

Service instructions for contractors Gas condensing boilers



from 2016 on



Table of contents

1.	Safety instructions	3
2.	Checking fault messages	6
3.	CGB-2 appliance description	7
4.	CGB-2K appliance description	8
5.	CGW-2 appliance description	9
6.	CGS-2L appliance description	. 10
7.	CGS-2R appliance description	. 11
8.	Maintenance equipment Maintenance spare parts set	. 12
9.	Preparing for inspection/ maintenance	. 13
10.	Opening the combustion chamber	. 14
11.	Checking the burner	. 15
12.	Checking the ionisation and ignition electrodes	. 17
13.	Cleaning the heat exchanger	. 18
14.	Assembling the heat exchanger	. 20
15.	Checking DHW heating	. 22
16.	Checking the combustion parameters	. 23
17.	HG control parameters	. 24
18	Maintenance Report	. 25
19	Notes	.26



Safety instructions

Authorised personnel should read these instructions before any installation, commissioning or service work. Adhere to the specifications in this document. Failure to observe these installation instructions voids any WOLF warranty.

The gas condensing boiler must be installed, commissioned and maintained by qualified and trained personnel only. In accordance with VDE 0105 Part 1, work on electrical components (e.g. control unit) may be carried out only by qualified electricians.

VDE/ÖVE regulations [Germany/Austria] and those of your local power supply utility are applicable to electrical installation work.

Only operate the gas condensing boiler within its output range, which is stated in the technical documentation supplied by WOLF. Intended use of the boiler includes exclusive use for hot water heating systems in accordance with EN 12828.

Never remove, bypass or otherwise disable any safety or monitoring equipment. Operate the boiler only if it is in perfect technical condition.

Any faults or damage which impact or might impact upon safety must be remedied immediately by a qualified contractor. Replace faulty components and equipment only with original WOLF spare parts.



Danger: if you smell gas

- Close the gas tap.
- Open the windows.
- Do not operate any electrical switches.
- Extinguish naked flames.
- Phone the gas supply utility company and an approved contractor from an external location.



Danger from "live" electrical components

Never touch electrical components or contacts when the ON/OFF switch is in the ON position. There is a danger of electrocution, resulting in a risk to health or death. The main terminals are 'live', even when the ON/OFF switch is in the OFF position.



Danger: if you smell flue gas

- Switch OFF the appliance.
- Open windows and doors
- Notify an approved contractor.



Risk of scalding

Boilers may contain hot water. Hot water can cause severe scalding. Before working on parts which are in contact with water, allow the appliance to cool to below 40 °C, shut off all valves and, if necessary, drain the appliance.

Symbols

The following warning symbols are used in these instructions. These relate to personal safety and operational reliability.



Instructions that must be followed precisely in order to prevent risk and injury to persons.



Instructions that must be followed precisely in order to prevent risk and injury to persons from live electrical components.



Indicates technical instructions that must be observed to prevent damage to the boiler and malfunctions.



Risk of burns

Boiler components may be extremely hot. Hot components can cause burns. Before working on the opened up appliance, allow it to cool below 40 °C or wear suitable gloves.

3064812_201804



1. Safety instructions



Danger from pressurised water

Boilers are subject to high water pressure. Water pressure can cause severe injuries. Before working on parts which are in contact with water, allow the appliance to cool to below 40 °C, shut off all valves and, if necessary, drain the appliance.

Note:

Sensors can be in contact with water and therefore exposed to pressure.

Working on the system

- Close the gas shut-off valve and secure it against unintentional reopening.
- Isolate the system from the power supply (e.g. by removing the separate mains fuse or by means of a main switch or a heating emergency stop switch) and check to ensure there is no voltage.
- Safeguard the system against reconnection.

Inspection and service

- Ensure the correct operation of the gas boiler by having a contractor carry out inspections at least once a year and maintenance/repair when required.
- (DVGW TRGI 2008 G600).
 We recommend arranging a suitable maintenance contract.
- The operator is responsible for the safety, environmental compatibility and energy quality of the heating system (German Immission Control Act/Energy Saving Ordinance) [Germany].
- Only use genuine WOLF spare parts.



