Service instructions
for contractors

VIESSMANN

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

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.

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).

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.

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Safety instructions (cont.)

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

Commissioning steps

Inspection steps

Maintenance steps

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

Commissioning steps

Inspection steps

Maintenance steps   Page

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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.
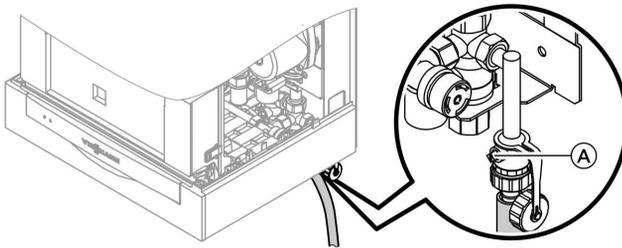
1. Check the inlet pressure of the diaphragm expansion vessel.

2. Fill the heating system via the 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 filling 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
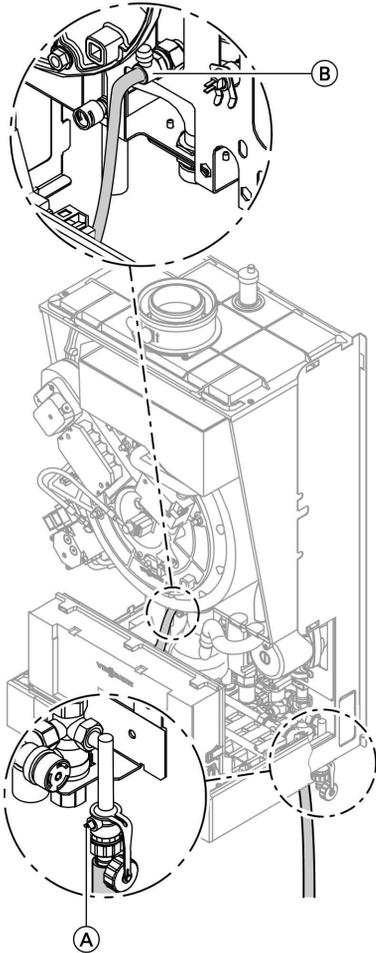
1. Close the shut-off valves on the heating water side.

2. Connect the drain hose between top valve (B) and a drain outlet.

3. Open valves (A) and (B) and vent using mains pressure until no more air noise is audible.

4. Close valves (A) and (B) 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 84.
When the venting program is enabled, the display shows "Venting".

3. Check the system pressure.

Filling the siphon with water
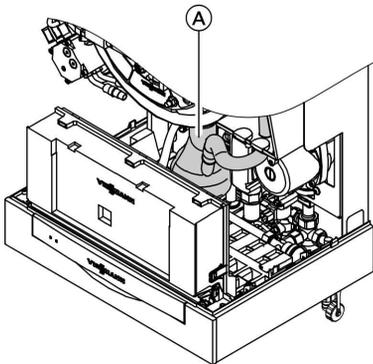
1. Remove the retaining clip and siphon Ⓐ.

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.*
■ *During commissioning these terms appear in German (delivered condition):*

Time (see step 1)

```
┌─────────────────────────┐
│  Uhrzeit                │
│                         │
│           09:05    ◷    │
│                         │
└─────────────────────────┘
```

Date (see step 2)

```
┌─────────────────────────┐
│  Datum                  │
│                         │
│  Sa    19 02 05         │
│                         │
└─────────────────────────┘
```

Press the following keys:

1. ⊕/⊖ for the current time.

2. OK to confirm; **"Datum"** (date) is displayed.

3. ⊕/⊖ for the current date.

4. OK to confirm.

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.)

```
┌─────────────────────────┐
│  Heizkreis wählen       │
│                         │
│  1▥                     │
│                         │
└─────────────────────────┘
```
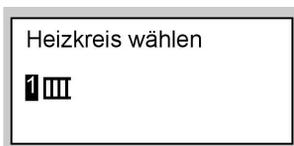
Outside temperature (see step 3.)

```
┌─────────────────────────┐
│  Außentemperatur        │
│                         │
│  i            13    °C  │
│                         │
└─────────────────────────┘
```
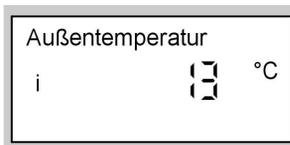
Press the following keys:

1. ⓘ **"Heizkreis wählen"** (select heating circuit) is displayed.

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

Further details regarding the individual steps (cont.)

3. ⓘ press this button again, **"Außentemperatur"** (outside temperature) is displayed.

4. ⊖ for the required language.

5. ⓞⱪ to confirm.

Function sequence and possible faults

	Display screen	Measures
Control unit issues heat demand	No →	Increase set value and ensure heat is drawn off
↓ Yes		
Oil preheating starts	No → after approx. 10 min Fault E6 →	Check the oil pre-heater, cables and plug-in connectors
↓ Yes		
Fan starts after no more than 10 min. Green LED on ignition transformer flashes.	No → Fault F9 →	Check the oil pre-heater, fan, cables and plug-in connectors (the oil preheater has not switched through; the temperature is not achieved)
↓ Yes		
The air pressure switch responds	No → After approx. 51 s Fault F5 →	Check the air pressure switch, cables and plug-in connectors

Further details regarding the individual steps (cont.)

Yes

Ignition and oil pump motor start	→ No →	Check the ignition module and oil pump motor, cables and plug-in connectors

Yes

The solenoid valves open	→ No →	Fault F4	→	Check the oil supply; check the solenoid valves

Yes

Flame signal present Symbol ⏵	→ No →	Fault F4	→	Check ignition electrodes, electrode gaps and connecting lines

Yes

Burner in operation. Green LED on ignition transformer is permanently on.

For further details regarding faults,

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).

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Further details regarding the individual steps (cont.)
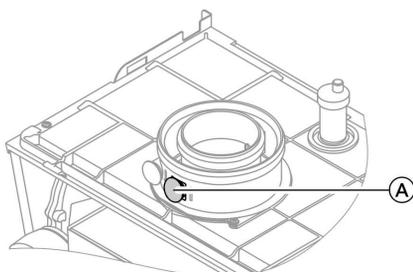
Ⓐ Flue gas test port

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	
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	7.8-9.5	16.0-17	11.0-15.5	17.5-21.0
CO_2 content approx. ■ Test value w/o cap ■ Test value with cap	% %	12.2-13.4 12.7-13.9		12.2-13.2 12.7-13.7	
Nozzle gap "a" (see page 18)	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 18.

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

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Further details regarding the individual steps (cont.)

Installation position, oil preheater

Position the oil preheater in the recess of the mixer facility in accordance with the diagram.
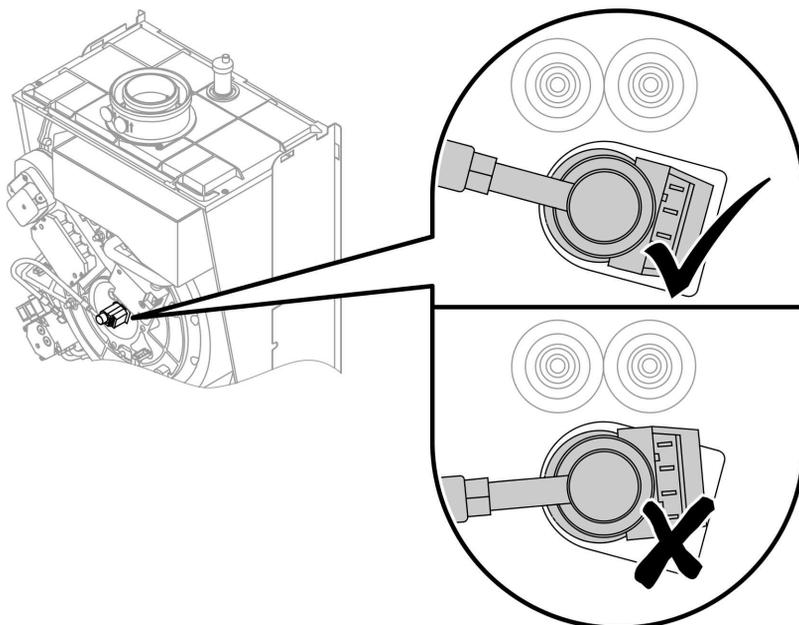
Further details regarding the individual steps (cont.)

Adjusting the oil pressure and checking the vacuum
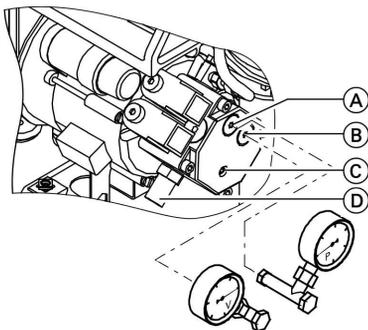
Oil pump; make: Danfoss,
type BFP 52

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.

3. Press [⏻] and Ⓞⓚ 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 or 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 13).

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 Ⓞⓚ.

Further details regarding the individual steps (cont.)

Adjusting the air volume (static burner pressure)
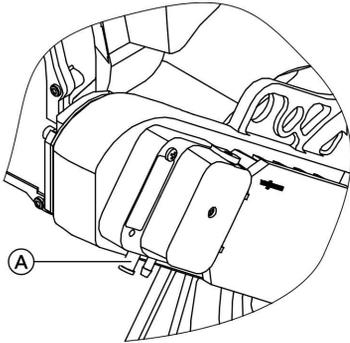
1. Start the boiler.

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 13.

6. Confirm the set value with Ⓞ🄺.

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.

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

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

Further details regarding the individual steps (cont.)

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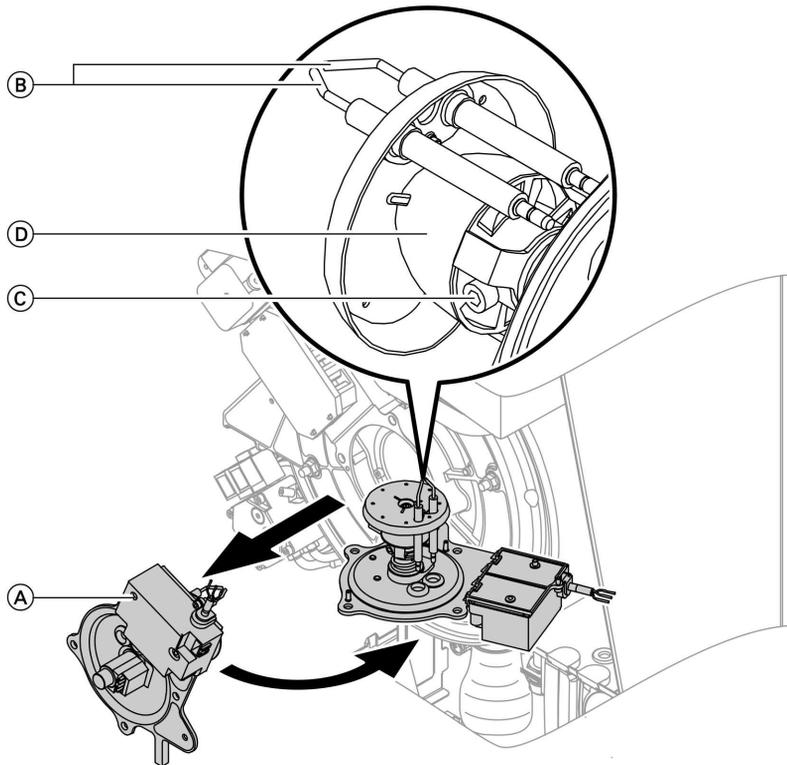
1. Undo nuts, remove the lid with mixer equipment Ⓐ and secure in the maintenance position.

