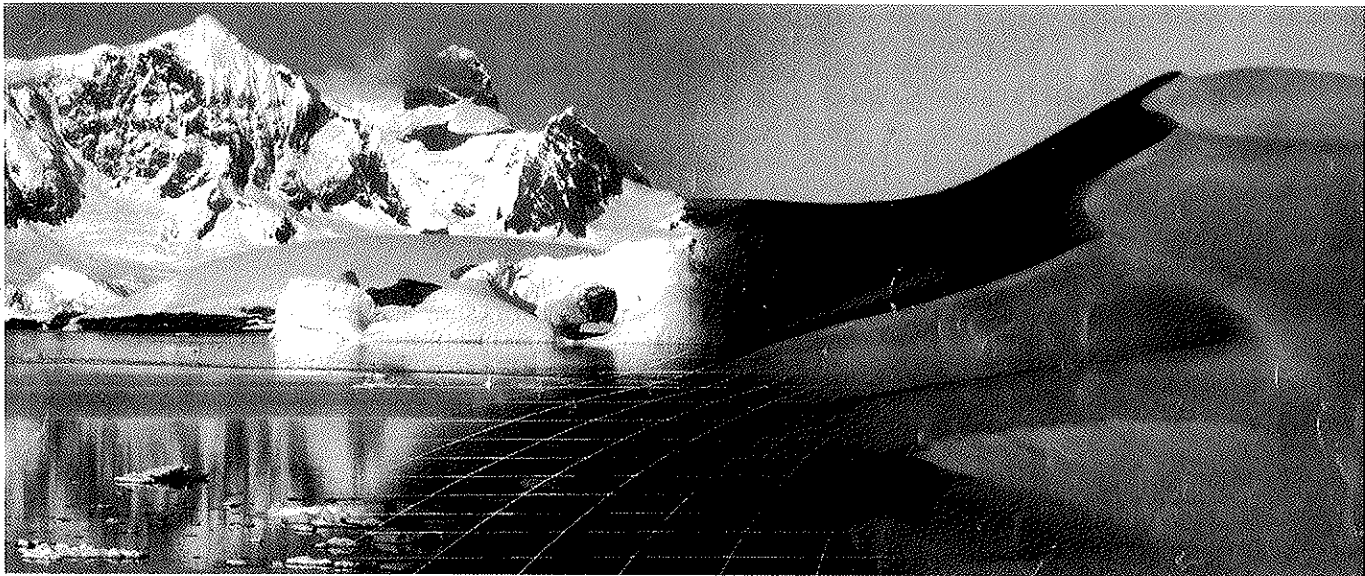


Tempo

OPERATION, INSTALLATION AND MAINTENANCE MANUAL



ENVIRONMENTAL COMFORT SYSTEMS

INDOOR UNIT

TVU-15H

TVU-24H

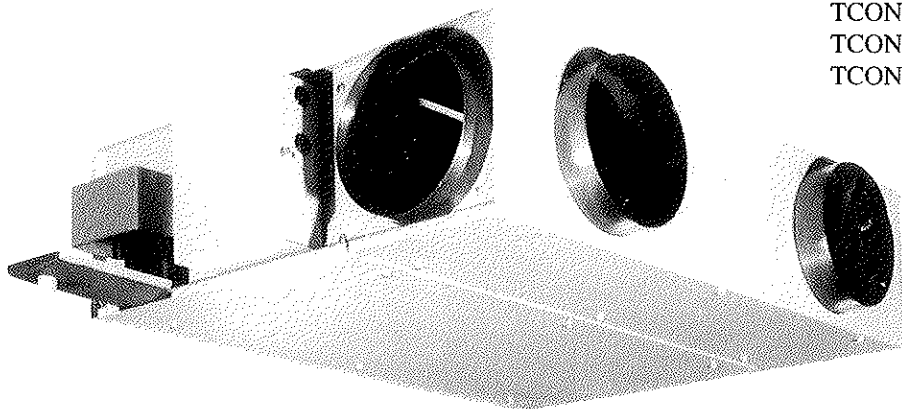
TVU-36H

OUTDOOR UNIT

TCON-15H

TCON-24H

TCON-36H



LENNOX

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1. Installation Location	3
2. Refrigerant Piping	4
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TEMPO SPLIT SYSTEM HEAT PUMP AIR CONDITIONERS

First check contents of packages

INDOOR UNIT (Void)

The indoor unit is supplied with:
 LCD controller.
 Liquid and gas flare fittings and nuts.
 User manual.
 Installation manual.

OUTDOOR UNIT (Condenser)

The outdoor unit is supplied with:
 Refrigeration service valves.
 Liquid and gas line flare fittings and nuts.
 Test certificate.

FACTORY SUPPLIED ACCESSORIES

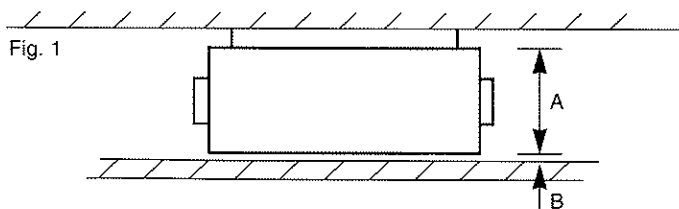
Check to ensure all factory supplied accessories are supplied with the unit.

1 INSTALLATION LOCATION

Indoor Unit

Install the indoor unit in a position:

1. Having sufficient strength to carry the weight of the indoor unit.
2. Where the inlet and outlet connections are not obstructed.
3. From where refrigerant pipes can be run easily to the outdoor unit.
4. From where condensate can be run to waste easily.
5. Check the distance between the upper slab and false ceiling to ensure the unit will suit the distance. (Fig. 1.)



MODEL	TVU-15 TVU-24	TVU-36
A (mm)	233	285
B (mm)	>50	>50

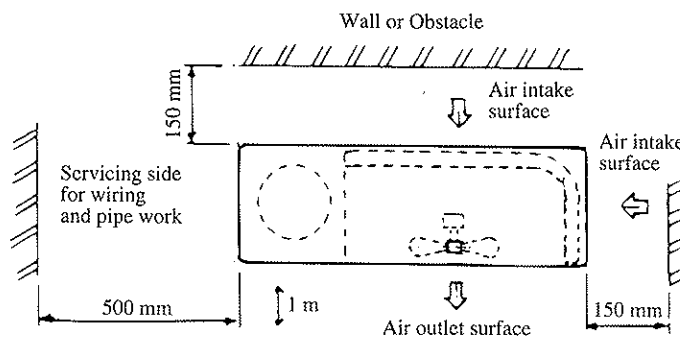
6. Ensure there is sufficient space around the unit to service it.

Outdoor Unit

1. Leave at least 150mm around the sides of the unit and at least 1m around the fan discharge of the unit to maintain good airflow.

See Fig. 2 below.

Fig. 2



2. Do not place unit closer than 1m to another air conditioner.
3. If possible, do not install the unit where it will be exposed to direct sunlight.
4. Do not install the unit where it is likely to be directly affected by strong winds. This will affect the airflow through the unit and will stop correct operation.
5. Unless using wall brackets install the unit on a concrete slab to minimise vibration transmission.
6. Install the outdoor unit in a place where it will be free from being obstructed by falling leaves or other debris.
7. Install the unit where connection to the indoor unit is easy.
8. The outdoor unit will produce water when operating as a heat pump, so do not mount the unit above footpaths or other public areas unless the condensate connection is run to waste.

WARNING:

1. Do not install the indoor unit in a machinery shop or kitchen where vapour from oil or its mist flows into the unit. The oil will deposit on the heat exchanger, thereby reducing the unit performance. It is recommended that standard filter be replaced with a special filter, if necessary.
2. Pay attention to the following points when the indoor unit is installed in a hospital or other facilities where electromagnetic radiation is radiated from equipment.
 - A) Do not install the unit where the electromagnetic waves are directly radiated to the electrical box, remote control cable and remote control switch.
 - B) Install the unit and components as far is practicable, at least three metres from the electromagnetic wave source.
 - C) Prepare a steel box and install the remote control switch in it. Prepare a steel conduit pipe and wire the remote control cable to it and then connect an earth wire with the box and the pipe.
 - D) Install a noise filter if any harmful noise exists in the power supply.
3. Do not install the units in an acid or alkaline environment due to the corrosive action to the heat exchangers.
4. Do not install the units in a flammable environment due to the danger of an explosion.