1. Safety instructions

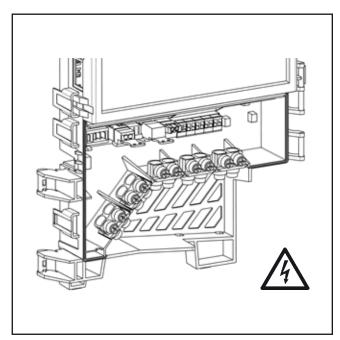


Fig: Terminal box: Danger from 'live' electrical components

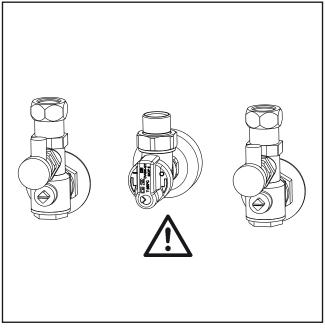


Fig: Gas connection: Risk of poisoning or explosion in the event of gas escaping

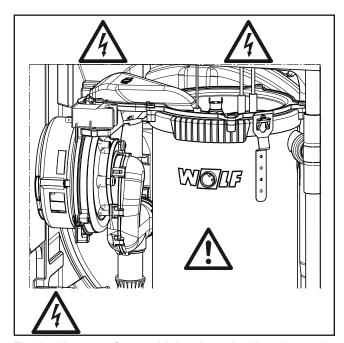


Fig: Ignition transformer, high voltage ignition electrode, combustion chamber

Danger from 'live' electrical components, risk of burning from hot components

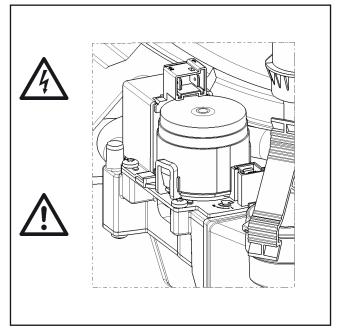


Fig: Gas combination valve
Danger from 'live' electrical components
Escaping gas may cause poisoning or an explosion

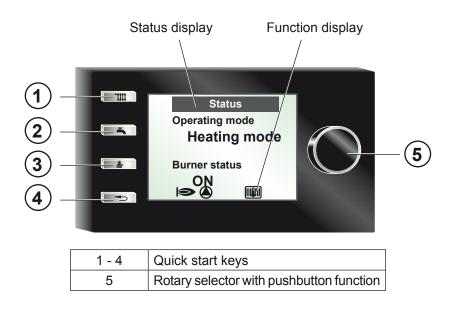
3064812_201804



Message history in AM or BM-2

2. Checking fault messages

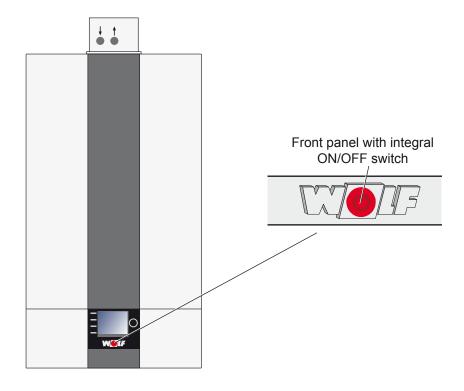
Any faults that have occurred during operation can be called up on the 'Contractor' level under 'Message history'. Press rotary selector 5, select 'Contractor', enter the code and call up 'Message history'. The last 40 fault messages will be displayed which can provide the contractor with information for maintenance.



ON/OFF switch

Either an AM display module or a BM-2 programming unit can be installed in the front panel for operating the appliance.

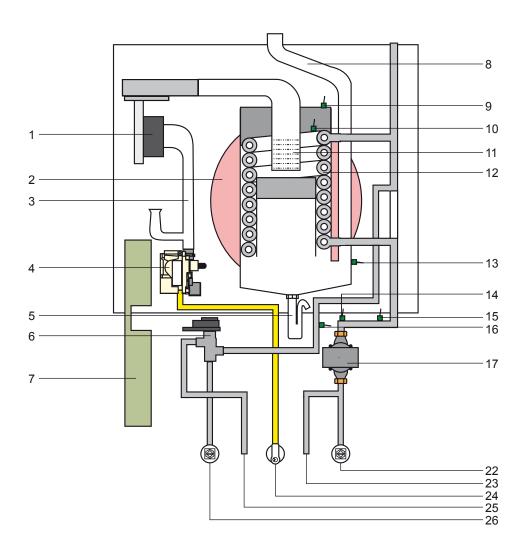
The ON/OFF switch (integrated in the Wolf logo) switches the appliance off across all poles.





3. CGB-2 appliance description

CGB-2Wall mounted gas condensing boiler



- 1 Gas fan
- 2 Expansion vessel
- 3 Mixing valve
- 4 Gas valve
- 5 Trap
- 6 3-way valve
- 7 Control unit enclosure (GBC-e burner control unit, top) (HCM-2 control unit PCB, bottom)
- 8 Flue pipe
- 9 Combustion chamber cover HLSC (thermostat)
- 10 Combustion chamber temperature sensor (eHLSC sensor)

- 11 Burner
- 12 Heating water heat exchanger
- 13 Flue gas temperature sensor
- 14 Pressure sensor
- 15 Return temperature sensor
- 16 Boiler water temperature sensor
- 17 Heating circuit pump with air vent valve
- 22 Heating return
- 23 Cylinder return
- 24 Gas supply pipe
- 25 Cylinder flow
- 26 Heating flow

