Owner's Guide and Installation Instructions

Continuous Flow Gas Indoor Water Heater

862 series B28 models

INSTALLER:

The ONLY suitable flue parts are certified Rheem coaxial flue components carrying the following label:

DO NOT use any other type of flue parts.
Carefully follow the Installation Instructions.

OPERATOR:

DO NOT OPERATE THIS WATER HEATER:

- **Unless a certified Rheem coaxial flue system, venting to the outside through a certified Rheem terminal, is installed in accordance with the Installation Instructions.**
- **If a loud continued vibration occurs during operation**

This water heater must be installed and serviced by a qualified person.
Please leave this guide with a responsible officer.

⚠ **Warning:** Upon completion of the installation and commissioning of the water heater, leave this guide with a responsible officer or the householder. **DO NOT** leave this guide inside of the cover of the water heater, as it may interfere with the safe operation of the water heater or ignite when the water heater is turned on.

RESPONSIBLE OFFICER AND INSTALLER PLEASE NOTE

This Owner's Guide and Installation Instructions is shared for the Australian and New Zealand markets.

Where the content of this document is specific to either market, it is marked with either AU for Australian specific content or NZ for New Zealand specific content.

The 862B28 models in natural gas and propane gas fuel types are sold in Australia.
References to Universal LP Gas models do not apply to the Australian market.

The 862B28 models in natural gas and Universal LP Gas fuel types are sold in New Zealand.
References to propane gas models do not apply to the New Zealand market.

An electronic copy of these Owner's Guide and Installation Instructions can be downloaded from rheem.com.au and rheem.co.nz.

Rheem Australia Pty Ltd and Rheem New Zealand Limited are the suppliers of the Rheem range of gas continuous flow water heaters, manufactured in Japan by Paloma Co., Ltd., a world leader in water heater technology and manufacture.

PATENTS

This water heater may be protected by one or more patents or registered designs in the name of Rheem Australia Pty Ltd, Rheem New Zealand Limited or Paloma Co., Ltd.

TRADEMARKS

® Registered trademark of Rheem Australia Pty Ltd., or Rheem New Zealand Limited.
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Note: Every care has been taken to ensure accuracy in preparation of this publication.
No liability can be accepted for any consequences, which may arise as a result of its application.

CONTENTS

RESPONSIBLE OFFICER

This booklet contains important information about your new water heater, including terms of the Rheem warranty.

We recommend you read pages 7 to 18, and the terms of the Rheem warranty on pages 4 to 6.

The other pages are intended for the installer but may be of interest.

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RHEEM AUSTRALIA PTY LTD, A.B.N. 21 098 823 511
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For Service Telephone 131 031 AUSTRALIA or 0800 657 335 NEW ZEALAND

RHEEM GAS CONTINUOUS FLOW WATER HEATER WARRANTY – AUSTRALIA AND NEW ZEALAND ONLY

GAS CONTINUOUS FLOW WATER HEATER 862B28 MODELS

1. THE RHEEM WARRANTY – GENERAL

1.1 This warranty is given in Australia by Rheem Australia Pty Limited ABN 21 098 823 511 of 1 Alan Street, Rydalmere New South Wales, and in New Zealand by Rheem New Zealand Limited of 475 Rosebank Road Avondale Auckland 1026, the suppliers of Rheem gas continuous flow water heaters.

1.2 Rheem offer a trained and qualified national service network who will repair or replace components at the address of the water heater subject to the terms of the Rheem warranty. Rheem Service, in addition can provide preventative maintenance and advice on the operation of your water heater. The Rheem Service contact number in Australia is 131031, with Contact Centre personnel available 24 hours, 7 days a week to take your call and if necessary to arrange a service call for during normal working hours Monday to Friday (hours subject to change) or in New Zealand on 0800 657 335.

1.3 For details about this warranty, you can contact us in Australia on 131031 or by email at warrantyenquiry@rheem.com.au (not for service bookings), or in New Zealand on 0800 657 335 or by email at rheem@rheem.co.nz (not for service bookings).

1.4 The terms of this warranty and what is covered by it are set out in sections 2 and 3 and apply to water heaters manufactured after 1st April 2024.

1.5 If a subsequent version of this warranty is published, the terms of that warranty and what is covered by it will apply to water heaters manufactured after the date specified in the subsequent version.

2. TERMS OF THE RHEEM WARRANTY AND EXCLUSIONS TO IT

2.1 The decision of whether to repair or replace a faulty component is at Rheem's sole discretion.

2.2 If you require a call out and we find that the fault is not covered by the Rheem warranty, you are responsible for our standard call out charge. If you wish to have the relevant component repaired or replaced by Rheem, that service will be at your cost.

2.3 Where a failed component or cylinder is replaced under this warranty, the balance of the original warranty period will remain effective. The replacement does not carry a new Rheem warranty.

2.4 Where the water heater is installed outside the boundaries of a metropolitan area as defined by Rheem or further than 25 km from either a regional Rheem branch office or an Accredited Rheem Service Agent's / Centre's office, the cost of transport, insurance and travelling between the nearest branch office or Rheem Accredited Service Agent's / Centre's office and the installed site shall be the owner's responsibility.

2.5 Where the water heater is installed in a position that does not allow safe or ready access, the cost of that access, including the cost of additional materials handling and/or safety equipment, shall be the owner's responsibility. In other words, the cost of dismantling or removing cupboards, doors or walls and the cost of any special equipment to bring the water heater to floor or ground level or to a serviceable position is not covered by this warranty.

2.6 This warranty only applies to the original and genuine Rheem water heater in its original installed location and any genuine Rheem replacement parts.

2.7 The Rheem warranty does not cover faults that are a result of:

a) Accidental damage to the water heater or any component (for example: (i) Acts of God such as floods, storms, fires, lightning strikes and the like; and (ii) third party acts or omissions).

b) Misuse or abnormal use of the water heater.

c) Installation not in accordance with the Owner's Guide and Installation Instructions or with relevant statutory and local requirements in the State or Territory in which the water heater is installed.

d) Connection at any time to a water supply that does not comply with the water supply guidelines as outlined in the Owner's Guide and Installation Instructions.

e) Repairs, attempts to repair or modifications to the water heater by a person other than Rheem Service or a Rheem Accredited Service Agent / Centre.

GAS CONTINUOUS FLOW WATER HEATER 862B28 MODELS

f) Faulty plumbing or faulty gas or power supply.

g) Failure to maintain the water heater in accordance with the Owner's Guide and Installation Instructions.

h) Transport damage.

i) Fair wear and tear from adverse conditions (for example, corrosion).

j) Cosmetic defects.

k) Ice formation in the waterways of a water heater: where the electricity supply has been switched off or has failed and the water heater has not been drained in accordance with the instructions; or due to an ambient temperature below -20°C (including wind chill factor).

2.8 Subject to any statutory provisions to the contrary, this warranty excludes any and all claims for damage to furniture, carpet, walls, foundations or any other consequential loss either directly or indirectly due to leakage from the water heater, or due to leakage from fittings and/ or pipe work of metal, plastic or other materials caused by water temperature, workmanship or other modes of failure.

2.9 If the water heater is not sized to supply the hot water demand in accordance with the guidelines in the Rheem water heater literature, any resultant fault will not be covered by the Rheem warranty.

2.10 In New Zealand this warranty excludes to the extent permissible all implied warranties set out in the Sale of Goods Act 1908 (New Zealand) and all guarantees set out in the Consumers Guarantees Act 1993 (New Zealand) to the extent that the goods are acquired for the purpose of resupply in trade consumption in the course of a process of production or manufacture or repairing or treating in trade other goods or fixtures on land.

3. WHAT IS COVERED BY THE RHEEM WARRANTY FOR THE WATER HEATERS DETAILED IN THIS DOCUMENT

3.1 Rheem will repair or replace a faulty component of your water heater if it fails to operate in accordance with its specifications as follows:

What components are covered	The period in which the fault must appear in order to be covered	What coverage you receive
All components	Year 1	Repair and/or replacement of the faulty component, free of charge, including labour.
All components if the water heater is installed with a preset outlet temperature setting below 76°C	Years 2 & 3	Repair and/or replacement of the faulty component, free of charge, including labour.
The heat exchanger if the water heater is installed with a preset outlet temperature setting below 76 °C	Years 4 and 5	Replacement heat exchanger, free of charge. Installation and repair labour costs are the responsibility of the owner.

RHEEM GAS CONTINUOUS FLOW WATER HEATER WARRANTY – AUSTRALIA AND NEW ZEALAND ONLY

GAS CONTINUOUS FLOW WATER HEATER 862B28 MODELS

4. ENTITLEMENT TO MAKE A CLAIM UNDER THIS WARRANTY

4.1 To be entitled to make a claim under this warranty you need to:

a) Be the owner of the water heater or have consent of the owner to act on their behalf.

b) Contact Rheem Service without undue delay after detection of the defect and, in any event, within the applicable warranty period.

4.2 You are **not** entitled to make a claim under this warranty if your water heater:

a) Does not have its original serial numbers or rating labels.

b) Is not installed in Australia or New Zealand.

5. HOW TO MAKE A CLAIM UNDER THIS WARRANTY

5.1 If you wish to make a claim under this warranty, you need to:

a) Contact Rheem on 131031 in Australia or 0800 657 335 in New Zealand and provide owner's details, address of the water heater, a contact number and date of installation of the water heater or if that's unavailable, the date of manufacture and serial number (from the rating label on the water heater).

b) Rheem will arrange for the water heater to be tested and assessed on-site.

c) If Rheem determines that you have a valid warranty claim, Rheem will repair or replace the water heater in accordance with this warranty.

5.2 Any expenses incurred in the making of a claim under this warranty will be borne by you.

6. THE AUSTRALIAN CONSUMER LAW

6.1 In Australia, 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.

6.2 The Rheem warranty (set out above) is in addition to any rights and remedies that you may have under the Australian Consumer Law.

7. THE CONSUMER GUARANTEES ACT 1993 (NEW ZEALAND)

7.1 In New Zealand, our goods come with guarantees that cannot be excluded under the Consumer Guarantees Act 1993 (New Zealand). If the goods fail to comply with the applicable guarantees set out under the Consumer Guarantees Act 1993 (New Zealand) being the guarantee as to acceptable quality, the guarantee as to correspondence with description or the guarantee as to repair and parts, or if the goods fail to comply with any express guarantee given by Rheem, then you are entitled to a replacement or refund and for compensation for any other reasonably foreseeable loss or damage.

7.2 The Rheem warranty (set out above) is in addition to any rights and remedies that you may have under the Consumer Guarantees Act 1993 (New Zealand).

SAFETY, WARNINGS, INSTALLATION NOTES

It is important you read the following safety and warnings information.

⚠ SAFETY AND WARNINGS

- The water heater heats the water to the preset outlet temperature setting if a temperature controller is not installed. The outlet temperature setting can be up to 82°C for the 862 series water heater. If the water heater is installed as part of a solar water heater system, the system can deliver water at temperatures from 58°C up to 82°C and possibly higher depending upon the model of solar water heater installed.

  These temperatures from an 862 series water heater are sufficiently hot to cause severe scalding. Water at this temperature may have been plumbed to fixtures where water hotter than 50°C is allowed, such as the kitchen, laundry and other areas requiring sanitising temperatures.

  Refer to:

  - “How Hot Should the Water Be?” on page 11, and
  - “Hotter Water Increases the Risk of Scald Injury” on page 11.
- This water heater is only intended to be operated by persons who have the experience or the knowledge and the capabilities to do so.
- This water heater is not intended to be operated by persons with reduced physical, sensory or mental capabilities i.e. the infirm, or by children. Children should be supervised to ensure they do not interfere with or play with or at the water heater.
- If the power supply cord or plug is damaged, it must be replaced by a qualified person in order to avoid a hazard. The power supply cord and plug must be replaced with a genuine replacement part available from Rheem. Phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for an inspection.
- The power lead from the water heater must be plugged into a weatherproof electrical outlet. Take care not to touch the power plug with wet hands.
- The water heater uses 220 - 240 V a.c. electrical power for operation of the control systems and the combustion fan. The removal of the front panel will expose 220 - 240 V a.c. wiring. It must only be removed by a qualified person. Do not operate the water heater with the front panel removed.
- This water heater is supplied with temperature sensors, a FlameSafe® protection system and a pressure relief valve. These devices must not be tampered with or removed. The water heater must not be operated unless each of these devices is fitted and is in working order.

  The Rheem warranty may not cover faults if safety devices or the relief valve are tampered with or if the installation is not in accordance with these instructions.
- Temperature controllers **must not** be fitted to this water heater (862 series) if it is installed as an in-series gas booster with a solar water heater system because water at a temperature much higher than the controller setting can be delivered. If a solar water heater is installed to an existing water heater installation, then all controllers **must be** disconnected and removed.
- For continued safety of this water heater it must be installed, operated and maintained in accordance with the Owner’s Guide and Installation Instructions.
- Servicing of the water heater must only be carried out by qualified personnel. Phone Rheem Service or their nearest Accredited Service Agent / Centre.
- Do not modify this water heater.
- Switch off the electrical supply at the power outlet to the water heater prior to performing general maintenance. This will prevent the water heater from operating while you clean or spray around the water heater.

  Refer to “General Maintenance” on page 14 for additional information.

- Do not spray **aerosols** in the vicinity of this water heater while it is in operation. Propellants and gases in many aerosol sprays contain hydrocarbons which are flammable. Gases from aerosol sprays may also become corrosive when drawn into a flame.
- Do not use or store **flammable materials** in or near this water heater. Flammable liquids (such as petrol), combustible materials (such as newspapers) and similar articles must be kept well away from the water heater and the flue terminal.
- Do not store **swimming pool chemicals, household cleaners**, etc., near the water heater.
- Do not place articles on or against this water heater, or in contact with the flue terminal. Ensure the flue terminal is not obstructed in any way at any time.

- Do not use Propane / Butane gas mixtures in a Propane model. A Propane model is designed to operate on Propane only. The use of Propane / Butane mixture, such as automotive LP gas fuel, in a Propane model is unsafe and can cause damage to the water heater.

  Note: LP gas models sold in New Zealand are designed to operate on the Propane / Butane mixture supplied in New Zealand. An LP gas model has an LPZ suffix in its model number.

- The water heater has a frost protection system to protect against damage by preventing ice forming in the waterways of the water heater, in the event of freezing conditions occurring. The frost protection system will be rendered inoperable if electrical power is not available at the water heater. If it is necessary to switch the power off to the water heater and there is a risk of freezing, then it is necessary to drain the water heater.

  Refer to:

  - "Frost Protection" on page 12, and
  - "Draining the Water Heater" on page 13.

INSTALLATION NOTES

This water heater must be installed:

- by a qualified person,
- in accordance with the installation instructions,
- in compliance with the Plumbing Code of Australia (PCA) and Plumbing Standard AS/NZS 3500.4,
  - This water heater is designed for indoor installation only.
  - This water heater is intended to be permanently connected to the water mains and not connected by a hose-set. A braided flexible hose or semi-flexible connector may be used for connection to the water heater, where permitted by AS/NZS 3500.4.
- in compliance with the Gas Installations Standard AS/NZS 5601.1,
- in compliance with all local codes and regulatory authority requirements,
- in New Zealand also conforming to Clauses G11, G12 and H1 of the New Zealand Building Code.

Installation and commissioning requirements and details for the installing plumber and licensed electrical worker are contained on pages 19 to 58.

Mains pressure water supply
The water heater is designed to operate at mains pressure by connecting directly to the mains water supply.

The maximum mains water supply pressure for the water heater is 1,000 kPa. If the mains supply pressure in your area exceeds 1,000 kPa, an approved pressure limiting valve that does not have non-return valve characteristics (such as an RMC PSL series valve) must be installed.

A minimum water supply pressure of 120 kPa is required to achieve the rated flow and performance of the water heater.

Refer to “Mains Water Supply” on page 21 for additional information.

Mounting of the water heater
This water heater must be installed vertically upright with the water, gas and power connections on the underside, pointing toward the ground. The back of the water heater can be either against a wall or supported by a frame. The water heater must be well secured to the wall or frame using two fasteners, suitable for the wall or frame type, each at the top and bottom of the unit.

Refer to the note on page 20 for additional information.

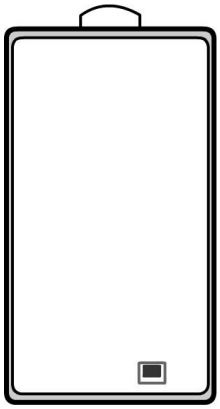
ABOUT YOUR WATER HEATER

WATER HEATER APPLICATION

This water heater is designed for the purpose of heating potable water. Its use in an application other than this may shorten its life.

MODEL TYPE

The Rheem® gas continuous flow water heater model you have chosen is for indoor installation only.



The water heater has a maximum preset outlet temperature setting of:

- 862 series 82°C

If a temperature controller is connected to the water heater, this will override the preset outlet temperature setting and the maximum temperature setting will be:

- Kitchen controller connected 60°C
- Bathroom controller only connected 50°C

WATER HEATER OPERATION

The water heater operates automatically, heating water as it passes through the water heater. When a hot tap is opened, the gas burners ignite to provide immediate heating of the water. The heat produced by the burner is transferred to the water through the heat exchanger. The water is heated to a constant temperature by the automatic adjustment of the gas supply to the burner to suit the water flow rate. The gas burners extinguish when the hot tap is closed.

Automatic safety controls are fitted to the water heater to provide safe and efficient operation. In the event of a power supply interruption, such as a blackout or brownout, when power is restored to the water heater, it will initialise and be ready for use.

REDUCED HOT WATER FLOW WHEN HEAT EXCHANGER IS COLD

At a cold start-up, i.e. when the water heater has not operated for some time (which is most often first thing in the morning), the initial flow of hot water may be reduced for a period of 5-10 seconds while the heat exchanger warms up. **This is both an energy and water saving feature of this water heater.** Once the heat exchanger has warmed up the hot water flow will increase and remain at normal flow levels. This feature will only occur at a cold start-up and not when the heat exchanger is already warm from a recent use of hot water.

GAS BOOSTING FOR A SOLAR WATER HEATER

The 862 series water heater may be installed as an in-series gas booster to a solar water heater.

Water stored in the solar storage tank passes through the in-series gas booster when a hot tap is opened. The in-series gas booster is for heating water at times of low solar energy gain, such as during cloudy or rainy weather, or during colder months.

The in-series gas booster operates automatically. When the solar heated water is at a temperature lower than 2°C below a water heater preset outlet temperature setting of up to 75°C (i.e. below 68°C if the preset outlet temperature setting is 70°C) or lower than 4°C below a water heater preset outlet temperature setting of 82°C, the in-series gas booster heats the water to a minimum temperature of the preset outlet temperature setting.

Solar heated water can reach temperatures up to 70°C to 80°C for a Premier Loline and Loline pumped system and possibly higher for a Hiline and Premier Hiline thermosiphon system. When the solar heated water is at a temperature higher than 2°C below a water heater preset outlet temperature setting of up to 75°C (i.e. 68°C or above if the preset outlet temperature setting is 70°C) or higher than 4°C below a water heater preset outlet temperature setting of 82°C, the flow passes through the in-series gas booster without boosting.

For information relating to the function and operation of the solar water heater, refer to the Owner's Guide and Installation Instructions supplied with the solar water heater.

HOW HOT SHOULD THE WATER BE?

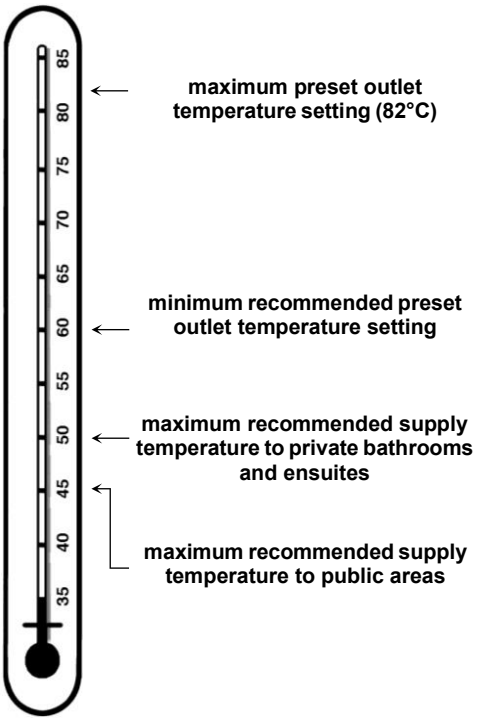
The water heater has a maximum preset outlet temperature setting of 82°C. For applications requiring sanitising temperatures, the outlet temperature should be set at 82°C. The minimum recommended preset outlet temperature setting is 60°C.

If the water heater is installed as part of a circulated hot water flow and return system in a building, the preset outlet temperature setting of the water heater must be set to at least 60°C.

If a controller is not installed, the water heater heats the water to the preset outlet temperature setting. The factory preset outlet temperature setting is:

• 862 series	70°C	for a single water heater
	70°C	as part of a Multipak® system
	70°C	as part of a Commpak® system
	70°C	as part of a Tankpak® system

Note: The preset outlet temperature setting of this water heater cannot be adjusted by a responsible officer or the householder. The setting can only be adjusted by the installer, Rheem Service or their nearest Accredited Service Agent / Centre.



Note: Australian Standard AS 3498 and New Zealand Building Code Clause G12 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater (862 series) is used as an in-series booster for a solar water heater it can satisfy these AS 3498 and Clause G12 requirements provided it is energised, the booster preset outlet temperature setting is at least 70°C or higher, and that a remote temperature controller is not used.

⚠ **Warning:** Temperature controllers **must not** be fitted to this water heater (862 series) if it is installed as an in-series gas booster with a solar water heater system is installed because water at a temperature much higher than the controller setting can be delivered. If a solar water heater has been installed to an existing water heater installation, then all controllers **must be** disconnected and removed.

