



# Installation instructions

## Gas fired condensing boilers

**CGB-35** Boiler  
**CGB-50** Boiler



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The following symbols are used in conjunction with these important instructions concerning personal safety, as well as technical reliability.



"Safety instructions" are instructions with which you must comply exactly, to prevent injury and material losses.



Danger through 'live' electrical components.

Please note: Switch OFF the ON/OFF switch before removing the casing.

Never touch electrical components or contacts when the ON/OFF switch is in the ON position. This brings a risk of electrocution, which may result in injury or death.

The main supply terminals are 'live' even when the ON/OFF switch is in the OFF position.



This indicates technical instructions which you must observe to prevent material losses and boiler malfunctions.

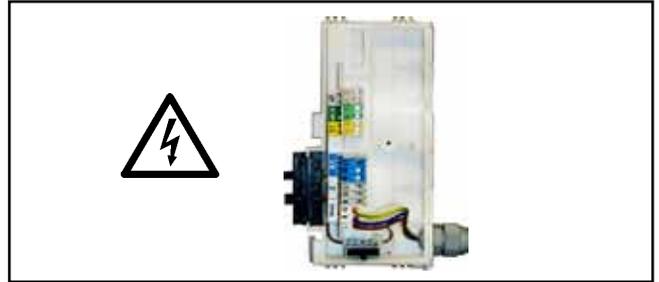


Fig.: Terminal box: Danger from electric power



Fig.: Ignition transformer, high voltage ignition electrode, combustion chamber

Risk through 'live' electrical components, risk of burning from hot components

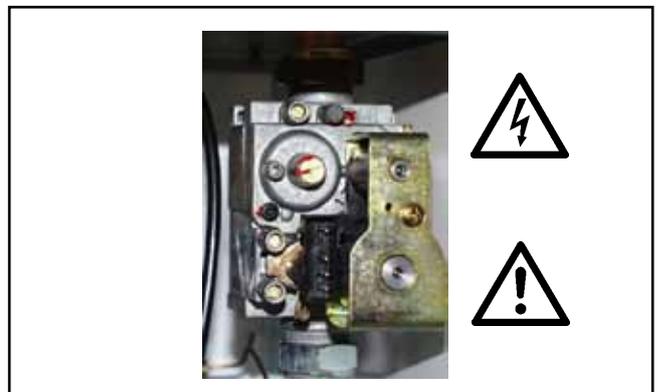


Fig.: Gas combination valve

Danger from electric power

Escaping gas may cause poisoning or the risk of explosion

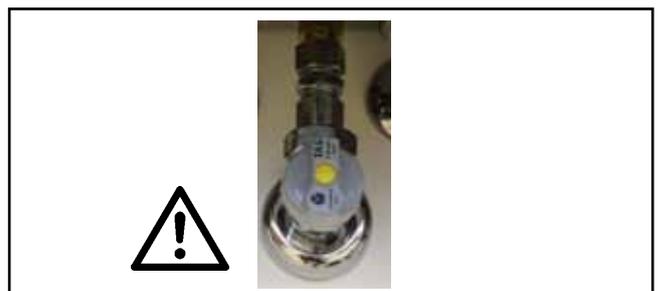


Fig.: Gas connection

Escaping gas may cause poisoning or the risk of explosion

**Obtain the permission of your mains gas supplier and flue gas inspector prior to the installation of Wolf gas fired boilers [where appropriate].**

Wolf gas fired boilers must only be installed by a recognised heating contractor. This heating contractor will also be responsible for the proper installation and commissioning of the heating system.

The following regulations, rules and guidelines must be observed during installation:

- DIN EN 12828  
Heating systems in buildings, designing hot water heating systems
- VDE 0722 / EN50165  
Electrical equipment of heat generators with non-electrical heating systems.
- EN 60335-1  
Safety of electrical equipment for domestic use and similar purposes
- VDE 0470 / EN 60529  
Protection through housings



**Any damage or loss resulting from technical modifications to the control unit or to the control components are excluded from our liability.**

**Incorrect use can lead to a risk to life and limb or to a risk of material losses.**

**Note:** Please read these instructions carefully before the installation and keep them in a safe place. Please also note the technical information in the appendix.

### Requirements

The installation of the boiler must be in accordance with the relevant requirements of Gas Safety (Installation and Use) Regulations 1998, Health and Safety Document No. 635 (The Electricity at Work Regulations 1989), BS 7671 (IEE Wiring Regulations) and the Water Supply (Water Fitting) Regulations 1999, or The Water Bylaws 2000 (Scotland). It should also be in accordance with the relevant requirements of the Local Authority, Building Regulations, including amendments to the Approved Documents Part L and J 2002, The Building Regulations (Scotland), The Building Regulations (Northern Ireland)

and the relevant recommendations of the following British Standards:

- BS 5440: Flues and ventilation of gas fired boilers not exceeding 70 kW net:
  - Part 1: Flues
  - Part 2: Ventilation
- BS 5449: Specification for forced circulation hot water for domestic premises.
- BS 5546: Specification for gas hot water supplies for domestic premises.
- BS 6700: Services supplying water for domestic use within buildings and their curtilages.
- BS 6798: Specification for installation of gas fired boilers not exceeding 60 kW input.
- BS 6891: Specification for installation of low pressure gas pipework up to 28 mm (R1") in domestic premises (2<sup>nd</sup> family gas).
- BS 7593: Treatment of water in domestic hot water central heating systems.

Institute of Gas Engineers Publication IGE/UP/7/1998: "Guide for gas installations in timber framed housing".



**Important: The appliance must be installed and serviced by a competent person as stated in the Gas Safety (Installation and Use) Regulations 1998. In IE, the installation must be in accordance with the current edition of I.S.813 'Domestic Gas Installations', the current Building Regulations and reference should be made to the current ECI rules for electrical installation.**



**When tightening or loosening threaded connections always use suitable open-ended spanners (not pipe wrench, or extensions, etc.). Incorrect use and/or unsuitable tools can lead to damage (e.g. gas or water leaks)!**

**Gas fired condensing boiler CGB-...**

Gas fired condensing boilers according to:  
DIN EN 297 / DIN 3368 T5, T6, T7, T8 / DIN EN 437 / DIN EN 483 (draft) / DIN EN 677 (draft) / DIN EN 625 and Gas Appliance Directive 90/396/EEC (Gas Consumer Equipment), 92/42/EEC (Boiler Efficiency Directive), 73/23/EEC (Low Voltage Directive), and 89/336/EEC (EMC Directive), with electronic ignition and electronic flue gas temperature monitoring, for low temperature heating and DHW production in heating systems with flow temperatures up to 95 °C and 3 bar design pressure according to DIN EN 12828 part 3.

The Wolf gas fired boiler is also approved for installation in garages.



Fig.: Wolf gas fired condensing boiler



**Open flue gas fired condensing boilers must only be installed in a room which complies with the appropriate ventilation requirements. Otherwise there is a risk of asphyxiation and poisoning. Read these installation and maintenance instructions before installing the boiler. Also take the Technical Guide into consideration.**

**Poorly vented LPG tanks can lead to ignition problems. In such cases, contact your local LPG supplier.**



**To save energy and protect against scaling if the total hardness is greater than 2.5 mol/m<sup>3</sup>, the DHW temperature may be set to a maximum of 50 °C.**

**If the total hardness is greater than 3.58 mol/m<sup>3</sup>, we recommend using a water treatment facility in the cold water supply line for DHW heating, to prolong the maintenance interval (descaling DHW heat exchanger).**



ON/OFF switch

Reset button

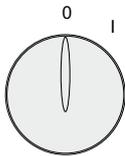
DHW temperature selector

Thermometer

Illuminated ring

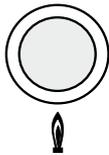
Heating water temperature selector

Pressure gauge



### ON/OFF switch

The gas fired boiler is OFF in position 0.

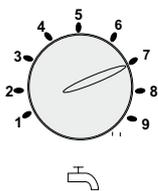


### Reset

A fault is reset by pressing the reset button which will also restart the system. Pressing the reset button reactivates the system if there was no fault.

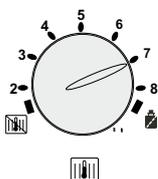
### Illuminated ring as status indicator

Display	Explanation
Flashing green	Standby (power supply ON, no heat demand)
Constant green	Heat demand: pump running, burner OFF
Flashing yellow	Emissions test mode
Constant yellow	Burner ON, flame steady
Flashing red	Fault



### DHW temperature selector

When gas fired condensing boilers are combined with a DHW cylinder, setting 1 - 9 corresponds to a cylinder temperature of 15 - 65 °C. The setting on the DHW thermostat becomes ineffective when the system is used in conjunction with a digital room thermostat or a weather-compensated controller. The temperature will then be selected at the controller (accessories). With combi boilers, setting 1 - 9 corresponds to a DHW temperature of 40 - 60 °C.



### Heating water temperature selector

The factory setting range 2 - 8 corresponds to a heating water temperature of 20 - 75 °C. The setting on the heating water thermostat becomes ineffective when the system is used in conjunction with a digital room thermostat or a weather-compensated controller.

**Setting**

Winter mode (position 2 to 8)

In winter mode, the boiler heats to the temperature selected at the heating water thermostat. According to the pump operating mode, the circulation pump operates constantly (factory setting) or only in parallel with the burner activation/run-on time.

**Summer mode**

Winter mode is deactivated by rotating the heating water temperature selector into position . In other words, the equipment will then operate in summer mode. Summer mode (central heating OFF) means = only DHW heating. Frost protection for the central heating system and pump anti-seizing protection are, however, assured.

**Emissions test mode**

The emissions test mode is activated by rotating the heating water temperature selector into position . The illuminated ring flashes yellow. After the emissions test mode has been activated, the boiler will heat to the selected maximum heating output. Any previous cycle block will be cancelled. The emissions test mode terminates after 15 minutes or when the maximum flow temperature has been exceeded. For a renewed activation, turn the heating water temperature selector anti-clockwise and then back into position .

**Thermomanometer**

The current heating water temperature is displayed in the top half. The water pressure in the heating system is displayed in the lower half. In normal use, the water pressure should be between 2.0 - 2.5 bar.

**Anti-seizing pump protection**

In summer mode, the circulation pump operates for approx. 30 seconds after a maximum idle period of 24 hours.

**Note:**

The number of times the gas boiler can be started in heating mode is limited electronically. This limit can be bypassed by pressing the reset button. Then, the equipment starts immediately, as soon as a heating demand is present.

**As delivered condition  
Gas fired condensing boiler**

The standard delivery comprises:

- 1 Gas fired condensing boiler, fully wired, including casing
- 1 Safety valve, central heating side
- 1 Expansion vessel connection
- 1 Wall mounting bracket
- 1 Installation instructions
- 1 Operating instructions
- 1 Maintenance instructions

**Accessories**

The following accessories are required for the installation of this gas fired condensing boiler:

- Balanced flue accessories (see design information)
- Room temperature-dependent or weather-compensated control unit
- Condensate drain outlet with hose retainer
- Maintenance shut-off valves for primary flow and return
- Gas ball valve with fire protection facility

Additional accessories in accordance with the pricelist. We recommend:

- Blow-down facility/filter
- Air separator

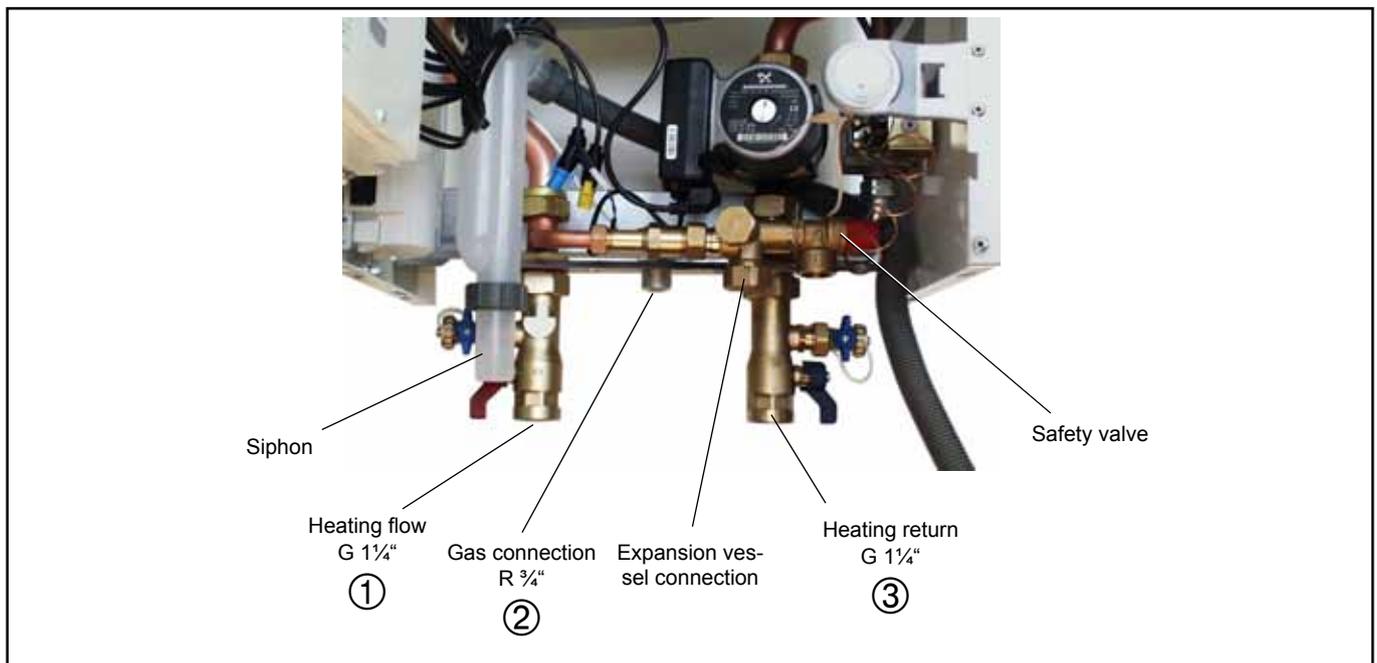
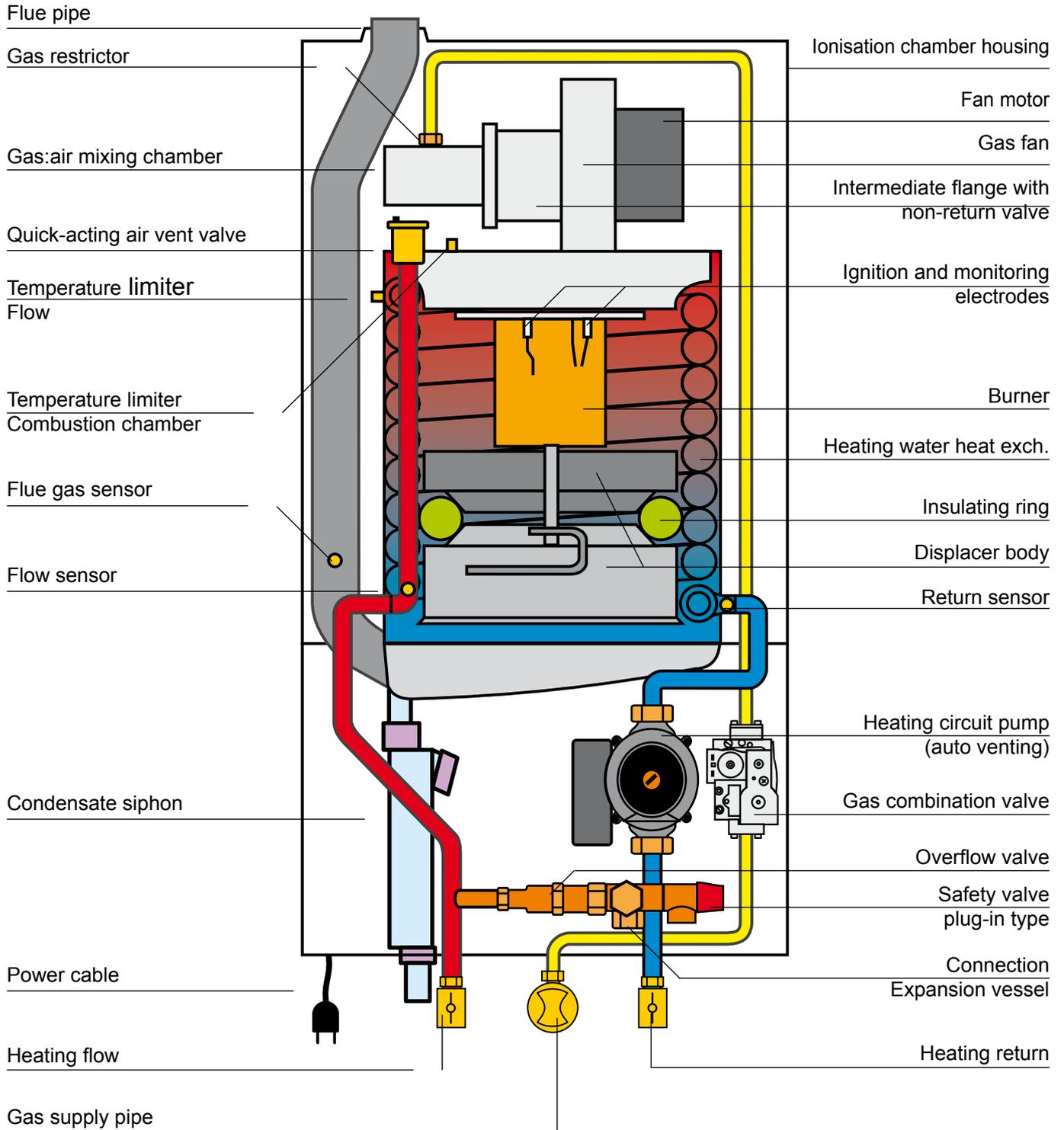
**Connections**

Fig.: Connections with heating circuit connection set (accessories)

## CGB-35 / CGB-50

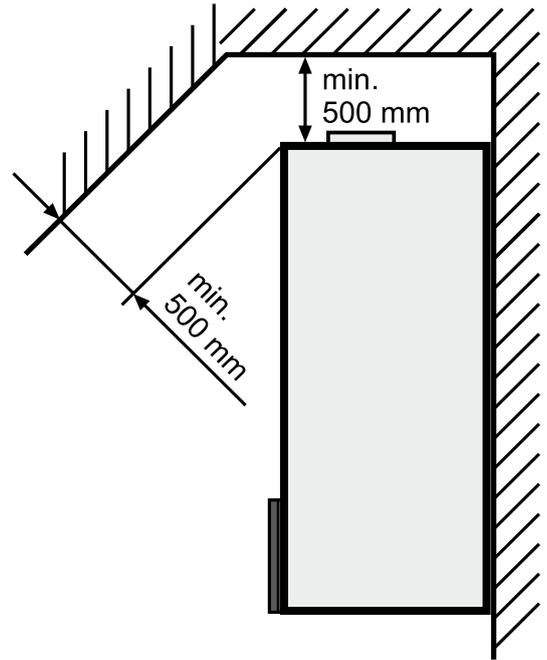


**General notes**

The CGB wall mounted gas fired condensing boiler is supplied fully wired to a power supply plug.

A clearance of 400 mm to the ceiling is recommended to enable inspection and maintenance work on the boiler to be carried out, otherwise adequate inspection and function tests on components cannot be ensured during maintenance. Secure the drain hoses safely with their retaining plate above the drain outlet (siphon). The drain should be able to be inspected easily.

