

CD425 (10147BR-US) INDUSTRIAL DEHUMIDIFIER OWNER'S MANUAL



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CD425

PACKAGE CONTENTS

Item	Description	Quantity
10147BR-US	Dehumidifier	1
3944110	Reinforced tubing – 16mm I/D	1
TPC573	Manual	1

UNPACKING

Carefully remove the CD425 dehumidifier unit from its packing 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, as it will be useful when transporting the dehumidifier unit in the future.

INTRODUCTION

The Ebac CD425 dehumidifier removes moisture from the air that circulates through it. The resulting reduction in relative humidity protects buildings and their contents from the adverse effects of excess humidity.

The CD425 Dehumidifier comprises of:

- a) A compressor
- b) Refrigerant evaporator coils
- c) Refrigerant condenser coils
- d) Circulation fan
- e) A drain tray for collecting and disposing of condensed moisture
- f) A cabinet to house the above components.

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

Where large amounts of moisture are required to be removed from the area, more than one dehumidifier may be required, please contact your local distributor for advice.

SPECIFICATIONS

MODEL: CD425

HEIGHT: 1193 mm (47")

WIDTH: 1092 mm (43")

DEPTH: 482 mm (19")

WEIGHT: 160 kg (353 lbs)

AIRFLOW: 1750 CFM
(2975M3/Hr)

TOTAL POWER: 3680 (MAX)

**MAXIMUM OPERATING
TEMPERATURE:** 35°C (95°F)

POWER SUPPLY: 220V 3PH 60Hz

REFRIGERANT: R407c

CHARGE: 2.5Kg

"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

*R134a – 1300
R407c – 1610*

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

SYSTEM INSALLATION

WIRING

Connect a suitably fused 220V 60Hz 3 phase mains power supply to the MAINS T/B terminal block inside the electrical box located at the control panel end of the machine.

DRAINAGE

The appliance is fitted with a condensate pump which collects all the condensate. As the condensate pump fills with water it will automatically activate and empty via the tube outlet located underneath the dehumidifier, this should be connected to a water container or permanent drain. NOTE: after the pump has emptied there will still be a small amount of water standing in the pump reservoir which will leak if the dehumidifier is not kept upright.

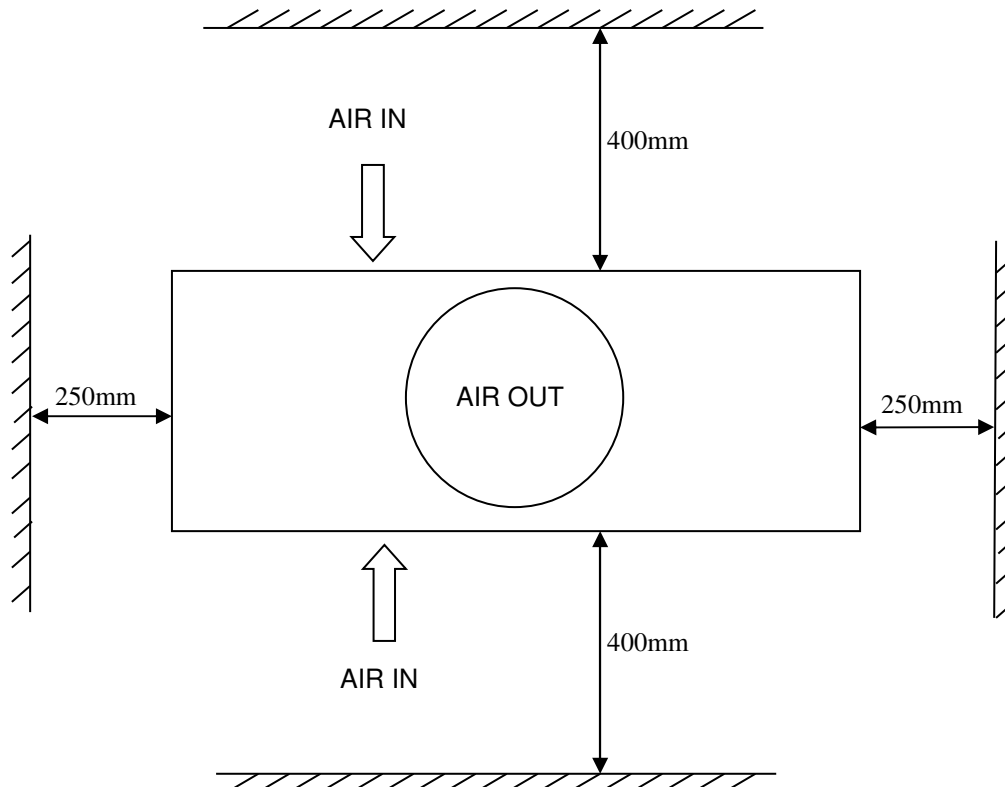
POSITIONING

The CD425 is designed for indoor use only.

Position the dehumidifier unit in the centre of the room to be conditioned if at all possible. Using a spirit level ensure the unit is level in both directions. Failure to do so may result in the drain tray overflowing and flooding of the chamber.

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

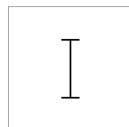
Minimum installation requirements.



A gap of at least 1000mm is required above the dehumidifier.