If this water heater is installed as part of a solar water heater system, the system can deliver water at temperatures up to 82°C and possibly higher depending upon the model of solar water heater installed and the preset outlet temperature of this water heater.

HOTTER WATER INCREASES THE RISK OF SCALD INJURY

⚠ **Warning:** An 862 series water heater can deliver hot water at a temperature up to 82°C depending upon its preset outlet temperature setting. This temperature is sufficiently hot to cause severe scalding. Water at this temperature may have been plumbed to fixtures where water hotter than 50°C is allowed, such as a kitchen, laundry and other areas requiring sanitising temperatures.

Check the water temperature before use, such as when entering a shower or filling a bath or basin, to ensure it is suitable for the application and will not cause scald injury.

We recommend and it may be required by regulations that an approved temperature limiting device be fitted into the hot water pipe work to bathrooms, ensuites, public amenities or other ablution areas when an 862 series water heater is installed. This will keep the water temperature below the maximum permitted by the Plumbing Code of Australia and New Zealand Building Code Clause G12 to these areas. The risk of scald injury will be reduced and if no controllers are installed and the preset outlet temperature setting has not been adjusted below 60°C or if a Kitchen controller is installed, still allow hotter water to the kitchen, laundry and other areas.

FROST PROTECTION

The water heater has a frost protection system. The frost protection system will protect the water heater from damage, by preventing ice forming in the waterways of the water heater, in the event of freezing conditions occurring.

Notes

- The frost protection system will be rendered inoperable if electrical power is not available at the water heater. Damage caused by freezing due to the unavailability of power at the water heater is not covered by the Rheem warranty (refer to "Terms of the Rheem Warranty" on page 4).
- If it is necessary to switch the power off to the water heater and there is a risk of freezing, then it is necessary to drain the water heater (refer to "Draining the Water Heater" on page 13).
- Pipe work to and from the water heater must be adequately insulated to prevent freezing.
- The water heater is not suitable for installation in areas where the ambient temperature falls below -20°C (including wind chill factor).
- Refer to "Terms of the Rheem Warranty" on page 4.

TO TURN OFF THE WATER HEATER

If it is necessary to turn off the water heater:

- Turn off the controller(s) (if fitted) by pressing the on / off (⏻) button.

  The on / off operating light will go out and the priority light, if it is on, will go out.
- Switch off the electrical supply at the power outlet to the water heater if there is no risk of freezing conditions occurring (refer to note below).
- Close the gas isolation valve at the inlet to the water heater.
- Close the cold water isolation valve at the inlet to the water heater.

Note: If there is a risk of freezing conditions, the electrical supply to the water heater should not be switched off unless the water heater is drained, otherwise damage could result (refer to "Frost Protection" on page 12 and "Draining the Water Heater" on page 13).

TO TURN ON THE WATER HEATER

- Screw in the drain plugs at the cold water inlet and hot water outlet of the water heater if the water heater has been drained.
- Open all of the hot taps in the house (don't forget the shower).
- Open the cold water isolation valve fully at the inlet to the water heater.

  Air will be forced out of the taps.
- Close each tap as water flows freely from it.
- Open the gas isolation valve fully at the inlet to the water heater.
- Plug in the power supply cord at the power outlet.
- Switch on the electrical supply at the power outlet to the water heater.
- Turn on a controller, if one is fitted, by pressing the on / off (⏻) button.

  The on / off operating light and the priority light will both glow.

The water heater will operate automatically when you open a hot tap.

GOING ON HOLIDAYS

If you are going on holidays, it is not necessary to turn the water heater off. If it is necessary to turn off the water heater, refer to "To Turn Off The Water Heater" on page 12.

PRECAUTIONS

The water heater must be maintained in accordance with the Owner's Guide and Installation Instructions. Refer to "General Maintenance" on page 14 and "Service Every Twelve Months" on page 14.

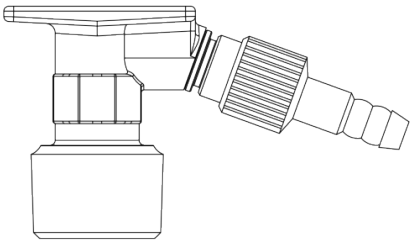
If this water heater is to be used where an uninterrupted hot water supply is necessary for your application or business you should ensure that you have back-up redundancy within the hot water system design. This should ensure the continuity of hot water supply in the event that this water heater were to become inoperable for any reason. We recommend you seek advice from a plumber or specifier about your needs and building back-up redundancy into your hot water supply system.

DRAINING THE WATER HEATER

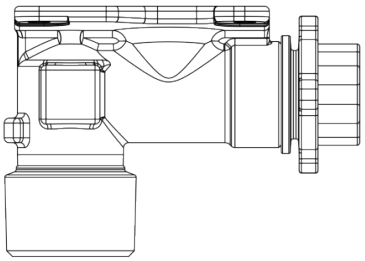
- Turn off the water heater (refer to "Turn Off The Water Heater" on page 12).
- Open a hot tap (preferably the shower outlet).
- Unscrew the two drain plugs, one each at the cold water inlet and hot water outlet, on the underside of the water heater.

  Water will drain from the water heater.
- When water stops flowing from the water heater, close the hot tap.

Note: It is recommended not to screw the drain plugs back in, until the water heater is to be turned on again.



HOT WATER OUTLET



COLD WATER INLET

CIRCULATED HOT WATER FLOW AND RETURN SYSTEM

A Rheem 862B28 model continuous flow water heater can be installed as part of a circulated hot water flow and return system in a building. Refer to "Circulated Hot Water Flow and Return System" on page 24 for further information and notes on this type of installation.

VICTORIAN CUSTOMERS

Notice to Victorian Customers from the Victorian Building Authority. This water heater must be installed by a licensed person as required by the Victorian Building Act 1993.

Only a licensed person 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 for 6 years. Make sure you use a licensed person to install this water heater and ask for your Compliance Certificate.

DOES THE WATER CHEMISTRY AFFECT THE WATER HEATER?

The water heater is suitable for most public water supplies, however some water chemistries may have detrimental effects on the water heater, its components and fittings. Refer to "Water Supplies" on page 15.

If you are in a known harsh water area or you are not sure of your water chemistry, have your water checked against the conditions described on page 15.

HOW LONG WILL THE WATER HEATER LAST?

The water heater is supported by a manufacturer's warranty (refer to page 4). There are a number of factors that will affect the length of service the water heater will provide. These include but are not limited to the water chemistry, the water pressure, the water temperature (inlet and outlet) and the water usage pattern. Refer to "Precautions" on page 13.

MAINTENANCE REQUIREMENTS

GENERAL MAINTENANCE

General maintenance can be performed by the responsible officer. It is recommended general maintenance be conducted every six (6) months or more regularly as required.

Switch off the electrical supply at the power outlet to the water heater prior to performing general maintenance. This will prevent the water heater from operating while you clean or spray around the water heater. Switch on the electrical supply at the power outlet to the water heater when finished performing the general maintenance.

The general maintenance includes:

- The jacket of the water heater can be cleaned with a soft cloth and warm mild soapy water if required. Under no circumstances should abrasive materials or powders be used.
- Condensate Trap – Check a condensate trap, if one is installed, to ensure it is filled with water. If a trap is dry or the water level is low, then a trap must be refilled.

  A condensate trap may be installed as part of a condensate drain line from the secondary flue system.

  ⚠ **Warning:** Failure to fill a Condensate Trap with water may cause flue gases to escape through the drain line.

  - To check and / or refill a trap with water, remove the clamp securing the hose of the condensate trap to the spigot on the flue outlet. Remove the hose from the spigot and fill the condensate trap with water. Reconnect the hose to the spigot. Ensure the hose is not kinked when reconnected.
- Inspect around the flue terminal of the water heater for plant growth.
  - Trim back any shrubs, bushes or other plants which have encroached around the flue terminal.

    Plant growth across flue terminal can interfere with the performance of the water heater.

SERVICE EVERY TWELVE MONTHS

For safe and efficient operation, it is recommended a service be conducted on the water heater every twelve (12) months.

⚠ **Warning**: Servicing of a water heater must only be carried out by qualified personnel. Phone Rheem Service or their nearest Accredited Service Agent / Centre.

Note: The service and routine replacement of any components, if required, are not included in the Rheem warranty. A charge will be made for this work. Only genuine replacement parts should be used on this water heater.

The service includes the following actions:

- Check and if necessary adjust the gas pressure.
- Check the operation of and clean the burner.
- Check the water level in the condensate trap (if one is installed).
- Check and clean the line strainer.
- Visually check the unit for any potential problems.
- Inspect all connections.

WATER SUPPLIES

This water heater must be installed in accordance with this advice to be covered by the Rheem warranty.

This water heater is manufactured to suit the water conditions of most public reticulated water supplies. However, there are some known water chemistries which can have detrimental effects on the water heater and its operation and / or life expectancy. If you are unsure of your water chemistry, you may be able to obtain information from your local water supply authority. This water heater should only be connected to a water supply which complies with these guidelines for the Rheem warranty to apply.

CHANGE OF WATER SUPPLY

The changing or alternating from one water supply to another can have a detrimental effect on the operation and / or life expectation of a heat exchanger in a continuous flow water heater.

Where there is a changeover from one water supply to another, e.g., a rainwater tank supply, bore water supply, desalinated water supply, public reticulated water supply or water brought in from another supply, then water chemistry information should be sought from the supplier or it should be tested to ensure the water supply meets the requirements given in these guidelines for the Rheem warranty to apply.

SATURATION INDEX

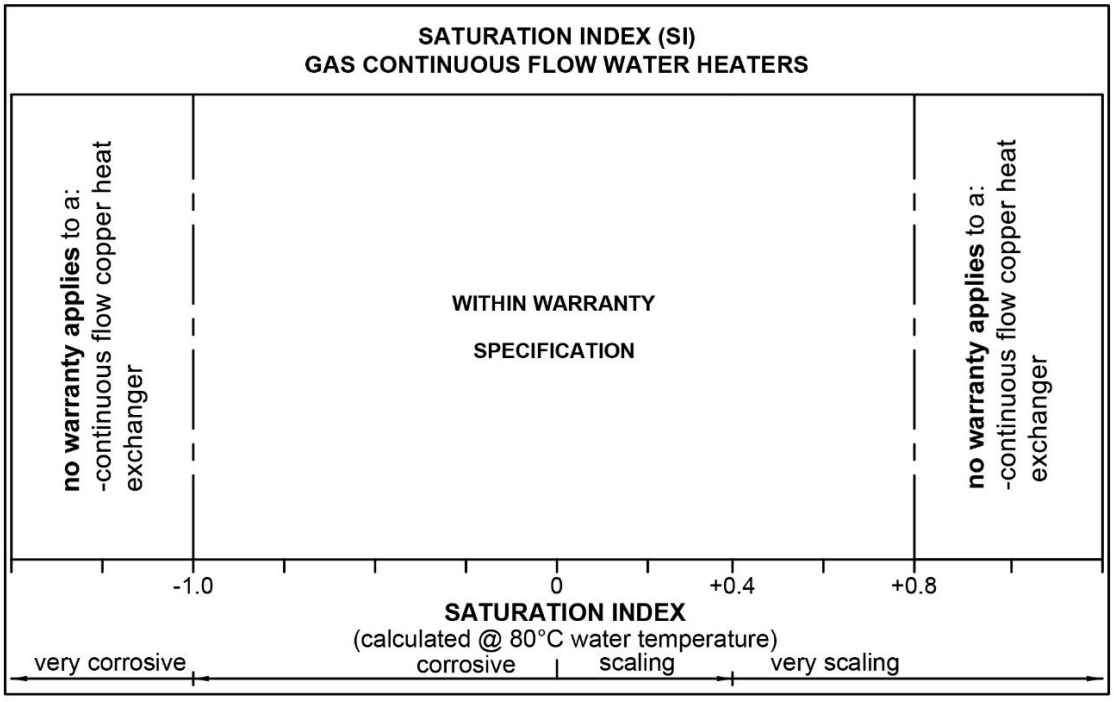
The saturation index (SI) is used as a measure of the water's corrosive or scaling properties. The saturation index figures stated are calculated using a water temperature of 80°C.

In a corrosive water supply, the water can attack copper parts and cause them to fail. Where the saturation index is less than –1.0, the water is very corrosive and the Rheem warranty does not apply to a copper heat exchanger in a continuous flow water heater.

In a scaling water supply calcium carbonate is deposited out of the water onto any hot metallic surface. Where the saturation index exceeds +0.80, the Rheem warranty does not apply to a copper heat exchanger in a continuous flow water heater.

Water which is scaling may be treated with a water softening device to reduce the saturation index of the water.

Refer to the Saturation Index chart on page 15.



SAVE A SERVICE CALL

Check the items below before making a service call. You will be charged for attending to any condition or fault, which is not related to manufacture or failure of a part (refer to “Terms of the Rheem Warranty” on page 4).

NO DISPLAY ON THE CONTROLLER (IF FITTED)

- Is the controller turned on?

  Press the on / off (⏻) button on the controller.
- Is the water heater plugged in and the power outlet switched on?
- Is power available in the premises?

  Try using another electrical appliance.

COLD WATER FROM THE HOT TAP

- Is the controller turned on?

  Press the on / off (⏻) button on the controller.
- Close the hot tap, wait 10 seconds and open the hot tap again.
- Is the hot tap open enough?

  The burners will not light if the flow rate is less than 1.5 L / min.
- Is the water heater plugged in and the power outlet switched on?
- Is power available in the premises?

  Try using another electrical appliance.
- Is the isolation valve in the gas line open?
- Is there a gas supply to the rest of the premises?

  Try lighting another gas appliance.
- Has the gas line been purged of air after installation? Refer to a plumber.

WATER IS TOO HOT OR NOT HOT ENOUGH

- Is the preset outlet temperature of the water heater higher than required?
- Does the controller you are using have priority?

REDUCED HOT WATER FLOW WHEN HEAT EXCHANGER IS COLD

At a cold start-up, i.e. when the water heater has not operated for some time (which is most often first thing in the morning), the initial flow of hot water may be reduced for a period of 5-10 seconds while the heat exchanger warms up. **This is both an energy and water saving feature of this water heater.** Once the heat exchanger has warmed up the hot water flow will increase and remain at normal flow levels. This feature will only occur at a cold start-up and not when the heat exchanger is already warm from a recent use of hot water.

WATER FLOW FLUCTUATES

Too many taps in use at the same time may cause a decrease in the hot water flow from the taps. This can also be evident if the water heater has been installed as an in-series gas booster to a solar water heater and the solar heated water is at a low temperature.

- Are there several hot taps open, or are appliances such as a dishwasher or washing machine, in use at the same time?

  Ensure no more than two or three taps or appliances are on at the one time.
- Check the flow of hot water from each tap to see if one or more outlets are using more water than you think.

  Have a plumber install a flow control valve to each shower outlet, basin and sink to reduce water usage.

NO WATER FROM THE HOT TAP

No flow of water from the hot tap may indicate a restriction in or failure of the cold water supply to the water heater. Check for water flow at other taps and that the cold water isolation valve (refer to page 28) is fully open.

GAS BOOSTER OPERATING TOO FREQUENTLY

If the water heater is installed as an in-series gas booster to a solar water heater, you may find that the water heater operates more frequently than expected. This will occur when the solar heated water temperature is lower than 2°C below a water heater preset outlet temperature setting of up to 75°C (i.e. below 68°C if the preset outlet temperature setting is 70°C) or lower than 4°C below a water heater preset outlet temperature setting of 82°C, which may be experienced during periods of low solar energy gain or if there has been heavy hot water usage. Factors to consider are:

- **Hot tap not used recently**
  If a hot tap has not been used for a while, the water in the pipe work between the solar storage tank and the in-series gas booster may have cooled down. The in-series gas booster will sense the cooler water and this will cause the burners on the water heater to ignite and boost the water temperature when a hot tap is first turned on. The burners will extinguish when solar heated water at a temperature higher than 2°C below a water heater preset outlet temperature setting of up to 75°C (i.e. 68°C or above if the preset outlet temperature setting is 70°C) or higher than 4°C below a water heater preset outlet temperature setting of 82°C from the solar storage tank reaches the in-series gas booster (refer also to "Fan Continues to Run after Water Heater Operation Stops" on page 17).

- **Insufficient sunlight**
  Insufficient sunlight due to cloudy weather during hotter months or low solar energy contribution in colder months may mean the in-series gas booster operates more often.

- **Collectors shaded**
  If trees or other objects shade the solar collectors or if the glass is dirty, the effectiveness of the solar collectors will be greatly reduced. Have the trees trimmed or the solar collectors relocated if the obstruction is permanent or clean the collector glass.

  Ensure the glass on your solar collectors is free of dust, salt spray or any other matter, which may reduce the effectiveness of the solar collectors. If the collector glass becomes dirty, hose down or if the solar collectors are accessible, wash the collector glass with water and a soft brush when the solar collectors are cool.

- **Collector area is too small**
  For most installations, the number of solar collectors recommended in Rheem literature has been proven to provide the required solar energy to meet the average family needs. However, in some circumstances, it may be necessary to install an additional solar collector.

- **Are you using more hot water than you think?**
  Are outlets (especially the showers) using more hot water than you think? Very often it is not realised the amount of hot water used, particularly when showering. Carefully review the hot water usage. As you have installed an energy saving appliance, energy saving should also be practised. Adjust your water usage pattern to take advantage of maximum solar gains.

  Have a plumber install a flow control valve to each shower outlet, basin and sink to reduce water usage.

- **Water heater size**
  Do you have the correct size water heater for your requirements? The sizing guide in the sales literature and on the Rheem website (AU – www.rheem.com.au or NZ – www.rheem.co.nz) suggests average sizes that may be needed.

FAN CONTINUES TO RUN AFTER WATER HEATER OPERATION STOPS

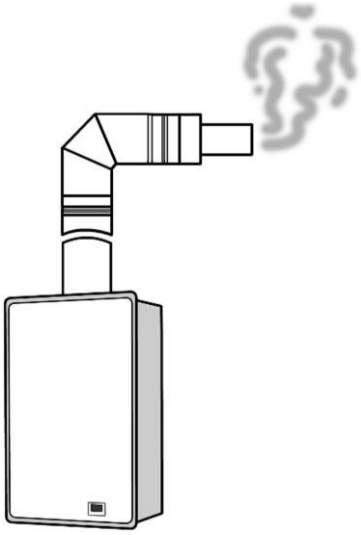
It is the normal operation of the water heater for the fan to continue running after heating of the water is finished. The fan may run for up to six minutes after the burners extinguish, to prepare for the next ignition.

SMELL OF FLUE GASES

The flue system may incorporate a condensate drain and condensate trap. A condensate trap must be filled with water to prevent the escape of flue gases. If the water has evaporated flue gases may escape. Remove the clamp securing the hose of the condensate trap to the spigot on the flue outlet. Remove the hose from the spigot and fill the condensate trap with water. Reconnect the hose to the spigot. Ensure the hose is not kinked when reconnected.

CLOUDS OF WHITE 'VAPOUR' FROM THE FLUE TERMINAL

During the heating cycle, it is not unusual to see water vapour clouds steaming from the flue terminal, particularly on cold days. This is normal operation of the water heater.



PRESSURE RELIEF VALVE DISCHARGING

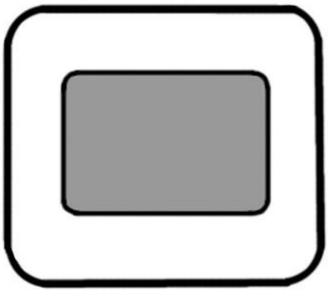
A pressure relief valve is incorporated into the water heater controls. This valve protects the water heater, by allowing water to escape, in the event of excessive pressure build-up in the waterways.

- **Normal operation**
  A small volume of water may discharge from the bottom of the water heater when a hot tap is suddenly closed.
- **Continuous dribble**
  A continuous dribble may indicate the water supply pressure is above the design pressure for the water heater. If so, a pressure limiting valve must be installed on the cold water supply pipe to the water heater (refer to "Mains Water Supply" on page 21).

ERROR CODE

The water heater provides a diagnostic error code in the event of an interruption to its operation. The error code is displayed on the controller(s) (if installed) and on the LED display on the front of the water heater as a numerical value. If an error code appears:

- Close the hot tap, turn off the controller(s) and switch off the electrical supply to the water heater.
- Check the gas isolation valve at the gas inlet to the water heater is fully open.
- Wait 5 minutes, then switch on the electrical supply to the water heater, turn on a controller and open a hot tap.



If the error code persists, take note of the numerical code, turn off the hot tap and turn off the controller(s). Phone Rheem Service or their nearest Accredited Service Agent / Centre to arrange for inspection.

HIGHER THAN EXPECTED GAS BILLS

Should you at any time, feel your gas bill is too high, we suggest you check the following points:

- Are outlets (especially the showers) using more hot water than you think?

  Very often it is not realised the amount of hot water used, particularly when showering. Carefully review the hot water usage. Have a plumber fit a flow control valve to each shower outlet, basin and sink to reduce water usage.
- Is the in-series gas booster operating too frequently?

  Refer to "Gas Booster Operating Too Frequently" on page 17.
- Has there been an increase in hot water usage?

  An increase in hot water usage will result in an increase in water heater operation.
- Has your water heating tariff rate been increased by your gas retailer since your previous bill?

IF YOU HAVE CHECKED ALL THE FOREGOING AND STILL BELIEVE YOU NEED ASSISTANCE, PHONE RHEEM SERVICE OR THEIR NEAREST ACCREDITED SERVICE AGENT / CENTRE.

