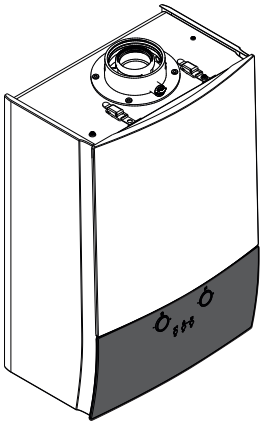
Installation manual

Wall-mounted condensing boiler



D2CND024A1AB
D2CND024A4AB
D2TND012A4AB
D2TND018A4AB
D2TND024A4AB

Installation manual
Wall-mounted condensing boiler

English

Table of contents

1 About the documentation

This document provides essential guidance for the proper installation of the unit. Daikin is not responsible for any damage resulting from failure to follow these instructions.

- The original documentation is written in English; all other languages are translations.
- The precautions described in this document are intended for installers and cover critical safety and installation guidelines. Strict compliance is necessary.
- Please read both the operation manual and installation manuals prior to use and keep them for future reference.

1.1 Meaning of warnings and symbols

DANGER
Indicates a situation that results in death or serious injury.

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.

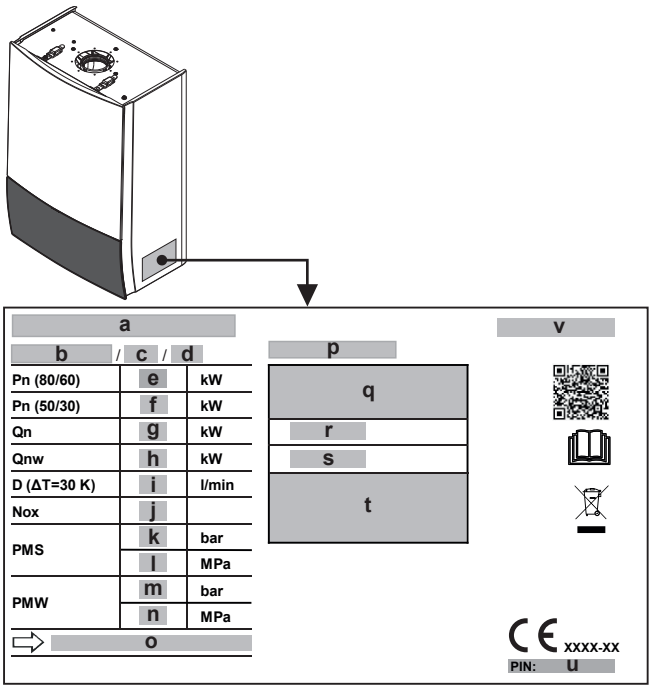
2 About the box

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.

2.1 Identification label

You can find data about the unit on its identification label, which is located at the bottom of the right cover of the unit.



a Product number
b Electrical supply
c Maximum electrical power consumption
d Degree of protection
e Nominal heat output range @ 80/60
f Nominal heat output range @ 50/30
g Nominal heat input range
h Nominal heat input range (Domestic hot water)
i Hot water amount @ DT=30
j NOx class
k Maximum central heating pressure (bar)
l Maximum central heating pressure (MPa)
m Maximum domestic hot water pressure (bar)
n Maximum domestic hot water pressure (MPa)
o Country of destination(s)
p Serial number
q Appliance type
r Efficiency class
s Gas category
t Gas type and supply pressure
u PIN number
v Product type

2.2 Symbols on the package

Store it in a dry location.

This unit is fragile. Handle with care to avoid damage due to impact or dropping.

Store the unit in a flat position as indicated on the packaging.

Do not stack more than 5 boxes on top of each other.

When stacking 6 boxes on one pallet, do not stack more than 2 pallets on top of each other.

When stacking 4 boxes on one pallet, do not stack more than 3 pallets on top of each other.

3 Safety instructions

These instructions are intended for authorized personnel only.

- Work on gas units must be performed only by an authorized gas fitter.
- Work on electrical equipment must be performed only by an authorized electrician.
- The system must be commissioned by an authorized person.

WARNING

An authorized person should explain the operating principles and the use of the unit to the user. The user is NOT allowed to perform any modifications, maintenance or repairs on the unit, unless otherwise stated, or have the such performed by unauthorised third parties. Otherwise, the unit warranty becomes void.

DANGER

Isolate the boiler from the power mains before working on it.

WARNING

Unit installation, commissioning, repair, configuration and service MUST be performed by an authorized person in accordance with local standards and regulations. Incorrect installation of this unit may harm the user and his/her surroundings. The manufacturer is NOT responsible for any malfunctions and/or damage that may occur this way.

DANGER

Flammable fluids and materials must be stored at least 1 metre away from the boiler.

WARNING

To ensure faultless operation, long term availability of all functions and long working life of the boiler ONLY use original spares.

DANGER

Do not damage or remove any seals on components. Only qualified persons are allowed to alter sealed components.

INFORMATION

In order for the unit to operate at the sound levels specified on the energy label, it must be installed as instructed in the manual.

4 About the unit

This Daikin unit is a wall-mounted, gas-fired condensing boiler that can provide heat to central heating systems and domestic hot water. Depending on the settings, the unit can be used either solely for domestic hot water or solely for central heating. The hot water supply type can be either instantaneous or via a hot water storage tank. Heating-only boilers do not provide domestic hot water. The type of boiler can be identified from the model name indicated on the identification label.

Model	Type	Domestic hot water supply	Filling loop
D2CND024A1AB	D2CND024	Instantaneous	Internal
D2CND024A4AB	D2CND024	Instantaneous	External
D2TND012A4AB	D2TND012	Storage tank	External
D2TND018A4AB	D2TND018	Storage tank	External
D2TND024A4AB	D2TND024	Storage tank	External

A control unit, which contains a user interface, controls the ignition, safety systems, and other actuators. User interaction is provided via that user interface, which is composed of an LCD screen and buttons which is located on the front cover of the unit.

4.1 Declaration of Conformity

This product has been designed and manufactured in accordance with the essential requirements of the relevant directives and regulations in force in the European Union. The CE marking indicates that the product meets the requirements of the applicable European Union legislation.

As the manufacturer, we declare that this product complies with the relevant legislation. The latest version of the full Declaration of Conformity can be accessed on our website www.daikin.eu.

4.2 Safety systems

The unit is equipped with several safety systems, to protect it against dangerous conditions:

Flue safety system: This is controlled by the flue gas temperature sensor located on the flue outlet part of the boiler. It is activated when the flue gas temperature exceeds safety limits.

Overheating safety system: This is controlled by the safety limiting thermostat. It is located on the main heat exchanger and stops the unit when the flow temperature reaches 100°C, to avoid boiling of the water, which may damage the unit.

Pump anti-blockage system: The pump operates for 30 seconds every 24 hours during long periods of inactivity to ensure it does not get stuck. To enable this function, the unit must be connected to the power supply.

Three-way valve anti-blockage system: In cases where the unit is non-operational for prolonged periods of time, the three-way valve switches its position every 24 hours to prevent it from getting stuck. To enable this function, the unit must be connected to the power supply.

Safety against dry operation: This is controlled by the pressure sensor. It turns off the unit and ensures system safety when the water pressure of the heating installation falls below 0.6 bar for any reason.

Flame ionisation control: This is controlled by the ionisation electrode. It checks whether a flame forms on the burner surface or not. If there is no flame, it turns the unit off to stop gas flow and warns the user.

High pressure protection:

- **Pressure sensor**: When heating system pressure reaches 2.8 bar, control unit stops heating operation thus preventing the pressure from rising.
- **Safety valve**: When the water pressure of the heating circuit exceeds 3 bar, some water is automatically drained from the safety valve to keep the pressure below 3 bar thus protecting the boiler and heating installation.

Automatic air vents: There are two air vents; one on the pump, other on the heat exchanger. They help discharging the air inside the installation and heating circuit to avoid air traps and consequent operational problems.

Frost protection safety system: This function protects the unit and heating installation from frost damages. It is controlled by the flow temperature sensor, which is located at the outlet of the main heat exchanger. This protection activates the boiler pump when the water temperature drops below 13°C and it activates the burner when the water temperature drops below 8°C. The unit keeps running until the temperature reaches 20°C. To enable this function, the unit must be connected to the power supply and its main gas valve must be open. Any damage caused by frost is not covered by the warranty.

Low voltage safety system: The boiler is monitored by the control unit. If the supply voltage drops below 170 V, the boiler enters error mode. This is a blocking error. The boiler resumes operation automatically once the supply voltage rises above 180 V. To ensure fault-free operation, it is recommended to use a voltage regulator of suitable capacity and type in areas where voltage fluctuations fall below this threshold.

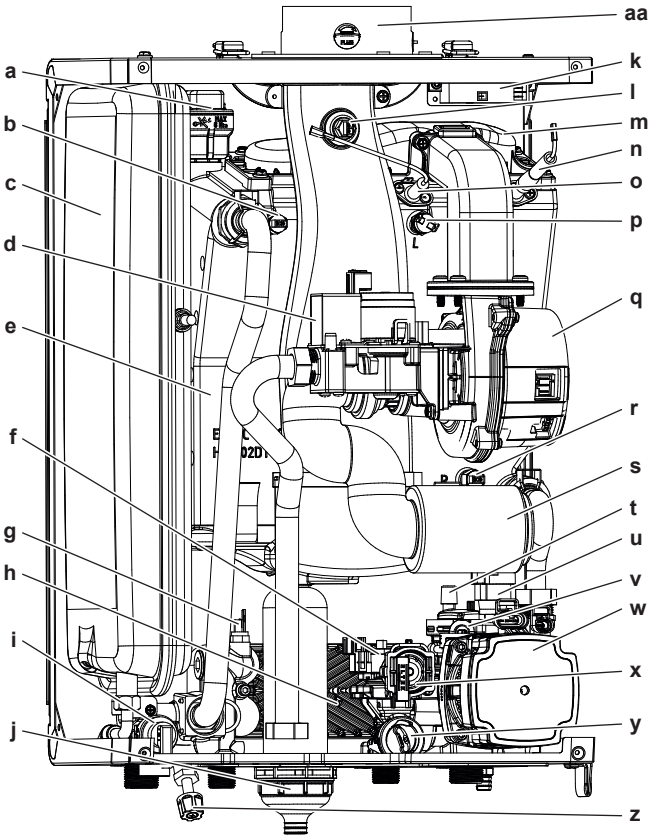
High electric supply current protection system: A fuse on the control unit protects the equipment and wiring against electrical faults caused by excess current. It disconnects faulty equipment by "blowing" (opening) when the current exceeds the rated value for a prolonged period.

Automatic by-pass system: This ensures that the flow is at all times continued, to avoid overheating of the heat exchanger. This system is also supported with a special by-pass function in the control unit software.

Combustion control safety system: Boiler control unit monitors the flame to avoid bad combustion and risky conditions. It also makes self-inspection against its own malfunctioning and to keep emissions always at a low level.

4.3 Components

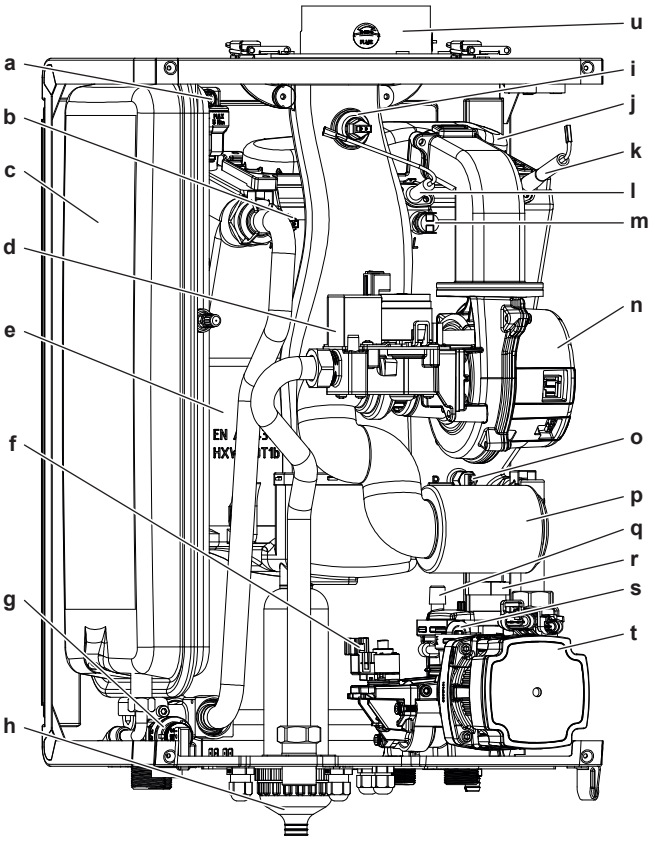
For models D2CND024A1AB and D2CND024A4AB



a	Automatic air vent (heat exchanger)
b	Flow temperature sensor
c	Expansion vessel
d	Gas valve
e	Heat exchanger
f	3-way valve stepper motor
g	Domestic hot water temperature sensor
h	Plate exchanger
i	Safety valve (3 bar)
j	Condensate trap
k	Ignition transformer
l	Flue gas temperature sensor
m	Burner head
n	Ignition electrode
o	Ionisation electrode
p	High limit thermostat
q	Fan
r	Central heating return water temperature sensor
s	Silencer
t	Automatic air vent (pump)
u	Water pressure sensor
v	By-pass
w	Boiler pump

x Domestic hot water flow sensor
y Domestic hot water flow limiter
z Filling valve (only includes in D2CND024A1AB model)
aa Check valve

For models D2TND012A4AB, D2TND018A4AB, and D2TND024A4AB



a Automatic air vent (heat exchanger)
b Flow temperature sensor
c Expansion vessel
d Gas valve
e Heat exchanger
f 3-way valve stepper motor
g Safety valve (3 bar)
h Condensate trap
i Flue gas temperature sensor
j Burner head
k Ignition electrode
l Ionisation electrode
m High limit thermostat
n Fan
o Central heating return water temperature sensor
p Silencer
q Automatic air vent (pump)
r Water pressure sensor
s By-pass
t Boiler pump
u Flue gas adapter

5 Unit installation

5.1 To open the unit

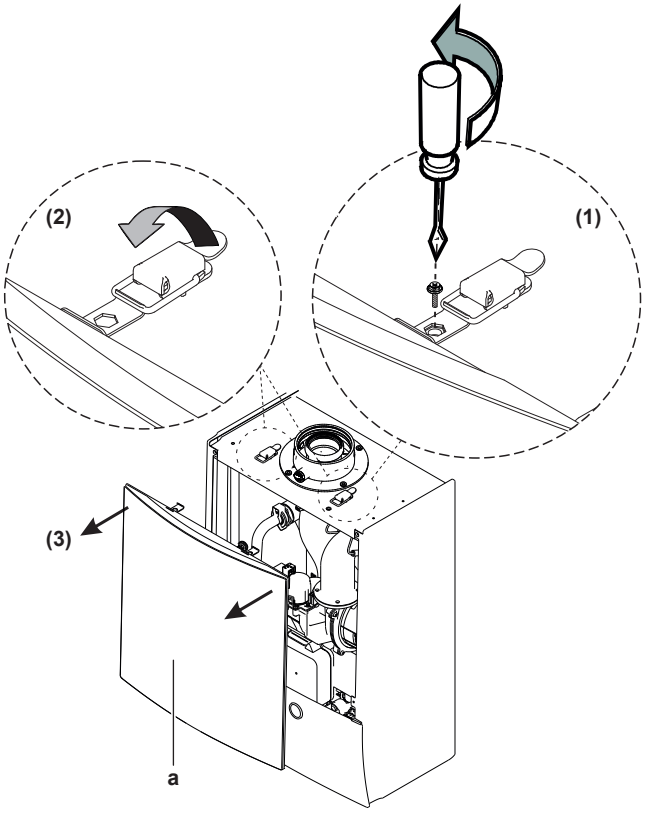
WARNING
ONLY authorized personnel are allowed to open the unit.

