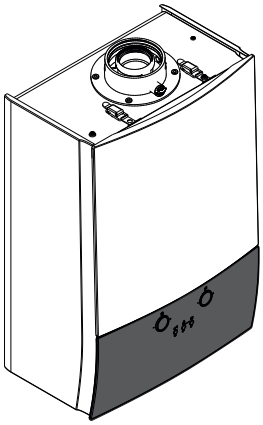
Installation manual

Wall-mounted condensing boiler



D2CND028A1AB
D2CND028A4AB
D2CND035A1AB
D2CND035A4AB
D2TND028A4AB
D2TND035A4AB

Installation manual
Wall-mounted condensing boiler

English

CE - DECLARATION-OF-CONFORMITY
CE - KONFORMITÄTSERKLÄRUNG
CE - DECLARATION-DE-CONFORMITE
CE - CONFORMITEITSVERKLARING

CE - DECLARACION-DE-CONFORMIDAD
CE - DICHIARAZIONE-DI-CONFORMITA
CE - ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ

CE - DECLARAÇÃO-DE-CONFORMIDADE
CE - ЗАЯВЛЕНИЕ-О-СООТВЕТСТВИИ
CE - OVERENSSTEMMELSESERKLÆRING
CE - FÖRSÄKRAN-OM-ÖVERENSTÄMMELSE

CE - ERKLÆRING OM-SAMSVAR
CE - ILMOITUS-YHDENMUKAISUUDESTA
CE - PROHLÁŠENÍ-O-SHODĚ

CE - IZJAVA-O-USKLAĐENOSTI
CE - MEGFELELŐSÉGI-NYILATKOZAT
CE - DEKLARACJA-ZGODNOŚCI
CE - DECLARAŢIE-DE-CONFORMITATE

CE - IZJAVA O SKLADNOSTI
CE - VASTAVUSDEKLARATSIOON
CE - ДЕКЛАРАЦИЯ-ЗА-СЪОТВЕТСТВИЕ

CE - ATITIKTIES-DEKLARACIJA
CE - ATBILSTĪBAS-DEKLARĀCIJA
CE - VYHLÁSENIE-ZHODY
CE - UYGUNLUK-BEYANI

Daikin Europe N.V.

01 declares under its sole responsibility that the equipment to which this declaration relates:
02 erklärt auf seine alleinige Verantwortung daß die Ausrüstung für die diese Erklärung bestimmt ist:
03 déclare sous sa seule responsabilité que l'équipement visé par la présente déclaration:
04 verklaart hierbij op eigen exclusieve verantwoordelijkheid dat de apparatuur waarop deze verklaring betrekking heeft:
05 declara bajo su única responsabilidad que el equipo al que hace referencia la declaración:
06 dichiara sotto la propria responsabilità che gli apparecchi a cui è riferita questa dichiarazione:
07 δηλώνει με αποκλειστική της ευθύνη ότι ο εξοπλισμός στον οποίο αναφέρεται η παρούσα δήλωση:
08 declara sob sua exclusiva responsabilidade que os equipamentos a que esta declaração se refere:
09 заявляет, исключительно под свою ответственность, что оборудование, к которому относится настоящее заявление:
10 erklærer under eneansvarlig, at udstyret, som er omfattet af denne erklæring:
11 deklarerar i egenskap av huvudansvarig, att utrustningen som berörs av denna deklaration innebär att:
12 erklærer et fullstendig ansvar for at det utstyr som berøres av denne deklarasjon innebærer at:
13 ilmoittaa yksinomaan omalla vastuullaan, että tämän ilmoituksen tarkoittamat laitteet
14 prohlašuje ve své plné odpovědnosti, že zařízení, k němuž se toto prohlášení vztahuje:
15 izjavljuje pod isključivo vlastitom odgovornošću da oprema na koju se ova izjava odnosi:
16 teljes felelőssége tudatában kijelenti, hogy a berendezések, melyekre e nyilatkozat vonatkozik:
17 deklaruje na własną i wyłączną odpowiedzialność, że urządzenia, których ta deklaracja dotyczy:
18 declară pe proprie răspundere că echipamentele la care se referă această declarație:
19 z vso odgovornostjo izjavlja, da je oprema naprav, na katero se izjava nanaša:
20 kinnitab oma täielikul vastutusel, et käesoleva deklaratsiooni alla kuuluv varustus:
21 декларира на своя отговорност, че оборудването, за което се отнася тази декларация:
22 visiška savo atsakomybe skelbia, kad įranga, kuriai taikoma ši deklaracija:
23 ar pilnu atbildību apliecina, ka tālāk aprakstītās iekārtas, uz kurām attiecas šī deklarācija:
24 vyhlasuje na vlastnú zodpovednosť, že zariadenie, na ktoré sa vzťahuje toto vyhlásenie:
25 tamamen kendi sorumluluğunda olmak üzere bu bildirinin ilgili olduğu donanımının aşağıdaki gibi olduğunu beyan eder:

D2TND012, D2HND012, D2CND024, D2TND024, D2HND024, D2CND028, D2TND028, D2HND028, D2CND035, D2TND035, D2HND035, D2C18ND024, 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 derlden folgenden Norm(en) oder einem anderen Normdokument oder -dokumenten entspricht/entsprechen, unter der Voraussetzung, daß sie gemäß unseren Anweisungen eingesetzt werden:
03 sont conformes à la/aux norme(s) ou autre(s) document(s) normatif(s), pour autant qu'ils soient utilisés conformément à nos instructions:
04 conform de volgende norm(en) of één of meer andere bindende documenten zijn, op voorwaarde dat ze worden gebruikt overeenkomstig onze instructies:
05 están en conformidad con la(s) siguiente(s) norma(s) u otro(s) documento(s) normativo(s), siempre que sean utilizados de acuerdo con nuestras instrucciones:
06 sono conformi al(i) seguente(i) standard(s) o altro(i) documento(i) a carattere normativo, a patto che vengano usati in conformità alle nostre istruzioni:
07 είναι σύμφωνα με το(α) ακόλουθο(α) πρότυπο(α) ή άλλο έγγραφο(α) κανονισμών, υπό την προϋπόθεση ότι χρησιμοποιούνται σύμφωνα με τις οδηγίες μας:
08 estão em conformidade com a(s) seguinte(s) norma(s) ou outro(s) documento(s) normativo(s), desde que estes sejam utilizados de acordo com as nossas instruções:
09 соответствуют следующим стандартам или другим нормативным документам, при условии их использования согласно нашим инструкциям:
10 overholder følgende standard(er) eller andet/andre retningsgivende dokument(er), forudsat at disse anvendes i henhold til vore instrukser:
11 respektive utrustning är utförd i överensstämmelse med och följer följande standard(er) eller andra normgivande dokument, under förutsättning att användning sker i överensstämmelse med våra instruktioner:
12 respektive utstyr er i overensstemmelse med følgende standard(er) eller andre normgivende dokument(er), under forutsetning av at disse brukes i henhold til våre instrukser:
13 vastaavat seuraavien standardien ja muiden ohjeellisten dokumenttien vaatimuksia edellyttäen, että niitä käytetään ohjeidemme mukaisesti:
14 za předpokladu, že jsou využívány v souladu s našimi pokyny, odpovídají následujícím normám nebo normativním dokumentům:
15 u skladu sa slijedećim standardom(ima) ili drugim normativnim dokumentom(ima), uz uvjet da se oni koriste u skladu s našim uputama:
16 megfelelnek az alábbi szabvány(ok)nak vagy egyéb irányadó dokumentum(ok)nak, ha azokat előírás szerint használják:
17 spełniają wymogi następujących norm i innych dokumentów normalizacyjnych, pod warunkiem że używane są zgodnie z naszymi instrukcjami:
18 sunt în conformitate cu următorul (următoarele) standard(e) sau alt(e) document(e) normativ(e), cu condiția ca acestea să fie utilizate în conformitate cu instrucțiunile noastre:
19 skladni z naslednjimi standardi in drugimi normativi, pod pogojem, da se uporabljajo v skladu z našimi navodili:
20 on vastavuses järgmis(t)e standardi(te)ga või teiste normatiivsete dokumentidega, kui neid kasutatakse vastavalt meie juhenditele:
21 съответстват на следните стандарти или други нормативни документи, при условие, че се използват съгласно нашите инструкции:
22 atitinka žemiau nurodytus standartus ir (arba) kitus norminius dokumentus su sąlyga, kad yra naudojami pagal mūsų nurodymus:
23 tad, ja lietoti atbilstoši ražotāja norādījumiem, atbilst sekojošiem standartiem un citiem normatīviem dokumentiem:
24 sú v zhode s nasledovnou(ými) normou(ami) alebo iným(i) normatívnym(i) dokumentom(ami), za predpokladu, že sa používajú v súlade s našim návodom:
25 ürünün, talimatlarımıza göre kullanılması koşuluyla aşağıdaki standartlar ve norm belirten belgelerle uyumludur:

EN15502-1, EN60335-2-102,

01 following the provisions of:
02 gemäß den Vorschriften der:
03 conformément aux stipulations des:
04 overeenkomstig de bepalingen van:
05 siguiendo las disposiciones de:
06 secondo le prescrizioni per:
07 με τήρηση των διατάξεων των:
08 de acordo com o previsto em:
09 в соответствии с положениями:
10 under iagttagelse af bestemmelserne i:
11 enligt villkoren i:
12 gitt i henhold til bestemmelsene i:
13 noudattaen määräyksiä:
14 za dodržení ustanovení předpisu:
15 prema odredbama:
16 követi a(z):
17 zgodnie z postanowieniami Dyrektyw:
18 în urma prevederilor:
19 ob upoštevanju določb:
20 vastavalt nõuetele:
21 следвайки клаузите на:
22 laikantis nuostatų, pateikiamų:
23 ievērojot prasības, kas noteiktas:
24 održiavajúc ustanovenia:
25 bunun koşullarına uygun olarak:

Low Voltage 2014/35/EU *
Boiler Efficiency 92/42/EEC *
Gas Appliance Regulation 2016/426/EU *
Electromagnetic Compatibility 2014/30/EU *

01 Directives, as amended.
02 Direktiven, gemäß Änderung.
03 Directives, telles que modifiées.
04 Richtlijnen, zoals geamendeerd.
05 Directivas, según lo enmendado.
06 Direttive, come da modifica.
07 Οδηγιών, όπως έχουν τροποποιηθεί.
08 Directivas, conforme alteração em.
09 Директив со всеми поправками.
10 Direktiver, med senere ændringer.
11 Direktiv, med företagna ändringar.
12 Direktiver, med foretatte endringer.
13 Direktiivejä, sellaisina kuin ne ovat muutettuina.
14 v platném znění.
15 Smjernice, kako je izmijenjeno.
16 irányelv(ek) és módosításaik rendelkezéseit.
17 z późniejszymi poprawkami.
18 Directivelor, cu amendamentele respective.
19 Direktive z vsemi spremembami.
20 Direktiivid koos muudatustega.
21 Директиви, с техните изменения.
22 Direktyvose su papildymais.
23 Direktīvās un to papildinājumos.
24 Smernice, v platnom znení.
25 Değiştirilmiş halleriyle Yönetmelikler.

