

# Installation and service instructions

for contractors

# VIESSMANN

## Vitodens 111-W

Type B1LB, 6.5 to 35.0 kW

Gas condensing storage combi boiler

Natural gas and LPG version

Gas Council Number: 47-819-36, 47-819-37

*For applicability, see the last page*



## VITODENS 111-W



## Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

### Safety instructions explained



#### **Danger**

This symbol warns against the risk of injury.



#### **Please note**

This symbol warns against the risk of material losses and environmental pollution.

### Note

Details identified by the word "Note" contain additional information.

### Target group

These instructions are exclusively intended for authorised contractors.

- Work on gas installations must only be carried out by a registered gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

### Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for environmental protection

- Codes of practice of the relevant trade associations
- All current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards
  - Ⓐ ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE
  - ⒸH SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

### Safety instructions for working on the system

#### Working on the system

- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.
- Isolate the system from the power supply, e.g. by removing the separate fuse or by means of a mains isolator, and check that it is no longer 'live'.
- Safeguard the system against reconnection.



#### **Danger**

Hot surfaces can cause burns.

- Before maintenance and service work, switch OFF the appliance and let it cool down.
- Never touch hot surfaces on the boiler, burner, flue system or pipework.

## Safety instructions (cont.)



### Please note

Electronic assemblies can be damaged by electrostatic discharge.

Prior to commencing work, touch earthed objects such as heating or water pipes to discharge static loads.

### Repair work



### Please note

Repairing components that fulfil a safety function can compromise the safe operation of the system.

Replace faulty components only with genuine Viessmann spare parts.

### Auxiliary components, spare and wearing parts



### Please note

Spare and wearing parts that have not been tested together with the system can compromise its function. Installing non-authorised components and making non-approved modifications or conversions can compromise safety and may invalidate our warranty.

For replacements, use only original spare parts supplied or approved by Viessmann.

### Safety instructions for operating the system

#### If you smell gas



#### Danger

Escaping gas can lead to explosions which may result in serious injury.

- Never smoke. Prevent naked flames and sparks. Never switch lights or electrical appliances on or off.
- Close the gas shut-off valve.
- Open windows and doors.
- Evacuate any people from the danger zone.
- Notify your gas or electricity supply utility from outside the building.
- Have the power supply to the building shut off from a safe place (outside the building).

#### If you smell flue gas



#### Danger

Flue gas can lead to life threatening poisoning.

- Shut down the heating system.
- Ventilate the installation site.
- Close doors to living spaces to prevent flue gases from spreading.

## Safety instructions (cont.)

### What to do if water escapes from the appliance



#### **Danger**

When water escapes from the appliance there is a risk of electrocution.

Switch off the heating system by means of an external isolator (for example fuse box, domestic power distribution).



#### **Danger**

The simultaneous operation of the boiler and appliances that extract air to the outside can result in life threatening poisoning due to reverse flow of the flue gas.

Fit an interlock circuit or take suitable steps to ensure an adequate supply of combustion air.

### Flue systems and combustion air

Ensure that flue systems are clear and cannot be sealed, for instance due to accumulation of condensate or other causes. Ensure an adequate supply of combustion air.

Instruct system users that subsequent modifications to the building characteristics are not permissible (e.g. cable/pipe-work routing, cladding or partitions).



#### **Danger**

Leaking or blocked flue systems, or an inadequate supply of combustion air can cause life threatening poisoning from carbon monoxide in the flue gas.

Ensure the flue system is in good working order. Apertures for supplying combustion air must be non-closable.

### Extractors

Operating appliances that extract air to the outside (cooker hoods, extractors, air conditioning units, etc.) can create negative pressure. If the boiler is operated at the same time, this can lead to reverse flow of the flue gas.



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## Disposal of packaging

Please dispose of waste packaging in line with statutory regulations.

## Symbols

Sym- bol	Meaning
	Reference to other document containing further information
	Step in a diagram: The numbers correspond to the order in which the steps are carried out.
	Warning of material losses and environmental pollution
	Live electrical area
	Pay particular attention.
	<ul style="list-style-type: none"> <li>■ Component must audibly click into place.</li> <li>or</li> <li>■ Acoustic signal</li> </ul>
	<ul style="list-style-type: none"> <li>■ Fit new component.</li> <li>or</li> <li>■ In conjunction with a tool: Clean the surface.</li> </ul>
	Dispose of component correctly.
	Dispose of component at a suitable collection point. Do <b>not</b> dispose of component in domestic waste.

## Intended use

The appliance is only intended to be installed and operated in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions. It is only designed for the heating of water that is of potable water quality.

Intended use presupposes that a fixed installation in conjunction with permissible, system-specific components has been carried out.

Commercial or industrial usage for a purpose other than heating the building or DHW shall be deemed inappropriate.

Any usage beyond this must be approved by the manufacturer in each individual case.

Incorrect usage or operation of the appliance (e.g. the appliance being opened by the system user) is prohibited and will result in an exclusion of liability. Incorrect usage also occurs if the components in the heating system are modified from their intended use (e.g. if the flue gas and ventilation air paths are sealed).

## Product information

### Vitodens 111-W, type B1LB

Preset for operation with natural gas. Conversion to LPG P requires a gas conversion kit.

#### Conversion for other countries

The Vitodens 111-W must only be delivered to the countries specified on the type plate. For deliveries to alternative countries, an approved contractor must arrange individual approval on his/her own initiative and in accordance with the law of the country in question.

#### Product description

The Vitodens 111-W is equipped with a cylinder and an integral plate heat exchanger as cylinder loading system for DHW heating. For the connection of heating circuits and DHW line, see page 15 onwards.

In the delivered condition, the Vitodens 111-W is set up for operation with constant boiler water temperature. By connecting an outside temperature sensor (accessories), the boiler can be operated in weather-compensated mode.

## Product information (cont.)

The appliance is equipped with a sealed unvented hydraulic system with 2 connections for heating flow and return and 2 connections for DHW heating.

The following components are integrated into the hydraulic system:

- Circulation pump
- 3-way diverter valve
- Safety valve

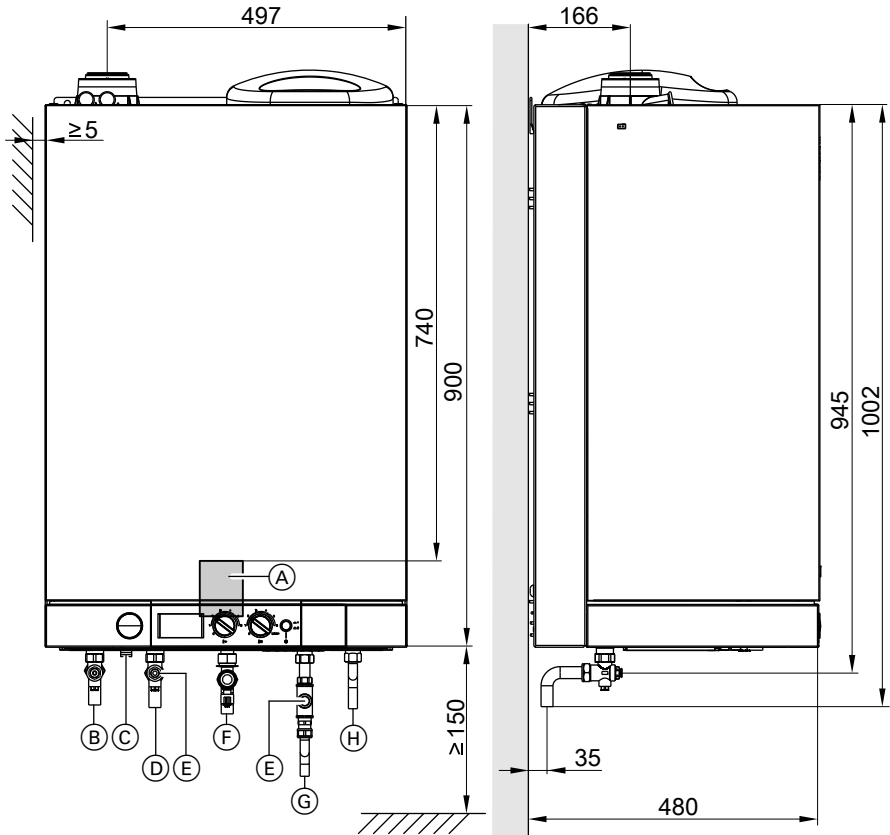
- Heating water expansion vessel and DHW expansion vessel
- Cylinder and plate heat exchanger for DHW heating

### Connecting accessories

Outside temperature sensor and time switch are connected with low voltage to the control unit.

## Preparing for boiler installation

### Dimensions and connections



- |  |  |
|--|--|
| (A) Area for electrical connections    | (F) Gas connection $\varnothing$ 22 mm |
| (B) Heating flow $\varnothing$ 22 mm   | (G) Cold water $\varnothing$ 15 mm     |
| (C) Condensate drain                   | (H) DHW $\varnothing$ 15 mm            |
| (D) Heating return $\varnothing$ 22 mm |  |
| (E) Filling loop                       |  |

## Preparing for boiler installation (cont.)

### Preparing the connections

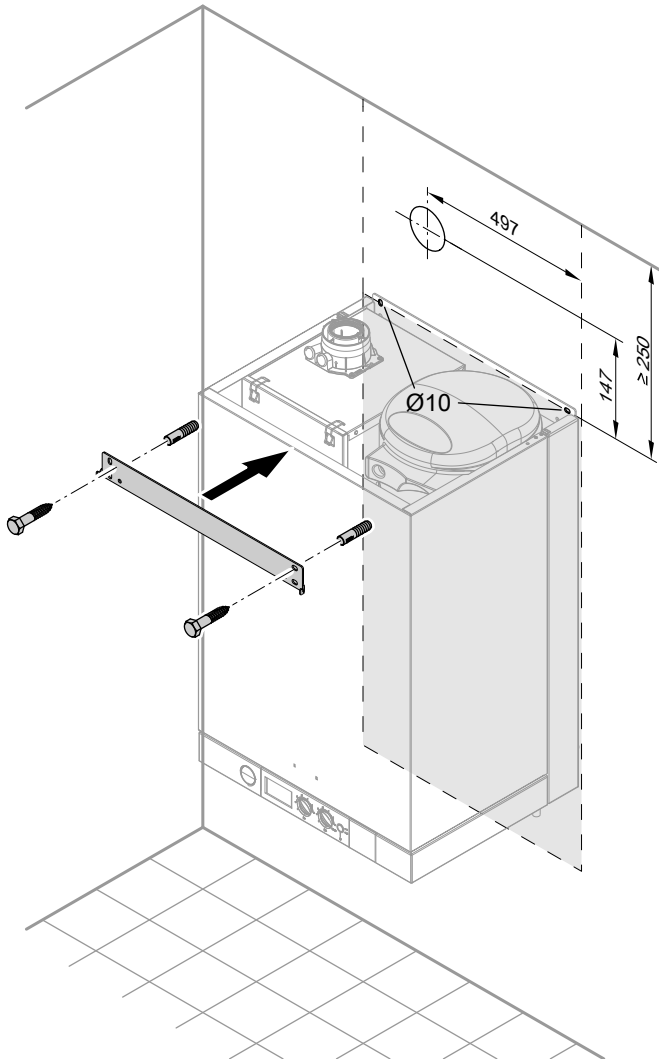
#### Note

*This boiler (IP rating: IP X4D) is approved for installation in wet rooms inside safety zone 1 in accordance with IEEE Wiring Regulations, providing the occurrence of hosed water can be ruled out.*

*Observe the IEEE Wiring Regulations.*

1. Prepare the water connections. Flush the heating system.
2. Prepare the gas connection.
3. Prepare the electrical connections.
  - Power cable:  
Flexible cable 3 x 1.5 mm<sup>2</sup>  
Leave the earth conductor (PE) longer than the 'live' conductors L1 and N.
  - Accessory cables:  
NYM-O 2-core min. 0.5 mm<sup>2</sup>.



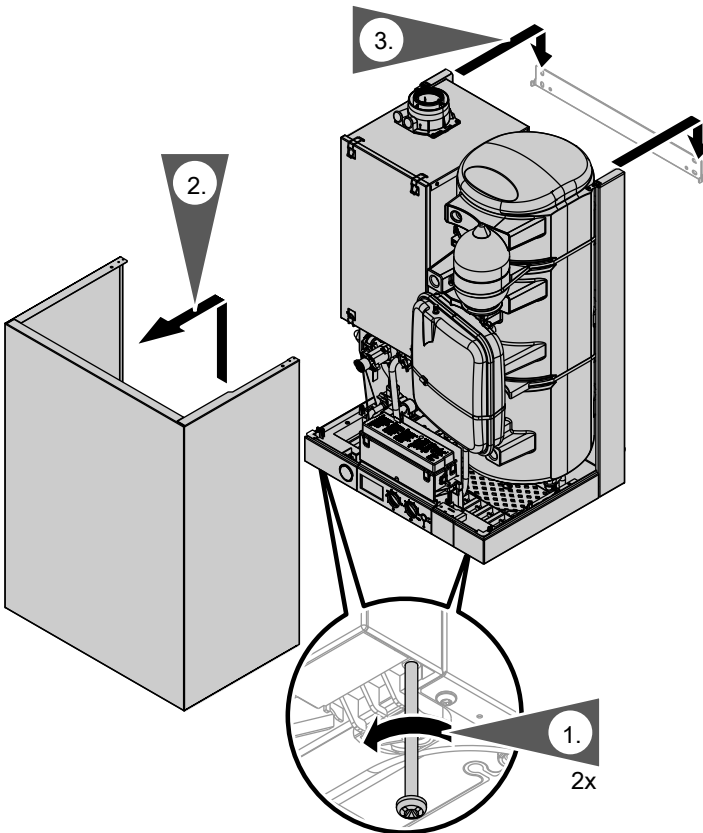
**Fitting the wall mounting bracket**

## Mounting the boiler and making the connections

### Removing the front panel and mounting the boiler

**Note**

When mounting on the wall, observe the following: *Weight excl. packaging: approx. 65 kg.*



1. Undo the screws at the bottom of the boiler; do not remove completely.
2. Remove the front panel.
3. Hook the boiler onto the wall mounting bracket.

## Mounting the boiler and making the connections (cont.)

### Making the connections on the water side

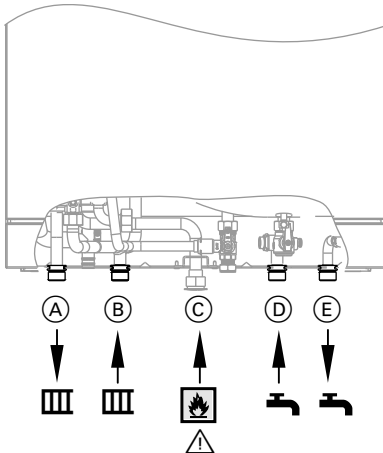


See separate installation instructions for installation of fittings on the heating water side and DHW side.



#### Please note

To prevent appliance damage, connect all pipework free of load and torque stress.



- (A) Heating flow
- (B) Heating return

- (C) Gas connection
- (D) Cold water
- (E) DHW

### Connection on the domestic hot water side

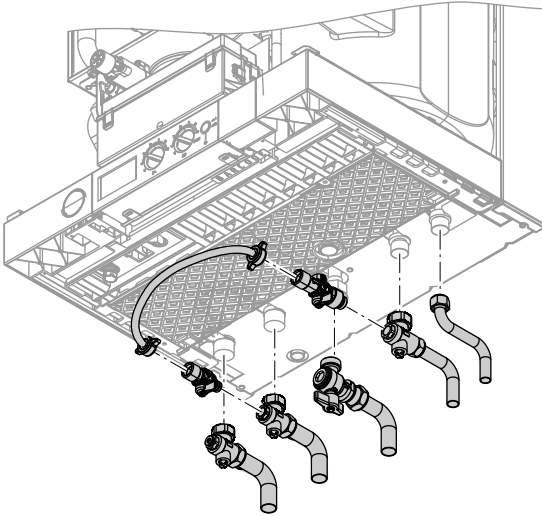
Permiss. cylinder operating pressure: 10 bar.

Fit a safety valve and pressure limiter in the case of higher mains pressure.

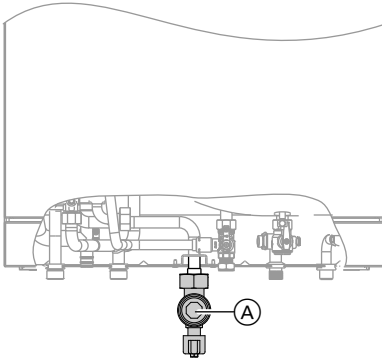
No flow limiter is fitted into the cold water supply.

## Mounting the boiler and making the connections (cont.)

### Mounting the connection set



### Gas connection



1. Connect gas shut-off valve to connection (A).

**Mounting the boiler and making the connections** (cont.)

2. Carry out a tightness test.

**Note**

*Only use suitable and approved leak detection agents (EN 14291) and devices for the tightness test. Leak detection agents with unsuitable constituents (e.g. nitrides, sulphides) can cause material damage.*

*Remove leak detection agent residues after testing.*

**Please note**

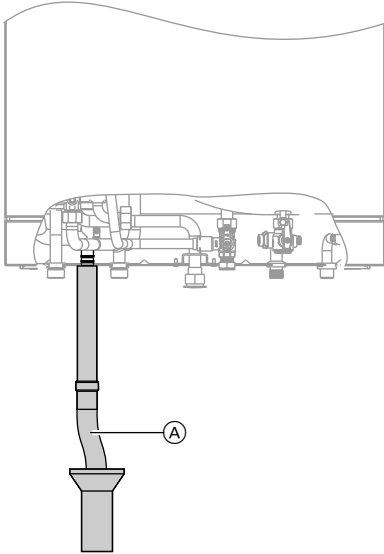
Excessive test pressure will damage the boiler and the gas train.