2 REFRIGERANT PIPING

1. Refrigerant Line Connections

LINE DESCRIPTION		MODEL NO.		
		15	24	36
Up to 5m	Liquid	1/4	3/8	3/8
	Suction	1/2	5/8	3/4
Horizontal over 5m	Liquid	5/16	3/8	3/8
	Suction	5/8	3/4	3/4
Vertical over 5m	Liquid	5/16	3/8	3/8
	Suction	1/2	5/8	3/4

- Both the liquid and gas lines should be insulated along their entire length, including the flare connections and the stub pipes.
- Maximum line lengths and additional charge.

Fig. 3

MODEL NO.		15	24	36
Line Length	Max Total Run	33m	40m	50m
	Max Lift	10m	10m	15m
Charge (R22)	Std Charge 5m	1125g	1725g	3450g
	Additional Charge per m	20g	43g	52g

- If vertical separation exceeds 3m, oil traps should be fitted at start of vertical rise and at 6m intervals thereafter.
 - Suction line lengths above 30m may require additional oil refer to Lennox.
 - The indoor unit has a nitrogen holding charge which must be released prior to connecting the pipework.
 - The field pipework should be pressure tested with dry Nitrogen.
 - The lines should then be evacuated to a vacuum.
 - The unit is pre-charged with 5m of R22 in the outdoor unit.
- If the fridge pipework is longer than 5 m refrigerant should be added as per Fig 3.
- To charge the unit fully open the suction line valve and slowly open the liquid line valve.

Place the jumper provided on Terminal JP5 on the outdoor board over both pins. Starting the unit with this jumper in place will automatically run the unit in:

Cooling Mode

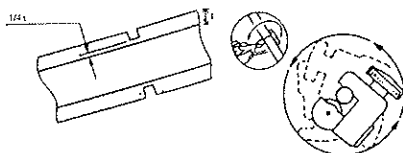
High Fan Indoor

Full speed Outdoor Fan 'Overriding' Fan Speed Control

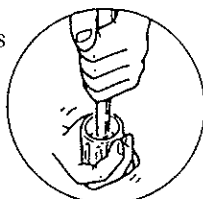
If required additional weight of refrigerant can now be charged into the unit and the operating pressures checked.

For Flare Connection

- Cut the pipe stage by stage, advancing the blade of pipe cutter slowly. Extra force and a deep cut will cause more distortion of pipe and therefore extra burr.

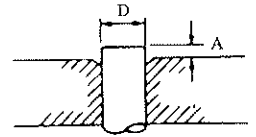


- Remove burr with a burr remover. This will avoid unevenness on the flare face which will cause gas leak. Hold the flaring end down to prevent burrs from dropping inside pipe.



- The exact length of pipe protruding from the face of the flare die is determined by the flaring tool. The table shows the use of an imperial die and rigid die.

PIPE Ø (MM)	A(MM)	
	IMPERIAL DIE	RIGED DIE
6.35 (1/4")	1.3	0.7
9.52 (3/8")	1.6	1.0
12.7 (1/2")	1.9	1.3
15.88 (5/8")	2.2	1.7



Fix the pipe firmly on the flare die. Match the centres of both the flare die and the flaring punch, and tighten flaring punch fully.

3 WIRING

Electrical Connections

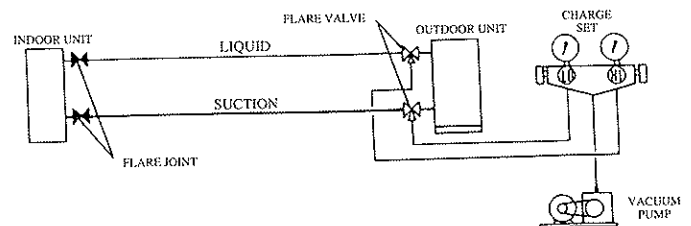
- Wiring regulations on wire diameters differ from country to country. Please refer to your LOCAL ELECTRICAL CODES for field wiring rules. Be sure that installation complies with such rules and regulations.

General Precautions

- Ensure that the rated voltage of the unit corresponds to the name plate before carrying out proper wiring according to wiring diagram.
- Provide a power outlet to be used exclusively for each unit. A power supply disconnect and a circuit breaker for over-current protection should be provided in the exclusive line.
- The unit must be GROUNDED to prevent possible hazards due to insulation failures.
- All wiring must be firmly connected.
- All wiring must not touch the hot refrigerant piping, compressor or any moving parts of fan motors.

4 VACUUMING AND CHARGING

- The precharged outdoor unit does not need any vacuuming or charging. However once it is connected, the connecting pipe line and the indoor need to be evacuated before releasing the R22 from the outdoor unit.
- Open the service port core cap.
 - Connect pressure gauge to the service port.
 - Connect the line to vacuum pump. Open the charging fold valve and turn the pump on. (evacuation time varies by the capacity of the pump but 1 hour is average).



- After evacuation, unscrew the spindles (diagram 2) for the gas to run to indoor unit.

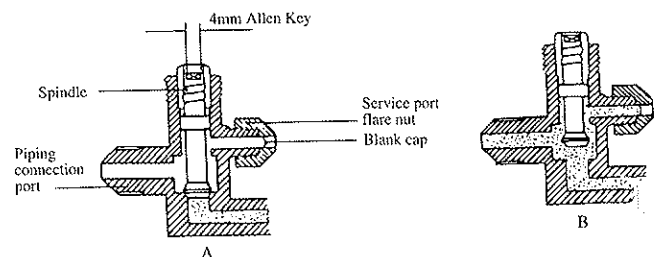


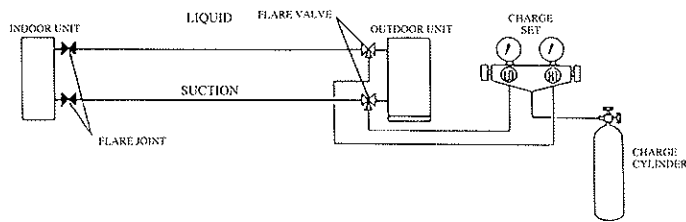
Diagram 2

5) Decision by low side pressure. Turn compressor on for 10 or 15 min.

	STANDARD CONDITION		HEAVY LOAD CONDITION	
	INDOOR 27°C/OUTDOOR 35°C		INDOOR 32°C/OUTDOOR 43°C	
	Kg/cm ²	psig	Kg/cm ²	psig
TVU-15 TCON-15	4.6 ~ 5.6	65.4 ~ 79.6	5.2 ~ 6.3	74.0 ~ 89.6
TVU-24 TCON-24	4.6 ~ 5.8	65.4 ~ 82.5	5.4 ~ 6.6	76.8 ~ 93.9
TVU-36 TCON-36	4.6 ~ 5.6	65.4 ~ 79.6	5.2 ~ 6.3	74.0 ~ 89.6

Within the value – refrigerant cycle normal.
 Lower than value – refrigerant cycle has some leaks – check, amend and top up is necessary. (Test for leaks)
 Extremely low (≈ zero) – needs evacuation and charge.

Diagram show typical charging method.



DRAIN PIPEWORK

Indoor Unit

1. The unit is fitted with a 22mm copper drain connection.
2. On completion the drain line should be insulated.

Outdoor Unit

1. The condenser is provided with a plastic drain connection in the bottom of the base. The two parts are pushed together and require sealing when they are in final position. The connection is 22mm.
2. The drain should be installed with a downward slope.

5 ELECTRICAL DATA

*Per phase

MODEL NO.	15	24	24	36
Power supply	230 V.1 - phase 50 Hz		400 V.3 - phase 50 Hz	
Maximum full load current A	10.2	13.0	4.7*	6.3*
Locked rotor current A	52.6	66.6	29.0*	37.1*
Power consumption kW	2.20	2.84	2.80	3.65

Interconnecting Wiring






	All Models
Two core wires indoor to outdoor	0.5mm
Two core wires indoor to controller	0.5mm

ENSURE THE CORRECT POLARITY IS OBSERVED.

We recommend that screened cable be used in electrically noisy areas.

