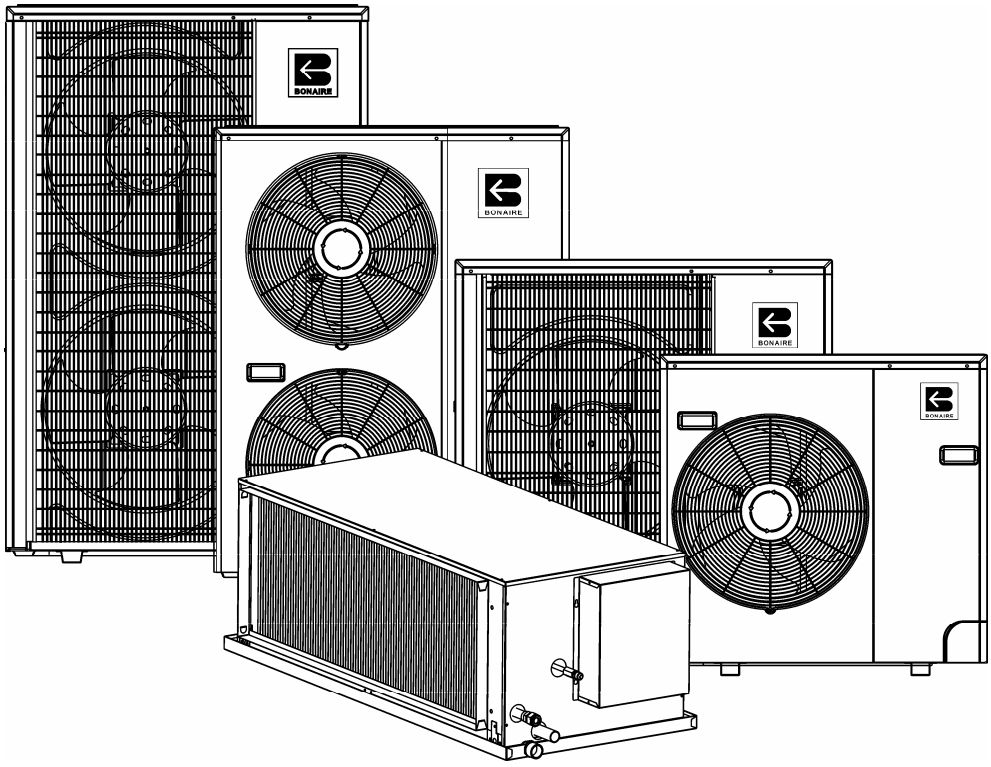
Installation Manual

BONAIRE

DUCTED REVERSE CYCLE
REFRIGERATED AIR CONDITIONING



B007RS, B009RS, B012RS, B015RS, B016RT, B019RT

Table of Contents

General

GENERAL

Bonaire Ducted Reverse Cycle air conditioners include two separate units – Indoor and Outdoor Unit. The two units are interconnected by two refrigerant tubes and an electric cable. Unit functions are controlled by a Radio Frequency Remote controller or a hard wired low voltage controller (depending on the option purchased).

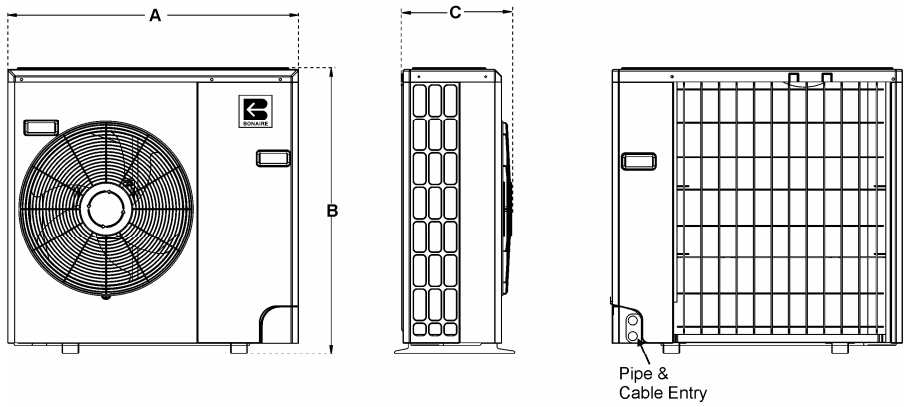
WARNING

The air conditioner must be installed by authorized technicians, according to Climate Technologies specifications and using recommended standard tubing, electric cables and proper installation tools. Failure to comply with the above may invalidate your warranty!

Dimensions & Clearances

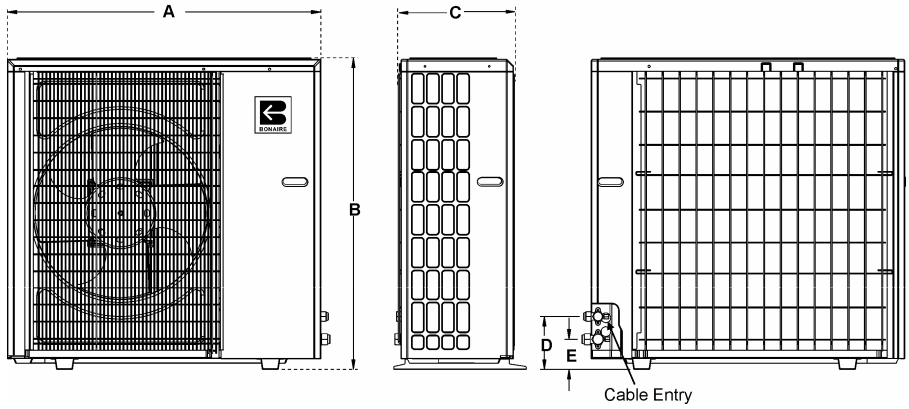
OUTDOOR UNIT DIMENSIONS

B007RS



B009RS

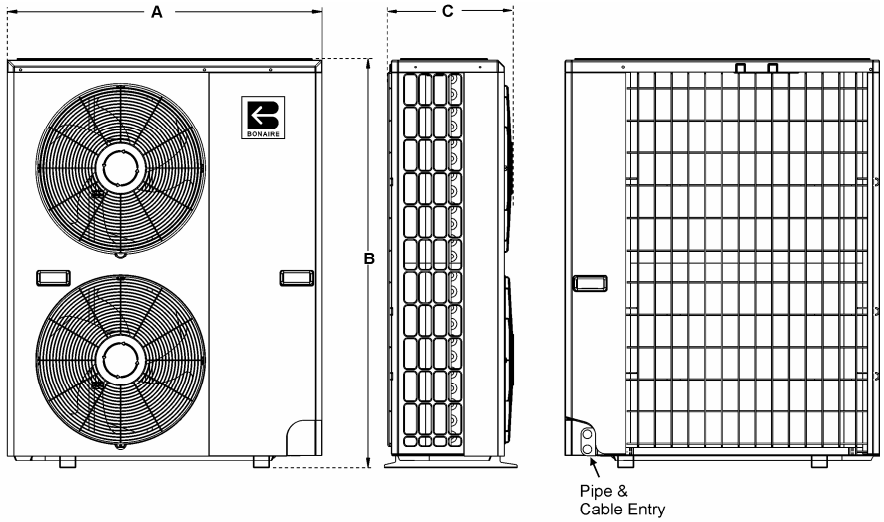
B012RS



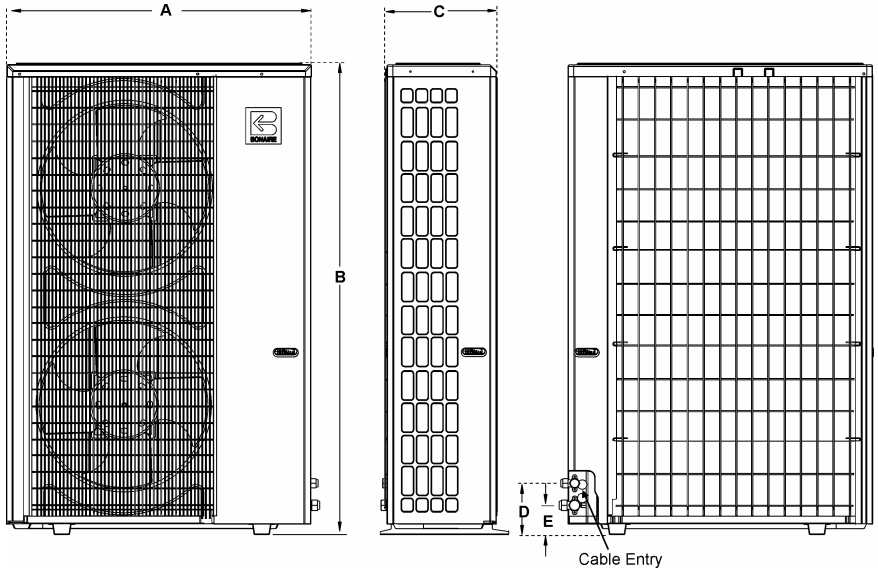
Unit	Weight	A	B	C	D	E
B007RS	60kg	870	860	340	Connections Inside Unit	
B009RS	92kg	970	960	365	160	90
B012RS	97kg	970	960	365	160	90

Dimensions & Clearances

B015RS
B016RT



B019RT



Unit	Weight	A	B	C	D	E
B015RS	103kg	970	1260	395	Connections Inside Unit	
B016RT	108kg	970	1260	395	Connections Inside Unit	
B019RT	131kg	970	1460	365	160	90

Dimensions & Clearances

OUTDOOR UNIT ACCESS AND CLEARANCES

In selecting a proper location, the following criteria must be considered:

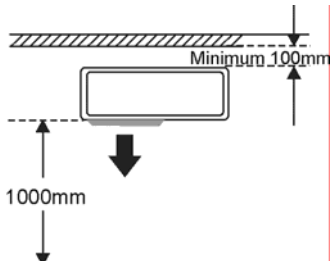
a) The outdoor unit and the indoor unit must be installed as close to each other as possible, within 10m. If longer tubing is required see table on page 14 or consult your technical sales rep.

b) Outdoor unit installation should provide for:

1. Easy service access.
2. Minimum disturbance to the owner and nearby neighbors.
3. A minimum distance of 100 mm from the wall
4. If installed in a closed place (balcony, attic, etc), outdoor air vent must be provided to prevent hot/cold air from recirculation through the outdoor unit.
5. If several outdoor units are installed in the same area, make sure that the hot air outlet from one outdoor unit does not enter another outdoor unit.
6. Verify that any wall on which the outdoor unit is installed is capable of carrying the unit's weight. Do not install on a light unstable structure susceptible to vibration.
7. When installing on a balcony above the first floor, make sure that the outdoor unit location allows easy access for removal of the top cover and/or the entire unit, if necessary.
8. If the outdoor unit is installed in a non-accessible location, long and flexible refrigerant tubing and electrical cable must be installed to allow the unit to be moved for servicing.
9. Do not install the unit in a highly polluted area in which the air is contaminated by oil mist, salt or sulfuric gas.

