General safety precautions

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1.1 About the documentation

- The original documentation is written in English. All other languages are translations.
- The precautions described in this document cover very important topics, follow them carefully.
- All activities described in the installation manual must be performed by an authorized installer.

1.1.1 Meaning of warnings and symbols

DANGER

Indicates a situation that results in death or serious injury.

DANGER: RISK OF ELECTROCUTION

Indicates a situation that could result in electrocution.

DANGER: RISK OF BURNING

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

WARNING

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

CAUTION

Indicates a situation that could result in minor or moderate injury.

NOTICE

Indicates a situation that could result in equipment or property damage.

INFORMATION

Indicates useful tips or additional information.

DANGER: RISK OF EXPLOSION

Indicates a situation that could result in explosion.

DANGER: RISK OF POISONING

Indicates a situation that could result in poisoning.

WARNING: PROTECT AGAINST FROST

Indicates a situation that could result in equipment or property damage.

1.2 For the user

- If you are not sure how to operate the unit, contact your installer.
- The appliance is not intended for use by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children must be supervised to ensure that they do not play with the product.

CAUTION

Do NOT rinse the unit. This may cause electric shocks or fire.

NOTICE

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

- Units are marked with the following symbol:

This means that electrical and electronic products may not be mixed with unsorted household waste. Do NOT try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, of oil and of other parts must be done by an authorized installer and must comply with applicable legislation.
Units must be treated at a specialized treatment facility for reuse, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. For more information, contact your installer or local authority.

- Batteries are marked with the following symbol:

This means that the batteries may not be mixed with unsorted household waste. If a chemical symbol is printed beneath the symbol, this chemical symbol means that the battery contains a heavy metal above a certain concentration.
Possible chemical symbols are: Pb: lead (>0.004%).
Waste batteries must be treated at a specialized treatment facility for reuse. By ensuring waste batteries are disposed of correctly, you will help to prevent potential negative consequences for the environment and human health.

1.3 For the installer

1.3.1 General

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

NOTICE

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

WARNING

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

CAUTION

Wear adequate personal protective equipment (protective gloves, safety glasses,…) when installing, maintaining or servicing the system.

WARNING

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

DANGER: RISK OF BURNING

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

NOTICE

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

CAUTION

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

NOTICE

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

NOTICE

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

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

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

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

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

1.3.2 Installation site

- Provide sufficient space around the unit for servicing and air circulation.
- Make sure the installation site withstands the unit's weight and vibration.
- Make sure the area is well ventilated.
- Make sure the unit is level.
- Make sure that the floor, where the unit will be installed, is level.
- Make sure walls sensitive to heat (e.g. wood) are protected by suitable insulation.
- ONLY operate the gas boiler if a sufficient supply of combustion air is ensured. In case of a concentric air/flue gas system dimensioned according to the specifications of this manual, this is fulfilled automatically and there are no other conditions for the equipment installation room. This method of operation applies exclusively.
- This gas boiler is NOT designed for room air dependent operation.

Do NOT install the unit in the following places:

- In potentially explosive atmospheres.
- In places where there is machinery that emits electromagnetic waves. Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
- In places where there is a risk of fire due to the leakage of flammable gases (example: thinner or gasoline), carbon fibre, ignitable dust.
- In places where corrosive gas (example: sulphurous acid gas) is produced. Corrosion of copper pipes or soldered parts may cause the refrigerant to leak.
- In bathrooms.
- In places where frost is possible. The ambient temperature around the indoor unit should be >5°C.

1.3.3 Refrigerant

NOTICE

Make sure refrigerant piping installation complies with applicable legislation. In Europe, EN378 is the applicable standard.

NOTICE

Make sure the field piping and connections are not subjected to stress.

WARNING

During tests, NEVER pressurize the product with a pressure higher than the maximum allowable pressure (as indicated on the nameplate of the unit).

WARNING

Take sufficient precautions in case of refrigerant leakage. If refrigerant gas leaks, ventilate the area immediately. Possible risks:

- Excessive refrigerant concentrations in a closed room can lead to oxygen deficiency.
- Toxic gas may be produced if refrigerant gas comes into contact with fire.

WARNING

Always recover the refrigerants. Do NOT release them directly into the environment. Use a vacuum pump to evacuate the installation.

- Only use phosphoric acid deoxidised seamless copper with annealed temper grade.

NOTICE

After all the piping has been connected, make sure there is no gas leak. Use nitrogen to perform a gas leak detection.

NOTICE

- Refrigerant cannot be charged until field wiring has been completed.
- Refrigerant may only be charged after performing the leak test and the vacuum drying.
- When charging a system, care shall be taken that its maximum permissible charge is never exceeded, in view of the danger of liquid hammer.
- When the refrigerant system is to be opened, refrigerant must be treated according to the applicable legislation.

- To avoid compressor breakdown, do not charge the refrigerant more than the specified amount.
- In case re-charge is required, refer to the nameplate of the unit. It states the type of refrigerant and necessary amount.
- This outdoor unit is factory charged with refrigerant and depending on pipe sizes and pipe lengths some systems require additional charging of refrigerant.

- Only use tools exclusively for the refrigerant type used in the system, this to ensure pressure resistance and prevent foreign materials from entering into the system.
- Charge the liquid refrigerant as follows:

If	Then
A siphon tube is present (i.e., the cylinder is marked with "Liquid filling siphon attached")	Charge with the cylinder upright. 
A siphon tube is NOT present	Charge with the cylinder upside down. 

- Open refrigerant cylinders slowly.
- Charge the refrigerant in liquid form. Adding it in gas form may prevent normal operation.

