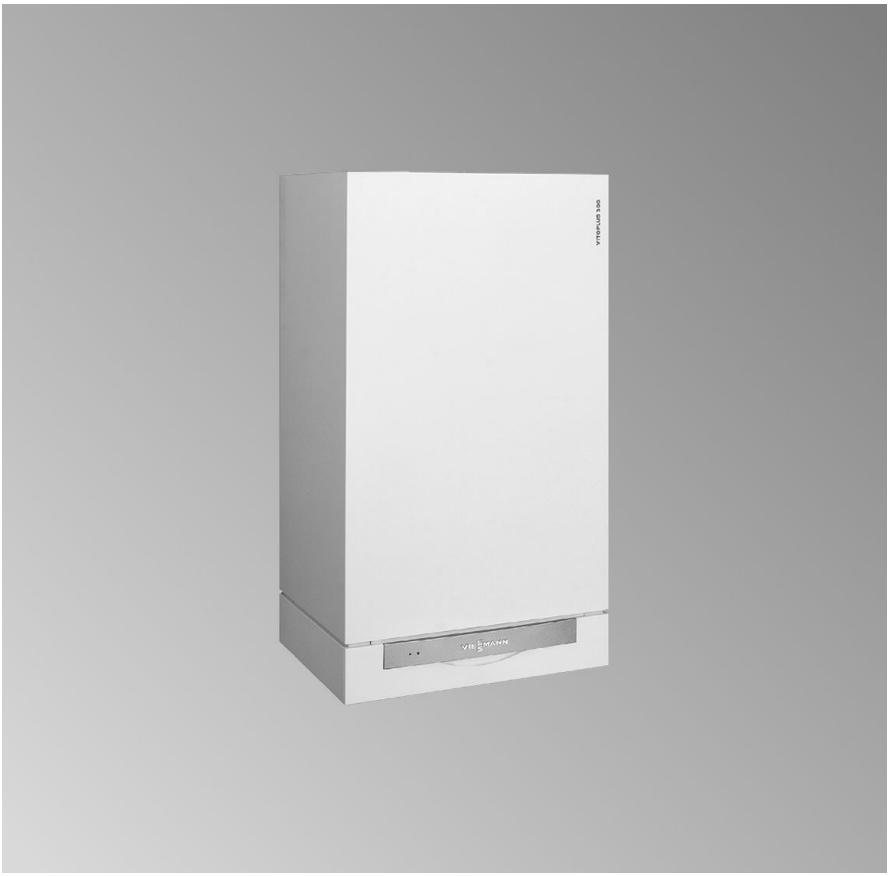
Service instructions

for contractors

Vitoladens 300-W
Type VP3B, 12.9/19.3 kW, 16.1/23.5 kW
Wall mounted oil fired condensing boiler
for the combustion of low sulphur fuel oil DIN 51603-EL-1
with integral boiler control unit

For applicability, see the last page

VITOLADENS 300-W



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Please keep safe.

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

Regulations

Observe the following when working on this system
- all legal instructions regarding the prevention of accidents,
- all legal instructions regarding environmental protection,
- the Code of Practice of relevant trade associations,
- all current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards,
- Gas Safety (Installation & Use) Regulations
  - the appropriate Building Regulation either the Building regulations, the Building Regulation (Scotland), Building Regulations (Northern Ireland),
  - the Water Fittings Regulation or Water Bylaws in Scotland,
  - the current I.E.E. Wiring Regulations.

If you smell gas

Danger
Escaping gas can lead to explosions which may result in serious injury.
- Never smoke. Prevent naked flames and sparks. Never switch lights or electrical appliances ON or OFF.
- Close the gas shut-off valve.
- Open windows and doors.
- Remove all people from the danger zone.
- Notify your gas or electricity supplier from outside the building.
- Shut off the electricity supply to the building from a safe place (outside the building).

Safety instructions (cont.)

If you smell flue gas

Danger
Flue gas can lead to life-threatening poisoning.
- Shut down the heating system.
- Ventilate the boiler room.
- Close all doors leading to the living space.

Working on the system

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

Please note
Electronic modules can be damaged by electro-static discharges.
Touch earthed objects, such as heating or water pipes, to discharge static loads.

Repair work

Please note
Repairing components which fulfil a safety function can compromise the safe operation of your heating system.
Replace faulty components only with original Viessmann spare parts.

Ancillary components, spare and wearing parts

Please note
Spare and wearing parts which have not been tested together with the heating system can compromise its function. Installing non-authorised components and non-approved modifications/conversion can compromise safety and may invalidate our warranty.
For replacements, use only original spare parts from Viessmann or those which are approved by Viessmann.

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Steps - commissioning, inspection and maintenance

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

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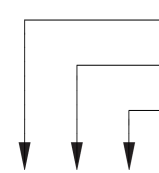
Steps - commissioning, inspection and… (cont.)



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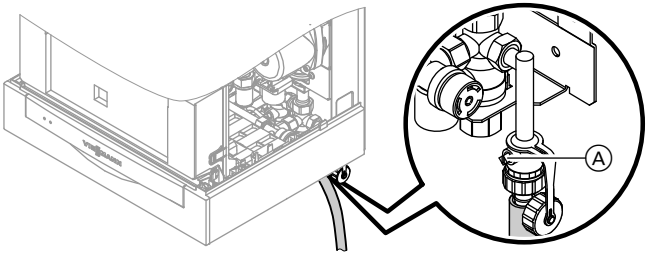
Further details regarding the individual steps

Filling the heating system

Please note
Unsuitable fill water increases the level of deposits and corrosion and may lead to boiler damage.
- Thoroughly flush the entire heating system prior to filling it with water.
- Only use fill water of potable quality.
- Soften fill water with hardness exceeding 3.0 mol/m^3, e.g. using a small softening system for heating water (see Viessmann Vitoset price list).
- An antifreeze additive suitable for heating systems can be mixed with the fill water. The antifreeze manufacturer must verify its suitability.



1. Check the pre-charge pressure of the diaphragm expansion vessel.

2. Fill the heating system via boiler fill & drain valve Ⓐ in the heating return (at the connection set or on site). (Minimum system pressure 0.8 bar).

   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.

3. If the control unit had already been switched ON before filling began: Switch ON the control unit and activate the fill program via coding address "2F:2".

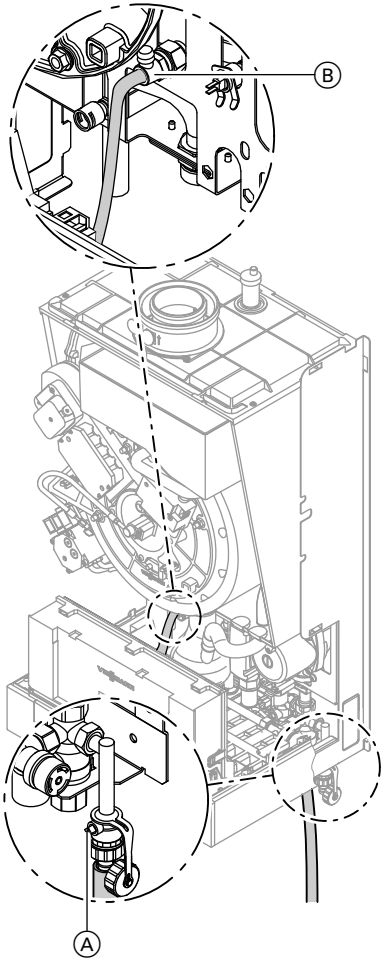
   Note
   To call up code 1 and for setting the coding address, see page 36.

4. Close boiler fill & drain valve Ⓐ.

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

Further details regarding the individual steps (cont.)

Venting the boiler



1. Close the shut-off valves on the heating water side.
2. Connect the drain hose between top valve Ⓑ and a drain outlet.
3. Open valves Ⓐ and Ⓑ and vent using mains pressure until no more air noise is audible.
4. Close valves Ⓐ and Ⓑ and open the heating water shut-off valves.

Venting the heating system

1. Start the control unit.

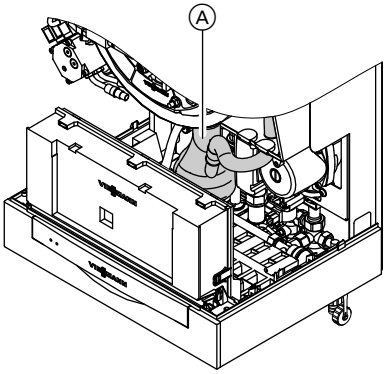
Further details regarding the individual steps (cont.)

2. Activate the venting program via coding "2F:1".

Note
To call up code 1 and for setting the coding address, see page 36.
For function and sequence of the venting program, see page 83.
When the venting program is enabled, the display shows "Entlüftung" (Venting).

3. Check the system pressure.

Filling the siphon with water



1. Remove the retaining clip and siphon Ⓐ.

2. Fill the siphon with water.

3. Fit siphon Ⓐ and secure with the retaining clip.

Further details regarding the individual steps (cont.)

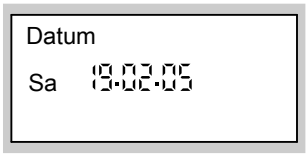
Setting the time and date (if required)

Note

- *During commissioning, or after a prolonged time out of use, it may be necessary to reset the time and date, if the time flashes in the display.*
- *When the unit is first taken into operation the display is in German (default language setting):*

Time (see step 1)

Date (see step 2)



Press the following keys:

1. ⊕/⊖ for the current time.

2. OK to confirm; "**Datum**" is displayed.

3. ⊕/⊖ for the current date.

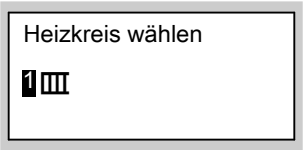
4. OK to confirm.

Further details regarding the individual steps (cont.)

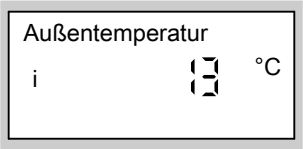
Changing the language at the control unit

Note
When the unit is first taken into operation the display is in German (default language setting):

Select heating circuit (see step 1.)



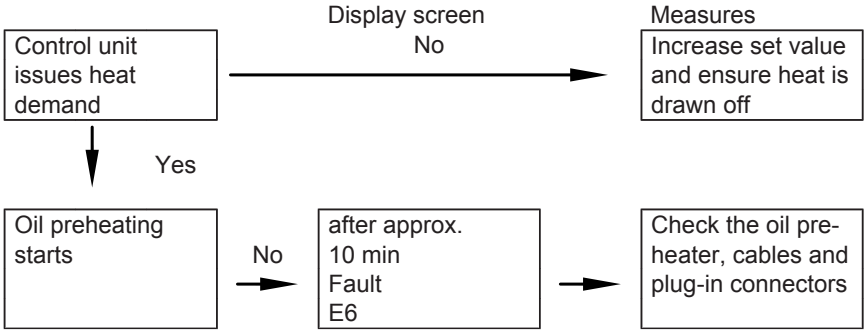
Outside temperature (see step 3.)



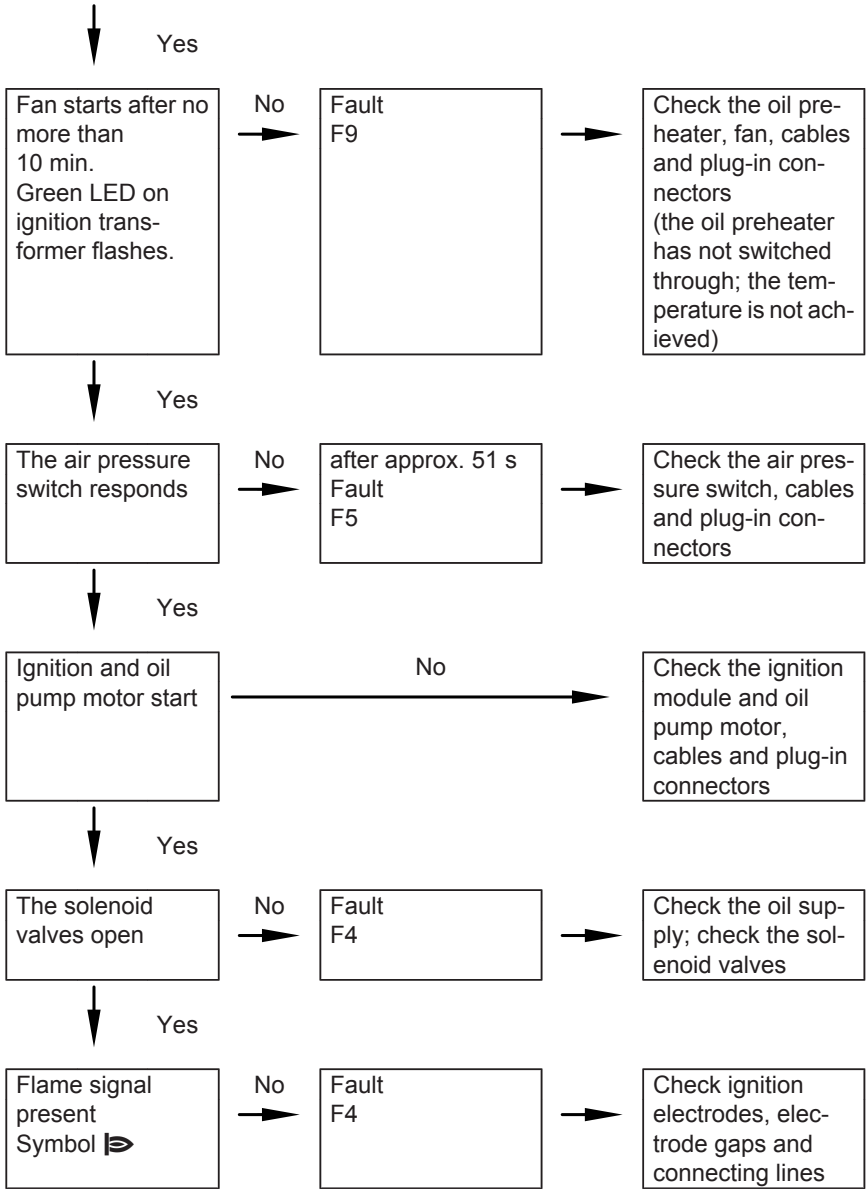
Press the following keys:

1. ⓘ "**Heizkreis wählen**" (select heating circuit) is displayed.
2. OK to confirm; wait approx. 4 s.
3. ⓘ press this button again, "**Außentemperatur**" (outside temperature) is displayed.
4. ⊖ for the required language.
5. OK to confirm.

Function sequence and possible faults



Further details regarding the individual steps (cont.)



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Further details regarding the individual steps (cont.)

Yes

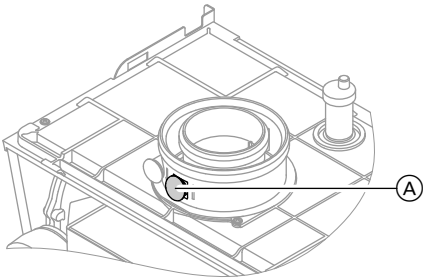
Burner in operation.
The green LED on the ignition transformer is permanently on (a flame is recognised).

For further details regarding faults, see page 63.

Adjusting the standard burner settings

Standard burner settings

Note
Check that the service instructions are valid for the relevant burner (see applicability on the last page and the serial no. on the boiler type plate).



Ⓐ Flue gas test port

Rated output	**kW**	**12.9/19.3**		**16.1/23.5**	
Burner stage		Stage 1	Stage 2	Stage 1	Stage 2
Rated output	kW	12.9	19.3	16.1	23.5
Oil burner nozzle	Type	80°H LE V		80°H LE V	
Make: Danfoss	Gph	0.40		0.50	

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Further details regarding the individual steps (cont.)

Rated output	kW	12.9/19.3		16.1/23.5	
Oil pressure approx.[*1]	bar	8.0-10.5	14.0-17.5	9.0-13.5	16.0-18.5
Max. permissible vacuum in the oil feed line	bar	0.35	0.35	0.35	0.35
Oil throughput approx.	kg/h l/h	1.05 1.24	1.58 1.86	1.53 1.80	1.92 2.26
Static burner pressure approx.	mbar	8.0-10.5	15.5-19.5	11.0-15.5	17.5-21.0
CO_2 content approx.					
■ Test value w/o cap	%	12.2-13.4		12.2-13.2	
■ Test value with cap	%	12.7-13.9		12.7-13.7	
Nozzle gap "a" (see page 19)	mm	3.0 $^{+0.2/-0.3}$		1.5 $^{+0.2/-0.3}$	

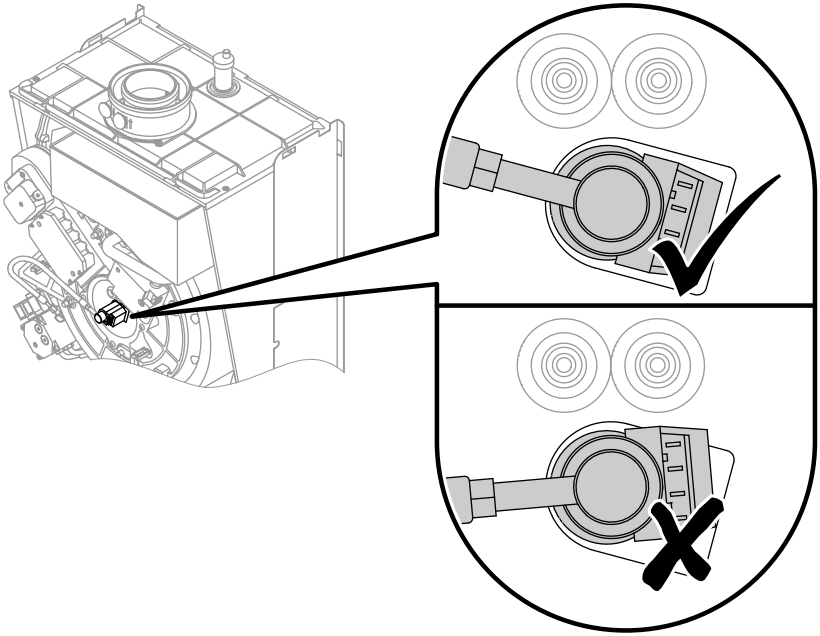
! **Please note**
An incorrectly adjusted nozzle gap "a" can result in irregular operation of the burner and even a fault shutdown.
Always maintain the stated dimension and check in accordance with the details on page 19.

