OWNER/INSTALLATION MANUAL
WALLHUNG/FLOORSTANDING
DEHUMIDIFIERS
DH44/66 RANGE

SD496251 ISS 9

01/11/16

HEALTH AND SAFETY WARNING

As the dehumidifier embodies electrical and rotational equipment, ONLY competent persons should carry out any work on this type of machine. (See warranty).

Contents

CALOREX HEAT PUMPS & DEHUMIDIFIERS
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Health and Safety

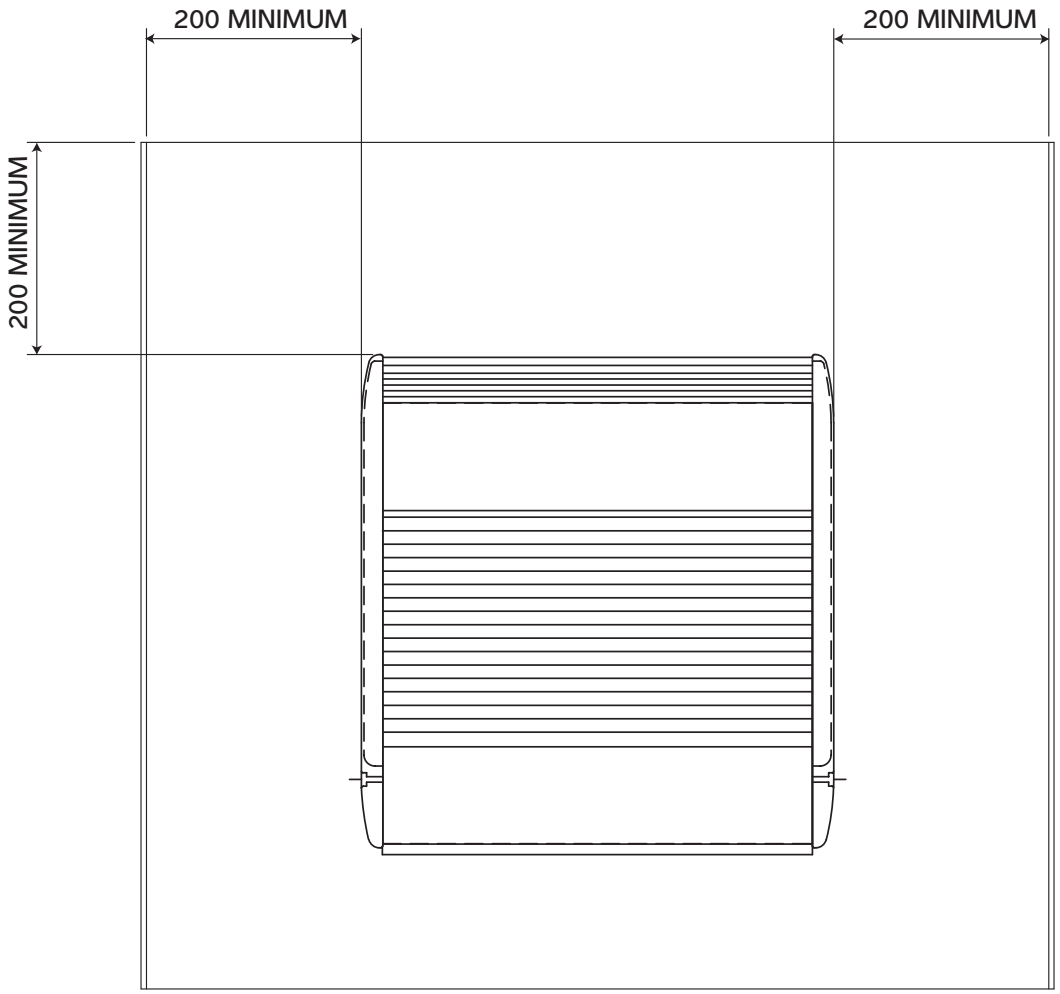
This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

1.1 MOUNTING, POSITION

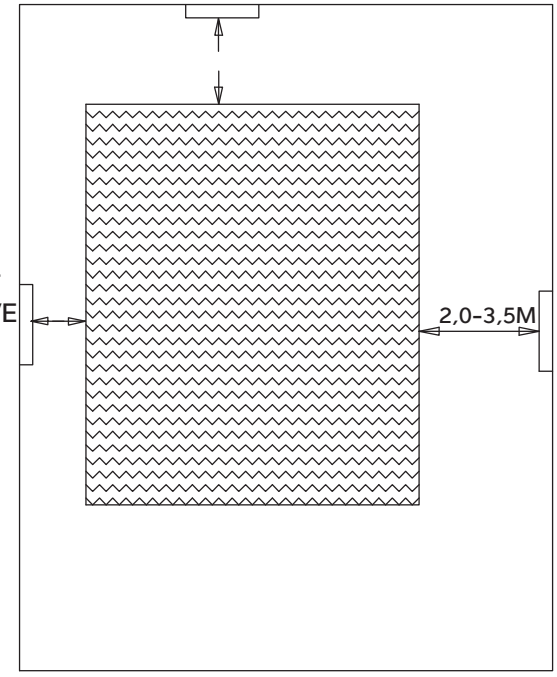
For optimum performance of the dehumidifier, care needs to be taken when considering it's position.

1. Good air circulation.
2. The unit needs to be horizontally level.
3. At least 200mm away from ceiling and corners of the room.
4. At least 200mm service access is required.
5. If the dehumidifier is positioned on a wall, the wall needs to be load bearing. (A plasterboard or wood cladded wall is not sufficiently strong).



16TH EDITION REGULATIONS AND CALOREX UNITS

1,25 - 2,0M MUST BE FITTED WITH AN RCD
AND BE AT LEAST 300mm FROM FLOOR

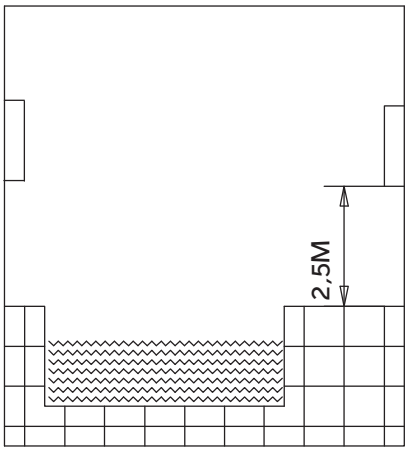


CAN BE WITHIN 1,25M BUT
MUST THEN BE 2,5M ABOVE
POOL SURFACE

MUST BE FITTED WITH RCD
ANY HEIGHT ACCEPTABLE

1) N.B. THE RCD IS AN EARTH LEAKAGE TRIP & ALTHOUGH NOT ALWAYS REQUIRED
IT IS RECOMMENDED THAT IT IS USED ON ALL INSTALLATIONS. (A 30mA RCD SHOULD BE USED).
2)THE ISOLATOR FOR THE DEHUMIDIFIER MUST COMPLY TO THE APPROPRIATE IPX REGULATION

ALTHOUGH THE UNIT IS 2,5M
ABOVE THE HEIGHT OF THE
POOL IT IS NOT ACCESSIBLE
FOR SERVICE & SO BREAKS
THE NEW REGULATIONS

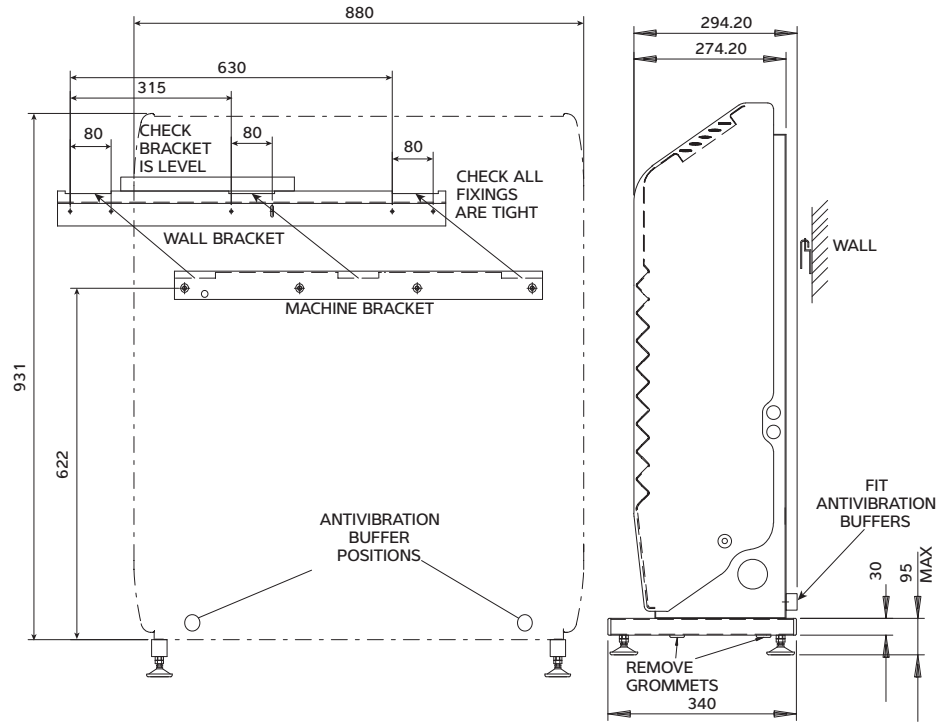


IF THE UNIT IS WITHIN 1,25M
OF THE POOL HORIZONTALLY
THEN IT MUST BE 2,5M ABOVE
THE POOL SURFACE.

