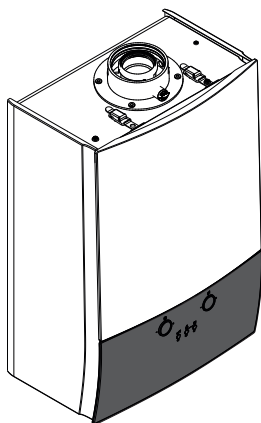




Installation manual

Wall-mounted condensing boiler



D2CND024A1AA
D2CND024A4AA

D2TND012A4AA
D2TND018A4AA
D2TND024A4AA

Installation manual
Wall-mounted condensing boiler

English

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Daikin Europe N.V.

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D2TND012, D2TND018, D2CND024, D2TND24, D2CND028,
D2TND028, D2CND035, D2TND035, D2C20ND028, D2C24ND035,

- 01 are in conformity with the following standard(s) or other normative document(s), provided that these are used in accordance with our instructions:
02 deiden (volgens Normen) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, dass sie ge-
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05 instrucciones:
06 conform de volgende normen of één of meer andere andere documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze
07 instructies:
08 conforma cu norma(n) sau la(s) siglele(n) norma(l) e altele documente(n) normative, sempre ca sunt utilizate de acord cu instructiile
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10 sono conformi all(i) seguente(i) standard(i) e al(l)i documenti(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
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12 σύμφωνα με τις οδηγίες μας.

EN15502-1, EN60335-2-102,

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| 03 | conformément aux dispositions des: | 03 | berdasarkan ketentuan: |
| 04 | overeenkomstig de bepalingen van: | 04 | berdasarkan ketentuan: |
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| 06 | secondo le prescrizioni per: | 06 | berdasarkan ketentuan: |
| 07 | je třetího téhož bodužby tuž: | 07 | berdasarkan ketentuan: |
| 08 | de acordo com o previsto em: | 08 | berdasarkan ketentuan: |
| 09 | в соответствии с положениями: | 09 | berdasarkan ketentuan: |
| 10 | following the provisions of: | 10 | berdasarkan ketentuan: |
| 11 | gemäß den Vorschriften der: | 11 | berdasarkan ketentuan: |
| 12 | conformément aux dispositions des: | 12 | berdasarkan ketentuan: |
| 13 | overeenkomstig de bepalingen van: | 13 | berdasarkan ketentuan: |
| 14 | siguendo las disposiciones de: | 14 | berdasarkan ketentuan: |
| 15 | secondo le prescrizioni per: | 15 | berdasarkan ketentuan: |
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| 01 Note* | as set in <-> and judged positively by <-> | 06 Note* |
| 02 Hinweis* | according to the Certificate <-> | 07 Zündpunkt |
| 03 Hinweis* | wie in <-> angegeben und von <-> positiv beurteilt gemäß Zertifikat <-> | 08 Note* |
| 04 Remarque* | tel que défini dans <-> et évalué positivement par <-> | 09 Tüpfenwasser* |
| 04 Bemerk* | conformément au Certificat <-> | 10 Bemerk* |
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25 bunun košullanna uygu

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- | | | |
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| 12 Merk* | som den fremkommer <A> og genom positiv bedømmelse av folge Seriffin <A> | 17 Uwege* |
| 13 Huom* | on jaksen i enlei assirassa <A> a pite <A> on tykkens Seriffin <A> mikaeseli. | 18 Not* |
| 14 Poznamka* | jak byv soudati <A> a pozitivni zjsteno <A> v soudati <A> osvedčeni <A> | 19 Opomba* |
| 15 Napomena* | kalo je izloženo <A> i pozitivno ocjenjeno od strane prema Ceriffin <A> | 20 Markus* |

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DAIKIN

DAIKIN EUROPE N.V.

Zandvoordestraat 300, B-8400 Oostende, Belgium

3rd of July 2017

Shigeki Morita
Director



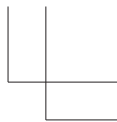


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Disposal

Old units must be appropriately disposed of, in accordance with local and national regulations. The components are easy to separate and the plastics are marked. This allows the various components to be sorted for appropriate 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: 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.

1 Introduction

1.1 About the documentation

The instructions contained in this document are intended to guide you through the installation of the unit. Damage caused by non-observance of these instructions are not under the responsibility of Daikin.

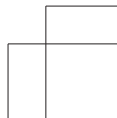
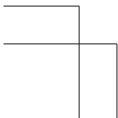
- The original documentation is written in English. All other languages are translations.
- The precautions described in this document are written for installers and they cover very important topics. Follow them carefully.
- Please read the operation manual and installation manual prior to use and keep them for future reference.

1.1.1 Meaning of warnings and symbols

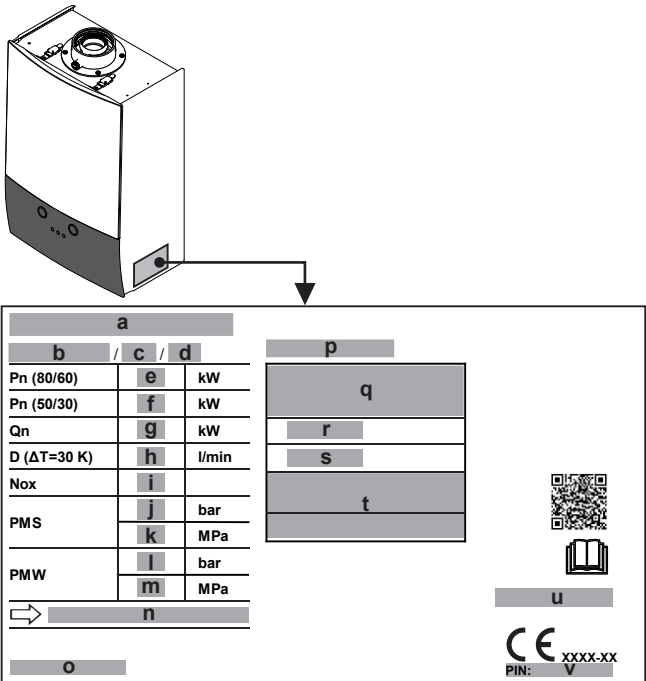
	DANGER Indicates a situation that results in death or serious injury.
	WARNING Indicates a situation that could result in death or serious injury.
	CAUTION Indicates a situation that could result in minor or moderate injury.
	NOTICE Indicates a situation that could result in equipment or property damage.
	INFORMATION Indicates useful tips or additional information.

1.2 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.



2 Safety instructions



- 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 Hot water amount @ DT=30
- i NOx class
- j Maximum central heating pressure (bar)
- k Maximum central heating pressure (MPa)
- l Maximum domestic hot water pressure (bar)
- m Maximum domestic hot water pressure (MPa)
- n Country of destination(s)
- o Country of origin
- p Serial number
- q Appliance type
- r Efficiency class
- s Gas category
- t Gas type and supply pressure
- u Product type
- v PIN number

1.3 Symbols on the package

- This is a fragile piece of equipment: Please provide a dry storage space for the unit.
- This is a fragile piece of equipment: Please be very careful not to drop.
- Store the unit in a flat position as indicated on the box.
- No more than five boxes should be stacked on top of each other.

2 Safety instructions

These instructions are exclusively designed for qualified competent persons.

- Work on gas units must only be carried out by a qualified gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.
- The system must be commissioned by a qualified competent person.

- WARNING**
A qualified person shall 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 qualified competent persons 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.

3 About the unit

This Daikin unit is a wall-mounted gas-fired condensing boiler that can supply heat to central heating systems, as well as supply domestic hot water. Depending on settings, it is possible to use the unit solely for hot water or solely for central heating. Hot water supply type can be instantaneous or by means of a hot water storage tank. The type of the boiler can be recognised from the model name written on the identification label. See table below:

Model	Type	Domestic hot water supply	Filling loop
D2CND024A1AA	D2CND024	Instantaneous	Internal
D2CND024A4AA	D2CND024	Instantaneous	External
D2TND012A4AA	D2TND012	Storage tank	External
D2TND018A4AA	D2TND018	Storage tank	External
D2TND024A4AA	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, push buttons, and two dials, and which is located on the front cover of the unit.

3.1 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.

3 About 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: This is controlled by the control unit. When the supply voltage drops below 170 Volt, the boiler goes to error mode. It is a blocking error and the boiler will operate without reset after supply voltage is above 180 Volt. It is recommended to use a voltage regulator of suitable power and type in locations with voltage fluctuations below this limit for faultless operation.

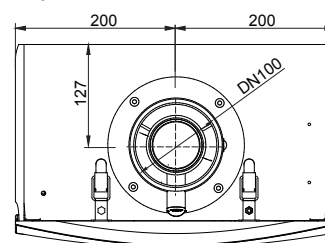
High electric supply current protection system: A fuse on the control unit protects equipment and wiring against the damaging effects of electrical faults which is caused by excess currents, and disables equipment which is faulty. The fuse "blows" (opens) when the current carried exceeds the rated value for an excessive time.

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.

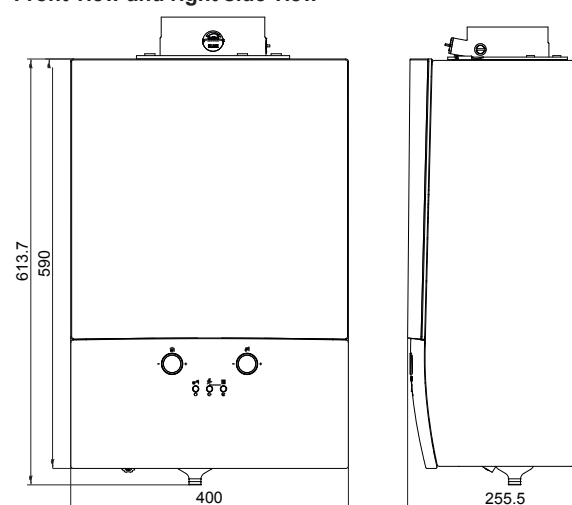
Combustion control safety system: Boiler control unit monitors the flame to avoid bad combustion and risky conditions. It also makes self-inspection against its own malfunctioning and to keep emissions always at a low level.

