

THERMANN™

INSTALLER'S MANUAL

Performance Pack 1150
Commercial Gas Water Heater

Installer's Manual
Safety Information
Owner's Information
Warranty

Models

Outdoor & Indoor Gas Water Heaters:

T12813ENTK | T12813ELTK

T12813FNTK | T12813FLTK



Thermann Owner's Guide

Performance Pack 1150 Commercial Gas Water Heater

Carefully remove all packaging and transit protection before installation.

Dispose of the packaging responsibly using recycling facilities where they exist

CONTENTS

INTRODUCTION	4
TECHNICAL DATA	5
TH28ENR6N TH28ENR6L	6
TH28FNR6N TH28FNR6L	7
INSTALLATION REQUIREMENTS	8
FLUE CLEARANCES - GENERAL	10
FLUE CLEARANCES - INDOOR UNITS	12
LOCATION	15
INSTALLATION	16
INSTALLATION	17
PLUMBING CONNECTIONS	21
COLD WATER CONNECTIONS	22
MANIFOLDING & RING MAINS	24
HOT WATER CONNECTION	27
TEMPERATURE PROTECTION	28
GAS CONNECTION	29
ELECTRICAL CONNECTION	30
FILLING THE SYSTEM	31
TEMPERATURE SETTING	32
COMMISSIONING	34
GAS SUPPLY PRESSURE	35
COMMISSIONING	36
SAFETY INFORMATION	37
STORAGE TANK MAINTENANCE	39
CONTINUOUS FLOW MAINTENANCE	40
CONSIDERING A SERVICE CALL?	41
WARRANTY	42

INTRODUCTION

General:

Single or multiple Performance Pack 1150 systems may be installed depending on the hot water needs of the application.

The 28 L/min continuous flow water heater that makes up the Performance Pack 1150 system is available in Natural gas and 'Universal LPG' gas types.

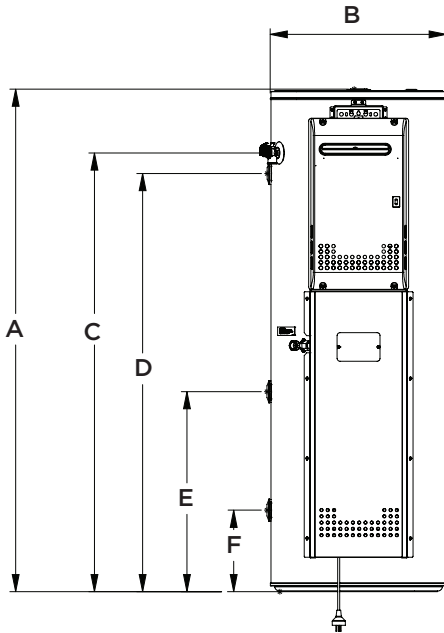
Both indoor and outdoor models are available.

Please contact your supplier for information on correct product selection.

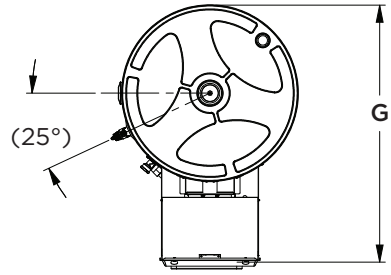
Pool Heating:

Performance Pack 1150 must not be used for pool heating.

TECHNICAL DATA



FRONT VIEW



TOP VIEW

TANK MODEL	315THMCP	
Storage Capacity	L	315
Net Weight Empty	kg	141 (113 Tank + 28 Burner)
Relief Valve Pressure Rating	kPa	1000
Relief Valve Temperature Rating	°C	99
Relief Valve Power Rating	kW	46
Total power consumption	A	2
NOMINAL DIMENSIONS		
A - Total Height	mm	1760
B - Total Diameter	mm	617
C - Relief Valve Height	mm	1537
D - Outlet Height	mm	1465
E - Optional Cold Connection Height (suitable for Ring main connection)	mm	700
F - Default Cold Connection	mm	285
G - Depth over Continuous Flow unit	mm	900
Length of power cord	mm	2400

TECHNICAL DATA

TH28ENR6N | TH28ENR6L

1. Outdoor / Indoor Appliance	Outdoor
2. Minimum water pressure	200kPa
3. Maximum inlet water supply pressure	800kPa

NOTE : MINIMUM WATER PRESSURE FOR MAXIMUM FLOW IS 200kPa

Nominal hourly gas consumption and burner test point pressures (in kPa)	
Natural Gas consumption	220 MJ/h
MAX Burner Test Point Pressure	0.66 kPa
MIN Burner Test Point Pressure	0.31 kPa
LP Gas (Universal ULPG) consumption	220 MJ/h
MAX Burner Test Point Pressure	1.05 kPa
MIN Burner Test Point Pressure	0.45 kPa

Minimum & Maximum gas supply pressures

Natural Gas	
MAX Supply Test Point Pressure	3.0 kPa
MIN Supply Test Point Pressure	1.13 kPa
LP Gas (Universal ULPG)	
MAX Supply Test Point Pressure	3.5 kPa
MIN Supply Test Point Pressure	2.75 kPa
Electrical requirements	Alternating Current 230/240V 50 Hz
Maximum rated current	1.5 Amp

TECHNICAL DATA

TH28FNR6N | TH28FNR6L

1. Outdoor / Indoor Appliance	Indoor
2. Minimum water pressure	200kPa
3. Maximum inlet water supply pressure	800kPa

NOTE : MINIMUM WATER PRESSURE FOR MAXIMUM FLOW IS 200kPa

Nominal hourly gas consumption and burner test point pressures (in kPa)	
Natural Gas consumption	205 MJ/h
MAX Burner Test Point Pressure	0.68 kPa
MIN Burner Test Point Pressure	0.31 kPa
LP Gas (Universal ULPG) consumption	205 MJ/h
MAX Burner Test Point Pressure	0.79 kPa
MIN Burner Test Point Pressure	0.37 kPa

Minimum & Maximum gas supply pressures

Natural Gas	
MAX Supply Test Point Pressure	3.0 kPa
MIN Supply Test Point Pressure	1.13 kPa
LP Gas (Universal ULPG)	
MAX Supply Test Point Pressure	3.5 kPa
MIN Supply Test Point Pressure	2.75 kPa
Electrical requirements	Alternating Current 230/240V 50 Hz
Maximum rated current	1.5 Amp

INSTALLATION REQUIREMENTS

General:

This manual must be read in conjunction with the manuals supplied with the continuous flow water heater.

This Performance Pack system must be installed by licensed tradespersons, and in accordance with:

- AS/NZS 3500.4 Plumbing and Drainage – Heated Water Services
- Clause G12 of the NZ Building Code (in New Zealand)
- AS/NZS 5601.1 Gas Installations – General Installations
- AS/NZS 3000 Electrical Installations (known as the Australian/New Zealand Wiring Rules)
- Local authority regulations
- Outside Australia and New Zealand, please refer to local plumbing and building codes and regulations.

Failure to comply with these requirements may affect the warranty.

Note for Victoria:

This system must be installed by a licensed person as required by the Victorian Building Act (1993).

Only a licensed person will provide a compliance certificate, showing the work complies with all the relevant Standards.

Only a licensed person will have insurance protecting their workmanship.

INSTALLATION REQUIREMENTS

Water Supply:

This hot water storage tank has been manufactured to suit the water conditions of most Australian metropolitan supplies.

Please note certain water supplies can have a detrimental effect on the Continuous Flow unit, storage tank and its life expectancy.

If you are unsure about the water supply you can obtain information from the local water supply authority.

