



Wall mounted gas condensing boiler

# Condens 2500 W

WBC 24-1 DC



**BOSCH**

Operating instructions

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## 1 Explanation of symbols and safety instructions

### 1.1 Explanation of symbols

#### Warnings

In warnings, signal words at the beginning of a warning are used to indicate the type and seriousness of the ensuing risk if measures for minimizing danger are not taken.

The following signal words are defined and can be used in this document:

#### **DANGER:**

**DANGER** indicates that severe or life-threatening personal injury will occur.

#### **WARNING:**

**WARNING** indicates that severe to life-threatening personal injury may occur.

#### **CAUTION:**

**CAUTION** indicates that minor to medium personal injury may occur.

#### **NOTICE:**

**NOTICE** indicates that material damage may occur.

#### Important information



The info symbol indicates important information where there is no risk to people or property.

#### Additional symbols

Symbol	Meaning
▶	a step in an action sequence
→	a reference to a related part in the document
•	a list entry
–	a list entry (second level)

Table 1

## 1.2 General safety instructions

### **⚠ Instructions for the target group**

These operating instructions are intended for the heating system user.

All instructions must be observed. Failure to comply with instructions may result in material damage and personal injury, including possible loss of life.

- ▶ Read and retain the operating instructions (heat source, heating controller, etc.) prior to operation.
- ▶ Observe the safety instructions and warnings.

### **⚠ Determined use**

The product may only be used for the heating of boiler water and for DHW heating.

Any other use is considered inappropriate. We assume no liability for damage occurring due to non-permitted use.

### **⚠ If you smell gas**

A gas leak could potentially cause an explosion. If you smell gas, observe the following rules.

- ▶ Prevent flames or sparks:
  - Do not smoke, do not use a lighter or strike matches.
  - Do not operate any electrical switches or unplug any equipment.
  - Do not use the telephone or ring doorbells.
- ▶ Turn off the gas supply at the main shut-off valve or at the gas meter.
- ▶ Open windows and doors.
- ▶ Warn your neighbours and leave the building.
- ▶ Prevent anyone from entering the building.
- ▶ Move well away from the building: call the emergency services and the gas supplier.

### **⚠ Risk to life from poisoning by flue gas**

There is a risk to life from escaping flue gas. If flues are damaged or leaking, observe the following rules.

- ▶ Switch off the heat source.
- ▶ Open windows and doors
- ▶ If necessary, warn your neighbours and leave the building.
- ▶ Prevent anyone from entering the building.
- ▶ Notify an approved contractor.
- ▶ Have any defects rectified immediately.

### **⚠ Inspection and maintenance**

If there is a lack of cleaning, inspection or maintenance, or if these are carried out incorrectly, this may result in material damage and/or personal injury, including possible loss of life.

- ▶ Have work carried out only by an approved contractor.
- ▶ Have any defects rectified immediately.
- ▶ Have the heating system inspected once a year by an approved contractor, and have any required maintenance or cleaning work carried out.
- ▶ Have the heat source cleaned at least every two years.
- ▶ We recommend that you enter into a contract covering an annual inspection and needs-based maintenance with an approved contractor.

### **⚠ Conversion and repairs**

Improper modifications to the heat source or other parts of the heating system can result in personal injury and/or material damage.

- ▶ Have work carried out only by an approved contractor.
- ▶ Never remove the casing of the heat source.
- ▶ Never carry out any modifications to the heat source or to other parts of the heating system.
- ▶ Never close the outlet of the pressure relief valves. Heating systems with DHW cylinder: During heat-up, water can escape from the pressure relief valve of the DHW cylinder.

### **⚠ Open flue operation**

The installation location must be adequately ventilated, if the heat source draws its combustion air from the room.

- ▶ Never cover or reduce the size of ventilation openings in doors, windows and walls.
- ▶ Consult a contractor to ensure that ventilation requirements are met:
  - If structural modifications are made (e.g. replacing windows and doors)
  - If devices with an air discharge to the outside are subsequently installed (e.g. extractor fans, kitchen fans or air conditioning units).

### **⚠ Combustion air/ambient air**

The air in the installation location must be free of flammable or chemically aggressive substances.

- ▶ Do not store or use any highly flammable or explosive materials (paper, petrol, thinners, paints etc.) within the vicinity of the heat source.
- ▶ Do not store or use any corrosive substances (solvents, adhesives, chlorinated cleaning agents, etc.) within the vicinity of the heat source.

### ⚠ Safety of electrical devices for domestic use and similar purposes

The following requirements apply in order to prevent hazards when using electrical devices:

“If the power cable is damaged, it must be replaced by the manufacturer, its customer service department or a similarly qualified person, so that risks are avoided.”

