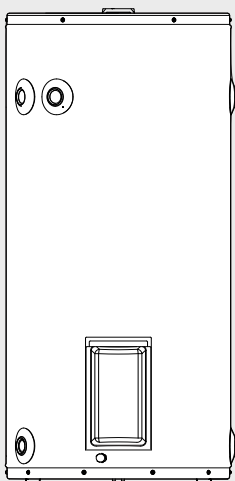




# BOSCH

Installation and operating instructions

## Electric Storage Water Heater **Tronic 1000T**



6720821421-00.1V


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## 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 can be 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

#### Installation

- ▶ The water heater must only be installed by an authorised person.



This water heater must be installed in accordance with:

- Manufacturers Installation Instructions
- AS/NZS 3500.4 “National Plumbing & Drainage Code”
- AS/NZS 3000 “Wiring Rules”
- Municipal Building Codes
- Any other State or Federal Statutory Regulations

#### Instructing the customer

- ▶ Do not operate this water heater until all operating instructions have been read and understood by the homeowner.
- ▶ Do not activate this water heater unless the cylinder is filled with water.
- ▶ Do not block or seal the relief safety valve or drain pipe.
- ▶ The water heater warranty can become void if relief valves or other safety devices are tampered with, or if the installation is not in accordance with these instructions.
- ▶ Do not place any articles, chemicals or flammable materials on or near the water heater.
- ▶ During the installation isolate the appliance from the power supply.

- ▶ Removal of access covers will expose 240V wiring. Do not remove the terminal box cover unless the power supply has been effectively disconnected by an authorised person.
- ▶ Do not operate this water heater with terminal box cover removed or loose.
- ▶ This water heater is not intended to be operated or adjusted by young children or infirm persons. Young children must be supervised to ensure they do not interfere with the water heater.
- ▶ This water heater is intended to be installed as a fixed appliance and must be installed on a hard, level surface. If installation is to be in a wet area or a concrete floor, ensure the water heater is mounted on a suitable and substantial raised base.
- ▶ If the electrical conduit to the water heater is damaged, it must be replaced by an authorised person in order to avoid a hazard.
- ▶ For service of this water heater phone the Bosch Hot Water Service Department on AU 1300 30 70 37, or NZ 0800 543 352.

### **Notice to Victorian Customers from the Victorian Plumbing Industry Commission**

This water heater must be installed by a licensed person as required by the Victorian Building Act 1993. Only a

licensed professional will give you a Compliance Certificate, showing that the work complies with all the relevant standards. Only a licensed person will have insurance protecting their workmanship.

Make sure you use a licensed person to install this water heater and ask for your Compliance Certificate

### **Water temperature warnings**

- ▶ To meet regulatory requirements the temperature of stored water heater must not be less than 60°C.
- ▶ The thermostat on your water heater is factory pre-set to 65°C which is suitable for the vast majority of domestic applications.
- ▶ The thermostat setting can be adjusted between 50°C and 70°C. Adjustment must be made by an electrician or other suitably qualified trades person.

**WARNING:**

Hot water can cause scalds. Children, disabled and the elderly are at greatest risk. Scalds from hot water can result in severe injuries to young children. Feel water temperature before bathing or showering. Scalds can occur when children are exposed directly to hot water when they are placed into a bath that is too hot.

**WARNING:**

Additional temperature control or limiting devices such as tempering valves may be required to be fitted to this water heater to meet regulatory requirements.

## Hydrogen warnings

**WARNING:**

If the hot water heater is not used for two weeks or more, a quantity of hydrogen gas, which is highly flammable, may accumulate in the water heater. To dissipate this safely, it is recommended that a non-electrically operated hot tap be turned on for several minutes at a sink, or bath, but not at a dishwasher or other appliance.

During this procedure there must be no smoking, open flame, or any electrical appliance operating nearby. If hydrogen gas is discharged through the tap, it will probably make a sound like air escaping.

## General safety warnings

This water heater is fitted with a combination pressure and temperature PTR relief valve (approved to AS1357), a thermostat, and a resettable over-temperature cut-out.

- It is imperative that all safety devices are not tampered with as this will void warranty.

**WARNING:**

Do not operate this water heater unless all safety devices are fitted and functioning normally.

**CAUTION:**

Failure to operate the relief valve easing gear at least once every six months may result in product fault. It is important that the easing gear on the valve be raised and lowered very gently. Failure to do so may result in the water heater cylinder failing, or faulting under certain circumstances.

**WARNING:**

Relief valves should be checked and replaced at regular intervals not exceeding 5 years, and more frequently in areas subject to poor water quality. Checking should include operation of the relief valve to remove any lime deposits.

**For your safety:****WARNING:**

It is normal that small quantities of water (up to 15 litres of water in a 24 hour period) are released by the valve during the heating cycle. Continuous leakage of water from the valve may indicate a problem with the water heater. If the valve does not discharge water when the easing gear is operated, or does not seal again, a service call should be made without delay. The PTR valve is not serviceable.

**CAUTION:**

The activation of the thermal cut-out indicates a possibly dangerous situation.

- ▶ Do not reset the thermal cut-out until the water heater has been serviced by a qualified person.

## 2 Standard delivery

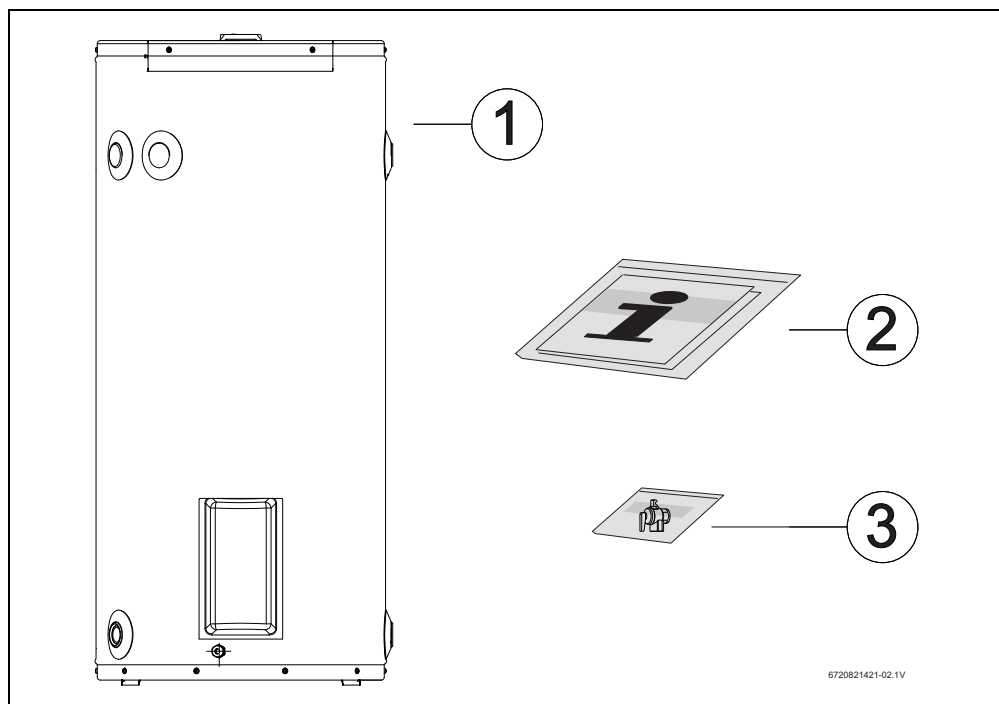


Fig. 1

- [1] Electric Storage Water Heater
- [2] Installation Instructions
- [3] PTR valve