INSTALLATION – WATER HEATER

THIS WATER HEATER IS FOR INDOOR INSTALLATION ONLY.
THIS WATER HEATER IS NOT SUITABLE FOR POOL HEATING.
Check the water heater is suitable for the gas type available.
(refer to the rating label on the water heater)

INSTALLATION STANDARDS

The water heater must be installed:

- by a qualified person, and
- in accordance with the installation instructions, and
- in compliance with the Plumbing Code of Australia (PCA), Standards AS/NZS 3500.4 and AS/NZS 5601.1, and all local codes and regulatory authority requirements, and
- in New Zealand also conforming to Clauses G11, G12 and H1 of the New Zealand Building Code.

⚠ **Warning:** This water heater may deliver water at high temperature. Refer to the Plumbing Code of Australia, local requirements and these installation instructions to determine if additional delivery temperature control is required. Refer to "Hot Water Delivery" on page 22.

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

WATER HEATER APPLICATION

This water heater is designed for the purpose of heating potable water. Its use in an application other than this may shorten its life.

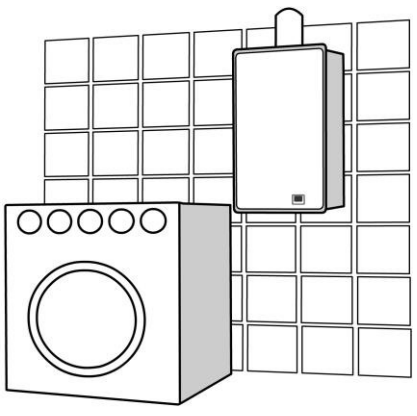
If this water heater is to be used where an uninterrupted hot water supply is necessary for the application or business, then there should be back-up redundancy within the hot water system design. This should ensure the continuity of hot water supply in the event that this water heater was to become inoperable for any reason. We recommend you provide advice to the system owner about their needs and building back-up redundancy into the hot water supply system.

The 862 series of water heater may be installed as an in-series gas booster to a solar water heater. For information relating to the function and operation of the solar water heater, refer to the Owner's Guide and Installation Instructions supplied with the solar water heater.

Note: Australian Standard AS 3498 and New Zealand Building Code Clause G12 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater (862 series) is used as an in-series booster for a solar water heater it can satisfy these AS 3498 and Clause G12 requirements provided it is energised, the booster preset outlet temperature setting is at least 70°C or higher, and that a remote temperature controller is not used.

WATER HEATER LOCATION

The water heater is suitable for indoor installation only and should be installed close to the most frequently used outlet and its position chosen with safety and service in mind. If this water heater is part of a solar water heater system, it should also be installed close to the solar storage tank. Make sure people (particularly children) will not touch the flue outlet. The flue outlet and air inlet must be clear of obstructions.



Clearance must be allowed for servicing of the water heater. The water heater must be accessible without the use of a ladder or scaffold. Make sure the entire front panel can be removed for service. You must be able to read the information on the rating plate. Remember you may have to take the entire water heater out later for servicing.

There are also special requirements in AS/NZS 5601.1 for water heaters installed in a garage, an enclosed space and other locations. Remember all local authorities have regulations about putting water heaters into roof spaces.

This water heater must be installed vertically upright with the water, gas and power connections on the underside, pointing toward the floor. The back of the water heater can be either against a wall or supported by a frame. A heat shield or insulating material or an air gap is not required between the back of the water heater and the wall or frame to comply with the temperature limitation requirement of AS/NZS 5601.1.

Note: The water heater must be well secured to the wall or frame using two fasteners each at the top and bottom of the unit (refer to page 26 for mounting hole positions and weight of the water heater). Use the screws provided only if they are suitable for the wall or frame type. Otherwise select and use alternative fasteners suitable for the application. The fasteners must be capable of bearing the full weight of the water heater so it may not work loose nor impose any load on the gas and water pipe work connected to the water heater. Refer to the fastener manufacturer's information and recommendations for the type of fastener to use for the wall or frame type and load bearing requirements.

For a single water heater installation, refer to the typical installation diagram on page 27.

For a multiple water heater installation, refer to "Multiple Installations" on page 49 and the typical installation diagram on page 50.

The water heater must not be installed in an area with a corrosive atmosphere where chemicals are stored or where aerosol propellants are released. Remember the air may be safe to breathe, but when it goes through a flame, chemical changes take place which may attack the water heater.

VENTILATION

This water heater is to be installed with a Rheem coaxial flue system. The kit enables a room sealed installation, drawing air for combustion from outside of the building.

The ventilation of a room or an enclosure such as a cupboard, where the water heater is installed must comply with the requirements of AS/NZS 5601.1.

SECONDARY FLUE

A secondary flue must be installed with an indoor water heater to discharge combustion products to outside the building. The water heater **MUST ONLY** be installed with a certified Rheem coaxial flue system.

Where more than one water heater is installed, each water heater must be individually flued using a certified Rheem coaxial flue system. A common flue system **MUST NOT** be used.

Refer to "Flueing" on page 30 for details on the flue requirements and installation details.

FROST PROTECTION

The water heater has a frost protection system. The frost protection system will protect the water heater from damage, by preventing ice forming in the waterways of the water heater, in the event of freezing conditions occurring.

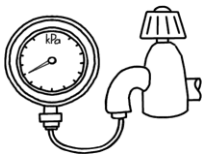
The frost protection system will be rendered inoperable if electrical power is not available at the water heater. Damage to the water heater caused by freezing of the pipe work to or from the water heater is not covered under the Rheem warranty. Refer to AS/NZS 3500.4 for precautions to be taken for installations in frost prone areas. The water heater is not suitable for installation in areas where the ambient temperature falls below -20°C (including wind chill factor).

The cold water line to the water heater must be insulated with suitable thickness insulation if freezing conditions are likely to occur. The insulation must be fitted to the underside of the water heater and be weatherproof and UV resistant if exposed.

MAINS WATER SUPPLY

Where the mains water supply pressure exceeds that shown in the table below, an approved pressure limiting valve that does not have non-return valve characteristics (such as an RMC PSL series valve) is required and should be fitted as shown in the water and gas connection detail diagram on page 28.

Model	B28
Relief valve setting	1750 kPa
Maximum mains supply pressure	1000 kPa
Minimum mains supply pressure *	120 kPa



* minimum water supply pressure required to achieve the rated flow and performance

Notes

- It is not recommended to install this water heater with a low pressure water supply.
- A minimum water supply pressure of 120 kPa is required to achieve the rated flow and performance of the water heater.
- If this water heater is installed as an in-series gas booster for a solar water heater, the maximum water supply pressure to the solar water heater, without an expansion control valve (ECV), is generally 800 kPa, however it may be less than this for some models. Refer to the Owner's Guide and Installation Instructions supplied with the solar water heater for maximum mains supply pressure details.
- If sludge or foreign matter is present in the water supply, it is recommended a suitable filter be incorporated in the cold water line to the water heater.
- This water heater is not suitable for connection to bore water or spring water unless a water treatment device is fitted.
- Refer to "Water Supplies" on page 15 for further information on water chemistry.

PRESET OUTLET TEMPERATURE SETTING

The factory preset outlet temperature setting of the water heater is:

• 862 series	70°C	for a single water heater
	70°C	as part of a Multipak system
	70°C	as part of a Commpak system
	70°C	as part of a Tankpak system

It is usually not necessary to check or adjust the factory preset outlet temperature setting of the water heater, unless the customer or application has a particular requirement for this to be done.

For applications requiring sanitising temperatures, such as a commercial kitchen, it will be necessary to adjust the preset outlet temperature setting to 82°C.

If the water heater is installed as part of a circulated hot water flow and return system in a building, the preset outlet temperature setting must be set to at least 60°C – AU or 65°C – NZ. If the water temperature decreases by more than 5°C through a circulated hot water flow and return system due to heat loss in the ring main, the preset outlet temperature setting of the water heater should be set to at least 70°C.

Gas Booster for a Solar Water Heater

Note: Australian Standard AS 3498 and New Zealand Building Code Clause G12 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater (862 series) is used as an in-series booster for a solar water heater it can satisfy these AS 3498 and Clause G12 requirements provided it is energised, the booster preset outlet temperature setting is 70°C or higher, and that a remote temperature controller is not used.

It will be necessary to check and if required to adjust the preset outlet temperature setting of the continuous flow water heater when:

- it is installed as an in-series gas booster to a solar water heater
- it is an existing continuous flow water heater and a solar water heater is then installed.

Refer to "Preset Outlet Temperature Setting" on page 56.

HOT WATER DELIVERY

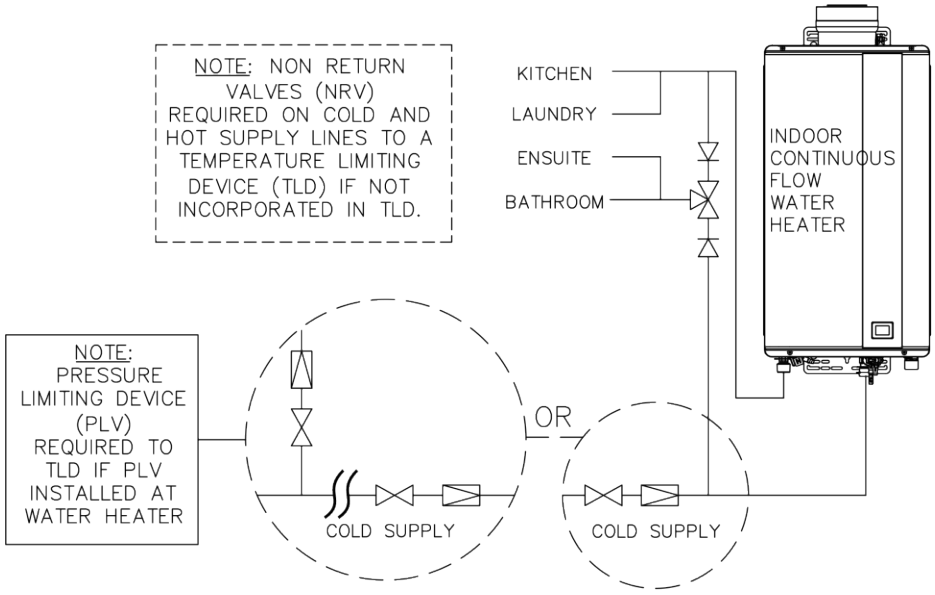
⚠ **Warning:** An 862 series water heater can deliver hot water at a temperature up to 82°C depending upon its preset outlet temperature setting. This temperature is sufficiently hot to cause severe scalding. Water at this temperature may be plumbed to fixtures where water hotter than 50°C is allowed, such as a kitchen, laundry and other areas requiring sanitising temperatures.

The installing plumber may have a legal obligation to ensure the installation of this water heater meets the water temperature delivery requirements of the Plumbing Code of Australia and New Zealand Building Code Clause G12 so that heated water delivered to fixtures and appliances used primarily for personal hygiene is at a temperature which is unlikely to scald.

It is necessary and we recommend that a temperature limiting device be fitted between an 862 series water heater and the fixtures and appliances used primarily for personal hygiene such as in a bathroom, ensuite, public amenities or other ablution areas, to reduce the risk of scalding. The temperature limiting device must be of a type suitable for use with a gas continuous flow water heater. Refer to the manufacturer's specifications of the temperature limiting device.

Where a temperature limiting device is installed adjacent to the water heater, the cold water line to the temperature limiting device can be branched off the cold water line either before or after the isolation valve and pressure limiting valve to the water heater.

If a pressure limiting valve is installed on the cold water line to the water heater and the cold water line to a temperature limiting device branches off before this valve or from another cold water line in the premises, then a pressure limiting valve of an equal pressure setting may be required prior to the temperature limiting device.



Two Temperature Zones Using a Temperature Limiting Device

Gas Booster for a Solar Water Heater

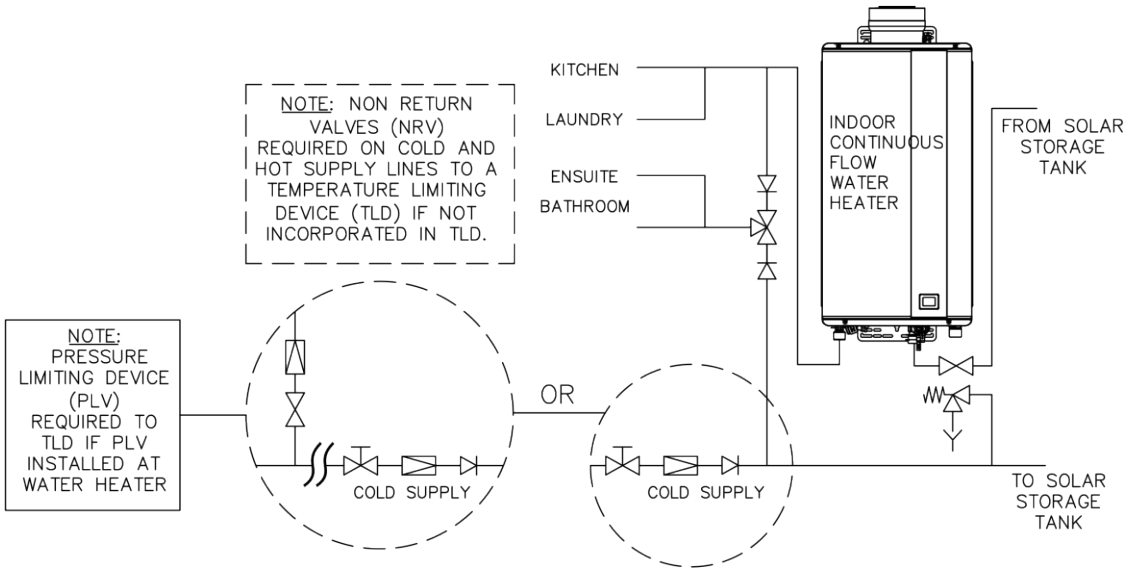
The temperature limiting device used with an 862 series in-series gas booster as part of a solar water heater installation must be of a type suitable for use with both a continuous flow water heater and a solar water heater. Refer to the manufacturer's specifications of the temperature limiting device.

⚠ **Warning:** Temperature controllers **must not** be fitted to this water heater (862 series) if it is installed as an in-series gas booster with a solar water heater system is installed because water at a temperature much higher than the controller setting can be delivered. If a solar water heater has been installed to an existing water heater installation, then all controllers **must be** disconnected and removed.

Where a temperature limiting device is installed adjacent to the in-series gas booster, the cold water line to the temperature limiting device can be branched off from either the cold water line to the solar storage tank or another cold water line in the premises. It must not be branched off the water line from the solar storage tank.

If a pressure limiting valve is installed on the cold water line to the solar water heater and the cold water line to a temperature limiting device branches off before this valve or from another cold water line in the premises, then a pressure limiting valve of an equal pressure setting may be required prior to the temperature limiting device.

Note: Refer to the installation instructions supplied with the solar storage tank for further information on the location of a cold water branch line to a temperature limiting device relative to the installation of the cold water valves in the cold supply pipework prior to the solar storage tank.



In-series Gas Booster as part of a Typical Solar Water Heater Installation
Two Temperature Zones Using a Temperature Limiting Device

TEMPERATURE CONTROLLERS

The Rheem 862 series can be installed with Rheem Standard controllers to enable the user to control the temperature of the delivered water from the outlet of the water heater.

There are three types of Standard controller. They are the Kitchen controller, Bathroom 1 controller and the Bathroom 2 controller. The controllers are designed to be hard wired into the water heater using either the Kitchen controller cable or the Bathroom controller cable.

Temperature controllers are only suitable for either a single water heater installation or a dual water heater installation using the EZ Link system. They are not suitable if multiple water heaters are manifolded together. Other manufacturers' controllers are not suitable to and cannot be installed with this water heater.

⚠ **Warning:** Temperature controllers **must not** be fitted to this water heater (862 series) if it is installed as an in-series gas booster with a solar water heater system because water at a temperature much higher than the controller setting can be delivered. If a solar water heater is installed to an existing water heater installation, then all controllers **must be** disconnected and removed.

Refer to the Rheem website for the Owner's Guide and Installation Instructions for the Standard Rheem Controllers. Visit www.rheem.com.au/rheem/help#guides.

EZ LINK DUAL INSTALLATION

Two 862B28 gas continuous flow water heaters can be installed as an EZ Link dual installation. The EZ Link® system is designed to electronically control the two gas continuous flow water heaters and have them operate as one. One or both water heaters may be in operation, depending upon the hot water demand. The second water heater will only operate when the hot water demand exceeds the capacity of the first water heater to supply.

Refer to the installation instructions supplied with the EZ Link installation kit or visit www.rheem.com.au/rheem/help#guides.

CIRCULATED HOT WATER FLOW AND RETURN SYSTEM

A Rheem 862B28 model continuous flow water heater can be installed as part of a circulated hot water flow and return system in a building.

Notes

- the preset outlet temperature setting of the water heater must be set to at least 60°C – AU or 65°C – NZ.

  In New Zealand an approved UV sterilisation or chlorine disinfection system may be used if the temperature setting of the water heater is less than 65°C.

- the return water temperature to the water heater must not be less than 55°C – AU or 60°C – NZ.

  If the water temperature decreases by more than 5°C due to heat loss from the ring main, the preset outlet temperature setting of the water heater must be set to above 60°C – AU or 65°C – NZ to ensure the return water temperature is not less than 55°C – AU or 60°C – NZ.

- temperature controllers should not be installed with this water heater as part of a circulated hot water flow and return system, including when installed as part of an EZ Link System dual installation.

The circulator must be:

- sized and set to provide a minimum flow rate of 3.0 L/min through the recirculated hot water flow and return system, and
- either thermostatically and / or timer controlled.

  The circulator **must not** be set to operate continuously, i.e. 24 hours per day.

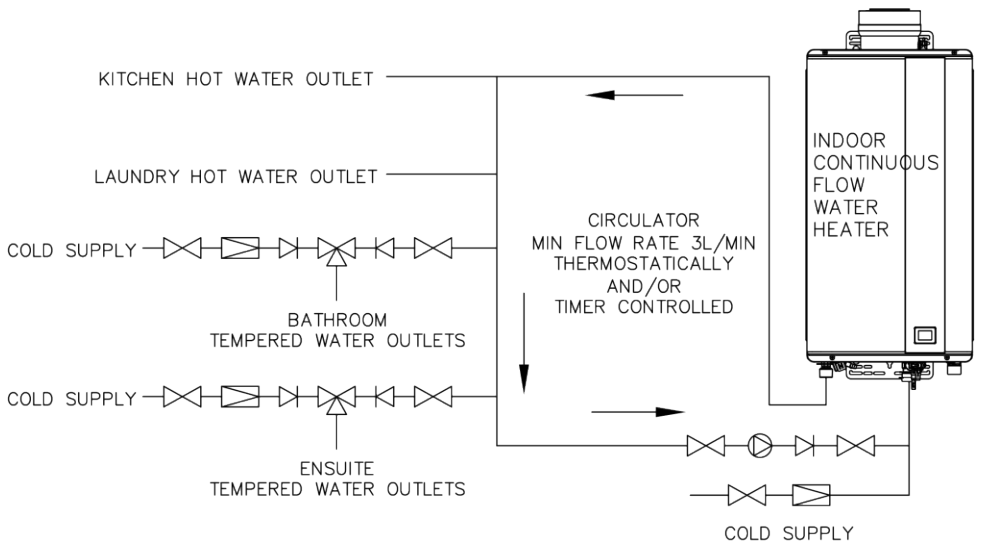
Temperature Limiting Device

A temperature limiting device cannot be installed in circulated hot water flow and return pipe work. The tempered water from a temperature limiting device cannot be circulated. Where a circulated hot water flow and return system is required in a building, a temperature limiting device can only be installed on a dead leg, branching off the circulated hot water flow and return pipe.

If circulated tempered water were to be returned back to the water heater, depending on the location of the return line connection on the water supply line to the water heater, then either:

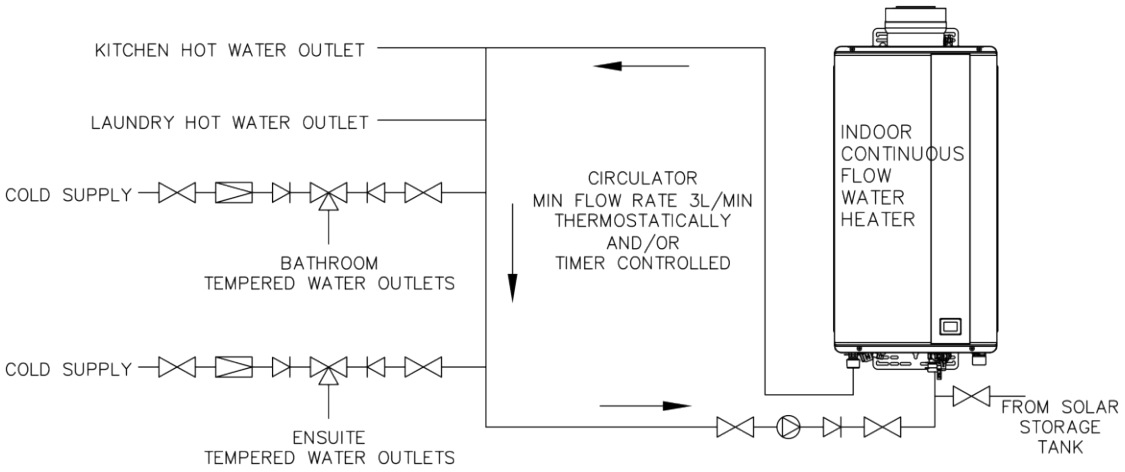
- water will be supplied to the cold water inlet of the temperature limiting device at a temperature exceeding the maximum recommended water supply temperature, or
- when the hot taps are closed no water will be supplied to the cold water inlet of the temperature limiting device whilst hot water will continue to be supplied to the hot water inlet of the temperature limiting device.

These conditions may result in either water at a temperature exceeding the requirements of AS/NZS 3500.4 being delivered to the hot water outlets in the ablution areas, or the device closing completely and not delivering water at all, or the device failing. Under either condition, the operation and performance of the device cannot be guaranteed.



