



*excellence
in hot water*



Kompakt HRE eco

12 Solo

18 Solo

30 Solo

40 Solo

Installation instructions

Read these installation instructions carefully before installing and using the appliance.

Keep these installation instructions with the appliance.
Always act in accordance with the instructions indicated.

INDICE

1	SAFETY REGULATIONS	4
1.1	General	4
1.2	Central heating installation	4
1.3	Gas installation	4
1.4	Electrical installation	4
1.5	Drinking water installation (only in combination with external DHW tank)	4
1.6	Flue pipe and air supply	4
2	Description of appliance	5
2.1	General	5
2.2	Operation	5
2.3	Operating modes	5
2.4	PC Interface	7
2.5	Test program's	7
3	Principal components	8
4	Installation	9
4.1	Overall dimensions	9
4.2	Installation location	10
	Installing the appliance	11
5	Connection	12
5.1	Connecting CH installation	12
5.2	Connecting a DHW tank	13
5.3	Electrical connection	14
5.4	Connect room thermostat	15
5.5	Gas connection	16
5.6	Flue pipe and air supply	17
5.7	Pipe lengths	18
5.8	Balanced flue assemblies	20
5.9	Roof outlet Common Flue System	30
6	COMMISSIONING the appliance	32
6.1	Filling and venting the appliance and the installation	32
6.2	Commissioning the appliance	33
6.3	Shutting down	34
7	Setting and adjustment	35
7.1	Directly via the operating panel	35
7.2	Setting via the service code	36
7.3	Parameters	36
7.4	Activating and de-activating DHW comfort	37
7.5	Setting maximum CH power	38
7.6	Setting pump setting	38
7.7	Weather-dependent adjustment	39
7.8	Conversion to different gas type	40
7.9	Gas-Air ratio control	41
7.10	Checking the gas air ratio control	42
8	FAults	46
8.1	Fault codes	46
8.2	Other faults	46
9	Maintenance	49
10	Technical specifications	51
10.1	NTC resistances	51
10.2	Product Fiche according to CELEX-32013R0811, ANNEX IV	52
10.3	Electrical diagram Kompakt HRE eco Solo	53
11	Warranty provisions	54
12	CE- Declaration	54

The information provided applies to the standard version of the product. ACV International cannot therefore be held liable for any loss or damage arising from product specifications deviating from the standard version. The available information has been compiled with all possible care, but ACV International cannot be held liable for any errors in the information or for the consequences thereof.

ACV International cannot be held liable for any loss or damage arising from work performed by third parties.

Subject to change

This manual

This manual will enable you to assemble, install and maintain the appliance safely.
Follow the instructions meticulously.

In case of doubt contact the manufacturer.

Keep these installation instructions with the appliance.

Abbreviations and descriptions used

Description	Referred to as
High efficiency	HE
ACV Kombi Kompakt HRE wall mounted gas fired boiler	Appliance
Appliance plus pipework for central heating	CH installation

Pictograms

The following pictograms are used in this manual:



CAUTION

Procedures which – if they are not performed with the necessary caution – can result in damage to the product, the surrounding area or the environment, or in physical injury.

Service and technical support

For information about specific adjustments, installation, maintenance and repair work, please contact:

ACV International
Oude Vijverweg 6
B-1653 Dworp

www.ACV.com

Product identification

You will find the appliance data on the data plate on the underside of the appliance.

- A. Appliance type
- B. Hot water power rating (kW)
- C. Power rating, upper and lower value (kW)
- D. Rated power (kW)
- E. Gas category
- F. Gas connection pressure (mbar)
- G. Gas type set
- H. Pin
- I. Appliance category
- J. Maximum CH pressure (bar)
- K. Maximum CH water temperature (°C)
- L. n/a
- M. Electrical connection
- N. NOx number
- O. Serial number
- P. Year of manufacture

Kompakt HRE eco ** Solo

No:

Anno:

Condensing boiler

Type: B23, B33, C13(x), C33(x), C43(x), C53(x), C63(x), C83(x), C93(x)

Type BE: B23, B33, C13(x), C33(x), C43(x), C53(x), C83(x), C93(x)

NOx classe: 5

PIN: 0063 AR 3527

BE	G20 - 20mbar	I2E(S)
	G25 - 25mbar	

HR, IT, SI	G20 - 20mbar	I12H3P
LU, PL		I12E3P

Qn (Hi)	G20: **_**	G25: **_**	kW
Pn(80-60)	**_**		kW
Pn(50-30)	**_**		kW
PMS	3		bar
Tmax	90		°C

~230V-50Hz, 80W, IP44 (B23, B33= IP20)

ACV International
Oude Vijverweg 6
1653 DWORP Belgium
Email: International@acv.com

CE
0063
2013

1 SAFETY REGULATIONS

The manufacturer ACV International accepts no liability whatsoever for damage or injury caused by failure to adhere (strictly) to the safety regulations and instructions, or carelessness during installation of the Intergas Kombi Kompakt High Efficiency wall mounted gas fired boiler and any associated accessories.

1.1 General

The system as a whole must satisfy the applicable safety and other regulations, as indicated in:

- These installation instructions.
- NEN 1087: Ventilation in buildings – Determination methods for new estate
- NEN 3215: Drainage systems inside buildings.
- The Building Decree.
- Local regulations of municipal authority, fire service and public utilities.

1.2 Central heating installation

The entire installation must comply with the applicable safety and other regulations, as indicated in:

- NEN 3028: Requirements for fuel combustion installations.

1.3 Gas installation

The entire installation must comply with the applicable safety and other regulations, as indicated in:

- NEN 1078 (2004): Supply for gas with an operating pressure up to and including 500 mbar – performance requirements- new estate
- NPR 1088: Ventilation in dwellings and residential buildings.
- NPR 3378: Guidelines for gas installations.
- NEN 2920: Requirements for domestic gasconsuming installations and . . . on commercial butane, commercial propane en butane/propane mixtures.

1.4 Electrical installation

The entire installation must comply with the applicable safety and other regulations, as indicated in:

- NEN 1010: Safety requirements for low-voltage installations

1.5 Drinking water installation (only in combination with external DHW tank)

- NEN 1006: General requirements for water supply installations.

1.6 Flue pipe and air supply

The flue pipe and air supply installation must comply with:

- NEN 1078 (2004): Supply for gas with an operating pressure up to and including 500 mbar – performance requirements- new estate
- NEN 2757: Air supply and smoke outlet of incineration furnaces in buildings – determination methods.
- NPR 3378: Guidelines for gas installations.

2 DESCRIPTION OF APPLIANCE

2.1 General

The ACV Kombi Kompakt HRE wall mounted, gas fired boiler is a closed appliance. The appliance is intended to deliver heat to the water in a CH system and the DHW installation.

The air supply and combustion gas flue can be connected to the appliance by means of two separate pipes. A concentric connection can be supplied if requested. The appliance has been inspected in combination with the ACV "combi duct", but it can also be connected to combi ducts that comply with the universal requirements for combi ducts and which carry a 'Gaskeur' (Dutch gas certification).

Depending on preference, the appliance may be connected to a mounting bracket, a frame with top connection and various connection sets. These are supplied separately.

The ACV Kombi Kompakt HRE wall mounted gas fired boilers carry the CE label, IP 44 rating and the 'Gaskeur' (Dutch gas certification) labels HR & SV.

The appliance is supplied as standard for natural gas (G20). On request a conversion set for propane (G31) can be delivered.

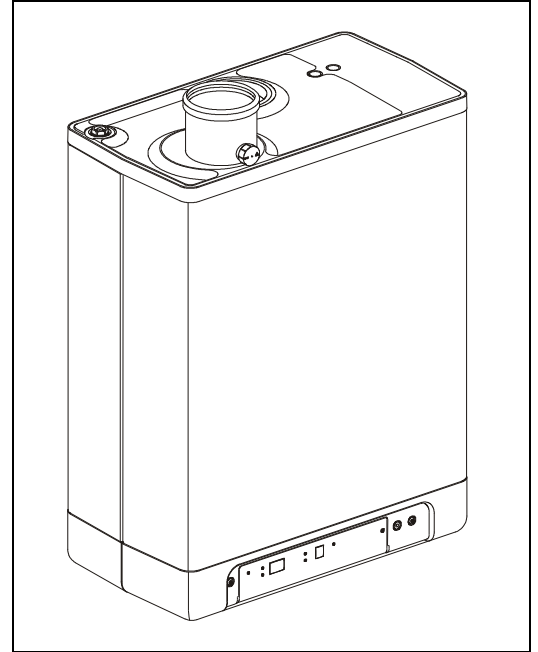
2.2 Operation

The ACV Kombi Kompakt HRE wall mounted, gas fired boiler is a modulating high efficiency boiler. This means that the power is adjusted in line with the desired heat requirement.

The aluminium heat exchanger comprises a copper circuit.

By using a diverter valve and a sensor the ACV Kompakt Solo can be connected to an external DHW tank. The internal boiler controller regulates the DHW demand and assures that DHW supply takes priority over the heating.

The appliance has been provided with an electronic burner controller that controls the fan with the heat demand from either heating system or external DHW tank, opens the gas valve, ignites the burner and continuously monitors the flame and controls it dependent on the power required.




2.3 Operating modes

A code on the service display of the operating panel indicates the appliance's operating mode.


Off

The appliance is out of operation but is supplied with electrical power. No response occurs to calls for DHW or CH. The appliance frost protection is active. This means that the pump operates and the exchanger is heated up if the temperature of the water present in it falls too far.

If the frost protection is actuated, code  is displayed (heating exchanger).

In this operating mode the pressure in the CH installation (in Bar) can also be read on the temperature display.

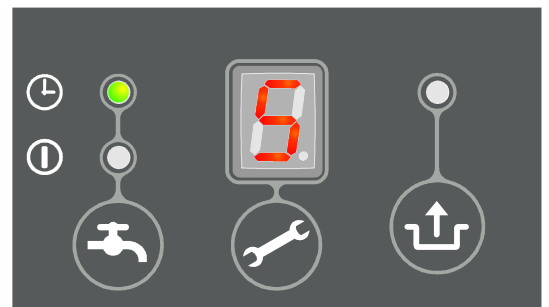
Waiting mode

The LED at the  button is lit and possibly one of the LEDs for the DHW comfort function. The appliance is ready to respond to a request for CH or DHW.

Running on of CH

After the end of CH operation the pump continues to run. The running on time is factory set at the value in accordance with section 7.3, page:36. This setting can be changed.

In addition, the pump runs automatically for 10 seconds once every 24 hours in order to prevent seizing. This automatic switching on of the pump occurs at the time of the last call for heat. To change the time, the room thermostat setting should be increased briefly at the desired time.



1 Desired temperature reached

The burner manager can temporarily block the request for heat. The burner is then stopped. Blocking occurs because the requested temperature has been reached. When the temperature has fallen sufficiently the blocking is cancelled.

2 Self-test

The connected sensors are checked regularly by the burner manager. During the check the manager does not perform any other tasks.

3 Ventilation

When the appliance is started the fan is first brought to starting speed. When the starting speed has been reached the burner is lit. Code **3** is also visible when post-ventilation is taking place after the burner has stopped.

4 Ignition

When the fan has reached the starting speed, the burner is ignited by means of electrical sparks. During ignition the code **4** is visible. If the burner does not ignite, a new ignition attempt occurs after approximately 15 seconds. If after 4 ignition attempts the burner is not yet burning, the burner manager goes into fault mode. (See section 8.2.1).

5 CH operation

An on/off thermostat, an OpenTherm thermostat, an external sensor or a combination of the latter can be connected to the burner manager. (See section 10.2)

When a request for heat is received from a thermostat, the fan is started (code **3**), followed by ignition (code **4**) and CH operating mode (code **5**).

During CH operation the fan speed and hence the appliance power are controlled by the burner manager so that the CH water temperature reaches the desired CH supply temperature.

If an on/off thermostat is connected, this is the CH supply temperature set on the display. In the case of an OpenTherm thermostat the desired CH supply temperature is determined by the thermostat. In the case of an external sensor the desired CH supply temperature is determined by the heating line programmed in the burner manager. For the latter two, however, the maximum is the temperature set on the display.

The CH operation the requested CH supply temperature is indicated on the operating panel.

The CH supply temperature can be set between 30°C and 90°C. (See section 7.1).

The actual CH supply temperature can be read by pressing the service button during CH operation.

When the DHW comfort function is switched on (See code **7**) any OpenTherm request for heat of less than 40°C is ignored.

The resistance R may be removed if the room thermostat does not need anticipation current. (See section 10.2)

6 DHW operation

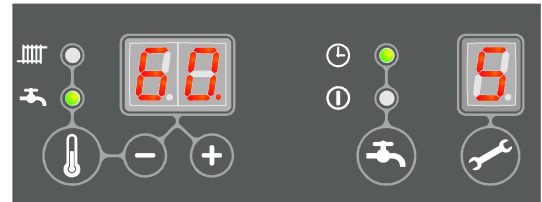
The hot water supply takes priority over the heating. When the sensor in the DHW tank measures a temperature 5 °C below the setting, an eventual CH demand will be stopped, the diverter valve will switch and the boiler will heat up the DHW tank until the demanded temperature has been reached. During this process the display shows code **6**

When a thermostat is used instead of a sensor the DHW heat demand starts when the thermostat opens and stops when the thermostat closes.

During DHW operation the fan speed, and hence the power of the appliance, are controlled by the burner manager so that the DHW water temperature reaches the DHW temperature setting.

The water temperature can be set between 40°C and 65°C (See section 7.1) and is displayed on the operating panel during DHW operation.

The actual DHW temperature can be read by pressing the service button during DHW operation.



2.4 PC Interface

The burner manager is equipped with an interface for a PC, which can be connected by means of a special cable and associated software. This facility allows the behaviour of the burner manager, the appliance and the heating installation to be monitored over a longer period.

2.5 Test program's




The burner manager has a facility for placing the appliance in test mode.

Activation of a test program will result in the appliance starting operation at a fixed fan speed, without the control functions being actuated.

The safety functions do remain active.

The test program is ended by pressing the **+** and **-** simultaneously.

Test programs

Program description	Button combinations	Display reading
Burner on at minimum CH power	 and -	"L"
Burner on with maximum CH power setting (See section 7.3, parameter 3)	 and + (1x)	"h"
Burner on with maximum DHW power (See section 7.3, parameter 4)	 and + (2x)	"H"
Switch off test program	+ and -	Actuele bedrijfssituatie

Addition readings :

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

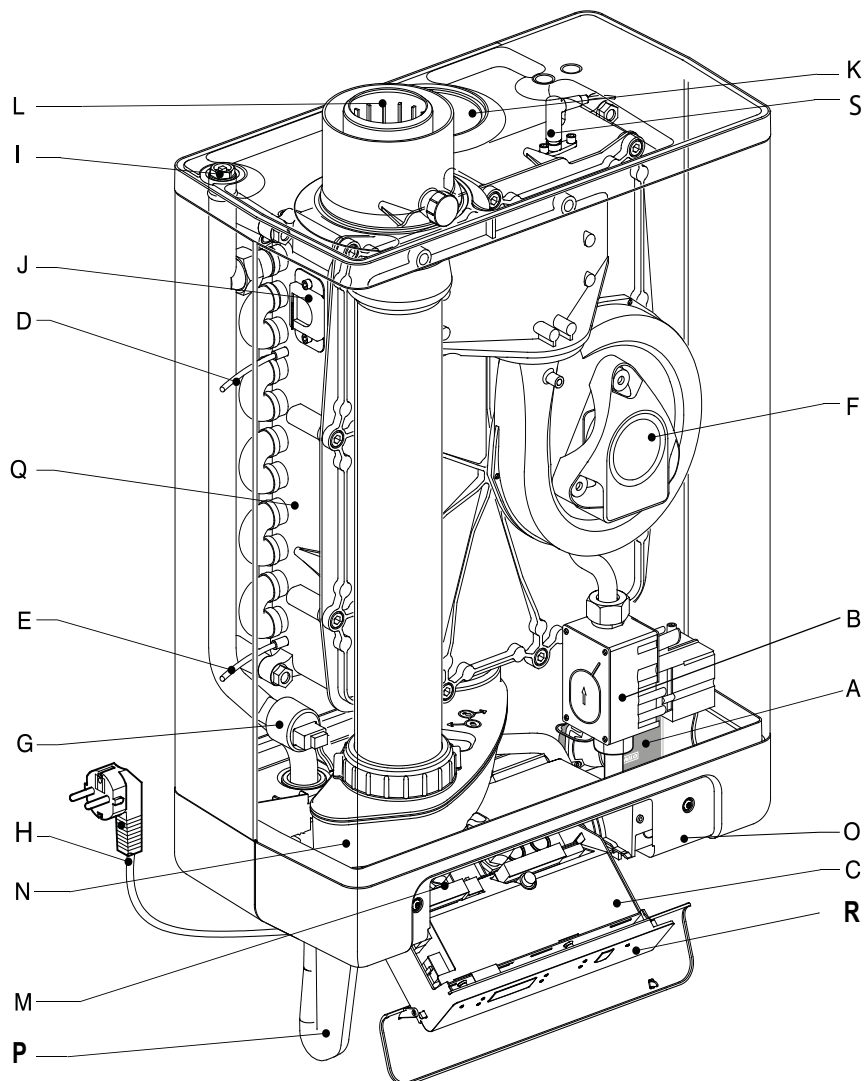


- To prevent freezing of the appliance it is equipped with appliance frost protection. If the heat exchanger temperature falls to low, the burner switches on and the pump runs until the heat exchanger temperature is sufficient. When the appliance frost protection is actuated code **7** is displayed (pre heating exchanger).
- If the installation (or a part of it) can freeze, an (external) frost thermostat must be fitted to the return line at the coldest location. This must be connected in accordance with the wiring diagram. (See section 10.2.)

Note

If the appliance is out of operation (**-** on the service display) the appliance frost protection **is** active. However, a request for heat from an (external) frost thermostat will not be responded to.

3 PRINCIPAL COMPONENTS

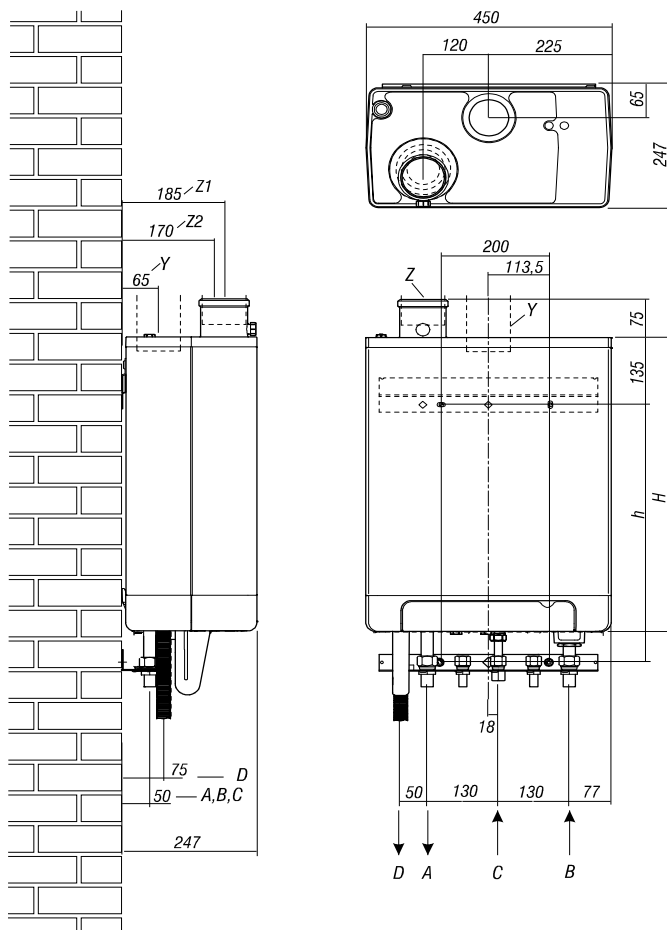


- | | |
|---|---|
| A. CH pump | K. Air inlet |
| B. Gas valve | L. Flue pipe adapter |
| C. Burner manager | M. Connection block / terminal strip X4 |
| D. Supply sensor S1 | N. Condensate drain pan |
| E. Return sensor S2 | O. Siphon |
| F. Fan | P. Position data plate |
| G. CH pressure sensor | Q. Heat exchanger |
| H. Mains lead 230 V AC with grounded plug | R. Operating panel and read-out |
| I. Manual air bleed | S. Ignition/ionisation pin |
| J. Inspection glass | |

4 INSTALLATION

4.1 Overall dimensions

Appliance with connections downwards:



Appliance + mounting bracket

A =	Supply CH	Ø22
B =	Return CH	Ø22
C =	Gas	½" (F)
F =	Condensate drain	Ø25 (flexible)
h =	517	HRE eco 12 and 18 Solo
	637	HRE eco 30 and 40 Solo
H =	590	HRE eco Solo 12 and 18
	710	HRE eco 30 and 40 Solo
Y =	Air supply	Ø80 (*)
Z1 =	Flue pipe	Ø80 (*)
Z2 =	Flue pipe / air supply	Concentric Ø60/100 (standard) or Ø80/125 (*)

(*) After changing the flue adapter

Appliance + mounting bracket + complete bottom connection set

A =	Supply CH	Ø22 (compression)
B =	Return CH	Ø22 (compression)
C =	Gas	Ø15 (compression)
F =	Condensate drain	Ø25 (flexibel)
Y =	Air supply	Ø80 (*)
Z1 =	Flue pipe	Ø80 (*)
Z2 =	Flue pipe / air supply	Concentric Ø60/100 (standard) or Ø80/125 (*)

(*) After changing the flue adapter

4.2 Installation location

The appliance should be fitted to a wall that has sufficient bearing strength.