The gas fired boiler may only be installed in rooms which are protected from frost.



**Clearance between the boiler and combustible materials or components is not required, as temperatures are limited to 85 °C at the rated boiler output. However, explosive and easily combustible materials must not be used in the boiler room; these would create a risk of fire or explosion.**



**The combustion air supplied to the boiler must be free from chemicals, e.g. fluoride, chlorine or sulphur. Such materials are contained in sprays, solvents and cleaning agents. Under the most unfavourable conditions, these may lead to corrosion, even in the flue gas system.**

**NB**

**During the boiler installation, ensure that no contaminants (e.g. drilling swarf) enter the gas fired boiler, otherwise faults may result. Use the enclosed polystyrene cover.**

Sound insulation: In critical installation locations (e.g. installation on a dry lining wall), additional measures to protect the equipment against the transmission of structure-borne vibrations may be required. In such cases, use anti-vibration rawl plugs and possibly rubber mounts or insulating strips.

Initially, determine the location for the boiler installation. In your deliberations, consider the flue gas outlet, the lateral clearances towards walls and ceilings and any existing connections for gas, central heating, DHW and electrics.

## Opening the casing lid

We recommend you remove the casing lid during installation.

- Pivot the control unit lid down.
- Unlock the casing lid with the l.h. and r.h. rotating locking screw.
- Release the lower part of the casing lid and unhook at the top.

## Mounting the boiler with a mounting bracket



**During the boiler installation ensure that the fixing components are sufficiently strong to carry its weight. Also consider the wall consistency, otherwise gas or water may escape which would result in a risk of explosions and flooding.**

Initially, determine the location for the installation of the gas fired boiler.

In your deliberations, consider the flue gas outlet, the lateral clearances towards walls and ceilings and any existing connections for gas, central heating, DHW and electrics.

- Mark the holes to be drilled ( $\varnothing 12$  mm) for the mounting bracket, bearing minimum clearances in mind.
- Insert the rawl plugs and secure the mounting bracket with the screws provided.
- Hang the boiler with the mounting brace into the mounting bracket.

**Note:** When replacing an existing TGB-40 or TGB-60 boiler, fit the new mounting bracket 11 mm lower.

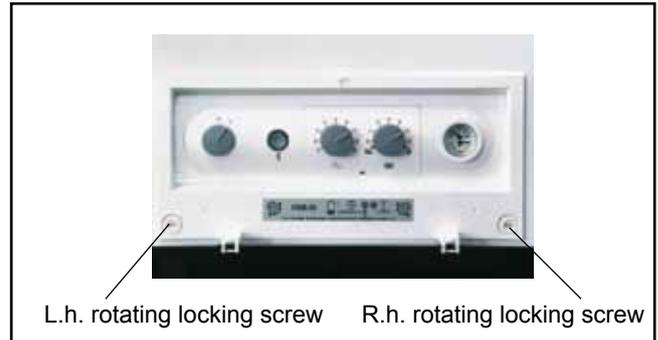


Fig.: Open the rotating locking screws

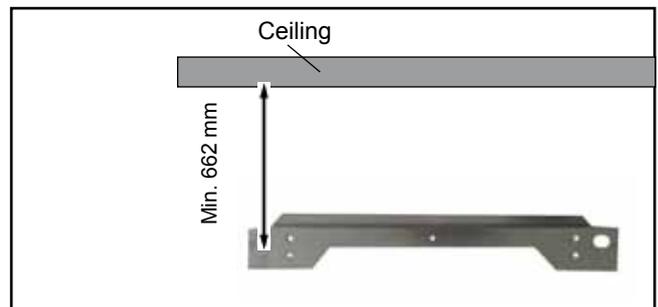


Fig.: Fixing holes for the mounting bracket

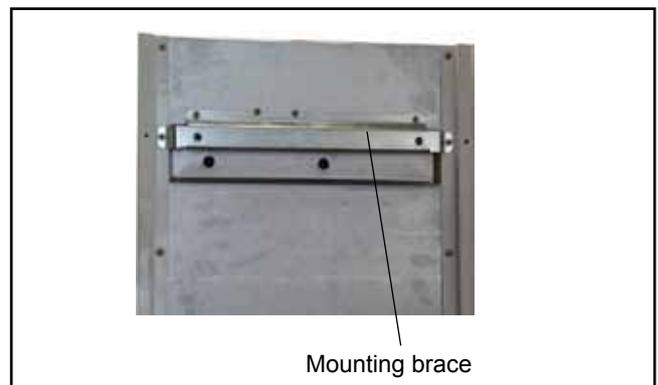


Fig.: Mounting brace on the boiler

### CGB

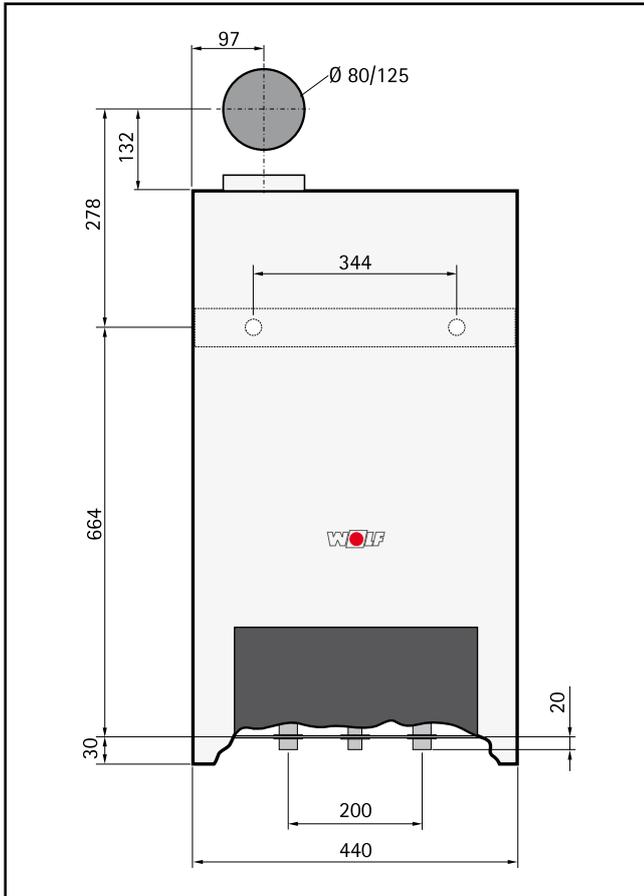


Fig.: Dimensions

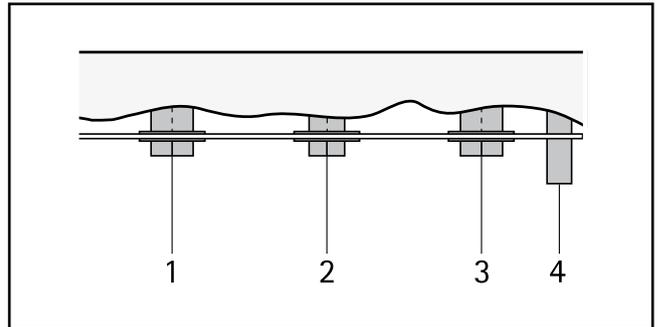


Fig.: Connections

- ① Heating flow
- ② Gas connection
- ③ Heating return
- ④ Condensate drain

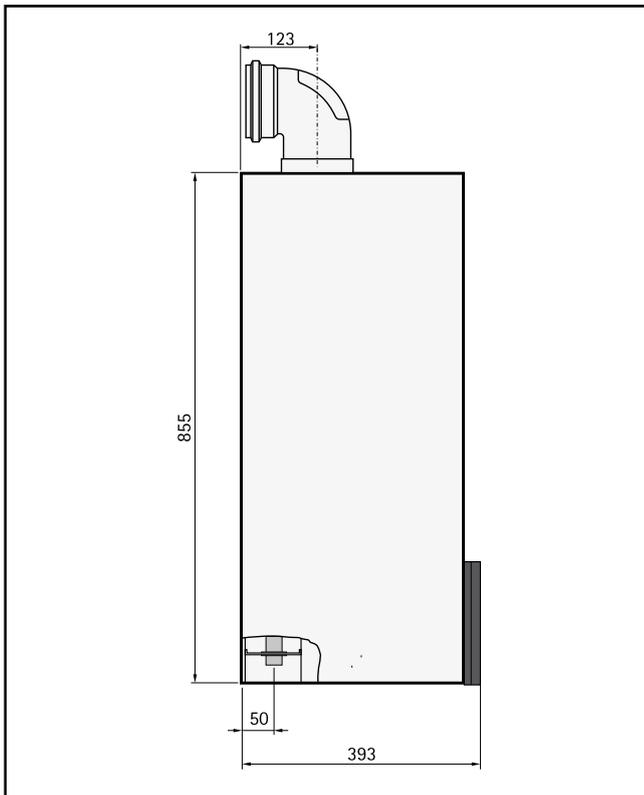


Fig.: Dimensions

## Heating circuit connection set

We recommend you connect the heating system with the aid of a heating circuit connection set.

Connection set comprising:

Boiler connection with flat packing; connection to the heating flow and return with ball valves 1" (fem. thread).

### Notes:

Provide a fill and drain cock at the lowest system point.



Fig.: Heating circuit connection set (accessory)

## Safety equipment

The TGB-35 and TGB-50 are not factory-fitted with an expansion vessel. Therefore, install an expansion vessel on site (available as WOLF accessory).



**Never install between the expansion vessel and the condensing boiler, otherwise the boiler will suffer permanent damage as soon as the pressure builds during heat-up. System components may burst, which would result in a risk of scalding.**

An exception would be cap valves upstream of the expansion vessel.

There is no factory-fitted safety valve. Route the blow-off line into a drain funnel. Minimum system pressure 0.75 bar.

CGB-35 and CGB-50 are approved exclusively for sealed systems up to 3 bar. The maximum flow temperature is factory-set to 75 °C and may be adjusted to 85 °C, if required. The expansion vessel must be adequately sized in accordance with DIN 4708.

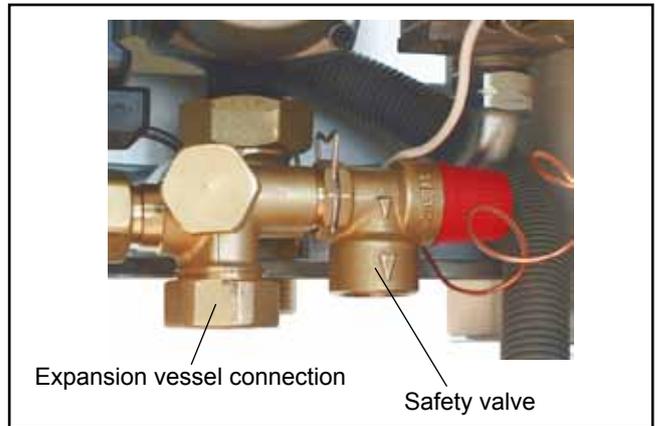


Fig.: Safety valve, expansion vessel connection

## Click the control unit into position

The control unit can be pivoted into a position of approx. 180° for better access during work behind the unit.



**Heating water**

Only use untreated tap water as fill or top up water for heating systems.

Chemical additives or water from an ion exchanger are not permissible.

Thoroughly flush the heating system prior to filling with water.

**Dirt trap**

Install the dirt trap for all systems on site in the return pipe to protect the boiler and pump from coarse dirt and sediments.

**Sludge separator**

Install a sludge separator upstream of the boiler in the return pipe of all older systems which are predominantly equipped with steel pipework.

**Air separator**

An additional air separator can be installed in larger systems.

For CGB-35, the maximum permissible flow rate is 2000 l/h and 2800 l/h for the CGB-50; therefore, never install an additional pump.

When using pipes which are permeable to oxygen, e.g. underfloor heating systems, provide system separation by using a heat exchanger. Unsuitable heating water increases the risk of sludge formation and corrosion. This may lead to faults and heat exchanger damage.

**Information regarding scaling**

The build-up of scale can be substantially influenced by the way the system is commissioned. When the system is heated up at low loads or slowly step by step, calcium can settle, not only on the hottest parts, but also over the entire system, maybe even as sludge. For multi-boiler systems it is recommended that all boilers are started simultaneously, which prevents a calcium concentration over the heat transfer surface of a single boiler.

If appropriate, start with the screed drying program.

## Condensate connection

Connect the supplied sealed siphon to the connector on the condensate sump.

**Note:** Fill the siphon with water, prior to commissioning

The condensate may be routed into the siphon below the safety valve, if neutralisation is not required. If condensate is directly routed to the public sewer, ensure ventilation, so that the public sewer cannot affect the condensing boiler.

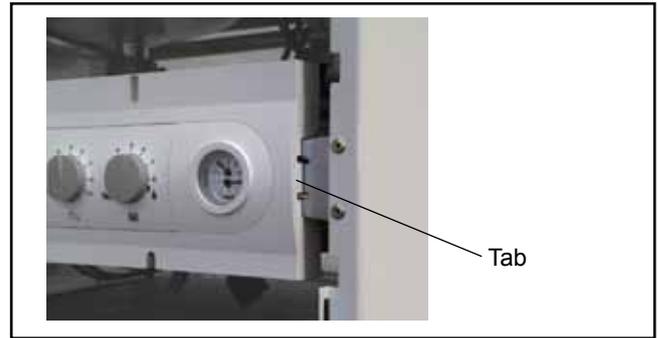


Fig.: Push in the tab

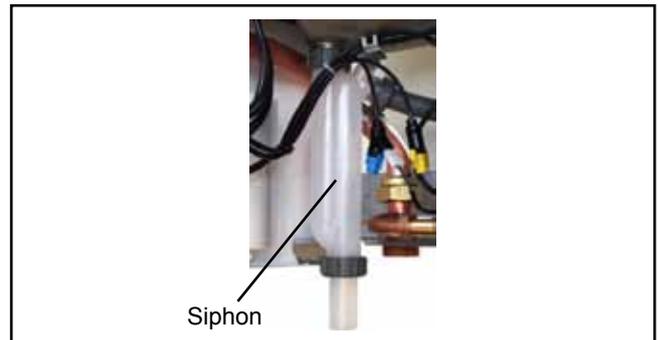


Fig.: Siphon

Observe the relevant instructions if you install a neutralising system (accessory).



Fig.: Neutralising system (accessory)

## Connection of a 200 litre Wolf DHW cylinder or third party cylinder

Connect the DHW flow and return with a three-way diverter valve or the return pipe of the gas fired boiler. Use a DHW sensor from the Wolf accessory range when connecting a DHW cylinder made by third parties. A detailed description is included with the connection set (accessories).

**NB** Check all water connections for possible leaks, prior to commissioning:  
Test pressure (DHW side): max. 10 bar  
Test pressure (heating water side): max. 4.5 bar.  
If the system leaks, water may seep out, resulting in material losses.

## Gas connection



Laying the gas pipe as well as gas connections must only be carried out by a licensed gas fitter. Close the gas shut-off valve on the gas fired boiler to pressure test the gas pipe.

Clean all residues from the heating pipe-work and the gas pipe prior to connecting the boiler, particularly in older systems.

Prior to commissioning, test all pipe and other gas connections for soundness.

Inappropriate installation or using unsuitable components or assemblies may lead to gas escaping, which results in a risk of poisoning and explosion.



Install a gas shut-off valve with fire protection in the gas supply line upstream of the Wolf gas fired boiler. Otherwise explosions may occur during a fire. Size the gas supply line in accordance with current regulations.



Gas fittings on the gas burner may be pressure tested to 150 mbar. Higher pressure may damage the gas burner fitting, resulting in a risk of explosion, asphyxiation or poisoning.

Close the gas shut-off valve on the gas fired boiler to pressure test the gas pipe.



Install the gas ball valve in an easily accessible position.

Prior to installation, ensure that the boiler corresponds to the type of gas available. See the table opposite for factory settings subject to gas type.



Fig.:  
Gas shut-off valve  
straight version (accessories)



Fig.:  
Gas shut-off valve  
angled version (accessories)

### Natural gas H:

Ws = 12.7 - 15.2 kWh/m<sup>3</sup> = 45.7 - 54.7 MJ/m<sup>3</sup>

### LPG P:

Ws = 20.2 - 21.3 kWh/m<sup>3</sup> = 72.9 - 76.8 MJ/m<sup>3</sup>

Table: Factory settings subject to gas type

**NB** For concentric air/flue pipes (balanced flue systems), use only original Wolf components.

Please observe the technical information regarding balanced flue systems prior to installing the flue pipe or the ventilation air connection.

Different countries have different regulations. We would therefore recommend that you contact the appropriate authorities to check local requirements.

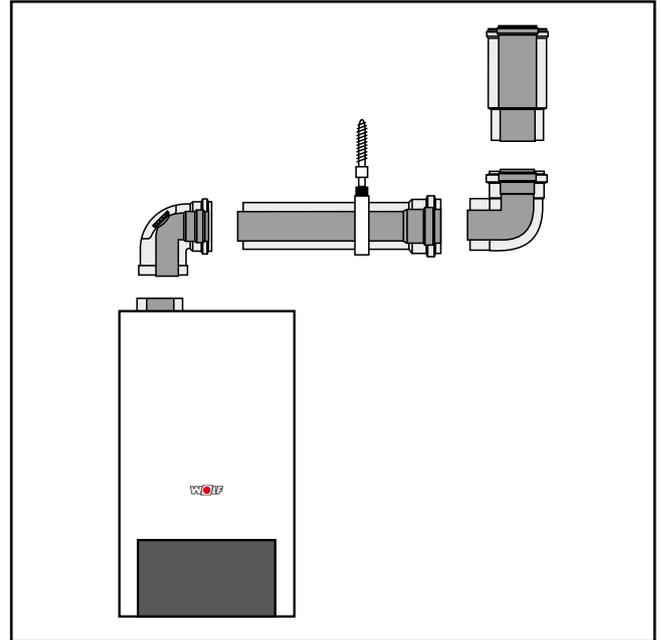


Fig.: Example: Balanced flue system

**NB** The flue gas test ports must remain accessible to the relevant authorities, even after fitting the ceiling bezels.



With low outside temperatures the water vapour contained in the flue gas may condense on the balanced flue pipe and freeze. Prevent ice from falling through on-site measures, e.g. the installation of a snow catcher grille.

**NB** To avoid the air supply and the expelled flue gas and/or ventilation influencing each other above the roof, we recommend you maintain a minimum distance of 2.5 m between the air inlet and flue terminal. Also take the Technical Guide into consideration.

## General notes



The installation must be carried out by a licensed electrical contractor. Observe local regulations and those of the power supply company.



The power supply terminals are 'live' even when the ON/OFF switch has been switched OFF.

## Terminal box

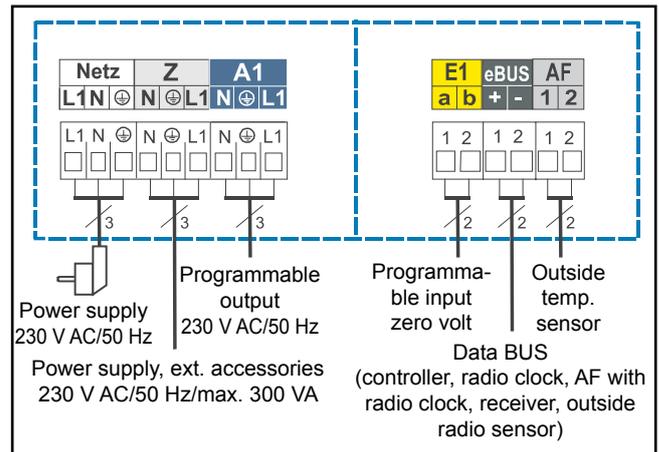
The control, regulating and safety equipment are fully wired and tested.

