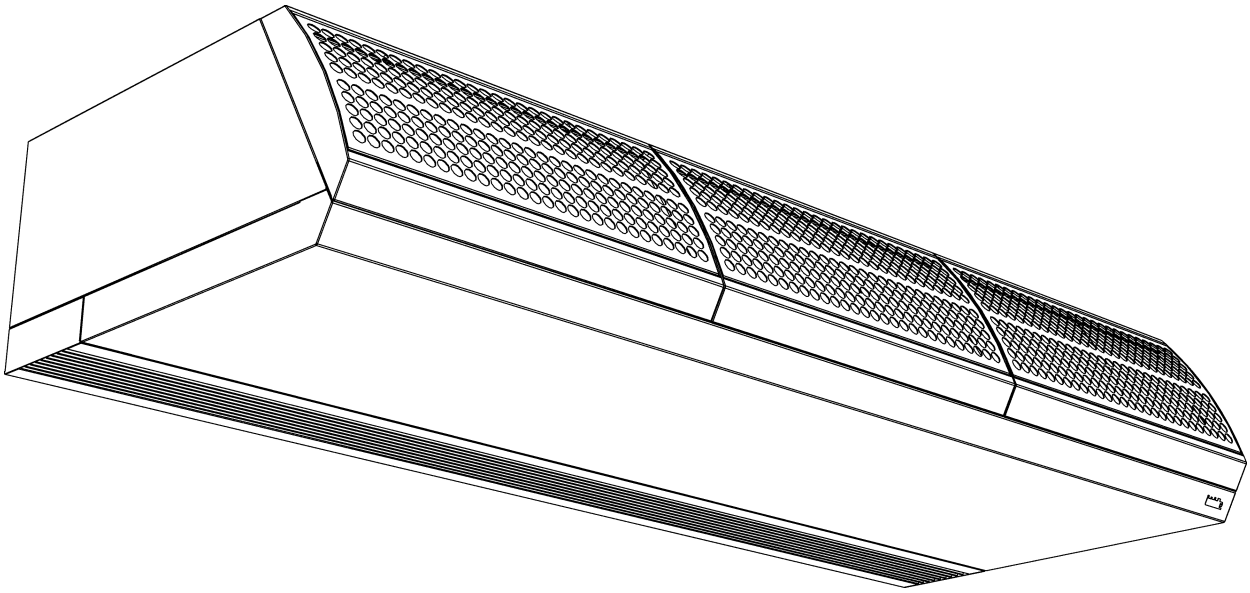
Installation, Operation and Maintenance Manual

Comfort Air Curtain

Model CYA



Version 1.0
Original Manual

English

CE

Biddle

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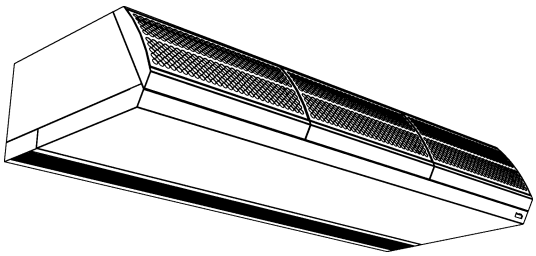
1 Introduction

1.1 About this manual



This manual describes the installation, operation and maintenance of the comfort air curtain model CYA . The manual also provides instructions and information for servicing activities.

1.2 How to read this manual

1.2.1 Designations used in the manual

The following symbols are used in the manual:

Note:

Refers to an important section in the text.

Caution:

If you do not carry out the procedure or action correctly, you may cause damage to the unit.

Follow the instructions precisely.

Warning:

If you do not carry out the procedure or action correctly, you may cause physical injury and/or damage.

Follow the instructions precisely.

Danger:

Is used to designate actions that are not permitted.

Ignoring this prohibition may lead to serious damage or to accidents resulting in physical injury.

1.2.2 Symbols used on the unit and in the manual

The following symbols indicate possible risks or hazards. The same symbols will also be found on the unit.

SYMBOL	DESCRIPTION
 	**You have accessed a section of the unit containing components which carry a voltage.** Access restricted to qualified maintenance staff only. Caution is required.
 	**This surface or component may be hot. Risk of burns on contact.**
 	**WARNING: Mildly Flammable Material. The refrigerant inside this unit is mildly flammable..**

1.2.3 Related documentation

In addition to this manual, the following documentation is also supplied with the unit:

- wiring diagram for installation and servicing.

This manual should be read in consultation with the manuals of the Daikin components (outdoor unit, indoor unit, control panel, etc.) that also form part of the system.

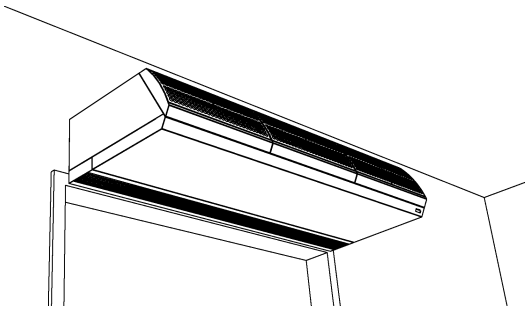
1.3 About the unit

1.3.1 Applications

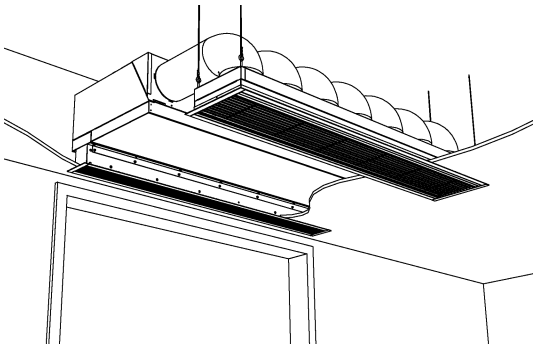
General

The purpose of the Comfort air curtain is to separate climates between two rooms and to heat and filter (filter class EN779-G1) air. The unit is installed horizontally above the doorway, across its full width.

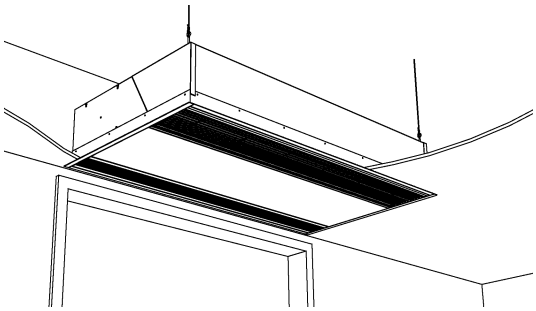
Mounting methods



The free-hanging model is designed for free, visible installation above the door.



The recessed model is designed for integration into a false ceiling or into an alcove, with the inlet opening possibly at some distance from the unit.



The cassette model is designed for installation above a false ceiling, with the inlet opening close to the unit and with easy access to the unit.

The air curtain is connected to a direct expansion system from Daikin. The air discharged by the unit is heated by the refrigerant. The air curtain is controlled and operated partly by the Daikin system using the room controller supplied separately.

This system has a number of limitations:

- The unit is only suitable for use in Daikin direct expansion systems.
- The unit is not suitable for cooling.
- The Daikin system has to be active at all times.

Other versions and intended use

Upon request, we can supply versions for non-standard applications.

Warning:

Applications other than those described above are deemed to be 'usage other than for the intended purpose'. Biddle is not liable for damage or loss resulting from usage other than for the intended purpose. Usage for the intended purpose also entails observance of the instructions in this manual.

1.3.2 General

An air curtain above the door opening counteracts losses of energy and comfort. Located at the opening, it blows out a stream of air and thereby brings about the following:

- The exchange of air between two rooms due to a temperature difference (convection) is significantly reduced.
- The air that enters at floor level due to draughts can be heated.

1.3.3 Type designation

The table below provides an overview of the available models of the air curtain and the corresponding type designations. In combination, the type designations constitute the type code, for instance: CYAS150DK80FS.

If some part of the manual applies to certain models only, these will be indicated with the corresponding type designation, for example:

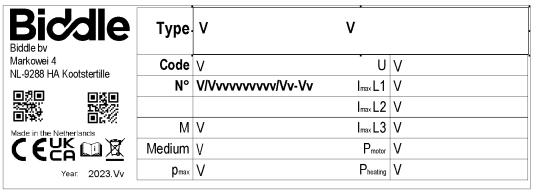
- S: models with capacity S
- 150: models with discharge width 150
- DK: direct expansion models
- 80: system index
- F: installation/casing type - free hanging models
- S: unit colour Grey

Note:

In the illustrations in this manual, one type of unit is used as a general example. The outer appearance of your unit may be different but its functioning is the same, unless stated otherwise.

Explanation of the type code

TYPE CODE ELEMENT	DESIGNATION	MEANING
product series	CYA	general designation for the series
capacity	S	short range
	M	medium range
	L	long range
length	100, 150, 200 or 250	discharge length in cm
coil type	DK	heating with Daikin direct expansion system
index size	80	
	100	
	125	
	140	
	200	
	250	
model	F	free-hanging model
	R	recessed model
	C	cassette model
unit colour	B	White
	S	Aluminium
	X	Special Colour



1.3.4 Type plate

The type plate is located at the left on the intake side of the unit.

Designations on the type plate

DESIGNATION	MEANING
Type	complete type code of the unit
N°	serial number, production week and year
M	weight of unit
Capacity Index	Daikin capacity index
U	power supply voltage
I_{max}	max. current
P_{motor}	max. power consumption by fans

1.3.5 Field of application

The Comfort Air Curtain is predominantly used in commercial premises at an ambient temperature of max. 27°C. The product should be installed up to 2000m above sea level and should not be installed below ground level. The following operating limits must be observed:

Operating limits for all models

	Operating temperature	10 °C to 27 °C
	Relative air humidity	20% - 95%, not condensing
Power supply voltage		see type plate
Power		see type plate

Warning:

The air curtain may not be used in potentially explosive atmospheres, wet environments, outdoors or in very dusty or aggressive air conditions.

