Drawing	: - TPC525
Issue	: - 3
Date	: - 19/01/24

BD150 DEHUMIDIFIER

(DUAL VOLTAGE)

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

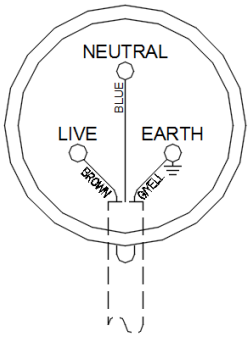
POSITIONING:

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.

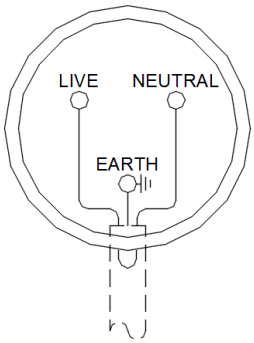
NOTE: Both inlet grille and outlet grille of the appliance must not be obstructed in anyway. Leave a minimum 1 metre clearance gap around all surfaces of the unit. The unit must also be on a level surface.
Appliance shall be installed, operated and stored in a room with a floor area larger than 4M^2.

WIRING:

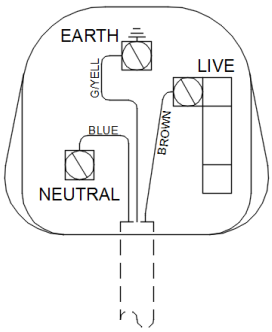
YELLOW 110V PLUG
BS4343 / IEC60309



BLUE 230V PLUG
BS4343 / IEC60309



13 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.

RECOMMENDED CURRENT PROTECTION

230V - 13 amp
110V – 16 amp

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:

Under most operating conditions water will be produced continuously and it is important that it is drained away correctly and not allowed to spill. Any spillage will evaporate and will, therefore, have to be recycled through the dryer again, which in effect, only prolongs the drying period.

PORTABLE CONTAINERS:

Position a closed top container underneath the water discharge pipe (approximately 25 litre capacity). Place a short length of pipe one end over the discharge pipe and the other end in the container. Use a transparent container, this will enable you to check the level of the water and so prevent overflowing. As the unit will be running for long periods of time, a regular check should be made on the container water level.

PERMANENT DRAINAGE:

Connect a flexible hose to the water discharge pipe of sufficient length so that it will reach a permanent drain. The gravity head created will allow for a gradual fall from the unit to the drain. Ensure that the hose is free of kinks and is not allowed to rise at any point above the level of the discharge point from the dehumidifier. Any air locks which may be created, should the level be raised by the hose passing over obstructions, could cause the water to “back up” the hose and spill form the dryer.

OPERATION

The unit is fitted with a transformer which will allow the unit 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 rotary switch allows for the selection of the required voltage prior to starting the unit.
The unit is fitted as standard with a unique voltage selection protection device. Should the unit be connected to 110volts supply and the rotary selector switch set inadvertently to 230volts , the unit will not start.
This unit is fitted with a 12 amp circuit breaker.

Once the appliance is installed to the correct voltage required the unit can be turned on as follows. Turn the rotary switch to the required voltage being used and press the start switch, note the unit starts (DO NOT PRESS START SWITCH FOR MORE THAN 1 SECOND) Then carry out the following: -

- Check that the compressor is 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.

To turn the unit off, turn the rotary switch to the OFF position. Turn off the power supply and disconnect.

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:	BD150
HEIGHT:	915 mm (36 in)
WIDTH:	610 mm (24 in)
DEPTH:	692 mm (27 in)
WEIGHT:	80 Kg (176 lb)
AIRFLOW:	510 M^3/Hr (-- CFM)
POWER SUPPLY:	230 V, 1 ph, 50 Hz OR 110 V, 1 ph, 50 Hz
MAX POWER:	1.5 KW
MAX CURRENT:	8 A / 16 A
RECOMMENDED CURRENT PROTECTION	230V – 13A 110V – 16A
GENERATOR SIZE:	1.5 Kva
FINISH:	Epoxy Coating
REFRIGERANT TYPE/QTY:	R454c (See unit rating label for quantity)
OPERATING RANGE:	3°C – 35°C

APPLIANCE SPARE PARTS LIST

Description	Part Number
Product Part Number	10218MG-GB
Compressor	3944967
By-Pass Valve	3020833
Condenser Coil	3020727
Evaporator Coil	3020732
Filter Dryer	3020957
Fan Motor	3030126
Fan Blade	3040116
PCB Timer	1619519
Solenoid Coil	3030453
Mains Cable	3031202
Rotary Switch	3030555
Rotary Switch Knob (Round Shaft)	3030578
Rotary Switch Knob (Square Shaft)	3030579
Compressor Start Capacitor	3030813
Compressor Run Capacitor	3036358
Start Button	3036781
Wheel	3050116
Contactor	3930732
Transformer	3031063
Circuit Breaker	3931313
LH Side Cover	1021814
RH Side Cover	1021815
Top Cover	2021872

Spare parts available online

www.EIPLDIRECT.com

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