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SPP6A

DEHUMIDIFIER

OWNER'S MANUAL

www.eipl.co.uk

SAFETY INFORMATION

READ AND SAVE THESE INSTRUCTION

Children shall not play with the appliance.

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.

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.

If the appliance 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.

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 appliance is switched off at the mains power supply for any reason, it must be allowed to stand at rest for at least three minutes before restarting. Failure to do so may cause the appliance to blow the fuses owing to the compressor due to there being a refrigerant imbalance.

The Global Warming Potential (GWP) of refrigerants used in products manufactured by Ebac Industrial Products Ltd is as follows: -
R290 – 3
R454c – 148

For type and weight of refrigerant contained in this appliance, please refer to the product data label.

Do not insert objects into any of the grilles on the machine.

Do no cover or obstruct airflow from the grilles.

Do not operate the unit with the covers removed

Do not stand on the unit

Do not attempt to lift heavy units unassisted.

Do check the plug on the unit matches the supply.

Do check the supply cord and power supply are earthed correctly

Do check the voltage selection before attempting to power up the unit (This is for dual voltage units only).

Do use a residual current device “RCD” where possible.

The appliance uses R290 refrigerant gas. This gas is much kinder to the environment as it is non-toxic with zero Ozone Depletion Potential (ODP). This is a flammable gas and the following warnings should be considered:

- The appliance uses a flammable refrigerant (see unit serial plate for charge quantity). It is therefore part of a sealed system and **any servicing should only be carried out by EIPL service personnel.**
- Do not pierce / puncture the appliance at any point, even when disposing of. Before disposing all refrigerant should be evacuated and disposed of as required by local environmental laws.
- If there is any damage to the appliance, DO NOT USE and contact EIPL.
- The appliance must not be used in a potentially explosive atmosphere.
- The appliance must not be used in an aggressive atmosphere e.g. chemical environments.
- The appliance must not be used in a high dust environment.
- The appliance must not be used in a high solvent concentration atmosphere.
- The appliance should not be used or stored in a space of 4M^3 or smaller
- Do not use the appliance in a room with any continuous source of ignition e.g. open flames or gas fires.
- R290 is an odourless gas.
- Anyone who does work on the refrigeration circuit must have the appropriate qualifications / certification issued by a national accredited organisation to ensure competence when handling flammable refrigerants.
- Any parts to be replaced within the appliance should only be replaced with EIPL approved parts.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example open flames, an operating gas appliance or an operating electric heater.

GAS DETECTION

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) must not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks. Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at 25% of the LFL of the refrigerant and must be calibrated to the refrigerant deployed.

Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe work.

SPP6A

PACKAGE CONTENTS

Item	Description	Quantity
11398GY-US	Dehumidifier	1
1139805	Indicator box	1
1137500	Dehumidifier stand	1
2137509	Spanner	1
3014338	PVC tube – 12mm I/D	3 M
3086101	Jubilee clip	1
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UNPACKING

Carefully remove the SPP6A 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

Dehumidifiers remove moisture from the air that is circulating through the unit.

The resulting reduction of relative humidity helps prevent rust, rot, mould, mildew and condensation within the room, or other enclosed spaces where the dehumidifier is used.
A dehumidifier consists of a motor-compressor unit, a refrigerant condenser, an air circulating fan, a refrigerated surface, a means of collecting and disposing the condensed moisture and a cabinet to house these components.
The fan draws air through the refrigerated surface and cools it below its dew point, removing moisture which is collected and led away. The cool air then passes 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 lower relative humidity than when the air entered the unit. Continuous circulation of the room air through the dehumidifier unit gradually reduces the relative humidity in the room.

The SPP6A Dehumidifier is a robust, compact unit designed to control the humidity in the enclosed space in which it is placed.

- The unit is thermally protected and will switch off for a period if the maximum operating temperature of 50ºC is exceeded.
- The SPP6A has been designed for the exacting conditions which can prevail in the medium to long term storage of mobile shelters and vehicles. It combines lightness and compactness with high reliability and strength.
- Handles contribute to its portability.
- A Dehumidifier stand (Part Number 1137500) is available to provide both a level platform and an easy working height for the operational personnel.
- The gas which is used inside the hermetically sealed refrigeration circuit is R134A, which contains no CFC's and has therefore a zero ozone depletion factor.