2. Pull the leads off ignition electrodes Ⓑ.

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

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

Further details regarding the individual steps (cont.)

Replacing or adjusting the nozzle and checking the ignition electrodes
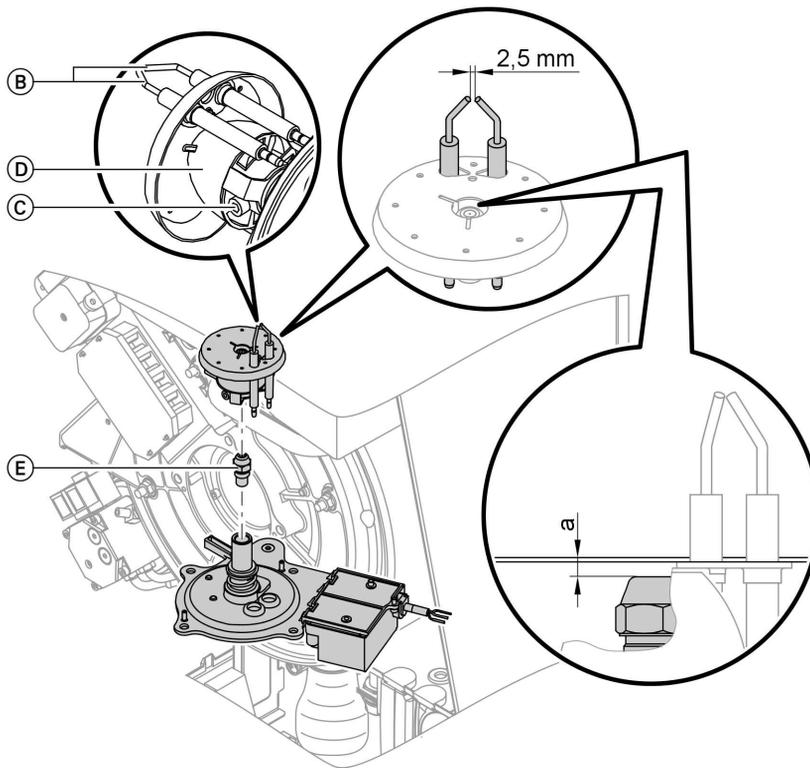
1. Undo nozzle Ⓔ whilst holding the oil preheater. Prevent the formation of bubbles.

Further details regarding the individual steps (cont.)
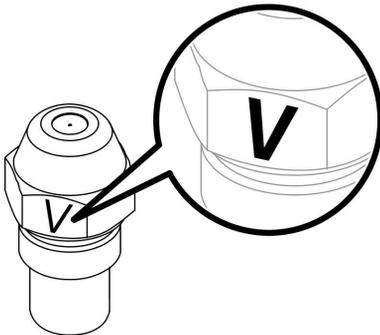
2. Insert a new LE nozzle Ⓔ (whilst holding the oil preheater). Select the nozzle in accordance with the details on page 13.

> **!** **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 18)	mm	$3.0^{+0.2/-0.3}$	$1.5^{+0.2/-0.3}$

Further details regarding the individual steps (cont.)

Cleaning and replacing the oil pump filter, if required

Oil pump; make: Danfoss, type BFP 52
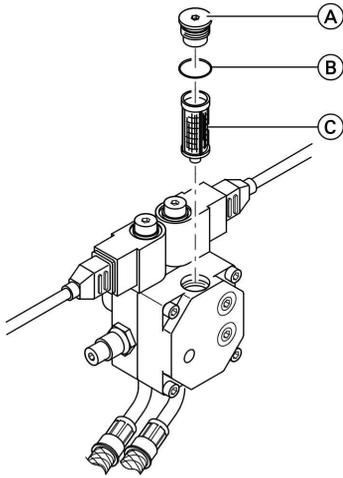
Ⓐ Filter plug
Ⓑ O-ring (replace)
Ⓒ Filter (replace)

Further details regarding the individual steps (cont.)

Checking the heat exchanger for contamination
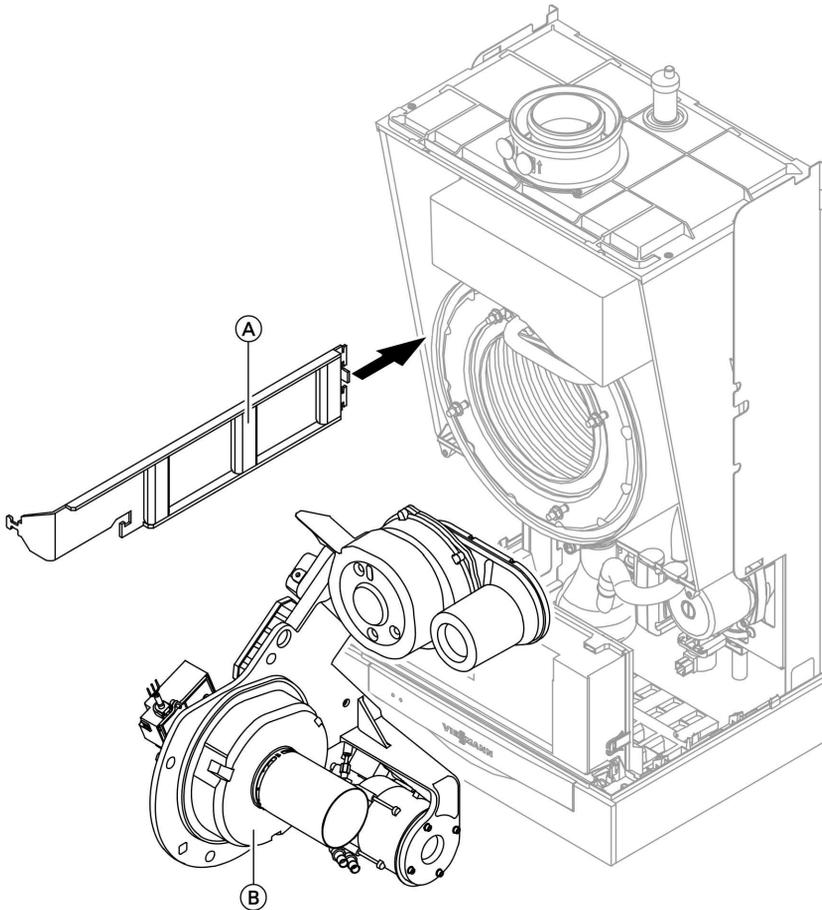
1. Pull plug 131 and 100 from the fan. Remove the cables from the cable clip on the l.h. side of the boiler.

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.

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

Cleaning the heat exchanger
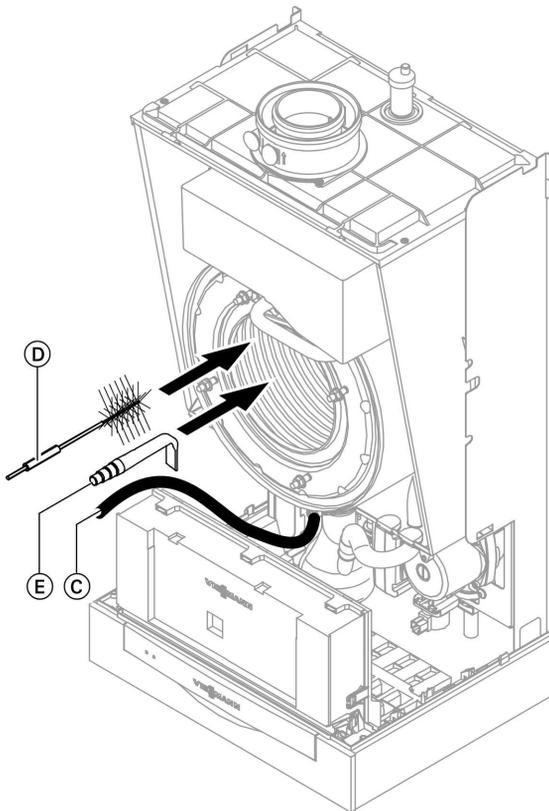
⚠ **Please note**
To prevent damage to the heat
exchanger,
only clean with the implements
supplied as part of the optional
cleaning set

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

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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 powertool and
clean the heat exchanger with the
rotary brush (at low speeds).
Remove all deposits, including
from the sides of the reversing sec-
tions.

3. Remove dirt from the heat exchan-
ger gaps with a vacuum cleaner
with angled nozzle Ⓔ (acces-
sories).

4. Thoroughly flush the combustion
chamber with water. Ensure that
the drain hose continues to termi-
nate in the vessel (see point 1).

Checking the condensate drain and cleaning the siphon
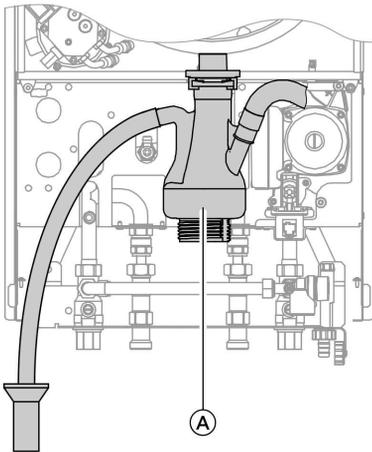
1. Check at siphon Ⓐ, that the con-
densate can freely drain off.

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 granu-
late if the pH value < 6.5.

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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)
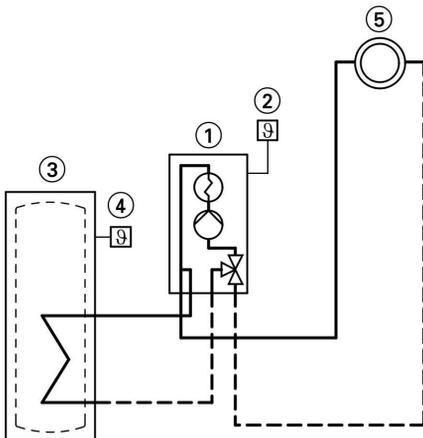
(1) Vitoladens 300-W   (3) DHW cylinder
(2) Outside temperature sensor

Further details regarding the individual steps (cont.)