The wall mounted remote controller can be mounted up to 50m from the indoor unit, when screened cable is used.

6 TEST RUNNING

1. Check to ensure the electrical resistance is more than 1 Mohm, by measuring the resistance between the earth and the terminal of the electric parts.
2. Ensure that the service valves are fully opened.
3. Set the controller to fan mode  and high fan speed . Press the on/off switch . The fan should start up and run and the outdoor unit should remain off. TEST MEDIUM AND LOW SPEED.
4. Set the controller to 18°C and to cooling mode . Press the on switch. The unit should now operate in cooling mode (there may be a 3 minute delay).
5. When the unit has operated for approximately 5 minutes in cooling mode turn the unit off and wait for 5 minutes before testing the heating mode.
6. Set the controller to 28°C and to heating mode . Press the on switch the unit should now operate in heating mode.

NOTE: If the temperature is above 25°C do not operate in heating mode for long periods.

7 SETTING THE HEAD PRESSURE CONTROL

Procedure for setting up Tempo TCON electronic head pressure controllers.

Note: The pressure and speed settings are factory set and should not be adjusted unless considered essential.

Remove electrical access panel and fit refrigerant high pressure line to high side of system.

Remove condenser top panel to gain access to the adjustment potentiometers on the PCB.

First check that the charge link is **not** fitted to the PCB.

To set the head pressure

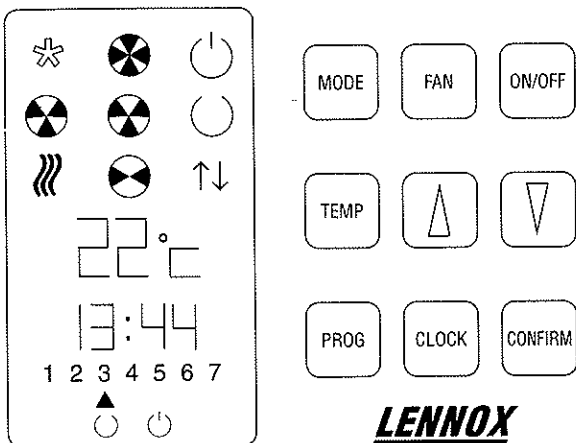
This adjustment can only be carried out accurately if the outdoor ambient is below 27°C. Set the minimum speed potentiometer to its lowest setting and turn the evaporator onto high speed with full cooling. After one minute at full speed the condenser fan will drop to zero and then will gradually increase as the head pressure builds up. Adjust the set temp. potentiometer to maintain 235 to 255 psi (16.2 to 17.6 Bar). With temperature actuated controls some instability is inevitable but the pressure should settle after five minutes. Now set up the min speed as described below.

To set the minimum speed

To set the minimum speed of the condenser fan first remove the compressor contactor live feed wire to disable the compressor. Turn the evaporator onto full cooling. The condenser fan will run at full speed for one minute and then drop back to zero. Now adjust the min speed potentiometer to give around 80 to 100 r.p.m. Replace the compressor contactor wire.

Turn the evaporator onto high speed with full cooling and recheck operation.

8 SETTING THE CONTROLLER



STEP 1 Setting The Day

Press **CLOCK**, a small triangular indicator will flash.

Press **▲** **▼** to move the triangle to the correct day assuming that Monday is day 1.

Press **CONFIRM**, the correct day is now set and the hour figure will flash.

STEP 2 Setting The Time

Press **▲** **▼**, the hour will increase or decrease in 1 hour increments until the correct time is reached. (The controller has a 24 hour clock).

Press **CONFIRM**, the hour figure is now set and the minutes are flashing.

Press **▲** **▼**, the minute figure increases/decreases in 1 minute increments until the correct time is reached.

Press **CONFIRM**, the clock is now current.

STEP 3 Setting 7 Day On-Off Programme

The programme can be used to set 1 off time period per day or omit a day. The programme can be overridden by using the On/Off button.

Press **PROG**, the triangular indicator will show day 1 (Monday) below a small will indicate this is an on time. The on hour will flash.

Press **▲** **▼** to increase or decrease the start time.

Press **CONFIRM**, the On Time is now set and the minutes are flashing.

Press **▲** **▼**, the minute figure increases/decreases in 1 minute increments until the correct minutes is reached.

Press **CONFIRM**, the on minutes are now set and the hours off time is flashing the small circle is now open to indicate we are in day 1 off time.

Press **▲** **▼**, to confirm the off hours.

Press **CONFIRM**, to set the hours and bring up minutes.

Press **▲** **▼**, to set off minutes.

Press **CONFIRM** The Monday on and off times are now set and day 2 is now indicated.

The timer can be brought into operation by pressing **PROG** then **ON/OFF**. The unit will be under timer control when the small or symbols are indicated at the bottom of the display. The timer is taken out of operation by pressing **PROG** then On/Off. The small or symbols will not be displayed.

The same procedure can now be used to set each day. To escape from the programme at any time press **ON/OFF** when the hour indication is flashing.

STEP 4 Temperature Set Point

Press **TEMP** The set temperature will flash.

Press **▲** **▼** to set the desired set temperature. Each depression will increase or decrease the set temperature in 1°C increments.

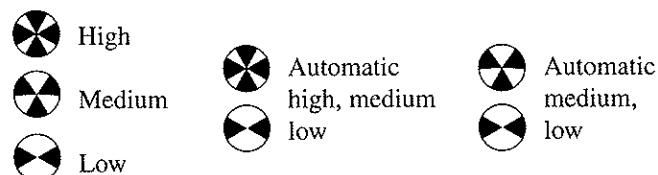
Press **CONFIRM** to confirm the required room temperature.

STEP 5 °C → °F

To change the set temperature reading from °C into °F press **TEMP** and then **PROG** the set point will have to be re-installed.

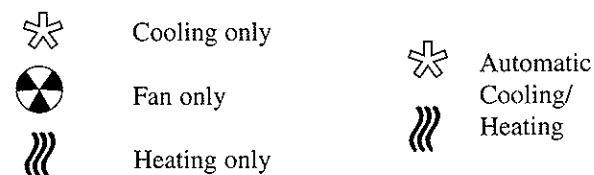
STEP 6 Fan Setting

To alter the fan setting press **FAN**, each depression will move the display through the fan options show below:



STEP 7 Setting The Operation Mode

To alter the operation mode press **MODE**, each depression will move the display through the control options shown below:



STEP 8 Temperature Set Forward/Set Back

Outside the timed period the set forward/set back temperatures can be operated to prevent the room becoming too hot or too cold.

With the unit in the Off position, press **PROG** the on hours will flash, keep pressing **CONFIRM** until the set temperature flashes and a downwards flashing arrow is indicated 5°C ↓ This is the set back temperature at which heating will be automatically started. If the setback/forward facility is required press On/Off to indicate the small symbol at the bottom of the display. If not required press On/Off to display small symbol. The temperature can be altered by pressing **▲** **▼** This is set by pressing **CONFIRM**.

The setforward temperature is now flashing with an arrow pointing upwards 31°C ↑ This is the setforward temperature at which cooling will be automatically started. This is set by pressing and finally, **CONFIRM**.

Two arrows ↑↓ will be indicated in Off mode to show the setforward/setback function is set.

NOTE: In setforward/setback mode the fan will continue running at all times to enable correct sensing of room temperature.

STEP 9 Diagnostics

To check the 14 point unit self diagnostics press **MODE** and **CONFIRM** together, release confirm button first.

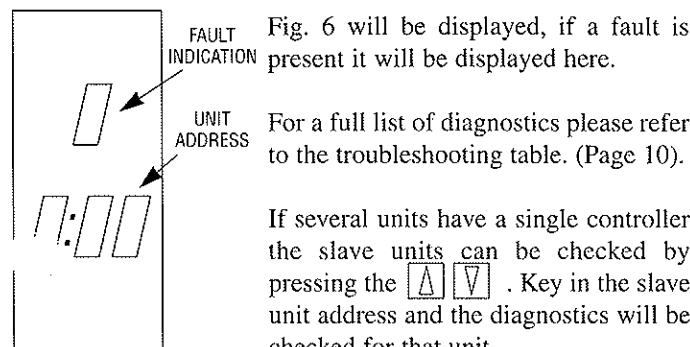


Fig. 6

Press **CONFIRM** to exit the diagnostics.