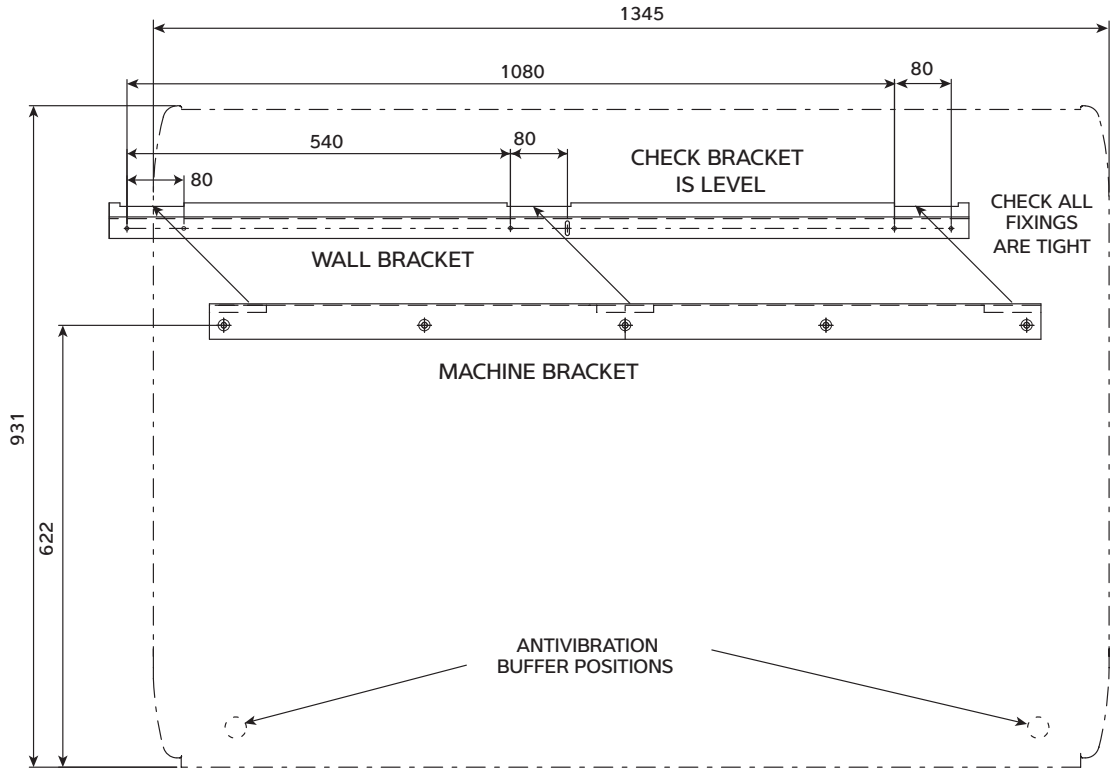
1.2 WALL HANGING/FLOOR STANDING

When the dehumidifier is unpacked it is suitable for use standing on the floor. The feet can be adjusted to allow for unevenness in the surface. If the unit is to be mounted on a wall, the complete package contains wall brackets and antivibration buffers. Once the unit has been hung on the wall the floor stand arrangement can be removed. Access to the fixings for the stand arrangement can be gained by removing the round grommets in the feet.

DH44 MODEL



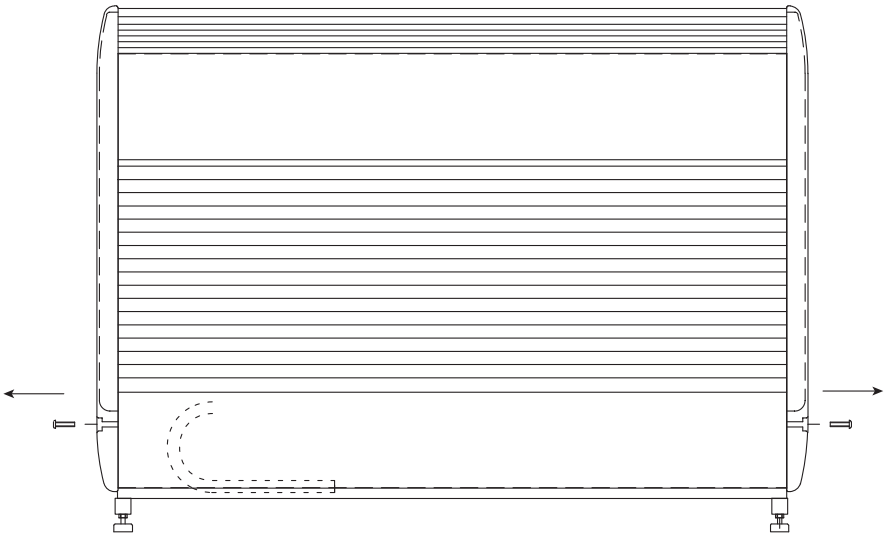
DH66 MODEL

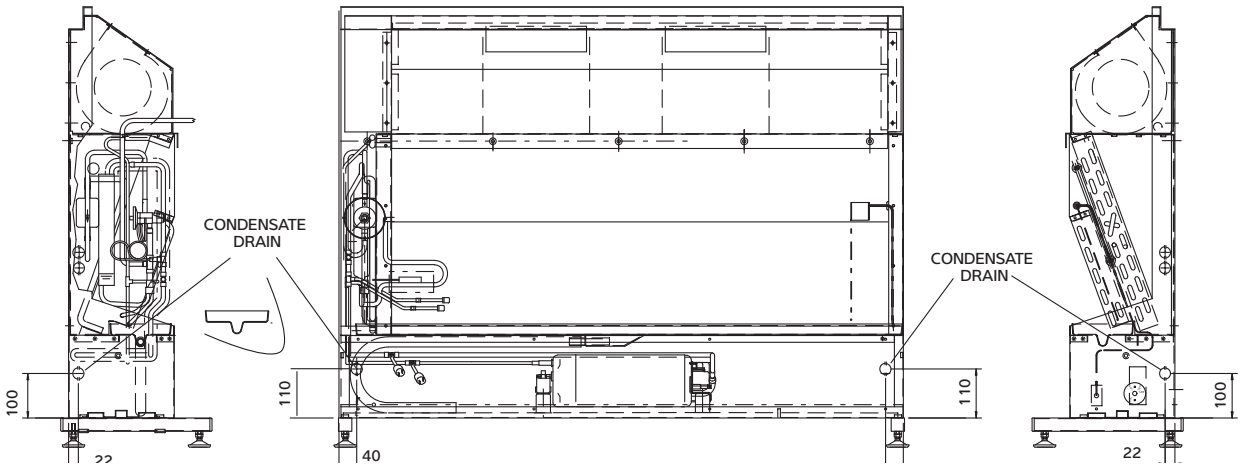


2.1 CONDENSATE DRAIN CONNECTION

The condensate output and electrical connections can be at either end of the machine, at the side or in the back, depending on the requirements of the user. To gain access to the unit remove the covers, unscrewing the fixing screw in both end mouldings.The driptray can be removed and turned round. Remove the desired knockouts, insert grommet (supplied) and route condensate pipe through the knockout.(Tube outside diameter 19mm).