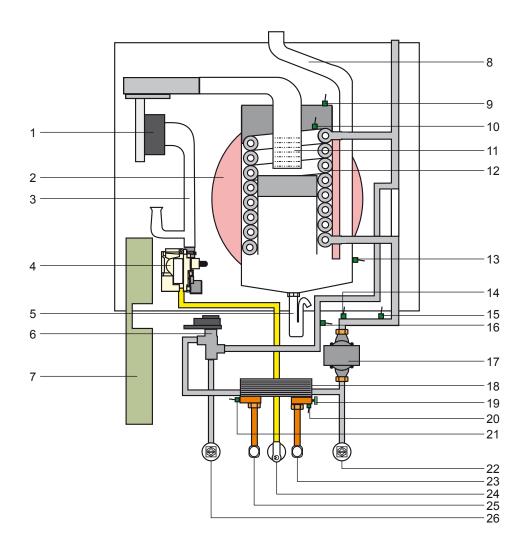
3064812_201804



4. CGB-2K appliance description

CGB-2K

Wall mounted gas condensing combi boiler



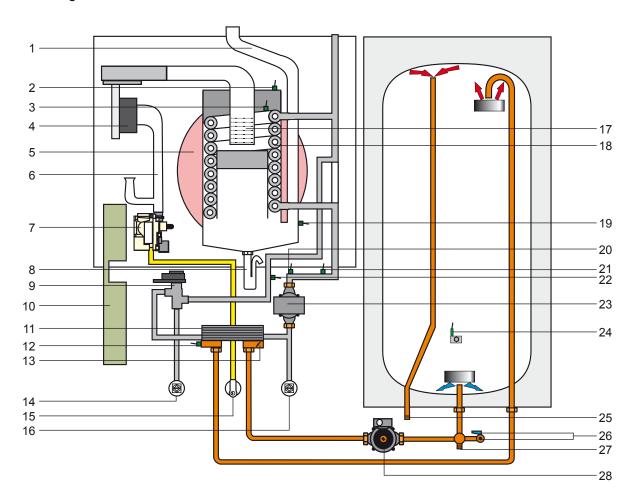
- 1 Gas fan
- 2 Expansion vessel
- 3 Mixing valve
- 4 Gas valve
- 5 Trap
- 6 3-way valve
- Control unit enclosure (GBC-e burner control unit, top) (HCM-2 control unit PCB, bottom)
- 8 Flue pipe
- 9 Combustion chamber cover HLSC (thermostat)
- 10 Combustion chamber temperature sensor (eHLSC sensor)
- 11 Burner
- 12 Heating water heat exchanger

- 13 Flue gas temperature sensor
- 14 Pressure sensor
- 15 Return temperature sensor
- 16 Boiler water temperature sensor
- 17 Heating circuit pump with air vent valve
- 18 Plate heat exchanger
- 19 Flow limiter
- 20 Flow sensor
- 21 DHW outlet temperature sensor
- 22 Heating return
- 23 Cold water connection
- 24 Gas supply pipe
- 25 DHW connection
- 26 Heating flow



5. CGW-2 appliance description

CGW-2
Gas condensing centre



- 1 Flue pipe
- 2 Combustion chamber cover HLSC (thermostat)
- Combustion chamber temperature sensor (eHLSC sensor)
- 4 Gas fan
- 5 Expansion vessel
- 6 Mixing valve
- 7 Gas valve
- 8 Trap
- 9 3-way valve
- 10 Control unit enclosure (GBC-e burner control unit, top) (HCM-2 control unit PCB, bottom)
- 11 Plate heat exchanger
- 12 DHW outlet temperature sensor
- 13 Non-return valve

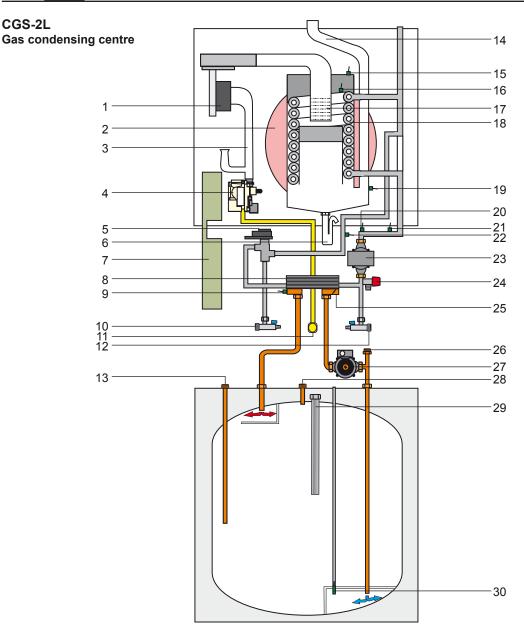
- 14 Heating flow (accessory)
- 15 Gas supply pipe
- 16 Heating return (accessory)
- 17 Burner
- 18 Heating water heat exchanger
- 19 Flue gas temperature sensor
- 20 Pressure sensor
- 21 Return temperature sensor
- 22 Boiler water temperature sensor
- 23 Heating circuit pump with air vent valve
- 24 Cylinder temperature sensor
- 25 DHW connection
- 26 BDF valve/DHW circulation connection
- 27 Cold water connection
- 28 Cylinder primary pump

3064812_201804



CGS-2L

6. CGS-2L appliance description



- 1 Gas fan
- 2 Expansion vessel
- 3 Mixing valve
- 4 Gas valve
- 5 3-way valve
- 6 Trap
- 7 Control unit enclosure (GBC-e burner control unit, top) (HCM-2 control unit PCB, bottom)
- 8 Plate heat exchanger
- 9 DHW outlet temperature sensor
- 10 Heating flow
- 11 Gas supply pipe
- 12 Heating return
- 13 DHW circulation connection
- 14 Flue pipe
- 15 Combustion chamber cover HLSC (thermostat)

