

delta

performance

performance

25 / 35 / 45 / 55

F25 / F35 / F45 / F55

G25 / G35 / G45 / G55

EN *INSTALLATION, OPERATING AND
SERVICING INSTRUCTIONS*



excellence in hot water

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SPARE PARTS

See at the end of this manual

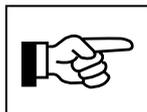
WARNINGS

WHO SHOULD READ THESE INSTRUCTIONS

These instructions should be read by:

- the specifying engineer
- the installer
- the user
- the service engineer

SYMBOLS



Essential instruction for the correct operation of the installation.



Essential instruction for the safety of persons and the environment.



Danger of electrocution.



Danger of burns

RECOMMENDATIONS



- These instructions are an integral part of the equipment to which they refer and the user must be provided with a copy.
- The product must be installed and serviced by qualified engineers, in compliance with current standards.
- The manufacturer cannot accept liability for any damage resulting from incorrect installation or from the use of components or fittings not specified by the manufacturer.
- Any failure to follow instructions relating to tests and test procedures may result in personal injury or risks of pollution.



- It is important to switch the boiler off before carrying out any work.
- There are no user parts inside the control panel.

APPLICABLE STANDARDS

The products described in this document have been certified at European level "CE" (European Directives 92/42/EEC "Efficiency", 90/396/EEC "Gas devices"). They have been awarded the Belgian label "HR+" (gas boilers) and "OPTIMAZ" (oil boilers).



IMPORTANT NOTES

These instructions are an integral part of the equipment to which they relate and must be handed to the user.

The product must be installed and serviced by qualified engineers in accordance with the regulations in force.

The manufacturer declines all liability for any damage caused as a result of incorrect installation or in the event of the use of appliances or accessories that are not specified by the manufacturer.



The manufacturer reserves the right to change the technical characteristics and specification of its products without notice.

INTRODUCTION

GENERAL DESCRIPTION

This boiler is available in 5 models.

- Combination boiler (*central heating and domestic hot water*).
- Designed for connection to a chimney.
- TANK-IN-TANK indirect storage type domestic hot water production.
- Equipment required: a water connection kit for heating circuit supply (*optional*).
- The control panel contains a main switch, a control thermostat, a thermometer, a Summer/Winter switch and knockout for the built-in ACV control system (*to be ordered separately*).
- DELTA Performance 25, 35, 45 and 55 models - with effective outputs adjustable between 22 and 62 kW - are shipped without burners. They can be fitted with most gas or oil burners available on the market.
- DELTA Performance F25, F35 and F45 models - with effective outputs adjustable between 22 and 54 kW - are shipped with an ACV BM R oil burner.
- DELTA Performance F55 models - with effective outputs adjustable between 45 and 62 kW - are shipped with an ACV BM oil burner.
- DELTA Performance G25, G35, G45 and G55 models - with effective outputs adjustable between 22.5 and 49 kW - are shipped with a BG 2000-S gas burner.

OPERATING PRINCIPLE

The "Tank-in-Tank" concept

The DELTA Performance series differs from traditional hot water producers in that it has a ring-shaped tank immersed in the primary fluid contained in the outer body. When hot water from the central heating system or the domestic hot water system is needed, the thermostat starts up the burner. The combustion gases quickly heat up the primary fluid, thus creating a natural circulation around the tank.

Indirect hot water heating

This circulation allows easier heat exchange between the primary fluid and the domestic water, all over the tank surface. The corrugations on the inner and outer shells of the ring-shaped tank increase the area of heat exchange still further and thus speed up the process of heating the domestic water.

Easy to control and safe

With a single command, the water temperature of both the primary circuit and the domestic hot water circuit can be set by the adjustable thermostat situated underneath the tank in the primary circuit.

A cut-off thermostat, placed on the top of the boiler automatically switches off the burner when the temperature of the water in the primary circuit reaches 95°C. A manually resettable safety thermostat switches off the burner if the temperature reaches 103°C.

DESIGN CHARACTERISTICS

Lining

The boiler is protected by a steel lining that first of all undergoes a degreasing and phosphation process before being lacquered and cured at 220°C.

Heating body

The boiler heat exchanger is constructed from carbon steel STW 22 with welded joints. It is hydraulically tested under a pressure of 4.5 bar (maximum working pressure = 3 bar).

"Tank-in-Tank" type storage exchanger

The ring-shaped inner tank is made from 18/10 austenitic stainless steel and features a large heat exchanger surface for rapid hot water heating. It is corrugated over its full height by means of an exclusive production process, and is fully argon welded using the TIG (Tungsten Inert Gas) method.

Combustion gas circuit

The combustion gas circuit is protected by high temperature paint. The circuit comprises:

- **Flue pipes**
Depending on output, the various DELTA Performance models contain either 4 or 8 steel flue pipes with an inner diameter of 64 mm. Each pipe is fitted with a special steel baffle designed to improve heat exchange and reduce the flue gas temperature.
- **Combustion chamber**
Sealed combustion chamber. The combustion chamber is water-cooled.

Insulation

The boiler body has a full sprayed-on rigid polyurethane foam insulation with a high insulation coefficient. No CFC emissions are created by the spraying process.

Oil Burner	BM R 31	BM R 51	BM 101
F25 / F35	●	-	-
F45	-	●	-
F55	-	-	●

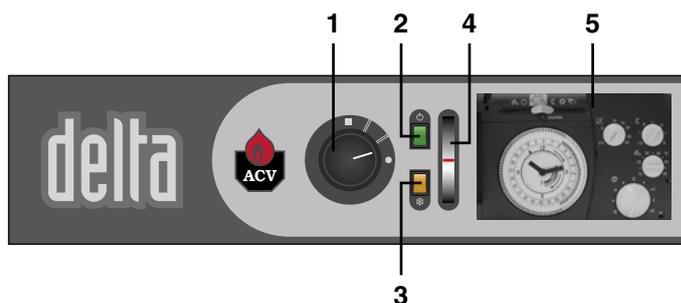
Gas Burner	BG 2000-S
G25 / G35 / G45 / G55	●