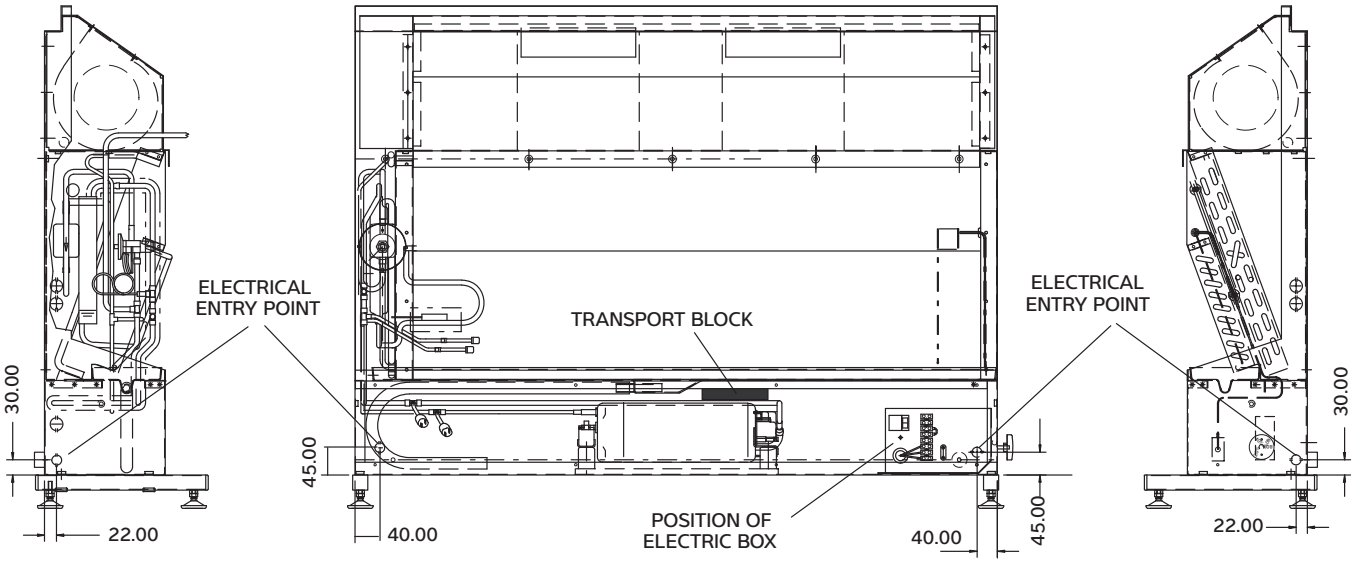
REMOVAL OF COVERS





DH66 DEHUMIDIFIER SHOWN.
POSITIONS OF KNOCKOUTS FOR CONDENSATE DRAIN CONNECTION

2.2 ELECTRICAL CONNECTION



CAUTION!
REMOVE COMPRESSOR TRANSPORT BLOCK BEFORE RUNNING MACHINE

DH66 DEHUMIDIFIER SHOWN
POSITIONS OF KNOCKOUTS FOR ELECTRICAL CONNECTION

The electrical connection should be carried out by an authorised electrician, paying special attention to the latest IEE regulations. In any case, the mains power supply should be fitted with a 30mA/30ms protection switch. The cable access position can be selected by the customer from the positions shown above. Once the desired knockout has been removed a cable gland (supplied in package) can be fitted to neaten off the hole.

The electric box is situated under the compressor cover which will need to be removed.

The connections are made to the terminal box on the outside of the electric box in the bottom right hand corner of the dehumidifier.

The machine should be installed in accordance with EMC2004/108/EC.

FAN MODE SWITCH

A fan mode switch is positioned on the electric box with the following modes:

Fan continuous – continuous operation of the fan.

Fan cycle – the fan will be switched on and off automatically by the humidistat.

The mode "fan cycle" helps, especially with a covered swimming pool, to save energy:

(but in this mode larger humidity swings may be experienced).

After connecting the electrical supply, the compressor cover and machine cover need to be installed in the manner shown on page 5.

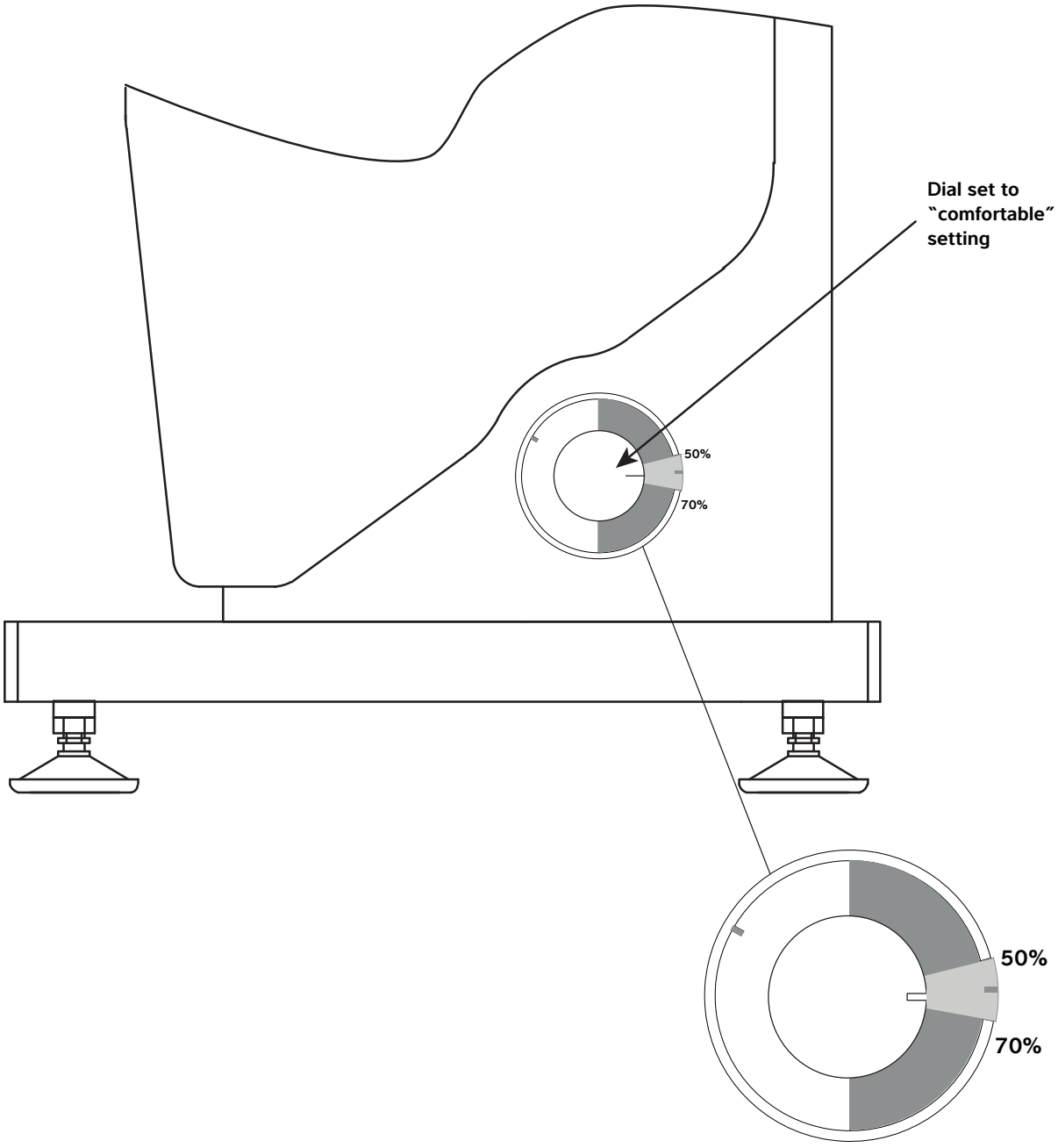
The dehumidifier is now ready to operate.

Attention. The dehumidifier should not be switched on without it's covers in place. Operation without a cover causes poor airflow. Due to safety features the unit will switch off after a short period of time.

