

**Please read these instructions carefully as they will enable you to get maximum efficiency and reliability from your new Calorex Dehumidifier.**

**Technical Manual  
VARIHEAT VH3  
AA/AW600/900/1200A/BVHXF  
1500BVHXF  
SD437360 iss 41  
21/04/15**

**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 Guarantee).**



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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.**

### **1.0 HOW THE CALOREX 'SERIES 3 VARIHEAT' SYSTEM WORKS.**

The Calorex 'SERIES 3 VARIHEAT' range consists of 4 models: 600/900/1200/1500.

The model number increases in relation to the recirculated air flow from model 600 at 2000 m<sup>3</sup>/h to model 1500 at 4300 m<sup>3</sup>/h.

600 and 900 models are fitted with constant flow fans and deliver the optimum airflow, self compensating for pressure differentials in the system.

All models are fitted with either one or two "console fixing service panels" These allow for the console to be fixed to the Variheat 3. These service panels can be fitted on any face of the machine.

When optional fresh air box is fitted, all models have the facility to exhaust a percentage of the recirculating air and introduce a slightly lesser amount of fresh air (slight differential creates a negative pressure on pool hall to localise pool environment and protect the building fabric).

An optional "negative pressure box" is also available. This exhausts a percentage of the circulating air without introducing fresh air to the pool hall.

Optional, factory fitted frost protection kits are available, for use when the fresh air box is fitted. These kits protect the LPHW from freezing by closing the dampers to min when the ambient temperature is below 6°C. The first kit controls the machine dampers. A second kit controls the machine dampers and also a remote damper fitted by the customer in the installation ductwork.

All AW models are fitted with a fully controlled low pressure hot water air heating battery and a pool water heat exchanger.

Provision is made for an external heat source to be initiated by the 'SERIES 3 VARIHEAT' controller.

All AW models have air and water heat exchangers recovering energy from the refrigerated dehumidification process. These are also fully controlled with priority given to water.

**THE CALOREX 'SERIES 3 VARIHEAT' RANGE.**

**FEATURES :-**

All versions have removable drip trays for easy cleaning.  
 Control panel can be mounted remotely up to a maximum of 20 metre cable length.  
 Models fitted with a fresh air box or a negative pressure box have motor driven louvres on the exhaust and fresh air dampers.  
 Optional electrical resistance air heater boxes ranging from 6kW to 18kW.  
 The power to each model in the range is fed in via din rail mounted terminal blocks located in the electric box of the unit.

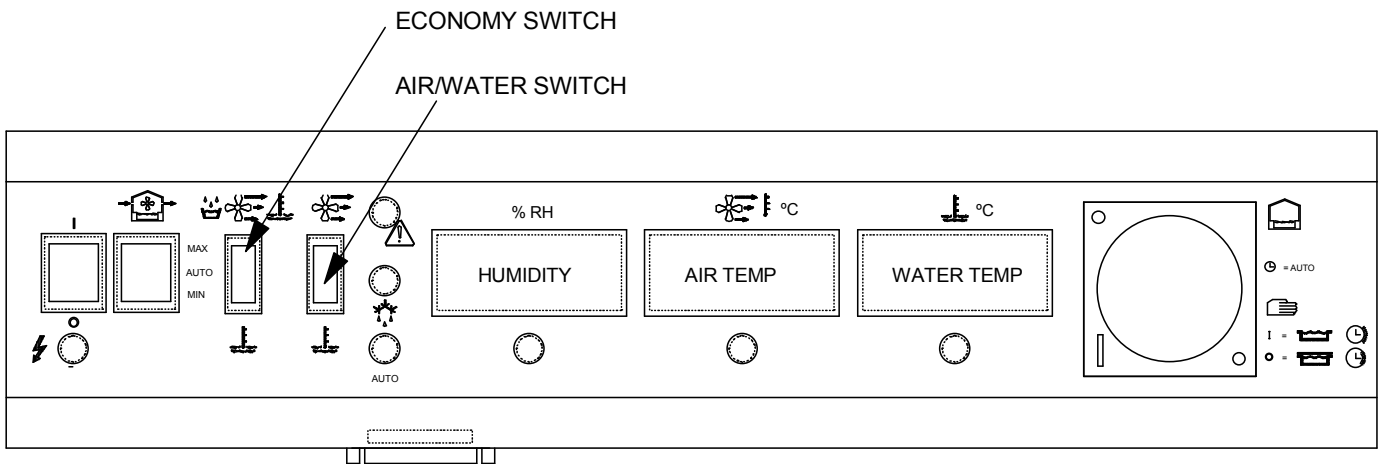
**CONTROL PANEL.** (All Models) Note AA Models do not have a water temperature controller, and do not include a time clock unless fitted with LPHW.

The panel has the following features,

1. Relative Humidity Controller, with red light to indicate dehumidification demand.
2. Air Temperature Controller, with red light to indicate air heating demand.
3. Water Temperature Controller, with red light to indicator water heating demand.
4. Fresh Air Switch, with MAX, AUTO and MIN positions (for use with fresh air module or negative pressure box).
5. Economy Switch to select between water heating only or full function on AW versions.
6. On/Off Switch. NOTE with the switch in the OFF position the machine is still live and mains lamp and clock are energised.
7. Air/Water switch, can be set to give priority to either water heating or air heating.
8. Time clock to control "occupied/unoccupied" timings with battery 'back up' and manual override.
9. Indicator lights :-

- Power on
- Fault
- Defrost
- Auto
- Dehumidification
- Air heating
- Water heating (if applicable).

**CONTROL PANEL** (AW version shown, see section 3.0)



## 1.1 OPERATION

When the SERIES 3 VARIHEAT is connected to the mains supply via an isolator and the isolator is energised, the MAINS light on the side of the electric box will illuminate indicating mains ON and time clock will start to run. The time clock has a battery reserve fitted which when charged will run for 100 hours so that isolating the machine for short periods will not affect the time clock settings.

The SERIES 3 VARIHEAT unit is switched on to normal operation by an ON (I)/OFF (O) switch on the control panel. When switched on the red indicator light will illuminate and digital controllers will light up. Note digital water controller will be the only controller to light up when in economy mode.

Providing that the controls are set to the correct parameters; nominally 60% RH, 28°C air temperature, 26°C water temperature and fresh air switch set to AUTO, then the machine will operate automatically. The 'unoccupied' temperature is set on the digital air controller and will be switched at the time set on the time clock.

As the unit operates, the indicator lights will show the state of the control conditions, ie dehumidification, heat to air and heat to water.

Other indicator lights are :-

Yellow for Fault (high or low refrigerant trip or soft start fault if fitted).

Yellow for Defrost

Green to indicate automatic operation.

See section 3.0 for control panel symbols.

### PARAMETER CONTROLLERS

Each parameter, Relative Humidity, Water Temperature and Air Temperature is sensed within the machine and the signal is taken to the relevant digital controller.

RH & Water Temperature controllers have two switching channels, also the Air Temperature controller for AA units without room heating:

OUT1 which is set from the front panel, OUT2 which is factory pre-set.

The Air Temperature digital controller for units with room heating has three switching channels, one of which is for setting OCCUPIED/UNOCCUPIED air temperature.

Each channel has a switching differential which is also factory pre-set. None of the factory settings should be tampered with.

When the re-settable channel is adjusted all other settings and differentials automatically follow at the correct relationship.

Nominal set point values & diffs	RH%	=	60%	diff	3%
	Air temperature	=	28°C	diff	0.5 °C
	Water temperature	=	26°C	diff	0.2 °C

Please note: on AA machines with no fresh air box or RCU, in occupied mode dehumidification stops once the Air temperature is 2.5°C above set point.

### TIME CLOCK

The time clock setting determines the OCCUPIED/UNOCCUPIED periods and is set to match the operators requirements regarding opening and closing times for the pool and possible times where the pool is covered. The two settings are OCCUPIED or day time, and UNOCCUPIED or night time (covered).

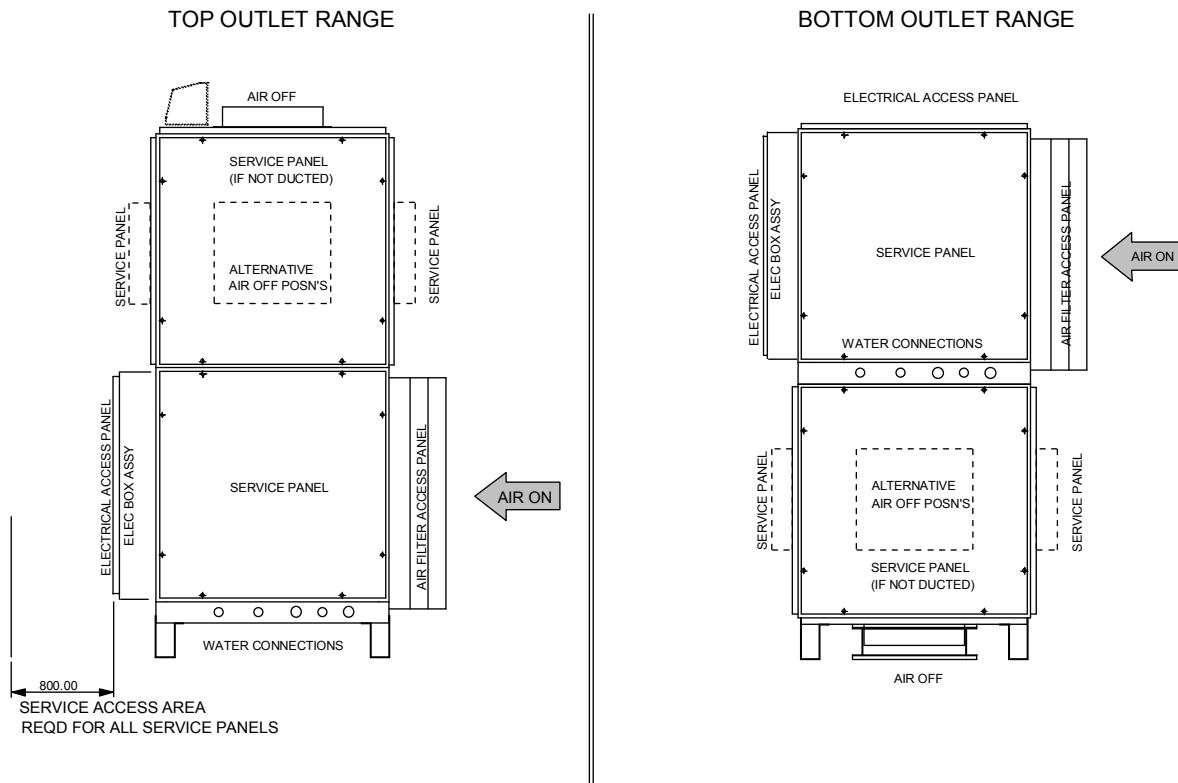
The most obvious action of this change is to lower the pool hall air temperature to a determined level to conserve air heating energy. This lowering of temperature is allowable because of the quiescent, and ideally covered, condition of the pool.

Pool water occupied      I =        (no pool cover)

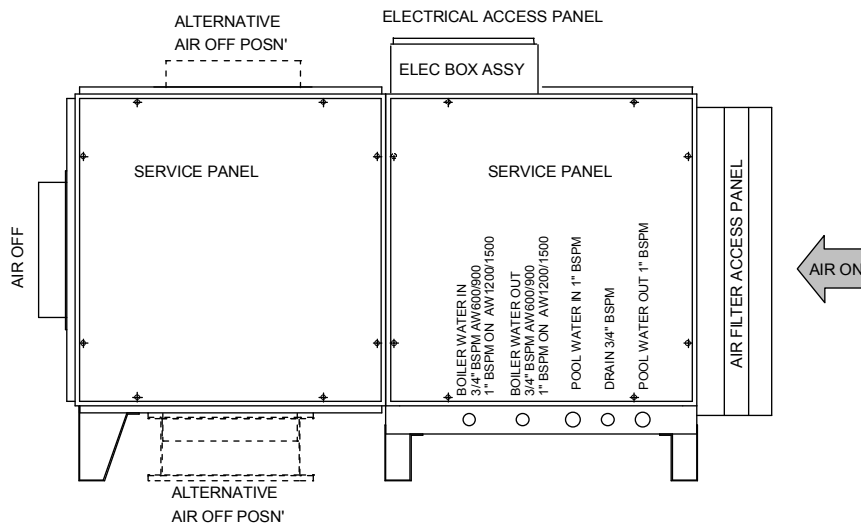
Pool water unoccupied      O =        (pool covered)

## 2.0 INSTALLATION

### SITING, MACHINE LOCATION



### HORIZONTAL RANGE



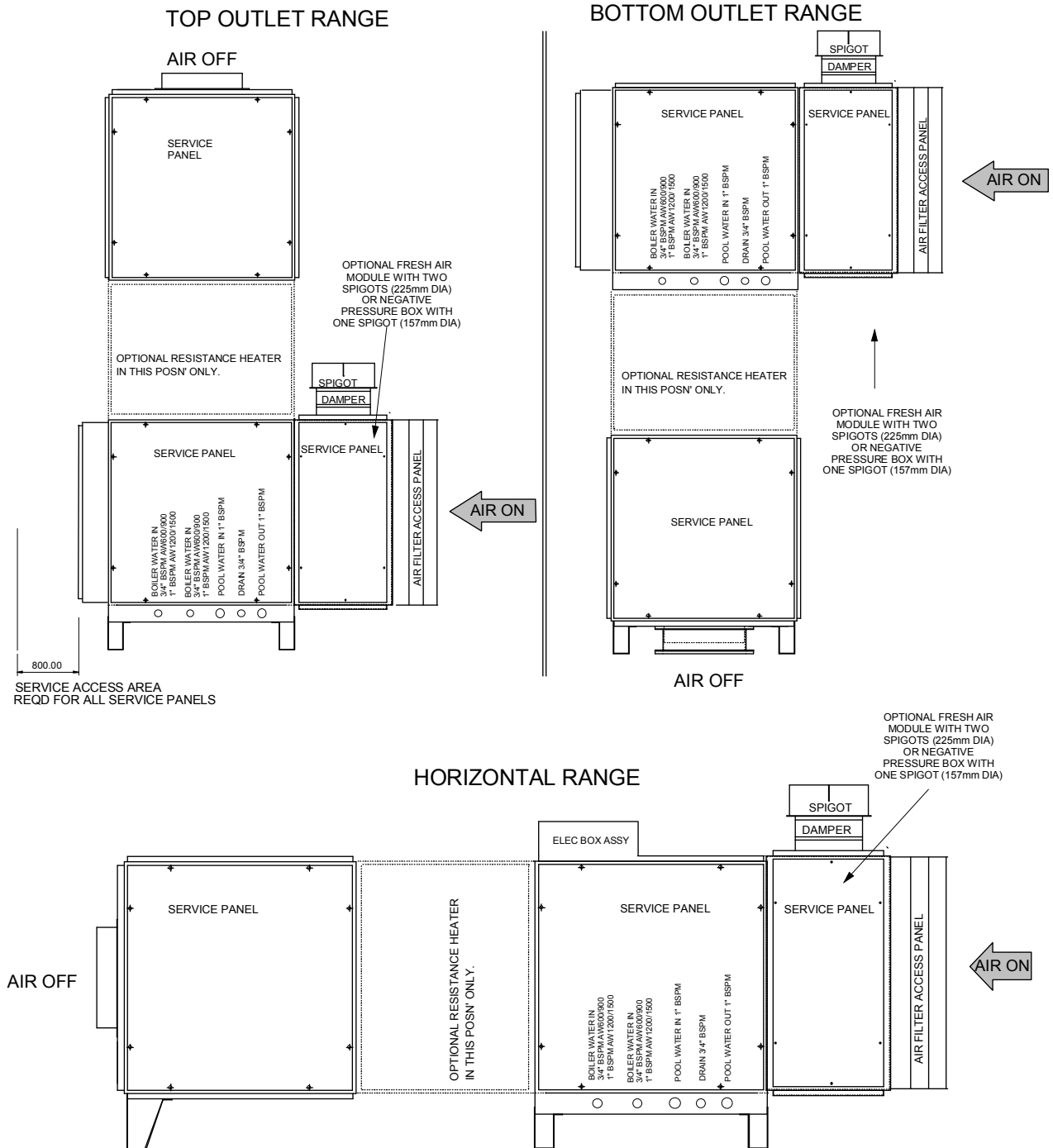
If unit is located in a plant room at pool hall air temperatures, any ambient air ducting must be heavily insulated. Recommend fresh air/exhaust spring return dampers to be fitted to ductwork for sub zero ambient applications in case of power failure.

**IMPORTANT - 600 and 900 models are fitted with constant flow fans and deliver the optimum airflow, self compensating for pressure differentials in the system.**

**On 1200 and 1500 models ensure duct work pressure drop does not exceed resistance given in data sheet. Damper plates fitted on side of fan CAN be removed if ducting is fitted but fan amps MUST be verified to be as per data sheet fan amps with dry coils, clean air filter and all panels fitted.**



## 2.0 INSTALLATION WITH OPTIONAL FEATURES

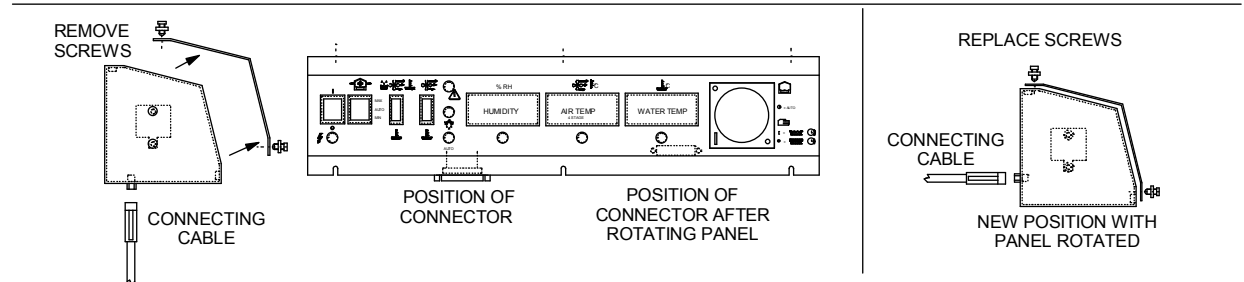
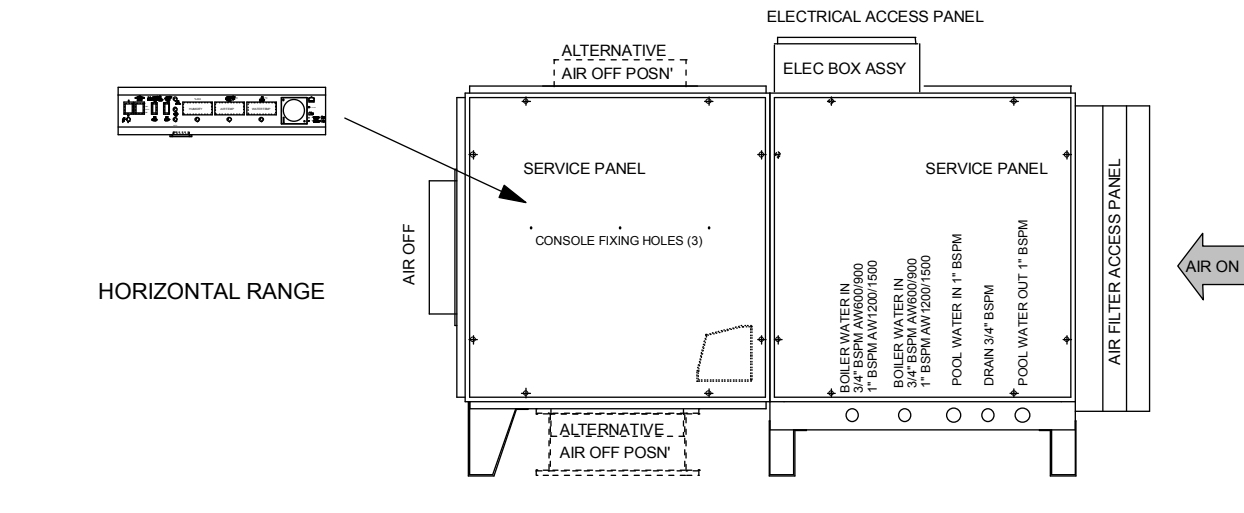
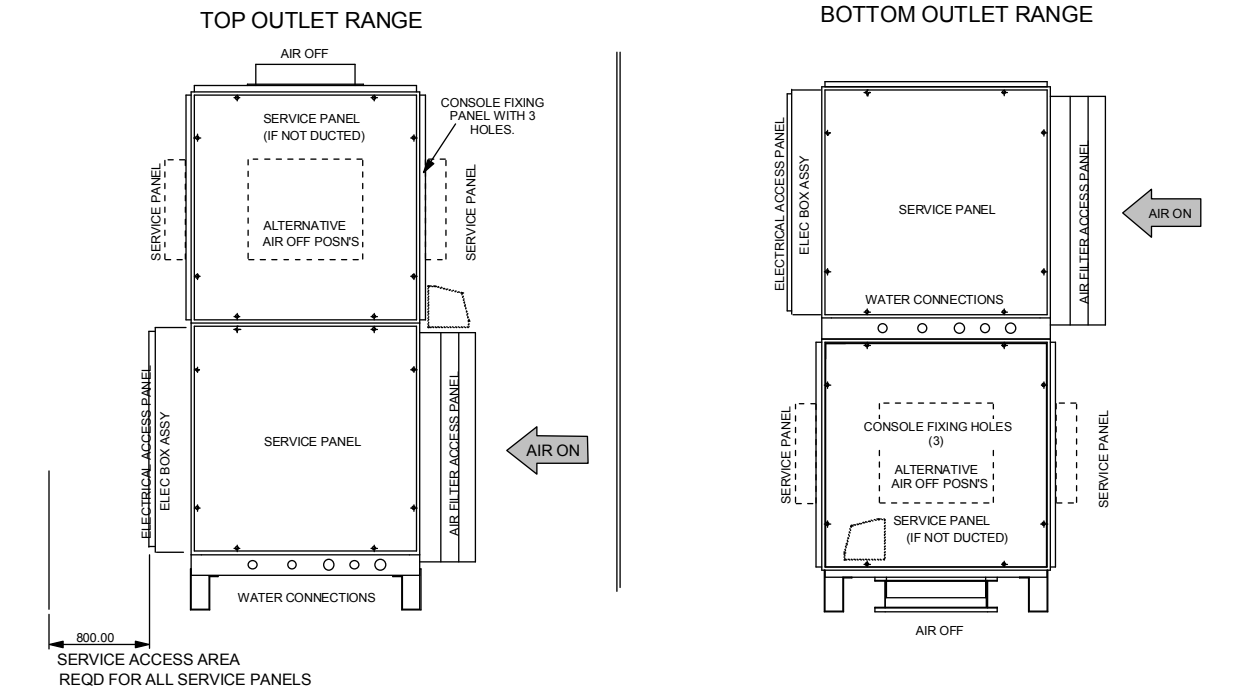


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**On 1200 and 1500 models ensure duct work pressure drop does not exceed resistance given in data sheet. Damper plates fitted on side of fan CAN be removed if ducting is fitted but fan amps MUST be verified to be as per data sheet fan amps with dry coils, clean air filter and all panels fitted.**

## 2.0 CONSOLE FIXING



The Variheat 3 is designed with interchangeable service panels.

On delivery, a console fixing service panel is fixed in the position shown in the diagrams above. The console for the Variheat 3 will either be attached to the machine above the air filter access panel or located inside the Variheat 3 fan box. The console can be attached to the Variheat 3 as instructed below.

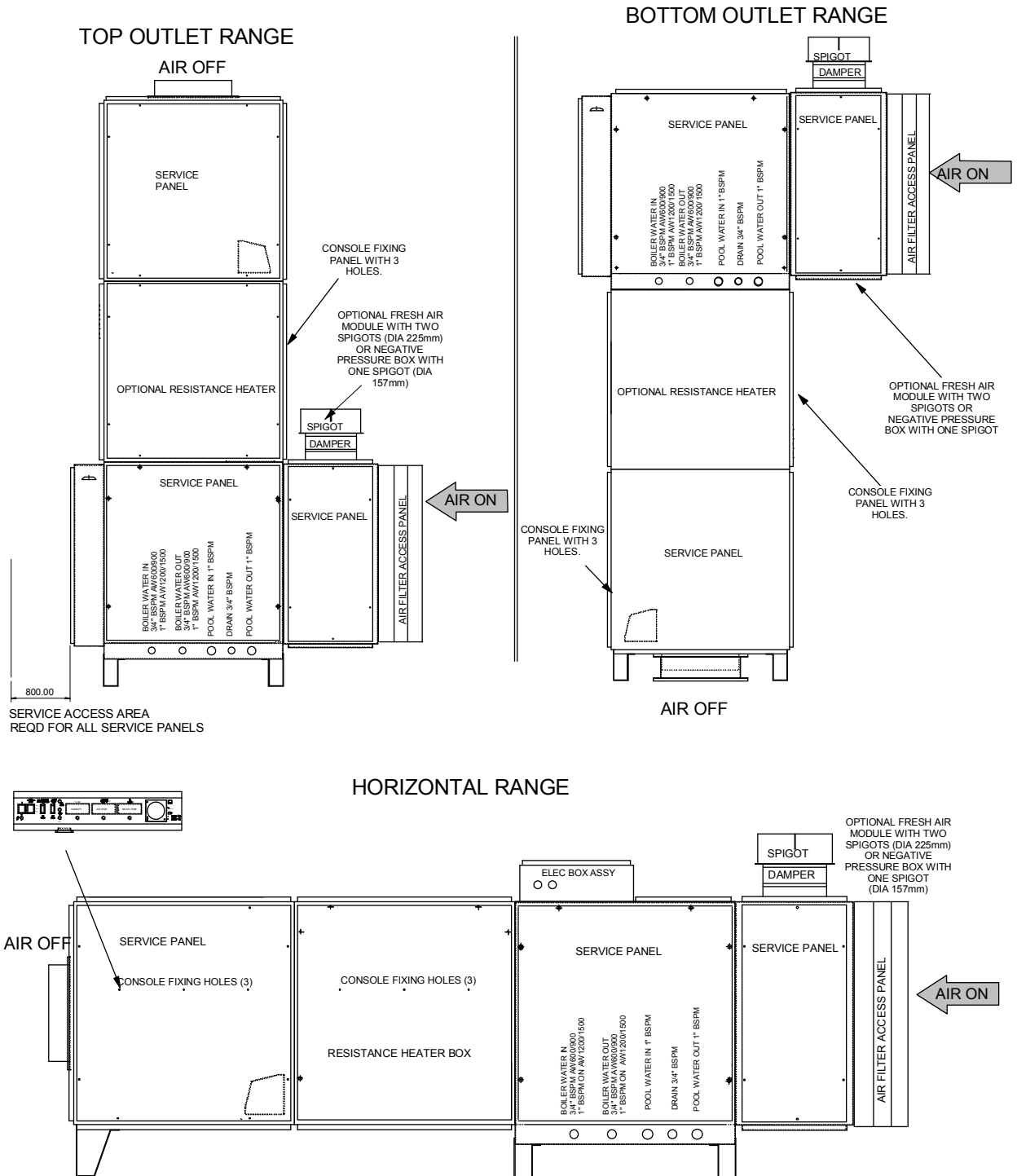
1. Fix the 3 self tapping screws provided into the 3 holes in the console fixing service panel. (Indicated by a label). Leave a small gap.

2. The console drops over the screws.

Note: It is best to have the console panel close to the electric box, as once the console is fixed to the Variheat 3 the ribbon cable connector supplied with the Variheat 3 needs to be connected between the console and the electric box. The connector on the console is at the bottom.

If the console is to sit on a shelf, the back panel on the console can be turned round. Remove the 6 fixings attaching the display to the back panel. Turn the panel round to that the connector points out of the back of the panel and replace the fixings. See sketch above.

## 2.0 CONSOLE FIXING, VARIHEAT 3 WITH OPTIONAL FEATURES



The Variheat 3 is designed with interchangeable service panels.

On delivery, two console fixing service panels are fitted in the positions shown in the diagrams above. The console for the Variheat 3 will be inside the Variheat 3 fan box. Attach the console to the Variheat 3 console fixing panel selected as instructed below.

1. Fix the 3 self tapping screws provided into the 3 holes in the console fixing service panel. (Indicated by a label). Leave a small gap.
2. The console drops over the screws.

Note: It is best to have the console panel close to the electric box, as once the console is fixed to the Variheat 3 the ribbon cable connector supplied with the Variheat 3 needs to be connected between the console and the electric box. The connector on the console is at the bottom.

See the sketch on the previous page for instructions on how to rotate the console back panel.

## 2.1 PLUMBING

### POOL WATER

The Calorex 'SERIES 3 VARIHEAT' should be connected as shown in section 3.0.

If an existing heater is being retained then the 'VARIHEAT' should be connected between the filter and the existing heater.

Pool water connections on the machine are 1" BSPM stubs.

The unit is supplied with 2 off each of the following PVC fittings - 1" BSPFx 1"M  
1"F x 1½"M  
1½" x 50mm F

Suitable breakable couplings, isolation, and drain down valves should be installed in the pool water inlet/outlet pipes local to 'VARIHEAT' unit.

The heat exchanger in the 'VARIHEAT' unit will, on small pools, take the full flow rate of the recirculation system. On larger pools a bypass or separate auxiliary pump may be necessary. This method can also be used to reduce energy consumption, by the installation of a two speed or auxiliary pump by-passing the main pump/filter to satisfy pool water heating and dehumidification without the need for the main pump to be running.

When the pipework installation is complete the circulating pump should be switched on and the system checked for leaks. Also check the filter gauge to see that there is not excessive back pressure.

### CONDENSATE DRAIN

The condensate driptray in the 'VARIHEAT' unit collects the water removed by the dehumidification process, It is therefore necessary to ensure that the 'VARIHEAT' unit is placed on a level plinth so that the condensate can run away and not overflow the edges of the driptray inside the machine.

All 'SERIES 3 VARIHEATS' have a 3/4" BSPM threaded condensate drain connection. The drain pipe should run away with adequate fall to waste ie 1/2" per foot min. and must incorporate a 'U' trap & tun dish.

### BOILER PLUMBING

The boiler connections on the machine are :-

3/4" BSPM on AW600/900

1" BSPM on AW1200/1500

for connecting the boiler water flow and return.

Suitable breakable couplings, isolation, and drain down valves should be installed in the boiler water flow and return pipes local to the 'VARIHEAT' unit.

Water and air LPHW circuits internal to Calorex Heat Pump should be bled for air pockets. (Bleed valves fitted to unit).

Refer to the boiler manufacturers instructions before designing the pipework system.

### IMPORTANT GENERAL CONDITIONS

1. Do not route water pipes across service access panels or air inlet/outlets.
2. The water circuits to and from the 'VARIHEAT' unit should be capable of maintaining the specified water flow limits required by the machine.
3. All pipe work must be adequately supported with allowance for expansion and contraction especially with regard to the plastic pipe work.
4. It is recommended that when installing water systems the last connections to be made should be adjacent to the 'VARIHEAT' unit to avoid undue stresses on the unit connections.
5. All pool purifying devices and chemical injection systems must be fitted down stream of the 'VARIHEAT' unit with a non-return valve to prevent concentrated chemicals back feeding into the heat exchangers.
6. The practice of dosing chemicals direct into skimmer basket must not be allowed as this would result in concentrated corrosive liquids passing over vulnerable metal components.
7. Water quality must be maintained not only relating to solids, etc but for pH between 7.4 - 7.8, and if pool water is saline at a maximum concentration of 8mg/litre.
8. See Warranty Exclusions section 6.0 for total list of water quality limits.

## 2.2 DETERMINING WATER FLOW

### Flow Meter Method (see pool water schematics)

Ensure isolation valves 'A' and 'B' and bypass valve 'C' are fully open. Slowly close down bypass valve 'C' until correct flow rate is shown on the flow meter (see section 4.0).  
Remove handle and lock off valve 'C'.

### Differential Pressure Method

By simply installing two filter pressure indicating gauges, one on the inlet and one on the outlet of the heat pump, and a locking type gate bypass valve in the bypass line, the flow rate through the heat pump can be accurately determined by the difference in the readings of the gauges. This pressure drop is proportional to flow.

Flow rate should be set at the maximum differential with a clean filter fitted, this differential pressure will drop as the filter becomes dirty. Provided the filter is cleaned before the minimum differential is reached then no problems should be encountered (standard system only)

### Setting up the differential

When the installation is complete, the procedure for setting the flow rate through the heat pump using two gauges is as follows :-

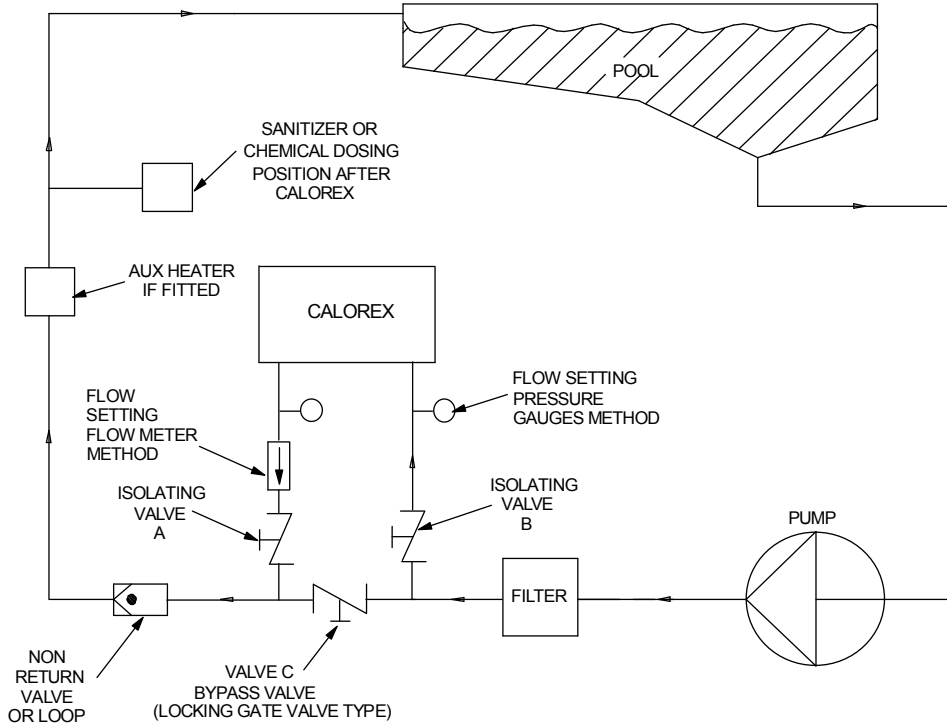
1. With the heat pump switched off, ensure isolation valves 'A', 'B' and bypass valve 'C' are fully open.
2. Switch on water circulating pump.
3. Note the water system pressure on both gauges - they should read the same, but because of manufacturing tolerance they may read different.

For example :- with a water system pressure of 5mhd the gauge on the inlet may read 5 and the outlet gauge 5.5 therefore there is a static error difference of 0.5mhd.

4. Gradually close the bypass valve 'C' until there is a difference in pressure between the two gauges that is equal to the required pressure drop (see section 4.0) observing any static error on the gauges before beginning this process.
5. Lock the bypass valve, or render it tamper proof when correct setting is achieved.
6. See section 4.0 for correct pool water pressure drop.

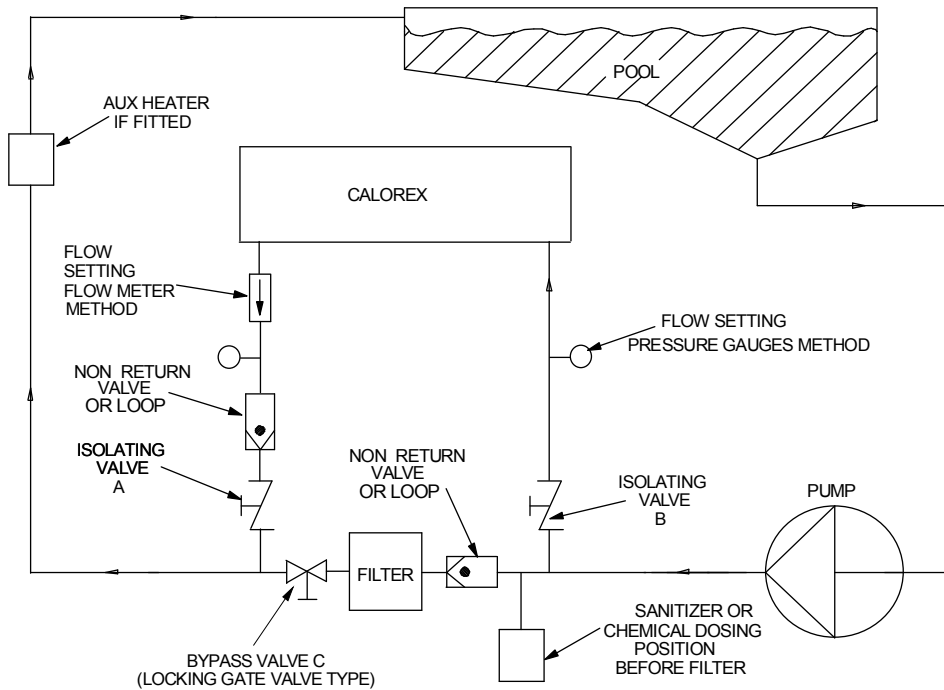
## POOL WATER SCHEMATIC (STANDARD)

ENSURE POOL FILTRATION PUMP SELECTION ALLOWS FOR ALL SYSTEM RESISTANCE



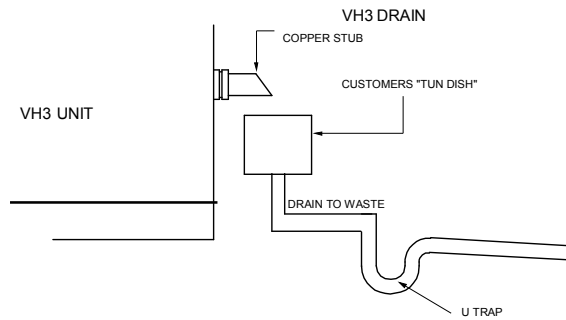
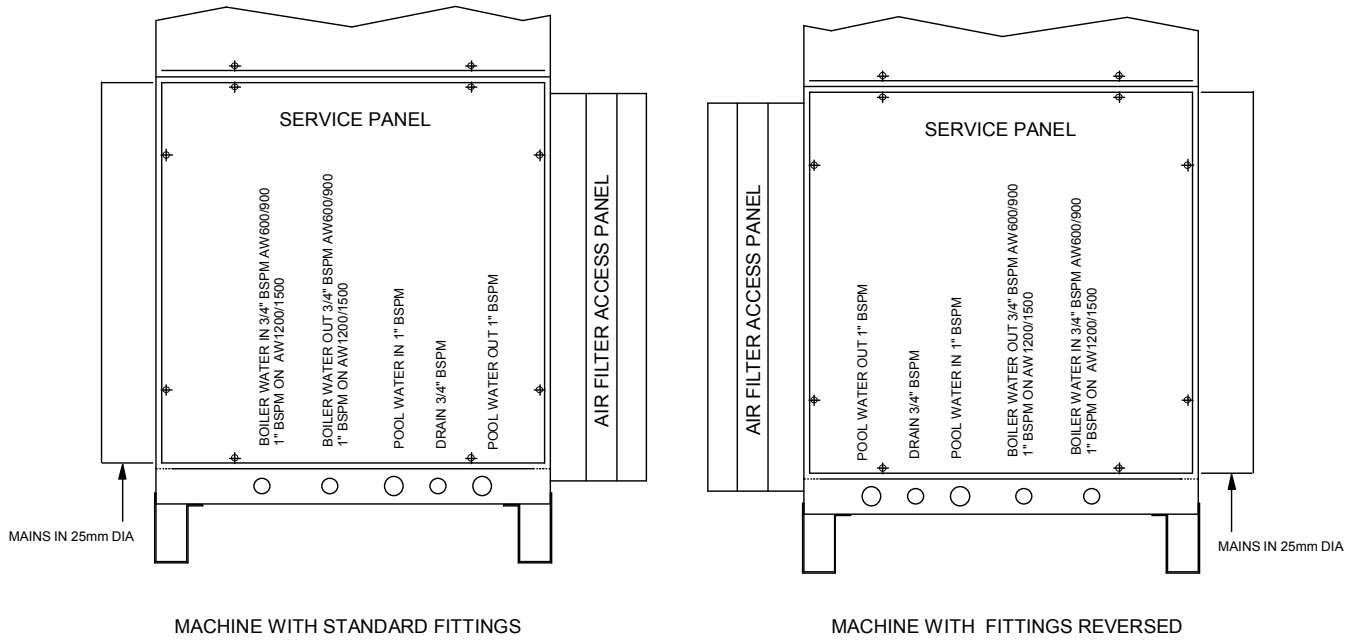
## POOL WATER SCHEMATIC (FILTER DOSING)

ENSURE POOL FILTRATION PUMP SELECTION ALLOWS FOR ALL SYSTEM RESISTANCE

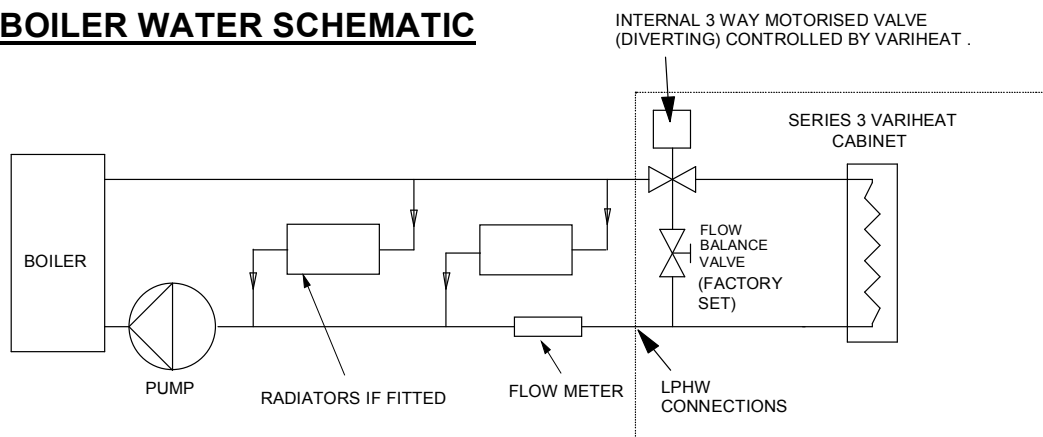


## 2.3 WATER CONNECTIONS

(also see SECTION 2.1)



### BOILER WATER SCHEMATIC



## 2.4 ELECTROLYTIC CORROSION IN SWIMMING POOLS

Electrolytic corrosion will occur when dissimilar metals that are in contact with each other create a potential difference between themselves. Sometimes separated by a conductive substance known as an electrolyte, the dissimilar metals will create a small voltage (potential difference) that allows the ions of one material to pass to the other. Just like a battery, ions will pass from the most positive material to the more negative material.

Anything more than 0.3 volts can cause the most positive material to degrade.

A swimming pool with its associated equipment can create this effect. The pool water being an ideal electrolyte and components of the filtration circuit, heating system, steps, lights etc providing the dissimilar metals needed to complete the circuit.

Whilst these small voltages are rarely a safety threat, they can create premature failure through corrosion. Not dissimilar to corrosion through oxidation, electrolytic corrosion can cause complete failure of a metallic material in a very short period of time.

In order to prevent this type of corrosion all metallic components in contact with swimming pool water should be bonded together using 10mm<sup>2</sup> bonding cable. This includes non-electrical items such as metal filters, pump strainer boxes, heat exchangers, steps and handrails. It is highly recommended that bonding be retrofitted to existing pools, which may not be protected by this system.



## 2.5 ELECTRICAL INSTALLATION

### ELECTRICAL SAFETY

It is important to ensure that all aspects of the installation comply with the latest I.E.E. Regulations. It is also important to ensure that any remote devices which terminate within the pool hall are of the type and voltage as specified in the latest I.E.E. Regulations.

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

### PROTECTED SUPPLY

Whilst not mandatory, Calorex recommend that an R.C.C.B. is always fitted or that the supply is to local electricity authority recommendations, and that all ducting is bonded in accordance with these regulations. The supply to the machine should incorporate fuses or motor rated circuit breakers (type GU, FAZC) to specified rating (see data sheet) H.R.C. fuses are recommended. An isolator must be fitted within clear view of the machine and not more than 2 metres away. The isolator must have a minimum of 3mm air gap when in the off position.

### INCONSISTENT ELECTRICAL SUPPLY.

The following limits of operation must not be exceeded if Calorex machines are to be guaranteed either in performance or warranty terms :-

Voltage single phase -	207V min, 253V max
Voltage three phase -	360V min, 440V max
Frequency -	47.5Hz min, 52.5Hz max.

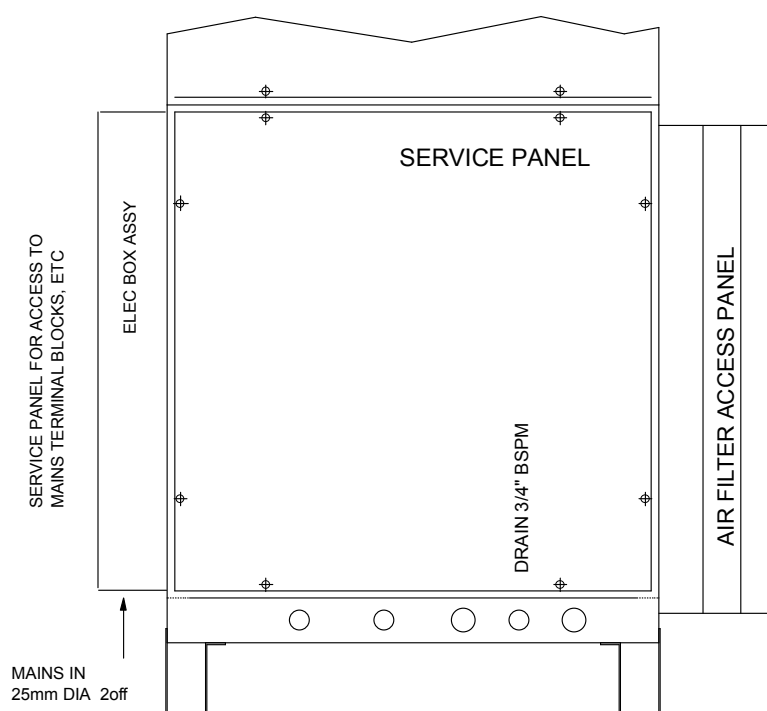
**N.B** The voltage must be measured at the heat pump mains terminals with all the fans/compressors running at the rated condition.

Please note that AW1200/1500 three phase machines are fitted with a phase rotation relay and will not run if the phases are connected incorrectly or if the voltage is 15% less than 400V (340V) for a three phase 50Hz machine

### CORRECT CABLE SIZING

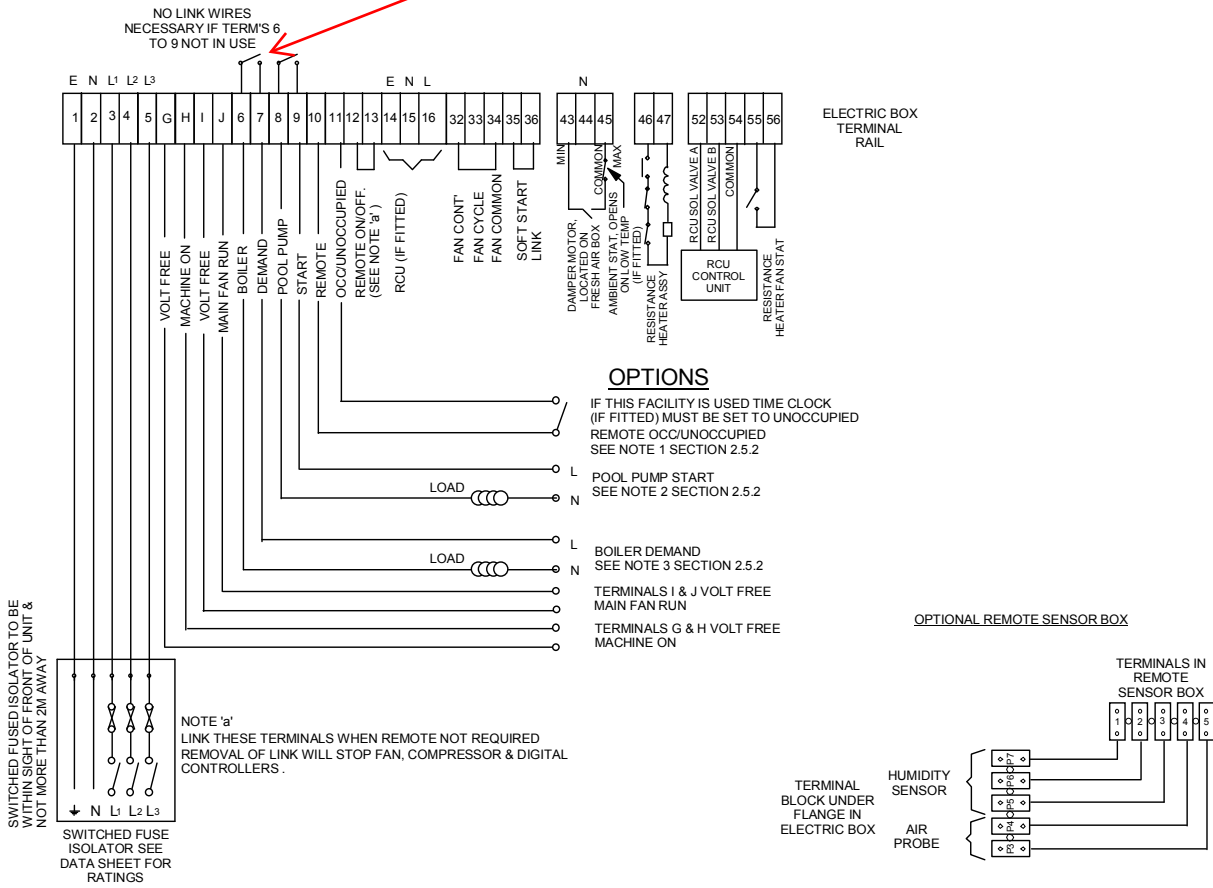
The cable supplying electricity to a machine with a given load must increase in cross sectional area (CSA) as the length increases in order that the voltage drop within the cable does not exceed recommended limits. Cable sizing should be calculated by an approved electrician with due consideration to I.E.E. and local codes of practice.