Max. test pressure 150 mbar (15 kPa). If a higher pressure is required for tightness tests, disconnect the boiler and the gas train from the main supply pipe (undo the fitting).

3. Purge the gas line.

## Mounting the boiler and making the connections (cont.)

### Condensate drain connection



- The condensate pipe is connected to the discharge pipe of the safety valve. The supplied condensate hose meets the temperature requirements for CE certification.
- We recommend connecting the condensate pipe internally to the domestic waste water system, either directly or via a tundish.

- If the condensate pipe is routed outside the building, use a pipe with at least  $\varnothing$  30 mm and protect this pipe from frost. Avoid long external pipe runs.



#### Please note

A frozen condensate pipe can result in faults and damage to the boiler.

Always protect condensate pipes against frost.

- Observe local building regulations. Connect condensate pipe (A) to the public sewage system with a constant fall and a pipe vent. Observe the local waste water regulations.

#### Note

*Fill the trap with water before commissioning.*

### Filling the trap with water

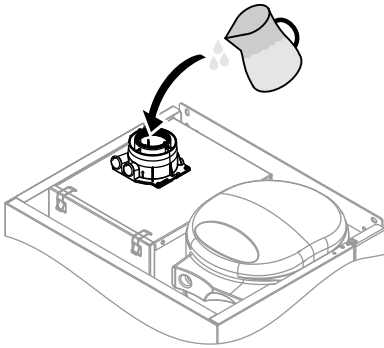


#### Please note

During commissioning, flue gas may escape from the condensate drain.

Always fill the trap with water before commissioning.

## Mounting the boiler and making the connections (cont.)



Pour at least 0.3 l of water into the flue outlet.



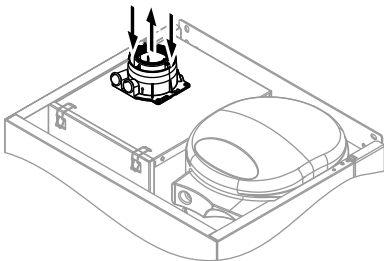
### Please note

Water in the ventilation air supply can be detrimental to the combustion quality.  
Never pour water into the external vent.

## Balanced flue connection

### Note

Only use the "System certificate" and "Skoberne GmbH flue system" labels in conjunction with the Viessmann flue system made by Skoberne.



Connect the balanced flue pipe.  
During installation and positioning of the flue system, observe Building regulations Part L and BS 5440.



Flue system installation instructions

## Connecting several Vitodens 111-W to a shared flue system

Adjust the burner setting of each connected boiler to match the flue system:

- For shared connection, see page 31.
- For flue gas cascade, see page 37.

Do not carry out **commissioning** until the following conditions are met:

- Free passage through the flue gas pipes.
- Flue system with positive pressure is gas-tight.
- Apertures for ensuring sufficient combustion air supply are open and cannot be closed off.
- Applicable regulations on installing and commissioning flue systems have been followed.

## Mounting the boiler and making the connections (cont.)

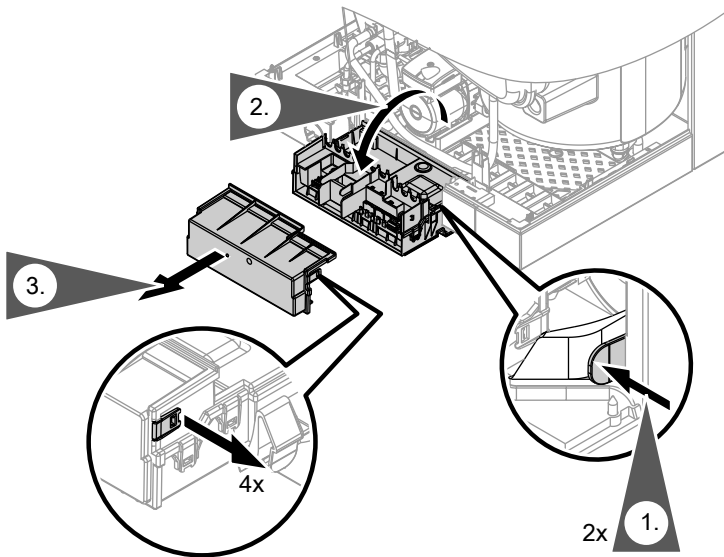


### Danger

Leaking or blocked flue systems or an insufficient supply of combustion air cause life threatening poisoning due to carbon monoxide in the flue gas.

Ensure the flue system functions correctly. Apertures for combustion air supply must not be able to be closed off.

## Opening the control unit enclosure



### Please note

Electronic assemblies can be damaged by electrostatic discharge. Prior to commencing any work, touch earthed objects such as heating or water pipes to discharge static loads.

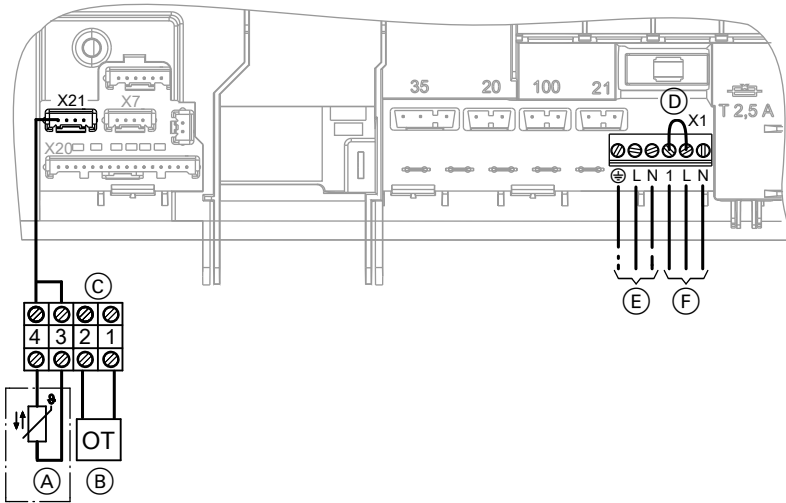


## Electrical connections



### Information on connecting accessories

When connecting accessories observe the separate installation instructions provided with them.



- (A) Only for weather-compensated mode:  
Outside temperature sensor (accessories)
- (B) OpenTherm device  
Remove jumper (D) when making this connection.
- (C) Connecting cable
- (D) Jumper
- (E) Power supply (230 V, 50 Hz).  
See page 23.
- (F) Vitotrol 100 or on-site room temperature controller (230 V switched input)  
Remove jumper (D) when making this connection.



Separate installation instructions

## Connecting accessories



Accessory installation instructions

When connecting a Vitotrol 100 or an OpenTherm remote control, remove the jumper across L and 1.

## Electrical connections (cont.)

### Outside temperature sensor (accessories)

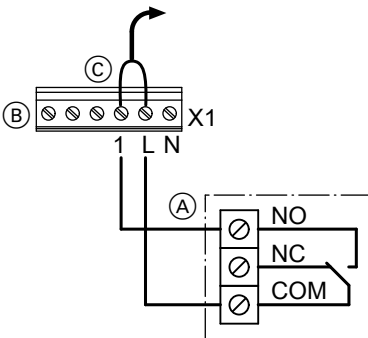
1. Fit outside temperature sensor.

Installation site:

- North or north-westerly wall, 2 to 2.5 m above ground level; in multi storey buildings, in the upper half of the 2nd floor
- Not above windows, doors or vents
- Not immediately below balconies or gutters
- Never render over
- Connection:  
2-core lead, length up to 35 m with a cross-section of 1.5 mm<sup>2</sup>

2. Connect the outside temperature sensor to terminals 3 and 4 of the power cable (see page 21).

### Vitotrol 100 connection



Example: Vitotrol 100, type UTDB

- (A) Vitotrol 100, type UTDB
- (B) Terminals "X1" on the control unit

- (C) Jumper, remove when making this connection

Recommended connecting cable

- 2-core cable with a cross-section of 1.5 mm<sup>2</sup> for 230 V~

## Electrical connections (cont.)

### Power supply

#### Regulations and Directives



#### Danger


Incorrectly executed electrical installations can result in injuries from electrical current and in appliance damage.

Connect the power supply and implement all safety measures (e.g. RCD circuit) in accordance with the following regulations:

- IEC 60364-4-41
- IEEE Wiring Regulations
- Connection requirements specified by your local power supply utility

Install an isolator in the power cable that simultaneously isolates all non-earthed conductors from the power supply with at least 3 mm contact separation.

We also recommend installing an AC/DC-sensitive RCD

(RCD class B ) for DC (fault) currents that can occur with energy efficient equipment.

Protect the power cable with an external 3 A fuse to BS 1362.



#### Danger

Incorrect core assignment can result in serious injury and damage to the appliance.

Take care **not** to interchange wires "L1" and "N".



#### Danger

The absence of component earthing can lead to serious injury from electric current if an electrical fault occurs.

The appliance and pipework must be connected to the equipotential bonding of the building.

## Electrical connections (cont.)

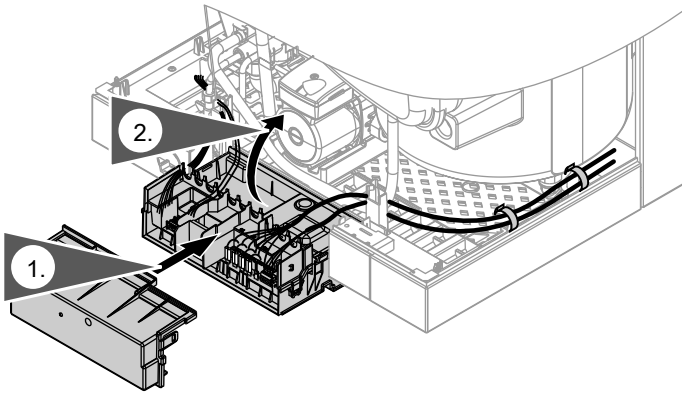
### Routing connecting cables and closing the control unit enclosure



**Please note**

Connecting cables will be damaged if they touch hot components.

When routing and securing cables/leads on site, ensure that the maximum permissible temperature for these cables/leads is not exceeded.



## Steps - commissioning, inspection and maintenance

For further information regarding the individual steps, see the page indicated

			Commissioning steps	Inspection steps	Maintenance steps	Page
•	•	•				<b>1. Filling the heating system</b> ..... 27
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•	•	•				<b>3. Converting to operation with LPG</b> ..... 30
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•	•	•				<b>18. Checking the connections on the heating water and the DHW side</b> ..... 52
•	•	•				<b>19. Checking flue system for unrestricted flow and tightness</b>
•	•	•				<b>20. Checking firm seating of electrical connections</b>

**Steps - commissioning, inspection and...** (cont.)

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			Inspection steps	
			Maintenance steps	
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## Further details regarding the individual steps

### Filling the heating system

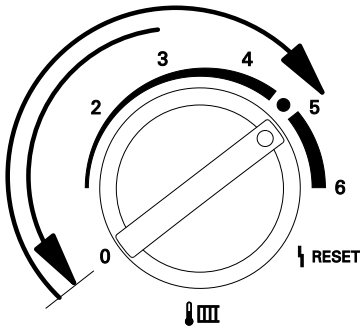


#### Please note

Unsuitable fill water increases the level of deposits and corrosion and may lead to appliance damage.

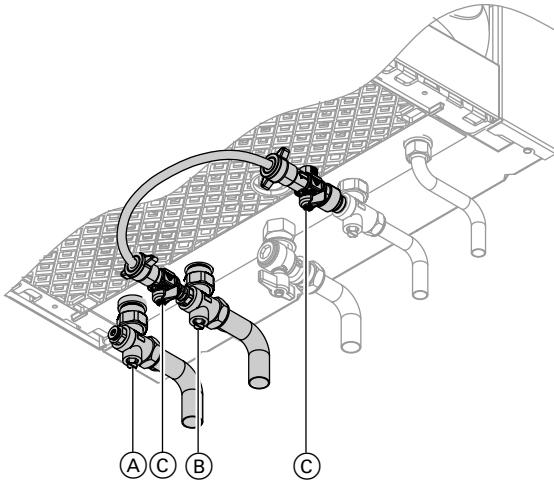
- Flush the heating system thoroughly before filling.
- Only fill with water of potable quality.

- Fill water with a hardness above 300 ppm must be softened.
- Antifreeze suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability.



1. Close the gas shut-off valve.
2. Switch ON power and wait until the display shows the boiler water temperature.
3. Turn rotary selector "III ↓" fully anti-clockwise, until the display shows "SERV".  
Within 2 s return the rotary selector to the r.h. control range.  
The display shows "III" and "⚡".  
Filling function is enabled.  
This function terminates automatically after 20 min or when the ON/OFF switch is switched off.

## Further details regarding the individual steps (cont.)

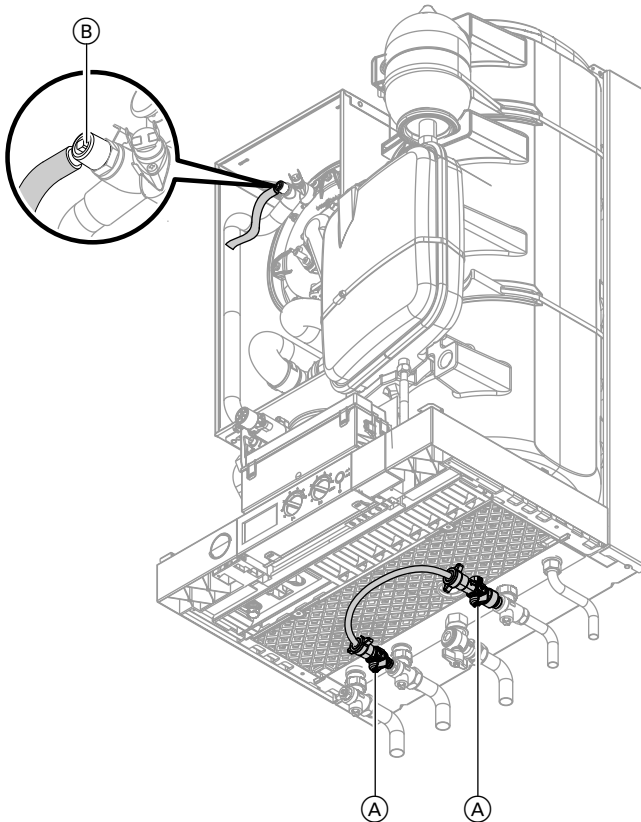


4. Open shut-off valves (A) and (B).
5. Open taps (C) and fill the heating system. (Minimum system pressure > 0.8 bar (80 kPa).
6. Close taps (C).
7. Remove connection line between both valves (C). In operation the connection must be interrupted.



**Further details regarding the individual steps (cont.)**

**Venting the boiler by flushing**



1. Close the shut-off valves on the heating water side.
2. Connect the drain hose between top tap (B) and a drain.
3. Open taps (A) and (B) and vent at mains pressure, until no sound of escaping air can be heard.
4. Close taps (A) and (B); open the shut-off valves on the heating water side.
5. Remove the line between taps (A) and keep safe. This will be required for topping up.

## Further details regarding the individual steps (cont.)

### Converting to operation with LPG

In the delivered condition, the boiler is set up for operation with natural gas. For operation with LPG, change the gas nozzle and switch to the correct gas type at the control unit.



Separate installation instructions.

Conversion from LPG to natural gas, see page 68.

### Checking the static and supply pressure

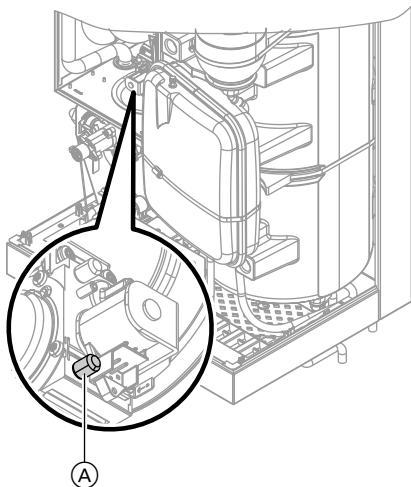


#### Danger

CO formation as a result of incorrect burner adjustment can have serious health implications. Carry out a CO test before and after work on gas appliances.

#### Operation with LPG

Purge the LPG tank twice during commissioning or replacement. Vent the tank and gas connection line thoroughly after purging.



2. Release the screw inside test connector (A) on the gas train but do not remove, then connect the pressure gauge.
3. Open the gas shut-off valve.
4. Check the static pressure.  
Set value: max. 57.5 mbar (5.75 kPa)
5. Start the boiler.

#### Note

During commissioning, the boiler can enter a fault state because of airlocks in the gas line. After approx. 5 s, press **Reset** to reset the burner.

6. Check the supply (flow) pressure.

Set value:

- Natural gas: 20 mbar (2.0 kPa)
- LPG: 37 mbar (3.7 kPa)

#### Note

Use a suitable tester with a resolution of at least 0.1 mbar (10 Pa) to check the supply pressure.

1. Close the gas shut-off valve.

7. Proceed as indicated in the following table.

## Further details regarding the individual steps (cont.)

8. Shut down the boiler, close the gas shut-off valve, remove the pressure gauge and tighten screw in test connector (A).
9. Open the gas shut-off valve and start the appliance.

### Note

The maximum pressure drop between the gas shut-off valve and test connector (A) at the gas train is 0.5 mbar (50 Pa).



### Danger

Gas escaping from the test connector leads to a risk of explosion.  
Check gas tightness at test connector (A).

Supply pressure (flow pressure)		Measures
For natural gas	For LPG	
below 17.4 mbar (1.74 kPa)	below 25 mbar (2.5 kPa)	Do not start the boiler. Notify your gas supply utility or LPG supplier.
17.4 to 25 mbar (1.74 to 2.5 kPa)	25 to 47 mbar (2.5 to 4.7 kPa)	Start the boiler.
above 25 mbar (2.5 kPa)	above 47 mbar (4.7 kPa)	Install a separate gas pressure governor upstream of the system and regulate the flow pressure to 20 mbar (2.0 kPa) for natural gas or 37 mbar (3.7 kPa) for LPG. Notify your gas supply utility or LPG supplier.