The boiler is factory-fitted with a safety plug.

### Mains electrical connection

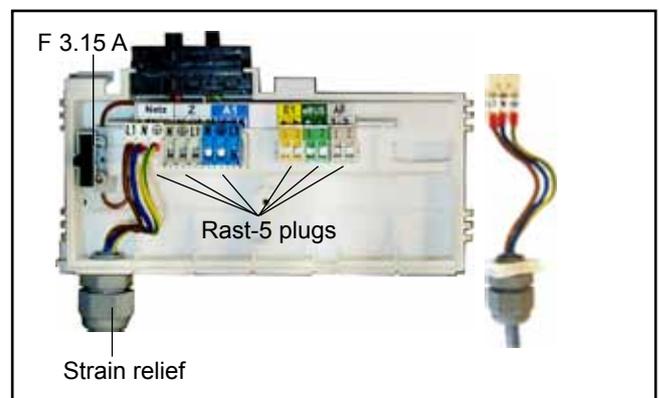
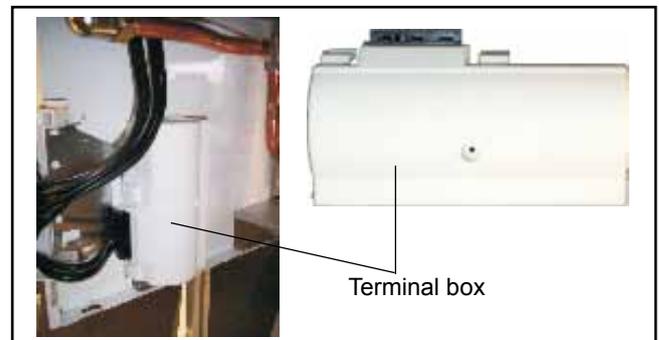
The system is connected to the power supply system by a safety plug.

If the system is connected to the power supply in the proximity of a bath or a shower (protection areas 1 and 2), replace the safety plug with a permanent connection.



## Installation information, power supply

- Isolate the system from the power supply before opening the casing.
- Pivot the control unit to the side.
- Open the terminal box.
- Insert the strain relief into the holes provided.
- Strip approx. 70 mm off the power supply cable insulation.
- Push the cable through the strain relief and secure the strain relief.
- Pull the Rast-5 plugs.
- Terminate the appropriate cores at the Rast-5 plugs.
- Push the inserts back into the terminal box casing.
- Push the Rast-5 plugs back into their correct positions.



### Changing a fuse



Isolate the condensing boiler from the power supply prior to changing a fuse. The ON/OFF switch on the boiler does not provide separation from the power supply. Danger through 'live' electrical components. Never touch electrical components or contacts as long as the condensing boiler has not been isolated from the power supply.  
**Risk to life!**

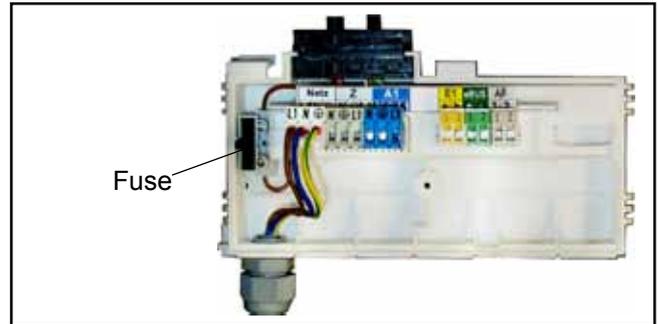


Fig.: Pivot the control unit forward; terminal box cover open

### DHW sensor connection

- When a cylinder is to be connected, the blue socket of the cylinder sensor must be connected to the blue plug of the control unit.
- Observe the cylinder installation instructions.

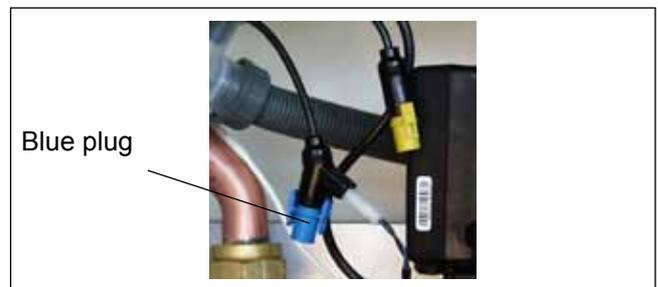


Fig.: Blue plug, cylinder sensor connection

### Connection DHW circulation pump/ external accessories (230 V AC)

Insert the cable glands into the terminal box. Insert and secure the cable through the cable gland.

Connect the DHW circulation pump 230 V AC, which is part of the Wolf accessory range, to terminals L1, N and .

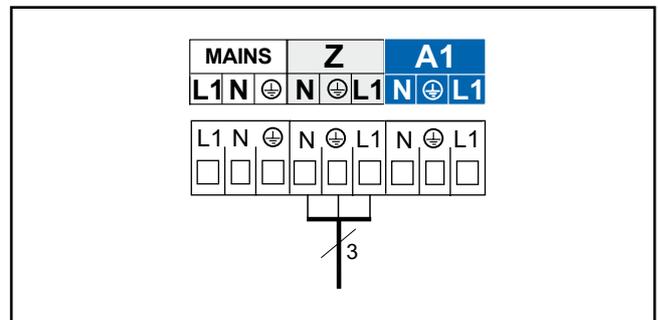


Fig.: Connection DHW circulation pump/external accessories

### Connection output A1 (230 V AC; 200 VA)

Insert the cable glands into the terminal box. Insert and secure the connecting cable through the cable gland. Connect the cable to terminals L1, N and .

The parameters for output A1 are described in the table on the following page.

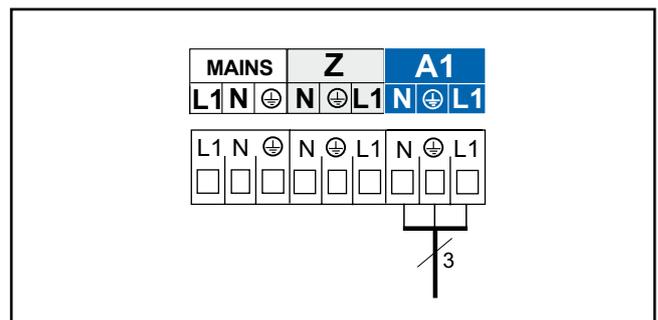
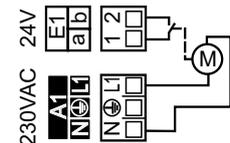


Fig.: Connection output A1

The functions of output A1 can be scanned and adjusted with Wolf control accessories with eBUS capability. The following functions can be allocated to output A1:

Code	Explanation
0	<b>N/A</b> No activation of output A1
1	<b>DHW circulation pump 100%</b> Controller (e.g. BM) activate output A1 when DHW is enabled. Output A1 is constantly activated when no controller is installed.
2	<b>DHW circulation pump 50%</b> Controller (e.g. BM) cycles output A1, when DHW is enabled. 5 minutes ON and 5 minutes OFF. Output A1 is cycled constantly in 5 minute intervals when no controller is installed.
3	<b>DHW circulation pump 20%</b> Controller (e.g. BM) cycles output A1, when DHW is enabled. 2 minutes ON and 8 minutes OFF. Output A1 is cycled constantly when no controller is installed.
4	<b>Alarm output</b> Output A1 is activated after a fault and expiry of 4 minutes.
5	<b>Flame transmitter</b> Output A1 is activated after a flame has been recognised.
6	<b>Cylinder primary pump</b> (only for central heating boilers) (factory setting for A1) Output A1 is activated when the cylinder is heated up.
7	<p><b>Ventilation damper</b> Output A1 is activated before each burner start. The burner will, however, only be enabled after input E1 has been closed.</p> <p>Important: In any case, input E1 must also be programmed as „Ventilation damper“!</p> <p>The feedback to input E1 must be made with a zero volt contact (24V). Otherwise, use an on-site relay for potential separation.</p>
8	<b>External ventilation</b> Output A1 is activated inverted to the gas combination valve. Switching off external ventilation equipment (e.g. extractor fan) during burner operation is only required, if the boiler is operated as open flue system.
9	<b>External LPG valve</b> Output A1 is activated in parallel to the gas combination valve.
10	<b>External pump</b> Output A1 switches synchronously with the heating circuit pump (HKP). Use with, for example, system separation.



### Connection input E1 (24 V)

Connect the cable for input 1 at terminals E1 in accordance with the wiring diagram; first remove the jumper between a and b from the respective terminals.

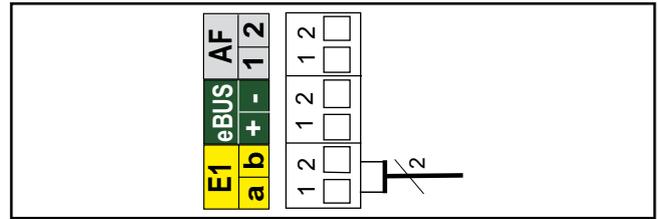


Fig.: Connection of room thermostat

The functions of input E1 can be scanned and adjusted with Wolf controllers with eBUS capability. The following functions can be allocated to input E1:

Code	Explanation
0	<b>No function</b> Input E1 is not taken into consideration by the control unit.
1	<b>Room thermostat</b> With open input E1, heating operation will be blocked (summer mode), independent of any digital Wolf control accessories.
2	<b>Maximum thermostat or system pressure switch</b> Optional connection for a maximum thermostat or system pressure switch. To enable the burner, input E1 must be closed. As long as the contact is open, the burner will remain blocked for DHW and central heating, incl. emissions test mode and frost protection.
3	<b>Not allocated</b>
4	<b>Flow switch</b> Optional connection for an additional water flow switch. After pump activation, input E1 must be closed within 12 seconds. Where this is not the case, the burner will be switched OFF, and fault 41 will be displayed.
5	<b>Monitoring the ventilation damper</b> See parameters of output A1, no. 7. ventilation damper.
8	<b>Burner block (BOB))</b> Operation without burner Contact closed, burnerblocked Heating circuit pump and cylinder primary pump in standard mode The burner is enabled in emissions test mode and in frost protection mode Opening the contact enables the burner again

### Digital Wolf controller connection (BM, MM, KM, SM1, SM2)

Only connect control units from the Wolf accessory range. Each accessory is supplied with its own connection diagram.

Use a 2-core cable (cross-section > 0.5 mm<sup>2</sup>) as connection between the control unit and the gas fired boiler.

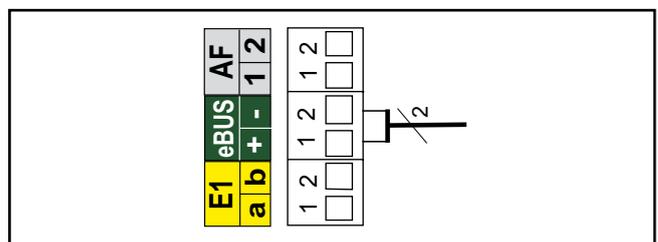


Fig.: Digital Wolf controller connection (eBUS interface)

### Connection of outside temperature sensor

The outside temperature sensor may be connected to the terminal strip of the boiler connection AF, or the terminal strip of the BM.

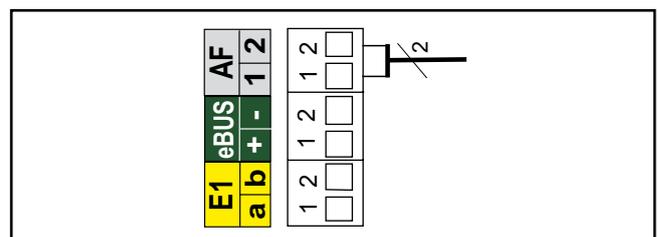


Fig.: Connection of outside temperature sensor

**Filling the siphon**

- Remove the siphon.
- Fill the siphon with water.
- Install the siphon.

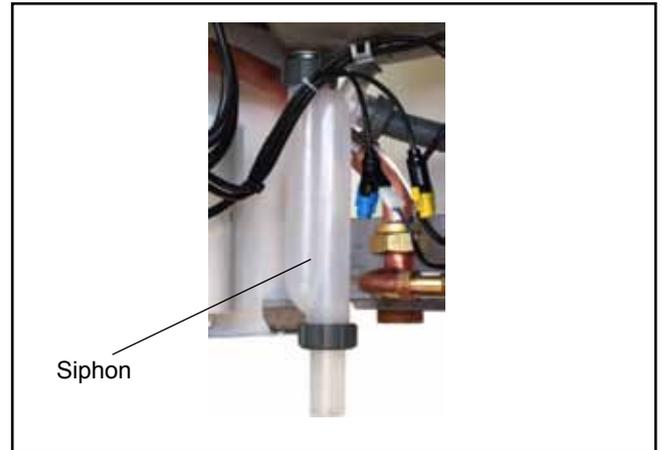


Fig.: Siphon

Fill the system and vent it properly, to safeguard the perfect function of the gas fired condensing boiler.

**NB**

**Before connecting the gas fired condensing boiler to the heating system, flush the entire system to remove residues such as welding pearls, hemp, putty, etc. from the pipework.**

- With the boiler in a cold condition, fill the heating system slowly via the return pipe, until 1.5 bar pressure is indicated. Inhibitors are not permissible.
- Check the entire system for water leaks.
- Fill the condensate siphon with water.
- Close the gas tap.
- Open the manual air vent valve.
- Open the cap of the automatic air-vent valve (on the heating circuit pump) by one revolution, but do not remove the cap.
- Open all radiator valves.
- Open all flow and return valves on the gas fired condensing boiler.
- Fill the system to 2 bar pressure. In operation, the pressure gauge must indicate between 1 and 2.5 bar.
- Start the gas fired condensing boiler, set the heating water temperature selector into position "2" (pump running, illuminated ring (status display) constantly green).
- Vent the pump; for this, briefly open and then retighten the air vent screw.
- Vent the heating circuit; for this, switch the condensing boiler ON and OFF several times.
- Top up with water when the system pressure drops severely.
- Close the manual air vent valve.
- Open the gas shut-off valve.
- Press the reset button.

**Note:** In constant operation, the heating circuit will be automatically vented via the heating circuit pump.

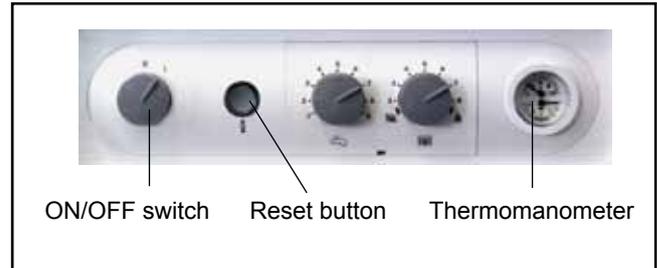


Fig.: Control unit overview



Fig.: Automatic air vent valve



Fig.: Air vent valve at the heating circuit pump and at the cylinder primary pump

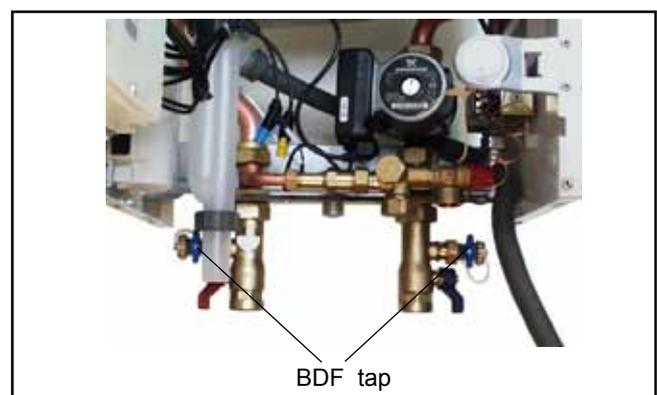


Fig.: BDF tap (valves, accessory)

### Checking the gas supply pressure



Work on gas components **MUST ONLY** be performed by a registered gas fitter. Work which is carried out incorrectly may lead to gas escaping, resulting in a risk of explosion, asphyxiation or poisoning.

- Switch OFF the gas fired boiler. Open the gas shut-off valve.
- Pivot the control unit lid down. Unlock the casing lid with the l.h. and r.h. rotating locking screws. Release the lower part of the casing lid and unhook at the top.
- To pivot the control unit, push in the tab on the r.h. side of the thermomanometer using a screwdriver.
- Pivot the control unit out.
- Release the plug at test nipple (1) and vent the gas supply pipe.
- Connect the differential pressure meter to "+" at test port (1). Connect "-" against atmosphere.
- Switch ON the ON/OFF switch.
- After starting the boiler, check the supply pressure at the differential pressure gauge.

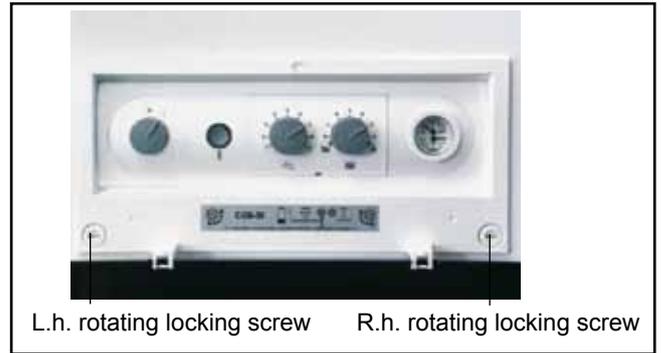


Fig.: Open the rotating locking screws

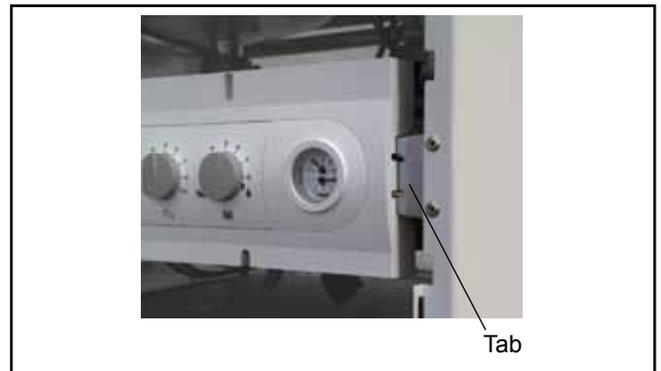


Fig.: Push in the tab

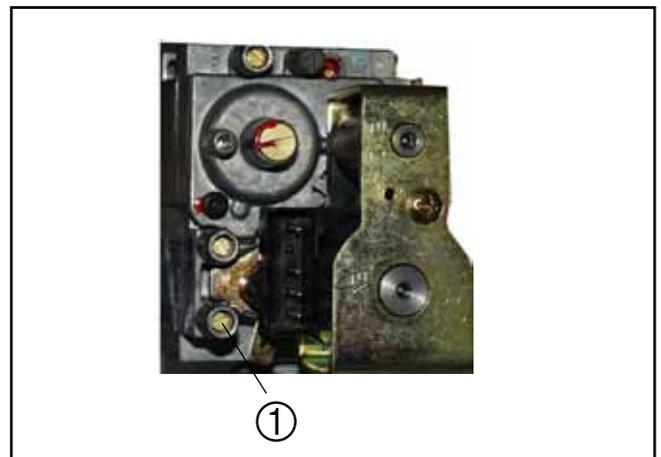


Fig.: Check the gas supply pressure

**NB** Natural gas:

If the supply pressure lies outside the 18 to 25 mbar range, adjustments must not be carried out and the boiler must not be taken into use. There is a risk of the equipment malfunctioning.