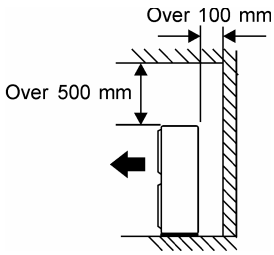
When the back is close to the Wall

The top and the front need to be open. This includes protruding window sills.



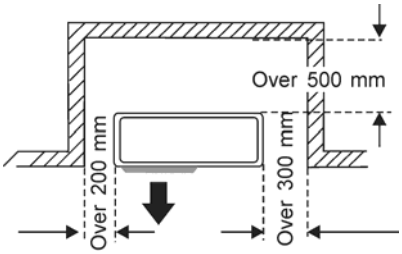
When the top is blocked

The front and the sides must be clear for these minimum clearances.

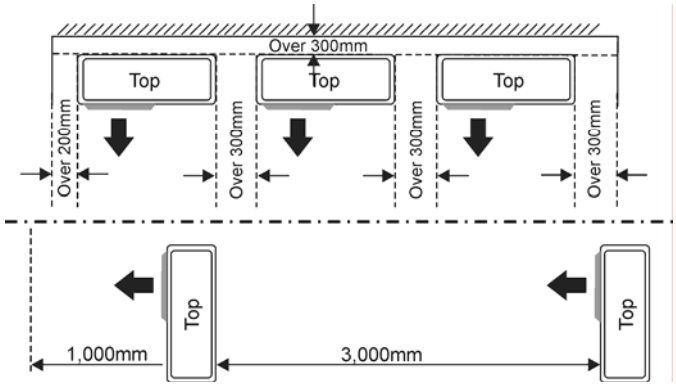


When the back & sides are blocked

The back and the side minimum clearances must be achieved

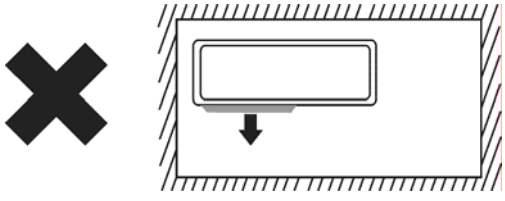


Multiple Units – Lateral and Behind relationships



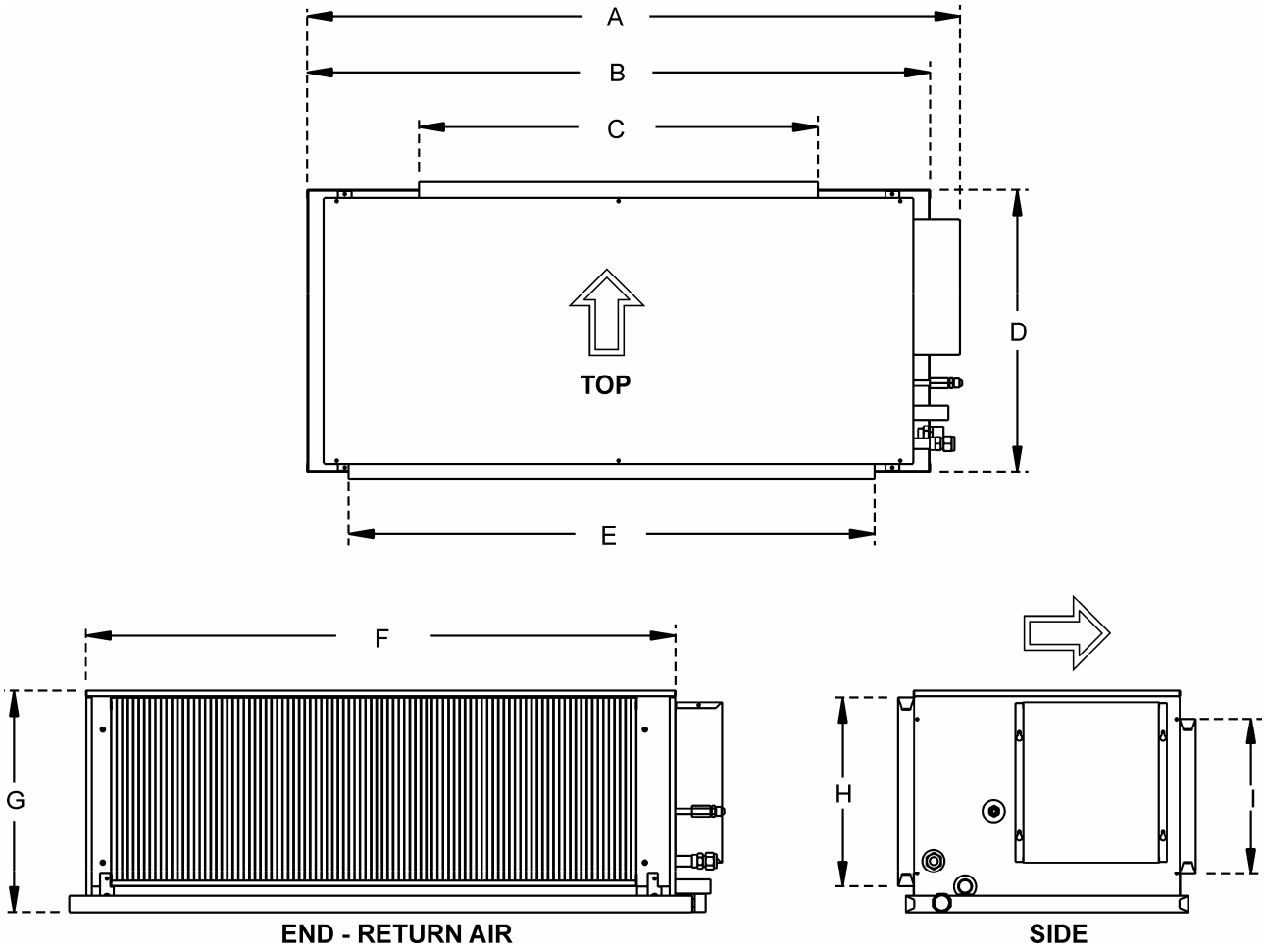
When all the sides are blocked

If all sides are blocked, this will be an unacceptable installation



Dimensions & Clearances

INDOOR UNIT DIMENSIONS

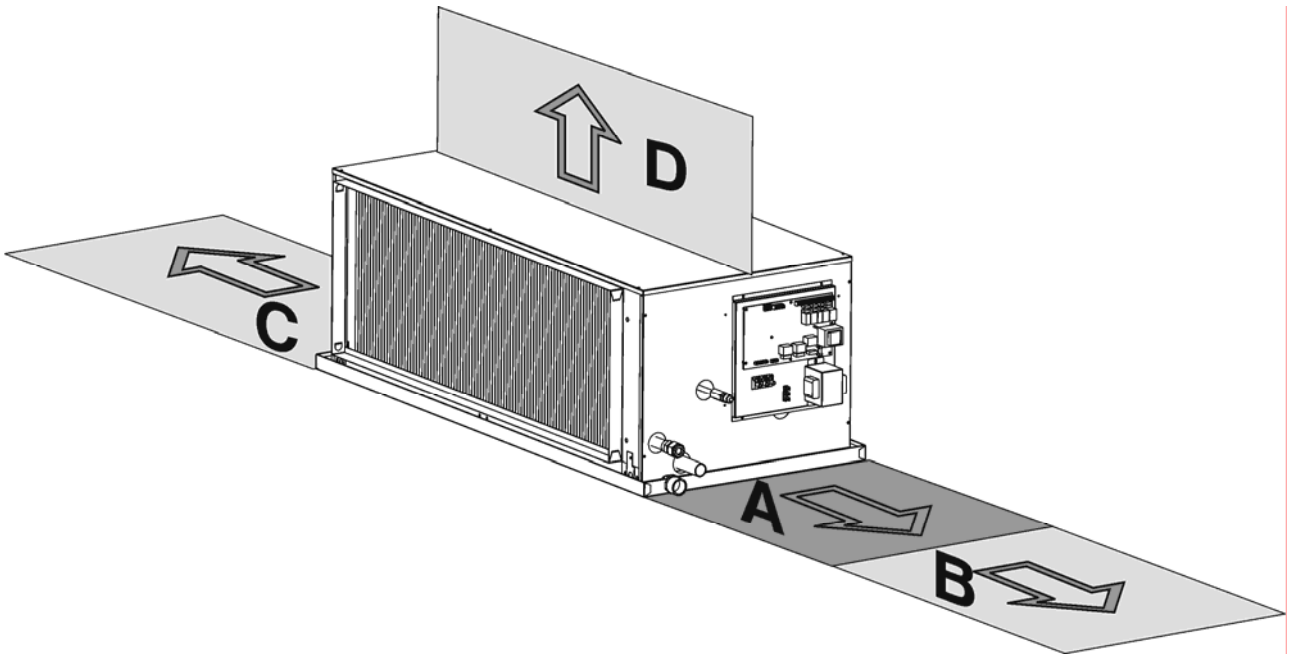


Unit Dimensions

Unit	Net Weight	A	B	C	D	E	F	G	H	I
B007HD	39Kg	946	891	246	510	716	831	381	292	251
B009HD	39Kg	946	891	246	510	716	831	381	292	251
B012HD	46Kg	1181	1126	721	510	951	1066	401	342	281
B015HD	46Kg	1181	1126	721	510	951	1066	401	342	281
B016HD	49Kg	1301	1246	721	510	1071	1186	401	342	295
B019HD	53Kg	1301	1246	721	510	1071	1186	401	342	295