OPERATION

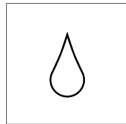
The CD425 is a self contained low temperature dehumidifier. All electrical contactors, overloads, etc are housed in an electrical box built inside the unit. The unit is equipped with a defrost valve which energized automatically to clear any ice formation on the evaporator coils. This allows the unit to operate at much lower temperatures; the control panel gives indication of the set humidity, drying and defrost status.



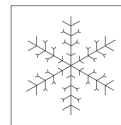
GREEN LENS
POWER ON



RED LENS
POWER OFF



BLUE LENS
DEFROST



YELLOW LENS
DEHUMIDIFYING

TEST FOR CORRECT OPERATION

The following procedure should be followed to test the unit for correct operation.

1. After unpacking connect the unit to a 220V 3PH 60 Hz wire power supply.
2. Switch the machine to the on position and check for correct fan rotation. (Air blows out of the top of the machine).
3. Check dehumidification process:
 - a) Remove front cover
 - b) Check actual relative humidity inside the area
 - c) Set humidity control to a lower value than the actual relative humidity 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% (Range is 35% - 99%)
 - 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 illuminates.
 - d) After approximately 6 minutes check the compressor is running.
 - e) Leave the machine to run for 15 minutes. (NOTE: ensure that the set humidity, see c) above, is set very low as the compressor will switch off when the actual RH coincides with the set point)

- f) Observe the evaporator coils
 - i) If the air temperature is below 20°C, an even coating of ice should cover the entire evaporator coil
 - ii) If the temperature is above 20°C, droplets of condensed water should cover the entire evaporator coil.
- 4. Leave the unit to run for approximately 42minutes (from compressor starting), after which the unit should go through a 4 minute defrost cycle. During the defrost cycle the defrost solenoid valve is energized and a warming of the evaporator coil can be felt.

If after carrying out the above checks the unit does not appear to function correctly refer to the repairs section or your supplier.

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 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, ensure the air temperature is below 20 °C, switch the machine on and leave it running for approximately 1 hour. The machine will then enter "Hot Gas" defrost mode for approximately 5 minutes before returning to normal operation. If the unit will not defrost, the printed circuit timer board/sensor 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	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 movement 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
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	1. Clear the obstruction, straighten or replace 2. No section of the drainage pipe

SPARE PARTS LIST

<u>DESCRIPTION</u>	<u>PART No.</u>	<u>QUANTITY</u>
Dehumidifier Controller	1619522	1
Display PCB	1619525	1
Humidity Sensor PCB	1619526	1
LED Board Cable	2013748	1
Humidity Sensor Cable	2013753	1
Keypad Label	2014468	1
Capillary Tube	3014251	12 X 1400mm X 0.047
Condenser Coil	3020725	1
Evaporator Coil	3020733	3
Defrost valve	3020835	1
Filter Dryer	3020930	1
Fan Motor	3030140	1
Contactors (Fan)	3030301	1
Contactors (Compressor)	3030321	1
Auxiliary contact (Fan)	3030322	1
Solenoid Coil	3030454	1
Transformer	3031144	1
Terminal Block	3031418	1
Overload	3032623	1
Coil Sensor	3035142	1
Humidity Sensor Housing	3035164	1
PCB Jumper Socket	3035834	1
MCB (16A)	3037742	1
MCB (2A)	3037746	1
Axial Fan	3040159	1
Standoff Locknut	3080504	32
No.10 x 5/8" Screw	3084095	6
R407c Refrigerant	3100453	2.5kg
Condensate Pump	3160156	1
Momentary Switch	3932324	2
Indicator Lamp Holder	3932325	2
Switch Contact Block	3932326	2
12V LED bulb	3932327	4
M20 Cable Gland	3942330	4
M25 Cable Gland	3942331	1
Pump outlet tubing (7.8 Metre Roll)	3944110	1
Compressor	3944926	1

Spare parts available online

www.EIPLDIRECT.com



Drawing	: - TPC573
Issue	: - 1
Date	: - 08/02/22

LIMITED WARRANTY

Our products carry a one-year unconditional warranty against any defects in workmanship or material. This warranty will cover all parts and labor required to repair your Ebac product. This warranty is invalid if the unit has been abused, damaged, whether intentional or accidental, or if any modifications have been made to the unit.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS ISSUED IN LIEU OF ALL OTHER WARRANTIES (WHETHER WRITTEN, ORAL, OR IMPLIED) INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. EBAC INDUSTRIAL PRODUCTS, INC. DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL DAMAGES, LOST PROFITS, OR INCIDENTAL DAMAGES FOR BREACH OF ANY WRITTEN OR IMPLIED WARRANTY WITH RESPECT TO THE FOREGOING DESCRIBED MERCHANDISE.

For Your Records: Model: _____
 S/N: _____
 Date Received: _____

SAVE THIS SECTION FOR YOUR RECORDS

 CLIP AND RETURN THIS CARD

PLEASE NOTE

To ensure that your Ebac Dehumidifier is accorded the full coverage provided by this warranty, please complete and mail this card at your earliest convenience.

Thank You

WARRANTY REGISTRATION		
MODEL _____	S/N _____	DATE RECEIVED _____
OWNER _____		
ADDRESS _____		
CITY _____ STATE _____ ZIP _____		
COMMENTS _____		

Ebac Industrial Products. 700 Thimble Shoals Boulevard, Suite 109, Newport News, Virginia. 23606-2575		

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.

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R134a – 1300

R407c – 1610

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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.



Drawing	: - TPC573
Issue	: - 1
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