If resistance heaters are fitted an extra power supply will be required to the terminal blocks inside the heater box, see data sheet for supply amps and fuse size.



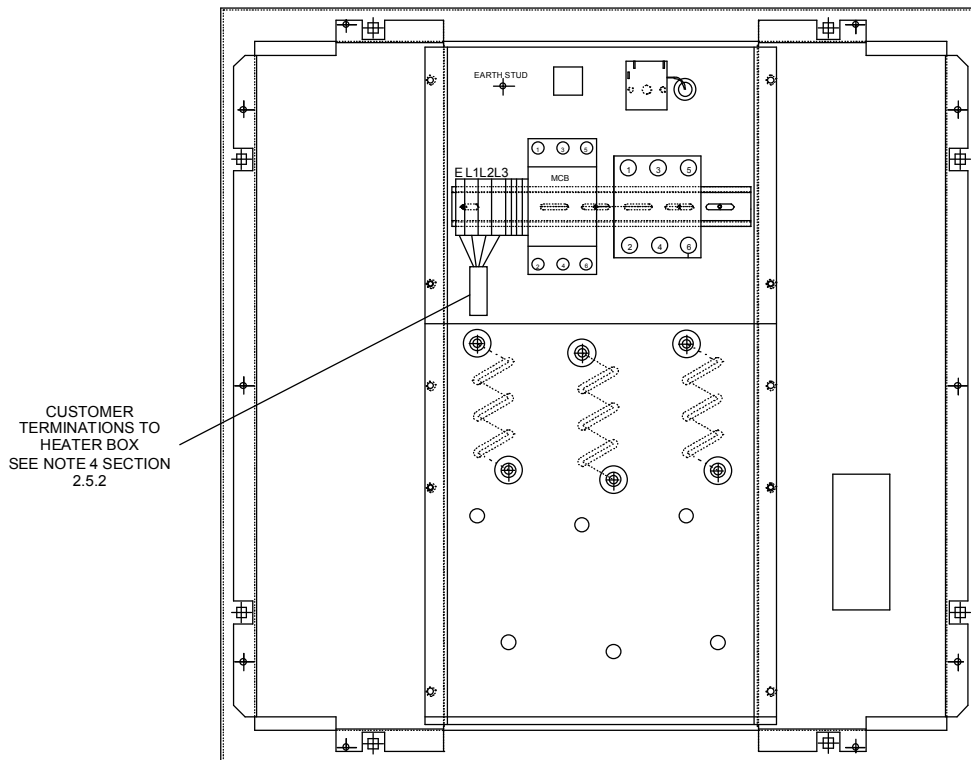
2.5.1

**MAINS SUPPLY TERMINAL BLOCK LAYOUT SINGLE AND THREE PHASE  
(NO CONNECTION TO TERMINALS 4 AND 5 ON SINGLE PHASE UNITS)**



**SEPARATE MAINS SUPPLY TERMINAL BLOCKS FOR RESISTANCE HEATER BOXES LAYOUT SINGLE AND THREE PHASE**

(NO CONNECTION TO TERMINALS L2 AND L3 ON SINGLE PHASE UNITS)



## 2.5.2 NOTES ON TERMINAL BLOCK CONNECTIONS

### **NOTE 1 - Remote occupied/unoccupied**

These contacts (from terminals 10 & 11) are to enable the air temperature set back facility to be remotely overridden. Please note that in unoccupied mode on AW machines, water heating does not take place unless there is a demand for dehumidification.

There is a 12 Vac output from these terminals and closing a remote switch will enable the unit to regain the normal operating air temperature for when the pool is in use.

This can be done via a voltage free pool cover switch or some other form of voltage free switch.

If this facility is used then the time clock (if fitted) on the control panel of the unit should be set to the 'unoccupied' (o) position. (See note on time clock and switch settings, section 3.2.1).

If these terminals are fitted on versions without time clocks then they **MUST BE LINKED**.

### **NOTE 2 - Pool pump start -AW only (see also section 3.2.2)**

These are voltage free contacts (from terminals 8 & 9) rated at 3(1) Amp at 230 Volts.

If the pool water pump is to be run via an external time clock then these connections should go across the switching contacts of the external time clock to ensure that, if dehumidification demand occurs the pool water pump will start.

The pool water pump will exceed the one amp inductive rated current of these contacts therefore a contactor or relay should be used to switch the load of the pump. The switching action of the external time clock should energise the contactor/relay coil.

If the pool water pump is to be run continuously then these contacts can be ignored.

### **NOTE 3 - Boiler demand -AA+LPHW & AW machines only**

These are voltage free contacts (from terminals 6 & 7) rated at 3(1) Amp at 230 Volts.

If the low pressure hot water supply to the unit is to be governed by the Calorex unit then these contacts should be utilised to bring water to the unit via the boiler, motorised valve, boiler pump etc. Remember the maximum inductive load is one amp.

This is dependant on how the low pressure hot water supply to the unit has been designed.

If the supply of low pressure hot water to the unit is not dependant on a signal from the unit then these contacts can be ignored.

### **NOTE 4 – SEPARATE SUPPLY FOR RESISTANCE HEATER BOX**

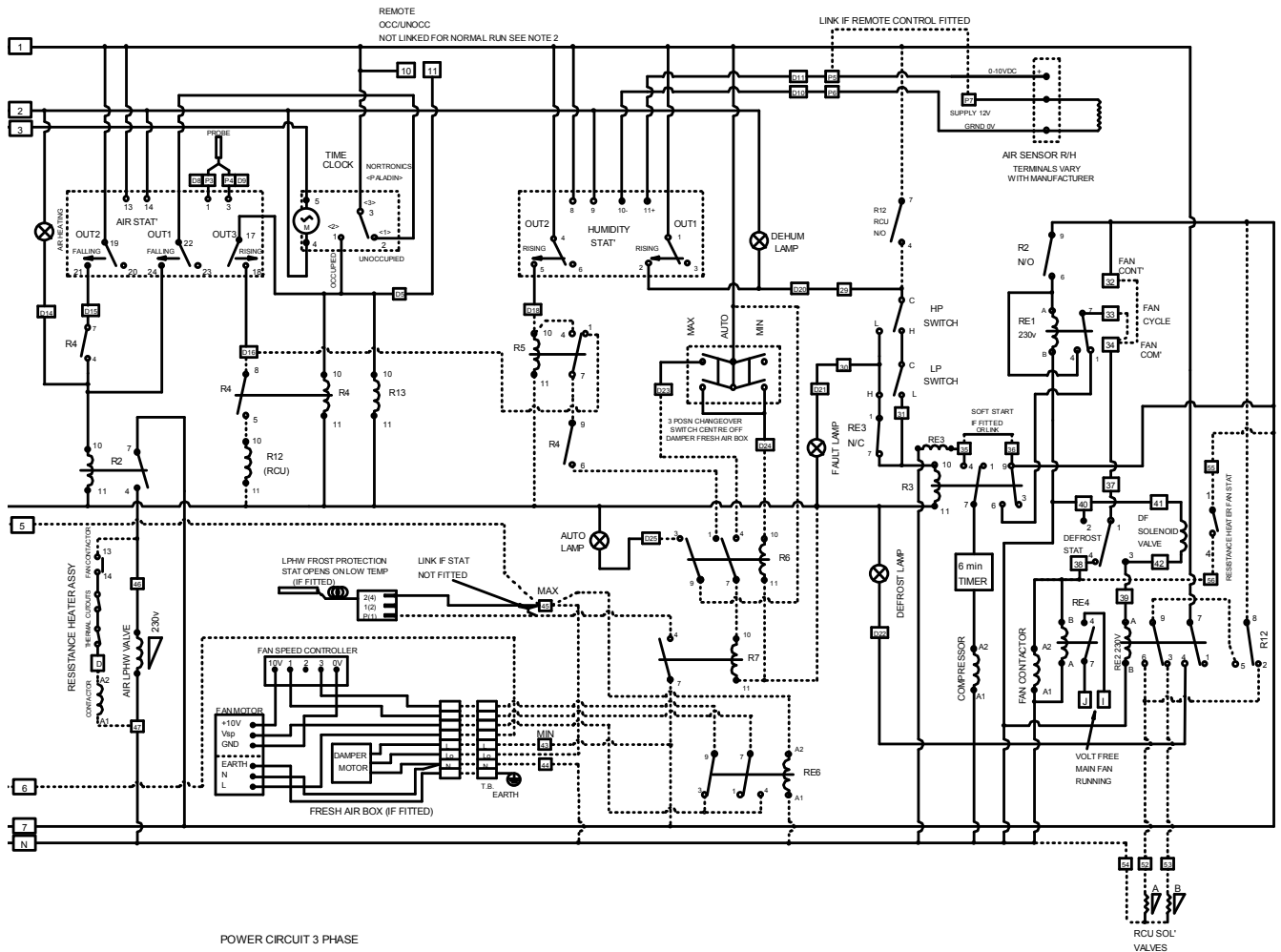
If resistance heaters are fitted then an extra power supply will be required to the terminal blocks inside the heater box. See section 4.0 for supply amps & fuse size.

### **CONTROL PANEL 25 WAY CABLE CONNECTION**

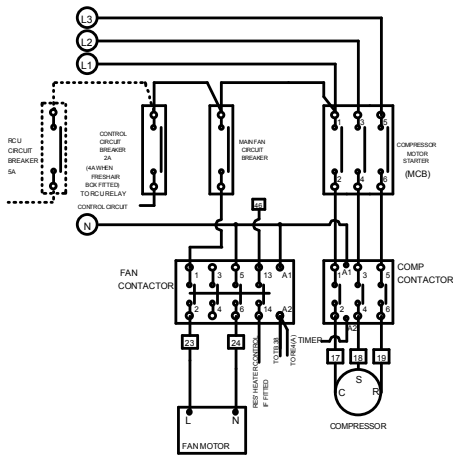
Data signal between control panel and electric box is via a 25 way cable with 'D' connection (plug & socket) both ends.



## 2.6 ELEC CONTROL & POWER CIRCUIT 'AW' VERSION CONTINUED

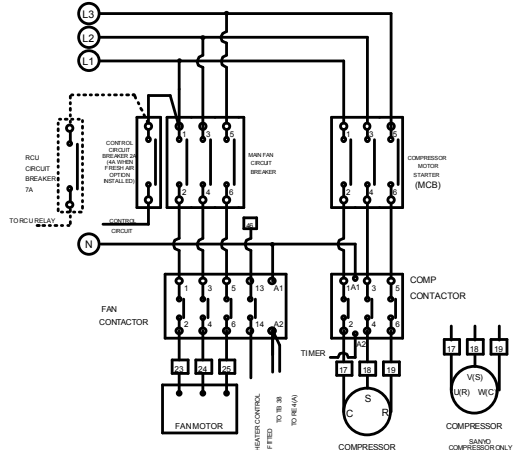


POWER CIRCUIT 3 PHASE WITH SINGLE PHASE FAN



MODEL	FAN MCB 1 PHASE	COMP. MCB	
		TRIPPING CURRENT	SETTING VALUE
AA/AW80B/HX(F)	10A	4.0A	3.0A
AA/AW90B/HX(F)	10A	6.7A	5.0A
AA/AW120B/HX(F)	16A	10.0A	8.0A

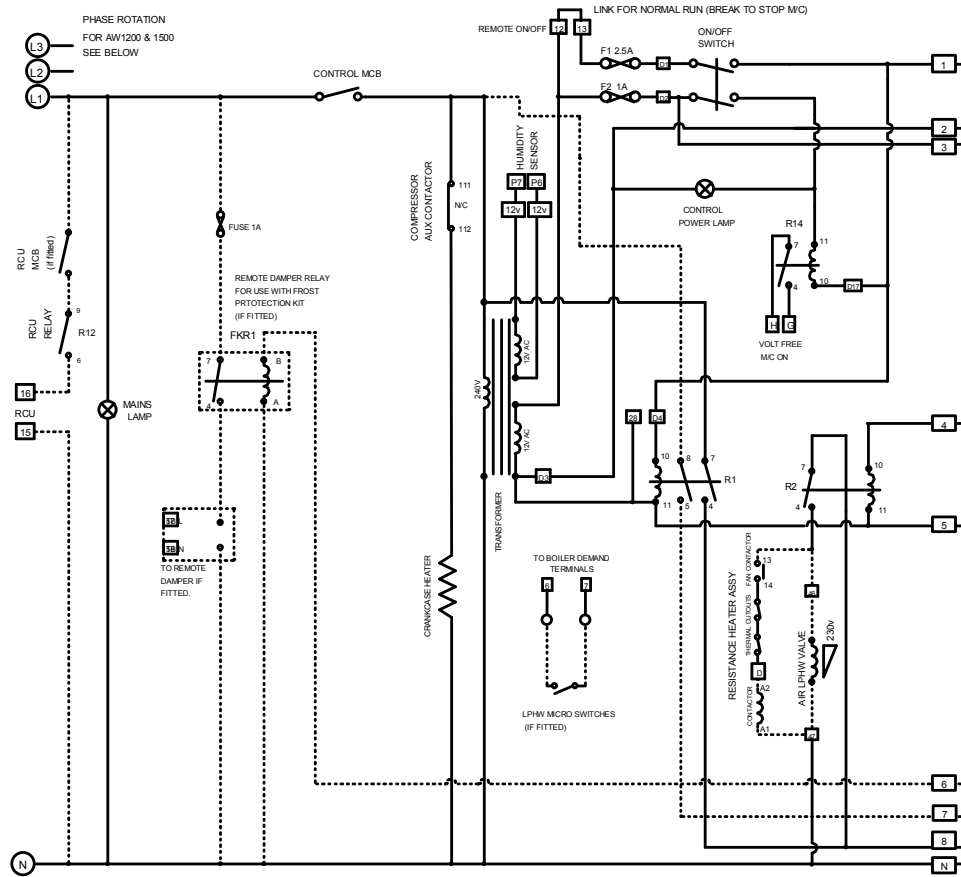
POWER CIRCUIT 3 PHASE WITH 3 PHASE FAN



MODEL	FAN MCB		COMP. MCB	
	1 <sup>PH</sup>	NON 1 <sup>PH</sup>	TRIPPING CURRENT	SETTING VALUE
AA/AW150B/HX(F)	3.0A	2.2A	14.0A	12.0A

# ELECTRICAL CONTROL CIRCUIT 'AA+LPHW' VERSION

See pages AW circuit for power circuits



## NOTES

'R' LETTER RELAYS ARE 12V

'RE' LETTER RELAYS ARE 230V

'P' LETTERS ARE CONNECTOR BLOCK PIN NUMBERS

15 = DIN RAIL MOUNTED TERMINAL BLOCK NUMBERS

D25 = 25 WAY 'D' PLUG PIN NUMBERS

D = DELAY TIMER

2 IF REMOTE OCC/UNOCC FEATURE USED

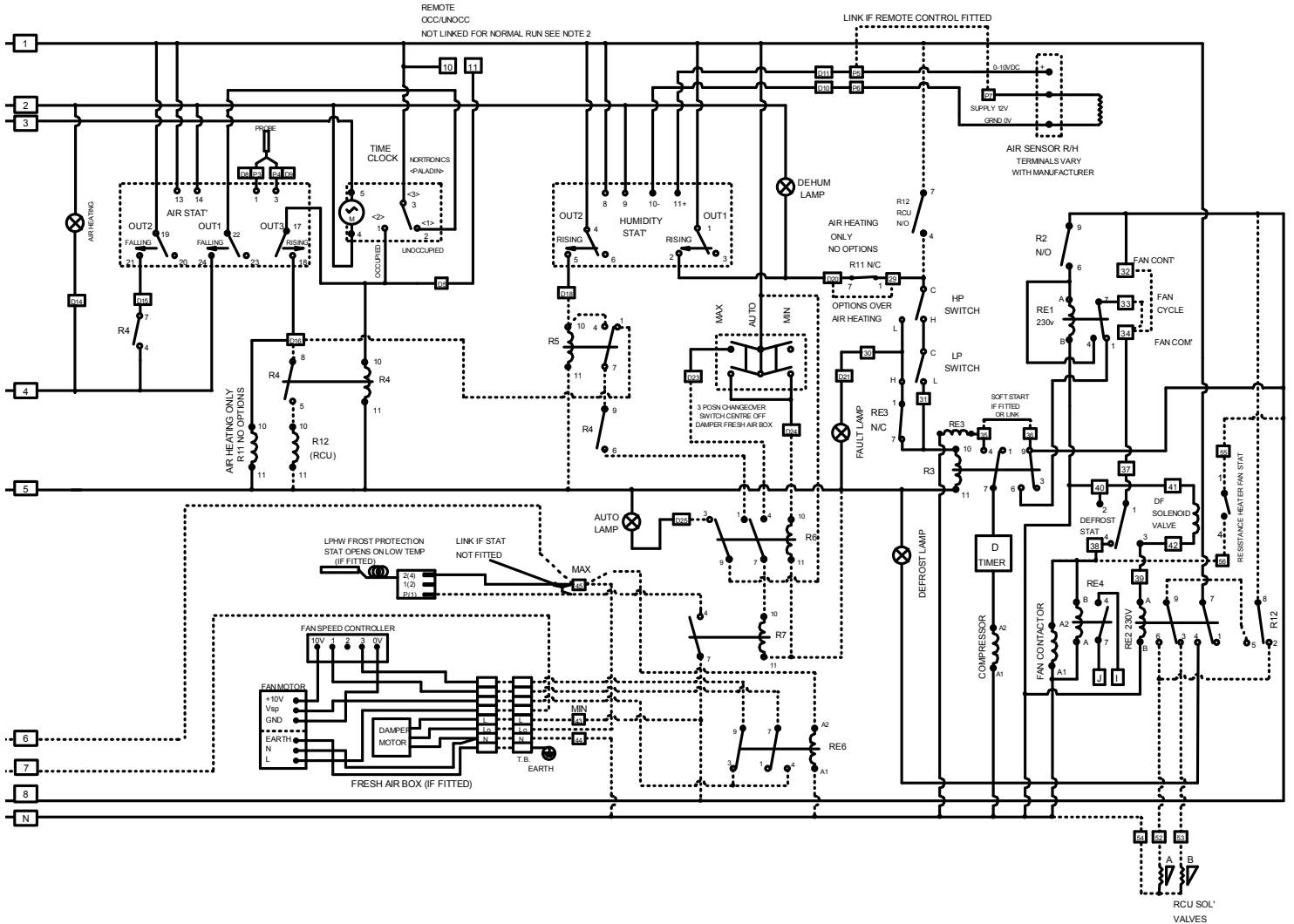
a) FORCE TIME CLOCK TO 'UNOCCUPIED'

b) 10/11 N/O = 'UNOCCUPIED'

c) 10/11 N/C = 'OCCUPIED'

VH3 MK II AA + LPHW CONTROL CIRCUIT  
D459851 ISS 27

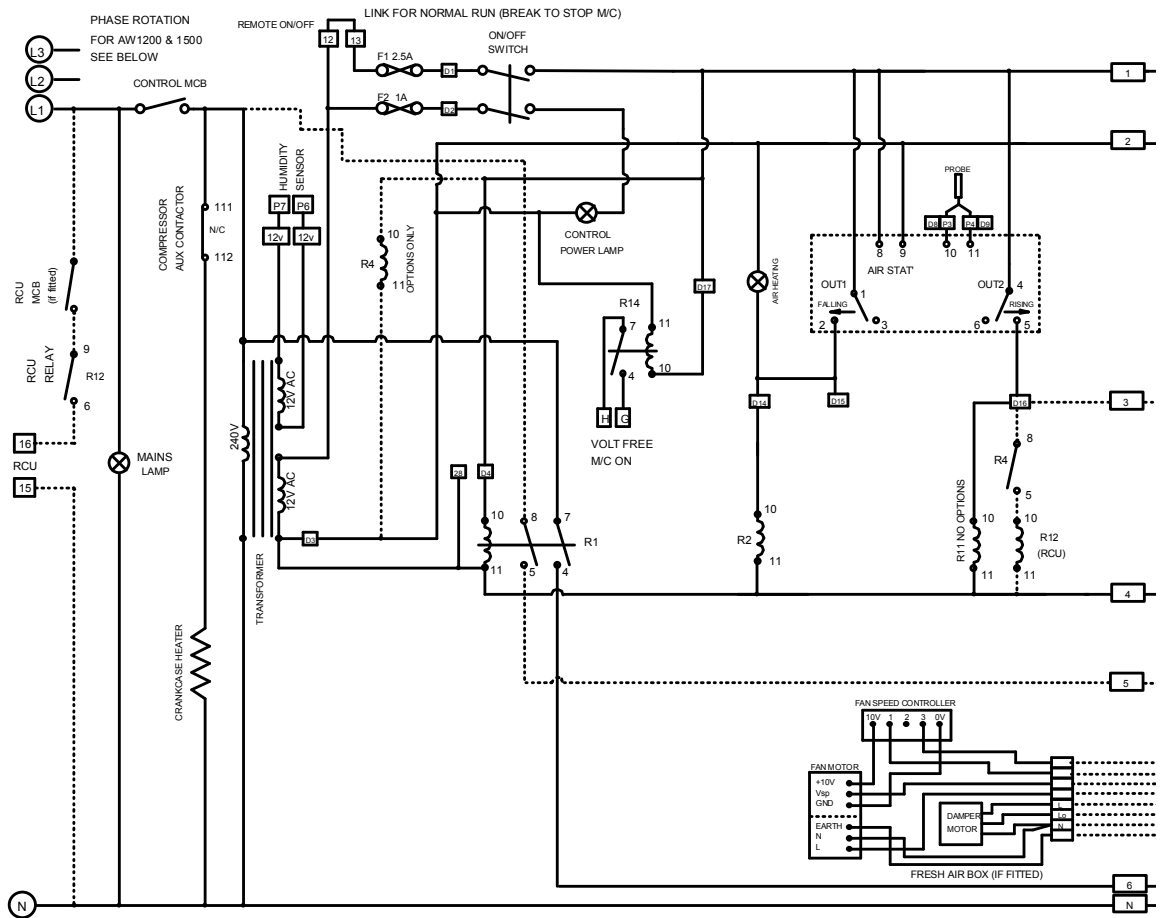
## 2.6 ELEC CONTROL CIRCUIT 'AA+LPHW' CONTINUED



See AW circuits for power circuits

# ELECTRICAL CONTROL CIRCUIT 'AA' VERSION

See pages AW circuit for power circuits



## NOTES

- 'R' LETTER RELAYS ARE 12V
- 'RE' LETTER RELAYS ARE 230V
- 'P' LETTERS ARE CONNECTOR BLOCK PIN NUMBERS
- 15** = DIN RAIL MOUNTED TERMINAL BLOCK NUMBERS
- D25** = 25 WAY 'D' PLUG PIN NUMBERS
- D** = DELAY TIMER

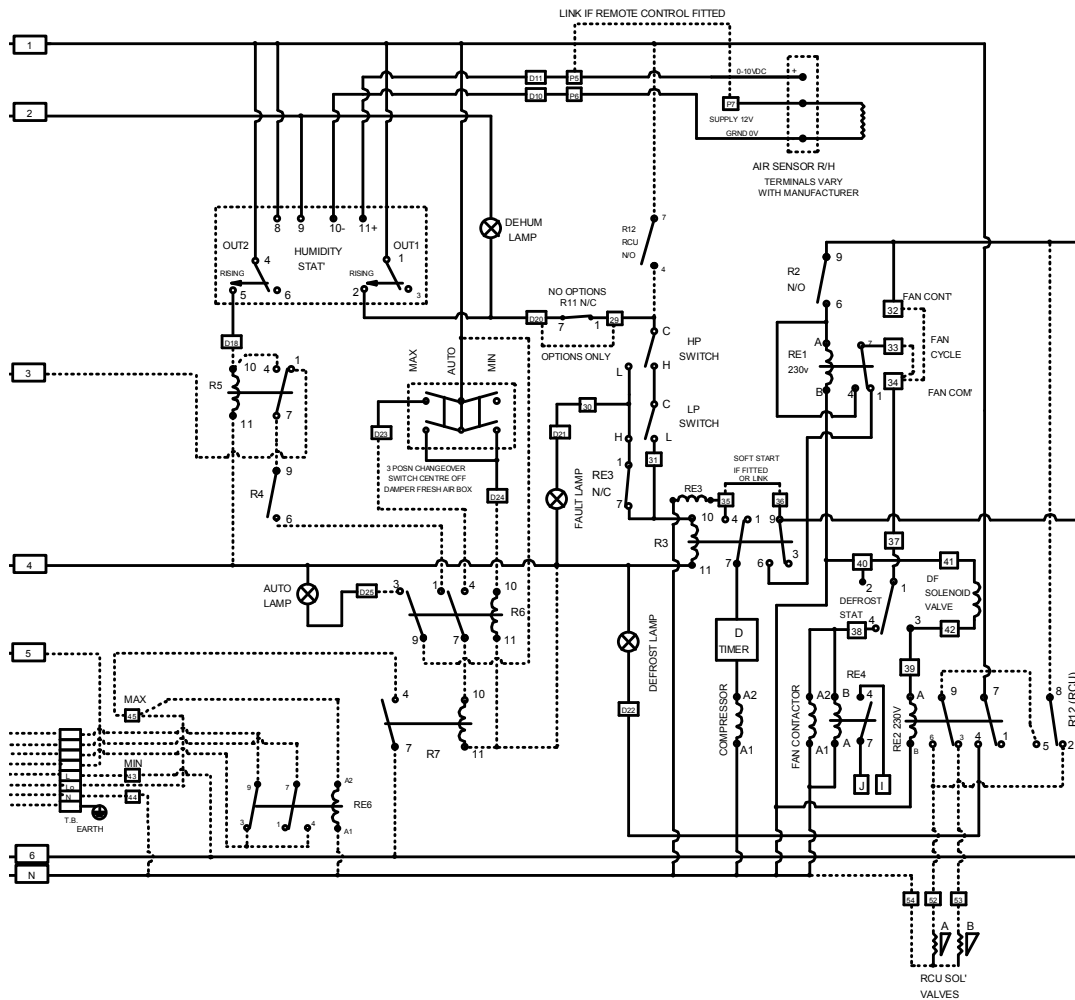
- 2 IF REMOTE OCC/UNOCC FEATURE USED
  - a) FORCE TIME CLOCK TO 'UNOCCUPIED'
  - b) 10/11 N/O = 'UNOCCUPIED'
  - c) 10/11 N/C = 'OCCUPIED'

## VH3 MK11 'AA' CONTROL CIRCUIT

D459852 iss 26



## 2.6 ELEC CONTROL CIRCUIT 'AA' CONTINUED



See AW circuits for power circuits

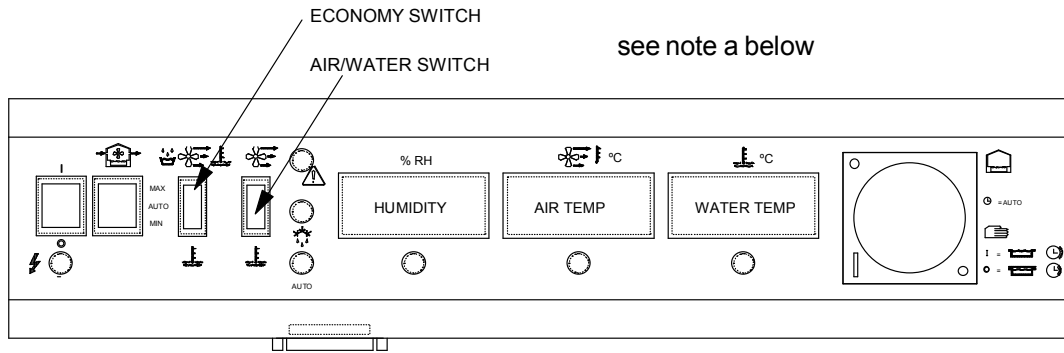
## 2.7 REGULAR PLANNED MAINTENANCE

Operations to be carried out during a regular planned maintenance visit are as follows:








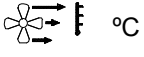





1. Replace all belts where fitted.
2. Clean or replace filters as applicable. (This action may be required more frequently than regular servicing).
3. Check operation and condition of all fans and compressors.
4. Check capacitor tolerances (where fitted).
5. Check condition of all heat exchangers/evaporators.
6. Check refrigeration system parameters.
7. Check operation of control valves.
8. Check for water leaks.
9. Check drip trays and internal drain lines for blockages and clear.
10. Check operation of controls and calibrate as necessary.
11. Check operation of interlocks in use.
12. Final check on overall operation of unit.
13. Indicate on report any faults found or causes for concern.

Frequencies recommended: Light to medium use	2 visits per year.
Heavy use	4 visits per year.

### 3.0 CONTROLS STANDARD CONTROL PANEL MODULE (12V)



see note a below

-  Power on
-  Power off
-  Power symbol
-  Fresh air flow Switch (for fresh air/negative pressure box options only)-
  - in AUTO position auto indicator light will be on.
  - in MAX position dampers fully open, light off.
  - in MIN position dampers closed, light off.
-  Fault light      Check that the pool hall air and water flow through the unit are within specified limits. Check M.C.B.'s & pressure switches see note b (also soft start overload if fitted) and push all to reset. Call for a service check if fault light stays on.
-  Defrost light      Unit is temporarily defrosting evaporator machine will automatically reset.
-  Dehumidification light      Indicates that there is a demand for the unit to dehumidify.
-  Air heating light      Indicates that there is a demand for the unit to heat the pool hall air.
-  Water heating light      Indicates that there is a demand for the unit to heat the pool water.
-  Pool hall symbol
-  Manual override symbol
-  Pool water occupied (no pool cover)
-  Pool water unoccupied symbol (pool covered)

**Economy Switch** (AW versions only). Switches between full function, i.e. dehumidification/air & water heating to water heating only. Note that in economy mode there is a 60 minute time delay before water heating commences.

**Air to Water Switch** (AW versions only). Can be set to give priority to either water heating or air heating.

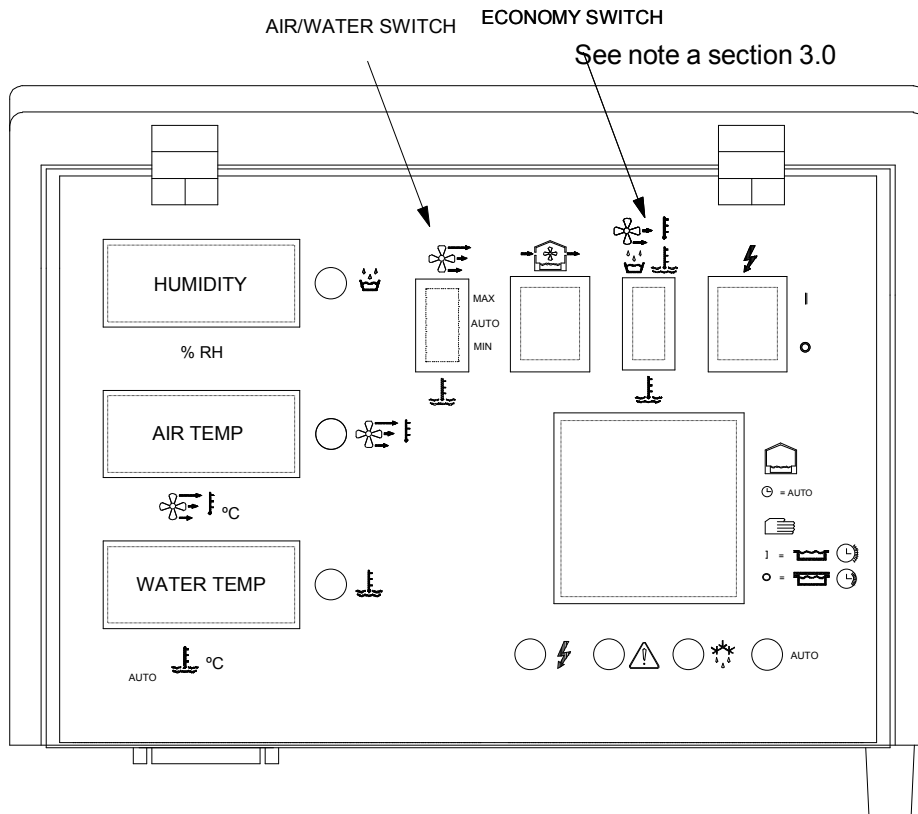
**Note 'a'**

Water temperature display and Economy switch not fitted on 'AA' or 'AA+LPHW' versions, time clock not fitted on 'AA' version.

**Note 'b'**

High & low pressure switches are mounted on a cross bracket fitted inside the fridge box assemblies. Push the red button on each switch to reset.

## OPTIONAL REMOTE CONTROL PANEL MODULE (12V)



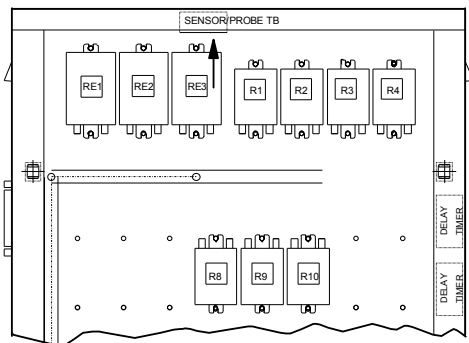
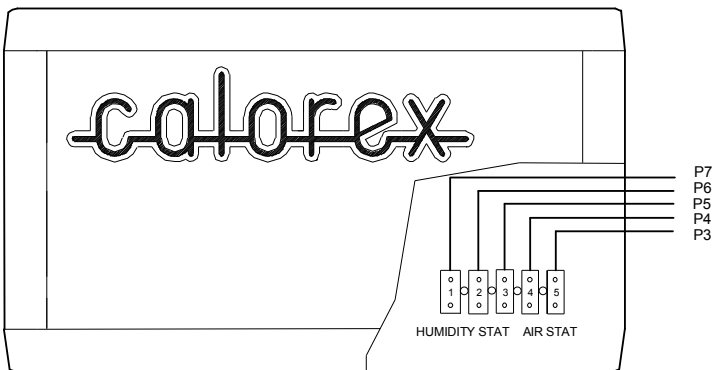
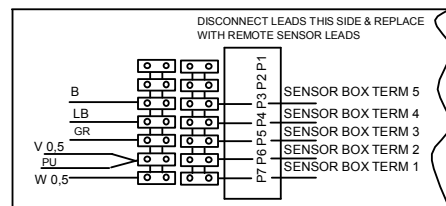
Note - water sensor lead can be extended up to 20 metres with 0,5mm<sup>2</sup> cable.

Also on sensor lead terminal block ( located in electric box assy) terminals P5 & P7 must be linked for this control panel to operate.

## OPTIONAL REMOTE SENSOR BOX

Disconnect wires to sensors at electric box terminals & run leads to sensor box & connect as shown use 0,5mm<sup>2</sup> cable up to 20 metres.

### SENSOR PLUG AND TERMINAL BLOCK



ELECTRIC BOX

### 3.1 COMMISSIONING CHECKLIST

- a. Is the building finished in accordance with the original plans and specification.
  - b. Is the plenum chamber and all ductwork insulated, special attention should be made to the insulation of the exhaust air ducting and fresh air inlet ducting to prevent condensation problems.
  - c. Are there any significant draughts in the pool hall or plant room (plenum installation) through poorly fitting doors, windows, pipe ducts, etc. This will let in unwanted ambient air raising the heating duty required.
  - d. Is fresh air suction and exhaust air discharge ducting (if fitted) perfectly sealed from plant room.
- NOTE: (c) and (d) above should be checked by measuring plant room and pool hall air temperatures. If the plant room is acting as a plenum chamber both temperatures should correspond. If the plant room temperature is lower than ambient air is leaking in, this leak should be located and rectified.
- e. Are the fresh air inlet and exhaust air outlets free from obstructions ie, undersize grilles, objects in the path of exhaust air deflecting it back to the fresh air inlet, etc.
  - f. Is 'occupied / unoccupied' set correctly, (set with air thermostat) see section 3.2.3.
  - g. Is the time clock set correctly.
  - h. Is start up ('fresh air flow' switch to 'min') feature required and if so is customer aware of when to switch machine back to 'Auto'.
  - i. Has the Calorex Heat Pump been bled for air pockets. (Bleed valves fitted to unit as standard).
  - j. Any sign of abnormal operation such as water dripping should be reported immediately to an installer or Calorex.
  - k. Is airflow sufficient through machine? Remove fan damper plates and check fan amps.
  - l. Check belts and filters are fitted correctly.

#### 3.2.1 TIME CLOCK SETTINGS

The time clock is a quartz 24 hour clock with 100 hours battery reserve used to control the automatic operation or the SERIES 3 VARIHEAT unit per 24 hour time cycles.

##### SETTING ACTUAL TIME

Turn the large clock hand clockwise until the correct time of day is set, ensuring that the correct half of the day is chosen (24 hour clock).

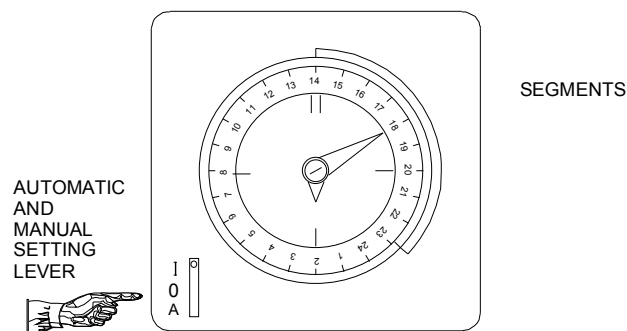


FIG 1.

##### SETTING FOR AUTOMATIC OCCUPIED/UNOCCUPIED OPERATION WITH TIME CLOCK

To set for automatic time clock control of occupied/unoccupied, slide the lever to 'A'. Each yellow segment represents a 15 minute time period. Extend outward the segments for a period of time that the pool is occupied (i.e. used or uncovered) per day.

If the unoccupied period is more than 20 hours per day, extend one segment at 9:00 or other suitable time that does not coincide with the main occupied period\*.

### SETTING FOR AUTOMATIC OCCUPIED/UNOCCUPIED OPERATION WITH REMOTE INTERFACE

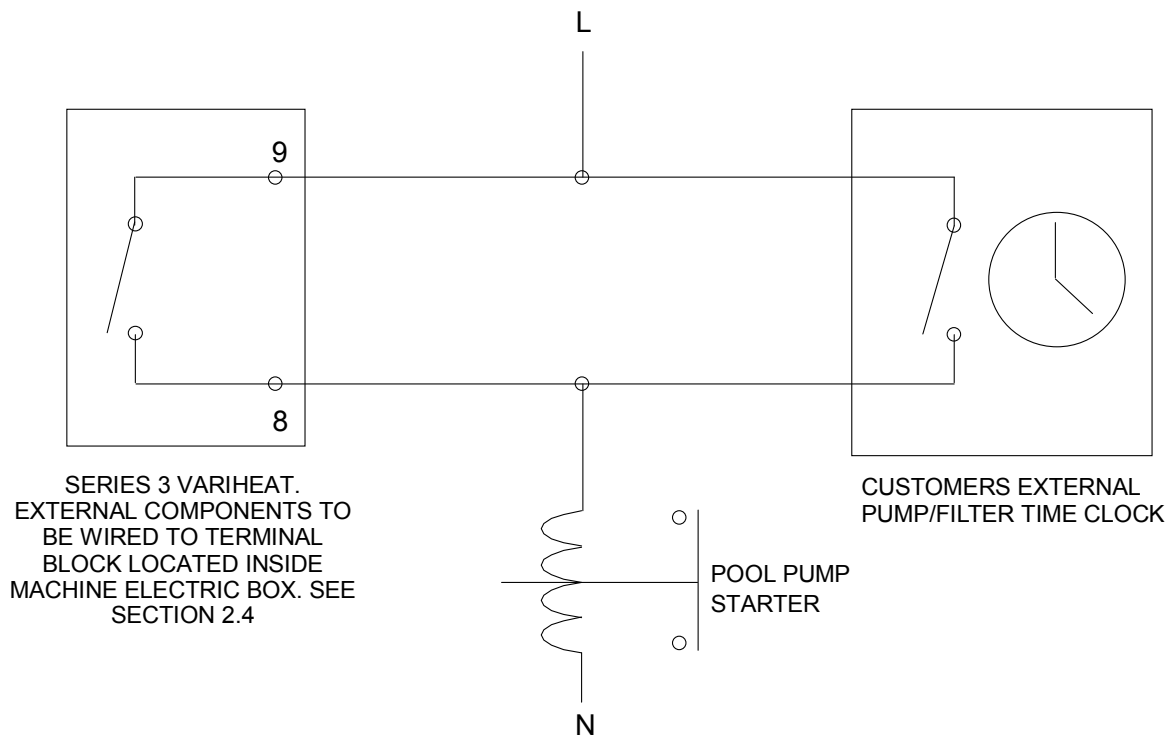
To set for remote control of occupied/unoccupied, slide lever to 'O'. See section 2.4, Note 1 for more information on remote interface. If the unoccupied period is more than 20 hours per day, extend one segment at 9:00 or other suitable time that does not coincide with the main occupied period.\* Ensure all other segments are pushed inwards and slide lever to 'A'.

### SETTING FOR MANUAL OCCUPIED/UNOCCUPIED OPERATION

To set for manual occupied period (or override automatic unoccupied period) slide the lever to 'I' for 'occupied'. If the unoccupied period is more than 20 hour per day, to set for a manual unoccupied period slide the lever to 'O' for 'unoccupied'; extend outwards one segment at 9:00 or other suitable time that does not coincide with the main occupied period\* and ensure all other segments are pushed inwards.

\*In unoccupied mode, the pool water is not heated unless a demand for dehumidification occurs during this period. If the unoccupied is more than 20 hours per day, it is recommended to allow a brief occupied period to allow the water temperature to be sampled and maintained if necessary.

### 3.2.2 WIRING TO EXTERNAL SWIMMING POOL PUMP/FILTER TIME CLOCK



### 3.2.3 POOL & AIR TEMPERATURE AND HUMIDITY CONTROLS

#### POOL WATER TEMPERATURE & HUMIDITY DIGITAL CONTROLLERS AND AIR DIGITAL CONTROLLER ON AA MACHINE WITHOUT AIR HEATING

To Program the Set Point. Press down P, SP1 and Set Point value will be displayed alternately. Press the  $\Delta$  or  $\nabla$  key to change the value of SP1. Once the desired value is displayed press P to memorise the value. The display will revert to the present reading.

NOTE: If anything else shows on the display leave alone for 1 minute until the display returns to normal.

#### AIR TEMPERATURE DIGITAL CONTROLLER AW AND AA MACHINES WITH AIR HEATING

The digital controller for controlling air temperature can be changed as follows:-

To program the set point, press P button once and release it. SP1 (set point) and set point value e.g. 28 will be displayed alternately. Press P again AL1 (-4.5) will show. This is the difference between the set point and AL1 plus a constant 0.5 e.g.  $28 - 4.5 + 0.5 = 24^{\circ}\text{C}$  (unoccupied) SP1 and AL1 can be changed in the same way as described for humidity and air.

NOTE: AL1 can only be set -1 to -10 below SP1 value.

If the reading on the digital controller is not the same as the actual pool hall temperature, water temperature or relative humidity it may be necessary to program an offset into the digital controller. See technical manual.

#### FRESH AIR BOX

**AUTO** Opens dampers and switches on fan when demand for dehumidification (OUT 2) and/or high temperature OUT 3 (**OUT 2 on AA version without time clock**). Machine must be in occupied mode to close Relay 4 and to bring on fan and open damper motor.

**MAX** Opens dampers and brings on fresh air fan to provide full fresh air at all times, even in unoccupied mode.

**MIN** Turns off fresh air fan and closes dampers to minimum position.

**NOTE** On machines with LPHW, if the optional frost protection stat is fitted, the operation of the dampers will be inhibited when the ambient temperature is below  $6^{\circ}\text{C}$ .

#### NEGATIVE PRESSURE BOX

**AUTO** Opens dampers and switches on fan when demand for dehumidification (OUT 2) and/or high temperature OUT 3 (**OUT 2 on AA version without time clock**). Machine must be in occupied mode to close Relay 4 and to bring on fan and open damper motor.

**MAX** Opens dampers to exhaust air from pool hall at all times, even in unoccupied mode.

**MIN** Turns off fresh air fan and closes dampers to minimum position.

**NOTE** On machines with LPHW, if the optional frost protection stat is fitted, the operation of the dampers will be inhibited when the ambient temperature is below  $6^{\circ}\text{C}$ .

**4.0 DATA SHEET  
SERIES 3 VARIHEAT**

MODEL:-		Units	AA/AW600	AA/AW900	AA/AW1200	AA/AW1500
<b>DEHUMIDIFICATION DUTY</b>	VIA HEAT PUMP (30°C/60% rh)	litres/hr	4.6	6.5	8.5	10.1
	TOTAL @ 18°C dewpoint (summer if fresh air option fitted)	litres/hr	5.2	7.3	9.5	11.3
	TOTAL @ 7°C dewpoint (winter if fresh air option fitted)	litres/hr	6.5	9.0	11.7	13.9
<b>HEAT TO AIR</b>	VIA HEAT PUMP (MODE A):-	kW	0	0	0	0
	VIA HEAT PUMP (MODE B):-	kW	5.1	7.1	10	14
	VIA SINGLE LPHW @ 80°C :-	kW	11	13.5	24	28
	TOTAL :- (MODE B)	kW	14	18.6	30	36
	VIA DOUBLE LPHW @ 80°C :-	kW	18.7	22.95	40.8	47.6
<b>VENTILATION</b>	HEAT REQ' FOR FRESH AIR @ -5 ° C(IF OPTION *FITTED)	kW	1.7	2.2	2.8	3.3
<b>HEAT TO POOL WATER (AW VERSIONS)</b>	VIA HEAT PUMP (MODE A):-	kW	5.5	7.4	10	12.5
	VIA HEAT PUMP (MODE B):-	kW	0	0	0	0
	VIA LPHW @ 80°C :-	kW	18	30	30	40
	TOTAL :-	kW	23.5	37.4	40	52.5
	Flow Rate Pool Water ± 10%	l/min	30	32	33	40
	Pressure Drop @ Rated Flow	m/hd	3.5	3.5	3.5	3.5
	Max working pressure	bar	3.5	3.5	3.5	3.5
<b>RECOMMENDED BOILER CAPACITY (AW VERSIONS)</b>	RECOMMENDED BOILER CAPACITY	kW	29	44	54	68
	FLOW RATE SINGLE CAPACITY LPHW	l/min	25	32	42	52
	FLOW RATE DOUBLE CAPACITY LPHW	l/min	32	44	64	74
	Pressure Drop @ Rated Flow SINGLE CAPACITY LPHW	m/hd	6.3	6.3	6.3	6.3
	Pressure Drop @ Rated Flow DOUBLE CAPACITY LPHW	m/hd	6.3	6.3	4.5	4.9
<b>RECOMMENDED BOILER CAPACITY (AA+LPHW)</b>	RECOMMENDED BOILER CAPACITY	kW	11	13.5	24	28
	FLOW RATE SINGLE CAPACITY LPHW	l/min	10	10	22	22
	FLOW RATE DOUBLE CAPACITY LPHW	l/min	14	24	44	44
	Pressure Drop @ Rated Flow SINGLE CAPACITY LPHW	m/hd	1.6	1.6	1.6	1.6
	Pressure Drop @ Rated Flow DOUBLE CAPACITY LPHW	m/hd	1.6	4.1	4.2	4.2
	Max system working pressure	bar	6	6	6	6
<b>ELECTRICAL</b>	TOTAL POWER CONSUMED					
	TYPICAL HIGH PRESSURE SYSTEM WITH CONSTANT FLOW FAN	kW	2.05	2.76	3.6	N/A
	TYPICAL LOW PRESSURE SYSTEM WITH CONSTANT FLOW FAN	kW	1.77	2.4	3.13	N/A
	'F' & NON 'F'	kW	N/A	N/A	N/A	5.1/4.66
	MIN' SUPPLY CAPACITY (Max F.L.A.) 1 ph N:-	amps	17.2	22.5	29	N/A
	MIN' SUPPLY CAPACITY (Max F.L.A.) 3 ph N:- ('F' & NON 'F' FOR 1500)	amps	11.6	13.2	17.8	13 / 12
	MAX SUPPLY FUSE 1 ph N:-	amps	25	32	42	N/A
MAX SUPPLY FUSE 3 ph N:- ('F' & NON 'F' FOR 1500)	amps	16	20	25	20 / 16	
<b>MAIN FAN</b>	AIR FLOW (anemometer @ air on filter, wet evaporator)	m³/hr	2000 ±10%	2500 ±10%	3500 ±10%	4300 ±10%
	MAX EXTERNAL STATIC PRESSURE:- (CONSTANT FLOW FAN) SINGLE LPHW	mm Wg	33	22	29	N/A
	MAX EXTERNAL STATIC PRESSURE:- 'F' & NON 'F' SINGLE LPHW	mm Wg	N/A	N/A	N/A	24/12
	MAX EXTERNAL STATIC PRESSURE:- (CONSTANT FLOW FAN) DOUBLE LPHW	mm Wg	32	20.8	17.8	N/A
	MAX EXTERNAL STATIC PRESSURE:- 'F' & NON 'F' DOUBLE LPHW	mm Wg	N/A	N/A	N/A	21.5 / 9.5
	DESIGN CONDITION AMPS:-					
	1 ph N :-	amps	3.75	4.7	9.3	N/A
3 ph N :- (F & NON F FOR 1500)	amps	N/A	N/A	N/A	3.3 / 2.3	
FLA:- 1 ph N:-	amps	7.6	7.6	9.3	N/A	
FLA:- 3 ph N :- (F & NON F FOR 1500)	amps	N/A	N/A	N/A	3.45 / 2.5	
<b>COMPRESSOR</b>	NOMINAL POWER CONSUMED:-	kW	1.5	2	2.5	3.4
	LRA:- 1 ph N:-	amps	55	76	100	N/A
	RLA:- 1 ph N:-	amps	8	12.4	16.6	N/A
	SOFT START AMPS 1 ph N:-	amps	26	31	34	N/A
	LRA:- 3 ph N:-	amps	30	42	48	48
	RLA:- 3 ph N:-	amps	3.2	4.7	7.3	10
	SOFT START AMPS 3 ph N:-	amps	14	16	17	25
<b>GENERAL DATA</b>	<b>Hermetic System</b>					
	GAS CHARGE (R407c) AA & AW	kg	1.8 / 1.8	1.85 / 2.0	2.7 / 2.85	2.65 / 3.0
	LPHW battery volume	litres	1.6	1.6	3.2	3.2
	WEIGHT approx' (AW un-packed no options):-	kg	170	171	230	240
<b>OPTIONAL FRESH AIR COOLING FEATURE</b>	AIR FLOW:-	m³/hr	0-900	0-900	0-900	0-900
	MAX EXTERNAL STATIC PRESSURE	mm Wg	10	10	10	10
<b>OPTIONAL RESISTANCE HEATER MODULE</b>	NOMINAL POWER	kW	6 or 12	6 or 12	12 or 18	12 or 18
	MINIMUM SUPPLY 1 ph N :-	amps	30 or 60	30 or 60	60 or 80	N/A
	MINIMUM SUPPLY 3 ph N :-	amps	9 or 18	9 or 18	18 or 27	18 or 27
	MAX SUPPLY FUSE (MCB) 1 ph N :-	amps	32 or 63	32 or 63	63 or 100	N/A
	MAX SUPPLY FUSE (MCB) 3 ph N :-	amps	10 or 20	10 or 20	20 or 30	20 or 30

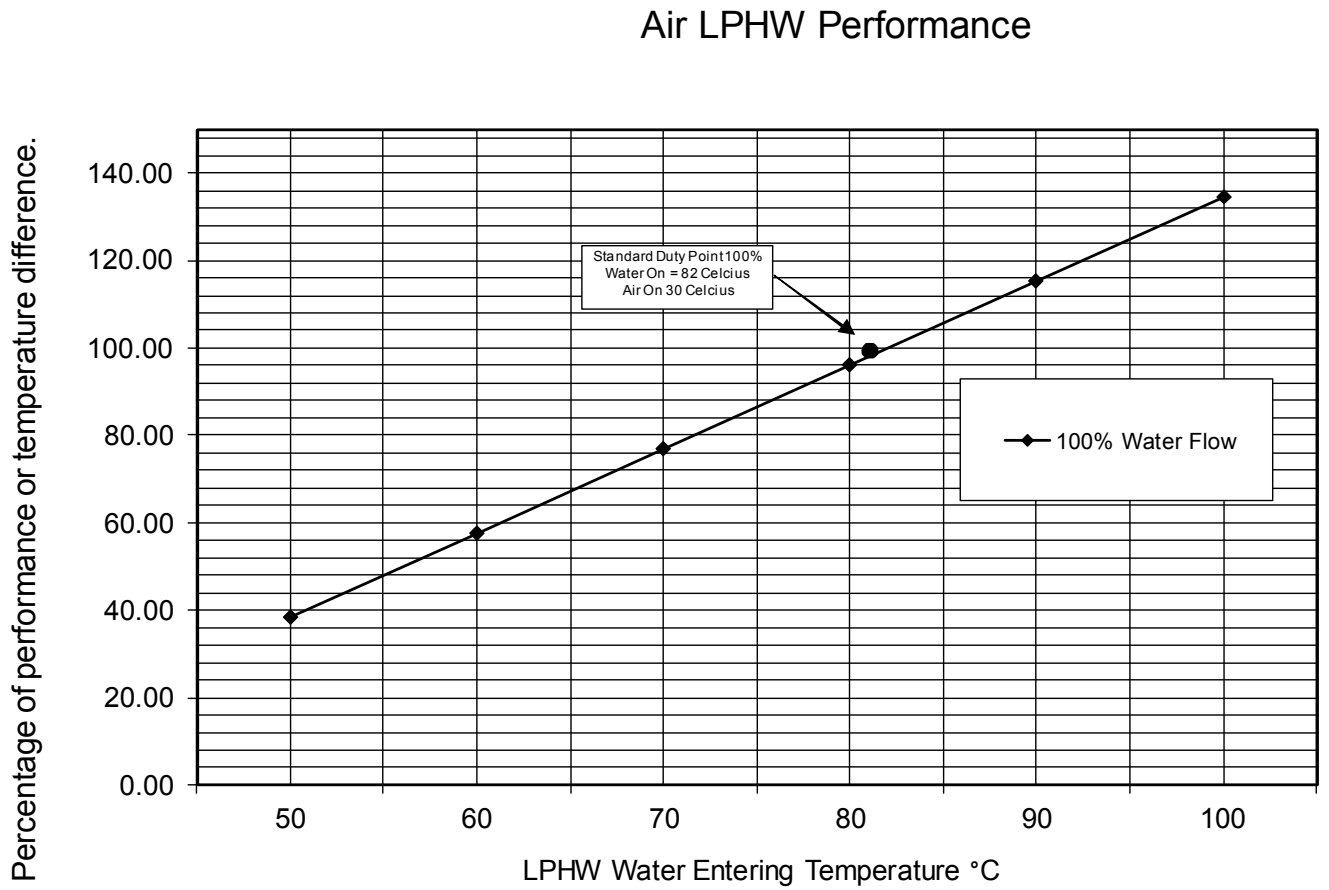
For accurate application sizing consult CALOREX Heat Pumps Ltd.  
 Boiler not required for AA versions without LPHW.  
 MODE A = recovered heat biased to pool water (pool water temp not satisfied)  
 MODE B = recovered heat biased to pool hall air (pool water temp satisfied)  
 R407c Global warming potential (GWP) 1774.