Climatic controller

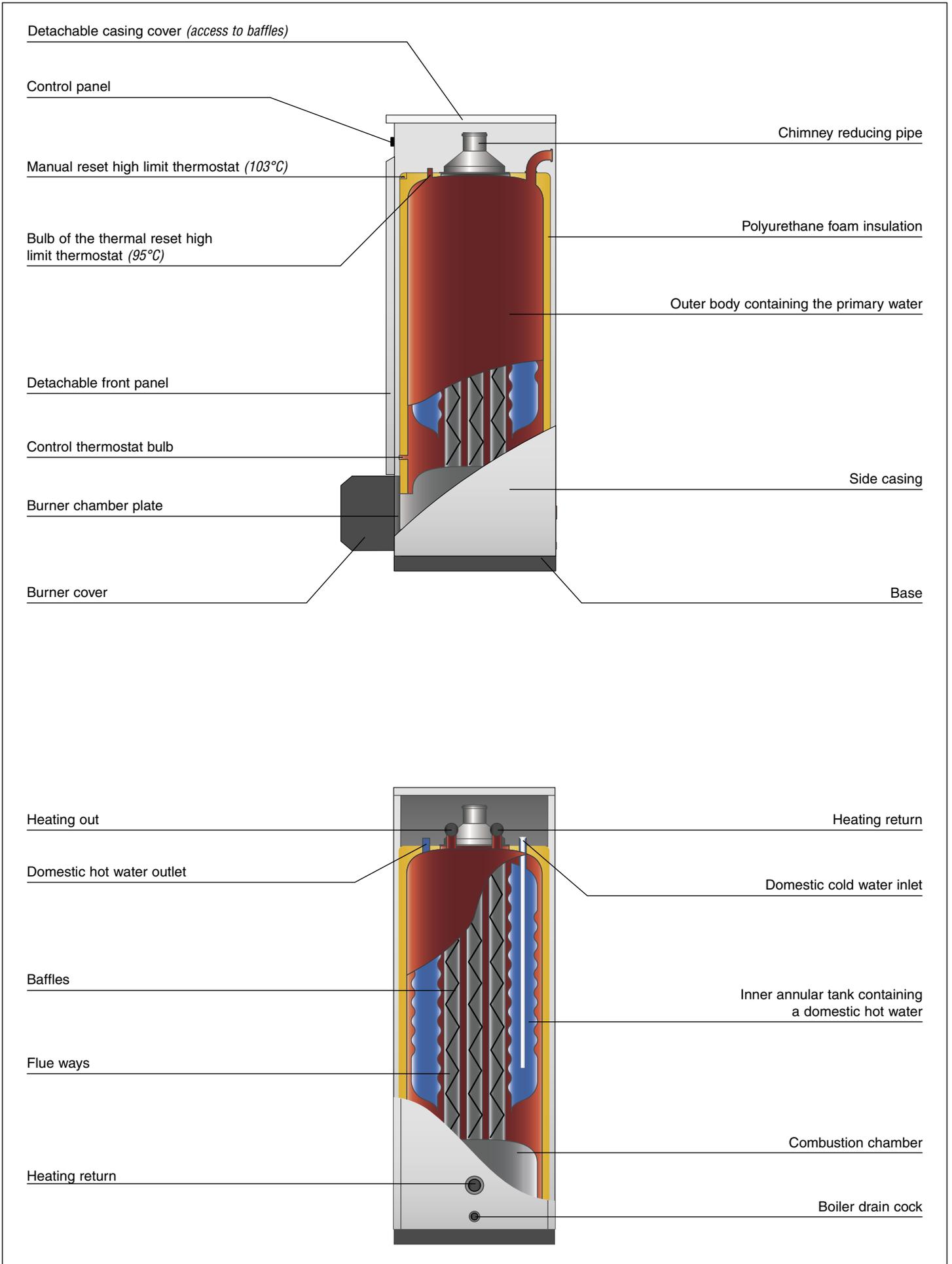
It is possible integrated a climatic controller in the control panel.

Control panel

1. Control thermostat (*60/90°C*)
2. Main switch
3. Summer/Winter switch
4. Thermometer
5. ACV Controller (*opcional*)



INTRODUCTION



INSTRUCTIONS



We recommend that you have your system serviced each year by a qualified engineer.

Starting the burner:

In normal operation the burner starts automatically if the temperature of the boiler is below setpoint.



Before carrying out any work on the boiler, isolate it from the electrical supply at the switch on the external control box.

Also move the main switch on the control panel to "OFF".

YOU SHOULD FAMILIARISE YOURSELF WITH THE CONTROL PANEL

1 - Control thermostat

If the boiler is being used to generate hot water only, the boiler temperature can be set to between 60 and 90°C. If the boiler is being used for hot water and heating, then the boiler's control thermostat should normally be set to 80°C to guarantee optimum operating conditions.

2 - Main switch

This switch is used to start and stop the boiler

3 - Summer/Winter switch

Switches ON and OFF the heating pump.

4 - Thermometer

The thermometer shows the boiler temperature in the heating circuit. This temperature should not exceed 90°C. If it does, stop the boiler and check the settings on the thermostat. If the problem persists, contact your installer for advice.

5 - ACV climatic controller (optional)

Refer to the instructions supplied with the controller if you have this option.

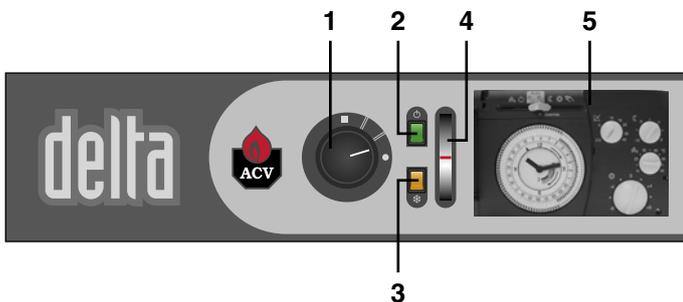
PRESSURE IN THE HEATING SYSTEM

The Central Heating pressure must be minimum 1 bar and must be periodically checked by the end user.

Make sure that the appliance is powered off when filling the system. To do this, turn the on/off switch. For more information, please ask your installer when the system is delivered. A safety valve is provided underneath the appliance. If the system pressure exceeds 3 bars, this valve opens and drains the water from the system. In this case, please contact your installer.



The water escaping from the safety valve can be extremely hot and cause very serious burns.



INSTRUCTIONS

BURNER SHUTDOWN

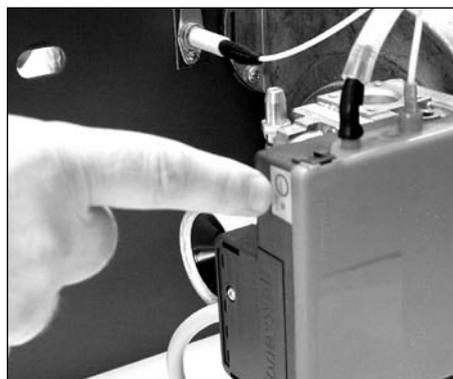
If the oil burner is not working:

1. The burner indicator lamp lights.
2. Press the burner reset button on the burner. Now switch off the boiler for a few seconds at the main switch and then restart it.

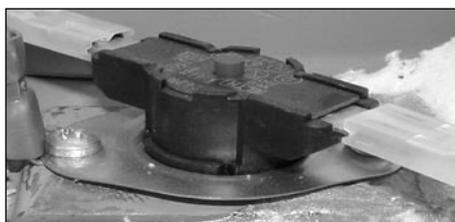


If the gas burner is not working:

1. Remove the protective burner cover.
2. The reset button lamp is lit.
3. Press the reset button to start the burner. Now switch off the boiler for a few seconds at the main switch and then restart it.



If the oil or gas burner does not operate, isolate the boiler's electrical supply at the switch on the external control box before removing the front panel of the casing, for press the manual reset high limit thermostat on the top of the boiler



Manual reset high limit thermostat



Wait until the boiler temperature drops to below 60°C, then refit the front panel of the casing.

If the problem persists, please contact your installer for advice.