④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1

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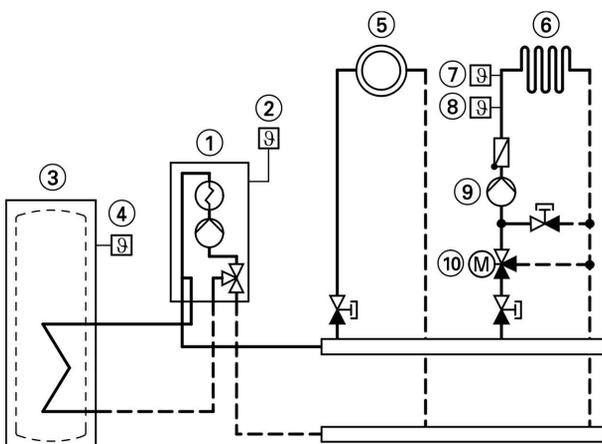
① Vitoladens 300-W
② Outside temperature sensor
③ DHW cylinder
④ Cylinder temperature sensor
⑤ Heating circuit without mixer A1
⑥ Heating circuit with mixer M2
⑦ Temperature limiter for limiting the maximum temperature of underfloor heating systems
⑧ Flow temperature sensor M2
⑨ Heating circuit pump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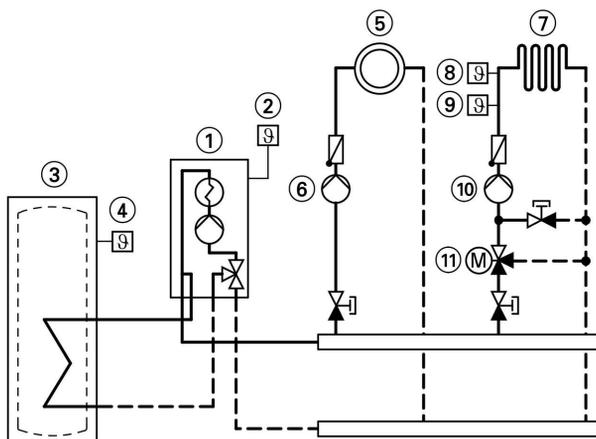
1. Vitoladens 300-W
2. Outside temperature sensor
3. DHW cylinder
4. Cylinder temperature sensor
5. Heating circuit without mixer A1
6. Heating circuit pump A1
7. Heating circuit with mixer M2

8. Temperature limiter for limiting the maximum temperature of under-floor 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
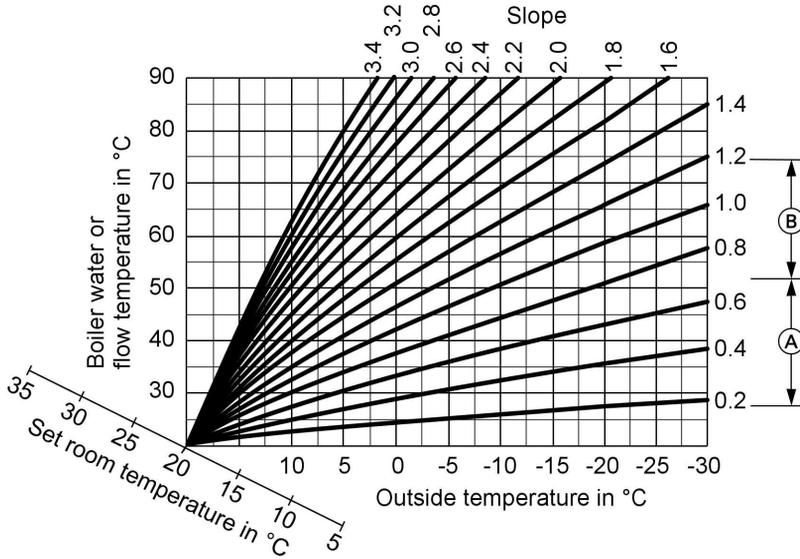
Ⓐ Heating curve slope for underfloor heating systems

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

Further details regarding the individual steps (cont.)

Changing the slope and level
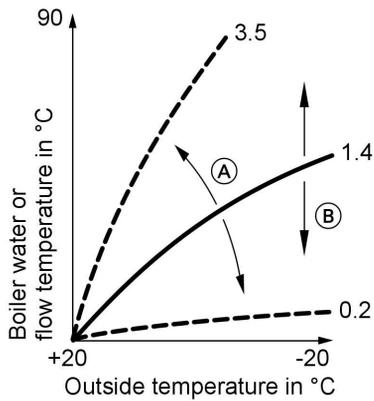
Ⓐ Changing the slope
Ⓑ Changing the level (vertical paral-
lel offset of the heating curve)

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.

Further details regarding the individual steps (cont.)

Adjusting the set room temperature

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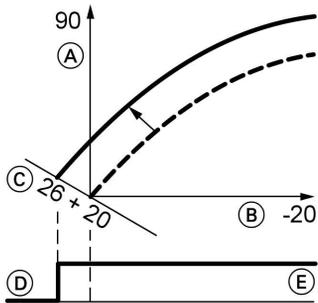
Example 1: Adjustment of standard room temperature from 20 to 26 °C

Ⓐ 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▥" flashes.

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

3. ⊕ "2▥" flashes.

4. OK to select heating circuit with mixer M2.

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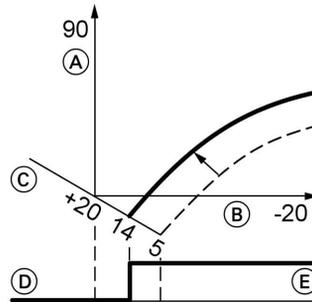
Example 2: Adjustment of reduced room temperature from 5 °C to 14 °C

Ⓐ 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▥" flashes.

Further details regarding the individual steps (cont.)

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

3. +   "2▥" 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).
Only one Vitotronic may be programmed as fault manager.

Note
*In the same LON system, the same number **cannot** be allocated twice.*

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

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Further details regarding the individual steps (cont.)

Boiler control unit	Vitotronic 200-H	Vitotronic 200-H	Vitocom
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 33).

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

Carrying out a subscriber check

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

Precondition:
■ 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 32)
■ The LON subscriber list in the fault manager must be up to date (see page 32)

User check
01 : 01

Ⓐ   Ⓑ
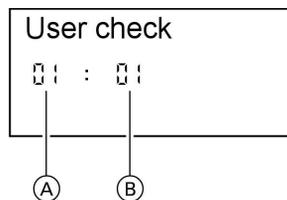
Ⓐ Consecutive number in the subscriber list
Ⓑ Subscriber number

Commissioning, inspection, maintenance

Press the following keys:

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

2. (+)/(−)   for the required subscri-
ber.

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.

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 (i).
The service scan is active.

2. Scan maintenance messages with
(+) or (−).

Further details regarding the individual steps (cont.)

3. Press Ⓞ, for weather-compen-
sated control units also confirm the
display "Acknowledge: Yes" with
Ⓞ.
The "Service" display extinguishes
and the red fault indicator con-
tinues to flash.

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

After a service has been carried out

1. Reset coding address "24:1" to
"24:0".
The red fault indicator extin-
guishes.

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.
Ⓞ   Scanning is completed.

Code 1

Calling up code 1

Note
Codes are displayed as plain text.
Codes that are irrelevant (due to the
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 simulta-
              neously, 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	Filling program enabled

Coding

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 29)
Level A1/M2			
d4:0	Heating curve level = 0	d4:–13 to d4:40	Heating curve level adjustable from –13 to 40 (see page 29)

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 dis-
played.

Press the following keys:

1. ⬅ + ⬛➡ simultaneously for
approx. 2 s.

2. Ⓞ🅚 to confirm.

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

4. Ⓞ🅚 to confirm; the value
flashes.

5. ⊕/⊖ for the selected value.

6. Ⓞ🅚 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 simulta-
neously, 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

Coding

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

Code 2 (cont.)

Coding in the delivered condition		Possible change	
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)
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 adjustment on connection)
2F:0	Venting program/filling program disabled	2F:1	Venting program enabled
		2F:2	Filling 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

Coding

Coding	Internal circula-tion pump	Heating cir-cuit pump Heating cir-cuit without mixer	Heating circuit pump Heating circuit with mixer	Cylinder primary pump
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.)

Coding	Internal circulation pump	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Cylinder primary pump
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.

Code 2 (cont.)

Coding	Internal circulation pump	Heating circuit pump Heating circuit without mixer	Heating circuit pump Heating circuit with mixer	Cylinder primary pump
21	ON	OFF	Control funct.	OFF
22	ON	OFF	OFF	Control funct.
23	ON	OFF	OFF	OFF

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 adjustment after 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 boiler 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 up to 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

Code 2 (cont.)

Coding in the delivered condition		Possible change	
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
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 Grund-fos
67:40	In conjunction with the Vitosolic solar control unit: 3. 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 set value 1
		71:2	ON during DHW heating to set value 1
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)

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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

Code 2 (cont.)

Coding in the delivered condition		Possible change	
91:0	No external heating pro-gram changeover via external extension	91:1	The external heating pro-gram changeover affects the heating circuit without mixer
		91:2	The external heating pro-gram changeover affects the heating circuit with mixer
		91:3	The external heating pro-gram changeover affects the heating circuit without mixer and the heating cir-cuit with mixer
95:0	Without Vitocom 100 communication inter-face	95:1	With Vitocom 100 com-munication interface (automatic recognition)
97:0	With LON communica-tion module: The out-side 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 adjusta-ble from 1 to 5
9b:0	No minimum set boiler water temperature for external demand	9b:1 to 9b:127	Set value adjustable from 1 to 127 °C
9C:20	Monitoring LON sub-scribers. If a subscriber fails to respond, the values de-faulted inside the con-trol 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

Coding

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*** *When selecting a value below 1 °C, there is a risk of pipes outside the thermal envelope of the building being damaged by frost. 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)

Parameter 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

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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** *When selecting a value below 1 °C, there is a risk of pipes outside the thermal envelope of the building being damaged by frost. 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

Coding

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 are switched OFF and the mixer will be closed at a variable value, which 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 mode ■ 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

Code 2 (cont.)

Coding in the delivered condition		Possible change	
b0:0	With remote control: Heating mode/reduced operating mode: weather-compensated*[1]	b0:1	Heating mode: weather-compensated Reduced operating mode: with room temperature hook-up
		b0:2	Heating mode: with room temperature hook-up Reduced operating mode: weather-compensated
		b0:3	Heating mode/reduced operating mode: with room temperature hook-up
b2:8	Heating with room temperature hook-up must be encoded for remote control and for the heating circuit: Room influence factor 8*[1]	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)*[1]	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 $RT_{actual} < RT_{set}$

*[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.

