

**EBAC MODEL TRITON
INDUSTRIAL DEHUMIDIFIER
OWNER'S MANUAL**

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UNPACKING

Carefully remove the TRITON Dehumidifier from its transit box. Remove the plastic bag containing the dehumidifier. Make sure the plastic bag cannot be a danger to children. Keep the packing for a possible return of the unit to the factory or incase you will have to forward it to another destination.

Visually check for signs of transit damage. If there is any evidence of damage DO NOT attempt to operate the unit, call your supplier for advice.

INTRODUCTION

The Triton is an Industrial dehumidifier which removes moisture from the air that is circulating through the unit. The fan draws damp air through the refrigerated surface (= evaporator) and cools it below its dew point so that the moisture of the air condenses. The air then passes a hot condenser. With the addition of other radiated heat the air is discharged into the room at a higher temperature but lower relative humidity than when the air entered the unit. The resulting reduction of relative humidity helps prevent rust, rot, mould and condensation within the room where the dehumidifier is used. For mobile use the Triton is also equipped with two wheels and a retractable handle.

APPROPRIATE USE

The Triton dehumidifier is a robust compact unit. Its purpose is to reduce the relative humidity in any enclosed space where it is used. It is not suitable for use in an indoor pool.

BASIC DESIGN

The Triton dehumidifier consists of the following main components:

- A motor-driven, fully hermetic rotary refrigerant compressor
- A temperature-sensitive microprocessor controlled defrost system
- An evaporator coil (= cold surface)
- A condenser coil (= hot surface)
- An inlet air filter
- An axial fan to circulate the air through the unit
- A condensate drain tray
- A trolley casing with retractable handle to house the above-mentioned items.

Durable epoxy powder coated finish for resilience to damage caused by rough handling.

WORKING PRINCIPLE

Dehumidifier

The fan draws moist air through the refrigerated surface which cools it below its dew point, removing moisture which is collected and lead away. The cool air then passes over the hot condenser, where it is reheated. With the addition of other radiated heat the air is discharged into the room at a higher temperature but a lower relative humidity than when the air entered the unit.

Refrigerant circuit

The liquid refrigerant is evaporated inside the evaporator coil due to the absorption of heat which is added via the surface of the evaporator. In doing so, the evaporator is refrigerated to such an extent that its temperature falls below the dew point of the air which passes through it. As a consequence, the moisture vapour contained in the air condenses at the surface of the evaporator coil and drops into the drain tray. The compressor then compresses the gaseous refrigerant at a high pressure before it is led into the condenser. Inside the condenser coil, the refrigerant is then re-liquidified at the liberation of heat (= the heat absorbed for evaporation + the energy of the compressor converted into heat). In doing so, the heat absorbed by the evaporator and the electric energy of the compressor are released via the air discharged into the room what can be established from slightly higher air outlet temperature. Afterwards, the refrigerant is discharged from the condenser into the evaporator passing through the filter dryer and the expansion valve. The air discharged from the dehumidifier has a higher temperature and lower moisture content.

Operating range

The Triton Industrial dehumidifier can be operated within an ambient temperature range of 3°C (lower limit) to +35°C (upper limit).

SPECIFICATIONS

MODEL:	TRITON
HEIGHT:	750mm
WIDTH:	500mm
DEPTH:	400mm
WEIGHT:	34 Kg
AIRFLOW:	500 m ³ /hr
POWER SUPPLY:	230V, 1 ph, 50Hz
MAX POWER DRAW:	500W
MAX CURRENT DRAW:	2,8A
GENERATOR:	0,630
FUSE:	6 A
ACOUSTIC PRESSURE (AT 1 M DISTANCE)	55 dB(A)
WATER EXTRACTION RATE	1,21 l/h
WATER EXTRACTION RATE	0,66 l/h
REFRIGERANT TYPE/QTY:	R134a (0.250g)

INSTALLATION

POSITIONING

As the dehumidifier may only be operated in the vertical position, always place it on level and solid ground.

For small areas position central in the area to be dried. For larger areas such as open plan buildings, offices or factories, a number of dryers may be required. In such cases they should be spaced evenly around the area. Ensure that no unit is positioned in such a way that it blows directly onto another.

For private houses or flats, position the dryer on one floor at a time, starting at the lowest floor, closing all the internal doors on the floor previously dried. Continue until all floors have been dried. If it is a new building and there are no doors or windows yet, close the openings provisionally.

Note when a particular damp patch is to be dried out the air outlet grille should be direct towards that area but should never be closer than 1 m to the surface. At no time should the inlet or outlet grilles be covered or obstructed.

WIRING

Connect the power mains cable/plug of the dehumidifier unit to power supply. As follows:-

Brown	Live
Blue	Neutral
Green/Yellow	Earth (ground)

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.

COLLECTING THE CONDENSATE

Place a big enough bucket under the drain nozzle of the condensate drain tray.

PERMANENT DRAINAGE

The drain nozzle of the condensate drain tray allows the connection of a flexible hose with an inner diameter of 12 mm. Use a hose clip to fasten the hose. The condensate will then be drained through the hose to a permanent drain.

The hose should at no point be raised higher than the outlet pipe of the drain tray. Failure to follow this instruction may result in flooding of the dehumidifier. Also ensure the hose is not kinked.

