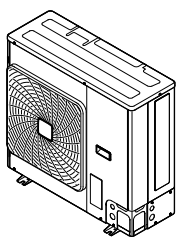




Installation manual



Sky Air Active-series

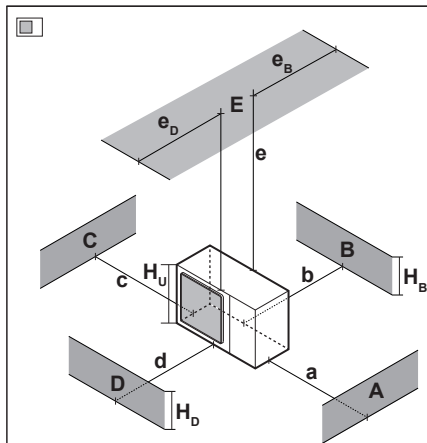


AZAS100MUV
AZAS125MUV
AZAS140MUV

AZAS100MUY
AZAS125MUY
AZAS140MUY

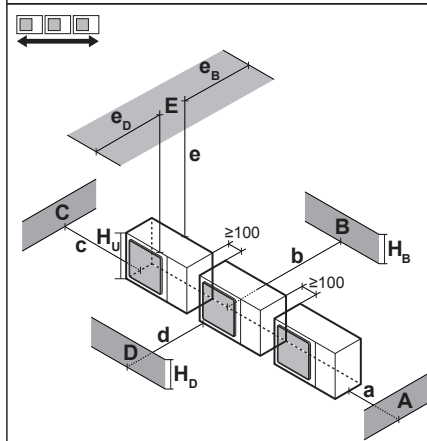
Installation manual
Sky Air Active-series

English



A~E	H_B H_D H_U	(mm)						
		a	b	c	d	e	e_B	e_D
B	—		≥ 100					
A, B, C	—	≥ 250	≥ 100	≥ 100				
B, E	—		≥ 100			≥ 1000		≤ 500
A, B, C, E	—	≥ 250	≥ 150	≥ 150		≥ 1000		≤ 500
D	—				≥ 500			
D, E	—				≥ 500	≥ 1000	≤ 500	
B, D	—		≥ 100		≥ 500			
B, D, E	$H_B < H_D$	$H_B \leq \frac{1}{2} H_U$		≥ 250	≥ 750	≥ 1000	≤ 500	
		$\frac{1}{2} H_U < H_B \leq H_U$		≥ 250	≥ 1000	≥ 1000	≤ 500	
		$H_B > H_U$		⊘				
	$H_B > H_D$	$H_D \leq \frac{1}{2} H_U$		≥ 100	≥ 1000	≥ 1000		≤ 500
		$\frac{1}{2} H_U < H_D \leq H_U$		≥ 200	≥ 1000	≥ 1000		≤ 500
		$H_D > H_U$		⊘				

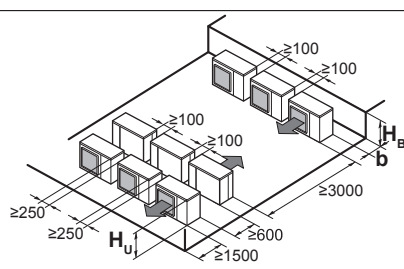
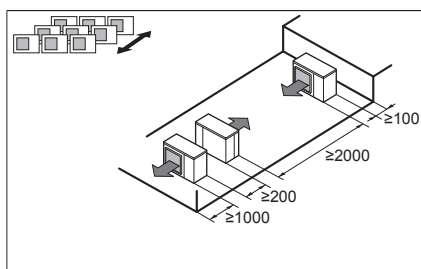
1



A, B, C	—	≥ 250	≥ 300	≥ 1000				
A, B, C, E	—	≥ 250	≥ 300	≥ 1000		≥ 1000		≤ 500
D	—				≥ 1000			
D, E	—				≥ 1000	≥ 1000	≤ 500	
B, D	$H_D > H_U$		≥ 300		≥ 1000			
	$H_D \leq \frac{1}{2} H_U$		≥ 250		≥ 1500			
	$\frac{1}{2} H_U < H_D \leq H_U$		≥ 300		≥ 1500			
B, D, E	$H_B < H_D$	$H_B \leq \frac{1}{2} H_U$		≥ 300	≥ 1000	≥ 1000	≤ 500	
		$\frac{1}{2} H_U < H_B \leq H_U$		≥ 300	≥ 1250	≥ 1000	≤ 500	
		$H_B > H_U$		⊘				
	$H_B > H_D$	$H_D \leq \frac{1}{2} H_U$		≥ 250	≥ 1000	≥ 1000		≤ 500
		$\frac{1}{2} H_U < H_D \leq H_U$		≥ 300	≥ 1000	≥ 1000		≤ 500
		$H_D > H_U$		⊘				

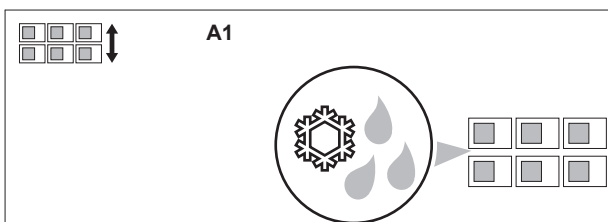
1+2

1



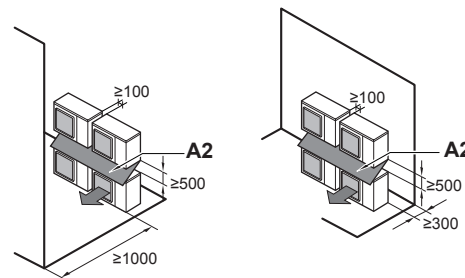
H_B H_U	b (mm)
$H_B \leq \frac{1}{2} H_U$	$b \geq 250$
$\frac{1}{2} H_U < H_B \leq H_U$	$b \geq 300$
$H_B > H_U$	⊘

2



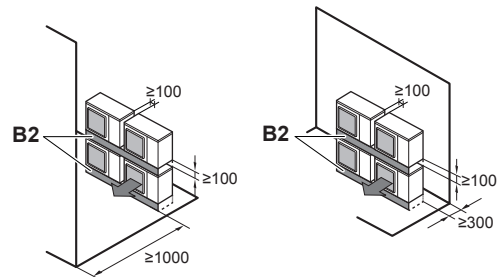
A1

A2



B1

B2



3

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1 About this document

Target audience

Authorised installers



INFORMATION

This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

Documentation set

This document is part of a documentation set. The complete set consists of:

General safety precautions:

- Safety instructions that you **MUST** read before installing
- Format: Paper (in the box of the outdoor unit)

Outdoor unit installation manual:

- Installation instructions
- Format: Paper (in the box of the outdoor unit)

Installer reference guide:

- Preparation of the installation, reference data, ...
- Format: Digital files on <https://www.daikin.eu>. Use the search function 🔍 to find your model.

The latest revision of the supplied documentation is published on the regional Daikin website and is available via your dealer.

The original instructions are written in English. All other languages are translations of the original instructions.

Technical engineering data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of the latest technical data is available on the Daikin Business Portal (authentication required).

2 Specific installer safety instructions

Always observe the following safety instructions and regulations.

Installation site (see "[4.1 Preparing the installation site](#)" ▶ 5)



WARNING

Follow the service space dimensions in this manual to install the unit correctly. See "[4.1.1 Installation site requirements of the outdoor unit](#)" ▶ 5].



WARNING

The appliance shall be stored in a room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).



CAUTION

Appliance NOT accessible to the general public, install it in a secured area, protected from easy access.

This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.

Opening and closing the unit (see "[4.2 Opening and closing the unit](#)" ▶ 6)]



DANGER: RISK OF BURNING/SCALDING



DANGER: RISK OF ELECTROCUTION

2 Specific installer safety instructions



DANGER: RISK OF ELECTROCUTION

Do NOT leave the unit unattended when the service cover is removed.

Mounting the outdoor unit (see "4.3 Mounting the outdoor unit" ▶ 7)



WARNING

Fixing method of the outdoor unit MUST be in accordance with the instructions from this manual. See "4.3 Mounting the outdoor unit" ▶ 7.

Piping installation (see "5 Piping installation" ▶ 8)



DANGER: RISK OF BURNING/SCALDING



WARNING

Field piping MUST be in accordance with the instructions from this manual. See "5.1 Connecting the refrigerant piping" ▶ 8.