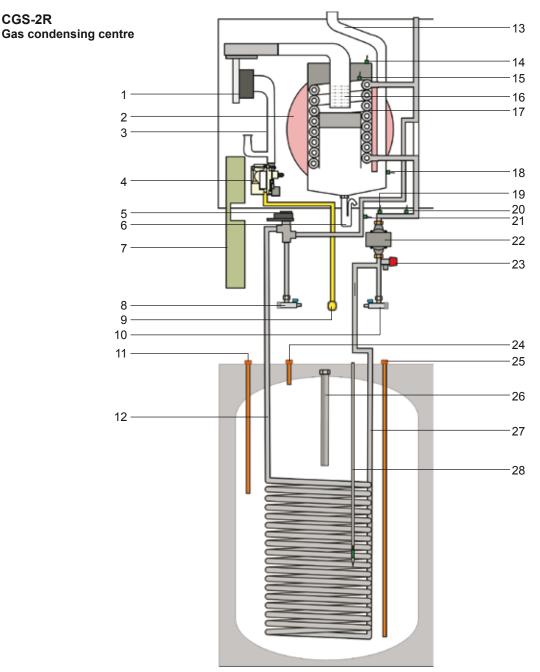
- 16 Combustion chamber temperature sensor (eHLSC sensor)
- 17 Burner
- 18 Heating water heat exchanger
- 19 Flue gas temperature sensor
- 20 Pressure sensor
- 21 Return temperature sensor
- 22 Boiler water temperature sensor
- 23 Heating circuit pump with air vent valve
- 24 Heating circuit safety valve
- 25 Non-return valve
- 26 Cold water connection
- 27 Cylinder primary pump
- 28 DHW connection
- 29 Protective anode
- 30 Cylinder temperature sensor

10 3064812 201804



CGS-2R

CGS-2R appliance description 7.



- 1 Gas fan
- 2 Expansion vessel
- 3 Mixing valve
- 4 Gas valve
- 5 3-way valve
- 7 Control unit enclosure (GBC-e burner control unit, top) (HCM-2 control unit PCB, bottom)
- 8 Heating flow
- 9 Gas supply pipe
- 10 Heating return
- 11 DHW circulation connection
- 12 Cylinder flow
- 13 Flue pipe
- 14 Combustion chamber cover HLSC (thermostat)

- 15 Combustion chamber temperature sensor (eHLSC sensor)
- 16 Burner
- 17 Heating water heat exchanger
- 18 Flue gas temperature sensor
- 19 Pressure sensor
- 20 Return temperature sensor
- 21 Boiler water temperature sensor
- 22 Heating circuit pump with air vent valve
- 23 Heating circuit safety valve
- 24 DHW connection
- 25 Cold water connection
- 26 Protective anode
- 27 Cylinder return
- 28 Cylinder temperature sensor

3064812_201804 11



8. Maintenance equipment Maintenance spare parts set

Maintenance requires the following:						
1	Maintenance set	Part no.	86 14 984			
1	Cleaning set	Part no.	86 03 194			
1	Measuring instrument for immission test [BImSch - Germany]					

We recommend you carry the following parts in your service kit:						
1	Universal installation key	Part no.	17 31 146			
1	Flue gas temperature sensor	Part no.	27 45 24 399			
1	Displacer	Part no.	17 31 02 299			
1	Protective anode for enamelled cylinder (for CGS-2)	Part no.	24 45 128			



9. Preparing for inspection/ maintenance

Isolating the system from the power supply



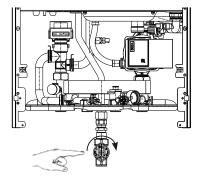
The mains terminals remain 'live' even when the ON/OFF switch has been switched OFF.

- Disconnect the system from the power supply.



Close the gas ball valve.





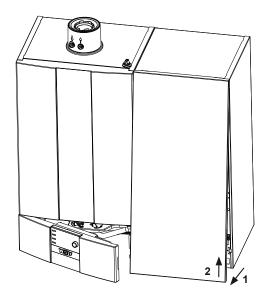
Opening the CGW-2

First, grip the control unit cover on the r.h. side and swivel to the side.

Then undo the two screws on the r.h. and l.h. sides of the front casing.

The front casing can then be released at the top and removed.

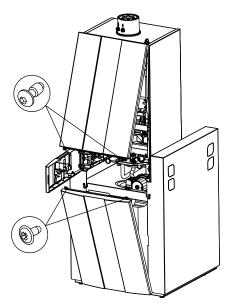
Pull the bottom of the cylinder casing forwards, release it at the top and remove.



Opening the CGS-2

To remove the cylinder front casing, undo the two screws on the r.h. and l.h. side.

The casing can then be pulled forwards and removed.





10. Opening the combustion chamber

Risk of burns

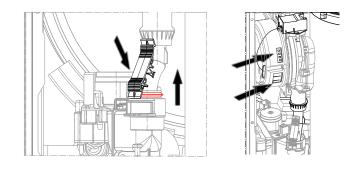


Various components may be very hot. Let them cool down or wear gloves.

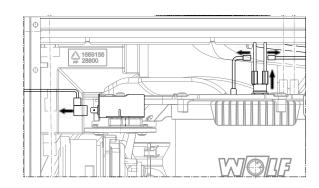
Release the lock of the gas supply pipe to the mixing chamber.

Press the locking lever and push the gas pipe upwards. (O-ring will be visible.)