01 **Note*** as set out in **<A>** and judged positively by **<B>** according to the **Certificate <C>**.
02 **Hinweis*** wie in **<A>** aufgeführt und von **<B>** positiv beurteilt gemäß **Zertifikat <C>**.
03 **Remarque*** tel que défini dans **<A>** et évalué positivement par **<B>** conformément au **Certificat <C>**.
04 **Bemerk*** zoals vermeld in **<A>** en positief beoordeeld door **<B>** overeenkomstig **Certificaat <C>**.
05 **Nota*** como se establece en **<A>** y es valorado positivamente por **<B>** de acuerdo con el **Certificado <C>**.
06 **Nota*** delineato nel **<A>** e giudicato positivamente da **<B>** secondo il **Certificato <C>**.
07 **Σημείωση*** όπως καθορίζεται στο **<A>** και κρίνεται θετικά από το **<B>** σύμφωνα με το **Πιστοποιητικό <C>**.
08 **Nota*** tal como estabelecido em **<A>** e com o parecer positivo de **<B>** de acordo com o **Certificado <C>**.
09 **Примечание*** как указано в **<A>** и в соответствии с положительным решением **<B>** согласно **Свидетельству <C>**.
10 **Bemærk*** som anført i **<A>** og positivt vurderet af **<B>** i henhold til **Certifikat <C>**.
11 **Information*** enligt **<A>** och godkänts av **<B>** enligt **Certifikatet <C>**.
12 **Merk*** som det fremkommer i **<A>** og gjennom positiv bedømmelse av **<B>** ifølge **Sertifikat <C>**.
13 **Huom*** jotka on esitetty asiakirjassa **<A>** ja jotka **<B>** on hyväksynyt **Sertifikaatin <C>** mukaisesti.
14 **Poznámka*** jak bylo uvedeno v **<A>** a pozitivně zjištěno **<B>** v souladu s **osvědčením <C>**.
15 **Napomena*** kako je izloženo u **<A>** i pozitivno ocijenjeno od strane **<B>** prema **Certifikatu <C>**.
16 **Megjegyzés*** a(z) **<A>** alapján, a(z) **<B>** igazolta a megfelelést, a(z) **<C>** **tanúsítvány** szerint.
17 **Uwaga*** zgodnie z dokumentacją **<A>**, pozytywną opinią **<B>** i **Świadectwem <C>**.
18 **Notă*** așa cum este stabilit în **<A>** și apreciat pozitiv de **<B>** în conformitate cu **Certificatul <C>**.
19 **Opomba*** kot je določeno v **<A>** in odobreno s strani **<B>** v skladu s **certifikatom <C>**.
20 **Märkus*** nagu on näidatud dokumendis **<A>** ja heaks kiidetud **<B>** järgi vastavalt **sertifikaadile <C>**.
21 **Забележка*** както е изложено в **<A>** и оценено положително от **<B>** съгласно **Сертификата <C>**.
22 **Pastaba*** kaip nustatyta **<A>** ir kaip teigiamai nuspręsta **<B>** pagal **Sertifikatą <C>**.
23 **Piezīmes*** kā norādīts **<A>** un atbilstoši **<B>** pozitīvajam vērtējumam saskaņā ar **sertifikātu <C>**.
24 **Poznámka*** ako bolo uvedené v **<A>** a pozitívne zistené **<B>** v súlade s **osvedčením <C>**.
25 **Not*** **<A>**'da belirtildiği gibi ve **<C>** **Sertifikasına** göre **<B>** tarafından olumlu olarak değerlendirildiği gibi.

<A>	**DAIKIN.TCF.5.001.16**
<B>	**KIWA (NB0063)**
<C>	**18GR0466/00**

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02** Daikin Europe N.V. hat die Berechtigung die Technische Konstruktionsakte zusammenzustellen.
03** Daikin Europe N.V. est autorisé à compiler le Dossier de Construction Technique.
04** Daikin Europe N.V. is bevoegd om het Technisch Constructiedossier samen te stellen.
05** Daikin Europe N.V. está autorizado a compilar el Archivo de Construcción Técnica.
06** Daikin Europe N.V. è autorizzata a redigere il File Tecnico di Costruzione.
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11** Daikin Europe N.V. är bemyndigade att sammanställa den tekniska konstruktionsfilen.
12** Daikin Europe N.V. har tillatelse til å kompilere den Tekniske konstruksjonsfilen.
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2P475131-1C

DAIKIN

Shigeki Morita
Director
Ostend, 2nd of April 2018

DAIKIN EUROPE N.V.
Zandvoordestraat 300, B-8400 Oostende, Belgium

Table of contents

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

DANGER

Following information is only applicable for UK.

If you smell gas:

- Away from the building: call the National Gas Emergency Service on 0800 111 999.
- L.P.G. boilers: Call the supplier's number on the side of the gas tank.

Contact Information

Homeowner Helpdesk: 0845 641 9271

Technical Helpdesk: 0845 641 9277

Daikin UK

1 The Heights

Brooklands / Weybridge / Surrey

KT13 0NY

Tel: 0845 641 9000

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

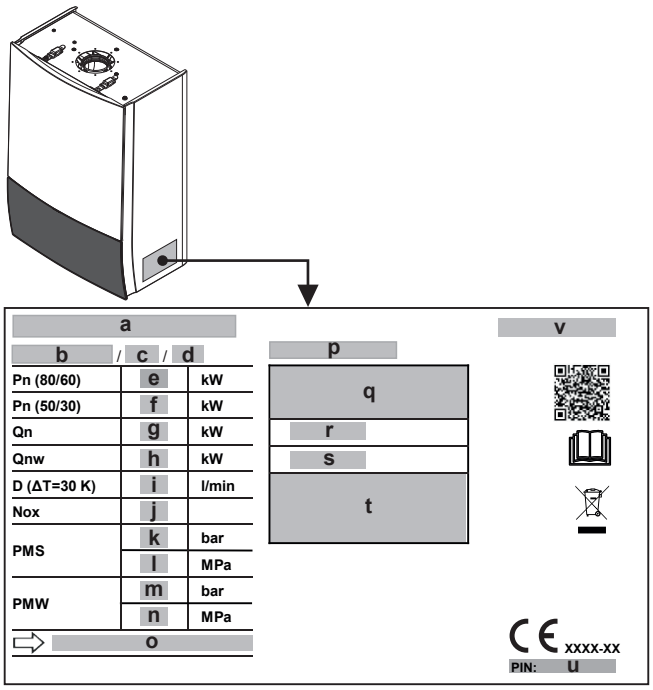
Indicates a situation that could result in equipment or property damage.

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.



- **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

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 5 boxes should be stacked on top of each other.

When stacking 6 boxes on one pallet, no more than 2 pallets should be stacked on top of each other.

When stacking 4 boxes on one pallet, no more than 3 pallets 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**. **Heating only** boilers do not supply domestic hot water. The type of the boiler can be recognized from the model name written on the identification label. See table below:

Model	Type	Domestic hot water supply	Filling loop
D2CND028A1AB	D2CND028	Instantaneous	Internal
D2CND028A4AB	D2CND028	Instantaneous	External

Model	Type	Domestic hot water supply	Filling loop
D2CND035A1AB	D2CND035	Instantaneous	Internal
D2CND035A4AB	D2CND035	Instantaneous	External
D2TND028A4AB	D2TND028	Storage tank	External
D2TND035A4AB	D2TND035	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.

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.

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 V, the boiler goes to error mode. It is a blocking error and the boiler will operate without reset after supply voltage is above 180 V. It is recommended to use a voltage regulator of suitable power and type in locations with voltage fluctuations below this limit for faultless operation.

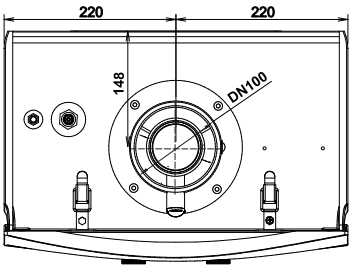
High electric supply current protection system: A fuse on the control unit protects equipment and wiring against the damaging effects of electrical faults which is caused by excess currents, and disables equipment which is faulty. The fuse "blows" (opens) when the current carried exceeds the rated value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

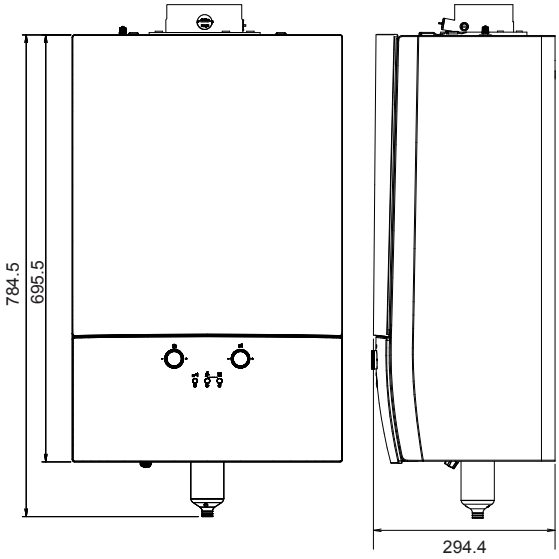
Combustion control safety system: Boiler control unit monitors the flame to avoid bad combustion and risky conditions. It also makes self-inspection against its own malfunctioning and to keep emissions always at a low level.

3.2 Dimensions

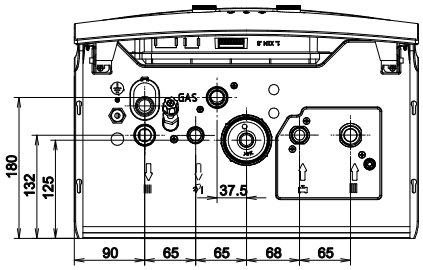
Top view



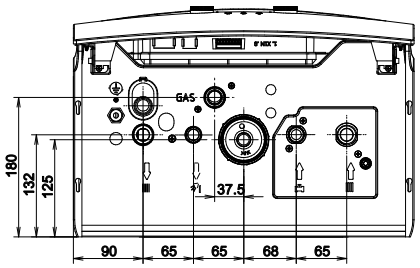
Front view and right side view



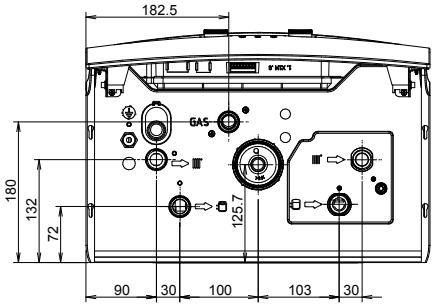
Bottom view of model D2CND028A1AB and D2CND035A1AB