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.

Electrical installation (see "6 Electrical installation" ▶ 10)



DANGER: RISK OF ELECTROCUTION



WARNING

Electrical wiring MUST be in accordance with the instructions from:

- This manual. See "6 Electrical installation" ▶ 10.
- The wiring diagram, which is delivered with the unit, located at the inside of the service cover. For a translation of its legend, see "11.3 Wiring diagram: Outdoor unit" ▶ 19.



WARNING

ALWAYS use multicore cable for power supply cables.



WARNING

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



WARNING

- If the power supply has a missing or wrong N-phase, equipment might break down.
- Establish proper earthing. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earthing may cause electrical shocks.
- Install the required fuses or circuit breakers.
- Secure the electrical wiring with cable ties so that the cables do NOT come in contact with sharp edges or piping, particularly on the high-pressure side.
- Do NOT use taped wires, extension cords, or connections from a star system. They can cause overheating, electrical shocks or fire.
- Do NOT install a phase advancing capacitor, because this unit is equipped with an inverter. A phase advancing capacitor will reduce performance and may cause accidents.



WARNING

If the supply cord is damaged, it MUST be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.



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 push or place redundant cable length into the unit.



CAUTION

For use of units in applications with temperature alarm settings it is recommended to foresee a delay of 10 minutes for signalling the alarm in case the alarm temperature is exceeded. The unit may stop for several minutes during normal operation for "defrosting the unit", or when in "thermostat stop" operation.

Charging refrigerant (see "7 Charging refrigerant" ▶ 12)



WARNING

Charging of refrigerant MUST be in accordance with the instructions from this manual. See "7 Charging refrigerant" ▶ 12.



WARNING

Some sections of the refrigerant circuit may be isolated from other sections caused by components with specific functions (e.g. valves). The refrigerant circuit therefore features additional service ports for vacuuming, pressure relief or pressurizing the circuit.

In case it is required to perform **brazing** on the unit, ensure that there is no pressure remaining inside the unit. Internal pressures need to be released with ALL the service ports indicated on the figures below opened. The location is depending on model type.



WARNING: MILDLY FLAMMABLE MATERIAL

The refrigerant inside this unit is mildly flammable.

**WARNING**

- The refrigerant inside the unit is mildly flammable, but normally does NOT leak. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, this may result in fire, or the formation of a harmful gas.
- Turn OFF any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
- Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.

**WARNING**

The appliance shall be stored in a room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).

**WARNING**

- Do NOT pierce or burn refrigerant cycle parts.
- Do NOT use cleaning materials or means to accelerate the defrosting process other than those recommended by the manufacturer.
- Be aware that the refrigerant inside the system is odourless.

**WARNING**

- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.

Commissioning (see ["9 Commissioning" \[p 15\]](#))

**WARNING**

Commissioning MUST be in accordance with the instructions from this manual. See ["9 Commissioning" \[p 15\]](#).

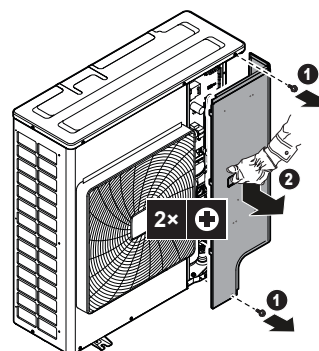
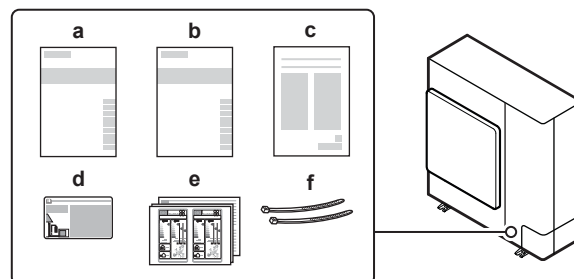
3 About the box

Keep the following in mind:

- At delivery, the unit MUST be checked for damage and completeness. Any damage or missing parts MUST be reported immediately to the claims agent of the carrier.
- Bring the packed unit as close as possible to its final installation position to prevent damage during transport.
- Prepare in advance the path along which you want to bring the unit to its final installation position.

3.1 Outdoor unit

3.1.1 To remove the accessories from the outdoor unit



- a General safety precautions
- b Outdoor unit installation manual
- c Addendum (LOT 21)
- d Fluorinated greenhouse gases label
- e Energy label
- f Tie wraps

4 Unit installation

4.1 Preparing the installation site

**WARNING**

The appliance shall be stored in a room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).

4.1.1 Installation site requirements of the outdoor unit

Mind the spacing guidelines. See the "Technical data" chapter, and the figures on the inside of the front cover.

**INFORMATION**

The sound pressure level is less than 70 dBA.

**CAUTION**

Appliance NOT accessible to the general public, install it in a secured area, protected from easy access.

This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.

The outdoor unit is designed for outdoor installation only, and for the following ambient temperatures:

Cooling mode	Heating mode
-10~46°C DB	-15~15.5°C WB

4 Unit installation

4.2 Opening and closing the unit

4.2.1 To open the outdoor unit

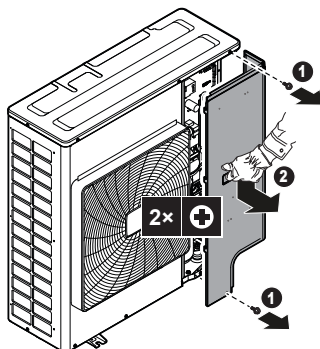


DANGER: RISK OF ELECTROCUTION



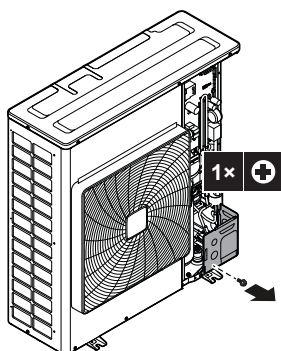
DANGER: RISK OF BURNING/SCALDING

- 1 Open the service cover.



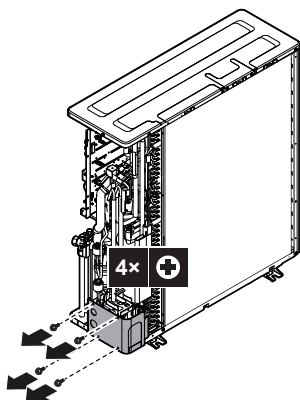
- 2 If necessary, remove the piping intake front plate. This is e.g. necessary in the following cases:

- "5.1 Connecting the refrigerant piping" [p 8].
- "6.4 To connect the electrical wiring to the outdoor unit" [p 11].
- "7 Charging refrigerant" [p 12].



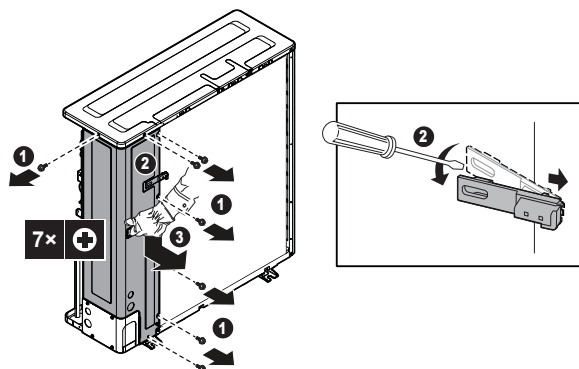
- 3 If necessary, remove the piping intake rear plate. This is e.g. necessary in the following cases:

- "5.1 Connecting the refrigerant piping" [p 8].
- "6.4 To connect the electrical wiring to the outdoor unit" [p 11].



- 4 If necessary, open the rear cover. This is e.g. necessary in the following cases:

- "6.4 To connect the electrical wiring to the outdoor unit" [p 11].
- "7 Charging refrigerant" [p 12].



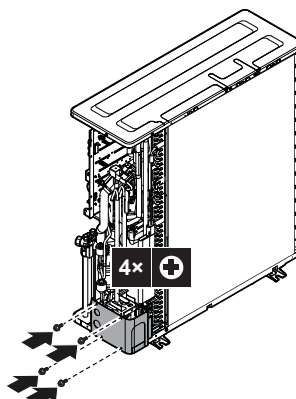
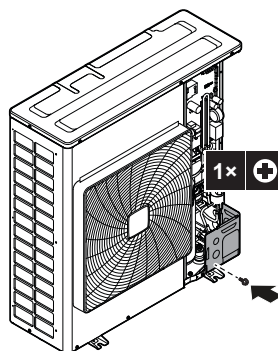
NOTICE

Use a flat head screwdriver to remove the thermistor fixing plate (2).