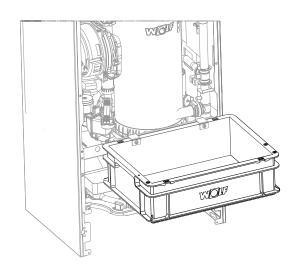
Disconnect both connection plugs on the gas fan.



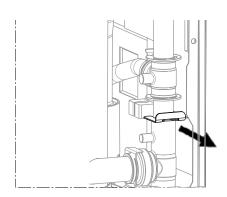
Pull out the monitoring electrode and HLSC plugs. Pull out the ignition transformer plug.



Fit the Wolf cleaning vessel to the appliance.



Pull out the locking clip from the bottom rotary entry at the bottom.

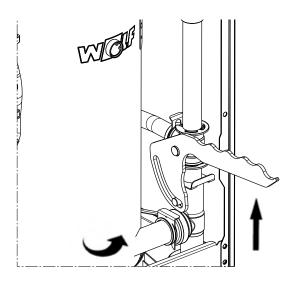




11. Checking the burner

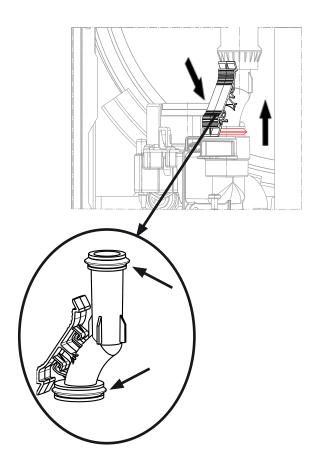
Position the installation key (accessory) and **lift the** combustion chamber and swing it out.

The heating water does <u>not</u> need to be drained as the work can be carried out at system pressure.



• Visual inspection of gaskets of gas supply

Inspet and if required replace gaskets of gas supply to mixing chamber. Grease gaskets.



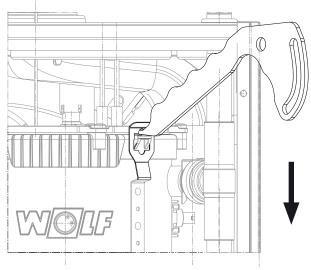


11. Checking the burner

Removing the combustion chamber cover

Open the retaining tabs for the combustion chamber cover at the front and back.

Lift off the gas fan unit with the combustion chamber cover.



• Visual burner inspection

In principle, the burner is maintenance-free.

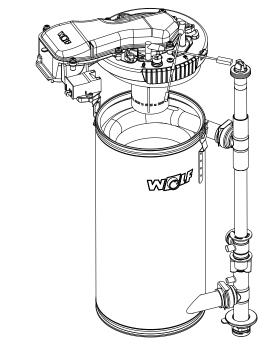
Carry out a visual check of the burner for damage or deposits.

Replace if damaged, clean in case of deposits (detergent, damp cloth).

After cleaning or replacing the burner, carry out a 100 % calibration.

- See description HG43 in chapter "Parameter description"

Replace the burner gasket after replacing or cleaning the burner.



• Visual inspection of the burner gasket

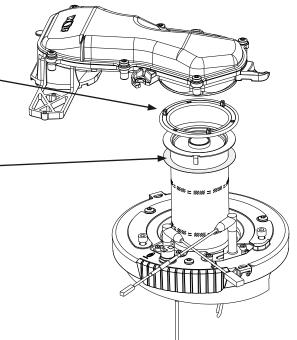
Clean the supporting surface on the combustion chamber cover and the burner flange. Replace the burner gasket without lubricating it!

• Graphite seal

Clean the supporting surfaces. Install or replace graphite seal.

• Visual inspection of refractory brick

Inspect and if required replace refractory brick.





12. Checking the ionisation and ignition electrodes

Repacing the ignition electrode

Replace ignition electrode with every maintenance.

Check spacings and adapt if not correct.

Replacing the ionisation electrode

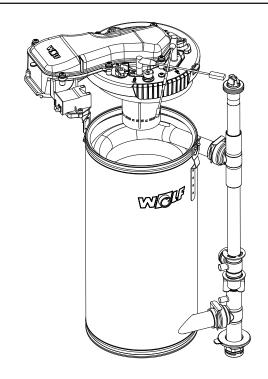
Replace ionisation electrode with every maintenance.

Tighten the electrode fixing screws with a torque of 3,0 Nm.!



Carry out a 100 % calibration after working on the ionisation electrode. See description HG43 in chapter

"Parameter description" in the installation instructions.



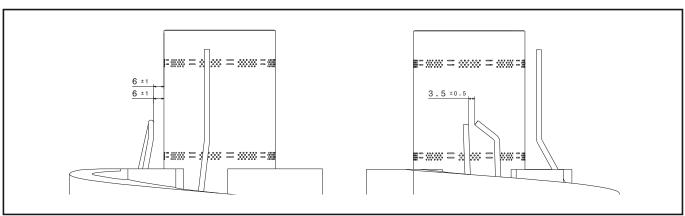


Fig.: Ignition electrode gap

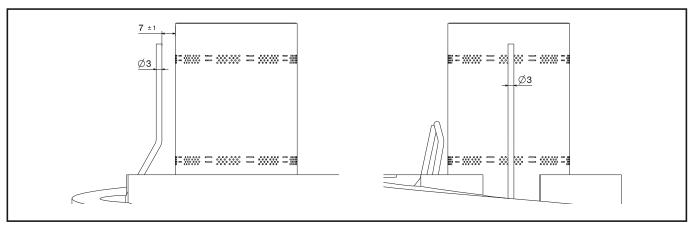


Fig.: Ionisation electrode gap



13. Cleaning the heat exchanger

The heat exchanger can be cleaned under pressure and with swung out combustion chamber.