## Burner adjustment when connecting multiple flues to a shared flue system

When connecting several Vitodens 111-W to a shared flue system:

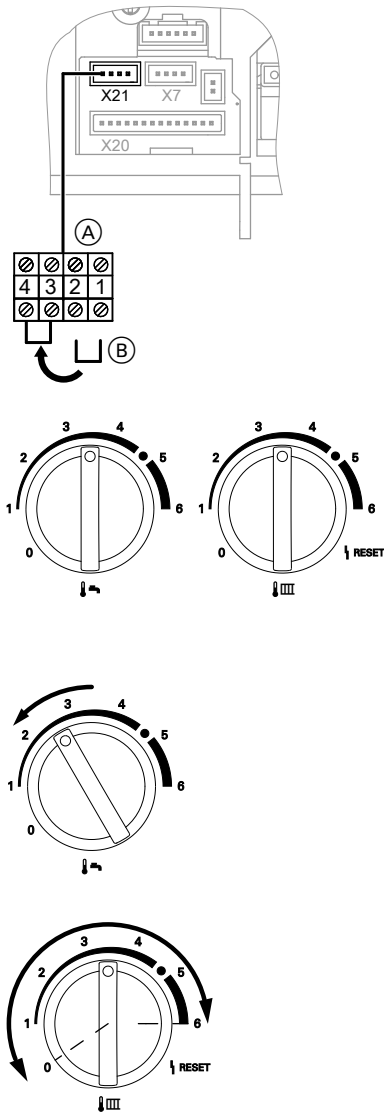
Adjust the burner setting of each connected boiler by a correction factor to match the flue system.

System conditions:

- Shared flue in shaft  $\varnothing$  100 mm
- Balanced flue connection line from boiler to shaft  $\varnothing$  80/125 mm

- Minimum shaft cross-section
  - Square 175 x 175 mm
  - Round  $\varnothing$  195 mm
- Height between floors min. 2.5 m
- Max. 6 boilers with the same rated heating output connected to the flue system

## Further details regarding the individual steps (cont.)



- At terminal block (A) insert jumper (B) across terminals 3 and 4.
- Switch ON the ON/OFF switch.
- Turn both rotary selectors "⌚" and "⏏" simultaneously to their central positions.  
The display shows "SERV".
- Refer to the following table for the correction factor required for the flue system.
- Within 2 s, turn rotary selector "⌚" to the top left range.  
The display shows "⏏", "⏏", and the selected correction factor flashes.  
In the delivered condition, factor 0 has been set.
- Within 15 s, set rotary selector "⏏" to the required correction factor.
- The set correction factor is saved when the value stops flashing, and the control unit returns to standard mode.
- Remove jumper (B) from terminal block (A).

## Further details regarding the individual steps (cont.)

### One boiler per floor

#### Rated heating output 26 kW

Number of boilers	2	3	4	5	6
Correction factor (setting value)	Flue length a (m)				
0					
1	≤ 17				
2	> 17 ≤ 25	≤ 17			
3	–	> 17 ≤ 25	≤ 17	≤ 14	≤ 13
4	–	–	> 17 ≤ 21	> 14 ≤ 17	> 13 ≤ 15
5	–	–	> 21 ≤ 25	> 17 ≤ 20	> 15 ≤ 17
6	–	–	–	> 20 ≤ 22	> 17 ≤ 19

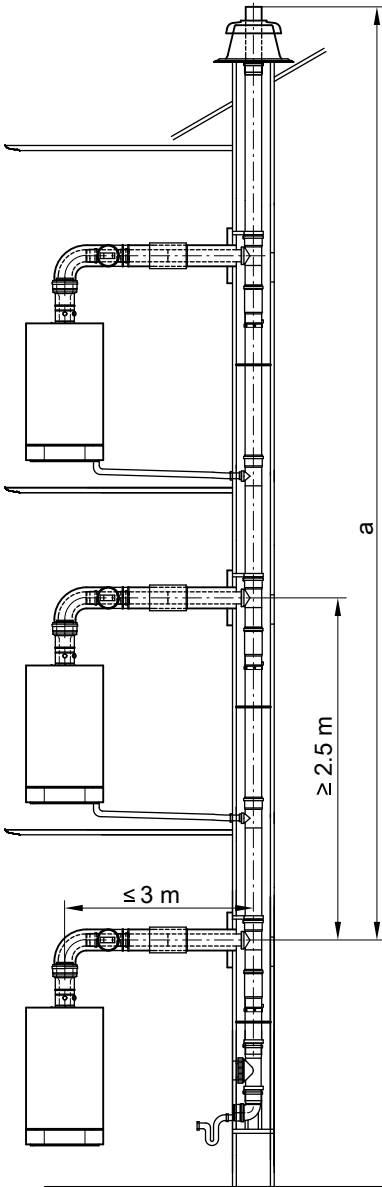
#### Rated heating output 35 kW

Number of boilers	2	3	4	5	6
Correction factor (setting value)	Flue length a (m)				
0					
1	≤ 10				
2	> 10 ≤ 25	≤ 11			
3	–	> 11 ≤ 17			
4	–	> 17 ≤ 22	≤ 14	≤ 13	
5	–	> 22 ≤ 25	> 14 ≤ 17	> 13 ≤ 14	≤ 13
6	–	–	> 17 ≤ 20	> 14 ≤ 16	> 13 ≤ 15

#### Note

The correction factor changes the boiler modulation range.

**Further details regarding the individual steps (cont.)**



## Further details regarding the individual steps (cont.)

### Two boilers per floor

#### Rated heating output 26 kW

Number of boilers	2	4	6
Correction factor (setting value)	Flue length a (m)		
0			
1	≤ 25		
2	–	≤ 8	≤ 6
3	–	> 8 ≤ 13	> 6 ≤ 8
4	–	> 13 ≤ 15	> 8 ≤ 10
5	–	–	> 10 ≤ 12
6	–	–	> 12 ≤ 14

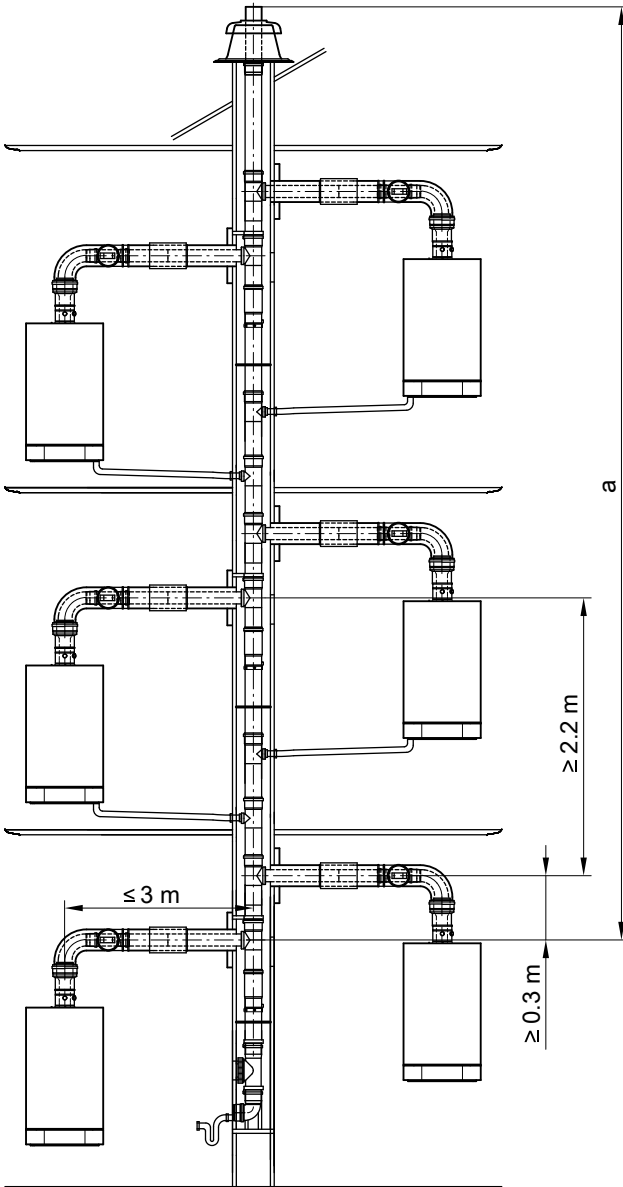
#### Rated heating output 35 kW

Number of boilers	2	4	6
Correction factor (setting value)	Flue length a (m)		
0			
1	≤ 9		
2	> 9 ≤ 15	≤ 6	≤ 5
3	–	> 6 ≤ 8	> 5 ≤ 6
4	–	> 6 ≤ 11	> 6 ≤ 7
5	–	> 11 ≤ 14	> 7 ≤ 8
6	–	> 14 ≤ 15	> 8 ≤ 9

#### Note

The correction factor changes the boiler modulation range.

**Further details regarding the individual steps (cont.)**





**Further details regarding the individual steps (cont.)**

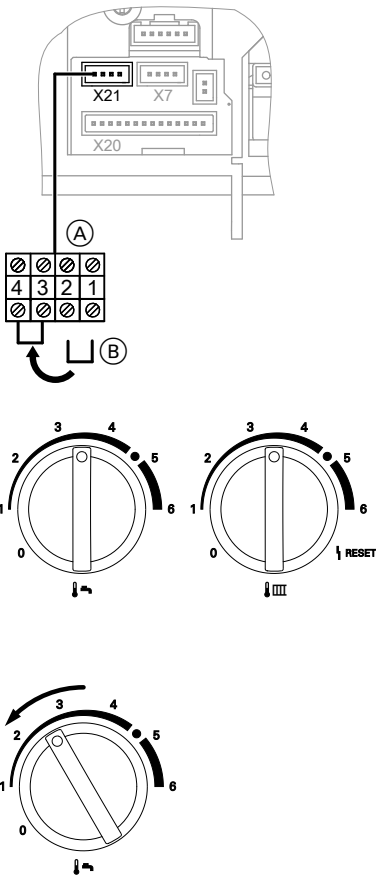
**Adjust the burner setting if several boilers are connected to a shared flue (flue gas cascade)**

Adjust the burner setting of each connected boiler by a correction factor to match the flue system.

System conditions:

- Shared flue gas header  $\varnothing$  100 mm
- Max. 4 boilers with the same rated heating output connected to the flue system

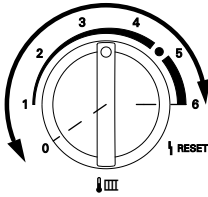
1. At terminal block (A) insert jumper (B) across terminals 3 and 4.
2. Switch ON the ON/OFF switch.



3. Turn both rotary selectors "⏴" and "⏵" simultaneously to their central positions.  
The display shows "SERV".
4. Refer to the following table for the correction factor required for the flue system.
5. Within 2 s, turn rotary selector "⏴" to the top left range.  
The display shows "III", "I➤", and the selected correction factor flashes.  
In the delivered condition, factor 0 has been set.



**Further details regarding the individual steps (cont.)**



6. Within 15 s, set rotary selector "↓ III" to the required correction factor.
7. The set correction factor is saved when the value stops flashing, and the control unit returns to standard mode.
8. Remove jumper (B) from terminal block (A).

**Rated heating output 26 kW**

Number of boilers	2	3	4
Correction factor (setting value)	Flue length a (m)		
0			
1	≤ 17	≤ 5	
2	> 17 ≤ 25	> 5 ≤ 15	≤ 7
3	–	> 15 ≤ 25	> 7 ≤ 13
4	–	–	> 13 ≤ 18
5	–	–	> 18 ≤ 24
6	–	–	> 24 ≤ 25

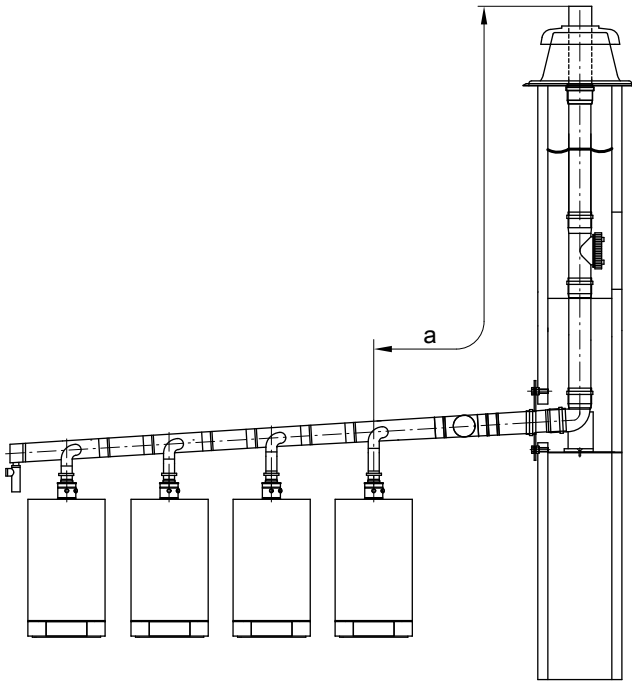
**Rated heating output 35 kW**

Number of boilers	2	3	4
Correction factor (setting value)	Flue length a (m)		
0			
1	≤ 10		
2	> 10 ≤ 25	≤ 8	
3	–	> 8 ≤ 15	≤ 7
4	–	> 15 ≤ 21	> 7 ≤ 10
5	–	> 21 ≤ 25	> 10 ≤ 13
6	–	–	> 13 ≤ 16

**Note**

The correction factor changes the boiler modulation range.

## Further details regarding the individual steps (cont.)



### Reducing the max. heating output

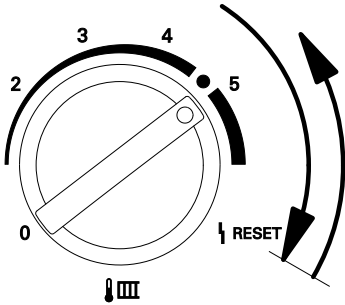
The max. heating output can be reduced according to the system requirements.

1. Turn on the ON/OFF switch.

**Note**

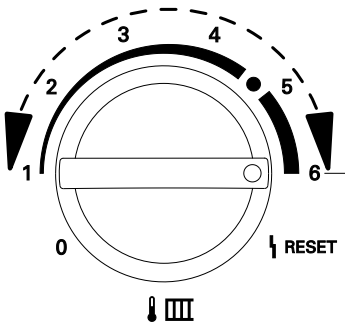
*The heating output can only be changed with the burner in operation.*

## Further details regarding the individual steps (cont.)

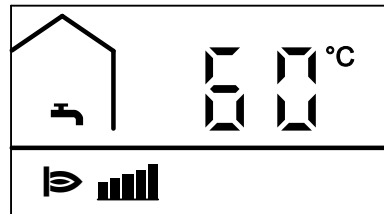


2. Turn rotary selector "🌡️ IIII" fully clockwise, until the display shows "SERV".

Within 2 s return the rotary selector to the r.h. control range. The display shows "👉".

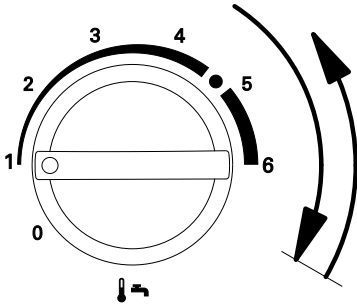


3. Select the required max. heating output with rotary selector "🌡️ IIII". Bars for the selected heating output flash on the display.



- Position 1 (1 bar) = lower heating output.
  - Position 6 (5 bars) = upper heating output.
4. Test selected heating output by measuring the gas throughput.

**Further details regarding the individual steps (cont.)**



5. Transfer selected heating output:  
Turn rotary selector "🔥👉" for less than 2 s fully clockwise and then back into the r.h. control range.  
During the transfer, "- . - . -" will be displayed.
6. Shut down the boiler.

**Matching the circulation pump rate to the heating system**

In its delivered condition the circulation pump is set to the following values:

- For DHW heating: Speed 100 %
- For heating mode without outside temperature sensor:

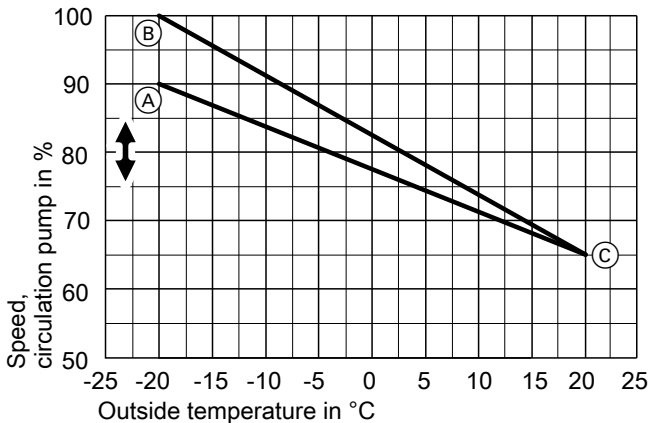
Rated heating output in kW	26	35
Speed in %	90	100

- For heating mode with outside temperature sensor:

Rated heating output in kW	26	35
Min. speed in %	65	65
Max. speed in %	90	100

The maximum speed can be changed. See the following chapter.

The speed cannot be changed.



Ⓐ Max. speed 26 kW

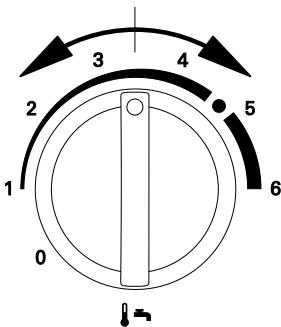
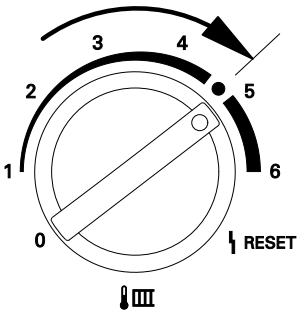
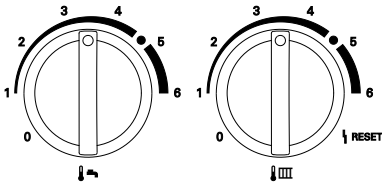
Ⓑ Max. speed 35 kW

## Further details regarding the individual steps (cont.)

### © Min. speed

#### Changing the maximum speed

Only when operating with an outside temperature sensor.