Biddle shall not be held liable for damage caused by use under these conditions.

1.3.6 CE (and UKCA) declaration

The unit is compliant with the applicable CE standards. For the UK market, the unit is also compliant to the applicable UKCA standards. The Declaration(s) of Conformity can be found on the website.

1.3.7 Modifications and changes

Without our approval, no changes or modifications may be made to the unit that could adversely affect safety. The CE (and UKCA where appropriate) declaration is no longer valid if the unit has been modified or changed in any way.

1.3.8 Components and accessories

The unit is supplied with a control panel that must be installed to operate the unit.

Accessories for attachment and finishing

The following accessories are available as options:

- door contact switch,
- set of wall brackets,

1.4 Safety instructions

1.4.1 Safety in use

Warning:

Do not put any objects into the inlets and outlets.

Warning:

Do not obstruct the unit's inlets or outlets.

Warning:

The upper surface of the unit becomes hot during operation.

Caution:

In exceptional situations, water may run out of the unit. Therefore, do not place anything under the unit that could be damaged as a result.

1.4.2 Safety issues relating to installation, maintenance and servicing

Danger:

The unit may only be opened by qualified technical staff.

Warning:

Perform the following actions before opening the unit:

1. Switch the unit off, using the control panel.
2. Wait until the fans have stopped.

Danger:

The fans may continue rotating for a while.

3. Allow the unit to cool down.

4. **For models intended for connection to a Daikin direct expansion system:**
   turn the Daikin system off and disconnect the mains supply from the Daikin external unit.
5. Disconnect the mains supply (remove plug from the power socket or turn off at the isolation switch).

Caution:

For models to be connected to a Daikin direct expansion system:

water may be present in the inspection panel if the system is, or was recently, running in defrost mode.

1.5 Safety information for R32 systems

The CYA air curtain can operate using R410A or R32 refrigerant. When R32 refrigerant is used, additional safety measures need to be taken due to it's classification as an A2L refrigerant (ISO 817). This section should be read through before undertaking any installation, maintenance or decommissioning of the unit or system, alongside statutory regulations applicable in the country and product manuals for other components in the system. This guidance is not deemed to be complete, and the installer is responsible for ensuring that the system as a whole is checked and certified as safe.

Danger:

The unit shall not be stored in a room with continuously operating ignition sources (for example: open flames, an operating gas appliance or an operation electric heater.

Danger:

Do not pierce or burn.

Danger:

Be aware that refrigerants may not contain an odour.

1.6 R32 system layout

To comply with the requirements of enhanced tightness refrigerating systems of the IEC 60335-2-40, this system is equipped with shut-off valves in the outdoor unit and an alarm in the remote controller. In case the room size requirements of this manual are followed, no additional safety measures are needed.

A large range of charge and room area combinations are allowed thanks to the countermeasures that are implemented in the unit by default. Follow the installation requirements below to ensure that the complete system is compliant to legislation.

1.7 Unit location

Danger:

If one or more rooms are connected to the unit using a duct system, make sure air inlet AND outlet are connected directly to the same room by ducting. Do NOT use spaces such as a false ceiling as a duct for the air inlet or outlet.

The total amount of refrigerant in the system shall be less than or equal to the maximum allowed total refrigerant amount. The maximum allowed total refrigerant amount depends on the area of the rooms being served by the system. See section "Determination Of The Charge Limit" to check if your system meets the requirement for charge limitation.

The S-100, M-100, S-150 and M-150 models have no requirements on room size as their charge is below m_1 (IEC 60335-2-40:2022) when connected with up to 50m of piping.

1.8 Piping requirements

Piping should not be installed in unventilated spaces smaller than A_{min}. Where this isn't possible, only mechanical joints (e.g. braze+flare connections) that are compliant with the latest version of ISO 14903 can be used. All mechanical connections shall be accessible for maintenance purposes.

For piping installed in the occupied space, please make sure that the piping is protected against accidental damage. All field made refrigerant joints must be tested for tightness. Piping should be checked using a test method that has a sensitivity of 5 grams refrigerant per year or better, at a pressure of at least 0.25 times the maximum working pressure (see the unit's type plate). No leak shall be detected.

Warning:

Precautions shall be taken to avoid excessive vibration or pulsation to refrigeration piping.

Protection devices, piping and fittings shall be protected as far as possible against adverse environmental effects, for example the accumulation of dirt and debris.

Provision shall be made for the expansion and contraction of long runs of piping.

Piping in refrigerating systems shall be so designed and installed as to minimise the likelihood of hydraulic shock damaging the system.

1.9 Determination of additional charge

Consideration needs to be given to the additional charge of refrigeration required for the site piping. The method to calculate this can be found in the outdoor unit manual.

The method takes into account the length and diameter of the piping installed on site only.

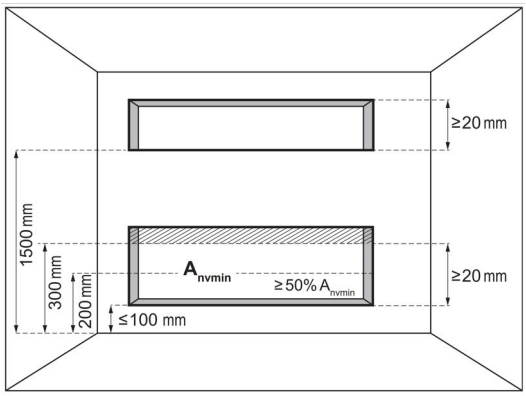
1.10 To determine the charge limit

Step 1 – In order to derive the total refrigerant charge limit in the system, determine the area of the rooms where the CYA unit is installed.

The room area can be determined by projecting the walls, doors and partitions to the floor and calculate the enclosed area. The area of the smallest room being served by the system is used in the next step to determine the maximum allowable total charge of the system.

Spaces connected by only false ceilings, ductwork, or similar connections shall not be considered a single space.

If the partition between two rooms on the same floor meets certain requirements, then the rooms are considered as one room and the areas of the rooms may be added up. In this way it is possible to increase the A_{min} value used to calculate the maximum allowed charge.



One of the following two requirements must be met to add up room areas:

- Rooms on the same floor that are connected with a permanent opening that extends to the floor and is intended for people to walk through can be considered as one room.
- Rooms on the same floor connected with openings that fulfil following requirements can be considered as a single room. The opening must consist of two parts to allow for air circulation.

For the lower opening:

- It is not an opening to the outside
- The opening cannot be closed
- The opening must be ≥0.012 m² ($A_{nv,min}$)
- The area of any openings above 300 mm from the floor does not count when determining $A_{nv,min}$
- At least 50% of $A_{nv,min}$ is less than 200 mm above the floor
- The bottom of the lower opening is ≤100 mm from the floor
- The height of the opening is ≥20 mm

For the upper opening:

- It is not an opening to the outside
- The opening cannot be closed
- The opening must be ≥0.006 m² (50% of $A_{nv,min}$)
- The bottom of the upper opening must be ≥1500 mm above the floor
- The height of the opening is ≥20 mm

Note:

The requirement for the upper opening can be met by false ceilings, ventilation ducts or similar arrangements that provide an airflow path between the connected rooms.

A_{min} (m^2)	m_c (kg)		
	S	M	L
5	2.64	2.87	3.44
10	5.28	5.74	6.89
15	7.92	8.61	10.33
20	10.56	11.48	13.77
25	13.20	14.34	17.21
30	15.84	17.21	20.66
35	18.47	20.08	24.10
40	21.11	22.95	27.54
45	23.75	25.82	30.98
50	26.39	28.69	34.43
55	29.03	31.56	37.87
60	31.67	34.43	41.31
65	34.31	37.29	44.75
70	36.95	40.16	48.20
75	39.59	43.03	51.64
80	42.23	45.90	55.08
85	44.87	48.77	58.52
90	47.51	51.64	61.97

Step 2 – Use the table here to determine the total refrigerant charge limit in the system for each indoor unit.

Determine the value of the total refrigerant charge limit. The table shown here can be used as guidance, and is based on the recommended mounting height of the unit.

Note:

The CYA and ducting cannot be installed lower than 1.8 m from the lowest point of the floor.

Note:

The derived charge value should be rounded down.

Step 3 – Determine the total amount of refrigerant in the system by referring to the additional refrigerant charge formula in the outdoor unit installation manual.

Step 4 – The total refrigerant charge in the system MUST be less than the lowest value of the refrigerant charge limit for each room where an indoor unit is installed or that is served by a ducted indoor unit installed in a different room. If NOT, change the installation using the choices below and repeat all of the above steps.

- Increase the area of the room restricting the total charge.
- Decrease the piping length by changing the system layout.
- Increase the installation height of the unit or the duct.
- Add additional countermeasures as described in applicable legislation.

1.11 Additional ventilation as a counter measure

When using additional ventilation to allow the installation to meet the applicable legislative requirements, the upper edge of the air extraction opening from the room shall be located at a height equal to or below the refrigerant release point. The mechanical ventilation air extracted from the space shall be positioned relative to the mechanical ventilation air intake openings such that the makeup air will mix with the leaked refrigerant.

The X25A output closes in case a leak is detected, failure or disconnection of the R32 sensor (located in the indoor unit) and can be used to connect and activate additional countermeasures (e.g. mechanical ventilation). This output has a limited capacity of 230V AC – 0.5 A. Do NOT use the output as

a power source. Instead, use it to energize a relay that controls the external circuit.