Starting the burner.

In normal operation the burner starts automatically if the temperature of the boiler is below setpoint.



To ensure that your system operates correctly, please have it serviced annually by a qualified engineer; servicing should be done before the start of the heating season.

TECHNICAL CHARACTERISTICS

GENERAL

The appliances are supplied fully assembled, tested and packed standing on a timber base with impact protection strips and rapped in heat-shrunk plastic film. When the appliance arrives, remove the packaging and check that no parts have been damaged during shipment. Refer to the dimensions and weights listed below for handling purposes:

OPERATING CONDITION LIMITS

Maximum service pressure (tank filled with water)

- Heating circuit: 3 bar
- DHW circuit: 10 bar

Test pressure (tank filled with water)

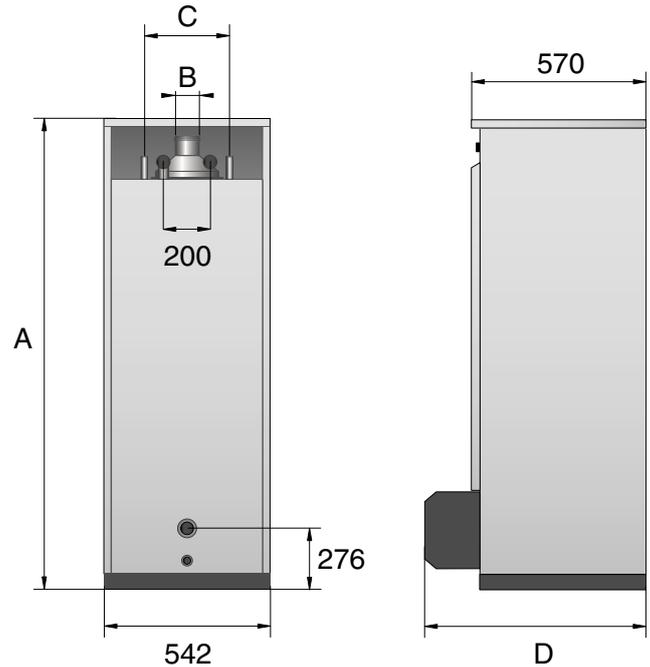
- Heating circuit: 4,5 bar
- DHW circuit: 13 bar

Operating temperature

- Maximum temperature: 90°C

Water quality

- Chlorides: < 150 mg/l (304 Stainless steel)
< 2.000 mg/l (Duplex)
- $6 \leq \text{ph} \leq 8$



DIMENSIONS	25	35	45	55	F25	F35	F45	F55	G25	G35	G45	G55
A [mm]	1497	1697	1497	1697	1497	1697	1497	1697	1497	1697	1497	1697
B [mm]	130	130	150	150	130	130	150	150	130	130	150	150
C [mm]	360	360	390	390	360	360	390	390	360	360	390	390
D [mm]	565	565	565	565	818	818	818	848	755	755	755	755
Weight when empty [kg]	145	156	168	200	157	168	180	212	159	170	182	214

DOMESTIC HOT WATER OUTPUT DATA	25		35		45		55	
	F25 / G25		F35 / G35		F45 / G45		F55 / G55	
<i>Operating conditions at 80°C</i>								
Peak flow at 40°C [ΔT = 30°C]	L/10'		268	285	316	362		
Peak flow at 40°C [ΔT = 30°C]	L/60'		806	1035	1284	1533		
Constant flow at 40°C [ΔT = 30°C]	L/h		645	900	1161	1405		
<i>Tank refill time at 60°C</i>								
Initial heating time	minutes		32	29	16	16		
After drawoff of 140 L at 45°C	minutes		15	11	9	7		

GENERAL CHARACTERISTICS		25	35	45	55
		F25 / G25	F35 / G35	F45 / G45	F55 / G55
Total capacity	L	157	178	132	162
Heating circuit capacity	L	83	104	70	82
Heating connection	Ø	1"	1"	1"	1"
DHW connection	Ø	3/4"	3/4"	3/4"	3/4"
Water tank heat exchanger surface	m ²	1,59	1,59	1,99	2,46

BOILERS WITHOUT BURNER		25	35	45	55
Input	kW	25 / 33	33 / 45	42 / 61	50 / 69
Output	kW	22 / 29	29 / 40	38 / 54	45 / 62
Heat losses [60°C]	%	1,36 / 1,0	1,0 / 0,79	0,8 / 0,56	0,75 / 0,6

INSTALLATION

BOILER ROOM

Important

- Never obstruct the ventilation.
- Do not store inflammable products in the boiler room.
- Avoid storing corrosive products such as paint, solvents, chlorine, salt, soap or other cleaning products near the boiler.

Accessibility

The boiler room should be large enough to allow easy access to the boiler. Minimum clearances around the boiler:

- To the front 500 mm
- To the rear 150 mm
- To the sides 100 mm
- Above 700 mm

Base

The base on which the boiler will be mounted must be made from non-combustible materials.

Ventilation

The boiler room must have both low and high level ventilation.

By way of information, the table below gives the minimum ventilation requirements according to Belgian regulations.

The user must ensure that his boiler room ventilation complies with local regulations.

CHIMNEY CONNECTION



Important:

The boiler must be installed by a qualified engineer in accordance with the local standards and codes of practice.



The diameter of the chimney must not be less than the diameter of the boiler's chimney reducer.

Chimney connector type: B23

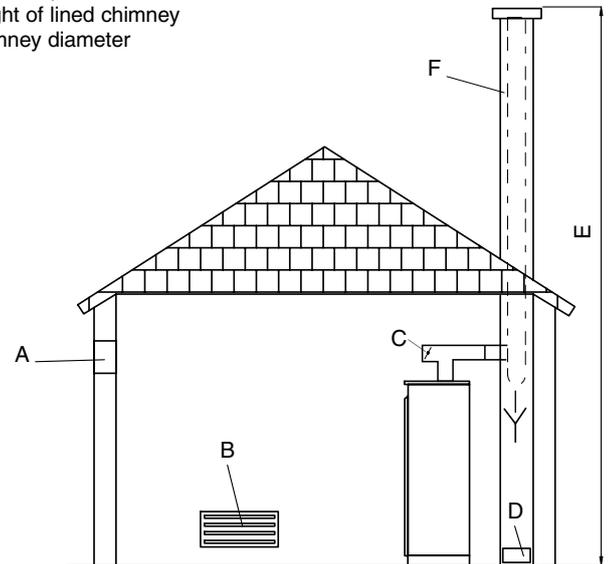
The chimney must be connected to the boiler by means of a metal pipe rising at an angle from the boiler to the chimney. It must be easily removable in order to give access to the flue pipes when servicing the boiler. A draught regulator must be installed on the chimney in order to stabilise negative pressure.



The high efficiency of our boilers means that the flue gases exit at low temperature. The attendant risk of condensation may cause damage to some chimneys. To avoid this risk we strongly advise that you line the chimney.

Please contact your installer for further information about chimney lining.

