

DUAL VOLTAGE RM85 INDUSTRIAL DEHUMIDIFIER OWNER'S MANUAL



www.eipl.co.uk

INTRODUCTION

Designed for a wide range of applications, the RM85 is a rugged, industrial unit, which utilizes an energy-efficient compressor and a compact portable design to provide easy efficient drying.

The RM85 has a number of special features:

- High efficiency rotary compressor
- EIPL's "Hot Gas" defrost system
- Hours run meter
- Integral pump out system
- Provision for permanent drainage
- Robust rotational moulded polyethylene housing
- Extra long power cord
- Separate outlets allowing dry air to be ducted

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

The RM85 dehumidifier 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, controlled by an electronic timer, guarantees positive de-icing, thereby optimizing operation at low temperatures.

The unit incorporates a rotational moulded polyethylene shell resilient to damage caused by rough handling.

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

All electrical components within the unit are rated for 110volts, for safety reasons.

The unit can easily be adjusted to operate from a 230 volt power supply as follows:

Warning: ensure the unit is switched OFF and isolated form the supply.

The voltage selector switch is located at the rear of the machine – see diagram on Page 4.

Remove the lower screw and swing the cover to one side to reveal the access hole. The switch lever can be seen through the hole. Using a flat blade screwdriver move the switch lever down to the 230 volt position. (If 110 volt is required the switch lever must be in the upper position)

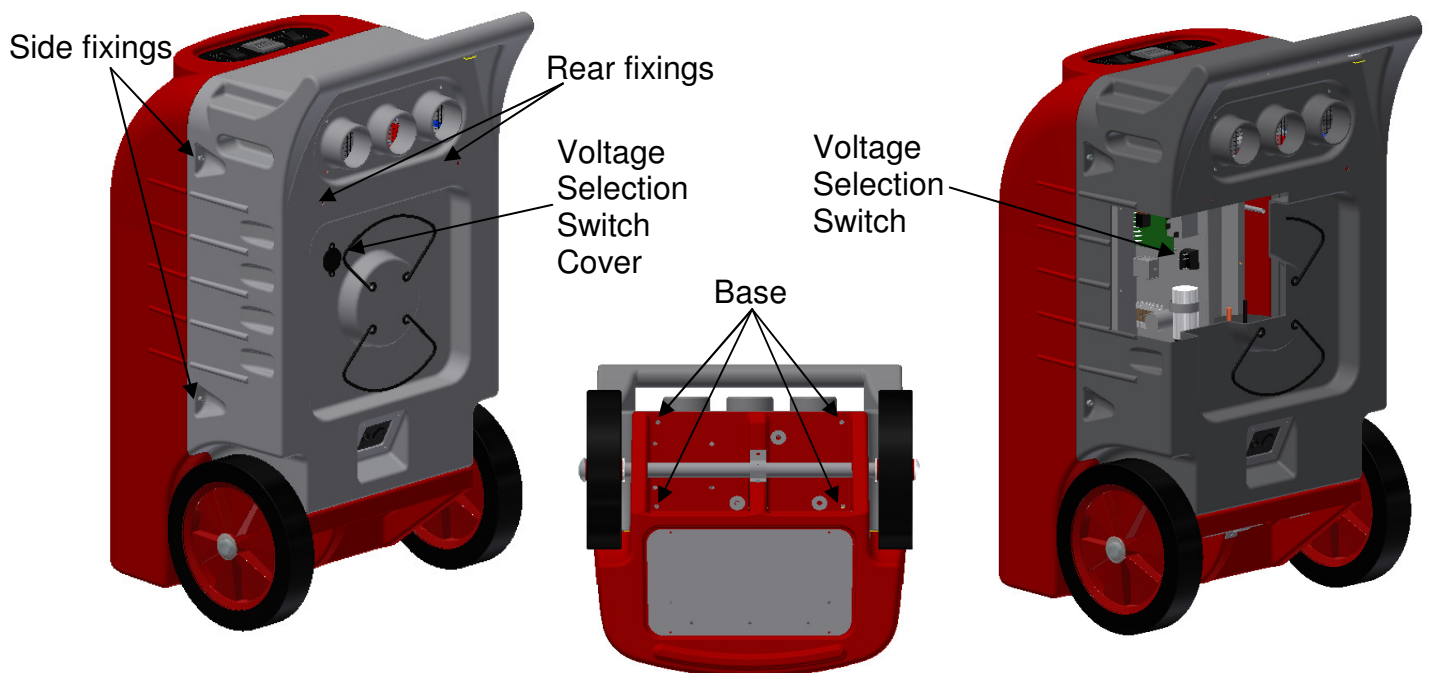
Once the required voltage has been selected, refit the cover and tighten the lower fixing screw.