**3 Appliance details**

**3.1 Overview**

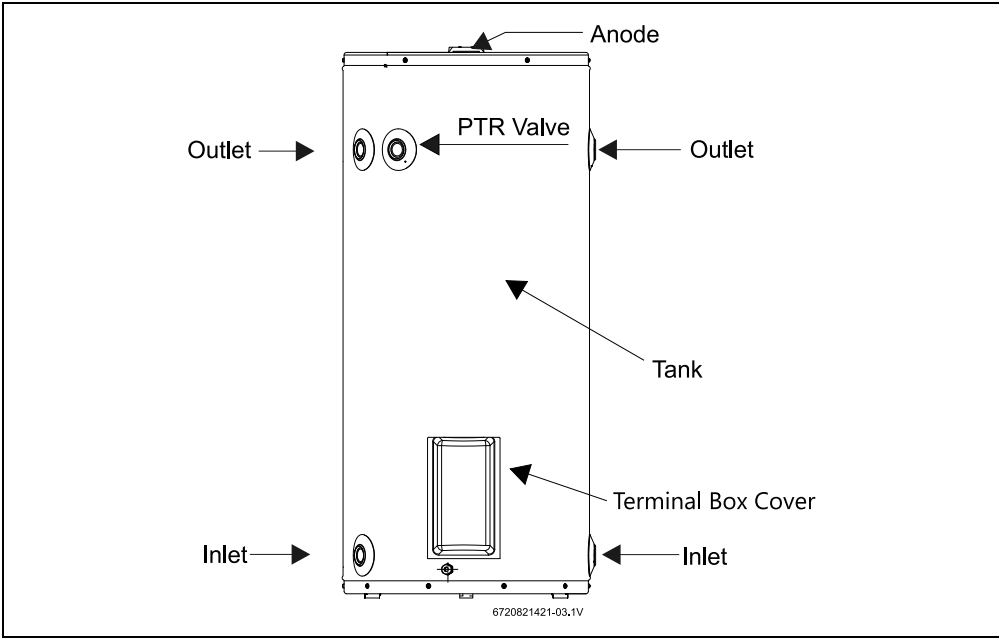


Fig. 2 Appliance overview - Australian



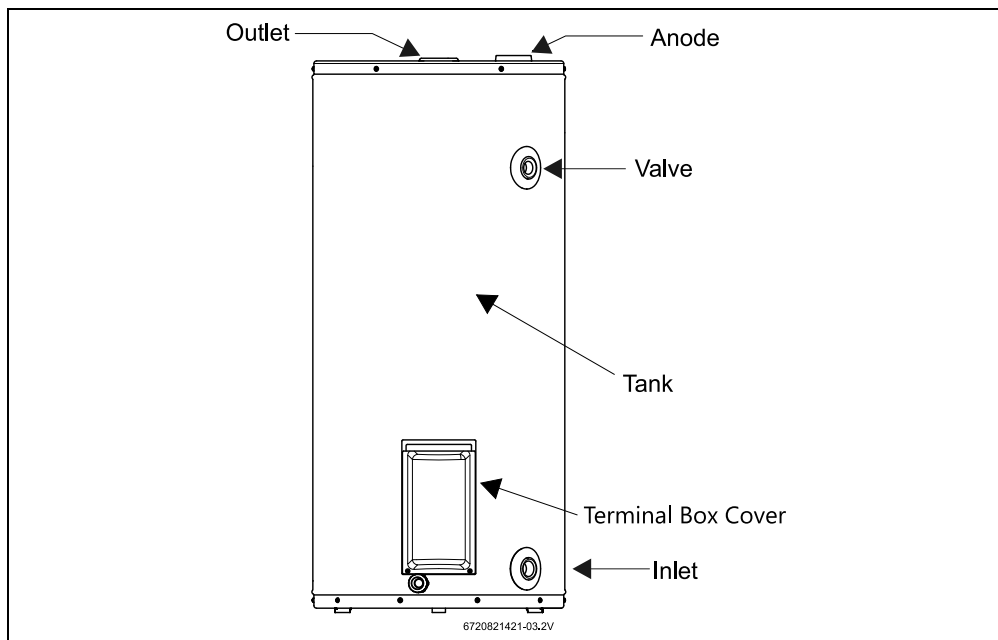


Fig. 3 Appliance overview - New Zealand

### 3.2 Features and general information

Your storage electric water heater consists of a vitreous enamel lined steel cylinder, an internally adjustable thermostat, a pre-painted zinc-coated steel shell or exterior, an immersion type element, a sacrificial anode, and a PTR safety valve.

Water is stored within the steel inner tank and is heated to the thermostat set temperature by the element. The PTR valve ensures water pressure and temperature does not exceed safe limits during the heating cycle. As the water is drawn off in normal every-day use, the thermostat will monitor the tank temperature and activate the element to ensure hot water is available.



The thermostat is factory set at 65°C and is adjustable from 50°C to 70°C by an authorised person.

The tank is a mains pressure tank. It is designed to supply water at mains pressure (above 350kPa).

If the maximum cold water pressure exceeds 680kPa, a pressure limiting valve must be fitted. The sacrificial anode in your water heater (located at the top of the water heater) will slowly erode to protect the cylinder.



Bosch recommends that the anode be inspected and replaced every five years or more frequently in poor water quality areas.

Water heater life expectancy is dependent on a number of factors including water heater usage patterns, water quality and water pressure.



**NOTICE:** Please refer to the Water Quality Statement on Page 21, and the Warranty Details on page 22.

#### Water Quality

This water heater has been designed and constructed to be suitable for connection to most water supplies in Australia and New Zealand. However, in areas where Total Dissolved Solids (TDS) exceeds 2500mg/L, detrimental effects on water heater performance and longevity will result.

#### Anode

Should your water supply have a TDS of greater than 600mg/L, the installed anode must be aluminium (blue) or hydrogen gas can accumulate at the top of the water heater in long periods of no use. When this is likely to occur, the installer should instruct

the householder on how to dissipate the gas safely. This process is explained under "Hydrogen warning" on page 4. Any change of anode must be carried out by an authorised service person.