1.12 Guidance when installing

- Keep the installation of pipe-work to a minimum and routed such that it ensures protection from physical damage
- Do not install pipework in unventilated spaces below the limits defined in EN 378, taking into account the complete system's charge size
- All mechanical connections shall be accessible for maintenance purposes
- The units shall be installed in either a ventilated or unventilated space that does not contain any continuously operating open flames or other potential ignition sources
- Units in ventilated spaces should have suitable warnings in place to ensure that openings remain open during the life and operation of the building
- Units shall only be installed in unventilated spaces where the space is constructed such that any potential refrigerant leak will not stagnate creating a fire or explosion hazard
- Ensure that the control panel is installed in the room the air curtain is located in. The control panel is safety critical part of the alarm system should there be a refrigerant leak
- An optional output PCB for the CYA unit can be added to provide output for external device(s). The output PCB will trigger in case a leak is detected. Please refer to the output PCB manual for information on wiring.

1.13 Guidance on charging the system

In addition to conventional charging procedures the following requirements must be followed:

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them
- Cylinders should be kept in an appropriate position according to the instructions
- Ensure that the refrigeration system is earthed prior to charging the system with refrigerant

- Label the system when charging is complete (if not already)
- Extreme care shall be taken to not overfill the refrigeration system

Prior to recharging the system it shall be pressure tested with the appropriate purging gas. The system shall be leak tested on completion of charging but prior to commissioning a follow-up leak test should be carried out prior to leaving the site.

1.14 Refrigerant charge sizes

The CYA air curtain is considered a partial air conditioning system. For the calculation of the full refrigerant charge size please refer to Daikin documentation.

1.15 Guidance when carrying out maintenance

- Servicing and maintenance shall only be carried out as instructed in this manual and should be completed by qualified and competent person(s).
- Safety checks should be carried out prior to conducting work on the system to ensure the risk of ignition is minimised. No live electrical components and wiring are exposed whilst charging, recovering or purging the system, and all earth bonding shall have continuity.
- Work should be undertaken under a controlled procedure so as to minimise the risk of flammable gas or vapours being present.
- All persons in the immediate area shall be informed of the nature of the work being undertaken.
- Work in confined spaces shall be avoided.
- The area shall be checked with a suitable refrigerant detector prior to and during work to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.
- Should any hot work be carried out on site, ensure that a fire extinguisher of the correct type is available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.
- No person carrying out work in relation to the system which involves exposing any pipework shall use any sources of ignition in such a manner that it may lead to the risk of

fire or explosion. All possible ignition sources, including cigarette smoking should be kept sufficiently far away from the site of installation, repairing, removing and disposal during which refrigerant can possible be released to the surrounding space. Prior to work taking place, the area arund the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

- Ensure that the area is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.
- Any replacement parts used should be supplied from Biddle or Daikin to ensure that they are fit for purpose and to the correct specification. At all times, the information contained in this manual should be followed. If in doubt, consult the manufacturer's technical department for assistance. Replacement with other parts may result in the ignition of refrigerant in the event of a leak.
- The following checks shall be applied to installations using flammable refrigerants:
- The refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed
- The ventilation machinery and outlets are operating adequately and are not obstructed
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of the refrigerant
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected
- Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which can corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded
- Repairs to sealed components are not allowed.
- Capacitors are discharged in a safe manner to avoid possibility of sparking.
- Particular attention should be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection

is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands etc.

- Ensure that the unit is mounted securely
- Ensure that seals or sealing materials have not degraded to the point that they are no longer serve the purpose of preventing the ingress of refrigerant.
- Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The checks will also take into account the effects of ageing or continual vibration from sources such as compressors or fans.
- Under no circumstances shall potential sources of ignition be used in the searching for, or detection of frequent leaks.
- Electronic leak detectors may be used to detect refrigerant leaks but in some cases the sensitivity may not be adequate and require recalibration.
- The CYA unit is fitted with an internal leak sensor but this should not be used for the purposes of maintenance.
- If a leak is suspected, all naked flames should be removed or extinguished.
- If the leakage of refrigerant is found which requires brasing all of the refrigerant shall be recovered from the system or isolated by means of shut off valves in the part of the system remote from the leak.
- When breaking into refrigerant circuit to make repairs, or for any other purpose, conventional procedures shall be used. It is important that the flammability of R32 is considered. The following procedure shall be adhered to: Remove refrigerant, Purge the circuit with inert gas (optional), Evacuate (optional), Purge with inert gas (optional), Open the refrigeration pipework by cutting or braising.
- The refrigerant charge shall be recovered into the correct recovery cylinders
- Compressed air or oxygen should not be used for purging the system
- Ensure that the outlet for the vacuum pump is not close to any potential ignition sources at the ventilation is available. This should typically be carried out on the outdoor unit outside.

1.16 Guidance on decommissioning the system

Before carrying out this procedure it is essential that the competent person is completely familiar with the equipment and all its detail. It is recommended good practise that all refrigerants are recovered safely prior to the task being carried out and oil and refrigerants samples shall be taken in case analysis is required prior to reuse or recovered refrigerant. It is essential that electrical power is available before the task has commenced. The following steps shall be taken:

- Become familiar with the equipment and its operation
- Isolate the system electrically
- Before attempting the procedure ensure that: Mechanical handling equipment if available it's required for handling refrigerant cylinders, all personal protective equipment is available and being used correctly, the recovery process is supervised at all times by a competent person, recovery equipment and cylinders conform to the appropriate standards
- Pump down the refrigerant system if possible
- If a vacuum is not possible make a manifold so that refrigerant can be removed from various parts of the system
- Make sure that cylinder is situated on the scales before recovery takes place
- Stop the recovery machine and operate in accordance with instructions
- Do not overfill cylinders - no more than 80% liquid volume charge
- Do not exceed the maximum working pressure of the cylinder even temporarily
- When the cylinders have been filled correctly in the process completed make sure that the cylinders and equipment are removed from site promptly and all isolation valves on the equipment are closed off.
- Recovered refrigerant shall be not be charged into another refrigeration system unless it has been cleaned and checked.
- Equipment shall be labelled stating that it has been decommissioned and emptied of refrigerant the label should be dated and signed for appliances containing flammable refrigerants ensure that there are labels on the equipment stating that the equipment contains flammable refrigerant.

1.17 Guidance on recovery

- When removing refrigerant from a system either for servicing or decommissioning it is recommended good practise that all refrigerants are removed safely
- When transferring refrigerant into cylinders ensure that only appropriate refrigerant recovery cylinders are employed.
- Ensure that the correct number of cylinders for holding the total system charge is available
- All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant
- Cylinders shall be complete with pressure relief valve and associated shutoff valves in good working order
- Empty recovery cylinders are evacuated and if possible cooled before recovery occurs
- The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including when applicable flammable refrigerants
- In addition a set of calibrated weighing scales shall be available and in good working order
- Hoses shall be complete with leak free disconnect couplings and in good condition
- Before using the recovery machine check that it is satisfactory working order has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of fraudulent release. Consults the manufacturer of the recovery machine if in doubt
- The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder and the relevant waste transfer note arranged
- Do not mix refrigerants in recovery units and especially not in cylinders
- If compressors or compressed soils are to be removed and show that they have been evacuated to an acceptable level to make certain that fumble refrigerants does not remain within the lubricant
- The evacuation process should be carried out prior to returning the compressor to the suppliers
- Only electric heating to the compressor body should be employed to accelerate this process

- When oil is drained from a system it shall be carried out safely

2 Installation

2.1 Safety instructions

Warning:

Installation activities may only be performed by technical staff qualified for this purpose.

Warning:

Before starting installation: read the safety instructions.

2.2 Inspection on delivery

- Check the unit and the packaging to ensure that they have been delivered in good order. Notify the supplier and, if possible, the driver immediately if any shipping damage is detected.
- Ensure that all components are present. Notify supplier of any missing parts immediately.

2.3 General working method

2.3.1 Sequence of operations

Biddle recommends working as follows when installing the unit:

1. Hang the unit up.
2. Install the Daikin components in accordance with the relevant Installation manual(s).
3. Connect the unit to the mains supply.
4. Install the control panel and (any optional) connections to external controls.
5. Complete the installation of the unit.
6. Connect the unit to the Daikin system.
7. Switch the mains supply on and check that the unit is working properly.

8. Connect the unit to any building management systems (if required).

General instructions

Some parts of this section only apply to certain models. Where this is the case, it will be indicated. If no specific model is referred to, then the description applies to all models.

Note:

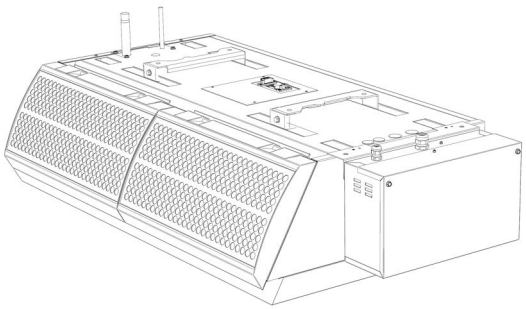
Make sure that you perform all installation operations that are applicable to your unit.

Check the type plate and consult the manual if in doubt about the model or type of your unit.

Note:

During the installation period, protect the unit against damage and penetration of dust, cement, etc. You can, for instance, use the packaging for protection.

2.4 Hanging the unit up



2.4.1 Determining the location of the unit

Danger:

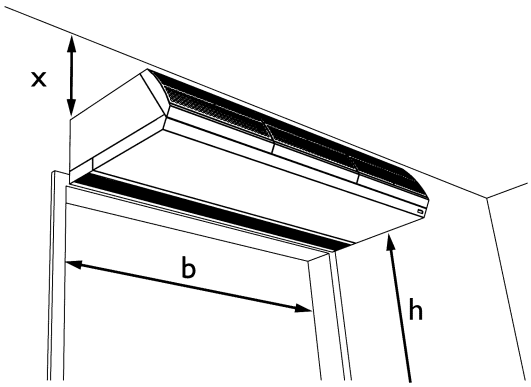
Do not install the unit in a vertical position.