Installation position, oil preheater

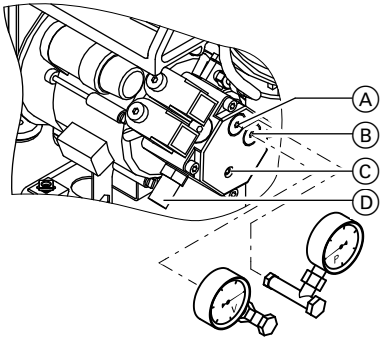
Position the oil preheater in the recess of the mixer facility in accordance with the diagram.

[*1] *Due to nozzle tolerances and varying oil characteristics, the oil pressure may vary from the values shown.*

Further details regarding the individual steps (cont.)



Adjusting the oil pressure and checking the vacuum



Oil pump; make: Danfoss, type BFP 52

1. Insert the pressure gauge (range 0 - 25 bar) into test port "P" Ⓐ and the vacuum gauge (range 0 - 1 bar) into test port "V" Ⓑ.

   Note
   Seal the pressure and vacuum gauges only with copper or aluminium gaskets or with O-rings. Never use tape to seal these joints.

2. Start the boiler.

Further details regarding the individual steps (cont.)

3. Press ⏻ and OK simultaneously for approx. 2 s.
   "Relay test" is shown in the display.
   After approx. 4 s the display shows **"Burner st 1 ON"**.

4. Where vacuum measures higher than 0.35 bar, check the filter for contamination and check the pipe route.

5. If required, adjust the oil pressure for stage 1 at pressure adjusting screw Ⓒ of the oil pump (for standard values, see page 15).

6. Check the actual emission values after adjusting the oil pressure.

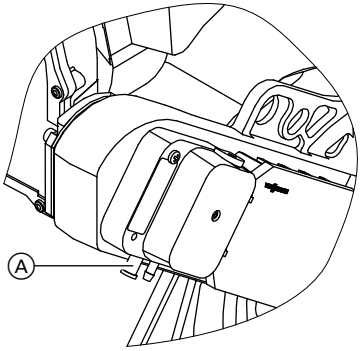
7. Select burner stage 2 with ⊕.
   "Burner st 1 + 2 ON" is shown on the display.

8. If required, adjust the oil pressure for stage 2 at pressure adjusting screw Ⓓ of the oil pump.

9. Check the actual emission values after adjusting the oil pressure.

10. After testing, press OK.

Adjusting the air volume (static burner pressure)



1. Start the boiler.

2. Remove plug Ⓐ from the test port.

3. Connect the U-shaped pressure gauge to test port Ⓐ.

4. Press ⏻ and 🧹 simultaneously until **"Speed stage 1"** and a value between 1 and 255 are displayed.

5. Change the value with ⊕/⊖ until the static burner pressure displayed by the U-shaped pressure gauge and the CO_2 flue gas content correspond to the values in the table on page 15.

6. Confirm the set value with OK.

   Note
   *The control unit changes automatically to burner stage 2. The display shows **"Speed stage 1 + 2"** and a value between 1 and 255.*

7. Repeat steps 4 and 5 for burner stage 2.

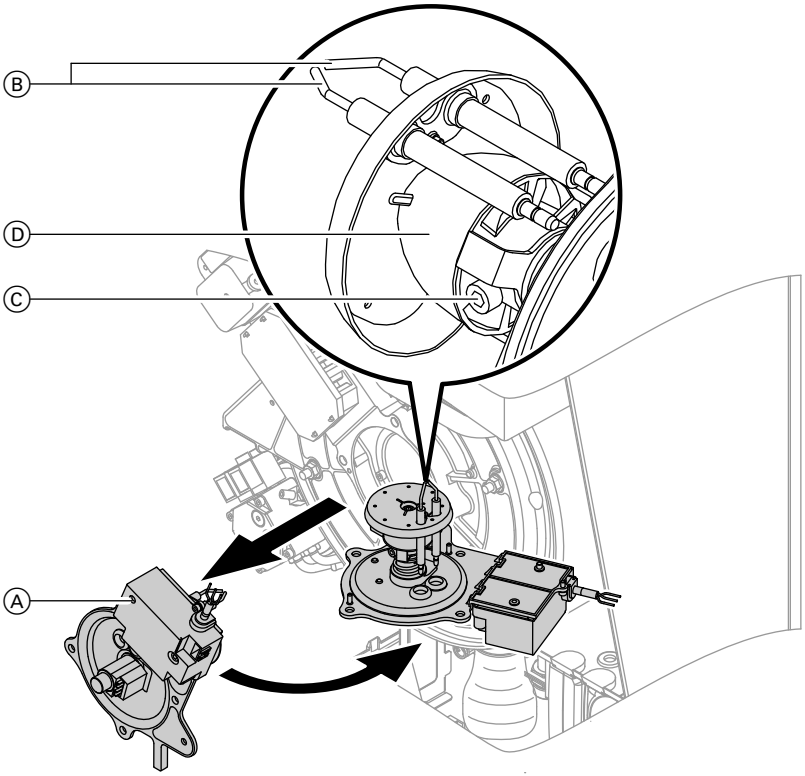
8. Check the set values.

Further details regarding the individual steps (cont.)

9. Seal test connector Ⓐ again with the previously removed plug.

Note
*Do **not** seal the connector next to test connector Ⓐ.*

Cleaning the burner



1. Undo nuts, remove the lid with mixer equipment Ⓐ and secure in the maintenance position.

2. Pull the leads off ignition electrodes Ⓑ.

3. Undo Allen screw Ⓒ and remove rifling facility Ⓓ.

4. Clean the restrictor, dosing ring and ignition electrodes.

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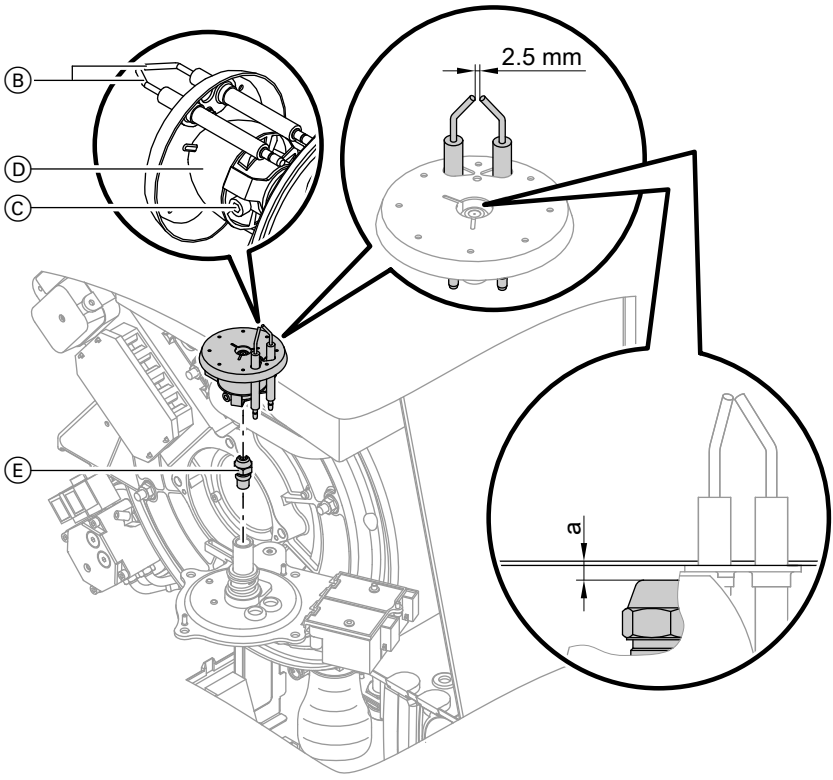
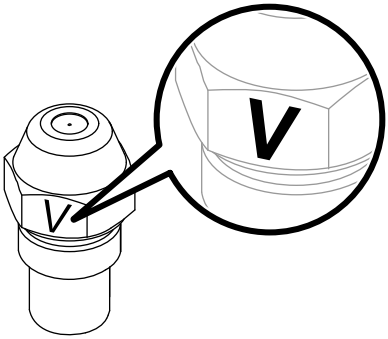
Further details regarding the individual steps (cont.)

Replacing the nozzle and checking or adjusting the ignition electrodes



1. Undo nozzle (E) whilst holding the oil preheater. Prevent the formation of bubbles.

Further details regarding the individual steps (cont.)



2. Insert a new LE nozzle Ⓔ (whilst holding the oil preheater).
   Select the nozzle in accordance with the details on page 14.

   Please note

   Only use nozzles marked **"V"** (on the hexagon) (see Fig.).

3. Insert rifling facility Ⓓ as far as possible. Align ignition electrodes Ⓑ in accordance with the drilled holes towards the cable entries. Install the oil burner nozzle centrally into the restrictor.

4. Secure Allen screw Ⓒ of the rifling facility. Check nozzle gap "a".

   Please note
   An incorrectly adjusted nozzle gap "a" can result in irregular operation of the burner and even a fault shutdown.

Rated output	kW	12.9/19.3	16.1/23.5
Nozzle gap "a" (see page 19)	mm	3.0 $^{+0.2/-0.3}$	1.5 $^{+0.2/-0.3}$

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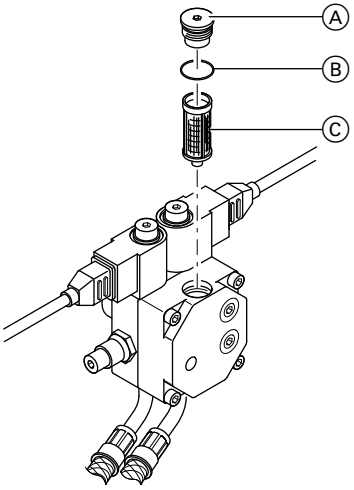
Further details regarding the individual steps (cont.)

Cleaning and replacing the oil pump filter, if required

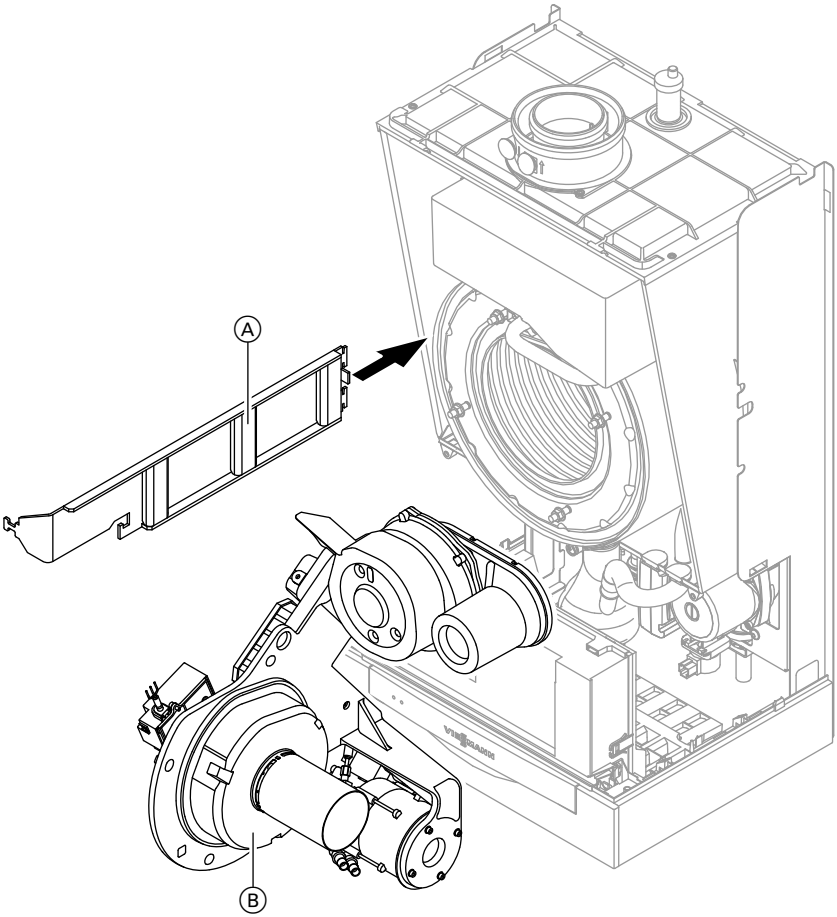
Oil pump; make: Danfoss, type BFP 52



Ⓐ Filter plug
Ⓑ O-ring (replace)
Ⓒ Filter (replace)

Further details regarding the individual steps (cont.)

Checking the heat exchanger for contamination

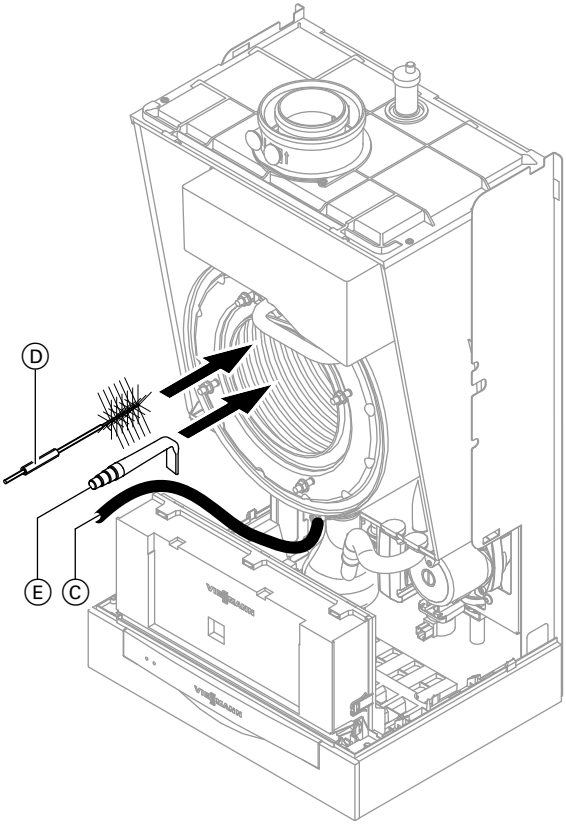


1. Pull plugs [131] and [100] from the fan. Remove the cables from the cable clip on the l.h. side of the boiler.
2. Insert burner retainer Ⓐ (part of the cleaning set) into the l.h. side of the boiler.
3. Undo four nuts from burner Ⓑ and remove the burner.
4. Hook burner Ⓑ into burner retainer Ⓐ or position on a suitable surface.

Further details regarding the individual steps (cont.)

5. Check for heat exchanger contamination. (if contaminated, continue with the following chapter).

Cleaning the heat exchanger



! **Please note**
To prevent damage to the heat exchanger,
only clean with the cleaning equipment available as accessory

1. Pull condensate drain hose Ⓒ from the neutralising system and lead it into a suitable vessel.

Further details regarding the individual steps (cont.)

2. **Please note**
To prevent damage, cover the control unit.

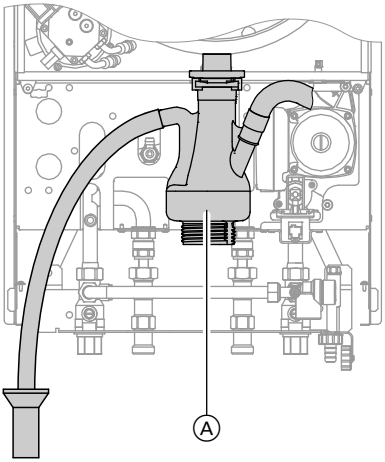
Danger
Cleaning work may lead to eye injuries.
Wear protective goggles.

Fit rotary brush Ⓓ (accessories) to a rechargeable power tool and clean the heat exchanger with the rotary brush (at low speeds). Remove all deposits, including from the sides of the reversing sections.

3. Remove dirt from the heat exchanger gaps with a vacuum cleaner with angled nozzle Ⓔ (accessories).

4. Thoroughly flush the combustion chamber with water. Ensure that the end of the drain hose remains in the vessel (see point 1).

Checking the condensate drain and cleaning the siphon



1. Check at siphon Ⓐ that the condensate can freely drain off.

2. Remove the retaining clip and the siphon.

3. Clean the siphon.

4. Fill siphon Ⓐ with water and fit it to the boiler. Position the retaining clip.

Checking the neutralising system (accessories)

Check the pH value of the condensate with a pH test strip. Replace the granulate if the pH value < 6.5.

Further details regarding the individual steps (cont.)

Note
Part no. for pH test strips: 9517 678.
Please observe neutralising system manufacturer's instructions.

Checking the active charcoal filter (accessories)

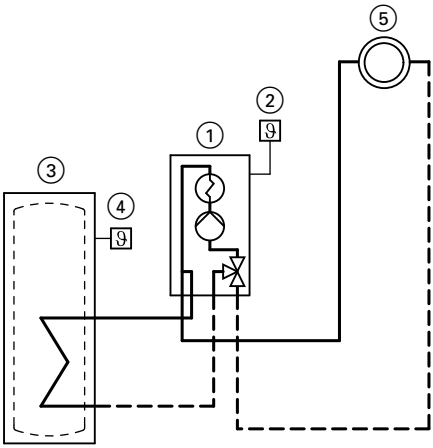
Note
Please observe active charcoal filter manufacturer's instructions.

Matching the control unit to the heating system

Note
The control unit must be matched to the equipment level of the system. Various system components are recognised automatically by the control unit and the relevant codes are adjusted automatically.
- *For the selection of an appropriate design, see the following diagrams.*
- *For coding steps, see page 36.*

System version 1

One heating circuit without mixer A1 (with/without DHW heating)



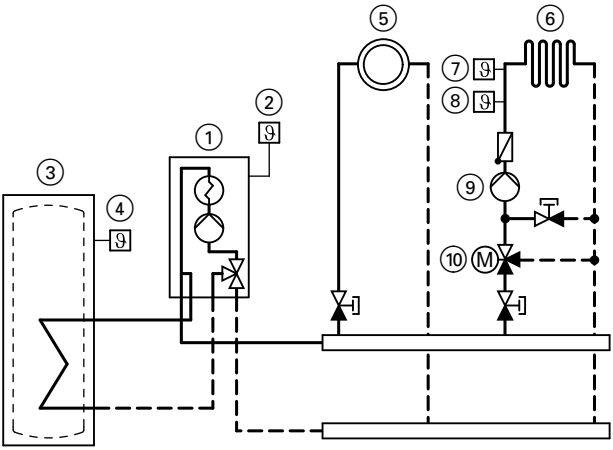
① Vitoladens 300-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1

Further details regarding the individual steps (cont.)