STEP 10 On/Off

Press **ON / OFF** when is displayed, the unit is on.

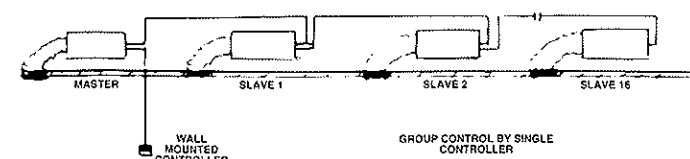
Press **ON / OFF** when is displayed, the unit is off.

9 GROUP CONTROL

1. Up to 16 units can be controlled from 1 controller.

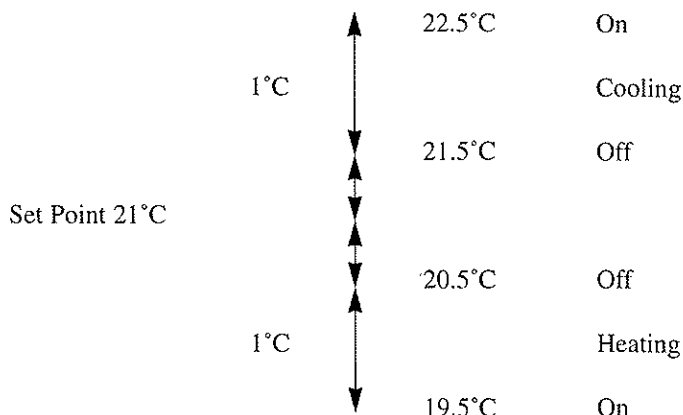
The wall mounted controller is connected to the master unit (WCU + WCU -) on the indoor unit PCB. The master unit is then addressed on the adjustable set switch SW1 on the indoor PCB (address '0').

3. The first unit is then linked to the master at (WCU + and WCU -) and then from slave to slave on (WCU + and WCU -). NOTE: Polarity must be correct from link to link. Each slave unit must be addressed on the address set switch SW1 of each unit (address 1, 2, 3, - 15). Also, on each slave the link on the indoor PCB JP7 must be removed.



10 ELECTRICAL CONTROL INFORMATION

VOID THERMOSTAT OPERATION



HEAT PUMP CONTROL FUNCTIONS

Defrost Function

If the outdoor sensor is below -2°C then the control will call for a defrost hourly.

If the coil temperature reaches 13°C or the unit has been defrosting for 10 minutes the defrost will terminate.

Outdoor and indoor fans will both stop during defrost.

During this period the LP switch is over-ridden for 6 minutes to prevent nuisance trips.

Indoor Fan

Indoor fan will run for 25 seconds after the unit is turned off to use all available heat.

INDOOR COIL FROST PROTECTION

If the indoor coil reaches -2°C for 10 minutes then the microprocessor switches the compressor off. The fan speed is then set to high and the coil must reach 15°C or 10 minutes must elapse before the unit will restart.

PRESSURE SWITCHES

LP Switch

1. If contacts are open on start up THE UNIT WILL NOT START.

2. For the first 6 minutes of operation no action is taken.

3. If, after 6 minutes the pressure is below 10 psi for a further 1 minute continuously, then the microprocessor will turn the unit off and flag fault No. 11 on the diagnostics display. If pressure rises to 30 PSI the LP switch will reset.

HP Switch

Set to trip at 410 psi reset at 210 psi.

If a trip occurs, a fault 10 is logged but the unit is stopped until the HP resets. The auto reset allows 10 trips within an hour, once 10 trips have been logged a fault 9 is indicated. When this occurs the unit will remain stopped even if the HP resets.

There is also an additional protection where, if the outdoor coil temperature reaches 65°C then the unit will stop and display error code 12. The unit will also stop if the indoor coil temperature reaches 68°C however, no error code would be displayed in this case.

OUTDOOR FAN SPEED CONTROL

1. Fan will hard start for 1 minute on full speed which then reduces to the factory set minimum speed setting. (approx. 100 rpm)
2. Temperature is factory set to 37.5°C (approx. 220 psi head pressure) mid position. Control is +7.5 –7.5°C spread on the potentiometer.

OTHER FEATURES

1) Random Start

A random compressor inhibit period of between 0 and 16 seconds will elapse before starting the compressor to minimise power surges on multiple installations.

2) Compressor Lockout

A 3 minute delay is built into the compressor contactor control circuit to prevent short cycling. It will prevent all rapid restarts of the compressor.

3) Heating Cooling Changeover

An inhibit time of 5 minutes will stop the unit from switching rapidly from heating to cooling.

4) Prevention of High Condensing Temperature in Heating Mode

If the condensing temperature exceeds 63°C in heating mode the microprocessor will switch the electric heater off for 5 minutes if one is fitted. If the condensing temperature exceeds 68°C the microprocessor will switch the system off.

Note: No error code will be displayed in this case.

5) Resume Normal Operation After Mains Failure

If the mains power fails the unit will resume its previous operation on restoration of the supply. The clock is also backed up for at least 250 Hrs of mains failure.

FUNCTION OF JUMPERS AND SWITCHES

Indoor Board

- 1) JP2 (AUX HTR) When the unit is fitted with auxiliary electric heaters this link is fitted.
- 2) JP7 (AHU 1) For master units or stand-alone operation this jumper is left in place. This link is *only* removed when the unit is a slave. See below.
- 3) SW1. This is the address select switch. If factory set to 0 for master units or stand-alone operation, on slave units it is set on site to the required address 1 to 15. This address must be set correctly for the unit *and* the diagnostics to function.

Outdoor Board

- 1) JP5 (CHARGE) A jumper is factory supplied on one of the pins. For commissioning the two pins can be shorted if desired. This disables all alarms and runs the unit on full fan speed on

both indoor and outdoor fans. **Note that all HP and LP functions are disabled and that the compressor will run even if the indoor mains supply is not connected. Ensure that the jumper is removed after commissioning.**

- 2) JP7 (H_PUMP) A jumper is factory fitted on heat pump systems. The jumper is off for cooling only.

AUXILIARY HEAT

Auxiliary electric heaters are available in the following ratings.

Unit Size	kW
15	2.0
24/36	4.0

On heat pumps fitted with electric heating the elements are only brought on if the return air temperature is 2°C below the setpoint. There is a 2 minute delay before the electric heaters are brought on to stop energy wastage.

DIAGNOSTIC ERROR CODES

The LCD panel can display 14 error codes, however, any errors recorded whilst the unit is running will be erased if power to the indoor unit is turned off. Therefore it is essential that the unit is left powered until the service engineer checks the unit.

Note: All errors recorded on the diagnostics will clear automatically once the fault has cleared.

Error codes 1 to 13 will result in the shutdown of both indoor and outdoor units.