Certain actions described in this document, such as gas conversion, connecting optional equipment, require the front cover to be removed.

1 Loosen the screw securing the right mounting clips (1).

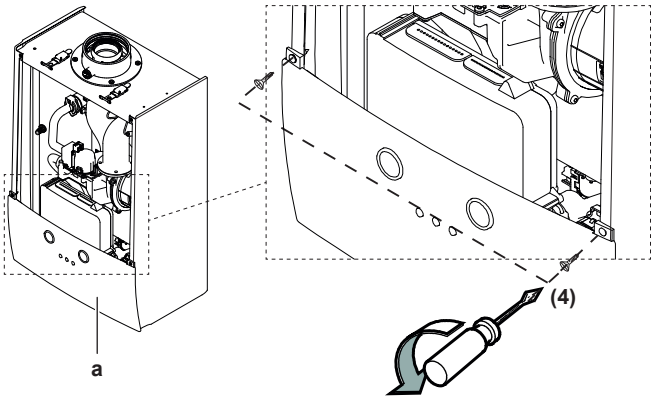
2 Remove the two mounting clips securing the front cover (2).

3 Remove the front cover forwards (3).

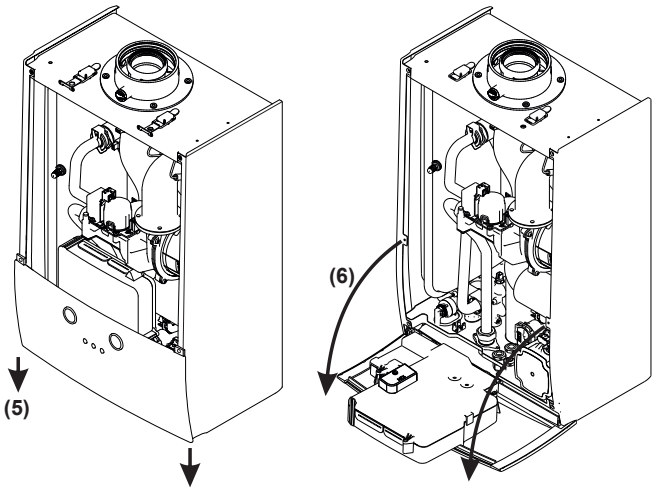


a Front cover

4 Loosen the two screws securing the control panel (4).



5 Shift the control panel downwards (5) and then pull it forwards (6).



5.2 Installation site requirements

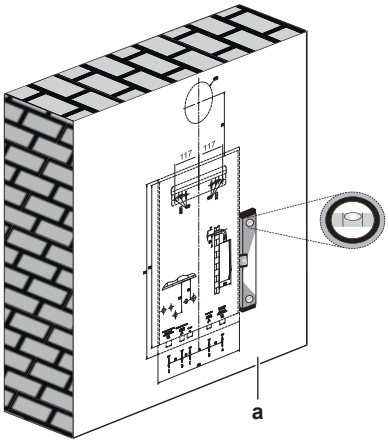
WARNING

The boiler MUST be installed by a qualified installer in accordance with local and national regulations.

WARNING

The following instructions shall be observed when determining the installation site.

- Mount this unit on vertical, flat walls only.



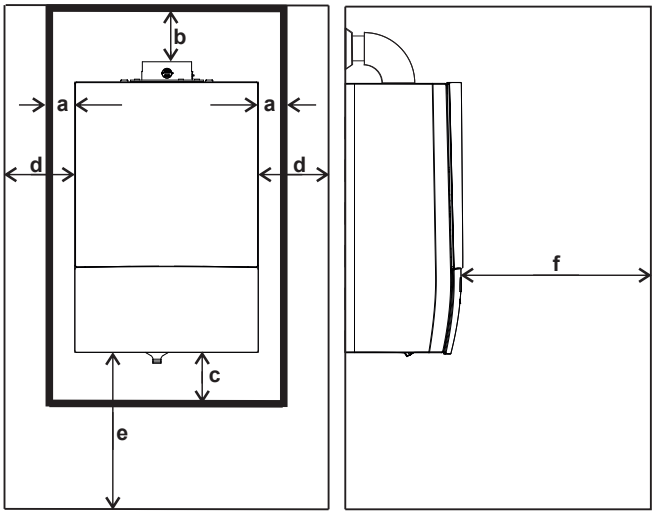
a Vertical, flat wall

- The boiler must be installed in a cabinet specifically designed for outdoor use. Otherwise, it is not suitable for outdoor installation.
- The boiler can be installed outdoors in a partially protected location. A partially protected location is a place where the boiler is not exposed to the direct action and to the penetration of atmospheric precipitation (rain, snow, hail,...). Minimum declared installation temperature is 0°C.

  The boiler can also be installed inside of an outside wall using the appropriate in-wall kit.

  In case of outdoor installation, use the antifreeze kit (DRANTIFREEZxx) to prevent the piping and condensate trap from freezing.
- Flammable fluids and materials must be kept at least 1 metre away from the boiler.
- The wall on which the unit is mounted should be strong enough to support its weight. Reinforcements should be made if necessary.
- The minimum clearances required for servicing are: 180 mm above the casing*, 200 mm below, and 10 mm at each side. 500 mm front clearance can be achieved by opening a cupboard door. See "Minimum installation clearances" [▸ 6].
- For ease of use, the boiler should be installed at a height of 1500 mm from the floor to ensure easy access to the control panel. Side clearances of 50 mm are recommended for convenient part replacement. See "Minimum installation clearances" [▸ 6].
- If installed in a room or compartment, the boiler does not require a dedicated ventilation system for combustion air. However, if placed in a bathroom or shower room, the installation must comply with I.E.E. Wiring Regulations, local Building Regulations, and any other applicable regulations.
- The intake air must be free from chemicals that may cause corrosion, toxic gas formation, or explosion hazards.
- If the boiler is mounted on a flammable wall, a non-flammable insulation material must be placed between the unit and the wall. Additionally, all flue pipe penetrations through flammable materials must be properly insulated.

Minimum installation clearances

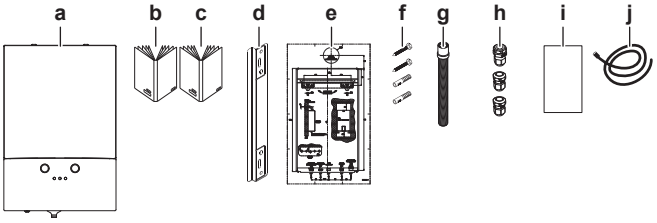


Minimum allowable clearances	
a, sides	10 mm
b, Above the casing[(a)]	180 mm
c, below	200 mm
f, in front	500 mm
Recommended clearances for easy servicing	
d, sides	50 mm
e, below (from the floor)	1500 mm

[(a)] A **180 mm** clearance is required when a **60/100 90°** elbow is connected to the flue outlet of the boiler.
b = **270 mm** clearance is required when an adapter with **60/100 to 80/80** calibrated orifice and **90°and 80°** elbow are connected to the flue outlet of the boiler.
b = **280 mm** is also required when a **60/100** to **80/125** adapter and **80/125 90°** elbow are connected to the flue outlet of the boiler.

5.3 To unpack the unit

1 Unpack the unit as shown on top of the packing case. The following items must be included in the package:



a Combi boiler
b Operation manual
c Installation manual
d Wall-mounting bracket
e Installation template
f Wall fasteners and screws
g Condensate hose
h Cable glands 1×PG 9 + 2×PG 7
i Energy label
j Storage tank temperature sensor (only includes in D2TND012A4AB, D2TND018A4AB, and D2TND024A4AB models)

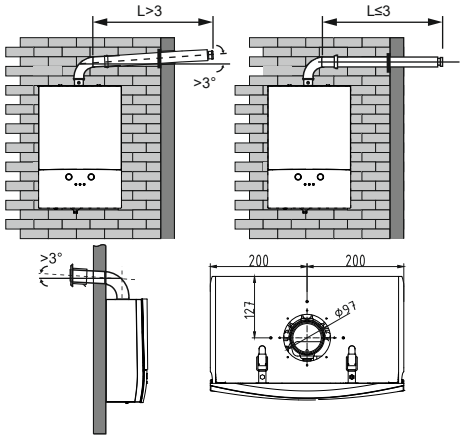
2 Check the contents of the package. If any of them is damaged or missing, contact your dealer.

CAUTION

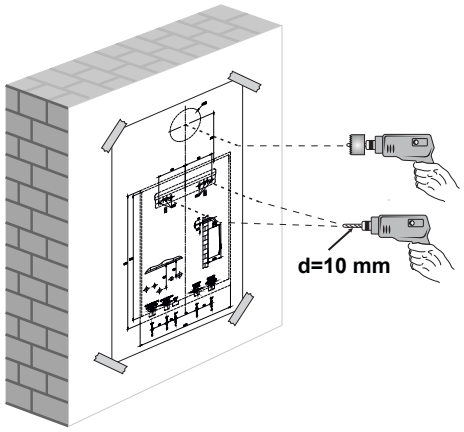
Store the remaining parts of the package (cardboard, plastic, etc.) in a place children cannot reach. The manufacturer is not responsible for any accidents and/or damage that may occur this way.

5.4 To mount the unit

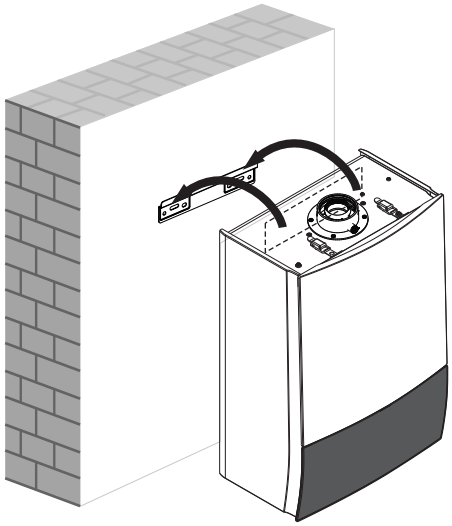
1 The mounting template indicates the position of the horizontal flue. If no hole exists in the wall for the flue pipe, drill one. If a hole already exists, use it as a reference point to determine the position of the mounting bracket. Ensure that the flue duct is inclined 3° away from the unit, to allow condensate to drain back to the boiler.



2 Drill a Ø10 mm hole for the mounting bracket. Secure the hanging plate to the wall according to the mounting diagram.



3 Hang the unit on the bracket. Make sure the unit is latched to the bracket.



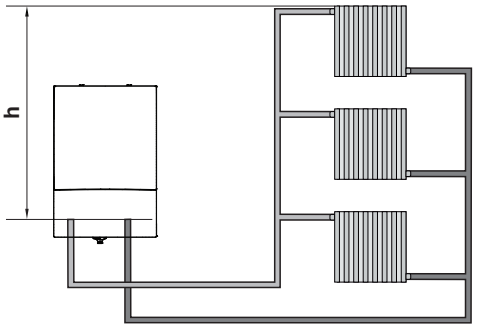
5.5 Central heating system requirements

Expansion vessel sizing

The boiler is equipped with an expansion vessel that has initial charge pressure of 1 bar.

Sufficiency of the incorporated expansion vessel for the central heating circuit that the boiler is to be connected to depends on system charge pressure and water temperature circulating in the circuit.

Determination of system water height and related system charge pressure are given below:

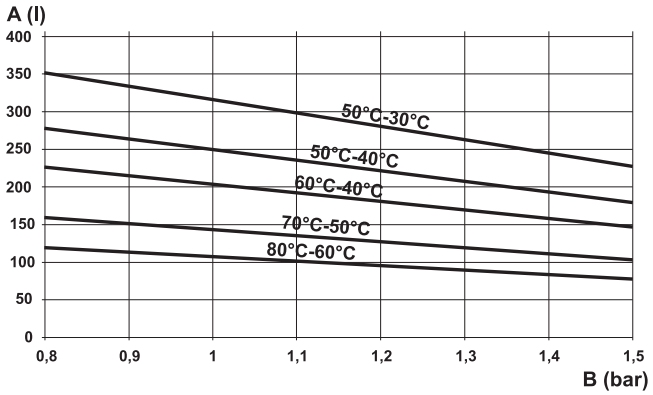


h	p
≤6 m	0.8 bar
7 m	0.9 bar
8 m	1.0 bar
9 m	1.1 bar
10 m	1.2 bar
11 m	1.3 bar
12 m	1.4 bar
13 m	1.5 bar

h System water height (m)
p System charge pressure (bar)

In case system charge pressure needs to be more than 1 bar, gas side initial charge pressure must be increased to the pressure value that is equal to system charge pressure. Make sure that gas charging to the vessel is done while boiler and circuit are not pressurized.

According to the graph below, there is no need to install an additional expansion vessel for the systems with a water volume in the area below the operating temperature curve. If water volume is above the curve, additional vessel must be installed, preferably on the return to the boiler.



A System water volume (l)
B System charge pressure (bar)

*The 50°C-40°C regime is the currently used temperature regime for underfloor heating installations.

Water treatment

Inappropriate central heating circuit water reduces functionality and efficiency of the boiler over time. Appropriate water should have:

- pH degree between 6.5 and 8.5
- Hardness less than 15°fH and 8.4°dH

Appropriate additives can be used for water treatment.

If antifreeze is needed for the system, the chosen antifreeze should not interact with rubber, commercial plastic and metal parts of the boiler that are in contact with the central heating water.

For use of any additive in the central heating system, please refer to the instructions of their manufacturers to ensure above functionality and compatibility.

WARNING

Damages caused by corrosive water are not covered by the warranty.

If antifreeze is to be used in the unit, products of the brands Sentinel or Fernox must be used. The instructions provided by the manufacturer must be followed for the use of antifreeze.

Domestic water circuit

Water softening for domestic water circuit is recommended if hardness of supply water is higher than 20°fH, in order to prevent damage on boiler.