SWITCHING ON THE UNIT

First plug the unit into the power supply and switch on. Only then set the illuminated rocker switch to the ON position. Ensure that the plug/power supply can be easily reached.

Warning: Never operate the unit with the cover completely or entirely removed.

When a generator is used to supply the power, it is essential to check the minimum kVA - value required (cf. table Technical Data). The generator must be started before connection is made to the dehumidifier.

SWITCHING OFF THE UNIT

Set the unit to the AUS/OFF. If necessary, switch off the voltage supply and unplug the unit.

Attention: Once the unit is switched off, always allow 3 minutes before turning the unit back on.

TRANSPORTATION INSTRUCTIONS

The mobile Triton dehumidifier may only be stored and transported in the vertical position. Transporting on its back is only admissible in exceptional cases and for short distances.

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.

PROTECTIVE FEATURES

Warning: Do not carry out any self-directed modifications on the Triton Industrial dehumidifier otherwise you will put yourself and others in danger.

OVERLOAD PROTECTION

The Triton dehumidifier has been designed to work at ambient temperatures between 3 to +35°C. To control the temperature and to protect the unit against overload there is a thermal overload switch (winding protector) within the compressor casing.

If the ambient temperature exceeds +35°C, this protection switch will stop the dehumidifier unit the temperature will have fallen.

ADDITIONAL FEATURES

DEFROST SYSTEM

If the ambient temperature of the room in which the dehumidifier is used falls below 20°C, ice will form on the evaporator coil. After sum time this build up of ice on the evaporator coil will affect the efficiency of the dehumidifier i.e. its ability to remove moisture from the air.

For this reason, the Triton dehumidifier has been fitted with an intelligent defrost control device. This defrost control device is programmed to operate only when there is an ice layer on the evaporator. (Ice which may build up is melted, the melted ice is then collected and drained away together with the condensate.)

AIR FILTER

The Triton is fitted with a replaceable air inlet filter (see Spare Parts List)

RUN HOUR METER

The mobile Triton dehumidifier is serially fitted with a run hour meter which is installed on the unit front. It measures the time the unit is operated by the hour.

ACCESSORIES

PERMANENT CONDENSATE DRAINAGE BY WAY OF A CONDENSATE PUMP

The Triton can be fitted with a condensate pump either ex works or the pump can be retrofitted. This condensate pump allows:

- The unsupervised operation of the unit whereby the condensate is pumped to a permanent drain.
- The operation of the unit at up to 4 m below the level on which the permanent drain is.

Note: Having switched off the unit, leave it connected to the mains supply until any possible ice will have melted, in doing so you will avoid an overflow of the pump tank.

Before transporting the Triton, discharge the condensate pump by pushing the switch “Pump” for about 10 seconds.

USE OF AN ON-LINE HYGROSTAT

The use of an on-line hygostat will allow you to operate the mobile dehumidifier independently of the ON/OFF-switch. By setting the desired relative humidity at this hygostat, the dehumidifier will only be operated until the set value is achieved. The unit will automatically be switched off as soon as the set value is achieved, and it will be switched on again as soon as the set value is undershot. The on-line hygostat is positioned on the supply line from the socket into the unit.

GENERAL SAFETY POINTS

- DO NOT use the unit if the cabinet or power cord is damaged.
- DO NOT insert objects into any of the grilles on the machine.
- DO NOT cover or obstruct airflow from the grilles.
- DO NOT operate the unit with the covers removed.
- DO NOT attempt any repairs should the unit fail to operate.
- DO NOT stand on the unit.
- DO NOT attempt to lift heavy units unassisted.
- DO check the plug on the equipment matches the supply.
- Do use the unit only for the purpose in which it was designed.
- DO ensure the power cord and supply is earthed correctly.
- DO check the voltage selection before attempting to power up the unit (DUAL VOLTAGE UNITS ONLY).
- DO use a residual current device „RC” where possible.

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>
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 	<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
Little or no water extraction	<ol style="list-style-type: none"> 1. Insufficient air flow 2. Compressor not running <ol style="list-style-type: none"> a) No power supply to compressor b) Compressor switched off after internal overload. Allow a reset time of two hours c) Compressor burn out d) Loss of refrigerant (resulting in hot compressor casing) e) Blocked Filter Dryer 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
Little or no defrost when required	<ol style="list-style-type: none"> 1. Faulty Timer 2. Faulty bypass timer 	<ol style="list-style-type: none"> 1. Contact the Factory Service Center 2. Contact the Factory Service Center

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TRITON SPARE PARTS LIST

<u>DESCRIPTION</u>	<u>PART NUMBER</u>
Wheel	3050110
Rubber Foot	3088553
Condensate Pump	3160130
Condensate Pump Switch	3036779
ON/OFF - Switch	3035914
Fan Blade	3040129
Fan Motor	3035797
Hour Meter	3030778
3-Core Power Cord	2141001
Evaporator / Condenser Coil	2139330
Capillary Tube	3014249
Condensate Drain Tray (Plastic)	2131107
Air Filter Inlet	2013831
Filter Dryer	3020909
Compressor & Capacitor	3022173
Timer Board	1609850
Thermister assembly	3035142