

**EBAC MODEL SD100/SD200
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL**

Ebac Industrial Products
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UNPACKING

Carefully remove the SD100/SD200 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 Ebac SD100/SD200 industrial dehumidifier removes moisture from the air through the refrigeration process.

The Ebac SD100/SD200 is basically comprised of:

- 1) A compressor
- 2) A refrigerant evaporator coil
- 3) A refrigerant condenser coil
- 4) One circulation fan
- 5) A remote humidistat
- 6) 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 SD100/SD200 dehumidifier is a rugged, reliable drying unit designed to operate effectively over a broad range of temperature and humidity conditions.

The SD100/SD200 dehumidifier uses a remotely mounted adjustable humidistat to enable you to select the level of dryness.

SPECIFICATIONS

MODEL:	Ebac SD 100	Ebac SD200
HEIGHT:	18"	18"
WIDTH:	26"	26"
DEPTH:	27"	27"
WEIGHT:	143 lbs	172 lbs
AIRFLOW:	Low 560 CFM High 760 CFM	Low 560 CFM High 650 CFM
HORSEPOWER:	1	2
POWER SUPPLY:	110V-115V/60Hz/1ph	208V-230V/60Hz/ ph
FINISH:	Powder-coated Epoxy	Powder-coated Epoxy
REFRIGERANT TYPE/QTY:	R22	R22

INSTALLATION

POSITIONING:

Position the dehumidifier unit in the center of the room to be conditioned if at all possible. However if a damp patch is particularly apparent the outlet grille should be pointed towards it.

NOTE: Both inlet grille and outlet grille of the dehumidifier unit must have clear space around them and not be obstructed in anyway.

OPERATION

The following procedures should be followed to test the SD100/SD200 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 power source.
- 2) Install drain tubing as required.

Caution: Do not operate the machine without the covers for any longer than necessary. Do not remove/ replace the covers when the unit is in operation.

Check dehumidification process as follows:

- A. Place unit on a level surface.
- B. Start up unit as follows:
 - i. Rotate humidistat control knob to full counter clockwise, minimum setting.
 - ii. Plug in unit to power supply and rotate humidistat knob to desired setting.
- C. Check that the compressor is running.
- D. Leave the machine running for 15 minutes.
- E. Observe the evaporator coils inside the top rear intake grill to confirm frost formation.
 - i. If the air temperature is below 70°F, an even coating of frost should cover the entire evaporator coil, except for the last one or two coils.
 - ii. If the air temperature is about 70°F, frost and/or droplets of condensed water should cover the entire evaporator coil.
- F. As the drain tray fills, the condensate will automatically drain by gravity.

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

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 five 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, 4, 5, AND 6.

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. To check the operation of the defrost system, switch the machine on and leave it running for approximately 45 minutes. The machine will then enter "Hot Gas" defrost mode for approximately 4 minutes before returning to normal operation. If the unit will not defrost, the printed circuit timer board may be defective or the by-pass valve may be inoperable.

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	<ol style="list-style-type: none"> 1. Loose fan on shaft 2. Fan motor burnt out 3. Dirty refrigeration coils 4. Loose electrical wiring 5. Fuse blown or circuit breaker tripped 	<ol style="list-style-type: none"> 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 5. Replace the fuse or reset the circuit breaker
Little or no water extraction	<ol style="list-style-type: none"> 1. Insufficient air flow 2. Compressor fault 3. Loss of refrigerant gas 	<ol style="list-style-type: none"> 1. Check all of the above 2. Contact the Factory Service Center 3. Contact the Factory Service Center
Unit vibrates excessively	<ol style="list-style-type: none"> 1. Loose compressor mounts 2. Damaged fan 	<ol style="list-style-type: none"> 1. Tighten the nuts on the compressor mounts 2. Replace fan
Water flooding inside the machine	<ol style="list-style-type: none"> 1. Drain pipe blocked/frozen 2. Drain pipe too high 	<ol style="list-style-type: none"> 1. Clear the obstruction 2. Ensure that no section of the drain hose is above the level of the water outlet

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RATING PLATE INFORMATION

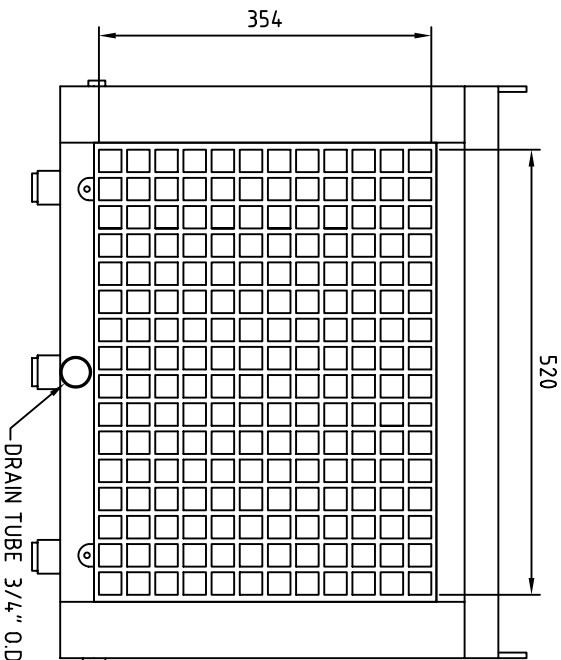
	SD100	SD200
MOISTURE REMOVAL:	2.5 Liters/hr	4.2 Liters/Hr
REFRIGERANT:	1120 Grams	1650 Grams
VOLTAGE:	115 Volts	208/230 Volts
WATT:	1100	2100
PHASE:	Single	Single
HZ:	60 Hz	60 Hz
	9.2 Amp	9.6 Amp
CONTROL VOLTAGE:	24 Volt	24 Volt
TIME DELAY FUSE:	15 A	15 A