- A. High level ventilation
- B. Low level ventilation
- C. Draught stabiliser
- D. Flame inspection window
- E. Height of lined chimney
- F. Chimney diameter



Ventilation		25 F25	35 F35	45 F45	55 F55	G25	G35	G45	G55
Fresh air supply minimum	m3/h	50 / 66	66 / 99	84 / 122	100 / 138	45	63	81	99
High level ventilation [A]	dm2	2	2	2	2	1,5	1,5	1,5	1,5
Low level ventilation [B]	dm2	1,5	1,5	1,5	1,5 / 2,1	1,5	1,5	1,5	1,7
Draught stabiliser [C]	Ø	130	130	150	150	130	130	150	150

Chimney		25 F25	35 F35	45 F45	55 F55	G25	G35	G45	G55
E = 5 m Ø min. F	mm	158 / 182	182 / 213	208 / 248	226 / 266	160	189	215	236
E = 10 m Ø min. F	mm	133 / 153	153 / 179	175 / 209	190 / 223	135	159	181	199
E = 15 m Ø min. F	mm	130 / 138	138 / 162	158 / 188	172 / 202	130	143	163	179

N.B.:

The figures for (B) and (C) only apply to type B23 connectors.

The above table is shown by way of indication only as regulations vary from country to country.

INSTALLATION

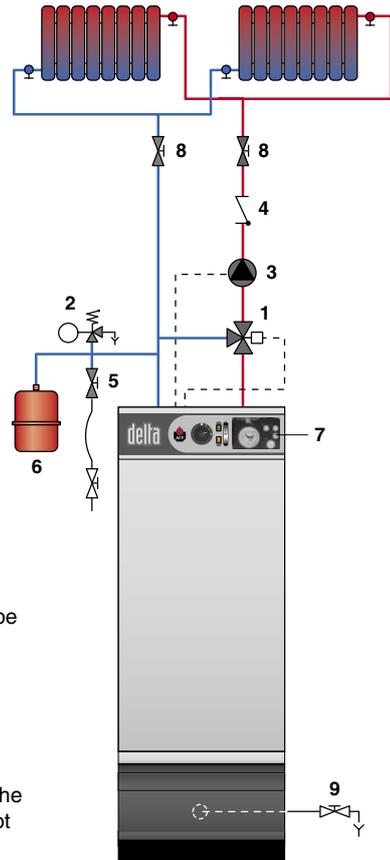
HEATING SYSTEM CONNECTION

TYPICAL SINGLE CIRCUIT CONFIGURATION

1. 3-way motorised mixer valve.
2. Safety valve calibrated to 3 bar, with pressure gauge.
3. Pump.
4. Check valve.
5. System filling valve.
6. Expansion vessel.
7. Controller ACV 13.00 (see Controller Kit on page 11)
8. Isolating valve, heating system.
9. Drain cock.

DRAIN

The drain cock and safety valve must be connected to the sewer.

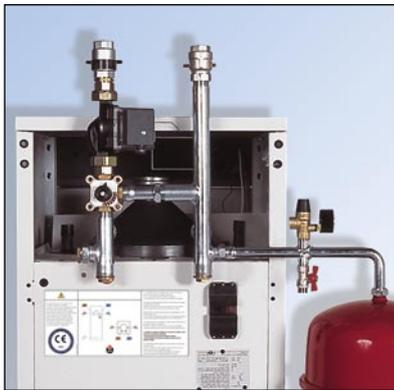


ACV HYDRAULIC KIT

ACV can supply an optional pre-assembled water kit.

This kit comprises:

- A pump;
- A 3-way manual valve. This valve can be motorised if required;
- Connection pipes that can be used to connect a second heating circuit;
- Two isolating valves;
- Connectors for the right or left hand mounting of the expansion vessel, the safety valve with pressure gauge and the filling valve. The expansion vessel is not included.



DOMESTIC HOT WATER CONNECTION

TYPICAL CIRCUIT WITH THERMOSTAT VALVE

1. Safety group
2. Pressure reducing valve
3. Thermostatic mixer
4. Hot water pump
5. Check valve
6. Hot water expansion vessel
7. Cold water supply tap
8. Drawoff tap
9. Drain cock
10. Air vent
11. Isolating valve

PRESSURE REDUCING VALVE

If the mains water pressure exceeds 6 bar, a pressure reducing valve calibrated to 4.5 bar must be installed.

SAFETY GROUP

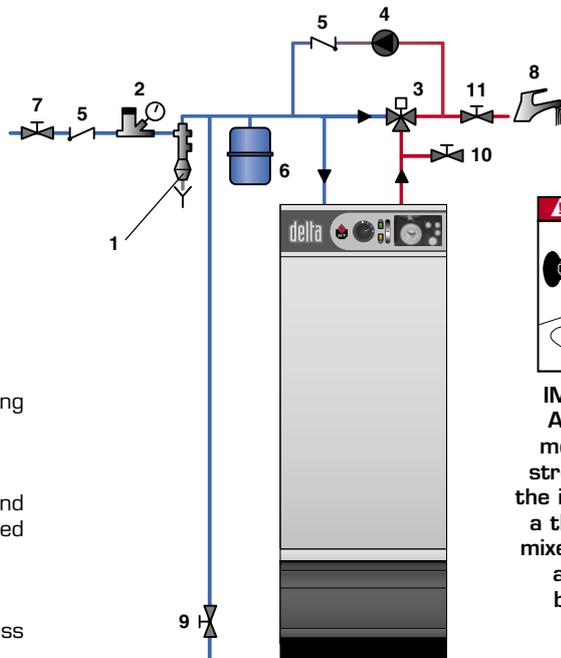
The safety group of the water tank must be approved by ACV and calibrated to 7 bar; the group's valve discharge must be connected to the sewer.

HOT WATER EXPANSION VESSEL

Installing a hot water expansion vessel will prevent any risk of excess pressure due to water hammer or pressure fluctuations.

HOT WATER CIRCULATION

If the water tank is a long way from the point of use, installing a closed recirculation circuit can ensure a faster hot water drawoff at any time.



IMPORTANT
As a safety measure, we strongly advise the installation of a thermostatic mixer to prevent any risk of burning to persons.

Optional accessories

Safety group	Ø 3/4"
Pressure reducing valve	Ø 3/4"
Thermostatic mixer	Ø 3/4"
Expansion vessel	5 litres

INSTALLATION

CONTROLLER KITS [OPTIONAL]

KIT 1: ACV 13.00 / BASIC

This basic kit is used to control the hot water circuit outlet temperature as a function of ambient conditions.

It comprises: a temperature controller with analog clock, a surfacemounted primary water temperature sensor (-30/130°C), an outdoor sensor (-30/50°C), a servomotor SSY 319 230 V - 3-pin and an intermediate socket.



KIT 2: ACV 13.00 / STANDARD

This basic kit is used to control the hot water circuit outlet temperature as a function of ambient conditions.

It comprises: a temperature controller with analog clock, a surfacemounted primary water temperature sensor (-30/130°C), an outdoor sensor (-30/50°C), a servomotor SQY 349 230 V - 3-pin and an intermediate socket.

