

EBAC MODEL CD220 INDUSTRIAL DEHUMIDIFIER OWNER'S MANUAL





Drawing No.	:- TPC621
Issue	:- 2
Date	:- 15/11/24

UNIT

PACKAGE CONTENTS

Item	Description	Quantity
11185GR-US	Dehumidifier	1
3086144	Quick release hose coupling	1
3944110	PVC Tube – 3/8" I/D	1
TPC621	Manual	1

UNPACKING

Carefully remove the CD220 dehumidifier unit from its transit packaging 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 CD220 industrial dehumidifier removes moisture from the air through the refrigeration process.

The Ebac CD220 is basically comprised of:

- 1) A compressor
- 2) A refrigerant evaporator coil
- 3) A refrigerant condenser coil
- 4) One circulation fan
- 5) A humidistat
- 6) A condensate pump
- 7) 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 with which it entered. Continuous circulation of air through the dehumidifier gradually reduces the relative humidity within the area.

The CD220 dehumidifier is a rugged, reliable drying unit designed to operate effectively over a broad range of temperature and humidity conditions.

The CD220 dehumidifier uses an adjustable humidistat to enable you to select the level of dryness.



SPECIFICATIONS

MODEL:	11185GR-US
HEIGHT:	33.4" (847mm)
WIDTH:	29.5" (745mm)
DEPTH:	17.5" (445mm)
WEIGHT:	176 lbs
AIRFLOW:	Low 585 CFM High 664 CFM
POWER:	2250 W
POWER SUPPLY:	220V/60Hz/1ph
FINISH:	Powder-coated Epoxy
REFRIGERANT TYPE/QTY:	R410a / 45.9oz (1.3Kg)

INSTALLATION

POSITIONING:

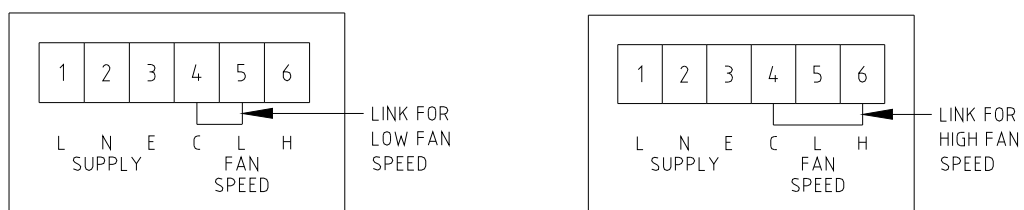
Position the dehumidifier unit in the center of the room to be conditioned if at all possible. However if a damp patch is particularly apparent the outlet grille should be pointed towards it if possible.

This unit can also be used in a duct system where applicable, please see the diagrams on the following pages which identify the overall sizes of the unit and also the mounting points.

NOTE: Both inlet grille and outlet grille of the dehumidifier unit must have clear space around them and not be obstructed in anyway. For correct installation and operation the unit inlet and outlet must have a clearance of 0.5M from all adjacent surfaces and or structures.

This unit should be connected to a single outlet circuit fused spur with a 20A rating.

Selecting the correct fan speed – The CD220 has a low fan speed and a high fan speed and the required speed must be chosen before installation. To select the correct fan speed firstly remove the filter cover via the 9off screws, then remove the electrical box cover via the 4off M4 hex head bolts. Once the electrical box cover is removed the supplied link wire must be wired between either the 'C' and 'L' or the 'C' and 'H' terminals on the terminal block. This is shown below. The default setting of the unit is high speed.



OPERATION

The following procedures should be followed to test the CD220 for correct operation:

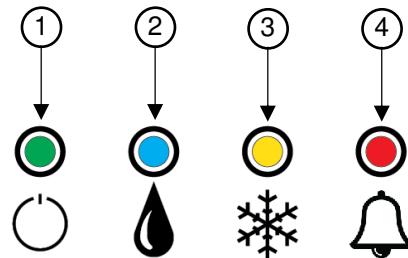
- 1) After unpacking, examine all external features to confirm damage-free shipment. Report all defects and damage at once. Connect the power cable to a grounded power source.
- 2) Install drain tubing as required (detailed in step F).

**Caution: Do not operate the machine without the covers for any longer than necessary.
Do not remove/ replace the covers when the unit is in operation.**