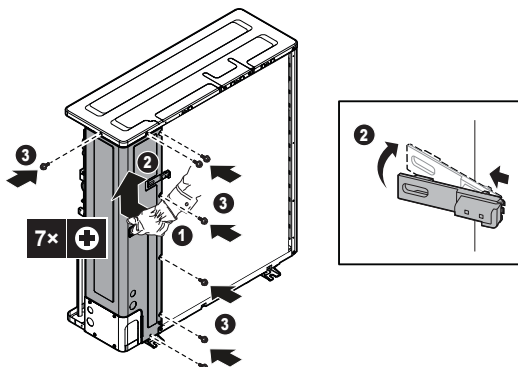
NEVER remove the lid, that covers the thermistor body.

4.2.2 To close the outdoor unit

- 1 Reinstall the piping intake front and rear plate.



- 2 Reinstall the rear cover.

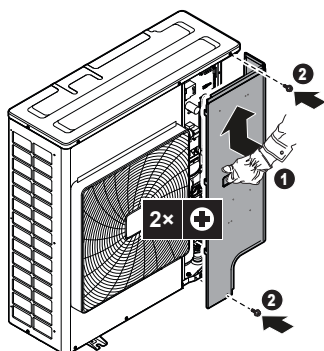




NOTICE

Take care to mount the hooks of the thermistor fixing plate (2) correctly to the rear cover.

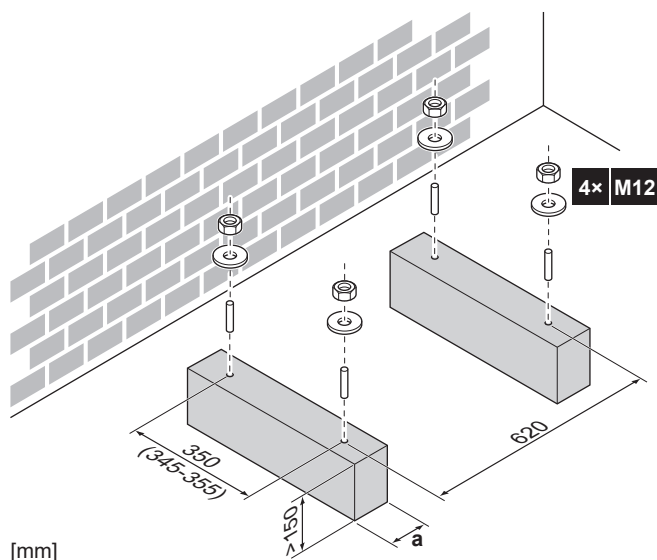
- Reinstall the service cover.



4.3 Mounting the outdoor unit

4.3.1 To provide the installation structure

Prepare 4 sets of anchor bolts, nuts and washers (field supply) as follows:

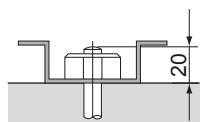


- a** Make sure not to cover the drain holes of the bottom plate of the unit.



INFORMATION

The recommended height of the upper protruding part of the bolts is 20 mm.

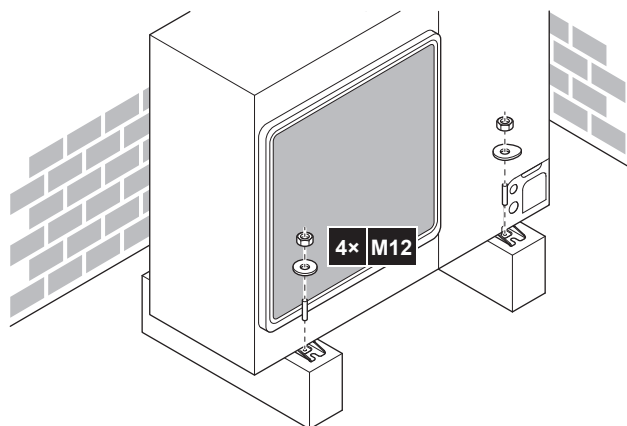


NOTICE

Fix the outdoor unit to the foundation bolts using nuts with resin washers (a). If the coating on the fastening area is stripped off, the metal can rust easily.



4.3.2 To install the outdoor unit



4.3.3 To provide drainage



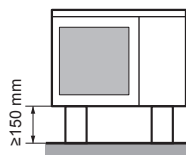
INFORMATION

If necessary, you can use a drain plug kit (field supply) to prevent drain water from dripping.

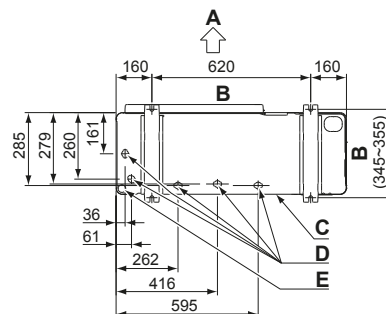


NOTICE

If drain holes of the outdoor unit are covered by a mounting base or by floor surface, raise the unit to provide a free space of more than 150 mm under the outdoor unit.



Drain holes (dimensions in mm)

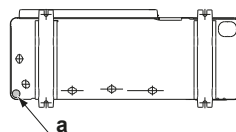


- A** Discharge side
- B** Distance between anchor points
- C** Bottom frame
- D** Drain holes
- E** Knockout hole for snow

Snow

In regions with snowfall, snow might build up and freeze between the heat exchanger and the external plate. This might decrease the operating efficiency. To prevent this:

- Remove the knockout hole (a) by tapping on the attachment points with a flat head screwdriver and a hammer.



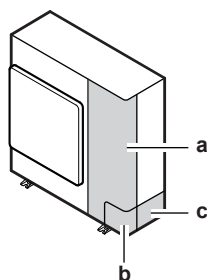
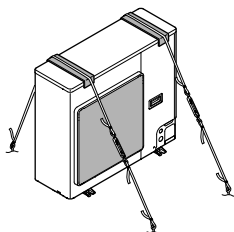
- Remove the burrs, and paint the edges and areas around the edges using repair paint to prevent rusting.

5 Piping installation

4.3.4 To prevent the outdoor unit from falling over

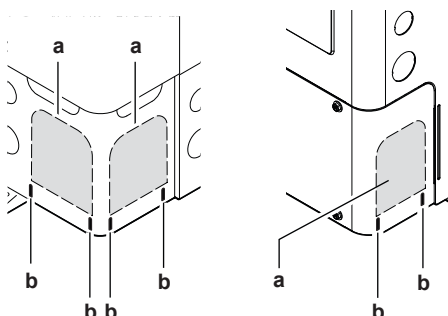
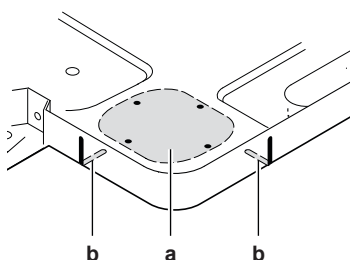
In case the unit is installed in places where strong wind can tilt the unit, take following measure:

- 1 Prepare 2 cables as indicated in the following illustration (field supply).
- 2 Place the 2 cables over the outdoor unit.
- 3 Insert a rubber sheet between the cables and the outdoor unit to prevent the cables from scratching the paint (field supply).
- 4 Attach the ends of the cables.
- 5 Tighten the cables.



- a Service cover
- b Piping intake front plate
- c Piping intake rear plate

- 2 Remove the knockout hole(a) in the bottom plate or in the piping intake plate by tapping on the attachment points with a small flat screwdriver and a hammer. Optionally, cut out the slits (b) with a metal saw.



- a Knockout hole for piping
- b Slit

5 Piping installation

5.1 Connecting the refrigerant piping



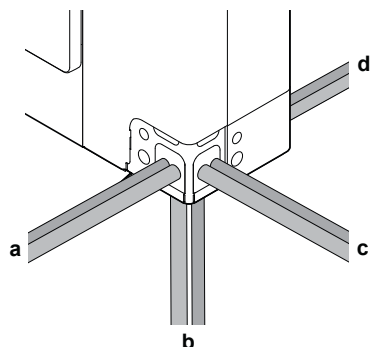
DANGER: RISK OF BURNING/SCALDING

5.1.1 To connect the refrigerant piping to the outdoor unit

Keep the following in mind:

- **Piping length.** Keep field piping as short as possible.
- **Piping protection.** Protect the field piping against physical damage.