Note:

Units of type CYA 100 have a box on the right side. You can choose to relocate this box from the unit.

Danger:

Do not disconnect the wiring between the box and the unit. It contains the earth connection



- Make sure that the structure from which the unit is about to be suspended can bear at least 4 times the weight of the unit. The unit's weight is indicated on its type plate.
- Note the following dimensions:
  - The unit must be at least as wide as the door opening (dimension b).
  - Position the unit as near to the doorway as possible.
  - Position the unit as close to the top of the door as possible.

Warning:

The minimum installation height is 1.8 m .

Note:

The maximum installation height of the unit (dimension h, measured from the floor to the discharge grille) depends on the unit type.

Installation Height Of The Unit

DESIGNATION	MEANING
CYA S	2.3m
CYA M	2.5m
CYA L	3.0m
These heights apply only under normal circumstances. If in doubt, ask Biddle for guidance.	

Warning:

The top of the unit may get hot. The unit must be positioned with at least 25 mm clearance from the ceiling (dimension x).

2.4.2 Attaching the wall controllers (accessory)

Attach the wall controllers in accordance with the instructions supplied.

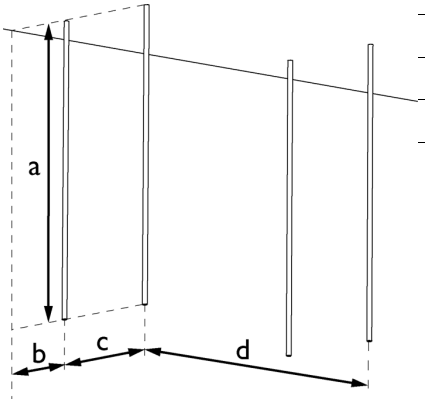
2.4.3 Fixing the threaded rods

Fix four threaded rods M8 in accordance with the dimensions in the table. Make sure the threaded rods are perpendicular.

Note:

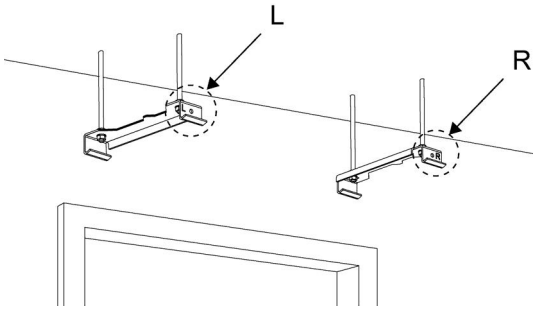
For units of 250mm length, three suspension brackets are used. Fix six threaded rods for that type.

Dimensions for suspending unit



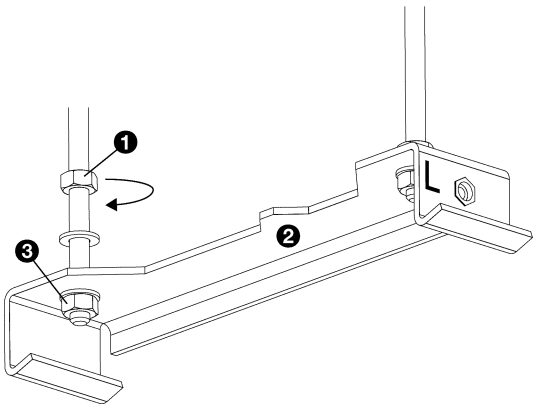
SIZE	TYPE	DIMENSIONS
a	all models	as needed
b	CYA S	119 mm
	CYA M	119 mm
	CYA L	200 mm
c	all models	197 mm
d	CYA S	119 mm
	CYA 100	500 mm ± 125 mm
	CYA 150	1000 mm ± 125 mm
	CYA 200	1500 mm ± 125 mm
	CYA 250 (two threaded rods)	2 x 1000 mm ± 60 mm

2.4.4 Fixing the suspension brackets



Attach the suspension brackets to the threaded rods or to the wall consoles.

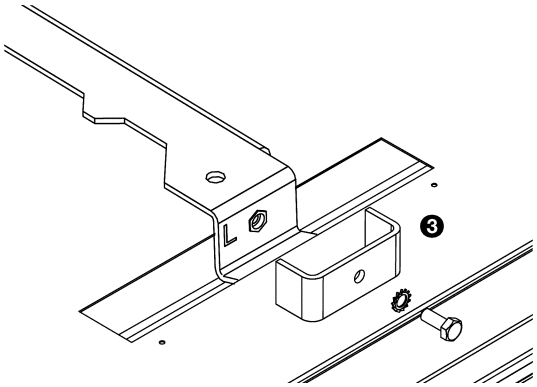
Note:
Place the left- (L) and right brackets (R) in the correct position.



1. Screw a lock nut ❶ onto each threaded rod.
2. Place the suspension brackets ❷ onto the threaded rods and then put on the nuts ❸.
3. Make sure that the suspension brackets are suspended horizontally and at equal height.
4. Secure each suspension bracket by tightening the lock nuts ❶.

2.4.5 Suspending and securing the unit

1. Lift the unit up and hook it into the suspension brackets.



Caution:

Depending on the weight specified on the type plate, either use a lifting device or lift the unit (requires at least 2 persons).

2. Fit a lock plate ❸ to each suspension bracket.

Warning:

The unit may fall down if you do not secure the suspension.

3. Check whether the unit is suspended firmly:
   - Try to push the unit out of its suspension.
   - Shake the unit back and forth for a few seconds.

Warning:

Ensure you do not run any risk in case the unit falls down.

2.5 Connecting the unit to the Daikin refrigerant system

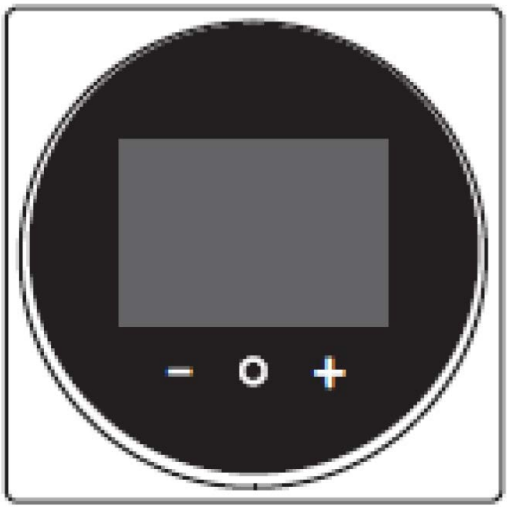
2.5.1 Connecting To The Refrigerant System

The CYA unit should be connected to a Daikin refrigerant system to work correctly. Please refer to Daikin installation manuals for connection to the system and best practice. The CYA range can be connected in different ways depending on how the installation has been designed:

- Pair Layout - one CYA unit connected to one outdoor unit system (meaning one or more outdoor units that are connected to the same refrigerant circuit).
- Multi Layout - several CYA units are connected to one outdoor unit system (meaning one or more outdoor units that are connected to the same refrigerant circuit).
- Mixed Layout - there are one or more CYA units, connected to one outdoor unit system (meaning one or more outdoor units that are connected to the same refrigerant circuit). In addition to the CYA unit(s) there may be other VRV indoor units are connected to the same outdoor unit.

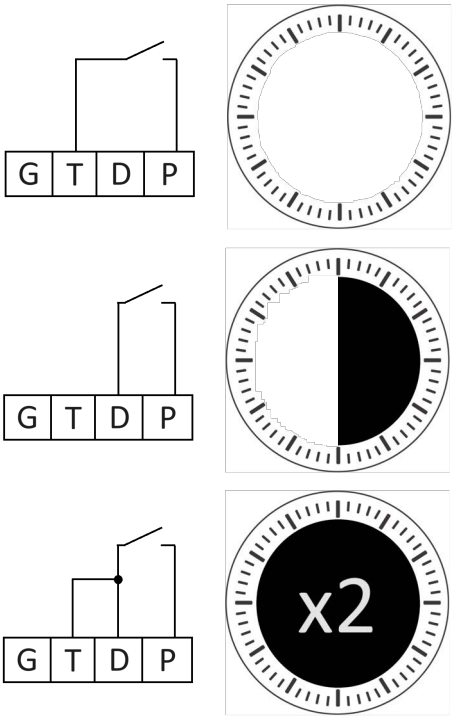
In all cases, the system can use either R410A or R32 refrigerant.

2.6 Installing the control panel and external controls



2.6.1 Mounting the control panel

The control panel is required for all systems to control the unit correctly. When installing a control panel, please follow the installation instructions supplied with it.



2.6.2 Connecting The Door Switch

Door Switch release function with optional run on timer:

A door switch can be used to influence the fans' operation. When a contact is made, the fan speed works according to the user setting (default setting). When the contact is opened, then the speed is limited to speed 1 after the run time has expired (normally this is used to limit the speed/heat input when the door is closed). The run on time is determined by the wiring of the Door Switch on terminal X72. (see over-view below and schematics on the left hand side).

- Open contact P-T: run time = 0 sec.
- Open contact P-D: run time = 30 sec.
- Open contact P-T/D: run time = 120 sec.

Note:

The unit will work immediately in the user set fan speed when the contact is made.

Note:

Control components must be connected to block X4 (100) or X72 (150/200/250).

Note:

Use unshielded cable with a cross-section of min. 0.75 mm².

