



Installation Manual

Domestic Hot Water Pre Plumbed Tank for Daikin Altherma R32 Monobloc Systems

UK.PPC150SL/R32
UK.PPC150/R32
UK.PPC180SL/R32
UK.PPC180/R32
UK.PPC210/R32
UK.PPC250/R32
UK.PPC300/R32

Installation Manual
Domestic hot water tank for Daikin Altherma R32 Monobloc systems

English

1. General safety precautions

1.1 About the documentation

The original documentation is written in English. All other languages are translations.

The precautions described in this document cover very important topics, follow them carefully.

The installation of the system, and all activities described in the installation manual and the installer reference guide MUST be performed by an authorised installer.

1.1.1 Meaning of warning and symbols



DANGER

Indicates a situation that results in death or serious injury



DANGER: RISK OF ELECTROCUTION

Indicates a situation that could result in electrocution.



DANGER: RISK OF BURNING

Indicates a situation that could result in burning because of extreme hot or cold temperatures.



DANGER: RISK OF EXPLOSION

Indicates a situation that could result in explosion.



WARNING

Indicates a situation that could result in death or serious injury.



WARNING: FLAMMABLE MATERIAL



CAUTION

Indicates a situation that could result minor or moderate injury.



NOTICE

Indicates a situation that could result equipment or property damage.



INFORMATION

Indicates useful tips or additional information.

1.2 For the installer

1.2.1 General

If you are NOT sure how to install or operate the unit, contact your dealer.



NOTICE

Improper installation or attachment of equipment or accessories could result in electric shock, short-circuit, leaks, fire or other damage to the equipment. Only use accessories, optional equipment and spare parts made or approved by Daikin.



WARNING

Make sure installation, testing and applied materials comply with applicable legislation (on top of the instructions described in the Daikin documentation).



CAUTION

Indicates a situation that could result minor or moderate injury. Wear adequate personal protective equipment (protective gloves, safety glasses,...) when installing, maintaining or servicing the system



WARNING

Tear apart and throw away plastic packaging bags so that nobody, especially children, can play with them. Possible risk: suffocation.



DANGER: RISK OF BURNING

- Do NOT touch the refrigerant piping, water piping or internal parts during and immediate after operation. It could be too hot or too cold. Give it time to return to normal temperatures. If you must touch it, wear protective gloves.
- Do NOT touch any accidental leaking refrigerant.



WARNING

Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.



CAUTION

Do NOT touch the air inlet or aluminium fins of the unit.



NOTICE

- Do NOT place any objects or equipment on top of the unit.
- Do NOT sit, climb or stand on the unit.



NOTICE

Works executed on the outdoor unit are best done under dry weather conditions to avoid water ingress.

In accordance with the applicable legislation, it might be necessary to provide a logbook with the product containing at least: information on maintenance, repair work, results of tests, stand-by periods,...

Also, at least, following information MUST be provided at an accessible place at the product:

- Instructions for shutting down the system in case of an emergency
- Name and address of fire department, police and hospital
- Name, address and day and night telephone for obtaining service

In Europe, EN378 provides the necessary guidance for this logbook.

1.2.2 Installation site

Provide sufficient space around the unit for servicing and air circulation.

- Make sure the installation site withstands the unit's weight and vibration.
- Make sure the area is well ventilated. Do NOT block any ventilation openings.
- Make sure the unit is levelled.

Do NOT install the unit in the following places:

- In potentially explosive atmospheres.
- In places where there is machinery that emit electromagnetic waves. Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
- In places where is a risk of fire due to the leakage of flammable gases (example: thinner or gasoline), carbon fibre, ignitable dust.
- In places where corrosive gas (example: sulphurous acid gas) is produced. Corrosion of copper pipes or soldered parts may cause the refrigerant to leak.

1.2.3 Water

If applicable. See the installation manual or installer reference guide of your application for more information.



NOTICE

Make sure water quality complies with EU Directive 98/93 EC.

1.2.4 Electrical



DANGER: RISK OF ELECTROCUTION

- Turn OFF all power supply before removing the switch box cover, connecting electrical wiring or touching electrical parts.
- Disconnect the power supply for more than 1 minute, and measure the voltage at the terminals of main circuit capacitors or electrical components before servicing. The voltage MUST be less than 50 V DC before you can touch electrical components. For the location of the terminals, see the wiring diagram.
- Do NOT touch electrical components with wet hands.
- Do NOT leave the unit unattended when the service cover is removed.



WARNING

If NOT factory installed, a main switch or other means for disconnection, having a contact separation in all poles provided full disconnection under overvoltage category III condition, MUST be installed in the fixed wiring.



WARNING

- ONLY use copper wires.
- Make sure the field wiring complies with the applicable legislation.
- All field wiring MUST be performed in accordance with the wiring diagram supplied with the product.
- NEVER squeeze bundled cables and make sure they do NOT come in contact with the piping and sharp edges. Make sure no external pressure is applied to the terminal connections.
- Make sure to install earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to install the required fuses or circuit breakers.
- Make sure to install an earth leakage protector. Failure to do so may cause electric shock or fire.
- When installing the earth leakage protector, make sure it is compatible with the inverter (resistant to high frequency electrical noise) to avoid unnecessary opening of the earth leakage protector.



NOTICE

Precautions when laying power wiring:



- Do NOT connect wiring of different thicknesses to the power terminal block (Slack in the power wiring may cause abnormal heat).
- When connecting wiring which is the same thickness, do as shown in the figure above.
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will damage the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.

2 About the box

2.1 Overview: Above the box

It contains information about:

- Removing the accessories from the unit

Keep the following in mind:

- At delivery, the unit MUST be checked for damage. Any damage MUST be reported immediate to the carrier's claims agent.
- Bring the packaged unit as close as possible to its final installation position to prevent damage during transport
- Prepare the path along which you want you bring the unit in advance.

3 Preparation

3.1 Overview: Preparation

This chapter described what you have to do and know before going on-site.

It contains information about:

- Preparing the installation site
- Preparing the water piping
- Preparing the electrical wiring

3.2 Preparing the installation site

The cylinder is to be installed vertically on a stable base which must be capable of supporting the weight when the cylinder is full of water.

The minimum recommended installation space is dependent on the specification of the cylinder, the slimline variants are recommended if available space is limited. Additional considerations should be made to allow space to mount expansion vessels. Full specification, weights and dimensions of the product range are provided in this booklet.

Access for maintenance of all equipment should be considered when position the unvented cylinder. Care should be taken that the immersion heater can be withdrawn for servicing if required, these are 375mm long. Building regulation G3 should always be followed when installing discharge pipework from the safety valves.

Any hot outlets which are higher than the cylinder will reduce in pressure by 0.1 bar for every 1m of height difference.

All exposed pipe work should be insulated and additional considerations should be taken to protect the unit from frost damage. Particular care is needed if the cylinder is to be installed in an exposed location such as an outhouse or garage.

3.3 Preparing water piping

3.3.1 Water circuit requirements



NOTICE

In case of plastic pipes, make sure they are fully oxygen diffusion tight according to DIN 4726. The diffusion of oxygen into the piping can lead to excessive corrosion.



NOTICE

In case of plastic pipes, make sure they are fully oxygen diffusion tight according to DIN 4726. The diffusion of oxygen into the piping can lead to excessive corrosion.

- **Connecting piping—Legislation.** Making all piping connections in accordance with the applicable legislation and the instructions in the “installation” chapter, respecting the water inlet and outlet.
- **Connecting piping—Force.** Do NOT use excessive force when connecting the piping. Deformation of the piping can cause malfunctioning of the unit.
- **Connecting piping—Tools.** Only use appropriate tooling to handle brass, which is a soft material. If NOT, pipes will get damaged.
- **Connecting piping—Air, moisture, dust.** If air, moisture or dust gets into the circuit, problems may occur. To prevent this:
 - Only use clean pipes.
 - Hold the pipe end downwards when removing burrs.
 - Cover the pipe end when inserting it through a wall, to prevent dust and/or particles entering the pipe.
 - Use a decent thread sealant to seal connections.
- **Glycol.** We recommend using anti freeze valves instead of glycol. For those projects where antifreeze valves cannot be installed in the system, Propylene glycol can be used. Note that inhibitor should always be added to the circuit.
- **Field supply components—Water pressure and temperature.** Check that all components in the field piping can withstand the water pressure and water temperature.
- **Drainage—Low points.** Provide drain taps at all low points of the system in order to allow complete drainage of the water circuit.
- **Non-brass metallic piping.** When using non-brass metallic piping, insulate the brass and non-brass properly, so that they do NOT make contact with each other. This is to prevent galvanic corrosion.
- **Domestic hot water tank—Capacity.** To avoid stagnation of water, it is important that the storage capacity of the domestic hot water tanks meets the daily consumption of domestic hot water.
- **Domestic hot water tank—After installation.** Immediately after installation, the domestic hot water tank must be flushed with fresh water. This procedure must be repeated at least once a day the first 5 consecutive days after installation.
- **Domestic hot water tank—Standstills.** In cases where during longer periods of time there is no consumption of hot water, the equipment MUST be flushed with fresh water before usage.
- **Domestic hot water tank—Pressure relief valve.** A pressure relief valve (part of the inlet control group) with an opening pressure of 6 bar prevents excessive water pressure in the water circuit.
- **Domestic hot water tank—Temperature and pressure relief valve.** The temperature and pressure relief valve prevents excessive water temperature



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable legislation.
- Make electrical connections to the fixed wiring
- All components procured on-site and all electrical construction MUST comply with the applicable legislation

3.4 Preparing electrical wiring

3.4.1 About preparing electrical wiring



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable legislation.
- Make electrical connections to the fixed wiring.
- All components procured on-site and all electrical construction MUST comply with the applicable legislation.



