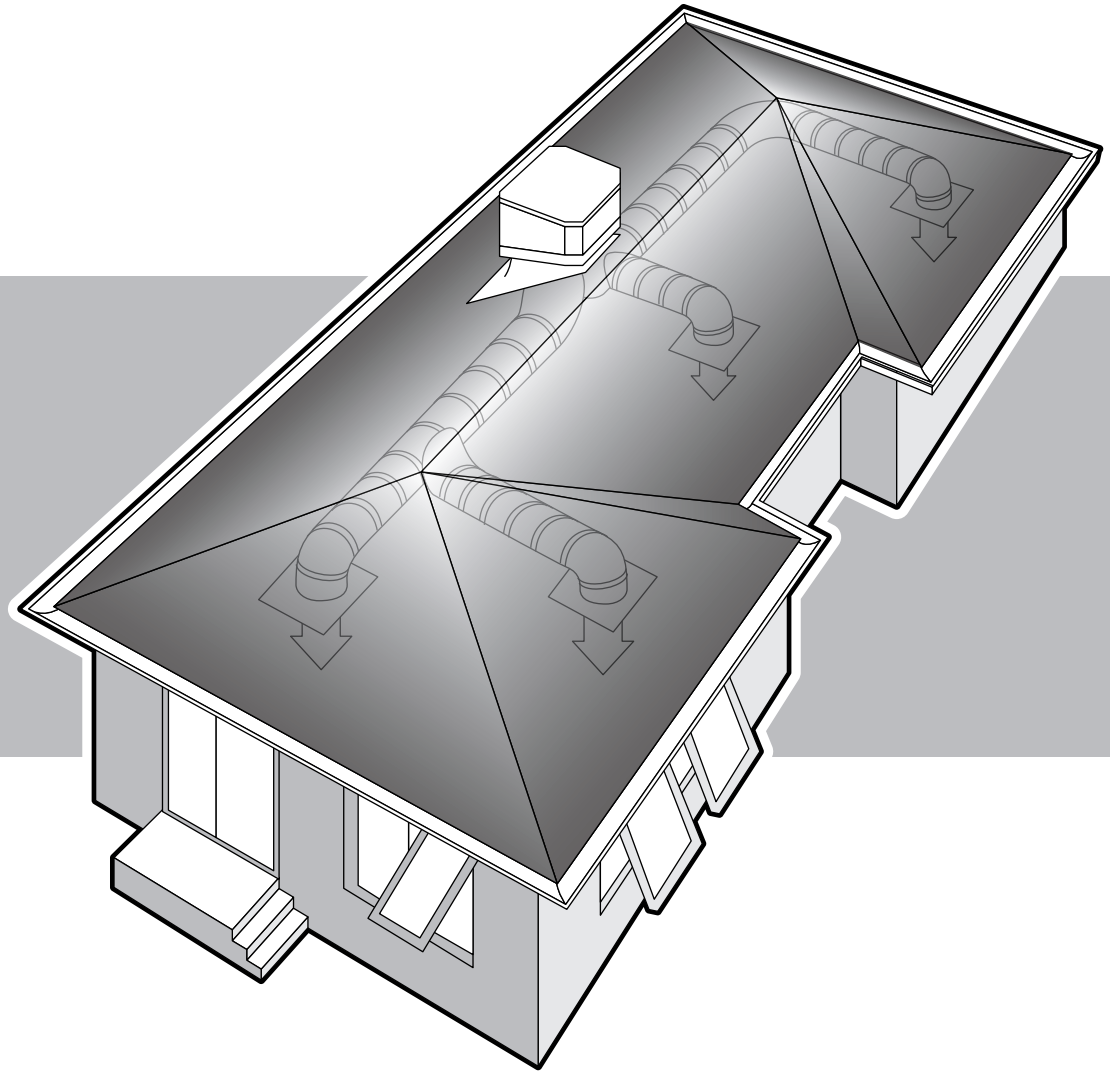
Rinnai

Installation Manual

C & A Series Evaporative Air Coolers



This appliance shall be installed in accordance with:

- Manufacturer's Installation Instructions
- Current AS/NZS 3000
- Local Regulations and Municipal Building Codes including local OH&S requirements

This appliance must be installed, maintained and removed by an Authorised Person.

For continued safety of this appliance it must be installed and maintained in accordance with the manufacturers instructions.

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WARNINGS AND IMPORTANT INFORMATION

IMPORTANT

READ ALL INSTRUCTIONS BEFORE INSTALLING OR USING THE APPLIANCE.

Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

WARNINGS: **WHEN IGNORED, CAN RESULT IN SERIOUS INJURY OR DEATH.**

CAUTIONS: **WHEN IGNORED, CAN RESULT IN MINOR INJURY OR PRODUCT DAMAGE.**

SHALL / MUST / IMPORTANT: **INDICATES A MANDATORY REQUIREMENT OF THIS MANUAL.**

SHOULD: **INDICATES A RECOMMENDED REQUIREMENT OF THIS MANUAL.**

Any deviations from these instructions may, at the discretion of Rinnai, void the warranty. As a result, the customer and/or installer may be charged a fee for product non-warranty related call outs. Also, note that failure to comply with these instructions may preclude Rinnai from being able to service the unit.

DISCLAIMER: **This document is a guide only. Laws, regulations and industry standards can vary between States and Territories.**

Accordingly, this guide MUST BE read in conjunction with, and subject to, all laws, regulations and industry standards applicable in the State or Territory in which the products are installed.

You MUST ensure that the installation of the products will comply with those laws, regulations and standards, and that the products recommended to customers are fit for the purpose for which they are intended.

WARNING

REGULATORY / INSTALLATION

This appliance shall be installed in accordance with:

Manufacturer's Installation Instructions.

Current AS/NZS 3000 (electrical codes).

Local Regulations and Municipal Building Codes including local OH&S requirements.

Local water authority regulations

Duct fixing regulations, EPA guidelines and AS HB276-2004 "A Guide to Good Practice"

ALWAYS comply with the following precautions to avoid dangerous situations and to ensure optimum performance.

This appliance MUST BE installed, maintained and removed by an Authorised Person.

This appliance is heavy, use 2 people or mechanical lifting device. Improper lifting may result in serious injury.

Take care when opening or unpacking this appliance. Failure to do so may result in serious injury or product failure.