3.0 HUMIDISTAT SETTINGS

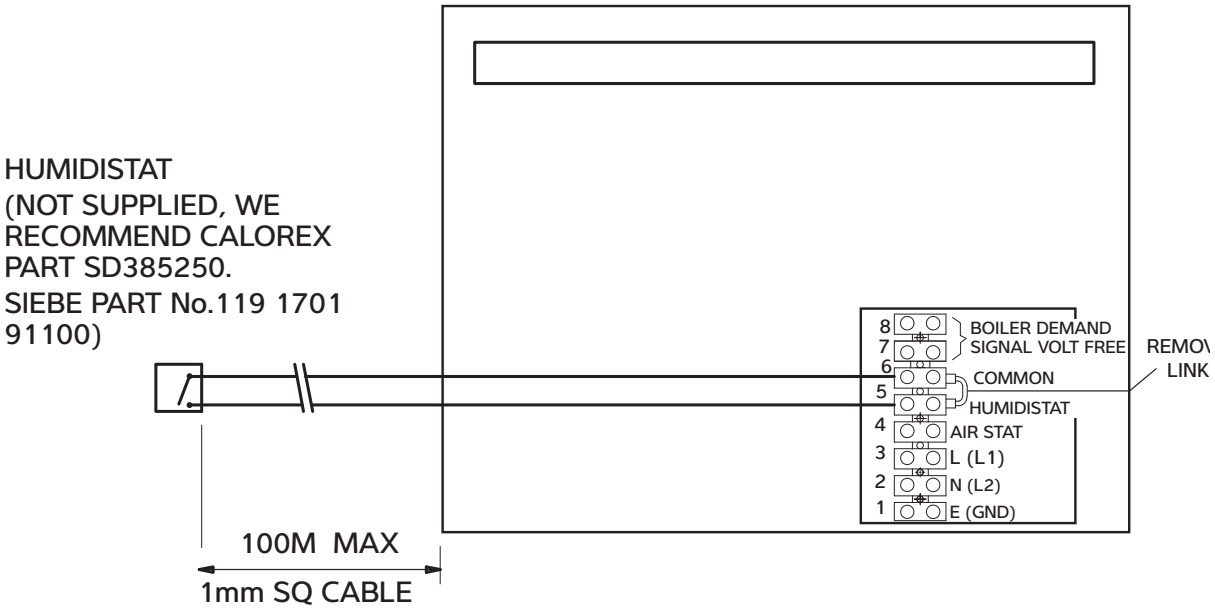
The dehumidifier is provided with automatic control by a humidistat that can be adjusted to suit room requirements. Adjustment is by a dial that is located on the right hand side of the unit. The dial is marked as % relative humidity. When the % relative humidity is lower, the air is drier.

To set the dial, turn it so that the requred room humidity is positioned adjacent to the reference mark as shown below. A room relative humidity of 50% to 60% is recommended. To operate the dehuidifier continuously or to test its operation, turn the dial to the 20% position. In this position the fan and compressor will run continuously (after the initial 6 minute time delay).



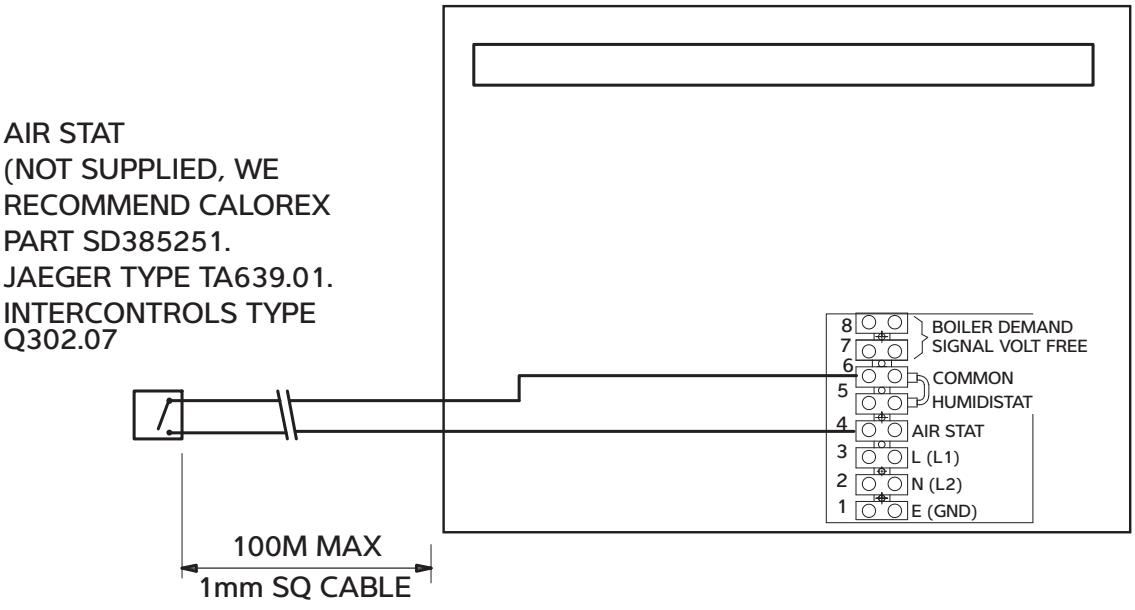
4.1 OPTIONAL HYGROSTAT/AIRSTAT

REMOTE HUMIDISTAT CONNECTIONS

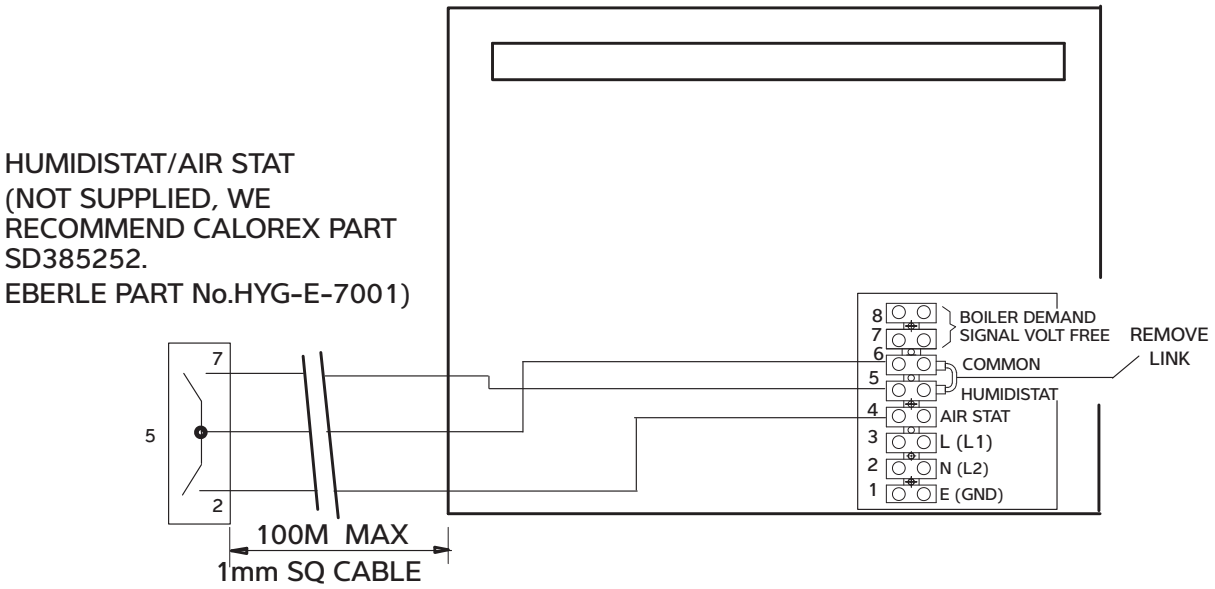


WITH REMOTE HUMIDISTAT FITTED ENSURE HUMIDISTAT
IN MACHINE IS SET FULLY ANTI-CLOCKWISE (IE MAXIMUM DEHUMIDIFICATION)
REMOVE PINK WIRE LINK

REMOTE AIR THERMOSTAT CONNECTIONS



COMBINED REMOTE HUMIDISTAT/AIR STAT CONNECTIONS



WITH REMOTE HUMIDISTAT/AIR STAT FITTED ENSURE HUMIDISTAT
IN MACHINE IS SET FULLY ANTI-CLOCKWISE (IE MAXIMUM DEHUMIDIFICATION)
REMOVE PINK WIRE LINK

4.2 OPTIONAL LPHW

Connect the flow and return water circuit pipe work by means of the 15mm stubs which are provided on the side of the machine. The connections project 40mm out from the left hand side of the DH44 and the right hand side of th DH66.

