EKOMBG22AAV1
EKOMBG28AAV1
EKOMBG33AAV1

Installation instructions

Before installing and using the machine, make sure you read these installation instructions carefully. Store these installation instructions carefully.
Always handle in accordance with the instructions given.

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

EKOMBG22AAV1*, EKOMBG28AAV1*, EKOMBG33AAV1*, EKOMB22AAV1*, EKOMB28AAV1*, EKOMB33AAV1*, EKOMBGU22AAV1*, EKOMBGU28AAV1*, EKOMBGU33AAV1*,

* = , , 1, 2, 3, ..., 9, A, B, C, ..., Z

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 der/den 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 forutssetning 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 condiţia ca acestea să fie utilizate în conformitate cu instrucţiunile 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:

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 održavajúc ustanovenia:
25 bunun koşullarına uygun olarak:

Low Voltage 2006/95/EC
Gas Appliances 2009/142/EC
Boiler Efficiency requirements 92/42/EEC
Electromagnetic Compatibility 2004/108/EC *

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>**.	**06**	**Nota** *	delineato nel **<A>** e giudicato positivamente da **<B>** secondo il **Certificato <C>**.
02	**Hinweis** *	wie in **<A>** aufgeführt und von **<B>** positiv beurteilt gemäß **Zertifikat <C>**.	**07**	**Σημείωση** *	όπως καθορίζεται στο **<A>** και κρίνεται θετικά από το **<B>** σύμφωνα με το **Πιστοποιητικό <C>**.
03	**Remarque** *	tel que défini dans **<A>** et évalué positivement par **<B>** conformément au **Certificat <C>**.	**08**	**Nota** *	tal como estabelecido em **<A>** e com o parecer positivo de **<B>** de acordo com o **Certificado <C>**.
04	**Bemerk** *	zoals vermeld in **<A>** en positief beoordeeld door **<B>** overeenkomstig **Certificaat <C>**.	**09**	**Примечание** *	как указано в **<A>** и в соответствии с положительным решением **<B>** согласно **Свидетельству <C>**.
05	**Nota** *	como se establece en **<A>** y es valorado positivamente por **<B>** de acuerdo con el **Certificado <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>**.	**16**	**Megjegyzés** *	a(z) **<A>** alapján, a(z) **<B>** igazolta a megfelelést, a(z) **<C>** **tanúsítvány** szerint.
12	**Merk** *	som det fremkommer i **<A>** og gjennom positiv bedømmelse av **<B>** ifølge **Sertifikat <C>**.	**17**	**Uwaga** *	zgodnie z dokumentacją **<A>**, pozytywną opinią **<B>** i **Świadectwem <C>**.
13	**Huom** *	jotka on esitetty asiakirjassa **<A>** ja jotka **<B>** on hyväksynyt **Sertifikaatin <C>** mukaisesti.	**18**	**Notă** *	aşa cum este stabilit în **<A>** şi apreciat pozitiv de **<B>** în conformitate cu **Certificatul <C>**.
14	**Poznámka** *	jak bylo uvedeno v **<A>** a pozitivně zjištěno **<B>** v souladu s **osvědčením <C>**.	**19**	**Opomba** *	kot je določeno v **<A>** in odobreno s strani **<B>** v skladu s **certifikatom <C>**.
15	**Napomena** *	kako je izloženo u **<A>** i pozitivno ocijenjeno od strane **<B>** prema **Certifikatu <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>	**177155_EMC2/03-2011**
<B>	**KIWA (NB0063)**
<C>	**-**

2P369568-1B

DAIKIN

Shigeki Morita
Director
Ostend, 1st of April 2015

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

TABLE OF CONTENTS

These installation instructions

With these installation instructions, you can safely assemble, install and maintain the unit. Carefully follow the instructions.

In case of any doubt, please contact the manufacturer.

Keep the installation instructions near the unit.

Abbreviations and terms used

Description	To be referred to as
High Efficiency	HR
Daikin EKOMBG22AAV1, EKOMBG28AAV1 and EKOMBG33AAV1 wall-mounted gas boiler.	Unit
Unit with piping for central heating	CH installation
System with pipes for domestic hot water	DHW installation

Symbols

The following symbols are used in this manual:

CAUTION

Procedures which - if they are not carried out with the necessary care - may cause damage to the product, the surroundings, the environment or injury.

IMPORTANT

Procedures and/or instructions which, if they are not followed, will have a negative effect on the functioning of the unit.

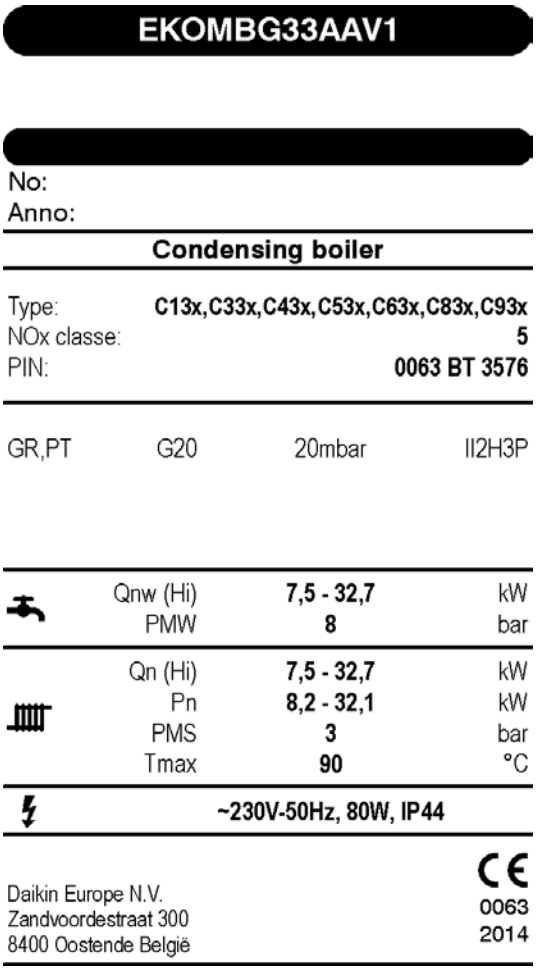
Service and technical support for the installer

For information about specific settings, installation, maintenance and repair work, as an installer, please contact your local Daikin dealer.

Identification of the product

You will find the unit details on the type plate on the bottom of the unit.

A. Unit type
B. Bar code with article number and serial number
C. Options



1 SAFETY INSTRUCTIONS

The manufacturer Daikin accepts no liability for damage or injury caused by the failure to (strictly) observe the safety instructions, or negligence during the installation of the Daikin EKOMBG*AAV1 wall-mounted gas boiler and any associated accessories.

This device is not intended for use by people (including children) with reduced physical, sensory or mental abilities, or lack of experience and knowledge, unless they are given supervision or instructions on the use of the device by a person who is responsible for their safety.

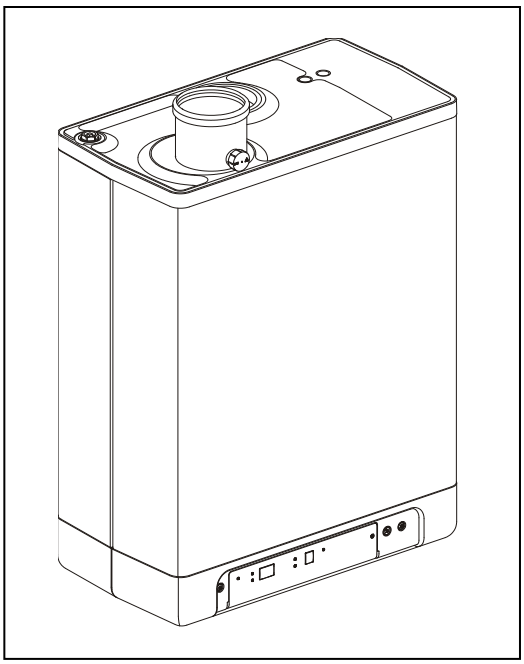
The instructions are stated separately for the various disciplines.

The entire installation must meet the applicable local technical and (safety) instructions, for the gas installation, the electrical installation, smoke extraction installation, drinking water installation, and central heating installation.

2 UNIT DESCRIPTION

2.1 General

The Daikin EKOMBG*AAV1 wall-mounted gas boiler is a closed unit. The unit is intended to provide heat to the water of a CH-installation and the domestic hot water installation.



The air supply and the combustion gas outlet of the EKOMBG*AAV1 can be connected to the unit by two separate pipes, or by a concentric connection. The unit was tested in combination with the combi feedthrough, but the unit may also be connected to combi feedthroughs which meet the universal test standards for combi feedthroughs.

The unit can be connected to an assembly bracket if required, a frame with top connection, and various installation sets. These are provided separately.

The Daikin EKOMBG*AAV1 wall-mounted gas boilers have the CE quality mark, electrical protection class IP44.

It is possible to use the unit solely for warm water, or solely for heating. The system which is not in use, does not need to be connected (see par. 7.2).

The unit is delivered for natural gas (G25) as a standard. On request, the unit can also be provided for propane (G31).

2.2 Functioning

The Daikin EKOMBG*AAV1 wall-mounted gas boiler is a modulating high-efficiency boiler. This means that the power is modulated to suit the required heat demand. In the aluminum heat exchanger two separate copper circuits are integrated.

The separate circuits for CH and warm water allow the heating and warm water supply to function independently. The hot water supply takes precedence over the heating. Both cannot work at the same time.

The unit is fitted with an electronic boiler controller machine, which operates the fan and the modulating pump at every heat requirement of the heating or the warm water supply, opens the gas valve, ignites the boiler controller, and continuously monitors and regulates the flame, depending on the requested power. The pump is only operated during a heat request from the heating, depending on the requested power.

2.3 Operating modes

The operating mode of the unit is indicated by means of a code on the service display of the operating panel.

- Off

The unit is not in operation, but is connected to the electricity supply. No response is given to requests for domestic hot water or CH water. The unit frost protection is active. This means that the pump will start running and the exchanger will be heated up if the temperature of the water in the system drops too far.

If the frost protection intervenes, the code 7 will be displayed (heating up exchanger).

The pressure in the CH installation can also be read from the temperature display in this operating mode (in bar).

Standby

The LED at the ⏻ key is lit and possibly one of the LEDs of the tap comfort function. The unit is ready to respond to a request for CH or tap water.

0 Post-running CH

After the end of the CH-operation, the pump will post-run. The post-pumping time is set to the value in par. 7.2 in its factory settings. This setting can be changed. In addition to this, the pump will run automatically 1 time per 24 hours, for 10 seconds, in order to prevent it from getting stuck. This automatic switching on of the pump takes place at the time of the last heating request. In order to change this, the room thermostat needs to be set higher for a moment, at the required time of day.

1 Requested temperature reached

The boiler controller may temporarily block the heat request. The boiler controller will then be stopped. The block occurs because the required temperature has been reached. When the temperature has sufficiently decreased, the block will be lifted.

2 Selftest

Once every 24 hours, the boiler controller tests the connected sensors. During the test, the controller will not carry out any other tasks.

3 Ventilating

When the unit is started, the fan is first brought up to its correct start rpm. When the start rpm is reached, the boiler controller will be ignited. Code 3 is also visible when there is post-fanning after the boiler controller is stopped.

4 Igniting

When the fan has reached the start rpm, the boiler controller will be ignited by means of electrical sparks. During the ignition, code 4 is displayed. If the boiler controller does not ignite, a new attempt will be made after approximately 15 seconds. If after 4 ignition attempts, the boiler controller has still not been ignited, the controller will go into down-time.

5 CH-operation

An on/off thermostat, an OpenTherm thermostat, an outdoor sensor or a combination thereof can be connected to the controller (see par. 10.1)

When there is a heat request from a thermostat, after the fan has started running (code 3), the ignition will take place (code 4) followed by the CH operating mode (code 5).

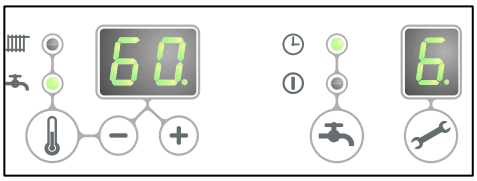
During CH operation, the rpm of the fan and therefore the power of the unit can be adjusted so the temperature of the CH water to the required CH supply temperature can be controlled. If an on/off thermostat has been connected, this will be the CH supply temperature set on the display. In case of an OpenTherm or wireless thermostat, the required CH supply temperature is determined by the thermostat. In case of an outdoor sensor, the required CH supply temperature is determined by the fuel line programmed in the boiler controller. For the last two situations, the temperature set on the display is the maximum.

During CH operation, the requested CH supply temperature will be displayed on the operating panel.

The CH supply temperature can be set between 30 and 90°C (see par. 7.1). Caution: for a low temperature system, a lower maximum setting may be required than the standard setting of 80°C.

You can press the service button during CH operation to read the actual CH supply temperature.

If the tap comfort function is switched on (see code 7), an OpenTherm heat request of less than 40 degrees will be generated.



6 Domestic hot water operation

The hot water supply takes precedence over the heating. If the flow switch senses a request for more than 2 l/min of domestic hot water, any CH requests will be interrupted. After the fan has switched on (code 3) and there has been an ignition (code 4), the controller will switch to domestic water operation (code 6). During domestic hot water operation, the rpm of the fan, and therefore the power of the unit, is controlled by the controller on the basis of the set tap water temperature.

The control system ensures the tap water temperature is correct. The water temperature can be set between 40°C and 65°C (see par. 7.1).

The set tap water temperature is displayed on the operation panel. The standard setting is 60°C.

You can press the service button during tap water operation to read the actual tap water temperature.

7 Heating up unit

In order to provide a fast supply of domestic hot water, a so-called tap comfort function has been installed in the unit. This function keeps the heat exchanger at the right temperature (it can be set, see par. 7.2). The tap comfort function has the following settings:

- On: *(① LED on)* The tap comfort function of the unit is continuously switched on. The unit always immediately provides warm water.
- Eco: *(◷ LED on) The tap comfort function of the unit is self-learning*. The unit will adjust to the usage pattern of the domestic hot water. This means the heat exchanger will not be kept warm during the night or during longer absences.
- Off: *(Both LEDs off)* The heat exchanger is not kept warm which means the supply of domestic hot water takes a bit of time. If there is no need for fast delivery of domestic hot water, the tap comfort function can be switched off.

In the settings "on" ① and "eco" ◷, the unit meets the requirements of the Gaskeur [Gas Inspection] CW standards.

2.4 PC Interface

The boiler controller is provided with an interface for a PC. A PC can communicate with the CH boiler by means of a special dongle, and the associated software. This facility enables you to follow the behavior of the boiler controller, the unit and the heat installation over a long period.

2.5 Test programs

There is an option in the boiler controller, to bring the unit into a test status.

Activating a test program, will switch on the unit with a set fan rotations per minute, without the control functions intervening.
The safety functions do remain active.

The test program is ended by pressing + and − simultaneously.

Test programs

Description of program	Button combination	Display reading
Burner on with minimum DHW capacity (see parameter d par. 7.2)	🔧 and −	"L"
Burner on with set maximum CH power (see parameter 3 par. 7.2)	🔧 and + (1x)	"h"
Burner on with maximum DHW power (see parameter 3 par. 7.2)	🔧 and + (2x)	"H"
Switching off test program	+ and −	Current operation situation

During test mode the following data can be read :

• By pressing the + button continuously in the display the CH water pressure is shown.

• By pressing the - button continuously in the display the ionisation current is shown.

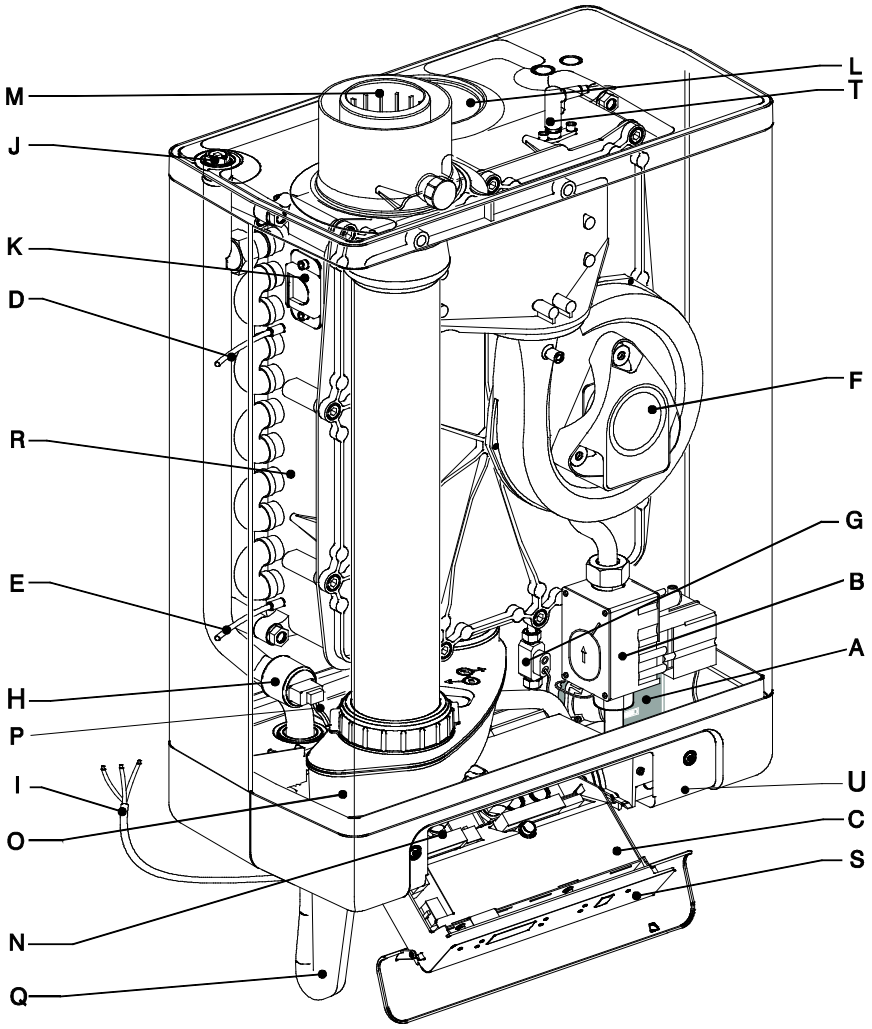
2.5.1 Frost protection

- The unit is fitted with frost protection in order to prevent it from freezing. If the temperature of the heat exchanger drops too low, the pump will start running until the temperature of the heat exchanger is sufficiently high. If the frost protection intervenes, code 7 will be displayed (heating up exchanger).
- If the installation (or a part thereof) can freeze, the coldest place should be fitted with an (external) frost thermostat on the return pipe. This must be connected in accordance with the electrical diagram (see par. 10.1).

Note

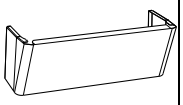
When the unit is switched off (- on the service display), the unit frost protection will remain active, however a heat request from an (external) frost thermostat will be ignored.