The storage tank is designed for use in areas where the Total Dissolved Solids (TDS) content of the water supply is less than 2500mg/L.

The Cylinder Failure Warranty does not apply in areas where the TDS exceeds 2500 mg/L.

TDS ¹	PH	SATURATION INDEX ² (LSI)	TOTAL HARDNESS (Langelier)	Chlorides	Sodium	Iron	Silicon Dioxide (SiO ₂)
REFER NOTES	6.5 - 9.0	-1.0 to +0.4 @65° C	200mg/L	250mg/L	180mg/L	1mg/L	50mg/L

Notes:

1. In areas where the TDS exceeds 600mg/L, it is possible the magnesium alloy anode (fitted as standard in the storage tank) may become over-reactive

To alleviate this, the magnesium alloy anode should be replaced with an aluminium alloy anode.

Aluminium alloy anodes are available from your local Reece Branch.

For advice contact your local Reece branch or, in Australia, call 1300 412 612.

FLUE CLEARANCES - GENERAL

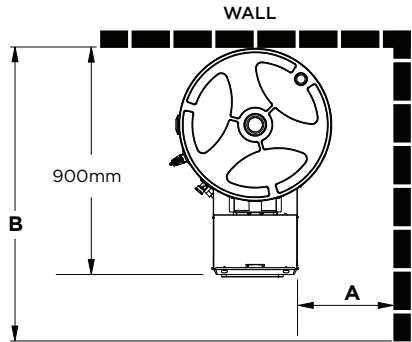
General:

The system must be located so that the flue terminal complies with the clearances specified in clause 6.9 of AS/NZS 5601.1 except the flue terminal clearance between the units.

Flue terminal clearance for 28L outdoor units

The continuous flow water heater is certified for side by side installation and hence the flue terminal clearance between the units mentioned in AS/NZS 5601.1 does not apply. The Continuous Flow unit is certified for a minimum clearance of 268mm (exhaust to inlet of adjacent unit).

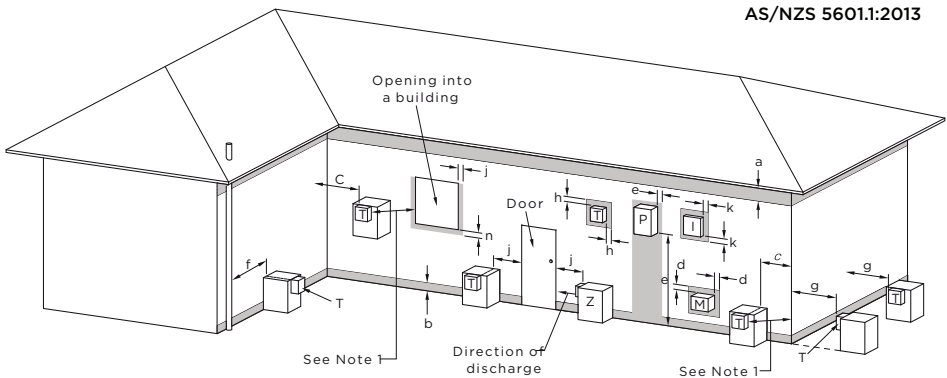
FLUE CLEARANCES - OUTDOOR UNITS



A= Clearances to walls and other obstructions per AS/NZS 5601

B= Recommended minimum of 1500mm for service access

AS/NZS 5601.1:2013



I = Mechanical air inlet M = Gas meter P = Electricity meter or fuse box T = Flue terminal Z = Fan-assisted appliance only

■ Shading indicates prohibited area for flue terminals

FIGURE 6.2 (in part) LOCATION OF FLUE TERMINALS OF BALANCED FLUE, ROOM-SEALED, FAN-ASSISTED OR OUTDOOR APPLIANCES

FLUE CLEARANCES - GENERAL

Ref.	Item	Minimum clearances mm
		Fan assisted
a	Below eaves, balconies and other projections:	
	Appliances over 50 MJ/h input	300
b	From the ground, above a balcony or other surface*	300
c	From a return wall or external corner*	300
d	From a gas meter (M) (see Note 5)	1 000
	(see Clause 5.11.5.9 for vent terminal location of regulator)	
	(see Table 6.7 for New Zealand requirements)	
e	From an electricity meter or fuse box (P) [†] (see Note 5)	500
f	From a drain pipe or soil pipe	75
g	Horizontally from any building structure* or obstruction facing a terminal	500
h	From any other flue terminal, cowl, or combustion air intake*	300
j	Horizontally from an openable window, door, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:	
	Appliances over 200 MJ/h input up to 250 MJ/h input*	500
	All fan-assisted flue appliances, in the direction of discharge	1 500
k	From a mechanical air inlet, including a spa blower	1 000
n	Vertically below an openable window, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:	
	Appliances over 150 MJ/h input	1 500

* Unless appliance is certified for closer installation

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

NOTES:

- Where dimensions **c**, **j** or **k** cannot be achieved an equivalent horizontal distance measured diagonally from the nearest discharge point of the terminal to the opening may be deemed by the Technical Regulator to comply
- See Clause 6.9.4 for restrictions on a flue terminal under a covered area
- See Figure J3 for clearances required from a flue terminal to an LP Gas cylinder; a flue terminal is considered to be a source of ignition
- For appliances not addressed above acceptance should be obtained from the Technical Regulator
- Minimum clearances **d** and **e** also apply to any combustion air intake openings of appliances

FLUE CLEARANCES - INDOOR UNITS

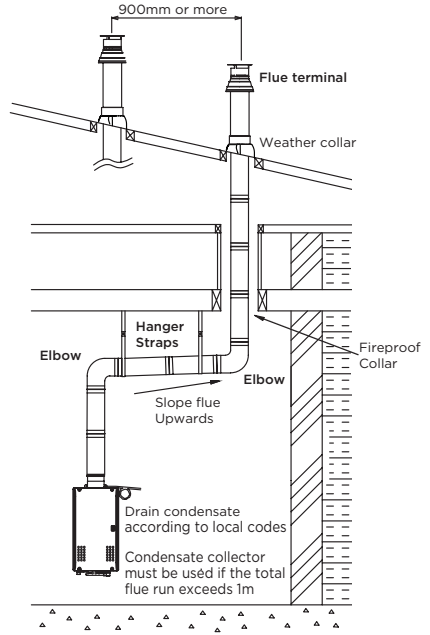
Flue terminal clearance for indoor units with roof (vertical) terminals

- See Table on P11
- Terminate the flue terminal at least 500mm above the roof
- Provide vertical support every 2.0m and horizontal support every 1.0m or as required by the flue pipe manufacturer's instructions
- Slope the horizontal flue 10mm upwards for every 1m
- The integrated condensate collector must be used for total flue runs in excess of 1m
- When the flue runs more than 1m, remove the black rubber cap from the condensation line connection point at the top of the heater and connect a 6.5mm rubber hose. The hose must loop over to create a water trap to stop gas escaping (see following diagram)



- When 2 or more units are installed, maintain a minimum distance of 900mm between the vertical terminations

Vertical Flue Termination



Flue terminal clearance for 28L indoor units with wall (horizontal) terminals

The minimum flue terminal clearance for indoor 28L units with wall terminals is provided below:

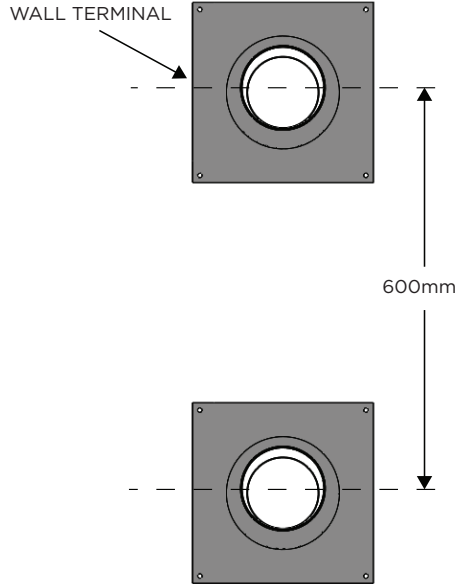
- Terminate at least 300mm above ground
- Terminate at least 2.3m above a public walkway
- See Table on P11
- Provide vertical support every 2.0m and horizontal support every 1.0m or as required by the flue pipe manufacturer's instructions

FLUE CLEARANCES - INDOOR UNITS

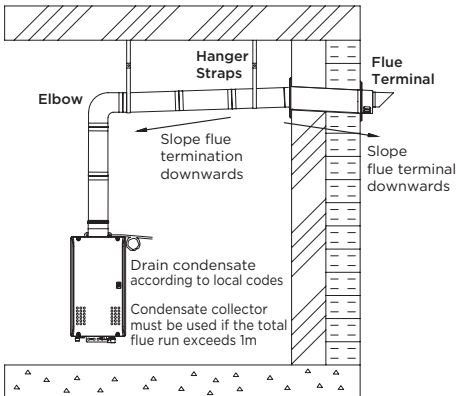
- Slope the horizontal flue 10mm upwards for every 1m
- The integrated condensate collector must be used for total flue runs in excess of 1m
- When the flue runs more than 1m, remove the black rubber cap from the condensation line connection point at the top of the heater and connect a 6.5mm rubber hose. The hose must loop over to create a water trap to stop gas escaping (see following diagram)

Wall Terminals on a vertical plane

If the wall terminals are arranged vertically, allow a minimum centre to centre vertical clearance of 600mm.



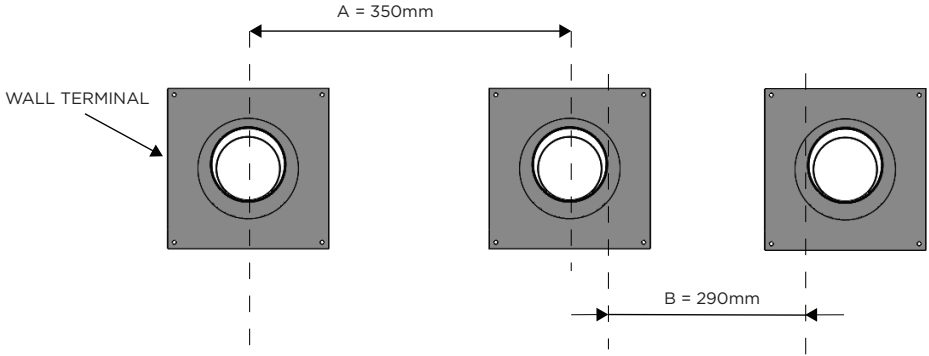
Horizontal Flue Termination



FLUE CLEARANCES - INDOOR UNITS

Wall Terminals on a horizontal plane

Minimum terminal clearance is 240mm (exhaust to inlet of adjacent unit) for 28L indoor units with wall terminals.

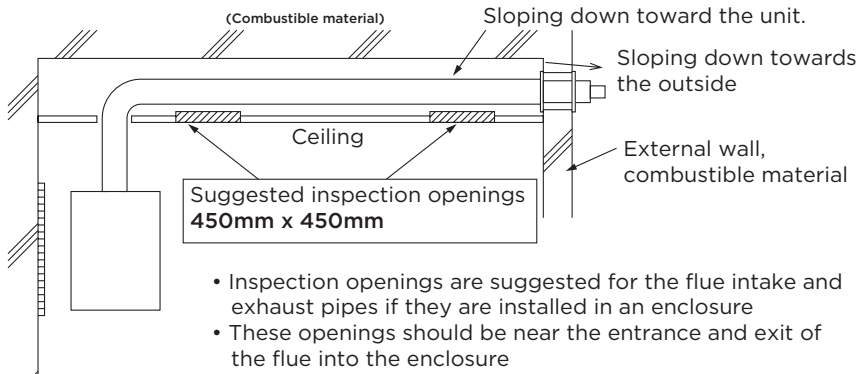


A- CENTRE TO CENTRE DISTANCE BETWEEN FLUES OF ADJACENT UNITS (in mm)

B- MINIMUM DISTANCE BETWEEN FLUE EXHAUST AND INLET OF ADJACENT UNIT (in mm)

Wall Terminals in enclosed spaces

When the flue pipe passes through an enclosed space:



- Inspection openings are suggested for the flue intake and exhaust pipes if they are installed in an enclosure
- These openings should be near the entrance and exit of the flue into the enclosure
- These openings should be 450mm x 450mm

LOCATION

General:

The system must not be installed below ground level or in a location where water pools. The system must be accessible without the use of a ladder or scaffold.

Ensure the compliance plates and associated warnings of each continuous flow water heater will be clearly visible.

Also ensure the compliance plates of ancillary equipment such as storage tanks and pumps will be clearly visible.

Adequate access must be available to isolation valves and switched socket outlets. Adequate access must also be available to service each continuous flow water heater and any ancillary equipment.

Further information can be found in the individual installation manuals.

AS/NZS 3500.4 requires that the water heating system be placed as close as practicable to the most frequently used hot water outlets.

Also, consideration shall be given to the route taken by vent pipes, drain lines or safe wastes

Outdoor Installations:

Only use continuous flow water heaters marked as “**CERTIFIED FOR OUTDOOR INSTALLATION ONLY**” in outdoor areas.

These water heaters must not be installed indoors or in confined spaces.

AS/NZS 5601.1 provides a definition of outdoor areas and diagrams explaining the definition.

Outdoor water heaters should not have secondary flues attached.

The potential effects of wind loading must be considered when installing the water heating system.

INSTALLATION

General:

The system must be installed on a flat, solid, non-combustible supporting surface.

The weight of the system should not cause deformation to any part of the building structure.

It is recommended that a plinth is installed under systems that are installed outdoors.

The system must be installed plumb and level.

Safe trays and safe wastes shall be constructed in accordance with AS/NZS 3500.4.

The warranty may not cover water damage if suitable water drainage has not been installed.



INSTALLATION

Indoor Installations:

Only use continuous flow water heaters marked as **"CERTIFIED FOR INDOOR INSTALLATION ONLY"** in indoor areas.

Indoor water heaters must be installed with suitable secondary flues to discharge the products of combustion to the outside.

Each secondary flue must be certified for use with the specific model of continuous flow water heater to which it is attached.

Each water heater must be fitted with its own flue. **Flues from two or more water heaters must not be joined into a common system.**

28L/min indoor continuous flow water heaters use coaxial metal flues.

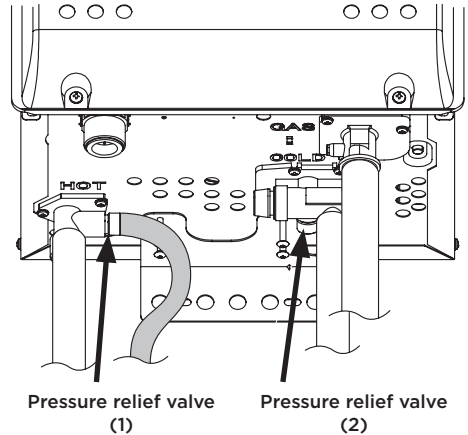
Installation instructions are included in the continuous flow water heater Installation Manuals.