Code 2 (cont.)

Parameter address b5:...	With heating circuit pump logic function: Heating circuit pump OFF, if
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

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 in standard mode adjustable from 1 to 127 °C
C6:74	Electronic maximum flow temperature limit 74 °C	C6:0 to C6:127	Maximum temperature limit adjustable from 1 to 127 °C
d3:14	Heating curve slope = 1.4	d3:2 to d3:35	Heating curve slope adjustable from 0.2 to 3.5 (see page 29)
d4:0	Heating curve level = 0	d4:–13 to d4:40	Heating curve level adjustable from –13 to 40 (see page 29)
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

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Code 2 (cont.)

Coding in the delivered condition		Possible change	
E6:65	Max. speed of the vari-able speed pump 65 % of max. speed in stan-dard mode	E6:0 to E6:100	Maximum speed adjusta-ble from 0 to 100 % of max. speed
E7:30	Min. speed of the vari-able speed pump 30 % of max. speed	E7:0 to E7:100	Minimum speed adjusta-ble from 0 to 100 % of max. speed
E8:1	Min. speed subject to the setting in coding ad-dress "E9"	E8:0	Speed subject to the set-ting 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 drying function disabled (only for weather-compensated control units).	F1:1 to F1:5	Screed drying function adjustable in accordance with five optional tem-perature/time profiles (see page 85)
		F1:6 to F1:15	Constant flow tempera-ture 20 °C
Mixer circuit			
F2:8	Time limit for party mode 8 hours or exter-nal operating mode changeover via key *1	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 inter-nal circulation pump in heating mode	F5:0	No run-on time for the in-ternal circulation pump
		F5:1 to F5:20	Run-on time of the inter-nal circulation pump ad-justable from 1 to 20 min

*1Party mode ends **automatically** in the "Heating and DHW" program, when the system changes over to operation with standard room temperature.

Coding

Coding in the delivered condition		Possible change	
Burner			
F8:-5	For operation in re-duced room tempera-ture mode, the set room temperature will be raised (up to the tem-perature limit set by coding address F9) to a value that is subj. to the outside temperature, if the outside temperature falls below -5 °C, see example on page 87. Observe the setting of coding address A3.	F8:+10 to F8:-60	Limit for raising the tem-perature in reduced mode adjustable from +10 to -60 °C
		F8:-61	Function disabled
F9:-14	Below an outside tem-perature 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 tem-perature, see the exam-ple on page 87	F9:+10 to F9:-60	Limit for raising the set room temperature to the value selected for stan-dard mode adjustable from +10 to -60 °C
FA:20	Raising the set flow temperature for the transition from reduced room temperature to standard room tempera-ture mode by 20%, see the example on page 88	FA:0 to FA:50	Raising the set flow tem-perature for the transition from reduced room tem-perature mode to stan-dard 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 ex-ample on page 88	Fb:0 to Fb:150	Duration for raising the set flow temperature ad-justable from 0 to 150 (corresponds to 0 to 300 min)

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	⏻ and ▦⤺ simultaneously for approx. 2 s.	Press (OK)	56
Relay test	⏻ and (OK) simultaneously for approx. 2 s.	Press (OK)	59
Adjusting the air volume	⏻ and ⤓⤺ simultaneously for approx. 2 s	⏻ and ⤓⤺ simultaneously	16
Operating condition	Press (i)	Press (i)	59
Service scan	(i) (if "Service" flashes)	Press (OK)	34
Adjusting the display contrast	(OK) and (+) simultaneously; the display darkens	–	–
	(OK) and (–) simultaneously; the display becomes lighter	–	–
Fault history	▦⤺ and (OK) simultaneously for approx. 2 s	Press (OK)	62
Subscriber check (in conjunction with a LON system)	⤺ and (OK) simultaneously for approx. 2 s	⤺ and (OK) simultaneously	32
Emissions test function "⚲"	⤓⤺ and ⤓⟳ simultaneously for approx. 2 s.	⤓⤺ and ⤓⟳ simultaneously	–
Coding level 1 Plain text display	⏻ and ⤺ simultaneously for approx. 2 s	⏻ and ⤺ simultaneously	36
Coding level 2 Numerical display	⤺ and ▦⤺ simultaneously for approx. 2 s	⤺ 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 actual system equipment level:

Display screen	Explanation
■ Slope A1 – level A1	
■ Slope M2 – level M2	
■ Outside temp. adj.	The adjusted outside temperature can be reset
■ Outside temp. actual	to the actual outside temperature with (✳).
■ Boiler temp. Set	
■ Boiler temp. actual	
■ DHW temp. set	
■ DHW temp. actual	
■ Flow temp. Set	Heating circuit with mixer
■ Flow temp. actual	Heating circuit with mixer
■ Mixed flow temp. set	Low loss header
■ Mixed flow temp. actual	Low loss header
■ Boiler coding card	

■ Brief scan 1
  to
  Brief scan 8	

	Display screen					
Brief scan	🔲	🔲	🔲	🔲	🔲	🔲
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		

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

Brief scan	Display screen					
	⎕	⎕	⎕	⎕	⎕	⎕
3	0	Software version Pro-gram-ming unit	Software version Mixer exten-sion 0: no mixer exten-sion	Software version Solar control unit	Software version LON module 0: no LON module	Software version External extension 0: no exter-nal exten-sion
4	Software version Burner control unit		Type Burner control unit		Equipment type	
5	0: no ex-ternal de-mand 1: exter-nal de-mand	0: no ex-ternal blocking 1: exter-nal blocking	0	External 0 - 10 V hook-up Display in % 0: no external hook-up		
6	Number of LON sub-scribers		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: Vitotr-ol 200 2: Vitotr-ol 300	Software version Remote control 0: no re-mote control	Remote control 0: w/o 1: Vitotr-ol 200 2: Vitotr-ol 300	Software version Remote control 0: no re-mote con-trol
	Internal circulation pump		**Heating circuit pump to connection ex-tension**			
8	Variable speed pump 0: w/o 1: Wilo 2: Grun-dfos	Software version Variable speed pump 0: no variable speed pump	Variable speed pump 0: w/o 1: Wilo 2: Grun-dfos	Software version Variable speed pump 0: no variable speed pump	Variable speed pump 0: w/o 1: Wilo 2: Grun-dfos	Software version Variable speed pump 0: no vari-able speed pump

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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.

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

Display screen	Explanation
Burner st 1 ON	Burner stage 1
Burner st 1 + 2 ON	Burner stage 2
Int. pump ON	Int. pump/output 20 ON
Heating valve	Diverter valve set to heating mode
Valve central pos.	Diverter valve in central position (filling/draining)
DHW valve	Diverter valve set to DHW mode
Mixer CLOSE	Mixer extension
Mixer OPEN	Mixer extension
Heating circuit p. M2 ON	Mixer extension
Heating circuit p. A1 ON	Ext. Extension
Cylinder pump ON	Ext. Extension
DHW circ. pump ON	Ext. Extension
Central fault ON	Ext. Extension
Solar circuit 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:

Display screen	Explanation
Subscriber no.	Programmed user number in the LON system
Holiday program	If holiday program entered.

Service scans

Scanning operating conditions and sensors (cont.)

Display screen	Explanation
Departure date	Date
Return date	Date
Outside temperature, ... °C	Actual value
Boiler water temp., ... °C	Actual value
Flow temperature, ... °C	Actual value (only with heating circuit with mixer M2)
Standard	Set value
Room temperature, ... °C	
Room temperature, ... °C	Actual value
Ext. Set room temp, ... °C	With external hook-up
DHW temperature, ... °C	Actual DHW temperature
Mixed flow temp., ... °C	Actual value, only with low loss header
Burner, ...h*1	Hours run
Burner st 1 ...h	Hours run
Burner st 2 ...h	Hours run
Burner starts, ... *2	Actual value
Time	
Date	
Burner OFF/ON	
Burner stage 1 OFF/ON	
Burner stage 2 OFF/ON	
Int. pump OFF/ON	Output 20
Heating circuit pump OFF/ON	If an external extension or extension kit for one heating circuit with mixer is installed
Cylinder pump OFF/ON	If an external extension is installed
DHW circulation pump OFF/ON	If an external extension is installed
Central fault OFF/ON	If an external extension is installed
Mixer 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)

*1Reset hours run and burner starts after a service. The values can be reset individually to "0" by pressing (※).

*2Party 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
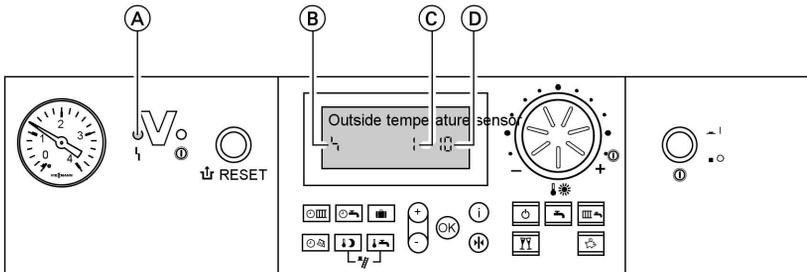
Ⓐ Fault display
Ⓑ Fault symbol

Ⓒ 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

```
Fault

Mo          57 °C
         🚰        ⇨
```
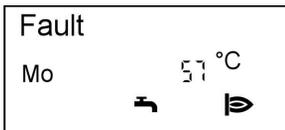
Plain text fault displays:
- Burner control unit
- Outside temperature sensor
- Flow sensor
- Boiler sensor
- Mixed flow sensor
- Cylinder sensor
- Flue gas sensor
- DHW outlet sensor
- Room temperature sensor
- Collector sensor
- Solar DHW sensor
- Remote control
- Subscriber fault

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.

3. ⓄⓀ All fault messages are
acknowledged simulta-
neously, the fault display
will be deleted and the red
fault indicator continues to
flash.

Fault display (cont.)

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.

Fault history

        !   !8
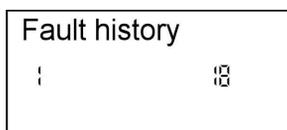
Press the following keys:

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.

Fault codes

Fault code on the display	System characteristics	Cause	Measures
0F	Control mode	Service	Service the equipment. After the service, set coding address "24:0".
10	Regulates as if the outside temperature was 0 °C	Outside temperature sensor shorted out	Check the outside temperature sensor (see page 69).
18	Regulates as if the outside temperature was 0 °C	Outside temperature sensor lead broken	Check the outside temperature sensor (see page 69).

Fault codes (cont.)