3 MAIN COMPONENTS



A. CH pump
B. Gas valve
C. Burner controller (incl. operating panel)
D. Sensor S1 (flow)
E. Sensor S2 (return)
F. Fan
G. Flow sensor
H. Pressure sensor central heating
I. Connection wire 230 V ~ with earthed plug
J. Manual air bleed
K. Sight glass
L. Air supply (only when using twin pipe flue system)
M. Flue gas/air inlet concentric adapter
N. Connection block / terminal strip X4
O. Condensate drain pan
P. Domestic hot water sensor S3
Q. Siphon
R. Heat exchanger
S. Operating panel and display
T. Ionization / ignition pen
U. Position of data plate

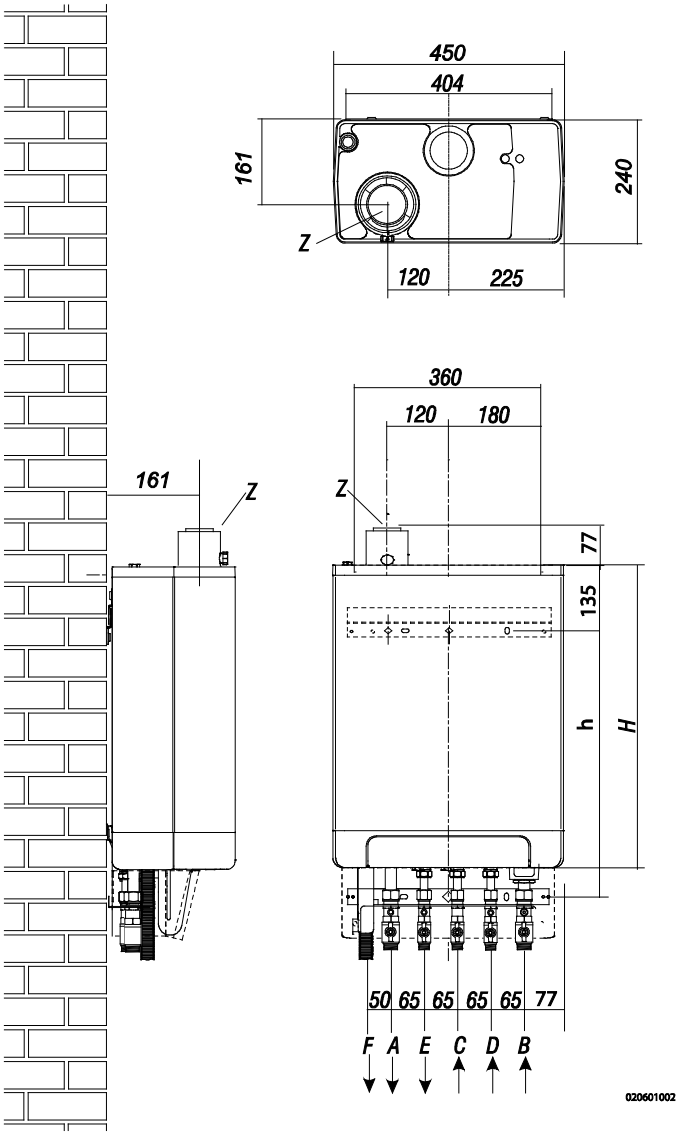
3.1 Accessories

Description	Article numbers	
B-pack EKFJS*AA	EKFJS*AA	
B-pack middle	EKFJM*AA	
B-pack large	EKFJL*AA	
Valve kit	EKVK4AA	
Cover plate EKOMBG*AAV1	EKCP1AA	
Outdoor sensor	EKOSK1AA	
3-way valve set	EK3WV1AA	
Flue gas adapter Concentric Ø80x125	EKHY090717	
Flue gas adapter Parallel 80 mm	EKHY090707	
Propane set *KOMBG22AAV1	EKPS075877	
Propane set *KOMBG28AAV1	EKPS075867	
Propane set *KOMBG33AAV1	EKHY075787	

4 INSTALLATION

4.1 Installation measurements

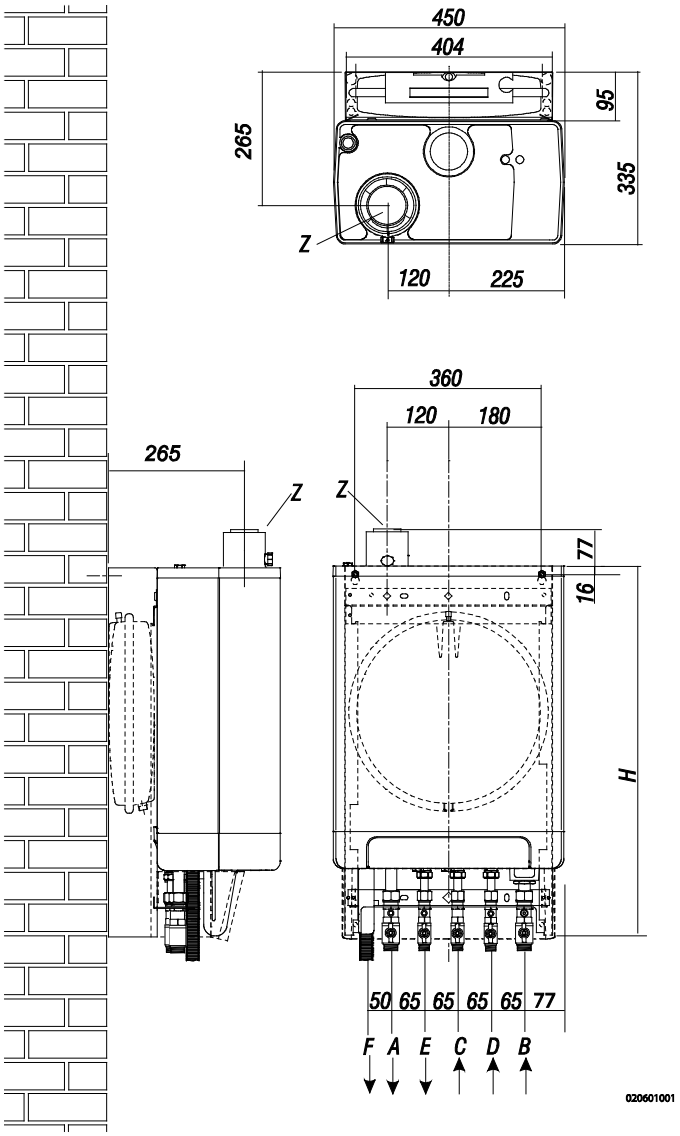
Unit with pipes connected downwards:



Unit + wall mounting strip

A =	Supply CH	G ¾" (ext)
B =	Return CH	G ¾" (ext)
C =	Gas	G ½" (int)
D =	Tap water cold	R ½"
E =	Tap water warm	R ½"
F =	Condense outlet	Ø dn25 (flexible)
h=	517mm	EKOMBG22AAV1
	577mm	EKOMBG28AAV1
	637mm	EKOMBG33AAV1
H=	590mm	EKOMBG22AAV1
	650mm	EKOMBG28AAV1
	710mm	EKOMBG33AAV1
Z =	Flue gas outlet/air inlet	Ø60/100 (concentric)

Unit connected to B-pack:



Unit + B-pack

A =	Supply CH	G ¾" (ext)
B =	Return CH	G ¾" (ext)
C =	Gas	G ½" (int)
D =	Tap water cold	R ½"
E =	Tap water warm	R ½"
F =	Condense outlet	Ø dn25 (flexible)
H=	770mm	EKOMBG22AAV1
	830mm	EKOMBG28AAV1
	890mm	EKOMBG33AAV1
Z =	Flue gas outlet/air inlet	Ø60/100 (concentric)

4.2 Installation space

The unit must be installed against a wall with sufficient load bearing capacity.

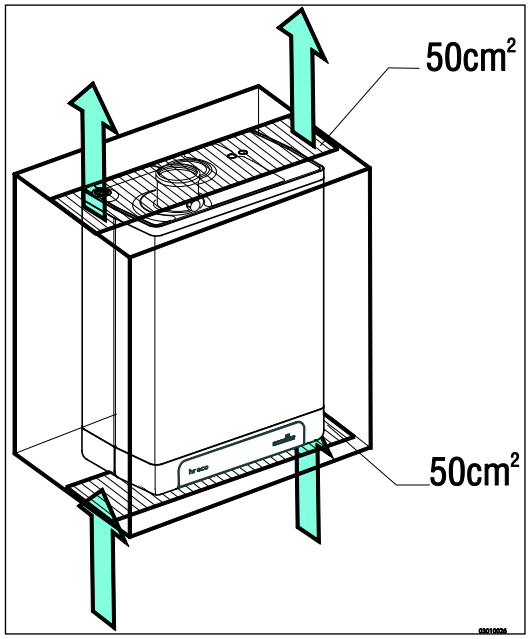
In case of light wall constructions, there is a risk of resonance noises.

Within 1 meter of the unit, there must be a earthed wall plug.

In order to prevent the condense outlet from freezing, the unit must be installed in a frost-free room. Preferably ensure there is a space of at least 2 cm next to the boiler. No free space is required due to danger of singeing.

IMPORTANT

The unit must not be installed in a space where work is carried out with aggressive or corrosive gases such as hairspray.



4.2.1 Installing in kitchen cabinet

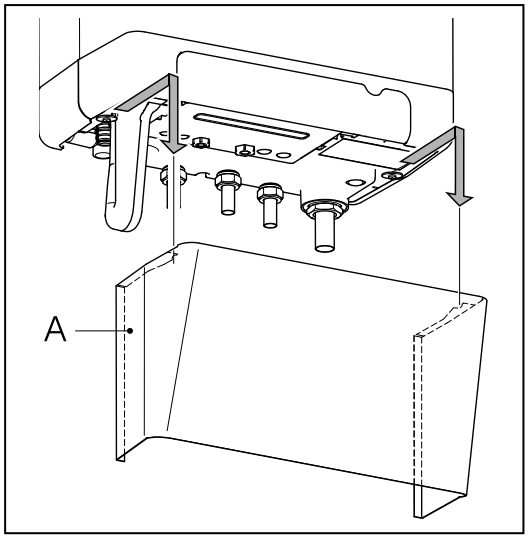
The unit can be placed between two kitchen cabinets, or inside a kitchen cabinet.

Make sure there is sufficient ventilation at the bottom and the top.
If the unit is installed inside a cabinet, ventilation openings of at least 50 cm^2 are required.

4.2.2 Removing cover plate and front panel

For various activities on the unit, the cover plate and front panel have to be removed from the unit, if they were installed. Do this as follows:

- If you are using the cover plate (A), remove it to the front.
- Unscrew both screws (1) behind the display window.
- Pull the bottom of the front panel (2) forwards.

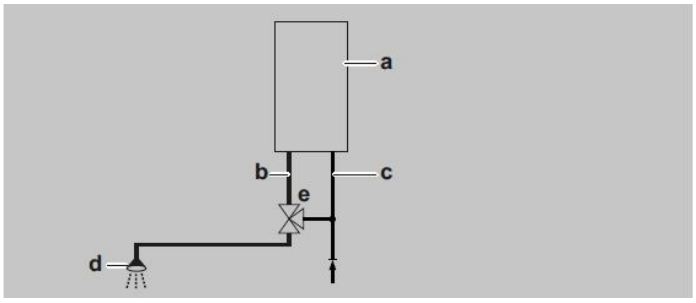


Danger: risk of burning

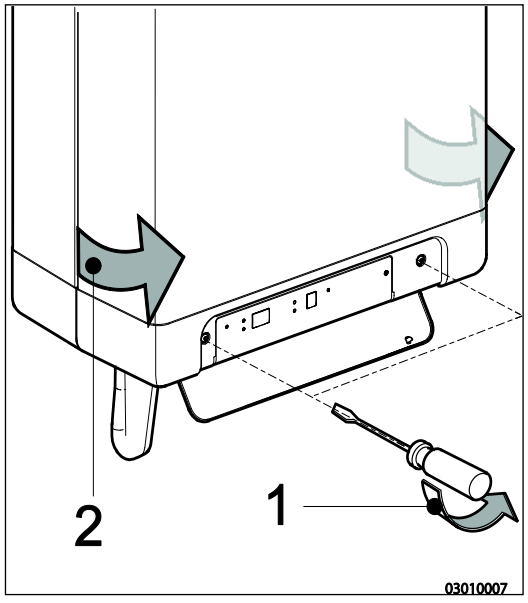
In case of high leaving water set ponts for space heating (eighter a high fixed set point or a high weather-dependent set point at low ambient temperatures), the heat exchanger of the boiler can be very hot, for example 70°C.

Beware that in case of a tapping demand, the water can initially have a higher water temperature than requested.

In this case, it is recommended to install a thermostatic valve to prevent scalding. This can be done according to the schematics below.



a=boiler, b=DHW from boiler, c= cold water inlet,
d=shower, e=thermostatic valve (field supply)



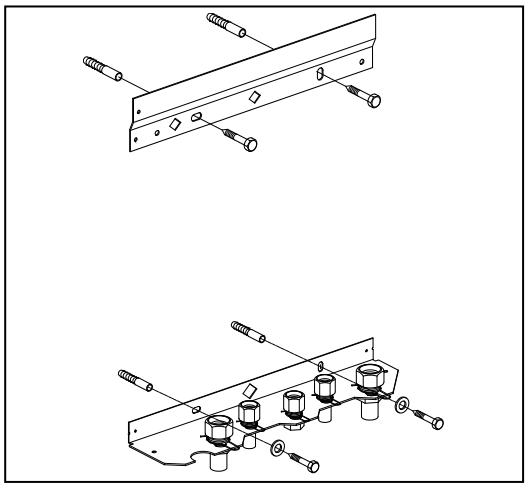
4.3 Assembly

The boiler can be hung to the wall using :

- the wall suspension strip and a the connection kit EKVK4AA
- a B-pack including an expension vessel and a connection kit.

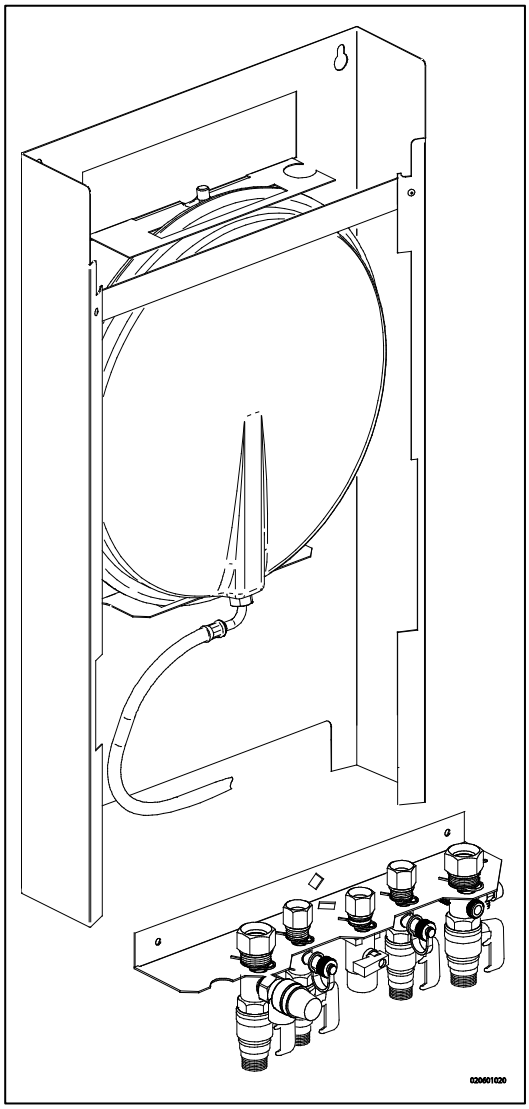
4.3.1 Assembling suspension strip and assembly bracket

- Make sure the construction of the wall is suitable for hanging the boiler.
- Drill the holes for the suspension strip and the connection kit in the wall using the template delivered with the boiler.
- Mount the suspension strip and the assembly bracket horizontally on the wall, using the associated attachment materials.
- Place the filling loop on the connections of the return and cold water nipple following the connection kit installation instruction
- The boiler can now be placed on the suspension strip simultaniously sliding the pipes of the boiler into the valves in the assembly bracket.



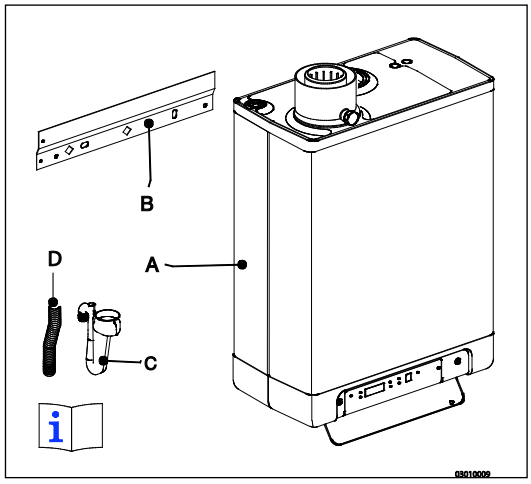
4.3.2 Assembling bottom connection set

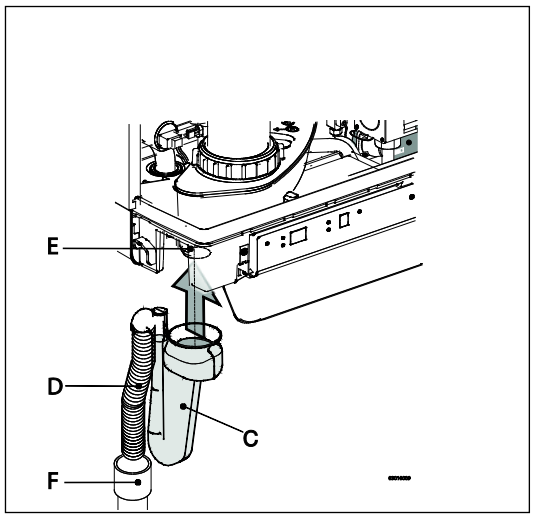
- Make sure the construction of the wall is suitable for hanging the boiler and B-pack.
- Drill the holes for the B-pack kit in the wall using the template delivered with the boiler.
- Mount the B-pack on the wall using the associated attachment materials.
- Place the assembly bracket in the frame as described in the manual inclued in the B-pack.
- Connect the flexible hose on the expension vessel and the conenction on the return valve. Make sure the seal rings are placed !
- Place the filling loop on the connections of the return and cold water nipple following the connection kit installation instruction
- The boiler can now be placed on B-pack simultaniously sliding the pipes of the boiler into the valves in the assembly bracket



4.3.3 Assembling the unit

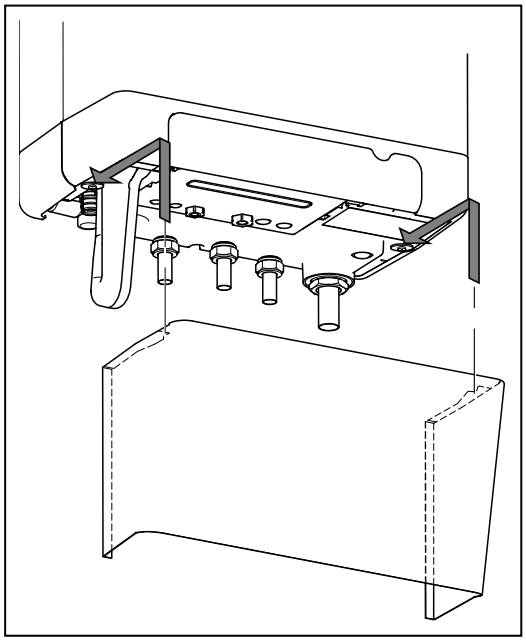
1. Unpack the unit.
2. Check the content of the packaging, which consists of:
   - Unit (A)
   - Suspension strip (B)
   - Siphon (C)
   - Flexible tube (D)
   - Installation instructions
   - Operating instructions
   - Warranty card
3. Check the unit for any damage: immediately report damages to the supplier.
4. Install the suspension strip.
5. Check whether the compression rings are positioned straight in the couplings of the assembly bracket.
6. Position the unit: slide it from top to bottom over the suspension strip (B). Make sure the pipes slide into the compression fittings simultaneously.
7. Tighten the compression fittings onto the assembly bracket.
   The nipples and pipes must not rotate with it!
8. Open the display valve and loosen the two screws on the left and right of the display, and remove the front panel.
9. Assemble the flexible tube (D) onto the outlet of the siphon.
10. Fill the siphon with water, and slide it as far as possible on top of the condense output connector (E) under the unit.
11. Seal flexible tube (D) of the siphon, if possible together with the overflow pipe of the inlet combination and the overflow valve, to the sewage via open connection (F).
12. Assemble the air supply and the burning gas outlet (see par. 5.6).
13. Assemble the cover and tighten the two screws to the left and the right of the display, and close the display cover.





4.3.4 Apply cover plate (optional)

Suspend the converted top edge of the cover plate from the washers underneath the bottom of the unit, and slide the cover plate as far back as possible.

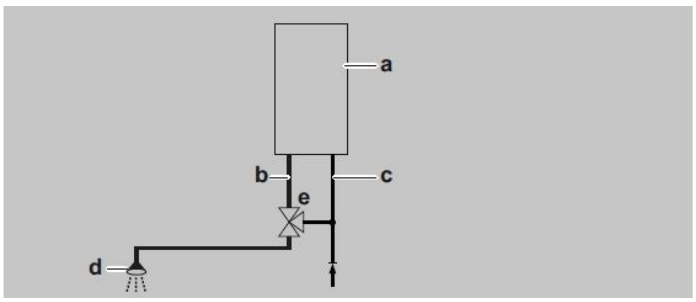


Danger: risk of burning

In case of high leaving water set ponts for space heating (eighter a high fixed set point or a high weather-dependent set point at low ambient temperatures), the heat exchanger of the boiler can be very hot, for example 70°C.

Beware that in case of a tapping demand, the water can initially have a higher water temperature than requested.

In this case, it is recommended to install a thermostatic valve to prevent scalding. This can be done according to the schematics below.

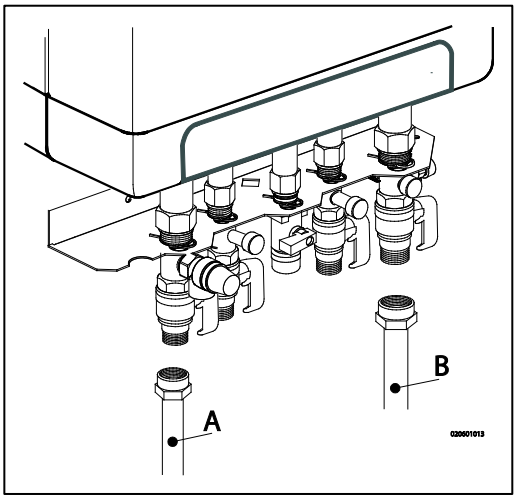


a=boiler, b=DHW from boiler, c= cold water inlet,
d=shower, e=thermostatic valve (field supply)

5 CONNECTING

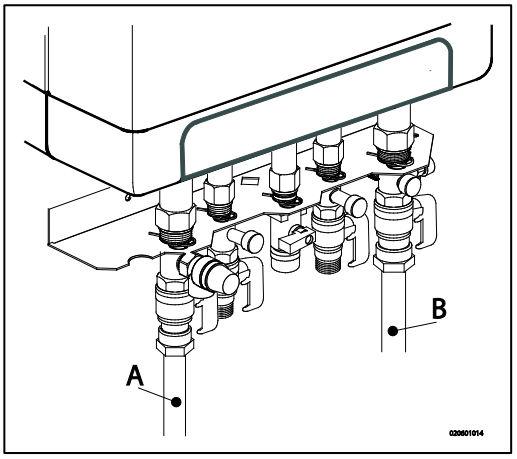
5.1 Connecting CH installation

1. Rinse the CH installation carefully.
2. Fit the supply pipe (A) and return pipe (B) to the connection set.
3. All pipes must be assembled with no electrical current, in order to prevent shocks from the pipes.
4. Existing connections may not be rotated, in order to prevent leakages.