Attention! Flow – bottom connection

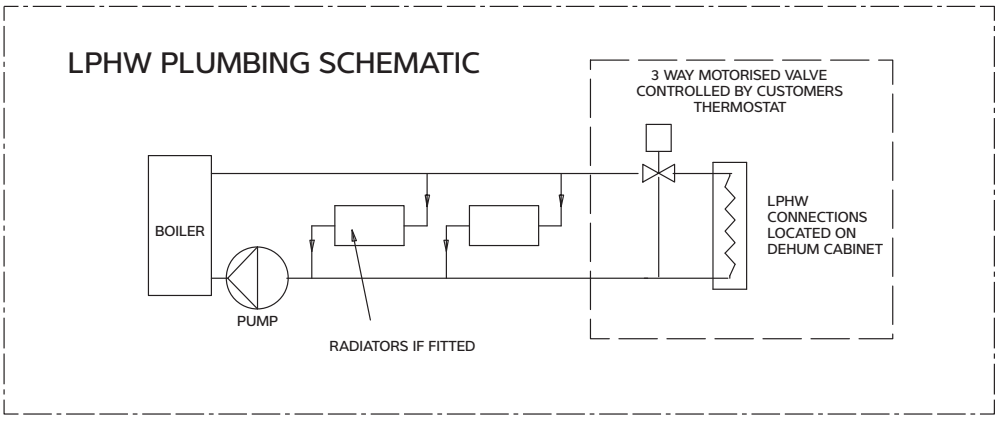
Return – top connection

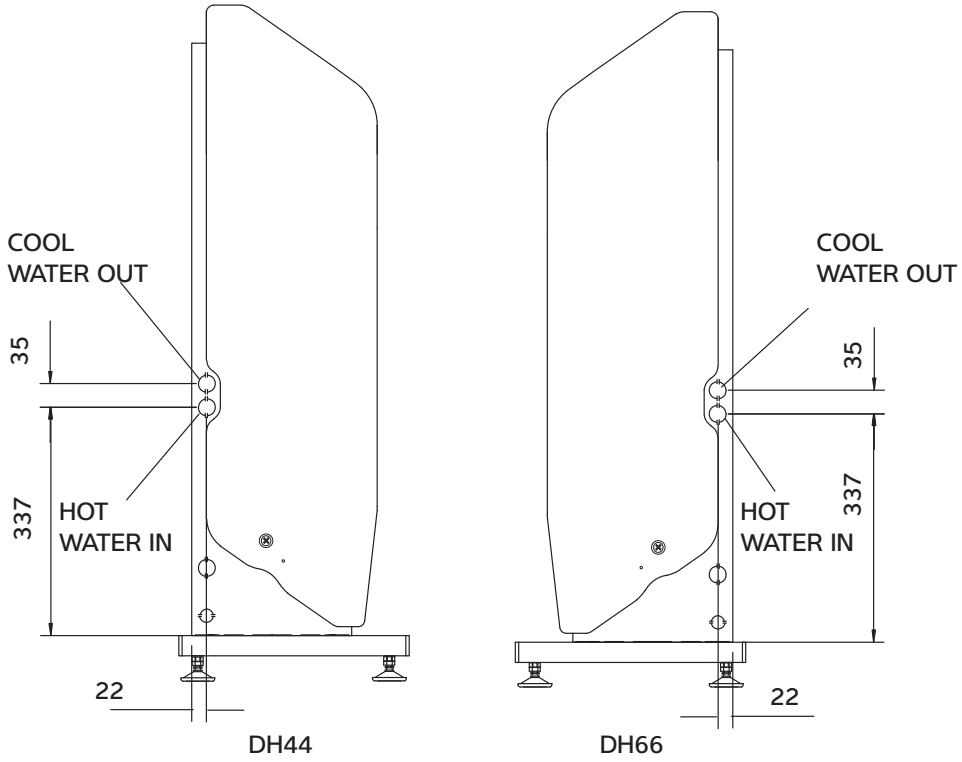
The 3 way, motorised, diverting valve fitted to machines with the LPHW option is operated by a remote 12V AC air temperature thermostat (available from Calorex).

When the valve is energised the flow is through the LPHW coil.

When the valve is unenergised the flow is diverted.

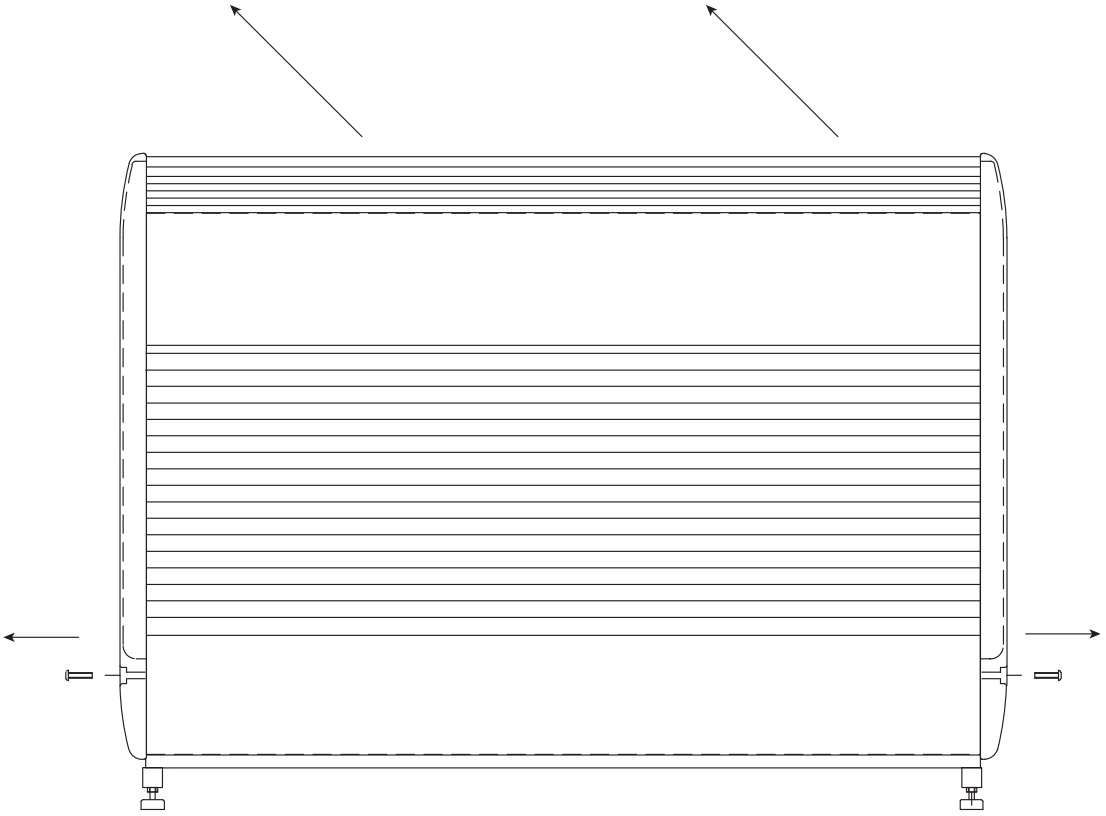
NOTE :– When the fan switch is set to cycle and the fan is not running, a demand on the LPHW valve will cause the fan to automatically start.





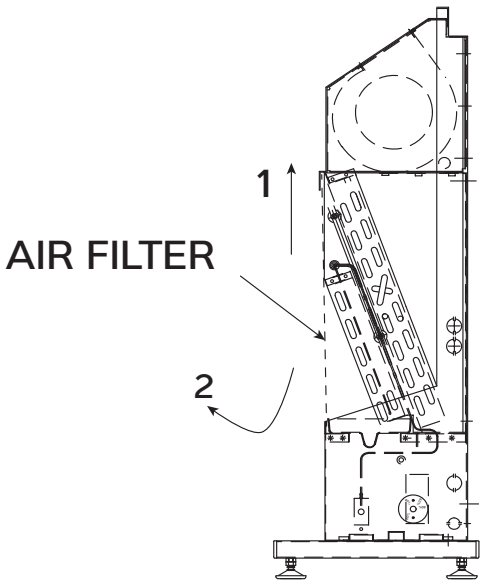
LPHW INLET AND OUTLET POSITIONS

4.3 OPTIONAL AIR FILTER



The optional air filter is situated behind the front covers, in front of the evaporator fins and is accessed by removing the covers. Undo the screw in each side moulding and lift off covers. This should only be done with the power turned OFF.

From time to time it may be necessary to remove the filter for cleaning purposes. All that is needed to clean the filter is to remove it and wash it in warm soapy water. Reinstall the filter when dry.