WARNING

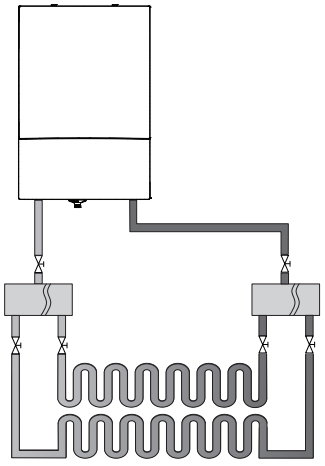
Mixing inappropriate additives with the central heating circuit water can result in efficiency loss in the boiler or damage to the boiler and the other central heating circuit elements. Daikin accepts no liability for any such damage or ineffectiveness caused by using inappropriate additive.

5.6 Underfloor heating requirements

WARNING

Make sure parameter changes explained above are done to avoid discomfort of the user.

Underfloor heating systems require a higher flow rate and a lower temperature difference (ΔT). Thanks to its high pump capacity, this boiler can be connected directly to an underfloor heating system without the need for a second pump or low-loss header, provided that the system is properly designed and the pressure drop is sufficiently low.

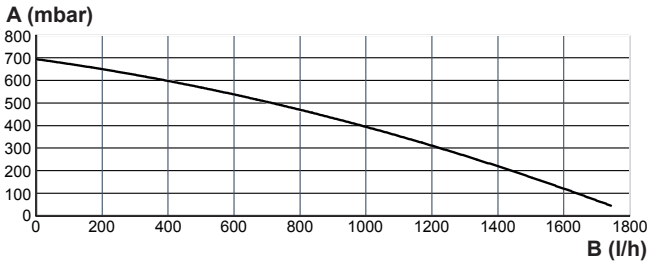


1 Return collector
2 Flow collector
n Each floor heating circuit

When the boiler is connected to an underfloor heating system, limit the maximum central heating set temperature to 50 °C, and set the pump operation temperature difference to 10 K in the service settings menu. For instructions on changing these settings, refer to the servicing manual.

5.7 Residual pump lift graph

The residual pump lift graph indicates the remaining pump lift (mbar) available for the central heating circuit.



A Residual pump lift (mbar)
B Flow (l/h)

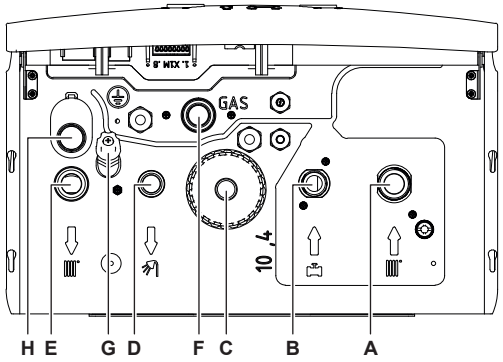
5.8 Connections

NOTICE

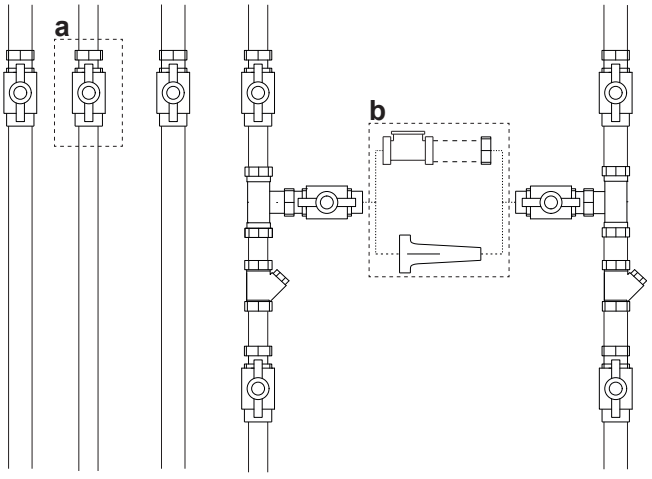
During installation, do not loosen or remove any screw from bottom plate.

5.8.1 Piping connections

For D2CND024A1AB and D2CND024A4ABmodels:



A Central heating return connection, 3/4"
B Domestic cold water inlet connection, 1/2"
C Condensate trap discharge
D Domestic hot water outlet connection, 1/2"
E Central heating flow connection, 3/4"
F Gas inlet connection, 3/4"
G Filling valve (for D2CND024A4AB model)
H Safety valve discharge, 1/2"



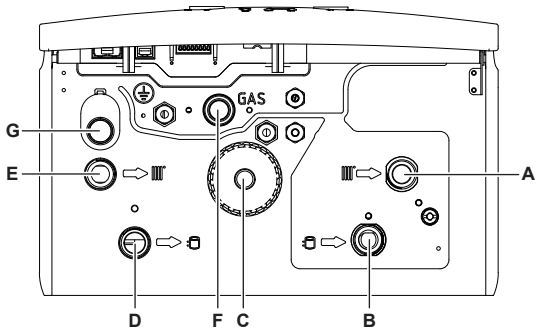
Valve
Strainer
Tee connection
Double check valve + filling hose
Disconnector
a Isolation valve on domestic hot water supply pipe is tentative
b External filling group used with model D2CND024A4AB

Isolation valves and strainers should be used just before the appliance piping inlet as shown in figure above.

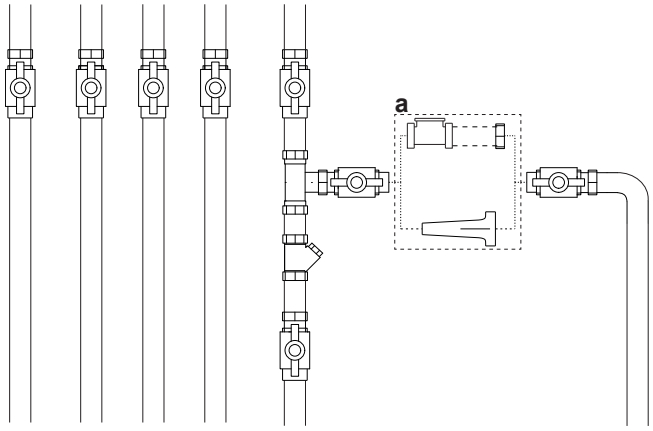
Ensure that necessary gaskets are placed.

Note: Optional Daikin connection kit can be used and it is recommended to use it.

For models D2TND012A4AB**,** D2TND018A4AB**, and** D2TND024A4AB**:**



A Central heating return connection ¾''
B Storage tank return connection ¾''
C Condensate trap discharge
D Storage tank supply connection ¾''
E Central heating supply connection ¾''
F Gas inlet connection ¾''
G Safety valve discharge



Valve
Strainer
Tee connection
Double check valve + filling hose
Disconnector
a External filling group used with models D2TND012A4AB, D2TND018A4AB, and D2TND024A4AB.

If the boiler is only used for central heating, the storage tank connections must be blinded.

Isolation valves and strainers should be used just before the appliance piping inlet as shown in figure above. Boiler is filled with external fresh water supply.

Ensure that necessary gaskets are placed.

Note: Optional Daikin connection kit can be used and it is recommended to use it.

5.8.2 Guidelines when connecting the gas piping

WARNING
The boiler is intended exclusively to be installed on a gas supply with a meter with gas pressure regulator.

This unit is designed to be operated with natural gas or LPG. The preset gas type and the designated gas inlet pressure are indicated on the boiler's identification label.

WARNING
ONLY authorized personnel are allowed to connect the gas piping. The gas inlet pipe diameter MUST be selected according to the applicable legislation, standards, and regulations.

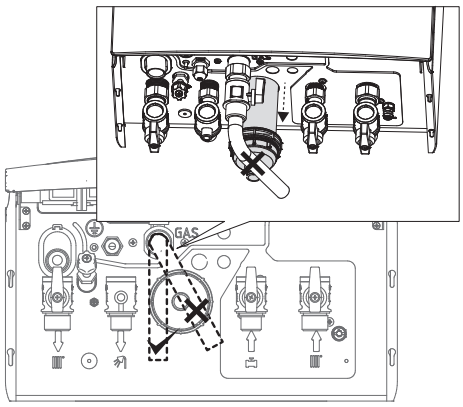
Connect the gas piping according to applicable legislation of the country of destination and the regulations of the gas supply company.

Connect the gas supply piping without tension to the gas pipe connection ("Connection F", see "5.8.1 Piping connections" [▶ 8]).

WARNING
After the gas connection is made, the gas line MUST be tested for leakage while the gas line to the boiler is open (see "6.3 To check for gas leakage" [▶ 23]).

If the gas piping runs adjacent to the wall and needs to be connected to the boiler's gas inlet using an elbow, sufficient space must be left for removing the condensate trap. This can be achieved in two ways:

1 Elbow must be placed crosswise so it will not block the condensate trap when it is being taken out.
2 Elbow must be placed 120 mm below the gas piping connection of the boiler.



5.8.3 Guidelines when connecting the water piping

When connecting the piping to the boiler, observe the following instructions:

WARNING
Ignoring the rules explained below may result in serious damages in installation or boiler or cause discomfort of the user. The manufacturer is NOT responsible for any damage that may occur this way.

- The installation of the boiler should be in compliance with the applicable legislation, standards, and regulations.
- The materials used in the installation must be in compliance with the applicable legislation, standards, and regulations.
- Heating installation piping material must not allow oxygen diffusion according to DIN4726.
- The central heating/domestic hot water installation should be flushed and visually inspected. Wastes, dust, rubbers, and metal pieces generated during the installation and mounting of the boiler must be removed in order not to cause any damage.
- The central heating circuit must be able to withstand a pressure of at least 6 bar.
- Cross connection must be preferred in the radiators longer than 1.5 metres.
- The safety valve piping should be connected to a water outlet with an additional hose or piping. This outlet should not be installed in places where there is risk of freezing, nor in the rain gutter, it should not end to dry floor without available drainage to avoid damaging of floor coating like parquet.

- The maximum pressure in the domestic hot water circuit is 10 bar. Inspect the piping taking this in to consideration. If the water pressure of the main water supply is excessive, use an appropriate pressure reducer. Installation must comply with EN 15502-2-2.
- As the condensing boilers generate condensate, the condensate trap outlet should be connected to an open drain. Piping and elements of the drain line must be made of acid-resistant material like plastics. Metals like steel or copper are not allowed.
- The system must be air-free to protect the boiler. There are two automatic air vents on the boiler, one at heat exchanger, the other on the pump. Ensure air is discharged completely at each water filling. Bleed the radiators if necessary.
- If the boiler will be connected to an old central heating/domestic hot water installation, then first visually inspect the old installation. The installation must be in compliance with the capacity of the boiler and must not prevent the efficient running of it. Dirt in old system and piping must be flushed, and filters must be inspected.
- If old piping material does not have an oxygen barrier, then it must be separated from the boiler circuit via a plate heat exchanger and a second pump has to be installed for necessary circulation.
- If the pressure reading on the boiler user interface is dropping repeatedly, most probably there is a leakage in the installation. Inspect the installation to repair.
- In case of solar preheating of the domestic hot water from a solar tank, install the thermostatic mixing valve at the domestic hot water outlet and inlet.

5.8.4 Guidelines when connecting the electrical wiring

DANGER

Before working on the electrical circuit always isolate the unit from the power mains.

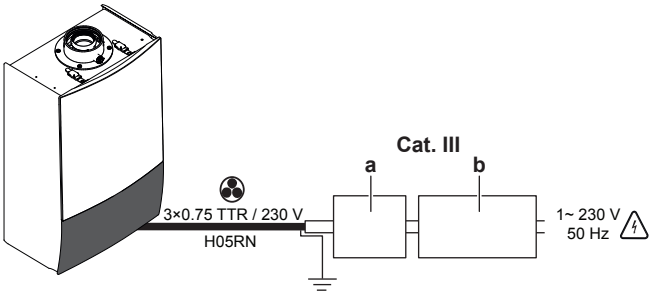
WARNING

ONLY qualified persons are allowed to make electrical connections on the unit. Failure to observe this warning will void the warranty. The manufacturer is NOT responsible for any damage that may occur this way.

WARNING

Use a dedicated power circuit. NEVER use a power supply cable shared by another unit.

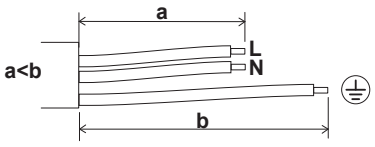
The unit runs on 230 V AC 50 Hz power. A power cable is delivered with the package. The power cable must be connected to the power supply by an electrician and in accordance with the applicable legislation.



a Safety breaker (2A)
b Earth leakage safety breaker
Cat. III Overvoltage category III

- Electrical work should be carried out in accordance with the installation manual and the national electrical wiring rules or code of practice.
- Insufficient capacity or incomplete electrical work may cause electrical shock or fire.
- A main switch or other means for disconnection, having a contact separation in all poles providing full disconnection under overvoltage category III, shall be installed in the fixed wiring.
- Be sure to establish an earth. Do not earth the unit to a utility pipe, lightning arrester, or telephone earth. **Incomplete earth may cause electrical shock and fire.**
- While the electrical connections are being done, energy should not be on the main power supply cable and the main switch should be closed.
- During the electrical connections, make sure that the cables are well-fixed and are connected firmly and tightly.
- Power supply cable must be equivalent to **H05RN-F (2451EC57)** as minimum requirement.
- The boiler is not approved to be operated at altitudes above 2000 meters above sea level.

Observe the point mentioned below when wiring to the power supply terminal board.



a Length
b Length
L Line
N Neutral

WARNING

Do NOT interchange the supply conductors L and the neutral conductor N.

DANGER

Do not use gas and water pipes for earthing purposes and ensure that they have not been used for this purpose before. Failure to observe this relieves the manufacturer of any responsibility.

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

There should be a circuit breaker to disconnect all poles in the connection to the mains.

5.8.5 Guidelines when connecting options to the boiler

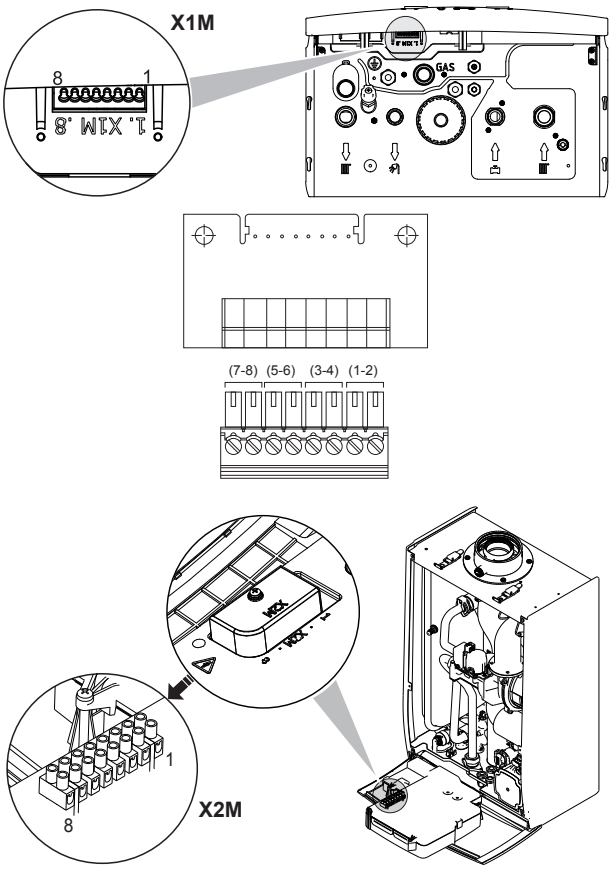
DANGER

X2M connector has 230 V AC.