System version 2

One heating circuit without mixer A1 and one heating circuit with mixer M2 (with/without DHW heating)

Note
The volume flow of the heating circuit without mixer must be at least 30% greater than the volume flow of the heating circuit with mixer.



① Vitoladens 300-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1
⑥ Heating circuit with mixer M2
⑦ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑧ Flow temperature sensor M2
⑨ Heating circuit pump M2
⑩ Extension kit for one heating circuit with mixer M2

Required coding	Address
System with only one heating circuit with mixer	
■ with DHW cylinder	00:4
■ without DHW cylinder	00:3

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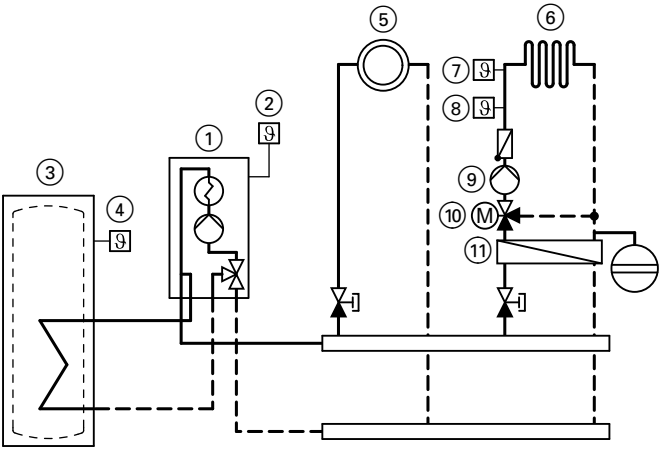
Further details regarding the individual steps (cont.)

System version 3

One heating circuit without mixer A1 and one heating circuit with mixer M2 with system separation (with/without DHW heating)

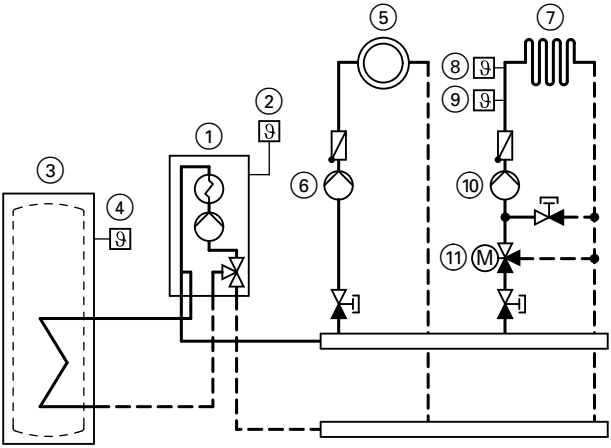


① Vitoladens 300-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1
⑥ Heating circuit with mixer M2
⑦ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑧ Flow temperature sensor M2
⑨ Heating circuit pump M2
⑩ Extension kit for one heating circuit with mixer M2
⑪ Heat exchanger for system separation

Further details regarding the individual steps (cont.)

System version 4

One heating circuit without mixer A1 with a separate heating circuit pump and one heating circuit with mixer M2 (with/without DHW heating)



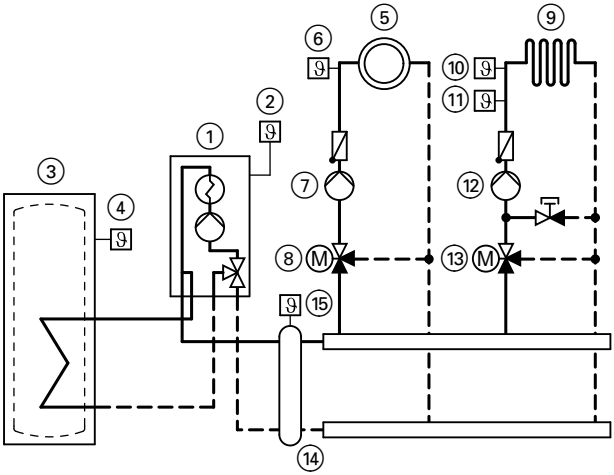
① Vitoladens 300-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1
⑥ Heating circuit pump A1
⑦ Heating circuit with mixer M2
⑧ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑨ Flow temperature sensor M2
⑩ Heating circuit pump M2
⑪ Extension kit for one heating circuit with mixer M2

Required coding	Address
Max. speed of the internal circulation pump in heating mode: 20%	31:20

Further details regarding the individual steps (cont.)

System version 5

One heating circuit with mixer M1 (with Vitotronic 200-H), one heating circuit with mixer M2 (with extension kit) and low loss header (with/without DHW heating)



① Vitoladens 300-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit with mixer M1
⑥ Flow temperature sensor M1
⑦ Heating circuit pump M1
⑧ Vitotronic 200-H
⑨ Heating circuit with mixer M2
⑩ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑪ Flow temperature sensor M2
⑫ Heating circuit pump M2
⑬ Extension kit for one heating circuit with mixer M2
⑭ Low loss header
⑮ Flow temperature sensor, low loss header

Required coding	Address
One heating circuit with mixer with extension kit for mixer and one heating circuit with mixer with Vitotronic 200-H	
■ with DHW cylinder	00:4
■ without DHW cylinder	00:3

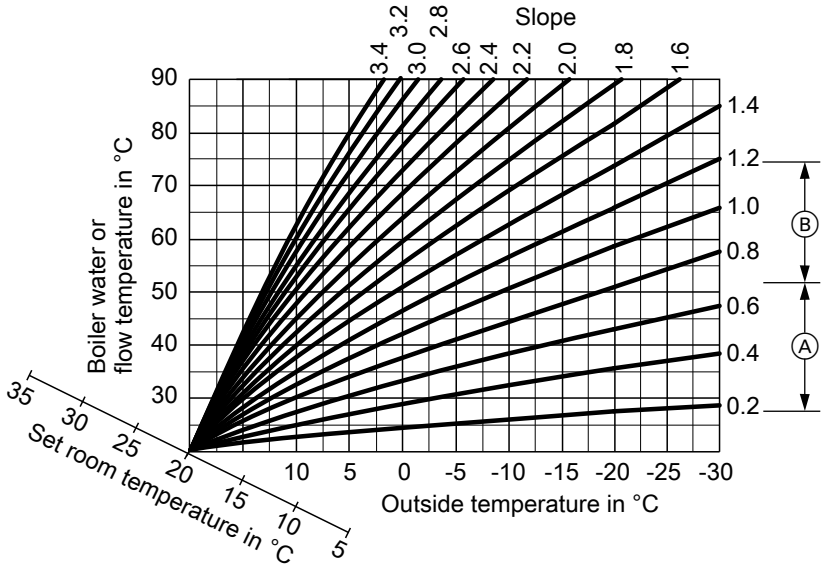
Further details regarding the individual steps (cont.)

Adjusting the heating curves (only for weather-compensated control units)

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 or flow temperature.

The room temperature, again, depends on the boiler water or the flow temperature.

Settings in the delivered condition:
- Slope = 1.4
- Level = 0



Ⓐ Heating curve slope for underfloor heating systems
Ⓑ Heating curve slope for low temperature heating systems (according to the Energy Savings Order [Germany])

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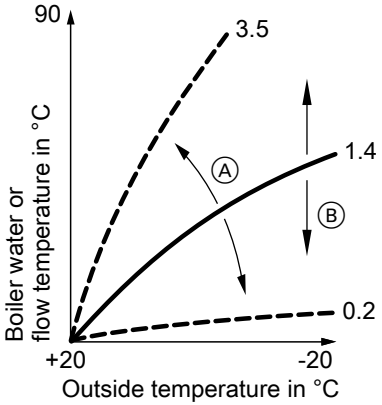
Further details regarding the individual steps (cont.)

Changing the slope and level



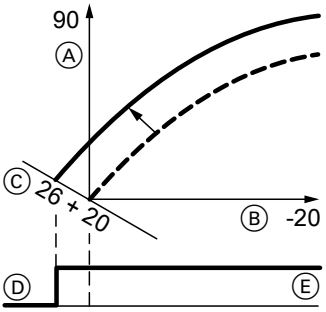
Ⓐ Changing the slope
Ⓑ Changing the level (vertical parallel offset of the heating curve)

1. **Slope:**
   Change with coding address "d3" in code 1.
   Setting range 2 to 35 (equals slope 0.2 to 3.5).

2. **Level:**
   Change with coding address "d4" in code 1.
   Setting range -13 to +40 K.

Adjusting the set room temperature

Standard room temperature



Example 1: Adjustment of standard room temperature from 20 to 26 °C

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

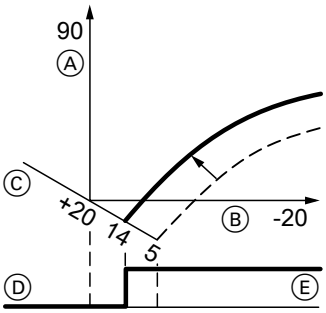
Press the following keys:

1. ⊕ "1 III" flashes.
2. OK to select heating circuit A1 (heating circuit without mixer)
   or
3. ⊕ "2 III" flashes.
4. OK to select heating circuit with mixer M2.

Further details regarding the individual steps (cont.)

5. Adjust the set day temperature with rotary selector "🌡☀".
The value will be automatically accepted after approx. 2 s.
Accordingly, the heating curve is adjusted along set room temperature axis Ⓒ, which results in modified start/stop characteristics of the heating circuit pumps if heating circuit pump logic function is active.

Reduced room temperature



Example 2: Adjustment of reduced room temperature from 5 °C to 14 °C

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

Press the following keys:

1. ⊕ "1 III" flashes.

2. OK to select heating circuit A1 (heating circuit without mixer)
or

3. ⊕ "2 III" flashes.

4. OK to select heating circuit with mixer M2.

5. Call up the set night temperature.

6. ⊕/⊖ Change the value.

7. OK Confirm the value.

Linking the control unit to the LON

The LON communication module (accessories) must be plugged in.

Installation instructions LON communication module

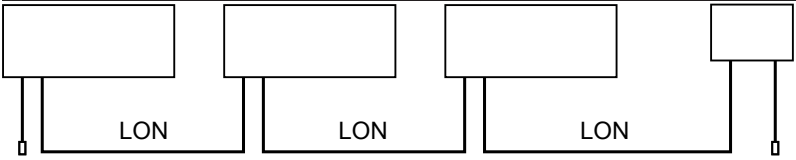
Note
The data transfer via LON can take several minutes.

Single boiler system with Vitotronic 200-H and Vitocom 300

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

Further details regarding the individual steps (cont.)

Note
In the same LON system, the same number ***cannot*** *be allocated twice.*
Only one Vitotronic *may be programmed as fault manager.*

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
			
Subscriber no. 1 Code "77:1"	Subscriber no. 10 Code "77:10"	Subscriber no. 11 **Set** code "77:11"	Subscriber no. 99
Control unit is fault manager Code "79:1"	Control unit is not fault manager Code "79:0"	Control unit is not fault manager Code "79:0"	Device is fault manager
Control unit transmits the time Code "7b:1"	Control unit receives the time **Set** code "81:3"	Control unit receives the time **Set** code "81:3"	Device receives the time
Control unit transmits outside temperature **Set** code "97:2"	Control unit receives outside temperature **Set** code "97:1"	Control unit receives outside temperature **Set** code "97:1"	—
LON subscriber fault monitoring Code "9C:20"	LON subscriber fault monitoring Code "9C:20"	LON subscriber fault monitoring Code "9C:20"	—

Updating the LON subscriber list

Only possible if all subscribers are connected and the control unit is programmed to be fault manager (code "79:1").

Press the following keys:

1. ⌂ + OK simultaneously for approx. 2 s.
Subscriber check initiated (see page 34).

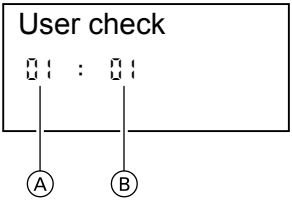
2. ⌂ The subscriber list is updated after approx. 2 min. The subscriber check is completed.

Further details regarding the individual steps (cont.)

Carrying out a subscriber check

Communication with the system devices connected to the fault manager is tested with a subscriber check.

Preconditions:
- The control unit must be programmed as **fault manager** (code "79:1")
- The LON subscriber number must be programmed in all control units (see page 33)
- The LON subscriber list in the fault manager must be up to date (see page 33)



Ⓐ Consecutive number in the subscriber list
Ⓑ Subscriber number

Press the following keys:

1. [⌂] + (OK) simultaneously for approx. 2 s. The subscriber check has been initiated.

2. ⊕/⊖ for the required subscriber.

3. (OK) Check is enabled "**Check**" flashes until its completion. The display and all key illuminations for the selected subscriber flash for approx. 60 s.

4. "**Check OK**" is displayed during communication between both devices.
or

"**Check not OK**" is displayed if there is no communication between both devices. Check the LON connection.

5. Repeat points 2 and 3 to check further subscribers.

6. [⌂] + (OK) simultaneously for approx. 1 s. The subscriber check is completed.

Instructing the system user

The system installer must hand the operating instructions to the system user and instruct him/her in the operation of the system.

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Further details regarding the individual steps (cont.)

Scanning and resetting the "Service" display

The red fault indicator flashes when the limits set via coding address "21" and "23" have been reached. "Service" flashes in the programming unit display.

Note
Set coding address "24:1" and then coding address "24:0" if a service is carried out before the service display is shown; the set service parameters for hours run and interval are then reset to 0.

1. Press ⓘ.
The service scan is active.

2. Scan maintenance messages with ⊕ or ⊖.

3. Press OK, for weather-compensated control units also confirm the display "Acknowledge: Yes" with OK.
The "Service" display extinguishes and the red fault indicator continues to flash.

Note
An acknowledged maintenance message can be redisplayed by pressing OK (approx. 3 s).

After a service has been carried out

1. Reset code "24:1" to "24:0".
The red fault indicator extinguishes.

Note
If coding address "24" is not reset, the service message re-appears after 7 days.

2. Reset the burner hours run, burner starts and consumption, if required
Press the following keys:
ⓘ Scanning is active.
⊕/⊖ for the selected value.
⊕ the selected value will be set to "0".
⊕/⊖ for further scans.
OK Scanning is completed.

Code 1

Calling up code 1

Note
Codes are displayed as plain text. Codes that are irrelevant (due to the heating system equipment level or the setting of other codes) will not be displayed.

Press the following keys:

1. ⏻ + 🚿 simultaneously for approx. 2 s.

2. ⊕/⊖ for the required coding address; the address flashes

3. OK to confirm

4. ⊕/⊖ for the selected value

5. OK to confirm; the display briefly shows "**accepted**" (weather-compensated control unit); the address flashes again.

6. ⊕/⊖ for the selection of further addresses.

7. ⏻ + 🚿 approx. 1 s simultaneously, to terminate coding 1.

Code 1 (cont.)

Overview

Coding

Coding in the delivered condition		Possible change	
System design			
00 :1	System design 1: 1 heating circuit without mixer A1, without DHW heating	00 :2	System design 1: 1 heating circuit without mixer A1, with DHW heating
		00 :3	System design 5: 1 heating circuit with mixer M2, without DHW heating
		00 :4	System design 5: 1 heating circuit with mixer M2, with DHW heating
		00 :5	System design 2, 3, 4: 1 heating circuit without mixer A1 and 1 heating circuit with mixer M2, without DHW heating
		00 :6	System design 2, 3, 4: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, with DHW heating
Max. boiler water temp.			
06:...	Maximum limit of the boiler water temperature, defaulted by the boiler coding card	06:20 to 06:127	Maximum limit of the boiler water temperature within the ranges defaulted by the boiler
Venting/filling			
2F:0	Programs disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled

Code 1 (cont.)

Coding in the delivered condition		Possible change	
Subscriber no.			
77:1	LON subscriber number	77:2 to 77:99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - ... = Vitotronic 200-H 99 = Vitocom ***Note*** *Allocate each number* ***only*** *once.*
Summer econ. A1/M2			
A5:5	With heating circuit pump logic function	A5:0	Without heating circuit pump logic function
Min. flow temp. A1/M2			
C5:20	Electronic minimum flow temperature limit 20 °C	C5:1 to C5:127	Minimum limit adjustable from 1 to 127 °C
Max. flow temp. A1/M2			
C6:74	Electronic maximum flow temperature limit set to 74 °C	C6:1 to C6:127	Maximum limit adjustable from 1 to 127 °C
Slope A1/M2			
d3:14	Heating curve slope = 1.4	d3:02 to d3:35	Heating curve slope adjustable from 0.2 to 3.5 (see page 30)
Level A1/M2			
d4:0	Heating curve level = 0	d4:–13 to d4:40	Heating curve level adjustable from –13 to 40 (see page 30)

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Code 2

Calling up code 2

Note
Codes that are irrelevant (due to the heating system equipment level or the setting of other codes) will not be displayed.

Press the following keys:

1. ⌂ + ⌂ simultaneously for approx. 2 s.

2. OK to confirm.

3. ⊕/⊖ for the required coding address; the address flashes.

4. OK to confirm; the value flashes.

5. ⊕/⊖ for the selected value.

6. OK to confirm; the display briefly shows "**accepted**" (for weather-compensated control units); the address flashes again.

7. ⊕/⊖ for the selection of further addresses.

8. ⌂ + ⌂ approx. 1 s simultaneously, to terminate coding 2.

Complete overview

The coding addresses are grouped according to the following **function areas**. The respective function area is shown on the display.
The areas are scanned in the following sequence with ⊕/⊖:

Function area	Coding addresses
System design	00
Boiler/burner	06 to 54
DHW	56 to 73
General	76 to 9F
Heating circuit A1 (heating circuit without mixer)	A0 to Fb
Heating circuit with mixer M2	A0 to Fb

Code 2 (cont.)

Note
Heating systems with one heating circuit without mixer and one heating circuit with mixer:
Initially, the possible coding addresses "A0" to "Fb" for the heating circuit without mixer A1 are scanned; then the coding addresses for the heating circuit with mixer M2 are scanned.

Coding

Coding in the delivered condition		Possible change	
System design			
00 :1	System design 1: 1 heating circuit without mixer A1, without DHW heating	00 :2	System design 1: 1 heating circuit without mixer A1, with DHW heating
		00 :3	System design 5: 1 heating circuit with mixer M2, without DHW heating
		00 :4	System design 5: 1 heating circuit with mixer M2, with DHW heating
		00 :5	System design 2, 3, 4: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, without DHW heating
		00 :6	System design 2, 3, 4: 1 heating circuit without mixer A1; 1 heating circuit with mixer M2, with DHW heating
Boiler/burner			
06:...	Maximum limit of the boiler water temperature, defaulted by the boiler coding card	06:20 to 06:127	Maximum limit of the boiler water temperature within the ranges defaulted by the boiler
21:0	No maintenance interval (operating hours) selected	21:1 to 21:100	The number of hours run before the burner should be serviced is adjustable from 100 to 10000 hours (each step represents 100 hours)

Code 2 (cont.)