Note:

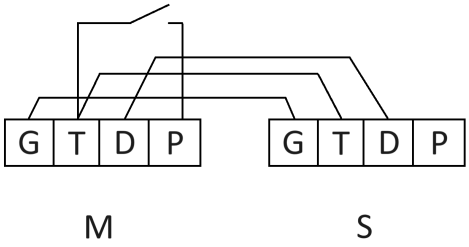
Control components must switch with potential free contacts. Biddle recommends the use of components with gold-plated contacts and a low resistance of less than 20 mΩ in order to be able to switch 1 mA at 5 VDC.

Steps:

1. Select the run on time
2. Connect the control component to the corresponding terminals P, D, or T of block X72. (See circuit diagrams on the left)

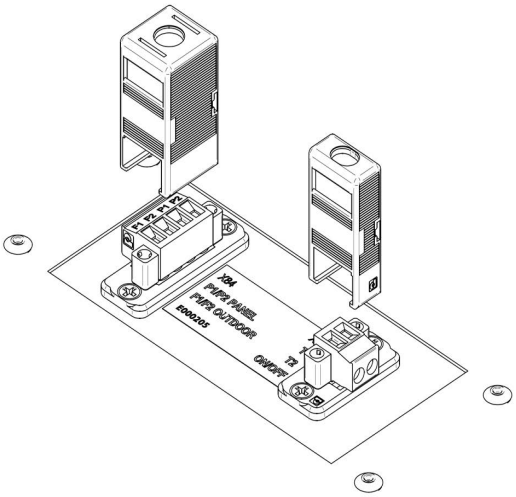
Master/Slave connection:

If you wish to connect several units to 1 control component, the wiring at the terminals has to be connected between the units (see circuit diagram).



2.6.3 Connecting The Daikin Control System

All models:



Note:

Use unshielded cable with a cross-section of min. 0.75 mm².

1. Connect the Daikin outdoor system to connector X84 terminals F1 and F2. Fix securely to the unit using the two screws on the connector
2. For the control panel, connect to connector X84 terminals P1 and P2. Again, fix securely to the unit using the two screws on the connector

Optional on/off control:

You can switch the unit on or off by using a potential free contact.

1. Connect external control to connector X82, terminals T1 and T2. Fix securely to the unit using the two screws on the connector

When the unit is off, and the T1T2 contact is closed, the unit will switch on and stay running until the unit is switched off by either the control panel, or by breaking the T1T2 contact. The last action on either the control panel or the T1T2 contact will take priority for switching the unit on or off.

Note:
If multiple units are grouped, then the control should be connected to the master unit (0)

2.7 Connecting the unit to the mains supply

2.7.1 Special points regarding the mains supply

For all models

Warning:
Do not turn unit ON/OFF at its power supply. Use the control panel.

Warning:
The unit must be earthed.

Warning:
The unit must be connected in accordance with the applicable local requirements.

Warning:
Each unit must be fused in accordance with the table below.

Fuse ratings

	MAXIMUM FUSE VALUE A
≤ 10A	16 A

Note:

A single fuse may only be used for multiple units if they draw a total current of less than 10A.

- Make sure that there is a power socket (earthed) available at no more than 1.5 m from the left-hand side of the unit.

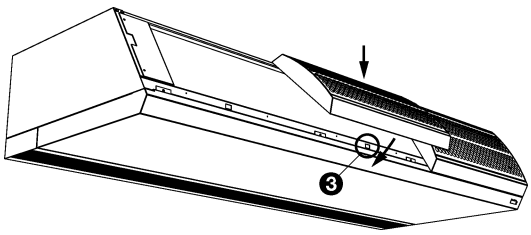
Note:

The power socket must remain accessible after installation so that the unit can be disconnected for service and maintenance. Should the power cable become damanged, it must be replaced by Biddle, their service agent of a suitably qualified person in order to avoid a hazard.

Danger:

Do not insert the plug into the power socket and energise the unit until the system installation has been completed.

2.8 Finishing the unit



2.8.1 Finishing free-hanging models

Position the inlet grilles

Fit the inlet grilles to the unit:

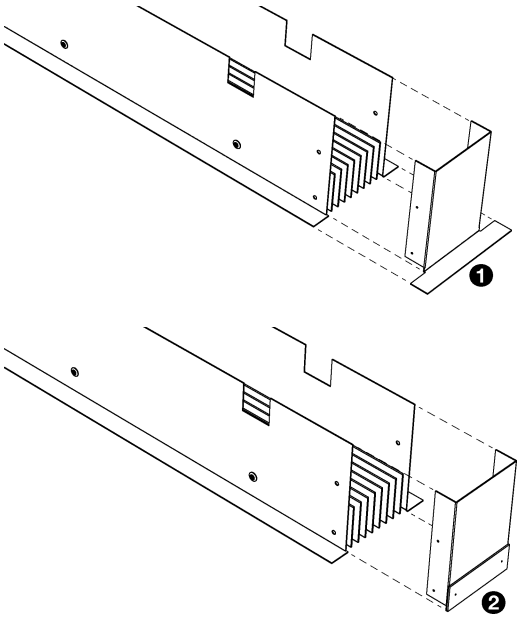
- Hook the grilles onto the upper side of the unit.
- The back of each grille has a projection. Fit the grille with the projection into the rectangular hole ❸.

2.8.2 Finishing recessed models

General

Note:

Ensure that the unit remains accessible for maintenance and repair, via an inspection hatch, for instance.



Adjusting the discharge duct

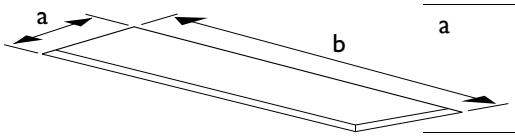
If linking two or more units to each other contiguously, you must adjust the discharge duct so that the finishing edges are not in each other's way.

1. Remove the end piece *with* finishing edge ❶.
2. Mount the end piece *without* finishing edge ❷.

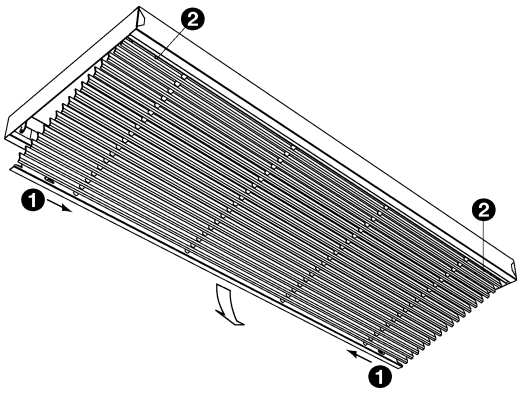
Mounting the discharge duct

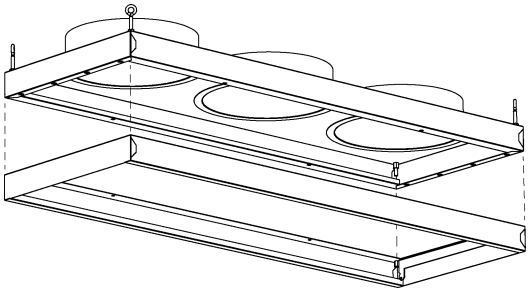
1. Make a hole in the ceiling for the discharge (see table regarding dimensions of the hole for the discharge section).
2. Fix the two angle sections ❸ with sheet metal screws to the unit, along the edges of the discharge opening.
3. Slide the discharge duct ❹ into the unit's discharge opening until the desired height is reached.
4. Using sheet metal screws, fix the discharge duct to the angle sections ❸.

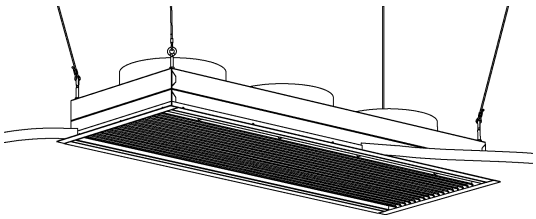
Discharge section hole dimensions



SIZE	TYPE	DIMENSIONS
a	S-R	102 mm
	M-R	102 mm
	L-R	133.5 mm
b	100-R	1008 mm
	150-R	1508 mm
	200-R	2008 mm
	250-R	2508 mm







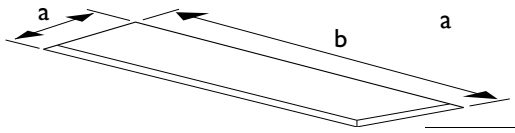
Installing the grille plenum of the inlet section

1. Make a hole in the suspended ceiling for the inlet section (see table regarding dimensions of the hole for the inlet section).
2. Remove the inlet grille from its frame:
   - Push the two electrodes ❶ in the grille towards one another and tilt the grille outwards.
   - Push the two electrodes at ❷ towards one another and take the grille out.
3. Mount the grille plenum to the inlet grille frame.
4. Put the grille back into its frame.

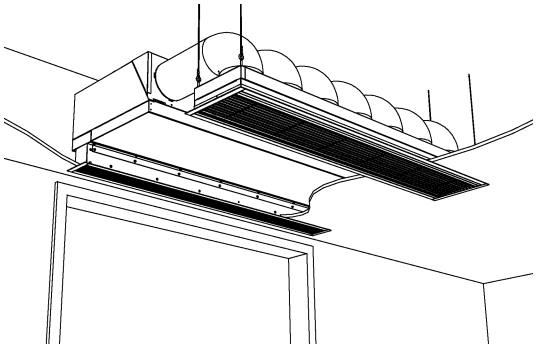
Note:
On delivery, the grille plenum may arrive already mounted to the inlet grille.

5. Fix the edge finishing strips to the frame.
6. Suspend the inlet section. To do so, use the supplied screw eyes or four threaded rods, M6.