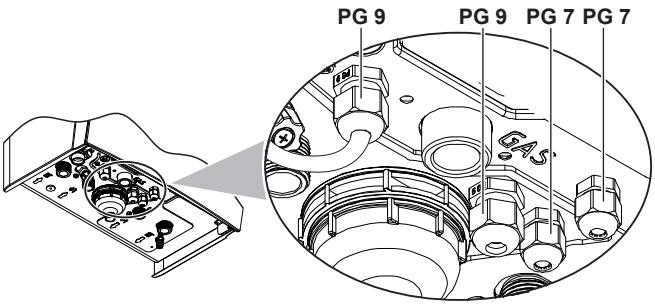
Optional equipment is connected to the connectors located on the outside of the switch box. Do not open the switch box to connect optional equipment.

Temperature control units	Connector	Connection
Solar NTC sensor	X1M	1-2
Daikin room thermostat	X1M	3-4
Outdoor sensor	X1M	5-6
Domestic hot water storage tank sensor	X1M	7-8
External power output (230 V AC)	X2M	3-4
On-Off room thermostat[(a)]	X2M	5-6

[(a)] ON/OFF room thermostat must have volt-free dry contact (230 V AC).



Wiring for options to be connected to the internal connectors must exit the unit through cable glands. The cable glands supplied with the unit must be installed on the bottom panel of the boiler when connecting these options. The placement of the cable glands is shown below:



PG 9 Cable clamp (9 mm)
PG 7 Cable clamp (7 mm)

Holes on the bottom sheet that are reserved for cable glands are covered with insulation material. The insulation material must be bored if glands are to be used.

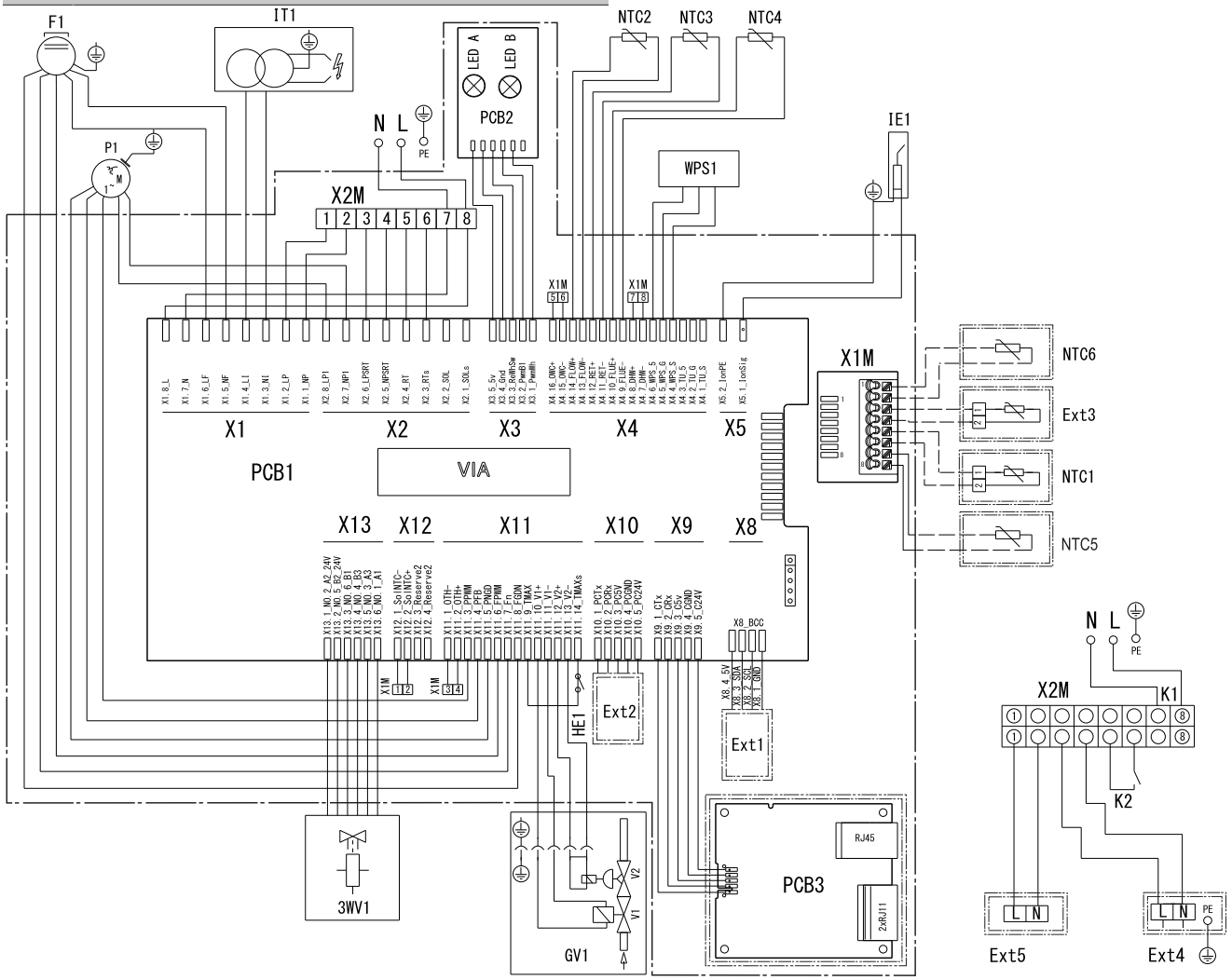
Note: Unit must be opened to mount cable glands.

5.8.6 Wiring diagram

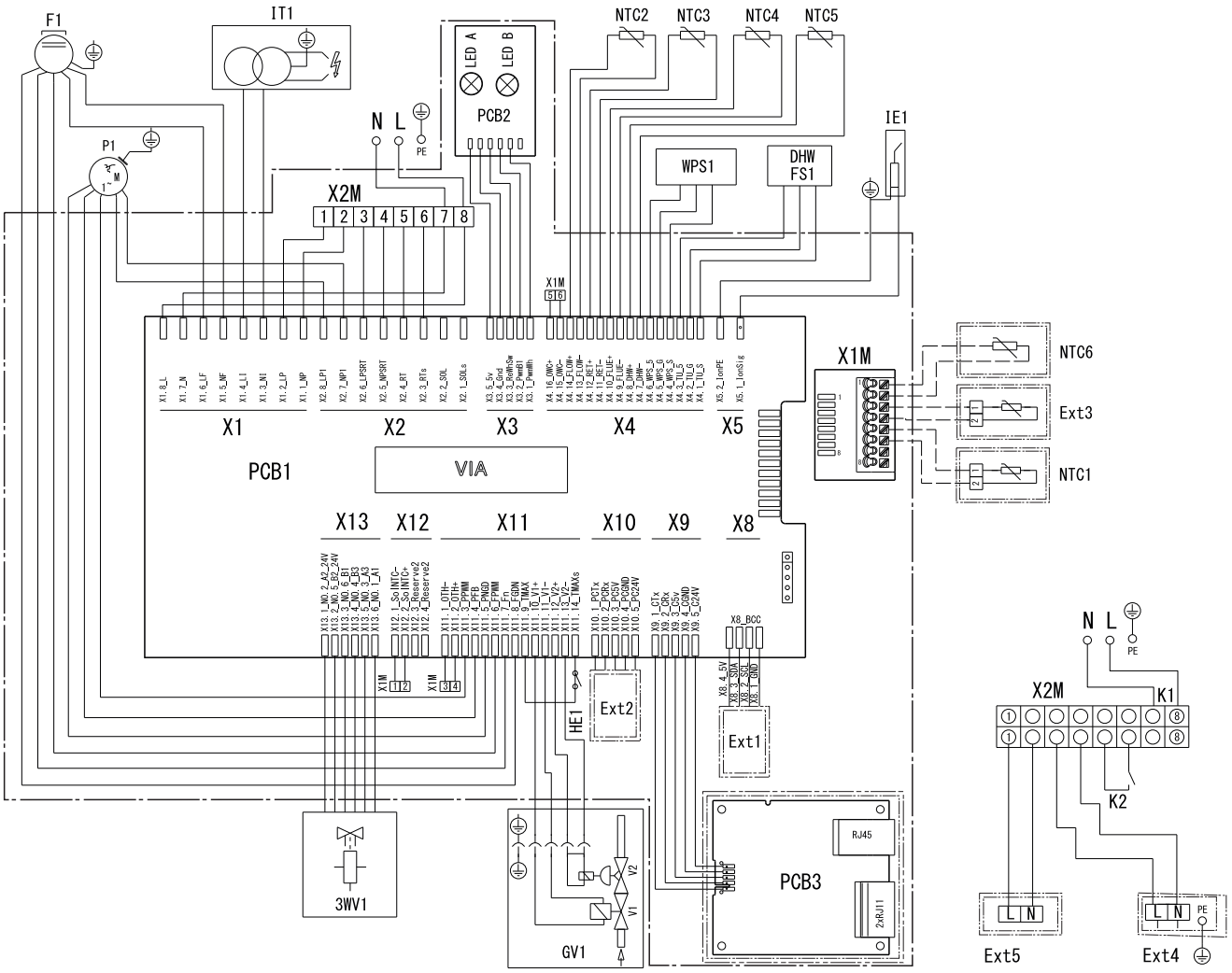
DANGER: RISK OF ELECTROCUTION

Disconnect the power supply for more than 10 minutes before servicing.

For models D2TND024A4AB , D2TND018A4AB and D2TND012A4AB :



For models D2CND024A1AB and D2CND024A4AB :


F1
IT1
LED A
LED B
PCB2
NTC2
NTC3
NTC4
NTC5
N L
PE
P1
IE1
WPS1
DHW FS1
X2M
1 2 3 4 5 6 7 8
X1M
5 6
X1
X2
X3
X4
X5
PCB1
VIA
X1M
NTC6
Ext3
NTC1
X13
X12
X11
X10
X9
X8
X8_BCC
X1M
1 2
X1M
3 4
HE1
Ext2
Ext1
3WV1
GV1
V2
V1
PCB3
RJ45
2xRJ11
N L
PE
X2M
K1
K2
L N
Ext5
L N PE
Ext4

Symbols:

Item	Description
	Option
	Wiring depending on model
	Switch box
	PCB
X4M	Main terminal
	Earth wiring
15	Wire number 15
	Field supply
①	Several wiring possibilities

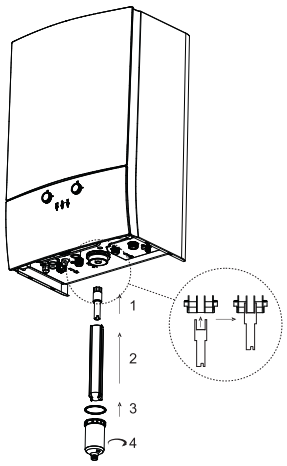
Legend:

Part	Connector	Description
PCB1	—	Main PCB
PCB2	X3	Status indicator PCB
PCB3	X9	LAN (var iCAN) adapter
P1	X2-X11	Boiler pump
F1	X1-X11	Fan
GV1	X11	Gas valve
IT1	X1	Ignition transformer
3WV1	X13	Central heating / domestic hot water diverter valve stepper motor
WPS1	X4	Water pressure sensor
DHW FS1	X4	Domestic hot water flow sensor (for models D2C*)
IE1	X5	Ionisation input
K1	X2M	Power supply cable
K2	X2M	On/OFF room thermostat
HE1	X11	Overheat thermostat
NTC1	X1M	Outdoor temperature sensor
NTC2	X4	Flow temperature sensor
NTC3	X4	Return temperature sensor
NTC4	X4	Flue temperature sensor
NTC5	X4	Domestic hot water temperature sensor (for models D2C*)
NTC5	X1M	Domestic hot water storage tank sensor (for models D2T*)
NTC6	X1M	Solar domestic hot water temperature sensor
Ext1	X8	BCC (Boiler Chip Card)
Ext2	X10	Personal computer production interface
Ext3	X1M	Daikin room thermostat
Ext4	X2M	External power output (230 V AC)
Ext5	X2M	Reserved, not in use
X1M	X4-X11-X12	Low voltage terminal strip
X2M	X1-X2	High voltage terminal strip

5.8.7 Guidelines when connecting the condensate piping

DANGER

In order to prevent escape of flue gases and so poisoning, the condensate trap must be mounted to its place before commissioning.



The condensate trap must be connected to a drain via an open connection.

The following precautions should be taken for condensate piping:

- Horizontal pipe runs must have a minimum slope of 45 mm/metre.
- External piping should be kept as short as possible or thermally insulated to prevent freezing, depending on the winter climate condition at the installation site.
- Ensure that the condensate disposal system, piping, and fittings are made of acid resistant- materials such as plastics.

WARNING

The condensate trap outlet shall NOT be modified or blocked.

CAUTION

The condensate discharge piping diameter must be large enough so as not to restrain the condensate water flow.

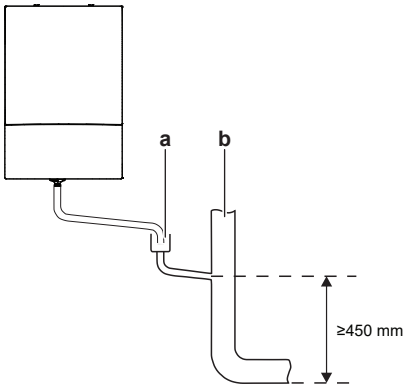
WARNING

If the discharge pipe is located outdoors, take measures against frost.

5.8.8 Guidelines for condensate piping termination

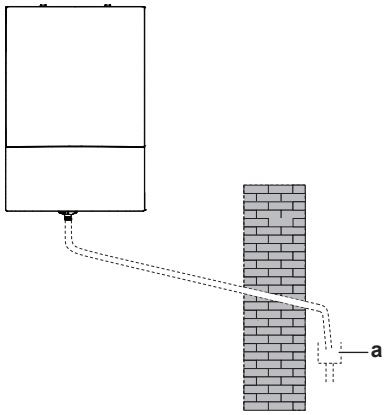
Condensate piping can be connected to a termination in different ways shown below:

Terminating into an internal soil and vent stack



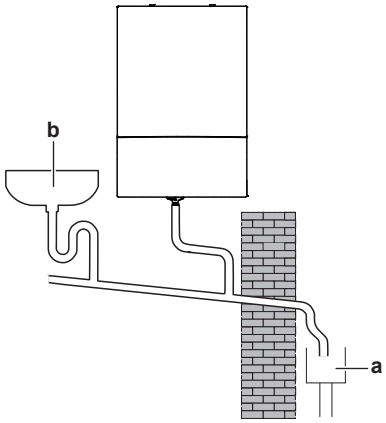
a Air breaker
b Internal soil and vent stack

Terminating into an external waste system



a Open end direct into gully, below ground but above water level

Terminating into an external purpose made soakaway



a Open end direct into gully, below ground but above water level
b Sink, basin, bath or shower

NOTICE

Use of a condensate drain pump is necessary where termination of condensate line is below a soakaway.

