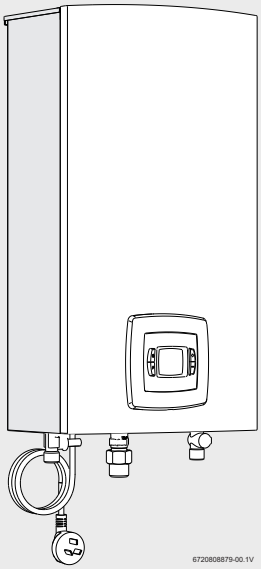


Room sealed gas continuous flow water heaters

Optiflow Professional

GWH12/16/20 1 CTD E23/31 F5 L

BOSCH

Installation Manual

Read installation manual prior to installation of this appliance!
Read user manual before putting this unit in operation!

Observe the warnings in the manuals!
The installation location must meet the requirements for sufficient ventilation!

Installation by an authorised person only!

6 720 810 560 (2016/06) AU

Index

1 Key to symbols and safety instructions

1.1 Key to symbols

Warnings

Warnings in this document are identified by a warning triangle printed against a grey background.
Keywords at the start of a warning indicate the type and seriousness of the ensuing risk if measures to prevent the risk are not taken.

The following keywords are defined and used in this document:

- **NOTICE** indicates a situation that could result in damage to property or equipment.
- **CAUTION** indicates a situation that could result in minor to medium injury.
- **WARNING** indicates a situation that could result in severe injury or death.
- **DANGER** indicates a situation that will result in severe injury or death.

Important information

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

Additional symbols

Symbol	Explanation
▶	Step in an action sequence
→	Cross-reference to another part of the document
•	List entry
–	List entry (second level)

Table 1

1.2 Safety Information

If you smell gas

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

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

If you notice dark combustion gases or sooting:

- ▶ Isolate the gas supply to the heater.
- ▶ Notify an authorised technician.

Installation, Assembly and Modifications

Installation, assembly and modifications to the heater must only be performed by an authorised technician .

Maintenance

- ▶ The water heater is required to have a service and safety inspection every two years.
- ▶ The installer is responsible for the safety and environmental compatibility of the installation, according to local regulations.
- ▶ The Owner/User is responsible for keeping the area around the water heater free from debris.
- ▶ Safe access to inspect and service the water heater is the responsibility of the property owner.
- ▶ Use only genuine Bosch spare parts.

Explosive and highly flammable material

- ▶ Do not store or use flammable material (paper, spray cans, solvents, paints, etc) near the heater.

Combustion air and surrounding air

- ▶ The combustion air and surrounding air must be free from corrosive substances.
- ▶ Do not spray aerosols or use chemicals around the heater unless heater is disconnected from the power supply.

Risk of damage due to user error

User errors can result in injury and damage to property.

- ▶ Ensure that children never play with or operate this appliance.
- ▶ Ensure that only personnel who can operate this appliance correctly have access to it.
- ▶ Refer to the operating and user instructions before adjusting the water heater.

To be installed and serviced only by an authorised person

The authorised installer is responsible for:

- Correct installation and commissioning of this appliance.

- Ensuring the appliance performs to the specifications stated on the rating label.
- Demonstrating the operation of the appliance to the customer before leaving.
- Handing the operating instructions to the customer.

THIS APPLIANCE IS NOT SUITABLE FOR POOL OR SPA POOL APPLICATIONS.
NOT SUITABLE FOR COMMERCIAL BOOSTING OF A WARM WATER RECIRCULATION SYSTEM

Regulations

All local by-laws and regulations pertaining to installation and use of gas appliances must be observed.

This appliance must be installed in accordance with the manufacturers installation instructions, AS/NZS5601, AS/NZS3500, and all Local Building & Gas fitting regulations.

The appliance must not be installed outdoors. The appliance is approved for indoor installation only. Do not install this appliance with any modification or alteration.

Failure to install this appliance in accordance with these installation instructions will void the warranty and may create an unsafe situation.

Installation

DANGER: Explosion Risk!

- ▶ Always turn off the gas valve before carrying out any work on components which carry gas.

DANGER: Appliance malfunction!
This appliance must be installed with no obstructions to the flue terminal.

- ▶ Periodic checking of the flue terminal to ensure no blockage or obstruction of the openings from plants, debris or insects must be carried out.

The installation of gas, water, and electrical supply, and the initial startup are to be performed by an authorised person.

Not suitable for pool or spa pool applications. Not suitable for commercial boosting of warm water recirculation systems.

All gas appliances require adequate air intake to ensure correct combustion. Insects and dirt ingress may affect combustion causing sooting. If you notice sooting from the flue outlet the unit would require servicing. Pest and dirt ingress is not covered by the manufacturers warranty.

Important information

- ▶ Determine the most appropriate location for the appliance. Install as close as possible to the most frequently used hot water outlet.
- ▶ Ensure the mounting structure is capable of supporting the weight of the appliance once installed. Secure the heater to the wall using fixings suitable for the weight of the appliance and the wall material.
- ▶ Install gas and water isolation valves as close as possible to the appliance. Only use a gate valve or full flow ball valve (fixed mechanism type) for cold water.
- ▶ Check the cold water supply pressure to ensure it meets the required supply pressure for the appliance. (see table 5, page 9).
- ▶ If inlet water pressure exceeds 800 kPa a pressure limiting valve (500 kPa) MUST be fitted. The preferable location for the pressure limiting valve is at the water meter.
- ▶ Where the pressure limiting valve is less than 3 metres from the hot water unit, it must be fitted in conjunction with a cold water expansion valve (700 kPa), between the water heater and the pressure limiting valve.
- ▶ Failure to comply with this requirement may void the warranty.
- ▶ Refer to AS/NZS5601 for the relevant gas pipe sizing.
- ▶ After finishing the gas piping system, the pipes must be thoroughly purged and leak tested. This test must be performed with the gas isolation valve of the appliance closed.
- ▶ Ensure the gas pressure and flow through the regulator are appropriate for the consumption of the heater (see table 5, page 9). Refer to AS/NZS5601 and AS3500, for the relevant pipe size.

Note: Incorrect pipe sizing or gas supply pressure may cause the appliance to under perform. Service calls for incorrect pipe sizing and/or gas pressure, will **NOT** be covered under warranty.

Safety of electrical appliances for domestic use and similar purposes

The following requirements apply in accordance with EN 60335-1 in order to prevent hazards from occurring when using electrical appliances:

"This appliance can be used by children of 8 years and older, as well as by people with reduced physical, sensory or mental capabilities or lacking in experience and knowledge, if they are supervised and have been given instruction in the safe use of the appliance and understand the resulting dangers. Children must not play with the appliance. Cleaning and user maintenance must not be performed by children without supervision."

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

2 Product details

2.1 Declaration of Conformity

The appliance has been tested and certified to Australia Standards.

Model	GWH12/16/20 1 CTD E23/31 F5 L...

Table 2

2.2 Type overview

GWH	12	1	CT	D	E	23	F5	L
GWH	12	1	CT	D	E	31	F5	L
GWH	16	1	CT	D	E	23	F5	L
GWH	16	1	CT	D	E	31	F5	L
GWH	20	1	CT	D	E	23	F5	L
GWH	20	1	CT	D	E	31	F5	L

Table 3

[GWH]	Gas continuous flow water heater
[12]	Capacity (l/min)
[1]	Generation
[CT]	Thermostatic
[D]	Digital user interface
[E]	Electric ignition
[23]	Appliance set for natural gas
[31]	Appliance set for Universal LP gas
[F5]	Tight chamber
[L]	Locked water temperature adjustment

2.3 Included Items

- Gas continuous flow water heater
- Fixing bracket
- Appliance documentation

2.4 Rating plate

The rating plate is located on the outside of the appliance, on the bottom.