WARNING

ALWAYS use multicore cable for power supply cables.

3.4.2 Safety device requirements

The immersion heater in the domestic hot water tank is equipped with a thermal protector (Set at 95°C).



WARNING

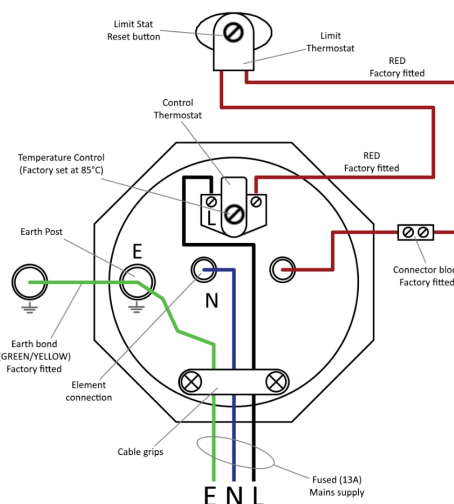
The switch box lid must only be opened by a licensed electrician. Switch off the power supply before opening the switch box lid.



NOTICE

Do NOT install heaters without thermal cut-outs.

To reset the thermal protector: first check possible reasons for the thermal cut-out button being released and when solved press the button located on the thermal protector.



The power supply must be protected with the required safety devices, i.e. a main switch, a slow blow fuse on each phase and an earth leakage protector in accordance with the applicable legislation.

Selection and sizing of the wiring should be done in accordance with the applicable legislation based on the information mentioned in the table below.

Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by a qualified personnel according to local laws and regulations and this manual. An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.

Fuse	Minimum circuit ampacity	Recommended fuses	Power supply
Field supply	13A	16A	1~ 50Hz 220-240 V

4 Installation

4.1 Overview: Installation

This chapter describes what you have to do and know on-site to install the systems.

Typical workflow

Installation typically consists of the following stages:

1. Siting the domestic hot water tank.
2. Connecting the water piping.
3. Connecting the electrical wiring.
4. Finishing the domestic hot water tank installation.

4.2 Siting the domestic hot water tank

4.2.1 Installing the domestic hot water tank

1. Check if all domestic hot water tank accessories are enclosed
2. Place the domestic hot water tank on a level surface. Make sure the tank is mounted level.

4.3 Connecting the water piping

4.3.1 About connecting the water piping

Typical workflow

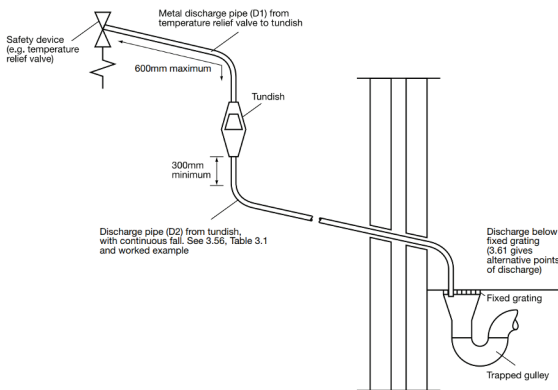
Connecting the water piping typically consists of the following stages:

1. Connecting the water piping.
2. Filling the domestic hot water tank
3. Insulating the water piping.

4.3.2 Connect the water piping

Position the inlet control group so that the discharge from both safety valves can be joined together via a 15mm end feed Tee. Connect the tundish and route the discharge pipe. The discharge pipe work must be routed in accordance with Part G3 of schedule 1 of the Building Regulations. The information that follows is not exhaustive and if you are in doubt you should seek advice. The two safety valves will only discharge water under fault conditions. When operating normally water will not be discharged. The tundish should be vertical, located in the same space as the unvented hot water storage system and be fitted as close as possible to, and lower than, the safety device, not more than 600mm of pipe between the valve outlet and the tundish.

Any discharge should be visible at the tundish. The tundish should be located such that and discharge is visible. In addition, where discharges from safety devices may not be apparent, i.e. people with impaired vision or mobility, consideration should be given to the installation of a suitable safety device to warn when discharge takes place i.e. electronically operated.



WARNING

- Do NOT install any valves between the domestic hot water tank and relief valves/expansion vessel
- Do NOT install shut-off valves between expansion relief valve and the domestic hot water tank



NOTICE

- Where the secondary return circuits are used, an additional expansion vessel may be required.
- All pipework and fittings must be flushed free of flux and debris prior to installing the domestic hot water tank kit. Failure to do this may cause irreparable damage to the tank kit controls. Flush the system by opening the hot water tap.
- The tundish pipework must be a 22 mm metal pipe with a minimal vertical length of 300 mm below the tundish before any elbows or bends in the pipework. All pipework must have a continuous fall of 1 in 200 thereafter. Maximum permitted (equivalent) length of 22 mm pipework is 9m. Each bend or elbow is equivalent to 0.8m of pipework.

Sizing of copper discharge pipe D2 for common temperature relief valve outlet sizes:

Valve outlet size	Discharge pipe size D1	Discharge pipe size D2 from tundish	Maximum resistance (a)	Resistance created by each elbow or bend
15 mm	15 mm	22 mm	Up to 9 m	0.8 m

(a) The maximum allowed resistance is expressed as a length of straight pipe (i.e. no elbows or bends).

If in any doubt, refer to Building Regulations G3.

Before installation

Locate the domestic hot water tank in a suitable to facilitate the installation of water supply, discharge fittings and pipework. It is therefore recommended to first read through this whole procedure.

In the box all the needed components for G3-compliance have been installed from the factory.

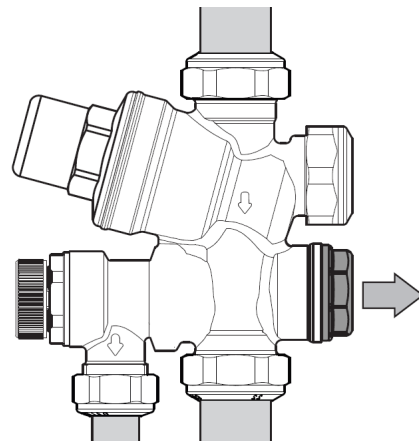
1. Connect the cold water mains to the pipework



NOTICE

The temperature and pressure valve is factory installed on the tank. Do NOT remove the temperature and pressure valve.

2. Connect the hot water outlet from the tank to the hot water means of the house
3. Connect a metal discharge pipe from the tundish. Refer to "Discharge pipe requirements" in this chapter. All pipework must have a continuous fall and be fitted conforming to the requirements of the building regulations G3.
4. The expansion vessel must be connected to the valve block: Remove the plug (¾—female) (see illustration below) and use appropriate pipework to connect the expansion vessel in a vertical position and fully supported for its weight.



WARNING

The discharge pipes from the pressure relief valves MUST terminal in a safe and visible position without forming any risk to persons in the vicinity.



WARNING

- Discharge piping, tundish, drain valves, etc. must be positioned away from any electrical components.
- The discharge pipe away from the tundish must terminate in a safe, visible position without forming any risk to persons in the vicinity.

- After completing the installation, the installer must complete the Installation, commissioning and service record log book, found at the end of this document.

4.3.3 Filling the domestic hot water tank

- Open every hot water tap in turn to purge air from the system pipework.
- Open the cold water supply valve.
- Close all water taps after all air is purged.
- Check for water leaks.
- Manually operate the temperature and pressure relief valve of the domestic hot water tank to ensure a free water flow through the discharge pipe.



NOTICE

To operate the system, the domestic hot water tanks needs to be filled completely. Turning on the system when the tank is not full can damage the integrated immersion heater and cause electrical errors.

On-Board Pump: If there is no possibility for water circulation on the secondary side, an automatic bypass valve should be fitted. Water circulation could be via a towel rail, a by-pass valve or a radiator without a TRV.

4.3.4 Insulating the water piping

The piping in the complete water circuit MUST be insulated to prevent reduction of heating capacity.

4.4 Connection of electrical wiring



DANGER: RISK OF ELECTROCUTION



WARNING

ALWAYS use multicore cable for power supply cables.

Immersion heater comes complete with integral control thermostat and a high limit cut-out. If a replacement is required please order them from Daikin UK, installation of a non-approved immersion may affect your warranty.

Electrical supply to the immersion heater must be installed by a qualified electrician. The fuse rating should be sized correctly to suite the heater's duty and isolators must be double pole to BS 3456.

Correct cable sizing must be carried out based on the power, cable length and cable enclosures however in most domestic applications 2.5mm² cable is suitable. Heat resistance sheathed flex complying to BS 6141:1981 should be used.

Do not operate the immersion heater if any cleaning agents are in the cylinder as this will also cause premature failure of the element immersion.