DO NOT modify the electrical wiring of this appliance. If the control power wiring is damaged or deteriorated then it MUST BE replaced by an authorized person. Failure to do so may result in electric shock, fire, serious injury or product failure.

DO NOT install or service the Cooler during adverse weather conditions, or drain water onto the roof where it could cause a slippery and hazardous work environment.

MODELS COVERED IN THIS MANUAL

Rinnai C Series	C20	C30	C40	C50	C60	C70	
Rinnai A Series	A20	A30	A40	A50	A60	A70	A80

1. GENERAL GUIDELINES

1.1 UNPACKING THE COOLER

The unit is supplied on a pallet and enclosed with protective packaging.

To unpack:

- Carefully remove the outer packaging and any retaining brackets/straps that secure the cooler to the pallet.

Rinnai coolers **MUST BE** installed in accordance with these instructions and related regulations, codes, standards, and authorities. These include but may not be limited to:

- AS 3500.2 - Plumbing & Drainage
- AS 4254 - Ductwork for air-handling systems in buildings
- Local Building Regulations
- HB 276 - A Guide to Good Practice
- Environment Authorities
- Local Plumbing and Electricity Authorities
- Building Code of Australia (BCA)

1.2 UNLOADING THE COOLER

When lifting the cooler onto the roof, ensure the lifting equipment is in good operating condition and capable of lifting the total weight. Be sure there is a clear area to place the cooler down, which is within reach of the lifting equipment.

1.3 COOLER POSITIONING

The Cooler shall be installed in a position that allows adequate and safe access for service, and enables only fresh outside air to be drawn into the unit. The cost of any equipment and additional labour involved in accessing cooler installations will not be accepted by Rinnai.

Avoid positioning the cooler near any source of smoke, dust or objectionable fumes so that only fresh outside air will be drawn into it. Coolers should not be sited close to the windows or bedrooms of neighbouring houses.

The cooler shall not be installed within a 5m (6m in W.A.) radius of a sanitary vent, 1.5m radius from a gas appliance flue terminal and 3m horizontal radius from a wood stove flue terminal.

1.4 WEATHER PROOFING

All ductwork, electrical cables and water pipes **MUST BE** flashed and sealed, to prevent water entry into the building. Exposed ductwork **MUST BE** weatherproofed and coated with reflective aluminium paint.

1.5 INSULATION

It is important that ducting should be well insulated. It is mandatory under some building codes to install insulated, fire rated ducting on Evaporative Cooling systems. Check with your local authority.

1.6 INSTALLING DUCTWORK

The duct system should be designed and installed in accordance with the following:

- These installation instructions.
- Standard engineering practices.
- Rinnai Sizing Guide and Installation Guidelines.

1.7 SYSTEM

The installation unit **MUST** comply with all laws, regulations and industry standards applicable in the state or territory in which the products are installed.

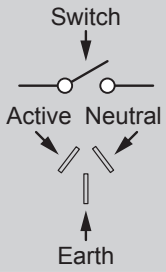
2. COOLER SERVICE REQUIREMENTS

IMPORTANT

A qualified electrician MUST install the 240 Volt wiring according to local regulations.

Switch OFF the power and unplug the Cooler before touching any wiring. If any electrical wiring is damaged, it MUST BE replaced by the manufacturer, its service agents or an electrically qualified technician, in order to avoid a hazard.

The electricity supply MUST BE 240 Volt / 50 Hertz, and from an authorised power supplier. Generators should NEVER be used, as their output may be incompatible with or damage the Cooler's electronic control system.



2.1 ELECTRICAL POWER SUPPLY TO THE COOLER

The Cooler is pre-wired with a 3-pin plug and lead, and should be plugged into a standard 10 Amp - 240 Volt fixed switched socket outlet located within the roof cavity, in close proximity to the dropper duct. The fixed switched socket outlet should be wired back to the meter box on a dedicated power circuit.

2.2 WATER SUPPLY TO THE COOLER

The Cooler's water system is designed to operate with a water supply pressure between 300 kPa and 1000 kPa. If the supply pressure is excessive, a pressure-reducing regulator will be required. If the pressure is insufficient the Cooler's operation will be compromised. In areas subject to water pipes freezing, provision **MUST BE** made to drain water piping to prevent damage to the Cooler.

- Ensure the supply piping has been flushed before connecting it to the Cooler.
- A registered licensed plumber **MUST** install the water supply piping and connection to the Cooler in accordance with the local water supply regulations.
- An isolating valve on the supply pipe **MUST** be placed external and adjacent to the unit, not inside the ceiling. This **MUST BE** provided to facilitate isolation of the water or to disconnect the water supply piping when servicing.
- Non-return isolating valves on the water supply are not recommended as they may cause damage or lock up the Cooler's inlet mechanism where high lock-up pressures or freezing water in pipes may occur.
- For the owner's convenience, an additional isolating valve may be provided at ground level to isolate the water supply.
- The water supply pipe **MUST BE** supported and secured so as not to place strain on the Cooler's water connection fittings or cause water hammer noise.
- Water quality should be checked and filtration fitted where necessary e.g. tank or bore water.
- **DO NOT** remove water supply line, (braided hose) from rear of cooler.

2.3 INSTALLING THE WALL CONTROL

The Rinnai Networker and Manual Wall Control are part of a sophisticated control system. Controllers with Auto mode constantly monitor the temperature inside the house, switching the Cooler ON and OFF to maintain the target comfort level selected. To do this effectively, the wall control **MUST BE** positioned correctly:

- **Install the wall control within the area being cooled:** It is important that the Wall Control is placed in a position that will provide the most accurate reading of the temperature within the area being cooled.
- **Attach to an internal wall:** The temperature difference on an external wall can affect the reading, so always mount the wall control on an internal wall. Also keep the hole in the wall for your wiring as small as possible to prevent draughts from within the wall cavity affecting the temperature sensing.
- **Get the height right:** The Wall Control should be approximately 1500mm above floor level.
- **Avoid hot spots:** Keep it as far away as possible from heat sources, e.g. above electrical equipment, direct sunlight and walls backing onto wall-ovens and stoves.
- **Avoid cold spots:** Ensure that the Wall Control is not affected by draughts coming through doorways, windows and stairwells, and is not placed too close to cooling outlets.
- **Avoid dead spots:** Don't site it in areas with no or little circulation, e.g. behind doors, in corners or alcoves.
- **Interference from other electrical connections:** Ensure the thermostat and wiring are kept away from other electrical, data and antenna cables.
- **Use the right cable:** Ensure the cable is 0.75mm² in cross section and less than 100m in length.