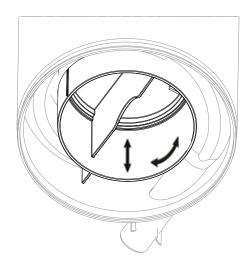
Push the combustion chamber module upwards (loosen if necessary).

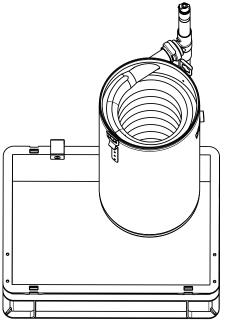
Then rotate and remove it downwards.

Cleaning the cobustion chamber

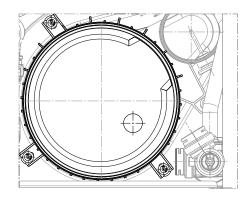


Never use a metal brush for cleaning as this will destroy the protective coating of the finned tube





Clean residues from the condensate pan



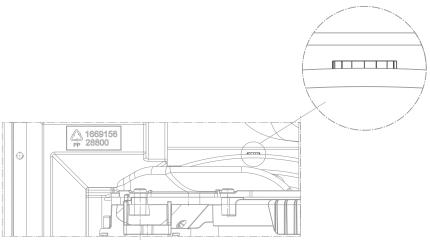


13. Cleaning the heat exchanger

If you notice a loss of water, check the expansion vessel pre-charge pressure.

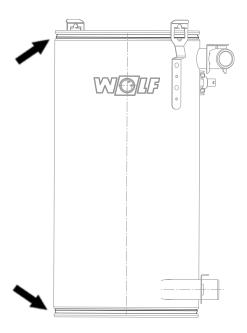
The connection valve is at the top rear and is secured with a protective cap.

When the heating circuit is depressurised, the pre-charge pressure should be about 0.75 bar.



Replace the top and bottom combustion chamber gaskets.

After installing the gaskets, lubricate them with silicone grease on the outside.





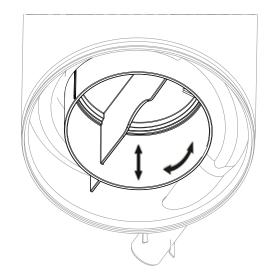
14. Assembling the heat exchanger

Assembly of the combustion chamber

Install cobustion chamber pot.

Turn pot until stop and secure by drawing downwards.

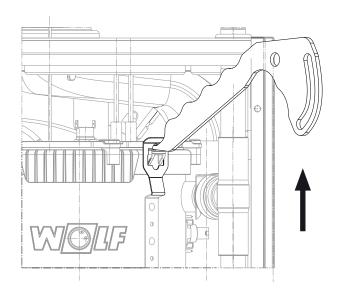
Check secure fit.



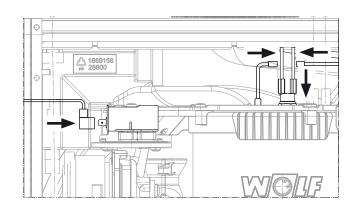
Put combustion chamber cover outo the chamber and press down regularly.

Check perfect fit of combustion chamber gasket.

Lock both retaining brackets with assembly tool.



Put on plugs outo ignition and ionisation electrodes as well as on ignition transformer and safety temperature cutout (STB)





14. Assembling the heat exchanger

Swivelling the combustion chamber inwards

Push the combustion chamber into the condensate pan. Make sure the seal is seated securely in the groove.

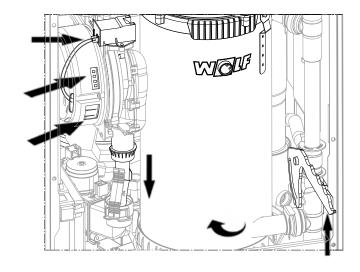
Push the gas connection pipe downwards until it engages.

The O-ring seal must no longer be visible.

Insert plug at the ignition transformer.

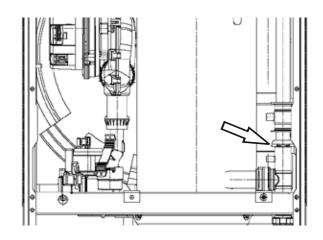
Insert both plugs on the gas fan.

Check electrical connections for tightness.



Secure the locking clip on the rotary joint.





Check the pressure indicator in the appliance.

Top up with heating water if required. Set pressure 2 - 2.5 bar.

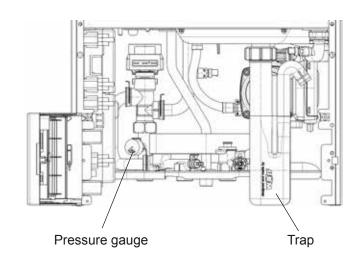
Check the safety valve.

Clean residues from the trap.



Then fill the trap with tap water, make sure it engages and tighten the screws.