4.4.1 About electrical compliance

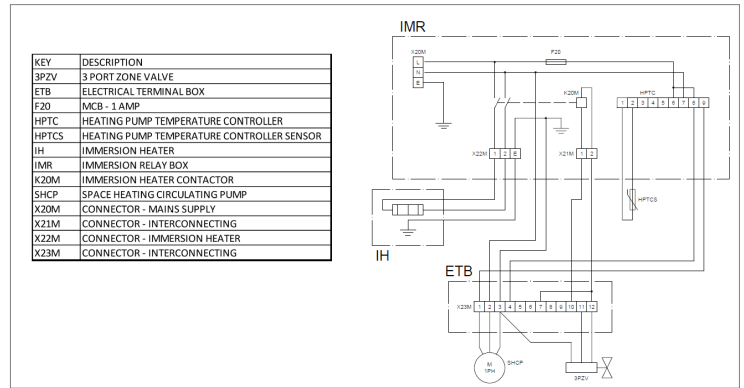
Equipment complying with EN/IEC 61000-3-12 (European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input currents >16 A and ≤75 A per phase.

4.4.2 Overview of wiring connections

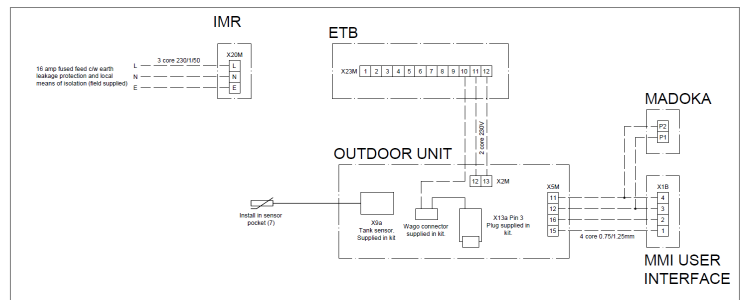
- Cable section 2.5 mm²
- Minimum cable section 0.75 mm; maximum length: 20 m.
- Cable section 0.75 mm² to 1.25 mm²; maximum length: 500 m. Applicable for both single user interface and dual use interface connection.
- Cable section 0.75 mm² to 1.25 mm²; maximum length: 50 m. voltage-free contact shall ensure the minimum applicable load of 15 V DC, 10mA.
- Minimum cable section 0.75 mm²; maximum length 10m.
- The thermistor and connection wire 12m are pre installed on the domestic hot water tank.

4.5 Wiring Connections

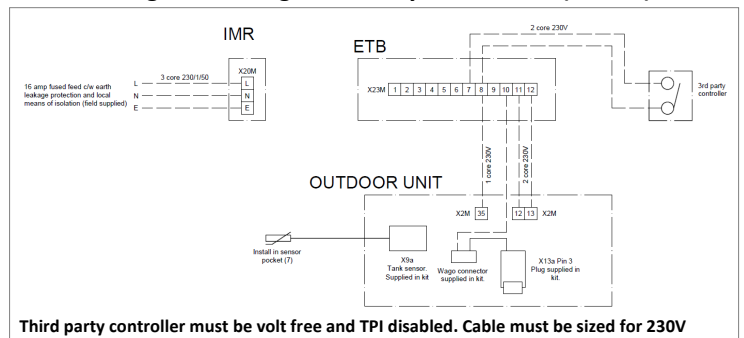
4.5.1 Factory Fitted Wiring



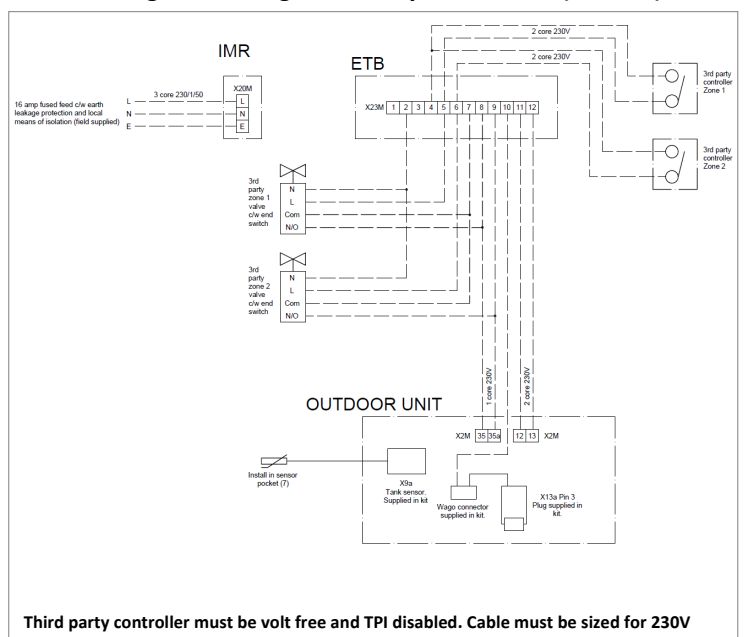
4.5.2 Wiring when using Madoka (BRC1HHD) Controller



4.5.3 Wiring when using Third Party Thermostat (1 Zone)



4.5.4 Wiring when using Third Party Thermostat (2 Zones)



NOTICE

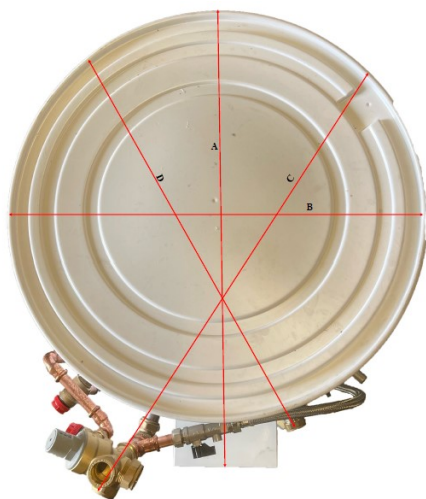
Refer to the Appendix to view these diagrams in larger print.

4.5.5 Parts List

	1. Cold Feed	6. Heating Return	A. Temp Relief Valve	F. Filling Loop	K. Magnetic Filter	
	2. Balanced Cold	7. Heat Pump Flow	B. Cold Inlet Manifold	G. Immersion Heater	L. Heating Circulator	
	3. Expansion Vessel	8. Heating Return	C. Relay Enclosure	H. Air Vents	M. 3 Port Valve	
	4. Secondary Return	9. Heat Pump Return	D. Dixell Temp Control	I. Wiring Centre	N. Isolating Valve	
	5. Hot Outlet	10. Heating Flow	E. Tundish	J. Pressure Gauge		

4.5.6 Plan View and Dimensions

Allow 300mm space in front for servicing immersion heater.

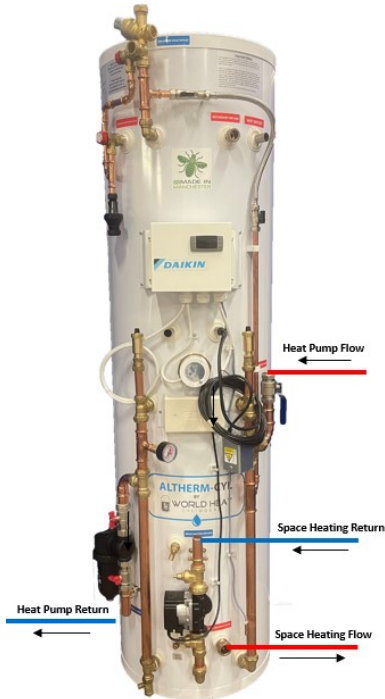


Dimension	475mm Diameter (Slimline) 150L & 180L	550mm Diameter (Standard) 150L, 180L, 210L & 250L	600mm Diameter 300L
A	600mm	660mm	710mm
B	480mm	550mm	605mm
C	590mm	650mm	750mm
D	500mm	560mm	620mm

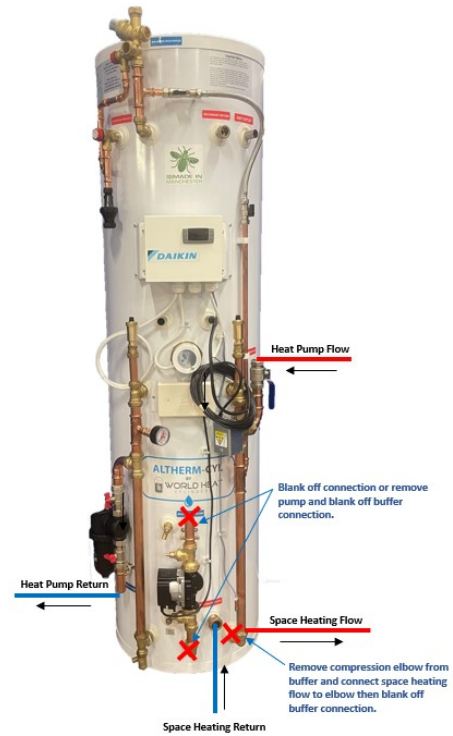
4.5.6 Hydraulic Separator or Volumiser Vessel

This pre plumbed cylinder is supplied with the vessel which can be used as hydraulic separator, between the primary and secondary heating circuits, or just as a volumiser.

From the factory, the pre plumbed cylinder will be supplied with the vessel as a hydraulic separator. In order to change the vessel to function only as a volumiser, use the following configuration.