3. COOLER HARDWARE

3.1 BENDS AND ELBOWS

- Where square ducting elbows are to be used, install turning vanes within the elbow to aid airflow.
- Use unrestricted ductwork with smooth changes of duct cross section.
- Bends in ducting should have a large radius and branches should have shallow angles.

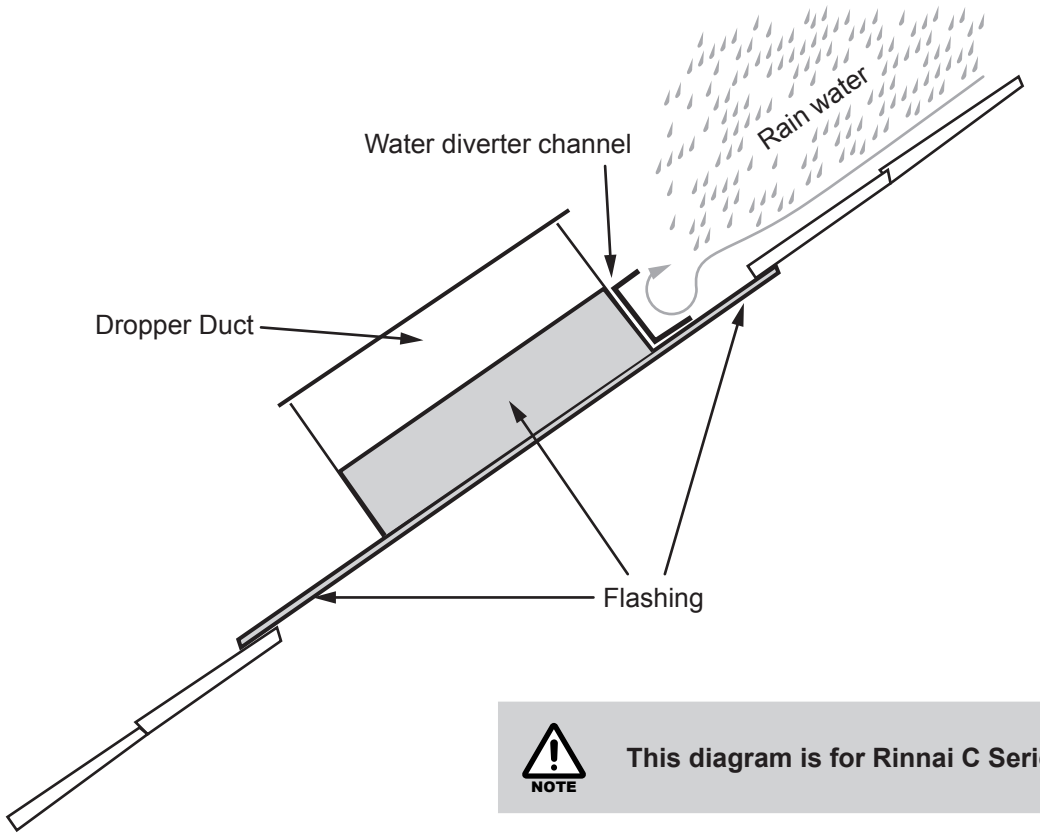
3.2 DAMPERS

Dampers may be required to balance the air distribution of the duct system.

3.3 FIX AND SEAL THE ROOF FLASHING

The roof flashing **MUST BE** fixed and sealed to the dropper duct to prevent water entry into the building. Ensure that the screws or rivets **DO NOT** protrude into the dropper duct more than 8mm.

Installations where the Cooler is more than 4m downstream from the roof peak should be fitted with an additional water-diverting channel on the dropper duct high side, that extends beyond the dropper duct sides by at least 50mm (see diagram below).



NOTE **This diagram is for Rinnai C Series Models.**

3.4 DROPPER DUCT INSTALLATION GUIDELINES

- The dropper duct on which the Cooler is mounted **MUST BE** properly secured to the roof structure or timbers.
- Ensure the dropper duct does not contact the ceiling joists or other structural members that can transmit vibration.
- If possible, the dropper duct should be positioned to the rear or on the service side of the home.
- It should also be as far down the roof as practicable.
- Rinnai recommend installing a diffuser or cone in the base of the dropper box. This will assist distributing the airflow evenly into the duct system and can also reduce noise levels.