In case of light wall structures the possibility exists that resonance noise may occur.

There must be an earthed wall socket within 1 m of the appliance.

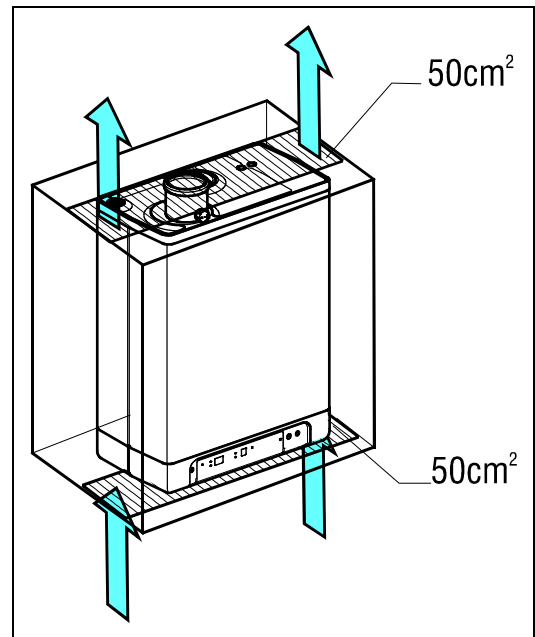
If the appliance is installed as an open appliance, the installation location should be equipped with the necessary openings for the combustion air supply. (See section 5.6.2)

To prevent freezing of the condensate drain pipe, the appliance must be installed in a frost-free room.

4.2.1 Installing in a kitchen cupboard

The appliance can be installed between two kitchen cabinets or in a cabinet.

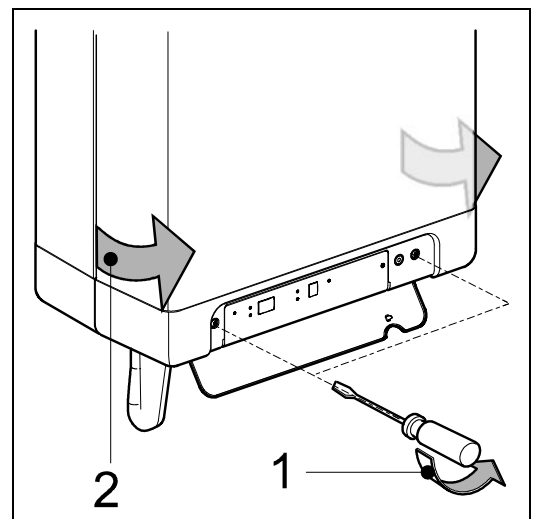
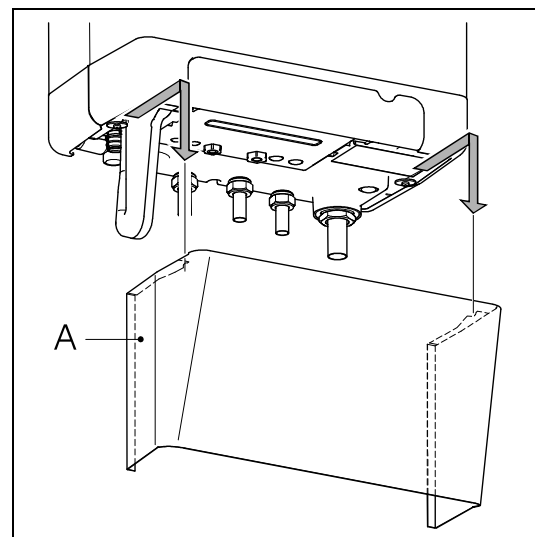
Ensure sufficient ventilation at top and bottom. If the appliance is installed in a cabinet, ventilation openings of at least 50 cm² must be created.



4.2.2 Removing cover plate and front panel

For various work on the appliance the cover plate and front panel should be removed from the appliance. Proceed as follows:

- If cover plate (A), is used, remove to the front.
- Unscrew the two screws (1) behind the appliance display cover.
- Pull the bottom of the front panel (2) forwards.



Installing the appliance

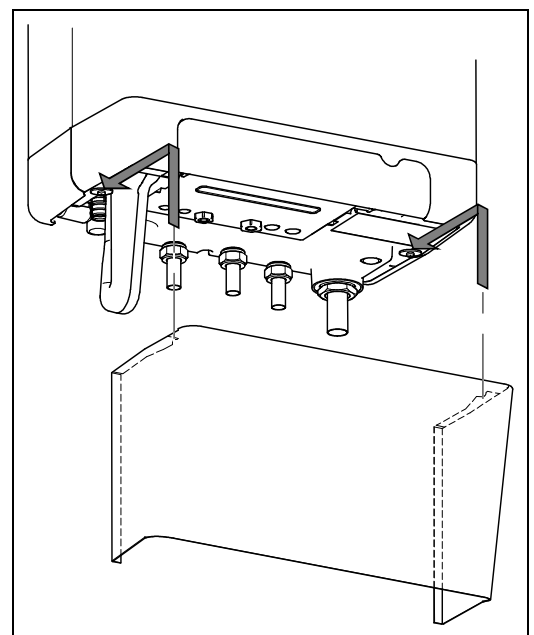
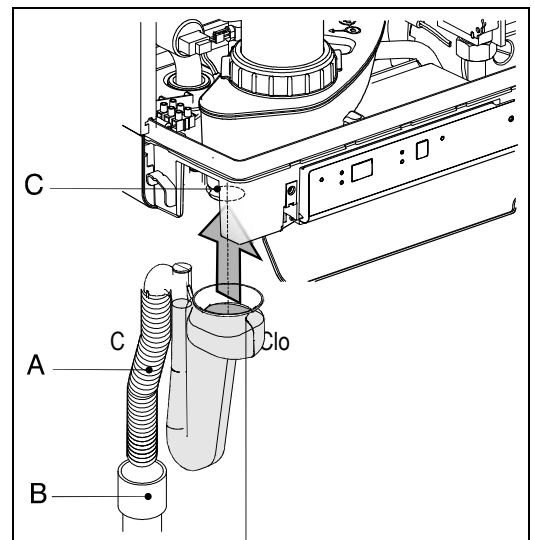
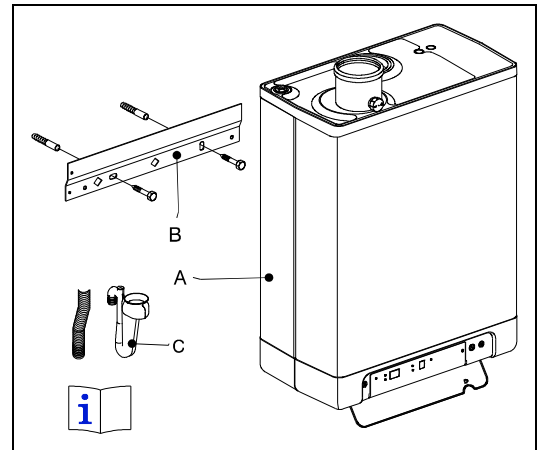
1. Unpack the appliance.
2. Check the contents of the packaging; they consist of:
 - Appliance (A)
 - Suspension strip (B)
 - Siphon (C)
 - Installation instructions
 - Operating instructions
 - Warranty card
3. Check the appliance for possible damage: report damage immediately to the supplier.
4. Check whether the compression rings are sitting squarely in the mounting bracket couplings.
5. Fit the appliance, sliding it downwards over the suspension strip. Ensure at the same time that the pipes slide into the compression fittings.
6. Tighten the compression fittings on the mounting bracket. The nipples must not be allowed to turn!
7. Open the display cover and unscrew the two screws behind. Then remove the front panel.
8. Fit the flexible tube to the siphon outlet.
9. Fill the siphon with water and slide it as far as possible upwards on to the condensate drain connector (C) below the appliance.
10. Connect the flexible tube (A) from the siphon (where applicable together with the overflow pipe from the inlet assembly and the pressure relief valve) to the drain via an open connection (B).
11. Fit the air supply and the combustion gas flue. (See section 5.6)
12. Place the front cover and tighten the two screws (hand tight), close the display cover.



IMPORTANT

The Kompakt HRE eco 40 Solo is only to be used in combination with the accompanying siphon.

Make sure that, when replacing the siphon the correct version is ordered (art. nr. 91844787)



4.2.3 Fit the cover plate

Hang the flanged upper edge of the cover plate on the washers under the base of the appliance and slide the cover plate as far as possible towards the rear.

5 CONNECTION

5.1 Connecting CH installation

1. Flush the CH system thoroughly to clean.
2. Fit the supply pipe (B) and the return pipe (A) to the mounting bracket.
3. All pipes must be fitted unstressed in order to prevent the pipes from ticking.
4. Existing connections must not be twisted, in order to avoid leakages.

The CH system should be equipped with:

- A filling/draining tap (A) in the return pipe immediately below the appliance.
- A drain tap at the lowest point(s) of the installation.
- A 3 bar pressure relief valve (B) in the supply pipe at a maximum distance of 500 mm from the appliance.
There must be no valve or constriction between the appliance and the overflow valve.
- An expansion vessel in the return pipe.
- A check valve, if pipes run upwards at a short distance from the appliance. This avoids the occurrence of thermosiphon effect during DHW operation mode.

5.1.1 Thermostatic radiator valves

If all radiators are equipped with thermostatic or regular radiator valves, a bypass must be fitted in order to guarantee minimum water circulation. The bypass must be at a distance of at least 6 m from the appliance in order to prevent overheating of the appliance.

Appliance with zone regulation.

If there is, next to the CH system another heating source (as for example a stove or a fireplace) in the living room often the problem occurs that the other rooms cool down. This can be solved by splitting up the CH system into two separate zones. The zone regulation can only be used if there is no external DHW tank present (in case of a system boiler)

Schedule zone-regulation

- A. Appliance
- B. Electrical Shut-off valve 230 V ~
- C. Radiators
- T1. Room thermostat zone 1
- T2. Room thermostat zone 2
- Z1. Zone 1
- Z2. Zone 2

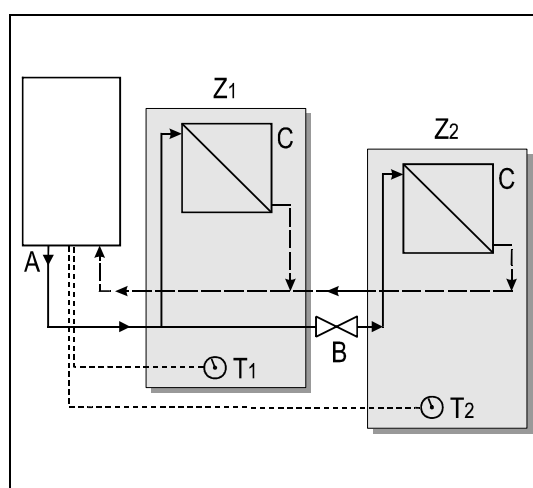
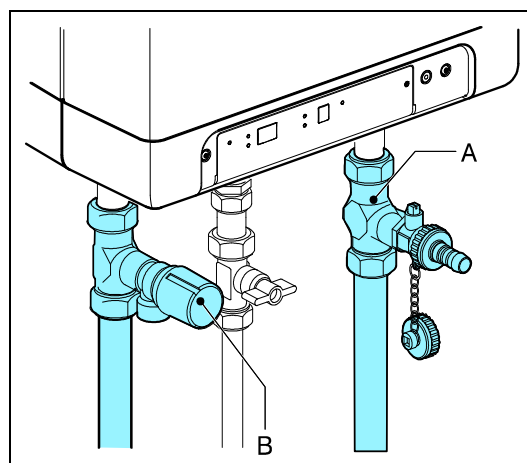
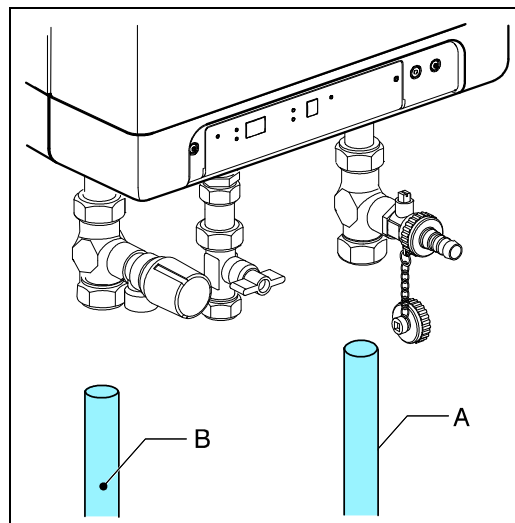
Operating principle

The zone regulation contains 2 room thermostats and a shut off valve. When the room thermostat of zone 2 generates a heat demand, the shut off valve opens and the complete CH system heats up (zone 1 and 2). When the heat demand of zone 2 is not or no longer present, room thermostat 1 controls the room temperature in zone 1.

Installation

5. Place the shut-off valve into the heating system according to the schedule.
6. Connect the room thermostat of zone 1 on to connector X4 – 6/7.
7. Connect the room thermostat of zone 1 on to connector X4 – 11/12.
8. Modify parameter A in the parameter list. (See § 7.3)

Note : The room thermostat for zone 1 must be an on/off type. The room thermostat for zone 2 can be either on/off or "Open Therm".



5.2 Connecting a DHW tank

For connecting the Kompakt Solo HR on an indirect heated DHW tank the following parts can be ordered:

- Sensor set for DHW tank (art. nr. 065.117)
- Divider valve set (art. nr. 092647).

Connect the DHW tank and the divider valve on in accordance with the schedule. Remove the link between 9 and 10 of connector X4.

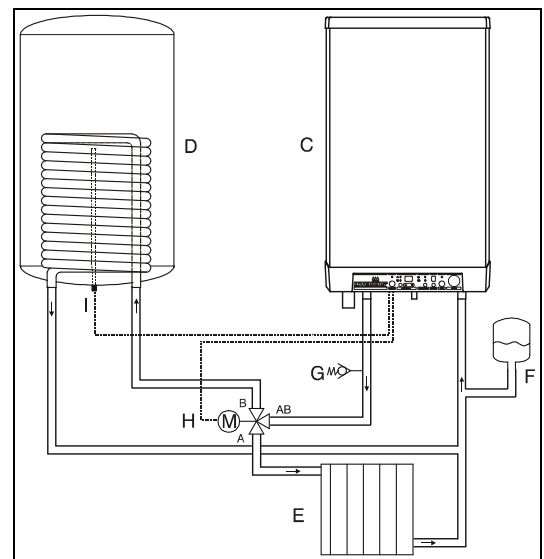
Connect cable of the divider valve to connector X2 and the DHW tank sensor to connector X4 (see schedule § 10.2)

Aansluitschema indirect gestookte boiler

C	Boiler
D	DHW tank
E	Central heating installation
F	Exp. vessel
G	Safety valve
H	Divider valve

Remark

When using a DHW tank thermostat instead of a sensor heating up the tank will start when the thermostat is open and stop with the thermostat closes again.



5.3 Electrical connection



CAUTION

An earthed wall socket must be located no more than 1 metre from the appliance.

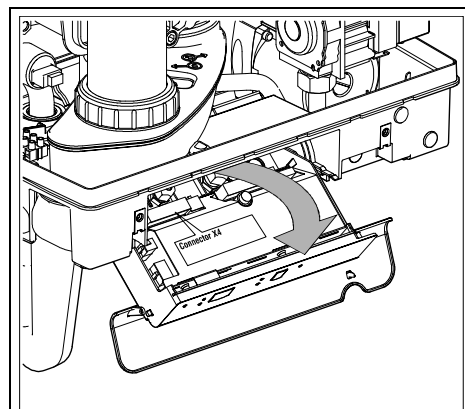
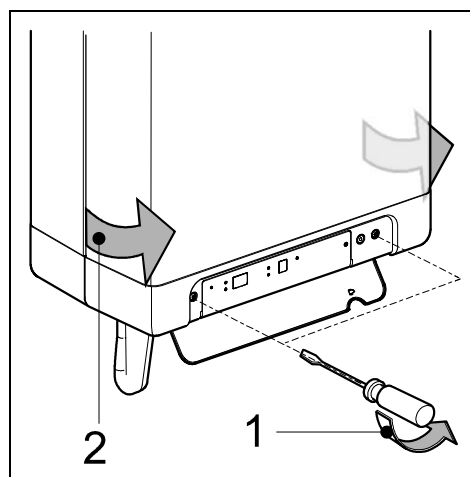
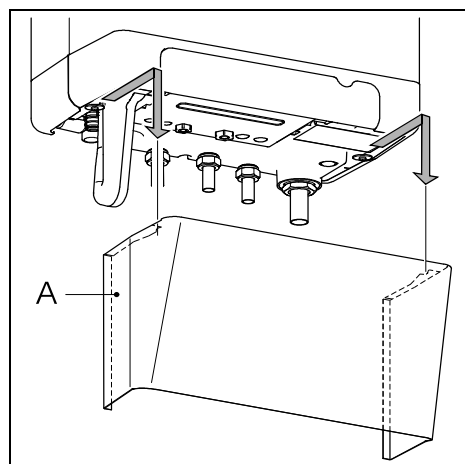
The wall socket must be easily accessible.

For installation in damp rooms a fixed connection is obligatory.

When working on the electrical circuit always remove the plug from the wall socket

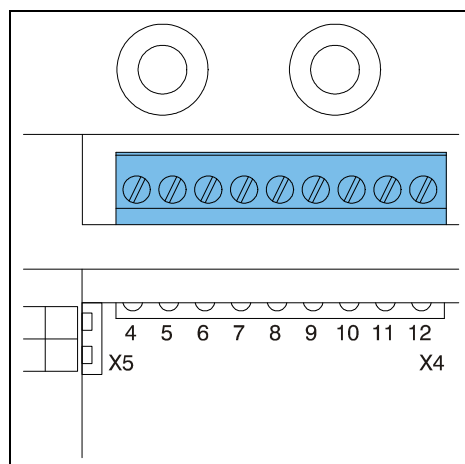
If the mains lead has to be replaced, this should be carried out by the manufacturer

1. Slide the cover plate (A) (if present) to the front to remove.
2. Unscrew screw (A) to gain access to the burner manager (B).
3. Pull the burner manager unit forwards; the burner manager will tip downwards to provide access.
4. Consult sections 5.3.1 and 10.2 for the making the connections.
5. After making the desired connections plug the appliance into an earthed wall socket.