### **Corrosive Water**

Water deemed to be corrosive can attack copper parts causing them to fail. When the water supply Saturation Index (check with your local water supplier for additional information) is less than -1.0, water is deemed corrosive and a corrosion resistant heating element should be used. When the Saturation Index is greater than +0.40, an expansion control valve must be fitted on the cold water line after the non-return valve. Should the Saturation Index exceed +0.80, a low-watts density heating element should be fitted by an authorised person.

When an ECV is required to be fitted, a small amount of water may be discharged during the heating cycle rather than the PTR valve.

**IMPORTANT:** Where fitted, gently operate the easing lever on the ECV every six months and replace at intervals not exceeding 5 years, or more frequently in areas with poor quality water.

Please refer to the Water Quality Statement on Page 21, and the Warranty Details on page 22.

### **Switching off the appliance**

If you intend to not use the water heater for only a few days, we suggest you leave it switched on. If the water heater is to be switched off, the switch is generally marked and located in the circuit board or next to the appliance. When the water heater switch is turned back on, it may take several hours before sufficient hot water becomes available.

### **Tariffs**

In some regions Off-Peak Tariffs may be available for water heaters. In these regions water heaters greater than 160L are suitable for connection to either Continuous or Off-Peak Tariffs. Where the household requirements for hot water exceeds the water heater storage capacity, Continuous Tariff is required. Where hot water demand is less than water heater capacity, Off-Peak Tariffs may be applicable. Note that Off-Peak tariff vary from region to region, however are generally less expensive than Continuous Tariff rates (subject to local regulations).

### 3.3 Technical properties

| Technical characteristics - Australian | Unit | EWS 080.                    | EWS 125.        | EWS 160.    | EWS250. | EWS 315. | EWS 400. |
|--|------|-----------------------------|-----------------|-------------|---------|----------|----------|
| General characteristics                |      |                             |                 |             |         |          |          |
| Nominal Delivery                       | l    | 80                          | 125             | 160         | 250     | 315      | 400      |
| Stored Capacity                        | l    | 94                          | 141             | 200         | 268     | 337      | 433      |
| Element rating                         | kWh  | 1.8/2.4/<br>3.6             | 1.8/2.4/<br>3.6 | 1.8/2.4/3.6 | 3.6/4.8 | 3.6/4.8  | 3.6/4.8  |
| Water supply data                      |      |                             |                 |             |         |          |          |
| Water connections                      |      | RP ¾" / 20mm                |                 |             |         |          |          |
| Relief valve setting                   | kPa  | 850                         |                 |             |         |          |          |
| Expansion control valve (ECV)          | kPa  | 700                         |                 |             |         |          |          |
| Maximum supply pressure with (ECV)     | kPa  | 500                         |                 |             |         |          |          |
| Maximum supply pressure without (ECV)  | kPa  | 680                         |                 |             |         |          |          |
| Electrical characteristics             |      |                             |                 |             |         |          |          |
| Power supply voltage                   | V    | 240                         |                 |             |         |          |          |
| Thermostat temperature                 |      |                             |                 |             |         |          |          |
| Temperature range                      | °C   | 50 °C to 70 °C              |                 |             |         |          |          |
| Factory set                            | °C   | 65 °C                       |                 |             |         |          |          |
| General Data                           |      |                             |                 |             |         |          |          |
| Weight (empty/ unpacked)               | kg   | 38                          | 49              | 62          | 83      | 94       | 114      |
| Outer case material                    |      | Painted zinc coated steel   |                 |             |         |          |          |
| Inner tank material                    |      | Enamel lined steel cylinder |                 |             |         |          |          |
| Insulation                             |      | CFC free polyurethane       |                 |             |         |          |          |
| Indoor/ Outdoor rating                 |      | IP X4                       |                 |             |         |          |          |

Table 2 Technical characteristics (Australian Market)

| Technical characteristics - New Zealand | Unit | EWS 90.                     | EWS 135. | EWS 180. | EWS260. | EWS 330. |
|---|------|-----------------------------|----------|----------|---------|----------|
| <b>General characteristics</b>          |      |                             |          |          |         |          |
| Nominal Capacity                        | l    | 90                          | 135      | 180      | 260     | 330      |
| Element rating                          | kWh  | 2.0/3.0                     | 2.0/3.0  | 2.0/3.0  | 3.0/4.0 | 3.0/4.0  |
| Water supply data                       |      |                             |          |          |         |          |
| Water connections                       |      | RP ¾" / 20mm                |          |          |         |          |
| Relief valve setting                    | kPa  | 850                         |          |          |         |          |
| Expansion control valve (ECV)           | kPa  | 700                         |          |          |         |          |
| Maximum supply pressure with (ECV)      | kPa  | 500                         |          |          |         |          |
| Maximum supply pressure without (ECV)   | kPa  | 680                         |          |          |         |          |
| <b>Electrical characteristics</b>       |      |                             |          |          |         |          |
| Power supply voltage                    | V    | 240                         |          |          |         |          |
| <b>Thermostat temperature</b>           |      |                             |          |          |         |          |
| Temperature range                       | °C   | 50 °C to 70 °C              |          |          |         |          |
| Factory set                             | °C   | 65 °C                       |          |          |         |          |
| General Data                            |      |                             |          |          |         |          |
| Weight (empty/ unpacked)                | kg   | 37                          | 48       | 57       | 83      | 94       |
| Outer case material                     |      | Painted zinc coated steel   |          |          |         |          |
| Inner tank material                     |      | Enamel lined steel cylinder |          |          |         |          |
| Insulation                              |      | CFC free polyurethane       |          |          |         |          |
| Indoor/ Outdoor rating                  |      | IP X4                       |          |          |         |          |

Table 3    *Technical characteristics (New Zealand Market)*

### 3.4 Dimensions

#### 3.4.1 Side Connections

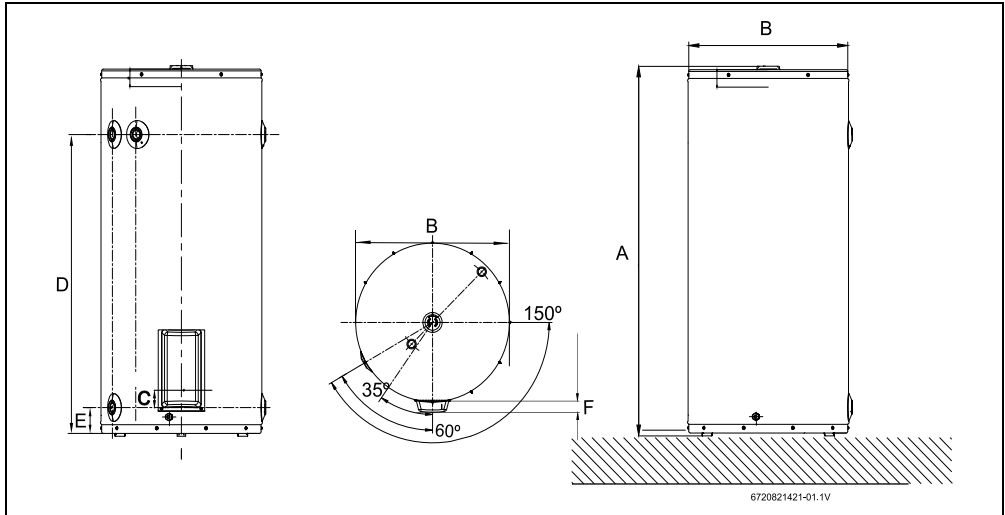


Fig. 4 Dimensions in mm (Vertical installation)

