

# Installation and service instructions for contractors

**VIESSMANN**

**Vitodens 200-W**  
Type **B2HB, B2KB**, 1.8 to 35 kW  
Natural gas and LPG version

*For applicability, see the last page*




## **VITODENS 200-W**





## Safety instructions

### 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 qualified 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
  - Ⓞ 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.

 **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.

- Do not 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 at the external isolator (e.g. fuse box, domestic power distribution).

**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/pipework 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. Vents 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.

**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.

<b>1. Information</b>	Disposal of packaging .....	7
	Symbols .....	7
	Intended use .....	7
	Product information .....	8
	■ Vitodens 200-W, type B2HB, B2KB .....	8
<b>2. Preparing for installation</b>	.....	9
<b>3. Installation sequence</b>	Mounting the boiler and making connections .....	11
	■ Removing the front panel .....	11
	■ Fitting the boiler to the pre-plumbing jig .....	13
	Connections on the heating water and DHW side .....	14
	Flue gas connection .....	15
	Condensate connection .....	15
	Gas connection .....	16
	Opening the control unit enclosure .....	16
	Electrical connections .....	18
	■ Routing connecting cables .....	19
	■ Outside temperature sensor <span style="border: 1px solid black; padding: 0 2px;">1</span> .....	19
	■ Connecting the Vitoconnect 100 connecting cable (accessories) .....	20
	■ External demand via switching contact .....	20
	■ External demand via 0 – 10 V input .....	21
	■ External blocking via switching contact .....	21
	■ Power supply for accessories at plug <span style="border: 1px solid black; padding: 0 2px;">96</span> (230 V~) .....	22
	■ Power supply <span style="border: 1px solid black; padding: 0 2px;">40</span> .....	23
	■ Routing connecting cables .....	24
	Closing the control unit enclosure and inserting the programming unit .	24
<b>4. Commissioning, inspection, maintenance</b>	Steps - commissioning, inspection and maintenance .....	25
<b>5. Parameter level 1</b>	Calling up parameter level 1 .....	52
	General .....	53
	Boiler .....	54
	DHW .....	55
	Solar .....	55
	Heating circuit 1, heating circuit 2, heating circuit 3 .....	57
<b>6. Parameter level 2</b>	Calling up parameter level 2 .....	61
	General .....	62
	Boiler .....	69
	DHW .....	71
	Solar .....	75
	Heating circuit 1, heating circuit 2, heating circuit 3 .....	79
<b>7. Diagnosis and service scans</b>	Calling up the service menu .....	87
	Leaving the service menu .....	88
	Change passwords .....	88
	Resetting all passwords to their delivered condition .....	88
	Diagnosis .....	88
	■ Scanning operating data .....	88
	■ Calling up device status .....	89
	■ Calling up solar circuit pump status .....	89
	■ Brief scan .....	89
	Checking outputs (actuator test) .....	91
<b>8. Troubleshooting</b>	Fault display .....	92
	Fault messages .....	92



## Index

	Maintenance .....	100
	■ Shutting down the boiler .....	101
	■ Removing the boiler for servicing .....	101
	■ Checking the temperature sensors .....	103
	■ Checking the outlet temperature sensor or comfort sensor (only for gas condensing combi boiler) .....	105
	■ Checking the plate heat exchanger .....	106
	■ Checking the temperature limiter .....	107
	■ Checking for interchange of flow/return connections in solar circuit ...	107
	■ Checking the fuse .....	108
	■ Mixer extension kit .....	108
	■ Checking the Vitotronic 200-H (accessories) .....	109
<b>9. Parts lists</b>	Overview of assemblies .....	110
	■ Serial no. 7570787, 7570788, 7570790, 7570792 .....	110
	■ Serial no. 7570789, 7570791, 7570793 .....	111
	Casing assembly .....	112
	Heat cell assembly .....	114
	MatriX cylinder burner assembly .....	116
	Hydraulic assembly .....	118
	■ Serial no. 7570787, 7570788, 7570790, 7570792 .....	118
	■ Serial no. 7570789, 7570791, 7570793 .....	120
	Hydraulic assembly, system boiler .....	122
	Hydraulic assembly, combi boiler .....	124
	Control unit assembly .....	126
	Miscellaneous assembly .....	128
	Ordering individual parts for accessories .....	130
<b>10. Function description</b>	Control unit .....	131
	■ Weather-compensated heating mode .....	131
	■ Constant temperature heating mode .....	131
	■ DHW heating with gas condensing combi boiler .....	131
	■ DHW heating with gas condensing system boiler .....	131
	■ Boosting DHW heating .....	131
	Internal extensions (accessories) .....	132
	■ Internal H1 extension .....	132
	■ Internal H2 extension .....	133
	External extensions (accessories) .....	134
	■ AM1 extension .....	134
	■ EA1 extension .....	135
	Control functions .....	136
	■ External operating program changeover .....	136
	■ External blocking .....	137
	■ External demand .....	137
	■ Venting program .....	137
	■ Fill program .....	137
	■ Screed drying .....	138
	■ Raising the reduced room temperature .....	139
	■ Reducing the heat-up time .....	140
	Assigning heating circuits to the remote control .....	141
	Vitocom 100, type GSM: Entering PIN code via Vitotronic .....	142
	Hydronic balancing .....	142
	Electronic combustion control unit .....	142
<b>11. Connection and wiring diagrams</b>	Connection and wiring diagram – internal connections .....	144
	Connection and wiring diagram – external connections .....	145
<b>12. Commissioning/service reports</b>	.....	146
<b>13. Specification</b>	.....	147

# Index

## Index (cont.)










<b>14. Disposal</b>	Final decommissioning and disposal .....	150
<b>15. Certificates</b>	Declaration of conformity .....	151
	■ Manufacturer's declaration .....	151
<b>16. Keyword index</b>	.....	152

## Disposal of packaging







Please dispose of waste packaging in line with statutory regulations.

Waste packaging is disposed of by the HVAC contractor.

## Symbols

Symbol	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.

The steps in connection with commissioning, inspection and maintenance are found in the "Commissioning, inspection and maintenance" section and identified as follows:

Symbol	Meaning
	Steps required during commissioning
	Not required during commissioning
	Steps required during inspection
	Not required during inspection
	Steps required during maintenance
	Not required during maintenance

## Intended use

The appliance is intended solely for installation and operation 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 heating up heating 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.

### Intended use (cont.)

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 200-W, type B2HB, B2KB

Wall mounted gas condensing boiler with Inox-Radial heat exchanger and the following integrated components:

- Modulating MatriX cylinder burner for natural gas and LPG
- Hydraulics with 3-way diverter valve and variable speed high efficiency circulation pump
- Vitotronic 200 for weather-compensated operation
- Integral diaphragm expansion vessel (10 l capacity)

Preset for operation with natural gas H. For conversion to LPG P (without conversion kit), see "Commissioning, inspection and maintenance".

The Vitodens 200-W may only be delivered to countries listed on the type plate. For deliveries to other countries, approved contractors must arrange individual approval on their own initiative and in accordance with the law of the country in question.

**Preparing for installation**

**Note**

This boiler (IP rating: IP X4) is approved for installation in wet rooms inside safety zone 1, to DIN VDE 0100. Exposure to jets of water must be prevented. For open flue operation, the boiler may only be operated with a splash cover. Observe the IEEE Wiring Regulations (17th issue).



**Please note**

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

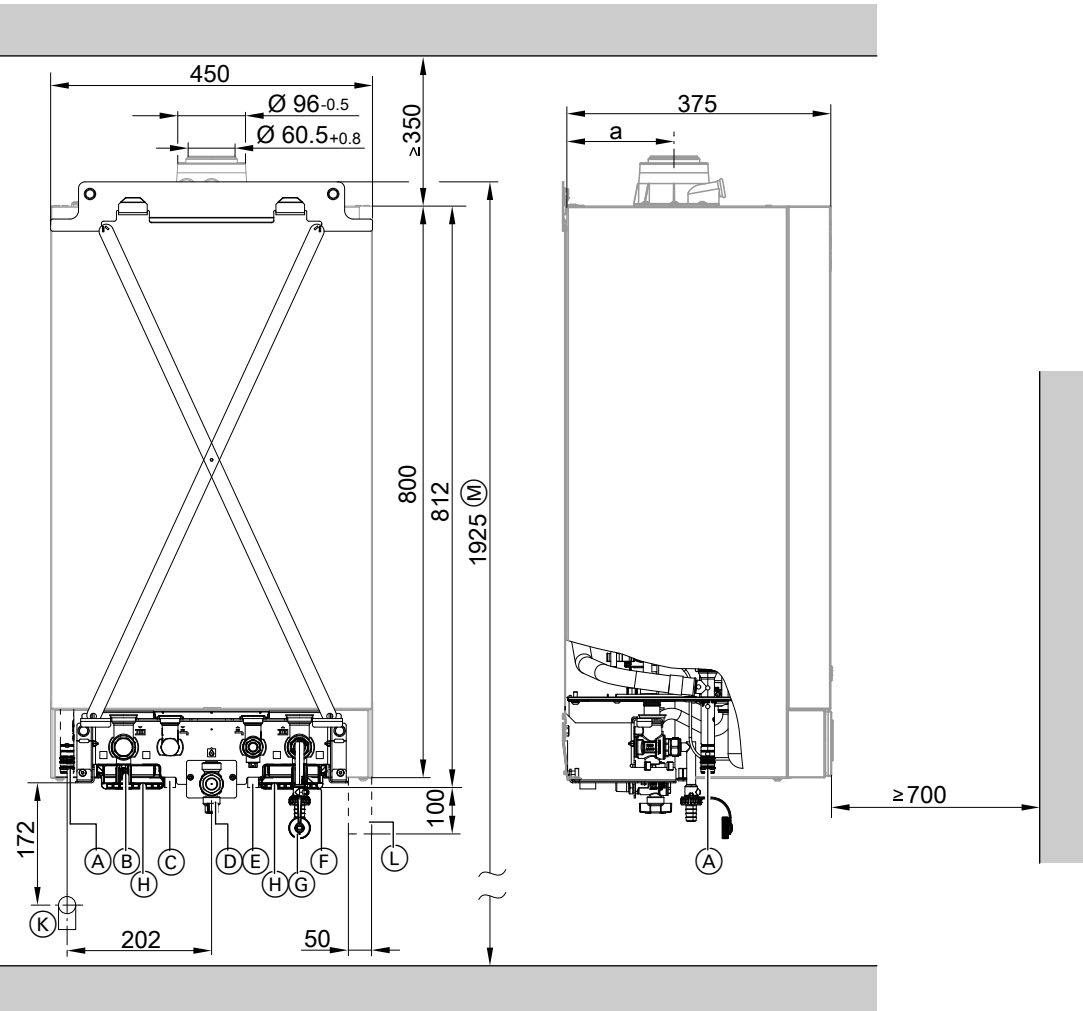


Fig. 1

- (A) Condensate drain
- (B) Heating flow Ø 22 mm
- (C) DHW Ø 15 mm (gas condensing combi boiler)  
Cylinder flow G ¾ (gas condensing system boiler)
- (D) Gas connection R ½
- (E) Cold water Ø 15 mm (gas condensing combi boiler)  
Cylinder return G ¾ (gas condensing system boiler)
- (F) Heating return Ø 22 mm
- (G) Filling/draining
- (H) Retainer for cables
- (K) Drain outlet kit
- (L) Power supply area
- (M) Dimension for installation with DHW cylinder below the boiler

Dimensions for connections in conjunction with the pre-plumbing jig (accessories)

Rated heating output kW	Dim. a mm
19	132
26 and 35	156

## Preparing for installation

### Preparing for installation (cont.)

1. Fit the pre-plumbing jig or wall mounting bracket from the installation accessories provided at the chosen installation location.



Installation instructions for pre-plumbing jig or installation accessories

#### Note

The screws and rawl plugs provided are designed for concrete. For other construction materials, use fixing materials with sufficient load-bearing capacity.

2. Prepare the water connections on the valves/ fittings of the pre-plumbing jig. Thoroughly flush the heating system.

#### Note

To prevent dirt from entering the connections, do not remove the protective caps until you are about to fit the boiler.

3. Prepare the gas connection according to TRGI or TRF [or local regulations].
4. Prepare the electrical connections.
  - The appliance is delivered fitted with an approx. 1.5 m long power cable. Fuse max. 16 A, 230 V, 50 Hz.
  - Cables for accessories: Min. 0.75 mm<sup>2</sup> flexible PVC cables, each with the required number of cores for external connections.

## Connection on the DHW side for gas condensing combi boiler

### Cold water installation

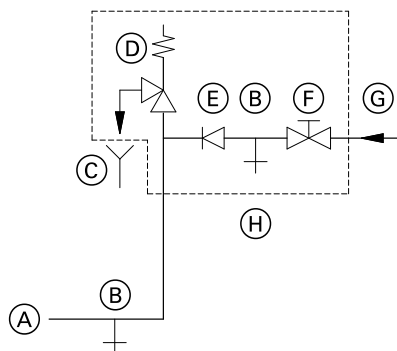


Fig. 2

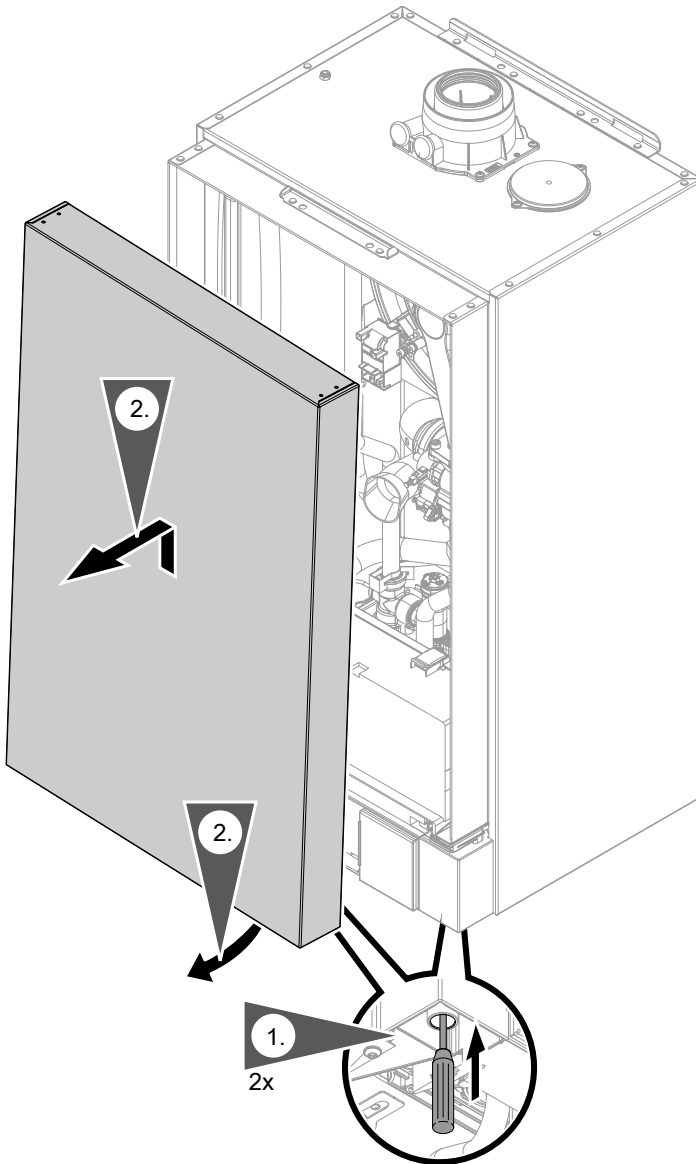
- (A) Cold water connection, boiler
- (B) Drain outlet
- (C) Visible discharge pipe outlet point [tundish]
- (D) Safety valve
- (E) Non-return valve
- (F) Shut-off valve
- (G) Cold water
- (H) Safety assembly

Safety assembly (H) to 1999 Fittings Directive and EN 806 is required if the mains water supply pressure exceeds 10 bar (1.0 MPa), and no DHW pressure reducing valve is installed (to 1999 Fittings Directive). Only use a non-return valve or a combined shut-off and non-return valve in conjunction with a safety valve. If the safety valve is used, the cold water shut-off valve on the boiler must not be shut off. Remove the toggle on the cold water shut-off valve (if installed) to prevent it being shut off manually.

### Shock arrestor

If draw-off points that could cause pressure peaks (water hammer/shock) are connected to the same pipework as the boiler (such as pressure washers, washing machines or dishwashers), we would recommend the installation of a shock arrestor near the source of such pressure shocks.

(GB): Fit a small domestic expansion vessel if water hammer occurs.

**Mounting the boiler and making connections****Removing the front panel***Fig. 3*

1. Unlock the front panel on the underside (push in), using a screwdriver or similar tool.
2. Swivel the front panel forwards slightly and lift away upwards.



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

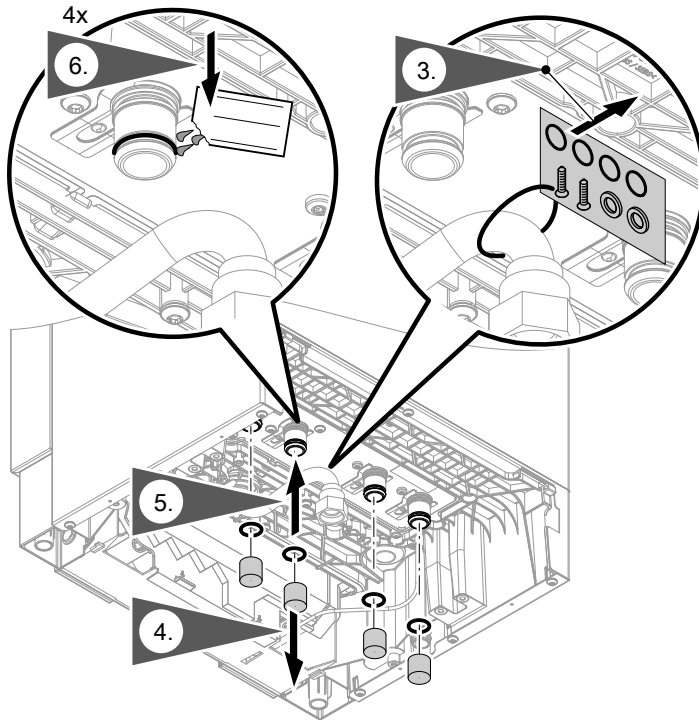


Fig. 4

- 3. Remove the installation kit from the gas pipe.
- 4. Remove the protective caps from the hydraulic connections and gas connection.
- 5. Fit the O-rings from the installation kit to the hydraulic connections.
- 6. Lubricate the O-rings with the valve grease supplied. Do not use any other agent.

**Note**

*Do not remove the protective caps until you are about to commence installation.*



Mounting the boiler and making connections (cont.)

Fitting the boiler to the pre-plumbing jig

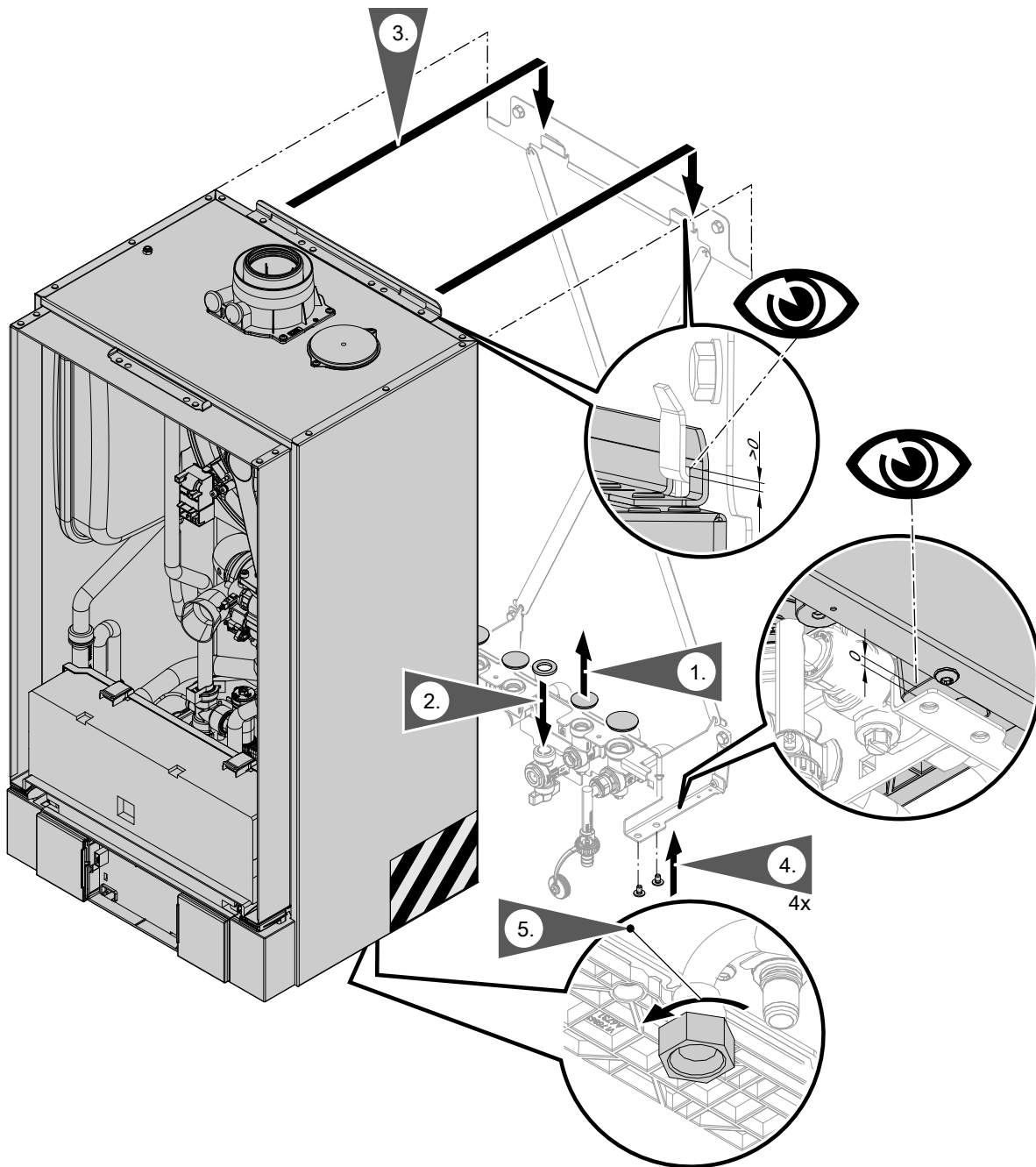


Fig. 5

**Note**

The diagram shows installation on a pre-plumbing jig for finished walls.

The boiler can be installed on the following accessories:

- Pre-plumbing jig for unfinished walls
- Pre-plumbing jig for sub-mounting kit
- Mounting frame
- Self-supporting mounting frame

**Note**

The fitting assembly bears the full weight of the boiler.


1. Remove the protective caps from the hydraulic connections and gas connection.

**Note**

Do not remove the protective caps until you are about to commence installation.

2. Take the flat gasket for the gas connection from the installation kit. Place the flat gasket on the gas shut-off valve or gas connector (pre-plumbing jig for sub-mounting kit).

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

3. **Danger**  Avoid injury to the hands. Do not grip the boiler in the rear section of the side panels. Hatched area in the diagram.

Fitting the boiler:

- Align the boiler with the outer ends of the wall mounting bracket.
  - Lower the boiler vertically into position.
  - The supporting surface of the boiler must rest on the fitting assembly.
4. Take 4 screws from the installation kit and screw them into the fitting assembly from below.

- !** **Please note**
- Tighten screws just enough to ensure the components do not suffer damage and will function correctly. **Never** tighten the screws with a cordless screwdriver.

**Note**

*The screws must be inserted to fasten the boiler securely. When correctly installed, the boiler will not rest on the hooks of the wall mounting bracket (see diagram).*

5. Tighten the union nut on the gas pipe.

- !** **Please note**
- Tighten screws just enough to ensure the components do not suffer damage and will function correctly.

## Connections on the heating water and DHW side

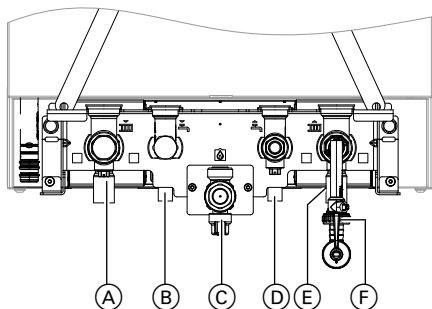


Fig. 6 Diagram shows connections for gas condensing combi boiler

- (A) Heating flow Ø 22 mm
- (B) DHW Ø 15 mm (gas condensing combi boiler)  
Cylinder flow G ¾ (gas condensing system boiler)
- (C) Gas connection R ½
- (D) Cold water Ø 15 mm (gas condensing combi boiler)  
Cylinder return G ¾ (gas condensing system boiler)
- (E) Heating return Ø 22 mm
- (F) Filling/drainage  
Dimensions for connections in conjunction with the pre-plumbing jig (accessories)

If the connections have not been pre-fitted: Make the connections on the heating water and the DHW side.

## Flue gas connection

### Note

- The labels "System certificate" and "Skoberne GmbH flue system" enclosed with the technical documentation may only be used in conjunction with the Viessmann flue system made by Skoberne.
- During installation and positioning of the flue system, observe Part L and BS 5440 building regulations [GB only].



### Connecting the balanced flue pipe

Flue system installation instructions

### Connecting several Vitodens to a shared flue system

If connecting several Vitodens to a shared flue system, install a back draught safety device in each boiler.

- Multiple vertical connections:  
Back draught safety device available as separate accessory
- Flue gas cascade:  
Back draught safety device in standard delivery for the flue gas cascade (accessories)

Install the back draught safety device:



### Back draught safety device installation instructions

Change control unit to operation with a shared flue system:

- In the commissioning assistant, select the "**Multiple connections**" setting under "**Flue system**" or
- Set code 7E:1

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.



### 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.

## Condensate connection

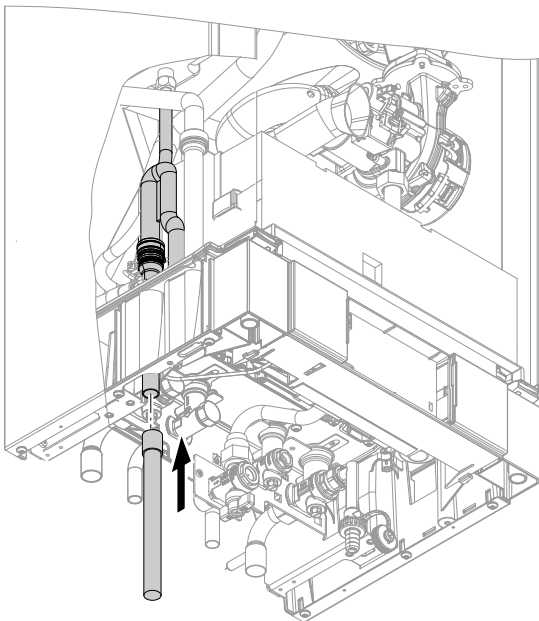


Fig. 7

1. Attach the supplied condensate hose to the trap.
2.
  - 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 min.  $\varnothing$  30 mm and protect the 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 local waste water regulations.

### Note

Fill the trap with water before commissioning.

### Gas connection

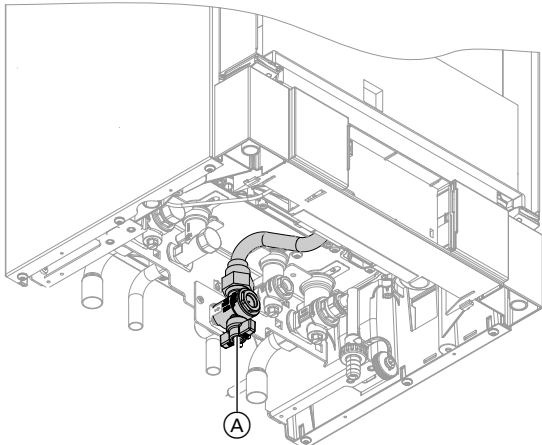



Fig. 8

1. If the gas connection has not been pre-fitted: Seal gas shut-off valve (A) to the gas connection.

#### **Information on operation with LPG**

*Install an external safety solenoid valve if the boiler is installed below ground level.*

2.  **Danger**  
Escaping gas leads to a risk of explosion. Check all gas connections for tightness.

#### **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.



#### **Conversion to alternative gas types:**

See "Commissioning, inspection and maintenance".

### 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.

Opening the control unit enclosure (cont.)

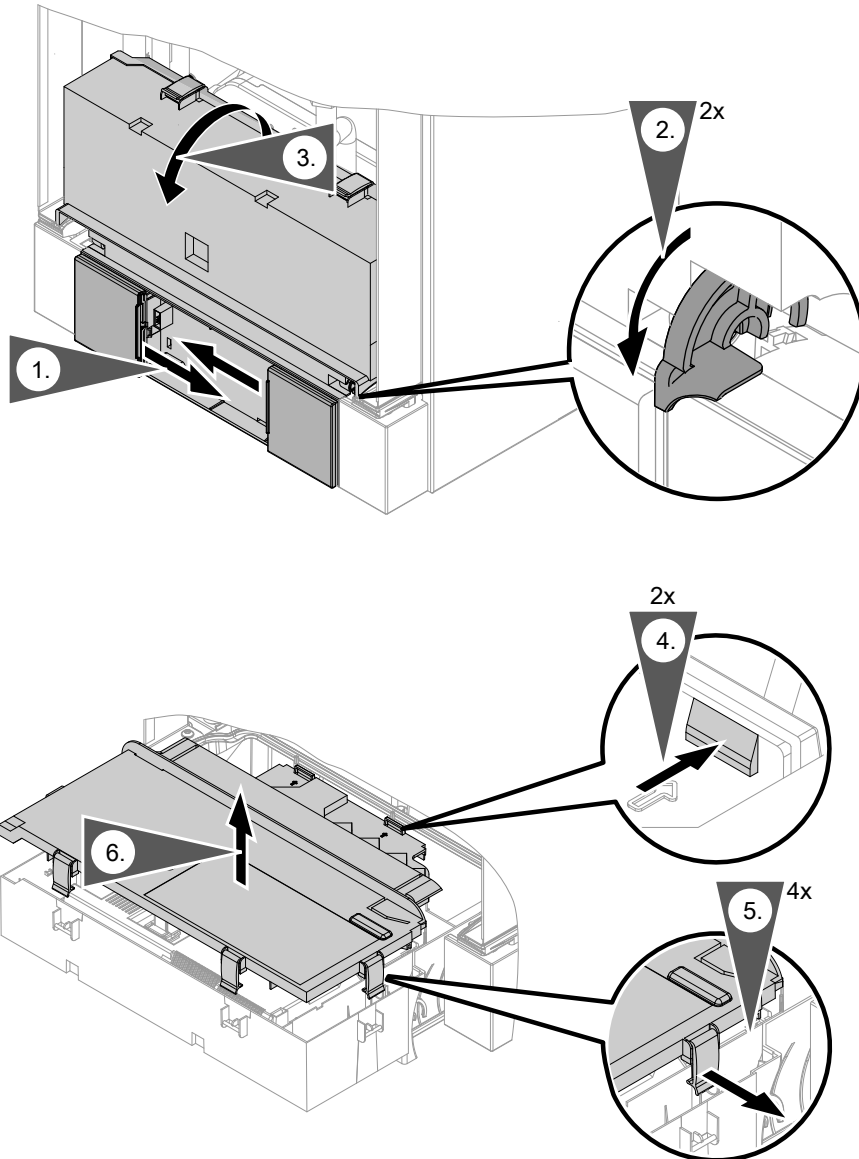


Fig. 9

**Electrical connections**

Installation

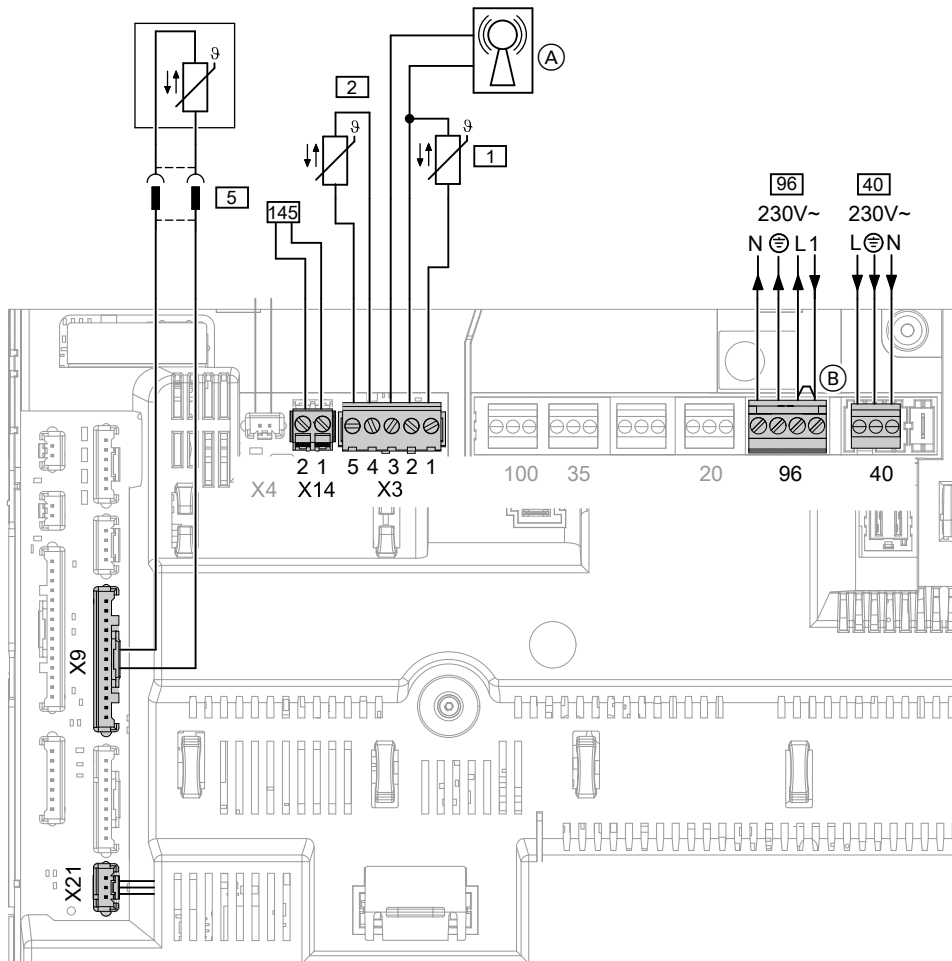


Fig. 10

- (A) Radio clock receiver
- (B) Jumper

**Connections to 230 V~ plugs**

- 40 Power supply
- 96
  - Power supply for accessories
  - External demand/blocking
  - Room temperature controller (remove jumper (A) when connecting):
    - Vitotrol 100, UTA
    - Vitotrol 100, UTDB
    - Vitotrol 100, UTDB-RF

**Connections to LV plugs**

- X3 Plug X3 can be disconnected to facilitate installation.
  - 1 Outside temperature sensor
  - 2 Flow temperature sensor for low loss header (accessories)
- X21 CO limiter (accessories)

- 5 Type B2HB:
  - Cylinder temperature sensor (part of the DHW cylinder connection set)
- Type B2KB:
  - Comfort sensor (connected at the factory)
- 145 KM-BUS subscriber (accessories)
  - To connect several accessories, see page 22.
    - Vitotrol 200-A or 300-A remote control unit
    - Vitocom 100, type GSM
    - Mixer extension kit
    - Solar control module, type SM1
    - Vitosolic
    - AM1 extension
    - EA1 extension
    - Wireless base station
    - KM-BUS distributor



**Information on connecting accessories**

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

## Electrical connections (cont.)

### Routing connecting cables

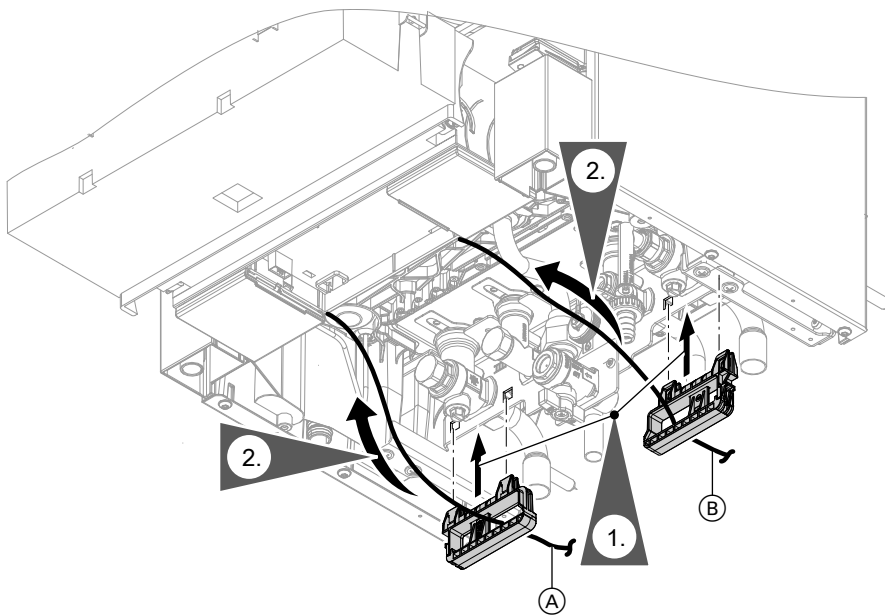



Fig. 11

- (A) LV leads
- (B) 230 V cables

1. Take the cable holders from the installation kit and attach them to the fitting assembly.
2. Feed the cables through the cable holders into the control unit enclosure.

### Outside temperature sensor 1

For fitting the wireless outside temperature sensor (wireless accessory):

 Wireless base station installation and service instructions

#### Fitting location for outside temperature sensor

- North or north-western wall, 2 to 2.5 m above ground level; in multi storey buildings, in the upper half of the second floor
- Not above windows, doors or vents

- Not immediately below balconies or gutters
- Never render over

#### Outside temperature sensor connection

2-core lead, length max. 35 m with a cross-section of 1.5 mm<sup>2</sup>



**Connecting the Vitoconnect 100 connecting cable (accessories)**

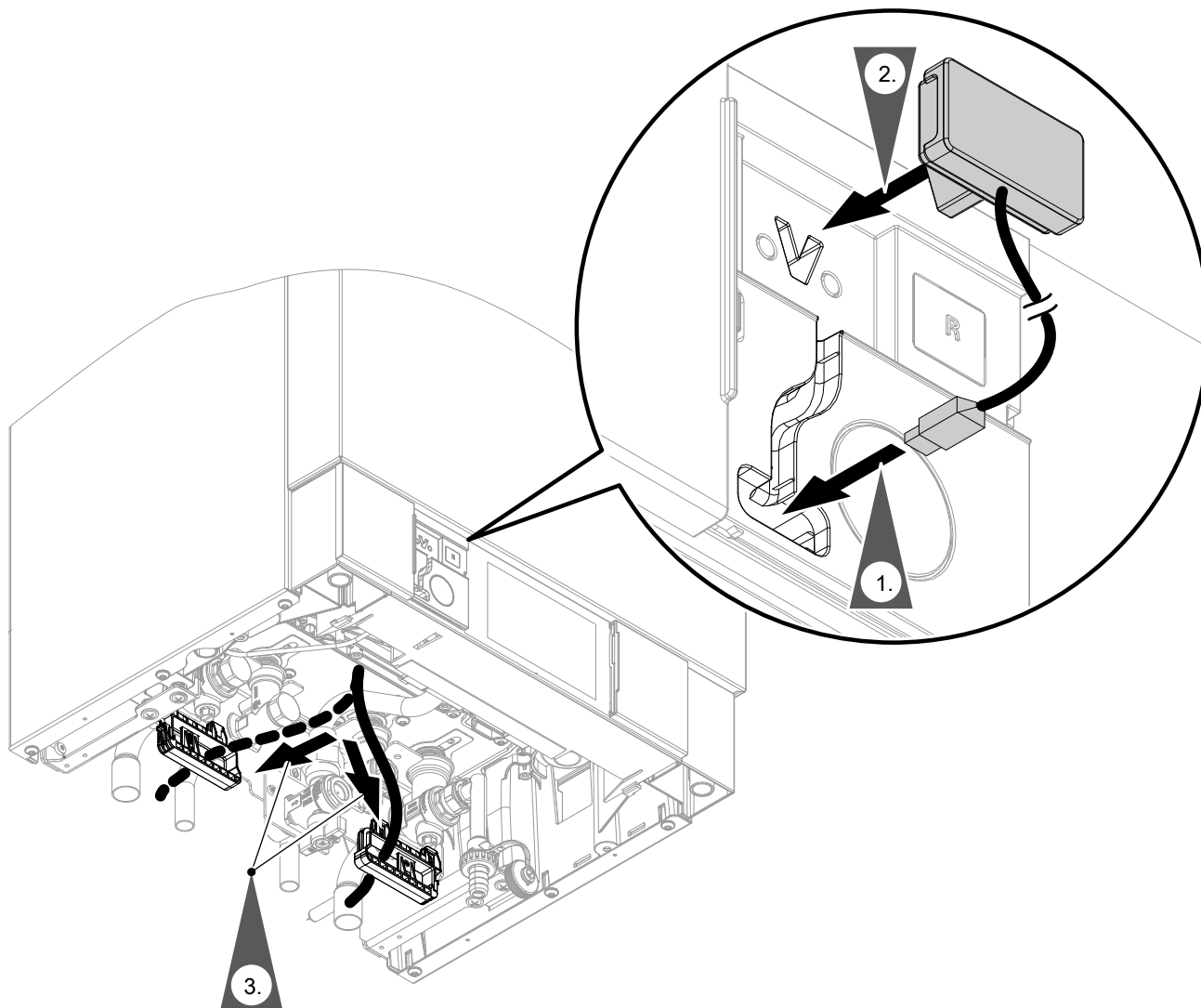




Fig. 12

**Installing the Vitoconnect 100**

 Vitoconnect 100 installation and commissioning instructions

**External demand via switching contact**

Connection options:

- EA1 extension (accessory, see separate installation instructions)
- Plug 

When the contact is closed, burner operation is load-dependent. The boiler water is heated to the value set in parameter "9b" in the **"General"** group. The boiler water temperature is limited by this set value and the electronic maximum limit (parameter "06" in the **"Boiler"** group).