The rating plate has the indications on the performance of the appliance, approval data and the serial number.

2.5 Description of appliance

- Room sealed wall-mounted appliance for internal installation
- Multifunctional display panel
- Suitable for Natural Gas or Universal LPG
- Electronic ignition
- Water flow sensor
- Water valve
- Temperature sensors for monitoring the temperature of the incoming and outgoing water of the appliance.
- Safety devices:
  - Flame sensor rod
  - Thermal fuse
  - Hot water temperature sensor
  - Electronic control unit
  - Air temperature sensor
  - Frost protection device
- Electrical connection: 230 V, 50 Hz

2.6 Accessory

- Flue accessories
- Mains remote control (optional).
- Bathroom remote control (optional).

2.7 Dimensions and minimum clearances

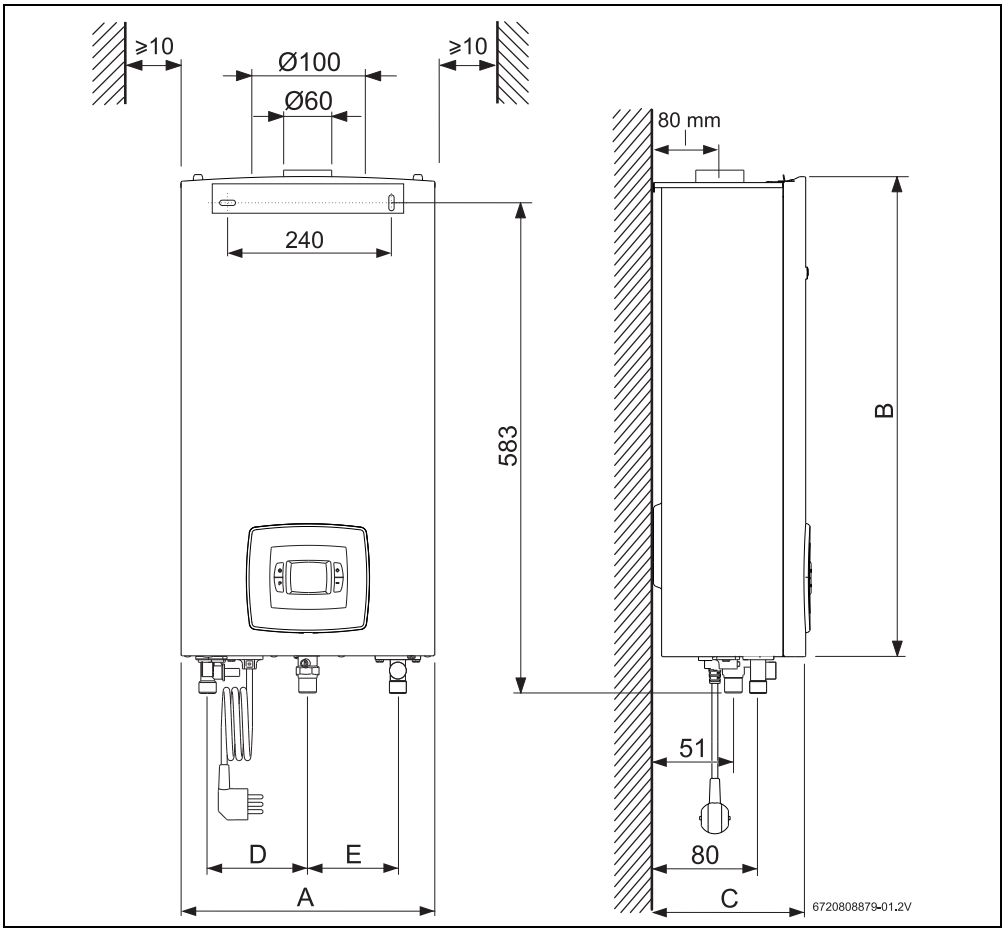


Fig. 1 Dimensions (in mm)

	A	B	C	D	E	Connections Water Cold	Connections Water Hot	Connections Gas Nat.	Connections Gas Universal LPG
GWH12	300	570	170	120	107	½ “	½ “	½ “	½ “
GWH16	364	570	175	142	137				
GWH20	364	570	175	142	137				

Table 4 Dimensions (in mm)

2.8 Appliance layout

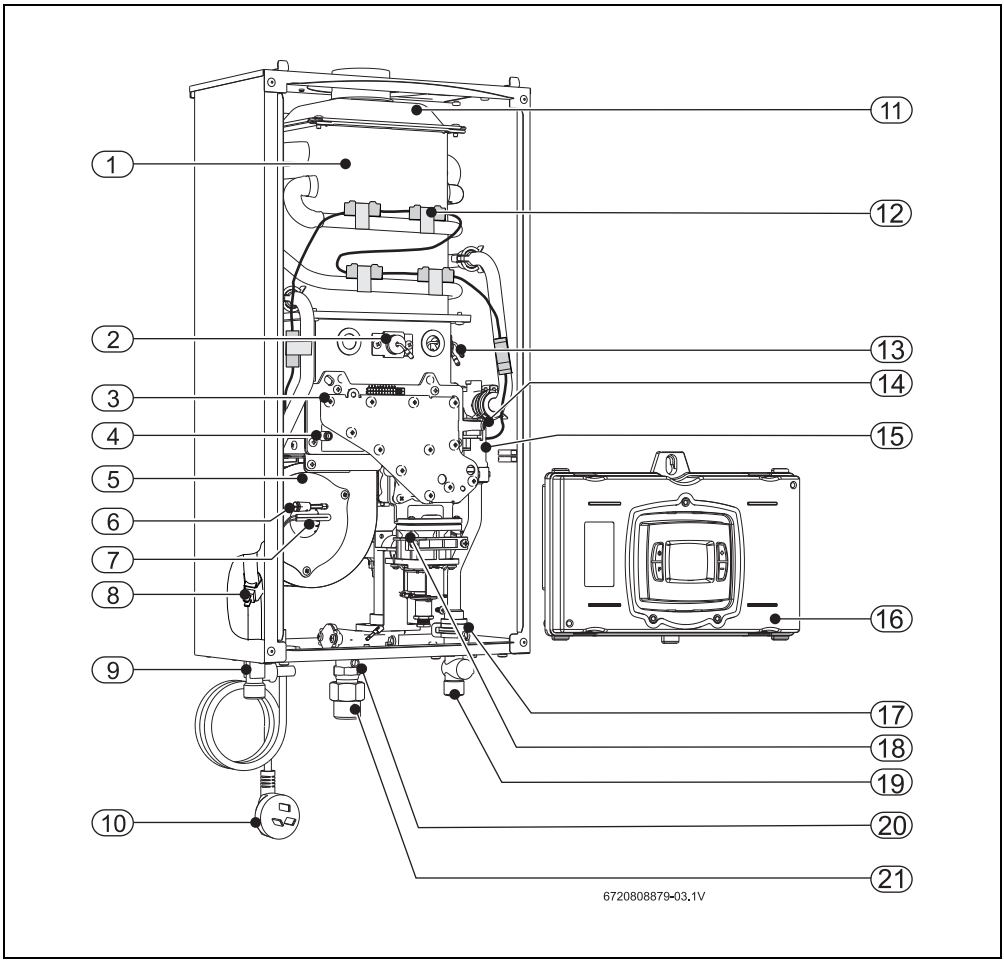


Fig. 2

[1] Heat exchanger
[2] Flame sensor rod
[3] Burner
[4] Air pressure test point
[5] Fan
[6] Air temperature sensor
[7] Thermal fuse
[8] Hot water temperature sensor
[9] Hot water outlet
[10] Power cord and plug
[11] Combustion gas collector
[12] Frost protection device
[13] Ignition electrode
[14] Burner pressure test point
[15] Water flow sensor and Water valve
[16] Electronic control unit
[17] Cold water temperature sensor
[18] Gas shut-off valve
[19] Cold water inlet
[20] Gas pressure test point
[21] Gas inlet

