

RADIANT HOT WATER

Owner's Manual

RADIANT®

Electric Storage Water Heaters

Models: 125A118
 125A136
 160A124
 160A136
 250A136
 315A136

Installation Details

Owner's Information

Warranty

For advice, repairs and service, call:

1300 365 115 (Australia)

0800 729 389 (New Zealand)



Carefully remove all packaging and transit protection from the heater before installation. Dispose of the packaging responsibly using re-cycling facilities where they exist.



Specifications and materials may change without notice.

Effective for all Radiant electric storage water heaters manufactured and sold after 1st Feb 2009.

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RADIANT HOT WATER

Owner's Manual – Radiant Electric Storage Water Heaters

Welcome To Radiant Hot Water

Your decision to purchase a Radiant Hot Water system will reward you for many years to come.

Since 1915, the Dux range has seen continuous research and development, resulting in many breakthroughs in the efficiency, reliability and longevity of hot water systems.

Radiant water heaters are manufactured in Australia in a state-of-the-art facility, using a Quality Endorsed Company production system.

This is your assurance that you have purchased the highest quality water heater available, one that will provide continuous hot water for all your needs – safely, economically, and for many years to come.

To be upfront about it, we want Radiant to be your brand of choice. So you can depend on us to provide more than just a hot water system.

You can rely on Radiant products and choose them with confidence. We'll make sure you have the information, the quality and the innovation you're looking for, including the latest energy-saving alternatives. If you should ever have a problem – and we'll bet you won't – you'll find that we're easy to get hold of, friendly to talk to and quick to act. Our service is all about providing anything you need as soon as you need it.

Go with Radiant and you'll have a dependable, economical, efficient hot water system designed to perform well, year after year. And that's a promise.

Features

- Positive Domed tank provides superior corrosion resistance, resulting in longer life.
- Dual handed design to make installation easier.
- Australian made.



Installation Details

Installation Requirements

This water heater must be installed by a licensed tradesperson, and in accordance with:

- AS/NZS3500.4.2 “National Plumbing and Drainage Code Hot Water Supply Systems – Acceptable Solutions”.
- AS/NZS3000.
- Local authority regulations.
- Outside Australia and New Zealand, please refer to local plumbing and building codes and regulations.
- Notice to Victorian customers from the Victorian Plumbing Industry Commission – this water heater must be installed by a licensed person as required by the *Victorian Building Act* (1993). Only a licensed 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.

Water Supply Pressure

This water heater is designed for direct connection to water supply pressures of:

125 Litre model – 1120kPa

160 Litre model – 1120kPa

250 Litre model – 800kPa

315 Litre model – 800kPa

Where the mains pressure can exceed or fluctuate beyond the pressure shown above, a pressure limiting device (complying with AS1357) must be fitted in the cold water inlet supply. This device must be installed after the isolating valve and set below the pressure shown above. Note that during periods of lower demand, water pressure may increase.

Caution: This water heater delivers hot water at temperatures exceeding 50°C. Refer to AS/NZS3500 and local regulations regarding the need for additional hot water delivery temperature control.

Pool Heating

This water heater must **not** be used for pool heating.

Installation Details

Location

The water heater should be located as close as possible to the most frequently used hot water outlet. Adequate access must be made for service to the element(s), thermostat, relief valve and anode. Ensure that the data plate is clearly visible.

Note: All models are equipped with a sacrificial anode, accessible through the top cover. Allow 50% of the height of the water heater for clearance above to replace the anode.

We recommend a plinth be installed under the water heater where the water heater is subjected to wet conditions.

A properly drained overflow tray must be used where property damage could occur from water spillage. (See AS/NZS3500.4.2 for further details.)

When installing this water heater in a roof area as a mains pressure unit, refer to local regulations.

Note: The warranty does not cover damage due to leakage of the water heater.

Plumbing Connections

Pressure & Temperature Relief Valve

The Pressure & Temperature Relief Valve is supplied loose with the water heater.

Please refer to the specifications table on page 7 for the valve ratings.

The PTR valve must be installed directly into the top socket marked “RELIEF VALVE”. The drain line from this valve must run in a continuously downward direction in a frost-free ambient position with the discharge end left open to atmosphere permanently.

The PTR Valve is not intended to enable connection of the water heater to supplementary energy sources such as solar panels or slow combustion stoves (refer AS/NZS 3500.4 for guidance on these types of installations).