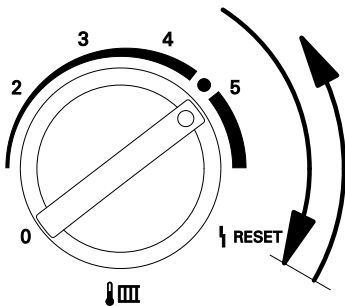
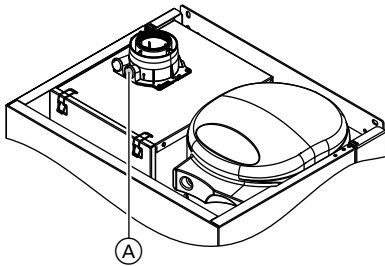


1. Switch ON the ON/OFF switch.
2. Turn both rotary selectors "🌡️➡️" and "🌡️||| " simultaneously to their central positions.  
The display shows "SERV".
3. Within 2 s, turn rotary selector "🌡️||| " to the top right range.  
"|||" appears on the display and the set value in % of maximum speed flashes.
4. Change the maximum speed with rotary selector "🌡️➡️".
5. The change has been programmed when the value stops flashing. The control unit returns to standard mode.
6. Reset both rotary connectors to their required set values.

## Further details regarding the individual steps (cont.)

### Checking the CO<sub>2</sub> content

The Vitodens 111-W is factory-set for natural gas. During commissioning or maintenance, the CO<sub>2</sub> and CO have to be measured at the boiler flue adaptor test point to check the flue integrity. Subject to the Wobbe index, the CO<sub>2</sub> content fluctuates between 7.4 % and 10.5 %. CO of up to 500 ppm during start-up is acceptable. We recommend measuring O<sub>2</sub> as the value is unmistakable regarding lambda (air/gas). The O<sub>2</sub> content fluctuates between 7.5 % and 3.2 %. The CO/CO<sub>2</sub> ratio has to be less than 0.004.



If the actual CO<sub>2</sub> or O<sub>2</sub> and CO values deviate from the stated range, check the balanced flue systems for leaks. If flue installation is OK, change the gas valve.

#### Note

*Operate the appliance with uncontaminated combustion air to prevent operating faults and damage.*

1. Connect a flue gas analyser to flue gas port (A) on the boiler flue connection.
2. Start the boiler and check for leaks.



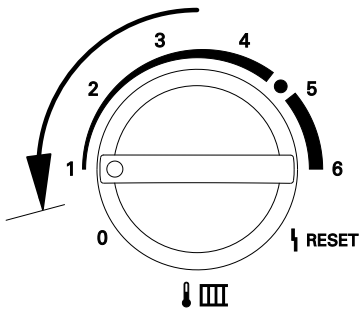
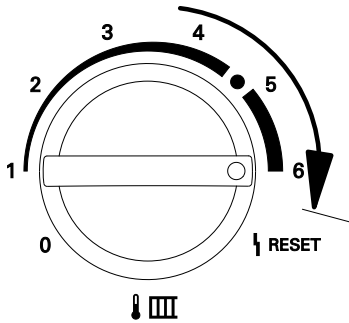
#### Danger

Escaping gas leads to a risk of explosion.

Check gas equipment for tightness.

3. Turn rotary selector "⚠️" fully clockwise, until the display shows "SERV". Within 2 s return the rotary selector to the r.h. control range. The display shows "P".

## Further details regarding the individual steps (cont.)

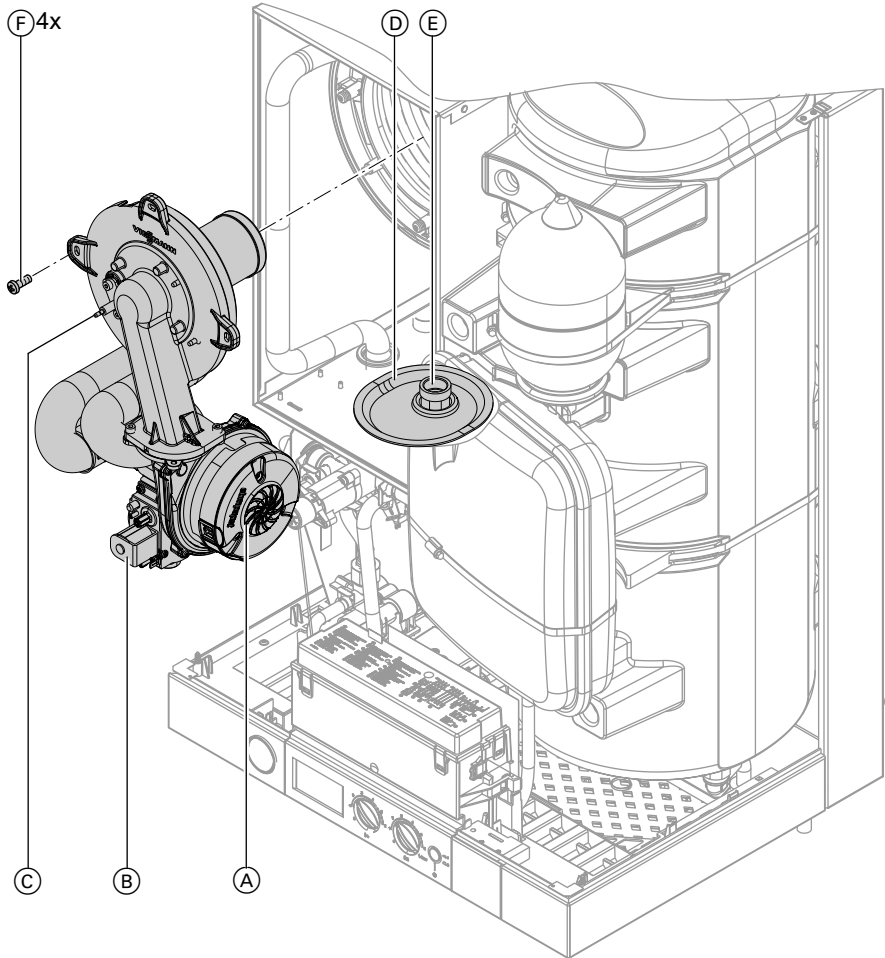


4. Adjust the upper heating output:  
Turn rotary selector "🌡️📊" fully clockwise, until the display shows 5 bars for the upper heating output.
5. Check the CO<sub>2</sub> content for the upper heating output.  
The CO<sub>2</sub> content must be between 7.0 and 10.5 %.
6. Adjust the lower heating output:  
Turn rotary selector "🌡️📊" fully anti-clockwise, until the display shows 1 bar for the lower heating output.
7. Check the CO<sub>2</sub> content for lower heating output.  
The CO<sub>2</sub> content must be between 0.3 and 0.9 % below the value for the upper heating output.
8. ■ If the CO<sub>2</sub> content is within the given range, continue with point 10.  
■ If the CO<sub>2</sub> content is **outside** the given range, check the balanced flue system for tightness; remove any leaks.  
Replace gas train if required.
9. Test the CO<sub>2</sub> content for upper and lower heating output again.
10. Shut the boiler down, remove flue gas analyser and close flue gas port (A).
11. Turn both rotary selectors "🌡️🔧" and "📊🌡️" simultaneously into their original positions.



**Further details regarding the individual steps (cont.)**

**Burner removal**



1. Switch off the power supply.
2. Shut off the gas supply.
3. Pull the power cables from fan motor (A), gas train (B) and electrodes (C).
4. Push grommet (D) down.
5. Undo gas supply pipe fitting (E).



## Further details regarding the individual steps (cont.)

6. Undo 4 screws (F) and remove the burner.

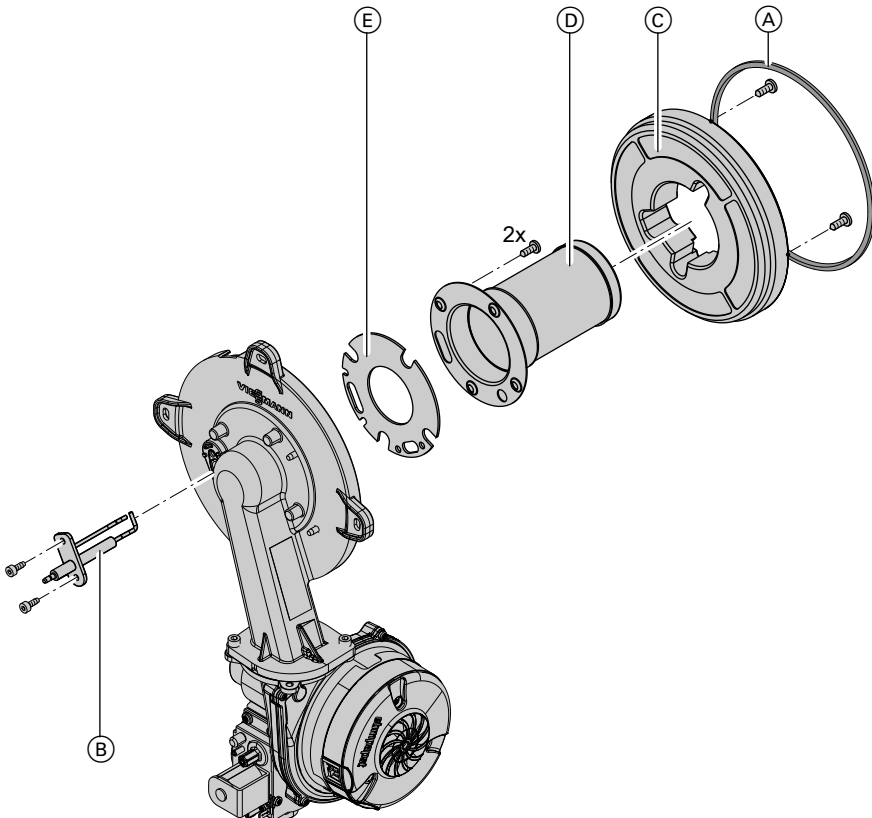


### Please note

To prevent damage, never rest the burner on the burner gauze assembly.

## Checking the burner gasket and burner gauze assembly

Check burner gasket (A) and burner gauze assembly (D) for possible damage and replace, if required.



1. Remove electrode (B).

2. Undo 2 Torx screws and remove thermal insulation ring (C).

## Further details regarding the individual steps (cont.)

3. Undo 2 Torx screws and remove burner gauze assembly (D) with gasket (E).
4. Insert and secure new burner gauze assembly (D) with new gasket (E).



**Please note**

Tighten screws just enough to ensure the components do not suffer damage and will function correctly.

5. Mount thermal insulation ring (C).



**Please note**

Tighten screws just enough to ensure the components do not suffer damage and will function correctly.

6. Fit electrode (B).



**Please note**

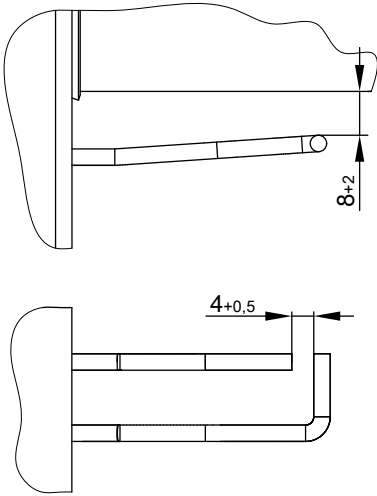
Tighten screws just enough to ensure the components do not suffer damage and will function correctly.

## Checking and adjusting the electrode

1. Check the electrode for wear and contamination.
2. Clean the electrode with a small brush (not with a wire brush) or emery paper.



## Further details regarding the individual steps (cont.)



3. Check the electrode gaps. If the gaps are not as specified or the electrode is damaged, replace electrode and gasket and realign the electrode.



### Please note

Tighten screws just enough to ensure the components do not suffer damage and will function correctly.

## Cleaning the heat exchanger



### Please note

Do not damage the surfaces of the heat exchanger that come into contact with hot gas. This can lead to corrosion damage.

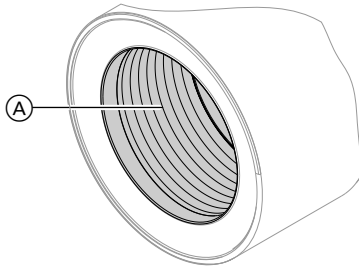
**Never use brushes to clean the heat exchanger.**

Brushing can cause deposits to become lodged in the gaps between the coils.

### Note

*Discolouration on the heat exchanger surface is a normal sign of use. It has no bearing on the function and service life of the heat exchanger.*

*The use of chemical cleaning agents is not required.*

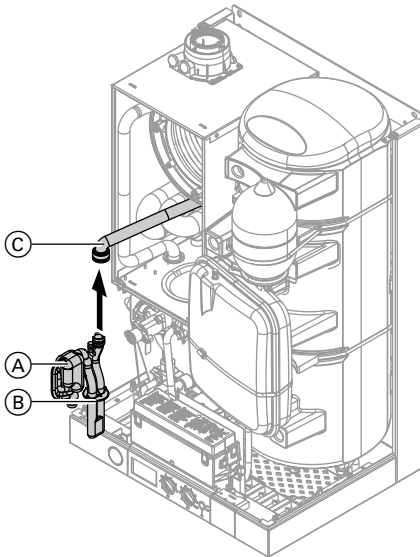


1. Use a vacuum cleaner to remove combustion residues from heating surface (A) of the heat exchanger.
2. Flush heating surface (A) with water.
3. Check condensate drain and clean siphon. See the following chapter.

**Further details regarding the individual steps (cont.)**

4. Flush the heating surface again with water (the siphon is also filled with water in the process).

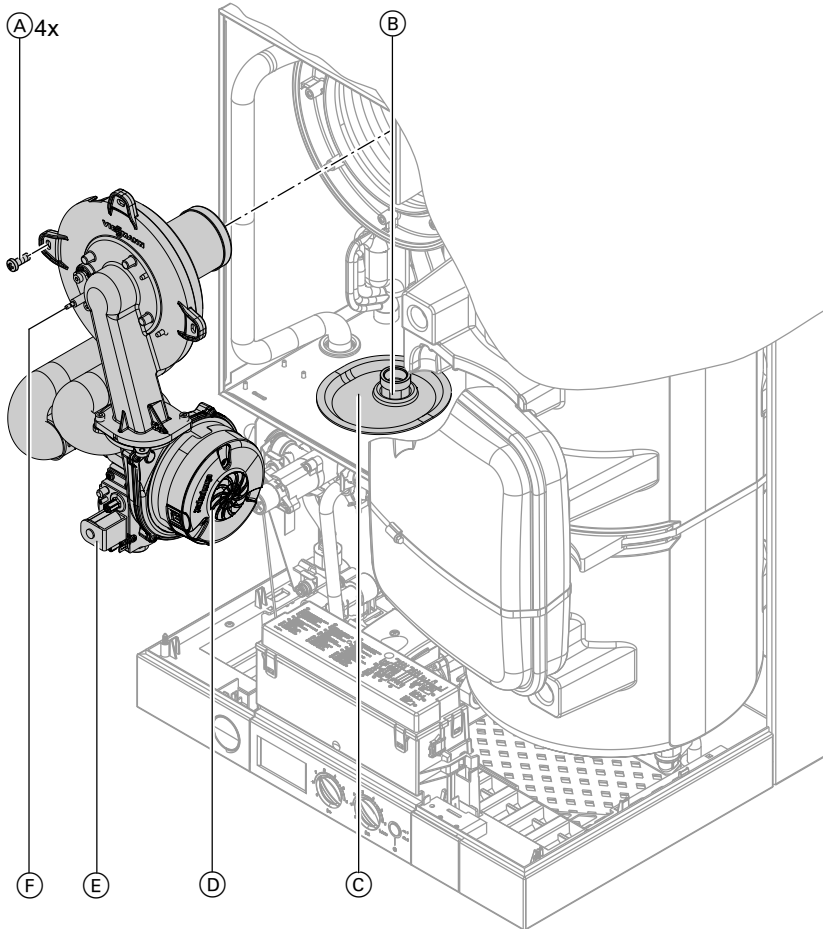
**Checking the condensate drain and cleaning the trap**



1. Release hook and remove trap (A) with sealing piece (B). Pull trap (A) upwards away from the drain connection.
2. Remove supply hose (C) from trap (A).
3. Clean trap (A).
4. Insert trap (A) with sealing piece (B). Refit trap (C) to the drain connection.
5. Refit supply hose (C).
6. Fill trap (A) with water. For this, pour approx. 0.3 l of water into the combustion chamber.
7. Check that condensate can drain freely and that the connections are tight.

**Further details regarding the individual steps (cont.)**

**Installing the burner**



1. Mount burner and secure with 4 screws (A).
2. Insert new gasket and tighten the fitting on gas supply pipe (B).

3. Tighten 4 screws (A) crosswise.



**Please note**

Tighten screws just enough to ensure the components do not suffer damage and will function correctly.

## Further details regarding the individual steps (cont.)

4. Fit electrical cables to fan motor (D), gas train (E) and ignition unit (F).
5. Reopen gas supply and switch on power supply.
6. Check the gas connections for tightness.
7. Push grommet (C) up again.



### Danger

Escaping gas leads to a risk of explosion.  
Check the fitting for gas tightness.



### Please note

The use of leak detection spray can result in faulty operation.  
Leak detection spray must not come into contact with electrical contacts or seal the diaphragm opening on the gas valve.