BUT under no circumstances should this gas be released into the atmosphere, the unit should be serviced by trained personnel who will re-claim any of the unwanted gas.

SPECIFICATIONS

Model:	SPP6A MKII
Length:	447mm
Width:	340mm
Height:	255mm
Weight:	28 Kg (Typically)
Paint Finish:	Light Grey
Power Supply:	115v ± 10%, 1 ph / 60Hz
Power Rating:	250-300W
Airflow:	250 M3/HR
Construction:	Welded 1.2m steel chassis and covers
Portability:	Two folding carrying handles.
Power Cable Length:	10 Meters
Water Drainage:	12mm outlet spigot

MONITOR BOX

LENGTH:	120mm
WIDTH:	80mm
DEPTH:	55mm

3 NEON INDICATING AMPS

CONSTRUCTION:	ABS/ Polycarbonate enclosure designed in accordance with IP65 standards.

WATER EXTRACTION DUTY

TEMPERATURE ºC	HUMIDITY %	WATER EXTRACTION L/24HR
0	70	0.6
10	70	1.8
20	70	3.5
30	70	5.2
40	70	7.0
55	40	7.0
44	95	12.0

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

WIRING:

Connect the power mains cable/plug of the dehumidifier unit to a 15 Amp power supply. As follows:-

115 Volt Supply

Brown	Live
Blue	Neutral
Green/Yellow	Earth (ground)

DRAINAGE:

Connect a 12.5mm 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. The hose should be ran to a permanent drain. Failure to observe this requirement will result in flooding of the dehumidifier unit.

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.

AIR MOVING SYSTEM:

Air is drawn in through the inlet grille at the rear of the dehumidifier (below the handle) and over the two heat exchanges (evaporator/condenser coils) under the influence of the axial fan, which is driven by the motor. The operation of the fan motor is to run continuously whenever power is supplied to the dehumidifier. The fan motor used in the dehumidifier unit is induction protected i.e. the motor is able to take stalled current without burning out the motor windings.

DEFROST OPERATION:

If the ambient temperature of the room in which the dehumidifier unit is conditioning falls below 15ºC ice will form on the evaporator coil as the air is passed over it, after a time this build up of ice on the evaporator coil will effect the efficiency of the unit, on its ability to maintain the required set conditions for the room.

The SPP6A is therefore fitted with a defrost control device. This defrost control device is timed to operate every 55mins, at which time, for approximately 5mins the high pressure gas is diverted by means of a by-pass valve to enter the evaporator coil. The effect of this high pressure gas entering the evaporator coil is to melt any build up of ice on this coil. The melted ice is collected and disposed of by means of the condensate tube.

HIGH TEMPERATURE CUTTOUT:

The SPP6A dehumidifier has been designed to work in ambient conditions of 10ºC and 50ºC. Should the temperature in the room become excessive a thermostat within the compressor casing will open and dehumidifying will stop, until the thermostat resets itself.

SPECIAL FEATURES

CONTROL AND WARNING INDICATOR HUMIDISTAT

The SPP6A dehumidifier unit is fitted with a control panel fixed to the outside of the dehumidifier cabinet, the panel incorporates two humidistats, which measure the relative humidity of the air within the room/space. The first humidistat incorporates a pointer and a scale, and is adjustable to a set point. The second humidistat has no pointer or scale, and is pre-set and fixed at the factory at the customers requested set point.

FIRST HUMIDISTAT

The humidistat controls the on/off function of the dehumidifier unit, when the relative humidity of the air in the room/space falls below the set point of the humidistat the dehumidifier unit will switch off, but when the relative humidity of the air within the room/space rises above the set point of the humidistat the dehumidifier unit will switch on.