5.8.9 Guidelines when connecting the boiler to the flue gas system

CAUTION

Connected flue type must be identified on the identification label.

CAUTION

Flexible flue gas lines CANNOT be used in horizontal connection sections.

DANGER

Risk of poisoning due to flue gas escaping within enclosed rooms that are inadequately ventilated.

INFORMATION

The unit is equipped with an internal flue flap to prevent backflow from common chimney.

WARNING

Make sure that an air inlet opening to outside of at least 150 cm² is provided.

Approved flue systems

Choose a flue type according to the installation site.

Approved flue types are written on the identification label.

Flue termination

The positions of the terminals in the roof or in the wall with respect to openings for ventilation must be in accordance with national regulations.

- The boiler must be installed so that the terminal is exposed to external air.
- Position of the terminal must allow the free passage of air across it at all times.
- Pluming may occur at the flue terminal. Positions where this could be a nuisance should be avoided.
- For single wall flue pipe, the minimum distance to a combustible material must be 25 mm.

  For air intake pipe and concentric systems, the distance to a combustible material is 0 (zero) mm.
- It is essential to ensure that products of combustion discharging from the terminal cannot re-enter the building or other buildings, through ventilators, windows, doors, other sources of natural air infiltration or forced ventilation.
- Minimum flue duct length must be 50 cm.

5.8.10 Applicable flue systems

In this part, information about different flue systems are given. The mounting instructions for correct installation of the flue systems are included in the packaging of the flue parts as well as flue cutting instructions where needed.

DANGER

Flue duct must incline 3° away from the unit, to allow the condensate to drain back to the boiler and out of the condensate drain. If the flue has an internal fall then please follow instructions delivered with the flue parts.

NOTICE

Optional parts shown in rectangular area are used where needed.

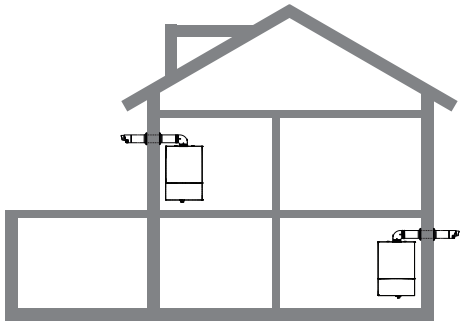
WARNING

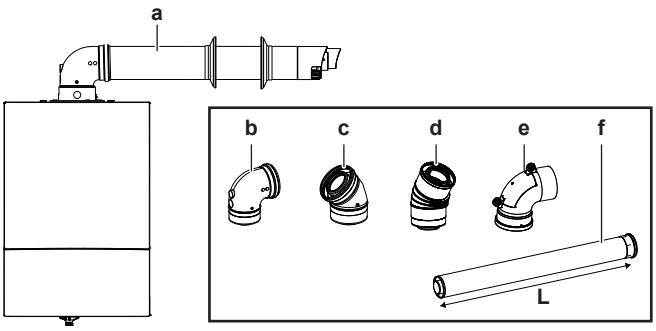
The boiler is not intended to be connected to chimneys that are likely to be affected by heat (e.g. plastic ducts or ducts with internal plastic lining).

Type C13x (concentric flue system)

The boiler draws combustion air from outside via a concentric coaxial pipe fitted to the external wall and expels flue gas to the outside via the external wall.

The terminal outlets from the separate combustion and air supply circuits must fit within a 50 cm square.





a Wall terminal kit 60/100

Optional:

b 90° elbow 60/100
c 45° elbow 60/100
d 30° elbow 60/100
e Inspection elbow 60/100
f Extension 60/100
L 500-1000 mm

Allowable flue length for C13x		
	D2T/H*	D2C*
Concentric 60/100 mm"FN" [▸ 16]	11.0 m	8.1 m
Concentric 80/125 mm"FN" [▸ 16]	44.0 m	26.2 m

*It is the length including one piece of 90° elbow.

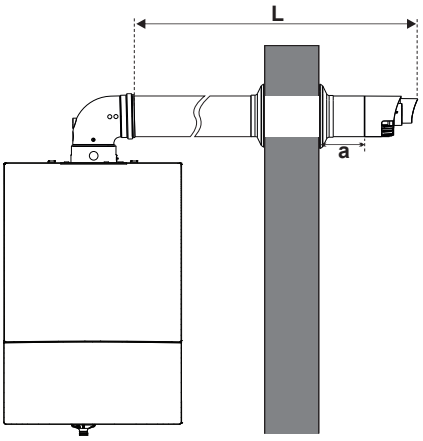
Equivalent length of options	
90° elbow 60/100 mm	1.5 m
45° elbow 60/100 mm	1.0 m
30° elbow 60/100 mm	1.0 m
90° elbow 80/125 mm	1.5 m
45° elbow 80/125 mm	1.0 m
30° elbow 80/125 mm	1.0 m

60/100 flue length can be increased up to 17.9 metres (for D2T/H***) / 14.1 metres (for** D2C* **)by adjusting the parameter C3 to 3. Refer to servicing instructions for this operation.**

Subtract equivalent length value of bends from the allowable flue length value.

Flue length determination

Flue duct length (L) is measured from lip of the elbow to end of the flue terminal.



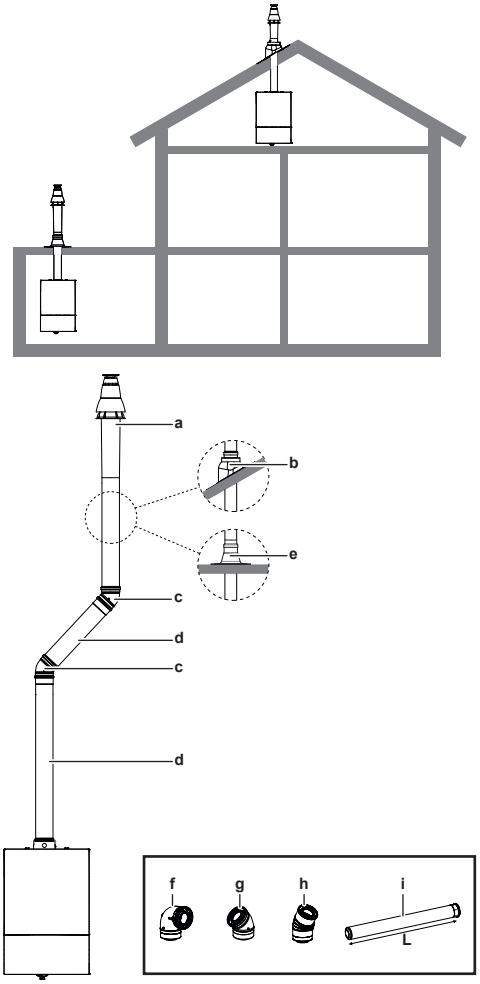
L Flue duct length
a Distance of outer lip of terminal to outer wall, **a≤50 mm**

Note: Flue ducts are inserted 45 mm into elbows and extensions.

Type C33x (concentric flue system)

The boiler draws combustion air from the outside and expels flue gas to the outside through a concentric coaxial pipe via the roof.

The terminal outlets from separate combustion and air supply circuits should fit inside of a square of 50 cm and the distance between the planes of the two orifices shall be less than 50 cm.



a Roof terminal 60/100
b Tile roof outlet kit

Optional:

c 45° elbow 60/100
d Extension 60/100 mm
e Flat roof outlet kit
f 90° elbow 60/100
g 45° elbow 60/100
h 30° elbow 60/100
i Extension 60/100
L 500-1000 mm

Allowable flue length for C33x		
	D2T/H*	D2C*
Concentric 60/100 mm	12.5 m	7.6 m
Concentric 80/125 mm	42.8 m	25.6 m

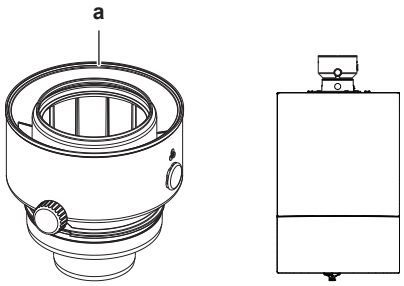
Equivalent length of options	
90° elbow 60/100 mm	1.5 m
45° elbow 60/100 mm	1.0 m
30° elbow 60/100 mm	1.0 m
90° elbow 80/125 mm	1.5 m
45° elbow 80/125 mm	1.0 m
30° elbow 80/125 mm	1.0 m

60/100 Vertical flue length can be increased up to 19.2 metres (for D2T/H* **) / 13.6 metres (for** D2C***)by adjusting the parameter C3 to 3 from the user interface. Refer to servicing instructions for this operation.**

Subtract equivalent length value of bends from the allowable flue length value.

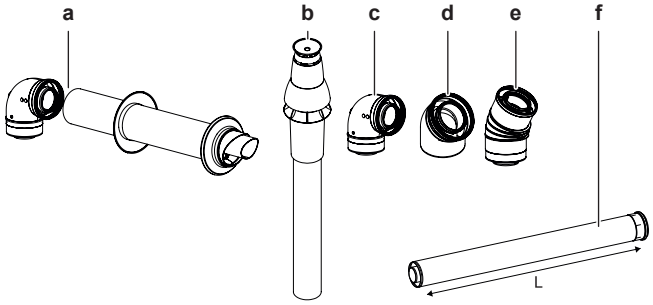
80/125 mm flue system

To increase the maximum allowable flue duct length, 80/125 mm concentric flue ducts can be used instead of 60/100 mm. In this case, C13X and C33x flue systems should start with a 60/100 to 80/125 adapter coupled to the flue outlet.



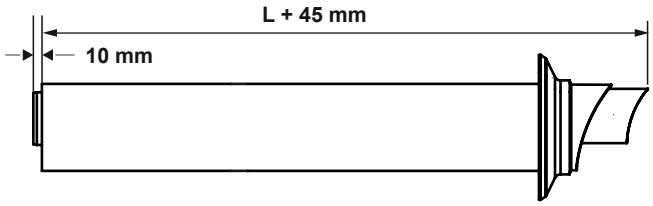
a 60/100 to 80/125 adapter

80/125 flue parts to be used are shown below:



a 80/125 wall terminal kit (type C_{13})
b 80/125 roof terminal kit (type C_{33})
c 90° elbow 80/125
d 45° elbow 80/125
e 30° elbow 80/123
f Extension 80/125
L 500-1000 mm

Flue duct cutting

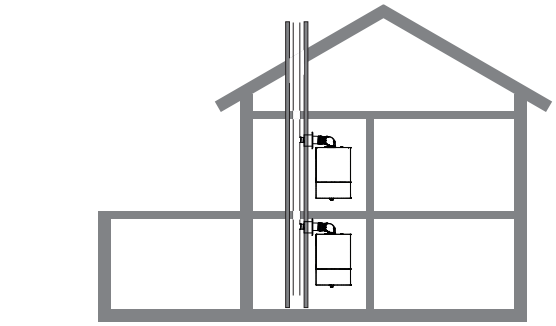


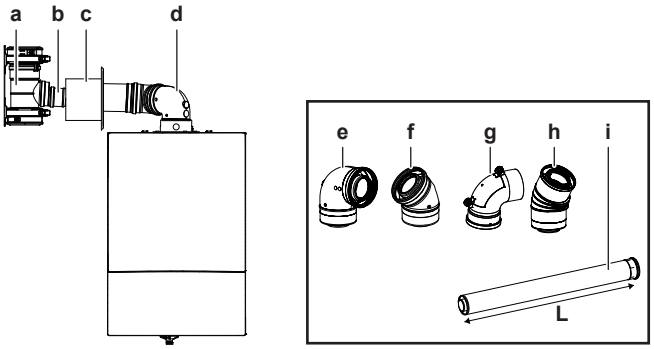
1. Measure the distance (L) from the edge of the topping to the duct connection point and add 45 mm on it.
2. Mark the point where the cutting will be made (L+45mm) an cut the outer duct at the marked point.
3. Remove debris from the cut surface and make sure the cut area retains its original shape.
4. Mark and cut the inner duct to be 10 mm longer than the outer duct.
5. Remove surface debris and slightly chamfer the outer edges of the ducts for ease of installation.

Type C43x (concentric flue system)

Several heat sources draw combustion air from the outside through the annular gap of the room sealed balanced flue system and expel flue gas to the outside via the roof, through a moisture-resistant internal pipe.

The multi-served chimney is a system that is part of the building and has a separate CE marking. The connection between the boiler and the shaft and, the connection between the boiler and the air intake system must be obtained via Daikin.





a Tee flex boiler connection set 100 or 130
b Extension 60 mm
c Chimney connection 60/100
d Elbow 60/100 90°

Optional:

e 90° elbow 60/100
f 45° elbow 60/100
g Inspection elbow 60/100 mm
h 30° elbow 60/100
i Extension 60/100
L 500-1000 mm

Maximum allowable length of the flue duct up to common chimney is 3 metres + 1 60/100 90° elbow.

In C43x type units, condensate flow into the unit is not allowed. C4x boilers with connecting ducts are only suitable for connection to a natural draught chimney.

G20	For all models
Nominal combustion products temperature	66.05
Combustion products mass flow rate	6.04
Overheat combustion products temperature	-
Minimum combustion products temperature	56
Minimum combustion products mass flow rate	1.32
CO_2 content at nominal heat input	9 ± 0.8

G31	For all models
Nominal combustion products temperature	65.5
Combustion products mass flow rate	5.061
Overheat combustion products temperature	-

G31	For all models
Minimum combustion products temperature	55
Minimum combustion products mass flow rate	1.23
CO_2 content at nominal heat input	11.3 ± 1

Type C63x (concentric flue system)

INFORMATION

C63 flue type is not applicable to Belgium.

To install the boiler as a C63x option the following data must be used to determine the correct diameters and lengths of the flue system.