3.2 Dimensions

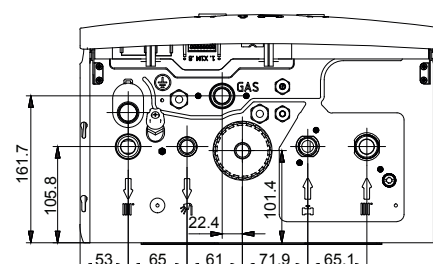
Top view



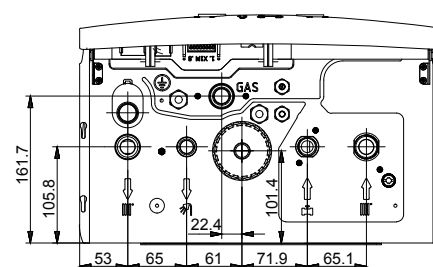
Front view and right side view



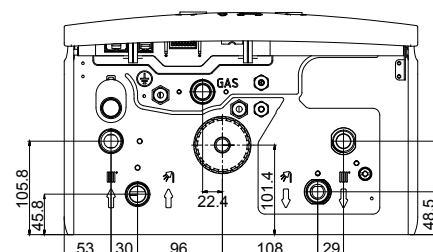
Bottom view of model D2CND024A1AA



Bottom view of model D2CND024A4AA



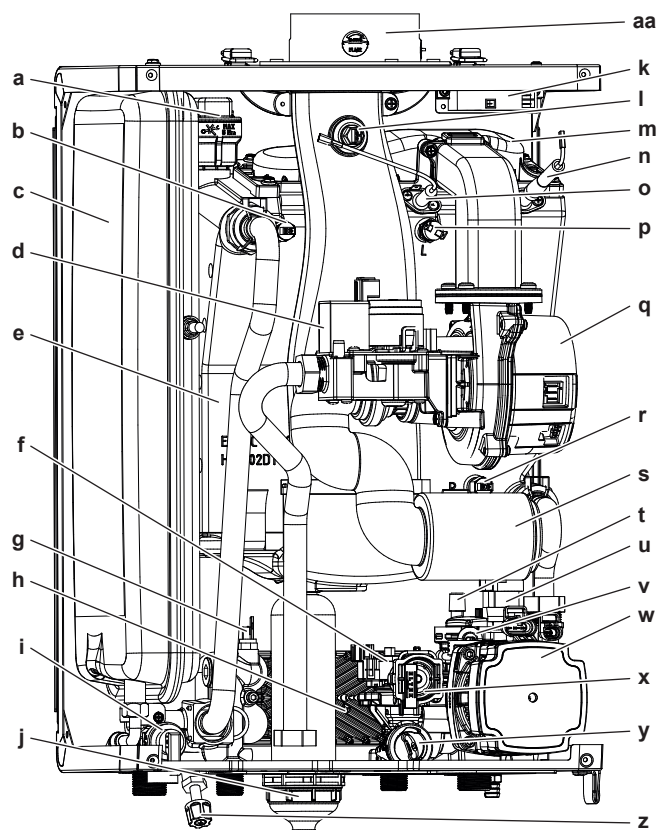
Bottom view of models D2TND012A4AA, D2TND018A4AA and D2TND024A4AA



3 About the unit

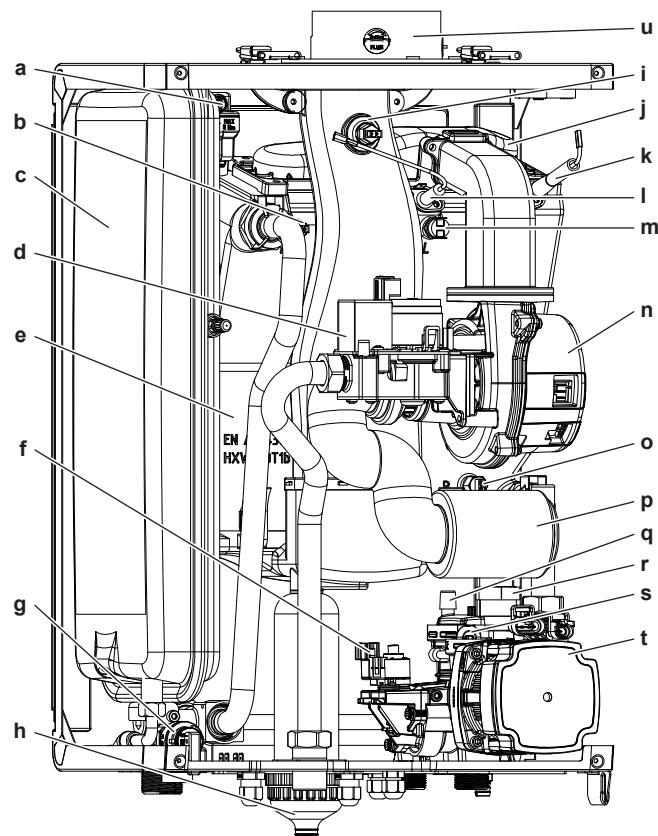
3.3 Components

Components of models D2CND024A1AA and D2CND024A4AA



- a Automatic air vent (heat exchanger)
- b Flow temperature sensor
- c Expansion vessel (8 litres)
- d Gas valve
- e Heat exchanger
- f 3-way valve stepper motor
- g Domestic hot water temperature sensor
- h Plate heat exchanger
- i Safety valve (3 bar)
- j Condensate trap
- k Ignition transformer
- l Flue gas temperature sensor
- m Burnerhood
- n Ignition electrode
- o Ionisation electrode
- p High limit thermostat
- q Fan
- r Return 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 Internal filling valve (included in model D2CND024A1AA and not included in model D2CND024A4AA)
- aa Flue gas adapter

Components of models D2TND012A4AA, D2TND018A4AA and D2TND024A4AA



- a Automatic air vent (heat exchanger)
- b Flow temperature sensor
- c Expansion vessel (8 litres)
- 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 Burnerhood
- k Ignition electrode
- l Ionisation electrode
- m High limit thermostat
- n Fan
- o Return temperature sensor
- p Silencer
- q Automatic air vent (pump)
- r Water pressure sensor
- s By-pass
- t Boiler pump
- u Flue gas adapter

3.4 Technical specifications

Technical specifications	Unit	D2TND012A4AA	D2TND018A4AA	D2TND024A4AA	D2CND024A*AA
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
Water Installation Pressure (min./max.)	bar	—			0.5 / 10.0
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	8			
Electrical Connection	V AC/Hz	230/50			
Electrical Power Consumption (max.)	W	86			
Standby Electrical Power Consumption	W	3.5			
Electrical Protection Class	—	IPX5D			
Boiler Weight	kg	26.5	26.5	27	27
Boiler Dimensions (Height x Width x Depth)	mm	590 x 400 x 256			
Flue outlet diameter	mm	60 / 100			
Combustion specifications	Unit	D2TND012A4AA	D2TND018A4AA	D2TND024A4AA	D2CND024A*AA
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			

(a) 20 / 30 for Hungary

Energy-related products (ErP) specifications	Symbol	Unit	D2TND012A4AA	D2TND018A4AA	D2TND024A4AA	D2CND024A*AA
Model	—	—	D2TND012	D2TND018	D2TND024	D2CND024
Condensing boiler	—	—	YES	YES	YES	YES
Low-temperature ^(b) boiler	—	—	NO	NO	NO	NO
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 ^(a)	P _t	kW	10.8	16.4	22.8	22.8
Useful heat output at 30% of rated heat output and low-temperature regime ^(b)	P _i	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 regime ^(a)	η _t	%	87.8	87.4	87.3	87.3
Useful efficiency at 30% of rated heat output and low-temperature regime ^(b)	η _i	%	98.6	98.2	97.9	97.9
Auxiliary electricity consumption						
At full load	e _{l,max}	kW	0.013	0.020	0.027	0.027
At part load	e _{l,min}	kW	0.009	0.009	0.010	0.010
In standby mode	P _{SB}	kW	0.004	0.004	0.004	0.004
Other items						
Standby heat loss	P _{sby}	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


4 Installation

Energy-related products (ErP) specifications	Symbol	Unit	D2TND012A4AA	D2TND018A4AA	D2TND024A4AA	D2CND024A*AA
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) High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.
(b) Low temperature means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature (at heater inlet).

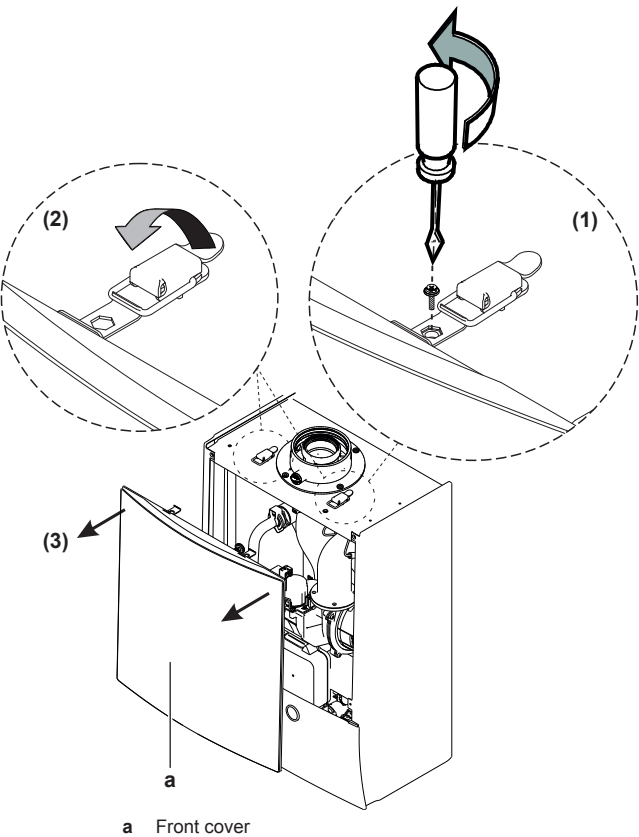
4 Installation

4.1 To open the unit

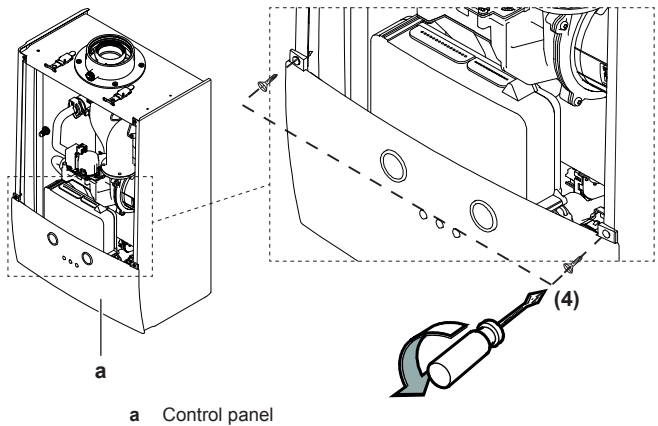
**WARNING**
Only qualified competent persons are allowed to open the unit.

Certain actions explained in this document, such as gas conversion, optional equipment connection, require that the front cover is opened.

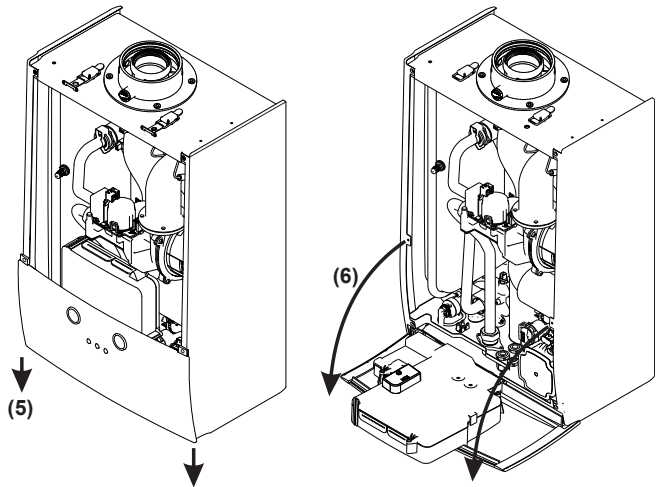
- 1 Loosen the screw that holds the right mounting clips (1).
- 2 Dismantle the two mounting clips that hold the front cover (2).
- 3 Remove the front cover forwards (3).