Inlet section hole dimensions



SIZE	TYPE	DIMENSIONS
a	S-R	268 mm
	M-R	268 mm
	L-R	368 mm
b	100-R	1008 mm
	150-R	1508 mm
	200-R	2008 mm
	250-R	2508 mm



Connect the unit plenum and grille plenum

1. Connect the unit plenum to the grille plenum using flexible ducts. Use hose clips to fasten the ducts.

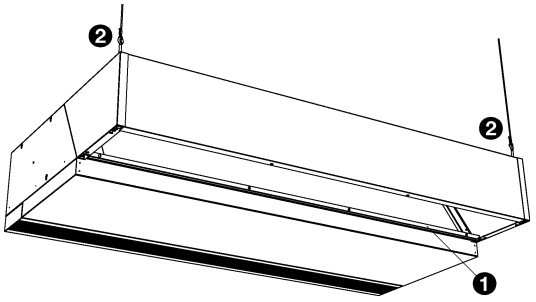
Plenum duct diameter

TYPE	DUCT DIAMETER
S-R	160 mm
M-R	160 mm
L-R	250 mm

2.8.3 Finishing cassette models

Note:

In the case of units with discharge width types 200 and 250, the components of the inlet section are supplied in two sections.

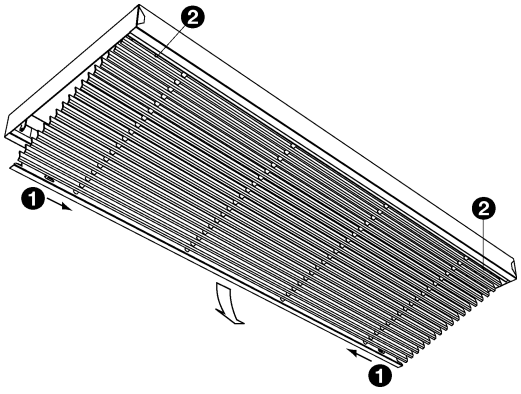


Installing the inlet case

1. Mount the inlet case to the unit:
   - Hook the inlet case onto the upper side of the unit.
   - Screw flange ❶ of the inlet case to the unit.
2. Fix the angle points ❷ of the inlet case to the ceiling. To do so, use the supplied screw eyes or four threaded rods, M6.

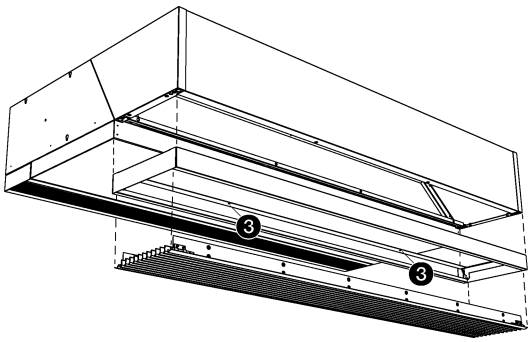
Warning:

If you do not fix the inlet case to the ceiling, the unit may tip over and fall out of the suspension rails.

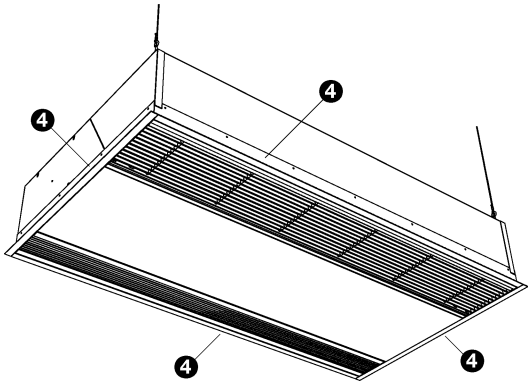


Installing the inlet grille

1. Remove the inlet grille from its frame:
   - Push the two electrodes ❶ in the grille towards one another and tilt the grille outwards.
   - Push the two electrodes at ❷ towards one another and take the grille out.



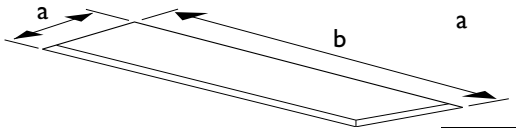
2. Screw the frame ❸ onto the inlet case.
3. Put the grille back into its frame.



Finishing

1. Fix the edge finishing strips ❹around the unit.
2. In the false ceiling, make a hole with dimensions in accordance with the table.

Unit hole dimensions



SIZE	TYPE	DIMENSIONS
a	S-C	829 mm
	M-C	829 mm
	L-C	1113 mm
b	100-C	1008 mm
	150-C	1508 mm
	200-C	2008 mm
	250-C	2508 mm

2.9 Switching on and checking operation

Commission the Daikin system:

1. Check the control cables between unit(s) and Daikin components.
2. Switch on the other Daikin indoor units and outdoor unit.
3. Test the complete Daikin system in accordance with the Installation manual for the outdoor unit.

Commission the CYA unit:

1. Switch the mains supply on .

2. Switch the unit ON using the control panel.
3. Configure the unit as shown below.

You can make local settings on the Daikin control panel as described in the corresponding installation manual. The units described in this manual should be setup and configured in the below way:

SETTINGS	DESCRIPTION	SW POSITION
10(20)-2	External protection device activated.	Control temperature selection for room air thermistor
		Use the suction air sensor only (or the remote sensor if installed).**
		Use remote controller sensor only.
12(22)-3	Fan operation at thermostat OFF (heating)	1 - On (Low Speed)
		2 - On (Control Panel)**
		3 - Off
13(23)-3	Fan operation during defrost and oil return	1 - Off
		2 - On (Low Speed)
		3 - On (Control Panel)**
15(23)-13	R32 leak safety system setting	1 - Disabled
		2 - Enabled**
		3 - Temporarily Disabled (max. 24 hours)
15(25)-14	R32 Sensor replacement completion setting	1 - Normal**
		2 - Reset

** denotes default setting

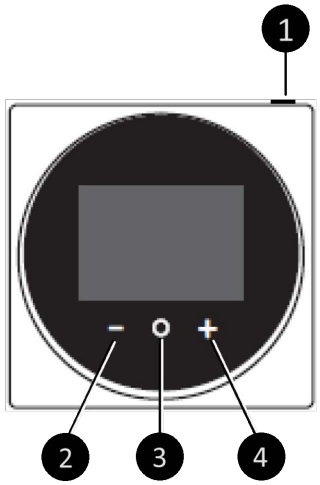
Check the complete system:

Operate the unit using the Daikin control panel and check its operation:

1. Turn the system on. The unit should start discharging air.
2. Set the operational mode to 'heat' and set the temperature to 'maximum'. After a while, the unit should discharge warm air.
3. Set the operational mode to 'fan only'. After a while, the unit should discharge unheated air.
4. Cycle through the three fan speeds and check that the unit responds as required.

5. Open and close the door, and check that the unit responds to the door switch, running on for the time set during installation.
6. Turn the system off. After a while, the unit should switch itself off.
7. Check the control panel for any potential errors that may be showing. Refer to the errors section for guidance on next steps.

3 Operation



The air curtain is operated with the Daikin control panel. Most functions on the Daikin control panel operate as described in the corresponding operating manual. A number of functions operate differently or do not operate at all.

3.1 Switching The Unit On And Off

3.1.1 Switching the system On and Off

Press ❶ to switch the system ON or OFF. When the ON symbol is shown, the system is switched on. If the OFF symbol is shown, the system is off.

3.1.2 Selecting the operating mode

From the home screen, press ❸ to enter the main menu.

From the main menu, enter one of the submenus.

From their respective submenu, activate a mode:

- Fan only: The air curtain constantly discharges unheated air.
- Heating: The heating of the air curtain is controlled automatically.

Other operating modes are not available.

Use ❷ to cycle left or decrease a setting.

Use ❹ to cycle right or increase a setting.

3.1.3 Defrosting

Whenever the Daikin control panel displays the defrosting symbol, the system is operating in defrost mode. The air curtain then discharges unheated or cold air, or does not operate (depending on the setting on the control panel). Defrosting is automatically activated by the system whenever it becomes necessary. After defrost is completed, the unit will stay in a low fan speed for 3 minutes and then switch off for 30 seconds. Once this time has elapsed the unit will continue to operate at it's required speed level.

3.2 Controlling The Air Curtain

3.2.1 Controlling the air curtain strength

The air curtain has three preset strengths.

To achieve maximum climate separation with minimum energy consumption, Biddle recommends selection of the lowest setting at which no draught occurs

To change the fan speed:

1. Navigate to the fan speed menu
2. Use ❷ and ❹ to adjust the fan speed to the desired level
3. Press ❸ to confirm

3.2.2 Controlling the heating

The system controls the heating of the air curtain automatically. Heating is stopped when the room set point is reached. The air curtain then discharges unheated air or stops (depending on the settings on the control panel).

To change the heat settings:

1. Navigate to the home screen
2. Use ❷ and ❹ to adjust the setpoint to the desired level

4 Maintenance

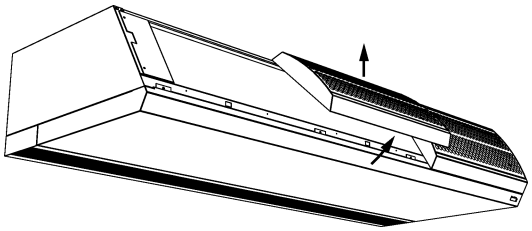
4.1 Replacing or cleaning the filter

The filter must be cleaned regularly. A dirty filter may cause inadequate heating as well as a high noise level. The interval at which the filter is to be cleaned depends on the local conditions.