Daikin Pre-Plumbed Cylinder with Hydraulic Separation (Factory Default)



Daikin Pre-Plumbed Cylinder with Inline Volumizer

NOTICE

On-Board Pump: The pre plumbed cylinder is supplied with an on-board water circulation pump. If the vessel is used as a hydraulic separation and if there is no possibility for water circulation on the secondary side, an automatic bypass valve should be fitted. Water circulation could be via a towel rail, a by-pass valve or a radiator without a TRV.

5 Commissioning



WARNING

ALWAYS use multicore cable for power supply cables.



CAUTION

Indicates a situation that could result minor or moderate injury.

5.1 Overview: Commissioning

Typical workflow

Commissioning typically consists of the following stages:

1. Checking the “checklist before commissioning”.
2. Performing a test run for the system.
3. Checking the “Checklist before commissioning”.

5.2 Checklist before commissioning

After the installation of the unit, first check the following items. Once all below checks are fulfilled, the unit MUST be closed, ONLY then can the unit be powered up.

<input type="checkbox"/>	Pre-plumbed pipework is free from any leaks.
<input type="checkbox"/>	Expansion vessel is set to 3 bar.
<input type="checkbox"/>	There are NO water leaks on the connections including any which are factory made.
<input type="checkbox"/>	Domestic hot water tank is properly mounted.
<input type="checkbox"/>	System is properly earthed and the earth terminals are tightened.
<input type="checkbox"/>	The fuses or locally installed protection devices are installed according to this document, and have not been bypassed.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.
<input type="checkbox"/>	The immersion heater circuit breaker F2B on the switch box is turned ON.
<input type="checkbox"/>	The shut-off valves are properly installed and fully open.
<input type="checkbox"/>	The pressure relief valve purges water when opened.
<input type="checkbox"/>	The minimum water volume is guaranteed in all conditions.
<input type="checkbox"/>	Be sure field wiring has been carried out according to the instructions described.

5.3 Checklist during commissioning



To perform a wiring check.

6 Hand-over to the user

Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- Make sure that the user has printed documentation and ask him/her to keep it for future reference.
- Explain the user how to properly operate the system and what to do in case of problems.
- Show the user what to do in relation to maintaining the unit.

7 Maintenance and service



NOTICE

Maintenance **MUST** be done by an authorized installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.

This chapter contains information about:

- the yearly maintenance of the domestic hot water tank.



DANGER: RISK OF ELECTROCUTION



DANGER: RISK OF BURNING



NOTICE: Risk of electrostatic discharge

Before performing any maintenance or service work, touch a metal part of the unit in order to eliminate static electricity and to protect the PCB



WARNING

- Before carrying out any maintenance or repair activity, **ALWAYS** switch off the circuit breaker on the supply panel, remove the fuses or open the protection devices of the unit.
- Make sure you do **NOT** touch a conductive section.
- Do **NOT** rinse the outside of the unit. This may cause electric shocks or fire.

7.1 Draining the cylinder

Before draining the cylinder, the immersion heater should be isolated to prevent the element from burning out. Shut the cold feed ball valve to isolate the cylinder from the cold feed. Securely connect a hose pipe to the drain connection on the cylinder and take to a nearby waste or soak-away. The drain point should be below the level of the cylinder to ensure that the maximum amount of water is drained from the cylinder. The nearest hot tap should be opened to allow air back into the system and prevent a vacuum being pulled in the cylinder. Care must be taken as the draining water may be hot.

7.2 Annual maintenance

Check the following at least once a year:

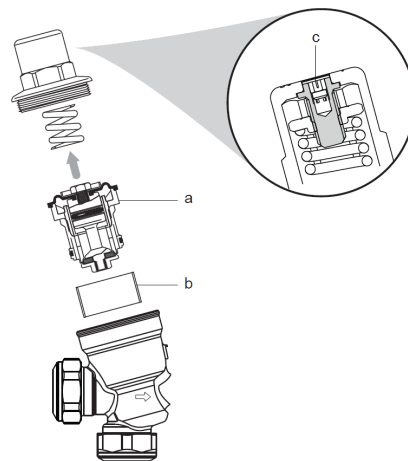
- Temperature and pressure relief valve
- Inlet control group
- Relief valve of the domestic hot water tank
- Descaling
- Chemical disinfection
- Switch box
- Pressure relief valve hose
- Immersion heater of the domestic hot water tank

Temperature and pressure relief valve

Check the correct operation of the temperature and pressure relief valve. Manually operate the temperature and pressure relief valve to ensure free water flow through the discharge pipe. Turn knob left.

Inlet control group

The inlet control group is a pressure reducing valve with integrated non-return valve and line strainer. Depending on local water conditions, annual inspection of the integral line strainer, pressure reducing valve cartridge and seating may be necessary.



- A) Cartridge
- B) Strainer
- C) Calibration screw

- Unscrew the plastic cover of the pressure reducing valve.
- Extract the cartridge with the aid of long nosed pliers to grip the head of the set screw.
- Remove the strainer element.
- Clean the strainer element and cartridge under clean running water
- Replace if the strainer or cartridge are damaged.
- Refit the strainer, cartridge and cover.
- If the cartridge has been replaced, calibrate the pressure reducing valve.

- Close the downstream isolating valve (field supply).

- Install a hex key on the calibration screw in the centre of the plastic cover. Rotate it clockwise to increase the outlet pressure and anticlockwise to reduce it.

Relief valve of the domestic hot water tank (field supply).

Open the valve and check the correct operation. **Water may be very hot!**

Checkpoints are:

- The water flow coming from the relief valve are high enough, no blockage of the valve or in between piping is suspected.
- Dirty water coming out of the relief valve.
 - Open the valve until the discharged water does not contain dirt anymore.
 - Flush and clean the complete tank, including the piping between the relief valve and cold water inlet.

To make sure this water originates from the tank, check after a tank heat up cycle.

It is recommended to do this maintenance more frequently.

Descaling

Depending on water quality and set temperature, scale can deposit on the heat exchanger inside the domestic hot water tank and can restrict heat transfer. For this reason, descaling of the heat exchanger may be require at certain intervals.

Chemical disinfection

If the applicable legislation requires a chemical disinfection in specific situations, involving the domestic hot water tank, please be aware that the domestic hot water tank is a stainless steel cylinder containing an aluminium anode. We recommend to use a non-chloride based disinfection approved for use with water intended for human consumption.



NOTICE

When using means for descaling or chemical disinfection, it must be ensured that the water quality remains compliant with EU directive 98/83 EC.

Switch box

Carry out a thorough visual inspection of the switch box and look for obvious defects such as loose connections or defective wiring.

Check for correct operation of contactor K3M by use of an ohmmeter. All contacts of this contactor must be in open position.

Pressure relief valve hose

Check the condition and routing of the hose. Water must drain appropriately from the hose.

Booster heater of the domestic hot water tank

It is recommended to remove lime build up on the booster heater to extend its life span, especially in regions with hard water. To do so, drain the domestic hot water tank, remove the booster heater from the domestic hot water tank and immerse in a bucket (or similar) with lime-removing product for 24 hours.

10 Troubleshooting

10.1 Overview: Troubleshooting

This chapter describes what you have to do in case of problems. It contains information about solving problems based off symptoms.

Before troubleshooting

Carry out a thorough visual inspection of the unit and look for obvious defects such as loose connections or defective wiring.

10.2 Precautions and troubleshooting



WARNING

When carrying out an inspection of the switch box of the unit, ALWAYS make sure that the unit is disconnected from the mains. Turn off the respective circuit breaker.

When a safety device was activated, stop the unit and find out why the safety device was activated before resetting it. NEVER bridge safety devices or change their values to a value other than the factory default setting. If you are unable to find the cause of the problem, call your dealer.



DANGER: RISK OF ELECTROCUTION



WARNING

Prevent hazards due to inadvertent resetting of the thermal cut-out: this appliance MUST NOT be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly turned ON and OFF by the utility



DANGER: RISK OF BURNING

10.3 Solving problems based on symptoms

10.3.1 Symptom: No water flow from hot taps

Possible causes	Corrective action
The main water supply is OFF	The cold water inlet pressure reducing valve is not fitted properly.
The strainer is blocked.	Turn OFF the water supply, remove and clean the strainer of the Inlet control group (field supply).
The cold water inlet pressure reducing valve is not fitted properly.	Check and refit as required.

10.3.2 Symptom: The water from the hot taps is cold

Possible causes	Corrective action
The thermal cut-out(s) has/have operated.	Check and reset the button(s)
The unit is NOT operating.	Check unit operation. Refer to the manual delivered with the unit. If any faults are suspected, contact your dealer.

10.3.3 Symptom: Intermittent water discharge

Possible causes	Corrective action
Thermal control failure (water will be hot).	<ul style="list-style-type: none">• Turn OFF the power to the unit.• When discharge has stopped, check the thermal controls and replace if faulty.• Contact your local dealer.
The expansion vessel is broken.	Replace the expansion vessel.

10.3.4 Symptom: Continuous water discharge

Possible causes	Corrective action
Cold water inlet pressure.	Check the pressure reducing valve. Replace the pressure reducing valve if the measured pressure is >2.1 bar
Temperature and pressure relief valve.	Check and reset button.
The expansion relief valve is not functioning properly	Check for correct operation of the pressure relief valve by turning the red knob on the valve counter clockwise: <ul style="list-style-type: none">• If you do not hear a clacking sound, contact your local dealer.• In case the water keeps running out of the unit, close both the water inlet and outlet shut-off valves first and then contact your local dealer.