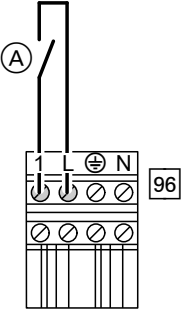
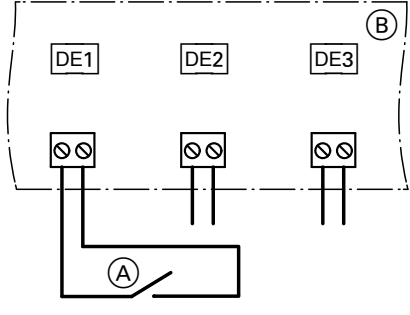


**Please note**

Live contacts lead to short circuits or phase failure. The external connection **must be potential-free** and meet the requirements of protection class II.



**Electrical connections** (cont.)

Plug 96	EA1 extension
 <p>(A) Floating contact (when connected, remove jumper between L and 1)</p>	 <p>(A) Floating contact (B) EA1 extension</p>
<p><b>Parameter settings</b></p> <ul style="list-style-type: none"> <li>▪ "4b:1" in the <b>"General"</b> group</li> <li>▪ Effect of the function on the relevant heating circuit pump: Parameter "d7" in the <b>"Heating circuit"</b> group</li> <li>▪ Effect of the function on the circulation pump for cylinder heating (if installed): Parameter "5F" in the <b>"DHW"</b> group</li> </ul>	<p><b>Parameter settings</b></p> <ul style="list-style-type: none"> <li>▪ Set "3A" (DE1), "3b" (DE2) or "3C" (DE3) in the <b>"General"</b> group to 2</li> <li>▪ Effect of the function on the relevant heating circuit pump: Parameter "d7" in the <b>"Heating circuit"</b> group</li> <li>▪ Effect of the function on the circulation pump for cylinder heating (if installed): Parameter "5F" in the <b>"DHW"</b> group</li> </ul>

**External demand via 0 – 10 V input**

Connection at 0 – 10 V input at **EA1 extension**.  
Ensure DC separation between the earth conductor and the negative pole of the on-site power source.

0 to 1 V	No specification for set boiler water temperature
1 V	Set value 10 °C
10 V	Set value 100 °C

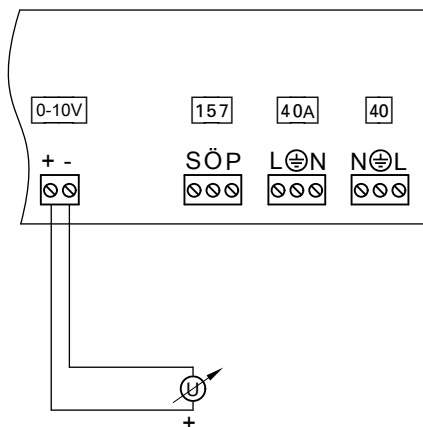


Fig. 13

**External blocking via switching contact**

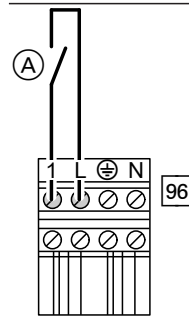
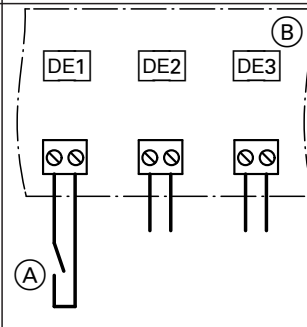
Connection options:

- Plug 96
- EA1 extension (accessory, see separate installation instructions)

When the contact is closed, the burner is switched off. The heating circuit pump and (if installed) circulation pump for cylinder heating are switched according to the following parameter settings.

**! Please note**  
Live contacts lead to short circuits or phase failure.  
The external connection **must be potential-free** and meet the requirements of protection class II.

**Electrical connections** (cont.)

Plug 96	EA1 extension
 <p>(A) Floating contact (when connected, remove jumper between L and 1)</p>	 <p>(A) Floating contact (B) EA1 extension</p>
<p><b>Parameter settings</b></p> <ul style="list-style-type: none"> <li>▪ "4b:2" in the <b>"General"</b> group</li> <li>▪ Effect of the function on the heating circuit pump: Parameter "d6" in the <b>"Heating circuit"</b> group</li> <li>▪ Effect of the function on the circulation pump for cylinder heating (if installed): Parameter "5E" in the <b>"DHW"</b> group</li> </ul>	<p><b>Parameter settings</b></p> <ul style="list-style-type: none"> <li>▪ Set "3A" (DE1), "3b" (DE2) or "3C" (DE3) in the <b>"General"</b> group to 3 or 4</li> <li>▪ Effect of the function on the heating circuit pump: Parameter "d6" in the <b>"Heating circuit"</b> group</li> <li>▪ Effect of the function on the circulation pump for cylinder heating (if installed): Parameter "5E" in the <b>"DHW"</b> group</li> </ul>

**Power supply for accessories at plug 96 (230 V~)**

Where the boiler is sited in a wet room, accessories outside the wet area must not be connected to the mains at the control unit. If the boiler is not sited in a wet room, the power supply for accessories can be connected at the control unit. This connection is switched directly with the ON/OFF switch of the control unit.

If the total system current exceeds 6 A, connect one or more extensions via an ON/OFF switch directly to the mains supply (see next chapter).

**Electrical connections** (cont.)

**Power supply and KM BUS connection of accessories**

Power supply to all accessories via heat source control unit

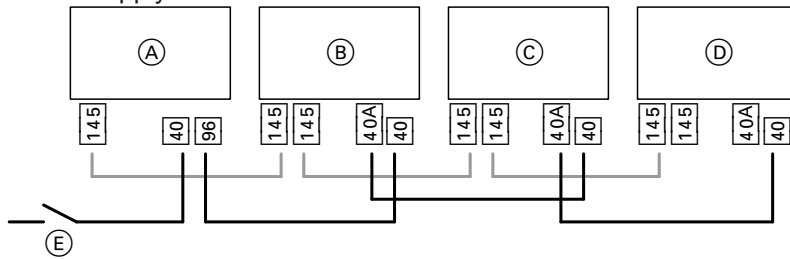


Fig. 14

Some accessories with direct power supply

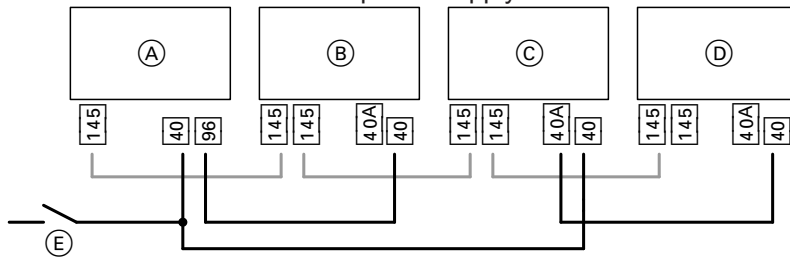


Fig. 15

- (A) Heat source control unit
- (B) Extension kit for heating circuit with mixer M2
- (C) Extension kit for heating circuit with mixer M3
- (D) AM1 extension, EA1 extension and/or solar control module, type SM1
- (E) ON/OFF switch
- 40 Mains input
- 40A Power outlet
- 96 Control unit power outlet
- 145 KM BUS connection

If the current flowing to the connected working parts (e.g. circulation pumps) is higher than the fuse rating of the respective accessory: Only use the output concerned to control an on-site relay.


Accessories	Internal fuse protection
Extension kit for heating circuit with mixer	2 A
AM1 extension	4 A
EA1 extension	2 A
Solar control module, type SM1	2 A

**Power supply** 40

**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
- VDE regulations
- Connection requirements specified by your local power supply utility

- Install an isolator in the power cable to provide omnipolar separation from the mains for all active conductors, corresponding to overvoltage category III (3 mm) for full isolation. This isolator must be fitted in the permanent electrical installation, in line with the installation requirements.  
In addition, we recommend installing an AC/DC-sensitive RCD (RCD class B ) for DC (fault) currents that can occur with energy efficient equipment.
- Max. fuse rating 16 A.

**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.

### Routing connecting cables

- ! Please note**  
If connecting cables come into contact with hot components they will be damaged.  
When routing and securing cables/leads on site, ensure that the maximum permissible temperatures for these cables/leads are not exceeded.

## Closing the control unit enclosure and inserting the programming unit

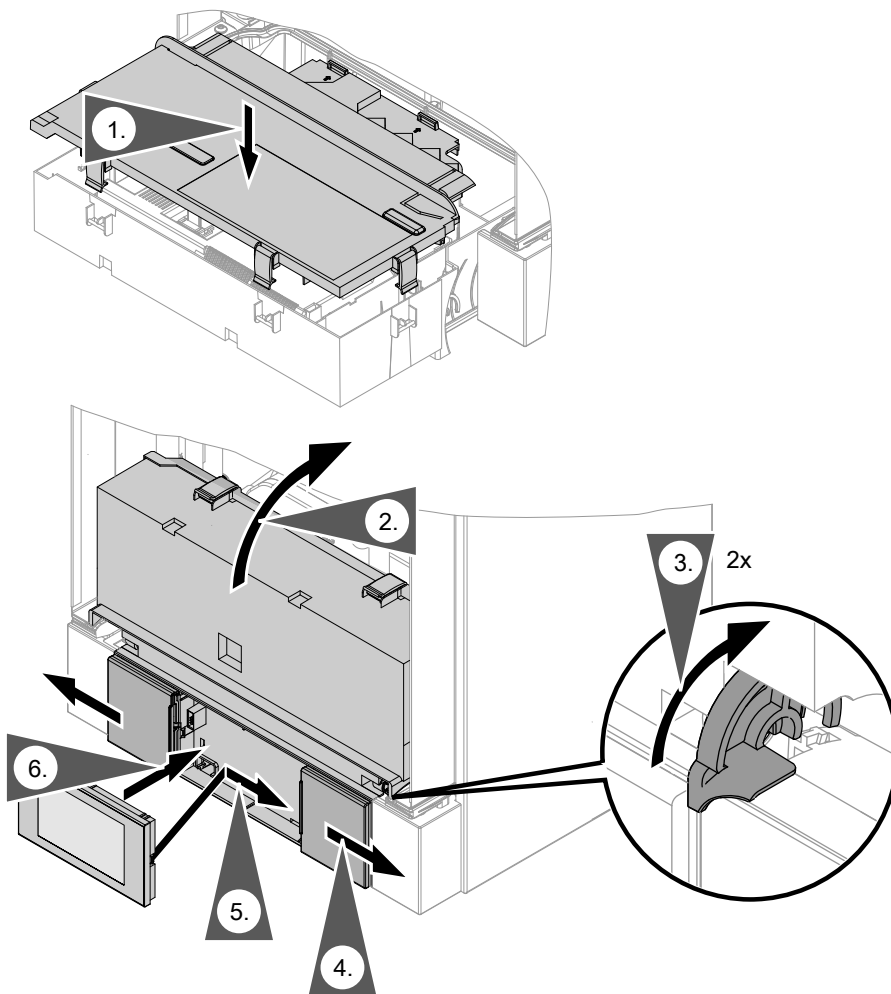


Fig. 16

Insert the programming unit (packed separately) into the control unit support.

#### Note

The programming unit can also be inserted into a wall mounting base (accessories) near the boiler.



Wall mounting base installation instructions












Steps - commissioning, inspection and maintenance

			Page
		Commissioning steps	
		Inspection steps	
		Maintenance steps	
•		1. Filling the trap with water.....	27
•		2. Filling the heating system.....	27
•	•	3. Checking all connections on the heating water and DHW sides for leaks	
•		4. Venting the boiler.....	29
•	•	5. Fitting the front panel.....	30
•		6. Venting the heating system.....	30
•		7. Commissioning the system with the commissioning assistant.....	31
•		8. Naming the heating circuits.....	33
•		9. Entering heating contractor contact details.....	34
•		10. Checking the gas type.....	34
•		11. Gas type conversion (only for operation with LPG).....	34
•	•	12. Checking the static pressure and supply pressure.....	34
•		13. Function sequence and possible faults.....	36
•		14. Setting the max. heating output.....	37
•		15. Entering absorber area.....	37
•		16. Determining solar circuit pump curve.....	37
•		17. Recording the set value for the pre-charge pressure of the diaphragm expansion vessel in the solar circuit.....	38
•		18. Activating screed drying.....	38
•		19. Tightness test on balanced flue system (annular gap check).....	39
•	•	20. Removing the burner .....	40
•	•	21. Checking the burner gasket and burner gauze assembly.....	41
•	•	22. Checking and adjusting the ignition and ionisation electrodes.....	42
•	•	23. Cleaning the heating surfaces.....	42
•	•	24. Checking the condensate drain and cleaning the trap.....	42
•	•	25. Installing the burner.....	44
•	•	26. Checking the neutralising system (if installed)	
•	•	27. Checking the flow limiter (only for gas condensing combi boiler).....	45
•	•	28. Checking the expansion vessel and system pressure.....	45
•	•	29. Checking the safety valve function	
•	•	30. Checking the firm seating of electrical connections	
•	•	31. Checking all gas equipment for tightness at operating pressure.....	46
•	•	32. Fitting the front panel.....	46
•	•	33. Checking the combustion quality.....	46
•	•	34. Checking the flue system for unrestricted flow and tightness	
•	•	35. Checking the external LPG safety valve (if installed)	
•		36. Matching the control unit to the heating system.....	47
•		37. Adjusting the heating curves.....	47
•		38. Connecting the control unit to the WLAN network.....	49





	Page
Commissioning steps	
Inspection steps	
Maintenance steps	
  	
•  	<b>39. Connecting the control unit to the LON</b> ..... 49
•   •	<b>40. Scanning and resetting service messages</b> ..... 50
•  	<b>41. Instructing the system user</b> ..... 51





## Filling the trap with water

### Multi boiler system:

Fill the trap in the flue gas header with water as well.

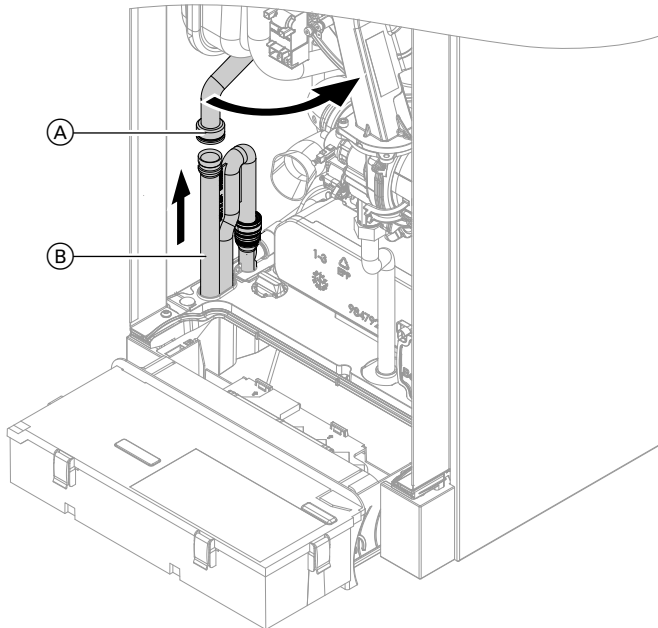


Fig. 17

1. Remove supply hose (A).
2. Remove trap (B).
3. Fill trap (B) with water.
4. Refit trap (B).
5. Reconnect supply hose (A).

#### Note

Never twist the inlet hose during assembly.



## Filling the heating system

### Fill water

According to EN 1717 with DIN 1988-100, as a heat transfer medium for DHW heating, the heating water must meet fluid category  $\leq 3$ . This requirement is met if water of potable quality is used as heating water. For example, if additives are used, the additive manufacturer must specify which category the treated heating water comes under.



#### 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 use fill water of potable water quality.
  - Special antifreeze suitable for heating systems can be added to the fill water. The antifreeze manufacturer must verify its suitability.
  - Fill and top-up water with a water hardness in excess of the following values must be softened, e.g. with a small softening system for heating water.

#### Total permissible hardness of the fill and top-up water

Total heating output kW	Specific system volume		
	< 20 l/kW	≥ 20 l/kW to < 50 l/kW	≥ 50 l/kW
≤ 50	≤ 3.0 mol/m <sup>3</sup> (16.8 °dH)	≤ 2.0 mol/m <sup>3</sup> (11.2 °dH)	< 0.02 mol/m <sup>3</sup> (0.11 °dH)
> 50 to ≤ 200	≤ 2.0 mol/m <sup>3</sup> (11.2 °dH)	≤ 1.5 mol/m <sup>3</sup> (8.4 °dH)	< 0.02 mol/m <sup>3</sup> (0.11 °dH)



Total heating output	Specific system volume		
	< 20 l/kW	≥ 20 l/kW to < 50 l/kW	≥ 50 l/kW
> 200 to ≤ 600	≤ 1.5 mol/m <sup>3</sup> (8.4 °dH)	≤ 0.02 mol/m <sup>3</sup> (0.11 °dH)	< 0.02 mol/m <sup>3</sup> (0.11 °dH)
> 600	< 0.02 mol/m <sup>3</sup> (0.11 °dH)	< 0.02 mol/m <sup>3</sup> (0.11 °dH)	< 0.02 mol/m <sup>3</sup> (0.11 °dH)

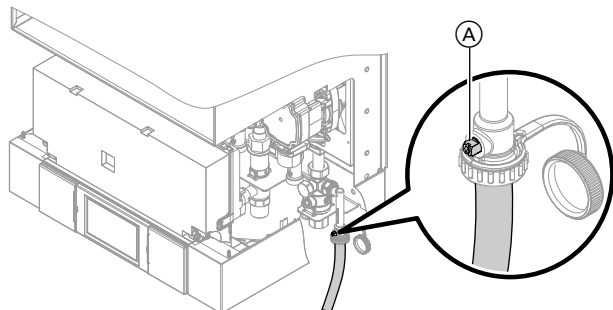


Fig. 18

1. Check the pre-charge pressure of the expansion vessel. See page 45.
2. Close the gas shut-off valve.
3. Fill the heating system via boiler drain & fill valve (A) in the heating return (at the connection set or on site). Minimum system pressure > 1.0 bar (0.1 MPa).

**Note**

*If the control unit has not been switched on prior to filling the system, then the servomotor of the diverter valve will still be in its central position, and the system will be completely filled.*

4. If the control unit was already on before filling:
  - Fit front panel (see page 30).
  - Switch ON the control unit.
  - Activate the filling function (see next chapter).
  - Switch OFF the control unit.
  - Remove the front panel.
5. Close boiler drain & fill valve (A).

**Activating the filling function**

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Service functions"
5. "Filling"
6. Activate the filling function with "Yes".  
The filling function ends automatically after 20 min or when you tap OK.







## Venting the boiler

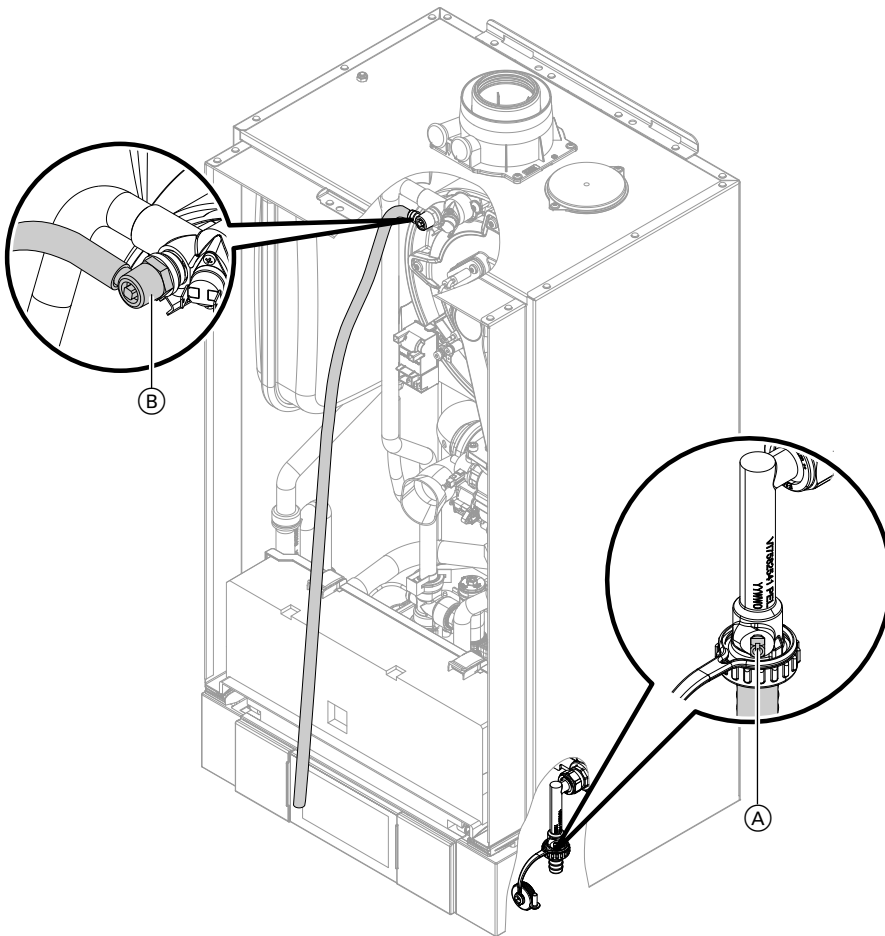


Fig. 19

**1. Note**

Only carry out the following tasks with the control unit switched off.

Close the shut-off valves on the heating water side.

2. Connect the supply hose to valve (A).
3. Push the drain hose (supplied inside the appliance) onto top valve (B) and connect to a drain.
4. Open valves (A) and (B) and vent at mains pressure (purge) until no sound of escaping air can be heard and no more air bubbles are visible.
5. First close valve (B).
6. When the required operating pressure has been built, close valve (A). Open the shut-off valves on the heating water side.
7. Remove the drain hose from top valve (B) and keep safe.

**Note**

Check the system pressure at the pressure gauge. Do not exceed 1.5 bar (0.15 MPa).





## Fitting the front panel

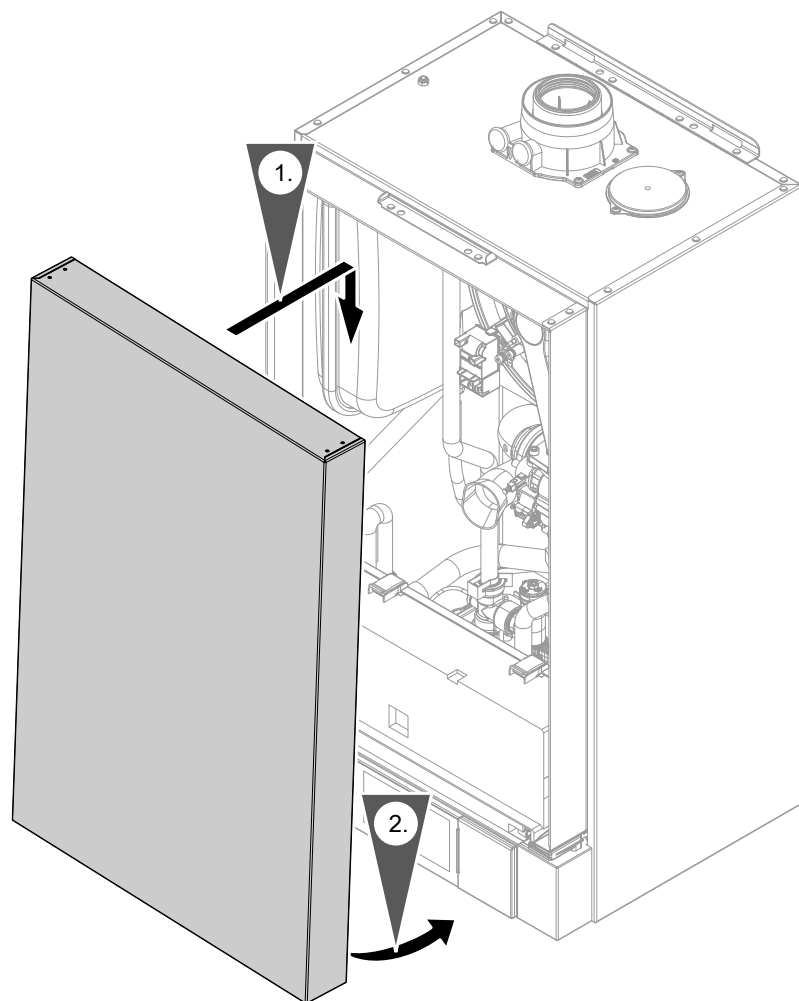


Fig. 20

### Note

Hook the front panel into place. There should be an audible click.



## Venting the heating system

1. Close the gas shut-off valve and switch the control unit ON.
2. Activate the venting program. See the following chapter.
3. Adjust the system pressure.
4. Disconnect the supply hose from valve (A).
5. Open the gas shut-off valve.

### Note

For function and sequence of the venting program, see page 136.

## Activating the venting function

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Service functions"
5. "Air vent valve"

   **Venting the heating system** (cont.)

6. Activate the venting function with **"Yes"**.  
The venting function ends automatically after 20 min or when you tap OK.

   **Commissioning the system with the commissioning assistant**

**Commissioning assistant**



Fig. 21

1. Turn on the ON/OFF switch on the control unit.  
The commissioning assistant starts automatically.
2. Optional settings and functions for commissioning are listed in the following table.

**Note**

*The optional settings and functions depend on the type of appliance.*

3. When all the required commissioning steps have been performed, tap **"Next"**.  
A safety instruction is shown on the display.
4. After successfully reviewing the safety instruction, tap **"Yes"** to confirm.  
This initiates an automatic flue gas temperature sensor test.  
The display shows: **"Testing, flue gas temperature sensor"** and **"Enabled"**.  
If the flue gas temperature sensor is not positioned correctly, fault message A3 appears on the display. For further details regarding the flue gas temperature sensor test, see Maintenance.
5. If fault message A3 appears, reposition the flue gas temperature sensor in the flue gas connection.

**Note**

*The burner remains blocked until the test has been passed.*

6. When the fault has been remedied, turn the ON/OFF switch off and then back on again.  
Confirm the commissioning assistant with **"Next"**.

Menu point	Settings and explanations
"Language"	
"Date and time"	
"Control unit"	<ul style="list-style-type: none"> <li>▪ <b>"Weather-compensated"</b> Delivered condition</li> <li>▪ <b>"Constant"</b> The control unit can be switched to constant operation (not Vitodens 3xx) if the system configuration makes this necessary. Not all the described settings are available in this operating mode.</li> </ul> <p><b>Note</b> <i>With each change, all the settings revert to the factory settings.</i></p>





Menu point	Settings and explanations
"Building type"	<ul style="list-style-type: none"> <li>▪ <b>"Detached house"</b> One shared holiday program and time program for DHW heating</li> <li>▪ <b>"Apartment building"</b> Holiday program and time program for DHW heating can be set separately</li> </ul>
"Filling and venting"	See chapters "Filling the heating system" and "Venting the heating system".
"Gas type"	Only when operating with LPG: See chapter "Converting the gas type". To convert the gas type, enter password "9".
"Energy cockpit"	<ul style="list-style-type: none"> <li>▪ <b>"ON"</b> The Energy cockpit with various scanning options is displayed.</li> <li>▪ <b>"OFF"</b> The Energy cockpit is not displayed.</li> </ul>
"Flue system" (not Vitodens 3xx)	<ul style="list-style-type: none"> <li>▪ <b>"Single connection"</b> Only one boiler is connected to the flue system.</li> <li>▪ <b>"Multiple connections"</b> Several boilers are connected to the flue system.</li> </ul>

### Calling up the commissioning assistant at a later point

If you need to continue commissioning later, the commissioning assistant can be reactivated at any time.

Tap the following buttons:

1. "Menu"

2. "Service"

3. Enter "viservice" password.

4. "Commissioning"

### Extended commissioning assistant

1. Call up the commissioning assistant with **"Yes"**.  
A safety instruction is shown on the display.

**Note**

*The extended commissioning assistant can be skipped with "No".*

2. After successfully reviewing the safety instruction, tap **"Yes"** to confirm. This starts detection of the connected sensors and the system components connected via KM-BUS.  
This process may take some time.
3. After detecting the devices, tap **"Next"**.  
A list of detected system components (device list) appears on the display.
4. Compare the device list with the system components actually connected.  
If any components were not detected, these can be added later via the relevant parameters.



## Commissioning the system with the commissioning... (cont.)

Illustration of system components (if available)

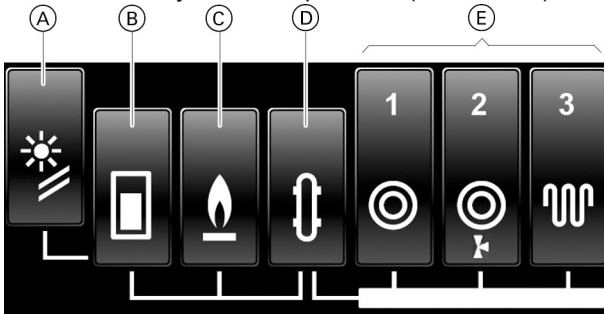


Fig. 22

- Ⓐ Solar thermal system
- Ⓑ DHW cylinder
- Ⓒ Heat generator (segments Ⓑ and Ⓒ are summarised for compact appliances)
- Ⓓ Low loss header
- Ⓔ Heating circuits
- Ⓕ Ventilation system (not shown)

5. Accept the device list with **"Next"**.  
A system scheme according to the detected components appears on the display.
6. Confirm the system scheme with **"Next"**.  
Add or remove system components with **"Change"**.
  - If there is no heating circuit without mixer in the system, it must be removed manually.
  - A second DHW cylinder must be added manually.
7. Confirm the system scheme with **"Next"**.

### Further settings for the system components

Further settings (fine adjustments) can be performed for the individual system components.

1. Tap the system component that you wish to change.  
The setting options for the system components appear in the display.
 

**Note**  
*In the case of heating circuits, it is possible to set the type of heating circuit (e.g. underfloor heating circuit or swimming pool).  
There are no setting options for the low loss header.*
2. When all the settings have been made, tap **"Next"**.  
The message **"Commissioning terminated"** is displayed along with the options **"Results"**, **"Components"** and **"Settings"**.

**Note**  
*If no settings have been made, a note on fine adjustments is displayed again.*

With **"No"** the commissioning is terminated.

3. To display a summary of the system configuration, tap the relevant area:
  - **"Results"**:
    - Successfully completed commissioning steps are marked with a tick.
    - White tick: commissioning steps without changes.
    - Green tick: commissioning steps with changes.
    - Commissioning steps which have not been completed successfully are marked with X.
    - Settings can be made retrospectively via the appropriate parameters.
  - **"Components"**:  
All detected sensors and KM BUS subscribers are displayed.
  - **"Settings"**:  
All settings for the individual components are displayed.

Use to go back to the selection.
4. Confirm **"Commissioning terminated"** with **"Finish"**.  
The default display appears on the display screen.



### Naming the heating circuits

In the delivered condition, heating circuits are designated "Heating circuit 1", "Heating circuit 2" and "Heating circuit 3" (if installed).  
If the system user prefers, heating circuits can be re-designated to suit the specific system.

To enter names for heating circuits:



Operating instructions



### Entering heating contractor contact details

The system operator can call up contact details when required and notify the heating contractor.

1. Tap "**Menu**".
2. Select "**Settings**".
3. Select "**Input, service contact details**".
4. Fill in each field and confirm with **OK**.



### Checking the gas type

The boiler is equipped with an electronic combustion controller that adjusts the burner for optimum combustion in accordance with the prevailing gas quality.

- For operation with natural gas, no adjustment is therefore required across the entire Wobbe index range.  
The boiler can be operated within the Wobbe index range 9.5 to 15.2 kWh/m<sup>3</sup> (34.2 to 54.7 MJ/m<sup>3</sup>).
- For operation with LPG, the burner must be converted (see following chapter).

1. Check with your gas supply utility regarding the gas type and Wobbe index.
2. Record the gas type in the report on page 146.



### Gas type conversion (only for operation with LPG)

1. To change the gas type on the control unit, see "Commissioning the system with the commissioning assistant"
2. Affix label "G31" (supplied with the technical documentation) adjacent to the type plate on the cover panel.

#### **Note**

*Mechanical conversion on the gas train is not possible.*



### Checking the static pressure and supply pressure



#### **Danger**

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

#### **Operation with LPG**

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



**Checking the static pressure and supply pressure** (cont.)

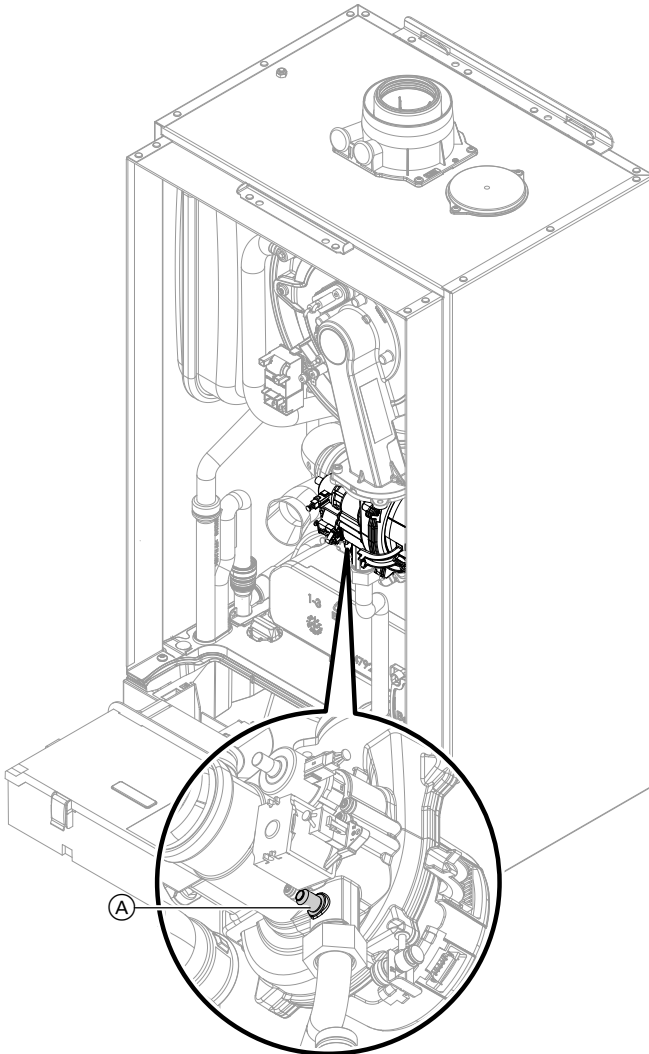


Fig. 23

1. Turn off the ON/OFF switch ①.
2. Remove the front panel (see page 11).
3. Close the gas shut-off valve.
4. Undo screw ① inside test connector "IN" on the gas train but do not remove it, and connect the pressure gauge.

5. Open the gas shut-off valve.
6. Check the static pressure and record the actual value in the report on page 146.  
Set value: max. 57.5 mbar (5.75 kPa).
7. Turn on the ON/OFF switch ① and start the boiler.

**Note**

*During commissioning, the boiler can enter a fault state because of airlocks in the gas line. Fault EE is displayed. After approx. 5 s, press reset button R to reset the burner.*

8. Check the supply (flow) pressure.

Set value:

- Natural gas: 20 mbar (2 kPa)
- LPG: 50 mbar (5 kPa)

**Note**

*Use a suitable measuring device with a resolution of at least 0.1 mbar (0.01 kPa) to check the supply pressure.*

9. Record the actual value in the report on page 146.  
Implement measures as indicated in the table below.
10. Shut down the boiler, close the gas shut-off valve and remove the pressure gauge. Close test connector ① with the screw.
11. Open the gas shut-off valve and start the appliance.



**Danger**

Gas escaping from the test connector leads to a risk of explosion.  
Check gas tightness at test connector ①.

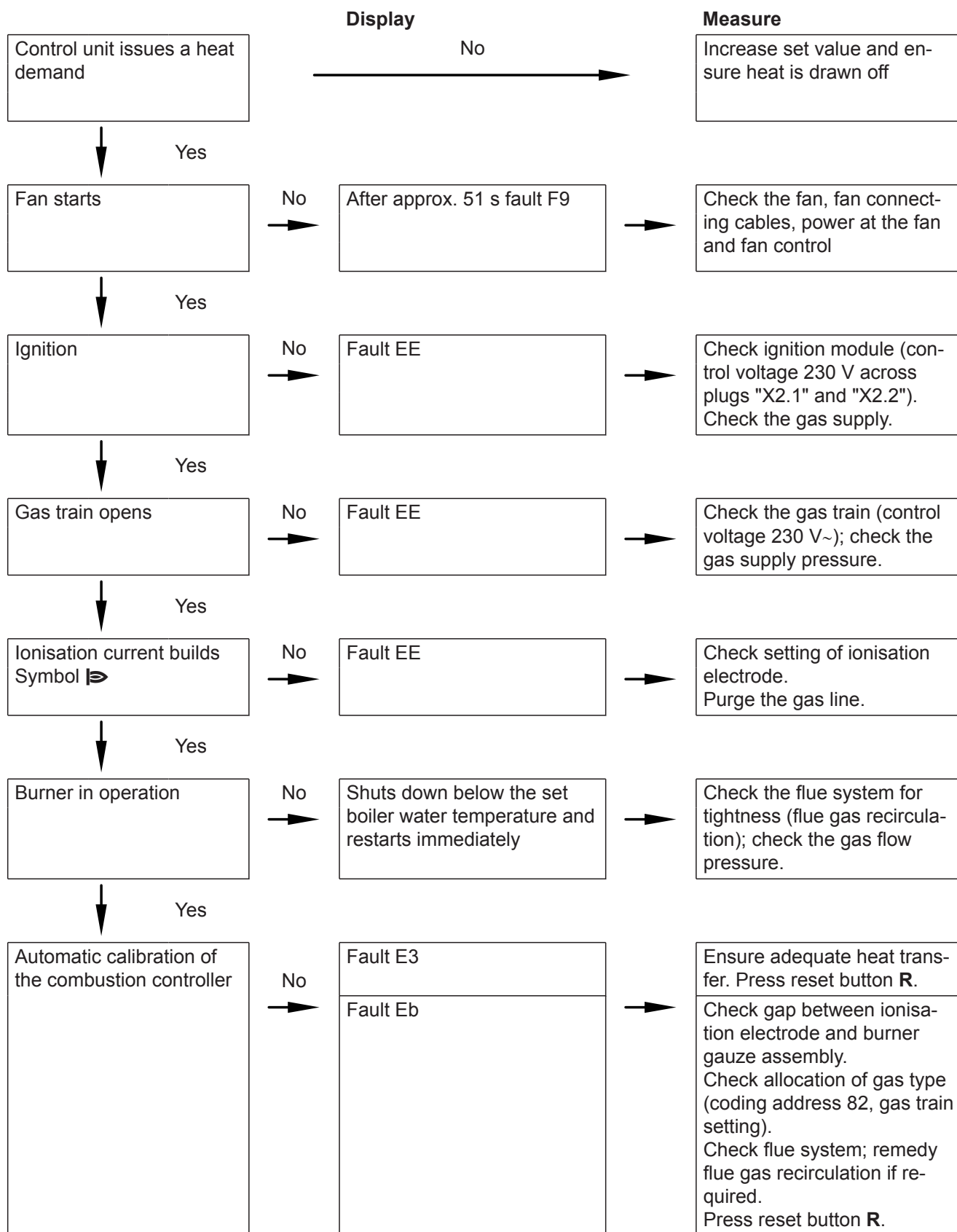
12. Fit front panel (see page 30).