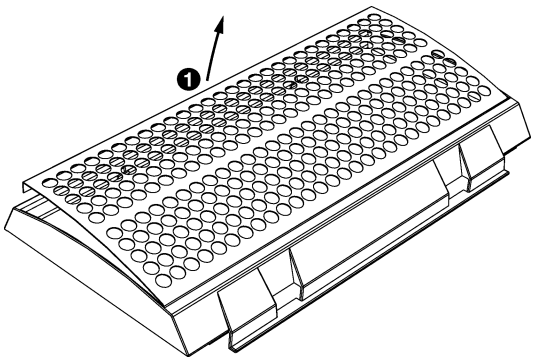
You can clean the filter with a vacuum cleaner, for instance. After several cleanings, however, the filter must be replaced. New filters are available from Biddle.

4.1.1 Removing the filter

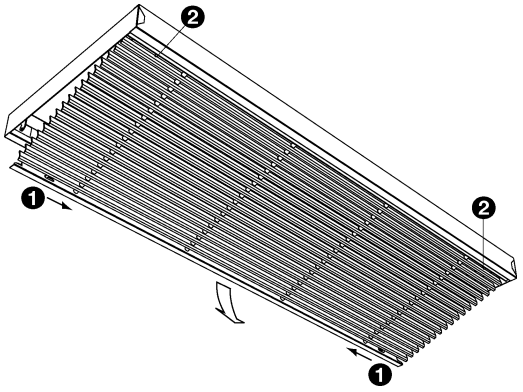
For free-hanging models



1. Remove the inlet grates from the unit:
   - Lift the grate at the bottom and unhook it.



2. Remove the grille from the inlet grate:
   - Insert a couple of fingers in the holes at ❶,
   - Pull in the direction indicated.
3. Clean or replace the filter.
4. Replace the grille in the inlet grate.



For recessed and cassette models

1. Open the inlet grille:
   - Push the two electrodes ❶ towards one another – the grille will tilt down.
2. Slide the filter out of the grille.
3. Clean or replace the filter.
4. Replace the grille in the inlet grate.

4.2 Cleaning the unit

You can clean the exterior of the unit with a damp cloth and a domestic cleaning agent. Do not use any solvents.

Caution:

Make sure that no water runs into the unit.

4.3 Scheduled maintenance

Biddle recommends having the following inspection and maintenance activities performed annually by an installer or other technical expert.

- Check whether the filter is clean enough and undamaged. Replace the filter if necessary.
- Carefully remove dust with a vacuum cleaner.
- Check the operation of the fans.

5 Errors

5.1 Safety instructions

Danger:

All work on the inside of the unit may only be carried out by personnel who are technically qualified to do so.

Warning:

Before you begin: read the safety instructions.

5.2 Checking for errors

Note:

You do not need to be an expert to carry out the following checks.

If you suspect an error, carry out the following to determine whether there is an error:

1. Carry out the following steps to determine whether the fault can be easily remedied or whether it is caused by an error.
2. If you determine that there is an error that cannot be remedied by the following steps, please contact your supplier.

5.2.1 For all units:

1. Set the system to heating mode using the Daikin control panel and set the temperature to Maximum.
   - If the unit does not discharge air or warm air after 15 minutes, then there is an error.
2. Set the temperature to Minimum.
   - If the unit is still discharging warm air after 15 minutes, then there is an error.

5.3 Resolving simple problems

If you suspect a malfunction, first try to resolve the problem using the table below. You do not need to be an expert for this.

PROBLEM	PROBABLE CAUSE	WHAT TO DO
The unit does not work, the control panel does not respond to the controls.	No power supply to the unit.	Check the mains supply: • plug in the power socket, • isolation switch, • unit has power.
The display of the Daikin control panel is blank.	No power supply to the unit to which the control panel is connected.	Check the plug, mains supply and P1P2 connections.
	The control panel wiring could be a poor connection.	Check the wiring for any loose or disconnected wires.
The air curtain is not functioning.	The system is switched OFF, or has automatically switched off the air curtain.	Check the settings on the Daikin control panel.
	The air curtain may have just completed a defrost style.	Normal operation will resume after 30 seconds.
The air curtain discharges unheated air.	An error has occurred in the system	Check the settings on the Daikin control panel.
	The Daikin system has automatically switched the heating off.	Check the settings on the Daikin control panel.
The air curtain discharges unheated or cold air, or does not function, and the Daikin control panel shows  .	The system is operating in defrost mode. This lasts 5 to 20 minutes.	Wait until defrosting has been completed.
The air curtain is running in low speed.	The air curtain has just completed a defrost cycle.	Normal operation will resume after 3.5 minutes.

5.4 Remedying errors

If you suspect an error:

1. Check whether the problem can be easily resolved.
2. Try to resolve the problem using the table below. Technical expertise is required for this.

PROBLEM	PROBABLE CAUSE	WHAT TO DO
The control panel works normally but the unit does not respond.	The power supply to the fans is cut off.	1. Check the wiring between the transformer and the fans. 2. Replace the transformer or fan control board.
	The unit is being controlled by a signal from an external source.	Check the inputs.
The unit does not work, the control panel does not respond to the controls.	The unit is not receiving power.	Check the power supply's connections and wiring.
	The connection between the control panel and the control circuit board is not correct.	1. Check the control cable. 2. Check the wiring between the connector plate and the control circuit board.
	The control circuit board is not working.	1. Check Daikin PCB fuse. 2. Check the mains power cable. Should the power cable be damaged, it must be replaced by Biddle, their service agent of a suitably qualified person in order to avoid a hazard. 3. Replace the Daikin circuit board.
	The control panel is faulty.	Check the control panel by connecting it to another unit with another cable. Replace the control panel if it is not working.
One fan does not work.	The fan is faulty or it is not receiving a power supply.	1. Check the wiring of the fan. 2. Check the fan transformer fuse. 3. Replace the fan.
The fans are not working at a particular speed level.	The connection to the relevant tap is not correct.	1. Check the transformer connections. 2. Check the wiring between the control circuit board and the transformer.
The unit functions differently from expectations.	1. Control components may not be connected correctly.	Check the installation.
The unit is always running in low speed and does not respond to medium or high speed.	Terminals X4/X72 are open circuit.	Check the terminal wiring.

PROBLEM	PROBABLE CAUSE	WHAT TO DO
The display of the Daikin control panel is blank.	No power supply to the connected unit. Poor connection to the Daikin control panel. The Daikin electronics in the air curtain are faulty.	1. Check the mains supply. Should the power cable be damaged, it must be replaced by Biddle, their service agent of a suitably qualified person in order to avoid a hazard. 2. Check the unit's fuses. 3. Consult the Daikin control panel Installation manual. 4. Contact the supplier.
The Daikin control panel signals an error (error indicator lights on the screen and/or an error code is visible).	Daikin electronics in the unit or outdoor unit detects an error.	1. Consult the table below for Error Codes and the service manual for the outdoor unit. 2. Contact the supplier.
The air curtain does not function although the Daikin control panel indicates that it is functioning normally.	Error in Biddle electronics, transformer, fuse or fans in the unit.	1. Check the fuses. 2. Check the wiring connections to the transformer. 3. Check the wiring between components in the unit.
The unit discharges cool air for a prolonged period and/or condensation drips from the unit.	There is a fault in the air curtain. **Warning:** this situation can result in danger and/or damage.	1. Switch off the whole system immediately. 2. Contact the supplier.

5.5 Error Codes

Depending on the fault, the wall controller may give the user an error code. A full explanation of these codes can be found in the table below:

CODE	DESCRIPTION	NEXT STEP
A0-11	R32 leak detected.	Refer to Daikin service manual for guidance on next steps to identify source of leak and corrective action. The system shall not be reset until the room has been ventilated, because resetting can result in additional flammable refrigerant being released into the space.
A0-13	False R32 leak detected.	
A1-00	Main PCB faulty.	Replace main PCB within indoor unit.
A6-01	Wiring malfunction.	The wiring link across terminals T5 and T6 has become open circuit. Recheck the wiring on these terminals to ensure continuity. If problem persists contact customer service.

CODE	DESCRIPTION	NEXT STEP
A9-01	Expansion valve coil malfunction.	Check expansion valve coil and replace if needed.
A9-02	Expansion valve body malfunction.	Check expansion valve body and replace if needed.
AJ-01	Capacity error - indoor unit mismatched to outdoor unit.	Check sizing of indoor and outdoor units. The required outdoor unit size for the air curtain is printed on the type plate.
AJ-02	Capacity error - indoor unit capacity flag not set.	Check the capacity adapter on the CYA main Daikin PCB is installed correctly on connector X23A.
C4-00	Liquid thermistor malfunction.	Check liquid thermistor wiring and position. Replace if required.
C5-00	Gas thermistor malfunction.	Check gas thermistor wiring and position. Replace if required.
C9-00	Inlet air thermistor malfunction.	Check inlet air thermistor wiring and position. Replace if required.
CH-01	R32 leak detection sensor failure (or disconnected).	Check R32 leak detection wiring and position. Replace if required.
CH-02	R32 leak detection sensor usable lifetime reached.	Replace the R32 leak sensor now.
CH-05	R32 leak detection sensor end of life approaching (less than 6 months).	Schedule in to replace the R32 leak sensor within the next 6 months.
CH-10	R32 leak detection sensor has activated in the presence of a leak and requires you to confirm it has been replaced.	Replace the leak sensor and confirm to the system it has been changed by changing function 15(25) from 01 to 02.
CJ-00	Remote controller air thermistor malfunction.	
U4-01	Communications error between indoor and outdoor unit.	Check the wiring and electrical connections between the units.
U5-04	Incorrect remote controller connected.	Replace remote controller with type suitable for R32 systems
U5-06	Supervisor remote controller not connected or set up.	Setup remote controller as shown in the remote controller manual(s).
UA-13	Indoor and outdoor unit refrigerant abnormality. Indoor unit refrigerant is not compatible with the outdoor unit(s) refrigerant.	Replace indoor or outdoor unit with alternative type.

