Ebac Industrial Products Limited

Drawing No.	:-	TPC162
Issue	:-	2
Date	:-	16/06/03

EBAC MODEL BD-150 (1025000)
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL

INTRODUCTION

Designed for a wide range of applications, the BD-150 dehumidifier is a super high capacity industrial unit which provides fast and efficient drying.

The BD-150 has a number of special features:

- Super high efficiency rotary compressor
- Temperature-sensitive microprocessor controlled defrost system
- Exterior epoxy powder-coated finish
- Hours run meter
- Internal condensate pump
- Rugged trolley for portability
- Extra long power cord

The fan draws the moist air through the inlet grille on the back of the unit, then 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 BD-150 dehumidifier is a rugged, reliable drying unit designed to operate effectively over a broad range of temperature and humidity conditions.

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

SPECIFICATIONS

MODEL:	BD-150
HEIGHT:	36”
WIDTH:	24”
DEPTH:	25”
WEIGHT:	165 lb
AIRFLOW:	1114 CFM
POWER SUPPLY:	115V/ 60Hz/ 1 ph
FINISH:	Powder-coated Epoxy
OPERATING RANGE:	41°F – 100°F
REFRIGERANT:	R-22 (19 oz)

OPERATION

The following procedures should be followed to test the BD-150 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. Connect a 12.5 mm inside diameter hose to the condensate outlet pipe (positioned centrally, beneath the air inlet grille). Secure the hose using a worm drive clip. The hose should at no point be raised higher than the outlet pipe. Failure to observe this requirement will result in flooding of the dehumidifier.

2. Check dehumidification process as follows:

CAUTION: DO NOT REMOVE COVERS WHEN UNIT IS IN OPERATION.

   A. Place unit on a level surface.

   B. Press the start button, DO NOT hold in this button for more than 1 second. The unit will run.

   C. Check that air is being delivered through the front outlet grille and the compressor is running.

   D. After 15/20 minutes an even coating of ice should cover the evaporator coil (temperature below 68°F), droplets of condensate water should cover the evaporator coil (temperature above 68°F)

   E. After 45 minutes +/- 5 minutes, the dehumidifier will operate in the defrost mode and the evaporator coil will clear of any ice. After 4 minutes +/- 1 minute, the dehumidifier unit will again operate in the dehumidifier mode.

   F. Allow the dehumidifier unit to run for a further 15/20 minutes and observe the frosting/droplets on the evaporator coil.

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 MAINTENANCE

WARNING: ENSURE THAT THE POWER CORD TO THE MACHINE HAS BEEN DISCONNECTED BEFORE CARRYING OUT ROUTINE MAINTENANCE.

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

1. Replace or clean the inlet air grille as required. 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 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 top cover. The evaporator coil should be evenly frost coated across its surface. At temperatures above 70°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.

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

SYMPTOM	CAUSE	REMEDY
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 5. Fuse blown or circuit breaker tripped	1. Tighten fan 2. Replace the fan motor 3. See *Routine Maintenance* 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	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

Ebac Industrial Products, Inc.
700 Thimble Shoals Blvd, Suite 109
Newport News, VA. 23606-2575
Tel: (757) 873 6800 Fax: (757) 873 3632
Website www.ebacusa.com

BD-150
SPARE PARTS LIST

NUMBER	DESCRIPTION	PART NUMBER	QUANTITY
1	Compressor (AK5512E)	3020116	1
2	Compressor Overheat Protector	3031728	1
3	Compressor Capacitor	3036337	1
4	Condenser Coil	3020727	1
5	Evaporator Coil	3020732	1
6	Filter Dryer	3020904	1
7	Fan Motor Assembly	3035774	1
8	By-pass Valve	3020810	1
9	Electronic Timer	1600500	1
10	Hour Meter	3030779	1
11	Rotary Switch	3030555	1
12	Terminal Block	3031460	1
13	Solenoid Coil	3030420	1
14	Contactor	3034393	1
15	Power Cord	3035148	27ft
16	Drain Tray	1025002	1
17	Worm Drive	3086116	1
18	Drain Tubing	3944110	25ft
19	Trolley	1026004	1
20	Wheel	3050116	2
21	1” Starlock Washer	3082601	2
22	1” Starlock Washer Cap	3082602	2

LIMITED WARRANTY

Our products carry a one-year unconditional warranty against any defects in workmanship or material. This warranty will cover all parts and labor required to repair your Ebac product. This warranty is invalid if the unit has been abused, damaged, whether intentional or accidental, or if any modifications have been made to the unit.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IS ISSUED IN LIEU OF ALL OTHER WARRANTIES (WHETHER WRITTEN, ORAL, OR IMPLIED) INCLUDING THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. EBAC INDUSTRIAL PRODUCTS, INC. DISCLAIMS ANY LIABILITY FOR CONSEQUENTIAL DAMAGES, LOST PROFITS, OR INCIDENTAL DAMAGES FOR BREACH OF ANY WRITTEN OR IMPLIED WARRANTY WITH RESPECT TO THE FOREGOING DESCRIBED MERCHANDISE.

For Your Records: Model: _____
S/N: _____
Date Received: _____

SAVE THIS SECTION FOR YOUR RECORDS

CLIP AND RETURN THIS CARD

PLEASE NOTE

To ensure that your Ebac Dehumidifier is accorded the full coverage provided by this warranty, please complete and mail this card at your earliest convenience.

Thank You

WARRANTY REGISTRATION

MODEL _____ S/N _____ DATE RECEIVED _____

OWNER _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

COMMENTS _____

_____

Ebac Industrial Products.
700 Thimble Shoals Boulevard, Suite 109, Newport News, Virginia. 23606-2575