Fault code on the dis-play	System character-istics	Cause	Measures
20	Regulates without flow temperature sensor (low loss header)	System flow temperature sensor shorted out	Check the low loss header sensor (see page 71).
28	Regulates without flow temperature sensor (low loss header)	System flow temperature sensor lead broken	Check the low loss header sensor (see page 71).
30	Burner blocked	Boiler water temperature sensor shorted out	Check the boiler water temperature sensor (see page 71).
38	Burner blocked	Boiler water temperature sensor lead broken	Check the boiler water temperature sensor (see page 71).
40	Mixer closes	Heating circuit with mixer M2 flow temperature sensor shorted out	Check the flow temperature sensor.
48	Mixer closes	Heating circuit with mixer M2 flow temperature sensor lead broken	Check the flow temperature sensor.
50	No DHW heating	Cylinder temperature sensor shorted out	Check the sensor (see page 71).
58	No DHW heating	Cylinder temperature sensor lead broken	Check the sensor (see page 71).
92	Control mode	Collector temperature sensor shorted out; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
93	Control mode	Cylinder temperature sensor shorted out; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
94	Control mode	Temperature sensor shorted out; connects to the Vitosolic at S2	Check the sensor at the Vitosolic.
9A	Control mode	Collector temperature sensor lead broken; connects to the Vitosolic at S1	Check the sensor at the Vitosolic.
9b	Control mode	Cylinder temperature sensor lead broken; connects to the Vitosolic at S3	Check the sensor at the Vitosolic.
9C	Control mode	Temperature sensor lead broken; 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 the delivered condition	Faulty programming unit	Replace the programming unit.
b0	Burner blocked	Flue gas temperature sensor shorted out	Check the flue gas temperature sensor (see page 72).
b1	Control mode as per the delivered condition	Communication fault; programming unit (internal)	Check connections and replace the programming unit if required.
b4	Regulates as if the outside temperature was 0 °C	Internal fault	Replace the control unit.
b5	Control mode as per the delivered condition	Internal fault	Replace the control unit.

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
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	Flue gas temperature sensor lead broken	Check the flue gas temperature sensor (see page 72).
bA	Mixer M2 regulates to a flow temperature of 20 °C.	Communication fault - extension kit for heating circuit M2	Check the extension kit connections and coding. 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 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 89).
bF	Control mode	Incorrect LON communication module	Replace the LON communication module.
C2	Control mode	KM BUS to solar heating control unit break	Check the KM BUS, the solar heating control unit and coding address "54".
C5	Control mode, max. pump speed	Communication error – 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".

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
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	Room temperature sensor, heating circuit A1 shorted out	Check the room temperature sensor, heating circuit A1.
db	Control mode without room influence	Room temperature sensor, heating circuit with mixer M2 shorted out	Check the room temperature sensor, heating circuit with mixer M2.
dd	Control mode without room influence	Room temperature sensor, heating circuit A1 lead broken	Check the room temperature sensor, heating circuit A1 and the remote control DIP switch settings (see page 89).
dE	Control mode without room influence	Room temperature sensor, heating circuit with mixer M2 lead broken	Check the room temperature sensor, heating circuit with mixer M2 and the remote control DIP switch settings (see page 89).
E4	Burner blocked	Supply voltage fault	Replace the control unit.

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
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 filling 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 filling 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 lines. Press "⟲".
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 lines, check nozzle, check solenoid valve coil. Correct all settings, if required; clean all contaminated parts and replace faulty components. Press "⟲".

Troubleshooting

Fault codes (cont.)

Fault code on the display	System characteristics	Cause	Measures
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 supply line, check solenoid valve Press "⟳".
F9	Burner in a fault state	Fan speed too low during burner start	Check fan, fan connecting cables and fan power supply. Press "⟳".
F9	Burner in a fault state	Fan power supply interrupted ■ 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 93). Press "⟳".
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

Fault codes (cont.)

Fault code on the display	System character-istics	Cause	Measures
FE	Burner blocked	Strong interfer-ence (EMC) field nearby or boiler coding card/main PCB faulty	Check boiler coding card, restart the equip-ment. Replace the con-trol unit if the equipment will not restart.
FF	Burner blocked	Internal fault	Start the equipment again. Replace the con-trol unit if the equipment will not restart.

Repairs

Checking the outside temperature sensor (weather-compen-sated control unit)
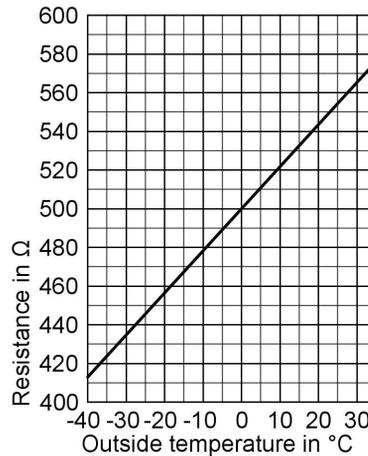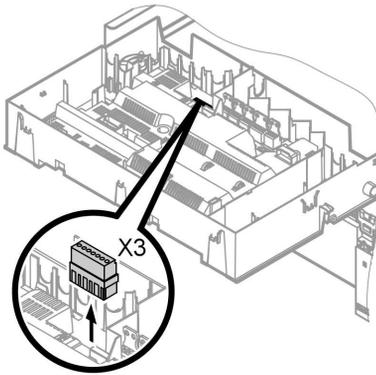
1. Pull plug "X3" from the control unit.

Repairs (cont.)

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.

Repairs (cont.)

Boiler water temperature sensor, checking the cylinder temperature sensor or the flow temperature sensor for a low loss header
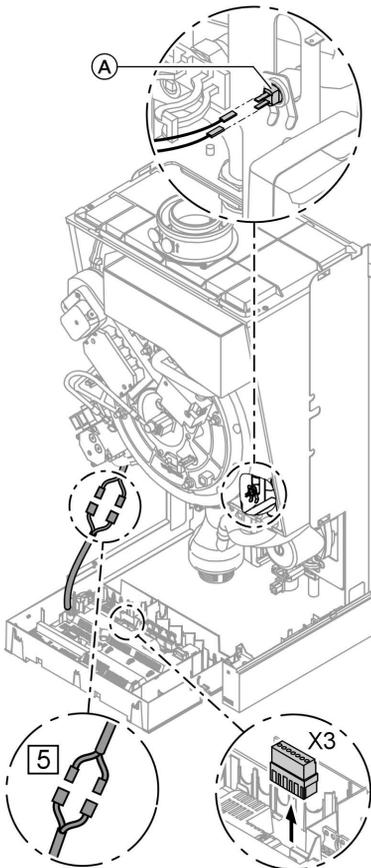
1. ■ Boiler water temperature sensor: Pull the leads from boiler water temperature sensor Ⓐ and check the resistance.
   - ■ Cylinder temperature sensor: Pull plug 5 from the cable harness at the control unit and check the resistance.
   - ■ Flow temperature sensor: Pull plug "X3" from the control unit and check the resistance across terminals "X3.4" and "X3.5".

Repairs (cont.)
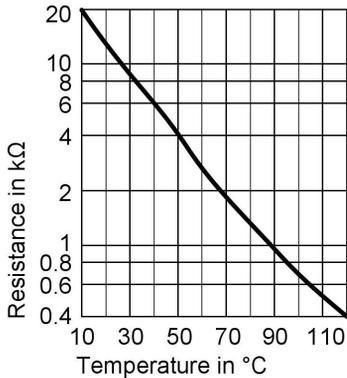
2. Check the sensor resistance and compare the actual values with the curve.

3. Replace the sensor in case of severe deviation.

⚠ **Danger**
The boiler water tempera-
ture sensor is immersed in
the heating water (risk of
scalding).
Drain the boiler before repla-
cing 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 "⬆".
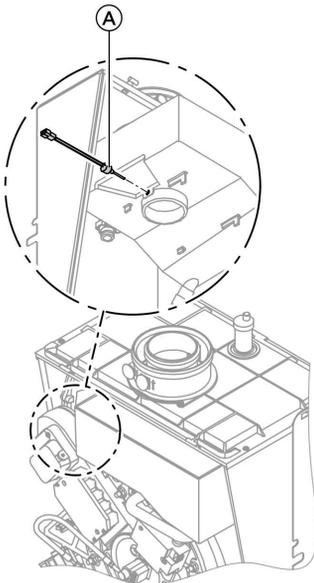
1. Pull the leads from flue gas tem-perature sensor Ⓐ.

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

Repairs (cont.)
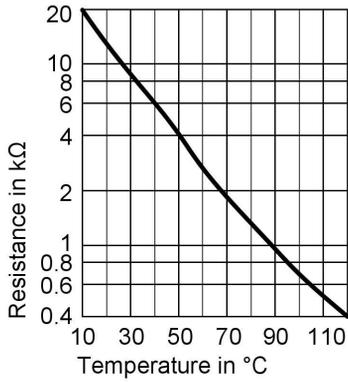
3. Replace the sensor in case of severe deviation.

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:

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Repairs (cont.)
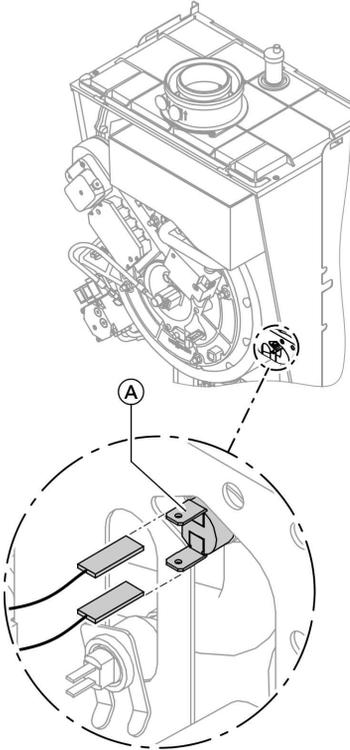
1. Pull the leads from temperature limiter Ⓐ.

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 "⬆r" at the control unit.

Repairs (cont.)

Checking the fuse
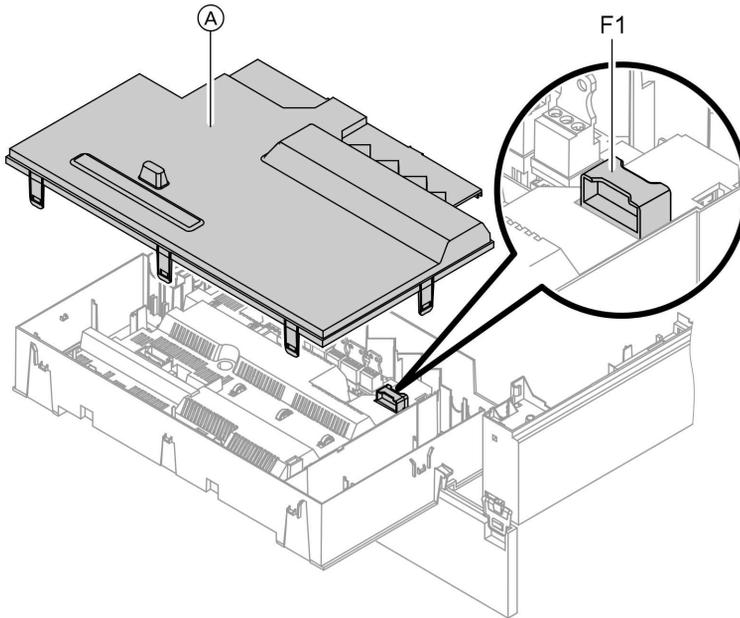
1. Switch OFF the power.

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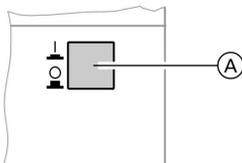
1. Switch ON/OFF switch Ⓐ at the extension kit first OFF and then ON again. The device will carry out the following self-test:
   ■ Mixer "Close" (150 s)
   ■ Pump "ON" (10 s)
   ■ Mixer "Open" (10 s)
   ■ Mixer "Close" (10 s)

Repairs (cont.)

Then standard control mode resumes.

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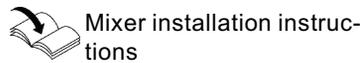
Changing the rotational direction of the mixer motor (if required)

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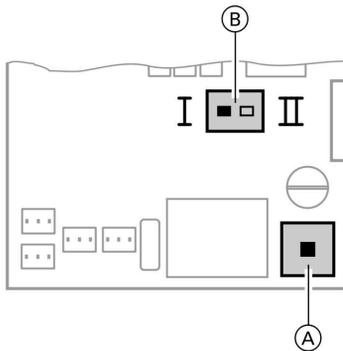
1. Remove the lower and upper housing cover of the extension kit.

Extension kit installation instructions
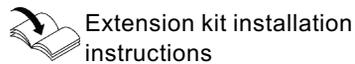
Ⓐ ON/OFF switch
Ⓑ Rotational direction switch

Repairs (cont.)

2. **Change over the rotational direction switch:**

   Switch position I for central heating return from the left (delivered condition).
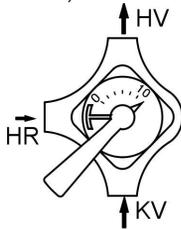
   Switch position II for central heating return from the right.
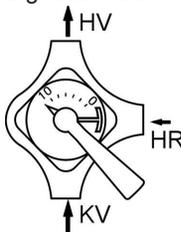
Checking Vitotronic 200-H (accessories)

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).

Function description

Control unit

Control and display elements
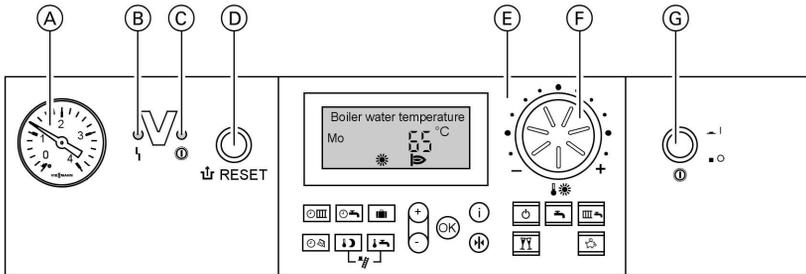
(A) Pressure gauge
(B) Fault display (red)
(C) ON indicator (green)
(D) Reset button

(E) User interface
(F) Rotary selector for standard room temperature
(G) ON/OFF switch

Keys at the user interface:

Symbol	Description
⊙▥	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)

Control unit (cont.)

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.

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".

Control unit (cont.)

Internal extension H3
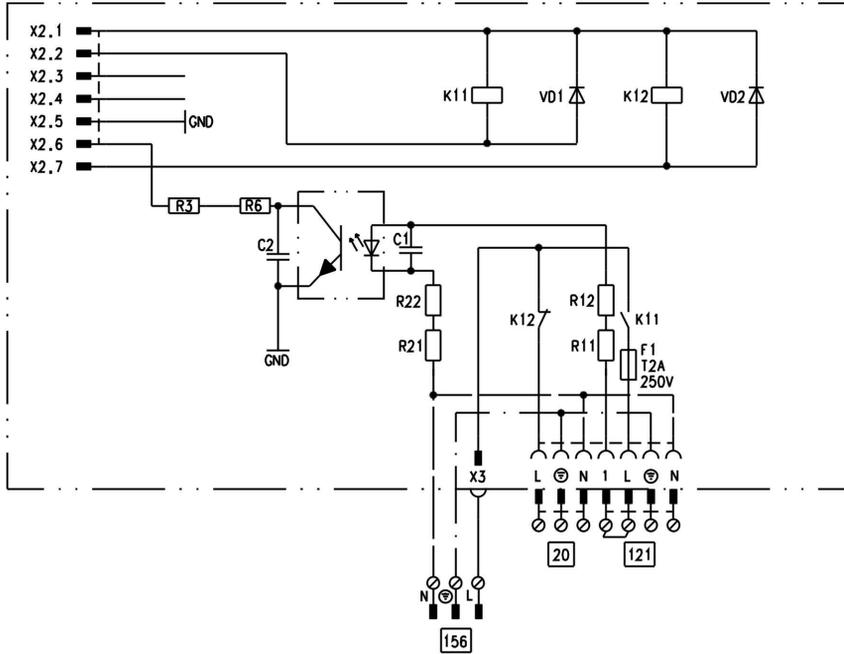
The internal extension is factory-fitted
into the control unit casing. The fol-
lowing functions are connected to the
relay outputs:

|20| Internal circulation pump
|121| Oil preheater

Extensions for external connections (accessories)

External extension H1
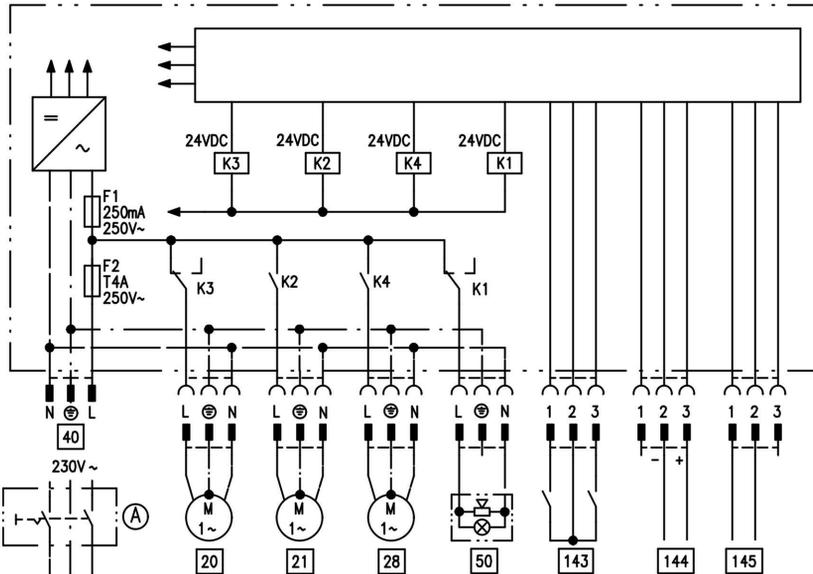
The external extension is connected to the boiler control unit via the KM BUS. The following functions can be controlled or processed simultaneously via the extension:

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

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

Extensions for external connections . . . (cont.)

External extension H2
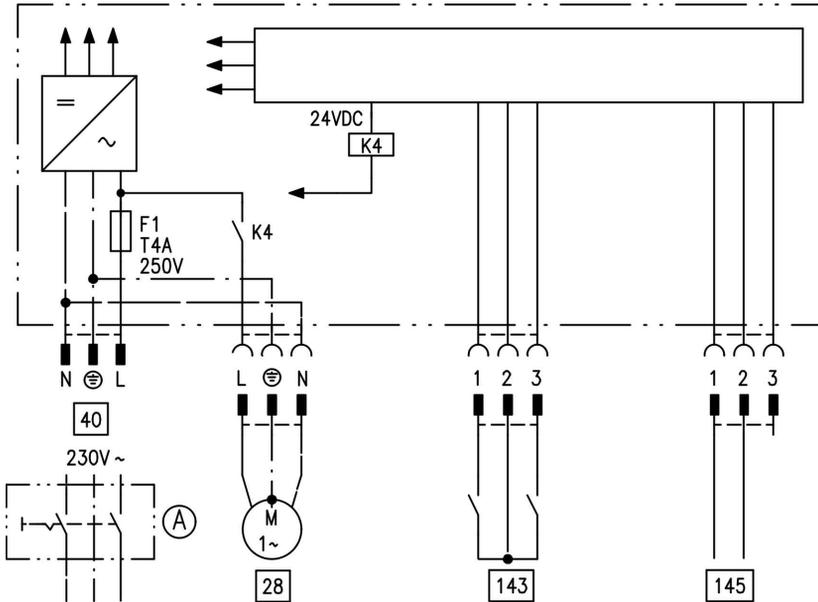
The external extension is connected
to the boiler control unit via the KM
BUS. The following functions can be
controlled or processed simulta-
neously via the extension:

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

143 ■ External blocking
        (terminals 2 - 3)
     ■ External demand
        (terminals 1 - 2)
     ■ External heating program
        changeover (terminals 1 - 2)
        (only for weather-compen-
        sated 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 chan-
geover" 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 which direction the
heating program changes over in cod-
ing address "D5":

Heating program changeover	Coding
Changeover towards "Permanently reduced" or "Perma-nent 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":

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 con-
tact remains closed, but at least as
long as the duration selected in cod-
ing address "F2".

Control functions (cont.)

External blocking

The "External blocking" function is connected via the 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 the 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".

Filling 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.

Control functions (cont.)

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"

Function description

Temperature profile 2: (ZV parquet and flooring technology) code "F1:2"
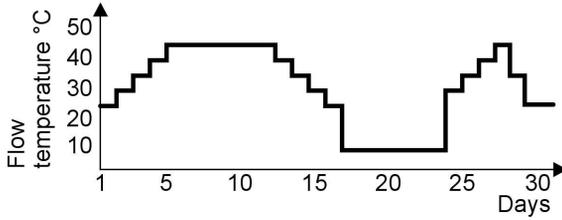
Temperature profile 3: Code "F1:3"
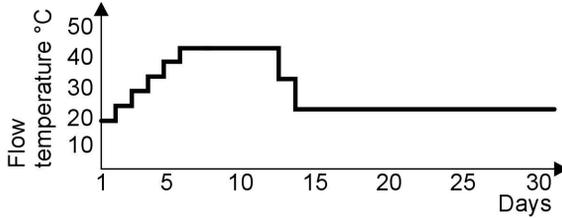
Temperature profile 4: Code "F1:4"
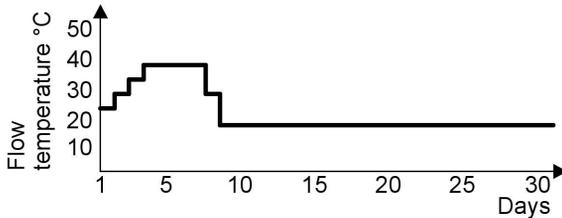
Temperature profile 5: Code "F1:5"
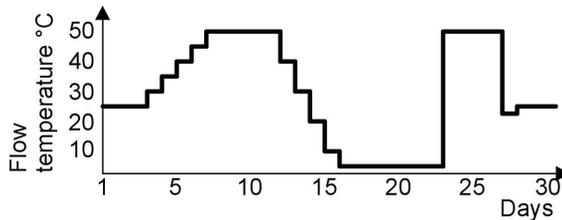
Control functions (cont.)