Supply pressure (flow pressure)		Steps
For natural gas	For LPG	
Below 17 mbar (1.7 kPa)	Below 42.5 mbar (4.25 kPa)	Do not commission the boiler. Notify your gas supply utility or LPG supplier.
17 to 25 mbar (1.7 to 2.5 kPa)	42.5 to 57.5 mbar (4.25 to 5.75 kPa)	Start the boiler.
Above 25 mbar (2.5 kPa)	Above 57.5 mbar (5.75 kPa)	Install a separate gas pressure governor upstream of the system and set the pre-charge pressure to 20 mbar (2.0 kPa) for natural gas and 50 mbar (5.0 kPa) for LPG. Notify your gas supply utility or LPG supplier.





Function sequence and possible faults



For further details regarding faults, see page 92.





## Setting the max. heating output

A limit can be set on the maximum heating output for **heating operation**. The limit is set via the modulation range. The max. adjustable output is limited upwards by the boiler coding card.

### Note

*Before the max. heating output can be set, the flow rate is checked. Ensure adequate heat transfer.*

1. Tap **"Menu"**.
2. Select **"Service"**.
3. Enter **"viservice"** password.
4. Select **"Service functions"**.
5. **"Max. heating output"**
6. Check whether a sufficient flow rate is guaranteed. If necessary, increase the heat transfer. Confirm the message with **"Yes"**.
7. If the flow rate is sufficient, the following is shown:  
**"Testing, flow rate"**  
**"Flow rate sufficient"**  
Confirm with **OK**.
8. A value is shown on the display (e.g. "85"). In the delivered condition, this value represents 100 % of rated heating output.
9. Select required value and confirm with **OK**.
10. End service functions.



## Entering absorber area

Only in conjunction with solar control module, type SM1.

### Note

*The absorber area is required for the "Solar circuit pump calibration" function.*

Tap the following buttons:

1. **"Menu"**
2. **"Service"**
3. Enter **"viservice"** password.
4. **"Service functions"**
5. **"Absorber area"**
6. Tap the **"Viessmann collector"** with the installed absorber area.
7. If no Viessmann collectors are being used, tap **"Other collector"**.  
Enter absorber area and confirm with **OK**.
8. Select the number of collectors.
9. Confirm with **OK**.  
The data is saved.



## Determining solar circuit pump curve

Only in conjunction with solar control module, type SM1.  
The solar circuit must have a device for displaying the flow rate.

Tap the following buttons:

1. **"Menu"**
2. **"Service"**
3. Enter **"viservice"** password.
4. **"Service functions"**
5. **"Solar circuit pump calibration"**
6. Confirm the message with **OK**.  
If the absorber area of the collectors has not yet been entered, an input template appears.
7. Enter absorber area and confirm with **OK**.  
The speed of the solar circuit pump is run up to 75 % within 10 s.
8. Determine the solar circuit flow rate.
9. Enter the determined flow rate in l/min.  
The pump curve is defined and displayed in the diagram.
10. Confirm with **OK**.  
The data is saved.



### Recording the set value for the pre-charge pressure of the diaphragm expansion vessel in the solar circuit

The pre-charge pressure of the diaphragm expansion vessel in the solar circuit required for the system conditions can be recorded for subsequent maintenance.

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Service functions"

5. "Pre-charge pressure, diaphragm expansion vessel"
6. Enter the determined set pre-charge pressure in bar.
7. OK to confirm

#### Note

The recorded value can be called up under "Diagnosis" in the "Solar" menu.



### Activating screed drying

#### Screed drying

Various temperature profiles can be set for screed drying:

- 7 predefined temperature profiles adjustable via parameter F1, see Parameter level 2
- Individual temperature profile, see following chapter

#### Adjusting the individual temperature profile for screed drying

Setting range for set temperature: 5 to 60 °C  
Duration of screed program: 30 days

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Service functions"
5. "Individual prog. screed drying"
6. Select the day for which a set temperature is to be specified.

7. Set the required set temperature.

#### Note

If screed drying is to be inactive on one of the days, select a set temperature of 255.

8. Press OK to confirm  
The set value is automatically adopted for the subsequent days. The daily overview is displayed again.
9. Press OK to confirm  
A diagram of the program created is displayed.
10. Press OK to confirm
11. Yes, if screed drying is to be started immediately.
12. Select heating circuit.

#### Note

Whilst screed drying is active, the selected temperature profile is displayed.



## Tightness test on balanced flue system (annular gap check)

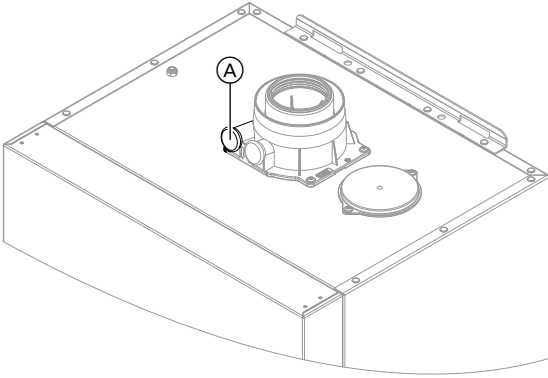


Fig. 24

Ⓐ Combustion air aperture

For balanced flue systems tested together with the heat source, there is no requirement for a tightness test (overpressure test) during commissioning by the flue gas inspector.

In this case, we recommend that your heating contractor carries out a simple tightness test during the commissioning of your system. For this it would be sufficient to check the CO<sub>2</sub> or O<sub>2</sub> concentration in the combustion air at the annular gap of the balanced flue pipe.

If the CO<sub>2</sub> concentration is less than 0.2 % or the O<sub>2</sub> concentration is greater than 20.6 %, the flue pipe is deemed to be sufficiently gas tight.

If actual CO<sub>2</sub> values are higher or actual O<sub>2</sub> values are lower, a pressure test with a static pressure of 200 Pa will need to be carried out on the flue pipe.





## Removing the burner

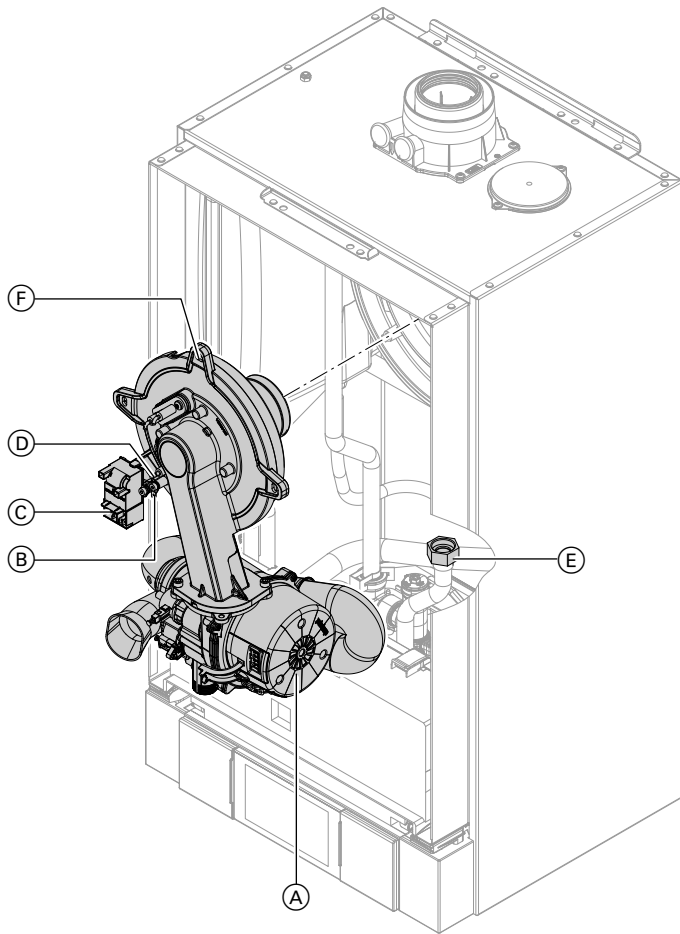


Fig. 25

1. Turn off the ON/OFF switch on the control unit and the power supply.
2. Remove the front panel (see page 11).
3. Close the gas shut-off valve and safeguard against reopening.
4. Disconnect the cables from fan motor (A), earth tab (B), ignition unit (C) and ionisation electrode (D).
5. Undo gas supply pipe fitting (E).
6. Undo 4 screws (F) and remove the burner.



**Please note**

Prevent damage to the burner.  
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 (E) for possible damage and replace if required.

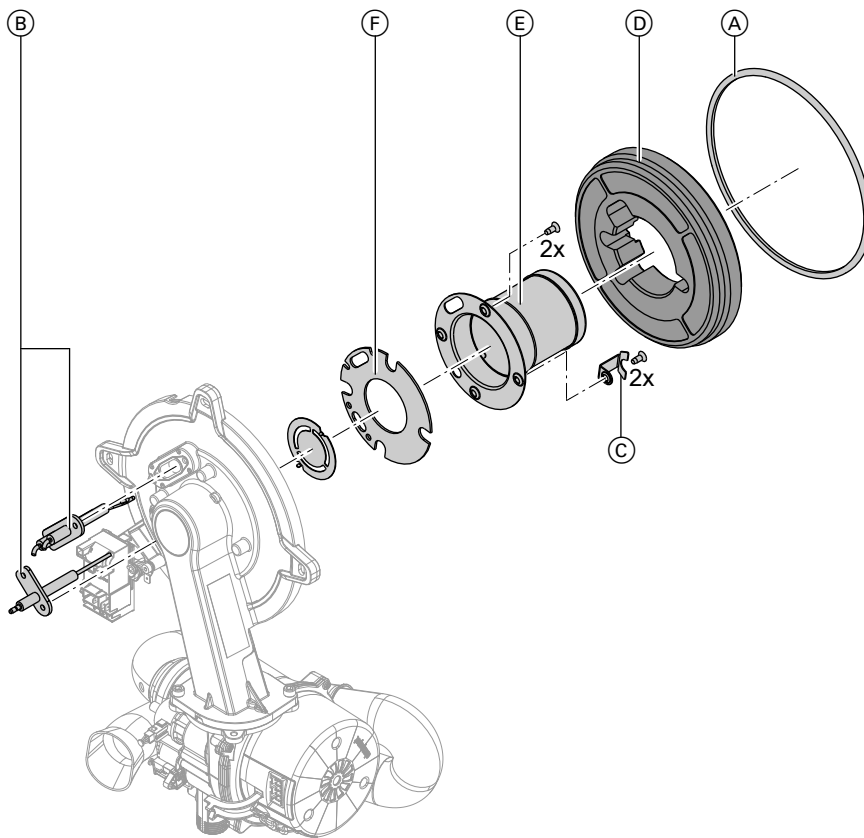


Fig. 26

1. Remove electrodes (B).
2. Undo 2 retaining clips (C) on thermal insulation ring (D) and then remove thermal insulation ring (D).
3. Undo 2 Torx screws and remove burner gauze assembly (E) with gasket (F).
4. Insert new burner gauze assembly (E) with new gasket (F) and secure.

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

5. Fit thermal insulation ring (D).
6. Fit electrodes (B).

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



## Checking and adjusting the ignition and ionisation electrodes

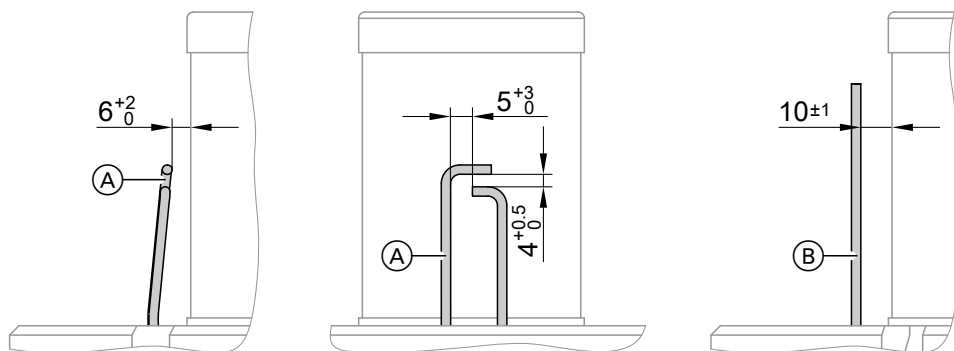


Fig. 27

- (A) Ignition electrodes
- (B) Ionisation electrode

1. Check the electrodes for wear and contamination.
2. Clean the electrodes with a small brush (not a wire brush) or sandpaper.
3. Check the electrode gaps. If the gaps are not as specified or the electrodes are damaged, replace the electrodes and gaskets and adjust them as required.



## Cleaning the heating surfaces

- ! **Please note**  
Scratches to the surfaces of the heat exchanger that come into contact with hot gas can result in corrosion damage.  
**Never use brushes to clean the heat exchanger.**

- ! **Please note**  
Brushing can cause deposits to become lodged in the gaps between the coils.  
**Never use brushes to clean the heat exchanger.**

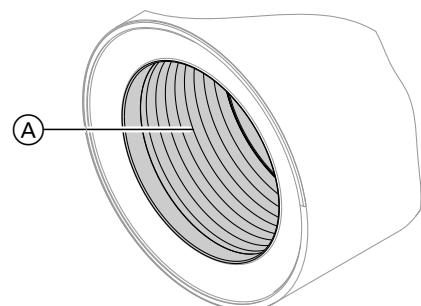


Fig. 28

- 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 trap. See the following chapter.
4. Flush the heating surface again with water. This will also fill the trap with water.



## Checking the condensate drain and cleaning the trap

### Multi boiler system:

Clean the trap in the flue gas header as well.



## Checking the condensate drain and cleaning the... (cont.)

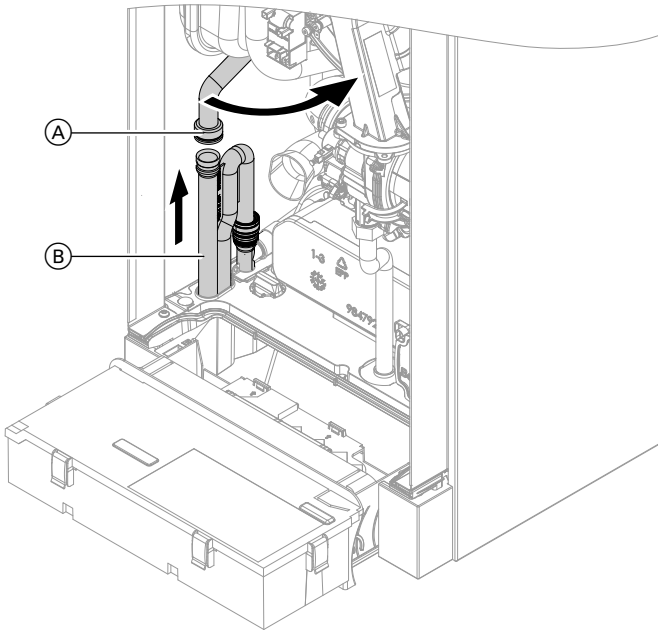


Fig. 29

1. Check at the trap that the condensate can drain freely.
2. Remove supply hose (A).
3. Remove trap (B).
4. Clean trap (B).
5. Fill trap (B) with water.
6. Refit trap (B).
7. Reconnect supply hose (A).

**Note**

*Never twist the inlet hose during assembly.*





## Installing the burner

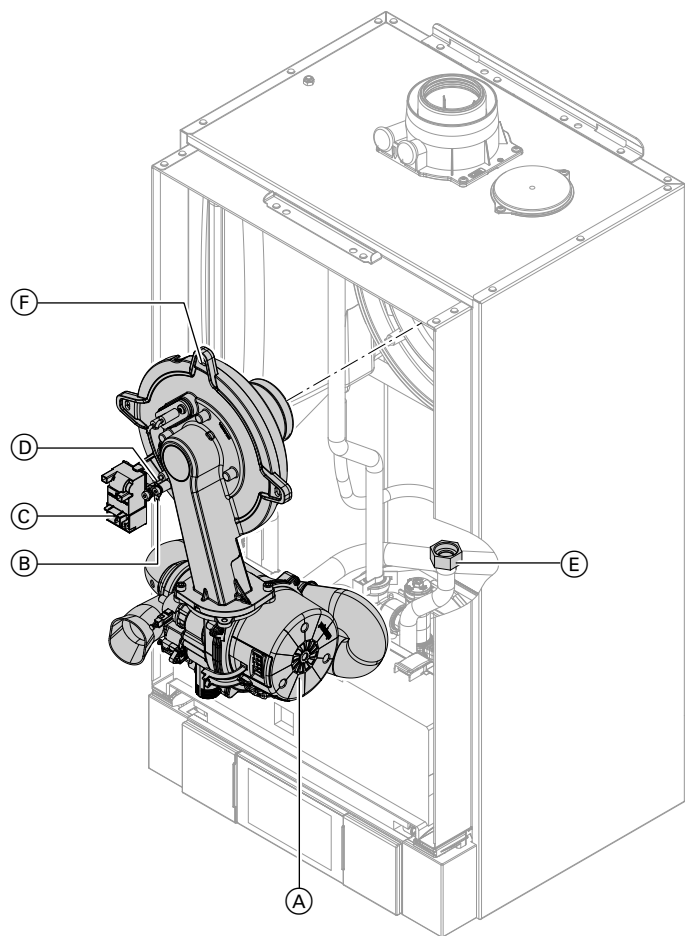


Fig. 30

1. Insert the burner and tighten screws (F) diagonally.
2. Fit gas supply pipe (E) with a new gasket.
3. Check the gas connections for tightness.
4. Connect the electrical cables/leads:
  - Fan motor (A)
  - Earth tab (B)
  - Ignition unit (C)
  - Ionisation electrode (D)



### Please note

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



### Danger

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

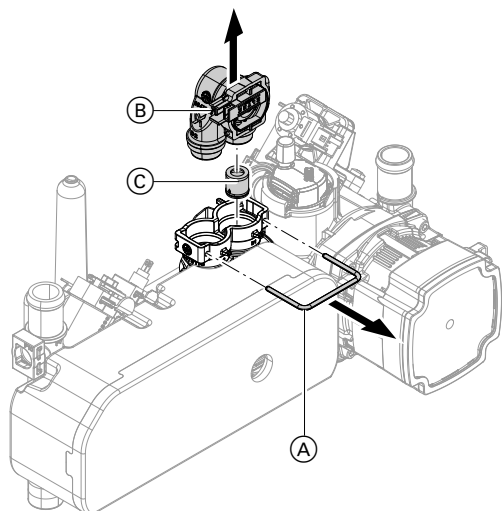


## Checking the neutralising system (if installed)





## Checking the flow limiter (only for gas condensing combi boiler)



1. Drain the boiler on the DHW side.
2. Pull off spring clip (A).
3. Remove flow sensor (B).
4. Check flow limiter (C), replace and reinsert if scaled up or damaged.
5. Mount flow sensor (B) with new gaskets.

Fig. 31

### Flow limiter

Serial no. (type plate)	Flow rate l/min	Colour
7570789	10	Blue
7570791	12	Red
7570793	14	Pink



## Checking the expansion vessel and system pressure

### Note

The expansion vessel can lose some of its charge pressure over time. When the boiler heats up, the pressure gauge will indicate a higher pressure of 2 or 3 bar (0.2 or 0.3 MPa). The safety valve may also respond and discharge the excess pressure. Therefore check the expansion vessel pre-charge pressure annually.

Check whether the installed expansion vessel is adequate for the system water volume (GB only). Carry out this test on a cold system.

1. Drain the system until the pressure gauge shows "0".  
Alternatively, close the cap valve on the expansion vessel and reduce the pressure until the pressure gauge indicates "0".

2. If the pre-charge pressure of the expansion vessel 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 than the static system pressure.
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)



## Checking the safety valve function



## Checking the firm seating of electrical connections



## Checking all gas equipment for tightness at operating pressure



### Danger

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

### 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.



## Fitting the front panel

See page 30.



## Checking the combustion quality

The electronic combustion controller automatically ensures optimum combustion quality. During commissioning/maintenance, only the combustion values need to be checked. To do this, test the CO content and CO<sub>2</sub> or O<sub>2</sub> content, and record these in the report on page 146. For a description of the electronic combustion controller functions, see page 142.

### Note

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

### CO content

- The CO content must be < 1000 ppm for all gas types.

### CO<sub>2</sub> or O<sub>2</sub> content

- The CO<sub>2</sub> content must be within the following limits for upper and lower heating output respectively:
  - 7.5 to 9.5 % for natural gas H
  - 8.8 to 11.1 % for LPG P
- The O<sub>2</sub> content must be between 4.0 and 7.6 % for all gas types.

If the actual CO, CO<sub>2</sub> or O<sub>2</sub> contents lie outside their respective ranges, proceed as follows:

- Check the balanced flue system for tightness; see page 39.
- Check the ionisation electrode and connecting cable; see page 42.

### Note

During commissioning, the combustion controller carries out an automatic calibration. Allow approx. 30 s after the burner has started before testing the emissions.

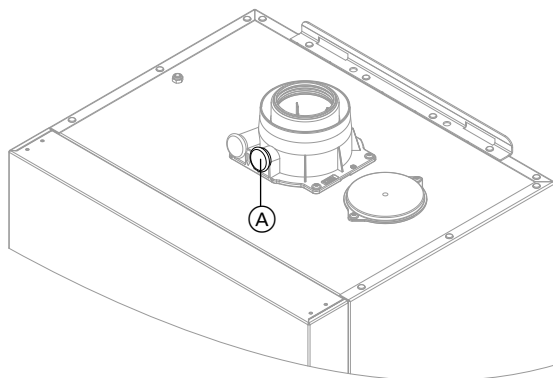


Fig. 32

1. Connect a flue gas analyser at flue gas port (A) on the boiler flue connection.
2. Open the gas shut-off valve, start the boiler and create a heat demand.
3. Set the lower heating output (see page 47).
4. Check the CO<sub>2</sub> content. Should the actual value deviate from the aforementioned ranges by more than 1 %, implement steps detailed on page 46.
5. Enter the actual value into the report.
6. Set the upper heating output (see page 47).



## Checking the combustion quality (cont.)

7. Check the CO<sub>2</sub> content. Should the actual value deviate from the aforementioned ranges by more than 1 %, implement steps detailed on page 46.
8. After testing, press **OK**.
9. Enter the actual value into the report.

## Selecting higher/lower heating output

### Note

Ensure adequate heat transfer.

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Actuator test"
5. Set the lower heating output: **"Base load" "ON"**. Burner runs at lower heating output.
6. Set the upper heating output: **"Full load" "ON"**. Burner runs at upper heating output.
7. Ending output selection: ↩
8. End service functions.



## Checking the flue system for unrestricted flow and tightness



## Checking the external LPG safety valve (if installed)



## Matching the control unit to the heating system

The control unit must be matched to the system equipment level. Various system components are recognised automatically by the control unit and the relevant parameters are set automatically.

Set the parameters according to the accessories fitted:



Accessories installation and service instructions

### Note

For the individual steps for setting parameters, see page 61.



## Adjusting the heating curves

The heating curves illustrate the relationship between the outside temperature and the boiler water or flow temperature.

To put it simply, the lower the outside temperature, the higher the boiler water temperature or flow temperature.

The boiler water or flow temperature in turn affects the room temperature.

### Note

If the heating system includes heating circuits with mixer, then the flow temperature of the heating circuit without mixer is higher by a selected differential (8 K in the delivered condition) than the flow temperature of the heating circuits with mixer.

The differential temperature can be set at parameter "9F" in the "General" group.

Settings in the delivered condition:

- Slope = 1.4
- Level = 0

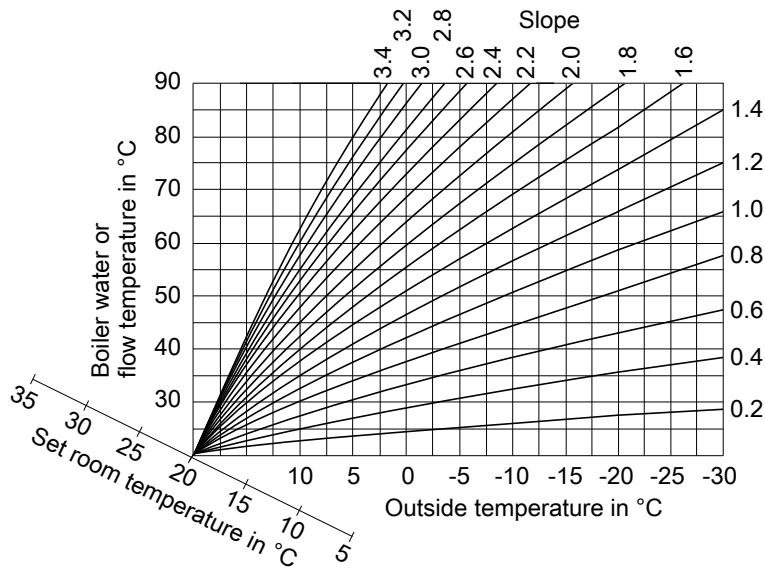


Fig. 33

Slope setting ranges:

- Underfloor heating systems: 0.2 to 0.8
- Low temperature heating systems: 0.8 to 1.6

### Adjusting the set room temperature

Individually adjustable for each heating circuit. The heating curve is offset along the set room temperature axis. With the heating circuit pump logic function enabled, the curve modifies the start and stop characteristics of the heating circuit pump.

#### Standard set room temperature

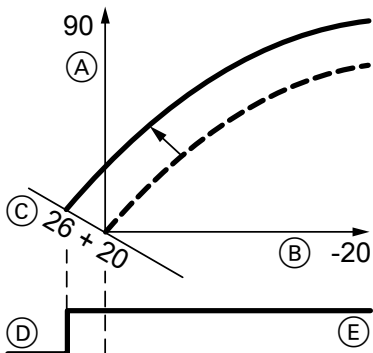


Fig. 34 Example 1: Adjusting standard set room temperature from 20 to 26 °C

- (A) Boiler water temperature or flow temperature in °C
- (B) Outside temperature in °C
- (C) Set room temperature in °C
- (D) Heating circuit pump "OFF"
- (E) Heating circuit pump "ON"

Changing the standard set room temperature

Operating instructions

#### Reduced set room temperature

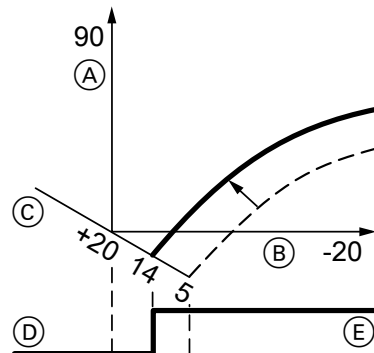


Fig. 35 Example 2: Adjusting the reduced set room temperature from 5 °C to 14 °C

- (A) Boiler water temperature or flow temperature in °C
- (B) Outside temperature in °C
- (C) Set room temperature in °C
- (D) Heating circuit pump "OFF"
- (E) Heating circuit pump "ON"

Changing the reduced set room temperature

Operating instructions

#### Changing the slope and level

Individually adjustable for each heating circuit.



## Adjusting the heating curves (cont.)

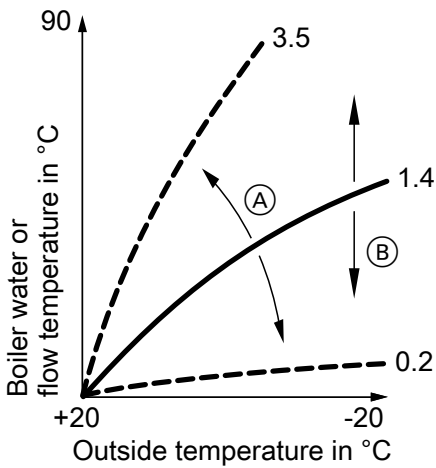


Fig. 36

- (A) Changing the slope
- (B) Changing the level (vertical parallel offset of the heating curve)

Tap the following buttons:

1. "Menu"
2. "Heating"
3. Select "Heating circuit 1/2/3" for the required heating circuit.
4. "Heating curve"
5. "Slope" or "Level"
6. Select heating curve according to the system requirements with +/-.
7. Press **OK** to confirm



## Connecting the control unit to the WLAN network

### Note

Vitoconnect 100, OPTO1 (accessories) required.  
For installation and commissioning: see the separate installation and commissioning instructions.



## Connecting the control unit to the LON network

The LON communication module must be plugged in.

### Note

Data transfer via LON can take several minutes.

### Example: Single boiler system with Vitotronic 200-H and Vitocom 200

Set the LON subscriber numbers and further functions via parameter level 2 (see the following table).

All parameters in the table are listed in the "General" group.

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
Subscriber no. 1 Parameter "77:1"	Subscriber no. 10 Parameter "77:10"	Subscriber no. 11 <b>Set</b> parameter "77:11".	Subscriber no. 99
Control unit is fault manager. Parameter "79:1"	Control unit is not fault manager. Parameter "79:0"	Control unit is not fault manager. Parameter "79:0"	Device is fault manager.





## Connecting the control unit to the LON (cont.)

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
Control unit transmits the time. Parameter "7b:1"	Control unit receives the time. <b>Set</b> parameter "81:3".	Control unit receives the time. <b>Set</b> parameter "81:3".	Device receives the time.
Control unit transmits outside temperature. <b>Set</b> parameter "97:2".	Control unit receives outside temperature. <b>Set</b> parameter "97:1".	Control unit receives outside temperature. <b>Set</b> parameter "97:1".	—
Viessmann system number. Parameter "98:1"	Viessmann system number. Parameter "98:1"	Viessmann system number. Parameter "98:1"	—
LON subscriber fault monitoring. Parameter "9C:20"	LON subscriber fault monitoring. Parameter "9C:20"	LON subscriber fault monitoring. Parameter "9C:20"	—

### Carrying out a LON subscriber check

The subscriber check is used to test communication with the system devices connected to the fault manager.

Requirements:

- The control unit must be enabled as **fault manager** (parameter "79:1" in the **"General"** group).
- The LON subscriber number must be set in all control units.
- The LON subscriber list in the fault manager must be up to date.

Tap the following buttons:

1. **"Menu"**
2. **"Service"**
3. Enter **"viservice"** password.
4. **"Service functions"**

### 5. "LON subscriber check"

The list of all connected LON subscribers appears.

6. Select subscriber and confirm with **"OK"**.  
The subscriber check for the selected subscriber is initiated.

- If the subscriber check was successful, **"Check OK"** is shown.
- If the subscriber check was unsuccessful, **"Check not OK"** is shown.

#### Note

To perform another subscriber check:  
Create a new subscriber list with **"New list"**. The subscriber list is updated.

#### Note

During the subscriber check, the display of the relevant subscriber shows the subscriber no. and **"Wink"** for approx. 1 min.



## Scanning and resetting service messages

### Service indicator

It is possible to set threshold limits for a service using either the commissioning assistant or by setting parameters "21" and "23" in the **"Boiler"** group. When these limit values are then reached, a service message appears in the display.

Tap the following buttons:

1. **"Confirm"**  
△ flashes in the footer.

2. △

#### Note

After tapping △ the following will be displayed if your heating system has several fault messages simultaneously:

3. **"Service, messages"**  
The service messages appear yellow in a list.

After maintenance has been carried out

Tap the following buttons:

1. **"Menu"**



## Scanning and resetting service messages (cont.)

2. **"Service"**
3. Enter **"viservice"** password.
4. **"Service functions"**
5. **"Reset service"**  
The selected service parameters for hours run and time intervals restart at 0.
6. Confirm **"Do you really want to delete the service list?"** with **OK**.



## Instructing the system user

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

This includes all components installed as accessories, e.g. remote control units. In addition, the system installer must make the user aware of the required maintenance work.



## Calling up parameter level 1

- Parameters are split into the following groups:
  - "General"
  - "Boiler"
  - "DHW"
  - "Solar"
  - "Ventilation"
  - "Heating circuit 1/2/3"
  - "All parameters"

In this group, all parameters are shown in ascending order (the parameters for the "Solar" and "Ventilation" groups are only shown if a solar control module, type SM1 and/or ventilation control module, type LM1 are connected).
- Heating systems with one heating circuit without mixer and one or two heating circuits with mixer:
 

In the following, the heating circuit without mixer is designated "Heating circuit 1" and the heating circuits with mixer as "Heating circuit 2" or "Heating circuit 3".

If the heating circuits have been designated individually, the chosen designation appears.

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "System configuration"
5. "Parameter level 1"
6. Select group.
7. Select parameter.
8. "Change"
9. ▼/▲ for the required value in line with the tables below.
10. OK to accept the set value.

### Parameter display

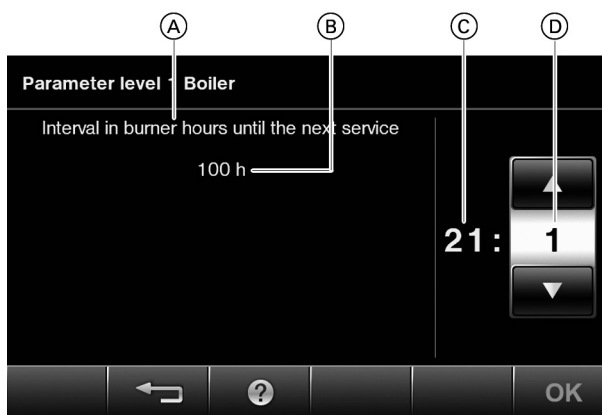


Fig. 37

- Ⓐ Parameter
- Ⓑ Description of parameter setting
- Ⓒ Number of parameter
- Ⓓ Value of parameter



## General

### Note

Parameter values in **bold** are factory settings

### "System scheme"

Setting		Explanations
One heating circuit without mixer A1 (heating circuit 1), without DHW heating	<b>00:1</b>	
One heating circuit without mixer A1 (heating circuit 1) with DHW heating	00:2	Value is set automatically
One heating circuit with mixer M2 (heating circuit 2), without DHW heating	00:3	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit with mixer M2 (heating circuit 2) with DHW heating	00:4	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), without DHW heating	00:5	Value is set automatically
One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), with DHW heating	00:6	Value is set automatically
One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating	00:7	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating	00:8	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating	00:9	Value is set automatically
One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating	00:10	Value is set automatically

### "Function of internal circulation pump for operation with low loss header or heating water buffer cylinder"

Setting		Explanations
Low loss header: Circulation pump always runs on demand	<b>51:0</b>	
Low loss header: Circulation pump only runs on demand if the burner is running with run-on time	51:1	
Heating water buffer cylinder: Circulation pump only runs on demand if the burner is running with pump run-on time	51:2	

## Parameter level 1

### General (cont.)

#### "LON subscriber number"

Setting		Explanations
LON subscriber number	<b>77:1</b> 77:2 to 77:99	Adjustable from 1 to 99: 1 = Boiler 10 to 90 = Vitotronic 200-H 97 = Vitogate 300 BN/MB 98 = Vitogate 99 = Vitocom  <b>Note</b> <i>Allocate each number only once.</i>

#### "Building type"

Setting		Explanations
Apartment building. Holiday program and time program for DHW heating can be set separately.	7F:0	
Detached house. One holiday program and one time program for DHW heating	<b>7F:1</b>	

#### "Operation enabled/disabled"

Setting		Explanations
Everything operable	<b>8F:0</b>	Controls on the display
Everything disabled apart from emissions test function	8F:1	
Default display and emissions test function operable	8F:2	

#### "Set flow temperature for external demand"

Setting		Explanations
70 °C	<b>9b:70</b>	Adjustable from 0 to 127 °C Limited by boiler-specific parameters
... °C	9b:0 to 9b:127	

### Boiler

#### **Note**

Parameter values in **bold** are factory settings

#### "Interval in burner hours until the next service"

Setting		Explanations
None	<b>21:0</b>	No service interval set
... 00 h	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h 1 step $\hat{=}$ 100 h

**Boiler** (cont.)**"Interval until the next service"**

Setting		Explanations
No time interval	<b>23:0</b>	No time interval selected for service
... Months	23:1 to 23:24	The number of months until the next service is adjustable from 1 to 24

**"Service display"**

Setting		Explanations
No service display	<b>24:0</b>	Displayed only if parameter setting 21 or 23 > 0
Service is shown on the display (address is automatically set and must be manually re-set after a service)	24:1	

**"Filling function / venting function"**

Setting		Explanations
Function disabled	<b>2F:0</b>	
Venting function enabled	2F:1	
Filling function enabled	2F:2	

**DHW****Note**

Parameter values in **bold** are factory settings

**"Set DHW temperature for reheating suppression"**

Setting		Explanations
40 °C	<b>67:40</b>	For solar DHW heating: Set DHW temperature 40 °C. Above the selected set temperature reheating is suppressed.
... °C	67:0 to 67:95	Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters)

**"Enable DHW circulation pump"**

Setting		Explanations
ON/OFF according to time program	<b>73:0</b>	"ON" from once per hour for 5 min up to 6 times per hour for "5 min" during the time program
... x 5 min per hour	73:1 to 73:6	
Permanently ON	73:7	

**Solar****Note**

Parameter values in **bold** are factory settings

**Note**

The solar group is only displayed if a solar control module, type SM1, is connected.

## Parameter level 1

### Solar (cont.)

#### "Speed control, solar circuit pump"

Setting		Explanations
Without speed control	02:0	Only set for multi stage circulation pumps
With wave packet control	02:1	
With PWM control	<b>02:2</b>	

#### "Maximum cylinder temperature"

Setting		Explanations
60 °C	<b>08:60</b>	Set DHW temperature (maximum cylinder temperature) 60 °C
... °C	08:10 to 08:90	Set DHW temperature adjustable from 10 to 90 °C

#### "Stagnation time reduction"

Setting		Explanations
5 K	<b>0A:5</b>	Temperature differential for stagnation time reduction 5 K Reduction in the speed of the solar circuit pump to protect system components and heat transfer medium.
... K	0A:0 0A:1 to 0A:40	Stagnation time reduction disabled Temperature differential adjustable from 1 to 40 K

#### "Flow rate, solar circuit at max. pump speed"

Setting		Explanations
7 l/min	<b>0F:70</b>	Flow rate adjustable from 0.1 to 25.5 l/min 1 step $\pm$ 0.1 l/min
... l/min	0F:1 to 0F:255	

#### "Extended control function"

Setting		Explanations
No extended control function enabled	<b>20:0</b>	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F
Auxiliary function for DHW heating	20:1	
Differential temperature control 2	20:2	
Differential temperature control 2 and auxiliary function	20:3	
Differential temperature control 2 for central heating backup	20:4	
Thermostat function	20:5	
Thermostat function and auxiliary function	20:6	
Solar heating via external heat exchanger without additional temperature sensor	20:7	
Solar heating via external heat exchanger with additional temperature sensor	20:8	
Solar heating of 2 DHW cylinders	20:9	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F

## Heating circuit 1, heating circuit 2, heating circuit 3

### Note

Parameter values in **bold** are factory settings

### "Heating limit: Economy function outside temperature"

Setting		Explanations
5 see service instructions	<b>A5:5</b>	Economy function outside temperature: Heating circuit pump "OFF" when the outside temperature (OT) is 1 K higher than the set room temperature ( $RT_{set}$ ) $OT > RT_{set} + 1 \text{ K}$
Without	A5:0	No economy function outside temperature
... see service instructions	A5:1 to A5:15	With economy function outside temperature: Heating circuit pump "OFF"; see the following table:

Parameter A5:...	With economy function outside temperature: Heating circuit pump "OFF"
1	$OT > RT_{set} + 5 \text{ K}$
2	$OT > RT_{set} + 4 \text{ K}$
3	$OT > RT_{set} + 3 \text{ K}$
4	$OT > RT_{set} + 2 \text{ K}$
5	$OT > RT_{set} + 1 \text{ K}$
6	$OT > RT_{set}$
7 to	$OT > RT_{set} - 1 \text{ K}$
15	$OT > RT_{set} - 9 \text{ K}$

### "Heating limit: Complete summer economy control"

Setting		Explanations
None	<b>A6:36</b>	Extended economy function <b>disabled</b>
... °C	A6:5 to A6:35	Extended economy function enabled: The burner and heating circuit pump will stop at a variable value, adjustable between 5 and 35 °C plus 1 °C. The mixer closes. The basis for this is the adjusted outside temperature. This is based on the actual outside temperature and a time constant, which takes into account the cooling down of an average building.