2.9 Electrical wiring diagram

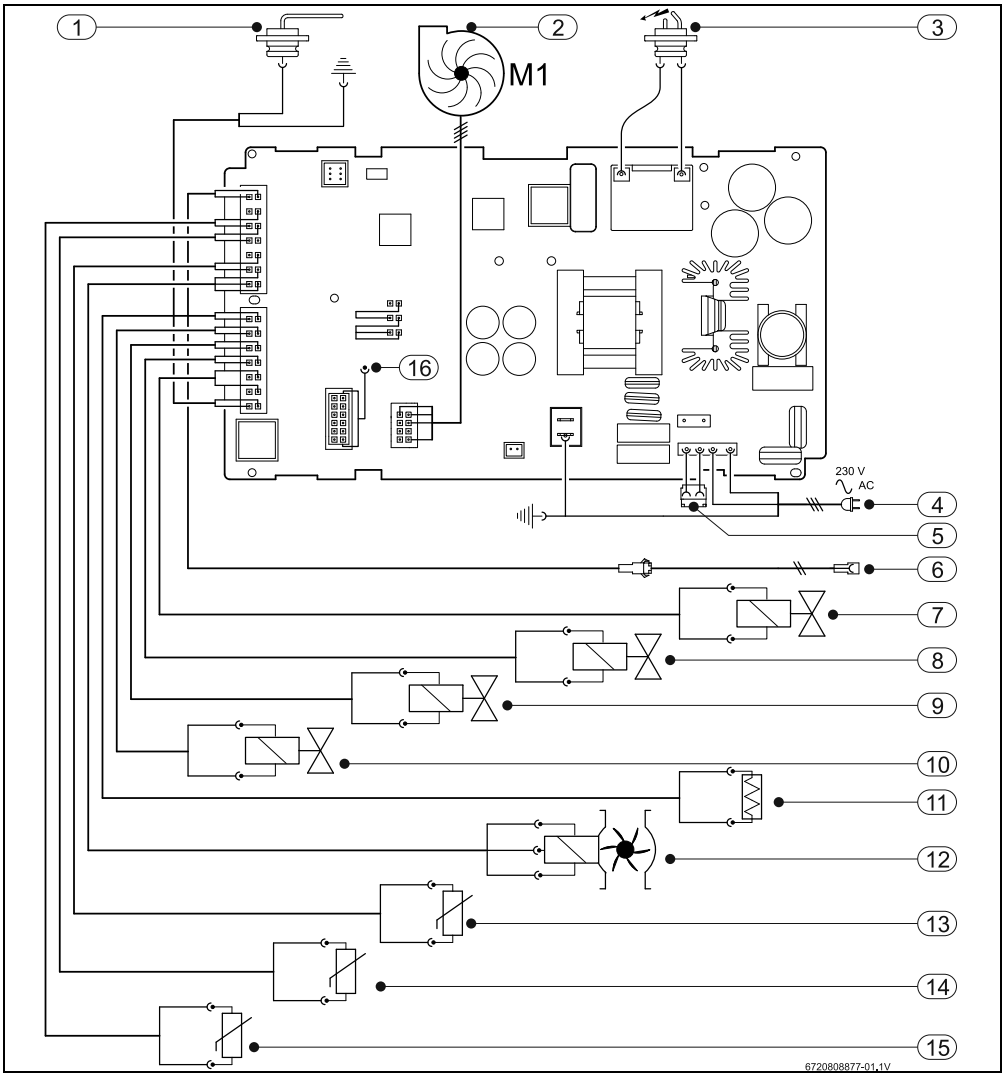


Fig. 3 Electrical diagram

[1] Flame sensor rod
[2] Fan
[3] Ignition electrode
[4] Power supply
[5] Connection for frost protection
[6] Connection for remote control
[7] Modulation electrovalve (gas)
[8] Segmentation electrovalve 1 (gas)
[9] Segmentation electrovalve 2 (gas)
[10] Safety electrovalve (gas)
[11] Thermal fuse
[12] Water flow sensor
[13] Air temperature sensor
[14] Hot water temperature sensor
[15] Cold water temperature sensor
[16] Water valve

2.10 Specification

Technical features	Units	GWH12	GWH16	GWH20
Performance				
Nominal Gas Consumption	MJ/h	90.0	120.2	149.0
Minimum gas consumption	MJ/h	11.9	18.0	18.0
Efficiency at 100% of nominal load	%	82.4	82.4	82.4
Gas supply data				
Gas supply pressure (flowing)				
Natural gas (when operating)	kPa	1.13	1.13	1.13
Universal LP gas (when operating)	kPa	2.75	2.75	2.75
Water supply data				
Maximum permissible pressure (static)	kPa	1000	1000	1000
Minimum operating pressure	kPa	100	100	100
Start-up flow	l/min	2.0	2.0	2.0
Maximum flow, corresponding to a temperature increase of 25 °C	l/min	12.0	16.0	20.0
Maximum inlet temperature	°C	50	50	50
Electrical circuit				
Power supply voltage	V_{AC}	230	230	230
Frequency	Hz	50	50	50
Maximum power consumption	W	228	228	228
Appliance enclosure rating			IPX4D	
General data				
Weight (unpacked)	kg	10	11	12
Height	mm	570	570	570
Width	mm	300	364	364
Depth	mm	170	175	175

Table 5

2.11 Flue accessories

Bosch 4000S coaxial flue must be used with this appliance. Failure to use Bosch 4000S flue could result in appliance failure.

DANGER: Install the flue gas pipe so that there are no leaks.

- Non compliance with this requirement may cause combustion gases to leak through the appliance installation compartment and may result in personal injury or death.

2.11.1 Selecting the Right Flue

- Map your flue configuration.
- Check that the configuration, including bends, is within the maximum flue limits.
- Calculate whether a condensate trap is required using Fig. 4.
- Choose the flue kit that best suits your application. The kit includes the appliance adapter and terminal.
- Add any flue lengths, bends, or condensate traps required for your configuration.
- Place your order using the Bosch part numbers shown below.

Below is a list of accessories. Only use original accessories.