## Checking the diaphragm expansion vessel and system pressure

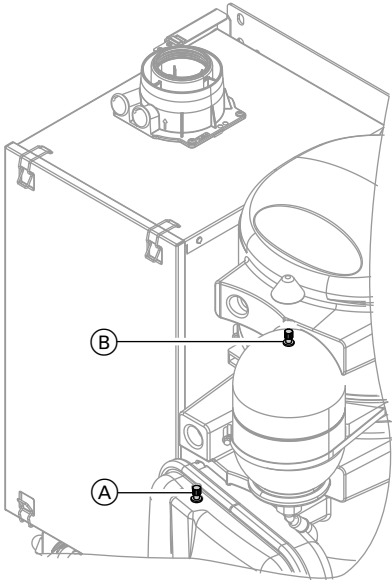
### Note

*The diaphragm expansion vessel can lose some charge pressure over time. When the boiler heats up, the pressure gauge will indicate a higher pressure of 2 or 3 bar. The safety valve too can respond and discharge excess pressure.*

Check whether the installed diaphragm expansion vessel on the heating water side is adequate for the system water volume.

Carry out this check on a cold system.

## Further details regarding the individual steps (cont.)



1. Drain the system until the pressure gauge shows "0".
2. If the diaphragm expansion vessel pre-charge pressure is lower than the static system pressure: Top up with nitrogen until the pre-charge pressure is 0.1 to 0.2 bar (10 to 20 kPa) higher.
3. Top up with water until the charge pressure of the cooled system is at least 1.0 bar (0.1 MPa), and is 0.1 to 0.2 bar (10 to 20 kPa) higher than the pre-charge pressure of the expansion vessel.  
Permiss. operating pressure: 3 bar (0.3 MPa)

- (A) Test connector, heating water expansion vessel
- (B) Test connector, DHW expansion vessel

## Checking the connections on the heating water and the DHW side

Check all connections and lines on the heating water and DHW side (including inside the appliance) for tightness and possible damage.

## Checking all gas equipment for tightness at operating pressure



### **Danger**

Escaping gas leads to a risk of explosion.  
Check all gas equipment for tightness.



### **Please note**

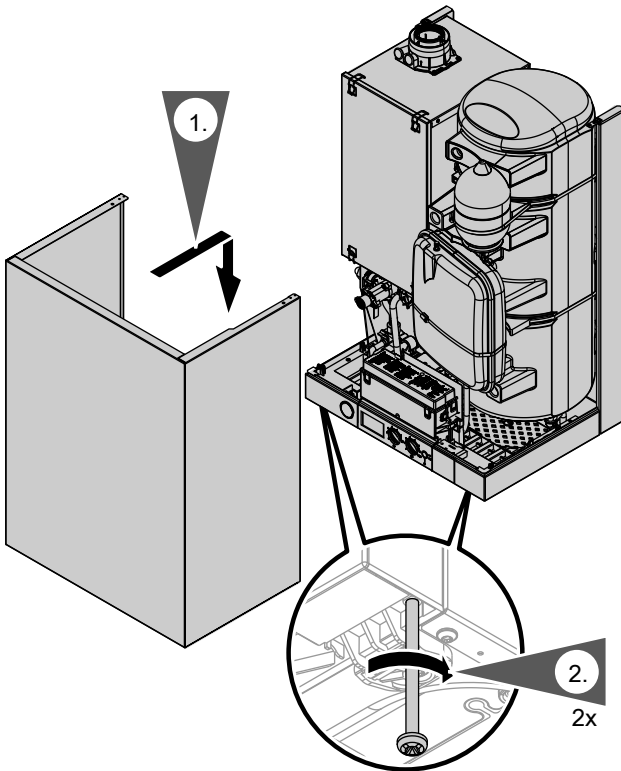
The use of leak detection spray can result in faulty operation.



## Further details regarding the individual steps (cont.)

Leak detection spray must not come into contact with electrical contacts or seal the diaphragm opening on the gas valve.

### Fitting the front panel



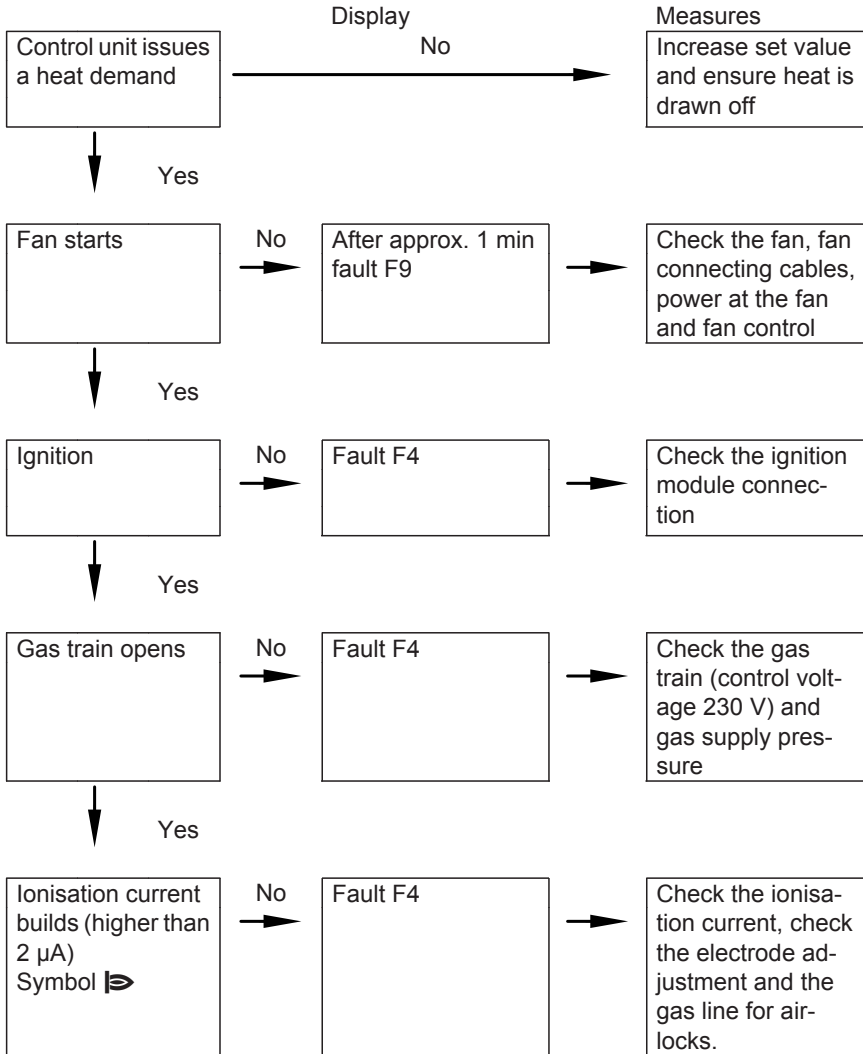
1. Hook the front panel into place.

2. Tighten screws underneath.

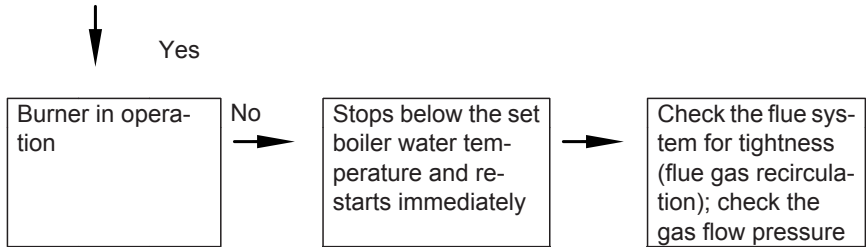
### Instructing the system user

The system installer should hand the operating instructions to the system user and instruct the user in operating the system.

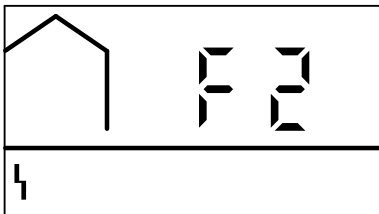
## Function sequence and possible faults



**Function sequence and possible faults (cont.)**



**Fault display**



Faults are indicated by a flashing fault code with fault symbol "L" on the display. For an explanation of the fault codes, see the following table.

Displayed fault code	System characteristics	Cause	Measures
0C	Burner blocked	Mains voltage too low	Check power supply.
10	Constant operation	Short circuit, outside temperature sensor	Check the outside temperature sensor and lead (see page 59).
18	Constant operation	Lead break, outside temperature sensor	Check the outside temperature sensor and lead (see page 59).
30	Burner blocked	Short circuit, boiler water temperature sensor	Check boiler water temperature sensor (see page 61).
38	Burner blocked	Lead break, boiler water temperature sensor	Check boiler water temperature sensor (see page 61).
50	No DHW heating	Short circuit, cylinder temperature sensor	Check sensor (see page 62).

**Fault display** (cont.)

<b>Displayed fault code</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
51	No DHW heating	Short circuit, outlet temperature sensor	Check sensor (see page 63).
58	No DHW heating	Lead break, cylinder temperature sensor	Check sensor (see page 62).
59	No DHW heating	Lead break, outlet temperature sensor	Check sensor (see page 63).
A9	Control mode without OpenTherm device	Communication error, OpenTherm device	Check connections and lead; replace OpenTherm device if required.
b0	Burner blocked	Short circuit, flue gas temperature sensor	Check sensor (see page 65).
b8	Burner blocked	Lead break, flue gas temperature sensor	Check sensor (see page 65).
E3	Burner in a fault state	Fault in safety chain	Check the temperature limiter and connecting cables (see page 64). Check the control unit, and replace if required.
E5	Burner blocked	Internal fault	Check the ionisation electrode and connecting cables. Press "Reset" (see page 58).
F0	Burner blocked	Internal fault	Replace control unit.
F1	Burner in a fault state	Max. flue gas temperature exceeded	Check heating system fill level. Check circulation pump. Vent the system. Press "Reset" (see page 58).

**Fault display (cont.)**

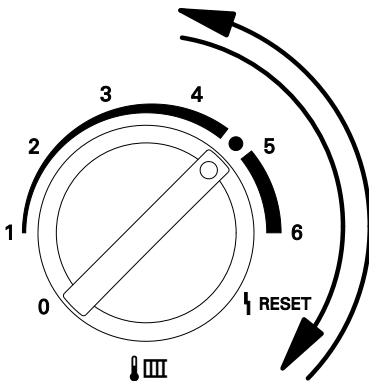
<b>Displayed fault code</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
F2	Burner in a fault state	Temperature limiter has responded	Check heating system fill level. Check circulation pump. Vent the system. Check the temperature limiter and connecting cables (see page 64). Press "Reset" (see page 58).
F3	Burner in a fault state	Flame signal is already present at burner start	Check ionisation electrode and connecting cable. Press "Reset" (see page 58).
F4	Burner in a fault state	No flame signal detected	Check the ionisation electrode and connecting cables, the gas pressure, the gas train, ignition and condensate drain. Press "Reset" (see page 58).
F8	Burner in a fault state	Fuel valve closes too late	Check gas train. Check both control paths. Press "Reset" (see page 58).
F9	Burner in a fault state	Fan speed too low during burner start	Check fan, fan connecting cables and power supply; check fan control. Press "Reset" (see page 58).
FA	Burner in a fault state	Fan idle state not reached	Check fan, fan connecting cables and fan control. Press "Reset" (see page 58).
FC	Burner blocked	Electrical fan control (control unit) faulty	Check fan connecting cable; replace if required, or replace control unit.



**Fault display** (cont.)

Displayed fault code	System characteristics	Cause	Measures
Fd	Burner blocked	Fault, burner control unit	<p>Check ignition electrodes and connecting cables. Check whether a strong interference (EMC) field exists near the appliance.</p> <p>Press "Reset" (see page 58). Replace control unit if fault persists.</p>
FF	Burner blocked	Fault, burner control unit	<p>Check ignition electrodes and connecting cables. Check whether a strong interference (EMC) field exists near the appliance.</p> <p>Press "Reset" (see page 58). Replace control unit if fault persists.</p>

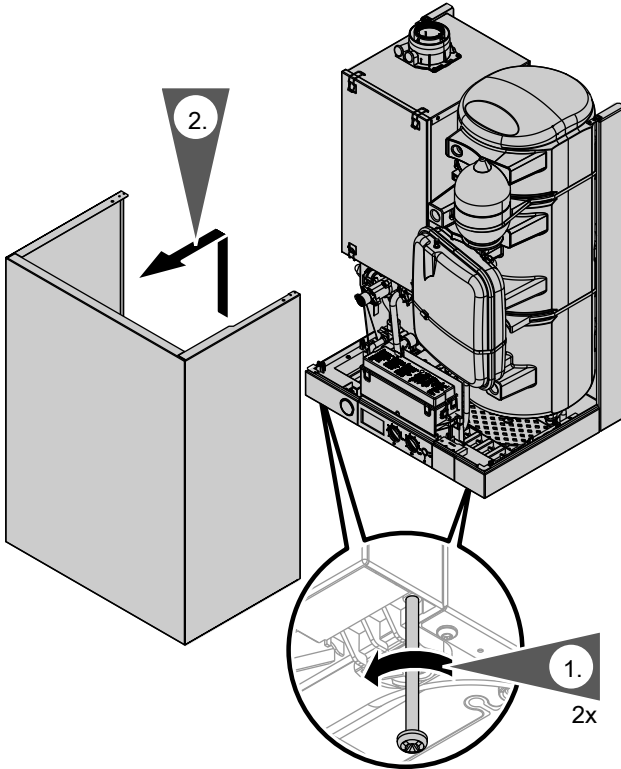
**Initiating a reset**



Turn rotary selector "III 🔥" to "I 🔥 RESET", until "SERV" is shown. Within 2 s return the rotary selector to the control range.

## Repairs

### Removing the front panel

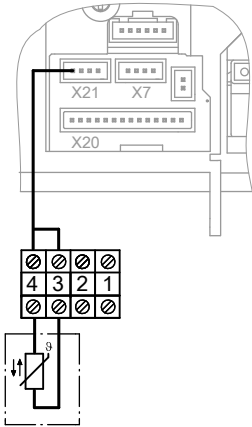


1. Undo screws underneath the boiler; do not remove completely.
2. Remove the front panel.

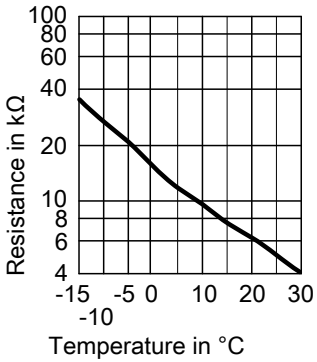
### Outside temperature sensor

1. Open the control unit enclosure. See page 20.

## Repairs (cont.)



2. Disconnect leads from outside temperature sensor.

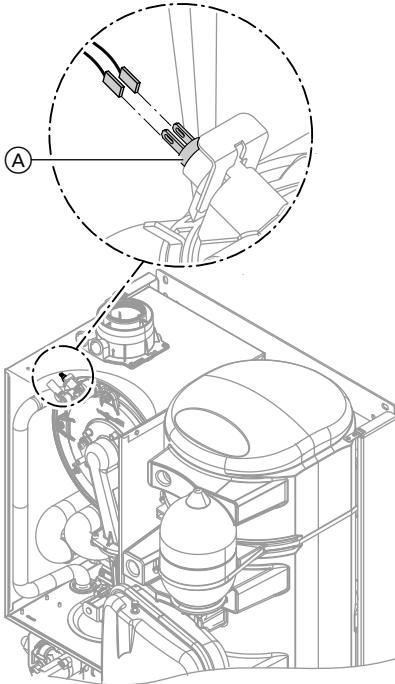


3. Check the sensor resistance and compare it with the curve.
4. In the event of severe deviation replace the sensor.

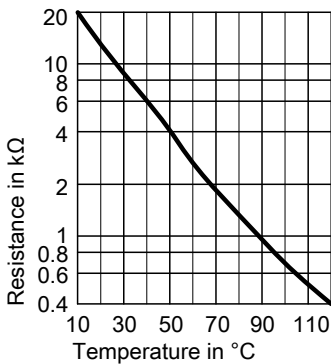


**Repairs** (cont.)

**Boiler water temperature sensor**



1. Pull the leads from boiler water temperature sensor (A) and check the resistance.



2. Check the sensor resistance and compare it with the curve.
3. In the case of severe deviation, drain the boiler on the heating water side and replace the sensor.



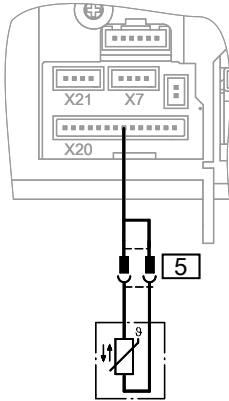
**Danger**

The boiler water temperature sensor is in direct contact with the heating water (risk of scalding).

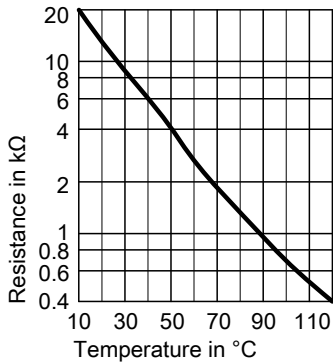
Drain the boiler before replacing the sensor.