## 2 Product Information

### 2.1 Type overview

**WBC...DC appliances** are wall-mounted gas condensing boilers with an integrated heating pump, 3-way valve and plate heat exchanger for heating and DHW heating using the instantaneous flow principle.

## 3 Prepare for operation

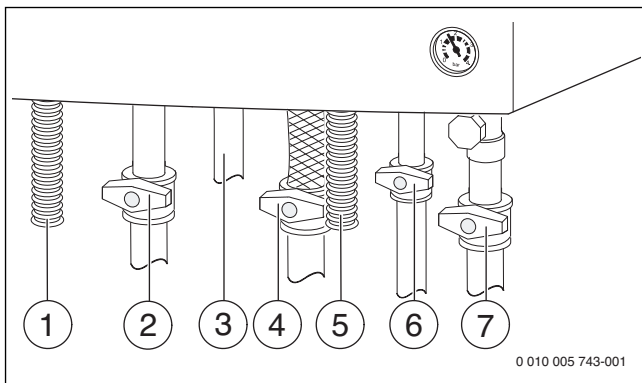


Fig. 1 Connections on the gas and water side (accessories)

- [1] Condensate hose
- [2] Heating flow valve<sup>1)</sup>
- [3] Domestic Hot Water
- [4] Gas isolator<sup>1)</sup> (closed)
- [5] Hose from the pressure relief valve (heating circuit)
- [6] Cold water valve<sup>1)</sup>
- [7] Heating return valve<sup>1)</sup>

### 3.1 Open service valves

- ▶ Push the handle down and turn to the left until it stops (handle in flow direction = open).

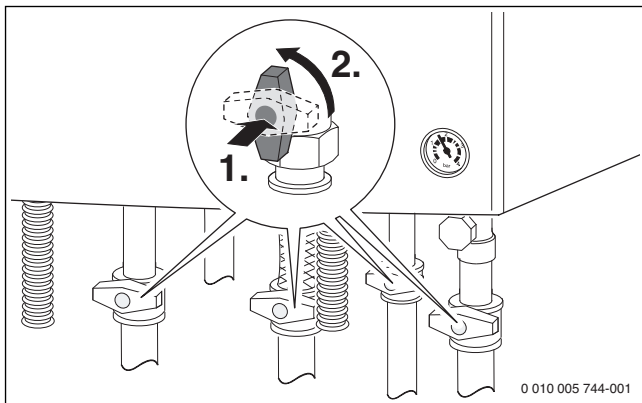


Fig. 2 Open service valves

### 3.2 Checking the operating pressure of the heating system

The operating pressure is generally 1 to 2 bar. For the optimum operating pressure for your heating system, refer to your contractor.

- ▶ Read the operating pressure from the pressure gauge.
- ▶ If the pressure is too low, top up the heating water.

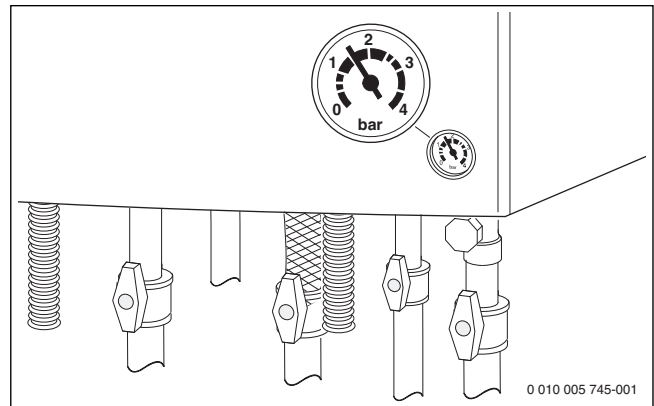


Fig. 3 Pressure gauge for checking the operating pressure

### 3.3 Topping up the heating water

The filling facility is located at the bottom of the appliance between the connection for the heating flow and the DHW connection.

The maximum pressure of 3 bar must not be exceeded even at the maximum heating water temperature. If the maximum pressure is exceeded, the pressure relief valve opens until the operating pressure is within the normal range again.