| Appliance                | A    | B   | C   | D    | E  | F  |
|--------------------------|------|-----|-----|------|----|----|
| EWS 80...                | 1060 | 470 | 40  | 854  | 74 | 35 |
| EWS 125...               | 1511 | 470 | 40  | 1305 | 74 | 35 |
| EWS 160...               | 1512 | 540 | 50  | 1295 | 74 | 35 |
| EWS 250...               | 1407 | 648 | 96  | 1161 | 74 | 35 |
| EWS 260... <sup>1)</sup> | 1407 | 648 | 96  | 1161 | 74 | 35 |
| EWS 315...               | 1710 | 648 | 96  | 1464 | 74 | 35 |
| EWS 330... <sup>1)</sup> | 1710 | 648 | 96  | 1464 | 74 | 35 |
| EWS 400...               | 1731 | 730 | 116 | 1464 | 74 | 35 |

Table 4

1) New Zealand model

**3.4.2 Top Connections (NZ only)**

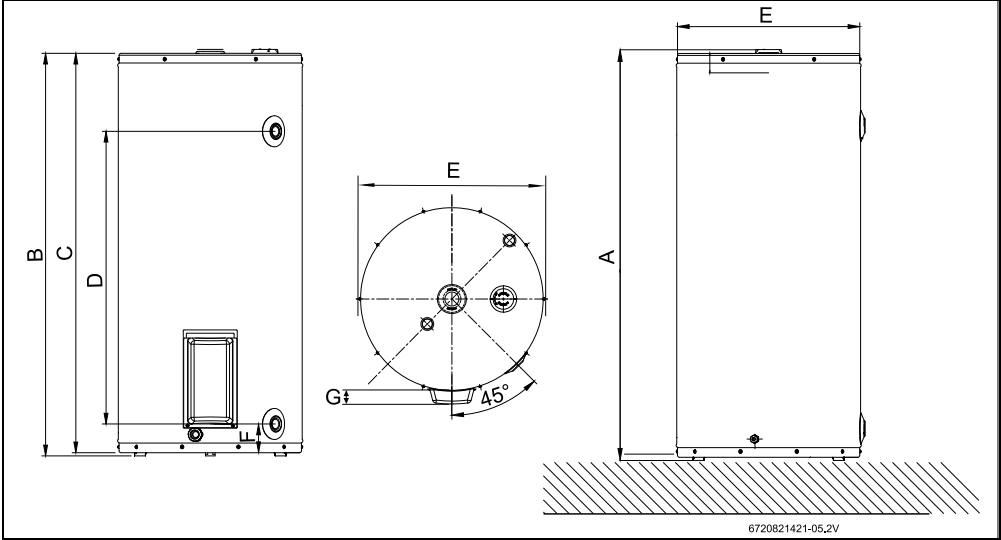


Fig. 5 Dimensions in mm (Vertical installation)

| Appliance  | A    | B    | C    | D    | E   | F  | G  |
|------------|------|------|------|------|-----|----|----|
| EWS 90...  | 1047 | 1037 | 1029 | 754  | 470 | 74 | 35 |
| EWS 135... | 1480 | 1470 | 1462 | 1187 | 470 | 74 | 35 |
| EWS 180... | 1422 | 1409 | ---  | 1118 | 540 | 74 | 35 |

Table 5

**3.5 Electrical wiring diagram**

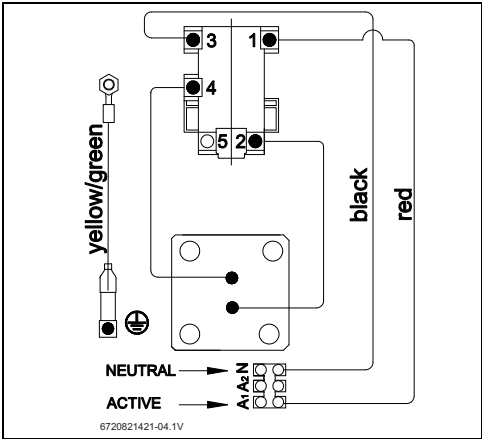





Fig. 6 Electric circuit diagram



**DANGER:**  
The activation of thermal cut-out indicates a potentially dangerous situation.



**DANGER:**  
Do not reset the thermal cut-out until it has been serviced by an authorised person.



**WARNING:**  
Do not operate this electric storage water heater without a thermostat and non self-resetting thermal cut-out in circuit.

**4 Storing and transportation**

As a rule, the unit is to be stored and transported in its original packaging, in an upright position.

**WARNING:**

Electric water heaters are heavy and bulky. Australian States and Territories have a Principal Occupational Health and Safety (OH&S) Act which contains requirements relating to the handling of large, bulky, or awkward items. Persons installing this electric water heater system must be aware of their responsibilities and be adequately trained and qualified in accordance with local OH&S requirements

**CAUTION:**

The electric storage water heater should not be located in an area where leakage of the tank or water connection will result in damage to the area adjacent to it or to lower floors of the structure. A properly drained safe tray must be used where property damage could occur from water spillage (see AS/NZS3500.4.2). Ensure this safe tray does not become blocked.

**WARNING: Transport damage!**

- ▶ To avoid transport damage, wait until the appliance is at the installation location to remove the protective packaging.
- ▶ Use straps to prevent the appliance from becoming damaged.

## 5 Installation instructions

**WARNING:**

The manufacturer's warranty does not cover any damage or defect caused by improper installation, attachment or use of any type of accessories (other than those mentioned in this user manual) with this water heater. The use of unauthorised energy-saving devices may shorten the life of the water heater and may endanger life and/or cause property damage.

The manufacturer disclaims any responsibility for such loss and/or injury resulting from the use of such unauthorised devices.

**CAUTION:**

All packaging materials must be removed from the electric storage water heater prior to its installation.

### 5.1 Location requirements and clearances

This electric storage water heater can be located outdoors or indoors and should be installed in a location as follows.

- ▶ Ensure easy access to the thermostat, terminal box, and element at the front of the water heater.
- ▶ Ensure easy access for service of the PTR valve.
- ▶ Locate the appliance as close as practical to the kitchen or area of most frequent hot water use.
- ▶ Foundations must be stable and level. The combined weight of the complete installation including the water heater, stored water, and fittings must not affect the integrity of any structure.
- ▶ The water heater must be accessible without the use of a ladder or scaffold.
- ▶ Adequate provision must be made available for removal of water that escapes from valves to avoid damage to property.
- ▶ Information on the technical label must be able to be read.
- ▶ If possible, allow for sufficient height above the water heater for anode removal and replacement.