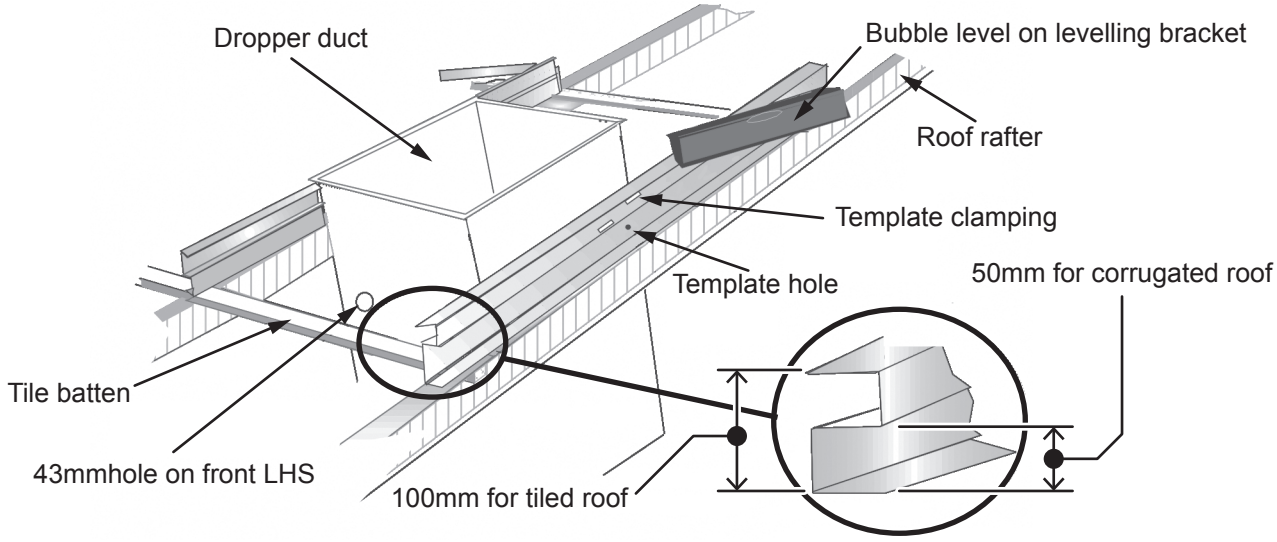
4. INSTALLATION - C SERIES

4.1 DROPPER DUCT INSTALLATION AND FITTING THE COOLER

- The dropper duct size for all Rinnai C Series models is 550mm X 550mm.
- Rinnai C Series Coolers **MUST** use a dropper duct with an out turned flange (15-20mm). This is installed on an angle through the roof.
- A spirit level is needed to set the correct angle to the dropper duct. Rinnai levelling templates are advisable.

NOTE **The levelling templates DO NOT come as standard, they MUST BE ordered through the Rinnai Sales Centre.**

- Determine the point of penetration through the roof and prepare the opening according to the type of building construction and roofing material.
- Frame the roof rafters to the correct width to suit the dropper duct.
- Position the 2 templates to each side of the dropper duct, under the out turned flange, and with the right angle bracket hard against the dropper duct corner.
- The templates provide a 50mm clearance (mid-level) for corrugated iron roofs, and 100mm clearance (top of template) for tile roofs, to give the correct height through the roof opening.
- Use the 50mm template position when resting the templates on top of the corrugated iron roof material, whereas the 100mm template position is used with the templates placed on the roof tile batten.
- Clamp the templates in position, or use a screw or rivet through the template hole provided to securely hold them to the dropper duct.
- Insert the dropper duct between the roof rafters (see diagram).
- Ensure the template levelling bracket is positioned on the high roof side of the dropper duct.
- Rest the templates equally on the tile battens or roof timbers, at both sides of the dropper duct.



- Place a spirit level on the templates levelling bracket, and raise one of the template ends (if necessary) until a level plane is reached.
- Depending on the pitch of the roof, either the lower or the higher template end will need raising, to level the bracket.
- This procedure will also locate the correct dropper duct height through the roof opening.
- When the template bracket is level, mark and/or fix the dropper duct to the roof frame timbers using bolts or coach screws.
- Be sure to use the level on both template sides to correctly position the dropper duct.

NOTE **The Cooler outlet has an 8mm clearance from the dropper duct for the bolt or screw heads.**

- The unit's power supply and wall control leads are pre-wired to the Cooler control module.
- These leads feed down from the base inside the dropper duct, and then out into the roof cavity through a 43mm hole in the dropper duct.
- This hole **MUST BE** on the left-hand-side on the low side of the roof. This will accommodate the loom grommet and allow the wires to be retracted from the dropper duct.

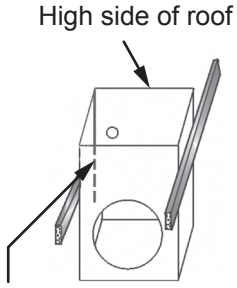
4.2 FITTING THE RINNAI C SERIES COOLER

- The Cooler should now be mounted into position. Insert the Cooler's air outlet fully into the dropper duct.
- Ensure the Cooler base sits fully on the dropper box flange and that the base latching brackets (four) retract over the flange on both sides of the dropper, to lock it onto the dropper duct.
- Fold the end of all four latching brackets in towards the dropper box. Using the hole at the end of the latching bracket as a guide, drill a 3mm pilot hole through the dropper box only. **DO NOT** penetrate the plastic chassis. Four 8g x 3/8" stainless steel screws should be inserted to secure the four latching brackets to the dropper box.
- The Cooler's smallest filter pad and the water supply connection fitting **MUST BE** on the high side of the roof.
- Ensure the 3 pin power plug and lead, together with the Wall Control connection lead, are also fed to the inside of the dropper duct before retracting the wires and fitting the grommet.

5. INSTALLATION - A SERIES

5.1 A SERIES DROPPER DUCT SPECIFIC

- All Rinnai A Series units sit on a 550mm x 550mm dropper box with a 15-20mm out turned flange.
- Rinnai A Series units can also be installed on an existing dropper box. Ensure the dropper box is in a sound condition and the top of the dropper box is level.
- Rinnai A Series units may also be installed using a dropper box transition piece (refer to Rinnai Sales Department).
- The dropper box **MUST BE** positioned as per the following diagram.
- Secure the dropper duct vertically, so the Cooler is level when placed on top of it.
- Ensure the 3 pin power supply plug and lead, the Wall Control Loom connection lead, and the rubber grommet, are fed to the inside of the dropper duct.
- Cut a 43mm hole in the dropper duct below the roof line, on the left-hand-side on the low side of the roof, to accept the wiring grommet. This will allow the 3-pin plug and lead, and the Wall Control Loom connection lead to be withdrawn from the dropper into the roof cavity.



Cut hole in this position using 43mm hole saw below roof line to accept wiring grommet in this corner. (Closest to Cooler Control Box)

5.2 FITTING A SERIES OPTIONAL WINTER-SEAL

- For detailed instructions please refer to Rinnai A Series Winter-Seal Installation Instructions provided with the Rinnai A Series Winter-Seal kit.
- This Procedure **MUST BE** completed before the Cooler is mounted onto the dropper duct, preferably before the Cooler is lifted up onto the roof.
- Gently lift the unit up so that you can see the Cooler's air outlet.
- On the Winter-Seal blades is an orange sticker indicating the bottom. This sticker should be facing down when the cooler is in its final position.
- Insert one end of the winter seal blades into the mounting holes provided on the base of the cooler.
- Lock the other side into place, ensuring that they have been placed in the correct direction and that they are both free moving.
- Then proceed with the mounting of the cooler into the dropper duct.