SD100/SD200 SPARE PARTS LIST

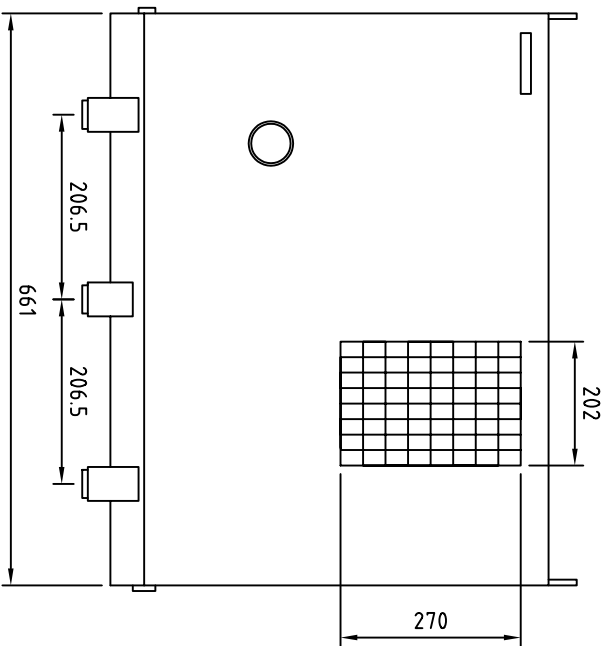
<u>DESCRIPTION</u>	<u>QTY</u>	<u>PART NUMBER</u>	
		<u>SD100</u>	<u>SD200</u>
Power Cord	1	N/A	N/A
High & Low Toggle Switch	1	3832306	3832306
Compressor	1	3820119	3820120
Accumulator	1	N/A	N/A
Humidistat	1	1026870	1026870
Drain Tray	1	2811001	2811001
Evaporator Coil	1	3820707	3820708
Condenser Coil	1	3820705	3820706
Fan Blade	1	3840404	3840404
Fan Motor	1	3830112	3830109
(Humidistat) Terminal Block	1	N/A	N/A
(Power) Terminal Block	1	N/A	N/A
(Transformer) Terminal Block	1	N/A	N/A
Contactora	1	3830306	3030306
Transformer	1	N/A	N/A
Fan Motor Capacitor	1	N/A	N/A
Compressor Capacitor	1	3830803	3830903
Defrost Control Switch	1	3831516	3831512
Intake Filter	1	3910306	3910306

1 2 3 4 5 6 7

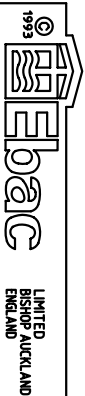
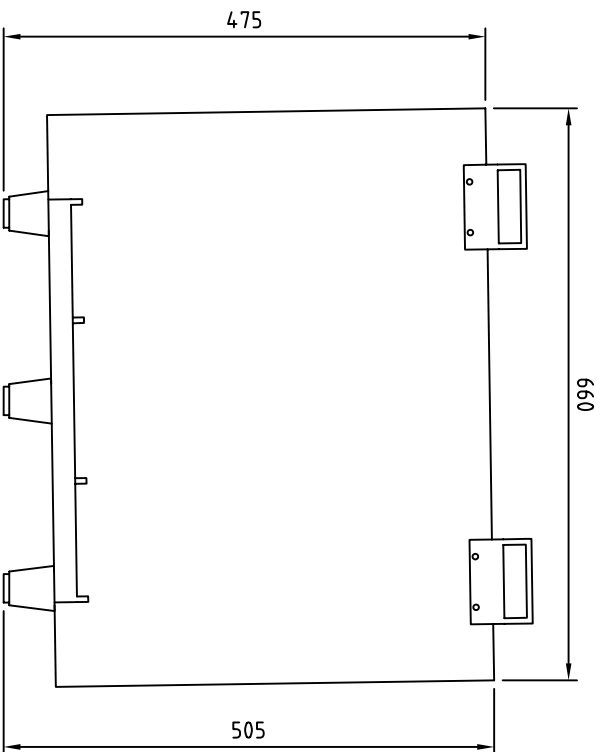
AIR INLET



AIR OUTLET



ISSUE	DATE	AMENDMENTS
1	08/12/04	ORIGINAL



TITLE
SD120/200 GENERAL SIZE

3RD ANGLE PROJECTION



DO NOT SCALE
IF IN DOUBT ASK

DIMENSIONS IN m.m.
TOLERANCES UNLESS
OTHERWISE STATED

0.0 ± 1
0.0 ± 0.25
0.0 ± 0.05
ANGULAR ± 0.5 DEGREE

MATERIAL

FINISH

DRAWN: C LILLY

CAD SCALE: NTS

DRG. NO. 4.010131

SHEET 1 OF 1