5.3.1 Electrical connections

Temperature control	Connector X4	Notes
Room thermostat	6 - 7	On/Off
Modulating thermostat with comfort function in use	11 - 12	6 - 7 open
Outside temperature sensor	8 - 9	-
External DHW disable- or MIT switch	9 - 10	Boiler NTC or thermostat. Note: Remove link 9-10.
Frost protection thermostat	6 - 7	Parallel to 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 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

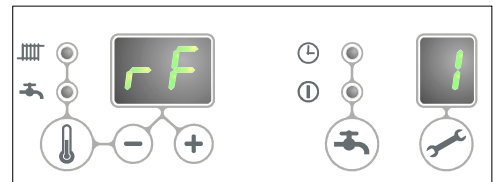
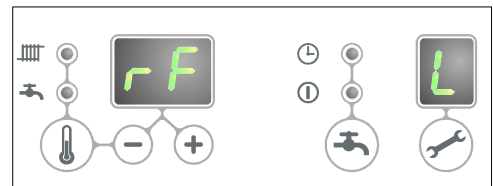
The ACV HRE boiler is suitable to communicate wirelessly without sending/receiving module with the Honeywell room thermostats T87RF1003 Round RF, DTS92 and CMS927. The CH boiler and the room thermostat must be appointed to each other:

- Press the reset  button of the unit for approximately 5 seconds in order to get to 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 the  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 exit 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.

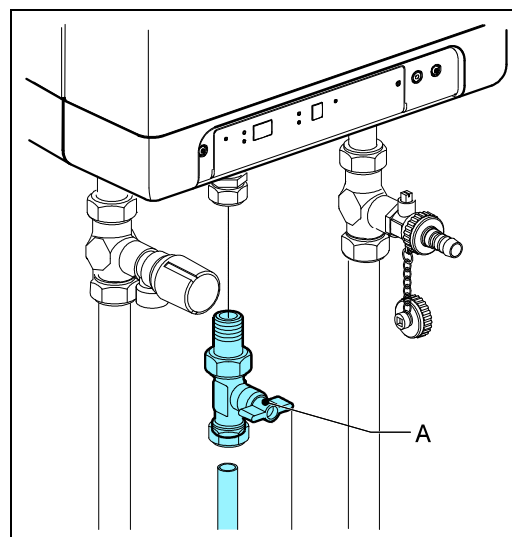
In principle, any on/off room thermostat can be combined with an outdoor sensor. Upon request of the room thermostat, the boiler will provide heat until the maximum set temperature in the boiler has been reached. This maximum set temperature is automatically regulated via the outdoor sensor, in accordance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

5.5 Gas connection

1. Fit a gas tap (A) between the gas supply and the appliance.
2. Fit the connection from the gas tap preferably directly into the 1/2" connection at the mounting bracket.
3. Install a gas filter mesh in the connection for the appliance if the gas may be contaminated.
4. Connect the appliance to the gas supply.
5. Check the gas carrying parts for leakage at a maximum pressure of 500 mmH₂O

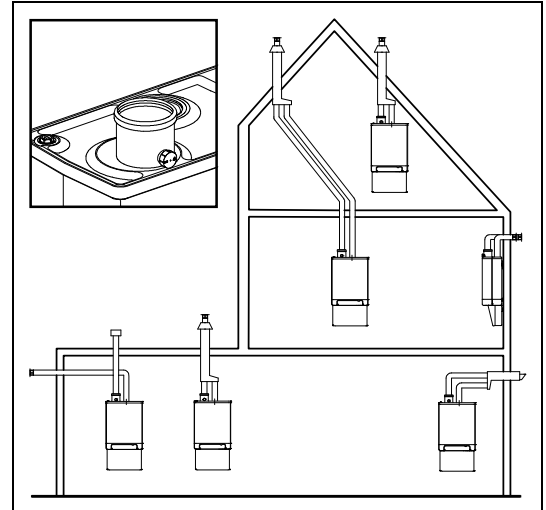


5.6 Flue pipe and air supply

- The boiler is equipped with an adapter suitable to be connected to a concentric flue system with the dimensions 60/100
- The flue systems needs to be correctly connected into the adapter . The internal seals in the adapter assure the tightness of the system.
- By replacing the concentric adapter 60/100 by a 80/125 version the boiler can be connected to concentric flue system with the dimensions 80/125.
- By replacing the concentric adapter 60/100 by a single pipe 80 mm adapter and removing the plastic cap from the air inlet connection the boiler can be connected to a twin pipe 80/80 flue system.

5.6.1 Draught, materials and insulation

Pipe	Diameter	Material
Air supply	ø 80 mm	As per the local fire service and/or power company regulations. 'Spiralotube', single-walled aluminium, galvanised sheet steel, stainless steel or plastic. Possibly insulated with 10 mm vapour-tight insulation material or plastic.
Combustion gas flue	ø 80 mm	As per table 8 of NEN 1078 (1987).
Insulation	-	10 mm vapour-tight insulation material in case of possibility of condensation on the outside as a result of a low wall temperature and a high room temperature with high relative humidity.



5.6.2 Open appliance connection



IMPORTANT

Make sure the boiler room complies to the regulatory requirements for connecting to a flue system in accordance to B23 or B33.

When connection the boiler to a flue system in accordance to B23 or B33 the electrical protection class is IP20

1. Fit the pipe for the combustion gas flue into the flue outlet. The integral sealing ring ensures an airtight connection.

5.6.3 Closed appliance connections

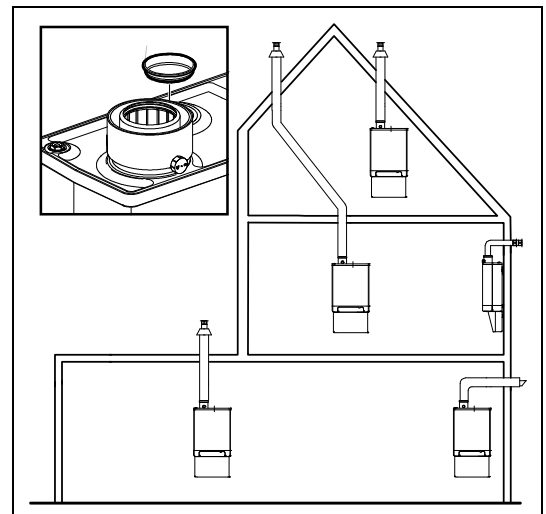
Two-pipe connection

1. Fit the pipes for the air supply and combustion gas flue into the appliance inlet and outlet. The integral sealing rings ensure an airtight connection.

Concentric connection

With the concentric adapter set the standard two-pipe connection can be changed to a concentric connection (80/125 or 60/100).

1. Fit the concentric pipe for the air supply and combustion gas flue into the adapter. The integral sealing rings ensure an airtight connection.



5.7 Pipe lengths

As the resistance of the flue pipe and air supply pipe increases the appliance power will decline. The maximum permitted reduction in power is 5 %.

The resistance of the air supply pipe and combustion gas flue depends on the length, the diameter and all components of the pipe system. The total permitted pipe length of the air supply and the combustion gas flue is indicated for each appliance category.

5.7.1 Pipe lengths using a concentric flue system

Concentrisc 60/100

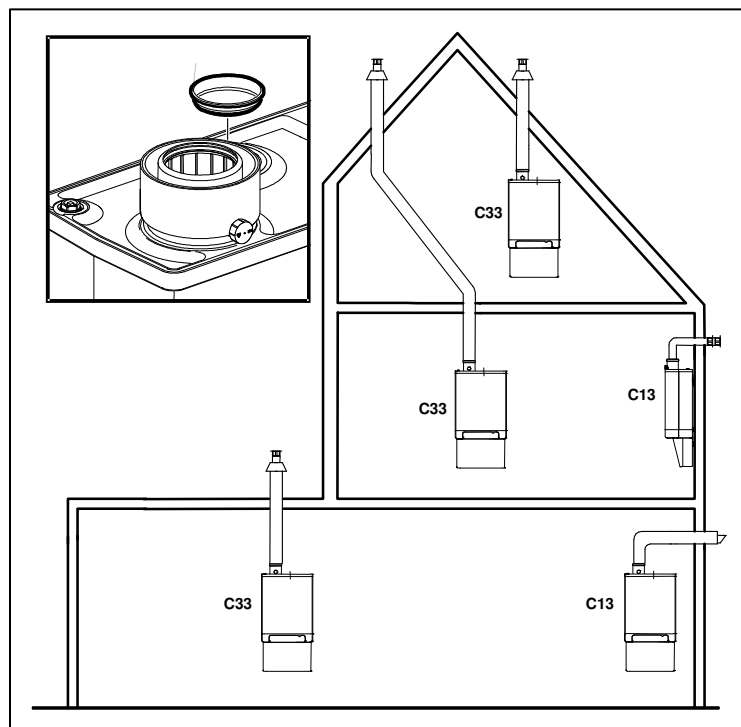
	C13	C33
Kompakt HRE eco 12 Solo	10 m	11 m
Kompakt HRE eco 18 Solo	10 m	11 m
Kompakt HRE eco 30 Solo	10 m	10 m
Kompakt HRE eco 40 Solo	10 m	10 m

Concentrisc 80/125

	C13	C33	C93
Kompakt HRE eco 12 Solo	29 m	29 m	See §.5.8.8
Kompakt HRE eco 18 Solo	29 m	29 m	
Kompakt HRE eco 30 Solo	29 m	29 m	
Kompakt HRE eco 40 Solo	29 m	29 m	

Vervangende lengten

Elbow 90°	R/D=1	2 m
Elbow 45°	R/D=1	1 m
Knee 90°	R/D=0,5	4 m
Knee 45°	R/D=0,5	2 m



Assembly:

For all concentric flue systems the following has to be considered:

1. Fit the concentric flue pipe into the adapter on the boiler
2. Connect all flue pipes to begin at the boiler and work towards the wall or roof terminal. Make sure the connection is air tight.
3. A non vertical flue system must be connected with a minimum fall of 5mm/m toward the boiler. If the outer pipe has a folded seam this needs to be installed upwards.

Important: A wall terminal must be installed levelled

5.7.2 Equivalent lengths

Bend 90°	R/D=1	2 m
Bend 45°	R/D=1	1 m
Elbow 90°	R/D=0,5	4 m
Elbow 45°	R/D=0,5	2 m

In the case of larger or smaller pipe diameters the permissible pipe length is greater or smaller respectively.

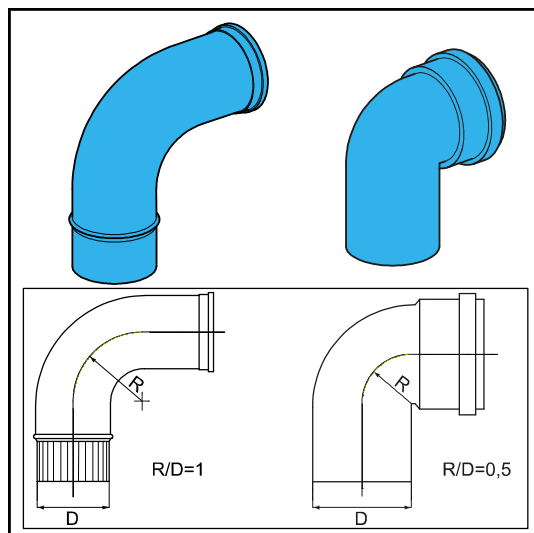
In the case of smaller diameters the following applies:

Ø70: 0,59x the permissible pipe length for ø80

Ø60: 0,32x the permissible pipe length for ø80

Ø50: 0,15x the permissible pipe length for ø80

Contact the manufacturer for check calculations for the resistance of the air supply and combustion gas flue pipe and the wall temperature at the end of the combustion gas flue pipe.

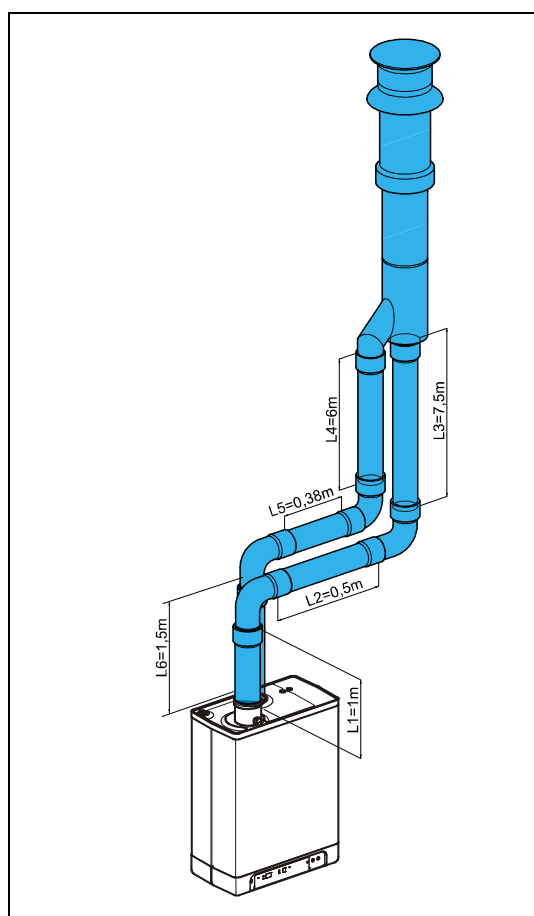


5.7.3 Sample calculation

Pipe	Pipe lengths	Total pipe length
Flue pipe	$L1 + L2 + L3 + 2 \times 2 \text{ m}$	13 m
Air supply	$L4 + L5 + L6 + 2 \times 2 \text{ m}$	12 m

Note

- The total pipe length is:
Sum of the straight pipe lengths + sum of the equivalent pipe lengths of bends/elbows.
- Permissible length of air supply pipe and flue outlet pipe totals 85 m, excluding the length of the combi duct or the dual-pipe duct.



5.8 Balanced flue assemblies

Assembly general:

The assembly described below applies to all flue systems:

1. Slide the combustion gas flue pipe into the appliance flue outlet.
2. Slide the combustion gas flue pipes into each other.
Working from the appliance each pipe must be pushed into the previous pipe
3. Fit a non-vertical combustion gas flue pipe with a fall towards the appliance of minimal 5mm per metre
4. Fit flanged seams oriented upwards in a horizontal section.
5. Seal non-gastight connections with heat-and moisture-resistant aluminium tape.

Assemble all air supply pipes as indicates below:

1. Slide the air supply pipe into the appliance inlet.
2. Seal non-airtight connections with moisture-resistant tape.
3. Fit insulation if necessary.

Materials to be used:

Appliance category	Materials	Supplier
C13	Duct	ACV
	Other parts	Gastec QA or ACV
C33	Duct	ACV
	Duct in the case of Prefab	Gastec QA, ACV or third parties
	Other parts	
C43	All materials	Gastec QA or ACV
	For the combined air supply / combustion flue system	Third parties
C53	Inlet grille	ACV
	Other parts and flue cowl	Gastec QA or ACV
C63	All materials and duct	CE approved flue material
C83	Inlet grille	ACV
	Main channel	Third parties
	Other parts	Gastec QA or ACV

5.8.1 Dual-pipe wall duct, horizontal terminal

Appliance category: C13



CAUTION

Pipes for the connection of the air supply and the combustion gas flue between the appliance and the dual-pipe terminal must have a diameter of \varnothing 80 mm.

- ACV dual-pipe horizontal duct.
Can be extended, for purposes of a gallery balcony terminal, with one or two standard pipes (\varnothing 80 mm).

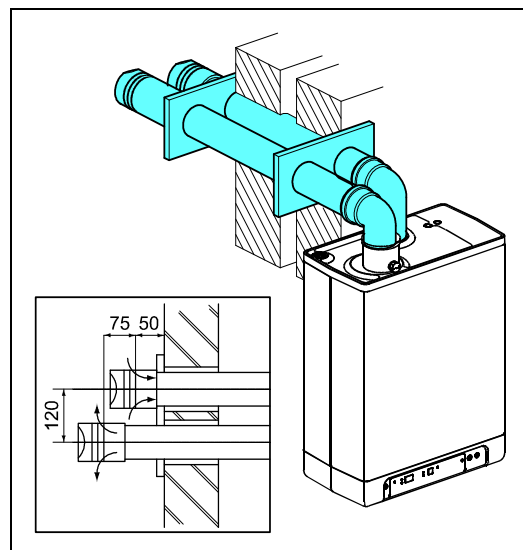
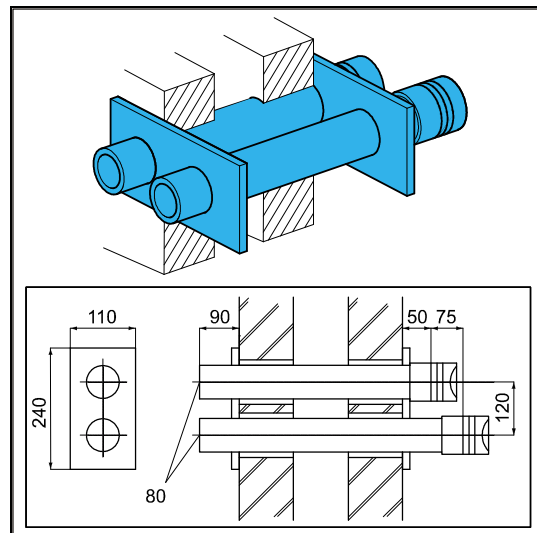
Permissible pipe length

Air supply and flue pipe (together) 100 metres, including the length of the dual-pipe terminal.

Kompak HRE eco 12 and 18 Solo	100 meters
Kompak HRE eco 30 Solo	80 meters
Kompak HRE eco 40 Solo	60 meters

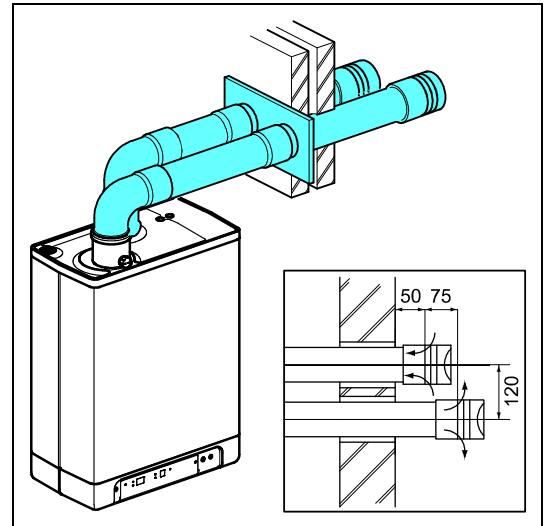
Combustion gas flue and air supply pipe

For assembly, see section 5.8 Assembly general.



Fitting dual-pipe duct

1. Fit the dual-pipe duct with a fall towards the appliance.
2. Make two openings of $\varnothing 90$ mm in the wall.
3. Shorten the dual-pipe duct to the correct length.
4. Slide the supply and flue pipes into the openings.
5. Cover the openings with the wall cover plates.
6. Fit the outlet grilles to the supply and flue pipes.
7. Secure them to the pipes.

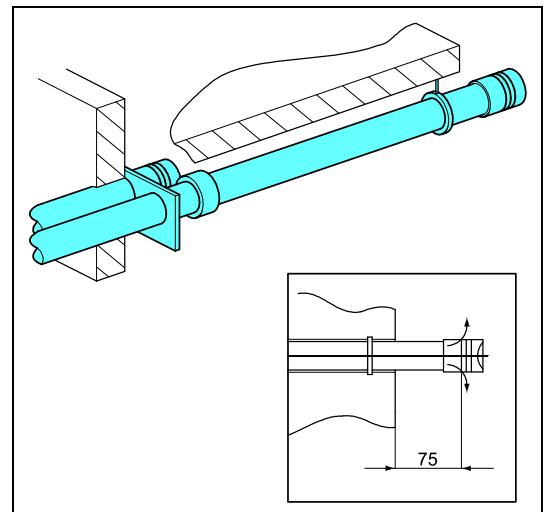
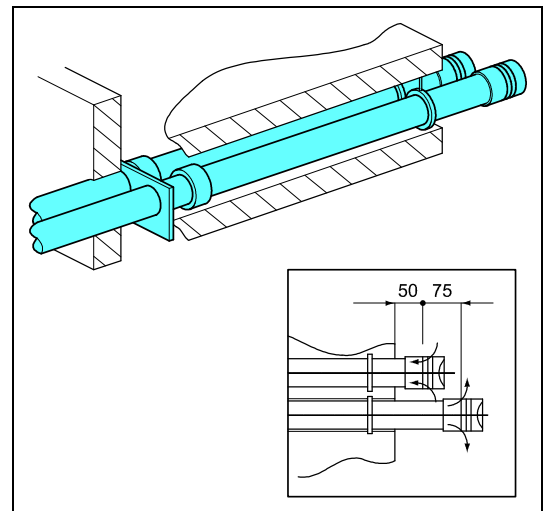


Fitting double-pipe extension pipe(s) for gallery balcony terminal.