You can route the refrigerant piping to the front, bottom, side or rear of the unit.



- a Front connection
- b Bottom connection
- c Side connection
- d Rear connection

- 1 Remove the following plates:

For details, see "[4.2.1 To open the outdoor unit](#)" [▶ 6].

- Remove the service cover (a) and the piping intake front plate (b).
- In case the refrigerant piping is routed to the rear side of the unit, also remove the piping intake rear plate (c).



NOTICE

Precautions when making knockout holes:

- Avoid damaging the casing and underlying piping.
- After making the knockout holes, we recommend to remove the burrs and paint the edges and areas around the edges using repair paint to prevent rusting.
- When passing electrical wiring through the knockout holes, wrap the wiring with protective tape to prevent damage.

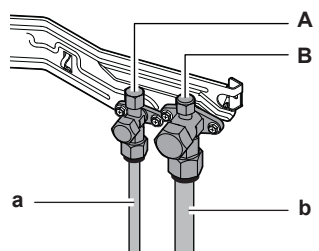


NOTICE

Avoid bending the bottom plate when removing the knockout hole.

- 3 Connect the gas and liquid piping.

- Connect the liquid piping (a) to the liquid stop valve (A).
- Connect the gas piping (b) to the gas stop valve (B).

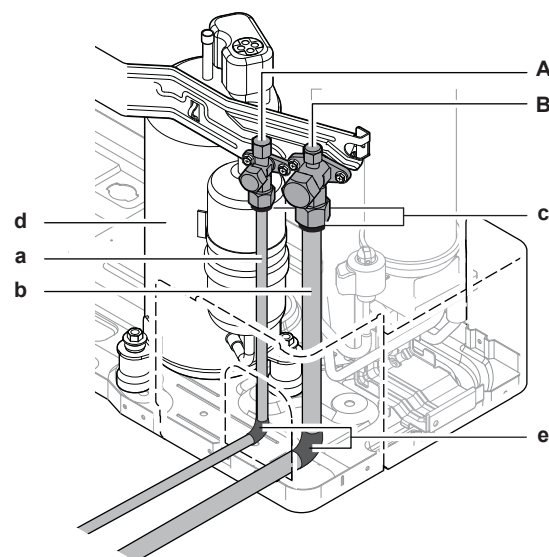


- A Stop valve (liquid)
- B Stop valve (gas)
- a Liquid piping
- b Gas piping

4 Insulate the refrigerant piping:

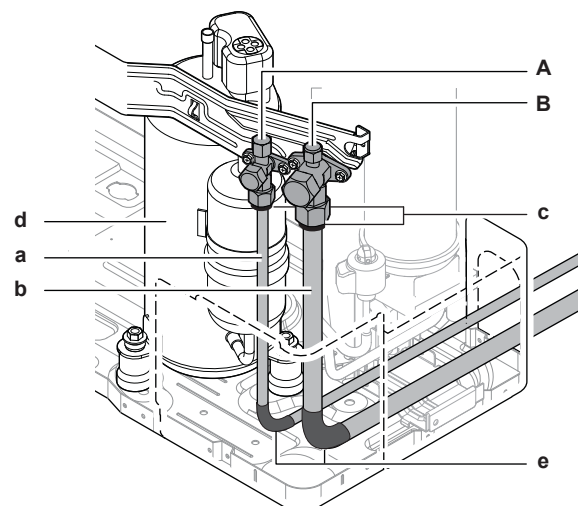
- Insulate the liquid piping (a) and the gas piping (b).
- Wind heat insulation around the curves, and then cover it with vinyl tape (e).
- Make sure the field piping does not touch any compressor components (d).
- Seal the insulation ends (sealant etc.) (c).

Example: Front connection



- A Stop valve (liquid)
- B Stop valve (gas)
- a Liquid piping
- b Gas piping
- c Insulation ends
- d Compressor
- e Vinyl tape

Example: Rear connection



- A Stop valve (liquid)
- B Stop valve (gas)
- a Liquid piping
- b Gas piping
- c Insulation ends
- d Compressor
- e Vinyl tape

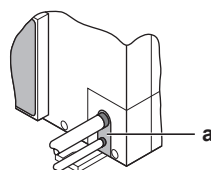
- 5 If the outdoor unit is installed above the indoor unit, cover the stop valves (A,B see above) with sealing material to prevent condensed water on the stop valves from moving to the indoor unit.



NOTICE

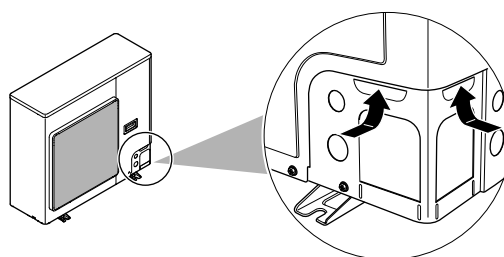
Any exposed piping can cause condensation.

- 6 Reattach the service cover and the piping intake plate.
- 7 Seal all gaps (example: a) to prevent snow and small animals from entering the system.



NOTICE

Do not block the air vents. This could affect air circulation inside the unit.



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.

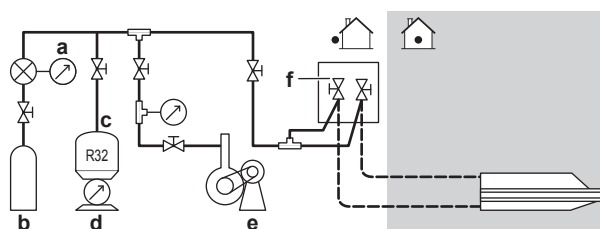


NOTICE

Make sure to open the stop valves after installing the refrigerant piping and performing vacuum drying. Running the system with the stop valves closed may break the compressor.

5.2 Checking the refrigerant piping

5.2.1 Checking refrigerant piping: Setup



- a Pressure gauge
- b Nitrogen
- c Refrigerant
- d Weighing scale
- e Vacuum pump
- f Stop valve

6 Electrical installation

5.2.2 To perform a leak test

The leak test must satisfy the specifications of EN378-2.

Pressure leak test



NOTICE

Do NOT exceed the unit's maximum working pressure (see "PS High" on the unit name plate).

- 1 Charge the system with nitrogen gas up to a gauge pressure of at least 0.2 MPa (2 bar). It is recommended to pressurize to 3.0 MPa (30 bar) in order to detect small leaks.
- 2 Check for leaks by applying the bubble test solution to all connections.



NOTICE

ALWAYS use a recommended bubble test solution from your wholesaler.

NEVER use soap water:

- Soap water may cause cracking of components, such as flare nuts or stop valve caps.
- Soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold.
- Soap water contains ammonia which may lead to corrosion of flared joints (between the brass flare nut and the copper flare).

- 3 Discharge all nitrogen gas.

5.2.3 To perform vacuum drying



NOTICE

- Connect the vacuum pump to **both** the service port of the gas stop valve and the service port of the liquid stop valve to increase efficiency.
- Make sure that the gas stop valve and liquid stop valve are firmly closed before performing the leak test or vacuum drying.

- 1 Vacuum the system until the pressure on the manifold indicates -0.1 MPa (-1 bar).
- 2 Leave as is for 4-5 minutes and check the pressure:

If the pressure...	Then...
Does not change	There is no moisture in the system. This procedure is finished.
Increases	There is moisture in the system. Go to the next step.

- 3 Vacuum the system for at least 2 hours to a manifold pressure of -0.1 MPa (-1 bar).
- 4 After turning the pump OFF, check the pressure for at least 1 hour.
- 5 If you do NOT reach the target vacuum or CANNOT maintain the vacuum for 1 hour, do the following:
 - Check for leaks again.
 - Perform vacuum drying again.



NOTICE

Make sure to open the stop valves after installing the refrigerant piping and performing vacuum drying. Running the system with the stop valves closed may break the compressor.

6 Electrical installation



DANGER: RISK OF ELECTROCUTION



WARNING

The appliance **MUST** be installed in accordance with national wiring regulations.



WARNING

ALWAYS use multicore cable for power supply cables.



WARNING

If the supply cord is damaged, it **MUST** be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.



CAUTION

Do NOT push or place redundant cable length into the unit.