**NB** LPG:

If the supply pressure lies outside the 25 to 45 mbar range with a nominal supply pressure of 37 mbar, or 43 to 57 mbar with a nominal supply pressure of 50 mbar, make no adjustments and do not start the boiler. There is a risk of the equipment malfunctioning.

## Checking the gas supply pressure

- Switch OFF the ON/OFF switch. Close the gas shut-off valve.
- Remove the differential pressure gauge, and **reseal the test port with its plug (1)**.
- Open the gas shut-off valve.
- Check the test nipple for gas leaks.
- Complete the enclosed notice and affix to the inside of the casing.
- Close the boiler.



Gas shut-off valve

Fig.: Shut-off valves



If all screws are not fully tightened, gas might escape, resulting in a risk of explosions, suffocation and poisoning.



The initial start-up and operation of the boiler as well as the user instruction must only be carried out by a qualified contractor.

**NB**

- Check the boiler and system for leaks. Prevent water leaks.
  - Check the location and seating of all fitted parts.
  - Check all connections and component connections for leaks.
  - Water damage may result if leaks are not prevented.
- 
- Check that all flue accessories have been correctly installed.
  - Open the shut-off valves on the flow and return pipes.
  - Open the gas shut-off valve.
  - Switch ON the system ON/OFF switch on the control unit.
  - Check the over-ignition and the regular flame structure of the main burner.
  - If the system pressure on the heating water side (primary) drops below 1.5 bar, top up with water until the pressure reached between 2.0 and a maximum of 2.5 bar.
  - The illuminated ring shows green, if the boiler starts correctly.
  - Check that the condensate drains correctly.
  - Make the customer familiar with the boiler operation whilst referring to the operating instructions.
  - Complete the commissioning report and hand over the instructions to the customer.

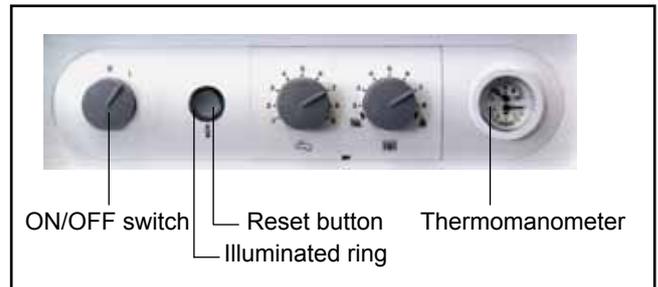


Fig.: Control unit overview

### Saving energy

- Instruct the customer about energy-saving options.
- Refer your customer to section "Information regarding energy-efficient operation" in the operating instructions.

**Setting the BUS address (only for the KM controller)**

When operating several boilers (number of boilers >1) in conjunction with a cascade module KM, set the eBUS address of each boiler in accordance with the table below.

BUS address setting:

Hold down the reset button; after 5 seconds, the corresponding flashing code will be displayed (see table). Select the corresponding address with the DHW temperature rotary selector. Release the reset button again.

<b>Boiler</b>	<b>BUS address</b>	<b>Rotary selector position DHW</b>	<b>Illuminated ring display</b>
Individual boiler	0	6	flashing green (factory setting)
<b>Boiler cascade</b>			
Boiler 1	1	1	flashing red
Boiler 2	2	2	flashing yellow
Boiler 3	3	3	flashing yellow/red
Boiler 4	4	4	flashing yellow/green

**NB** Modifications must only be carried out by a recognised heating contractor or by Wolf customer service.



To prevent damage to the heating system, cancel night setback when outside temperatures fall below -12 °C. If this rule is not observed, ice may form on the flue outlet which may result in injury to individuals or material losses.

**NB** Incorrect operation can lead to system faults.

Please note when using parameter **GB 05** (frost protection/outside temperature), that frost protection is not safeguarded if you set temperatures lower than 0 °C. This can lead to heating system damage.

For output details of this boiler, see the type plate.

The control parameter can be modified or displayed via controller with eBUS capability. For procedures, check the operating instructions of the relevant accessories.

Settings of column 1 are suitable for control accessories ART and AWT.

Settings of column 2 are suitable for Wolf control systems with BM (programming unit)

1	2	Parameter	Unit	Factory setting	min	max
GB01	HG01	Flow temperature hysteresis	K	8	5	30
	HG02	Lower fan speed Min. fan speed in %	%	CGB-35: 31 CGB-50: 29	31 29	100 100
	HG03	Upper fan speed DHW Max. fan speed in % for DHW	%	CGB-35: 100 CGB-50: 100	31	100
GB04	HG04	Upper fan speed central heating Maximum fan speed in % for central heating	%	CGB-35: 100 CGB-50: 100	31	100
GB05	A09	Frost protection outside temperature With connected outside temperature sensor and insufficient temperature pump ON	°C	2	-10	10
GB06	HG06	Heating circuit pump mode 0 → Pump ON in winter mode 1 → Pump ON when the burner is ON		0	0	1
GB07	HG07	Heating circuit pump run-on time Heating circuit pump run-on time in heating mode in min. Heating circuit pump run-on time in heating mode in min.	min	1	0	30
GB08	HG08 or HG22	Maximum set flow temperature Applies to heating mode	°C	80	40	90
GB09	HG09	Cycle block applies to heating mode	min	7	1	30
	HG10	e Bus address Bus address of boiler (display only)		0	0	5
	HG11	DHW quick start-up Temperature of plate heat exchanger in summer mode (suitable for combi-boilers only)	°C	10	10	60
	HG12	Gas type not assisted		0	0	1
GB13	HG13	Input E1 Input E1 (24 V) Various functions can be allocated to input E1. See chapter „Connection input E1“		1 Roomthermostat	0	5
GB14	HG14	Output A1 (230VAC) Various functions can be allocated to output A1. See chapter „Connection output A1“		6 Cylinder primary pump	0	9
GB15	HG15	DHW cylinder hysteresis Switching differential for cylinder reheating		5	1	30
	HG21	Minimum boiler water temperature TK-min	°C	20	20	90

## In heating mode:

The heating circuit pump modulates in proportion to the burner output. That means that the pump operates at its maximum speed in heating mode, when the burner operates at its maximum output. The pump operates at its minimum speed in heating mode, when the burner operates at its minimum output. In other words, the burner output and pump speed are regulated subject to the required heating load. The power consumption is reduced by the pump modulation.

## In DHW mode:

The heating circuit pump will not modulate, but operates constantly with the selected pump speed. DHW mode CGB-35: 82%, DHW mode CGB-50: 86%

## In Standby mode:

The heating circuit pump will not modulate, but operates constantly with the selected pump speed. Standby mode CGB-35: 20%, standby mode CGB-50: 35%

## Setting limits:

The speed limits for heating mode can be modified with the control accessory BM.

Settings of column 1 are suitable for control accessories ART and AWT.

Settings of column 2 are suitable for Wolf control systems with BM (programming unit)

				modulating pump Grundfos			modulating pump class A Wilo		
1	2	Parameter	Unit	Factory setting	min	max	Factory setting	min	max
GB16	HG16	Minimum pump speed, heating mode	%	CGB-35: 20 CGB-50: 35	20 35	100 100	CGB-35: 55 CGB-50: 55	55 55	100 100
GB17	HG17	Minimum pump speed, heating mode	%	CGB-35: 43 CGB-50: 63	20 63	100 100	CGB-35: 82 CGB-50: 86	60 60	100 100

**NB** Only settings in accordance with the table are permissible for the minimum pump speed in heating mode. Otherwise there is a risk that the pump will fail to start.

In addition, the "Maximum pump speed in heating mode" must be at least 5% higher than the "Minimum pump speed in heating mode", otherwise the pump would operate at its 100% rating.

## Energy saving tip for modulating pump Grundfos:

Clever system design can result in additional power savings (pump). If you increase the temperature spread between the flow/return from 15 K to 25 K, the pump rate will be reduced by approx. 40%. Consequently, the max. pump speed can be adjusted downwards. This reduces the power consumption of the pump by approx. 45%.

Raise the heating curve slightly after such a measure, as the average radiator temperature will be reduced by the wider spread. In addition, as the return temperature will drop, a wider spread will also improve the utilisation of condensing technology.

				modulating pump Grundfos	
Boiler	Spread	Rated output	Flow rate	Max. pump speed: heating mode	Power consumption pump
CGB-35	15 K	34.9 kW	2000 l/h	100 %	88 W
	25 K	34.9 kW	1200 l/h	25 %	52 W
CGB-50	15 K	49.9 kW	2860 l/h	100 %	128 W
	25 K	49.9 kW	1717 l/h	56 %	103 W

## Troubleshooting:

Problem	Solution
Individual radiators do not heat-up sufficiently.	Create an hydraulic balance, i.e. reduce the flow rate of warmer radiators.
During spring and autumn (adjusted outside temp.) the required room temperature is not achieved.	Increase the set room temperature at the controller. e.g. from 20 °C to 25 °C.
The room temperature is not achieved when the outside temperatures are very low.	Select a steeper heating curve at the controller. e.g. from 1.0 to 1.2.

## CGB-35/CGB-50

### Output setting (parameter GB04)

The output setting can be modified with Wolf control accessories with eBUS capability. The heating output will be determined by the gas fan speed. By reducing the gas fan speed in accordance with the table, the maximum output will be matched at 80/60°C for natural gas E / H/LL and LPG.

#### CGB-35

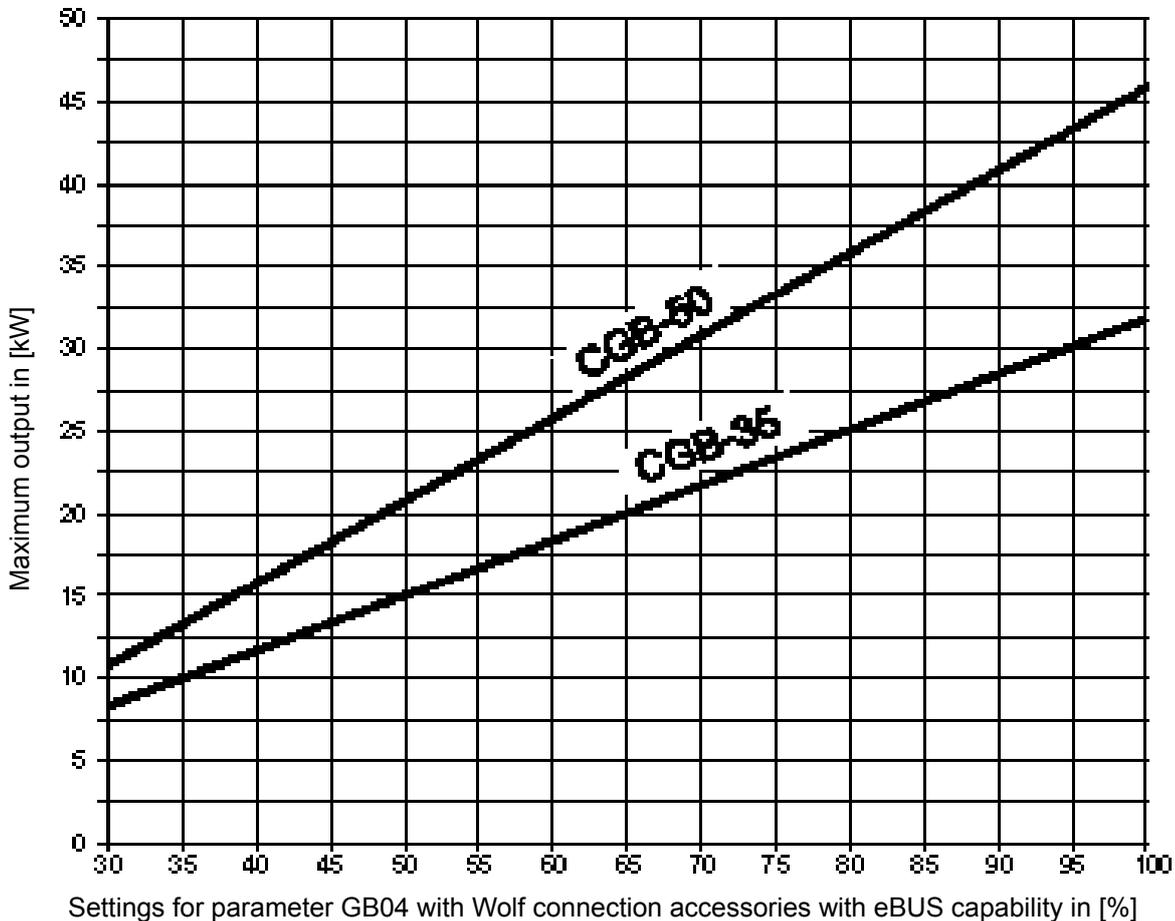
Heating output (kW)	8	10	12	14	16	17	19	21	23	24	26	28	30	31	32
Display value (%)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

#### CGB-50

Heating output (kW)	11	14	17	19	22	24	27	29	32	34	37	39	42	44	46
Display value (%)	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100

Table: Output setting

Limiting the maximum output relative to a flow/return temperature of 80/60 °C



Test the combustion parameters with the boiler doors closed.

## Testing the combustion air

- Remove the screw from the r.h. test port.
- Open the gas shut-off valve.
- Insert the test probe.
- Start the gas fired condensing boiler and turn the heating water temperature selector to the emissions test symbol (illuminated status display ring flashes yellow).
- Test the temperature and CO<sub>2</sub> value.  
The balanced flue pipe is not sound, if the CO<sub>2</sub> content is > 0.2%; rectify the leak.
- After the test has been completed, switch off the boiler, remove the test probe and close the test port. Ensure the screws seal tightly.



Fig.: Test ports

## Testing the flue gas parameters



**Flue gas can escape into the installation room if the test port is not sealed. This can result in a risk of asphyxiation.**

- Remove the screw from the l.h. test port.
- Open the gas shut-off valve.
- Start the gas fired condensing boiler and turn the temperature selector to the emissions test symbol (illuminated status display ring flashes yellow).
- Insert the test probe.
- Test the flue gas values.
- After the test has been completed, remove the test probe and close the test port. Ensure the screws seal tightly.

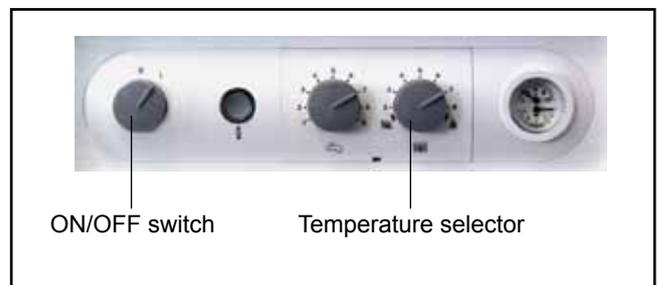


Fig.: Control unit overview

## Adjusting the gas:air mixture

**NB** Carry out the adjustments in the following sequence: At the factory, the gas combination valve has been adjusted for the gas type stated on the type plate. Only adjust the gas combination valve after the system has been changed to a different gas type.

### A) CO<sub>2</sub> adjustment at the upper load (emissions test mode)

- Pivot the control unit lid down. Unlock the casing lid with the l.h. and r.h. rotating locking screws. Release the lower part of the casing lid and unhook at the top.
- Remove the screw from the l.h. flue gas test port.
- Insert the test probe of the CO<sub>2</sub> test equipment into the flue gas test port.
- Turn the temperature selector to the emissions test position , (illuminated status display ring flashes yellow).
- Check the CO<sub>2</sub> content at full load, and compare the actual value with those in the table below.
- Pivot the control unit out and correct the CO<sub>2</sub> content with the gas flow adjusting screw on the gas combination valve (in accordance with the table).
- Turn clockwise - higher CO<sub>2</sub> content.
- Turn anti-clockwise - lower CO<sub>2</sub> content.

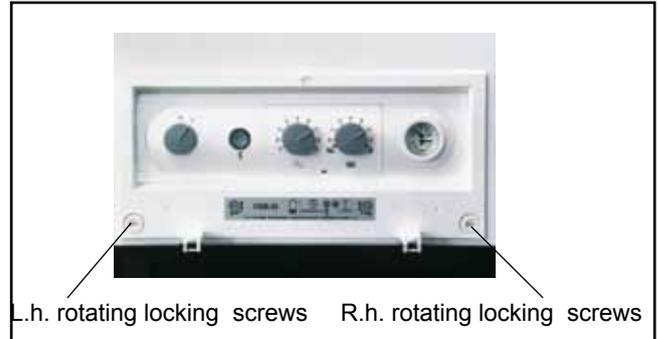


Fig.: Open the rotating locking screws

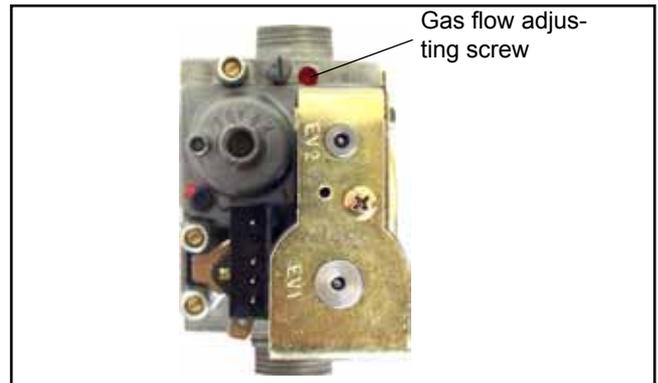


Fig.: Gas combination valve

Boiler open at upper load	
Natural gas H 8,6% ±0,2%	LPG P 9,9% ± 0,2%

- Terminate the emissions test mode by turning the temperature selector back into its original position.



Fig.: Flue gas test with an open boiler

### B) CO<sub>2</sub> adjustment at the lower load (soft start)

- Remove the protective screw above the zero point screw with a large screwdriver.
- Restart the boiler by pressing the reset button.
- Check and correct (if required) the CO<sub>2</sub> content approx. 20 s after burner start with the CO<sub>2</sub> meter, by fine adjusting the zero point adjusting screw in accordance with the table below. Make this adjustment within 180 s after burner start. If necessary, repeat the start phase for setting purposes by pressing the reset button.
- Turn clockwise - higher CO<sub>2</sub> content.
- Turn anti-clockwise - lower CO<sub>2</sub> content.

Boiler open at lower load	
Natural gas H 8,3% ± 0,2%	LPG P 10,4% ± 0,2%

- Re-insert the protective screw.

