

RMEI-Series

Portable Dehumidifiers

IOM Manual



CD35 / CD35P
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL



CD35

PACKAGE CONTENTS

Item	Description	Quantity
10186DG-US	Dehumidifier	1
TPC225	Manual	1

CD35P

PACKAGE CONTENTS

Item	Description	Quantity
10186DP-US	Dehumidifier	1
3086144	Quick release hose coupling	1
3944110	PVC Tube – 3/8" I/D	7.8M
TPC225	Manual	1

INTRODUCTION

Designed for a wide range of applications, the CD35 is a rugged, compact unit which incorporates its own tank for collected moisture with an automatic shutoff once the tank is full. Offices, shops, houses, restaurants and storerooms can be protected by this simple answer to humidity control.

The CD35 has a number of special features:

- Adjustable humidistat
- “Hot Gas” defrost system with solid state controller
- Whisper-quiet fan
- Water tank with “full” indicator lamp
- All galvanized interior
- Exterior epoxy powder-coated finish
- Four independent heavy-duty castors
- Fully enclosed coils

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 CD35 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 welded and galvanized steel chassis and is finished in an epoxy coating for resilience to damage caused by rough handling.

The CD35 dehumidifier is fitted with an adjustable humidistat to enable you to select the level of dryness that you desire.

SPECIFICATIONS

MODEL:	Ebac CD35 / CD35P
HEIGHT:	22"
WIDTH:	13.5"
DEPTH:	14"
WEIGHT:	CD35 – 57 lbs CD35P – 63 lbs
AIRFLOW:	170 CFM
POWER SUPPLY:	110V/ 60Hz/ 1 ph
CURRENT (MAX):	CD35 – 4 A CD35P – 5 A
FAN MOTOR:	1/50 HP MagneTek Totally Enclosed
COMPRESSOR:	¼ HP Heavy Duty Fully Hermetic Tecumseh
CONTROL:	Adjustable Humidistat
REFRIGERANT:	R-134a
REF. CHARGE:	0.17Kg
CONSTRUCTION:	18 AWG Epoxy Power Coated galvanized steel
FEATURES:	Hot Gas Defrost down to 33 Deg. F

"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"

FEATURES

The Adjustable Humidistat: The adjustable humidistat enables you to maintain the required level of dryness within a room. The humidistat switches off the CD35 when the relative humidity falls to the level predetermined by the position of the humidistat control.

The Water Tank: When the water tank has reached its capacity, a float mechanism will activate a microswitch lever and switch off the machine. The container-full indicator will also illuminate.

Before emptying the water container, disconnect the power supply and allow the dryer to stand for five minutes. Remove the container from the rear of the unit and when emptied, replace, taking care to ensure that the float mechanism is correctly positioned. Restart unit as instructed in the following Operation section of this manual.

UNPACKING & INSTALLATION

After removing the CD35 from its shipping container, visually check for signs of damage. If there is evidence of damage, do not operate. Call your supplier for advice. Do not discard the packing as it will be useful when transporting the machine in the future.

Wiring: Connect the power cord to a grounded single phase, 15 Amp fused, standard household wall socket.

POSITIONING

Single Room: Position the CD35 in the center of the room to be dried. However, if a damp patch is particularly apparent, the outlet grille should be directed towards it. If the CD35 cannot be positioned centrally, a minimum space of 6" should be allowed around the dryer.

Several Rooms: To dry a number of rooms simultaneously with the most efficiency, the dryer as to be positioned between the rooms. Ensure that all doors are left ajar allowing a patch for the air to circulate to the unit. An auxiliary circulation fan would be helpful.

SPECIAL FEATURES (where fitted)

CONDENSATE PUMP:

The CD-35 dehumidifier unit can be fitted, either in the factory, or as retro-fit, with a condensate pump. This condensate pump will allow the unit to run unattended, with the condensate run off to a permanent drain and can be used up to 13 feet (4 meters), below the level of a permanent condensate drainage point.

HUMIDISTAT CONTROL:

The CD-35 dehumidifier unit is fitted with a control humidistat which measures the relative humidity of the air within the room. 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.

TEMPERATURE CONTROLLED DEVICE:

The CD-35 dehumidifier unit is fitted with a temperature sensitive device which operates in conjunction with the defrost control. In normal operation the defrost control will come into operation every 45 minutes. This is to ensure that there will be no build up of ice at lower temperatures. At very low temperatures it is still possible for the defrost device not to clear the ice completely from the evaporator coil. To ensure that even at these very low temperatures all the ice is cleared from the coil, the temperature control device will stop the fan (preventing air movement). This will increase the temperature of the evaporator coil even higher, causing all the ice to melt from the coil during the defrost mode. Where year round conditions need to be maintained, the dehumidifier unit will have to operate across a wider range of temperatures. To ensure that the dehumidifier unit operates at its most efficient, the temperature control device will restrict the defrost operation to the times when the ambient temperature falls below 25 °C.