CAUTION

For use of units in applications with temperature alarm settings it is recommended to foresee a delay of 10 minutes for signalling the alarm in case the alarm temperature is exceeded. The unit may stop for several minutes during normal operation for "defrosting the unit", or when in "thermostat stop" operation.

6.1 About electrical compliance

AZAS100~140MUV

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 current >16 A and ≤ 75 A per phase.).

AZAS100~140MUY

Equipment complying with EN/IEC 61000-3-2 (European/ International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current ≤ 16 A per phase.).

6.2 Guidelines when connecting the electrical wiring

Tightening torques

Item	Tightening torque (N·m)
M4 (X1M)	1.2~1.8
M4 (earth)	1.2~1.4
M5 (X1M)	2.0~3.0
M5 (earth)	2.4~2.9



NOTICE

If limited space is available at the wire terminal, use bended crimp-style ring terminals.

6.3 Specifications of standard wiring components

Component		AZAS100~140MUV			AZAS100~140MUY	
		100	125	140	100	125+140
Power supply cable	MCA ^(a)	21.8 A	28.3 A	27.6 A	14.6 A	15.1 A
	Voltage range	220~240 V			380~415 V	
	Phase	1~			3N~	
	Frequency	50 Hz				
	Wire sizes	Must comply with national wiring regulation				
		3-core cable			5-core cable	
		Wire size based on the current, but not less than:				
		4.0 mm ²			2.5 mm ²	
Interconnection cable (indoor ↔ outdoor)	Voltage	220-240 V				
	Wire size	Only use harmonised wire providing double insulation and suitable for applicable voltage.				
		4-core cable				
Recommended field fuse		25 A	32 A		16 A	
Earth leakage circuit breaker / residual current device		Must comply with national wiring regulation				

^(a) MCA=Minimum circuit ampacity. Stated values are maximum values (see electrical data of combination with indoor units for exact values).

Note: Supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC 57).



NOTICE

We recommend using solid (single-core) wires. If stranded wires are used, slightly twist the strands to consolidate the end of the conductor for either direct use in the terminal clamp or insertion in a round crimp-style terminal. Details are described in "Guidelines when connecting the electrical wiring" in the installer reference guide.

6.4 To connect the electrical wiring to the outdoor unit

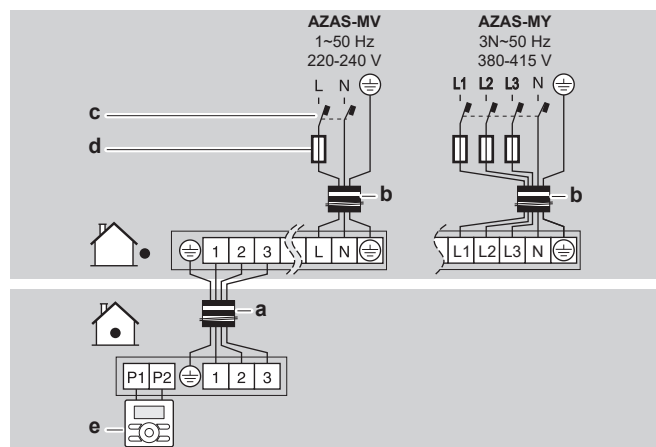


NOTICE

- Follow the wiring diagram (delivered with the unit, located at the inside of the service cover).
- Make sure the electrical wiring does NOT obstruct proper reattachment of the service cover.

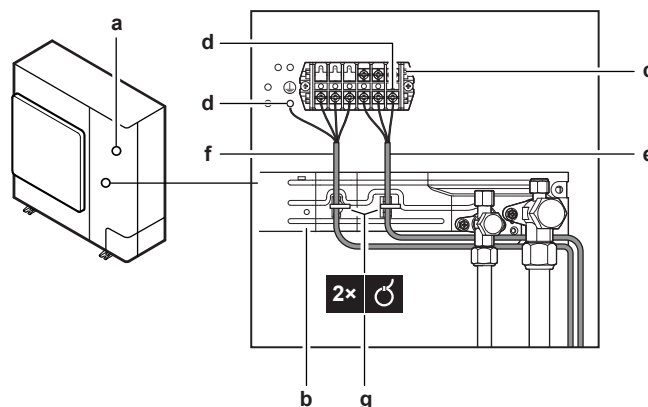
1 Remove the service cover.

2 Connect the interconnection cable and power supply as follows:



- a Interconnection cable
- b Power supply cable
- c Earth leakage circuit breaker
- d Fuse
- e User interface

Example: AZAS100~140MUV



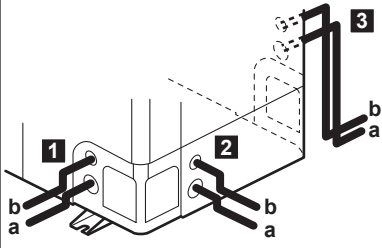
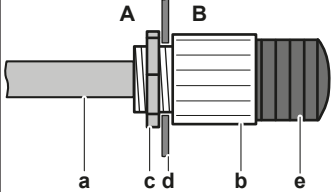
- a Switch box
- b Stop valve attachment plate
- c Terminal block
- d Earth wire
- e Power supply cable
- f Interconnection cable
- g Tie wrap

3 Fix the cables (power supply and interconnection cable) with a cable tie to the stop valve attachment plate and route the wiring according to the illustration above.

4 Choose a knockout hole and remove the knockout hole by tapping on the attachment points with a flat head screwdriver and a hammer.

5 Route the wiring through the frame and connect the wiring to the frame at the knockout hole.

7 Charging refrigerant

Routing through the frame	<p>Choose one of the 3 possibilities:</p>  <p>a Power supply cable b Interconnection cable</p>
Connecting to the frame	<p>When cables are routed from the unit, a protection sleeve for the conduits (PG insertions) can be inserted at the knockout hole.</p> <p>When you do not use a wire conduit, protect the wires with vinyl tubes to prevent the edge of the knockout hole from cutting the wires.</p>  <p>A Inside of the outdoor unit B Outside of the outdoor unit a Wire b Bush c Nut d Frame e Hose</p>

NOTICE

Precautions when making knockout holes:

- Avoid damaging the casing and underlying piping.
- After making the knockout holes, we recommend to remove the burrs and paint the edges and areas around the edges using repair paint to prevent rusting.
- When passing electrical wiring through the knockout holes, wrap the wiring with protective tape to prevent damage.

6 Reattach the service cover.

7 Connect an earth leakage circuit breaker and fuse to the power supply line.

7 Charging refrigerant

7.1 About charging refrigerant

The outdoor unit is factory charged with refrigerant, but in some cases the following might be necessary:

What	When
Charging additional refrigerant	When the total liquid piping length is more than specified (see later).

What	When
Completely recharging refrigerant	<p>Example:</p> <ul style="list-style-type: none"> ▪ When relocating the system. ▪ After a leak.

Charging additional refrigerant

Before charging additional refrigerant, make sure the outdoor unit's **external** refrigerant piping is checked (leak test, vacuum drying).



INFORMATION

Depending on the units and/or the installation conditions, it might be necessary to connect electrical wiring before you can charge refrigerant.

Typical workflow – Charging additional refrigerant typically consists of the following stages:

- 1 Determining if and how much you have to charge additionally.
- 2 If necessary, charging additional refrigerant.
- 3 Filling in the fluorinated greenhouse gases label, and fixing it to the inside of the outdoor unit.

Completely recharging refrigerant

Before completely recharging refrigerant, make sure the following is done:

- 1 All refrigerant is recovered from the system.
- 2 The outdoor unit's **external** refrigerant piping is checked (leak test, vacuum drying).
- 3 Vacuum drying on the outdoor unit's **internal** refrigerant piping is performed.



NOTICE

Before completely recharging, perform vacuum drying on the outdoor unit's **internal** refrigerant piping as well.



NOTICE

To perform vacuum drying or a complete recharge of the outdoor unit's internal refrigerant piping it is necessary to activate the vacuum mode (see ["7.3.2 To activate/deactivate the vacuum mode field setting"](#) ▶ 13) which will open required valves in the refrigerant circuit so the vacuuming process or recharge of refrigerant can be done properly.

- Before vacuum drying or recharging, activate field setting "vacuum mode".
- After finishing vacuum drying or recharging, deactivate field setting "vacuum mode".