### 5.2 Water connections

Cold and hot water connections are RP ¾" / 20mm BSP and marked "Inlet" and "Outlet" respectively.

As the unit is dual handed, brass plugs are supplied to blank off unused inlet and outlet fittings. All other fittings must be in accordance with AS/NZS3500 and local regulatory requirements

A heat trap must be installed in the hot water line as per AS/NZS3500 and the hot water lines after the heat trap must be insulated.

A non-return valve and isolation valve should be installed on the cold water line of the water heater. It is recommended that a union be fitted to the cold and hot water connections to allow easy disconnection of the appliance.

**NOTICE: Material damage!**

- Install a filter at the water inlet in areas where the water contains particles or sediments
- Where water pipes are attached to the tank exterior, screws of no longer than 25mm should be used. Any damage to the tank will not be covered by warranty

**WARNING:**

Flush out pipes before connecting this water heater to ensure no foreign matter can block the valve seat, and use line strainers where required by local authorities.

**CAUTION:**

Connections to this water heater must not be welded, brazed, or soldered connections. Connect only with compression or mechanical fittings

**WARNING:**

Internal dip tubes must not be removed.

**WARNING:**

An ECV is required where "Scaling" water exists having a total hardness in excess of 200mg/Litre (expressed as calcium carbonate), where the saturation index is in excess of +0.4 as detailed under water quality, or where required by local authorities.

**WARNING:**

Do not break or remove sections of metallic water tubing used as an earth electrode for an electrical installation before suitable precautions have been taken to ensure it is safe to do so.

### 5.2.1 Pressure limiting valve (not supplied with the appliance)

In installations where the mains water supply pressure exceeds that specified for this product, an approved pressure limiting

valve is required and must be fitted.

If the water heater is supplied with low pressure water, below the minimum working pressure specified for this product, then a pressure pump should be installed in order to minimize the forming of air traps in the hydraulic circuit.

### 5.2.2 Expansion control valve (not supplied with the appliance)

Local regulations, a saturation index greater than +0.4 or in corrosive water areas where there are sufficient quantities of silica dissolved in the water may require the installation of an expansion control valve (ECV) in the cold water line, being the last valve installed prior to the water heater.

### 5.3 Temperature mixing device (not supplied with the appliance)

**WARNING:**

This water heater can heat water to temperatures which can cause scalding.

Bosch recommends the installation of a temperature limiting device between the water heater and the hot water outlets supplying a sanitary outlet, in order to reduce the risk of scalding.

Additionally, a licensed plumber may have the legal obligation to ensure the water heater installation meets the hot water delivery requirements listed in AS/NZS 3500.4.

### 5.4 PTR Valve connection

A pressure and temperature relief valve (PTR valve) is supplied and must be installed in the tank port marked for this purpose. No valve or accessory of any type should be installed between the relief valve and the tank. Please observe local codes for the correct installation of relief valve drains.


**WARNING:**

The pressure rating of the PTR valve must not exceed 850 kPa. The maximum supply pressure of the water heater is marked on the rating plate

The PTR valve thread is RP ½" / 15mm BSP.


- Ensure the valve probe is straight and undamaged.
- Carefully apply Teflon tape to the valve, ensuring that the tape does not extend past the end of the thread.
- The drainpipe must be fitted to the relief valve to carry discharge safely away from the water heater (**see AS/NZS3500.4**).





**NOTICE:**


This drain pipe must fall continuously, shall be left open to the atmosphere, and shall be in a frost free environment



**WARNING:**


Relief valve easing gear should be checked and operated AT LEAST ONCE EVERY SIX MONTHS.

If water does not discharge freely when the lever is operated, the valve should be checked by an authorised agent.




**WARNING:**

The relief valve and relief valve drain pipe must not be sealed or blocked. Small amounts of water may leak from the relief valve during heating cycles.



**WARNING:**

Relief valves should be replaced at intervals not exceeding 5 years, or more frequently in areas where water quality is poor



**WARNING:**

The function of the PTR valve is to discharge high temperature water under certain conditions. Therefore it is strongly recommended that the pipe work connected to the PTR valve is able to withstand water temperatures exceeding 99 °C. Failure to follow this recommendation may result in a dangerous situation

Connect the outlet of the PTR valve to a suitable open drain so that the discharge water cannot contact any electrical parts, persons or animals, and to eliminate any other possible risks.

The drain line from the PTR valve must comply with the requirements of AS/NZS 3500.4.

Always use a PTR valve of the same rated pressure and temperature as the PTR Valve supplied with the unit.

## 6 Electrical connection



Connection to this storage water heater must be from a single phase 240V 50Hz supply and comply with AS/NZS 3000 Wiring Rules. Installations in New Zealand must comply with the New Zealand Building Code.



A means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules



The appliance must only be installed by an authorised person.



### **DANGER: Electric shock!**

- ▶ Isolate the appliance from the power supply using the circuit breaker isolation switch or another electrical protection device before carrying out any work on electrical parts.

- ▶ The electrical connection is made to the water heater at the terminal block located under the terminal box cover
- ▶ To remove this cover, simply remove two screws on the outer casing and lift off the lid



The electrical enclosure is tested and approved to IP X4.

The following must be observed during installation:

- ▶ Check all connections as wires may work loose in transit
- ▶ Check the thermostat setting is 65°C, which is the factory setting, and adjust if required.
- ▶ Ensure the circuit incorporates an isolation switch or circuit breaker.
- ▶ The household wiring to the water heater must be rated to withstand the electric element load.