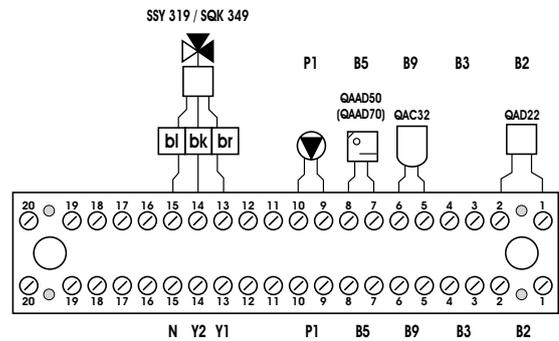


CIRCUIT DIAGRAM OF ACV CONTROL KITS

- B2. Temperature sensor
- B9. Outdoor sensor
- B5. Analog/digital room sensor
- P1. Pump
- Y1/Y2/N. Servomotor (SSY 319 or SQK 349)
 - bl. Blue N
 - n/z. Black Y2
 - br. Brown Y1

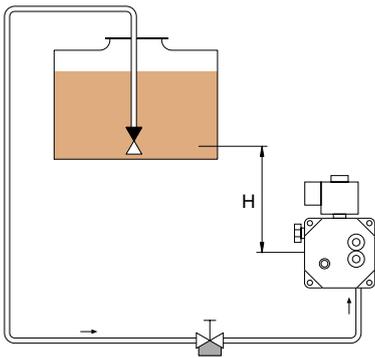


Please contact your installer for further details about this.



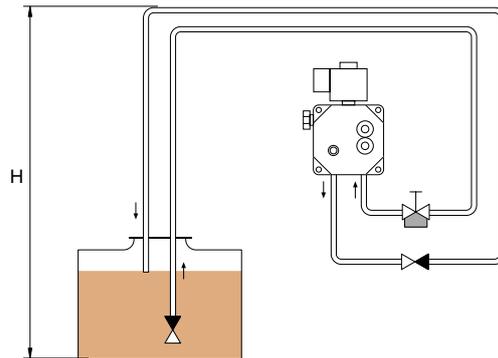
OIL SUPPLY

INSTALLATION WITHOUT RETURN



Height [H]	Ø int. 8 mm [L]	Ø int. 10 mm [L]
0,5 m	10 m	20 m
1,0 m	20 m	40 m
1,5 m	40 m	80 m
2,0 m	60 m	100 m

INSTALLATION WITH RETURN



Height [H]	Ø int. 8 mm [L]	Ø int. 10 mm [L]
0,0 m	35 m	100 m
0,5 m	30 m	100 m
1,0 m	25 m	100 m
1,5 m	20 m	90 m
2,0 m	15 m	70 m
2,5 m	8 m	30 m
3,5 m	6 m	20 m

ELECTRICAL CONNECTIONS

ELECTRICAL BOILER CONNECTION

PRINCIPLE OF SUPPLY

The boiler operates on a single-phase supply of 230 V/50 Hz. You should install a control box with main switch and 6 A fuses externally to the boiler to allow the boiler to be isolated from the supply for servicing and repairs.

STATUTORY COMPLIANCE

The installation must comply with your local standards and codes of practice.

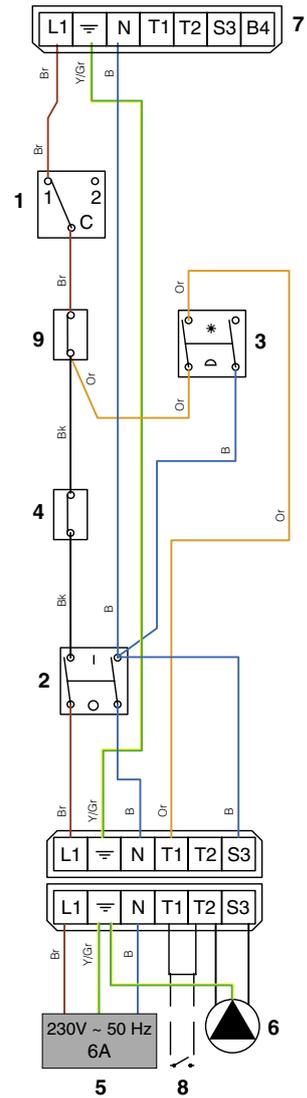
SAFETY

The stainless steel water tank must be provided with a separate earth.

BOILER WIRING

1. Control thermostat [60/90°C]
2. Main switch
3. Summer / Winter switch
4. Manual reset high limit thermostat [103°C max.]
5. Power supply to boiler
6. Heating pump connection
7. Burner connection [7-pin plug]
8. Room thermostat [optional]
9. Thermal reset high limit thermostat [95°C]

- B. Blue
- Br. Brown
- Bk. Black
- Or. Orange
- Y/Gr. Yellow / Green



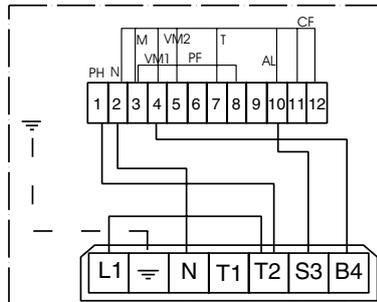
The boiler must be isolated from the electrical supply before any work is carried out on it.

ELECTRICAL BURNERS CONNECTION

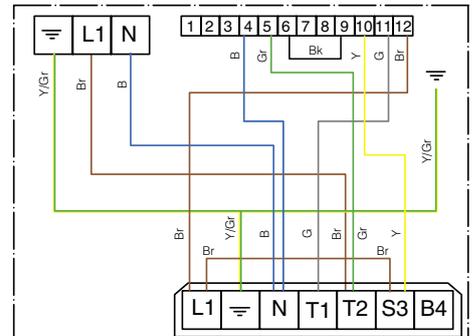
- PH. Phase
- N. Neutral
- M. Motor
- VM1. Magnetic valve 1
- VM2. Magnetic valve 2
- PF. Oil preheating
- T. Ignition transformer
- AL. Alarm
- CF. Photoelectric cell

- B. Blue
- Br. Brown
- Bk. Black
- G. Grey
- Gr. Green
- Y. Yellow
- Y/Gr. Yellow / Green

**ELECTRICAL CONNECTION
BM R 31 - BM R 51 - BM 101**



**ELECTRICAL CONNECTION
BG 2000-S**



The boiler must be isolated from the electrical supply before any work is carried out on it.

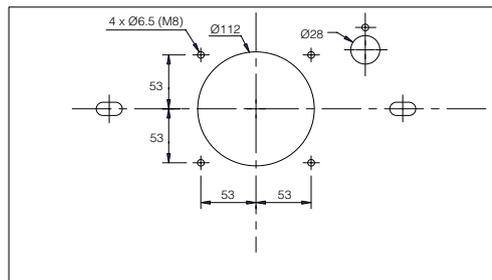
OIL BURNER CHARACTERISTICS

OIL BURNER DESCRIPTION

To fit out our Delta performance Oil boiler we needed a really high performance burner to give perfect combustion. We opted to use the brand new technology of the ACV BM R 31, BM R 51 y BM 101 burners.