If the free end of the terminal is obstructed by a roof overhang, balcony, gallery or otherwise, the air supply pipe and the combustion gas flue pipe must be extended to at least the front of the protruding part.

If the air supply cannot be disturbed by obstacles, such as a support or dividing wall and if the terminal is not at the edge of a building, the air supply pipe does not have to be extended.

1. Extend the combustion gas flue pipe, and where appropriate also the air supply pipe, of the dual-pipe duct with a standard combustion gas flue and air supply pipe of the correct length in accordance with the dimensions indicated.
2. Slide the combustion gas flue and where appropriate also the air supply pipe into the inlet and outlet pipe of the dual-pipe duct.
3. Fit the combustion gas flue and air supply pipe with a fall towards the appliance.
4. Fit the outlet grilles to both pipes.



5.8.2 Horizontal wall and roof terminal with a combi duct

Appliance category: C13



CAUTION

Pipes for connecting the air supply and the combustion gas flue between the appliance and the combi duct must have a diameter of \varnothing 80 mm.

- ACV combi duct-horizontal.
For wall or roof terminal - horizontal.
- ACV combi duct-horizontal.
For extension of a balcony/gallery discharge.

Permitted pipe lengths

Two-pipe

Air supply and combustion gas flue pipe (together) excluding the length of the combi duct.

Kompak HRE eco 12 and 18 Solo	100 meters
Kompak HRE eco 30 Solo	80 meters
Kompak HRE eco 40 Solo	60 meters

Concentric

Air supply and combustion gas flue pipe, excluding the length of the combi duct:

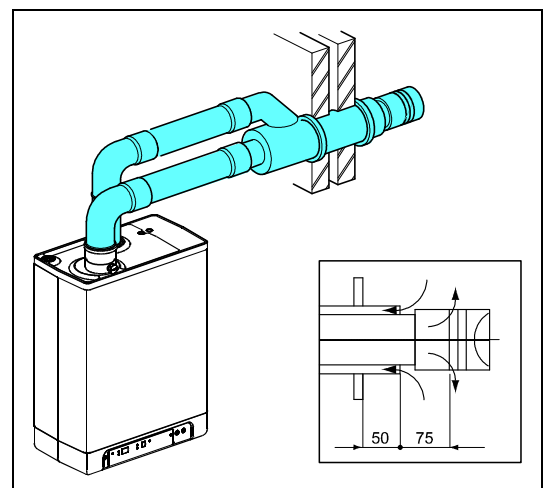
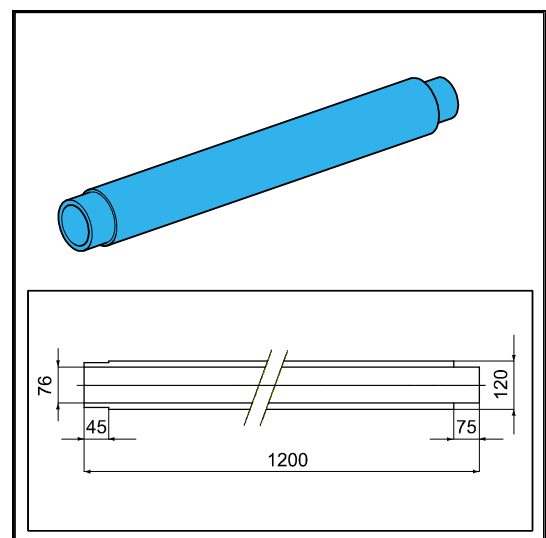
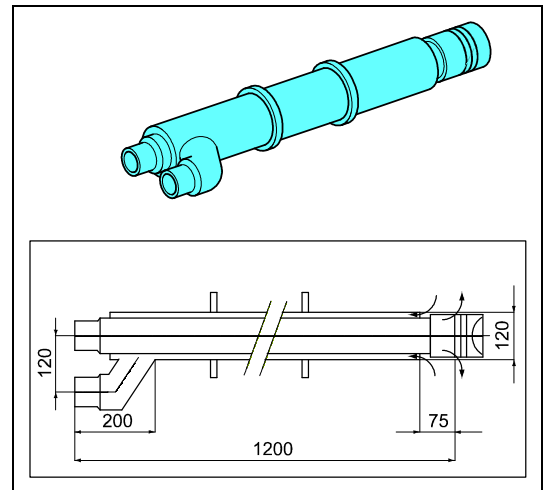
	60/100	80/125
Kompak HRE eco 12 and 18 Solo	11 meters	29 meters
Kompak HRE eco 30 Solo	10 meters	29 meters
Kompak HRE eco 40 Solo	10 meters	29 meters

Combustion gas flue and air supply pipe

For assembly see section 5.8 Assembly general.

Assembly of combi duct horizontal wall terminal

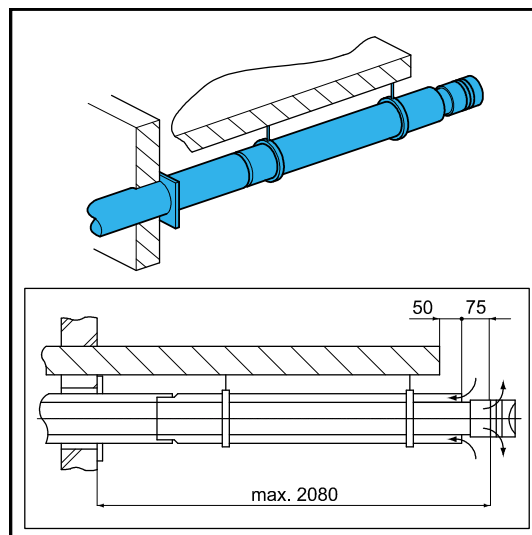
1. Fit the combi duct with a fall towards the appliance
2. Make an opening of \varnothing 130 mm in the wall at the position of the discharge.
3. Cut the combi duct to the correct length according to the dimensions indicated.
4. Fit the outlet grille and secure this to the inner pipe.
5. Slide the combi duct into the opening and fit the rosettes to cover the opening.



Fitting a combi extension pipe for balcony/gallery terminal

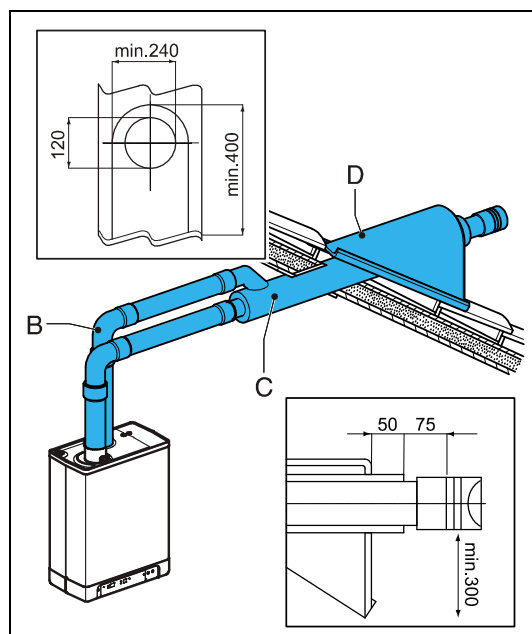
If the free end of the terminal is obstructed by a roof overhang, balcony, gallery or otherwise, the combi duct must be extended to at least the front of the protruding part.

1. Fit the combi extension pipe to the combi duct.
2. Shorten the combi duct or the combi duct extension pipe to the correct length in accordance with the dimensions indicated.
3. Fit the outlet grille and secure it to the inner pipe.
4. Fit the combi duct and combi extension pipe with a fall towards the appliance.



Fitting a combi duct horizontal roof terminal

1. The terminal can be placed at any point in the roof surface.
2. Fit a horizontal roof flashing (D) (suitable for pipe \varnothing 120 mm).
3. Fit the outlet grille to the combi duct and secure it to the inner pipe.
4. Slide the combi duct (C) from inside to outside through the horizontal flashing, in accordance with the dimensions indicated.
5. Fit the combi duct (C) with a fall towards the appliance.



5.8.3 Vertical roof terminal with combi duct and dual-pipe duct.

Appliance category: C33



CAUTION

If the ACV vertical combi duct cannot be used, the air supply and combustion gas flue must be constructed separately.

- ACV vertical combi duct.

Permitted pipe length.

Dual pipe

Air supply and combustion gas flue pipe (together), excluding the length of the combi duct or the dual-pipe duct.

Kompak HRE eco 12 and 18 Solo	100 meters
Kompak HRE eco 30 Solo	80 meters
Kompak HRE eco 40 Solo	60 meters

Concentric

Air supply and combustion gas flue pipe, excluding the length of the combi duct:

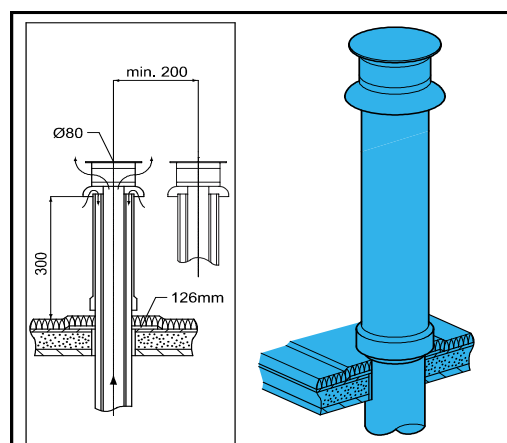
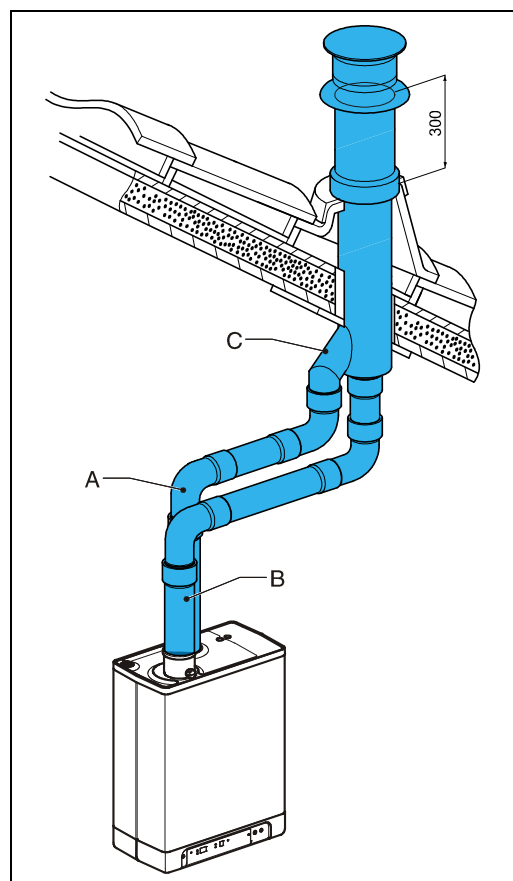
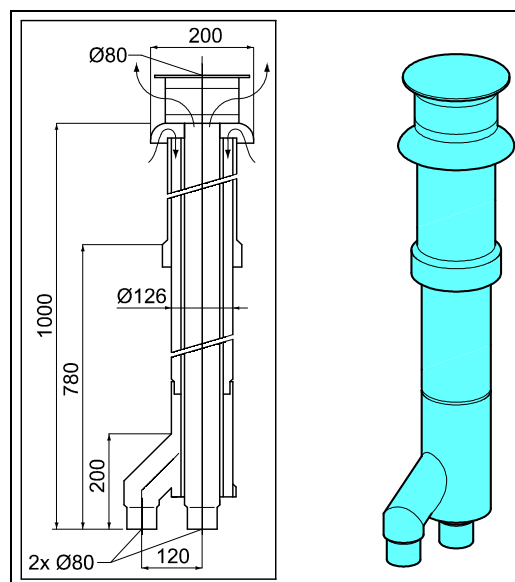
	60/100	80/125
Kompak HRE eco 12 and 18 Solo	11 meters	29 meters
Kompak HRE eco 30 Solo	10 meters	29 meters
Kompak HRE eco 40 Solo	10 meters	29 meters

Combustion gas flue and air supply pipe

For assembly see section 5.8 Assembly general

Fitting a vertical combi duct

1. Fit a vertical flashing for a sloping roof at the position of the discharge.
On a flat roof a flashing plate for a $\varnothing 126$ mm must be fitted.
2. Remove the branch from the combi duct (C).
3. Slide the combi duct (C) from the outside inwards.
4. Fit the branch for the combi duct (C) and secure it with a sheet metal screw or rivet.



Fitting a vertical two pipe terminal



CAUTION

The discharges of the combustion gas flue and air supply should be made in the same pressure surface.

The air supply through the sloping roof surface and the combustion gas flue through a structural chimney is also possible, but not the reverse.

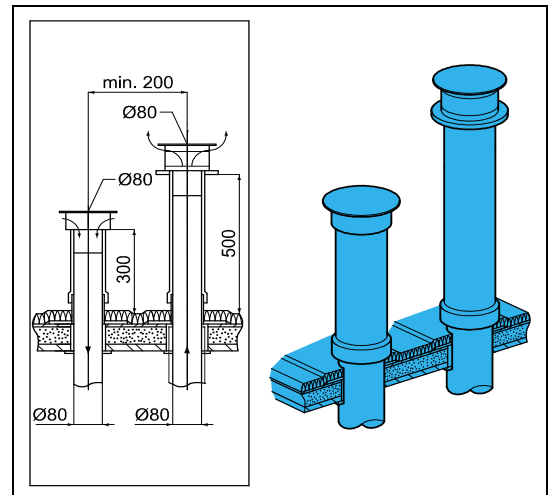
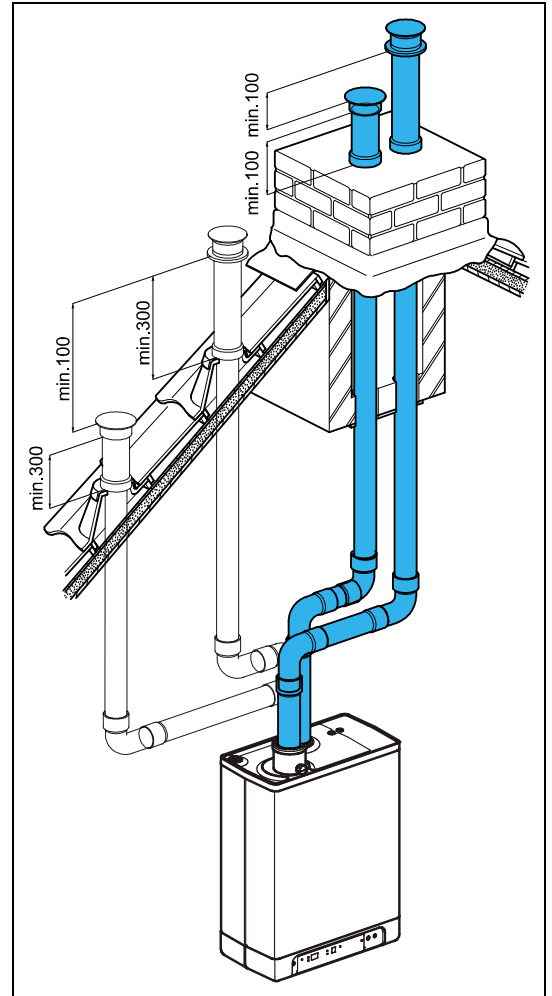
1. Fit a standard double-walled flue pipe (Ø 80 mm) with 'Giveg' approved flue cowl on a sloped roof flashing at the desired position.
2. Fit a standard ventilation pipe (Ø 80 mm) with cross cowl and roof flashing for the air supply.
3. Fit a standard double-walled flue pipe (Ø 80 mm) with 'Giveg' approved cowl at the desired position.

In the case of a flat roof or a structural chimney, for the purposes of the air supply fit a standard ventilation duct (Ø 80 mm) with cross cowl in an accompanying flashing plate.



CAUTION

Two terminals must be at least 200 mm apart.



5.8.4 Roof outlet prefabricated chimney

Appliance category: C33

When there is little space in a shaft, a roof outlet through a prefabricated chimney may be necessary.

The prefabricated chimney must comply with the minimum lengths shown. The supplier must guarantee the proper operation of the prefabricated chimney with respect to wind attack, ice formation, rain ingress, etc.

In view of the different models and requirements, the prefabricated chimneys must be adjusted to the local situation: a gas certificate is not required



VOORZICHTIG

CAUTION

The connection of the air supply and the flue discharge between the appliance and the prefab chimney must be made in pipes of diameter 80 mm.

Permitted pipe lengths

Air supply and combustion gas flue pipe (together).

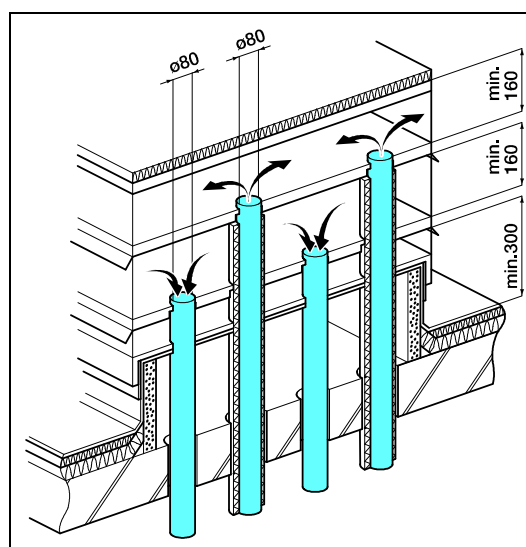
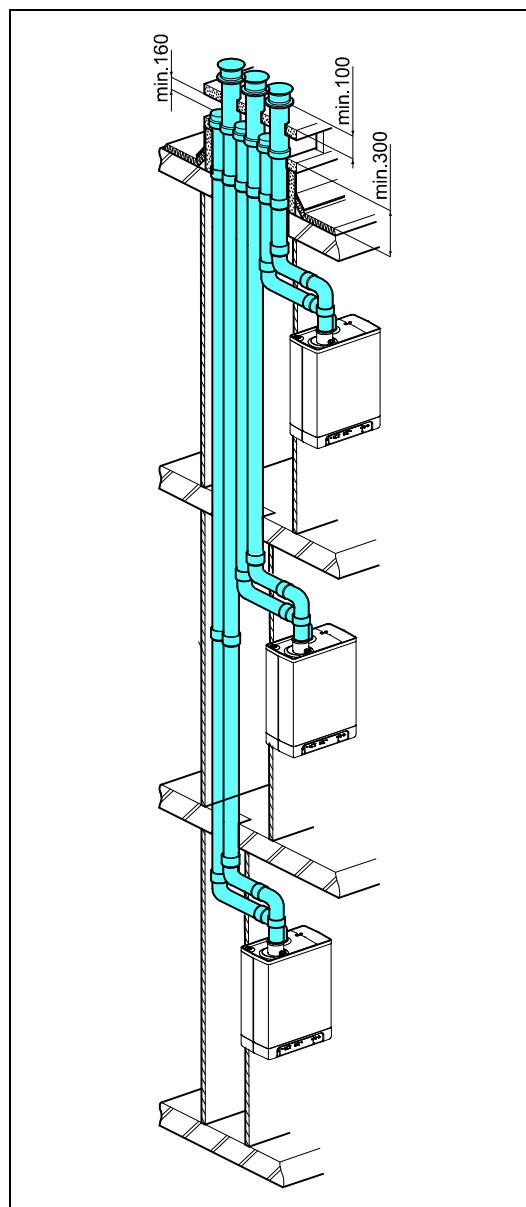
Kompak HRE eco 12 and 18 Solo	105 meters
Kompak HRE eco 30 Solo	85 meters
Kompak HRE eco 40 Solo	65 meters

Combustion gas flue and air supply pipe

For assembly see section 5.8 Assembly general

Mounting of prefabricated chimney

The outlet can be made at any place in the pitched or flat roof surface



5.8.5 Roof outlet and air supply from the facade

Appliance category: C53



Caution

The air supply (A) in the outside wall must be provided with an ACV inlet grid.

Flue discharge (B) through a prefabricated chimney or through a double-walled roof passage diameter 80 mm with an approved discharge cover. The supplier of the flue system needs to assure safety and functionality of the flue system regarding the resistance against wind, icing etc.

Maximum pipe length

Air supply and combustion gas flue pipe: together 75 m, excluding the length of the combi duct or the dual-pipe duct.