Bottom view of model D2CND028A4AB and D2CND035A4AB

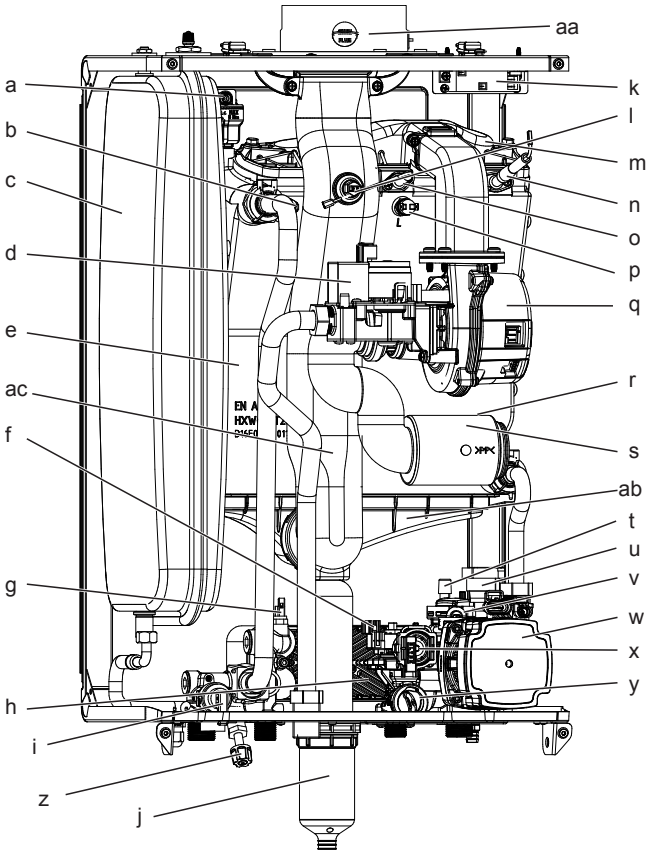


Bottom view of models D2TND028A4AB and D2TND035A4AB



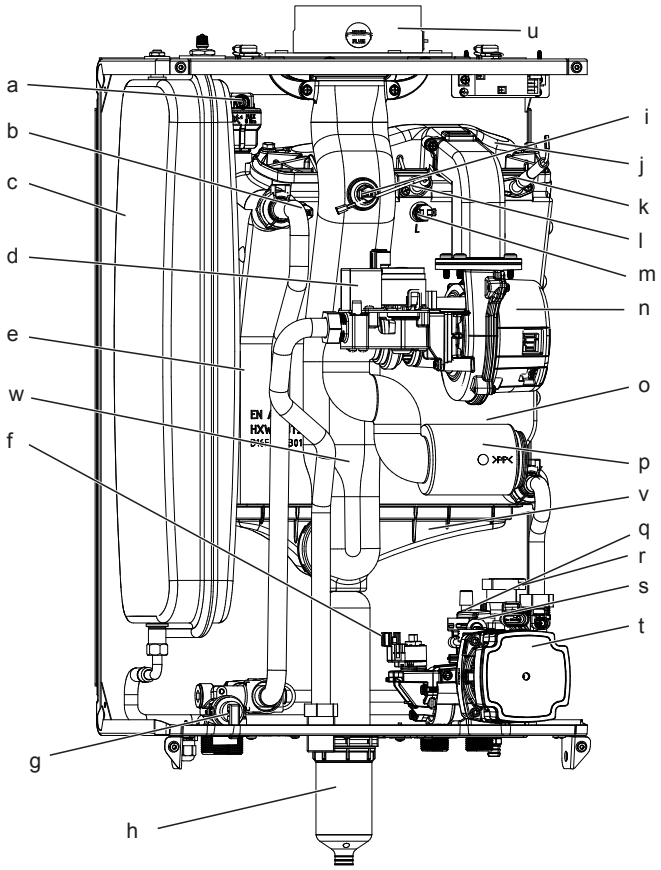
3.3 Components

Components of models D2CND028A1AB, D2CND028A4AB, D2CND035A1AB and D2CND035A4AB



a Automatic air vent (heat exchanger)
b Flow temperature sensor
c Expansion vessel (10 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 D2CND028A1AB + D2CND035A1AB and not included in model D2CND028A4AB + D2CND035A4AB)
aa Flue gas adapter
ab Condensate sump
ac Flue gas pipe

Components of models D2TND028A4AB and D2TND035A4AB



a Automatic air vent (heat exchanger)
b Flow temperature sensor
c Expansion vessel (10 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
v Condensate sump
w Flue gas pipe

3.4 Technical specifications

Technical specifications	Unit	D2CND028A*AB	D2CND035A*AB	D2TND028A4AB	D2TND035A4AB
Heat Input Range(Qn)	kW	4.8~27.0	4.8~34.0	4.8~27.0	4.8~34.0
Nominal Heat Output Range (Pn) at 80-60°C	kW	4.6~26.3	4.6~33.2	4.6~26.3	4.6~33.2
Nominal Heat Output Range (Pn) at 50-30°C	kW	5.2~28.2	5.2~35.0	5.2~28.2	5.2~35.0
Efficiency (30% partial load at 30°C return temperature)	%	108.9	108.7	108.9	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	14	16	—	
Hot Water Amount DT: 35°C	l/min	12	14	—	
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	—	instantaneous		storage tank	
General					
Expansion Vessel Initial Pressure	bar	1			
Expansion Vessel Capacity	l	10			
Electrical Connection	V AC/Hz	230/50			
Electrical Power Consumption (max.)	W	92	112	92	112
Standby Electrical Power Consumption	W	2.7			
IP Rating	—	IPX5D			
Boiler Weight	kg	37		35.5	
Boiler Dimensions (Height × Width × Depth)	mm	695 × 440 × 295			
Flue outlet diameter	mm	60 / 100			

Combustion specifications	Unit	D2CND028A*AB	D2CND035A*AB	D2TND028A4AB	D2TND035A4AB
Gas Category	—	II_{2N3P}			
Nominal Gas Inlet Pressure (G20/G25/G31)	mbar	20 / 37			
G20 Gas Inlet Pressure (min./max.)	mbar	17 / 25[(a)]			
G25 Gas Inlet Pressure (min./max.)	mbar	20 / 31			
G31 Gas Inlet Pressure (min./max.)	mbar	25 / 45			
Natural Gas (G20) Consumption (min./max.)	m³/h	0.51 / 2.89	0.51 / 3.63	0.51 / 2.89	0.51 / 3.63
Natural Gas (G25) Consumption (min./max.)	m³/h	0.59 / 3.32	0.59 / 4.19	0.59 / 3.32	0.59 / 4.19
LPG (G31) Consumption (min./max.)	m³/h	0.2 / 1.09	0.2 / 1.38	0.2 / 1.09	0.2 / 1.38
Combustion products mass flow rate (min./max.) (G20)	g/s	2.2 / 12.35	2.2 / 15.47	2.2 / 12.35	2.2 / 15.47
Combustion products mass flow rate (min./max.) (G31)	g/s	2.2 / 12.02	2.2 / 15.22	2.2 / 12.02	2.2 / 15.22
Combustion products temperature (min./max.) (G20)	°C	57.5 / 76.4	57.5 / 81.7	57.5 / 76.4	57.5 / 81.7
Combustion products temperature (min./max.) (G31)	°C	57.5 / 74.5	57.2 / 80.2	57.5 / 74.5	57.2 / 80.2
CO_2 Emission at nominal and minimum heat input (G20)	%	8.8±0.8			
CO_2 Emission at nominal and minimum heat input (G31)	%	11.3 / 10.2±1.0			
NOx Class	—	6			

(a) 20 / 30 for Hungary

Energy-related products (ErP) specifications	Symbol	Unit	D2CND028A*AB	D2CND035A*AB	D2TND028A4AB	D2TND035A4AB
Model	—	—	D2CND028	D2CND035	D2TND028	D2TND035
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	—	—	YES	YES	NO	NO
Central heating efficiency class	—	—	****/A			
Rated heat output	P_{rated}	kW	26	33	26	33
Useful heat output at rated heat output and high-temperature regime[(a)]	P_4	kW	26.3	33.2	26.3	33.2
Useful heat output at 30% of rated heat output and low-temperature regime[(b)]	P_1	kW	8.8	11.1	8.8	11.1
Seasonal space heating energy efficiency	η_s	%	93			
Useful efficiency at rated heat output and high-temperature regime[(a)]	η_4	%	87.8	87.9	87.8	87.9
Useful efficiency at 30% of rated heat output and low-temperature regime[(b)]	η_1	%	98.1	97.9	98.1	97.9
Auxiliary electricity consumption						
At full load	el_{max}	kW	0.0356	0.0547	0.0356	0.0547
At part load	el_{min}	kW	0.0098	0.0111	0.0098	0.0111
In standby mode	P_{SB}	kW	0.003			
Other items						
Standby heat loss	P_{stby}	kW	0.0651			
Ignition burner power consumption	P_{ign}	kW	—			
Annual energy consumption	Q_{HE}	GJ	48	58	48	58
Sound power level, indoors (at maximum heat input)	L_{WA}	dB	49	52	49	52
Emissions of nitrogen oxides	NO_x	mg/kWh	36	35	36	35
Domestic hot water parameters						
Declared load profile	—	—	XL		—	
Daily electricity consumption	Q_{elec}	kWh	0.153	0.204	—	

Energy-related products (ErP) specifications	Symbol	Unit	D2CND028A*AB	D2CND035A*AB	D2TND028A4AB	D2TND035A4AB
Annually electricity consumption	AEC	kWh	33	44	—	
Water heating energy efficiency	η_{wh}	%	84	83	—	
Water heating energy efficiency class	—	—	A		—	
Daily fuel consumption	Q_{fuel}	kWh	23.25	30.26	—	
Annual fuel consumption	AFC	GJ	18	23	—	

(a) High-temperature regime means 60°C return temperature at heater inlet and 80°C flow 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

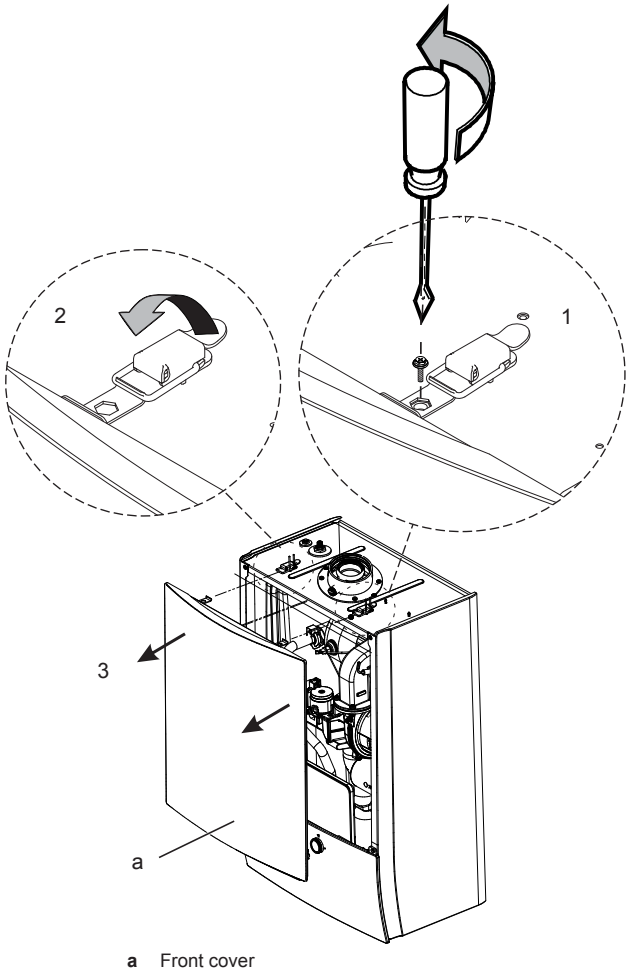
4.1 To open the unit

WARNING

Only qualified competent persons are allowed to open the unit.

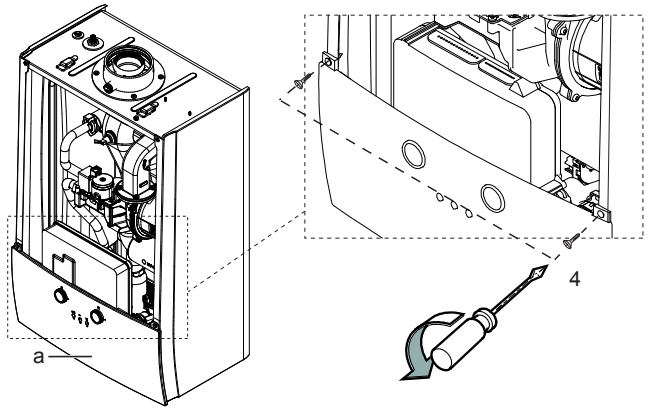
Certain actions explained in this document, such as gas conversion, optional equipment connection, require that the front cover is opened.

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).



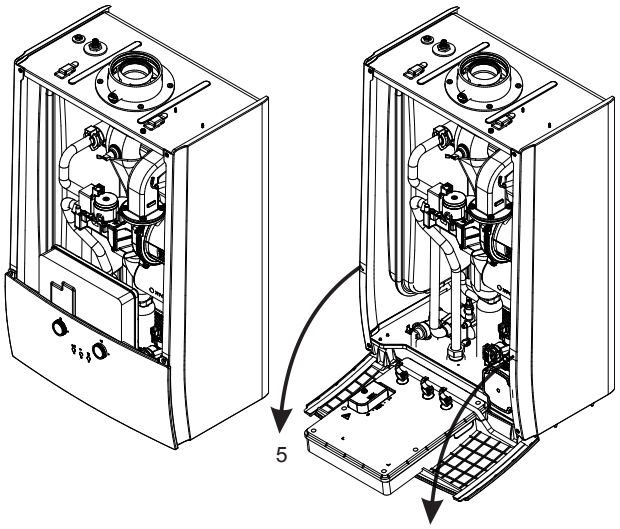
a Front cover

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



a Control panel

5 Pull the control panel forwards (5).



4.2 Installation site requirements

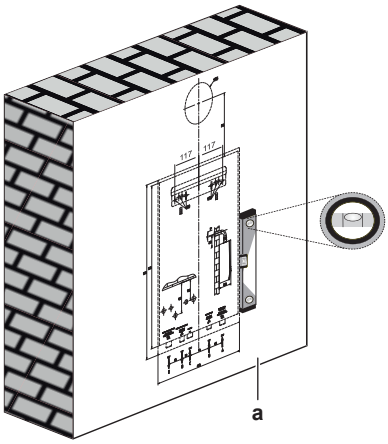
WARNING

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.