Dimensions & Clearances

INDOOR UNIT CLEARANCES

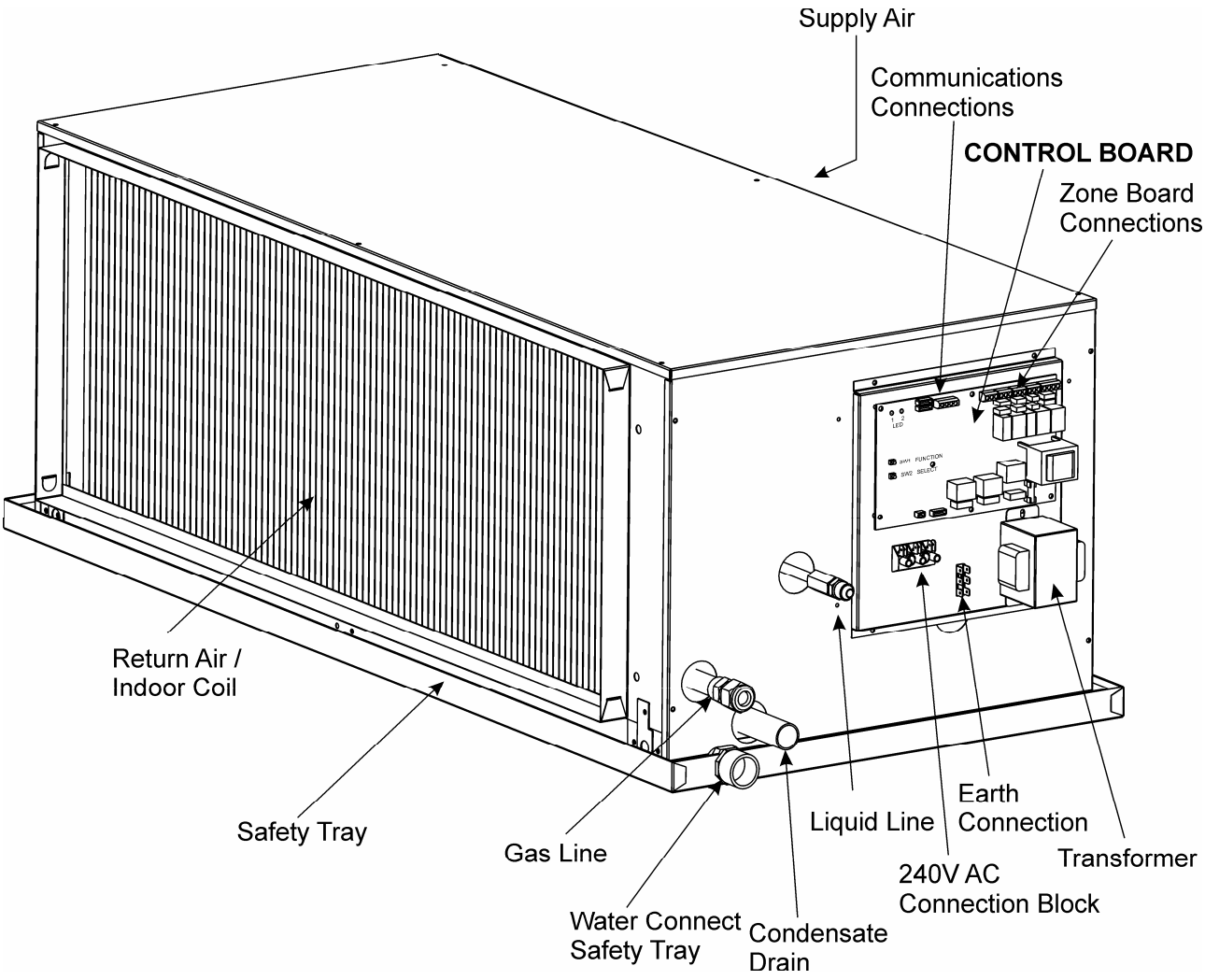


Clearance Options for Maintenance

Unit	(Mandatory)	Fan Removal Clearances Options		
	A	A + B	C	D
B007HD	500	500	500	450
B009HD	500	500	500	450
B012HD	500	850	850	450
B015HD	500	850	850	450
B016HD	500	850	850	450
B019HD	500	850	850	450

Unit Installation

INDOOR INSTALLATION



Unit Installation

Indoor Unit Location

The indoor unit is designed for installation within a ceiling/roof space or other compartment, where there is no influence from outdoor conditions.

While selecting the location, the following conditions must be assured:

a) The location should assure free flow of the return air into the unit without interference.

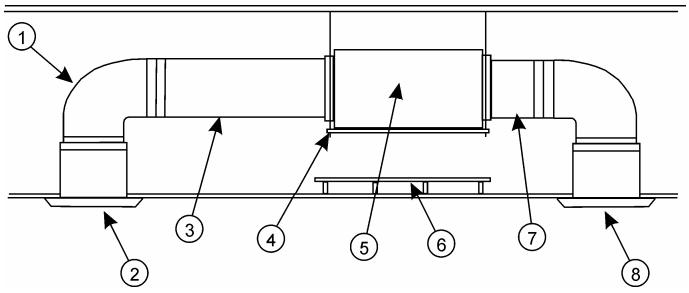
b) The unit should not be installed close to rooms where noise should be avoided (bedrooms, children rooms, etc).

c) Consider air distribution from the unit to the rooms and select a suitable location for even air flow.

d) Avoid obstacles which may restrict the run air intake or the discharge supply air flow.

e) If installing the unit on a platform ensure that the structure is capable of supporting the indoor unit and platform.

NOTE: The indoor unit should not be installed outside.



1. Insulated Acoustic ducting
2. Discharge air grilles
3. Transition duct – air off
4. Suspended hanging option – indoor fan coil
5. Indoor Fan Coil
6. Platform Option – Indoor fan coil
7. Transition duct – air on
8. Return air grille
9. Electrical Box

Notes for Installation

a) The return-air duct should be as short as possible, with full acoustic lining inside. The cross section at the duct connection to the unit shall be equal to that of the unit.

b) The distance between the return air grille and the air intake on the unit must be as short as possible.

Design and prepare in advance easy access for servicing as follows:

c) The minimum height clearance for the installation is 410 mm.

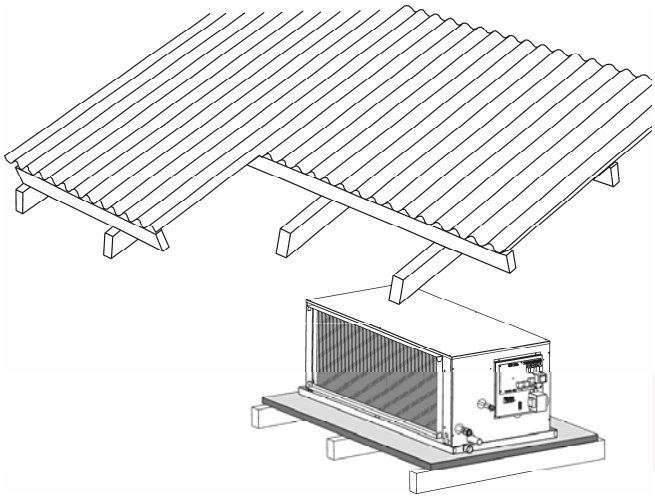
d) Allow the access to the electrical control box to facilitate its easy removal by opening the cover (fastened by 4 screws).

e) A distance of 500 mm must be kept to allow access to the electrical service panel. For the maintenance of fan and motor see indoor unit clearances. See Page 7.

Unit Installation

Floor or Platform Mounting

1. Create a platform using bearers and chipboard. Place the unit platform over load bearing walls or on strategically located trusses in the roof space.
2. Place serrated rubber pads or isolating springs under each corner of the unit to minimize / eliminate any noise transmission.



Suspension Mounting

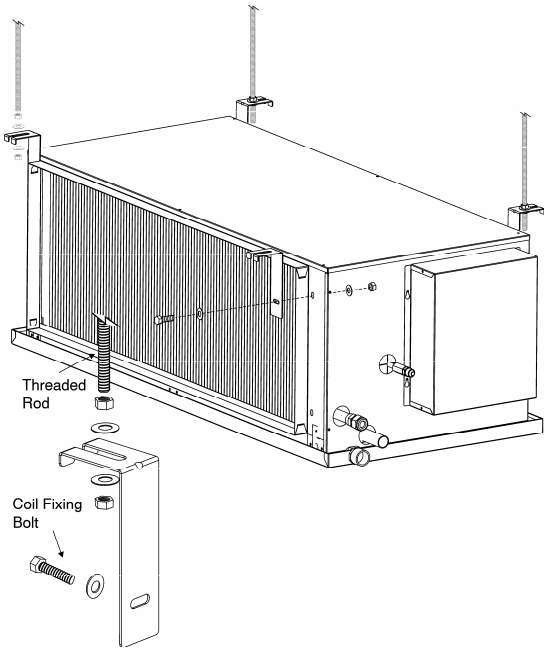
Use the accessory kit – P/n 6601905 Hanging Bracket Kit. For installation detailed see the instructions supplied with this accessory kit.

1. Fasten the hanging brackets to the indoor coil.
2. Use field supplied threaded rod to suspend the unit.

   M10 or greater is recommended to brace the unit mounting.
3. Fix the threaded rod to a structurally sound part of the roof or concrete pad.

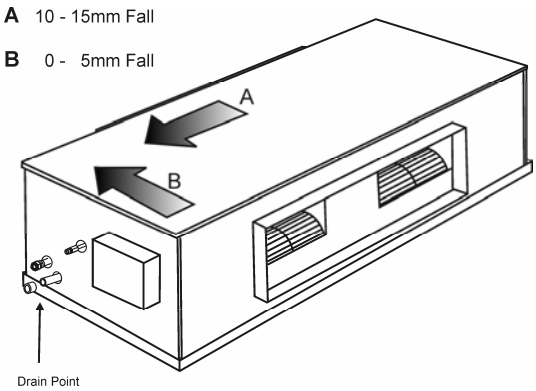
   Check with local and national building codes and or a structural engineer as to the fixing of the unit or building support structure if applicable.
4. Secure the indoor fan unit to the threaded rods ensuring all fasteners are secure and tight.

   Failure to correctly secure the suspension brackets and threaded rod to the indoor unit could cause it to fall and inflict injury or damage.