WARNING:

- 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. Failure to do so may cause the unit to blow the fuses owing to the compressor due to there being a refrigerant imbalance.

ROUTINE MAINTENANCE

WARNING:
ENSURE THAT THE POWER CORD TO THE MACHINE HAS
BEEN DISCONNECTED BEFORE CARRYING OUT ROUTINE
MAINTENANCE ON ITEMS 1, 2, 3, AND 4.

To ensure continued full efficiency of the dehumidifier, maintenance procedures should be performed as follows:

Removal of the cover is achieved by means of four screws at the sides of the unit at base level. With the cover removed all maintenance can be carried out.

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"/150 mm) to avoid damaging the fins. Alternatively, vacuum clean the coils.

WARNING:
DO NOT STEAM CLEAN REFRIGERATION COILS

2. Check that the fan is firmly secured to the motor shaft and that the fan rotates freely. Using mobile DD heavy medium oil, lubricate the motor bearing with 10 drops every 6 months.
3. To check the refrigerant charge, run the unit for 15 minutes and briefly remove the cover. The evaporator coil should be evenly frost coated across its surface. At temperatures above 20°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.

**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.

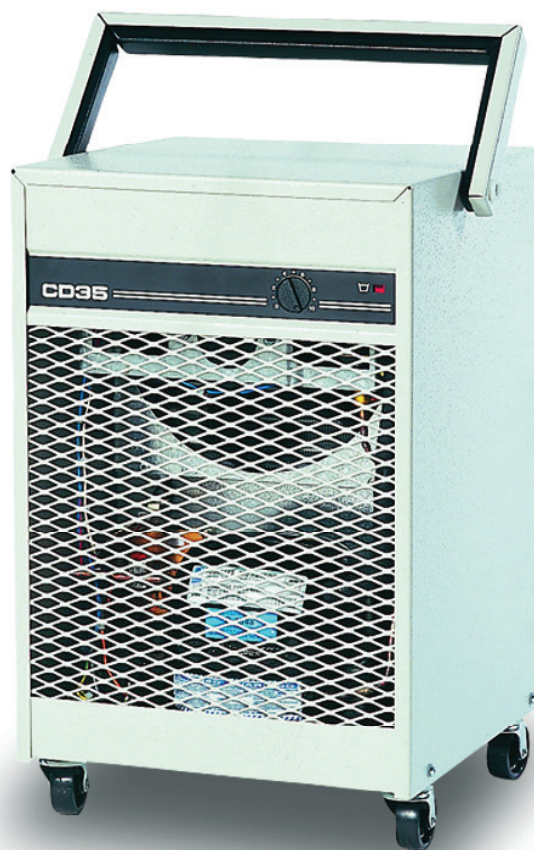
TROUBLESHOOTING

<u>SYMPTOM</u>	<u>CAUSE</u>	<u>REMEDY</u>
Unit inoperative	1. No power to unit	1. Check the power from power supply panel
Little or no airflow	1. Loose fan on shaft 2. Fan motor burnt out 3. Dirty refrigeration coils 4. Loose electrical wiring	1. Tighten fan 2. Replace the fan motor 3. See <i>Routine Maintenance</i> Section 4. 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 4. Blocked filter dryer	1. Check all of the above 2. Contact the Factory Service Center 3. Contact the Factory Service Center 4. Contact the Factory Service Center
Little or no defrost when required	1. Faulty timer 2. Faulty by-pass 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 4. Defective Pump	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 4. Replace pump
Hissing noise from the machine	1. Machine defrosting – normal operation	N/A

CD35
SPARE PARTS LIST

Part Number	Description
1018611	EVAP COIL ASSY
1137907	WATER CONTAINER
2013865	MICROSWITCH SUPPORT
2013866	MICROSWITCH LEVER
2017707	HUMIDEX 7 KNOB
2131107	HUMIDEX DRAIN TRAY
2131147	CONDENSER COIL
3014272	CAPILLIARY TUBE .031 Already Cut
3020811	BY-PASS VALVE
3020937	FILTER DRYER
3033033	MICROSWITCH
3035145	HUMIDISTAT
3035346	PANEL MOUNTED TERMINAL BLOCK
3036636	RED LAMP ASSY
3040181	FAN BLADE
3050216	CASTOR
1617990	PCB
2141095	MAINS POWER CABLE
3021518	COMPRESSOR BOX COVER
3021543	OHP
3021544	RELAY
3022147	COMPRESSOR
3030421	SOLENOID COIL
3035773	MOTOR
2018641	EVAPORATOR COIL
1600500	PCB (Pre-95 Model)
3030275	110V RELAY (Pre-95 Model)
2013837	DRAIN TRAY

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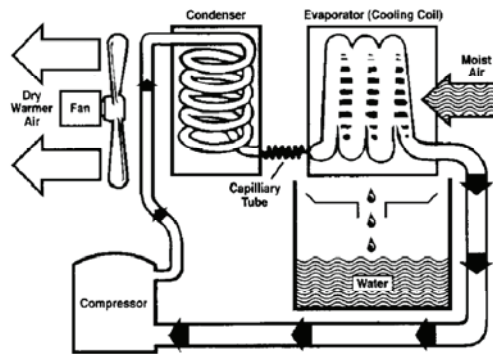
INTRODUCTION

Your Ebac Dehumidifier is packed in a plastic wrapper – please ensure that it is disposed of safely and where it will not be a danger to children.