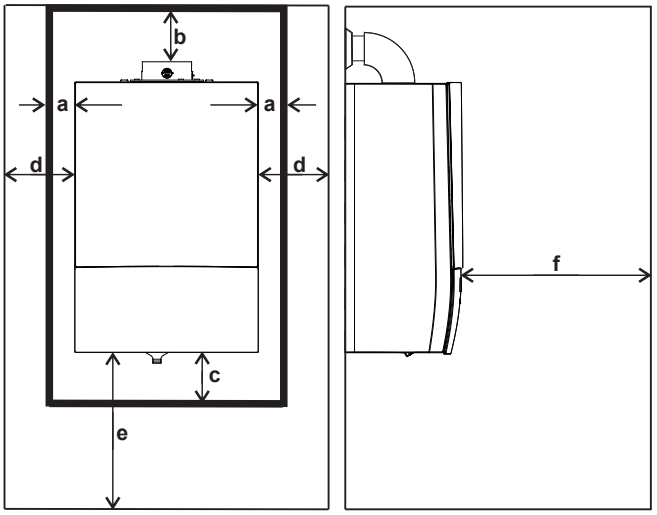
a Vertical, flat wall

- 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 (DRANTIFREEZxx) 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" [▸ 10].
- 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" [▸ 10].
- 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

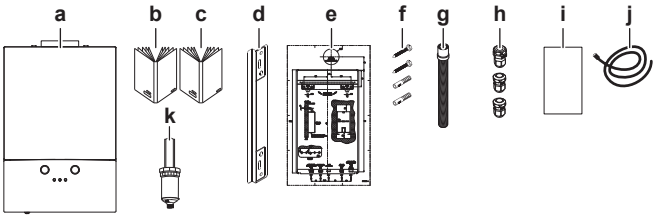


Minimum allowable clearances	
a, sides	10 mm
b, Above the casing*	180 mm
c, below	255 mm
f, in front	500 mm
Recommended clearances for easy servicing	
d, sides	50 mm
e, below (from the floor)	1500 mm

* **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

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 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 D2TND028A4AB and D2TND035A4AB)
k Condensate trap

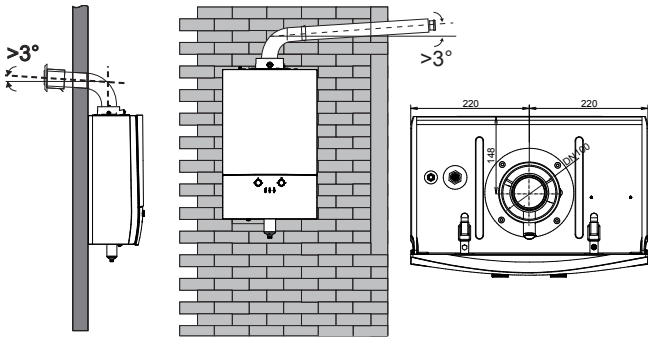
2 Check the contents of the package. If any of them is damaged or missing, contact your dealer.

CAUTION

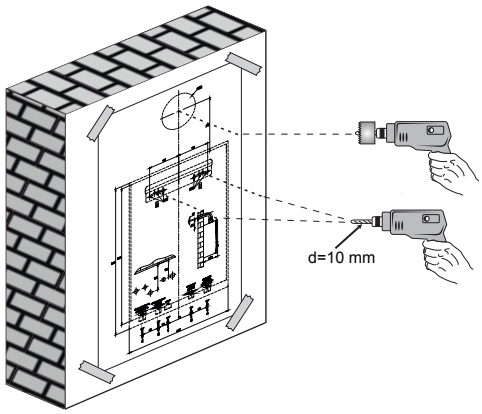
Store the remaining parts of the package (cardboard, plastic, etc.) in a place children cannot reach. The manufacturer is not responsible for any accidents and/or damage that may occur this way.

4.4 To mount the unit

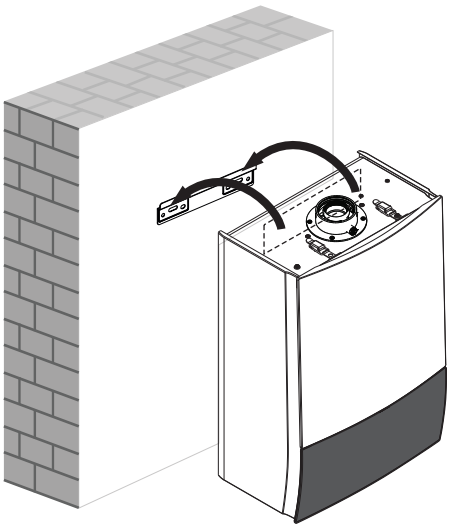
1 The mounting template shows the position for the horizontal flue. If there is no hole in the wall for the flue piping, drill one. If there is already a hole in the wall for the flue piping, you can use this hole as a starting point to determine the position of the mounting bracket, according to the 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.



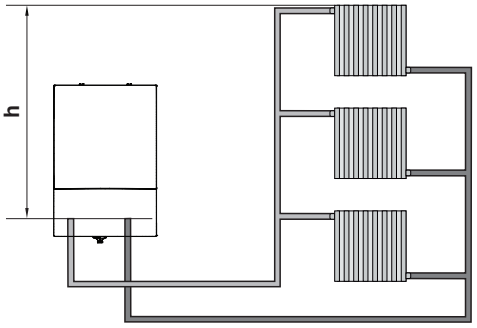
4.5 Central heating system requirements

Expansion vessel sizing

The boiler is equipped with an 10 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:

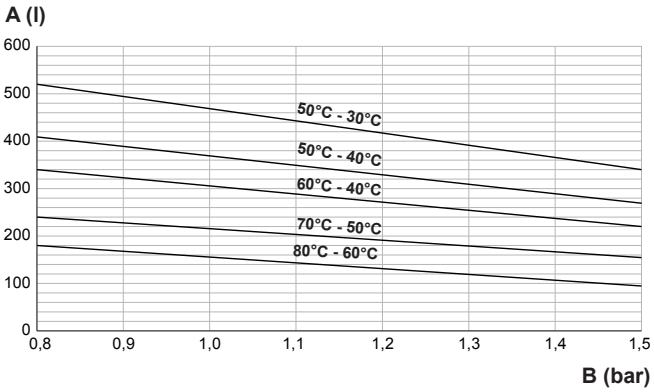


h	p
≤6 m	0.8 bar
7 m	0.9 bar
8 m	1.0 bar
9 m	1.1 bar
10 m	1.2 bar
11 m	1.3 bar
12 m	1.4 bar
13 m	1.5 bar

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)
* 50°C-40°C temperature regime is given for underfloor heating systems

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.

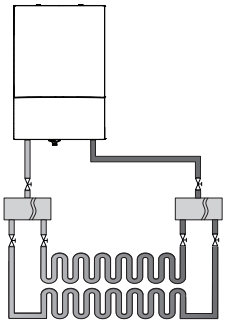
Water softening for domestic water circuit is recommended if hardness of supply water is higher than 20°fH, in order to prevent damage on boiler.

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.

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.



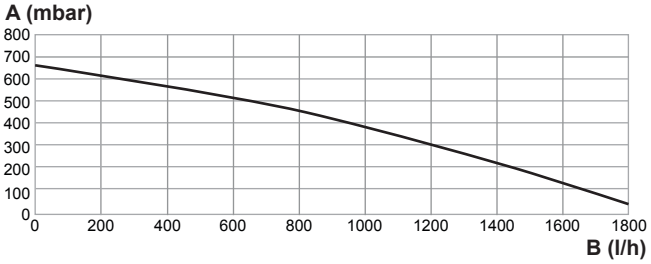
When the boiler is connected to underfloor heating installation, the maximum central heating set temperature must be limited to 50°C and the pump operation temperature difference must be adjusted to 10 Kelvin in the service settings menu. To change this setting, refer to the servicing instructions.

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

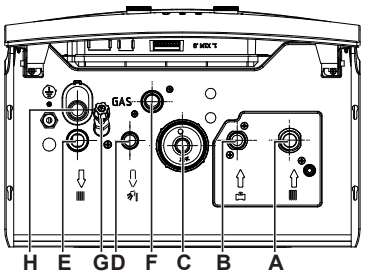
NOTICE

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

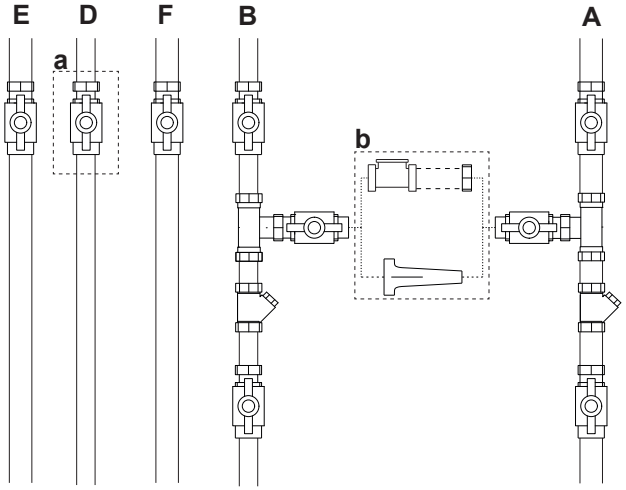
4.8.1 Piping connections

Piping connections of models D2CND028A1AB, D2CND028A4AB, D2CND035A1AB and D2CND035A4AB

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 D2CND028A1AB and D2CND035A1AB)
H Safety valve discharge



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 D2CND028A4AB and D2CND035A4AB. Use a disconnector or a double check valve according to local regulations.

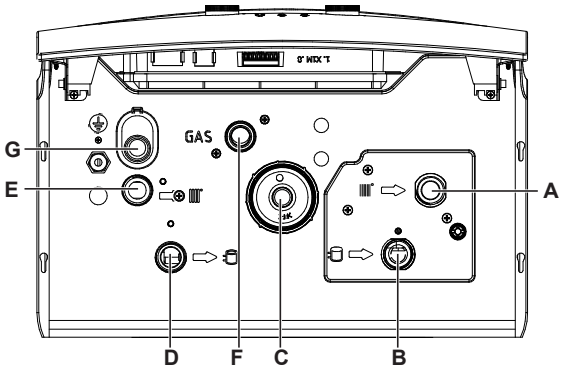
Isolation valves and strainers should be used just before the appliance piping inlet as shown in figure above.

Ensure that necessary gaskets are placed.

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

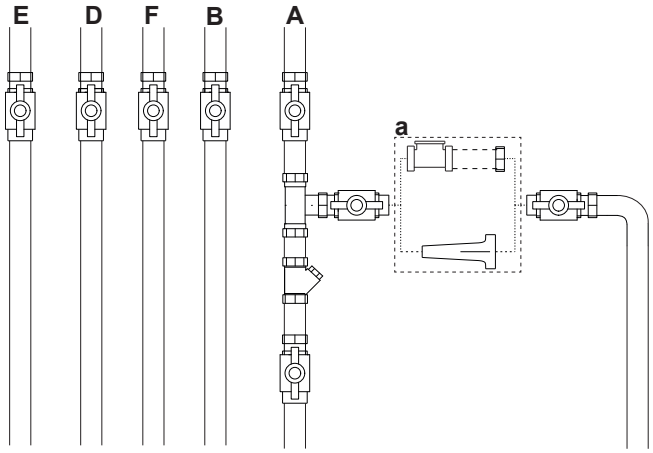
Piping connections of models D2TND028A4AB and D2TND035A4AB

Below, find the piping connections of the unit.