SECOND HUMIDISTAT

This humidistat which is factory pre-set at 60%RH is connected to a warning indicating system. This warning indicating system will be monitored by the customer and will indicate that the relative humidity of the air within the room has risen above the pre-set 60%RH level due to a fault, either with the dehumidifier unit or due to some other circumstance and requires attention of a service engineer.

TEMPERATURE CONTROLLED DEFROST

The SPP6A dehumidifier unit is fitted with temperature sensitive device which will operate in conjunction with the defrost control. In normal operation the defrost control will come into operation every 55 minutes, this is to ensure that there will be no build up of ice at lower temperatures, but 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 operates at its most efficient this temperature sensitive device will restrict the defrost operation to the times when the evaporator coil is at -3ºC.

INDICATOR BOX

The indicator box, which is sealed against water ingress, is connected to the dehumidifier in the mains input cable; it has three indicating lamps mounted under a transparent front panel.

AMBER LAMP

This indicates that the dehumidifier unit is in stand by mode (the relative humidity within the room/space is below the set point of the Control humidistat) and mains power is applied.

GREEN LAMP

This indicates that the dehumidifier unit is operating (the relative humidity within the room/space is above the set point of the Control humidistat). The relative humidity above which the dehumidifier unit will operate can be set by adjusting the humidistat knob, which is positioned on the inside of the dehumidifier unit.

RED LAMP

This indicates that the relative humidity within the room/space has risen above the pre-set 60% RH of the second humidistat and requires attention of a service engineer.

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. 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.

TROUBLESHOOTING

SYMPTOM	CAUSE	REMEDY
Little or no airflow	1. Loose fan on shaft 2. Fan motor burnt out 3. Dirty refrigeration coils 4. Loose electrical wiring 5. Control humidistat either set too high or malfunctioning	1. Tighten fan 2. Replace the fan motor 3. See *Routine Maintenance* Section 4. Check the wiring diagram to find fault and repair 5. Contact the Factory Service Center
Little or no dehumidifying effect	1. Insufficient air movement 2. Compressor not running:- a) No power supply to compressor b) Compressor tripped on internal overload – allow reset time of two hours c) Compressor burnt out d) Loss of refrigerant (resulting in hot compressor) e) Humidistat either set too high or malfunctioning f) Blocked filter dryer	1. Check all of the above 2. Contact the Factory Service Center

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SPARE PARTS LIST

DESCRIPTION	PART NUMBERS
Product Part Number	11398GY-US
Indicator Box	1139805
Timer	1619522
Evaporator Coil	2012414
Indicator Housing	2135713
Indicator Humidistat	2135727
Capillary Tube	3014253
Insul Tube 10mm ID	3014301
Drain Tube	3014338
Condenser Coil	3020740
Bypass Valve	3020836
Filter Dryer	3020937
Fan Motor	3030126
Solenoid Coil	3030451
Mains Cable	3031225
Control Cable	3031227
Open Grommet 20mm	3032101
Cable Gland	3032511
Cable Gland Nut	3032512
Male insert	3033809
Housing	3033809
Female Insert	3033810
Hood	3033811
Cable Seal	3033813
Male Contacts	3033814
Female Contact	3033815
Green Neon	3034584
Coil Sensor	3035142
Control Humidistat	3035158
Circuit Board Jumper	3035834
Red Neon	3036636
Terminal Block	3036810
Fan Blade	3040589
Adjustable Tilt Guide	3050305
Clip Nut	3080501
Cover Fixings	3084095
Worm Drive Clip	3086101
Knob	3090611
Knob Cap	3090612
Knob Pointer	3090613
PCB Mounting Clips	3101413
Compressor	3944969
Compressor Start Relay	3944971
Compressor Protector	3944975
Compressor Cap and Clip	3944976
Compressor Foot, Clip and Pin	3944977

UK Head Office

Ebac Industrial Products Ltd
St Helens Trading Estate
Bishop Auckland
County Durham
DL14 9AD

Tel: +44 (0) 1388 664400
Fax: +44 (0) 1388 662590

www.eipl.co.uk
sales@eipl.co.uk

American Sales Office

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

Tel: +01 757 873 6800
Fax: +01 757 873 3632

www.ebacusa.com
sales@ebacusa.com