- 4 Loosen the two screws of the control panel (4).




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



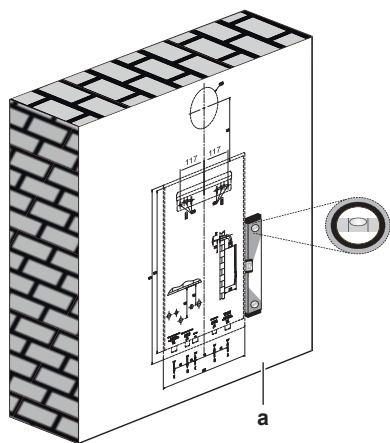
4.2 Installation site requirements

**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.

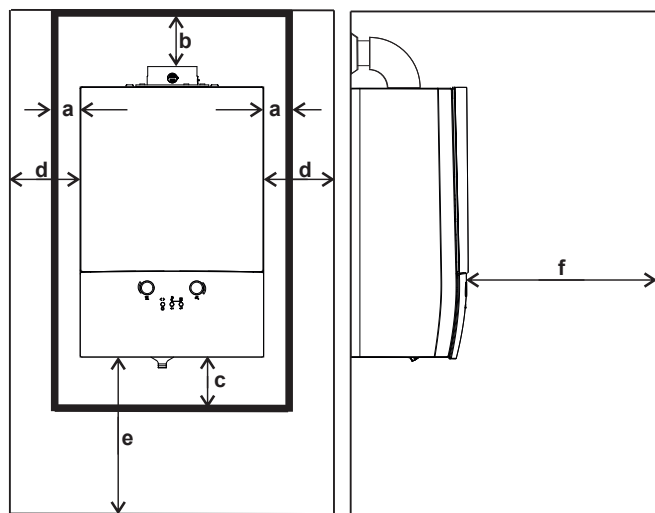
4 Installation



a Vertical, flat wall

- 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,...). 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 (DRANTIFREEZAA) to prevent the piping and condensate trap from freezing.
- Flammable fluids and materials must be stored at least 1 metre away from the boiler.
- The wall on which the unit is mounted should be strong enough to carry the unit's weight. Build a reinforcement if necessary.
- The following minimum clearances are required for servicing: 180 mm above the casing*, 200 mm below, and 10 mm at each side. 500 mm at the front clearance may be realised by opening a cupboard door. See ["Minimum installation clearances" on page 9](#).
- For easier use of control panel, it is recommended that boiler bottom is 1500 mm from the floor, for easier part replacement side clearances should be 50 mm where applicable. See ["Minimum installation clearances" on page 9](#).
- If the boiler is installed in a room or compartment, it does not require a dedicated ventilation for combustion air. If however installed in a room containing a bath or a shower, then particular reference is drawn to the current I.E.E. Wiring Regulations, local Building Regulations or any other local regulations currently in service.
- The intake air must not include chemicals that may cause corrosion, toxic gas formation and even risk of explosion.
- If the wall on which the unit is mounted, is flammable, a non-flammable material must be placed between the wall and the unit and also at all locations through where the flue piping passes.

Minimum installation clearances



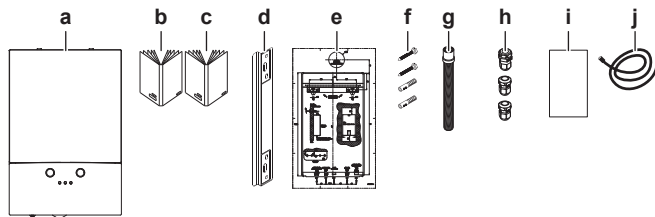
Minimum allowable clearances

a, sides	10 mm
b, Above the casing*	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

* 180 mm is for the case that 60/100 90° elbow is connected to the flue outlet of the boiler.
b = 270 mm in case that 60/100 to 80/80 adapter + 90° elbow 80 are connected to the flue outlet of the boiler.
b = 280 mm in case that 60/100 to 80/125 adapter + 90° elbow 80/125 are connected to the flue outlet of the boiler.

4.3 To unpack the unit

- 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 Dowels and screws
- g Condensate hose
- h Cable glands 2×PG 7, 1×PG 9
- i Energy label
- j Storage tank temperature sensor (only for models D2TND012A4AA, D2TND018A4AA and D2TND024A4AA)

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



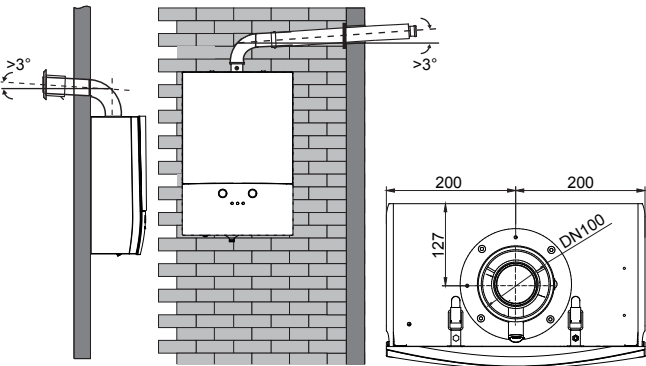
CAUTION

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.

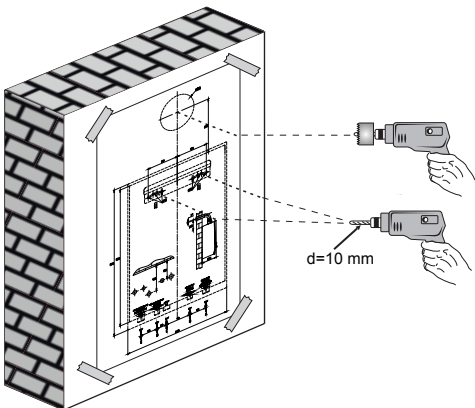
4 Installation

4.4 To mount the unit

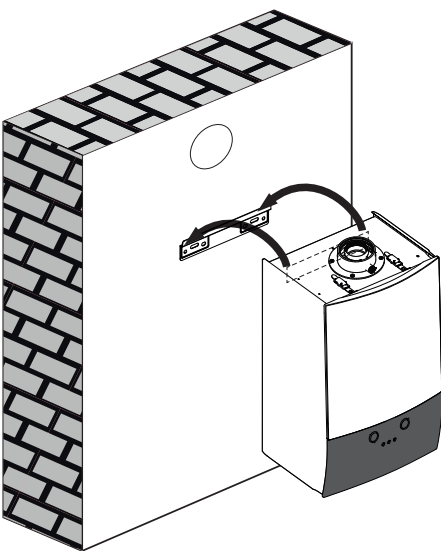
- 1 The mounting template shows the position for the horizontal flue. If there is no hole in the wall for the flue piping, drill one. If there is already a hole in the wall for the flue piping, you can use this hole as a starting point to determine the position of the mounting bracket, according to the template. Flue duct must incline 3° away from the unit, to allow the condensate to drain back to the boiler.



- 2 Drill holes for the mounting bracket (Ø10 mm). Fasten the mounting bracket to the wall according to mounting template.



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



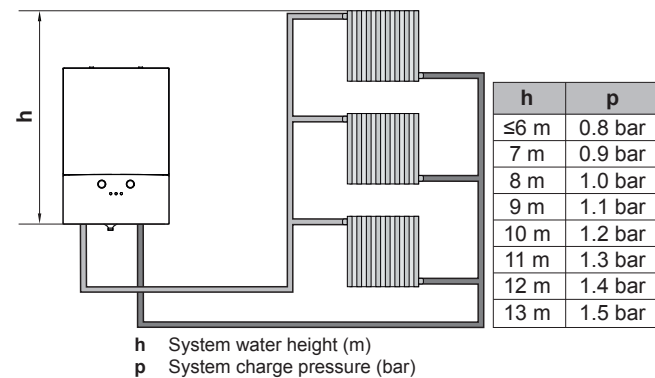
4.5 Central heating system requirements

Expansion vessel sizing

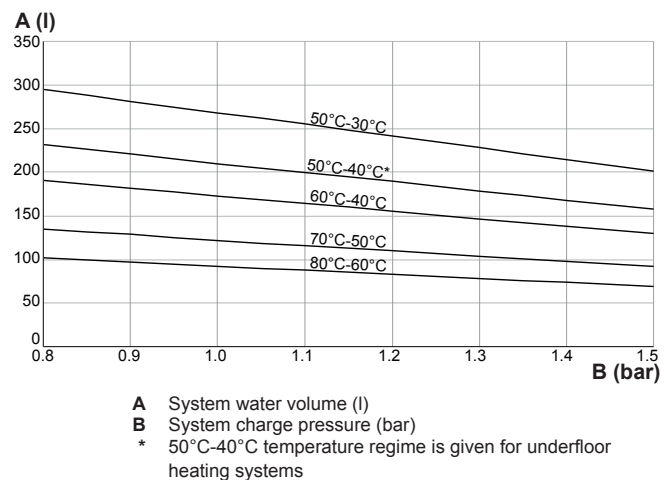
The boiler is equipped with an 8 litre expansion vessel that has initial charge pressure of 1 bar.

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:



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.



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.

4 Installation

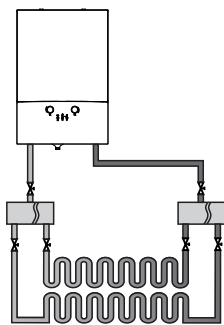


WARNING

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.

4.6 Underfloor heating requirements

Underfloor heating systems apparently require higher flow rate and lower ΔT . This boiler can be connected to an underfloor heating system without use of a second pump and low loss header because of its high pump capacity. Direct connection is possible when the system is well designed and pressure loss is low enough.



When the boiler is connected to underfloor heating installation, the maximum central heating set temperature must be limited to 50°C and the pump operation temperature difference must be adjusted to 10 Kelvin in the service settings menu. To change this setting, refer to the servicing instructions.

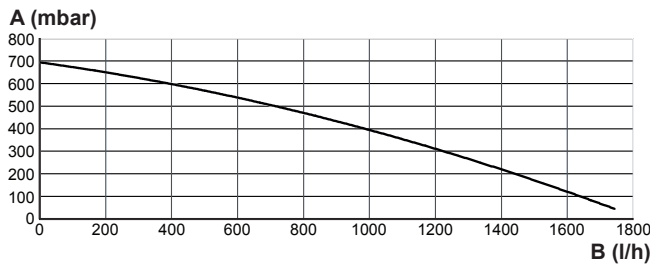


WARNING

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

4.7 Residual pump lift graph

The residual pump lift graph shows the amount of pump lift (mbar) that remains for the central heating circuit.