Your Ebac Heavy Duty Dehumidifier is designed to help dry flooded or damp areas. Ideally where natural drying is just too slow. Drying with a dehumidifier enables fast drying without problems associated with heat drying pasters, etc can crack.

HOW YOUR DEHUMIDIFIER WORKS

Your dehumidifier draws in the moisture, cooling it to a temperature where excess moisture will condense, thereby removing the excess moisture. This in turn dries anything in the immediate area which is damp. The moisture is collected in the water container. The air is rewarmed and passed back approximately 2°C warmer.



OPERATING YOUR DEHUMIDIFIER

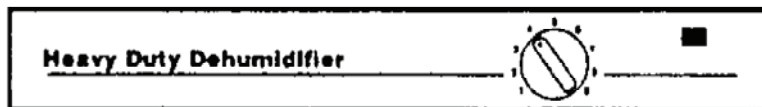
The amount of moisture removed by your dehumidifier will vary according to the conditions in which it is operating. For example, operating in very cold temperatures will reduce water extraction levels.

The time taken to dry an area will depend on the size of area to be dried and level of moisture to begin with. To achieve maximum benefit from your dehumidifier, you should ensure :-

- a) It is permanently connected to the mains and controlled via the Humidostat
- b) It is not switched off for long periods of time due to an incorrect setting of the Humidostat or because the container is full.
- c) Doors to areas not to be dried are kept closed.
- d) External doors and windows are kept closed as much as possible.

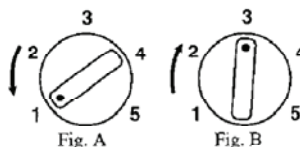
CONTROLS

Your dehumidifier is fitted with an adjustable humidostat and container full indicator.



SWITCHING ON YOUR DEHUMIDIFIER

Before connecting it to the mains you should ensure that the humidostat is turned fully anti-clockwise (Fig A). Once connected to the mains power, the humidostat control should be turned clockwise until you hear the unit operate (Fig B). To protect the compressor, you should allow 5 minutes between switching the dehumidifier off and on again.

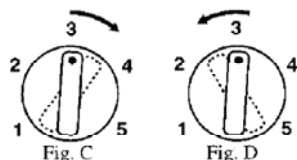


OPERATING THE HUMIDISTAT

The humidistat works in a similar way to a central heating thermostat, but instead of measuring temperature, it measures the amount of moisture in the air. You may select the level of moisture you require (known as Relative Humidity) and the unit will operate to achieve that level and then switch off.

As a general guide, the higher the setting the lower the Relative Humidity will be before the machine switches off. Therefore the machine will operate longer to achieve this.

If the dehumidifier switches off and drying is not complete it is possible that the humidistat setting is too low and may need increasing (e.g. 70°C). Conversely, if you no longer have condensation and the unit is still operating, then the humidistat setting may need reducing (e.g. 60°C).



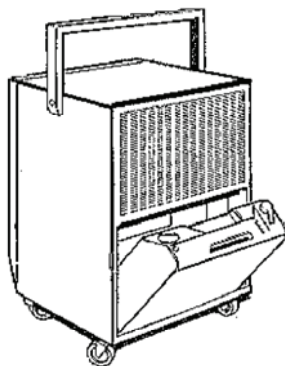
DEFROST OPERATION

At certain temperatures, the water taken freezes onto the pipes inside your dehumidifier and therefore needs to be defrosted. This mode features an automatic defrost which will clear any ice buildup.

USER MAINTENANCE

EMPTYING THE WATER CONTAINER

When the water container is full an internal float mechanism will switch the unit off. This is indicated by the illumination of the "full" light on the front control panel. The water container is at the rear of the unit. To empty the container, carefully remove the water container. When emptied replace



PERMANENT DRAINAGE

When your dehumidifier is to be used constantly in one area, it can be fitted to drain continuously, eliminating the need to empty the water container. Ideal when the property is to be left unoccupied.

For this you will need a length of PVC tubing, 18mm external diameter X 12mm internal diameter and a hose clip of the same size. Disconnect your dehumidifier from the power supply before fitting permanent drainage.

Remove the water container and pass the tube through the hole in the base of the dehumidifier. Place the hose clip on the tubing and push the tubing over the outlet on the underside of the drain tray and fasten the hose clip. DO NOT over-tighten the clip or it may crack the drain tray. The water container should not be replaced whilst the drainage kit is in use.

USE OF PERMANENT DRAINAGE

When in use tubing should be run to a suitable drainage point, ensuring that the tube doesn't rise above the drain tray, otherwise flooding may occur.

