Drawing	: - TPC427
Issue	: - 2
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RM4500

INDUSTRIAL DEHUMIDIFIER

OWNER'S MANUAL

www.eipl.co.uk

RM4500

PACKAGE CONTENTS

Item	Description	Quantity
10570RG-US	Dehumidifier	1
3086144	Quick release hose coupling	1
3944110	PVC Tube – 3/8” I/D	7.8M
TPC427	Manual	1

INTRODUCTION

Designed for a wide range of applications, the RM4500 is a rugged, industrial unit, which utilizes an energy-efficient compressor and a compact portable design to provide easy efficient drying.

The RM4500 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
- Extra long power cord
- Robust rotational moulded polyethylene housing

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 RM4500 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.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

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.

SPECIFICATIONS

MODEL:	10570RG-US
HEIGHT:	44” (1115mm)
WIDTH:	25” (625mm)
DEPTH:	28” (710mm)
WEIGHT:	170 lbs (77 Kg)
AIRFLOW:	350 CFM (600 M3/hr)
POWER SUPPLY:	110V/ 60Hz/ 1 ph
FINISH:	Rotational Moulded polyethylene
OPERATING RANGE:	33°F – 95°F
REFRIGERANT:	R-407c (22.9 oz)

"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 RM4500 for correct operation:

1. After unpacking, examine all external features to confirm damage-free shipment. Report all defects and damage at once. Connect the power cable to a grounded 15 Amp electrical outlet.

2. Check dehumidification process as follows:

CAUTION:
DO NOT REMOVE COVERS WHEN UNIT IS IN OPERATION

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 78°F, an even coating of frost should cover the entire evaporator coil.
   ii. If the air temperature is above 78°F, frost and/or droplets of condensed water should cover the entire evaporator coil.

F. When the unit is operated in ambient of less than 59°F, a defrost cycle should occur approximately 20 mins. 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.

CAUTION:
ONCE THE UNIT HAS BEEN SWITCHED OFF, WAIT AT LEAST FIVE MINUTES BEFORE RESTARTING.

After using the RM4500, turn it off for five minutes to allow the condensate on the coils to drain into the pump reservoir, then press the momentary pump purge switch for twenty to thirty seconds to evacuate the water from the pump reservoir.

ROUTINE MAINTENANCE

WARNING:
ENSURE THAT THE POWER CORD TO THE MACHINE HAS BEEN DISCONNECTED BEFORE CARRYING OUT ROUTINE MAINTNENANCE ON ITEMS 1, 2, 3, 4 & 5

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 remove the front cover, run the unit for 15 minutes and observe the evaporator coil. It should be evenly frost coated across its surface. At temperatures above 78°F, 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. In order to check the defrost operation, the unit needs to be operated in an ambient temperature of less than 59°F for at least 1 hour. When operated In this condition the unit should defrost at least once 20 mins. 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 internal pipework.

      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

SYMPTOM	CAUSE	REMEDY
Unit inoperative	1. No power to unit	1. Check the power from power supply panel
Little or no airflow	1. Fan motor burnt out 2. Dirty refrigeration coils 3. Loose electrical wiring	1. Replace the fan motor 2. See *Routine Maintenance* Section 3. 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 the Factory Service Center 3. Contact the Factory Service Center
Little or no defrost when required	1. Faulty timer 2. Faulty reversing valve	1. Contact the Factory Service Center 2. Contact the Factory Service Center
Unit vibrates excessively	1. Loose compressor 2. Damaged fan	1. Tighten the nuts on the compressor mounts 2. Replace fan
Water flooding inside the machine	1. Drain pipe blocked/frozen 2. Drain pipe too high 3. Crimped or blocked tubing	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

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SPARE PARTS LIST

NUMBER	DESCRIPTION	PART NUMBER	QUANTITY
1	Timer	1619508	1
2	Condenser coil	2057025	1
3	Evaporator coil	2057024	1
4	Filter	2057031	1
5	Capillary	3014249	2 X 30”
6	Solenoid valve	3020833	1
7	Filter dryer	3020957	1
8	Compressor	3944938	1
9	Solenoid coil	3030453	1
10	Hour meter	3030779	1
11	Run capacitor	3036354	1
12	On/Off switch	3035924	1
13	Power Relay	3036157	1
14	Pump purge switch	3036779	1
15	Fan	3040281	1
16	Fan inlet ring	2057003	1
17	Duct attachment	2057004	1
18	Grille	2057005	1
19	Wheel	3050124	2
20	Condensate pump	3160155	1
21	Heat Exchanger	1057002	1

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