Coding in the delivered condition		**Possible change**	
23:0	No time interval for burner service	23:1 to 23:24	Interval adjustable from 1 to 24 months
24:0	No **"Service"** display	24:1	**"Service"** display (the address is automatically set and must be manually reset after a service has been carried out)
26:0	Burner fuel consumption (stage 1); no count if "26:0" is programmed	26:1 to 26:255	Entry of 0.1 to 25.5; 1 step ≙ 0.1 litre or gallon/hour
29:0	Burner fuel consumption (stage 1 and 2); no count if "29:0" is programmed	29:1 to 29:255	Entry of 0.1 to 25.5; 1 step ≙ 0.1 litre or gallon/hour
2E:0	Without external extension	2E:1	With external extension (automatic setting on connection)
2F:0	Venting program/fill program disabled	2F:1	Venting program enabled
		2F:2	Fill program enabled
30:1	Internal variable speed circulation pump (automatic adjustment)	30:0	Internal circulation pump without variable speed (e.g. temporarily for service)
31:65	Set speed of the internal circulation pump when operated as boiler circuit pump 65%, defaulted by the boiler coding card	31:0 to 31:100	Set speed adjustable from 0 to 100 %
32:0	Influence of the signal "External blocking" on circulation pumps: All pumps in control function	32:1 to 32:15	Influence of the signal "External blocking" on circulation pumps: See the following table

Code 2 (cont.)

Code	Internal circulation pump	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Circulation pump for cylinder heating
0	Control funct.	Control funct.	Control funct.	Control funct.
1	Control funct.	Control funct.	Control funct.	OFF
2	Control funct.	Control funct.	OFF	Control funct.
3	Control funct.	Control funct.	OFF	OFF
4	Control funct.	OFF	Control funct.	Control funct.
5	Control funct.	OFF	Control funct.	OFF
6	Control funct.	OFF	OFF	Control funct.
7	Control funct.	OFF	OFF	OFF
8	OFF	Control funct.	Control funct.	Control funct.
9	OFF	Control funct.	Control funct.	OFF
10	OFF	Control funct.	OFF	Control funct.
11	OFF	Control funct.	OFF	OFF
12	OFF	OFF	Control funct.	Control funct.
13	OFF	OFF	Control funct.	OFF
14	OFF	OFF	OFF	Control funct.
15	OFF	OFF	OFF	OFF

Coding in the delivered condition		Possible change	
Boiler/burner			
34:0	Influence of the signal "External demand" on the circulation pumps: All pumps in control function	34:1 to 34:23	Influence of the signal "External demand" on the circulation pumps: See the following table

Code 2 (cont.)

Code	Internal circulation pump	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Circulation pump for cylinder heating
0	Control funct.	Control funct.	Control funct.	Control funct.
1	Control funct.	Control funct.	Control funct.	OFF
2	Control funct.	Control funct.	OFF	Control funct.
3	Control funct.	Control funct.	OFF	OFF
4	Control funct.	OFF	Control funct.	Control funct.
5	Control funct.	OFF	Control funct.	OFF
6	Control funct.	OFF	OFF	Control funct.
7	Control funct.	OFF	OFF	OFF
8	OFF	Control funct.	Control funct.	Control funct.
9	OFF	Control funct.	Control funct.	OFF
10	OFF	Control funct.	OFF	Control funct.
11	OFF	Control funct.	OFF	OFF
12	OFF	OFF	Control funct.	Control funct.
13	OFF	OFF	Control funct.	OFF
14	OFF	OFF	OFF	Control funct.
15	OFF	OFF	OFF	OFF
16	ON	Control funct.	Control funct.	Control funct.
17	ON	Control funct.	Control funct.	OFF
18	ON	Control funct.	OFF	Control funct.
19	ON	Control funct.	OFF	OFF
20	ON	OFF	Control funct.	Control funct.
21	ON	OFF	Control funct.	OFF
22	ON	OFF	OFF	Control funct.
23	ON	OFF	OFF	OFF

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
Boiler/burner			
52:0	Without flow temperature sensor for low loss header	52:1	With flow temperature sensor for low loss header (automatic setting on recognition)
54:0	Without solar control unit	54:1	With a Vitosolic 100
		54:2	With a Vitosolic 200 (automatic adjustment after recognition)
DHW			
56:0	DHW temperature adjustable from 10 to 60 °C	56:1	DHW temperature adjustable from 10 to above 60 °C (max. value subject to coding card) Observe the maximum permissible DHW temperature
58:0	Without auxiliary function for DHW heating	58:10 to 58:60	Input of a second set DHW value; adjustable from 10 to 60 °C
59:0	Cylinder heating: Starting point -2.5 K Stopping point +2.5 K	59:1 to 59:10	Starting point adjustable from 1 to 10 K below the set value
5b:0	DHW cylinder directly connected to the boiler	5b:1	DHW cylinder connected downstream of the low loss header
60:20	During DHW heating, the boiler water temperature is max. 20 K higher than the set DHW temperature	60:5 to 60:25	The difference between the boiler water temperature and the set DHW temperature is adjustable from 5 to 25 K
62:2	Circulation pump with 2 min run-on	62:0	Circulation pump without run-on
		62:1 to 62:15	Run-on time adjustable from 1 to 15 min

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
65:...	Information regarding the type of diverter valve (not adjustable)	65:0	Without diverter valve
		65:1	Diverter valve by Viessmann
		65:2	Diverter valve by Wilo
		65:3	Diverter valve by Grundfos
67:40	In conjunction with the Vitosolic solar control unit: Third set DHW value	67:0 to 67:60	Set DHW value adjustable from 0 to 60 °C
6C:100	Set speed; internal circulation pump with DHW heating 100 %	6C:0 to 6C:100	Set speed adjustable from 0 to 100 %
6F:100	Maximum output for DHW heating 100 %, defaulted by the boiler coding card		
71:0	DHW circulation pump "ON" according to time program	71:1	"OFF" during DHW heating to the first set value
		71:2	"ON" during DHW heating to the first set value
72:0	DHW circulation pump "ON" according to time program	72:1	"OFF" during DHW heating to the second set value
		72:2	"ON" during DHW heating to the second set value
73:0	DHW circulation pump "ON" according to time program	73:1 to 73:6	During the time program 1x/h "ON" for 5 min up to 6x/h "ON" for 5 min
		73:7	Permanently "ON"
General			
76:0	Without LON communication module	76:1	With LON communication module (automatic recognition)

Code 2 (cont.)

Coding in the delivered condition		**Possible change**	
77 :1	LON subscriber number	77 :2 to 77 :99	LON subscriber number, adjustable from 1 to 99: 1 - 4 = Boiler 5 = Cascade 10 - ... = Vitotronic 200-H 99 = Vitocom ***Note*** *Allocate each number* ***only*** *once.*
79:1	Control unit is fault manager	79:0	Control unit is not fault manager
7b:1	Send time via LON	7b:0	Do not send time via LON
7F:1	Detached house	7F:0	Apartment block Separate adjustment of holiday program and time program for DHW heating, as option
80:1	With 5 s delay for fault message; message is displayed if fault is present for at least 5 s	80:0	Without time delay
		80:2 to 80:199	Time delay adjustable from 10 to 995; 1 step ≙ 5 s
81:1	Automatic summer/winter time changeover	81:0	Manual summer/winter time changeover
		81:2	Radio clock module is automatically detected
		81:3	Accept time via LON
88 :0	Temperatures are displayed in °C (Celsius)	88 :1	Temperatures are displayed in °F (Fahrenheit)
90:128	Time constant for calculating adjusted outside temperature 21.3 h	90:0 to 90:199	Fast (low values) or slow (high values) matching of the flow temperature, subject to the set value when the outside temperature changes; 1 step ≙ 10 min

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
91:0	No external heating program changeover via external extension	91:1	The external heating program changeover affects the heating circuit without mixer
		91:2	The external heating program changeover affects the heating circuit with mixer
		91:3	The external heating program changeover affects the heating circuit without mixer and the heating circuit with mixer
95:0	Without Vitocom 100 communication interface	95:1	With Vitocom 100 communication interface (automatic recognition)
97:0	With LON communication module: The outside temperature of the sensor connected to the control unit is utilised internally	97:1	The control unit receives the outside temperature
		97:2	The control unit sends the outside temperature to the Vitotronic 200-H
98:1	Viessmann system number (in conjunction with monitoring several systems via Vitocom 300)	98:1 to 98:5	System number adjustable from 1 to 5
9b:0	No minimum set boiler water temperature for external demand	9b:1 to 9b:127	Minimum set boiler water temperature adjustable from 1 to 127 °C (limited by boiler-specific paramet
9C:20	Monitoring LON subscribers. If a subscriber fails to respond, the values defaulted inside the control unit will be used after 20 min. Only then will a fault message be issued.	9C:0	No monitoring
		9C:5 to 9C:60	The time is adjustable from 5 to 60 min
9F:8	Differential temperature 8 K; only in conjunction with a mixer circuit	9F:0 to 9F:40	Differential temperature adjustable from 0 to 40 K

Code 2 (cont.)

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
A0:0	Without remote control	A0:1	With Vitotrol 200 (automatic recognition)
		A0:2	With Vitotrol 300 (automatic recognition)
A3:2	Outside temperature below 1 °C: Heating circuit pump ON Outside temperature above 3 °C: Heating circuit pump OFF ***Note*** *If a value is selected below 1 °C, there is a risk of pipes outside the thermal envelope of the building freezing up. The standby mode, in particular, should be taken into consideration, e.g. during holidays.*	A3:-9 to A3:15	Heating circuit pump ON/OFF (see the following table)

Parameters Address A3:...	Heating circuit pump ON at	OFF at
-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 to 15	1 °C to 14 °C	3 °C 16 °C

Code 2 (cont.)

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
A4:0	With frost protection	A4:1	No frost protection, adjustment only possible if coding address "A3: -9" has been selected. ***Note*** *If a value is selected below 1 °C, there is a risk of pipes outside the thermal envelope of the building freezing up. The standby mode, in particular, should be taken into consideration, e.g. during holidays.*
A5:5	With heating circuit pump logic function (economy circuit): Heating circuit pump OFF if outside temperature (AT) is 1 K higher than the set room temperature (RT_{set}) $AT > RT_{set} + 1$ K	A5:0	Without heating circuit pump logic function
		A5:1 to A5:15	With heating circuit pump logic function: Heating circuit pump OFF, if (see the following table)

Parameter address A5:...	With heating circuit pump logic function: Heating circuit pump OFF, if
1	$AT > RT_{set} + 5$ K
2	$AT > RT_{set} + 4$ K
3	$AT > RT_{set} + 3$ K
4	$AT > RT_{set} + 2$ K
5	$AT > RT_{set} + 1$ K
6	$AT > RT_{set}$
7 to 15	$AT > RT_{set} - 1$ K $AT > RT_{set} - 9$ K

Code 2 (cont.)

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
A6:36	Extended economy mode **disabled**	A6:5 to A6:35	Extended economy mode is enabled, i.e. the burner and heating circuit pump will be switched OFF and the mixer will be closed at a variable value that is adjustable between 5 and 35 °C plus 1 °C. This value is based on the adjusted outside temperature, comprising the actual outside temperature and a time constant that takes the cooling down of an average building into consideration.
A7:0	Without mixer economy function	A7:1	With mixer economy function (extended heating circuit pump logic): Heating circuit pump also "OFF": If a mixer has been closed for longer than 20 min. Heating pump "ON": ■ If the mixer changes to control function ■ If there is a risk of frost
A8:1	Heating circuit with mixer M2 creates a demand for the internal circulation pump	A8:0	Heating circuit with mixer M2 creates no demand for the internal circulation pump
A9:7	With pump idle time: Heating circuit pump OFF in case of set value modification (by changing the operating mode or the set room temperature)	A9:0	Without pump idle time
		A9:1 to A9:15	With pump idle time; adjustable from 1 to 15

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
b0:0	With remote control: Heating mode/reduced mode: weather-compensated[*1]	b0:1	Heating mode: weather-compensated Reduc. mode: with room temperature hook-up
		b0:2	Heating mode: with room temperature hook-up Reduc. mode: weather-compensated
		b0:3	Heating mode/reduced mode: with room temperature hook-up
b2:8	With remote control and for the heating circuit, operation with room temperature hook-up must be programmed: Room influence factor 8[*2]	b2:0	Without room influence
		b2:1 to b2:64	Room influence factor adjustable from 1 to 64
b5:0	With remote control: No room temperature-dependent heating circuit pump logic function (change the coding only for the heating circuit with mixer M2)[*2]	b5:1 to b5:8	Heating circuit pump logic function, see the following table:

Parameter address b5:...	With heating circuit pump logic function: Heating circuit pump OFF, if
1:	enabled $RT_{actual} > RT_{set} + 5$ K; disabled $RT_{actual} < RT_{set} + 4$ K
2:	enabled $RT_{actual} > RT_{set} + 4$ K; disabled $RT_{actual} < RT_{set} + 3$ K
3:	enabled $RT_{actual} > RT_{set} + 3$ K; disabled $RT_{actual} < RT_{set} + 2$ K
4:	enabled $RT_{actual} > RT_{set} + 2$ K; disabled $RT_{actual} < RT_{set} + 1$ K
5:	enabled $RT_{actual} > RT_{set} + 1$ K; disabled $RT_{actual} < RT_{set}$
6:	enabled $RT_{actual} > RT_{set}$; disabled $RT_{actual} < RT_{set} - 1$ K
7:	enabled $RT_{actual} > RT_{set} - 1$ K; disabled $RT_{actual} < RT_{set} - 2$ K
8:	enabled $RT_{actual} > RT_{set} - 2$ K; disabled $RT_{actual} < RT_{set} - 3$ K

*[*1] Change the code for the heating circuit without mixer A1 or for the heating circuit with mixer M2 only, if the remote control unit affects that heating circuit.*

*[*2] Change the code for the heating circuit without mixer A1 or for the heating circuit with mixer M2 only, if the remote control unit affects that heating circuit.*

Code 2 (cont.)

Coding in the delivered condition		Possible change	
Boiler circuit, mixer circuit			
C5:20	Electronic minimum flow temperature limit in standard mode 20 °C	C5:1 to C5:127	Minimum temperature limit adjustable from 1 to 127 °C (limited by boiler-specific parameters)
C6:74	Electronic maximum flow temperature limit 74 °C	C6:0 to C6:127	Maximum temperature limit adjustable from 10 to 127 °C (limited by boiler-specific parameters)
d3:14	Heating curve slope = 1.4	d3:2 to d3:35	Heating curve slope adjustable from 0.2 to 3.5 (see page 30)
d4:0	Heating curve level = 0	d4:–13 to d4:40	Heating curve level adjustable from –13 to 40 (see page 30)
d5:0	With external heating program changeover: Heating program switches to "continuous operation with reduced room temperature"	d5:1	The external heating program changeover changes the heating program to "Constant central heating with standard room temperature"
E1:1	With remote control: Set day temperature is adjustable at the remote control unit from 10 to 30 °C	E1:0	Set day temperature adjustable from 3 to 23 °C
		E1:2	Set day temperature adjustable from 17 to 37 °C
E2:50	With remote control: No display correction of the actual room temperature	E2:0 to E2:49	Display correction –5 K or Display correction –0.1 K
		E2:51 to E2:99	Display correction +0.1 K or Display correction +4.9 K
E5:0	Without variable speed circulation pump	E5:1	With variable speed circulation pump; automatic recognition
E6:65	Maximum speed of the variable speed pump 65 % of max. speed in standard mode	E6:0 to E6:100	Maximum speed adjustable from 0 to 100 % of max. speed

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
E7:30	Minimum speed of the variable speed pump 30 % of max. speed	E7:0 to E7:100	Minimum speed adjustable from 0 to 100 % of max. speed
E8:1	Minimum speed subject to the setting in coding address "E9"	E8:0	Speed subject to the setting in coding address "E7"
E9:45	Speed of the variable speed pump 45 % of max. speed in reduced mode	E9:0 to E9:100	Speed adjustable from 0 to 100% of max. speed
F1:0	Screed function disabled	F1:1 to F1:6	Screed drying function adjustable in accordance with 6 optional temperature/time profiles (see page 84)
		F1:15	Constant flow temperature 20 °C
Mixer circuit			
F2:8	Time limit for party mode 8 hours or external operating mode changeover via key *2	F2:0	No time limit for party mode
		F2:1 to F2:12	Time limit adjustable from 1 to 12 h
F5:12	Run-on time of the internal circulation pump in heating mode	F5:0	No run-on time for the internal circulation pump
		F5:1 to F5:20	Run-on time of the internal circulation pump adjustable from 1 to 20 min

*2 *Party mode ends **automatically** in the "Heating and DHW" program, when the system changes over to operation with standard room temperature.*

Code 2 (cont.)

Coding in the delivered condition		Possible change	
Burner			
F8:-5	For operation in reduced room temperature mode, the set room temperature will be raised (up to the temperature limit set by coding address F9) to a value that is subject to the outside temperature, if the outside temperature falls below -5 °C, see example on page 86. Observe the setting of coding address A3.	F8:+10 to F8:-60	Temperature limit for cancelling reduced mode, adjustable from +10 to -60 °C
		F8:-61	Function disabled
F9:-14	Below an outside temperature of -14 °C, the set room temperature will be raised to the value selected as set room temperature, if the system operates with the standard room temperature, see the example on page 86	F9:+10 to F9:-60	Limit for raising the set room temperature to the value selected for standard mode adjustable from +10 to -60 °C
FA:20	Raising the set flow temperature for the transition from reduced room temperature to standard room temperature mode by 20%, see the example on page 87	FA:0 to FA:50	Raising the set flow temperature for the transition from reduced room temperature mode to standard room temperature mode, adjustable from 0 to 50%
Fb:30	Duration for raising the set flow temperature (see coding address FA): 60 min, see the example on page 87	Fb:0 to Fb:150	Duration for raising the set flow temperature adjustable from 0 to 150 (corresponds to 0 to 300 min)

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Resetting codes to their delivered condition

Press the following keys:

1. [🛁] + [🚿] simultaneously for approx. 2 s.