## Repairs (cont.)

### Checking cylinder temperature sensor



1. Pull plug **5** from the cable harness.

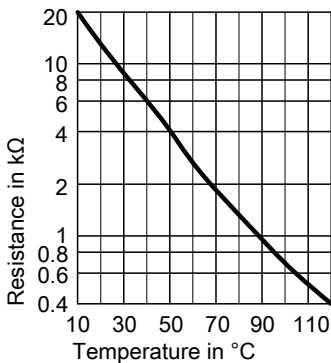
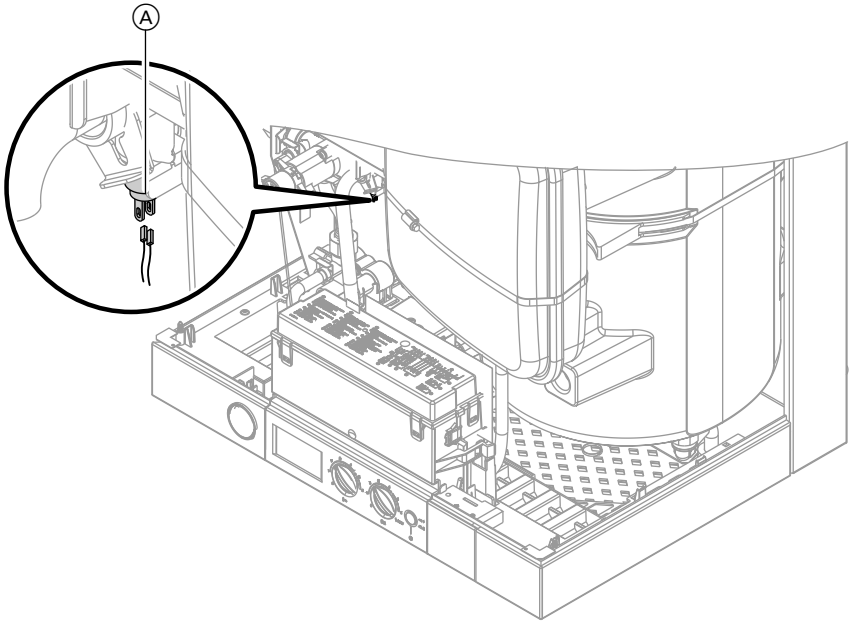


2. Check the sensor resistance and compare it with the curve.

3. In the event of severe deviation replace the sensor.

Repairs (cont.)

Checking the outlet temperature sensor



Sensor type: NTC 10 kΩ

1. Pull leads from outlet temperature sensor (A).
2. Check the sensor resistance and compare it with the curve.
3. In the event of severe deviation replace the sensor.



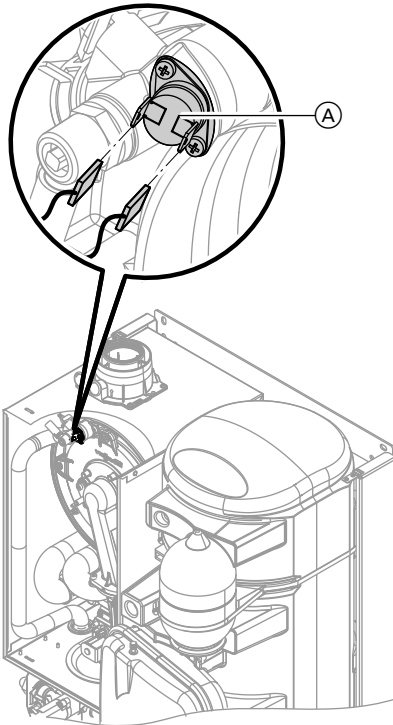
**Danger**

The outlet temperature sensor is immersed in the DHW (risk of scalding). Drain the DHW side of the boiler before replacing the sensor.

## Repairs (cont.)

### Checking the temperature limiter

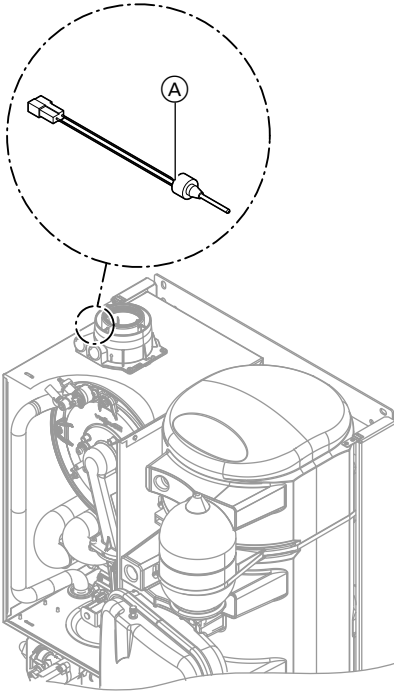
If the burner control unit cannot be reset after a fault shutdown, although the boiler water temperature is below approx. 95 °C, check the temperature limiter.



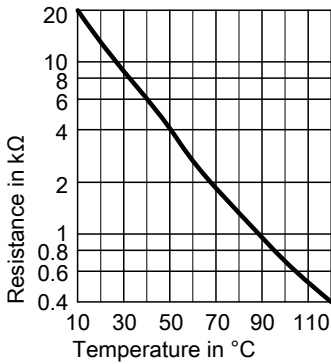
1. Pull the leads from temperature limiter (A).
2. Check the continuity of the temperature limiter with a multimeter.
3. Remove faulty temperature limiter.
4. Install a new temperature limiter.
5. Reset by pressing "Reset" on the control unit to (see page 58).

**Repairs** (cont.)

**Checking the flue gas temperature sensor**



1. Pull leads from flue gas temperature sensor (A).



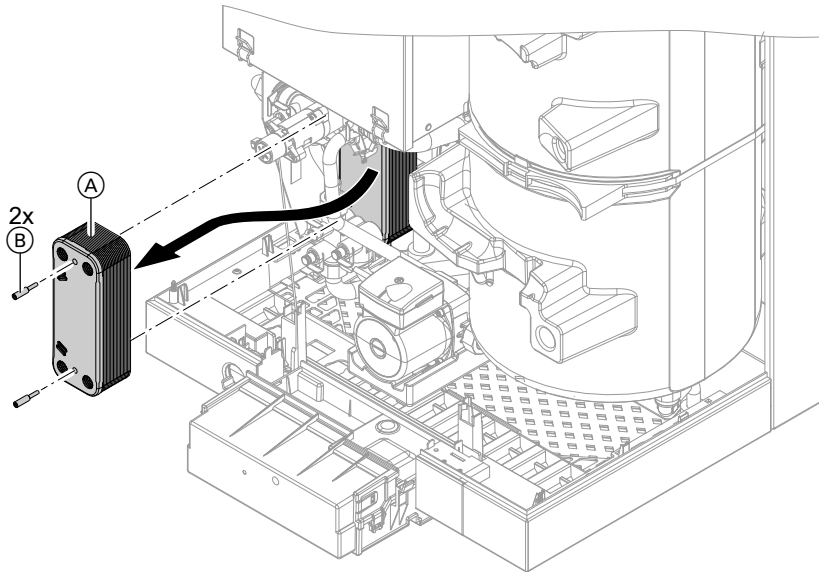
2. Check the sensor resistance and compare it with the curve.
3. In the event of severe deviation replace the sensor.

## Repairs (cont.)

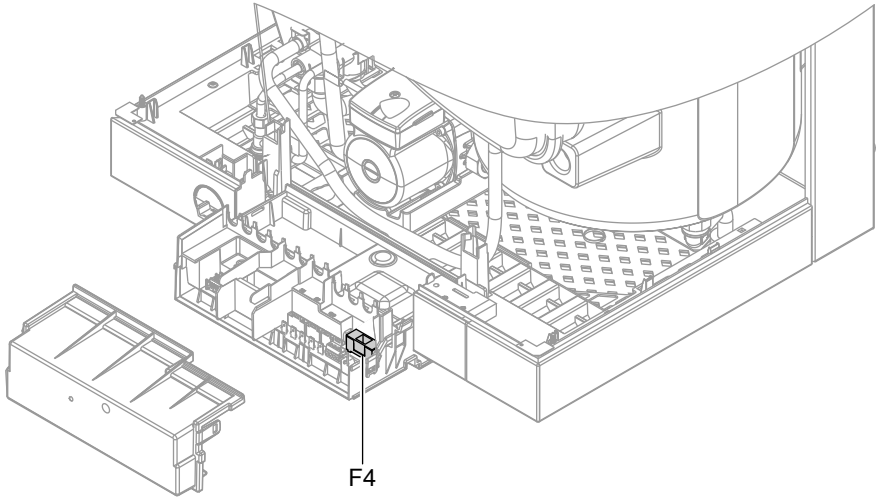
### Checking and cleaning the plate heat exchanger

**Note**

*Drain the boiler on the heating water and DHW sides.*



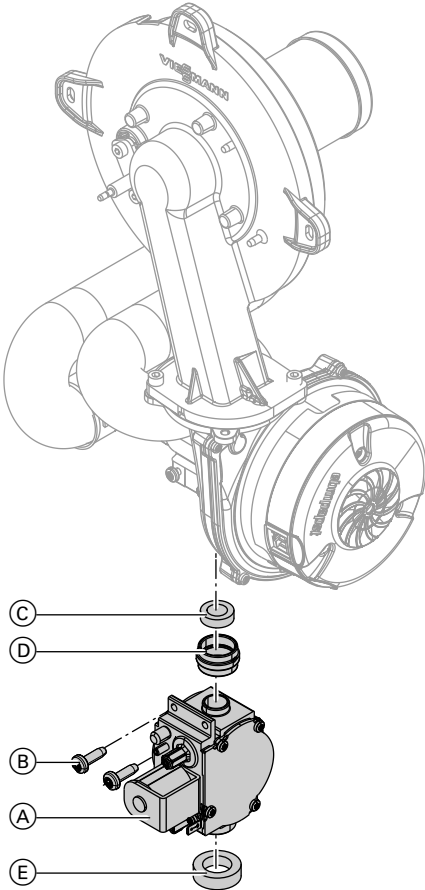
1. Undo plate heat exchanger (A) (screws (B)) and pull out of the front.
2. Check the connections on the heating water and DHW side for contamination and scaling; if required, replace the plate heat exchanger.
3. Install in reverse order using new gaskets.

**Repairs (cont.)****Checking the fuse**

1. Switch off the power supply.
2. Open control unit enclosure (see page 20).
3. Check fuse F4.

## Converting from LPG to natural gas

### Removing gas restrictor



1. Remove the burner (see "Commissioning, inspection and maintenance").
2. Pull cable from gas train (A).
3. Undo two screws (B) and remove gas train (A).
4. Remove gas restrictor (C) from gas train (A).
5. Mount gas train (A) with new gasket (D).  
Torque for fixing screw (B): 3 Nm.
6. Refit the burner with new gasket (E).
7. Remove or void gas type sticker on the top of the boiler (next to the type plate).
8. Fit the burner (see "Commissioning, inspection and maintenance").
9. Start the boiler and check for leaks.



#### **Danger**

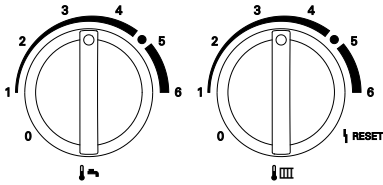
Escaping gas leads to a risk of explosion.  
Check gas equipment for tightness.

### Converting the gas type at the control unit

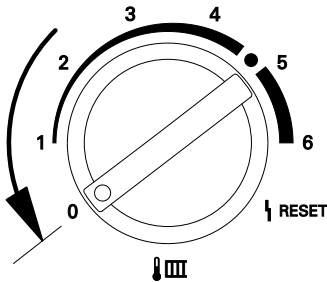
1. Turn on the ON/OFF switch.



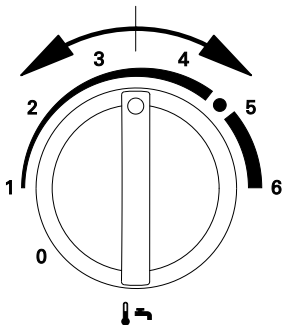
## Converting from LPG to natural gas (cont.)



- Turn both rotary selectors "🔥" and "🧺" simultaneously into their respective central positions. "SERV" appears on the display.



- Turn rotary selector "🧺" within 2 s fully anti-clockwise. The display shows "👁" and the set value flashes.



- Adjust the control unit to natural gas or LPG by turning rotary selector "🔥". The display shows:
  - "0" for operation with natural gas or
  - "1" for operation with LPG.
- The set operating mode is saved when the value stops flashing, and the control unit returns to standard mode.

## Checking the CO<sub>2</sub> content

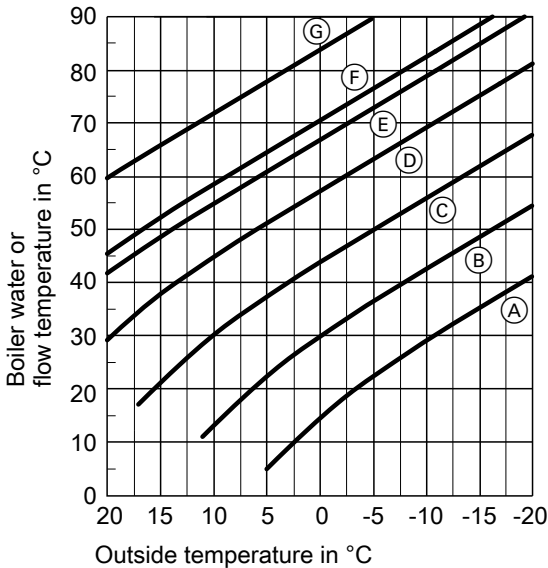
See "Commissioning, inspection and maintenance".

## Functions and operating conditions in weather-compensated mode

### Heating mode

In weather-compensated mode, the boiler water temperature is regulated subject to the outside temperature.

#### Heating curve for weather-compensated control



Setting of rotary selector "🌡️📊"

- (A) = 1
- (B) = 2
- (C) = 3
- (D) = 4
- (E) = delivered condition
- (F) = 5
- (G) = 6

#### Frost protection function

The frost protection function requires an outside temperature sensor to be connected. Frost protection function is active at outside temperatures of  $< 5^{\circ}\text{C}$ . The burner starts and the boiler water temperature is held at  $20^{\circ}\text{C}$ .

## Functions and operating conditions in... (cont.)

### DHW heating

#### Heating the DHW loading cylinder from cold

The heating circuit pump is switched ON and the 3-way diverter valve will be changed over, if the cylinder temperature sensor captures a temperature lower than the defaulted set value.

- The cylinder loading pump is switched ON if the boiler water temperature  $\geq$  set cylinder temperature.
- The burner is switched ON if the boiler water temperature  $\leq$  set cylinder temperature, and the cylinder loading pump is switched ON when the required boiler water temperature is reached.

The loading cylinder is heated up to the set cylinder temperature. Heating stops when the specified temperature has been reached at the cylinder temperature sensor.

After loading has stopped, the cylinder loading pump and the 3-way diverter valve remain on for a further 30 s.

#### Reheating when DHW is drawn off

When DHW is drawn off, cold water enters the lower section of the loading cylinder.

The heating circuit pump is switched ON and the 3-way diverter valve is changed over, if the cylinder temperature sensor captures a temperature lower than the defaulted set value.

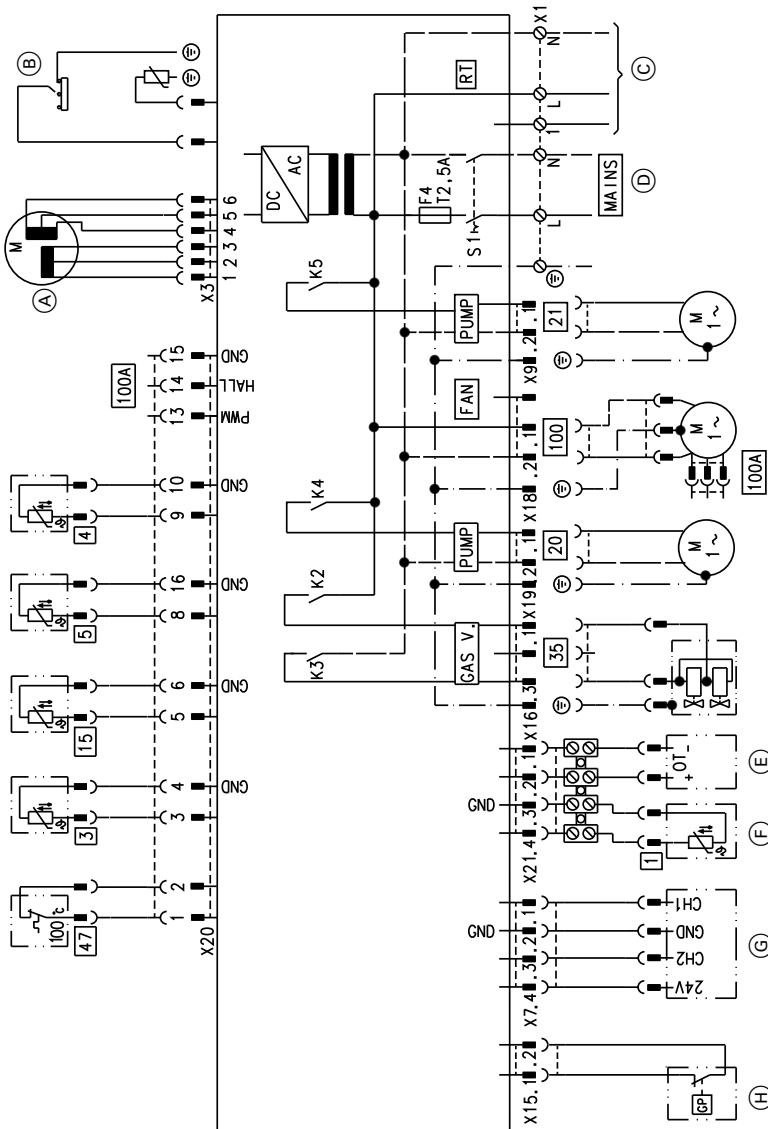
- The cylinder loading pump is switched ON if the boiler water temperature  $\geq$  set cylinder temperature.
- The burner is switched ON if the boiler water temperature  $\leq$  set cylinder temperature, and the cylinder loading pump is switched ON when the required boiler water temperature is reached.

DHW is regulated to the set temperature via the outlet temperature sensor.

After the draw off process has ended the loading cylinder continues to be heated up, until the set DHW temperature has been reached at the cylinder temperature sensor.

The cylinder loading pump and the 3-way diverter valve remain ON for a further 30 s.