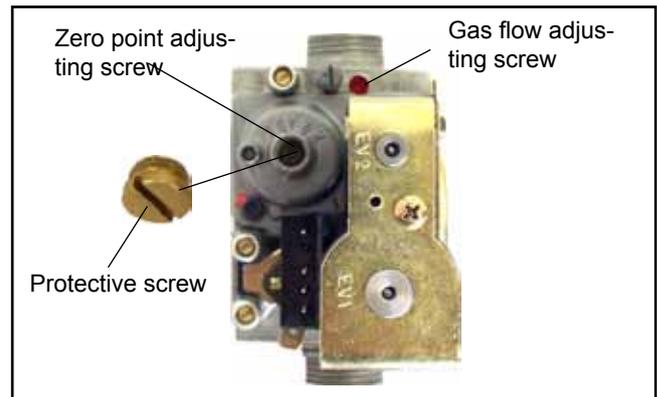


Fig.: Gas combination valve

### C) Checking the CO<sub>2</sub> adjustment

- After completing the work, refit the casing lid and check the CO<sub>2</sub> value with the boiler closed.



**Observe the CO emissions whilst making CO<sub>2</sub> adjustments. The gas combination valve is incorrectly adjusted, if the CO value lies >200 ppm, when the CO<sub>2</sub> value is correct. In that case, take the following steps:**

- Fully insert the zero point adjusting screw
- Open the zero point adjusting screw 3 revolutions for natural gas, and 2 revolutions for LPG.
- Repeat the adjusting process from section A).
- The boiler is correctly adjusted, when the CO<sub>2</sub> value corresponds with those in the adjacent table.



Fig.: Flue gas test with a closed boiler

### D) Completing the adjustments

- Switch the boiler OFF and close the test ports and hose nipple; check for leaks.

Boiler closed at upper load	
Natural gas H 8,8% ± 0,5%	LPG P 10,1% ± 0,5%

Boiler closed at lower load	
Natural gas H 8,5% ± 0,5%	LPG P 10,6% ± 0,5%

Commissioning steps	Test values or confirmation
1.) Gas type	Natural gas H <input type="checkbox"/> LPG <input type="checkbox"/>  Wobbe-Index _____ kWh/m <sup>3</sup> Betriebsheizwert _____ kWh/m <sup>3</sup>
2.) Gas supply pressure checked?	<input type="checkbox"/>
3.) Gas soundness test carried out?	<input type="checkbox"/>
4.) Balanced flue system checked?	<input type="checkbox"/>
5.) Water connections checked for leaks?	<input type="checkbox"/>
6.) Fill the siphon	<input type="checkbox"/>
7.) Vented boiler and system?	<input type="checkbox"/>
8.) System pressure 1.5 - 2.5 bar?	<input type="checkbox"/>
9.) System flushed?	<input type="checkbox"/>
10.) Heating water hardness between 2 and 11 °dH?	<input type="checkbox"/>
11.) No chemical additives (inhibitors; antifreeze) added?	<input type="checkbox"/>
12.) Entered type of gas and output onto label?	<input type="checkbox"/>
13.) Function test carried out?	<input type="checkbox"/>
14.) Flue gas test: Gross flue gas temperature _____ Ventilation air temperature _____ Net flue gas temperature _____ Carbon diox. content (CO <sub>2</sub> ) or oxygen content (O <sub>2</sub> ) _____ Carbon monoxide content (CO) _____	_____ t <sub>A</sub> (°C) _____ t <sub>L</sub> (°C) _____ (t <sub>A</sub> -t <sub>L</sub> ) (°C) _____ % _____ ppm
15.) Casing fitted?	<input type="checkbox"/>
16.) System user trained, tech. docs. handed over?	<input type="checkbox"/>
17.) Confirm commissioning?	_____ <input type="checkbox"/>

Wolf offer you the option of matching your gas fired condensing boiler to changing conditions via conversion sets.

Conversion to other gas types:

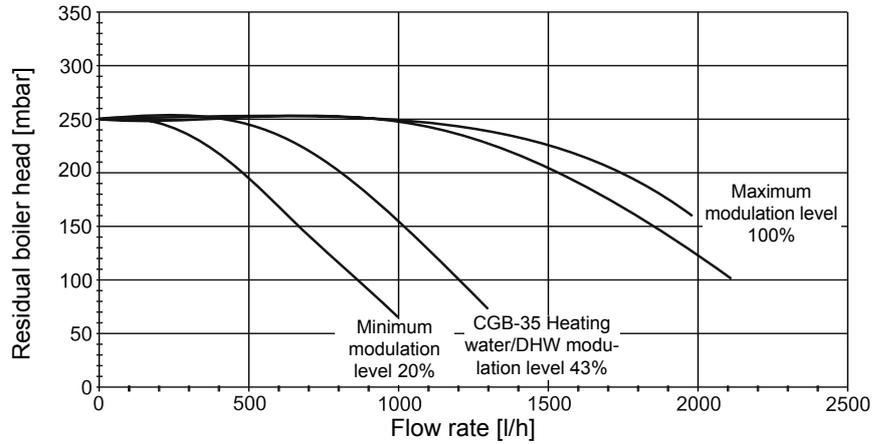
from	to	CGB-35	CGB-50
Natural gas H	LPG P	86 11 508	86 11 510
LPG P	Natural gas H	86 11 507	86 11 509

Boiler	Gas type conversion		High limit safety cut-out STB	
	Gas type	Gas restrictor	Flue gas STB	Combustion chamber STB
CGB-35	Natural gas H	yellow 660 17 20 521	27 41 063	27 41 068
	LPG P	red 510 17 20 520		
CGB-50	Natural gas H	light grey 850 17 30 257	27 41 063	27 41 068
	LPG P	lilac 620 17 30 258		

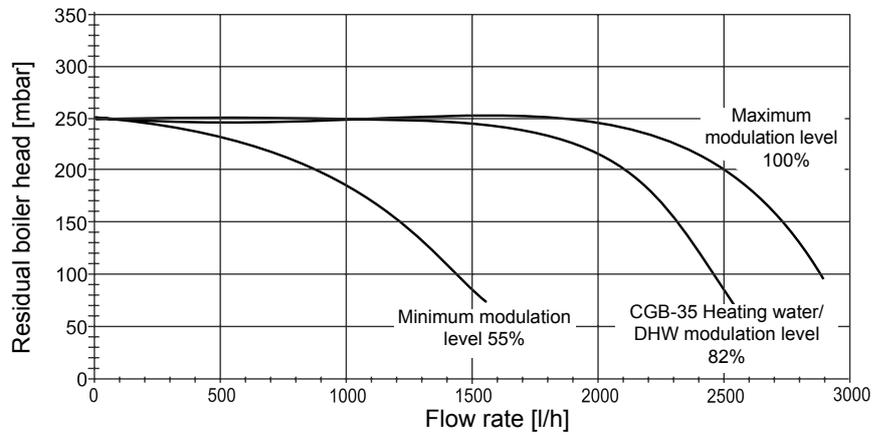
## Residual head of the boiler pump

An heating circuit pump is integrated into the CGB-35 and CGB-50 which is modulated subject to the burner load. See diagrams for residual head.

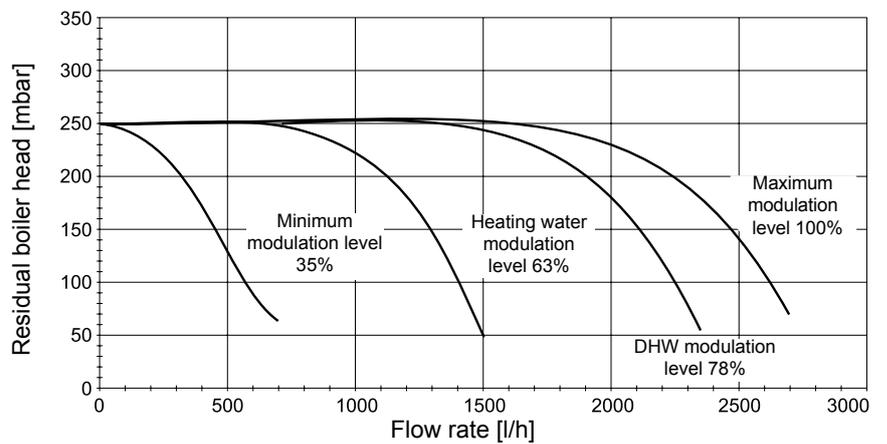
**CGB-35**  
Residual head with modulated pump Grundfos



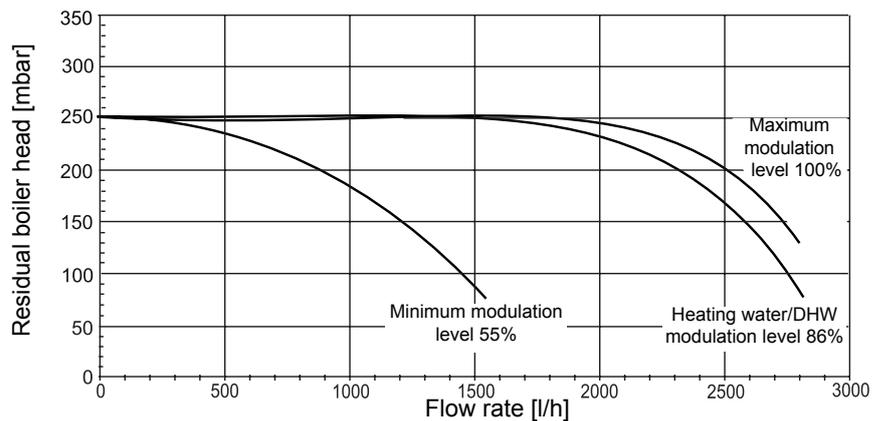
**CGB-35**  
Residual head with modulated pump class A Wilo



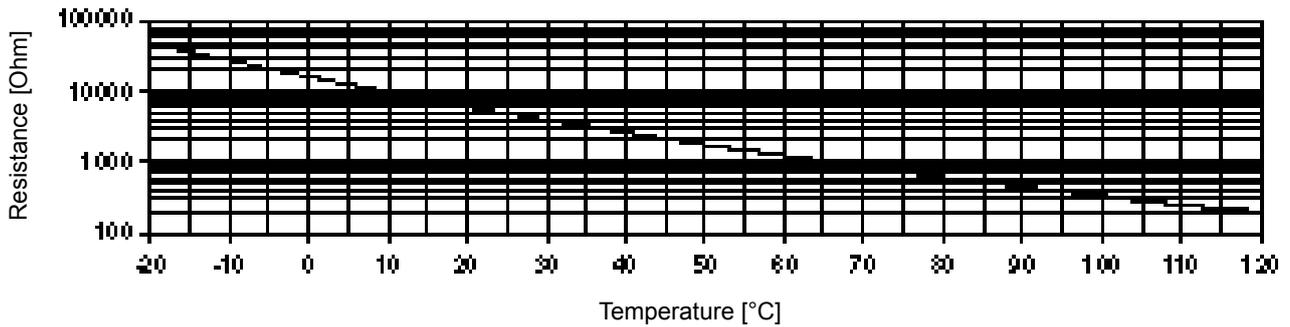
**CGB-50** Residual head with modulated pump Grundfos



**CGB-50**  
Residual head with modulated pump class A Wilo



## Sensor resistances



## Temperature/pressure drop

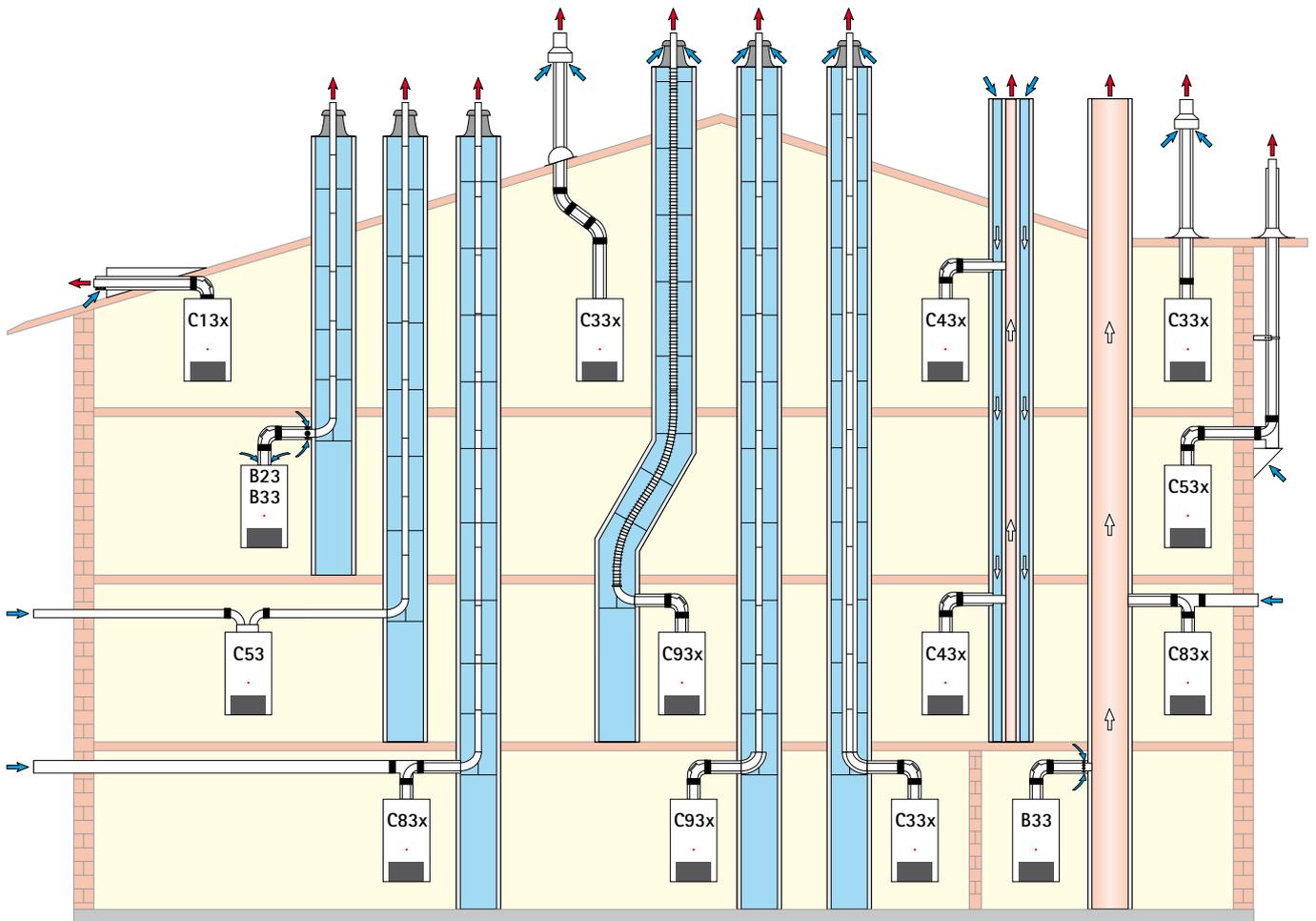
0°C / 16325	15°C / 7857	30°C / 4028	60°C / 1244
5°C / 12697	20°C / 6247	40°C / 2662	70°C / 876
10°C / 9952	25°C / 5000	50°C / 1800	80°C / 628

## Types of connection

Boiler	Type <sup>1), 2)</sup>	Category	Operating mode		To be connected to...				
			Open flue	Balanced flue	moisture-resist. chimney	balanced flue chimney	balanced flue routing	acc. to build Regs cert. LAF	moisture resistant flue pipe
CGB-35/50	B23, B33, C53, C53x C13x, C33x, C43x, C83x, C93x	II <sub>2H3P</sub>	yes	yes	B33, C53 C83x	C43x	C33x C53x, C13x <sup>3)</sup>	C63x	B23, C53x C83x, C93x

<sup>1)</sup> Marking "x" indicates that all flue pipe components are surrounded by combustion air.

<sup>2)</sup> For type B23, B33 the combustion air is drawn from the boiler room (open flue combustion equipment).

**Flue gas/ventilation air routing options**

## Flue gas/ventilation air routing options system

Condensing boiler versions			Max. length <sup>1) 2)</sup> [m]	
			CGB-35	CGB-50
B23	Flue pipe inside a duct and combustion air directly via the boiler (open flue)	DN 80	30	20
		DN 100	35	28
B33	Flue pipe inside a duct with horizontal concentric connection pipe (open flue)	DN 80	30	20
		DN 100	35	28
B33	Resistant flue gas chimney with vertical concentric connection pipe (open flue)		Calculation acc. to DIN EN 13384 (LAS manufacturer)	
C13x	Horizontal concentric roof outlet through a pitched roof, (balanced flue - on-site dormer)		20	11
C33x	Vertical concentric roof outlet through a pitched roof or flat roof, vertical concentric balanced flue routing for installation in a duct, (balanced flue)		22	13
C33x C93x	Vertical flue pipe for routing through a ducts rigid/flexible with horizontal concentric connection pipe	DN 80	22	15
		DN 100	30	22
C43x	Connection to a moisture-resistant balanced flue chimney (LAS) maximum pipe length from the centre of the boiler bend to the connection 2 m (balanced flue)		Calculation acc. to DIN EN 13384 (LAS manufacturer)	
C53	Connection to the flue pipe inside a duct and air supply pipe through an outside wall (balanced flue)	DN 80	30	20
		DN 100	35	28
C53x	Connection to a flue pipe on an outside wall (balanced flue)	DN 80	22	15
C83x	Connection to the flue pipe inside a duct and air supply through an outside wall (balanced flue)	DN 80	30	20
		DN 100	35	28
C83x	Concentric connection to a moisture-resistant flue gas chimney and combustion air through outside wall (balanced flue)		Calculation acc. to DIN EN 13384 (LAS manufacturer)	

<sup>1)</sup> Available fan draught: CGB-35 115 Pa, CGB-50 145 Pa

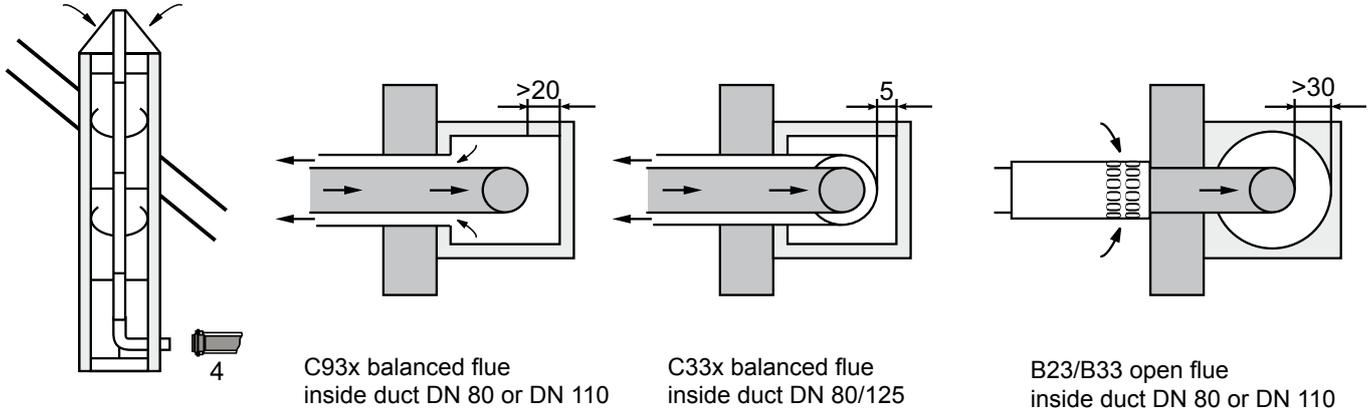
<sup>2)</sup> For calculating the pipe length, see section "Calculating the balanced flue pipe length", page 42.