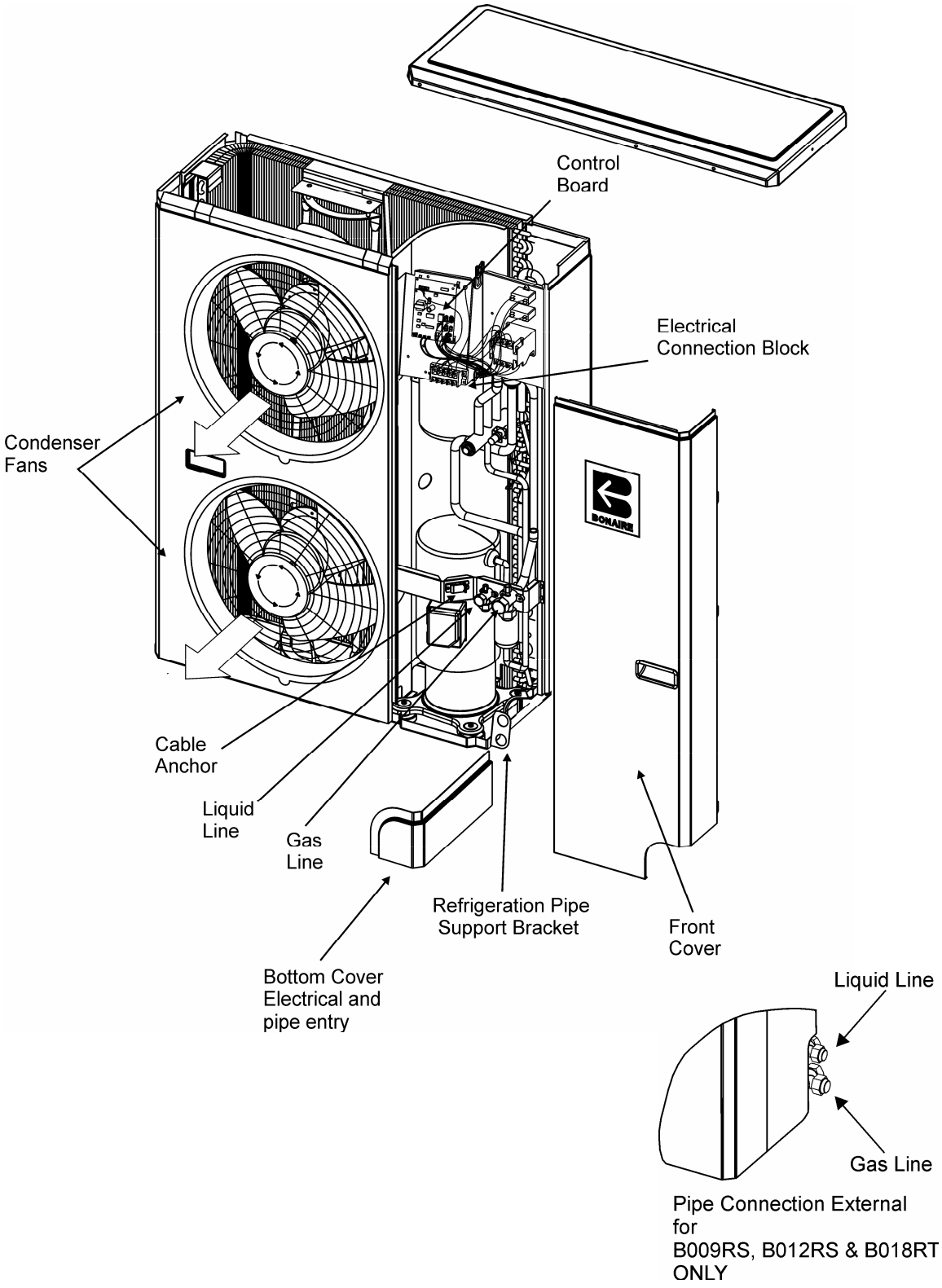
Leveling the Unit

1. Adjust the level of the unit as required. The drainpipe end of the unit must be lower by at least 5mm for good drainage.
2. Take care not to damage the drain tubes or coil when lifting to adjust unit level
3. For suspension mounting units, tighten the locking nuts once the revised position is determined.



Unit Installation

OUTDOOR UNIT

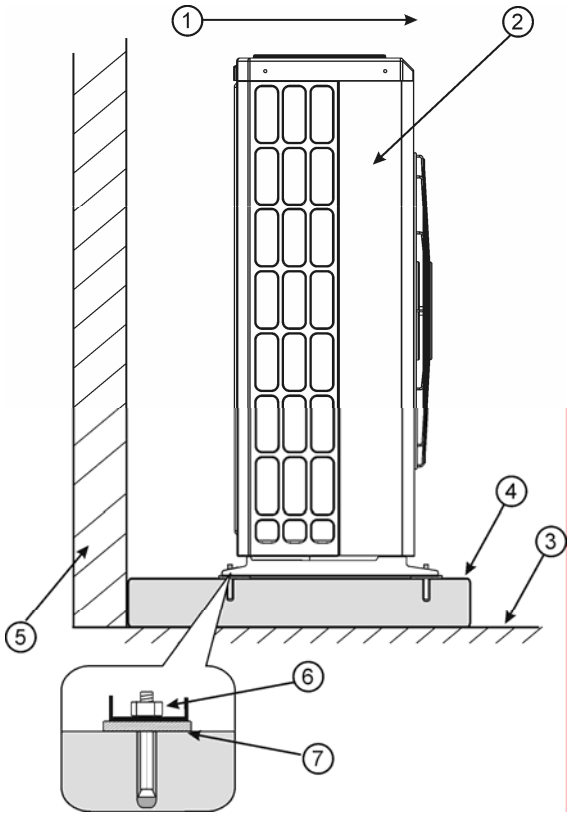


Unit Installation

CONDENSER INSTALLATION

Installation on flat surface (roof, ground, etc)

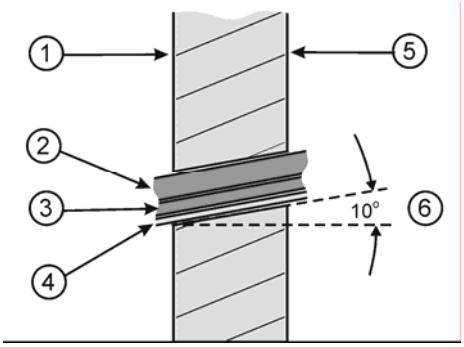
Install outdoor unit support in a position elevated at least 100 mm on a concrete pad, concrete block or wooden beams, in order to allow free water flow underneath.



1. Outside the building
2. Outdoor Unit
3. Floor
4. Concrete slab or equivalent
5. Wall
6. Anchor bolts
7. Serrated Rubber / Waffle Pad 40x80 mm

INTERCONNECTING TUBING

The tubing between the indoor and outdoor units consist of two copper tubes and an electric cable routed through a 60-mm wall opening. In addition, a drainage hose is installed between the indoor unit and the closest drainage point. Connect both sections, taking the shortest, most direct route.



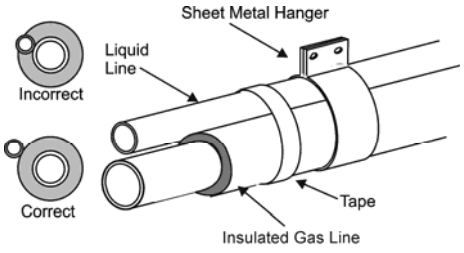
1. Outside wall
2. Gas (Vapor) Line
3. Liquid Line
4. Electric Cable
5. Inside wall
6. Incline Angle

Unit Installation

Installation Notes

1. When laying the tubing for the installation, make sure that the ends are sealed to prevent penetration of dirt, moisture etc. To prevent dust or moisture from entering the tubes, seal them with caps or masking tape. It is recommended to clean the inside space of the tubes with nitrogen before connecting them to the unit.
2. Whenever possible, avoid passing tubes through hot zones, such as walls next to ovens, chimneys, etc. In such cases, additional insulation or other means of protection should be employed.
3. Tubing route shall be kept in straight lines as much as possible. When installing, keep the number of tube bends to a minimum. If bends are necessary, perform them only by using professional tube benders and not manually.
4. Make sure that tubing is insulated on its entire length, including tube end and quick connectors, or flare-nuts, to avoid tube "sweating" and water dripping from it.
5. Tubing shall be of refrigerant grade, without any damage. Tube inside walls must be kept absolutely clean prior to and during installation operations.
6. The Gas line shall be individually insulated with a minimum 9mm (3/8") thick closed cell pipe insulation.
7. For diameters, length of liquid and gas lines, and height difference, see the table below for each model. If the liquid or gas tube diameters differs from the corresponding flare connector diameter (mounted on the unit), use a suitable reducing union for this purpose.

NOTE: it is not a requirement to insulate the liquid line unless it is exposed to direct sun or extreme ambient temperatures.



INSULATION OF THE GAS LINE

Unit Interconnecting Tubing Table

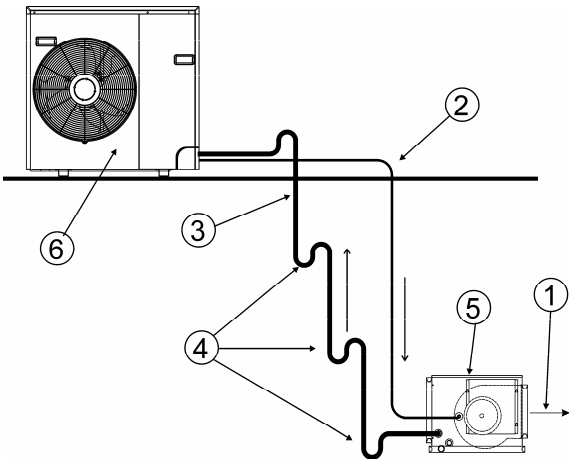
UNIT MODEL	CONNECTING LINE	TUBING LENGTH, UP TO – (IN METRES, ONE WAY)				MAXIMUM TUBING LENGTH	MAXIMUM HEIGHT DIFFERENCE
		10	15	20	25		
B007RS	Gas Liquid	15.88mm (⅝") 9.58mm (⅜")	15.88mm (⅝") 9.58mm (⅜")	19.05MM (¾") 9.58mm (⅜")	- -	20M	10M
B009RS	Gas Liquid	19.05MM (¾") 9.58mm (⅜")	19.05MM (¾") 9.58mm (⅜")"	19.05MM (¾") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	25M	10M
B012RS	Gas Liquid	19.05MM (¾") 9.58mm (⅜")	19.05MM (¾") 9.58mm (⅜")"	22.23mm (⅞") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	25M	15M
B015RS	Gas Liquid	19.05MM (¾") 9.58mm (⅜")	19.05MM (¾") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	25M	15M
B016RT	Gas Liquid	19.05MM (¾") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	25M	15M
B019RT	Gas Liquid	19.05MM (¾") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	22.23mm (⅞") 9.58mm (⅜")	25M	15M

Unit Installation

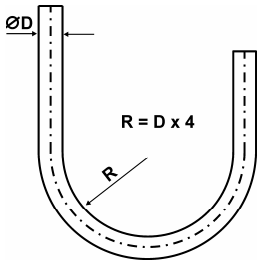
Recommendation for Interconnection Tubing Installation

Three possible versions are schematically illustrated:

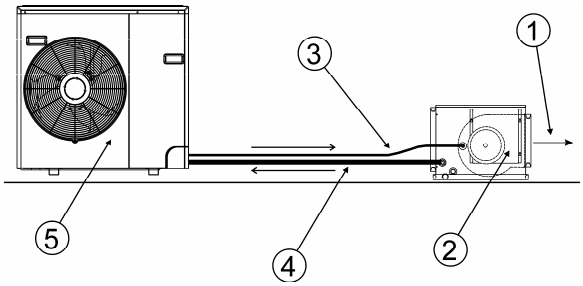
1) The outdoor unit installed above the indoor unit – such installation requires an oil trap in the gas line at the lowest point of the riser. The radius of the oil trap should be as short as possible. Horizontal runs of liquid line should follow the gas line (except for trap). In case the insulation must be partially removed for installation purposes, it is imperative that lines be fully insulated with after the installation has been completed.



1. Air
2. Liquid Line
3. Gas Line
4. Oil trap every 3m
5. Indoor Unit
6. Outdoor Unit



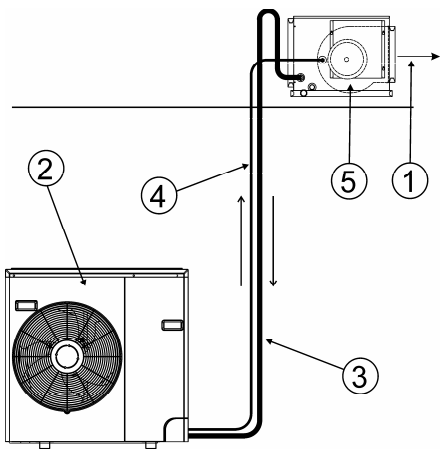
2) The units are installed at the same level – no trap is required.



1. Air
2. Indoor Unit
3. Liquid Line
4. Gas Line
5. Outdoor Unit

3) The outdoor unit is installed below the indoor unit – such installation requires an inverted gas line trap to be installed at the indoor unit. The top of the trap must be greater than the height of the indoor unit.