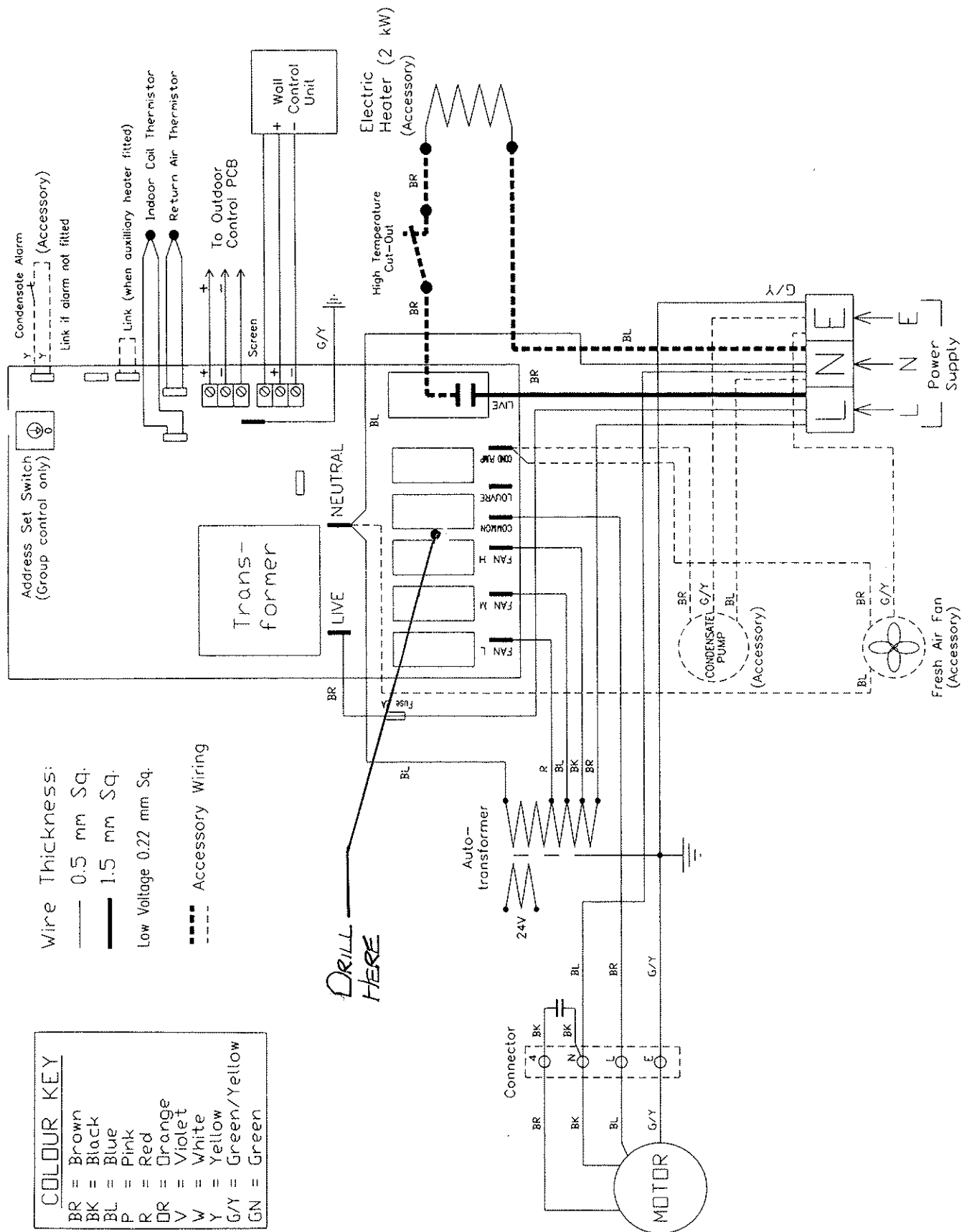
To read the error codes first press the CONFIRM button then the MODE button, if you wish to remain in diagnostics mode be sure to release the confirm button first. On master slave units the slaves can be interrogated by pressing the ↑ ↓ keys until the appropriate address is displayed.

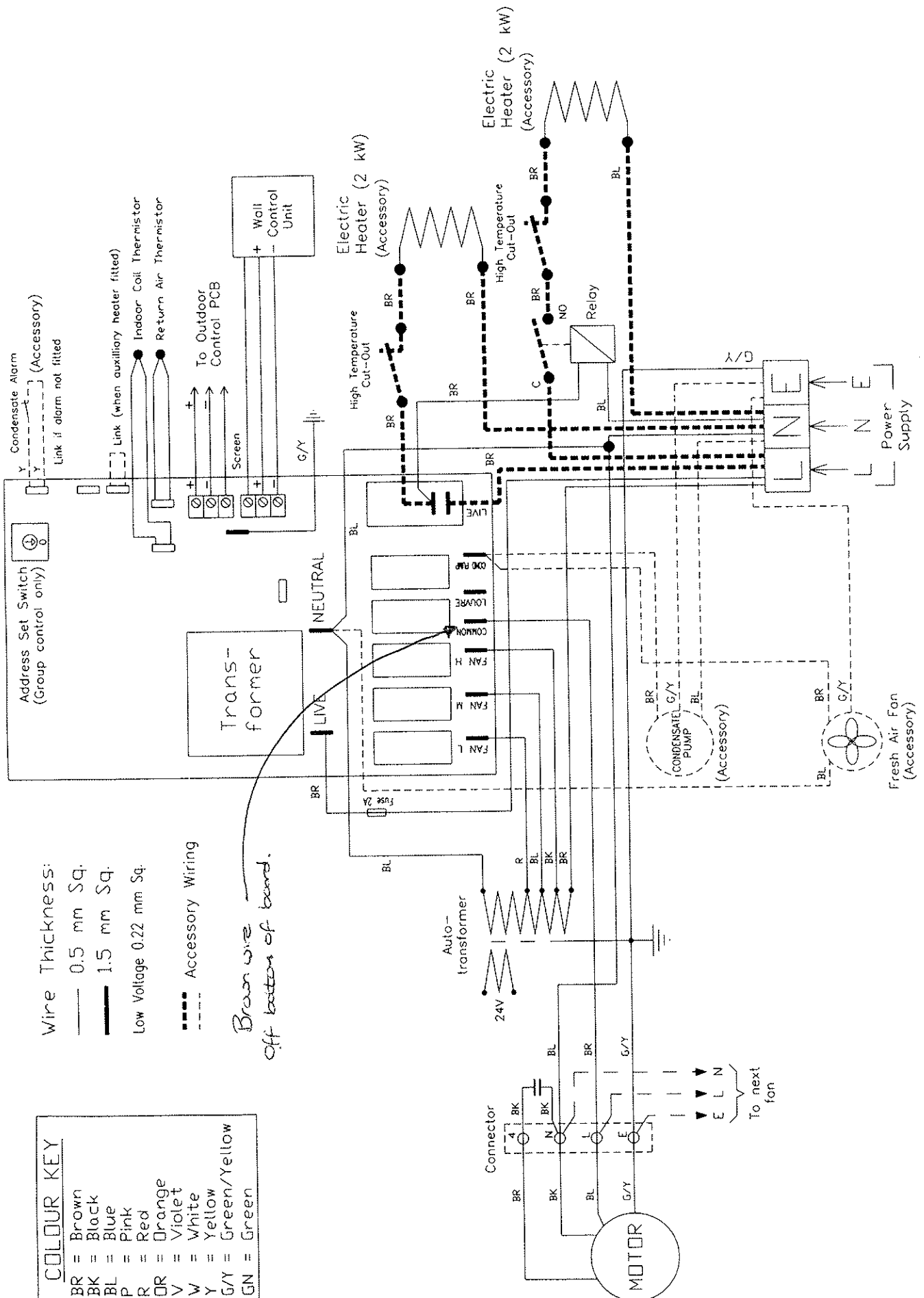
Error No.	Indicated Fault	Probable Cause
1	Return air sensor short circuit	Shorted wires, damaged sensor
2	Return air sensor open circuit	Broken wires, damaged sensor
3	Indoor coil sensor short circuit	Shorted wires, damaged sensor
4	Indoor coil sensor	Broken wires, damaged sensor
5	High condensate level alarm	Condensate drain blocked, pump faulty, float switch wires broken
6	Wall unit communication failure	Poor connections, polarity reversed
7	Outdoor coil sensor short circuit	Shorted wires, damaged sensor
8	Outdoor coil sensor open circuit	Broken wires, damaged sensor
9	HP switch has locked out	HP switch has tripped 10 times in 1 hour
10	HP switch has operated	HP switch has tripped, wires broken
11	LP switch has locked out	LP switch has tripped for one continuous minute after the 6th minute of running
12	General non specific error	Outdoor coil sensor has exceeded 65°C, faulty PCB
13	Outdoor to indoor communication failure	Shorted/broken wires, polarity reversed, power off on outdoor unit, fuse blown.
(14)	Not a true error condition (applies to master/slaves only)	Indicates that there is a cooling inhibit state
No code	The unit does not run but no error is shown	The address of the unit is set incorrectly
No colon flashing*	Controller not communicating	Shorted/broken wires, polarity reversed, Faulty wall control unit or indoor board.