Open the PTR Valve for approximately 10 seconds by lifting the lever on the valve to ensure water is relieved to waste through the relief drain pipe. Lower lever gently and check that it closes correctly.

The PTR Valve must not be tampered with or removed. The water heater must not be operated unless this valve is fitted and in working order.

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

Important: The PTR Valve and its drain outlet pipe must not be sealed or

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

Danger

Failure to operate the relief valve easing lever at least once every six (6) months may result in a problem with the water heater and in some cases the tank may explode.

Warning: A separate drain line must be run for this relief valve. It is not permitted to couple drain lines from relief valves into a single common drain line.

Note: Brass plugs are supplied with the water heater to plug off the unused fittings. Ensure that a sealing material is applied to the plugs to prevent leaking.

Cold Water Connection

An approved isolating valve, non return valve, line strainer (optional but recommended), and union must be fitted between the supply main and either of the RP³/₄/20 sockets marked “Inlet” at the bottom of the water heater. All fittings must be approved by the relevant Authority. See the diagram on page 5 for details.

Note for S.A. and W.A.: It is a state requirement that a pressure relief valve be fitted on the cold water supply line between the non return valve and the water heater. See the diagram on page 5 for details.

Plumbing Connections

Hot Water Connection

The hot water pipe should be connected to either of the RP $\frac{3}{4}$ /20 sockets marked OUTLET at the top of the unit. For the most economical operation of the water heater, it is recommended that all hot water lines are insulated. Please check local regulations regarding the use of hot water supply pipework that are not made of copper.

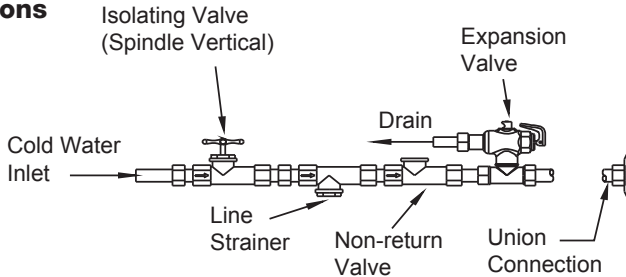
Insulation of Pipes

All hot water pipes **must** be insulated with UV stabilized insulation suitable for solar working temperatures, e.g. Armaflex Insulation.

Temperature Protection

Water heaters can produce very hot water. To reduce the risk of scald injury, it is mandatory under the requirements of Australian Standard AS/NZS3500.4.2 that a suitably approved temperature control device be fitted to the hot water supply to outlets used primarily for personal hygiene. This valve should be checked at regular intervals to ensure its operation and settings remain correct.

Inlet Connections



Note: a combined isolating valve/non-return valve/line strainer may be used. Expansion valve only required where local regulations demand.

Electrical Connection

This water heater is designed for single phase 240V A.C supply only. The electrical connection must comply with Local Supply Authority Regulations and AS/NZS3000.

For models pre-wired with a flexible lead, if the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified person in order to avoid hazard.

For models not pre-wired with a flexible lead, connections are made at the terminal block inside the water heater, and a means for disconnection must be incorporated in accordance with the wiring rules.

Entry to the connection area is through the hole beneath the element cover, designed to accept a 20mm conduit. The element cover may be removed by undoing the two screws on the cover and sliding the cover downwards to disengage the top edge. Ensure that the conduit entry is well sealed to achieve correct weatherproofing.

Note: This water heater is fitted with a thermostat and over-temperature energy cut-out. Under no circumstances should the water heater be operated without both these devices being in the circuit. Replacement must be carried out only by a qualified electrician or the manufacturer.

Danger: The operation of the thermal cut-out indicates a possibly dangerous situation. Do NOT reset the thermal cutout until the water heater has been serviced by a qualified person.

Caution: Water heater must be filled with water before turning on the electricity supply.

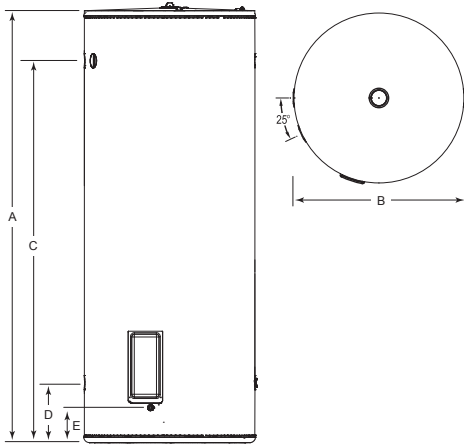
Electrician: Press the reset button on thermostat to ensure over-temperature cut-out is set.