A Central heating return connection, 3/4"
B Storage tank return connection, 3/4"
C Condensate trap discharge
D Storage tank supply connection, 3/4"

E Central heating supply connection, 3/4"
F Gas inlet connection, 3/4"
G Safety valve discharg



Valve
Strainer
Tee connection
Double check valve + filling hose
Disconnector
a External filling group used with models D2TND028A4AB and D2TND035A4AB. Use a disconnector or a double check valve according to local regulations.

If the boiler will only be used for central heating, storage tank connections should 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.

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.

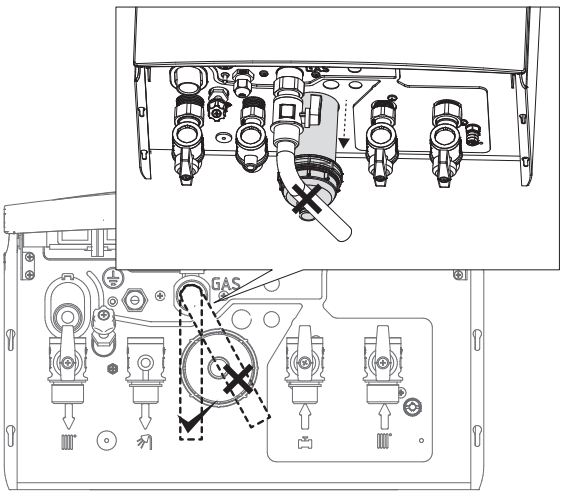
Connect the gas supply piping without tension to the gas pipe connection ("Connection F", see "4.8.1 Piping connections" [▶ 12]).

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" [▶ 26]).

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 200 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.
- 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.

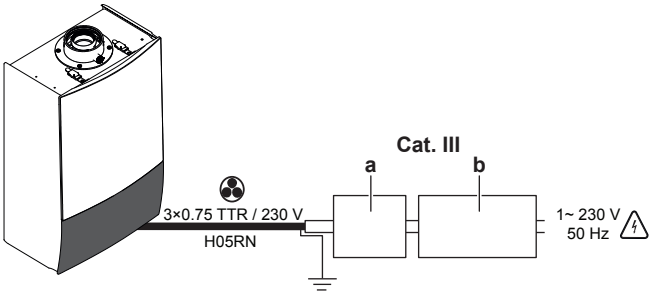
WARNING

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.

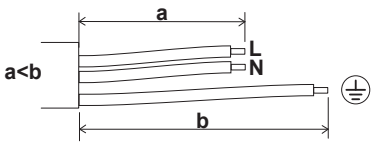
The unit runs on 230 V AC 50 Hz power. A power cable is delivered with the package. The power cable must be connected to the power supply by an electrician and in accordance with the applicable legislation.



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.
- 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.



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

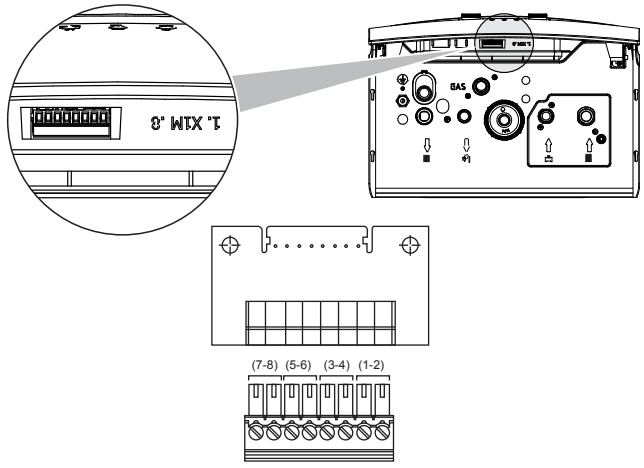
DANGER

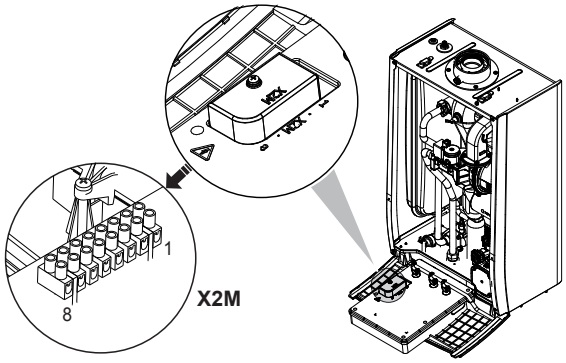
X2M connector has 230 V AC.

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.

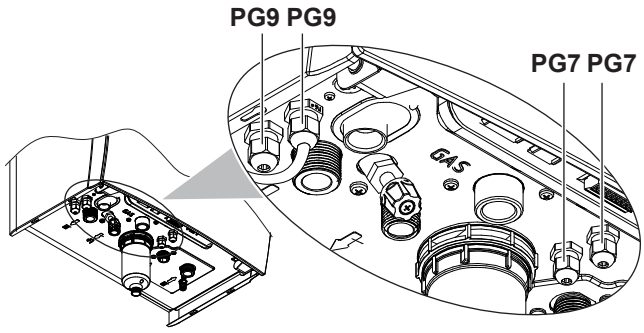
Temperature control units	Connector	Connection
Solar NTC sensor	X1M	1-2
Daikin room thermostat	X1M	3-4
Outdoor sensor	X1M	5-6
Domestic hot water storage tank sensor	X1M	7-8
External power output (230 V AC)	X2M	3-4
On-Off room thermostat*	X2M	5-6

* On-Off room thermostat must have volt-free dry contact (230 V AC)





Wiring of the options that are to be connected to the internal connectors 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.

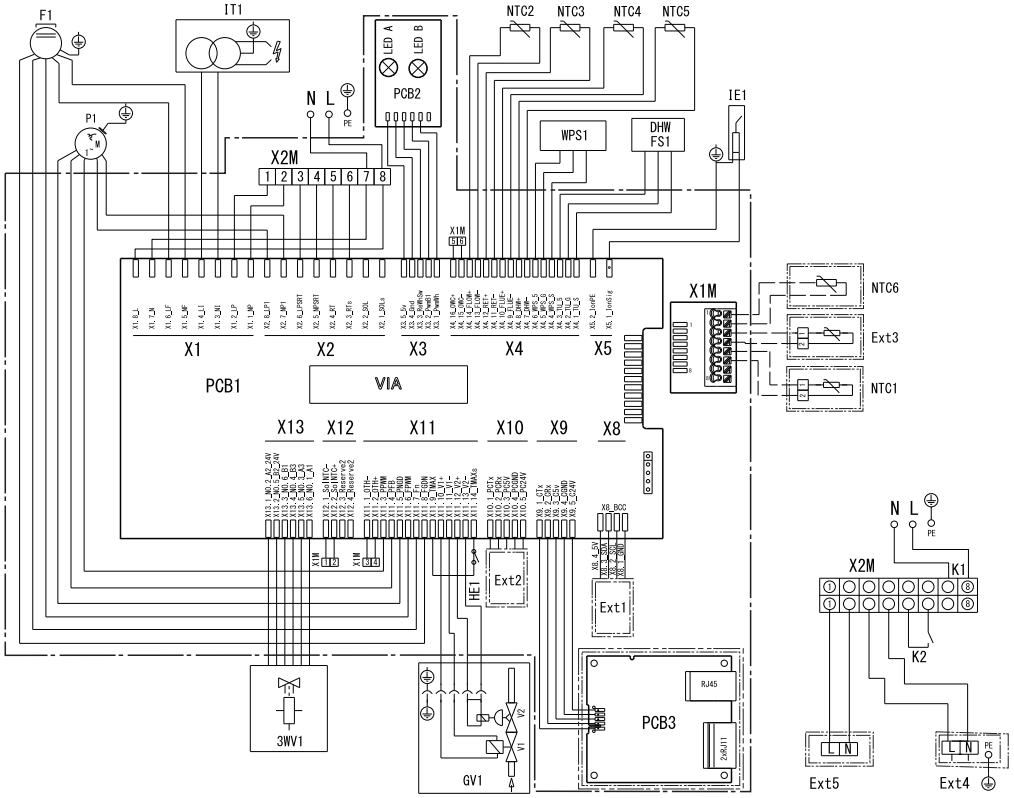
Note: Unit must be opened to mount cable glands. See "4.1 To open the unit" [▸ 9] to reach the inside of the boiler.

4.8.6 Wiring diagram

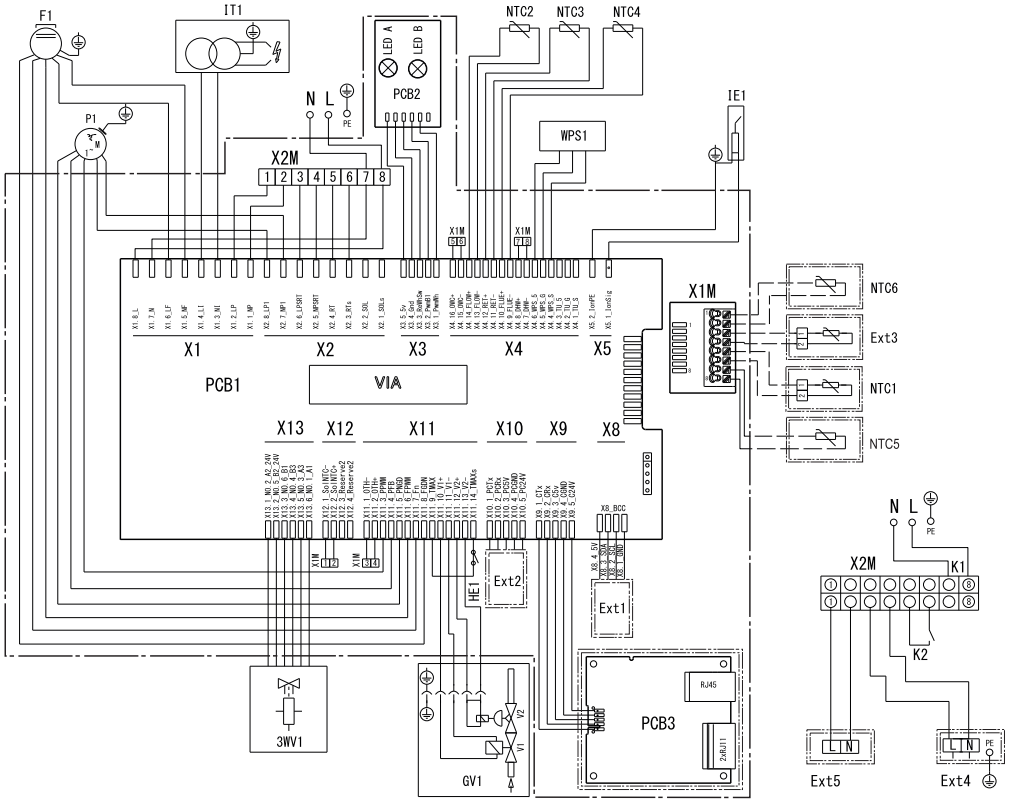
DANGER: RISK OF ELECTROCUTION

Disconnect the power supply for more than 10 minutes before servicing

Models D2CND028A1AB, D2CND028A4AB, D2CND035A1AB and D2CND035A4AB



Models D2TND028A4AB and D2TND035A4AB



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

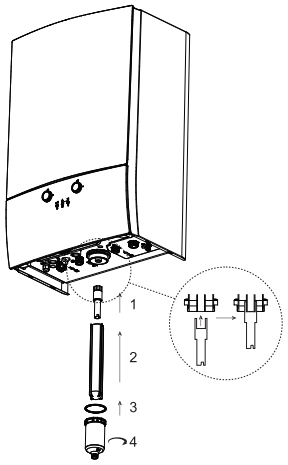
Legend:

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

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.