Check for secure seating - prevent flue gas escaping. Operating the appliance with an empty trap presents a risk of poisoning due to flue gases escaping.



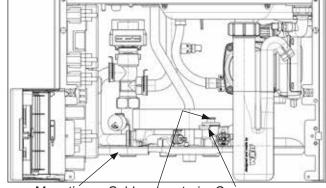


15. Checking DHW heating

Shut off cold water and relieve hydraulic pressure in the system.

Clean the cold water strainer.

(Only for CGB-2K wall mounted combi boiler.)



Mounting Cold water strain- Cover bracket er

If CGB-2K, CGW-2 or CGS-2L have inadequate DHW output, proceed as follows:

Non-return valve on CGW-2 and CGS-2L:

Check and descale if necessary.

Dirt filter on CGB-2K:

Check and clean.

Removing the plate heat exchanger on CGB-2K, CGW-2 and CGS-2L (not on CGS-2R)

Undo the knurled nuts (2 pce) under the panel with a 4 mm Allen key and pull the plate heat exchanger off upwards.

Descale or replace the plate heat exchanger.

After installation, tighten the knurled nuts with a torque of 3.5 ± 0.5 Nm.

Checking the protective anode (only on CGS-2L/R)

- Shut off the cold water valve.
- Depressurise the cylinder.
- Remove the cover.
- Unscrew the protective anode for checking.
- In case of significant wear, replace the anode.

In principle, the CGW-2 cylinder is maintenance-free. Tightening torque for the nut for the bracket of the handhole cover: 55-60 Nm

Test run



Set MCBs, open gas ball valve and switch on the appliance.

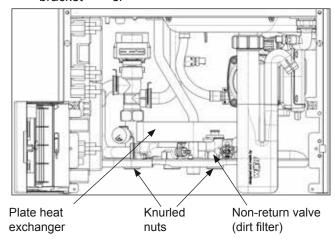
Check the gas train and hydraulics for tightness.

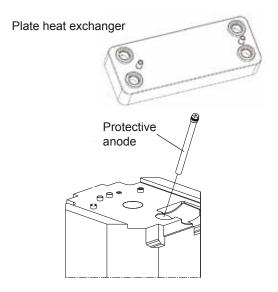
Replace and secure the casing.

Press the Emissions test key.



Check the appliance for gas leaks (gas and exhaust gas lines) during operation.









16. Checking the combustion parameters

If work was carried out on the ionisation electrode or the ignition electrode during maintenance, carry out a full calibration. See description HG43 in chapter "Parameter description" in the installation instructions.

The condensing boiler is equipped with electronic combustion control which ensures optimum combustion quality. For a detailed description of the combustion control, see chapter "Combustion air control".

During commissioning and maintenance, a check of CO, CO_2 or O_2 is required. **Test the combustion parameters with the boiler closed.**



A flue gas emissions test by a contractor is necessary after every modification of the GBC-e PCB, mixing device, burner and gas valve.

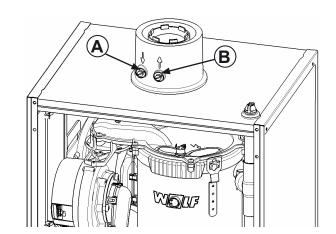
Note:

The combustion control carries out an automatic calibration after every boiler start. This can lead to briefly increased CO emissions.

Therefore, test the emissions no sooner than 60 seconds after the burner has started.

Checking the intake air

- 1. Remove screw (A) from the left hand test port.
- 2. Open the gas ball valve.
- 3. Insert the test probe.
- 4. Switch ON the boiler and select Emissions test via the function keys.
- 5. Check the temperature and CO₂.
- In the case of a balanced flue, the flue is not gastight if the CO₂ content is > 0.3 %. The leak must be rectified.
- 7. After the test has been completed, switch the boiler OFF, remove the test probe and close the test port. Ensure the screws are tightly secured.



Checking the flue gas parameters



When the test port is open, flue gas can escape into the installation room. There is a risk of asphyxiation.

- 1. Remove screw (B) from the right hand test port.
- 2. Open the gas ball valve.
- 3. Insert the test probe.
- 4. Switch ON the boiler and select the Emissions test kev.
- 5. Carry out the checks after a minimum of 60 seconds of operation, measuring first at maximum load and then at minimum load.
- 6. Flue gas values (for permissible values, see table)

	14/20/24kW-appliance					
Gas type	CO ₂ in %	O ₂ in %	Lambda			
Natural gas E/H/	7.8 - 9.8 ¹⁾	3.5 - 7.0	1.35			
LL			+/- 0.15			
LPG (G31)	9.1 - 11.42)					
¹⁾ Max. base CO ₂ value = 11.7 % (G20)						
²⁾ Max. base CO ₂ value = 13.7 % (G31)						

7. After the test has been completed, switch the boiler OFF, remove the test probe and close the test port. Ensure the screws are tightly secured.





17. HG control parameters

Please note Modifications must only be carried out by a recognised heating contractor or by Wolf customer service. Incorrect operation can lead to system faults.

Please note

On the AM display module or the BM2 programming unit, the factory setting for the HG parameters can be reinstated in the Contractor menu.



To prevent damage to the heating system, cancel night setback when outside temperatures fall below -12 °C. Failure to observe this requirement may result in ice forming on the flue outlet which may cause injury or material losses.