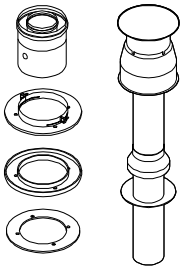
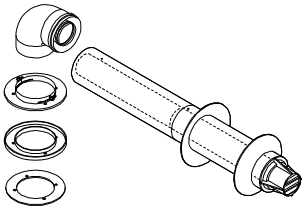
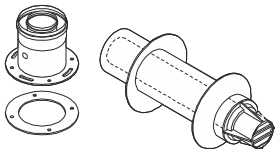
Type	Description	Reference	
AZ369	Vertical Flue Kit (Fixed 1.4m)	7 716 050 071	
AZ361	Telescopic Horizontal Flue Kit 500-725mm	7 716 050 063	
AZ362	Horizontal Flue Kit (Fixed 0.8m)	7 716 050 064	
---	Horizontal Flue Kit w/ Adaptor Ø 60/100	7 736 995 083	

Table 6 Flue gas accessories Ø60/100 mm

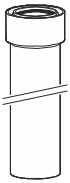
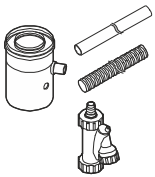
Type	Description	Reference	
---	Flue Elbow Ø 60/100 90°	7 736 995 079	
---	Flue Elbow Ø 60/100 45°	7 736 995 071	
---	Flue Terminal Extension DN60/100 350mm	7 736 995 059	
---	Flue Terminal Extension DN60/100 750 mm	7 736 995 063	
---	Flue Terminal Extension DN60/100 1500 mm	7 736 995 067	
---	Horizontal Condensate Trap Ø 60/100	7 736 995 087	
---	Vertical Flue Condensate Trap Ø 60/100	7 736 995 089	

Table 6 Flue gas accessories Ø60/100 mm

Add note on using 100m 2 pce clips.

Flue condensate collector

We advise using a condensate trap when the flue length and the lowest average inlet air temperature is likely to result in condensate forming during operation.
When the intersection of the flue length and lowest average inlet air temperature is in the white section of the graph, a condensate trap is required. (See Fig. 4)

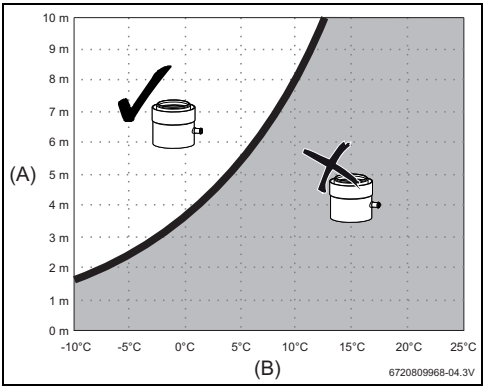


Fig. 4

[A] Flue pipe length
[B] Lowest average inlet air temperature

Bosch 4000S flue components

All 4000S coaxial flue components have an internal pipe diameter of 60 mm and an external pipe diameter of 100 mm.

2.11.2 Vertical installation

Maximum lengths (Lmax)

	Lmax Concentric pipes
GWH12 GWH16	12 m
GWH20	10 m

Table 7

2.11.3 Horizontal installation

Maximum lengths (Lmax)

	Lmax Concentric pipes
GWH12	8 m
GWH16	
GWH20	6 m

Table 8

In case of horizontal flue, ensure that the installations has a fall of 3°.

Equivalent lengths (Leq) Ø	Accessory	Leq	Min Length
Ø 60/100	45° elbow		
Ø 60/100	90° elbow	2 m	0.375 m

Table 9

3 Regulations

Any local by-laws and regulations pertaining to installation and use of gas-fired appliances must be observed.

This appliance must be installed in accordance with the manufacturers installation instructions, AS/NZS5601 and all Local Building & Gas fitting regulations

It is recommended that sanitary fixtures used for the purpose of personal hygiene have a temperature limiting device such as a tempering valve be fitted as per AS3498.

4 Installation (only by an authorised technicians)

DANGER: Explosion!

- ▶ Always shut off the gas valve before carrying out work on gas pipes.

The appliance installation, electrical connection, gas connection, connection of the flue system, and the initial start-up, are operations to be carried out by authorised technicians only.

NOTICE: Damage to the appliance!

- ▶ Do not place the device on the floor with the connections facing downwards as this may damage the appliance.

Installation in marine environments can lead to premature corrosion. Premature corrosion due to the installation environment would not be covered by warranty.

Not suitable for pool or spa pool applications.

WARNING: Scalding!

This appliance can deliver water exceeding 50 °C.

- ▶ Please refer to AS/NZS 3500.4 local requirements and installation instructions to determine if additional delivery temperature control is required.

4.1 Important information

- ▶ Before carrying out the installation, consult the gas supply company and the standard on gas appliances and ventilation of rooms.
- ▶ Install in accordance with AS/NZS5601, AS/NZS3500.4, NZS5261 and all local building, water and gas fitting regulations.

4.2 Choice of installation site

4.2.1 Regulations concerning the installation site

- The water heater may not be installed over a heat source.
- Comply with the minimum installation clearances indicated in fig. 5 and table 10.
- Ensure there is a socket for electrical connection near the water heater and it is easily accessible after the installation of the water heater.

Location of the appliance

The combined air intake and flue terminal must terminate outdoors in a well ventilated area away from vegetation and other obstructions.

In order to prevent corrosion, the combustion air must not contain any corrosive substances.

Substances classed as corrosion-promoting include halogenated hydrocarbons containing chlorine and fluorine compounds. They may be found in solvents, paints, adhesives, aerosol propellants and household cleaners, for example.

If these conditions cannot be guaranteed, a different site must be chosen for the appliance.

4.2.2 Overall flue length of the installation

The overall flue length may not exceed the values indicated in the tables 7 and 8, and must not be less than the values indicated in table 9 (Min length).

In determining the overall length of the installation, the equivalent length (Leq) of each accessory must be considered.

In horizontal installations, the first elbow positioned just at the outlet of the appliance must not be considered for the purposes of calculation.

Surface temperature

The maximum surface temperature of the appliance is below 85 °C. No special safety precautions are required with regard to flammable building materials and cabinetry.

- Ensure that local building codes and regulations are followed.

4.3 Minimum clearances

Consider the following limitations when determining the installation location:

- Maximum length of the power cord.
- Allowances for service work while considering the minimum distances indicated in fig. 6.