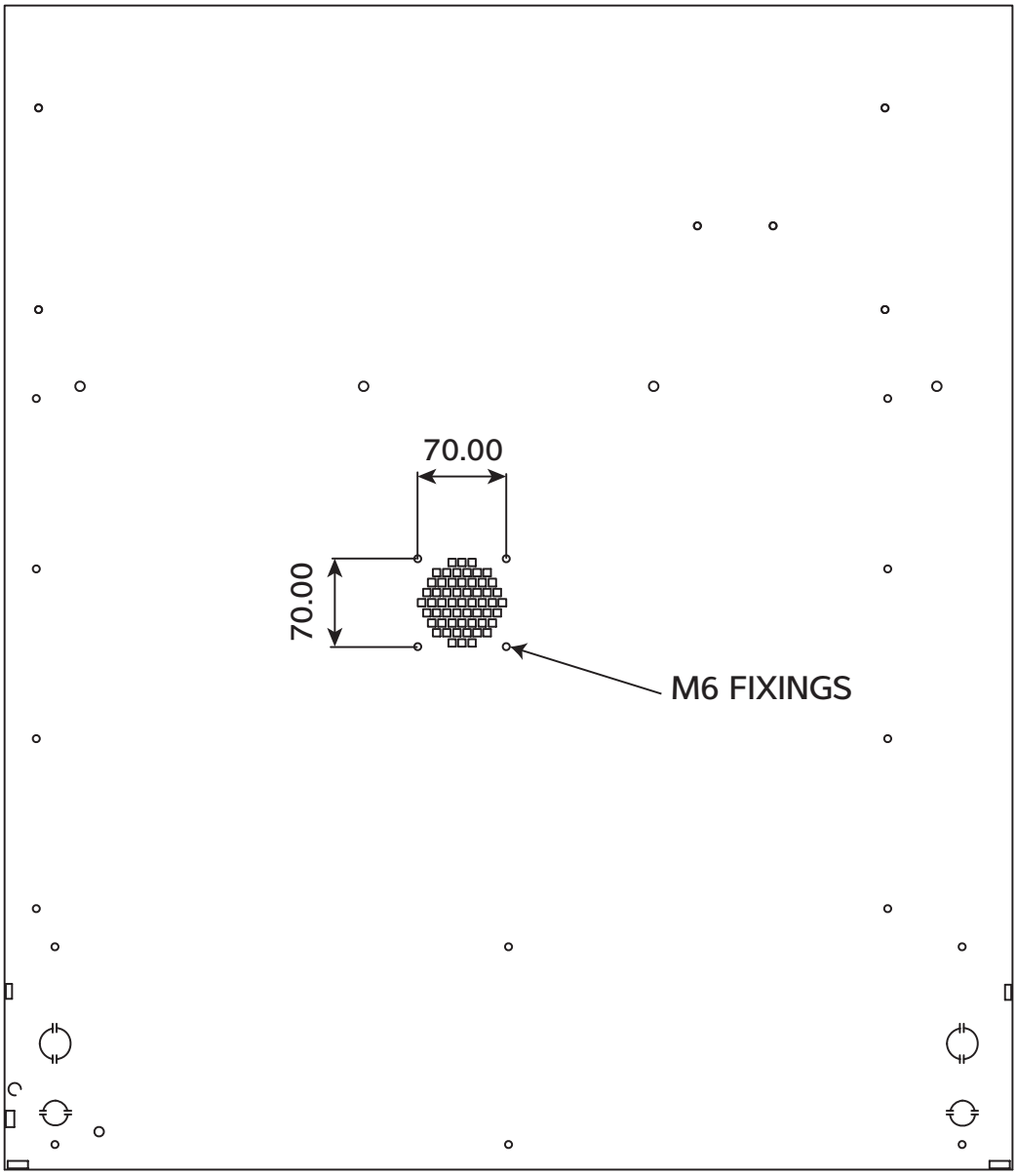
AIR FILTER SIZES

DH44	DH66
780 x 430	1240 x 430
SD264655	SD264656

4.4 FRESH AIR FEATURE

The facility to draw fresh air through the dehumidifier is incorporated into the design.

After removing the blanking plate, a suitable spigot may be attached to the back of the dehumidifier.



DH44 STYLE DEHUMIDIFIER SHOWN

5.1 OPERATION

A normal humidistat setting of 50-60% RH, marked on the dial provided.

Minimum air temperature DH44/66A is 15ºC

Minimum air temperature DH44/66AX is 0ºC

Note on "X" models fan stops during defrost.

On models with LPHW, fans will start automatically as required.

5.2 SERVICE NOTES

Maintenance

a. Ensure air inlet/outlets are kept clean. Air filters are available.

b. Wipe clean with a damp cloth or cleaning fluid suitable for polyeurethane.

Cleaning

The evaporator and the condenser will need to be cleaned occasionally with a soft brush. It is also necessary to check if the driptray and the condensate drain contain any dirt which may impair satisfactory operation. Calorex recommends that the maintenance should be done annually by a specialised dealer.

Note The reply paid warranty registration card must be returned to ensure the correct warranty is given. If you do not find a registration card with your machine please contact the CALOREX service department giving your name, address, and the serial number of your machine. A card will then be sent to you for your completion.

Health and Safety

As the Heat Pump contains electrical and rotational equipment, it is important that ONLY competent persons carry out any work on this type of machine (see warranty).

Before opening the unit you must ensure that the mains supply is isolated

Machine not running at all

Check the following:

Is the supply switched on?

Is the supply fuse healthy?

Turn the humidistat dial fully anti-clockwise.

Check the air inlet and oulet for obstructions.

If, after carrying out the above and waiting 1 hour the machine does not start phone for service.

Machine Fan only running

Turn humidistat dial fully clockwise

Check air inlet and oulet for obstructions, if after waiting 30 minutes the machine does not start phone for service.

Water leaking from base of unit

Check connection from machine to drain for blockages and clear accordingly, check fall is adequate.

Check that machine is both vertically and horizontally level.

The user checklist should be carried out before initiating a service call.

Do not attempt to interfere with any internal control setting as these have been factory calibrated and sealed.

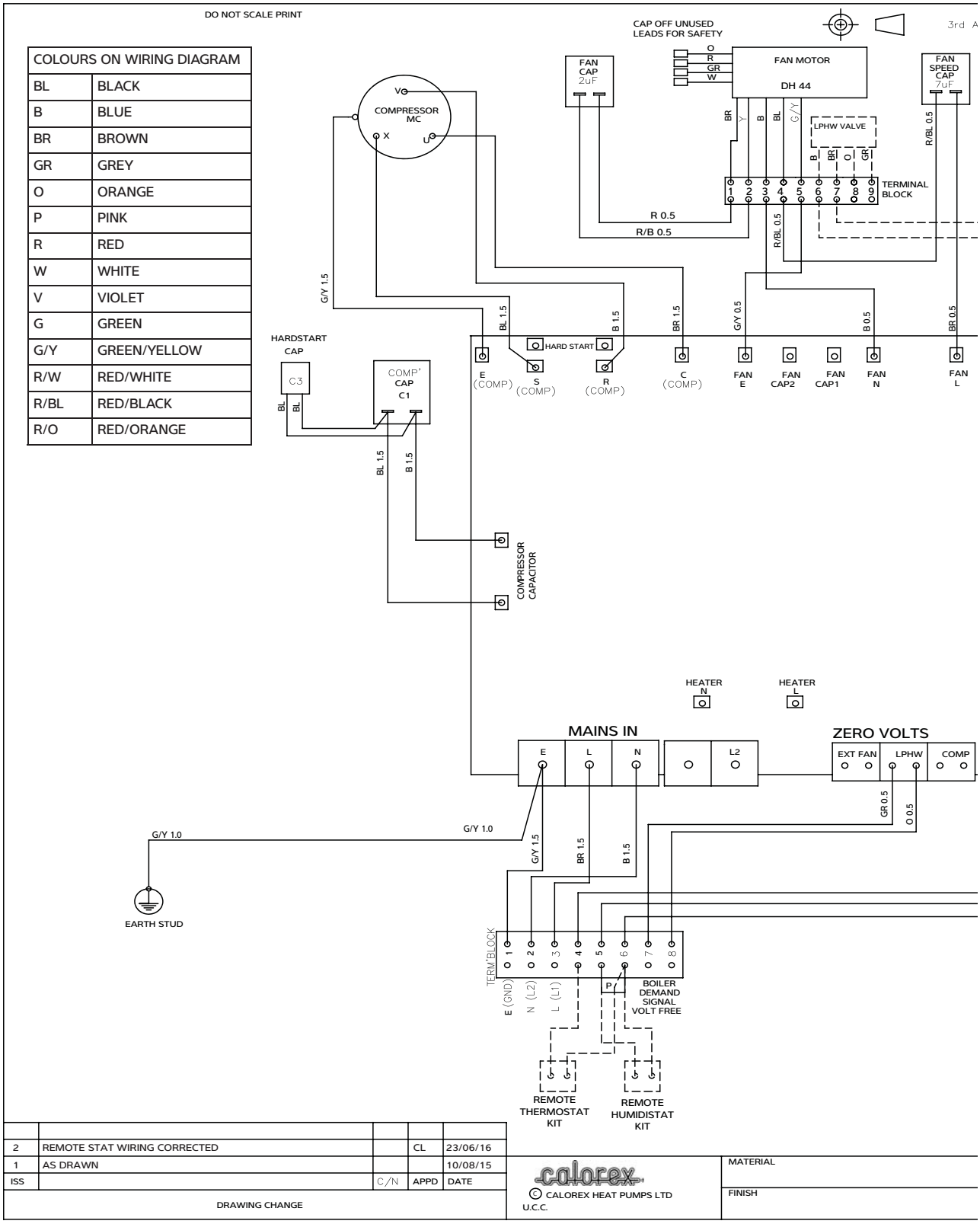
Any sign of abnormal operation such as water dripping should be reported immediately to an installer or Calorex.

