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ECO85 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.
The dehumidifier unit is fitted with a transformer which will allow the unit to operate on either 110volts or 230volts 1ph 50Hz power supply.

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

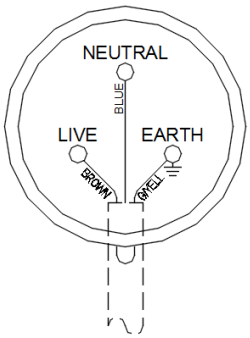
POSITIONING:

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.

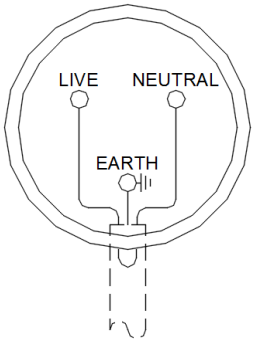
NOTE: Both inlet grille and outlet grille of the appliance must have clear space around them and not be obstructed in anyway. The unit must also be on a level surface.
Appliance shall be installed, operated and stored in a room with a floor area larger than $4M^2$.

WIRING:

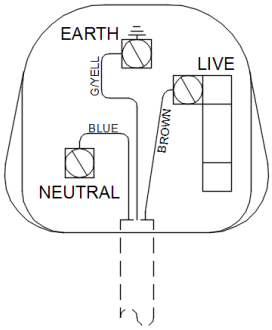
YELLOW 110V PLUG
BS4343 / IEC60309



BLUE 230V PLUG
BS4343 / IEC60309



5 AMP 230V PLUG BS1363



The wires in the mains lead are coloured and must be connected as shown in the diagrams above by a qualified electrician.

ELECTRICAL CONNECTIONS

The wire which is coloured Green and Yellow must be connected to the terminal marked E or by the Earth symbol. The wire which is coloured Blue must be connected to the terminal in the plug which is marked with the letter N or coloured blue. The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured brown.

CHANGING THE FUSE

13 amp fuses that are ASTA approved to BS1362 should only be used.

NOTE

When a generator is used to supply the power, it is essential to check the minimum kva required in the technical section within this manual. The generator must be started before connection is made to the dehumidifier.

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 at the back of the dehumidifier, this should be connected to a water container or permanent drain. If the pump fails, then the dehumidifier will automatically switch off. 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

OPERATION

The appliance is fitted with a transformer which will allow it to operate on either 110volts or 230volts 1ph 50Hz power supply.
All electrical components within the dehumidifier are rated for 110volts, for safety reasons. The toggle switch within the appliance allows for the selection of the required voltage prior to starting. This switch can be seen through the rear grille (under the handle), Only change the voltage selection switch when the appliance is not connected to a power supply.
The appliance is fitted as standard with a unique voltage selection protection device.
Should the appliance be connected to a 110volts supply and the selector switch set inadvertently to 230volts, it will not start.

Once the appliance is installed turn the power supply on, then turn the on / off switch to the 'I' position and note it starts. Then carry out the following: -

- Check that the compressor is running
- Leave the appliance to run for approximately 15 minutes
- Observe the coils through the filter 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.

After using the appliance, turn it off for 5 minutes to allow the condensate on the coils to drain into the pump reservoir. Then turn the appliance back on and press the momentary purge switch for 20 to 30 seconds to evacuate the water from the pump reservoir.

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 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 2. Fan motor burnt out 3. Dirty refrigeration coils 4. Loose electrical wiring 5. Control humidistat either set too high or malfunctioning	1. Tighten fan 2. Replace the fan motor 3. See *Routine Maintenance* 4. Check the wiring diagram to find fault and repair 5. Adjust humidistat as required or replace
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

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SPECIFICATIONS

MODEL:	ECO85
HEIGHT:	700 mm (27.5 in)
WIDTH:	480 mm (19 in)
DEPTH:	390 mm (15.3 in)
WEIGHT:	40 Kg (88 lb)
AIRFLOW:	650 M^3/Hr (383 CFM)
MAX POWER:	0.65 KW
MAX CURRENT:	3 A / 6 A
GENERATOR SIZE:	1 KVA
POWER SUPPLY:	230 V, 1 ph, 50 Hz
FINISH:	Epoxy Coating
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	11298WD-GB
PCB Timer	1619522
Cable Tidy	2029115
Refrigeration Coils	2029336
Filter	2029826
By-Pass Valve	3020837
Filter Dryer	3020909
Solenoid Coil	3030451
Hour Meter	3030779
Transformer	3031061
Mains Cable	3031231
Voltage Selection Switch	3032301
On / Off Switch	3035914
Solid State Relay	3931320
Pump Purge Switch	3036779
Fan	3040277
Fan Inlet Ring	3040283
Wheel	3050120
Rubber Foot	3088553
Condensate Pump	3160155
Condensate Drain Tube	3944110
Compressor	3944966
Capillary Tube	3014251
Insulation Tube 10mm ID	3014301
Silicone Drain Tray Tube	3014368
Foam Tape 50mm wide x 3mm thick	3015124
Terminal Block	3031460
20mm Open Grommet	3032101
3/8” Open Grommet	3032104
Mains In Filter	3033618
Coil Sensor	3035142
Mains In Gland / Terminal Block	3035346
PCB Timer Jumper Socket	3035834
Starlock Washer Uncapped	3082601
Starlock Washer Capped	3082602
Large Snapper Hose Clip	3086135
Quick Release Hose Coupling	3086144
Small Snapper Clip	3086146
Filter Panel Quick Release Catches	3088539
Handle Lock Ring	3088599
Circuit Board Support	3101413
Handle Rubber Buffer	3101436
Compressor Capacitor	3036357
Small Capped Starlock Washer	3942927
Condensate Pump Outlet Tube	3944113
Transformer Terminal Block	3036810

Spare parts available online
www.EIPLDIRECT.com

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