The CH installation must be fitted with:

- A filling/draining tap (A) in the return pipe, immediately underneath the unit.
- A draining tap at the lowest point of the installation.
- An overflow valve (B) of 3 bar in the input pipe at a distance of no more than 500 mm from the unit.
  Between the unit and the overflow valve there may be no valve or constriction.
- An expansion vessel in the return pipe (in the B-pack or in the installation).
- A check valve, if there are pipes running up, within close distance of the unit. This prevents a thermosiphon effect from occurring during tap water operation (a non spring-operated return valve, must be assembled vertically).



5.1.1 Thermostatic radiator taps

If all radiators are fitted with thermostatic or cable radiator taps, a minimum water circulation must be safeguarded. See par. 7.3.

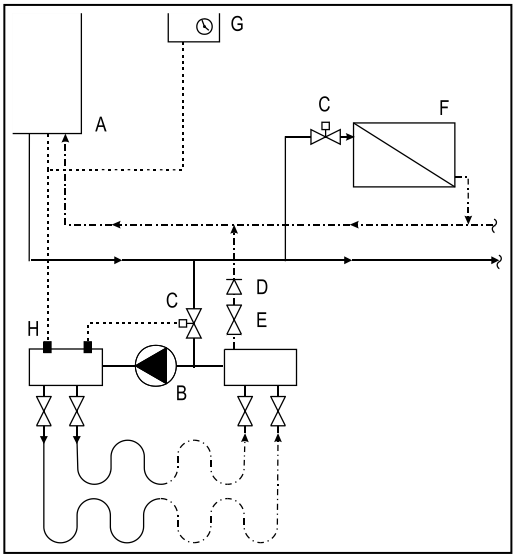
5.1.2 Underfloor heating

Underfloor heating with pump

If an underfloor heating system is not hydraulically neutral, the underfloor heating pump may generate unwanted circulation over the CH boiler. For a good functioning of the domestic hot water provision, unwanted circulation over the CH boiler must be prevented.

Connect an underfloor heating system indirectly hydraulically neutrally or provide the CH installation with a two-way valve set 230 V ~ (E). If the underfloor heating pump absorbs heat via the return of the boiler, unwanted circulation can be prevented by means of a check valve (D).

Make sure there is a minimal water circulation. See par. 7.3.



Connection diagram underfloor heating

A. CH boiler
B. CH pump
C. Thermostatic control valve
D. Spring-operated check valve
E. Electrical valve 230 V ~
F. Radiators
G. Space/clock thermostat
H. Maximum thermostat

Underfloor heating without pump

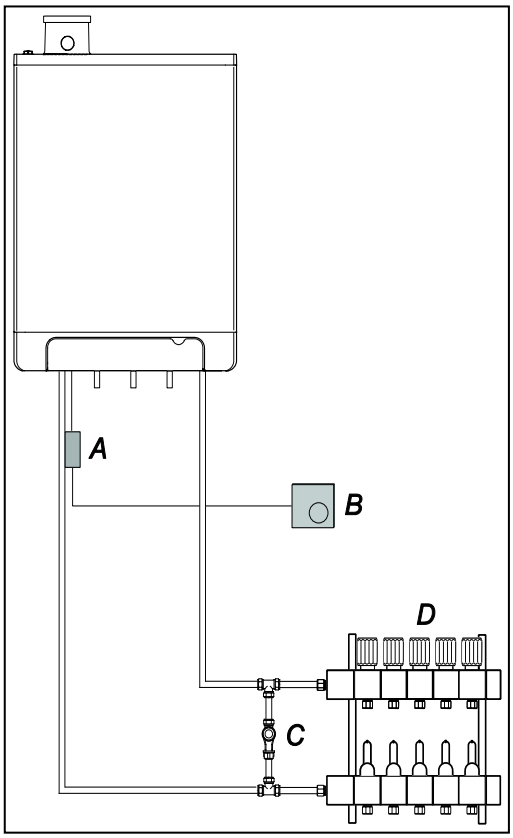
Connect the underfloor heating system (D) and set the maximum CH supply temperature of the CH boiler to the design condition. Fit a clamp thermostat (A) onto the supply tube underneath the CH boiler. The clamp thermostat with blind cap must be set to a maximum supply temperature of 55°C.

Fit the on/off room thermostat (B) and connect in a series with the clamp thermostat. The boiler must be connected to X4 - 6/7.

In this situation, the pump in the boiler is used to bridge the loss of pressure of the underfloor heating system. Using the loss of pressure graph par. 7.4, the maximum loss of pressure of the underfloor heating system can be determined.

Make sure there is a minimal water circulation. See par. 7.3.

In case of an underfloor heating system without pump, we recommend changing the following parameter settings:
par. o from 0 to 3.
par. P from 5 to 2.
Parameter 3 must also be set to its minimum level, or the
Transmission loss of the property, see par. 7.3.

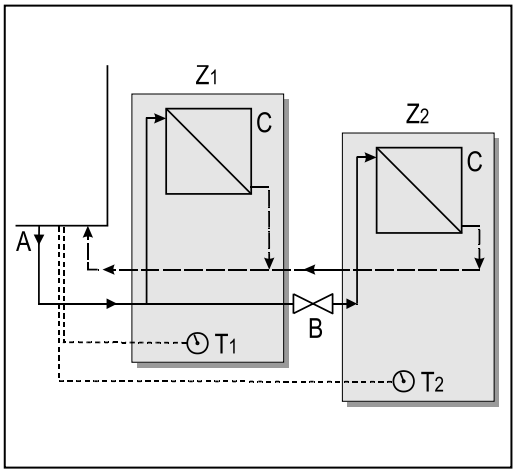


5.1.3 Dividing CH installation in groups in case of additional heat sources

Operating principle

If the room thermostat switches off the boiler because another heat source, the other rooms may cool down.
This can be resolved by splitting the CH installation into two groups. The group with the external heat source (Z2) can be shut off from the main circuit by means of an electrical shut-off valve. Both groups are fitted with their own room thermostat.

Please note: This "external heat source" regulation may only be applied if no extra external boiler has to be heated up (installation type 1).



Installation instructions

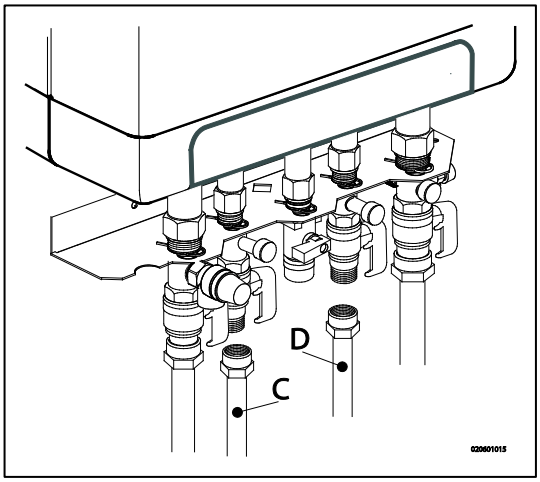
1. Install the valve in accordance with the connection diagram.
2. Connect the room thermostat of group 1 to op X4 – 6/7.
3. Connect the room thermostat of group 2 to op X4 – 11/12.
4. Change parameter A (see Parameter settings via the service code par. 7.2).

Please note: The room thermostat in group 1 MUST be an on/off thermostat. The room thermostat in group 2 may be an OpenTherm thermostat or an on/off thermostat.

Connection diagram "external heat source" regulation
A. CH boiler
B. Electrical shut-off valve 230 V ~
C. Radiators
T1. Room thermostat group 1
T2. Room thermostat group 2
Z1. Group 1
Z2. Group 2

5.2 Connecting DHW installation

1. Rinse the installation carefully.
2. If required, assemble an inlet combination.
3. Assemble the cold (D) and warm water pipe (D) to the connection set.



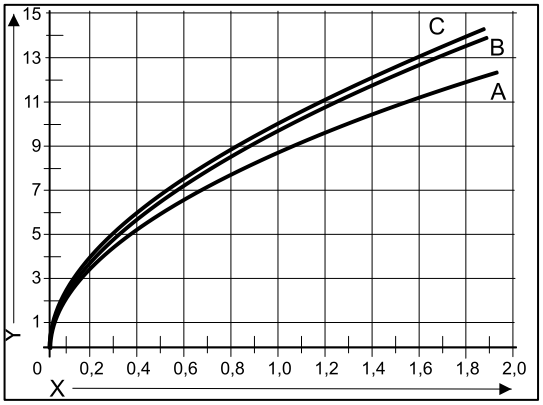
Comments

- If the unit is only used for warm water supply, the heating function can be switched off using the service code on the operating panel. The CH installation does not need to be connected or filled.
- If the unit is switched off during winter, and is disconnected from the electricity supply, the sanitary water must be drained in order to prevent freezing. To do so, disconnect the tap water connections straight underneath the unit.

In case of old installations or domestic hot water circuits which can contain small particles, install a filter in the domestic hot water circuit.
This pollution could cause a fault during domestic hot water operation.

Resistance graph tap circuit unit

A. EKOMBG22AAV1
B. EKOMBG28AAV1
C. EKOMBG33AAV1
X. Water pipe pressure (Bar)
Y. Flow rate (L/min, tolerance ± 10%)



5.3 Connecting electronically

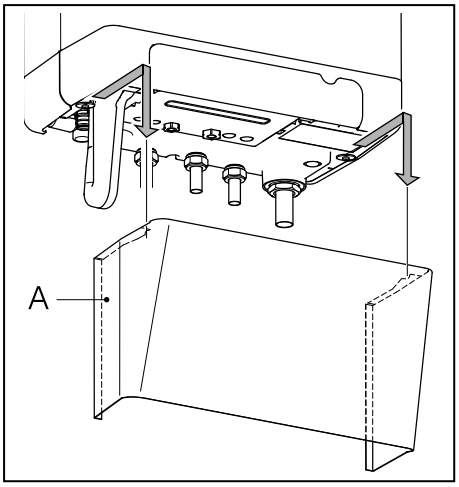
CAUTION

A socket with safety ground must be no further than 1 meter from the unit.

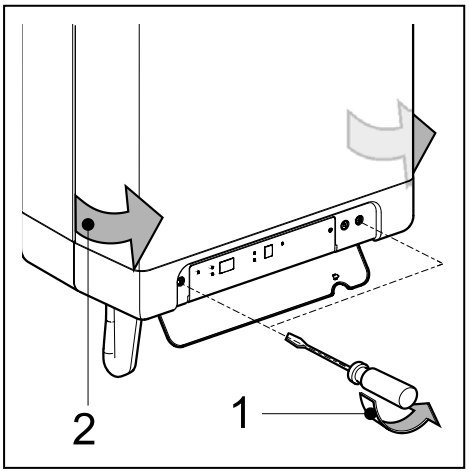
The socket must be easily accessible.

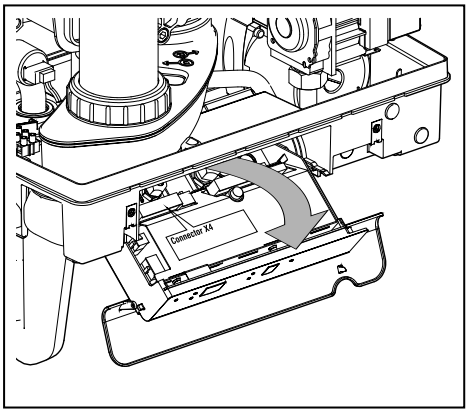
When installing the unit in a damp space, a fixed connection is obligatory, by means of an all-pole main switch with a minimum contact gap of 3 mm.

If the mains cable is damaged or requires replacement for any other reason, the replacement mains cable must be ordered from the manufacturer or its representative. In case of any doubt, contact the manufacturer or its representative.



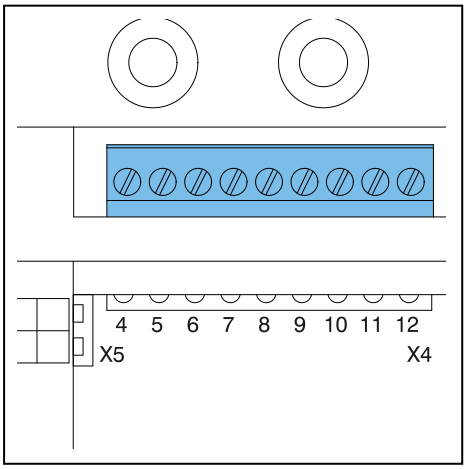
1. Remove the plug from the socket, when working on the electrical circuit.
2. If there is a cover plate (A), remove it to the front.
3. Unscrew both screws (1) behind the display window.
4. Slide the bottom of the front panel (2) forwards, and remove it.
5. Pull the boiler controller forward. The boiler controllery unit will tip downwards in the process.
6. Consult par. 10.1 to make the connections.
7. After the required connections have been made, slide the boiler controller back into the unit and return the cover plate, if you are using one.
8. After making the required connections, connect the unit to the socket with safety ground.





5.3.1 Electrical connections

Temperature regulation	Connector X4	Comments
Room thermostat on/off	6 - 7	-
Modulating thermostat with comfort function in use	11 - 12	
Outdoor temperature sensor	8 - 9	-
Frost thermostat	6 - 7	Parallel over room thermostat

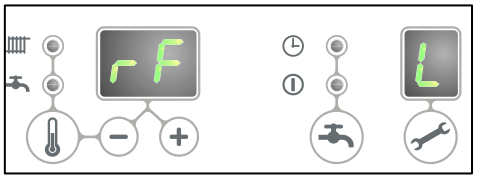


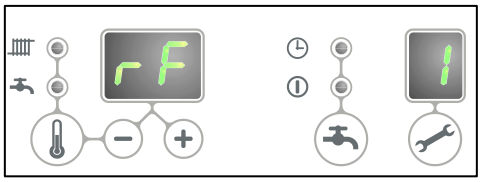
5.4 Connect room thermostat

5.4.1 Room thermostat on/off

1. Connect the room thermostat (see par. 10.1).
2. If necessary, set the feedback resistance of the room thermostat to 0.1 A. If unsure, measure the electrical current and set it accordingly.
   The maximum resistance of the thermostat pipe and the room thermostat amounts to a total of 15 Ohm.

5.4.2 Modulating room thermostat, Open Therm





The unit is suitable for connecting a modulating room thermostat, in accordance with the OpenTherm communication protocol.

The most important function of the modulating room thermostat is to calculate the input temperature at a required room temperature, in order to make optimal use of the modulating. At every heating request, the required input temperature is shown on the display of the unit.

Connect the modulating thermostat (see par. 10.1).

If you want to use the tap water on/off switch function of the OpenTherm thermostat, the tap water comfort function must be set to eco or on.

For more information, consult the manual of the room thermostat.

5.4.3 Modulating room thermostat, wireless

The EKOMBG*AAV1 CH boiler is suitable to communicate wireless without sending/receiving module with the Honeywell room thermostats T87RF1003 Round RF, DTS92 and CMS927. The CH boiler and the room thermostat must be appointed to each other:

- Press the reset button of the unit for approximately 5 seconds to access the RF room thermostat menu.
- One of the following codes will be shown on the display of the unit:
  1. rF and L / - : the display above the button shows an L alternated by a –
     red led : flashing
     The CH boiler has not been appointed. A unit in this operating status, can be linked by using the method of the appropriate room thermostat.
     The method of appointment depends on the type of room thermostat and is described in the installation and operating instructions of the wireless room thermostat.

  2. rF and L / 1 : the display above button shows an L alternated by a 1
     red led : off
     The CH boiler has already been appointed. There is already an existing link with an RF room thermostat. In order to allow a new link to be made, the existing link will have to be removed.
     See: *Undo the appointment of an RF room thermostat to the CH boiler.*

- Press the reset button to leave the RF room thermostat menu or wait for 1 minute.

Testing the connection between the unit and the RF room thermostat

1. Press the reset button of the unit for approximately 5 seconds to access the RF room thermostat menu of the boiler controller.
2. Press the service button 1x. On the display above the button, a t will be shown.
3. Set the room thermostat to the test mode (see the installation and operating instructions of the room thermostat).
4. The red led above the reset button will flash if the appointment has been carried out correctly.
5. Press the reset button of the unit to leave the RF room thermostat menu of the boiler controller. You will automatically exit the test mode 1 minute after the last test message of the RF room thermostat has been received.

Undo the appointment of an RF room thermostat to the CH boiler.

- Press the reset button of the unit for approximately 5 seconds to access the RF room thermostat menu of the CH boiler.
- Press the service button 2x. On the display above the button, a C will be shown.

- Press the reset button of the unit again to remove the existing appointments. The display of the unit will show **rF** again, with a flashing L / - . If required, an RF room thermostat can be appointed to the unit again.
- Press the reset button of the unit to leave the RF room thermostat menu or wait for 1 minute.

5.4.4 Outdoor temperature sensor

The unit is provided with a connection for an outdoor temperature sensor. The outdoor temperature sensor should be used in combination with an on/off room thermostat.

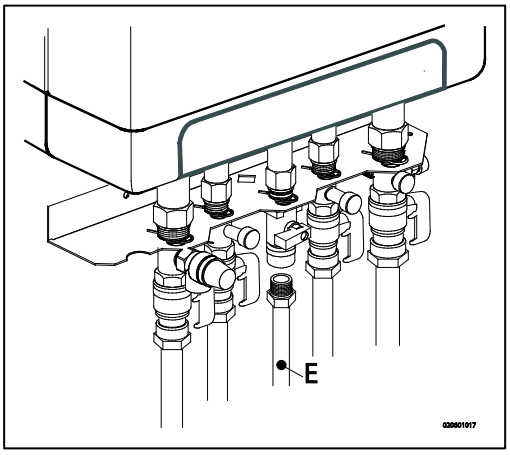
In principle, any on/off room thermostat can be combined with an outdoor sensor. Upon request of the room thermostat, the boiler will provide heat until the maximum set temperature in the boiler has been reached. This maximum set temperature is automatically regulated via the outdoor sensor, in accordance with the set fuel line in the boiler.

Connect the room outdoor sensor (see par. 10.1).

For the fuel line setting, see the weather dependent regulation (see par. 7.5).

5.5 Connecting gas

1. Fit the gas valve directly on the 1/2" gas connection of the connection set using appropriate seal
2. .Place a gas sieve in the connection for the unit if the gas may be contaminated.
3. Connect the gas pipe in the gas valve using appropriate seal..
4. Check the gas carrying parts for leakages at a pressure of up to 50 mbar.
5. The gas pipe should be fitted pressure free.



5.6 Flue gas output and air input

For the installation of the flue gas output and air input material, we refer to the enclosed basic manual, or contact the manufacturer of the appropriate flue gas output and air input equipment for extensive technical information and specific assembly instructions.

Make sure that the spigot and socket joint of the flue gas output and air input materials seal effectively and will not come loose. Not properly attaching the flue gas output and the air input can lead to dangerous situations or physical injury. Check all parts which transport flue gas or air for air tightness.

5.6.1 Concentric connection 60/100

The boiler is fitted with a flue gas adapter suitable for connecting to a concentric flue gas extractor system with a diameter of 60/100.

Fit the concentric pipe for the air supply and burning gas extraction in the adapter. The built in gaskets ensure there is an air tight seal.

5.6.2 Concentric connection 80/125

If required, the flue gas adapter 60/100 can be replaced by a version for a flue gas extractor system with a 80/125 diameter.

1. Carefully follow the instruction as provided with the adapter set 80/125.
2. Fit the concentric pipe for the air supply and burning gas extraction in the adapter. The built in gaskets ensure there is an air tight seal.

5.6.3 Parallel connection 80/80

If required, the flue gas adapter 60/100 can be replaced by a version for a parallel flue gas extraction system (2 pipes) with a 80 mm diameter.

1. Carefully follow the instruction as provided with the adapter set 80.
2. Fit the pipes for the air supply and burn gas extraction in the input and output of the unit. The built in gaskets ensure there is an air tight seal.

5.6.4 Materials to be used:

Unit category	Materials	Supplier/Test standard
C13	Feedthrough	Daikin
	Other parts	Gastec QA or Daikin
C33	Feedthrough	Daikin
	Feedthrough at the Prefab chimney	Gastec QA, Daikin or third parties
	Other parts	In accordance to applicable national or local legislation
C43	All materials	Gastec QA or Daikin
	At the CLV system	Gastec QA
C53	Inlet roster	Daikin
	Other parts and exhaust hood	Gastec QA or Daikin
C63	All materials and feedthrough	Gastec QA
	Main channel	Gastec QA
	Other parts	Gastec QA
C83	Inlet roster	Daikin
C93	All materials	Gastec QA or Daikin

5.7 Outlet systems

Please note that not all flue gas configurations described below are permitted in all countries. Therefore observe local regulations prior to installation.

5.7.1 Pipe lengths

As the resistance of the flue tube and air supply pipes increases, the power of the unit will decrease. The maximum permitted power reduction is 5%.

The resistance of the air supply and the combustible gas outlet depends on the length, diameter and all components of the pipe system. Per unit category, the total permitted pipe length has been indicated for the air supply and the combustible gas outlet.