## Connection and wiring diagram



- (A) Diverter valve stepper motor
- (B) Ignition/ionisation

## Connection and wiring diagram (cont.)

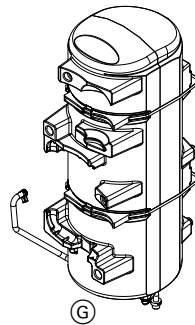
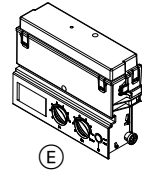
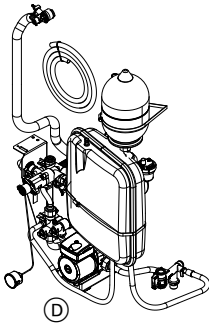
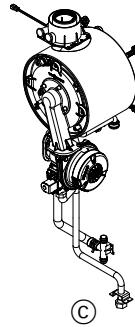
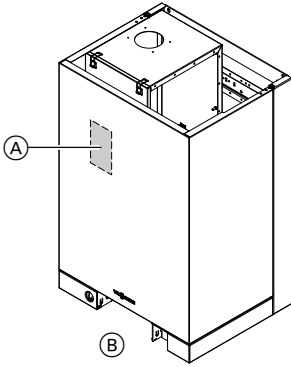
Ⓒ	Vitotrol 100	X ...	Electrical interface
	■ Type RT	<span style="border: 1px solid black; padding: 2px;">3</span>	Boiler water temperature sensor
	■ Type UTA	<span style="border: 1px solid black; padding: 2px;">4</span>	Outlet temperature sensor (gas condensing combi boiler)
	■ Type UTDB		
	■ Type UTDB-RF	<span style="border: 1px solid black; padding: 2px;">5</span>	Cylinder temperature sensor (gas condensing boiler)
Ⓓ	Power supply 230 V/50 Hz	<span style="border: 1px solid black; padding: 2px;">15</span>	Flue gas temperature sensor
Ⓔ	Remote control (OpenTherm device)	<span style="border: 1px solid black; padding: 2px;">20</span>	Circulation pump (heating water)
Ⓕ	Outside temperature sensor (accessories)	<span style="border: 1px solid black; padding: 2px;">21</span>	Cylinder loading pump
Ⓖ	Time switch (accessory)	<span style="border: 1px solid black; padding: 2px;">35</span>	Gas solenoid valve
Ⓕ	Gas pressure switch (accessories)	<span style="border: 1px solid black; padding: 2px;">47</span>	Temperature limiter
		<span style="border: 1px solid black; padding: 2px;">100</span>	Fan motor 230 V~
		<span style="border: 1px solid black; padding: 2px;">100</span> A	Fan control

## Ordering parts

**The following information is required:**

- Serial no. (see type plate (A))
- Assembly (from this parts list)
- Position number of the individual part within the assembly (from this parts list)

## Overview of assemblies



- (A) Type plate (on the cover panel)
- (B) Casing assembly
- (C) Heat cell assembly

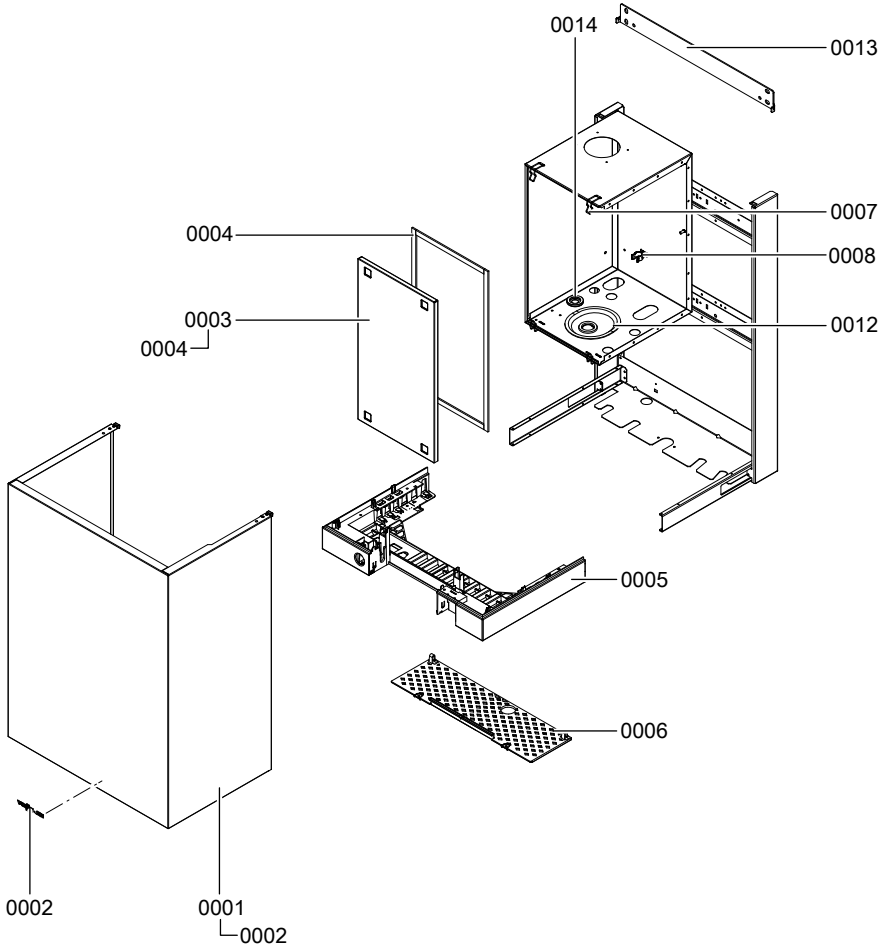
- (D) Control unit assembly
- (E) Hydraulic assembly
- (F) Miscellaneous



**Overview of assemblies (cont.)**

Ⓒ Cylinder assembly

**Casing assembly**

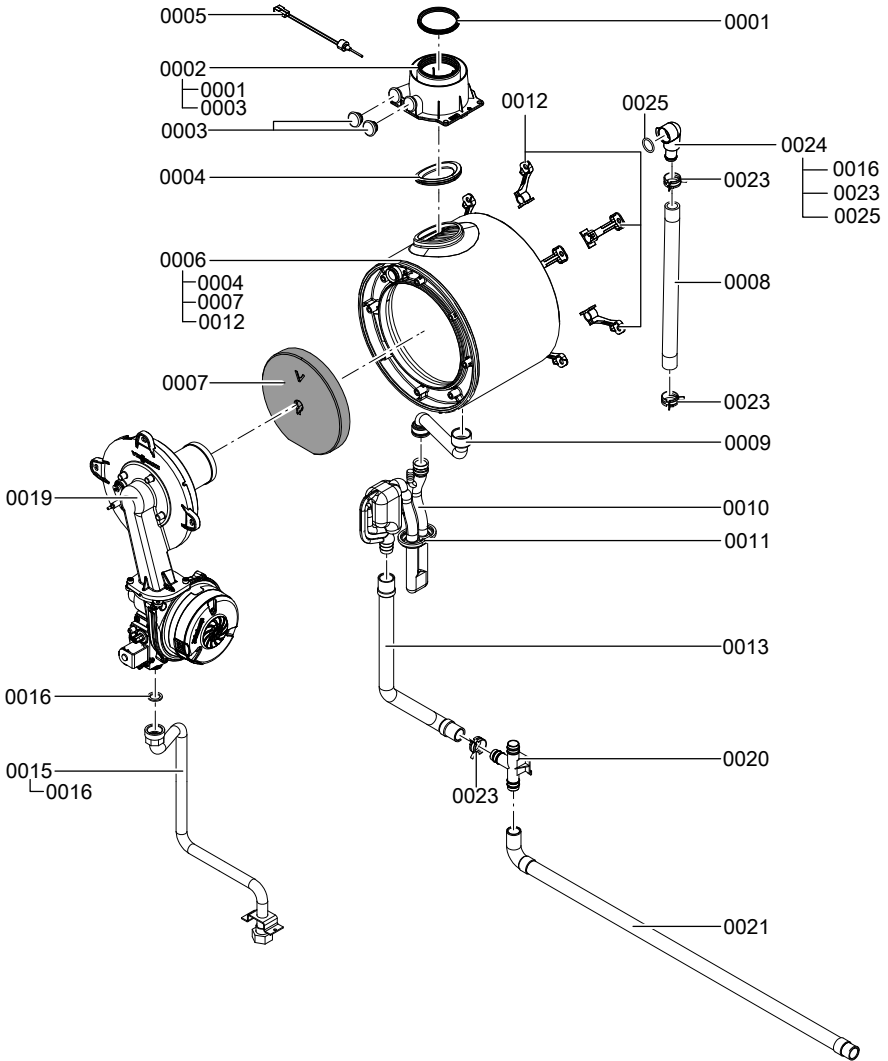




**Casing assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Front panel
0002	Viessmann logo
0003	Cover panel with gasket
0004	Profiled seal
0005	Control unit support
0006	Contact guard
0007	Toggle fastener (4 pce)
0008	Pipe clip $\varnothing$ 18
0012	Air box gasket, gas pipe
0013	Wall mounting bracket
0014	Diaphragm grommet

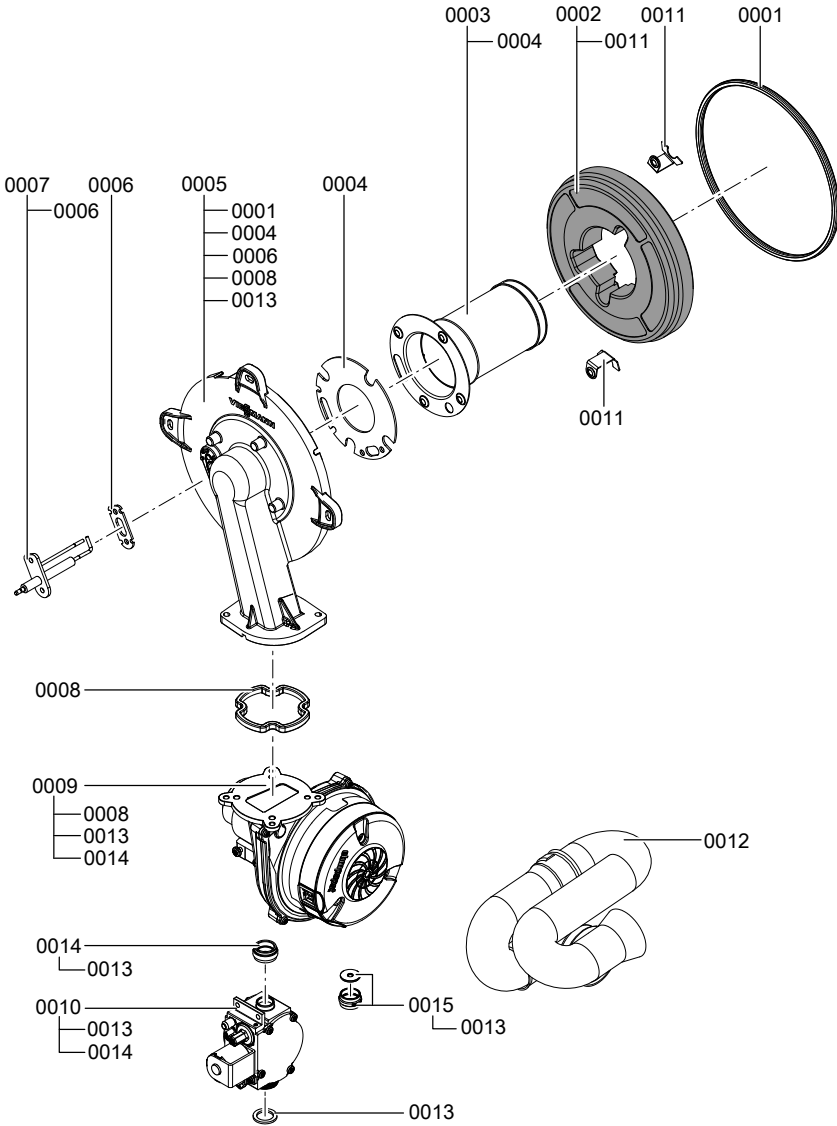
# Heat cell assembly



**Heat cell assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Gasket DN 60
0002	Boiler flue connection
0003	Boiler flue connection plug
0004	Flue gasket
0005	Flue gas temperature sensor
0006	Heat exchanger
0007	Thermal insulation block
0008	Profile hose HR
0009	Condensate hose
0010	Splash trap
0011	Air box gasket, trap
0012	Heat exchanger mounting (set)
0013	Condensate hose
0015	Gas supply pipe
0016	Gasket A 17 x 24 x 2 (5 pce)
0019	Burner (see burner assembly)
0020	Tee union
0021	Corrugated hose 19 x 800 with ferrule/bend
0023	Spring clip DN 25 (5 pce)
0024	Connection elbow, heating water return
0025	O-ring 20.63 x 2.62 (5 pce)

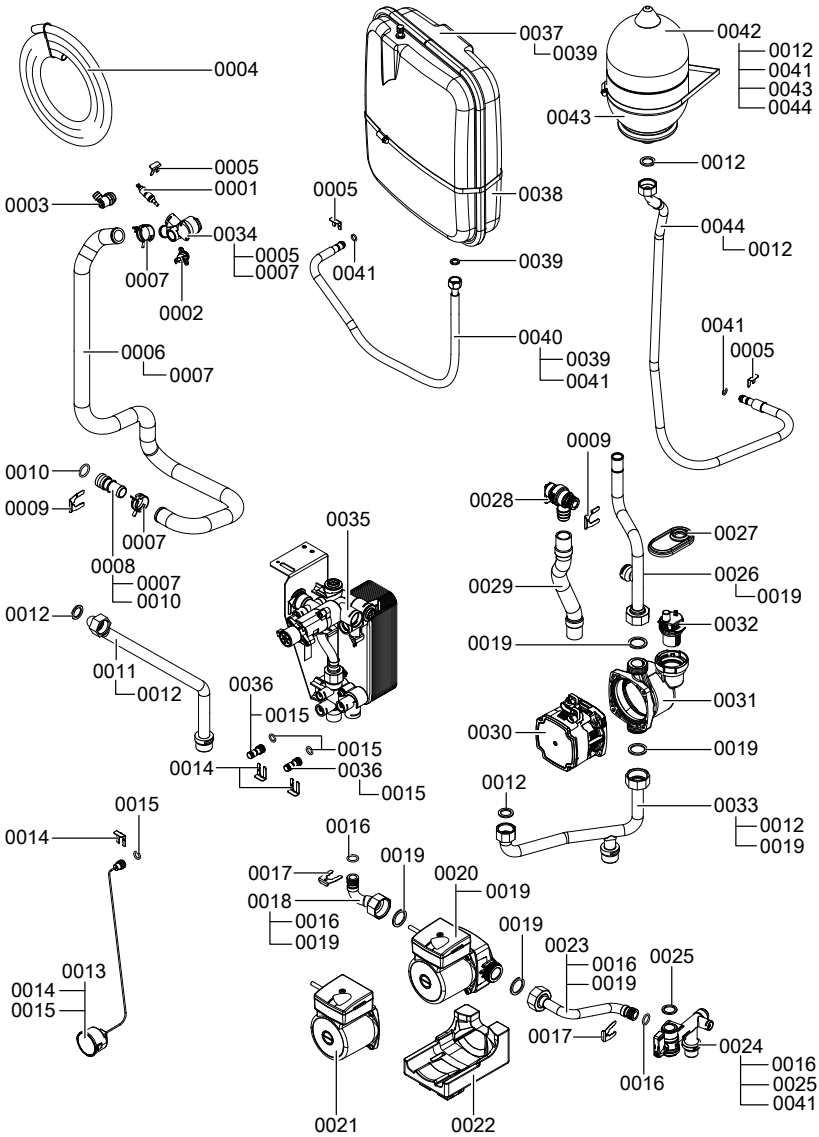
## Burner assembly



**Burner assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Burner gasket $\varnothing$ 187 (wearing part)
0002	Thermal insulation ring
0003	Cylinder burner gauze assembly
0004	Gasket, burner gauze assembly
0005	Burner door
0006	Gasket, ionisation electrode (5 pce)
0007	Ignition/ionisation electrode
0008	Gasket, burner door flange (wearing part)
0009	Radial fan NRG 118
0010	Gas valve GB-ND 055 E01
0011	Mounting bracket, thermal insulation ring (2 pce)
0012	Venturi extension
0013	Gasket A 17 x 24 x 2 (5 pce)
0014	Gasket set
0015	Conversion kit G31

## Hydraulic assembly



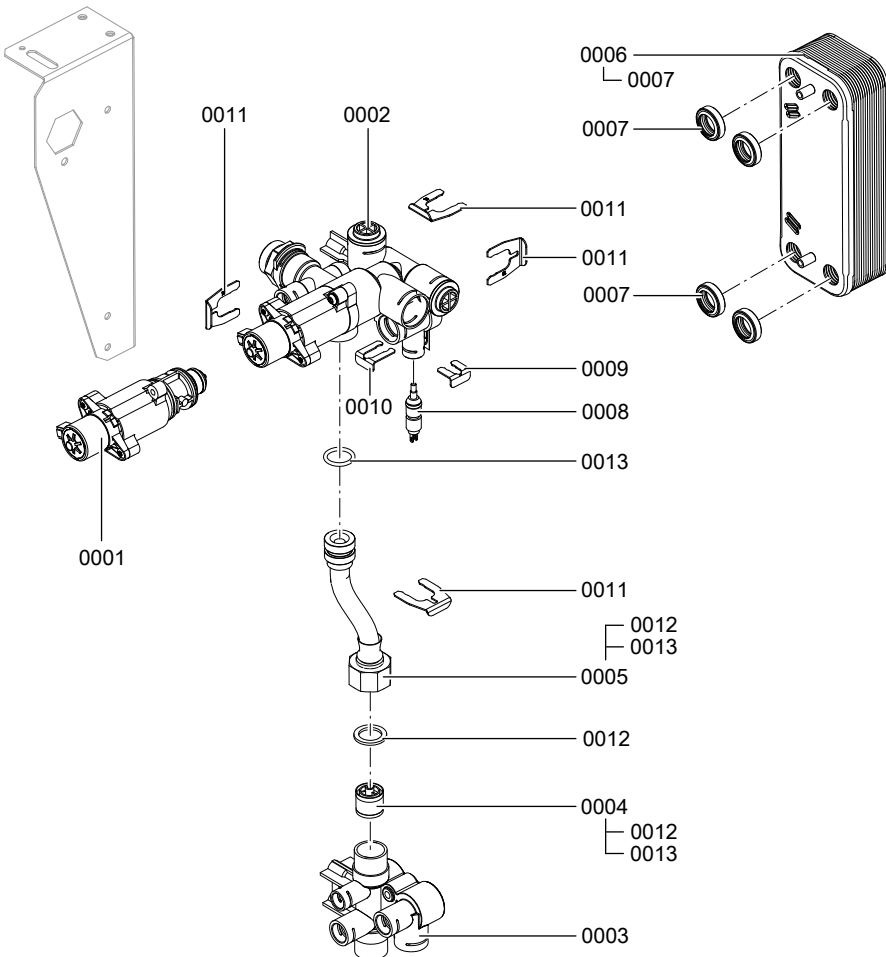
## Hydraulic assembly (cont.)