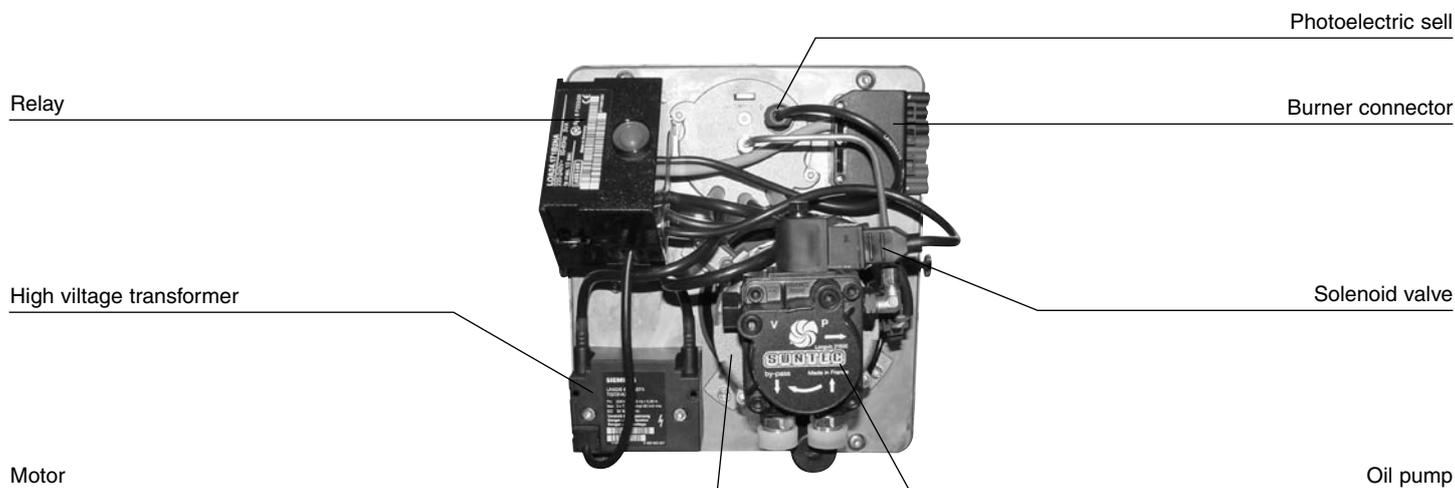
Chamber plate (oil)

The chamber plate has 4 screws (M 8 x 20 mm) for the fixing of the burner. It is protected from the radiation of the flame by an insulation blanket.

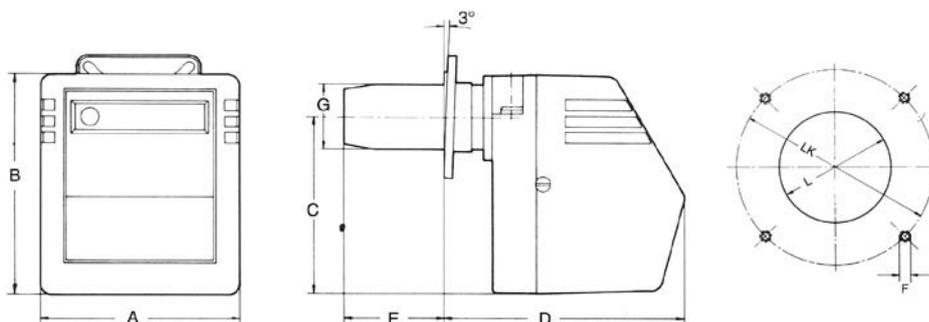


SETTING OIL BURNER PARAMETERS

		F25	F35	F45	F55
Burner		BM R 31	BM R 31	BM R 51	BM 101
Output	kW	12 / 48	12 / 48	42 / 60	55 / 130
Electrical power	W	150	150	150	185
Nozzle	gal/h	0,6	0,75	0,85	1,50
Nozzle angle		60°	60°	60° B	60° B
Oil flow rate	kg/h	2,18	2,84	3,60	5,76
Pump pressure	bar	11,2	12,0	15,0	10,0
Flue gas index		0,6	0,3	0,4	0,5
Air flap setting		4,5	4,8	4,5	5,0
Combustion head setting		1	2 - 3	4 - 5	4 - 5
Flue pressure drop	mbar	0,02 / 0,09	0,08 / 0,09	0,01 / 0,08	0,02 / 0,05
Weight	kg	12	12	12	14



	BM R 31 BM R 51	BM 101
A mm	240	260
B mm	270	300
C mm	215	250
D mm	280	310
E mm	60 - 130	60 - 150
F mm	M 8	M 8
G mm	80	90
L Ø	85	95
LK Ø	140 - 165	125 - 180



GAS BURNER CHARACTERISTICS

ACV BG 2000-S AIR/GAS PREMIX GAS BURNERS

The air/gas premix BG 2000-S burner is fitted with a Honeywell gas valve, a venturi tube and an electrical control relay. The gas valve has been specially developed for low NOx air/gas premix burners with automatic lighting and flame detection by ionisation.

The pressure at the gas valve outlet is equal to the air pressure at the neck of the venturi tube, reduced as the offset is adjusted. The fan sucks in the combustion air through the venturi tube which the gas inlet leads into. As it goes through, the air creates a vacuum to the right of the neck of the venturi tube and sucks in the gas at the venturi tube outlet. A perfect air/gas mix then goes through the fan and then goes on towards the ramp.

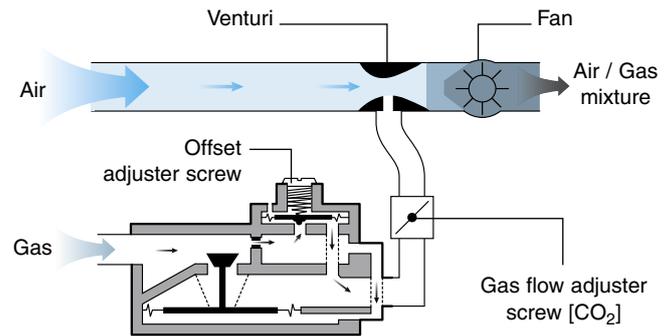
The electrical control relay built into the gas valve ensures that the flame on the burner is properly lit and controlled.

This principle guarantees silent and totally safe operation:

- If there is not enough air, the vacuum in the venturi tube drops, the gas flow is reduced, the flame goes out and the gas valve is closed. The burner is locked out.
- If there is any restriction in the discharging of the burnt gases, the air flow drops and this leads to the same reactions as those described above leading to the burner being shut down, locked out.

 **The BG 2000-S burner is factory preset to natural gas.**

 **Conversion to propane:**
 Prohibited in Belgium.
 Conversion kit enclosed with the burner comprising:
 - Gate disk(s)
 - Rating plate(s).
 - Settings sticker.
 - Assembly instructions.