NOTE **The Rinnai A Series accepts the Rinnai A Series Winter-Seal.**

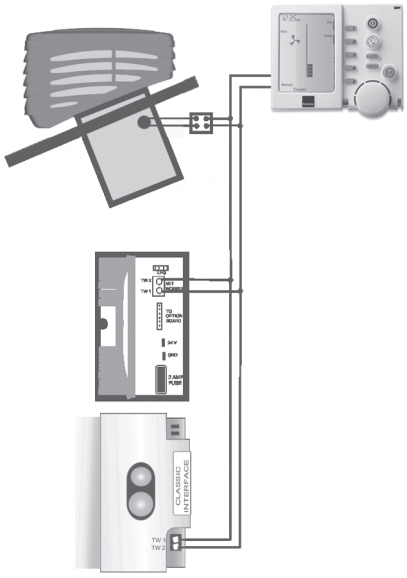
5.3 FITTING THE RINNAI A SERIES COOLER

- The Rinnai A Series Cooler chassis comprises latching brackets to secure the unit to the dropper box. To assist with connection it is important the dropper box has a 15-20mm outward turned flange.
- In addition to the latching brackets the unit **MUST BE** secured to the dropper box and the cooler chassis with screws, refer below for method:

1. Fold the end of all four latching brackets in towards the dropper box.
2. Using the 5mm hole in the bracket as a guide secure with 8g stainless steel screws.

6. NETWORK CONNECTION

6.1 WIRING CONNECTION RINNAI NETWORKERS



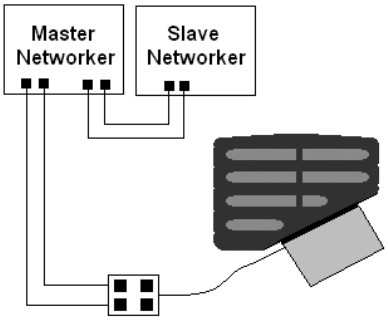
The Rinnai Networker backing plate has 4 terminal points for the connection of Thermostat wires. When connecting, use the top 2 terminal points marked TW1 and TW2 or the bottom 2 terminal points also marked TW1 or TW2. Never use a combination of terminals when connecting to a single appliance.

For example; A Rinnai Networker operating a cooler and a heater would have the 2 bottom terminals connected to the heater and the 2 top terminals connected to the cooler.

Run a twin wire cable (i.e. figure 8 cable - 0.75mm2) from the Cooler to the Rinnai Networker.

- Remove the backing plate from the Rinnai Networker by unclipping it at the sides.
- Draw the wires from the wall cavity and feed them through the opening in the backing plate, connect the cable to the terminal connections on the backing plate before mounting it on the wall and re-assembling the Rinnai Networker.
- Connect the cable to the Rinnai Networker connection lead terminal block at the Cooler.

6.2 INSTALLING DUAL RINNAI NETWORKERS



It is possible to have two Rinnai Networkers connected together on a system. The Rinnai Networkers should be wired in parallel, never in series (see diagram of typical wiring). The two Rinnai Networkers are identified as either Master or Slave. All Rinnai Networkers come set as Master by default, and the slave Rinnai Networker will need to be configured upon installation.

NOTE **Both Rinnai Networkers cannot be set as Master on a system otherwise it will malfunction. Both Rinnai Networkers cannot be set as Slave otherwise the system will lock out.**

6.3 DUAL RINNAI NETWORKERS

Adjustments to the cooler settings can be made from either Rinnai Networker; but the settings are common to both Rinnai Networkers. If an adjustment is made on one Rinnai Networker it is immediately reflected on the other Rinnai Networker.

When the cooler is operating in AUTO mode, the Master Rinnai Networker only will be sensing the inside comfort level, unless the cooler has been designated to the Slave. This means the Master Rinnai Networker should be located in the most appropriate location to control the inside comfort level.

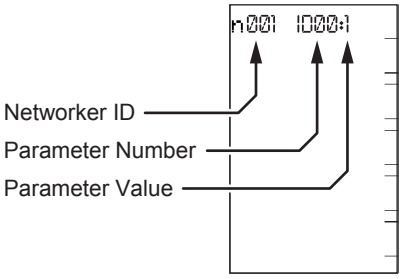
Once the location for the Master and Slave controllers has been determined, the Rinnai Networker addresses should be configured. All Rinnai Networkers come set as Master by default, which means only the Slave Rinnai Networker needs to be configured.

A Master Rinnai Networker can be identified by the word “clock” beside Key 5 (while the Rinnai Networkers are in the off position). Initially, both Rinnai Networkers upon power up will have the word “clock” beside key 5, because they are both still Masters at this stage.

6.4 MASTER AND SLAVE ADDRESSING

Unit Type	Parameter Value
Master	1
Slave	2

- Press the clock Key 5, and across the top a scrolling message should say “Clock setting mode”, and after the message has finished the time will begin flashing.
- Push and hold Keys 2 & 4, until the screen displays this message “Installer parameter access”
- After the message has finished, push the Mode key until the screen displays - n01 ID00:1 at the top (see diagram).
- Rotate the circular dial to change the parameter value displayed at the top right of screen to the number required for the Slave e.g. Slave=2.
- Once this parameter value has been set, push the ON/OFF button to exit this Installer set-up program.

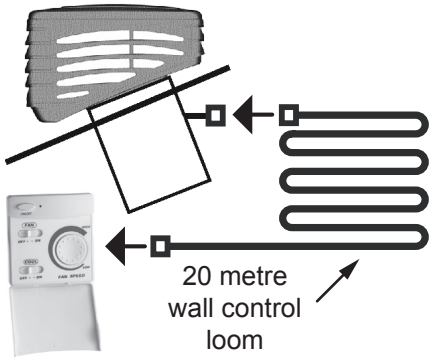


This Rinnai Networker will now become the Slave Rinnai Networker, and the installer parameters can no longer be accessed from this Rinnai Networker. The Master Rinnai Networker **MUST** now be used to access the installer parameters.

6.5 WIRING THE MANUAL WALL CONTROL

After the Cooler’s power supply and pre-wired wall control leads are fed down from the base into the roof cavity, connect the 20-metre wall control loom plug to the cooler’s lead plug.

- Ensure the wall control is positioned so that it is within reach of the cooler using the 20-metre wire loom assembly supplied.
- Wall Controls accept the polarised plug connection. The Manual wall control has a small loom to connect the polarised plug to.