2. ⊕ "**Standard setting? Yes**" appears.

3. OK to confirm
or

4. ⊕/⊖ to select "**Standard setting? No**".

Service level overview

Function	Key combination	Exit	Page
Temperatures, boiler coding card and brief scans	Press ⏻ and 🛁 simultaneously for approx. 2 s	Press OK	56
Relay test	Press ⏻ and OK simultaneously for approx. 2 s	Press OK	58
Adjusting the air volume	Press ⏻ and 🌡 simultaneously for approx. 2 s	Press ⏻ and 🌡 simultaneously	17
Operating condition	Press i	Press i	59
Service scan	i (if "Service" flashes)	Press OK	35
Adjusting the display contrast	Press OK and ⊕ simultaneously; the display darkens	–	–
	Press OK and ⊖ simultaneously; the display becomes lighter	–	–
Fault history	Press 🛁 and OK simultaneously for approx. 2 s	Press OK	62
Subscriber check (in conjunction with a LON system)	Press 🚿 and OK simultaneously for approx. 2 s	Press 🚿 and OK simultaneously	32
Emissions test function "🔧"	Press 🌡 and 🔊 simultaneously for approx. 2 s	Press 🌡 and 🔊 simultaneously	–
Coding level 1 Plain text display	Press ⏻ and 🚿 simultaneously for approx. 2 s	Press ⏻ and 🚿 simultaneously	36
Coding level 2 Numerical display	Press 🚿 and 🛁 simultaneously for approx. 2 s	Press 🚿 and 🛁 simultaneously	39

Temperatures, boiler coding card and brief scans

Press the following keys:

1. ⏻ + 🛁 simultaneously for approx. 2 s

2. ⊕/⊖ for the required scan.

3. OK Scanning is completed.

Temperatures, boiler coding card and brief… (cont.)

The following values can be scanned, subject to the system equipment level:

Display screens	Explanation
■ Slope A1 – level A1	
■ Slope M2 – level M2	
■ Outd.temp.damped	The adjusted outside temperature can be reset to the current outside temperature with ⊕.
■ Outside temp.act.	
■ Boiler temp.setpt.	
■ Boiler temp.act.	
■ DHW temp.setpt.	
■ DHW temp. act.	
■ Supply temp.setpt.	Heating circuit with mixer
■ Supply temp.act.	Heating circuit with mixer
■ Com.supply t.setp.	Low loss header
■ Com.supply t.act.	Low loss header
■ Boiler coding card	
■ Scan 1 to Scan 8	

	Display screens					
Brief scan	0	0	0	0	0	0
1	Software version Control unit		Equipment version		Burner control unit version	
2	System designs 1 to 6 Display in accordance with the system equipment level		Number of KM BUS subscribers 0: no KM BUS subscriber	Maximum demand temperature		
3	0	Software version Programming unit	Software version Mixer extension 0: no mixer extension	Software version Solar control unit	Software version LON module 0: no LON module	Software version External extension 0: no external extension
4	Software version Burner control unit		Type Burner control unit		Appliance type	

Temperatures, boiler coding card and brief… (cont.)

	Display screens					
Brief scan	0	0	0	0	0	0
5	0: no external demand 1: external demand	0: no external blocking 1: external blocking	0	External 0 to 10 V hook-up Display in % 0: no external hook-up		
6	Number of LON subscribers		Check digit	Max. output Details in %		
	Boiler		**Heating circuit A1 (without mixer)**		**Heating circuit with mixer M2**	
7	0	0	Remote control 0: w/o 1: Vitotrol 200 2: Vitotrol 300	Software version Remote control 0: no remote control	Remote control 0: w/o 1: Vitotrol 200 2: Vitotrol 300	Software version Remote control 0: no remote control
	Internal circulation pump		**Heating circuit pump to connection extension**			
8	Variable speed pump 0: w/o 1: Wilo 2: Grundfos	Software version Variable speed pump 0: no variable speed pump	Variable speed pump 0: w/o 1: Wilo 2: Grundfos	Software version Variable speed pump 0: no variable speed pump	Variable speed pump 0: w/o 1: Wilo 2: Grundfos	Software version Variable speed pump 0: no variable speed pump

Checking outputs (relay test)

Press the following keys:

1. ⏻ + OK simultaneously for approx. 2 s

2. ⊕/⊖ for the required relay output

3. OK relay test is completed

Checking outputs (relay test) (cont.)

Subject to the actual equipment level, the following relay outputs can be controlled:

Display screens	Explanation
Burner stage 1 ON	Burner stage 1
Burner stage 1+ 2 ON	Burner stage 2
Intern.pump ON	Int. pump/output 20 ON
Htg. system valve	Diverter valve set to heating mode
Valve in middle pos.	Diverter valve in central position (filling/draining)
DHW valve	Diverter valve set to DHW mode
Mix.valve closed	Mixer extension
Mix.valve open	Mixer extension
Htg.cir.pump M2 ON	Mixer extension
Htg.cir.pump A1 ON	Ext. extension
DHW pump ON	Ext. extension
Recirc.pump ON	Ext. extension
Centr.fault ind. ON	Ext. extension
Solar pump ON	Vitosolic

Scanning operating conditions and sensors

Press the following keys:

1. ⓘ "Select heating circuit" is displayed.

2. OK to confirm; wait approx. 4 s.

3. ⓘ press again.

4. ⊕/⊖ for the required operating condition.

5. OK Scanning is completed.

The following operating conditions can be scanned, subject to the actual system equipment level for heating circuit A1 and heating circuit with mixer M2:

Displays screen	Explanation
Participant No.	Programmed subscriber number in the LON system
Holiday program	If holiday program entered.
Departure date	Date
Return date	Date
Outdoor temp., ... °C	Actual value
Boiler temp., ... °C	Actual value
Supply temp., ... °C	Actual value (only with heating circuit with mixer M2)

Scanning operating conditions and sensors (cont.)

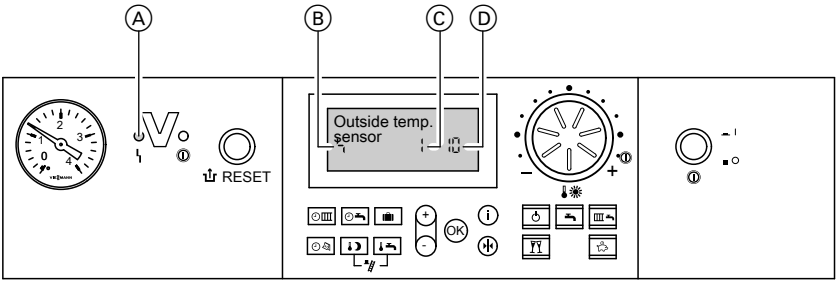
Displays screen	Explanation
Normal room temp., ... °C	Set value
Room temperature, ... °C	Actual value
Ext.room t.setpt., ... °C	With external hook-up
DHW temp., ... °C	Actual DHW temperature
Com.supply temp., ... °C	Actual value, only with low loss header
Burner, ...h*4	Hours run
Burner stage 1 ...h	Hours run
Burner stage 2 ...h	Hours run
Burner starts, ... *3	Actual value
Time	
Date	
Burner OFF/ON	
Burner stage 1 OFF/ON	
Burner stage 2 OFF/ON	
Intern. pump OFF/ON	Output 20
Htg.cir.pump OFF/ON	If an external extension or extension kit for one heating circuit with mixer is installed
DHW pump OFF/ON	If an external extension is installed
Recirc.pump OFF/ON	If an external extension is installed
Centr.fault ind. OFF/ON	If an external extension is installed
Mix.valve OPEN/CLOSE	If an extension kit for one heating circuit with mixer is installed
Various languages	The respective languages can be selected as permanent display language with (OK)

*4 *Reset hours run and burner starts after a service. The values can be reset individually to "0" by pressing (↯).*

*3 *Party mode ends **automatically** in the "Heating and DHW" program, when the system changes over to operation with standard room temperature.*

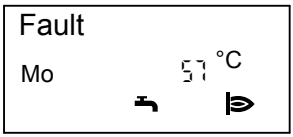
Fault display

Fault display layout



Ⓐ Fault display
Ⓑ Fault symbol
Ⓒ Fault number
Ⓓ Fault code

The red fault indicator flashes for every fault.
A fault in the burner control unit causes the display to show "".
The display flashes "Fault" if a fault message is issued



- Flow sensor
- Boiler sensor
- Mixed flow sensor
- Cylinder sensor
- Flue gas sensor
- DHW outlet sensor
- Room temperature sensor
- Collector sensor
- Solar DHW sensor
- Remote control
- Subscriber fault

Plain text fault displays:
- Burner control unit
- Outside temperature sensor

Checking and acknowledging faults

Note
If an acknowledged fault is not removed, the fault message will be re-displayed the following day at 07:00 h.

Press the following keys:

1. ⓘ for the current fault.

2. ⊕/⊖ for further fault messages.

Fault display (cont.)

3. ⓞⓚ All fault messages are acknowledged simultaneously, the fault display will be deleted and the red fault indicator continues to flash.

Calling up acknowledged fault messages

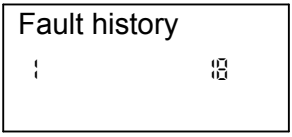
Press the following keys:

1. ⓞⓚ for approx. 3 s

2. ⊕/⊖ for the acknowledged fault.

Calling up fault codes from the fault memory (fault history)

The 10 most recent faults are saved and may be scanned.
The faults are ordered by date, thus the most recent fault is fault number 1.



Press the following keys:

1. ⚙ + ⓞⓚ simultaneously for approx. 2 s.

2. ⊕/⊖ for individual fault codes.

3. ***Note***
All saved fault codes can be deleted with ⌫*.*

4. ⓞⓚ Scanning is completed.

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Fault codes

Fault code on the display	System characteristics	Cause	Measures
0F	Control mode	Maintenance	Service the equipment. After the service, set coding address "24:0".
10	Controls as if the outside temperature were 0 °C	Short circuit, outside temperature sensor	Check the outside temperature sensor (see page 69).
18	Controls as if the outside temperature were 0 °C	Lead break, outside temperature sensor	Check the outside temperature sensor (see page 69).
20	Regulates without flow temperature sensor (low loss header)	Short circuit, system flow temperature sensor	Check the low loss header sensor (see page 71).
28	Regulates without flow temperature sensor (low loss header)	Lead break, system flow temperature sensor	Check the low loss header sensor (see page 71).
30	Burner blocked	Short circuit, boiler water temperature sensor	Check the boiler water temperature sensor (see page 71).
38	Burner blocked	Lead break, boiler water temperature sensor	Check the boiler water temperature sensor (see page 71).
40	Mixer closes	Short circuit, flow temperature sensor in heating circuit with mixer M2	Check the flow temperature sensor.
48	Mixer closes	Lead break, flow temperature sensor in heating circuit with mixer M2	Check the flow temperature sensor.
50	No DHW heating	Short circuit, cylinder temperature sensor	Check the sensor (see page 71).
58	No DHW heating	Lead break, cylinder temperature sensor	Check the sensor (see page 71).

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
92	Control mode	Short circuit, collector temperature sensor; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
93	Control mode	Short circuit, cylinder temperature sensor; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.
94	Control mode	Short circuit, temperature sensor; connects to the Vitosolic at S2	Check the sensor at the Vitosolic.
9A	Control mode	Lead break, collector temperature sensor; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
9b	Control mode	Lead break, cylinder temperature sensor; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.
9C	Control mode	Lead break, temperature sensor; connects to the Vitosolic at S2	Check the sensor at the Vitosolic.
9F	Control mode	Solar control unit fault; displayed if a fault without fault code occurs at the solar control unit	Check the solar control unit (see solar control unit service instructions).
A7	Control mode as per delivered condition	Faulty programming unit	Replace the programming unit.
b0	Burner blocked	Short circuit, flue gas temperature sensor	Check the flue gas temperature sensor (see page 72).

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
b1	Control mode as per delivered condition	Communication fault, programming unit (internal)	Check connections and replace the programming unit if required.
b4	Controls as if the outside temperature were 0 °C	Internal fault	Replace the control unit.
b5	Control mode as per delivered condition	Internal fault	Replace the control unit.
b7	Burner blocked	Boiler coding card missing, faulty or incorrect boiler coding card	Plug in boiler coding card or replace it, if faulty.
b8	Burner blocked	Lead break, flue gas temperature sensor	Check the flue gas temperature sensor (see page 72).
bA	Mixer M2 regulates to 20 °C flow temperature	Communication fault, extension kit for heating circuit with mixer M2	Check extension kit connections and code. Start the extension kit.
bC	Control mode without remote control	Communication fault, Vitotrol remote control, heating circuit A1	Check connections, cable, coding address "A0" and the remote control DIP switches.
bd	Control mode without remote control	Communication fault, Vitotrol remote control, heating circuit with mixer M2	Check connections, cable, coding address "A0" and the remote control DIP switches.
bE	Control mode	Vitotrol remote control incorrectly programmed	Check remote control DIP switch settings (see page 88).
bF	Control mode	Incorrect LON communication module	Replace the LON communication module.
C2	Control mode	Lead break, KM BUS to solar control unit	Check the KM BUS, the solar control unit and coding address "54".

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
C5	Control mode, max. pump speed	Communication fault, variable speed internal circulation pump	Check the setting of coding address "30".
C6	Control mode, max. pump speed	Communication fault, external variable speed heating circuit pump, heating circuit with mixer M2	Check the setting of coding address "E5".
C7	Control mode, max. pump speed	Communication fault, external variable speed heating circuit pump, heating circuit A1	Check the setting of coding address "E5".
Cd	Control mode	Communication fault, Vitocom 100 (KM BUS)	Check connections, Vitocom 100 and coding address "95".
CE	Control mode	Communication fault, ext. extension	Check connections and coding address "2E".
CF	Control mode	Communication fault, LON communication module	Replace the LON communication module.
dA	Control mode without room influence	Short circuit, room temperature sensor, heating circuit A1	Check the room temperature sensor, heating circuit A1.
db	Control mode without room influence	Short circuit, room temperature sensor, heating circuit with mixer M2	Check the room temperature sensor, heating circuit with mixer M2.
dd	Control mode without room influence	Lead break, room temperature sensor, heating circuit A1	Check the room temperature sensor, heating circuit A1 and the remote control DIP switch settings (see page 88).

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Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
dE	Control mode without room influence	Lead break, room temperature sensor, heating circuit with mixer M2	Check the room temperature sensor, heating circuit with mixer M2 and the remote control DIP switch settings (see page 88).
E4	Burner blocked	Supply voltage fault	Replace the control unit.
E5	Burner in a fault state	Internal fault	Press "⇧". Replace the control unit if the burner will not restart.
E6	Burner in a fault state	The oil preheater does not respond inside the tolerated time	Check oil pre-heater and supply line and replace if necessary. Press "⇧".
F0	Burner blocked	Internal fault	Replace the control unit.
F1	Burner in a fault state	Flue gas temperature limiter has responded	Check the heating system fill level. Vent the system. Press reset button "⇧" after the flue gas system has cooled down.
F2	Burner in a fault state	The temperature limiter has responded	Check the heating system fill level. Check the circulation pump. Vent the system. Check the temperature limiter and connecting cables. Press "⇧".
F3	Burner in a fault state	Flame signal is already present at burner start	Check ignition electrodes, electrode gaps and connecting cables. Press "⇧".

▶▶

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
F4	Burner in a fault state	The flame is not established at the end of the safety time	Check oil supply, ignition electrodes, electrode gaps and connecting cables, check nozzle, check solenoid valve coil. Correct all settings, if required; clean all contaminated parts and replace faulty components. Press "⇧".
F5	Burner in a fault state	The air pressure switch does not respond.	Check air pressure switch and replace if necessary. Press "⇧".
F7	Burner in a fault state	No control/feedback of/from fuel valve BV 2	Replace fuel valve BV 2 Press "⇧".
F8	Burner in a fault state	Fuel valve BV 1 closes late	Check nozzle, vent oil line, check solenoid valve Press "⇧".
F9	Burner in a fault state	Fan speed too low during the burner start	Check fan, fan connecting cables and fan power supply. Press "⇧".
F9	Burner in a fault state	Fan power supply lead broken ■ The fire safety switch or flue gas thermostat is faulty or has responded ■ The jumper across terminals 1 and 2 in junction box 201 is broken or has been removed	Check fire safety switch or smoke thermostat, check jumper across terminals 1 and 2 in junction box 201 (see page 92). Press "⇧".

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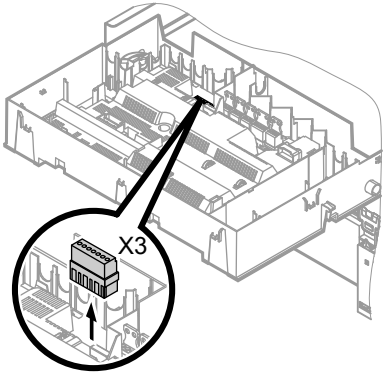
Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
FA	Burner in a fault state	Fan speed deviation	Check fan, check connecting cables to fan. Press "↑".
Fb	Burner in a fault state	3 x flame blow-off during operation	Check oil supply, check nozzle. Press "↑".
Fd	Burner blocked	Burner control unit fault	Press "↑" . Replace control unit if the fault persists.
FE	Burner blocked	Strong interference (EMC) field nearby or boiler coding card/main PCB faulty	Check boiler coding card, restart the equipment. Replace the control unit if the equipment will not restart.
FF	Burner blocked	Internal fault	Start the equipment again. Replace the control unit if the equipment will not restart.

Repairs

Checking the outside temperature sensor (weather-compensated control unit)



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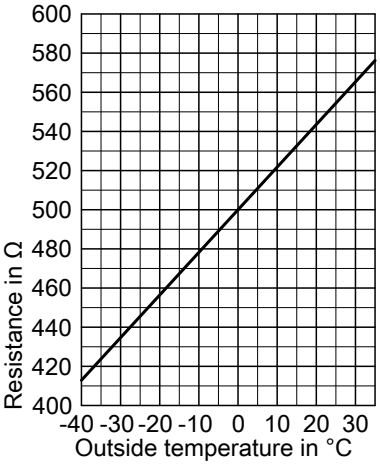
Repairs (cont.)