## 7 Seismic strapping

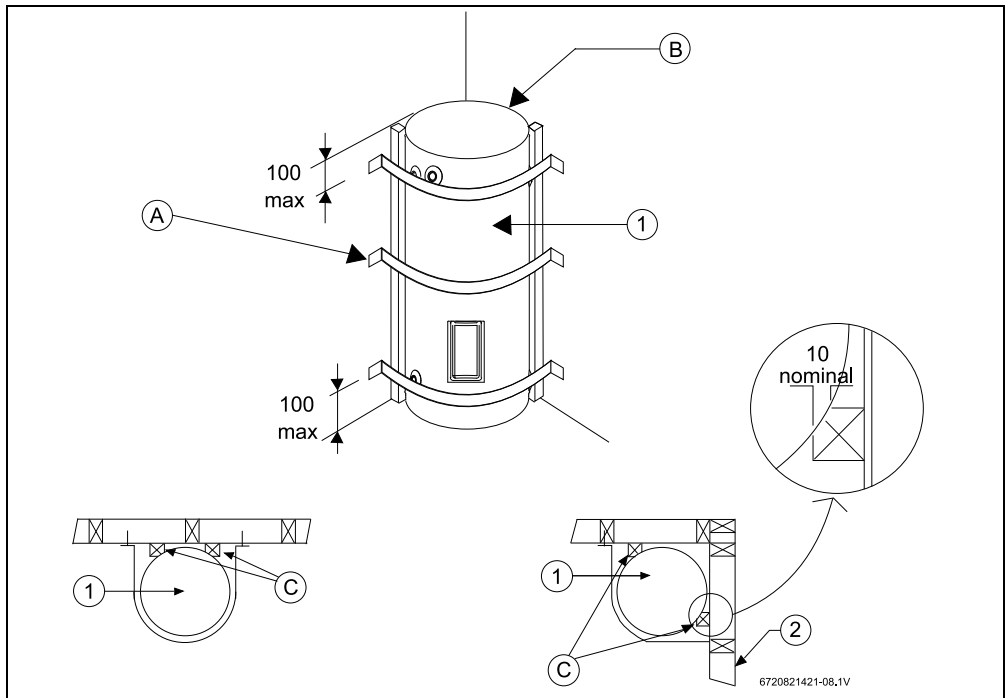


Fig. 7

- [A] Extra centre strap for water heaters exceeding 200L
- [B] Storage water heaters to be restrained with 25x1 galvanized steel straps tensioned when fixed in place.  
Straps to be fixed to wall framing with:
  - 1 No. 8 coach screw with 30x2 thick washer, or
  - 2 No. 20x2.5 thick washers.
 Screws to penetrate timber framing a minimum of 50.
- [C] 50x50 vertical blocking full height of water heater, fixed to wall framing with 1 No. 100x3.75 nail at 600 maximum centres
- [1] Storage water heating
- [2] Light timber frame wall

New Zealand regulations require storage tanks to be fixed with seismic strapping as per NZS4603 or NZS4607.

## 8 Commissioning

### 8.1 Before commissioning



**NOTICE:** Do not start the appliance without water!

- ▶ Only operate the appliance once it has been filled with potable water.

- ▶ Ensure the cylinder is filled with water
- ▶ Check all connections for water tightness
- ▶ Check the electrical connection.

### 8.2 Switching the appliance on/off

Power to this appliance is switched on or off at the isolation switch on the circuit board, or at a separate isolation switch for the appliance, if one is installed.



**NOTICE:** Damage to the appliance!  
Negative temperatures can cause the water to freeze

- ▶ Do not switch off the appliance if a frost threat exists
- ▶ Drain the appliance completely if the water heater heat must be switched off for an extended period of time

## 9 Service



**DANGER: Electric shock!**

- ▶ Isolate the appliance from the power supply using the circuit breaker isolation switch or another protection device before carrying out any work on electrical parts



**NOTICE:** Damage to the appliance!

- ▶ Do not shut off the water supply while the appliance is in operation.

### 9.1 General inspections

Check the appliance regularly for faults.

- ▶ Keep the appliance and the installation location clean
- ▶ Dust the system regularly using a damp cloth  
In this way, leaks can be identified and repaired at an early stage
- ▶ Check all connections regularly for water tightness

### 9.2 Save a service call

In some instances, calling on our service network may be avoided. Check the following to determine if your water heater may be returned to operation, without calling a service agent.

#### 9.2.1 Lack of hot water

- ▶ Ensure that the power to the water heater is switched on at the circuit board.

Generally, there is an isolating switch marked "Hot Water" or "Water Heater". There may also be another isolating switch near the water heater.



Note that repeated failure of the fuse or circuit breaker indicates a fault and an authorised service agent should be contacted to investigate.

#### 9.2.2 High hot water usage

Generally this is related to increased showering times.

- ▶ Investigate the installation of water saving devices such as flow reduction valves or water saving shower roses.

#### 9.2.3 High electricity bills

Generally linked to high hot water usage. However, leaking valves and pipework may also be responsible, and require attention from a plumber.

### 9.2.4 Continuous discharge from ECV & PTR valves

Discharges of more than 15 litres of water in 24 hours indicates that the valve may not be functioning correctly. This may be remedied by gently easing the valve lever for a few seconds as described under Routine Service to dislodge any foreign matter.



**CAUTION:** Continual flow may also indicate high water pressure which will require a pressure limiting valve to be fitted by an authorised person.

### 9.3 Service contact details

Bosch has an extensive network of service agents that may be contacted in event of failure of your water heater. Please contact AU 1300 30 70 37, NZ 0800 543 352, or Email [hotwater.warranty@au.bosch.com](mailto:hotwater.warranty@au.bosch.com). Ensure that you have copied the Model Number and Date of Manufacture from the water heater **Data label** and pass this information to our service department to ensure prompt service.

## 10 Maintenance and repair



#### **WARNING:**

The electric storage water heater should only be serviced by a qualified person, and in accordance with the Plumbing Standard AS/NZS 3500.4 and local authority requirements.



Routine service will assist in prolonging the life of your water heater, and help ensure trouble free operation.

### 10.1 Periodic Inspection

It is recommended that a periodic inspection of the valves, thermostat, heating elements and wiring should be made by a service person qualified in electric appliance repair.

Most electrical appliances, even when new, make some sound when in operation. If the hissing or singing sound level increases excessively, the electric heating element may require cleaning. Contact a qualified installer or service agent.

### 10.2 Pressure and temperature relief valve (PTR Valve)

At least every 6 months:

- ▶ Lift and release the lever handle on the PTR valve, to make certain the valve operates freely.

Allow several litres to flush through the discharge line to an open drain.

If the valve does not discharge water when the release lever is opened, or does not seal properly when closed, replacement by an authorised person must be arranged immediately. The PTR valve is not serviceable.



#### **DANGER:**

Never replace the PTR Valve with one which has a higher pressure rating than is specified for your water heater.



#### **DANGER:**

Before manually operating the relief valve, make certain no one will be exposed to the hot water released by the valve. The water drained from the tank may be hot enough to present a scald hazard and should be directed to a suitable drain to prevent injury or damage.

### 10.2.1 Vacation and Extended Shutdown

If the water heater is to remain idle for an extended period of time, the power and water to the appliance should be isolated to conserve energy and prevent the build up of dangerous hydrogen gas.

The electric water heater and piping should be drained if they might be subjected to freezing temperatures. After a long shutdown period, the water heater's operation and controls should be checked by qualified service person.

Make certain the electric water heater is completely filled again before operating.

### 10.3 Flushing the water heater



#### **WARNING:**

Draining and flushing the water heater must only be carried out by an authorised service person.



A regular 5 years service plan by an authorised person would include: draining flushing, checking anode and refilling the water heater


**CAUTION:**

Turn off the power supply to the water heater before draining water.



If you intend on being away from your house for only a few days, we suggest you leave the water heater switched on.