IF YOUR DEHUMIDIFIER FAILS TO OPERATE

1. Check that the plug is fully pushed into the socket and is switched on.
 2. Check with some other electrical device that the wall socket is "live". If it is not, contact a qualified electrician.
 3. Check the fuse in the plug. If you replace the fuse, refer to a 13Amp fuse.
 4. Check the humidity control is turned clockwise.
 5. Check that the water container is not full.
- Should none of the above remedies work, then disconnect from the mains. Contact the helpline on 01388 664400. DO NOT attempt to repair the unit or unscrew the outer casing.

ELECTRICAL CONNECTION

If the appliance is fitted with a plug for which your socket is unsuitable, then it should be cut off and an appropriate plug fitted.

This appliance complies with the suppression requirements of the EEC directive 82/199/EEC as embodied in BS800:1988.

IMPORTANT:- The wires in the mains lead are coloured in accordance with the following code:-

Green & Yellow	Earth
Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your own plug, proceed as follows:

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

You must dispose of the non-reusable plug once it has been removed from the flexible cord. It is dangerous to attempt to insert the plug into any electrical socket elsewhere in the house. If the flexible cord becomes damaged it must be replaced by an identical cord.

CHANGING THE FUSE

Only 13 Amp fuses that are ASTA approved to BS1362 should be used.

The fuse cover must be refitted after replacement of the fuse. In the event of the fuse cover being lost or damaged, the plug must not be used until a replacement is obtained. Replacement fuse covers, which must be coloured BLACK, are obtainable from electrical retailers.

WARNING – THIS APPLIANCE MUST BE EARTHED

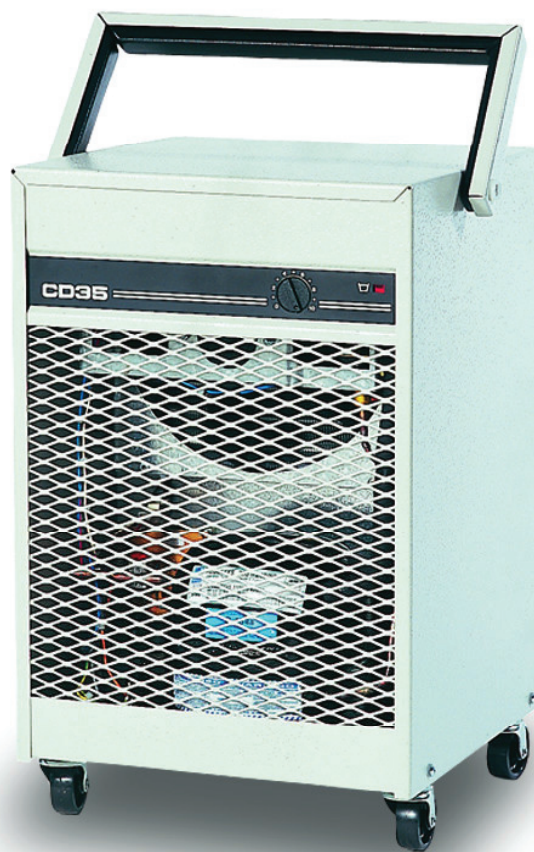
TECHNICAL SPECIFICATIONS

CD35	230V/50Hz/1 Phase
Height	550 mm
Width	345 mm
Depth	350 mm
Weight	26 kg
Min Operating Temperature	1 °C
Max Operating Temperature	35 °C
Water Extraction (24hrs) 32 °C / 90%RH	10
Max Power Consumption 32 °C / 90%RH	250 W
Max Running Current	2 A
Fuse Rating (UK)	13 A

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 appliance 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.
- 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 plate
- 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.
- Do not remove the front or rear panels
- This machine should be serviced by qualified Ebac personnel or other persons having technical competence servicing refrigeration equipment following the instructions in the Ebac service manual.
- Ebac service manuals and spares lists are available upon request by contacting your local Ebac distributor.
- Never operate the unit in a bathroom or swimming pool area
- Do not poke objects into any of the grilles on the machine.
- Do not cover or obstruct the air inlet or outlet.
- When running, the noise level of this machine is less than 70dba
- This machine complies with the electromagnetic compatibility 1992 regulations.
- This machine has been manufactured in the United Kingdom.
- Ensure this unit is protected by a 15A Circuit

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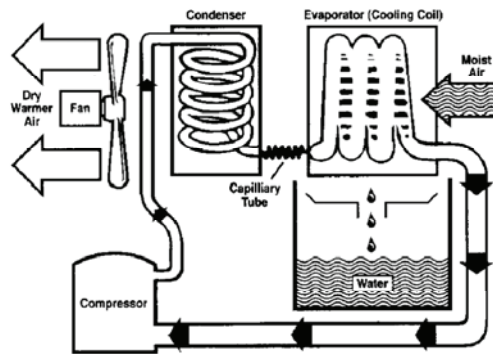
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OPERATING YOUR DEHUMIDIFIER