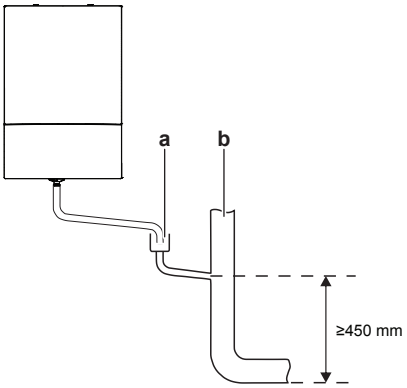
WARNING

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

4.8.8 Guidelines for condensate piping termination

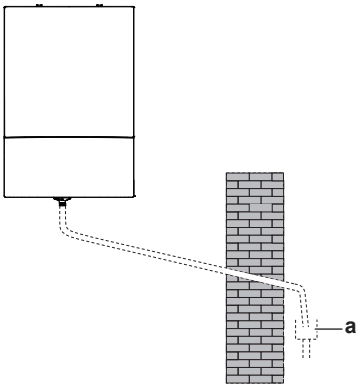
Condensate piping can be connected to a termination in different ways shown below:

Terminating into an internal soil and vent stack



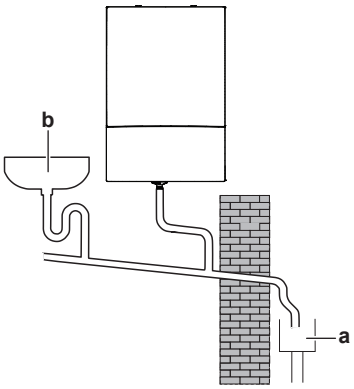
a Air breaker
b Internal soil and vent stack

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.

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.

WARNING

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

CAUTION

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

CAUTION

Connected flue type must be identified on the identification label.

INFORMATION

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

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.

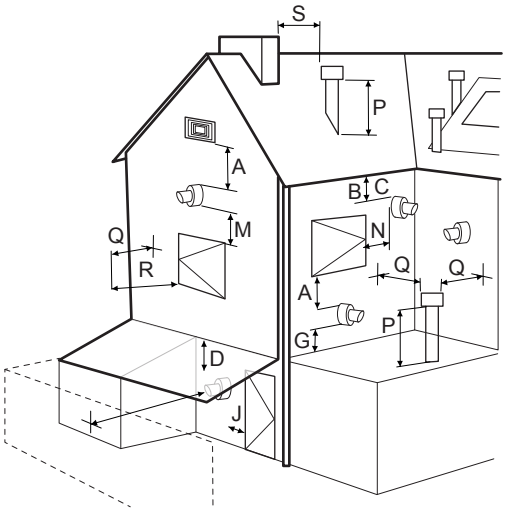
- The boiler must be installed so that the terminal is exposed to external air.
- Position of the terminal must allow the free passage of air across it at all times.
- Pluming may occur at the flue terminal. Positions where this could be a nuisance should be avoided.
- For single wall flue pipe, the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

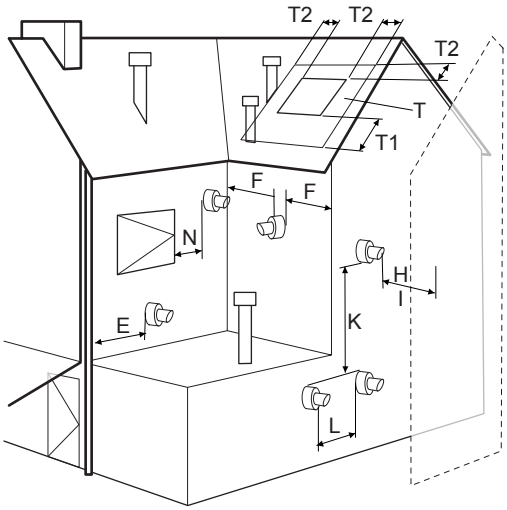
  For air intake pipe and concentric systems, the distance to a combustible material is 0 (zero) mm.
- It is essential to ensure that products of combustion discharging from the terminal cannot re-enter the building or other buildings, through ventilators, windows, doors, other sources of natural air infiltration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

Especially for UK:

Only use flue products approved by the boiler manufacturer, which can be bought from the supplier of your boiler.

Refer to the field supplied accessories for all available accessories.





	Terminal position	Minimum distance (mm)
A	Directly below an open able window or other opening (e.g. air brick)	300
B	Below gutters, soil pipes or drain pipes	75
C	Below eaves	200
D	Below balconies or car front roofs	
E	From vertical drain pipes and soil pipe	150
F	From internal or external corners	300
G	Above ground, roof or balcony level	
H	From a surface facing a terminal	600
I	From a terminal discharging towards another terminal	1200
J	From an opening in a car port (e.g. door, window) into a dwelling	
K	Vertically from a terminal on the same wall	1500
L	Horizontally from a terminal on the same wall	300
M	Above an opening, air brick, opening windows, etc.	
N	Horizontally to an opening, air brick, opening windows, etc.	
P	Above roof level (to base terminal)	
Q	From an adjacent wall to flue	
R	From an adjacent opening window	1000
S	From another roof terminal	600
-	From an external boundary. Note: If the terminal is facing a boundary, it is recommended that an anti-plume kit be fitted.	
T T1 T2	Terminals adjacent to windows or openings on pitched and flat roofs: The flue should NOT penetrate this area.	 2000 600

NOTICE

The boiler manufacturer cannot be held responsible for atmospheric conditions when siting flue terminals.

CAUTION

Once the flue system has been installed and the appliance commissioned, the installer should observe the plume direction. Particular attention should be drawn to plume vapour reentering the gas boiler via the air intake. If this occurs, it is highly possible the flue is fitted with a negative pressure area and therefore a plume management kit MUST be fitted.

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.

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.

INFORMATION

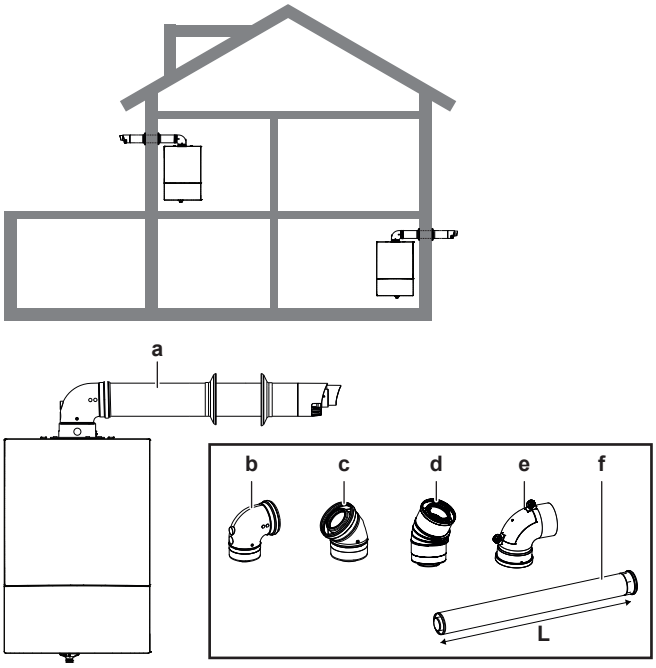
In the UK, only C13 and C33 flue types are allowed.

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 Inspection elbow 60/100
f Extension 60/100
L = 500-1000 mm

Allowable flue length for C13x	
Concentric 60/100 mm[(a)]	7.0 m
Concentric 80/125 mm[(a)]	33.6 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

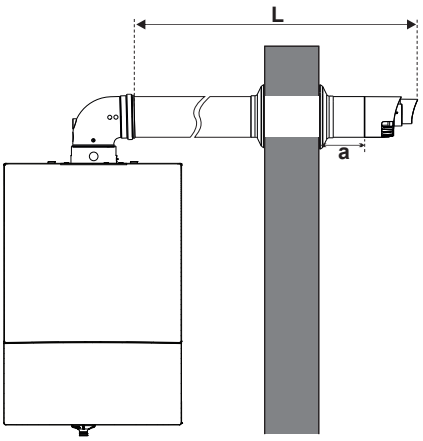
60/100 flue length can be increased up to 19.9 metres by adjusting the parameter C3 to 5. Refer to servicing instructions for this operation.

80/125 flue length can be increased up to 99 metres by adjusting the parameter C3 to 5. 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.



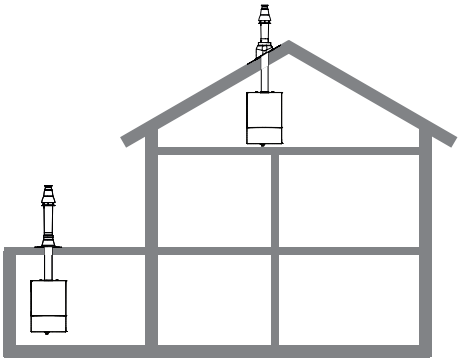
L Flue duct length
a Distance of outer lip of terminal to outer wall, **a≤50 mm**

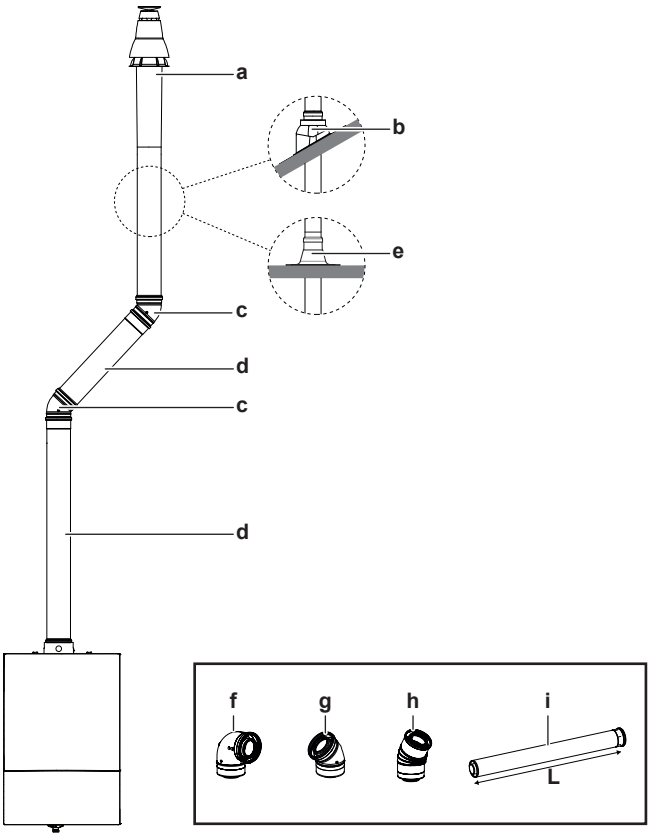
Note: Flue ducts are inserted 45 mm into elbows and extensions.

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 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	
Concentric 60/100 mm	7.6 m
Concentric 80/125 mm	34.4 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

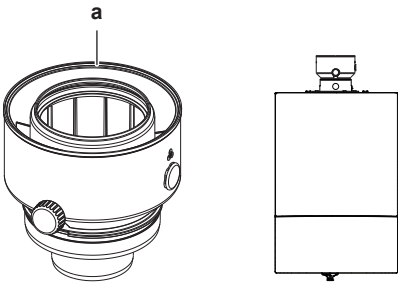
60/100 Vertical flue length can be increased up to 20.7 metres by adjusting the parameter C3 to 5 from the user interface. Refer to servicing instructions for this operation.

80/125 Vertical flue length can be increased up to 99 metres by adjusting the parameter C3 to 5 from the user interface. Refer to servicing instructions for this operation.