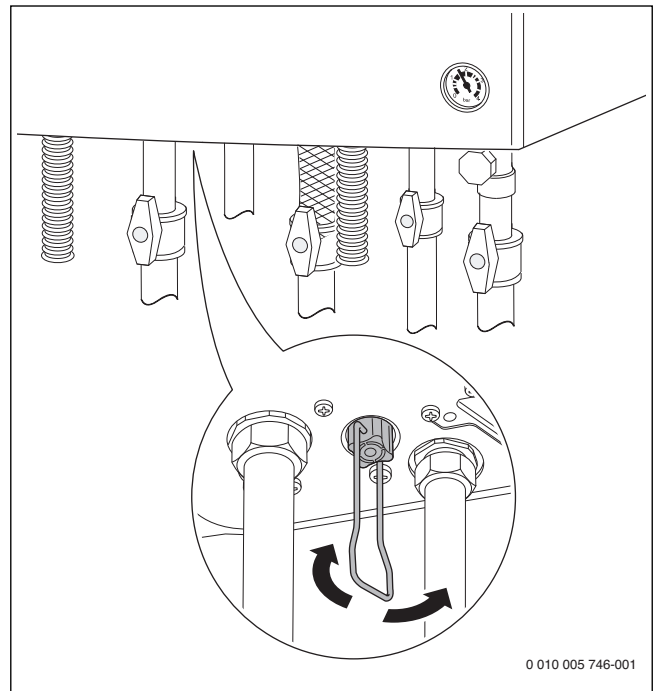


Fig. 4

- ▶ Open the filling valve and fill the heating system until a pressure between 1 and 2 bar is indicated on the pressure gauge.
- ▶ Close the filling valve.

1) ACCESSORIES

## 4 Operating the appliance

These operating instructions describe the operation of the heating appliance. Depending on the user interface that is used, the operation of several functions may be different from this description. Therefore please also observe the operating instructions for the user interface.

The following user interfaces can be used:

- User interface fitted externally, for weather-compensated control
- User interface for room temperature-dependent control
- ▶ Set the user interface in accordance with the appropriate operating instructions.

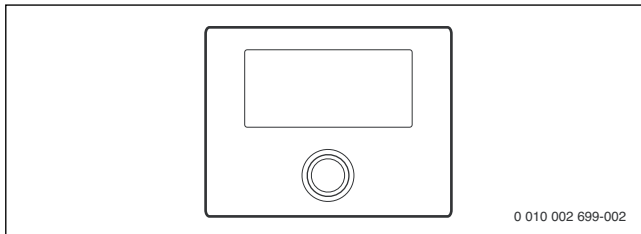


Fig. 5 User interface (example showing)

### 4.1 Control panel overview

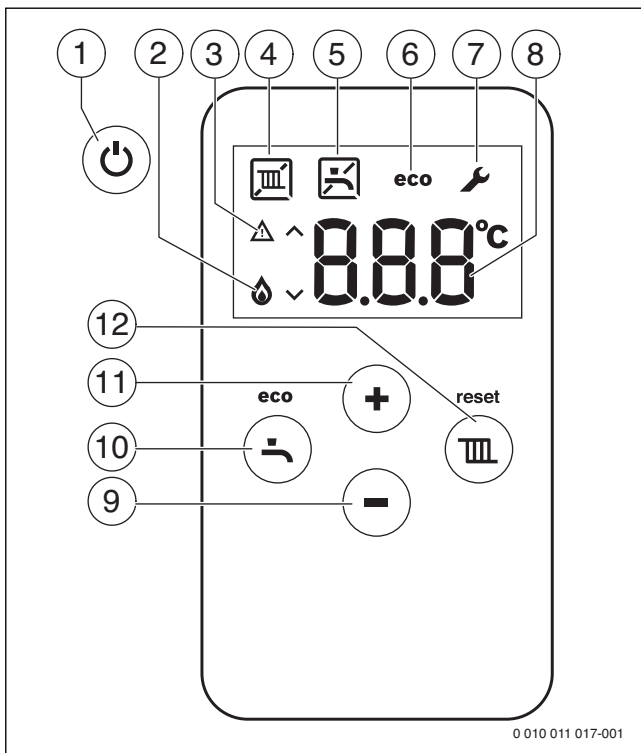


Fig. 6 Display readings

- [1] ⏻ key
- [2] Burner operation
- [3] Fault display
- [4] Heating mode
- [5] DHW heating
- [6] eco mode
- [7] Service mode
- [8] Temperature display (in °C)
- [9] - key
- [10] 🏠 key (eco)
- [11] + key
- [12] 🔄 key (reset)

### 4.2 Switching on the appliance

- ▶ Switch on the device with the ⏻ key.  
The display shows the heating water flow temperature.

### 4.3 Setting the flow temperature

The maximum flow temperature can be set between 30 °C and approx. 82 °C. The current flow temperature is shown on the display.

- ▶ Press 🔄 key.  
The set maximum flow temperature is displayed.
- ▶ Press + key or - to set the required maximum flow temperature.  
The setting is stored after 3 seconds. The display shows the current flow temperature.