11 Disposal



NOTICE

Do NOT try to dismantle the system yourself: dismantling the of the system, treatment of the refrigerant, oil and other parts MUST comply with applicable legislation. Units MUST be treated at a specialised treatment facility for reuse, recycling and recovery.

11 Digital Controller for the On-board Pump

11.1 Digital Controller Front Panel Commands

6. FRONT PANEL COMMANDS



SET



AUX

To display target set point, in programming mode it selects a parameter or confirm an operation

To start a manual defrost (Only XR02CX)

In programming mode it browses the parameter codes or increases the displayed value

In programming mode it browses the parameter codes or decreases the displayed value

KEYS COMBINATION

- To lock or unlock the keyboard
- SET** + To enter in programming mode
- SET** + To return to room temperature display

LED	MODO	SIGNIFICATO
	On	Compressore enabled
	Flashing	Anti short cycle delay enabled (AC parameter)
	On	Defrost in progress
	Flashing	Dripping in progress
	On	Measurement unit
	Flashing	Programming mode
	On	Measurement unit
	Flashing	Programming mode

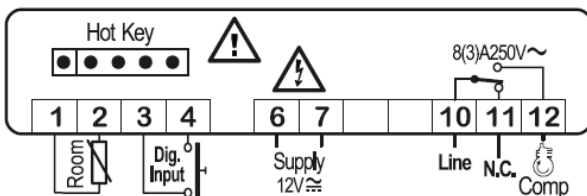
HOW TO SEE THE SET POINT

1. Push and immediately release the **SET** key, the set point will be showed;
2. Push and immediately release the **SET** key or wait about 5s to return to normal visualisation.

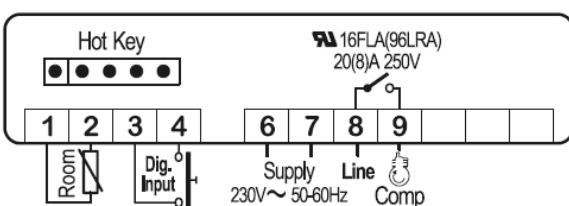
HOW TO CHANGE THE SETPOINT

1. Push the SET key for more than 2 seconds to change the Set point value;
2. The value of the set point will be displayed and the "°C" or "°F" LED starts blinking;
3. To change the Set value push the o or n arrows within 10s.
4. To memorise the new set point value push the SET key again or wait 10s.

11.2 Digital Controller Wiring Connections



14.2 XR01-02CX - 20A OR 8A



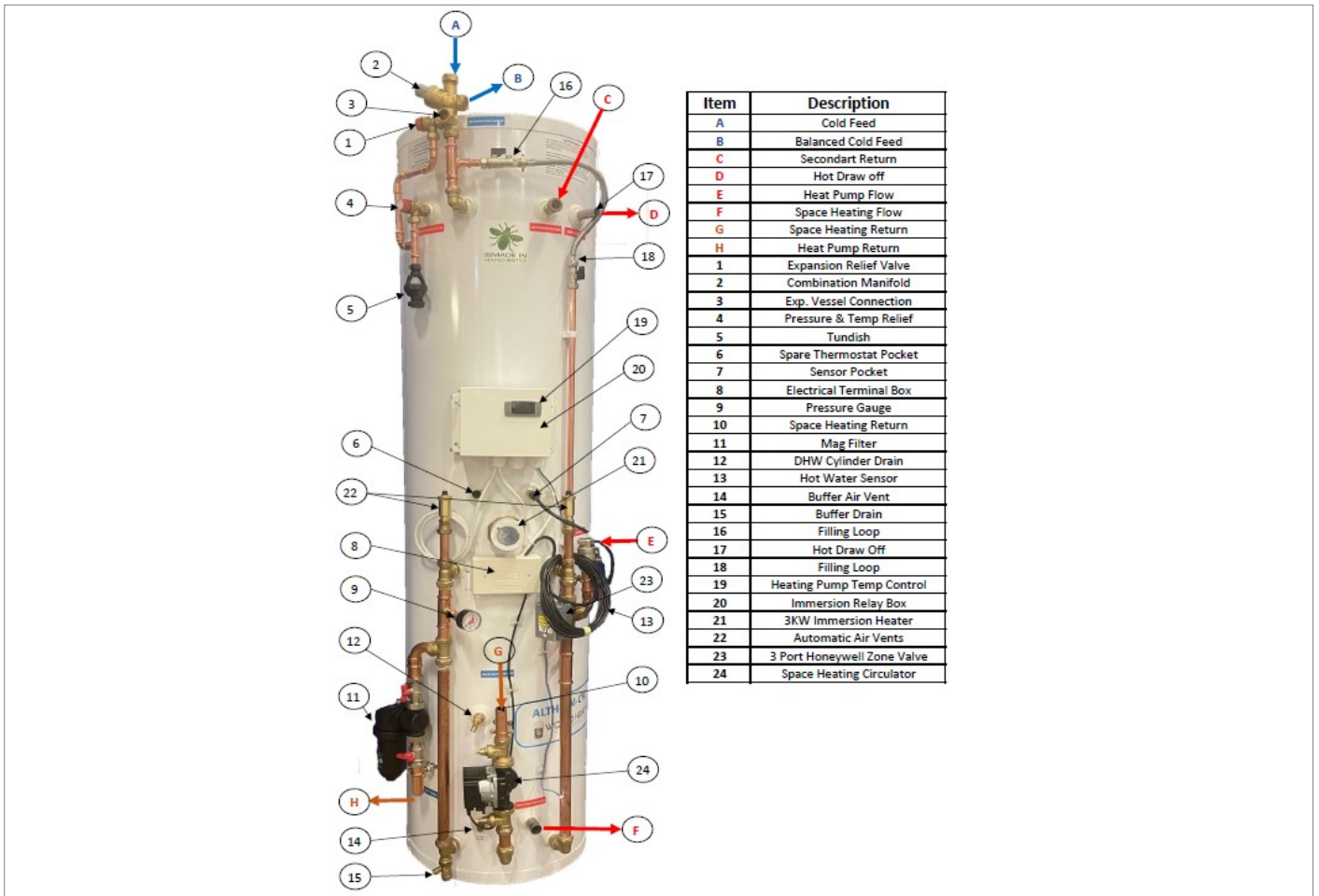
NOTE: The compressor relay is 20(8)A or 8(3)A depending on the model.
NOTE: 120Vac connect to 6-7

NOTICE

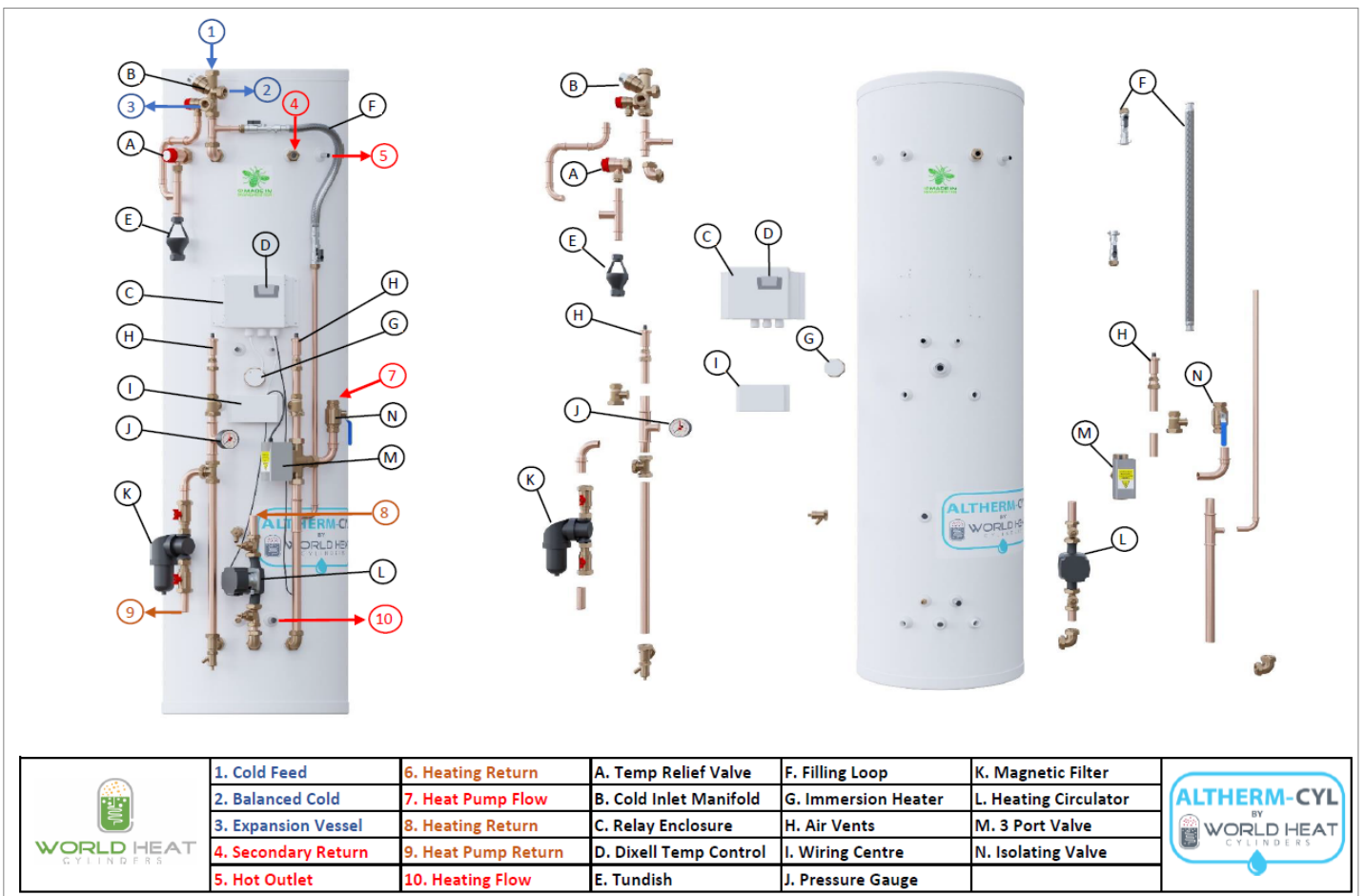
- The Dixell stat is set at 37°C from the factory. This setpoint can be changed by using the Dixell control panel. We recommend the setpoint to be 37°C however it could be changed based on your requirements. e.g. if using low temperature heat emitters.
- If there is no possibility for water circulation on the secondary side, an automatic bypass valve should be fitted. Water circulation could be via a towel rail, a by-pass valve or a radiator without a TRV.
- Do NOT use Dixell control panel for DHW setpoint. This control panel should only be used to set the water temperature used to run the on board pump for space heating.