1. Pull plug "X3" from the control unit.
2. Test the resistance of the outside temperature sensor across terminals "X3.1" and "X3.2" on the disconnected plug and compare it with the curve.
3. Where actual values strongly deviate from the curve values, disconnect the wires at the sensor and repeat test immediately at the sensor.
4. Subject to result, replace the lead or the outside temperature sensor.

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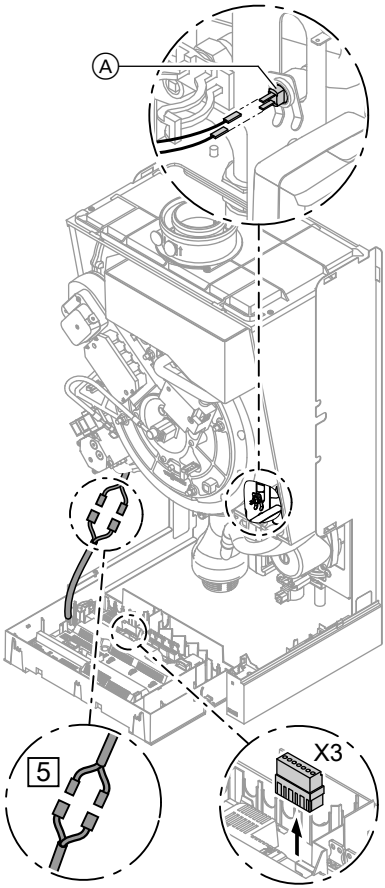
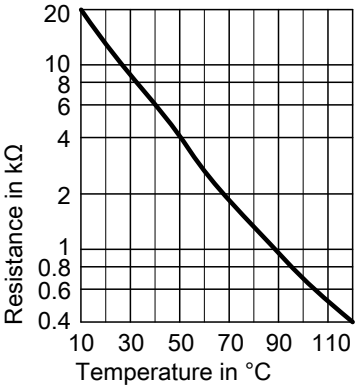
Repairs (cont.)

Checking the boiler water temperature sensor, the cylinder temperature sensor or the flow temperature sensor for the low loss header



1. ■ Boiler water temperature sensor: Pull the leads from boiler water temperature sensor Ⓐ and check the resistance.
■ Cylinder temperature sensor: Pull plug [5] from the cable harness at the control unit and check the resistance.
■ Flow temperature sensor: Pull plug "X3" from the control unit and check the resistance across terminals "X3.4" and "X3.5".

Repairs (cont.)



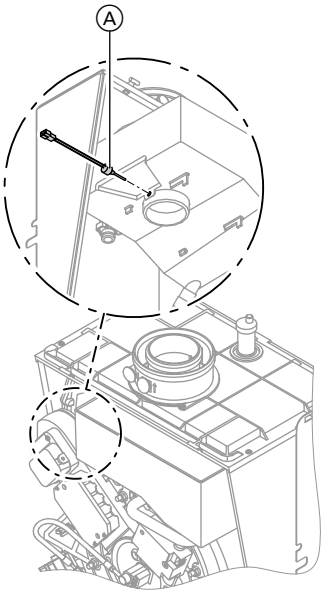
2. Check the sensor resistance and compare the actual values with the curve.

3. Replace the sensor in case of severe deviation.

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

Checking the flue gas temperature sensor

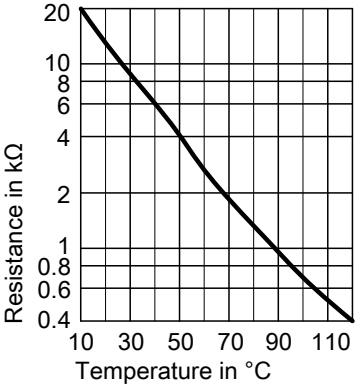
The flue gas temperature sensor locks out the boiler when the permissible flue gas temperature is exceeded. Reset interlock after flue gas system has cooled down by pressing reset button "".



1. Pull the leads from flue gas temperature sensor Ⓐ.

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

Repairs (cont.)

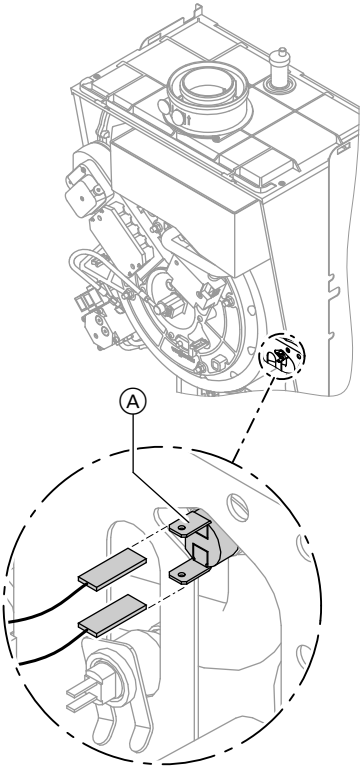


3. Replace the sensor in case of severe deviation.

Checking the temperature limiter

If the burner control unit cannot be reset after a fault shutdown, although the boiler water temperature is below approx. 90 °C, check the following:

Repairs (cont.)



1. Pull the leads from temperature limiter Ⓐ.
2. Check the continuity of the temperature limiter with a multimeter.
3. Remove the faulty temperature limiter.
4. Install a new temperature limiter.
5. After commissioning, press reset button "⇧" at the control unit.

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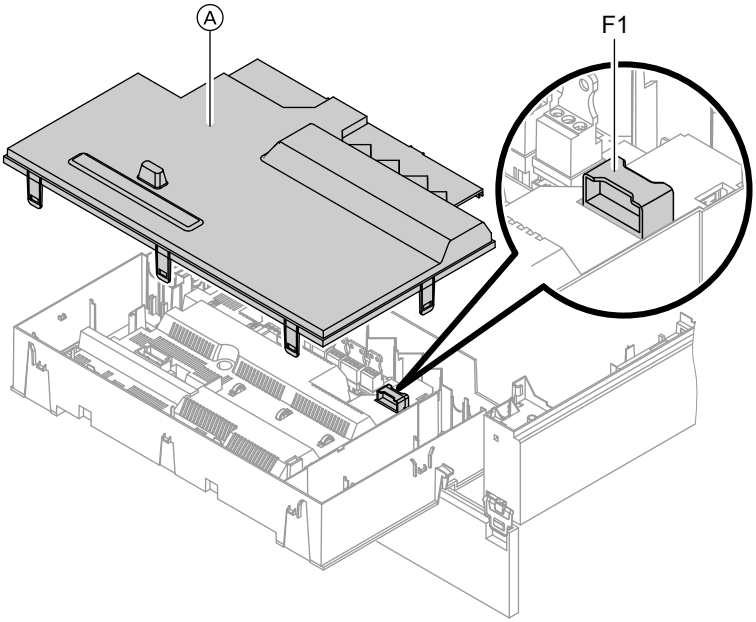
Repairs (cont.)

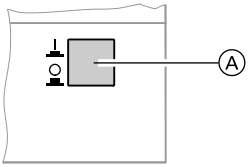
Checking the fuse



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

Extension kit for heating circuit with mixer

Checking the rotational direction of the mixer motor



1. Switch ON/OFF switch Ⓐ at the extension kit first OFF and then ON again. The device will carry out the following self-test:
   - Mixer "Close" (150 s)
   - Pump "ON" (10 s)
   - Mixer "Open" (10 s)
   - Mixer "Close" (10 s)

   Then standard control mode resumes.

Repairs (cont.)

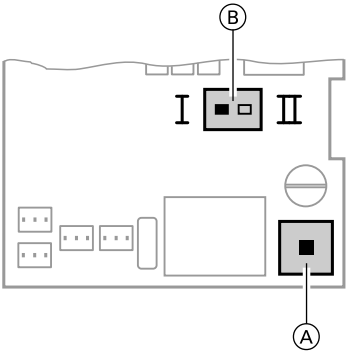
2. Note the rotational direction of the mixer motor during its self-test. Then set the mixer manually to "Open" again.

Note
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 set is incorrectly fitted.

Mixer installation instructions

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

Danger
An electric shock can be life-threatening.
Before opening the equipment, switch OFF the ON/OFF switch and mains voltage, for example at the fuse or the main isolator.

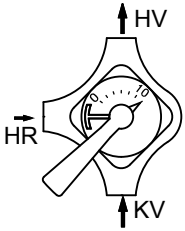


Ⓐ ON/OFF switch
Ⓑ Rotational direction switch

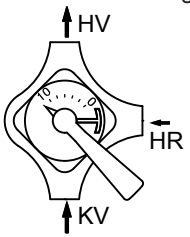
1. Remove the lower and upper housing cover of the extension kit.

Extension kit installation instructions

2. Change over the rotational direction switch:
Switch position I for central heating return from the left (delivered condition).



Switch position II for central heating return from the right.



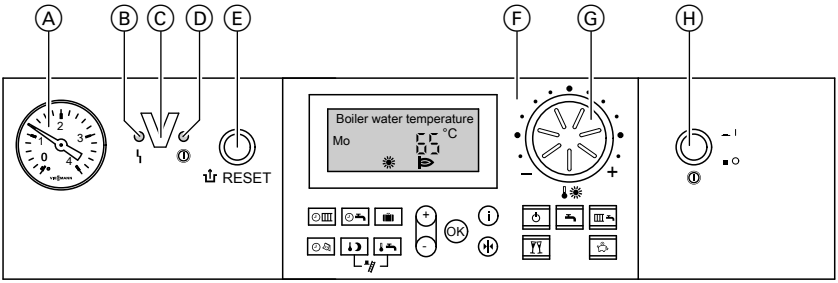
Repairs (cont.)

Checking the Vitotronic 200-H (accessories)

The Vitotronic 200-H is connected to the control unit via the LON system. To test the connection, carry out a subscriber check at the boiler control unit (see page 32).

Control unit

Control and display elements



Ⓐ Pressure gauge
Ⓑ Fault indicator (red)
Ⓒ Optolink interface
only in conjunction with the diagnostic adaptor (accessory) and Vitosoft (accessory)
Ⓓ ON indicator (green)
Ⓔ Reset button
Ⓕ User interface
Ⓖ Rotary selector for standard room temperature
Ⓗ ON/OFF switch

Keys at the user interface:

- Central heating time program
- DHW heating and DHW circulation pump time programs (if connected to the control unit)
- Holiday program
- Time/date
- Reduced room temperature
- Set DHW temperature
- + Emissions test function
- Standby mode
- DHW only
- Heating and DHW
- Party mode
- Economy mode
- (−)/(+) Setting values
- OK Confirmation
- i Information
- Standard settings (Reset)

Heating mode

The control unit calculates a set boiler water temperature depending on the outside temperature and/or the room temperature (if a room temperature-controlled remote control facility is connected) and the slope/level of the heating curve. The determined set boiler water temperature is then transferred to the burner control unit.

The burner control unit calculates the heat demand and controls the two-stage burner accordingly. The burner control unit limits the boiler water temperature: to 74 °C by the temperature controller, and to 82 °C by the electronic temperature limiter. The temperature limiter of the safety chain locks out the burner control unit at a boiler water temperature of 100 °C.

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Control unit (cont.)

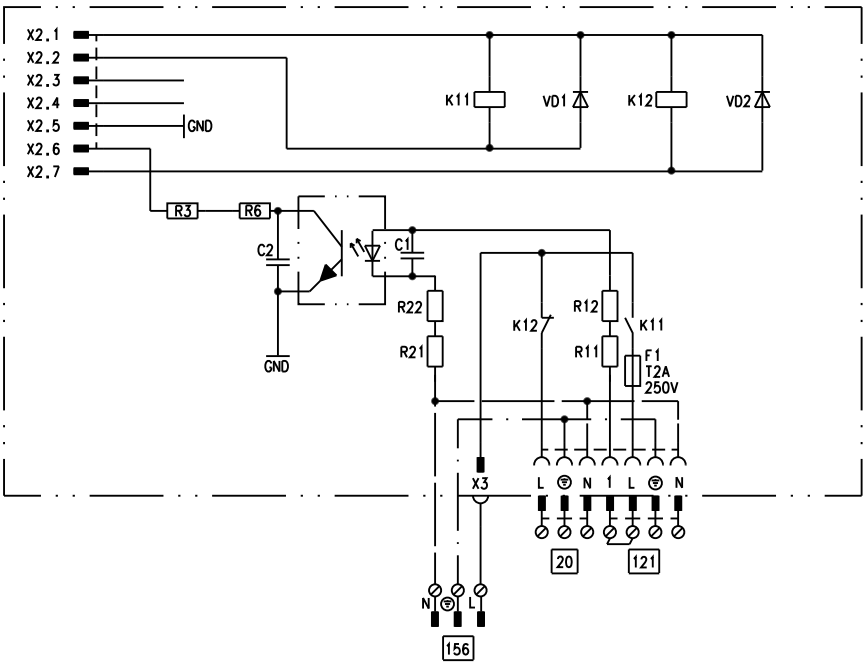
DHW heating

The burner, the circulation pump and the three-way valve are started or changed over, if the cylinder temperature lies 2.5 K below the set cylinder temperature. The set boiler water temperature is adjusted 20 K higher than the set DHW temperature (adjustable via coding address "60"). The burner will be switched OFF and the circulation pump run-on time will begin, if the actual cylinder temperature exceeds the set cylinder temperature by 2.5 K.

Boosting DHW heating

The booster heating function is activated if a switching period is selected for the fourth time phase.
The set temperature value for the heating boost is adjustable in coding address "58".

Internal extension H3



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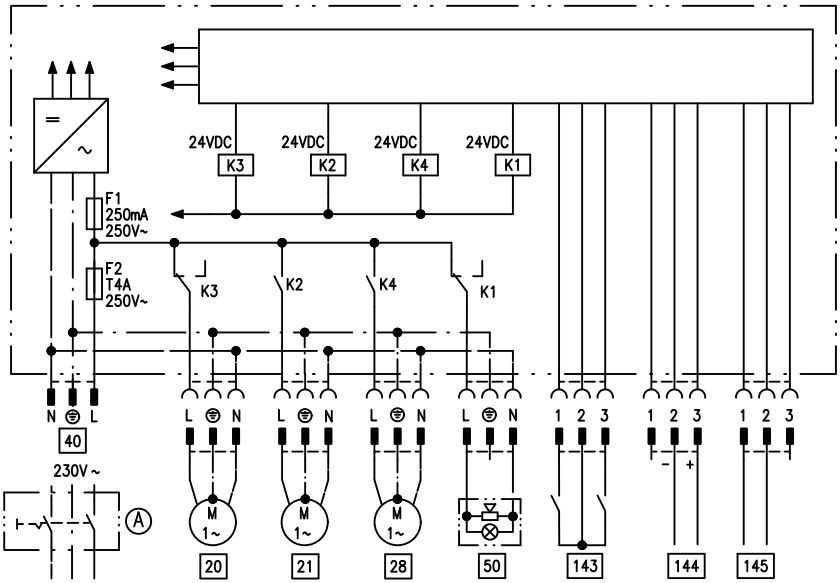
Control unit (cont.)

The internal extension is factory-fitted into the control unit casing. The following functions are connected to the relay outputs:

20 Internal circulation pump
121 Oil preheater

Extensions for external connections (accessories)

External extension H1



The external extension is connected to the boiler control unit via the KM BUS. The following functions can be controlled or processed simultaneously via the extension:

Ⓐ ON/OFF switch (on site)
20 Heating circuit pump for the heating circuit without mixer
21 Circulation pump for cylinder heating
28 DHW circulation pump (only for weather-compensated operation)
40 Power supply
50 Central fault message

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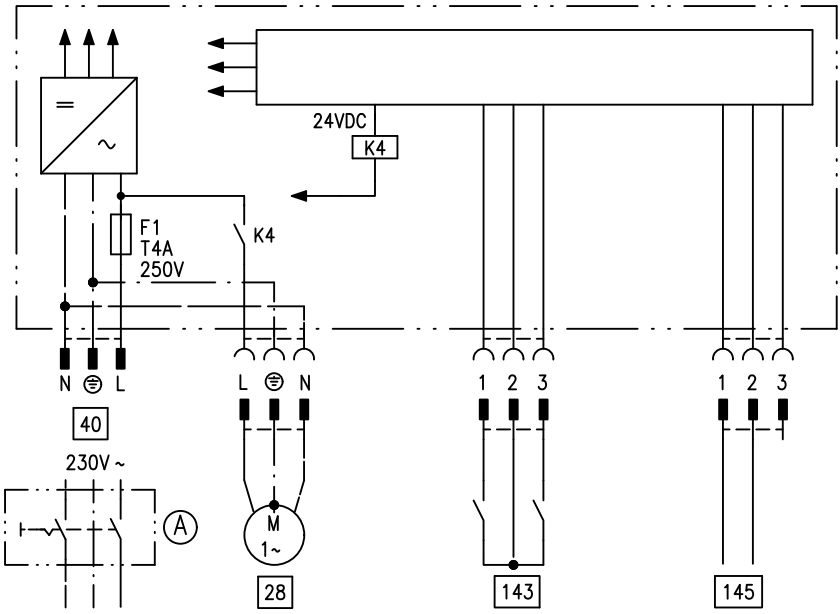
Extensions for external connections… (cont.)

143 ■ External blocking (terminals 2 - 3)
■ External demand (terminals 1 - 2)
■ External heating program changeover (terminals 1 - 2) (only for weather-compensated operation)
The allocation of the function "External heating program changeover" is set via coding address "91".

144 External set value 0 to 10 V

145 KM BUS

External extension H2



The external extension is connected to the boiler control unit via the KM BUS. The following functions can be controlled or processed simultaneously via the extension:

A ON/OFF switch (on site)
28 DHW circulation pump (only for weather-compensated operation)
40 Power supply

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Extensions for external connections… (cont.)

143 ■ External blocking (terminals 2 - 3)
■ External demand (terminals 1 - 2)
■ External heating program changeover (terminals 1 - 2) (only for weather-compensated operation)
The allocation of the function "External heating program changeover" is set via coding address "91".

145 KM BUS

Control functions

External heating program changeover

The "External heating program changeover" function is connected via external extension input "143". You can select which heating circuits the heating program changeover affects in coding address "91":

Heating program changeover	Coding
No changeover	91:0
Heating circuit without mixer A1	91:1
Heating circuit with mixer M2	91:2
Heating circuit without mixer and heating circuit with mixer	91:3

You can select in which direction the heating program changes over in coding address "D5":

Heating program changeover	Coding
Changeover towards "Permanently reduced" or "Permanent standby" mode (subject to the selected set value)	d5:0
Changeover towards "Constant heating mode"	d5:1

The duration of the heating program changeover can be adjusted in coding address "F2":

Control functions (cont.)

