Drawing	: - TPC546
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CD425 DEHUMIDIFIER

OWNER'S MANUAL

www.eipl.co.uk

SAFETY INFORMATION

Children shall not play with the appliance.

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.

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.

If the appliance 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.

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 appliance is switched off at the mains power supply for any reason, it must be allowed to stand at rest for at least three minutes before restarting. Failure to do so may cause the appliance to blow the fuses owing to the compressor due to there being a refrigerant imbalance.

The Global Warming Potential (GWP) of refrigerants used in products manufactured by Ebac Industrial Products Ltd is as follows: -
R290 – 3
R454c – 148

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

Do not insert objects into any of the grilles on the machine.

Do no cover or obstruct airflow from the grilles.

Do not operate the unit with the covers removed

Do not stand on the unit

Do not attempt to lift heavy units unassisted.

Do check the plug on the unit matches the supply.

Do check the supply cord and power supply are earthed correctly

Do check the voltage selection before attempting to power up the unit (This is for dual voltage units only).

Do use a residual current device “RCD” where possible

The appliance uses R454c refrigerant gas. This gas is much kinder to the environment as it is non-toxic with zero Ozone Depletion Potential (ODP). This is a flammable gas and the following warnings should be considered:

- The appliance uses a flammable refrigerant (see unit serial plate for charge quantity). It is therefore part of a sealed system and **any servicing should only be carried out by EIPL service personnel.**
- Do not pierce / puncture the appliance at any point, even when disposing of. Before disposing all refrigerant should be evacuated and disposed of as required by local environmental laws.
- If there is any damage to the appliance, DO NOT USE and contact EIPL.
- The appliance must not be used in a potentially explosive atmosphere.
- The appliance must not be used in an aggressive atmosphere e.g. chemical environments.
- The appliance must not be used in a high dust environment.
- The appliance must not be used in a high solvent concentration atmosphere.
- The appliance should not be used or stored in a space of $4M^3$ or smaller.
- Do not use the appliance in a room with any continuous source of ignition e.g. open flames or gas fires.
- R454c is an odourless gas.
- Anyone who does work on the refrigeration circuit must have the appropriate qualifications / certification issued by a national accredited organisation to ensure competence when handling flammable refrigerants.
- Any parts to be replaced within the appliance should only be replaced with EIPL approved parts.

DEHUMIDIFIER PRINCIPLE

Dehumidifiers remove moisture from the air that is circulating through the appliance.
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 appliance. Continuous circulation of the room air through the appliance gradually reduces the relative humidity in the room.
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 energises 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 defrosts status.

UNPACKING

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

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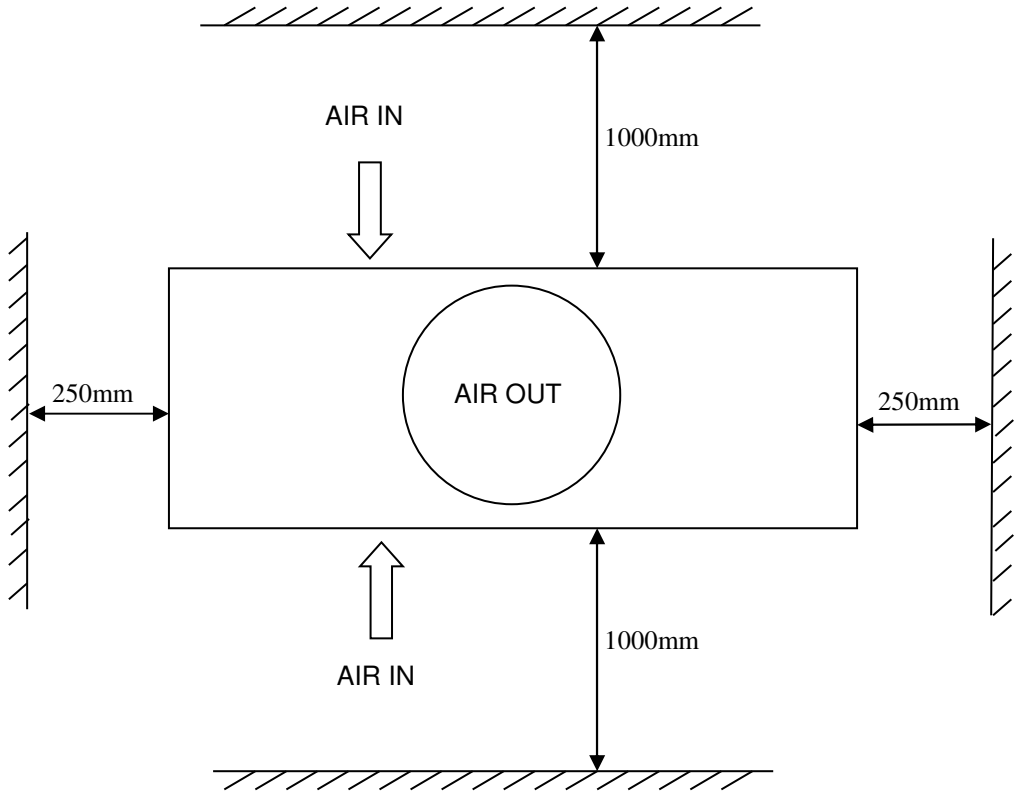
INSTALLATION

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.