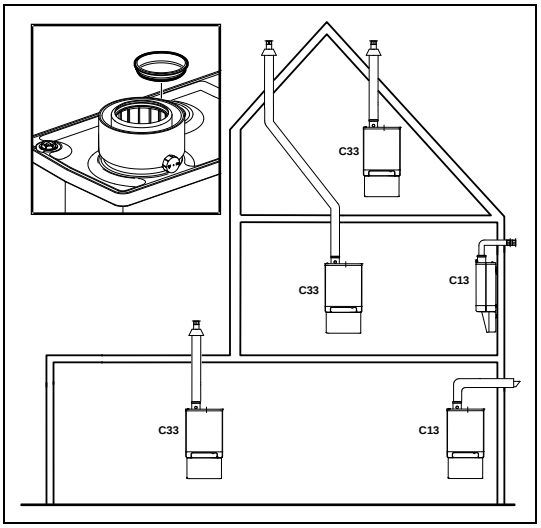
5.7.2 Permitted pipe lengths in concentric flue tube systems

Permitted pipe lengths when applying concentric 60/100

	C13	C33
EKOMBG22AAV1	10 m	11 m
EKOMBG28AAV1	10 m	10 m
EKOMBG33AAV1	10 m	10 m

Permitted pipe lengths when applying concentric 80/125

	C13	C33	C93
EKOMBG22AAV1	29 m	29 m	See par. 5.7.13
EKOMBG28AAV1	29 m	29 m	See par. 5.7.13
EKOMBG33AAV1	29 m	29 m	See par. 5.7.13



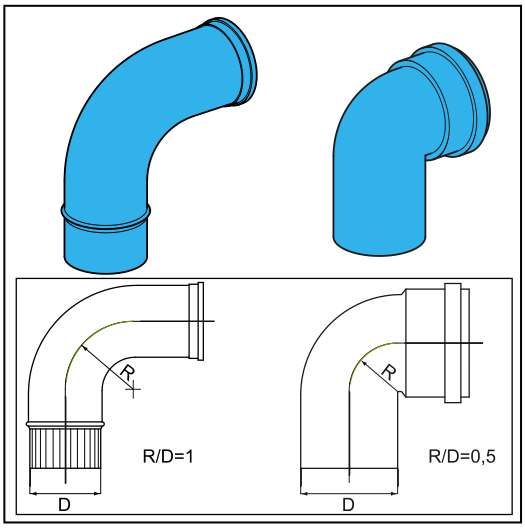
Replacement lengths

Bend 90°	R/D=1	2 m
Bend 45°	R/D=1	1 m
Knee 90°	R/D=0.5	4 m
Knee 45°	R/D=0.5	2 m

General assembly:

For all outlets, the following assembly applies:

1. Slide the concentric combustion gas outlet pipe and air supply pipe.
2. Slide the concentric pipes into each other.
   From the unit, every pipe has to be slid into the previous one.
3. Mount a non-vertical combustion gas outlet pipe on a slope towards the unit (min. 5mm/m).
4. Fit the assembly brackets in accordance with the assembly instructions of the supplier of the air supply/flue tube system.

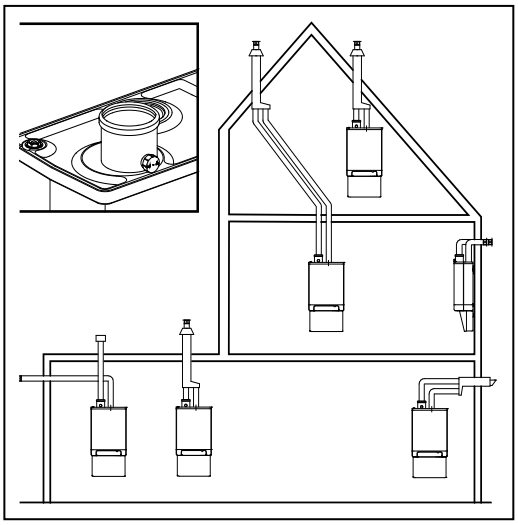


5.7.3 Permitted pipe lengths at parallel air supply and flue tube systems

Permitted pipe lengths when applying Ø80 mm.

	C13	C33 (*)	C43	C53	C83
EKOMBG22AAV1	100 m	100 m	100 m	100 m	100 m
EKOMBG28AAV1	85 m	85 m	85 m	85 m	85 m
EKOMBG33AAV1	80 m	80 m	80 m	80 m	80 m

(*) Under certain conditions, a greater total length is possible.
Also see par. 5.7.9



In case of greater or smaller pipe diameters, the permissible pipe length is greater or smaller respectively. In case of smaller diameters, the following applies:

Ø70: 0.59x the permitted pipe length for Ø80

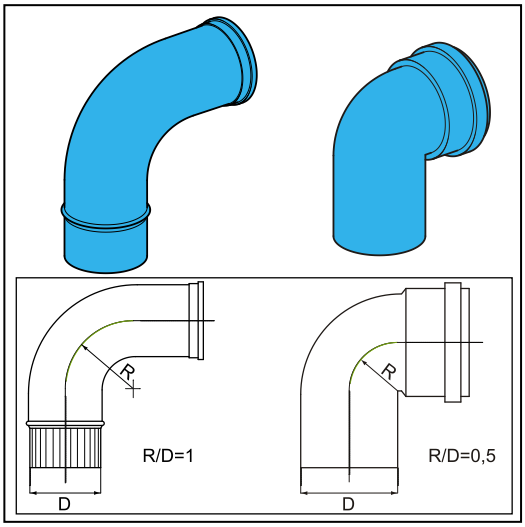
Ø60: 0.32x the permitted pipe length for Ø80

Ø50: 0.15x the permitted pipe length for Ø80

Contact the manufacturer for test calculations for the resistance of the air supply and combustible gas outlet pipe and the wall temperature at the end of the combustible gas outlet pipe.

Replacement lengths

Bend 90°	R/D=1	2 m
Bend 45°	R/D=1	1 m
Knee 90°	R/D=0.5	4 m
Knee 45°	R/D=0.5	2 m



Calculation example

Pipe	Pipe lengths	Pipe length total
Flue gas outlet	L1 + L2 + L3 + 2x2 m	13 m
Air supply	L4 + L5 + L6 + 2x2m	12 m

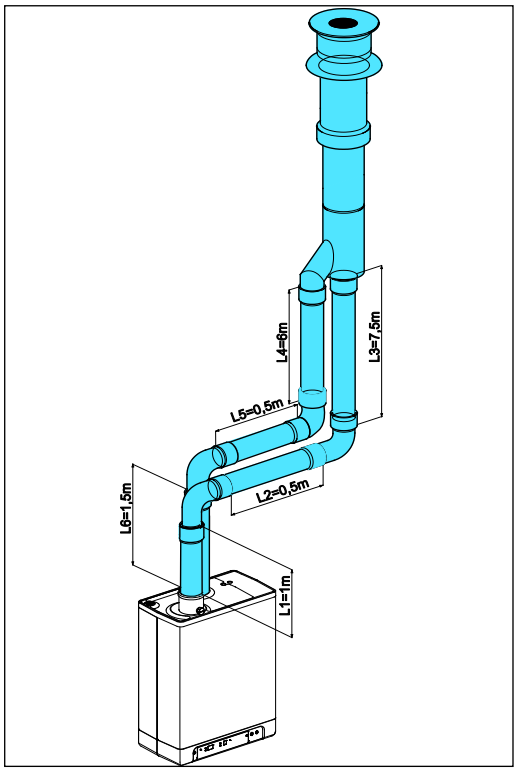
Note:

The total pipe length is: sum of the straight pipe lengths + sum of the replacement pipe lengths of bends/knees amounts to a total of 25 meters. If this value is less than the maximum permitted pipe length, the flue gas outlet meets the requirements on this point.

5.7.4 Passage, materials and insulation

		supplier per country	
		PT	GR
C13	all materials	Daikin	
C33	all materials	Daikin	
C53	all materials	Daikin	
C43	all materials	Daikin	
C63	all materials	1	1
C83	all materials	Daikin	
C93	all materials	Daikin	

(1) Gas exhaust/air intake parts can be bought from a 3rd party.
All parts purchased from an external supplier MUST comply with EN14471.



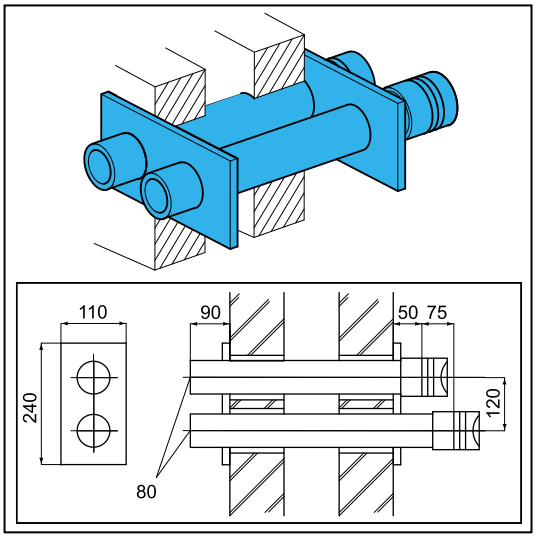
5.7.5 General assembly:

For all outlets, the following assembly applies:

1. Slide the combustible gas outlet pipe into the air outlet of the unit.
2. Slide the combustible gas outlet pipes into each other.
   From the unit, every pipe has to be slid into the previous one.
3. Mount a non-vertical combustible gas outlet pipe on a slope towards the unit (min. 5mm/m).

For all air supply pipes, the following assembly applies:

1. Slide the air supply pipe into the input of the unit.
2. Mount a non-vertical air supply pipe on a slope outward (min. 5mm/m).
3. Place one or more assembly brackets at no more than 1 meter apart.
4. Place an assembly bracket on both sides of each bend.
5. If necessary, apply insulation.
   Fit the assembly brackets to the flue gas outlet tube and air supply tube in accordance with the assembly instructions of the supplier of the air supply/flue tube system.



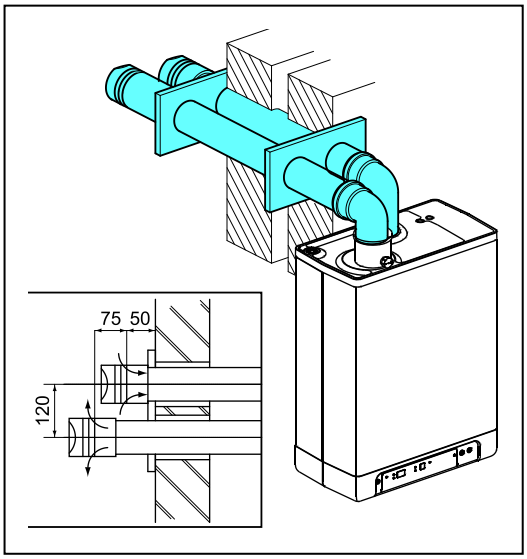
5.7.6 Horizontal facade outlet double pipe feedthrough

Unit category: C13

CAUTION

Pipes for the connection of the air supply and the combustion gas outlet between the unit and the double pipe feedthrough must have a diameter of Ø 80 mm.

- Horizontal double pipe feedthrough
  Extendable, for a balcony gallery output, by one or two standard pipes (Ø80 mm).



Permissible pipe length

Air supply and combustible gas outlet pipe including length of the double pipe feedthrough.

EKOMBG22AAV1	100 m
EKOMBG28AAV1	85 m
EKOMBG33AAV1	80 m

Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.

Double pipe feedthrough assembly

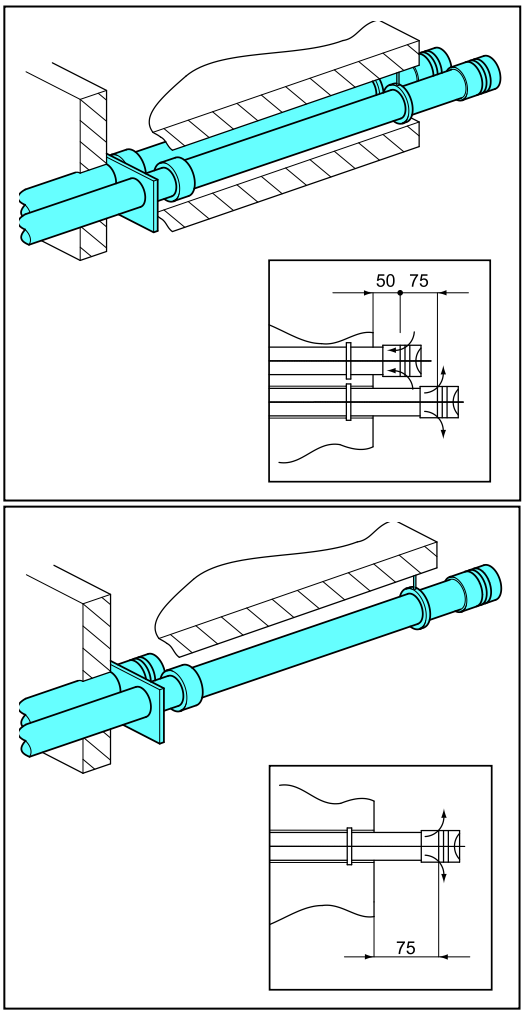
1. Create two grooves of Ø90 mm at the location of the output.
2. Shorten the double pipe feedthrough to the correct length.
3. Slide the input and output pipe into the grooves.
4. Cover the grooves with wall plates.
5. Fit the exhaust rosters onto the input and output pipe.
6. Attach these to the pipes.
7. Fit the double pipe feedthrough whereby the air supply is sloped outwards and the flue gas output is sloped towards the unit.

Assembly of double pipe extension pipe(s) for balcony gallery output

If free output is hindered by a roof overhang, balcony, gallery etc., the air supply pipe and combustible gas outlet pipe have to be extended up to at least the front of the overhanging part.

If the air supply cannot be disrupted by obstacles, such as a console or divider wall and if the output is not on the edge of a building, the air supply pipe need not be extended.

1. Extend the combustion gas outlet pipe, and possibly also the air supply pipe, of the double pipe feedthrough with a standard combustion gas outlet and air supply pipe at the correct length in accordance with the stated measurements.
2. Slide the combustion gas outlet and possibly also the air supply pipe into the output and input pipe of the double pipe feedthrough.
3. Fit the combustion gas outlet pipe and air supply pipe on a slope towards the unit.
4. Fit the exhaust rosters on both pipes.



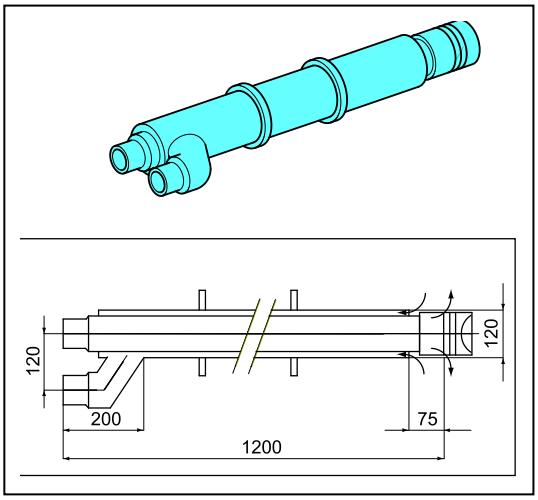
5.7.7 Horizontal wall terminal

Unit category: C13

CAUTION

Pipes for the connection of the air supply and the combustion gas outlet between the unit and the double pipe feedthrough must have a diameter of Ø80 mm.

When installing a concentric flue tube system, it must have a diameter of 80/125 mm.

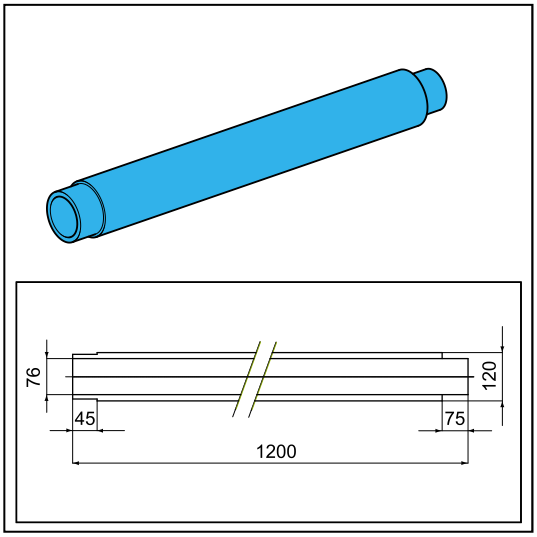


- Horizontal combi feedthrough
  For horizontal facade or roof outlet
- Combi extension pipe.
  For extension of a balcony/gallery output.

Permitted pipe lengths

For parallel: Air supply and combustion gas outlet together, excluding the length of the combi feedthrough.

For concentric: total pipe length, excluding the length of the combi feedthrough.



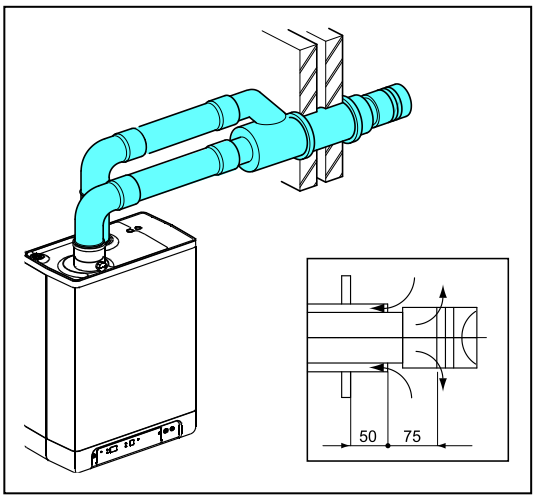
	Parallel	Concentric 60/100	Concentric 80/125
EKOMBG22AAV1	100 m	10 m	29 m
EKOMBG28AAV1	85 m	10 m	29 m
EKOMBG33AAV1	80 m	10 m	29 m

Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.

Concentric feedthrough assembly

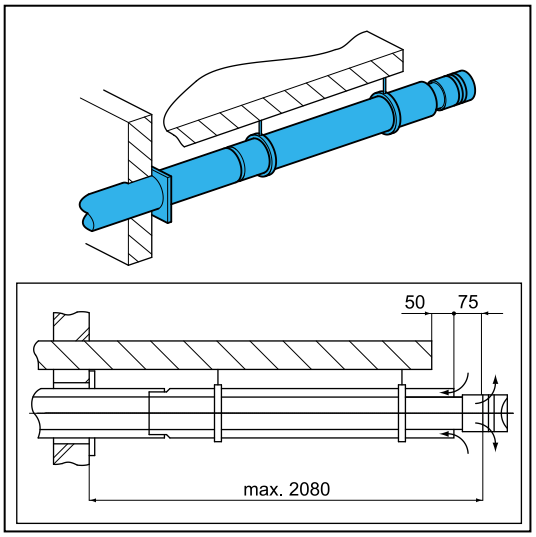
1. Create a groove at the place of the outlet.
2. Shorten the concentric combi feedthrough to the correct length.
3. Slide the wall feedthrough into the grooves and turn it into such a position that the flue tube pipe ends up in the highest position.
4. Cover the grooves with wall plates.
5. Fit the combi feedthrough to the boiler directly or via an extension pipe.



Assembly of combi extension pipe for balcony/gallery outlet

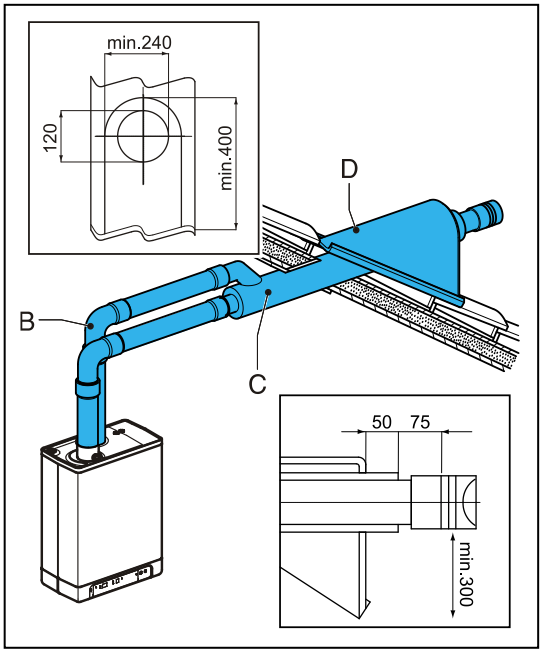
If free output is hindered by a roof overhang, balcony, gallery etc., the combi feedthrough pipe must be extended up to at least the front of the overhanging part.

1. Fit the combi extension pipe onto the combi feedthrough.
2. Shorten the combi feedthrough or the combi extension pipe to the correct length in accordance with the measurements provided.
3. Fit the exhaust roster and attach it to the inner pipe.
4. Fit the combi feedthrough and combi extension pipe on a slope towards the unit.



Assembly horizontal roof terminal

1. The outlet can be made on any place on the roof surface.
2. Fit a horizontal feedthrough roof panel (D) (suitable for a ø 120 mm pipe) at the location of the outlet.
3. Fit the exhaust roster onto the combi feedthrough and attach it to the inner pipe.
4. Slide the combi feedthrough (C) from inside to outside through the horizontal roof feedthrough panel, in accordance with the given measurements.
5. Fit the combi feedthrough (C) on a slope towards the unit.



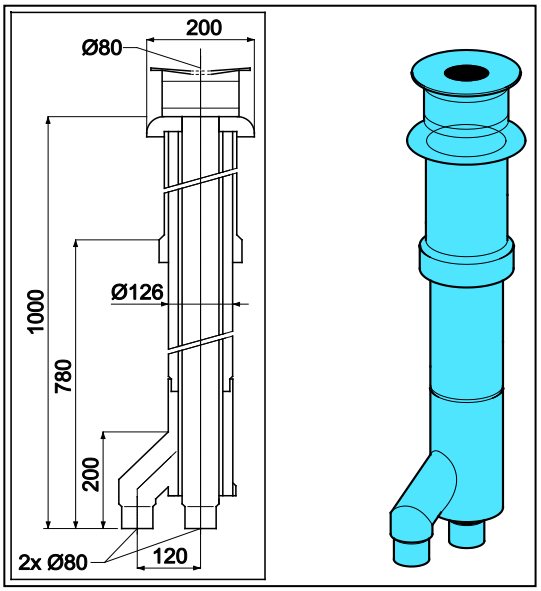
5.7.8 Vertical roof terminal and vertical double flue system

Unit category: C33

CAUTION

If the combi feedthrough vertical cannot be applied, the air supply and combustion gas outlet must be carried out separately.