When supply wiring has been connected, supply wires must be kept lower than the terminal block.

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Specifications



| Nominal Dimensions | | | | |
|----------------------|------|------|------|------|
| Tank Size | 125L | 160L | 250L | 315L |
| Total Height (A) | 1062 | 1317 | 1444 | 1754 |
| Total Diameter (B) | 532 | 532 | 617 | 617 |
| Outlet Height (C) | 857 | 1112 | 1231 | 1541 |
| Inlet Height (D) | 206 | 206 | 215 | 215 |
| Electrical Entry (E) | 116 | 116 | 125 | 125 |

| Specifications | | | | |
|------------------------|----------|----------|------|------|
| Tank Size | 125L | 160L | 250L | 315L |
| Storage Capacity (L) | 128 | 164 | 259 | 315 |
| Hot Water Delivery (L) | 125 | 160 | 250 | 315 |
| Net Weight Empty (kg) | 48 | 59 | 88 | 103 |
| Element(s) Sizes (kW) | 1.8, 3.6 | 2.4, 3.6 | 3.6 | 3.6 |

Relief Valve:

| | | | | |
|-------------------|------|------|------|------|
| Pressure (kPa) | 1400 | 1400 | 1000 | 1000 |
| Temperature (°C) | | 99 | | |
| Power Rating (kW) | | 10kW | | |

Operating Instructions

Safety

This appliance 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 appliance by a person responsible for their safety.

Children and animals should be supervised to ensure that they do not interfere with the appliance.

Filling The Water Heater

Open all hot water taps. Open isolating valve at the cold water inlet slowly and allow water heater to fill until water flows through the system. Close each hot water tap after the air is expelled from its line. As noted previously power is not to be turned on until the water heater is filled with water.

Water Quality

Your Dux water heater has been manufactured to suit water conditions of most Australian metropolitan supplies. Please note that harsh water supplies can have a detrimental effect on the water heater and its life expectancy. If you are unsure about your water quality you can obtain information from your local water supply authority.

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

where the TDS exceeds 600mg/L it is possible that the magnesium alloy anode (supplied in the heater) may become over-reactive. To alleviate this, the magnesium alloy anode should be replaced with an aluminium alloy anode, available from your local Dux supplier.

Water can also be very corrosive, the measure of this is the saturation index. If the water saturation index is greater than 0.40, an expansion control valve should be fitted. If the index is greater than 0.80, the water heater installed should be a Hard Water Model. Please consult our Service Department for advice if required.

Caution

If the water heater is left in an operating condition and unused for two weeks or more, a quantity of hydrogen (which is highly flammable) may accumulate in the top of the water cylinder. 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 an unusual sound as with air escaping.

Where the water heater is not installed in accordance with the listed advice, the water heater will not be covered by the Terms of Warranty.

Safety Information

Warning

For safe performance, this water heater is fitted with:

1. Combination Thermostat and over-temperature energy cut-out.
2. Combination Pressure & Temperature 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 in working order. **The element cover(s) should be removed only by an electrician.**

The electrical power supply switch must be turned off and the fuse removed or the circuit breaker isolated at the main electrical supply switchboard before the water heater electrical cover is removed.

Open the PTR Valve for approximately 10 seconds by lifting the lever on the valve to ensure water is relieved to waste through the relief drain pipe. Lower lever gently and check that it closes correctly.

The PTR Valve must not be tampered with or removed. The water heater must not be operated unless this valve is fitted and in working order.

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

Important

The PTR Valve and its drain outlet pipe must not be sealed or blocked. It is normal for the PTR valve to leak a small amount of water during heating cycles.

Danger

Failure to operate the relief valve easing lever at least once every six (6) months may result in a problem with the water heater and in some cases the tank may explode.

Service Information

Six Monthly Service (By Owner)

Operate the Pressure & Temperature Relief Valve for approximately 10 seconds by operating the easing lever on the valve to ensure water is relieved to waste through the relief drain pipe. Check to ensure the valve closes correctly.

Five Year Service (By Authorised Personnel Only)

The five yearly service should be carried out by a licensed tradesperson. It is recommended that this service be carried out by your local Dux agent.