**Note: Systems C 33x and C 83x are also suitable for installation in garages.**

Where necessary, adapt the installation examples to the relevant Building Regulations and requirements of your country/region. Discuss any questions relating to the installation, in particular regarding the installation of inspection parts and ventilation apertures, with your local heating engineer.

**For concentric air/flue pipes (balanced flue systems), only use original Wolf components.**

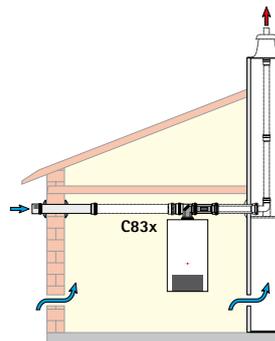
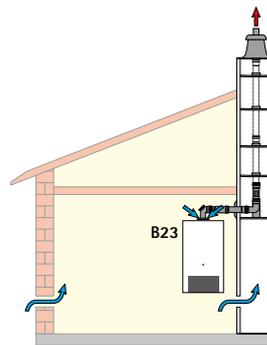
## Minimum duct sizes applicable to open and balanced flue operation



C93 x balanced flue  
system DN 80/125 horizontal  
DN 100 or DN 80 vertical

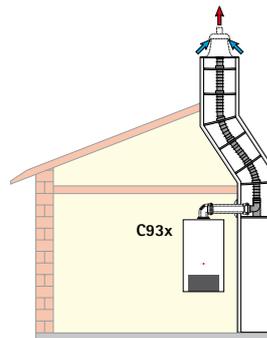
## Balanced flue routing; (rigid) inside a duct Minimum duct sizes

	Round Ø	Rectangular □
DN 80	150 mm	130 mm
DN 110	190 mm	170 mm



## Flexible flue pipe Minimum duct sizes

	Round Ø	Rectangular □
DN 83	150 mm	130 mm
DN 110	190 mm	170 mm



## General notes

Particularly for safety reasons, use only original Wolf components for concentric air/flue pipes (balanced flue systems).

Where necessary adapt the installation examples to the relevant Building Regulations and requirements in your country/region. Discuss any questions relating to the installation of inspection covers and ventilation apertures with your local heating engineer.



With low outside temperatures the water vapour contained in the flue gas may condense on the balanced flue pipe and freeze. These icicles may fall from the roof causing injuries or material losses. Prevent ice from falling through on-site measures, e.g. the installation of a snow catcher grille.



If the balanced flue pipe crosses different floors, route the pipes outside the boiler room inside a duct with a fire resistance of at least 90 min., and in living accommodation of low height with a resistance of at least 30 min. Fire may be transferred if these instructions are not observed.



Gas fired condensing boilers with a balanced flue outlet above the roof may only be installed in attics or in rooms, where the ceiling also forms the roof or where only the roof construction is located above the ceiling.

The following applies to gas fired boilers with a balanced flue above the roof, where only the roof structure lies above the ceiling:



If a specific fire resistance is required for the ceiling, the combustion air supply and flue pipes running between the top edge of the ceiling and the roof skin must be run inside a liner, which also offers this fire resistance and is made from non-flammable materials. There is a risk of fires spreading if these requirements are ignored.



If no specific fire resistance is required for the ceiling, route the combustion air supply and flue gas pipes between the top edge of the ceiling and the roof skin inside a duct made from non-flammable, rigid material or inside a protective metal pipe (mechanical protection). There is a risk of fires spreading if these requirements are ignored.

A specific clearance between the concentric balanced flue and combustible materials or components is not required, as temperatures are limited to 85 °C at the rated boiler output.

If only a flue pipe is installed, maintain the clearances in accordance with current installation regulations.



Balanced flues without ducts must not be routed through other rooms, otherwise there is a risk of fires spreading, and mechanical protection is not ensured.



Combustion air must not be introduced from chimneys, which previously carried flue gases from oil or solid fuel boilers.



Secure the balanced flue pipe or outer flue pipe ducts with spacer pipe brackets at a maximum distance of 50 cm from the flue outlet or upstream/downstream of deviations to achieve protection against the pipe joints being pulled apart. Flue gas may escape, if this rule is not observed.

Risk of poisoning through escaping flue gas. The equipment may also suffer damage.

### Flue gas temperature limiter

The electronic flue gas temperature limiter switches the boiler off when the flue gas temperature exceeds 110 °C.

The boiler restarts when the reset button is pressed.

### Connection to the balanced flue

The cross-section of flue pipes must be able to be inspected, to ensure that they are not blocked. Therefore, install an inspection and/or test aperture inside the boiler room; agree suitable arrangements with your local heating engineer.

Flue pipe connections are created using couplings and gaskets. Always arrange couplings against the condensate flow direction.



**Install the balanced flue pipe with at least a 3° slope towards the gas fired condensing boiler. Install spacer clamps to secure the location (see installation example). Under the most unfavourable circumstances, a lesser slope of the balanced flue pipe can lead to corrosion and faulty operation.**

**NB**

**Generally bevel or deburr trimmed flue pipes to ensure a gas tight installation of pipe joints. Ensure that gaskets are properly fitted. Remove all contamination prior to installation - never fit faulty parts.**

For boilers with a rated output up to 50 kW, a distance of at least 0.4 m is required between the flue terminal and the roof surface.

### Calculating the balanced flue pipe length

The calculated length of a balanced flue system or the flue pipe is derived from the straight pipe length and the length of the installed pipe bends. In this calculation, a 90° bend or a 90° tee piece is calculated as being 2 m and a 45° bend as being 1 m.

Example:

Length of straight balanced flue pipe: 1.5 m

87° bend = 2 m

2 x 45° bends = 2 x 1 m

$L = 1.5 \text{ m} + 1 \times 2 \text{ m} + 2 \times 1 \text{ m}$

**L = 5.5 m**

Component	Calculated length
87° bend	2 m
45° bend	1 m
87° inspection elbow	2 m
Straight pipe	subject to length

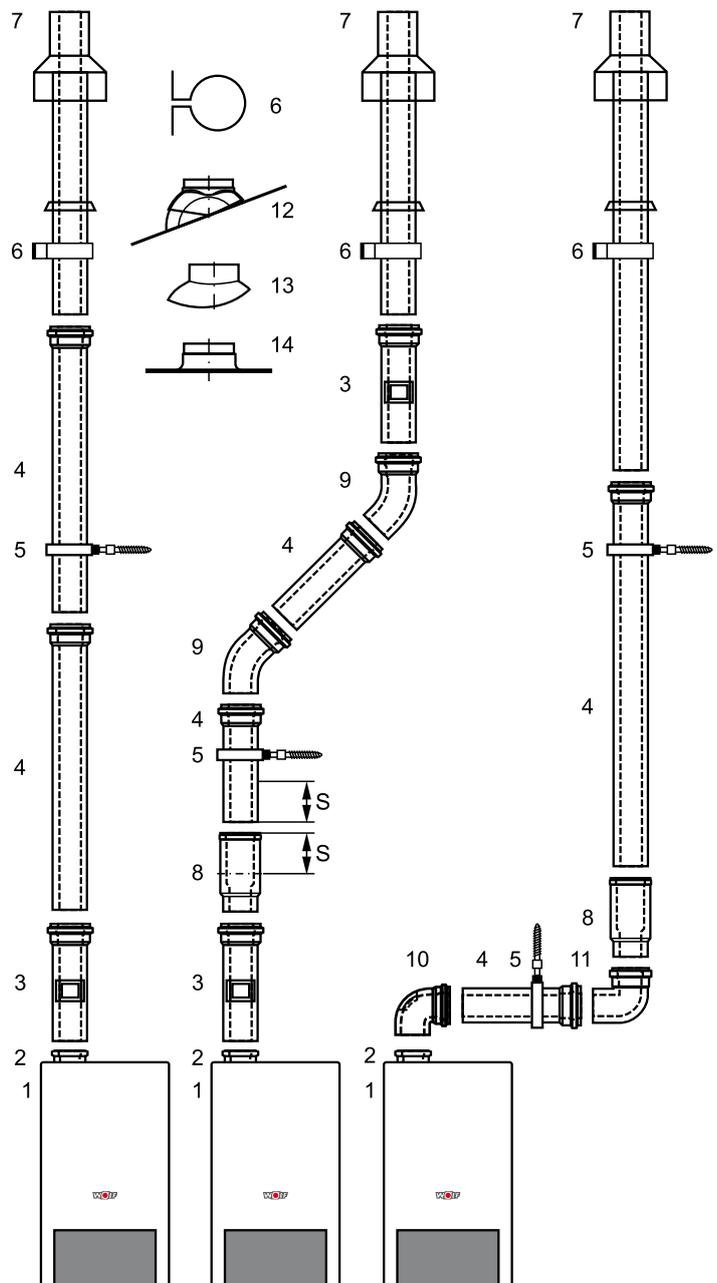
Table: Pipe length calculation

**NB**

**To avoid the air supply and flue gas exhaustion and/or duct ventilation influencing each other above the roof, we recommend you maintain a minimum distance of 2.5 m between the air inlet and flue terminal. Also take the Technical Guide into consideration.**

### Balanced flue routing, vertical and concentric (examples)

- 1 Gas fired condensing boiler
- 2 Gas fired condensing boiler connection DN 80/125
- 3 Balanced flue incl. inspection aperture DN 80/125 (250 mm long)
- 4 Balanced flue DN80/125  
500 mm  
1000 mm  
2000 mm
- 5 Spacer clip
- 6 Fixing bracket DN125 for roof outlet
- 7 Balanced flue, vertical DN80/125 (roof outlet for flat or pitched roofs)  
L = 1200 mm  
L = 1800 mm
- 8 Separator (slide coupling), if required
- 9 Bend 45° DN 80/125
- 10 Inspection elbow 87° DN80/125
- 11 Bend 87° DN80/125
- 12 Universal tile for pitched roof 25/450
- 13 Klöber adaptor 20-50°
- 14 Flat roof collar

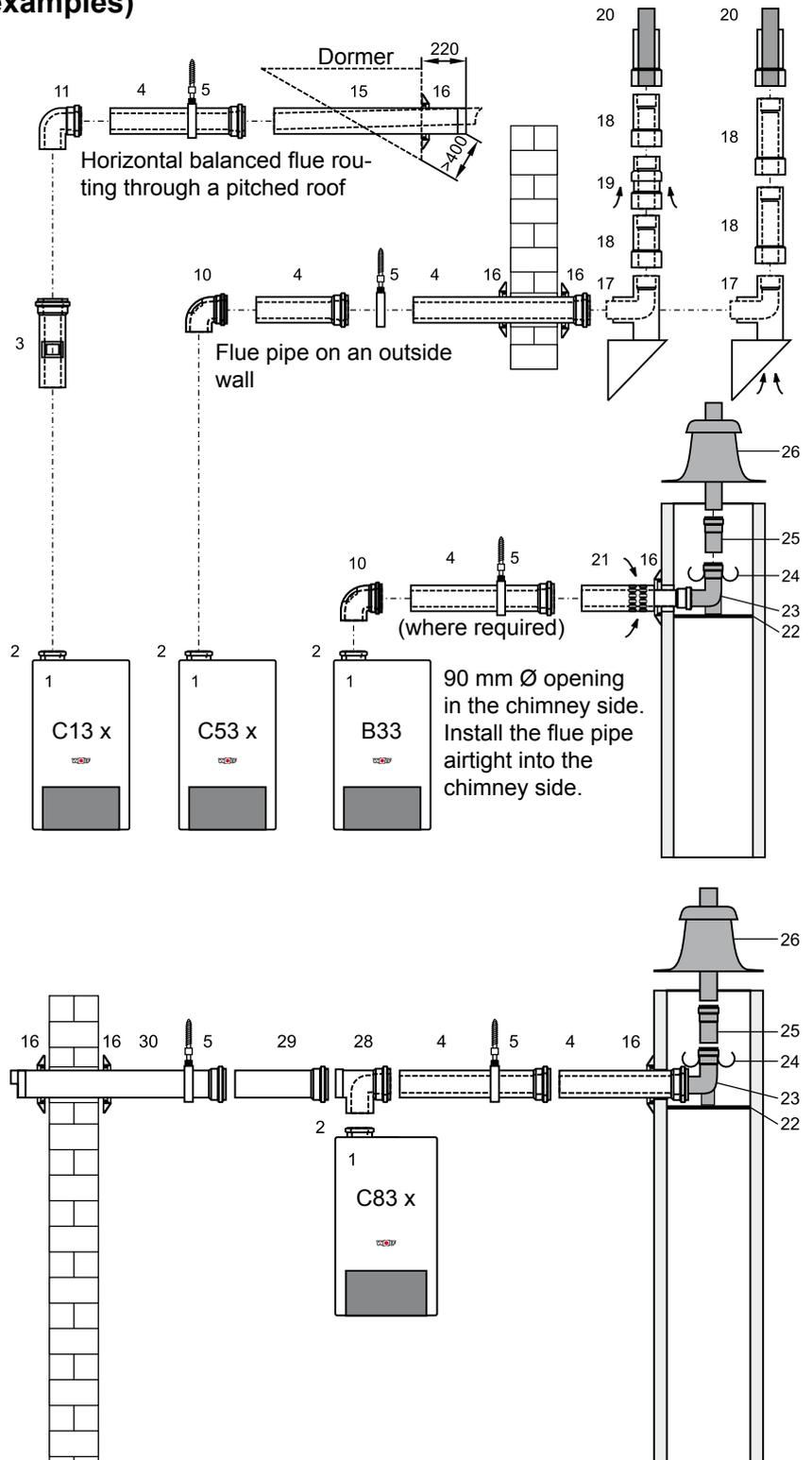


**Type C33x:** Gas fired condensing boiler with combustion air and flue gas routed vertically above the roof.

**Note:** During installation, slide the separator (8) fully into the coupling. Push the next balanced flue pipe (4) 50 mm (dim. "S") into the coupling of the separator, and secure in this location, e.g. with pipe clips DN125 (5) or a fixing screw on the air inlet side. Lubricate the pipe ends and gaskets for an easier installation. Determine the required inspection piece (3) (10) with your heating engineer prior to the installation.

### Horizontal concentric balanced flue pipe C33x, C53x and B33 and flue pipe on an outside wall (examples)

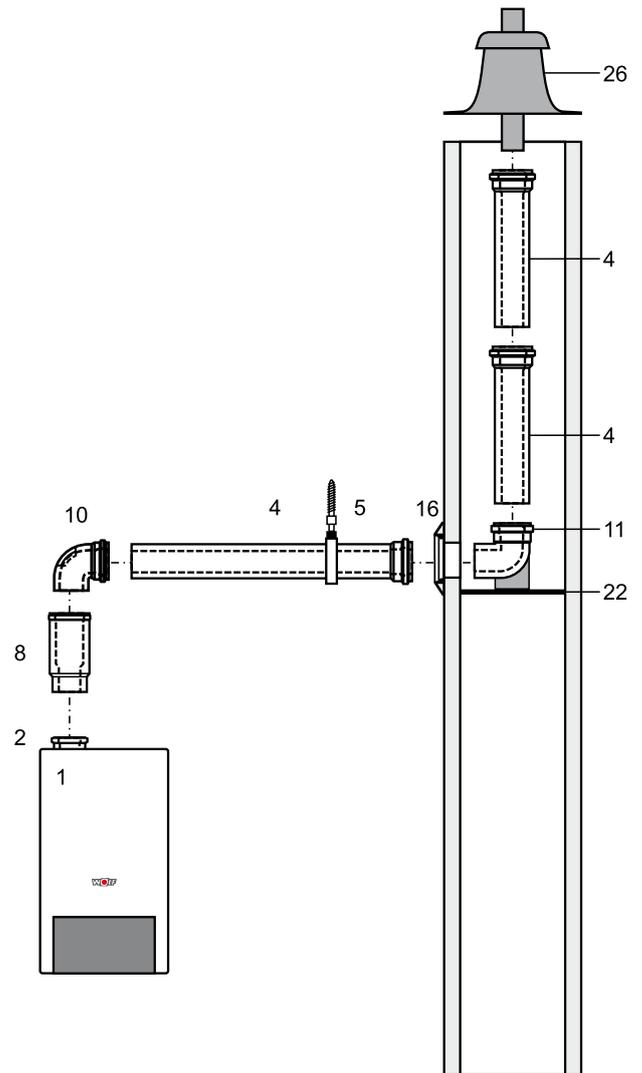
- 1 Gas fired condensing boiler
- 2 Gas fired condensing boiler connection DN 80/125
- 3 Balanced flue incl. inspection aperture DN80/125 (250 mm long)
- 4 Balanced flue DN80/125  
500 mm  
1000 mm  
2000 mm
- 5 Spacer clip
- 10 Inspection elbow 87° DN80/125
- 11 Bend 87° DN80/125
- 15 Balanced flue horizontal, incl cowl
- 16 Rose
- 17 External wall panel 87° DN80/125 with smooth air pipe end
- 18 Balanced flue pipe, external wall DN80/125
- 19 LAir inlet piece, external wall DN80/125
- 20 conc. terminal end with clamping strap
- 21 Connection to a flue gas chimney B33 Length 250 mm with air apertures
- 22 Support rail
- 23 Support bend 87° DN80
- 24 Spacers
- 25 PP flue DN80
- 26 Duct cover with UV-stabilised terminal
- 28 Inspection tee
- 29 Air pipe Ø 125 mm
- 30 Air inlet pipe Ø 125 mm



Install the horizontal flue pipe with approx. 3° slope (6 cm/m) towards the boiler. Route the horizontal air supply pipe with a 3° slope towards the outside – install the air inlet with wind protection; permissible wind pressure at the air inlet 90 Pa. The burner will not operate with higher wind pressure. Following the support bend (23), inside the duct the flue pipe can be routed in DN 80, or with the use of a reducer Ø110 mm to 80 mm (23) in DN 100. A flexible flue pipe DN 80 can be connected downstream of the support bend (23).

## Connection to the balanced flue inside a duct (example)

Connection to a concentric balanced flue inside a duct C33X



**Inform your local heating engineer prior to installation.**

The following balanced flue or flues with CE-0036-CPD-9169003 certification may be used:

- Flue DN 80
- Concentric balanced flue DN 80/125
- Flue DN 110
- Concentric balanced flue (on an external wall) DN 80/125
- Flue, flexible DN 83

**NB**

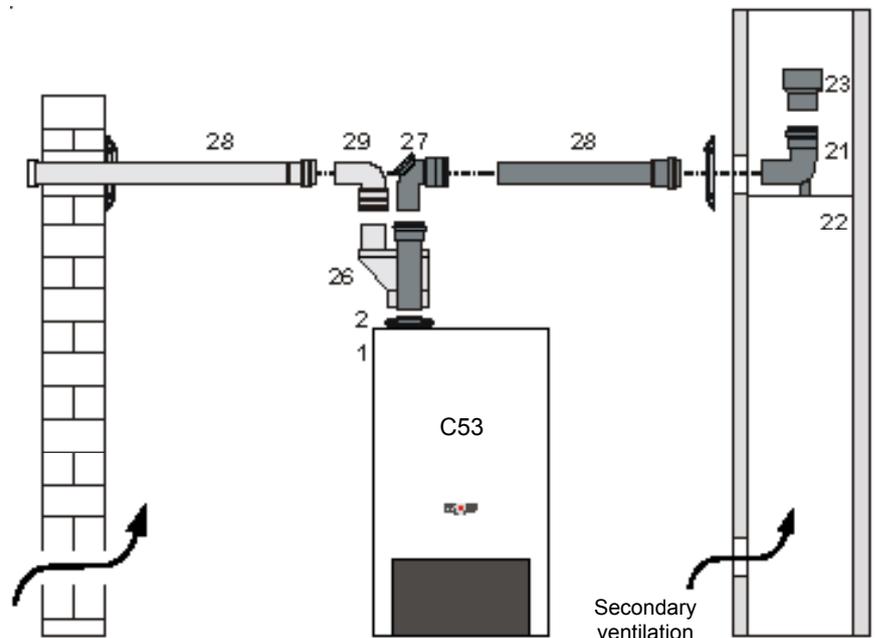
**The necessary type plates are supplied with the respective WOLF accessory. Observe all additional installation instructions included with accessories. Otherwise there is a risk of equipment malfunction and damage.**

### Eccentric balanced flue

Install the balanced flue distributor 80/80 mm eccentrically (31) for separate air supply and flue pipe routing. When connecting a balanced flue which has Building Regulations approval, observe the certification of the relevant body.