Indoor units are supplied with drain tubes (supplied in the continuous flow water heater box)

Drain line(s) Installation:

The units are fitted with two pressure relief valves.

- It is recommended that the supplied drain hose be fitted over Pressure relief valve (1) and ducted to a suitable drain point, ensuring the drain hose is not pinched or obstructed
- In some circumstances, there may be small amounts of water droplets appearing from Pressure relief valve (2), the installation should be assessed to determine if Pressure relief valve (2) should be ducted to a suitable drain similar to Pressure relief valve (1)



Connect the drain tube to the pressure relief valve on the hot water outlet on the water heater and drain to a suitable location.

Damage from Water Leakage:

The installer must comply with the requirements of AS/NZS 3500.4.

In situations where a safe tray is not required by AS/NZS 3500.4, the installer must still consider the potential effects of water leakage.

The water heating system should be installed on or above a surface that is impervious to water and suitably drained.

Where this is not possible, safe tray/s should be installed.

INSTALLATION

Fit the continuous flow unit to the storage tank as follows:

1. Remove the Installation Kit, remove all packaging, remove the hoses and discard the cardboard hose tray from inside the pump cover.

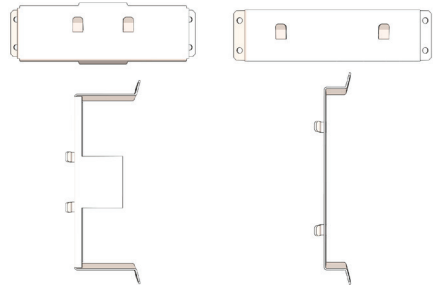


2. Carefully remove the pump cover by undoing the screws down each side of the cover, care must be taken to support the cover when undoing the last screws
3. Remove the two screws and washers from the face of the lower bracket



4. The tank is factory fitted with brackets for outdoor units. If fitting an indoor unit, remove the screws holding the upper and lower brackets to the tank and discard the brackets, and use the two brackets supplied inside the installation kit, note the bracket with the tabs on the face is the upper bracket, fit these brackets to the heater using the screws that were holding the previous brackets, **CARE MUST BE TAKEN NOT TO OVER TIGHTEN THESE SCREWS.**

Tighten by screwdriver or with a powered driver set on low torque.



Outdoor Bracket

Indoor Bracket

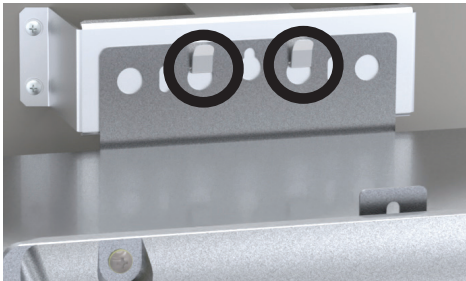
5. For Indoor units, fit the Indoor mounting brackets to the tank with the 8 screws and washers for the top bracket and the 4 screws and washers for the bottom bracket.

DO NOT OVERTIGHTEN SCREWS

INSTALLATION

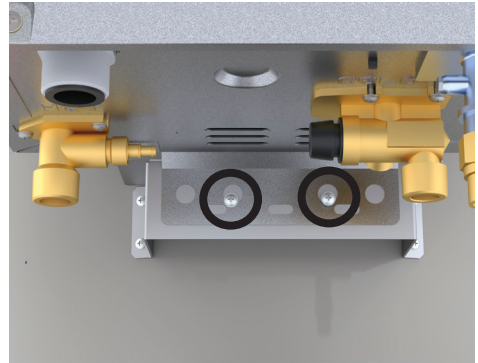
Mounting of continuous flow unit

6. Remove the straps from the continuous flow unit packaging and lift the carton off. Let the continuous flow unit sit on its base.
7. Carefully lift the heater and mount it on the frame by hooking the mounting bracket on to the top bracket
8. Because of the tight clearance at the hooks on the top mounting bracket, you may need to have the base of the heater tilted slightly towards you to as you lower the heater bracket on to the top bracket so the hooks engage in the mounting holes correctly



9. Ensure that the burner unit is sitting on the tabs of the upper bracket, let the burner unit hang and rest against the lower bracket

10. Using the two screws and washers that were removed previously from the lower bracket, fit these to the holes in the face of the lower bracket and securely tighten



11. Plug the unit into the spare switched outlet, leave it switched **OFF** until the commissioning stage
12. Apply 3 to 4 layers of gas thread tape on the $\frac{3}{4}$ " male gas connection on the heater
13. Connect the $\frac{3}{4}$ " M&F adaptor that is cable tied to the braided gas hose and tighten to 30Nm, ensure that the gas connection on the heater is securely supported with a spanner when tightening the gas adaptor to ensure that the heater does not get damaged during the tightening process

INSTALLATION

14. Untie the washers provided with the hot and cold-water flexible hoses and assemble them on the hoses.
15. Connect the hoses on to the corresponding connections on the heater. Apply some lubricant at the back of the flexible hose nut to allow free rotation of nut without jamming and twisting the flexible hose. Ensure that the lubricant used is suitable for Potable water. Tighten the water flexible hoses to 30Nm.
16. Tighten the gas flexible hose to 40Nm. Ensure that the gas adaptor is held in place while tightening the gas flexible hose. Incorrect installation will lead to damage of the gas flexible hose.
17. While commissioning, check for leakages on both water and gas connections. In case of leak, tighten a bit further and check for leaks.
- 18. DO NOT** turn on the power supply to any component until the system has been filled with water and all air has been purged via the taps.
19. Ensure that both switches on the GPO are turned **ON**
20. If an indoor continuous flow unit is fitted, a drain line on the water outlet should be connected to the drain line from the Pressure Relief valve. Indoor units are supplied with drain tubes (supplied in the continuous flow water heater box)
21. Connect the drain tube to the pressure relief valve on the hot water outlet on the water heater and drain to a suitable location.

PLUMBING CONNECTIONS

Tank Relief Valve:

The Pressure & Temperature Relief (PTR) Valve is supplied loose with the hot water storage tank.

The PTR Valve rating is 1,000 kPa and has a capacity of 46 kW.

The PTR Valve must be installed directly into the RP $\frac{3}{4}$ " (DN20) socket marked "RELIEF VALVE" at the top of the storage tank. Ensure that a sealing material is applied to the PTR Valve to prevent water leaks.

The drain line from the PTR Valve must be made of copper and run in accordance with the requirements of AS/NZS 3500.4. It must be installed in a continuously downward direction in a frost free environment.

The PTR Valve and its drain line must not be sealed or blocked. Generally a separate drain line must be run for the valve although it may be joined with the drain line from the expansion control valve under certain circumstances.

Care must be taken when attaching pipe saddles to the storage tank. Self-drilling screws no longer than 12 mm are recommended.

It is normal for the valve to leak a small amount of water during heating cycles

COLD WATER CONNECTIONS

Cold Water Supply:

The cold-water supply should be sized by a competent person.

Valves and Strainers:

An isolating valve is required in all installations. Flush the cold-water supply line to remove any debris before connecting the isolation valve.

An expansion control valve is required for installations with storage tanks if:

- They are located in New Zealand, South Australia or Western Australia; or
- The water supply is scaling in nature (saturation index greater than 0.4);

A pressure limiting valve is required.