* Between the 0 and the 00 on the lower two figures, i.e. 0:00

13 WIRING DIAGRAMS

MODEL 15 INDOOR



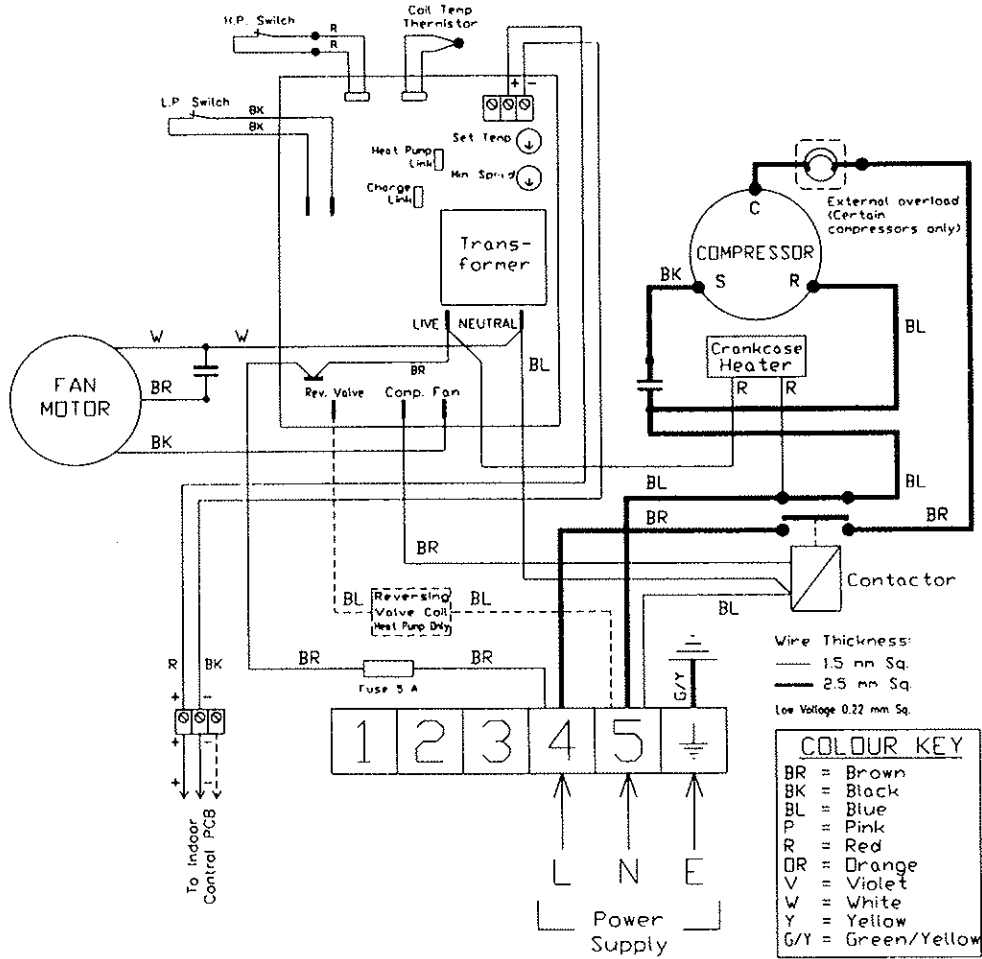


Wire Thickness:
 — 0.5 mm Sq.
 — 1.5 mm Sq.
 - - - Low Voltage 0.22 mm Sq.
 - - - Accessory Wiring

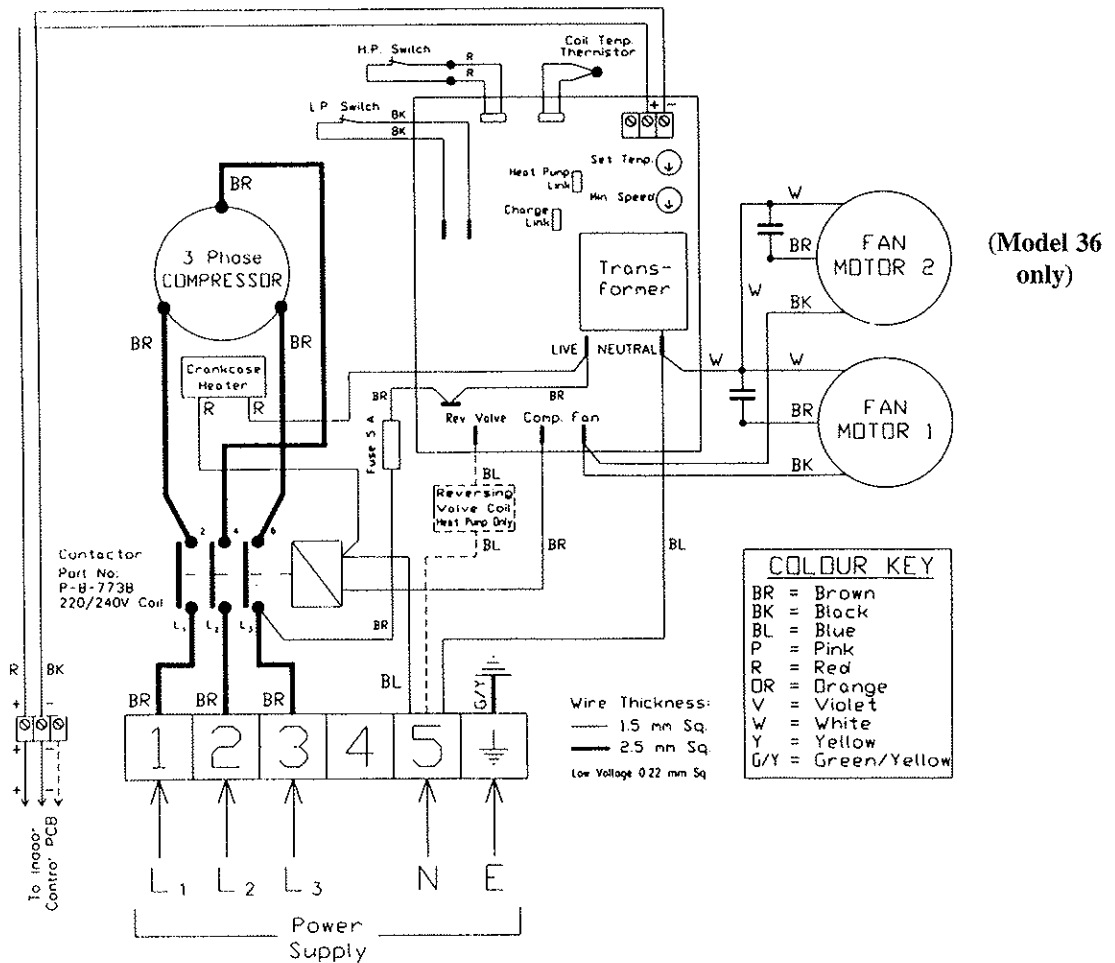
Brown wire off bottom of board.

COLOUR KEY	
BR	= Brown
BK	= Black
BL	= Blue
P	= Pink
R	= Red
DR	= Orange
V	= Violet
W	= White
Y	= Yellow
G/Y	= Green/Yellow
GN	= Green