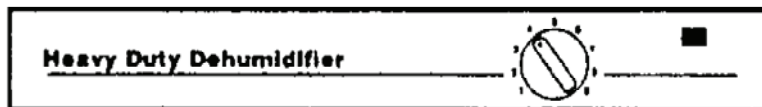
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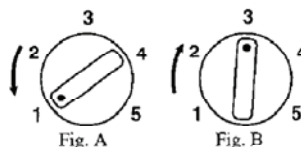
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SWITCHING ON YOUR DEHUMIDIFIER

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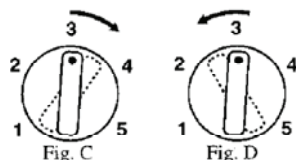


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As a general guide, the higher the setting the lower the Relative Humidity will be before the machine switches off. Therefore the machine will operate longer to achieve this.

If the dehumidifier switches off and drying is not complete it is possible that the humidistat setting is too low and may need increasing (fig C.). Conversely, if you no longer have condensation and the unit is still operating, then the humidistat setting may need reducing (fig D.)



DEFROST OPERATION

At certain temperatures, the water taken freezes onto the pipes inside your dehumidifier and therefore needs to be defrosted. This mode features an automatic defrost which will clear any ice build up.

USER MAINTENANCE

EMPTYING THE WATER CONTAINER

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 and the warning indicator on the control panel will illuminate. 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.

PERMANENT DRAINAGE

When your dehumidifier is to be used constantly in one area, it can be fitted to drain continuously, eliminating the need to empty the water container. Ideal when the property is to be left unoccupied.

For this you will need a length of PVC tubing, 18mm external diameter X 12mm internal diameter and a hose clip of the same size. Disconnect your dehumidifier from the power supply before fitting permanent drainage.

Remove the water container and pass the tube through the hole in the base of the dehumidifier. Place the hose clip on the tubing and push the tubing over the outlet on the underside of the drain tray and fasten the hose clip. DO NOT overtighten the clip or it may crack the drain tray. The water container should not be replaced whilst the drainage kit is in use.

USE OF PERMANENT DRAINAGE

When in use tubing should be run to a suitable drainage point, ensuring that the tube doesn't rise above the drain tray, otherwise flooding may occur.

IF YOUR DEHUMIDIFIER FAILS TO OPERATE

1. Check that the plug is fully pushed into the socket and is switched on.
 2. Check with some other electrical device that the wall socket is "live". If it is not, contact a qualified electrician.
 3. Check the fuse in the plug. If you replace the fuse, refit with a 13Amp fuse.
 4. Check the humidistat controls turned clockwise.
 5. Check that the water container is not full.
- Should none of the above remedies work, then disconnect from the mains. Contact the helpline on 01388 664400. DO NOT attempt to repair the unit or unscrew the outer casing.

ELECTRICAL CONNECTION

If the appliance is fitted with a plug for which your socket is unsuitable, then it should be cut off and an appropriate plug fitted.

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CHANGING THE FUSE

Only 13 Amp fuses that are ASTA approved to BS1362 should be used.

The fuse cover must be refitted after replacement of the fuse. In the event of the fuse cover being lost or damaged, the plug must not be used until a replacement is obtained. Replacement fuse covers, which must be coloured BLACK, are obtainable from electrical retailers.

WARNING – THIS APPLIANCE MUST BE EARTHED

TECHNICAL SPECIFICATIONS

CD35P	230V/50Hz/1 Phase
Height	550 mm
Width	345 mm
Depth	350 mm
Weight	26 kg
Min Operating Temperature	1 °C
Max Operating Temperature	35 °C
Water Extraction (24hrs) 32 °C / 90%RH	10
Max Power Consumption 32 °C / 90%RH	250 W
Max Running Current	2 A
Fuse Rating (UK)	13 A
Pump Capacity	3.2

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 appliance 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.
- 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 plate
- 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.
- Do not remove the front or rear panels
- This machine should be serviced by qualified Ebac personnel or other persons having technical competence servicing refrigeration equipment following the instructions in the Ebac service manual.
- Ebac service manuals and spares lists are available upon request by contacting your local Ebac distributor.
- Never operate the unit in a bathroom or swimming pool area
- Do not poke objects into any of the grilles on the machine.
- Do not cover or obstruct the air inlet or outlet.
- When running, the noise level of this machine is less than 70dba
- This machine complies with the electromagnetic compatibility 1992 regulations.
- This machine has been manufactured in the United Kingdom.
- Ensure this unit is protected by a 15A Circuit

RM40
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL



RM40

PACKAGE CONTENTS

Item	Description	Quantity
10187MG-US	Dehumidifier	1
3086144	Quick release hose coupling	1
3944110	PVC Tube – 3/8" I/D	7.8M
TPC470	Manual	1

INTRODUCTION

Designed for a wide range of applications, the RM40 is a rugged, industrial unit, which utilizes an energy-efficient compressor and a compact portable design to provide easy efficient drying.

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 RM40 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.