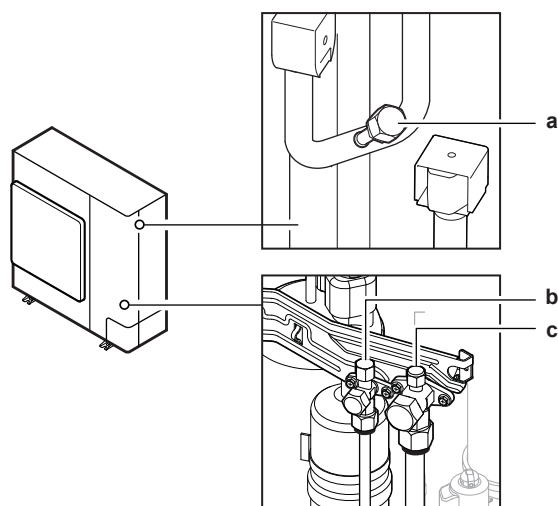


WARNING

Some sections of the refrigerant circuit may be isolated from other sections caused by components with specific functions (e.g. valves). The refrigerant circuit therefore features additional service ports for vacuuming, pressure relief or pressurizing the circuit.

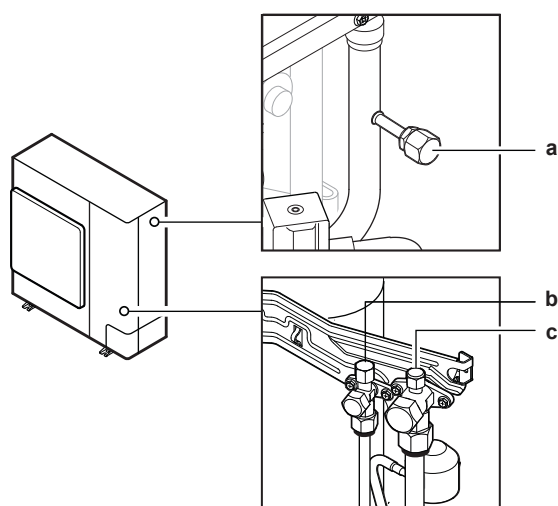
In case it is required to perform **brazing** on the unit, ensure that there is no pressure remaining inside the unit. Internal pressures need to be released with ALL the service ports indicated on the figures below opened. The location is depending on model type.

4-5 HP



- a Internal service port
- b Stop valve with service port (liquid)
- c Stop valve with service port (gas)

6 HP



- a Internal service port
- b Stop valve with service port (liquid)
- c Stop valve with service port (gas)

Typical workflow – Completely recharging refrigerant typically consists of the following stages:

- 1 Determining how much refrigerant to charge.
- 2 Charging refrigerant.
- 3 Filling in the fluorinated greenhouse gases label, and fixing it to the inside of the outdoor unit.

7.2 About the refrigerant

This product contains fluorinated greenhouse gases. Do NOT vent gases into the atmosphere.

Refrigerant type: R32

Global warming potential (GWP) value: 675

Periodical inspections for refrigerant leaks may be required depending on the applicable legislation. Contact your installer for more information.



WARNING: MILDLY FLAMMABLE MATERIAL

The refrigerant inside this unit is mildly flammable.



WARNING

- The refrigerant inside the unit is mildly flammable, but normally does NOT leak. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, this may result in fire, or the formation of a harmful gas.
- Turn OFF any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
- Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.



WARNING

The appliance shall be stored in a room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).



WARNING

- Do NOT pierce or burn refrigerant cycle parts.
- Do NOT use cleaning materials or means to accelerate the defrosting process other than those recommended by the manufacturer.
- Be aware that the refrigerant inside the system is odourless.

7.3 Completely recharging refrigerant

7.3.1 To determine the complete recharge amount

To determine the complete recharge amount (kg)

Model	Length
	5~30 m
AZAS100-125	2.6 kg
AZAS140	2.9 kg

7.3.2 To activate/deactivate the vacuum mode field setting

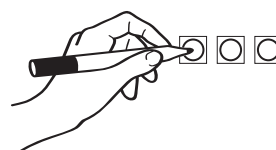
Description

To perform vacuum drying or a complete recharge of the outdoor unit's internal refrigerant piping it is necessary to activate the vacuum mode which will open required valves in the refrigerant circuit so the vacuuming process or recharge of refrigerant can be done properly.

To activate vacuum mode:

Activating the vacuum mode is done by operating the push buttons BS* on the PCB (A1P) and reading the feedback from the 7-segment displays.

Operate the switches and push buttons with an insulated stick (such as a closed ball-point pen) to avoid touching of live parts.



- 1 When the unit is powered on and not running, hold down the BS1 pushbutton for 5 seconds.

Result: You will reach the setting mode, the 7 segment display will show '2 0 0'.

- 2 Press the BS2 button until you reach page 2-28.

8 Finishing the outdoor unit installation

- When **2-28** is reached, press the BS3 button once.
- Change the setting to '1' by pressing the BS2 button once.
- Push the BS3 button once.
- When the display is not blinking anymore, press the BS3 button again to activate vacuum mode.

To deactivate vacuum mode:

After charging or vacuuming the unit, please deactivate the vacuum mode by changing the setting back to '0'.

Make sure to reattach the electronic component box cover and to install the front cover after the job is finished.

NOTICE

Make sure that all outside panels, except for the service cover on the switch box, are closed while working.

Close the lid of the switch box firmly before turning on the power.



NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO₂ equivalent.

Formula to calculate the quantity in CO₂ equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

Use the GWP value mentioned on the refrigerant charge label.

- Fix the label on the inside of the outdoor unit. There is a dedicated place for it on the wiring diagram label.

8 Finishing the outdoor unit installation

8.1 To insulate the refrigerant piping

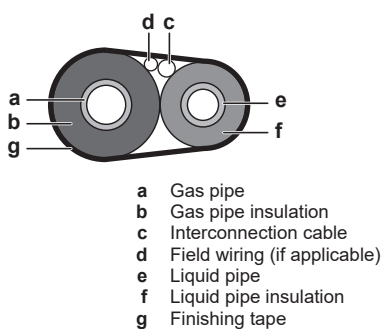
After finishing the charging procedure, the piping must be insulated. Take into account the following points:

- Be sure to insulate the liquid and gas piping (for all units).
- Use heat resistant polyethylene foam which can withstand a temperature of 70°C for liquid piping and polyethylene foam which can withstand a temperature of 120°C for gas piping.
- Reinforce the insulation on the refrigerant piping according to the installation environment.

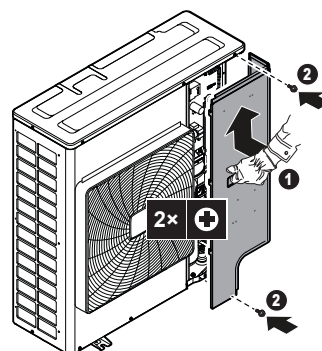
Ambient temperature	Humidity	Minimum thickness
≤30°C	75% to 80% RH	15 mm
>30°C	≥80% RH	20 mm

Between outdoor and indoor unit

- Insulate and fix the refrigerant piping and cables as follows:



- Install the service cover.



7.3.3 Charging refrigerant: Setup

See "5.2.1 Checking refrigerant piping: Setup" [p 9].

7.3.4 To completely recharge refrigerant



WARNING

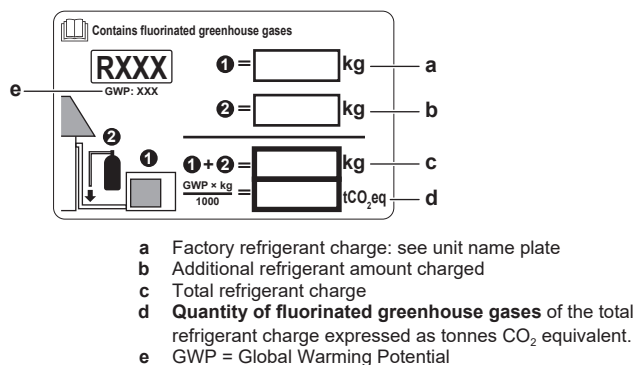
- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.

Prerequisite: Before completely recharging refrigerant, make sure the system is pumped down, the outdoor unit's **external** refrigerant piping is checked (leak test, vacuum drying) and vacuum drying on the outdoor unit's **internal** refrigerant piping is performed.