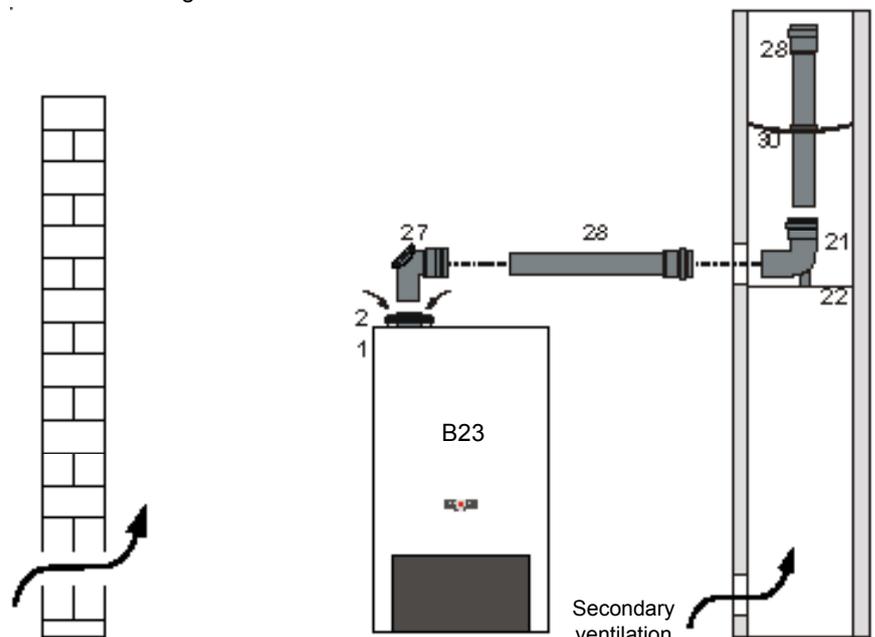
The flue pipe can be routed in DN 80, following the support bend (23), inside the duct. A flexible flue pipe DN 83 can be connected downstream of the support bend (23).

Install the horizontal flue pipe with approx. 3° slope (6 cm/m) towards the boiler. Route the horizontal air supply with a 3° slope towards the outside – install the air inlet with wind protection; permissible wind pressure at the air inlet 90 Pa. The burner will not operate with higher wind pressure.



- 1 Gas fired condensing boiler
- 2 Gas fires condensing boiler DN 80/125
- 16 Rose
- 22 Support rail
- 23 Support bend 87° DN 80
- 24 Spacers
- 25 PP Flue DN80
  - 500 mm
  - 1000 mm
  - 2000 mm
- 26 Duct cover with UV-stabilised terminal
- 31 Balanced flue distributor 80/80 mm
- 32 Air inlet pipe Ø 80 mm
- 33 Bend 90° DN80
- 34 Bend 87° with inspection aperture DN80

Maintain the following clearance between the internal duct wall and the flue pipe:  
 Circular ducts: 3 cm  
 Rectangular ducts: 2 cm

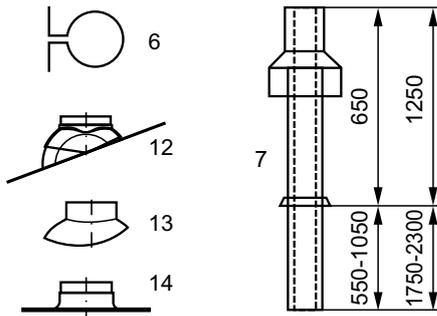


### Supplementary installation notes

Flat: Affix the ceiling outlet approx.  $\varnothing$  130 mm (14) in the roof cover.  
 Pitched: At (11), observe the installation instructions on the hood, regarding roof pitches.

Insert the roof outlet (13) from above through the roof and secure vertically with (9) on a rafter or on the brickwork.

**Install the roof outlet only in its original condition. Modifications are not permissible.**



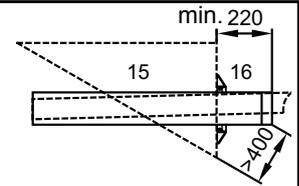
If an inspection aperture is required for the balanced flue pipe, insert a balanced flue pipe with inspection aperture (3) (200 mm length).

Slacken and move (3) the clamp for inspections.  
 Slacken and remove the flue pipe cover.

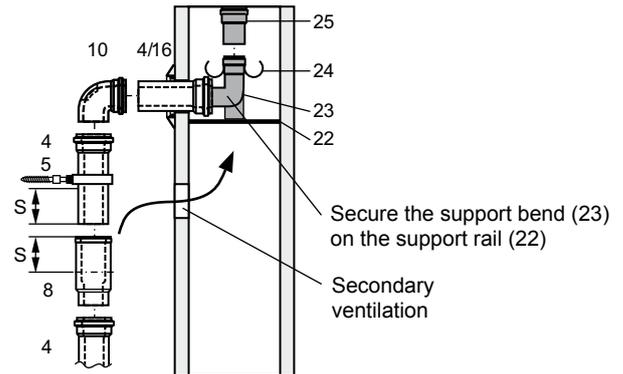


Inspection piece (3)

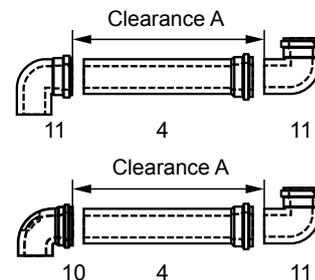
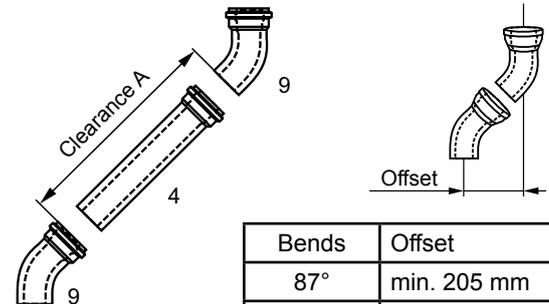
Install all horizontal flue pipes with approx. 3° slope (6 cm/m) towards the boiler. Any condensate must be returned to the boiler. Install the centring triangles near the end of the pipe.



During installation, slide the separator (8) fully into the coupling. Push the next balanced flue pipe (4) 50 mm (dim. "S") into the coupling of the separator, and secure in this location, e.g. with pipe clips DN 125 (5) or a fixing screw on the air inlet side.



**\* Observe the installation instructions for the flue gas system made from polypropylene (PP).**



Determine clearance A. Balanced flue pipe length (4) always approx. 100 mm longer than distance A. Always trim the flue pipe on the smooth side, never on the coupling side. **Chamfer the flue pipe after trimming.**

#### Notes:

**Separate (8) on the slide coupling for inspection or separation.**

**Lubricate all air/flue gas joints prior to installation, e.g. with a soapy solution or coat lightly with suitable grease.**

**Regulations require the following:****Connection to a moisture-resistant balanced flue chimney (LAS), flue gas chimney or flue gas system**

Chimneys and flue gas systems must be certified for condensing combustion equipment in accordance with local Building Regulations (approval by the relevant authority). Sizing via calculation tables subject to flue gas category. In addition to the boiler connection bend or tee piece, a maximum of two 90° diverters may be installed. Operation with positive pressure may require an appropriate permit.

**Connection to a moisture-resistant balanced flue chimney type C43x (LAS)**

Straight balanced flue pipes may be a **maximum of 2 m long**, when installing the system in a balanced flue chimney. In addition to the boiler connection bend, a maximum of **two** 90° deviations may be installed. The balanced flue chimney (LAS) must be certified by the relevant authority for pressurised condensing operation.

**Connection to a moisture-resistant flue gas chimney of a flue gas system type B33 for open flue operation**

Straight balanced flue pipes installed in a flue gas chimney may be a **maximum of 2 m long**. In addition to the boiler connection bend, a maximum of **two** 90° diverters may be installed. The flue gas chimney must be certified by the relevant authority and must be approved for condensing operation. The flue outlet should be obtained from the chimney manufacturer, if necessary. The air vents to the boiler room must be free from obstruction.

**Connection to a moisture-resistant flue pipe type B23 for open flue operation**

The straight, horizontal flue pipe must not be longer than 3 m. In addition to the boiler connection bend, a maximum of two 90° diverters may be installed into the horizontal flue pipe. For this version, observe the ventilation requirements for boiler rooms acc. to local regulations.

**Connection to a moisture-resistant flue pipe type C53, C83x for balanced flue operation**

The straight, horizontal flue pipe must not be longer than 3 m. For horizontal air supply pipes, a maximum length of 3 m is recommended. Observe special requirements for flue pipes, which are not surrounded by combustion air, acc. to local regulations and all locally applicable Combustion Orders.

**Connection to a combustion air supply and flue pipe system type C63x, which is not tested together with the combustion equipment**

Original Wolf components have been optimised over many years and are matched to Wolf gas fired condensing boilers. When using third party equipment, the installer will be responsible for the correct sizing and perfect function of such systems. Faults, material losses and injuries resulting from incorrect pipe lengths, an excessive pressure drop, premature wear with escaping flue gas and condensate or incorrect function, e.g. through components working themselves loose, are excluded from our warranty, if non-approved third party equipment is used. Straight balanced flue pipes may be a maximum of 2 m long, when connecting the system to a combustion air supply and a separate flue pipe. In addition to the boiler connection bend, a maximum of two 90° deviations may be installed.

The chimney must be free from contamination if the combustion air is drawn from the chimney.

**Note to types B23, B33 and C53**

Special requirements laid down for the combustion air aperture must be observed for systems with a total rated output higher than 50 kW (CGB-50).

This boiler may only be installed in rooms provided with a combustion air aperture leading outdoors, the cross-section of which (for CGB-50) is at least 150cm<sup>2</sup>. This cross-section may only be split into two apertures. Observe all local regulations relating to the installation of boilers.

## General considerations on hydraulics

A variable speed pump is integrated into the boiler. This pump modulates subject to burner output. An overflow valve ensures the minimum circulation and largely prevents flow noises in the system. The integral pump and the overflow valve result in the previously illustrated residual head.

## Notes

- Residual head:  
If the residual head of the boiler is insufficient, use a low loss header or connect one mixer circuit per injection control.
- Underfloor heating:  
Provide system separation in underfloor heating systems with plastic pipes which are permeable to oxygen.
- Use a temperature limiter to prevent excessive temperatures in the underfloor heating circuit.
- Contamination:  
Protect the condensing boiler against contamination. In new systems use a dirt trap (strainer), and in older systems, and those which are predominantly equipped with steel pipework, install a sludge separator in the return pipe.

## Symbols used in hydraulic diagrams:

Heat consumer		Special conditions			
					
Heating circuit	Mixer circuit	Low loss header	System separation with Heat exchanger	Parallel operation Heating system II DHW	Cascade

## Hydraulic system overview:

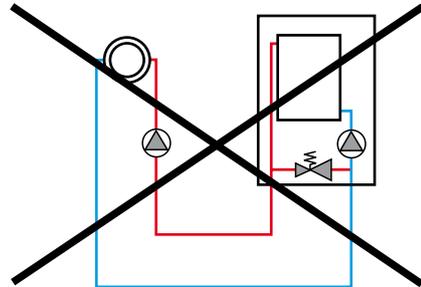
Heat consumer		Special conditions				System example
					bis 240 kW	No.
Prohibited designs						1.1 1.2 1.3
Direct connection of a mixer circuit via injection control						2
Decoupling of the system with a low loss header						3
x						4
	x					5
x	x		x			6
x		x				7
x		x				8
	x	x		x		9
x	2 x	x				10
	2x	x		x		11
x	2x	x		x	x	12

## Prohibited designs

### Direct connection of an external pump

**Reason:**

- The flow velocities inside the boiler exceed the permissible values.
- Raising the pump rate by directly connecting an external pump serves no purpose. It is more effective to use a low loss header or an injection control.
- This type of connection affects the boiler flow monitoring. The boiler may malfunction.

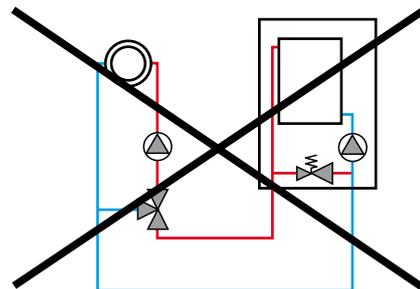


### Direct connection of a mixer circuit without hydraulic decoupling

**Reason:**

- The permissible boiler flow velocity will be exceeded if the three-way mixer is fully opened.
- This affects the boiler flow monitoring. The boiler may malfunction.

Install a sufficiently large bypass between the flow and return in the mixer circuit to provide the decoupling (see the description of the injection control).



## Direct connection of a mixer circuit via injection control

### Applications

The injection control will be used if a mixer circuit with pump is to be directly connected (i.e. without low loss header) to a CGB-35/50. The injection control offers many benefits compared with a conventional dual shunt pump control.

### Description

The injection control includes an open bypass between the flow and return in the mixer circuit, which separates the mixer circuit pump from the boiler circuit.

The mixer, equipped with a dummy plug, controls the mass flow which is injected into the mixer circuit subject to the flow temperature.

Benefits of injection control when compared to shunt pump control:

- A hydraulic separation is provided, thereby preventing the boiler pump and the mixer circuit pump from affecting each other.
- The hydraulic balance is substantially easier to achieve, since every consumer circuit requires only one reducer.
- The pump rate in the mixer circuit is reduced, because the mixer pressure drop must be added to the boiler circuit.
- The mixer circuit pump will be switched OFF if, for an underfloor heating system, an excess temperature occurs in the mixer circuit flow. No additional solenoid valve (like those required for dual shunt pump circuits) is required for interrupting the mixer circuit supply. Switching OFF the boiler pump is also no longer required.

### Vital installation requirements:

- Insert a dummy plug into the three-way mixer (see diagram).
- Size the mixer circuit pipework correctly (see table).
- Match up the mixer circuit and possibly any existing consumer circuits (see diagram) with reducers, thereby preventing supply shortages for the individual consumers.

### Design example - Injection control

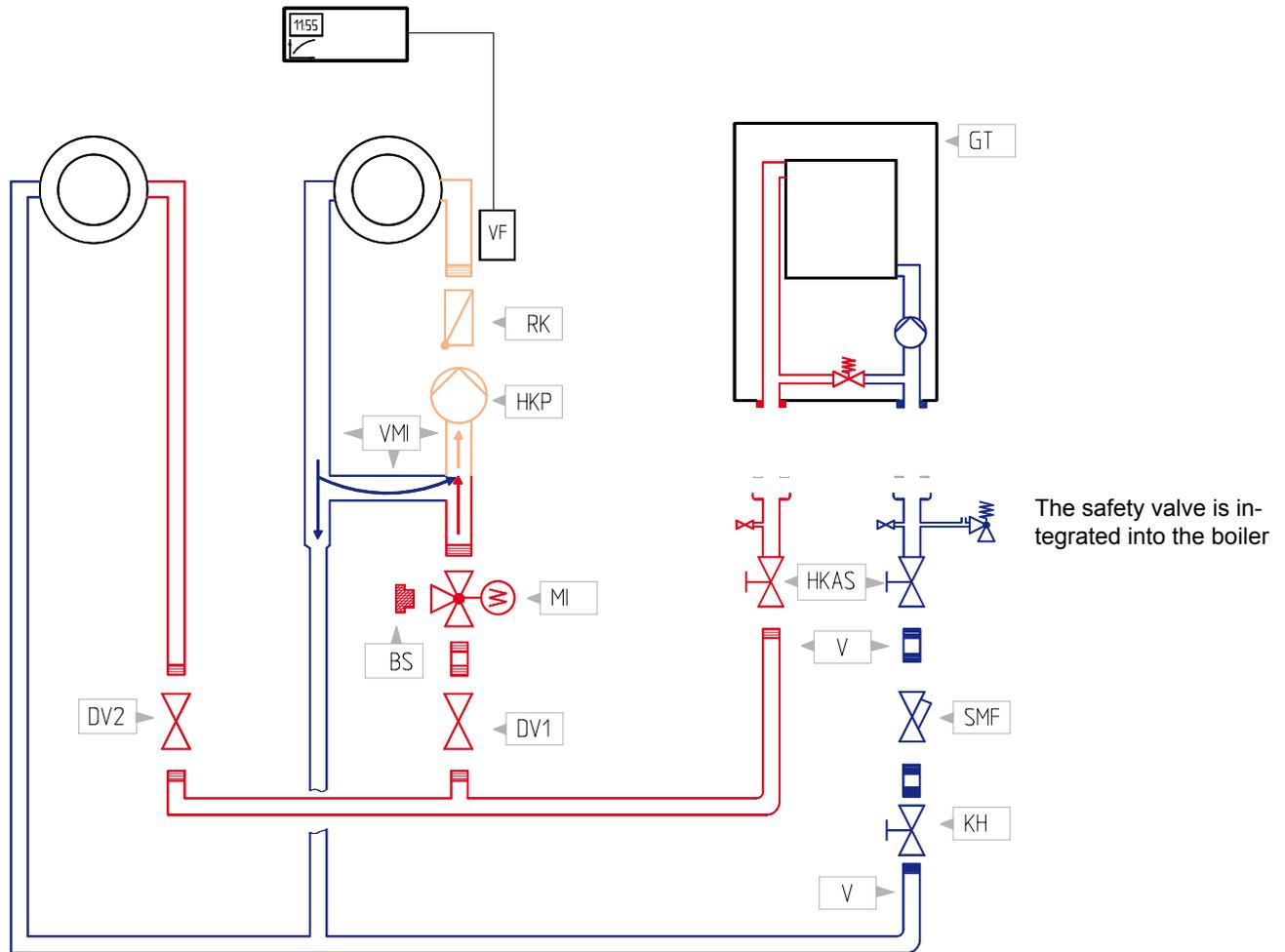


Abb.	Product			
GT	Boiler type CGB-35/50			
RK	Check valve - opening pressure 20 mbar			
HKAS	Heating circuit connection set comprising: 2 ball valves 1" 2 fill & drain valves			
SMF	Dirt trap 1 1/4"			
DV 1,2	Reducer			
KH	Ball valve 1"			
BS	Dummy plug - same internal diameter as the mixer			
MI	Three-way mixer	DN 20 $k_{vs}$ 6,3	up to 45 kW with injection control (heating curve distance 10 K)	
		DN 25 $k_{vs}$ 12	> 45 kW with injection control (heating curve distance 10 K)	
	Mixer motor			
VF	Flow sensor (part of the standard delivery of the MM)			
R	control unit - weather-compensated thermostat incl. flow sensor			
V	Pipework			
	Pipework in the mixer circuit (MK) Flow, return, bypass in the mixer circuit			
	Flow volume MK	$\Delta T$	Rated output	Internal diameter - pipework
VMI	bis 1290 l/h	10 K	bis 20 kW	DN 25
	bis 2000 l/h	10 K	bis 30 kW	DN 32
	bis 3440 l/h	10 K	bis 45 kW	DN 40
	bis 5160 l/h	10 K	bis 60 kW	DN 50

### Design example - Low loss header

#### Applications

The use of a low loss header as an alternative to the injection control is advisable if particularly high flow rates are to be employed on the central heating side and if an external pump without mixer is connected. Furthermore use a low loss header, if several CGB-35 or CGB-50 are to be joined together into one hydraulic cascade.