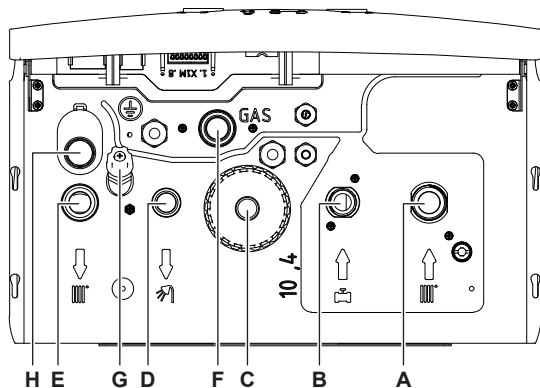
A Residual pump lift (mbar)
B Flow (l/h)

4.8 Connections

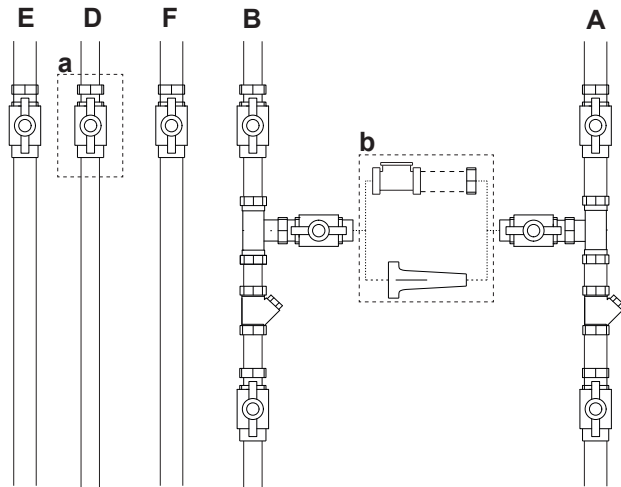
4.8.1 Piping connections

Piping connections of models D2CND024A1AA and D2CND024A4AA

Below, find the piping connections of the unit.



- 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 supply connection, 3/4"
- F Gas inlet connection, 3/4"
- G Filling valve (for D2CND024A1AA)
- H Safety valve discharge



- Valve
- Strainer
- Tee connection
- Double check valve + filling hose
- Disconnecter
- a Isolation valve on domestic hot water supply pipe is tentative.
- b External filling group used with model D2CND024A4AA. Use a disconnecter or a double check valve according to local regulations.

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

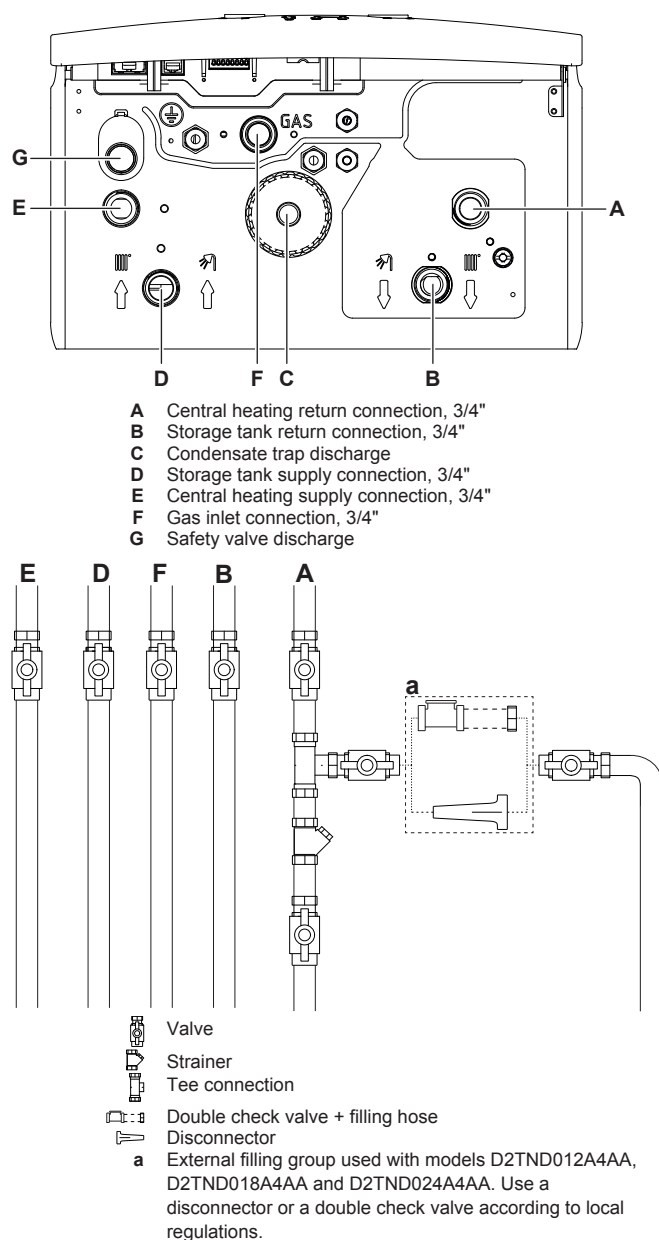
Ensure that necessary gaskets are placed.

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

Piping connections of models D2TND012A4AA, D2TND018A4AA and D2TND024A4AA

Below, find the piping connections of the unit.

4 Installation



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.

4.8.2 Guidelines when connecting the gas piping

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 qualified persons 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 "4.8.1 Piping connections" on page 11).

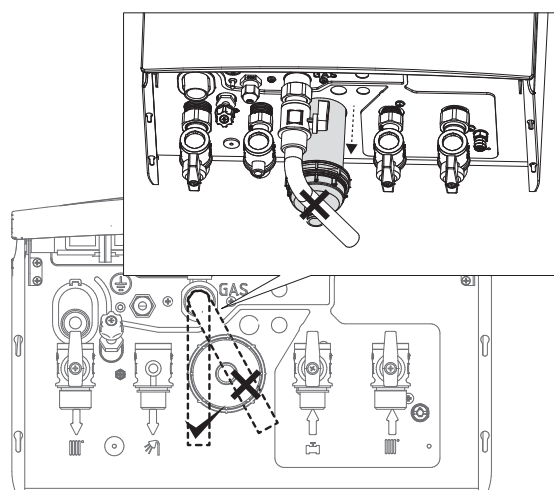


WARNING

After the gas connection is made, the gas line must be tested for leakage while the gas line to the boiler is open (see "5.3 To check for gas leakage" on page 25).

In case gas piping is adjacent to the wall and is to be connected to the gas pipe connection of the boiler with an elbow, enough space for taking out the condensate trap must be left. This can be done 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.



4.8.3 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.

4 Installation

- 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 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.

4.8.4 Guidelines when connecting the electrical wiring



DANGER

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



WARNING

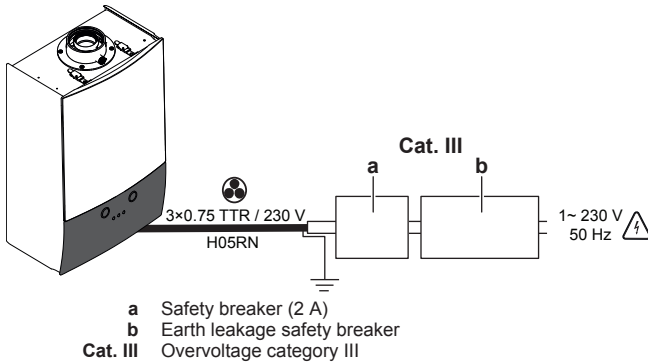
Only qualified persons are allowed to make electrical connections on the unit. Failure to observe this warning will void the warranty. The manufacturer is not responsible for any damage that may occur this way.



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.

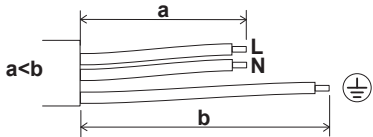


- a Safety breaker (2 A)
- b Earth leakage safety breaker
- Cat. III Overvoltage category III

- 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.

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



WARNING

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



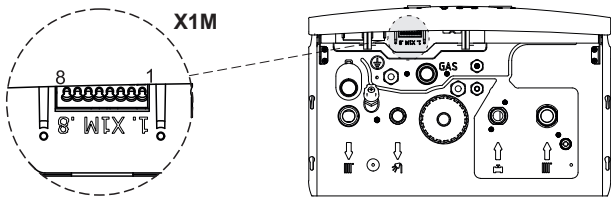
DANGER

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.

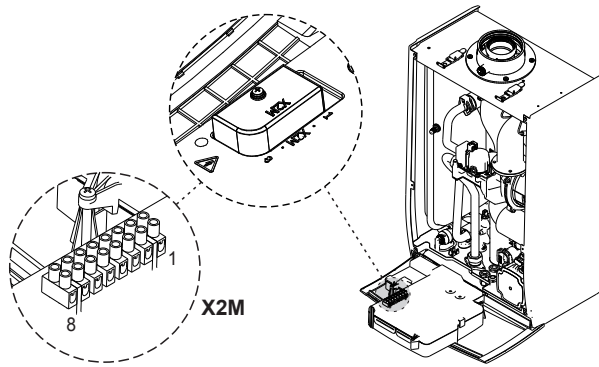
4.8.5 Guidelines when connecting options to the boiler

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

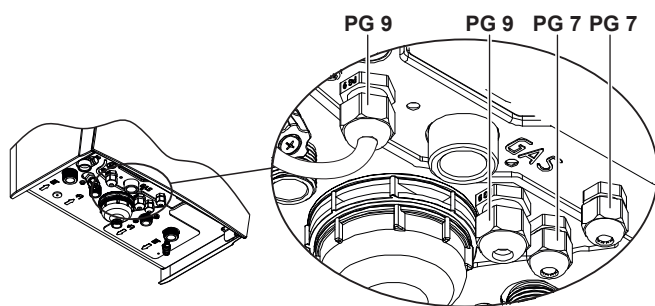
Temperature control units	Connector	Connection
Solar NTC sensor	X1M	1-2
Opentherm room thermostat	X1M	3-4
Outdoor sensor	X1M	5-6
Domestic hot water storage tank sensor	X1M	7-8
External power output (230 V AC)	X2M	3-4
On-Off room thermostat	X2M	5-6
Solar stop contact	X2M	7-8



4 Installation



Wiring of the options that are to be connected to the X2M connector must pop out from the inside of the unit via cable glands. Cable glands that are sent with the unit must be assembled to the bottom sheet of the boiler in case connection of these options. Below, you can see the cable glands placement.