### "Mixer economy function"

Setting		Explanations
Without	<b>A7:0</b>	Heating circuit pump also "OFF": <ul style="list-style-type: none"> <li>▪ If the mixer has been trying to close for some time.</li> </ul> Heating circuit pump "ON": <ul style="list-style-type: none"> <li>▪ If the mixer changes to control function</li> <li>▪ If there is a risk of frost</li> </ul>
With	A7:1	

**Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)**

**"Pump idle time"**

Setting		Explanations
With calculated pump idle time	<b>A9:7</b>	Heating circuit pump "OFF" if set value is modified by changing the operating mode or changing the set room temperature. Only if room hook-up is not set in parameter b0.
Without	A9:0	No economy function outside temperature
With calculated pump idle time	A9:1 to A9:15	Adjustable from 1 to 15. The higher the value, the longer the pump idle time.

**"Room temperature hook-up"**

Setting		Explanations
Without	<b>b0:0</b>	With remote control: Heating mode/reduced mode: Weather-compensated Change value only for the heating circuit with mixer.
For reduced mode	b0:1	Heating mode: Weather-compensated Reduced mode: With room temperature hook-up
For standard mode	b0:2	Heating mode: With room temperature hook-up Reduced mode: Weather-compensated
For standard mode and reduced mode	b0:3	Heating mode/reduced mode: With room temperature hook-up

**"Economy function: room temperature"**

Setting		Explanations
Without	<b>b5:0</b>	With remote control: No room temperature-dependent economy function. Change value only for the heating circuit with mixer.
... see service instructions	b5:1 to b5:8	For economy function, see the following table:

Parameter b5:...	With economy function:	
	Heating circuit pump "OFF"	Heating circuit pump "ON"
1	$RT_{actual} > RT_{set} + 5\text{ K}$	$RT_{actual} < RT_{set} + 4\text{ K}$
2	$RT_{actual} > RT_{set} + 4\text{ K}$	$RT_{actual} < RT_{set} + 3\text{ K}$
3	$RT_{actual} > RT_{set} + 3\text{ K}$	$RT_{actual} < RT_{set} + 2\text{ K}$
4	$RT_{actual} > RT_{set} + 2\text{ K}$	$RT_{actual} < RT_{set} + 1\text{ K}$
5	$RT_{actual} > RT_{set} + 1\text{ K}$	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\text{ K}$
7	$RT_{actual} > RT_{set} - 1\text{ K}$	$RT_{actual} < RT_{set} - 2\text{ K}$
8	$RT_{actual} > RT_{set} - 2\text{ K}$	$RT_{actual} < RT_{set} - 3\text{ K}$

**"Minimum flow temperature limit, heating circuit"**

Setting		Explanations
20 °C	<b>C5:20</b>	Electronic minimum flow temperature limit set to 20 °C
... °C	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)

### Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)

#### "Maximum flow temperature limit, heating circuit"

Setting		Explanations
74 °C	<b>C6:74</b>	Electronic maximum flow temperature limit 74 °C
... °C	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters)

#### "External operating program changeover"

Setting		Explanations
Operating program changeover to constant central heating with reduced room temperature or standby mode (subject to the settings of the set reduced room temperature)	<b>d5:0</b>	
The operating program changes to constant operation with standard room temperature	d5:1	Subject to parameters 3A, 3b and 3C

#### "EA1 extension: Operating program changeover"

Setting		Explanations
No operating program changeover	<b>d8:0</b>	
Operating program changeover via input DE1	d8:1	
Operating program changeover via input DE2	d8:2	
Operating program changeover via input DE3	d8:3	

#### "Max. speed of speed-controlled heating circuit pump in standard mode"

Setting		Explanations
... %	<b>E6: ...</b>	This value is determined by boiler-specific parameters
... %	E6:0 to E6:100	Maximum speed adjustable from 0 to 100 %

#### "Min. speed of speed-controlled heating circuit pump in standard mode"

Setting		Explanations
30 %	<b>E7:30</b>	
... %	E7:0 to E7:100	Minimum speed adjustable from 0 to 100 % of the maximum speed

#### "Screed drying"

Setting		Explanations
Screed drying disabled	<b>F1:0</b>	Screed drying adjustable, with choice of 6 temperature/time profiles (see chapter "Function description")
Diagram 1	F1:1	
Diagram 2	F1:2	
Diagram 3	F1:3	
Diagram 4	F1:4	
Diagram 5	F1:5	
Diagram 6	F1:6	
Constant flow temperature 20 °C	F1:7 to F1:14	
Individual program for screed drying	F1:15	See chapter "Function description"

### Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)

#### "Time limit for comfort mode"

Setting		Explanations
8 h	<b>F2:8</b>	Time limit adjustable from 1 to 12 h
No time limit	F2:0	
... h	F2:1 to F2:12	

#### "Outside temperature limit for cancelling reduced set room temperature"

Setting		Explanations
-5 °C	<b>F8:-5</b>	See chapter "Function description" Observe parameter "A3".
... °C	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60°C
Function disabled	F8:-61	

#### "Outside temperature limit for raising the reduced set room temperature to the standard set room temperature"

Setting		Explanations
-14 °C	<b>F9:-14</b>	See chapter "Function description"
... °C	F9:+10 to F9:-60	Temperature limit adjustable from +10 to -60°C

#### "Raising the set boiler water or flow temperature when switching from operation with reduced room temperature to operation with standard room temperature"

Setting		Explanations
20 %	<b>FA:20</b>	See chapter "Function description"
... %	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %

#### "Duration for raising the set boiler water or flow temperature"

Setting		Explanations
60 min	<b>Fb:60</b>	See parameter "FA" See chapter "Function description"
... Min	Fb:0 to Fb:240	Temperature rise adjustable from 0 to 240 min



## Calling up parameter level 2

- Parameters are split into the following groups:
  - "General"
  - "Boiler"
  - "DHW"
  - "Solar"
  - "Ventilation"
  - "Heating circuit 1/2/3"
  - "All parameters"

In this group, all parameters are shown in ascending order (the parameters for the "Solar" and "Ventilation" groups are only shown if a solar control module, type SM1 and/or ventilation control module, type LM1 are connected).
- Heating systems with one heating circuit without mixer and one or two heating circuits with mixer: In the following, the heating circuit without mixer is designated "Heating circuit 1" and the heating circuits with mixer as "Heating circuit 2" or "Heating circuit 3".  
If the heating circuits have been designated individually, the chosen designation appears.

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "System configuration"
5. "Parameter level 2"
6. Enter "viexpert" password.
7. Select group.
8. Select parameter.
9. "Change"
10. ▼/▲ for the required value in line with the tables below.
11. OK to accept the set value.

### Parameter display

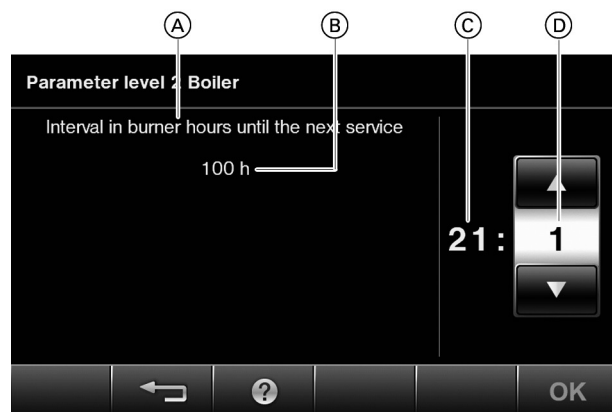


Fig. 38

- Ⓐ Parameter
- Ⓑ Description of parameter setting
- Ⓒ Number of parameter
- Ⓓ Value of parameter

## General

### Note

Parameter values in **bold** are factory settings

### "System scheme"

Setting		Explanations
One heating circuit without mixer A1 (heating circuit 1), without DHW heating	<b>00:1</b>	
One heating circuit without mixer A1 (heating circuit 1) with DHW heating	00:2	Value is set automatically
One heating circuit with mixer M2 (heating circuit 2), without DHW heating	00:3	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit with mixer M2 (heating circuit 2) with DHW heating	00:4	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), without DHW heating	00:5	Value is set automatically
One heating circuit without mixer A1 (heating circuit 1) and one heating circuit with mixer M2 (heating circuit 2), with DHW heating	00:6	Value is set automatically
One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating	00:7	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating	00:8	Set the value manually if the system is not equipped with a heating circuit without mixer.
One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), without DHW heating	00:9	Value is set automatically
One heating circuit without mixer A1 (heating circuit 1), one heating circuit with mixer M2 (heating circuit 2) and one heating circuit with mixer M3 (heating circuit 3), with DHW heating	00:10	Value is set automatically

### "Burner control unit parameter access rights"

Setting		Explanations
No	<b>11:0</b>	Access to combustion control parameters is blocked
Yes	11:9	Access to combustion control parameters is open

### "Outside temperature sensor for constant temp. control"

Setting		Explanations
No outside temperature sensor	<b>25:0</b>	Only if control unit has been changed to constant temperature mode.
Outside temperature sensor available	25:1	If an outside temperature sensor is connected to the control unit.

**General** (cont.)**"Wireless outside temperature sensor"**

Setting		Explanations
Without wireless outside temperature sensor	<b>2A:0</b>	Value is set automatically upon detection
With wireless outside temperature sensor	2A:1	
Wireless outside temperature sensor is not used	2A:2	
	2A:3	Do not adjust

**"Show energy consumption"**

Setting		Explanations
No	2b:0	
Yes	<b>2b:1</b>	

**"Extension AM1"**

Setting		Explanations
Without	<b>32:0</b>	Value is set automatically upon detection
With	32:1	

**"Function, output A1 at extension AM1"**

Setting		Explanations
DHW circulation pump	33:0	
Heating circuit pump, heating circuit without mixer A1 (heating circuit 1)	<b>33:1</b>	
Circulation pump for cylinder heating	33:2	

**"Function output, A2 at extension AM1"**

Setting		Explanations
DHW circulation pump	<b>34:0</b>	
Heating circuit pump, heating circuit without mixer A1 (heating circuit 1)	34:1	
Circulation pump for cylinder heating	34:2	

**"Extension EA1"**

Setting		Explanations
Without	<b>35:0</b>	Value is set automatically upon detection
With	35:1	

**"Function, output 157 at extension EA1"**

Setting		Explanations
Central fault message	<b>36:0</b>	
Feed pump	36:1	
DHW circulation pump	36:2	

## Parameter level 2

### General (cont.)

#### "Function, input DE1 at extension EA1"

Setting		Explanations
None	<b>3A:0</b>	
Operating program changeover	3A:1	
External demand with set flow temperature	3A:2	Set flow temperature setting: Parameter 9b Internal circulation pump function: Parameter 3F
External blocking	3A:3	Internal circulation pump function: Parameter 3E
External blocking with fault message	3A:4	Internal circulation pump function: Parameter 3E
External fault message	3A:5	Fault message hook-up from external appliances
Brief operation, DHW circulation pump (pushbutton function)	3A:6	Adjusting DHW circulation pump runtime: Parameter 3d

#### "Function input, DE2 at extension EA1"

Setting		Explanations
None	<b>3b:0</b>	
Operating program changeover	3b:1	
External demand with set flow temperature	3b:2	Set flow temperature setting: Parameter 9b Internal circulation pump function: Parameter 3F
External blocking	3b:3	Internal circulation pump function: Parameter 3E
External blocking with fault message	3b:4	Internal circulation pump function: Parameter 3E
External fault message	3b:5	Fault message hook-up from external appliances
Brief operation, DHW circulation pump (pushbutton function)	3b:6	Adjusting DHW circulation pump runtime: Parameter 3d

#### "Function, input DE3 at extension EA1"

Setting		Explanations
None	<b>3C:0</b>	
Operating program changeover	3C:1	
External demand with set flow temperature	3C:2	Set flow temperature setting: Parameter 9b Internal circulation pump function: Parameter 3F
External blocking	3C:3	Internal circulation pump function: Parameter 3E
External blocking with fault message	3C:4	Internal circulation pump function: Parameter 3E
External fault message	3C:5	Fault message hook-up from external appliances
Brief operation, DHW circulation pump (pushbutton function)	3C:6	Adjusting DHW circulation pump runtime: Parameter 3d

#### "With EA1 extension: DHW circulation pump runtime for brief operation"

Setting		Explanations
5 min	<b>3d:5</b>	
... Min	3d:0 to 3d:60	Adjustable from 1 to 60 min

#### "Function internal circulation pump with signal "External blocking""

Setting		Explanations
Remains in control mode	<b>3E:0</b>	
Is switched off	3E:1	
Is switched on	3E:2	

**General** (cont.)**"Function internal circulation pump with signal "External demand""**

Setting		Explanations
Remains in control mode	<b>3F:0</b>	
Switch off internal pump or switch on internal pump at VIUPM pump	3F:1	
Is switched on	3F:2	

**"Function, input 96"**

Setting		Explanations
Without	<b>4b:0</b>	Function of external hook-up to plug 96
External demand	4b:1	
External blocking	4b:2	

**"Function of internal circulation pump for operation with low loss header or heating water buffer cylinder"**

Setting		Explanations
Low loss header: Circulation pump always runs on demand	<b>51:0</b>	
Low loss header: Circulation pump only runs on demand if the burner is running with run-on time	51:1	
Heating water buffer cylinder: Circulation pump only runs on demand if the burner is running with pump run-on time	51:2	

**"Flow temperature sensor for low loss header"**

Setting		Explanations
Without	<b>52:0</b>	
With	52:1	Automatic recognition

**"Function, output, internal connection extension"**

Setting		Explanations
Central fault	53:0	Actuator at terminal <span style="border: 1px solid black; padding: 0 2px;">28</span>
DHW circulation pump	<b>53:1</b>	
Heating circuit pump A1	53:2	Circulation pump for heating circuit without mixer
Circulation pump for cylinder heating	53:3	Circulation pump/diverter valve for DHW heating

**"Solar thermal system"**

Setting		Explanations
Without	<b>54:0</b>	Do not adjust in the case of storage combi boilers without solar DHW heating.
With Vitosolic 100	54:1	
With Vitosolic 200	54:2	
With solar control module, type SM1, without auxiliary function; automatic recognition	54:3	
With solar control module, type SM1, with auxiliary function, e.g. central heating back-up; automatic recognition	54:4	2nd differential temperature control with temperature sensor <span style="border: 1px solid black; padding: 0 2px;">7</span> and <span style="border: 1px solid black; padding: 0 2px;">10</span>

## Parameter level 2

### General (cont.)

#### "Display correction for outside temperature"

Setting		Explanations
... K	6E:0 to 6E:49	Display correction -5 K to -0.1 K
None	<b>6E:50</b>	
... K	6E:51 to 6E:100	Display correction +0.1 K to +5 K

#### "Communication module"

Setting		Explanations
Without	<b>76:0</b>	Automatic recognition Do not adjust
With LON communication module	76:1	
With cascade communication module	76:2	

#### "LON subscriber number"

Setting		Explanations
LON subscriber number	<b>77:1</b> 77:2 to 77:99	Adjustable from 1 to 99: 1 = Boiler 10 to 90 = Vitotronic 200-H 97 = Vitogate 300 BN/MB 98 = Vitogate 99 = Vitocom  <b>Note</b> <i>Allocate each number only once.</i>

#### "LON communication module: Fault manager"

Setting		Explanations
Control unit is not fault manager	79:0	
Control unit is fault manager	<b>79:1</b>	

#### "LON communication module: Time"

Setting		Explanations
Control unit does not transmit the time	7b:0	
Control unit transmits the time	<b>7b:1</b>	

#### "Chimney connection"

Setting		Explanations
Single connection	<b>7E:0</b>	One boiler connected to the flue system
Multiple connections	7E:1	Several boilers connected to one shared flue system

#### "Building type"

Setting		Explanations
Apartment building. Holiday program and time program for DHW heating can be set separately.	7F:0	
Detached house. One holiday program and one time program for DHW heating	<b>7F:1</b>	

**General** (cont.)**"Fault messaging delay"**

Setting		Explanations
	<b>80:6</b>	If a fault occurs for at least 30 s, a fault message is displayed
None	80:0	Immediate fault message
... x 5 s	80:2 to 80:199	Delay adjustable from 10 s to 995 s 1 step $\cong$ 5 s

**"Automatic summer/wintertime changeover"**

Setting		Explanations
Without automatic summer/wintertime changeover	81:0	Time must be changed over manually
With automatic summer/wintertime changeover	<b>81:1</b>	
Use of the radio clock receiver (automatic recognition)	81:2	
With LON communication module: Control unit receives the time	81:3	

**"Gas type (note "General" group, parameter 11)"**

Setting		Explanations
Natural gas	<b>82:0</b>	Only adjustable if parameter 11:9 has been set
LPG	82:1	

**"Temperature display"**

Setting		Explanations
° Celsius	<b>88:0</b>	Temperature indicator in the display
° Fahrenheit	88:1	

**"Display conditions, parameter"**

Setting		Explanations
For technical services department	<b>8A:175</b>	
For technical services department	8A:176	

**"Operation enabled/disabled"**

Setting		Explanations
Everything operable	<b>8F:0</b>	Controls on the display
Everything disabled apart from emissions test function	8F:1	
Default display and emissions test function operable	8F:2	

**"Time constant for calculating the adjusted outside temperature"**

Setting		Explanations
128 x 10 minutes	<b>90:128</b>	Time constant for calculating the adjusted outside temperature 21.3 h
... x 10 minutes	90:1 to 90:199	Subject to the set value, the flow temperature is adjusted quickly (low values) or slowly (high values) when the outside temperature changes 1 step $\cong$ 10 min

## Parameter level 2

### General (cont.)

#### "SCOT correction factor, flue length"

Setting		Explanations
...	<b>93:...</b>	Never adjust

#### "Extension OpenTherm"

Setting		Explanations
Without	<b>94:0</b>	Automatic recognition
With	94:1	

#### "Vitocom 100 GSM"

Setting		Explanations
Without	<b>95:0</b>	Automatic recognition
With	95:1	

#### "Minimum burner output"

Setting		Explanations
...	<b>96:...</b> 96:... to 96:100	Factory setting according to boiler-specific parameters Minimum burner output adjustable from ... to 100 %

#### "LON communication module: outside temperature"

Setting		Explanations
Control unit uses outside temperature sensor	<b>97:0</b>	Temperature value of the outside temperature sensor connected to the control unit is utilised
Control unit receives outside temperature	97:1	
Control unit transmits outside temperature	97:2	

#### "Viessmann system number"

Setting		Explanations
1	<b>98:1</b>	Viessmann system number In conjunction with monitoring several systems via Vitocom 300
...	98:1 to 98:5	System number adjustable from 1 to 5

#### "Recognition, extension DAP1"

Setting		Explanations
Without	<b>99:0</b>	Never adjust
With	99:1	

#### "Recognition, extension DAP2"

Setting		Explanations
Without	<b>9A:0</b>	Never adjust
With	9A:1	

#### "Set flow temperature for external demand"

Setting		Explanations
70 °C	<b>9b:70</b>	Adjustable from 0 to 127 °C Limited by boiler-specific parameters
... °C	9b:0 to 9b:127	



**General** (cont.)**"LON subscriber monitoring"**

Setting		Explanations
20 min.	<b>9C:20</b>	If there is no response from a subscriber for 20 min, the values specified in the control unit are used. Only then will a fault message be issued.
... Min.	9C:2 to 9C:60	Adjustable from 2 to 60 min

**"Differential temperature"**

Setting		Explanations
8 K	<b>9F:8</b>	The differential temperature is the value by which the common flow temperature should be higher than the highest currently required flow temperature of the heating circuits with mixer. Only in connection with heating circuit with mixer M2 (heating circuit 2) and M3 (heating circuit 3)
... K	9F:0 to 9F:40	Adjustable from 0 to 40 K

**Boiler****Note**

Parameter values in **bold** are factory settings

**"Single and multi boiler system"**

Setting		Explanations
Single boiler system	<b>01:1</b>	Only if control unit has been changed to constant temperature mode.
Multi boiler system	01:2	If the boiler is operated in a multi boiler system.

**"Minimum burner pause time"**

Setting		Explanations
Standard	04:0	Fixed setting for minimum burner pause time
Differential method	<b>04:1</b>	Minimum burner pause time subject to the boiler load
Integral method	04:2	Minimum burner pause time subject to the boiler load and taking into account a threshold value (specified by boiler coding card)

**"Maximum boiler water temperature limit"**

Setting		Explanations
... °C	<b>06:...</b>	Maximum limit of the boiler water temperature, defaulted by the boiler coding card
	06:20 to 06:...	Maximum limit of the boiler water temperature within the ranges specified by the boiler coding card Setting range 20 to ... °C

**"Integral threshold for burner switch-off"**

Setting		Explanations
20	<b>10:20</b>	Only effective if parameter 04:2 has been set.
...	10:5 to 10:255	Adjustable from 5 to 255 The higher the value, the later the burner switches off

**Boiler** (cont.)**"Enable start temperature for cyclical calibration in heating mode"**

Setting		Explanations
Do not enable	13:0	
Enable	<b>13:1</b>	Never adjust

**"Enable increase start hysteresis DHW heating for cyclical calibration requirement"**

Setting		Explanations
Do not enable	14:0	
Enable	<b>14:1</b>	Never adjust

**"Enable increase start hysteresis DHW heating for urgent calibration requirement"**

Setting		Explanations
Do not enable	15:0	
Enable	<b>15:1</b>	Never adjust

**"Interval in burner hours until the next service"**

Setting		Explanations
None	<b>21:0</b>	No service interval set
... 00 h	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10,000 h 1 step $\pm$ 100 h

**"Interval until the next service"**

Setting		Explanations
No time interval	<b>23:0</b>	No time interval selected for service
... Months	23:1 to 23:24	The number of months until the next service is adjustable from 1 to 24

**"Service display"**

Setting		Explanations
No service display	<b>24:0</b>	
Service is shown on the display (address is automatically set and must be manually re-set after a service)	24:1	Displayed only if parameter setting 21 or 23 > 0

**"Burner interval ignition"**

Setting		Explanations
No burner interval ignition	<b>28:0</b>	
... h	28:1 to 28:24	Time interval adjustable from 1 h to 24 h. The burner is force-started for 30 s each time.

**"Recognition, external connection extension"**

Setting		Explanations
Without	<b>2E:0</b>	
With	2E:1	Automatic recognition

**"Filling function / venting function"**

Setting		Explanations
Function disabled	<b>2F:0</b>	
Venting function enabled	2F:1	
Filling function enabled	2F:2	

**Boiler** (cont.)**"Operating mode, internal circulation pump"**

Setting		Explanations
Not speed-controlled	30:0	E.g. temporarily for service
Speed-controlled without flow rate capturing	<b>30:1</b>	
Speed-controlled with flow rate capturing	30:2	Automatic recognition

**"Set speed of internal circulation pump as boiler circuit pump"**

Setting		Explanations
... %	<b>31:...</b>	Set speed of the internal circulation pump when operated as boiler circuit pump in %, specified by the boiler coding card
... %	31:0 to 31:100	Set speed adjustable from 0 to 100 %

**"Current fault status of burner control unit"**

Setting		Explanations
No fault	<b>38:0</b> 38: ...	Status of burner control unit: Operational (no fault) Status of burner control unit: fault (38:≠0)

**"CO limiter"**

Setting		Explanations
Learning mode	<b>49:0</b>	
Sensor monitoring and fault messaging enabled	49:1	
Deactivated	49:2	

**DHW****Note**

Parameter values in **bold** are factory settings

**"Cylinder type"**

Setting		Explanations
No DHW cylinder	05:0	Vitosolar 300-F (recognised automatically)
One mono mode DHW cylinder	<b>05:1</b>	
Two mono mode DHW cylinders in series	05:2	
One dual mode DHW cylinder	05:3	
System cylinder CVUC-A	05:4	
Vitosolar combi cylinder	05:5	
Vitocell ...	05:6 to 05:18	

**"Ambient temperature of cylinder"**

Setting		Explanations
15 °C	<b>09:15</b>	Adjustable from 1 to 40 °C
... °C	09:1 to 09:40	

## Parameter level 2

### DHW (cont.)

#### "Lower threshold of temperature stratification"

Setting		Explanations
30 °C	<b>19:30</b>	Adjustable from 5 to 40 °C
... °C	19:5 to 19:40	

#### "Upper threshold of temperature stratification"

Setting		Explanations
70 °C	<b>1A:70</b>	Adjustable from 65 to 100 °C
... °C	1A:65 to 1A:100	

#### "Selection of set DHW temperature"

Setting		Explanations
Between 10 ... 60 °C	<b>56:0</b>	Set DHW temperature adjustable from 10 to ≤ 60 °C
10 °C .. programmed maximum value	56:1	Set DHW temperature adjustable from 10 to > 60 °C
		<b>Note</b> <i>Max. value subject to boiler coding card. Observe the maximum permissible DHW temperature.</i>

#### "Selection of DHW temperature setting range"

Setting		Explanations
Use of parameter GWG5A	<b>57:0</b>	Never adjust
Use of parameter GWG5E	57:1	Never adjust

#### "Additional function for DHW heating"

Setting		Explanations
0 .. 9: Without auxiliary function for DHW heating	<b>58:0</b>	Entry of a 2nd set DHW temperature Adjustable from 10 to 60 °C (observe parameter "56") Activate 4th time phase in DHW time program
... Set value °C	58:10 to 58:60	

#### "Cylinder heating: Set start point"

Setting		Explanations
2.5 K below set value	<b>59:0</b>	Start point adjustable from 1 to 10 K below set value
... K below set value	59:1 to 59:10	

#### "DHW cylinder hydraulic connection"

Setting		Explanations
Directly at boiler or upstream of low loss header	<b>5b:0</b>	
Downstream of low loss header	5b:1	

#### "Function of circulation pump for cylinder heating at "External blocking" signal"

Setting		Explanations
Remains in control mode	<b>5E:0</b>	
Is switched off	5E:1	
Is switched on	5E:2	

**DHW** (cont.)**"Function of circulation pump for cylinder heating at "External demand" signal"**

Setting		Explanations
Remains in control mode	<b>5F:0</b>	
Is switched off	5F:1	
Is switched on	5F:2	

**"Set boiler water temperature for DHW heating"**

Setting		Explanations
20 K	<b>60:20</b>	During DHW heating, the boiler water temperature is up to 20 K higher than the set DHW temperature
... K	60:5 to 60:25	The differential between the boiler water temperature and the set DHW temperature is adjustable from 5 to 25 K

**"Circulation pump run-on"**

Setting		Explanations
2 min.	<b>62:2</b>	Circulation pump with 2 min run-on time after cylinder heating
No run-on	62:0	
... Min.	62:1 to 62:15	Run-on time adjustable from 1 to 15 min

**"Additional function for DHW heating"**

Setting		Explanations
Without	<b>63:0</b>	Only if control unit has been changed to constant temperature mode. Circulation pump with 2 min run-on time after cylinder heating
1x daily	63:1	
All ... Days	63:2 to 63:14	Additional function adjustable from every 2 days to every 15 days
2x daily	63:15	

**"Diverter valve"**

Setting		Explanations
Without	65:0	
With	<b>65:...</b>	Information on the type of diverter valve (never adjust; specified by the boiler coding card)

**"Home position of diverter valve"**

Setting		Explanations
The diverter valve moves according to operating mode	<b>66:0</b>	Diverter valve home position (e.g. in standby mode): DHW heating
The diverter valve is permanently in the heating position	66:1	Diverter valve home position: Heating Set to prevent for example thermal recirculation in gas condensing boilers. Should not be set for gas condensing combi boilers.

**DHW** (cont.)**"Set DHW temperature for reheating suppression"**

Setting		Explanations
40 °C	<b>67:40</b>	For solar DHW heating: Set DHW temperature 40 °C. Above the selected set temperature reheating is suppressed.
... °C	67:0 to 67:95	Set DHW temperature adjustable from 0 to 95 °C (limited by boiler-specific parameters)

**"Set speed, internal circulation pump for DHW heating"**

Setting		Explanations
... %	<b>6C:...</b>	Set speed of internal circulation pump for DHW heating specified by boiler coding card
... %	6C:0 to 6C:100	Set speed adjustable from 0 to 100 %

**"Draw-off function enable and runtime"**

Setting		Explanations
None	6D:0	Only for gas condensing combi boilers and if the control unit has been changed to constant temperature mode.
... Min.	6D:1 to 6D:15	Enable and runtime adjustable from 1 to 15 min

**"Limit, max. heating output for DHW heating"**

Setting		Explanations
... %	<b>6F:...</b>	Max. heating output for DHW heating in %; defaulted by the boiler coding card
... %	6F:0 to 6F:100	Max. heating output for DHW heating adjustable from min. heating output to 100 %

**"DHW circulation pump for DHW heating"**

Setting		Explanations
ON according to time program	<b>71:0</b>	
OFF	71:1	"OFF" during DHW heating to set value 1
ON	71:2	"ON" during DHW heating to set value 1

**"DHW circulation pump for auxiliary function DHW heating"**

Setting		Explanations
ON according to time program	<b>72:0</b>	
OFF	72:1	"OFF" during DHW heating to set value 2
ON	72:2	"ON" during DHW heating to set value 2

**"Enable DHW circulation pump"**

Setting		Explanations
ON/OFF according to time program	<b>73:0</b>	
... x 5 min per hour	73:1 to 73:6	"ON" from once per hour for 5 min up to 6 times per hour for "5 min" during the time program
Permanently ON	73:7	

## Solar

**Note**

Parameter values in **bold** are factory settings

**Note**

The solar group is only displayed if a solar control module, type SM1, is connected.

**"Start temperature differential, solar circuit pump"**

Setting		Explanations
8 K	<b>00:8</b>	Start temperature differential adjustable from 2 to 30 K
... K	00:2 to 00:30	

**"Stop temperature differential, solar circuit pump"**

Setting		Explanations
4 K	<b>01:4</b>	Stop temperature differential adjustable from 1 to 29 K
... K	01:1 to 01:29	

**"Speed control, solar circuit pump"**

Setting		Explanations
Without speed control	02:0	Only set for multi stage circulation pumps
With wave packet control	02:1	
With PWM control	<b>02:2</b>	

**"Temperature differential for start of speed control"**

Setting		Explanations
10 K	<b>03:10</b>	Temperature differential adjustable from 5 to 20 K
... K	03:5 to 03:20	

**"Controller amplification of speed control"**

Setting		Explanations
4 %/K	<b>04:4</b>	Controller amplification adjustable from 1 to 10 %/K
... %/K	04:1 to 04:10	

**"Min. speed, solar circuit pump"**

Setting		Explanations
10 %	<b>05:10</b>	Min. speed of solar circuit pump 10 % of max. speed
... %	05:2 to 05:100	Minimum speed of the solar circuit pump adjustable from 2 to 100 %

**"Max. speed, solar circuit pump"**

Setting		Explanations
75 %	<b>06:75</b>	Maximum speed of solar circuit pump 75 % of max. speed
... %	06:2 to 06:100	Maximum speed of solar circuit pump adjustable from 2 to 100 %

**Solar** (cont.)**"Interval function, solar circuit pump"**

Setting		Explanations
OFF	<b>07:0</b>	Interval function of the solar circuit pump switched off To capture the collector temperature more accurately, the solar circuit pump periodically starts for a short duration.
ON	07:1	

**"Maximum cylinder temperature"**

Setting		Explanations
60 °C	<b>08:60</b>	Set DHW temperature (maximum cylinder temperature) 60 °C
... °C	08:10 to 08:90	Set DHW temperature adjustable from 10 to 90 °C

**"Maximum collector temperature"**

Setting		Explanations
130 °C	<b>09:130</b>	Maximum collector temperature (to protect system components) 130 °C
... °C	09:20 to 09:200	Maximum collector temperature adjustable from 20 to 200 °C

**"Stagnation time reduction"**

Setting		Explanations
5 K	<b>0A:5</b>	Temperature differential for stagnation time reduction 5 K Reduction in the speed of the solar circuit pump to protect system components and heat transfer medium.
	0A:0	
... K	0A:1 to 0A:40	Stagnation time reduction disabled Temperature differential adjustable from 1 to 40 K

**"Frost protection function for solar circuit"**

Setting		Explanations
OFF	<b>0b:0</b>	Not required for Viessmann heat transfer medium
ON	0b:1	

**"Delta T monitoring"**

Setting		Explanations
OFF	0C:0	No flow rate captured in the solar circuit or flow rate too low
ON	<b>0C:1</b>	

**"Night DHW circulation monitoring"**

Setting		Explanations
OFF	0d:0	Unintentional flow in the solar circuit is captured (e.g. at night)
ON	<b>0d:1</b>	



**Solar** (cont.)**"Calculation of solar yield"**

Setting		Explanations
OFF	0E:0	Do not adjust
Calculation of solar yield with Viessmann heat transfer medium	0E:1	
Calculation of solar yield with water as heat transfer medium	0E:2	

**"Flow rate, solar circuit at max. pump speed"**

Setting		Explanations
7 l/min	0F:70	Flow rate adjustable from 0.1 to 25.5 l/min 1 step $\hat{=}$ 0.1 l/min
... l/min	0F:1 to 0F:255	

**"Target temperature control"**

Setting		Explanations
OFF	10:0	See parameter "11"
ON	10:1	

**"Set DHW temperature, solar"**

Setting		Explanations
50 °C	11:50	<ul style="list-style-type: none"> <li>▪ Target temperature control switched on (parameter "10:1"): Temperature at which the solar heated water is to be stratified into the DHW cylinder.</li> <li>▪ If parameter "20:9" (heating of 2 DHW cylinders) is set: When one DHW cylinder reaches its set DHW temperature, the second DHW cylinder is heated.</li> </ul>
... °C	11:10 to 11:90	

**"Minimum collector temperature"**

Setting		Explanations
10 °C	12:10	Minimum start temperature for solar circuit pump 10 °C
None	12:0	Minimum temperature limit disabled
... °C	12:1 to 12:90	Minimum start temperature adjustable from 1 to 90 °C

**Solar** (cont.)**"Extended control function"**

Setting		Explanations
No extended control function enabled	<b>20:0</b>	
Auxiliary function for DHW heating	20:1	
Differential temperature control 2	20:2	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F
Differential temperature control 2 and auxiliary function	20:3	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F
Differential temperature control 2 for central heating backup	20:4	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F
Thermostat function	20:5	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F
Thermostat function and auxiliary function	20:6	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F
Solar heating via external heat exchanger without additional temperature sensor	20:7	
Solar heating via external heat exchanger with additional temperature sensor	20:8	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F
Solar heating of 2 DHW cylinders	20:9	Do not adjust in conjunction with Vitocell 100-W, type CVUC-A or Vitosolar 300-F

**"Start temperature differential for central heating backup"**

Setting		Explanations
8 K	<b>22:8</b>	Parameter "20:4" must be set.
... K	22:2 to 22:30	Start temperature differential adjustable from 2 to 30 K

**"Stop temperature differential for central heating backup"**

Setting		Explanations
4 K	<b>23:4</b>	Parameter "20:4" must be set.
... K	23:1 to 23:29	Stop temperature differential adjustable from 1 to 29 K

**"Start temperature for thermostat function"**

Setting		Explanations
40 °C	<b>24:40</b>	Parameter "20:5" or "20:6" must be set.
... °C	24:0 to 24:100	Start temperature for thermostat function adjustable from 0 to 100 °C

**"Stop temperature for thermostat function"**

Setting		Explanations
50 °C	<b>25:50</b>	Parameter "20:5" or "20:6" must be set.
... °C	25:0 to 25:100	Stop temperature for thermostat function adjustable from 0 to 100 °C

**Solar** (cont.)**"Priority for DHW cylinder"**

Setting		Explanations
Priority for DHW cylinder 1 – without cyclical heating	26:0	Parameter 20:9 must be set
Priority for DHW cylinder 1 – with cyclical heating	<b>26:1</b>	
Priority for DHW cylinder 2 – without cyclical heating	26:2	
Priority for DHW cylinder 2 – with cyclical heating	26:3	
Cyclical heating without priority for either DHW cylinder	26:4	

**"Cyclical heating time"**

Setting		Explanations
15 min	<b>27:15</b>	Once the DHW cylinder with priority is heated up, the DHW cylinder without priority is heated for a maximum duration equal to the set cyclical heating time.
... Min	27:5 to 27:60	The cyclical heating time is adjustable from 5 to 60 min

**"Cyclical pause time"**

Setting		Explanations
3 min	<b>28:3</b>	After the set cyclical heating time for the DHW cylinder without priority has expired, the rise in collector temperature is captured during the cyclical pause time.
... Min	28:1 to 28:60	Cyclical pause time is adjustable from 1 to 60 min

**Heating circuit 1, heating circuit 2, heating circuit 3****Note**

Parameter values in **bold** are factory settings

**"Remote control recognition"**

Setting		Explanations
Without	<b>A0:0</b>	No remote control connected
With Vitotrol 200-A or Vitotrol 200-RF	A0:1	Automatic recognition
With Vitotrol 300-A, Vitotrol 300-RF or Vito-comfort 200	A0:2	Automatic recognition

**"Remote control blocking"**

Setting		Explanations
All possible settings at the remote control can be accessed	<b>A1:0</b>	Only for Vitotrol 200
Only comfort mode can be set at the remote control	A1:1	

**Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)**

**"Temperature limits, frost protection function"**

Setting		Explanations
2 see service instructions	<b>A3:2</b>	Outside temperature below 1 °C: Heating circuit pump "ON" Outside temperature above 3 °C: Heating circuit pump "OFF"
... see service instructions	A3:-9 to A3:15	Heating circuit pump ON/OFF, see following table:

**!** **Please note**  
With settings below 1 °C, pipes outside the thermal envelope of the building could freeze up. Use settings below 1 °C only if pipes are appropriately thermally insulated.

Parameter A3: ...	Heating circuit pump	
	"ON"	"OFF"
-9	-10 °C	-8 °C
-8	-9 °C	-7 °C
-7	-8 °C	-6 °C
-6	-7 °C	-5 °C
-5	-6 °C	-4 °C
-4	-5 °C	-3 °C
-3	-4 °C	-2 °C
-2	-3 °C	-1 °C
-1	-2 °C	0 °C
0	-1 °C	1 °C
1	0 °C	2 °C
2	1 °C	3 °C
to	to	to
15	14 °C	16 °C

**"Frost protection"**

Setting		Explanations
With	<b>A4:0</b>	Frost protection active
Without	A4:1	No frost protection. Adjustment only possible if parameter "A3:-9" has been set.  <b>Note</b> <i>Observe "Please note" for parameter "A3"</i>

**"Heating limit: Economy function outside temperature"**

Setting		Explanations
5 see service instructions	<b>A5:5</b>	Economy function outside temperature: Heating circuit pump "OFF" when the outside temperature (OT) is 1 K higher than the set room temperature (RT <sub>set</sub> ) $OT > RT_{set} + 1 K$
Without	A5:0	No economy function outside temperature
... see service instructions	A5:1 to A5:15	With economy function outside temperature: Heating circuit pump "OFF"; see the following table:

## Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)

Parameter A5:...	With economy function outside temperature: Heating circuit pump "OFF"
1	$OT > RT_{set} + 5 \text{ K}$
2	$OT > RT_{set} + 4 \text{ K}$
3	$OT > RT_{set} + 3 \text{ K}$
4	$OT > RT_{set} + 2 \text{ K}$
5	$OT > RT_{set} + 1 \text{ K}$
6	$OT > RT_{set}$
7 to 15	$OT > RT_{set} - 1 \text{ K}$ $OT > RT_{set} - 9 \text{ K}$

**"Heating limit: Complete summer economy control"**

Setting		Explanations
None	<b>A6:36</b>	Extended economy function <b>disabled</b>
... °C	A6:5 to A6:35	Extended economy function enabled: The burner and heating circuit pump will stop at a variable value, adjustable between 5 and 35 °C plus 1 °C. The mixer closes. The basis for this is the adjusted outside temperature. This is based on the actual outside temperature and a time constant, which takes into account the cooling down of an average building.

**"Mixer economy function"**

Setting		Explanations
Without	<b>A7:0</b>	Heating circuit pump also "OFF": <ul style="list-style-type: none"> <li>▪ If the mixer has been trying to close for some time.</li> </ul> Heating circuit pump "ON": <ul style="list-style-type: none"> <li>▪ If the mixer changes to control function</li> <li>▪ If there is a risk of frost</li> </ul>
With	A7:1	

**"Influence of heating circuit with mixer on internal circulation pump"**

Setting		Explanations
Without	<b>A8:0</b>	Heating circuit with mixer creates no demand for internal circulation pump
With	<b>A8:1</b>	Heating circuit with mixer creates a demand for internal circulation pump

**"Pump idle time"**

Setting		Explanations
With calculated pump idle time	<b>A9:7</b>	Heating circuit pump "OFF" if set value is modified by changing the operating mode or changing the set room temperature. Only if room hook-up is not set in parameter b0.
Without	A9:0	No economy function outside temperature
With calculated pump idle time	A9:1 to A9:15	Adjustable from 1 to 15. The higher the value, the longer the pump idle time.

**Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)**

**"Room temperature hook-up"**

Setting		Explanations
Without	<b>b0:0</b>	With remote control: Heating mode/reduced mode: Weather-compensated Change value only for the heating circuit with mixer.
For reduced mode	b0:1	Heating mode: Weather-compensated Reduced mode: With room temperature hook-up
For standard mode	b0:2	Heating mode: With room temperature hook-up Reduced mode: Weather-compensated
For standard mode and reduced mode	b0:3	Heating mode/reduced mode: With room temperature hook-up

**"Room influence factor"**

Setting		Explanations
The higher the value, the greater the room influence	<b>b2:8</b>	Room influence factor 8 With remote control, and for the heating circuit, operation with room temperature hook-up must be set Change value only for the heating circuit with mixer
Without	b2:0	Room influence factor adjustable from 1 to 64.
The higher the value, the greater the room influence	b2:1 to b2:64	

**"Economy function: room temperature"**

Setting		Explanations
Without	<b>b5:0</b>	With remote control: No room temperature-dependent economy function. Change value only for the heating circuit with mixer.
... see service instructions	b5:1 to b5:8	For economy function, see the following table:

Parameter b5:...	With economy function:	
	Heating circuit pump "OFF"	Heating circuit pump "ON"
1	$RT_{actual} > RT_{set} + 5\text{ K}$	$RT_{actual} < RT_{set} + 4\text{ K}$
2	$RT_{actual} > RT_{set} + 4\text{ K}$	$RT_{actual} < RT_{set} + 3\text{ K}$
3	$RT_{actual} > RT_{set} + 3\text{ K}$	$RT_{actual} < RT_{set} + 2\text{ K}$
4	$RT_{actual} > RT_{set} + 2\text{ K}$	$RT_{actual} < RT_{set} + 1\text{ K}$
5	$RT_{actual} > RT_{set} + 1\text{ K}$	$RT_{actual} < RT_{set}$
6	$RT_{actual} > RT_{set}$	$RT_{actual} < RT_{set} - 1\text{ K}$
7	$RT_{actual} > RT_{set} - 1\text{ K}$	$RT_{actual} < RT_{set} - 2\text{ K}$
8	$RT_{actual} > RT_{set} - 2\text{ K}$	$RT_{actual} < RT_{set} - 3\text{ K}$

**"Minimum flow temperature limit, heating circuit"**

Setting		Explanations
20 °C	<b>C5:20</b>	Electronic minimum flow temperature limit set to 20 °C
... °C	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)

### Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)

#### "Maximum flow temperature limit, heating circuit"

Setting		Explanations
74 °C	<b>C6:74</b>	Electronic maximum flow temperature limit 74 °C
... °C	C6:10 to C6:127	Maximum limit adjustable from 10 to 127 °C (limited by boiler-specific parameters)

#### "Heating curve slope"

Setting		Explanations
1.4	<b>d3:14</b>	Heating curve slope = 1.4
...	d3:2 to d3:35	Heating curve slope adjustable from 0.2 to 3.5

#### "Heating curve level"

Setting		Explanations
0	<b>d4:0</b>	Heating curve level adjustable from -13 K to 40 K
...	d4:-13 to d4:40	

#### "External operating program changeover"

Setting		Explanations
Operating program changeover to constant central heating with reduced room temperature or standby mode (subject to the settings of the set reduced room temperature)	<b>d5:0</b>	Subject to parameters 3A, 3b and 3C
The operating program changes to constant operation with standard room temperature	d5:1	

#### "Function of heating circuit pump at "External blocking" signal"

Setting		Explanations
Remains in control mode	<b>d6:0</b>	Subject to parameters 3A, 3b and 3C
Is switched off	d6:1	
Is switched on	d6:2	

#### "Function of heating circuit pump at "External demand" signal"

Setting		Explanations
Remains in control mode	<b>d7:0</b>	Subject to parameters 3A, 3b and 3C
Is switched off	d7:1	
Is switched on	d7:2	

#### "EA1 extension: Operating program changeover"

Setting		Explanations
No operating program changeover	<b>d8:0</b>	
Operating program changeover via input DE1	d8:1	
Operating program changeover via input DE2	d8:2	
Operating program changeover via input DE3	d8:3	

### Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)

#### "Setting range, set day temperature"

Setting		Explanations
3 .. 23 °C	E1:0	Never adjust
10 .. 30 °C	E1:1	
17 .. 37 °C	E1:2	

#### "Display correction of the actual room temperature"

Setting		Explanations
None	E2:50	With remote control: No display correction of the actual room temperature
... K	E2:0 to E2:49	Display correction –5 K to Display correction –0.1 K
... K	E2:51 to E2:100	Display correction +0.1 K to Display correction +4.9 K

#### "Recognition, speed-controlled circulation pump"

Setting		Explanations
Without	E5:0	Automatic recognition
With	E5:1	

#### "Max. speed of speed-controlled heating circuit pump in standard mode"

Setting		Explanations
... %	E6: ...	This value is determined by boiler-specific parameters
... %	E6:0 to E6:100	Maximum speed adjustable from 0 to 100 %

#### "Min. speed of speed-controlled heating circuit pump in standard mode"

Setting		Explanations
30 %	E7:30	Minimum speed adjustable from 0 to 100 % of the maximum speed
... %	E7:0 to E7:100	

#### "Speed setting in reduced mode"

Setting		Explanations
Minimum speed according to parameter E7	E8:0	
Reduced speed according to parameter E9	E8:1	

#### "Speed of speed-controlled heating circuit pump in reduced mode"

Setting		Explanations
45 %	E9:45	Speed adjustable from 0 to 100 % of max. speed
... %	E9:0 to E9:100	



### Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)

#### "Screed drying"

Setting		Explanations
Screed drying disabled	<b>F1:0</b>	Screed drying adjustable, with choice of 6 temperature/time profiles (see chapter "Function description")
Diagram 1	F1:1	
Diagram 2	F1:2	
Diagram 3	F1:3	
Diagram 4	F1:4	
Diagram 5	F1:5	
Diagram 6	F1:6	
Constant flow temperature 20 °C	F1:7 to F1:14	
Individual program for screed drying	F1:15	See chapter "Function description"

#### "Time limit for comfort mode"

Setting		Explanations
8 h	<b>F2:8</b>	Time limit adjustable from 1 to 12 h
No time limit	F2:0	
... h	F2:1 to F2:12	

#### "Run-on time, heating circuit pump"

Setting		Explanations
None	F5:0	Only if control unit has been changed to constant temperature mode. No run-on time of the internal circulation pump in heating mode
... Min.	F5:1 to F5:20	Run-on time of the internal circulation pump in heating mode adjustable from 1 to 20 min

#### "Pump start heating circuit pump A1, DHW only"

Setting		Explanations
OFF	F6:0	Only if control unit has been changed to constant temperature mode. In "Only DHW" mode, the internal circulation pump is permanently off
... ON	F6:1 to F6:24	Activation of the internal circulation pump in "Only DHW" mode is adjustable from 1 to 24 times per day for 10 min. each time.
Constantly ON	<b>F6:25</b>	In "Only DHW" mode, the internal circulation pump is permanently on

### Heating circuit 1, heating circuit 2, heating circuit 3 (cont.)

#### "Pump start heating circuit pump A1, standby mode"

Setting		Explanations
OFF	F7:0	Only if control unit has been changed to constant temperature mode. In "Standby mode", the internal circulation pump is permanently off
... ON	F7:1 to F7:24	Activation of the internal circulation pump in "Standby mode" is adjustable from 1 to 24 times per day for 10 min. each time.
Constantly ON	<b>F7:25</b>	In "Standby mode", the internal circulation pump is permanently on

#### "Outside temperature limit for cancelling reduced set room temperature"

Setting		Explanations
-5 °C	<b>F8:-5</b>	See chapter "Function description" Observe parameter "A3".
... °C	F8:+10 to F8:-60	Temperature limit adjustable from +10 to -60°C
Function disabled	F8:-61	

#### "Outside temperature limit for raising the reduced set room temperature to the standard set room temperature"

Setting		Explanations
-14 °C	<b>F9:-14</b>	See chapter "Function description"
... °C	F9:+10 to F9:-60	Temperature limit adjustable from +10 to -60°C

#### "Raising the set boiler water or flow temperature when switching from operation with reduced room temperature to operation with standard room temperature"

Setting		Explanations
20 %	<b>FA:20</b>	See chapter "Function description"
... %	FA:0 to FA:50	Temperature rise adjustable from 0 to 50 %

#### "Duration for raising the set boiler water or flow temperature"

Setting		Explanations
60 min	<b>Fb:60</b>	See parameter "FA" See chapter "Function description"
... Min	Fb:0 to Fb:240	Temperature rise adjustable from 0 to 240 min

Calling up the service menu

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. Select the required menu section.

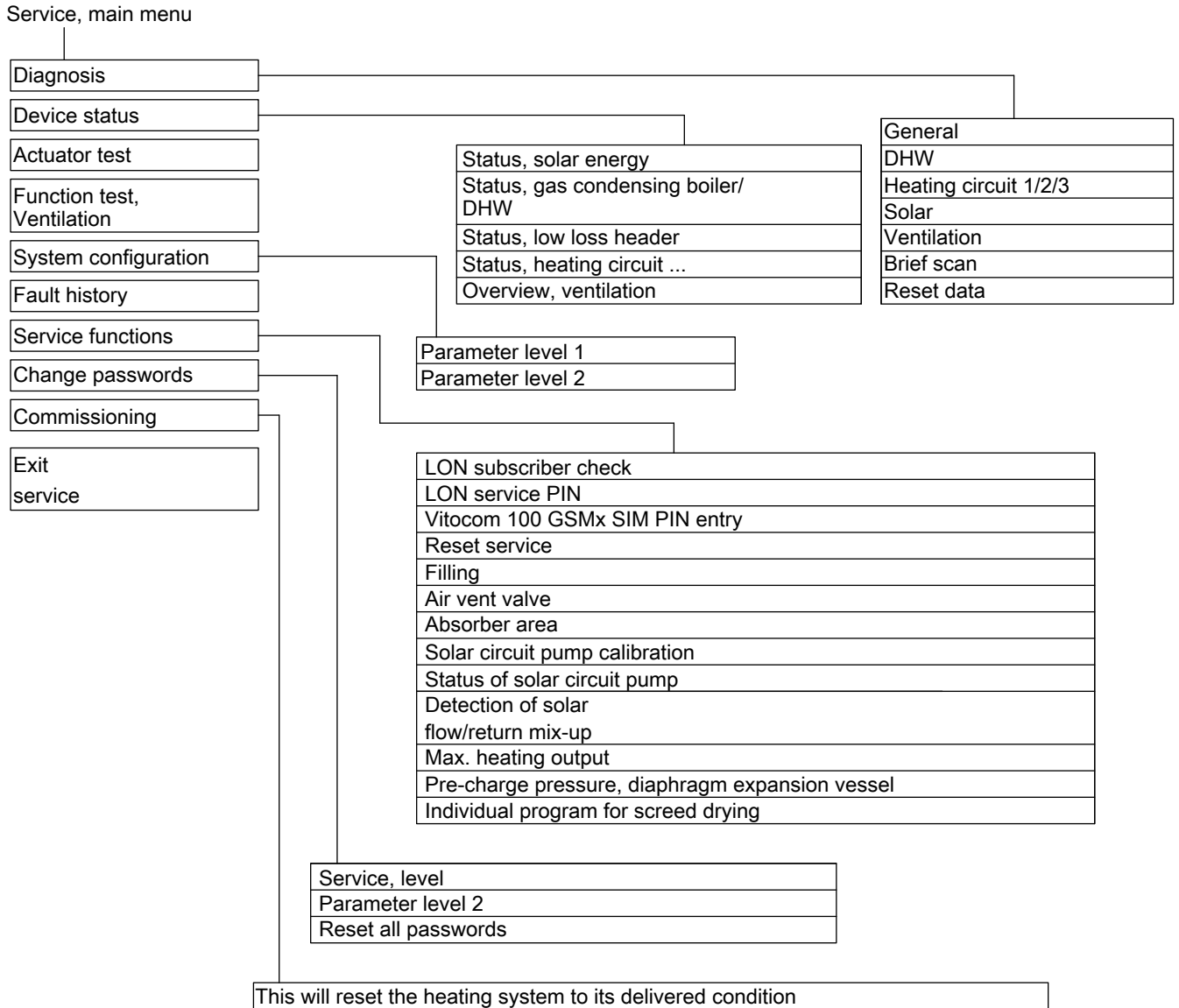


Fig. 39

Note

- "Solar energy" is only shown if a solar control module type SM1 is connected.
- "Ventilation" is only shown if a ventilation control module type LM1 is connected.
- "Parameter level 2" is only displayed if this level has been enabled:  
Enter "viexpert" password.
- Tap to return to the "Service, main menu"

### Leaving the service menu

Tap the following buttons:

"Exit service".

#### Note

The system exits the service menu automatically after 30 min.

### Change passwords

In the delivered condition, the following passwords have been assigned:

- "viservice" for access to the "Service main menu"
- "viexpert" for access to "Parameter level 2"

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.

4. "Change passwords".
5. "Service, level" or "Parameter level 2"
6. Enter current password.
7. Confirm with **OK**.
8. Enter new password.
9. Tap **OK** twice

### Resetting all passwords to their delivered condition

Tap the following buttons:

1. Request the master password from the Technical Service at the Viessmann Group.
2. "Menu"
3. "Service"
4. Enter "viservice" password.

5. "Change passwords"
6. "Reset all passwords"
7. Enter master password.
8. Press **OK** 2 times to confirm.

## Diagnosis

### Scanning operating data

Operating data can be called up in various areas. See "Diagnosis" in the service menu overview.

Operating data on heating circuits with mixer, ventilation or solar thermal systems can only be called up if such components are installed in the system.

For further information on operating data, see chapter "Brief scan".

#### Note

If a scanned sensor is faulty, "- - -" appears on the display.

#### Calling up operating data

Tap the following buttons:

1. "Menu"

2. "Service"
3. Enter "viservice" password.
4. "Diagnosis"
5. Select required group, e.g. "General".

#### Resetting operating data

Saved operating data (e.g. hours run) can be reset to 0.

The value "Adjusted outside temperature" is reset to the actual value.

Tap the following buttons:

1. "Menu"

**Diagnosis** (cont.)

2. "Service"
3. Enter "viservice" password.
4. "Diagnosis"
5. "Reset data"
6. Select required value or "All data".

**Calling up device status**

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Device status"  
The system scheme is shown in the display.
5. Tap the system component that you wish to change. A list containing the current settings and the switching states appears.

**Calling up solar circuit pump status**

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Service functions"
5. "Status of solar circuit pump"  
The display shows the current pump speed and the resulting flow rate.

**Brief scan**

In the brief scan, you can scan temperatures or call up software versions and connected components, for example.

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Diagnosis"
5. "Brief scan"
6. "Code"  
An overview of the brief scan appears, with 14 rows and 6 fields.

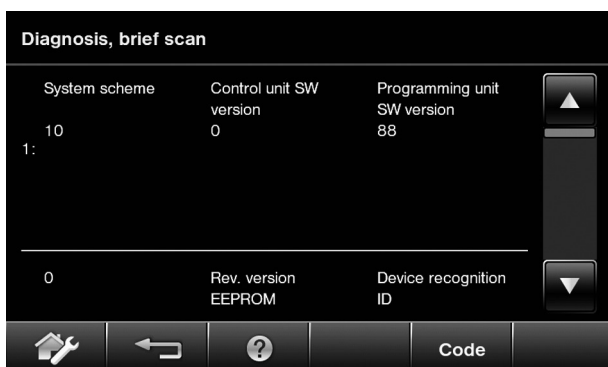


Fig. 40

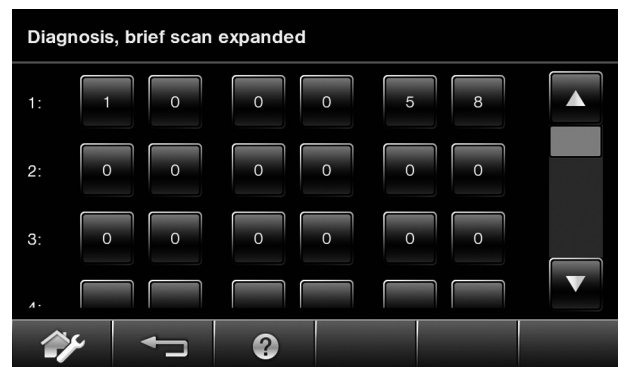


Fig. 41

7. ▼/▲ for the required brief scan in line with the following table


**Diagnosis** (cont.)

**Meaning of the relevant values in the individual rows and fields:**

Row (brief scan)	Field					
	1	2	3	4	5	6
1:	System scheme 01 to 10		Software version Control unit		Software version Programming unit	
2:	0	0	Appliance version		Appliance ID CU-ID	
3:	0	0	Number of KM-BUS subscribers		Software version solar control module SM1	
4:	Software version Burner control unit		Type Burner control unit		Burner control unit version	
5:	Burner starts until next calibration			Escalation stage, calibration	Software version, AM1 extension	Software version, EA1 extension
6:	0	0	0	Switching state of flow switch (only for combi boiler) 0: OFF 1: Active	0	0
7:	LON Subnet address/system number		LON Node address		0	0
8:	LON SNVT or SVNT configuration	LON Software version, communication coprocessor	LON Software version, neuron chip		Number of LON subscribers	
9:	<b>Heating circuit A1/HC1</b> Remote control 0: Without 1: Vitotrol 200-A/ 200-RF 2: Vitotrol 300-A/ 300-RF or Vitocomfort		<b>Heating circuit M2/HC2</b> Remote control 0: Without 1: Vitotrol 200-A/ 200-RF 2: Vitotrol 300-A/ 300-RF or Vitocomfort		<b>Heating circuit M3/HC3</b> Remote control 0: Without 1: Vitotrol 200-A/ 200-RF 2: Vitotrol 300-A/ 300-RF or Vitocomfort	
10:	0	0	0	0	0	0
11:	0	0	Software version Mixer extension, heating circuit M2 0: No mixer extension	0	Software version Mixer extension, heating circuit M3 0: No mixer extension	0
12:	<b>Vitovent gateway</b> 0: Without 1: With		<b>CU-ID</b> xx		<b>Connection error, Vitovent</b> xx	
	0	0	0	0	0	0
13:	0	0	0	0	0	0
14:	0	0	0	0	0	0

**Checking outputs (actuator test)**

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Actuator test"
5. Select actuator (tap).
6. Deactivate actuator or select another actuator with . The actuator is also deactivated automatically after 30 min.

The following actuators (relay outputs) can be controlled subject to system design:

Display		Explanation
"All actuators"	"OFF"	All actuators are off
"Base load"	"ON"	Burner operates at min. output. Internal pump is switched on
"Full load"	"ON"	Burner operates at max. output. Internal pump is switched on
"Output 20"	"ON"	Internal output <span style="border: 1px solid black; padding: 0 2px;">20</span> (int. pump) active
"Valve"	"Heating"	Diverter valve set to heating mode
"Valve"	"Middle"	Diverter valve in central position (filling/draining)
"Valve"	"WW"	Diverter valve set to DHW heating
"Heating circuit pump HC2"	"ON"	Heating circuit pump output active (extension to heating circuit with mixer)
"Mixer HC2"	"Open"	"Mixer open" output active (extension to heating circuit with mixer)
"Mixer HC2"	"Closed"	"Mixer close" output active (extension to heating circuit with mixer)
"Heating circuit pump HC3"	"ON"	Heating circuit pump output active (extension to heating circuit with mixer)
"Mixer HC3"	"Open"	"Mixer open" output active (extension to heating circuit with mixer)
"Mixer HC3"	"Closed"	"Mixer close" output active (extension to heating circuit with mixer)
"Output, internal H1 extension"	"ON"	Output at internal extension active
"Solar circuit pump"	"ON"	Solar circuit pump output <span style="border: 1px solid black; padding: 0 2px;">24</span> on solar control module SM1 active
"Solar circuit pump min."	"ON"	Solar circuit pump output on solar control module SM1 switched to minimum speed
"Solar circuit pump max."	"ON"	Solar circuit pump output on solar control module SM1 switched to maximum speed
"SM1 output 22"	"ON"	Output <span style="border: 1px solid black; padding: 0 2px;">22</span> on solar control module SM1 active
"EA1 output 1"	"ON"	Contact P - S at plug <span style="border: 1px solid black; padding: 0 2px;">157</span> of EA1 extension closed
"AM1 output 1"	"ON"	Output A1 at AM1 extension active
"AM1 output 2"	"ON"	Output A2 at AM1 extension active
"Output 28"	"ON"	If available: Internal output <span style="border: 1px solid black; padding: 0 2px;">28</span> (DHW circulation pump) active

## Fault display

In the event of a fault, red fault indicator (A) on the control unit flashes.  $\Delta$  appears on the display and "Fault" is shown.

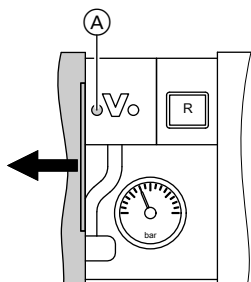


Fig. 42

### Note

If a central fault message facility is connected, this is started.

For an explanation of fault codes, see chapter "Fault messages".

### Acknowledging the fault display

Tap "Confirm".

$\Delta$  flashes in the footer.

### Note

Any connected central fault message facility stops. If an acknowledged fault is not remedied, the fault message will be redisplayed the following day at 07:00 h, and the fault message facility restarts.

### Calling up acknowledged fault messages

Tap the following buttons:

1.  $\Delta$

### Note

If service messages are present at the same time in the heating system, "Faults" and "Service, messages" appear.

2. "Faults"

The fault messages appear in red and in chronological order in a list.

Service messages appear in yellow.

### Calling up fault messages from the fault memory (fault history)

The 10 most recent faults (including those remedied) and service messages are saved and can be called up.

Faults are sorted by date.

Tap the following buttons:

1. "Menu"

2. "Service"

3. Enter "viservice" password.

4. "Fault history"

5. Use ? to call up further information on the relevant fault.

6. If you wish to delete the list, tap "Delete".

### Note

The fault lists are shown separately in conjunction with a ventilation system (Vitovent). The ventilation system fault codes can be called up as menu points within the standard fault history. This list can only be cleared via "Delete" within this history.

## Fault messages

Fault code displayed	System characteristics	Cause	Measures
10	Regulates as if the outside temperature were 0 °C.	Short circuit, outside temperature sensor	Check outside temperature sensor (see page 103)
18	Regulates as if the outside temperature were 0 °C.	Lead break, outside temperature sensor	Check outside temperature sensor (see page 103)












**Fault messages** (cont.)

Fault code displayed	System characteristics	Cause	Measures
19	Regulates as if the outside temperature were 0 °C.	Communication interruption, outside temperature sensor RF	Check wireless connection. Place outside temperature sensor RF close to the boiler. Forget outside temperature sensor, then pair again (see separate documents). Replace outside temperature sensor RF.
20	Regulates without flow temperature sensor (low loss header).	Short circuit, system flow temperature sensor	Check low loss header sensor (see page 103).
21	Control mode Display fault in energy cockpit	Sensor outside tolerance range	Check sensors on DHW cylinder and collectors.
22	Control mode Display fault in energy cockpit	Sensor outside tolerance range	Check sensors on DHW cylinder and collectors.
23	Control mode Display fault in energy cockpit	Incorrect commissioning	Determine solar circuit flow rate and enter value established.
24	Control mode Display fault in energy cockpit	DHW circulation pump shut down	Check setting of parameter 39 (" <b>General</b> " group). If required, carry out an actuator test.
25	Control mode Display fault in energy cockpit	Transfer pump not working	Check setting of parameter 20 (" <b>Solar</b> " group). If required, carry out an actuator test.
26	Control mode Display fault in energy cockpit	DHW circulation pump and transfer pump not working	Check settings of parameter 39 (" <b>General</b> " group) and parameter 20 (" <b>Solar</b> " group). If required, carry out an actuator test.
27	Control mode Display fault in energy cockpit	Incorrect commissioning	Determine solar circuit flow rate and enter value established.
28	Regulates without flow temperature sensor (low loss header).	Lead break, system flow temperature sensor	Check low loss header sensor (see page 103) If no low loss header sensor is connected, set parameter 52:0.
2A	Control mode Display fault in energy cockpit	Solar circuit flow and return interchanged.	Check solar circuit flow and return and swap over if required.
30	Burner blocked	Short circuit, boiler water temperature sensor	Check boiler water temperature sensor (see page 103)
38	Burner blocked	Lead break, boiler water temperature sensor	Check boiler water temperature sensor (see page 103)
40	Mixer closes.	Short circuit, flow temperature sensor, heating circuit 2 (with mixer)	Check flow temperature sensor (see page 109).
44	Mixer closes.	Short circuit, flow temperature sensor, heating circuit 3 (with mixer)	Check flow temperature sensor (see page 109)
48	Mixer closes.	Lead break, flow temperature sensor, heating circuit 2 (with mixer)	Check flow temperature sensor (see page 109)



**Fault messages** (cont.)

Fault code displayed	System characteristics	Cause	Measures
49	Mixer closes.	Incorrect assignment of extension for mixer, heating circuit 2	Check and adjust rotary selector S1 (see page 108).
4C	Mixer closes.	Lead break, flow temperature sensor, heating circuit 3 (with mixer)	Check flow temperature sensor (see page 109).
4D	Mixer closes.	Incorrect assignment of extension for mixer, heating circuit 3	Check and adjust rotary selector S1 (see page 108).
50	No DHW heating by the boiler	Short circuit, cylinder temperature sensor or comfort sensor	Check cylinder temperature sensor (see page 103) or comfort sensor (see page 105).
51	No DHW heating by the boiler	Short circuit, outlet temperature sensor	Check outlet temperature sensor (see page 105)
58	No DHW heating by the boiler	Lead break, cylinder temperature sensor or comfort sensor	Check cylinder temperature sensor (see page 103) or comfort sensor (see page 105).
59	No DHW heating by the boiler	Lead break, outlet temperature sensor	Check outlet temperature sensor (see page 105).
90	Control mode	Short circuit, temperature sensor 	Check sensor  on solar control module.
91	Control mode	Short circuit, temperature sensor 	Check sensor  on solar control module.
92	No solar DHW heating	Short circuit, collector temperature sensor	Check temperature sensor  on solar control module or sensor on the Vitosolic.
93	Control mode	Short circuit, collector return temperature sensor	Check temperature sensor at terminal S3 on the Vitosolic 100.
94	No solar DHW heating	Short circuit, cylinder temperature sensor	Check temperature sensor  on solar control module or sensor on the Vitosolic.
95	Burner blocked	CO limit exceeded	<p> <b>Danger</b> An increased concentration of carbon monoxide can cause potentially fatal carbon monoxide poisoning. Observe the safety instructions at the beginning of this manual.</p> <p>Determine the cause of the increased CO level. Remedy the fault. Press <b>Test</b> on the CO limiter. The alarm is switched off. The burner starts again once the CO level is below the CO limit.</p>
96	Burner blocked	CO limiter sensor fault	Replace the CO limiter. If the system is to be temporarily operated without CO limiter, set parameter 49:0.
98	Control mode	Lead break, temperature sensor 	Check sensor  on solar control module.

**Fault messages** (cont.)

<b>Fault code displayed</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
99	Control mode	Lead break, temperature sensor <span style="border: 1px solid black; padding: 0 2px;">10</span>	Check sensor <span style="border: 1px solid black; padding: 0 2px;">10</span> on solar control module.
9A	No solar DHW heating	Lead break, collector temperature sensor	Check temperature sensor <span style="border: 1px solid black; padding: 0 2px;">6</span> on solar control module or sensor on the Vitosolic.
9B	Control mode	Lead break, collector return temperature sensor	Check temperature sensor at terminal S3 on the Vitosolic 100.
9C	No solar DHW heating	Lead break, cylinder temperature sensor	Check temperature sensor <span style="border: 1px solid black; padding: 0 2px;">5</span> on solar control module or sensor on the Vitosolic.
9E	Control mode	No flow rate in solar circuit or flow rate too low, or temperature limiter has responded.	Check solar circuit pump and solar circuit. Acknowledge fault message.
9F	Control mode	Solar control module or Vitosolic fault	Replace solar control module or Vitosolic.
A3	Burner blocked	Flue gas temperature sensor incorrectly positioned	Fit flue gas temperature sensor correctly (see page 103).
A7	Control mode as per delivered condition	Programming unit faulty	Replace the programming unit.
A8	Burner blocked. The venting program is started automatically (see page 136).	Air in the internal circulation pump or minimum flow rate not achieved	Vent the system if the fault message persists.
A9	If a heating circuit with mixer is connected, the burner operates at its lower heating output. If only one heating circuit without mixer is connected, the burner is blocked.	Internal circulation pump blocked	Check circulation pump.
B0	Burner blocked	Short circuit, flue gas temperature sensor	Check flue gas temperature sensor.
B1	Control mode as per delivered condition	Communication error, programming unit	Check connections; replace programming unit if necessary.
B5	Control mode as per delivered condition	Internal fault	Replace control unit.
B7	Burner blocked	Boiler coding card fault	Plug in boiler coding card or replace if faulty.
B8	Burner blocked	Lead break, flue gas temperature sensor	Check flue gas temperature sensor.
BA	Mixer regulates to 20 °C flow temperature.	Communication error, extension kit for heating circuit 2 (with mixer)	Check extension kit connections and assignment.
BB	Mixer regulates to 20 °C flow temperature.	Communication error, extension kit for heating circuit 3 (with mixer)	Check extension kit connections and assignment.



**Fault messages** (cont.)

<b>Fault code displayed</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
BC	Control mode without remote control	Communication error, Vitotrol remote control, heating circuit 1 (without mixer)	Check connections, cable, parameter "A0" in the <b>"Heating circuit"</b> group and remote control settings (see page 141). For wireless remote controls: check connection, place remote control close to the boiler.
BD	Control mode without remote control	Communication error, Vitotrol remote control, heating circuit 2 (with mixer)	Check connections, cable, parameter "A0" in the <b>"Heating circuit"</b> group and remote control settings (see page 141). For wireless remote controls: check connection, place remote control close to the boiler.
BE	Control mode without remote control	Communication error, Vitotrol remote control, heating circuit 3 (with mixer)	Check connections, cable, parameter "A0" in the <b>"Heating circuit"</b> group and remote control settings (see page 141). For wireless remote controls: check connection, place remote control close to the boiler.
BF	Control mode	Incorrect LON communication module	Replace LON communication module.
C1	Control mode	Communication error, EA1 extension	Check connections.
C2	Control mode	Communication error, solar control module or Vitosolic	Check solar control module or Vitosolic.
C3	Control mode	Communication error, AM1 extension	Check connections.
C4	Control mode	Communication error, OpenTherm extension	Check OpenTherm extension.
C5	Control mode, max. pump speed	Communication error, internal variable speed pump	Check setting of parameter "30" in <b>"Boiler"</b> group.
CD	Control mode	Communication error, Vitocom 100 (KM-BUS)	Check connections, Vitocom 100 and parameter "95" in <b>"General"</b> group.
CF	Control mode	Communication error, communication module	Replace communication module.
D3	Burner in a fault state or blocked.	Communication error, fan unit	Check the connecting cable to the fan unit. Press reset button <b>R</b> . If the fault recurs, replace the fan unit.
D4	Control mode Burner is operating with a limited modulation range.	No air flow detected in fan unit.	Check the mass flow sensor at the fan unit. Check the flue system for flue gas back pressure.
D5	Burner in a fault state.	Fan blocked	Press reset button <b>R</b> . Check free movement of the impeller. Replace the fan unit if required.
D6	Control mode	Input DE1 at EA1 extension reports a fault.	Remedy fault at appliance concerned.

**Fault messages** (cont.)

<b>Fault code displayed</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
D7	Control mode	Input DE2 at EA1 extension reports a fault.	Remedy fault at appliance concerned.
D8	Control mode	Input DE3 at EA1 extension reports a fault.	Remedy fault at appliance concerned.
DA	Control mode without room influence	Short circuit, room temperature sensor, heating circuit 1 (without mixer)	Check room temperature sensor, heating circuit 1. External room temperature sensor for Vitotrol 300 or integrated sensor for Vitotrol 200/300
DB	Control mode without room influence	Short circuit, room temperature sensor, heating circuit 2 (with mixer)	Check room temperature sensor, heating circuit 2. External room temperature sensor for Vitotrol 300 or integrated sensor for Vitotrol 200/300
DC	Control mode without room influence	Short circuit, room temperature sensor, heating circuit 3 (with mixer)	Check room temperature sensor, heating circuit 3. External room temperature sensor for Vitotrol 300 or integrated sensor for Vitotrol 200/300
DD	Control mode without room influence	Lead break, room temperature sensor, heating circuit 1 (without mixer)	Check room temperature sensor, heating circuit 1 and remote control settings (see page 141). External room temperature sensor for Vitotrol 300 or integrated sensor for Vitotrol 200/300
DE	Control mode without room influence	Lead break, room temperature sensor, heating circuit 2 (with mixer)	Check room temperature sensor, heating circuit 2 and remote control settings (see page 141). External room temperature sensor for Vitotrol 300 or integrated sensor for Vitotrol 200/300
DF	Control mode without room influence	Lead break, room temperature sensor, heating circuit 3 (with mixer)	Check room temperature sensor, heating circuit 3 and remote control settings (see page 141). External room temperature sensor for Vitotrol 300 or integrated sensor for Vitotrol 200/300
E0	Control mode	External LON subscriber error	Check connections and LON subscribers.
E2	Burner in a fault state	No calibration as flow rate too low	Ensure adequate heat transfer. Press reset button <b>R</b> .
E3	Burner in a fault state	Heat transfer too low during calibration Temperature limiter has shut down.	Ensure adequate heat transfer. Press reset button <b>R</b> .
E4	Burner blocked	24 V power supply fault	Replace control unit.
E5	Burner blocked	Flame amplifier fault	Replace control unit.



**Fault messages** (cont.)

Fault code displayed	System characteristics	Cause	Measures
E8	Burner in a fault state	Ionisation current lies outside the permissible range	<p>Check gas supply (gas pressure and gas flow switch), gas train and connecting cable. Check assignment of gas type (see page 34).</p> <p>Check ionisation electrode:</p> <ul style="list-style-type: none"> <li>▪ Distance to burner gauze assembly (see page 42)</li> <li>▪ Electrode soiled</li> </ul> <p>Press reset button <b>R</b>.</p>
EB	Burner in a fault state	Repeated flame loss or deactivation during calibration	<ol style="list-style-type: none"> <li>1. Check system for excessive temperature. If fault F1 or F2 is present, ensure there is adequate heat transfer. Press reset button <b>R</b>.</li> <li>2. Check system for condensate backup. <b>Note</b> <i>To prevent water damage, detach fan unit before removing the burner.</i> Remove the condensate backup. Press reset button <b>R</b>.</li> <li>3. Check ionisation electrode for contamination. Check gap between ionisation electrode and burner gauze assembly (see page 42). Press reset button <b>R</b>.</li> <li>4. Check flue system; remove flue gas recirculation if required. Press reset button <b>R</b>.</li> </ol>
EC	Burner in a fault state	Parameter error during calibration	<p>Press reset button <b>R</b>. or Replace boiler coding card and press reset button <b>R</b>.</p>
ED	Burner in a fault state	Internal fault	Replace control unit.

**Fault messages** (cont.)

Fault code displayed	System characteristics	Cause	Measures
EE	Burner in a fault state	Flame signal at burner start not present or insufficient.	<ul style="list-style-type: none"> <li>▪ Check gas supply (gas pressure and gas flow switch).</li> <li>▪ Check gas train.</li> <li>▪ Check system for condensate backup.</li> </ul> <p><b>Note</b> To prevent water damage, detach fan unit before removing the burner.</p> <ul style="list-style-type: none"> <li>▪ Check ionisation electrode and connecting cable.</li> </ul> <p>Check ignition:</p> <ul style="list-style-type: none"> <li>▪ Connecting cables to ignition module and ignition electrode</li> <li>▪ Ignition electrode gap and soiling (see page 42).</li> </ul> <p>Press reset button <b>R</b>.</p>
EF	Burner in a fault state	Flame is lost immediately after it has built (during safety time).	<p>Check gas supply (gas pressure and gas flow switch). Check balanced flue system for flue gas recirculation.</p> <p>Check ionisation electrode (replace if required):</p> <ul style="list-style-type: none"> <li>▪ Distance to burner gauze assembly (see page 42)</li> <li>▪ Electrode soiled</li> </ul> <p>Press reset button <b>R</b>.</p>
F0	Burner blocked	Internal fault	Replace control unit.
F1	Burner in a fault state	Flue gas temperature limiter has responded.	<p>Check heating system fill level. Vent the system. When the flue system has cooled down, press reset button <b>R</b>.</p>
F2	Burner in a fault state	Temperature limiter has responded.	<p>Check heating system fill level. Check circulation pump. Vent the system. Check temperature limiter and connecting cables. Press reset button <b>R</b>.</p>
F3	Burner in a fault state	Flame signal is already present at burner start.	<p>Check ionisation electrode and connecting cable. Check system for condensate backup.</p> <p><b>Note</b> To prevent water damage, detach fan unit before removing the burner.</p> <p>Press reset button <b>R</b>.</p>
F8	Burner in a fault state	Fuel valve or modulation valve will not close.	<p>Check the gas train and replace if required. Press reset button <b>R</b>.</p>



**Fault messages** (cont.)

<b>Fault code displayed</b>	<b>System characteristics</b>	<b>Cause</b>	<b>Measures</b>
F9	Burner in a fault state	Fan speed too low	Check fan, fan connecting cables and fan power supply. Press reset button <b>R</b> .
FA	Burner in a fault state	Fan idle state or set speed not reached	Check fan, check connecting cables to fan. Press reset button <b>R</b> .
FC	Burner in a fault state	Fan unit faulty.	Check fan unit, replace if required. Press reset button <b>R</b> .
Fd	Burner in a fault state and additional fault B7 is displayed.	Boiler coding card missing.	Insert the boiler coding card. Press reset button <b>R</b> . Replace control unit if fault persists.
Fd	Burner in a fault state	Burner control unit fault	Check ignition electrode, ionisation electrode and connecting cables. Check whether a strong interference (EMC) field exists near the appliance. Press reset button <b>R</b> . If the fault occurs sporadically, replace the coding card. Replace control unit if fault is permanent.
FE	Burner blocked or in a fault state	Boiler coding card or main PCB faulty, or incorrect boiler coding card	Press reset button <b>R</b> . If the fault persists, check the boiler coding card and replace boiler coding card or control unit if necessary.
FF	Burner blocked or in a fault state	Internal fault or reset button <b>R</b> blocked.	Restart the appliance. Replace the control unit if the appliance will not restart.

**Maintenance**

- !** **Please note**
- Residual water will escape when the boiler or one of the following components is fitted or removed:
    - Water-filled pipework
    - Circulation pumps
    - Plate heat exchanger
    - Components fitted in the heating water or DHW circuit
- Water ingress can result in damage to other components.

- Protect the following components against ingress of water:
- Control unit (in particular in the service position)
  - Electrical components
  - Plug-in connections
  - Cables and leads



**Maintenance** (cont.)

**Shutting down the boiler**

1. Switch off the power supply.
2. Shut off the gas supply.
3. If the boiler needs to be removed:
  - Disconnect the balanced flue system.
  - Drain the boiler on the heating water and DHW sides.
  - Disconnect the on-site cables/leads.