SETTING OIL BURNER PARAMETERS

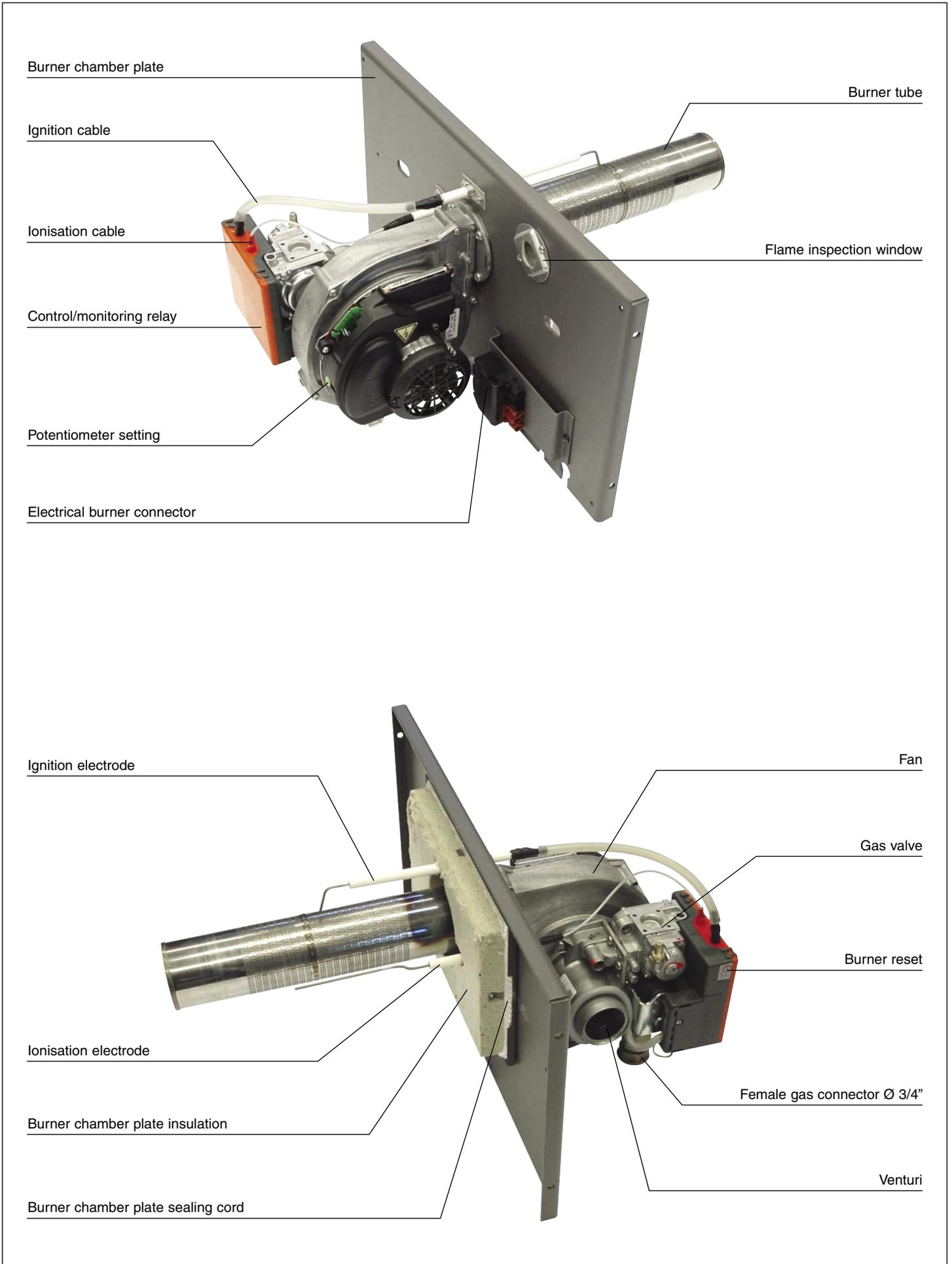
		G25	G35	G45	G55
Burner		BG 2000-S/25	BG 2000-S/35	BG 2000-S/45	BG 2000-S/55
Input	kW	25	34,9	45	55
Output	kW	22,45	31,35	40,5	49
Combustion efficiency - natural gas	%	91,7	91,5	92,4	92
CO ₂ natural gas	%	9,1	9,0	8,9	9,0
CO ₂ propane	%	11,0 / 11,2	11,0 / 11,2	11,0 / 11,2	11,0 / 11,2
Net T° of burnt gases	°C	170	173	153	165
Maintenance loss at 60°C of rate value	%	1,36	1,0	0,8	0,7
Gas connection [female]	Ø	3/4"	3/4"	3/4"	3/4"
Weight	Kg	14	14	14	14
Gas G20 - 20 mbar [I2E(S)B - I2Er - I2H - I2ELL - I2 E]					
Flow	m³/h	2,65	3,70	4,76	5,8
Gas G25 - 20 mbar [I2ELL] - 25 mbar [I2L]					
Flow	m³/h	3,07	4,3	5,52	7,98
Gas G31 - 30 / 37 / 50 mbar [I3P]					
Flow	m³/h	1,02	1,43	1,84	2,25

N.B. : • The burners are preset in our factory for use with natural gas (equivalent to G20)
 • An adjustment of the CO₂ % is not allowed in Belgium. I 2E(S)B

GAS CATEGORIES

I2Er	I2E(S)B	I2H	I3P	I2L	I2ELL	I2E
FR	BE	AT - DK - ES - UK IT - PT - IE - SE	BE - FR - ES UK - PT - IE	NL	DE	LU

GAS BURNER CHARACTERISTICS



COMMISSIONING AND MAINTENANCE

FILLING THE HOT WATER AND HEATING CIRCUITS



IMPORTANT

It is essential that the water tank is under pressure before the heating circuit is filled.

1. Fill the hot water circuit and pressurise it.
2. Fill the heating circuit - do not exceed a pressure of 2 bar.
3. Vent the air in the top of the boiler.
4. Once you have vented the system, return the pressure to static pressure plus 0.5 bar.

Height of the heating system:

- 10 m ⇒ heating circuit pressure = 1.5 bar
- 15 m ⇒ heating circuit pressure = 2 bar

USING THE BOILER FOR THE FIRST TIME

1. Check the gas or oil supply connection and ensure that it is free from leaks.
2. Check the electrical connection to the boiler and the boiler room ventilation, and ensure that the flue gas discharge pipes and the burner chamber plate are properly gas tight.
3. Set the boiler thermostat to between 60 and 90°C.
4. Move the Summer/Winter switch to the required position.
5. Move the main switch to "ON".
6. Carry out the necessary venting operations, measurements and settings.

RECOMMENDATION

ACV recommends that you have the boiler serviced at least once a year. Boiler servicing and checking must be carried out by a qualified engineer.

MAINTENANCE OF BOILER

1. Isolate the boiler from the electrical supply at the switch on the external control box, and close the gas or oil supply valve.
2. Move the main switch on the control panel to "OFF".
3. Remove the chimney flue **(G)** to free the top of the boiler.
4. Remove the jacket top **(A)** and lift off the flue reducer **(B)**.
5. Remove the baffles **(C)** from the flue ways **(D)** and clean them. Replace these items if worn.
6. Remove the burner cover and burner **(E)**.
7. Brush the flue ways **(D)**.
8. Clean the combustion chamber **(F)** and the burner.
9. Check the condition of the seal on the burner chamber plate **(H)**.