1. Air
2. Outdoor Unit
3. Gas Line
4. Liquid Line
5. Indoor Unit



Unit Installation

PIPE INSTALLATION

WARNING

This paragraph describes the necessary steps for setting the unit into operation. Be sure to follow the instructions, to assure proper functioning of the air conditioner.

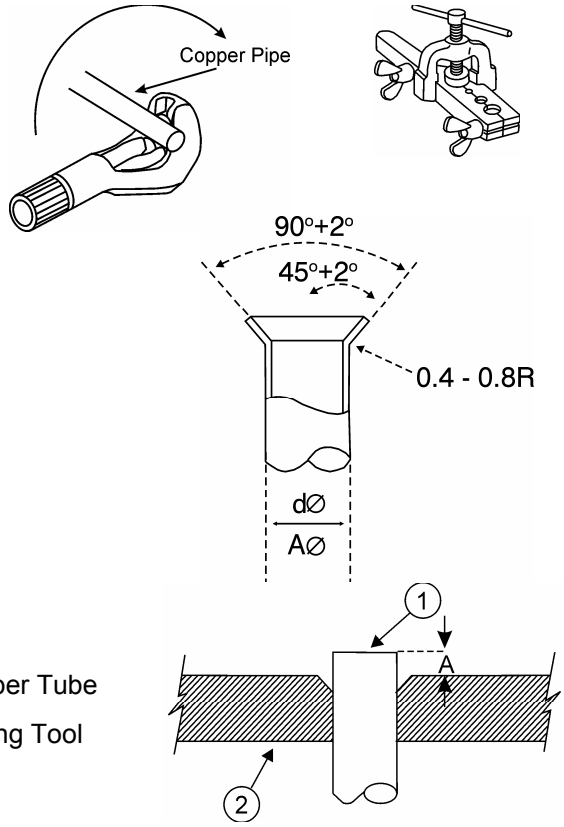
The outdoor unit is pre-charged with the correct amount of refrigerant. In extended runs, for additional refrigerant charge please refer to the outdoor unit name plate. This process shall be performed only by qualified refrigeration technicians with a professional charging set.

Flare Preparation

a) Cut the tube, using a tube cutter. Make sure that the cut is perpendicular to the tube axis. Ensure the pipe is de-burred and free of metal shavings

b) Slip the flare-nut over the tube, secure the tube in the flaring tool and perform the flare on the tube end. The tube projection length (A) from the flaring block varies with tube diameter and shall be set as indicated in the table.

c) Apply few drops of refrigeration oil to the tube before flaring.



Flare Depth (A)

A (mm)	TUBE OD
1.3	9.58mm (⅜")
1.9	15.88mm (⅝")
2.1	19.05mm (¾")

1. Copper Tube
2. Flaring Tool

Pipe Welding Preparation

The indoor / outdoor unit final connections are made using flared couplings. Where welded joints are required the following are the requirements.

1. Keep piping capped at ends when storing, handling and installing.
2. Use locally supplied, sealed, clean, refrigeration grade copper piping only.
3. Using a flat surface, hold down the pipe at one and roll out the requirements.

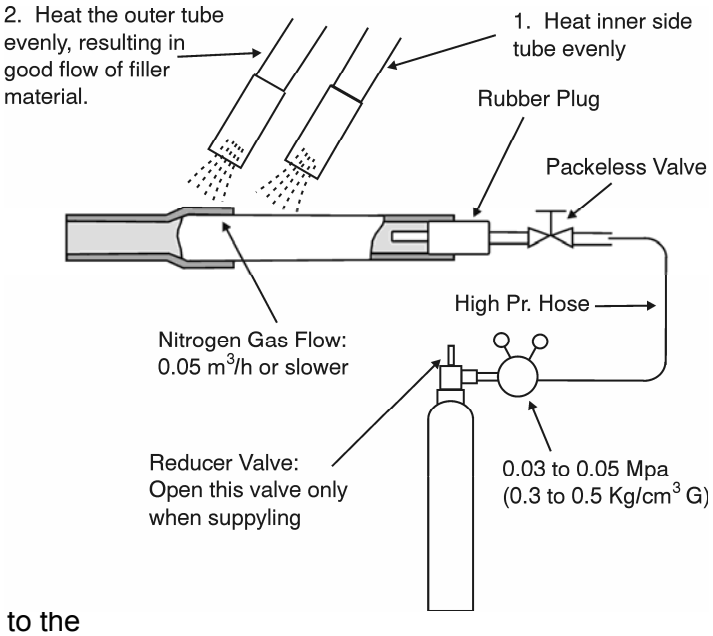
   NOTE: Take care not to dent, flatten or damage the pipe.
4. Use only a rotating wheel pipe cutter to cut the tube.
5. Use only a de-burring tool to de-bur the pipe ends.

Unit Installation

Pipe Welding

Take care when using brazing flame torch, ensure that hot pipes or flame do not cause a fire

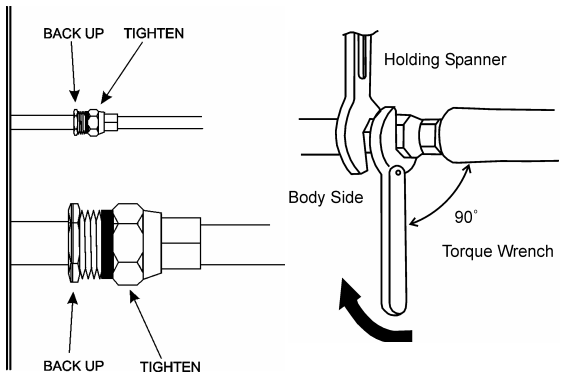
1. Use quality brazing rod suitable for copper to copper joins on refrigeration grade tubing.
2. Before brazing wrap a wet cloth around pipes next to the indoor unit to prevent hot pipes from melting foam insulation in the unit. Make sure the flame or heat from the flame does not contact the unit casing or wiring, or damage will occur
3. Heat the pipe up as per the illustration
4. Use nitrogen gas for flowing though piping during pipe brazing. If oxygen, acetylene or fluorocarbon gas is used, it will cause an explosion or poisonous gas.
5. Use a regulator valve when nitrogen gas flowing is performed during brazing. The gas pressure should be maintained within 0.03 to 0.05Mpa. If an excessively high pressure is used, it will cause an explosion.



Connecting the tubes

1. Connect and tighten the flare nuts to the refrigeration valves on the outdoor unit and to the male connectors of the indoor unit.
2. Coat the flared surfaces lightly with refrigeration oil to improve sealing.

   Note: First manually tighten the flare nuts, and then use a wrench. See table for tightening torque values.
3. Check for leaks. Use leak detect solution or soap solution for leak testing. An electronic leak detector is recommended.



Flare Sizes	Tube (Inches)		
	9.58mm (⅜")	15.88mm (⅝")	19.05mm (¾")
Torque (N.M.)	40-45	70-75	80-85

Unit Installation

EVACUATION AND SETTING IN OPERATION

a) Connect two charging hoses from the charging set to the outdoor unit as shown in the diagram below.

b) Connect the centre hose of the charging set to a vacuum pump.

c) **CAUTION** - turn on the vacuum pump and make sure that the low pressure gauge reading moves from 0 kPa to -100 kPa; then evacuate the system for a further 10 minutes.

If gauge needle does not move from 0 kPa to -100 kPa, this indicates a leak. Take the following measures: tighten all connections; if leaking stops when the tubing connections are tightened, proceed from step c. If leaking persists even after connections are tightened, detect the leak and repair it; be sure to proceed only after all leaks have been eliminated.

d) Close the valves of both the gas and liquid sides of the charging set and turn off the vacuum pump. Make sure that the gauge needle does not move for about 5 minutes.

e) Disconnect the charging hoses from the vacuum pump and from the service ports of both the three-way valves.

f) Replace the service port and valve caps of both tree-way valves and tighten them with a torque wrench; see table of torque values listed on the previous page.

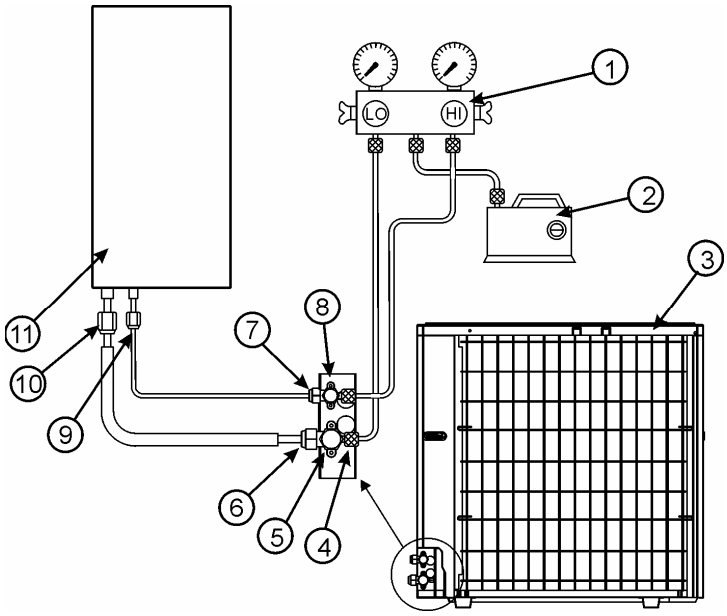
CAUTION

When performing the following steps, avoid any exposure to the service valve ports; remember that the system is under pressure.

g) Remove the valve caps from the service valves. Position both valves to “open” using a 5mm Hex/Allen key wrench. Open each valve by rotating the centre spindle in an anti-clockwise direction until fully back seated.

h) Replace valve caps of both service valves. Check for gas leakage with a leak detector or soapy water.

1. Charging Set
2. Vacuum Pump
3. Outdoor Unit
4. Service Port
5. Valve Cap
6. 3-Way Gas Valve
7. 3-Way Liquid Valve
8. Valve Cap
9. Indoor Unit
10. Gas Flare Connection
11. Liquid Flare Connection



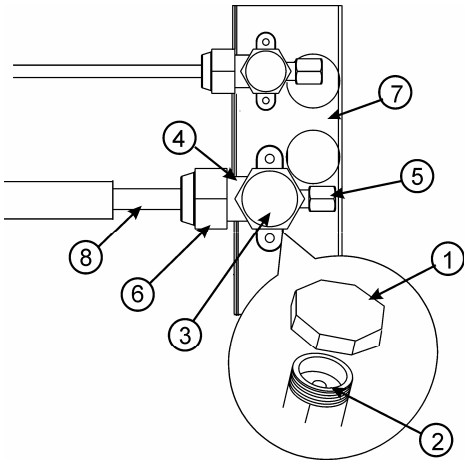
Unit Installation

ADDITIONAL CHARGE

1. Add 57 grams per meter of 9.53 (3/8") liquid line over and above the specified system pre-charged length. See the unit name plate for this information. DO NOT exceed the maximum equivalent pipe length on each unit.