NOTE: A PLV IS REQUIRED TO BE INSTALLED ON THE COLD SUPPLY LINE TO THE TEMPERING VALVE IF A PLV IS INSTALLED ON THE COLD SUPPLY LINE TO THE WATER HEATER.
NON RETURN VALVES (NRV) REQUIRED ON COLD AND HOT SUPPLY LINES TO A TEMPERATURE LIMITING DEVICE (TLD) IF NOT INCORPORATED INTO TLD.

Circulated Hot Water Flow and Return
Gas Continuous Flow Water Heater

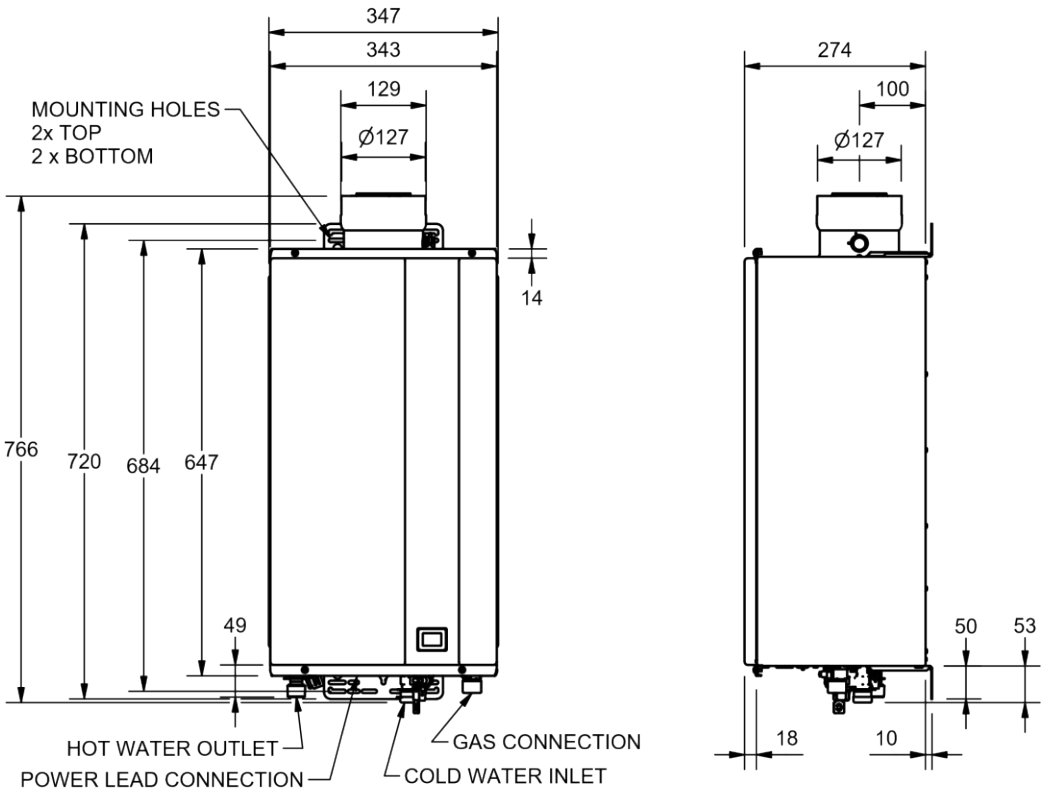


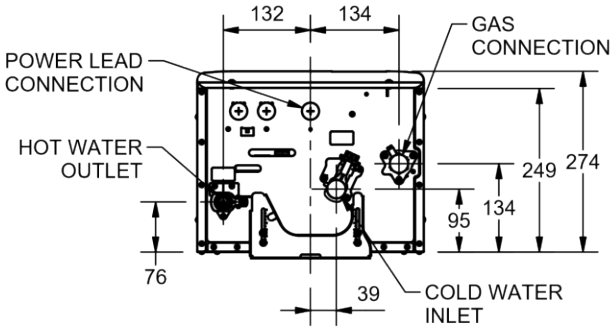
Circulated Hot Water Flow and Return
In-series Gas Booster as part of a Solar Water Heater Installation

REDUCING HEAT LOSSES

The hot water line from the water heater and the pipe work between the solar storage tank, if one is installed, and the in-series gas booster must be insulated in accordance with the requirements of AS/NZS 3500.4. The insulation must be weatherproof and UV resistant if exposed. The insulation must be fitted up to the connections on the both the underside of the water heater and the solar storage tank.

DIMENSIONS AND TECHNICAL DATA





Models		862B28 Natural Propane	862B28 Universal LP Gas
Water heating capacity @ 40°C rise	litres / min	17.5	17.5
Nominal capacity @ 25°C rise	litres / min	28	28
Mass Empty (unpackaged)	kg	27	27

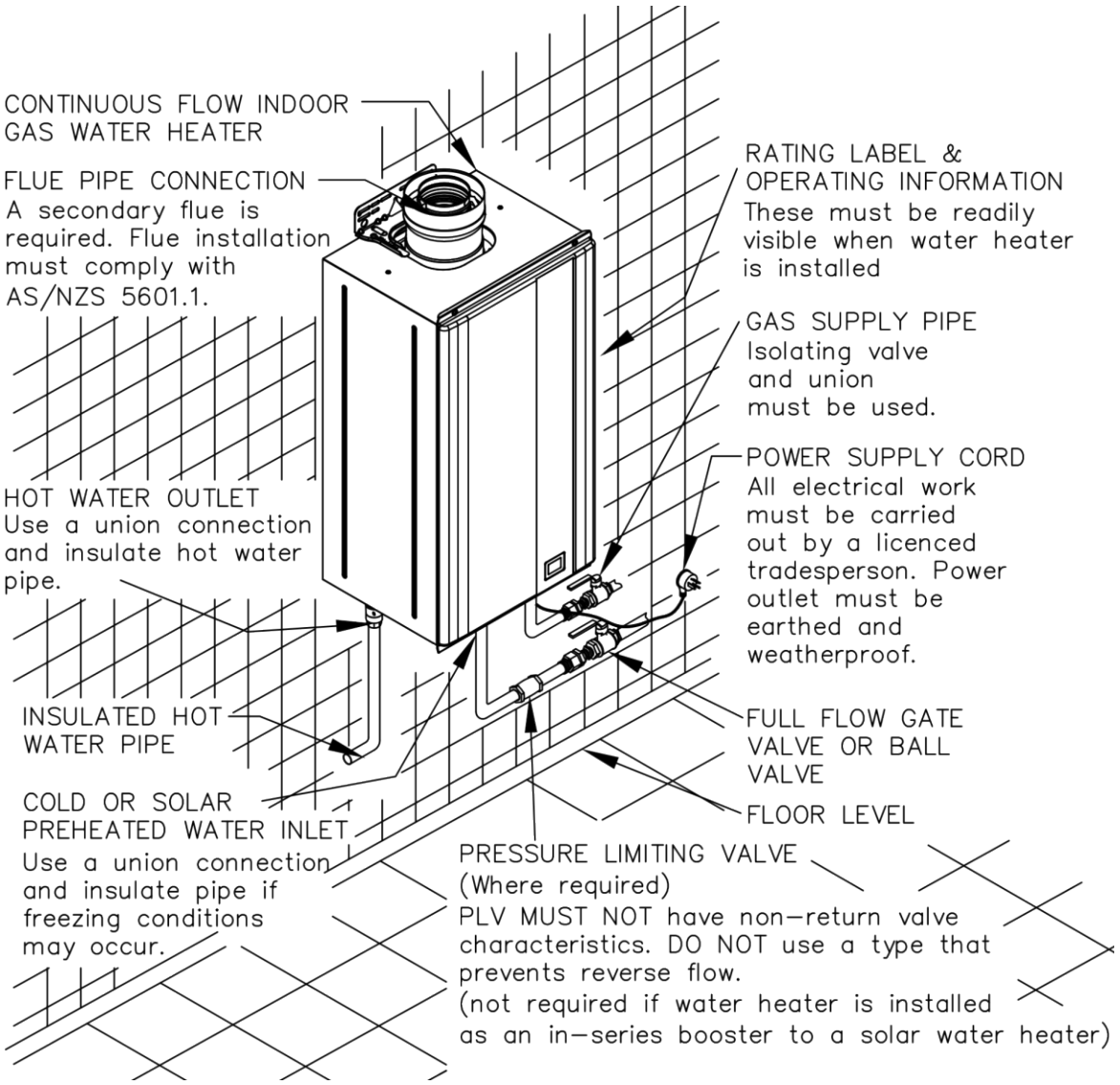
Technical data is subject to change.

862B28 Models **Gas Details**	Hourly Gas Consumption (MJ)	Min Gas Pressure (kPa)	Test Point Gas Pressure (kPa)		Max Gas Pressure (kPa)	Injector Size (mm)
			minimum	maximum		
Natural	210	1.13	0.175	0.720	3.50	19 x ∅ 1.73 & 19 x ∅ 1.25
Propane	210	2.75	0.295	1.050	3.50	19 x ∅ 1.11 & 19 x ∅ 0.80
Universal LP Gas	204	2.75	0.270	0.915	3.50	19 x ∅ 1.11 & 19 x ∅ 0.80

Model Numbers

Gas type	Letter N, P or LP is included in the model number to denote gas type. N = Natural, P = Propane (AU), L = Universal LP Gas (NZ). E.g. 862B28NF, 862B28PF, 862B28LPZ
Frost protection	Letter F is included in the model number to denote frost protection. The New Zealand LPZ model also has frost protection.
New Zealand	Letter Z is included in the model number to denote a New Zealand specific model, i.e. Universal LP Gas model only – 862B28LPZ.

TYPICAL INSTALLATION – INDOOR LOCATION



CONNECTIONS – PLUMBING

All plumbing work must be carried out by a qualified person and in compliance with the Standard AS/NZS 3500.4 and all local codes and regulatory authority requirements.

All gas work must be carried out by a qualified person and in compliance with the Standard AS/NZS 5601.1 all local codes and regulatory authority requirements.

In New Zealand the installation must conform to Clauses G11, G12 and H1 of the New Zealand Building Code.

CONNECTION SIZES

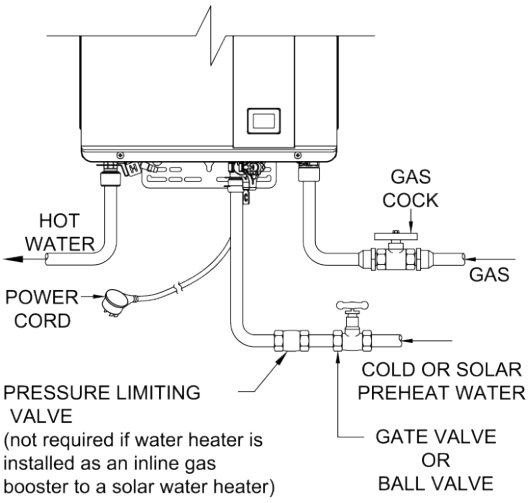
Model	862B28
Hot water connection	R 3/4
Cold water connection	R 3/4
Gas inlet connection	R 3/4

WATER INLET AND OUTLET

All pipe work must be cleared of foreign matter before connection and purged before attempting to operate the water heater. All olive compression fittings must use brass or copper olives. Use an approved thread sealant such as Teflon tape on all threaded joints. Only use sufficient thread sealant to seal a joint. Refer to the sealant manufacturer's guidelines for how much and where to use.

⚠ **Warning:** Sealant must not be allowed in the waterways of pipe work or fittings. Excess sealant may be carried into the water heater where it will damage components and block the internal filters. This damage to components or blockage of filters is not covered by the Rheem warranty and a service rectification fee will be charged.

A full flow gate valve or ball valve must be installed on the cold water line or solar preheat water line to the water heater. **A non-return valve or stop tap must not be installed.** An acceptable arrangement is shown in the diagram. Refer also to "Hot Water Delivery" on page 22 and to "Mains Water Supply" on page 21.



Gas Water Heater
Cold (or Solar Preheat) and Hot Water and Gas Connection Details

A disconnection union must always be provided at the cold water inlet and hot water outlet on the water heater to allow for disconnection of the water heater.

Insulation used on the cold and hot water lines must extend up to the cold water inlet and hot water outlet of the water heater.

This water heater is intended to be permanently connected to the water mains and not connected by a hose-set. A braided flexible hose or semi-flexible connector may be used for connection to the water heater, where permitted by AS/NZS 3500.4.

Notes

- It is essential all pipe connections be correctly aligned, otherwise component connections within the water heater may be strained and / or components themselves misaligned. It is recommended also, wherever possible, pipe connections be made at the water heater first and final pipe runs be made in soft copper pipe to allow some adjustment for misalignment.
- Use the spanner flats on the water heater fittings and take care to avoid twisting the water inlet and outlet pipes inside the jacket.

PIPE SIZES

The pipe sizing for hot water supply systems should be carried out by persons competent to do so, choosing the most suitable pipe size to ensure adequate flow for each individual application. Reference to the technical specifications of the water heater and local regulatory authority requirements must be made.

To achieve true mains pressure operation, the cold water line to the water heater should be the same size or bigger than the hot water line from the water heater.

The minimum recommended cold pipe or solar preheat pipe and hot pipe size is DN20 for a single water heater installation. If more than one water heater is installed, refer to the table of minimum header pipe sizes on page 49.

IN-SERIES BOOSTER

The pipe work between the solar storage tank (if one is installed) and the in-series gas booster has a minimum recommended pipe size of DN20 for a single water heater installation and **MUST BE** of copper or other metal material suitable for potable water. If more than one water heater is installed, refer to the table of minimum header pipe sizes on page 49.

The pipe work shall be fully insulated with a closed cell type insulation or equivalent in accordance with the requirements of AS/NZS 3500.4. The insulation must be weatherproof and UV resistant if exposed. The insulation must be fitted up to the connections on both the solar storage tank and the in-series gas booster.

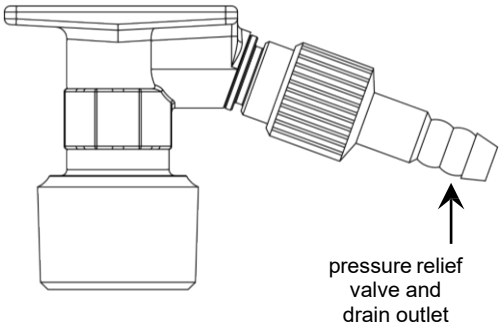
A full flow isolation valve may be installed on the solar preheat water line from a solar storage tank to the in-series gas booster.

RELIEF VALVE DRAIN

A pressure relief valve is incorporated into the hot water outlet fitting of the water heater. A drain line is recommended to be fitted to the relief valve to carry any discharge clear of the water heater.

A one (1) metre length of flexible silicone tubing is supplied with the water heater to use as a drain line for the relief valve. The tubing is to be cut to length to suit the distance from the water heater to the drain line discharge point.

Connect the drain line to the relief valve using a suitable restraining device such as a hose clamp or pipe clamp. The drain line from the valve to the point of discharge should be as short as possible, have a continuous fall all the way from the water heater to the discharge outlet and have no restrictions, twists or kinks in the tubing. Pipe clips are to be used to secure the drain line to a wall at a suitable spacing so the drain line will not sag over time. The pipe clips are to be installed so not to cause a restriction or compress, pinch or distort the tubing.



Hot Water Outlet Fitting

The outlet of a drain line must be in such a position that flow out of the pipe can be easily seen, but arranged so discharge will not cause damage or nuisance or result in injury, such as a slip injury. The termination point of a drain line must comply with the requirements of AS/NZS 3500.4.

GAS INLET

The gas connection is made at the underside of the water heater. The pipe work must be cleared of foreign matter before connection and purged before attempting to operate the water heater. An isolation valve and disconnection union must be installed to allow servicing and removal of the water heater (refer to the diagram on page 28).

Note: Refer to the Gas Installations Standard AS/NZS 5601.1 for the correct method of sizing the gas supply pipe to the water heater. The pipe size selection must take into account the high gas input of this water heater (refer to table on page 26) as well as all of the other gas appliances in the premises.

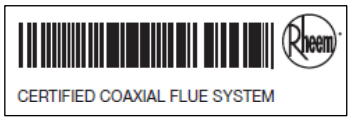
⚠ **Warning:** Always isolate the water heater before pressure testing the gas supply system. Disconnect the water heater after the isolation valve to prevent the risk of serious damage to the gas control. The Rheem warranty does not cover damage of any nature resulting from failure to observe this precaution. Refer to rating label for gas types and pressures.

FLUEING

SECONDARY FLUE

A secondary flue must be installed with an indoor water heater to discharge combustion products to outside the building. The water heater **MUST ONLY** be installed with certified Rheem coaxial flue components carrying the label opposite. **DO NOT** use any other type of flue parts.

Where more than one water heater is installed, each water heater must be individually flued using certified Rheem coaxial flue components.



A common flue system **MUST NOT** be used.

The installation of the secondary flue must be carried out by a qualified person and be in accordance with the Gas Installations Standard AS/NZS 5601.1, local authority requirements and the installation instructions. A charge will be made for any service related call due to the installation of the flue system not complying with these installation instructions.

The water heater must be flued separately from all other appliances and flued to the outdoors. Minimum clearance requirements apply from the flue terminal in accordance with AS/NZS 5601.1 (refer also to "Flue Terminal Location" on page 32). Do not install the flue to discharge into a chimney. There is no requirement on the flue to maintain a minimum distance from combustible materials.

⚠ **Warning:** Where the flue penetrates through walls, floors or ceilings, the penetration must comply with local regulations for fire rating. The coaxial flue system does not have nor provides a fire rating.

The water heater flue may only be terminated with a Horizontal Flue Terminal at the end of either a horizontal or vertical flue. The secondary flue must be self-supporting and not impose a load on the water heater. Flue runs must be adequately supported along both horizontal and vertical runs. The maximum recommended unsupported span for a horizontal run is no more than 2.0 m. Support isolation hanging bands should be used. Do not use wire. Wall Brackets (PN 295129) are available and should be used for vertical runs. The coaxial flue components are to be connected together using the screws provided. The flue outside diameter is 127 mm.

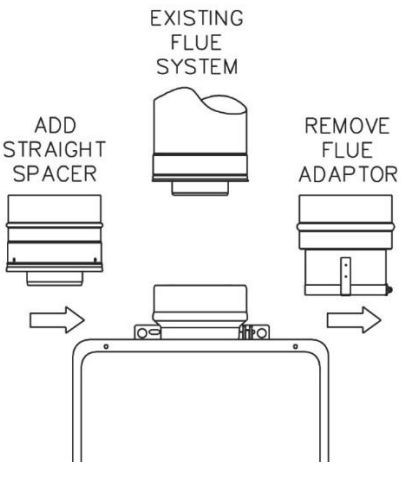
⚠ **Warning:** Never operate the water heater unless it has been installed in accordance with the installation instructions. Failure to install the water heater in accordance with the installation instructions, properly flueing the water heater to the outdoors and ensuring it has an adequate air supply, will result in unsafe operation of the water heater, possibly causing fire, explosion, serious injury and asphyxiation from carbon monoxide.

A sealing gasket is located at one end of the inner flue. Check all flue components to ensure the gasket is in place and properly seated. **DO NOT** install if any gaskets are missing. Contact Rheem Service or their nearest Accredited Service Agent / Centre if the gasket is missing.

REPLACING AN 862 027 OR 627 MODEL WITH AN 862B28 MODEL

An 862B28 model is taller than the superseded 862027 model. If a new model is replacing the superseded model, the original Flue Adaptor connected to the 862027 model needs to be removed and a Straight Spacer (PN 295140) installed on the 862B28 model.

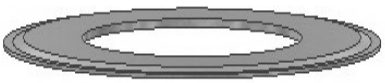
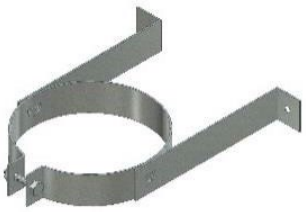
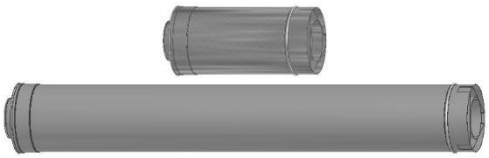
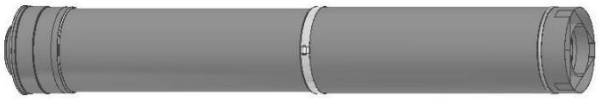
1. Loosen the ring clamp on the Flue Adaptor and undo the screws securing this component to the flue above.
2. Disconnect and remove the 862027 model water heater and the Flue Adaptor.
3. Fit the Straight Spacer to the 862B28 model water heater prior to securing the water heater on the wall.
4. Locate the Straight Spacer into the existing flue system and secure the water heater to the wall.
5. Secure the Straight Spacer to the adjacent flue component with the screws provided.
6. Where an existing Condensate Trap and drain line is installed, this is to remain connected to its existing flue fitting. The condensate connection at the top of the 862B28 model is not used and the blanking cap **must** remain in place.



Remove Flue Adaptor – Install Straight Spacer

COMPONENTS

A complete flue system is comprised from the following components.

horizontal flue terminal (PN 295146) 	**trim ring** (PN 295125) 
wall bracket (PN 295129) 	**condensate trap** (PN 295139)
90° elbow (PN 295147) 	**45° elbow** (PN 295148)
flue extensions (PN 295152) – 300 mm (PN 295149) – 900 mm 	**adjustable flue extension – 560 to 890 mm** (PN 295153) 
male to male (MM) adaptor (PN 295151) 	**female to female (FF) adaptor** (PN 295150)
straight spacer – 105 mm (PN 295140) – (to convert flue from '027' to 'B28' model) 	

FLUE TERMINAL LOCATION

The water heater must be located to ensure that the location of the flue terminal complies with the requirements of AS/NZS 5601.1. As a guide the following requirements are extracted from the Gas Installations Standard. The distances are measured along the wall from the flue penetration.