6.6 SETTING UP MULTIPLE COOLERS ON THE NETWORK

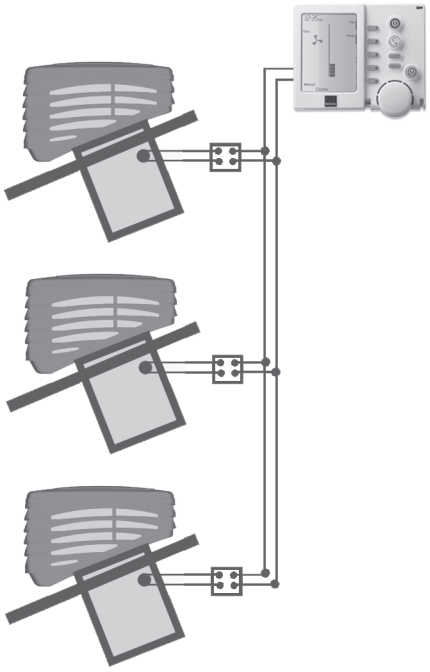
To ensure each Cooler is configured correctly to the Rinnai Networker see the instructions below and refer to the Rinnai Networker Advanced Programming Manual No. 400 (Available on request from Rinnai Customer Service).

As the Rinnai Networker is polarity sensitive when more than one Cooler is installed on a Rinnai Networker all the Coolers should be wired in parallel (see diagrams above).

To ensure each Cooler is configured correctly to the Rinnai Networker, each Cooler **MUST BE**:

- Given a different specific identification number, starting at No. 1.
- Designated to a zone (refer to the Rinnai Networker Advanced Programming Manual No. 404).

Each Cooler comes with the ID number set at number 1. To give it a new number, first complete the installation and wiring of all the units, as described previously and follow the instructions on the next page. (Changing an Identification Number)



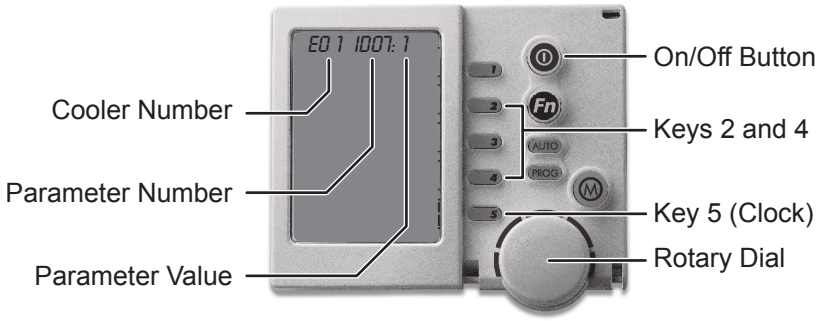
Typical A & C Series Application

6.7 CHANGING AN IDENTIFICATION NUMBER

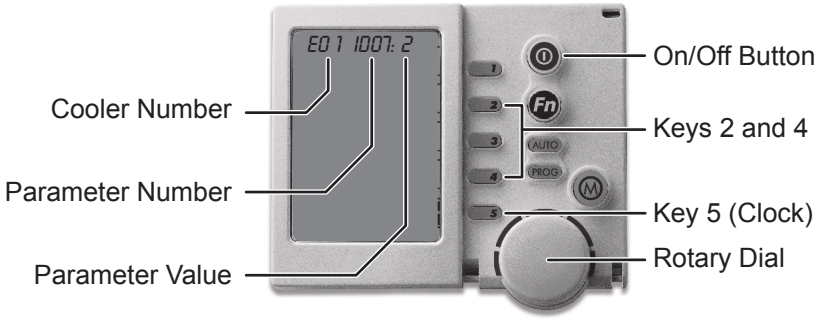
- To change the ID number a cooler **MUST BE** powered and configured individually.
- So, turn OFF the power to all the other coolers and heaters on the Network System.

Use the Installer Set-Up program as follows.

- Turn the Rinnai Networker OFF.
- Press (clock) Key 5 and the screen will display the message “Clock setting mode”. After the message has finished ensure that the time is flashing.
- Now simultaneously press and hold the 2nd & 4th keys for 3-5 seconds until the message displays “Installer parameter access”. After the message has finished the display will appear like this. If a Heater is also on the system you will need to press the Mode button.



- Rotate the rotary dial to change the parameter value displayed at the top right of screen to the unit number required for this Cooler (as shown below by unit number “ 2”).
- Wait one minute before proceeding to allow for the programming change.



- Press the Rinnai Networker ON/OFF button to exit the program.
- Turn the power supply at the Cooler OFF to save the new ID number.
- Repeat the sequence for each Cooler.
- Then follow the Rinnai Networker Advanced Programming Instructions to allocate the Coolers to their respective zones.

7. WATER CONNECTION

7.1 INLET CONNECTION

The water inlet connection point is under the cooler base on the left hand side, at the high side of the roof. The connection is via a 1/2” BSP female fitting supplied on a flexible hose.

7.2 TANK WATER QUALITY MANAGEMENT.

The Rinnai A Series and Rinnai C Series electronic water level sensor automatically maintains the correct water level within the tank. The Rinnai A Series model is programmed to periodically flush the tank and refill it with clean water, depending on the operating conditions, and automatically maintain the water quality within the tank. The Rinnai C Series is fitted with an AquaSave module that maintains water purity during the cooler’s operation and therefore does not flush as often.

7.3 WATER DRAIN CONNECTION

Rinnai A Series and Rinnai C Series models have a drainage connection point at the underside of the base, on the low side of the roof.

When the cooler’s discharge is likely to fall on a roof or catchment area for potable water, or water reuse, then a drain **MUST BE** fitted. In some municipalities it is mandatory to fit a drain to the cooler. Check with the local authority regarding the regulations.

Where required Rinnai recommend the drain outlet be plumbed to a suitable point in order to disperse the waste water away adequately without causing damage or nuisance i.e. overflowing roof guttering, accelerated corrosion.

There are two recommended options when connecting drainage to the unit:

- Option one is for a small diameter pipe which **MUST BE** secured with PVC cement, not a screw. This slides over the Ø19.8mm fitting detailed in Figure 1.
- Option two is for a larger diameter pipe and prior to connection, the snorkel outlet **MUST BE** modified by cutting and de-burring at the “CUT LINE” shown in Figure 1. Once complete, slide on the large diameter pipe, drill a pilot hole Ø3mm and secure with a 8gx3/8 stainless steel screw as shown in Figure 2.