Temperature profile 6 (delivered condition): Code "F1:6"
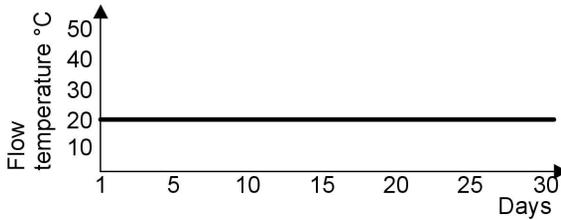
Raising the reduced room temperature

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
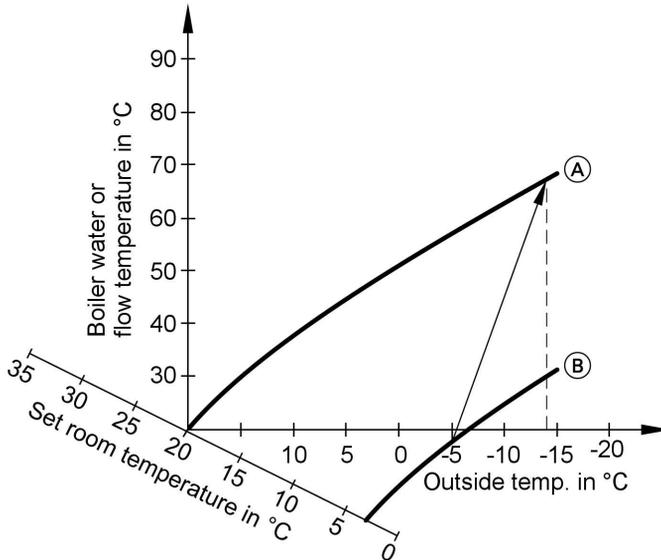
Ⓐ Heating curve for operation with standard room temperature

Ⓑ 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 temperature or flow temperature can be adjusted in coding addresses "FA" and "Fb".

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Control functions (cont.)

Example using the settings in the delivered condition
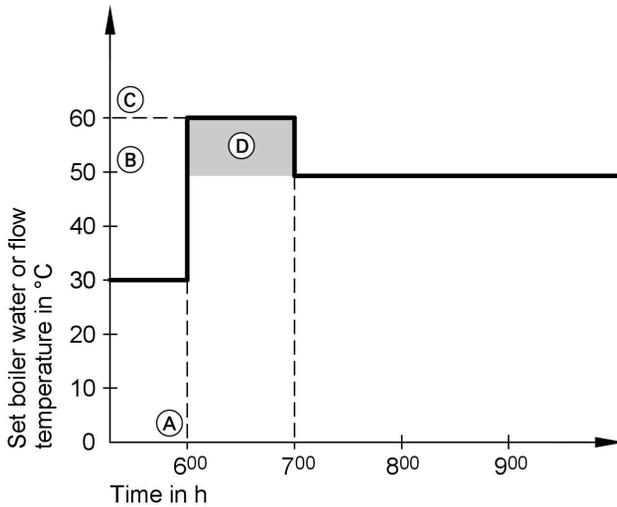
Ⓐ Start of operation with standard room temperature
Ⓑ Set boiler water or flow temperature in accordance with the selected heating curve

Ⓒ 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.

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Function description

Remote control	DIP switch setting
The remote control affects the heating circuit without mixer A1	ON 1 2 3 4
The remote control affects the heating circuit with mixer M2	ON 1 2 3 4
When connecting a separate room temperature sensor, set DIP switch "3" to "ON".	ON 1 2 3 4

Connection and wiring diagrams – internal connections
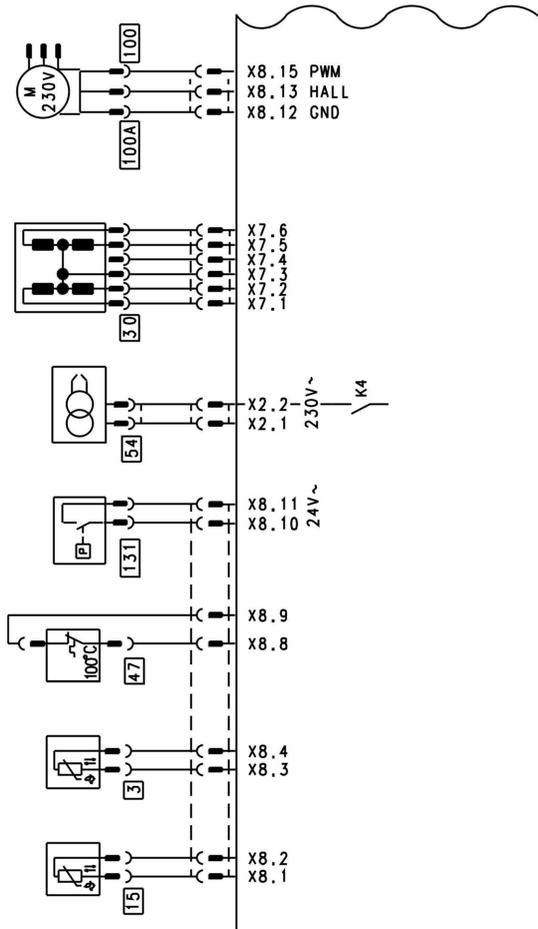
X …	Electrical interfaces	47	Temperature limiter
3	Boiler water temperature sensor	54	Ignition unit
		100	Fan
15	Flue gas temperature sensor	100 A	Fan control
30	Stepper motor for diverter valve	131	Air pressure switch

Connection and wiring diagrams – external connections

| A1 | Main PCB | A2 | Power supply unit |

Connection and wiring diagrams – 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
⒈   Outside temperature sensor
⒉   Flow temperature sensor, low
      loss header
⒌   Cylinder temperature sensor
⒇   Internal circulation pump
⒋⒤   Power supply
⒈⒉⒈   Oil preheater
⒈⒉⒋   Flame monitoring
⒈⒋⒌   KM BUS
⒈⒌⒍   Power supply, accessories
⒉⒐⒈   Internal connecting cable

Plug 201 connection diagram
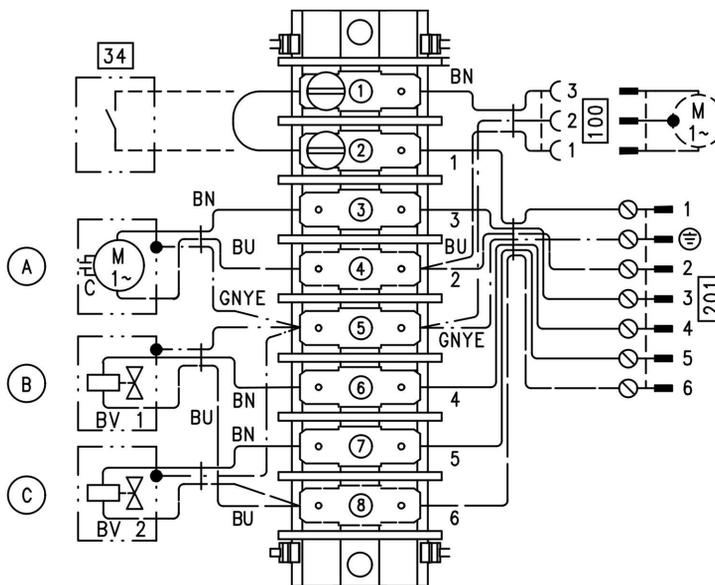
34	Jumper or fire safety switch
100	Fan motor
201	Internal connecting cable (on the main PCB)

Ⓐ   Oil pump
Ⓑ   Fuel valve 1
Ⓒ   Fuel valve 2

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 Insulating 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 item 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 item 064 and 068
052 Plug-in connector gasket set
053 Plug-in connector clips
054 Safety spring

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Parts lists (cont.)

056 Heat exchanger siphon connec-
     tion
058 Wall mounting bracket
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
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 item 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 item 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, mainte-
     nance 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
104 Adaptor
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.)

037 047 051 068

047

037 064

068

008

31k

111

31m 030

31j 014

31l 31e 31f 002 31a 032 010

006

016 030

31b

112

005 028

029

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Parts lists (cont.)

024
007
31d
009
31d
001
013
022
31t
003 030
048
021 019 015 071 020
31g
31h
31r 31i
004
017
018
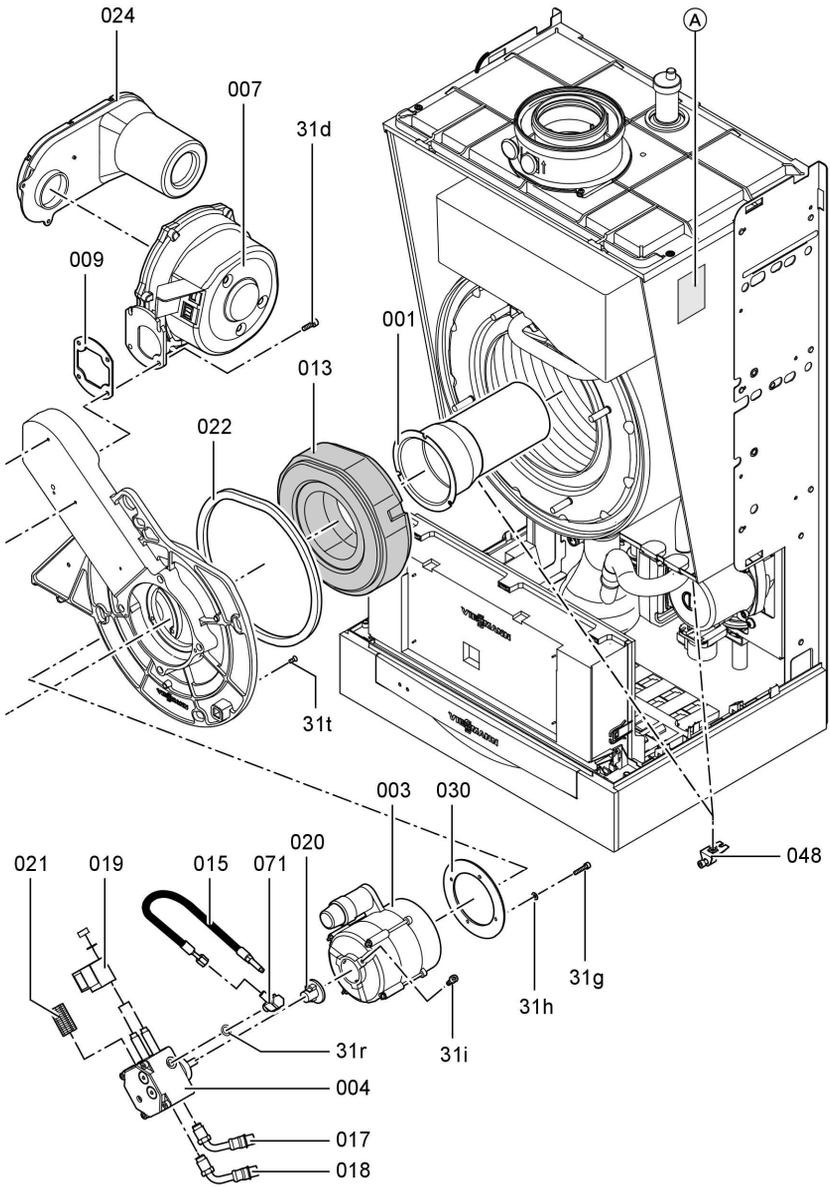
Parts lists (cont.)

