

RM40-SH

INDUSTRIAL DEHUMIDIFIER

OWNER'S MANUAL



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RM40-SH

PACKAGE CONTENTS

Item	Description	Quantity
10187SH-US	Dehumidifier	1
3014338	PVC tube – 12mm I/D	3 M
3086101	Jubilee clip	1
TPC519	Manual	1

UNPACKING

Carefully remove the RM40-SH dehumidifier unit from its transit box and visually check for signs of transit damage. If there is evidence of damage DO NOT attempt to operate the unit, call your supplier for advice. Do not discard the packing; it will be useful when transporting the dehumidifier unit in the future.

INTRODUCTION

The RM40-SH industrial dehumidifier removes moisture from the air through the refrigeration process.

The RM40-SH is basically comprised of:

- A) A compressor
- B) A refrigerant evaporator coil
- C) A refrigerant condenser coil
- D) One circulation fan
- E) A drain tray for collecting and disposing of condensed moisture
- F) A solid state timer for hot gas defrost cycle
- G) An adjustable membrane-type humidistat
- H) A cabinet to house the above components

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-SH dehumidifier is a rugged reliable drying unit designed to operate effectively over a broad range of temperature and humidity conditions. A powerful and reliable 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 steel chassis and is finished in an epoxy coating for resilience to damage caused by rough handling.

The RM40-SH dehumidifier is fitted with an adjustable humidistat to enable you to select the level of dryness.

SPECIFICATIONS

MODEL: RM40-SH

HEIGHT: 11.8" (300mm)

WIDTH: 13" (330mm)

DEPTH: 21.7" (550mm)

WEIGHT: 50 lbs

AIRFLOW: 129 CFM (220M³/hr)

MAX OPERATING TEMP: 95°F

POWER SUPPLY: 110V, 60Hz

REFRIGERANT TYPE: R410a

"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 operation of the dehumidifier is to remove moisture from the air by having it condense on the cold tubes of the evaporator coil. The air then passes over the hot condenser coil and returns to the conditioned space slightly warmer and dryer than when it entered the dehumidifier unit.

TEST FOR CORRECT OPERATION

The following procedures should be followed to test the RM40-SH for correct operation.

1. After unpacking, examine all external features to confirm damage free shipment. Report all defects and damage at once.
2. Check dehumidification process:
 - a) Place unit on a level surface. Connect a suitably sized hose to the condensate outlet and run the hose to a permanent drain.
 - b) Start up unit by rotating the adjustable humidistat knob counter clockwise to the minimum setting. Plug in the unit to a grounded receptacle with a 15 amp power source. Rotate the humidistat knob clockwise to the maximum setting.
 - c) Check the compressor is running.
 - d) Leave the machine running for 15 minutes.
 - e) Observe the evaporator coils, to confirm frost formation.
 - i. If the air temperature is below 70°F, an even coating of frost should cover the entire evaporator coils, except for the last one or two coils.
 - ii. If the temperature is above 70°F, frost and/or droplets of condensed water should cover the entire evaporator coil.

If after carrying out all the above checks, the unit does not appear to function correctly refer to the section, "Trouble Shooting", or contact your supplier.

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.

Humidistat

This humidistat operates to control the on/off function of the dehumidifier unit as required.

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 (approx 6") 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. **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 briefly remove the cover. The evaporator coil should be evenly frost coated across its surface. At temperatures above 25°C, the coil may be covered with droplets of water rather than frost. Partial frosting accompanied by frosting of the thin capillary tubes, indicates loss of refrigerant gas or low charge.
4. Check all wiring connections.
5. 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 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 the 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 bypass timer	1. Contact the Factory Service Center 2. Contact the Factory Service Center
Unit vibrates excessively	1. Loose compressor mounts 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	1. Clear the obstruction 2. No section of the drainage hose should be above the level of the water outlet

Spare parts available online

www.EIPLDIRECT.com

RM40-SH

SPARE PARTS LIST

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QUANTITY</u>
1	Timer	1619519	1
2	Refrigerant Coil Set	2018743	1
3	Capillary	3014254	1.64ft
4	Solenoid valve	3020836	1
5	Filter dryer	3020937	1
6	Solenoid coil	3030451	1
7	Fan Motor	3947012	1
8	Fan Blade	3947014	1
9	Compressor	3944954	1
10	Humidistat	3035158	1
11	Mains Cable	2141095	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.

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No attempt should be made to cut open any part of the refrigeration circuit due to high pressures and gas involved.

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



Drawing	: - TPC519
Issue	: - 1
Date	: - 03/03//20



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