- 3) Check dehumidification process as follows:
 - A. Place unit on a level surface.
 - B. Turn the power supply on, then turn the on / off switch to the 'I' position, note the display will flash for approximately 1 second then show the humidity set point for approximately 12 seconds. Also all the indicator lights will illuminate for the same duration. After this brief period the display will show the room humidity and all the lights will go off. The machine is now powered up (POWER light illuminated) and ready to operate. Then carry out the following: -
 - C. Set the humidity set point to lowest setting (35% RH) as follows.
 - i. Press the UP and DOWN arrow keys together for 3 seconds and the display will start to flash
 - ii. Use the UP and DOWN arrow keys to adjust the set point to 35%
 - iii. Press the RIGHT arrow key to save (if the RIGHT arrow key is not pressed for 3 seconds the selection is cancelled)
 - iv. Once set to 35% and saved the compressor will start and the drying light will illuminate
 - D. Check that the compressor is running.
 - E. Leave the machine running for 15 minutes.
 - F. Observe the evaporator coils through the rear upper grille, to confirm frost formation.
 - G. If the air temperature is below 25°C, an even coating of frost should cover the entire evaporator coil.
 - H. If the air temperature is above 25°C, frost and/or droplets of condensed water should cover the entire evaporator coil.
 - I. When the unit is operated in an ambient of less than 15°C, a defrost cycle should occur. This will be at intervals of no more than every hour and will last no more than 5 minutes. The exact time is impossible to predict as the unit is fitted with a temperature sensitive defrost control. When in defrost the DRYING lamp will extinguish and the DEFROST light illuminate. After defrost the lights will switch back
- 4) After using the CD220, turn it off for 5 minutes to allow the condensate on the coils to drain into the pump reservoir.

Light Functions:

The unit has four LED indicators, located on the side of the unit. The following lists the functions of these lights:



1 - ON / OFF

Green solid – Indicates power ON

2 – DRYING

Blue flashing – Indicates drying selected (compressor has not started)

Blue solid – Indicates drying ON (compressor has started)

3 – DEFROST

Yellow flashing (Approximately every 5 seconds) – Defrost cycle active

Yellow solid – Defrost in progress

4 – Alarm

Indicates the pump is running, colour can be Flashing Yellow or Red

Initially flashes yellow for a minimum time of 5 seconds. If after 10 seconds the pump is still running the controller assumes a fault / restriction and turns to solid Red.

If the fault clears and the float returns to its normal position, the pump will stop and the LED extinguishes

If, after carrying out the above procedures, the appliance does not appear to function properly, refer to the *Trouble Shooting* section, which follows, or contact EIPL.

ROUTINE SERVICE

WARNING: ENSURE THAT THE POWER CORD TO THE MACHINE HAS BEEN DISCONNECTED BEFORE CARRYING OUT ROUTINE SERVICE. THE SERVICING AND REPAIR OF THIS UNIT SHOULD ONLY BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON

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.

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 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 70°F, 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 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 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	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
Little or no water extraction	1. Insufficient air flow 2. Compressor fault 3. Loss of refrigerant gas	1. Check all of the above 2. Contact the Factory Service Center 3. Contact the Factory Service Center
Little or no defrost when required	1. Faulty timer 2. Faulty by-pass valve	1. Contact the Factory Service Center 2. Contact the Factory Service Center
Unit vibrates excessively	1. Loose compressor 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 3. Crimped or blocked tubing	1. Clear the obstruction 2. Ensure that no section of the drain hose is above the level of the water outlet 3. Straighten, clear, or replace tubing

CD220 SPARE PARTS LIST

Description	Part Number
Product Part Number	11185GR-US
PCB Timer	1619522
Controls Display Timer	1619524
Humidity Sensor PCB	1619526
PCB Connecting Cable	2013753
Filter	2018233
Keypad Label	2018241
Condenser Coil	2015027
Evaporator Coil	2015026
Capillary Tube	3014252
Insulation Tube 10mm ID	3014301
Drain Tray PVC Tube	3014338
Defrost Valve	3020834
Filter Dryer	3020957
Fan Motor	3947037
Defrost Valve Solenoid Coil	3030454
Mains Cable	3031202
20mm Open Grommet	3032101
9.5mm Open Grommet	3032104
Contactora	3033409
Coil Sensor	3035142
Humidity Sensor Housing	3035164
Rocker Switch	3035914
Terminal Block	3036810
Fan Wheel	3040247
Fan Inlet Ring	3040248
Adjustable Tilt Guide Foot	3050305
Spire Clip	3080501
No. 10 x 5/8" Screws	3084095
Jubilee Clip	3086101
Large Hose Clip	3086135
Quick Release Tube Coupling	3086144
Small Hose Clip	3086146
Filter Sliding Catches	3088539
PCB Mounting Pin	3101413
Condensate Pump	3160156
Light Pipe Lens	3931732
Mains Plug	3934516
Humidity Sensor Cable	3935420
M20 Gland	3942330
M5 Serrated Washer	3942926
Condensate Drain Tube	3944110
Condensate Pump Outlet Tube	3944113
Compressor	3944949
Compressor Capacitor	3933512
High Pressure Stat	3021154



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WARNINGS

This appliance can be used by children from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the application in a safe way and understand the hazards involved.

Children shall not play with the appliance.

Cleaning and user maintenance shall not be made by children without supervision.

If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid hazard.

This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. The refrigeration system is hermetically sealed.

The Global Warming Potential (GWP) of refrigerants used in products manufactured by Ebac Industrial Products Ltd is as follows
R410a – 2088

For type and weight of refrigerant contained in this unit, please refer to the product data label

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.



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