- If not already done (for vacuum drying of the unit), activate the vacuum mode (see "7.3.2 To activate/deactivate the vacuum mode field setting" [p 13])
- Connect the refrigerant cylinder to the service port of the liquid stop valve.
- Open the liquid stop valve.
- Charge the complete refrigerant amount.
- Deactivate the vacuum mode (see "7.3.2 To activate/deactivate the vacuum mode field setting" [p 13]).
- Open the gas stop valve.

7.4 To fix the fluorinated greenhouse gases label

- Fill in the label as follows:



8.2 To check the insulation resistance of the compressor

! NOTICE

If, after installation, refrigerant accumulates in the compressor, the insulation resistance over the poles can drop, but if it is at least 1 MΩ, then the unit will not break down.

- Use a 500 V mega-tester when measuring insulation.
- Do NOT use a mega-tester for low voltage circuits.

- Measure the insulation resistance over the poles.

If	Then
≥1 MΩ	Insulation resistance is OK. This procedure is finished.
<1 MΩ	Insulation resistance is not OK. Go to the next step.

- Turn ON the power and leave it on for 6 hours.

Result: The compressor will heat up and evaporate any refrigerant in the compressor.

- Measure the insulation resistance again.

9 Commissioning

Please provide the eco design data according to (EU)2016/2281 to the customer. This data can be found in the installer reference guide or via the Daikin website.

! NOTICE

ALWAYS operate the unit with thermistors and/or pressure sensors/switches. If NOT, burning of the compressor might be the result.

9.1 Checklist before commissioning

- After the installation of the unit, check the items listed below.
- Close the unit.
- Power up the unit.

<input type="checkbox"/>	You read the complete installation instructions, as described in the installer reference guide .
<input type="checkbox"/>	The indoor units are properly mounted.
<input type="checkbox"/>	In case a wireless user interface is used: The indoor unit decoration panel with infrared receiver is installed.
<input type="checkbox"/>	The outdoor unit is properly mounted.
<input type="checkbox"/>	The following field wiring has been carried out according to this document and the applicable legislation: <ul style="list-style-type: none"> Between the local supply panel and the outdoor unit Between the outdoor unit and the indoor unit (master) Between the indoor units
<input type="checkbox"/>	There are NO missing phases or reversed phases .
<input type="checkbox"/>	The 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"/>	The power supply voltage matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.

<input type="checkbox"/>	The insulation resistance of the compressor is OK.
<input type="checkbox"/>	There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
<input type="checkbox"/>	There are NO refrigerant leaks .
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	The stop valves (gas and liquid) on the outdoor unit are fully open.

9.2 To perform a test run

This task is only applicable when using the BRC1E52 user interface.

- When using BRC1E51, see the installation manual of the user interface.
- When using BRC1D, see the service manual of the user interface.

! NOTICE

Do NOT interrupt the test run.

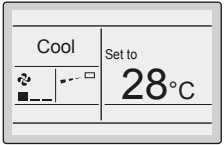

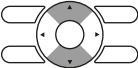
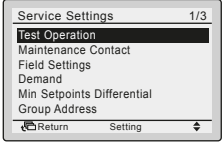
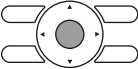
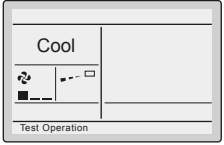
i INFORMATION

Backlight. To perform an ON/OFF action on the user interface, the backlight does not need to be lit. For any other action, it needs to be lit first. The backlight is lit for ±30 seconds when you press a button.


- Perform introductory steps.

#	Action
1	Open the liquid stop valve and gas stop valve by removing the cap and turning counterclockwise with a hex wrench until it stops.
2	Close the service cover to prevent electric shocks.
3	Turn ON power for at least 6 hours before starting operation to protect the compressor.
4	On the user interface, set the unit to cooling operation mode.

- Start the test run.


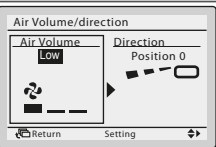

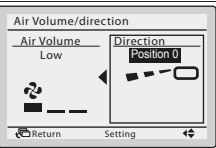


#	Action	Result
1	Go to the home menu.	
2	Press at least 4 seconds. 	The Service Settings menu is displayed.
3	Select Test Operation. 	
4	Press. 	Test Operation is displayed on the home menu. 

10 Disposal


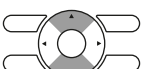
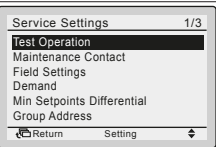

#	Action	Result
5	Press within 10 seconds. 	Test run starts.

3 Check operation for 3 minutes.

4 Check operation of the airflow direction.

#	Action	Result
1	Press. 	
2	Select Position 0. 	
3	Change the position. 	If the airflow flap of the indoor unit moves, operation is OK. If not, operation is not OK.
4	Press. 	The home menu is displayed.

5 Stop the test run.

#	Action	Result
1	Press at least 4 seconds. 	The Service Settings menu is displayed.
2	Select Test Operation. 	
3	Press. 	The unit returns to normal operation, and the home menu is displayed.

Error code	Possible cause
E7	There is a missing phase in case of three-phase power supply units. Note: Operation will be impossible. Turn OFF the power, recheck the wiring, and switch two of the three electrical wires.
L4	The air inlet or air outlet is blocked.
U0	The stop valves are closed.
U2	<ul style="list-style-type: none"> There is a voltage imbalance. There is a missing phase in case of three-phase power supply units. Note: Operation will be impossible. Turn OFF the power, recheck the wiring, and switch two of the three electrical wires.
U4 or UF	The inter-unit branch wiring is not correct.
UA	The outdoor and indoor unit are incompatible.



NOTICE

- The reversed phase protection detector of this product only functions when the product starts up. Consequently reversed phase detection is not performed during normal operation of the product.
- The reversed phase protection detector is designed to stop the product in the event of an abnormality when the product is started up.
- Replace 2 of the 3 phases (L1, L2, and L3) during reverse-phase protection abnormality.

10 Disposal

This unit uses hydrofluorocarbon. Contact your dealer when discarding this unit. It is required by law to collect, transport and discard the refrigerant in accordance with the "hydrofluorocarbon collection and destruction" regulations.



NOTICE

Do NOT try to dismantle the system yourself: dismantling 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.

9.3 Error codes when performing a test run

If the installation of the outdoor unit has NOT been done correctly, the following error codes may be displayed on the user interface:

Error code	Possible cause
Nothing displayed (the currently set temperature is not displayed)	<ul style="list-style-type: none"> The wiring is disconnected or there is a wiring error (between power supply and outdoor unit, between outdoor unit and indoor units, between indoor unit and user interface). The fuse on the outdoor unit PCB has blown out.
E3, E4 or L8	<ul style="list-style-type: none"> The stop valves are closed. The air inlet or air outlet is blocked.

11 Technical data


A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible). The **full set** of the latest technical data is available on the Daikin Business Portal (authentication required).

11.1 Service space: Outdoor unit

Suction side	In the illustrations on the inside of the front cover of this manual, the service space at the suction side is based on 35°C DB and cooling operation. Foresee more space in the following cases: <ul style="list-style-type: none"> When the suction side temperature regularly exceeds this temperature. When the heat load of the outdoor units is expected to regularly exceed the maximum operating capacity.
Discharge side	Take refrigerant piping work into account when positioning the units. If your layout does not match with any of the layouts below, contact your dealer.

Single unit | Single row of units

→ See "figure 1" [p. 2] on the inside of the front cover of this manual.