6.0 TECHNICAL DATA

MODEL		DH44A/AX	DH66A/AX
DEHUMIDIFICATION	l/hr	1.25	2.41
	l/day	30.0	58.0
TOTAL HEAT TO AIR:			
DEHUMIDIFIER ONLY	kW	1.6	3.0
DEHUMIDIFIER & LPHW	kW	4.9	8.8
LPHW ONLY	kW	3.3	5.8
NOMINAL POWER CONSUMED:-			
FAN ONLY	kW	0.04	0.07
DEHUM' (COMP & FAN)	kW	0.51	0.98
SUPPLY		230V 50Hz	230V 50Hz
FUSE	AMP	10	13
NOMINAL RUNNING AMPS	AMP	2.6	4.2
FULL LOAD AMPS	AMP	3.5	6.0
COMPRESSOR L.R.A.	AMP	12.0	26.0
AIR FLOW	m^3/h	440	740
NOISE LEVEL @ 3m	dB/A	42	44
LPHW FLOW RATE	l/min	4.8	10.2
LPHW PRESSURE DROP	m hd	3.8	3.4
LPHW VOLUME	l	0.9	1.4
HERMETIC SYSTEM			
REFRIGERANT CHARGE	kg R407c	1.1	1.7
IP RATING		45	45
WEIGHT UNPACKED/PACKED	kg	57/81	74/106

a) These performance figures are based on air @ 30ºC, 60% RH and boiler water @ 80ºC.
b) Humidistat adjustable from 20% to 80%.
c) Minimum air temperature on standard (A) models 15°C.
d) Minimum air temperature on defrost (AX) models 5ºC.
e) Maximum operating conditions air temp 35ºC and 90% RH.
f) R407c Global warming potentail (GWP)1774.
1L/min=0.22gall/min.
1m hd =1.4psi.
1mm Wg =9.8Pa.

7.0 WIRING DIAGRAM

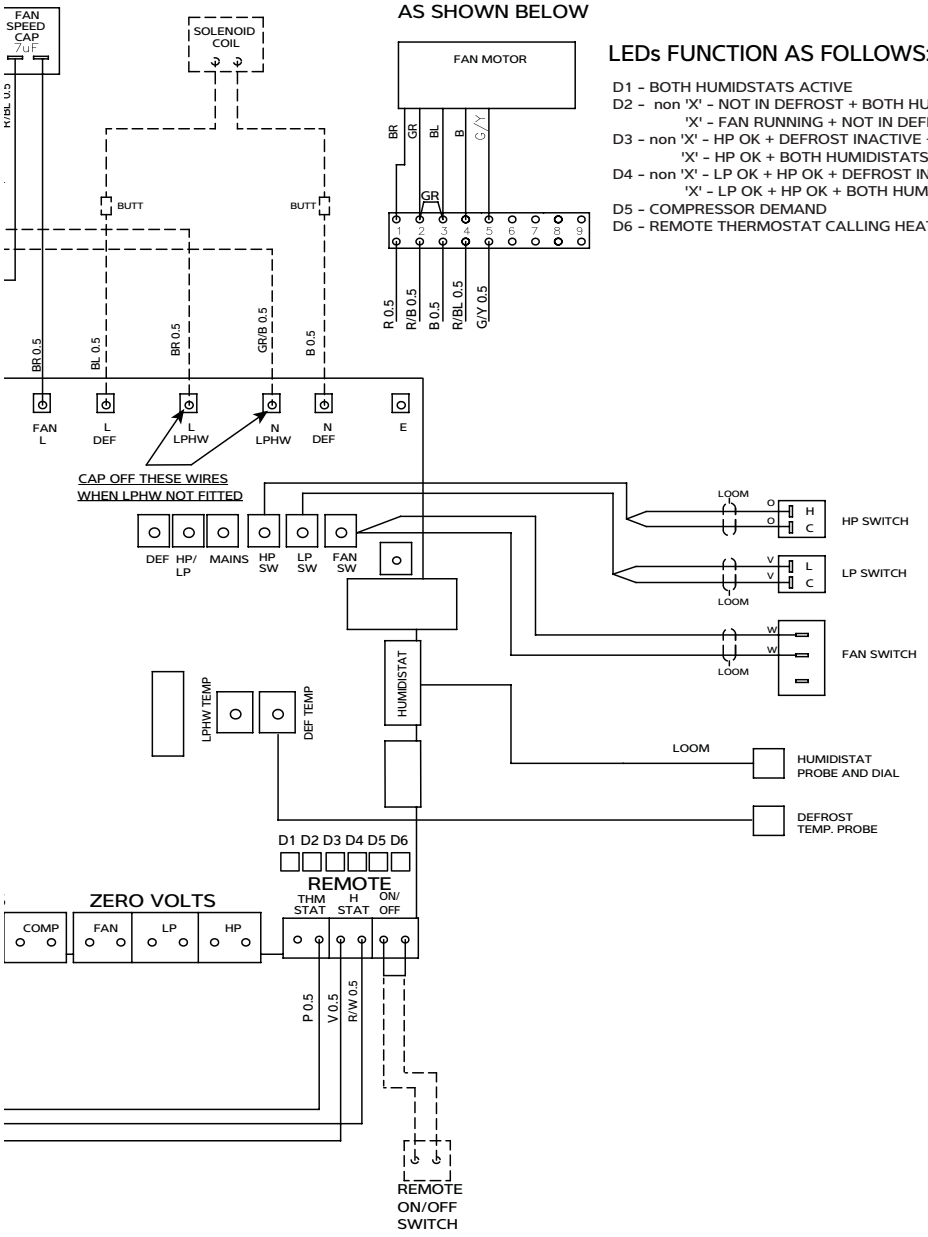


3rd ANGLE PROJECTION

IF IN DOUBT ASK

DRG No. D706950

FOR DH 66 WIRE FANS
AS SHOWN BELOW



LEDs FUNCTION AS FOLLOWS:

D1 - BOTH HUMIDSTATS ACTIVE
D2 - non 'X' - NOT IN DEFROST + BOTH HUMIDSTATS ACTIVE
'X' - FAN RUNNING + NOT IN DEFROST
D3 - non 'X' - HP OK + DEFROST INACTIVE + BOTH HUMIDISTATS ACTIVE
'X' - HP OK + BOTH HUMIDISTATS ACTIVE
D4 - non 'X' - LP OK + HP OK + DEFROST INACTIVE + BOTH HUMIDISTATS ACTIVE
'X' - LP OK + HP OK + BOTH HUMIDISTATS ACTIVE
D5 - COMPRESSOR DEMAND
D6 - REMOTE THERMOSTAT CALLING HEATING