1mm WG = 9.8Pa  
 1mhd = 1.4psi  
 1L/min=0.22 gall/min



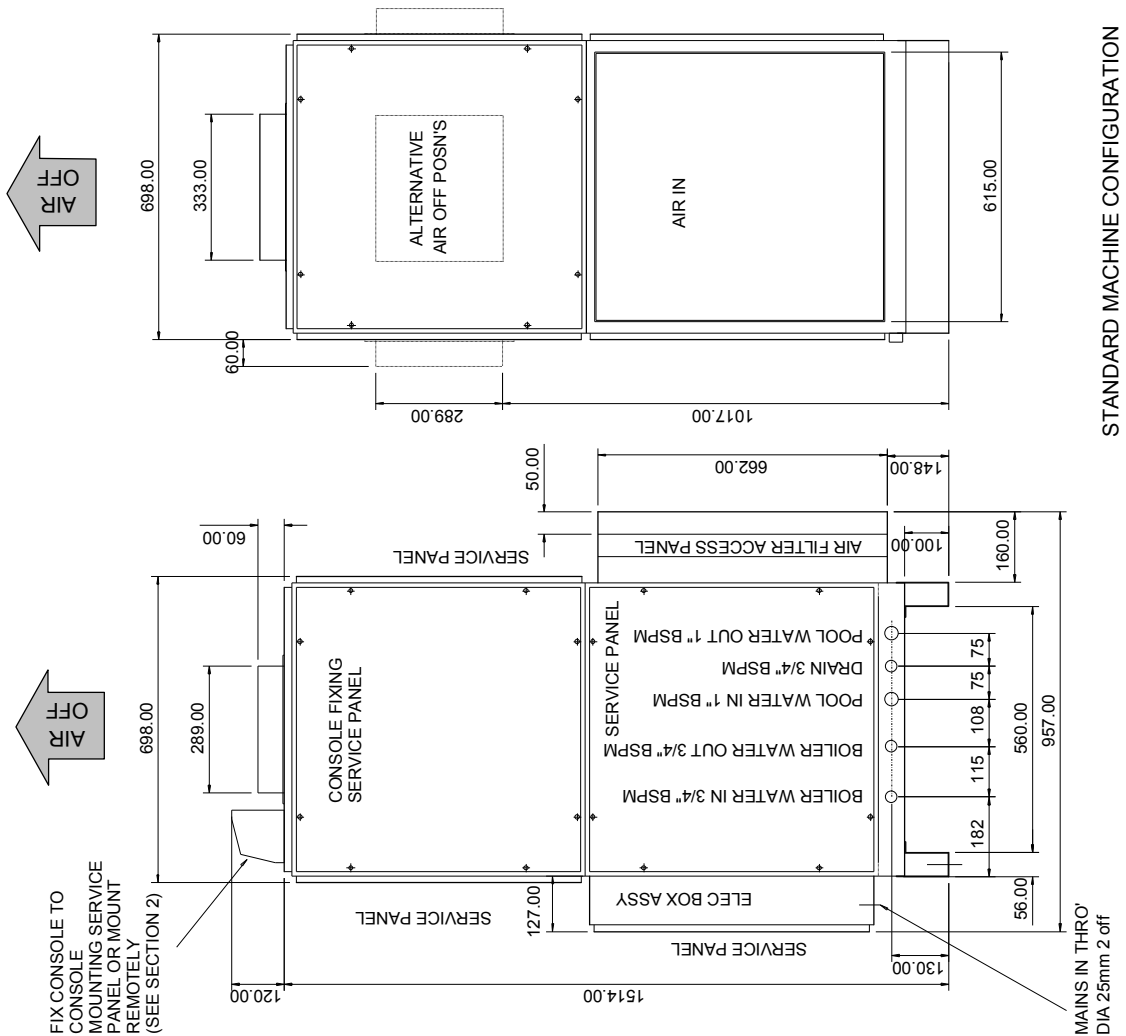
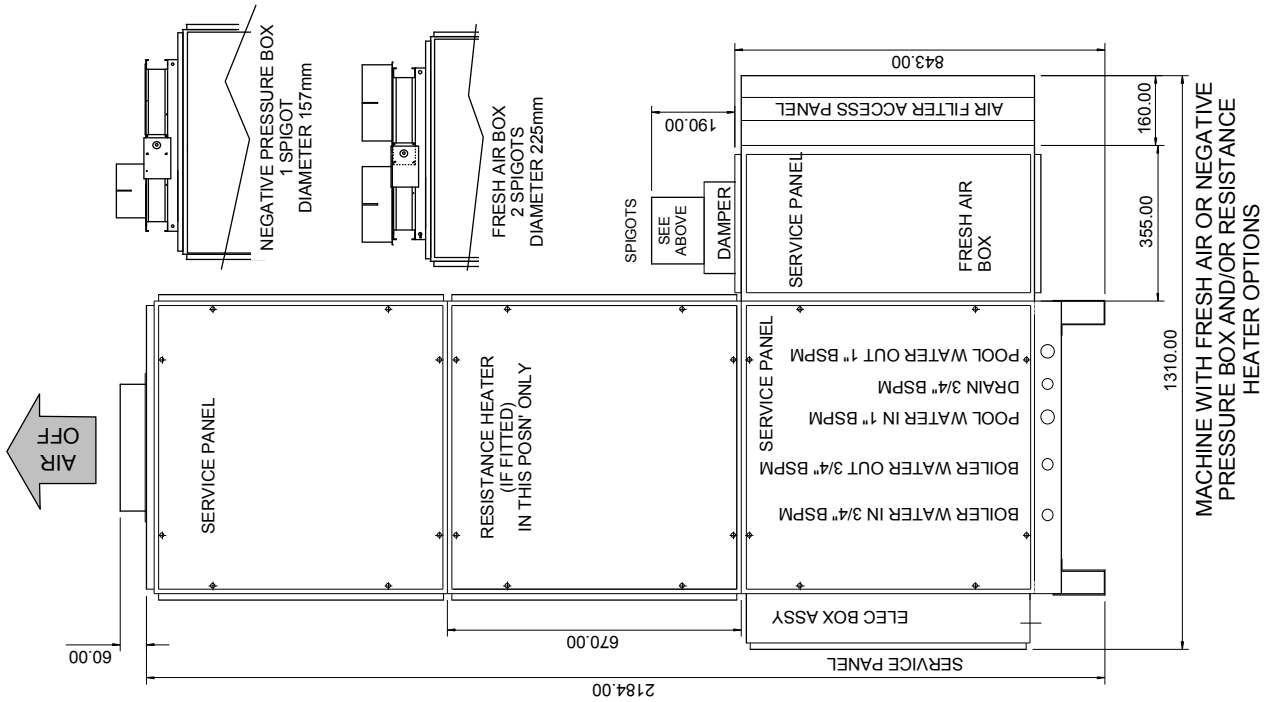
# AIR LPHW PERFORMANCE

This table shows the difference in performance with temperature and waterflow for all LPHWs, single and double capacity.

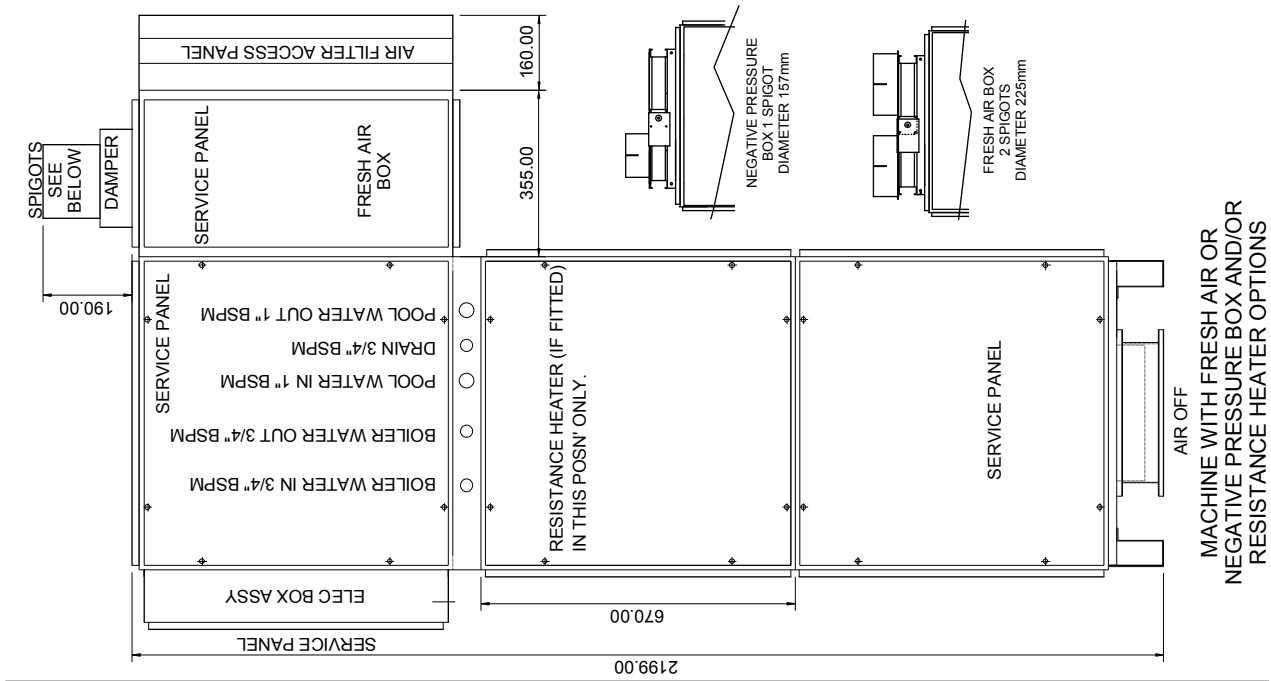


## 5.0 DIMENSION DRAWINGS 600/900 VERTICAL TOP OUTLET VERSIONS

**NOTE - FEET (TOP HAT SECTION) CAN BE REMOVED IF REQD ON ALL VERSIONS ( TO REDUCE HEIGHT BY 100mm)**

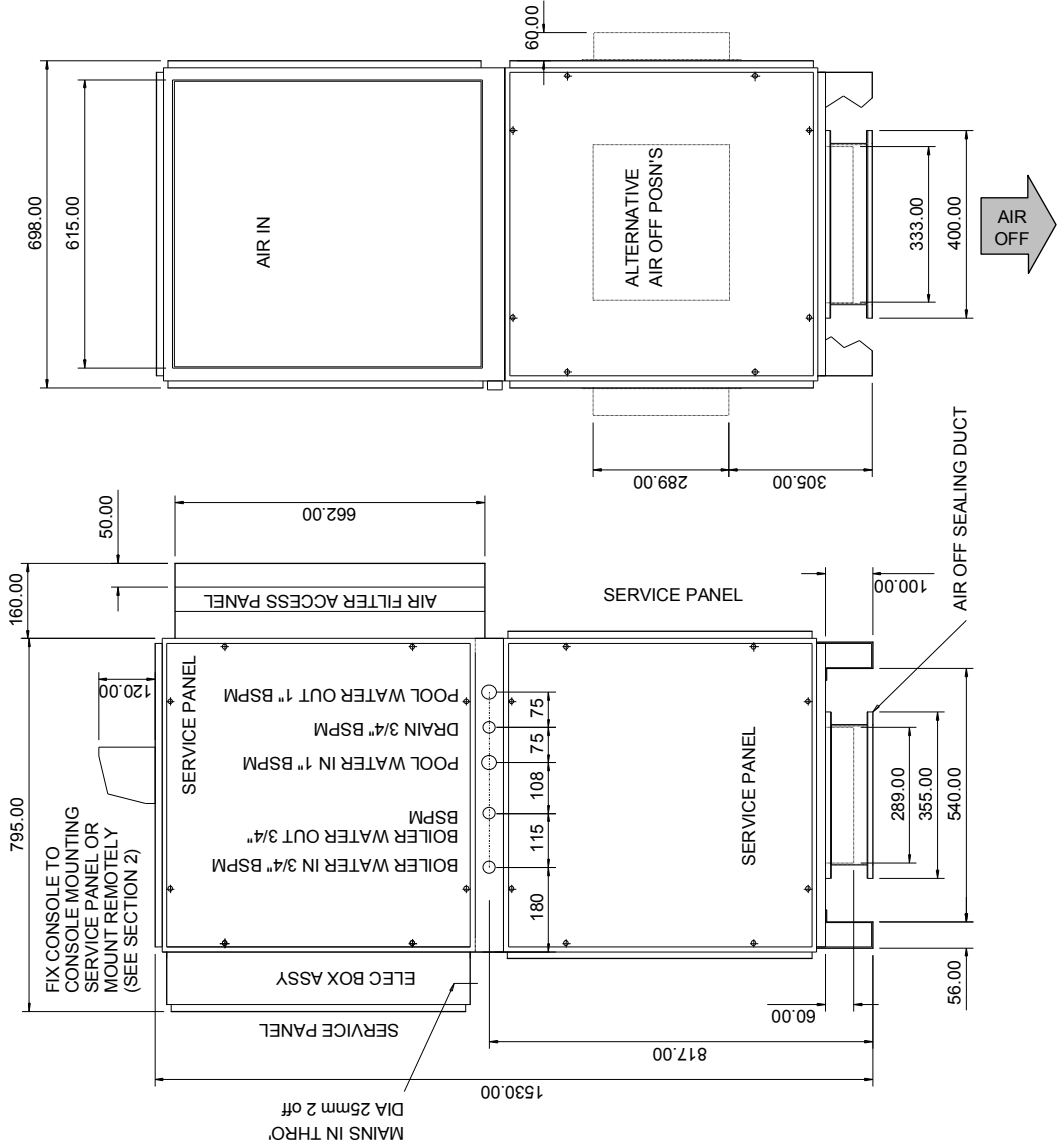


**600/900 VERTICAL BOTTOM OUTLET VERSIONS**

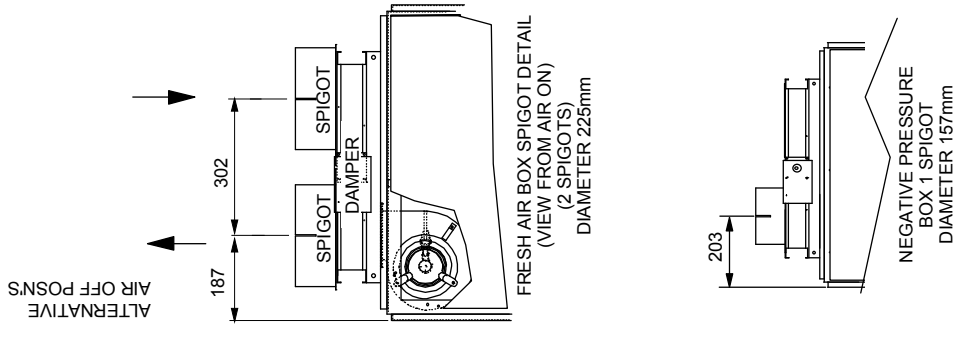
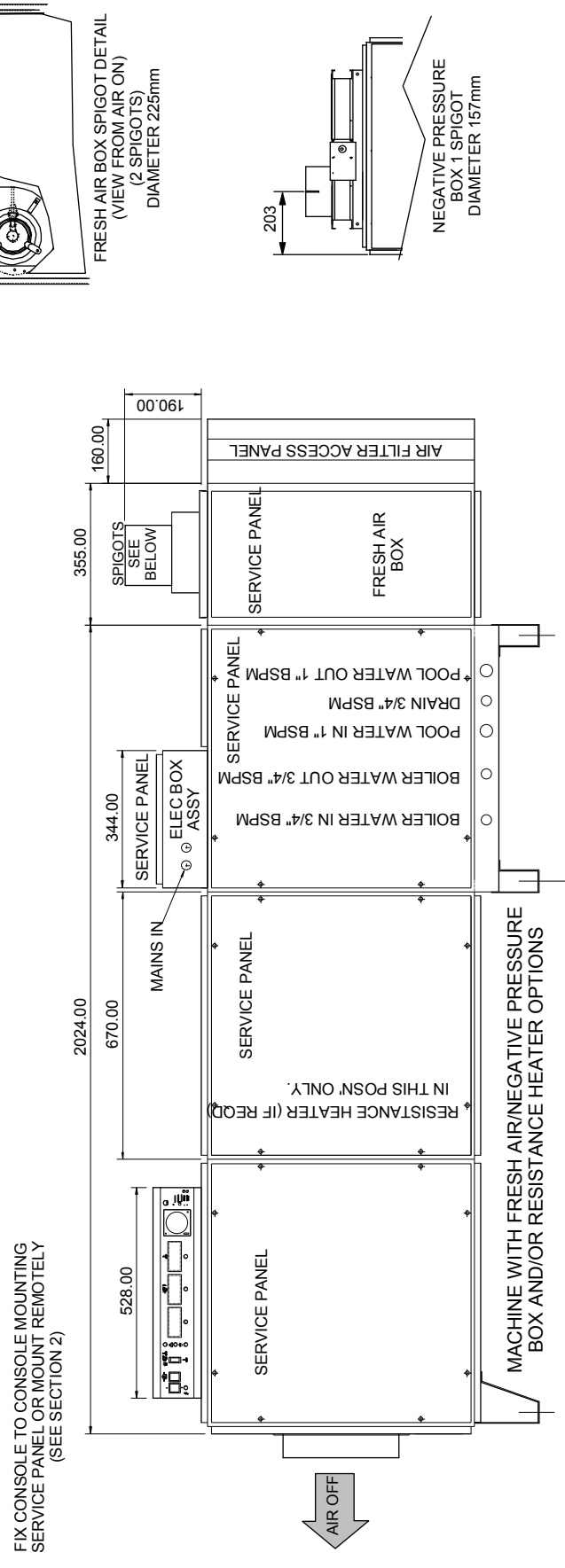
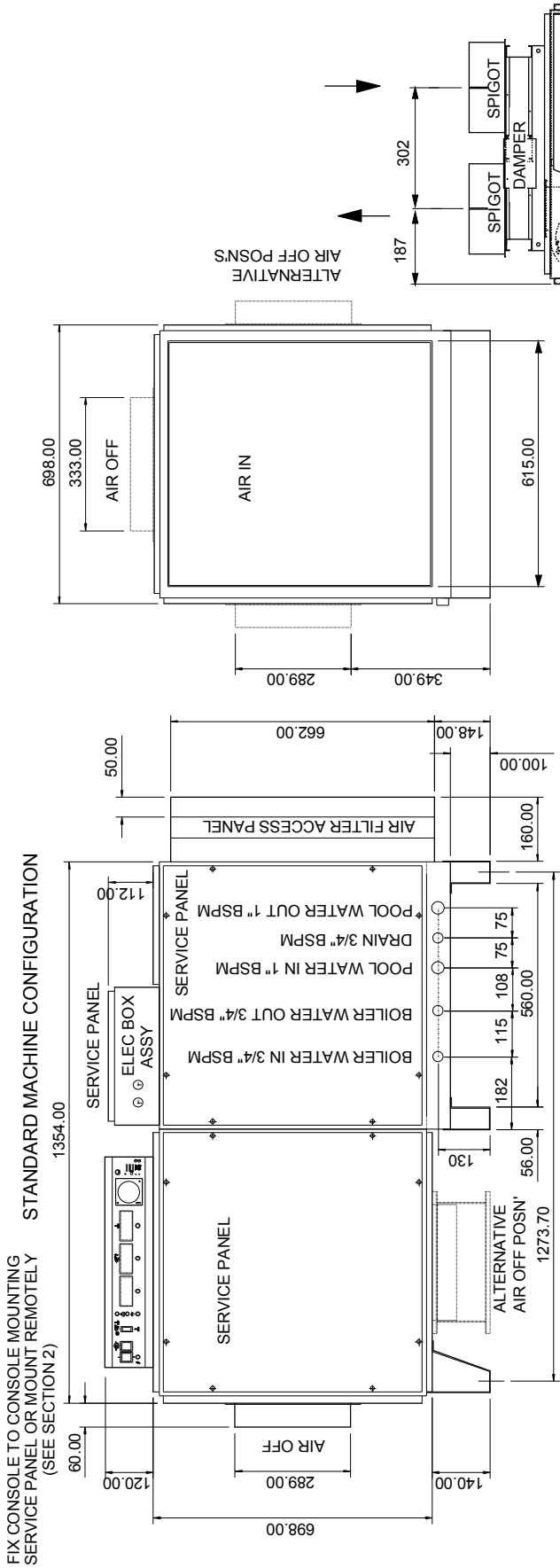


MACHINE WITH FRESH AIR OR  
NEGATIVE PRESSURE BOX AND/OR  
RESISTANCE HEATER OPTIONS

**STANDARD MACHINE CONFIGURATION**

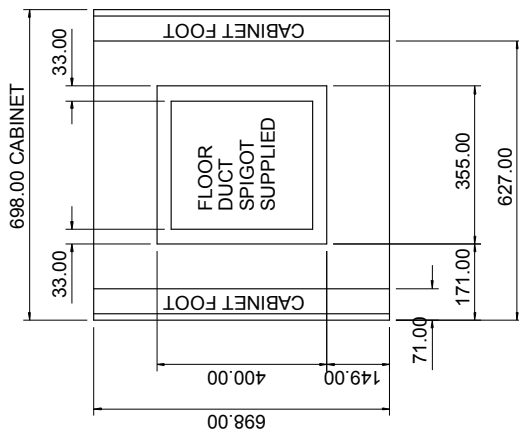


600/900 HORIZONTAL VERSIONS

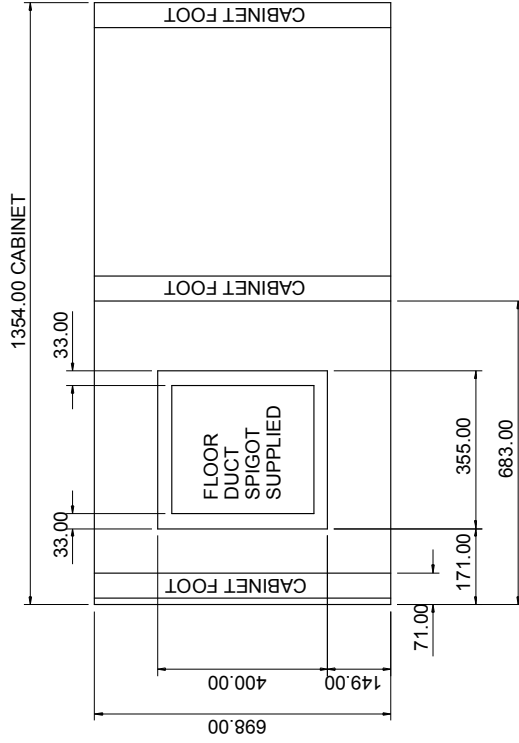


**BOTTOM OUTLET VERSIONS SHOWING DUCT TO FLOOR DETAIL**

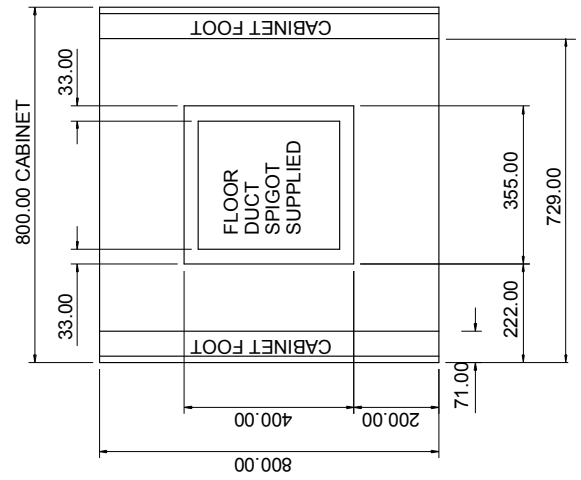
**600/900 VERTICAL VERSIONS**



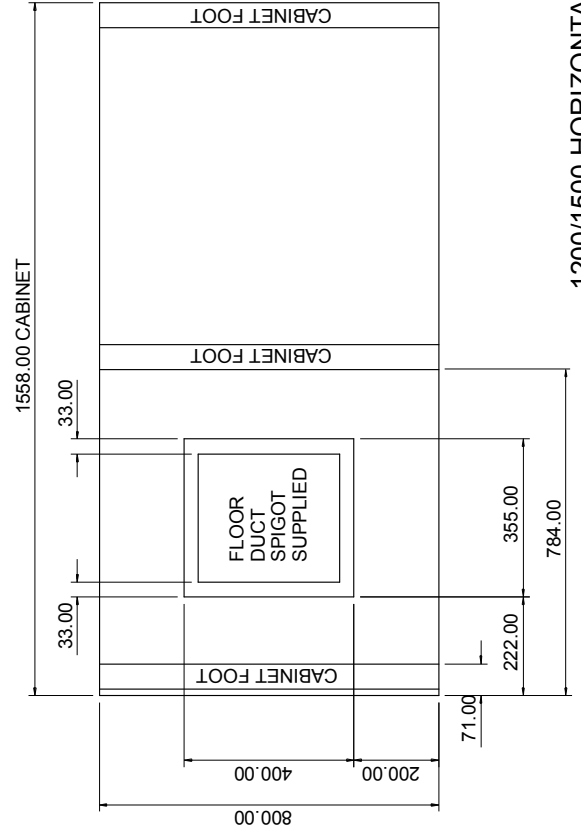
**600/900 HORIZONTAL VERSIONS**



**800/1500 VERTICAL VERSIONS**

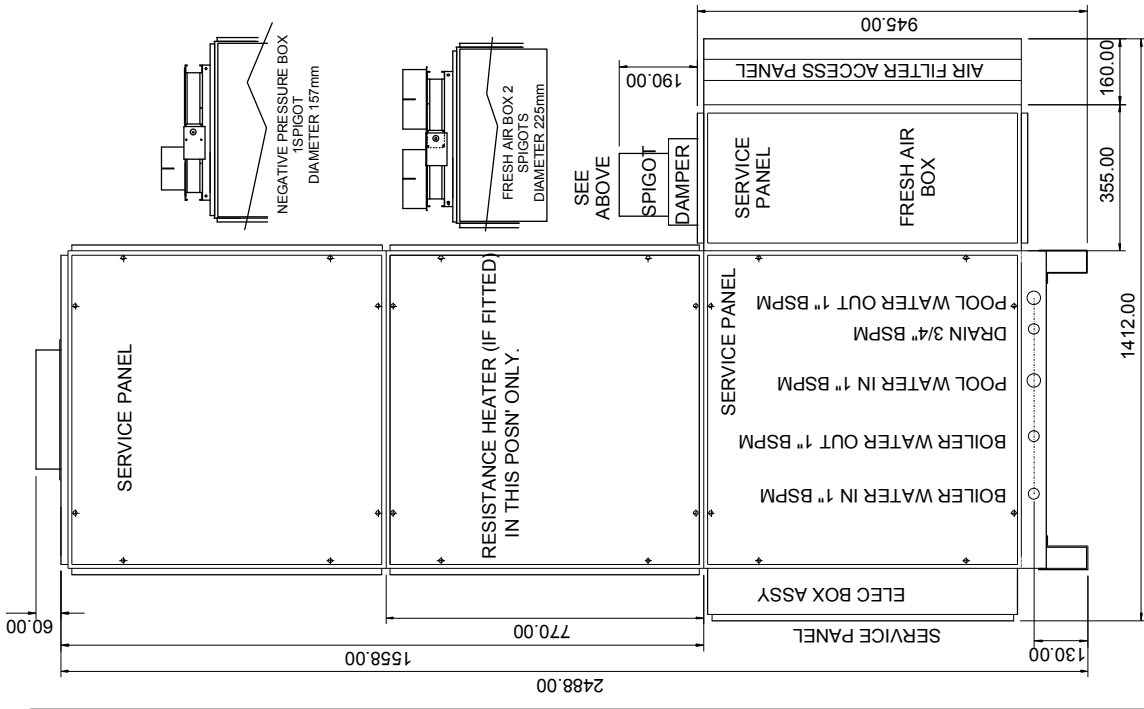


**1200/1500 VERTICAL VERSIONS**

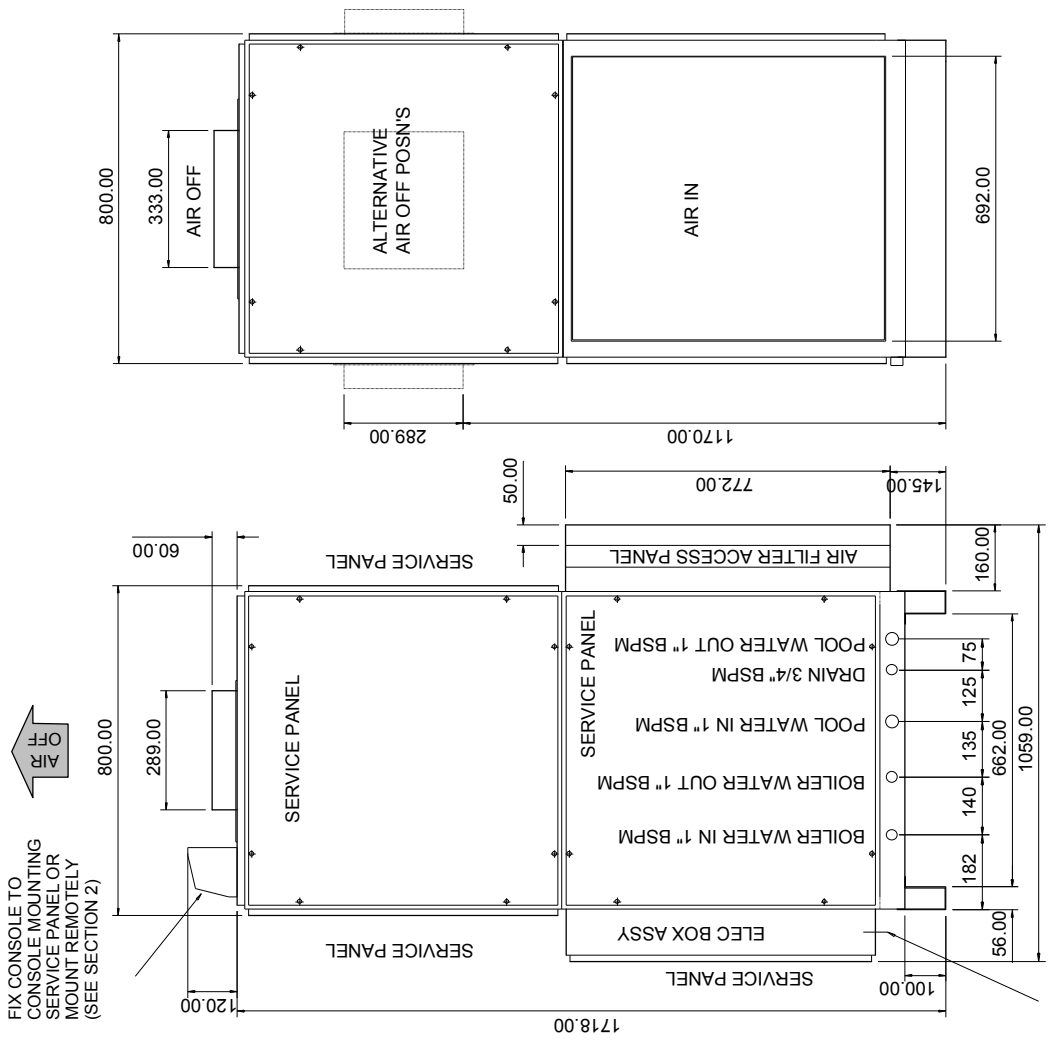


**1200/1500 HORIZONTAL VERSIONS**

**1200/1500 VERTICAL TOP OUTLET VERSIONS**



MACHINE WITH FRESH AIR OR  
NEGATIVE PRESSURE BOX AND/OR  
RESISTANCE HEATER OPTIONS

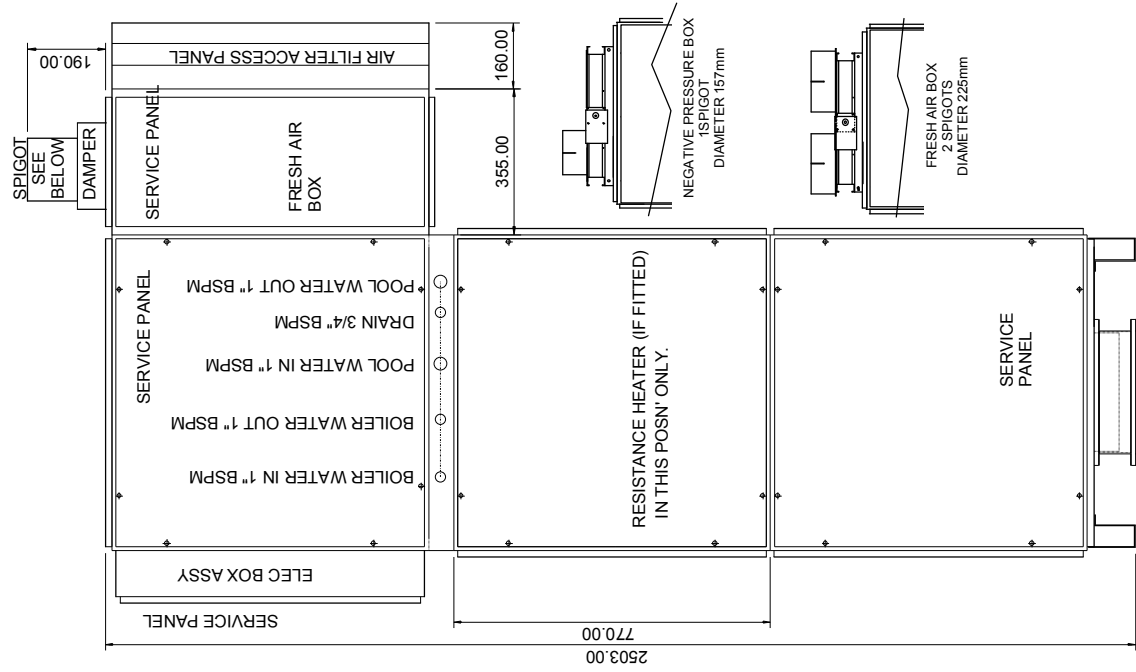


STANDARD MACHINE CONFIGURATION

FIX CONSOLE TO  
CONSOLE MOUNTING  
SERVICE PANEL OR  
MOUNT REMOTELY  
(SEE SECTION 2)

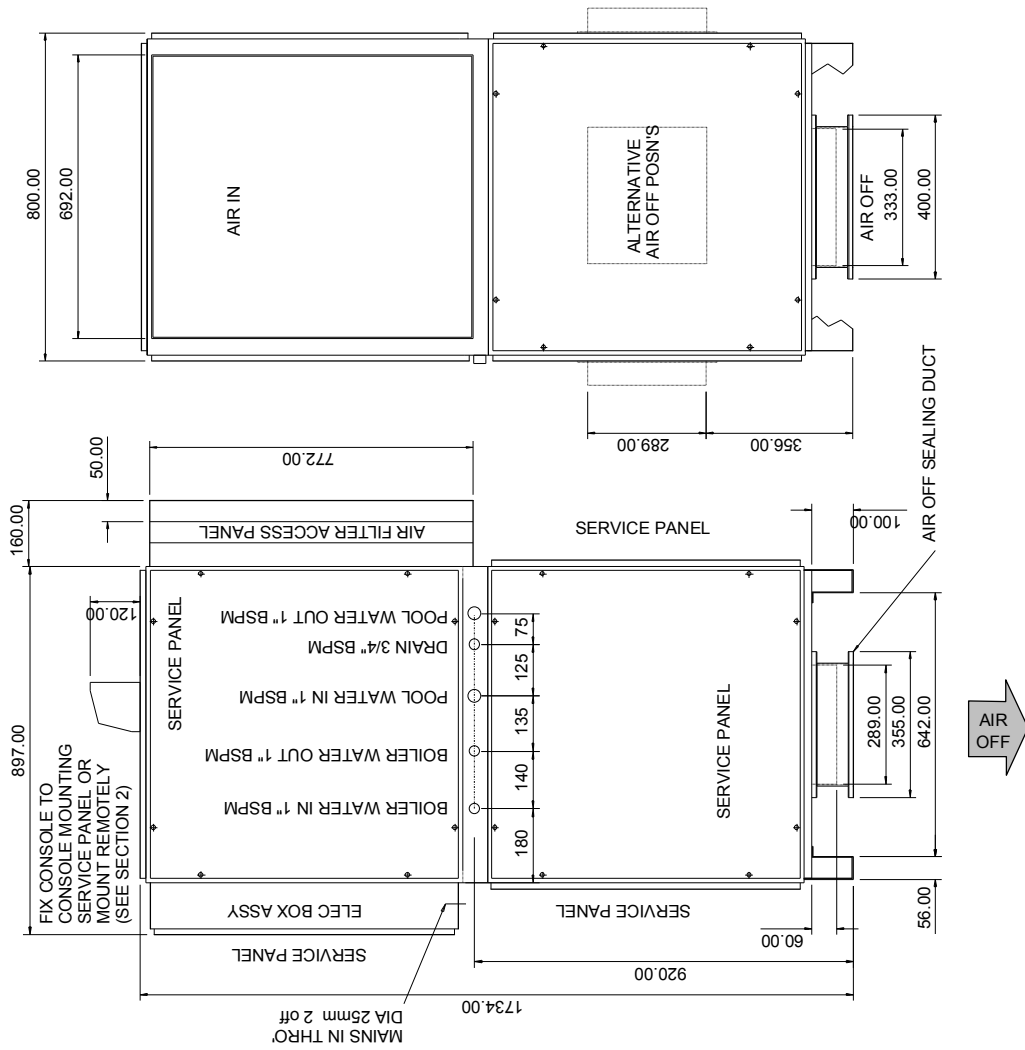


# 1200/1500 VERTICAL BOTTOM OUTLET VERSIONS



MACHINE WITH FRESH AIR OR  
NEGATIVE PRESSURE BOX AND/OR  
RESISTANCE HEATER OPTIONS

## STANDARD MACHINE CONFIGURATION







## 6.0 WARRANTY CONDITIONS

The following exclusions apply to the Warranty given by Calorex Heat Pumps Ltd. No claims will be accepted if :-

1. The heat pump is incorrectly sized for the application.
2. The heat pump is installed in any way that is not in accordance with the current procedures as defined by Calorex Heat Pumps Ltd.
3. The heat pump 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 to and from 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 <sub>3</sub>	ppm	80 - 120
Total Hardness, as CaCO <sub>3</sub>	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 heat pump has suffered frost damage.
8. The electrical supply is insufficient or in any way incorrect.
9. The fan amps and duct pressure are outside the specified limits.
10. The heat pump must be maintained to the service requirements in section 2.7.

For details of extended warranty and maintenance packages please call the service number below.

### IF IN ANY 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 Heat Pump please contact the Calorex Service Department giving your name, address, model & serial number of your heat pump. A card will be sent to you for completion.

Email [service@calorex.com](mailto:service@calorex.com)

Web Site <http://www.calorex.com>

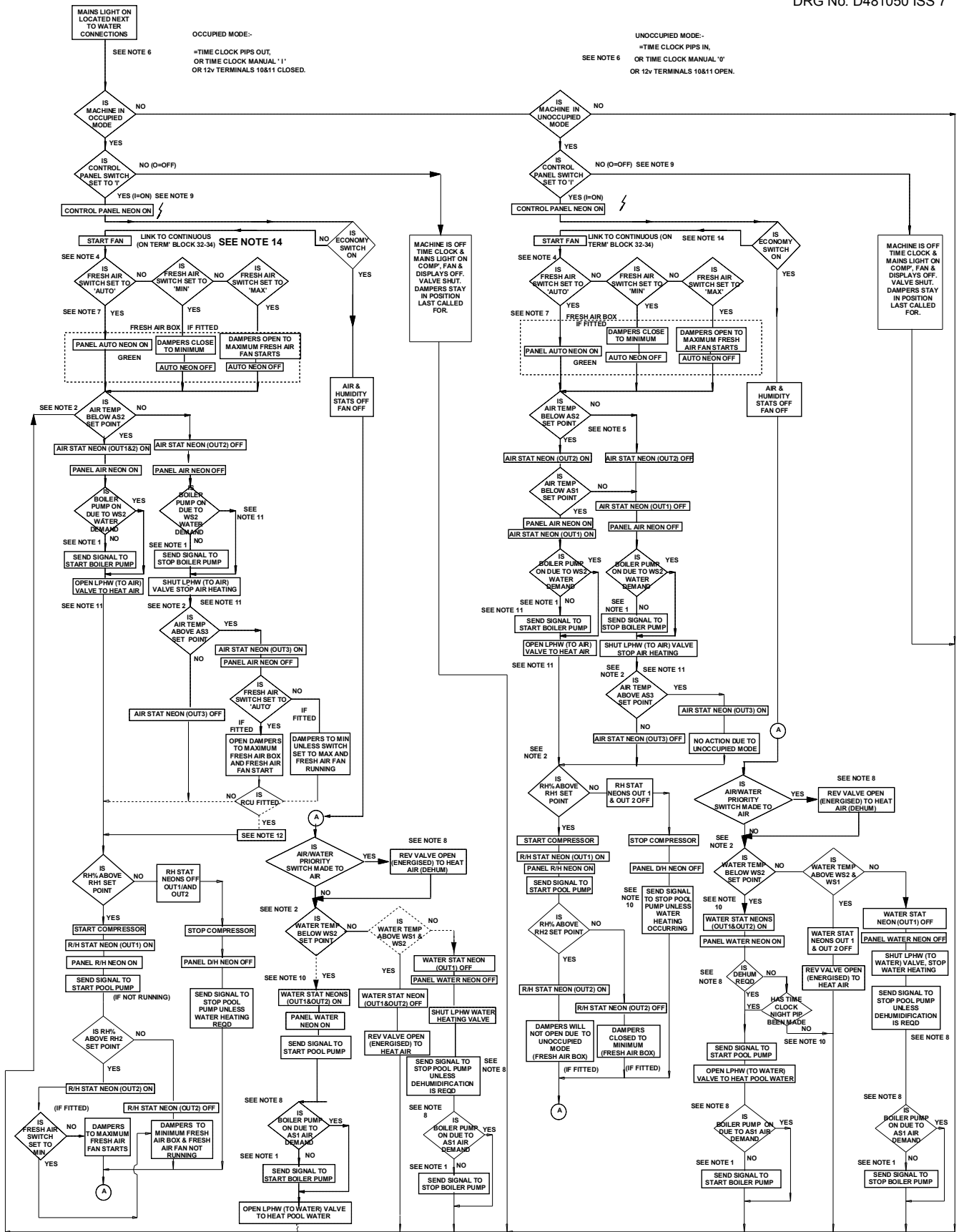
01621 857171



01621 856611

Please give MODEL NUMBER and SERIAL NUMBER of your heat pump when making technical or service enquiries. This will assist in correct diagnosis and ensure service can be provided with the minimum delay.





CHECK DEFROST MODE SEE NOTES 3 & 12

**NOTES**

- 1) SIGNAL TO START BOILER PUMP IS VIA TERMINAL BLOCKS 6 & 7 (VOLTAGE FREE SWITCH).
- 2) "SET POINT" OF THERMOSTATS IS REFERRED TO AS THE SWITCHING POINT FOR SIMPLICITY WHEN IN FACT THE RELAY OPERATES AT SET POINT, PLUS OR MINUS THE HYSTERESIS. (SEE GRAPHS BELOW).
- 3) WHEN MACHINE IS ON DEFROST THE FAN STOPS BUT ALL OTHER FUNCTIONS OPERATE AS NORMAL.
- 4) IF FRESH AIR SWITCH IS SET TO 'MIN' THE DAMPERS (AIR BOX) ARE FORCED TO CLOSE AND WILL NOT BE UNDER MACHINE 'AUTO' CONTROL.
- 5) AIR STAT NEON (OUT2) WILL SHOW DEMAND ON UNOCCUPIED SETTING BUT NOTHING WILL HAPPEN BECAUSE CONTROL IS BY OUT1 STAGE OF AIR STAT (UNOCCUPIED)
- 6) TIME CLOCK MUST BE OVERRIDDEN AND UNOCCUPIED (PIPS IN) SELECTED IN ORDER THAT THE REMOTE 12v SWITCHING FEATURE CAN OPERATE. MACHINE TERMINALS 10 & 11 ARE 12vac, OPEN CIRCUIT = UNOCCUPIED, CLOSED CIRCUIT = OCCUPIED.
- 7) PANEL AUTO NEON (GREEN) ONLY WORKS WHEN AIR BOX FITTED.
- 8) IF REMOTE ON/OFF LINK (TERMINAL 12 & 13) IS REMOVED MACHINE WILL NOT START.
- 9) RESISTANCE HEATER CAN SOMETIMES REPLACE AIR LPHW. (BOILER PUMP WILL NOT START WITH AIR RESISTANCE HEATING).
- 10) R.C.U. IS ENERGISED ON AS3 IN OCCUPIED MODE ONLY. (R.C.U. FAN WILL START) WITH COMPRESSOR, AND CHANGE R.C.U. SOLENOID VALVES FROM A TO B (A CLOSSES - B OPENS) UNLESS M/C IS IN DEFROST MODE WHICH WILL THEN KEEP VALVE A ENERGISED.
- 11) WHEN FAN IS SET TO CYCLE MODE, FAN ONLY RUNS WHEN MACHINE HAS DEHUMIDIFICATION OR AIR HEATING DEMANDS. CYCLE MODE IS TERMINALS 33 & 34 LINKED (MADE). FIT LINK BETWEEN TERMS 32 & 34 TO RUN MACHINE IN CONTINUOUS MODE.