Flueing Horizontally Through a Wall

- At least 300 mm between the top of the flue terminal and the eaves.
- At least 300 mm between the bottom of the flue terminal and the ground, balcony or other surface.
- At least 500 mm between the flue terminal and the edge of any opening into the building, such as an openable door or window, measured horizontally*.
- At least 1500 mm between the top of the flue terminal and the edge of any opening into the building, such as an openable window, measured vertically.
- At least 300 mm between the flue terminal and a return wall or external corner, measured horizontally*.
- At least 1500 mm between the flue terminal and any opening into a building, in the direction of the flue discharge.
- At least 500 mm between the flue terminal and a fence, wall or other obstruction, in the direction of the flue discharge.
- At least 450 mm between the flue terminal and a property boundary unobstructed by a fence, wall or other obstruction, in the direction of the flue discharge.
- At least 300 mm between the flue terminal and any other flue terminal, cowl or other combustion air intake.

Note: * If these horizontal distances cannot be achieved, AS/NZS 5601.1 states an equivalent horizontal distance measured diagonally from the nearest discharge point of the flue terminal to the opening may be deemed to comply. Check with the local regulator.

For a multiple water heater installation, refer to “Multiple Flue Terminations through Wall” on page 44 for minimum distances between flue terminals.

Flueing Vertically Through a Roof

- At least 500 mm between the underside of the flue terminal and the nearest part of a non-trafficable roof.
- At least 2000 mm between the end of the flue terminal and the nearest part of a trafficable roof and 500 mm above any surrounding parapet. The flue is to be supported.
- At least 1500 mm between the top of the flue terminal and the edge of any opening into the building, such as an openable window, measured vertically.
- At least 500 mm between the flue terminal and any building structure or obstruction facing the terminal, measured horizontally.
- At least 1500 mm between the flue terminal and the edge of any opening into the building, measured horizontally.
- At least 300 mm between the flue terminal and any other flue terminal, cowl or other combustion air intake.
- At least 200 mm between the flue terminal and the nearest part of a chimney.

For a multiple water heater installation, refer to “Multiple Flue Terminations through Roof” on page 44 for minimum distances between flue terminals.

FLUE LENGTHS

Maximum Flue Length

The system will not operate if there is excessive restriction (pressure drop) in the flueing system.

The water heater is approved to have a maximum length of a secondary flue between the water heater and the flue terminal of 9 m when the flue is installed with 3 x 90° Elbows or 6 x 45° Elbows. The maximum straight flue length with no elbows is 13.5 m to the flue terminal.

- To determine the maximum length of flue to the flue terminal for an installation, reduce the maximum straight flue length of 13.5 m:
  - by 1.5 m for every 90° Elbow, and
  - by 0.75 m for every 45° Elbow.
- A secondary flue may have a combination of 90° Elbows and 45° Elbows.
- Horizontal runs of flue must be installed with a gradient of 20 mm per metre of horizontal run. Refer to "Draining the Condensate and Flue Gradient" on page 33 and "Horizontal Flue Runs" on page 35.

  Note: Ensure the seam of the inner flue in horizontal runs is at the top of the installation.

Minimum Flue Length

The minimum horizontal flue distance which may be used is 300 mm, provided:

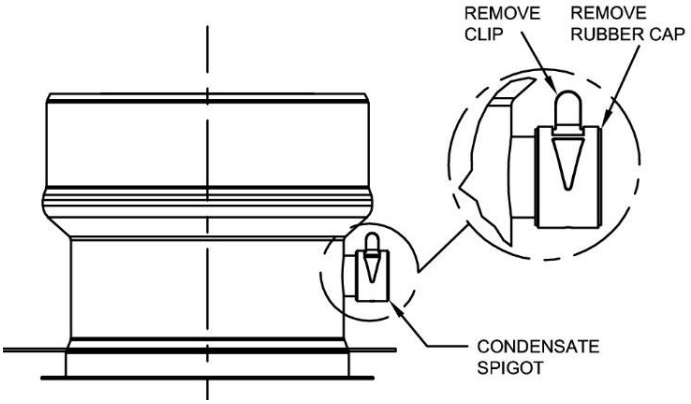
- one 90° Elbow is connected to the flue outlet of the water heater, and
- the Horizontal Flue Terminal is connected to the 90° Elbow.

FLUE CONDENSATE

Condensate from the combustion gases may form in the flue. The flue outlet assembly at the top of the water heater incorporates a condensate drain spigot to allow for draining of this condensate.

This spigot is covered by a rubber cap held in position by a clamp. For certain types of installations, it will be necessary to remove the clamp and cap and install a Condensate Trap (PN 295139) and drain line.

The Condensate Trap must be filled with water prior to the operation of the water heater. Refer to "Condensate Trap and Condensate Drain Line" on page 34.



condensate drain spigot

Draining the Condensate and Flue Gradient

A Condensate Trap and drain line must be installed under the following conditions in order to prevent condensate from draining back into the water heater:

- Where vertical sections exceeding 2 m are incorporated in a flue that penetrates a wall and terminates.
- Where a flue penetrates the roof and terminates.
- Where there is a horizontal run of flue between two elbows and the elbow closest to the flue terminal is orientated upward.
  - This horizontal run of flue must have a gradient upward to the flue terminal. Condensate will drain back toward the water heater.

Failure to install a Condensate Trap and drain line could allow acidic flue gas condensate to enter into the water heater flue-way, causing premature failure of the water heater. Any resultant faults will not be covered by the Rheem warranty.

Note: A horizontal run of flue connecting directly to a Horizontal Flue Terminal must have a gradient downward to the flue terminal. Condensate will drain from the flue terminal.

Condensate Trap and Condensate Drain Line
Where the installation requires a Condensate Trap and condensate drain line:

1. Remove the clamp and rubber cap from the condensate drain spigot on the water heater flue outlet assembly.

2. Locate the Condensate Trap in a suitable position adjacent to the water heater.

   The loop of the condensate trap **MUST BE** below the spigot of the condensate drain section to ensure proper drainage.

   - Secure to the wall with the pipe saddle supplied.

   If required, trim the hose length to suit the installation. Ensure the structure of the Condensate Trap including the fixed loop is not altered and the trimmed hose seals to the spigot.

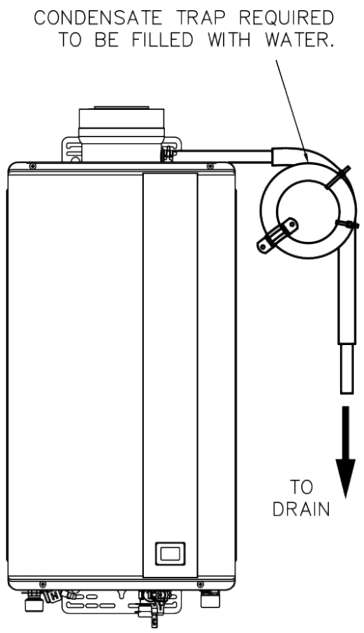
3. Fill the condensate trap with water.

4. Fit the shorter end of the silicone tube to the 16 mm spigot of the water heater flue outlet, ensuring a constant fall to the condensate trap.

   - Secure to the spigot with the clamp removed in step 1.
   - Ensure the silicon hose is not kinked.

5. Plumb the outlet of the Condensate Trap to drain.

   - Ensure the silicon hose is not kinked.



Condensate Trap and Condensate Drain Line

The drain line should be as short as possible, have a continuous fall all the way from the Condensate Trap to the discharge outlet and have no tap, valves or other restrictions in the pipe work.

The outlet of the drain line must be in such a position that flow can be easily seen, but arranged so the condensate will not cause injury, damage or nuisance.

⚠ **Warning:** Failure to fill with water may cause flue gasses to escape through the condensate trap. Check regularly to ensure the condensate trap is filled with water, replenishing when required.

Notes
Consideration must be given to the material used for a condensate drain line and to where the drain line discharges.

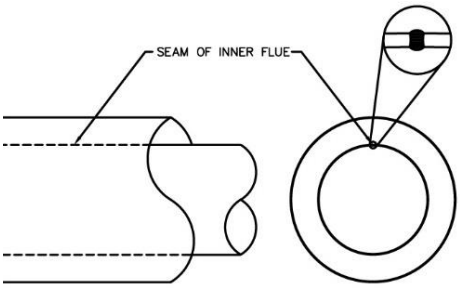
- As the condensate is mildly acidic, copper tube and fittings must not be used as they will corrode.
- Use UPVC (Unplasticised Polyvinyl Chloride) or PE (polyethylene) piping.
- The outlet of the drain line must be in such a position that flow can be easily seen, but arranged so that discharge will not cause injury, damage or nuisance.
- The drain line must not discharge onto electrical connections, earth stakes, copper pipe, concrete paths or into a pond.

For a multiple unit installation, refer to “Multiple Water Heater Condensate Trap and Condensate Drain Line Installation” on page 45.

HORIZONTAL FLUE RUNS

There are a number of basic installation requirements which must be followed for a flue installation incorporating horizontal flue runs.

Failure to observe these precautions can lead to the premature failure of the flue system and / or water heater.

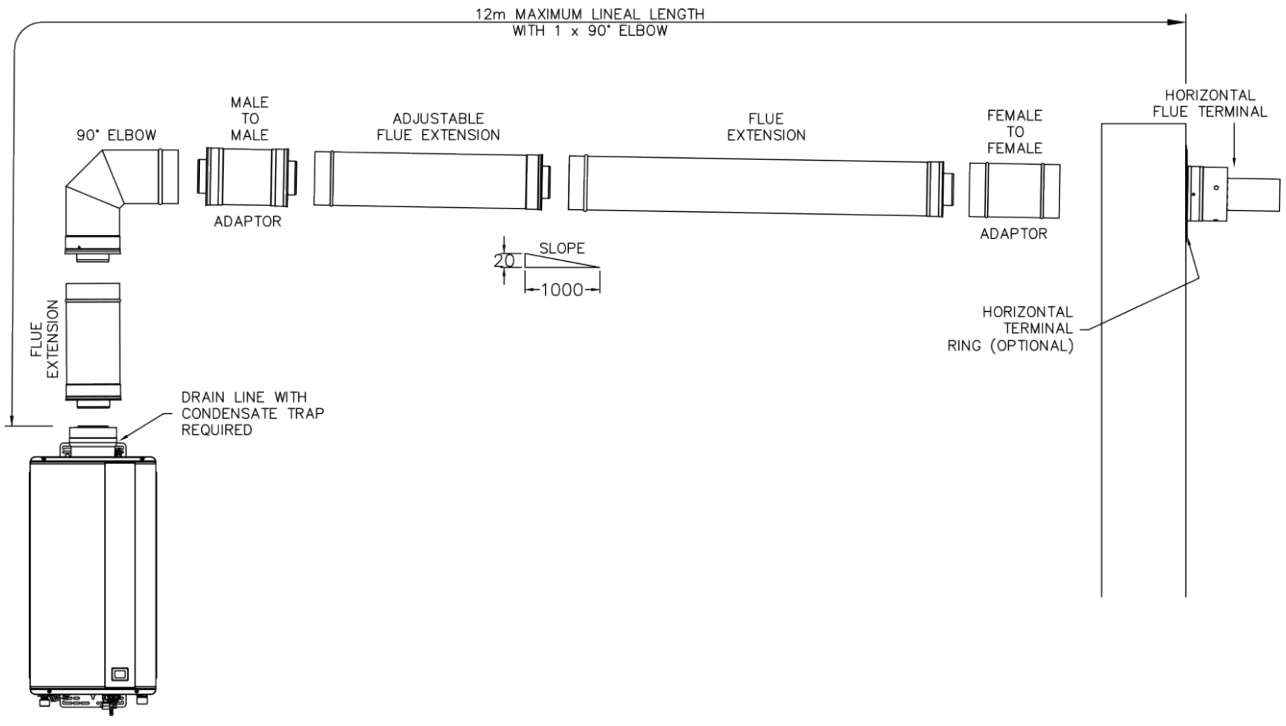


- The flue must be installed with the seam of the inner flue toward the top of the installation.
- A horizontal section of flue must be installed with a gradient of 20 mm per metre (1 in 50 or 1° fall) of horizontal run.
- A horizontal run of flue between two elbows where the elbow closest to the flue terminal is **orientated upward**, must have a gradient upward to the flue terminal.
    - Condensate will drain back toward the water heater. A Condensate Trap and drain line must be installed where the horizontal flue is installed with an upward gradient. Refer to "Draining the Condensate" on page 33.

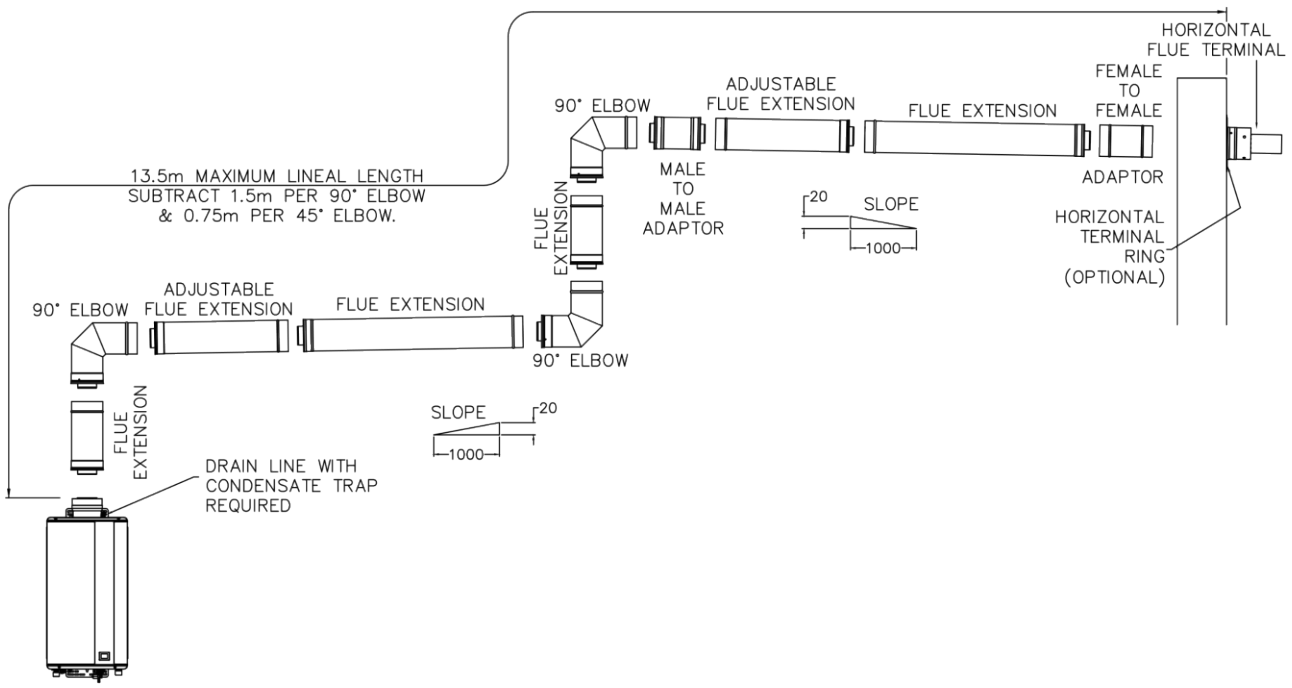
      This ensures any condensate formed during operation of the water heater is prevented from draining back into the water heater.
- A horizontal run of flue connecting directly to a Horizontal Flue Terminal must have a gradient downward to the flue terminal.

  This prevents rainwater from entering the flue draining back into the water heater.
    - Use Male to Male and Female to Female Adapters to reverse the direction of flue insertion where three or more sections of flue are used in a horizontal flue run and the flue drains toward the flue terminal. Refer to the diagram "Typical Installation – Horizontal Flue with One Elbow" on page 35.

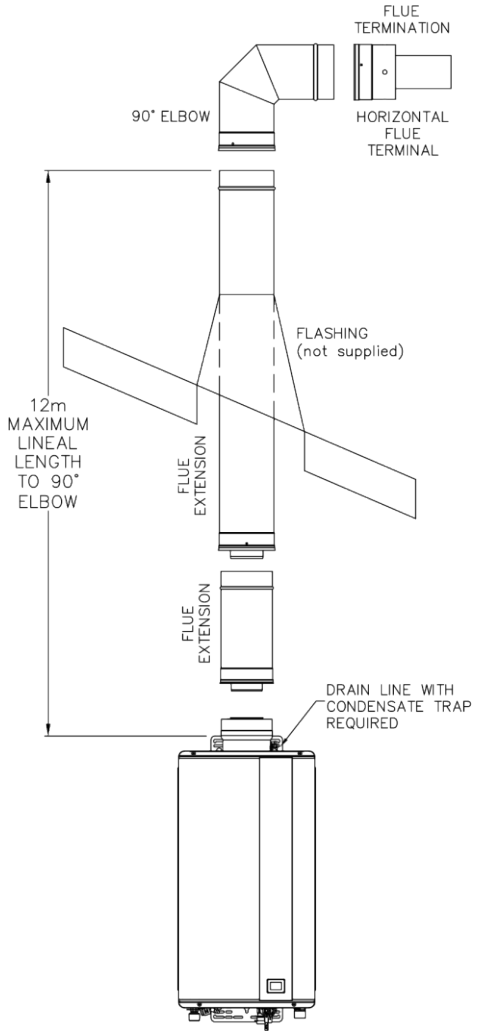
      This provides for proper draining of condensate without pooling at the flue component joins.



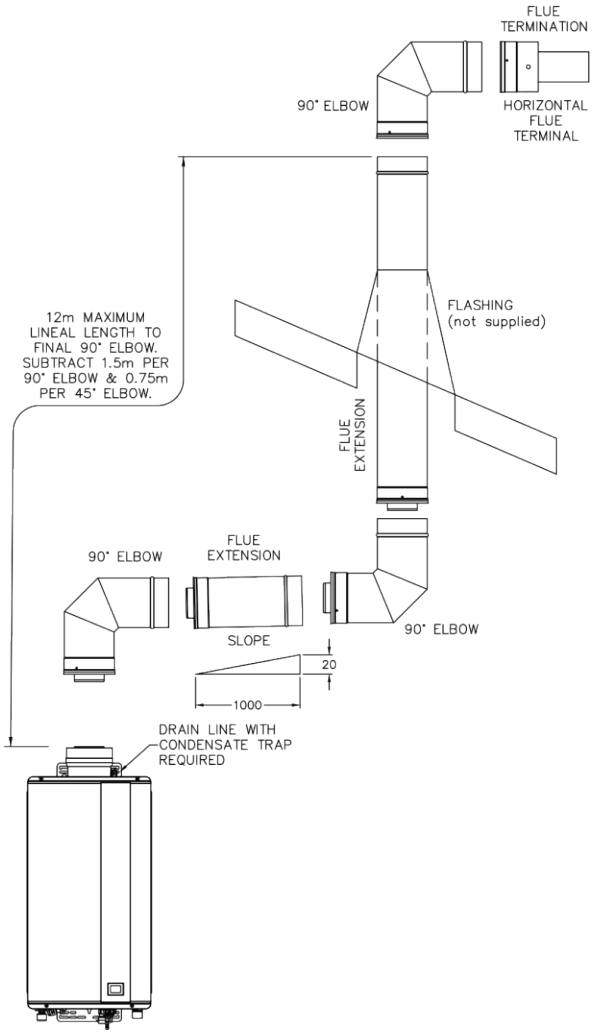
Typical Installation – Horizontal Flue with One Elbow



Typical Installation
Horizontal Flue with Multiple Vertical and Horizontal Sections



Typical Installation
Vertical Flue



Typical Installation
Vertical Flue with Vertical and Horizontal Sections

HORIZONTAL FLUE INSTALLATION

Horizontal Flueing – Directly Behind Water Heater

This method of flue installation is used where the secondary flue is to penetrate and terminate immediately behind the wall on which the water heater is mounted.

Do not plumb the water heater prior to this type of flue installation, as the water heater (if mounted) requires to be removed from the wall prior to the final installation of the flue.

Notes

- Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.
- Each flue component is supplied with screws to connect to the adjacent flue component. The screws are located in a bag taped to the outside of the flue component.

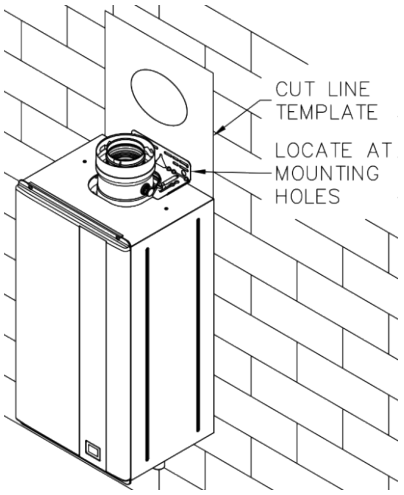
To install a horizontal flue and termination directly behind the water heater:

1. Carefully remove the template inserted as the middle pages of this installation instructions booklet.
2. Align the mounting bracket holes on the template exactly over the upper wall mounting bracket holes on the water heater.

   This step presumes the water heater is hung on the wall.

   - It may be convenient to tape the template to the wall.

   Note: Ensure there are no studs, noggins, pipes or electrical cables located in the wall where the flue is to penetrate



position template

3. Mark the pilot hole location through the centre of the template.

   - Remove but **DO NOT DISCARD** the template.

4. **Remove the water heater from the wall.**

   Note: It is necessary to remove the water heater from the wall to allow the fitting and installation of the flue. It is also good practice so no debris from the drilling operation enters the water heater flue outlet.

5. Drill a pilot hole using a 6.5 mm diameter or smaller drill bit.

   The drill bit must be long enough to penetrate completely through the outer skin of the external wall.

   Note: Ensure the drill remains level and straight during this step.