The service should include the following:

- Replace the Pressure & Temperature Relief Valve.
- Replace the anode. (in areas of harsh or adverse water conditions it is recommended that you carry out a more frequent check of your anode's condition, refer Operating Instructions "Water Quality")
- Flush the water heater by doing the following:
 - i. Turn off the power.
 - ii. Turn off the cold water supply to the water heater at the isolating valve.
 - iii. Gently operate the easing lever on the Pressure & Temperature Relief Valve to release the pressure in the water heater.
 - iv. Disconnect the cold water inlet union to the heater and attach a drain hose.
 - v. Gently operate the Pressure & Temperature Relief Valve to let air into the heater and allow water to escape through the hose.
 - vi. To flush the heater, carry out steps (i) to (iv) above. Disconnect the hot water inlet union and attach a water supply hose to the heater. Turn on the water supply.
 - vii. Flush the heater until clear water appears. Reconnect all fittings, fill the heater and restore the electricity supply.

Troubleshooting

What Should I Check Before Making A Service Call?

If there is not enough hot water, it is recommended that the following points be considered before making a service call. If after checking the following points the problem has not been identified, please contact Dux on 1300 365 115.

No Hot Water

- Is the Pressure & Temperature Relief Valve discharging too much water?
- Do you have the correct size water heater for your requirements? Sizing details are available from your Dux supplier.
- Is one outlet (such as the shower) using more hot water than you think?
- Carefully review the family's hot water usage and if necessary check the shower flow rates with a bucket, measuring the amount of water used over that period of time. If it is not possible to adjust water usage patterns, an inexpensive flow control valve can easily be fitted to the shower outlet.
- Consider that during night time heating, the time taken to heat the tank can take longer so you may find that the tank has not fully recovered from a period of heavy usage the previous evening.
- Consider that often the hot water usage of showers, washing

machines and dishwashers can be under estimated. Review these appliances to determine if your daily usage is greater than the storage volume of your water heater. For example, if you have a 315 litre storage tank and you are using 450 litres of water it is possible that there will be certain times of the day where there is insufficient hot water. It is also advisable to inspect tap washers etc. for leakage and replace if necessary.

- 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 have your plumber rectify any leaking pipe work.

Water Discharge from the PTR Valve

Pressure & Temperature Relief Valve (PTR)

It is normal for the PTR to allow a small quantity of water to escape during the heating cycle. The amount of discharge will depend on hot water usage.

Continuous trickle (PTR)

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

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

Steady flow (PTR) – more than 20L per day

This may be caused by excessive water supply pressure, a faulty Pressure & Temperature Relief Valve or a faulty thermostat. Turn off the electricity supply and contact Dux Hot Water.

High Electricity Bills

- Is the Pressure & Temperature Relief Valve discharging too much water?
- Is one outlet (such as the shower) using more hot water than you think? See “No Hot Water”.
- 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 have your plumber rectify any leaking pipework.

Warranty

Radiant Hot Water Unit

Manufactured by Dux Manufacturing Limited (“Dux”)

Terms of Warranty and Replacement Guarantee

All Radiant water heaters manufactured and sold after 1 January 2011 are backed by a comprehensive one (1) year full parts and labour warranty (conditions apply – see below).

Furthermore, the Radiant tank includes a guarantee to replace your hot water unit if the inner cylinder fails within five (5) years (conditions apply – see below).

The terms of the Warranty and replacement guarantee are set out below.

1 Year Comprehensive Warranty

Your Radiant hot water system and its components are covered by a one (1) year (parts and labour) warranty against defective factory materials or workmanship from the date your hot water unit is installed or two (2) years from date of manufacture, whichever occurs first.

5 Year Replacement Guarantee

If an inner cylinder fails on a Dux hot water unit within a further four (4) years after the end of the initial one (1) year warranty period, Dux will provide a free replacement hot water unit at the

nearest approved Dux agent or Dux office to the owner's home. Under this replacement guarantee, the transport, installation and labour costs of delivering the replacement hot water unit and removing and replacing the existing hot water unit will be the responsibility of the owner of the existing hot water unit.

Scope of Warranty and Replacement Guarantee

In addition to the guarantees implied by the Australian Consumer Law (“ACL”), Dux provides a warranty for the periods of time set out above (1 year plus a further 4 years), after the date of installation (or manufacture) of the hot water heater (“the Unit”), that the Unit is free from all defects in factory materials or workmanship under normal use.