**Removing the boiler for servicing**

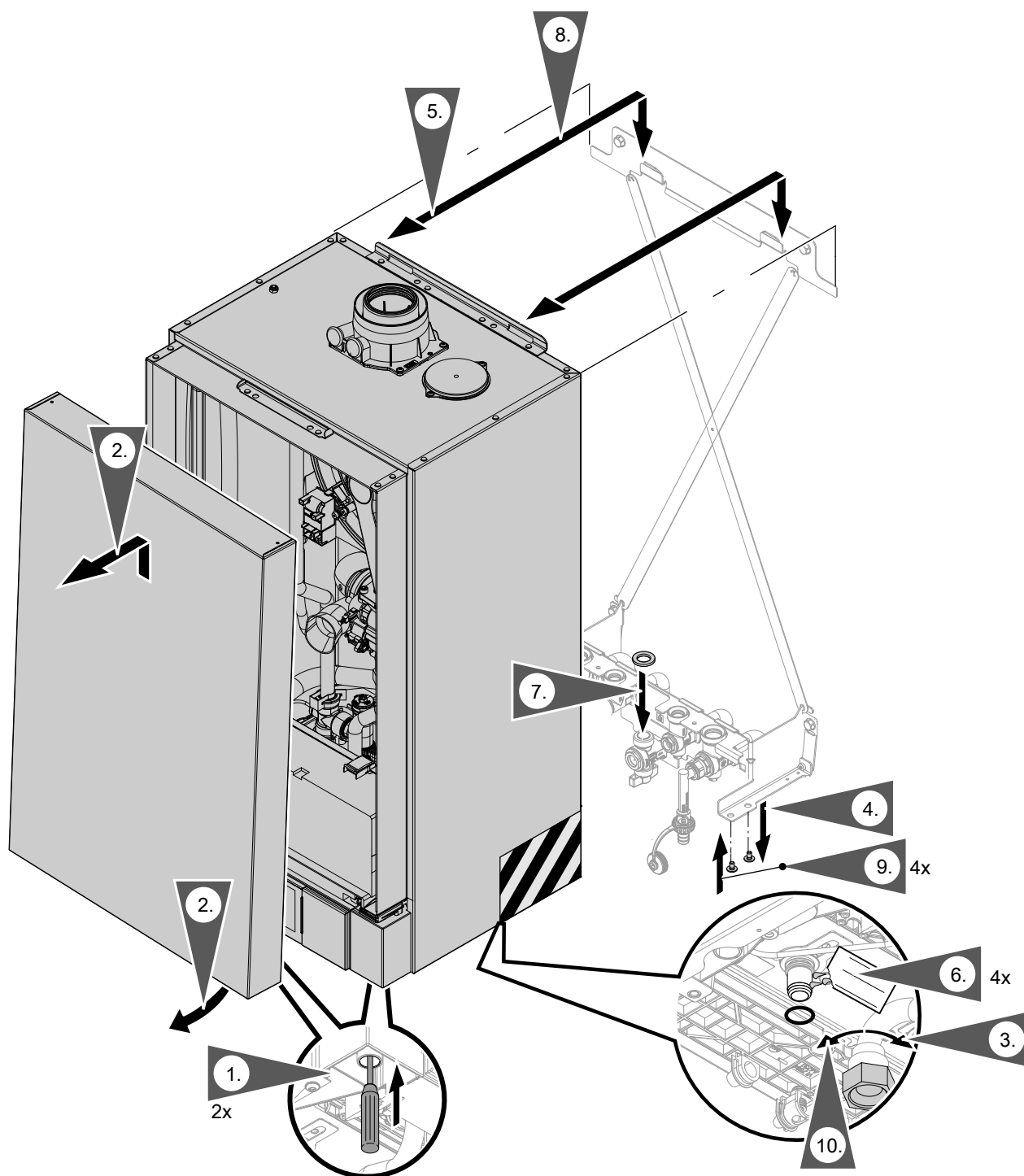



Fig. 43

1. Unlock the front panel on the underside (push in) using a screwdriver.
2. Swivel the front panel forwards slightly and lift away upwards.

### Maintenance (cont.)

3. Loosen the union nut on the gas pipe.
4. Remove the 4 screws from the fitting assembly.
5. Raise the boiler so that the connections are separated and remove from the wall.
6. Before fitting the boiler: Insert new O-rings. Lubricate the O-rings with the valve grease supplied.
7. Insert new flat gasket for the gas shut-off valve.
8.  **Danger**  
Avoid injury to the hands.  
Do not grip the boiler underneath at the back.
9. Insert 4 screws into the fitting assembly from below.

**! Please note**

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

10. Tighten the union nut on the gas pipe.

Fitting the boiler:

- Position the boiler centrally in front of the wall mounting bracket. Use the outer ends of the wall mounting bracket to line up the boiler.
- Lower the boiler vertically into position.
- The supporting surface of the boiler must rest on the fitting assembly.

### Checking the temperature sensors

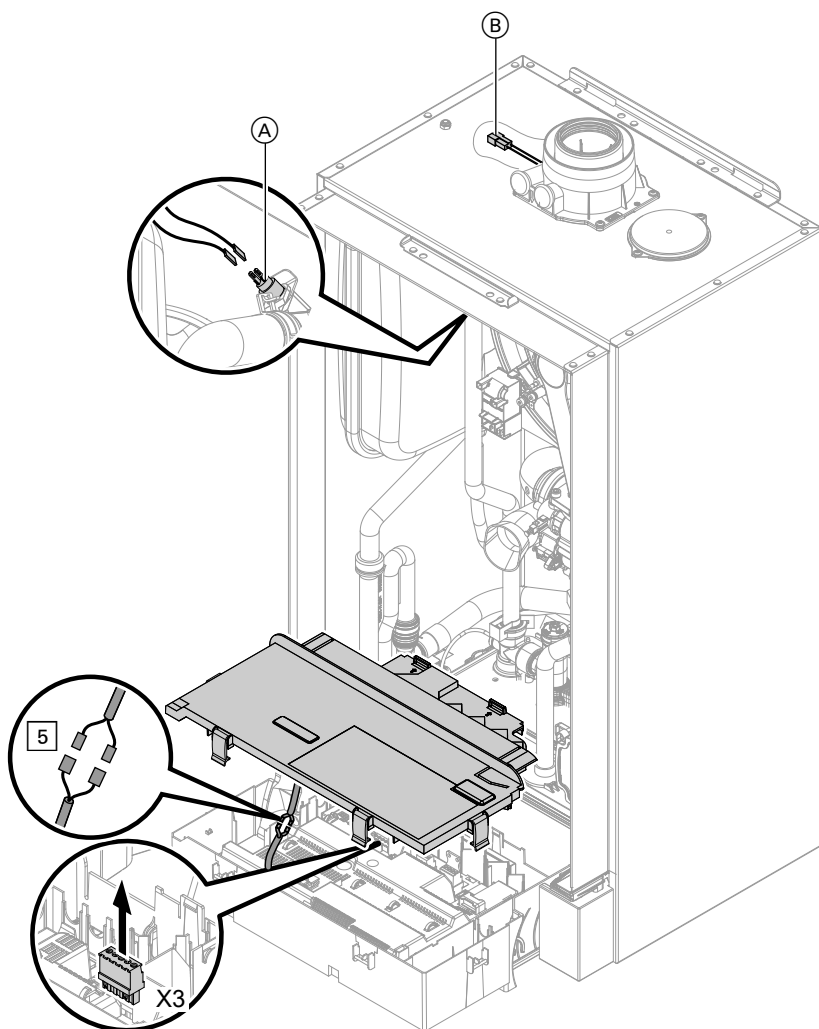


Fig. 44

#### Boiler water temperature sensor

1. Disconnect the leads from boiler water temperature sensor (A).
2. Check the sensor resistance and compare it to the curve in the following table.  
In the event of severe deviation replace the sensor.



**Danger**

The boiler water temperature sensor is directly immersed in the heating water (risk of scalding).  
Drain the boiler on the heating water side before replacing the sensor.

#### Cylinder temperature sensor

1. Disconnect plug [5] from the control unit cable harness.
2. Check the sensor resistance and compare it to the curve in the following table.  
In the event of severe deviation replace the sensor.

#### Flow temperature sensor, low loss header

1. Disconnect plug "X3" from the control unit.
2. Measure the sensor resistance across "X3.4" and "X3.5" and compare it to the curve in the following table.  
In the event of severe deviation replace the sensor.

#### Outside temperature sensor (hardwired)

1. Disconnect plug "X3" from the control unit.
2. Measure the sensor resistance across "X3.1" and "X3.2" and compare it to the curve in the following table.  
Where actual values deviate severely from the curve values, disconnect the wires at the sensor and repeat test on the sensor itself.  
Depending on the result, replace the lead or the outside temperature sensor.

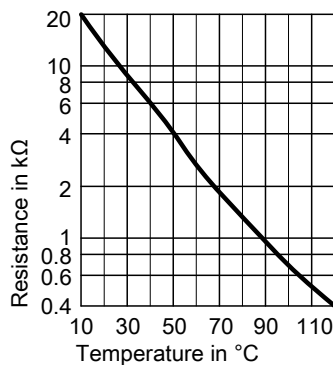
## Maintenance (cont.)

### Flue gas temperature sensor

1. Disconnect the leads from flue gas temperature sensor **B**.
2. Check the sensor resistance and compare it to the curve in the following table.  
In the event of severe deviation replace the sensor.

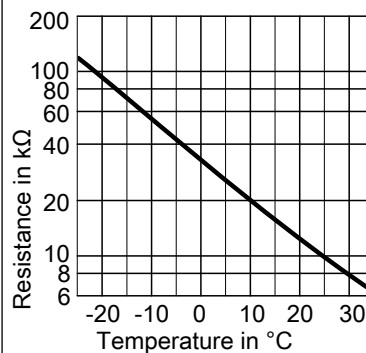
3. If the permissible flue gas temperature has been exceeded, the flue gas temperature sensor locks out the appliance. Cancel the interlock after the flue system has cooled down by pressing reset button **R**.

- Flue gas temperature sensor
- Boiler water temperature sensor
- Cylinder temperature sensor
- Flow temperature sensor, low loss header



Sensor type: NTC 10 kΩ

- Outside temperature sensor (hardwired)



Sensor type: NTC 10 kΩ

### Fault during commissioning (fault A3)

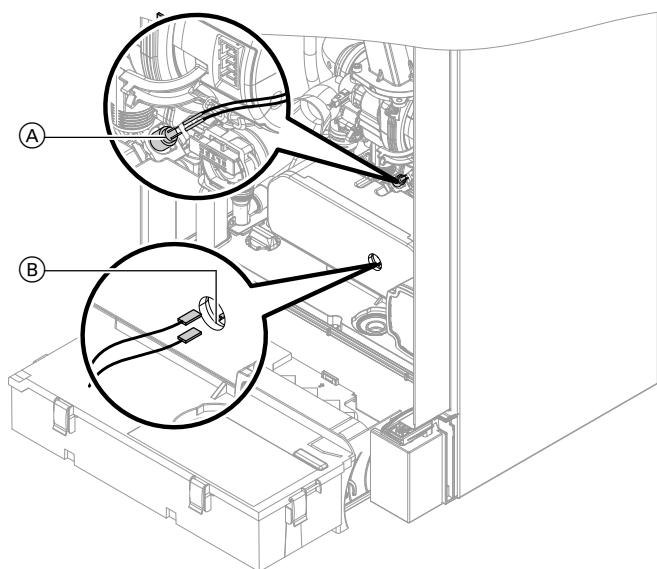
During commissioning, the control unit checks correct placement of the flue gas temperature sensor. If fault message A3 is displayed:

1. Check whether the flue gas temperature sensor is correctly inserted. See previous diagram.
2. Correct the position of the flue gas temperature sensor if required.

3. Switch the ON/OFF switch OFF.
4. Switch the ON/OFF switch ON again.  
Re-start the commissioning assistant.

**Maintenance** (cont.)

**Checking the outlet temperature sensor or comfort sensor (only for gas condensing combi boiler)**



1. Disconnect the leads from outlet temperature sensor (A) or comfort sensor (B).
2. Check sensor resistance and compare it to the curve.

Fig. 45

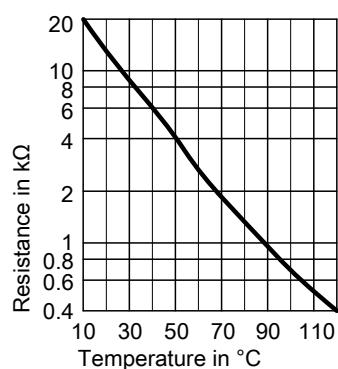


Fig. 46 Sensor type: NTC 10 kΩ

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

**Note**

Water may leak out when replacing the outlet temperature sensor. Close the cold water shut-off valve. Drain the DHW line and the plate heat exchanger (on the DHW side).

Checking the plate heat exchanger

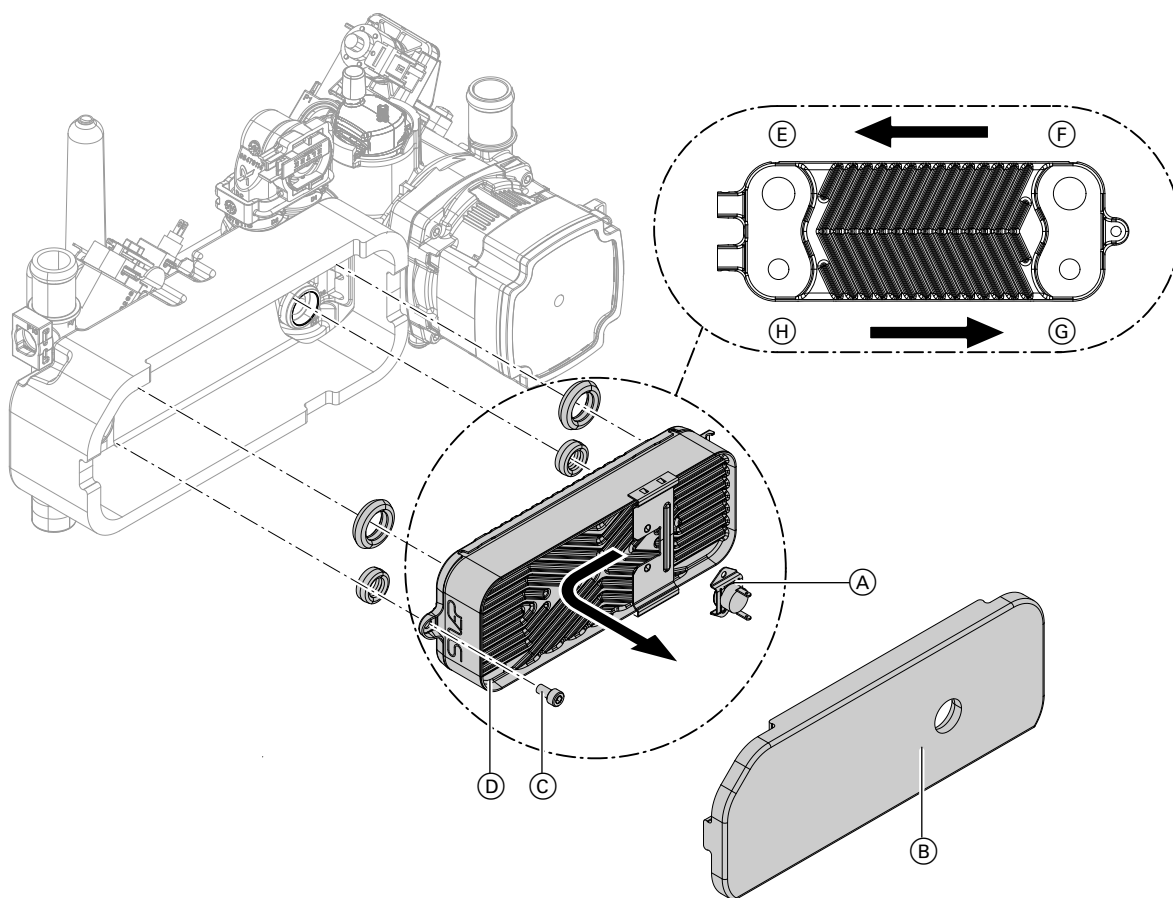


Fig. 47

- Ⓔ Heating water return
- Ⓕ Heating water flow

- Ⓖ DHW
- Ⓗ Cold water

1. Shut off and drain the boiler on the heating water and the DHW side.
2. Disconnect the leads from temperature sensor Ⓐ.
3. Remove thermal insulation Ⓑ from the plate heat exchanger.
4. Remove temperature sensor Ⓐ.
5. Undo screw Ⓒ on the plate heat exchanger and remove plate heat exchanger Ⓓ with gaskets.
6. Check the connections on the DHW side for scaling; clean or replace the plate heat exchanger if required.
7. Check the connections on the heating water side for contamination; clean or replace the plate heat exchanger if required.
8. Install in reverse order using new gaskets.

**Note**

*During and after removal, small amounts of water may trickle from the plate heat exchanger.*

**Note**

*During installation, ensure the fixing holes are aligned and the gaskets are seated correctly. Mount the plate heat exchanger with the correct orientation.*

**Maintenance** (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. 75 °C, check the following:

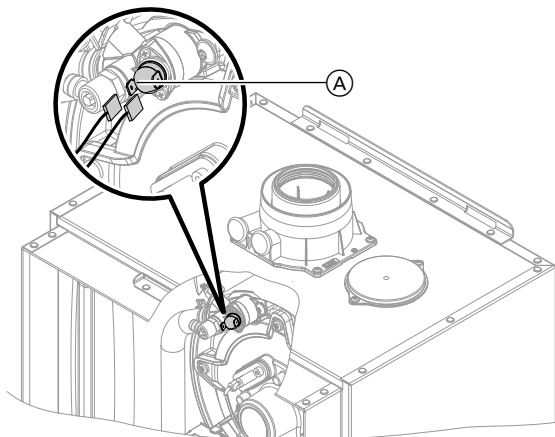


Fig. 48

1. Disconnect the leads from temperature limiter (A).
2. Check continuity of the temperature limiter with a multimeter.
3. Remove faulty temperature limiter.
4. Coat the new temperature limiter with heat conducting paste and install it.
5. After commissioning, press reset button **R** on the control unit.

**Checking for interchange of flow/return connections in solar circuit**

The test should run over several days with a solar heat source (sunshine).

**Note**

*When solar control module SM1 is recognised via the commissioning assistant, the process runs automatically in the background.*

Tap the following buttons:

1. "Menu"
2. "Service"
3. Enter "viservice" password.
4. "Service functions"
5. "Check flow/return interchange"

6. **"Start"**  
The test may take several days. The result of the test is displayed in the fault messages.
  - If the solar flow and solar return are connected correctly, the message **"Flow/return interchange check found no faults"** is displayed.
  - If the solar flow and solar return are interchanged, the message **"Flow/return interchange check detected a fault"** is displayed.
7. Once the result is known, the function is automatically terminated. The function can be terminated at any time with **"Shutdown"**. The function terminates automatically after 6 months.

### Checking the fuse

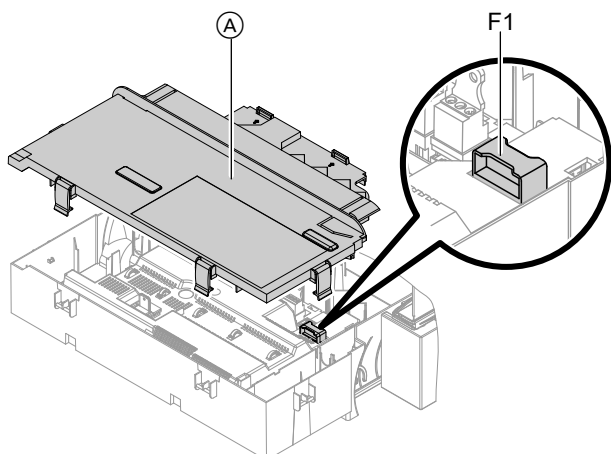




Fig. 49

1. Switch off the power supply.
2. Release the side closures and pivot the control unit down.
3. Remove cover (A).
4. Check fuse F1 (see connection and wiring diagram).

### Mixer extension kit

#### Checking the setting of rotary selector S1

The rotary selector on the PCB of the extension kit defines the assignment to the relevant heating circuit.

Heating circuit	Rotary selector S1 setting
Heating circuit with mixer M2 (heating circuit 2)	2 
Heating circuit with mixer M3 (heating circuit 3)	4 

#### Checking the rotational direction of the mixer motor

After being switched on, the boiler implements a self-test. During this, the mixer is opened and closed again.

#### Note

The mixer motor can also be started via the actuator test (see chapter "Checking outputs").

Observe the rotational direction of the mixer motor during its self-test. Then manually set the mixer back to "Open". The flow temperature sensor must now capture a higher temperature. If the temperature drops, either the motor is turning in the wrong direction or the mixer insert is incorrectly fitted.



Mixer installation instructions

#### Changing the rotational direction of the mixer motor (if required)

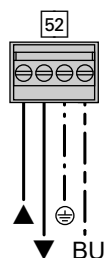


Fig. 50

1. Remove the upper casing cover of the extension kit.



#### Danger

An electric shock can be life-threatening. Before opening the boiler, disconnect it from the mains voltage, e.g. at the fuse or mains isolator.

2. At plug 52, swap the cores at terminals "▲" and "▼".
3. Refit the casing cover.



**Maintenance** (cont.)

**Check flow temperature sensor**

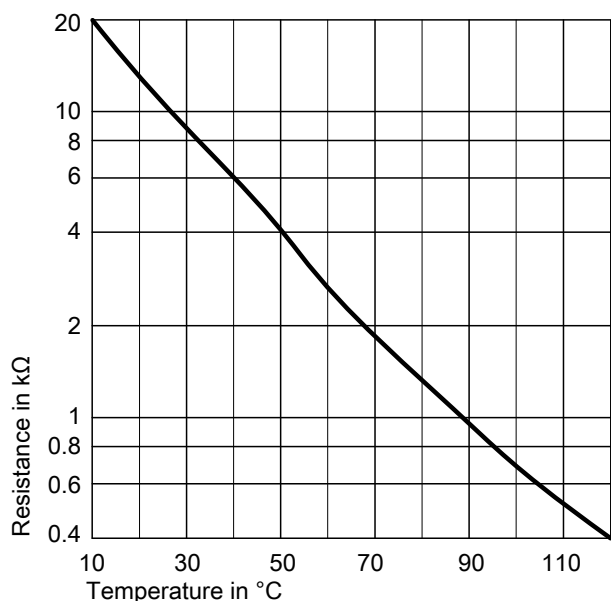


Fig. 51 Sensor type: NTC 10 kΩ

1. Disconnect plug 2 (flow temperature sensor).
2. Check the sensor resistance and compare it to the curve.  
In the event of severe deviation replace the sensor.

**Checking the Vitotronic 200-H (accessories)**

The Vitotronic 200-H is connected to the control unit via the LON cable. To test the connection, carry out a subscriber check at the boiler control unit (see page 50).

**Overview of assemblies**

The following details are required when ordering parts:

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

**Serial no. 7570787, 7570788, 7570790, 7570792**

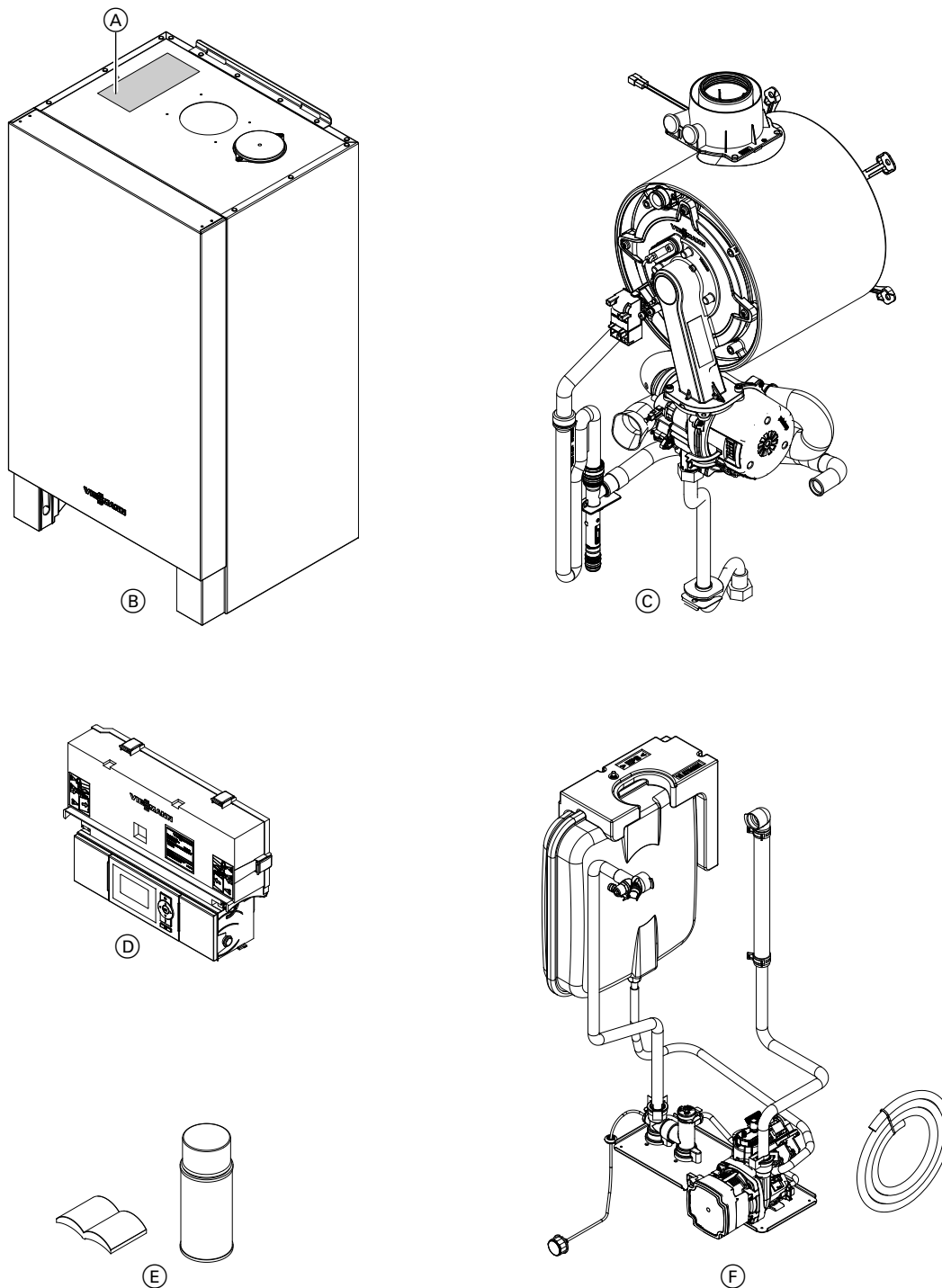


Fig. 52

- (A) Type plate
- (B) Casing assembly
- (C) Heat cell assembly with burner
- (D) Control unit assembly

Overview of assemblies (cont.)

- (E) Miscellaneous
- (F) Hydraulic assembly with Aqua-plate

Serial no. 7570789, 7570791, 7570793

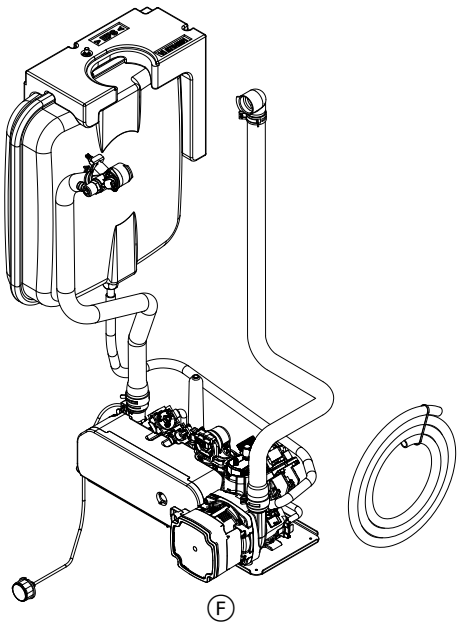
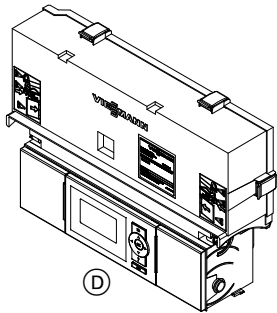
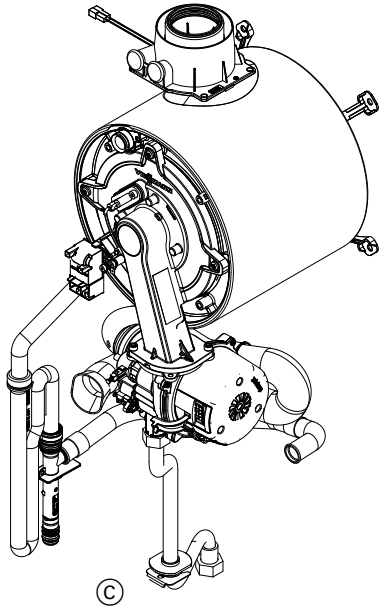
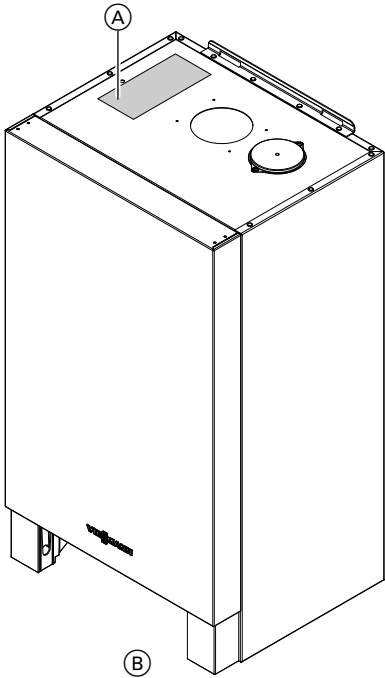


Fig. 53

- (A) Type plate
- (B) Casing assembly
- (C) Heat cell assembly with burner
- (D) Control unit assembly
- (E) Miscellaneous
- (F) Hydraulic assembly with Aqua-plate

Casing assembly

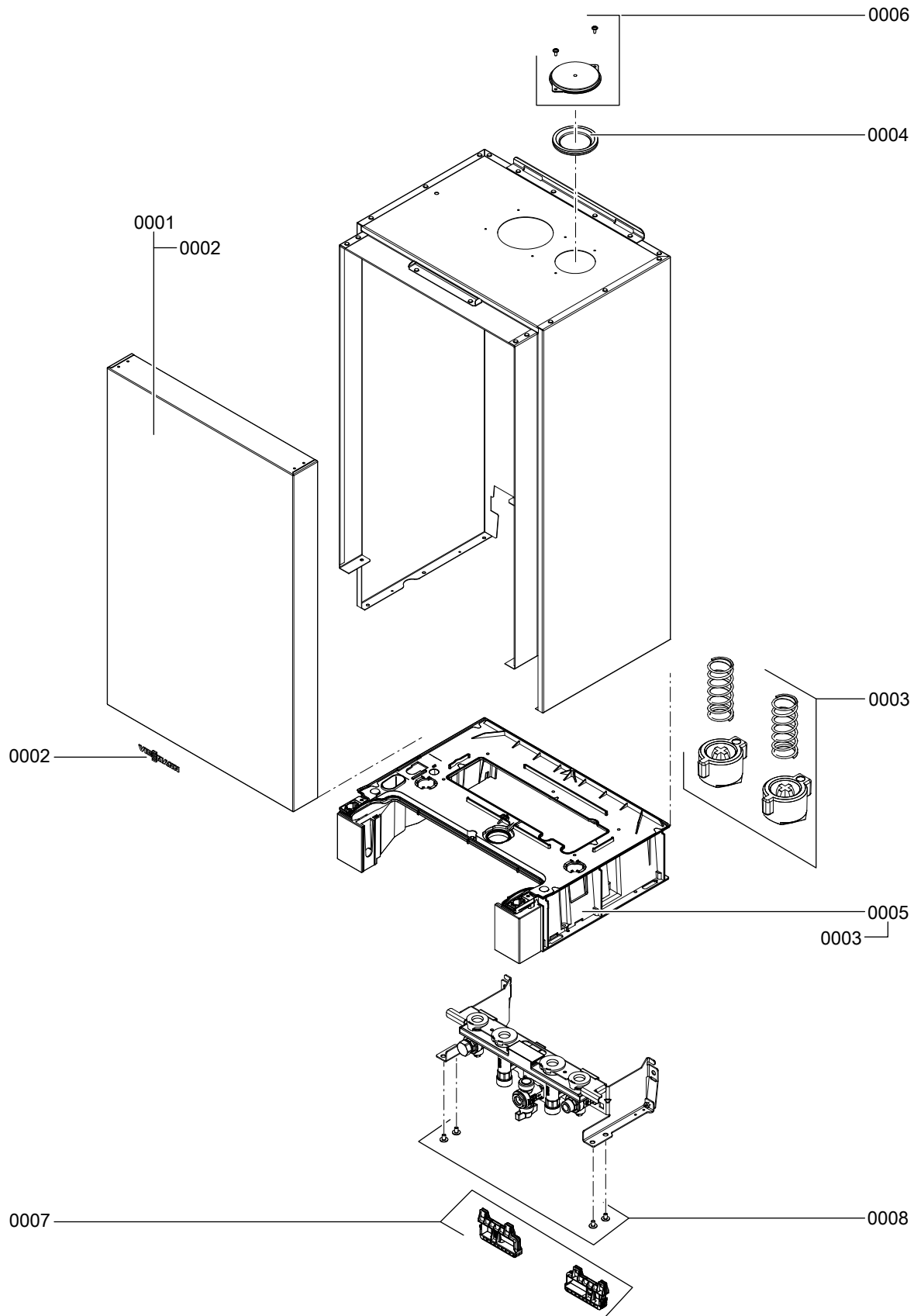


Fig. 54

**Casing assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Front panel
0002	Viessmann logo
0003	Locking elements
0004	Diaphragm grommet DN 60
0005	Air box floor
0006	Cover
0007	Cable holders, fitting assembly
0008	Screws, air box floor, fitting assembly (set)

Parts lists

Heat cell assembly

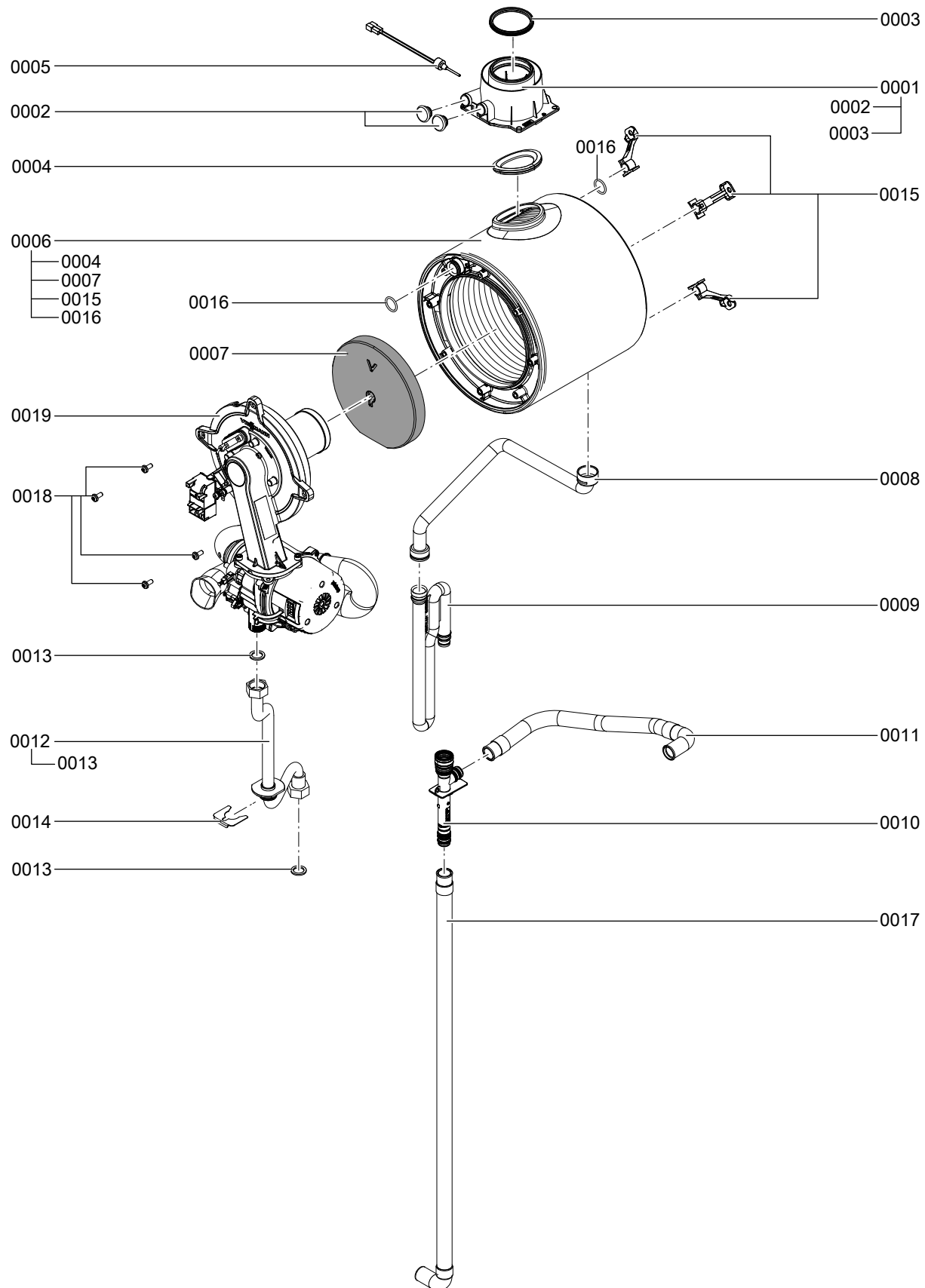


Fig. 55

**Heat cell assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Boiler flue connection
0002	Plug for boiler flue connection
0003	Gasket DN 60
0004	Flue gasket
0005	Flue gas temperature sensor
0006	Heat exchanger
0007	Thermal insulation block
0008	Condensate hose
0009	Trap
0010	Tee union
0011	Corrugated hose 19 x 400 bend/ferrule
0012	Gas supply pipe
0013	Gasket A 17 x 24 x 2 (5 pce)
0014	Clip Ø 24
0015	Heat exchanger mounting bracket (set)
0016	O-ring 20.63 x 2.62 (5 pce)
0017	Corrugated hose 19 x 800 with ferrule/bend
0018	Door screws (set)
0019	MatriX cylinder burner

**MatriX cylinder burner assembly**

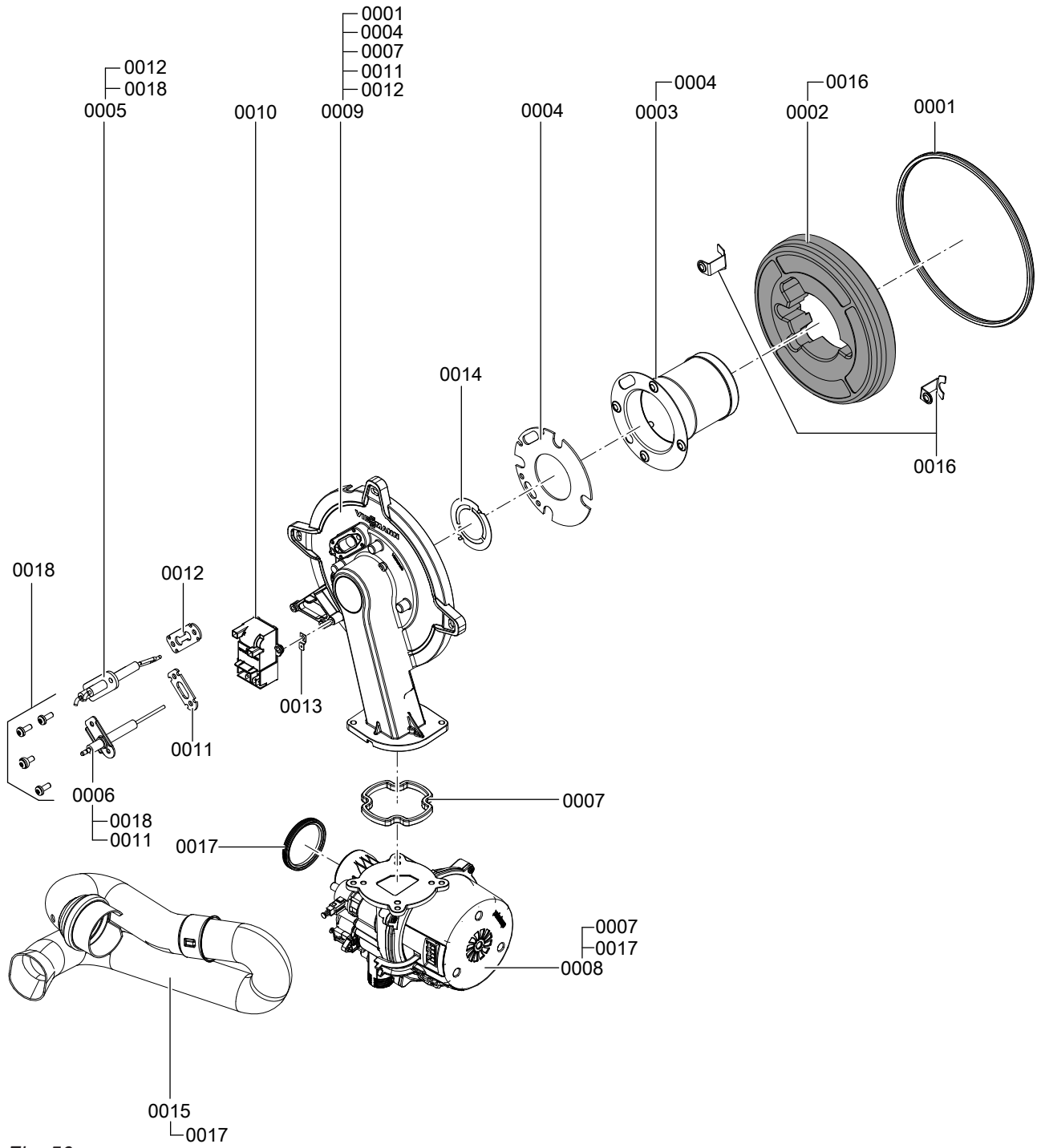


Fig. 56



**MatriX cylinder burner assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Burner gasket (wearing part)
0002	Thermal insulation ring
0003	Cylinder burner gauze assembly
0004	Burner gauze assembly gasket
0005	Ignition electrode (wearing part)
0006	Ionisation electrode (wearing part)
0007	Gasket, burner door flange (wearing part)
0008	Radial fan
0009	Burner door
0010	Ignition unit
0011	Gasket, ionisation electrode (5 pce)
0012	Gasket, ignition electrode (5 pce)
0013	Blade terminal (10 pce)
0014	Mixture restrictor
0015	Venturi extension
0016	Mounting plate, thermal insulation ring (2 pce)
0017	Gasket DN 50
0018	Fixing screws