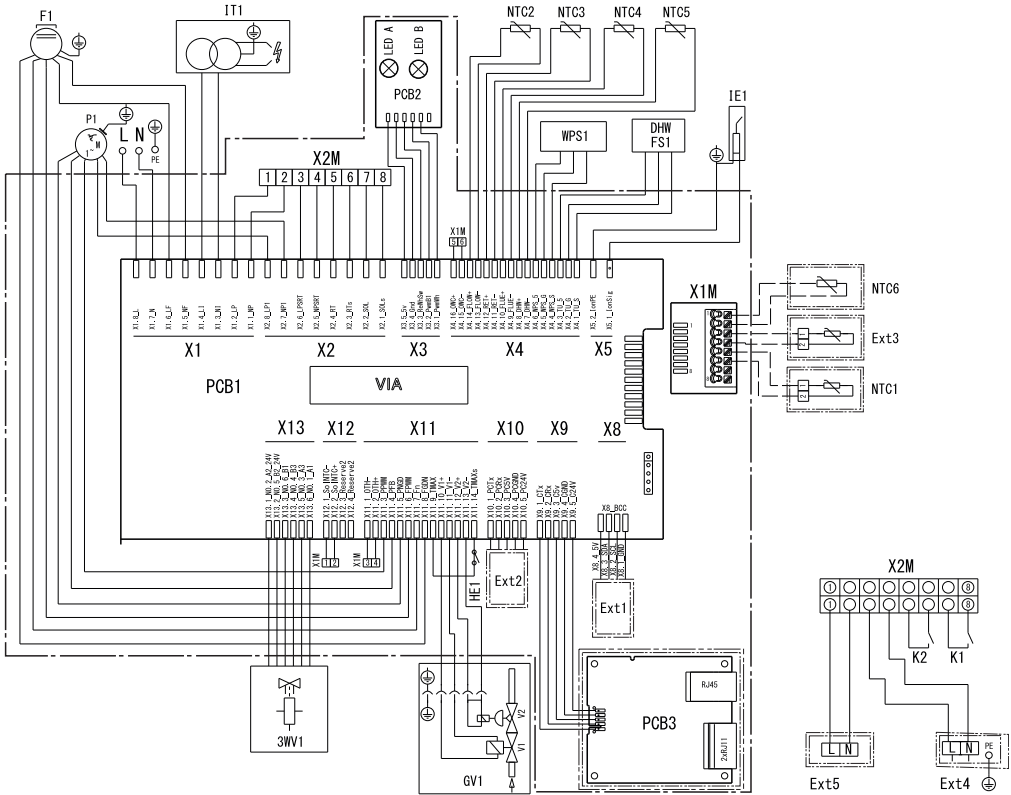
Holes on the bottom sheet that are reserved for cable glands are covered with insulation material. The insulation material must be bored if glands are to be used.

Note: Unit must be opened to mount cable glands. See ["4.1 To open the unit" on page 8](#) to reach the inside of the boiler.

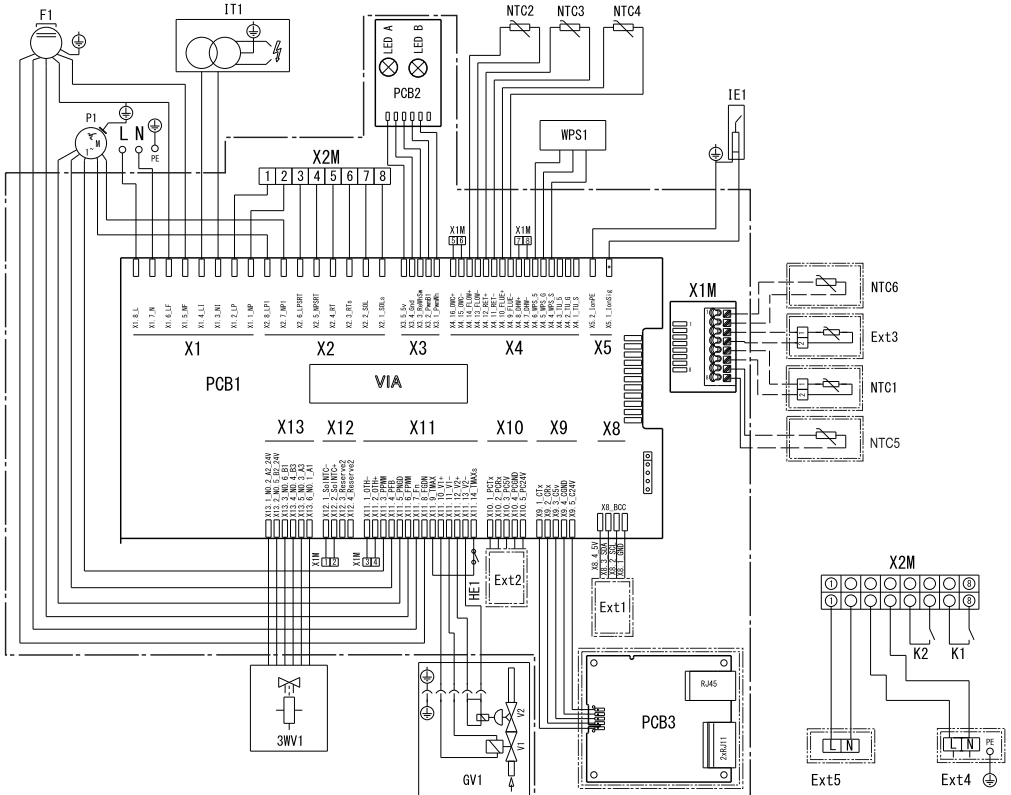
4.8.6 Wiring diagram

DANGER: RISK OF ELECTROCUTION
Disconnect the power supply for more than 10 minutes before servicing

Models D2CND024A1AA and D2CND024A4AA



Models D2TND024A4AA, D2TND018A4AA and D2TND012A4AA



4 Installation

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 D2CND024A*AA)
IE1	X5	Ionisation input
K1	X2M	Solar stop contact
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 D2CND024A*AA)
NTC5	X1M	Domestic hot water storage tank sensor (for models D2TND012A4AA, D2TND018A4AA and D2TND024A4AA)
NTC6	X1M	Solar domestic hot water temperature sensor
Ext1	X8	BCC (Boiler Chip Card)
Ext2	X10	Personal computer production interface
Ext3	X1M	Opentherm 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

4.8.7 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.

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

Precautions that should be taken about condensate piping are:

- Horizontal pipe runs must fall a minimum of 45 mm/metre.
- External piping should be kept as short as possible or thermally insulated to prevent freezing, depending on the installation winter climate condition.
- Make sure that the condensate disposal system, the piping, and the fittings are made of acid resistant material like 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.

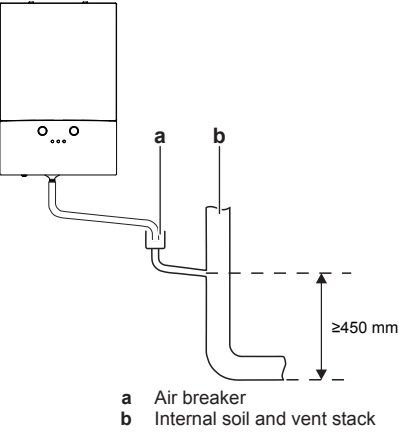
WARNING

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

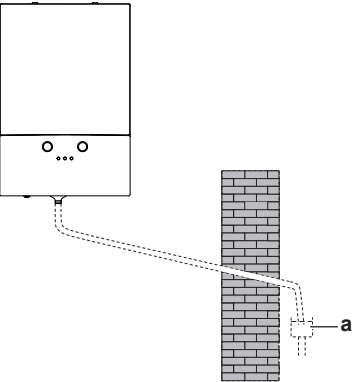
4.8.8 Guidelines for condensate piping termination

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

Terminating into an internal soil and vent stack



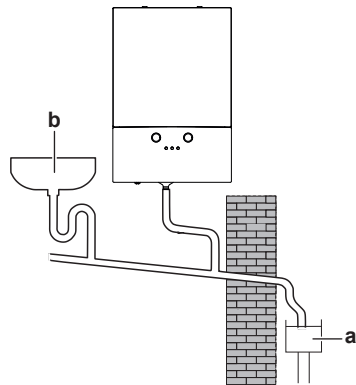
Terminating into an external waste system



4 Installation

- 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.

4.8.9 Guidelines when connecting the boiler to the flue gas system



DANGER

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



CAUTION

Connected flue type must be identified on the identification label.

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.
- Plumbing 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.

4.8.10 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.

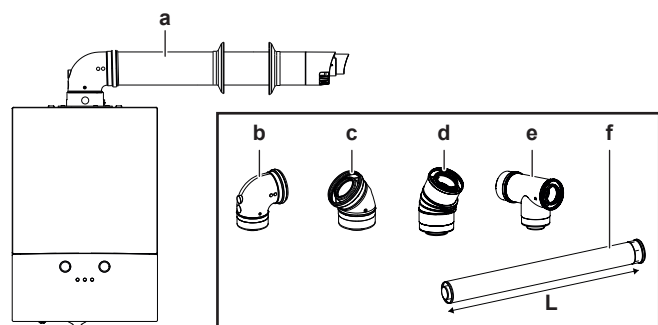
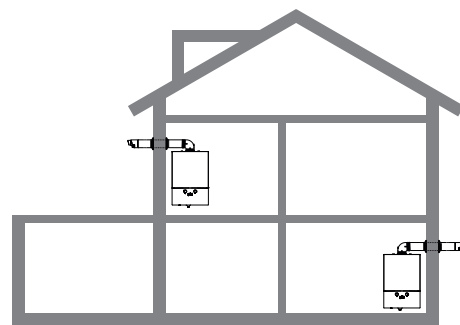


NOTICE

Optional parts shown in rectangular area are used where needed.

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.



a Wall terminal kit 60/100

Optional:

- b 90° elbow 60/100
c 45° elbow 60/100
d 30° elbow 60/100
e Tee 60/100 with measurement point
f Extension 60/100
L = 500-1000 mm

Allowable flue length for C13x

	D2TND*	D2CND*
Concentric 60/100 mm ^(a)	11.0 m	8.1 m
Concentric 80/125 mm ^(a)	44.0 m	26.2 m

(a) Including 1 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 D2TND*) / 14.1 metres (for D2CND*) 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.



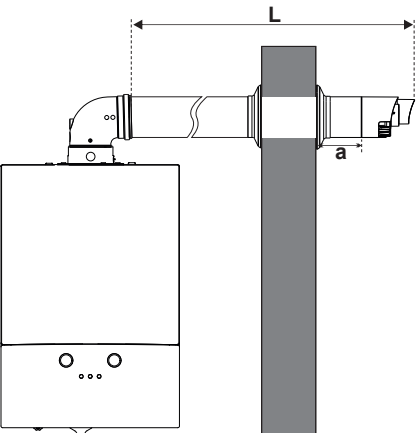
DANGER

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.