CODE	DESCRIPTION	NEXT STEP
UC-00	Address duplication error.	Refer to the outdoor unit manuals for new addresses.
UE-00	Communication adnormality with central controller.	Contact local Daikin office for next steps.
UH-00	Faulty wiring between indoor and outdoor units.	Check wiring and replace where necessary.
C1-13	Demand PCB disconnected.	Check wiring between Main PCB and Demand PCB.
C1-14	Relay PCB disconnection or power failure.	Check the wiring of relay K8 (supply and output).

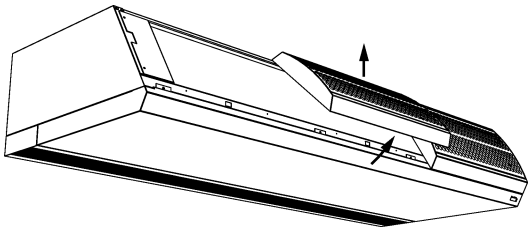
6 Service

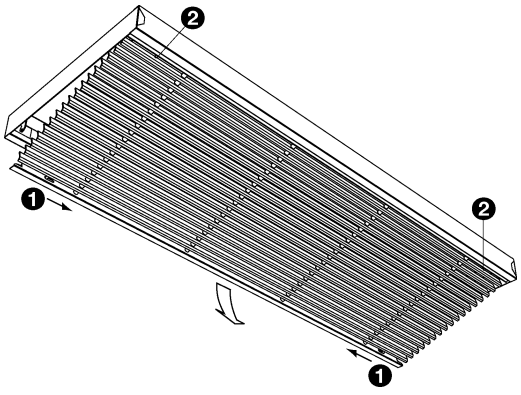
6.1 Safety instructions

Warning:
Servicing activities may only be carried out by personnel who are technically qualified to do so.

Warning:
Before you begin: read the safety instructions.

6.2 Access to the interior of the unit





For all models

1. Switch the unit off using the control panel.

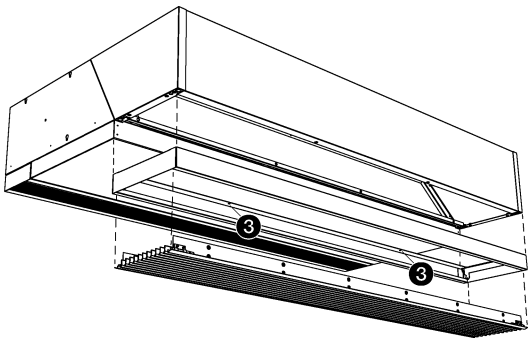
Warning:
Disconnect the mains supply (remove plug from power socket or turn off at the isolation switch).

For free-hanging models

1. Remove the inlet grates from the unit:
   - Lift the grate at the bottom and unhook it.

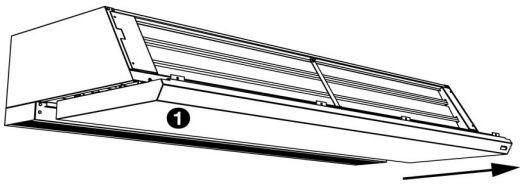
For cassette models

1. Remove the inlet grille from its frame:
   - Push the two electrodes ❶ in the grille towards one another: the grille will tilt down.
   - Push the two electrodes at ❷ towards one another and take the grille out.



2. Loosen screws ❸ and remove the frame.

For all models



1. Remove the inspection panel ❶:
   - Remove the screws from the front of the inspection panel.
   - Pull the panel forward a little and remove it.

Caution:

The entire panel comes free once pulled forward – make sure it does not fall.

Warning:

When replacing the inspection panel, always attach it using flanged bolts with milled edges; these are required for the earth connection.

6.3 Electronics module

The unit contains two electrical enclosures.

1. Fan power module controls the fans and door function.
2. Daikin module controls the overall functionality.

Fan power module contains the following:

- The transformer
- The printed circuit board
- The connector plate for door switch
- The main fuse

For models with discharge width of 150, 200 or 250 it is located between fan 1 and 2. For models with a discharge width of 100, it is located on the side of the unit. It is split in 2 parts:

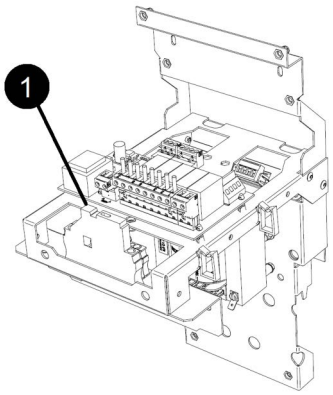
- Connection bracket with supply cord and main fuse
- External box with control board and transformer

The Daikin electronics module contains the following:

- 3 control boards (main, relay and demand)
- Connector plate for outdoor unit, control panel and on/off connections.

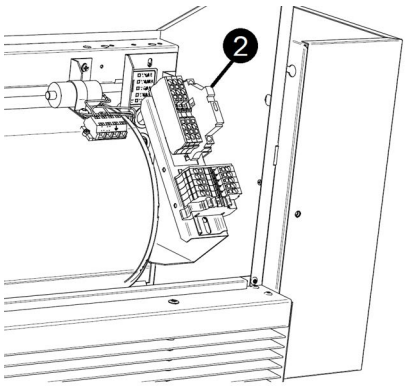
This module is positioned between the fans 1 and 2 (discharge width 100) and fan 2 and 3 (discharge width 150, 200 and 250). An R32 leak sensor is located within the unit, positioned between the fans.

6.4 Fuses

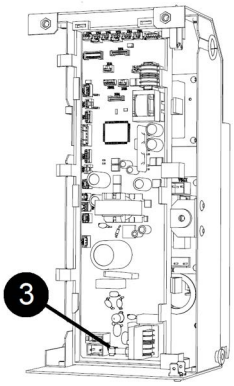


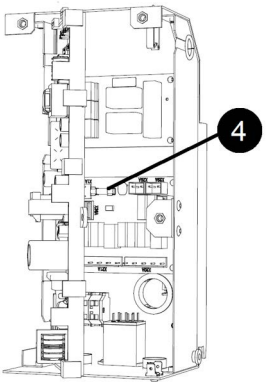
The unit is fitted with the following fuses:

- fuse ❶ for main power (1.5m, 2m and 2.5m units). ❷ for main power (1m units only).
- fuse ❸ for main control circuit board (F1U / T 3.15A, voltage 250V).
- fuse ❹ for fan control circuit board (F1U / T 6.3A, voltage 250V).



The values are indicated on the fuses.

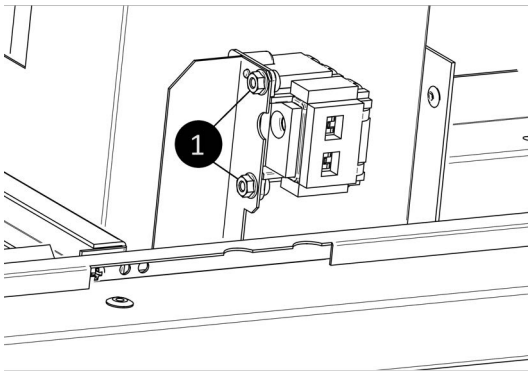




6.5 R32 Leak Sensor

For all models

The product is fitted with an R32 leak detection sensor with a lifetime expectancy of 10 years. After this time, the sensor will need to be replaced. Replace the sensor only with the same type, available from Daikin or Biddle. To replace the sensor:



1. Safely isolate the unit
2. Remove the access panel
3. Locate the R32 leak sensor
4. Unplug the sensor and remove the screws ❶ holding it into the unit
5. Reverse the procedure to fit the new sensor
6. Confirm to the system it has been changed by changing function 15(25) from 01 to 02 on the control panel.

7 Dismantling

The dismantling of the installation and the handling of the coolant, oil and other components must be carried out by a qualified fitter in accordance with the relevant local and national legislation and regulations.

Pursuant to EU legislation, used electrical and electronic appliances must be collected for recycling. By ensuring that this product is disposed of in the correct manner, you are helping to prevent potential negative consequences for the environment and public health. For more information about this, please contact your supplier or the relevant government authority.

8 Addresses

If you have any comments or queries relating to this product, please do not hesitate to contact your Biddle branch.

Biddle bv
P.O. Box 15
9288 ZG Kootstertille
The Netherlands
T +31 (0)512 33 55 55
E info@biddle.nl

Biddle Air Systems
St. Mary's Road, Nuneaton
Warwickshire CV11 5AU
United Kingdom
T +44 (0)24 7638 4233
E sales@biddle-air.co.uk
I www.biddle-air.co.uk

N° Vert 0 800 24 33 53
N° Vert 0 800 BI DD LE

Biddle France
21 Allée des Vendanges
77183 Croissy Beaubourg
France
T +33 (0)1 64 11 15 55
E contact@biddle.fr
I www.biddle.fr

Biddle GmbH
Emil-Hoffmann-Straße 55-59
50996 Cologne
Germany
T +49 (0)2236 9690 0
E info@biddle.de
I www.biddle.de

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Should you nevertheless discover any errors or ambiguities in the manual, we shall be glad to learn that from you. It helps us to improve the documentation still further.

For more information

If you have any comments or queries relating to this product, please do not hesitate to contact Biddle. You will find the contact information for your Biddle branch in the Addresses chapter.

Biddle bv
P.O. Box 15
9288 ZG Kootstertille
The Netherlands

T +31 (0)512 33 55 55
E info@biddle.nl
I www.biddle.nl

Name and telephone number of installer: