

# Service Instructions

for the service engineer

# VIESSMANN

## Vitodens 300

### Type WB3

Wall-mounted, gas-fired condensing boiler  
with built-in boiler control unit

Natural gas version

*See notes on applicability, page 2.*

Länderspez. angepaßt:

Korrektur gelesen:

gewünschte Stückzahl:

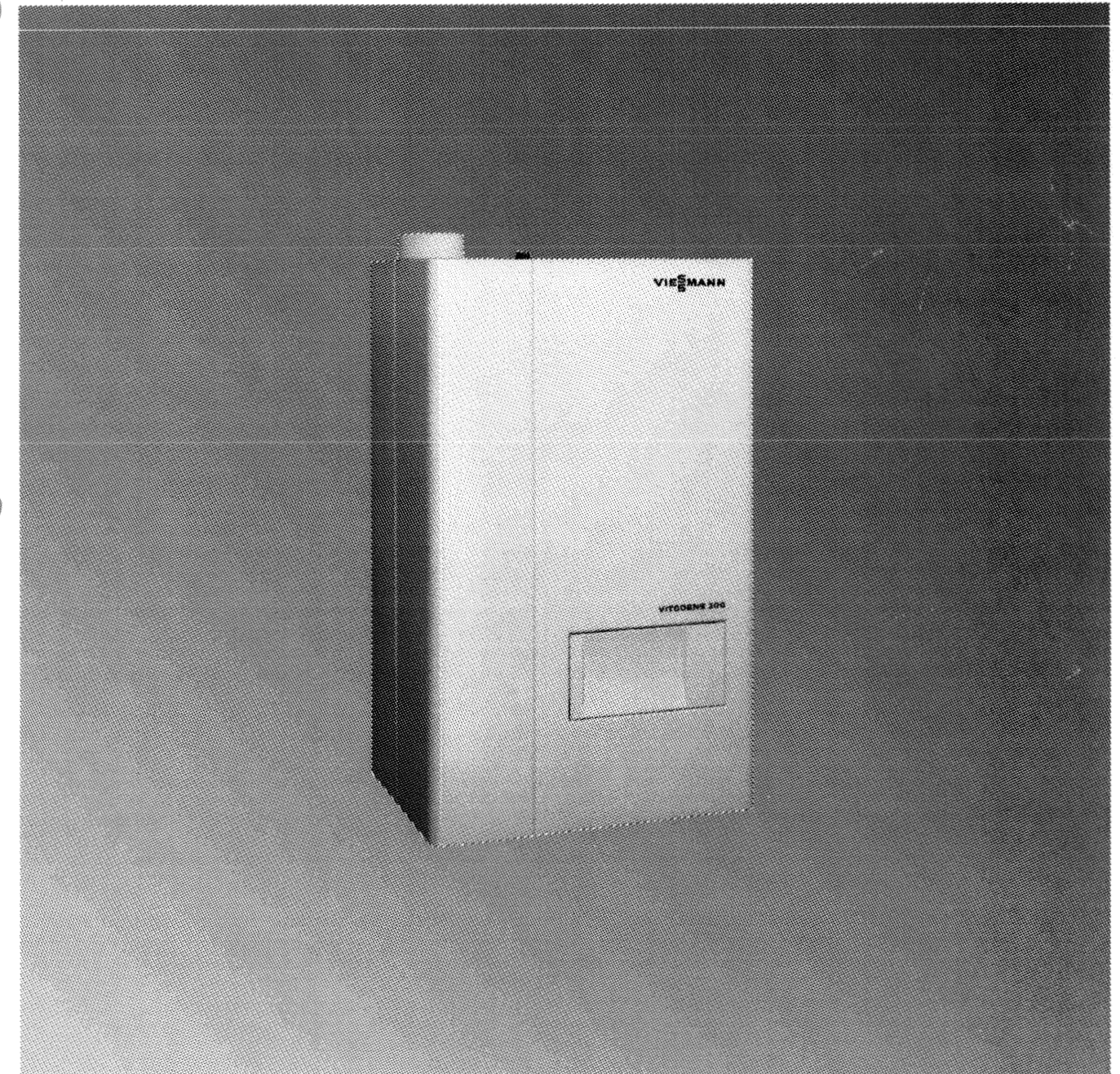
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 nochmals Korrekturabzug




## VITODENS 300



## General information

### Safety instructions

 Please follow these safety instructions closely to avoid the risk of injury to persons and damage to property.

#### Work on the equipment

Installation, initial start-up, maintenance and repairs must be carried out by a competent person (heating engineer/service contractor). (See EN 50 110, Part 1, and VDE 1000, Part 10. (GB): British Standards codes of practice).

Before work is undertaken on the equipment/heating system, the mains voltage must be switched off (e.g. at the separate fuse or mains electrical isolator switch) and measures taken to prevent it from being switched on again. Disconnection must be carried out by means of an isolating device which simultaneously isolates all non-earthed conductors with at least 3 mm contact separation.

On gas-fired systems, also close the gas shut-off valve and make secure to prevent unauthorised opening.

When carrying out work which involves opening up the control unit, no static discharge should be allowed to take place through the internal components.

#### Gas installation work

Gas installation work must be carried out by an approved installer (GB: registered with C.O.R.G.I.). The requirements for starting up gas-fired systems, as defined in TRGI'86/96, must be complied with (GB: British Standards codes of practice).

#### Repairs


It is not permitted to carry out repairs on parts which serve a safety function. Defective parts must be replaced with the appropriate Viessmann proprietary components or equivalent parts which have been approved by Viessmann.


#### Initial start-up


The initial start-up must be carried out by the installer of the system or a commissioning engineer designated by him; all readings should be recorded in a commissioning report.

#### Instruction of the system user

The installer of the system is required to give the system user the operating instructions and show him how to operate the system.

 **Safety instruction!**  
This heading in these instructions denotes information which must be observed to safeguard persons and property.

 **Caution!**  
This heading denotes actions which must be avoided in the interests of the safety of persons and property.

 This symbol indicates a reference to other instructions which must be observed.

### Notes on applicability

Rated output range for central heating

**8 to 15 (11) kW\***<sup>1</sup>

7148431 1 00001 ...

7148433 1 00001 ...

7148437 1 00001 ...

**8 to 18 kW**

7148438 1 00001 ...

7148440 1 00001 ...

**8 to 24 kW**

7148443 1 00001 ...

7148445 1 00001 ...

\*<sup>1</sup>The 8 to 15 kW Vitodens 300 can be converted to 8 to 11 kW for central heating (domestic hot water heating remains at 8 to 18 kW).

### Operating and service documents

1. Hand over all parts lists, operating and service instructions to the system user for safekeeping.

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**Procedure (overview)**

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**Steps**

**Initial start-up**

**1. Fill the heating system with water**

1. Open non-return valves (if installed).
2. Check the inlet pressure of the diaphragm expansion vessel.
3. Fill the heating system with water and bleed the air from the system.
4. Check the pressure of the system.
5. Reset non-return valves (if installed) to their operating position.

→ **Please note:**  
Before filling the heating system with water, check that all necessary check valves are installed.

→ See step 2 "Check diaphragm expansion vessel and pressure of system".

**Initial start-up**

**Maintenance**

**2. Check diaphragm expansion vessel and pressure of system**

Carry out the check with the system cold.

1. Drain the boiler/system and reduce the pressure until the manometer reading is "0".
2. If the inlet pressure of the diaphragm expansion vessel is lower than the static pressure of the system, add sufficient nitrogen until the inlet pressure is higher than the static pressure of the system.
3. Top up with water until the filling pressure is higher than the inlet pressure of the diaphragm expansion vessel with the system cold.
4. When starting up the system for the first time, mark this value as the minimum filling pressure on the manometer.

→ **Example**  
Static head ..... 10 m  
(distance between boiler and topmost heat exchange surface) corresponds to a static pressure of ..... 1 bar

→ With the system cold, the filling pressure must be approx. 0.2 bar higher than the static pressure.  
Max. operating pressure: ..... 3 bar.  
Min. operating pressure: ..... 1.2 bar.

Steps

Initial start-up

3. Check mains electrical connections

Check that the wire ends remaining after factory tests have been removed from connector [40].

**Voltage range**

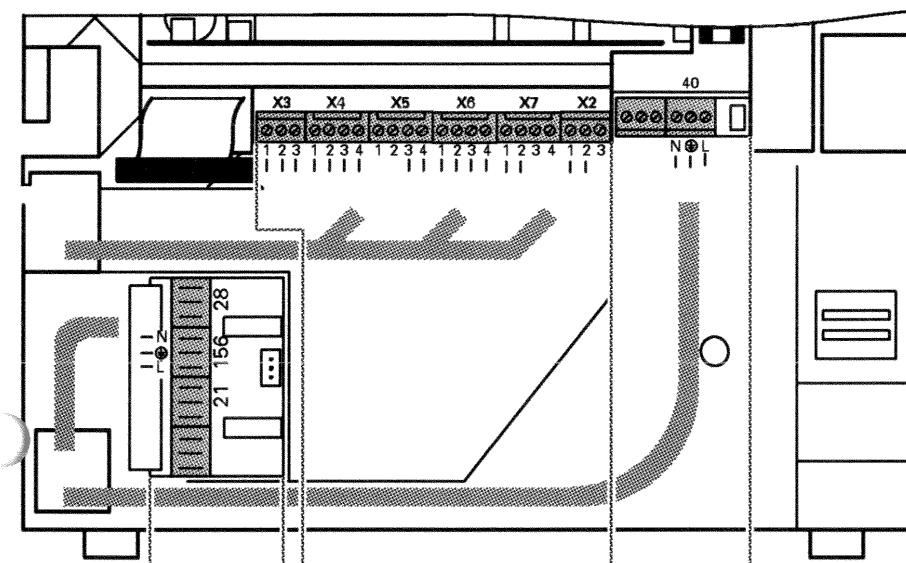
The operating voltage at connector [40] (boiler) and [156] (accessories) must be between 200 and 250 V~; connector [156] cannot be checked until after the heating system on/off switch has been operated.

**Neutral conductor**

The mains electrical supply must have a neutral conductor. The water piping must be connected to the potential equalization line of the building.

→ **Please note:**

The outer conductor "L1" and the neutral conductor "N" must not be interchanged. Only non-interchangeable connectors must be used for the mains electrical connections.



**Steps** (continued)

Initial start-up

**4. Select language (if necessary) – only with Comfortrol programming unit**

H LANGUAGE

```

SPRACHE/|LANGUAGE|
|
|
|
>GERMAN:.....A
>ENGLISH:.....B
|
|
>ZURÜCK/BACK:.....D
    
```

Open the cover:  
 Menu option                      Button  
 → SYSTEM                              "D"  
 → FACTORY SETTING                      "A"  
 → LANGUAGE                              "C"  
 Select language.

Initial start-up

**5. Heating contractor address input – only with Comfortrol programming unit**

*In the event of a fault, the system user can call up the name and telephone number on the display (see operating instructions).*

```

HEATING CONTRACTOR
INPUT NAME/TEL.:
|-----|
TEL.:-----|
|-----|
>CHANGE: -/+
>POSITION FORWARD:..A
>POSITION BACK:....B
>INSTALLER SETUP:...C
    
```

Open the cover:  
 Menu option                      Button  
 → SYSTEM                              "D"  
 → INSTALLER SETUP                      "C"  
 → CODE PLEASE:                      "B-C-C-B"  
 → DIAGNOSIS                              "A"  
 → HEATING CONTRACTOR                      "C"

Position the cursor as required using the "A" and "B" buttons.

Select the required characters (number, letter, special character) by turning the "↻" selector knob (clockwise or counter-clockwise).

Sequence of available character set:  
 0 1 2 3 4 5 6 7 8 9 A B C D E  
 F G H I J K L M N O P Q R S T  
 U V W X Y Z = < > . : \_ ? , -  
 ↻ | Ä Ö Ü ï / ( )

*Characters already selected can be deleted with the space character " " or overwritten with another character.*

*When the input menu is exited (INSTALLER SETUP "C"), the name and telephone number are stored.*

**Steps** (continued)

Initial start-up

Maintenance

**6. Check gas type**

**⚠ Safety instruction!**

The natural gas version **cannot** be converted to LPG.

1. Contact the gas supply company to establish the gas type and Wobbe index (Wo).
2. Compare the gas type and gas group with the data on the burner label.
3. If the data differs, the burner must be matched to the available gas type according to the data provided by the gas supply company. See "Conversion to other gas type" if conversion from natural gas E to natural gas LL is required.
4. Enter the gas type in the commissioning/service report on the inside rear cover.

→ **Please note:**

In its as delivered condition, the Vitodens 300 is preadjusted for operation with natural gas E.

**Natural gas E version:**

The boiler can be operated in the Wobbe index range from 12.0 to 16.1 kWh/m<sup>3</sup> (43.2 to 58.0 MJ/m<sup>3</sup>).

**After conversion from natural gas E to natural gas LL**

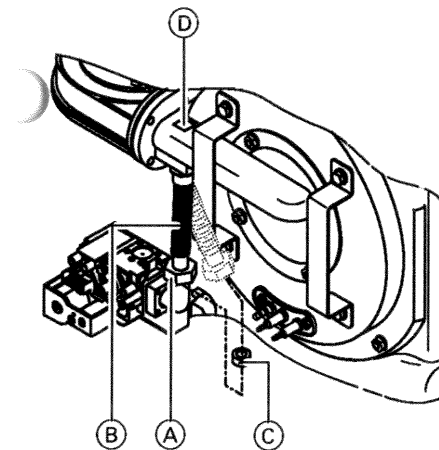
The boiler can be operated in the Wobbe index range from 10.0 to 13.1 kWh/m<sup>3</sup> (36.0 to 47.2 MJ/m<sup>3</sup>).

Initial start-up

**7. Conversion to other gas type**

**⚠ Safety instruction!**

The natural gas version **cannot** be converted to LPG.



**Conversion from natural gas E to natural gas LL**

1. Unscrew the screwed connection (A) and take the gas restrictor out of the gas connection hose (B).
2. Fit the new gas restrictor (C) in the gas connection hose (B).
3. Re-tighten the screwed connection (A).
4. Affix the enclosed sticker (D) "Adjusted for natural gas E/LL" over the label on the air supply pipe.
5. Enter the gas type in the commissioning/service report on the inside rear cover.

→ **Please note:**

See page 68 for information on gas restrictors and air restrictors.



**Steps** (continued)

Initial start-up

Maintenance

**8. Measure static pressure and supply pressure**

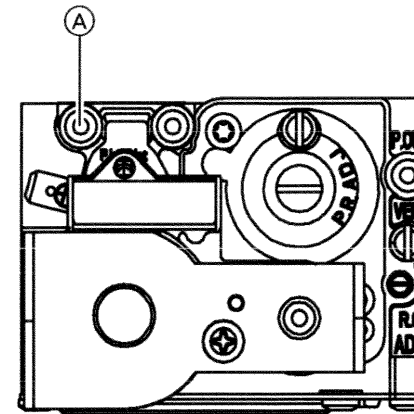
**⚠ Safety instruction!**

A CO measurement (see page 10) must be made before and after working on gas appliances to preclude any risk to health and to guarantee the satisfactory condition of the system.

**Static pressure**

1. Close the gas shut-off valve.
2. Unscrew the screw in the test nipple "P in" (A) on the gas combination valve, but do not screw out. Connect manometer.
3. Open the gas shut-off valve.
4. Measure the static pressure (max. 57.5 mbar).
5. Enter the value measured in the commissioning/ service report.
6. Start up the boiler.

→ The burner is automatically ignited and starts to operate after a safety time has elapsed. When started up for the first time, the unit may indicate a fault because of air in the gas supply pipe. After approx. 5 seconds, press the "⏮" button to reset the burner. The ignition procedure is repeated.



**Gas supply pressure (flow pressure)**

7. Measure the supply pressure (flow pressure); it should be 17.4 to 25 mbar.

→ Use suitable measuring instruments calibrated with a minimum resolution of 0.1 mbar for measuring the supply pressure.

Take the action described in the table.

Supply pressure (flow pressure)	Action required
under 17.4 mbar	Do not make any adjustments; inform gas supply company.
17.4 to 25 mbar	Start up the boiler.
over 25 mbar	Install a separate gas governor upstream of boiler, and set pressure to 20 mbar. Inform gas supply company.

8. Enter the value measured in the commissioning/ service report.
9. Switch off the heating system on/off switch on the control unit (boiler is shut down), close the gas shut-off valve, remove the manometer and re-tighten the test nipple (A) with the screw.

10. **⚠ Safety instruction!** Open gas shut-off valve and check that the test nipple (A) and all gas connections are gas-tight.

**Steps** (continued)

**Initial start-up** | **Maintenance** | **9. Check rated output**

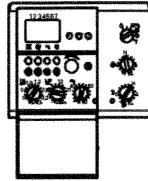
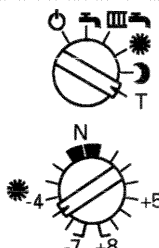
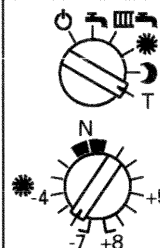
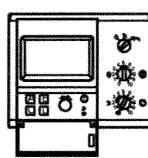
**⚠ Safety instruction!**

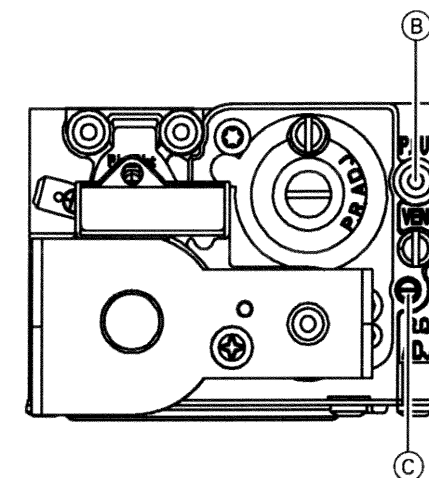
The Vitodens 300 is preset in the factory for operation with natural gas E. The settings must be checked during initial start-up and servicing.

Readjustments may only be made when the gas combination valve is replaced.

**Check top end of rated output range** → Set max. output (see page 12).

1. Select top end of rated output range (see table). → Do not use the emissions test switch "\*/#" to trigger the heat request.

Control unit type	Select lower end of rated output range	Select top end of rated output range	Exit the setting mode
 <p>Control unit with standard programming unit</p>			<ul style="list-style-type: none"> <li>■ Select the required heating program.</li> <li>■ Turn the "*/#" selector knob to the required value.</li> </ul>
 <p>Control unit with Comfortrol menu-driven programming unit</p>	<p>→ SYSTEM "D" → INSTALLER SETUP "C" → CODE PLEASE: "B-C-C-B" → DIAGNOSIS "A" → RELAY TEST "A" Select menu option CONTINUE "A" until code 10: MODULATION &lt;PL.90&gt; CLOSED BURNER &lt;PL.41&gt; ON is displayed</p>	<p>Select menu option CONTINUE "A" until code 11: MODULATION &lt;PL.90&gt; OPEN BURNER &lt;ST.41&gt; ON is displayed</p>	<ul style="list-style-type: none"> <li>■ Close the cover of the programming unit.</li> </ul>



2. Unscrew the screw in the test nipple "P out" (B) on the gas combination valve, but do not screw out. Connect manometer.
3. Open the gas shut-off valve and start up the boiler.
4. Check the nozzle pressure for the top end of the rated output range according to the table below and (if necessary) adjust accordingly on the adjusting screw "R.Q.ADJ." (C).

If the value measured differs, take the following steps:  
 ■ Check whether the correct gas restrictor has been used (see page 68).  
 ■ Check the AZ system for leaks (see page 17).

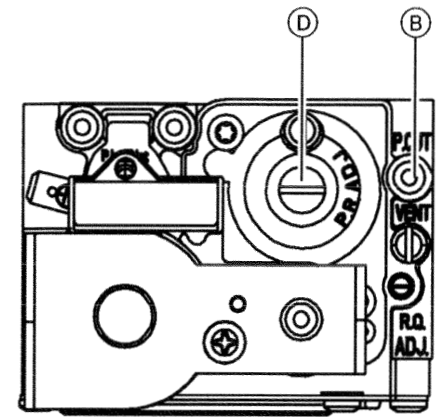
<b>Rated output</b>	kW	8	15	18	24
<b>Rated thermal load</b>	kW	8.3	15.6	18.8	25.0
<b>Nozzle pressure for natural gas E based on G20</b>	mbar	0.40	1.23	1.70	2.60
<b>Nozzle pressure for natural gas LL based on G25</b>	mbar	0.40	1.23	1.70	2.60

**Steps** (continued)

Initial start-up Maintenance

**9. Check rated output (continued)**

**Check bottom end of rated output range**

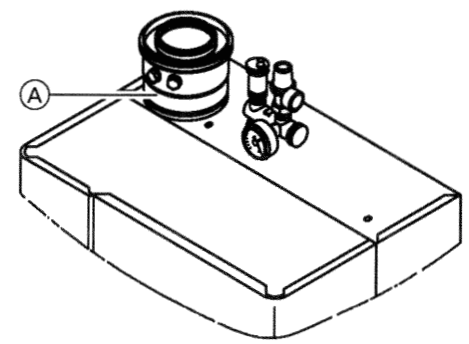


5. Select bottom end of rated output range (see table on page 10).
6. Check the nozzle pressure for the bottom end of the rated output range according to the table ~~above~~ *below* and (if necessary) adjust accordingly with the adjusting screw "P.P.ADJ." (D) (under the safety cap).

<b>Rated output</b>	kW	8	11	13	15	18	20	22	24
<b>Rated thermal load</b>	kW	8.3	11.5	13.5	15.6	18.8	20.8	22.9	25.0
<b>Nozzle pressure for natural gas E based on G20</b>	mbar	0.40	0.71	1.05	1.23	1.70	2.00	2.25	2.60
<b>Nozzle pressure for natural gas LL based on G25</b>	mbar	0.40	0.71	1.05	1.23	1.70	2.00	2.25	2.60

7. Exit the setting mode (see table on page 10).
8. Close the gas shut-off valve, remove the manometer and re-tighten the test nipple (B).
9. **⚠ Safety instruction:**  
Open gas shut-off valve and check that the test nipple (B) is gas-tight.

**Check the CO<sub>2</sub> content**



1. Connect flue gas analyzer to the boiler connection adaptor (A) ("Flue gas" port).
2. Measure the CO<sub>2</sub> content. **Do not make any readjustment** if the measured values differ.
3. Close the measuring port on the boiler connection adaptor.
4. Enter the CO<sub>2</sub> content for the top and bottom end of the rated output range in the commissioning/service report.

**Please note:**  
Depending on the Wobbe index, the CO<sub>2</sub> content is within the range of  
 ■ 7.4 to 11.0 % with natural gas E,  
 ■ 7.7 to 10.7 % with natural gas LL.

*In accordance with current regulations, flue gas loss measurements are not carried out on condensing boilers.*

**Steps** (continued)

Initial start-up

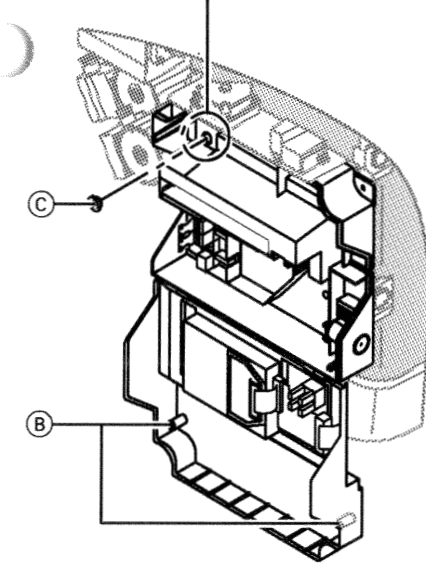
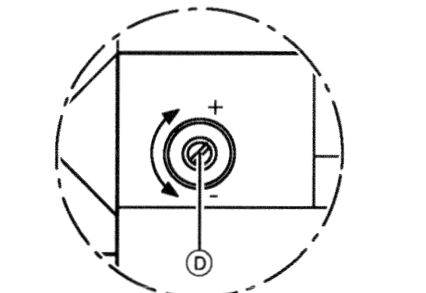
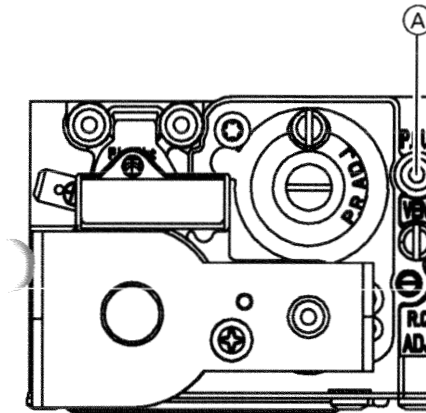
Maintenance

**10. Set the max. output**

**Please note:**

The rated output of the **15 kW** boiler (for central heating) can be converted to **11 kW**.

**18 kW and 24 kW** boilers can be adjusted continuously between the min. output (8 kW) and the max. output.



1. Unscrew the screw in the test nipple "P out" (A) on the gas combination valve, but do not screw out, and connect manometer.
2. Open the gas shut-off valve. Start up the boiler.
3. Select the top end of the rated output range: See table on page 10. → Do not use the emissions test switch "A" to trigger the heat request.
4. Unscrew the front part of the control unit (B) and swing down.
5. Turn the stopper (C) one quarter of a turn counter-clockwise and remove.
6. Using a screwdriver, turn the potentiometer (D) counter-clockwise until the nozzle pressure corresponds to the required output according to the table below. → **15 kW only**  
Turn the potentiometer fully counter-clockwise.

<b>Rated output</b>	kW	8	11	13	15	18	20	22	24
<b>Rated thermal load</b>	kW	8.3	11.5	13.5	15.6	18.8	20.8	22.9	25.0
<b>Nozzle pressure for natural gas E based on G20</b>	mbar	0.40	0.71	1.05	1.23	1.70	2.00	2.25	2.60
<b>Nozzle pressure for natural gas LL based on G25</b>	mbar	0.40	0.71	1.05	1.23	1.70	2.00	2.25	2.60

7. Put the stopper (C) back in. → If necessary, the stopper (C) can be lead-sealed.
8. Swing up the front part of the control unit (B) and screw on.
9. Exit the setting mode (see table on page 10).
10. Record the setting of the max. output on the nameplate enclosed with the "Technical Documentation". Affix the nameplate inside the hinged cover on the front panel.
11. Close the gas shut-off valve, remove the manometer and retighten the test nipple (A).
12. **⚠ Safety instruction:** Open gas shut-off valve and check that the test nipple (A) is gas-tight.

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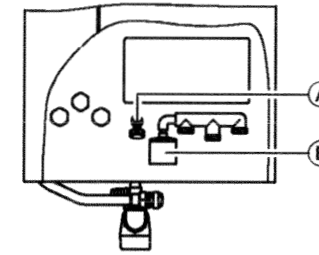
## Steps (continued)

Initial start-up

Maintenance

## 11. Check water pressure switch

Operation of the heating system is prevented by the water pressure switch if the water pressure is too low.



- (A) Filling and drain cock  
(B) Water pressure switch

1. Trigger a heat request.

2. Drain water from the system until the pressure falls to zero and observe the fault message on the control unit.  
At pressures below 0.5 bar ( $\pm 20\%$ )
- the burner and pumps must be switched off,
  - the red LED should be lit and
  - depending on the control unit, the fault code "495", "4:9:5" or "FAULT 95" must be displayed.

→ **Please note:**

If no fault message is displayed on the control unit, check that the water pressure switch has been installed correctly.

3. Re-fill with water until the filling pressure exceeds the inlet pressure of the expansion vessel.  
Press the reset button "⏏". After reset, operation of the heating system is resumed automatically.

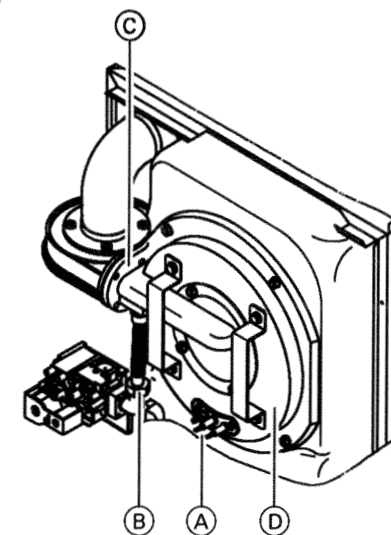
Initial start-up

Maintenance

## 12. Check all primary and secondary circuit connections for leaks

Maintenance

## 13. Disassemble burner and check packing cord of burner door



1. Switch off the heating system switch on the control unit and the mains power.
2. Close the gas shut-off valve and secure.
3. Disconnect the wires from the electrode block (A).
4. Unscrew the screwed connection (B).
5. Unscrew the fan flange (C) (four hexagon socket head cap screws).
6. Unscrew the burner door (D) (four hexagon nuts).

→ **Caution:**

Do not place burner on the burner gauze assembly (wire gauze)!

7. Check the packing cord of the burner door for damage and replace if necessary.

→ **Please note:**

Replace packing cord after two years at the latest (sold by the metre).

## Initial start-up and maintenance

### Steps (continued)

#### Maintenance

#### 14. Check burner gauze assembly

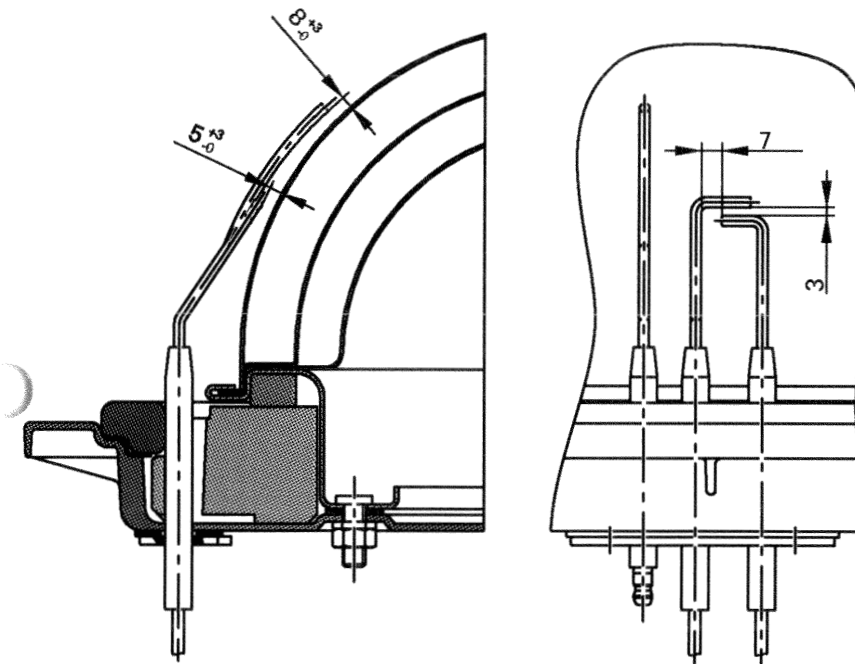
Replace burner gauze assembly if wire gauze damaged.

#### Maintenance

#### 15. Check electrode block

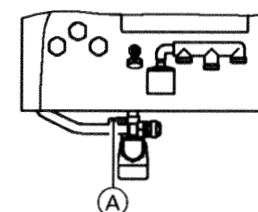
1. Check electrodes for wear and contamination.
2. Clean electrodes with small brush or emery paper.
3. Check the clearances. If the clearances are not satisfactory, replace the electrode block and align. Tighten the fastening screws for the electrode block to a torque of 2 Nm.

→ **Caution!**  
Take care not to damage the wire gauze when cleaning!



#### Maintenance

#### 16. Check condensate drain



Check that the condensate can drain away freely (at the siphon trap (A)).

*If necessary, clean siphon trap.*

→ **Please note:**  
If the condensate cannot drain away freely, it collects in the bottom part of the boiler and obstructs the free passage of the flue gases.

**Steps** (continued)

**Maintenance** 17. Check neutralizing unit **Accessory**

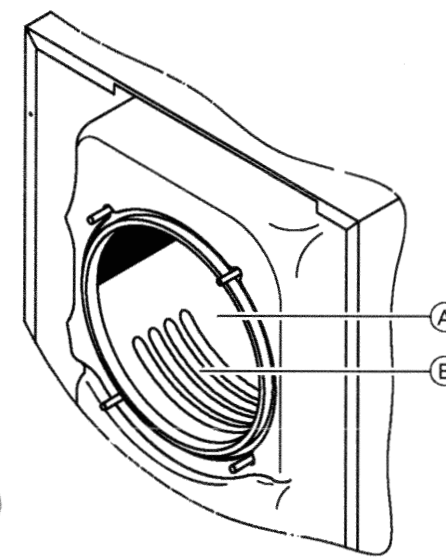
1. Check the pH value of the condensate with pH paper. If the pH value is less than 6.5, replace the granulate.
2. If contaminated:  
Rinse the neutralizing unit with tap water.
3. Add granulate up to the level of the marking.

→ **Please note:**  
Part No. of pH paper: 9517 678.

→ Please follow the instructions of the manufacturer of the neutralizing unit.

The granulate is consumed as it neutralizes the condensate. The red marking shows the minimum filling level.

**Maintenance** 18. Clean combustion chamber/heat exchange surfaces and mount burner



1. Clean the combustion chamber (A) and heat exchange surfaces (B) with a brush if necessary or rinse with water.  
  
Use solvent-free cleaning agents to remove stubborn residues:
  - Remove deposits of soot with alkaline agents containing tenside (e.g. Fauch 600).
  - Remove coatings and (yellowish brown) surface discoloration with slightly acidic, chloride-free cleaning agents based on phosphoric acid (e.g. Antox 75 E).
  - Rinse thoroughly with water.
2. Bolt on the burner door and tighten to a torque of 2.5 Nm (four hexagon nuts).
3. Bolt on the fan flange (four hexagon socket head cap screws).
4. Replace gaskets on gas train and tighten screwed connection on gas train.
5. Connect cables to electrode block.

→ **⚠ Caution!**  
Be careful not to scratch parts which are in contact with the flue gas. Use plastic brushes, not wire brushes!

→ Follow the safety instructions of the manufacturer of the cleaning agent.  
The cleaning agents must not contain hydrocarbon-based solvents or potassium.

**Please note:**  
Fauch 600 and Antox 75 E are supplied by  
Hebro Chemie GmbH  
Rostocker Straße 40  
D-41199 Mönchengladbach

→ **⚠ Safety instruction:**  
~~Dichtheitsprüfung durchführen!~~  
H Test for leaks!  
- kursiv

**Initial start-up** **Maintenance** 19. Check function of safety valves

**Initial start-up** **Maintenance** 20. Check soundness of electrical connections

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## Initial start-up and maintenance

### Steps (continued)

Initial start-up

Maintenance

#### 21. Check gas pipes and fittings for leaks

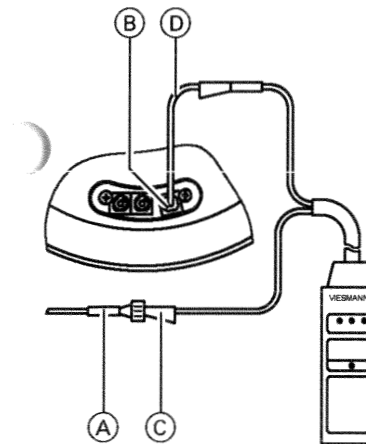
Initial start-up

Maintenance

#### 22. Measure ionization current

##### ⚠ Safety instruction!

Switch off the heating system switch on the control unit before connecting the measuring instrument.



1. Disconnect the socket of the ionization measuring cable (A) from the monitoring electrode (B) and connect to the plug of the Testomatik via the adaptor (C).

##### → Please note:

Measuring cable 1 is required for measurements with the Testomatik-Gas. The measurement can also be made with a multimeter (measuring range 0 to 100  $\mu$ A).

2. Connect the additional ionization measuring cable (D) to the monitoring electrode (B) and the socket of the Testomatik.

3. Start up the boiler at the top end of its rated output range: Turn emissions test switch "A" on the control unit to "B".

##### → Please note:

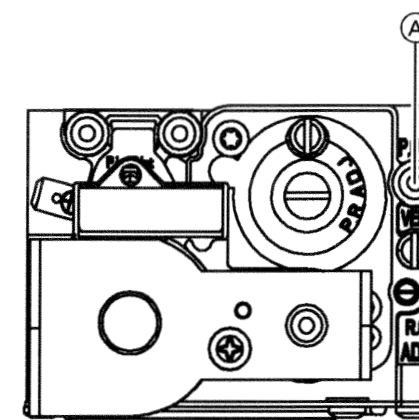
The minimum ionization current must be at least 15  $\mu$ A when the flame is formed (approx. 2 - 3 seconds after the gas combination valve opens).

4. After completing the measurement, turn the emissions test switch to "C".

5. Enter the value measured in the commissioning/ service report.

Maintenance

#### 23. Check closing action of the solenoids in the gas combination valve



1. Switch off the heating system on/off switch on the control unit and close the gas shut-off valve.

2. Connect manometer to test nipple "P out" (A).

3. Open the gas shut-off valve and start up the system.

4. When the burner is switched off, the nozzle pressure must fall rapidly to 0 mbar.

5. Close the gas shut-off valve, remove the manometer and re-tighten the test nipple (A).

6. ⚠ Safety instruction!

Open gas shut-off valve and check that the test nipple (A) is gas-tight.

the g



**Steps** (continued)

## Initial start-up

**24. Control unit – Match coding addresses**

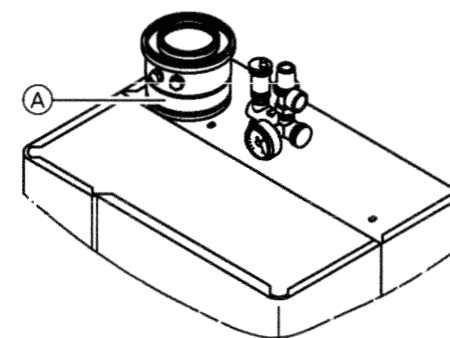
The control unit must be matched to the system equipment. See

- page 42 onwards for standard programming unit,
- page 57 onwards for Comfortrol programming unit.

For details of the coding procedure and an overview of the coding addresses, see

- page 43 onwards for standard programming unit,
- page 58 onwards for Comfortrol programming unit.

## Initial start-up

**25. Check AZ system for leaks (circular gap measurement)**

Not all inspection authorities require a leak test (overpressure test) to be carried out when the system is started up in the case of flue gas/ventilation systems tested together with the boiler.

In such cases, we recommend that the heating contractor carries out a simplified check for leaks when starting up the system. For this purpose, it is sufficient to measure the CO<sub>2</sub> concentration in the combustion air in the circular gap of the AZ pipe.

The flue pipe is considered sufficiently leak-proof if the CO<sub>2</sub> concentration in the combustion air is no higher than 0.2 % and the O<sub>2</sub> concentration no lower than 20.6 %.

If higher CO<sub>2</sub> or lower O<sub>2</sub> values are measured, the flue pipe must be subjected to pressure testing at a static overpressure of 200 Pa.

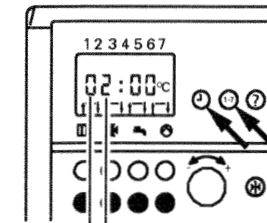
Ⓐ Combustion air measuring point (ventilation air)

**Steps** (continued)

Initial start-up

**26. Check extension kit for heating circuit with mixing valve**

Accessory



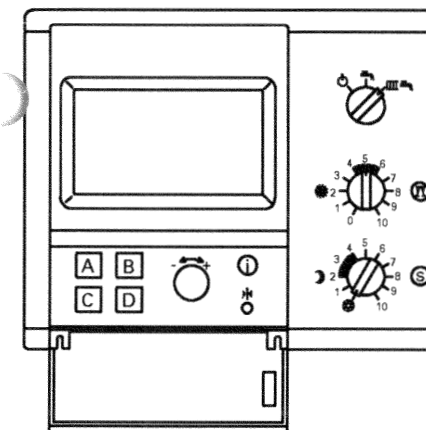
**With standard programming unit**

1. Press buttons "1" and "7" simultaneously.
2. Evaluate display.

- 02 with burner control unit
- (12) additionally with Vitocom 100
- 03 with burner control unit and variable speed heating circuit pump
- (13) additionally with Vitocom 100
- 06 with burner control unit and extension kit for heating circuit with mixing valve
- (16) additionally with Vitocom 100
- 07 with burner control unit, extension kit for heating circuit with mixing valve and variable speed heating circuit pump
- (17) additionally with Vitocom 100

3. If the extension kit is not recognized, check the coding of the heating system type (see page 42).

→ **Please note:**  
The extension kit is only recognized when connected via the KM-BUS, not when connected via the Viessmann 2-wire BUS.



**With Comfortrol menu-driven programming unit**

1. Check via Scan 1 on the Comfortrol programming unit whether the connected extension kit is recognized.

**Calling up Scan 1**

- Open the cover:  
Menu option
- SYSTEM
  - OPERATING STATUS
  - CONTINUE

Button "D"  
"B"  
"A"  
until "Scan 1" is displayed

→ **Please note:**  
The third and fourth-placed digits from the left have the following meaning here:  
\_\_02\_\_ = with burner control unit  
(\_\_12\_\_) = additionally with Vitocom 100  
\_\_03\_\_ = with burner control unit and variable speed heating circuit pump  
(\_\_13\_\_) = additionally with Vitocom 100  
\_\_06\_\_ = with burner control unit and extension kit for heating circuit with mixing valve  
(\_\_16\_\_) = additionally with Vitocom 100  
\_\_07\_\_ = with burner control unit, extension kit for heating circuit with mixing valve and variable speed heating circuit pump  
(\_\_17\_\_) = additionally with Vitocom 100

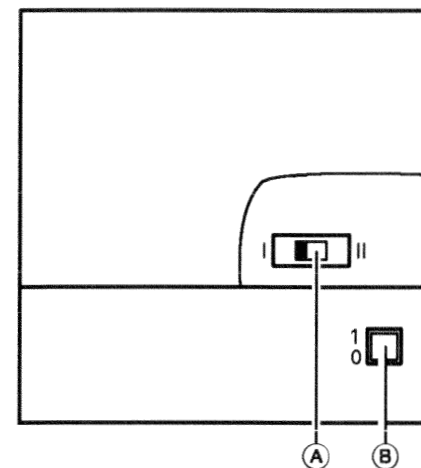
2. If the extension kit is not recognized, check the coding of the heating system types (see page 57).

→ **Please note:**  
The extension kit is only recognized when connected via the KM-BUS, not when connected via the Viessmann 2-wire BUS.

**Steps** (continued)

Initial start-up

**26. Check extension kit for heating circuit with mixing valve (con.)** Accessory



(A) Rotational direction switch  
(B) Mains power switch "I"

**Check mixing valve motor**

1. Select the rotational direction of the mixing valve motor.
  - Switch setting I for heating return from left (as delivered condition).
  - Switch setting II for heating return from right.
2. Relay test  
Switch the mains power switch on the motor off and then on again. The unit carries out the following self-test:
  - Close mixing valve (150 sec)
  - Pump ON (10 sec)
  - Open mixing valve (10 sec)
  - Close mixing valve (10 sec)
 Then the normal control mode is resumed.

3. Observe the rotational direction of the mixing valve motor during the automatic relay test of the extension kit.  
Afterwards, position the mixing valve by hand in the "Open" setting.

→ The flow temperature sensor must now measure a higher temperature.  
If the temperature is lower, either the rotational direction of the motor is incorrect or the mixing valve insert is incorrectly fitted.

Initial start-up

**27. Check Dekamatik-HK** Accessory

The Viessmann 2-wire BUS expansion module is required in order to activate a Dekamatik-HK.

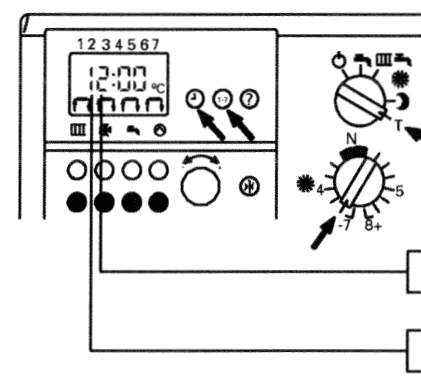
It is not possible to connect a Dekamatik-HK additionally if an extension kit for a heating circuit with mixing valve is already connected.

A communication module is required additionally in the Dekamatik-HK1 in order to activate a Dekamatik-HK1.

**Check Viessmann 2-wire BUS and data transfer line to the Dekamatik-HK**

**With standard programming unit**

1. Turn heating program selector switch to "T".
2. Turn "☼" selector knob to "-6".
3. Press buttons "⏸" and "1-7" simultaneously.
4. Evaluate display.
  - With Dekamatik-HK1 or HK2
  - With Dekamatik-HK4
  - Expansion module not recognized
  - Expansion module recognized



5. If the expansion module or the Dekamatik is not recognized, check that they have been installed correctly.

→ **Please note:**  
A green LED flashes on the expansion module if the data bus is intact. If the LED is not lit, the data line "X5.3"- "X5.4" may be incorrectly connected.

## With Comfortrol menu-driven programming unit

1. Check via Scan 2 on the Comfortrol programming unit whether the connected expansion module is recognized.

## Calling up Scan 2

Open the cover:

- Menu option      Button  
 → SYSTEM        "D"  
 → OPERATING  
 STATUS            "B"  
 → CONTINUE      "A"  
                          until  
                          "Scan 2"  
                          is displayed

**Expansion module**

The last-placed digit has the following meaning here:

2\_\_\_\_0 = Viessmann 2-wire BUS expansion module not recognized

2\_\_\_\_1 = Viessmann 2-wire BUS expansion module recognized

**Dekamatik-HK**

The second-placed digit from the left has the following meaning here:

\_2\_\_\_\_ = Extension kit for a heating circuit with mixing valve or Dekamatik-HK1/HK2 recognized

\_3\_\_\_\_ = Dekamatik-HK4 recognized

2. If the expansion module or the Dekamatik-HK is not recognized, check that they have been installed correctly.

→ **Please note:**


A green LED flashes on the expansion module if the data bus is intact. If the LED is not lit, the data line "X5.3"-"X5.4" may be incorrectly connected.

See wiring diagram in section headed "Additional information".

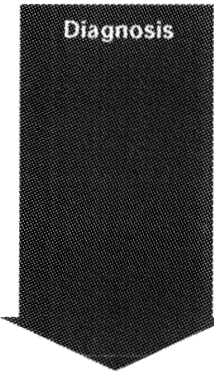
## Check setting of rotary switch

- Dekamatik-HK1:  
The rotary switch on the communication module must be set to "4".
- Dekamatik-HK2:  
The rotary switch on the electronics board E4 must be set to "4".
- Dekamatik-HK4:  
The rotary switch on electronics board E4.1 must be set to "4" and the rotary switch on electronics board E4.2 to "5".

→ **Please note:**

 Please refer also to the corresponding installation documents for the Dekamatik-HK.

## Troubleshooting steps



1. Establish fault message or ascertain behaviour of system
2. Look for the corresponding cause of the fault in the diagnosis tables  
Diagnosis with the control units
  - for faults with fault display on control unit (page 22)  
*Please note:*  
See page 23 for retrieval of fault codes from the fault memory.
  - for faults without fault display on control unit (page 30)
3. Establish the action required in the table
4. Correct the fault (page 31)

## Troubleshooting

### Diagnosis

Faults with fault display on control unit

(with Comfortrol programming unit)

When a fault message is transmitted, --- FAULT --- flashes in the display of the programming unit with the cover closed.

```
FAULT SEARCH
FAULT:
  OUTDOOR TEMP.
  SENSOR
>HEATG. CONTRACTOR:i
>ACKNOWLEDGE:.....A
```

#### To trace the fault

1. Open the cover:  
→ FAULT SEARCH "A"  
Fault code is displayed.

#### → Please note:

The fault message is extinguished when "ACKNOWLEDGE" is selected.  
If an acknowledged fault is not rectified by 24.00 hrs on the same day, the fault message will reappear.  
The acoustic alarm systems (if installed) are not reactivated.

The meaning of the fault codes is explained in the tables on page 24 onwards.

2. Close the cover.

```
DIAGNOSIS/SENSORS
01: OUTD. TEMP. HC A
01: OPEN CIRCUIT
>CONTINUE:.....A
>BACK:.....B
>INSTALLER SETUP:...C
```

#### Establish nature of sensor fault in plain language

Open the cover:	Button
Menu option	
→ MAIN MENU	"D"
→ SYSTEM	"D"
→ INSTALLER SETUP	"C"
→ CODE PLEASE:	"B-C-C-B"
→ DIAGNOSIS	"A"
→ SCAN SENSORS	"B"

Select the defective sensor with the menu option CONTINUE "A".

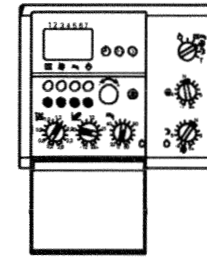
#### → Please note:

Please refer to the diagnosis table on page 24 onwards for details of the action required.

**Diagnosis** (continued)

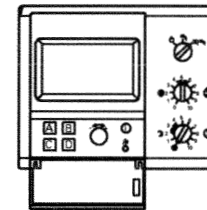
**Retrieval of fault codes from the fault memory**

*Details of burner faults which occur are stored and can be scanned. The scanning sequence starts with the most recently stored fault code.*



**Control unit with standard programming unit**

1. Turn heating program selector switch to "T".
2. Turn the "☀" selector knob to "-6".
  - "1" appears for approx. 3 seconds in the display.
  - The most recent fault codes flashes for approx. 3 seconds.
  - The figure "2" appears, followed by a flashing fault code. The sequence continues until "0" appears with the last of the fault codes stored.



**Control unit with Comfortrol programming unit**

1. Open the cover:
 

Menu option	Button
→ SYSTEM	"D"
→ INSTALLER SETUP	"C"
→ CODE PLEASE:	"B-C-C-B"
→ CODING 2	"C"

→ **Please note:**  
*All settings are made in the "Installer setup" menu, containing "Coding 1" (the main coding addresses in plain language) and "Coding 2" (all coding addresses).*

2. ■ Select coding address "B2" by pressing button "A" (CONTINUE) or "B" (BACK).
  - With the "↔" selector knob (CHANGE), set the value of the coding address to "001".
  - Confirm the change with button "D".

*Changes which are made and confirmed in Coding 1 are automatically transferred to Coding 2 and vice versa.*

3. Select coding address "B3".

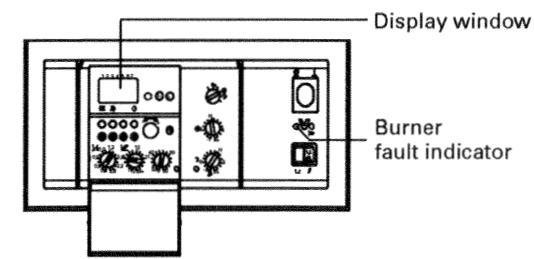
→ *The value which appears is the most recent fault code (value in brackets () in the diagnosis table).*

4. Repeat step 2, but set the value of the coding address to "002". The value which appears under coding address "B3" is the next fault code.

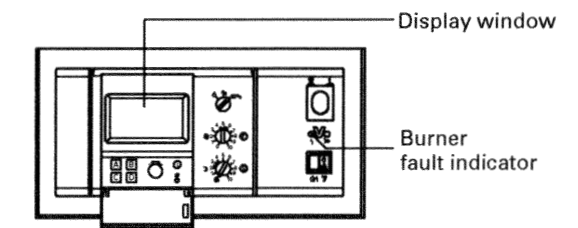
→ **Please note:**  
*10 fault codes can be scanned.*

## Troubleshooting

### Diagnosis (continued)



Control unit with standard programming unit







Control unit with Comfortrol programming unit

#### Diagnosis table: Faults with fault display on control unit

Fault message in display window		Red burner fault indicator	Behaviour of the system
Control unit with standard programming unit	Comfortrol programming unit		
4:1:0	FAULT: OUTDOOR TEMP. SENSOR	OFF	Operates on basis of 0 °C outdoor temperature
4:1:8	FAULT: OUTDOOR TEMP. SENSOR	OFF	Operates on basis of 0 °C outdoor temperature
4:3:0	FAULT: OUTDOOR TEMP. SENSOR	OFF	Boiler cools down
4:3:8	FAULT: OUTDOOR TEMP. SENSOR	OFF	Boiler cools down
4:4:0	FAULT: OUTDOOR TEMP. SENSOR	OFF	Mixing valve is opened
4:4:8	FAULT: OUTDOOR TEMP. SENSOR	OFF	Mixing valve is closed
4:5:0	FAULT: OUTDOOR TEMP. SENSOR	OFF	DHW cylinder cools down
4:5:8	FAULT: OUTDOOR TEMP. SENSOR	OFF	DHW cylinder cools down
4:6:0 4:6:8	—	OFF	Boiler cools down
4:6:1 4:6:9	—	OFF/ON	Boiler cools down



Cause of fault	Action
 Short circuit - outdoor temperature sensor	Check outdoor temperature sensor (see page 32)
Open circuit - outdoor temperature sensor	Check outdoor temperature sensor (see page 32)
Short circuit - boiler temperature sensor	Check boiler temperature sensor (see page 32)
Open circuit - boiler temperature sensor	Check boiler temperature sensor (see page 32)
 Short circuit - flow temperature sensor	 See installation instructions for mixing valve motor
Open circuit - flow temperature sensor	 See installation instructions for mixing valve motor
Short circuit - cylinder temperature sensor	Check cylinder temperature sensor (see page 33)
Open circuit - cylinder temperature sensor	Check cylinder temperature sensor (see page 33)
Coding address 27 incorrectly coded (standard programming unit)	Set coding address 27 to 0
Coding address 31 incorrectly coded (standard programming unit)	Set coding address 31 to 0

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die Seiten 26 u. 27 müssen  
zusammenfallen.






## Troubleshooting

### Diagnosis (continued)

Diagnosis table: Faults with fault display on control unit (continued)

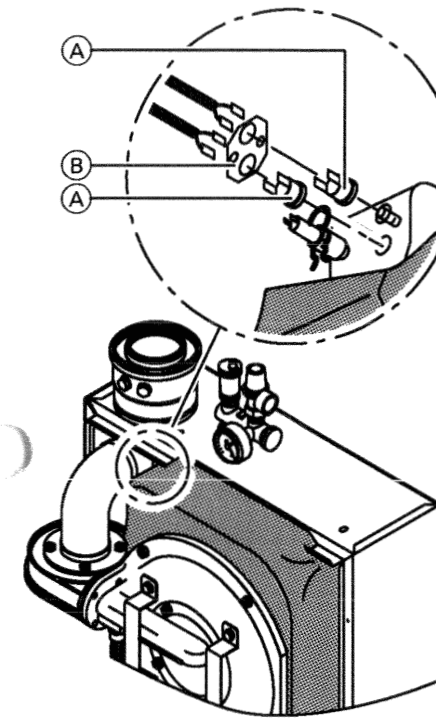
Fault message in display window		Red burner fault indicator	Behaviour of the system
Control unit with standard pro- gramming unit	Comfortrol pro- gramming unit		
4:7: 0	FAULT: 70 RS/WS REMOTE CONTROL	OFF	Operates on basis of 20 °C desired day temperature, 14 °C desired night temperature
4:7: 8	FAULT: 78 RS/WS REMOTE CONTROL	OFF	Operates on basis of 20 °C desired day temperature, 14 °C desired night temperature
4:8: 1	FAULT: A1 KM-BUS BURNER CONTROL UNIT	Flashes	Boiler operates in emergency mode (after approx. 30 min BUS fault)
		OFF	Boiler cools down
4:8: 2	FAULT: A2	OFF	—
4:8: 4	FAULT: A4 KM-BUS HEATING CIRCUIT PUMP	OFF	Pump runs at max. speed
4:8: 5	FAULT: A5 KM-BUS MIXING VALVE	OFF	—
—	FAULT: B1	OFF	Continuous heating mode
4:b: 2	FAULT: B2	OFF	Boiler cools down
4:b: 3	FAULT: B3	OFF	Setting via service level not possible
4:b: 6	FAULT: B6 BURNER CONTROL UNIT DEFECTIVE	OFF	Boiler cools down
4:E: 4 or 4:E: ...	FAULT: E4 or FAULT: E...	OFF	—
4:F: 2	FAULT: F2	OFF	—
4:F: 4	FAULT: F4	OFF	—
4:F: 5	FAULT: F5	OFF	—
4:F: 9	FAULT: F9 (249*1)	OFF/ON	Burner control unit goes to fault mode
4:F: d	FAULT: FD (253*1)	ON	Burner control unit goes to fault mode
4:F: E	FAULT: FE (254*1)	ON	Burner control unit goes to fault mode
4:0: 2	FAULT: 02 (002*1)	ON	Burner control unit goes to fault mode

\*1 Displayed when fault codes retrieved from fault memory.

Cause of fault	Action
Short circuit – WS/RS remote control unit	Check WS/RS remote control unit (see page 37)
Open circuit – WS/RS remote control unit	Check WS/RS remote control unit (see page 37)
BUS fault	Replace circuit board VR 20 or circuit board of burner control unit LGM 29
Open circuit – internal BUS connection	Replace circuit board VR 20 or circuit board of burner control unit LGM 29
KM-BUS fault on line to Vitocom	Check connection or Vitocom
Open circuit – BUS connection to variable speed heating circuit pump	Check line connections to variable speed heating circuit pump or  See installation instructions for circuit board of burner control unit LGM 29
Short circuit/open circuit – BUS connection to extension kit for heating circuit with mixing valve	Check connection of extension kit for heating circuit with mixing valve (see page 18)
Open circuit – BUS connection to Comfortrol programming unit	Check line connections to programming unit
Sensor inputs are not read in correctly	Replace circuit board VR 20
Data points are not stored	Replace circuit board VR 20
HAD <del>A-D</del> converter of burner control unit defective	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Fault in Dekamatik-HK heating circuit control unit connected downstream	Check Dekamatik-HK heating circuit control unit connected downstream and data transmission circuit
Error message re Vitocom	Check Vitocom
Error message re variable speed heating circuit pump	Check variable speed heating circuit pump for defects
Error message re extension kit for heating circuit with mixing valve	Check the coding for the extension kit and the extension kit itself
Parameterization of burner control unit defective	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Parameterization of burner control unit defective	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Internal fault in burner control unit	Reset burner control unit or replace circuit board of burner control unit LGM 29  See installation instructions for circuit board of burner control unit LGM 29
5692 397 GB Safety chain has operated	Check thermal circuit breaker (see page 36)

**Correction** (continued)

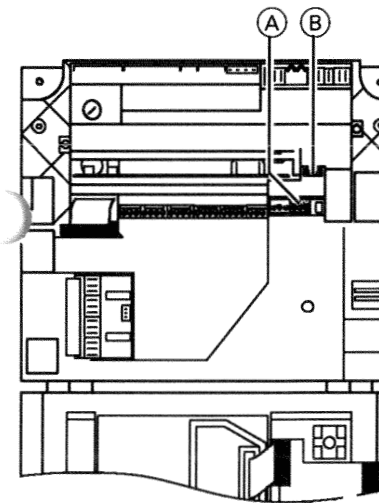
**Check safety chain**



If the safety chain cannot be reset after an automatic cut-out of the burner control unit, even though the boiler water temperature is below approx. 90 °C, carry out the following steps:

- Disconnect one cable from each of the thermal circuit breakers (A).
- Check the continuity of the thermal circuit breakers with a multimeter.
- If the thermal circuit breakers are defective, unfasten the retaining plate (B) and remove the thermal circuit breakers.
- Coat the new thermal circuit breakers with heat conductive paste and install.
- After starting up, press the reset button "⏮" on the control unit.

**Check fuse**



1. Disconnect connector 40 (A) in the control unit.
2. Holding the fuse F3 (6.3 A) (B) by its grip, pull out of the base.
3. Check continuity of fuse with a multimeter.

**Check thermostatic radiator valves**

Check operation and setting.

→ **Please note:**

*The thermostatic radiator valves must not be activated in the room in which the room temperature sensor is installed for room temperature controlled operation (e.g. via the RS remote control unit) (keep the thermostatic radiator valves fully open).*

Seiten 28 und 29 müssen  
zusammen passen








Troubleshooting

**Diagnosis** (continued)

Diagnosis table: Faults with fault display on control unit (continued)

Fault message in display window		Red burner fault indicator	Behaviour of the system
Control unit with standard pro- gramming unit	Comfortrol pro- gramming unit		
4:0: 4	FAULT: 04 (004*1)	ON	Burner control unit goes to fault mode
4:0: 5	FAULT: 05 (005*1)	ON	Burner control unit goes to fault mode
4:0: 6	FAULT: 06 (006*1)	ON	Burner control unit goes to fault mode
4:0: 7	FAULT: 07 (007*1)	ON	Burner control unit goes to fault mode
4:0: 8	FAULT: 08 (008*1)	ON	Burner control unit goes to fault mode
4:0: 8	FAULT: 0A (010*1)	ON	Burner control unit goes to fault mode
4:0: b	FAULT: 0B (011*1)	ON	Burner control unit goes to fault mode
4:0: c	FAULT: 0C (012*1)	ON	Burner control unit goes to fault mode
4:0: d	FAULT: 0D	ON	Burner control unit goes to fault mode
4:0: F	FAULT: 0F	ON/OFF	Parametrizing setting
4:1: 5	FAULT: 15 (021*1)	ON	Burner control unit goes to fault mode
4:2: 5	FAULT: 25	OFF	Boiler operates with high boiler water temperature
4:2: 6	FAULT: 26	OFF	Boiler operates with continuous modulation
4:3: 5	FAULT: 35	OFF	Boiler does not switch on
4:9: 5	FAULT: 95	OFF	Boiler does not switch on

\*1 Displayed when fault codes retrieved from fault memory.

Cause of fault	Action
Fan speed too high at start	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Fan speed too low at start	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Air pressure threshold for ignition level is not reached	Check air pressure switch (see page 33)
Fan speed too high before ignition	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Fan speed too high before ignition	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Air pressure switch not in basic position after auto reset	Check air pressure switch (see page 33)
Fan not idle after auto reset	 Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Flame signal still present after switching off	Check gas combination valve (see page 16) Check electrode block (see page 14)  Replace circuit board of burner control unit LGM 29 See installation instructions for circuit board of burner control unit LGM 29
Unit still interlocked	Press reset button "⏏" once
Burner control unit interlocked or circuit board VR 20 defective	Reset burner control unit or replace circuit board VR 20
No flame signal present	Check electrical connections (see page 6) Measure ionization current (see page 16) Check gas pressure (see page 9) Check gas combination valve (see page 16) Check ignition, ignition module (see page 69) Check ignition electrodes (see page 14) Check condensate drain (see page 14)
Emissions inspection switch "⚡" turned to "⏏" for 30 minutes already	Turn emissions test switch "⚡" to "⏏"
Setting mode for upper or lower rated output active for 30 minutes already	Set heating program selector switch to required operating mode or close cover on Comfortrol programming unit
 Reset button "⏏" operated with emissions test switch "⚡" turned to "⏏"	Turn emissions test switch "⚡" to "⏏" and press reset button "⏏" once
Air pressure switch not connected through	Check water pressure switch (see page 13)

## Troubleshooting

### Diagnosis *(continued)*

#### Diagnosis table: Faults without fault display on control unit

Behaviour of system	Cause of fault	Action
Flow temperature too cold or too warm	Fuse	Check fuse (see page 36)
	Variable speed heating circuit pump	Check coding of heating circuit pump (see page 52 and 62)
	Heating system type incorrectly coded	Check coding of heating system type (see page 42 and 57)
Room temperature too cold or too warm	Thermostatic radiator valves	Check thermostatic radiator valves (see page 36)
Domestic hot water temperature too cold or too warm	Circulation pump for heating the DHW cylinder	Check circulation pump for heating the DHW cylinder
Boiler constantly switches on and off	Flue system leaking	Check flue system for leaks

**Correction**

	Page
<b>Sensors</b>	
Check outdoor temperature sensor .....	32
Check boiler temperature sensor .....	32
Check cylinder temperature sensor .....	33
<b>Boiler components</b>	
Check air pressure switch .....	33
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WS remote control .....	37
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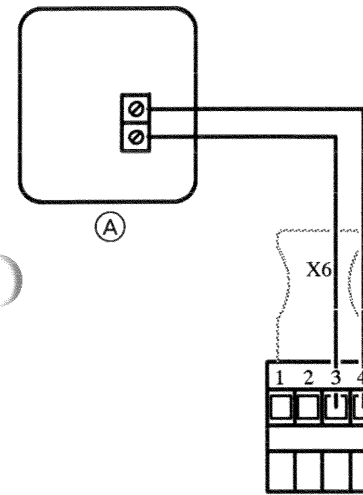


**Correction** (continued)

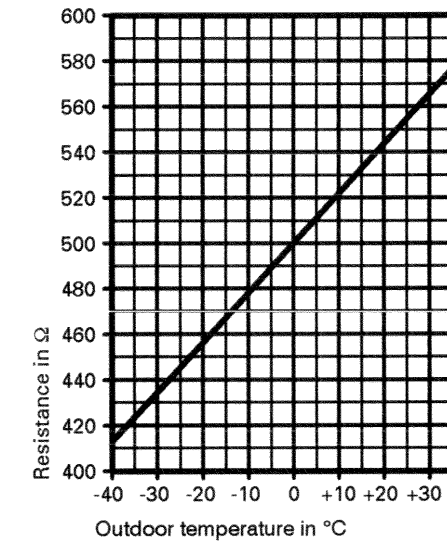
**Scanning the actual and desired temperatures for control unit**

- with standard programming unit: see page 54,
- with Comfortrol programming unit: see page 66.

**Check outdoor temperature sensor**

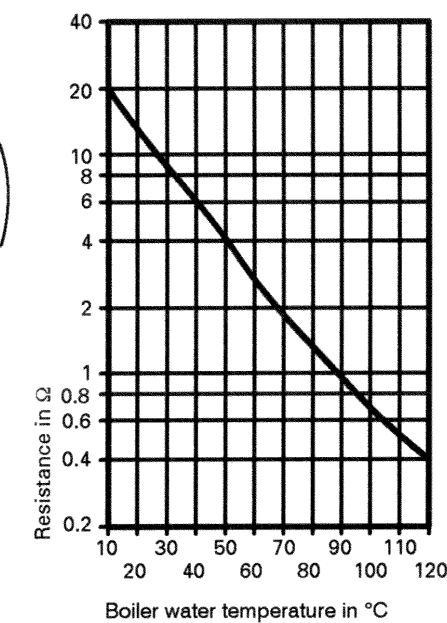
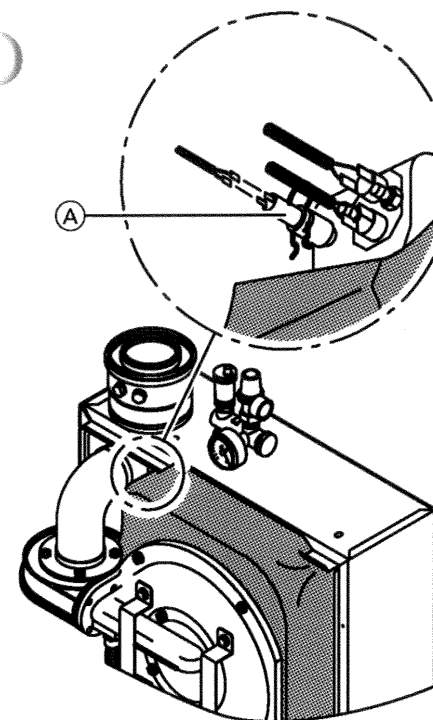


(A) Outdoor temperature sensor



1. Disconnect connector "X6" from the control unit.
2. Measure resistance of outdoor temperature sensor at the disconnected connector between "X6.3" and "X6.4".
3. If the value measured differs significantly from the curve, disconnect the wires on the sensor and repeat the measurement directly on the sensor.
4. Depending on the result, replace the cable or the outdoor temperature sensor.

**Check boiler temperature sensor**

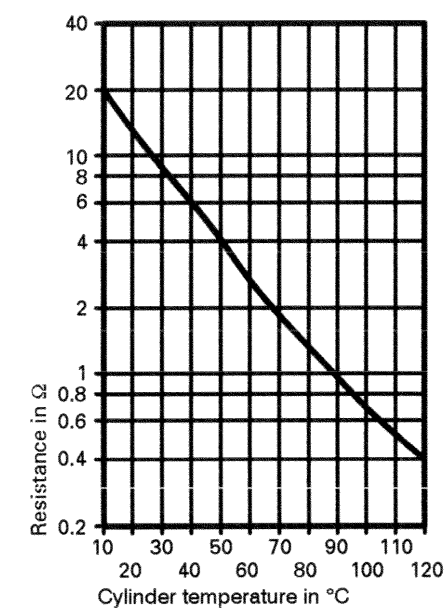
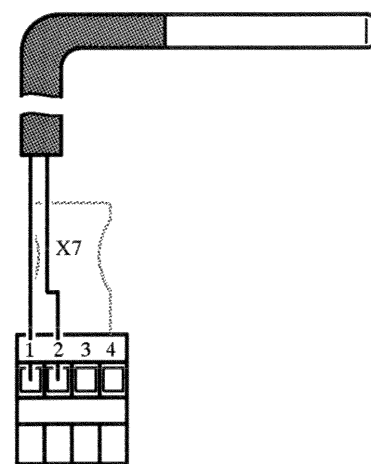


1. Disconnect the cables from the boiler temperature sensor (A).
2. Measure the resistance of the boiler temperature sensor and compare with the curve.
3. If the value measured differs significantly, replace the sensor.

**Important:**  
As the sensor is in direct contact with the heating water, the boiler must be drained before changing the sensor.

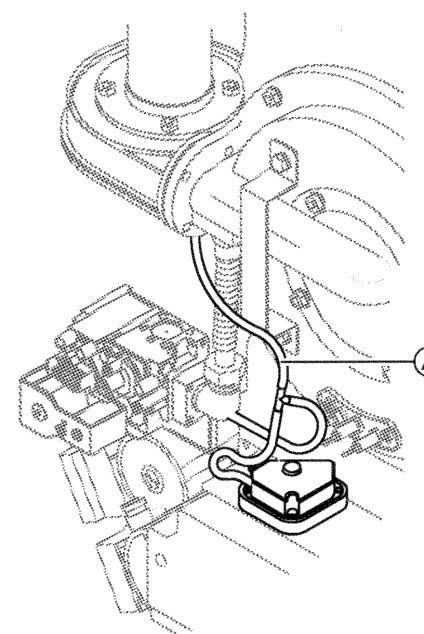
**Correction** (continued)

**Check cylinder temperature sensor**



1. Disconnect connector "X7" from the control unit.
2. Measure resistance of the cylinder temperature sensor and compare with the curve.
3. If the value measured differs significantly, replace the sensor.

**Check air pressure switch**

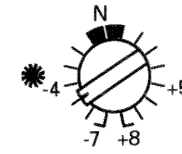


1. Disconnect control pipe (air pressure) (A) from fan.
2. Disconnect connector "X12.4" and "X12.5".
3. Blow into the hose. The contact in the air pressure switch must close audibly.

**Please note:**  
*The contact of the air pressure switch must be open before starting up.*

- Check by means of resistance measurement at connector "X12.4" and "X12.5".
- Contact switched over by air pressure.

**Correction** (continued)



**Relay test** (with standard programming unit)

1. Turn heating program selector switch to "T".
2. Select required setting on the "☀" selector knob.

Function	"☀" selector knob	Flashing display
Circulation pump for heating the cylinder	N	4:0:4
Heating circuit pump A	-1	4:0:2
Heating circuit pump with extension kit for heating circuit with mixing valve	-2	4:0:3
Open mixing valve	+1	4:0:0
Close mixing valve	+2	4:0:7
DHW circulation pump	-4	4:0:6
Burner ON	-3	4:0:1
Burner ON at bottom end of rated output range and heating circuit pump ON	-5	Boiler water temperature displayed
Burner ON at top end of rated output range and heating circuit pump ON	-6	Fault code from fault memory displayed (see page 23)

3. Turn heating program selector switch and "☀" selector knob back to original settings.

**Correction** (continued)

H PL

```

DIAGNOSIS/RELAYS
02: HEATING
   CIRCUIT PUMP.. A
   <PL20> ON
>CONTINUE:.....A
>BACK:.....B
>INSTALLER SETUP:...C
    
```

**Relay test** (with Comfortrol programming unit)

Open the cover:  
 Menu option            Button  
 → SYSTEM                "D"  
 → INSTALLER SETUP        "C"  
 → CODE PLEASE:          "B-C-C-B"  
 → DIAGNOSIS              "A"  
 → RELAY TEST             "A"

→ **Please note:**  
 Those relays which are not mentioned have no significance. When the relay is selected, only the corresponding unit is activated. If no heat request is active, the burner is omitted from the relay test.

Select the required relay to check its function with the menu option CONTINUE "A" (see below).

Display	Meaning
01    - 1st stage burner <PL41> ON	Burner
02    - Heating circuit pump A <PL20> ON	Heating circuit pump (built-in)
03    - Heating circuit pump B <PL20B> ON	Heating circuit pump with extension kit with mixing valve
04    - Cylinder loading pump <PL21> ON	Circulation pump for heating the cylinder
07    - Mixing valve HC B <PL52B> CLOSED	Mixing valve CLOSED
08    - Mixing valve HC B <PL52B> OPEN	Mixing valve OPEN
10    - Modulation <PL90> CLOSED Burner <PL41> ON	Burner (min. output)
11    - Modulation <PL90> OPEN Burner <PL41> ON	Burner (max. output)
13    - DHW circulation pump <PL28> ON	DHW circulation pump
14    - Central fault indicator <PL56> ON	Central fault indicator* <sup>1</sup>

\*<sup>1</sup>Only in conjunction with connection extension adaptor (Part No. 7404 582).

**Correction** (continued)

Check WS remote control unit (Part No. 7450 027)  
 Check RS remote control unit (Part No. 7450 028)

Accessory  
 Accessory

The WS remote control unit is used for setting the desired room temperature values from any room in the building.  
 The RS remote control unit is used for setting the desired room temperature values from the main living room (with room temperature dependent control).

**Functional check**

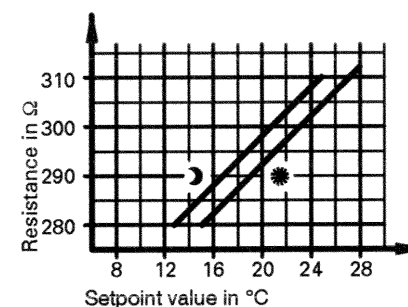
Resistance measurement and control unit response test.  
 If the presence of a fault is suspected in the customer's connecting cable, temporarily connect the remote control unit directly to the control unit and carry out test.

To calculate the total resistance (NTC), add together the actual value and the current resistance setpoint value.

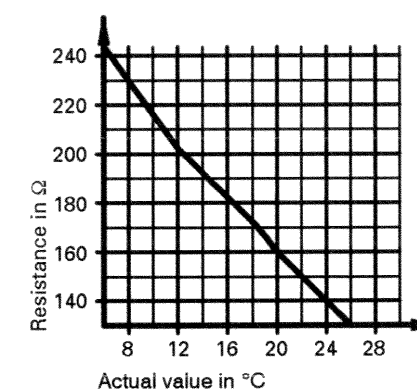
→ **Please note:**

In most cases, faulty behaviour of the control unit is due to the installation of the RS remote control unit in an unsuitable location. This can lead to draught phenomena caused by cavities behind the remote control unit or by the stack effect of empty pipes.

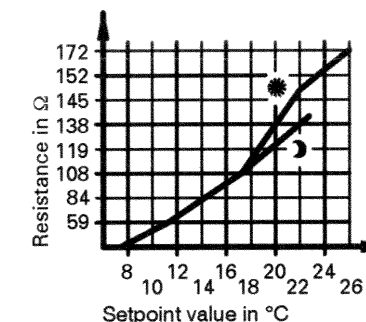
Wiring diagram: see section headed "Additional information".



WS remote control unit  
 \* - Setpoint value between terminal "9" and "10"  
 ) - Setpoint value between terminal "9" and "11"



RS remote control unit  
 Room temperature sensor (NTC) curve between terminal "9" and "13"



RS remote control unit  
 \* - Setpoint value between terminal "10" and "14"  
 ) - Setpoint value between terminal "11" and "14"

**Overview**

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**Technical data**

Rated voltage: 230 V~	Ambient temperature	Setting of high limit safety cut-out:
Rated frequency: 50 Hz	■ during operation: - 0 to +40 °C	100 °C (fixed setting)
Rated current: 2.5 A~	■ during storage and transport: -20 to +65 °C	Main fuse: max. 16 A
Protection class: I	Setting of electronic limit thermostat: 78 °C	Power consumption
Degree of protection: IP X4 D to EN 60529, to be guaranteed by mounting/integration		■ Circulation pump: max. 115 W
		■ Burner: max. 20 W
		■ Control unit: max. 10 W
Relay output at 230 V~		
■ for DHW circulation pump [28]: 4 (2) A~		

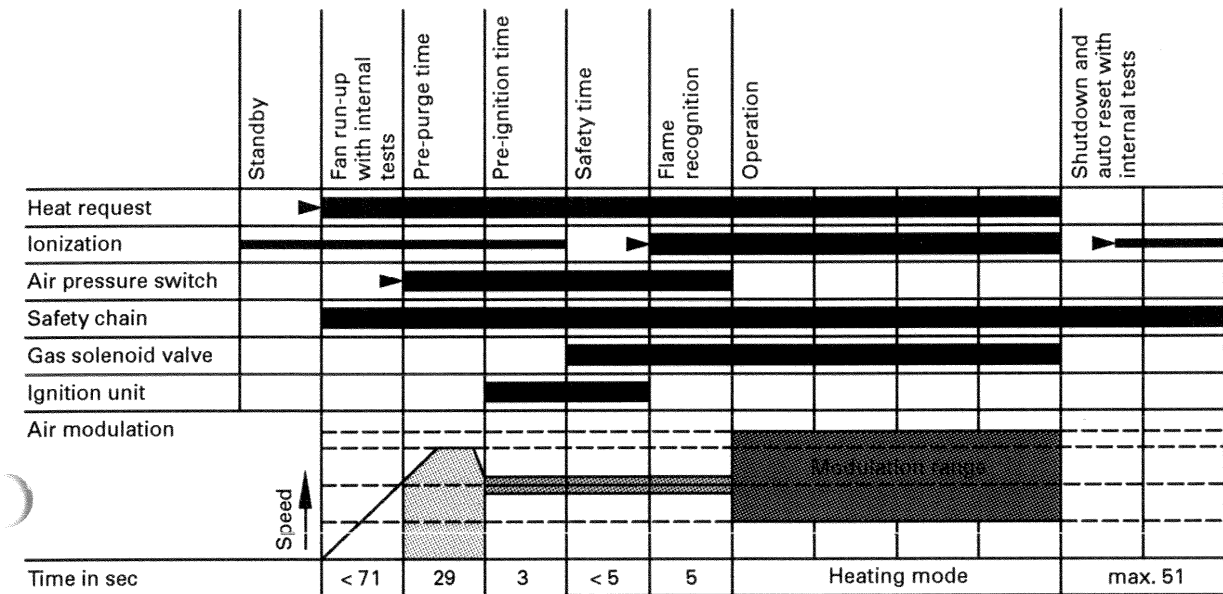
**Gas boiler, category II<sub>2</sub>ELL**

<b>Rated output range</b>	Vitodens 300, 8 to 15 kW with MatriX radiant burner, converted on site to 8 to 11 kW			
■ Central heating t <sub>F</sub> /t <sub>R</sub> = 75/60 °C	8 to 11 kW	8 to 15 kW	8 to 18 kW	8 to 24 kW
t <sub>F</sub> /t <sub>R</sub> = 40/30 °C	8.9 to 12.5 kW	8.9 to 16.5 kW	8.9 to 20.4 kW	8.9 to 26.3 kW
■ Domestic hot water heating kW <i>building</i>	8 to 18 kW	8 to 18 kW	8 to 22 kW	8 to 24 kW
<b>Rated thermal load range</b>				
■ Central heating kW	8.4 to 11.6 kW	8.4 to 15.8 kW	8.4 to 18.9 kW	8.4 to 25.0 kW
■ Domestic hot water heating kW	8.4 to 18.9 kW	8.4 to 18.9 kW	8.4 to 23.2 kW	8.4 to 25.0 kW
<b>Connection values*<sup>1</sup></b> based on the max. load				
■ Central heating				
with gas				
natural gas E	9.45 kWh/m <sup>3</sup> m <sup>3</sup> /h 34.01 MJ/m <sup>3</sup>	1.22	1.65	2.02
natural gas LL	8.13 kWh/m <sup>3</sup> m <sup>3</sup> /h 29.25 MJ/m <sup>3</sup>	1.41	1.92	2.31
■ Domestic hot water heating				
with gas				
natural gas E	9.45 kWh/m <sup>3</sup> m <sup>3</sup> /h 34.01 MJ/m <sup>3</sup>	2.02	2.02	2.42
natural gas LL	8.13 kWh/m <sup>3</sup> m <sup>3</sup> /h 29.25 MJ/m <sup>3</sup>	2.32	2.32	2.82
<b>Product ID No.</b>	CE-0085 AQ 0004	CE-0085 AQ 0004	CE-0085 AQ 0258	CE-0085 AQ 0445

\*<sup>1</sup>Connection values are only for documentation purposes (e.g. for the gas supply application) or for approximate, supplementary volumetric checking of the setting. Due to the factory settings, the gas pressures must not be changed from the values stated.

**Burner control unit LGM 29**

**Program sequence**



■ signal required  
 ■ signal invalid  
 ▶ signal required for transition to next phase

**Standby**

Waiting time until next heat request signal. The air pressure switch must be reset and the speed feedback signal must signal fan stationary.

**Start-up and run-up of fan**

Start takes place when request is received from controller, provided no air pressure is detected. The fan motor receives voltage. The speed signal and the air pressure signal must be received within approx. 70 seconds, otherwise a fault message is transmitted. During the run-up of the fan, the self-tests take place within the burner control unit LGM 29.

**Pre-purge time**

The combustion chamber is flushed out by the fan.

**Pre-ignition time**

Ignition spark is initiated.

**Safety time**

The solenoid valve coils receive voltage, flame monitoring is activated. Ignition is switched off after approx. 4 seconds. If the flame is not recognized during ignition, automatic switch-off takes place.

**Burner operation (green LED lit)**

Burner operation begins after the safety time has elapsed with flame recognition having taken place successfully. The burner control unit modulates from its ignition load on the basis of the selected setpoint value. After controlled shutdown, auto reset to the standby mode takes place.

**Shutdown**

The fuel valves are switched off. Internal tests are carried out.

**Air pressure switch test**

The air pressure switch must be reset after shutdown. A fault message is transmitted if

- the air pressure switch is not reset,
- a flame is still recognized.

**Test time**

Auto reset is the end of shutdown after controlled switch-off. Auto reset also takes place after re-setting, failure of the flame during operation or heat request terminated before the start of the safety time.

**Safety chain**

The safety chain must be closed continuously during the entire period of operation, otherwise automatic switch-off takes place immediately.

**Burner control unit LGM 29**

The burner control unit LGM 29 carries out self-tests in the following cases:

- when the burner has been in continuous operation for more than 24 hours,
- before each time that the burner is switched on,
- after each time that the burner is switched off.

**Behaviour in the event of malfunctions**

If errors are detected, either no start takes place or automatic switch-off is triggered. In the case of all safety-relevant malfunctions, the fuel supply is cut off. Automatic switch-off takes place

- when the flame fails to form before the expiry of the flame formation time,
- in the event of an uninterrupted delay of the flame signal for more than 3 seconds,
- in the event of an incorrect air pressure switch message longer than 70 seconds,
- in the event of internal faults.

In the event of undervoltage, the burner control unit either operates without a fault function or goes into the reset position (fuel valve closed). When the voltage rises to the normal value again, the burner control unit is ready to start again.



## Control unit with standard programming unit

### Functional description

The control unit calculates a boiler water setpoint temperature as a function of the outdoor temperature or room temperature (where a room temperature dependent remote control is connected) and the slope/shift of the heating curve.

The computed boiler water setpoint temperature is transmitted to the burner control unit.

From the boiler water setpoint and actual temperature the burner control unit calculates the degree of

modulation required and controls the burner accordingly.

The boiler water temperature is limited in the burner control unit:

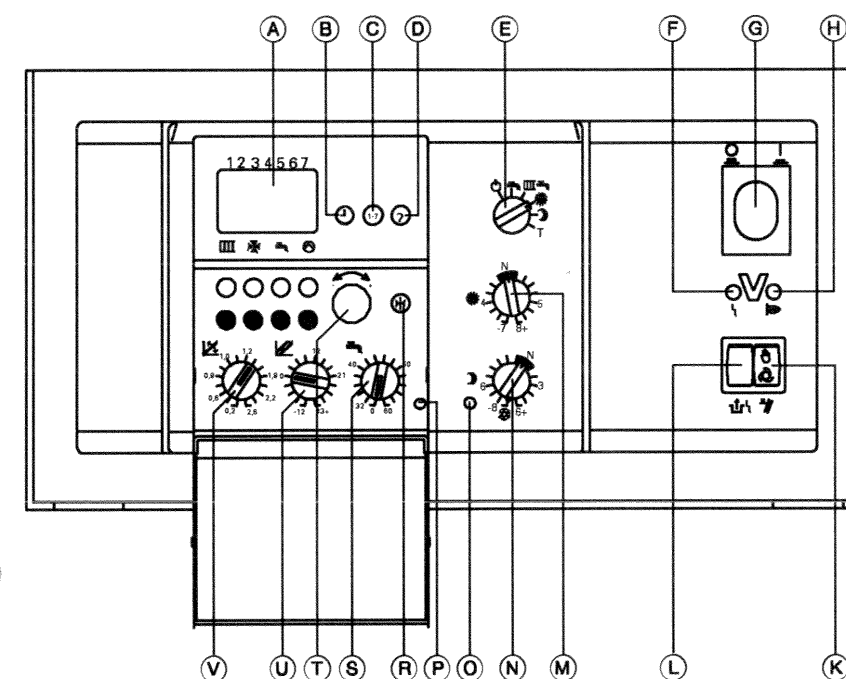
- to 84 °C by the temperature regulator (adjustable from 42 to 84 °C)
- to 78°C by the electronic limit thermostat.

The thermal circuit breaker of the safety chain interlocks the burner control unit at 90 °C boiler water temperature.

### Additional heating (domestic hot water)

The additional heating function is activated when an activation period of 10 minutes is selected (e.g. 22.10 to 22.20 hrs).

This period must lie outside the switching times for normal domestic hot water heating so that the signal is recognized by the control unit. The temperature setpoint value for additional heating is set in coding address "107".



- (A) Display
- (B) Time setting
- (C) Day setting
- (D) Temperature scan
- (E) Heating program selector switch
  - Standby mode
  - ☞ Domestic hot water only
  - ☞☞ Central heating and domestic hot water
  - ☼ Continuous normal room temperature
  - ☾ Continuous reduced room temperature
  - T Test setting
- (F) Burner fault indicator
- (G) Heating system on/off switch
- (H) Burner operating status indicator
- (K) Emissions test switch
- (L) Burner fault reset button
- (M) ☼ "Normal room temperature" selector knob
- (N) ☾ "Reduced room temperature" selector knob
- (O) "Reduced room temperature" indicator
- (P) "Domestic hot water heating" indicator
- (R) "Factory setting" button
- (S) ☞ "Domestic hot water temperature" selector knob
- (T) ☞☞ selector knob
- (U) ☞☞ "Heating curve shift" selector knob
- (V) ☞☞ "Heating curve slope" selector knob

**Control unit with standard programming unit** (continued)

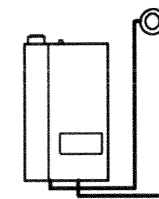
**Heating system types**

The control unit must be matched to the system equipment.  
 In the as delivered condition, the heating system type "04:00" is coded.  
 The coding is set automatically when a cylinder temperature sensor is connected.  
 The control unit must be re-coded if a heating circuit with mixing valve is connected.

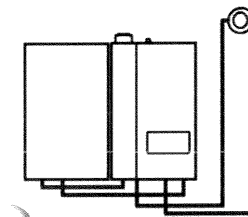
For this purpose the corresponding heating system type is coded in the coding address "04".  
 For other settings please note the numbers of the system types.

See page 43 for procedure for calling up the coding level.

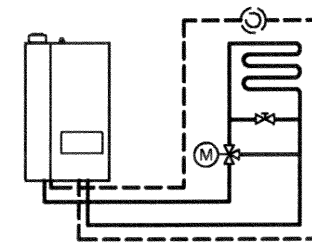
**Please note:**  
 If only heating circuit B with mixing valve is connected (i.e. there is no direct-connected heating circuit), the coding address "22:01" must be set.



**System type "04:00"**  
 Heating system with one heating circuit without mixing valve, without domestic hot water heating.

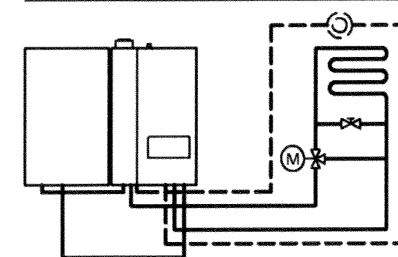


**System type "04:01"**  
 Heating system with one heating circuit without mixing valve, with domestic hot water heating.



**System type "04:02"**

- Heating system with one heating circuit with mixing valve, without domestic hot water heating
- or
- Heating system with one heating circuit with mixing valve and one heating circuit without mixing valve, without domestic hot water heating.



**System type "04:03"**

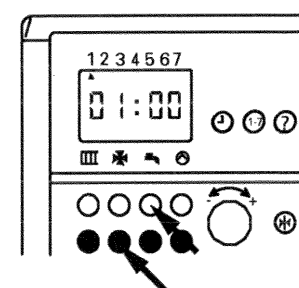
- Heating system with one heating circuit with mixing valve, with domestic hot water heating
- or
- Heating system with one heating circuit with mixing valve and one heating circuit without mixing valve, with domestic hot water heating.

**Control unit with standard programming unit (continued)**

**Call up coding level 1 (Example: Code heating system type)**

**Please note:**

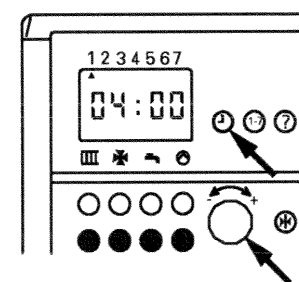
See page 48 for overview of all coding addresses in coding level 1.



**1. Call up coding level**

Press red "⏏" button and blue "⏏" button simultaneously. Keep both buttons pressed until "01:00" appears after approx. 5 seconds.

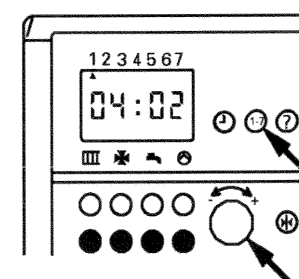
→ Coding level "01" is selected.



**2. Select coding address**

Press "1" button and turn the "1-7" selector knob clockwise until "04:00" is displayed.

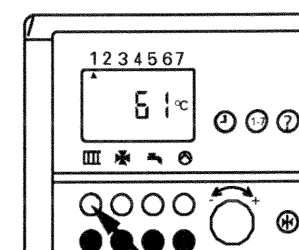
→ Coding address for the heating system type is selected.



**3. Change value of coding address**

Press "1-7" button and turn the "1-7" selector knob until the code number of the selected system type appears.

→ Coding of the heating system type is selected.



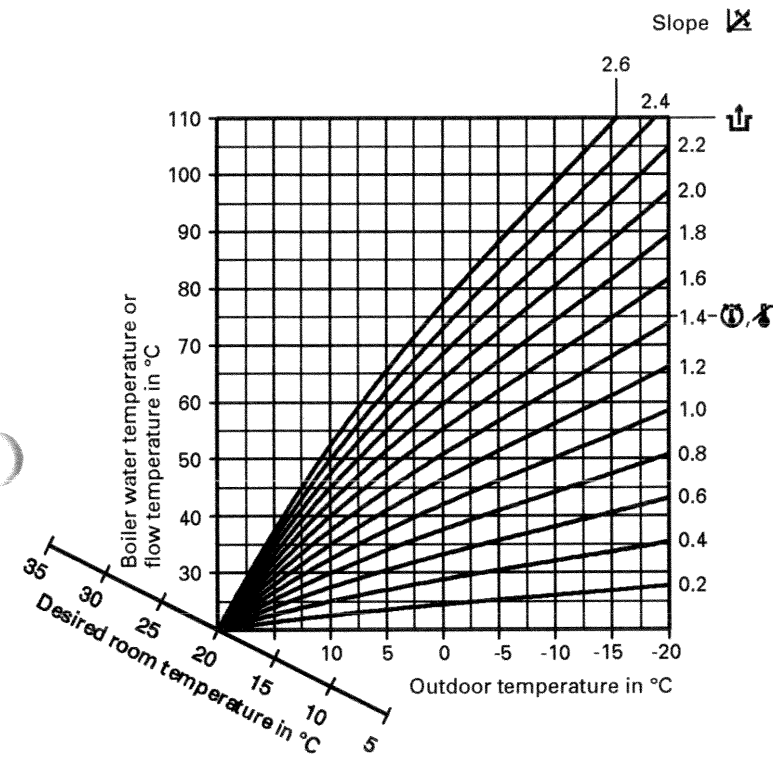
**4. Exit coding**

Press red "⏏" button.

→ Display goes back to initial status (e.g. display of boiler water temperature).

**Control unit with standard programming unit** (continued)

**Heating curve**



The heating curves represent the relationship between the outdoor temperature and the boiler water or flow temperature.  
 Put simply: The lower the outdoor temperature, the higher the boiler water or flow temperature.  
 In turn, the room temperature is dependent on the boiler water or flow temperature.  
 If a different room temperature is set, the curves are shifted parallel to the desired room temperature axis.

- Factory settings:*
- Slope  $\text{X}$  = 1.4
  - Shift  $\text{Z}$  = 0

**Control unit with standard programming unit (continued)**

**Heating curve for system types "04:00" and "04:01"**

Setting required	Effect on heating curve	How to carry out the setting																												
Desired room temperature		<p>"☀" selector knob "☾" selector knob</p>																												
Slope of heating curve		<p>"⚡" selector knob</p>																												
Shift of heating curve		<p>"⚡" selector knob</p>																												
Maximum temperature limit		<ol style="list-style-type: none"> <li>Call up coding address "06" (see procedure on page 43).</li> <li>Change coding address for heating circuit A</li> </ol> <table border="1"> <thead> <tr> <th>Coding address for heating circuit A</th> <th>Maximum limit</th> </tr> </thead> <tbody> <tr><td>06:01</td><td>40 °C</td></tr> <tr><td>06:02</td><td>45 °C</td></tr> <tr><td>06:03</td><td>50 °C</td></tr> <tr><td>06:04</td><td>55 °C</td></tr> <tr><td>06:05</td><td>60 °C</td></tr> <tr><td>06:06</td><td>65 °C</td></tr> <tr><td>06:07</td><td>70 °C</td></tr> <tr><td>06:08</td><td>75 °C</td></tr> <tr><td>06:09</td><td>80 °C</td></tr> <tr><td><b>06:10</b></td><td><b>85 °C (factory setting)</b></td></tr> <tr><td>06:11</td><td>90 °C</td></tr> <tr><td>06:12</td><td>95 °C</td></tr> <tr><td>06:13</td><td>100 °C</td></tr> </tbody> </table>	Coding address for heating circuit A	Maximum limit	06:01	40 °C	06:02	45 °C	06:03	50 °C	06:04	55 °C	06:05	60 °C	06:06	65 °C	06:07	70 °C	06:08	75 °C	06:09	80 °C	<b>06:10</b>	<b>85 °C (factory setting)</b>	06:11	90 °C	06:12	95 °C	06:13	100 °C
Coding address for heating circuit A	Maximum limit																													
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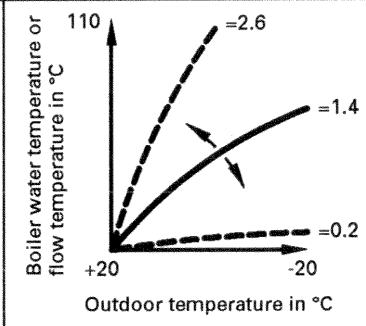
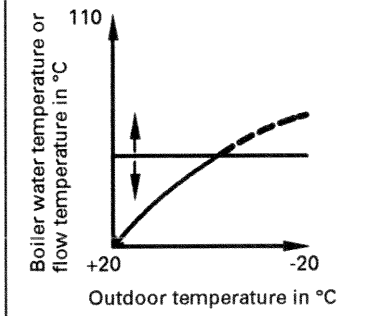
**Control unit with standard programming unit** (continued)

Heating curve for system types "04:02" and "04:03"

Setting required	Effect on heating curve	How to carry out the setting																																		
Desired room temperature		<p>"☀" selector knob "☾" selector knob</p>																																		
Slope of heating curve of heating circuit with mixing valve		<p>"⌘" selector knob</p>																																		
Shift of heating curve of heating circuit with mixing valve		<p>"⌘" selector knob</p>																																		
Differential temperature		<ol style="list-style-type: none"> <li>Call up coding address "07" (see procedure on page 43).</li> <li>Change coding address</li> </ol> <table border="1"> <thead> <tr> <th>Coding address</th> <th>Differential temperature</th> </tr> </thead> <tbody> <tr> <td>07:00</td> <td>6 K</td> </tr> <tr> <td><b>07:01</b></td> <td><b>8 K</b> (factory setting)</td> </tr> <tr> <td>07:02</td> <td>10 K</td> </tr> <tr> <td>07:03</td> <td>12 K</td> </tr> <tr> <td>07:04</td> <td>14 K</td> </tr> <tr> <td>07:05</td> <td>16 K</td> </tr> <tr> <td>07:06</td> <td>18 K</td> </tr> <tr> <td>07:07</td> <td>20 K</td> </tr> <tr> <td>07:08</td> <td>22 K</td> </tr> <tr> <td>07:09</td> <td>24 K</td> </tr> <tr> <td>07:10</td> <td>26 K</td> </tr> <tr> <td>07:11</td> <td>28 K</td> </tr> <tr> <td>07:12</td> <td>30 K</td> </tr> <tr> <td>07:13</td> <td>32 K</td> </tr> <tr> <td>07:14</td> <td>34 K</td> </tr> <tr> <td>07:15</td> <td>36 K</td> </tr> </tbody> </table>	Coding address	Differential temperature	07:00	6 K	<b>07:01</b>	<b>8 K</b> (factory setting)	07:02	10 K	07:03	12 K	07:04	14 K	07:05	16 K	07:06	18 K	07:07	20 K	07:08	22 K	07:09	24 K	07:10	26 K	07:11	28 K	07:12	30 K	07:13	32 K	07:14	34 K	07:15	36 K
Coding address	Differential temperature																																			
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07:10	26 K																																			
07:11	28 K																																			
07:12	30 K																																			
07:13	32 K																																			
07:14	34 K																																			
07:15	36 K																																			

**Control unit with standard programming unit (continued)**

**Heating curve for system types "04:02" and "04:03" (continued)**

Setting required	Effect on heating curve	How to carry out the setting																																																			
Slope of heating curve for heating circuit without mixing valve	 <p>→ <b>Please note:</b> The heating curve for the heating circuit without mixing valve is shifted upwards by the differential temperature.</p>	<p>1. Call up coding address "08" (see procedure on page 43).</p> <p>2. Change coding address</p> <table border="1"> <thead> <tr> <th>Coding address</th> <th>Setting range of slope "Δ"</th> </tr> </thead> <tbody> <tr><td>08:00</td><td>0.2</td></tr> <tr><td>08:01</td><td>0.4</td></tr> <tr><td>08:02</td><td>0.6</td></tr> <tr><td>08:03</td><td>0.7</td></tr> <tr><td>08:04</td><td>0.8</td></tr> <tr><td>08:05</td><td>0.9</td></tr> <tr><td>08:06</td><td>1.0</td></tr> <tr><td>08:07</td><td>1.1</td></tr> <tr><td>08:08</td><td>1.2</td></tr> <tr><td><b>08:09</b></td><td><b>1.4</b> (factory setting)</td></tr> <tr><td>08:10</td><td>1.6</td></tr> <tr><td>08:11</td><td>1.8</td></tr> <tr><td>08:12</td><td>2.0</td></tr> <tr><td>08:13</td><td>2.2</td></tr> <tr><td>08:14</td><td>2.4</td></tr> <tr><td>08:15</td><td>2.6</td></tr> </tbody> </table>	Coding address	Setting range of slope "Δ"	08:00	0.2	08:01	0.4	08:02	0.6	08:03	0.7	08:04	0.8	08:05	0.9	08:06	1.0	08:07	1.1	08:08	1.2	<b>08:09</b>	<b>1.4</b> (factory setting)	08:10	1.6	08:11	1.8	08:12	2.0	08:13	2.2	08:14	2.4	08:15	2.6																	
Coding address	Setting range of slope "Δ"																																																				
08:00	0.2																																																				
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08:13	2.2																																																				
08:14	2.4																																																				
08:15	2.6																																																				
Maximum temperature limit		<p>1. Call up coding address (see procedure on page 43).</p> <p>Heating circuit A (without mixing valve) "05" Heating circuit B (with mixing valve) "05"</p> <p>2. Change coding address</p> <table border="1"> <thead> <tr> <th>Heating circuit A (boiler circuit)</th> <th>Heating circuit B (mixing valve circuit)</th> <th>Maximum limit</th> </tr> </thead> <tbody> <tr><td>—</td><td>05:00</td><td>35 °C</td></tr> <tr><td>06:01</td><td>05:01</td><td>40 °C</td></tr> <tr><td>06:02</td><td>05:02</td><td>45 °C</td></tr> <tr><td>06:03</td><td>05:03</td><td>50 °C</td></tr> <tr><td>06:04</td><td>05:04</td><td>55 °C</td></tr> <tr><td>06:05</td><td>05:05</td><td>60 °C</td></tr> <tr><td>06:06</td><td>05:06</td><td>65 °C</td></tr> <tr><td>06:07</td><td>05:07</td><td>70 °C</td></tr> <tr><td>06:08</td><td><b>05:08</b></td><td>75 °C</td></tr> <tr><td>06:09</td><td>05:09</td><td>80 °C</td></tr> <tr><td><b>06:10</b></td><td>05:10</td><td>85 °C</td></tr> <tr><td>06:11</td><td>05:11</td><td>90 °C</td></tr> <tr><td>06:12</td><td>05:12</td><td>95 °C</td></tr> <tr><td>06:13</td><td>05:13</td><td>100 °C</td></tr> <tr><td>06:14</td><td>05:14</td><td>105 °C</td></tr> <tr><td>06:15</td><td>05:15</td><td>110 °C</td></tr> </tbody> </table> <p>"06:10" and "05:08" are factory settings.</p>	Heating circuit A (boiler circuit)	Heating circuit B (mixing valve circuit)	Maximum limit	—	05:00	35 °C	06:01	05:01	40 °C	06:02	05:02	45 °C	06:03	05:03	50 °C	06:04	05:04	55 °C	06:05	05:05	60 °C	06:06	05:06	65 °C	06:07	05:07	70 °C	06:08	<b>05:08</b>	75 °C	06:09	05:09	80 °C	<b>06:10</b>	05:10	85 °C	06:11	05:11	90 °C	06:12	05:12	95 °C	06:13	05:13	100 °C	06:14	05:14	105 °C	06:15	05:15	110 °C
Heating circuit A (boiler circuit)	Heating circuit B (mixing valve circuit)	Maximum limit																																																			
—	05:00	35 °C																																																			
06:01	05:01	40 °C																																																			
06:02	05:02	45 °C																																																			
06:03	05:03	50 °C																																																			
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Additional information

**Control unit with standard programming unit** (continued)

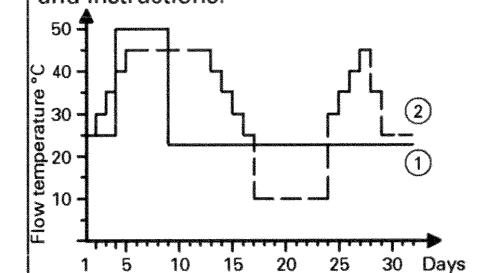
Overview – coding level 1

**⚠ Safety instruction!**

Do not change coding addresses which are not described below.

See page 43 for procedure for calling up coding level 1.

Coding as per factory setting Address: Value	Function mode	Coding change Address: Value	Possible change
00:15	Do not change		
01:00	Do not change		
02:00	Do not change		
03:00	No domestic hot water heating	03:01 03:02*1  03:14 03:15	Cylinder temperature control Cylinder temperature control (optimized)  Screed drying function based on temperature curve ① (DIN 4725)*2 Screed drying function based on temperature curve ② (Central Federation for Parquet and Floor Technology)*2  Screed function selectable on basis of two temperature/time curves. See DIN 4725-2 and manufacturer's data and instructions.
04:00*3	One heating circuit without mixing valve, without domestic hot water heating	04:01*3 04:02 04:03*3	One heating circuit without mixing valve, with domestic hot water heating One heating circuit without mixing valve, one heating circuit with mixing valve, without domestic hot water heating One heating circuit without mixing valve, one heating circuit with mixing valve, with domestic hot water heating
05:08*3	<b>Mixing valve</b> Max. temperature limit set to 75 °C	05:00 to 05:15	Max. temperature limit setting variable between 35 and 110 °C (limited by electric limit thermostat) H J
06:10	<b>Boiler</b> Max. temperature limit set to 85 °C	06:00 to 06:15	Max. temperature limit setting variable between 35 and 110 °C (limited by electric limit thermostat) H J
07:01*4	<b>Boiler</b> Differential temperature set to 8 K (Kelvin)	07:00 to 07:15	Differential temperature setting variable between 6 and 36 K (Kelvin)
08:09*4	<b>Boiler</b> Slope "∫" of heating curve set to "1.4"	08:00 to 08:15	Slope setting "∫" variable between "0.2" and "2.6"



\*1 This is set automatically when a cylinder temperature sensor is connected and can be re-set to "01" manually if required.

\*2 When the function expires, the program is changed over automatically to the "Central heating and DHW heating" mode.

\*3 On a system without mixing valve, the address without mixing valve and with recognition of DHW heating is set automatically and must be re-set manually therefore.

\*4 Only with heating system types "04:02" and "04:03".



**Control unit with standard programming unit (continued)****Overview - coding level 1 (continued)**

Coding as per factory setting Address: Value	Function mode	Coding change Address: Value	Possible change
10:01	<b>DHW cylinder</b> Circulation pump switches on immediately	10:00	Circulation pump is switched on as a function of the boiler temperature
11:01	<b>Heating circuit pump</b> Heating circuit pump speed in reduced range as per coding address "044:..." in coding level 2	11:00	Heating circuit pump speed in reduced range as per coding address "046:..." in coding level 2
12:01	<b>Heating circuit pump</b> With variable speed heating circuit pump (automatic recognition)	12:00	Staged heating circuit pump (e.g. as a temporary measure during servicing)
13:00	<b>DHW cylinder</b> Circulation pump with run-on time up to max. 10 min	13:01	Circulation pump without run-on time
14:00	<b>DHW cylinder</b> When the cylinder is being heated, the boiler water setpoint temperature corresponds to the cylinder setpoint temperature +20 K	14:01	When the cylinder is being heated, the boiler water setpoint temperature corresponds to 78 °C
15:01	<b>DHW cylinder</b> With domestic hot water priority control	15:00	Without domestic hot water priority control
16:01	<b>Pumps</b> With heating circuit pump logic function	16:00	Without heating circuit pump logic function
17:00	<b>Heating circuits</b> Heating circuit without mixing valve installed	17:01	Heating circuit with mixing valve installed
20:00	<b>Heating circuits</b> Without WS or RS remote control unit	20:01	With WS or RS remote control unit*1
21:00	Connection facility for DHW circulation pump	21:01	Output signal for DHW heating active
22:00	Heating system type 04:02 and 04:03: One heating circuit without mixing valve, one heating circuit with mixing valve	22:01	Built-in circulation pump OFF in heating mode (no direct-connected heating circuit installed)
24:01	Do not change		
25:00	Do not change		
26:00	Do not change		
27:00	Do not change		
30:00	External changeover of heating program	30:01	External request
31:00	Do not change		
32:01 33:00	<b>Remote control</b> Weather-compensated operation in heating mode and with reduced operation	32:00*2 33:00*2	With room temperature control switched in for heating mode and reduced operation
		32:00*2 33:01*2	Weather-compensated operation in heating mode With room temperature dependent control switched in for reduced operation
34:01	Do not change		
35:00	External request or external changeover of heating program blocked	35:01	External request or external changeover of heating program active
40:01	<b>Boiler</b> Boiler water temperature displayed	40:00	Time displayed

5692 397 GB

\*1Address is set automatically and must be re-set manually.

\*2Do not set in conjunction with RS remote control unit.

Additional information

**Control unit with standard programming unit** (continued)

Overview – coding level 1 (continued)

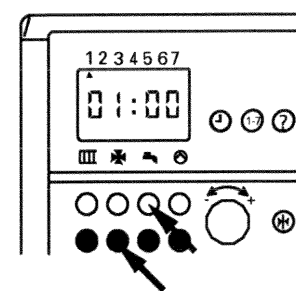
Coding as per factory setting Address: Value	Function mode	Coding change Address: Value	Possible change
41:00	Do not change		
42:00	Do not change		
43:00	Do not change		
44:01	Do not change		
45:00	Do not change		
46:01	Do not change		
47:01	Automatic resetting to summer/winter time	47:00	Manual resetting to summer/winter time
50:03	Start of summer time: March	50:01 to 50:12	January to December
51:05	Start of summer time: last week of month	51:01 to 51:05	Week 1 to Week 5 of the selected month
52:07	Start of summer time: last day of week (Sunday)	52:01 to 52:07	Monday to Sunday
53:10	Start of winter time: October	53:01 to 53:12	January to December
54:05	Start of winter time: last week of month	54:01 to 54:05	Week 1 to Week 5 of the selected month
55:07	Start of winter time: last day of week (Sunday)	55:01 to 55:07	Monday to Sunday

## Control unit with standard programming unit (continued)

## Call up coding level 2

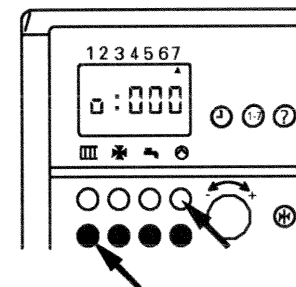
**Please note:**

If codings are to be carried out in coding level 2, the programming unit must be inserted in the control unit in the case of systems equipped with a wall mounting fixture. See page 52 for overview of all coding addresses in coding level 2.

**1. Call up coding level 1**

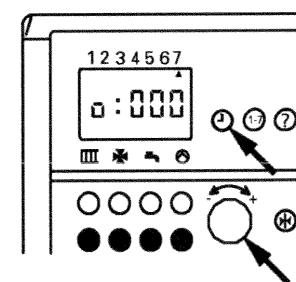
Press red "1-7" button and blue "\*" button simultaneously. Keep both buttons pressed until "01:00" appears after approx. 5 seconds.

→ Coding level "01" is selected.

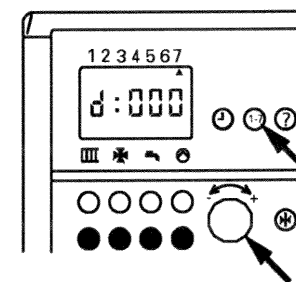
**2. Call up coding level 2**

Press red "III" button and blue "III" button simultaneously. Keep both buttons pressed until the display changes after approx. 5 seconds (e.g. to "0:000").

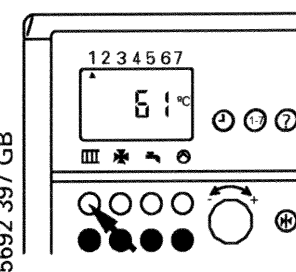
→ Coding level "02" is selected.

**3. Select coding address**

Press "1-7" button and turn the "1-7" selector knob clockwise until the coding address is displayed.

**4. Change value of coding address**

Press "1-7" button and turn the "1-7" selector knob until the required value of the coding address is displayed.

**5. Exit coding**

Press red "III" button.

Additional information

**Control unit with standard programming unit** (continued)

Overview of all coding addresses in coding level 2

See page 51 for procedure for calling up coding level 2.

Coding as per factory setting	Function mode	Coding change	Possible change
Address Value		Address Value	
038 040	<b>Boiler</b> Minimum flow temperature in heating mode	038 020 to 038 127	
042 075	<b>Boiler</b> Maximum boiler water temperature in heating mode	042 000 to 042 127	
044 020	<b>Heating circuit pump</b> Minimum speed of heating circuit pump; approx. 1100 rpm	044 001 to 044 100*1	Lowest value for min. speed of heating circuit pump; approx. 700 rpm Highest value for min. speed of heating circuit pump; approx. 2700 rpm
045 065	<b>Heating circuit pump</b> Maximum speed of heating circuit pump; approx. 1750 rpm	045 001 to 045 100*1	Lowest value for max. speed of heating circuit pump; approx. 700 rpm Highest value for max. speed of heating circuit pump; approx. 2700 rpm

\*1 One increment corresponds to approx. 20 rpm.

**Set** 045: ... codings according to the following table

Rated output of boiler in kW	Required residual head in m w.g.	Coding to be set for system temperature difference $\Delta T$ (heating water flow/heating water return) and resulting flow rate in m <sup>3</sup> /h					
		$\Delta T = 20$ K		$\Delta T = 15$ K		$\Delta T = 10$ K	
		Coding	Flow rate	Coding	Flow rate	Coding	Flow rate
11	1.5	037	0.47	039	0.63	044	0.95
	2.0	047	0.47	048	0.63	053	0.95
	3.0	064	0.47	066	0.63	069	0.95
15	1.5	040	0.65	043	0.86	051	1.29
	2.0	048	0.65	052	0.86	058	1.29
	3.0	066	0.65	068	0.86	075	1.29
18	1.5	042	0.77	047	1.03	056	1.55
	2.0	051	0.77	055	1.03	063	1.55
	3.0	067	0.77	072	1.03	078	1.55
24	1.5	046	1.03	052	1.38	070 *1	2.07
	2.0	054	1.03	060	1.38	*1	
	3.0	071	1.03	076	1.38	*1	

\*1 No residual head available.

046 045	<b>Heating circuit pump</b> Speed of heating circuit pump in reduced operation; approx. 1200 rpm	046 001 to 046 100*1	Lowest value for speed of heating circuit pump in reduced operation; approx. 700 rpm Highest value for speed of heating circuit pump in reduced operation; approx. 2700 rpm
100 020*2	<b>DHW cylinder</b> Differential temperature between desired boiler water temperature and desired cylinder temperature with domestic hot water heating	100 010 to 100 050	
102 075	<b>Boiler</b> Desired boiler water temperature with external request 75 °C	102 000 to 102 127	Setting range of desired boiler water temperature 0 to 127 °C
107 060	<b>DHW cylinder</b> Temperature for additional function for domestic hot water heating	107 061 to 107 090	Setting range between 61 and 90 °C

\*1 One increment corresponds to approx. 20 rpm.

\*2 Only effective with coding 14:00.

**Please note:**

"255" is displayed for all coding addresses not listed.

**Control unit with standard programming unit (continued)**

**Overview of all coding addresses in coding level 2 (continued)**

See page 51 for procedure for calling up coding level 2.

Coding as per factory setting	Function mode	Coding change	Possible change
Address Value		Address Value	
108 000	<b>Boiler</b> See table below for effect of external blocking signal	108 001 to 108 007	See table below for effect of external blocking signal

**Possible coding changes for coding address 108 "external blocking"**

Coding	Heating circuit pump	Heating circuit with mixing valve (extension kit)		Circulation pump for heating the cylinder	Burner
		Heating circuit pump	Mixing valve		
108-000	x	x	x	x	Blocked
108-001	OFF	OFF	CLOSED	OFF	Blocked
108-002	x	x	x	OFF	Blocked
108-003	x	OFF	CLOSED	x	Blocked
108-004	OFF	x	x	x	Blocked
108-005	OFF	x	x	OFF	Blocked
108-006	OFF	x	x	x	Blocked
108-007	OFF	OFF	CLOSED	x	Blocked

x= in normal control mode

109 098	<b>Circulation pump</b>	Maximum speed of circulation pump with domestic hot water heating	109 001 to 109 100*1	Lowest value for speed of circulation pump with domestic hot water heating
125 000	<b>Boiler</b>	See table below for effect of external request signal	125 001 to 125 011	See table below for effect of external request signal

**Possible coding changes for coding address 125 "external request"**

Coding	Heating circuit pump	Heating circuit with mixing valve (extension kit)		Circulation pump for heating the cylinder	Boiler water temperature
		Heating circuit pump	Mixing valve		
125-000	ON	OFF	CLOSED	OFF	Maintained at desired value according to coding address "102"
125-001	OFF	OFF	CLOSED	OFF	
125-002	x	OFF	CLOSED	OFF	
125-003	OFF	x	x	OFF	
125-004	ON	x	x	OFF	
125-005	x	x	x	OFF	
125-006	OFF	OFF	CLOSED	x	
125-007	ON	OFF	CLOSED	x	
125-008	x	OFF	CLOSED	x	
125-009	OFF	x	x	x	
125-010	ON	x	x	x	
125-011	x	x	x	x	

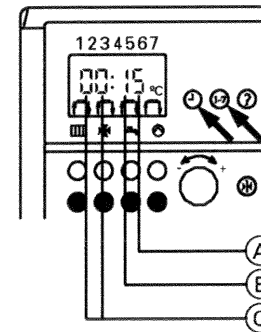
x= in normal control mode

\*1 One increment corresponds to approx. 20 rpm.

① Highest value for speed of circulation pump with domestic hot water heating

**Control unit with standard programming unit** (continued)

**Scanning**



Press buttons "1" and "7" simultaneously.

- (A) Domestic hot water system type selected in coding address 03\*1
- (B) Heating system type selected in coding address 04\*1
- (C) KM BUS user (see overview on page 18)

\*1 On systems equipped with a wall mounting fixture, the programming unit must be inserted in the control unit.

**Calling up temperatures**

With the programming unit, the temperatures of the connected sensors can be called up as setpoint and actual values.

**To call up actual temperatures**

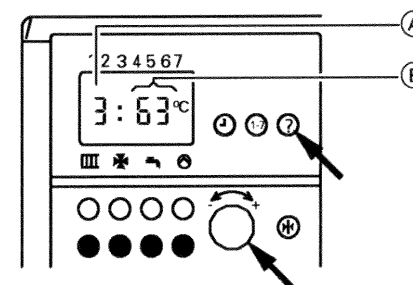
1. Select the code number for the corresponding temperature from the table.

Code number	Meaning of display	Actual temperature in °C (example of display)
1*1	Outdoor temperature	1: 8 °C
3	Boiler water temperature	3: 63 °C
4*2	Flow temperature	4: 44 °C
5*3	Cylinder temperature	5: 50 °C
7*3	Room temperature (only if the programming unit is used in the wall mounting fixture as a room temperature dependent remote control)	7: 20 °C

\*1 The value displayed takes into account weather conditions such as wind and sunshine as well as the wall temperature of the building.

\*2 Only in conjunction with extension kit for a heating circuit with mixing valve.

\*3 Only if the sensor is connected/activated.



2. Press the "?" button and turn the "←→" selector knob clockwise or counter-clockwise until code number (A) for the corresponding temperature appears in the display window. The current temperature (B) appears at the same time.

3. Release the "?" button. → Temperature scan is ended.

**Control unit with standard programming unit** (continued)

**Calling up temperatures** (continued)

**Please note:**

On systems equipped with a wall mounting fixture, the programming unit must be inserted in the control unit in order to be able to call up the setpoint temperatures.

**To call up setpoint temperatures**

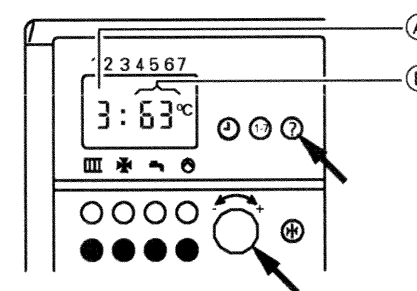
1. Turn the heating program selector switch to "T". → The display and the LEDs for "Reduced room temperature" and "Domestic hot water heating" flash.
2. Select the code number for the corresponding temperature from the table.



Code number	Meaning of display	Setpoint temperature in °C (example of display)
3	Boiler water setpoint temperature	3 : 65 °C
4 <sup>*1</sup>	Flow setpoint temperature	4 : 44 °C
5 <sup>*2</sup>	Cylinder setpoint temperature	5 : 55 °C

<sup>\*1</sup>Only in conjunction with extension kit for a heating circuit with mixing valve.

<sup>\*2</sup>Only if the sensor is connected/activated.



3. Press the "?" button and turn the "-/+ " selector knob clockwise or counter-clockwise until code number (A) for the corresponding temperature appears in the display window. The current temperature (B) appears at the same time.

4. Release the "?" button. → Temperature scan is ended.

## Control unit with Comfortrol programming unit

### Functional description

The control unit calculates a boiler water setpoint temperature as a function of the outdoor temperature or room temperature (where a room temperature dependent remote control is connected) and the slope/shift of the heating curve.

The computed boiler water setpoint temperature is transmitted to the burner control unit.

From the boiler water setpoint and actual temperature the burner

control unit calculates the degree of modulation required and controls the burner accordingly.

The boiler water temperature is limited in the burner control unit:

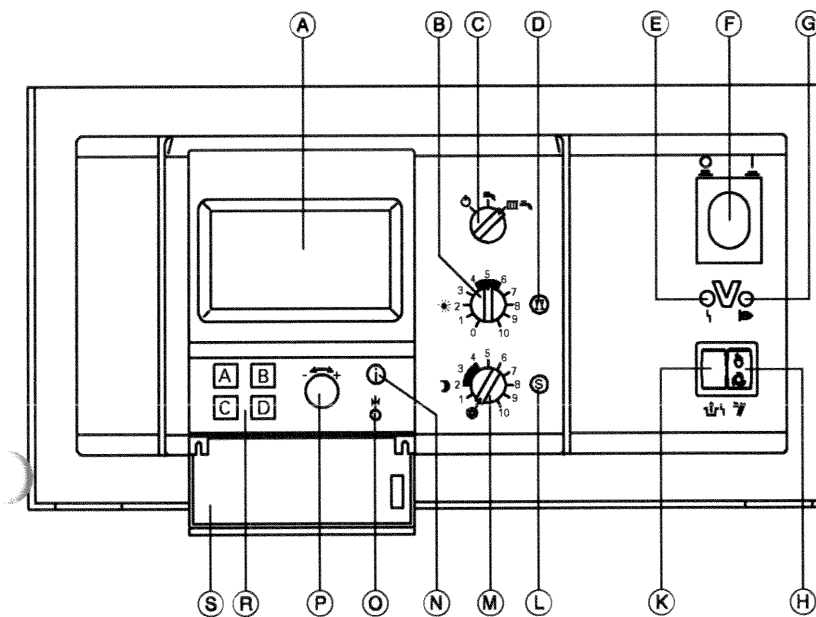
- to 84 °C by the temperature regulator (adjustable from 42 to 84 °C),
- to 78 °C by the electronic limit thermostat.

The thermal circuit breaker of the safety chain interlocks the burner control unit at 90 °C boiler water temperature.

### Additional heating (domestic hot water)

The additional heating function is activated when an activation period of 10 minutes is selected (e.g. 22.10 to 22.20 hrs).

This period must lie outside the switching times for normal domestic hot water heating so that the signal is recognized by the control unit. The temperature setpoint value for additional heating is set in coding address "0A7".



- (A) Display
- (B) \* "Normal room temperature" selector knob
- (C) Heating program selector switch
  - ⏻ Standby mode
  - 🔥 Domestic hot water only
  - 🏠 Central heating and domestic hot water
- (D) Party button
- (E) Burner fault indicator
- (F) Heating system on/off switch
- (G) Burner operating status indicator
- (H) Emissions test switch
- (K) Burner fault reset button
- (L) Energy saving button
- (M) 🌙 "Reduced room temperature" selector knob
- (N) Information button
- (O) Factory settings button
- (P) Selector knob for settings
- (R) Selector buttons
- (S) Hinged cover



**Control unit with Comfortrol programming unit** (continued)

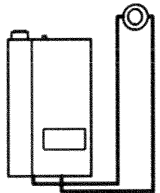
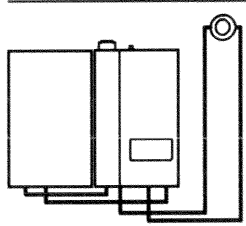
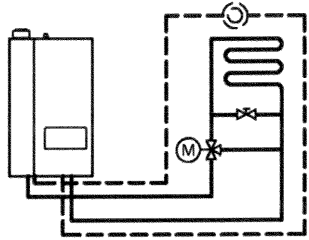
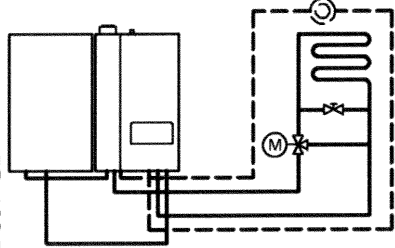
**Heating system types**

The control unit must be matched to the system equipment.  
 In the as delivered condition, the heating system type "000:000" is coded.  
 The coding is set automatically when a domestic hot water cylinder.  
 The control unit must be re-coded if a heating circuit with mixing valve is connected.

For this purpose the corresponding heating system type is coded in the coding address "000".  
 For other settings please note the numbers of the system types.

See page 58 for procedure for calling up the coding level.

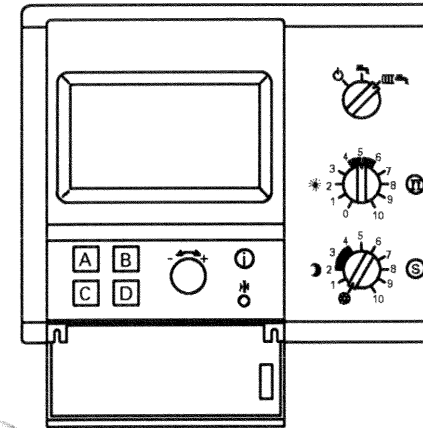
**Please note:**  
 If only heating circuit B with mixing valve is connected (i.e. there is no direct-connected heating circuit), the coding address "008:001" must be set.

	<p><b>System type "000:000"</b>                  Heating system with one heating circuit without mixing valve, without domestic hot water heating.</p>
	<p><b>System type "000:001"</b>                  Heating system with one heating circuit without mixing valve, with domestic hot water heating.</p>
	<p><b>System type "000:002"</b></p> <ul style="list-style-type: none"> <li>■ Heating system with one heating circuit with mixing valve, without domestic hot water heating or</li> <li>■ Heating system with one heating circuit with mixing valve and one heating circuit without mixing valve, without domestic hot water heating.</li> </ul>
	<p><b>System type "000:003"</b></p> <ul style="list-style-type: none"> <li>■ Heating system with one heating circuit with mixing valve, with domestic hot water heating or</li> <li>■ Heating system with one heating circuit with mixing valve and one heating circuit without mixing valve, with domestic hot water heating.</li> </ul>

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**Control unit with Comfortrol programming unit** (continued)

**Calling up the coding addresses**



The coding of the Comfortrol programming unit is carried out with the "A", "B", "C" and "D" buttons and the "↔" selector knob.

Open the cover:

Menu option	Button
→ SYSTEM	"D"
→ INSTALLER SETUP	"C"
→ CODE PLEASE:	"B-C-C-B"
→ CODING 1	"B"
or	
→ CODING 2	"C"

The desired coding address is selected by pressing button "A" (CONTINUE) or "B" (BACK). The coding address concerned is changed with the "↔" selector knob (CHANGE). The change is confirmed with button "D" (the change is stored).

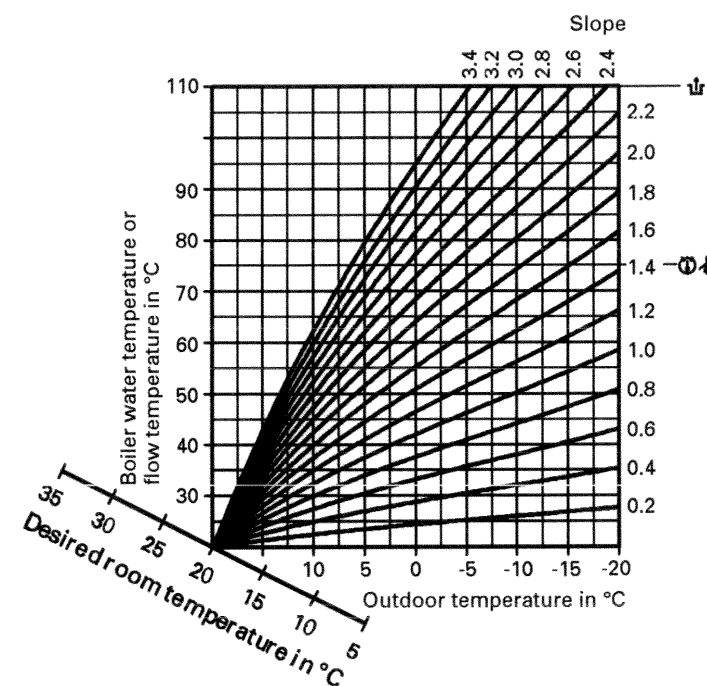
→ **Please note:**

*All the settings are carried out in the "Installer setup" menu which contains "Coding 1" (the main coding addresses in plain language) and "Coding 2" (all coding addresses).*

*If changes are made and confirmed in Coding 1, they are automatically accepted in Coding 2 and vice versa.*

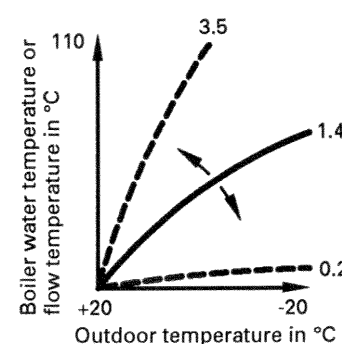
**Control unit with Comfortrol programming unit (continued)**

**Heating curve**

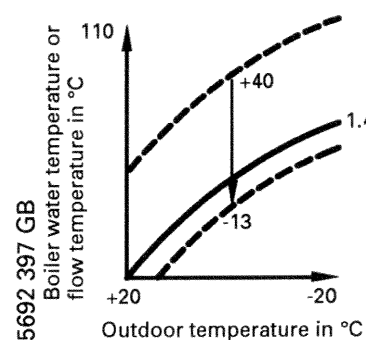


The heating curves represent the relationship between the outdoor temperature and the boiler water or flow temperature.  
 Put simply: The lower the outdoor temperature, the higher the boiler water or flow temperature.  
 In turn, the room temperature is dependent on the boiler water or flow temperature.  
 If a different room temperature is set, the curves are shifted parallel to the desired room temperature axis.

- Factory settings:*
- slope "∇" = 1.4
  - shift "∇" = 0



- 1. To change the slope**  
 Open the cover:  
 Menu option                      Button  
 → HEATING CIRCUIT A        "A"  
     or  
     HEATING CIRCUIT B        "B"  
 → HEATING CURVE            "B"  
 → CHANGE                      "A"



- 2. To change the shift**  
 Open the cover:  
 → HEATING CIRCUIT A        "A"  
     or  
     HEATING CIRCUIT B        "B"  
 → HEATING CURVE            "B"  
 → CHANGE                      2 x "A"

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**Control unit with Comfortrol programming unit** (continued)

## Overview of coding addresses

**⚠ Safety instruction!**

Coding addresses which are not described in this section must not be changed.

See page 58 for procedure for calling up the coding addresses.

Coding as per factory setting Address: Value	Function mode	Coding change Address: Value	Possible change
000:000	One heating circuit without mixing valve, system without domestic hot water heating	000:001* <sup>1</sup> 000:002* <sup>2</sup> 000:003* <sup>1, 2</sup>	One heating circuit without mixing valve, system with domestic hot water heating One heating circuit with mixing valve, system without domestic hot water heating One heating circuit with mixing valve, system with domestic hot water heating
001:000	Do not change		
003:001	<b>DHW cylinder</b> With priority switching to heating circuit pump(s)	003:000	Without priority switching to heating circuit pump(s)
004:000	Do not change		
005:001	<b>Heating circuit pump</b> With heating circuit pump logic function	005:000	Without heating circuit pump logic function
006:001	<b>Heating circuit pump</b> Heating circuit pump speed in reduced range as per coding address "044:..."	006:000	Heating circuit pump speed in reduced range as per coding address "046:..."
007:000	<b>DHW cylinder</b> Setting range of domestic hot water temperature 10 to 60 °C	007:001	Setting range of domestic hot water temperature 10 to 70 °C <b>Important:</b> Note max. cylinder water temperature.
008:000	<b>Heating circuit pump</b> Heating circuit pump "ON" with heating system types "000:002" and "000:003"	008:001	Heating circuit pump "OFF" with heating system types "000:002" and "000:003"
009:000	<b>Program- ming unit</b> Display of boiler water temperatures	009:001	Display of outdoor temperature
010:000	Do not change		
011:000	External request or external changeover of heating program blocked	011:001	External request or external changeover of heating program active
012:000	Do not change		
013:001	<b>Heating circuit pump</b> With variable speed heating circuit pump (automatic recognition)	013:000	Staged heating circuit pump (e.g. as temporary measure for servicing)
014:000* <sup>3</sup>	<b>Heating circuit</b> Party button "Y" effective for heating circuit B	014:001* <sup>3</sup>	Party button "Y" effective for heating circuit A and heating circuit B
015:001	Do not change		
016:000	Do not change		
017:001	<b>DHW cylinder</b> Circulation pump switches on immediately	017:000	Circulation pump switches on as a function of the boiler water temperature
018:000	<b>DHW cylinder</b> Circulation pump with run-on	018:001	Circulation pump without run-on

\*<sup>1</sup>Coding for systems with domestic hot water heating is automatically recognized.

\*<sup>2</sup>These codings also apply on systems with one heating circuit without mixing valve and one heating circuit with mixing valve.

\*<sup>3</sup>Only on heating system types "000:002" and "000:003" (heating systems with one heating circuit with mixing valve).

**Control unit with Comfortrol programming unit** (continued)

## Overview of coding addresses (continued)

Coding as per factory setting Address: Value	Function mode	Coding change Address: Value	Possible change
019:000	<b>Program- ming unit or remote control</b> Operation on weather-compensated basis (WS function) for all connected heating circuits	019:001* <sup>1</sup>  019:002* <sup>1</sup>	<ul style="list-style-type: none"> <li>■ On systems with one heating circuit without mixing valve <b>or</b> one heating circuit with mixing valve: Operation with room temperature dependent control (RS function)</li> <li>■ On systems with one heating circuit without mixing valve <b>and</b> one heating circuit with mixing valve: Operation on weather-compensated basis (WS function) for the heating circuit without mixing valve and operation with room temperature dependent control (RS function) for the heating circuit with mixing valve</li> <li>■ On systems with one heating circuit without mixing valve <b>or</b> one heating circuit with mixing valve: Operation on weather-compensated basis (WS function) in normal heating mode and operation with room temperature dependent control (RS function) in reduced operation</li> <li>■ On systems with one heating circuit without mixing valve <b>and</b> one heating circuit with mixing valve: Operation on weather-compensated basis (WS function) for the heating circuit without mixing valve and on weather-compensated basis in normal heating mode and operation with room temperature dependent control in reduced operation (WS/RS function) for the heating circuit with mixing valve</li> </ul>
020:000	<b>Heating circuits</b> Without WS or RS remote control unit	020:001	With WS or RS remote control unit* <sup>2</sup>
027:000	External changeover of the heating program	027:001	External request
028:000	<b>Boiler</b> During domestic hot water heating, the boiler water temperature is max. 20 K higher than the desired cylinder water temperature	028:001	During domestic hot water heating, the boiler water temperature is limited to 78 °C by the limit thermostat
029:001	Do not change		
033:000	Do not change		
034:000	Do not change		
036:000	Do not change		
038:020	Minimum flow temperature in heating mode	020 to 127	Setting only feasible up to limit set by the electronic limit thermostat H J
042:075	Maximum boiler water temperature in heating mode	000 to 127	
044:020	<b>Heating circuit pump</b> Minimum speed of heating circuit pump; approx. 1100 rpm	044:001 to 044:100* <sup>3</sup>	Lowest value for minimum speed of heating circuit pump; approx. 700 rpm Highest value for minimum speed of heating circuit pump; approx. 2700 rpm

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\*<sup>1</sup>Change only feasible if the programming unit is mounted in the wall mounting fixture.\*<sup>2</sup>Address set automatically, must be re-set manually.\*<sup>3</sup>One increment corresponds to approx. 20 rpm.

Additional information

**Control unit with Comfortrol programming unit (continued)**

Overview of coding addresses (continued)

Coding as per factory setting Address: Value	Function mode	Coding change Address: Value	Possible change
045:065	<b>Heating circuit pump</b> Maximum speed of heating circuit pump; approx. 1750 rpm	045:001 to 045:100*1	Lowest value for maximum speed of heating circuit pump; approx. 700 rpm Highest value for maximum speed of heating circuit pump; approx. 2700 rpm

\*1 One increment corresponds to approx. 20 rpm.

**Set 045: --- codings** according to the following table

Rated output of boiler in kW	Required residual head in m w.g.	Coding to be set for system temperature difference $\Delta T$ (heating water flow/ heating water return) and resulting flow rate in m <sup>3</sup> /h					
		$\Delta T = 20 K$		$\Delta T = 15 K$		$\Delta T = 10 K$	
		Coding	Flow rate	Coding	Flow rate	Coding	Flow rate
11	1.5	:037	0.47	:039	0.63	:044	0.95
	2.0	:047	0.47	:048	0.63	:053	0.95
	3.0	:064	0.47	:066	0.63	:069	0.95
15	1.5	:040	0.65	:043	0.86	:051	1.29
	2.0	:048	0.65	:052	0.86	:058	1.29
	3.0	:066	0.65	:068	0.86	:075	1.29
18	1.5	:042	0.77	:047	1.03	:056	1.55
	2.0	:051	0.77	:055	1.03	:063	1.55
	3.0	:067	0.77	:072	1.03	:078	1.55
24	1.5	:046	1.03	:052	1.38	:070	2.07
	2.0	:054	1.03	:060	1.38	*1	
	3.0	:071	1.03	:076	1.38	*1	

\*1 No residual head available.

046:045	<b>Heating circuit pump</b> Speed of heating circuit pump in reduced operation; approx. 1200 rpm	046:001 to 046:100*1	Lowest value for speed of heating circuit pump in reduced operation; approx. 700 rpm Highest value for speed of heating circuit pump in reduced operation; approx. 2700 rpm
047:---	<b>DHW cylinder</b> Actual temperature at cylinder temperature sensor <input type="checkbox"/> 4 in °C (no setting possible)		
048:000	Do not change, controller stop function		
049:---	Hours run ("hundreds") at 3rd place from left	049:000	Reset hours run
050:---	Hours run ("units") at 3rd place and "tens" at 2nd place from left	050:000	Reset hours run
055:040	Do not change		
085:032	Do not change		
086:032	Do not change		
088:007	Do not change		
089:008	Do not change		
099:000	Facility for connecting DHW circulation pump	099:001	Output signal for domestic hot water heating active
0A0:020*2	Differential temperature between desired boiler water temperature and desired cylinder temperature with domestic hot water heating		
0A1:006	Do not change		
0A2:075	<b>Boiler</b> Desired boiler temperature with external request 75 °C	0A2:000 to 0A2:127	Setting range of desired boiler water temperature 0 to 127 °C
0A3:---	Do not change		

\*1 One increment corresponds to approx. 20 rpm.

\*2 Only effective with coding 028:000.

**Control unit with Comfortrol programming unit** (continued)

## Overview of coding addresses (continued)

Coding as per factory setting Address: Value	Function mode	New coding Address: Value	Possible change
0A4:___	Do not change		
0A5:___	Do not change		
0A6:___	Do not change		
0A7:060	<b>DHW cylinder</b> Setpoint value for "Additional function for domestic hot water heating" (domestic hot water heated briefly to 60 °C)	A07:061 to A07:070	Setting range between 61 and 70 °C
0A8:000	<b>Boiler</b> See table below for effect of external blocking signal	0A8:001 to 0A8:007	See table below for effect of external blocking signal

## Possible coding changes for coding address 0A8 "external blocking"

Coding	Heating circuit pump	Heating circuit with mixing valve (extension kit)		Circulation pump for heating the cylinder	Burner
		Heating circuit pump	Mixing valve		
0A8:000	x	x	x	x	Blocked
0A8:001	OFF	OFF	CLOSED	OFF	Blocked
0A8:002	x	x	x	OFF	Blocked
0A8:003	x	OFF	CLOSED	x	Blocked
0A8:004	OFF	x	x	x	Blocked
0A8:005	OFF	x	x	OFF	Blocked
0A8:006	OFF	x	x	x	Blocked
0A8:007	OFF	OFF	CLOSED	x	Blocked

x= in normal control mode

**Control unit with Comfortrol programming unit (continued)**

**Overview of coding addresses (continued)**

Coding as per factory setting Address: Value	Function mode	New coding Address: Value	Possible change
0B2:___	Fault memory (see page 30)		
0B3:___	Fault memory (see page 30)		
0B4:___	Do not change		
0B8:000	No domestic hot water heating	0B8:001 0B8:002*1  0B8:014  0B8:015	Cylinder temperature control Cylinder temperature control (optimized)  Screed drying function based on temperature curve ① (DIN 4725)*2 Screed drying function based on temperature curve ② (Central Federation for Parquet and Floor Technology)*2  Screed function selectable on basis of two temperature/time curves. See DIN 4725-2 and manufacturer's data and instructions.
0C1:011	Do not change		
0C2:008	Do not change		
0C5:000	<b>Boiler</b> See table below for effect of external request signal	0C5:001 to 0C5:011	See table below for effect of external request signal

**Possible coding changes for coding address 0C5 "external request"**

Coding	Heating circuit pump	Heating circuit with mixing valve (extension kit)		Circulation pump for heating the cylinder	Boiler water temperature
		Heating circuit pump	Mixing valve		
0C5:000	ON	OFF	CLOSED	OFF	Maintained at desired value according to coding address "0A2"
0C5:001	OFF	OFF	CLOSED	OFF	
0C5:002	x	OFF	CLOSED	OFF	
0C5:003	OFF	x	x	OFF	
0C5:004	ON	x	x	OFF	
0C5:005	x	x	x	OFF	
0C5:006	OFF	OFF	CLOSED	x	
0C5:007	ON	OFF	CLOSED	x	
0C5:008	x	OFF	CLOSED	x	
0C5:009	OFF	x	x	x	
0C5:010	ON	x	x	x	
0C5:011	x	x	x	x	

x= in normal control mode

\*1 This is set automatically when a cylinder temperature sensor is connected and can be re-set to "001" manually if required.

\*2 When the function expires, the program is changed over automatically to the "Central heating and DHW heating" mode.



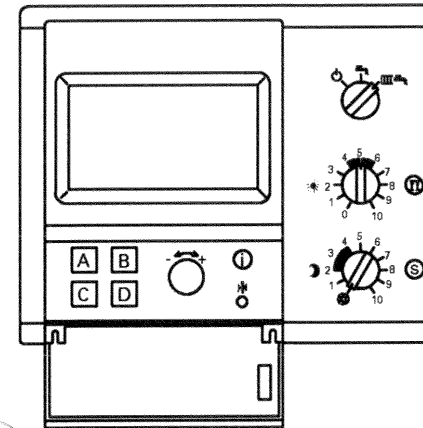
**Control unit with Comfortrol programming unit** (continued)

## Overview of coding addresses (continued)

Coding as per factory setting Address: Value	Function mode	New coding Address: Value	Possible change
0C6:000	Do not change		
0C7:003	<b>Resetting to summer/winter time</b> Automatic (Use of radio clock module is automatically recognized)	0C7:000 0C7:001 0C7:002	S/W changeover manual/date change blocked S/W changeover automatic S/W changeover manual/date change released
0C8:001	<b>External change-over of heating program</b> Contact open: Central heating ON/domestic hot water heating ON (according to time program) Contact closed: Central heating OFF/domestic hot water heating OFF.	0C8:000	Contact open: Central heating ON/domestic hot water heating ON (according to time program) Contact closed: Continuous central heating ON/domestic hot water heating ON (regardless of preset time program)
0C9:003	Start of summer time: March	0C9:001 to 0C9:012	January to December
0D0:005	Start of summer time: Last week of month	0D0:001 to 0D0:005	Week 1 to Week 5 of the selected month
0D1:007	Start of summer time: Last day of week (Sunday)	0D1:001 to 0D1:007	Monday to Sunday
0D2:010	Start of winter time: October	0D2:001 to 0D2:012	January to December
0D3:005	Start of winter time: Last week of month	0D3:001 to 0D3:005	Week 1 to Week 5 of the selected month
0D4:007	Start of winter time: Last day of week (Sunday)	0D4:001 to 0D4:007	Monday to Sunday
0D5:000	<b>Programming unit</b> Normal display format with cover closed	0D5:001	Large display format for time and outdoor temperature with cover closed
0D6:000	<b>Programming unit</b> Temperatures displayed in "°C" (°Celsius)	0D6:001	Temperatures displayed in "°F" (°Fahrenheit)
0D7:000	Do not change		

**Control unit with Comfortrol programming unit** (continued)

**Calling up temperatures**



The following desired and actual values can be called up and shown on the display of the Comfortrol programming unit:

→ **Please note:**  
Depending on the coding, the boiler water temperature or the outdoor temperature is shown in the first menu in the display.

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

Open the cover:

Menu option	Button
→ HEATING	
CIRCUIT A or	"A"
HEATING	
CIRCUIT B or	"B"
SYSTEM	"D"
→ OPERATING STATUS	"C" or "B"
→ CONTINUE	"A"

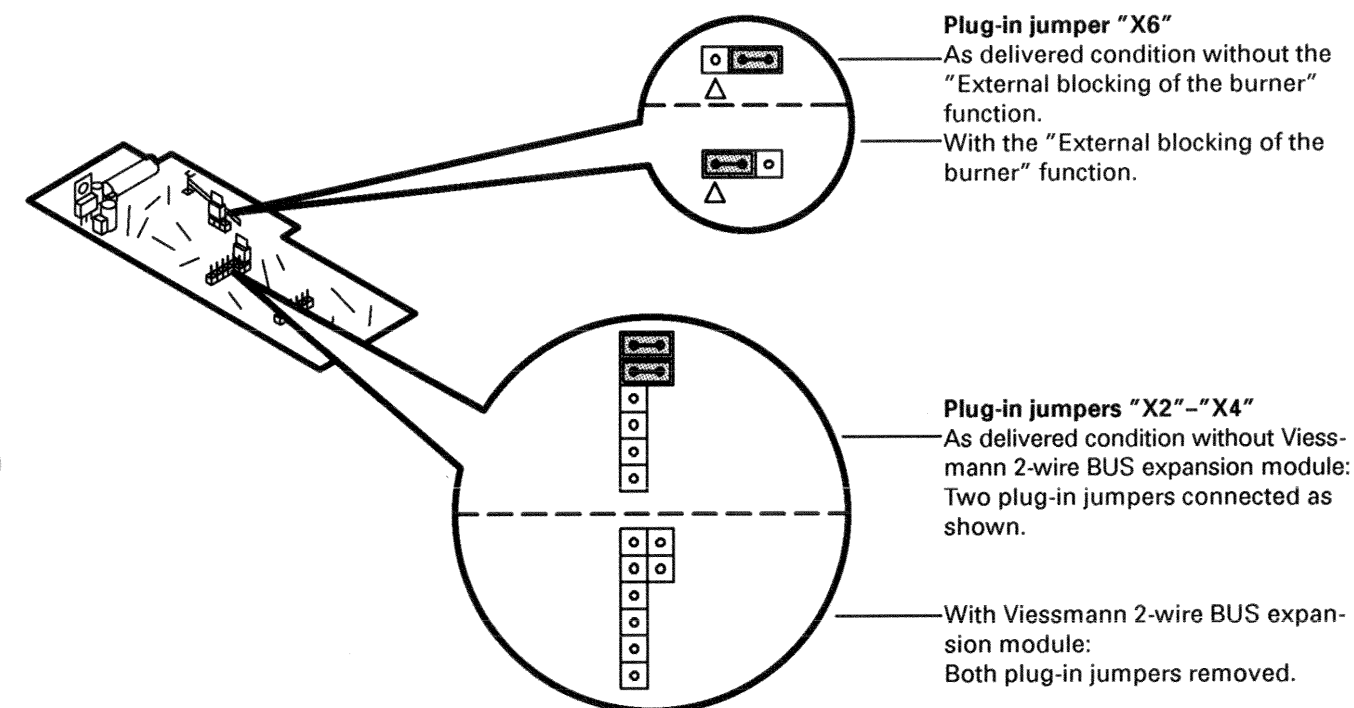
- Domestic hot water temperature

Open the cover:

Menu option	Button
→ DHW	"C"
→ DHW TANK	"A"
→ OPERATING STATUS	"C"

## Jumper assignment and codings

### Assignment of plug-in jumper on circuit board VR 20



### External changeover of the heating program (telephone contact)

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

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

### External request

to be provided 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".

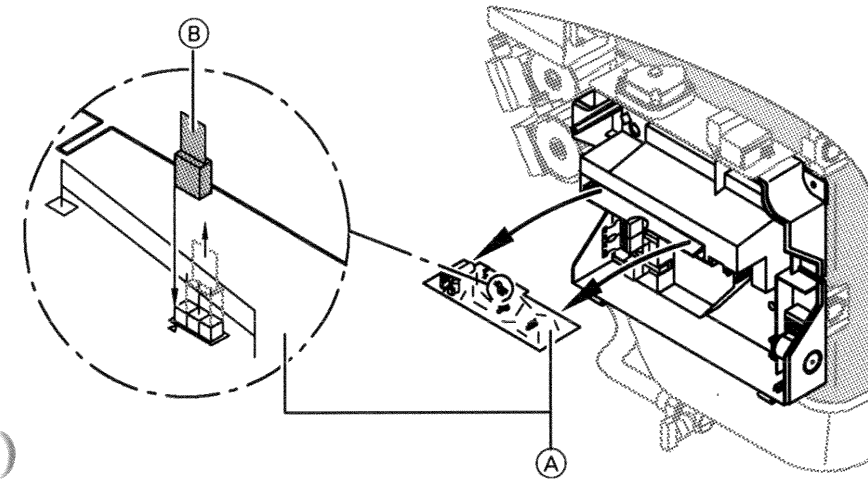
→ **Please note:**

The boiler is started up in accordance with the setting of the coding address "125" (standard programming unit) or "0C5" (Comfortrol programming unit).  
 The boiler water temperature is maintained at the desired value in accordance with the setting of the coding address "102" (standard programming unit) or "0A2" (Comfortrol programming unit).

**Jumper assignment and codings** (continued)

External blocking

to be provided on site



1. Pull out the circuit board VR 20 (A).
2. Reverse the plug-in jumper "X6" (B).
3. Insert the circuit board (A) again.

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

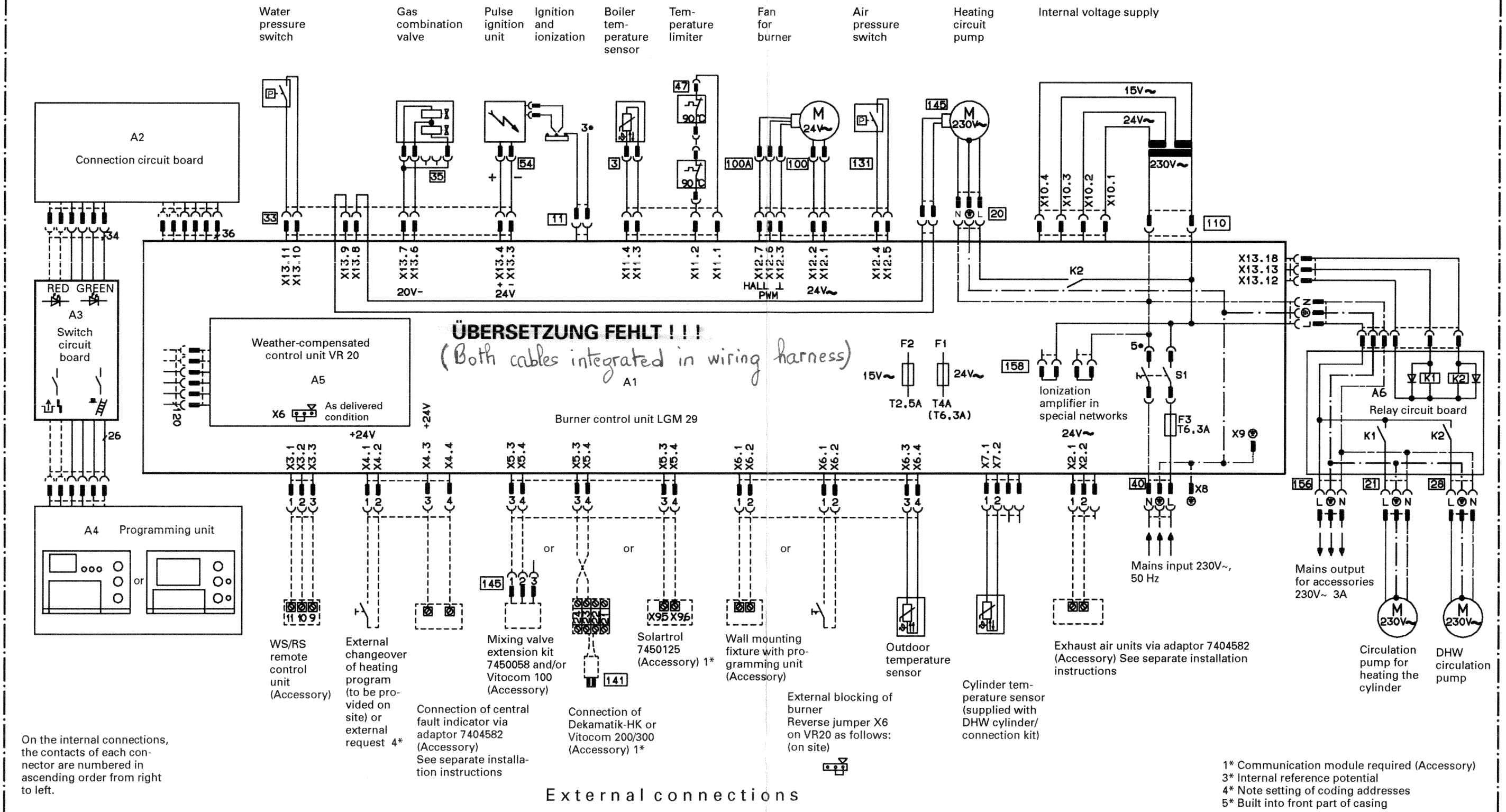
**Gas restrictors and air restrictors**

Boiler for	Rated output range (kW) for central heating	8 to 15 (8 to 11)* <sup>1</sup>	8 to 18	8 to 24
Natural gas E	Gas restrictor Identification code E			
Natural gas LL	Gas restrictor Identification code LL			

\*<sup>1</sup>Boilers with 8 to 15 kW output can be converted to 8 to 11 kW for central heating (DHW heating remains 8 to 18 kW).

Wiring diagram

Internal connections



# Additional information

## Parts list for Vitodens 300

### Note regarding orders for spare parts

Please state Part No. and Serial No. (see nameplate) as well as the item number of the part (as shown in this Parts List).  
Commercially available parts can be obtained from your local plumbers' merchant.

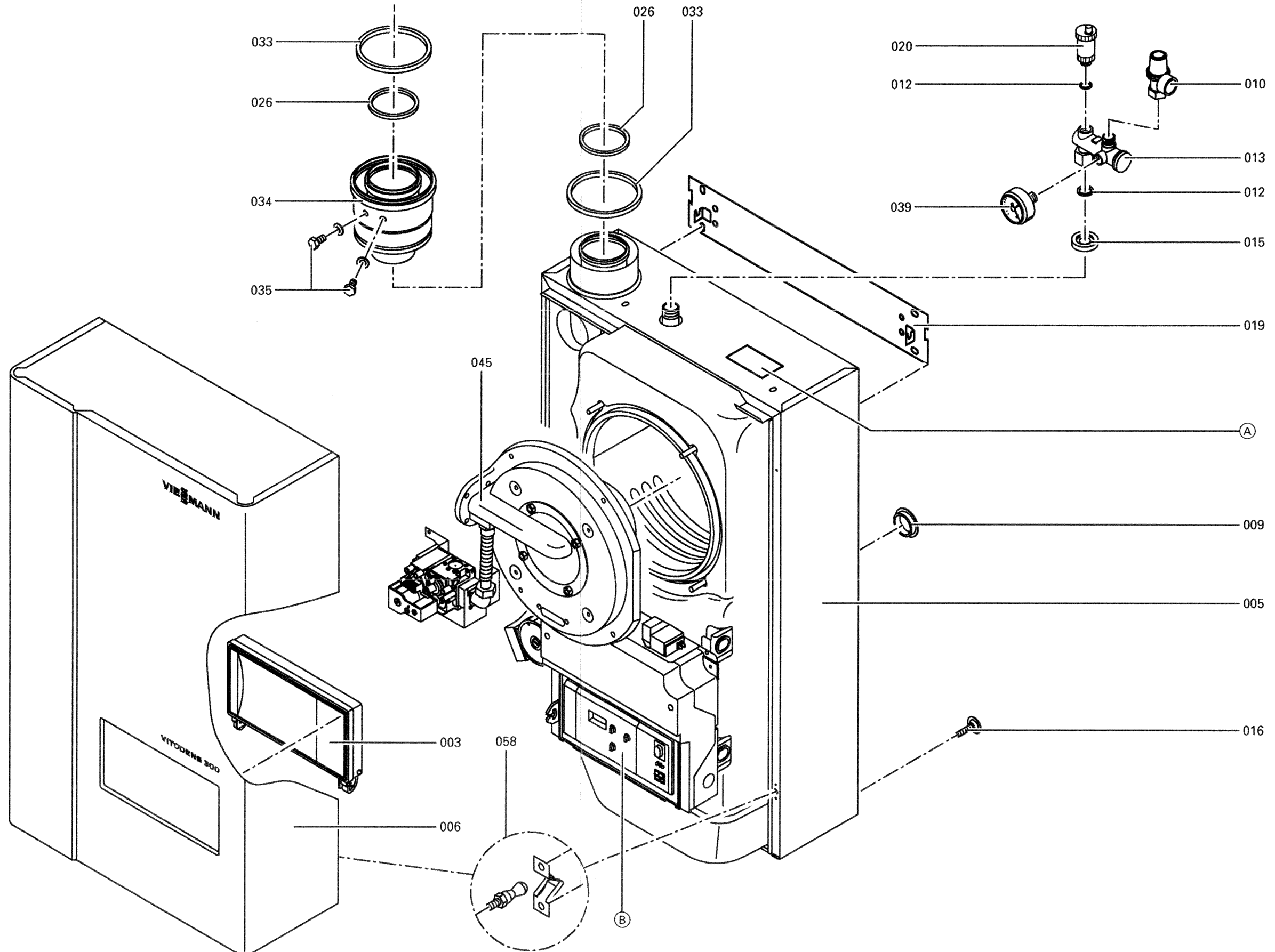
### Parts

- 003 Control unit cover, complete
- 005 Rear panel, complete (with items 009, 015, 016 and 033)
- 006 Front panel, complete (with items 003 and 058)
- 009 Cable bushing
- 010 Safety valve
- ( ) Set of seals
- 013 Safety equipment manifold
- 015 Diaphragm bushing
- 016 Adjustable foot
- 019 Wall mounting bracket
- 020 AAV (automatic air vent)
- 026 Flue pipe seal
- 033 Ventilation air pipe seal
- 034 Boiler connection adaptor
- 035 Locking cap
- 039 Manometer
- 045 MatriX radiant burner, complete (Parts: see page 75/76)
- 058 Fastenings

### Parts not illustrated

- 007 Service instructions
- 008 Wiring diagram
- 014 Heat conductive paste for thermal circuit breaker (item 018)
- ( ) Operating instructions (Vitodens 300 with control unit for weather-compensated operation with standard programming unit)
- 043 Operating instructions (Vitodens 300 with control unit for weather-compensated operation with Comfortrol programming unit)
- 048 Touch-up paint (aerosol), pure white
- 049 Touch-up paint (stick), pure white
- 050 Installation instructions
- 054 Conversion parts for natural gas type E and LL
- 059 Edge trim

- (A) Nameplate
- (B) Control unit parts on page 77/78

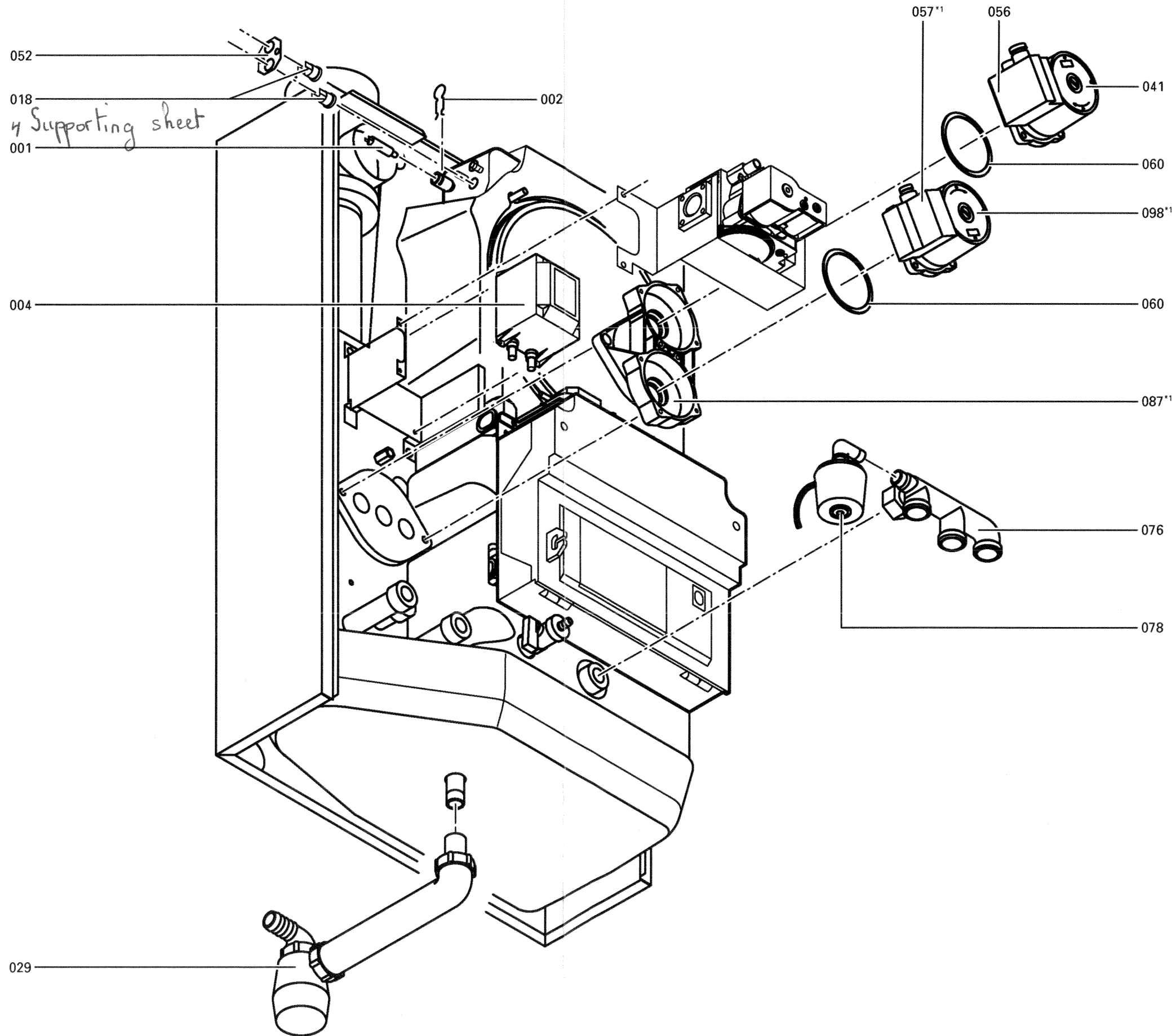


Parts list for Vitodens 300 (continued)

Parts

- 001 Temperature sensor
- 002 Spring clip
- 004 Transformer
- 018 Thermal circuit breaker
- 029 Siphon trap
- 041 Pump motor, variable speed
- 052 ~~Heatblech~~ **Übersetzung fehlt!**
- 056 Electronics module for pump motor, variable speed
- 057 4-speed module for pump motor\*1
- 060 Pump seal
- 076 Boiler return connection manifold
- 078 Water pressure switch
- 087 Flange for twin pump\*1
- 098 Pump motor, 4-speed (for circulation pump for heating the cylinder)\*1

\*1 Only with Part No.  
 7148433 1 00001 ...  
 7148437 1 00001 ...  
 7148440 1 00001 ... and  
 7148445 1 00001 ...



# Additional information

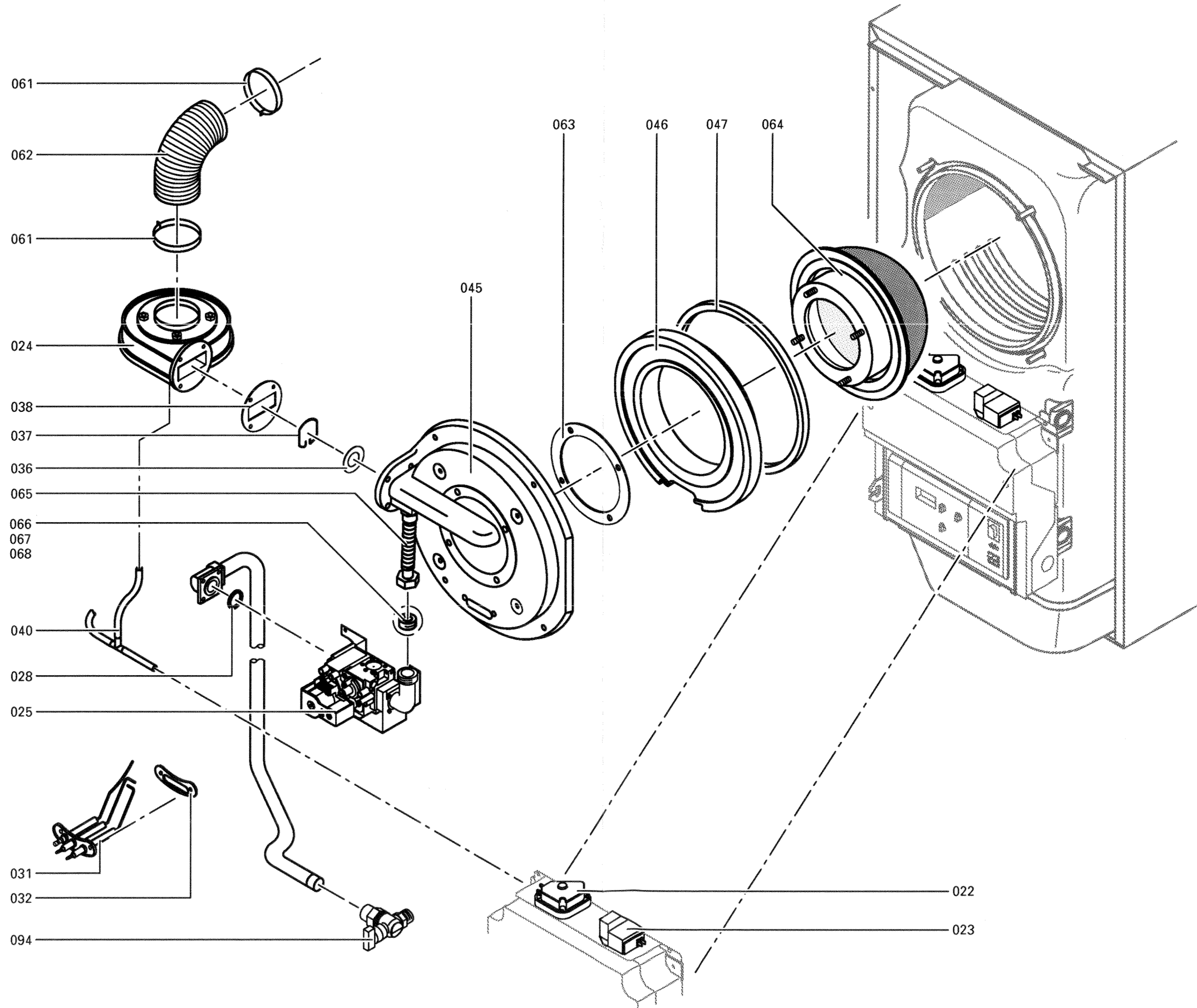
## Parts list for burner

### Parts

- 022 Air pressure switch
- 023 HF ignition unit
- 024 Fan
- 025 Gas train with gas governor
- 028 O ring
- 036 Air restrictor for MatriX radiant burner
- 037 Retaining ring for air restrictor
- 038 Seal for fan
- 040 Control pipe (air pressure)
- 045 MatriX burner
- 046 Insulating block
- 047 Ceram packing
- 061 Clip
- 062 Flexible pipe
- 063 Graphite seal ring
- 064 Wire gauze hemisphere, assembly
- 065 Gas connection hose
- 066 Gas restrictor for natural gas E
- 067 Gas restrictor for natural gas LL
- 068 Gas restrictor for LPG
- 094 Gas shut-off valve with built-in thermal safety shut-off valve

### Wearing parts

- 031 Ignition and monitoring block
- 032 Seal for ignition and monitoring block





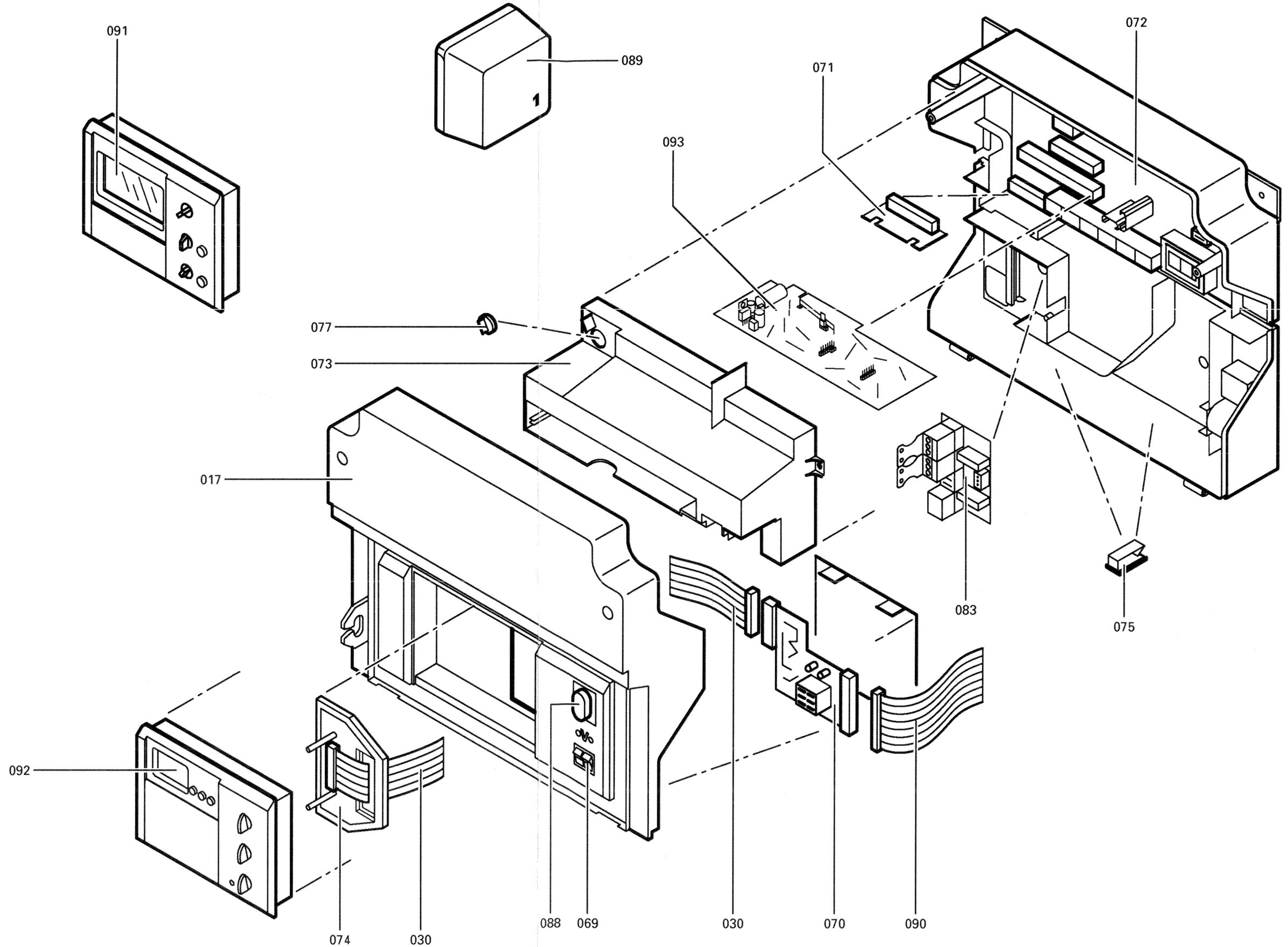
Parts list for control unit

Parts

- 017 Top part of case
- 030 Flat cable, 26-pin
- 069 Rocker switch
- 070 Optolink circuit board
- 071 Adaptor circuit board
- 072 Burner control unit LGM 29
- 073 Cover for burner control unit
- 074 Mounting plate
- 075 Cable clip
- 077 Cover for potentiometer
- 088 Mains power switch
- 083 Relay circuit board
- 089 Outdoor temperature sensor
- 090 Flat cable, 34-pin
- 091 Comfortrol programming unit
- 092 Standard programming unit
- 093 Circuit board VR 20

Parts not illustrated

- 079 Wiring harness "X 11"
- 080 Wiring harness "X 12"
- 081 Wiring harness "X 13"
- 082 Wiring harness, ionization
- 085 Pack of counterplugs
- 097 Strapping plug, ionization



**Attestation of conformity for Vitodens 300**

We, Viessmann Werke GmbH & Co, D-35107 Allendorf, bearing sole responsibility, declare that the product

**Vitodens 300****conforms to the following standards:**

DIN 4702-6  
DIN EN 483  
EN 625  
EN 677  
EN 297  
EN 60 335  
EN 50 165  
EN 55 014  
EN 61 000-3-2  
EN 61 000-3-3

**According to the provisions of the guidelines**

90/396/EEC  
89/336/EEC  
73/ 23/EEC  
92/ 42/EEC

**this product is designated as follows:**

CE-0085

This product conforms to the requirements of the Efficiency Directive (92/42/EEC) for:  
**Condensing boilers**

**Manufacturer's certificate**

We, Viessmann Werke GmbH & Co, D-35107 Allendorf, confirm that the following product satisfies the NO<sub>x</sub> emission limits required in accordance with current legislation:

**Vitodens 300**

Allendorf, 14th December 2000

Viessmann Werke GmbH & Co



Prof. Dr.-Ing. Helmut Burger

1-1

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**Commissioning/service report**

5692 397 GB

**Measurements**

	Initial start-up Date: Signature:	Maintenance/service Date: Signature:	Maintenance/service Date: Signature:	Maintenance/service Date: Signature:	Maintenance/service Date: Signature:	Setpoint value
<b>Static pressure</b>						max. 57.5 mbar
<b>Supply pressure (flow pressure)</b>						
<input type="checkbox"/> Natural gas E						17.4-25 mbar
<input type="checkbox"/> Natural gas LL						17.4-25 mbar
<i>Tick gas type</i>						
<b>Nozzle pressure</b>						
■ at lower end of rated output range						
■ at upper end of rated output range						
<b>Carbon dioxide content CO<sub>2</sub></b>						
■ at lower end of rated output range						vol.-%
■ at upper end of rated output range						vol.-%
<b>Oxygen content O<sub>2</sub></b>						
■ at lower end of rated output range						vol.-%
■ at upper end of rated output range						vol.-%
<b>Carbon monoxide content CO</b>						
■ at lower end of rated output range						ppm
■ at upper end of rated output range						ppm
<b>Ionization current</b>						min. 15 µA