The dehumidifier is now ready to be connected to the required power supply.

BACK SHELL REMOVAL

To remove the back shell and access the voltage selection switch please carry out the following steps.

- Locate 2 off cap headed bolts on back of unit and remove
- Locate 2 off cap headed studs on right hand side of unit and remove
- Locate 2 off cap headed studs on left hand side of unit and remove
- Locate 4 off cap headed studs on base of unit and remove
- Once studs are removed the back shell will lift off the unit. The unit will remain free standing once back shell is removed
- The voltage selection switch is located on the rear of the electrical panel hanging from the fan deck. Choose the correct voltage for the mains supply your unit will be connected to. **WARNING:** selecting the incorrect voltage for the mains supply being used may damage the unit.
- Once correct voltage is selected, place back onto unit
- Re-fit 4 off cap headed bolts to base
- Re-fit 2 off cap head bolts to right hand side of unit
- Re-fit 2 off cap headed bolts to left hand side of unit
- Re-fit 2 off cap headed bolts to rear of unit
- Ensure all bolts are replaced and tightened correctly before moving unit.



SPECIFICATIONS

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|-------------------------|---------------------------------|
| MODEL: | 10560RD-GB |
| HEIGHT: | 945 mm |
| WIDTH: | 545 mm |
| DEPTH: | 492 mm |
| WEIGHT: | 48 kg |
| AIRFLOW: | 390 M ³ /Hr |
| POWER SUPPLY: | 230V/115V / 50Hz/ 1 ph |
| FINISH: | Rotational Moulded polyethylene |
| OPERATING RANGE: | 3°C – 35°C |
| REFRIGERANT: | R407c (500g) |

"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"

OPERATION

The following procedures should be followed to test the RM85 for correct operation:

1. After unpacking, examine all external features to confirm damage-free shipment. Report all defects and damage at once. Ensure the correct voltage has been selected. Connect the drainage outlet to a suitably sized hose and run the hose to a permanent drain
2. Check dehumidification process as follows:

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| <p style="text-align: center;">CAUTION: DO NOT REMOVE COVERS WHEN UNIT IS IN OPERATION</p> |
|---|

- A. Place unit on a level surface.
- B. Start up unit by switching to "I".
- C. Check that the compressor is running.
- D. Leave the machine running for 15 minutes.
- E. Observe the evaporator coils through the front grille, to confirm frost formation.
 - i. If the air temperature is below 25°C, an even coating of frost should cover the entire evaporator coil.
 - ii. If the air temperature is above 25°C, frost and/or droplets of condensed water should cover the entire evaporator coil.
- F. When the unit is operated in ambient of less than 15°C, a defrost cycle should occur approximately every hour. The exact time is impossible to predict as the unit is fitted with a temperature sensitive defrost control.

If, after carrying out the above procedures, the unit does not appear to function properly, refer to the *Trouble Shooting* section, which follows, or contact the Factory Service Center.

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| <p style="text-align: center;">CAUTION: ONCE THE UNIT HAS BEEN SWITCHED OFF, WAIT AT LEAST FIVE MINUTES BEFORE RESTARTING.</p> |
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After using the RM85, turn it off for five minutes to allow the condensate on the coils to drain into the pump reservoir, then turn it back on and press the momentary purge switch for twenty to thirty seconds to evacuate the water from the pump reservoir.

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 to avoid damaging the fins. Alternatively, vacuum clean the coils.