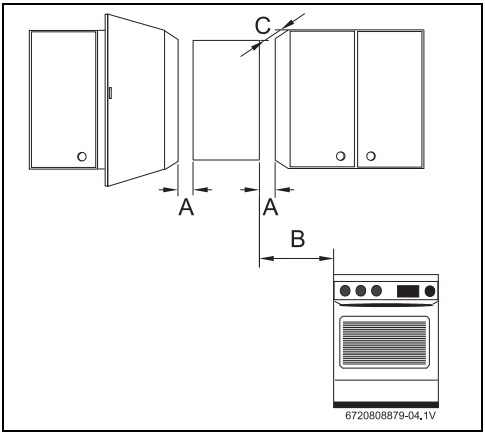


Fig. 5 Minimum distances

[A] Side≥ 1 cm
[B] ≥ 40 cm
[C] Front ≥ 2 cm

Minimum distances to exhaustion points

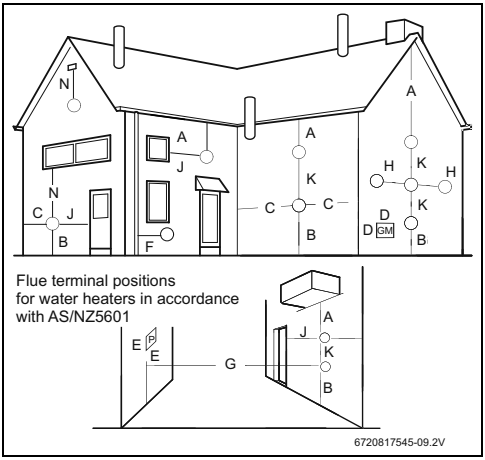


Fig. 6 Minimum flue clearances

	Item	Min.clearance (mm)
A	Below eaves, balconies and other projections	300
B	From the ground, above a balcony or other surface[1)]	300
C	From a return wall or external corner[1)]	300
D	From a gas meter (GM)	1000
E	From an electricity meter or fuse box (P)[2)]	500
F	From a drain pipe or soil pipe	75
G	Horizontally from any building structure [1)] or obstruction facing a terminal	500
H	From any other flue terminal, cowl, or combustion air intake[1)]	300
J	Horizontally from an openable window, door, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:	
	Appliances up to 150 MJ/h input[1)]	300
	Appliances over 150 MJ/h input up to 200 MJ/h input[1)]	300
K	From a mechanical air inlet, including a spa blower	1000
N	Vertically below an openable window, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:	
	Appliances over 50 MJ/h input and up to 150 MJ/h input	1000
	Appliances over 150 MJ/h input	1500

Table 10

1) unless appliance is certified for closer installation

2) Prohibited area below electricity meter or fuse box extends to ground level

4.4 Fitting hanging-plate

Before fitting the hanging-plate, ensure that the water, gas, and flue connections can be installed in this area.

No special wall protection is necessary. The wall has to be capable of supporting the weight of the appliance.

- ▶ Find a suitable location.
- ▶ Drill the required holes.
- ▶ Fix the hanging plate using appropriate fixings (not supplied).

4.5 Installing the appliance

NOTICE: The appliance may be damaged if dirt is allowed to enter via the gas or water connections.

- ▶ Purge the pipes to eliminate possible foreign bodies.

- ▶ Remove the appliance from the packaging.
- ▶ Check that all the items indicated are included (section 2.3).
- ▶ Remove the covers from the gas and water connections.
- ▶ Check that the gas type available matches that shown on the sticker on the front of appliance, and on its dataplate.

CAUTION:

- ▶ Never support or balance the water heater on the water and gas connections.

Packaging materials can be recycled.

4.6 Water connection

- ▶ Identify the cold and hot water pipe to avoid possible cross connection.
- ▶ Install a pressure reducing valve if required. It's preferable to install this valve close to the water meter.
- ▶ Complete the cold (fig. 2. [18]) and hot (fig. 2, [8]) water connections.

4.7 Gas connection

DANGER:
Non-compliance with applicable legal standards may cause, material damage, personal injury, or even death.

The gas connection to the water heater must comply with the AS/NZS5601.

- ▶ First ensure that the water heater corresponds to the gas type available.
- ▶ Fit a gas isolation valve on the gas supply line as close as possible to the appliance.
- ▶ After installation of the gas supply line, thorough purging and a tightness test must be carried out.

Size gas supply as per AS/NZS5601.

Incorrect gas pipe sizing will not be covered by the warranty.

4.8 Installation of flue accessories

The instructions in the respective manual must be followed for the installation of the accessories.

DANGER: Install the flue gas pipe so that there are no leaks!

- Non compliance with this requirement may cause combustion gases to leak through the appliance case and may result in personal injury or death.

CAUTION:

Ensure that the flue is installed to the requirements of AS/NZS5601.

- Once the connection of the flue is completed, ensure that the seal is air tight.

Flue configuration

Bosch 4000S supplied flue must be used with these appliances.

Cutting coaxial flue to length

When cutting flue to length please ensure that:

- All cuts are made on the male end of each flue component.
- The cuts are square (not on an angle) so that a complete seal can be achieved on installation.
- The burrs are removed from the cut lengths of flue. If burrs are not removed they may damage the internal seals in the flue.

Maximum distance to the facade

In case of horizontal flue termination:

- Ensure that the distance between the end of the inlet air pipe and the facade is no greater than 30 mm (Fig. 7).

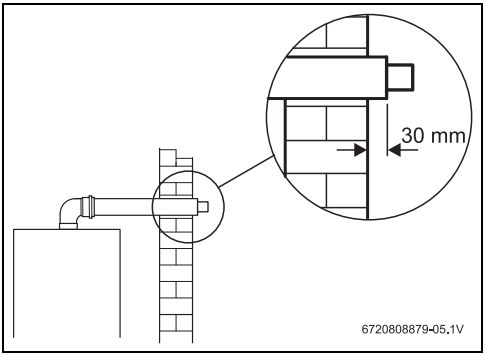


Fig. 7 Dimensions

4.9 Altitude of installation site

To ensure correct operation of the appliance, at altitudes above 500m, the altitude setting must be adjusted.

- Enter the Service function (→section 5.2).
  Display will show “P2”.
- Press + until the display shows “P4”.
- Press the button P .
  Display will show “E”.
- Press − until the display shows “AS”.
- Press the button P .
  Display will show “1”.
- Press the button + or − and select the altitude of the installation site according with table below.

Display	Altitude
1	< 500 m
2	500 m - 1 000 m
3	1 000 m - 1 500 m
4	1 500 m - 2 000 m
5	2 000 m - 2 500 m
6	> 2500 m

Table 11

4.10 Electrical connection (only by authorised technicians)

DANGER: Due to electric shock!
- ▶ Before carrying out work on electrical components, disconnect the power supply (230 V AC) (by isolating switch and removing the power plug from the electrical socket) secure against unintentional reconnection.

All the regulating, control and safety devices in the appliance are factory supplied already connected and ready to operate.

4.10.1 Connecting the power cable

The electrical connection must be done in accordance with AS/NZS3000.

If the power cable is damaged, it must be replaced with a Bosch supplied spare part.

- ▶ Connect the power cable to a power socket.

4.11 Commissioning of the appliance

- ▶ Open the gas and water isolation valves and check the tightness of all the connections.

When a hot water tap is turned on, the movement of water through the flow sensor (fig. 2, [15]) sends a signal to the control box. This signal triggers the following actions:
- The fan to start working.
- The ignition sequence and the gas valve (fig. 2, [18]) delivers gas to the burner.
- The burner ignites. Initially only a part of the burner is lit.
- The flame sensor rod (fig. 2, [2]) detects the flame.
- The temperature of the water is checked automatically by the sensors. The appliance adjusts the gas flow and water flow to achieve the temperature selected.
- Depending on the output required, the rest of the burner will ignite.

Safety shut-down when the safety time is exceeded

If the appliance does not maintain a flame within the safety interval stipulated, a safety shut-off is carried out.

Air in the gas supply line may cause a delay or difficulty when igniting.
If the ignition attempt is unsuccessful after a period of time, the safety devices block the operation of the appliance, and air will have to be purged from the circuit.

Safety shut-down due to an excessively high water temperature

The electronic control unit detects the temperature of the water through the thermistor placed at the hot water outlet. If the appliance detects an excessive temperature, a safety shutoff will occur.

Safety shut-off due to incorrect flue conditions

If the appliance detects an incorrect flue condition, a safety shut-off will occur.

Re-start after a safety shut-off

To put the appliance back into operation after a safety shut-off:
- ▶ Close all hot water taps.
- ▶ Reset the appliance by switching it off at the socket and unplugging the cord.