Heating program changeover	Coding
No heating program changeover	F2:0
Duration of the heating program changeover 1 to 12 hours	F2:1 to F2:12

The heating program changeover stays enabled for as long as the contact remains closed, but at least as long as the duration selected in coding address "F2".

External blocking

The "External blocking" function is connected via external extension input "143".

In coding address "32" you can select the influence the "Ext. blocking" signal should have on the connected circulation pumps.

External demand

The "External demand" function is connected via external extension input "143".
In coding address "34" you can select the influence the "Ext. demand" signal should have on the connected circulation pumps.

The minimum set boiler water temperature in case of external demand is selected in coding address "9b".

Venting program

During the venting program, the circulation pump will be alternately switched ON and OFF for 30 s respectively over a period of 20 min.
For a certain period, the diverter valve is alternately set towards heating and DHW heating. The burner is switched OFF during the venting program.

The venting program is activated via code "2F:1". The program is automatically disabled after 20 min, and coding address "2F" is set to "0".

Control functions (cont.)

Fill program

In the delivered condition, the diverter valve is set to its central position, enabling the system to be filled completely. After switching ON the control unit, the diverter valve no longer goes into its central position.
Afterwards, the diverter valve can be moved via code "2F:2" into the central position. In this position, the control unit can be switched OFF, and the system can be filled completely.

Filling with the control unit switched ON

If the system is to be filled with the control unit switched ON, the diverter valve will be moved to its central position via code "2F:2" and the pump will be started.
The burner shuts down if this function is enabled via coding address "2F". The program is automatically disabled after 20 min, and coding address "2F" is set to "0".

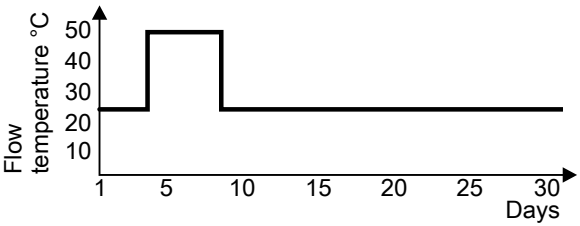
Screed drying function

The screed function enables screeds to be dried. For this, always observe the details specified by the screed manufacturer.
When the screed drying function is activated, the heating circuit pump of the mixer circuit is switched ON and the flow temperature will be held at the selected profile. After completion (30 days), the mixer circuit will again be regulated automatically via the set parameters.
Observe EN 1264. The report to be provided by the heating contractor must contain the following heat-up details:

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

The various temperature profiles are adjustable via coding address "F1".
The function continues after power failure or after the control unit has been switched OFF. "Heating and DHW" will be started after the screed drying function has been terminated or if code "F1:0" is manually adjusted.

Temperature profile 1: (EN 1264-4) code "F1:1"



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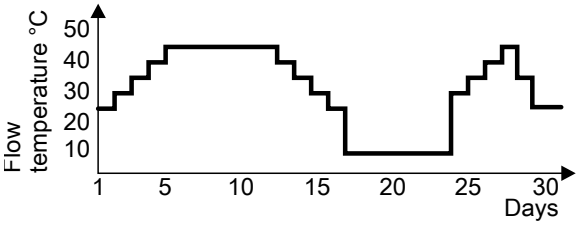
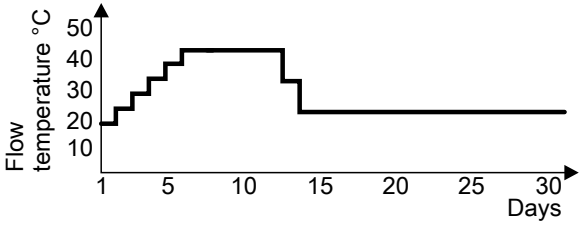
Control functions (cont.)

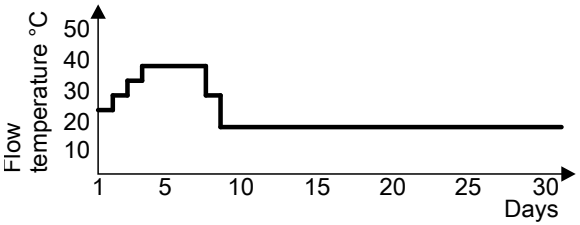
Temperature profile 2: (ZV parquet and flooring technology) code "F1:2"



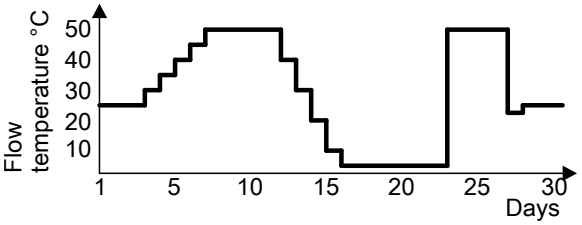
Temperature profile 3: Code "F1:3"



Temperature profile 4: Code "F1:4"



Temperature profile 5: Code "F1:5"



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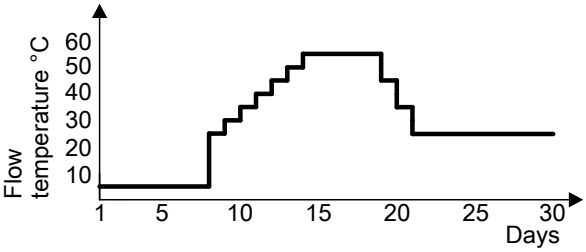
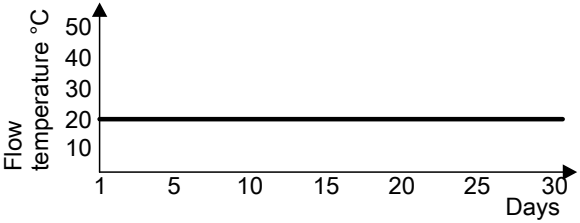
Control functions (cont.)

Temperature profile 6: Code "F1:6"



Temperature profile 7: Code "F1:15"



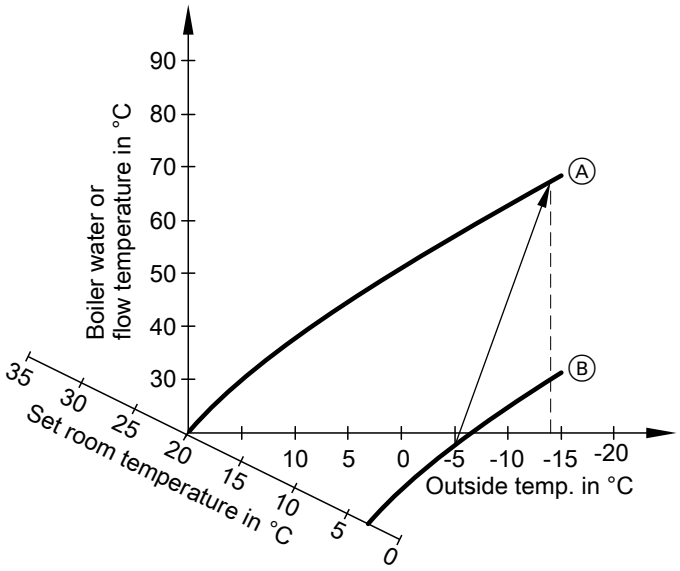
Raising the reduced room temperature

During operation with 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, but no higher than the set standard room temperature.

The outside temperature limits for the start and end of the temperature raising can be adjusted via coding addresses "F8" and "F9".

Control functions (cont.)

Example using the settings in the delivered condition



Ⓐ Heating curve for operation with standard room temperature

Ⓑ Heating curve for operation with reduced room temperature

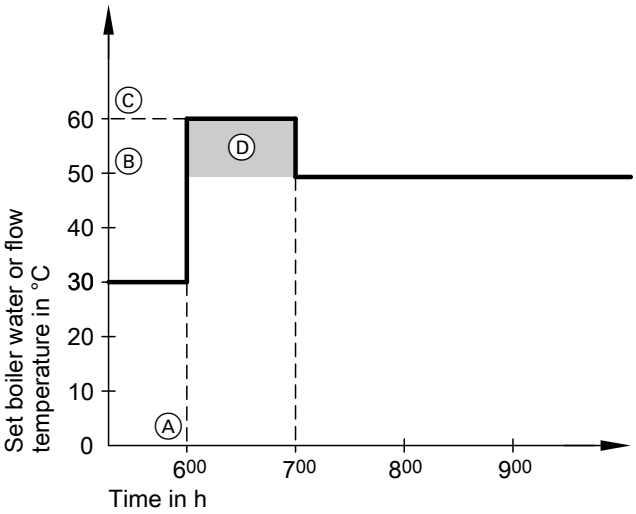
Reducing the heat-up time

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 of the additional increase of the set boiler water or flow temperature can be adjusted in coding addresses "FA" and "Fb".

Control functions (cont.)

Example using the settings in the delivered condition



Ⓐ Start of operation with standard room temperature
Ⓑ Set boiler water or flow temperature in accordance with the selected heating curve
Ⓒ Set boiler water or flow temperature in accordance with coding address "FA":
50 °C + 20 % = 60 °C
Ⓓ Duration of operation with raised set boiler water or flow temperature in accordance with coding address "Fb":
60 min

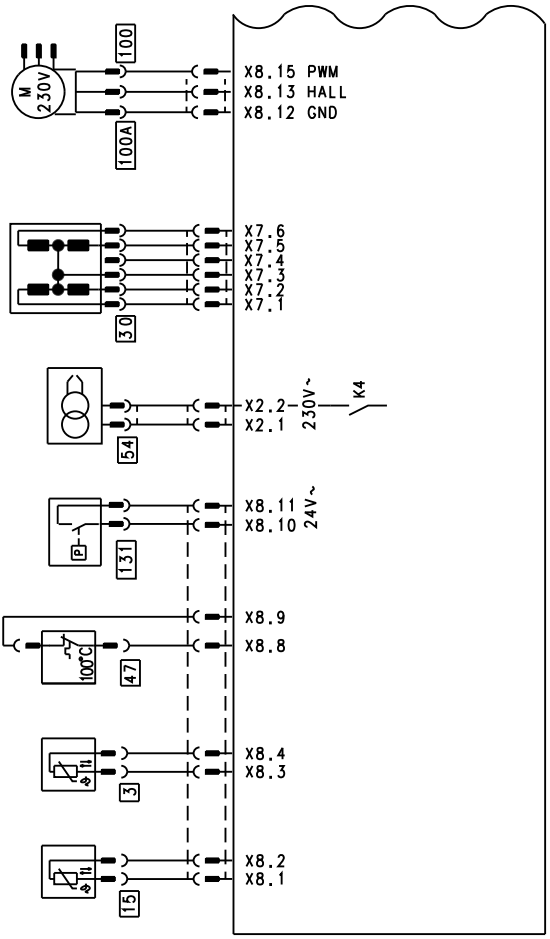
Remote control DIP switches

The DIP switches are located on the PCB in the top part of the casing.

Remote control DIP switches (cont.)

Remote control	DIP switch setting
The remote control affects the heating circuit without mixer A1	
The remote control affects the heating circuit with mixer M2	
When connecting a separate room temperature sensor, set DIP switch "3" to "ON".	

Connection and wiring diagram – internal connections



X ... Electrical interfaces

3	Boiler water temperature sensor
15	Flue gas temperature sensor
30	Stepper motor for diverter valve
47	Temperature limiter
54	Ignition unit
100	Fan
100 A	Fan control
131	Air pressure switch

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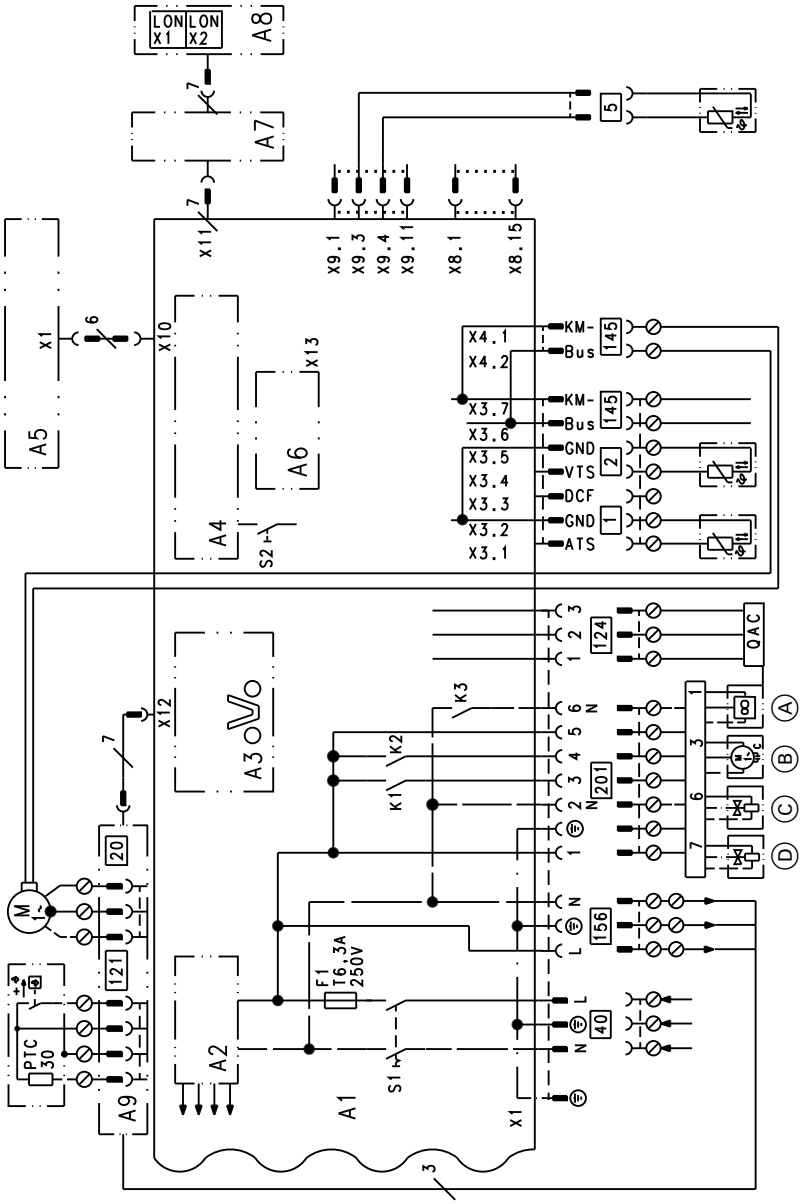
Connection and wiring diagram – external connections



A1 Main PCB

A2 Power supply unit

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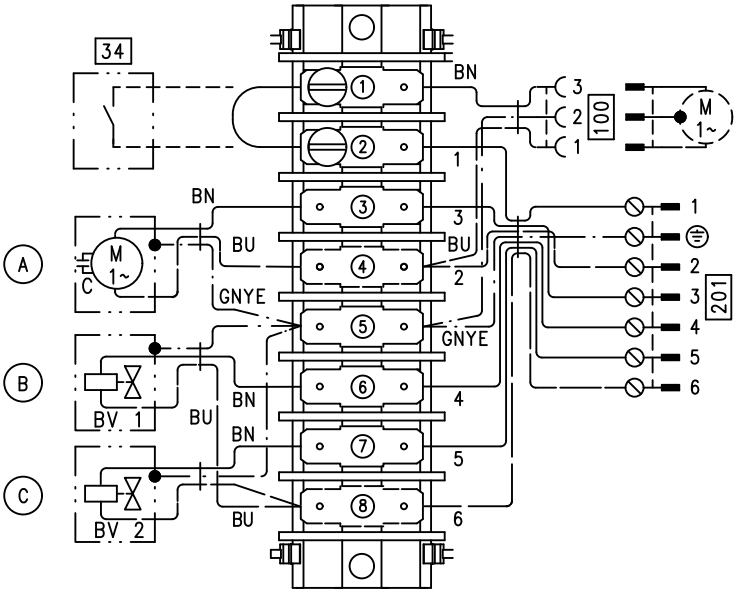
Connection and wiring diagram – external… (cont.)

A3 Optolink
A4 Burner control unit
A5 Programming unit
A6 Coding card
A7 Connection adaptor
A8 LON communication module
A9 Internal extension H3
S1 ON/OFF switch
S2 Reset button
Ⓐ Fan
Ⓑ Oil pump
Ⓒ Fuel valve stage 1
Ⓓ Fuel valve stage 2

X ... Electrical interfaces
[1] Outside temperature sensor
[2] Flow temperature sensor, low loss header
[5] Cylinder temperature sensor
[20] Internal circulation pump
[40] Power supply
[121] Oil preheater
[124] Flame monitor
[145] KM BUS
[156] Power supply of accessories
[201] Internal connecting cable

Plug 201 connection diagram



[34] Jumper or fire safety switch
[100] Fan motor
[201] Internal connecting cable (on the main PCB)

Ⓐ Oil pump
Ⓑ Fuel valve 1
Ⓒ Fuel valve 2

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Parts lists

Spare parts information
Quote the part and serial no. (see type plate) and the item number of the required part (as per this parts list). Obtain standard parts from your local supplier.