If the mains pressure can exceed or fluctuate above 800 kPa. The valve should be set to:

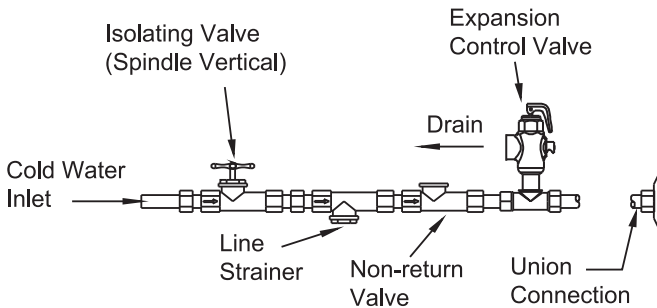
- 500 kPa in installations with an expansion control valve; or
- 600 kPa in installations without an expansion control valve.

A line strainer is optional but is strongly recommended.

Cold water supply valves shall be fitted in the sequence below or as a combined unit:

- Isolating valve;
- Line strainer (where fitted);
- Pressure limiting valve (where fitted);
- Non-return valve (where fitted);
- Expansion control valve (where fitted);

Cold Water Connection Diagram:



Note: a combined isolating valve/non-return valve/line strainer may be used.

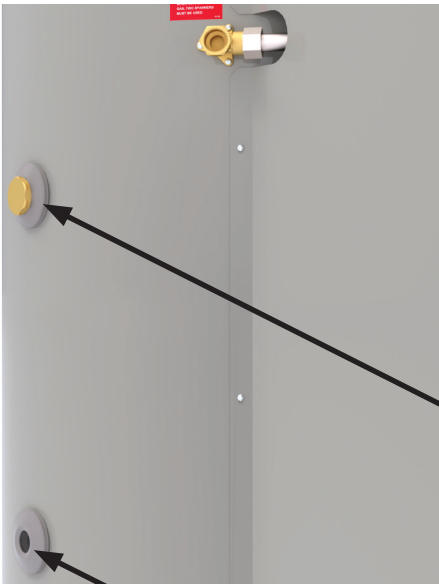
The expansion control valve is only required where local regulations demand, although it is recommended in areas where the water saturation index is greater than 0.40.

COLD WATER CONNECTIONS

Cold water connections:

Cold water pipe is to be connected via an isolating valve and union to the R1¼" (DN32) socket marked "INLET" at the bottom of the storage tank.

The default cold water supply connection is the lower fitting.



This connection point is recommended for all installs

An optional connection is available for retrofit applications. This connection may also be used to connect the ring main system.



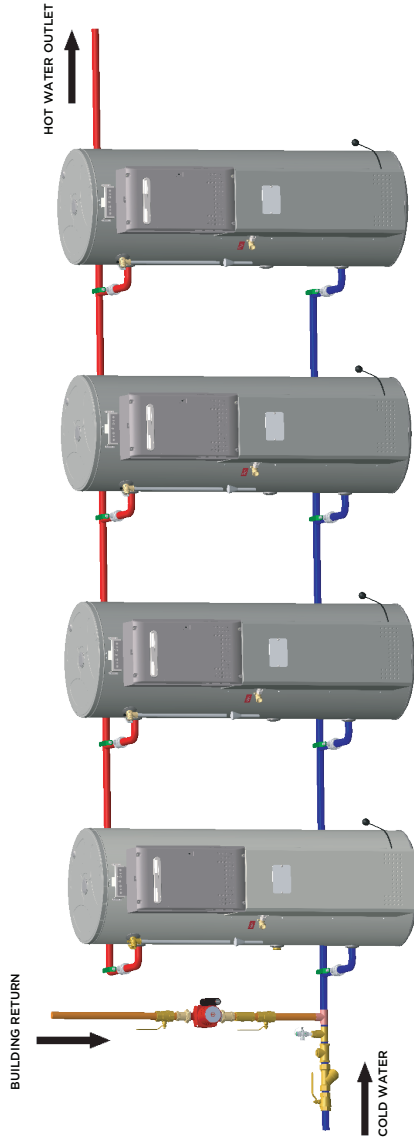
The 1¼" brass plug that was supplied in the Installation kit should be fitted to the unused inlet water connection.

Insulation:

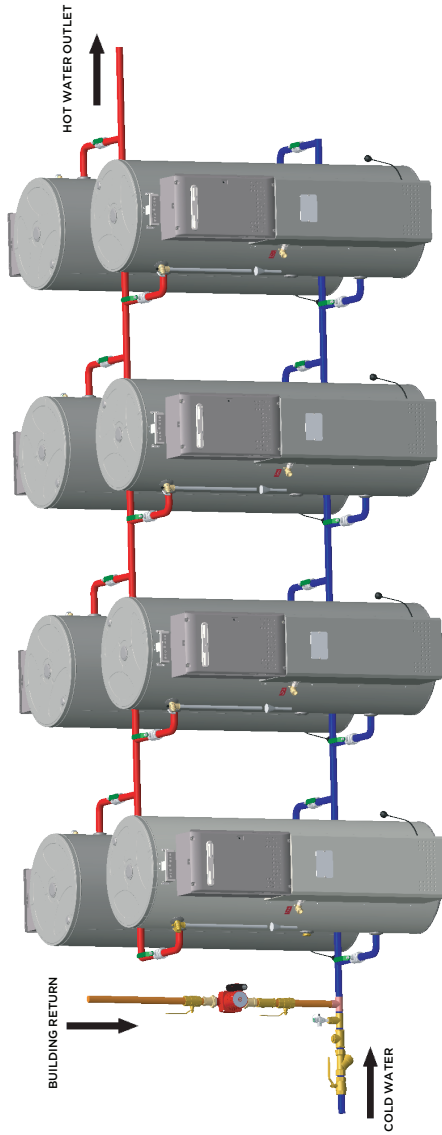
AS/NZS 3500.4 specifies minimum requirements for the insulation of piping associated with storage water heaters.

It is recommended that all Cold water pipes after the Ring Main return connection are insulated. Cold water pipes installed outdoors should be insulated with UV stabilised weather resistant insulation

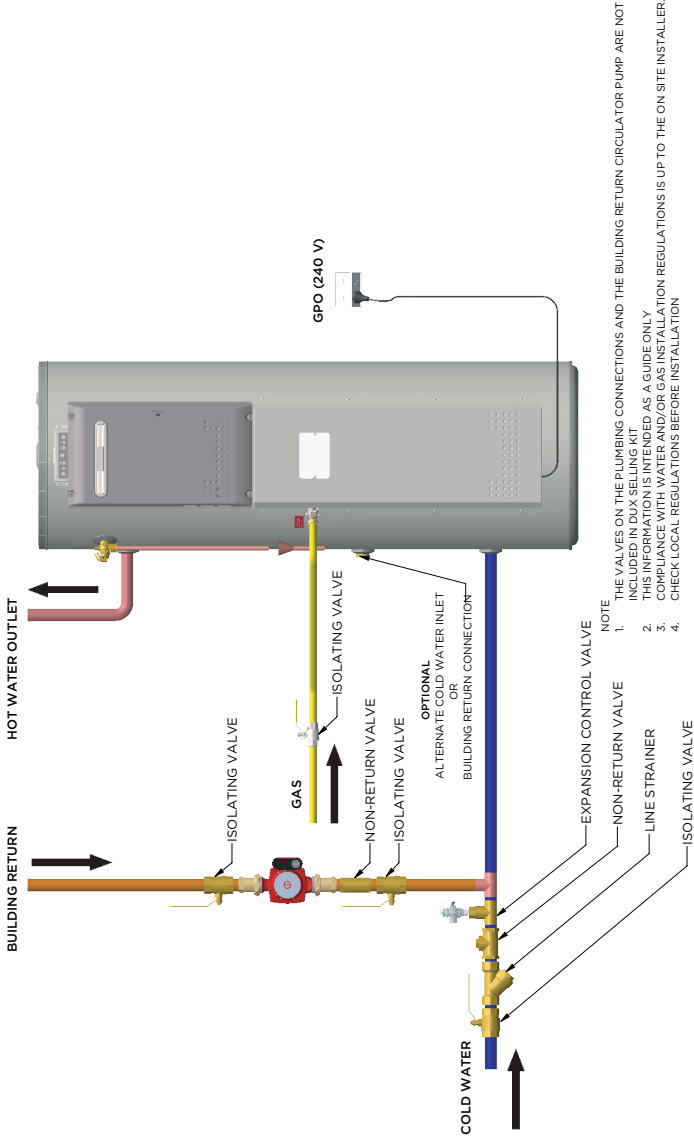
MANIFOLDING & RING MAINS



MANIFOLDING & RING MAINS



MANIFOLDING & RING MAINS



HOT WATER CONNECTION

Hot Water Delivery:

Hot water delivery lines should be sized by a competent person.