#### Diagram

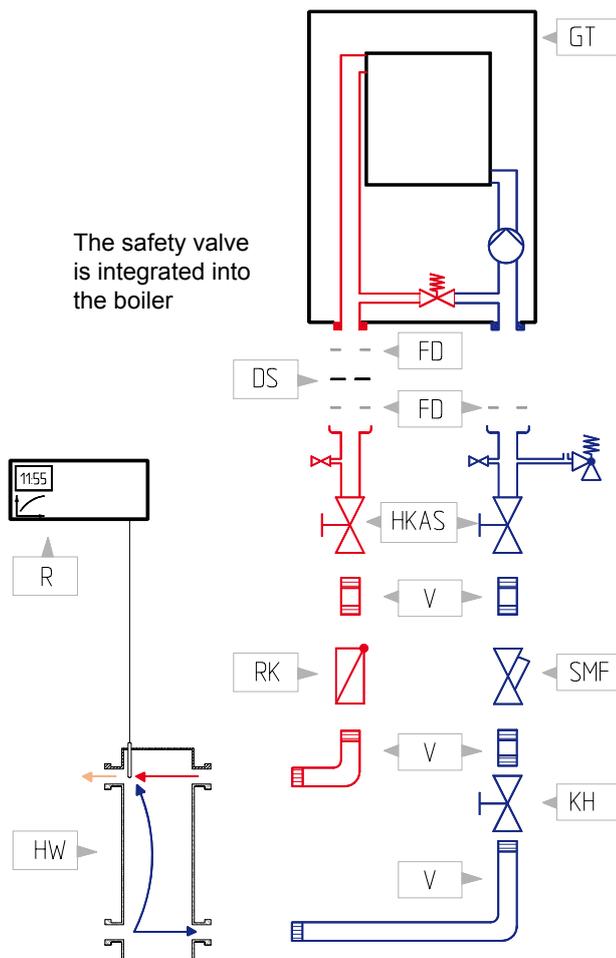


Abb.	Product
GT	Boiler type CGB-35/50
FD	Flat packing 1¼"
DS	Reducer
RK	Check valve / Gravity brake
HKAS	Heating circuit connection set comprising: 2 ball valves 1" 2 fill & drain valves
V	Pipework
SMF	Dirt trap 1¼"
KH	Ball valve 1"
HW	Low loss header up to 4.5 m³/h Low loss header up to 10 m³/h
R	control unit - weather-compensated thermostat

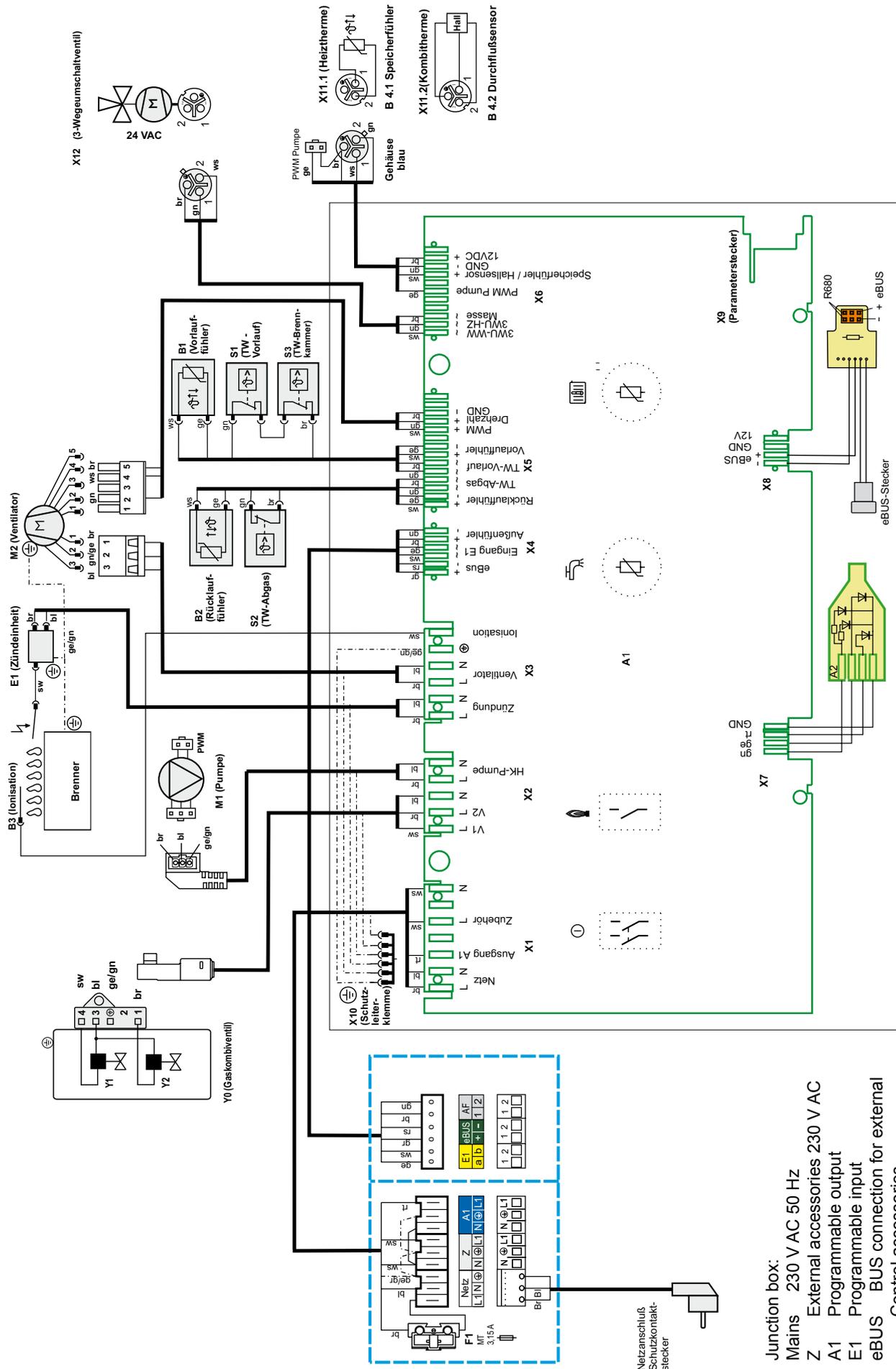
#### Important installation requirements

Install a reducer into the boiler circuit for matching the flow rate to requirements. This avoids the need for undesirable return temperature raising via the low loss header. The reducer is included on the boiler packaging.

The check valve prevents the boiler from being affected by a flow created by the external pump. This is vital for cascade systems.

The dirt trap protects the boiler from coarse particles from the heating system. Use the ball valve when servicing the filter.

Use only the KM controller. Only this device can regulate the heating flow temperature.



- Junction box:  
 Mains 230 V AC 50 Hz  
 Z External accessories 230 V AC  
 A1 Programmable output  
 E1 Programmable input  
 eBUS BUS connection for external  
 Control accessories  
 AF Outside temperature sensor

Type		CGB-35	CGB-50
Nominal output at 80/60 °C	kW	32.0	46.0
Nominal output at 50/30 °C	kW	34.9	49.9
Rated thermal load	kW	33.0	47.0
Lowest output (modulating at 80/60)			
Natural gas	kW	8	11
LPG	kW	8.5	11.7
Lowest output (modulating at 50/30)			
Natural gas	kW	9	12.2
LPG	kW	9.5	12.9
Lowest thermal load (modulating)			
Natural gas	kW	8.5	11.7
LPG	kW	9.0	12.4
SEDBUK			
Natural gas	band	B	B
LPG	band	A	A
SAP 2009 annual efficiency			
Natural gas	%	89.3	89.2
LPG	%	90.3	90.2
Outside diameter heating flow	G	1¼"	1¼"
Outside diameter heating return	G	1¼"	1¼"
Waste outlet (condensate)		1"	1"
Gas connection		¾"	¾"
Air/flue gas connection	mm	125/80	125/80
Boiler dimensions H x W x D	mm	855 x 440 x 393	855 x 400 x 393
Gas connection value:			
Natural gas H (Hi = 9.5 kWh/m³ = 34.2 MJ/m³)	m³/h	3.47	4.94
LPG P (Hi = 12.8 kWh/kg = 46.1 MJ/kg)	kg/h	2.57	3.66
Gas supply pressure:			
Natural gas	mbar	20	20
LPG	mbar	37/50	37/50
Factory setting, maximum flow temperature	°C	75	75
Max. system pressure, heating	bar	3.0	3.0
Heating water heat exchanger water content	litre	2.5	2.5
DHW temperature range (adjustable) <sup>1)</sup>	°C	15-65	15-65
Flue gas mass flow rate	g/s	15	21.5
Flue gas temperature 80/60 - 50/30	°C	65-45	80-50
Available gas fan draught	Pa	115	145
NOx class		5	5
Electrical connection	V~/Hz	230/50	230/50
Fitted fuse (medium slow)	A	3.15	3.15
Power consumption with modulated pump / modulated pump class A	W	130 / 110	175 / 150
Protection		IPX 4D	IPX 4D
Total weight (empty)	kg	45	45
Condensate volume at 40/30 °C	litres/h	3.9	5.5
Condensate pH value		4	4
CE designation		CE-0085BP5571	CE-0085BP5571

<sup>1)</sup> with DHW cylinder

All faults will be displayed as a fault code by Wolf controllers with eBUS capability. To these faults, cause and remedy may be allocated by means of the following table. This table is designed to allow your local heating contractor to trace the fault more easily.

Fault code	Fault	Cause	Remedy
1	TBV Excess temperature  Water pressure too low	The flow temperature has exceeded the limit for TBV shutdown.  Heat exchanger severely contaminated. Water pressure switch trips at < 1.0 bar pressure	Check system pressure/heating circuit pump. Check the HC pump step switch. Vent the heating system. Press the reset button. Clean the heat exchanger. Check TB combustion chamber. Increase system pressure.
4	No flame is established	No flame established during the burner start.	Check the gas supply pipe and open the gas shut-off valve, if necessary. Check the ignition electrode and cable. Press the reset button.
5	Flame failure during operation	Flame failure within 15 s after flame recognition.	Check CO <sub>2</sub> values. Check ionisation electrode and cable. Press the reset button.
6	DHW excess temperature	The flow/return temperature has exceeded the limit for TW shutdown.	Check system pressure. Vent the heating system. Set the pump to stage 2 or 3.
7	TBA excess temperature  Positive pressure in the flue gas system	The flue gas temperature has exceeded the limit for TBA shutdown. Flue gas system blocked. Ventilation air system blocked	Check for correct installation of combustion chamber pot. Check flue gas system. Check ventilation air system.
11	False Flame signal	A flame is recognised before the burner starts.	Press the reset button.
12	Flow sensor faulty  Gas pressure too low	Flow temperature sensor or lead faulty.  Gas pressure < value set at the gas pressure switch (only displayed after 15 min).	Check lead. Check the flow sensor. Check gas pressure. Check gas pressure switch (accessory).
14	Cylinder sensor faulty	DHW temperature sensor or lead faulty.	Check sensor and lead.
15	Outside temp.	Outside temperature sensor or lead faulty.	Check lead. Check the outside temperature sensor.
16	Return sensor faulty	Return temperature sensor or lead faulty.	Check lead. Replace the return sensor.
20	Gas valve „1“ fault	A flame is recognised 15 s after burner operation, even if gas valve 1 has received a shutdown command.	Replace the gas combination valve.
21	Gas valve „2“ fault	A flame is recognised 15 s after burner operation, even if gas valve 2 has received a shutdown command.	Replace the gas combination valve.
24	Gas fan fault	The gas fan does not reach the required pre-purging speed.	Check the gas fan supply cable and gas fan. Press the reset button.
25	Gas fan fault	The gas fan does not reach the ignition speed.	Check the gas fan supply cable and gas fan. Press the reset button.
26	Gas fan fault	The gas fan does not stop.	Check the gas fan supply cable and the gas fan. Press the reset button.
30	CRC fault gas fired	The EEPROM record „Gas fired condensing boiler“ is	Switch the power supply OFF and ON; if unsuccessful, replace the control PCB.
31	CRC fault burner	The EEPROM record „Boiler“ is invalid.	Switch the power supply OFF and ON; if unsuccessful, replace the control PCB.
32	Fault in the 24 VAC supply	24 V AC supply outside the permissible range (e.g. short circuit).	Check the three-way valve. Check the gas fan.
33	CRC default values fault	The EEPROM record „Master reset“ is invalid.	Replace the control PCB.

34	CRC fault, BCC	Faulty boiler coding card	Replace parameter plug
35	BBC missing	Boiler coding card was removed	Korrekten Parameterstecker wieder aufstecken
36	CRC fault, BCC	Faulty boiler coding card	Replace parameter plug
37	Incorrect BCC	The boiler coding card is incompatible with the control unit PCB	Refit the correct parameter plug
38	BCC no. invalid	Faulty boiler coding card	Replace parameter plug
39	BCC system error	Faulty boiler coding card	Replace parameter plug
41	Flow monitoring	Return temperature > flow + 25 K.	Vent the heating system, check the system pressure. Check the heating circuit pump.
50	Activation of boiler coding card	The parameter plug must still be enabled	Press reset 2x
52	Activation of boiler coding card	The parameter plug must still be enabled	Press reset 2x
60	Ionisation current fluctuates	The siphon or the flue gas system is blocked severe storm.	Clean siphon, check the flue gas system, Check ventilation air, check monitoring electrode.
61	Ionisation current drops	Poor gas quality, monitoring electrode faulty, severe storm.	Check monitoring electrode and lead.
	LED constantly red	Ionisation lead shorted out or ionisation electrode earthed (housing).	Check the ionisation lead and position of electrode to burner. Press the reset button.

# Product fiche according to Regulation (EU) no. 811/2013



Product group: CGB-35/50

Supplier's name or trade mark			Wolf GmbH	Wolf GmbH
Supplier's model identifier			CGB 35	CGB 50
Seasonal space heating energy efficiency class			A	A
Rated heat output	$P_{rated}$	kW	32	46
Seasonal space heating energy efficiency	$\eta_s$	%	93	93
Annual energy consumption for space heating	$Q_{HE}$	kWh	17892	25720
Sound power level, indoors	$L_{WA}$	dB	48	52
Any specific precautions that shall be taken when the space heater is assembled, installed or maintained			See installation instruction	See installation instruction

## Product fiche according to Regulation (EU) no. 811/2013



Product group: CGB-K-35/50

Supplier's name or trade mark			Wolf GmbH
Supplier's model identifier			CGB-K 40-35
Load profile			L
Seasonal space heating energy efficiency class			A
Water heating energy efficiency class			A
Rated heat output	$P_{\text{rated}}$	kW	32
Annual energy consumption for space heating	$Q_{\text{HE}}$	kWh	17892
Annual fuel consumption for water heating	AFC	GJ	19
Seasonal space heating energy efficiency	$\eta_s$	%	93
Seasonal water heating energy efficiency	$\eta_{\text{wh}}$	%	75
Sound power level, indoors	$L_{\text{WA}}$	dB	50
Any specific precautions that shall be taken when the space heater is assembled, installed or maintained			See installation instruction

Type			CGB-35	CGB-K40-35	CGB-50
Condensing boiler	[yes/no]		yes	yes	yes
Low temperature boiler (**)	[yes/no]		no	no	no
B11 boiler	[yes/no]		no	no	no
Cogeneration space heater	[yes/no]		no	no	no
If yes, equipped with a supplementary heater	[yes/no]		-	-	-
Combination heater	[yes/no]		no	yes	no
Item	Symbol	Unit			
Rated heat output	$P_{rated}$	kW	32	32	46
Useful heat output at rated heat output and high-temperature regime (*)	$P_4$	kW	32,0	32,0	46,0
Useful heat output at 30% of rated heat output and low-temperature regime (**)	$P_1$	kW	9,6	9,6	13,8
Auxiliary electricity consumption at full load	elmax	kW	0,056	0,056	0,089
Auxiliary electricity consumption at part load	elmin	kW	0,018	0,018	0,019
Auxiliary electricity consumption in standby mode	$P_{SB}$	kW	0,003	0,003	0,003
Seasonal space heating energy efficiency	$\eta_s$	%	93	93	93
Useful efficiency at rated heat output and high-temperature regime (*)	$\eta_4$	%	88,2	88,2	88,1
Useful efficiency at 30% of rated heat output and low-temperature regime (**)	$\eta_1$	%	98,2	98,2	97,8
Standby heat loss	$P_{stby}$	kW	0,059	0,059	0,059
Ignition burner power consumption	$P_{ing}$	kW	0,000	0,000	0,000
Emissions of nitrogen oxides	$NO_x$	mg/kWh	17	17	23
Declared load profile	(M, L, XL, XXL)	-	-	L	-
Daily electricity consumption	Qelec	kWh	-	0,324	-
Water heating energy efficiency	nwh	%	-	75	-
Daily fuel consumption	Qfuel	kWh	-	26,212	-
Contact details	Wolf GmbH, Industriestraße 1, D-84048 Mainburg				

(\*) High-temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.

(\*\*) Low temperature means for condensing boilers 30°C, for low-temperature boilers 37°C and for other heaters 50°C return temperature (at heater inlet).

## Declaration of conformity

(acc. to ISO/IEC 17050-1)

No. 3061490  
Issued by: **Wolf GmbH**  
Address: Industriestraße 1, D-84048 Mainburg  
Product: Gas fired condensing boilers  
CGB-35, CGB-50

The product described above conforms to the requirements specified in the following documents:

§ 6, 1.BImSchV, 26.01.2010  
DIN EN 297, 10/2005  
DIN EN 437, 09/2009  
DIN EN 483, 06/2000  
DIN EN 677, 08/1998  
DIN EN 625, 10/1995  
DIN EN 60335-1, 02/2007  
DIN EN 60335-2-102 / 04/2007  
DIN EN 55014-1, 06/2007

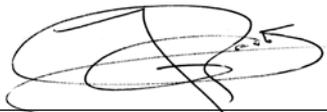
In accordance with the following Directives:

90/396/EEC (Gas Appliances Directive)  
2004/108/EC (EMC Directive)  
2006/95/EC (Low Voltage Directive)  
2009/125/EG (ErP Directive)  
2011/65/EU (RoHS Directive)

This product is identified as follows:



Mainburg, 15.07.2015

  
Gerdewan Jacobs  
Executive Board Engineering

  
i. V. Klaus Grabmaier  
Product approval