You can find typical maximum flow temperatures in Tab. 2.



Heating mode is blocked in summer mode (on the display appears 🏠).

If the burner is active in heating mode, the following symbols appear 🏠 and 🔥 on the display.

Flow temperature	Sample application
🏠 (Symbol 🏠 appears)	Summer mode
approx. 75 °C	Radiator heating system
approx. 82 °C	Convactor heating system

Table 2 Maximum flow temperature

### 4.4 Setting the DHW heating

#### 4.4.1 Adjusting the domestic hot water temperature

The DHW temperature can be set between 40 °C and approx. 60 °C.

- ▶ Press the 🏠 key.  
The set DHW temperature is displayed.
- ▶ Press the + key or the - key to set the required DHW temperature.  
The setting is stored after 3 seconds. The display shows the current flow temperature.

When the burner is active in DHW mode, the symbols 🏠 and 🔥 appear on the display.

#### WBC...DC appliances: Measures for hard water

To protect against increased limescale and resulting service work:



In hard water with a hard hardness range ( $\geq 15^\circ\text{dH} / 27^\circ\text{fH} / 2.7 \text{ mmol/l}$ )

- ▶ Set the DHW temperature to less than 55 °C.

#### 4.4.2 Setting the comfort mode or eco mode

In comfort mode, the appliance is continually kept at the set temperature. This will mean that there will be a short delay when drawing DHW, but on the other hand, the device will switch on even if no DHW is being drawn.

In eco mode, the heating-up to the set temperature begins as soon as the DHW is being drawn.



For maximum gas and DHW saving:

- ▶ Briefly open and close the DHW tap.  
The water is heated once to the set temperature.
- ▶ To set eco mode: Press the key until **eco** appears on the display.
- ▶ To return to comfort mode: Press the key until **eco** goes out on the display.

#### 4.5 Setting the heating control device



Observe the operating instructions of the heating controller. This shows you:

- ▶ how to set the room temperature.
- ▶ how to heat economically and save energy.

#### 4.6 Setting summer mode

The heating pump and consequently central heating are switched off. The DHW and power supply for the heating control device and timer are retained.

##### NOTICE:

##### Heating system at risk through frost.

In summer mode, only the device is protected against frost.

- ▶ Observe frost protection measures where there is a risk of frost (→ Chapter 5.2).

To activate summer mode:

- ▶ Press key.
- ▶ Press key until on the display appears.  
The setting is stored after 3 seconds. The display permanently shows .

For further information, see the heating controller operating instructions.

## 5 Shutdown

### 5.1 Switching off/standby mode



The device has an anti-seizing function which prevents the heating pump and the 3-way valve seizing up following long periods of inactivity. The anti-seizing function remains active during standby mode.

- ▶ Switch off the device with the key.  
The display shows only the symbols and .
- ▶ If the device is taken out of operation for a long period: Bear in mind frost protection (→ chapter 5.2).

### 5.2 Setting frost protection

##### NOTICE:

##### Risk of damage to the system from frost!

The heating system can freeze up after a prolonged period (e.g. during a power failure, switching off the power supply, faulty fuel supply, boiler fault etc.).

- ▶ Ensure that the heating system is in constant use (particularly when there is a risk of frost).

##### Frost protection for the heating system:

Frost protection for the heating system is only ensured if the heating pump is operational and is pumping heating water through the entire system.

- ▶ Leave the heating switched on.
- ▶ Set the maximum flow temperature to at least 40 °C (→ chapter 4.3).
- or- If you want to leave the appliance switched off:
- ▶ Ask your heating contractor to mix antifreeze (see installation instructions) into the heating water and drain the DHW circuit.



For further information, see the heating controller operating instructions.

##### Device frost protection:

The device frost protection function switches the burner and heating pump on when the temperature in the installation room (at temperature sensor for heating flow) falls below 5 °C. This prevents the boiler freezing up.

- ▶ Activate summer mode (→ chapter 4.6) or set the device to standby mode (→ chapter 5.1).

##### NOTICE:

##### Heating system at risk through frost.

In summer/standby mode, only the device is protected against frost.

## 6 Tips on energy saving

### Economy heating

The device is designed for low energy consumption and low environment pollution with a big comfort at the same time. The supply of fuel to the burner is regulated in accordance with the home's heat energy demand. If the heat energy demand is lower, the appliance continues to operate with a small flame. The contractors refer to this process as modulating control. As a result of the modulating control, temperature fluctuations are kept low and heat is distributed evenly in the rooms. This may mean that the appliance is in operation for a longer period of time but actually consumes less fuel than an appliance that is constantly being switched on and off.