CAUTION

When the refrigerant charging procedure is done or when pausing, close the valve of the refrigerant tank immediately. If the tank is left with the valve open, the amount of refrigerant which is properly charged may get off point. More refrigerant may be charged by any remaining pressure after the unit has stopped.

1.3.4 Brine

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

WARNING

The selection of the brine MUST be in accordance with the applicable legislation.

WARNING

Take sufficient precautions in case of brine leakage. If brine leaks, ventilate the area immediately and contact your local dealer.

WARNING

The ambient temperature inside the unit can get much higher than that of the room, e.g. 70°C. In case of a brine leak, hot parts inside the unit can create a hazardous situation.

WARNING

The use and installation of the application MUST comply with the safety and environmental precautions specified in the applicable legislation.

1.3.5 Water

NOTICE

Make sure water quality complies with EU directive 98/83 EC.

Avoid damages caused by deposits and corrosion. To prevent corrosion products and deposits, observe the applicable regulations of technology.

Measures for desalination, softening or hardness stabilization are necessary if the filling and top-up water have a high total hardness (>3 mmol/l–sum of the calcium and magnesium concentrations, calculated as calcium carbonate).

Using filling water and top-up water which does NOT meet the stated quality requirements can cause a considerably reduced service life of the equipment. The responsibility for this is entirely that of the user.

1.3.6 Electrical

DANGER: RISK OF ELECTROCUTION

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

WARNING

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

WARNING

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

Install power cables at least 1 meter away from televisions or radios to prevent interference. Depending on the radio waves, a distance of 1 meter may not be sufficient.

WARNING

- After finishing the electrical work, confirm that each electrical component and terminal inside the electrical components box is connected securely.
- Make sure all covers are closed before starting up the unit.

NOTICE

If there exists the possibility of reversed phase after a momentary black out and the power goes on and off while the product is operating, attach a reversed phase protection circuit locally. Running the product in reversed phase can break the compressor and other parts.

1.3.7 Gas

The gas boiler is factory set to:

- the type of gas quoted on the type identification plate or on the setting type identification plate,
- the quitted gas pressure.

Operate the unit ONLY with the gas type and gas pressure indicated on these type identification plates.

Installation and adaptation of the gas system MUST be conducted by:

- personnel qualified for this work,
- in compliance with valid gas installation related guidelines,
- in accordance with applicable regulations of the gas supply company,
- In accordance with local and national regulations.

Boilers that use natural gas MUST be connected to a governed meter.

Boilers that use liquid petroleum gas (LPG) MUST be connected to a regulator.

The size of the gas supply pipe should under no circumstance be less than 22 mm.

The meter or regulator and pipe work to the meter MUST be checked preferably by the gas supplier. This is to ensure that the equipment works good and meets the gas flow and pressure requirements.

DANGER

If you smell gas:

- call immediately your local gas supplier and your installer,
- call the suppliers's number on the side of the LPG tank (if applicable),
- turn off the emergency control valve at the meter/ regulator,
- do NOT turn electrical switches ON or OFF,
- do NOT strike matches or smoke,
- put out naked flames,
- open doors and windows immediately,
- keep people away from the affected area.

1.3.8 Gas exhaust

Flue systems must NOT be modified or installed in any way other than as described in the fitting instructions. Any misuses or unauthorized modifications to the appliance, flue or associated components and systems could invalidate the warranty. The manufacturer accepts no liability arising from any such actions, excluding statutory rights.

It is NOT allowed to combine flue system parts purchased from different suppliers.

1.3.9 Local legislation

See the local and national regulations.

Local regulations for UK

It is law that all gas appliances are installed by a gas safe registered competent engineer and in accordance with the following recommendations:

- Current Gas Safety (Installation and Use) Regulations
- All current building regulations
- Building Standards (Scotland) Consolidated
- This appliance MUST be installed in accordance with the Gas (Safety and Use) Regulations, current Building Regulations, Building Standards (Scotland), I.S.813 Installation of Gas Appliances (Ireland), IEE Wiring Regulations (BS 7671), Health and Safety Document No. 635 (Electricity at Work Regulations) and Local Water Authority Bye Laws
- UK Water Regulations and Bye Laws
- Health & Safety

The installation MUST comply with the following British Standards codes of practice:

- BS 5440: Flues and Ventilation for gas appliances of rated input NOT exceeding 70 kW (Part 1 Flues)
- BS 5440: Flues and Ventilation for gas appliances of rated input NOT exceeding 70 kW (Part 2 Air Supply)
- BS 5546: 2000 Installation of gas hot water supplies for domestic purposes.
- BS 5549: 1990 Forced circulation hot water systems.
- BS 6700: 1997 Design, Installation, testing and maintenance of services supplying hot water
- BS 6798: 2000 Specification for installation of gas fired hot water boilers of rated input NOT exceeding 70 kW
- BS 6891: 1998 Installation of low pressure gas pipe-work installation up to 35 mm (RI)
- BS 7593: 1992 Code of practice for treatment of water in heating systems
- BS 7671: 2001 Requirements for electrical installations, IEE Wiring regulations
- BS 7074: 1 Code of practice for domestic and hot water supply
- EN12828 Central heating for domestic premises

Potable water: all seals, joints and compounds (including flux and solder) and components used as part of the secondary domestic water system MUST be approved by WRAS.

1.4 Glossary

Dealer

Sales distributor for the product.

Authorized installer

Technical skilled person who is qualified to install the product.

User

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

Applicable legislation

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

Service company

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

Installation manual

Instruction manual specified for a certain product or application, explaining how to install, configure and maintain it.

Operation manual

Instruction manual specified for a certain product or application, explaining how to operate it.

Accessories

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

Optional equipment

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

Field supply

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

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