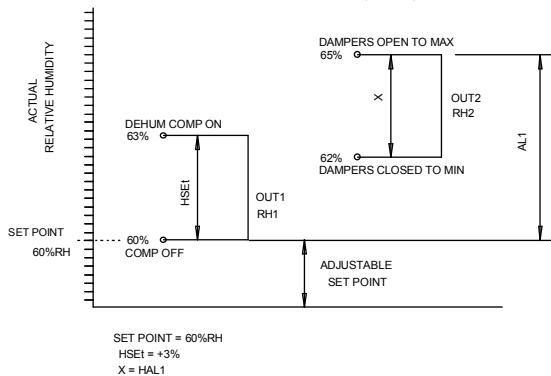
OCCUPIED MODE:-

=TIME CLOCK PIPS OUT,  
OR TIME CLOCK MANUAL 'I'  
OR 12V TERMINALS 10&11 CLOSED.

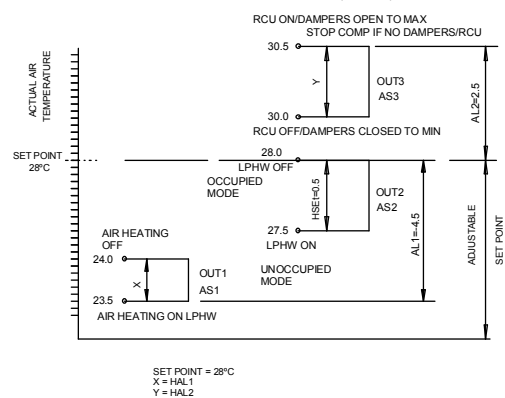
UNOCCUPIED MODE:-

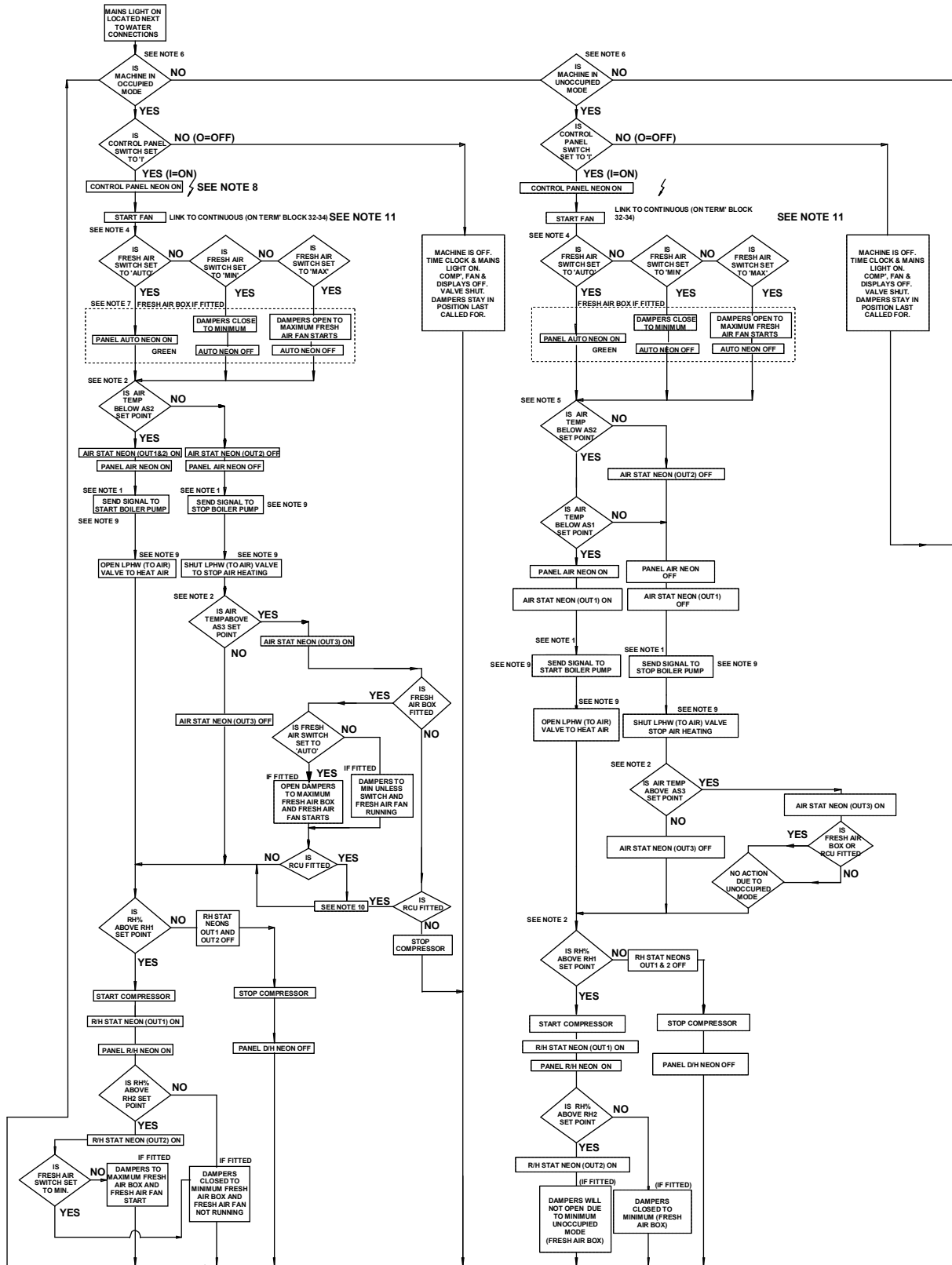
=TIME CLOCK PIPS IN,  
OR TIME CLOCK MANUAL 'O'  
OR 12V TERMINALS 10&11 OPEN.  
RH2 = DEHUM STAT STAGE 2 (DAMPERS OPEN)  
AS1 = AIR STAT STAGE 1 (LPHW HEAT AIR) UNOCCUPIED MODE  
AS2 = AIR STAT STAGE 2 (LPHW HEAT AIR) OCCUPIED MODE  
AS3 = AIR STAT STAGE 3 (A/C COOL AIR. DAMPERS OPEN)

DEHUMIDISTAT EXAMPLE  
TECNOLOGIC STAT (TLK38)



AIR THERMOSTAT EXAMPLE  
TECNOLOGIC STAT (TLK31)



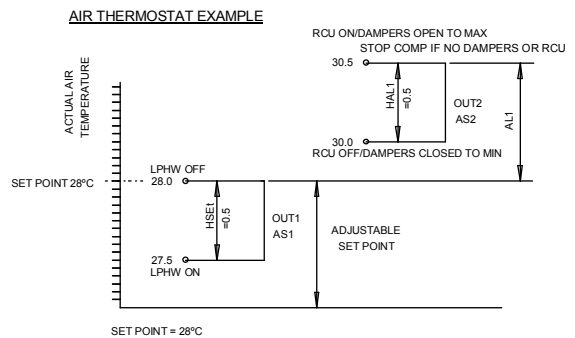
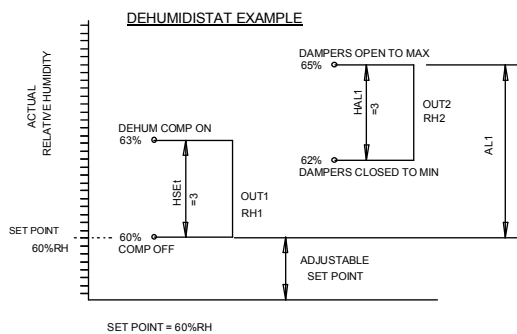


CHECK DEFROST MODE SEE NOTES 3 & 10

**NOTES**

- 1) "SET POINT" OF DIGITAL CONTROLLERS IS REFERRED TO AS THE SWITCHING POINT FOR SIMPLICITY WHEN IN FACT THE RELAY OPERATES AT SET POINT PLUS OR MINUS THE HYSTERESIS. (SEE GRAPHS BELOW).
  - 2) WHEN MACHINE IS ON DEFROST, FAN STOPS BUT ALL OTHER FUNCTIONS OPERATE AS NORMAL.
  - 3) IF FRESH AIR SWITCH IS SET TO 'MIN' THE DAMPERS (AIR BOX) ARE FORCED TO CLOSE AND WILL NOT BE UNDER MACHINE 'AUTO' CONTROL.
  - 4) PANEL AUTO NEON (GREEN) ONLY WORKS WHEN AIR BOX FITTED.
  - 5) IF REMOTE ON/OFF LINK (TERMINAL 12 & 13) IS REMOVED MACHINE WILL NOT START.
  - 6) RCU IS ENERGISED ON AS2, RCU FAN WILL START WITH COMPRESSOR, AND CHANGE RCU SOLENOID VALVES FROM A TO B (A CLOSES - B OPENS) UNLESS M/C IS IN DEFROST MODE WHICH WILL THEN KEEP VALVE A ENERGISED.
  - 7) WHEN FAN IS SET TO CYCLE MODE, FAN ONLY RUNS WHEN MACHINE HAS DEHUMIDIFICATION OR AIR HEATING DEMANDS. CYCLE MODE IS TERMINALS 33 & 34 (LINKED (MADE) LINK TO TERMS 32 & 34 IN CONTINUOUS MODE.)
  - 8) IF REMOTE ON/OFF LINK (TERMINAL 12 & 13) IS REMOVED MACHINE WILL NOT START.
- RH1 = DEHUM STAT STAGE 1 (COMP ON)  
 RH2 = DEHUM STAT STAGE 2 (DAMPERS OPEN)  
 AS1 = AIR STAT STAGE 1 (HEAT AIR).  
 AS2 = AIR STAT STAGE 2 (A/C COOL AIR. DAMPERS OPEN).

TECNOLOGIC STATS (TLK38)





## 7.1 RELAY FUNCTIONS

- R1 Energised on power on switch being made on AA and AA+LPHW /resistance heating.  
Energised on power on switch being made and economy switch in the full operation mode on the AW.  
When not energised and the machine is switched on allows the pool pump & water LPHW to operate in economy mode once 60 min timer on AW machine (if fitted) has timed out, when water temperature is below stage 1.
- R2 Energised when stage 1 (unoccupied) or stage 2 in occupied mode. Air heating is needed bring on the LPHW air valve or resistance heater (used on AA machine to bring on the fan if air is below stage 1. R4 has to be made in occupied mode). It will also bring on the fan on all machines if fan is not already running.
- R3 Energised when dehumidification is needed as long as LP and HP pressure switches are not in fault mode.
- R4 Energised when time clock is in occupied mode on AA+LPHW / resistance heating and AW machine. On AA with air box or RCU energised once the power switch is made.
- R5 Energised on humidity still rising above stage 2, which in turn will open the dampers (only if air box is fitted and R4 is energised).
- R6 Energised when damper switch on control panel is switched from auto mode (only if air box is fitted).
- R7 Energised to switch the air box to max (if air box is fitted).
- R8 Energised when water temperature is above stage 2 it energise the reversing valve to send dehumidification heat to air (AW machine only).
- R9 Energised if LPHW water heating is required to start the pool pump only in the occupied mode and economy mode or if at any time dehumidification is happening (AW machine only).
- R10 Energised by relay 9 to bring on water LPHW valve. Only if water temperature is below stage 1 in occupied mode only. (AW machine only).
- R11 Used on AA / AA+LPHW / resistance heating machine without options to stop dehumidification once air temperature is above stage 2 on AA machine, above stage 3 on AA+LPHW / resistance heating.
- R12 Used only if RCU unit is fitted energised if air temperature is above stage 2 on an AA machine with out time clock or stage 3 on all other machines.
- R13 Used only on AW machine to start LPHW water heating and pool pump if water temperature is below stage 1 in the occupied mode only.
- R14 Provides volt free contacts for remote 'control power' indication.
- RE 1 Energised by R2 to bring on the fan when the fan is wired to cycle mode when air temperature is low.
- RE 2 Energised in defrost mode to bring on defrost lamp and if RCU is fitted to change back to valve A if RCU is calling for, valve B when machine is in defrost mode.
- RE 3 Energised once R1 is made unless the soft start has a fault or soft start link is broken.  
Which would cause RE 3 to drop out bring on the fault lamp.
- RE 4 Provides volt free contacts for fan running.



## 7.2 PARAMETER SETTINGS

### SETTING INSTRUCTIONS (TECNOLOGIC STATS, TLK 38, TLK 31)

NOTE : These parameter settings are programmed by the supplier to the figures shown below and should not need altering. See Section 3.2 for description of how to alter customer settings.

#### 1a. To Program the Set Point (Humidity and Water).

Press down P, SP1 and Set Point value (e.g. 60) will be displayed alternately. Press the ▲ or ▼ key to change the value of SP1. Once the desired value is displayed press P to memorise the value. The display will revert to the present reading.

NOTE : If anything else shows on the display leave alone for 1 minute, until the display returns to normal.

#### 1b. To Program the Set Point (Air)

Press down P, SP1 and Set Point value (e.g 28) will be displayed alternately. Press 'P' again, AL1 and AL1 value (-4.5) will be displayed alternately. This is the difference between the Set Point and AL1 plus HSEt e.g 28-4.5+0.5 = 24°C Night set back or unoccupied temperature.

SP1 and AL1 can be changed in the same way as described above for all Variheats

2. To Program the Parameters. Press and hold down the P key for approximately 2 seconds. You will enter the Programme Control Group Menu. Press the ▲ key to reach ConF, then press P again. Enter the Password -281 by holding the ▼ key. If you pass -281 press the ▲ key to go back, then press P again, this will take you into the Programmable Group Menu. Press the ▲ or ▼ key to get into the relevant group and press P again. You should now be at the first parameter of that group. To read or change the setting press P, then to change the setting (if needed) press the ▲ or ▼ key. Once the correct setting is reached press P again. To move to the next setting press the ▲ or ▼ key and repeat above.

\*NOTE Some functions are not present, either because they are instrument dependant or because they are disabled.

To return to Programmable Group Menu leave keys alone for 20 seconds approx. To return to Normal Mode leave alone for a further 20 seconds approx.

PARAMETER NAME	FUNCTION	SETTING			
		WATER	AIR NO AIR HEATING	AIR AIR HEATING	HUMIDITY

#### GROUP 0SP (RELATIVE TO SET POINT )

CAN BE SET FROM  
KEYPAD

nSP	FACTORY SETTING	1	1	1	1
SP1	SET POINT 1	26.0	28.0	28.0	60
SPLL	FACTORY SETTING	10.0	10.0	10.0	15
SPhL	FACTORY SETTING	40.0	40.0	40.0	80

#### GROUP 0InP (RELATIVE TO THE MEASURED OUTPUT )

SEnS	FACTORY SETTING	Ptc	Ptc	Ptc	0.10
*SSC	FACTORY SETTING				0
*FSC	FACTORY SETTING				100
dp	FACTORY SETTING	1	1	1	0
*Unit	FACTORY SETTING	°C	°C	°C	
FiL	FACTORY SETTING	1	1	1	OFF
Fild	FACTORY SETTING	OFF	OFF	OFF	OFF
OFSt	MEASURING OFFSET	0.0	0.0	0.0	0
rot	FACTORY SETTING	1.000	1.000	1.000	1.000
InE	FACTORY SETTING	Our	Our	Our	Our
OPE	FACTORY SETTING	0	0	0	0
*Dif	FACTORY SETTING			noF	

#### GROUP 0Out (RELATIVE TO OUTPUTS)

01F	FACTORY SETTING	1.rEG	1.rEG	ALno	1.rEG
02F	FACTORY SETTING	Alnc	ALno	1.rEG	ALno
*03F	FACTORY SETTING			ALno	
*04F	FACTORY SETTING			ALno	

PARAMETER NAME	FUNCTION	SETTING			
		WATER	AIR NO AIR HEATING	AIR AIR HEATING	HUMIDITY
GROUP 3AL1 (RELATIVE TO ALARM AL1)					
0AL1	OUTPUT, ALARM AL1 ADDRESSED	Out2	Out2	Out1	Out2
AL1t	FACTORY SETTING	LodE	HidE	LodE	HidE
Ab1	FACTORY SETTING	0	0	0	0
AL1	ALARM AL1 THRESHOLD	0.1	2.5	-4.5	5
AL1L	FACTORY SETTING	-199.0	-199.0	-10.0	-1999
AL1H	FACTORY SETTING	999.0	999.0	-1.0	9999
HAL1	ALARM AL1 HYSTERESIS	0.2	0.5	0.5	3
AL1d	FACTORY SETTING	OFF	OFF	OFF	OFF
AL1i	FACTORY SETTING	no	no	no	no
GROUP 3AL2 (RELATIVE TO ALARM AL2)					
* 0AL2	OUTPUT, ALARM AL2 ADDRESSED			Out3	
* AL2t	FACTORY SETTING			HidE	
* Ab2	FACTORY SETTING			0	
* AL2	ALARM AL2 THRESHOLD			2.5	
* AL2L	FACTORY SETTING			-199.0	
* AL2H	FACTORY SETTING			999.0	
* HAL2	ALARM AL2 HYSTERESIS			0.5	
* AL2d	FACTORY SETTING			OFF	
* AL2i	FACTORY SETTING			no	
GROUP 3AL3 (RELATIVE TO ALARM AL3)					
* 0AL3	OUTPUT, ALARM AL3 ADDRESSED			Out4	
* AL3t	FACTORY SETTING			HidE	
* Ab3	FACTORY SETTING			0	
* AL3	ALARM AL3 THRESHOLD			4.5	
* AL3L	FACTORY SETTING			-199.0	
* AL3H	FACTORY SETTING			999.0	
* HAL3	ALARM AL3 HYSTERESIS			0.5	
* AL3d	FACTORY SETTING			OFF	
* AL3i	FACTORY SETTING			no	
GROUP 3LBa (RELATIVE TO LOOP BREAK ALARM)					
0LbA	FACTORY SETTING	OFF	OFF	OFF	OFF
LbAt	FACTORY SETTING	OFF	OFF	OFF	OFF

PARAMETER NAME	FUNCTION	SETTING			
		WATER	AIR NO AIR HEATING	AIR AIR HEATING	HUMIDITY
GROUP rEG (RELATIVE TO CONTROL)					
Cont	FACTORY SETTING	On.FA	On.FA	On.FA	On.FA
Func	FACTORY SETTING	HEAt	HEAt	HEAt	CooL
HSEt	FACTORY SETTING	0.2	0.5	0.5	3
SloR	FACTORY SETTING	1nF	1nF	1nF	1nF
dur.t	FACTORY SETTING	1nF	1nF	1nF	1nF
SLoF	FACTORY SETTING	1nF	1nF	1nF	1nF
GROUP PAn (RELATIVE TO USER INTERFACE)					
USrb	FACTORY SETTING	noF	noF	noF	noF
disP	FACTORY SETTING	dEF	dEF	dEF	dEF
AdE	FACTORY SETTING	OFF	OFF	OFF	OFF
Edit	FACTORY SETTING	SAE	SAE	SAE	SAE

**NOTE** Any group or parameter not shown on list should be left as factory setting.

SET POINT	SWITCHING POINTS					
	OUT1		OUT2		OUT3	
	ON	OFF	ON	OFF	ON	OFF
RELATIVE HUMIDITY = 60%	63	60	65	62	---	---
AIR TEMPERATURE = 28°C	23.5	24.0	27.5	28.0	30.5	30.0
WATER TEMPERATURE = 26°C	25.8	26.0	26.1	26.3	---	---

ERROR	ACTION
"---" PROBE INTERRUPTED "uuuu" OR "oooo" PROBE LIMIT UNDER/OVER RANGE	VERIFY CORRECT CONNECTION BETWEEN PROBE AND STAT, THEN VERIFY CORRECT FUNCTIONING OF PROBE.
LbA LOOP CONTROL INTERRUPTED	CHECK WORKING OF PROBE AND ACTUATOR AND SWAP INSTRUMENT TO rEG CONTROL
EreP POSSIBLE ANOMALY OF EPROM MENU	PUSH P KEY

### Programming the offset

If the reading on the digital controller is not the same as the actual pool hall air temperature, water temperature or relative humidity, it may be necessary to program the offset.

Press and hold the P key for approximately 2 seconds. You will then enter the programme control group menu. Press the up key to reach ConF, then press P again and enter the password -281 by holding the down key. If you pass -281 use the up key to go back, then press P again. This takes you into the programmable group menu. Press the up or down key to get to group =>InP and then press P again. Press the up key until OFSt is displayed. This parameter can be adjusted by pressing the P key and then the up and down key until the Technologic stat reading and the actual reading are the same.

Example: If the Pool water is 26.0°C and the digital controller reads 25.5°C the offset to be entered is +0.5.

When the correct offset has been inserted, leave the stat alone for 20 seconds and the display will return to normal. Great care should be taken to leave all other parameters at their factory settings.

SETTING INSTRUCTIONS (TECNOLOGIC STATS, TLZ11)

NOTE : These parameter settings are programmed by the supplier ready for use. The parameter tables below should only be needed for reference. See Section 3.2 for description of how to alter customer settings.

1a. To Program the Set Point (Air and Water).

Press down P, SP1 and Set Point value (e.g. 60) will be displayed alternately. Press the ▲ or ▼ key to change the value of SP1. Once the desired value is displayed press P to memorise the value. The display will revert to the present reading.

NOTE : If anything else shows on the display leave alone for 1 minute, until the display returns to normal.

2. To program the parameters. Press and hold the P key for approximately 2 seconds, until the display shows '0', the programme control menu. Enter the password 281 by holding the ▲ key. If you pass 281 press the ▼ key to go back. Then press P again. This will take you into the programmable menu.

To read or change the setting press P, then to change the setting (if needed) press the ▲ or ▼ key.

Once the correct setting is reached press P again. To move to the next setting press the ▲ or ▼ key and repeat above.

To return to normal mode leave alone for a further 20 seconds approx.

PARAMETER NAME	FUNCTION	WATER	AIR
SPLL	MINIMUM SET POINT	10	10
SPHL	MAXIMUM SET POINT	40	40
SEnS	PROBE TYPE	Ptc	Ptc
OFS	PROBE CALIBRATION	0.0	0.0
Unit	UNIT OF MEASUREMENT	OC	OC
dp	DECIMAL POINT	ON	ON
FIL	MEASUREMENT FILTER	OFF	OFF
HSEt	DIFFERENTIAL	0.2	0.5
tonE	ACTIVE TIME OUTPUT OUT FOR PROBE BROKEN	OFF	OFF
toFE	DEACTIVATION TIME OUTPUT FOR PROBE BROKEN	OFF	OFF
Func	FUNCTION MODE OUPUT OUT	HEAT	HEAT
PSC	TYPE OF COMPRESSOR PROTECTION: 1 = DELAY AT SWITCH ON 2 = DELAY AFTER SWITCH ON 3 = DELAY BETWEEN STARTS	1	1
PtC	COMPRESSOR PROTECTION TIME	OFF	OFF
od	DELAY AT POWER ON	OFF	OFF
HAL	RELATIVE HIGH TEMPERATURE ALARM THRESHOLD	0.3	2.5
LAL	RELATIVE LOW TEMPERATURE ALARM THRESHOLD	OFF	OFF
daL	TEMPERATURE ALARM DIFFERENTIAL	0.2	0.5
Ald	TEMPERATURE ALARM DELAY	OFF	OFF
PAL	TEMPERATURE ALARM DELAY AT POWER ON	OFF	OFF
dald		1	1
Usrb	FUNCTION MODE KEY U: OFF = NO FUNCTION 1 = ON/STAND-BY	OFF	OFF
PASS	ACCESS PASSWORD TO PARAMETER FUNCTIONS	281/381	281
SP	SET POINT	26	28

SET POINT	SWITCHING POINTS			
	OUT 1		OUT 2	
	ON	OFF	ON	OFF
AIR TEMPERATURE 28°C	27.5	28.0	30.5	30.0
WATER TEMPERATURE 26°C	25.8	26.0	26.1	26.3

## SETTING INSTRUCTIONS (STORK STATS)

**NOTE:** THESE PARAMETER SETTINGS ARE SET BY CALOREX AT THE FACTORY TO THE FIGURES SHOWN BELOW AND SHOULD NOT NEED ALTERING. SEE SECTION 3.2 FOR DESCRIPTION OF HOW TO ALTER CUSTOMER SETTINGS.

1. WITH MAINS LIGHT ON, PRESS DOWN  $\nabla$  TOGETHER AND HOLD.
2. WHEN 'P1' IS DISPLAYED PRESS  $\Delta$  AND HOLD UNTIL 'P32' IS DISPLAYED.
3. PRESS AND HOLD  $\Delta$  ,WHEN 'PA' APPEARS PRESS TOGETHER  $\nabla$  UNTIL 'A1' APPEARS.
4. PRESS AND HOLD 'SET' TO SHOW SETTING AND ALTER USING  $\Delta$  OR  $\nabla$ .  
WHEN REQUIRED SETTING DISPLAYED RELEASE 'SET' AND MOVE TO 'A2' USING  $\Delta$
5. REPEAT ABOVE PROCEDURE TO TABLE BELOW UNTIL ALL 'A' SETTINGS COMPLETED
6. PRESS AND HOLD  $\nabla$  UNTIL 'P1' APPEARS, THEN PRESS 'SET' TO SHOW SETTING.
7. REPEAT 'P' SETTINGS AS 'A' SETTING PROCEDURE.
8. WHEN ALL SETTINGS COMPLETED CONTROL WILL REVERT TO NORMAL DISPLAY.

PARAMETER	FUNCTION	SETTING		
		WATER	AIR 2 STAGE ONLY	HUMIDITY
P1	DELTA 'T' IN DEGREES CENTIGRADE BETWEEN THERMOSTAT STAGE 1 & STAGE 2	-0.2	2.0	3
P2	DIFFERENTIAL OF THERMOSTAT STAGE 1.	0.2	0.6	5
P3	DIFFERENTIAL OF THERMOSTAT STAGE 2.	0.2	0.6	5
P4	CUSTOMER SETTING LIMIT (LOWER)	20.0	20.0	15
P5	CUSTOMER SETTING LIMIT (HIGHER)	40	40	80
P6	ACTUAL TEMP DISPLAY ADJUSTMENT.	0.0	0.0	0
P19	KEYBOARD LOCK 1, UNLOCK 0	0	0	0
P30	N/A (LOWER BOUNDARY VALUE K3)	0.0	0.0	-10
P31	N/A (UPPER BOUNDARY VALUE K3)	0.0	0.0	10
P32	K3 HYSTERESIS	1	1	1
A1	SWITCH MODE K1 0 = HEATING 1 = COOLING	0	0	1
A2	SWITCH MODE K2 0 = HEATING 1 = COOLING	0	0	1
A3	SENSOR ERROR FUNCTION K1 0 = ON SWITCH OFF 1 = ON SWITCH ON	0	0	0
A4	SENSOR ERROR FUNCTION K2 0 = OFF 1 = ON	0	0	0
A5	K1 TO K2 SEPARATE OR DELTA T SEP = 0 $\Delta T = 1$	1	1	1
A6	CONTROL MODE K1 0 = THERMOSTAT 1 = K1 RAMP 2 = K1 RAMP OBSOLETE 3 = K1 RAMP OBSOLETE	0	0	0
A8	DISPLAY MODE 1 = WITH DECIMAL PLACES 2 = WITH DECIMAL PLACES 3 = WITHOUT DECIMAL PLACES 0 = WITHOUT DECIMAL PLACES	1	1	0
A9	WEIGHTING FACTOR 50...150%	100	100	100
A10	VOLTAGE INPUT Tu	N/A	N/A	0
A11	VOLTAGE INPUT Td	N/A	N/A	100
A19	PARAMETER SETTINGS 0 = NOT LOCKED, 1 = 'A' LOCKED 2 = 'A' & 'P' LOCKED	0	0	0
A20	KEYPAD BLEEP 1 = ON 0 = OFF	0	0	0
A30	N/A	0	0	0
A31	N/A	0	0	0
A40	0 = HYSTERESIS SYMMETRICAL ABOUT SET POINT 1 = OR ONE SIDE OF SET POINT HEATING = BELOW SET POINT COOLING = ABOVE SET POINT	0	0	0
A41	AS ABOVE FOR K2	0	0	0
A50	MINIMUM ON TIME K1	1.0	1.0	1
A51	MINIMUM OFF TIME K1	1.0	1.0	1
A52	MINIMUM ON TIME K2	1.0	1.0	1
A53	MINIMUM OFF TIME K2	1.0	1.0	1
A54	TIME DELAY K1/K2 AFTER POWER ON	15	15	15
A55	TIME DELAY AFTER K1 BEFORE K2 ALLOWED TO SWITCH ON.	0.0	0.0	0
A60	SENSOR TYPE. TERMINALS '10' & '11' (FIXED)	21	21	32
A70	SOFTWARE TIME CONSTANT. TIME FOR DISPLAY/CONTROL TO REACH NEW VALUE	3	3	3
A80	1 = C ° 0 = F	1	1	N/A
A90	N/A	1	1	1
A91	N/A	1	1	1
A92	N/A	0	0	0
A93	N/A	7	7	7