Valves:

An isolating valve is required in all installations.

Hot water connection:

Hot water pipe is to be connected via an isolating valve and union to the R1¼"(DN32) socket marked "OUTLET" at the top of the storage tank.

Plastic Pipes and Fittings:

Plastic pipes or fittings shall not be used within 1 metre of the outlet connection although they may be used downstream of a temperature control valve. Refer to AS/NZS 3500.4 for further details.

Insulation:

AS/NZS 3500.4 specifies minimum requirements for the insulation of piping associated with storage water heaters.

It is recommended that all hot water pipes are insulated. Hot water pipes installed outdoors should be insulated with UV stabilised weather resistant insulation.

TEMPERATURE PROTECTION

Temperature Protection:

Hot water supply systems can produce very hot water.

To reduce the risk of scald injury, AS/NZS 3500.4 requires that an approved temperature control device is fitted to the hot water supply to outlets used primarily for personal hygiene (such as showers, baths, hand basins and bidets).

The maximum allowed delivery temperature is further reduced in facilities for children, the aged, the sick and people with disabilities.

Temperature control devices require routine maintenance and performance testing.

GAS CONNECTION

Gas Connection:

Ensure the gas type to be connected matches the gas type marked on the compliance plates of the continuous flow water heaters.

The gas supply pipe must be sized in accordance with AS/NZS 5601.1.

An undersized gas supply pipe may affect the correct operation of the continuous flow water heater.

The gas supply pipe is to be connected via an isolating valve and union to the R $\frac{3}{4}$ "(DN20) socket on the LHS of the pump cover



To avoid damage to the gas supply connection socket, 2 spanners must be used to tighten up the gas supply connection

**CAUTION:
WHEN CONNECTING
GAS, TWO SPANNERS
MUST BE USED**

H2154

The isolating valve must be accessible with all equipment in the installed position.

Purge any debris from the gas supply line before making the connection to the unit.

Consult the continuous flow water heater installation manual before conducting system pressure testing.

The Manual also contains information on acceptable inlet pressures and measuring gas supply pressures.

Check all joints for gas leaks.

ELECTRICAL CONNECTION

Continuous Flow Water Heater:

The continuous flow water heater must be connected using the 2.4m supply cord provided with the water heater.

Consult the continuous flow water heater installation manual for further information.

Tank Circulator Pump:

The pump is connected to a single switched socket outlet from the Pump controller.

General:

The Performance Pack 1150 uses a Grundfos UPM3 25-70 180 pump, switched on and off by a Pump controller.

Pump Controller:

The Pump controller is connected to a switched socket outlet on the tank using the supply cord provided with the unit.

The Grundfos Pump is connected to the outlet cord from the Pump controller.

Tank Circulator Pump Sensor:

The Pump controller is connected to a storage tank sensor, mounted in the drywell.

FILLING THE SYSTEM

Filling the Water Heating System:

The water heating system must be filled with water before turning on the electrical supply to any component.

Ensure all pipework joints have been made, open ends sealed with caps, and manifold pipe isolation and drain valves closed.

1. Open one or more hot water taps to allow air to be expelled from the system
2. Slowly open the cold-water supply isolation valve to allow the system to fill
3. After the system has filled with water and the air has been expelled, close each hot water tap
4. Open the Pressure & Temperature Relief Valve for approximately 10 seconds by lifting the easing lever on the valve
5. Confirm water is relieved to waste through the relief valve drain pipe
6. Slowly lower the easing lever and check the valve closes correctly

TEMPERATURE SETTING

The temperatures need to be set on both the continuous flow units and the pump controller.

Step-1:

Decide on the hot water storage temperature required. There are 3 options - 65°C, 70°C and 75°C

Step-2:

Referring the table below, set the temperatures on the continuous flow units and the Pump controller

Continuous Flow Water Heaters:

The continuous flow water heaters are factory set at 60°.

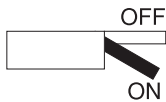
The temperature must be set to 75° C or higher prior to use using the DIP switches. Refer to the table below for DIP switch settings.

This must be carried out with the power to the water heater turned off. Refer to the Continuous Flow Water Heater Installation Manual.

Recommended Pump Controller and Water Heater Settings

	Option-1 (recommended)	Option-2	Option-3
Nominal Hot Water Temperature	65°	70°	75°
Thermostat Set ON	60°	65°	70°
Thermostat Set OFF	65°	70°	75°
Continuous Flow Water Heater Setting	75°	85°	85°

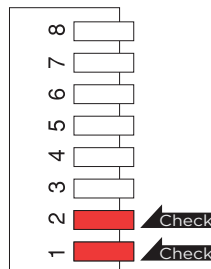
INDOOR UNITS - ALSO SET DIP SWITCH FOR FLUE LENGTH PER THE HEATER MANUAL



* Maximum temperature

	1	2
75°C	<input type="radio"/>	<input checked="" type="radio"/>
85°C	<input checked="" type="radio"/>	<input checked="" type="radio"/>

ON=● OFF=○



TEMPERATURE SETTING

Pump Controller:

The pump controller can be adjusted to operate between 20° and 75°.

Programming of the Pump controller is via the screen on the front of the unit. This is carried out with the power turned on.

DO NOT set a 'SET ON' temperature below 60° unless the temperature dependant minimum exposure periods specified in AS 3498 are to be met by other means

The pump controller can indicate the current tank temperature, the turn on temperature and the turn off temperature by cycling through the display using the "NEXT" button.

The "PWR" light indicates if power is available to the unit and the "HWC" light indicates if power is being provided to the tank circulator pump.

The default LED display is **PWR** and **TANK** lights on



To enter Programming mode:

1. PRESS: **HWC** + to increase the **SET OFF** temperature value to the desired temperature shown on the table on P32
8. PRESS: **NEXT** when finished adjusting **SET OFF** value, this then goes to the **SET ON** value
9. PRESS: **HWC** + to increase the **SET ON** temperature value to the desired temperature shown on the table on P32
10. PRESS: **NEXT** when finished adjusting **SET ON** value, this then goes to the **TANK** value.

There are no more settings to adjust.

The values can be checked by simply

pressing **NEXT** to allow you to review or change the previously adjusted values.

Recirculation Systems:

The temperature of water supplied to a recirculation system must be at least 60° C.

The temperature of the water in the hot water return (before it joins the cold-water supply) must be at least 55°.