- Combi feedthrough vertical.



Permitted pipe length

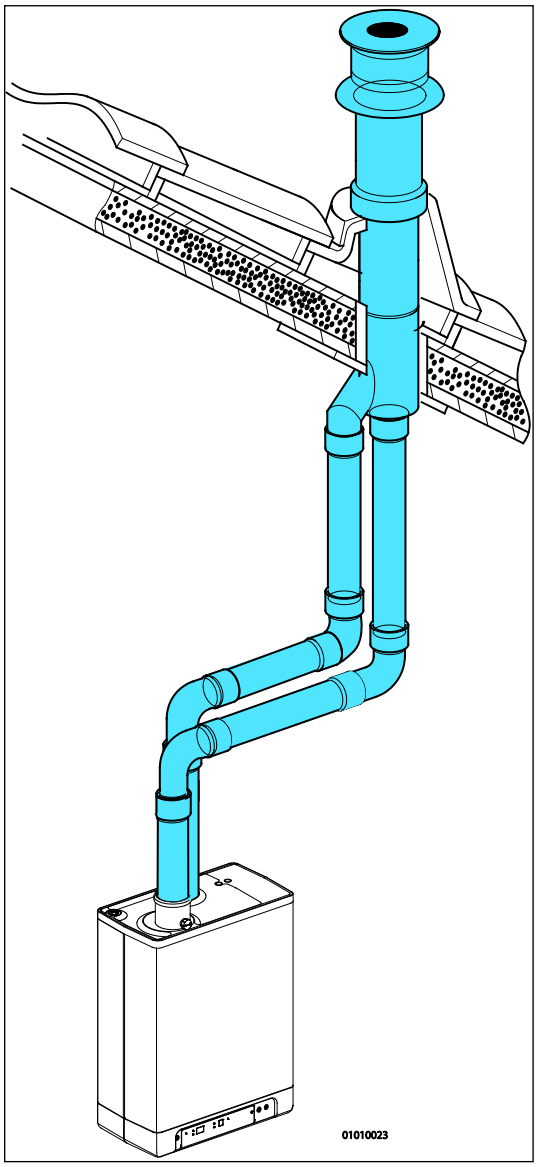
For parallel: Air supply and combustion gas outlet together, excluding the length of the combi feedthrough.

For concentric: total pipe length, excluding the length of the combi feedthrough.

	Parallel	Concentric 60/100	Concentric 80/125
EKOMBG22AAV1	100 m	11 m	29 m
EKOMBG28AAV1	85 m	10 m	29 m
EKOMBG33AAV1	80 m	10 m	29 m

Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.



Assembly vertical roof terminal

1. Fit a vertical feedthrough panel with scale at the location of the outlet on a sloped roof.
   A flat roof requires an adhesive panel for a Ø126 mm pipe.
2. Disassemble the manifold from the combi feedthrough.
3. Slide the combi feedthrough from outside to inside:
   In case of a sloped roof, through the vertical feedthrough panel with scale.
   In case of a flat roof, through the adhesive panel.
4. In case of a parallel connection, fit the manifold of the combi feedthrough and secure it with a sheet metal screw or pop rivet.

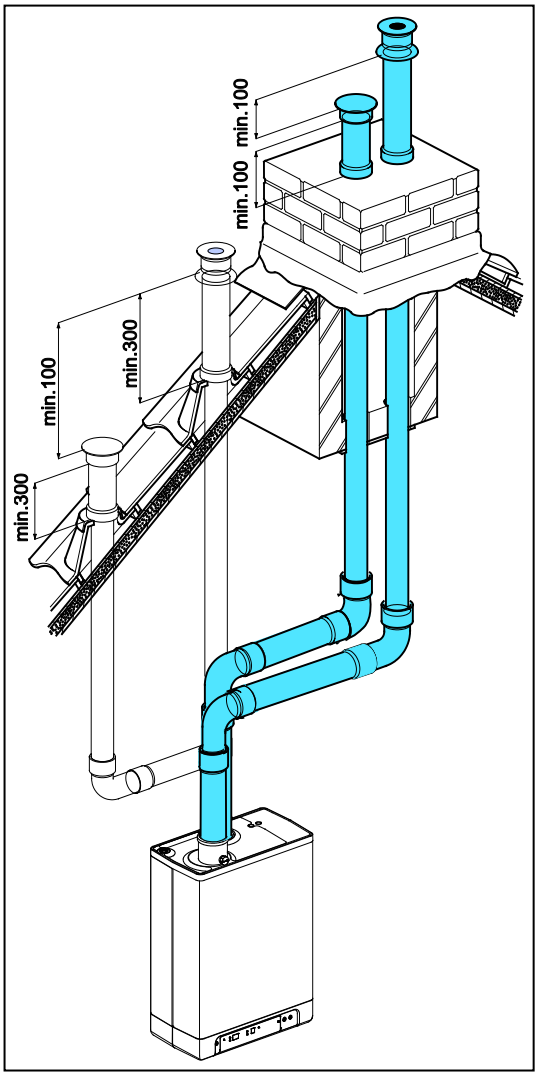
Vertical double pipe flue system

CAUTION

The outputs of the combustion outlet and air supply must be made in the same pressure surface.

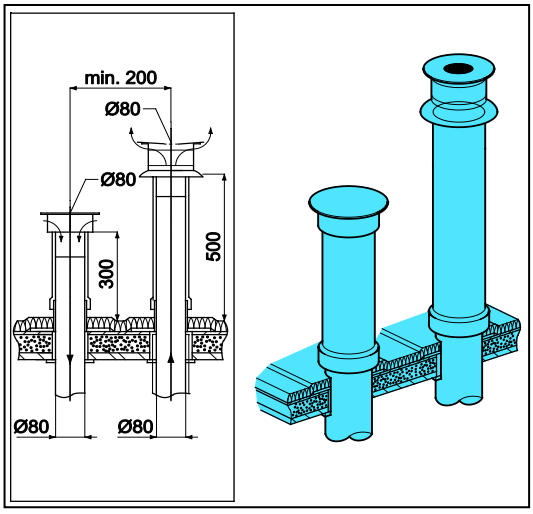
The air supply from the sloped roof surface and the combustion gas outlet is also possible through a chimney; the other way round it is not.

1. Fit a standard double-walled combustion gas outlet (Ø80 mm) with *Giveg exhaust hood* onto a sloped roof at the location of the outlet.
2. Fit a standard ventilation feedthrough (Ø80 mm) with rain cap in an associated roof feed though panel for the air supply.
3. Before the combustible gas outlet, fit a standard double-walled combustible gas outlet (Ø80 mm) with exhaust hood at the location of the outlet.
   In case of a flat roof or an architectural chimney, fit a standard ventilation feedthrough (Ø80 mm) with rain cap in an associated adhesive roof panel.



CAUTION

Two outlets must be at least 200 mm apart.



5.7.9 Roof outlet prefab chimney

Unit category: C33

If there is too little space in a shaft, a roof outlet through a prefab chimney may be required.

The prefab chimney must be fitted with combustible gas outlet openings of at least 150cm² per connected unit and must meet the stated minimum measurements. The supplier must guarantee the proper functioning of the prefab chimney in terms of wind damage, ice forming, raining in, recirculation etc.

CAUTION

The connection of the air supply and the combustible gas outlet between the unit and the prefab chimney can be constructed in pipes of Ø80 mm.

Permitted pipe lengths at Ø80 mm

Air supply and combustible gas outlet pipe:

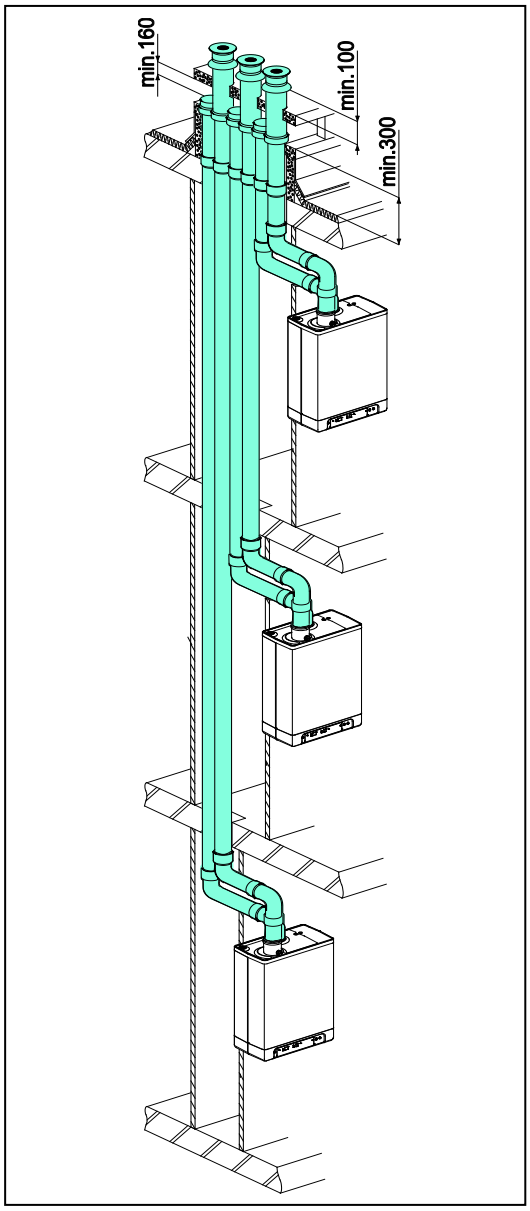
EKOMBG22AAV1	105 m
EKOMBG28AAV1	90 m
EKOMBG33AAV1	85 m

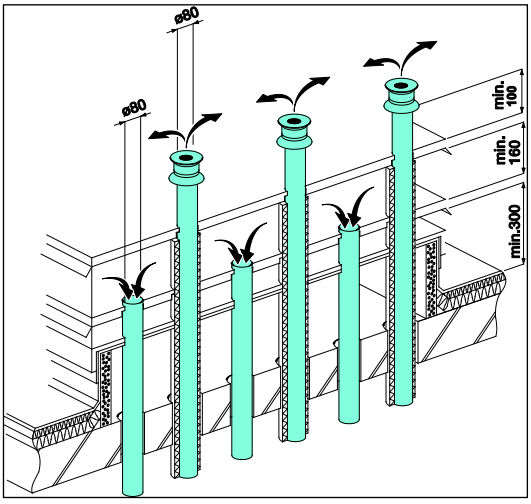
Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.

Prefab chimney assembly

The outlet can be made on any place on the sloped or flat roof surface.





5.7.10 Roof outlet and air supply from the facade

Unit category: C53

CAUTION

The air supply in the facade must be fitted with an inlet ro (A).

Combustion gas outlet (B) through a prefab chimney, or through a double-walled roof through feed Ø80 mm with traction extractor hood.

The prefab chimney must be fitted with flue tube openings of at least 150cm² per connected unit and must meet the stated minimum measurements. The supplier must guarantee the proper functioning of the prefab chimney in terms of wind damage, ice forming, raining in etc.

Permitted pipe lengths at Ø80 mm

Air supply and combustible gas outlet pipe including length of the feedthrough.

EKOMBG22AAV1	100 m
EKOMBG28AAV1	85 m
EKOMBG33AAV1	80 m

Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.

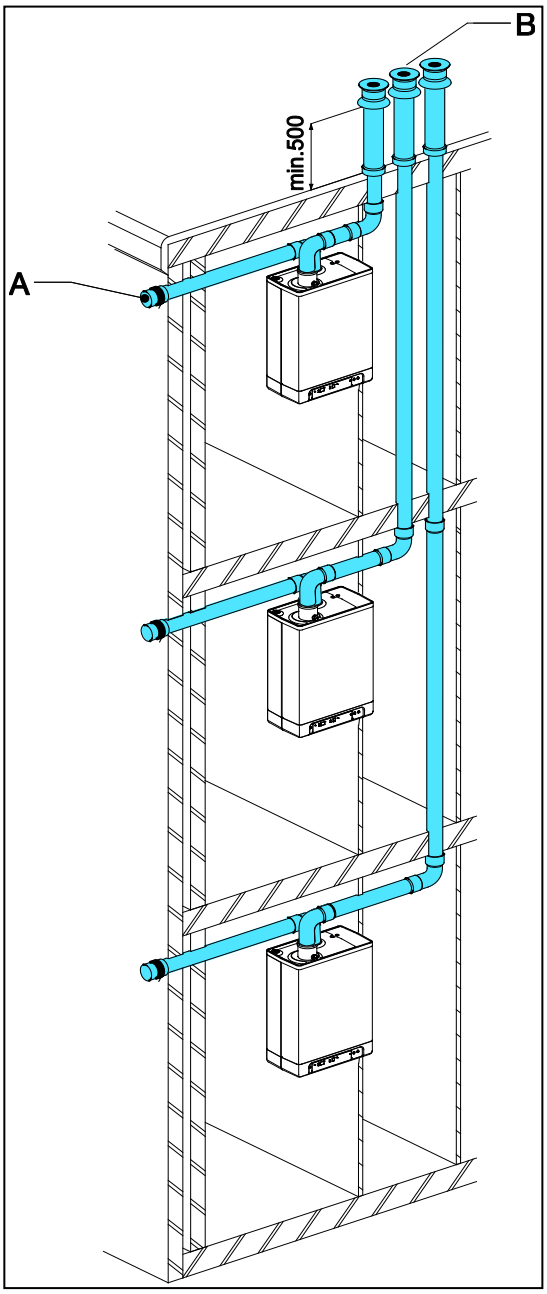
Horizontal air supply assembly

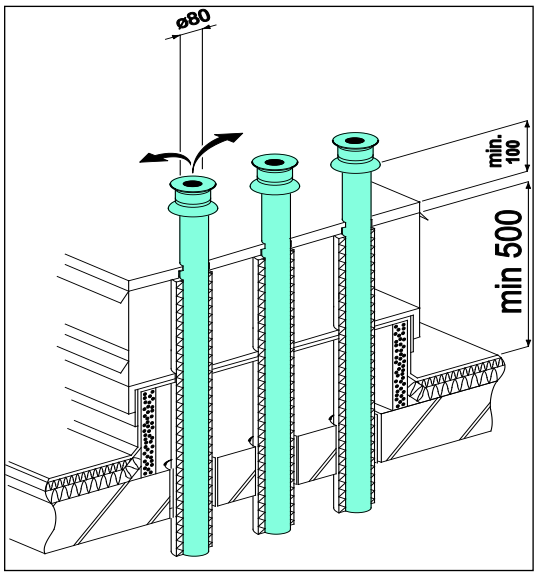
The air supply (A) can be fitted at any place in the facade.

1. At the location of the air supply, create a groove of Ø90 mm.
2. Shorten the air supply pipe to the required length from the wall.
3. Fit the inlet roster and attach it to the pipe.
4. Slide the air supply pipe into the groove and cover the groove with a pipe cover if necessary.
5. Fit the air supply, at the place of the facade feedthrough, on a slope outward, in order to prevent raining in.

Assembly of vertical combustion gas outlet

1. Fit a feedthrough panel with scale on a sloped roof surface at the location of the outlet.
   Fit a roof panel suitable for a double-walled combustion gas outlet Ø80 mm (diameter Ø96 mm) in a flat roof.
2. Slide the double-walled combustion gas outlet from outside to inside through the roof through feed.
   The outlet should end up at least 500 mm above the roof surface.

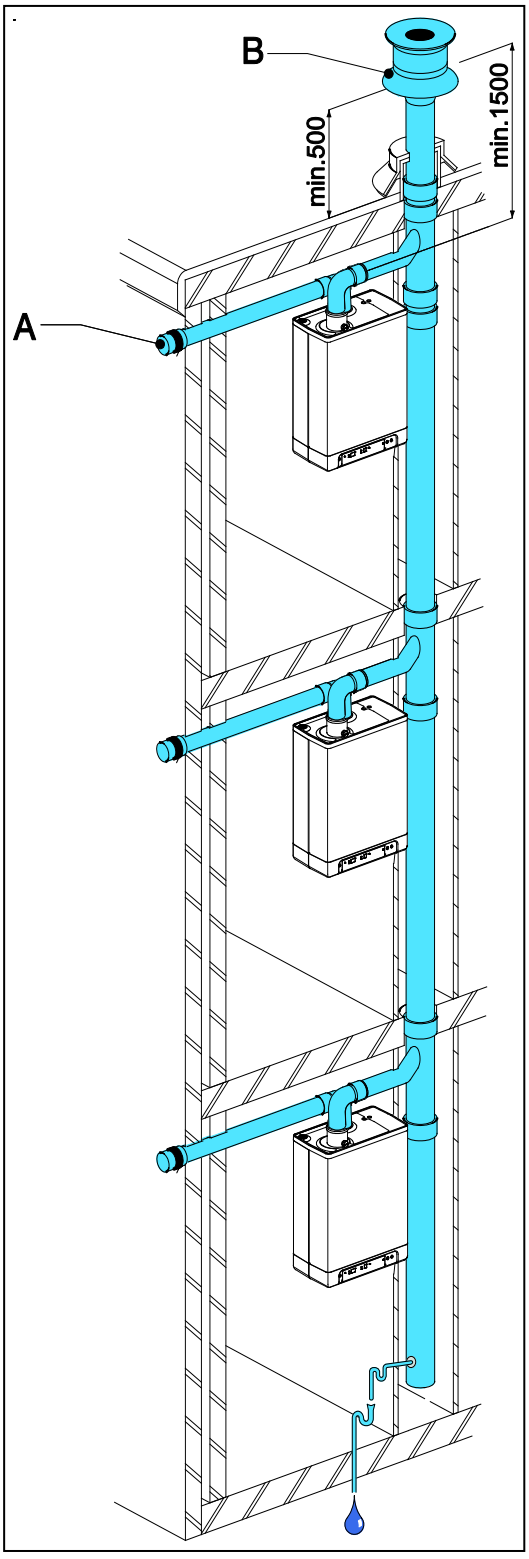




5.7.11 Air supply from the facade and a roof outlet with communal exhaust system

Unit category: C83

An air supply from the facade and a roof outlet with communal exhaust system is permitted.



IMPORTANT

- The air supply in the facade must be fitted with an inlet roster (A).
- The communal output system must be fitted with a traction extractor hood (B).
- If the communal output system is situated in the outdoors, the output pipe must be double-walled or insulated.

Permitted pipe length

Combustion gas outlet pipe between the unit and the communal output system and air supply pipe between the unit and the inlet roster together:

EKOMBG22AAV1	100 m
EKOMBG28AAV1	85 m
EKOMBG33AAV1	80 m

The minimum diameters of the communal output system based on vacuum

	Flue tube diameter		
	EKOMBG*AAV1		
Number of units	22	28	33
2	110	130	130
3	130	150	150
4	150	180	180
5	180	200	200
6	200	220	220
7	220	230	230
8	230	250	250
9	240	270	270
10	260	280	280
11	270	290	290
12	280	300	300

Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.

Communal combustible gas outlet

The output of the combustion gas outlet can be made in any location on the sloping roof surface, providing the outlet in the roof surface has the same orientation as the air supply in the facade. On a flat roof, the outlet of the combustion gas outlet must be made in the “free” outlet area.

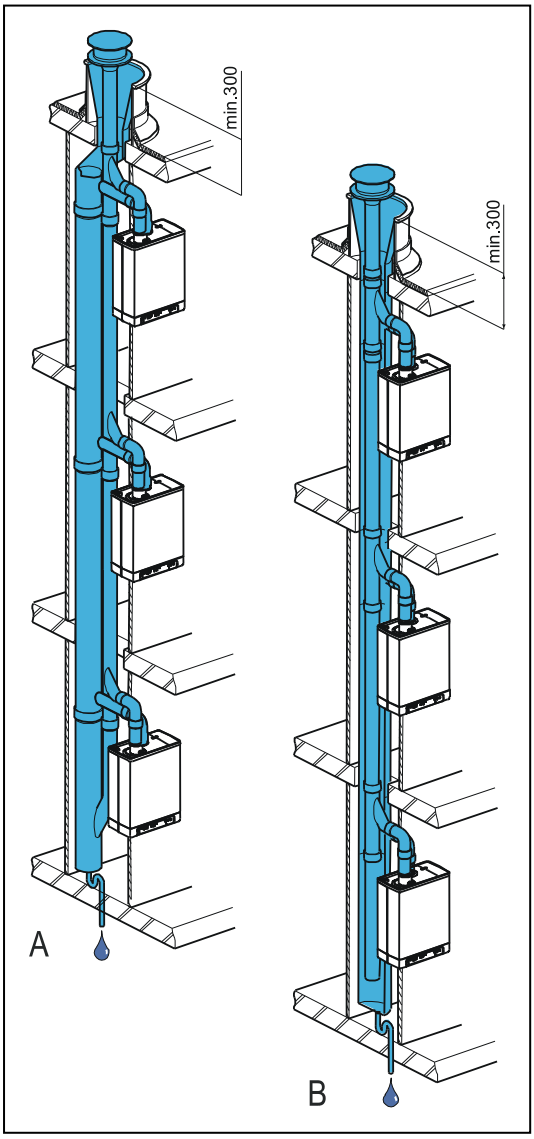
Fit a condense output.