MAINTENANCE OF BURNER

See the technical and maintenance manual of the burner.

MAINTENANCE OF SAFETY EQUIPMENT

- Check that all thermostats and safety devices operate correctly: boiler thermostat, thermal reset high limit thermostat and manual reset high limit thermostat.
- Check the safety valves in both the heating circuit and the hot water circuit.

DRAINING THE BOILER



The water draining from the drain cock is very hot and can cause serious burns. Keep all persons away from running hot water.

Draining the heating circuit

1. Move the main switch on the control panel to "OFF", isolate the boiler from the electrical supply at the switch on the external control box and close the gas or oil supply valve.
2. Close the isolating valves **(8)** in the heating circuit.
3. Connect a flexible tube to the drain cock **(9)**.
4. Open the drain cock **(9)** to drain the heating circuit.

Draining the hot water circuit

1. Move the main switch on the control panel to "OFF", isolate the boiler from the electrical supply at the switch on the external control box and close the gas or oil supply valve.
2. Release the pressure in the heating circuit until the pressure gauge reads zero.
3. Close the tap **(7)** and the isolating valve **(11)**.
4. Open the drain cock **(9)** and air vent **(10)** (first **9** then **10**).
5. Allow the hot water circuit to discharge to the drain.



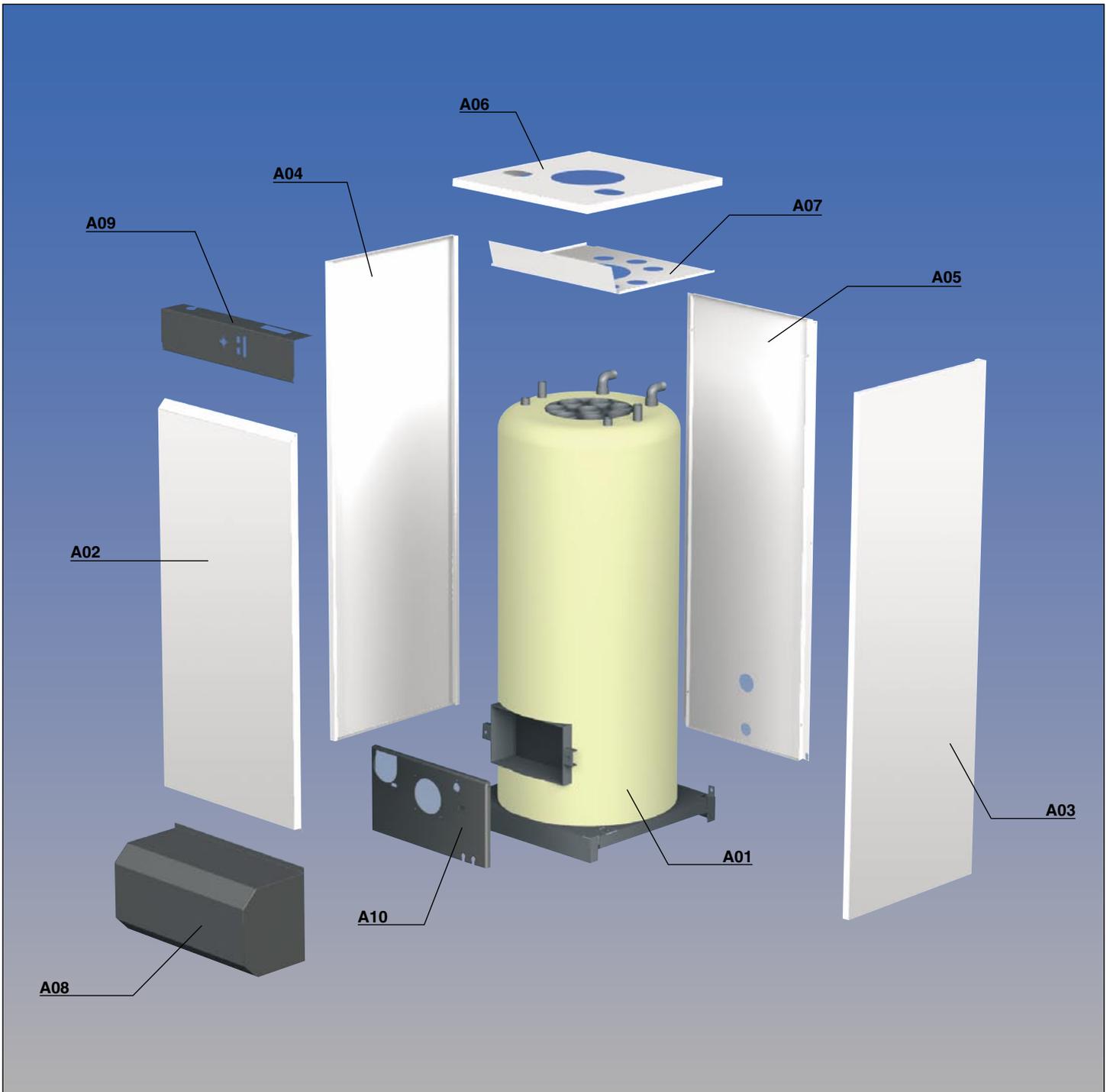
The drain cock **(9)** must be at ground level for the circuit to drain fully.



Water escaping from the safety valve or safety group can be extremely hot and cause very serious burns.



N°	25 - F25	G25	35 - F35	G35	45 - F45	G45	55 - F55	G55
A01	30537054	30537054	30537055	30537055	30537389	30537389	30537227	30537227
A02	21473338	21473338	21473339	21473339	21473338	21473338	21473339	21473339
A03	21472338	21472338	21472339	21472339	21472338	21472338	21472339	21472339
A04	21471338	21471338	21471339	21471339	21471338	21471338	21471339	21471339
A05	21474338	21474338	21474339	21474339	21474338	21474338	21474339	21474339
A06	21475338	21475338	21475338	21475338	21475338	21475338	21475338	21475338
A07	21478338	21478338	21478338	21478338	21478338	21478338	21478338	21478338
A08	21476339	21476338	21476339	21476338	21476339	21476338	21476339	21476338
A09	21477338	21477338	21477338	21477338	21477338	21477338	21477338	21477338
A10	21423026	2147P263	21423026	2147P263	21423026	2147P263	21423026	2147P263



25 - F25 - G25**35 - F35 - G35****45 - F45 - G45****55 - F55 - G55**



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	F25	F35	F45	F55
 <p>BM R 31</p>	237E0009	237E0009	-	-
 <p>BM R 51</p>	-	-	23860600	-
 <p>BM 101</p>	-	-	-	23860200
	G25	G35	G45	G55
 <p>BG 2000-S/25</p>	237D0063	-	-	-
 <p>BG 2000-S/35</p>	-	237D0066	-	-
 <p>BG 2000-S/45</p>	-	-	237G0065	-
 <p>BG 2000-S/55</p>	-	-	-	237D0013



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