Parts lists (cont.)

042
050
049
067
043
038
052
033 053
056
063
035

115 034 116
023
036
058
052
054
040
036
045 039 054 041
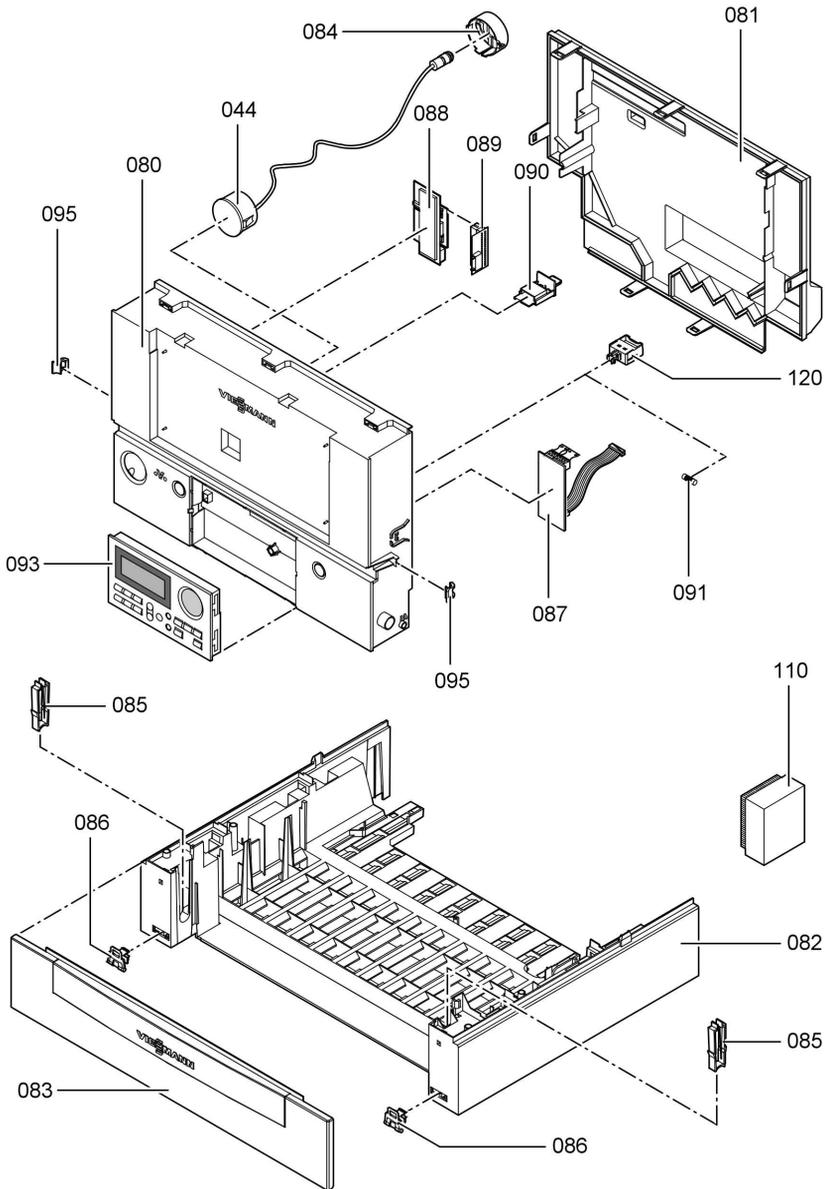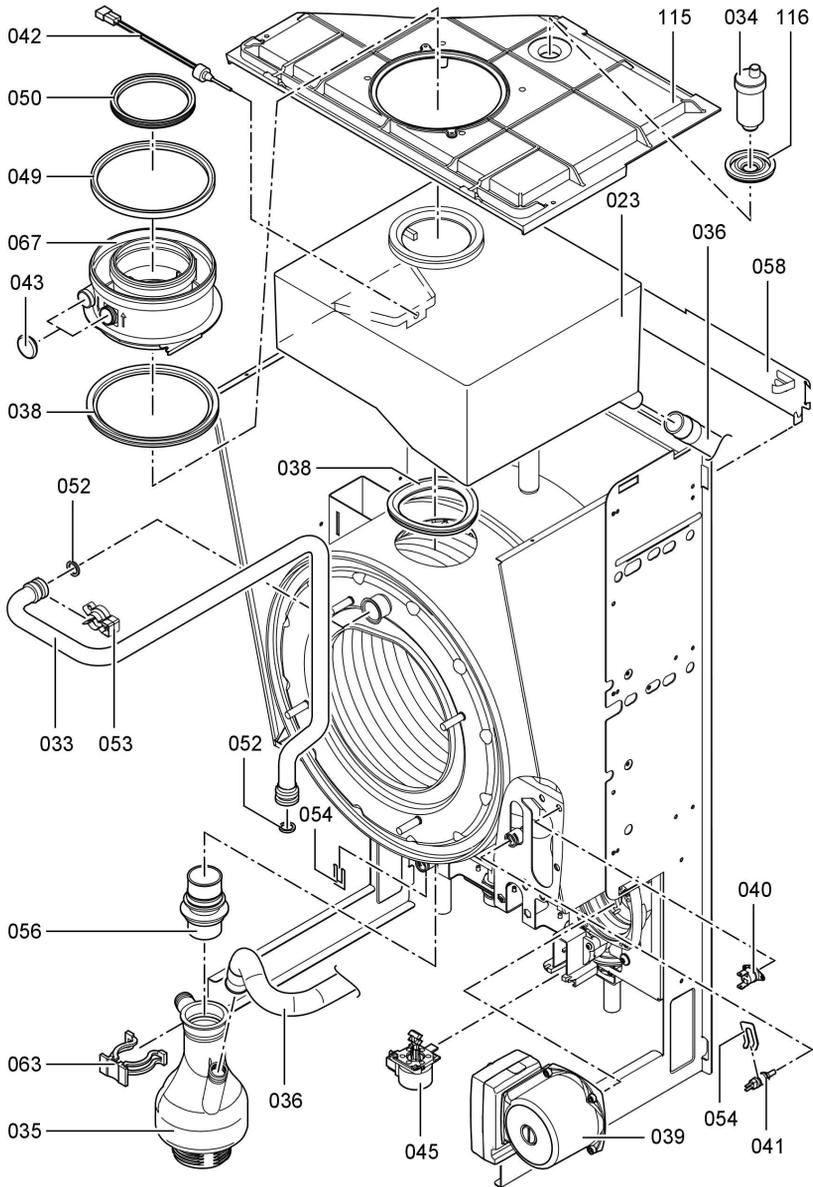
Commissioning/service reports

Setting and test values				Com-mission-ing
			Date: By:	
Oil pressure	Stage 1	actual	*bar*	
		set	*bar*	
	Stage 2	actual	*bar*	
		set	*bar*	
Vacuum		actual	*bar*	
		after mainte-nance	*bar*	
Carbon dioxide content CO2	Stage 1	actual	*% vol.*	
		set	*% vol.*	
	Stage 2	actual	*% vol.*	
		set	*% vol.*	
or				
Oxygen content O2	Stage 1	actual	*% vol.*	
		set	*% vol.*	
	Stage 2	actual	*% vol.*	
		set	*% 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*	

Commissioning/service reports (cont.)

Service	Service	Service	Service

Specification

Rated voltage:	230 V~	Control thermostat	
Rated frequency:	50 Hz	and temperature	
Rated current:	6.0 A	controller settings:	75 °C
Protection class:	I	Temperature limiter	
Protection:	IP 20	setting:	100 °C
		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. 115 W
- Burner: max. 60 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	205	255	218	280
Motor speed Oil pump drive	r.p.m.	2880		2880	
Capacity Oil pump	l/h	45		45	
Burner version		two-stage		two-stage	
Product ID		$C\epsilon$-0645 BM 112.3			

Product characteristics (to EnEV [Germany])

Rated output range	kW	12.9/19.3	16.1/23.5
Efficiency η at			
- 100 % of rated output	%	96.1	96.0
- 30 % of rated output	%	103.7	103.5
Standby loss q $_{B,70}$*[1]	%	1.27	1.10
Power consumption *[1] at			
- 100 % of rated output	W	180	198
- 30 % of rated output	W	60	66

*[1]*Max. limit to EnEV [Germany]*

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 303
EN 483
EN 625
EN 677
EN 15034

EN 50 165
EN 55 014
EN 60 335
EN 61 000-3-2
EN 61 000-3-3
prEN 13 203 (Draft Sept. 2000)

In accordance with the following Directives, this product is designated with $C\epsilon$:

73/23/EC
89/336/EEC
92/42/EEC
98/37/EEC

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

The product characteristics determined as system values for the product **Vitoladens 300-W as part of EC type testing according to the Efficiency Directive** (see specification table), can be utilised to assess the energy consumption of heating and ventilation equipment to DIN V 4701–10 which is specified by the EnEV [Germany].

Allendorf, 1. February 2007   Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

Certificates

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].

Allendorf, 1. February 2007   Viessmann Werke GmbH&Co KG

pp. Manfred Sommer

Keyword index

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Keyword index (cont.)

Applicability

Oil fired condensing boiler
Type VP3B
12.9 to 19.3 kW
from serial no.
7248 081 7 00001
16.1 to 23.5 kW
from serial no.
7248 082 7 00001