4 Installation

Flue length determination

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



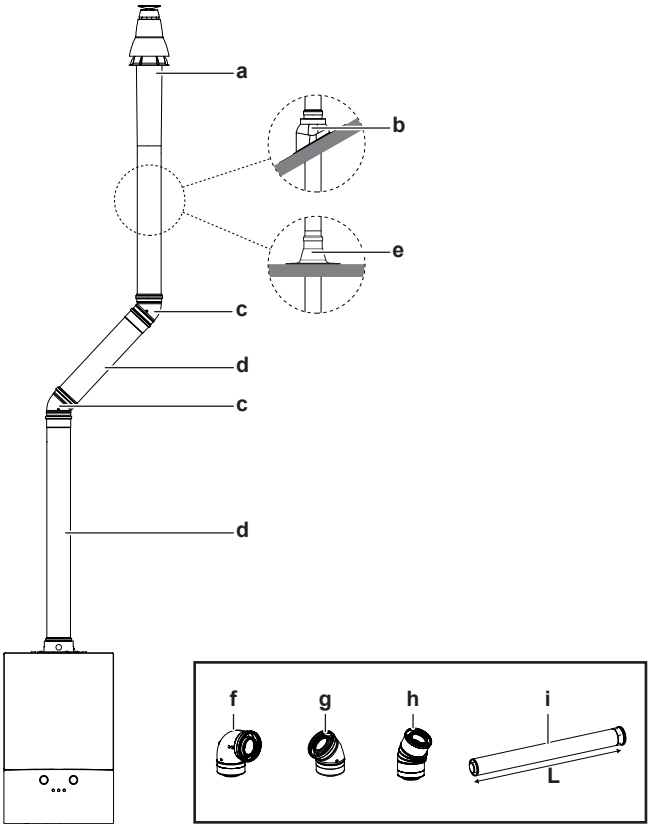
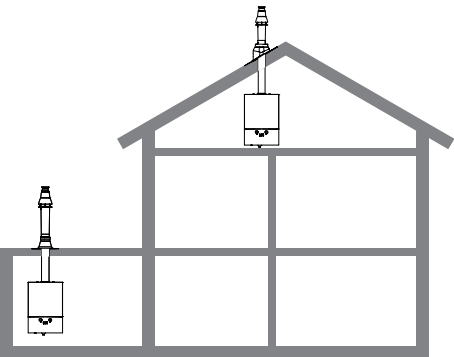
L Flue duct length
a Distance of outer lip of terminal to outer wall, $a \leq 50$ mm

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 shall fit inside 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		
	D2TND*	D2CND*
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

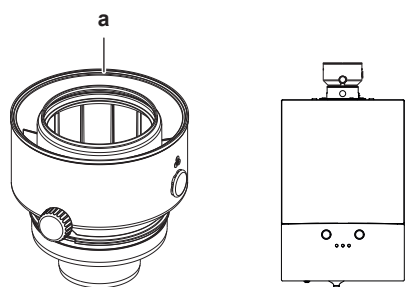
60/100 Vertical flue length can be increased up to 19.2 metres (for D2TND*) / 13.6 metres (for D2CND*) by adjusting the parameter C3 to 3 from the user interface. Refer to servicing instructions for this operation.

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

80/125 mm flue system

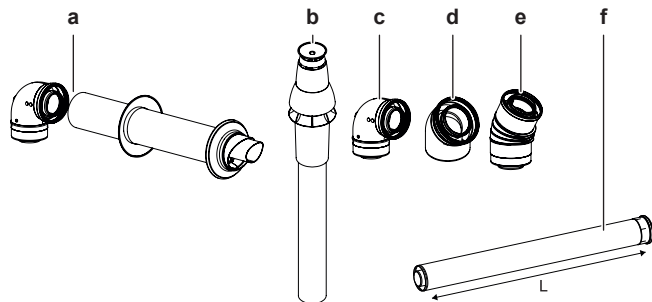
To increase the maximum allowable flue duct length, 80/125 mm concentric flue ducts can be used instead of 60/100 mm. In this case, C13x and C33x flue systems should start with a 60/100 to 80/125 adapter coupled to the flue outlet.

4 Installation



a 60/100 to 80/125 adapter

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

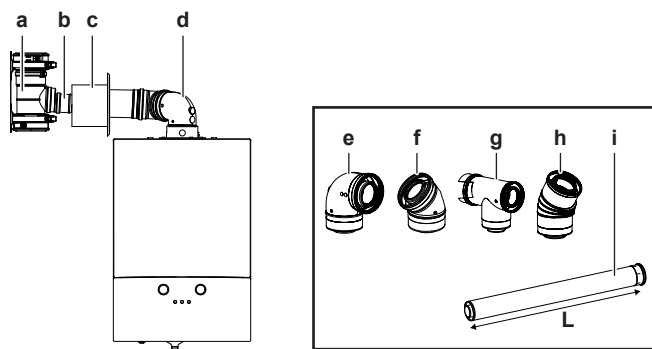
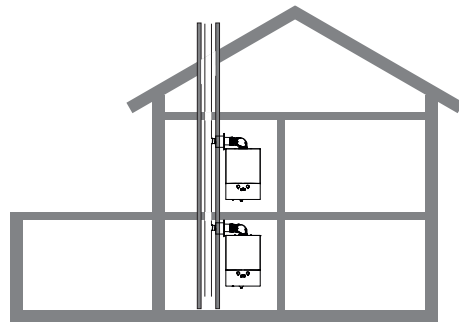


a 80/125 wall terminal kit (type C13)
b 80/125 roof terminal kit (type C33)
c 90° elbow 80/125
d 45° elbow 80/125
e 30° elbow 80/125
f Extension 80/125
L = 500-1000 mm

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 Tee 60/100 with measurement point
- 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.

Type C63x (concentric flue system)

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 D2TND*

- 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 D2CND*

- 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 D2CND* and D2TND*

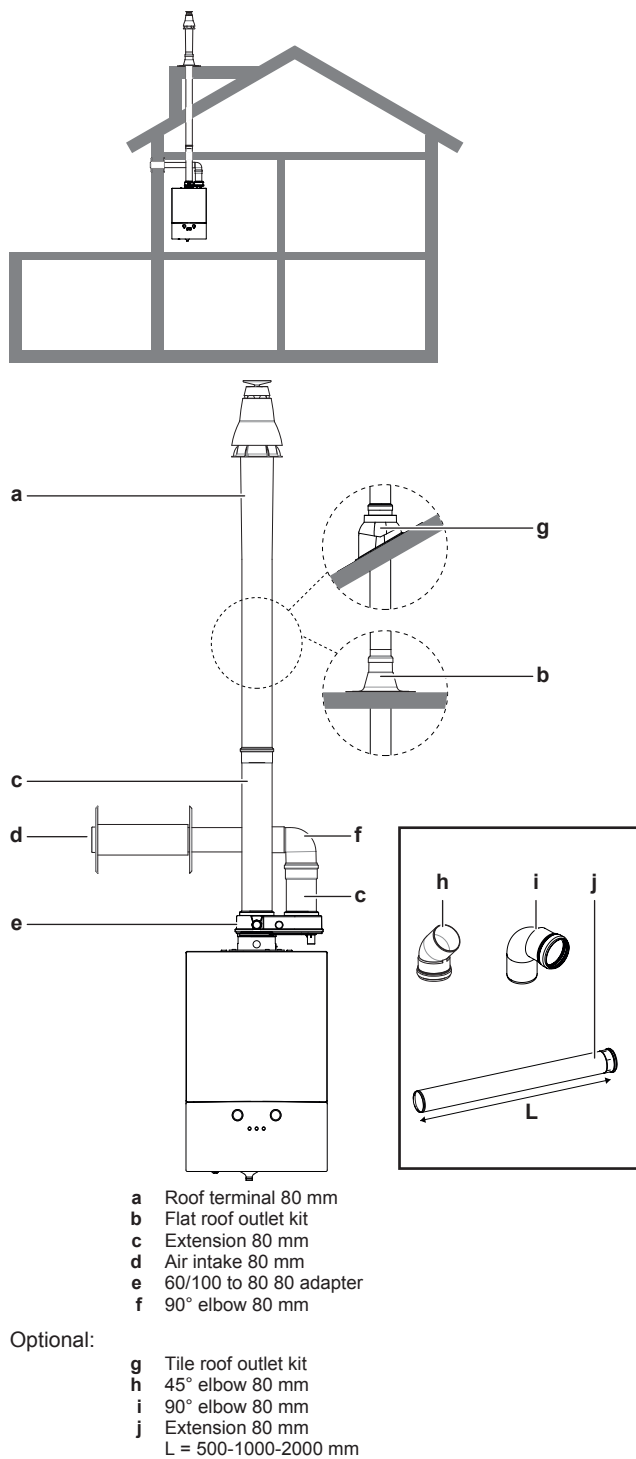
- Minimum combustion products mass flow rate: 1.32 g/s
- CO₂ content at nominal heat input: 9.0%
- Maximum allowable draught: 200 Pa
- The boiler must be connected to a system with the following characteristics: T120 P1 W
- Maximum allowable temperature of combustion air: 50°C
- Maximum allowable recirculation 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.

4 Installation



Allowable flue length for C53x		
	D2TND*	D2CND*
Air intake duct 80 mm	3.0 m	3.0 m
Flue outlet duct 80 mm	125.0 m	109.0 m

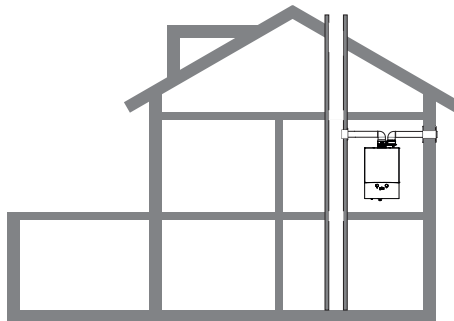
Equivalent length of options	
45° elbow 80 mm	1.0 m
90° elbow 80 mm	2.0 m

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.

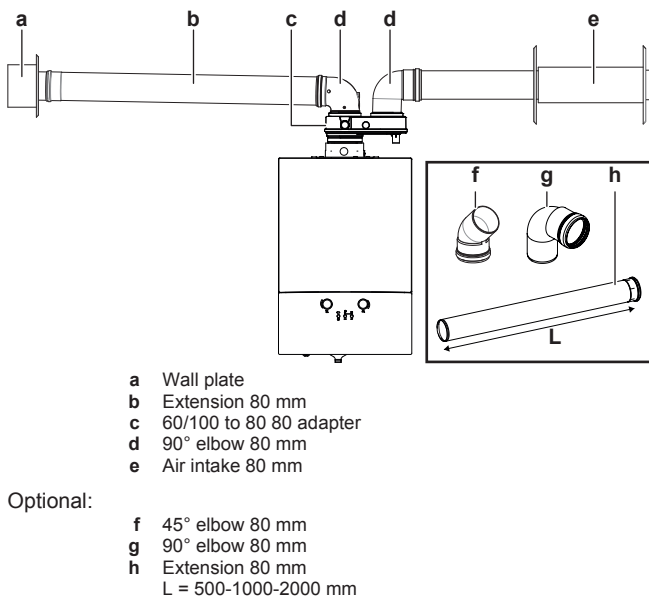
Type C83x (twin pipes flue system)

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.



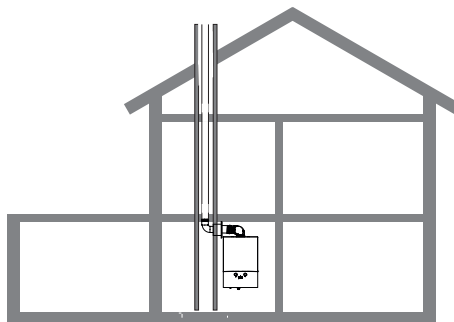
The multi served chimney is a system that is part of the building and has a separate CE marking. The connection between the boiler and the shaft and, the connection between the boiler and the air intake system must be obtained via Daikin.