### 10.3.1 Draining the water heater

- Isolate the electrical supply at the main switchboard via the circuit breaker switch or isolating switch, and then remove the fuse.
- Isolate the cold water supply to the appliance.
- Gently raise the lever on the PTR valve to relieve the pressure in the water heater until flow stops.
- Disconnect the cold water connection to the appliance and attach drain hose.
- Operate the lever on the PTR valve again allowing air into the water heater.
- The water heater will drain through the hose.



Large volumes of water will drain from the cold water inlet.

- Ensure proper drainage of water.

### 10.3.2 Flushing the water heater

- Complete the draining operation(→section 10.3.1) then disconnect the hot water outlet connection and attach a water supply hose to the water heater.
- Turn on the water supply and allow flow until the water from the inlet becomes clear.
- After the water from the inlet becomes clear, remove the hose and reconnect the hot and cold water connections.

### 10.3.3 Filling the water heater

- Open all hotwater taps in the house.
- Open the cold water isolating valve to the water heater.
- Close each tap as water flows freely from it.
- Check all piping for leaks.

- Reconnect power to the water heater.

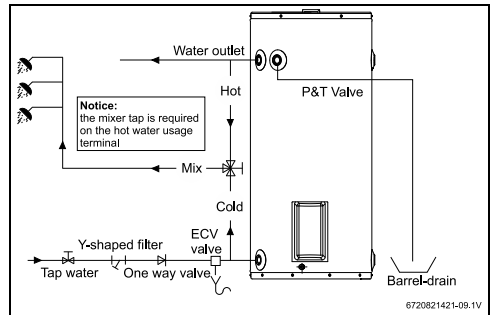


Fig. 8

## 11 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.

This water heater has been designed and constructed to be suitable for connection to most water supplies in Australia and New Zealand. However, in areas where Total Dissolved Solids (TDS) exceeds 2500mg/L, detrimental effects on water heater performance and longevity will result.

While Bosch water heaters are warranted against manufacturing 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 acceptable standard.

The water quality limits/parameters listed in the water quality table (table 6, page 22) are considered acceptable, and generally Australian and New Zealand suburban water supplies fall within these limits/parameters.

Where uncertainty exists concerning water quality, intending appliance users should seek a water analysis from the water supplying authority. 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.

### Anode

Should your water supply have a TDS of greater than 600mg/L, the installed anode must be the "blue" one (aluminium) or hydrogen gas can accumulate at the top of the water heater in long periods of no use. When this is likely to occur, the installer should instruct the householder on how to dissipate the gas safely. This process is explained on the previous page under

“Safety”. The change of anode must be done by a plumber or authorised service person.

**Corrosive Water**

Water deemed to be corrosive can attack parts causing them to fail. When the water supply Saturation Index (check with your local water supplier for additional information) is less than - 1.0, water is deemed corrosive and a corrosion resistant heating element should be used. The effect of scaling water is the build up of calcium carbonate onto hot metallic surfaces. When the Saturation Index is greater than +0.40, an expansion control valve must be fitted on the cold water line after the non-return valve. Should the Saturation Index exceed +0.80, a low-watts density heating element should be fitted to your water heater by your local Bosch authorised service agent.

**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 6

**12 Environmental protection/Recycling**

Environmental protection is one of the fundamental company policies of the Bosch Group. Product quality, efficiency, and environmental protection are equally important objectives for us. We comply with all environmental protection laws and regulations. In order to protect the environment, we use the latest technologies and the best materials whilst bearing in mind the economic implications.

**Packaging**

Where packaging is concerned, we participate in the relevant local recycling systems in order to ensure optimum recycling. All of our packaging materials are environmentally friendly and can be reused.

**13 Warranty details**

**Robert Bosch (Australia) Pty Ltd**  
**Thermotechnology Division**

**Voluntary Repair or Replacement Warranty**

All Bosch products are carefully checked, tested and certified to Australian and New Zealand standards.

**Important Note: Mandatory Australian Consumer Law statement**

If you have purchased your product in Australia, you should be aware that:

*This warranty is provided in addition to other rights and remedies held by a consumer at law. 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.*

**Important Note: New Zealand law**

If you have purchased your product in New Zealand, you should be aware that:

*This warranty is supplemental to any other rights and remedies you have under the Consumer Guarantees Act 1993 NZ, unless your purchase is made for commercial purposes, in which case Bosch excludes all consumer guarantees implied in the Consumer Guarantees Act 1993 NZ in respect of your product.*

**Warranty**

Bosch warrants, at its option, to repair or replace your water heater or relevant part thereof (**Product**) if such Products are faulty or defective in manufacture or materials during the warranty period specified below.

The warranty period commences on the date of purchase. If the date of original purchase cannot be determined, then the warranty period will commence six (6) months after the date of manufacture stamped on the Product.

Bosch may require evidence to verify the date of purchase.

This warranty only covers repair or replacement of defective Product (including labour costs where indicated). It does not cover:

- any costs incurred by the end user in normal or scheduled maintenance of the Product; or
- subject to any law to the contrary, any damage to property, personal injury, direct or indirect loss, consequential losses or other expenses arising from breach of this warranty. Any end user concerned with this exclusion

should consider the "Important Note: Mandatory Australian Consumer Law statement" above.

### Warranty Period and Coverage

Bosch will provide warranty service for Product purchased and installed in Australia and New Zealand as follows.

| Components                                       | The period after purchase within which the fault must appear | What Bosch will do (see below for definitions) |
|--|--|--|
| <b>Domestic Use (see below for definition)</b>   |  |  |
| <b>All components</b>                            | Year [1 to 2]  | Parts & Labour                                 |
| <b>Tank</b>                                      | Year [2 to 7]  | Parts only                                     |
| <b>Commercial Use (see below for definition)</b> |  |  |
| <b>All components</b>                            | Year [1 to 1]  | Parts & Labour                                 |

Table 7

**"Parts & Labour"** means free of charge repair and/or replacement, including labour.

**"Parts only"** means a replacement tank, free of charge. All installation and repair labour costs are the responsibility of the owner.

**"Domestic use"** warranty period applies to Product installed to supply hot water for use by individuals in domestic dwellings. For Product used for all other uses, the commercial use warranty period will apply. This includes, without limitation, installations such as centralised or bulk hot systems, hotels, sporting complexes, caravan parks, laundry facilities, restaurants and cafes.

For "Parts only" warranty, the end user will be charged for service call costs and service technician fees in effecting the replacement.

For valid claims within "Parts & Labour" warranty periods, the end user will not be charged for costs associated with making a warranty claim, including service call costs, any service technician fees or the cost of replacement parts and freight, provided that:

- the Product is located within the usual operating area of an authorised service technician;
- the Product has been installed according to the installation instructions so as to provide adequate service access.

If the Product is not located within the usual operating area of an authorised service technician, the end user will be required to pay the service call costs associated with a service call under this voluntary warranty.