6. Cut along the middle of the **bold** circle marked “Cut Line” on the template.
7. Align the centre of the template with the pilot hole on the wall surface and scribe around the template onto the wall.

   The circle should be 150 mm in diameter.

   - Remove but **DO NOT DISCARD** the template.

8. Align the centre of the template with the pilot hole on the outside wall surface and scribe around the template onto the wall.

   The circle should be 150 mm in diameter.

   - Remove the template.

9. Drill or cut the flue termination hole through the wall using a cutting tool suitable for the wall construction.

   Note: The Trim Ring (PN 295125) will cover a 150 mm diameter hole.

Note: Steps 10 to 14 can only be conducted whilst the water heater is off the wall.

10. Connect the 90° Elbow (PN 295147) to the water heater flue outlet so it is orientated behind the water heater.
    - Fit the end of the elbow down over the water heater flue outlet as far as it will go.

      Ensure there is a minimum 35 mm and maximum 42 mm overlap, the rubber seal on the inner flue is well seated and the elbow is fully engaged on the water heater flue outlet.
    - Secure the elbow to the outlet with the screws provided.
11. Fit the 300 mm Flue Extension (PN 295152) to the 90° Elbow, if required.

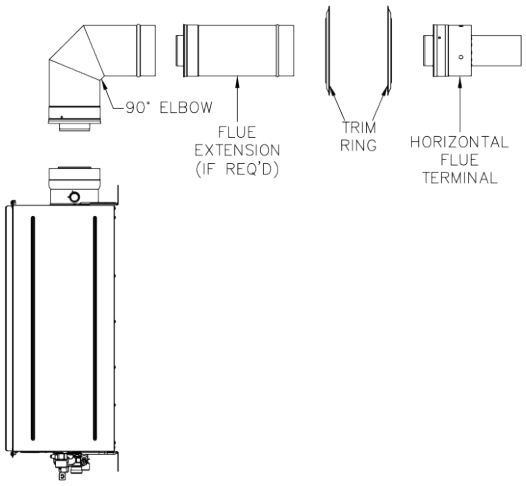
    Note: A total wall thickness of greater than 170 mm will require a 300 mm Flue Extension.
12. Fit the Horizontal Flue Terminal (PN 295146) to either the 90° Elbow or 300 mm Flue Extension.
13. Secure each flue component using the sheet metal screws provided.
14. Fit a Trim Ring over the last section of flue.
15. Rehang the water heater on the wall, carefully inserting the flue assembly through the wall penetration.

    The water heater should be installed in its final location and fixed in position before completing the flue installation.

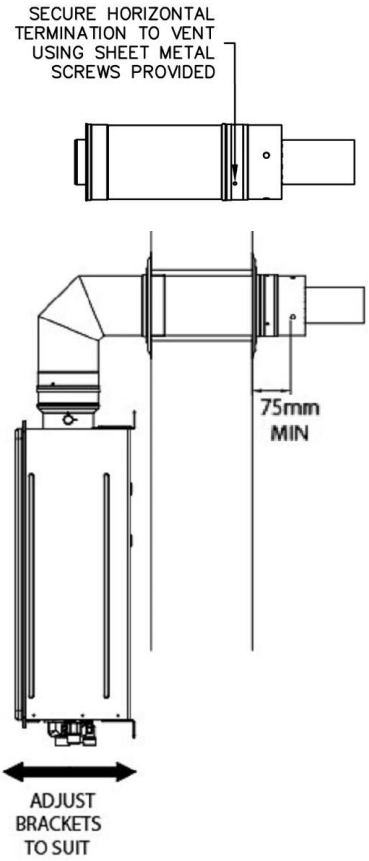
    Securely fasten the water heater to the wall at each of the Wall Bracket mounting points.

    Adjust the mounting brackets at the top and bottom of the water heater if required. Bracket adjustment of up to 30 mm can be made and may assist with flue fitment and alignment.
16. Check the end of the outer skin of the flue terminal extends a minimum of 75 mm from the face of the external wall.
17. Apply an adequate bead of sealant around the flue assembly and exterior wall of the building, using a general purpose silicone sealant suitable for outdoor application.

    Failure to properly seal the flue penetration through the wall will result in long term damage due to weather conditions.



flue components required



18. Apply an adequate bead of sealant on the rear face of a Trim Ring, using a general purpose silicone sealant suitable for outdoor application.
    - Fit the Trim Ring over the flue terminal and press against the wall.
19. Apply an adequate bead of sealant around the flue assembly and interior wall of the building and on the rear face of the Trim Ring, using a general purpose silicone sealant suitable for indoor application.

    Press the Trim Ring against the wall.

Refer to “Connections – Electrical” on page 47 electrical connection details and “Commissioning” on page 52 for the commissioning details of the water heater.

Horizontal Flueing – Extended Flue Run
Notes

- Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.
- Each flue component is supplied with screws to connect to the adjacent flue component. The screws are located in a bag taped to the outside of the flue component.
- Refer to diagrams:
  - "Typical Installation – Horizontal Flue with One Elbow" on page 35, and
  - "Typical Installation – Horizontal Flue with Multiple Vertical and Horizontal Sections" on page 36.

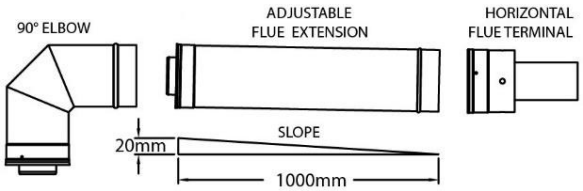
To install an extended horizontal flue and termination:

1. Install the water heater in its final location.
2. Connect the 90° Elbow (PN 295147) to the water heater flue outlet and rotate in the desired direction of discharge, if the flue is not to have a change of direction from horizontal to vertical.
   - Fit the end of the elbow down over the water heater flue outlet as far as it will go.

     Ensure there is a minimum 35 mm and maximum 42 mm overlap, the rubber seal on the inner flue is well seated and the elbow is fully engaged on the water heater flue outlet.
   - Secure the elbow to the outlet with the screws provided.
3. Mark the location where the top of the flue is to penetrate the wall to outside of the building.

   If the flue is not to have a change of direction from horizontal to vertical, then to accurately mark this position:

   - Measure the vertical distance from the floor to the top of the 90° Elbow, and
   - Measure the horizontal distance from the wall behind the water heater to the centre of the 90° Elbow, and
   - Then, where the flue is expected to penetrate the wall, mark the vertical distance up from the floor and the horizontal distance out from the wall measured from the previous steps.



   Note: If the flue is to have an additional one or two horizontal changes of direction, then it is not necessary to measure or mark the horizontal distance from the wall behind the water heater to the centre of the 90° Elbow.

   - Alternatively, using a level, run from the top of the 90° Elbow to a location horizontal on the wall where the flue will penetrate and mark this point on the wall
   - Measure the horizontal distance, along the proposed flue route, from the end of the 90° Elbow to the where the flue is to penetrate the wall.

     Divide this measurement by 50 to calculate the vertical distance fall of the flue (allowing for a 1 in 50 fall).
   - Measure this distance down from the previous mark placed on the wall.

     This point will be the top of the flue termination hole and the flue will have a gradient of 20 mm per metre of length towards the terminal.

   Note: Ensure there are no studs, noggins, pipes or electrical cables located in the wall where the flue is to penetrate

4. Carefully remove the template inserted as the middle pages of this installation instructions booklet.
   - Cut along the middle of the **bold** circle marked “Cut Line”.
5. Align the top of the circular template with the mark on the wall.
   - It may be convenient to tape the template to the wall.
6. Mark the pilot hole through the centre of the template and scribe around the template onto the wall.

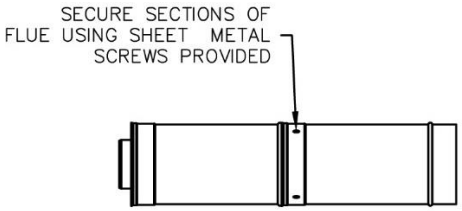
   The scribed circle should be 150 mm in diameter.
   - Remove but **DO NOT DISCARD** the template.
7. Drill a pilot hole using a 6.5 mm diameter or smaller drill bit.

   The drill bit must be long enough to penetrate completely through the outer skin of the external wall.

   Note: Ensure the drill remains level and straight during this step.
8. Align the centre of the template with the pilot hole on the outside wall surface and scribe around the template onto the wall.

   The scribed circle should be 150 mm in diameter.
   - Remove the template.
9. Drill or cut the flue termination hole through the wall using a cutting tool suitable for the wall construction.

   Note: The Trim Ring (PN 295125) will cover a 150mm diameter hole.
10. Starting from the 90° Elbow and working towards the terminal location, connect all of the other flue system components.
    - Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.
11. Secure each flue component using the sheet metal screws provided.
12. Support horizontal sections at a distance no greater than 2 m using a Wall Bracket (PN 295129).



13. A horizontal run of flue connecting directly to a Horizontal Flue Terminal must have a downward gradient to the flue terminal.
    - Use Male to Male and Female to Female Adaptors to reverse the direction of flue insertion where three or more sections of flue are used in a horizontal flue run and the flue drains toward the flue terminal. Refer to the diagram on page 35.

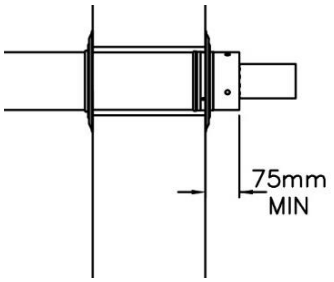
      This provides for proper draining of condensate without pooling at the flue component joins.
14. A horizontal run of flue between two elbows where the elbow closest to the flue terminal is **orientated upward**, must have a gradient upward in the direction of the flue terminal.

    Note: A Condensate Trap and condensate drain line must be installed if the flue has a gradient upward in the direction of the flue terminal. Refer to step 22.
15. The Adjustable Flue Extension (PN 295153) may be required if a special length is required between offsets or changes in direction of the flue or to ensure the outer skin of the Horizontal Flue Terminal extends a minimum of 75 mm from the face of the external wall.
    - The Adjustable Flue Extension can be adjusted from 560 mm to 890 mm by pulling on its end to increase its length or pushing on its end to decrease its length.
16. Fit a Trim Ring over the last section of flue prior to penetrating the wall.

17. Once the flue is assembled and penetrating the wall, install the Horizontal Flue Terminal and secure the termination to the flue using the sheet metal screws provided.

    Note: If the flue terminal position is more than 1800 mm above a safe working surface, then suitable equipment will be required to enable safe access to fit the flue terminal.

    Alternatively, the flue terminal may be fitted to the flue assembly prior to the assembly penetrating the wall.



18. Make a final adjustment to the Adjustable Flue Extension, if required, to ensure the end of the outer skin of the flue terminal extends a minimum of 75 mm from the face of the external wall.

    - Firmly tighten the compression band on the Adjustable Flue Extension to prevent the pipe from extending or compressing its length over time.

19. Apply an adequate bead of sealant around the flue assembly and exterior wall of the building, using a general purpose silicone sealant suitable for outdoor application.

    Failure to properly seal the flue penetration through the wall will result in long term damage due to weather conditions.

20. Apply an adequate bead of sealant on the rear face of a Trim Ring, using a general purpose silicone sealant suitable for outdoor application.

    - Fit the Trim Ring over the flue terminal and press against the wall.

21. Apply an adequate bead of sealant around the flue assembly and interior wall of the building and on the rear face of the Trim Ring, using a general purpose silicone sealant suitable for indoor application.

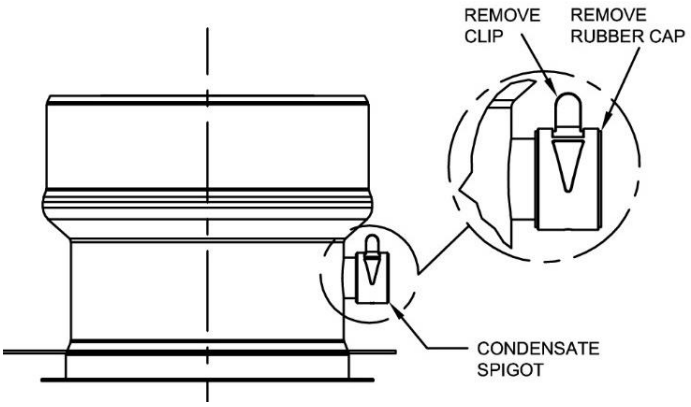
    Press the Trim Ring against the wall.

22. Connect a Condensate Trap (PN 295139) to the condensate drain spigot on the water heater flue outlet the flue has a change of direction from horizontal to vertical or if there is a long vertical rise directly from the water heater.

    - Install a condensate drain line to the Condensate Trap.

    Refer to “Draining the Condensate” on page 33 and to “Condensate Trap and Condensate Drain Line” on page 34.

23. Upon completion of the secondary flue installation, remove the warning label adhered to the top left hand corner of the water heater’s front panel.



condensate drain spigot

Refer to “Connections – Electrical” on page 47 electrical connection details and “Commissioning” on page 52 for the commissioning details of the water heater.

VERTICAL FLUE INSTALLATION

Suitable flashing (not supplied) is required to waterproof the roof penetration.

Notes

- Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.
- Each flue component is supplied with screws to connect to the adjacent flue component. The screws are located in a bag taped to the outside of the flue component.
- Refer to diagrams:
  - "Typical Installation – Vertical Flue" on page 36, and
  - "Typical Installation – Vertical Flue with Vertical and Horizontal Sections" on page 36.

To install a vertical flue and termination:

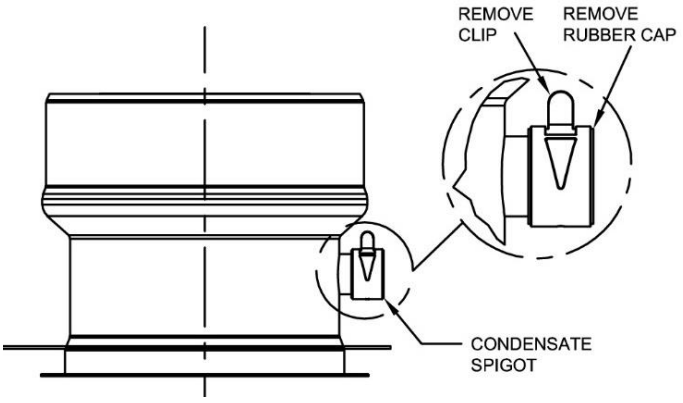
1. Determine the location where the flue will penetrate through the roof.

   Note: Ensure there are no rafters, purlins, pipes or electrical cables located in the roof where the flue is to penetrate.

2. Drill or cut the flue termination holes through the roof and ceiling of a suitable size to allow the installation of the flue, using a cutting tool suitable for the roof construction.

3. Install a Condensate Trap (PN 295139) to the condensate drain spigot on the water heater flue outlet.
   - Install a condensate drain line to the Condensate Trap.

   Refer to "Draining the Condensate" on page 33 and to "Condensate Trap and Condensate Drain Line" on page 34.

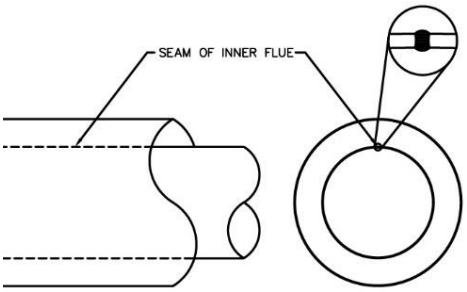


condensate drain spigot

4. Connect the first flue component to the water heater flue outlet.
   - Fit the end of the flue component down over the water heater flue outlet as far as it will go.

     Ensure there is a minimum 35 mm and maximum 42 mm overlap, the rubber seal on the inner flue is well seated and the flue component is fully engaged on the water heater flue outlet.

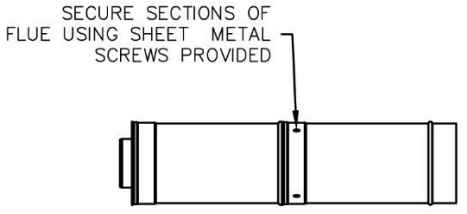
   - Secure the elbow to the outlet with the screws provided.



5. Continuing from the first flue component and working towards the terminal location, connect all of the other flue system components.
   - Ensure each flue component is fully engaged and the rubber seal on the inner duct is well seated at each joint.

6. Horizontal flue runs between elbows must have a minimum upward gradient towards the flue terminal of 20 mm per metre.

   Note: Ensure that the seam of the inner flue in horizontal runs is towards the top of the installation.



7. Secure each flue component using the sheet metal screws provided.

8. Fix a Wall Bracket after each transition to a vertical run.

   This is to prevent vertical loading on the elbows and offsets.

9. Support vertical sections of flue at a distance no greater than 2 m using a Wall Bracket (PN 295128).

   Note: The Wall Bracket can be used to support vertical sections of flue from a ceiling by rotating the legs through 90°.

10. Install an Adjustable Flue Extension (PN 295153) if a special length is required between offsets or changes in direction of the flue.

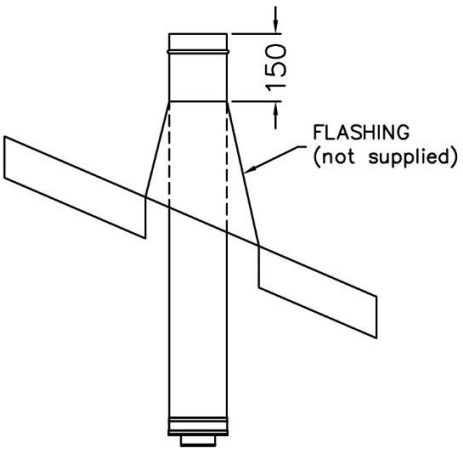
    - The Adjustable Flue Extension can be adjusted from 560 mm to 890 mm by pulling on its end to increase its length or pushing on its end to decrease its length.
    - Firmly tighten the compression band on the Adjustable Flue Extension to prevent the pipe from extending or compressing its length over time.

11. Fit a Trim Ring over the last section of flue prior to penetrating the ceiling, if one is to be fitted.

12. Once all the flue components, excluding the 90° Elbow (PN 295147) and Horizontal Flue Terminal (PN 295146), have been installed and all supports are securely fastened, the roof flashing must be installed and adequately sealed to prevent rain entry.

    - Cut the flashing to a diameter that allows a snug fit over the flue.
    - Install the roof flashing over the flue and using suitable fasteners, fix to the roof material.

      The flue must extend a minimum of 150 mm through the roof flashing.



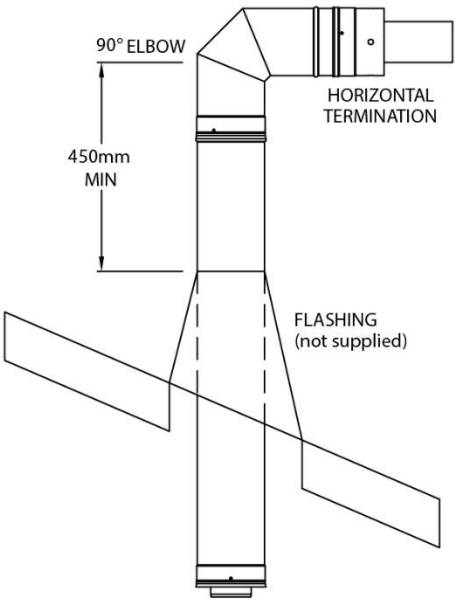
13. Connect the 90° Elbow to the flue exiting the roof, and the Horizontal Flue Terminal to the 90° Elbow.

    - Secure the joints with sheet metal screws provided.

    The top of the Horizontal Flue Terminal should not be less than 450 mm above the flashing below.

    Observe flue terminal clearances in accordance with AS/NZS 5601.1. Refer also to “Flueing Vertically Through a Roof” on page 32.

    Note: The flue should not extend more than 1.5 m from the roof unless guy wires or other additional support is provided.



14. Apply an adequate bead of sealant around the flue assembly and flashing and around the flashing and roof material, using a general purpose silicone sealant suitable for outdoor application.

    Failure to properly seal the flue penetration through the roof ill result in long term damage due to weather conditions.

15. Apply an adequate bead of sealant around the flue assembly and ceiling and on the rear face of the Trim Ring (if fitted), using a general purpose silicone sealant suitable for indoor application.

    Press the Trim Ring (if fitted) up against the ceiling.

16. Upon completion of the secondary flue installation, remove the warning label adhered to the top left hand corner of the water heater’s front panel.

Refer to “Connections – Electrical” on page 47 electrical connection details and “Commissioning” on page 52 for the commissioning details of the water heater.

MULTIPLE WATER HEATER FLUE INSTALLATION

Where multiple water heaters are installed, each water heater must be individually flued to the outside. A common flue system **MUST NOT** be used.

For a multiple unit installation, the water heater is certified for installation with zero clearance between adjacent water heaters.

If the water heaters are mounted on a wall, although they are certified for installation with zero clearance between them, it may be necessary to leave a suitable space of a minimum 175 mm between each water heater if a Condensate Trap and condensate drain line is to be installed. The Condensate Trap and condensate drain line would located between each water heater with the common drain manifold positioned below the water heaters. Refer to "Multiple Water Heater Condensate Trap and Condensate Drain Line Installation" on page 45.