Kompak HRE eco 12 and 18 Solo	100 meter
Kompak HRE eco 30 Solo	80 meter
Kompak HRE eco 40 Solo	60 meter

Combustion gas flue and air supply pipe

For assembly see section 5.8 Assembly general

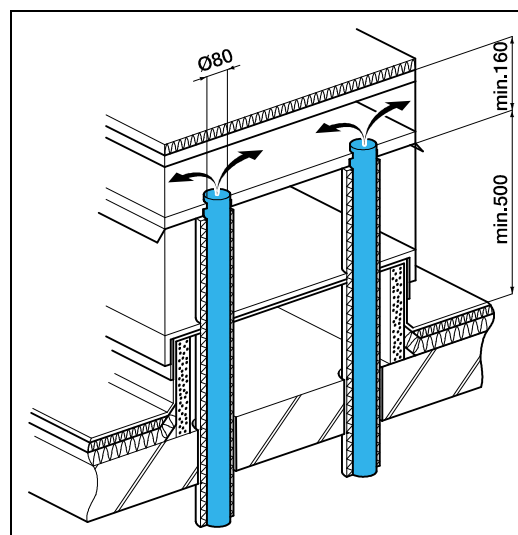
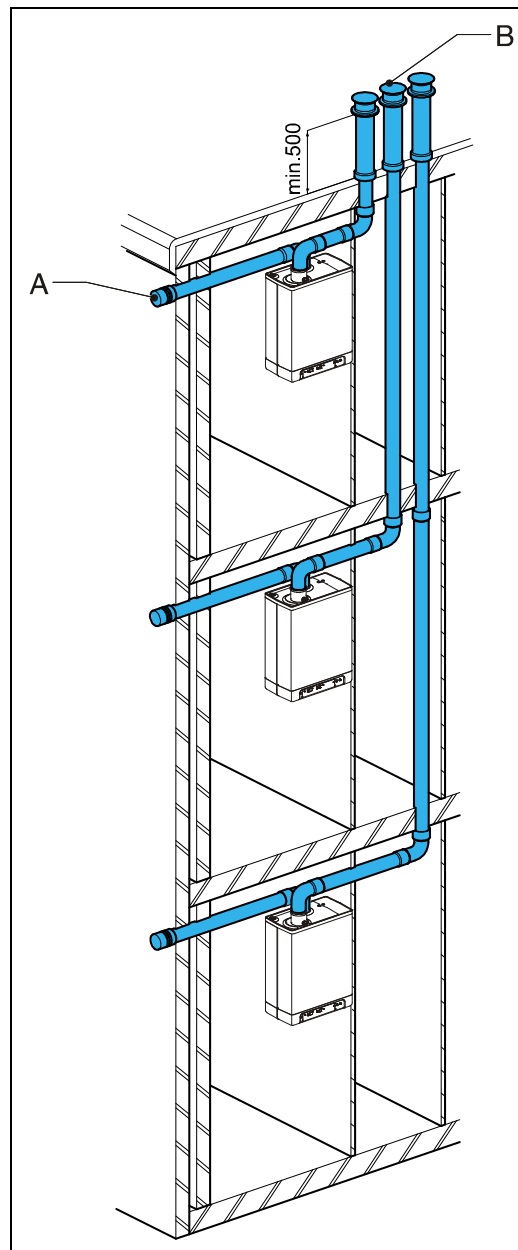
Mounting of air supply - horizontal

The air supply (A) can be made at any place in the outside wall.

1. Make an opening of diameter 90 mm at the place of the supply.
1. Shorten the air supply pipe to the correct length out of the wall.
2. Mount the Intergas inlet grid and attach this to the pipe.
3. Slide the air supply pipe into the opening and cover the opening with a rosette, if necessary.
4. Mount the air supply at the place of the outside wall terminal in a slope to the outside, to prevent rain from entering.

Mounting flue terminal - vertical

1. Mount a roof tile with shell in a pitched roof surface at the place of the outlet. Mount an adhesive plate suitable for a double-walled flue terminal diameter 80 mm (outside diameter 96 mm) in a flat roof.
2. Slide the double-walled flue terminal from the outside to the inside through the roof terminal. The outlet must protrude at least 500 mm above the roof surface.



5.8.6 Air supply from the outside wall and a roof outlet with common flue discharge system

Appliance category: C83

An air supply from the outside wall and a roof outlet with common discharge system is allowed.



CAUTION

The air supply (A) in the outside wall must be provided with an ACV inlet grid.

De minimum diameter of the common flue discharge system

Number of appliances	Kompakt HRE eco		
	12 Solo	18 Solo	30 Solo
2	110	110	130
3	130	130	150
4	150	150	180
5	180	180	200
6	200	200	220
7	220	220	230
8	230	230	250
9	240	240	270
10	260	260	280
11	270	270	290
12	280	280	300



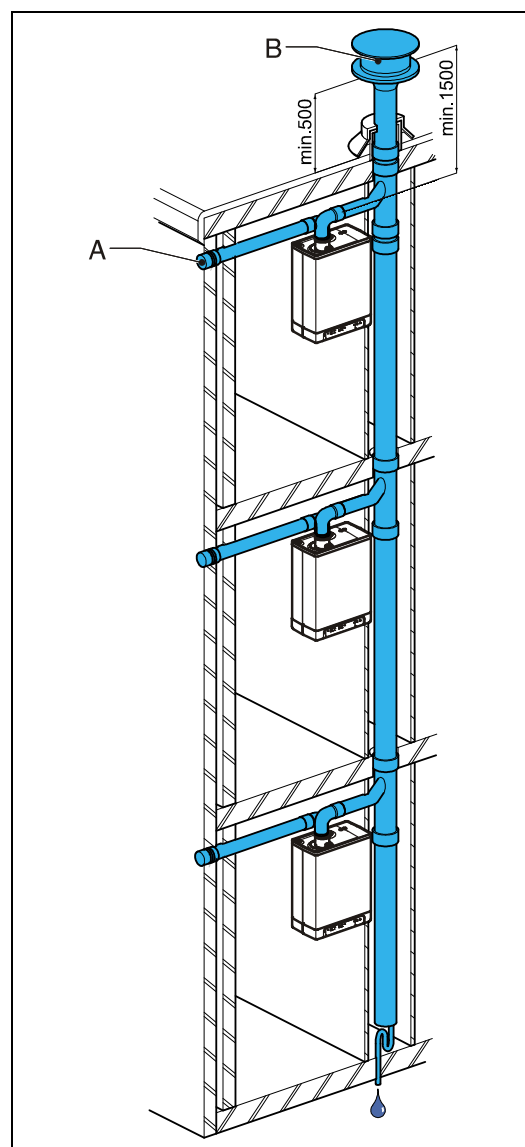
IMPORTANT

Before connecting the model HRE eco 40 Solo to a C83, common flue discharge system please contact your supplier.

Maximum pipe length

Total length of the air supply pipe until the inlet grid plus the flue exhaust pipe until the common flue discharge system.

Kompak HRE eco 12 and 18 Solo	100 meter
Kompak HRE eco 30 Solo	80 meter



Combustion gas flue and air supply pipe

For assembly see section 5.8 Assembly general

Common flue discharge

The outlet of the flue discharge can be made at any place in the pitching roof surface, provided that the outlet in the roof surface has the same orientation as the air supply in the outside wall. With a flat roof the outlet of the flue discharge must be made in the 'free' outlet area.

Apply a condensate discharge.



CAUTION

The common discharge system must be provided with a pulling discharge cover.

When the common discharge system is located in the outside air, the discharge pipe must be double-walled or insulated.

Remark

The common flue discharge system needs to be approved in combination with the boiler.

5.8.7 Roof outlet Common Flue System

Appliance category: C43



CAUTION

A roof outlet through a Combination Air inlet / Flue discharge system is allowed.

For the common flue discharge cover and air supply cover a certificate of incorporation from the Gastec-Gasinstituut is required.

The opening for pressure levelling at the bottom of the common air-inlet / flue discharge system must be equal to 0,44 * the surface of the flue discharge

The common air supply and the common flue discharge may be made concentrically(B) or separately(A).

Maximum pipe length

The maximum length of the air supply and flue discharge pipes between appliance and the Common Flue System(together) ::

Kompak HRE eco 12 and 18 Solo	100 meter
Kompak HRE eco 30 Solo	80 meter

Combustion gas flue and air supply pipe

For assembly see section 5.8 Assembly general

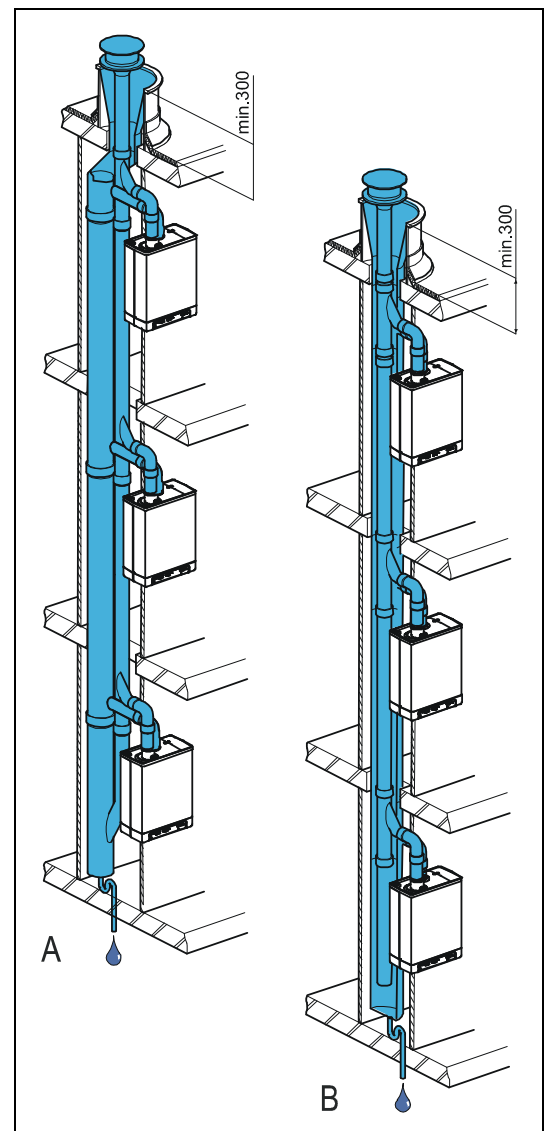
The minimum diameters for the Common Flue System have been based on the supplement sheet 2001-02, inspection requirement nr. 138 of KIWA/Gastec.

Number of appliances	HRE eco 12 and 18 Solo				HRE eco 30 Solo			
	Concentric		Twin pipe		Concentric		Twin pipe	
	FLUE	AIR	FLUE	AIR	FLUE	AIR	FLUE	AIR
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



IMPORTANT

Before connecting the model HRE eco 40 Solo to a C43, common flue discharge system please contact your supplier.



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

A flue tube system according to C93 (C33) is permitted when using CE approved flue material or the flue material provided by ACV International
The points below have to be considered.

General

- Flue outlet in shaft with 60 or 80 mm diameter (rigid or flexible).
- When using plastic flue pipe materials, a minimum temperature class of T120 applies.
- The transfer bend between concentric and vertical flue connection in the shaft must be supported in accordance with supplier instructions. The assembly instruction of the manufacturer for the flue system must always be followed in full.
- In existing installations, the shaft must be inspected and if necessary cleaned before the new installation is commissioned.
- The tightness of the shaft towards living spaces must be ensured.

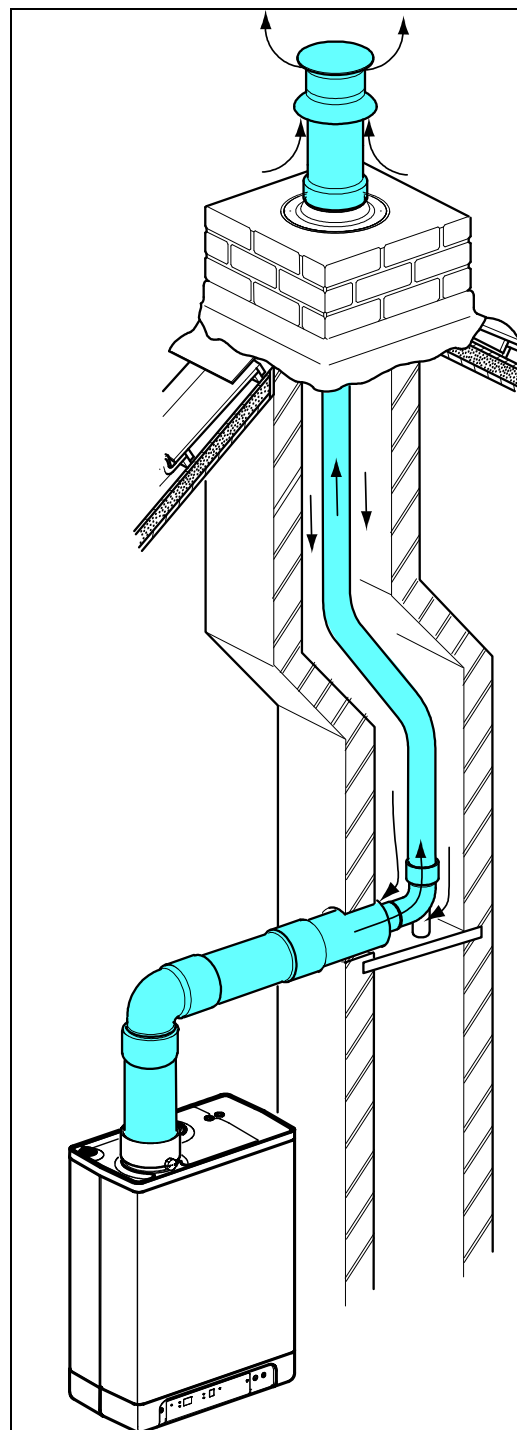
Permitted pipe length and system requirements

When a shaft (e.g. a brickwork chimney) has the purpose of air intake the following requirements are applicable.

Flue gas pipe Diameter (mm) (rigid or flexible)	Dimension shaft [mm]		Max. length [mtr]
	Square	Round	
DN 60	115 x 115	135	11
DN 80	135 x 135	155	29

Combustion gas flue and air supply pipe

For assembly see section 5.8 Assembly general



6 COMMISSIONING THE APPLIANCE

6.1 Filling and venting the appliance and the installation

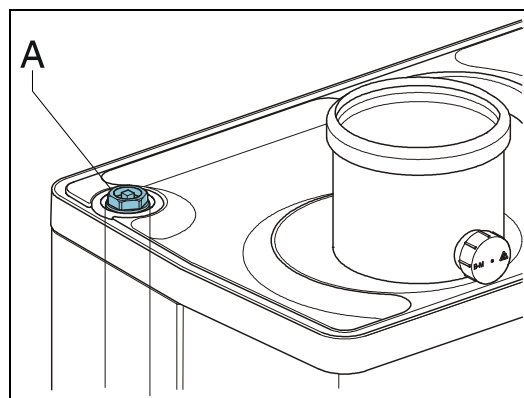
6.1.1 CH system



WARNING

If an additive is added to the CH water, this must be suitable for the materials used in the appliance, such as copper, brass, stainless steel, steel, plastic and rubber.

1. Insert the appliance plug into a wall socket.
The appliance may perform a self test: ☐ (on service display).
The appliance will then go into wait mode: ☐ (on service display).
2. Connect the filling hose to the filling/drain tap and fill the installation with clean drinking water, to a maximum pressure of 1-2 bar in the case of a cold installation. (Indicated on the temperature display.)
3. Bleed the appliance with the manual bleed screw (A).
An automatic air bleeding device may be fitted to the appliance in place of the manual bleed screw.
4. Bleed the air in the installation with the manual bleed screws on the radiators.
5. Top up the CH installation if the pressure has dropped too far as a result of the air bleeding.
6. Check all couplings for leakage.
7. Fill the siphon with water.

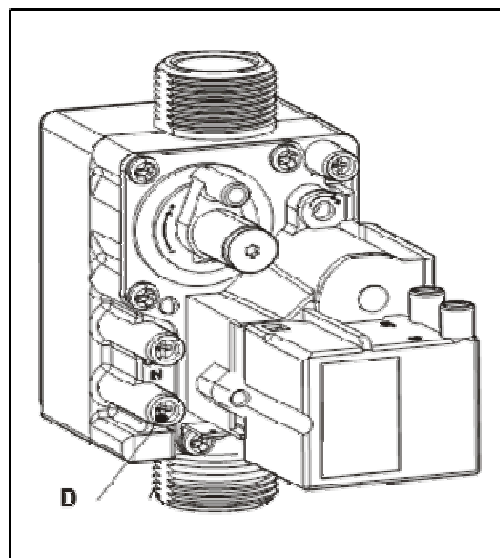


6.1.2 Hot water supply (only with external DHW tank)

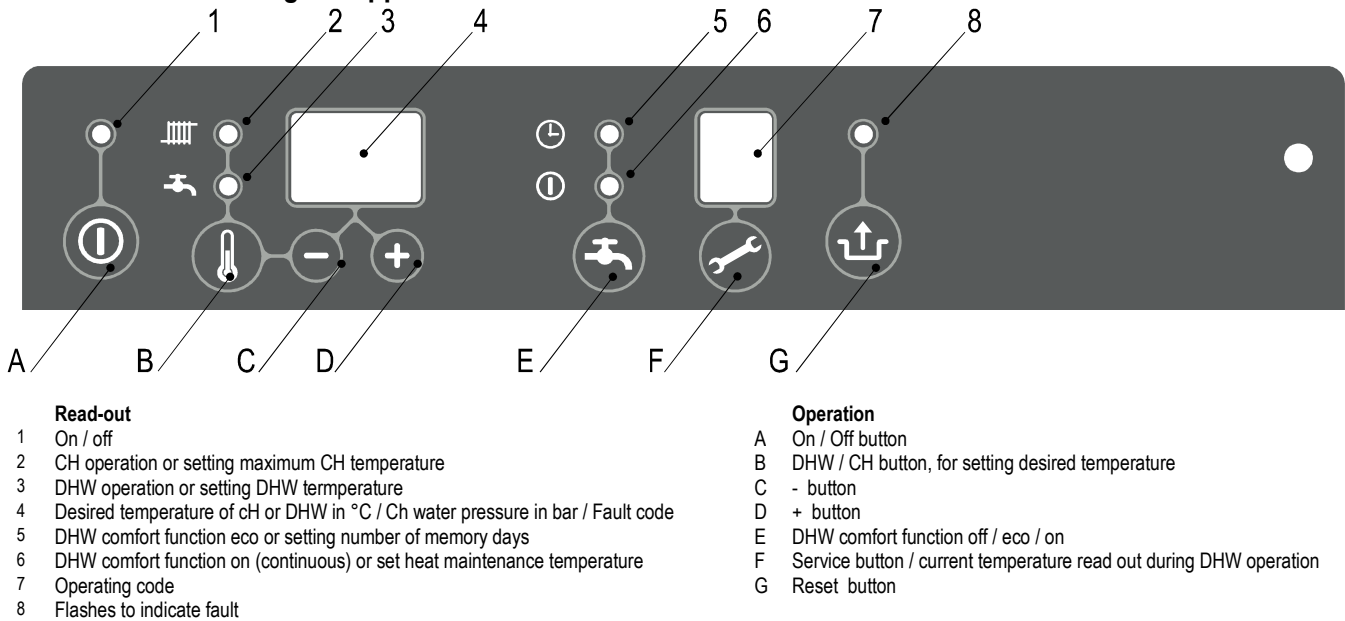
1. Open the main tap in order to pressurise the hot water part.
2. De-aerate the heat exchanger and the pipe system by opening a hot water tap.
Leave the tap open until all the air has left the system.
3. Check all joints for leaks.

6.1.3 Gas supply

1. Vent the gas supply with the pre-pressure measurement nipple (D) on the gas block.
2. Check the connections for leaks.
3. Check the pre-pressure and the burner pressure



6.2 Commissioning the appliance



Once the preceding actions have been carried out, the appliance may be started up.