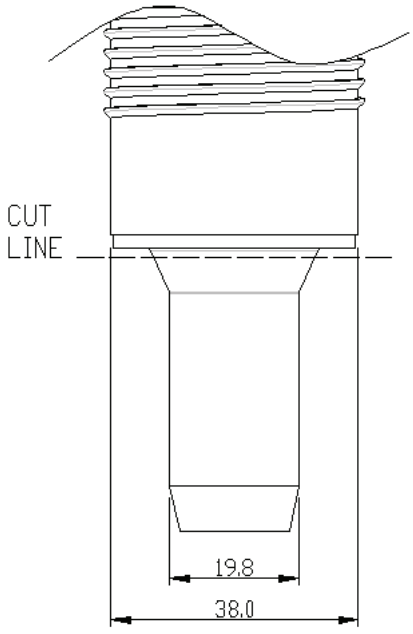


FIGURE 1

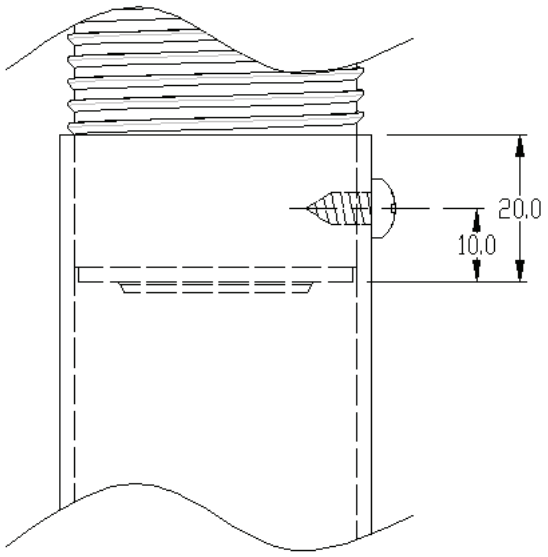


FIGURE 2

Ensure that all field supplied drainage pipe is rigid (not flexible) and UV stabilised.

Ensure any drain has a continuous fall, the joints and fittings are adequately sealed, and that all penetrations in and out of the roof cavity are sealed against water entry into the building.

The drain pipe **MUST** also be properly supported along its entire run, and **MUST NOT** place strain on the Cooler’s outlet fitting or base.

For installations on tiled roofs where a drain may not be required, Rinnai recommend fitting a water distribution spreader to the Cooler’s drain outlet.

8. TIMING & COOLER FUNCTIONS

8.1 START UP

Rinnai Cooler with Dump Valve fitted will have a 15 second delay on start up.

On start up, the Rinnai C Series ServoSeal damper will also open before any other function.

If the Cooler has been OFF for longer than 60 minutes the tank will require refilling. Allow approximately 3-5 minutes depending on the water pressure.

8.2 PRE-WET

The Cooler has been pre-programmed to automatically saturate the filter pads when the pump is turned ON.

Pre-wet is the process of running the pump and wetting the pads without the fan operating ensuring full pad saturation and optimum cooling potential when the fan starts.

Pump Off Time	Pre-wet Time
Less Than 2 minutes	No Pre-wet
Between 2 and 10 minutes	Pre-wet 1 minute
Longer than 10 minutes	Pre-wet 4 minutes
Longer than 60 minutes	Tank has to be filled, therefore total time including Pre-wet is 5 to 7 minutes

8.3 TANK WATER QUALITY AND REPLENISHMENT DURING OPERATION

During the Cooler's operation with the pump operating, the Cooler will be evaporating water from the tank and automatically refilling itself.

Rinnai A Series models will periodically, after a specified number of tank refills, flush out the tank (discharging water from the drain outlet for approximately 1 minute) without stopping the Cooler.

How frequently this flush occurs will vary according to local water conditions and the rate of evaporation.

Rinnai C Series will not flush as often, as they are fitted with an AquaSave.

8.4 SHUT-DOWN TIMES

When the Cooler is turned OFF at the end of use, the controls are programmed to wait 60 minutes before commencing Shut-down.

This Shut-down procedure starts with draining the tank (approximately 60 seconds). Rinnai C Series models will also close the ServoSeal damper at the start of the Shut-down procedure. Then a wash cycle is performed to clean the tank for approximately 30 seconds.

9. DISMANTLING

9.1 REMOVING THE FRONT AND REAR PADS

For general servicing, remove the front and back pads to access all components.

- Loosen the 4 plastic thumbscrew knobs on the cooler's roof until the large front pad can be lifted up enough to clear the bottom edge.
- Swing the large front pad out at the top edge.
- Remove the 2 thumbscrews above the small back pad completely.
- Raise the roof until the small back pad has enough clearance at the top to be removed.
- With the front and rear pad frames removed, the filter pads simply slide up and out of their frames.

9.2 REMOVING THE SIDE PADS

Remove the front and back pads as above, then:

- Disconnect the 19mm clear hose supplying water to the roof distribution spreader at the fitting in the cooler's base (squeeze clip then pull to release).
- Ensure that all thumb screws have been removed.
- Remove the roof assembly.
- Slide the filter pads up and out of their frames.

9.3 DISMANTLING THE FRAMEWORK

Complete all the steps above then:

- From the front of the unit remove all four 10g screws securing the posts to the base caps. Note that the top brackets are glued to the posts, and cannot be separated.
- Lift up and remove the 4 PVC support posts, disengaging the pad's restraining angle brackets.
- Slide the side pad frames out from the formed brackets at the base of the frames.
- Remove the side pad frames and external panel assemblies.

10. COMMISSIONING CHECKLIST

IMPORTANT

Switch OFF the power and unplug the Cooler before touching any wiring. Care MUST BE taken to ensure electrical components have been isolated before performing any service work, i.e. water inlet valve, Servo Seal motor. Only an electrically qualified technician should carry out any service to electrical wiring.

10.1 ISOLATING SWITCH

The Rinnai A Series and Rinnai C Series both have an external power-isolating switch to facilitate servicing.

The switch is located under the front left hand side of the cooler. To access the switch, reach under the front of the Cooler's trough and locate the switch. By observing the LED light on the control box you can ascertain whether the power is on or off. Always test for electrical voltage before commencing any work on the cooler.