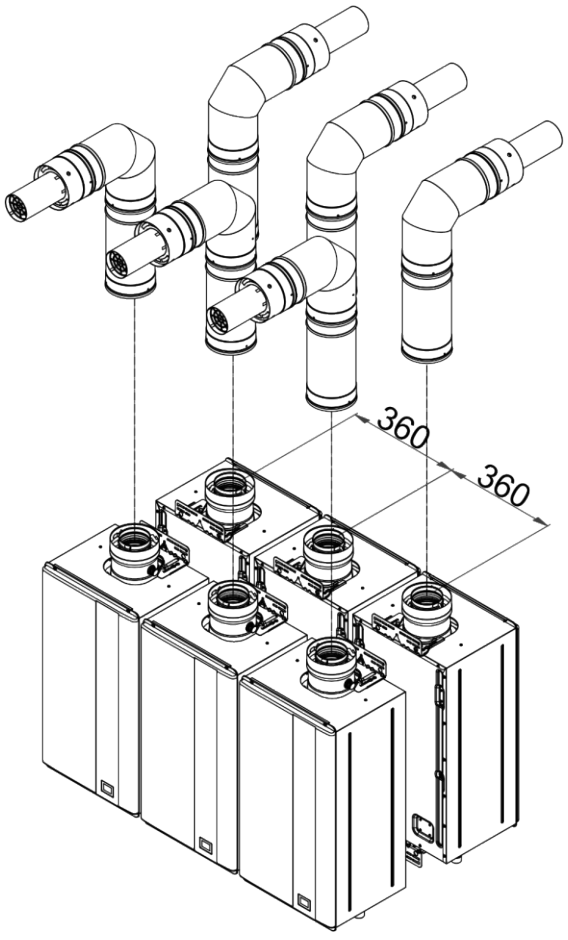
Refer to "Flue Terminal Location" on page 32 for flue terminal clearances from other objects in accordance with AS/NZS 5601.1.

Follow the relevant instructions pertaining to the type of flue installation, with the following additional requirements in relation to flue terminal clearances to be taken into account. The distances are based on using the coaxial flue system components.

Note: All flues for a multiple water heater installation **MUST** terminate horizontally.

Multiple Flue Terminations through Roof

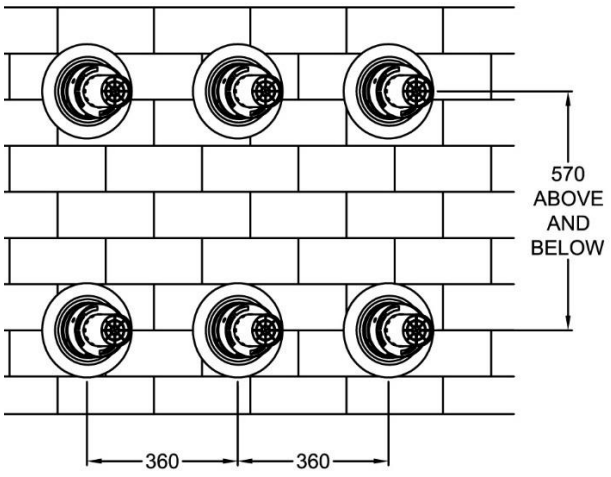
1. The minimum **side by side** centre to centre distance between flue terminals is to be no less than 360 mm.
2. Each flue is to be terminated horizontally by using a 90° Elbow (PN 295147) and a Horizontal Flue Terminal (PN 295146).
3. Refer to "Flueing Vertically Through a Roof" on page 32 for the minimum distances of the flue terminals from the roof and other structures.
4. The flue terminals for back to back water heaters are to be installed at 180° to each other.



multiple flue terminations through roof

Multiple Flue Terminations through Wall

1. The minimum **horizontal** centre to centre distance between flue terminals is to be no less than 360 mm.
2. The minimum **vertical** centre to centre distance between flue terminals is to be no less than 570 mm.



multiple flue terminations through wall

MULTIPLE WATER HEATER CONDENSATE TRAP AND CONDENSATE DRAIN LINE INSTALLATION

Depending upon the type of installation, it may be necessary to install a Condensate Trap and condensate drain line to each water heater. Refer to “Draining the Condensate” on page 33.

The drain line from each Condensate Trap may be:

- drained separately to a discharge point, or
- manifolded together with a single drain line running to a discharge point.

If the water heaters are mounted on a wall, although they are certified for installation with zero clearance between them, it may be necessary to leave a suitable space of a minimum 175 mm between each water heater if a Condensate Trap and condensate drain line is to be installed. The Condensate Trap and condensate drain line would located between each water heater with the common drain manifold positioned below the water heaters.

Condensate Traps with Common Drain Line

1. Remove the clamp and rubber cap from the condensate drain spigot on each water heater flue outlet assembly.
2. Locate and install the Condensate Trap in a suitable position adjacent to the water heater.

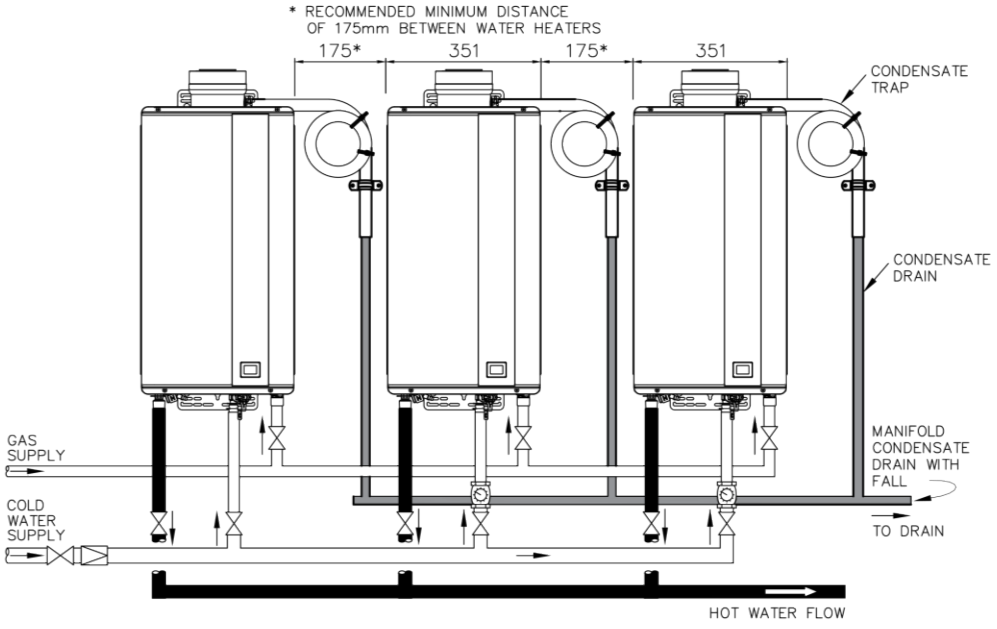
   Refer to steps 2 to 4 of the procedure outlined in “Condensate Trap and Condensate Drain Line” on page 34.

   If the drain line from each Condensate Trap is to be run separately to a discharge point, then proceed to step 4, otherwise continue with step 3.
3. Manifold the drain lines from each Condensate Trap into a common header.

   Use UPVC, PE or similar, do not use copper.

   Ensure adequate fall is provided in the header to allow for complete drainage.

   It may be necessary to support the drain line manifold with suitable hangers from the ceiling.



condensate drain common manifold

4. Plumb the outlet of each Condensate Trap or the drain line manifold to a suitable discharge point.

   The drain line should be as short as possible, have a continuous fall all the way from the Condensate Trap or drain line manifold to the discharge outlet and have no tap, valves or other restrictions in the pipe work. The outlet of the drain line must be in such a position that flow can be easily seen, but arranged so the condensate will not cause injury, damage or nuisance.

⚠ **Warning:** Failure to fill with water may cause flue gasses to escape through the condensate trap. The condensate trap should be regularly checked to ensure it is filled with water, replenishing when required.

Notes
Consideration must be given to the material used for a condensate drain line and to where the drain line discharges.

- As the condensate is mildly acidic, copper tube and fittings must not be used as they will corrode.
- Use UPVC (Unplasticised Polyvinyl Chloride) or PE (polyethylene) piping.
- The outlet of the drain line must be in such a position that flow can be easily seen, but arranged so that discharge will not cause injury, damage or nuisance.
- The drain line must not discharge onto electrical connections, earth stakes, copper pipe, concrete paths or into a pond.

CONNECTIONS – ELECTRICAL

All electrical work and permanent wiring must be carried out by a qualified person and in accordance with the Wiring Rules AS/NZS 3000 and all local codes and regulatory authority requirements.

⚠ **Warning:** Temperature controllers **must not** be fitted to this water heater (862 series) if it is installed as an in-series gas booster with a solar water heater system is installed because water at a temperature much higher than the controller setting can be delivered. If a solar water heater has been installed to an existing water heater installation, then all controllers **must be** disconnected and removed.

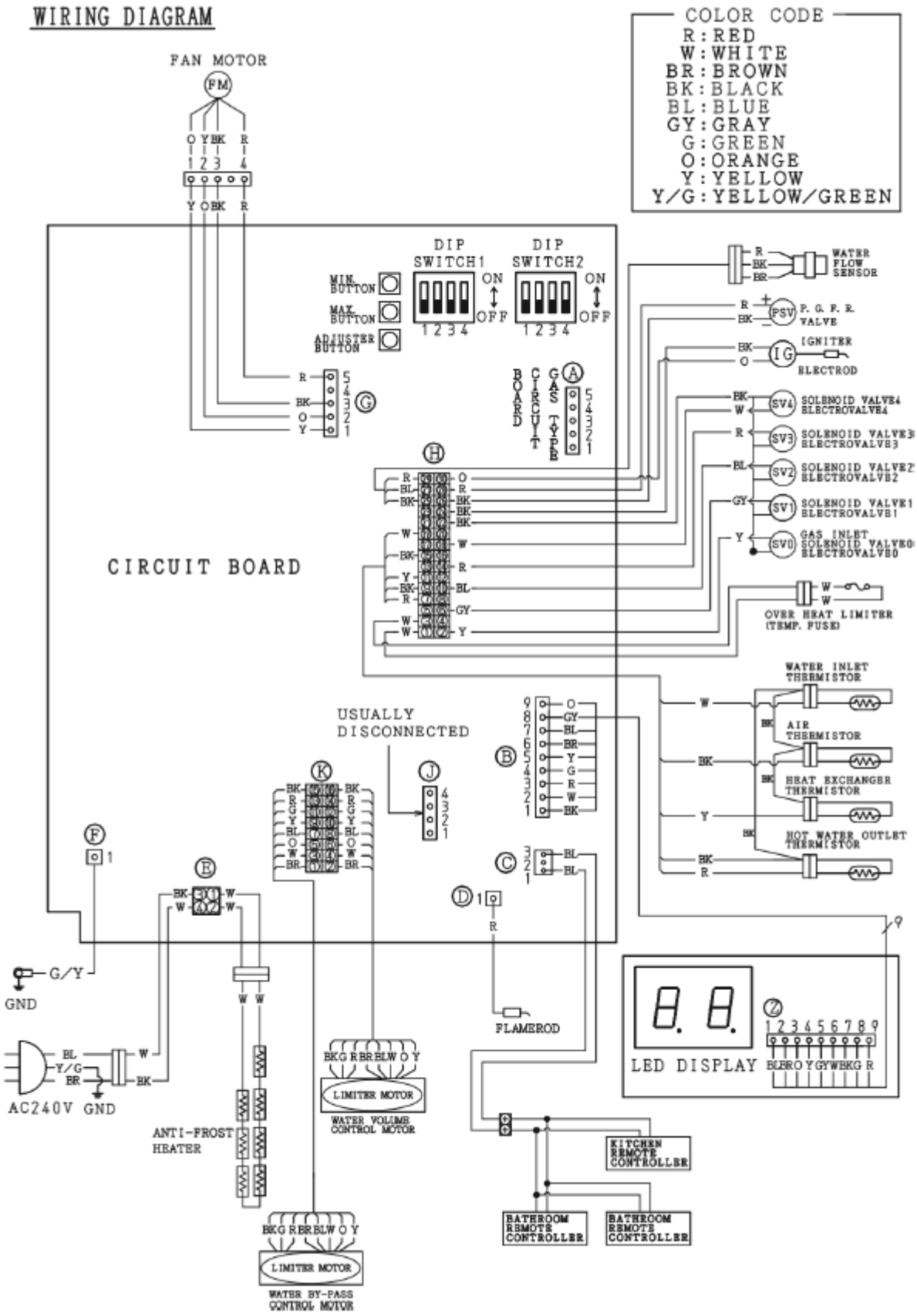
The water heater is supplied with a 1.8 metre lead and plug and requires a 220 - 240 V a.c. 50 Hz general purpose outlet (GPO) to be located within 1.2 metres of the installation. The GPO must be clear of the flue exhaust, draining water, gas supply pipe and water connections.

The power consumption of the water heater is:

Models	Power consumption	Comments
862B28 models natural gas, propane gas (AUS) and universal LP gas (NZ) @ 220 V – 240 V a.c. 50 Hz	< 1 Watt	Burner off, anti-frost device inactive
	95 Watts	Burner off, anti-frost device active
	77 Watts	Burner on, anti-frost device inactive

The water heater will only operate on a sine wave at 50 Hz. Devices generating a square wave cannot be used to supply power to the water heater.

WIRING DIAGRAM



Wiring Diagram – 862 Series B28 Models

MULTIPLE INSTALLATIONS

A multiple installation of 28 litre gas water heaters on a single manifold is possible, using a parallel plumbing arrangement, where large volumes of hot water are required. It is good practice, but not essential, to install the water heaters in an Equa-Flow® plumbing arrangement. The installation may operate on a dead leg system or a circulated flow and return system.

If a circulated flow and return system is installed, the circulator must be sized and set to provide a minimum flow rate of 3.0 L/min through the circulated hot water flow and return system and be either thermostatically and / or timer controlled. The circulator must not be set to operate continuously, i.e. 24 hours per day.

The cold (or solar preheat) water and hot water manifolds must be designed to balance the flow from each water heater. To achieve this, there are basic installation requirements and principles which must be followed:

1. The maximum number of water heaters in a bank should be 6. Only one bank can be installed.
2. The water heaters must be of the same model.
3. The cold (or solar preheat) water line, cold (or solar preheat) and hot headers and hot water line must be sized to meet the requirements of both AS/NZS 3500.4 and the application. The gas line must be sized to meet the requirements of AS/NZS 5601.1 and the application.

   Minimum header pipe sizes at the installation are:

No of water heaters	1	2	3	4	5	6
Cold (or solar preheat) and hot header pipe size	DN20	DN25	DN32	DN32	DN40	DN40
Gas pipe size	DN20	DN25	DN32	DN32	DN40	DN40

   Note: Water and gas supply pipe sizes to the installation may be required to be larger than the minimum pipe sizes at the installation to meet the requirements of the Standards and the application.

   The recommended branch line size for the cold (or solar preheat) and hot water and gas pipes is DN20.

4. A full flow gate valve or ball valve and if required a pressure limiting valve must be installed on the cold water line to the system. A non-return valve or stop tap must not be installed.

   Note: The gate valve or ball valve and pressure limiting valve are not required if this is an in-series gas booster installation to a solar water heater.

5. A full flow gate valve or ball valve (not a stop tap) must be installed on both the inlet and outlet branches of each water heater. A non-return valve must not be installed.
6. An isolation valve must be installed on the gas branch of each water heater.
7. An adjustable pressure reducing valve (PRV) (RMC model SYR 312 / 20) must be installed on the cold (or solar preheat) branch to all but the first water heater.

   Each PRV is to be adjusted so that each subsequent water heater is staged to operate only after the required hot water flow rate increases by intervals of 13 litres per minute (refer to “Pressure Reducing Valve Commissioning Procedure” on page 50).

8. Non-return valves or pressure limiting valves must not be installed on the branch lines to the water heaters.
9. It is good plumbing practice for all fittings, valves and branch lines to be matched sets all the way along the manifold.
10. Sufficient space must be left to enable access, servicing or removal of any water heater.

    The water heaters can be installed side by side with minimal clearance between them. Rheem 862B28 models are certified for installation with an exemption from the 300 mm minimum clearance requirements between flue terminals, as stated in AS/NZS 5601.1 clause 6.9.3.

    A second rating label is attached to the inside of the front cover of each water heater. This can be referenced to determine details of the water heater.

Refer to the diagram on page 50 for installation and plant layout details.

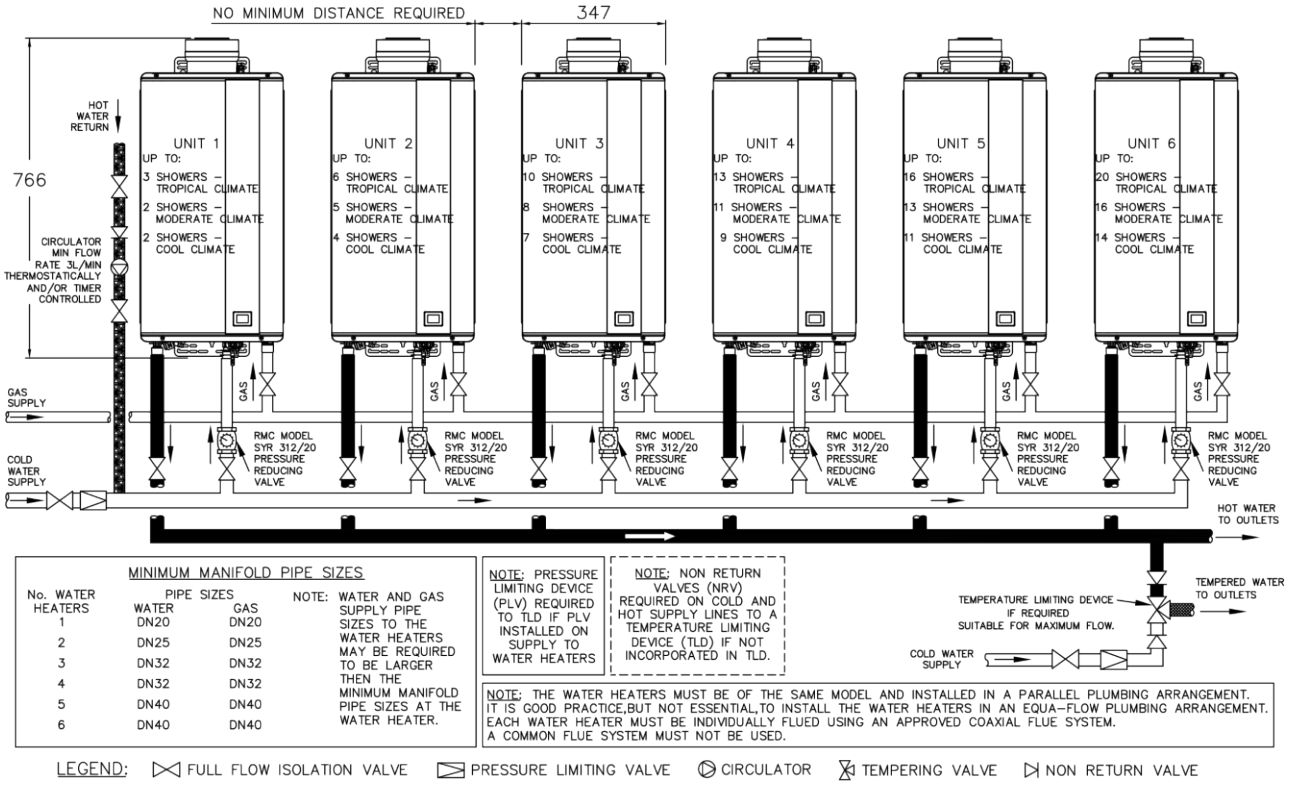
PRESSURE REDUCING VALVE COMMISSIONING PROCEDURE

The pressure reducing valves must be set and commissioned for each water heater so the water heaters will turn on and off in sequence when the flow rate increases or decreases to a particular rate. This procedure can be conducted with either cold water or solar preheated water, however the temperature of the solar preheated water must be at least 2°C lower than the preset outlet temperature setting of the water heater.

The water heater installation should be sized and the number of water heaters selected to cater for the cold water temperature in winter and assuming a period of no solar gain without any solar preheated water available, if the installation is part of a solar water heater system. The climate chart is based on a flow rate from a shower outlet not exceeding nine (9) litres per minute and a tempered water temperature of 42°C.

Climate Chart	**Number of Shower Outlets**																			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
number of water heaters warm / tropical climate (20°C inlet temperature)	1	1	1	2	2	2	3	3	3	3	4	4	4	5	5	5	6	6	6	6
number of water heaters moderate climate (15°C inlet temperature)	1	1	2	2	2	3	3	3	4	4	4	5	5	6	6	6	-	-	-	-
number of water heaters cool climate (10°C inlet temperature)	1	1	2	2	3	3	3	4	4	5	5	6	6	6	-	-	-	-	-	-

Note: If there are other hot water outlets which may operate simultaneously with the shower outlets, then the operation and flow rates of these outlets need to be considered and an allowance made when selecting the number of water heaters for the application.



Note: An isolation valve and pressure limiting valve are not required on the solar preheat water line to the gas boosters as part of a solar water heater installation. A full flow isolation valve must still be installed on the inlet branch of each water heater.

TYPICAL INSTALLATION – MULTIPLE GAS CONTINUOUS FLOW WATER HEATERS

To set and commission the pressure reducing valves:

1. **Commissioning:** Commission each of the water heaters prior to setting the pressure reducing valve on the cold (or solar preheat) branch to the water heater (refer to “Commissioning” on page 52).
2. **Turn on services:** Turn on the water, gas and electricity to the water heaters.
3. **Locking screw:** Loosen the locking screw on each SYR valve with a flat bladed screw driver.
   - To adjust the SYR valve during this commissioning procedure, turn the knob:
     - **Anti-clockwise** = delay unit ignition
     - **Clockwise** = bring forward unit ignition
4. **Open a hot tap:** Open 1 x hot shower or tap to between 7-8 litres / min. The first water heater (without SYR valve) should ignite and provide hot water.

   Notes

   - The flow rate from each shower or tap throughout this commissioning procedure should be between 7-8 litres / min.
   - When turned on, each shower or tap must be at an equal flow rate.
5. **Temperature limiting device:** Set the temperature of any temperature limiting device installed downstream of the manifold.
6. **First water heater:** Open the maximum number of showers suitable for 1 x water heater in accordance with the climate chart. Only the first water heater should be operating.