**MODEL 15-24 OUTDOOR
SINGLE PHASE**



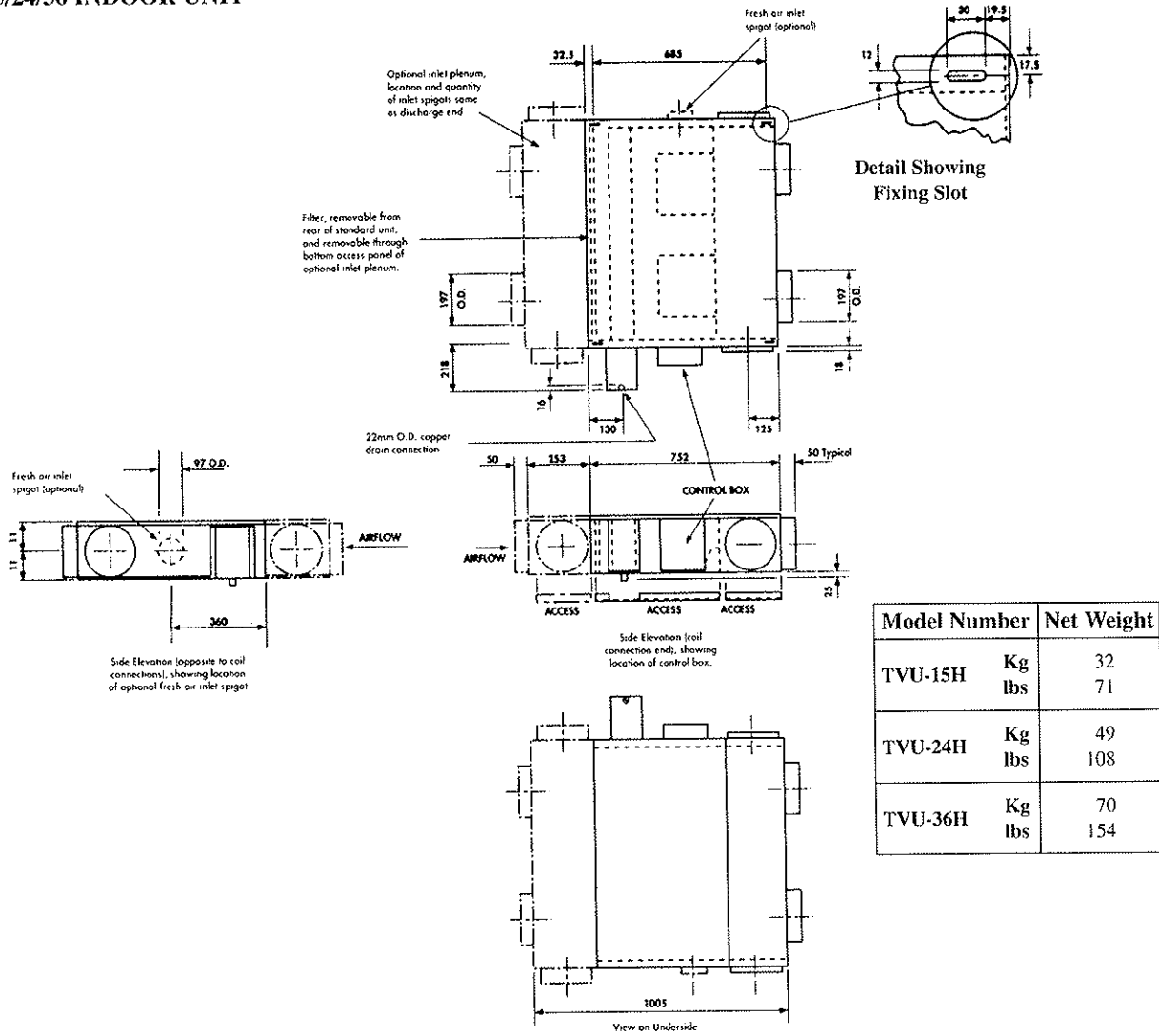
**MODEL 24 OUTDOOR THREE PHASE
MODEL 36 OUTDOOR**



14 DIMENSIONS - mm

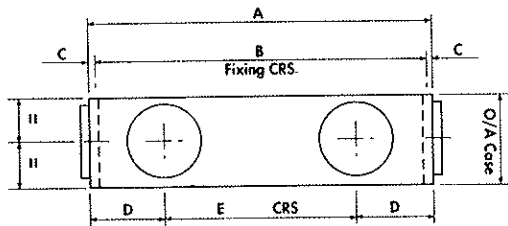
TVU15/24/36 INDOOR UNIT

Plan Elevation

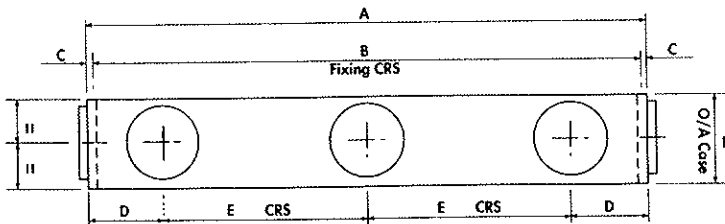


Model Number	Net Weight	
TVU-15H	Kg	32
	lbs	71
TVU-24H	Kg	49
	lbs	108
TVU-36H	Kg	70
	lbs	154

Model TVU-15H



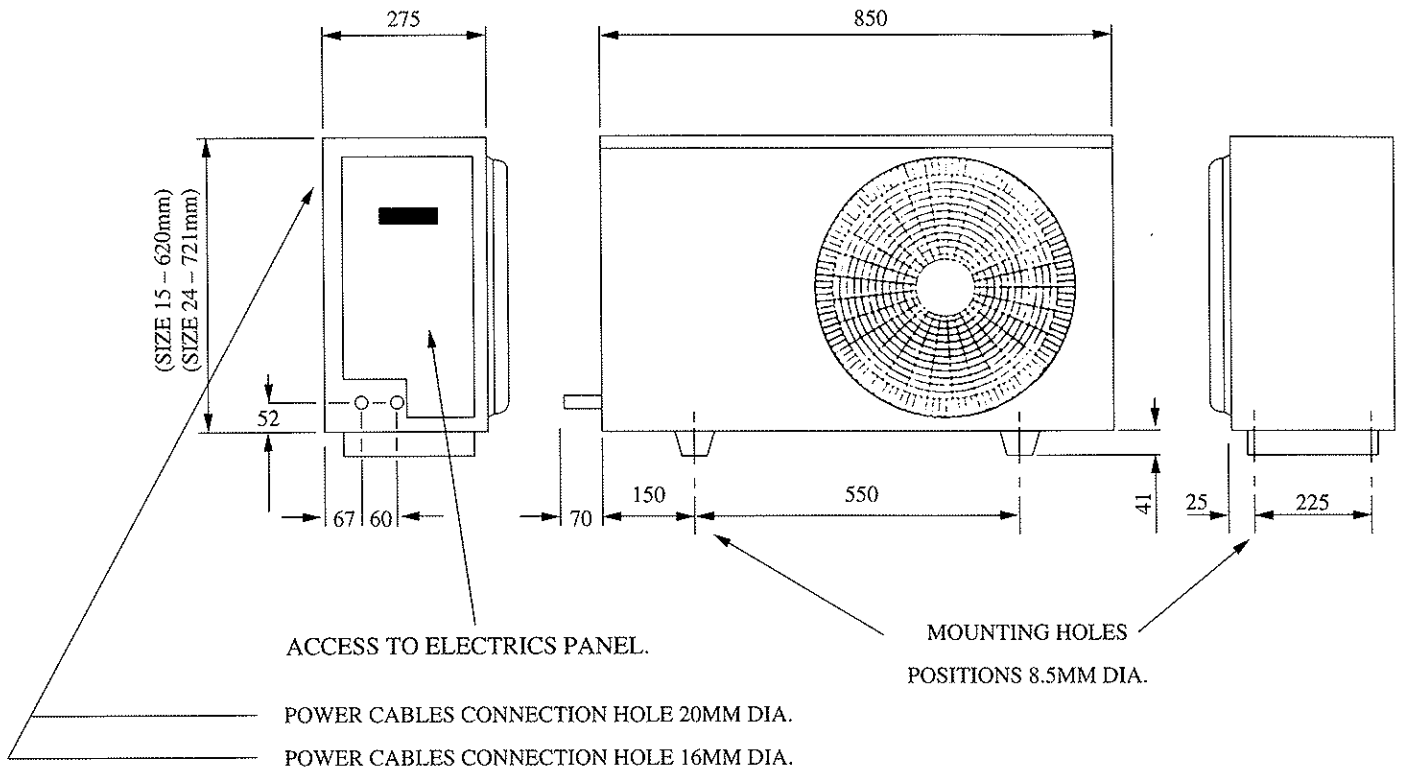
Models TVU-24H, TVU-36H



Model Number	A	B	C	D	E	F
TVU-15H mm	715	880	17.5	175	360	233
TVU-24H mm	1165	1130	17.5	200	380	233
TVU-36H mm	1465	1430	17.5	200	530	285

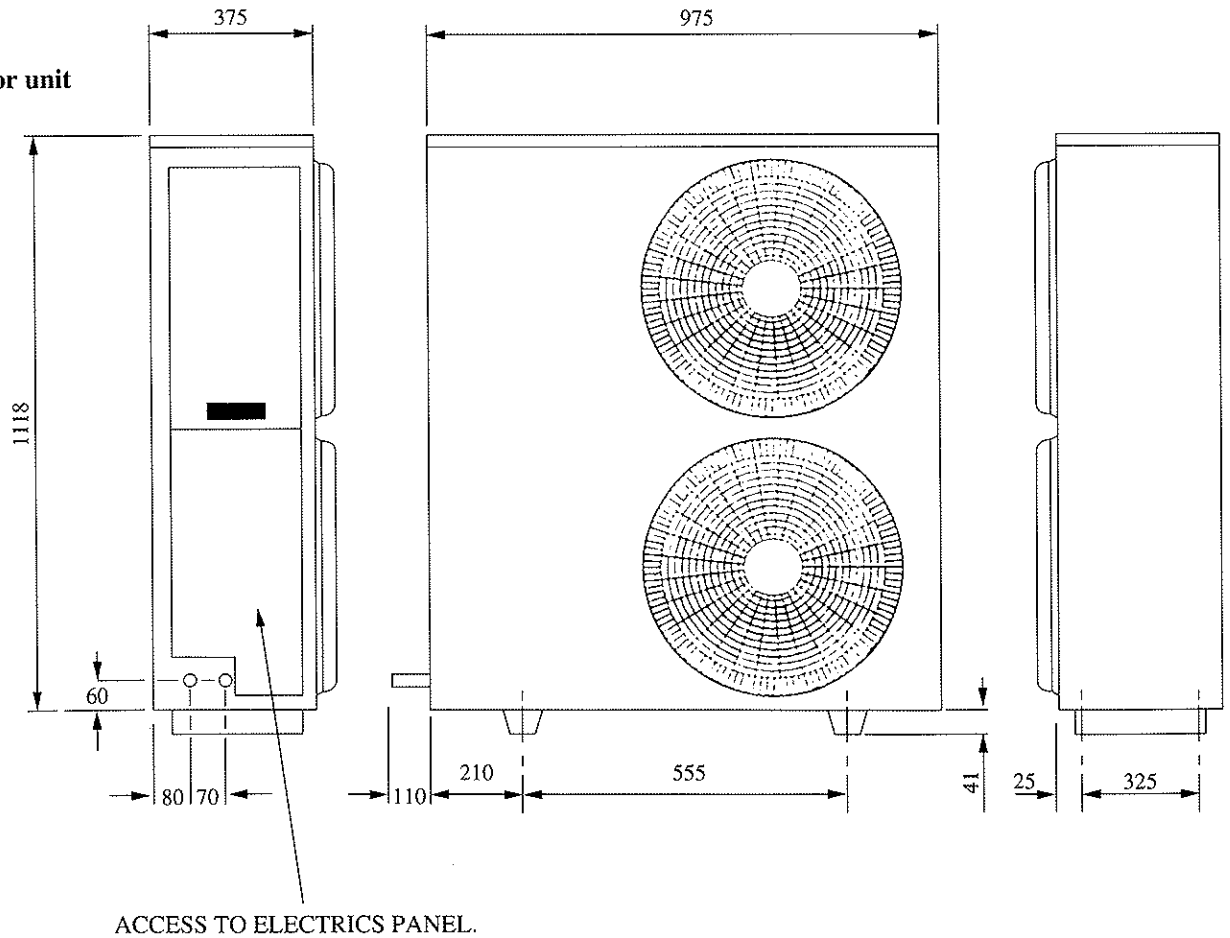
OUTDOOR UNIT: TCON-15H TCON-24H

Outdoor unit



TCON-36H

Outdoor unit



15 ACCESSORIES

a) RETURN AIR PLENUM

The Return Air Plenum is bolted onto the body of the unit and allows connection of up to four return air ducts.

MODELS		Part No.
TVU-15H		ZZP150
TVU-24H		ZZP260
TVU-36H		ZZP440

b) ELECTRIC ELEMENT KIT

Additional heating can be achieved with the use of an electric heater kit comprising the element and protection devices.

MODELS		Part No.
TVU-15H	2kW	TVU-15/EL2
TVU-24H	4kW	TVU-24/EL4
TVU-36H	4kW	TVU-36/EL4

c) CONDENSATE PUMP

If pumped condensate removal is required a pump kit is available which will give 3m of suction and 9m of head.

MODELS	Part No.
TVU15-36	TVU-CP

FIRST EDITION (JULY 1995)

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lennox may make improvements and/or changes in the product(s) described in this publication at any time.

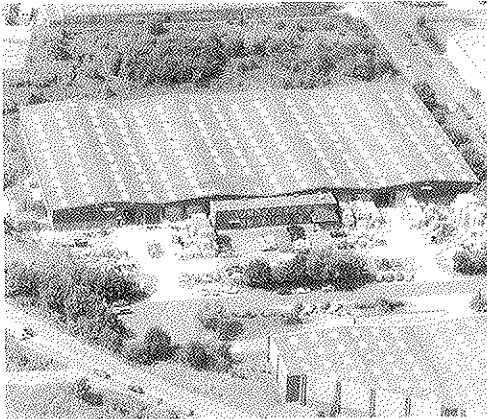
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NOTES

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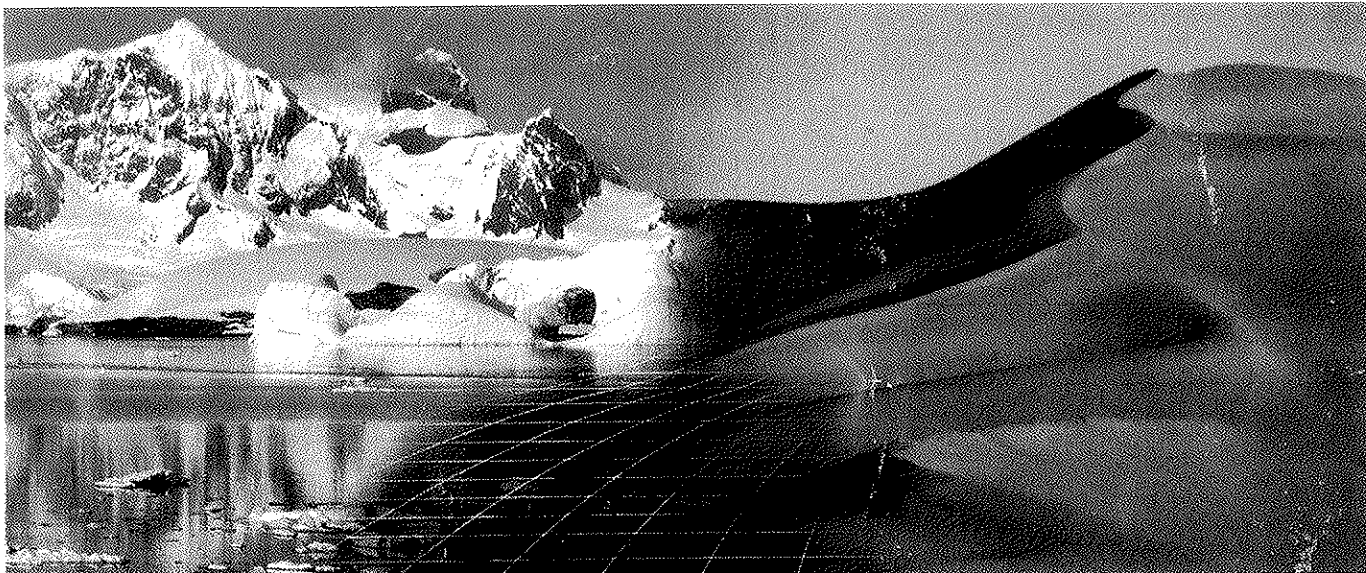
CE



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European Headquarters
Northampton*



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From its origins in 1895 Lennox Industries has concentrated on a single purpose, that of providing indoor environmental comfort, and few companies in the heating and air conditioning business have such breadth of experience or carry out so much research and development.

As a privately owned, well established company Lennox has the ability and commitment to invest heavily in developing new, innovative products and this policy has kept the company on the leading edge of the industry's technology. Over the past one hundred years we have grown to become one of the most successful and experienced manufacturers of heating and air conditioning equipment employing more than 7,000 people worldwide with factories in the United Kingdom, Australia, Canada and America.

While some manufacturers have cut corners to make a cheaper product, Lennox has been uncompromising in the pursuit of quality both in design and manufacture. Lennox equipment has an enviable reputation for efficiency, reliability, and long life.

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