# 8.0 SOUND GRAPH

**TEST SUBJECT :- VH3 600**

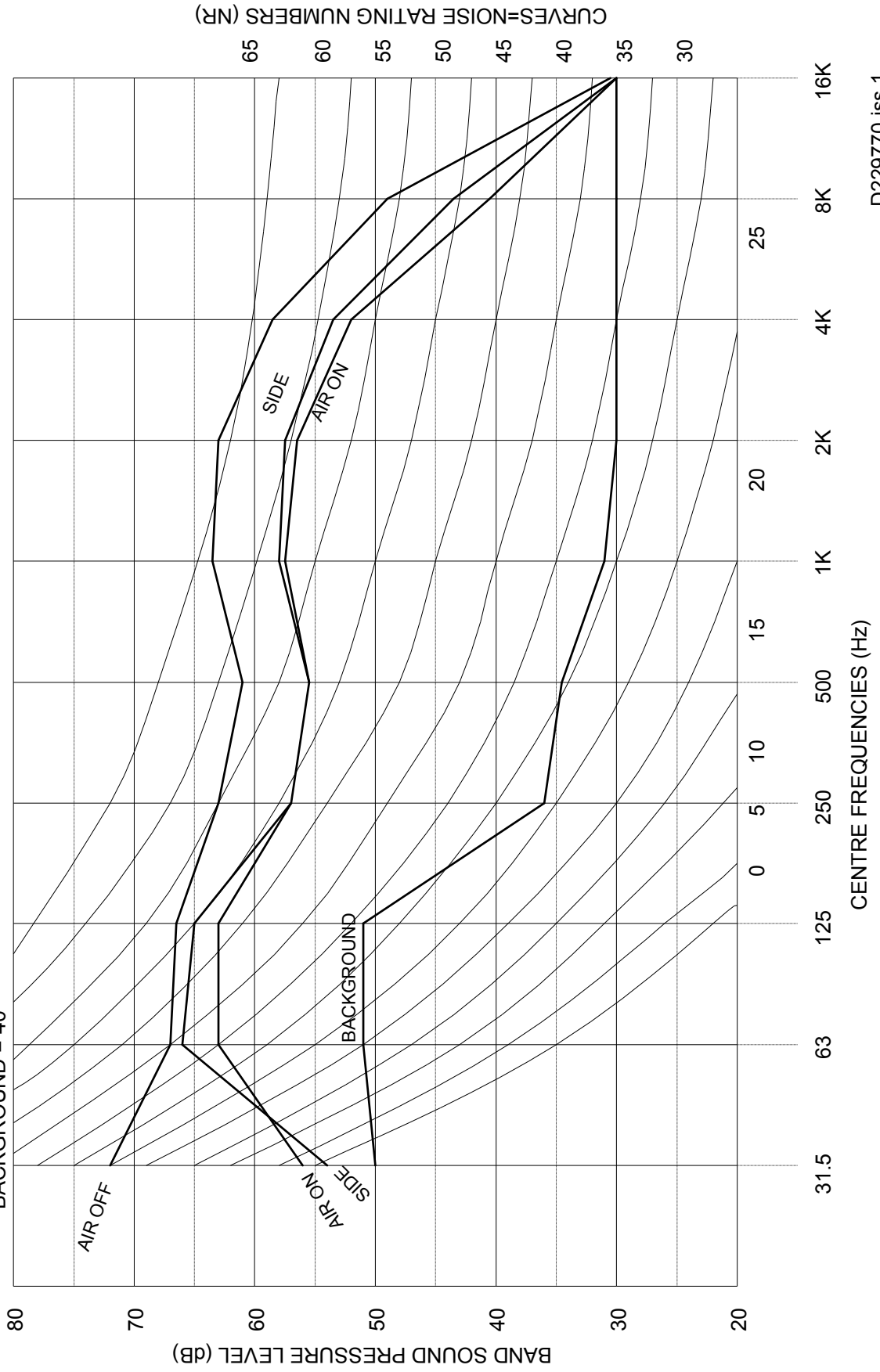
MEASURED dBA :-

AIR ON = 63.5 AIR OFF= 69 SIDE= 64.5

BACKGROUND = 40

DATE :- 30:9:02

DISTANCE FROM NOISE SOURCE :- 3M



D229770 iss 1

DATE :- 1:10:02

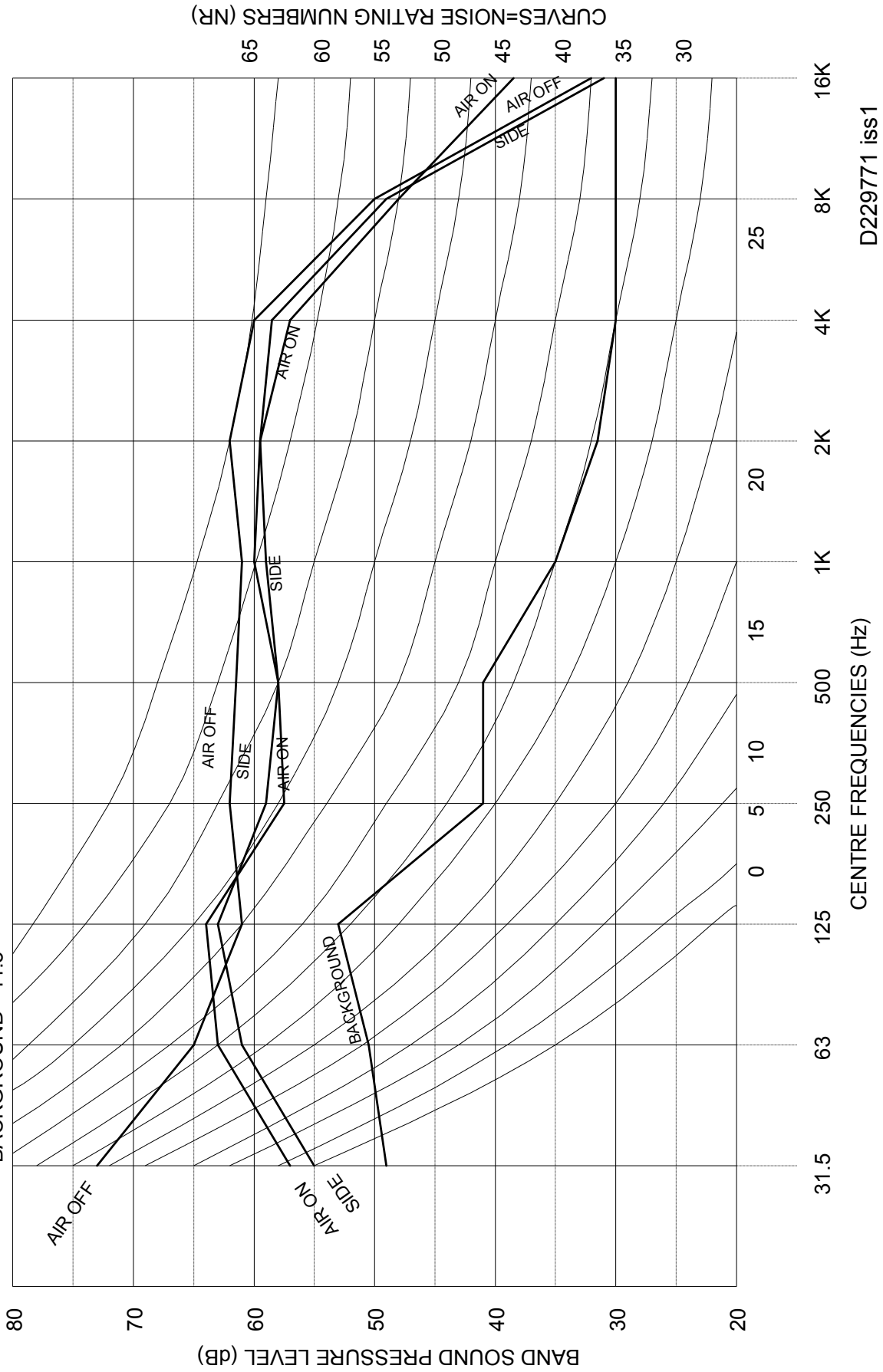
TEST SUBJECT :- VH3 900

MEASURED dBA :-

AIR ON= 66.5 AIR OFF= 68 SIDE= 66.5

BACKGROUND= 41.5

DISTANCE FROM NOISE SOURCE :- 3M



D229771 iss1

TEST SUBJECT :- VH3 1200

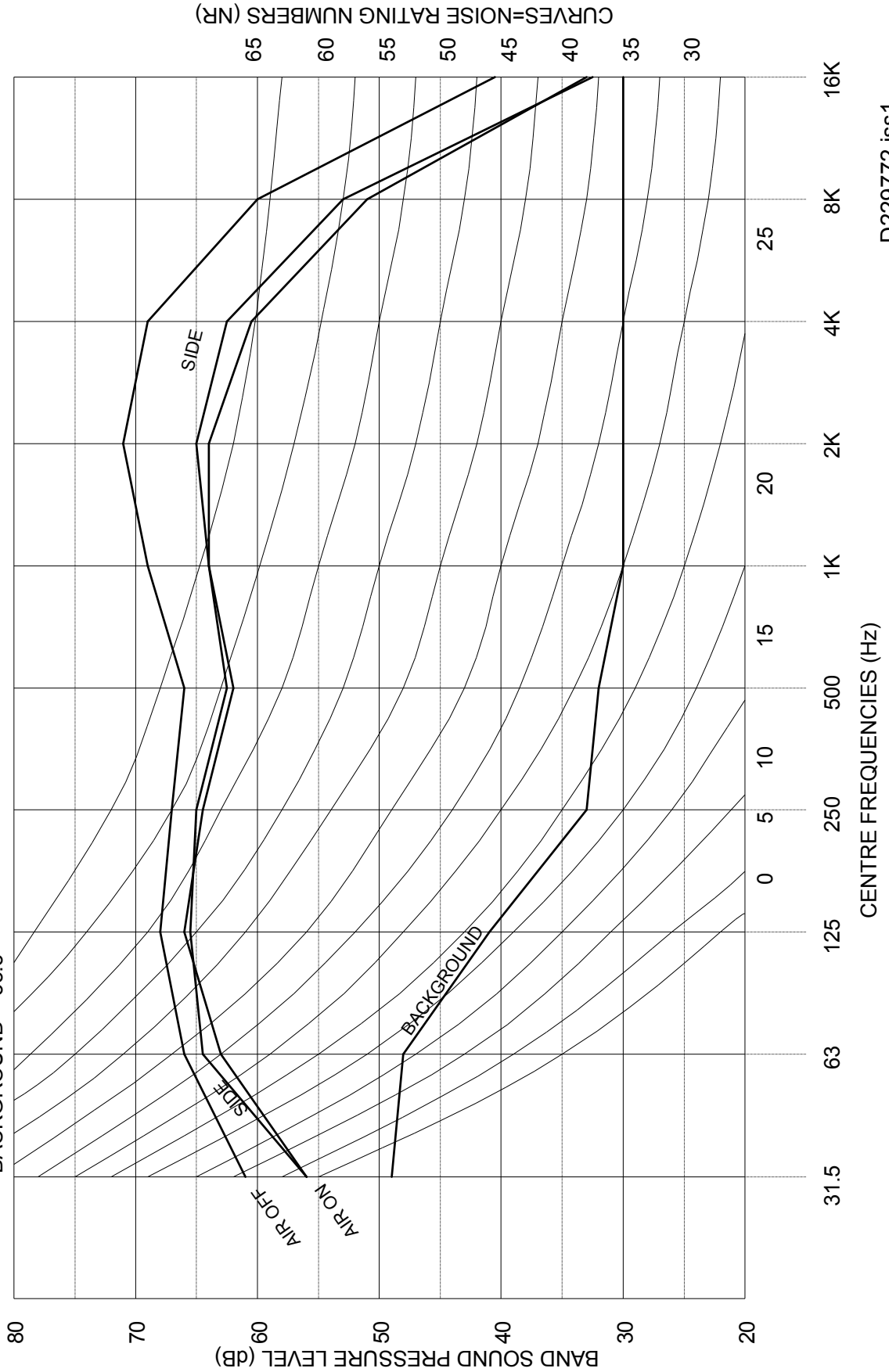
DATE :- 1:10:02

MEASURED dBA :-

AIR ON= 70.5 AIR OFF= 76.5 SIDE= 71

DISTANCE FROM NOISE SOURCE :-3M

BACKGROUND = 35.5



D229772 iss1



TEST SUBJECT :- VH3 1500

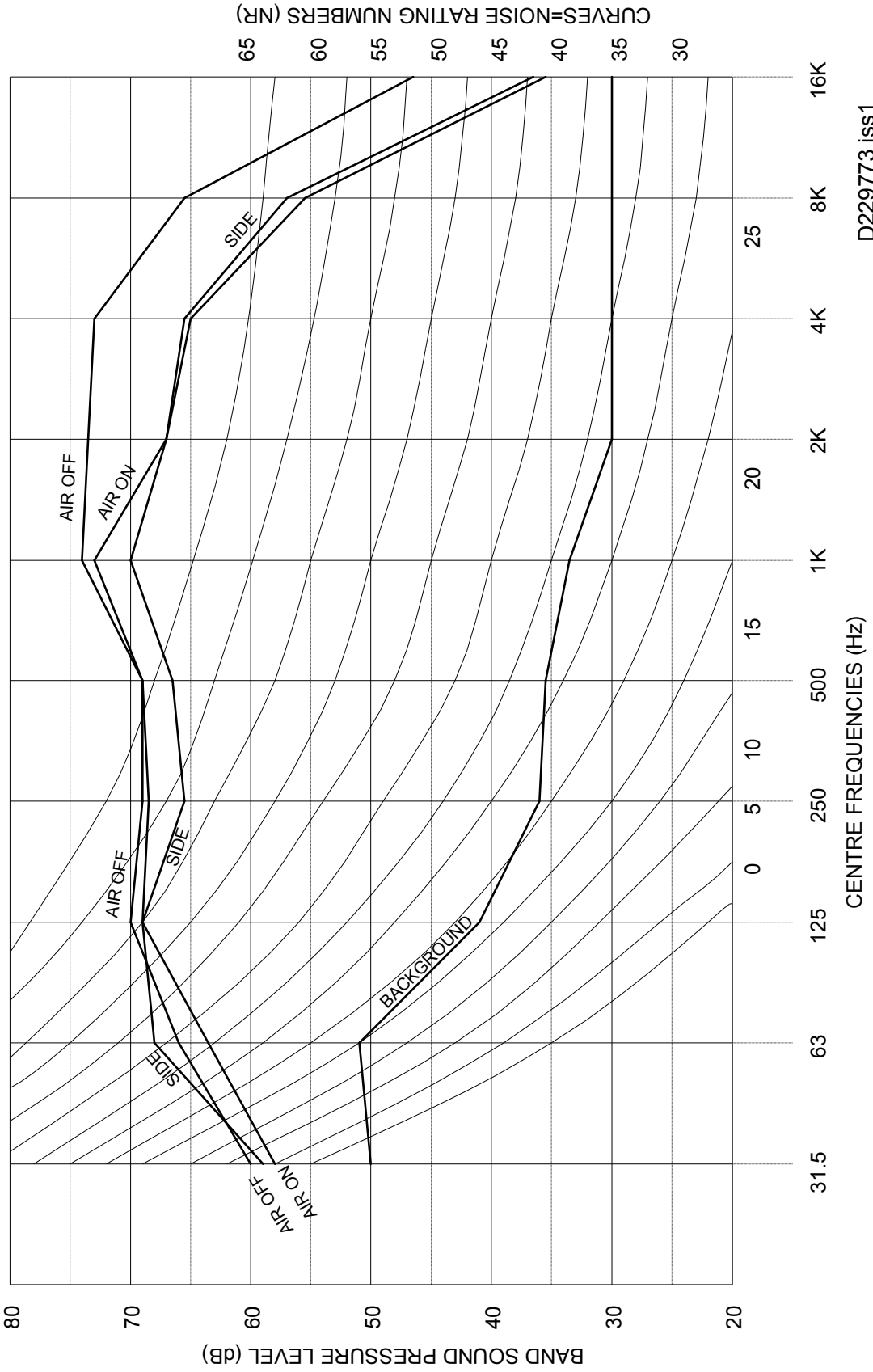
DATE :- 1:10:02

MEASURED dBA :-

AIR ON= 76 AIR OFF= 80 SIDE= 74

DISTANCE FROM NOISE SOURCE :- 3M

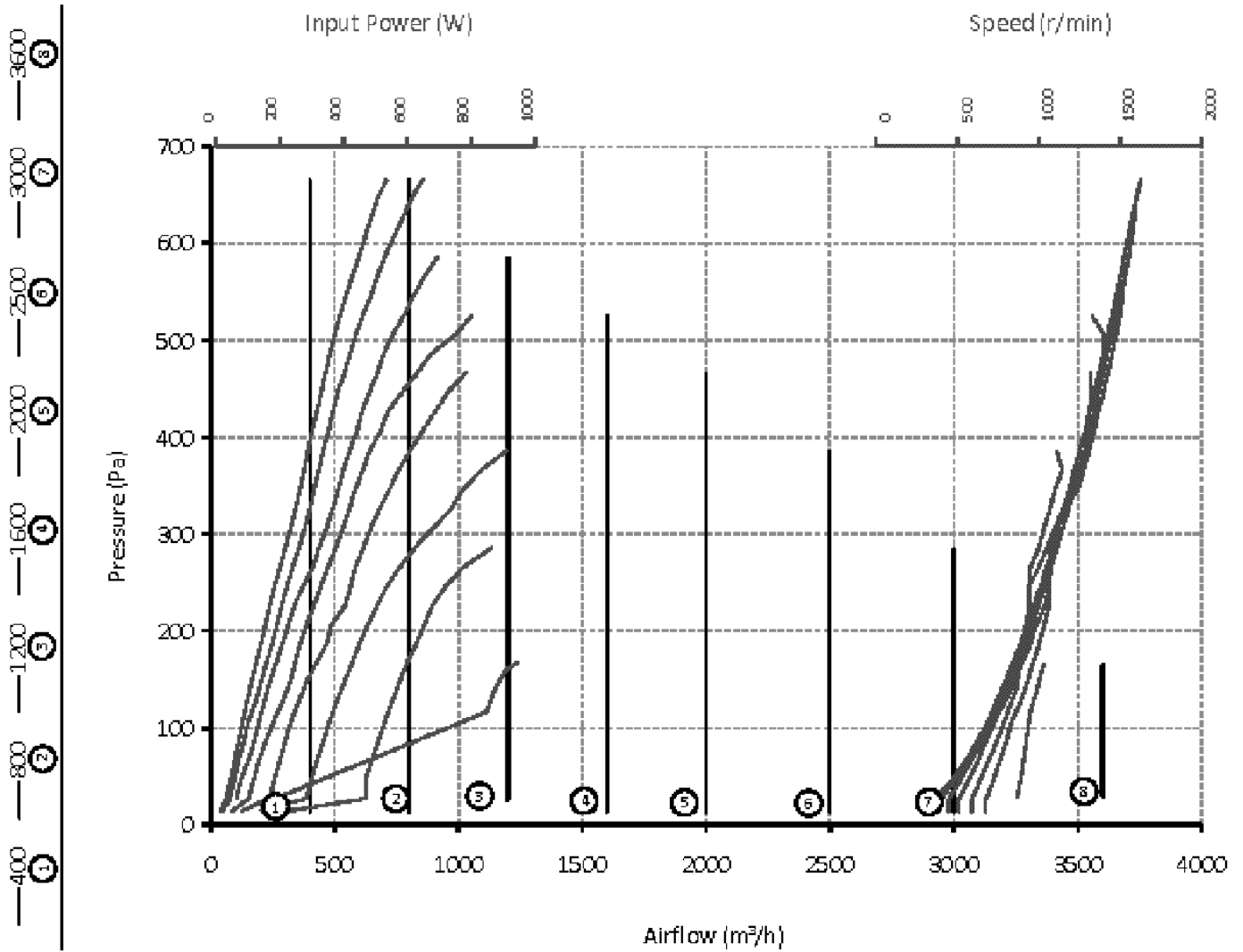
BACKGROUND = 39



D229773 iss1

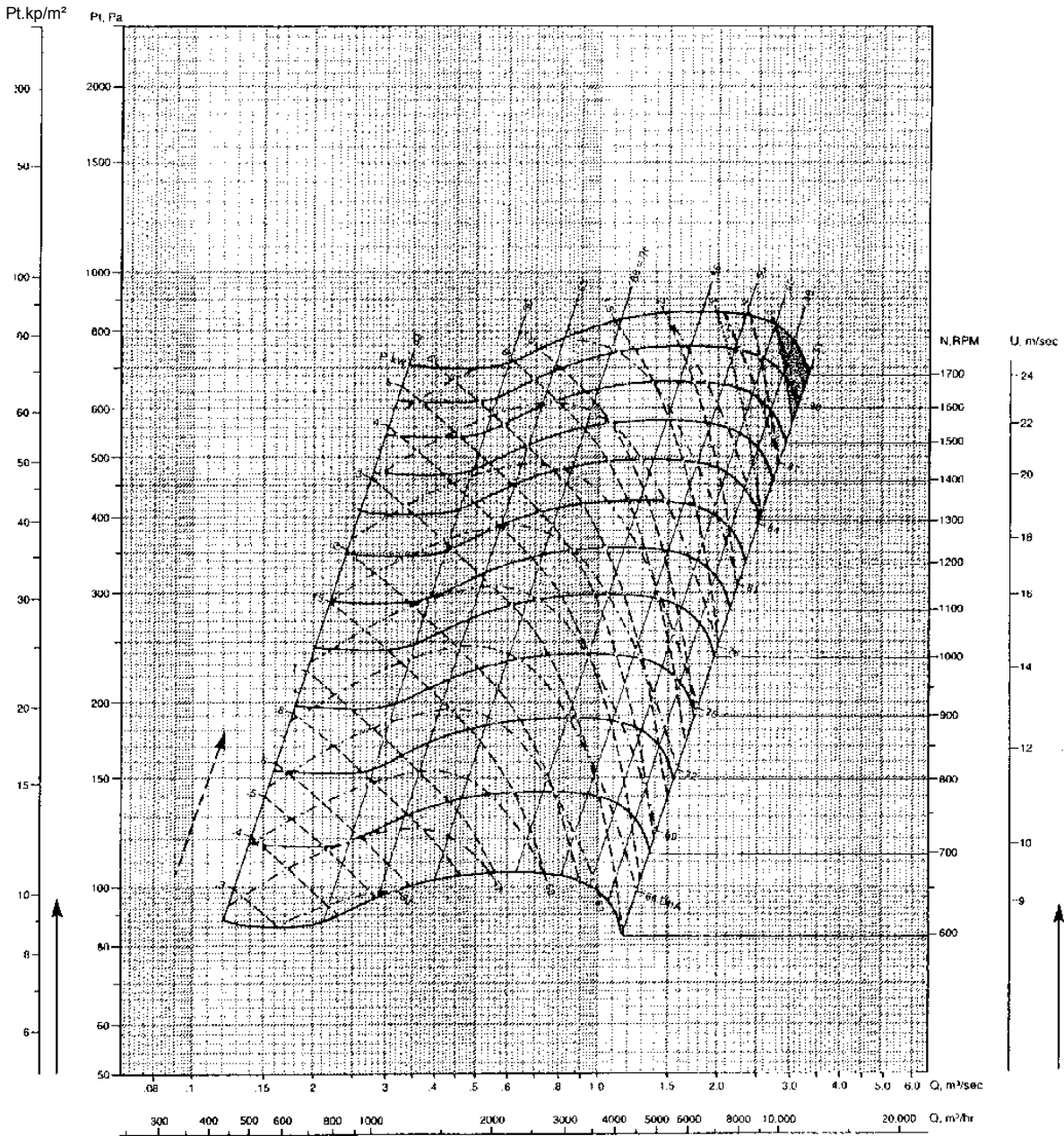
# 9.0 FAN CURVES

## FAN CURVE VH3-600/900

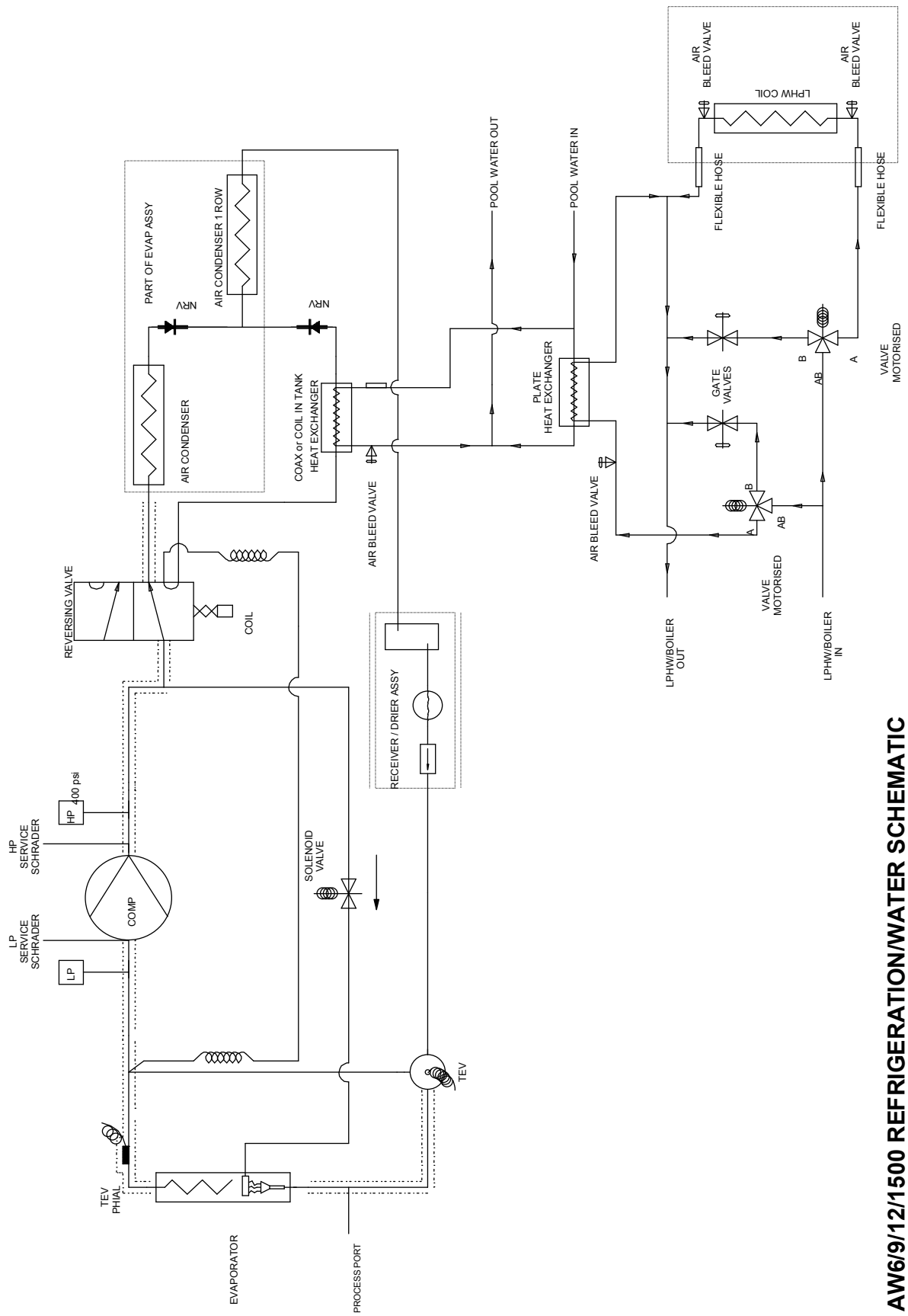




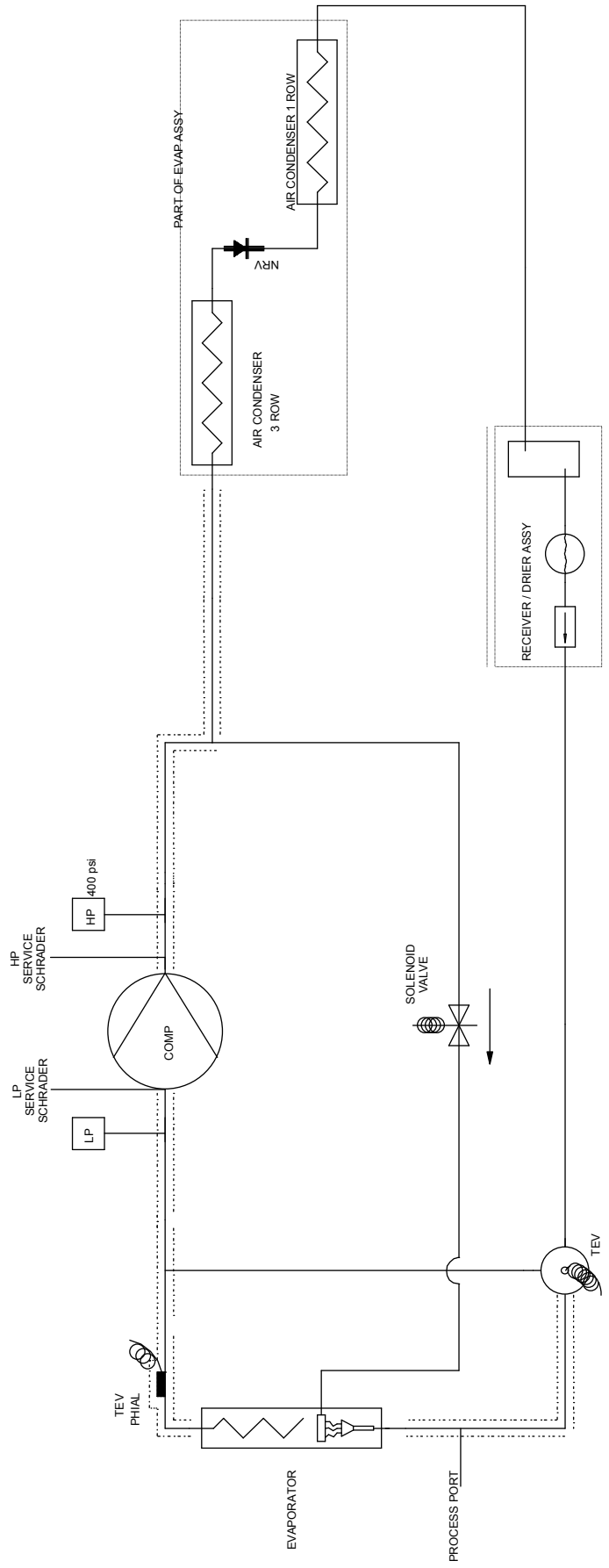
# FAN CURVE VH3-12/1500



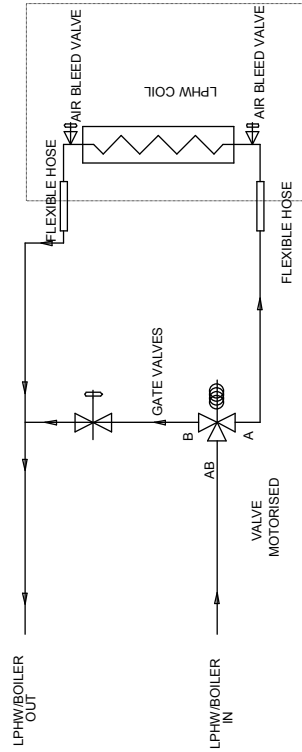
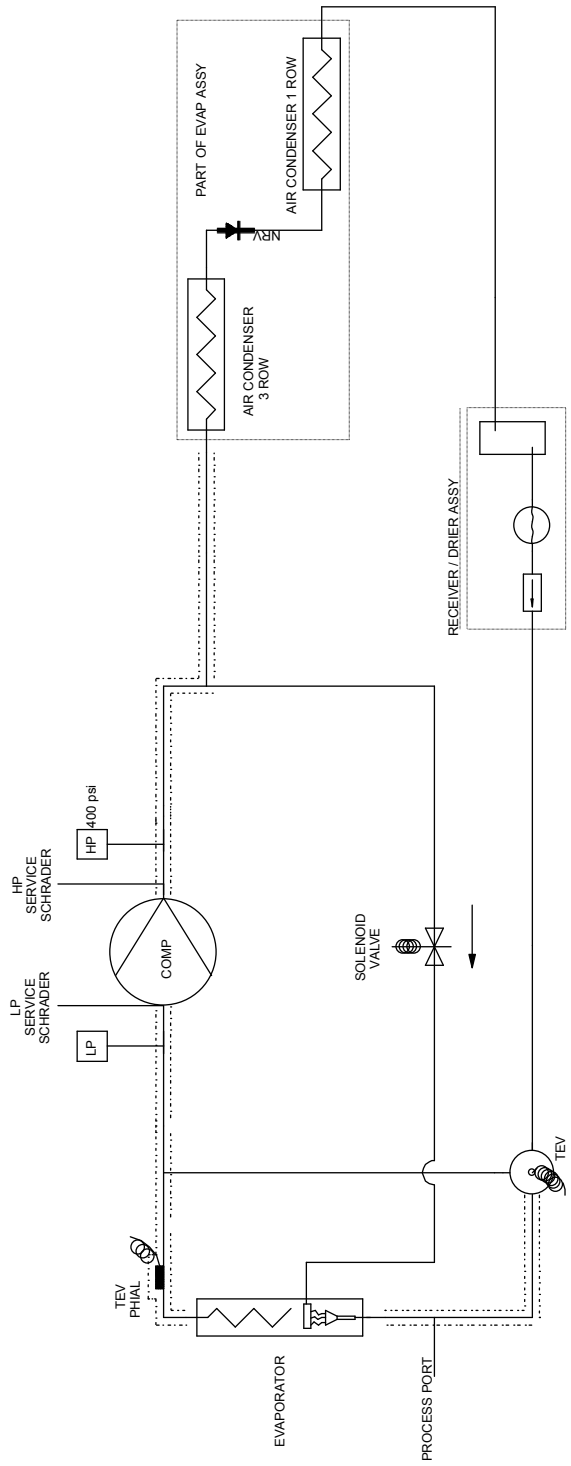
# 10.0 REFRIGERATION DIAGRAMS



**AW6/9/12/1500 REFRIGERATION/WATER SCHEMATIC**



**AA619/12/1500 REFRIGERATION SCHEMATIC**



AA6/9/12/1500 REFRIGERATION + LPHW SCHEMATIC

# 11.0 SPARE PARTS LISTS

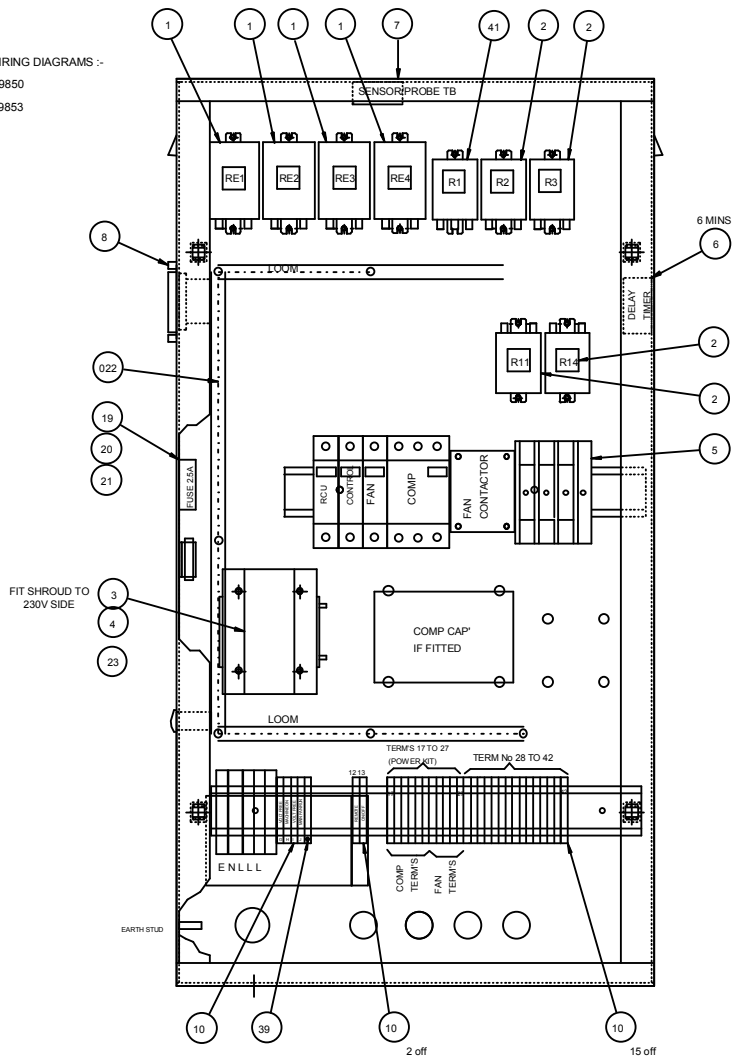
## ELECTRIC BOX ASSY CONTROL KITS FOR 'AA' 600/900A/BVHX(F)/1200AVHX(F)

**NOTES**

WIRED TO WIRING DIAGRAMS :-

3 PHASE 459850

1 PHASE 459853



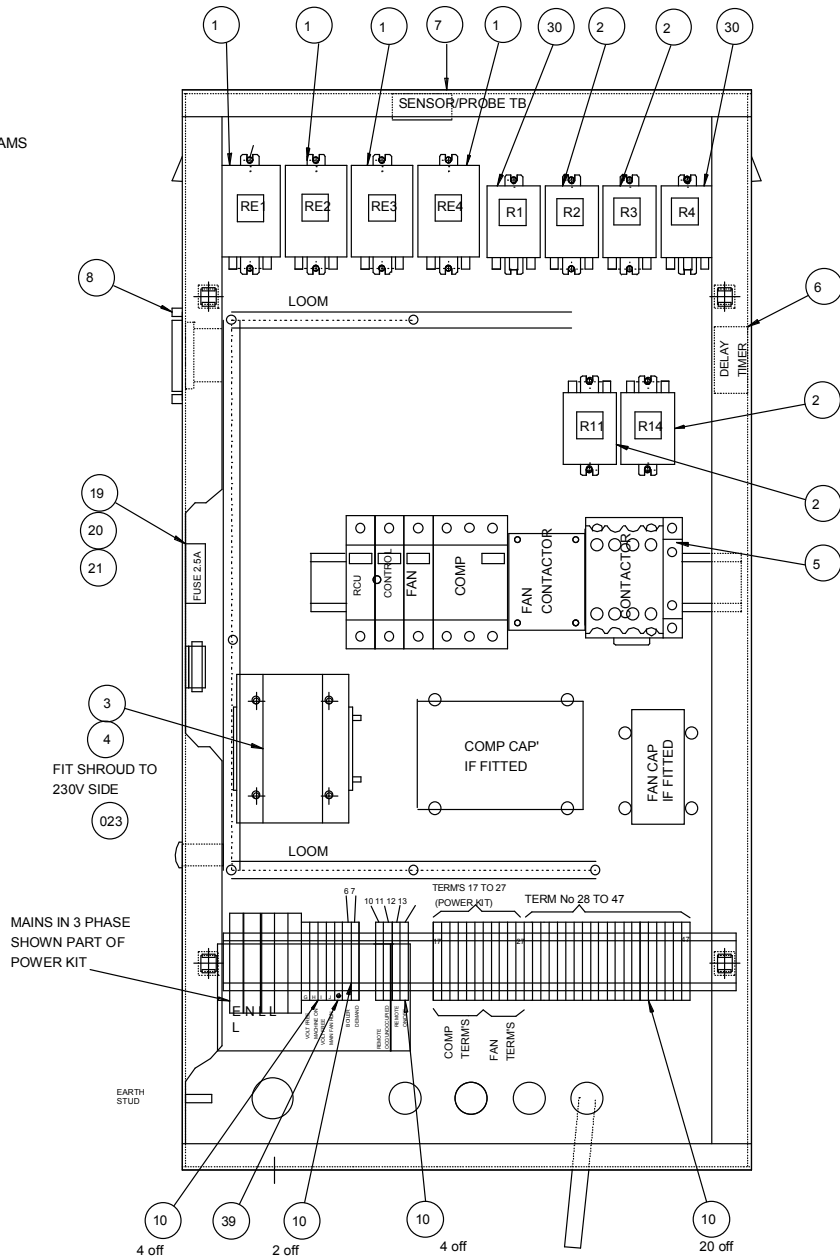
ASSY No A460001 AT ISS 9 (19/02/2015). CONTROL KIT A-A VERSION

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD189550	RELAY C/O 2 POLE 16A 230V AC COIL	4	off
2	SD469250	RELAY 2POLE C/O 12V COIL	4	off
3	SD416650	TRANSFORMER 75VA	1	off
4	SD416651	SHROUD TRANSFORMER	1	off
5	SD611753	AUXILIARY CONTACT BLOCK 2 POLE	1	off
6	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
7	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	1	off
8	SD469450	CONNECTOR D 25 WAY	1	off
10	SD409350	TERM BLOCK WDU 2.5N	21	off
19	SD216550	FUSE HOLDER	2	off
20	SD035353	FUSE 1/4 x 1 1/4 1A	2	off
21	SD469650	FUSE 2.5A ANTISURGE	2	off
23	SP144250	CLIP U NUT No. 8 SCREW	4	off
39	SD403551	2.5 EARTH TERM WPE2.5	1	off
41	SD469350	RELAY 2 3 POLE C/O 12V COIL	1	off



ELECTRIC BOX ASSY CONTROL KITS FOR 'AA' / 'AA+LPHW' 600/900A/BVHX(F)P/1200AVHX(F)P

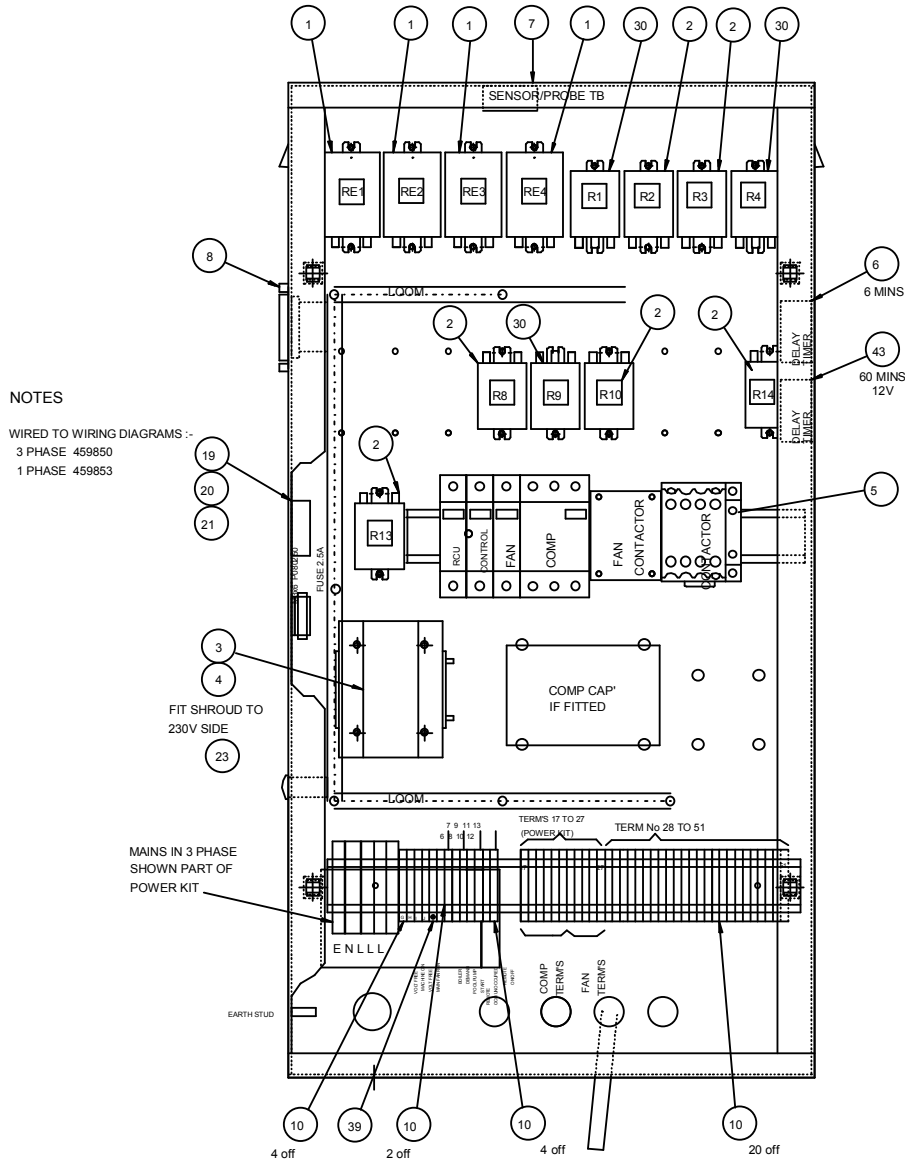
NOTES  
 WIRED TO WIRING DIAGRAMS  
 3 PHASE 459850  
 1 PHASE 459853



ASSY No A460002/04 AT ISS 9 (19/02/2015). CONTROL KIT A-A+LPHW HEATING

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD189550	RELAY C/O 2 POLE 16A 230VAC COIL	4	off
2	SD469250	RELAY 2POLE C/O 12V COIL	4	off
3	SD416650	TRANSFORMER 75VA	1	off
4	SD416651	SHROUD TRANSFORMER	1	off
5	SD611753	AUXILIARY CONTACT BLOCK 2 POLE	1	off
6	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
7	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	2	off
8	SD469450	CONNECTOR D 25 WAY	1	off
10	SD409350	TERM BLOCK WDU 2.5N	30	off
19	SD216550	FUSE HOLDER	2	off
20	SD035353	FUSE 1/4 x 1 1/4 1A	2	off
21	SD469650	FUSE 2.5A ANTISURGE	2	off
23	SP144250	CLIP U NUT No. 8 SCREW	4	off
30	SD469350	RELAY C/O 3 POLE 10A 12V COIL	2	off
39	SD403551	2.5 EARTH TERM WPE2.5	1	off

ELECTRIC BOX ASSY CONTROL KITS FOR 'AW' 600/900A/B/1200AVHX(F)P



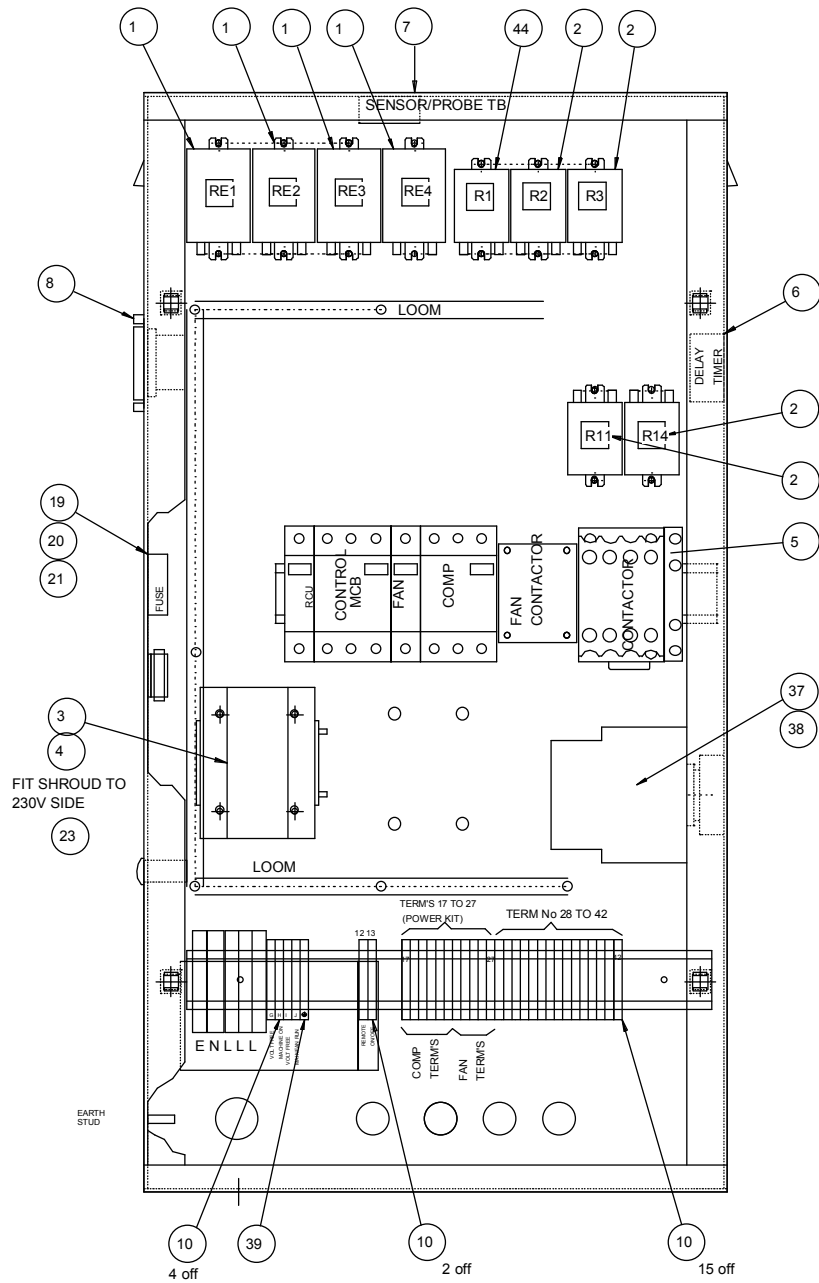
ASSY No A460003 AT ISS 9 (19/02/2015). CONTROL KIT 'AW' VERSION

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD189550	RELAY C/O 2 POLE 16A 230VAC COIL	4	off
2	SD469250	RELAY 2POLE C/O 12V COIL	6	off
3	SD416652	TRANSFORMER 100VA	1	off
4	SD416651	SHROUD TRANSFORMER	1	off
5	SD611753	AUXILIARY CONTACT BLOCK 2 POLE	1	off
6	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
7	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	1	off
8	SD469450	CONNECTOR D 25 WAY	1	off
10	SD409350	TERM BLOCK WDU 2.5N	36	off
19	SD216550	FUSE HOLDER	2	off
20	SD035353	FUSE 1/4 x 1 1/4 1A	2	off
21	SD469650	FUSE 2.5A ANTISURGE	2	off
23	SP144250	CLIP U NUT No. 8 SCREW	4	off
30	SD469350	RELAY C/O 3 POLE 10A 12v COIL	3	off
39	SD403551	2.5 EARTH TERM WPE2.5	1	off
43	SD089551	DELAY TIMER 4 to 60 mins	1	off

ELECTRIC BOX ASSY CONTROL KITS FOR 'A-A' 1200/1500BVHX(F)

NOTES

WIRED TO WIRING DIAGRAM :-  
3 PHASE 459859

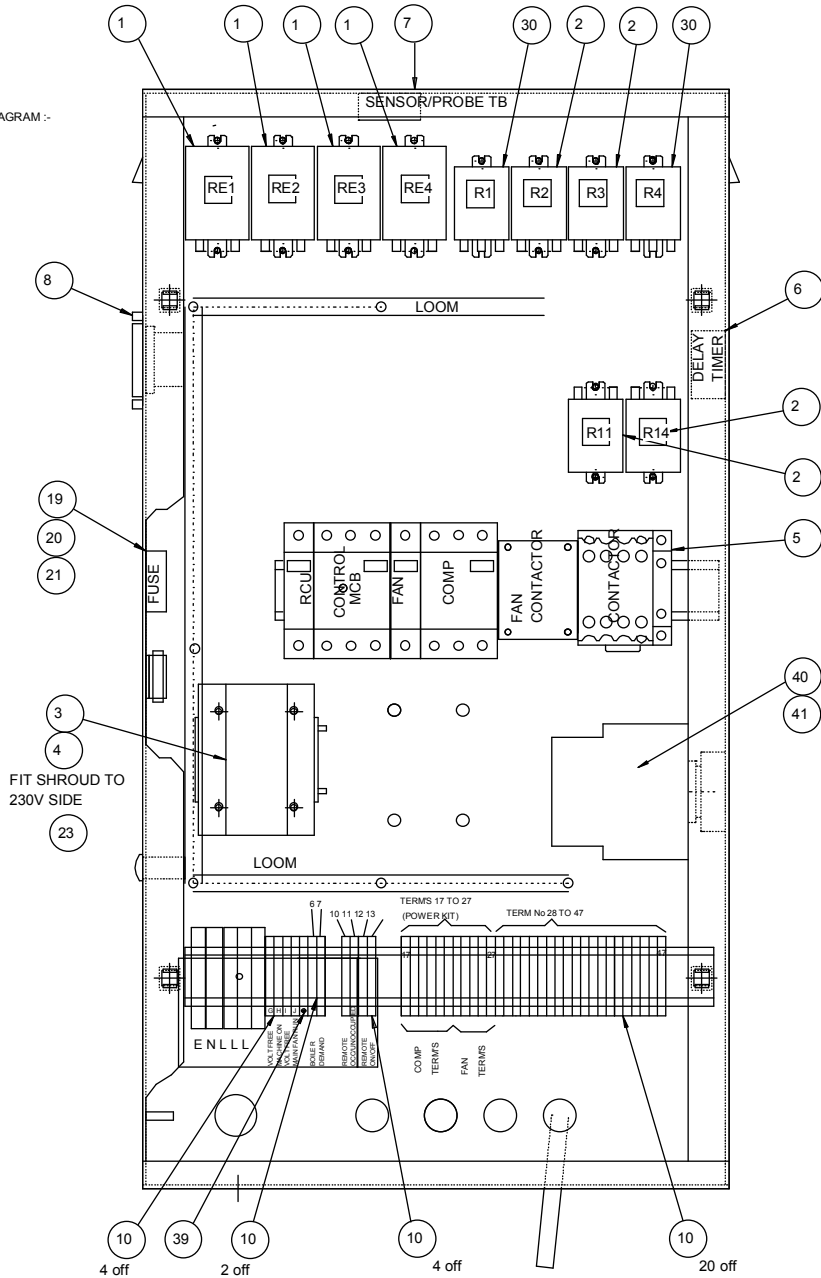


ASSY No A460005 AT ISS 7 (19/02/2015). CONTROL KIT AA1200/1500 3 PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD189550	RELAY C/O 2 POLE 16A 230vac COIL	4	off
2	SD469250	RELAY 2POLE C/O 12V COIL	4	off
3	SD416650	TRANSFORMER 75VA	1	off
4	SD416651	SHROUD TRANSFORMER	1	off
5	SD611753	AUXILIARY CONTACT BLOCK 2 POLE	1	off
6	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
7	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	1	off
8	SD469450	CONNECTOR D 25 WAY	1	off
10	SD409350	TERM BLOCK WDU 2.5N	21	off
19	SD216550	FUSE HOLDER	2	off
20	SD035353	FUSE 1/4 x 1 1/4 1A	2	off
21	SD469650	FUSE 2.5A ANTISURGE	2	off
23	SP144250	CLIP U NUT No. 8 SCREW	4	off
38	SD067250	RELAY BASE & CLIP 11 PIN	1	off
39	SD403551	2.5 EARTH TERM WPE2.5	1	off
44	SD469350	RELAY C/O 3 POLE 10A 12V COIL	1	off

ELECTRIC BOX ASSY CONTROL KITS FOR 'A-A' 1200/1500BVHX(F)P

NOTES  
WIRED TO WIRING DIAGRAM :-  
3 PHASE 459858



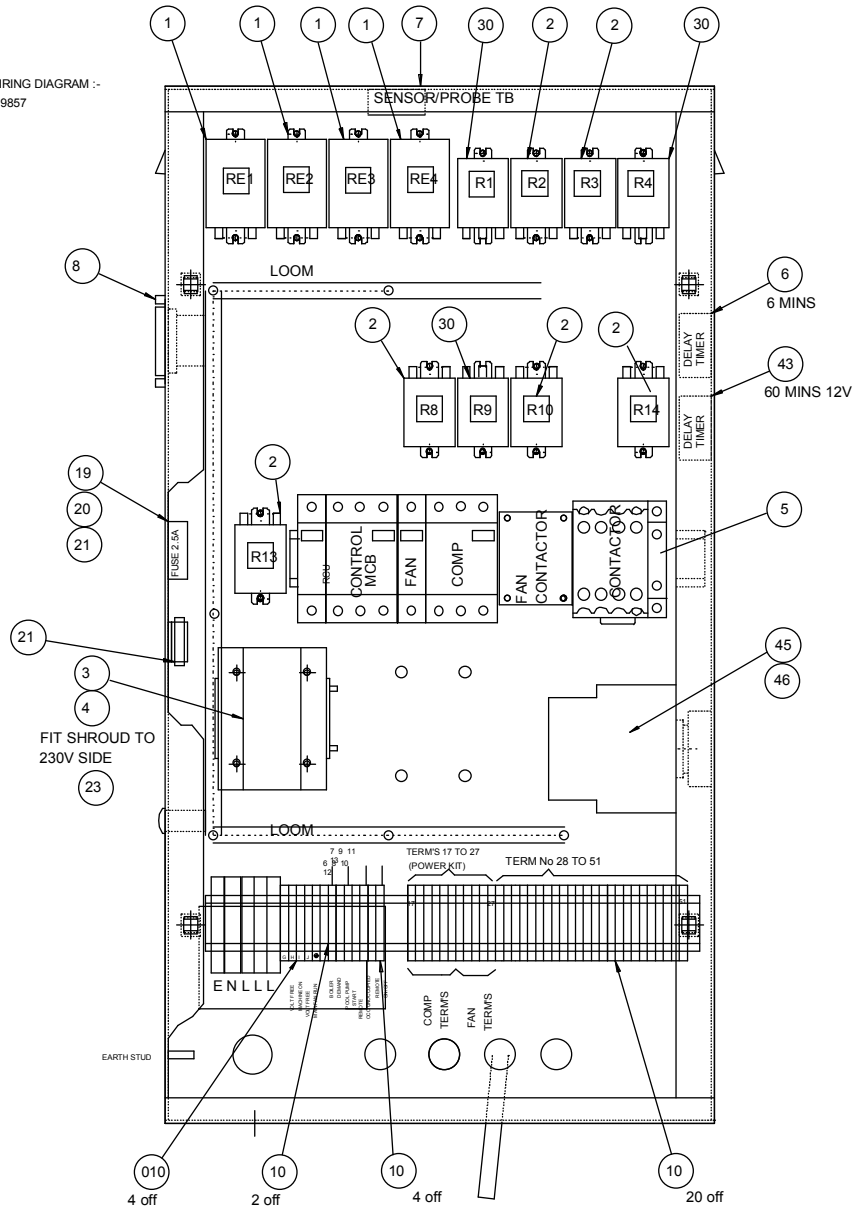
ASSY No A460006 AT ISS 7 (19/02/2015). CONTROL KIT AA1200/1500 + RES HEATERS 3 PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD189550	RELAY C/O 2 POLE 16A 230VAC COIL	4	off
2	SD469250	RELAY 2POLE C/O 12V COIL	4	off
3	SD416650	TRANSFORMER 75VA	1	off
4	SD416651	SHROUD TRANSFORMER	1	off
5	SD611753	AUXILIARY CONTACT BLOCK 2 POLE	1	off
6	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
7	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	2	off
8	SD469450	CONNECTOR D 25 WAY	1	off
10	SD409350	TERM BLOCK WDU 2.5N	30	off
19	SD216550	FUSE HOLDER	2	off
20	SD035353	FUSE 1/4 x 1 1/4 1A	2	off
21	SD469650	FUSE 2.5A ANTISURGE	2	off
23	SP144250	CLIP U NUT No. 8 SCREW	4	off
30	SD469350	RELAY C/O 3 POLE 10A 12V COIL	2	off
39	SD403551	2.5 EARTH TERM WPE2.5	1	off
41	SD067250	RELAY BASE & CLIP 11 PIN	1	off

ELECTRIC BOX ASSY CONTROL KITS FOR 'AW' 1200/1500 THREE PHASE ONLY

NOTES

WIRED TO WIRING DIAGRAM :-  
3 PHASE 459857

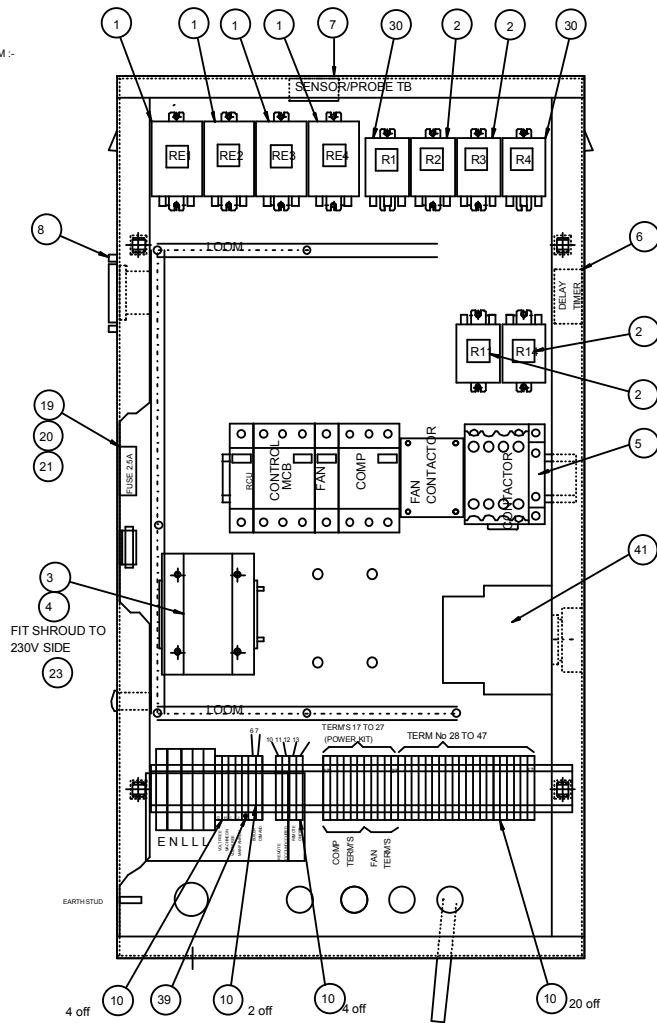


ASSY No A460007 AT ISS 7 (19/02/2015). CONTROL KIT AW1200/1500 3 PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD189550	RELAY C/O 2 POLE 16A 230VAC COIL	4	off
2	SD469250	RELAY 2POLE C/O 12V COIL	6	off
3	SD416652	TRANSFORMER 100VA	1	off
4	SD416651	SHROUD TRANSFORMER	1	off
5	SD611753	AUXILIARY CONTACT BLOCK 2 POLE	1	off
6	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
7	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	1	off
8	SD469450	CONNECTOR D 25 WAY	1	off
10	SD409350	TERM BLOCK WDU 2.5N	36	off
19	SD216550	FUSE HOLDER	2	off
20	SD035353	FUSE 1/4 x 1 1/4 1A	2	off
21	SD469650	FUSE 2.5A ANTISURGE	2	off
23	SP144250	CLIP U NUT No. 8 SCREW	4	off
30	SD469350	RELAY C/O 3 POLE 10A 12V COIL	3	off
39	SD403551	2.5 EARTH TERM WPE2.5	1	off
43	SD089551	DELAY TIMER 4 to 60 mins	1	off
46	SD067250	RELAY BASE & CLIP 11 PIN	1	off

ELECTRIC BOX ASSY CONTROL KITS FOR 'AA' + AIR HEATING' 1200/1500 THREE PHASE ONLY

NOTES  
WIRED TO WIRING DIAGRAM -  
3 PHASE 459856



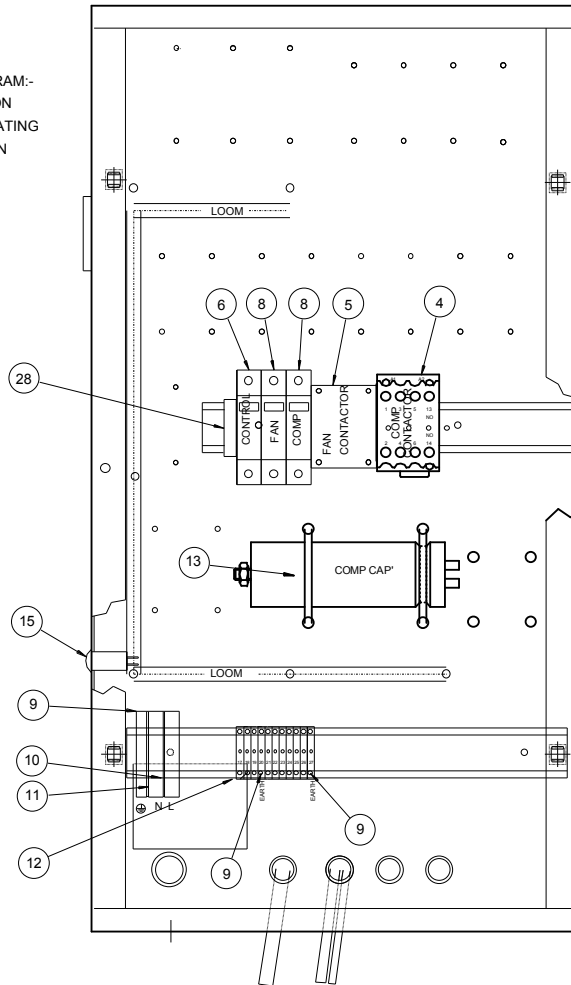
ASSY No A460008 AT ISS 7 (19/02/2015). CONTROL KIT AA + AIR HEATING AA1200/1500 3 PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD189550	RELAY C/O 2 POLE 16A 230vac COIL	4	off
2	SD469250	RELAY 2POLE C/O 12V COIL	4	off
3	SD416650	TRANSFORMER 75VA	1	off
4	SD416651	SHROUD TRANSFORMER	1	off
5	SD611753	AUXILIARY CONTACT BLOCK 2 POLE	1	off
6	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
7	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	2	off
8	SD469450	CONNECTOR D 25 WAY	1	off
10	SD409350	TERM BLOCK WDU 2.5N	30	off
19	SD216550	FUSE HOLDER	2	off
20	SD035353	FUSE 1/4 x 1 1/4 1A	2	off
21	SD469650	FUSE 2.5A ANTISURGE	2	off
23	SP144250	CLIP U NUT No. 8 SCREW	4	off
30	SD469350	RELAY C/O 3 POLE 10A 12V COIL	2	off
41	SD067250	RELAY BASE & CLIP 11 PIN	1	off
45	SD403551	2.5 EARTH TERM WPE2.5	1	off

# 11.0 SPARES PARTS LISTS (cont.)

## ELECTRIC BOX ASSY POWER KITS FOR 6/9/1200A

WIRED TO WIRING DIAGRAM:-  
 D459853 FOR AW VERSION  
 D459854 FOR AA+AIR HEATING  
 D459855 FOR AA VERSION



ASSY No A460010 AT ISS 11 (19/02/2015). POWER KIT 600 SINGLE PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD612052	CONTACTOR 18A 3+1N/O AUX	1	off
5	SD392551	CONTACTOR	1	off
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off
8	SD316557	MINIATURE CIRC BREAKER 16A	2	off
9	SD403550	TERM EARTH WPE6 8mm	3	off
10	SD409550	TERMINAL BLOCK WDU10	2	off
11	SD403851	TERMINAL BLOCK BARRIER WAP 16-35	2	off
12	SD409350	TERM BLOCK WDU 2.5N	9	off
13	SD022550	CAPACITOR 35µF 440V 50/60Hz	1	off
15	SD159850	PILOT LIGHT RED 240V	1	off
28	SD403950	END BRACKET EW35 (8.5)	1	off

NOTE FOR POWER KITS WHEN FRESH AIR BOX IS FITTED:

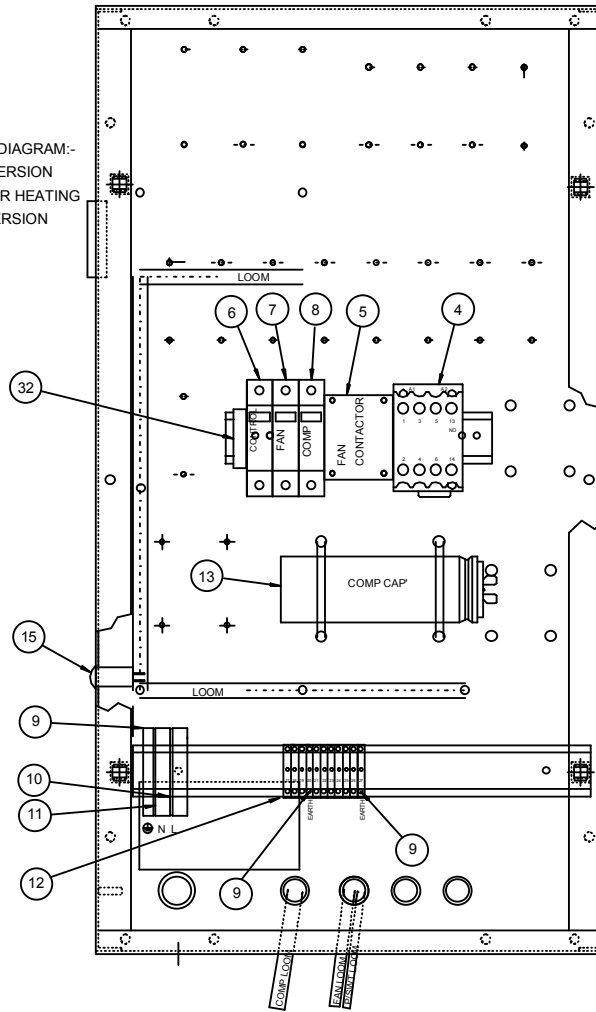
DROP

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off

FIT

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316551	CIRCUIT BREAKER MINIATURE 4 A	1	off

WIRED TO WIRING DIAGRAM:-  
 D459853 FOR AW VERSION  
 D459854 FOR AA+AIR HEATING  
 D459855 FOR AA VERSION



ASSY No A460012 AT ISS 13 (19/02/2015). POWER KIT 900 SINGLE PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD612053	CONTACTOR 25A 3+1N/O AUX	1	off
5	SD392551	CONTACTOR	1	off
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off
7	SD316557	CIRCUIT BREAKER MINIATURE 16A	1	off
8	SD316554	CIRCUIT BREAKER 20A	1	off
9	SD403550	TERM EARTH WPE6 8mm	3	off
10	SD409550	TERMINAL BLOCK WDU10	2	off
11	SD403851	TERMINAL BLOCK BARRIER WAP 16-35	2	off
12	SD409350	TERM BLOCK WDU 2.5N	9	off
13	SD157850	CAPACITOR FOR COMP 40µF +/- 10% 370V	1	off
15	SD159850	PILOT LIGHT RED 240V	1	off
28	SD403950	END BRACKET EW35 (8.5)	1	off

NOTE FOR POWER KITS WHEN FRESH AIR BOX IS FITTED:

DROP

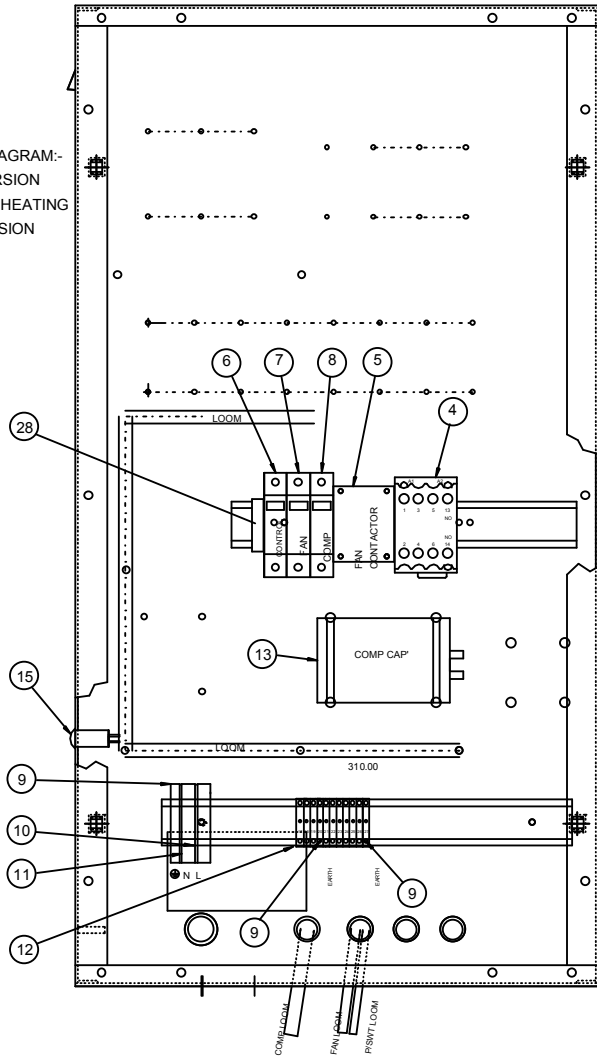
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off

FIT

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316551	CIRCUIT BREAKER MINIATURE 4 A	1	off



WIRED TO WIRING DIAGRAM:-  
 D459853 FOR AW VERSION  
 D459854 FOR AA+AIR HEATING  
 D459855 FOR AA VERSION



ASSY No A460014 AT ISS 14 (20/04/2015). POWER KIT 1200 SINGLE PHASE

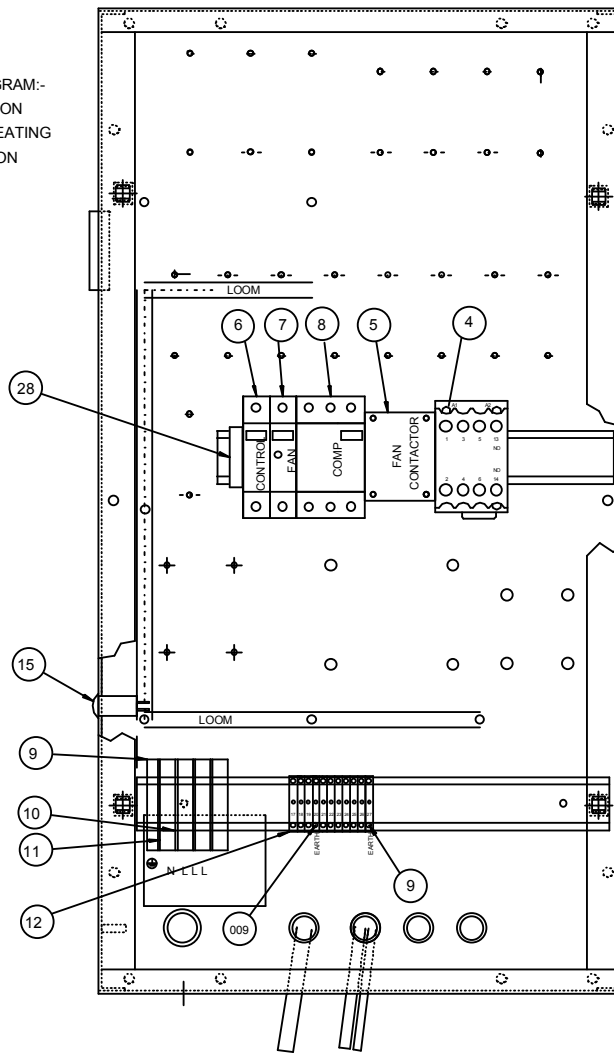
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD612053	CONTACTOR 25A 3+1N/O AUX	1	off
5	SD392551	CONTACTOR	1	off
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off
7	SD316557	CIRCUIT BREAKER MINIATURE 16A	1	off
8	SD316556	CIRCUIT BREAKER MINIATURE 32A	1	off
9	SD403550	TERM EARTH WPE6 8mm	3	off
10	SD409550	TERMINAL BLOCK WDU10	2	off
11	SD403851	TERMINAL BLOCK BARRIER WAP 16-35	2	off
12	SD409350	TERM BLOCK WDU 2.5N	9	off
13	SD486650	RUN CAP 60µF 470V	1	off
15	SD159850	PILOT LIGHT RED 240V	1	off
28	SD403950	END BRACKET EW35 (8.5)	1	off

NOTE FOR POWER KITS WHEN FRESH AIR BOX IS FITTED:

DROP				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off
FIT				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316551	CIRCUIT BREAKER MINIATURE 4 A	1	off

ELECTRIC BOX ASSY POWER KITS FOR 600/900B

WIRED TO WIRING DIAGRAM:-  
 D459853 FOR AW VERSION  
 D459854 FOR AA+AIR HEATING  
 D459855 FOR AA VERSION



ASSY No A460011 AT ISS 10 (19/02/2015). POWER KIT 600 THREE PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD612050	CONTACTOR 9A 3+1 N/O AUX	1	off
5	SD392551	CONTACTOR	1	off
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off
7	SD316557	CIRCUIT BREAKER MINIATURE 16A	1	off
8	SD611551	MOTOR STARTER O/LOAD 2.5-4.0A	1	off
9	SD403550	TERM EARTH WPE6 8mm	3	off
10	SD409550	TERMINAL BLOCK WDU10	4	off
11	SD403850	TERMINAL BLOCK BARRIER WAP 16-35	4	off
12	SD409350	TERM BLOCK WDU 2.5N	9	off
15	SD159850	PILOT LIGHT RED 240V	1	off
28	SD403950	END BRACKET EW35 (8.5)	1	off

NOTE FOR POWER KITS WHEN FRESH AIR BOX IS FITTED:

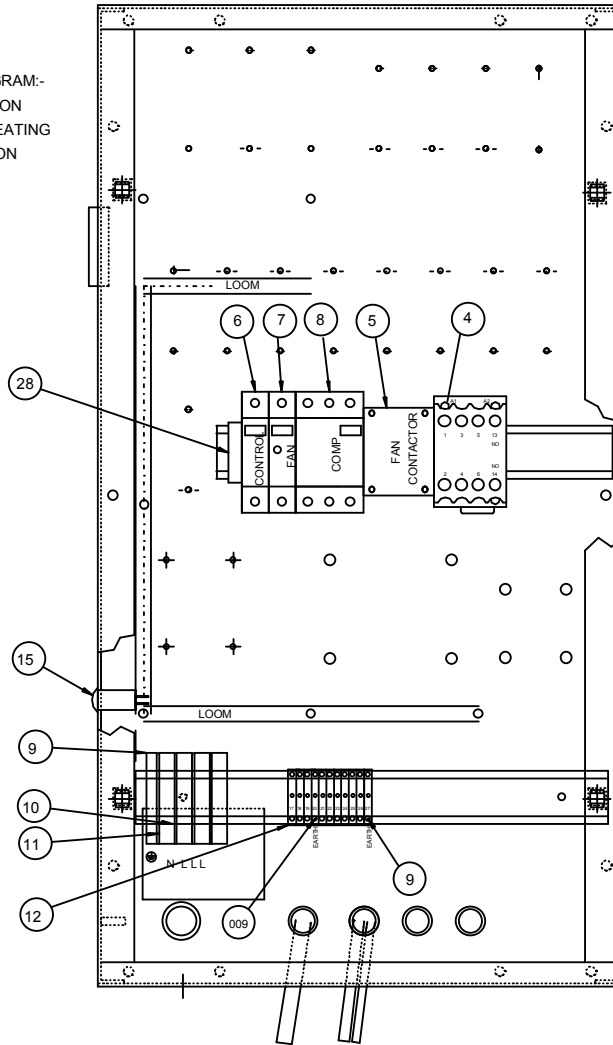
DROP

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off

FIT

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316551	CIRCUIT BREAKER MINIATURE 4 A	1	off

WIRED TO WIRING DIAGRAM:-  
 D459853 FOR AW VERSION  
 D459854 FOR AA+AIR HEATING  
 D459855 FOR AA VERSION



ASSY No A460013 AT ISS 10 (02/09/2011). POWER KIT 900 THREE PHASE

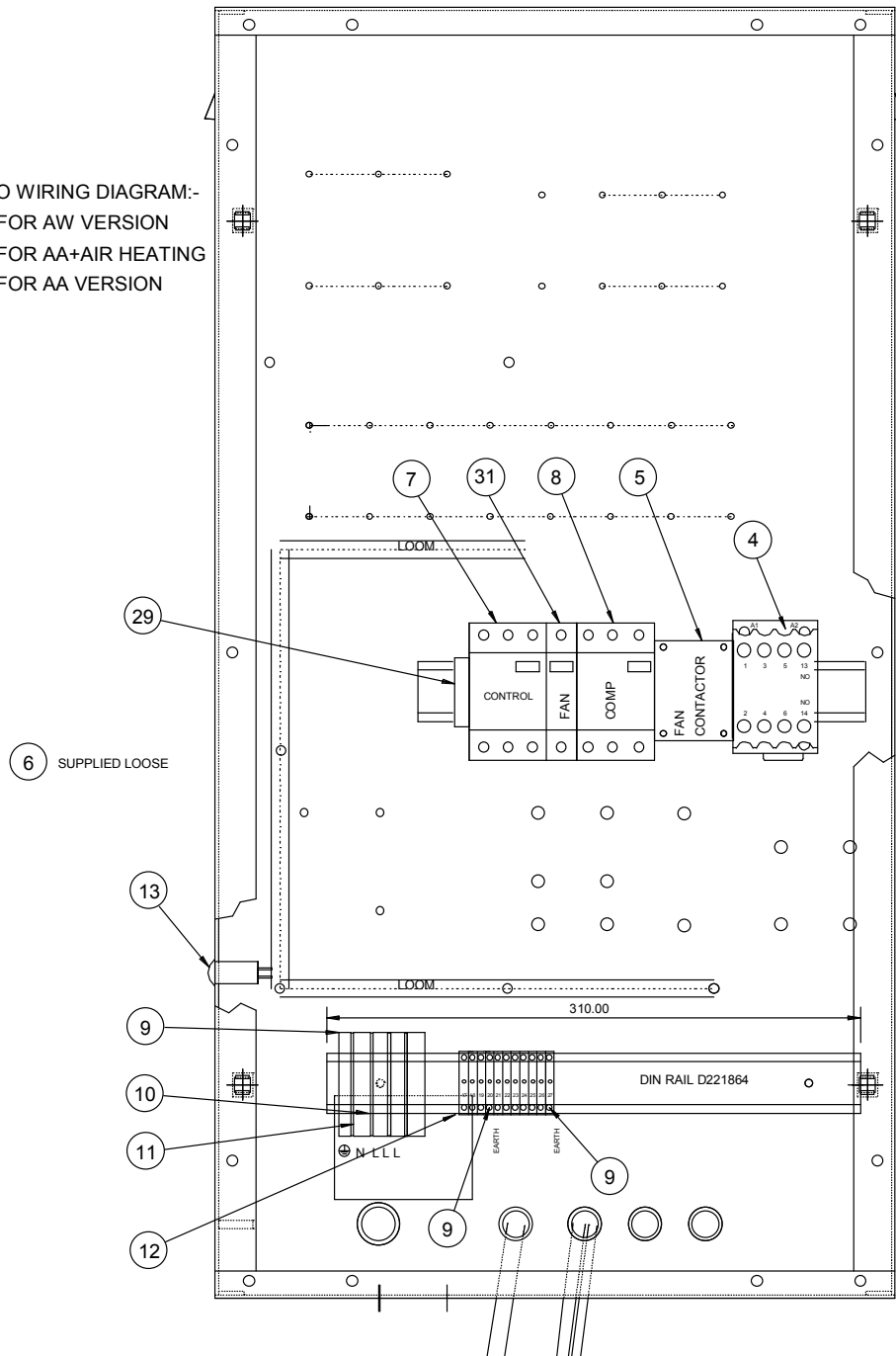
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD612050	CONTACTOR 9A 3+1 N/O AUX	1	off
5	SD392551	CONTACTOR	1	off
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off
7	SD316557	CIRCUIT BREAKER MINIATURE 16A	1	off
8	SD611552	MOTOR STARTER OVERLOAD 4.0 - 6.3A	1	off
9	SD403550	TERM EARTH WPE6 8mm	3	off
10	SD409550	TERMINAL BLOCK WDU10	4	off
11	SD403850	TERMINAL BLOCK BARRIER WAP 16-35	4	off
12	SD409350	TERM BLOCK WDU 2.5N	9	off
15	SD159850	PILOT LIGHT RED 240V	1	off
28	SD403950	END BRACKET EW35 (8.5)	1	off

NOTE FOR POWER KITS WHEN FRESH AIR BOX IS FITTED:

DROP				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316550	CIRCUIT BREAKER MINIATURE 2A	1	off
FIT				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
6	SD316551	CIRCUIT BREAKER MINIATURE 4 A	1	off

# ELECTRIC BOX ASSY POWER KITS FOR 1200B

WIRED TO WIRING DIAGRAM:-  
 D459853 FOR AW VERSION  
 D459854 FOR AA+AIR HEATING  
 D459855 FOR AA VERSION

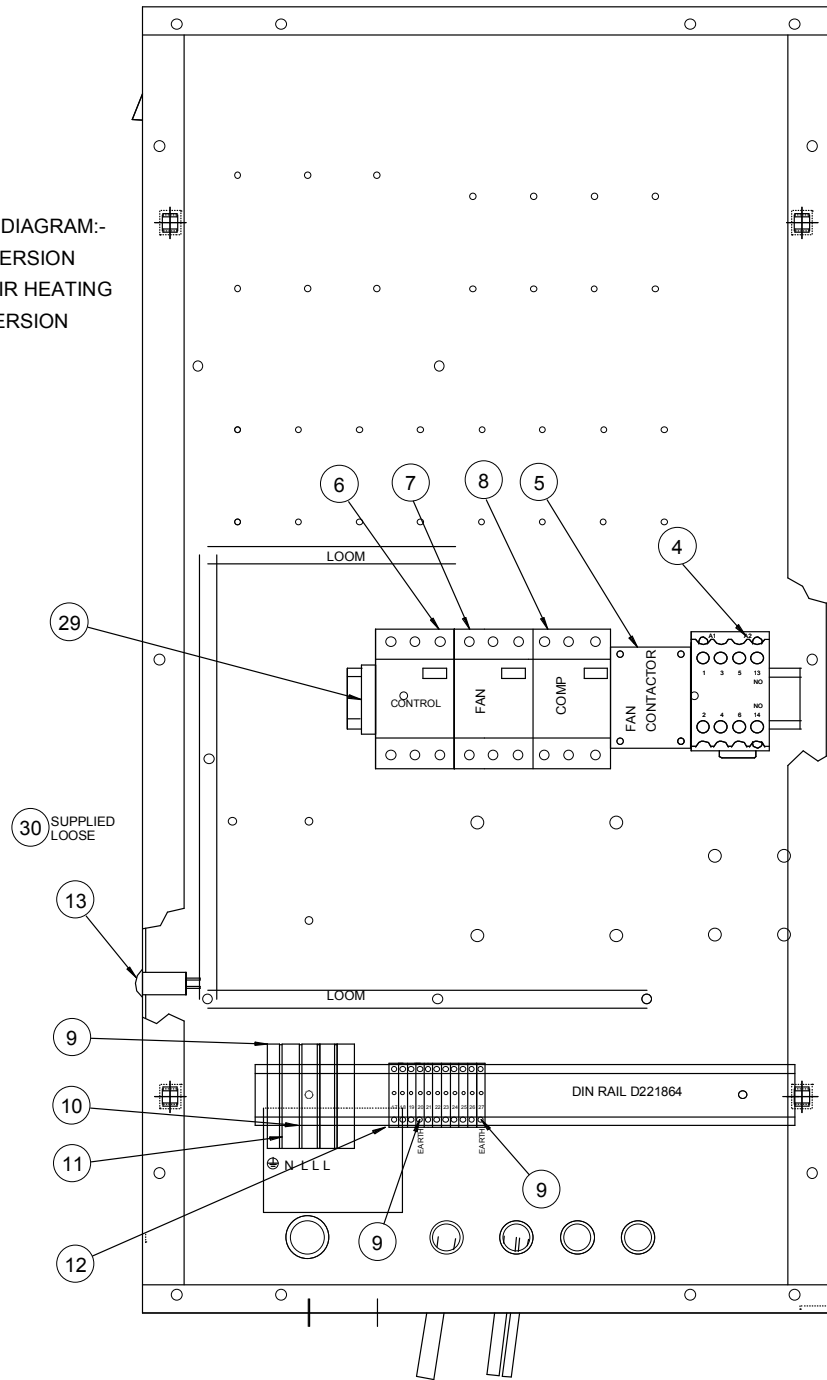


ASSY No A460015 AT ISS 16 (20/04/2015). POWER KIT 1200 THREE PHASE

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD612051	CONTACTOR 12A 3+1 N/O AUX	1	off
5	SD392551	CONTACTOR	1	off
6	SD448750	PTC SENSOR LEAD (TECNOLOGIC)	1	off
7	SD611550	MOTOR STARTER O/LOAD 1.6-2.5A	1	off
8	SD611553	MOTOR STARTER O/LOAD 6.5 - 10.0 A	1	off
9	SD403550	TERM EARTH WPE6 8mm	3	off
10	SD409550	TERMINAL BLOCK WDU10	4	off
11	SD403850	TERMINAL BLOCK BARRIER WAP 2.5	4	off
12	SD409350	TERM BLOCK WDU 2.5N	9	off
13	SD159850	PILOT LIGHT RED 240V	1	off
29	SD403950	END BRACKET EW35 (8.5)	1	off
31	SD316557	CIRCUIT BREAKER MINIATURE 16A	1	off

ELECTRIC BOX ASSY POWER KITS FOR 1500B

WIRED TO WIRING DIAGRAM:-  
 D459853 FOR AW VERSION  
 D459854 FOR AA+AIR HEATING  
 D459855 FOR AA VERSION



ASSY No A460016 AT ISS 9 (25/01/2011). POWER KIT 1500 THREE PHASE

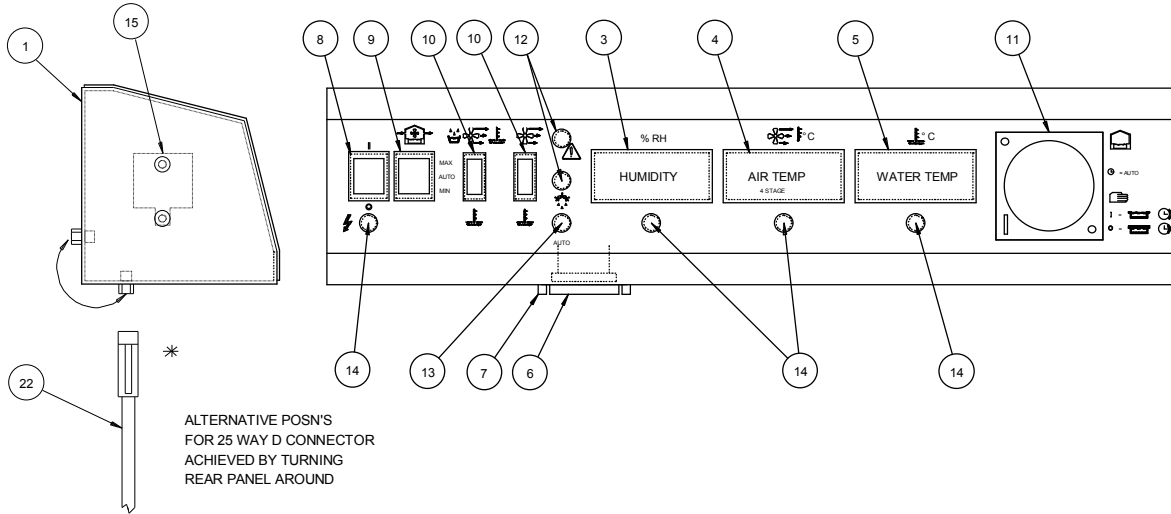
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD612052	CONTACTOR 18A 3+1N/O AUX	1	off
5	SD392551	CONTACTOR	1	off
6	SD611550	MOTOR STARTER O/LOAD 1.6-2.5A	1	off
7	SD611551	MOTOR STARTER O/LOAD 2.5-4.0A 3P	1	off
8	SD611555	MOTOR STARTER O/LOAD 12-18A 3PH	1	off
9	SD403550	TERM EARTH WPE6 8mm	3	off
10	SD409550	TERMINAL BLOCK WDU10	4	off
11	SD403850	TERMINAL BLOCK BARRIER WAP 2.5	4	off
12	SD409350	TERM BLOCK WDU 2.5N	9	off
13	SD159850	PILOT LIGHT RED 240v	1	off
29	SD403950	END BRACKET EW35 (8.5)	1	off
30	SD448750	PTC SENSOR LEAD (TECNOLOGIC)	1	off

# 12.0 CONTROL PANELS

## STANDARD CONTROL PANEL MODULE

\* CAN BE FITTED EITHER END  
DEPENDING  
ON POSN OF 25 CONNECTOR

**NOTES**  
WIRED TO WIRING DIAGRAM D460850



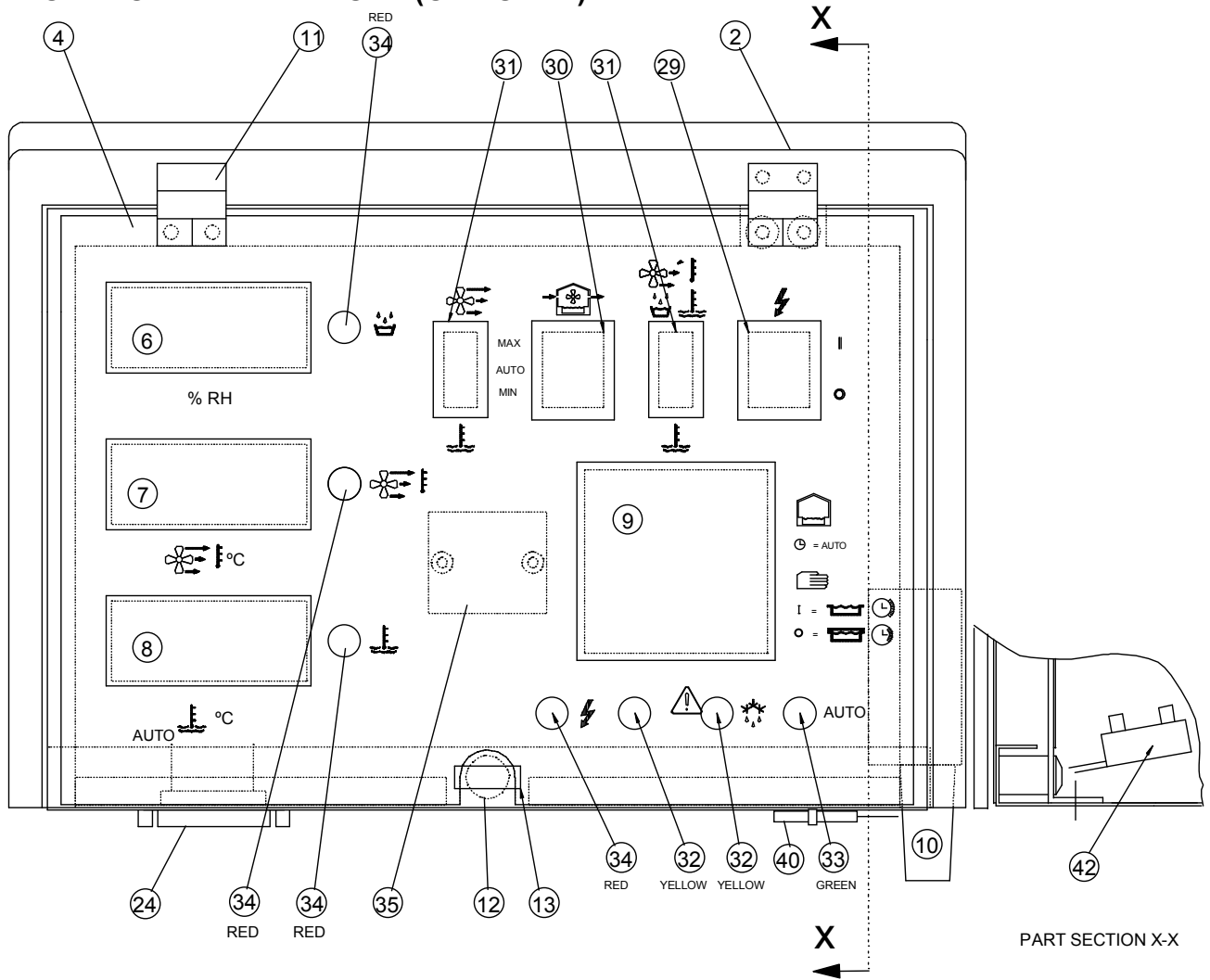
ASSY No A470001 AT ISS 2 (21/05/2009). CONTROL PANEL AW MACHINES

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD418450	REAR PANEL	1	off
2	SD469801	FRONT PANEL	1	off
3	SD432451	THERMOSTAT HUMIDITY	1	off
4	SD432555	AIR STAT (4 STAGE)	1	off
5	SD432552	THERMOSTAT WATER	1	off
6	SD469451	CONNECTOR D 25WAY MALE	1	off
8	SD318650	SWITCH ROCKER 2 POLE	1	off
9	SD316750	SWITCH 2 POLE 3 POSN C/O	1	off
10	SD469950	SWITCH ROCKER SPST	2	off
11	SD151554	TIME CLOCK 12V AC	1	off
12	SD470352	PILOT LIGHT YELLOW 12VAC	2	off
13	SD470351	PILOT LIGHT GREEN 12VAC	1	off
14	SD470350	PILOT LIGHT RED 12VAC	4	off
15	SD163352	TERMINAL BLOCK	1	off
22	SD434051	CABLE ASSY D25 MALE/FEMALE	1	off

ASSY No A470002 AT ISS 1 (15/06/2005). CONTROL PANEL AA+LPHW MACHINES				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD418450	REAR PANEL	1	off
2	SD469803	FRONT PANEL	1	off
3	SD432451	THERMOSTAT HUMIDITY	1	off
4	SD432555	AIR STAT (4 STAGE)	1	off
6	SD469451	CONNECTOR D 25WAY MALE	1	off
8	SD318650	SWITCH ROCKER 2 POLE	1	off
9	SD316750	SWITCH 2 POLE 3 POSN C/O	1	off
11	SD151554	TIME CLOCK 12v AC	1	off
12	SD470352	PILOT LIGHT YELLOW 12Vac	2	off
13	SD470351	PILOT LIGHT GREEN 12Vac	1	off
14	SD470350	PILOT LIGHT RED 12Vac	3	off
15	SD163352	TERMINAL BLOCK	1	off
22	SD434051	CABLE ASSY D25 MALE/FEMALE	1	off

ASSY No A470003 AT ISS 1 (15/06/2005). CONTROL PANEL AA MACHINES				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
1	SD418450	REAR PANEL	1	off
2	SD469802	FRONT PANEL	1	off
3	SD432451	THERMOSTAT HUMIDITY	1	off
4	SD432551	THERMOSTAT AIR	1	off
6	SD469451	CONNECTOR D 25WAY MALE	1	off
8	SD318650	SWITCH ROCKER 2 POLE	1	off
9	SD316750	SWITCH 2 POLE 3 POSN C/O	1	off
12	SD470352	PILOT LIGHT YELLOW 12Vac	2	off
13	SD470351	PILOT LIGHT GREEN 12Vac	1	off
14	SD470350	PILOT LIGHT RED 12Vac	3	off
15	SD163352	TERMINAL BLOCK	1	off
22	SD434051	CABLE ASSY D25 MALE/FEMALE	1	off

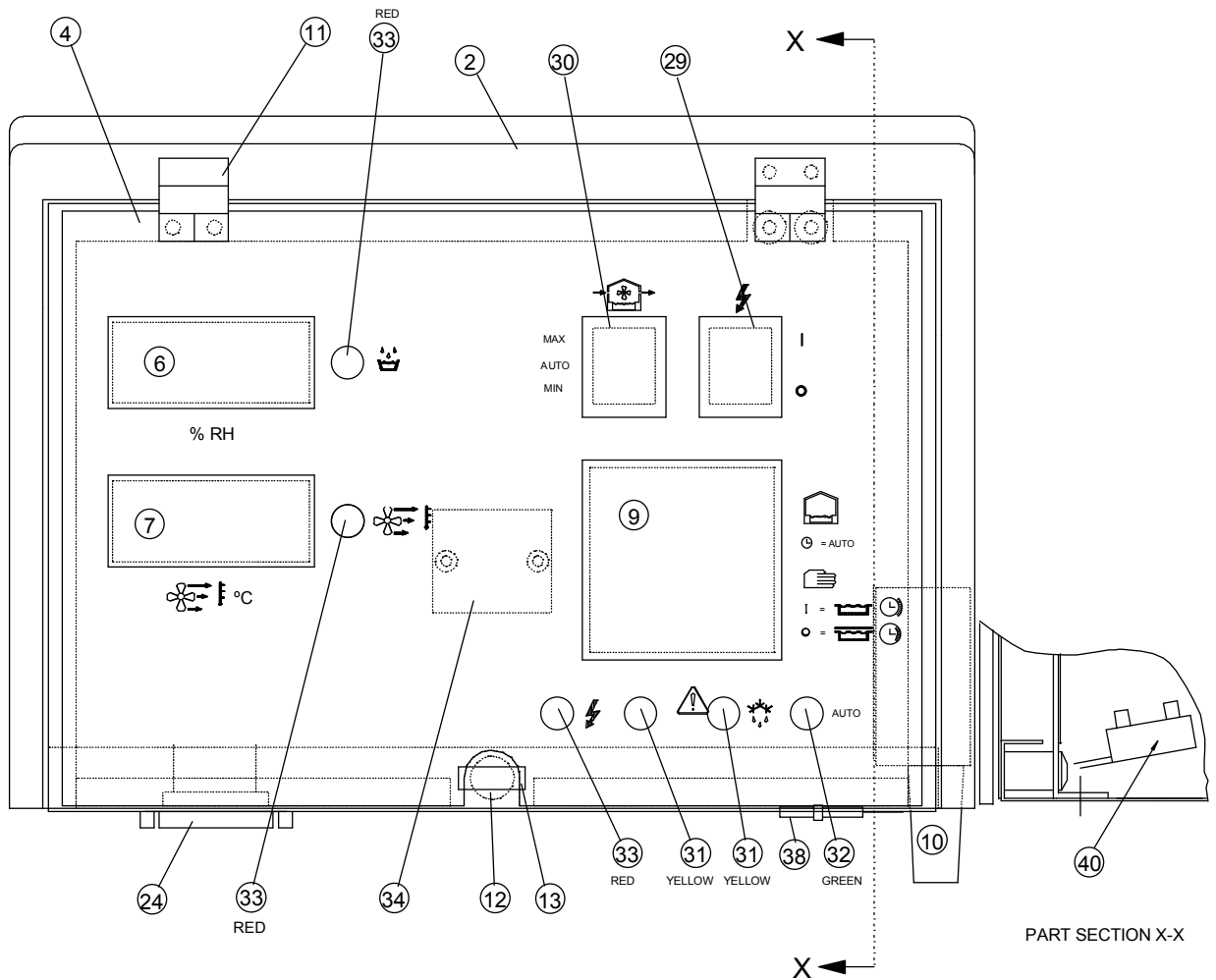
## 12.1 CONTROL PANEL REMOTE (OPTIONAL)



ASSY No A478001 AT ISS 4 (21/05/2009). REMOTE CONSOLE 'AW' VERSION

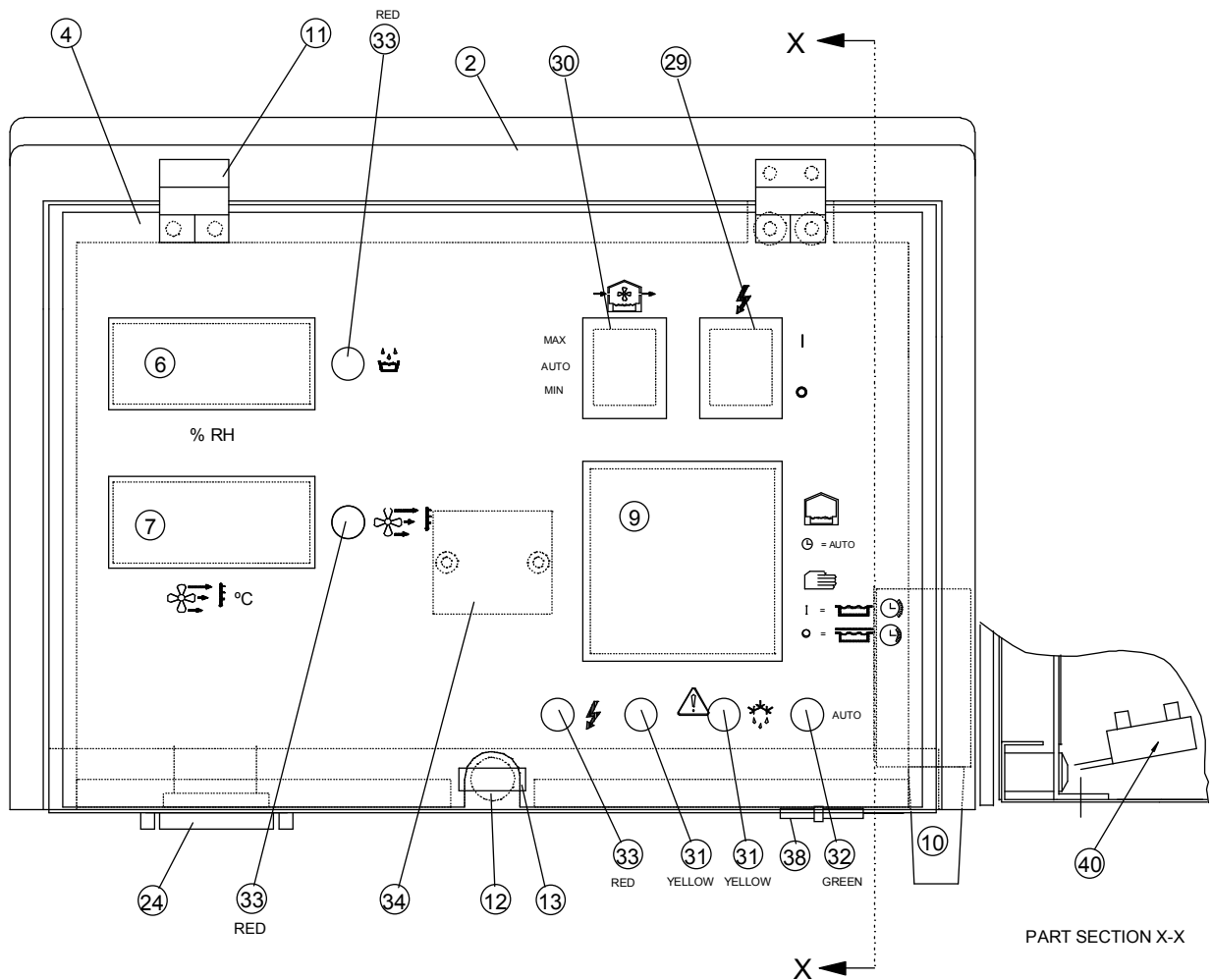
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD477401	DISPLAY PANEL	1	off
4	SD310552	WINDOW	1	off
6	SA432451	HUMIDITY STAT, TECHNOLOGIC	1	off
7	SA432555	AIR STAT CALIBRATED	1	off
8	SA432552	THERMOSTAT WATER	1	off
9	SD151554	TIME CLOCK 12V AC	1	off
10	SD260351	HUMIDITY SENSOR	1	off
11	SD324350	ADJUSTABLE HINGE	2	off
12	SD317150	MAGNETIC CATCH	1	off
13	SD317250	STEEL CATCH STRIKE	1	off
24	SD434052	25 WAY D CONNECTOR 10M	1	off
29	SD318650	SWITCH ROCKER 2 POLE	1	off
30	SD316750	SWITCH 2 POLE 3 POSN C/O	1	off
31	SD469950	SWITCH ROCKER SPST	2	off
32	SD470352	PILOT LIGHT YELLOW 12VAC	2	off
33	SD470351	PILOT LIGHT GREEN 12VAC	1	off
34	SD470350	PILOT LIGHT RED 12VAC	4	off
35	SD163352	TERMINAL BLOCK	1	off
40	SD448750	PTC SENSOR LEAD (TECNOLOGIC)	1	off
42	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	1	off





ASSY No A478002 AT ISS 4 (25/01/2011). REMOTE CONSOLE 'AA+LPHW' VERSION

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD477402	DISPLAY PANEL	1	off
4	SD310552	WINDOW	1	off
6	SA432451	HUMIDITY STAT, TECHNOLOGIC	1	off
7	SA432555	AIR STAT CALIBRATED	1	off
9	SD151554	TIME CLOCK 12v AC	1	off
10	SD260351	HUMIDITY SENSOR	1	off
11	SD324350	ADJUSTABLE HINGE	2	off
12	SD317150	MAGNETIC CATCH	1	off
13	SD317250	STEEL CATCH STRIKE	1	off
24	SD434052	25 WAY D CONNECTOR 10M	1	off
29	SD318650	SWITCH ROCKER 2 POLE	1	off
30	SD316750	SWITCH 2 POLE 3 POSN C/O	1	off
31	SD470352	PILOT LIGHT YELLOW 12Vac	2	off
32	SD470351	PILOT LIGHT GREEN 12Vac	1	off
33	SD470350	PILOT LIGHT RED 12Vac	3	off
34	SD163352	TERMINAL BLOCK	1	off
38	SD448750	PTC SENSOR LEAD (TECNOLOGIC)	1	off
40	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	1	off

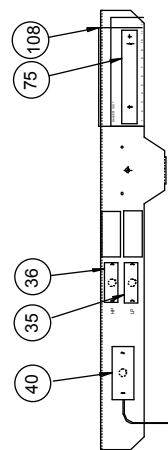
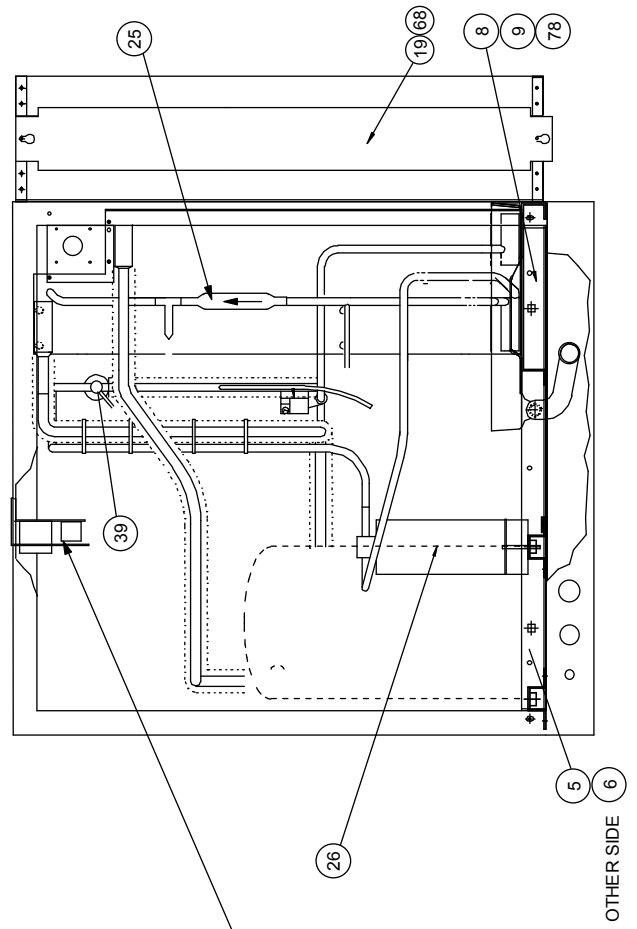
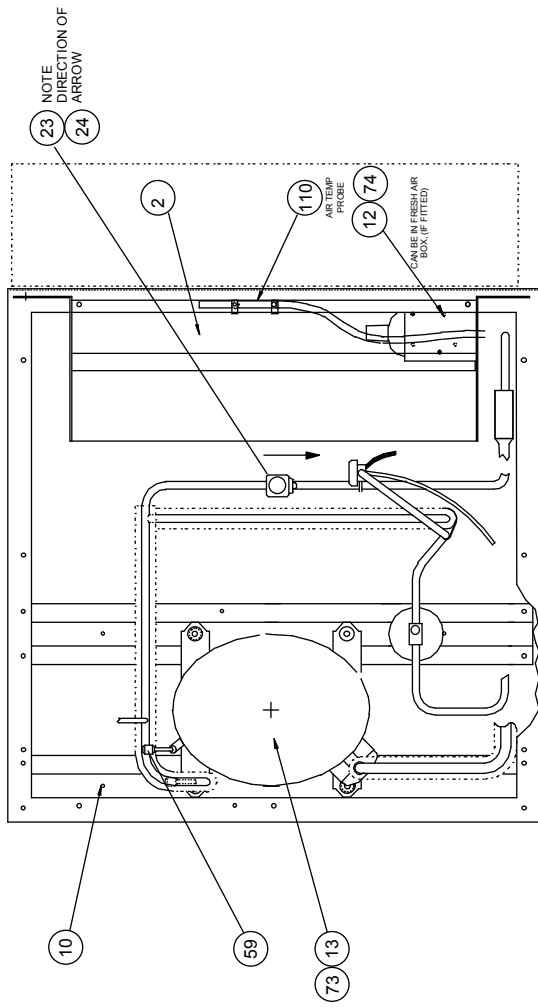


ASSY No A478003 AT ISS 5 (26/01/2011). REMOTE CONSOLE 'AA' VERSION

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD477402	DISPLAY PANEL	1	off
4	SD310552	WINDOW	1	off
6	SA432451	HUMIDITY STAT, TECHNOLOGIC	1	off
7	SA432551	THERMOSTAT AIR	1	off
9	SD456350	BLANKING PLATE	1	off
10	SD260351	HUMIDITY SENSOR	1	off
11	SD324350	ADJUSTABLE HINGE	2	off
12	SD317150	MAGNETIC CATCH	1	off
13	SD317250	STEEL CATCH STRIKE	1	off
24	SD434052	25 WAY D CONNECTOR 10M	1	off
29	SD318650	SWITCH ROCKER 2 POLE	1	off
30	SD316750	SWITCH 2 POLE 3 POSN C/O	1	off
31	SD470352	PILOT LIGHT YELLOW 12Vac	2	off
32	SD470351	PILOT LIGHT GREEN 12Vac	1	off
33	SD470350	PILOT LIGHT RED 12Vac	3	off
34	SD163352	TERMINAL BLOCK	1	off
38	SD448750	PTC SENSOR LEAD (TECNOLOGIC)	1	off
40	SA329954	TERMINAL BLOCK 7 WAY PLUG/SOCKET	1	off

# 13.0 FRIDGE BOX ASSEMBLIES

## 13.1 MAIN FRIDGE COMPONENTS ALL MACHINES



SHOWING PRESSURE SWITCH BKT ASSY

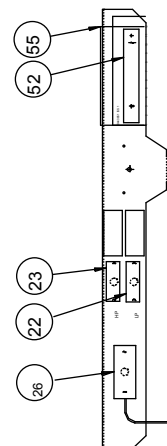
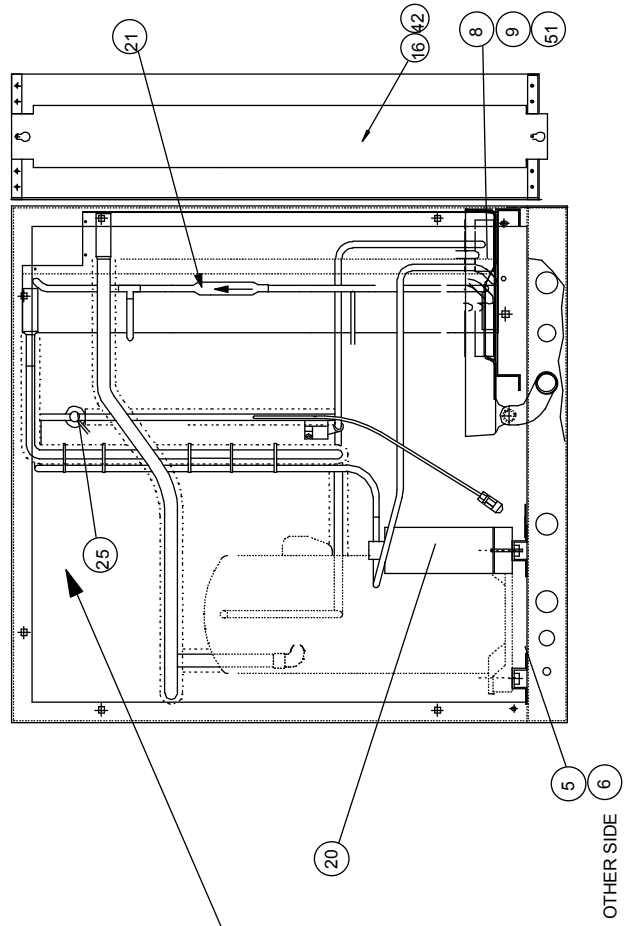
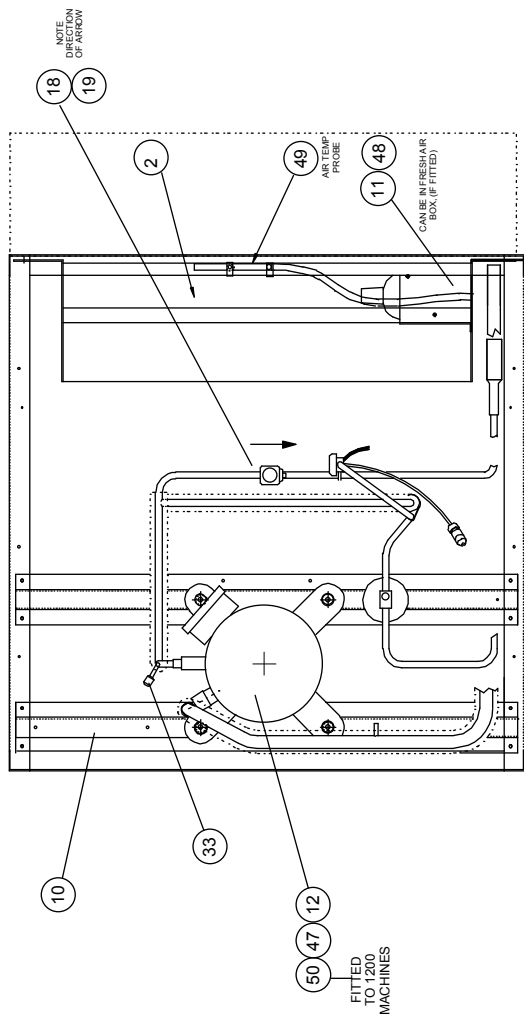
FRIDGE BOX ASSY AA600/900A/BVHXF

ASSY No A436008 AT ISS 5 (21/03/2007). FRIDGE BOX ASSY AA600A/BXF

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD416001	EVAPORATOR	1	off
5	SD416550	PANEL BRACKET	1	off
6	SD416551	PANEL BRACKET	1	off
8	SD416701	DRIPTRAY	1	off
9	SD416850	DRIPTRAY SUPPORT BKT	1	off
10	SD416950	COMPRESSOR CHANNEL	2	off
12	SD418250	SENSOR BRACKET	1	off
13	SD286252	COMPRESSOR, H79B22UABKA SINGLE PHASE	1	off
13a	SD132856	COMPRESSOR, H79B22UDBEA THREE PHASE	1	off
19	SD310153	FILTER PANEL	2	off
23	SD166250	SOLENOID VALVE 3/8	1	off
24	SD166550	SOLENOID COIL 230V 50HZ	1	off
25	SD084550	NRV 3/8	1	off
26	SD149650	RECEIVER/DRIER	1	off
35	SD384550	L P SWITCH MANUAL RESET	1	off
36	SD101350	HP SWITCH (400psi)	1	off
39	SD086851	TEV INE 2GA	1	off
40	SA145802	STAT/TIMER FOR DEFROST	1	off
59	SD066350	SCHRADER VALVE	2	off
68	SD197150	FILTER 24 X 24 X 2	1	off
73	SP182554	REFRIGERANT R407c	1.8	kg
74	SD260351	HUMIDITY SENSOR	1	off
75	SD072858	TERMINAL BLOCK 12 WAY (16A)	1	off
78	SD111050	PIPE FLEXIBLE CLEAR PVC 16 BORE	0.4	m
108	SD470750	COVER FOR TB	1	off
110	SD448750	TEMPERATURE PROBE	1	off

ASSY No A436010 AT ISS 1 (21/03/2007). FRIDGE BOX ASSY AA900A/BXF

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD416001	EVAPORATOR	1	off
5	SD416550	PANEL BRACKET	1	off
6	SD416551	PANEL BRACKET	1	off
8	SD416701	DRIPTRAY	1	off
9	SD416850	DRIPTRAY SUPPORT BKT	1	off
10	SD416950	COMPRESSOR CHANNEL	2	off
12	SD418250	SENSOR BRACKET	1	off
13	SD132956	COMPRESSOR H79B32UABKA SINGLE PHASE	1	off
13a	SD133055	COMPRESSOR H79B32UDBEA THREE PHASE	1	off
19	SD310153	FILTER PANEL	2	off
23	SD166250	SOLENOID VALVE 3/8	1	off
24	SD166550	SOLENOID COIL 230V 50HZ	1	off
25	SD084550	NRV 3/8	1	off
26	SD149650	RECEIVER/DRIER	1	off
35	SD384550	L P SWITCH MANUAL RESET	1	off
36	SD101350	HP SWITCH (400psi)	1	off
39	SD086951	TEV BBINE-3-GA-B10	1	off
40	SA145802	STAT/TIMER FOR DEFROST	1	off
59	SD066350	SCHRADER VALVE	2	off
68	SD197150	FILTER 24 X 24 X 2	1	off
73	SP182554	REFRIGERANT R407c	1.85	kg
74	SD260351	HUMIDITY SENSOR	1	off
75	SD072858	TERMINAL BLOCK 12 WAY (16A)	1	off
78	SD111050	PIPE FLEXIBLE CLEAR PVC 16 BORE	0.4	m
108	SD470750	COVER FOR TB	1	off
110	SD448750	TEMPERATURE PROBE	1	off