Notwithstanding the above, if the Product has not been installed in accordance with the installation instructions in regards to access, or has been otherwise installed in location where service access is difficult, the end user will be required to pay charges associated with the difficult access. This includes, but is not limited to, the removal of walls or doors to gain access and the use of specialised equipment to move the Product or components to safe working levels. Where the

Product cannot be safely accessed, Bosch may refuse to service the Product under this voluntary warranty.

For invalid claims under this voluntary warranty, the end user will be liable for the costs of making the warranty claim including any service call costs.

### Warranty Conditions

This voluntary warranty is subject to the following conditions:

- The Product must have been installed and correctly commissioned by an authorised and licensed installer in compliance with applicable Australian Plumbing and Gas Standards. Proof may be required of correct commissioning of the Product (such as certificate of compliance). Claims for failures due to incorrect installation or commissioning are not covered under this voluntary warranty and may be rejected by Bosch.
- Where a Product or part thereof is replaced or repaired under this voluntary warranty, the balance of the original voluntary warranty will apply. The replacement Product or part does not carry a new voluntary warranty.
- The Product must have its original serial numbers and rating labels intact.
- The warranty does not extend to any Product that has been completely or partially disassembled.
- These warranty terms cannot be amended except in writing by an authorised officer of Bosch.
- The warranty only applies to Product installed for an end user in Australia or New Zealand and purchased from Bosch or from a reseller where the Product has been originally sold by Bosch.
- Any claim made under this voluntary warranty meets the requirements set out below in the "How to Make a Warranty Claim" section.

### Warranty Exclusions

This warranty will not apply to a defect or fault to the extent to which it arises:

- due to storage, handling or installation of the Product otherwise than in accordance with instructions provided for the Product by Bosch or without reasonable care, including installation of a Product which is of inappropriate size or type for the intended purpose;
- due to operation, use or maintenance of the Product otherwise than in accordance with instructions provided for the Product by Bosch or without reasonable care, including use of the Product with faulty or unsuitable plumbing, water pressure, power or gas supply;
- due to accidental damage or use of the Product for a purpose or in environmental conditions for which the Product were not designed or sold, or use of the products outside the specified or normal operating ranges for such Product.
- as a result of changes which occur in the condition or operational qualities of the Product due to climate or other environmental influence, foreign material contamination or water entry or as a result of exposure to excessive heat or solvents or because of use of non-potable water or bore

- water in the Product or damage as result of an Act of Nature including but not limited to storms, fires, floods and lightning strikes;
- from normal wear and tear or when replacement or repair of parts would be part of normal maintenance or service of the Product or where the damage is only to surface coating, varnish or enamel;
- as a result of repairs, alterations or modifications to the Product which have been performed by a person who is not suitably qualified and experienced to perform works on the Product; or
- from the use of any spare parts not manufactured, sold or approved by Bosch in connection with the repair or replacement of Product.

This voluntary warranty does not apply to damage that has been caused by continued use of a Product after it is known, or would have been known with regular servicing, it is defective.

Failure to service Product in accordance with recommendations in instruction manuals for Product may result in a warranty claim under this voluntary warranty being rejected by Bosch. Bosch alerts end users that instruction manuals for Product contain specific recommendations for servicing and safety checks to be carried out on Product.

Table 8

**Wrong Deliveries and Transit Damage**

Wrong deliveries, incorrect or damaged packing and transit damage claims are not warranty claims. Such cases should be directed to Bosch's Customer Service line in Australia on ph: 1300 307 037 or in New Zealand on ph: 0800 543 352.

**How to Make a Warranty Claim**

If a Product fails within the warranty period, the end user must stop using the Product and make a claim as soon as possible, in any event before the end of the Warranty Period (see Deadlines for Submitting Warranty Claims below).

To make a warranty claim under this voluntary warranty, call the Bosch Customer Contact Centre (in Australia on ph: 1300 307 037 or in New Zealand on ph: 0800 543 352). Please be ready to provide the model and serial number, date of installation, purchase details and a full description of the problem. Alternatively, for claims in Australia, you can post details of your claim to Robert Bosch (Aust) Pty Ltd, Attn TT Warranty Department, Locked Bag 66, Clayton Sth, Victoria, 3169. Claims received by post will take longer to process and we encourage you to call. Bosch may refer you to one of its Bosch Warranty Authorised Service Dealers.

Proof of purchase and purchase date, as well as proof of installation and proper commissioning by a licensed installer, may be required by Bosch or an authorised service technician.

All warranty service calls will be conducted by an authorised service technician during normal business hours. Bosch will not accept claims under this voluntary warranty for attendance and repair of the Product by third parties not authorised by Bosch.

**Deadlines for Submitting Warranty Claims**

Bosch aims to rectify genuine quality problems as a priority. This is generally achieved by investigating why defective products have failed and by introducing immediate corrective action measures to prevent re-occurring warranty failures. It is therefore critical that all warranty claims are promptly submitted to Bosch as soon as the product fails, and in any event before the end of the warranty period.

**Product Liability and Product Safety**

Bosch should be informed immediately about any potential product safety concerns within and outside the warranty period. Bosch is well aware of its product liability and product safety obligations and responsibilities. It is our aim to ensure appropriate product safety standards are met in order to avoid injury, loss and damage caused by defects in any Product.

**Privacy**

Bosch is required to seek personal information from an end user who seeks to make a claim under this warranty.



Such personal information may be used by Bosch and/or any authorised service technician (who is authorised to process warranty claims and/or carry out warranty repairs on behalf of Bosch) for the purpose of processing such warranty claim and also for the provision of customer support and further information about Bosch's products and services (Purpose).

If an end user does not wish to provide Bosch and/or its authorised service technician with personal information, Bosch may be unable to process the end user's warranty claim or to provide the end user with additional customer support, services and information.

Bosch is committed to protecting the privacy of personal information and will act in compliance with applicable privacy laws, including the National Privacy Principles under the Australian Privacy Act 1988 (Cth) (as amended) and New Zealand's Information Privacy Principles described in the Privacy Act 1993 (NZ).

Bosch takes security measures in order to protect any personal information collected in the warranty claim process against manipulation, loss, destruction, access by unauthorised persons or unauthorised disclosure.

Bosch will not disclose any personal information to third parties other than for the Purpose or except as required by law.

An end user has the right to access the personal information Bosch or its authorised service technician hold about them. The end user can request to see, change or modify the personal information held about them, or withdraw consent for its usage, by contacting Bosch at the Bosch Contact Details below.

### **Bosch Contact Details**

This warranty is offered by Robert Bosch (Australia) Pty Ltd (ACN 004 315 628) of 1555 Centre Road, Clayton, Victoria 3168. Please call the Customer Contact Centre on 1300 30 70 37 in Australia or 0800 543 352 in New Zealand if you have any queries in relation to this warranty or contact us using the online form at [www.bosch-climate.com.au](http://www.bosch-climate.com.au) or [www.bosch-climate.co.nz](http://www.bosch-climate.co.nz)

## Notes

## Notes

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