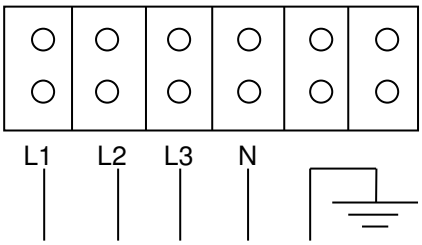
A gap of at least 1000mm is required above the dehumidifier.
Appliance shall be installed, operated and stored in a room with a floor area larger than 4M^2.

WIRING:

The CD425 should be connected to a suitably protected, 16A, 3 phase mains power supply.
A recognized means of disconnecting the dehumidifier from the supply must be incorporated into the fixed wiring to the unit in accordance with the latest wiring regulations.

Connect the supply cable to the MAINS T/B terminal block inside the electrical box located at the control panel end of the machine.

Wiring connections to MAINS Terminal Block



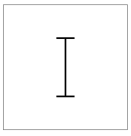
DRAINAGE:

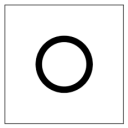
Connect the outlet from the drain tray (located behind the front grille and under the evaporator coils) to a permanent drain. Please ensure that the drainage does not rise above the level of the CD425's drain tray. Failure to observe this requirement will result in internal flooding of the dehumidifier unit.

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.

The lights on the indicator panel represent the following:


GREEN LENS / BUTTON
POWER ON


RED LENS / BUTTON
POWER OFF


BLUE LENS
DEFROST


YELLOW LENS
DEHUMIDIFYING

Test for Correct Operation

WARNING!

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

1. After unpacking connect the unit to a 380/415V, 3Ph, 50Hz 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
    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 42 minutes (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 your supplier.

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 THE POWER CORD TO THE APPLIANCE IS DISCONNECTED BEFORE CARRYING OUT ROUTINE SERVICE. SERVICING AND REPAIR SHOULD ONLY BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON.

To ensure continued full efficiency of the appliance, 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 THE REFRIGERATION COILS

2. Check that the fan is firmly secured to the motor shaft and that the fan rotates freely. The motor is sealed for life and does not require any lubrication

3. To check the refrigerant charge, run the appliance for 15 minutes. The evaporator coil should be evenly frost coated across its surface. At temperatures above 20°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. The bolts retaining the compressor and fan should be inspected to ensure they have not become loose. Check the insulation sleeves on the refrigeration pipe work have not become detached.

6. Inspect the drain tray for water marking. If marking is excessive check the drain pipe for blockage.

7. To check the operation of the defrost system, switch the machine on and leave it running for approximately 42 minutes in temperatures below 20°C. The machine will then enter defrost mode for approximately 4 minutes, before returning to normal operation. If the unit will not defrost, replace the printed circuit board. If the machine is still not defrosting, replace the by-pass valve. Check the machine again after a further hour of operation to determine that the valve is working correctly.

TROUBLESHOOTING

SYMPTOM	CAUSE	REMEDY
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 *Routine Maintenance* 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 EIPL 3. Contact EIPL
Little or no defrost when required	1. Faulty Timer 2. Faulty bypass timer	1. Contact EIPL 2. Contact EIPL
Unit vibrates excessively	1. Loose compressor mounts 2. Damaged fan	1. Tighten nuts on compressor mounts 2. Replace with a new fan
Water flooding inside machine	1. Drain pipe blocked / frozen 2. Drain pipe to high	1. Clear the obstruction 2. Lower section of pipe

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SPECIFICATIONS

MODEL:	10145MR-GB
HEIGHT:	1190 mm (46.9 in)
WIDTH:	1100 mm (43.3 in)
DEPTH:	460 mm (18.1 in)
WEIGHT:	160 Kg (353 lb)
AIRFLOW:	3000 M^3/Hr (1766 CFM)
POWER SUPPLY:	380-415 V, 3 ph, 50 Hz
FINISH:	Vinyl Coated Steel
REFRIGERANT TYPE/QTY:	R454c (See unit rating label for quantity)
OPERATING RANGE:	3°C – 35°C

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APPLIANCE SPARE PARTS LIST

Description	Part Number
Product Part Number	10145MR-GB
PCB Controller	1619522
Capillary	3014252
Drain Outlet Tube	3014315
Condenser Coil	3020725
Evaporator Coil	3020733
Reversing Valve	3020835
Filter Dryer	3020930
Fan Motor	3030130
Contactor	3030321
Auxiliary Contact	3030322
Solenoid Coil	3030454
Transformer	3031144
Terminal Block	3031418
20mm Open Grommet	3032101
Overload	3032618
Humidistat	3035158
PCB Controller Jumper Socket	3035834
3 Phase MCB	3037708
1 Phase MCB	3037726
Fan Blade	3040119
Spire Clip (U nut)	3080501
Standoff Locknut	3080504
No.10 x 5/8” Screw	3084095
Jubilee Clip	3086119
Push Button Switch	3932324
Indicator Holder	3932325
Switch Contact Block	3932326
12V LED bulb	3932327
M16 Cable Gland	3942329
M20 Cable Gland	3942330
M25 Cable Gland	3942331
M5 External Serrated Washer	3942926
Compressor	3944968

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