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

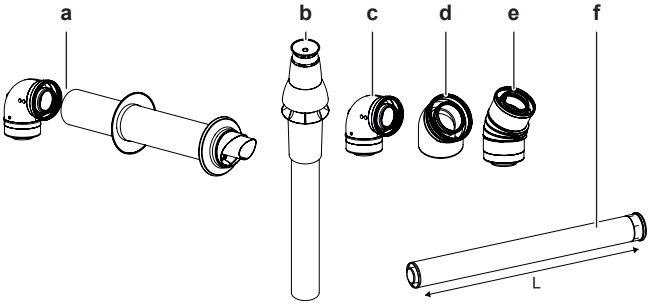
80/125 mm flue system

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:

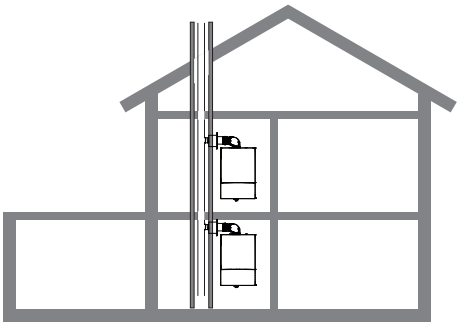


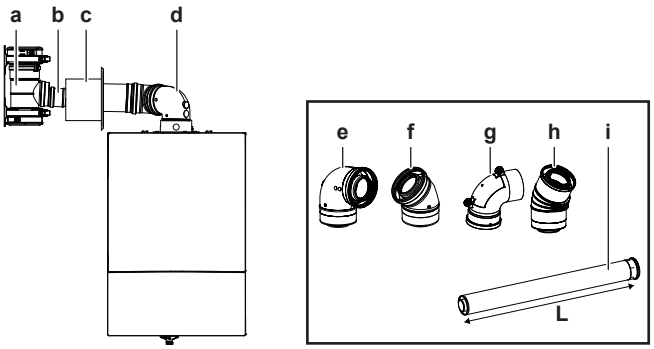
a 80/125 wall terminal kit (type C13)
b 80/125 roof terminal kit (type C33)
c 90° elbow 80/125
d 45° elbow 80/125
e 30° elbow 80/125
f Extension 80/125
L = 500-1000 mm

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 Inspection elbow 60/100
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 2 metres + 1 60/100 90° elbow.

In C43x type units, condensate flow into the unit is not allowed.

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 D2C/T...ND028

- Nominal combustion products temperature: 83.4°C
- Combustion products mass flow rate: 12.35 g/s
- Overheat combustion products temperature: 92.2°C
- Minimum combustion products temperature: 30.8°C
- Maximum allowable pressure difference between combustion air inlet and flue gas outlet (including wind pressures): 135 Pa

for D2C/T...ND035

- Nominal combustion products temperature: 88.4°C
- Combustion products mass flow rate: 15.47 g/s
- Overheat combustion products temperature: 99.5°C
- Minimum combustion products temperature: 31.2°C
- Maximum allowable pressure difference between combustion air inlet and flue gas outlet (including wind pressures): 185 Pa

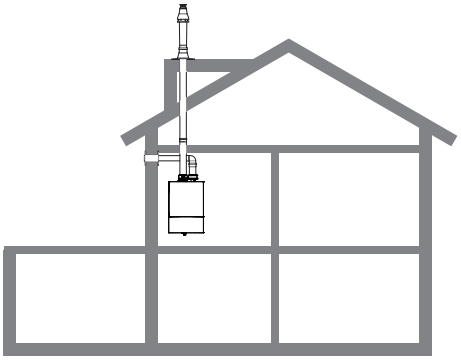
for D2C/T...ND028 and D2C/T...ND035

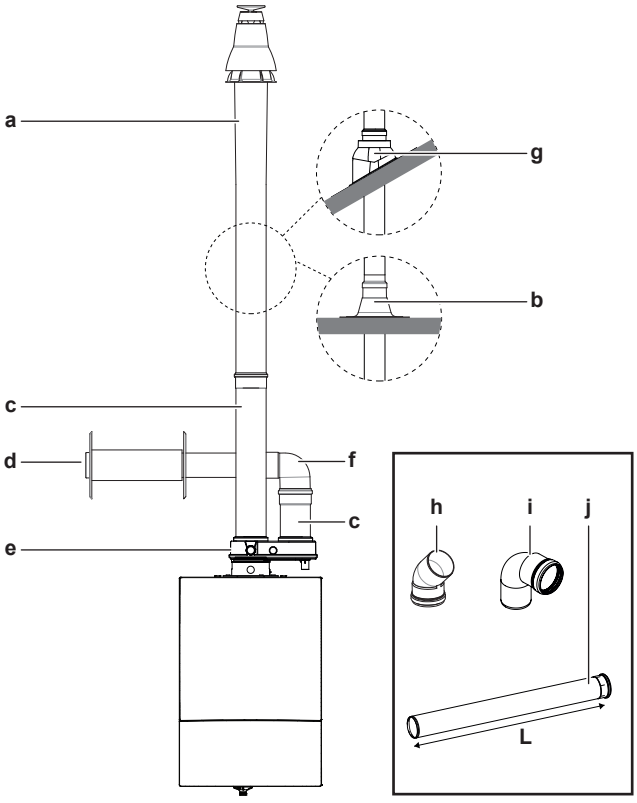
- Minimum combustion products mass flow rate: 2.2 g/s
- CO_2 content at nominal heat input: 8.8%
- Maximum allowable draught: 50 Pa
- The boiler must be connected to a system with the following characteristics: T120 P1 W
- Maximum allowable temperature of combustion air: 50°C
- Maximum allowable recirculation 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	
Air intake duct 80 mm	54 m
Flue outlet duct 80 mm	54 m

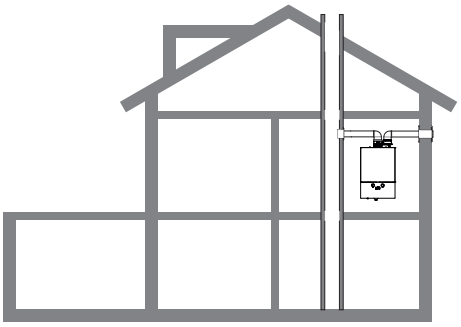
Equivalent length of options	
45° elbow 80 mm	1.0 m
90° elbow 80 mm	2.0 m

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.

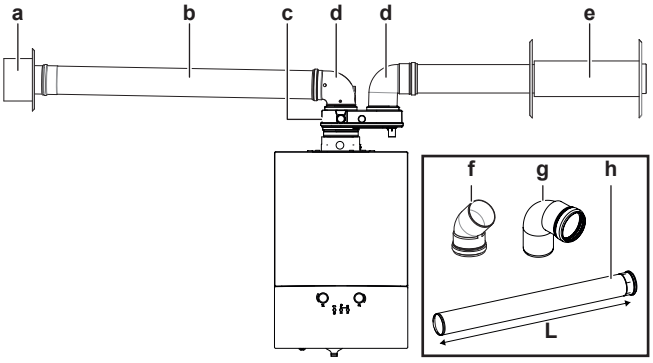
Type C83x (twin pipes flue system)

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.



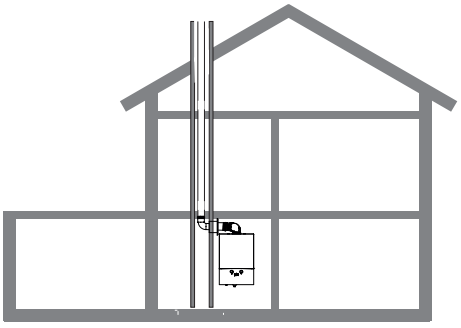
a Wall plate
b Extension 80 mm
c 60/100 to 80 80 adapter
d 90° elbow 80 mm
e Air intake 80 mm

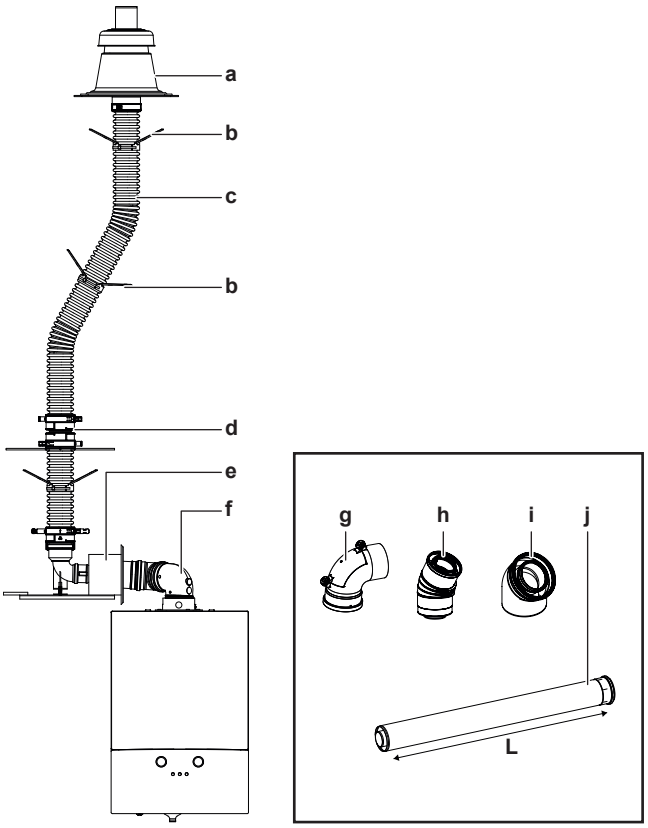
Optional:

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

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.



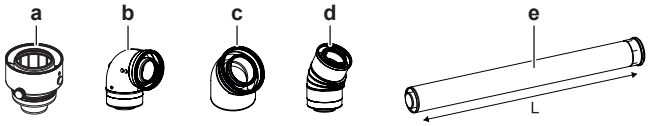


a Flex kit PP Dn 60-80 or Dn 80
b Spacer
c Extension Flex PP 80 mm
d Connector Flex-Flex PP 80 mm
e Chimney connection 60/100 or 80/125
f 90° elbow 60/100 (boiler outlet)

Optional:

g Inspection elbow 60/100
h 30° elbow 60/100
i 45° elbow 60/100
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				
	Shaft	Chimney cross-section	Parameter C3	
			"3"	"5"
60-100 Concentric	circular and smooth	100	8.0	21
DN 60 Flex	circular and rough	106	3.7	9.8
DN 60 Flex	circular and rough	100	2.7	7.0
DN 60 Flex	square and rough	95	3.8	9.9
DN 60 Flex	square and rough	90	2.8	7.4
80-125 Concentric	circular and smooth	124	34	100
DN 80 Flex	circular and rough	140	18.2	53.5
DN 80 Flex	circular and rough	130	11.6	34.1

Allowable flue length for C93x				
DN 80 Flex	circular and rough	120	4.4	13.0
DN 80 Flex	square and rough	140	23.8	69.9
DN 80 Flex	square and rough	130	20.6	60.6
DN 80 Flex	square and rough	120	14.8	43.5
DN 80 Star	square and rough	140	58	169.5
DN 80 Star	square and rough	120	40.7	119.0

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.

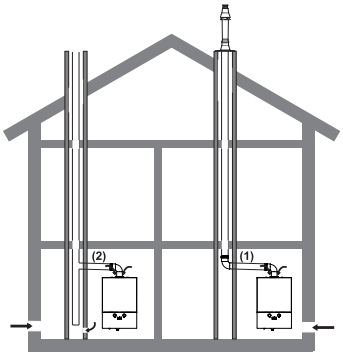
Type B53 (open flue system)

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).

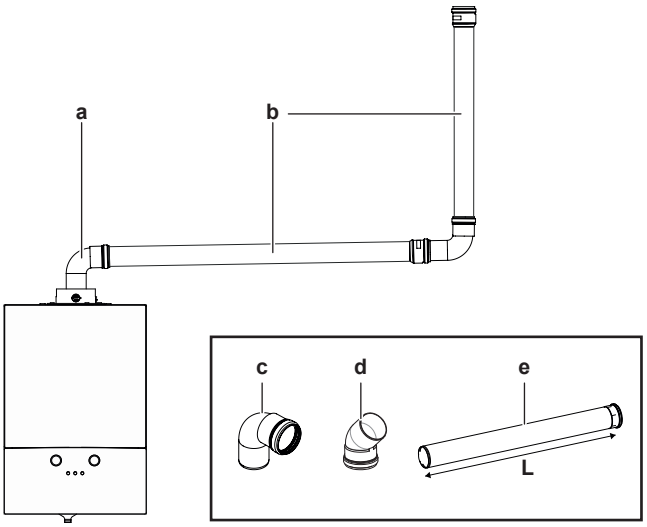
The boiler draws combustion air from the installation room and routes flue gas through the moisture-resistant chimney to above the roof (2).