4.12 Changing the setpoint limit temperature (only for 55 °C preset appliances)

The maximum temperature is preset to 55 °C. If required it can be increased to 60 °C or 70 °C.
- ▶ Enter the Service function (section 5.2).
  Display will show "P2".
- ▶ Press + until the display shows "P4".
- ▶ Press the button P .
  Display will show "E".
- ▶ Press + until the display shows "SL".
- ▶ Press the button P .
  Display will show "55"
- ▶ Press + until the display shows "60" or “70”.
- ▶ Press the button P for 3 seconds.
  The value flashes to confirm the new setpoint limit.

4.13 Delivery temperature calibration

If the delivery temperature at the closest hot water outlet to the appliance does not match the setpoint it can be adjusted as follows:
- ▶ Enter the Service function (section 5.2).
  Display will show "P2".
- ▶ Press + until the display shows "P4".
- ▶ Press the button P .
  Display will show "E".
- ▶ Press + until the display shows "SC".
- ▶ Press the button P .
  Display will show "0"
- ▶ Press + or − to adjust the delivery temperature as required.
  The setpoint can be adjusted between -5 °C and +5 °C.

▶ Press the button **P** for 3 seconds.
The value flashes to confirm the new setpoint limit.

Calibration example

Setpoint	Water temp. at tap	Calibration
50 °C	48 °C	+2 °C

Table 12

5 Regulating the gas (only for authorised technicians)

5.1 Factory settings

The data plate on the each appliance will show the factory setting of that appliance.

Natural gas

The appliance must not be operated if the dynamic connection pressure is less than 1.13 kPa or greater than 2.75 kPa.

Universal LPG

The appliance must not be operated if the dynamic connection pressure is less than 2.5 kPa or greater than 4.5 kPa.

DANGER:
▶ The operations described below must only be carried out by an authorised service technician.

5.2 Service function

Accessing the service function

▶ Press and hold down at the same time **P** , **+** ,and **−** for 3 seconds.

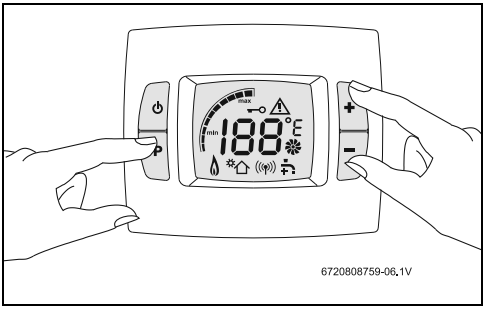


Fig. 8 Service function

The display will show "P2".
The service function is now activated.

5.3 Adjusting the appliance

5.3.1 Access to the test points

▶ Remove the front of the appliance.

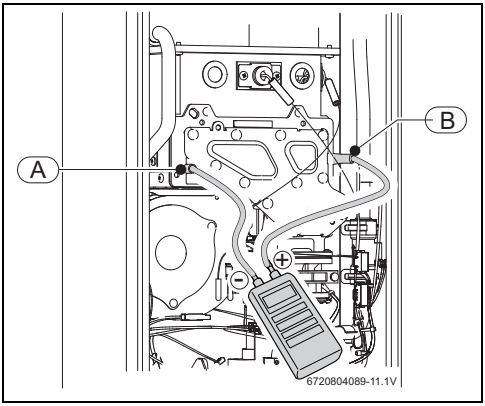


Fig. 9

[A] Air pressure test point
[B] Gas pressure test point

5.3.2 Adjusting the maximum flow (Parameter P1)

▶ Turn on the appliance using the ON/OFF button.
▶ Loosen the test point screw of the gas pressure test point.[B]
▶ Connect the pressure gauge connection "+" to the gas pressure test point [B].

- ▶ Loosen the test point screw of the air pressure test point.[A]
- ▶ Connect the negative "-" side of the pressure gauge to the air pressure test point.[A]
- ▶ Press − until the display shows "P1".
- ▶ Press the button P .
  Display will show "E".
- ▶ Press − until the display shows "L1".
- ▶ Press the button P .
  The appliance is now ready for adjustment of the maximum gas flow.
- ▶ Open a hot water tap.
- ▶ Press + or − until the pressure gauge shows the value indicated in tab. 13.

If it is not possible to reach the differential pressure value:

- ▶ Adjust the pressure in the burner (section 5.3.4) and repeat the procedure for adjusting maximum flow.

- ▶ Press P for 3 seconds.
  The displayed value flashes as a sign of confirmation.
- ▶ Press P .
  Display will show "L1".
- ▶ Close the hot water tap.
- ▶ Press + until the display shows "E".
- ▶ Press the button P .
  Display will show "P1".
  The adjustment of the maximum gas flow is complete.

5.3.3 Adjusting the minimum flow (Parameter P2)

- ▶ Press + until the display shows "P2".
- ▶ Press the button P .
  Display will show "E".
- ▶ Press − until the display shows "L2".
- ▶ Press the button P .
- ▶ Open a hot water tap.
  The appliance is now ready for adjustment of the minimum gas flow.
- ▶ Press + or − until the pressure gauge shows the value indicated in tab. 13.

If it is not possible to reach the differential pressure value:

- ▶ Adjust the pressure in the burner (section 5.3.4) and repeat the procedure for adjusting minimum flow.

- ▶ Press P for 3 seconds.
  The displayed value flashes as a sign of confirmation.
- ▶ Press P .
  Display will show "L2".
- ▶ Close the hot water tap.
- ▶ Press + until the display shows "E".
- ▶ Press the button P .
  Display will show "P2".
- ▶ Simultaneously press the P , + and − for 3 seconds.
  Display will show the temperature selected.
- ▶ Disconnect the pressure gauge from the test points [A] and [B].
- ▶ Tighten the shutter screws of the test points [A] and [B].
  The adjustment of the minimum gas flow is complete.

		Natural gas H	Universal LP gas
Ø injector	GWH12	1.7	1.3
	GWH16	2.0 + 1.7	1.5 + 1.3
	GWH20		
Dynamic connection pressure (kPa)	GWH12 GWH16 GWH20	1.13	2.75
Burner pressure (kPa) - P0	GWH12 GWH16 GWH20	0.12	
Differential pressure of the burner MAX (kPa) - P1	GWH12	0.46 - 0.50	0.63 - 0.67
	GWH16	0.37 - 0.41	0.63 - 0.67
	GWH20	0.33 - 0.37	0.44 - 0.49
Differential pressure of the burner MIN (kPa) - P2	GWH12	0.05 - 0.08	0.05 - 0.08
	GWH16	0.05 - 0.07	0.05 - 0.07
	GWH20	0.04 - 0.08	0.05 - 0.08

Table 13 Pressure of the burner

5.3.4 Adjusting pressure at the burner (Parameter P0)

Burner pressure adjustment is only required if “L1” and “L2” cannot be achieved according to table 13.

- ▶ Enter the service mode by pressing and holding down the P , + , and − buttons simultaneously for 3 seconds (section 5.2).
  Display will show "P2".
- ▶ Press − until the display shows "P0".
- ▶ Press the button P .
- ▶ Open a hot water tap.
  With the pressure gauge connected, let the value measured stabilise.
- ▶ Press + or − until the pressure gauge shows the value indicated in tab. 13.
- ▶ Press P for 3 seconds.
  The displayed value flashes as a sign of confirmation.
- ▶ Press P to exit this function.
  Display will show "P0".
- ▶ Close the hot water tap.
  The adjustment of the burner pressure is complete.