The control parameters can only be modified or displayed using the AM display module or BM-2 programming unit on the boiler. For procedures, check the operating instructions of the relevant accessories.

No.:	Designation:		Factory setting Condensing boiler		Min:	Max:	
			14 kW	20 kW	24 kW		
HG01	Burner switching hysteresis	°C	12	12	12	7	30
HG02	Lower burner output, heat generator in % (fan control)	%	26	24	24	1)	100
HG03	Upper burner output, DHW (fan control) Maximum burner output, DHW in %	%	100	100	100	1)	100
HG04	Upper burner output, heating (fan control) Maximum burner output, heating in %	%	100	88	88	1)	100
HG07	Heating circuit pump run-on time Heating circuit pump run-on time in heating mode	min	1	1	1	0	30
HG08	Max. boiler temp., heating (applies to heating mode) TV-max	°C	80	80	80	40	90
HG09	Burner cycle block, applies to heating mode	min	7	7	7	1	30
HG10	Heat generator eBUS address	-	1	1	1	1	5
HG12	Gas type	-	Nat. gas	Nat. gas	Nat. gas	Nat. gas	LPG
HG13	Function, input E1 Various functions can be assigned to input E1.	-	none	none	none	var.	var.
HG14	Function, output A1 (230 V AC) Various functions can be assigned to output A1.	-	none	none	none	var.	var.
HG15	Cylinder hysteresis, switching differential during cylinder reheating	°C	5	5	5	1	30
HG16	HC Pump rate, minimum	%	30	30	30	15	100
HG17	HC pump rate, maximum	%	70	70	70	15	100
HG19	Run-on time, CLP (cylinder loading pump)	min	3	3	3	1	10
HG20	Max. cylinder heating time	min	120	120	120	30/Off	180
HG21	Minimum boiler temperature TK-min	°C	20	20	20	20	90
HG22	Maximum boiler temperature TK-max	°C	85	85	85	50	90
HG23	Maximum hot water temperature	°C	65	65	65	50	90
HG25	Boiler excess temperature during cylinder heating	°C	15	15	15	1	30
HG33	Burner hysteresis runtime	min	10	10	10	1	30
HG34	eBUS feed	-	Auto	Auto	Auto	OFF	ON
HG37	Pump control type (constant/linear/dT)	-	Lin.	Lin.	Lin.	var.	var.
HG38	Set spread, pump control (dT)	°C	15	15	15	0	40
HG39	Soft start time	min	3	3	3	0	10
HG40	System configuration (see chapter "Parameter description")	-	01	01	01	var.	var.
HG41	ZHP speed DHW	%	65	75	85	15	100
HG42	Hysteresis, header	°C	5	5	5	0	20
HG43	IO reduction, default value	-	0	0	0	-5	10
HG44	GPV curve offset	%	29,6 ³⁾	30,9 3)	30,9 ³⁾	15	46.4
HG45	No function	-	-	-	-	-	-
HG46	Excess boiler temperature, header	°C	6	6	6	0	20
HG60	Minimum burner switching hysteresis	°C	7	7	7	2	30
HG61	DHW control unit (boiler sensor / header sensor)	-	Boiler sensor	Boiler sensor	Boiler sensor	Various	Various

¹⁾ Minimum boiler output

²⁾ CGB-2-14 = 2.5%

³⁾ Value is set automatically with GLV adaptation



18 Maintenance Report

No.	Work step	Report Item	Report Item	Report Item
	Date			
1	Switch off appliance, Emergency Stop switch off			
2	Shut off gas supply,			
3	Open cover and remove combustion chamber housing			
4	Disconnect electrical connections to fan and ignition transformer			
5	Release catches and remove combustion chamber cover			
6	Clean burner as necessary. Check ignition and ionisation electrodes	0	0	0
7	Clean hot water heat exchanger	0	0	0
8	Clean condensate tray	0	0	0
9	Clean mixing chamber as necessary	0	0	0
10	Check combustion chamber insulation for damage	0	0	0
11	Check seals. Replace as necessary and coat with silicon grease	0	0	0
12	Check neutralisation if installed. Refill granulate as necessary	0	0	0
13	In case of enamelled tank, check protective anode every 2 years	0	0	0
14	Reassemble appliance			
15	Clean trap fill, install and check for firm fit	0	0	0
16	Descale hot water heat exchanger as necessary	0	0	0
17	Clean hot water sieve	0	0	0
18	Check expansion vessel, safety valve	0	0	0
19	Open gas supply, switch on appliance			
20	Gas leak test	0	0	0
21	Exhaust system leak test	0	0	0
22	Check ignition	0	0	0
23	Check bus connection to control accessories	0	0	0
24	Exhaust gas temperature in exhaust gas inspection mode	0	0	0
25	Gross exhaust gas temperature	°C	°C	°C
26	Intake air temperature	°C	°C	°C
27	Net exhaust gas temperature	°C	°C	°C
28	Carbon dioxide content (CO2)	%	%	%
29	or oxygen content (O2)	%	%	%
30	Carbon monoxide content (CO)	%	%	%
31	Exhaust gas losses	%	%	%
32	Call up maintenance display and acknowledge error history	0	0	0
	Confirm maintenance (Company stamp, date, signature)			

19 Notes



19 Notes