Allowable flue length for B53	
Flue duct 60 mm	15.0 m
Flue duct 80 mm	100.0 m

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

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
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

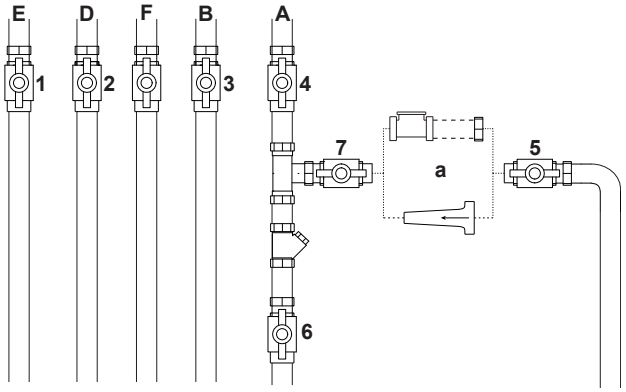
4.9 To fill the system with water

CAUTION

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

Method 1

(For models D2TND028A4AB and D2TND035A4AB)



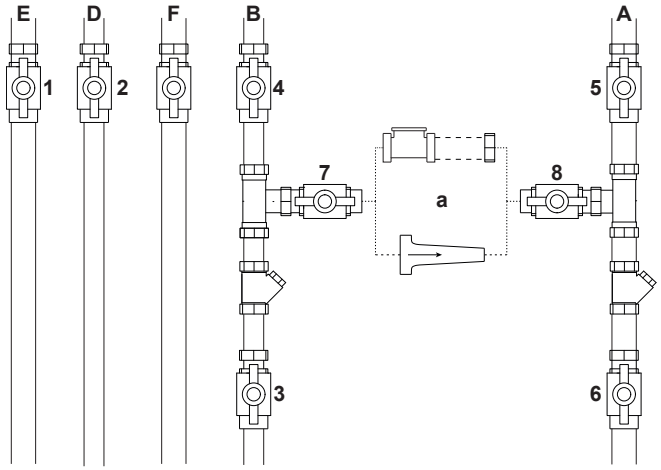
a Use a disconnector or a double check valve according to local regulations.

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 "4.5 Central heating system requirements" [▸ 11] 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 D2CND028A4AB and D2CND035A4AB)



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:

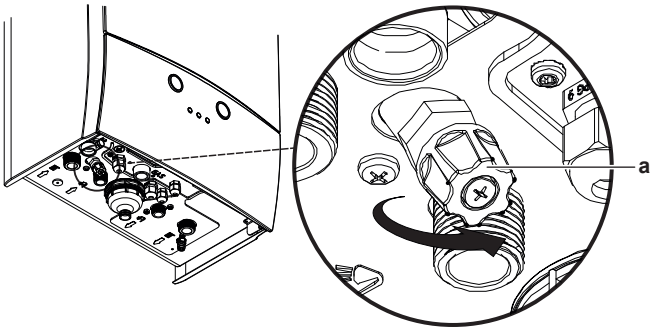
1 Connect the appliance to the main power supply. Due to low pressure, error code "Err HJ-09" will appear on the user interface and the status indicator light will be red.
2 Open all **radiator valves**.
3 Set all **isolating valves** to closed position.
4 Connect the filling loop to the **valve 7 and 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 "4.5 Central heating system requirements" [▸ 11] 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 D2CND028A1AB and D2CND035A1AB)

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 "4.5 Central heating system requirements" [▸ 11]).
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" [▸ 11] 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.

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.

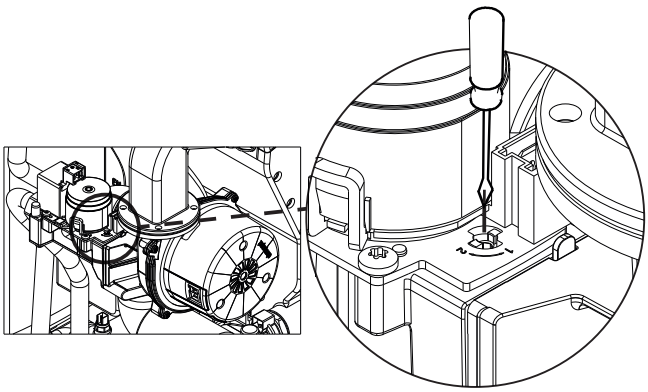
4.10.1 To convert the system for use with a different type of gas

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 (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.

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.

Especially for UK:

It is a requirement that the boiler is installed and commissioned to the manufacturer's instructions and the data fields on the commissioning checklist completed in full.

To instigate the boiler guarantee the boiler needs to be registered with the manufacturer within one month of the installation.

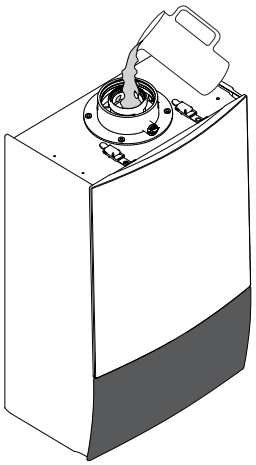
To maintain the boiler guarantee it is essential that the boiler is serviced annually by a Gas Safe registered engineer who has been trained on the boiler installed. The service details should be recorded on Service Interval Record and left with the householder.

5.1 To fill the condensate trap

INFORMATION

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

Fill the condensate trap by pouring 0.3 litres of water from the boiler flue outlet.



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.

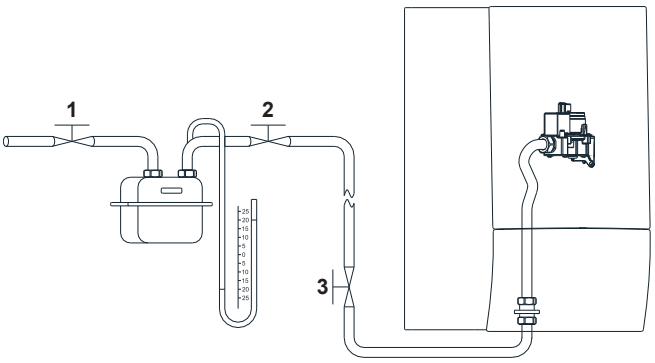
4 Close valve 1.

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.

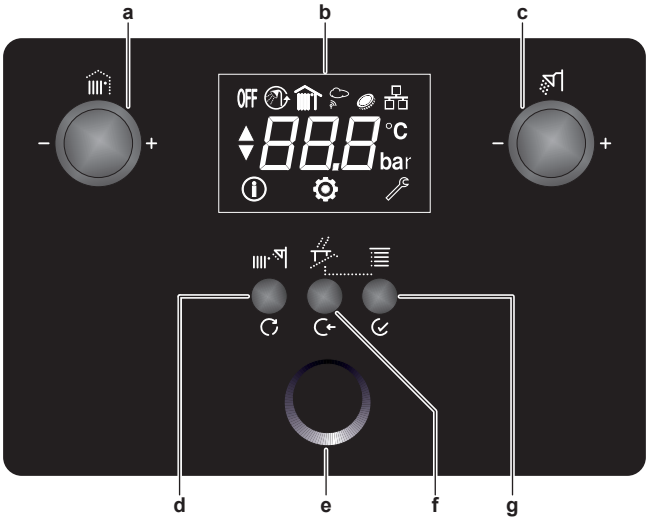
7 Repeat this process until being sure that there is no leakage.

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 energized.

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.

5.4.2 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

5.4.3 To commission the central heating capacity setting

The boiler's central heating capacity can be adjusted form 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.

5.4.4 To commission the domestic hot water

(Only for models D2CND028 and D2CND035)

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.

6.1 Appliance category and supply pressure

GAS BOILER SYSTEM COMMISSIONING CHECKLIST

This Commissioning Checklist is to be completed in full by the competent person who commissioned the boiler as a means of demonstrating compliance with the appropriate Building Regulations and then handed to the customer to keep for future reference.

Failure to install and commission according to the manufacturer's instructions and complete this Benchmark Commissioning Checklist will invalidate the warranty. This does not affect the customer's statutory rights.

Customer name:	Telephone number:
Address:	
Boiler make and model:	
Boiler serial number:	
Commissioned by (PRINT NAME):	Gas Safe register number:
Company name:	Telephone number:
Company address:	
	Commissioning date:
To be completed by the customer on receipt of a Building Regulations Compliance Certificate*	
Building Regulations Notification Number (if applicable):	

CONTROLS (tick the appropriate boxes)				
Time and temperature control to heating	Room thermostat and programmer/timer		Programmable room thermostat	
	Load/weather compensation		Optimum start control	
Time and temperature control to hot water	Cylinder thermostat and programmer/timer		Combination Boiler	
Heating zone valves	Fitted		Not required	
Hot water zone valves	Fitted		Not required	
Thermostatic radiator valves	Fitted		Not required	
Automatic bypass to system	Fitted		Not required	
Boiler interlock			Provided	

ALL SYSTEMS			
The system has been flushed and cleaned in accordance with BS7593 and boiler manufacturer's instructions		Yes	
What system cleaner was used?			
What inhibitor was used?	Quantity		litres
Has a primary water system filter been installed?	Yes	No	

CENTRAL HEATING MODE measure and record:			
Gas rate	m^3/hr	**OR**	ft^3/hr
Burner operating pressure (if applicable)	mbar	**OR** Gas inlet pressure	mbar
Central heating flow temperature			°C
Central heating return temperature			°C

COMBINATION BOILERS ONLY		
Is the installation in a hard water area (above 200ppm)?	Yes	No
If yes, and if required by the manufacturer, has a water scale reducer been fitted?	Yes	No
What type of scale reducer has been fitted?		

DOMESTIC HOT WATER MODE Measure and Record:			
Gas rate	m^3/hr	**OR**	ft^3/hr
Burner operating pressure (at maximum rate)	mbar	**OR** Gas inlet pressure at maximum rate	mbar
Cold water inlet temperature			°C
Hot water has been checked at all outlets	Yes	Temperature	°C
Water flow rate			l/min

CONDENSING BOILERS ONLY	
The condensate drain has been installed in accordance with the manufacturer's instructions and/or BS5546/BS6798	Yes

ALL INSTALLATIONS							
Record the following:	At max. rate:	CO	ppm	**AND**	CO/CO_2	Ratio	
	At min. rate: (where possible)	CO	ppm	**AND**	CO/CO_2	Ratio	
The heating and hot water system complies with the appropriate Building Regulations							Yes
The boiler and associated products have been installed and commissioned in accordance with the manufacturer's instructions							Yes
The operation of the boiler and system controls have been demonstrated to and understood by the customer							Yes
The manufacturer's literature, including Benchmark Checklist and Service Record, has been explained and left with the customer							Yes

Commissioning Engineer's Signature
Customer's Signature
(To confirm satisfactory demonstration and receipt of manufacturer's literature)

*All installations in England and Wales must be notified to Local Authority Building Control (LABC) either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer.

benchmark COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

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6 Hand-over to the user

SERVICE RECORD

It is recommended that your heating system is serviced regularly and that the appropriate Service Interval Record is completed.

Service Provider

Before completing the appropriate Service Record below, please ensure you have carried out the service as described in the manufacturer's instructions. Always use the manufacturer's specified spare part when replacing controls.

SERVICE 01						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 02						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 03						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 04						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 05						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 06						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 07						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 08						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 09						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

SERVICE 10						Date:
Engineer name:						
Company name:						
Telephone No:						
Gas safe register No:						
Record:	At max. rate:	CO	ppm	**AND**	CO_2 %	
	At min. rate: (Where Possible)	CO	ppm	**AND**	CO_2 %	
Comments:						
Signature						

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3P469346-5N 2019.11