For D2T/H*

- Nominal combustion products temperature: 77°C
- Combustion products mass flow rate: 10.75 g/s
- Overheat combustion products temperature: 90°C
- Minimum combustion products temperature: 20°C
- Maximum allowable pressure difference between combustion air inlet and flue gas outlet (including wind pressures): 100 Pa

For D2C*

- Nominal combustion products temperature: 93°C
- Combustion products mass flow rate: 11.48 g/s
- Overheat combustion products temperature: 100°C
- Minimum combustion products temperature: 20°C
- Maximum allowable pressure difference between combustion air inlet and flue gas outlet (including wind pressures): 125 Pa

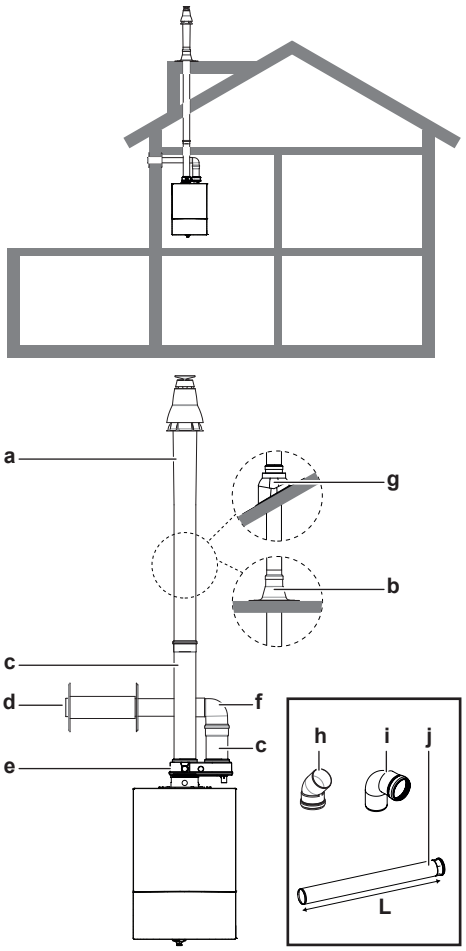
For D2C* and D2T/H*

- Minimum combustion products mass flow rate: 1.32 g/s
- CO_2 content at nominal heat input: 9.0%
- Maximum allowable draught: 200 Pa
- The boiler must be connected to a system with the following characteristics: T120 P1 W
- Maximum allowable temperature of combustion air: 50°C
- Maximum allowable recirculation rate under wind conditions is 10%
- The terminals for the supply of combustion air and for the evacuation of combustion products shall not be installed on opposite walls of the building.
- Condensate flow into the unit is allowed.

Type C53x (twin pipes flue system)

Air supply and flue gas discharge from / to atmosphere in areas of different pressure. The boiler draws combustion air from outside via a horizontal pipe fitted to the external wall and expels flue gas to the outside via the roof.

The terminals for the supply of combustion air and for the evacuation of combustion products shall not be installed on opposite walls of the building.



a Roof terminal 80 mm
b Flat roof outlet kit
c Extension 80 mm
d Air intake 80 mm
e 60/100 to 80 80 adapter
f 90° elbow 80 mm

Optional:

g Tile roof outlet kit
h 45° elbow 80 mm
i 90° elbow 80 mm
j Extension 80 mm
L 500-1000-2000 mm

Allowable flue length for C53x		
	D2T/H*	D2C*
Air intake duct 80 mm	3.0 m	3.0 m
Flue outlet duct 80 mm	125.0 m	109.0 m

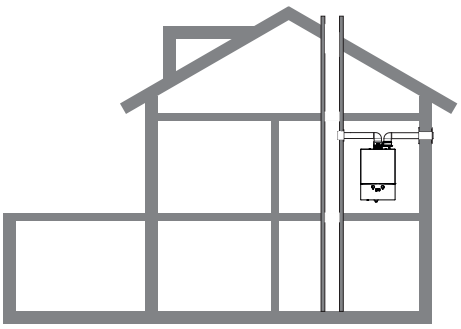
Equivalent length of options	
45° elbow 80 mm	1.0 m
90° elbow 80 mm	2.0 m

Subtract equivalent length value of bends from the allowable flue length value.

Note: The air intake length is 3 metres. In case of longer air intake use, flue outlet duct length must be shortened with the same length.

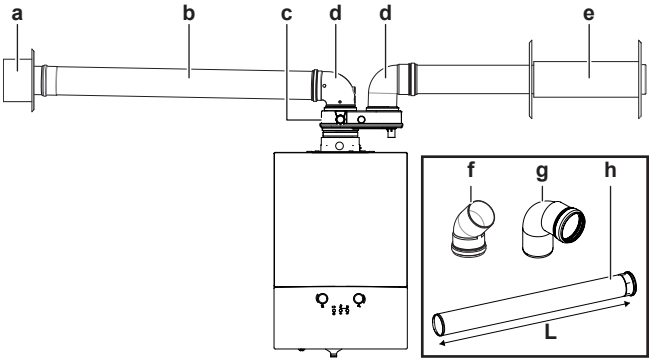
Type C83x (twin pipes flue system)

The boiler draws combustion air from outside via a separate supply pipe routed through the external wall, and expels flue gas to a shared flue system.



The multi served chimney is a system that is part of the building and has a separate CE marking. The connection between the boiler and the shaft and, the connection between the boiler and the air intake system must be obtained via Daikin.

In C83x type units, condensate flow into the unit is not allowed.



a Wall plate
b Extension 80 mm
c 60/100 to 80 80 adapter
d 90° elbow 80 mm
e Air intake 80 mm

Optional:

f 45° elbow 80 mm
g 90° elbow 80 mm
h Extension 80 mm
L 500-1000-2000 mm

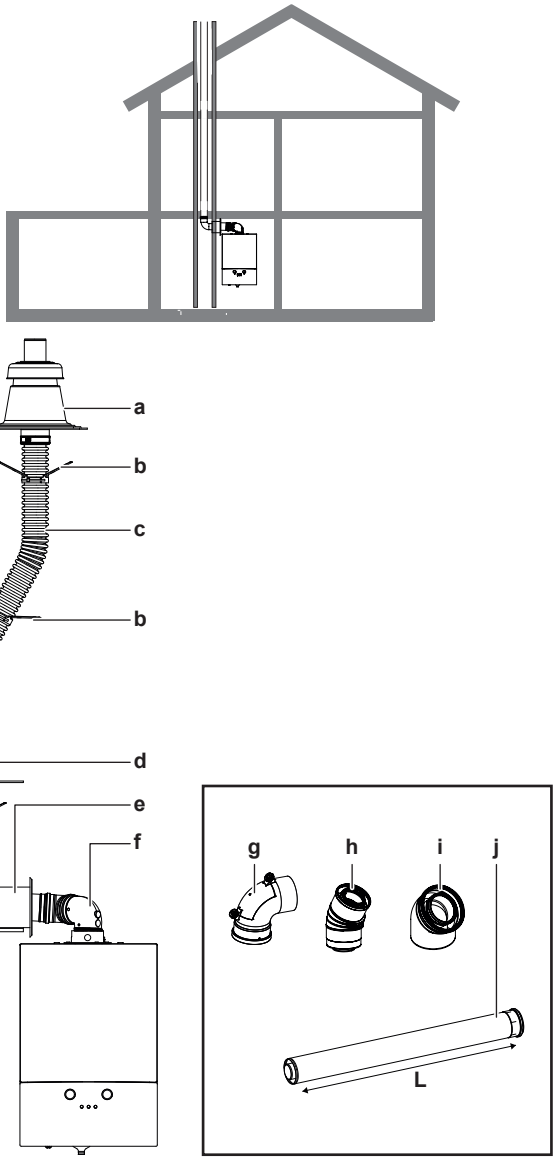
G20	For all models
Nominal combustion products temperature	66.05
Combustion products mass flow rate	6.04
Overheat combustion products temperature	-
Minimum combustion products temperature	56
Minimum combustion products mass flow rate	1.32
CO_2 content at nominal heat input	9 ± 0.8

G31	For all models
Nominal combustion products temperature	65.5
Combustion products mass flow rate	5.061
Overheat combustion products temperature	-
Minimum combustion products temperature	55
Minimum combustion products mass flow rate	1.23

G31	For all models
CO_2 content at nominal heat input	11.3 ± 1

Type C93x

The boiler draws combustion air from the outside through the annular gap in the shaft (chimney) and expels the flue gas via the flue pipe to above the roof.

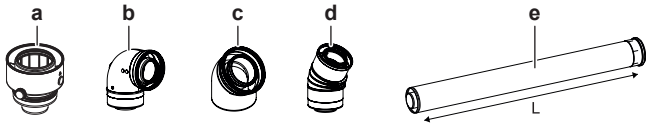


a Flex kit PP Dn 60-80 or Dn 80
b Spacer
c Extension Flex PP 80 mm
d Connector Flex-Flex PP 80 mm
e Chimney connection 60/100 or 80/125
f 90° elbow 60/100 (boiler outlet)

Optional:

g Inspection elbow 60/100
h 30° elbow 60/100
i 45° elbow 60/10000
j Extension 80/125
L = 500-100 0mm

Instead of 60/100, 80/125 flue ducts can be used at the outlet of the boiler. In that case, the parts below are used:



a 60/100 to 80/125 adapter
b 90° elbow 80/125
c 45° elbow 80/125
d 30° elbow 80/125
e Extension 80/125
L = 500-1000-2000 mm

Allowable flue length for C93x (for D2C*)				
	Shaft	Chimney cross-section	Parameter C3	
			"3"	"5"
60-100 Concentric	circular and smooth	100	9.0	15.0
DN 60 Flex	circular and rough	106	4.2	7.0
DN 60 Flex	circular and rough	100	3.0	5.0
DN 60 Flex	square and rough	95	4.2	7.1
DN 60 Flex	square and rough	90	3.2	5.3
80-125 Concentric	circular and smooth	124	28.0	99.0
DN 80 Flex	circular and rough	140	15.0	52.9
DN 80 Flex	circular and rough	130	9.6	33.8
DN 80 Flex	circular and rough	120	3.6	12.8
DN 80 Flex	square and rough	140	19.6	69.2
DN 80 Flex	square and rough	130	17.0	60.0
DN 80 Flex	square and rough	120	12.2	43.0
DN 80 Star	square and rough	140	47.5	167.8
DN 80 Star	square and rough	120	33.3	117.9

Allowable flue length for C93x (for D2T/H*)		
Chimney cross-section	PP 60 mm rigid duct	PP 60 mm flexible duct
Circular Ø100 mm	7.2 m	2.9 m
Circular Ø120 mm	9.3 m	4.5 m
Circular Ø140 mm	9.9 m	4.8 m
Square 100×100 mm	8.8 m	5.1 m
Square 120×120 mm	9.7 m	6.1 m
Square 140×140 mm	10.0 m	6.2 m
Chimney cross-section	PP 80 mm rigid duct	PP 80 mm flexible duct
Circular Ø120 mm	5.0 m	5.0 m
Circular Ø140 mm	15.4 m	15.4 m
Circular Ø160 mm	18.6 m	18.6 m
Square 120×120 mm	5.0 m	13.3 m
Square 140×140 mm	15.4 m	18.3 m
Square 160×160 mm	18.6 m	19.4 m

Equivalent length of options	
45° elbow 60/100 mm	1.0 m
90° elbow 60/100 mm	1.5 m
45° elbow 80/125 mm	1.0 m
90° elbow 80/125 mm	1.5 m

Maximum allowable length of the flue duct up to common chimney is 2 metres + 1 60/100 90° elbow.

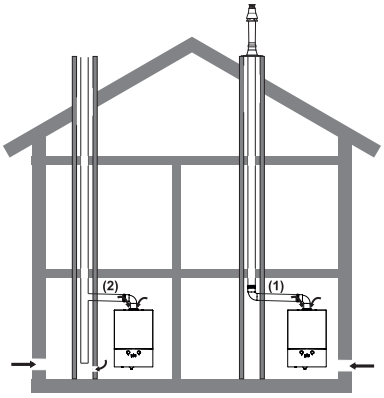
Subtract equivalent length value of bends from the allowable flue length value.

Type B53, B23 and B23p (open flue system)

WARNING
Make sure that an air inlet opening to outside of at least 150 cm² is provided.

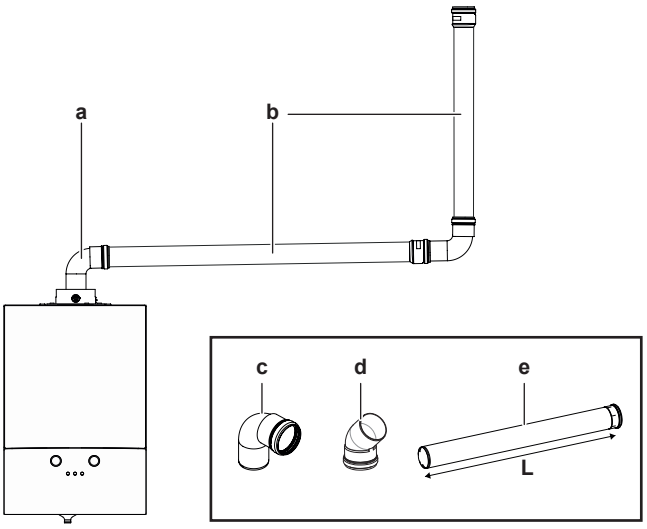
The boiler draws combustion air from the installation room and expels flue gas through the flue to above the roof (1).

The boiler draws combustion air from the installation room and routes flue gas through the moisture-resistant chimney to above the roof (2).



Equivalent length of options	
90° elbow 60 mm	1.5 m
45° elbow 60 mm	1.0 m
90° elbow 80 mm	2.0 m
45° elbow 80 mm	1.0 m

Subtract equivalent length value of bends from the allowable flue length value.



a 90° elbow 60 mm
b Extension 60 mm

Optional:

c 90° elbow 60 mm
d 45° elbow 60 mm
e Extension 60 mm
L 250-500-1000-1500-2000 mm

Allowable flue length for B53, B23, B23p		
	D2T/H*	D2C*
Flue duct 60 mm	24.0 m	20.0 m
Flue duct 80 mm	130.0 m	112.0 m

INFORMATION
B53 covers the B23 and B23p.