WARNING:

DO NOT STEAM CLEAN REFRIGERATION COILS

2. Check 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 observe the evaporator coil. It 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, including mains cable for damage or loose connections.
5. In order to check the defrost operation, the unit needs to be operated in an ambient temperature of less than 15°C for at least 1 hour. When operated in this condition the unit should defrost at least once every hour. The defrost mode can be monitored by observing the ice melting on the coil face, prior to defrost the face will show a white coating of frost, which should clear during defrost.

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 | <ol style="list-style-type: none"> 1. No power to unit 2. Mains cable damaged. | <ol style="list-style-type: none"> 1. Check the power from power supply panel. 2. Contact the Factory Service Center |
| Little or no airflow | <ol style="list-style-type: none"> 1. Fan motor burnt out 2. Dirty refrigeration coils 3. Loose electrical wiring | <ol style="list-style-type: none"> 1. Replace the fan motor 2. See <i>Routine Maintenance</i> Section 3. Check the wiring diagram to find fault and repair |
| Little or no water extraction | <ol style="list-style-type: none"> 1. Insufficient air flow 2. Compressor fault 3. Loss of refrigerant gas | <ol style="list-style-type: none"> 1. Check all of the above 2. Contact the Factory Service Center 3. Contact the Factory Service Center |
| Little or no defrost when required | <ol style="list-style-type: none"> 1. Faulty timer 2. Faulty by-pass valve | <ol style="list-style-type: none"> 1. Contact the Factory Service Center 2. Contact the Factory Service Center |
| Unit vibrates excessively | <ol style="list-style-type: none"> 1. Loose compressor 2. Damaged fan | <ol style="list-style-type: none"> 1. Tighten the nuts on the compressor mounts 2. Replace fan |
| Water flooding inside the machine | <ol style="list-style-type: none"> 1. Drain pipe blocked/frozen 2. Drain pipe too high 3. Crimped or blocked tubing | <ol style="list-style-type: none"> 1. Clear the obstruction 2. Ensure that no section of the drain hose is above the level of the water outlet 3. Straighten, clear, or replace tubing |

RM85
SPARE PARTS LIST

| <u>NUMBER</u> | <u>DESCRIPTION</u> | <u>PART NUMBER</u> | <u>QUANTITY</u> |
|---------------|-----------------------------|------------------------|-----------------|
| 1 | Timer | 1619508 | 1 |
| 2 | Condenser coil | 2029322 | 1 |
| 3 | Evaporator coil | 2029323 | 1 |
| 4 | Cable & Tube wrap | 2056002 | 2 |
| 5 | Drain tray | 2056003 | 1 |
| 6 | Filter | 2056004 | 1 |
| 7 | Capillary | 3014254 | 2 X 2ft |
| 8 | Solenoid valve | 3020837 | 1 |
| 9 | Filter dryer | 3020909 | 1 |
| 10 | Compressor | 3022198 | 1 |
| 11 | Defrost Relay | 3030269 | 1 |
| 12 | Voltage selection capacitor | 3030375 | 1 |
| 13 | Solenoid coil | 3030451 | 1 |
| 14 | Hour meter | 3030779 | 1 |
| 15 | Transformer | 3031061 | 1 |
| 16 | Voltage selection switch | 3032301 | 1 |
| 16 | Run capacitor | 3030908 | 1 |
| 17 | On/Off switch | 3035914 | 1 |
| 18 | Power Relay | 3036157 | 1 |
| 19 | Pump purge switch | 3036779 | 1 |
| 20 | Fan | 3040277 | 1 |
| 21 | Fan inlet ring | 3040283 | 1 |
| 22 | Wheel | 3050124 | 2 |
| 23 | Rubber foot | 3101436 | 2 |
| 24 | Condensate pump | 3160150 | 1 |

Spare parts available online

www.EIPLDIRECT.com

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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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.

For correct installation and operation the unit inlet and outlet must have a clearance of 0.5M from all adjacent surfaces and or structures.



| | |
|---------|--------------|
| Drawing | : - TPC409 |
| Issue | : - 6 |
| Date | : - 24/11/16 |



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| Drawing | : - TPC409 |
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| Date | : - 24/11/16 |

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