   If other water heaters are operating, adjust their SYR valves by turning the knob anti-clockwise until the water heater turns off.
7. **Second water heater:** Open the next shower. The second water heater should ignite.

   If it fails to ignite, adjust the SYR valve by turning the knob clockwise until the water heater turns on.

   If other water heaters ignite, adjust their SYR valves by turning the knob anti-clockwise until the water heater turns off.
8. Turn off the previous shower. The second water heater should turn off.

   If it does not turn off, adjust the SYR valve by turning the knob anti-clockwise until the water heater turns off.
9. Open the maximum number of showers suitable for 2 x water heaters, in accordance with the climate chart. Only the first two water heaters should be operating.

   If other water heaters downstream are operating, adjust their SYR valves by turning the knob anti-clockwise until the water heater turns off.
10. **Subsequent water heaters:** Repeat steps 7 to 9 for each subsequent water heater in the bank.
11. **Locking screw:** Turn off all showers and lock adjusting screw on the SYR valves. Commissioning is now complete.

COMMISSIONING

All water heaters are tested and adjusted before dispatch from the factory, however further adjustments may become necessary because of local conditions.

Note: If this water heater is installed as part of a multiple installation, i.e. in a bank of water heaters, it will be necessary to isolate the other water heaters and commission the water heaters one at a time. However, all the water heaters will need to be operating during the checking of the gas inlet pressure.

TO TURN ON THE WATER HEATER

- Open all of the hot taps in the house (don't forget the shower).
- Open the cold water isolation valve fully at the inlet to the water heater.

  Air will be forced out of the taps.
- Close each tap as water flows freely from it.
- Check the pipe work for leaks.
- Open the gas isolation valve fully.
- Check the gas pipe work for leaks.
- Plug in the water heater at the power outlet and switch on the electrical supply.
- Turn on a controller, if one is fitted, by pressing the on / off (⏻) button.

  The on / off operating light and the priority light will both glow.
- Open a hot tap.

  The water heater will operate automatically.
- Check to ensure the flow from each connected hot tap is sufficient to operate the water heater.

  The minimum operating flow rate for all models is 1.5 litres per minute.
- Check and if required adjust the preset outlet temperature setting of the water heater.

  Refer to "Preset Outlet Temperature Setting" on page 56.

The automatic water governor incorporated in the water heater is not adjustable.

To complete the installation, it is necessary to check the gas supply pressure at the inlet to the water heater (refer to "Gas Inlet Pressure" on page 52), the minimum test point pressure and the maximum test point pressure (refer to "Burner Gas Pressure" on page 54).

Upon completion and testing of the installation, ensure the controller(s) is turned off (if fitted). Explain to a responsible officer or the householder the functions and operation of the water heater and the controllers (if fitted).

⚠ **Warning:** Upon completion of the installation and commissioning of the water heater, leave this guide with a responsible officer or the householder. **DO NOT** leave this guide inside of the cover of the water heater, as it may interfere with the safe operation of the water heater or ignite when the water heater is turned on.

GAS INLET PRESSURE

IMPORTANT - CHECK the gas supply pressure at the inlet to the water heater with the water heater and all other gas burning appliances in the premises operating (burners alight). The minimum gas supply pressure is:

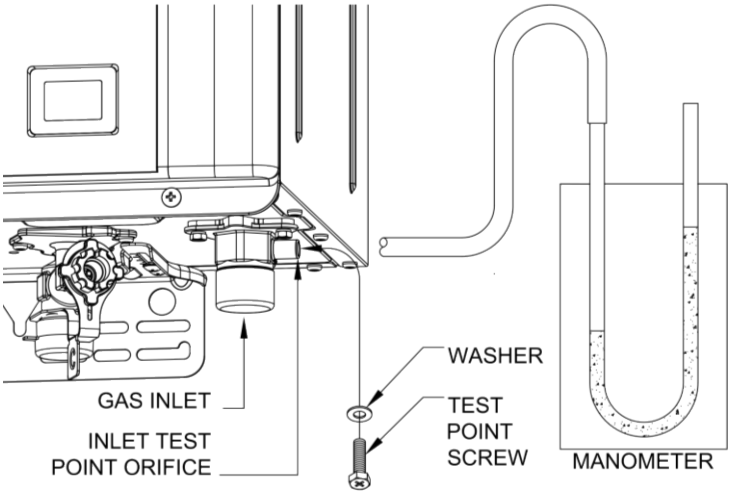
Natural Gas	1.13 kPa	Propane, LP Gas	2.75 kPa

If this minimum cannot be achieved, it may indicate the meter or the gas line to the water heater is undersized. It is important to ensure that an adequate gas supply pressure is available to the water heater when other gas burning appliances, on the same gas supply, are operating.

Gas Inlet Test Point Pressure

To check the gas inlet pressure:

1. Close any hot taps and ensure the burners are not operating.
2. Close the gas isolation valve at the gas inlet to the water heater.
3. Locate the gas inlet test point on the gas connection to the water heater.
   - Remove the test point screw and washer from the test point orifice.
   - Connect the manometer.
4. Open the gas isolation valve fully at the gas inlet to the water heater.



5. Observe the gas pressure reading on the manometer.

   If the manometer reading is between the minimum and maximum inlet gas pressure ratings on the rating label, no adjustment is required.

   If the manometer reading is below the minimum inlet gas pressure rating on the rating label, then either the gas pipe to the water heater is undersized and needs to be rectified or adjustment is required at the gas regulator.

   If the manometer reading is above the maximum inlet gas pressure ratings on the rating label, then adjustment is required at the gas regulator.

6. Switch on the electrical supply at the power outlet to the water heater if it is not already switched on and turn on a controller, if one is fitted, by pressing the on / off (⏻) button.
7. Open a hot tap fully and ensure the burners are fully ignited.

   It may be necessary to open a second tap.

8. Turn on all other gas burning appliances in the house which are on the same gas supply.
9. Observe the gas pressure reading on the manometer.

   If the manometer reading is between the minimum and maximum inlet gas pressure ratings on the rating label, no adjustment is required.

   If the manometer reading is below the minimum inlet gas pressure rating on the rating label, then either the gas pipe to the water heater is undersized and needs to be rectified or adjustment is required at the gas regulator.

   If the manometer reading is above the maximum inlet gas pressure ratings on the rating label, then adjustment is required at the gas regulator.

10. Turn off the other gas burning appliances in the house.
11. If an adjustment was made during Step 9, repeat this procedure from Step 5.
12. Close the hot tap(s).
13. Close the gas isolation valve at the inlet to the water heater.
14. Remove the manometer and refit and tighten the test point screw and washer.
15. Open the gas isolation valve fully at the gas inlet to the water heater.
16. Open a hot tap again so the burners ignite.
17. Test for gas leaks.
18. Close the hot tap.

BURNER GAS PRESSURE

It is necessary to check the burner gas pressure at both the minimum and maximum operational settings. To check and if necessary adjust the operational gas pressures, the electrical supply to the water heater must be switched on, the burners ignited and hot water must be flowing from a hot tap.

⚠ **Warning:** The removal of the front panel will expose 220 - 240 V a.c. wiring. Take care not to touch wiring terminals.

⚠ **Warning:** This procedure will involve pressing the MIN, MAX and adjuster buttons. The pressing of these buttons should only be performed with an insulated tool.

Note: If an 862 series model is installed as an in-series gas booster for a solar water heater, then the temperature of the water entering the in-series gas booster must be at least 2°C below the water heater preset outlet temperature setting. Otherwise the gas burners will not ignite and the test point gas pressures cannot be measured.

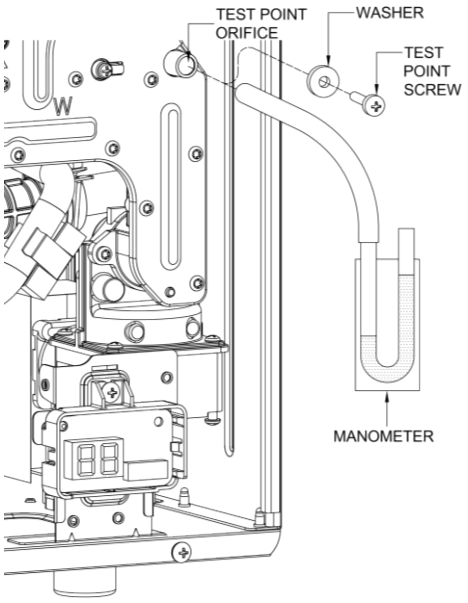
Minimum burner test point gas pressure

Refer to the rating label on the water heater for the minimum burner test point gas pressure.

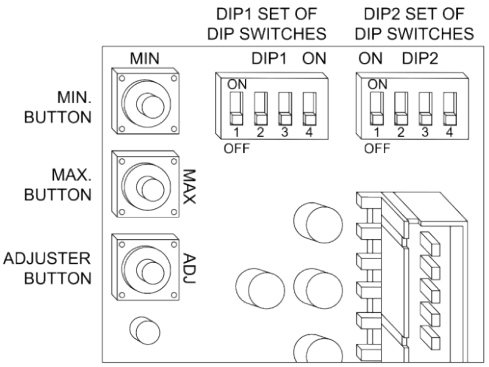
1. Close any hot taps and ensure the burners are not operating.
2. Turn off the controller(s), if one is fitted, by pressing the on / off (⏻) button and switch off the electrical supply at the power outlet to the water heater.
3. Remove the screws holding the front panel to the jacket.
4. Gently disengage the front panel and pull forward to remove from the water heater.
5. Locate the burner pressure test point on the main burner manifold.
   - Remove the test point screw and washer from the test point orifice.
   - Connect the manometer.
6. Carefully remove the plastic protective cover from in front of the PCB board. This is held in position with three holes in its top side and right side, engaging with three spigots in the PCB support housing.
7. Switch on the electrical supply at the power outlet to the water heater and turn on a controller, if one is fitted, by pressing the on / off (⏻) button.
8. Open the gas isolation valve fully at the gas inlet to the water heater, if not already open.
9. Open a hot tap slowly until the burners ignite.
10. Press and hold down the MIN button and observe the reading on the manometer.
    - "1L" is shown on the LED display.
11. Release the MIN button.

    If the manometer reading observed in step 10 agrees with the rating label, no further adjustment is required.
12. To adjust, press and hold the adjuster button.
    - "LH" is shown on the LED display.

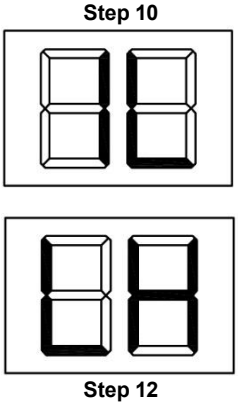
    Note: The adjuster button must be held down continuously through steps 12 to 14.
13. Press and hold the MIN button and observe the reading on the manometer.
    - The manometer reading will change as the test point gas pressure adjusts.



Step 5



Step 10



Step 12

Note: While the MIN button is pressed, the gas pressure will at first increase then decrease, cycling between an upper gas pressure limit (59 on the LED display) and a lower gas pressure limit (01 on the LED display).

14. Release the MIN button when the reading on the manometer agrees with the rating label.
15. Release the adjuster button.

Notes

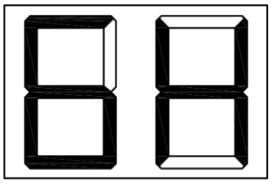
- If the burners extinguish and error code 11 or 12 starts to flash on the LED display:
  - release the MIN and adjuster buttons
  - close the hot tap
  - clear the error code (refer to "Clearing Error Code" on page 55)
  - recommence the procedure from Step 9.
- If the adjuster button is released before Step 14, clear any error code (if displayed) and recommence the procedure from Step 9.

Maximum burner test point gas pressure
Refer to the rating label on the water heater for the maximum burner test point gas pressure.

Follow Steps 9 to 15 of the "Minimum test point gas pressure" procedure on page 54, but open the hot tap fully and use the MAX button instead of the MIN button. It may be necessary to open two or three hot taps fully, depending upon the model of water heater and the incoming cold water temperature.

Notes

- In Step 10, "6H" (B28 models) will be shown on the LED display.
- In Step 13, while the MAX button is pressed, the gas pressure will at first increase then decrease, cycling between an upper gas pressure limit (39 on the LED display) and a lower gas pressure limit (01 on the LED display).



Step 10
max burner test point gas pressure

After setting the minimum and maximum test point gas pressures:

- Close the hot tap.
- Remove the manometer and refit and tighten the test point screw and washer.
- Open a hot tap again so the burners ignite.
- Test for gas leaks.
- Close the hot tap.
- Turn off the controller, if one is fitted, by pressing the on / off (⏻) button.
- Switch off the electrical supply at the power outlet to the water heater.
- Carefully replace the plastic protective cover over the front of the PCB board. Secure in position by engaging the three spigots in the PCB support housing through the three holes in the protective cover's top side and right side.
- Refit the front panel and screws to the water heater.

Clearing Error Code
If an error code does appear on the LED display during the commissioning process, it will be necessary to clear the error in order to complete the installation.

To clear an error code:

- switch off the electrical supply at the power outlet to the water heater.
- check the gas isolation valve at the gas inlet to the water heater is fully open.
- wait five (5) minutes.
- switch on the electrical supply at the power outlet to the water heater.

PRESET OUTLET TEMPERATURE SETTING

The factory preset outlet temperature setting of the water heater is:

• 862 series	70°C	for a single water heater
	70°C	as part of a Multipak system
	70°C	as part of a Commpak system
	70°C	as part of a Tankpak system

If a temperature controller is connected to the water heater, this will override the preset outlet temperature setting and the maximum temperature setting will be:

Maximum Outlet Temperature	862 series
Kitchen controller connected	60°C
Bathroom controller only connected	50°C

It is usually not necessary to adjust the factory preset outlet temperature setting of the water heater, unless the customer or application has a particular requirement for this to be done.

For applications requiring sanitising temperatures, such as a commercial kitchen, it will be necessary to adjust the preset outlet temperature setting to 82°C.

If the water heater is installed as part of a circulated hot water flow and return system in a building, the preset outlet temperature setting must be set to at least 60°C – AU or 65°C – NZ. If the water temperature decreases by more than 5°C through a circulated hot water flow and return system due to heat loss in the ring main, the preset outlet temperature setting of the water heater should be set to at least 65°C – AU or 70°C – NZ.

Refer to "To Check or Adjust the Preset Outlet Temperature Setting" on page 56 to check or if required to adjust the preset outlet temperature setting of the water heater.

Gas Booster for a Solar Water Heater

Note: Australian Standard AS 3498 and New Zealand Building Code Clause G12 requires that a water heater provides the means to inhibit the growth of Legionella bacteria in potable water. When this water heater (862 series) is used as an in-series booster for a solar water heater it can satisfy these AS 3498 and Clause G12 requirements provided it is energised, the booster preset outlet temperature setting is at least 70°C or higher, and that a remote temperature controller is not used.

It will be necessary to check and if required to adjust the preset outlet temperature setting of the continuous flow water heater when:

- it is installed as an in-series gas booster to a solar water heater
- it is an existing continuous flow water heater and a solar water heater is then installed.

Note:

- Consideration must be given to the delivery temperature to any ablution and public areas such as a bathroom, ensuite or public amenities. Refer to "Hot Water Delivery" on page 22 and to "Schematics of Two Temperature Zones Using A Temperature Limiting Device" on page 23.

TO CHECK OR ADJUST THE PRESET OUTLET TEMPERATURE SETTING

The temperature settings will be displayed on the LED display. The preset outlet temperature settings are:

- 862 series 40°C, 42°C, 45°C, 50°C, 55°C, 60°C, 65°C, 70°C, 75°C, 82°C

It is necessary to have the electrical supply to the water heater switched on during stages of checking or adjusting the preset outlet temperature setting procedure.

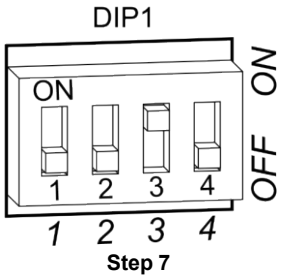
⚠ **Warning:** The removal of the front panel will expose 220 - 240 V a.c. wiring. Take care not to touch wiring terminals. The adjustment must be carried out by a qualified person.

⚠ **Warning:** This procedure will involve the adjustment of dip switches and may involve the pressing of the MIN and MAX buttons. Adjustment of a dip switch or the pressing of the MIN and MAX buttons should only be made with an insulated tool.

To check or adjust the preset outlet temperature setting:

1. Switch off the electrical supply at the power outlet to the water heater.
2. Remove the screws holding the front panel to the jacket.
3. Gently disengage the front panel and pull forward to remove from the water heater.
4. Close the cold water isolation valve at the inlet to the water heater.
5. Carefully remove the plastic protective cover from in front of the PCB board. This is held in position with three holes in its top side and right side, engaging with three spigots in the PCB support housing.
6. Switch on the electrical supply at the power outlet to the water heater.

   Note: Wait ten (10) seconds for the electronic system to initialise.

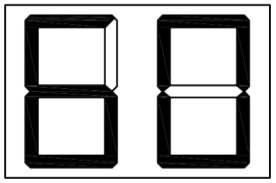


Step 7

7. Switch dip switch 3 to the on (up) position on the DIP 1 set of DIP switches on the I.C. Board.

   The current preset outlet temperature setting will show on the LED display.

   If the temperature displayed on the LED display is the desired preset outlet temperature setting, then proceed to step 9, as no further adjustment is necessary.



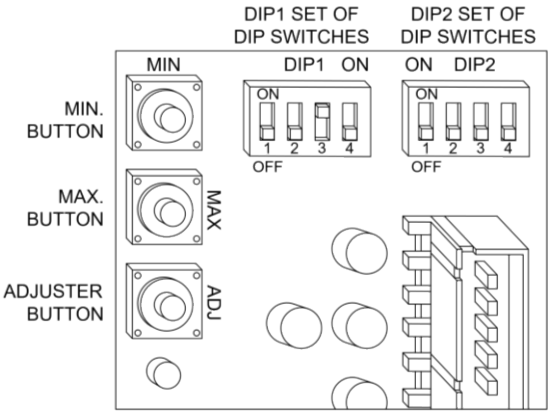
8. Press the MAX button to increase or the MIN button to decrease the preset outlet temperature setting.

   Each press of the MAX or MIN button will increase or decrease the preset temperature by one increment.

   The MAX and MIN buttons are located to the left of the DIP 1 and DIP 2 set of DIP switches.

   862 series
   The increments are 40°C, 42°C, 45°C, 50°C, 55°C, 60°C, 65°C, 70°C, 75°C, 82°C.

   Set the LED display to 82 on an 862 series water heater if it is required to deliver sanitising temperatures.

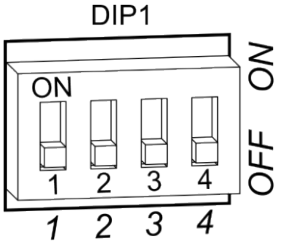


Step 8

9. Switch dip switch 3 to the off (down) position.

   The LED display will go blank.

   Note: Wait ten (10) seconds for the setting to be saved. The preset outlet temperature setting is now set.



Step 9

10. Switch off the electrical supply at the power outlet to the water heater.
11. Carefully replace the plastic protective cover over the front of the PCB board.
    - Secure in position by engaging the three spigots in the PCB support housing through the three holes in the protective cover's top side and right side.
12. Refit the front panel and screws to the water heater.
13. Open the cold water isolation valve fully at the inlet to the water heater.
14. Switch on the electrical supply at the power outlet to the water heater.

TO TURN OFF THE WATER HEATER

If it is necessary to turn off the water heater on completion of the installation, such as on a building site or where the premises is vacant, then:

- Turn off the controllers(s) (if fitted) by pressing the on / off (⏻) button.

  The on / off operating light will go out and the priority light, if it is on, will go out.
- Switch off the electrical supply at the power outlet to the water heater (refer to note below).
- Close the gas isolation valve at the inlet to the water heater.
- Close the cold water isolation valve at the inlet to the water heater.
- Drain the water heater if there is a risk of freezing conditions occurring (refer to “Draining The Water Heater” on page 58).

Notes

- The frost protection system will be rendered inoperable if electrical power is not available at the water heater.
- Damage caused by freezing due to the unavailability of power at the water heater is not covered by the Rheem warranty (refer to “Terms of the Rheem Warranty” on page 4).
- If the power has been switched off to the water heater and there is a risk of freezing, then it is necessary to drain the water heater (refer to “Draining the Water Heater” on page 58).

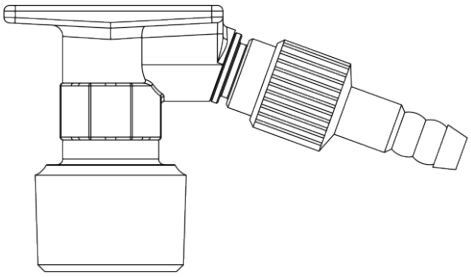
DRAINING THE WATER HEATER

To drain the water heater:

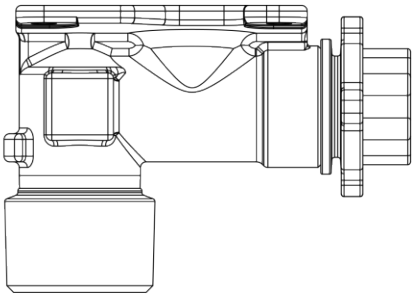
- Turn off the water heater (refer to “Turn Off The Water Heater” on page 58).
- Open a hot tap (preferably the shower outlet).
- Unscrew the two drain plugs, one each at the cold water inlet and hot water outlet, on the underside of the water heater.

  Water will drain from the water heater.
- When water stops flowing from the water heater, close the hot tap.

Note: It is recommended not to screw the drain plugs back in, until the water heater is to be turned on again.



HOT WATER OUTLET



COLD WATER INLET

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