### Heating control

To optimise the performance of the heating system, we recommend a heating control with a room temperature-dependent controller or a weather-compensated controller and thermostatic valves.

### Thermostatic valve

Fully open the thermostatic valves in order to achieve the required room temperature. Change the required room temperature at the temperature controller if the temperature is not achieved after a prolonged period.

### Underfloor heating system

Never set the flow temperature higher than the maximum flow temperature recommended by the manufacturer.

### Venting

Close the thermostatic valves while airing out the room, and completely open the windows for a short time. Never leave windows slightly open for ventilation purposes. Otherwise, heat will be constantly drawn from the room without significantly improving the ambient air.

### Domestic hot water



Always set the DHW temperature as low as possible. Choosing a low setting at the temperature controller can save you large amounts of energy.

In addition, high DHW temperatures result in increased scaling and thus impair the function of the appliance (e.g. longer heat-up times or lower outlet amount).




### DHW circulation pump

Set the DHW circulation pump, if installed, using a time program to suit individual requirements (such as morning, midday or evening).


## 7 Troubleshooting


The electronics monitors all safety and control components. If a fault occurs during operation, the display shows the  symbol and, in certain cases, the  symbol, and a fault code (e.g. **EA**) flashes.

If  and  appear:

- ▶ Press  key and hold it until the  and  symbols are no longer displayed.

The device goes back into operation and the flow temperature is displayed.

If only  appears:

- ▶ Switch the device off and on again with the  key. The device goes back into operation and the flow temperature is displayed.

If a fault persists:

- ▶ Call an approved contractor or Customer service and notify them of the fault code and details of the device.



An overview of the display readings can be found on page 5.

Data on the device	
Designation of device <sup>1)</sup>	
Serial number <sup>1)</sup>	
Commissioning date	
System installer	

1) The information can be found on the data plate in the control panel cover.

Table 3 Data on the device to be forwarded in the event of a fault

## 8 Maintenance

### Inspection and maintenance

The user is responsible for the safety and environmental compliance of the heating system.

Regular inspection and maintenance are prerequisites for safe and environmentally compatible operation of the heating system.

We recommend you enter into a contract for the annual inspection and demand-dependent maintenance with an authorised contractor.

- ▶ Have work carried out only by an approved contractor.
- ▶ If any faults are discovered, have them remedied immediately.

### Cleaning the casing

Never use aggressive or corrosive cleaning agents.

- ▶ Wipe the casing with a damp cloth.

## 9 Environmental protection and disposal

Environmental protection is a fundamental corporate strategy of the Bosch Group.

The quality of our products, their economy and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed.

We use the best possible technology and materials for protecting the environment taking account of economic considerations.

### Packaging

We participate in the recycling programmes of the countries in which our products are sold to ensure optimum recycling.

All of our packaging materials are environmentally compatible and can be recycled.

### Used appliances

Used appliances contain valuable materials that can be recycled.

The various assemblies can be easily dismantled. Synthetic materials are marked accordingly. Assemblies can therefore be sorted by composition and passed on for recycling or disposal.

## 10 Technical terms

### Operating pressure

The operating pressure is the pressure in the heating system.

### Wall mounted condensing boiler

The wall mounted condensing boiler does not just use the heat which arises as the measurable temperature of the products of combustion, but also the heat from the water vapour. This means that the wall mounted condensing boiler has a particularly high efficiency.

### Instantaneous water heater principle

The water is heated as it flows through the appliance. The maximum draw-off rate is quickly available, i.e. without long waiting times or interruptions for the heat-up process.

### Heating controller

The heating controller ensures the automatic control of the flow temperature depending on the outside temperature (for weather-compensated controllers) or of the room temperature in conjunction with a time program.

### CH return

The heating return is the pipework that returns the heating water at a lower temperature from the heating surfaces to the appliance.

### Heating flow connection

The heating flow is the pipework that supplies the heating water at a higher temperature from the appliance to the heating surfaces.

### Heating water

The heating water is the water used to fill the heating system.

### Thermostatic valve

Thermostatic valves are mechanical temperature controllers that enable a lower or higher heating water flow rate subject to ambient temperature in order to maintain a constant temperature.

### Siphon

The siphon is a stench trap for draining water that exits a pressure relief valve.

### Flow temperature

Flow temperature is the temperature with which the heated heating water flows from the appliance to the radiators, underfloor heating circuits, etc.

### DHW circulation pump

A DHW circulation pump circulates the hot water between the storage tank and draw-off point. This makes DHW available at the draw-off point immediately.




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