2. Service port on the liquid service valve is not supplied on all units.

1. Valve Protection Plug
2. Insert 5mm Hex / Allen key to open/close the Refrigerant Valve
3. Valve Protection Cap
4. Refrigerant Valve
5. Service Port cap
6. Flare Nut
7. Valve Mounting Bracket
8. Copper Tube



DRAIN LINE INSTALLATION

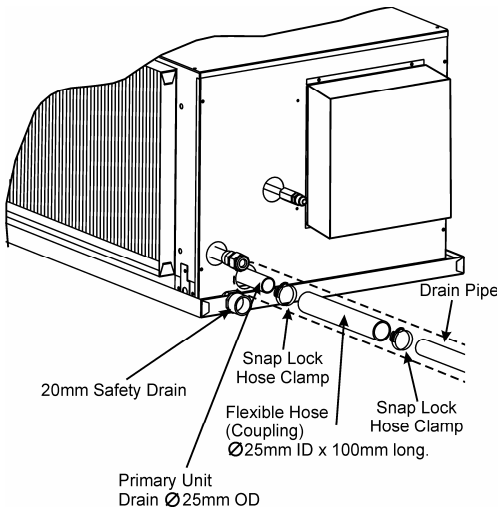
a. It is recommended to prepare a drainage point with rigid 20mm plumbing pressure PVC pipe tube by a qualified technician.

b. The drain run must be installed with a constant minimum down slope of 2% and equipped with a trap, at the indoor unit.

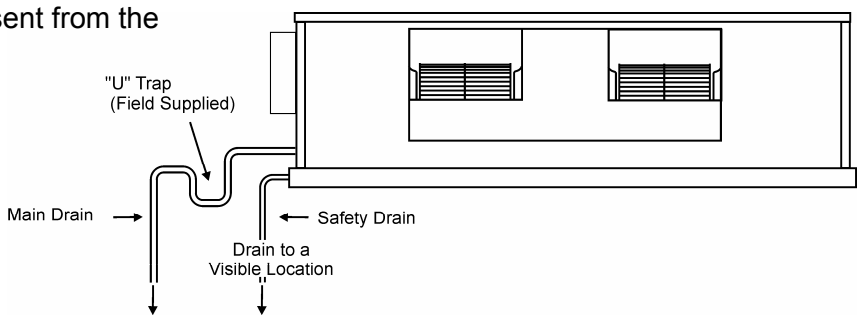
c. Install a "P" trap in the main drain.

d. Use the 25mm flexible plastic coupling hose provided to connect from the indoor unit primary drain point to the "P" trap and drain pipe. Secure with clamps.

e. To check the system, fill the condense tray with water and verify its free flow through the drain line.



Verify that no leaks are present from the drain line or unit.



Electrical

WARNING

1. Electrical connection shall be made only by authorized electricians and in accordance with local electrical requirements and codes.
2. The system must be grounded.
3. Single phase models and three phase models are available; for each of them, the necessary wiring diagram is shown.
4. Connect the unit to the main power supply as per its applicable wiring diagram.
5. Use supply wire sizes as per local electrical codes and regulations.

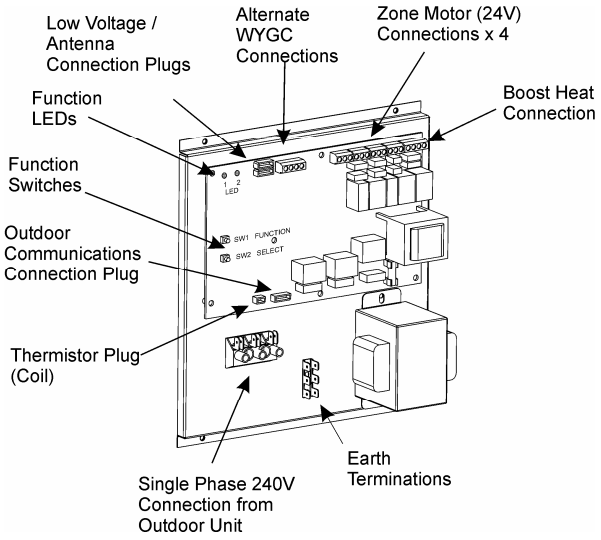
INDOOR UNIT CONNECTIONS

1. Power provision should be made from the power supply to the outdoor unit and isolated in conjunction with the outdoor unit.
2. Unit control cable from the indoor unit to the outdoor unit is a pre assembled loom with a plug each end (20meters).
3. Communications between the thermostat and unit can be completed with either of 3 options:

   RF (Radio Frequency) requires an antenna to be installed into one of the comms port. The thermostat will then have to be coded into the unit. See owner's manual for details.

   Or

   Low Voltage is the same looking control with the exception that there is a 20 meter interconnecting cable to be installed between the thermostat and the indoor unit.



Low voltage cable must be run at least 200 mm from the mains cables. Refer AS3000 Wiring rules.

Or

A field supplied **conventional HVAC thermostat** wired to the alternate thermostat connections. See the wiring diagram for more detailed instructions.

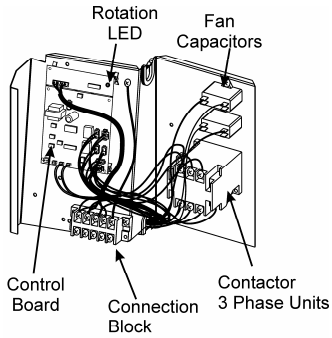
NOTE: The spare comms connection port can be used to link additional products using the single thermostat.

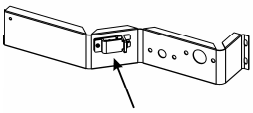
Electrical

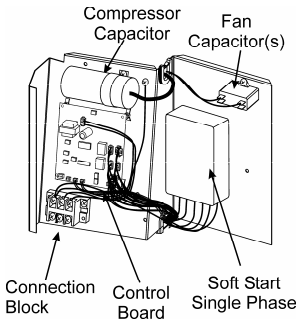
OUTDOOR UNIT CONNECTIONS

1. Install a dedicated circuit from the mains switch board. Circuit breaker requirements as per table below.
2. Connect the mains cables to the incoming connection block on the outdoor unit
3. Connect the low voltage control cable from the indoor unit to the comms port available on the outdoor PCB.

Use supply wire sizes as per local electrical codes and regulations.



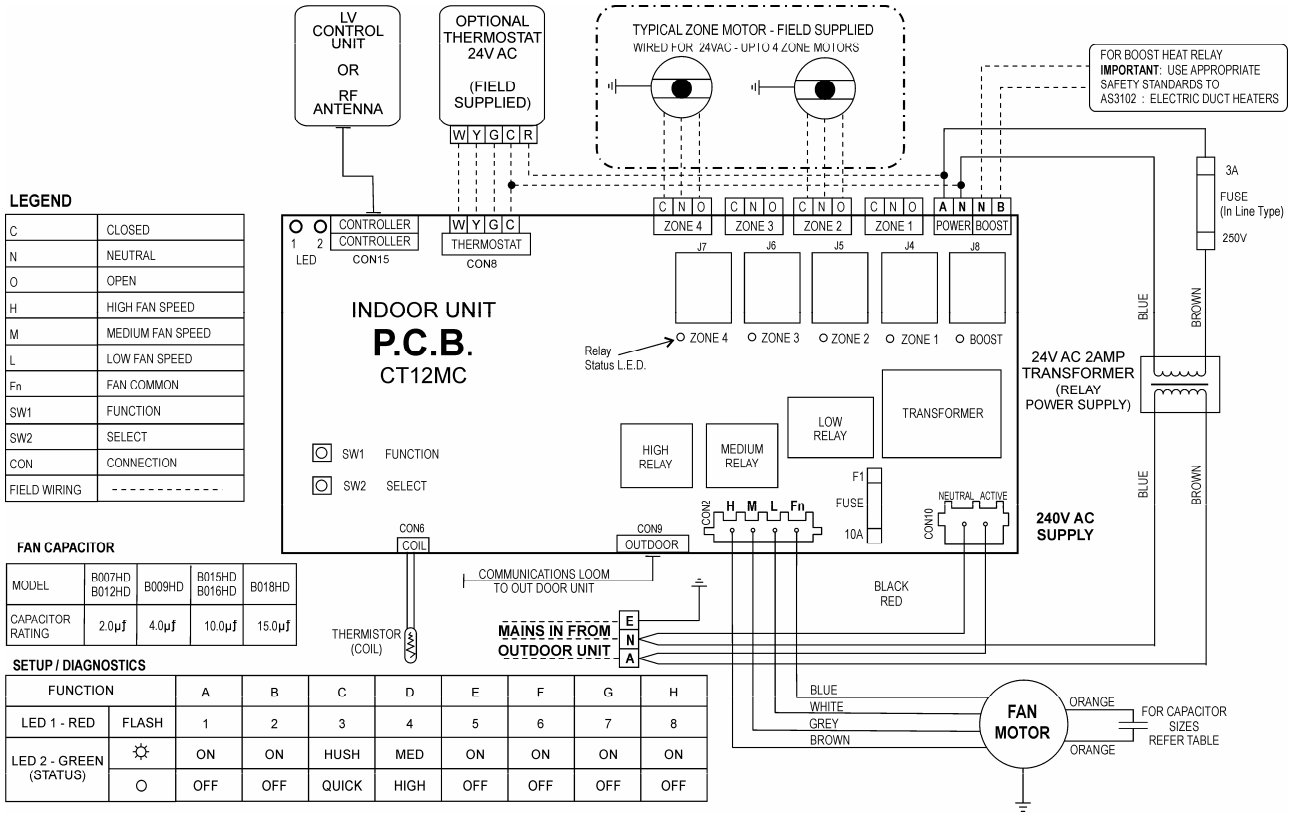




Model	Recommended Circuit Breaker	Full Load Amps	Recommended Cable Size
B007RS	25A	14.5	2.5mm
B009RS	32A	16.5	4.0mm
B012RS	32A	21.8	4.0mm
B015RS	40A	32.4	6.0mm
B016RT	3 x 32 A	14.8	4.0mm
B019RT	3 x 32 A	19.5	4.0mm

PLEASE NOTE: Circuit breaker and cable sizes are subject to cable run length – refer AS 3000 wiring rules

WIRING DIAGRAM - SINGLE PHASE INDOOR UNIT



LEGEND

C	CLOSED
N	NEUTRAL
O	OPEN
H	HIGH FAN SPEED
M	MEDIUM FAN SPEED
L	LOW FAN SPEED
Fn	FAN COMMON
SW1	FUNCTION
SW2	SELECT
CON	CONNECTION
FIELD WIRING	----------

