| | |
|---|---|
| Drawing | : - TPC533 |
| Issue | : - 1 |
| Date | : - 04/01/21 |

# CD100E 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 appliance is a rugged, reliable drying unit designed to operate effectively over a broad range of temperature and humidity conditions.
An active hot gas defrost system guarantees positive de-icing, thereby optimizing operation at low temperatures. Should the ambient temperature fall below 15°C then ice will form on the evaporator coil as the air is passed over it, and in turn the efficiency of the unit will drop. To prevent the buildup of this ice on the evaporator coil an electronic timer is incorporated to energize the hot-gas defrost valve. Operating the hot-gas valve causes the evaporator coil to defrost and the water to drain down to the condensate pan and into the drainage tube.
The appliance has been designed to work in ambient temperatures between 3°C and +35°C. Should the temperature in the room become excessive a thermostat within the compressor casing will open and dehumidifying will stop, until the thermostat resets itself.

## 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.

# INSTALLATION

## POSITIONING:

Position the appliance 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.

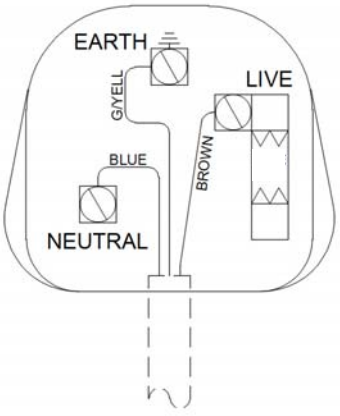
NOTE: Both inlet grille and outlet grille of the appliance must have clear space around them and not be obstructed in anyway. The unit must also be on a level surface and raised 1M from the ground, this allows a gap under the unit that gas can escape to if the refrigeration circuit is damaged and refrigerant escapes. This height also ensures that the condensate water can drain away correctly.
Appliance shall be installed, operated and stored in a room with a floor area larger than $4M^2$.

## WIRING:

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

| 230V supply | |
|---|---|
| Brown | Live |
| Blue | Neutral |
| Green/Yellow | Earth (ground) |

13 AMP 230V PLUG
TO BS1363




## ALARM WIRING:

Plug L (Normally Open Contacts)
Plug N (Close on Humidity Rise)
Plug E (Earth)

## DRAINAGE:

Connect a 12.5mm inside diameter hose to the condensate outlet pipe. Secure the hose using a worm drive clip. The hose should at no point be raised higher than the outlet pipe. Hose should be run to a permanent drain. Failure to observe this requirement will result in flooding of the appliance.

# OPERATION

Once the appliance is installed turn the humidistat knob fully clockwise. Switch the power supply ON. Turn the on/off switch ON and note the unit starts. Then carry out the following: -

- Check that the compressor and fan are running
- Leave the appliance to run for approximately 15 minutes
- Observe the evaporator coil through the inlet grille to confirm frost formation or weeping of the evaporator coil
    - If the air temperature is below 25°C, an even coating of frost should cover the entire evaporator coil.
    - If the air temperature is above 25°C, frost and/or droplets of condensed water should cover the entire evaporator coil.
- 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.

## CONTROL HUMIDISTAT:

The appliance is fitted with a control humidistat, which measures the relative humidity of the air within the room to be conditioned. The humidistat incorporates a pointer and scale, which can be adjusted, and set to a relative humidity level that is acceptable to maintain the required conditions within the room. The humidistat controls the on/off function of the dehumidifier, when the relative humidity of the air in the room falls below the set point of the humidistat the dehumidifier will switch off, but when the relative humidity of the air starts to rise again and passes the set point the unit will switch on. The humidistat is used for the on/off function as it is a cost effective method which ensures power is only used when needed. The humidistat is positioned behind the front cover; this removes the humidistat from normal view and therefore reduces the possibility of being mistakenly adjusted.

## ALARM HUMIDISTAT:

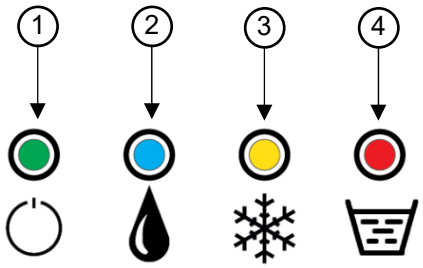
The appliance is also fitted with an alarm humidistat which is factory pre-set at 70%. A voltage free set of normally open contacts are available at the alarm plug, situated on the control panel. This facility allows connection to an external alarm monitoring system. The contacts will close on high RH.

## HEATED CONDENSATE DRAINAGE TUBE:

The appliance is fitted with a heater tape which runs the length of the condensate tube. The effect of this heated condensate drainage tube will ensure that the drainage point for the dehumidifier is kept free from ice when operated in low ambient temperatures.