5.4 Factory default settings

- ▶ Enter the service mode by pressing and holding down the P , + , and − buttons simultaneously for 3 seconds (section 5.2).
  Display will show "P2".
- ▶ Press + until the display shows "P4".
- ▶ Press the button P .
  Display will show "E".
- ▶ Press − until the display shows "rP".
- ▶ Press the button P .
  Display will show "P1"
- ▶ Press P for 3 seconds.
  The displayed value flashes as a sign of confirmation.
- ▶ Press P .
  Display will show "P1"
- ▶ Press + until the display shows "P2".
- ▶ Press the button P for 3 seconds.
  The displayed value flashes as a sign of confirmation.
- ▶ Press P .
  Factory default settings are now restored.

6 Maintenance (only by authorised service technician)

Bosch recommend that to maintain optimum performance from this appliance, servicing should be carried out by suitably licensed persons at intervals not greater than two (2) years.

Maintenance must only be performed by an authorised service technician.

DANGER: Due to electric shock!
- ▶ Always isolate the electrical power to the appliance (by turning off the power point and removing the power plug from the electrical socket) before carrying out any work on electrical parts.

- ▶ Your appliance should only be attended to by a Bosch service technician. To locate your nearest service provider, call: AU 1300 30 70 37, NZ 080054 33 52.
- ▶ Only use Bosch supplied replacement parts.

6.1 To remove the front panel

- ▶ Remove the bezel around the display from the appliance by gently levering it off with a screwdriver. (fig. 10, [1]).
- ▶ Loosen the 3 fixing screws from around the display and 2 front panel fixing screws from the underside of the appliance (fig. 10, [2]).

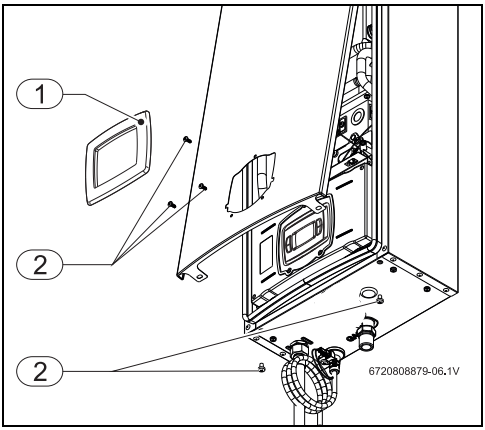


Fig. 10 Remove the front

- ▶ Remove the front by lifting forwards and upwards.

6.2 Periodic maintenance

Functional check

- ▶ Check the correct operation of all the safety, regulation and verification elements.

Heat exchanger

- ▶ If the heat exchanger is showing signed of sooting:
  - – Remove the heat exchanger.
  - – Clean by applying a jet of water in the lengthwise direction of the fins.

NOTICE: Damage to the appliance.
Damage to the heat exchanger.

- ▶ Do not apply a jet that is too strong or aimed in a direction other than that indicated.

- ▶ If the soot is not removed use a stiff brush to carefully clean the fins.
- ▶ Regions with average/high water hardness: descale the inside of the heat exchanger and the connection pipes by using a diluted solution of hydrochloric acid or white vinegar.
- ▶ When reinstalling the heat exchanger replace the o-rings and seals.

Burner

- ▶ Inspect the burner and clean it if necessary.

If cleaning is required:

- ▶ Dismantle the burner.
- ▶ Use a brush to clean the surface of the burner elements.
- ▶ Use a jet of air to blow the burner elements.

Water filter

- ▶ Close the cold water inlet isolation valve.
- ▶ Loosen the cold water pipe.
- ▶ Carefully remove the water filter.
- ▶ Replace with a new water filter.

6.3 Replacement of the fuse (electronic control unit)

- ▶ Loosen the fixing screw of the electronic control unit
- ▶ Release all the connections to the electronic control unit
- ▶ Open the electronic control unit
- ▶ Replace the fuse located in the corner of the circuit board.

6.4 Start-up after completion of maintenance

- ▶ Re-tighten all of the connections.
- ▶ Check the burner pressure.
- ▶ Check air tightness of the flue circuit with the front cover fitted.
- ▶ Check that there are no gas or water leaks.

6.5 Safe operation/ risk for prolonged use

Prolonged use power wear some elements may cause gas leaks and transhipment of products of combustion.

Preventively should:

- ▶ Make a visual inspection of the maintenance intervals to the following elements:
  - – Electrical contact of security sensor
  - – Fan
  - – Gas valve
  - – Combustion chamber

In case of corrosion visible:

- ▶ Call the intervention of a qualified contractor.

7 Troubleshooting

Fitting, maintenance and repair must only be carried out by authorised technicians. The following table describes the possible solutions.

Display	Description	Possible solution
A0	Cold and hot water temperature sensor damaged.	▶ Check temperature sensor and associated connections. ▶ If the problem persists, call an authorised service technician.
A1	Temperature inside the water heater housing is high (heat exchanger calcified or sooted).	▶ The appliance automatically regulates its performance to avoid overheating. ▶ If the problem persists, call an authorised service technician.
A4	Faulty air temperature sensor.	▶ Call an authorised service technician.
A7	Faulty hot water outlet temperature sensor.	▶ Check temperature sensor and associated connections. ▶ If the problem persists, call an authorised service technician.
A9	Hot water outlet temperature sensor is not fitted properly. Low incoming gas pressure.	▶ Check temperature sensor and associated connections. ▶ If the problem persists, call an authorised service technician.
C7	Faulty fan.	▶ Check if the fan is properly connected to ECU. ▶ If the problem persists, call an authorised service technician.
CA	Water flow above maximum specified value.	▶ Check incoming water pressure. ▶ Install a pressure limiting valve if necessary.
CF C1	Blocked flue gas outlet. Air flow insufficient for start-up.	▶ Remove dirt or any other impediment from the flue terminal and/or pipe. ▶ Press the reset button. If the problem persists, call an authorised service technician.
E0	Failure of control module	▶ Unplug the electrical connection for 10 seconds. ▶ Reconnect and restart the appliance. ▶ If the problem persists, call an authorised service technician.
E1	Hot water temperature sensor detects overheating.	▶ Let the appliance cool and try again. If the problem persists, call an authorised service technician.
E2	Faulty inlet water temperature sensor.	▶ Call an authorised service technician.

Table 14

Display	Description	Possible solution
E4	Air temperature sensor detects overheating (leaking combustion products inside the combustion chamber).	▶ Switch off at the power point and remove the plug from the electrical socket. ▶ Do not try to Restart the appliance. ▶ Call a service agent immediately.
E9	Activated thermal fuse.	▶ Call an authorised service technician.
EA	Flame not detected.	▶ Check that the gas to the appliance has not been turned off. ▶ Unplug the electrical connection for 10 seconds. ▶ Reconnect and restart the appliance. ▶ If the problem persists, call an authorised service technician.
EC	Failure ionization during operation	▶ Check type of gas. ▶ Check gas pressure. ▶ Check the ignition system. ▶ Check the output of combustion gases and remove dirt or other impediment to good extraction.
EE	Modulating solenoid valve disconnected.	▶ Check solenoid connections. ▶ If the problem persists, call an authorised service technician.
EF	Wrong gas connected.	▶ Call an authorised service technician.
F7	A flame is detected although the appliance is switched off.	▶ Unplug the electrical connection for 10 seconds. ▶ Reconnect and restart the appliance. ▶ If the problem persists, call an authorised service technician.
F9	Safety Solenoid valve disconnected.	▶ Call an authorised service technician.
FA	Fault in the gas control valve.	▶ Call an authorised service technician.
FC	Buttons stuck in a “pressed” position for more than 30 seconds.	▶ Release the button. ▶ If the problem persists, call an authorised service technician.
With indication, but without existence of solar thermal system.	The temperature selected is lower than the minimum power that the appliance supplies. High incoming water temperatures, or low flow rate can create this occurrence.	▶ Increase the hot water flow. **-or-** ▶ Select a higher temperature. ▶ If the problem persists: ▶ Call an authorised service technician.
With indication and water temperature low.		
	Appliance is making a resonance noise (vibration).	▶ Call an authorised service technician.