SPECIFICATIONS

MODEL: 10187MG-US

HEIGHT: 24.2" (615 mm)

WIDTH: 15" (382 mm)

DEPTH: 14.4" (365 mm)

WEIGHT: 57lbs (26 kg)

AIRFLOW: 88.3CFM (150 M³/Hr)

POWER SUPPLY: 110V/ 60Hz/ 1 ph

FINISH: Rotational Moulded
polyethylene

OPERATING RANGE: 37 °F – 95 °F

REFRIGERANT: R134a (6.1oz (173g))

"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

After unpacking, examine all external features to confirm damage-free shipment. Report all defects and damage at once.

Before connecting it to the mains you should ensure that the humidistat is turned fully anti-clockwise. Connect to a grounded 15A standard household electrical outlet then the humidistat control should be turned clockwise until you hear the unit operate. To protect the compressor, you should allow 5 minutes between switching the dehumidifier off and on again.

OPERATING THE HUMIDISTAT

The humidistat works in a similar way to a central heating thermostat, but instead of measuring temperature, it measures the amount of moisture in the air. You may select the level of moisture you require (known as Relative Humidity) and the unit will operate to achieve that level and then switch off. As a general guide, the higher the setting the lower the Relative Humidity will be before the machine switches off. Therefore the machine will operate longer to achieve this. If the dehumidifier switches off and drying is not complete it is possible that the humidistat setting is too low and may need increasing. Conversely, if you no longer have condensation and the unit is still operating, then the humidistat setting may need reducing.

EMPTYING THE WATER CONTAINER

When the water container is full an internal float mechanism will switch the unit off. This is indicated by the illumination of the “full” light on the front control panel. The water container is at the rear of the unit. To empty the container, carefully remove the water container. When emptied replace

PERMANENT DRAINAGE

When your dehumidifier is to be used constantly in one area, it can be fitted to drain continuously, eliminating the need to empty the water container. Ideal when the property is to be left unoccupied.

For this you will need a length of PVC tubing, 10mm internal diameter. Disconnect your dehumidifier from the power supply before fitting permanent drainage. Remove the water container; remove the blind grommet on the back face of the unit and then the blanking bung from the drainage point visible through the hole. Feed tubing through hole where grommet was located and onto the visible drain point. Lastly fit the blanking bung to the drain point on the underside of the drain tray. The water container can be replaced whilst the drainage kit is in use for safe storage

USE OF PERMANENT DRAINAGE

When in use tubing should be run to a suitable drainage point, ensuring that the tube doesn't rise above the drain tray, otherwise flooding may occur.

CHECK DEHUMIDIFICATION PROCESS AS FOLLOWS:

CAUTION:

DO NOT REMOVE COVERS WHEN UNIT IS IN OPERATION

1. Place unit on a level surface.
2. Start up unit by switching to "I" and humidistat fully clockwise
3. Check that the compressor is running.
4. Leave the machine running for 15 minutes.
5. Observe the evaporator coils through the rear grille, to confirm frost formation or weeping.
 - 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.
6. 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.

CAUTION:

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

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, service 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 coated with frost 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

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	1. No power to unit 2. Mains cable damaged.	1. Check the power from power supply panel. 2. Contact the Factory Service Center
Little or no airflow	1. Fan motor burnt out 2. Dirty refrigeration coils 3. Loose electrical wiring	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	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 by-pass 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

RM40 SPARE PARTS LIST

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QUANTITY</u>
1	Timer	1617990	1
2	Condenser coil	2131147	1
3	Evaporator coil	1018611	1
4	Drain tray	2018705	1
5	Filter	1019712	1
6	Capillary	3014250	1.64ft
7	Solenoid valve	3020836	1
8	Filter dryer	3020937	1
9	Solenoid coil	3030451	1
10	On/Off switch	3035914	1
11	Fan Motor	3035773	1
12	Fan Blade	3040181	1
13	Castor	3050205	4
14	Compressor	3022147	1
15	Water Container Assy	1137907	1
16	Bucket Micro Switch	3033033	1
17	Humidistat Knob	2018644	1
18	Bucket Full Lens	3032271	1
19	Bucket Full Light	3036636	1
20	Humidistat	3035158	1
21	Mains Cable	2141095	1
22	Front Grille	2018704	1

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.

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

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.

RM40P
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL



RM40

PACKAGE CONTENTS

Item	Description	Quantity
10187MP-US	Dehumidifier	1
3086144	Quick release hose coupling	1
3944110	PVC Tube – 3/8" I/D	7.8M
TPC473	Manual	1

INTRODUCTION

Designed for a wide range of applications, the RM40P is a rugged, industrial unit, which utilizes an energy-efficient compressor and a compact portable design to provide easy efficient drying.

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 RM40P 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 also incorporates an integral pump which will remove the condensate from the unit.