SHOWING PRESSURE SWITCH BKT ASSY

FRIDGE BOX ASSY AA1200/1500A/BVHXF

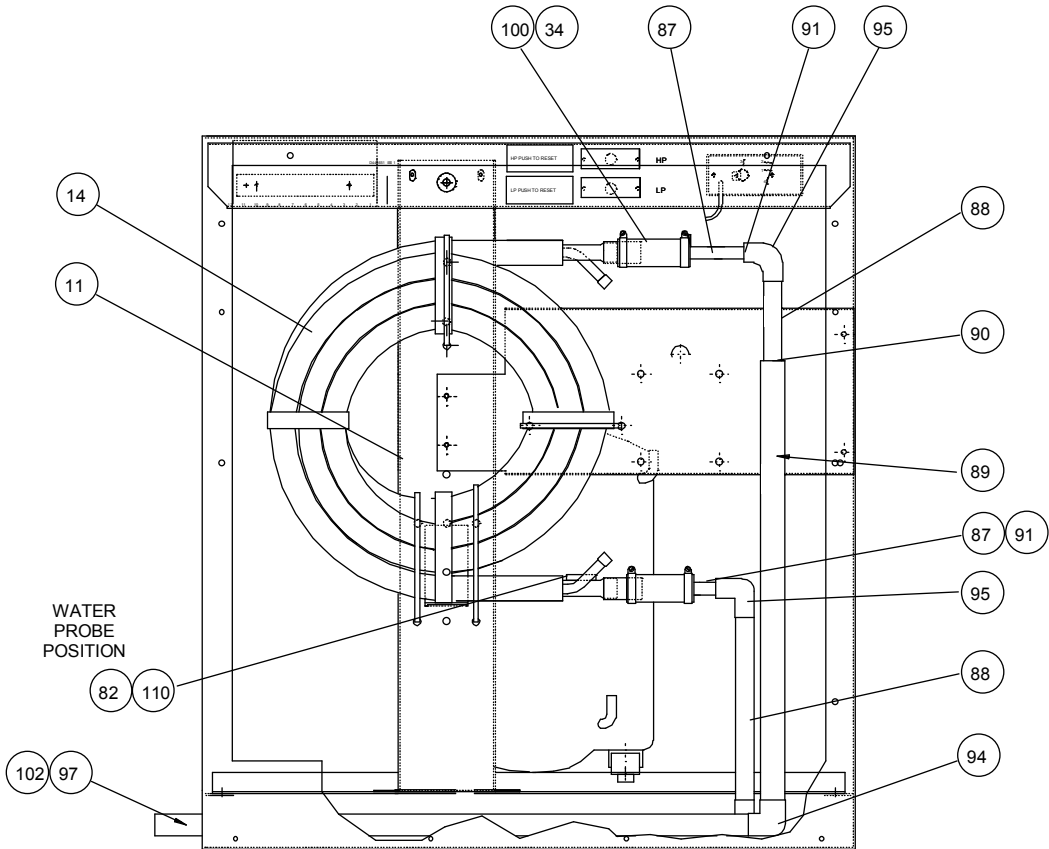
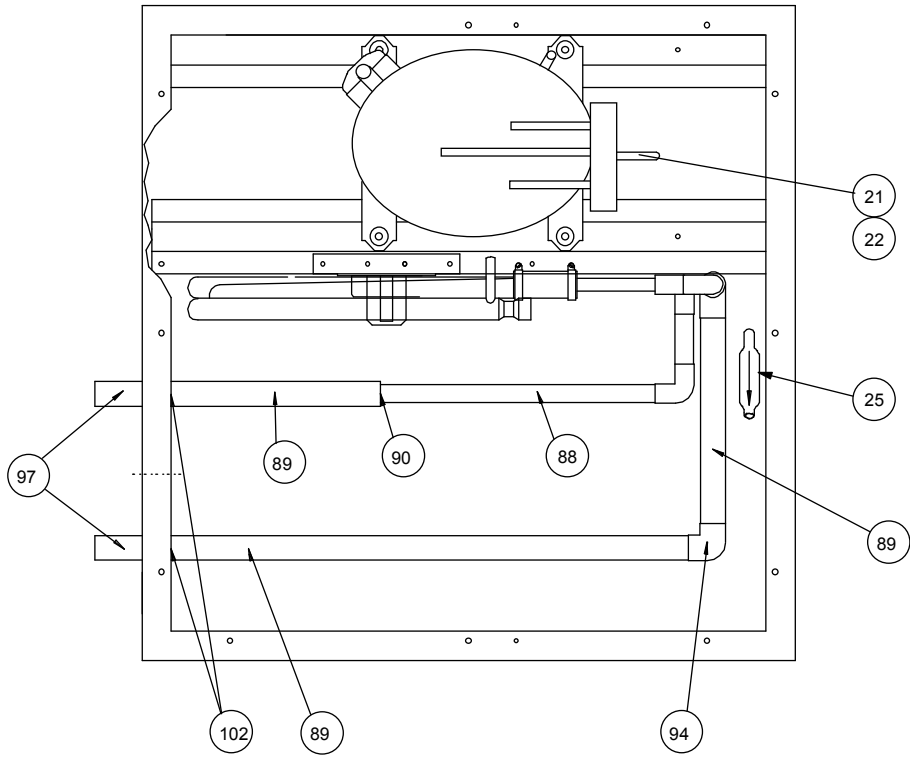
ASSY No A436012 AT ISS 5 (21/03/2007). FRIDGE BOX AA1200A/BXF

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD416002	EVAPORATOR	1	off
5	SD416552	PANEL BRACKET	1	off
6	SD416553	PANEL BRACKET	1	off
8	SD416702	DRIPTRAY	1	off
9	SD416851	DRIPTRAY SUPPORT BKT	1	off
10	SD416952	COMPRESSOR CHANNEL	2	off
11	SD418250	SENSOR BRACKET	1	off
12	SD500953	COMPRESSOR C-SBN261H5A 1~230V50Hz SANYO	1	off
12a	SD500952	COMPRESSOR C-SBN263H8A 3~400V50Hz SANYO	1	off
16	SD310155	FILTER PANEL	2	off
18	SD166250	SOLENOID VALVE 3/8	1	off
19	SD166550	SOLENOID COIL 230V 50HZ	1	off
20	SD149650	RECEIVER/DRIER	1	off
21	SD084550	NRV 3/8	1	off
22	SD384550	L P SWITCH MANUAL RESET	1	off
23	SD101350	HP SWITCH (400psi)	1	off
25	SD087151	TEV INE5GA	1	off
26	SA145802	STAT/TIMER FOR DEFROST	1	off
33	SD066350	SCHRADER VALVE	2	off
42	SD197152	AIR FILTER DISPOSABLE TYPE	1	off
47	SP182554	REFRIGERANT R407c	2.7	kg
48	SD260351	HUMIDITY SENSOR	1	off
49	SD448750	TEMPERATURE PROBE	1	off
50	SD404254	CRANKCASE HEATER	1	off
51	SD111050	PIPE FLEXIBLE CLEAR PVC 16 BORE	0.55	m
52	SD072858	TERMINAL BLOCK 12 WAY (16A)	1	off
55	SD470750	COVER FOR TB	1	off

ASSY No A436014 AT ISS 11 (26/07/2012). FRIDGE BOX ASSY AA1500BXF

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD416002	EVAPORATOR	1	off
5	SD416552	PANEL BRACKET	1	off
6	SD416553	PANEL BRACKET	1	off
8	SD416702	DRIPTRAY	1	off
9	SD416851	DRIPTRAY SUPPORT BKT	1	off
10	SD416952	COMPRESSOR CHANNEL	2	off
11	SD418250	SENSOR BRACKET	1	off
12	SD500851	COMPRESSOR C-SBN373H8A	1	off
16	SD310155	FILTER PANEL	2	off
18	SD166250	SOLENOID VALVE 3/8	1	off
19	SD166550	SOLENOID COIL 230V 50HZ	1	off
20	SD149650	RECEIVER/DRIER	1	off
21	SD084550	NRV 3/8	1	off
22	SD384550	L P SWITCH MANUAL RESET	1	off
23	SD101350	HP SWITCH (400psi)	1	off
25	SD084350	VALVE TEV (SVE8VGA)	1	off
26	SA145802	STAT/TIMER FOR DEFROST	1	off
33	SD066350	SCHRADER VALVE	2	off
42	SD197152	AIR FILTER DISPOSABLE TYPE	1	off
47	SP182554	REFRIGERANT R407c	2.65	kg
48	SD260351	HUMIDITY SENSOR	1	off
49	SD448750	TEMPERATURE PROBE	1	off
51	SD111050	PIPE FLEXIBLE CLEAR PVC 16 BORE	0.55	m
52	SD072858	TERMINAL BLOCK 12 WAY (16A)	1	off
55	SD470750	COVER FOR TB	1	off

### 13.2 EXTRA PIPE WORK FITTINGS, AW600/900 MACHINES (NO LPHW)



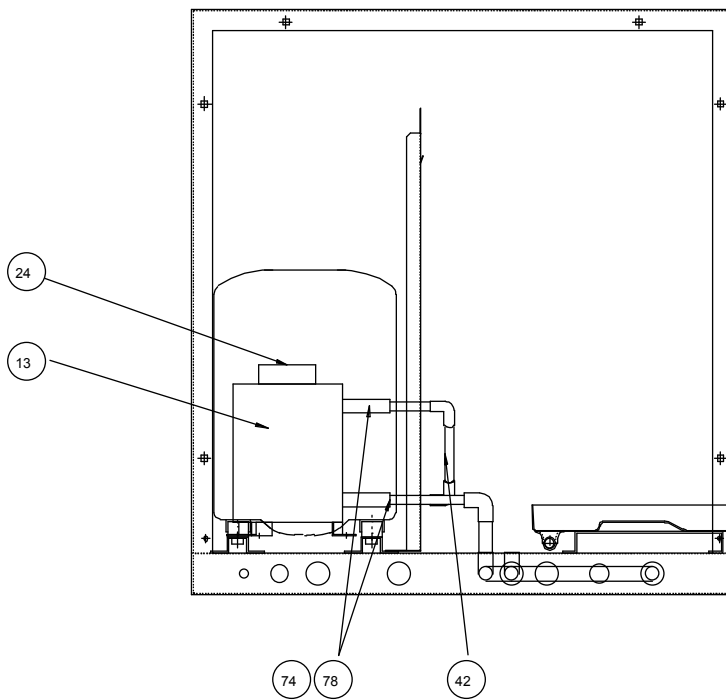
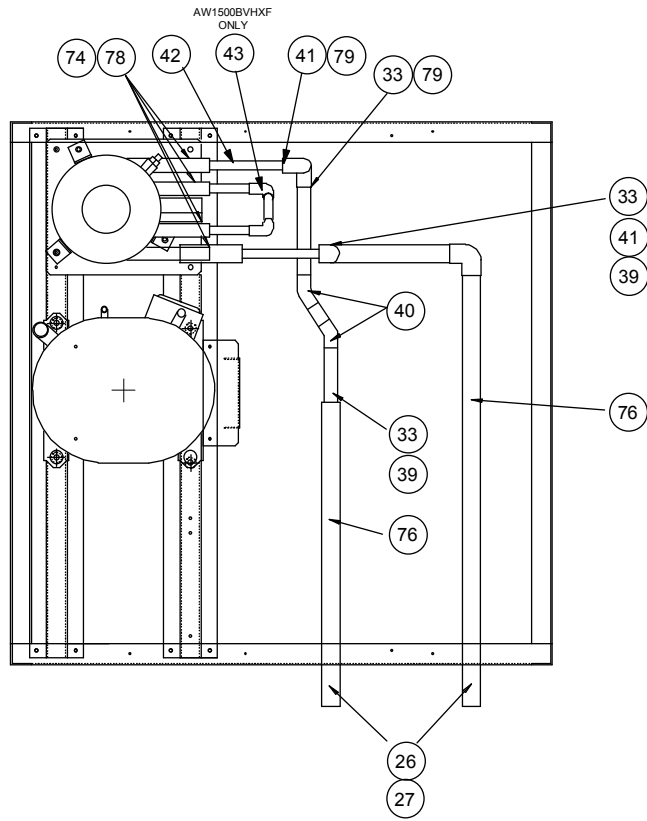
AW MACHINES CONTAIN PARTS LISTED HERE WITH RELEVANT PARTS ON AALIST

EXTRA PARTS FOR FRIDGE BOX AW600/900A/BVHXF (NO LPHW)

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
11	SD417650	COAX MOUNTING BKT	1	off
14	SD177002	COAX COIL ASSY	1	off
21	SD103750	REVERSING VALVE	1	off
22	SD085450	REV VALVE COIL	1	off
25	SD084550	NRV 3/8	1	off
34	SD110151	HOSE CLIP S/STEEL SIZE 35	4	off
58	SD284450	1/8 BSPM BLEED VALVE (PEGLER)	1	off
82	SD090150	COPPER EARTH STRAP	0.15	m
87	SD203950	PIPE NOMINAL DIA 1/2IN PVC-U	0.26	m
88	SD216452	3/4 PVC RIGID PIPE	1.6	m
89	SD216454	1inch PVC GREY PLAIN PIPE	1.25	m
90	SD466550	1 x 3/4 REDUCING BUSH	2	off
91	SD466552	3/4 x1/2inch PVC REDUCING BUSH	2	off
94	SD239357	1inch PVC GREY 90deg ELBOW	2	off
95	SD239355	3/4x3/4inch 90deg GREY PVC ELBOW	2	off
97	SD466751	1 inch PVC GREY TANK CONN	2	off
100	SD224751	FLEXIBLE HOSE DIA 22ID	0.17	m
102	SD466752	PVC PLAIN SOCKET 1 inch	2	off
110	SD448750	TEMPERATURE PROBE	1	off



### 13.2 EXTRA PIPE WORK FITTINGS, AW1200/1500 MACHINES.

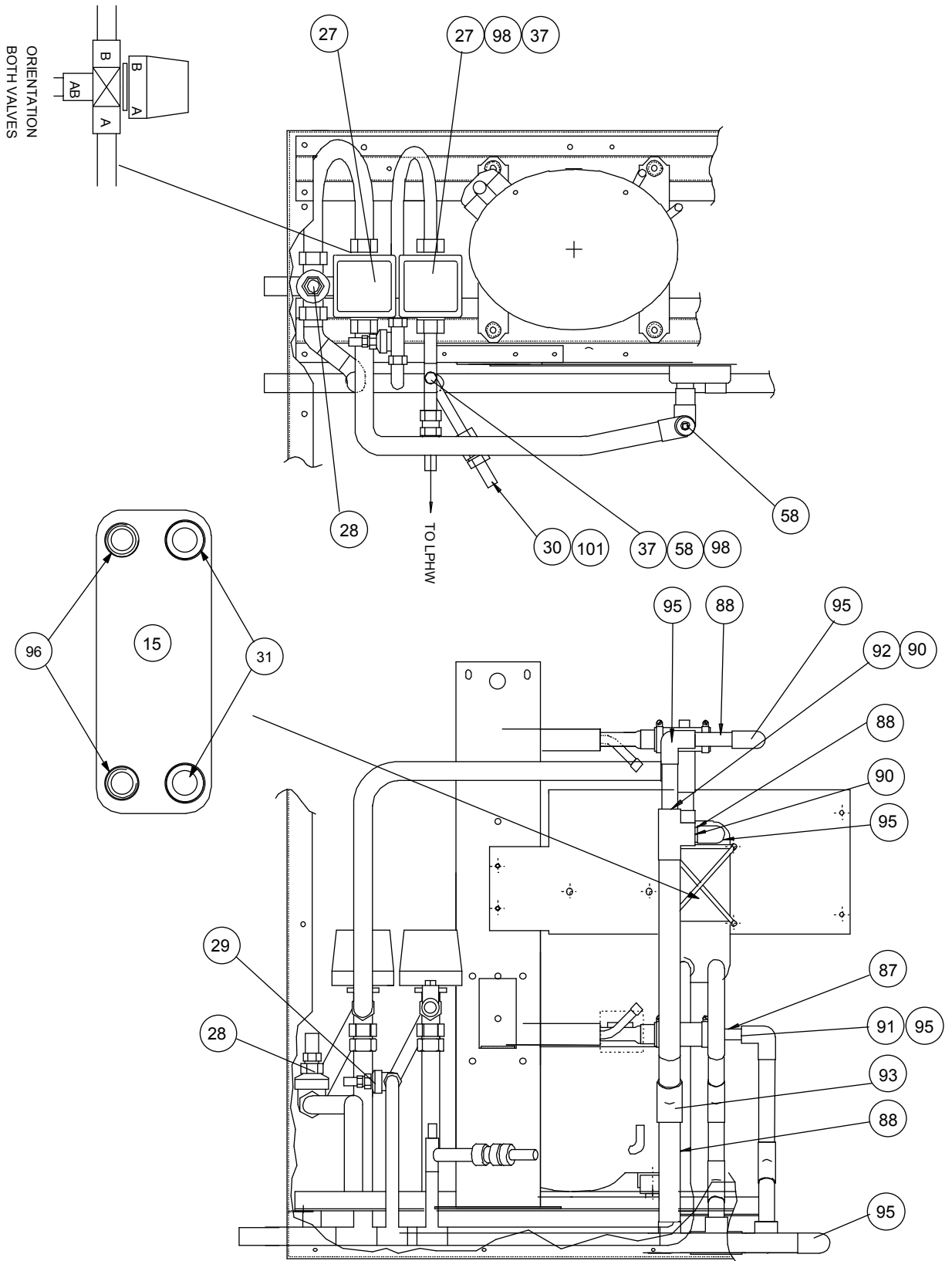


AW MACHINES CONTAIN PARTS LISTED HERE WITH RELEVANT PARTS ON AA LIST

EXTRA PARTS FOR AW1200A/BVHXF AND AW1500BVHXF (NO LPHW)

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
13	SD353451	CONDENSER CN2	1	off
20	SD085450	REV COIL	1	off
23	SD084550	NRV 3/8	1	off
25	SD061750	REVERSING VALVE V30	1	off
26	SD466751	1 inch PVC GREY TANK CONN	2	off
27	SD466752	PVC PLAIN SOCKET 1 inch	2	off
31	SD239357	1inch PVC GREY 90deg ELBOW	2	off
33	SD216452	3/4 PVC RIGID PIPE	1.6	m
39	SD466550	1 x 3/4 REDUCING BUSH	2	off
40	SD239358	3/4x3/4inch 45deg GREY PVC ELBOW	2	off
41	SD466552	3/4 x1/2inch PVC REDUCING BUSH	2	off
42	SD216453	PIPE NOMINAL DIA 1/2IN PVC-U	1.25	m
74	SD110150	HOSE CLIP S/STEEL SIZE 25	8	off
76	SD203950	1inch PVC GREY PLAIN PIPE	1.25	m
77	SD239359	1/2x1/2 90DEG ELBOW	4	off
78	SD224754	FLEXIBLE HOSE DIA 19ID	0.4	m
79	SD239355	ELBOW 3/4 X 3/4 90 DEG	2	off

### 13.3 EXTRA PIPE WORK FITTINGS, AW6/900 MACHINES WITH LPHW FITTED



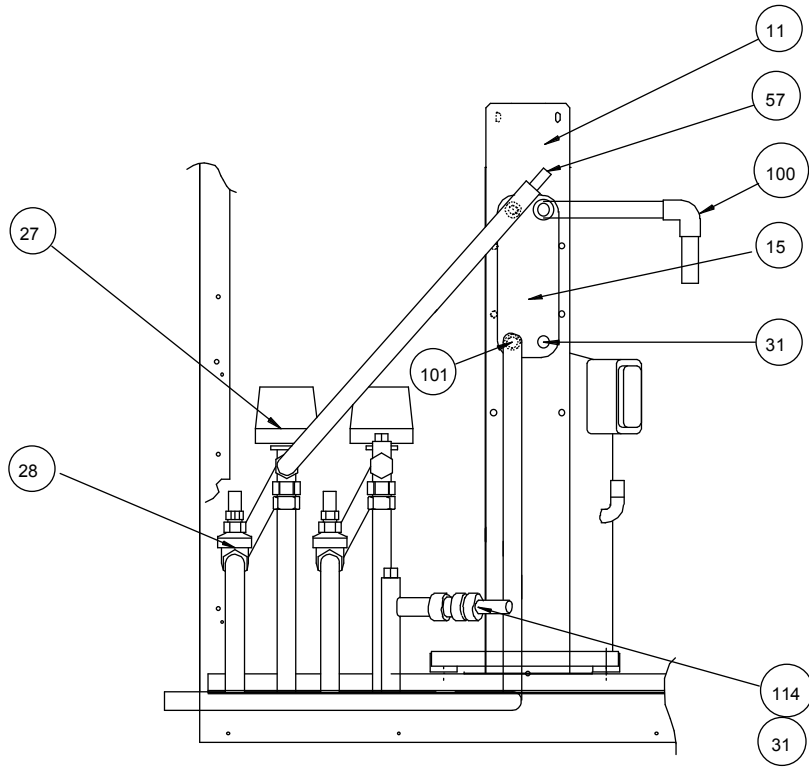
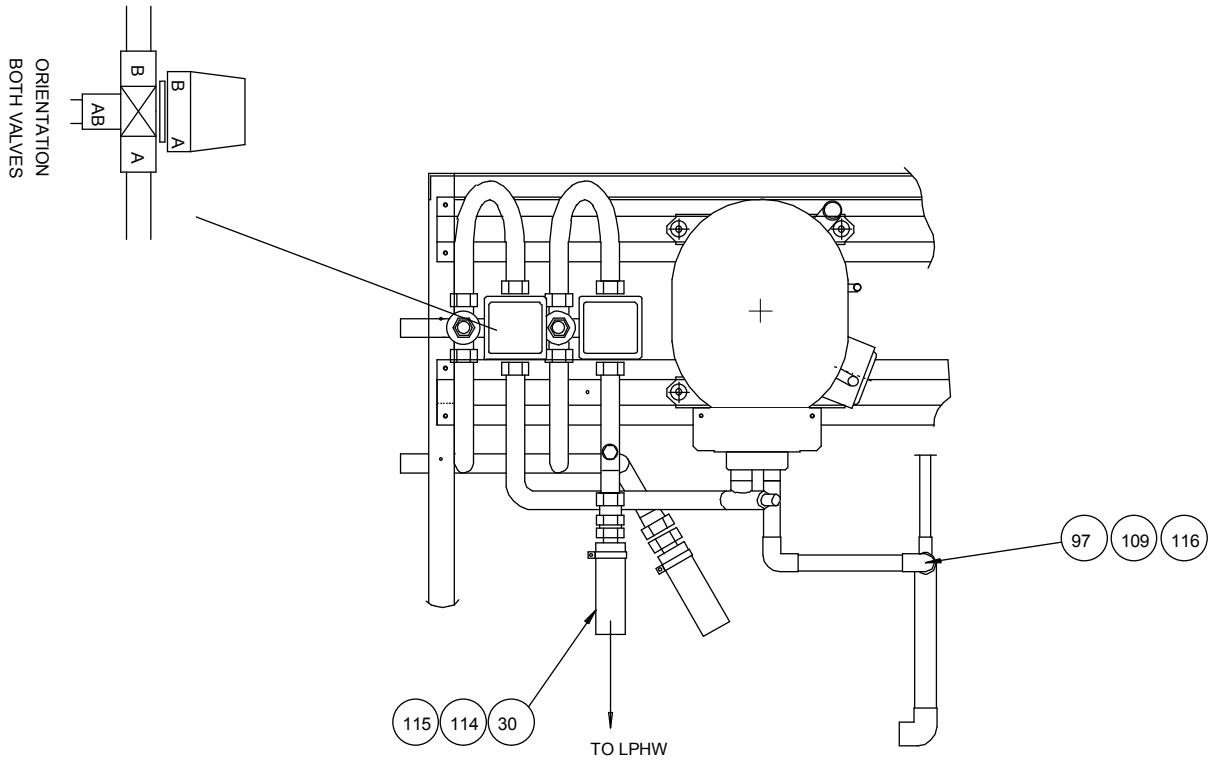
PART VIEW

AW MACHINES WITH LPHW CONTAIN PARTS LISTED HERE WITH RELEVANT PARTS ON AA & AW LISTS

EXTRA PARTS FOR AW600/900A/BVHXF WITH LPHW FITTED

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
15	SD418950	PLATE HEAT EXCHANGER, AW600	1	off
15a	SD418951	PLATE HEAT EXCHANGER, AW900	1	off
27	SD323903	MOTORISED VALVE 3 PORT	2	off
28	SD236852	GATEVALVE 22mm	1	off
29	SD236853	GATEVALVE 15mm	1	off
30	SD224755	HOSE 13 I/D	1.6	m
31	SD290653	COMPRESSION FITTING 22 x 3/4BSPM	2	off
37	SD290651	COMPRESSION FITTING 15x1/2BSPM	4	off
58	SD284450	BLEED VALVE	1	off
87	SD203950	PIPE NOMINAL DIA 1/2IN PVC-U	0.32	m
88	SP216452	PVC-U GREY PIPE 3/4 INCH	1.6	m
90	SD466550	1 x 3/4 REDUCING BUSH	2	off
91	SD466552	3/4 x1/2inch PVC REDUCING BUSH	2	off
92	SD243654	1" PVC GREY EQUAL T	2	off
93	SD239358	3/4 x 3/4 INCH 45 DEG PVC ELBOW	2	off
95	SD239355	ELBOW 3/4 X 3/4 90 DEG	8	off
96	SD467450	1/2" PVC/BRASS COMP UNION	2	off
98	SD296153	HOSE TAIL 13mm x 1/2 BSPM	4	off
101	SD110156	HOSE CLIP S/STEEL SIZE 20	4	off

# 13.4 EXTRA PIPE WORK FITTINGS, AW12/1500 MACHINES WITH LPHW FITTED

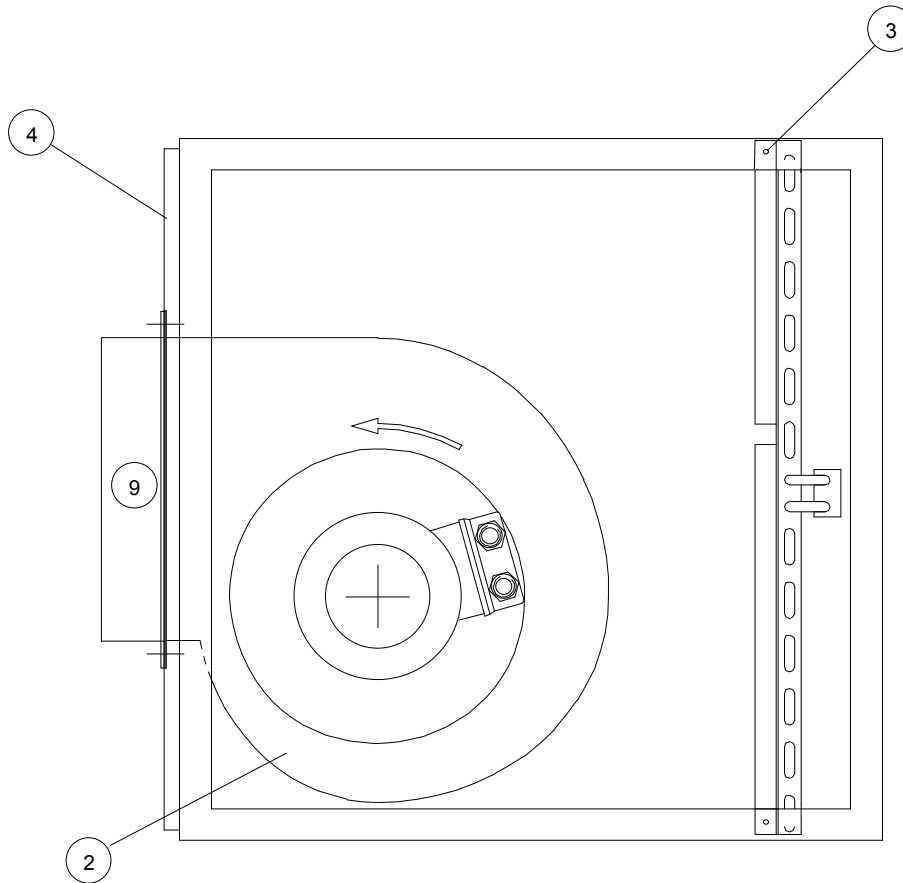


PART VIEWS

EXTRA PARTS FOR AW1200/1500 WITH LPHW FITTED

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
11	SD417651	HEATER MOUNTING BKT	1	off
15	SD418951	PLATE HEAT EXCHANGER AW1200	1	off
15a	SD418952	PLATE HEAT EXCHANGER AW1500	1	off
27	SD323903	MOTORISED VALVE 3 PORT	2	off
28	SD236852	GATEVALVE 22mm	2	off
30	SD224756	FLEXIBLE HOSE DIA 19ID (GATES GP40)	1.6	m
31	SD290653	COMPRESSION FITTING 22 x 3/4BSPM	4	off
57	SD284450	BLEED VALVE	1	off
87	SD090150	COPPER EARTH STRAP	0.15	m
92	SD216455	20mm PVC GREY RIGID PIPE	0.32	m
93	SD216452	3/4 PVC RIGID PIPE	1.6	m
94	SD216454	1" PVC GREY PLAIN PIPE	1.25	m
95	SD466550	1 x 3/4 REDUCING BUSH	2	off
96	SD466552	3/4" - 1/2" PVC REDUCING BUSH	2	off
97	SD243654	1" PVC GREY EQUAL T	2	off
98	SD239358	3/4"x3/4" 45DEG GREY PVC ELBOW	1	off
100	SD239355	ELBOW 3/4 X 3/4 90 DEG	3	off
101	SD467450	1/2" PVC/BRASS COMP UNION	2	off
104	SD239356	20 x 20 90deg ELBOW	2	off
109	SD466753	REDUCING SOCKET PLAIN 3/4" - 25mm	2	off
114	SD296154	HOSE TAIL 19mm x3/4 BSPM	4	off
115	SD110151	HOSE CLIP S/STEEL SIZE 35	4	off
116	SD466551	25mm x 20mm REDUCING BUSH	2	off

## 14.0 FAN BOX ASSEMBLY SPARE PARTS LIST

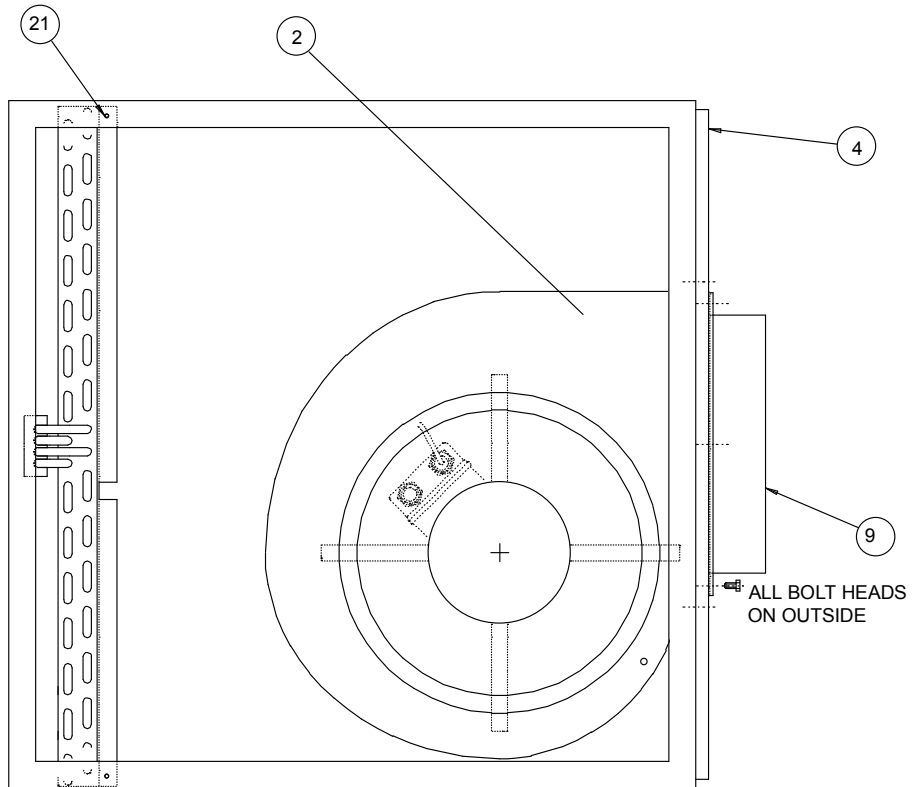


ASSY No A419001 AT ISS 9 (19/02/2015). FAN BOX ASSY 600+LPHW

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD127109	FAN CONSTANT FLOW	1	off
3	SD416101	LPHW COIL	1	off
4	SD417002	FAN PANEL	1	off
9	SD417950	FAN DUCT	1	off

ASSY No A419004 AT ISS 8 (19/02/2015). FAN BOX ASSY 900+LPHW

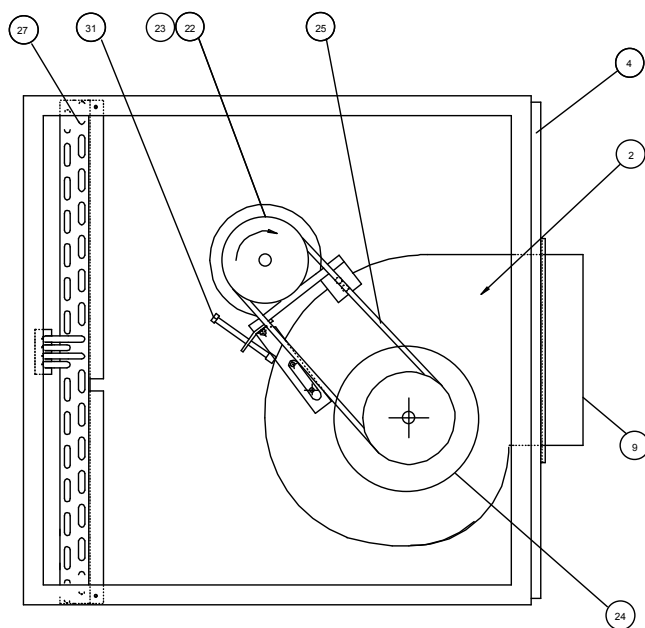
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD127109	FAN CONSTANT FLOW	1	off
3	SD416101	LPHW COIL	1	off
4	SD417002	FAN PANEL	1	off
9	SD417950	FAN DUCT	1	off



ASSY No A419007 AT ISS 8 (20/04/2015). FAN BOX ASSY 1200A+LPHW

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD674601	FAN ASSY FCDDC321-321	1	off
4	SD417009	FAN PANEL	1	off
9	SD417950	FAN DUCT	1	off
22	SD416102	LPHW COIL ASSY	1	off



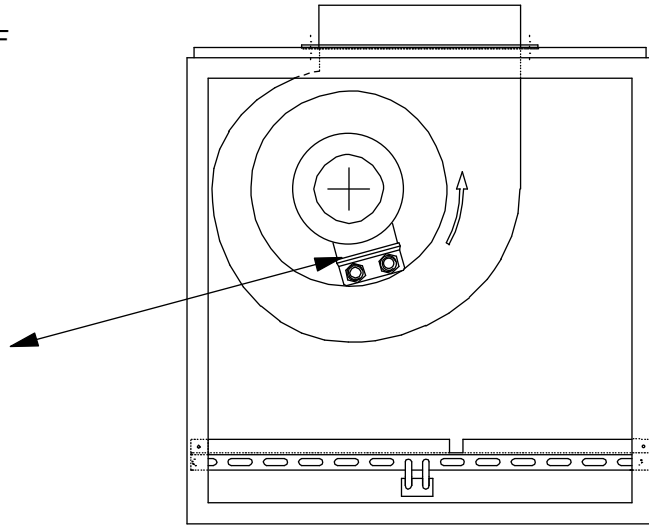
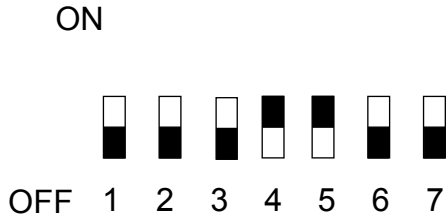


ASSY No A419013 AT ISS 4 (11/06/2005). FAN BOX ASSY 1500B+LPHW				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD435501	FAN ASSY BDC270-270	1	off
4	SD417009	FAN PANEL	1	off
9	SD417950	FAN DUCT	1	off
22	SD093550	MOTOR 1.5KW 1420RPM (MT90/L4)	1	off
23	SD347452	PULLEY 100 PCD x 1SPA 24 BORE ALI'	1	off
24	SD347451	PULLEY 100 PCD x1SPA 20 BORE ALI'	1	off
25	SD070356	BELT SPA1000 PB	1	off
27	SD416102	LPHW COIL ASSY	1	off
31	SD388852	M5 STUDDING 360mm LONG	1	off
		NON 'F' VERSION		
22	SD288150	MOTOR 1.1KW 2850RPM (MT90/L4)	1	off
23	SD248951	PULLEY 80 PCD x 1SPA 24 BORE ALI' (MOTOR)	1	off
24	SD327250	PULLEY 200 PCD x1SPA 20 BORE ALI'	1	off

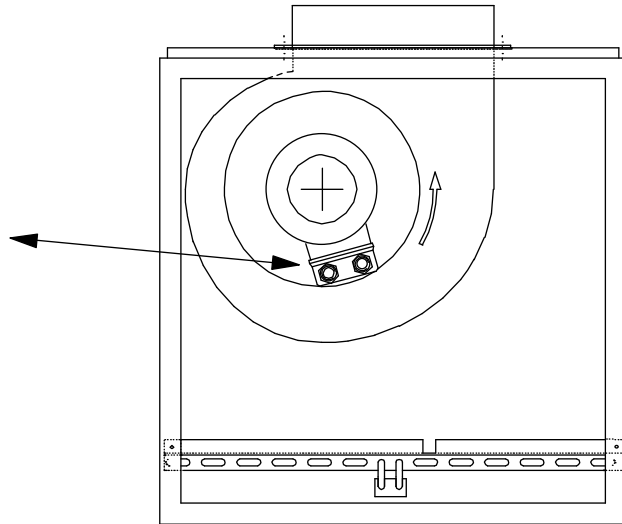
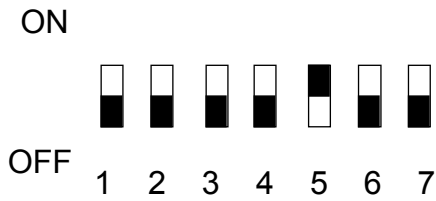
### 14.1 FAN LINK SETTINGS FOR 600/900/1200 UNITS

The fan used in the 600 and 900 Variheats is a constant flow fan. Inside the fan terminal box are 7 switches that determine certain characteristics of the fan. These switches are set up in the factory and should not need adjustment.

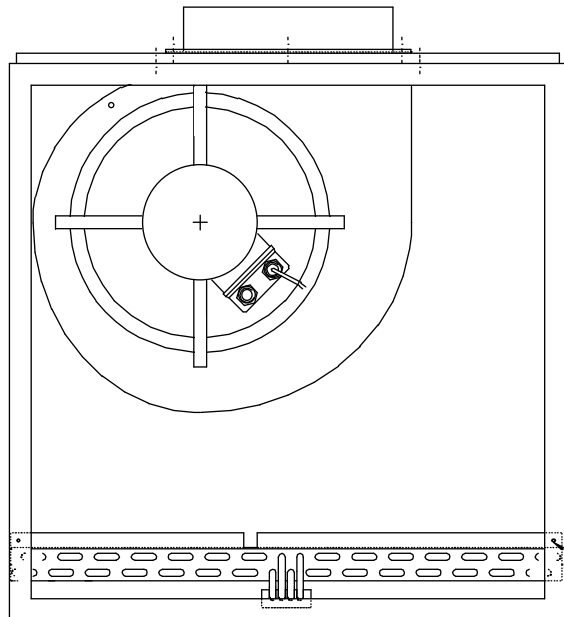
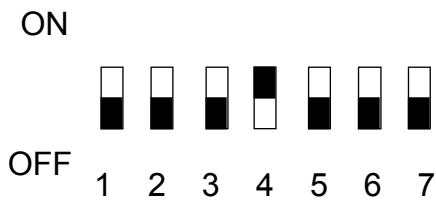
#### SWITCH SETTINGS ON AA/AW600A/BVHF



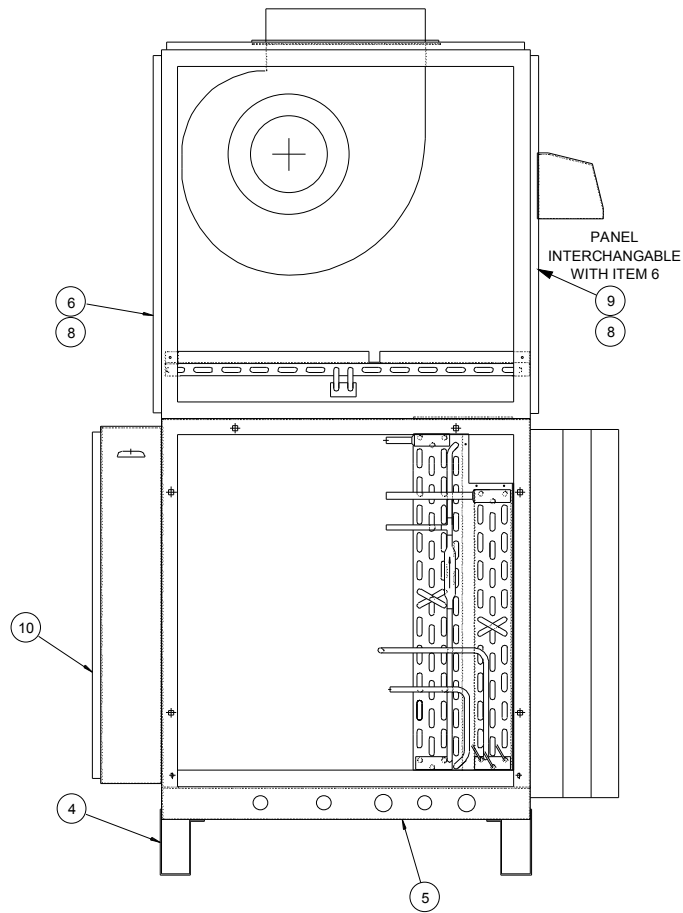
#### SWITCH SETTINGS ON AA/AW900A/BVHF



#### SWITCH SETTINGS ON AA/AW1200A/BVHF



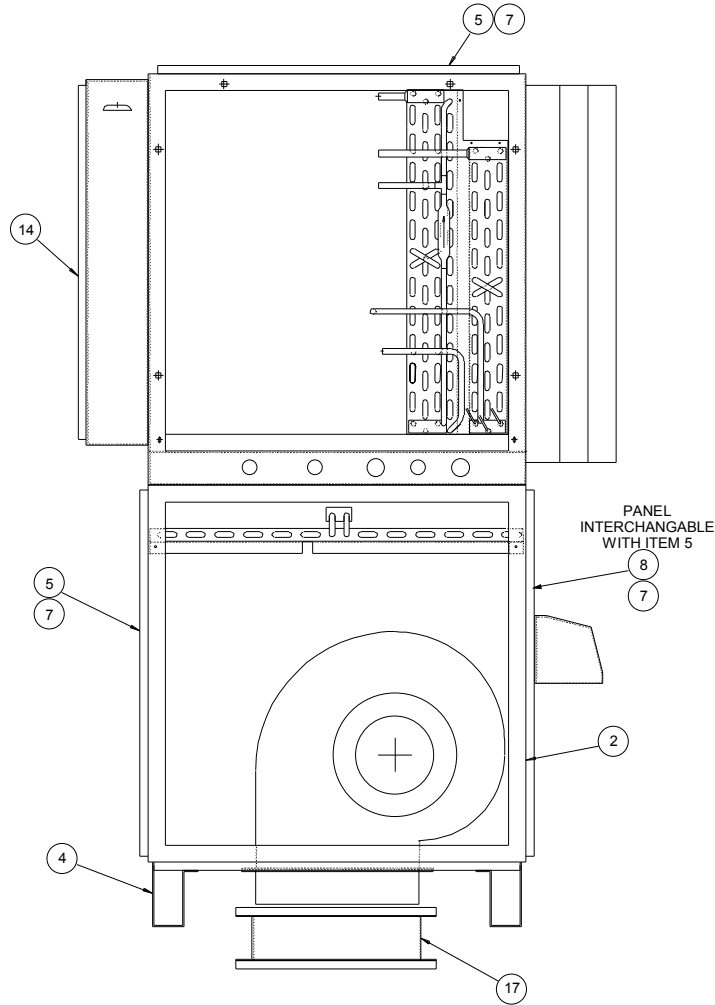
## 15.0 FINAL ASSEMBLY SPARE PARTS LIST TOP OUTLET



ASSY No A471701 AT ISS 1 (16/06/2005). SHOP BUILD AA/AW6/900A/BVHXF				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD417750	FOOT	2	off
5	SD417850	INFILL PANEL	1	off
6	SD417001	SIDE PANEL	5	off
7	SD460601	PANEL HALF	1	off
8	SD418750	INSULATION	6	off
9	SD417004	SIDE PANEL CONSOLE FIXING	1	off
10	SD460501	ELEC BOX COVER	1	off
	SD437350	INSTALLATION MANUAL	1	off

ASSY No A472101 AT ISS 1 (17/06/2005). SHOP BUILD AA/AW12/1500A/BVHXF				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD417752	FOOT	2	off
5	SD417851	INFILL PANEL	1	off
6	SD417008	SIDE PANEL	5	off
7	SD460602	PANEL HALF	1	off
8	SD418761	INSULATION	6	off
9	SD417010	SIDE PANEL CONSOLE FIXING	1	off
10	SD460502	ELEC BOX COVER	1	off
	SD437350	INSTALLATION MANUAL	1	off

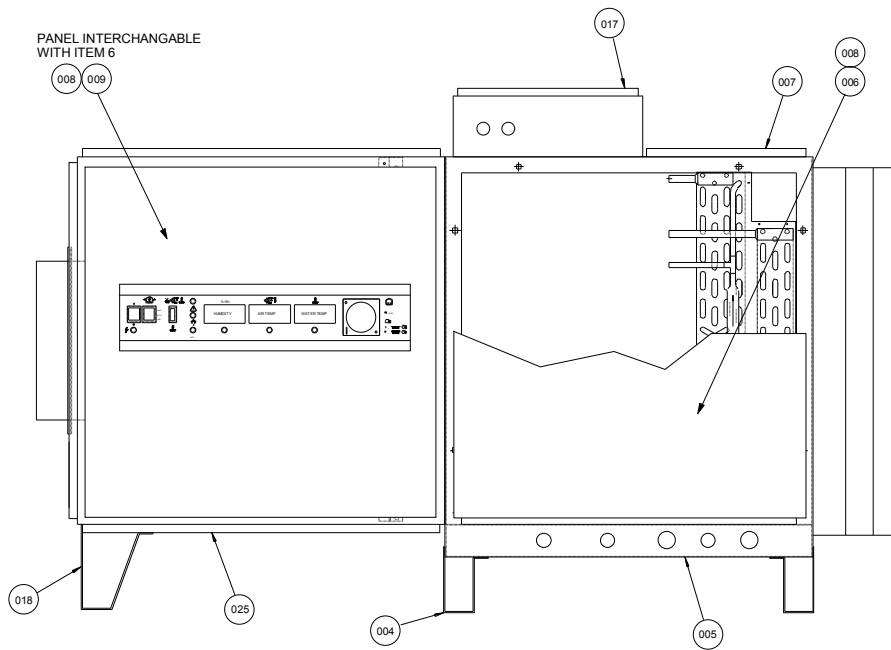
# 16.0 FINAL ASSEMBLY SPARE PARTS LIST DOWN DRAUGHT



ASSY No A471706 AT ISS 1 (17/06/2005). SHOP BUILD AA/AW6/900A/BVHXF				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD417750	FOOT	2	off
5	SD417001	SIDE PANEL	6	off
6	SD460601	PANEL HALF	1	off
7	SD418750	INSULATION	7	off
8	SD417004	SIDE PANEL, CONSOLE FIXING	1	off
14	SD460501	ELEC BOX COVER	1	off
17	SD417951	DUCT	1	off
	SD437350	INSTALLATION MANUAL	1	off

ASSY No A472106 AT ISS 1 (17/06/2005). SHOP BUILD AA/AW12/1500A/BVHXF				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD417752	FOOT	2	off
5	SD417008	SIDE PANEL	6	off
6	SD460602	PANEL HALF	1	off
7	SD418761	INSULATION	7	off
8	SD417010	SIDE PANEL, CONSOLE FIXING	1	off
14	SD460502	ELEC BOX COVER	1	off
17	SD417951	DUCT	1	off
	SD437350	INSTALLATION MANUAL	1	off