Note

The communal outlet is certified in combination with the unit.

5.7.12 Combined flue outlet/air inlet system

Unit category : C43



IMPORTANT

- A roof outlet through a Combination Air Supply-combustion gas outlet system is permitted.
- For the communal combustion gas outlet hood and air supply hood, a declaration of no objection or a Gas certificate from the Gastec Gas institute is required.
- The passage of the pressure balancing opening at the bottom of the communal air supply and flue gas outlet system is equal to 0.44 times the flue gas outlet surface.

The communal air supply and the communal output of the combustion gases may be carried out concentrically or separately.

Permitted pipe length

For parallel: Air supply and combustion gas outlet together, excluding the length of the combi feedthrough.

For concentric: total pipe length, excluding the length of the combi feedthrough.

	Parallel	Concentric 60/100	Concentric 80/125
EKOMBG22AAV1	100 m	10 m	29 m
EKOMBG28AAV1	85 m	10 m	29 m
EKOMBG33AAV1	80 m	10 m	29 m

Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.

The minimum diameters of the communal air supply and flue tube system based on the continuation sheet 2001-02 inspection requirements no, 138 of Gastec.

	EKOMBG22AAV1 AND EKOMBG28AAV1				EKOMBG33AAV1			
Number of units	Concentric		Parallel		Concentric		Parallel	
	Flue outlet	Air inlet	Flue outlet	Air inlet	Flue outlet	Air inlet	Flue outlet	Air inlet
2	135	253	135	214	155	291	155	246
3	157	295	157	249	166	311	166	263
4	166	311	166	263	176	330	176	279
5	175	328	175	278	186	349	186	295
6	184	345	184	292	196	367	196	311
7	193	362	193	306	206	386	206	326
8	201	376	201	318	216	404	216	342
9	210	393	210	332	226	423	226	358
10	219	410	219	347	236	442	236	374
11	228	427	228	361	247	463	247	391
12	237	444	237	375	257	482	257	407
13	246	461	246	389	267	500	267	423
14	255	478	255	404	277	519	277	439
15	264	494	264	418	287	538	287	454
16	272	509	272	431	297	556	297	470
17	281	526	281	445	307	575	307	486
18	290	543	290	459	317	594	317	502
19	299	560	299	473	328	614	328	519
20	308	577	308	488	338	633	338	535

5.7.13 Concentric horizontal flue gas outlet, vertical part air-surrounded by shaft

Unit category : C93

A flue tube system according to C93 (C33) is permitted when using the output material provided by Daikin.

Permitted pipe length and system requirements

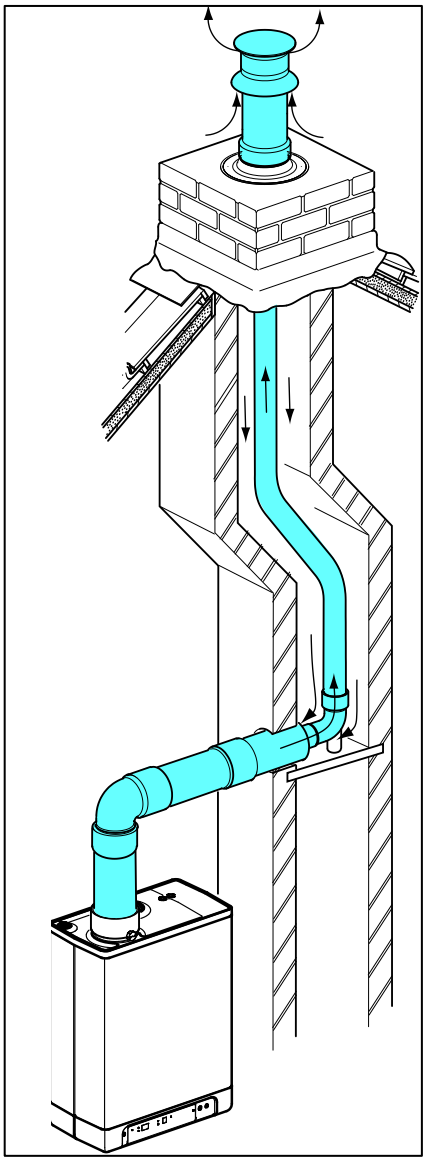
Air supply and combustion gas outlet pipe between unit and concentric horizontal shaft 80/125 with a maximum length of 10 meters. The flue tube must be fitted on a slope towards the boiler.

Flue outlet in shaft with 80 mm diameter (rigid or flexible) with a maximum length of 25 meters.
When using plastic flue tube material, a minimum temperature class of T120 applies.

The transfer bend between concentric and vertical flue connection in the shaft must be supported in the manner instructed by Daikin.

The assembly instruction of the manufacturer of the flue tube system must always be followed in full.

The minimum interior measurement of the shaft must be 200 x 200 mm.
In existing installations, the shaft must be inspected and if necessary cleaned before the new installation is commissioned.



Combustion gas outlet and air supply pipe

For assembly, see par. 5.7.5 General assembly.

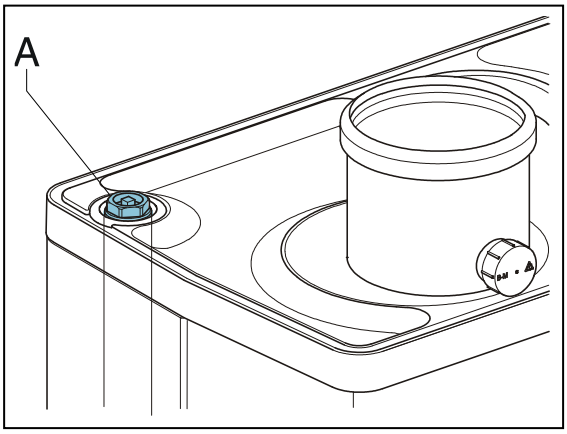
Note:

The outlet system is certified in combination with the unit.

6 COMMISSIONING THE UNIT AND THE INSTALLATION

6.1 Filling and air purge of unit and installation

6.1.1 CH system



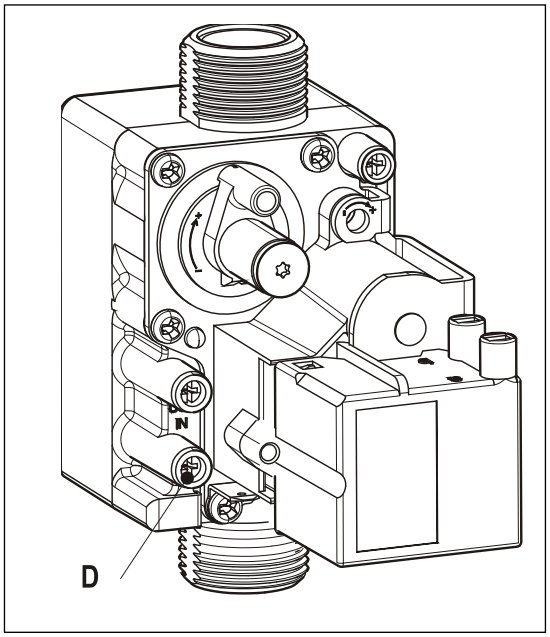
1. Insert the unit's plug into a socket.
   The unit may carry out a self-check: [2] (on service display).
   The unit will then go into the off setting: [-] (on service display) and the CH pressure is shown on the temperature 🌡 display.

   In case of a CH pressure lower than 0.5 bar, the CH pressure will be displayed flashing on the display.
   In the off setting, the CH pressure will be displayed.
2. Connect the filling hose to the fill/drain tap and fill the installation with clean drinking water, up to a pressure between 1 and 2 bar if the installation is cold (to be read from the temperature 🌡 display).
3. Aerate the system with the manual aerator (A).
   Upon request, an automatic aerator can be fitted onto the unit instead of the manual aerator.
4. Aerate the installation with the manual aerators on the radiators.
5. Top up the CH installation if the pressure has dipped too low due to the aeration.
6. Check all couplings for leaks.
7. Check whether the siphon is filled with water.

WARNING
If the siphon is not filled with water, combustion gases may be released into the room.

WARNING
If an additive is added to the CH water, it must be suitable for the materials used in the unit, such as copper, brass, stainless steel, steel, plastic and rubber. The additive should preferably have a KIWA/ATA/Atest certification.

6.1.2 DHW provision

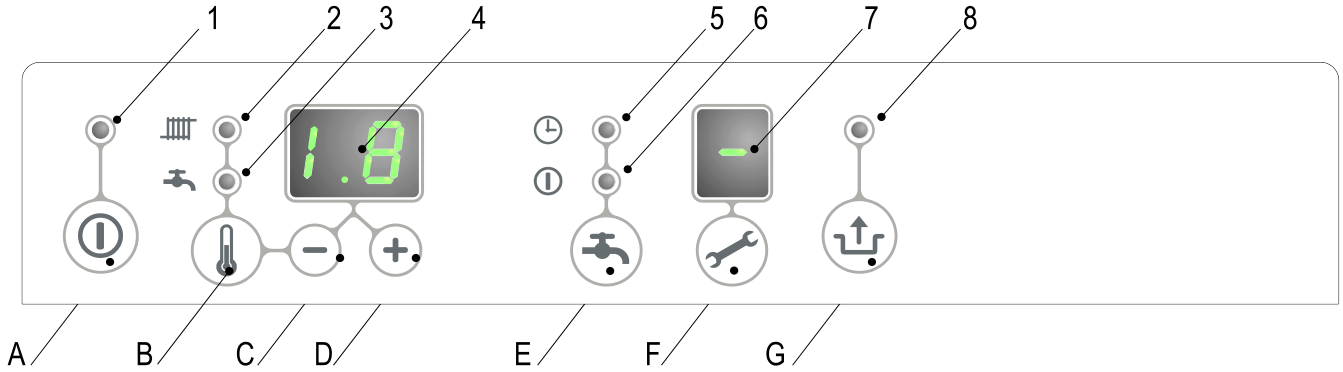


1. Open the main tap to bring the DHW section up to pressure.
2. Aerate the exchanger and the pipe system by opening a DHW tap.
   Leave the tap open until all air has flowed out of the system.
3. Check all couplings for leaks.

6.1.3 Gas supply

1. Aerate the gas pipe with the initial pressure measuring nipple (D) on the gas block.
2. Check all couplings for leaks.
3. Check the initial pressure and offset pressure (see par. 7.7).

6.2 Commissioning the unit



	Reading
1	On/off
2	CH operation or setting maximum CH temperature
3	Tap operation or setting tap temperature
4	Required temperature CH or tap water in °C / pressure CH water in bar / malfunction code
5	Tap comfort function eco
6	Tap comfort function on
7	Operating code
8	Flashing in case of a malfunction

	Operating
A	On/off button
B	Tap/CH button to set the required temperature
C	- button
D	+ button
E	Tap comfort function off / eco / on button
F	Service button / actual temperature during heat request
G	Reset button

After the following actions have been completed, the unit may be commissioned.

1. Press the ⏻ button to commission the unit.
   The heat exchanger will be heated up, and on the service display, 3, 4 and 7 appear (Depending on status of external eco switch and/or OpenTherm regulation).
2. Set the pump setting depending on the set maximum power and the water side resistance of the installation. For the water head of the pump and the loss of pressure of the unit: (see par. 7.4).
3. Set the room thermostat higher than the room temperature. The unit will now go into CH operation: 5 on the service display.
4. Fire up the installation.
5. Check whether the set maximum CH power matches the requested value. If necessary, the maximum CH power can be adjusted (see par. 7.2 parameter c and 3 and par. 7.3)
6. Check whether the set minimum and maximum value of the pump characteristic have been set correctly (see par. 7.2 and parameter 3. and c. and par. 7.4)
7. Switch the unit off.
8. Purge the air from the unit and the installation after cooling down (top up if necessary).
9. Switch the unit on.
10. Check the heating and the hot water provision for the correct functioning.
11. Instruct the user on the filling, air purging and functioning of the heating and the hot water provision.

Comments

- The unit is fitted with an electronic boiler controller which ignites the boiler controller and controls she modulating pump, at every heat request from the heating or from the hot water provision.
- The circulation pump will run at every heat request for the heating. The pump has a post-running time of 1 minute. The post-running time can be changed upon request (see par. 7.2).
- The pump will run automatically 1 time per 24 hours, for 10 seconds, in order to prevent it from getting stuck. This automatic switching on of the pump takes place 24 hours after the lastheating request. To change the time, the room thermostat must be turned up for a moment at the requested time.
- For the hot water provision, the pump will not run.

6.3 Switching off the unit

CAUTION

Drain the unit and the installation, if the mains electricity supply is interrupted and there is a risk of freezing.

1. Remove the plug from the socket.
2. Drain the unit with the filling/draining tap.
3. Drain the installation at the lowest point.
4. Close the main tap of the hot and cold water supply to the unit.
5. Drain the unit by loosening the domestic hot water couplings under the unit.
6. Empty the siphon.

6.3.1 Frost protection

- In order to prevent the condense outlet from freezing, the unit must be installed in a frost-free room.
- The unit is fitted with frost protection in order to prevent it from freezing. If the temperature of the heat exchanger drops too low, the boiler will switch on until the heat exchanger has heated up. If there is the possibility that the installation (or a part thereof) may freeze, an (external) frost thermostat must be fitted at the coldest place, on the return pipe. This must be connected in accordance with the electrical diagram (see par. 10.1).

Note
If an (external) frost thermostat has been fitted on the installation and has been connected to the unit, it will not be active if the unit on the operating panel is switched off (- on service display).

7 SETTING AND ADJUSTMENT

The functioning of the unit can be influenced by means of the (parameter) settings in the boiler controller. Part of this can be configured directly via the operating panel, another part can only be adjusted by means of the service code.

7.1 Direct via operating panel

The following functions can be operated directly.

Unit on/off

The ⏻ button activates the unit.

When the unit is active, the green LED above the ⏻ button will be lit. When the unit is off, one bar will be lit on the service display (-) to show the unit is connected to the electricity supply. In this operation setting, the temperature display will also show the pressure in the CH installation (in bar).

Summer mode.

When parameter q is set to a value unlike 0 summer mode can be activated pressing the ⏻ button.

In Summer mode the central heating has been shut off while DHW remains active.

Summer mode can be activated by pressing the ⏻ button. again after activating the boiler.

On the display [So], [Su] or [Et] appears (the code on the display depends on the setting of parameter q).

Summer mode can be deactivated by pressing the ⏻ button twice. The boiler will then be in normal functional mode again.

Tap comfort

The tap comfort function can be operated with the tap comfort button and has the following settings:

- On: *(⏻ LED on)* The tap comfort function of the unit is continuously switched on. The heat exchanger is continuously kept warm. The unit always immediately provides warm water.
- Eco: *(◷ LED on)* The tap comfort function of the unit is self-learning. The unit will adjust to the usage pattern of the domestic hot water. This means the heat exchanger will not be kept warm during the night or during longer absences.
- Off: *(Both LEDs off.)* Off: The heat exchanger is not kept warm which means the supply of domestic hot water takes a bit of time. If there is no desire for domestic hot water, or of immediate supply hereof, the tap comfort function can be switched off.

Resetting

Check the nature of the malfunction on the basis of the malfunction codes under par. 8.2 and if possible, resolve the cause of the malfunction before resetting the unit.

If a locking malfunction is indicated by means of a flashing LED above the button and a number on the display, the unit can be restarted by pressing the reset button.

Change settings of the various functions:

Pressing the button for 2 seconds, will take you to the users setting menu (LED at and the number display will start to flash). If you press the button repeatedly, a different function LED will flash each time. When the LED flashes, the appropriate function can be set with the + and — button. The set value is displayed on the display.

The on/off ⏻ button closes the settings menu and the changes are not saved.

The reset button closes the settings menu and saves the changes.

When no button is pressed for 30 seconds, the settings menu will automatically be closed and the changes are saved.

Maximum CH leaving water temperature

Press the button until the LED at starts flashing.

Use the + and — button to enter the temperature between 30°C and 90°C (standard setting 80°C).

Tap water temperature

Press the button until the LED at starts flashing.

Use the + and — button to enter the temperature between 40°C and 65°C (standard setting 60°C).

7.2 Parameter settings via the service code

The parameters of the boiler controller have been configured in the factory in accordance with the following table.

These parameters can only be changed with the service code. Take the following actions to activate the program memory:

1. Press the and the button simultaneously, until a 0 appears on the service display and a 0 on the temperature display.
2. Use the + button to enter 15 (service code) on the temperature display.
3. Use the button to set the parameter you wish to configure, on the service display.
4. Use the + and – button to set the parameter to the required value (visible) on the temperature display.
5. After all the required changes have been entered, press the button until P appears on the service display.

The boiler controller has now been reprogrammed.

Note

Pressing the button will take you out of the menu without saving the parameter changes.

Example: Change maximum CH power

1. Press the and the button simultaneously.
2. Use the +button to go to 15 .
3. Press the button 3 x. 60 and 3 will appear on the display.
4. Use the + button to change the 60 to 70.
5. Press the button until P appears.
6. The change has now been implemented. The maximum CH power has been increased from 60 to 70 %.

		EKOMBG*AAV1			
Parameter	Description	22	28	33	Settings reach
0	Service code [15]	-	-	-	Access to installers settings, the service code must be entered (=15)
1	Installation type	0	0	0	0= combi 1= Solo EKOMBG22AAV1 + boiler 2= Tap (hot water only) 3= Solo
2	CH pump setting	0	0	0	0= pump post-running time active 1= pump continuously active 2-3-5= not active
3	Set maximum CH power	60	60	60	Setting reach set value parameter c up to 100% (100 % = 99 + 1x+)
3.	Maximum capacity modulating CH pump	80	80	80	Setting reach set value parameter c. up to 100%
4	Set maximum hot water power	99	99	99	Setting reach set value parameter d up to 100%
5	Min. leaving water temperature of the fuel line	25	25	25	Setting reach 10°C to set value parameter 5
5.	Max setting value leaving water temperature via operating panel	90	90	90	Setting reach 30°C to 90°C
6	Min. outdoor temperature of the fuel line	-7	-7	-7	Setting reach -9 to 10°C
7	Max. outdoor temperature of the fuel line	25	25	25	Setting reach 15°C to 30°C
8	CH pump post-running time after CH operation	1	1	1	Setting reach 0 to 15 minutes
9	CH pump post-running time after boiler operation	1	1	1	Setting reach 0 to 15 minutes (n/a to Combi unit)
A	Setting three-way valve or electrical valve	0	0	0	0= powered during CH operation 1= powered during hot water operation and rest 2= powered during every heat request (CH, hot water and continuous heating function) 3= group regulation 4= External DHW tank pump 5= Powered during CH demand and rest 6= Powered during hot water operation

B	Booster	0	0	0	0= off 1= on
C	Step-by-step modulation	1	1	1	0= step-by-step modulation off during CH operation 1= step-by-step modulation on during CH operation 2= Power control by Open Therm room thermostat enabled
C	Minimum rpm CH	30	30	30	Setting reach 20 to 50%
c.	Minimum capacity modulating CH pump	40	40	40	Setting reach 15 to set value par. 3.
D	Minimum rpm hot water	25	25	25	Setting reach 20 to 50%
E	Min. leaving water temperature at OT (OpenTherm) or RF thermostat	40	40	40	Setting reach 10°C to 60°C
E .	Reaction OT and RF room thermostat	1	1	1	0= do not respond to hot water request if requested temperature is lower than the set value par. E 1= respond to hot water request with minimum leaving water temperature limited to set value par. E 2= respond to hot water request with maximum leaving water temperature (on/off function)
F	Start rpm CH	70	60	50	Settings reach 50 to 99% of the set maximum rpm
F .	Minimum start rpm hot water	70	60	50	Settings reach 50 to 99% of the set maximum rpm
h	Max. rpm fan	50	50	50	Setting reach 40 to 50 (40=4000 rpm, 50=5000 rpm). Please note: Factory setting, rpm may deviate
N	Regulated temperature during boiler operation (Ta)	80	80	80	Setting reach 60°C to 90°C
n.	Hot water temperature at Comfort/Eco	0	0	0	Setting reach 0 or 40°C to 60°C 0 = reheating temperature is equal to hot water temperature
O.	Wait time CH request response	0	0	0	Settings reach 0 – 15 minutes
O	Waiting time CH operation after hot water operation	0	0	0	Settings reach 0 to 15 minutes
o.	Number of eco days	3	3	3	Setting reach 0,1 to 10 0 = Comfort function controllable by Open Therm room thermostat 1 – 10 number of eco days
P	Anti-recycling time during CH operation	5	5	5	Minimum switch off time on boiler water temperature Can be set to 0 to 15 minutes
P.	Reference value hot water	24	30	36	24 = EKOMBG22AAV1 30 = EKOMBG28AAV1 36 = EKOMBG33AAV1
q	Summer mode	0	0	0	0 = Summer mode deactivated 1 = Summer mode to be activated by ⏻ button (code in display : Su) 2 = Summer mode to be activated by ⏻ button (code in display : So) 3 = Summer mode to be activated by ⏻ button (code in display : Et)

7.3 Setting maximum CH power

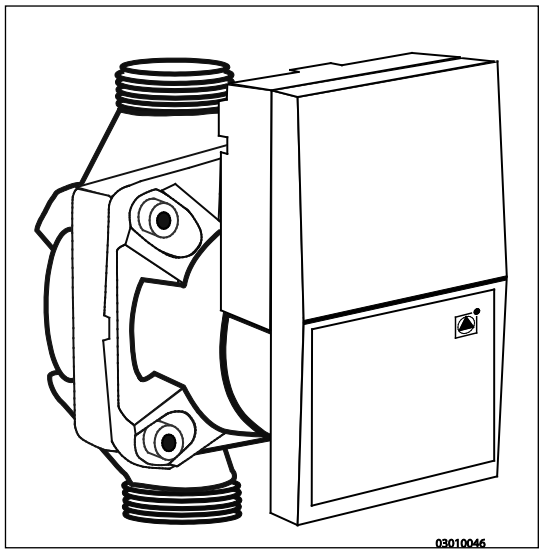
The maximum CH power is set to 60% in the factory. If more power is required for the CH installation, the maximum CH power can be changed by adjusting the rpm of the fan. See table: Setting CH power.