Pos.	Part
0001	Temperature sensor
0002	Thermal circuit breaker
0003	Air vent valve G 3/8
0004	Hose 10 x 1.5 x 1500
0005	Clip $\varnothing$ 8 (5 pce)
0006	Profile hose HF
0007	Spring clip DN 25 (5 pce)
0008	Adaptor, hose connector
0009	Clip $\varnothing$ 18 (5 pce)
0010	O-ring 17.86 x 2.62 (5 pce)
0011	Connection pipe HF
0012	Gasket A 17 x 24 x 2 (5 pce)
0013	Pressure gauge
0014	Clip $\varnothing$ 10 (5 pce)
0015	O-ring 9.6 x 2.4 (5 pce)
0016	O-ring 14.3 x 2.4 (5 pce)
0017	Clip $\varnothing$ 15 (5 pce)
0018	Connection pipe, DHW circulation pump
0019	Gasket A 23 x 30 x 2 (5 pce)
0020	Circulation pump VIUP15-30 CIL2
0021	Motor, circulation pump VIUP -30
0022	Support, cylinder loading pump
0023	Connection pipe CW
0024	Ball valve R 3/4 DN 15
0025	Gasket A 18.5 x 24 x 2 (3 pce)
0026	Return pipe
0027	Diaphragm grommet (5 pce)
0028	Safety valve 3 bar $\varnothing$ 19.9 x 21.7
0029	Condensate hose
0030	Motor, circulation pump UPM3 15-75
0031	CIAO2 casing
0032	Quick-action air vent valve
0033	Connection pipe HR
0034	Connection elbow HF
0035	Aqua-plate (see aqua-plate assembly)
0036	Plug $\varnothing$ 8/10
0037	Diaphragm expansion vessel
0038	Hose clip $\varnothing$ 220 - 240 x 9
0039	Gasket A 10 x 15 x 1.5 (5 pce)
0040	Connection line, expansion vessel 3/8 x 60

## Hydraulic assembly (cont.)

Pos.	Part
0041	Circular seal washer 8 x 2 (5 pce)
0042	Expansion vessel
0043	Clip $\varnothing$ 140 - 160
0044	Connection line, expansion vessel

## Aqua-plate assembly

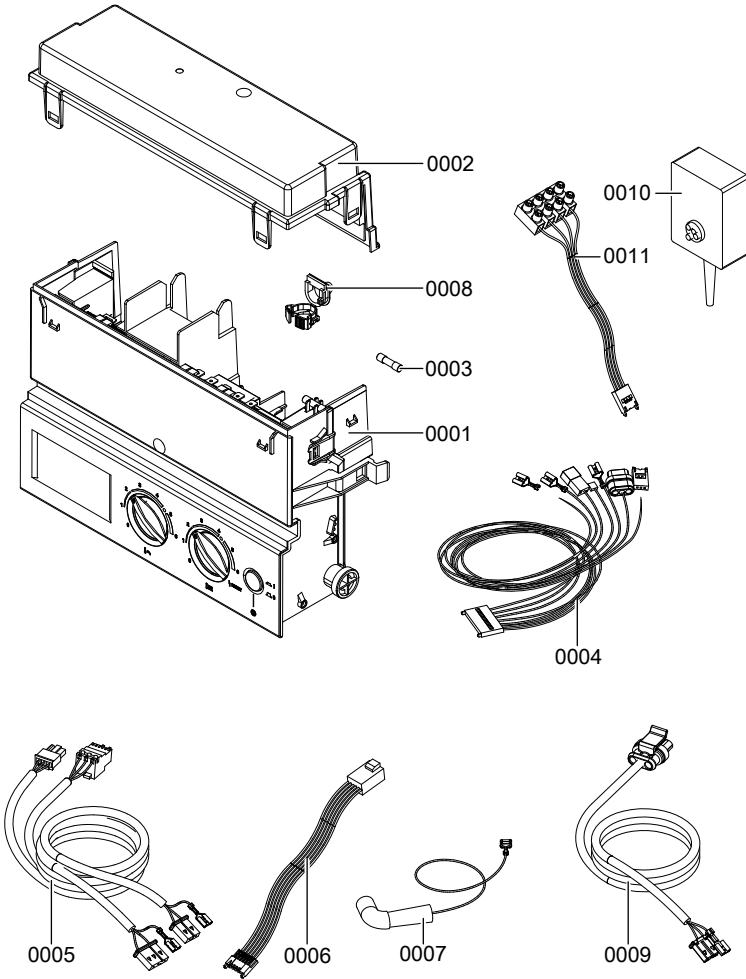




**Aqua-plate assembly (cont.)**

<b>Pos.</b>	<b>Part</b>
0001	Valve insert
0002	Flow unit
0003	Return unit
0004	Overflow valve
0005	Overflow line
0006	Plate heat exchanger
0007	Profile gasket (4 pce)
0008	Temperature sensor
0009	Clip $\varnothing$ 8 (5 pce)
0010	Clip $\varnothing$ 10 (5 pce)
0010	Clip $\varnothing$ 15 (5 pce)
0011	Clip $\varnothing$ 18 (5 pce)
0012	Gasket A 17 x 24 x 2 (5 pce)
0013	O-ring 17.86 x 2.62 (5 pce)

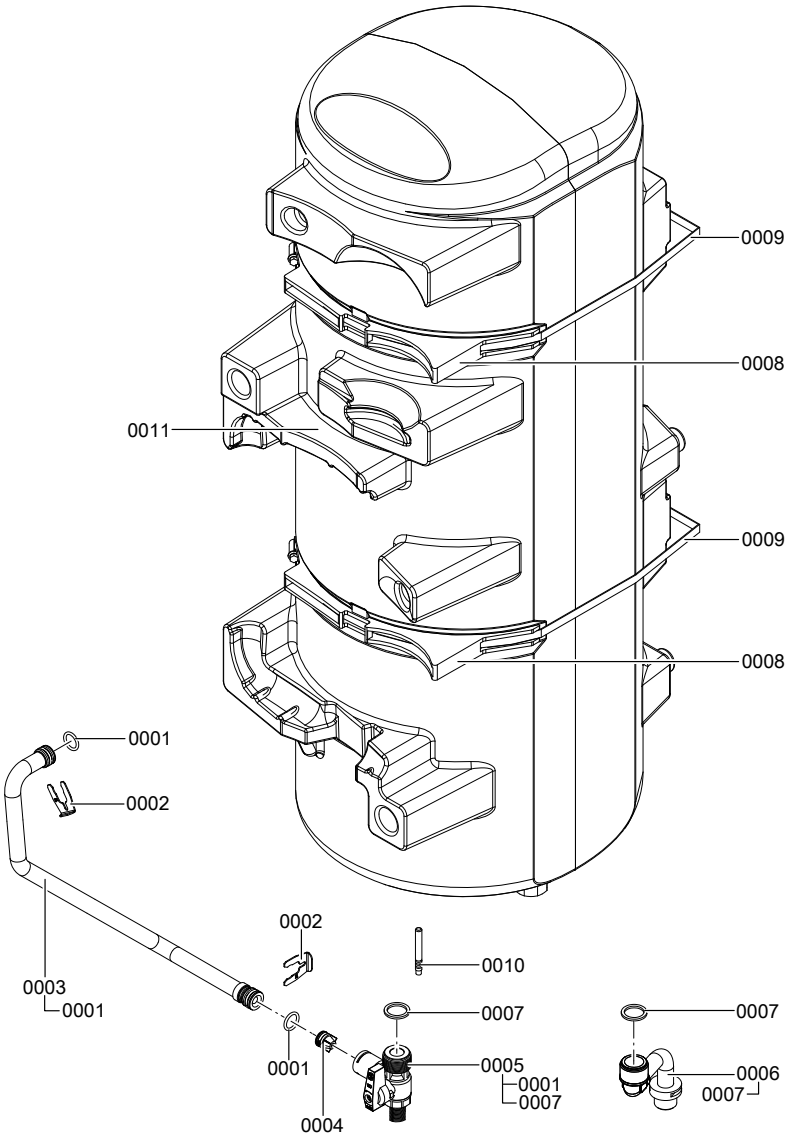
## Control unit assembly



## Control unit assembly (cont.)

Pos.	Part
0001	Control unit VBC114-C04
0002	Cover, wiring chamber
0003	Fuse, 2.5 A (slow), 250 V (10 pce)
0004	Cable harness X20
0005	Cable harness 100/35
0006	Cable harness, stepper motor
0007	Ignition cable with angled plug
0008	Cable ties (10 pce)
0009	Connecting cable, heating circuit pump 20
0010	Outside temperature sensor NTC 5K
0011	Cable harness X21

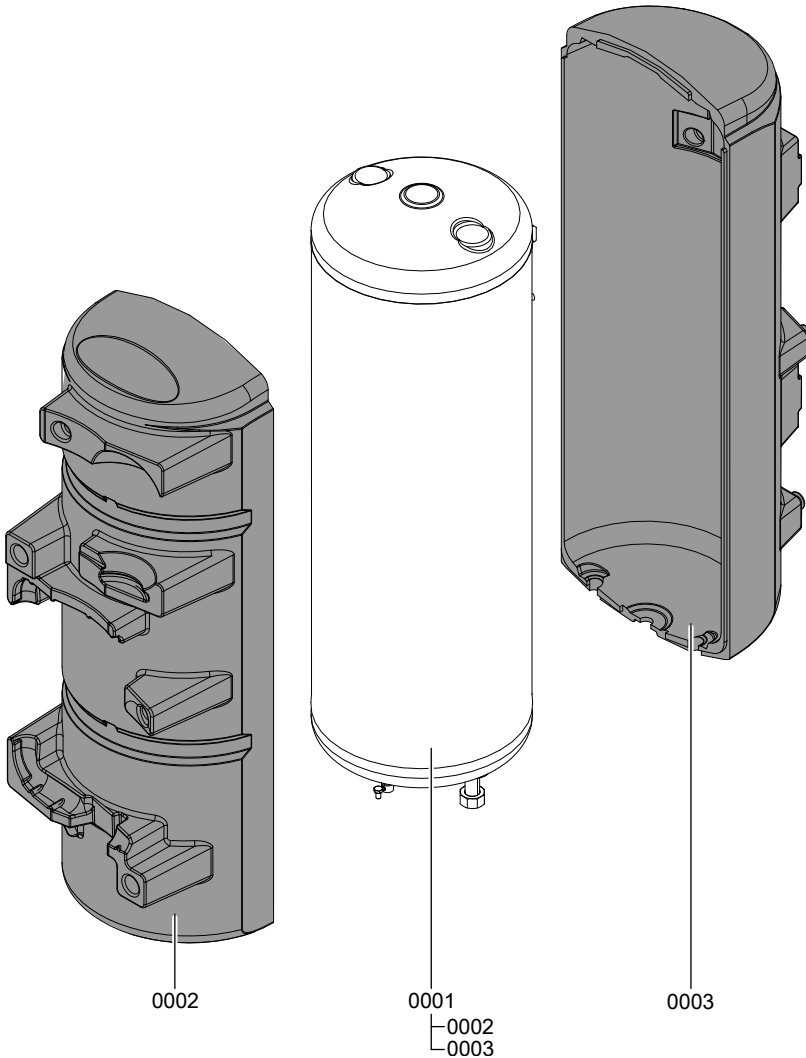
## Cylinder module assembly



## Cylinder module assembly (cont.)

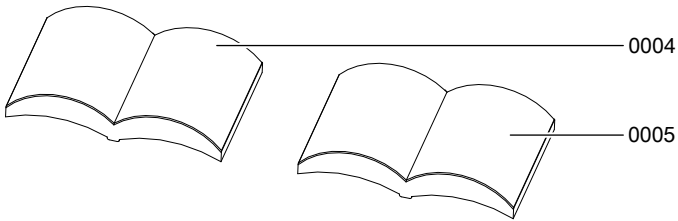
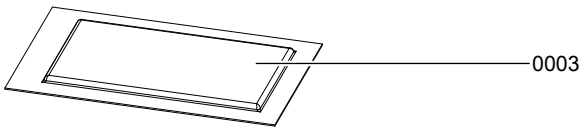
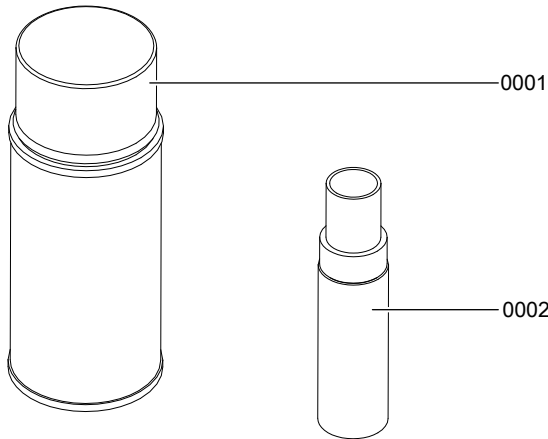
Pos.	Part
0001	O-ring 14.3 x 2.4 (5 pce)
0002	Clip $\varnothing$ 15 (5 pce)
0003	Connection pipe DHW
0004	RV cartridge DN 15
0005	Shut-off elbow, cylinder
0006	Connection pipe DHW
0007	Gasket A 18.5 x 24 x 2 (3 pce)
0008	Protective profile
0009	Hose clip $\varnothing$ 340 - 360 x 9
0010	Cylinder temperature sensor NTC
0011	Cylinder (see cylinder assembly)

## Cylinder assembly



Pos.	Part
0001	Cylinder with thermal insulation
0002	Thermal insulation EPS, front
0003	Thermal insulation EPS, back

## Miscellaneous



Pos.	Part
0001	Touch-up spray paint, white, 150 ml
0002	Touch-up paint stick, white
0003	Special grease
0004	Installation and service instructions
0005	Operating instructions

## Specification

### Specification

Rated voltage:	230 V~	Temperature limiter setting:	100 °C (fixed)
Rated frequency:	50 Hz	Backup fuse (power supply):	max. 3 A
Rated current:	2.0 A~		
Safety category:	I		
IP rating:	IP X4D to EN 60529		

#### Permissible ambient temperature

- During operation: 0 to +40 °C
- During storage and transport: -20 to +65 °C

<b>Rated heating output range in heating mode</b>			
<b>T<sub>F</sub>/T<sub>R</sub> 50/30 °C</b>	<b>kW</b>	<b>6.5 – 26</b>	<b>8.8 – 35</b>
<b>T<sub>F</sub>/T<sub>R</sub> 80/60 °C</b>	<b>kW</b>	<b>5.9 – 23.7</b>	<b>8.0 – 31.9</b>
<b>Rated heating output range for DHW heating</b>	kW	5.9 – 29.3	8.0 – 35.0
<b>Rated heating input range</b>	kW	6.1 – 30.5	8.2 – 36.5
<b>Connection values</b>			
Relative to the max. load for:			
- Natural gas E	m <sup>3</sup> /h	3.23	3.86
- LPG P	kg/h	2.39	2.86
<b>Power consumption (max.)</b>	W	141	153
<b>Weight</b>	kg	62	64
<b>Product ID</b>	CE-0085BT0029		

#### Note

*The connection values are only for reference (e.g. in the gas contract application) or for a supplementary, rough estimate to check the volumetric settings. Due to factory settings, the gas pressure must not be altered from these values. Reference: 15 °C, 1013 mbar.*



## Final decommissioning and disposal

Viessmann products can be recycled. Components and substances from the system are not part of ordinary household waste.

For decommissioning the system, isolate the system from the power supply and allow components to cool down where appropriate.

All components must be disposed of correctly.

## Declaration of conformity

### Declaration of Conformity for the Vitodens 111-W

We, Viessmann Werke GmbH & Co KG, D-35107 Allendorf, confirm as sole responsible body that the product **Vitodens 111-W** complies with the following standards:

DIN 4753	EN 55 014-1
EN 297	EN 55 014-2
EN 483	EN 60 335-1
EN 625	EN 60 335-2-102
EN 677	EN 61 000-3-2
EN 806	EN 61 000-3-3
EN 12 897	EN 62 223

In accordance with the following Directives and regulations, this product is designated **CE-0085**:

92/42/EEC	2009/125/EC* <sup>1</sup>
2004/108/EC	2010/30/EU* <sup>1</sup>
2006/95/EC	811/2013* <sup>1</sup>
2009/142/EC	813/2013* <sup>1</sup>

This product complies with the requirements of the Efficiency Directive (92/42/EEC) for **condensing boilers**.

Allendorf, 01 March 2015

Viessmann Werke GmbH & Co KG



Authorised signatory Manfred Sommer

\*<sup>1</sup> Valid from September 2015

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## Applicability

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