12 Technical data

12.1 Components: Domestic hot water tank



12.2 Exploded Diagram



12.3 Technical specifications

12.3.1 Technical specifications: Standard pre-plumbed cylinders

Part Number		UK.PPC150	UK.PPC180	UK.PPC210	UK.PPC250	UK.PPC300
Description		150l pre-plumbed cylinder	180l pre-plumbed cylinder	210l pre-plumbed cylinder	250l pre-plumbed cylinder	300l pre-plumbed cylinder
Suitable for		Daikin Altherma R32 Monobloc				
Energy efficiency class		B	B	C	C	C
Standing heat loss (ErP)	W	54	58	63	88	96
Storage volume	L	148	179	209	248	301
Integrated vessel storage volume	L	33	33	33	33	33
Standing heat loss	kWh/24h	1.29	1.39	1.50	2.10	2.29
Max. water temperature	°C	90				
Primary immersion capacity	kW	3				
Primary immersion power supply		1-phase / 230V / 50Hz				
Primary immersion recommended fuse	A	16				
Secondary immersion capacity	kW	3				
Secondary immersion power supply		1-phase / 230V / 50Hz				
Secondary immersion recommended fuse	A	16				
Height	mm	1400	1526	1714	2014	1877
Diameter	mm	550	550	550	550	600
Empty weight	kg	46	56	59	71	86
Material inside cylinder		Stainless steel 2304				
Piping connections (diameter)	Water inlet H/E	mm	28			
	Water outlet H/E	mm	28			
	Cold water in	mm	22			
	Hot water out	mm	22			

12.3.2 Technical specifications: Slimline pre-plumbed cylinders

Domestic hot water cylinder		UK.PPC150SL	UK.PPC180SL
Description		150l slimline pre-plumbed cylinder	180l slimline pre-plumbed cylinder
Suitable for		Daikin Altherma R32 Monobloc	
Energy efficiency class		B	B
Standing heat loss (ErP)	W	52	58
Storage volume	L	152	178
Integrated vessel storage volume	L	25	25
Standing heat loss	kWh/24h	1.23	1.39
Max water temperature	°C	90	
Primary immersion capacity	kW	3	
Primary immersion power supply		1-phase / 230V / 50Hz	
Primary immersion recommended fuse	A	16	
Secondary immersion capacity	kW	3	
Secondary immersion power supply		1-phase / 230V / 50Hz	
Secondary immersion recommended fuse	A	16	
Height	mm	1869	1970
Diameter	mm	475	475
Empty weight	kg	59	67
Material inside cylinder		Stainless steel 2304	
Piping connections (diameter)	Water inlet H/E	mm	28
	Water outlet H/E	mm	28
	Cold water in	mm	22
	Hot water out	mm	22

13 Glossary

Dealer

Sales distributor for the product

Authorised installer

Technical skilled person who is qualified to install the product

User

Person who is owner of the product and/or operates the product

Applicable legislation

All International, European, national and local directives, laws, regulations and/or codes that are relevant and applicable for a certain product or domain.

Service company

Qualified company which can perform or coordinate the require service to the product.

Accessories

Labels, manuals, information sheets and equipment that are delivered with the product and that need to be installed according to the instructions in the accompanying documentation.

Optional equipment

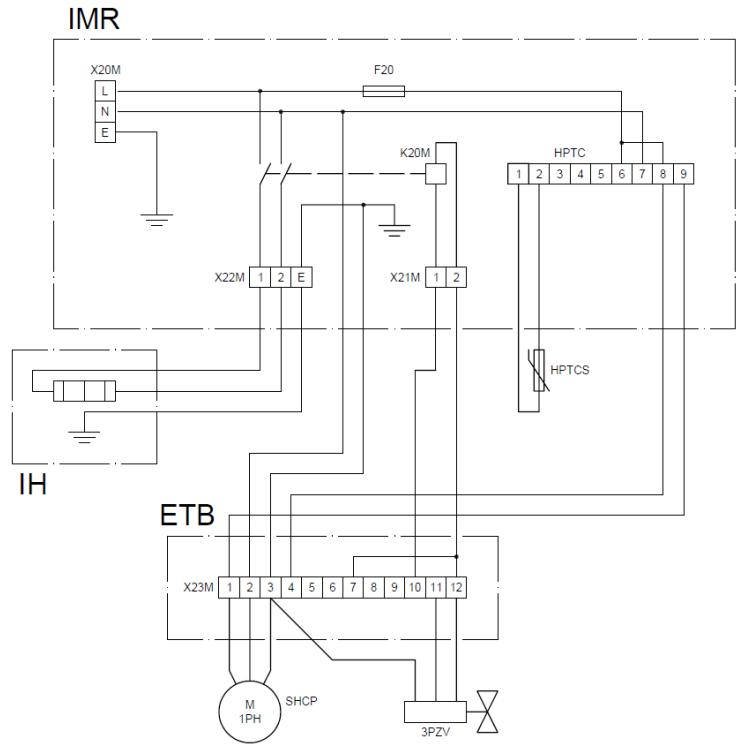
Equipment made or approved by Daikin that can be combined with the product according to the instructions in the accompanying documentation.

Field supply

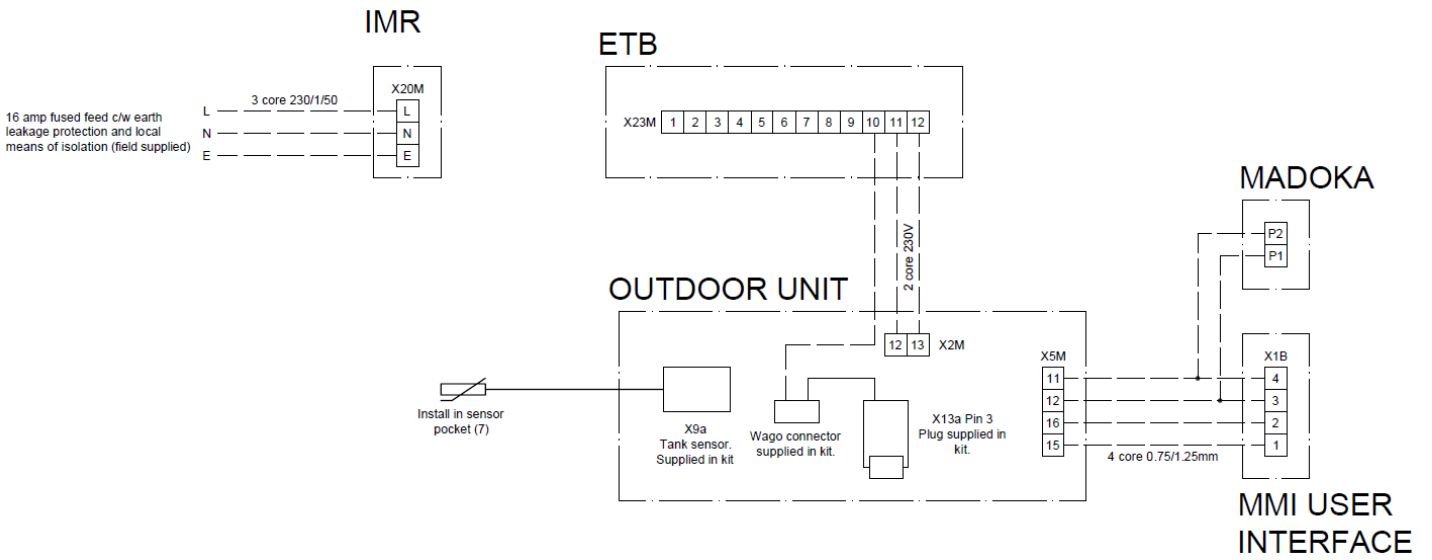
Equipment NOT made by Daikin that can be combined with the product according to the instructions in the accompanying documentation.