This table shows the relation between the rpm of the fan and the unit power.

Desired CH power in kW (approx.)			Settings on service display (in % maximum rpm)
EKOMBG*AAV1			
22	28	33	
22.7	28.4	31.9	100
20.5	25.6	28.8	90
18.2	22.9	25.6	80
16.0	20.1	22.4	70
13.7	17.4	19.2	60
11.5	14.6	16.0	50
9.3	11.8	12.8	40
5.9	7.7	8.0	25

Caution:

The power is slowly increased when the fire is lit and is lowered when the set leaving water temperature is reached (modulation on Tsupply).



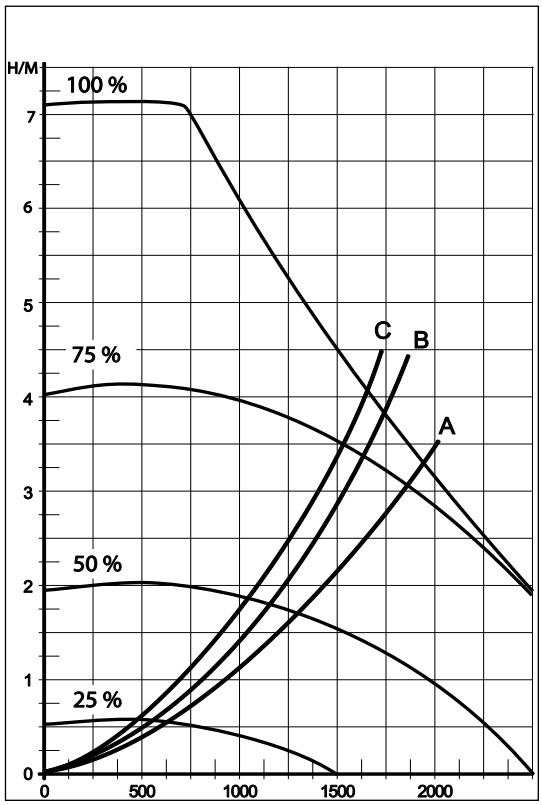
The minimum feedthrough amount (l/h)	Set power (kW)
155	5.4 kW
240	8.5 kW
510	17.8 kW
750	26.2 kW

7.4 Set pump capacity

The EKOMBG*AAV1 CH boilers are fitted with a modulating A-class pump which modulates on the basis to the CH power provided. The minimum and maximum capacity of the pump can be adjusted with the parameters 3 and c. Also see par. 7.2. The set value of parameter 3. (max. pump setting) is the percentage of the maximum pump capacity and is linked to the set maximum CH power as set with parameter 3

The set value of parameter c. (min. pump setting) is linked to the minimum CH-power as set with parameter c

If the CH load modulates between the minimum and maximum value, the pump capacity will modulate along proportionately.



Pressure loss graph unit CH side

A. EKOMBG22AAV1

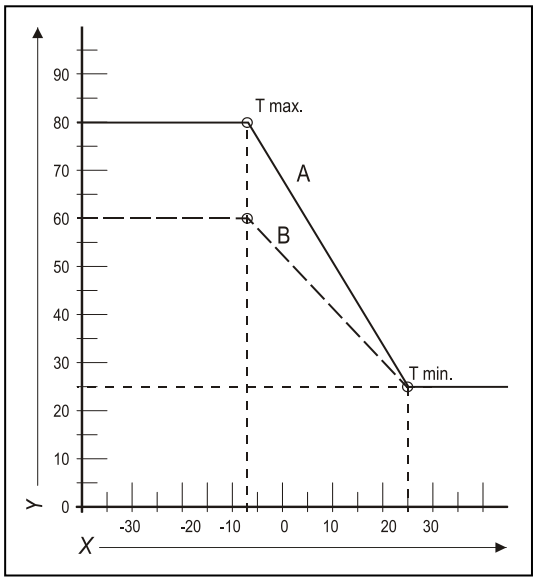
B. EKOMBG28AAV1

C. EKOMBG33AAV1

7.5 Weather dependent regulation

When connecting an outdoor sensor, the leaving water temperature is automatically regulated dependent on the outdoor temperature, in accordance with the set fuel line.

The maximum leaving water temperature (Tmax) is set via the temperature display. If so desired, the fuel line can be changed by using the service code (see par.7.2). The weather dependent regulation only functions with an on-off thermometer. When applying an Open Therm room thermostat, the outside temperature is passed on, but the fuel line of the CH boiler is not active.



Fuel line graph

X. T outside in °C

Y. T leaving water in °C

A. Factory setting

(Tmax CH = 80°C, Tmin CH = 25°C, Tmin ex = -7°C, Tmax ex = 25°C)

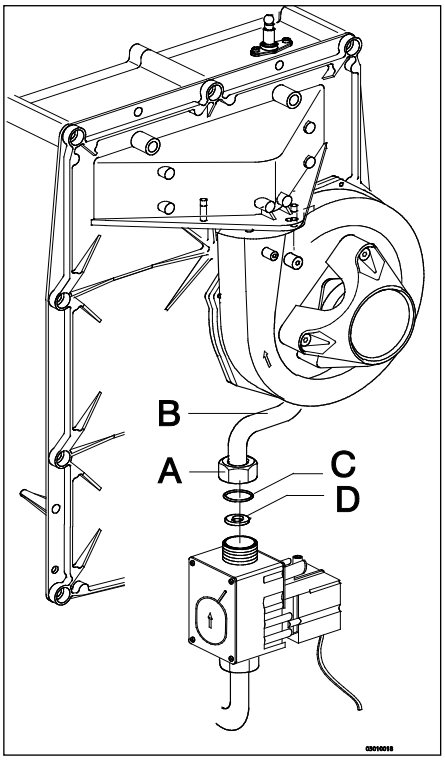
B. Example

(Tmax CH = 60°C, Tmin CH = 25°C, Tmin ex = -7°C, Tmax ex = 25°C)

7.6 Conversion to different type of gas

CAUTION

Work on gas carrying parts may only be carried out by a certified installer.



If a unit is connected to a different type of gas than the one it has been set to by the manufacturer, the gas dosing ring must be replaced. Conversion sets for other types of gas are available to order.

Converting the dosing ring

1. Switch off the boiler and remove the plug from the socket.
2. Shut the gas valve.
3. Remove the front panel from the unit.
4. Loosen the coupling (A) above the gas block and turn the gas mixing tube (B) backwards.
5. Replace the O-ring (C) and the gas dosing ring (D) by the rings in the conversion set.
6. Reassemble it in reverse order.
7. Open the gas valve.
8. Check whether the gas couplings before the gas block are sealed.
9. Enter the plug in the socket and switch on the boiler.
10. Check whether the gas couplings after the gas block are sealed (during operation).
11. Now check the setting of the gas/air ratio (see par. 7.7).
12. Put a sticker of the configured gas type on top of the existing sticker at the gas block.
13. Put a sticker of the configured gas type at the type plate.
14. Return the front panel onto the unit.

7.7 Gas/air regulation

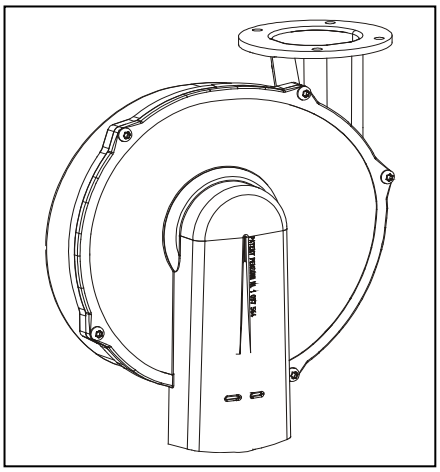
The gas/air regulation has been set at the factory and does not require any adjustments, in principle.

The setting can be checked by measuring the CO_2 percentage in the combustion gases or by measuring the offset.

In case of any disturbance, replacement of the gas block or conversion to a different type of gas, the regulation must be checked and set in accordance with the following tables.

Gas type	Natural gas H	Propane P
Gas category	2E/H G20	3P / G31
CO_2% at Low setting (L) *(🔧 and −)* *With open cover*	See par.: 7.8	See par.: 7.8
CO_2% at Low setting (H) *(🔧 and+ 2x)* *With open cover*	See par.: 7.8	See par.: 7.8
Initial gas pressure (mbar)	20 mbar	30/37/50 mbar

Gas dosing ring (only valid in combination with fan with integrated tunnel venturi (see drawing)	Natural gas H	Propane P
EKOMBG22AAV1	505	410
EKOMBG28AAV1	600	480
EKOMBG33AAV1	655	525

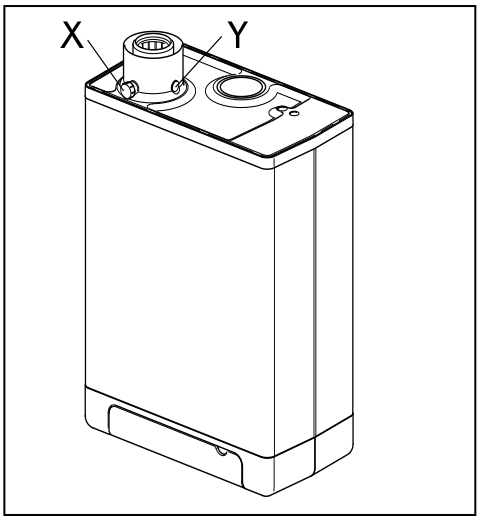


CAUTION

CO_2 check must be carried out with open cover. If the cover is shut, the CO_2% may be higher than the values stated in the above table.

7.8 Setting gas/air regulation

The CO_2 setting has been set at the factory and does not require any adjustments, in principle. The setting can be checked by measuring the CO_2 percentage in the combustion gases. In case of any disturbance of the setting, the replacement of the gas valve or the conversion to a different type of gas must be checked, and if necessary set in accordance with the following instructions. Always check the CO_2 percentage when the lid is open.



Checking the carbon dioxide setting

1 Switch off the heat pump module with the user interface.
2 Switch off the gas boiler with the ⏻ button. [-] appears on the service display.
3 Remove the front panel from the gas boiler.
4 Remove the sample point (a) and enter an appropriate chimney analysis probe.

IMPORTANT

Ensure the start-up procedure of the analysis machine has been completed before inserting the probe in the sample point.

IMPORTANT

Wait for the gas boiler to run stable. Faulty measurements may occur if the measuring probe is connected before the boiler is running stable. We recommend you wait for at least 30 minutes.

5 Switch on the gas boiler with the ⏻ button and create a request for space heating.
6 Select the High setting by twice pressing the 🔧 and + buttons simultaneously. A capital letter "H" will appear on the service display. The user display will show a Busy symbol. Do NOT carry out a test when a small letter "h" is shown. If this is the case, press 🔧 and + again.
7 Allow the display values to stabilize. Wait at least 3 minutes and compare the CO_2 percentage to the values in the following table.

CO_2 value at maximum power	Natural gas G20	Natural gas G25	Propane G31 (30/50 mbar)	Propane G31 (37 mbar)
Maximum value	9.6	8.3	10.8	
Minimum value	8.4	7.3	9.8	

8 Note the CO_2 percentage at maximum power. This is important in relation to the following steps.

IMPORTANT

It is NOT possible to adjust the CO_2 percentage when the test program is being carried out. If the CO_2 percentage deviates from the values in the above table, contact your local service department.

9 Select the Low setting by once pressing the 🔧 and + buttons simultaneously. "L" appears on the service display. The user display will show a Busy symbol.
10 Allow the display values to stabilize. Wait at least 3 minutes and compare the CO_2 percentage to the values in the following table.

CO_2 value at minimum power	Natural gas G20	Natural gas G25	Propane G31 (30/50 mbar)	Propane G31 (37 mbar)
Maximum value	(a)			
Minimum value	8.4	7.4	9.4	9.4

(a) CO_2 value at maximum power registered at setting High.

11 If the CO_2 percentage at maximum and minimum power is within the reach stated in the above tables, the CO_2 setting of the boiler is correct. If NOT, adjust the CO_2 setting in accordance with the instruction in the following chapter.
12 Switch off the unit by pressing the ⏻ button and return the sample point to its position. Make sure it is gas tight.
13 Return the front panel to its place.

CAUTION

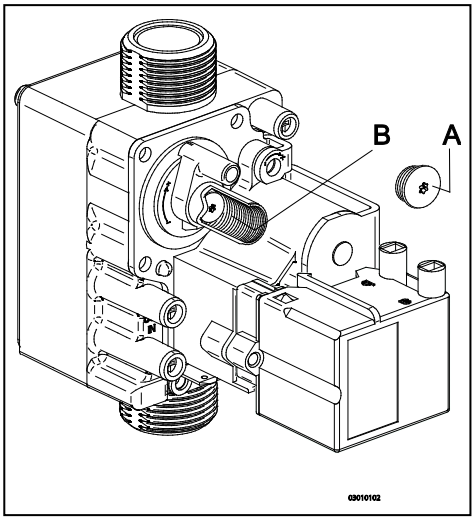
Work on gas carrying parts may ONLY be carried out by qualified, competent individuals.

Adjusting the carbon dioxide setting

IMPORTANT

Only adjust the CO_2 setting when you have first checked it and you have made sure the adjustment is necessary. No adjustments may be made to the gas valve without prior permission from your local Daikin distributor. In Belgium, the gas valve may NOT be adjusted and/or the seal may NOT be removed or broken. Contact your distributor.

1 Remove the cap (A) which covers the adjuster screw.
2 Turn the screw (B) to the right to increase the CO_2 percentage, and to the left to decrease it. See the following table for the desired value.



Measured value at maximum power	Set values CO_2 (%) at minimum power (front lid open)	
	Natural gas 2H (G20, 20 mbar)	Propane 3P (G31,30/50/37 mbar)
10.8	-	10.5±0.1
10.6		10.3±0.1
10.4		10.1±0.1
10.2		9.9±0.1
10		9.8±0.1
9.8		9.6±0.1
9.6	9.0±0.1	-
9.4	8.9±0.1	
9.2	8.8±0.1	
9.0	8.7±0.1	
8.8	8.6±0.1	
8.6	8.5±0.1	

3 After measuring the CO_2 percentage and adjusting the setting, replace the cover cap and the sample point. Make sure they are gas tight.
4 Select the High setting by twice pressing the 🔧 and buttons + simultaneously. A capital letter will appear on the service display.
5 Measure the CO_2 percentage. If the CO_2 percentage still deviates from the values in the table which indicates the CO_2 percentage at maximum power, contact your local distributor.
6 Press + and - simultaneously to leave the test program.
7 Return the front panel to its place.

8 MALFUNCTIONS

8.1 Show last malfunction

Use the ⏻ key to switch the unit off, and press the 🔧 button.
The red malfunction LED is lit continuously, and the latest fault code is shown flashing on the temperature display.
If the unit has never detected a locking malfunction, no code will be displayed.
The last locking malfunction can be deleted by briefly pressing the 🔧 button while pressing the − button.

8.2 Malfunction codes

If the malfunction LED is flashing, the boiler controller detects a fault. A malfunction code will be shown on the temperature display.

When the malfunction is rectified, the boiler controller can be restarted by pressing the reset ↑ button.

The following faults can be distinguished:

Temperature display	Description	Possible cause/solution
−		• Unit is off.
10, 11, 12, 13, 14	Sensor fault S1	• Air in the installation. Purge the air from the boiler and CH installation. • Check the connection of the ntc on the hot water tube. • Check wiring for break. • Replace S1.
20, 21, 22, 23, 24	Sensor fault S2	• Check wiring for break. • Replace S2.
0	Sensor fault after self-check	• Replace S1 and/or S2.
1	Temperature too high	• Air in installation. Purge the air from the boiler and CH installation. • Pump is not running. Reset or replace the pump, see par. 8.2.10
2	Switch S1 and S2	• Check cable harness. • Replace S1 or S2.
4	No flame signal	• Main gas valve not opened. • Gas supply pressure too low, or disappears. • Condense output blocked. • Check ignition unit and ignition cable. • No or incorrect ignition distance, check this using the checking mold. • Gas block or ignition unit is not receiving electrical current. • Check earthing.
5	Poor flame signal	• Condense output blocked. • Gas supply pressure too low, or disappears. • Check ignition unit and ignition cable. • Check setting of gas block. • Check earthing. • Check air supply and gas output for possible recirculation of flue gases.
6	Flame detection error	• Replace ignition cable + spark plug. • Replace ignition unit. • Replace boiler controller.
8	Fan rpm is not correct	• Fan is coming up against cover insulation. • Wiring between fan and cover. • Check wiring or plug for lack of wire contact, measure 25-27V dc. • Check and/or replace fan. • Replace boiler controller.
27	Short circuit outdoor sensor	• Check the wiring of the outdoor sensor. • Replace outdoor sensor. Boiler controller is not suitable for this application. Replace boiler controller for the appropriate version.
29, 30	Gas valve controller fault	• Replace boiler controller.

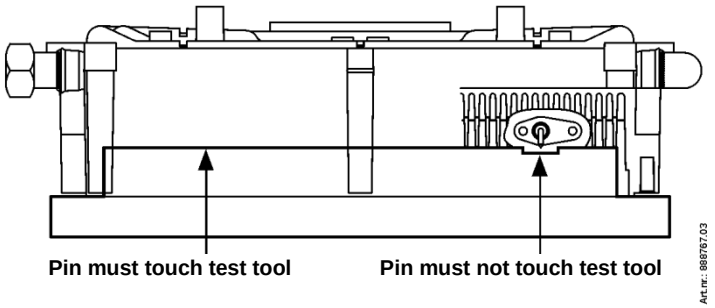
Only replace faulty parts with the original Daikin parts.
Failing to fit or incorrectly fitting the sensors S1 and/or S2 may lead to serious damage.

8.3 Other faults

8.3.1 Boiler controller is noisy when igniting

Possible causes:		Solution:
Gas supply pressure too high.	Yes ➡	The home pressure controller may be faulty. Contact the energy company.
No ⬇		
Incorrect ignition distance.	Yes ➡	Check the ignition pin distance with the checking mold. Replace the ignition pin.
No ⬇		
Gas/air regulation not correctly configured.	Yes ➡	Check the setting, see Gas air regulation par.7.7 and par. 7.8.
No ⬇		
Weak spark.	Yes ➡	Check the ignition pin distance with the checking mold. Check and/or replace ignition cable. Replace the ignition unit on the gas block. Replace the ignition pin.

Checking mold ignition pin position



8.3.2 Boiler controller resonates

Possible causes:		Solution:
Gas supply pressure too low. Lower than 20 mbar.	Yes ➡	The home pressure controller may be faulty. Contact the energy company.
No ⬇		
Recirculation combustion gases.	Yes ➡	Check the combustion gas outlet and the air supply system.
No ⬇		
Gas/air regulation not configured correctly.	Yes ➡	Check the setting, see Gas air regulation par.7.7 and par. 7.8.
No ⬇		
Boiler controller gasket faulty.	Yes ➡	Replace the boiler controller gasket.
No ⬇		
Boiler controller faulty.	Yes ➡	Replace the boiler controller.

8.3.3 No heating (CH)

Possible causes:		Solution:
The service display shows nothing.	Yes ➡	Check whether the plug is in the socket.
No ⬇		
The service display shows nothing.	Yes ➡	Check the fuse, see Electrical diagram par. 10.1
No ⬇		
The service display shows a hyphen (-). The boiler is off.	Yes ➡	Switch on the boiler with the ⏻ button.
No ⬇		
Room thermostat/weather dependent regulation not connected or faulty.	Yes ➡	Check the wiring. Check OpenTherm, On/off connection of the unit, or the connection between CH boiler and RF room thermostat .Replace the thermostat. Replace the weather-dependent regulation.
No ⬇		
Pump is not running. Display shows 80 and 1.	Yes ➡	Check the electricity supply. Check connector X2 and X4.
No ⬇		

No electrical supply (24 V).	Yes ➡	Replace the faulty controller. Check the wiring in accordance with the diagram. Check the connector X4. Replace the faulty controller.

8.3.4 The power is reduced

Possible causes:		Solution:
At high rpm, the power has decreased.	Yes ➡	Clean the unit and siphon. Check the flue tube and the air supply system.

8.3.5 CH is not reaching correct temperature

Possible causes:		Solution:
Water pressure in installation is too low.	Yes ➡	Top up the installation. See par. 6.1.1.
No ⬇		
Room thermostat is not set correctly.	Yes ➡	Check the setting and adjust if required.
No ⬇		
Temperature is set too low.	Yes ➡	Increase the CH temperature See Operation CH. If there is an outdoor sensor: Check the outdoor sensor for short circuit: rectify this.
No ⬇		
No flow through the installation.	Yes ➡	Check the ΔT (± 20° C) between the supply and return CH. Ensure there is good flow through the installation.
No ⬇		
The boiler power is not set correctly.	Yes ➡	Adjust the boiler power. See Setting maximum CH power.
No ⬇		
No heat transfer due to contamination in the CH boiler/installation.	Yes ➡	Rinse the CH boiler/installation on the side of the CH.