- Press the button, to start the appliance.
If the boiler is connected to an external DHW tank this tank will be heated until the set temperature is reached. The service display will show and (depending on the status of the DHW disabling switch and/or Open Therm regulation).
- Adjust the pump setting depending on the maximum power set and the resistance in the CH installation. For the water head of the pump and the pressure loss of the appliance see section **Fout! Verwijzingsbron niet gevonden..**
- Set the room thermostat higher than the room temperature. The appliance will now switch to CH operation: will show on the display.
- Heat the installation and the appliance to approximately 80°C.
- Check the temperature difference between the supply and return for the appliance and the radiators. This must be approximately 20°C. For this purpose set the maximum power on the service panel. See setting maximum power. If necessary adjust the pump setting and/or the radiator valves. The minimum flow is:
155 l/h at a power setting of 5.4 kW
510 l/h at a power setting of 17,8 kW
750 l/h at a power setting of 26,2 kW
- Switch the appliance off..
- Bleed the appliance and the installation after cooling. (if necessary top up.)
- Check correct operation of the heating and hot water supply.
- Instruct the user on filling, bleeding and the operation of the heating and hot water supply.

Notes

- The appliance is equipped with an electronic burner manager, which ignites the burner and continuously monitors the flame during each request for heat from the heating or from the hot water supply.
- The circulation pump starts running in response to every request for heat from the heating. The pump continues running for 1 minute after heating. This post purge period can be changed if desired. (See section 7.3.)
- The pump runs automatically for 10 seconds every 24 hours in order to prevent seizing. This will occur at the time of the last request for heat. To change this time the room thermostat should be turned up briefly at the desired time.

6.3 Shutting down



CAUTION



Drain the appliance and the installation if mains power has been interrupted and there is a possibility of freezing.

1. Set the divider valve in the manual position.
2. Drain the appliance at the filling/drain tap.
3. Drain the installation at the lowest point.

6.3.1 Frost protection

- To avoid freezing of the condensate drain pipe the appliance must be installed in a frost-free area.
- To avoid freezing of the appliance it is equipped with frost protection. If the temperature of the heat exchanger becomes too low, the burner switches on until the temperature of the heat exchanger is sufficient. If there is a possibility of the installation (or part of it) freezing, an (external) frost thermostat must be installed at the coldest point of the return pipe. This must be connected in accordance with the wiring diagram. (See section 10.2.)

Note

If an (external) frost thermostat has been fitted to the installation and connected to the appliance, this will not be active when the appliance is switched off at the operating panel ( on service  display).

7 SETTING AND ADJUSTMENT



The functioning of the appliance is determined primarily by the (parameter) settings in the burner manager. Part of this can be set directly via the operating panel; another part can only be adjusted using the installer code.

7.1 Directly via the operating panel


The following functions can be operated directly:


Appliance on/off

The appliance is started using the  key.







When the appliance is in operation the green LED above the  key will light up. When the appliance is off a single dash lights up on the service display () to indicate that supply voltage is present. In this operating mode the pressure in the CH installation (in bar) can also be read on the temperature display.

Summer Mode


When parameter q is set to a value other than 0 it is possible to activate "Summer Mode" by pushing the  button. During summer mode the Central Heating facility of the boiler is shut-off. The delivery of DHW remains as before.

Summer Mode can be activated by pressing the  button. The sequence is Off – ON – Summer mode – Off (etc). During Summer Mode the display is showing Su, So or Et (depends on the setting of parameter q) See § 7.3, parameters.

Changing the settings of the various functions:

Holding the  key pressed in for 2 seconds takes you to the user settings menu(LED at  and the figure display start to flash). Pressing the  key repeatedly results in a different function LED flashing each time. When the LED is flashing the indicated function can be set with the  and  key. The value set is shown on the  display.



The  on/off key closes the settings menu without storing the changes.

The reset  key closes the settings menu and the changes are stored.

If no key is pressed during a period of 30 seconds, the settings menu is closed automatically and the changes are stored.



Maximum CH supply temperature

Press the  key until the LED at  starts to flash.



With the  and  keys set the temperature between 30°C and 90°C (default value 80°C)

DHW temperature (in combination with external DHW tank)

Press the  key until the LED at  starts to flash.

With the  and  keys set the temperature between 40°C and 65°C (default value 60°C)




Control of external DHW tank

- On: ( LED on), The external DHW tank will be heated continuously.
- Eco: ( LED on) . The boiler will be heated / not heated depending on the information send by the Open Therm thermostat (provided that the thermostat supports this function). When using an on/off room thermostat or an Open Therm thermostat which does not support this function the DHW tank will be heated continuously..
- Off: (Both LED's off.) The boiler will not be heated.

Legionella prevention

When the boiler is connected to an indirect heated external DHW tank with a sensor connected to the boiler it is possible to heat up the water stored in the tank up to a minimum temperature of 65°C. This procedure can be executed on a daily or on a weekly basis (depending on the setting of parameter L). See § 7.3, parameter list for additional information.












Resetting

When a blocking fault is indicated by means of a flashing LED above the  key and a figure on the  display, the appliance can be restarted by pressing the reset  key. Check the nature of the fault on the basis of the fault codes in section 8.1 and resolve the cause of the fault if possible before resetting the appliance.


7.2 Setting via the service code

The burner manager in the appliance is factory set in accordance with the parameters in section 7.3.

These parameters can only be changed using the service code. Proceed as follows to activate the program memory:

1. Press the  and  keys simultaneously until a  appears on the service- and temperature display.
 2. Using the  and  keys set  (service code) on the temperature display.
 3. Using the  key set the parameter to be set on the service display.
 4. Using the  and  keys set the parameter to the desired value (visible) on the temperature display.
 5. Once all desired changes have been entered, press the  key until a  appears on the service display.
- The burner manager has now been reprogrammed.

Note

Pressing the  key in takes you out of the menu without storing the parameter changes.

7.3 Parameters

Par.	Setting	Kompakt HRE Solo Factory settings				Description
		12	18	30	40	
0	Service code [15]	-	-	-	-	Access to installer settings The service code must be entered (= 15)
1	Installation type	1	1	1	1	0= Combi 1= Heating only + external DHW tank 2= DHW only (no heating system required) 3= Heating only
2	CH pump continuous	0	0	0	0	0= post purge period only 1= pump continuously active 2 – 5 Not applicable
3	Maximum CH power set	99	85	85	99	Adjustment range of set value parameter c up to 85% (HRE eco 18 and 30 Solo) or up to 99 (HRE eco 40 Solo)
3.	Max. power modulating pump	80	80	80	99	Adjustment range: value par. c. until 100
4	Maximum DHW power set	99	85	85	75	Adjustment range of set value parameter d up to 99% (HRE eco 12, 18 and 30 Solo) or 75 % (HRE eco 40 Solo)
5	Min. supply temperature of the heat curve	25	25	25	25	Adjustment range 10°C to 25°C
5.	Max. value flow temperature in display (end user setting)	90	90	90	90	Adjustment range 30°C to 90°C
6	Min. outside temperature of the heat curve	-7	-7	-7	-7	Adjustment range -30°C to 10°C
7	Max. outside temperature of the heat curve	25	25	25	25	Adjustment range 15°C to 30°C
8	CH pump post purge period	1	1	1	1	Adjustment range 0 to 15 minutes
9	CH pump post purge period after DHW operation	1	1	1	1	Adjustment range 0 to 15 minutes (N.a. for Kombi appliance)
A	Setting three-way valve or shut-off valve	0	0	0	0	0= powered during CH operation 1= powered during hot water operation and rest 2= three-way valve in CH setting if device not in rest 3 t/m 6 = not applicable 7= LT/HT Zone control 8= Active when boiler is operational
b	Booster	0	0	0	0	N.a.
C	Step modulation	1	1	1	1	0= step modulation off during CH operation 1= step modulation on during CH operation
c	Minimal CH rpm	30	30	30	20	Adjustment range 25 to 50 %
c.	Min. power modulating pump	40	40	40	50	
d	Minimal DHW rpm	30	30	25	20	Adjustment range 25 to 50%

E	Min. Supply temperature during OT demand (OT= OpenTherm thermostat)	40	40	40	40	Adjustment range 10°C to 60°C
E.	OT response	1	1	1	1	0= ignore OT if < E 1= limit OT if < E 2= OT on-off
F	Start rpm CH	70	70	50	50	Adjustment range 50 to 99% of the set maximum rpm
F.	Start rpm DHW	70	70	50	50	Adjustment range 50 to 99% of the set maximum rpm
h	Max. fan rpm	44	44	45	65	Adjustment range: nominal value \pm 200 rpm. With this parameter the maximum rpm can be set.
n	Set point CH (flow temperature) during heating external DHW tank	85	85	85	85	Adjustment range 60°C to 90°C
n.	Keep hot temperature Eco/Comfort mode	0	0	0	0	Not applicable
O.	Delay time for responding on CH demand	0	0	0	0	Not applicable
o	Waiting time after a DHW demand before a CH demand is answered	0	0	0	0	Adjustment range 0 to 15 minutes
o.	Eco days	3	3	3	3	Not applicable
P	Anti cycle time (Delay time reacting on CH demand after exceeding maximum setting CH temp.)	5	5	5	5	Adjustment range 0 to 15 minutes
P.	Ref.value DHW	36	36	36	36	Not applicable
q	Summer mode	0	0	0	0	0 = Summer mode can not be activated 1 = Summer mode can be activated set with ① button ("Su" shown in the display when active) 2 = Summer mode can be activated set with ① button ("So" shown in the display when active) 3 = Summer mode can be activated set with ① button ("Et" shown in the display when active)
r		0	0	0	0	Not applicable

7.4 Activating and de-activating DHW comfort

It is possible to control the heating of an external DHW tank by using an Open Therm room thermostat on the condition that the room thermostat supports this functionality.

For this the setting on the display for DHW comfort must be on "Eco (upper LED on) and the parameter o. must be set to 0 .

7.5 Setting maximum CH power

The maximum CH power is set at maximum in the factory. If less power is necessary for the CH installation, the maximum CH power can be changed by changing the fan rpm. See table Setting CH power.

This table shows the relationship between the fan rpm and the appliance power.

Setting CH power

Desired CH power (in kW (approx.))				Setting on service display
				(in % of max. rpm)
Kompakt HRE eco				
12 Solo	18 Solo	30 Solo	40 Solo	
11,5	-	-	40,9	99
9,5	17,8	26,3	34,8	± 85
8,1	22,2	70	28,5	70
6,9	12,7	19,0	24,5	60
5,8	10,6	15,8	20,5	50
4,6	8,5	12,7	16,4	40
3,4	6,4	8,5	12,3	30
-	5,4	7,1	10,2	25
-	-	-	7,8	20

N.B. The power during burning is increased slowly and is reduced as soon as the set supply temperature is reached (modulatie on Ta).

7.6 Setting pump setting

The ACV HRE Solo boilers are equiped with a modulating A-class pump which modulates on the basis fo 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

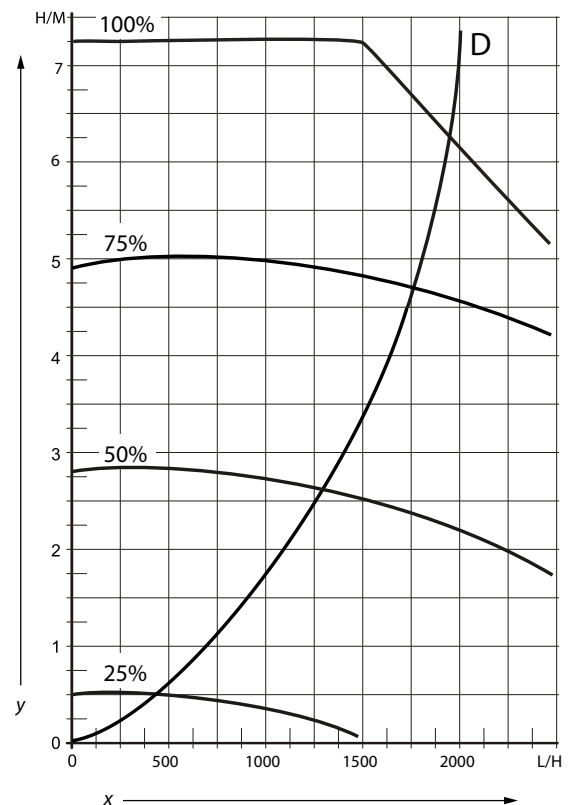
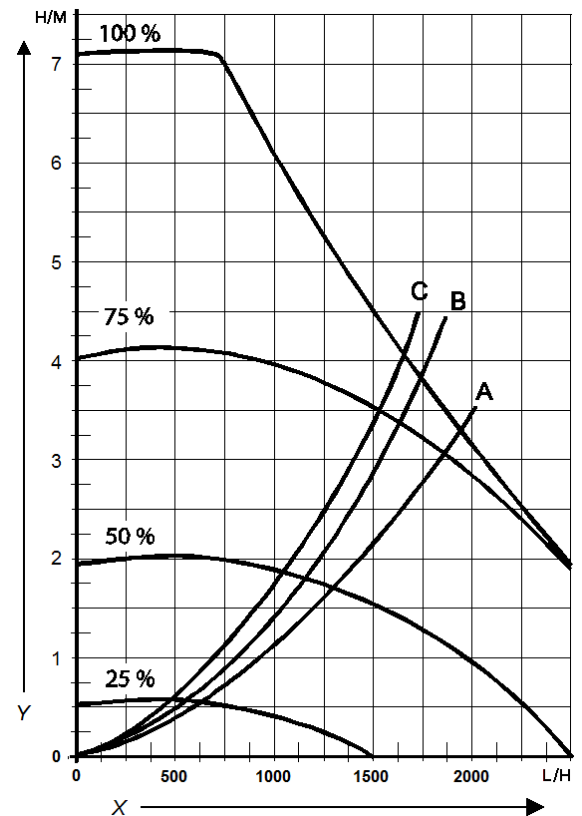
If the CH load modulates between the minimum and maximum value, the pump capacity will modulate along proportionately.

The minimum flow quantity	Power setting
155 l/h	5,4 kW
510 l/h	17,8 kW
650 l/h	22,8 kW
750 l/h	26,3 kW
1150 l/h	40,9 kW

Appliance pressure loss graph, CH side

- A. Kompakt HRE eco 12 and 18 Solo
- B. Not applicalble
- C. Kompakt HRE eco 30 Solo
- D. Kompakt HRE eco 40 Solo

X Flow in l/h
Y Pressure loss / water head in mH₂O



0206060009

7.7 Weather-dependent adjustment

When an external sensor is connected the supply temperature is adjusted automatically depending on the outside temperature, in accordance with the heating line set.

The maximum supply temperature (T_{\max}) is set via the temperature display. If desired, the heating line can be changed with the service code. See section 7.3.

Heating line graph

X. Outside T in °C

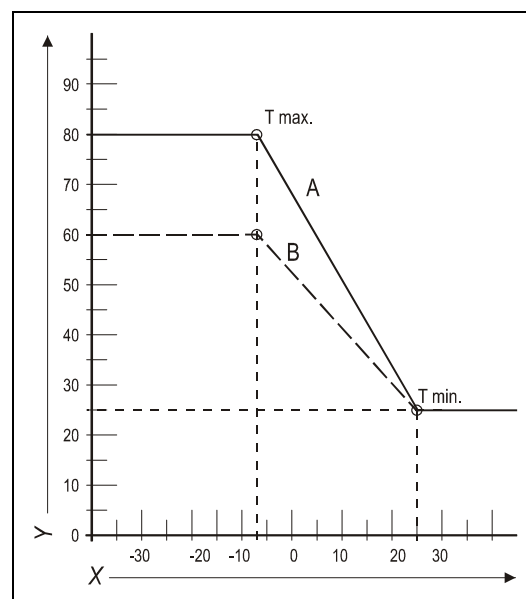
Y. Supply T in °C

A. Factory setting

($T_{\max \text{ CH}} = 80^{\circ}\text{C}$, $T_{\min \text{ CH}} = 25^{\circ}\text{C}$, $T_{\min \text{ out}} = -7^{\circ}\text{C}$, $T_{\max \text{ out}} = 25^{\circ}\text{C}$)

B. Example

($T_{\max \text{ CH}} = 60^{\circ}\text{C}$, $T_{\min \text{ CH}} = 25^{\circ}\text{C}$, $T_{\min \text{ out}} = -7^{\circ}\text{C}$, $T_{\max \text{ out}} = 25^{\circ}\text{C}$)



7.8 Conversion to different gas type



CAUTION

Work on gas carrying parts may only be carried out by a qualified competent person.

If a different type of gas is connected to the appliance than that for which the appliance has been set by the manufacturer, the gas metering ring should be replaced. Conversion sets for other types of gas are available to order.

1.1.1 Converting the gas restriction.

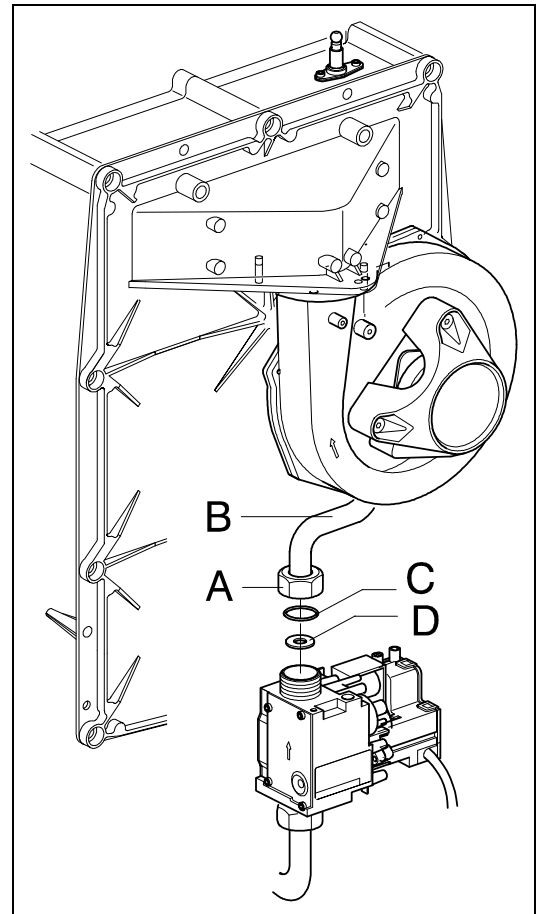
6. Switch the boiler off and isolate the boiler from the mains power.
7. Close the gas tap.
8. Remove the front panel from the appliance.
9. Unscrew the coupling (A) above the gas valve and twist the gas mixing tube towards the rear (B).
10. Replace the O-ring (C) and the gas restriction (D) with the rings from the conversion set.
11. Re-assemble in reverse sequence.
12. Open the gas tap.
13. Check the gas connections before the gas valve for gas-tightness.
14. Switch on the mains power.
15. Check the gas connections after the gas valve for gas-tightness (during operation).
16. Now check the setting of the CO₂ percentage at high setting (H in display) and low setting (L in display).



CAUTION

It is not possible to adjust the CO₂ percentage at high setting.
When the CO₂ percentage at high setting is not within the prescribed tolerance band please contact your suppliers.
For adjusting CO₂ percentage see § 7.10

Place a sticker for the gas type set over the existing sticker next to the gas valve.
Place a sticker for the gas type set next to the identification plate.



7.9 Gas-Air ratio control.

The gas air ration control of the boiler is set to the correct value in the factory and does not need to be adjusted. The gas type of the boiler on which the boiler has been set is noted on the data plate.

The boiler is only to be used in combination with this gas type.

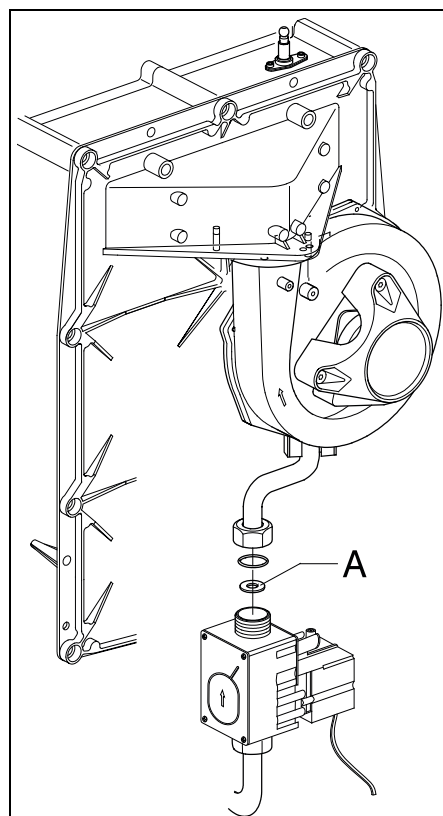
When necessary the boiler can be converted to another gas type using the appropriate conversion set. See the table below for the correct gas ring.