- A,B,C,D** Obstacles (walls/baffle plates)
E Obstacle (roof)
a,b,c,d,e Minimum service space between the unit and obstacles A, B, C, D and E
e_B Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle B
e_D Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle D
H_U Height of the unit
H_B,H_D Height of obstacles B and D
1 Seal the bottom of the installation frame to prevent discharged air from flowing back to the suction side through the bottom of the unit.
2 Maximum two units can be installed.
 Not allowed

Multiple rows of units

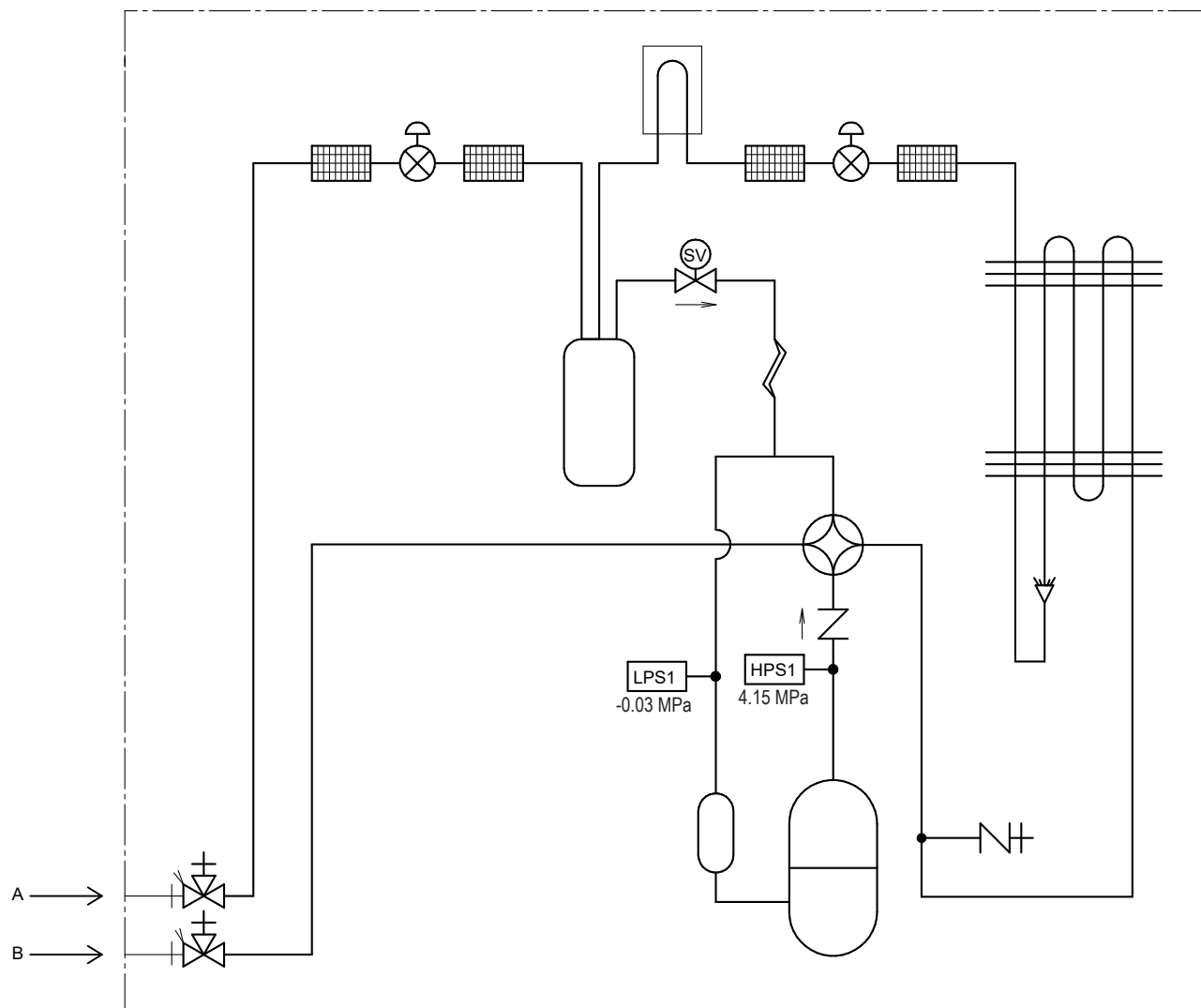
→ See "figure 2" [p. 2] on the inside of the front cover of this manual.

Stacked units (max. 2 levels)

→ See "figure 3" [p. 2] on the inside of the front cover of this manual.

- A1=>A2** (A1) If there is danger of drainage dripping and freezing between the upper and lower units...
(A2) Then install a **roof** between the upper and lower units. Install the upper unit high enough above the lower unit to prevent ice buildup at the upper unit's bottom plate.
B1=>B2 (B1) If there is no danger of drainage dripping and freezing between the upper and lower units...
(B2) Then it is not required to install a roof, but **seal the gap** between the upper and lower units to prevent discharged air from flowing back to the suction side through the bottom of the unit.

11.2 Piping diagram: Outdoor unit



3D146949A

	Charge port / Service port (with 5/16" flare)		Compressor
	Stop valve		Distributor
	Filter		Liquid receiver
	Check valve		Flare connection
	Solenoid valve	A	Field piping (liquid: Ø9.5 flare connection)
	Heat sink (PCB)	B	Field piping (gas: Ø15.9 flare connection)
	Capillary tube		Heating
	Electronic expansion valve		Cooling
	4-way valve		
	High pressure switch		
	Low pressure switch		
	Compressor accumulator		
	Heat exchanger		

11.3 Wiring diagram: Outdoor unit

The wiring diagram is delivered with the unit, located at the inside of the service cover.




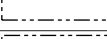
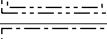
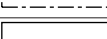

(1) Connection diagram

English	Translation
Connection diagram	Connection diagram
Only for ***	Only for ***
See note ***	See note ***
Outdoor	Outdoor
Indoor	Indoor
Upper	Upper
Lower	Lower
Fan	Fan
ON	ON
OFF	OFF

(2) Layout

English	Translation
Layout	Layout
Front	Front
Back	Back
Position of compressor terminal	Position of compressor terminal

(3) Notes

English	Translation
Notes	Notes
	Connection
X1M	Indoor/outdoor communication
-----	Earth wiring
-----	Field supply
①	Several wiring possibilities
	Protective earth
	Field wire
	Wiring depending on model
	Option
	Switch box
	PCB

NOTES:

- 1 Refer to the wiring diagram sticker (on the back of the front plate) for how to use the BS1~BS3 and DS1 switches.
- 2 When operating, do not short-circuit protective devices S1PH, S1PL and Q1E.
- 3 Refer to the combination table and the option manual for how to connect the wiring to X6A, X28A and X77A.
- 4 Colours: BLK: black, RED: red, BLU: blue, WHT: white, GRN: green, YLW: yellow.

(4) Legend

English	Translation
Legend	Legend
Field supply	Field supply
Optional	Optional
Part n°	Part n°
Description	Description

A1P Printed circuit board (main)
A2P Printed circuit board (noise filter)

BS1~BS3 (A1P)	Push button switch on PCB
C* (A1P) (Y only)	Capacitor
DS1 (A1P)	Dipswitch
E* (A1P)	Terminal (noiseless earth)
F*U	Fuse
H*P (A1P)	Light-emitting diode (service monitor is green)
K1M, K3M (A1P) (Y only)	Magnetic contactor
K1R (A1P)	Magnetic relay (Y1S)
K2R (A1P)	Magnetic relay (Y2S)
K10R, K13R~K15R (A1P)	Magnetic relay
K11M (A1P) (V only)	Magnetic contactor
L* (A1P)	Terminal (live)
L1R (Y only)	Reactor
M1C	Compressor motor
M1F	Fan motor
N* (A1P)	Terminal (neutral)
PFC (A1P) (V only)	Power factor correction
PS (A1P)	Switching power supply
Q1	Overload protection
Q1DI	Earth leakage circuit breaker (30 mA)
R1~R8 (A1P) (Y only)	Resistor
R1T	Thermistor (air)
R2T	Thermistor (discharge)
R3T	Thermistor (suction)
R4T	Thermistor (heat exchanger)
R5T	Thermistor (heat exchanger middle)
R6T	Thermistor (liquid)
R7T	Thermistor (fin)
R8T~R10T (A1P)	Thermistor (PTC)
R11T (A1P) (Y only)	Thermistor (PTC)
R501~R962 (A1P) (V only)	Resistor
R2~R981 (A1P) (Y only)	Resistor
R*V (A2P) (V only)	Varistor
S1PH	High pressure switch
S1PL	Low pressure switch
SEG* (A1P)	7-segment display
TC1 (A1P)	Signal transmission circuit
V1D (A1P) (V only)	Diode
V1D~V2D (A1P) (Y only)	Diode
V*R (A1P)	Diode module/ IGBT power module
X*A	Connector
X1M	Terminal strip
Y1E, Y3E	Electronic expansion valve
Y1S	Solenoid valve (4-way valve)
Y2S	Solenoid valve (gas receiver)
Z*C	Noise filter (ferrite core)
Z*F	Noise filter

11 Technical data

L*, L*A, L*B, NA, NB, Connector
E*, U, V, W, X*A
(A1P~A2P)







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