FAN CAPACITOR

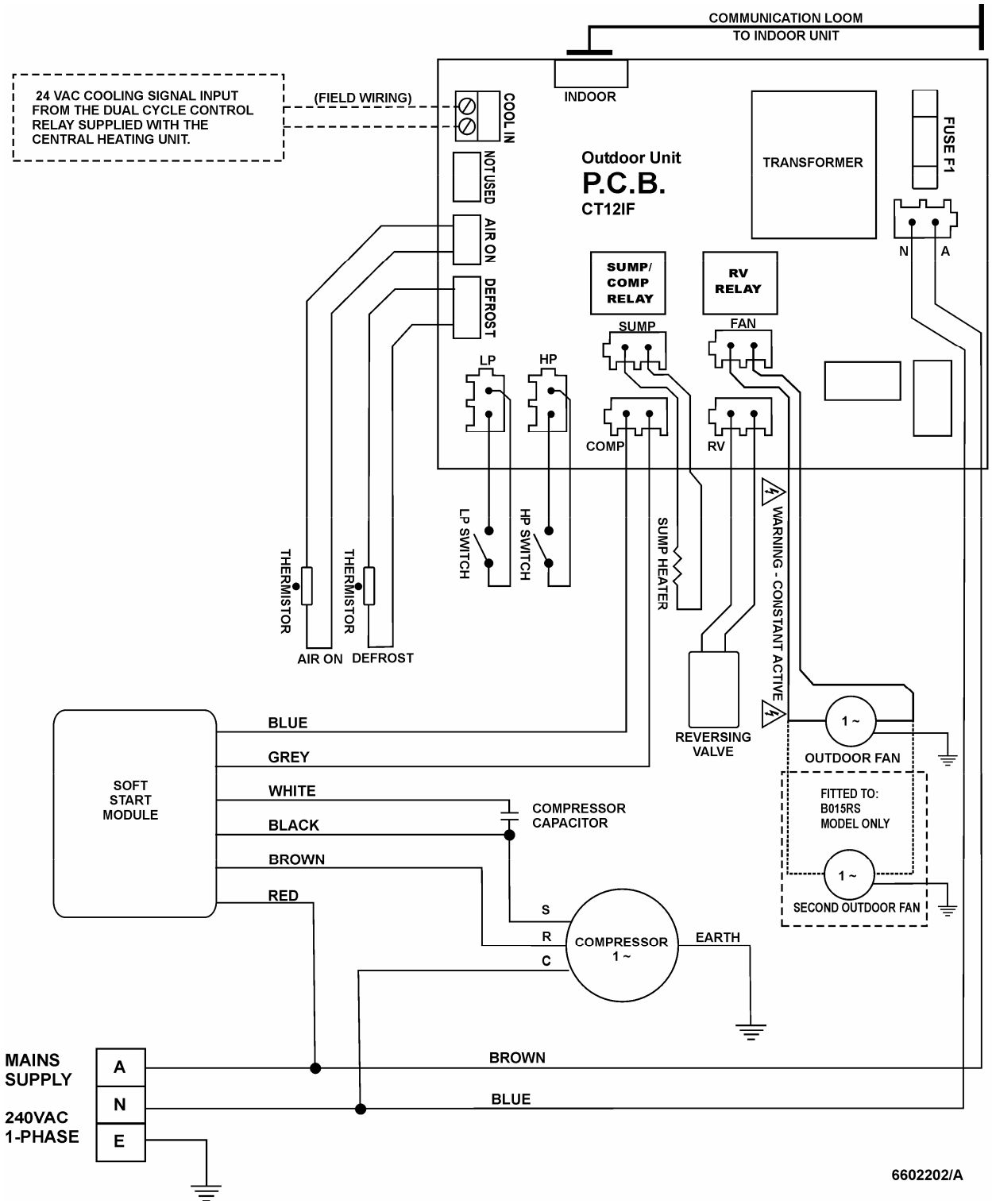
MODEL	B007HD B012HD	B009HD	B015HD B016HD	B018HD
CAPACITOR RATING	2.0µf	4.0µf	10.0µf	15.0µf

SETUP / DIAGNOSTICS

FUNCTION		A	B	C	D	E	F	G	H
LED 1 - RED	FLASH	1	2	3	4	5	6	7	8
LED 2 - GREEN (STATUS)	☼	ON	ON	HUSH	MED	ON	ON	ON	ON
	○	OFF	OFF	QUICK	HIGH	OFF	OFF	OFF	OFF

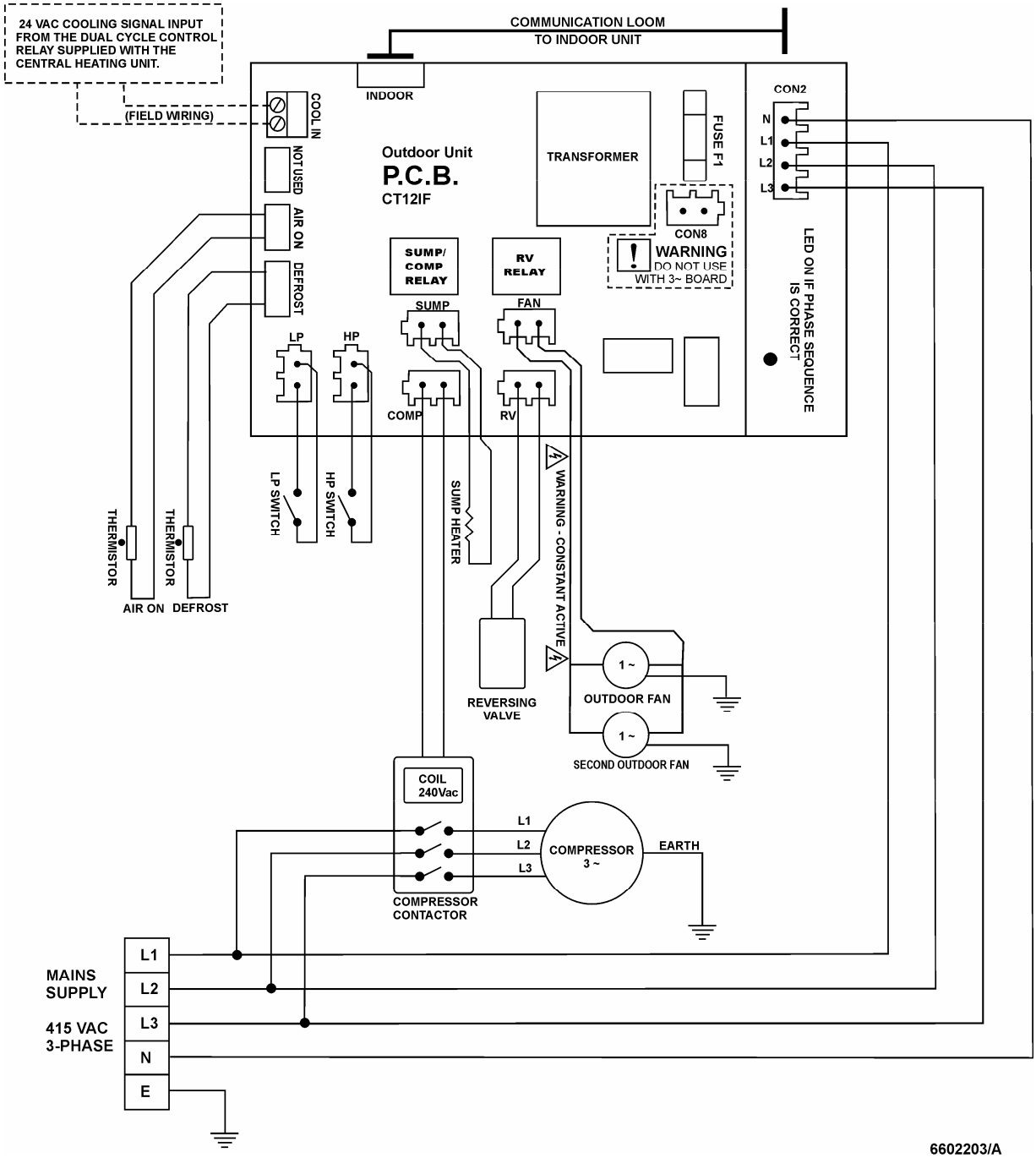
Electrical

WIRING DIAGRAM - SINGLE PHASE OUTDOOR UNIT



Electrical

WIRING DIAGRAM - 3 PHASE OUTDOOR UNIT



Control Installation

BEFORE STARTING

Before attempting to use the setup instructions for the controls system, make sure the antenna (RF units only) or the low voltage cable is connected, batteries have been correctly installed in the remote control (RF units only) and the 240 or 415 volt power has been turned on to the product.

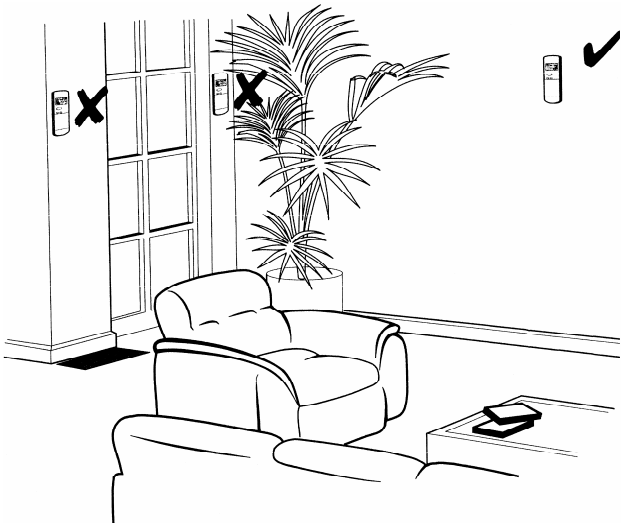
NOTE: Do not run the low voltage loom in long parallel runs with 240V mains cables. Keep the low voltage loom 200mm away from any long runs of mains wiring.

Cross over mains wiring at right angles.

Do not use existing access holes in wall cavities where 240V mains wiring exists. Drill a new access hole 200mm from the existing hole.

Installation

The thermostat must be installed approximately 1.5 metres above the floor level on a room wall which is most commonly used for best average sensing. For best operation do not locate it on an interior wall that is influenced by the outside wall.



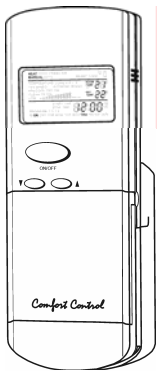
- Secure the Comfort Control cradle to the wall using the screws and plugs provided.
- For hard wired versions drill an access hole in the wall to bring the cable through the cradle into the thermostat. Once connected place rear cover on the thermostat and snap the control into the cradle.

For radio frequency controls install batteries and slide the Comfort Control into the cradle. The Comfort Control should remain in the cradle during normal operating conditions for optimum temperature thermostat control.

Do not locate Comfort Control near concealed hot or cold water pipes, warm air ducts, radiators, sunlight, televisions or draughts from hallways, stairways and fireplaces. These can all affect the temperature.

RF Control Units ONLY, ensure the antenna has been installed at least 500 mm clear of all metal masses. The transmissions between the RF thermostat Control and the unit control box are radio signals which are subject to interference. The primary causes for signal interference are:

- Metal Construction buildings or metal masses near the antenna.
- Incorrect location of the antenna
- Cordless RF door bells
- Other Faulty appliances
- Remote Control too close to computers
- Powerful radio scanners



If transmission cannot be achieved successfully a Low voltage cable control will need to be installed by the installer.

