Service instructions

for heating engineers

Vitodens 200
type WB2, 4.5 to 35.0/4 to 32 kW
Wall-mounted gas-fired condensing boiler with integral boiler control unit
Natural gas and LPG version

See notes on applicability, page 2.

VITODENS 200

5692 486 GB 12/2002

Please keep safe

Safety instructions

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

Work on the equipment
Installation, initial start-up, inspection, maintenance and repairs must only be carried out by a competent person (heating engineer/installation contractor).

Before working on the equipment/ heating system, isolate the mains electrical supply (e.g. by removing a separate mains fuse or by means of a mains electrical isolator) and safeguard against unauthorised reconnection.

Close the main gas shut-off valve and safeguard against unauthorised reopening.

Work on gas equipment
This must only be carried out by an approved contractor.
Please observe all commissioning work specified for gas installations acc. to TRGI or TRF and all local regulations.

Repair work
It is not permitted to carry out repairs on parts that fulfil a safety function. Use only original Viessmann spare parts, or equivalent parts that have been approved by Viessmann.

Initial start-up
The initial start-up must be carried out by the installer of the system or a designated commissioning engineer; all actual values should be recorded in a commissioning/service report.

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.

⚠ ***Safety instruction***
In this instruction manual, this heading denotes information which must be observed to prevent accidents and material losses.

⚠ *This symbol denotes important information which must be observed to prevent material losses.*

Applicability

Gas-fired condensing boiler

4.5 to 12/4 to 11 (16*1) kW
from serial no. & higher
7170313 2 00001 ␣␣␣
7170315 2 00001 ␣␣␣

6.6 to 26.3/6 to 24 kW
from serial no. & higher
7170310 2 00001 ␣␣␣
7170316 2 00001 ␣␣␣

8.7 to 35.0/8 to 32 kW
from serial no. & higher
7170309 2 00001 ␣␣␣
7170311 2 00001 ␣␣␣

Gas-fired condensing combination boiler

6.6 to 26.3/6 to 24 kW
from serial no.
7170312 2 00001 ␣␣␣ or 7170314 2 00001 ␣␣␣

*1 *Domestic hot water heating 16 kW.*

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Steps – initial start-up, inspection and maintenance

For further instructions concerning the individual steps see pages indicated.

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C		M	**20. Checking the diaphragm expansion vessel and the system pressure**	

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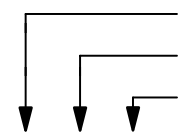
Steps – initial start-up, inspection and maintenance (cont.)



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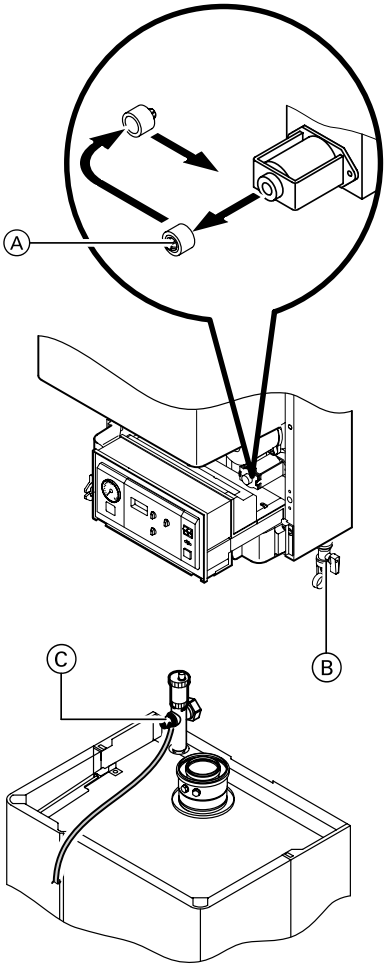
Further details regarding the individual steps

Filling the heating system



1. Check the inlet pressure of the diaphragm expansion vessel.
2. Remove protective cap Ⓐ from the changeover valve, and replace the opposite way around (central position of the valve for improved ventilation).
3. Fill the system via tap Ⓑ, vent the system and check the system pressure (min. system pressure > 0.8 bar).
4. Reposition protective cap Ⓐ.
5. Close the shut-off valves on the heating water side of the system.
6. Connect the drain hose to upper ball valve Ⓒ.
7. Open ball valves Ⓑ and Ⓒ, and vent at mains pressure until no further air noises are audible.
8. Close ball valves Ⓑ and Ⓒ, and open the shut-off valves on the heating water side.

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Further details regarding the individual steps (cont.)

Language selection (if necessary) – only with Comfortrol menu-assisted programming unit

```
SPRACHE/LANGUAGE



>DEUTSCH:.........A
>ENGLISH:.........B

>ZURÜCK/BACK:....D
```

Open flap:

Menu item	Key
→ SYSTEM	"**D**"
→ BASIC SETTINGS	"**A**"
→ LANGUAGE	"**C**"

Select the required language.

Checking the gas type

⚠ ***Safety instruction***
*The natural gas version **cannot** be converted to LPG.*

1. Enquire the gas type and Wobbe index (Wo) from your local mains or LPG gas supplier.

Please note:
In the "as delivered condition", Vitodens 200 is set up for natural gas E or LPG P.

Natural gas E version:
The boiler can be operated in the Wobbe index range 12.0 to 16.1 kWh/m³ (43.2 to 58.0 MJ/m³).

LPG P version:
The boiler can be operated in the Wobbe index range 21.4 to 22.5 kWh/m³ (76.9 to 81.0 MJ/m³).

2. Compare the gas category (type) and group with the details on the burner label.

3. The burner must be converted acc. to the details provided by the mains gas or the LPG supplier to match the fuel provided, if these details do not match.

See separate conversion kit installation instructions.

After conversion from
- ***natural gas E or LPG P to natural gas LL***
  The boiler can be operated in the Wobbe index range 10.0 to 13.1 kWh/m³ (36.0 to 47.2 MJ/m³).
- ***LPG P to natural gas E***
  The boiler can be operated in the Wobbe index range 12.0 to 16.1 kWh/m³ (43.2 to 58.0 MJ/m³).

4. Record the gas type in the service report on page 118.

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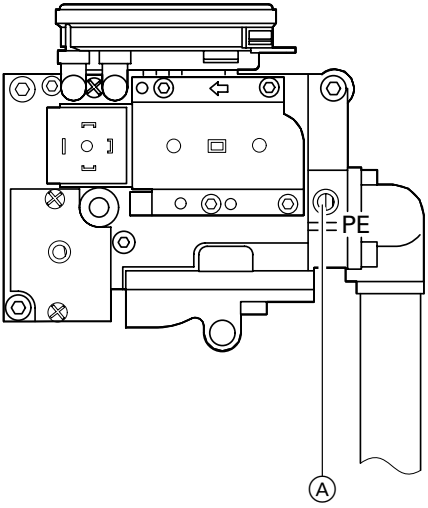
Further details regarding the individual steps (cont.)

Checking the static and the supply pressure

⚠ ***Safety instruction***
Measure the CO value before and after any work on gas appliances, to prevent any health hazards and to ensure the perfect operational condition of the system.

LPG version:
Flush the LPG tank twice after installation or replacement.
Thoroughly vent the tank and gas lines after flushing.



Static pressure

1. Close the gas shut-off valve.

2. Release the screw in test nipple "PE" Ⓐ on the gas combination valve but do not remove, and connect the pressure gauge.

3. Open the gas shut-off valve.

4. Check the static pressure; it should be
   - max. 25 mbar for natural gas and
   - max. 57.5 mbar for LPG.

   Record the actual value in the service report.

5. Start up the boiler.

   For function sequence and possible faults during the initial start-up, see page 10.
   On start-up, the boiler can enter a fault state because of airlocks in the gas pipe.
   After approx. 5 seconds, press key "⇧" to reset the burner.

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Further details regarding the individual steps (cont.)

Gas supply pressure (flow pressure)

6. Check the supply (flow) pressure; it should be
- 17.4 to 25 mbar for natural gas,
- 42.5 to 57.5 mbar for LPG.

Use suitable test equipment with a resolution of at least 0.1 mbar to measure the supply pressure.

Record the actual value in the service report.

Take the action shown in the table.

Supply pressure (flow pressure) for		**Check**
natural gas	**LPG**	
below 17.4 mbar	below 42.5 mbar	Do not start up the system. Notify your mains or LPG gas supplier.
17.4 up to 25 mbar	42.5 up to 57.5 mbar	Start up the boiler.
over 25 mbar	over 57.5 mbar	Install a separate gas pressure governor upstream of the system and regulate the pressure to 20 mbar for natural gas or 50 mbar for LPG. Notify your mains gas or LPG supplier.

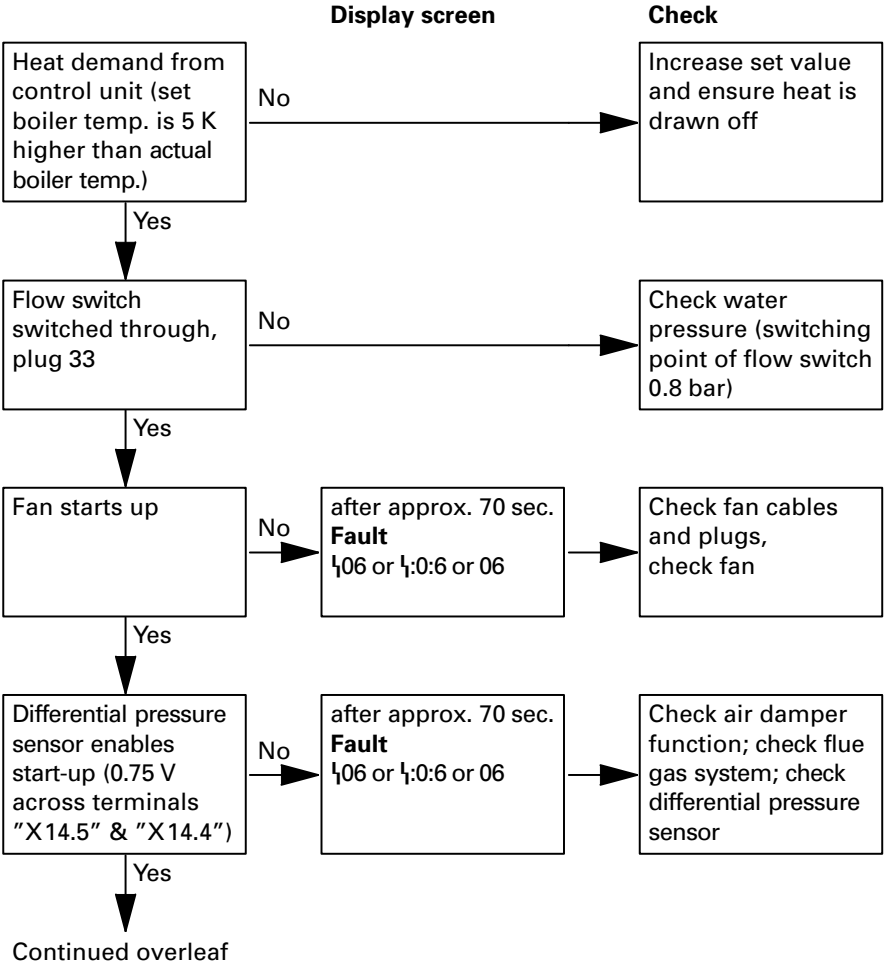
7. Shut down the boiler, close the gas shut-off valve, remove the pressure gauge and close test nipple "PE" Ⓐ with the screw.

8. ⚠ ***Safety instructions***
Open the gas shut-off valve and check for leaks on test nipple "PE", and all gas connections.

Further details regarding the individual steps (cont.)

Function sequence and possible errors during the initial start-up

For further details see "Troubleshooting".



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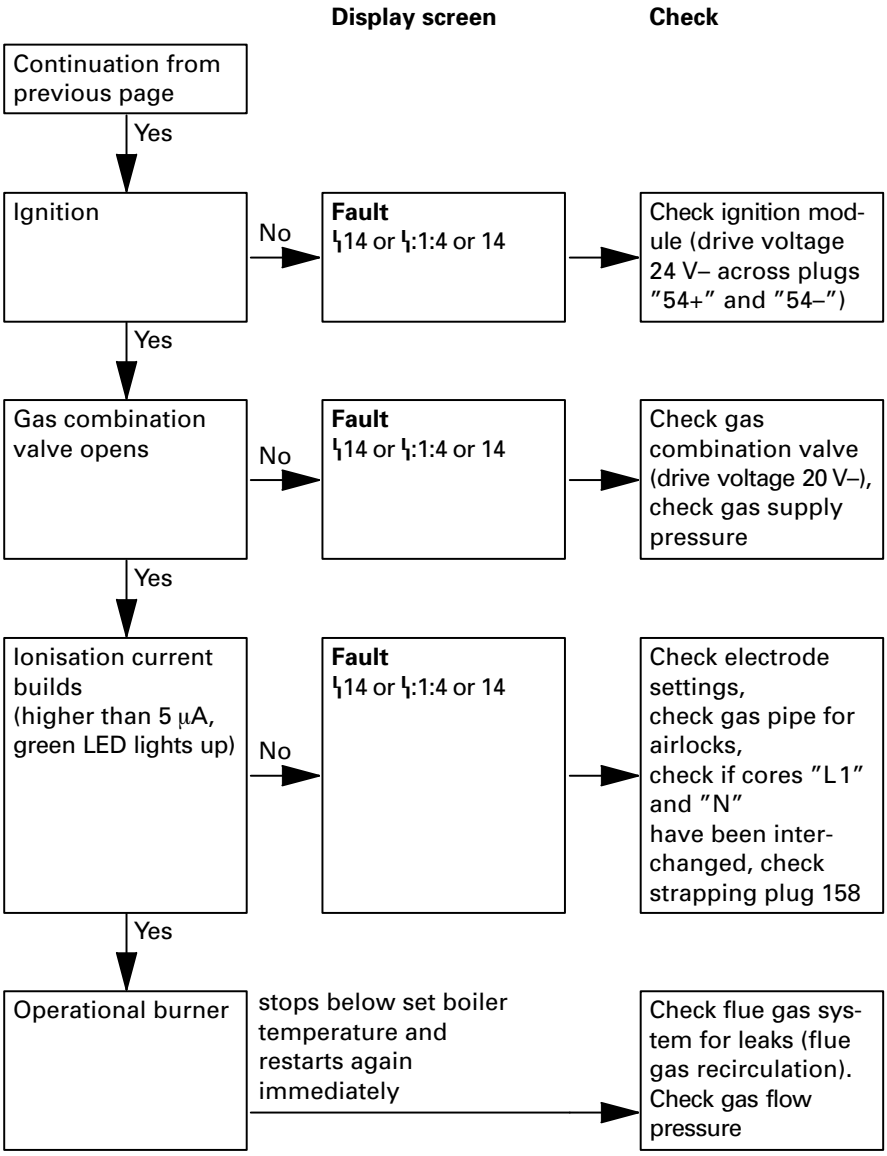
Further details regarding the individual steps (cont.)



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Further details regarding the individual steps (cont.)

Checking the CO_2 settings

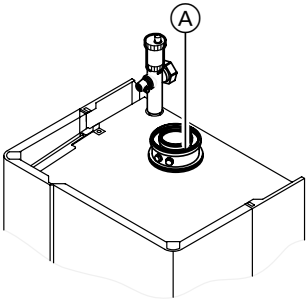
Vitodens 200 is, depending on version, set up in the factory for natural gas E or LPG P.
In case of initial start-up or maintenance, check the CO_2 level on the boiler connection fitting.

Please note:
The MatriX burner for Vitodens 200 is preset for the entire gas group. Therefore, the burner requires no further setting or adjustment.

Depending on the Wobbe index, the CO_2 content reaches levels of
- *6.6 to 10.0% for natural gas E,*
- *7.0 to 10.0% for natural gas LL and*
- *8.5 to 10.5% for LPG P.*

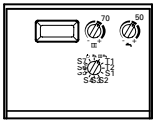
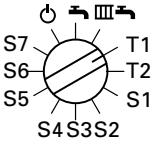
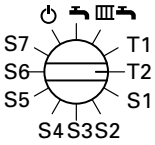
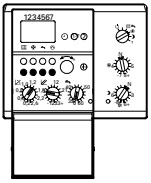
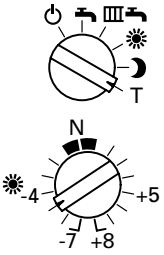
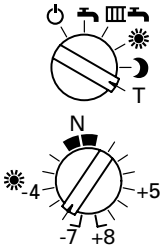
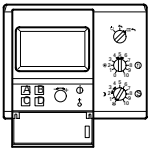
Compare the measured CO_2 value with the above CO_2 value ranges of the individual gas groups (check the gas group with your mains or LPG gas supplier).

If the actual CO_2 value deviates by more than 1% for natural gas or 0.5% for LPG, proceed as follows:
- *Check whether the correct gas restrictor has been installed (see page 126).*
- *Carry out a leak test (BF system) (see page 16).*



1. Connect a flue gas analyser at flue outlet Ⓐ ("flue gas" port).
2. Start up the boiler.
3. Create a heat demand (see table on page 13).

Further details regarding the individual steps (cont.)

Steps / Control unit type	4. Select the lower rated output and check the CO_2 content	5. Select upper rated output and check CO_2 content If value deviates by more than 1%, replace burner	6. Terminate the setting mode
Control unit for constant temperature mode 			■ Select the required heating program. ■ Enter actual values into the service report. ■ Close the test port.
Control unit for weather-compensated operation with standard programming unit 			■ Select required heating program. ■ Set rotary selector "☼" to required value. ■ Enter actual values into service report. ■ Close test port.
Control unit for weather-compensated mode with menu-guided Comfortrol programming unit 	→ SYSTEM "**D**" → INSTALLER SETUP "**C**" → CODE PLS "**B-C-C-B**" → DIAGNOSIS "**A**" → RELAY TEST "**A**" With menu item CONTINUE "**A**" up to code 10: MODULATION <ST.90> CLOSED BURNER <ST.41> ON	With menu item CONTINUE "**A**" up to code 11: MODULATION <ST.90> OPEN BURNER <ST.41> ON	■ Close programming unit. ■ Enter actual values into service report. ■ Close test port.

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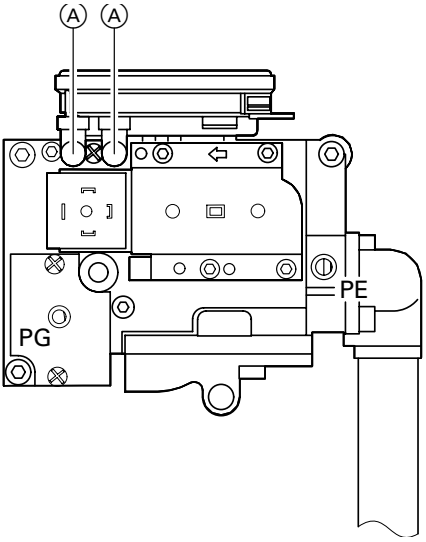
Further details regarding the individual steps (cont.)

Max. output

*The max. output can be limited for the **heating operation**.*
You set this limit via the modulation range.
The control pressure acts as standard value for setting the required output.



1. Start up the boiler.
2. Select the upper rated heating output:
   See table on page 13.
3. Remove the caps from test nipples Ⓐ of the gas combination valve.
4. Connect the gauge to both test nipples Ⓐ.

   Please note:
   Control pressure = differential pressure.
   This lies between 0.25 and 4 mbar.
   Use a suitable pressure gauge with a range from 0 to 10 mbar.

   Vacuum pressure is applied to both test nipples. The vacuum pressure on the test nipple with the "+" symbol is lower, and that on the test nipple with the "–" is higher.
   Connect the pressure gauge accordingly.

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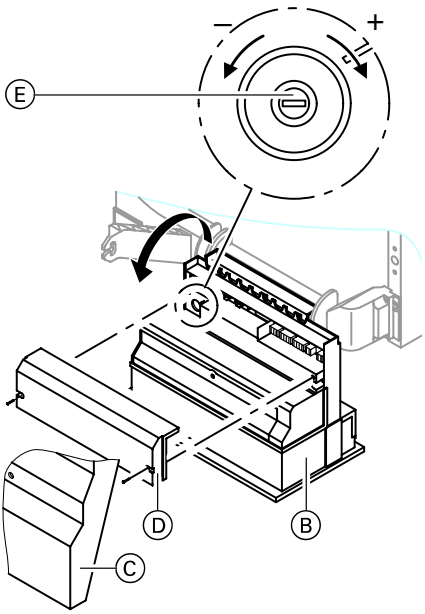
Further details regarding the individual steps (cont.)



5. Release the bottom part of control unit Ⓑ and pivot down.

6. Unscrew protective cover Ⓒ and rear casing lid Ⓓ.

7. Turn potentiometer Ⓔ with a screwdriver anticlockwise, until the control pressure corresponds to the required output in accordance with the table below.

Please note:
Whilst checking the pressure, wait approx. 5 minutes, until the pressure has stabilised.

8. Remove the pressure gauge fittings from test nipples Ⓐ and seal the nipples with the caps.

9. Assemble control unit Ⓑ, flip it up and secure with screws.

10. Record the settings for max. output on the type plate included with the "Technical documentation". Affix the type plate on the inside of the front cover of the front panel.

Rated output	kW	4	6	8	11	15	18	20	24	28	32
Rated thermal load	kW	4.20	6.30	8.33	11.50	15.60	18.80	20.80	25.00	29.20	33.30
Control pressure at rated output											
■ 4-11 (16) kW	mbar	0.25	0.57	1.00	1.90	—	—	—	—	—	—
■ 6-24 kW	mbar	—	0.25	0.45	0.85	1.57	2.25	2.78	4.00	—	—
■ 8-32 kW	mbar	—	—	0.25	0.48	0.88	1.27	1.57	2.25	3.07	4.00

Rated output or rated thermal load relative to gas G 20/G 25 and 8.5% CO_2 content.

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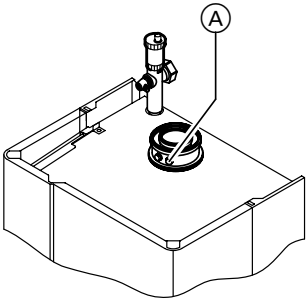
Further details regarding the individual steps (cont.)

Leak testing the BF system (checking the circular gap)

For balanced flue systems tested together with the gas-fired wall-mounted boilers, some Federal States (e.g. Nordrhein-Westfalia) waive the leak test (overpressure test) during commissioning by the district chimney sweep. We recommend that your heating engineer carries out a simple leak test during the initial start-up of your system. It would be sufficient to check the CO_2 concentration in the combustion air at the annular gap in the BF line. The flue pipe is deemed to be sufficiently tight if the CO_2 concentration in the combustion air is a maximum of 0.2% and the O_2 concentration is a minimum of 20.6%.
If actual CO_2 values are higher or O_2 values are lower, then you must test the flue pipe for leaks at a static overpressure of 200 Pa.



Ⓐ Combustion air test nipple (ventilation air)

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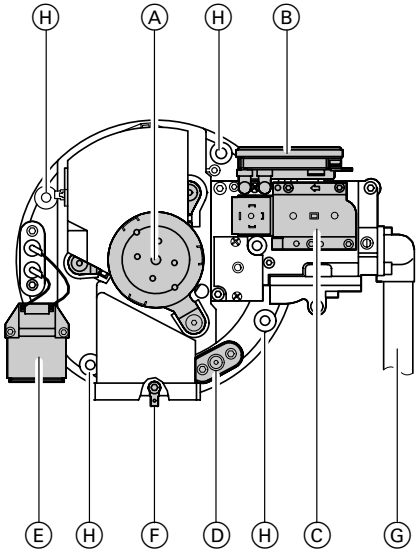
Further details regarding the individual steps (cont.)

Removing the burner and checking the burner gasket for leaks

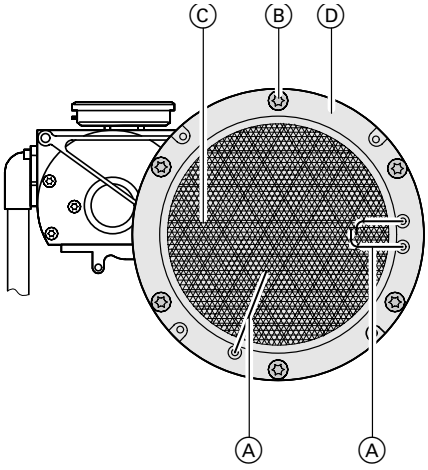


1. Switch off the system on the control unit and the mains electrical supply.
2. Close the gas shut-off valve and safeguard against re-opening.
3. Pull electrical cables off fan motor Ⓐ, differential pressure sensor Ⓑ, gas valve Ⓒ, ionisation electrode Ⓓ, ignition unit Ⓔ and earth Ⓕ.
4. Remove gas supply pipe Ⓖ from the gas combination valve.
5. Slacken four Allen screws Ⓗ and remove the burner.

   ⚠ *Do not rest the burner on the gauze assembly (wire mesh).*
6. Check the burner gasket (U-shaped gasket, see parts list) for damage and replace, if necessary.

   ⚠ *Replace the burner gasket every 2 years as standard.*

Checking the burner gauze assembly



Replace the burner gauze assembly if the wire mesh is damaged.

1. Remove electrodes Ⓐ.
2. Slacken six Torx screws Ⓑ and remove burner gauze assembly Ⓒ.
3. Remove old gauze assembly gasket Ⓓ.
4. Insert a new burner gauze assembly with new assembly gasket, and secure with six Torx screws.

   Torque: 3.5 Nm

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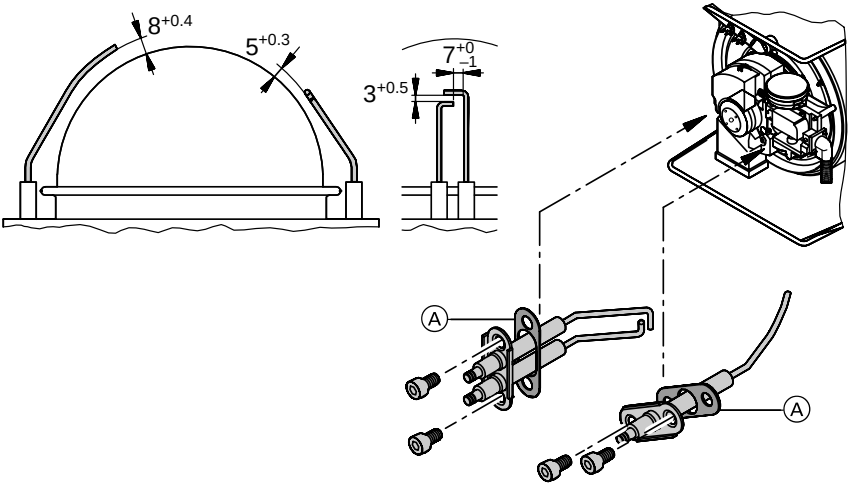
Further details regarding the individual steps (cont.)

Checking and adjusting the ignition and ionisation electrodes



1. Check the electrodes for wear and contamination.

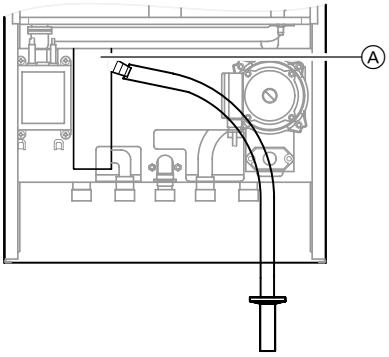
2. Clean the electrodes with a small brush or emery paper.

   ⚠ *Ensure that wire mesh is not damaged.*

3. Check all clearances. If the gaps are not as specified or the electrodes are damaged, replace and align the electrodes together with new gaskets Ⓐ.
   Tighten the electrode fixing screws with 2 Nm.

Further details regarding the individual steps (cont.)

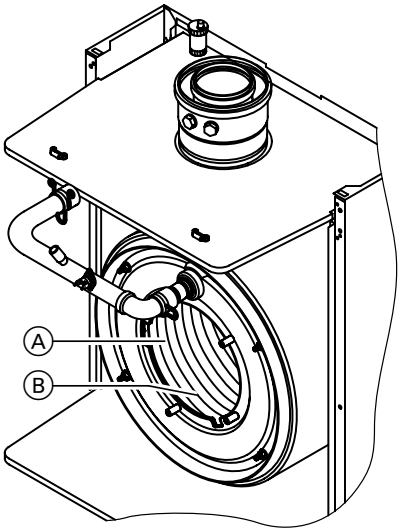
Checking the condensate drain



Check that the condensate can freely drain (at siphon Ⓐ), and clean the siphon if necessary.

Further details regarding the individual steps (cont.)

Cleaning the combustion chamber/heating surfaces and installing the burner



1. Clean combustion chamber Ⓐ and heating surfaces Ⓑ, if required, with a brush or flush with water.

⚠ *Avoid scratching parts which are in contact with flue gases. Only use plastic brushes and NOT wire brushes.*

Apply a solvent-/potassium-free cleaning agent where residues remain:

- Remove soot deposits with alkaline cleaning agents with additional surfactants (e.g. Fauch 600).
- Remove coatings and surface discolouration (yellow-brown) with slightly acidic, chloride-free cleaning agents based on phosphoric acid (e.g. Antox 75 E).
- Flush thorougly with water.

Please note:
Fauch 600 and Antox 75 E are supplied by
Hebro Chemie GmbH
Rostocker Straße 40
D-41199 Mönchengladbach
(CH):
Intec Bassersdorf AG
Grindelstrasse 12
Postfach
CH-8303 Bassersdorf

2. Install the burner and torque diagonally to 4 Nm.

3. Install the gas supply pipe.

⚠ ***Safety instruction***
Carry out a leak test.

4. Connect the electrical leads to each relevant component.

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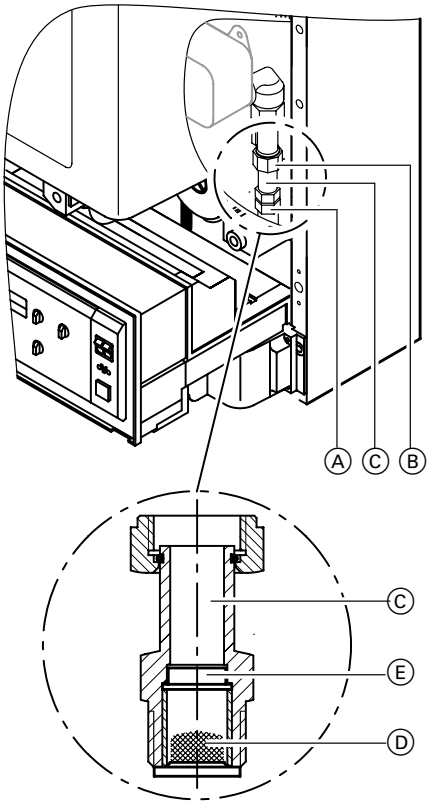
Further details regarding the individual steps (cont.)

Checking the flow limiter and the flow switch filter

(only for gas-fired combination boiler)



1. Release fittings Ⓐ and Ⓑ.
2. Remove connection nipple Ⓒ together with water strainer Ⓓ.
3. Check flow limiter Ⓔ inside connection nipple Ⓒ; replace the connection nipple if it is scaled up or damaged.
4. Clean water strainer Ⓓ.

   Lubricate the gasket with instrument grease.

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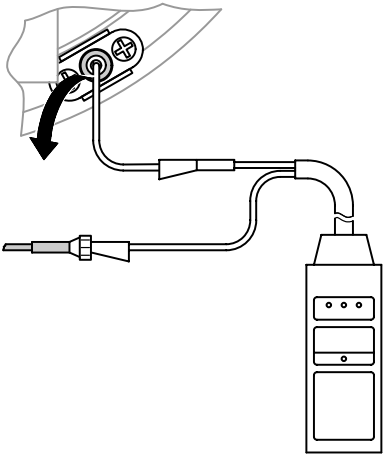
Further details regarding the individual steps (cont.)

Checking the ionisation current

⚠ ***Safety instruction***
Switch OFF the system ON/OFF switch on the control unit before connecting the test equipment.



1. Connect the test instrument acc. to the adjacent diagram.

2. Start up the boiler at the higher rated output:
   Set emission test switch "🧹" on the control unit to "✋".

   The minimum ionisation current should be at least 5 µA as soon as the flame is established (approx. 2-3 seconds after opening the gas combination valve).

3. If the ionisation current is < 5 µA
   - check the electrode gap (see page 18);
   - check the control unit power supply.

4. Set the emissions test switch after the test to "↻".

5. Record the actual value in the service report.

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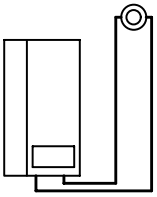
Further details regarding the individual steps (cont.)

Matching coding addresses to the heating system

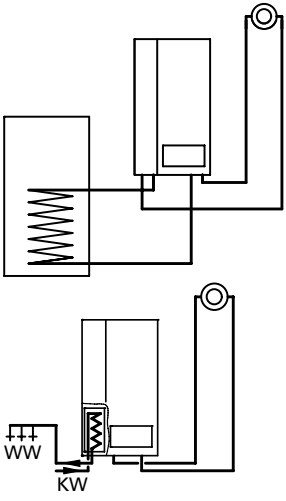
(control unit for weather-compensated mode)

The control unit must be matched to the system equipment.

	Control unit with standard programming unit	Control unit with Comfortrol programming unit
As delivered condition	**Design "04:00"**	**Design "000:000"**
	Heating system with one heating circuit without mixer, without DHW heating.	

Adjusting the heating system design

- *For selection of an appropriate design, see the following diagram.*
- *Coding steps*
  - *with standard programming unit, see page 67,*
  - *with Comfortrol programming unit, see page 87.*

	**Design "04:01"**	**Design "000:001"**
	Heating system with one heating circuit without mixer, with DHW heating. *The coding is automatically adjusted during DHW cylinder sensor connection when operating with a DHW cylinder.*	

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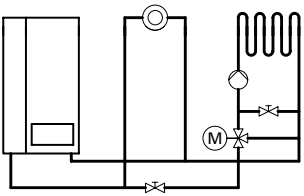
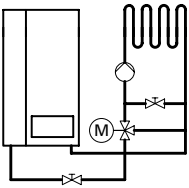
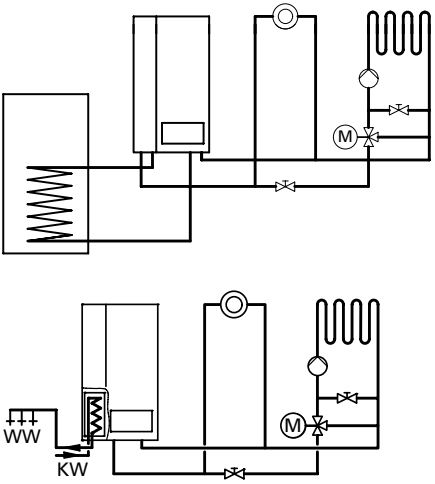
Further details regarding the individual steps (cont.)

	Control unit with standard programming unit	Control unit with Comfortrol programming unit
	**Design "04:02"**	**Design "000:002"**
	Heating system with one heating circuit with mixer and one heating circuit without mixer, without DHW heating.	
	**Design "04:02"**	**Design "000:002"**
	Heating system with one heating circuit with mixer, without DHW heating. *Set coding addresses "044, 045 and 046" respectively to "001".*	
	**Design "04:03"**	**Design "000:003"**
	Heating system with one heating circuit with mixer and one heating circuit without mixer, with DHW heating.	

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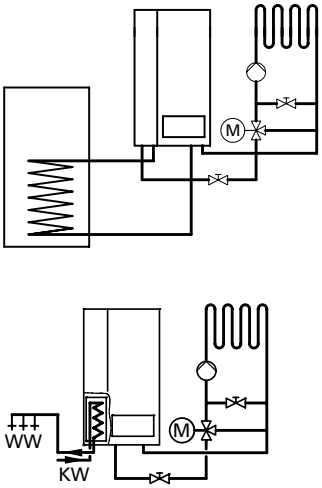
Further details regarding the individual steps (cont.)

	Control unit with standard programming unit	Control unit with Comfortrol programming unit
	**Design "04:03"**	**Design "000:003"**
	Heating system with one heating circuit with mixer, with DHW heating. *Set coding addresses "044, 045 and 046" respectively to "001".*	

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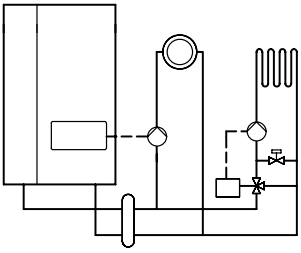
Further details regarding the individual steps (cont.)

Heating systems with low loss header



Control unit with standard programming unit	Control unit with Comfortrol programming unit
Design "04:02"	**Design "000:002"**
Heating system with ■ low loss header (with additional flow temperature sensor) ■ one heating circuit with mixer ■ one heating circuit without mixer (controlling the heating circuit pump via connection extension adaptor) ■ without DHW heating.	
Adjustment	
Set the heating circuit pump switching times at the time switch channel "Ⅲ" (heating circuit A) . *Set coding address "03" to "00".*	Set the heating circuit pump switching times at the time switch channel "Heating circuit A". *Set coding address "0B8" to "000".*
Notes *The integral circulation pump acts as boiler circuit pump and runs always when one of the other pumps is active. Controlling a DHW circulation pump is not possible.*	

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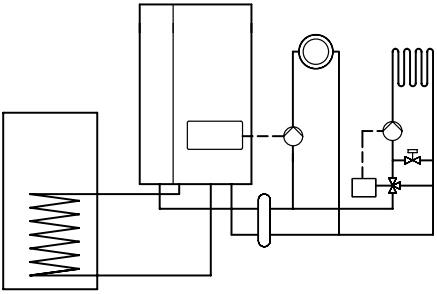
Further details regarding the individual steps (cont.)

Heating systems with low loss header (cont.)



	Control unit with standard programming unit	Control unit with Comfortrol programming unit
	Design "04:03"	**Design "000:003"**
	Heating system with ■ low loss header (with additional flow temperature sensor) ■ one heating circuit with mixer ■ one heating circuit without mixer (controlling the heating circuit pump via connection extension adaptor) ■ with DHW heating.	
	Adjustment	
	Set heating circuit pump switching times at time switch channel "III" (heating circuit A). *Set coding address "03" either to "01" or "02".*	Set the heating circuit pump switching times at the time switch channel "Heating circuit A". *Set coding address "0B8" either to "001" or "002".*
	Notes *The integral circulation pump acts as boiler circuit pump and runs always when one of the other pumps is active. Controlling a DHW circulation pump is not possible.*	

For further adjustments, see coding summary
■ *with standard programming unit from page 72,*
■ *with Comfortrol programming unit from page 90.*

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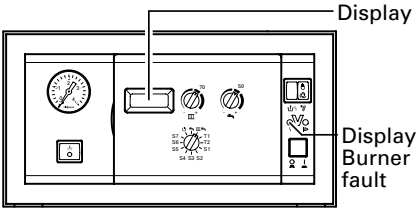
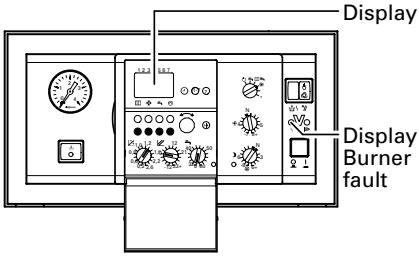
Diagnosis using the control unit

Control unit for constant temperature mode



Control unit for weather-compensated mode with standard prog. unit



Diagnosis table: Faults with fault display on the control unit

Fault message			Display burner fault, red	System characteristics
Control unit for constant temp. mode	Control unit for weather-compensated mode with standard programming unit	Comfortrol programming unit		
—	—	—	—	Boiler does not start
—	—	—	—	Boiler cycles constantly
—	ϟ:1: 0	FAULT: OUTSIDE TEMPERATURE SENSOR	OFF	Activates after 0 °C outside temperature
—	ϟ:1: 8			
—	ϟ:2: 0	FAULT: FLOW TEMPERATURE SENSOR	OFF	Heating circuit supply temperature too low
—	ϟ:2: 8			
1 Ξ 3	ϟ:3: 0	FAULT: BOILER TEMPERATURE SENSOR	OFF	Boiler cools down
Ξ 3	ϟ:3: 8			
—	ϟ:4: 0	FAULT: FLOW TEMPERATURE SENSOR	OFF	Mixer opens
—	ϟ:4: 8			Mixer closes

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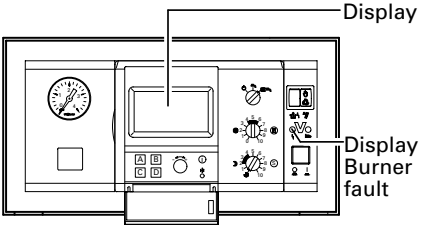
Control for weather-compensated mode
with Comfortrol programming unit



Open flap → fault scan "A"

	Cause	Check
	—	Check sequence (see page 10)
	Flue gas system leaks	Check the flue gas system for leaks
	Outside temperature sensor Short circuit or cable break	Check the outside temperature sensor (see page 40)
	Flow temp. sensor low loss header Short circuit or cable break	Check the flow temperature sensor (see page 41)
	Boiler temperature sensor Short circuit or cable break	Check the boiler temperature sensor (see page 41)
	Flow temperature sensor Short circuit	Mixer motor installation instructions
	Flow temperature sensor cable break	

Diagnosis using the control unit (cont.)

Fault message			Display burner fault, red	System characteristics
Control unit for constant temp. mode	Control unit for weather-compensated mode with standard programming unit	Comfortrol programming unit		
1 ☰ 5	┤:5: 0	FAULT: DHW CYLINDER TEMPERATURE SENSOR	OFF	Domestic hot water cylinder cools down
☰ 5	┤:5: 8			
1 ☰ 6	┤:6: 0	—	OFF	Boiler cools down
☰ 6	┤:6: 8			
1 ☱ 6	┤:6: 1	—	OFF/ON	Boiler cools down
☱ 6	┤:6: 9			
1 ☰ 7	—	—	OFF	No heating
☰ 7				
—	┤:7: 0	FAULT: 70	OFF	Activation after 20 °C daytime set value, 14 °C night set value
—	┤:7: 8	FAULT: 78	OFF	Activation after 20 °C daytime set value, 14 °C night set value
A☰ 1	┤:A: 1	FAULT: A1	Flashing	Boiler operates in emergency mode (after 30 minutes BUS fault)
			OFF	Boiler cools down
—	┤:A: 2	FAULT: A2	OFF	—

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	Cause	Check
	DHW cylinder temperature sensor Short circuit or cable break	Check the DHW cylinder temperature sensor (see page 41)
	Incorrect coding at coding address 27 (standard programming unit)	Set coding address 27 to 0
	Incorrect coding at coding address 31 (standard programming unit)	Set coding address 31 to 0
	Short circuit – M clock thermostat	Check M clock thermostat connections
	M clock thermostat cable break or incorrect coding	Check M clock thermostat connections Check coding
	Short circuit – WS/RS remote control unit	Check the WS/RS remote control unit
	WS/RS remote control unit break or incorrect coding	Check the WS/RS remote control unit Check coding
	BUS fault	Check the seating of circuit board VR 20. Check the BUS connection on plug „X5.3-X5.4" (e.g. extension kit for heating circuit with mixer or Vitocom) for correct connections and function (if necessary, disconnect wires for fault finding). Check the variable speed heating circuit pump and its connecting cables. Check the DIP switch settings are correct on LGM29 circuit board.
	Internal BUS connection break	
	KM BUS fault to Vitocom	Check connections or Vitocom

Diagnosis using the control unit (cont.)

Fault message			Display burner fault, red	System characteristics
Control unit for constant temp. mode	Control unit for weather-compensated mode with standard programming unit	Comfortrol programming unit		
A Ξ 4	┤:A: 4	FAULT: A4	OFF	Pump runs at maximum speed or pump inoperative
A Ξ 5	┤:A: 5	FAULT: A5	OFF	—
b Ξ 2	┤:b: 2	FAULT: B2	OFF	Boiler cools down
┤ C C	┤:C: C	FAULT: CC (204*1)	ON	Burner control unit fault
—	┤:E: 4 or ┤:E:__	FAULT: E4	OFF	—
—	┤:F: 2	FAULT: F2	OFF	—
┤ F 4	┤:F: 4	FAULT: F4	OFF	—
—	┤:F: 5	FAULT: F5	OFF	—

*1 *Call up display of fault codes from the fault memory.*

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	Cause	Check
	BUS connection break – to variable speed heating circuit pump or faulty pump	Check the cable connection to the heating circuit pump or check the heating circuit pump
	Short circuit/break in the BUS connection to the extension kit for the heating circuit with mixer	Check the cable connection to the extension kit (plug "X5"). Check the coding acc. to the heating system design. Check correct connection via "Brief scan" – Control unit with standard programming unit, see p. 82. – Control unit with Comfortrol programming unit, see p. 100.
	Sensor inputs are not properly read	Check the correct sensor connections on plugs "X6" and "X7", as well as connection cables to sensors, for damage. Check the interconnecting cable connections to all other external connections. Possibly remove plug connections.
	Fault because of a temporary on-site power failure	Press the reset key "↺" once
	Fault at the connected Vitotronic 050 heating circuit control unit	Check the Vitotronic 050 heating circuit control unit and the BUS connection on plug "X5" (see page 50)
	Vitocom error	Check Vitocom
	Fault signal – variable speed heating circuit pump	Check the variable speed heating circuit pump
	Fault signal – extension kit for one heating circuit with mixer	Check the extension kit and its coding

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Diagnosis using the control unit (cont.)

Fault message			Display burner fault, red	System characteristics
Control unit for constant temp. mode	Control unit for weather-compensated mode with standard programming unit	Control unit for weather-compensated mode with Comfortrol programming unit		
ϟ F 9	ϟ:F: 9	FAULT: F9 (249*1)	OFF/ON	Burner control unit fault
ϟ F d	ϟ:F: d	FAULT: FD (253*1)	ON	Burner control unit fault
ϟ F E	ϟ:F: E	FAULT: FE (254*1)	ON	Burner control unit fault
ϟ 0 2	ϟ:0: 2	FAULT: 02 (002*1)	ON	Burner control unit fault
ϟ 0 4	ϟ:0: 4	FAULT: 04 (004*1)	ON	Burner control unit fault
ϟ 0 5	ϟ:0: 5	FAULT: 05 (005*1)	ON	Burner control unit fault

*1 *Call up display of fault codes from the fault memory.*

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	Cause	Check
	Incorrect operation in conjunction with Vitosoft	Press the reset key "↺" once
	Incorrect operation in conjunction with Vitosoft	Press the reset key "↺" once
	—	Check ignition module, ignition electrodes, ionisation electrode and cable harness "X13" for damage (see p. 103/104). Check electrode adjustment (see p. 18, 22). Check flue gas system for leaks. Then press reset key "↺" once. If this fault message continues to appear during every burner start, replace LGM 29 boiler control unit.  Installation instructions for LGM 29 burner control unit circuit board
	The safety chain (temperature limiter) has activated or insufficient heat is drawn off	Check the thermocouple (see page 47). Vent the whole system and check the heating circuit circulation.
	Fan speed	Check flue gas system sizing against details specified in Vitodens technical documentation. Check the flue gas system for leaks and unrestricted flow. Check the cable connections to the fan motor as well as the fan power supply (see p. 103/104).
	Fan speed	

Diagnosis using the control unit (cont.)

Fault message			Display burner fault, red	System characteristics
Control unit for constant temp. mode	Control unit for weather-compensated mode with standard programming unit	Comfortrol programming unit		
ϟ 0 6	ϟ:0: 6	FAULT: 06 (006*1)	ON	Burner control unit fault
ϟ 0 7	ϟ:0: 7	FAULT: 07 (007*1)	ON	Burner control unit fault
ϟ 0 8	ϟ:0: 8	FAULT: 08 (008*1)	ON	Burner control unit fault
ϟ 0 A	ϟ:0: A	FAULT: 0A (010*1)	ON	Burner control unit fault
ϟ 1 4	ϟ:1: 4	FAULT: 14 (021*1)	ON	Burner control unit fault

*1 *Call up display of fault codes from the fault memory.*

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Cause	Check
The air pressure threshold for ignition is not reached	Check the differential pressure sensor (see page 43). Check the air damper. Check flue gas system sizing against Vitodens technical design details. Check the flue gas system for leaks and unrestricted flow. Check the cable connections to the fan motor as well as the fan power supply (see p. 103/104).
Fan speed	Check flue gas system sizing against Vitodens technical design details. Check the flue gas system for leaks and unrestricted flow. Check cable connections to fan motor as well as fan power supply (see p. 103/104).
Fan speed	
Base level of the air pressure threshold not OK in the dwell position	Check differential pressure sensor (see page 43). Check flue gas system sizing against Vitodens technical design details. Check the flue gas system for leaks and unrestricted flow. Check cable connections to fan motor as well as fan power supply (see p. 103/104).
No flame signal present	Check electrical connection (see p. 103/104). Check ionisation current (see page 22). Check gas pressure (see page 9). Check gas combination valve. Check ignition, ignition module (see p. 103/104). Check ignition electrodes (see page 18). Check condensate drain (see page 19). Check flue gas system for leaks.

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Diagnosis using the control unit (cont.)

Fault message			Display burner fault, red	System characteristics
Control unit for constant temp. mode	Control unit for weather-compensated mode with standard programming unit	Comfortrol programming unit		
┤ 0 C	┤:0: C	FAULT: 0C (012*1)	ON	Burner control unit fault
┤ 0 d	┤:0: d	FAULT: 0D (013*1)	ON	Burner control unit fault
┤ 2 5	┤:2: 5	FAULT: 25	OFF	Boiler runs with a high boiler water temperature
┤ 2 6	┤:2: 6	FAULT: 26	OFF	Boiler runs with constant modulation
┤ 3 5	┤:3: 5	FAULT: 35	OFF	Boiler does not start
1 Ξ 5	5 : _1	FAULT: 51	OFF	No DHW heating
Ξ 5	5 : _9	FAULT: 59		
1 Ξ C	c : _8	FAULT: C8	OFF	Boiler does not start
Ξ C	c : _0	FAULT: C0		

*1 *Call up display of fault codes from the fault memory.*

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	Cause	Check
	Flame signal still present after the system has been switched off	Check the electrodes and the electrode block (see page 18). Check the gas combination valve.
	The equipment is still disabled	Press the reset key "↑" once
	Emissions test switch "🧹" set to "✋" for 30 minutes	Set emissions test switch "🧹" to "🌀"
	Setting mode for the upper or lower rated output is active (test setting)	Set heating program selector to the required operating mode or close the Comfortrol programming unit flap
	Emissions test switch "🧹" set to "✋" and reset key "↑" activated	Set emissions test switch "🧹" to "🌀", and press reset key "↑" once
	Draw-off sensor Short circuit or cable break	Check sensor / wiring
	Air pressure sensor cable break	Check wiring
	Air pressure sensor Short circuit	Replace sensor

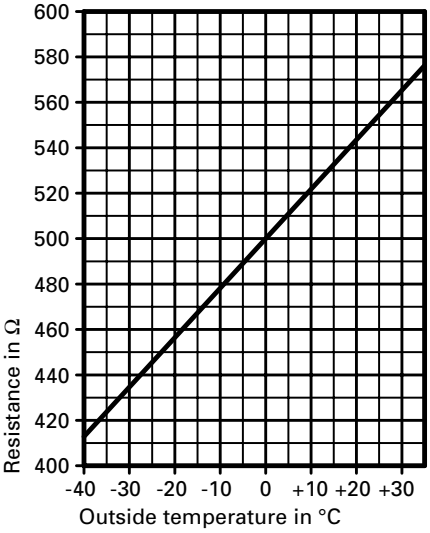
Repairs

Scanning the actual and set temperatures:

- *Control unit for constant temperature mode, see page 64.*
- *Control unit for weather-compensated mode*
  - *standard programming unit, see page 83,*
  - *Comfortrol programming unit, see page 101.*

Checking the outside temperature sensor

(control unit for weather-compensated mode)



1. Pull plug-in connector "X6" off the control unit.
2. Test the outside temperature sensor resistance across terminals "X6.3" and "X6.4" at the pulled connector and compare with the curve.
3. Where actual values strongly deviate from the curve values, disconnect the wires at the sensor and repeat test directly at the sensor.
4. Depending on the result, replace cable or outside temperature sensor.

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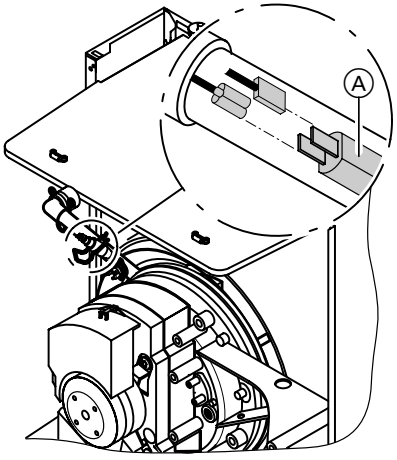
Repairs (cont.)

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

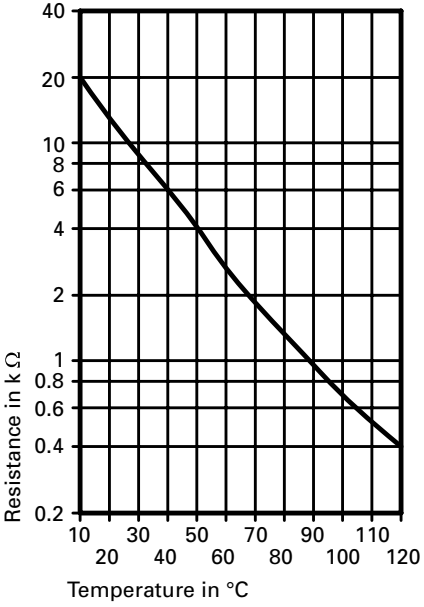


1. Boiler temperature sensor:
   Pull the cables off boiler temperature sensor Ⓐ.
   DHW cylinder temperature sensor or low loss header flow temperature sensor:
   Pull plug "X7" off.

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

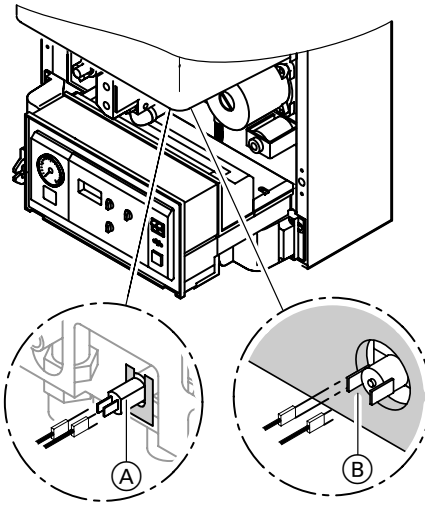
3. Replace the sensor in case of severe deviation.

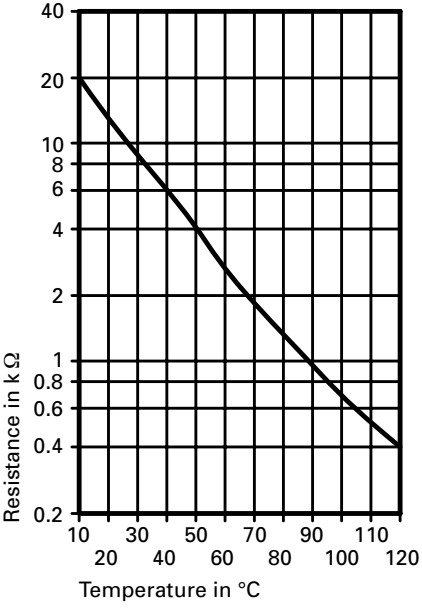
   ⚠ ***Safety instruction***
   The boiler temperature sensor is immersed in the heating water. Drain the boiler before replacing the sensor.



Repairs (cont.)

Checking the outlet or comfort sensor (only on gas-fired combination boiler).





1. Remove the cables from draw-off temperature sensor Ⓐ or from comfort sensor Ⓑ.

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

3. Replace the sensor in case of severe deviation.

⚠ ***Safety instruction draw-off temperature sensor***
The sensor is immersed into the DHW connecting flange.
Before replacement:
- *Close the cold water shut-off valve.*
- *Drain DHW pipe and plate-type heat exchanger (secondary side).*

Room temperature sensor
Insert the sensor into the heat exchanger straps during the installation.

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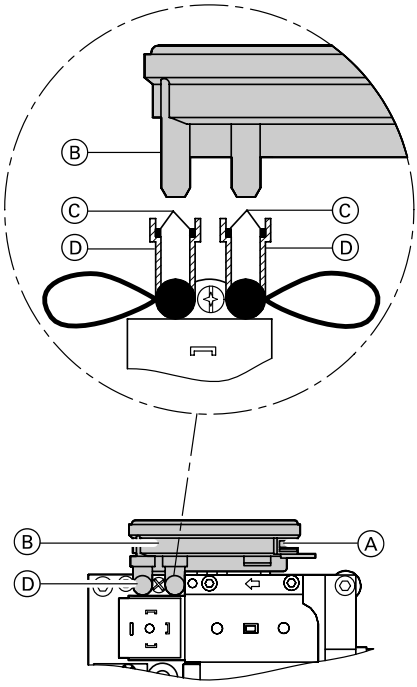
Repairs (cont.)

Checking and replacing the pressure differential sensor

In case of fault messages concerning the pressure differential sensor, check the sensor:

- *for correct installation*
- *for correct electrical connection*
- *for correct position of the O-rings in the adaptor*
- *for closure of the test nipples with plugs.*

Replace the sensor if fault messages still persist.



Checking the O-rings:

1. Pull off electrical plug Ⓐ.

2. Remove sensor Ⓑ by pulling it upwards.

3. Ensure that both O-rings Ⓒ are properly inserted into orifices Ⓓ of the adaptor.

4. Insert the sensor with connection nipples into the gas combination valve adaptor and push in until it clicks into place.

5. Reconnect the electrical plug-in connector on the sensor.

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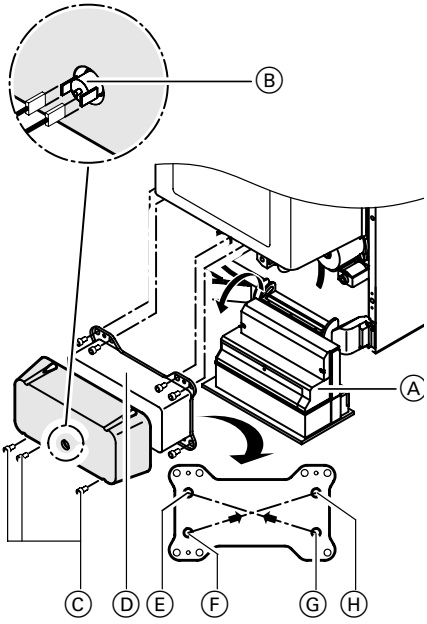
Repairs (cont.)

Checking the plate-type heat exchanger

(only for gas-fired combination boilers)



Ⓔ Central heating return
Ⓕ Cold water
Ⓖ Domestic hot water
Ⓗ Heating flow

1. Shut off the boiler on the primary and the secondary side and drain.
2. Release the control unit fixing screws and pivot control unit Ⓐ downwards.
3. Remove the siphon.
4. Remove comfort sensor plug Ⓑ.
5. Release fixing screws Ⓒ and remove plate-type heat exchanger Ⓓ by pulling it foward.

   During removal, small amounts of water may trickle from the removed plate-type heat exchanger.
6. Check the secondary side for scaling.
7. Install in reverse order.
   Lubricate the new seals and insert into the aqua-plate connections.

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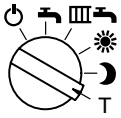
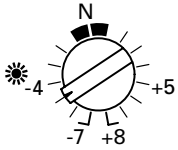
Repairs (cont.)

Relay test (standard programming unit)



1. Set the heating program selector switch to "**T**".



2. Select the required position using rotary selector "☼".

Function	Rotary selector "☼"	Flashing display
Three-way valve drive (DHW cyl.)	N	ϟ:0: 4
Heating circuit pump A	–1	ϟ:0: 2
Heating circuit pump with extension kit for a heating circuit with mixer	–2	ϟ:0: 3
Mixer open	+1	ϟ:0: 8
Mixer closed	+2	ϟ:0: 7
DHW circulation pump	–4	ϟ:0: d
No function	–3	ϟ:0: 1
Burner start with lower rated output and heating circuit pump ON	–5	Display of boiler water temperature
Burner start with upper rated output and heating circuit pump ON	–6	Fault code display from the fault memory (see page 28).

3. Return the heating program selector and rotary selector "☼" to their original positions.

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Repairs (cont.)

Relay test (for Comfortrol programming unit)

Open flap:
Menu item — Key
→ SYSTEM — "**D**"
→ INSTALLER SETUP — "**C**"
→ CODE PLEASE — "**B**-**C**-**C**-**B**"
→ DIAGNOSIS — "**A**"
→ RELAY TEST — "**A**"

You can select the required relay with menu item "CONTINUE" "**A**"

and check its function.

Please note:
Relays which have not been mentioned are not relevant.
The burner stays off during the relay test, if there is no heat demand.

Display		**Meaning**
01	– Burner 1st stage <ST41> ON	N/A
02	– Heating circuit pump A <ST20> ON	Circulation pump
03	– Heating circuit pump B <ST20B> ON	Heating circuit pump for extension kit with mixer
04	– Cylinder loading pump <ST21> ON	Three-way valve (DHW cyl. loading)
07	– Mixer HC B <ST52B> CLOSED	Mixer closed*1
08	– Mixer HC B <ST52B> OPEN	Mixer open*1
10	– Modulation <ST90> CLOSED Burner <ST41> ON	Burner (lower output) Circulation pump
11	– Modulation <ST90> OPEN Burner <ST41> ON	Burner (upper output) Circulation pump
13	– DHW circulation pump <ST28> ON	DHW circulation pump*2
14	– Central fault message <ST50> ON	Central fault message*2

**1Only with mixer extension kit, part no. 7450 058.*
**2Only with the connection extension, part no. 7404 582.*

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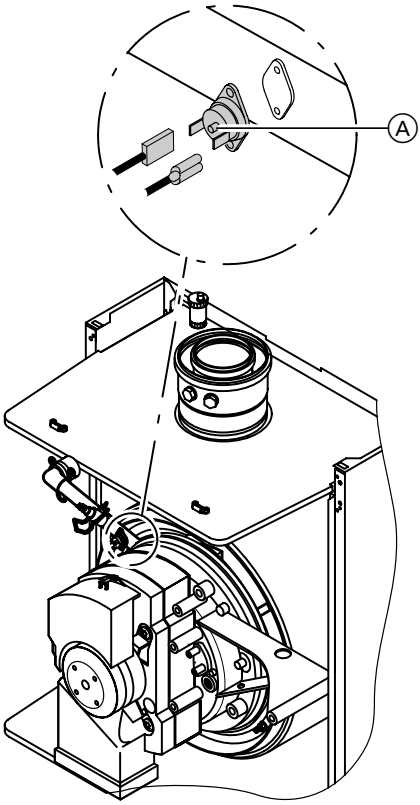
Repairs (cont.)

Checking the safety chain



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

- Pull the cables off thermocouple Ⓐ.
- Check the thermocouple continuity with a multimeter.
- Remove faulty thermocouple.
- Coat the replacement thermocouple with heat conducting paste and install.
- After commissioning, press reset key "⇫" on the control unit.

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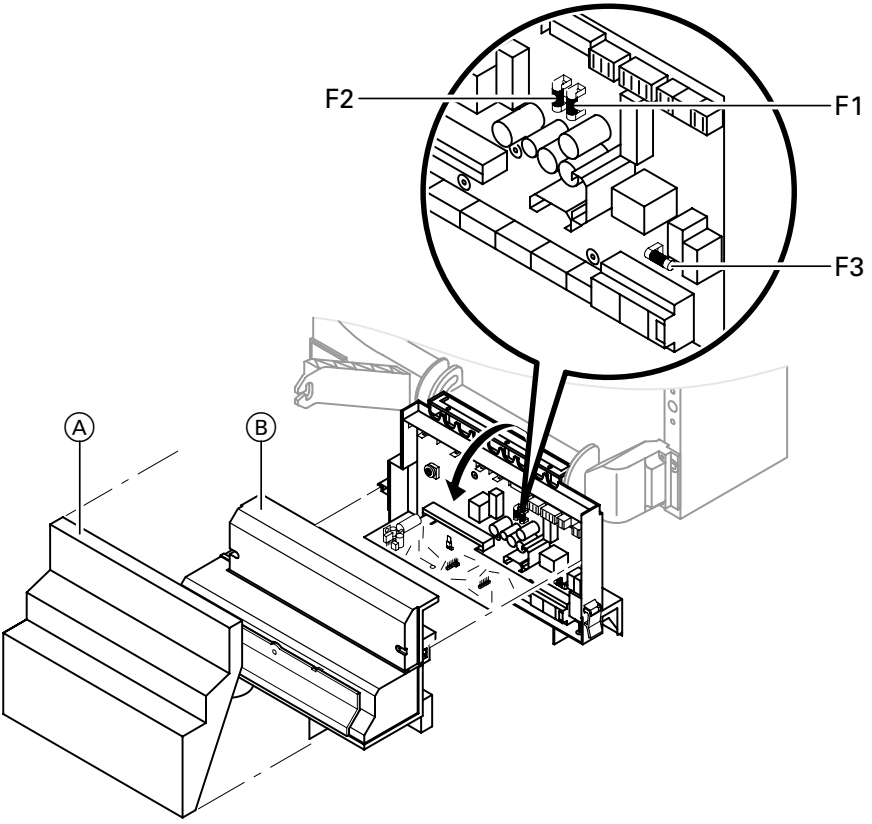
Repairs (cont.)

Checking fuses



1. Switch OFF the mains power.

2. Flip down the control unit and remove covers Ⓐ and Ⓑ.

3. Check fuse F1, F2 and F3.

When replacing fuses, observe the following:
F1: 4 A (slow), 250 V
(max. dissipated energy ≦ 1.6 W)
or
6.3 A (slow), 250 V
(max. dissipated energy ≦ 2.5 W)
F2: 2.5 A (slow), 250 V
(max. dissipated energy ≦ 1 W)
F3: 6.3 A (slow), 250 V
(max. dissipated energy ≦ 2.5 W).

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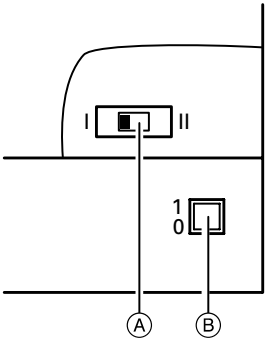
Repairs (cont.)

Extension kit for one heating circuit with mixer

Checking the rotational direction of mixer motor



Ⓐ Switch for rotational direction
Ⓑ Main ON/OFF switch "⏻"

1. Switch OFF and restart the motor at the main ON/OFF switch. The device will carry out the following self-test:
   - close mixer (150 seconds)
   - pump on (10 seconds)
   - open mixer (10 seconds)
   - close mixer (10 seconds)

   After the test, standard control mode recommences.

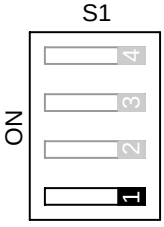
2. Note the rotational direction of the mixer motor during the self-test. Then set the mixer manually to "Open".

   The flow temperature sensor must now sense a higher temperature. If the temperature falls, either the motor is turning in the wrong direction or the mixer set is incorrectly fitted.

   Mixer installation instructions

3. Adjust the rotational direction of the mixer motor (if required).
   - Switch position I for central heating return from the l.h. side (as delivered condition).
   - Switch position II for central heating return from the r.h. side

DIP switch S1.1



If an extension kit for a heating circuit with mixer and a Vitotronic 050 are connected, the DIP switch S1.1 on the extension kit must be set to "OFF".

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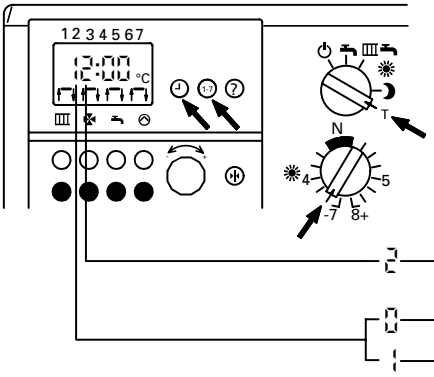
Repairs (cont.)

Checking Vitotronic 050 (accessory)

To select a Vitotronic 050, the Viessmann 2-wire BUS extension module is required in the boiler control unit, plus an additional communication module in Vitotronic 050.

Checking the Viessmann 2-wire BUS and the data connection to Vitotronic 050

With standard programming unit



1. Set the heating program selector switch to "**T**".

2. Set rotary selector "☀" to "**–6**".

3. Simultaneously press keys "🕘" and "**1-7**".

4. Evaluate the display.

2 — With Vitotronic 050

0 — Expansion module not recognised

1 — Expansion module recognised

5. Check the correct installation if the extension module or Vitotronic 050 are not recognised.

Please note:
A green LED on the expansion module flashes if the data bus is active. The data cable "X5.3"-"X5.4" may be interchanged, if the LED is not lit.

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Repairs (cont.)

With menu-guided Comfortrol programming unit

1. Check the Comfortrol programming unit via brief scan 2, to establish whether the extension module is installed.

Calling up brief scan 2

Open cover:

Menu item	Key
→ SYSTEM	"**D**"
→ OPERATING STATE	"**B**"
→ CONTINUE	"**A**" until the text "Brief scan 2" appears.

Expansion module
Here, the final digit means:
2____0 = No expansion module Viessmann 2-wire BUS recognised

2____1 = Expansion module Viessmann 2-wire BUS recognised

Vitotronic 050
The 2nd digit from the left means:
_2____ = Extension kit for a heating circuit with mixer or Vitotronic 050 recognised

Please note:
A green LED on the expansion module flashes if the data bus is active. The data cable "X5.3" - "X5.4" may be interchanged, if the LED is not lit.

Connection and wiring diagrams, see pages 105/106.

2. Check the correct installation if the extension module or Vitotronic 050 are not recognised.

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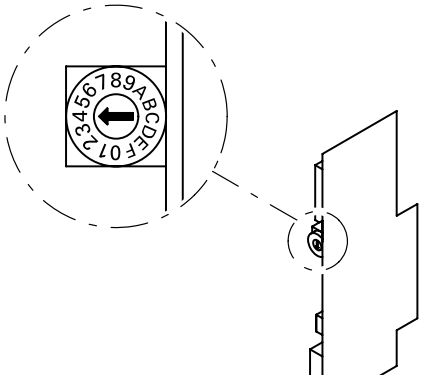
Repairs (cont.)

Checking rotary selector setting on communication module of Vitotronic 050



The rotary selector of communication module 1 must be set to "4".

Please note:

Please observe the respective installation documents for Vitotronic 050.

Set the rotary selector to "5" if, in addition to Vitotronic 050, an extension kit for one heating circuit with mixer is also connected.

Set the rotary selector on any additional Vitotronic 050 that may be connected to "6", etc.

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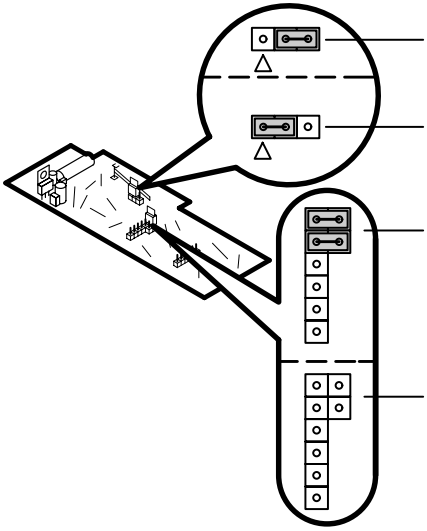
Strapping plug configuration and coding

Strapping plug configuration on circuit board VR 20



Strapping plug "X6"
As delivered condition without function "External burner blocking".

Including "External burner blocking" function (only if the contact on plug "X6.1-X6.2" is connected).

Strapping plugs "X2"-"X4"
As delivered condition without expansion module Viessmann 2-wire BUS: Two strapping plugs installed as shown.

With extension module Viessmann 2-wire BUS:
Both strapping plugs removed.

External demand (on site)

With standard programming unit
Change coding address "30:00" to "30:01" and "35:00" to "35:01".

With Comfortrol programming unit
Change coding address "011:000" to "011:001" and "027:000" to "027:001".

Please note:
The boiler is started according to the setting of coding address "125" (standard programming unit) or "0C5" (Comfortrol programming unit).
The boiler water temperature is maintained at the set value according to the setting of coding address "102" (standard programming unit) or "0A2" (Comfortrol programming unit).

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Strapping plug configuration and coding (cont.)

External blocking (on site)

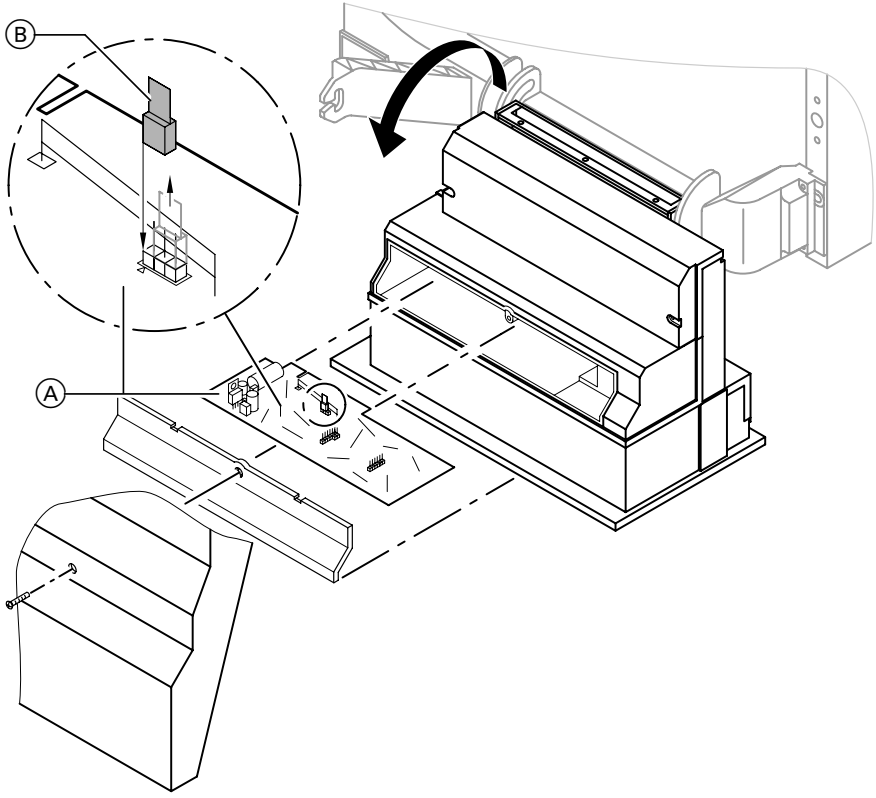
(only if the contact on plug "X6.1-X6.2" is connected)

1. Pull out circuit board VR 20 Ⓐ.

2. Re-position strapping plug "X6" Ⓑ.

3. Re-fit circuit board Ⓐ.

Please note:
The boiler is shut down according to the setting of coding address "108" (standard programming unit) or "0A8" (Comfortrol programming unit).



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Strapping plug configuration and coding (cont.)

External heating program changeover (telephone contact)

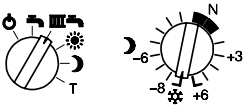
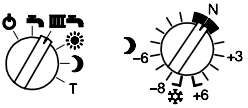
An auxiliary device (e.g. Vitocom 300) must be connected for this function.

The heating program, which was manually preselected on the boiler control unit, can only be changed from a central control station or via telephone and code transmitter.
The changeover occurs between the heating programs allocated in the table.

However, the heating program selector position remains unchanged.
A further call-up reloads the preselected heating program.

With standard programming unit

Change coding address "35:00" to "35:01".

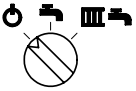
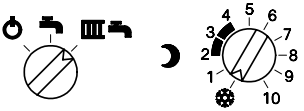
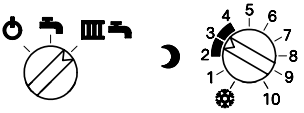
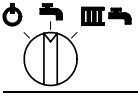
Preselected heating program	**Changed heating program** (after telephone call)
	■ Constant central heating with standard room temperature ■ Constant DHW heating
	Standby mode with frost protection
	Standby mode with frost protection
	■ Constant central heating with standard room temperature ■ Constant DHW heating
	Standby mode with frost protection
	■ Constant central heating with standard room temperature ■ Constant DHW heating

Strapping plug configuration and coding (cont.)

With Comfortrol programming unit

Please note:
If the heating circuit has been changed over via telephone, the display will show the additional text (with the flap closed): "TELE.PROG.".

Change coding address "011:000" to "011:001".

Preselected heating program	**Changed heating program** (after telephone call)
	■ Constant central heating with standard room temperature ■ Constant DHW heating
	Standby mode with frost protection
	With code "0C8:001" (as delivered condition): Standby mode with frost protection
	With code "0C8:000": ■ Constant central heating with standard room temperature ■ Constant DHW heating
	Standby mode with frost protection

Function description

Heating mode
The set boiler water temperature will be maintained when a demand is being raised by the room temperature dependent clock thermostat, and the heating program is set to central heating and DHW "".
If there is no demand, the boiler water temperature will be held to the preselected frost protection temperature (5 °C – burner ON, 50 °C – burner OFF).
The circulation pump characteristics after burner shutdown can be selected with position "S1" of the heating program selector switch (see page 60).

The DHW cylinder can (if installed) be quickly heated to 60 °C using position "S4" of the heating program selector switch (see page 61).
You can select limited system frost protection using position "S6" of the heating program selector switch (see page 62).

Instantaneous water heating with gas-fired combination boilers
If the flow switch recognises that water is drawn off (> 3 l), the burner and circulation pump are switched ON, and the three-way valve changes over to DHW heating (symbol in the display ""). The burner modulates to reach the DHW draw-off temperature and is limited on the boiler side of the system by the limit thermostat (82 °C).
If comfort mode has been activated, the plate-type heat exchanger is held to a standby temperature of "42 °C ON" and "46 °C OFF".

Instantaneous water heating with gas-fired boilers
The DHW heating will be activated if the DHW cylinder temperature falls 2.5 K below the set DHW cylinder temperature.
The burner, the circulation pump and the three-way valve are started or changed over. In the as delivered condition, the set boiler temperature is 78 °C (service position S3). If the actual cylinder temperature is 2.5 K above the set cylinder temperature, the burner will be switched OFF and the cylinder loading pump run-on will be activated.

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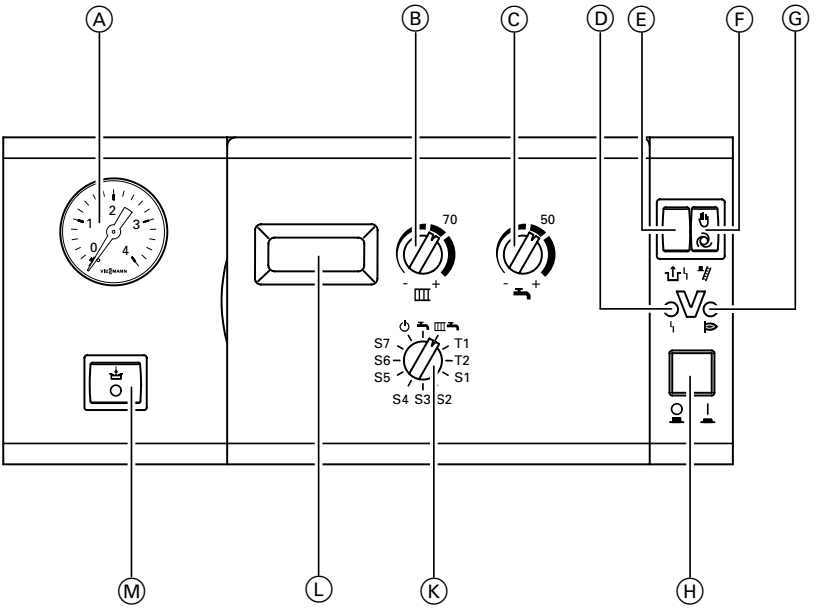
Function description (cont.)



Ⓐ Gauge
Ⓑ Rotary selector
"Heating water temperature"
Ⓒ Rotary selector
"DHW temperature"
Ⓓ Burner fault display
Ⓔ Burner fault reset
Ⓕ Emissions test switch
Ⓖ Burner operation display
Ⓗ System ON/OFF switch
Ⓚ Heating program selector switch
⏻ Standby mode
Only DHW
Heating and DHW
Ⓛ Display
Ⓜ Comfort switch
(only for gas-fired combination boilers)

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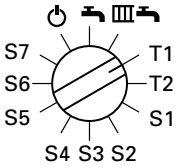
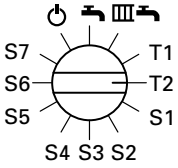
Test settings "T1" and "T2"



T1 – Heating operation with lower rated output

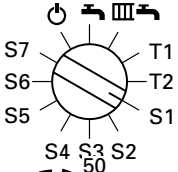


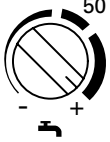
T2 – Heating operation with max. set output

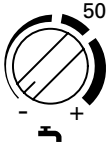
Please note:
In test position "T2", the fault memory will also be displayed.

Changing parameters in service positions "S1" to "S7"

Changing parameters in service positions "S1" to "S7" influences the control unit and system parameters.
The following steps for changing parameters apply to all service positions.







1. Select the service position on the heating program selector switch.
   The display shows: "-- "
   The current parameter will be displayed after approx. 2 sec.

2. Turn rotary selector "🚿" fully clockwise.
   The maximum value flashes in the display.

Please note:
If rotary selector "🚿" is positioned to the right of the central position, turn it first anticlockwise beyond the centre.

3. Turn rotary selector "🚿" fully anticlockwise.
   The minimum value flashes in the display.

4. Set the required value with rotary selector "🚿".

5. Set the heating program selector switch to another position.
   The value is now saved.

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Changing parameters in service positions "S1" to "S7" (cont.)

S1 – Pump run-on time when using a clock thermostat

The clock thermostat input will only be evaluated in heating mode.
The boiler water temperature will be maintained and the circulation pump remains switched ON, if the clock thermostat issues a heat demand.

The burner will be switched OFF without request.
You can set the run-on time for the circulation pump.

For setting steps, see page 59.

Parameter	Circulation pump behaviour
0	OFF immediately after burner switch-off
1 to 120 As delivered condition: "2" (2 min run-on)	1 to 120 minutes run-on. Setting step range: 1 to 10 minutes in 1 min. steps, 15 to 120 minutes in 5 mins. steps

S2 – External blocking

Subject to set parameters, different components are disabled when contact "X6.1"-"X6.2" closes.

Please note:
Change strapping plug "X6" on circuit board VR 20 to 

For setting steps, see page 59.

Parameter	Blocked-out components
0	Burner
1	Heating circuit and DHW heating
2	Heating circuit
3	Domestic hot water heating
4	Comfort mode

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Changing parameters in service positions "S1" to "S7" (cont.)

S3 – Max. boiler water temperature if DHW is heated

The display shows values in °C. As delivered condition: "78".

For setting steps, see page 59.

Control unit setting range 50 to 125°C, limited by the thermostat to 84°C. To optimise control characteristics, only select boiler water temperatures up to a maximum of 78°C.

S4 – Additional function for heating DHW (for gas-fired boilers)

The DHW cylinder will briefly be heated by the additional function to 60 °C. You can select the frequency.

For setting steps, see page 59.

Parameter	Heating frequency
0 (as delivered condition)	Additional function inactive
1 to 30	1 Every time DHW is heated, it will be heated to 60 °C to 30 Every 30th DHW heating it will be heated to 60 °C

S5 – DHW heating

Different options for DHW heating may be selected.

For setting steps, see page 59.

Parameter	Domestic hot water heating
0 As delivered condition – gas-fired boiler	no DHW heating
1	DHW cylinder temp. control
2	DHW cylinder temp. control (optimised)*1
3	N/A
4	N/A
5 As delivered condition – gas-fired combination boiler	with integral heat exchanger
6	N/A

*1 *Automatic adjustment, if a DHW cylinder temperature sensor is connected; can be manually changed to "1".*

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Changing parameters in service positions "S1" to "S7" (cont.)

S6 – Limited system frost protection

Limited frost protection for the system can be achieved by switching the circulation pump ON for 10 minutes. You can select the switching frequency.

For setting steps, see page 59.

Parameter	Switching cycle
0	Circulation pump will not be switched on
1 to 24	1 to 24 times daily; switch on the circulation pump

S7 – M clock thermostat

For setting steps, see page 59.

Parameter		Pump function		
Without M clock thermostat	0	—		
With M clock thermostat and room temp. hook-up. Set boiler water temp. is selected by control unit in such a way that set room temp. selected on clock thermostat is maintained inside room as accurately as possible. Burner will be enabled when room temp. hysteresis falls below its limits; burner will be switched OFF when its limits are exceeded.	1	Set room temp. hysteresis	±0.5	Pump "ON" when room temp. hysteresis falls below its limits. Pump run-on (S1) will be activated when room temp. hysteresis is exceeded.
	2		±1.0	
	3		±1.5	
	4		±2.0	
	5		±2.5	
	6		±3.0	
	7		±3.5	
	8		±4.0	
	9	Pump runs continuously*1		

Please note:
For settings 1 to 9, the link ***on the M clock thermostat*** *must be open (as delivered condition).*

Installation instructions M clock thermostat

*1 *The burner will be constantly enabled as room temp. hysteresis cannot be set.*

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Changing parameters in service positions "S1" to "S7" (cont.)

S7 – M clock thermostat (cont.)

<table>
<tr><th>Parameter</th><th></th><th colspan="2">Pump function</th></tr>
<tr><td>Without M clock thermostat and with link on input – clock thermostat with switched output.</td><td>10</td><td colspan="2">Pump run-on will be activated if the burner is switched OFF, pump "ON" with burner "ON"</td></tr>
<tr><td rowspan="10">With M clock thermostat
The set boiler water temperature is influenced by the room temperature set on the clock thermostat.
The boiler water temperature will be maintained at the set value selected on the control unit if the room temperature is set to 20 °C.

Please note:
For settings 11 to 20, the link on the M clock thermostat must be closed.

Installation instructions M clock thermostat</td><td>11</td><td rowspan="10">For each 1 K set room temp., the set boiler water temp. changes from the set value by</td><td>1 K</td><td rowspan="10">Pump "ON" and burner "ON".
Pump run-on (S1) will be activated when the burner is switched OFF.</td></tr>
<tr><td>12</td><td>2 K</td></tr>
<tr><td>13</td><td>3 K</td></tr>
<tr><td>14</td><td>4 K</td></tr>
<tr><td>15</td><td>5 K</td></tr>
<tr><td>16</td><td>6 K</td></tr>
<tr><td>17</td><td>7 K</td></tr>
<tr><td>18</td><td>8 K</td></tr>
<tr><td>19</td><td>9 K</td></tr>
<tr><td>20</td><td>10 K</td></tr>
</table>

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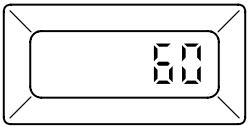
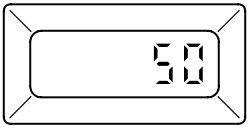
Scanning temperatures

The display can show the set and actual values for the
- *boiler water temperature, and the*
- *DHW temperature.*

Scanning actual temperatures



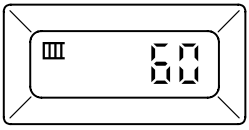
Boiler water temperature:
In operating mode,
„⏻" standby mode and
„🛁" heating and DHW
will be displayed.



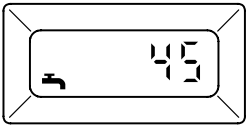
DHW cylinder temperature (gas-fired boiler) or draw-off temperature (gas-fired combination boiler):
In operating mode,
„🚰" only DHW
will be displayed.
Rotary selector "🚰" must ***not*** *be turned fully anticlockwise.*

Scanning and changing set temperatures

The set value change will flash for approx. 5 sec.
Then the relevant actual temperature will be displayed.



Select the required boiler water temperature on rotary selector "🛁".



Set the required DHW cylinder temperature with rotary selector "🚰".

5692 486 GB

Function description

Heating mode
The control unit determines a set boiler water temperature subject to the outside temperature or the room temperature (if a room temperature dependent remote control is connected) and the slope/level of the heating curve.
The determined set boiler water temperature is then transferred to the burner control unit.
From the set and actual boiler water temperatures, the burner control unit calculates the modulation level and controls the burner accordingly.
The burner control unit limits the boiler water temperature:
- by the limit thermostat to 84 °C,
- by the electronic limit thermostat to 82 °C.

The thermocouple in the safety chain locks out the burner control unit at 100 °C boiler water temperature.

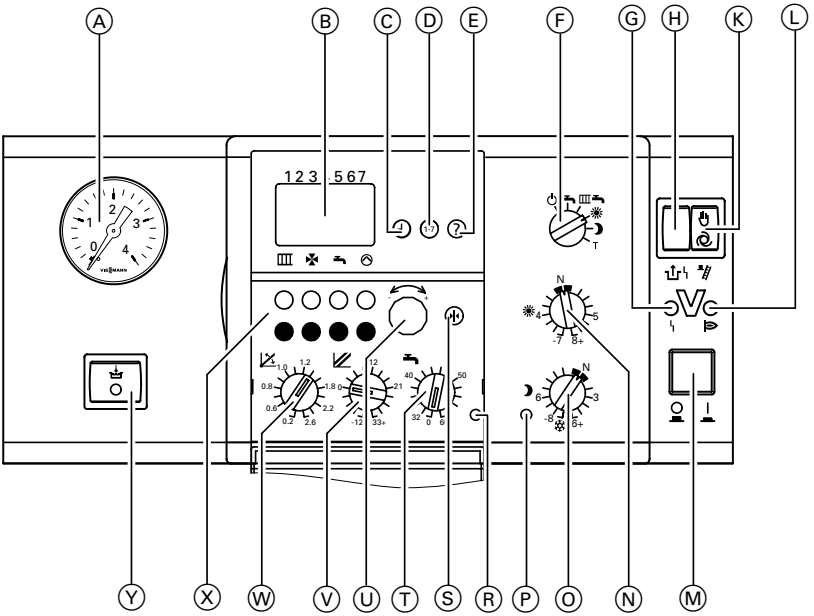
Instantaneous water heating with gas-fired combination boilers
If the flow switch recognises that water is drawn off (> 3 l), the burner and circulation pump are switched ON, and the three-way valve changes over to DHW heating. The burner modulates to reach the DHW draw-off temperature and is limited on the boiler side of the system by the limit thermostat (82 °C).
If comfort mode has been activated, the plate-type heat exchanger is held to a standby temperature of "42 °C ON" and "46 °C OFF".

Instantaneous water heating with gas-fired boilers
The DHW heating will be activated if the DHW cylinder temperature falls 2.5 K below the set DHW cylinder temperature.
The burner and the cylinder loading pump are switched ON.
In the delivered condition, the set boiler water temperature lies 20 K above the set DHW cylinder temperature. If the actual cylinder temperature is 2.5 K above the set cylinder temperature, the burner will be switched OFF and the cylinder loading pump run-on will be activated.

Supplementary DHW heating
The supplementary heating facility will be activated if a control period of 10 minutes (e.g. 22:10 to 22:20 hrs) has been selected. This period must lie outside the control range for normal DHW heating to enable the control unit to recognise the signal.
You can set the temperature value for supplementary heating in coding address "107".

5692 486 GB

Function description (cont.)



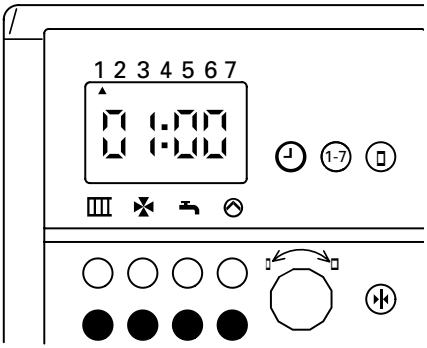
Ⓐ Gauge
Ⓑ Display
Ⓒ Time setting
Ⓓ Weekday setting
Ⓔ Scanning temperatures
Ⓕ Heating program selector switch
- ⏻ Standby mode
- Only DHW
- Heating and DHW
- ☀ Constant standard room temperature
- ☽ Constantly reduced room temperature
- **T** Test position

Ⓖ Burner fault display
Ⓗ Burner fault reset
Ⓚ Emissions test switch
Ⓛ Burner operation display
Ⓜ System ON/OFF switch
Ⓝ ☀ Rotary selector "Standard room temperature"
Ⓞ ☽ Rotary selector "Reduced room temperature"
Ⓟ Display "Reduced room temperature"
Ⓡ Display "DHW heating"
Ⓢ Key "Base settings"
Ⓣ Rotary selector "DHW temperature"
Ⓤ -⟳+ Rotary selector
Ⓥ Rotary selector "Level of the heating curve"
Ⓦ Rotary selector "Slope of the heating curve"
Ⓧ Start-up and shutdown timing keys
Ⓨ Comfort function switch (only for gas-fired combination boilers)

5692 486 GB

Calling up coding level 1

Please note:
For a summary of the coding addresses of coding level 1, see page 72.



1. **Calling up the coding level**
   Simultaneously press the red key "🚿" and the blue key "✠". Hold the keys down until after approx. 5 seconds "01:00" is displayed.

2. **Coding address selection**
   Press key "🕒" and turn rotary selector "-⟷+" clockwise, until the required coding address is displayed.

3. **Changing the coding address**
   Press key "**1-7**" and turn the rotary selector "-⟷+" until the figure of the selected value appears.

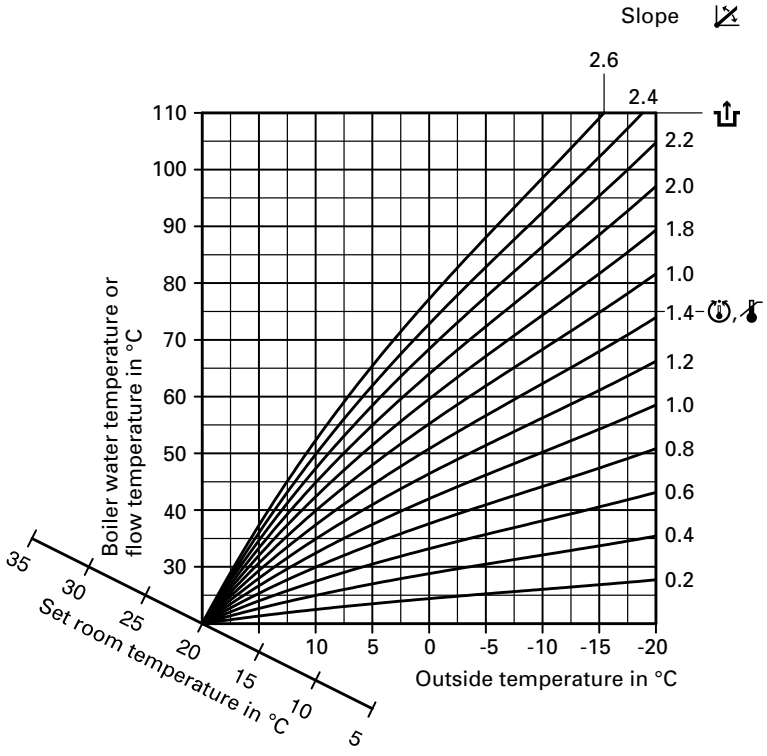
4. **Terminating coding**
   Press the red key "▥".

5692 486 GB

Heating curves

The heating curves illustrate the relationship between the outside temperature and the boiler water or the 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.
If different room temperatures are set, the curves will be adjusted parallel to the set room temperature axis.

Settings in the as delivered condition:
- *Slope* "⊿" = 1.4
- *Level* "▨" = 0

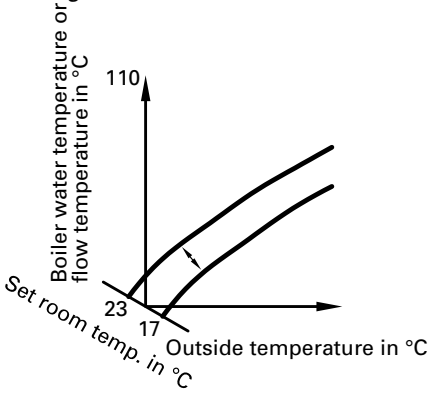


5692 486 GB

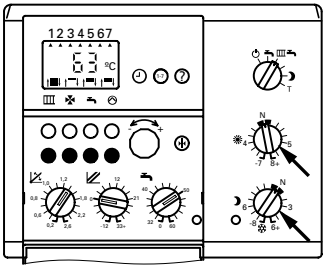
Adjusting heating curves

Room temperature set value

Designs ”04:00” and ”04:01”:
Heating circuit **without** mixer
Designs ”04:02” and ”04:03”:
Heating circuit **with** mixer

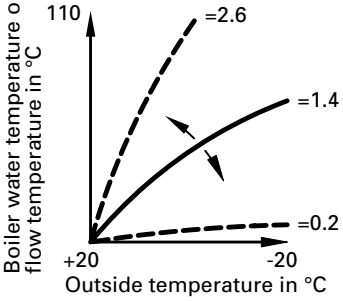


Control unit setting:

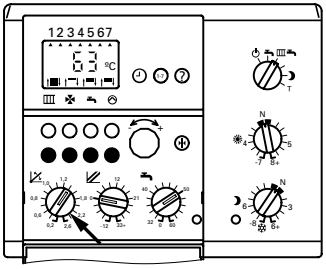


Heating curve slope

Designs ”04:00” and ”04:01”:
Heating circuit **without** mixer
Designs ”04:02” and ”04:03”:
Heating circuit **with** mixer



Control unit setting:



Designs ”04:02” and ”04:03”:
Heating circuit **without** mixer

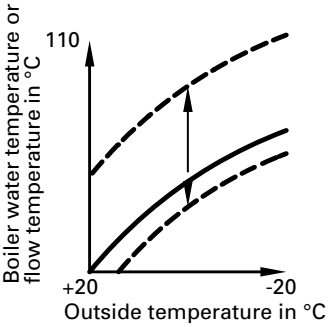
Setting of coding address ”08”
Slope setting range
”08:00” = 0.2 to ”08:15” = 2.6
(Change per step: 0.2)
As delivered condition: ”08:09” = 1.4.

5692 486 GB

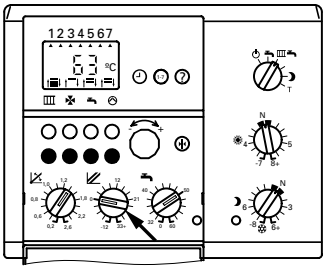
Adjusting heating curves (cont.)

Heating curve level

Designs ″04:00″ and ″04:01″:
Heating circuit **without** mixer
Designs ″04:02″ and ″04:03″:
Heating circuit **with** mixer

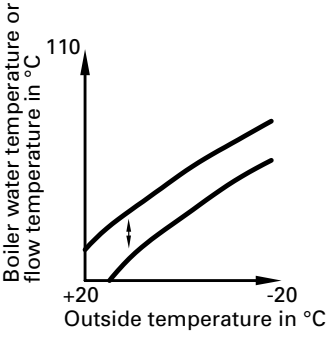


Control unit setting:



Differential temperature

Designs ″04:02″ and ″04:03″



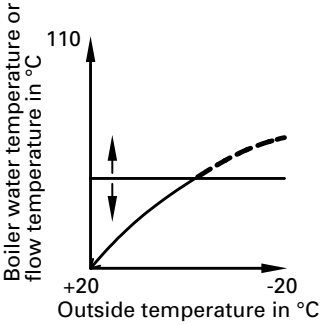
Setting of coding address ″07″
Differential temperature setting range from ″07:00″ = 6 K to ″07:15″ = 36 K
(Change per step: 2 K)
As delivered condition: ″07:01″ = 8 K.

Please note:
If Vitotronic 050 is connected, the set differential temperatures add up (as delivered condition respectively 8 K). Therefore set the differential temperature on Vitotronic 050 appropriately lower.

5692 486 GB

Adjusting heating curves (cont.)

Maximum temperature limit



Heating circuit **without** mixer
Setting of coding address "06"
Setting range for max. temp. from
"06:01" = 40 °C to "06:15" = 110 °C
(Change per step: 5 K)
As delivered condition:
"06:10" = 85 °C.

Heating circuit **with** mixer
Setting of coding address "05"
Setting range for max. temp. from
"05:00" = 35 °C to "05:15" = 110 °C
(Change per step: 5 K)
As delivered condition:
"05:08" = 75 °C.

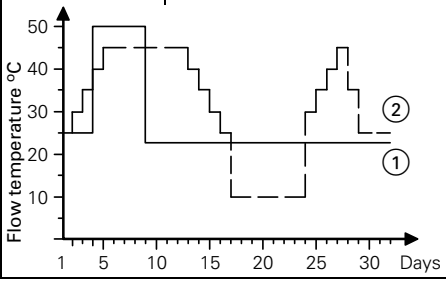
5692 486 GB

Summary coding level 1

⚠ ***Safety instruction***
Coding addresses that are not described here must not be changed.

For a sequence of steps to call up coding level 1, see page 67.

Coding in the delivered condition Address:value	**Function mode**	**Coding change Address:value**	**Possible change**
Boiler			
03:00	Gas-fired boiler: No DHW heating	03:01	DHW cylinder temperature control
		03:02*1	Cylinder temperature control (optimised)
03:05	Gas-fired combination boiler: DHW heating with integral heat exchanger		Screed drying acc. to two optional temperature-time profiles. Observe DIN 4725-2.
		03:14	Screed drying acc. to temperature profile ① (DIN 4725)*2
		03:15	Screed drying acc. to temperature profile ② (ZV parquet and under-floor technology)*2



*1 *Automatic adjustment, if a DHW cylinder temperature sensor is connected; can be manually changed to "01".*
*2 *After this function is completed, the system automatically changes over to the operating mode "Heating and DHW".*

5692 486 GB

Summary coding level 1 (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Boiler (cont.)			
06:10	Maximum temperature limit set to 85 °C	06:00 to 06:15	Max. temperature limit variable between 35 and 110 °C
30:00	External heating program changeover	30:01	External request
35:00	External demand or external heating program changeover blocked	35:01	External demand or external heating program changeover enabled
40:01	Boiler water temp. display	40:00	Time display
Heating circuits			
04:00*1	One heating circuit without mixer, without DHW heating	04:01*1 04:02 04:03*1	One heating circuit without mixer, with DHW heating One heating circuit without mixer, one heating circuit with mixer, without DHW heating One heating circuit without mixer, one heating circuit with mixer and with DHW heating
05:08*1	Maximum temperature limit set to 75 °C	05:00 to 05:15	Max. temperature limit variable between 35 and 110 °C
07:01*2	Differential temperature set to 8 K	07:00 to 07:15	Differential temperature variable between 6 and 36 K

**1For systems without mixer, the address without mixer and with recognition of the DHW heating will be set automatically, and therefore must be manually reset.*
**2Only for heating system designs "04:02" and "04:03".*

5692 486 GB

Summary coding level 1 (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Heating circuits (cont.)			
08:09*1	Heating circuit without mixer: Heating curve slope "⊿" set to "1.4"	08:00 to 08:15	Heating circuit without mixer: Slope "⊿" variable between "0.2" and "2.6"
DHW cylinder			
10:01	The circulation pump starts immediately	10:00	Circulation pump will be switched on subject to boiler temperature
13:00	Circulation pump with run-on, up to max. 10 min.	13:01	Circulation pump without run-on
14:00	Set boiler water temp. for DHW cylinder loading acc. to set DHW cylinder temp. +20 K	14:01	Set boiler water temp. during DHW cylinder loading equals 78 °C
15:01	With DHW priority control	15:00	Without DHW priority control
23:00	Setting range for DHW temperature 32 to 60 °C	23:01	Setting range for DHW temperature 52 to 80 °C
Heating circuit pump			
11:01	Heating circuit pump speed for reduced mode acc. to coding address "044:___" of coding level 2	11:00	Heating circuit pump speed for reduced mode acc. to coding address "046:___" of coding level 2
12:01	With variable speed heating circuit pump (automatic recognition)	12:00	Stepped heating circuit pump (e.g. transfer mode for service)
16:01	With heating circuit pump logic function	16:00	Without heating circuit pump logic function

**1 Only for heating system designs "04:02" and "04:03".*

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Summary coding level 1 (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Heating circuit pump (cont.)			
17:00	Heating circuit without mixer present	17:01	Heating circuit with mixer present
Remote control			
20:00	Without WS or RS remote control unit	20:01	With WS or RS remote control unit*1
32:01 33:00	Weather-compensated mode in heating and reduced mode	32:00*2 33:00*2	With room temperature hook-up in heating and reduced mode
		32:00*2 33:01*2	Weather-compensated mode in heating mode With room temperature hook-up in reduced mode
Changeover between summer and winter			
47:01	Automatic summer/ winter changeover	47:00	Manual summer/winter changeover
50:03	Summer starts: March	50:01 to 50:12	January to December
51:05	Summer starts: last week of the month	51:01 to 51:05	Week 1 to week 5 of the selected month
52:07	Summer starts: last day of the week (Sunday)	52:01 to 52:07	Monday to Sunday

**1The address is automatically set and must be manually reset.*
**2Do not adjust in the RS remote control connection.*

5692 486 GB

Summary coding level 1 (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Changeover between summer and winter time (cont.)			
53:10	Winter starts: October	53:01 to 53:12	January to December
54:05	Winter starts: last week of the month	54:01 to 54:05	Week 1 to week 5 of the selected month
55:07	Winter starts: last day of the week (Sunday)	55:01 to 55:07	Monday to Sunday

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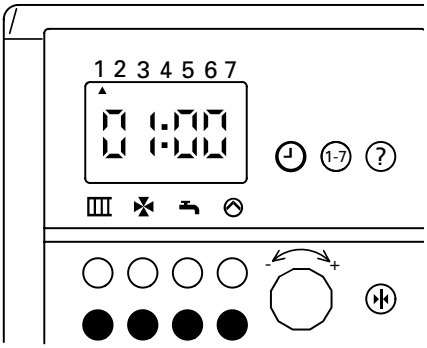
Calling up coding level 2

Please note:
For systems with wall mounting fixtures, the programming unit must be plugged into the control unit, if coding is to be carried out at coding level 2.
For a summary of the coding addresses of coding level 2, see page 78.



1. **Calling up coding level 1**
   Simultaneously press the red key "🚿" and the blue key "✠". Hold the keys down, until "01:00" is displayed for approx. 5 seconds.

2. **Calling up coding level 2,**
   Simultaneously press the red key "⏲" and the blue key "▥". Hold both keys down until after approx. 5 seconds, the display changes (e.g. to "o:000").

3. **Selecting the coding address**
   Press key "🕘" and turn the rotary selector "-⟲+" clockwise, until the required coding address is displayed.

4. **Changing the coding address**
   Press key "**1-7**" and turn the rotary selector "-⟲+" until the value of the selected coding address appears.

5. **Terminating coding**
   Press the red key "▥".

5692 486 GB

Summary coding level 2

For a sequence of steps to call up coding level 2, see page 77.

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Boiler			
038:040	Minimum flow temp. in heating mode	038:020 to 038:127	
042:075	Maximum boiler water temp. in heating mode	042:020 to 042:127	Max. possible boiler temperature 82 °C
102:075	Set boiler water temperature for external demand 75 °C	102:000 to 102:127	Setting range of the set boiler water temperature 0 to 127 °C (max. possible boiler water temperature 82 °C)
108:000	Signal external blocking enabled: see the following table	108:001 to 108:007	Signal external blocking enabled: see the following table

Modification types – coding address 108 "External blocking"

Coding	Heating circuit pump	Heating circuit with mixer (extension kit)		Circulation pump for DHW cylinder loading	Burner
		Heating circuit pump	Mixer		
108:000	×	×	×	×	Blocked
108:001	OFF	OFF	Closed	OFF	Blocked
108:002	×	×	×	OFF	Blocked
108:003	×	OFF	Closed	×	Blocked
108:004	OFF	×	×	×	Blocked
108:005	OFF	×	×	OFF	Blocked
108:006	OFF	×	×	×	Blocked
108:007	OFF	OFF	Closed	×	Blocked

× = in a normal control function

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Summary coding level 2 (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Boiler (cont.)			
125:000	Signal external demand activated: see the following table	125:001 to 125:011	Signal external demand activated: see the following table

Modification types coding address 125 "External demand"

Coding	Heating circuit pump	Heating circuit with mixer (extension kit)		Circulation pump for DHW cylinder loading	Boiler water temperature
		Heating circuit pump	Mixer		
125:000	ON	OFF	Closed	OFF	Will be held at the set value acc. to coding address "102"
125:001	OFF	OFF	Closed	OFF	
125:002	×	OFF	Closed	OFF	
125:003	OFF	×	×	OFF	
125:004	ON	×	×	OFF	
125:005	×	×	×	OFF	
125:006	OFF	OFF	Closed	×	
125:007	ON	OFF	Closed	×	
125:008	×	OFF	Closed	×	
125:009	OFF	×	×	×	
125:010	ON	×	×	×	
125:011	×	×	×	×	

× = in a normal control function

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Summary coding level 2 (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Heating circuit pump			
044:020	Minimum heating circuit pump speed; approx. 1100 rpm	044:001 to 044:100*1	Lowest value for lower heating circuit pump speed; approx. 700 rpm Highest value for lower heating circuit pump speed; approx. 2700 rpm
045:065	Highest heating circuit pump speed; approx. 1750 rpm	045:001 to 045:100*1	Lowest value for upper heating circuit pump speed; approx. 700 rpm Highest value for upper heating circuit pump speed; approx. 2700 rpm
046:045	Heating circuit pump speed for reduced mode; approx. 1200 rpm	046:001 to 046:100*1	Lowest value for heating circuit pump speed in reduced mode; approx. 700 rpm Highest value for heating circuit pump speed in reduced mode; approx. 2700 rpm
109:098	Highest value for circulation pump speed during DHW heating	109:001 to 109:100*1	Lowest value for circulation pump speed during DHW heating Highest value for circulation pump speed during DHW heating

*1 *Each step represents approx. 20 rpm.*

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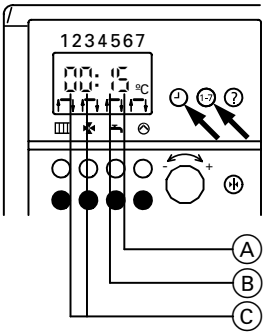
Summary coding level 2 (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
DHW cylinder			
100:020*1	Differential temperature between the set boiler water temperature and the set DHW cylinder temperature during DHW heating	100:010 to 100:050	Differential temperature setting range 10 to 50 °C
107:060	Temperature supplementary function DHW heating (DHW heats quickly to 60 °C)	107:061 to 107:090	Setting range between 61 and 90 °C (max. possible boiler water temperature 82 °C)

**1Only effective with coding 14:00.*

Please note:
For all non-listed coding addresses "255" will be displayed.

Brief scan



Simultaneously press keys "⏲" and "**1-7**".

Meaning of the display:
Ⓐ set DHW plan in coding address 03*1
Ⓑ set heating plan in coding address 04*1

Ⓒ KM BUS users:

02 with burner control unit
(12) plus Vitocom 100

03 with burner control unit and variable speed heating circuit pump
(13) plus Vitocom 100

06 with burner control unit and extension kit for one heating circuit with mixer*2
(16) plus Vitocom 100

07 with burner control unit extension kit for one heating circuit with mixer*2 and variable speed heating circuit pump
(17) plus Vitocom 100

*1*For systems with wall mounting fixture, plug the programming unit into the control unit.*
*2*The system only recognises the extension kit if it is connected via the KM BUS.*

Not if connected via the 2-wire Viessmann BUS.

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Scanning temperatures

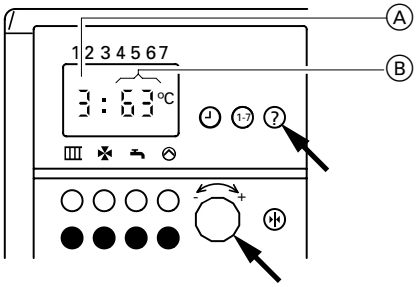
The programming unit enables the temperatures of connected sensors to be scanned as set and actual values.

Scanning actual temperatures

1. Select the ID of the respective temperature from the table.

ID	Meaning of the display	Actual temperature in °C (display example)
1*1	Outside temperature	1: 8 °C
2	Low loss header temperature	2: 45 °C
3	Boiler water temperature	3: 63 °C
4*2	Flow temperature	4: 44 °C
5*3	DHW cylinder temperature	5: 50 °C
7*4	Room temperature	7: 20 °C

*1 *The display value takes weather conditions into consideration, such as wind, solar radiation and the wall temperature of the building.*
*2 *Only in connection with the extension kit for heating circuits with mixer.*
*3 *Only if the sensor is connected or activated.*
*4 *Only if the programming unit is set into the wall mounting fixture as room temperature dependent remote control unit.*



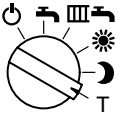
2. Press key "**?**" and turn the rotary selector "-↔+" anticlockwise or clockwise, until the ID Ⓐ for the corresponding temperature is shown on the display.
At the same time, the current temperature Ⓑ will be displayed.

5692 486 GB

Scanning temperatures (cont.)

Scanning set temperatures

Please note:
For systems with wall-mounting fixture, the programming unit must be plugged into the control unit to be able to scan set temperatures.

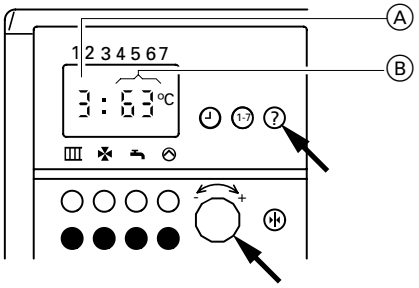


1. Set the heating program selector switch to "**T**".
   The LEDs "Reduced room temperature" and "DHW heating" flash in the display.

2. Select the ID of the respective temperature from the table.

ID	Meaning of the display	Set temperature in °C (display example)
3	Set boiler water temperature	3: 65 °C
4*1	Set flow temperature	4: 44 °C
5*2	Set DHW water temperature	5: 55 °C

*1 *Only in connection with the extension kit for heating circuits with mixer.*
*2 *Only if the sensor is connected or activated.*



3. Press key "**?**" and turn the rotary selector "- +" anticlockwise or clockwise, until the ID Ⓐ for the corresponding temperature is shown on the display.
   At the same time, the current temperature Ⓑ will be displayed.

5692 486 GB

Function description

Heating mode
The control unit determines a set boiler water temperature subject to the outside temperature or the room temperature (if a room temperature-dependent remote control is connected) and the slope/level of the heating curve.
The determined set boiler water temperature is then transferred to the burner control unit.
From the set and actual boiler water temperatures, the burner control unit calculates the modulation level and controls the burner accordingly.
The burner control unit limits the boiler water temperature:
- by the limit thermostat to 84 °C,
- by the electronic limit thermostat to 82 °C.

The thermocouple in the safety chain locks out the burner control unit at 100 °C boiler water temperature.

Instantaneous water heating with gas-fired combination boilers
If the flow switch recognises that water is drawn off (> 3 l), the burner and circulation pump are switched ON, and the three-way valve changes over to DHW heating. The burner modulates to reach the DHW draw-off temperature and is limited on the boiler side of the system by the limit thermostat (82 °C).
If comfort mode has been activated, the plate-type heat exchanger is held to a standby temperature of "42 °C ON" and "46 °C OFF".

Instantaneous water heating with gas-fired boilers
The DHW heating will be activated if the DHW cylinder temperature falls 2.5 K below the set DHW cylinder temperature.
The burner and the cylinder loading pump are switched ON.
In the delivered condition, the set boiler water temperature lies 20 K above the set DHW cylinder temperature. If the actual cylinder temperature is 2.5 K above the set cylinder temperature, the burner will be switched OFF and the cylinder loading pump run-on will be activated.

Supplementary DHW heating
The supplementary heating facility will be activated if a control period of 10 minutes (e.g. 22:10 to 22:20 hrs) has been selected. This period must lie outside the control range for normal DHW heating to enable the control unit to recognise the signal.
You can set the temperature value for supplementary heating in coding address "0A7".

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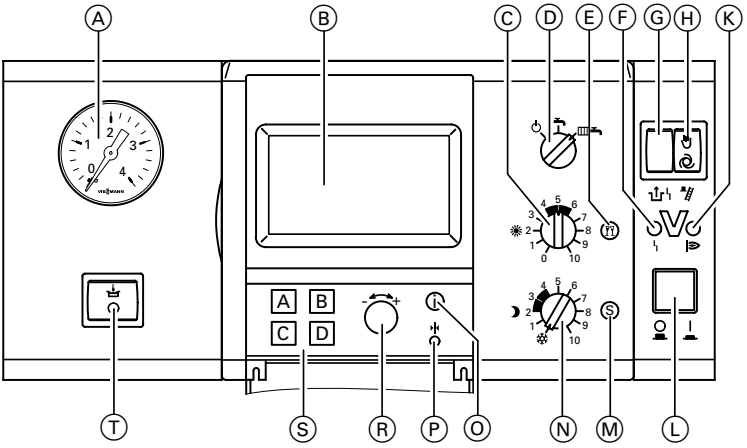
Function description (cont.)



Ⓐ Gauge
Ⓑ Display
Ⓒ ☼ Rotary selector
"Standard room temperature"
Ⓓ Heating program selector switch
⏻ Standby mode
Only DHW
Heating and DHW
Ⓔ Party key
Ⓕ Burner fault display
Ⓖ Burner fault reset
Ⓗ Emissions test switch
Ⓚ Burner operation display
Ⓛ System ON/OFF switch
Ⓜ Economy key
Ⓝ ☽ Rotary selector
"Reduced room temperature"
Ⓞ Information key
Ⓟ Key "Base settings"
Ⓡ - + Rotary selector
Ⓢ Selection keys
Ⓣ Comfort function switch
(only for gas-fired combination boilers)

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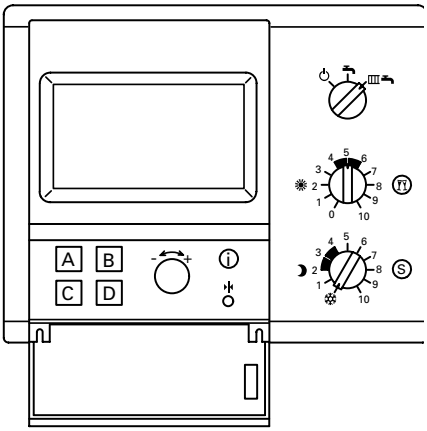
Calling up coding address



Open flap:

Menu item	Key
→ SYSTEM	"**D**"
→ INSTALLER SETUP	"**C**"
→ CODE PLEASE:	"**B**-**C**-**C**-**B**"
→ CODE 1	"**B**"
or	
CODE 2	"**C**"

All settings are implemented in the menu "Installer setup", where you will find "Code 1" (the most important coding addresses in plain text) and "Code 2" (all coding addresses).

Select the required coding address by pressing "**A**" (CONTINUE)
or "**B**" (BACK).
Change the relevant coding address with the rotary selector "-↷+" (CHANGE).
Confirm the change by pressing "**D**" (the changeover will then be saved).

Any changes made and confirmed in code 1 will be automatically adopted into code 2 and vice-versa.

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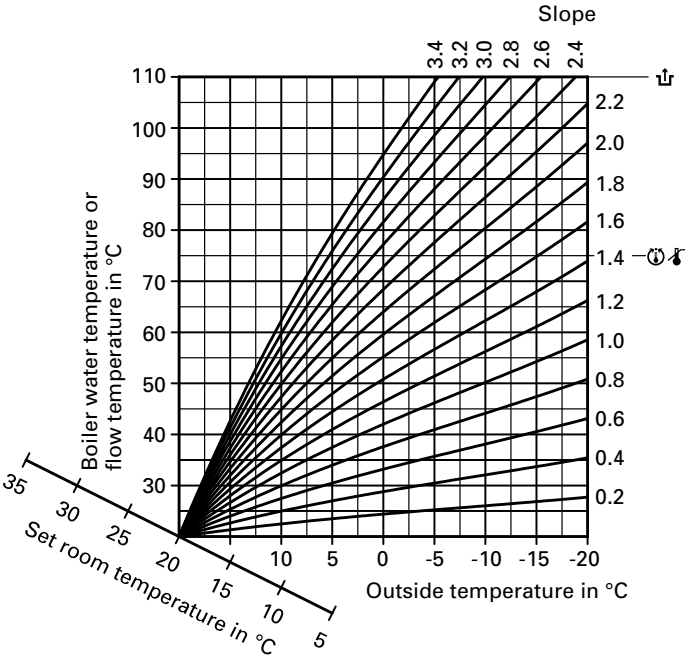
Heating curves

The heating curves illustrate the relationship between the outside temperature and the boiler water or the 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.
If different room temperatures are set, the curves will be adjusted parallel to the set room temperature axis.

Settings in the as delivered condition:

- *Slope = 1.4*
- *Level = 0*



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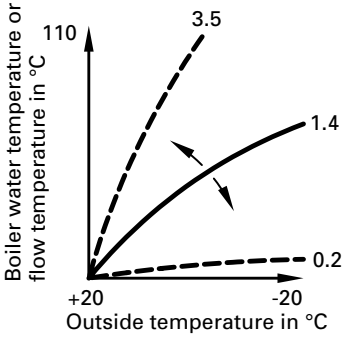
Adjusting heating curves

Please note:
*Heating circuit A = Heating circuit **without** mixer*
*Heating circuit B = Heating circuit **with** mixer*

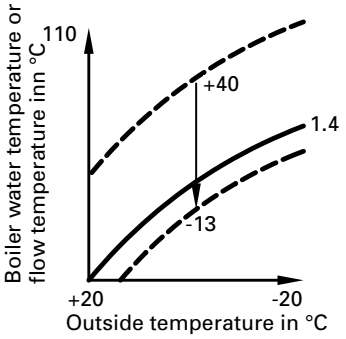
Heating curve slope



After opening the programming unit flap, follow the following menu path:

Menu item	Key
→ HEATING CIRCUIT A	"**A**"
or	
HEATING CIRCUIT B	"**B**"
→ HEATING CURVE	"**B**"
→ CHANGE	"**A**"

Heating curve level



After opening the programming unit flap, follow the following menu path:

→ HEATING CIRCUIT A	"**A**"
or	
HEATING CIRCUIT B	"**B**"
→ HEATING CURVE	"**B**"
→ CHANGE	2 × "**A**"

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Summary of coding addresses

⚠ ***Safety instruction***
Coding addresses that are not described here must not be changed.

For a sequence of steps to call up the coding addresses, see page 87.

Coding in the delivered condition Address:value	**Function mode**	**Coding change Address:value**	**Possible change**
Boiler			
011:000	External demand or external heating program changeover disabled	011:001	External demand or external heating program changeover enabled
027:000	External heating program changeover	027:001	External request
038:020	Minimum flow temp. in heating mode	038:020 to 038:127	
042:075	Maximum boiler water temp. in heating mode	042:020 to 042:127	Max. possible boiler water temp. 82 °C
099:000	Optional connection DHW circulation pump	099:001	Output signal DHW heating active
0A2:075	Set boiler water temperature for external demand 75 °C	0A2:000 to 0A2:127	Setting range of the set boiler water temp. 0 to 127 °C (max. possible boiler water temp. 82 °C)

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Boiler (cont.)			
0A8:000	Signal external blocking enabled: see the following table	0A8:001 to 0A8:007	Signal external blocking enabled: see the following table

Modification options – coding address 0A8 "External blocking"

Coding	Heating circuit pump	Heating circuit with mixer (extension kit)		Circulation pump for DHW cylinder loading	Burner
		Heating circuit pump	Mixer		
0A8:000	×	×	×	×	Blocked
0A8:001	OFF	OFF	Closed	OFF	Blocked
0A8:002	×	×	×	OFF	Blocked
0A8:003	×	OFF	Closed	×	Blocked
0A8:004	OFF	×	×	×	Blocked
0A8:005	OFF	×	×	OFF	Blocked
0A8:006	OFF	×	×	×	Blocked
0A8:007	OFF	OFF	Closed	×	Blocked

× = in a normal control function

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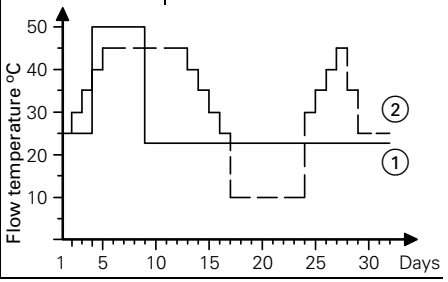
Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Boiler (cont.)			
0B2:___	Fault memory		
0B3:___	Fault memory		
0B8:000	Gas-fired boiler: No DHW heating	0B8:001	Cylinder temperature control
		0B8:002*1	Cylinder temperature control (optimised)
0B8:005	Gas-fired combination boiler: DHW heating with integral heat exchanger		Screed drying acc. to two optional temperature-time profiles. Observe DIN 4725-2.
		0B8:014	Screed drying acc. to temperature profile ① (DIN 4725)*2
		0B8:015	Screed drying acc. to temperature profile ② (ZV parquet and underfloor system)*2



*1 *Automatic adjustment, if a DHW cylinder temperature sensor is connected; can be manually changed to "001".*

*2 *After this function is completed, the system automatically changes over to the operating mode "Heating and DHW".*

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Boiler (cont.)			
0C5:000	Signal external demand activated: see the following table	0C5:001 to 0C5:011	Signal external demand activated: see the following table

Modification options coding address 0C5 "External demand"

Coding	Heating circuit pump	Heating circuit with mixer (extension kit)		Circulation pump for DHW cylinder loading	Boiler water temperature
		Heating circuit pump	Mixer		
0C5:000	ON	OFF	Closed	OFF	Will be held at the set value acc. to coding address "0A2"
0C5:001	OFF	OFF	Closed	OFF	
0C5:002	×	OFF	Closed	OFF	
0C5:003	OFF	×	×	OFF	
0C5:004	ON	×	×	OFF	
0C5:005	×	×	×	OFF	
0C5:006	OFF	OFF	Closed	×	
0C5:007	ON	OFF	Closed	×	
0C5:008	×	OFF	Closed	×	
0C5:009	OFF	×	×	×	
0C5:010	ON	×	×	×	
0C5:011	×	×	×	×	

× = in a normal control function

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Boiler (cont.)			
0C8:001	External heating program changeover Contact opened: Central heating ON/ DHW heating ON (acc. to time program). Contact closed: Central heating OFF/ DHW heating off.	0C8:000	External heating program changeover Contact opened: Central heating on/ DHW heating ON (acc. to time program). Contact closed: constant central heating ON/DHW ON (independent of set time program).
Heating circuits			
000:000	One heating circuit without mixer, without DHW heating	000:001*1 000:002*2 000:003*1, 2	One heating circuit without mixer, with DHW heating One heating circuit without mixer, one heating circuit with mixer, without DHW heating One heating circuit without mixer, one heating circuit with mixer and with DHW heating
014:000*3	Party key "⁋" affects heating circuit B	014:001*3	Party key "⁋" affects heating circuit A and B
DHW cylinder			
003:001	With priority switching to heating circuit pump(s)	003:000	Without priority switching to heating circuit pump(s)

**1 The coding for systems with DHW heating is automatically recognised.*

**2 These codings also apply to one heating circuit without mixer and one heating circuit with mixer.*

**3 Only for heating system designs "000:002" and "000:003" (heating systems with one heating circuit with mixer).*

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
DHW cylinder (cont.)			
007:000	Setting range for DHW temperature 10 to 60 °C	007:001	Setting range for DHW temp. 10 to 70 °C **Warning** Observe the max. permissible DHW temperature.
017:001	The circulation pump starts immediately	017:000	The circulation pump will be switched on subject to the boiler temperature
018:000	Circulation pump with run-on	018:001	Circulation pump without run-on
028:000	During DHW heating, the boiler water temp. is a max. of 20 K higher than the set DHW cylinder temperature	028:001	During DHW heating, the boiler water temp. is limited by the high limit thermostat to 78 °C.
047:___	Actual temperature at the DHW cylinder temp. sensor [4] in °C (no adjustment possible)		
0A0:020*1	Differential temperature between the set boiler water temperature and the set DHW cylinder temperature during DHW heating	0A0:010 to 0A0:050	Differential temperature setting range 10 to 50 °C
0A7:060	Set value for the "Auxiliary function for DHW loading" (DHW heats quickly to 60 °C)	0A7:061 to 0A7:070	Setting range between 61 and 70 °C

*1 *Only effective with coding 028:000.*

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Heating circuit pump			
005:001	With heating circuit pump logic function	005:000	Without heating circuit pump logic function
006:001	Heating circuit pump speed for reduced range acc. to coding address "044:___"	006:000	Heating circuit pump speed for reduced range acc. to coding address "046:___"
013:001	With variable speed heating circuit pump (automatic recognition)	013:000	Stepped heating circuit pump (e.g. transfer mode for service)
044:020	Minimum heating circuit pump speed; approx. 1100 rpm	044:001 to 044:100*1	Lowest value for lower heating circuit pump speed; approx. 700 rpm Highest value for lower heating circuit pump speed; approx. 2700 rpm
045:065	Highest heating circuit pump speed; approx. 1750 rpm	045:001 to 045:100*1	Lowest value for upper heating circuit pump speed; approx. 700 rpm Highest value for upper heating circuit pump speed; approx. 2700 rpm
046:045	Heating circuit pump speed for reduced mode; approx. 1200 rpm	046:001 to 046:100*1	Lowest value for heating circuit pump speed in reduced mode; approx. 700 rpm Highest value for heating circuit pump speed in reduced mode; approx. 2700 rpm

*1 *Each step represents approx. 20 rpm.*

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Heating circuit pump (cont.)			
0A9:098	Highest value for circulation pump speed during DHW heating	0A9:001 to 0A9:100*1	Lowest value for circulation pump speed during DHW heating Highest value for circulation pump speed during DHW heating
Programming unit or remote control unit			
009:000	Boiler water temperature display	009:001	Display of outside temperature
019:000	Weather-compensated mode (WS function) for all connected heating circuits	019:001*2	■ For systems with one heating circuit without mixer **or** one heating circuit with mixer: Operation with room temperature hook-up (RS function) ■ For systems with one heating circuit without mixer **and** one heating circuit with mixer: Weather-compensated mode (WS function) for heating circuit without mixer and operation with room temp. hook-up (RS function) for heating circuit with mixer

*1 *Each step represents approx. 20 rpm.*
*2 *This conversion is only appropriate if the programming unit is set into the wall mounting fixture.*

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Programming unit or remote control unit (cont.)			
019:000 (cont.)	Weather-compensated mode (WS-function) for all connected heating circuits	019:002*1	■ For systems with one heating circuit without mixer **or** one heating circuit with mixer: Weather-compensated mode (WS function) in heating mode and operation of the room temperature-dependent control (RS-function) in setback mode ■ For systems with one heating circuit without mixer **and** one heating circuit with mixer: Weather-compensated mode (WS function) for heating circuit without mixer and weather-compensated mode in heating mode and operation with room temp. hook-up in setback mode (WS/RS function) for heating circuit with mixer
020:000	Without WS or RS remote control unit	020:001	With WS or RS remote control unit*2
049:___	Hours run "hundreds" 3rd digit from the left	049:000	Resetting the hours run
050:___	Hours run "units" 3rd digit and "tens" 2nd digit from the left	050:000	Resetting the hours run

**2This conversion is only appropriate if the programming unit is set into the wall mounting fixture.*
**2The address is automatically set and must be manually reset.*

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Summary of coding addresses (cont.)

Coding in the delivered condition Address:value	Function mode	Coding change Address:value	Possible change
Programming unit or remote control unit (cont.)			
0D5:000	Standard display with closed flap	0D5:001	Large display of time and outside temperature with closed flap
0D6:000	Temperature display in "°C" (° Celsius)	0D6:001	Temperature display in "°F" (° Fahrenheit)
Changeover between summer and winter			
0C7:003	Automatic (radio clock module will be automatically recognised)	0C7:000 0C7:001 0C7:002	S/W. manual changeover/ change of date blocked S/W. automatic changeover S/W. manual changeover/ date change enabled
0C9:003	Summer starts: March	0C9:001 to 0C9:012	January to December
0D0:005	Summer starts: last week of the month	0D0:001 to 0D0:005	Week 1 to week 5 of the selected month
0D1:007	Summer starts: last day of the week (Sunday)	0D1:001 to 0D1:007	Monday to Sunday
0D2:010	Winter starts: October	0D2:001 to 0D2:012	January to December
0D3:005	Winter starts: last week of the month	0D3:001 to 0D3:005	Week 1 to week 5 of the selected month
0D4:007	Winter starts: last day of the week (Sunday)	0D4:001 to 0D4:007	Monday to Sunday

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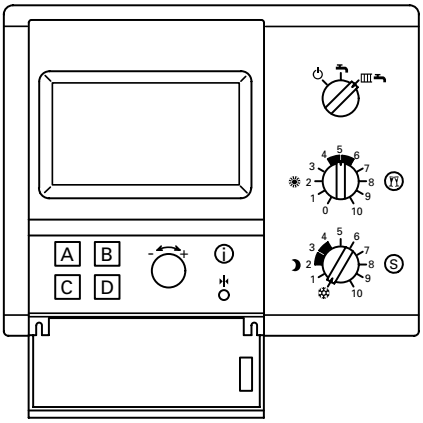
Brief scan



Calling up brief scan 1

Open cover:

Menu item	Key
→ SYSTEM	"**D**"
→ OPERATING STATE	"**B**"
→ CONTINUE	"**A**"
	until "Brief scan 1" appears.

The figures representing the 3rd and 4th digit from the left (e.g. __02__) have the following meaning:

02 with burner control unit
(12) plus Vitocom 100

03 with burner control unit and variable speed heating circuit pump
(13) plus Vitocom 100

06 with burner control unit and extension kit for one heating circuit with mixer*1
(16) plus Vitocom 100

07 with burner control unit extension kit for one heating circuit with mixer*1 and variable speed heating circuit pump
(17) plus Vitocom 100

*1 *Recognition only follows if the extension kit has been connected via KM-BUS.*
Not if connected via the 2-wire Viessmann BUS.

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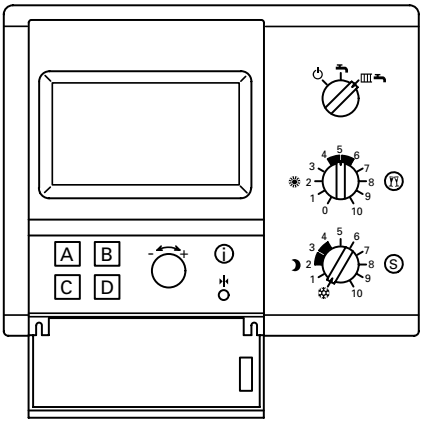
Scanning temperatures



The following set and actual values can be scanned in the display of the Comfortrol programming unit:

- Outside temperature
- Boiler water temperature
- Flow temperature of the extension kit for the heating circuit with mixer
- Room temperature (if the Comfortrol programming unit together with the wall mounting fixture is used as remote control).

Open cover:

Menu item	Key
→ HEATING CIRCUIT A or	"**A**"
HEATING CIRCUIT B or	"**B**"
SYSTEM	"**D**"
→ OPERATING STATE	"**C**" or "**B**"
→ CONTINUE	"**A**"

- DHW temperature

Open cover:

Menu item	Key
→ DHW	"**C**"
→ DHW CYLINDER	"**A**"
→ OPERATING STATE	"**C**"

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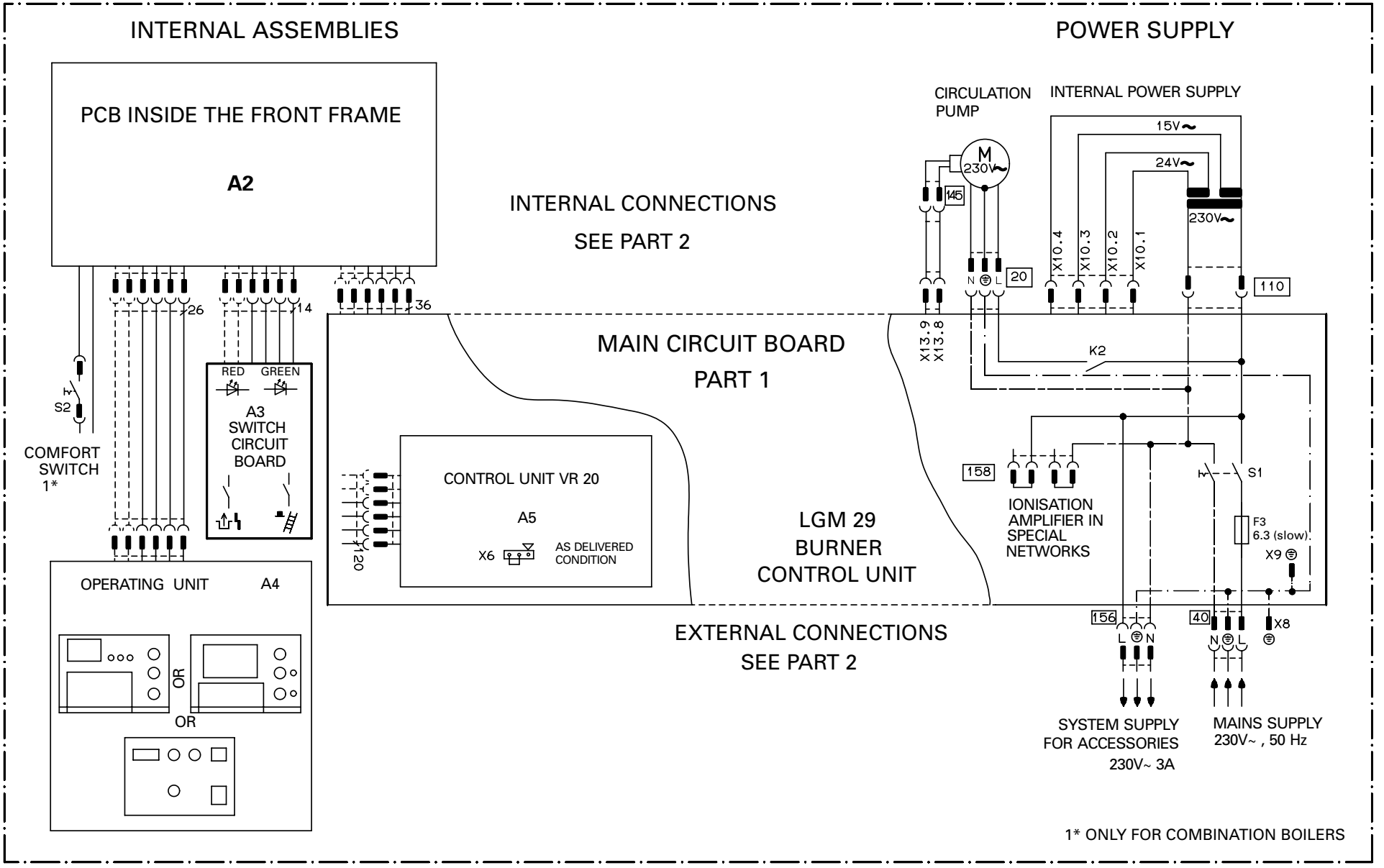
Control unit for weather-compensated mode with Comfortrol prog. unit

Connection and wiring diagram – power supply



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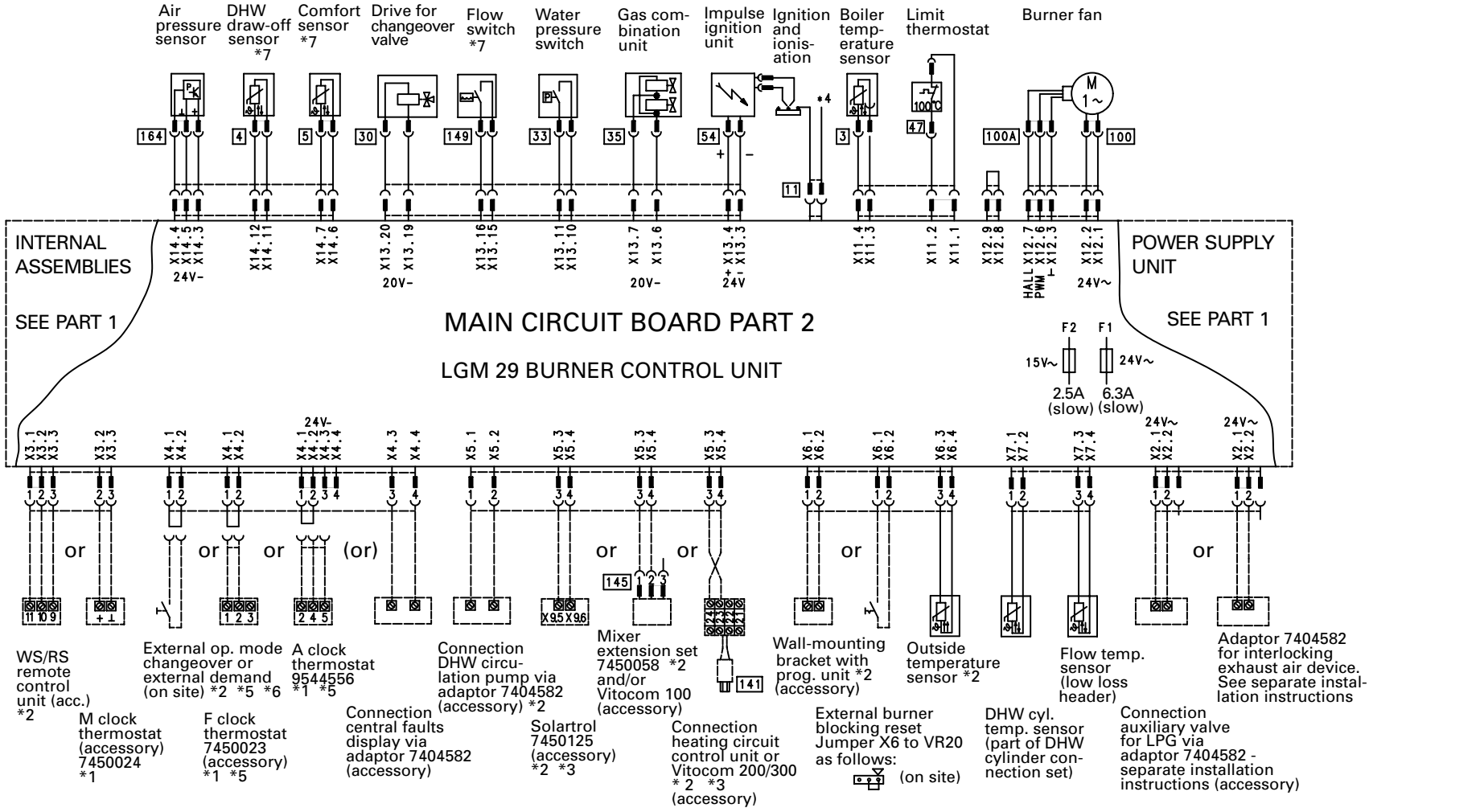
Connection and wiring diagram – operating components



For the internal connections, plug contacts are incrementally counted from right to left.

Only one function/accessory must be allocated to any one external connection.

*1 Only for constant temperature mode; only one clock thermostat may be connected
*2 Only for weather-compensated mode
*3 Communication module required (accessory)
*4 Internal reference potential
*5 For connection: Remove jumper X4.1 - X4.2
*6 Observe coding address settings
*7 Only for combination boilers

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Parts list

When ordering spare parts:
Quote the type and serial no. (see type plate) and the item no. of the required part (as per parts list). Obtain common parts from your local supplier.

Parts

005 Gasket pack
007 Profiled gasket (l.h. and r.h. side)
012 Wall mounting frame
016 Profiled gasket (top and bottom)
025 Hinged cover
028 Front panel (incl. items 025 and 059)
030 Cover plate
034 Burner gasket
035 Burner
036 Ignition unit
039 Burner gauze assembly
040 Radial fan
041 Differential pressure sensor
042 Gas valve
044 Gas restrictor for natural gas E
045 Gas restrictor for natural gas LL
046 Gas restrictor for LPG P
053 Test aperture plug
055 Boiler adaptor
059 Label pack

Parts not shown

019 Special grease
021 Heat transfer paste
026 Maintenance set
056 Operating instructions for constant temperature mode
057 Operating instructions for weather-compensated mode with standard programming unit
058 Operating instructions for weather-compensated mode with Comfortrol programming unit
070 Push plug
180 Installation instructions
181 Service instructions
183 Paint stick, pure white
184 Spray paint, pure white

Ⓐ Type plate
Ⓑ Control unit parts see page 114

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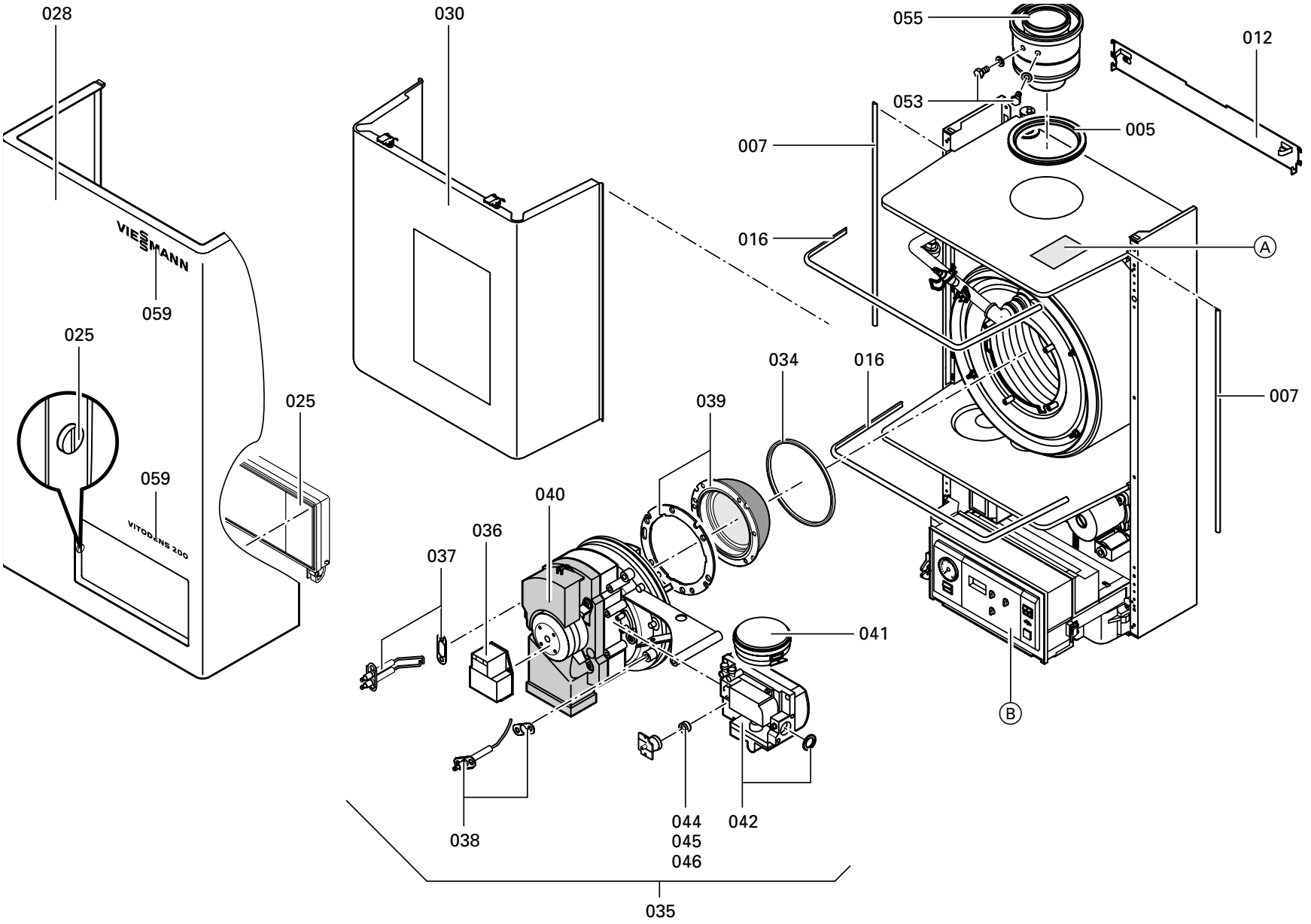
Parts list (cont.)



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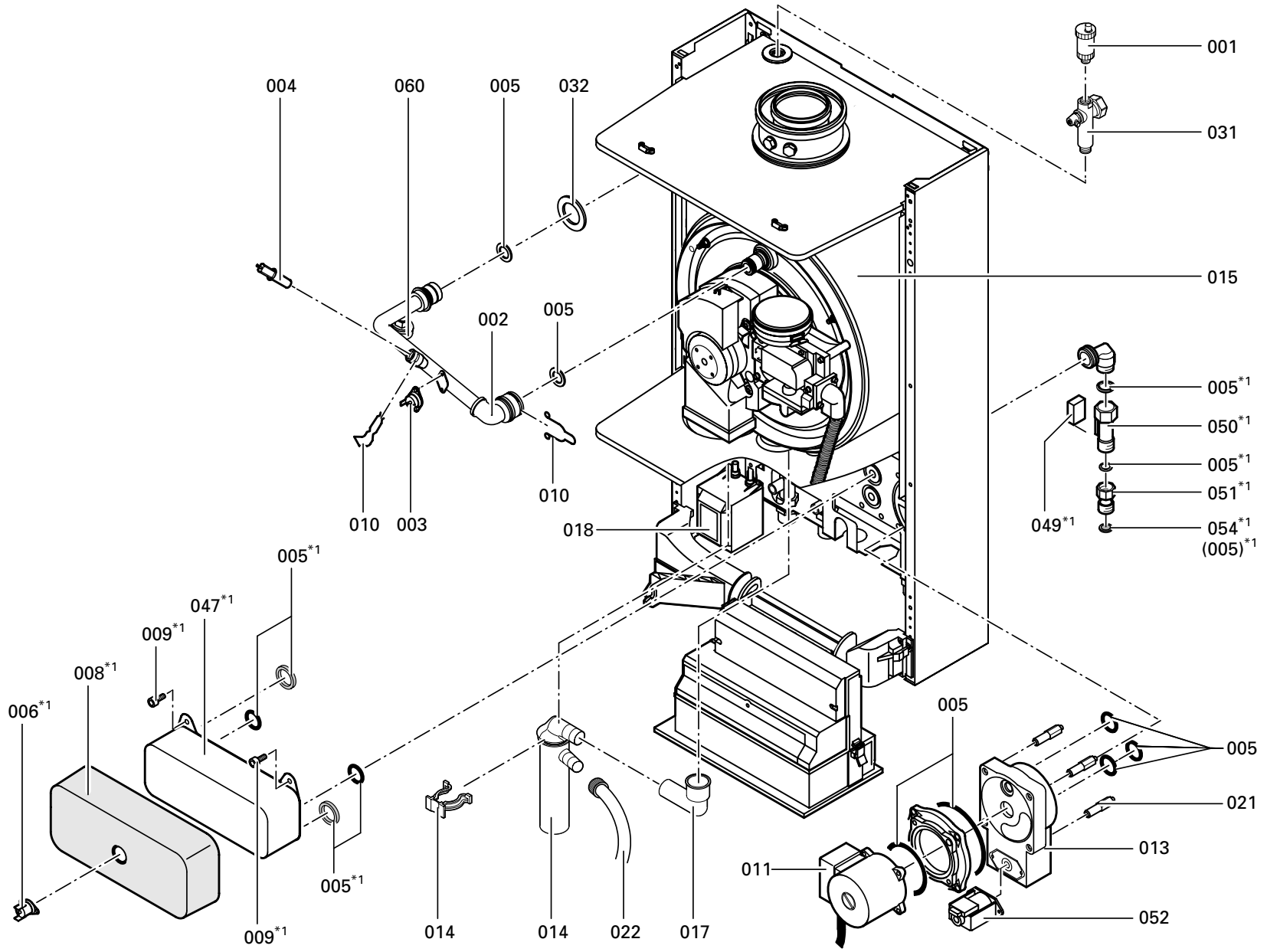
Parts list (cont.)



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Parts list (cont.)

Parts

001 Quick-acting air-vent valve
002 Heat exchanger/flow connecting pipe
003 Thermocouple 100 °C
004 Temperature sensor
005 Gasket pack
006 Temperature sensor*1
008 Thermal insulation – plate-type heat exchanger*1
009 Cheese-head screw*1
010 Holder spring pack
011 Pump motor
013 Changeover valve
014 Siphon
015 Heat exchanger*1
017 Siphon hose bend
018 Mains transformer
021 Grub screw M 6
022 Condensate hose
031 Extension for diaphragm expansion vessel
032 Gland pack
047 Plate-type heat exchanger*1
049 Reed contact*1
050 Flow switch*1
051 Cold water connection nipple*1
052 Electro-magnetic drive
054 Water strainer*1
060 Water pressure switch

Parts not shown
033 Plug-in connector holder
061 Overflow pipe

*1 *Only for serial no. 7170312 2 00101␣␣␣ and 7170314 2 00101␣␣␣.*

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Parts list (cont.)

Parts

029 Pressure gauge
048 Control unit cover
140 Hinged flap for standard programming unit*1
141 Programming module
142 Mounting plate
143 Cable gland cover
144 Connection module cover
145 Circuit board cover VR20
146 Connection module
147 Mounting bracket
148 Cable gland plug
149 Potentiometer lid
150 Cable entry strip
151 Rotary selectors for programming unit (3 pieces)*2
153 Rocker switch
154 Mains ON/OFF switch
156 Optolink circuit board
157 Adaptor circuit board
158 LGM29 burner control unit
159 VR20 circuit board
170 Rocker switch
171 Ribbon cable 26 pole
174 Fuse 6.3 amp (slow)
175 Standard programming unit*1
176 Programming unit*2
177 Comfortrol programming unit*1
179 Pressure gauge seat
200 Locking bracket
201 Outside temperature sensor*1
250 Control unit excl. programming unit (incl. items 142, 153, 154, 156, 157, 170 and 171)

Parts not shown

152 Female connector for control unit
160 Ionisation strapping plug
161 Cable harness "X11"
162 Cable harness "X12" /Ionisation/-Pe
163 Cable harness "X13"*3
164 Cable harness "X13"*4
165 Cable harness "X14"*3
166 Cable harness "X14"*4
178 Control unit pack

*1*Weather-compensated mode only.*
*2*Constant temperature mode only.*
*3*Only for serial no.*
7170312 2 00101␣␣␣ and
7170314 2 00101␣␣␣.
*4*Only for serial no*
7170309 2 00101␣␣␣,
7170310 2 00101␣␣␣,
7170311 2 00101␣␣␣,
7170313 2 00101␣␣␣,
7170315 2 00101␣␣␣ and
7170316 2 00101␣␣␣.

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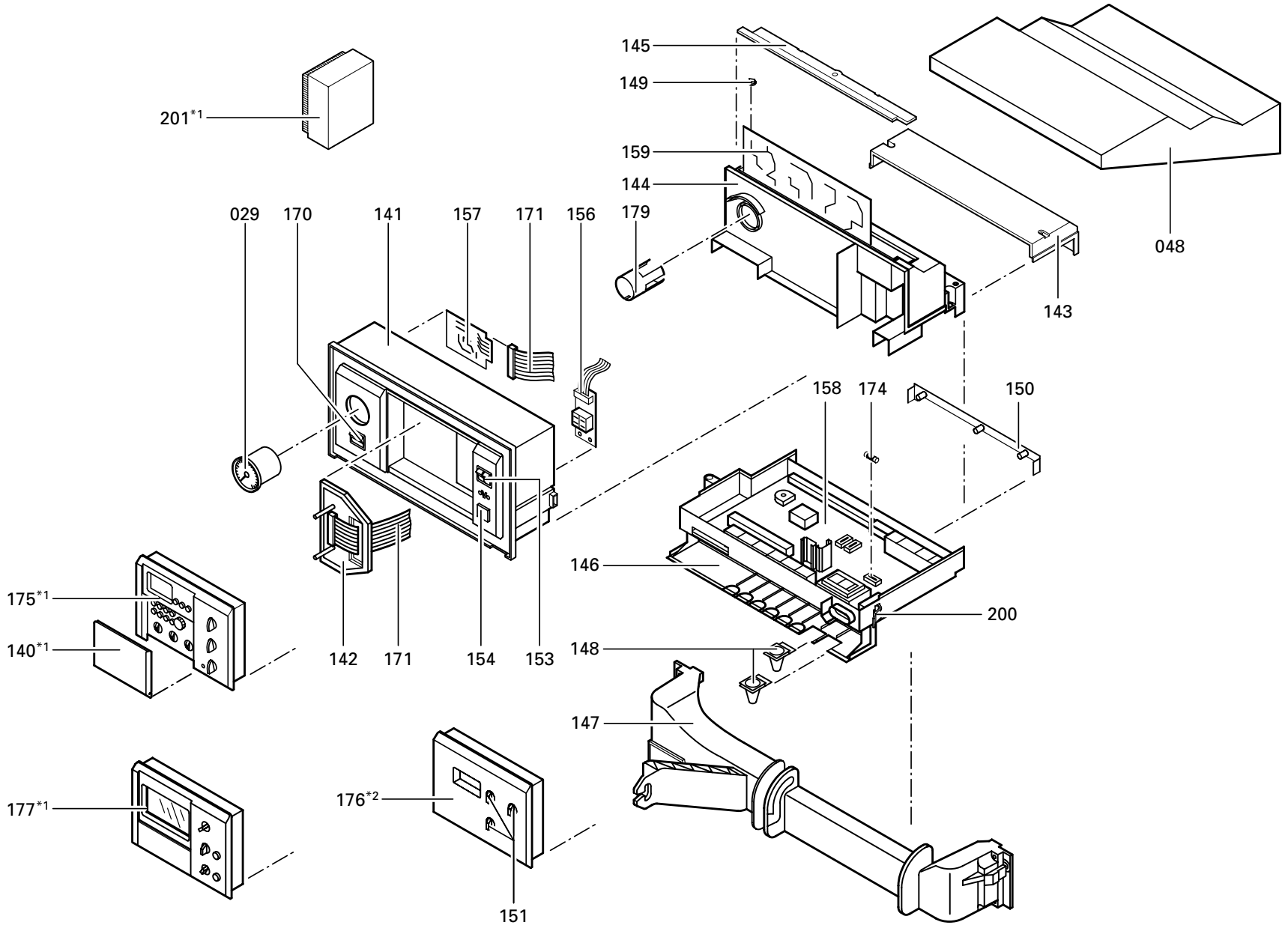
Parts list (cont.)



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Commissioning/service report

Setting and test values		Set value	Initial start-up
	Date:		
	By:		
Static pressure	*mbar*	max. 57.5 mbar	
Supply pressure (flow pressure)			
☐ for natural gas E	*mbar*	17.4-25 mbar	
☐ for natural gas LL	*mbar*	17.4-25 mbar	
☐ for LPG	*mbar*	42.5-57.7 mbar	
Tick gas type			
Carbon dioxide content CO_2			
■ at lower rated output	*% by vol.*		
■ at higher rated output	*% by vol.*		
Oxygen content O_2			
■ at lower rated output	*% by vol.*		
■ at higher rated output	*% by vol.*		
Carbon monoxide content CO			
■ at lower rated output	*ppm*		
■ at higher rated output	*ppm*		
Ionisation current	*µA*	min. 3 µA	

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Maint./service	**Maint./service**	**Maint./service**	**Maint./service**

Commissioning/service report (cont.)

Setting and test values		Set value	Maint./service
	Date:		
	By:		
Static pressure	*mbar*	max. 57.5 mbar	
Supply pressure (flow pressure)			
☐ for natural gas E	*mbar*	17.4-25 mbar	
☐ for natural gas LL	*mbar*	17.4-25 mbar	
☐ for LPG	*mbar*	42.5-57.7 mbar	
Tick gas type			
Carbon dioxide content CO_2			
■ at lower rated output	*% by vol.*		
■ at higher rated output	*% by vol.*		
Oxygen content O_2			
■ at lower rated output	*% by vol.*		
■ at higher rated output	*% by vol.*		
Carbon monoxide content CO			
■ at lower rated output	*ppm*		
■ at higher rated output	*ppm*		
Ionisation current	*µA*	min. 3 µA	

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Maint./service	**Maint./service**	**Maint./service**	**Maint./service**

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Commissioning/service report (cont.)

Setting and test values		Set value	Maint./service
	Date:		
	By:		
Static pressure	*mbar*	max. 57.5 mbar	
Supply pressure (flow pressure)			
☐ for natural gas E	*mbar*	17.4-25 mbar	
☐ for natural gas LL	*mbar*	17.4-25 mbar	
☐ for LPG	*mbar*	42.5-57.7 mbar	
Tick gas type			
Carbon dioxide content CO_2			
■ at lower rated output	*% by vol.*		
■ at higher rated output	*% by vol.*		
Oxygen content O_2			
■ at lower rated output	*% by vol.*		
■ at higher rated output	*% by vol.*		
Carbon monoxide content CO			
■ at lower rated output	*ppm*		
■ at higher rated output	*ppm*		
Ionisation current	*μA*	min. 3 μA	

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	Maint./service	Maint./service	Maint./service	Maint./service

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Specification

Rated voltage:	230 V~	Setting	
Rated frequency:	50 Hz	electronic	
Rated current:	2.5 A~	high limit thermostat	82 °C
Safety class:	I	Setting	
Protection:	IP X4 D acc. to EN 60529, ensure through design and installation	limit thermostat:	100 °C (fixed)
		Pre-fuse (mains) :	max. 16 amp
		Power consumption	
		■ Circulation pump:	max. 115 W
		■ Burner:	max. 60 W
		■ Control unit:	max. 10 VA

Permissible ambient temperature	
■ in use:	0 to +40 °C
■ in storage and in transport:	–20 to +65 °C

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Specification (cont.)

Gas-fired boiler, category I_{2ELL} (natural gas version) category II_{2ELL3P} (LPG version)					
Rated output range					
■ Central heating					
– T_V/T_R = 50/30 °C		kW	4.5 to 12.0	6.6 to 26.3	8.7 to 35.0
– T_V/T_R = 80/60 °C		kW	4 to 11	6 to 24	8 to 32
■ DHW heating		kW	4 to 16	6 to 24	8 to 32
Rated output range					
■ Central heating	kW		4.2 to 11.5	6.3 to 25.0	8.3 to 33.3
■ DHW heating	kW		4.2 to 16.7	6.3 to 25.0	8.3 to 33.3
Connection values[*1] relative to the max. output					
■ for central heating					
with gas	with H_{uB}				
natural gas E	9.45 kWh/m³ 34.01 MJ/m³	m³/h	1.22	2.65	3.52
natural gas LL	8.13 kWh/m³ 29.25 MJ/m³	m³/h	1.41	3.08	4.10
LPG	12.79 kWh/kg 46.04 MJ/kg	kg/h	0.89	1.94	2.59
■ for DHW heating					
with gas	with H_{uB}				
natural gas E	9.45 kWh/m³ 34.01 MJ/m³	m³/h	1.77	2.65	3.52
natural gas LL	8.13 kWh/m³ 29.25 MJ/m³	m³/h	2.05	3.08	4.10
LPG	12.79 kWh/kg 46.04 MJ/kg	kg/h	1.30	1.94	2.59
Product ID			CE-0085 AT 0355	CE-0085 AT 0355	CE-0085 AT 0355
Product characteristics (acc. to EnEV)					
Efficiency η at					
– 100% of rated output		%	96.3	96.3	96.5
– 30% of rated output		%	107.5	107.4	108.3
Standby losses $q_{B,70}$		%	1.5	0.7	0.5
Power consumption[*2] at					
– 100% of rated output		W	170	207	238
– 30% of rated output		W	47	69	79

*[*1] The connection values are only for reference (e.g. in the gas contract application) or to roughly check the supplementary volumetric settings.*
Because of the factory settings, the gas pressure must not be altered from these values.
Reference: 15 °C, 1013 mbar
*[*2] Standard characteristics*

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Gas restrictors

Boiler for	**Rated output range** (kW) ■ **Central heating** (T_V/T_R = 80/60 °C) ■ **DHW heating**	 4 to 11 4 to 16	 6 to 24 6 to 24	 8 to 32 8 to 32
Natural gas E	Gas restrictor ID with	E 16	E 24	E 32
Natural gas LL	Gas restrictor ID with	LL 16	LL 24	LL 32
LPG P	Gas restrictor ID with	P 16	P 24	P 32

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Declaration of conformity for Vitodens 200

We, Viessmann Werke GmbH&Co, D-35107 Allendorf, declare as sole responsible body, that the product with the type code

Vitodens 200

conforms to the following standards:	**This product is identified in accordance with the following guidelines:**
DIN 4702-6	73/ 23/EEC
EN 297	89/336/EEC
EN 483	90/396/EEC
EN 625	92/ 42/EEC
EN 677	
EN 50 165	
EN 60 335	**as follows:**
EN 61 000-3-2	
EN 61 000-3-3	CE-0085

Efficiency Guideline conformity via an appropriate body in accordance with EMVG article 10.2, certification number: E9 02 08 17 30.

This product meets the requirements of the guideline on efficiency (92/42/EEC) for: **Condensing boilers**

The **product characteristics determined** as system values for **Vitodens 200 as part of EC type testing acc. to the Efficiency Guideline** (see Specification table), can be utilised to assess the energy consumption of heating and ventilation equipment acc. to DIN V 4701-10, which is prescribed by the EnEV.

Manufacturer's certificate acc. to 1st BImSchV

We, Viessmann Werke GmbH&Co, D-35107 Allendorf, confirm that the following product meets the NO_x limits specified by the 1st BImSchV paragraph7 (2):

Vitodens 200

Allendorf, the 1st October 2002

Viessmann Werke GmbH&Co

pp. Manfred Sommer

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Keyword index

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Keyword index (cont.)

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