**Hydraulic assembly**

Serial no. 7570787, 7570788, 7570790, 7570792

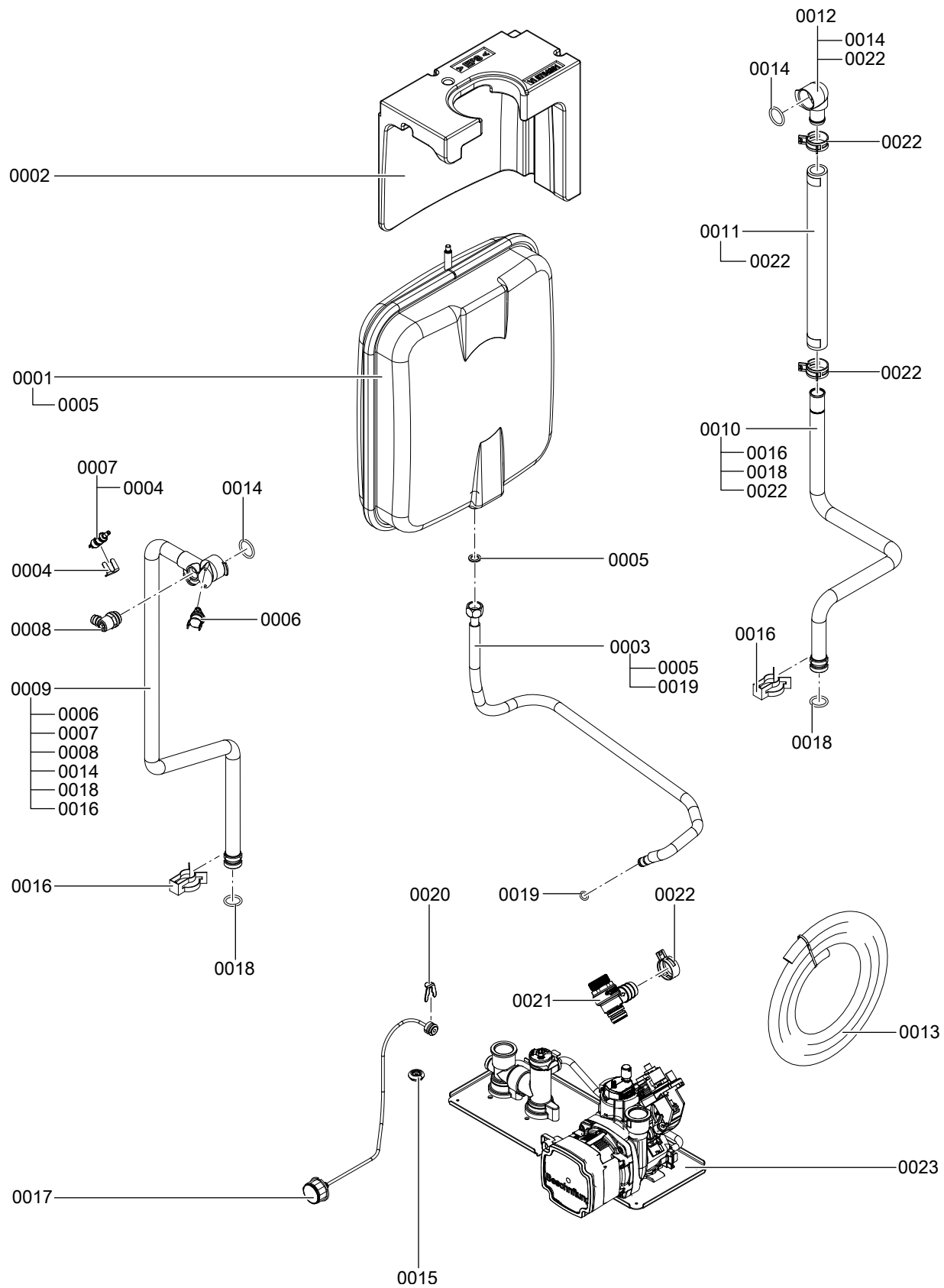


Fig. 57

**Hydraulic assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Diaphragm expansion vessel 10 l
0002	Support for diaphragm expansion vessel
0003	Connection line, diaphragm expansion vessel 3/8 x 60
0004	Clip Ø 8 (5 pce)
0005	Gasket A 10 x 15 x 1.5 (5 pce)
0006	Thermal circuit breaker
0007	Temperature sensor
0008	Air vent valve G 3/8
0009	Connection pipe HF
0010	Pipe, HR
0011	Profile hose HR
0012	Connection elbow HR
0013	Hose 10 x 1.5 x 1500
0014	O-ring 20.63 x 2.62 (5 pce)
0015	Diaphragm grommet, pressure gauge
0016	Pipe clip
0017	Pressure gauge
0018	Push-fit connector gasket set (5 pce)
0019	Circular seal washer 8 x 2 (5 pce)
0020	Clip Ø 10 (5 pce)
0021	Safety valve 3 bar
0022	Spring clip DN 25 (5 pce)
0023	Hydraulic assembly, system boiler (see page 122)

**Hydraulic assembly (cont.)**

Serial no. 7570789, 7570791, 7570793

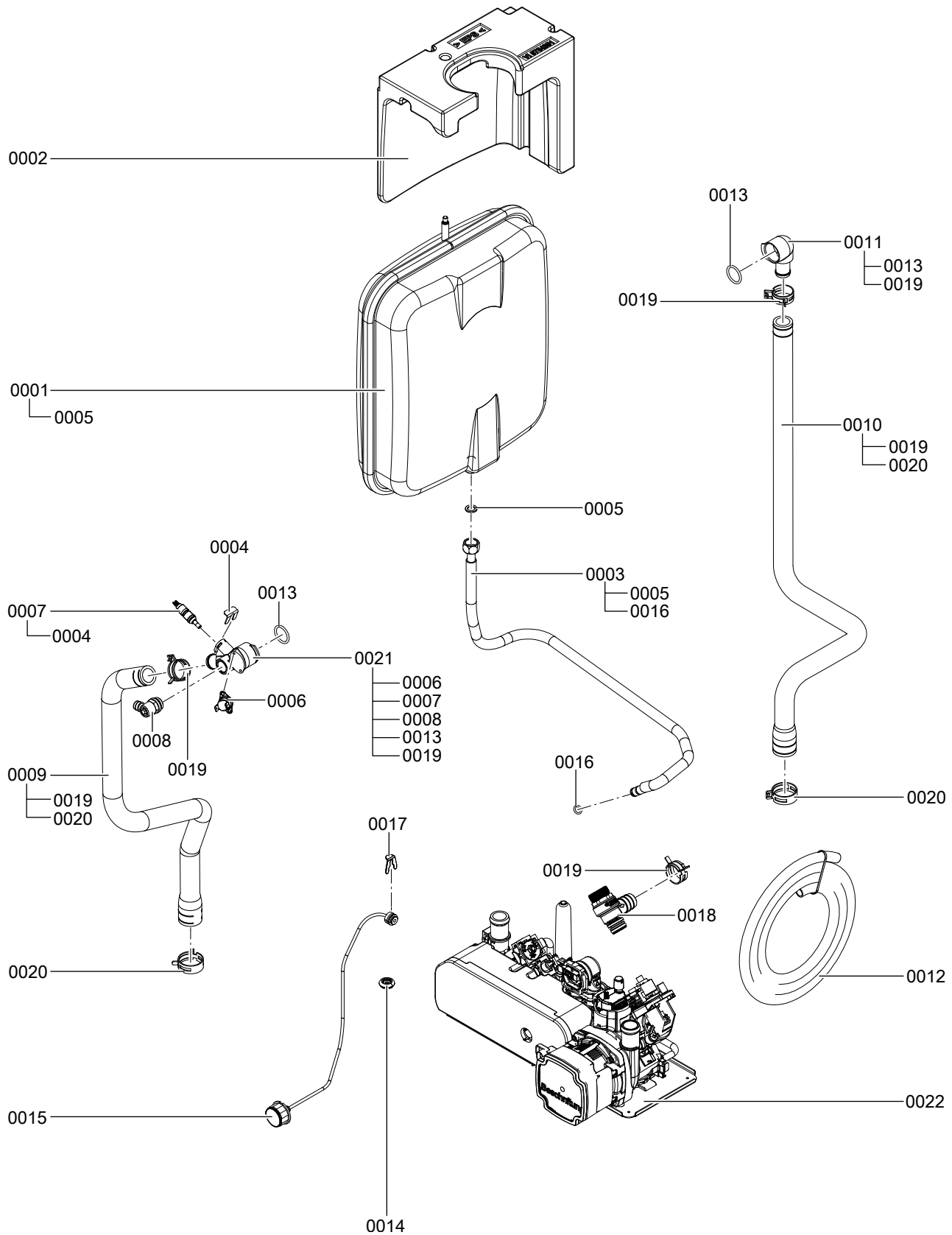


Fig. 58

**Hydraulic assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Diaphragm expansion vessel 10 l
0002	Support for diaphragm expansion vessel
0003	Connection line, diaphragm expansion vessel 3/8 x 60
0004	Clip Ø 8 (5 pce)
0005	Gasket A 10 x 15 x 1.5 (5 pce)
0006	Thermal circuit breaker
0007	Temperature sensor
0008	Air vent valve G 3/8
0009	Profile hose HF
0010	Profile hose HR WT
0011	Connection elbow HR
0012	Hose 10 x 1.5 x 1500
0013	O-ring 20.63 x 2.62 (5 pce)
0014	Diaphragm grommet, pressure gauge
0015	Pressure gauge
0016	Circular seal washer 8 x 2 (5 pce)
0017	Clip Ø 10 (5 pce)
0018	Safety valve
0019	Spring clip DN 25 (5 pce)
0020	Spring clip DN 30
0021	Connection elbow HF
0022	Hydraulic assembly, combi boiler (see page 124)

Hydraulic assembly, system boiler

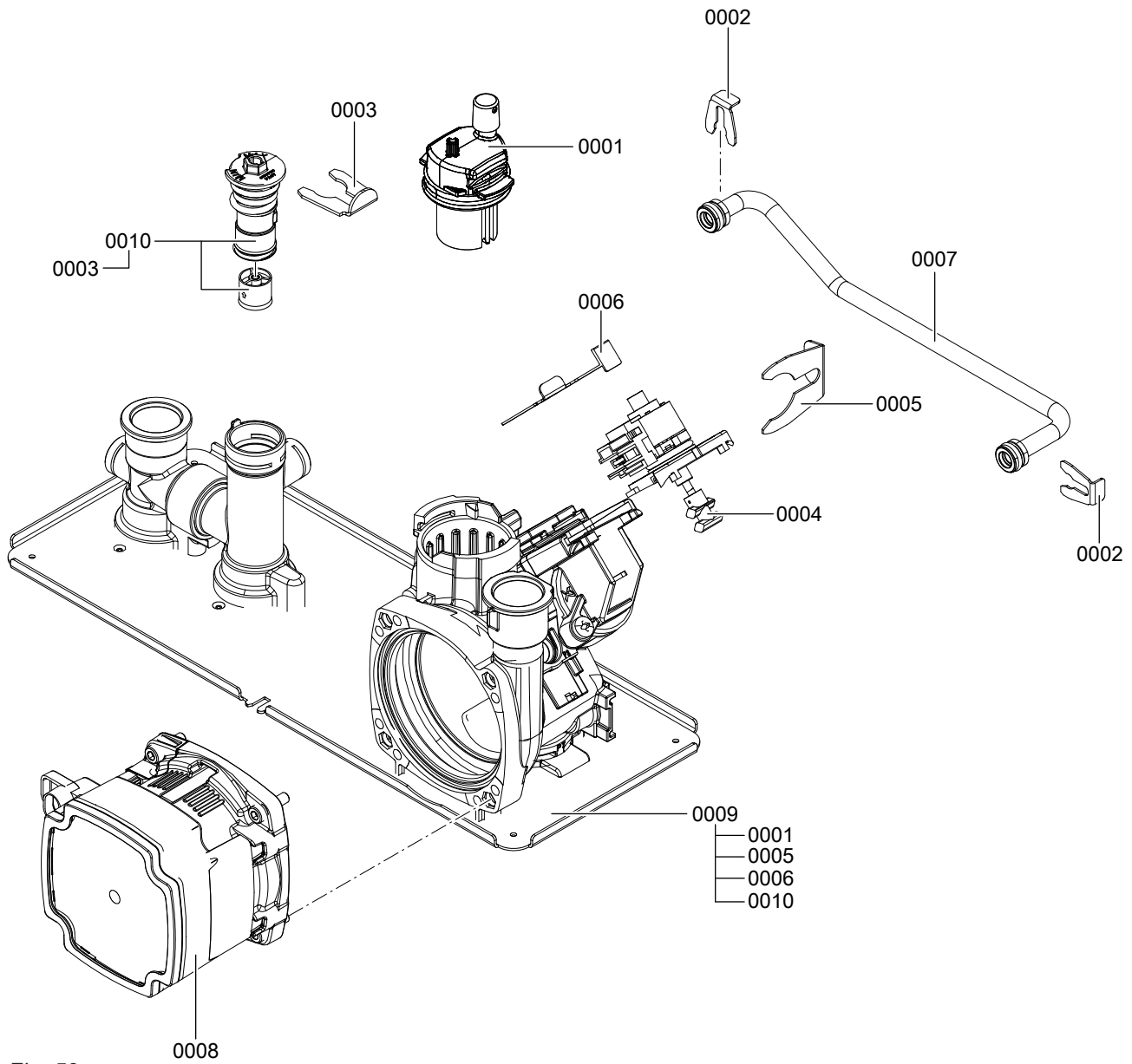


Fig. 59

**Hydraulic assembly, system boiler** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Air vent valve
0002	Clip Ø 8 (5 pce)
0003	Clip Ø 16 (5 pce)
0004	Stepper motor
0005	Clip Ø 24
0006	Clip Ø 16
0007	Bypass line
0008	Circulation pump UPM3 15-75 KM
0009	Hydraulic assembly, system boiler
0010	Bypass controller with overflow valve

Hydraulic assembly, combi boiler

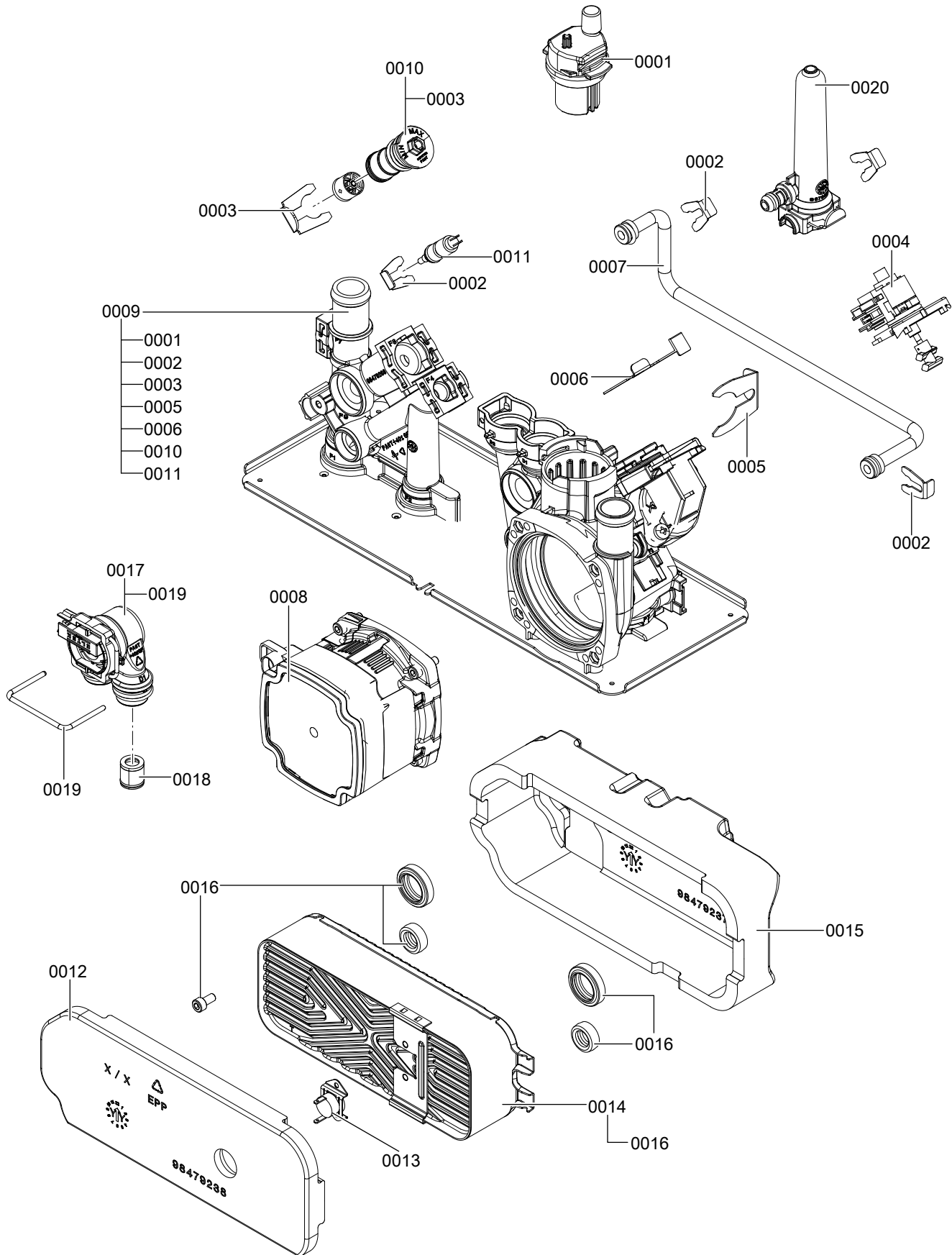


Fig. 60



**Hydraulic assembly, combi boiler** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Air vent valve
0002	Clip Ø 8 (5 pce)
0003	Clip Ø 16 (5 pce)
0004	Stepper motor
0005	Clip Ø 24
0006	Clip Ø 16
0007	Bypass line
0008	Circulation pump UPM3 15-75 KM
0009	Hydraulic assembly, combi boiler
0010	Bypass controller
0011	Temperature sensor
0012	Plate heat exchanger insulation board
0013	Temperature sensor NTC
0014	Plate heat exchanger
0015	Plate heat exchanger insulation shell
0016	Gaskets for plate heat exchanger and screw
0017	Flow sensor
0018	Flow limiter
0019	Clip 50
0020	Expansion vessel

**Control unit assembly**

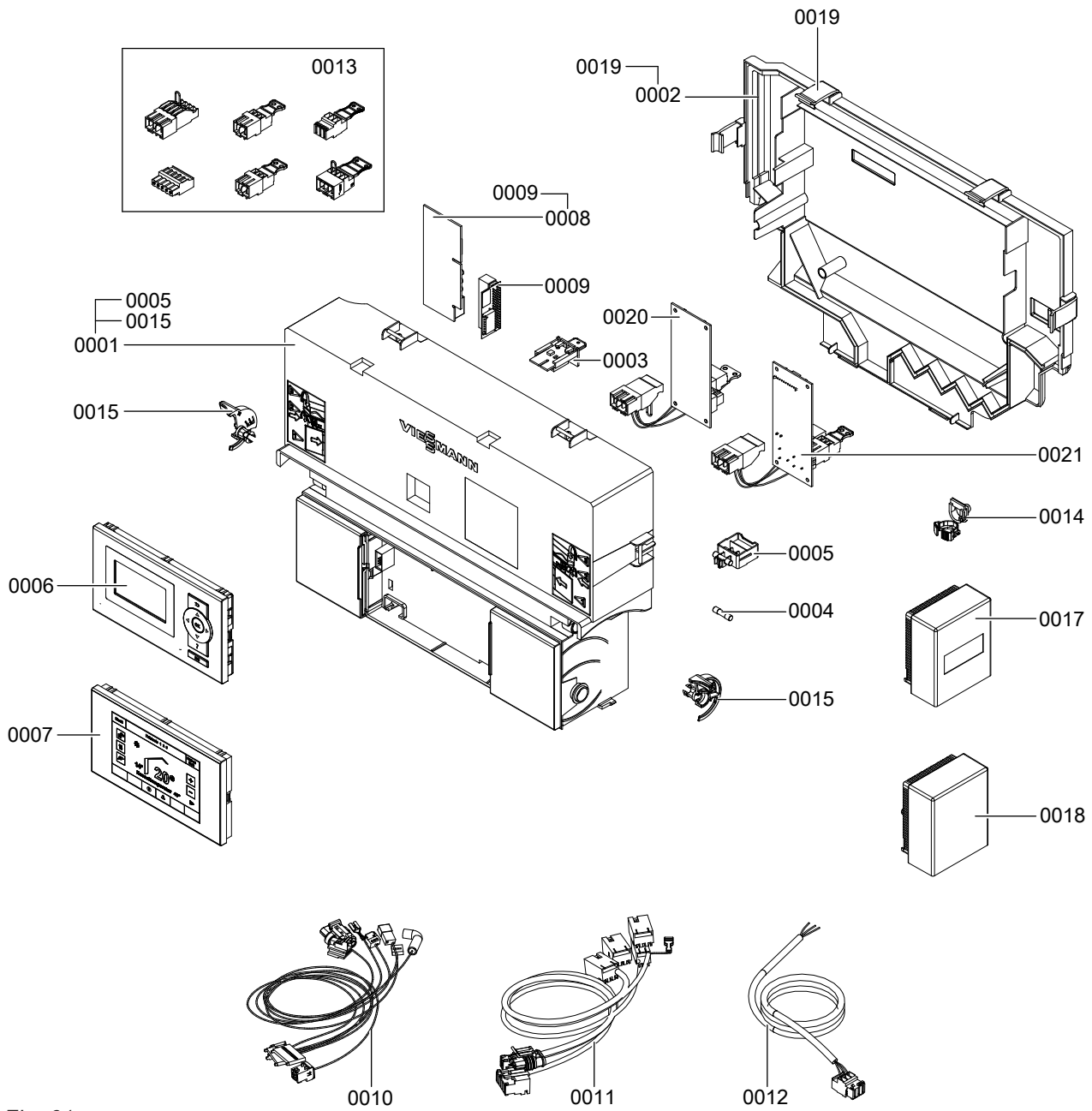


Fig. 61

**Control unit assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Control unit VBC138-A10.0xx
0002	Casing back panel
0003	Coding card
0004	Fuse 6.3 A (slow), 250 V (10 pce)
0005	Fuse holder 6.3 A (slow)
0006	Vitotronic 100 HC1B programming unit
0007	Vitotronic 200 HO2B programming unit
0008	LON communication module
0009	PCB adaptor
0010	Cable harness X8/X9/Ion/145/stepper motor
0011	Cable harness 35/100/20/54
0012	Power cable
0013	Mating plug
0014	Cable ties (10 pce)
0015	Locking bolts, left and right
0017	Wireless outside temperature sensor
0018	Outside temperature sensor NTC
0019	Catch, back panel
0020	Internal H1 extension
0021	Internal H2 extension

Miscellaneous assembly

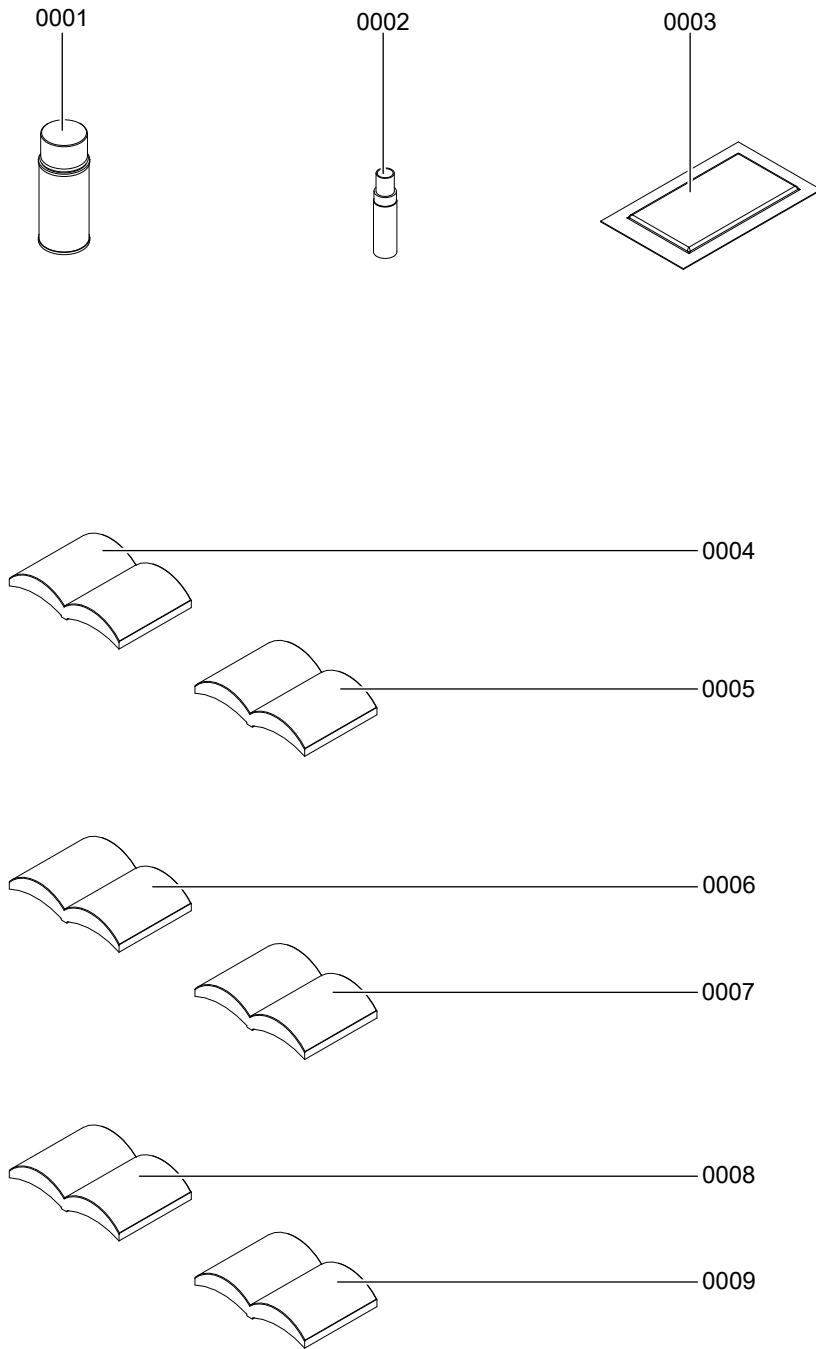


Fig. 62

**Miscellaneous assembly** (cont.)

<b>Pos.</b>	<b>Part</b>
0001	Touch-up spray paint, white, 150 ml can
0002	Touch-up paint stick, white
0003	Special grease
0004	Installation and service instructions (HO2B)
0005	Installation and service instructions (HC1B)
0006	Installation and service instructions (HO1B)
0007	Operating instructions (HO2B)
0008	Operating instructions (HC1B)
0009	Operating instructions (HO1B)

**Ordering individual parts for accessories**

Please affix accessory labels with part numbers here.  
Please state the relevant part no. when ordering individual parts.



## Control unit

### Weather-compensated heating mode

The control unit determines a set boiler water temperature subject to outside temperature or room temperature (if a room temperature-dependent remote control is connected) and the slope/level of the heating curve. The determined set boiler water temperature is transferred to the burner control unit. From the set and actual boiler water temperatures, the burner control unit calculates the modulation level and regulates the burner accordingly.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature.

### Constant temperature heating mode

Upon demand by the room thermostat in the heating and DHW "☒☒" operating program, the selected set boiler water temperature is maintained. The boiler water temperature will be held at the default frost protection temperature when there is no demand.

The electronic temperature limiter inside the burner control unit limits the boiler water temperature. Flow temperature setting range: 20 to 74 °C.

### DHW heating with gas condensing combi boiler

If the flow switch detects a hot water draw-off (> 3 l/min), the burner, circulation pump and 3-way valve are switched on or changed over. The burner modulates to reach the DHW outlet temperature and is limited on the boiler side by the temperature limiter.

### DHW heating with gas condensing system boiler

The burner, circulation pump and 3-way valve are started or changed over if the cylinder temperature lies 2.5 K below the set cylinder temperature.

In the delivered condition, the set boiler water temperature is 20 K higher than the set DHW temperature (adjustable via parameter "60" in the "DHW" group). If the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K, the burner is switched off and the circulation pump run-on time begins.

### Boosting DHW heating

This function is activated by specifying a second set DHW temperature via parameter 58 in the "DHW" group and activating the fourth DHW phase for DHW heating.

Heating is boosted during the periods selected in this time phase.

**Internal extensions (accessories)**

**Internal H1 extension**

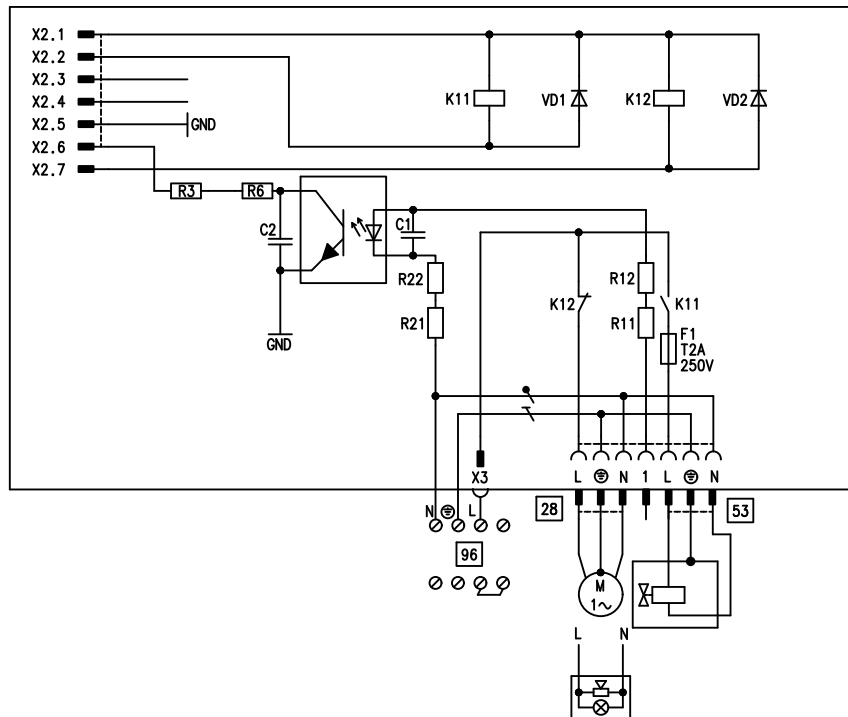


Fig. 63

The internal extension is integrated into the control unit enclosure. The following alternative functions can be connected to relay output 28. The function is assigned via parameter "53" in the "General" group:

- Central fault message (parameter "53:0")
- DHW circulation pump (parameter "53:1") (only for weather-compensated operation)  
Connect DHW circulation pumps with standalone functions directly to the 230 V~ supply.

- Heating circuit pump for heating circuit without mixer (parameter "53:2")
  - Circulation pump for cylinder heating (parameter "53:3")
- An external safety valve can be connected to connection 53.



## Internal extensions (accessories) (cont.)

## Internal H2 extension

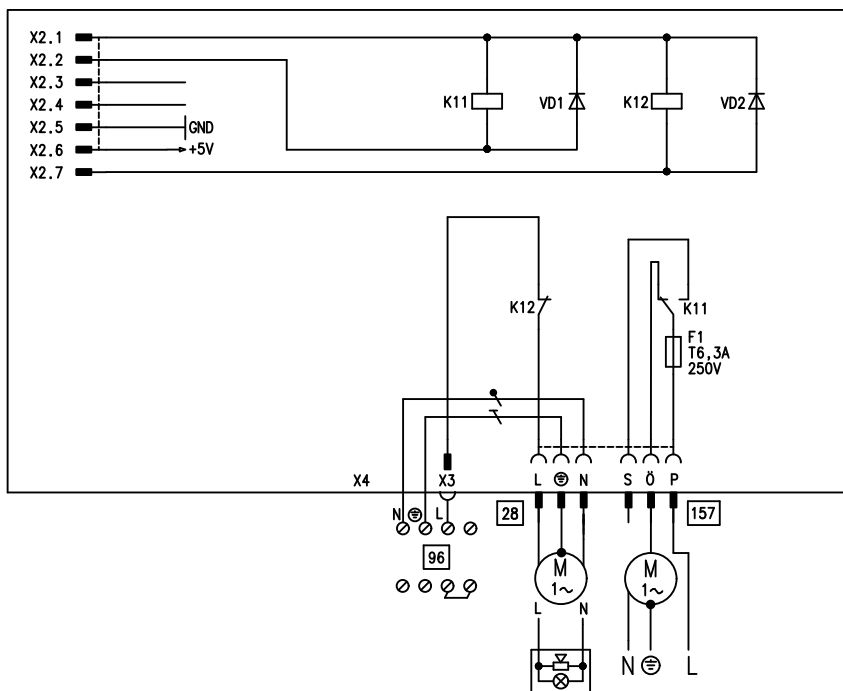


Fig. 64

The internal extension is integrated into the control unit enclosure. The following alternative functions can be connected to relay output **28**. The function is assigned via parameter "53" in the **"General"** group:

- Central fault message (parameter "53:0")
- DHW circulation pump (parameter "53:1") (only for weather-compensated operation)  
Connect DHW circulation pumps with standalone functions directly to the 230 V~ supply.

- Heating circuit pump for heating circuit without mixer (parameter "53:2")
- Circulation pump for cylinder heating (parameter "53:3")

An extractor fan can be switched off via connection **157** when the burner starts.

**External extensions (accessories)**

**AM1 extension**

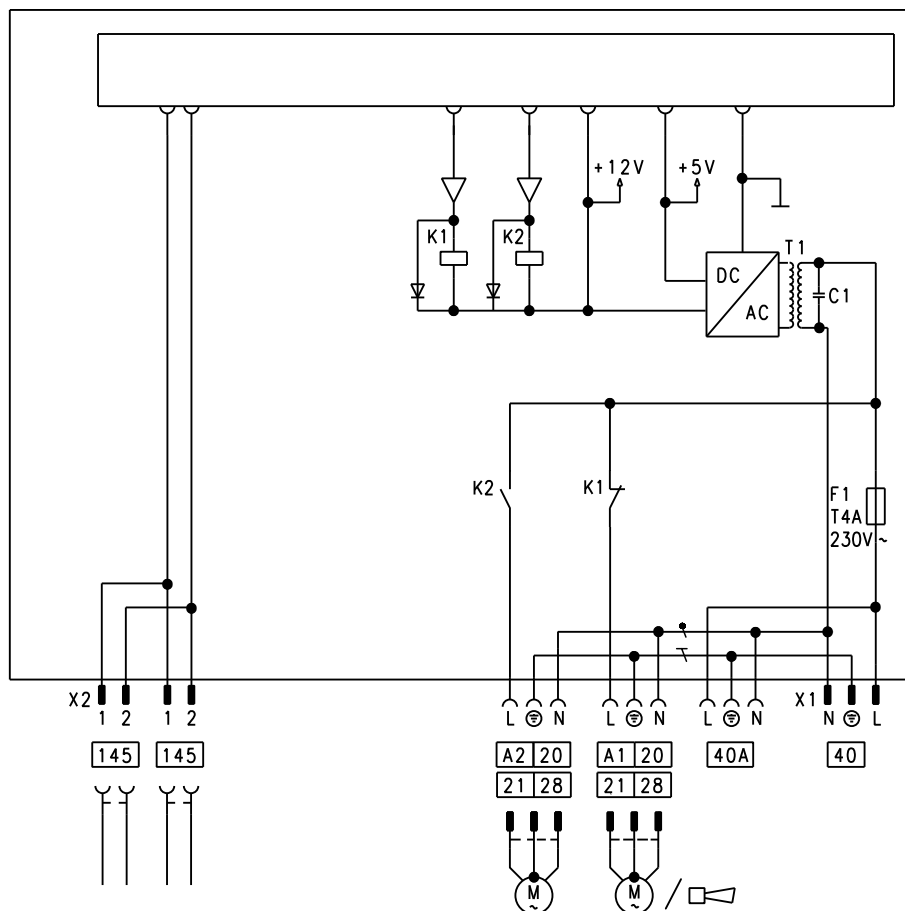


Fig. 65

- A1 Circulation pump
- A2 Circulation pump
- 40 Power supply

- 40 A Power supply for additional accessories
- 145 KM BUS

**Functions**

One of the following circulation pumps can be connected to each of the connections A1 and A2:

- Heating circuit pump for heating circuit without mixer
  - Circulation pump for cylinder heating
  - DHW circulation pump
- Connect DHW circulation pumps with standalone functions directly to the 230 V~ supply.

Select the output functions via parameters at the boiler control unit.

**Function assignment**

Function	Parameter ("General" group)	
	Output A1	Output A2
DHW circulation pump 28	33:0	34:0 (delivered condition)
Heating circuit pump 20	33:1 (delivered condition)	34:1
Circulation pump for cylinder heating 21	33:2	34:2

## External extensions (accessories) (cont.)

## EA1 extension

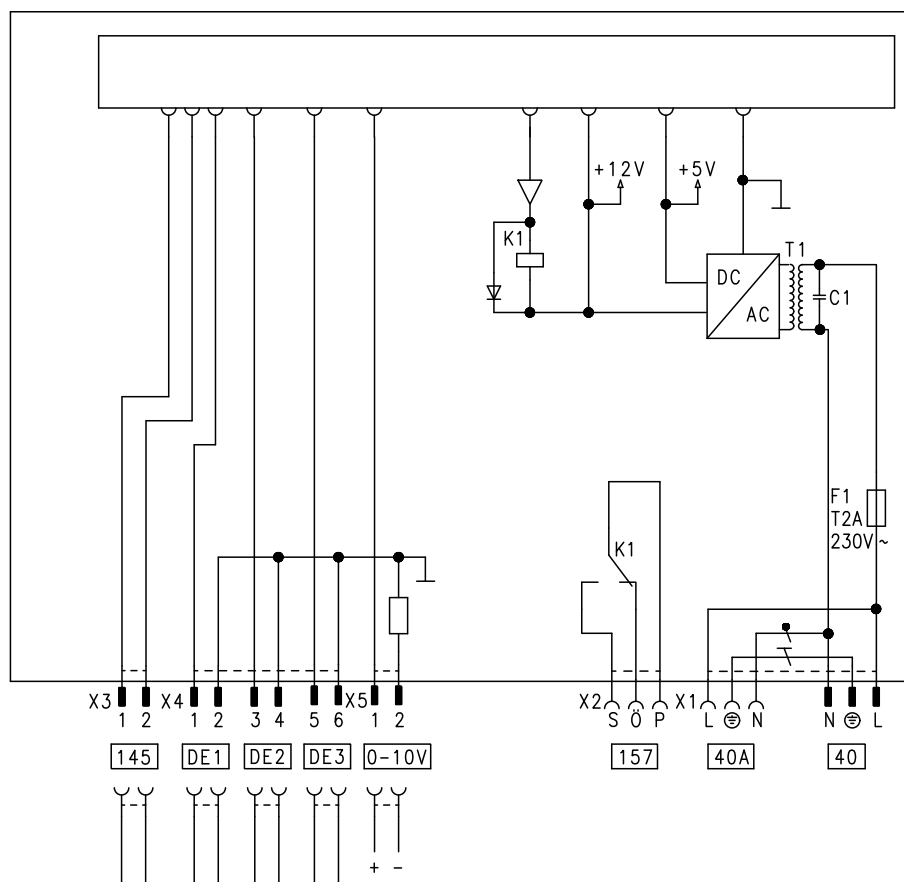


Fig. 66

F1 Fuse  
 DE1 Digital input 1  
 DE2 Digital input 2  
 DE3 Digital input 3  
 0-10V 0 – 10 V input

40 Power supply  
 40 A Power supply for additional accessories  
 157 Central fault message/feed pump/DHW circulation pump (potential-free)  
 145 KM-BUS

## Digital data inputs DE1 to DE3

Alternatively, the following functions can be connected:

- External operating program changeover for each heating circuit
- External blocking
- External blocking with fault message input
- External demand with minimum boiler water temperature
- Fault message input
- Brief operation of the DHW circulation pump

External contacts must be potential-free. When making the connection, adhere to the requirements of protection class II: 8.0 mm air and creep paths and 2.0 mm insulation thickness against live components.