SPECIFICATIONS

MODEL: 10187MP-US

HEIGHT: 24.2" (615 mm)

WIDTH: 15" (382 mm)

DEPTH: 14.4" (365 mm)

WEIGHT: 57lbs (26 kg)

AIRFLOW: 88.3CFM (150 M³/Hr)

POWER SUPPLY: 110V/ 60Hz/ 1 ph

FINISH: Rotational Moulded
polyethylene

OPERATING RANGE: 37°F – 95°C

REFRIGERANT: R134a (6.1oz (173g))

"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

After unpacking, examine all external features to confirm damage-free shipment. Report all defects and damage at once.

Connect the drainage outlet to a suitably sized hose and run the hose to a permanent drain.

Before connecting it to the mains you should ensure that the humidistat is turned fully anti-clockwise. Connect to a grounded 15A standard household electrical outlet then the humidistat control should be turned clockwise until you hear the unit operate. To protect the compressor, you should allow 5 minutes between switching the dehumidifier off and on again.

OPERATING THE HUMIDISTAT

The humidistat works in a similar way to a central heating thermostat, but instead of measuring temperature, it measures the amount of moisture in the air. You may select the level of moisture you require (known as Relative Humidity) and the unit will operate to achieve that level and then switch off. As a general guide, the higher the setting the lower the Relative Humidity will be before the machine switches off. Therefore the machine will operate longer to achieve this. If the dehumidifier switches off and drying is not complete it is possible that the humidistat setting is too low and may need increasing. Conversely, if you no longer have condensation and the unit is still operating, then the humidistat setting may need reducing.

CHECK DEHUMIDIFICATION PROCESS AS FOLLOWS:

CAUTION:

DO NOT REMOVE COVERS WHEN UNIT IS IN OPERATION

1. Place unit on a level surface.
2. Start up unit by switching to "I" and humidistat fully clockwise
3. Check that the compressor is running.
4. Leave the machine running for 15 minutes.
5. Observe the evaporator coils through the rear grille, to confirm frost formation or weeping.
 - 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.
6. 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.

CAUTION:

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

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, service 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 coated with frost 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

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.

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	1. No power to unit 2. Mains cable damaged.	1. Check the power from power supply panel. 2. Contact the Factory Service Center
Little or no airflow	1. Fan motor burnt out 2. Dirty refrigeration coils 3. Loose electrical wiring	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	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 by-pass 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

RM40P SPARE PARTS LIST

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QUANTITY</u>
1	Timer		1
2	Condenser coil	2131147	1
3	Evaporator coil	1018611	1
4	Drain tray	2018705	1
5	Filter	1019712	1
6	Capillary	3014250	1.64ft
7	Solenoid valve	3020836	1
8	Filter dryer	3020937	1
9	Solenoid coil	3030451	1
10	On/Off switch	3035914	1
11	Fan Motor	3035773	1
12	Fan Blade	3040181	1
13	Castor	3050205	4
14	Compressor	3022147	1
15	Condensate Pump	3160156	1
17	Humidistat Knob	2018644	1
18	Pump Fault Lens	3032271	1
19	Pump Fault Light	3036636	1
20	Humidistat	3035158	1
21	Mains Cable	2141095	1
22	Front Grille	2018704	1

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.

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

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.

RM85
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL



RM85

PACKAGE CONTENTS

Item	Description	Quantity
10560RG-US	Dehumidifier	1
3086144	Quick release hose coupling	1
3944110	PVC Tube – 3/8" I/D	7.8M
TPC408	Manual	1

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
- Extra long power cord
- Robust rotational moulded polyethylene housing
- 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.

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: 10560rg-us

HEIGHT: 37.2" (945mm)

WIDTH: 21.5" (545mm)

DEPTH: 19.4" (492mm)

WEIGHT: 99 lbs (45 Kg)

AIRFLOW: 230 CFM (390 M3/hr)

POWER SUPPLY: 110V/ 60Hz/ 1 ph

FINISH: Rotational Moulded
polyethylene

OPERATING RANGE: 33°F – 95°F

REFRIGERANT: R-407c (17.6 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 RM85 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 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.

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

After using the RM85, 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, 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 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	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 <i>Routine Maintenance</i> 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 by-pass 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

**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	Solenoid coil	3030451	1
13	Hour meter	3030779	1
14	Run capacitor	3030908	1
13	On/Off switch	3035914	1
14	Power Relay	3036157	1
16	Pump purge switch	3036779	1
17	Fan	3040277	1
18	Fan inlet ring	3040283	1
19	Wheel	3050124	2
20	Rubber foot	3101436	2
21	Condensate pump	3160150	1

**DUAL VOLTAGE RM85
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL**



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 from 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)