Control Installation

Setting Up the Thermostat

Radio Frequency

1) Place the 3 AAA batteries supplied into the thermostat. Make sure they are correctly rotated to ensure the thermostat screen initialises.

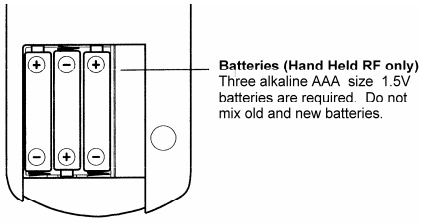
   Battery replacement requirements will be indicated via the thermostat screen.

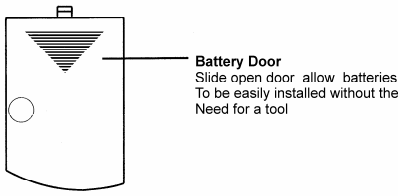
2) Fit the battery cover.

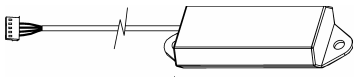
3) Before the RF thermostat will control the unit, it will need to be coded into the control board.

   See coding instructions below.

4) Make sure the antenna has been connected to the control board of the indoor unit. Ensure that it is at least 500mm from any metal mass. Do not fix the antenna to the indoor coil box.



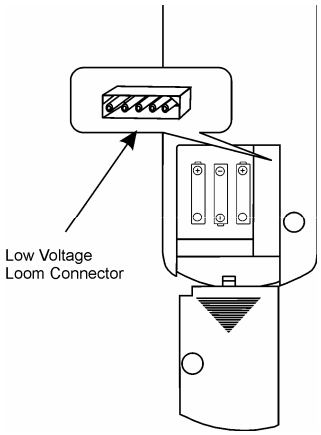




Low Voltage

Once the loom has been pulled through the wall and the cradle as been fixed to the wall:-

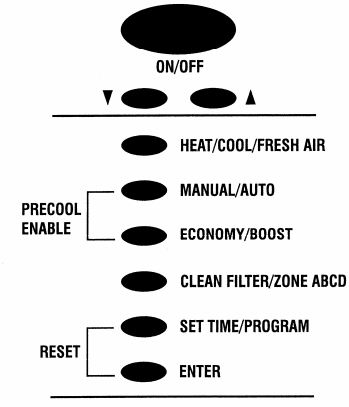
1) Connect the loom to the thermostat control
2) Fit the compartment cover and carefully snap the control into the scabbard
3) Turn the power on to the unit. The screen should be displayed
4) The communication code is set to the default code of 0016 and the unit should respond immediately. However there appears the control is not communicating, code the unit as below.



Coding The Unit

There is a 4 minute window from the timer the 240V has been turned on to the control board in which to code the unit.

1) Turn the 240V power ON to the unit. If the power has already been applied, turn the power OFF, then ON again.
2) Press the ▲ arrow and the ON/OFF button for 5 seconds until the word “CODE” flashes.
3) Code flashes for 15 seconds. When code stops flashing the unit is now ready to turn on.



For more information refer to the Owner’s Manual

Commissioning

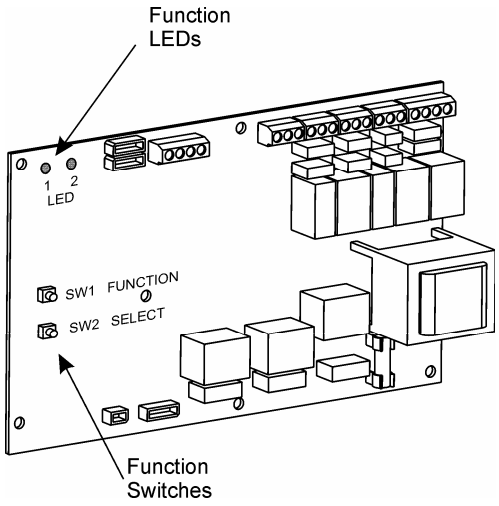
OPERATING PARAMETERS

Led Operation

FUNCTION		A	B	C	D	E	F	G	H
RED LED1	FLASH	1	2	3	4	5	6	7	8
GREEN LED2 (STATUS)	☼	ON	ON	HUSH	MED	ON	ON	ON	ON
	○	OFF	OFF	QUICK	HIGH	OFF	OFF	OFF	OFF

SETTING THE OPERATING PARAMETERS

1. To enter the setup mode press and hold both the 'FUNCT' and 'SELECT' buttons for a period of 5 seconds then release both buttons, a successful operation will be indicated by both 'Red Led1' and 'Green Led2' turning on for 2 seconds.
2. To modify system functions press the 'FUNCT' button to select the parameter/function to be adjusted, this is indicated by the number of consecutive flashes of 'Red Led1', (note: a long press of the 'FUNCT' button will result in the previous parameter/function being displayed i.e. going backwards.
3. To modify the value of each selected function, press the 'SELECT' button to toggle the value 'on or off', (see the "LED OPERATION" table for 'on/off' values).
4. To exit and save the setup mode press and release both 'FUNCT' and 'SELECT' buttons



NOTE: no parameter value change will be accepted until the setup mode has been exited via pressing both buttons. If not exited the system will self exit after a time out with no movement for a period of 30 secs, at this point the system will maintain the previous parameter settings

Parameters

Function (A):	Indoor fan on during defrost	***Function (E)***:	Indoor fan always on - Heat
Value:	0 = Off (default) 1 = On	***Value***:	0 = Off (default) 1 = On
Function (B):	Soft heat	***Function (F)***:	Indoor fan always on - Cool
Value:	0 = Off 1 = On (default)	***Value***:	0 = Off (default) 1 = On
Function (C):	Defrost Termination Cycle	***Function (G)***:	Boost heating mode
Value:	0 = Quick 1 = Hush (default)	***Value***:	0 = Off (default) 1 = On
Function (D):	Indoor fan speed select	***Function (H)***:	Outdoor economy mode
Value:	0 = High (default) 1 = Medium	***Value***:	0 = Off 1 = On (default)

Commissioning

***Function*: Installer commissioning mode (setup/service)**

Action: Hold 'FUNCT' button for 10 seconds then release to initiate commissioning mode sequence. This will be indicated by two flashes of the 'Red Led1'.

Result: Immediately after this has been selected the system will operate in the following mode;

All safety and fault sensing functions will be disabled for a period of 45 minutes or if power is interrupted or if the controller has been reset by the reset function, which ever occurs first.

***Function*: Test indoor (service)**

Action: Hold 'SELECT' button for 10 seconds then release to initiate indoor test sequence. This will be indicated by two flashes of the 'Green Led2'. Then press 'FUNCT' button within 5 seconds. This will be indicated by a constant illumination of 'Red Led1' during this cycle.

Result: 30 sec after this has been initiated the system will operate the following control sequence:-

Indoor Fan ON High for 15 sec, then OFF. Wait 3 sec, then Indoor Fan ON Medium for 15 sec, then OFF. Wait 3 sec, then Indoor Fan ON Low for 15 sec, then OFF. Wait 3 sec, then Indoor Fan ON High, Zone relays 1 ~ 4 = ON and Boost relay = ON. Wait for 30 sec, then Boost relay = OFF. Wait for 30 sec, then Zone relay 4 = OFF. Wait for 30 sec, then Zone relay 3 = OFF. Wait for 30 sec, then Zone relay 2 = OFF. Wait 30 sec, then Indoor Fan OFF and Zone relay 1 = OFF.

***Function*: Test outdoor (service)**

Action: Hold 'SELECT' button for 10 seconds then release to initiate indoor test sequence. This will be indicated by two flashes of the 'Green Led2'. Then press 'SELECT' button within 5 seconds. This will be indicated by a constant illumination of ' Green Led2' during this cycle.

Result: 60 sec after this has been initiated the system will operate the following sequence of controls:-

Compressor RUN for 10 sec, then Compressor STOP. Wait for 3 sec, then Reversing Valve ON for 10 sec, then Reversing Valve OFF. Wait 3 sec, then Outdoor Fan ON @ 50% speed for 15 sec, then ramp up to 100% speed over 15 sec, then ramp down to 40% speed over 15 sec, then hold at 40% speed for 5 sec, then Outdoor Fan OFF.

LED OPERATION AND INTERPRETATION

LED Effect: 'Green Led2' flicker every 1 second

Action: Successful indoor and outdoor PCB communication

LED Effect: 'Green Led2' flash for 1 second every 10 seconds

Action: Indoor and outdoor PCB communication is idle

LED Effect: 'Red Led1' flicker

Action: Successful indoor PCB and Handset or LV controller communication

LED Effect: 'Red Led1' flash for 1 second every 10 seconds

Action: Indoor PCB waiting for Handset or LV controller communication

Commissioning

COMMISSIONING CHECK LIST

Site

- ☐ Return panels and covers to their correct position and check that they are well secured.
- ☐ Ensure all service caps are fitted and correctly tightened.
- ☐ Attach the electrical wires and pipes to the wall with clamps.
- ☐ Check all the operations of the air-conditioner. Follow the operating manual for instruction.

Indoor unit

- ☐ Is the condensate drain fixed securely and has it been tested?
- ☐ Are all ducting connections secured and free from air leaks?
- ☐ Does the unit operate correctly?

Outdoor Unit

- ☐ Check for any abnormal noise or vibrations during operation of the air conditioner.
- ☐ Check that the noise, condensate drainage or air flow does not disturb the neighbors.
- ☐ Run the air-conditioner for both cooling and heating and check operation.

Communications

- ☐ Check the low voltage communication is transmitting instructions correctly.
- ☐ Check the RF communication between the portable remote control is consistent in all areas of the air conditioned space.
- ☐ See ***IMPORTANT NOTE*** for limitations with RF communications. Where communications are limited, a LV control option will have to be fitted.

IMPORTANT NOTE

To reduce the risk of possible RF interference, do not locate your RF control near any electrical equipment e.g. TV's computers, fridges, telecommunications and HI FI equipment or close to metal objects or window frames.

Other RF devices within your home can also cause interference such wireless door bells, gate or door openers, or perhaps baby monitors & intercoms. Such interference can impede the operation of your appliance.

Ensure the RF control unit is not exposed to excessive heat, humidity, moisture or dampness.

Commissioning

Customer Handover

Explain to the customer together with the operating instructions:

- ☐ How to remove, clean and replace the filter
- ☐ How to turn the air-conditioner on and off.
- ☐ How to choose between heating and cooling and how to set the desired temperature.
- ☐ How to set the program mode for controlled operating times
- ☐ How to operate the air conditioner from the controller.
- ☐ How to operate the zones (if fitted).
- ☐ Ensure the warranty details are completed correctly. The warranty section is found in the rear of the owner's manual.
- ☐ Ensure the model and serial number sticker is inserted in the warranty section of the owner's manual. The warranty section is found in the rear of the owner's manual.
- ☐ Give the customer the owner's manual.

Manufactured by
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