COMMISSIONING

To commission the water heating system:

1. Check all hot water taps are turned off
2. Check that the burner unit and the pump controller are plugged into the GPO and that both switches on the GPO are switched on
3. Ensure the system has been filled with water and the cold water supply isolating valve is open
4. Check for water leaks
5. Ensure the gas supply valve to the instantaneous water heater is open
6. Open the main gas supply valve and check for gas leaks
7. Ensure that the temperature is set on the pump controller and the heater; for indoor units ensure that the correct dip switch settings for flue length have been selected
8. Refer to the installation manual of the heater
9. Plug the power cable protruding out of the bottom of the GPO on the tank into a 240V power supply and switch it on.
10. Check that the continuous flow water heater starts; for further information refer to the "Trial Operation" section of the Continuous Flow Water Heater Installation Manual
11. Check the gas supply pressure under operating conditions
12. Check for any gas or water leaks and tighten if required
13. The continuous flow water heater should shut down automatically once the tank has reached the set temperature
14. Clean the inlet water filter on the Continuous Flow unit after one heating cycle
15. Refit the cover to the tank taking note of the top of the cover and the bottom of the burner unit correctly match up, support the cover and fit the supplied screws

CARE MUST BE TAKEN NOT TO OVERTIGHTEN THESE SCREWS.

GAS SUPPLY PRESSURE

Working Gas Pressure:

The working gas pressure available at each continuous flow water heater must be in the following range:

Natural Gas - 1.13 kPa to 3.00 kPa

Universal LPG - 2.75 kPa to 3.50 kPa

The gas supply pressure can be measured at the tapping point on the gas inlet of the continuous flow water heater.

Refer to the Continuous Flow Water Heater Installation Manual.

If the gas pressures are outside this range the continuous flow water heater will not operate correctly. This **must** be rectified before continuing.

COMMISSIONING

PERFORMANCE PACK 1150 - QUICK REFERENCE INSTALLATION INSTRUCTIONS

MODELS - T12813ENK / T12813ELTK / T12813FNTK / T12813FLTK

This product should be installed as per the supplied Installation Manual.

1. Remove the cover, confirm if an indoor or outdoor model continuous flow unit is to be fitted
2. If an outdoor unit is being fitted remove the two screws and washers from the lower heater mounting bracket
3. Hang the continuous flow unit onto the lugs on the top bracket
4. Secure the bottom of the continuous flow unit with the screws and washers that were removed in step 3
5. If an indoor model continuous flow unit is to be fitted to the tank, the upper and lower heater mounting brackets need to be replaced with the two brackets supplied in the installation kit this is done by removing the screws holding the brackets to the tank, replacing the brackets and reinstalling the screws, **CARE MUST BE TAKEN NOT TO OVER-TIGHTEN THE SCREWS**. The unused heater mounting brackets can be discarded
6. Fit the 3/4" M&F adaptor (supplied) to the gas connection point on the heater with appropriate sealing material
7. Connect the 3 braided hoses to the continuous flow unit ensuring the correct hose is connected to the appropriate fitting on the continuous flow unit and the fibre washers are used on the water lines
8. Plug the power lead from the continuous flow unit into the GPO near the bottom of the heater and ensure that both switches on the GPO are switched to the ON position
9. Connect the appropriate size gas line to the brass fitting ensuring that two spanners are used to tighten the connections
10. Connect and fill the tank with water

11. Confirm all water and gas connections are sealed, **clean the inlet water filter on the continuous flow unit**

12. Set the temperature on the continuous flow unit (For 75-degree setting, flick the dip switch-2 inside the continuous flow unit to ON). Refer installation manual for other temperature options. Recommended temperature settings are shown in the table

Nominal Hot Water Temperature	65°
Thermostat Set ON (Factory setting)	60°
Thermostat Set OFF (Factory setting)	65°
Continuous Flow Water Heater Setting (To be set by installer)	75°

13. For indoor heater, refer manual for additional DIP switch setting for flue lengths

OFF
ON

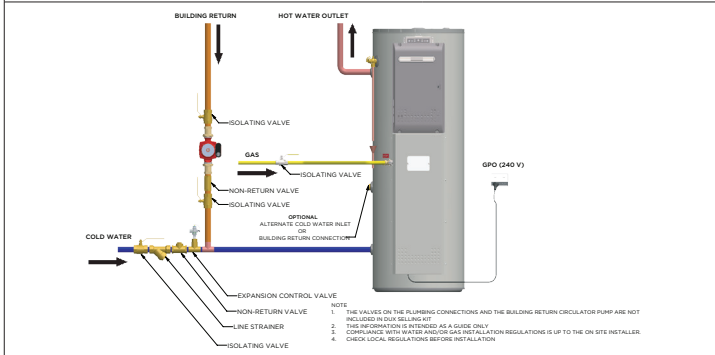
* Maximum temperature

1	2
75 °C	●

ON = ● OFF = ○

14. Plug in the supply cable and switch ON the power to the heater

15. If the burner unit fires and there are no water or gas leaks, refit the cover, **CARE MUST BE TAKEN NOT TO OVER TIGHTEN THE SCREWS**



Specifications and materials are subject to change without notice
Images are representative only and some items omitted/simplified for clarity

SAFETY INFORMATION

General:

This hot water storage tank is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the storage tank by a person responsible for their safety.

Children and animals should be supervised to ensure they do not interfere with the storage tank.

DO NOT store chemicals near this storage tank.

DO NOT modify this storage tank.

Temperature Protection:

Water heating systems can produce very hot water. To reduce the risk of scald injury, it is mandatory that an approved temperature control device is fitted to the hot water supply to outlets used primarily for personal hygiene.

This device should be checked at regular intervals to ensure its operation and settings remain correct.

Relief Valve:

The Pressure & Temperature Relief (PTR) Valve must be installed directly into the RP ¾" (DN20) socket marked "RELIEF VALVE".

The PTR Valve rating is shown on the compliance plate. The valve must not be tampered with or removed. The storage tank must not be operated unless this valve is fitted and in working order.

The PTR Valve should be checked by a licensed tradesperson for adequate performance, or replaced at intervals not exceeding 5 years, or less in areas where local regulations apply.

The PTR Valve is to be operated regularly to remove lime deposits and to verify it is not blocked. It is normal for the valve to leak a small amount of water during heating cycles.

Danger:

Failure to operate the PTR Valve easing lever at least once every six months may result in the storage tank exploding.

Continuous leakage of water from the PTR Valve may indicate a problem with the water heating system, although discharge of about 3% of the volume of the water heated is considered normal.

Excessive water leakage may be caused by high water supply pressure, a faulty PTR Valve or a fault in the water heating equipment.

Turn off the water heating system and contact your local Reece branch or, in Australia, call 1300 412 612

SAFETY INFORMATION

Legionella Control:

AS 3498 requires water heating systems to be designed to inhibit the growth of Legionella bacteria.

This hot water storage tank relies on the water heating system to ensure it meets the requirements of AS 3498.

It is recommended that the water heating system is designed to ensure that at least 90% of the stored water is heated to 60°C for at least one single period of not less than 32 minutes in each 7 day period.

Other means of compliance with AS 3498 are available depending on the type of water heating system.

For advice contact your local Reece branch or, in Australia, call 1300 412 612.

Not Using Hot Water?

If water is not drawn from or circulated through the storage tank for two weeks or more, a quantity of hydrogen (which is highly flammable) may accumulate inside the storage tank.

To dissipate this gas safely it is recommended that a hot tap be turned on for several minutes at a sink, basin or bath, but not a dishwasher, clothes washer or other appliance.

During this procedure there must be no smoking, open flame or any other electrical appliance operating nearby.

If hydrogen is discharged through the tap it will probably make a sound similar to air escaping.