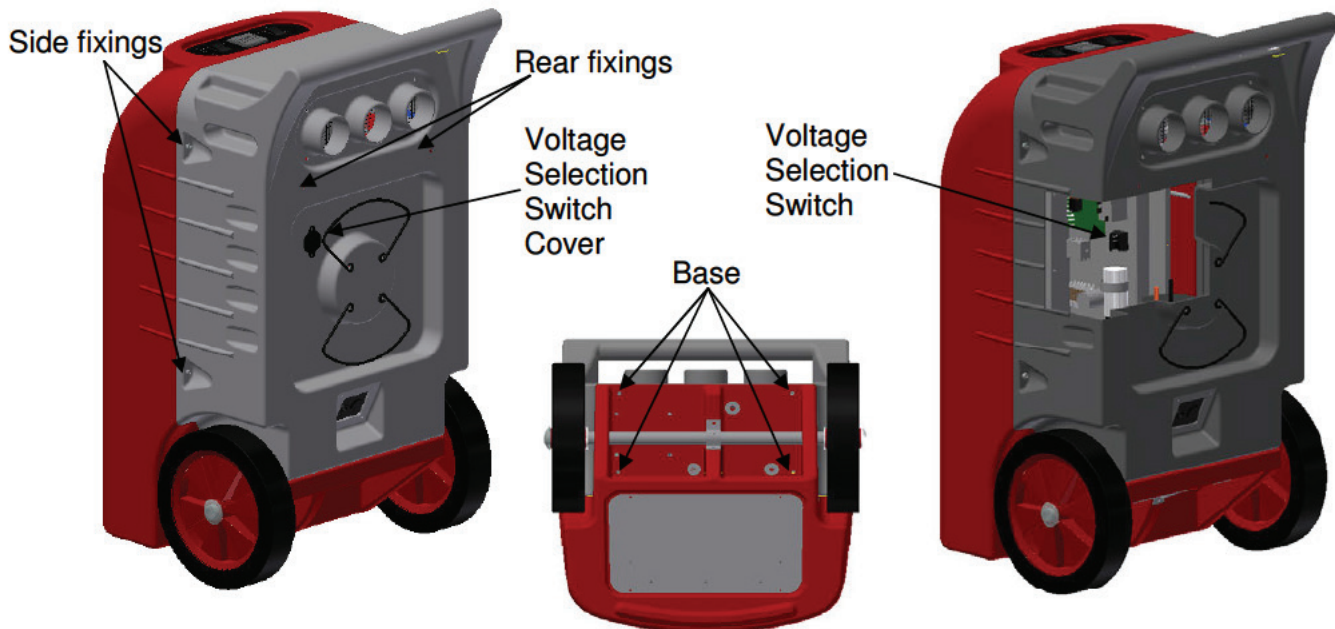
Once the required voltage has been selected, refit the cover and tighten the lower fixing screw.

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

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:

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 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.

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

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	1. No power to unit 2. Mains cable damaged.	1. Check the power from power supply panel. 2. Contact the Factory Service Center
Little or no airflow	1. Fan motor burnt out 2. Dirty refrigeration coils 3. Loose electrical wiring	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	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 by-pass 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

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

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.

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

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.

RM4500
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL



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

<u>SYMPTOM</u>	<u>CAUSE</u>	<u>REMEDY</u>
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 <i>Routine Maintenance</i> 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

**RM4500
SPARE PARTS LIST**

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QUANTITY</u>
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

RM4500
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL



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 "Reverse Cycle" 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.

SPECIFICATIONS

MODEL: 10570RG-GB

HEIGHT: 1115 mm

WIDTH: 625 mm

DEPTH: 710 mm

WEIGHT: 77 kg

AIRFLOW: 600 M³/Hr

POWER SUPPLY: 230V/ 50Hz/ 1 ph

FINISH: Rotational Moulded
polyethylene

OPERATING RANGE: 3 °C – 35 °C

REFRIGERANT: R407c (650g)

"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 13 Amp electrical outlet. Connect the drainage outlet to a suitably sized hose and run the hose to a permanent drain.

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 1 Hour.
- E. Operate the pump purge switch and ensure water is pumped out of the condensate outlet tube located on the back of the unit.
- F. When the unit is operated in ambient of less than 15°C, a defrost cycle should occur approximately every 20mins. 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 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 remove front cover and run the unit for 15 minutes and observe the evaporator coil. It should be evenly coated with frost 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 20mins. 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 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

<u>SYMPTOM</u>	<u>CAUSE</u>	<u>REMEDY</u>
Unit inoperative	1. No power to unit 2. Mains cable damaged.	1. Check the power from power supply panel. 2. Contact the Factory Service Center
Little or no airflow	1. Fan motor burnt out 2. Dirty refrigeration coils 3. Loose electrical wiring	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	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

**RM4500
SPARE PARTS LIST**

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QUANTITY</u>
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	Solenoid coil	3030454	1
9	Hour meter	3030778	1
10	On/Off switch	3035924	1
11	Power Relay	3036188	1
12	Run capacitor	3036337	1
13	Pump purge switch	3036779	1
14	Fan	3040282	1
15	Fan inlet ring	2057003	1
16	Duct attachment	2057004	1
17	Grille	2057005	1
18	Wheel	3050124	2
19	Condensate pump	3160151	1
20	Compressor	3944934	1
21	Heat exchanger	1057002	1

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.

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

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.