Table 1, inserts and associated gas rings per boiler type.

Model	Insert number	Gas category	
		Natural gas 20 mBar	Propane 3P G31 30/37/50 mBar
		Gas ring	
Kompakt HRE eco 12 Solo	541	460	315
Kompakt HRE eco 18 Solo	406	600	480
Kompakt HRE eco 30 Solo	362	655	525
Kompakt HRE eco 40 Solo			

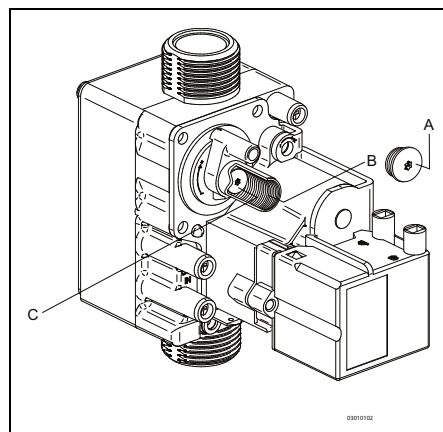
The correct setting of the Gas-Air ratio can be checked by measuring the flue gases using a calibrated O₂ measuring device. The measurement must be performed first at maximum power and thereafter on the minimum power.(see § 7.10.1 and § 7.10.2). For reference reasons the tables below contain O₂ and CO₂ values.

When the CO₂ or O₂ value is incorrect only the setting on minimum power can be adjusted (see § 7.10.3) by changing the setting of the gas valve.



Important

- During the CO₂ or O₂ check the front casing of the boiler needs to be removed.
- The deviation of the O₂ analyser must be restricted to +/- 0.3%
- A reliable measurement is only guaranteed when no extreme vacuum in the flue pipe is present (i.e. draft due to hard wind).
- A deviation at maximum power can not be adjusted with the gas valve setting. When the value measured at maximum power is without the prescribed range the boiler has to be checked on gas tightness and usage of the correct components, in particular the gas ring and the fan.
- When replacing parts or converting the boiler to another gas type the correct functioning of the gas air ration always has to be checked.



7.10 Checking the gas air ratio control

7.10.1 Checking flue gas at maximum power.

1. Switch the appliance off with the ① button .
[-] will appear in service display.
2. Remove the front panel by untightening the 2 screws.
3. Remove the cap X of the flue gas sampling point on the adapter.
4. Position the measuring probe or the flue gas analyser into the sampling point.

Important



- Ensure yourself that the analyser start up procedure has been finalized before placing the probe.
- The probe needs to close the sampling point fully to ensure an accurate measurement
- The end (tip) of the probe must be completely in the flue gasses (in the middle of the flue pipe)

5. Switch the appliance on with the ① button .
6. Activate the test program for maximum output by simultaneously pressing the buttons and + twice. A capital H appears in service display.

Important



- Make sure a capital H is shown in the display to ensure the appliance to run at maximum power.

7. Wait until the reading of the flue gas analyser is stable (minimal 3 minutes)
8. Note the measured value O₂(H) or CO₂(H)
O₂(H) = measured O₂ value at maximum power
CO₂(H) = Measured CO₂ value at maximum power
9. Check if the measured value is in accordance with the data noted in table 2a or 2b .

Table 2a: Limits O₂(H) at maximum power (open casing)

Limits	Gas category	
	Natural gas G 20	Propane 3P G31
	O ₂ [%]	O ₂ [%]
Maximum value	5.60	6.05
Minimum value	3.85	4.50

Tabel 2b: Limits CO₂(H) at maximum power (open casing)

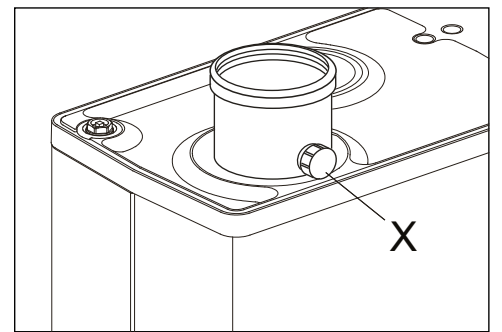
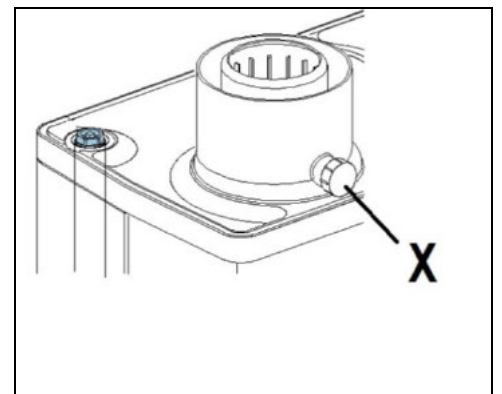
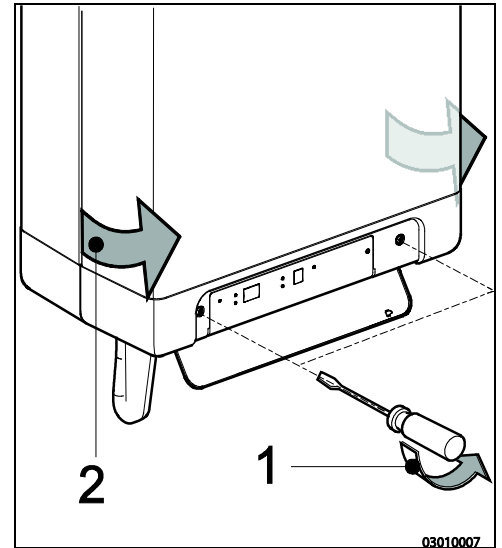
Limits	Gas category	
	Natural gas G 20	Propane 3P G31
	CO ₂ [%]	CO ₂ [%]
Maximum value	9.6	10.8
Minimum value	8.6	9.8



Important



- A deviation at maximum power can not be adjusted with the gas valve setting. When the value measured at maximum power is without the prescribed range the boiler has to be checked on gas tightness and usage of the correct components, in particular the gas ring, the insert and the fan.

10. Proceed performing the measurement on minimum output(see § 7.10.2).



7.10.2 Checking flue gas at minimum output

Before measuring the flue gasses at minimum output the measurement of the maximum output must be completed. The measured O₂ or CO₂ value at maximum output is important for determining the correct value for the measurement at minimum output. See § 6.8.1 for measuring at maximum output

1. Activate the test program for maximum output by simultaneously pressing the buttons  and . A capital L appears in service display.
Wait until the reading of the analyser is stable (min. 3 minutes)
2. Note the measured value O₂(L) or CO₂(L).
O₂(L) = is the measured value of O₂ at minimum power
CO₂(L) = is the measured value of CO₂ at minimum power
3. Check if the measured value is in accordance to the data in table 3a or 3b



The O₂ lower limit is the value of O₂(H) noted during the measurement at maximum output. The CO₂ upper limit is the value of CO₂(H) noted during the measurement at maximum output. (See § 1.2.1)

Table 3a: limits O₂(L) at minimum output (open casing)

Limits	Gas category	
	Natural gas G20	Propane 3P G31
	O ₂ [%]	O ₂ [%]
Maximum value	6.00	6.65
Minimum value	O ₂ (H)	O ₂ (H) + 0.5

Table 3b: limits CO₂(L) at minimum output (open casing)

Limits	Gas category	
	Natural gas G20	Propane 3P G31
	CO ₂ [%]	CO ₂ [%]
Maximum value	CO ₂ (H)	CO ₂ (H) – 0.3
Minimum value	8.4	9.4







Important

- The gas-air ratio is set correctly when the measured value at minimum output is within the upper and lower limit. Adjusting the gas-air ratio is not advised.
- The gas-air ratio needs to be adjusted in accordance to § 7.10.3 when the measured value at minimum output is not within the upper and lower limit.





For example (Natural gas G20)

During maximum output a O₂(H) value of 4.0 % has been measured. In that case the O₂(L) value at minimum output must be in-between 4 % (= value O₂(H)) and 6.05% as stated in the table. When during minimum output a value out of this range is measured the gas-air ratio must be adjusted..

4. Proceed, in case of a deviating value by adjusting the gas valve in accordance to § 7.10.3.
In case of a correct setting continue with point 6.
5. Fit the front panel to the appliance and tighten the 2 screws.
Check the values for CO at minimum output (= max. 160 ppm)
6. Activate the test program for maximum output by simultaneously pressing the button  and  twice. A capital H appears in service display.
Check the values for CO at maximum output (= max. 160 ppm)
7. Switch the appliance off with the  button.
8. Remove the measuring probe of the flue gas analyser and replace the cap on the sampling point.
9. Check the tightness of the sampling point
11. Switch the appliance off with the  button and check that the appliance is functioning well.

7.10.3 Correction gas air ratio on minimum power

Before the correction of the gas air ratio on minimum output the measurement of the maximum output must be completed. The measured O₂ or CO₂ value at maximum output is important for determining the correct value for the measurement at minimum output. See § 7.10.1 and § 7.10.2 for measuring at maximum output.

1. Remove the cover cap (A) on the gas valve so setting screw B will become attainable.
2. Activate the test program for minimum output by simultaneously pressing the buttons  and . A capital L appears in service display.
3. Wait until the reading of the analyser is stable (min. 3 minutes).
4. Measure the O₂(L) or CO₂(L) value
5. Set, using adjustment screw B de correct value for O₂(L) or CO₂(L).
See table 5a or 5b for the correct value



- Choose the correct table (4a and 5a is for natural gas, 4b and 5b is for Propane).
- The value measured at maximum output as noted during the measurement on maximum output (CO₂(H) or O₂(H)) Turning clockwise of the adjustment screw will raise the CO₂ value and lower the O₂ value. Turing anti clockwise will raise the O₂ value and lower the CO₂ value.
- Change the setting in small steps and wait until the reading is stable before continue.

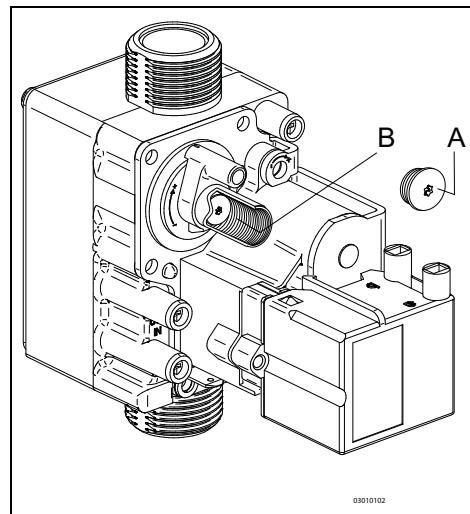


Table 4a: Determining the correct setting of O₂ at minimum output for natural gas G20 (open casing)

Natural gas G20 (20 mBar)	
Measured value am maximim power (See § 7.10.1)	Prescribed value at minimum power (= 0.5 x O ₂ (H) + 3.0)
O ₂ (H) [%]	O ₂ (L) [%]
5.60	5.80 ±0.2
5.30	5.65 ±0.2
5.00	5.50 ±0.2
4.70	5.35 ±0.2
4.40	5.20 ±0.2
4.10	5.05 ±0.2
3.85	4.90 ±0.2

Table 4b: Determining the correct setting of O₂ at minimum output for propane G31 (open casing)

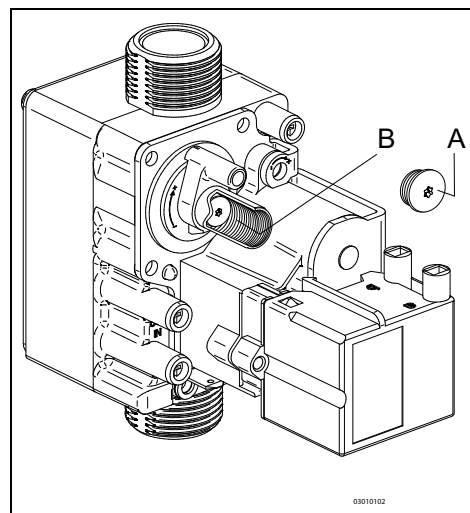
Propane 3P G31 (30 & 50 mBar)	
Measured value am maximim power (See § 7.10.1)	Prescribed value at minimum power (= O ₂ (H) + 0.5)
O ₂ (H) [%]	O ₂ (L) [%]
6.05	6.55 ±0.2
5.70	6.20 ±0.2
5.40	5.90 ±0.2
5.10	5.60 ±0.2
4.80	5.30 ±0.2
4.50	5.00 ±0.2

Tabel 5a: Determining the correct setting of CO₂ at minimum output for natural gas G20 (open casing)

Natural gas G20 (20 mBar)	
Measured value at maximum power (See § 7.10.1)	Prescribed value at minimum power (= 0.5 x CO ₂ (H) + 4.2)
CO ₂ (H) [%]	CO ₂ (L) [%]
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

Tabel 5b: Determining the correct setting of CO₂ at minimum output for Propane G31 (open casing)

Propane 3P G31 (30 & 50 mBar)	
Measured value at maximum power (See § 7.10.1)	Prescribed value at minimum power (= CO ₂ (H) - 0.3)
CO ₂ (H) [%]	CO ₂ (L) [%]
10.8	10.5 ± 0.1
10.6	10.3 ± 0.1
10.4	10.1 ± 0.1
10.2	9.9 ± 0.1
10.0	9.7 ± 0.1
9.8	9.5 ± 0.1



Example (when using natural gas G20)

During the measurement at maximum output the value of O₂(H) was 4.1 %.
The setting for O₂(L) at minimum output will then be 5.05 ± 0.2 %

6. Replace the cap A of the adjustment screw B for protection
7. Repeat the measurement at maximum and minimum output (§ 7.10.1 and § 7.10.2) to ensure the correct operation of the boiler.



Important

Work on gas carrying parts may only be carried out by a qualified competent person.


If a different type of gas is connected to the appliance than that for which the appliance has been set by the manufacturer, the gas metering ring should be replaced. Conversion sets for other types of gas are available to order.

8 FAULTS

8.1 Fault codes

If the fault LED is flashing, the burner manager has detected a fault. A fault code will be indicated on the temperature display.

Once the fault has been rectified the burner manager can be restarted:

Press the reset  key on the operating panel.

The following faults are distinguished

Temperatuur display	Omschrijving	Mogelijke oorzaak/oplossing
10, 11, 12, 13, 14	Sensor fault S1	<ul style="list-style-type: none"> Check wiring for break Replace S1
20, 21, 22, 23, 24	Sensor fault S2	<ul style="list-style-type: none"> Check wiring for break Replace S2
0	Sensor fault after self check	<ul style="list-style-type: none"> Replace S1 and/or S2
1	Temperature too high	<ul style="list-style-type: none"> Air in installation Pump not running Too little flow in installation, radiators closed, pump setting too Flow switch sticking
2	S1 and S2 interchanged	<ul style="list-style-type: none"> Check cable loom Replace S1 or S2
4	No flame signal	<ul style="list-style-type: none"> Gas tap closed No or incorrect ignition gap Gas supply pressure too low or failing Gas block or ignition unit not receiving current
5	Poor flame signal	<ul style="list-style-type: none"> Condensate drain blocked Check adjustment of gas block
6	Flame detection fault	<ul style="list-style-type: none"> Replace ignition cable + spark plug cap Replace ignition unit Replace burner manager
8	Incorrect fan speed	<ul style="list-style-type: none"> Fan catching on casing Wiring between fan and casing Check wiring for poor wire contact Replace fan
29,30	Gas valve relay faulty	<ul style="list-style-type: none"> Replace burner manager

8.2 Other faults

8.2.1 Burner does not ignite

Possible causes:

Oplossing:

Gas tap is closed.	Yes ➔	Open gas tap.
No ↓		
Air in the gas pipe.	Yes ➔	Remove air from gas pipe.
No ↓		
Gas supply pressure too low.	Yes ➔	Contact the gas company.
No ↓		
No ignition.	Yes ➔	Replace ignition pin.
No ↓		
No spark. Ignition unit or gas block faulty.	Yes ➔	Check the cabling. Check the spark plug cap. Replace the ignition unit.
No ↓		
Gas/air adjustment not correctly set.	Yes ➔	Check adjustment. See gas/air adjustment
No ↓		
Fan faulty	Yes ➔	Check the wiring. Check the fuse, if necessary, replace the fan.
No ↓		
Fan dirty.	Yes ➔	Clean the fan
No ↓		
Gas block faulty.	Yes ➔	Replace the gas block. Re-adjust the gas block, see gas/air adjustment

8.2.2 Burner ignites noisily

Possible causes:

Solution:

Gas supply pressure too high.

Yes ➔

The house pressure switch may be faulty. Contact the gas company.

No ↓

Incorrect ignition gap.

Yes ➔

Replace the ignition pin.
Check the ignition pin gap.

No ↓

Gas/air adjustment not correctly set.

Yes ➔

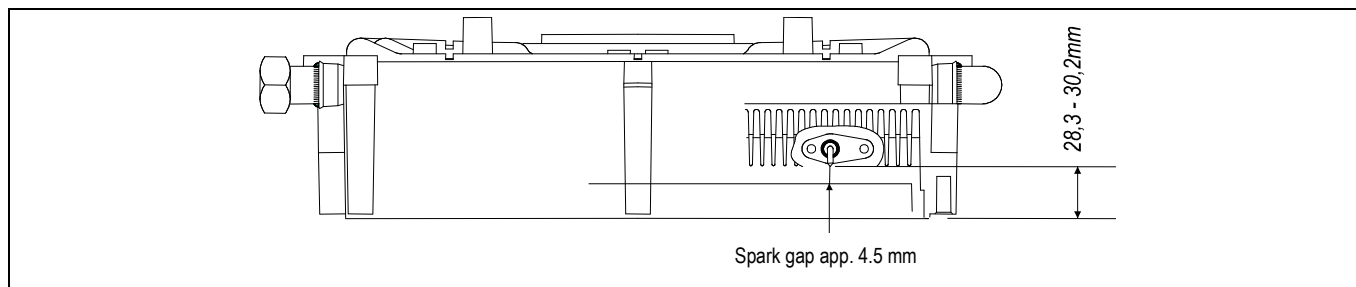
Check the setting. See gas/air adjustment.

No ↓

Weak spark.

Yes ➔

Check the ignition gap.
Replace the ignition pin.
Replace the ignition unit on the gas block.



8.2.3 Burner resonating

Possible causes:

Solution:

Gas supply pressure too low

Yes ➔

The house pressure switch may be faulty. Contact the gas company.

No ↓

Recirculation of combustion gases.

Yes ➔

Check the gas flue and the air supply.

No ↓

Gas/air adjustment not correctly set.

Yes ➔

Check the setting, see gas/air adjustment.

8.2.4 No heating (CH)

Possible causes:

Solution:

Room thermostat / weather-dependent adjustment not closed or faulty.

Yes ➔

Check the wiring.
Replace the thermostat.
Replace the weather-dependent adjustment.

No ↓

No current (24 V).

Yes ➔

Check the wiring against the diagram.
Check the connector X4.
Replace the faulty manager.

No ↓

Pump not running.

Yes ➔

Check the power supply.
Check connector X2.
Replace faulty pump.
Replace faulty manager.

No ↓

Burner not firing on CH: sensor S1 or S2 faulty.

Yes ➔

Replace sensor S1 or S2. See fault code, temperature display: 1 or 2.

No ↓

Burner does not ignite.

Yes ➔

See burner does not ignite.

8.2.5 The power is reduced

Possible causes:

At high rpm the power has fallen by more than 5%.

Yes ➔

Solution:

Check appliance and flue system for fouling.
Clean the appliance and flue system.

8.2.6 CH does not reach temperature

Possible causes:

Room thermostat setting incorrect.

Yes ➔

Solution:

Check the setting and if necessary adjust: Set to 0.1A.

No ↓

Temperature is too low.

Yes ➔

Increase the CH temperature. See Operating CH . Check external sensor for short-circuiting. Rectify.

No ↓

Pump not running correctly. Pump setting is too low.

Yes ➔

Increase pump setting, or replace the pump.

No ↓

No circulation in the installation.

Yes ➔

Check whether there is circulation: at least 2 or 3 radiators must be open

No ↓

The boiler power has not been correctly set for the installation.