Flue parts order codes

Required flue kits and/or additional parts can be ordered from Daikin with the order codes given in the table below:

Flue part		Order code
Wall terminal kit 60/100 (C13X)		DRWTER60100AA
Wall terminal kit 80/125 (C13X)		EKFGW6359
Roof terminal kit 60/100 (C33x)		EKFGP6837
Roof terminal kit 80/125 (C33x)		EKFGP6864
Tee 60/100 with measurement point		EKFGP4667
90° elbow 60/100 (boiler outlet)		DRMEEA60100BA
90° elbow 60/100		EKFGP4660
90° elbow 80/125		EKFGP4810
45° elbow 60/100		EKFGP4661
45° elbow 80/125		EKFGP4811
30° elbow 60/100		EKFGP4664
30° elbow 80/125		EKFGP4814
Extension duct 60/100	500 mm	EKFGP4651
	1000 mm	EKFGP4652
Extension duct 80/125	500 mm	EKFGP4801
	1000 mm	EKFGP4802
Tile roof outlet kit 60/100	18°/22°	EKFGS0518
	23°/27°	EKFGS0519
	25°/45°	EKFGP7910
	43°/47°	EKFGS0523
	48°/52°	EKFGS0524
	53°/57	EKFGS0525
Tile roof outlet kit 80/125	18°/22°	EKFGT6300
	23°/27°	EKFGT6301
	25°/45°	EKFGP7909
	43°/47°	EKFGT6305
	48°/52°	EKFGT6306
	53°/57°	EKFGT6307
Flat roof outlet kit	60/100	EKFGP6940
	80/125	EKFGW5333
Wall bracket	DN.100	EKFGP4631
	DN.125	EKFGP4481
60/100 to 80/125 adapter		DRDECO80125BA
Tee flex boiler connection set	100 mm	EKFGP6368
	130 mm	EKFGP6215
Flex + support elbow	60/100	EKFGP6354
	60/130	EKFGS0257
Chimney connection	60/100	EKFGP4678
	80/125	EKFGS4828
Roof terminal kit 80 mm		EKFGP6864
90° elbow 80 mm		EKFGW4085
45° elbow 80 mm		EKFGW4086
Extension duct 80 mm	500 mm	EKFGW4001
	1000 mm	EKFGW4002
	2000 mm	EKFGW4004
60/100 to 80/80 adapter		DRDECOP8080BA
Air intake 80 mm (C53 kit)		EKFGV1102
Air intake 80 mm (C83 kit)		EKFGV1101
Flex kit PP DN.80 (C93 kit)		EKFGP2520
Flex kit PP DN.60/80 (C93 kit)		EKFGP1856
Extension flex PP 80 mm	10 m	EKFGP6340
	15 m	EKFGP6344
	25 m	EKFGP6341
	50 m	EKFGP6342

Flue part		Order code
Connector flex - flex PP 80		EKFGP6324
Spacer PP 80 to 100 mm		EKFGP6333
90° elbow 60 mm		DR90ELBOW60AA
45° elbow 60 mm		DR45ELBOW60AA
Extension duct 60 mm	500 mm	DREXDUC0500AA
	1000 mm	DREXDUC1000AA

5.8.11 To fill the system with water

CAUTION

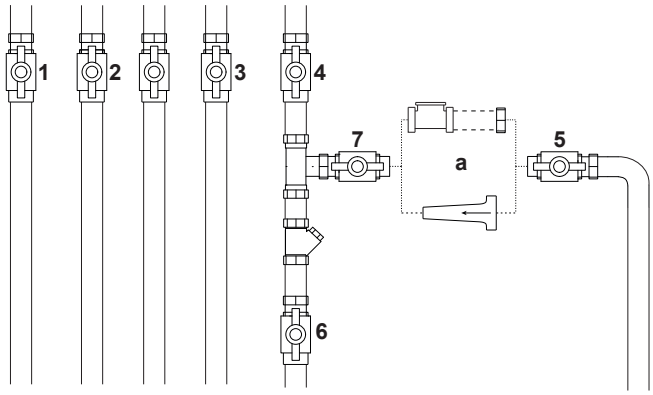
Water filling must be done while the boiler is in standby mode.

After all system connections are performed with care, perform the following steps:

1. Connect the unit to the main power supply. Due to low pressure, error code "Err HJ-09" will appear on the user interface and the status indicator light will be red.
2. Open all radiator valves.
3. Set all isolating valves to vertical (open) position.
4. Measure system water height (see "5.5 Central heating system requirements" [▶ 7]).
5. Slowly turn the filling valve until pressure reaches a value around 0.8 bar for system heights up to 6 metre. For longer system heights, see "5.5 Central heating system requirements" [▶ 7] to determine filling pressure. Filling operation should be done slowly. When pressure exceeds 0.8 bar, error code will disappear and the status indicator light will turn to blue. Turn off the filling valve.
6. System pressure value can be monitored from the user interface.
7. Make sure the automatic air vent valves located on the pump and heat exchanger are opened. Vent the air from the installation with the manual air vent screws on the radiators. Make sure screws are tightened after venting.
8. If after the venting the pressure decreases below 0.8 bar, refill the system with water until the pressure reaches 0.8 bar again.
9. Check the central heating circuit - especially the couplings of the circuit - for leakage.
10. Isolate the unit from power mains.

Method 1

(For models D2TND012A4AB, D2TND018A4AB and D2TND024A4AB)



a Use a disconnector or a double check valve according to local regulations

After all system connections are performed with care, perform the following steps:

1 Connect the appliance to the main power supply. Due to low pressure, error code "Err HJ-09" will appear on the user interface and the status indicator light will be red.

2 Open **all radiator valves**.

3 Set **all isolating valves** to closed position.

4 Connect fresh water supply pipe to **valve 5**.

5 Open **valves 1, 2, 3, 4, 5, 6**.

6 Slowly turn the **valve 7** to open position until pressure reaches a value around 0.8 bar for system heights up to 6 metres. For longer system heights, see "5.5 Central heating system requirements" [▸ 7] to determine filling pressure. Filling operation should be done slowly. When pressure exceeds 0.8 bar, error code will disappear and the status indicator light will turn to blue. Turn the **valve 7** off.

7 Turn the **valve 5** off. Remove the filling loop if it is required by local regulations.

8 Check the central heating circuit - especially the couplings of the circuit - for leakage.

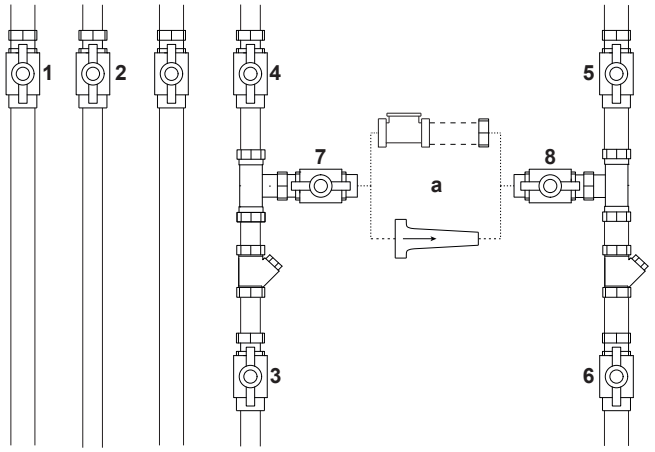
9 Make sure the automatic air vent valves located on the pump and heat exchanger are opened. Vent the air from the installation with the manual air vent screws on the radiators. Make sure screws are tightened after venting.

10 If after the venting the pressure decreases below 0.8 bar, refill with water until the pressure reaches 0.8 bar again.

11 Isolate the appliance from power mains.

Method 2

(For model D2CND024A4AB)



a Use a disconnector or a double check valve according to local regulations

After all system connections are performed with care, perform the following steps:

1 Connect the appliance to the main power supply. Due to low pressure, error code "Err HJ-09" will appear on the user interface and the status indicator light will be red.

2 Open all **radiator valves**.

3 Set all **isolating valves** to closed position.

4 Connect the filling loop to the **valve 7 and valve 8**.

5 Set **valves 1, 3, 5, 6 and 8** to open position.

6 Slowly open the **valve 7** until pressure reaches a value around 0.8 bar for system heights up to 6 metres. For longer system heights, see "5.5 Central heating system requirements" [▸ 7] to determine filling pressure. Filling operation should be done slowly. When pressure exceeds 0.8 bar, error code will disappear and the status indicator light will turn to blue. Turn the **valve 7** off.

7 You can monitor the system pressure value from the user interface.

8 Make sure the automatic air vent valves located on the pump and heat exchanger are opened. Vent the air from the installation with the manual air vent screws on the radiators. Make sure screws are tightened after venting.

9 If after the venting the pressure decreases below 0.8 bar, refill with water until the pressure reaches 0.8 bar again.

10 Set **valve 8** to off position. Remove the filling loop if it is required by local regulations.

11 Check the central heating circuit - especially the couplings of the circuit - for leakage.

12 Isolate the boiler from power mains.

Method 3

(For model D2CND024A1AB)

After all system connections are performed with care, perform the following steps:

1 Connect the unit to the main power supply. Due to low pressure, error code "Err HJ-09" will appear on the user interface and the status indicator light will be red.

2 Open all radiator valves.

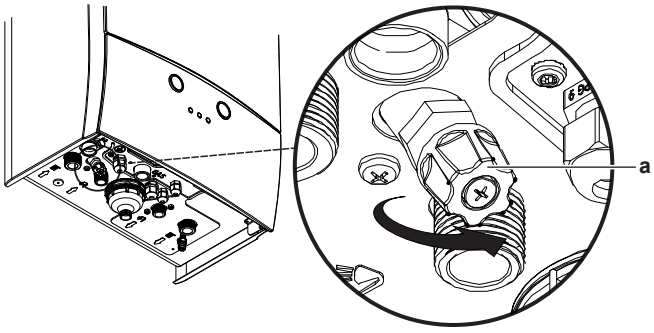
3 Set all isolating valves to vertical (open) position.

4 Measure system water height (see "5.5 Central heating system requirements" [▸ 7]).

5 Slowly turn the filling valve until pressure reaches a value around 0.8 bar for system heights up to 6 metre. For longer system heights, see "5.5 Central heating system requirements" [▸ 7] to determine filling pressure. Filling operation should be done slowly. When pressure exceeds 0.8 bar, error code will disappear and the status indicator light will turn to blue. Turn off the filling valve.

6 System pressure value can be monitored from the user interface.

7 Make sure the automatic air vent valves located on the pump and heat exchanger are opened. Vent the air from the installation with the manual air vent screws on the radiators. Make sure screws are tightened after venting.



a Filling valve

8 If after the venting the pressure decreases below 0.8 bar, refill the system with water until the pressure reaches 0.8 bar again.

9 Check the central heating circuit - especially the couplings of the circuit - for leakage.

10 Isolate the unit from power mains.

5.8.12 Converting for use with a different type of gas

WARNING

Gas conversion operation can ONLY be carried out by qualified competent persons.

DANGER

Isolate the boiler from the power mains before gas conversion operation.

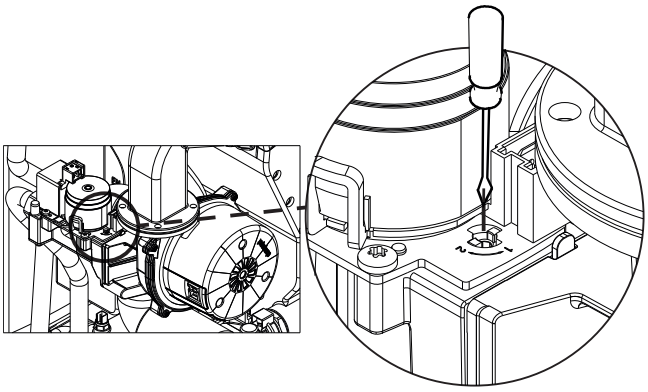
INFORMATION

Only for Belgium

Gas conversion from Natural gas to propane gas can only be executed by Daikin Belux Service Department. Please contact Daikin Belux Service Department to organise an appointment on site.

To convert the system for use with a different type of gas

1. Open the front cover of the unit as described in this manual.
2. To set natural gas, adjust screw on the gas valve to position "1".
3. To set LPG, adjust the screw to position "2".
4. Mount the front cover, connect the unit to the main power supply.



To modify settings for gas conversion

1. Enter the menu section from the user interface. Select service settings by using the left dial.
2. Press the "Enter" button and choose the password (742) by using the right dial and press the "Enter" button again.
3. Choose "C" parameters via left dial and press the "Enter" button.
4. Choose "CE" and press the "Enter" button. It will ask for password again. Choose the password (115) and press the "Enter" button.
5. Choose "C0" and press the "Enter" button.
6. To convert to LPG, choose "1" with the right dial and press the "Enter" button, To convert to Natural gas, choose "0" with the right dial and press the "Enter" button.
7. Leave the menu screen and go back to the home screen by using the "Back" button.

INFORMATION

When a conversion is performed, the identification label shall be marked to show the gas type in use.

6 Commissioning

WARNING

ONLY authorized personnel should conduct commissioning.

CAUTION

Preliminary electrical system checks such as earth continuity, polarity, resistance to earth and short circuit must be carried out by using a suitable test meter by a competent person.

INFORMATION

Since the unit is equipped with an electronic gas adaptive function, no gas–air ratio adjustment must be carried out by the installer.

6.1 To fill the condensate trap

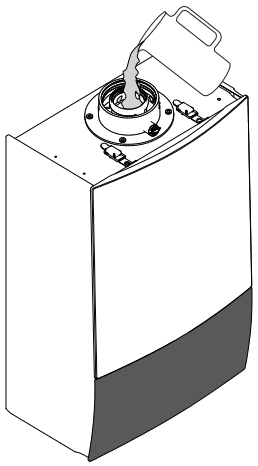
INFORMATION

Water should be poured into the heat exchanger flue outlet.

Fill the condensate trap by pouring 0.2 litres of water from the boiler flue outlet.

INFORMATION

Water must be poured into the **inner** tube.



6.2 Gas-air ratio: Adjustment not required

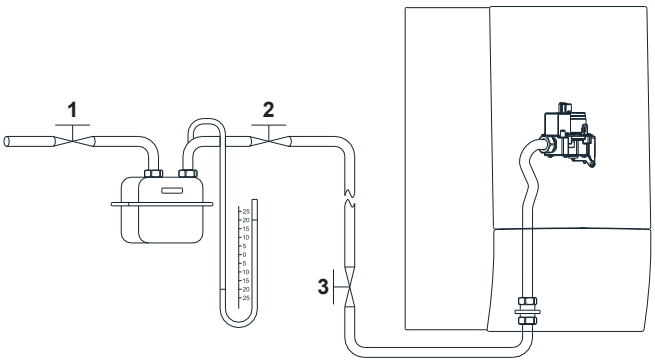
The installer does not have to adjust the gas-air ratio, because the boiler has an electronic gas adaptive feature.

6.3 To check for gas leakage

DANGER

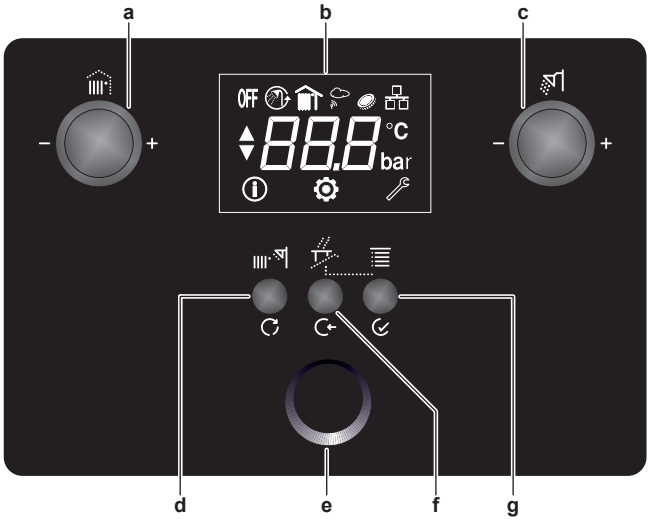
Before passing next steps, this control must be fulfilled.

1. Before connecting the unit to power mains, close valves 1, 2 and 3.
2. Connect a manometer to gas meter.
3. Open valves 1, 2, and 3.
4. Close valve 1.
5. Note the manometer reading and wait for 10 minutes.
6. After 10 minutes, compare the manometer reading with the initial value. If the pressure is decreased, it means there is gas leakage. Check the gas line and fittings.
7. Repeat this process until you are sure there is no leakage.
8. Close valve 1, remove the manometer, and open valve 1 again.