Appendix: Wiring Connections

KEY	DESCRIPTION
3PZV	3 PORT ZONE VALVE
ETB	ELECTRICAL TERMINAL BOX
F20	MCB - 1 AMP
HPTC	HEATING PUMP TEMPERATURE CONTROLLER
HPTCS	HEATING PUMP TEMPERATURE CONTROLLER SENSOR
IH	IMMERSSION HEATER
IMR	IMMERSSION RELAY BOX
K20M	IMMERSSION HEATER CONTACTOR
SHCP	SPACE HEATING CIRCULATING PUMP
X20M	CONNECTOR - MAINS SUPPLY
X21M	CONNECTOR - INTERCONNECTING
X22M	CONNECTOR - IMMERSION HEATER
X23M	CONNECTOR - INTERCONNECTING

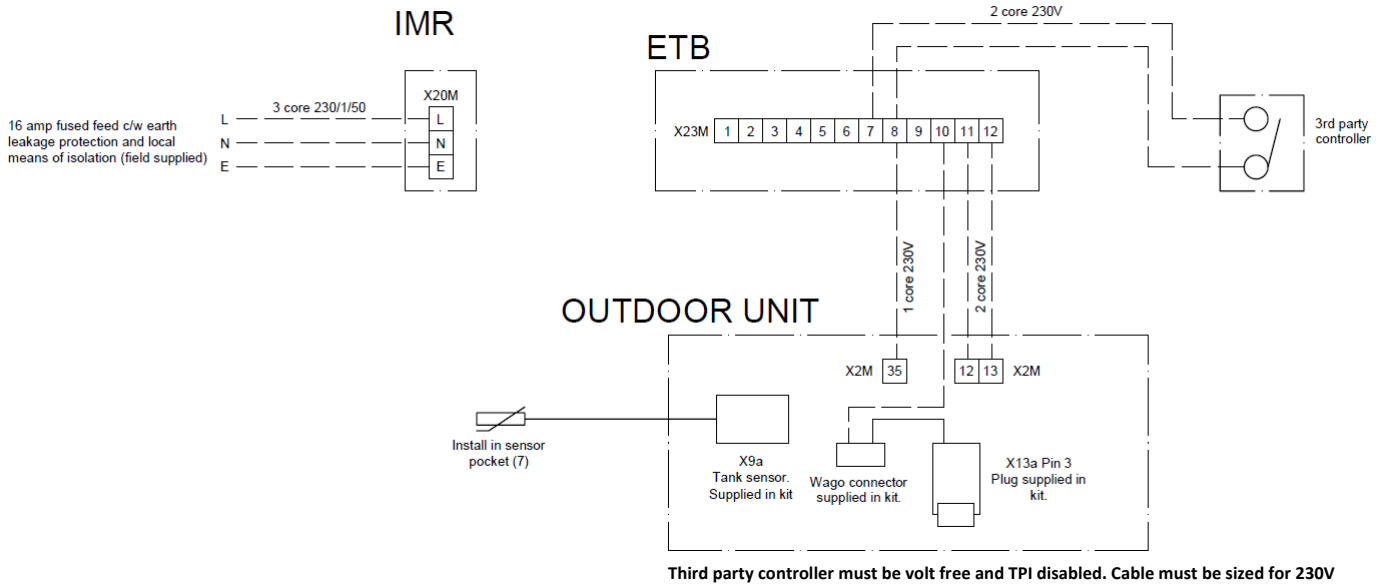


Factory Fitted Wiring

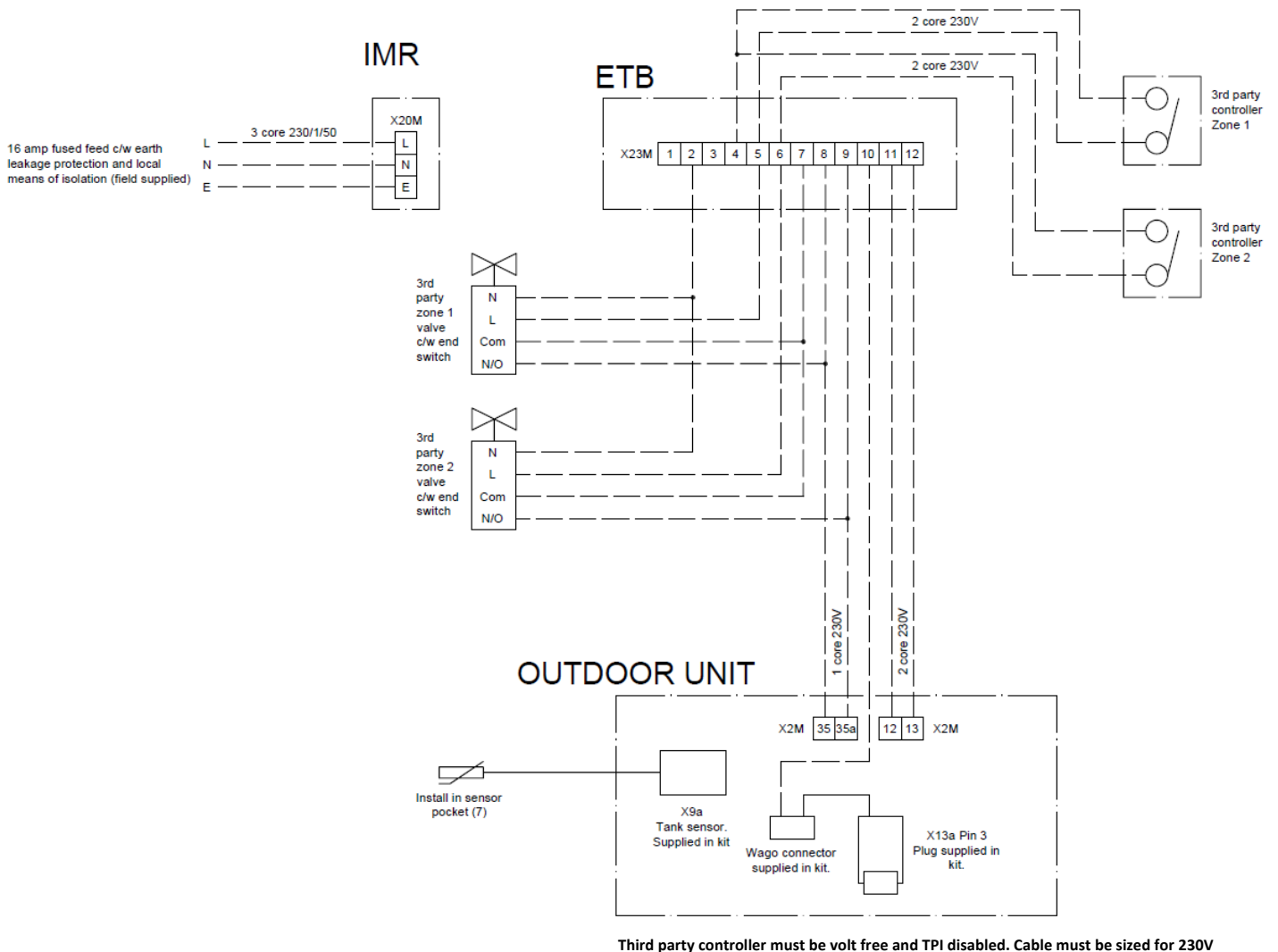


Wiring when using Madoka (BRC1HHD) Controller

Appendix: Wiring Connections Cont'd



Wiring when using Third Party Thermostat (1 Zone)



Wiring when using Third Party Thermostat (2 Zones)

It is the responsibility of the installer to complete this logbook and pass it onto the customer. Failure to do so may invalidate the cylinders warranty.



The code of practice for the installation, commissioning & servicing of mains pressure hot water storage

Installation, Commissioning and Service Record Log Book

CUSTOMER DETAILS

NAME

ADDRESS

TEL No.

IMPORTANT

1. Please keep the Log Book in a safe place for future reference.
2. This Log Book is to be completed in full by the competent person(s) who commissioned the equipment and then handed to the customer. When this is done, the Log Book is a commissioning certificate that can be accepted as evidence of compliance with the appropriate Building Regulations.
3. Failure to install and commission this appliance to the manufacturer's instructions may invalidate the warranty.

The above does not affect your statutory rights.

APPLIANCE & TIME CONTROL DETAILS

MANUFACTURER	MODEL		
CAPACITY	LITRES	SERIAL No.	
TYPE	UNVENTED		
TIME	PROGRAMMER	<input type="checkbox"/>	TIME SWITCH <input type="checkbox"/>

COMMISSIONING PROCEDURE INFORMATION

BOILER PRIMARY SETTINGS (INDRECT HEATING ONLY) ALL BOILERS

IS THE PRIMARY A SEALED OR OPEN VENTED SYSTEM? SEALED OPEN

WHAT IS THE BOILER FLOW TEMPERATURE °C

ALL MAINS PRESSURISED SYSTEMS

WHAT IS THE INCOMING STATIC COLD WATER PRESSURE AT THE INLET TO THE PRESSURE REDUCING VALVE? Bar

HAS THE STRAINER (IF FITTED) BEEN CLEANED OF INSTALLATION DEBRIS? YES NO

HAS A WATER SCALE REDUCER BEEN FITTED? YES NO

WHAT TYPE OF SCALE REDUCER HAS BEEN FITTED?