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

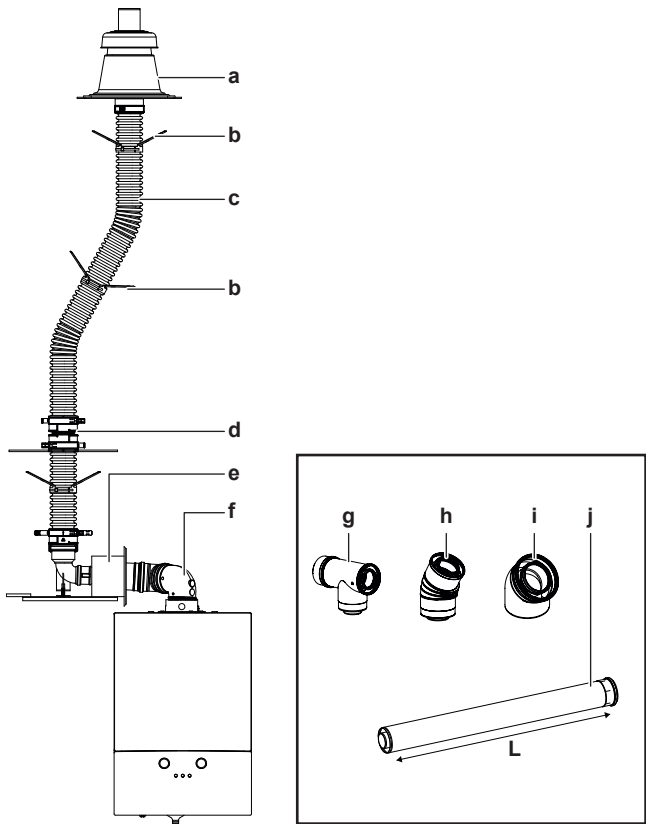


Type C93x

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.



4 Installation

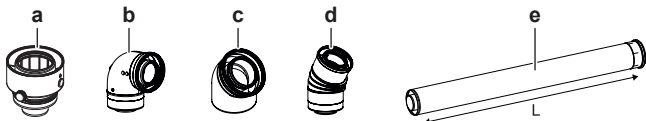


- a Flex kit PP Dn 60-80 or Dn 80
b Spacer
c Extension Flex PP 80 mm
d Connector Flex-Flex PP 80 mm
e Chimney connection 60/100 or 80/125
f 90° elbow 60/100

Optional:

- g Tee 60/100 with measurement point
h 30° elbow 60/100
i 45° elbow 60/100
j Extension 80/125
L = 500-1000 mm

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 mm

Allowable flue length for C93x (for D2CND*)				
	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

Allowable flue length for C93x (for D2CND*)				
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 D2TND*)		
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

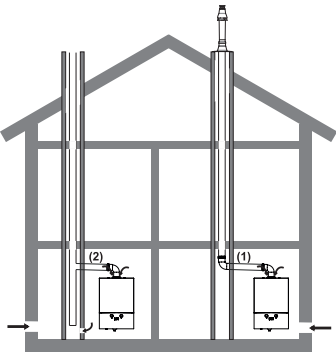
Maximum allowable length of the flue duct up to common chimney is 2 metres + 1 60/100 90° elbow.

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

Type B53 (open flue system)

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).

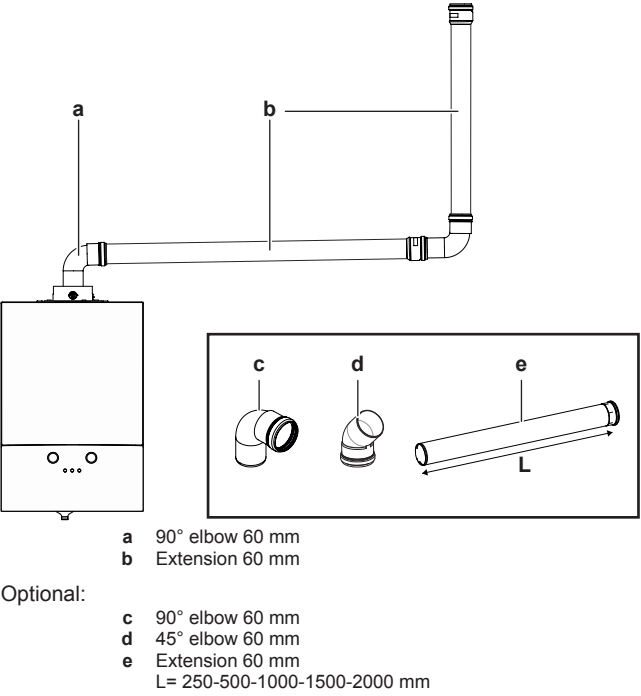


Allowable flue length for B53		
	D2TND*	D2CND*
Flue duct 60 mm	24.0 m	20.0 m
Flue duct 80 mm	130.0 m	112.0 m

4 Installation

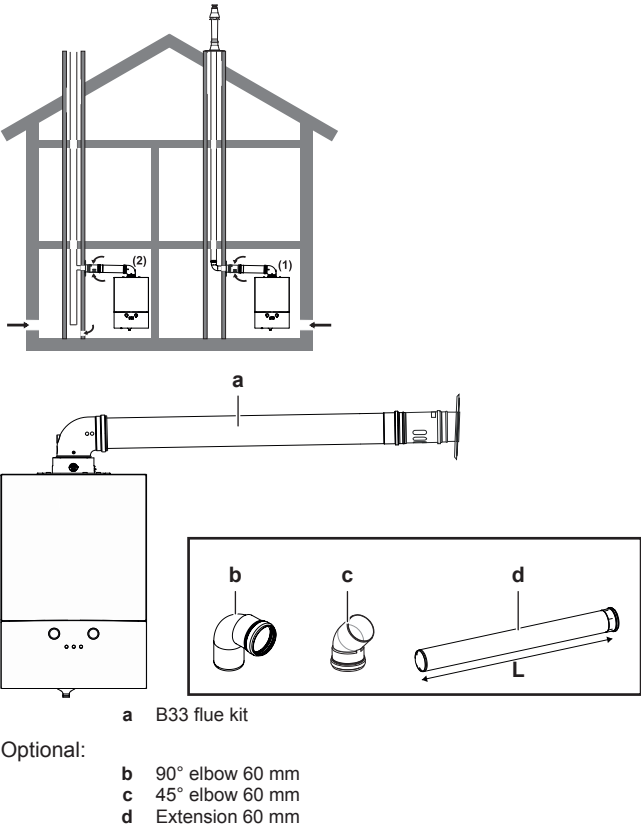
Equivalent length of options	
90° elbow 60 mm	1.5 m
45° elbow 60 mm	1.0 m
90° elbow 80 mm	2.0 m
45° elbow 80 mm	1.0 m

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



Type B33 (open flue system)

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



L = 500 mm

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 with measurement point		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

4 Installation

Flue part		Order code
Extension flex PP 80 mm	10 m	EKFGP6340
	15 m	EKFGP6344
	25 m	EKFGP6341
	50 m	EKFGP6342
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
B33 flue kit		DRB33FLUKITAA

4.9 To fill the system with water

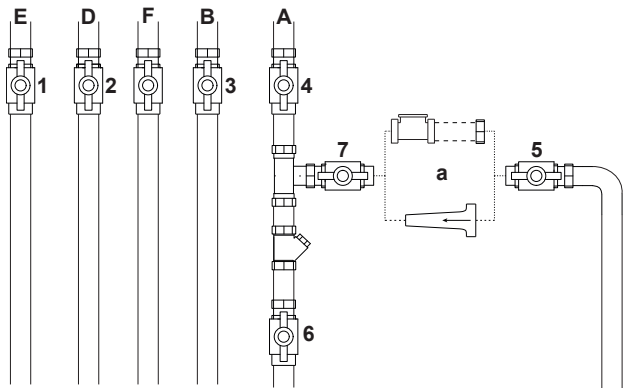


CAUTION

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

Method 1

(For models D2TND012A4AA, D2TND018A4AA and D2TND024A4AA)



a Use a disconnecter or a double check valve according to local regulations.

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

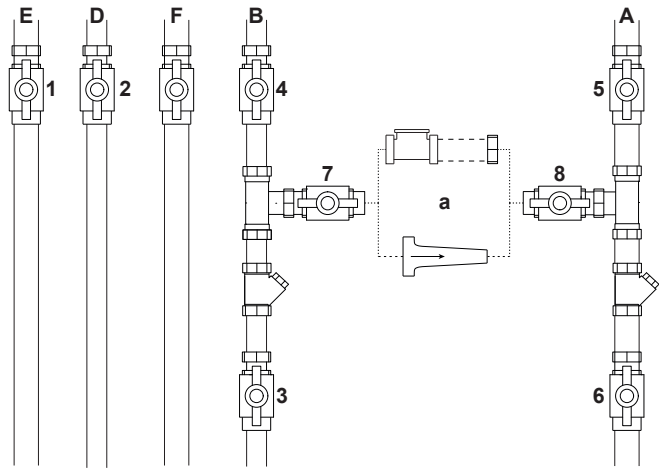
- 1 Connect the appliance to the main power supply. Due to low pressure, error code "Err HJ-09" will appear on the user interface and the status indicator light will be red.
- 2 Open **all radiator valves**.
- 3 Set **all isolating valves** to closed position.
- 4 Connect fresh water supply pipe to **valve 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 ["4.5 Central heating system requirements" on page 10](#) 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 D2CND024A4AA)



a Use a disconnecter 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 ["4.5 Central heating system requirements" on page 10](#) 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

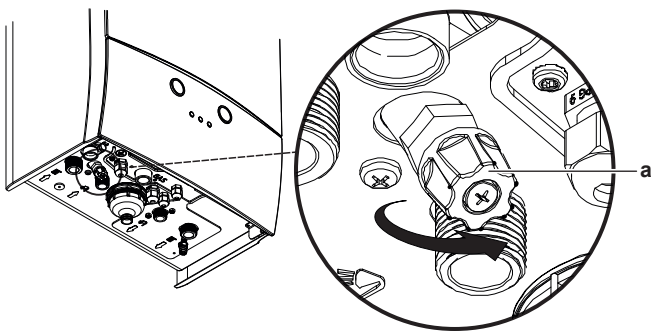
(For model D2CND024A1AA)

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.

5 Commissioning

- 4 Measure system water height (see "4.5 Central heating system requirements" on page 10).
- 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 "4.5 Central heating system requirements" on page 10 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.