6.4 To commission the unit

Legend - User interface:



a Left dial
b LCD screen
c Right dial
d Mode / Reset
e Status indicator
f Cancel / Back
g Menu / Enter

1 Make sure the system is filled with water and fully vented as described in this manual.

2 Check that the central heating and domestic hot water isolating valves are open.

3 Check that gas service valve is open.

4 Connect the unit to the main power supply. The user interface will be energized.

6.4.1 To commission the central heating

1 Set mode to winter mode via "Mode" button on the user interface. (and ■ icons are displayed on the screen.)

2 Set central heating set temperature to maximum value via left dial. If connected, make sure all external controls such as outdoor sensor and room thermostat are calling for heat.

3 The boiler control now go through its ignition sequence. The status indicator will glow constantly in blue if flame is established. ■ icon will blink when central heating is active.

INFORMATION

After first power ON, the boiler does not increase its capacity above a preset value for about 12 minutes, even if there is demand.

- First 0~2 minutes: The electronic gas adaptive system calibrates itself.
- Next 8~10 minutes: The boiler performs the low water temperature function. You can skip this function by pressing the "Cancel" button for 5 seconds.

6.4.2 To measure the flue emissions

NOTICE

Make sure all the radiator valves are opened and water circulation is allowed.

1 Change operation mode to the stand-by.

2 Before activating the sweeper mode, gas analyzer device should be mounted to its place on the flue.

3 To activate the sweeper mode, press "Cancel" and "Menu" buttons together 5 seconds. With sweeper mode, boiler can be operated at maximum and minimum capacity independent of heat demand.

4 When the sweeper mode is activated, "tst - 100" caption will appear on the screen. This means boiler is operating at nominal capacity. Check the CO_2 values at nominal capacity.

5 To switch between nominal and minimum capacities, press "Mode" button. "tst - xx" caption will appear on screen. This means boiler is operating at minimum capacity. Check the CO_2 values at minimum capacity.

6 To quit sweeper mode, again press "Cancel" and "Menu" buttons together 5 seconds. Sweeper mode will be deactivated and boiler will return to normal operation mode. Sweeper mode also finishes automatically after 15 minutes.

INFORMATION

"xx" is referring to minimum percental capacity and this value can be different according to model.

The CO_2 values should be in limits as shown in below table.

CO_2 emissions	Unit	Value
CO_2 Emission at nominal and minimum heat input (G20)	%	9.0 ± 0.8
CO_2 Emission at nominal and minimum heat input (G31)	%	11.3 ± 1.0

Gas inlet pressure	Unit	Value
G20 (min. / max.)	mbar	17 / 30
G31 (min. / max.)	mbar	25 / 45

6.4.3 To commission the central heating capacity setting

The boiler's central heating capacity can be adjusted from the control panel. If the heat loss of installation is much less than that of the boiler nominal capacity, it is recommended to reduce the boiler nominal capacity to the installation capacity. Refer to service instructions for this operation.

6.4.4 To commission the domestic hot water

Only for models D2CND024A1AB and D2CND024A4AB

1 Set domestic hot water set temperature to its maximum value via right dial.

2 Open hot water taps fully and ensure that water flows freely from them.

3 icon will blink when domestic water heating is active.

4 Measure the domestic hot water inlet temperature. (Cold water drawn off from taps)

5 Check that domestic hot water temperature rise is around 34°C.

7 Maintenance and cleaning

WARNING

The boiler should be maintained by authorised personnel every year.

An annual maintenance cycle is very important for the safe operation of your boiler and to ensure its reliable, efficient, and long-lasting performance.

Contact your service agent for details.

DANGER

Incorrect maintenance and repairs can lead to injury and material damage.

- Never attempt to perform maintenance work or repairs on the unit yourself.
- Contact your service agent.

7.1 To clean the outer surface of the unit

Clean the outer surface of your boiler with a damp cloth and a little solvent-free soap.

CAUTION

Sprays, solvents or cleaning agents containing chlorine can damage the exterior, the fittings or the control unit. Do not use them for cleaning purposes.

8 Contact information

Contact a local competent service agent if you have any questions regarding the maintenance and repair of your system.

In case of any complaints with the device, please contact our authorized services. The latest contact information of all the authorized service stations and spare part suppliers can be found on our website www.daikin.eu.

9 Hand-over to the user

After completing the installation and commissioning of the system, the installer must hand over the system to the user.

- Provide the operation manual to the user and inform them of their responsibilities in accordance with the applicable national regulations.
- Explain and demonstrate the boiler ignition and shutdown procedures.
- Explain the function and the use of the boiler heating and domestic hot water controls.
- Explain and demonstrate the operation of temperature controls, radiator valves, and other relevant components to ensure efficient and economical use of the system.
- Explain the error mode function of the boiler. Emphasise that, in the event of an error, the householder should refer to the “Error codes” section of the operation manual.
- Inform the householder about the frost protection function and advise them never to disconnect the boiler from the power supply.
- Emphasise that a full service must be carried out annually, particularly before the winter season.
- Inform the householder about the warranty conditions and the requirement to register the warranty to receive its full benefits.

10 Disposal

Old units must be disposed of in compliance with local and national regulations. The components are designed for easy disassembly, with clearly marked plastics to facilitate proper sorting, recycling, or disposal.

- 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: dismantling the system, treatment of the refrigerant, of oil and of other parts MUST be done by an authorised installer and MUST comply with applicable legislation.

Units MUST be treated at a specialised 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.

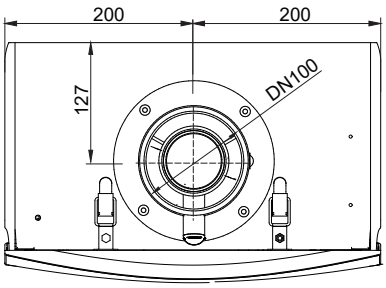
- The packaging of the product is produced from recyclable materials in accordance with our national legislation.

Do not dispose of the packaging waste together with the domestic or other waste, throw it away at the packaging collection points designated by the local authority.

11 Technical data

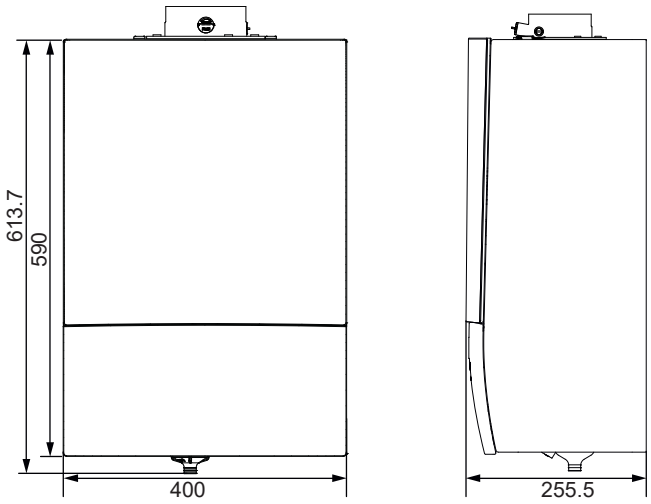
11.1 Dimensions

Top view

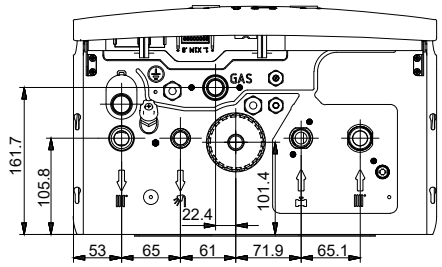


11 Technical data

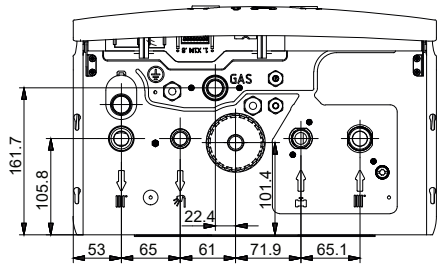
Front view and right side view



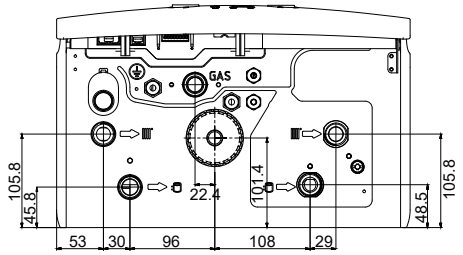
Bottom view of model D2CND024A1AB



Bottom view of model D2CND024A4AB



Bottom view of models D2TND012A4AB, D2TND018A4AB and D2TND024A4AB



11.2 Technical specifications

Technical specifications	Unit	D2TND012A4AB	D2TND018A4AB	D2TND024A4AB	D2CND024A*AB
Heat Input Range(Qn)	kW	2.9~11.2	2.9~17.0	2.9~23.5	2.9~23.5
Nominal Heat Output Range (Pn) at 80-60°C	kW	2.8~10.9	2.8~16.6	2.8~22.8	2.8~22.8
Nominal Heat Output Range (Pn) at 50-30°C	kW	3.1~12.0	3.1~18.0	3.1~24.0	3.1~24.0
Efficiency (30% partial load at 30°C return temperature)	%	109.5	109.1	108.7	108.7
Central Heating Circuit					
Operating Pressure (min./max.)	bar	0.6 / 3.0			
Heating Circuit Temperature Interval (min./max.)	°C	30 / 80			
Domestic Hot Water Circuit					
Hot Water Amount DT: 30°C	l/min	—			12
Hot Water Amount DT: 35°C	l/min	—			10.3
Comfort Class (EN13203)	—	—			***
Water Installation Pressure (min./max.)	MPa	—			0.05 / 1
Domestic Hot Water Temperature Interval (min./max.)	°C	35 / 60			
Domestic Hot Water Circuit Type	—	storage tank			instantaneous
General					
Expansion Vessel Initial Pressure	bar	1			
Expansion Vessel Capacity	l	7			
Electrical Connection	V AC/Hz	230/50			
Electrical Power Consumption (max.)	W	86			
Standby Electrical Power Consumption	W	3.5			
IP Rating	—	IPX5D			
Boiler Weight	kg	26.5	26.5	27	27
Boiler Dimensions (Height × Width × Depth)	mm	590 × 400 × 256			
Flue outlet diameter	mm	60 / 100			
Combustion specifications	Unit	D2TND012A4AB	D2TND018A4AB	D2TND024A4AB	D2CND024A*AB
Gas Category	—	II_{2N3P}			
Nominal Gas Inlet Pressure (G20/G25/G31)	mbar	20 / 25 / 37			
G20 Gas Inlet Pressure (min./max.)	mbar	17 / 30[a]			
G25 Gas Inlet Pressure (min./max.)	mbar	20 / 30			
G31 Gas Inlet Pressure (min./max.)	mbar	25 / 45			
Natural Gas (G20) Consumption (min./max.)	m³/h	0.31 / 1.18	0.31 / 1.80	0.31 / 2.48	0.31 / 2.48
Natural Gas (G25) Consumption (min./max.)	m³/h	0.36 / 1.38	0.36 / 2.09	0.36 / 2.89	0.36 / 2.89
LPG (G31) Consumption (min./max.)	m³/h	0.12 / 0.46	0.12 / 0.69	0.12 / 0.96	0.12 / 0.96
Combustion products mass flow rate (min./max.) (G20)	g/s	1.32 / 5.12	1.32 / 7.78	1.32 / 10.75	1.32 / 10.75
Combustion products mass flow rate (min./max.) (G31)	g/s	1.23 / 4.77	1.23 / 7.23	1.23 / 10.00	1.23 / 10.00
Combustion products temperature (min./max.) (G20)	°C	56 / 60	56 / 68	56 / 77	56 / 77
Combustion products temperature (min./max.) (G31)	°C	56 / 60	56 / 68	55 / 76	55 / 76
Maximum combustion products temp. at nominal heat input	°C	80	82	90	90
CO_2 Emission at nominal and minimum heat input (G20)	%	9.0±0.8			
CO_2 Emission at nominal and minimum heat input (G31)	%	11.3±1.0			
NOx Class	—	6			

Energy-related products (ErP) specifications	Symbol	Unit	D2TND012A4AB	D2TND018A4AB	D2TND024A4AB	D2CND024A*AB
Model	—	—	D2TND012	D2TND018	D2TND024	D2CND024
Condensing boiler	—	—	YES	YES	YES	YES
Low-temperature boiler[a]	—	—	YES	YES	YES	YES
B1 boiler	—	—	NO	NO	NO	NO
Cogeneration space heater	—	—	NO	NO	NO	NO
Combination heater	—	—	NO	NO	NO	YES
Central heating efficiency class	—	—	****/A			
Rated heat output	P_{rated}	kW	11	16	23	23
Useful heat output at rated heat output and high-temperature regime[b]	P_4	kW	10.8	16.4	22.8	22.8
Useful heat output at 30% of rated heat output and low-temperature regime[a]	P_1	kW	3.9	5.6	7.7	7.7
Seasonal space heating energy efficiency	η_s	%	93	93	93	93
Useful efficiency at rated heat output and high-temperature regimeF[a]	η_4	%	87.8	87.4	87.3	87.3
Useful efficiency at 30% of rated heat output and low-temperature regime[b]	η_1	%	98.6	98.2	97.9	97.9
Auxiliary electricity consumption						
At full load	el_{max}	kW	0.013	0.020	0.027	0.027
At part load	el_{min}	kW	0.009	0.009	0.010	0.010
In standby mode	P_{SB}	kW	0.003	0.003	0.003	0.003
Other items						
Standby heat loss	P_{stby}	kW	0.057	0.057	0.057	0.057
Ignition burner power consumption	P_{ign}	kW	—	—	—	—
Annual energy consumption	Q_{HE}	kWh	9281	13790	19648	19648
Sound power level, indoors (at maximum heat input)	L_{WA}	dB	42	46	49	49
Emissions of nitrogen oxides	NO_x	mg/kWh	10	18	22	22
Domestic hot water parameters						
Declared load profile	—	—	—	—	—	XL

11 Technical data

Energy-related products (ErP) specifications	Symbol	Unit	D2TND012A4AB	D2TND018A4AB	D2TND024A4AB	D2CND024A*AB
Daily electricity consumption	Q_{elec}	kWh	—	—	—	0.166
Annually electricity consumption	AEC	kWh	—	—	—	36
Water heating energy efficiency	η_{wh}	%	—	—	—	85
Water heating energy efficiency class	—	—	—	—	—	A
Daily fuel consumption	Q_{fuel}	kWh	—	—	—	23.366
Annual fuel consumption	AFC	GJ	—	—	—	17

(a) Low-temperature regime refers to a return temperature of 30°C for condensing boilers, 37°C for low-temperature boilers, and 50°C for other heaters (measured at the heater inlet).

(b) High-temperature regime refers to a return temperature of 60°C at the heater inlet and a flow temperature of 80°C at the heater outlet.

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