**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 – DRAIN FAULT
Yellow Flashing followed by Red solid – Drainage fault

**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.**

| | |
|---|---|
| Drawing | : - TPC533 |
| Issue | : - 1 |
| Date | : - 04/01/21 |

# CD100 / CD100E WALL MOUNTING BRACKET KIT
# PART NUMBER 1027301

## KIT CONTENTS:

| Item | Qty | Description |
|---|---|---|
| 1 | 2 | Frame Hook Rail |
| 2 | 1 | Frame Location Angle |
| 3 | 1 | Frame Top Angle |
| 4 | 2 | Frame Bottom Angle |
| 5 | 2 | 'U' Channel With Foot |
| 6 | 2 | Frame Support |
| 7 | 3 | 3/16" Dome Head Rivet |
| 8 | 10 | M8 X 25mm Hex Head Screw |
| 9 | 10 | M8 Spring Washer |
| 10 | 10 | M8 Flat Washer |
| 11 | 10 | M8 Spring Nut and Plate |
| 12 | 6 | End Cap |
| 13 | 1 | Mounting Fame Assembly 1027301 |
| 14 | 1 | Installation Drawing 5060117 |

## Assembly Instructions:

With reference to the table above, unpack the Mounting Frame Kit and check for completeness.
With reference to Drawing 1027301 Assemble the mounting frame as follows:-

1. Using Items 8, 9, 10, 11 assemble Items 4 and 5 ensuring the edge of the foot is flush with the end of Item 4.
2. Using Items 8, 9, 10, 11 assemble Items 5 and 3 ensuring the distance of 900mm +/- 2mm is maintained over Items 4.
3. Using Items 8, 9, 10, 11 assemble Items 1, 4 and 6 ensuring the front edges are flush.
4. Insert Item 12 into the front of the 'U' Channel.
5. Drill the appropriate fixing holes into Item 3 to secure bracket onto the wall.
6. Secure the bracket to the wall
7. With reference to Drawing 5060117 Position the CD100 / CD100E onto the Wall Mounted Bracket.
8. Using Item 6 assemble items 1 and 2 ensuring the fingers of Item 2 locate into the CD100 chassis.
9. Secure the CD100 / CD100E with the 2 Claw Clamps onto Item 1.

# 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 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.

# TROUBLESHOOTING

| SYMPTOM | CAUSE | REMEDY |
|---|---|---|
| **Little or no airflow** | 1. Loose fan on shaft<br>2. Fan motor burnt out<br>3. Dirty refrigeration coils<br>4. Loose electrical wiring<br>5. Control humidistat either set too high or malfunctioning | 1. Tighten fan<br>2. Replace the fan motor<br>3. See *Routine Maintenance*<br>4. Check the wiring diagram to find fault and repair<br>5. Adjust humidistat as required or replace |
| **Little or no water extraction** | 1. Insufficient air flow<br>2. Compressor fault<br>3. Loss of refrigerant gas | 1. Check all of the above<br>2. Contact EIPL<br>3. Contact EIPL |
| **Little or no defrost when required** | 1. Faulty Timer<br>2. Faulty bypass timer | 1. Contact EIPL<br>2. Contact EIPL |

| | |
|---|---|
| Drawing | : - TPC533 |
| Issue | : - 1 |
| Date | : - 04/01/21 |

# SPECIFICATIONS

**MODEL:** CD100E

**HEIGHT:** 400 mm (16 in)

**WIDTH:** 900 mm (35.5 in)

**DEPTH:** 500 mm (20 in)

**WEIGHT:** 75 Kg (165 lb)

**AIRFLOW:** 510 $M^3$/Hr (300 CFM)

**POWER SUPPLY:** 230 V, 1 ph, 50 Hz

**FINISH:** Epoxy Coating

**REFRIGERANT TYPE/QTY:** R454c (400g)

**OPERATING RANGE:** 3°C – 35°C

# APPLIANCE SPARE PARTS LIST

| Description | Part Number |
|---|---|
| Product Part Number | 10273GY-GB |
| PCB Timer | 1619522 |
| PCB Light Board | 1619523 |
| Humidistat Knob | 2019708 |
| Condenser Coil | 3020727 |
| Evaporator Coil | 3020732 |
| By-Pass Valve | 3020833 |
| Filter Dryer | 3020957 |
| Fan Motor | 3030129 |
| Solenoid Coil | 3030454 |
| On / Off Switch | 3030555 |
| Hour Meter | 3030778 |
| Mains Cable | 3031202 |
| Drain Tube Heater Tape | 3031629 |
| Float Switch | 3033043 |
| Control & Alarm Humidistat | 3035158 |
| Panel Mounting Plug | 3035997 |
| Free Socket | 3035998 |
| Fan Blade | 3040116 |
| Cover fixing standoff locknut | 3080504 |
| Worm Drive Clip | 3086101 |
| Knob | 3090611 |
| Knob Cap Black | 3090612 |
| Knob Pointer | 3090613 |
| Knob Cap Red | 3090645 |
| Contactor | 3930733 |
| LED Lens | 3931732 |
| Compressor Capacitor | 3933604 |
| Condensate Drain Tube | 3944115 |
| Compressor | 3944965 |


**UK Head Office**

Ebac Industrial Products Ltd
St Helens Trading Estate
Bishop Auckland
County Durham
DL14 9AD

Tel: +44 (0) 1388 664400
Fax: +44 (0) 1388 662590

www.eipl.co.uk
sales@eipl.co.uk

**American Sales Office**

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

Tel: +01 757 873 6800
Fax: +01 757 873 3632

www.ebacusa.com
sales@ebacusa.com

**German Sales Office**

Ebac Industrial Products Ltd.
Gartenfelder Str. 29-37
Gebäude 35
D-13599, Berlin
Germany

Tel: +49 3043 557241
Fax: +49 3043 557240

www.eip-ltd.de
sales@eip-ltd.de