Yes ➔

Adjust the power. See setting maximum CH power.

No ↓

No heat transfer as a result of lime scale or fouling in the heat exchanger.

Yes ➔

Descale or flush the heat exchanger on the CH side.

8.2.7 No hot water (only in combination with external DHW tank)

Possible causes:

No current at the divider valve (230V AC).

Yes ➔

Solution:

Check the wiring against the diagram.

No ↓

Divider valve not functioning

Yes ➔

Replace divider valve

No ↓

No current on the boiler sensor/thermostat (5 V DC)

Yes ➔

Check the wiring against the diagram..

No ↓

Burner does not ignite for DHW demand because of defect boiler sensor.

Yes ➔

Replace boiler sensor.

No ↓

Burner does not ignite

Yes ➔

See burner does not ignite.

8.2.8 Hot water does not reach temperature

Possible causes:

Temperature setting to low

Yes ➔

Solution:

Adjust the temperature setting. See & 7.1

9 MAINTENANCE

The appliance and the installation should be checked and if necessary cleaned every year by a registered expert.

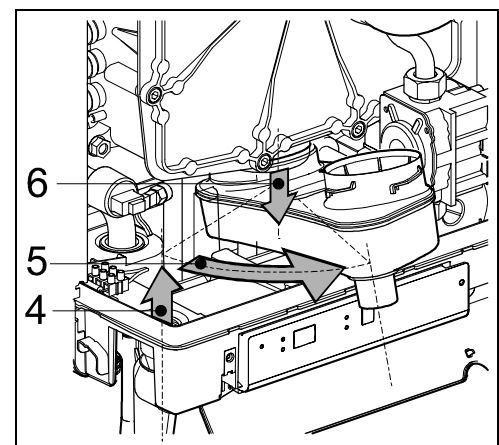
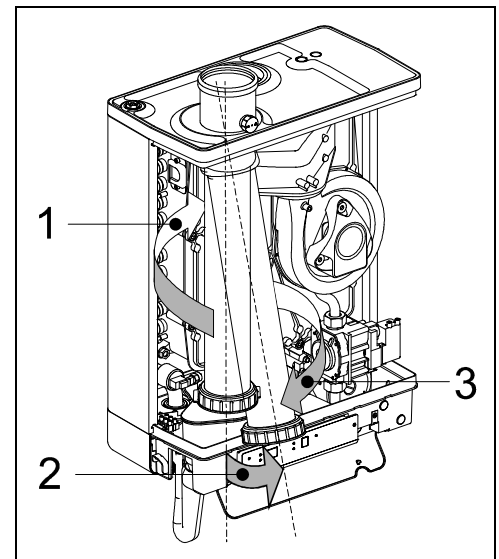
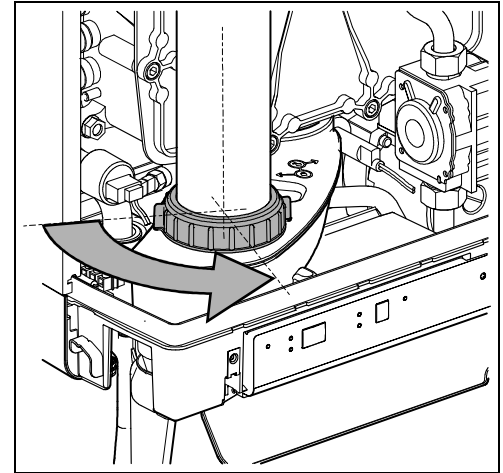


CAUTION

Work on gas-carrying parts may only be carried out by an authorised installer.
When the appliance has just been operating parts may be hot.

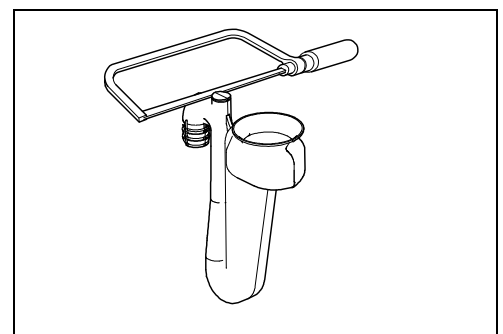
9.1.1 Disassembly

1. Switch the appliance off with the ① key.
2. Remove the plug from the wall socket.
3. Close the gas tap.
4. Open the display cover and turn the two screws on the left- and right-hand side of the display and remove the front panel.
5. Wait until the appliance has cooled down.
6. Unscrew the coupling nut at the base of the flue pipe anti-clockwise.
7. Slide the flue pipe upwards (1) turning it anti-clockwise until the bottom of the pipe is above the condensate drain pan connection. Pull the bottom of the pipe forwards (2) and remove the pipe downwards (3) turning it anti-clockwise.
8. Lift the condensate drain pan on the left-hand side from the connection to the siphon (4) and turn it to the right with the siphon connection over the edge of the base tray (5). Push the back of the condensate drain pan downward from the connection to the heat exchanger (6) and remove it from the appliance..
9. Remove the connector from the fan and the ignition unit from the gas block.
10. Unscrew the coupling below the gas block.
11. Unscrew the socket head screws from the front cover and remove this complete with gas block and fan to the front. (NB ensure that the burner, insulation plate, gas block, gas supply and fan do not get damaged.)
12. Remove the stem strips positioned crossways in the heat exchanger plates.



9.1.2 Cleaning

1. Clean the stem strips and plates of the heat exchanger from top to bottom with a brush or compressed air..
2. Clean the underside of the heat exchanger.
3. Clean the condensate drain pan with water.
4. Clean the siphon with water. (if necessary, the side branch on the siphon may be sawn off.)



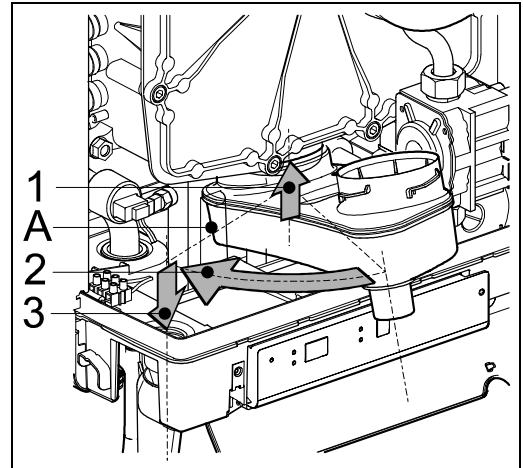
9.1.3 Assembly



When fitting the various seals check for damage, hardening, tears or hairline tears and/or discoloration. Where necessary fit a new seal. Also check whether seals are still correctly positioned.

Failure to fit the sensors S1 and/or S2, or the stem strips, or to fit them correctly, can result in serious damage.

1. Fit the stem strips in the heat exchanger..
2. Check that the seal around the front cover is correctly installed. Place the front cover on the heat exchanger and secure it using the socket head screws plus serrated lock washers. Tighten the socket head screws equally hand-tight, working crosswise.
3. Fit the gas connection below the gas block.
4. Fit the connector to the fan and the ignition unit to the gas block.
5. Fit the condensate drain by sliding it on to the exchanger outlet stump (1) with the siphon connection still in front of the base tray. Then turn it to the left (2) and push it downwards into the siphon connection (3). Make sure in doing this that the back of the condensate drain pan comes to rest on the lug at the back of the base tray (A).
6. Fill the siphon with water and fit it to the connection below the condensate drain pan.
7. Slide the flue pipe, turning it anti-clockwise, with the top around the flue adapter, into the top cover. Insert the bottom into the condensate drain pan and tighten the coupling nut clockwise..
8. Open the gas tap and check the gas connections below the gas block and on the mounting bracket for leakage.
9. Check the CH and the water pipes for leakage..
10. Insert the plug into the wall socket..
11. Switch the appliance on with the **ⓘ** key.
12. Check the front cover, the fan connection on the front cover and the flue pipe components for leakage.
13. Check the gas/air adjustment. (See section 7.10) Fit the casing, tighten the two screws left and right of the display and close the display cover.
14. Check the heating and the hot water supply



10 TECHNICAL SPECIFICATIONS

Appliance category	B23; B33; C13; C 33; C 43; C53; C63; C83: C93
Gas supply pressure	20 - 30 mbar
Suitable for gas type	II2L3P

Technical data	Kompakt HRE eco 12 Solo	Kompakt HRE eco 18 Solo	Kompakt HRE eco 30 Solo	Kompakt HRE eco 40 Solo
----------------	----------------------------	----------------------------	----------------------------	----------------------------

CH					
Nom. Power rating lower value**	kW	3,5 – 11,8	5,6 – 18,7	7.2 – 27.3	7.8 – 42.5
Rated power at 80/60°C**	kW	3,4 – 11,5	5,4 – 17,8	7.1 – 26.3	8.2 – 40.9
Rated power at 50/30°C**	kW	3,8 – 12,0	5,9 – 18,5	7.8 – 27.1	-
Max. CH-water pressure	bar	3	3	3,0	3,0
Max. CH-water temperature	°C	90	90	90	90

Other data					
Gas consumption (G20)	m³/h	0,36 – 1,22	0,59 – 2,30	0.75 - 3.40	0.80 – 4.41
Gas consumption (G31)	m³/h	0,14 – 0,47	0,22 – 0,74	0,29 – 1,08	0,31 – 1,68
Appliance pressure loss (CH)	mWk	See section 7.6			


Elektrical data				
Mains power	V	230		230
Safety class	IP	IP44 (B23, B33 = IP20)		IP44 (B23, B33 = IP20)
Power consumption : full load	W	80		135
Power consumption: stanby	W	2		2

Boiler dimensions and weight				
Height	mm	590		710
Width	mm	450		450
Depth	mm	240		240
Weight	kg	30		36

10.1 NTC resistances

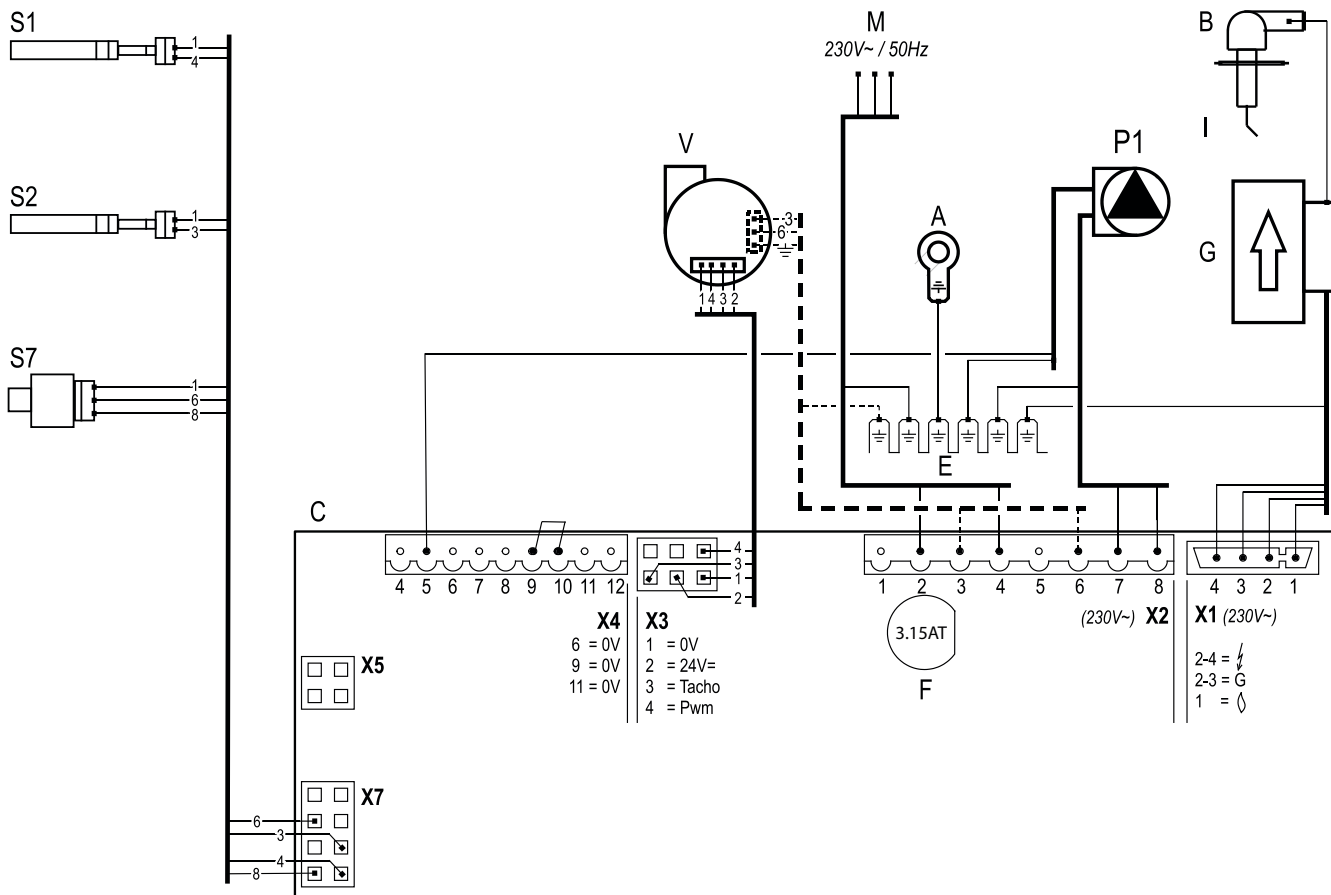
NTC 12kOhm							
T [°C]	R [ohm]	T [°C]	R [ohm]	T [°C]	R [ohm]	T [°C]	R [ohm]
-15	76020	15	18300	45	5522	75	1994
-10	58880	20	14770	50	4609	80	1717
-5	45950	25	12000	55	3863	85	1467
0	36130	30	9805	60	3253	90	1266
5	28600	35	8055	65	2752	95	1096
10	22800	40	6653	70	2337	100	952

Product Fiche according to CELEX-32013R0811, ANNEX iV

Supplier		ACV International Oude vijverweg 6 B-1653 Dworp Belgium			
Type designation		Kompakt HRE eco 12 Solo	Kompakt HRE eco 18 Solo	Kompakt HRE eco 30 Solo	Kompakt HRE eco 40 Solo
		A	A	A	A
Seasonal space heating energy efficiency class	kW	12	18	26	41
Heat rated output (power)	%	94	93	93	92
Seasonal space heating energy efficiency class	kWh	34	54	79	125
Annual energy consumption	dB	50	45	45	55
<div>  CAUTION <ul style="list-style-type: none"> • Please read all instructions before fitting this appliance. • This appliance is not intended for use of persons (including children) with diminished physical, sensory or mental ability, or lack of experience and knowledge, unless supervised by, or instruction about the use of the appliance by a person who is responsible for their safety. • The appliance and installation should every year be inspected by an qualified installer and cleaned when necessary. See annual cleaning § 9 • The appliance can be cleaned with a damp cloth. Don't use aggressive or abrasive cleaning- or solvent products. </div>					

10.2 Electrical diagram Kompakt HRE eco Solo

A	Earth connection exchanger	G	Gas valve + ignition module	S1	Flow sensor
B	Ignition hood	I	Ignition/ionization pin	S2	Return sensor
C	Boiler controller	M	Mains electricity supply	S7	CH water pressure sensor
E	Earth connections	P1	CH pump		
F	Fuse (3.15 A T)	V	Fan		



Connector X4 24V=	6-7		On/off room thermostat 0,1A 24V= and/or Frost thermostat.
	8-9		Outdoor sensor 12kOhm/25°C
	9-10		Boilersensor or boilerthermostat (When using 9 and 10 must be open)
	11-12		OpenTherm (When in use 6-7 must be open)
Connector X2 230V~	2-4		Mains (2=Live, 4=Neutral)
	3-6		Power supply (230 V) fan for Solo 40 only
	7-8		CH pump (8=Live, 7=Neutral)
	3-5-6		Three way valve (3=Live (brown), 5=Switch live (black), 6=Neutral(blue)), (e.g. VC4013 Honeywell 230V~)
Connector X5			PC interface

11 WARRANTY PROVISIONS

With due regard for the conditions indicated below ACV Heating BV guarantees to the registered installer the soundness of the materials used, as well as the effective operation of its Central Heating products, when used for the purpose for which they are supplied. As the case arises we should be given the opportunity where necessary to ascertain in situ the soundness of the warranty claim.

The warranty comprises:

The warranty is limited to re-supplying free of charge the parts that entirely in our judgement display material or manufacturing faults during the warranty period, which are not the result of normal wear etc. Such parts should be sent to us carriage paid with an indication of the defect and after replacement will become our property.

15. The warranty period on parts is 2 years, calculated from the date of installation. However, the following parts are excluded from warranty: ignition and ionisation pin, glass fuse, thermocouple and air bleed
16. The warranty period on the sealing of the appliance heat exchanger is 15 years provided, however, that, if in our view locally unavoidable leakages occur as a result of corrosion, we supply solely this boiler component on the basis of reimbursement of old for new calculated from the date of installation at the time of replacement: the first 5 years free, the 6th year 10%, the 7th year 20%, and so on up to the 14th year 90% of the current price of the boiler part to be replaced.
17. The warranty ceases to apply if it is determined that the defects, damage or excessive wear are attributable to improper use or injudicious handling or inexpert repair, adjustment, installation or maintenance, by unauthorised installers or to exposure to substances containing aggressive chemicals (including hair lacquer) and other harmful substances.
18. The warranty also ceases to apply if pipes and couplings have been used in the installation which can cause oxygen diffusion or if the defect is the result of boiler scale deposits (harmful to the appliance and the installation).
Surface damage and transport damage are not covered by the warranty. The right to warranty lapses if it cannot be demonstrated that, following commissioning, the central heating boiler or central heating stove has been subjected to a service at least once a year by an installer authorised for that purpose by or on behalf of the gas company. The installation and operating instructions that we issue for the appliances and stoves concerned should be fully adhered to.
19. The manufacturer's liability under the agreement is expressly limited to fulfilment of the warranty obligations described in this article. Any claim for compensation with the exception of those relating to non-fulfilment of the warranty obligations is excluded. With due regard for the mandatory legal provisions regarding liability and product liability, no rights may ever be derived with regard to any consequential loss, purely final loss or any loss whatsoever arising from defects in materials supplied or work undertaken by the manufacturer.
Furthermore all offers of and agreements regarding products to be supplied and/or services to be provided by us are subject to the general conditions of delivery for the metal and electrical engineering industry, filed by the Dutch Vereniging F.M.E.-C.W.M. on 18 October 1998 with the registry of the

district court of The Hague (number 119/1998). A copy of these conditions will be sent free of charge on request. Other conditions are expressly rejected.

20. The warranty is applicable solely if the appendix to the warranty certificate has been signed by the purchaser and returned to us within 8 days following installation. By signing the warranty card the purchaser declares that he/she is in agreement with the sound condition of that which has been delivered.
21. If the installer's business ceases operations before expiry of the warranty period, the user may have recourse to our warranty obligations to the installer.

Use as intended.

The appliance, as described in this documentation, is intended for heating rooms via a central heating installation and/or for supplying hot water. Any other use lies outside the intended use of the appliance. No liability can be accepted for loss or damage arising from incorrect use.

12 CE- DECLARATION

Declaration of conformity in accordance with ISO IEC GUIDE 22.

Manufacturer	ACV International
Address	Oude Vijverweg 6, B-1653 Dworp

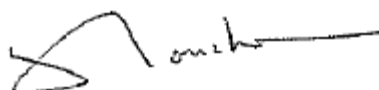
Hereby declares that the CH appliances:

Kompakt HRE eco 12 Solo
Kompakt HRE eco 18 Solo
Kompakt HRE eco 30 Solo
Kompakt HRE eco 40 Solo

Meets the provisions of the following directives:

- Low Voltage Directive (2014/35/EC)
- Gas Appliances Directive (2009/142/EC)
- Boiler Efficiency Directive for new oil- and gas-fired central heating boilers (92/42/EC)
- EMC Directive (2014/30/EC)
- RED Directive (2014/53/EC)
- Ecodesign Directive (2009/125/EG)
- Directive concerning energy labeling (2010/30/EU)

Coevorden, April 2017



[illegible]

ACV Belgium

Oude Vijverweg 6

B-1653 Dworp

tel. +32 - 2334 82 40

fax. +32 - 2334 82 59

www.acv.com