If the Unit fails to conform to this warranty during the applicable period, Dux will replace any failed component or where necessary, in the absolute discretion of Dux, replace the Unit free of charge including reasonable labour costs incurred in normal business working hours.

Note: Where the date of completion of installation is not known, then this warranty will commence one (1) month after the date of manufacture (refer to the data label on the Unit).

This warranty only applies to defects which have arisen solely from faulty

Warranty

materials or workmanship in the Unit and does not apply to other defects which may have arisen as a result of, without limitation, the following: accidental damage, abuse, misuse, maltreatment, abnormal stress or strain, harsh or adverse water conditions including excessive water pressure or temperature, or neglect of any kind of the Unit. Alterations or repair of the Unit other than by an accredited and licensed service agent or technician are not covered. Attachment of accessories or use of non genuine replacement parts other than those manufactured or approved by Dux are not covered by this extended warranty.

This warranty applies only to the Unit and does not cover any ancillary plumbing or electrical parts supplied by the installer such as pressure limiting valve, tempering valve, line strainer, stop cocks, non-return valve, electrical switches, pumps or fuses, or faulty installation.

The Unit must be installed by a licensed plumber in accordance with information set out in the Owner's Manual and/ or Installer's Guide supplied with the Unit and/or any relevant statutory requirements.

In addition to this extended warranty, certain legislation (including the ACL) may give you rights which cannot be excluded, restricted or modified. This extended warranty must be read subject

to such legislation and nothing in this warranty has the effect of excluding, restricting or modifying those rights.

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

- replacement of the Unit;
- repair of the Unit;
- refunding the cost of the Unit;
- payment of reasonable costs of having the Unit repaired;
- payment in respect of the reduced value of the Unit.

Any defective part of the Unit must be returned to the point of sale before replacement can be considered under the terms of this warranty. If the costs of returning any defective parts are unreasonable, please contact Dux on 1300 365 115 (Australia) or 0800 729 389 (New Zealand) so that we can arrange a collection if appropriate.

Warranty claims can be made at the point of sale or by posting or faxing a warranty claim to Dux (contact details listed below) within one (1) month of the appearance of a defect. Warranty claims under this extended warranty must include the following details:

- Date of Purchase;
- Location of Purchase;
- Proof of Purchase;

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- Contact Details
- Product Serial Number

Contact details

Dux' contact details are as follows:

Postal Address:

Dux Manufacturing Limited
PO Box 209
Moss Vale, NSW, 2577
Australia

Telephone:

1300 365 115 (Australia)
0800 729 389 (New Zealand)

Facsimile:

(61 2) 4868 0257

Web:

<http://dux.com.au/>

Note: If the Unit is located in a position that does not comply with the installation instructions or relevant statutory requirements, then this extended 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 Unit accessible for repair or replacement.

As required by legislation, including under the ACL, any claims for damage to furniture, carpets, walls, foundations or any other consequential loss either directly or indirectly due to defects of any kind in a Unit will only be met

by Dux where the damage could be considered reasonably foreseeable.

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

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Warranty Card

Inside the water heater carton you will find a warranty card – please fill in the details and return immediately. This will ensure prompt service under warranty, if required.

Product Warranty is applicable only in Australia and New Zealand.

See page 13 for terms of warranty.

Privacy Act Amendment (2000): If and whenever warranty service is required, your personal details will be given to an Authorised Dux Service Agent only for the express purpose of carrying out the arranged warranty service work agreed by you the client and Dux Manufacturing Limited.

Your Details

For future convenience, fill in the following details and retain with your original invoice for your own records.

Surname:.....Given Name(s):.....

Address:.....

Town/Suburb:.....

State/Territory:..... Postcode:.....

Date of Purchase:..... Purchased From:.....

Model:..... Serial Number:.....

Date of Manufacture:.....

(Details on Data Label on water heater)

Installer's Details:

Date of Installation:..... Installer's Name:.....

Address:.....

Installer's Signature:.....

Service Details:

Date of Service:..... Serviced By:.....

Work Carried Out:.....

.....

.....

Signature of Service Agent:.....

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RADIANT[®] **Electric Storage Water Heaters**

For advice, repairs and service, call:

1300 365 115 (Australia)

0800 729 389 (New Zealand)