4.10 Converting for use with a different type of gas



WARNING

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

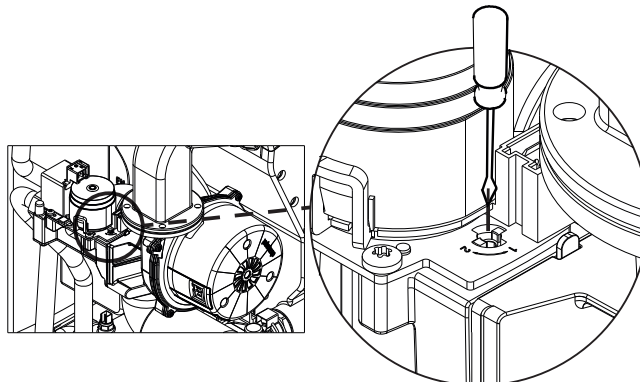


DANGER

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

4.10.1 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.



4.10.2 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 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 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

Only qualified persons have access to servicing parameters. The passwords needed to access service parameters are written in servicing instructions.

5 Commissioning



WARNING

Only qualified persons 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.

5.1 To fill the condensate trap

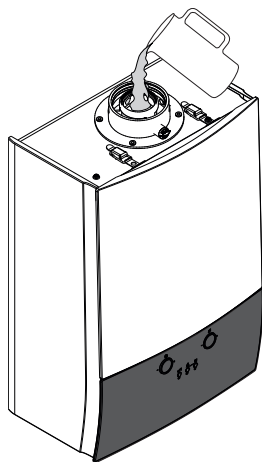


INFORMATION

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

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

5 Commissioning



5.2 Gas-air ratio: No need to adjust

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

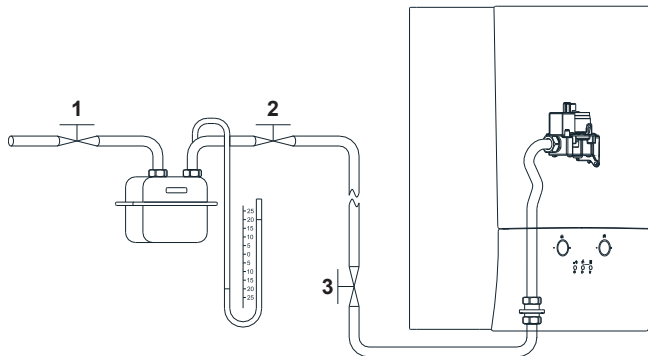
5.3 To check for gas leakage



DANGER

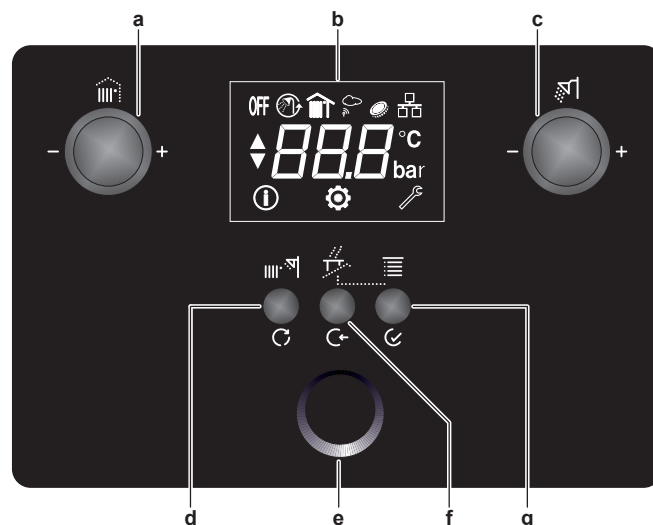
Before passing next steps, this control must be fulfilled.

- 1 Before connecting the unit to power mains, close valves 1, 2 and 3.
- 2 Connect a manometer to gas counter.
- 3 Open valves 1, 2 and 3.
- 4 Close valve 1.
- 5 Note the manometer measurement and wait for 10 minutes.
- 6 After 10 minutes, compare the manometer measurement 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 being sure that there is no leakage.
- 8 Close valve 1, remove the manometer and open valve 1 again.



5.4 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 energised.

5.4.1 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.

- 4 Press "Cancel" and "Menu" buttons together 5 seconds to activate the sweeper mode. With sweeper mode, boiler can be operated at maximum and minimum capacity independent of heat demand.
- 5 "tst - 100" caption will appear on the screen. This means boiler is operating at nominal capacity. Check nominal capacity operation.
- 6 To quit sweeper mode, again press "Cancel" and "Menu" buttons together five seconds. Sweeper mode will be deactivated and boiler will return to normal operation mode. Sweeper mode also finishes automatically after 15 minutes.


6 Hand-over to the user

5.4.2 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.

5.4.3 To commission the domestic hot water

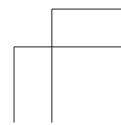
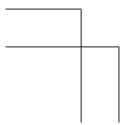
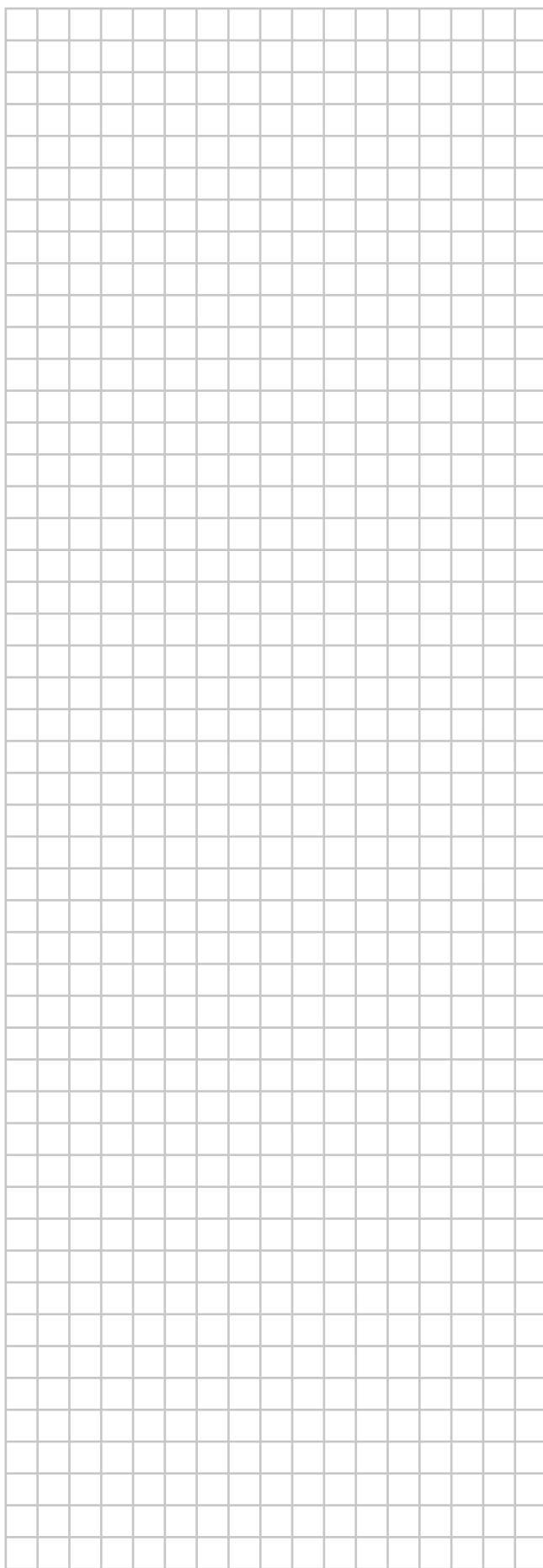
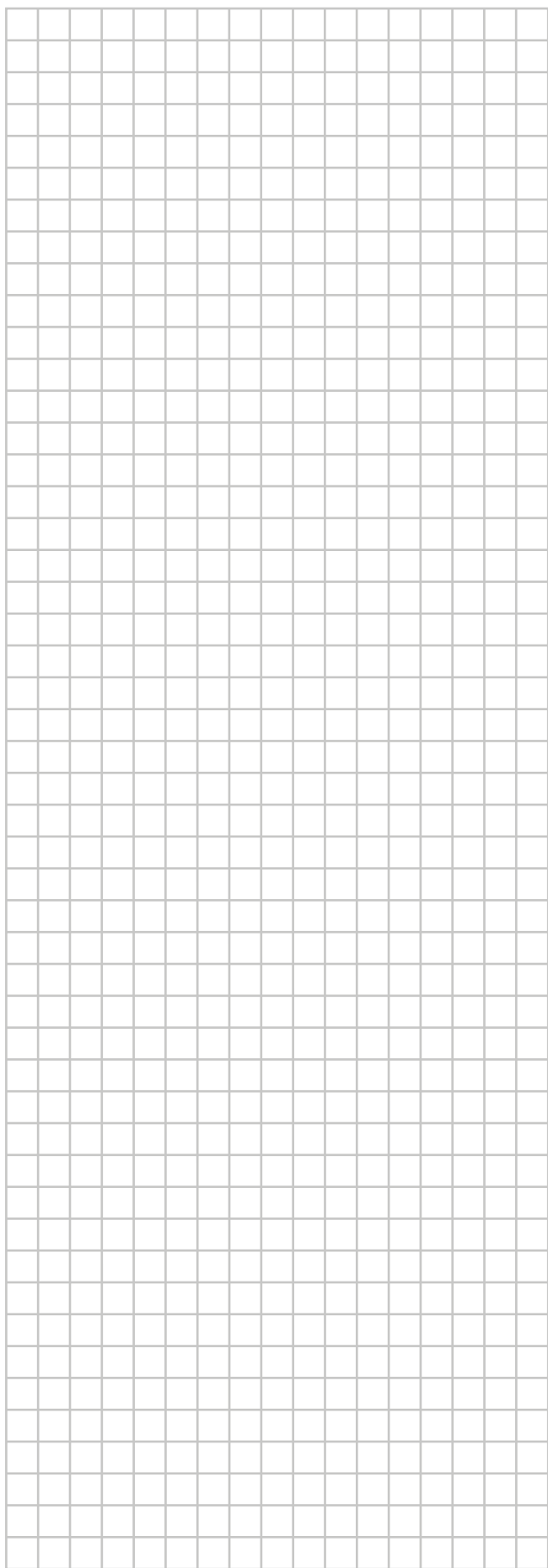
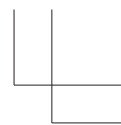
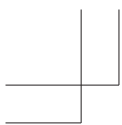
(Only for models D2CND024A1AA and D2CND024A4AA)

- 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.

6 Hand-over to the user

After completing the installation and commissioning of the system the installer should hand over to the householder.

- Hand the operation manual to the householder and inform them about his/her responsibilities under the relevant national regulations.
- Explain and demonstrate the lighting and shutting down procedures.
- Explain the function and the use of the boiler heating and domestic hot water controls.
- Explain and demonstrate the function of temperature controls, radiator valves etc., for the economic use of the system.
- Explain the function of the boiler error mode. Emphasise that if an error is indicated refer to "Error codes" in the operation manual.
- Inform the user about frost protection function and advise never to cut off the electric supply to the boiler.
- Emphasise that a comprehensive service should be carried out annually, especially before winter.
- Inform the householder of the guarantee and the requirement to register it to receive the full benefit of the warranty.



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