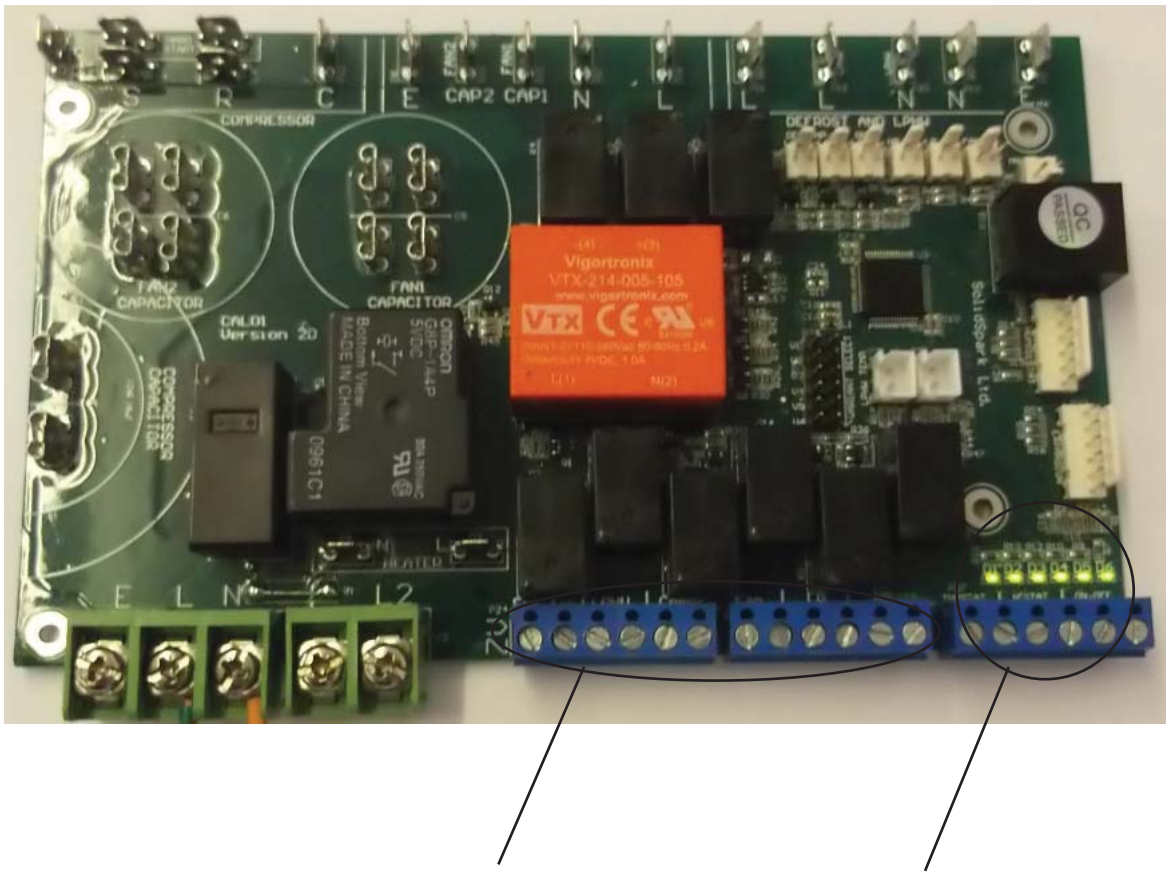
LABEL = 706951 ISS 2

ALL SHARP EDGES AND BURRS TO BE REMOVED

	TOLERANCE UNLESS SPECIFIED	TITLE	SHEET	DRAWN	DATE	SCALE
	HOLES TO BS 4500 E12	DH44/66 A/AX + LPHW	1 OF 1	CL	10/08/2015	1:1
	DIMS mm	DRG No. D706950				

7.1 FEATURES OF THE PRINTED CIRCUIT BOARD

The Printed board, mounted in the Electric Box has six small LEDs in the bottom right hand corner. These illuminate to show different states and marked D1 to D6.



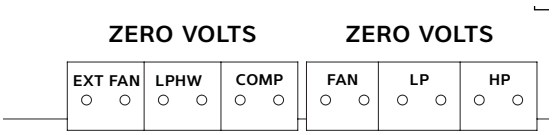
VOLT FREE TERMINALS LEDs HERE

LED	DH44A/DH66A	DH44AX/DH66AX
D1	LED D1 IS LIT IF THE INTERNAL HUMIDISTAT IS CALLING FOR DEHUMIDIFICATION AND THE REMOTE HUMIDISTAT SWITCH IS CLOSED.*	
D2	LED D2 IS LIT IF THE DEHUMIDIFIER IS NOT IN DEFROST AND BOTH HUMIDSTATS ARE ACTIVE	LED D2 IS LIT IF THE FAN IS RUNNING AND THE DEHUMIDIFIER IS NOT IN DEFROST
D3	LED D3 IS LIT WHEN THE HP SWITCH IS CLOSED, THERE IS NO DEFROST THE MACHINE IS CALLING FOR DEHUMIDIFICATION AND THE REMOTE HUMIDISTAT SWITCH IS CLOSED.	LED D3 IS LIT WHEN THE HP SWITCH IS CLOSED, AND THE MACHINE IS CALLING FOR DEHUMIDIFICATION AND THE REMOTE HUMIDISTAT SWITCH IS CLOSED.
D4	LED D4 IS LIT WHEN THE LP AND HP SWITCHES ARE CLOSED, THERE IS NO DEFROST. THE MACHINE IS CALLING FOR DEHUMIDIFICATION AND THE REMOTE HUMIDISTAT SWITCH IS CLOSED.	LED D4 IS LIT WHEN THE LP AND HP SWITCHES ARE CLOSED, THE MACHINE IS CALLING FOR DEHUMIDIFICATION AND THE REMOTE HUMIDISTAT SWITCH IS CLOSED.
D5	LED D5 IS LIT IF THE DEHUMIDIFIER IS ASKING FOR THE COMPRESSOR TO BE RUNNING.	
D6	LED D6 IS LIT IF THE REMOTE ROOM THERMOSTAT IS CALLING FOR HEATING.	
*THE REMOTE HUMIDISTAT IS CONSIDERED TO BE ACTIVE WHEN THE WIRE LINK IS FITTED TO TERMINALS 5 AND 6 ON THE TERMINAL BLOCK SEE THE WIRING DIAGRAM		

VOLT FREE TERMINALS

Six pairs of Volt Free terminals are present on the printed circuit board. Five of them can be used to connect the DH44/66 to a BMS system or to lamps to monitor the status of the dehumidifier.

The Maximum Inductive Load for these connections is 3A.



Compressor running.

Zero volt connection is closed when the compressor is running.

Fan running.

Zero volt connection is closed when the fan is running.

LP Fault.

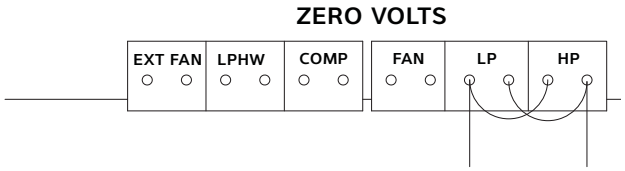
Zero volt connection is closed when the Low Pressure switch is open.

HP Fault.

Zero volt connection is closed when the High Pressure switch is open.

If a volt free common fault is required for the LP and HP switches, they can be linked in parallel. See diagram below.

LPHW



When the Dehumidifier is fitted with an LPHW valve the Zero volt connection is closed when heating is required. Also known as the Boiler Go Signal.

External fan.

Not used on this type of dehumidifier.

8.0 WARRANTY CONDITIONS

The following exclusions apply to the Warranty given by Calorex Heat Pumps Ltd.

No claims will be accepted if :

1. The dehumidifier is incorrectly sized for the application.

2. The dehumidifier is installed in any way that is not in accordance with the current procedures as defined by Calorex Heat Pumps Ltd.

3. The dehumidifier has been worked upon or is adjusted by anyone other than a person authorised to do so by Calorex Heat Pumps Ltd.

4. The air flow through the machine is outside the specified limits.

5. The water flow through the machine is outside the specified limits.

6. The water pH level and/or chemical balance is outside the following limits:

Acidity pH	pH	7.2 - 7.8
Total Alkalinity, as $CaCO_3$	ppm	80 - 120
Total Hardness, as $CaCO_3$	ppm	150 - 250
Total Dissolved Solids	ppm	1000
Maximum Salt Content	ppm	8000
Free Chlorine Range	ppm	1 - 2 Domestic
Free Chlorine Range	ppm	3 - 6 Commercial
Superchlorination	max	30ppm for 24 hrs
Bromine	ppm	2 - 5
Baquacil	ppm	25 - 50
Ozone	ppm	0.9 Max
Maximum Copper Content	ppm	1
Aquamatic Ionic Purifier	ppm	2 Max

7. The dehumidifier has suffered frost damage.

8. The electrical supply is insufficient or in anyway incorrect.

IF IN DOUBT PLEASE ASK.

Note:- The Reply Paid Warranty Registration Card must be returned, to ensure that the correct warranty is given. If you do not find a Registration Card with your Dehumidifier please contact the Calorex Service Department giving your name, address and serial number of your Dehumidifier. A card will be sent to you for completion.

Please give MODEL NUMBER and SERIAL NUMBER of your Dehumidifier when making technical or service enquiries. This will assist in correct diagnosis and ensure service can provide with a minimum delay.

PHONE +44(0)1621 857171 FAX +44(0)1621 850871

Email service@calorex.com Web Site http://www.calorex.com