STORAGE TANK MAINTENANCE

Regular servicing will help to keep the hot water storage tank operating safely and efficiently.

Six Month Service:

This service may be carried out by a responsible person.

1. Stand clear of the Pressure & Temperature Relief (PTR) Valve drain pipe outlet
2. Open the PTR Valve for approximately 10 seconds by lifting the easing lever on the valve, confirm water discharges to waste through the drain pipe
3. Lower the easing lever gently and check it closes correctly
4. Repeat the above process for the expansion control valve (if installed)

Other than this, personally inspecting or servicing any part of the storage tank is not recommended.

Five Year Service:

This service should only be carried out by a licensed tradesperson.

In locations where the water has Total Dissolved Solids (TDS) exceeding 600 mg/L, this service is recommended every 3 years.

This service should include the following:

- Replace the PTR Valve
- Replace the anode
- Inspect and flush the expansion control valve (if installed)
- Drain and flush the storage tank and continuous flow

Replacement parts are available from your local Reece branch

CONTINUOUS FLOW MAINTENANCE

Regular servicing will help to keep the continuous flow unit operating safely and efficiently.

Regular Service:

This service may be carried out by a responsible person.

The frequency will be dictated by local water conditions.

1. Clean the inlet water filter on the continuous flow
2. Indoor units - check the integrity and sealing of the flue system and confirm the installation meets the requirements of AS/NZS 5601 and any local codes

Other than this, check and adjust working and burner pressures as required.

CONSIDERING A SERVICE CALL?

It is recommended that the following points be reviewed before making a service call:

No Hot Water:

- Check for circuit breaker trip
- Check for gas supply trip

High Energy Bills or Insufficient Hot Water:

- Check that the water filter on the burner unit is clear
- Often the hot water usage of showers, washing machines and dishwashers can be underestimated - review these appliances to determine if the daily usage is greater than the capability of the water heating system
- Is the water heating system the correct size for the requirements? Sizing details are available from your local Reece branch
- Is there a leaking hot water pipe or dripping hot water tap? A small leak can waste a large quantity of hot water - Replace faulty tap washers and arrange for your plumber to rectify any leaking pipe work
- Is the Pressure & Temperature Relief Valve discharging too much water? See following.

Continuous Trickle of Water from the tank Pressure & Temperature Relief (PTR) Valve:

This is most likely due to a build up of foreign matter. In this case, try gently raising the easing lever on the PTR Valve for a few seconds, then release gently.

This may dislodge a small particle of foreign matter and rectify the fault.

Water Discharge from PTR Valve:

It is not unusual for a small quantity of water to discharge as water is heated.

The amount of discharge will depend on hot water usage and the size of the storage tank. If an expansion control valve is fitted, this discharge should occur from the expansion control valve rather than the PTR Valve.

Continuous leakage of water from the PTR Valve may indicate a problem with the water heating system, although discharge of about 3% of the volume of the water heated is considered normal.

Excessive water leakage may be caused by high water supply pressure, a faulty PTR Valve or a fault in the water heating equipment.

If after checking the above points, the problem has not been identified, contact your local Reece branch or, in Australia, call 1300 412 612.

WARRANTY

Thermann Performance Pack 1150 - Warranty Summary:

Manufactured by Dux Manufacturing Limited ("Dux").

The Warranty specified below applies when the product is used in an application other than a single family home.

Full warranty terms are described in the table on page 43.

All components of the system are covered by a 2 year parts and labour warranty. The internal water storage cylinder is covered for a further 3 years against failure. See below for details and conditions.

The benefits provided to you by this warranty are in addition to any other rights and remedies available to you under the Australian Consumer Law.

Two Year Parts and Labour Warranty:

Dux warrants against defects in the storage tank arising from faulty materials or workmanship for a period of two years. Conditions apply (see table on P43).

During this period Dux will repair or replace any failed component or where necessary, in the absolute discretion of Dux, replace the storage tank, free of charge including reasonable labour costs incurred during normal business working hours.

Extended Cylinder Failure Warranty:

Dux also warrants against failure of the internal water storage cylinder for a further period of three years.

Conditions apply (see table on P43).

During this period Dux will provide a replacement storage tank free of charge. Installation and other labour costs are the responsibility of the owner.

WARRANTY

Warranty conditions on Usage:

Component	Warranty Period - Year(s)	
	Commercial Use	Residential Use
Heat Exchanger inside the Continuous Flow unit	5	12
Storage tank	5	10
All other parts and labour	2	2

Residential - Single family dwelling

Commercial - Every other application other than single family dwelling

WARRANTY

Warranty Conditions:

The warranty only applies to the storage tank system itself and the components supplied with the storage tank by Dux. The warranty does not cover components supplied by others, including the installer.

The cylinder failure warranty does not apply if the storage tank has been connected to a water supply where the Total Dissolved Solids content is greater than 2500 mg/L.

Warranty does not apply if water quality is not within the specified guidelines on P9.

These warranties do not apply to defects that are a result of, without limitation, the following:

- Failure to install the storage tank in accordance with the installation instructions or statutory requirements;
- Faulty plumbing or water supply including excessive pressure;
- Use of the storage tank in a manner contrary to this manual or other instructions provided by Dux;
- Alterations or repair of the storage tank other than by an accredited and licensed service agent or technician;
- Accidental damage or abuse

If the storage tank is installed in a position that does not comply with the installation instructions or statutory requirements, then this warranty does not cover major dismantling or removal of cupboards, doors, walls or special equipment and/or excessive labour, at the determination of Dux, to make the storage tank accessible for repair or replacement.

Thermann continuous flow water heater Warranty:

- Refer to continuous flow manual

Commencement of Warranty:

The warranty period commences from the date of installation of the storage tank.

Where proof of the date of installation is not available, the warranty period commences on the date of manufacture of the storage tank. This is shown on the compliance plate on the outside of the storage tank.

The replacement of the storage tank, or a component of it, under this warranty does not change the warranty commencement date.

The original commencement date continues to apply.

Consequential Losses:

Claims for damage to furniture, carpets, walls, foundations or any other consequential loss either directly or indirectly due to defects of any kind in the storage tank will only be met by Dux where the damage could be considered reasonably foreseeable and the storage tank was installed in accordance with the installation instructions and all relevant statutory requirements.

WARRANTY

The Australian Consumer Law (“ACL”):

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 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.

If Dux fails to meet a guarantee under the ACL, your remedy for such failure may be limited to any one or more of the following:

- Replacement of the storage tank;
- Repair of the storage tank;
- Refunding the cost of the storage tank;
- Payment of the reasonable costs of having the storage tank repaired;
- Payment in respect of the reduced value of the storage tank

How to Make a Warranty Claim:

Warranty claims can be placed by completing the following steps:

- Contact Customer Service on 1300 412 612 (in Australia) or 0800 729 389 (in New Zealand)
- Provide the serial number and model number of the storage tank - this can be found on the compliance plate on the outside of the storage tank
- Provide the serial number and model number of the continuous flow unit - this can be found on the compliance plate on right hand side casing of the continuous flow unit
- Provide your full name, address and contact number
- Provide proof of date of installation for warranty to commence from that date, rather than from the date of manufacture - see Commencement of Warranty on page 43

Please note, if the defect or fault is not covered by the warranty or guarantee, you will be responsible for the costs incurred by the service agent or technician.

WARRANTY

Contact Details:

Dux Manufacturing Limited

Lackey Road

Moss Vale, NSW, 2577

Australia

1300 412 612 (Australia)

0800 729 389 (New Zealand)

Email: duxaftersales@dux.com.au