UNVENTED SYSTEMS

ARE COMBINED TEMPERATURE AND PRESSURE RELIEF VALVE AND EXPANSION VALVE FITTED AND DISCHARGE TESTED? YES NO

IS PRIMARY ENERGY SOURCE CUT OUT FITTED (NORMALLY 2 PORT VALVE)? YES NO

WHAT IS THE PRESSURE REDUCING VALVE SETTING (IF FITTED)? YES NO

WHERE IS THE OPERATING PRESSURE REDUCING VALVE SITUATED? YES NO

HAS THE EXPANSION VESSEL OR INTERNAL AIR SPACE BEEN CHECKED? YES NO

WHAT IS THE HOT WATER TEMPERATURE AT THE NEAREST OUTLET? °C

UNVENTED SYSTEMS

DOES THE HOT WATER SYSTEM COMPLY WITH THE APPROPRIATE BUILDING REGULATIONS? YES

HAS THE SYSTEM BEEN INSTALLED AND COMMISSIONED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS? YES

HAVE YOU DEMONSTRATED THE OPERATION OF THE SYSTEM CONTROLS TO THE CUSTOMER? YES

HAVE YOU LEFT ALL THE MANUFACTURER'S LITERATURE WITH THE CUSTOMER? YES

COMPETENT PERSON'S SIGNATURE

CUSTOMER SIGNATURE

(To confirm demonstrations of equipment and receipt of appliance instructions)

PLEASE FOLLOW THE INSTALLATION AND COMMISSIONING INSTRUCTIONS IN THE MANUAL SUPPLIED WITH THE EQUIPMENT

SERVICE INTERVAL RECORD

It is recommended that your hot water system is serviced regularly and that your service engineer completes the appropriate Service Interval Records below.

SERVICE PROVIDER

Before completing the appropriate Service Interval Record, please ensure you have carried out the service as described in the manufacturer's instructions and in compliance with all relevant codes of practice.

SERVICE 1	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 2	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 3	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 4	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 5	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 6	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

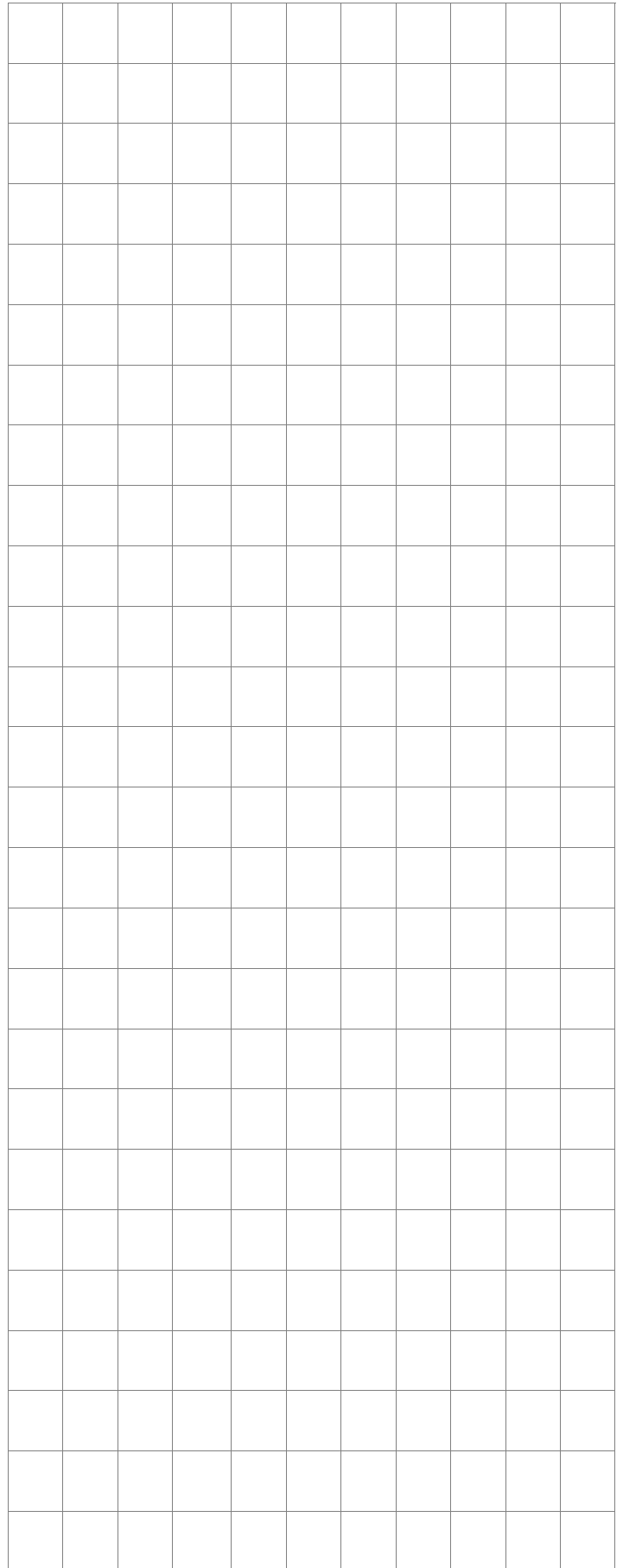
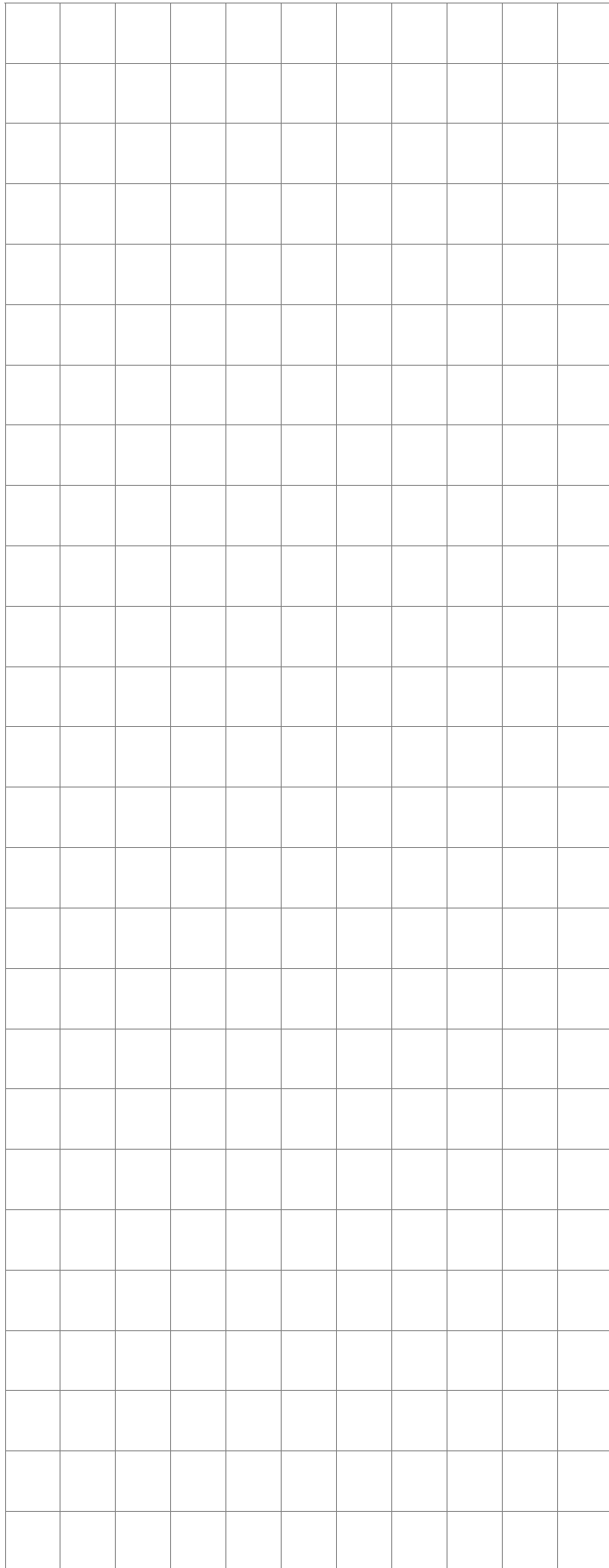
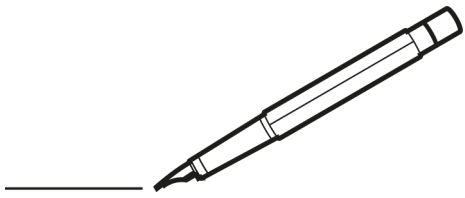
SERVICE 7	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 8	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 9	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

SERVICE 10	DATE
ENGINEER NAME	
COMPANY NAME	
TEL No.	
COMMENTS	
SIGNATURE	

When all the above services have been completed, please contact your Service Engineer for an additional service internal record sheet



DAIKIN UK

1, The Heights, Brooklands, Weybridge, Surrey, KT13 0NY