8.3.6 No domestic hot water

Possible causes:		Solution:
The service display shows nothing.	Yes ➡	Check whether the plug is in the socket.
No ⬇		
The service display shows nothing.	Yes ➡	Check the fuse, see Electrical diagram par. 10.1
No ⬇		
Flow sensor does not work.	Yes ➡	Replace the flow sensor.
No ⬇		
Tap flow < 1.5 l/min.	Yes ➡	Increase the tap flow.
No ⬇		
No electricity supply on flow sensor (5V DC).	Yes ➡	Check the wiring in accordance with the diagram.
No ⬇		
S3 faulty.	Yes ➡	Replace S3.
No ⬇		
The thermostatic shower or bath tap is faulty.	Yes ➡	The thermostatic tap only lets through cold water. This means the tap flow through the boiler remains under 1.5 l/min. Check the thermostatic tap.

8.3.7 DHW is not reaching the correct temperature

Possible causes:		Solution:
Tap flow too high.	Yes ➡	Reduce the tap flow. Check the dosing disk (EKOMBG22AAV1 and EKOMBG28AAV1)
No ⬇		
DHW temperature set too low.	Yes ➡	Increase the DHW temperature, see par. 7.1.
CH installation becomes hot during tapping.	Yes ➡	Unwanted circulation in the ch circuit during hot water request due to thermosiphon effect or second pump in the CH circuit. Install a check valve in case of thermosiphon effect or a two-way valve in case of a second pump.
No ⬇		
Insufficient heat transfer due to lime scale or contamination in the CH boiler on the tap water	Yes ➡	Remove lime scale or rinse the CH boiler on the tap water side.

side.		

8.3.8 CH installation stays warm unwanted

Possible causes:		Solution:
Room thermostat/weather dependent regulation faulty or short circuited.	Yes ➡	Check the wiring. Check OpenTherm, On/off connection of the unit, or the connection between CH boiler and RF room thermostat. Replace the thermostat. Replace the weather-dependent regulation.
No ⬇		
CH installation is heated due to Tap comfort. The service display regularly shows code 7.	Yes ➡	Unwanted circulation in the CH circuit due to thermosiphon effect or second pump in the CH circuit. Install a check valve in case of thermosiphon effect or a two-way valve in case of a second pump.

8.3.9 A-label pump LED flashes intermittently red/green

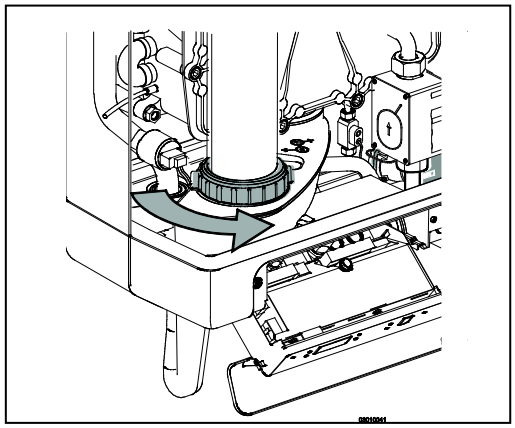
Possible causes:		Solution:
Too high or too low mains voltage.	Yes ➡	Check the mains voltage.
No ⬇		
Pump temperature is too high.	Yes ➡	Check the water and ambient temperature.

8.3.10 A-label pump LED flashes red

Possible causes:		Solution:
Pump stopped.	Yes ➡	Reset the pump by switching off the unit by pressing the on/off button for at least 20 seconds ⏻ (attention: if the pump has been set to continuous, the pump can only be reset by pulling the plug from the socket). Replace the pump.

9 MAINTENANCE

The unit and the installation must be checked by a certified installer, and cleaned if necessary.

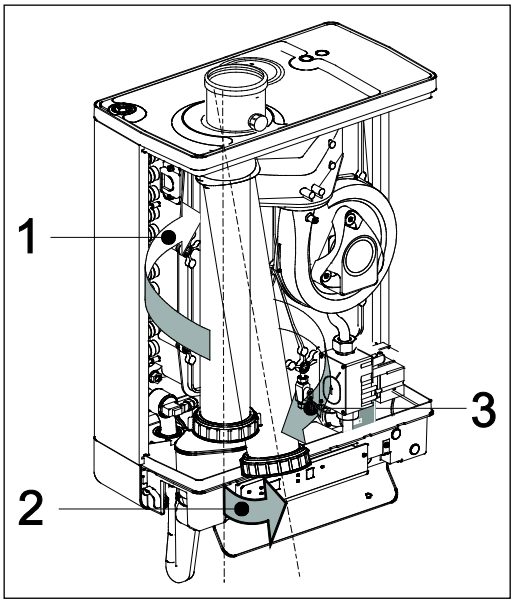


CAUTION

Work on gas carrying parts may only be carried out by a certified installer.
After work, check the flue gas carrying parts for air tightness.
If the unit has just been operational, some parts may be hot.

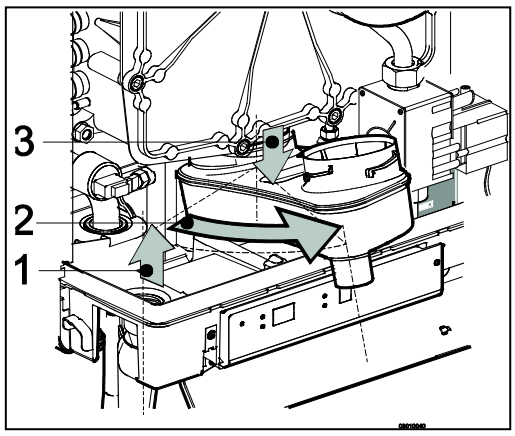
9.1.1 Disassembly

1. Switch the unit off with the ⏻ button.
2. Remove the plug from the socket.
3. Shut the gas valve.
4. Open the display valve and loosen the two screws on the left and right of the display, and remove the front panel.
5. Wait until the unit has cooled down.
6. Unscrew the coupling nut at the bottom of the flue tube to the left.
7. Slide the flue gas pipe upwards (1) with a turn to the left until the bottom of the pipe reaches above the coupling of the condense outlet container. Pull the bottom of the pipe forward (2) and remove the pipe by rotating it to the left and down (3).
8. Lift the condense outlet tray from the connection of the siphon (4) on the left, and turn it to the right with the siphon connection over the edge of the bottom tray (5). Push down the condense outlet tray at the back from the connection to the heat exchanger (6) and remove it from the unit.
9. Take the connector from the fan and the ignition unit from the gas block.
10. Disconnect the coupling under the gas block.
11. Unscrew the shouldered bolts (hex key) of the front lid and remove it to the front, complete with gas block and fan (be careful not to damage the boiler controller, insulation plate, gas block, gas pipe and fan). Lay the removed front lid with the foot rests horizontally on a flat surface.
12. The boiler controller and the integrated insulation plate do not require any maintenance (do not need cleaning). Therefore never use a brush or compressed air to clean these parts, in order to avoid dust developing.



9.1.2 Cleaning

1. Clean the heat exchanger with a brush or vacuum cleaner, from top to bottom.
2. Clean the bottom of the heat exchanger.
3. Clean the condense outlet tray with water.
4. Clean the siphon with water.
5. Only clean the bottom of the front plate.



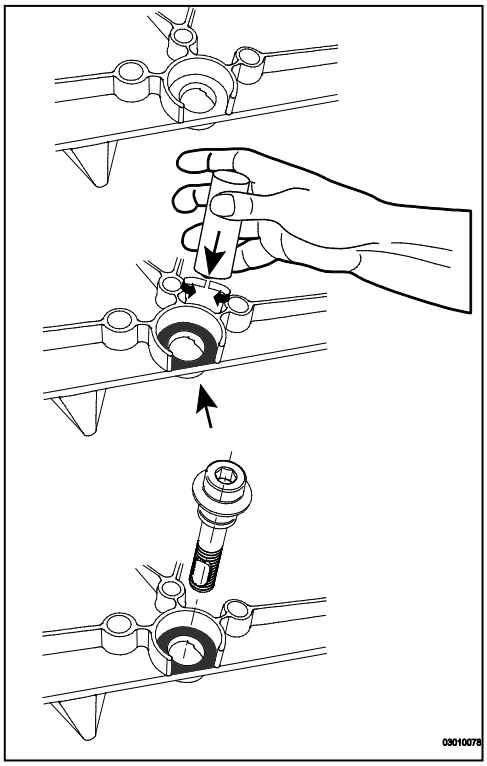
CAUTION

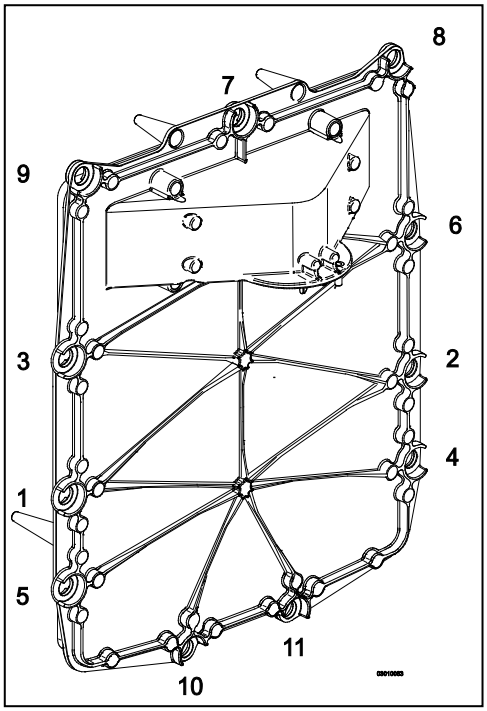
The integrated insulation plate and boiler controller gasket contain ceramic fibers.

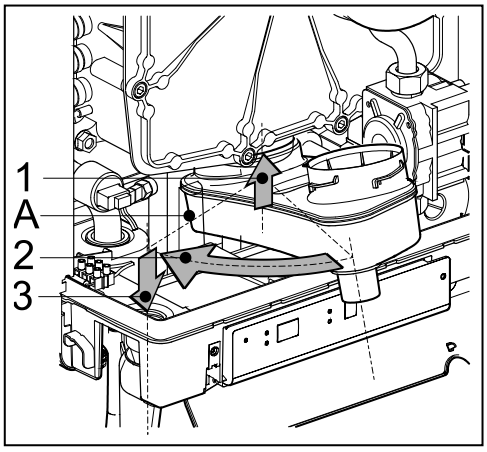
9.1.3 Fitting

When assembling, check the various seals for damages, hardening, (hairline) fractures and/or discoloration. Where necessary, place a new seal. Also check the correct positioning.

1. Check that between the flange of the shoulder bolt and the front plate, there is a thin layer of ceramic grease.
   If there is no or insufficient grease, it must be applied (see image).
2. Check whether the seal around the front lid has been fitted correctly. Place the front lid on the heat exchanger and secure it with the special shoulder bolts (hex key). Evenly tighten the shoulder bolts crosswise manually (10 – 12 Nm). For the sequence of tightening, see image.
3. Evenly manually tighten the boiler controller bolts crosswise.
4. Fit the gas coupling under the gas block.
5. Fit the connector onto the fan and the ignition unit onto the gas block.
6. Fit the condense outlet tray by sliding it into the outlet stump of the switcher (1), with the siphon connection, before the bottom tray. Then turn the condense outlet tray to the left (2) and push it down into the siphon connection (3). Make sure that the rear of the condense outlet tray ends up resting on the cam at the back of the bottom container (A).
7. Fill the siphon with water and fit it onto the connection under the condense outlet tray.
8. Slide the flue gas pipe, while turning it to the left, with its top around the flue gas adapter in the top lid. Insert the bottom into the condense outlet tray, drag the gasket down and tighten the swivel head to the right.
9. Open the gas valve and check the gas couplings under the gas block and on the assembly bracket for leakage.
10. Check the CH and the water pipes for leakage.
11. Insert the plug into the socket.
12. Switch the unit on with the ⏻ button.
13. Check the front lid, the connection of the fan to the front lid and the flue tube parts for leaks.
14. Check the gas-air regulation (see par. 7.7 and par. 7.8) and check the gas coupling on the gas block for gas tightness.
15. Assemble the cover and tighten the two screws to the left and the right of the display, and close the display cover.
16. Check the heating and the hot water provision for correct functioning.







10 TECHNICAL SPECIFICATIONS

Unit category	C13; C 33; C43; C53; C63; C83: C93
Initial gas pressure	G20 – 20 mbar; G31: 28-50 mbar
Suitable for gas	II2H3P

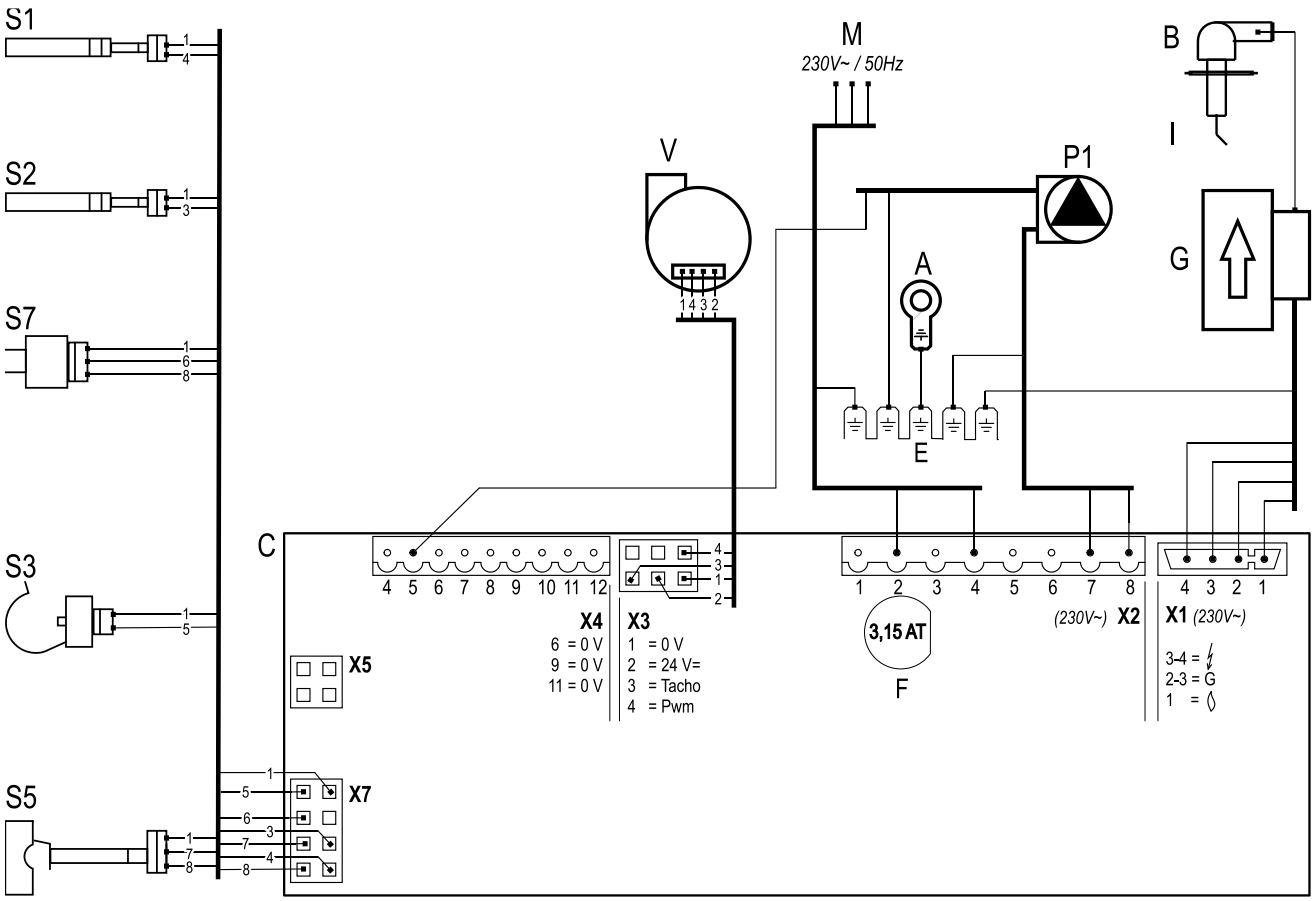
Technical data		EKOMBG*AAV1		
		22	28	33
Domestic water				
Nom. load upper value	kW	6.1 – 25.9	8.0 – 32.3	8.3 – 36.3
Nom. load lower value	kW	5.6 – 23.3	7.1 – 29.1	7.6 – 32.7
Nom. output	kW	5.9 – 22.7	7.7 – 28.4	8.2 – 32.1
Domestic water threshold	l/min	2		
Domestic water quantity 60°C	l/min	6	7.5	9
Domestic water quantity 40°C (mixed)	l/min	10	12.5	15
Domestic water temperature	°C	60		
Effective unit wait time*	sec	<1		
Domestic water side pressure difference	kPa	See par. 5.2		
CH				
Nom. load upper value**	kW	6.1 – 25.9	8.0 – 32.3	8.3 – 36.3
Nom. load lower value**	kW	5.6 – 23.3	7.1 – 29.1	7.6 – 32.7
Output at 80/60°C Min - Nom	kW	5,4 - 22,7	7,1 - 28,4	7,4 - 32,1
Output at 50/30°C Min - Nom	kW	5,9 - 23,8	7,7 - 31,1	8,2 - 35,0
Nom. output	kW	5.9 – 22.7	7.7 – 28.4	8.2 – 32.1
Max. CH water pressure	bar	3		
Max. CH water temperature	°C	90		
Other data				
Gas consumption (G25)	m³/h	0.67 – 2.80	0.85 – 3.50	0.91 – 3.93
Gas consumption (G20)	m³/h	0.58 – 2.42	0.74 – 3.02	0.79 – 3.39
Gas consumption (G31)	m3/h	0.22 – 0.92	0.28 – 1.15	0.30 – 1.29
Pressure loss of the unit (CH)	mH2O	See par. 7.4		
Electrical data				
Mains voltage	V	230		
Safety class	IP	IP44		
Absorbed power: full load	W	80		
Absorbed power: part load	W	40		
Absorbed power: standby	W	2		
Installation measurements and weight				
Height	mm	590	650	710
Width	mm	450		
Depth	mm	240		
Weight	kg	30	33	36

* Time needed from beginning of draining in order to achieve a temperature increase of 40K to the hot water outlet of the device based on the CW-hot water flow.

** Maximum CH power is set at the factory at 60% of the highest value (see par. 7.3 Setting CH power).

10.1 Electrical diagram

A	Earth connection heat exchanger	F	Fuse (3.15 AT)	P1	CH pump	S5	Flow sensor
B	Spark cover	G	Gas valve + ignition unit	S1	Supply sensor	S7	CH water pressure sensor
C	Boiler controller	I	Ignition/ionization pin	S2	Return sensor	V	Fan
E	Earth lips boiler controller	M	Mains voltage	S3	DHW sensor		



			Connecting:
Connector X4 *24V=*	5 - ⏚		CH pump (5= PWM signal (red), E=earth)
	6 - 7		On/off room thermostat and/or frost thermostat (24Vdc or ± 125mA)
	8 - 9		Outdoor sensor (12 k Ohm / 25°C)
	9 - 10		Tank sensor or tank thermostat (if through connection 9 – 10 present, then remove it)
	11 - 12		OpenTherm thermostat
Connector X2 *230V~*	2 - 4		Mains cable (2=L (brown), 4=N (blue), E=earth)
	7 - 8		CH-pump (8=L (brown), 7=N (blue), E=earth)
	3 – 5 - 6		Floor heating or group regulation valve. (3=L (brown), 5=switch (black), 6=N (blue)) (EK3WV1AA).
	3 – 5 - 6		Three-way valve (3=L (brown), 5=switch (black), 6=N (blue)) (EK3WV1AA).
Connector X5			Computer interface

10.2 NTC resistances

NTC 12k Ohm					
T [°C]	R [ohm]	T [°C]	R [ohm]	T [°C]	R [ohm]
-15	76020	25	12000	65	2752
-10	58880	30	9805	70	2337
-5	45950	35	8055	75	1994
0	36130	40	6653	80	1707
5	28600	45	5522	85	1467
10	22800	50	4609	90	1266
15	18300	55	3863	95	1096
20	14770	60	3253	100	952

11 WARRANTY CONDITIONS

The general warranty conditions of Daikin Europe NV apply to this product.

The warranty is void if it is determined that the faults, damages, or undue wear are attributable to improper use or inexpert treatment or inexpert repair, setting, installation or maintenance, by non-certified installers, or that it was exposed to substances with aggressive chemicals (incl. hair spray) and other damaging substances.

The warranty also becomes void when pipes and couplings have been applied in the installation which may cause oxygen diffusion, or the defect is a consequence of lime scale (damaging to the unit and installation). Surface damage as well as transport damage is included under the warranty. The entitlement to warranty becomes void if it cannot be proven that the CH boiler has been subjected to maintenance by a certified installer at least once a year from the commissioning date. The instructions for installation and use which we provide for units must be followed in full.

Environment

If the unit is due for replacement, it can usually be taken back by your dealer, following consultation. Should this not be possible, consult your council for the possibilities for recycling or environmentally friendly processing of used materials.

Various plastics and metals were used in the manufacturing of the unit. Furthermore, the unit contains electrical components which belong with electronic waste.

Use as intended

The unit, as described in this documentation is intended for heating spaces via a central heating installation and/or the supply of hot water. Any other usage falls outside the intended use of the unit. No liability can be accepted on damage arising from incorrect use.

DAIKIN EUROPE N.V.

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