## Input function assignment

Select the input functions via the parameters in the **"General"** group at the boiler control unit:

- DE1: Parameter 3A
- DE2: Parameter 3b
- DE3: Parameter 3C

## Assigning the operating program changeover function to the heating circuits

Select the operating program changeover function for the relevant heating circuit via parameter d8 in the **"Heating circuit"** group at the boiler control unit:

- Changeover via input DE1: Parameter d8:1
- Changeover via input DE2: Parameter d8:2
- Changeover via input DE3: Parameter d8:3

The effect of the operating program changeover is selected via parameter d5 in the **"Heating circuit"** group.

## Function description

### External extensions (accessories) (cont.)

The duration of the changeover is set via parameter F2 in the **"Heating circuit"** group.

#### Effect of external blocking function on the pumps

The effect on the internal circulation pump is selected via parameter 3E in the **"General"** group.

The effect on the relevant heating circuit pump is selected via parameter d6 in the **"Heating circuit"** group.

The effect on a circulation pump for cylinder heating is selected via parameter 5E in the **"DHW"** group.

#### Effect of the external demand function on the pumps

The effect on the internal circulation pump is selected via parameter 3F in the **"General"** group.

The effect on the relevant heating circuit pump is selected via parameter d7 in the **"Heating circuit"** group.

The effect on a circulation pump for cylinder heating is selected via parameter 5F in the **"DHW"** group.

#### DHW circulation pump runtime for brief operation

The DHW circulation pump is started by closing the contact at DE1, DE2 or DE3 by means of a pushbutton. The runtime is set via parameter "3d" in the **"General"** group.

#### Analogue input 0 – 10 V

The 0 – 10 V hook-up provides an additional set boiler water temperature:

0 – 1 V is taken as "no specification for set boiler water temperature".

1 V  $\triangleq$  Set value 10 °C

10 V  $\triangleq$  Set value 100 °C

Ensure DC separation between the earth conductor and the negative pole of the on-site power source.

#### Output 157

The following functions can be connected to output 157:

- Feed pump to substation  
or
- DHW circulation pump  
or
- Fault message facility

#### Information on the feed pump

*Function only possible in conjunction with a heating circuit control unit connected via LON.*

#### Information on DHW circulation pumps

*Connect DHW circulation pumps with standalone functions directly to the 230 V~ supply.*

#### Function assignment

The function of output 157 is selected via parameter "36" in the **"General"** group at the boiler control unit.

## Control functions

### External operating program changeover

The "External operating program changeover" function is implemented via the EA1 extension. There are 3 inputs available at the EA1 extension (DE1 to DE3). The function is selected via the following parameters in the **"General"** group:

Operating program changeover	Parameter
Input DE1	3A:1
Input DE2	3b:1
Input DE3	3C:1

Select the operating program changeover function for the respective heating circuit via parameter d8 in the **"Heating circuit"** group at the boiler control unit:

Operating program changeover	Parameter
Changeover via input DE1	d8:1
Changeover via input DE2	d8:2
Changeover via input DE3	d8:3

**Control functions** (cont.)

You can select the direction of the operating program changeover in parameter d5 in the **"Heating circuit"** group:

Operating program changeover	Parameter
Changeover towards "Continually reduced" or "Continuous standby mode" (subject to the selected set value)	d5:0
Changeover towards "Continuous heating mode"	d5:1

The duration of the operating program changeover is set in parameter F2 in the **"Heating circuit"** group:

Operating program changeover	Parameter
No operating program changeover	F2:0
Duration of the operating program changeover 1 to 12 hours	F2:1 to F2:12

The operating program changeover is enabled for as long as the contact is closed. As a minimum, it is enabled until the time set in parameter F2 has expired.

**External blocking**

The functions "External blocking" and "External blocking" and "Fault message input" are implemented via the EA1 extension. There are 3 inputs available at the EA1 extension (DE1 to DE3).

The function is selected via the following parameters in the **"General"** group:

External blocking	Parameter
Input DE1	3A:3
Input DE2	3b:3
Input DE3	3C:3

External blocking and fault message input	Parameter
Input DE1	3A:4
Input DE2	3b:4
Input DE3	3C:4

The effect on the internal circulation pump is selected in parameter 3E in the **"General"** group.

The effect on the relevant heating circuit pump is selected in parameter d6 in the **"Heating circuit"** group.

**External demand**

The "External demand" function is implemented via the EA1 extension. There are 3 inputs available at the EA1 extension (DE1 to DE3).

The function is selected via the following parameters in the **"General"** group:

External demand	Parameter
Input DE1	3A:2
Input DE2	3b:2
Input DE3	3C:2

The effect on the internal circulation pump is selected in parameter 3F in the **"General"** group.

The effect on the relevant heating circuit pump is selected in parameter d7 in the **"Heating circuit"** group.

The set minimum boiler water temperature for external demand is selected in parameter 9b in the **"General"** group.

**Venting program**

During the venting program, the circulation pump will be alternately switched on and off for 30 s over a period of 20 min.

The 3-way diverter valve alternates for a certain period between heating and DHW heating. The burner is switched off during the venting program.

Activating the venting program: See "Venting the heating system".

**Fill program**

In conjunction with the commissioning assistant, the system can be filled completely. The 3-way diverter valve is in its central position.

## Function description

### Control functions (cont.)

If the system is to be filled independently of the commissioning assistant, the diverter valve can be moved to the central position via the filling function (see "Filling the heating system"). In this position, the control unit can be switched off and the system can be filled completely.

When the function is enabled, the burner shuts down. The program automatically becomes inactive after 20 min.

### Screed drying

When activating screed drying, observe the information provided by the screed manufacturer. When screed drying is activated, the heating circuit pump for the heating circuit with mixer starts and the flow temperature is maintained in accordance with the selected profile. On completion (30 days), the heating circuit with mixer is controlled automatically according to the set parameters.

#### Note

Temperature profile 6 ends after 21 days

Observe EN 1264. The report to be provided by the heating contractor must contain the following details regarding heat-up:

Temperature profile 1: (EN 1264-4) parameter F1:1

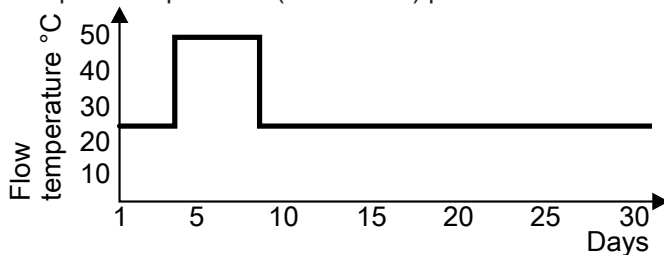


Fig. 67

Temperature profile 2: (ZV parquet and floor technology) parameter F1:2

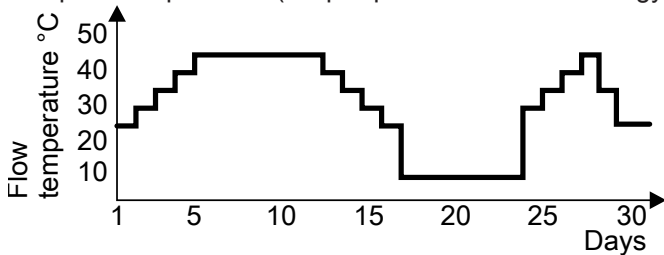


Fig. 68

Temperature profile 3: Parameter F1:3

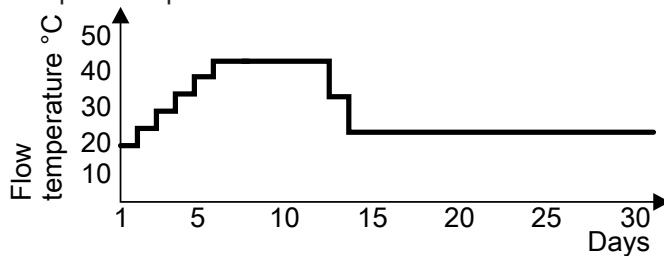


Fig. 69

- Heat-up data with respective flow temperatures
- Max. flow temperature achieved
- Operating state and outside temperature during handover

Different temperature profiles can be set via parameter F1 in the "Heating circuit" group.

The function continues after a power failure or after the control unit has been switched off. "Heating and DHW" is started when screed drying is finished or if parameter F1:0 is set manually.

**Control functions** (cont.)

Temperature profile 4: Parameter F1:4

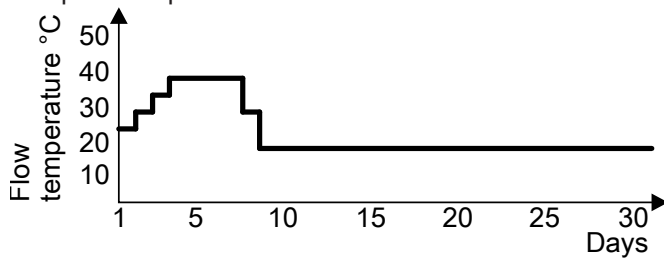


Fig. 70

Temperature profile 5: Parameter F1:5

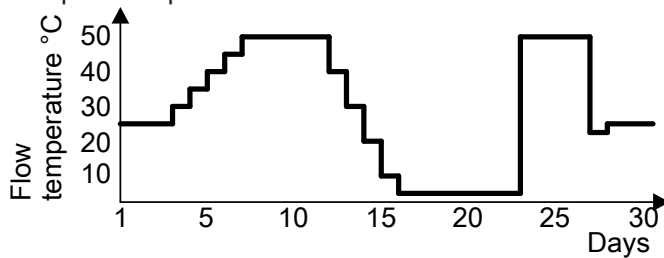


Fig. 71

Temperature profile 6: Parameter F1:6

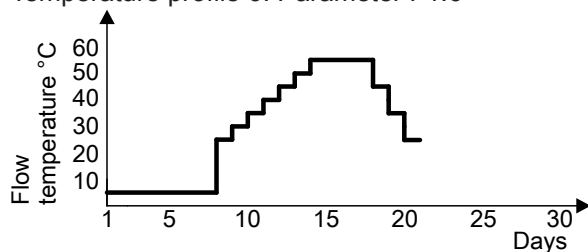


Fig. 72 Ends after 21 days

**Individual temperature profile for screed drying**

An individual temperature profile can be set for screed drying. See "Commissioning, inspection and maintenance".

**Raising the reduced room temperature**

During operation at reduced room temperature, the reduced set room temperature can be automatically raised subject to the outside temperature. The temperature is raised in accordance with the selected heating curve, and no higher than the set standard room temperature.

The outside temperature limits for the start and end of temperature raising can be set in parameters F8 and F9 in the "**Heating circuit**" group.

Example using the settings in the delivered condition

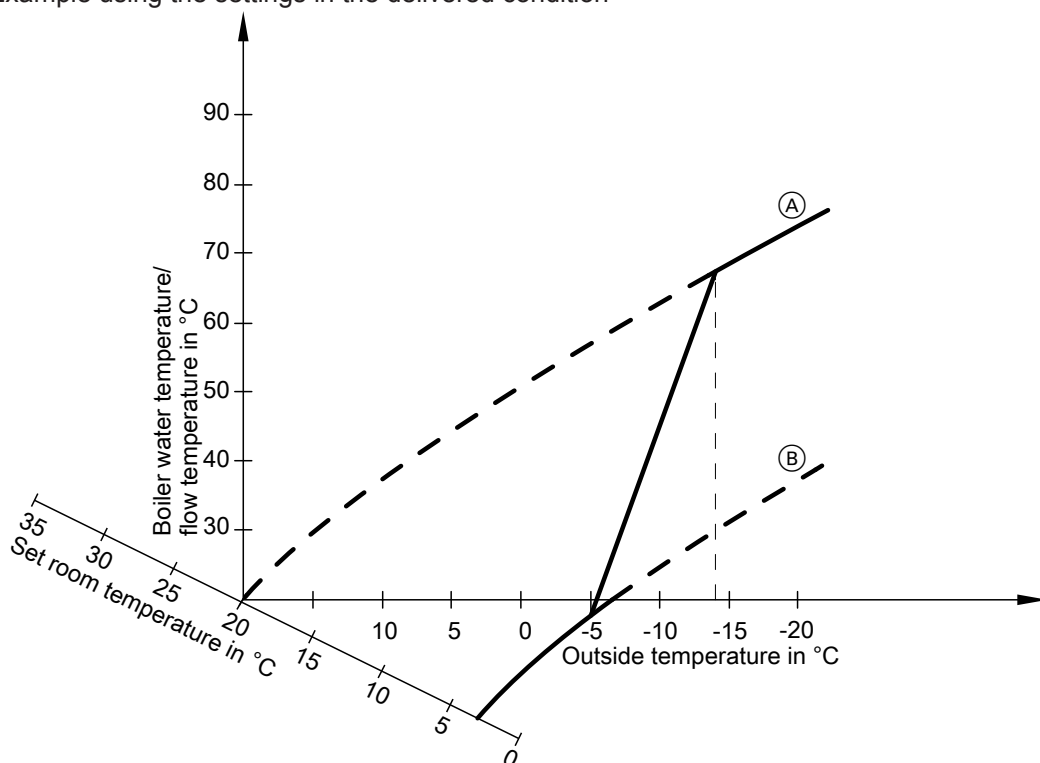


Fig. 73

- Ⓐ Heating curve for operation with standard room temperature
- Ⓑ Heating curve for operation with reduced room temperature

### Reducing the heat-up time

During the transition from operation with reduced room temperature to operation with standard room temperature, the boiler water or flow temperature will be raised in accordance with the selected heating curve. The boiler water or flow temperature can be automatically increased.

The value and duration for the additional raising of the set boiler water temperature or set flow temperature can be set in parameters FA and Fb in the **"Heating circuit"** group.



## Control functions (cont.)

Example using the settings in the delivered condition

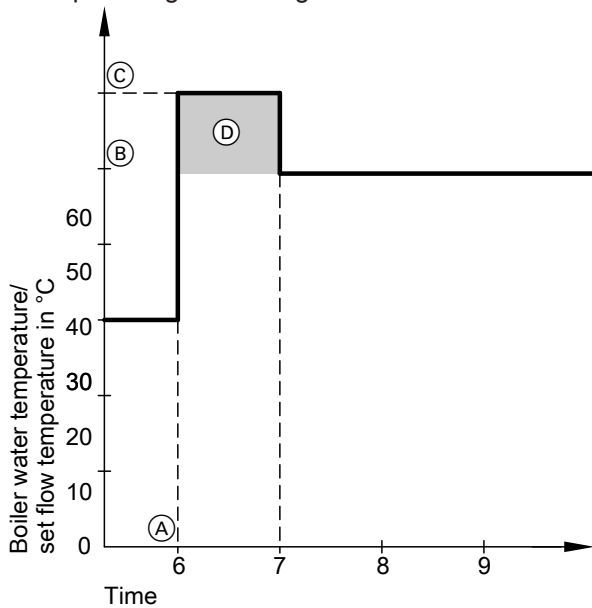


Fig. 74

- (A) Start of operation with standard room temperature
- (B) Set boiler water or flow temperature in accordance with the selected heating curve
- (C) Set boiler water temperature or set flow temperature in accordance with parameter FA:  
 $50\text{ °C} + 20\% = 60\text{ °C}$
- (D) Duration of operation with higher set boiler water temperature or set flow temperature in accordance with parameter Fb:  
 60 min

## Assigning heating circuits to the remote control

The assignment of heating circuits must be configured during remote control commissioning.

Remote control affects the following heating circuit:	Configuration	
	Vitotrol 200-A Vitotrol 200-RF	Vitotrol 300-A Vitotrol 300-RF
Heating circuit without mixer A1	H 1	Heating circuit 1
Heating circuit with mixer M2	H 2	Heating circuit 2
Heating circuit with mixer M3	H 3	Heating circuit 3

### Note

One heating circuit can be assigned to the Vitotrol 200-A and 200-RF.

Up to 3 heating circuits can be assigned to the Vitotrol 300-A and 300-RF.

A maximum of 2 hardwired remote control units **or** 3 wireless remote controls may be connected to the control unit.

If the assignment of a heating circuit is later cancelled, reset parameter A0 in the "Heating circuit" group for this heating circuit to 0 (fault message bC, bd, bE).

## Function description

### Vitocom 100, type GSM: Entering PIN code via Vitotronic

If a Vitocom 100, type GSM (accessories) has been connected to the heat source, enter the PIN code on the Vitotronic control unit.

After entry, you may have to wait 10 to 15 s.

Tap the following buttons:

1. "Menu"
2. "Service"

3. Enter "viservice" password.

4. "Service functions".

5. "Vitocom 100 GSM SIM PIN entry"

Further information:



"Vitocom 100" installation and service instructions

### Hydronic balancing

When carrying out hydronic balancing using the "Hydronic balancing service case with Vitosoft 300", "Hydraulic balancing ENABLED" appears on the display.

While the function is enabled, it is not possible to operate the boiler via the Vitotronic control unit.

The boiler is unavailable for heating operation or other functions during hydronic balancing. The burner does not start.

### Electronic combustion control unit

The electronic combustion controller utilises the physical correlation between the level of the ionisation current and the air ratio  $\lambda$ . The maximum ionisation current is achieved at an air ratio of 1 for all gas qualities. The ionisation signal is evaluated by the combustion controller and the air ratio is adjusted to a value between  $\lambda=1.24$  and 1.44. This range provides for an optimum combustion quality. Thereafter, the electronic gas valve regulates the required gas volume subject to the prevailing gas quality.

To check the combustion quality, the CO<sub>2</sub> content or the O<sub>2</sub> content of the flue gas is measured. The prevailing air ratio is determined with the measured values. The relationship between the CO<sub>2</sub> or O<sub>2</sub> content and air ratio  $\lambda$  is illustrated in the following table.

#### Air ratio $\lambda$ – CO<sub>2</sub>/O<sub>2</sub> content

Air ratio $\lambda$	O <sub>2</sub> content (%)	CO <sub>2</sub> content (%) for natural gas E	CO <sub>2</sub> content (%) for natural gas LL	CO <sub>2</sub> content (%) for LPG P
1.20	3.8	9.6	9.2	11.3
1.24	4.4	9.2	9.1	10.9
1.27	4.9	9.0	8.9	10.6
1.30	5.3	8.7	8.6	10.3
<b>1.34</b>	<b>5.7</b>	<b>8.5</b>	<b>8.4</b>	<b>10.0</b>
1.37	6.1	8.3	8.2	9.8
1.40	6.5	8.1	8.0	9.6
1.44	6.9	7.8	7.7	9.3
1.48	7.3	7.6	7.5	9.0

**Electronic combustion control unit** (cont.)

To achieve an optimum combustion control, the system regularly carries out an automatic self-calibration; also after a power failure (shutdown). For this, the combustion is briefly regulated to max. ionisation current (corresponding to air ratio  $\lambda=1$ ). Automatic calibration is carried out shortly after the burner start and lasts approx. 5 s. During calibration, higher than normal CO emissions may occur briefly.

Connection and wiring diagram – internal connections

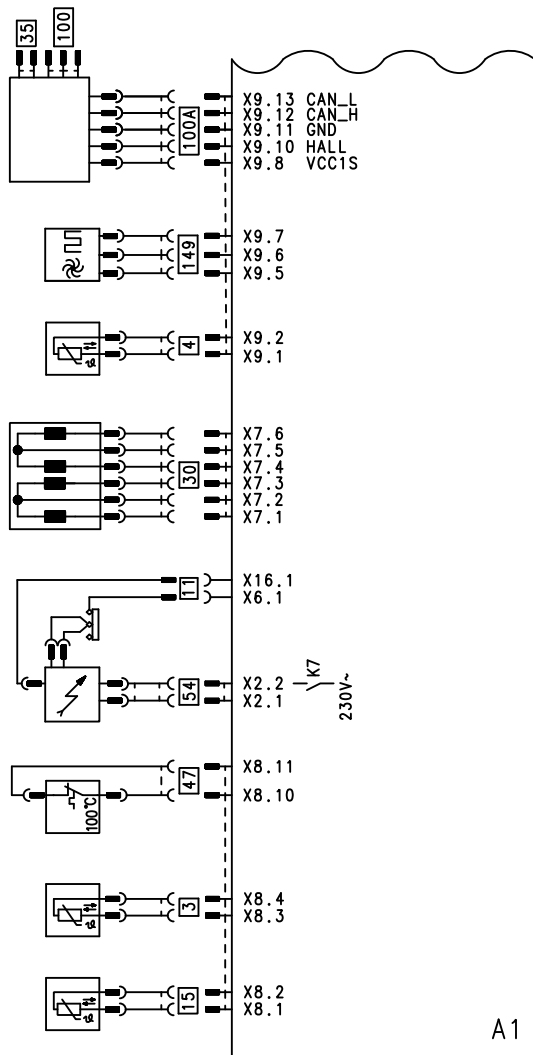


Fig. 75

- A1 Main PCB
- X... Electrical interface
- 3 Boiler water temperature sensor
- 4 Type B2KB only:  
Outlet temperature sensor
- 11 Ionisation electrode
- 15 Flue gas temperature sensor
- 30 Stepper motor for diverter valve

- 35 Gas solenoid valve
- 47 Temperature limiter
- 54 Ignition unit
- 100 Fan motor
- 100 A Fan motor control
- 149 Type B2KB only:  
Flow switch

Connection and wiring diagram – external connections

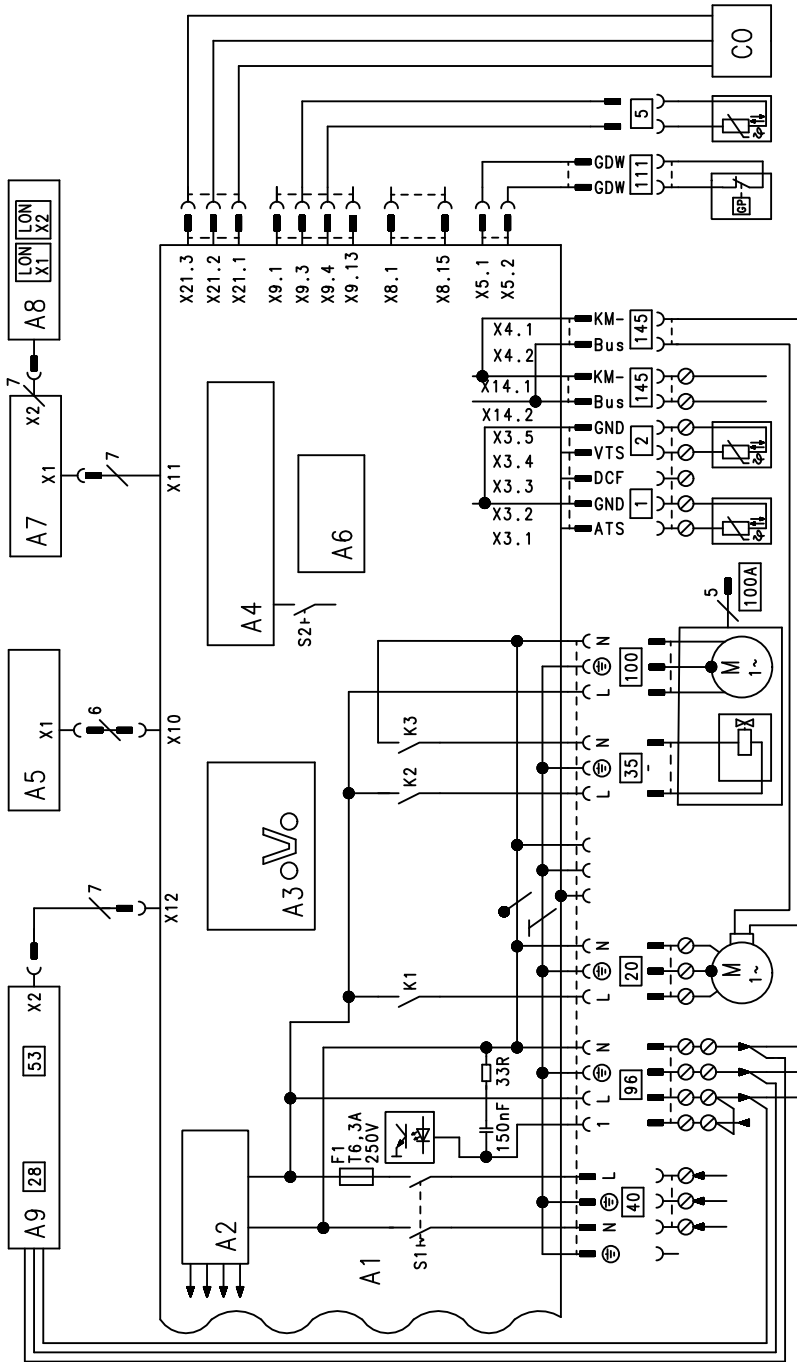


Fig. 76

- |      |   |       |   |
|------|---|-------|---|
| A1   | Main PCB                                  | 2     | Flow temperature sensor, low loss header  |
| A2   | Switching mode power supply               | 5     | Cylinder temperature sensor (type B2HB) or Comfort sensor (type B2KB) (plug on the cable harness) |
| A3   | Optolink                                  | 20    | Internal circulation pump   |
| A4   | Burner control unit                       | 35    | Gas solenoid valve  |
| A5   | Programming unit                          | 40    | Power supply  |
| A6   | Coding card                               | 96    | Power supply for accessories and Vitotrol 100   |
| A7   | Connection adaptor                        | 100   | Fan motor   |
| A8   | LON communication module (Vitotronic 200) | 100 A | Fan motor control   |
| A9   | Internal H1 or H2 extension               | 111   | Gas pressure switch   |
| S1   | ON/OFF switch                             | 145   | KM-BUS  |
| S2   | Reset button                              | CO    | CO limiter  |
| X... | Electrical interface                      |       |   |
| 1    | Outside temperature sensor                |       |   |

## Commissioning/service reports

Settings and test values		Set value	Commissioning	Maintenance/ service
	<b>Date</b>			
	<b>Signature</b>			
<b>Static pressure</b>	<i>mbar</i>	≤ 57.5		
	<i>kPa</i>	≤ 5.75		
<b>Supply pressure (flow pressure)</b>				
<input type="checkbox"/> for natural gas E	<i>mbar</i>	17-25		
	<i>kPa</i>	1.70-2.5		
<input type="checkbox"/> for natural gas LL	<i>mbar</i>	17-25		
	<i>kPa</i>	1.70-2.5		
<input type="checkbox"/> for LPG	<i>mbar</i>	42.5-57.5		
	<i>kPa</i>	4.25-5.75		
<i>Tick gas type</i>				
<b>Carbon dioxide content CO<sub>2</sub></b>				
For natural gas				
▪ At lower heating output	<i>% by vol.</i>	7.5-9.5		
▪ At upper heating output	<i>% by vol.</i>	7.5-9.5		
For LPG				
▪ At lower heating output	<i>% by vol.</i>	8.8-11.1		
▪ At upper heating output	<i>% by vol.</i>	8.8-11.1		
<b>Oxygen content O<sub>2</sub></b>				
▪ At lower heating output	<i>% by vol.</i>	4.0-7.6		
▪ At upper heating output	<i>% by vol.</i>	4.0-7.6		
<b>Carbon monoxide content CO</b>				
▪ At lower heating output	<i>ppm</i>	< 1000		
▪ At upper heating output	<i>ppm</i>	< 1000		

## Specification

## Gas condensing system boiler (type B2HB)

## Rated heating output range (to EN 15502-1)

$T_F/T_R = 50/30\text{ °C}$	kW	1.9 - 19	2.6 - 26	1.8 (3.5) <sup>*1</sup> - 30	1.8 (3.5) <sup>*1</sup> - 35
$T_F/T_R = 80/60\text{ °C}$	kW	1.7 - 17.6	2.4 - 24.1	1.6 (3.2) <sup>*1</sup> - 28.0	1.6 (3.2) <sup>*1</sup> - 32.5
Rated heating output for DHW heating	kW	1.7 - 17.2	2.4 - 23.7	1.6 (3.2) <sup>*1</sup> - 30.0	1.6 (3.2) <sup>*1</sup> - 31.7
Rated heat input	kW	1.8 - 17.9	2.5 - 24.7	1.7 (3.3) <sup>*1</sup> - 28.5	1.7 (3.3) <sup>*1</sup> - 33.0
Product ID	CE-0085CN0050				
IP rating	IP X4 to EN 60529				
Protection class	I				
Gas supply pressure					
Natural gas	kPa	20	20	20	20
	mbar	2	2	2	2
LPG	mbar	50	50	50	50
	kPa	5	5	5	5
Max. permissible gas supply pressure <sup>*2</sup>					
Natural gas	mbar	25.0	25.0	25.0	25.0
	kPa	2.5	2.5	2.5	2.5
LPG	mbar	57.5	57.5	57.5	57.5
	kPa	5.75	5.75	5.75	5.75
Rated voltage	V	230			
Rated frequency	Hz	50			
Rated current	A	6			
Backup fuse (power supply)	A	16			
Power consumption					
▪ In the delivered condition	W	42	65	82	95
▪ Max.	W	86	95	105	110
Permissible ambient temperature					
▪ During operation	°C	0 to +40			
▪ During storage and transport	°C	-20 to +65			
Setting, electronic temperature limiter	°C	82			
Temperature limiter setting (fixed)	°C	100			
Weight	kg	36.6	39.2	41.0	41.0
Permiss. operating pressure	bar	3	3	3	3
	MPa	0.3	0.3	0.3	0.3
Dimensions					
Length	mm	375	375	375	375
Width	mm	450	450	450	450
Height	mm	800	800	800	800
Gas connection	R	½	½	½	½
Flue gas connection	Ø mm	60	60	60	60
Ventilation air connection	Ø mm	100	100	100	100

\*1 Only when operating with LPG P

\*2 If the gas supply pressure is higher than the maximum permissible value, install a separate gas pressure governor upstream of the system.

## Specification

### Specification (cont.)

<b>Rated heating output range (to EN 15502-1)</b>					
$T_F/T_R = 50/30\text{ °C}$	<b>kW</b>	<b>1.9 - 19</b>	<b>2.6 - 26</b>	<b>1.8 (3.5)<sup>*1</sup> - 30</b>	<b>1.8 (3.5)<sup>*1</sup> - 35</b>
$T_F/T_R = 80/60\text{ °C}$	<b>kW</b>	<b>1.7 - 17.6</b>	<b>2.4 - 24.1</b>	<b>1.6 (3.2)<sup>*1</sup> - 28.0</b>	<b>1.6 (3.2)<sup>*1</sup> - 32.5</b>
<b>Supply values</b>					
Relative to max. load					
With gas					
Natural gas H	m <sup>3</sup> /h	1.89	2.61	3.02	3.49
LPG P	kg/h	1.40	1.93	2.23	2.58
<b>Gas condensing combi boiler (type B2KB)</b>					
<b>Rated heating output range (to EN 15502-1)</b>					
$T_F/T_R = 50/30\text{ °C}$	<b>kW</b>	<b>2.6 - 26</b>	<b>1.8 (3.5)<sup>*1</sup> - 30</b>	<b>1.8 (3.5)<sup>*1</sup> - 35</b>	
$T_F/T_R = 80/60\text{ °C}$	<b>kW</b>	<b>2.4 - 24.1</b>	<b>1.6 (3.2)<sup>*1</sup> - 28.0</b>	<b>1.6 (3.2)<sup>*1</sup> - 32.5</b>	
<b>Rated heating output for DHW heating</b>	<b>kW</b>	2.4 - 29.3	1.6 (3.2) <sup>*1</sup> - 30.0	1.6 (3.2) <sup>*1</sup> - 33.5	
<b>Rated heat input</b>	<b>kW</b>	2.5 - 30.5	1.7 (3.3) <sup>*1</sup> - 31.3	1.7 (3.3) <sup>*1</sup> - 34.9	
<b>Product ID</b>	CE-0085CN0050				
<b>IP rating</b>	IP X4 to EN 60529				
<b>Protection class</b>	I				
<b>Gas supply pressure</b>					
Natural gas	mbar	20	20	20	
	kPa	2	2	2	
LPG	mbar	50	50	50	
	kPa	5	5	5	
<b>Max. permissible gas supply pressure<sup>*3</sup></b>					
Natural gas	mbar	25.0	25.0	25.0	
	kPa	2.5	2.5	2.5	
LPG	mbar	57.5	57.5	57.5	
	kPa	5.75	5.75	5.75	
<b>Rated voltage</b>	V	230			
Rated frequency	Hz	50			
Rated current	A	6			
Backup fuse (power supply)	A	16			
<b>Power consumption</b>					
▪ In the delivered condition	W	65	82	95	
▪ Max.	W	108	119	123	
<b>Permissible ambient temperature</b>					
▪ During operation	°C	0 to +40			
▪ During storage and transport	°C	-20 to +65			
<b>Setting, electronic temperature limiter</b>	°C	82			
<b>Temperature limiter setting (fixed)</b>	°C	100			
<b>Weight</b>	kg	40.0	41.6	41.6	

<sup>\*1</sup> Only when operating with LPG P

<sup>\*3</sup> If the gas supply pressure is higher than the maximum permissible value, install a separate gas pressure governor upstream of the system.



## Specification (cont.)

<b>Rated heating output range (to EN 15502-1)</b>				
$T_F/T_R = 50/30\text{ °C}$	<b>kW</b>	<b>2.6 - 26</b>	<b>1.8 (3.5)<sup>*1</sup> - 30</b>	<b>1.8 (3.5)<sup>*1</sup> - 35</b>
$T_F/T_R = 80/60\text{ °C}$	<b>kW</b>	<b>2.4 - 24.1</b>	<b>1.6 (3.2)<sup>*1</sup> - 28.0</b>	<b>1.6 (3.2)<sup>*1</sup> - 32.5</b>
<b>Permiss. operating pressure</b>	bar MPa	3 0.3	3 0.3	3 0.3
<b>Dimensions</b>				
Length	mm	375	375	375
Width	mm	450	450	450
Height	mm	800	800	800
<b>Gas connection</b>	R	½	½	½
<b>Flue gas connection</b>	Ø mm	60	60	60
<b>Ventilation air connection</b>	Ø mm	100	100	100
<b>Supply values</b>				
Relative to max. load				
With gas				
Natural gas H	m <sup>3</sup> /h	3.23	3.31	3.69
LPG P	kg/h	2.38	2.45	2.73

**Note**

The supply 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 (101.3 kPa).

## Disposal

### 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

### Vitodens 200-W, type B2HB and B2KB

We, Viessmann Werke GmbH & Co. KG, D-35107 Allendorf, declare as sole responsible body that the named product complies with the provisions of the following directives and regulations:

92/42/EEC	Efficiency Directive
2009/142/EC	Gas Appliances Directive
2014/30/EU	EMC Directive
2014/35/EU	Low Voltage Directive
2009/125/EC	Ecodesign Framework Directive
2010/30/EU	Energy Labelling Framework Directive
811/2013	EU Regulation "Energy Efficiency Label"
813/2013	EU Regulation "Energy Efficiency Requirements"

#### Applied standards:

DIN 4753: 2011-11  
 EN 15502-1: 2012 + A1: 2015  
 EN 15502-2-1: 2012  
 EN 15502-2-2: 2014  
 EN 55014-1: 2006 + A1: 2009 + A2: 2011  
 EN 55014-2: 2015  
 EN 60335-1: 2012 + AC: 2014  
 EN 60335-2-102: 2006 + A1: 2010  
 EN 61000-3-2: 2014  
 EN 61000-3-3: 2013  
 EN 62233: 2008 + Corr. 1: 2008-11

In accordance with the listed directives, this product is designated with **CE-0085**.

Allendorf, 1 May 2016

Viessmann Werke GmbH & Co. KG



Authorised signatory Manfred Sommer

### Manufacturer's declaration

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

**Keyword index**

<b>B</b>		<b>H</b>	
Boiler water temperature sensor.....	103	Heating circuit assignment.....	141
Boosting DHW heating.....	131	Heating curve.....	47
Brief scans.....	89	Heating curve level.....	48
Burner gasket.....	41	Heating curve slope.....	48
Burner gauze assembly.....	41	Heating surface cleaning.....	42
Burner removal.....	40	Heat-up time.....	140
		Hydronic balancing.....	142
<b>C</b>		<b>I</b>	
Calling up parameter level 1.....	52	Ignition.....	42
Calling up parameter level 2.....	61	Ignition electrodes.....	42
Codes for commissioning.....	47	Interchanged solar circuit connections.....	107
Combustion chamber cleaning.....	42	Ionisation electrode.....	42
Combustion controller.....	142		
Combustion quality, checking.....	46	<b>L</b>	
Comfort sensor.....	105	Language selection.....	31
Commissioning.....	27	LON.....	49
Commissioning assistant.....	31	– Fault monitoring.....	50
Condensate drain.....	42	– Subscriber check.....	50
Converting gas type.....	34	– Subscriber numbers, setting.....	49
Cylinder temperature sensor.....	103	LON communication module.....	49
		<b>M</b>	
<b>D</b>		Mixer open/closed.....	108
Diaphragm expansion vessel.....	28		
<b>E</b>		<b>O</b>	
Electronic combustion controller.....	142	Operating conditions, scanning.....	88
Expansion vessel.....	45	Operating data, scanning.....	88
Extension		Operating program changeover.....	136
– AM1.....	134	Outlet temperature sensor.....	105
– EA1.....	135		
– Internal H1.....	132	<b>P</b>	
– Internal H2.....	133	Parameters.....	52
Extension kit for heating circuit with mixer .....	108	Passwords	
External blocking.....	137	– Changing.....	88
External demand.....	137	– Resetting to delivered condition.....	88
		Plate heat exchanger.....	106
<b>F</b>		<b>R</b>	
Fault codes.....	92	Raising reduced room temperature.....	139
Fault history.....	92	Reduced set room temperature.....	48
Fault manager.....	49	Reducing heat-up output.....	139
Faults.....	92	Reducing heat-up time.....	140
Fill function.....	137	Relay test.....	91
Filling function.....	28	Remote control.....	141
Filling the system.....	28	Report.....	146
Fill water.....	27	Rotational direction, mixer motor	
Flow limiter.....	45	– Changing.....	108
Flow temperature sensor.....	103	– Checking.....	108
Flue gas temperature sensor.....	104		
Function descriptions.....	131	<b>S</b>	
Function sequence.....	36	Safety chain.....	107
Function testing.....	91	Screed drying.....	138
Fuse.....	108	Screed drying function.....	138
		Service menu	
<b>G</b>		– Calling up.....	87
Gas supply pressure.....	35	– Leaving.....	88
Gas train .....	35	Service message, scanning.....	50
Gas type.....	34	Set room temperature adjustment.....	48
Gas type conversion.....	34		

**Keyword index** (cont.)

Setting the heating output..... 37  
 Solar circuit connections interchanged..... 107  
 Solar circuit pump curve.....37  
 Specification ..... 147  
 Standard set room temperature..... 48  
 Static pressure..... 35  
 Supply pressure..... 34  
 System pressure..... 28  
 System schemes.....47

**T**

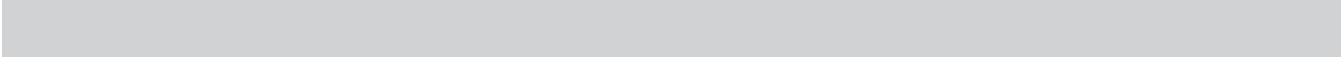
Temperature limiter..... 107  
 Tightness test, balanced flue system..... 39  
 Trap.....27, 42

**V**

Venting..... 29  
 Venting program..... 137  
 Vitocom 100  
 – PIN code entry..... 142  
 Vitotronic 200-H..... 109

**W**

Wiring diagram..... 144, 145  
 WLAN connection..... 49





## Applicability

**Serial No.:**

7570787	7570788	7570789	7570790
7570791	7570792	7570793	

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5776 863 GB Subject to technical modifications.