10.2 CHECKLIST

- The ServoSeal damper is not catching and opens fully (Rinnai C Series Models only).
- The isolating valve on the water supply is turned ON.
- The water tank fills with water and the water inlet valve closes when the tank is full.
- There is no foreign matter in the water tank or fan housing.
- The pads are correctly located.
- The pump operates when turned ON at the Wall Control.
- The fan operates through the entire speed range.
- For even water distribution with the pads in position and the Cooler in operation.
- The water drains completely from the tank and that any external drain piping is not blocked or restricted.
- That the optional dump valve functions correctly by isolating the power to the unit and ensuring that the tank drains completely.

NOTE

New cooling pads should be thoroughly flushed before use so, following commissioning, run the pump for 30 minutes without the fan, and then drain the tank fully. This will prime the pads, flush out some of the new pad odour, and remove any foreign matter that may have settled in the system during transport.

10.3 WHAT IF THE FAN MOTOR WILL NOT START?

Check:

- The 10 Amp fuse in the meter box has not blown.
- The Cooler's 3-pin supply plug is correctly located in the power socket.
- For power at the power socket (plug in another appliance and test).
- The isolating switches at the unit and the supply power socket are turned ON.
- The unit is turned ON at the Rinnai Networker Wall Control.
- The fan is not in a delay due to ServoSeal damper, tank filling, or pad Pre-Wet operation.
- The motor will spin freely with adequate tip clearance (approximately 2mm).
- The motor is not hot, causing the auto-reset thermal overload switch in the fan motor to open circuit.
- The motor speed sensor has not been damaged or displaced (where fitted).
- That all electrical connections are secure, and if the motor will not start, call Rinnai for service.

10.4 WHAT IF THE PUMP WILL NOT START?

Check:

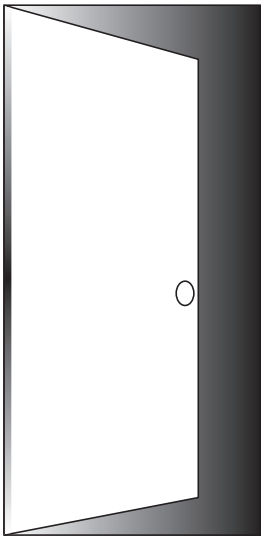
- The 10 Amp fuse in the meter box has not blown.
- The Cooler's 3-pin supply plug is correctly located in the power socket.
- For power at the power socket (plug in another appliance and test).

- The isolating switches at the unit and the supply power socket are turned ON.
- The unit is turned ON at the Rinnai Networker / Manual Wall Control.
- The pump is not in a delay due to ServoSeal damper, or tank filling operation.
- The pump impeller is not blocked or obstructed.
- All electrical connections are secure, and if the pump will not start, call Rinnai for service.

11. EXHAUST AND VENTILATION

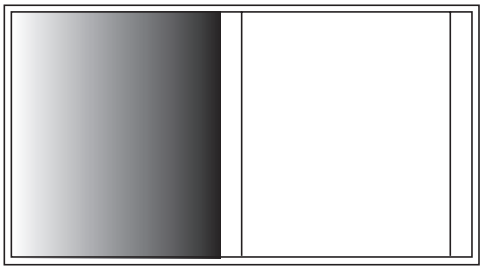
IMPORTANT

Exhaust fans may be required if insufficient free exhaust area exists. If the exhaust fan is the only exhaust or ventilation outlet, then its capacity should be at least equal to the Cooler's air output.



Door = 1.6m²

Hinged Window = 0.3m²



Sliding Window = 0.7m²

Average ventilation area provided by various openings when fully opened.

Model		Number of average size windows & doors *(suggestive only)*	Highest Fan Setting	Lowest Fan Setting
C Series	A Series			
C20	A20	Two sliding windows or Five hinged windows	1.5 m²	0.9 m²
C30	A30	One door and a hinged window	1.9 m²	1.1 m²
C40	A40 / A50	Three sliding windows or one door & two hinged windows	2.3 m²	1.4 m²
C50	A60	Four sliding windows or one door and four hinged windows	2.8 m²	1.7 m²
C60	A70	Five sliding windows or one door and five hinged windows	3.1 m²	1.9 m²
C70	A80	Six sliding windows or one door and six hinged windows	3.4 m²	2.1 m²

Model		C20	C30	C40	C50	C60	C70	A20	A30	A40	A50	A60	A70	A80
Weight (kg)	Dry	49.5	51.5	55.6	56.6	55.6	57.6	47.5	49.0	50.5	51.0	53.0	60.0	60.0
	Wet	67.3	70.4	77.8	80.3	77.8	79.8	65.5	67.0	69.0	69.5	71.5	81.0	81.0
Tank Capacity (litres)		12	12	12	12	12	12	15	15	15	15	15	15	15
Motor	Watts	315	750	750	750	750	1000	315	750	750	750	1000	1000	1000
	Amps	2.4	4.9	4.9	4.9	4.9	7.3	2.4	4.9	4.9	4.9	7.3	7.3	7.3
Fan Impeller Blades		6	11	11	11	11	11	6	11	11	11	11	11	11
Minimum Dropper Box Length (mm)		900						1200						
Angle of Dropper Box (degrees)		21°						90°						
Dump Drain Connection (mm)		20 or 40												
Water Connection		Flexible hose connection with 1/2” BSP thread												
Loom	**NOTE** **The type of loom depends on the wall control used.**	Networker - twin wire cable (figure 8 cable). Manual - 20 metre wiring loom												
Dropper Box Size (mm)		550 x 550 with 15-20 mm Flange out												
Wall Controller		Both C Series & A Series models can have either the Networker wall control or the Manual wall control												

NOTES

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Rinnai

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Rinnai has a Service and Spare Parts network with personnel who are fully trained and equipped to give the best service on your Rinnai appliance. If your appliance requires service, please call our National Help Line. Rinnai recommends that this appliance be serviced every 2 years.

Product Sales and Service - National
Phone: 1300 555 545* Fax: 1300 555 655*
Technical Helpline and Spare Parts
National (Mon-Fri 8am - 5.30pm EST)
Phone: 1300 555 545* Fax: 1300 300 141*
Cost of a local call higher from mobile or public phones.

E-mail: enquiry@rinnai.com.au

For further information visit: www.rinnai.com.au