002 Ignition module
003 Oil pump motor
004 Oil pump
005 Oil preheater
007 Fan
008 Air pressure switch
009 Fan gasket
013 Insulation ring
014 Rifling facility
015 Oil hose
016 Ignition cable set
017 Flow oil hose
018 Return oil hose
019 Solenoid valve coil
023 Silencer
024 Air intake duct
029 Angled nozzle
030 Gasket set
031 Small parts comprising:
- 31a Pan-head screws M 6 x 20
- 31b Hexagon nut M 8
- 31d Cheese-head screw M5 x 16
- 31e Cheese-head screw M4 x 10
- 31f Serrated washer A 4.3
- 31g Cheese-head screw M4 x 20
- 31h Washer A 4.3
- 31i Cheese-head screw M5 x 12
- 31j Cheese-head screw M5 x 8
- 31k Pan-head screw M 4 x 28
- 31l Cheese-head screw M5 x 40
- 31m Pan-head screw M3 x 6
- 31r Gasket A 10x14x1.5
- 31t Countersunk screw M4 x 8

032 Mixer facility lid
033 Connecting pipe
034 Air vent valve
035 Siphon
036 Condensate hose
037 Front panel with pos. 047
038 Boiler connection grommets
039 Pump motor
040 Thermocouple
041 Temperature sensor
042 Flue gas temperature sensor
043 Boiler flue connection plug
044 Pressure gauge
045 Linear stepper motor
047 Fixing clips
048 Clip nut
049 Ventilation air gasket
050 Lip seal
051 Cap with pos. 064 and 068
052 Plug-in connector gasket set
053 Plug-in connector clips
054 Safety spring
056 Heat exchanger siphon connection
058 Wall retainer
063 Retaining spring; condensate drain
064 Profiled gasket; l.h./r.h.
067 Boiler flue connection
068 Profiled gasket; top/bottom
071 Pivoting angle fitting
080 Control unit
081 Back cover
082 Support
083 Flap
084 Pressure gauge retainer
085 Clip
086 Hinge
087 Internal extension
088 LON communication module
089 Connection adaptor
090 Coding card
091 Fuse
093 Programming unit
095 Locking bracket
110 Outside temperature sensor
111 Junction box lid

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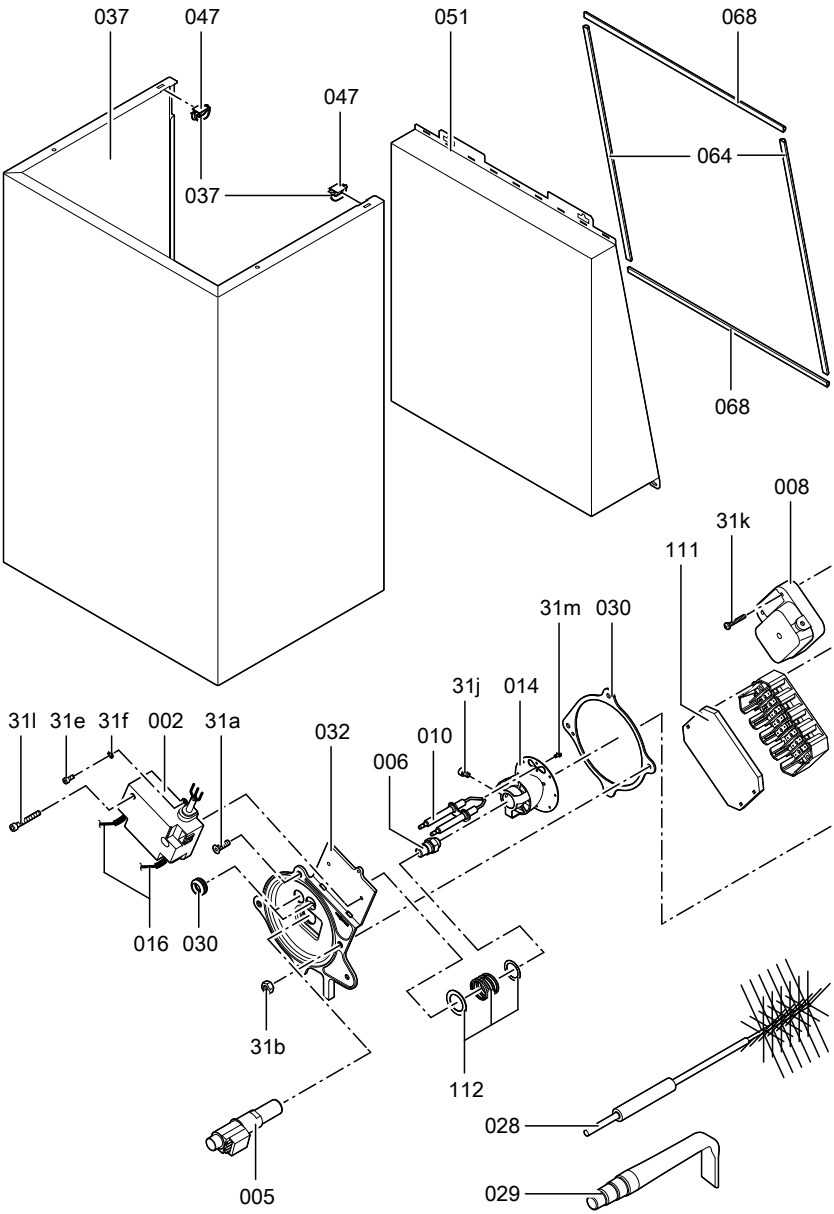
Parts lists (cont.)

112 Compression spring and washer
115 Cap lid
116 Grommet
120 Fuse holder

Wearing parts
001 Flame tube
006 Nozzle
010 Ignition electrode
020 Plug-in coupler
021 Filter element for pos. 004
022 Packing 10 x 10 mm
028 Cleaning brush (rotary)

Parts not shown
025 Oil filter insert; Siku
026 Filter bowl; Magnum
027 Filter insert for pos. 026
046 Special grease
055 Heat conducting paste
057 Set of fixing parts
059 Installation instructions
060 Service instructions
061 Neutralisation maintenance set
062 Active charcoal filter maintenance set
065 Solenoid valve core
069 Oil filter changeover set
070 Oil filter insert; Microtec
097 Cable harness X8/X9
098 Vitoladens terminal strip
099 Linear stepper motor connecting cable
100 Cable harness 121/124
101 Cable harness KM BUS 145; internal
154 Operating instructions
156 Spray paint, Vitowhite
157 Touch-up paint stick, Vitowhite
158 Cascade module
160 PCB adaptor; LON module
161 LON communication module installation instructions
162 Cascade module installation instructions
Ⓐ Type plate, optionally l.h. or r.h. side

Parts lists (cont.)



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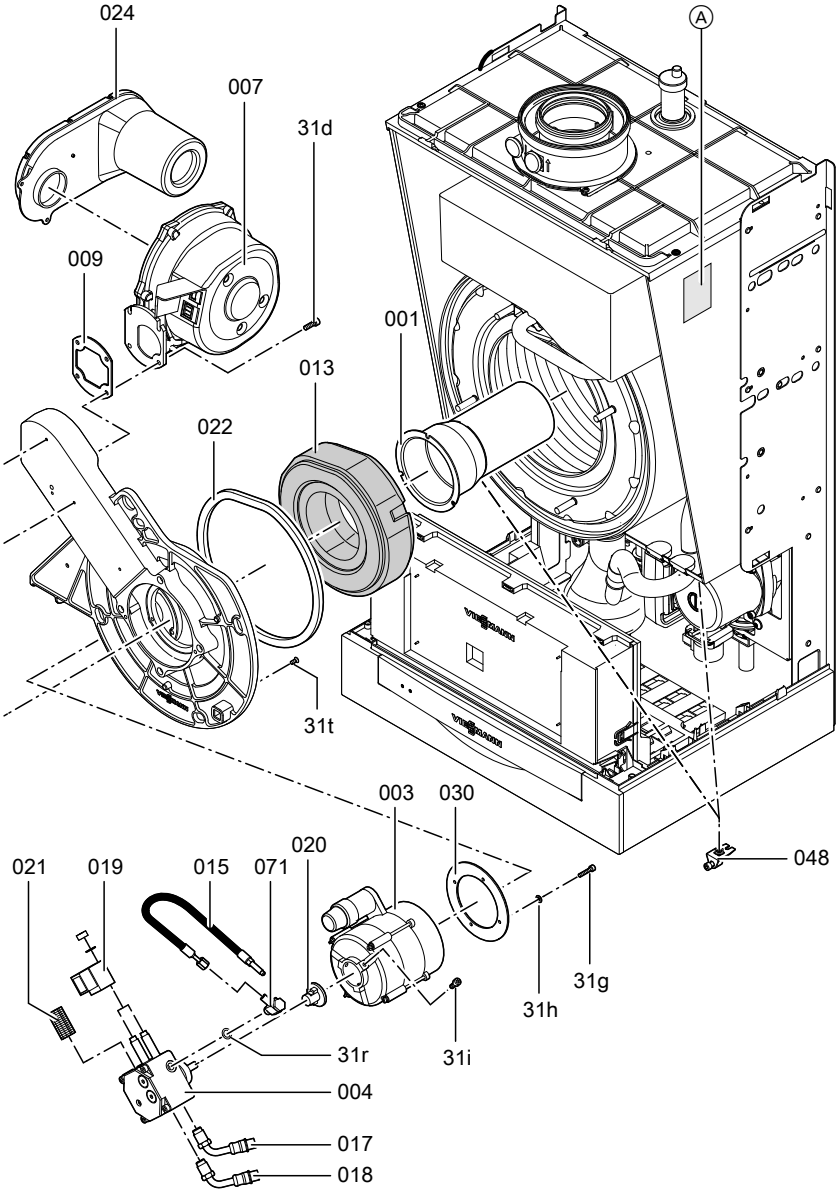
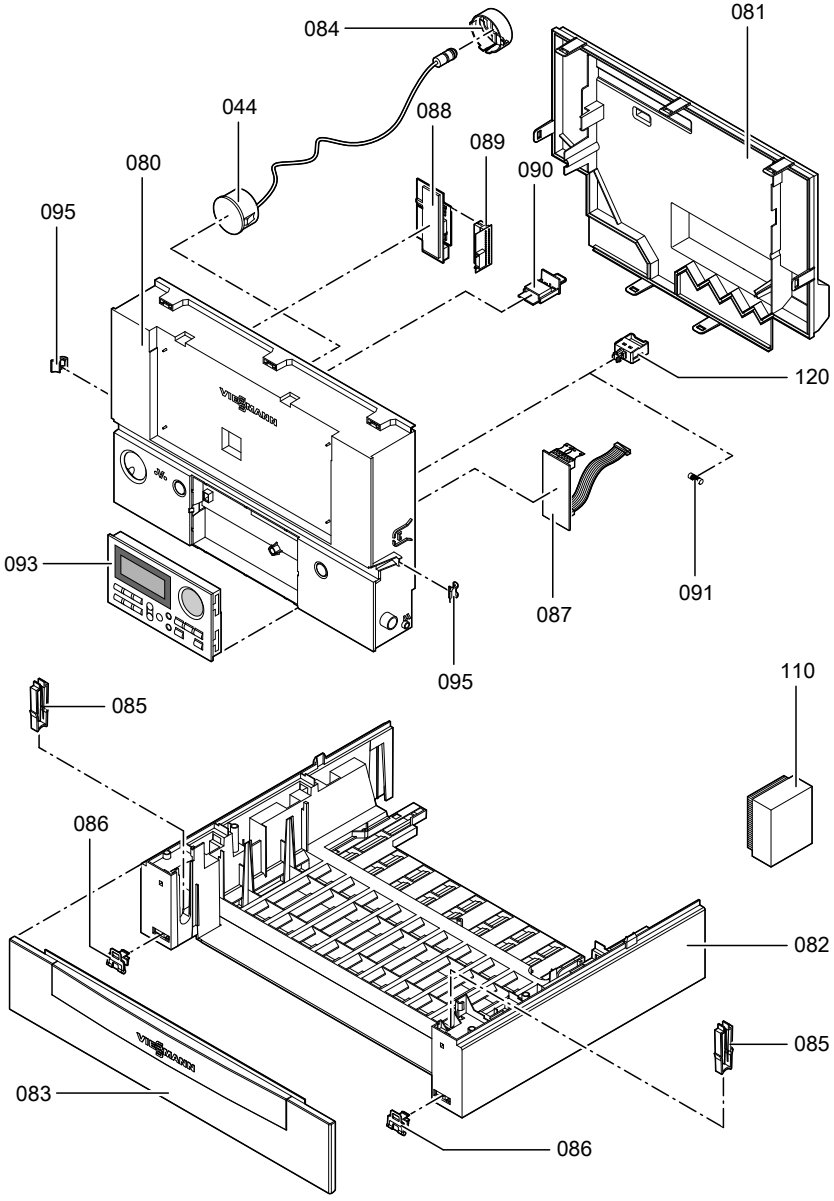
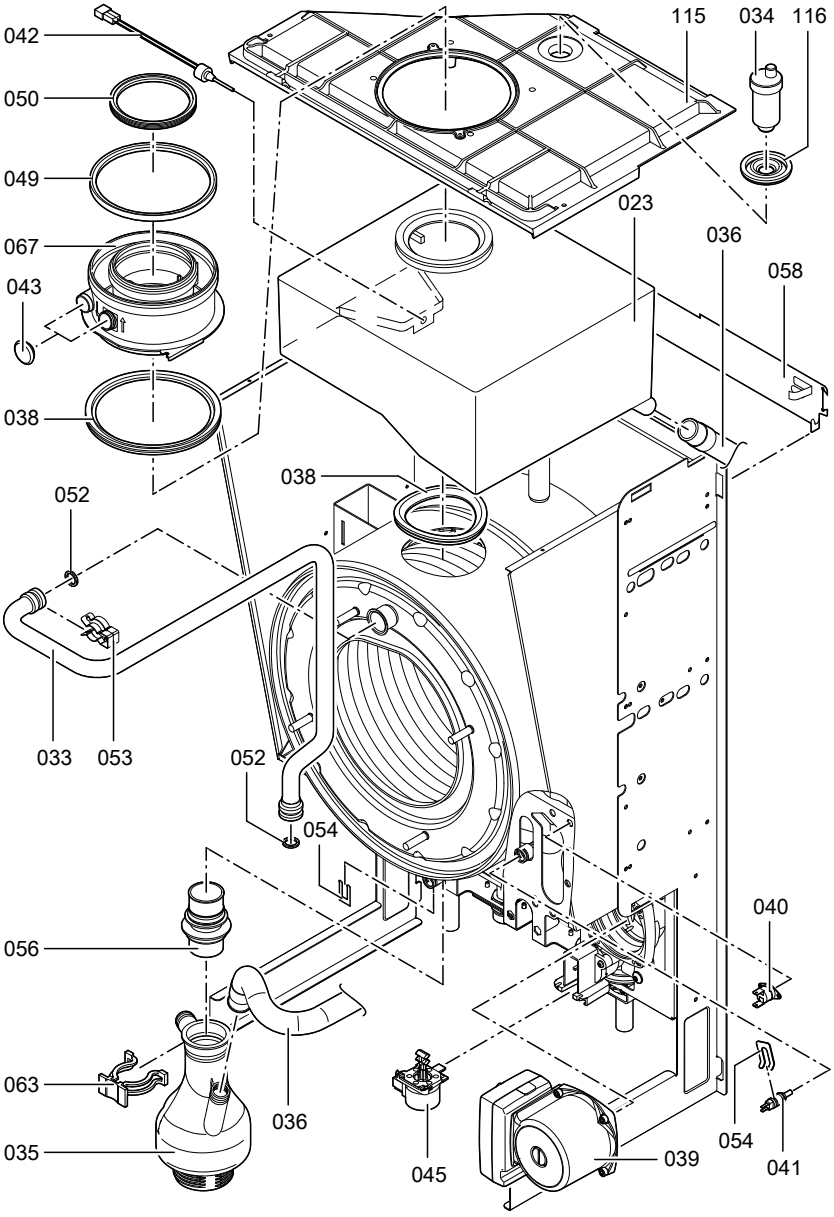
Parts lists (cont.)



Parts lists (cont.)



Parts lists (cont.)



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Replacing safety components

Afecor, the European Control Manufacturers' Association, requires all manufacturers of heating equipment to advise that safety components be replaced after a certain service life, subject to their design.

Safety components	Service life subject to design		CEN standard
	Cycles	Years	
Oil burner control unit	250,000	10	EN 230
Oil hoses	-	5	ISO 6806
Solenoid valve	250,000	10	EN 264

Commissioning/service reports

Setting and test values			Commissioning	Maintenance/ service
Oil pressure				
Stage 1	actual	*bar*		
	set	*bar*		
Stage 2	actual	*bar*		
	set	*bar*		
Vacuum				
	actual	*bar*		
	after maintenance	*bar*		
Carbon dioxide content CO_2				
Stage 1	actual	*% by vol.*		
	set	*% by vol.*		
Stage 2	actual	*% by vol.*		
	set	*% by vol.*		
Oxygen content O_2				
Stage 1	actual	*% by vol.*		
	set	*% by vol.*		
Stage 2	actual	*% by vol.*		
	set	*% by vol.*		
Carbon monoxide content CO				
Stage 1	actual	*ppm*		
	set	*ppm*		
Stage 2	actual	*ppm*		
	set	*ppm*		
Stat. burner pressure (operating phase)				
Stage 1	actual	*mbar*		
	set	*mbar*		
Stage 2	actual	*mbar*		
	set	*mbar*		

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Specification

Rated voltage:	230 V~	Control thermostat and temperature controller setting:	75 °C
Rated frequency:	50 Hz		
Rated current:	6.0 A		
Safety class:	I	Temperature limiter setting:	100 °C
Protection:	IP 20	Line fuse (mains):	max. 16 A

Permissible ambient temperature

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

Power consumption

- Circulation pump: max. 70 W
- Control unit: max. 10 W

Oil fired condensing boiler, type B_{23}, C_{33x}, C_{53x}, C_{63x}

Rated output	**kW**	**12.9/19.3**		**16.1/23.5**	
Burner stage		Stage 1	Stage 2	Stage 1	Stage 2
Rated output at burner stage	kW	12.9	19.3	16.1	23.5
Power consumption with circulation pump	W	165	215	178	240
Motor speed Oil pump drive	min^{-1}	2880		2880	
Capacity Oil pump	l/h	45		45	
Burner version		Two-stage		Two-stage	
Product ID		CE-0645 BM 112.3			

Declaration of conformity

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, declare as sole responsible body, that the product **Oil fired condensing boiler Vitoladens 300-W** complies with the following standards:

EN 267	EN 50 165
EN 303	EN 55 014
EN 483	EN 60 335
EN 625	EN 61 000-3-2
EN 677	EN 61 000-3-3
EN 15034	prEN 13 203 (Draft Sept. 2000)

In accordance with the following Directives, this product is designated with CE:

92/42/EEC
98/37/EEC
2004/108/EC
2006/95/EC

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

Allendorf, 1 February 2007

Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

Manufacturer's certificate according to the 1st BImSchV [Germany]

We, Viessmann Werke GmbH&Co KG, D-35107 Allendorf, confirm that the product **Oil fired condensing boiler Vitoladens 300-W** complies with the NO_x limits specified by the 1st BImSchV paragraph 7 (2) [Germany].

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Manufacturer's certificate according to the 1st… (cont.)

Allendorf, 1 February 2007

Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

Keyword index

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Keyword index (cont.)

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Applicability

Oil fired condensing boiler
Type VP3B
12.9 to 19.3 kW
from serial no.
7418 781 9 00001
16.1 to 23.5 kW
from serial no.
7418 782 9 00001

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5692 799 GB Subject to technical modifications.