Table 14

Note: breakdowns diagnosed by the water heater through an indication in the LCD panel result in the blocking of the appliance for safety reasons. Once the problem is solved, you have to press the on/off button for > 3 seconds to restart the appliance.
To locate your nearest service agent, call: AU 1300 30 70 37, NZ 0800 54 33 52.

8 Environmental considerations

Environmental protection is a fundamental corporate strategy of the Bosch Group.
The quality of our products, their efficiency and environmental safety are all of equal importance to us and all environmental protection legislation and regulations are strictly observed.
We use the best possible technology and materials for protecting the environment taking into account economic considerations.

Packaging

We participate in the recycling programmes of the countries in which our products are sold to ensure optimum recycling.
All of our packaging materials are environmentally friendly and can be recycled.

Used appliances

Used appliances contain valuable materials that should be recycled.
The various assemblies can be easily dismantled and synthetic materials are marked accordingly. Assemblies can therefore be sorted by composition and passed on for recycling or disposal.

9 Water quality

All Bosch water heating appliances are constructed from high quality materials and components and all are certified for compliance with relevant parts of Australian and New Zealand gas, electrical and water standards.

Whilst Bosch water heaters are warranted against defects, the warranty is conditional upon correct installation and use, in accordance with detailed instructions provided with the heater. In the case of the water supplied to the heater, it is important that the water quality be of an acceptable standard.

The water quality limits/parameters listed in water quality table are considered acceptable and generally, Australian and New Zealand suburban water supplies fall within these limits/ parameters.

In areas of Australia and New Zealand where water may be supplied, either fully or partly, from bores, artesian wells or similar, one or more of the important limits may well be exceeded and the heater could, therefore, be at risk of failure.

Where uncertainty exists concerning water quality, intending appliance users should seek a water analysis from the water supplying authority and in cases where it is established that the water supply does not meet the quality requirements of the water quality table, the Bosch warranty would not apply.

Water quality table

Maximum levels

pH	Saturation Index(LSI) (langelier)	Total Hardness	Chlorides	Sodium	Iron
6.5-9.0	+0.4 to -1.0 at 65 °C	200 mg/l	250 mg/l	180 mg/l	1 mg/l

Table 15

10 Warranty details

Robert Bosch (Australia) Pty Ltd
(Bosch) Manufacturer's Warranty
(Applicable for purchases from 1 January 2012)

All Bosch hot water units are carefully checked, tested and subject to stringent quality controls.

1. Warranty

Bosch offers, at its option, to repair or exchange this Bosch hot water unit or the relevant part listed in clause 2 below at no charge, if it becomes faulty or defective in manufacture or materials during the warranty period also stated in clause 2. This warranty is offered in addition to any other rights or remedies held by a consumer at law.

2. Warranty periods & coverage

(a) Domestic applications: 3 years (parts and labour)
(b) Heat exchangers used in domestic applications: 12 years (parts only)
(c) Commercial applications: 12 months (parts and labour)
(d) Heat exchangers used in commercial applications: 12 months (part and labour)

All warranty periods commence on the date of purchase of the hot water unit by the end-user. However, where the date of purchase by the end-user is more than 24 months after the date of manufacture, all warranty periods will automatically commence 24 months after the date of manufacture.

3. Warranty exclusions

This warranty is VOID if any damage to or failure of the hot water unit is caused wholly or partly by:

(a) faulty installation
(b) neglect, misuse, accidental or non-accidental damage, failure to follow instructions
(c) use of the unit for purposes other than which it was designed or approved
(d) unauthorised repairs or alterations to the unit without Bosch's consent
(e) use of unauthorised parts and accessories without Bosch's consent
(f) use of non-potable water or bore water in the hot water unit (see product instructions for further details)
(g) continued use after a fault becomes known or apparent.

This warranty DOES NOT include:

(a) costs of consumables or accessories
(b) wear and tear, normal or scheduled maintenance
(c) to the extent permitted by law, any damage to property, personal injury, direct or indirect loss, consequential losses or other expenses
(d) changes in the condition or operational qualities of the hot water unit due to incorrect storage or mounting or due to climatic, environmental or other influences.

NOTE: Any service call costs incurred by the owner or user of the hot water unit for any matter not covered by the terms of this warranty will not be reimbursed by Bosch, even if those costs are incurred during the warranty period. If the hot water unit is located outside the usual operating area of a Bosch service agent, the agent's travel, freight or similar costs are not covered by this warranty and must be paid by the owner or user of the hot water unit.

4. Warranty conditions

(a) Proof of purchase may be required.
(b) The hot water unit must be installed by an authorised and licensed installer.
(c) Proof may be required of the date of installation and correct commissioning of the hot water unit has been carried out to Bosch's satisfaction (such as a certificate of compliance).
(d) Repair or replacement of the hot water unit or any parts under this warranty does not lengthen or renew the warranty period.
(e) This warranty is not transferable and is only offered to the original purchaser of the hot water unit.
(f) No employee or agent of Bosch is authorised to amend the terms of this warranty.
(g) This warranty only applies to Bosch hot water units purchased from an authorised reseller and installed in Australia or New Zealand.
(g) To the extent that any condition or warranty implied by law is excludable, such condition or warranty is excluded.

5. How to lodge a warranty claim and warranty procedure

(a) Warranty claims must be made with the Bosch Customer Contact Centre (Australia: ph 1300 307 037; New Zealand: ph 0800 543 352). Please be ready to provide the model and serial numbers, date of installation, purchase details and a full description of the problem. Warranty claims must be made before the end of the warranty period.
(b) All warranty service calls must conducted by an authorised Bosch service agent.
(c) Invoices for attendance and repair of a hot water unit by third parties not authorised by Bosch will not be accepted for payment by Bosch.

6. Privacy Act 1988 (Cth)

A customer's personal information collected during warranty claims may be used for the provision of customer support, for the provision of information about products and services and for other marketing activities undertaken by Bosch and its Bosch Service Agents who are authorised to carry out warranty repairs on behalf of Bosch (Purpose). Bosch is committed to protecting the privacy of its customers' personal information. It will act in compliance with the National Privacy Principles and

Privacy Act 1988 (Cth). Bosch will not forward customers' personal information to third parties other than for the Purpose. A customer can object at any time to the use of their personal information for the Purpose. Bosch will cease to use a customer's personal information accordingly if an objection is made.

7. Bosch contact details

If you have any questions about this warranty or to lodge a warranty claim, please contact:

Robert Bosch (Australia) Pty Ltd
1555 Centre Road, Clayton, Victoria 3168
Tel: Australia: 1300 307 037
Tel: New Zealand: 0800 543 352

IMPORTANT NOTE FOR AUSTRALIAN CONSUMERS

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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Notes

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