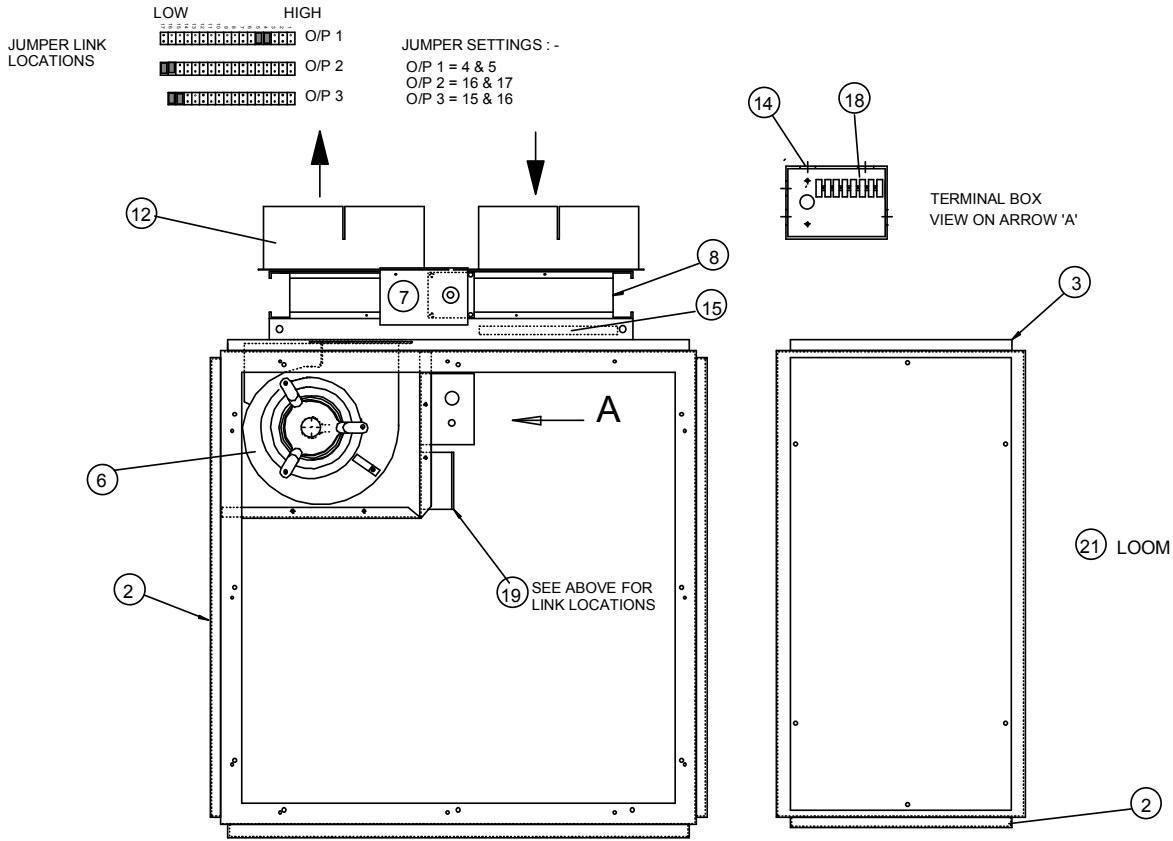
# FINAL ASSEMBLY SPARE PARTS LIST HORIZONTAL



ASSY No A471711 AT ISS 1 (17/06/2005). SHOP BUILD AA/AW6/900A/BVHXF				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD417750	FOOT	2	off
5	SD417850	INFILL PANEL	1	off
6	SD417001	SIDE PANEL	4	off
7	SD460601	PANEL HALF	1	off
8	SD418750	INSULATION	5	off
9	SD417004	SIDE PANEL, CONSOLE FIXING	1	off
17	SD460501	ELEC BOX COVER	1	off
18	SD417751	FAN BOX FOOT	1	off
25	SD417003	FAN BOX FOOT PANEL	1	off
	SD437350	INSTALLATION MANUAL	1	off

ASSY No A472111 AT ISS 1 (17/06/2005). SHOP BUILD AA/AW12/1500A/BVHXF				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
4	SD417752	FOOT	2	off
5	SD417851	INFILL PANEL	1	off
6	SD417008	SIDE PANEL	4	off
7	SD460602	PANEL HALF	1	off
8	SD418761	INSULATION	5	off
9	SD417010	SIDE PANEL, CONSOLE FIXING	1	off
17	SD460502	ELEC BOX COVER	1	off
18	SD417753	FAN BOX FOOT	1	off
25	SD417011	FAN BOX FOOT PANEL	1	off
	SD437350	INSTALLATION MANUAL	1	off

# 17.0 FRESH AIR BOX SPARE PARTS LIST

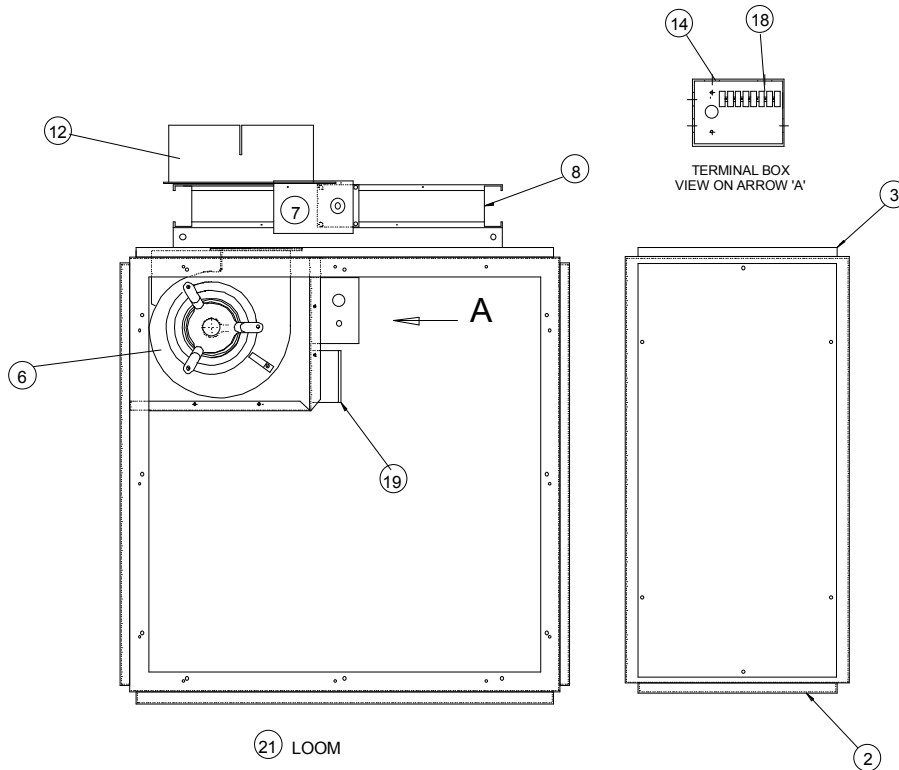


ASSY No A433001 AT ISS 8 (20/04/2015). FRESH AIR BOX ASSY 600/900

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD417005	SIDE PANEL	3	off
3	SD417007	SPIGOT PANEL	1	off
6	SD431052	FAN CENTRIFUGAL VARIABLE SPEED	1	off
7	SD521250	MOTOR DAMPER	1	off
8	SD441350	VOLUME CONTROL DAMPER	1	off
12	SD275310	9 INCH DUCT SPIGOT	2	off
14	SD174153	BOX ALUM DIECAST DRILLED	1	off
15	SD264653	FILTER 196 X 148mm	1	off
18	SP072856	TERMINAL BLOCK 8 WAY (16A)	1	off
19	SA654806	FAN SPEED CONTROLLER CALIBRATED	1	off
21	SA461031	LOOM ASSY VH3 FAN SPEED CONT	1	off

ASSY No A433002 AT ISS 8 (20/04/2015). FRESH AIR BOX 1200/1500

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD417012	SIDE PANEL	3	off
3	SD417014	SPIGOT PANEL	1	off
6	SD431052	FAN CENTRIFUGAL VARIABLE SPEED	1	off
7	SD521250	MOTOR DAMPER	1	off
8	SD441350	VOLUME CONTROL DAMPER	1	off
12	SD275310	9 INCH DUCT SPIGOT	2	off
14	SD174153	BOX ALUM DIECAST DRILLED	1	off
15	SD264653	FILTER 196 X 148mm	1	off
18	SP072856	TERMINAL BLOCK 8 WAY (16A)	1	off
19	SA654806	FAN SPEED CONTROLLER CALIBRATED	1	off
21	SA461031	LOOM ASSY VH3 FAN SPEED CONT	1	off



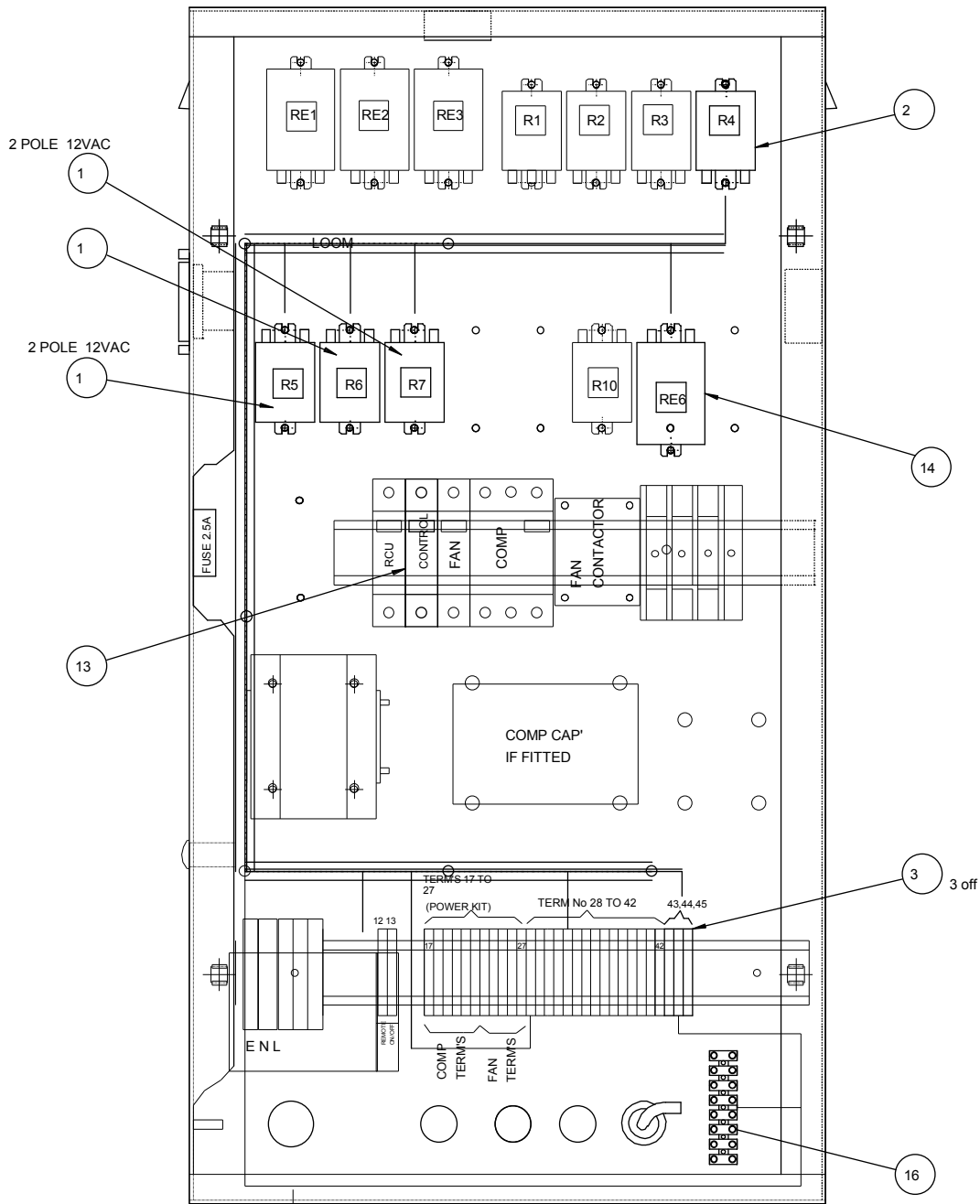
ASSY No A433005 AT ISS 2 (20/04/2015). NEGATIVE PRESSURE BOX 600/900

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD417005	SIDE PANEL	3	off
3	SD417007	SPIGOT PANEL	1	off
6	SD431052	FAN CENTRIFUGAL VARIABLE SPEED	1	off
7	SD521250	MOTOR DAMPER	1	off
8	SD441350	VOLUME CONTROL DAMPER	1	off
12	SD275309	6 inch DUCT SPIGOT	1	off
14	SD174153	BOX ALUM DIECAST DRILLED	1	off
18	SP072856	TERMINAL BLOCK 8 WAY (16A)	1	off
19	SA654807	FAN SPEED CONTROLLER	1	off
21	SA461031	LOOM ASSY VH3 FAN SPEED CONT	1	off

ASSY No A433006 AT ISS 2 (20/04/2015). NEGATIVE PRESSURE BOX 1200/1500

ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
2	SD417012	SIDE PANEL	3	off
3	SD417014	SPIGOT PANEL	1	off
6	SD431052	FAN CENTRIFUGAL VARIABLE SPEED	1	off
7	SD521250	MOTOR DAMPER	1	off
8	SD441350	VOLUME CONTROL DAMPER	1	off
12	SD275309	6 inch DUCT SPIGOT	1	off
14	SD174153	BOX ALUM DIECAST DRILLED	1	off
18	SP072856	TERMINAL BLOCK 8 WAY (16A)	1	off
19	SA654807	FAN SPEED CONTROLLER	1	off
21	SA461031	LOOM ASSY VH3 FAN SPEED CONT	1	off

# FRESH AIR BOX KIT AA VERSION

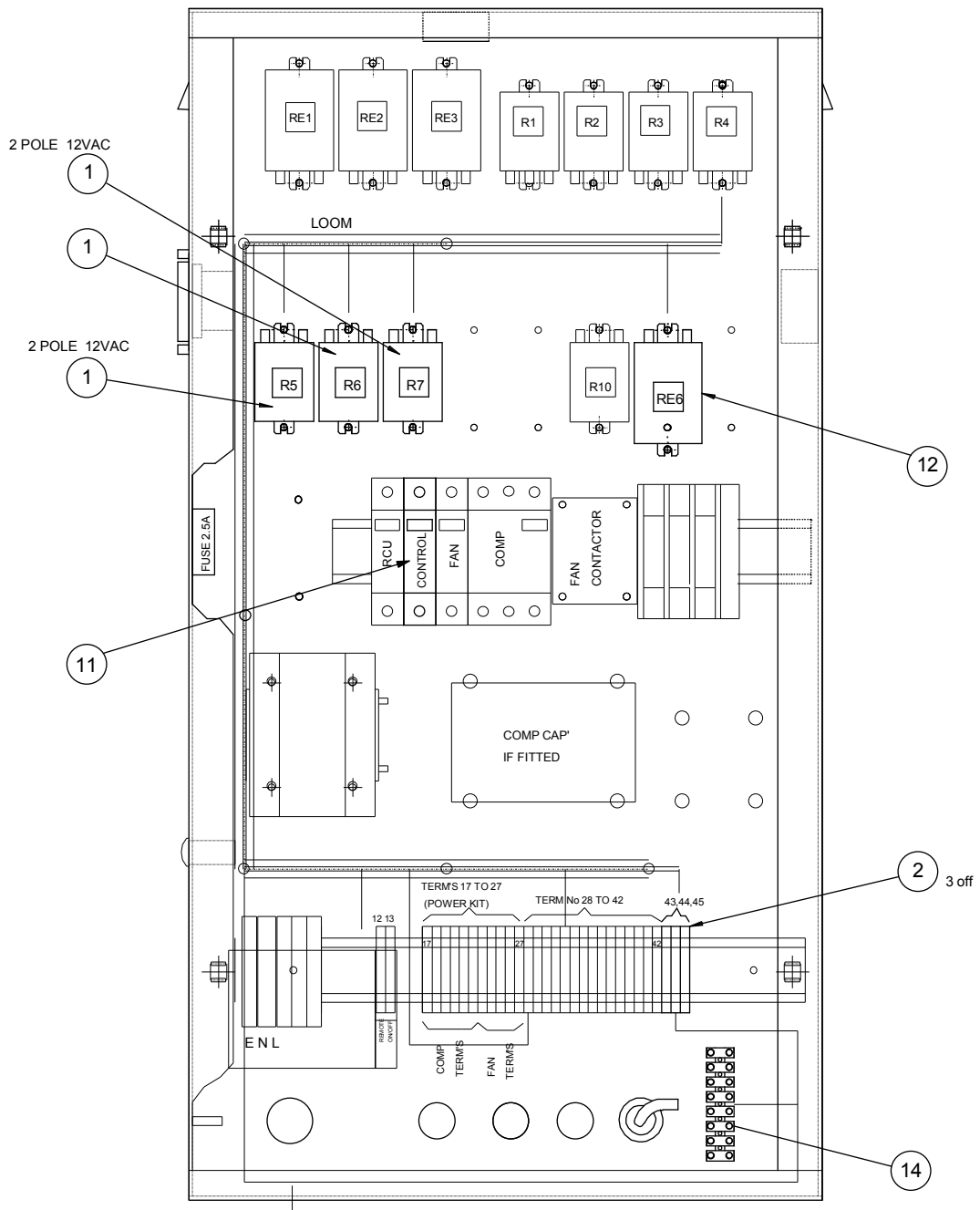


TYPICAL VIEW OF ELEC BOX ASSY - WILL VARY PER EDN

A460020				
ITEM	PART No.	DESCRIPTION	QUAN	UNITS
001	SD469250	RELAY 2POLE C/O 12V COIL	3.00	off
002	SD469350	RELAY 3 POLE C/O 12V COIL	1.00	off
003	SD409350	TERM BLOCK WDU 2.5N	3.00	off
013	SD316551	CIRCUIT BREAKER MINIATURE 4A	1.00	off
014	SD189550	RELAY C/O 2 POLE 16A 230vac COIL	1.00	off
016	SA098767	TERM BLOCK 8 WAY 6A	1.00	off



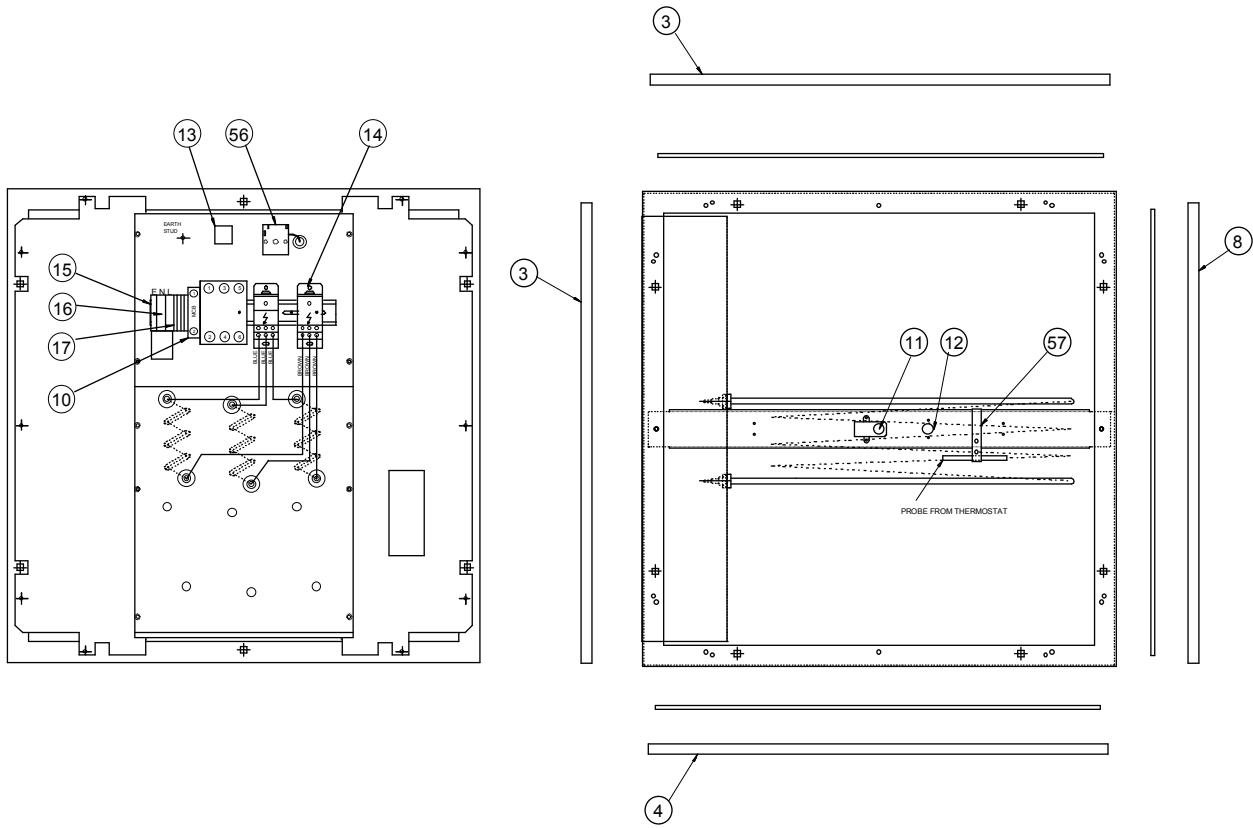
# FRESH AIR BOX KIT AW VERSION



TYPICAL VIEW OF ELEC BOX ASSY - WILL VARY PER EDN  
PLEASE NOTE THAT LABELLED COMPONENTS ARE EXTRA  
COMPONENTS. OTHER COMPONENTS SHOWN ARE ON THE  
STANDARD POWER KITS.

A460021				
ITEM	PART No.	DESCRIPTION	QUAN	UNITS
001	SD469250	RELAY 2POLE C/O 12V COIL	3.00	off
002	SD409350	TERM BLOCK WDU 2.5N	3.00	off
011	SD316551	CIRCUIT BREAKER MINIATURE 4A	1.00	off
012	SD189550	RELAY C/O 2 POLE 16A 230V AC COIL	1.00	off
014	SA098767	TERM BLOCK 8 WAY 6A	1.00	off

# 18.0 HEATER BOX ASSEMBLY SPARE PARTS LIST

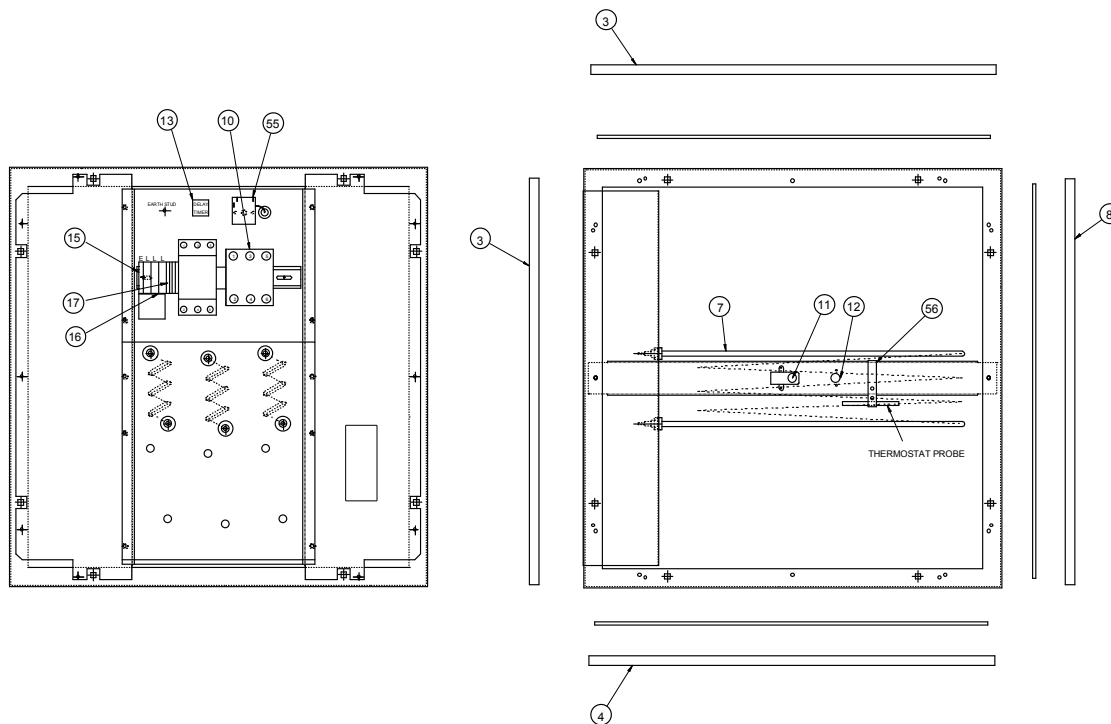


ASSY No A440001 AT ISS 4 (29/03/2007). HEATER BOX ASSY 6kW 1P 6/900				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
3	SD417001	SIDE PANEL	2	off
4	SD417017	SIDE PANEL (MAINS IN)	1	off
7	SD253651	HEATER ELEMENT 2kW	3	off
8	SD417004	SIDE PANEL, CONSOLE FIXING	1	off
9	SD068601	CONTACTOR CI 16 230v 50Hz	1	off
10	SD316556	MCB 32A 1 POLE	1	off
11	SD103251	THERMAL CUTOUT AUTO RESET	1	off
12	SD103252	THERMAL CUTOUT MANUAL RESET	1	off
13	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
14	SD419550	DISTRIBUTION TERM BLOCK	2	off
15	SD403550	TERM EARTH WPE6 8mm	1	off
16	SD403750	TERM BLOCK WDU4	2	off
17	SD409350	TERM BLOCK WDU 2.5N	6	off
56	SA253951	THERMOSTAT SET TO 65°C	1	off
57	SD090150	COPPER EARTH STRAP	0.15	m

ASSY No A440002 AT ISS 7 (02/09/2011). HEATER BOX ASSY 12kW 1P 6/900				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
3	SD417001	SIDE PANEL	2	off
4	SD417017	SIDE PANEL (MAINS IN)	1	off
7	SD253651	HEATER ELEMENT 2kW	6	off
8	SD417010	SIDE PANEL, CONSOLE FIXING	1	off
9	SD262601	CONTACTOR CI32 230V 50Hz	1	off
10	SD316559	MCB 63A 1 POLE	1	off
11	SD103251	THERMAL CUTOUT AUTO RESET	1	off
12	SD103252	THERMAL CUTOUT MANUAL RESET	1	off
13	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
14	SD419550	DISTRIBUTION TERM BLOCK	2	off
15	SD406351	TERM BLOCK EARTH (SL16)	1	off
16	SD406350	TERMINAL BLOCK WDU16	2	off
17	SD409350	TERM BLOCK WDU 2.5N	6	off
54	SD403950	END BRACKET EW35 (8.5)	1	off
56	SA253951	THERMOSTAT SET TO 65°C	1	off
57	SD090150	COPPER EARTH STRAP	0.15	m

ASSY No A440003 AT ISS 7 (02/09/2011). HEATER BOX ASSY 12kW IP 1200				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
3	SD417008	SIDE PANEL	2	off
4	SD417018	SIDE PANEL (MAINS IN)	1	off
7	SD253651	HEATER ELEMENT 2kW	6	off
8	SD3417010	SIDE PANEL, CONSOLE FIXING	1	off
9	SD262601	CONTACTOR CI32 230V 50Hz	1	off
10	SD316559	MCB 63A 1 POLE	1	off
11	SD103251	THERMAL CUTOUT AUTO RESET	1	off
12	SD103252	THERMAL CUTOUT MANUAL RESET	1	off
13	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
14	SD419550	DISTRIBUTION TERM BLOCK	2	off
15	SD406351	TERM BLOCK EARTH (SL16)	1	off
16	SD406350	TERMINAL BLOCK WDU16	2	off
17	SD409350	TERM BLOCK WDU 2.5N	6	off
54	SD403950	END BRACKET EW35 (8.5)	1	off
57	SA253951	THERMOSTAT SET TO 65°C	1	off
58	SD090150	COPPER EARTH STRAP	0.15	m

# HEATER BOX ASSY SPARE PARTS LIST CONTINUED



ASSY No A440005 AT ISS 4 (29/03/2007). HEATER BOX ASSY 6kW 3P 6/900				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
3	SD417001	SIDE PANEL	2	off
4	SD417017	SIDE PANEL (MAINS IN)	1	off
7	SD253651	HEATER ELEMENT 2kW	3	off
8	SD417004	SIDE PANEL, CONSOLE FIXING	1	off
9	SD068201	CONTACTOR CI9 230V 50Hz	1	off
10	SD325253	MOTOR STARTER O/LOAD 6.3-10A	1	off
11	SD103251	THERMAL CUTOUT AUTO RESET	1	off
12	SD103252	THERMAL CUTOUT MANUAL RESET	1	off
13	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
14	SD403950	END BRACKET EW35 (8.5)	1	off
15	SD403550	TERM EARTH WPE6 8mm	1	off
16	SD403750	TERM BLOCK WDU4	3	off
17	SD409350	TERM BLOCK WDU 2.5N	6	off
55	SA253951	THERMOSTAT SET TO 65°C	1	off
56	SD090150	COPPER EARTH STRAP	0.15	m

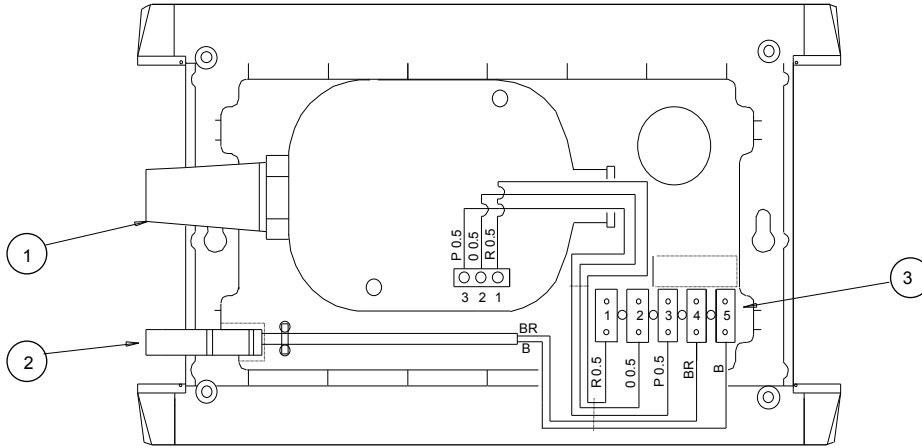
ASSY No A440006 AT ISS 4 (29/03/2007). HEATER BOX ASSY 12kW 3P 6/900				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
3	SD417001	SIDE PANEL	2	off
4	SD417017	SIDE PANEL (MAINS IN)	1	off
7	SD253651	HEATER ELEMENT 2kW	6	off
8	SD417004	SIDE PANEL, CONSOLE FIXING	1	off
9	SD068601	CONTACTOR CI 16 230v 50Hz	1	off
10	SD325254	MOTOR STARTER O/LOAD 10-16A	1	off
11	SD103251	THERMAL CUTOOUT AUTO RESET	1	off
12	SD103252	THERMAL CUTOOUT MANUAL RESET	1	off
13	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
14	SD403950	END BRACKET EW35 (8.5)	1	off
15	SD403550	TERM EARTH WPE6 8mm	1	off
16	SD403750	TERM BLOCK WDU4	3	off
17	SD409350	TERM BLOCK WDU 2.5N	6	off
55	SA253951	THERMOSTAT SET TO 65°C	1	off
56	SD090150	COPPER EARTH STRAP	0.15	m

ASSY No A440007 AT ISS 5 (29/03/2007). HEATER BOX ASSY 12kW 3P 12/1500				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
3	SD417008	SIDE PANEL	2	off
4	SD417018	SIDE PANEL (MAINS IN)	1	off
7	SD253651	HEATER ELEMENT 2kW	6	off
8	SD417010	SIDE PANEL, CONSOLE FIXING	1	off
9	SD068601	CONTACTOR CI 16 230v 50Hz	1	off
10	SD325254	MOTOR STARTER O/LOAD 10-16A	1	off
11	SD103251	THERMAL CUTOOUT AUTO RESET	1	off
12	SD103252	THERMAL CUTOOUT MANUAL RESET	1	off
13	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
14	SD403950	END BRACKET EW35 (8.5)	1	off
15	SD403550	TERM EARTH WPE6 8mm	1	off
16	SD403750	TERM BLOCK WDU4	3	off
17	SD409350	TERM BLOCK WDU 2.5N	6	off
55	SA253951	THERMOSTAT SET TO 65°C	1	off
56	SD090150	COPPER EARTH STRAP	0.15	m

ASSY No A440008 AT ISS 5 (29/03/2007). HEATER BOX ASSY 18kW 3P 12/1500				
ITEM NO.	PART No.	DESCRIPTION	QUAN	UNITS
3	SD417008	SIDE PANEL	3	off
4	SD417018	SIDE PANEL (MAINS IN)	1	off
7	SD253651	HEATER ELEMENT 2kW	9	off
8	SD417010	SIDE PANEL, CONSOLE FIXING	1	off
9	SD068801	CONTACTOR CI25	1	off
10	SD325257	CIRCUIT BREAKER 20-25A 3P	1	off
11	SD103251	THERMAL CUTOOUT AUTO RESET 60 deg C	1	off
12	SD103252	THERMAL CUTOOUT MANUAL RESET 90 C	1	off
13	SD089550	DELAY TIMER 7 SEC TO 9 MIN	1	off
14	SD403950	END BRACKET EW35 (8.5)	1	off
15	SD403550	TERM EARTH WPE6 8mm	1	off
16	SD403750	TERM BLOCK WDU4	3	off
17	SD409350	TERM BLOCK WDU 2.5N	6	off
55	SA253951	THERMOSTAT SET TO 65 C	1	off
56	SD090150	COPPER EARTH STRAP	0.15	m

# 19.0 REMOTE SENSOR BOX

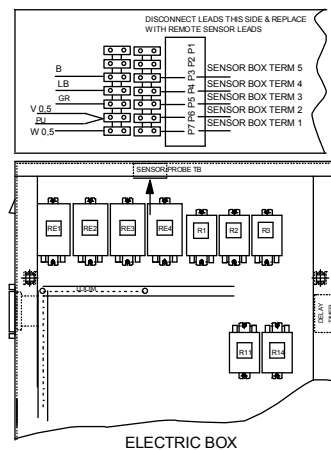
## REMOTE SENSOR BOX SA473601 TOP SIDE OF BASE (COVER REMOVED)



SA473601				
ITEM	PART No.	DESCRIPTION	QUAN	UNITS
001	SD260351	HUMIDITY SENSOR	1.00	off
002	SD448750	PTC SENSOR LEAD (TECNOLOGIC)	1.00	off
003	SA098761	5 WAY TERMINAL BLOCK 6A	1.00	off

NOTE:  
HUMIDITY SENSOR STYLE VARIES WITH MANUFACTURER (DIXELL XH20P SHOWN)  
TERMINAL LAYOUT FOR EACH HUMIDITY SENSOR

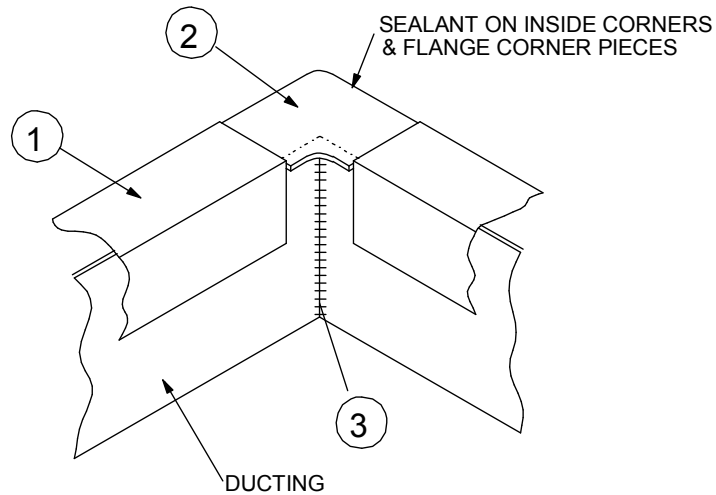
SENSOR	VOLT SUPPLY	OV COM	0-10 V
DIXELL	1	2	3
RENSE	5	3	4



RECOMMENDED INTERFACE CABLE : CALOREX PART No. D523450, 6 CORE SCREENED CABLE.

## 20.0 DUCT FLANGE KITS

### DUCT FLANGES INSTALLATION INSTRUCTIONS



#### ITEM DESCRIPTIONS

ITEM 1 DUCT FLANGE SD347650

ITEM 2 FLANGE CORNER PIECES SD347550

ITEM 3 SILICON SEALANT D250350

#### NOTES

1. USING TABLE BELOW CUT DUCT FLANGES TO SIZES STATED FOR REQUIRED MACHINE
2. PUSH CORNER PIECES ( 4 OFF ITEM 2 ) INTO FLANGES TO FORM REQUIRED DUCT SIZE.
3. PUSH ASSEMBLED FLANGE ON TO DUCT, & GENTLY TAP HOME.
4. SEAL ALL INSIDE CORNERS USING SILICONE SEALANT.

MODEL	DUCT DESCRIPTION	DUCT FLANGE CUT SIZES (ITEM 1)
VARIHEAT 3 - 6/900	INLET DUCT	2 OFF 585mm LENGTHS & 2 OFF 630mm LENGTHS
VARIHEAT 3 - 12/1500	INLET DUCT	2 OFF 660mm LENGTHS & 2 OFF 750mm LENGTHS
VARIHEAT 3	OUTLET DUCT	2 OFF 260mm LENGTHS & 2 OFF 303mm LENGTHS

# 21.0 FROST PROTECTION KITS

**NOTES**

DO NOT SCALE PRINT

**FROST PROTECTION KIT DESCRIPTION**  
USED TO PROTECT LPHW FROM FROST DAMAGE. SYSTEM ENERGISES WHEN AMBIENT TEMPERATURE DROPS BELOW 6 DEGREES.

FOR CIRCUIT DIAGRAM REFER TO STANDARD MACHINE WIRING DIAGRAM D459850/1 SHEET 2

IF IN DOUBT ASK

DRG No. SA533503

3rd ANGLE PROJECTION

STAT CAPILLARY ROUTES SEE BELOW

STAT IN THIS POSN FOR TOP OUTLET & HORIZONTAL VERSIONS

005  
001

STAT IN THIS POSN FOR DOWNDRAUGHT VERSIONS

001 005

ELEC BOX ASSY

100mm

006 007 008 009

STAT NOT INSULATE

LPHW FIN COIL BLOCK

TOP OUTLET VERSION

DOWNDRAUGHT VERSION

HORIZONTAL VERSION

DOWNDRAUGHT VERSION

**FITTING INSTRUCTIONS**

1. FIT THERMOSTAT INTO ELEC BOX AS SHOWN. POSN VARIES ACCORDING TO LAYOUT OF MACHINE.
2. DISCONNECT EXISTING R/O WIRE FROM R7 TERM 4 AND REWIRE AS SHOWN ON D459856 USING R/O WIRE LISTED CUT TO REQD LENGTH & CRIMP ON TERMINALS. ALSO IF REQUIRED REFER TO STANDARD MACHINE WIRING DIAGRAMS :- D459850 or D459851
3. ROUTE CAPILLARY AS SHOWN ON RELEVANT MACHINE LAYOUT AND FIX PROBE AS SHOWN TO LPHW BRACE.

ITEM	PART No.	DESCRIPTION	QUAN	UNITS
001	SA18551	6 DEG FROST PROTECTION STAT	1.00	off
002	P03650	WIRE 0.5mm RED/RANGE	1800.00	mm
003	P250250	PUSH ON FLARED ENTRY RED (14mm)	3.00	off
004	P036020	WIRE FIN FLARED ENTRY RED	1.00	off
005	P018752	SCREW M4 x 6 PAN HEAD POZI	2.00	off
006	SP090150	COPPER EARTH STRAP	200.00	mm
007	P090151	M5 BRASS SCREW	2.00	off
008	P090152	M5 BRASS WASHER	2.00	off
009	P090153	M5 BRASS NUT	2.00	off

CIRCUIT DIAGRAM NOTE ADDED	1569	DH	08.02.11
VIEW OF ELEC BOX ASSY UPDATED	1349/3	GSM	19.08.10
ITEM 1 - WAS 185550	1349	AJB	09/07/09
ISS	C/N	APPD	DATE

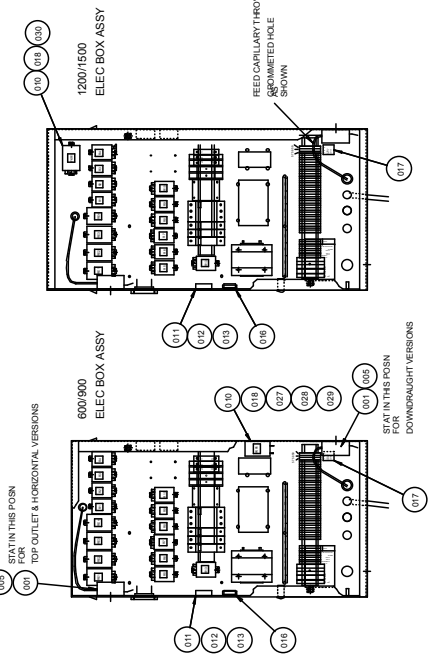
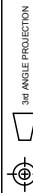
DRAWING CHANGE

**calorex**  
CALOREX HEAT PUMPS LTD  
U.C.C.

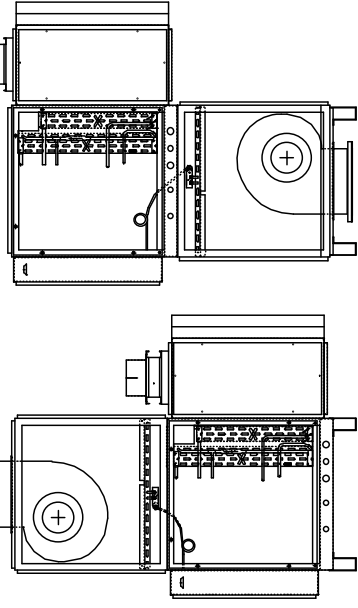
TOLERANCE UNLESS SPECIFIED	TITLE	DRG No.	SCALE
HOLE TO BS.4500. E12	FROST PROTECTION KIT VH3 RANGE	SA533503	NTS
INSPECTION LEVEL			

SIT No	CONT	DRAWN	APPD	DATE
1		GSM		31.8.07

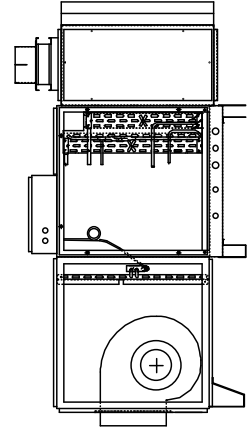




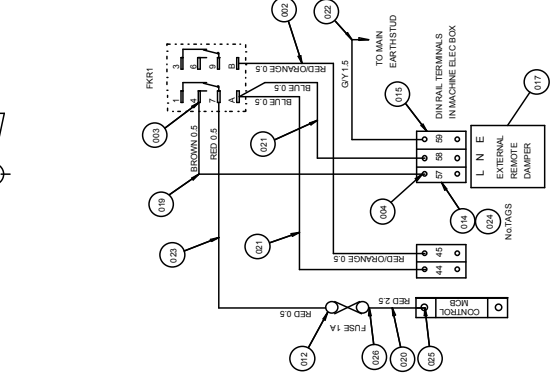
STAT. CAPILLARY ROUTES SEE BELOW



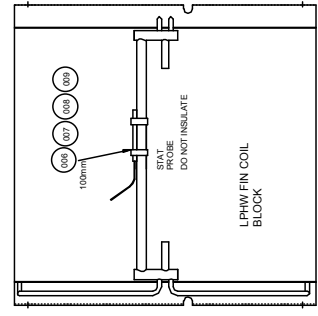
DOWN DRAUGHT VERSION  
TOP OUTLET VERSION



HORIZONTAL VERSION



ALSO REFER TO WIRING DIAGRAM D469856



FRONT PROTECTION KIT DESCRIPTION  
USED TO PROTECT LPHW FROM FROST DAMAGE.  
SYSTEM ENERGISES WHEN AMBIENT TEMPERATURE DROPS BELOW 6 DEGREES.

NOTES  
FOR CIRCUIT DIAGRAM REFER TO STANDARD MACHINE  
WIRING DIAGRAM D469856/1 SHEET 2.

ITEM	PART No.	DESCRIPTION	QTY	UNITS
001	SA16551	4 DEG FROST PROTECTION STAT	1.00	off
002	P033650	WIRE 0.5mm RED/ORANGE	750.00	mm
003	P252250	PUSH ON FLARED ENTRY RED (14mm)	4.00	off
004	P066052	WIRE PIN FLARED ENTRY RED	3.00	off
005	P018752	SCREW M4x6 PAN HEAD PZ02	2.00	off
006	SP00150	COPPER EARTH STRAP	200.00	mm
007	P000151	M6 BRASS SCREW	2.00	off
008	P000152	M6 BRASS WASHER	2.00	off
009	P000153	M6 BRASS NUT	2.00	off
010	SD16980	RELAY CO2 POLE 16A 230Vdc COIL	1.00	off
011	SD21680	FUSE HOLDER	1.00	off
012	SD03583	FUSE 14 x 1.1/4 1A	2.00	off
013	P065950	FUSE LABEL F 1A 500VAC	1.00	off
014	SDM0380	TERM BLOCK WDU 2.5N	2.00	off
015	SDM0380	TERM EARTH W/FEB 6mm	1.00	off
016	P070650	FUSE CLIP	1.00	off
017	D619750	TERMINAL LABEL - L N E	1.00	off
018	D605653	RELAY LABEL FR1	1.00	off
019	P022150	WIRE 0.5mm BROWN	750.00	mm
020	P006350	WIRE 2.5mm RED	350.00	mm
021	P000150	WIRE 0.5mm BLUE	750.00	mm
022	P031650	WIRE 1.5mm GREEN/YELLOW	750.00	mm
023	P000450	WIRE 0.5mm RED	600.00	mm
024	P071650	No TAGS No AS SHOWN	3.00	off
025	P060650	WIRE PIN FLARED ENTRY BLUE	1.00	off
026	P252251	PUSH ON FLARED ENTRY BLUE (14mm)	1.00	off
027	P060250	M3 x 6 POZI PAN HD SCREW	2.00	off
028	P066650	M3 HALF NUT	2.00	off
029	P060650	WASHER PLAIN BRASS M3	2.00	off
030	P092251	SCREW SELF TAP N06 X 1/4	2.00	off

FITTING INSTRUCTIONS

- FIT THERMOSTAT & OTHER COMPONENTS INTO ELEC BOX AS SHOWN. POSN VARIES ACCORDING TO LAYOUT OF MACHINE.
- DISCONNECT EXISTING RIO WIRE FROM RT TERM AND REMOVE AS SHOWN ON 600/900 MACHINE. WIRE MUST BE CUT TO REQD LENGTH & CRIMP ON TERMINALS. ALSO IF REQUIRED REFER TO STANDARD MACHINE WIRING DIAGRAMS : D469850 or D469851
- ROUTE CAPILLARY AS SHOWN ON RELEVANT MACHINE LAYOUT AND FK PROBE AS SHOWN TO LPHW BRACE.

ISS	NO.	DATE	APPD	DATE
3	1506	06.02.11	DNH	06.02.11
2	3403	06.05.10	GSM	06.05.10
1	1340	15.05.09	AJB	15.05.09



colorlex  
CALOREX HEAT PUMPS LTD  
U.K.C.

TITLE	SHT No.	CONT	DRAWN	APPROVED	DATE	SCALE
FRONT PROTECTION KIT FOR ADDITIONAL REMOTE DAMPER	DRG	—	GSM	—	31.03.07	NTS

INSPECTION LEVEL	DWS	FINISH	MATERIAL	TOLERANCE UNLESS SPECIFIED
				HOLES TO BS-400 EITZ

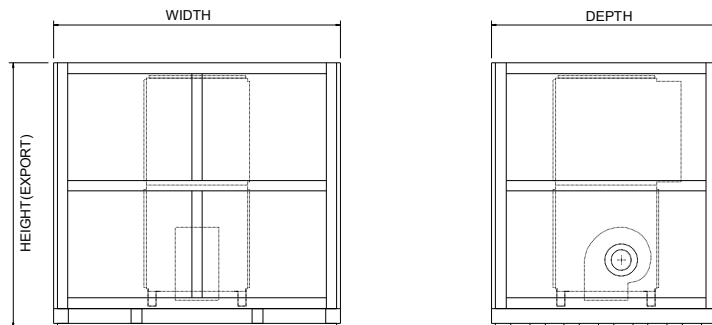
DRG No.	No.
SA533506	SA533506

DRAWING CHANGE

## 22.0 PACKING SPECIFICATIONS

VH 3 TOPOUT PACKING SPECIFICATION					
MACHINE	UK DELIVERY		EXPORT		H x W x D DIMENSIONS
	WEIGHT(kg)	H x W x D DIMENSIONS	WEIGHT(kg)	H x W x D DIMENSIONS	
600 A/B	178	922x772x1592	238	1000x860x1800	
600+AIR	198	765x1255x1474	258	1000x860x1800	
900 A/B	180	922x772x1592	240	1000x860x1800	
900+AIR	200	765x1255x1474	260	1000x860x1800	
1200 A/B	225	885x1045x1792	285	1105x960x1970	
1200 AIR	245	865x1365x1678	305	1102x960x1970	
1500 B	244	885x1045x1792	304	1102x960x1970	
1500+AIR	265	1462x1850x1828	325	1102x960x1970	

VH 3 DOWNDRAUGHT PACKING SPECIFICATION					
MACHINE	UK DELIVERY		EXPORT		H x W x D DIMENSIONS
	WEIGHT(kg)	H x W x D DIMENSIONS	WEIGHT(kg)	H x W x D DIMENSIONS	
600 A/B	225	1850x1462x1624	347	1850x1462x1750	
600+AIR	235	1850x1462x1624	355	1850x1462x1900	
900 A/B	227	1850x1462x1624	349	1850x1462x1750	
900+AIR	235	1850x1462x1624	357	1850x1462x1900	
1200 A/B	272	1850x1462x1828	404	1850x1462x1970	
1200+AIR	279	1850x1462x1828	411	1850x1462x2110	
1500 B	291	1850x1462x1828	423	1850x1462x1970	
1500+AIR	298	1850x1462x1828	430	1850x1462x2110	



<b>VH 3 HORIZONTAL PACKING SPECIFICATION</b>					
<b>MACHINE</b>	<b>UK DELIVERY</b>	<b>H x W x D</b>	<b>EXPORT</b>	<b>W x H x D</b>	
	<b>WEIGHT(kg)</b>	<b>DIMENSIONS</b>	<b>WEIGHT(kg)</b>	<b>DIMENSIONS</b>	
600 A/B	178	772x1602x922	238	860x1675x1080	
600+AIR	198	765x1580x780	258	860x1360x1875	
900 A/B	180	772x1602x922	240	860x1675x1080	
900+AIR	200	765x1580x780	260	860x1360x1875	
1200 A/B	225	885x1802x1012	285	960x1880x1185	
1200 AIR	245	865x1365x1678	305	960x1460x2085	
1500 B	244	885x1802x1012	304	960x1880x1185	
1500 AIR	265	865x1365x1678	325	960x1460x2085	

