Rinnai

Linear 1000
Burn media installation

Experience has shown that the majority of performance problems are caused by burn media being installed incorrectly. Please take the time to read and follow these instructions as malfunctioning due to incorrect burn media placement is not covered by warranty.

YouTube videos
We also have burn media installation videos on the Rinnai NZ YouTube channel.

- Linear 1000 - Designer Log Set Installation
  https://www.youtube.com/watch?v=Q8L9dD5STd4
- Linear 1000 & 1500 - Modern Media Installation
  https://www.youtube.com/watch?v=E70qe9nt4rI&t=5s
- Linear 1000 - FlameTech Log Set Installation
  https://www.youtube.com/watch?v=gKCvMvA7XF4

The Linear MUST NEVER be used with other burn media or burn media that is damaged. The Linear burn media sets are different and cannot be interchanged, ensure you have the correct set before installation.

Correct placement
It is important to place the burn media in the correct position. Incorrect placement can create carbon build-up (sooting) and affect performance.

IMPORTANT
Ensure the gaps between the burners are kept clear of any vermiculite or crushed glass. This is important as these gaps provide secondary air to the unit. A tip to stop any burn media going into the gaps is to place the installation guide in the burner gap while placing the vermiculite or crushed glass over the burner.

FlameTech log set: Single-sided/double-sided
When installing the burn media you will ALWAYS be working on the side where the pilot assembly is to the back of the firebox.

Designer log set
The logs have a charred section on them and when correctly installed, the charring will always be face down.

Linear 1000 FlameTech log set

Before starting the installation, carefully unpack the entire burn media set. Inspect each part for damage, and lay them out as shown below, making sure everything has been supplied.

Number	Description
1	Vermiculite, black granules, and crushed glass
2	Back left hand log
3	Back pilot log
4	Left hand FlameTech log
5	Centre log
6	Right hand FlameTech log (slightly longer)
7	Left hand front log
8	Right hand front log

Base panel

Make sure the base panel is properly fixed in place and that the brass aeration sleeves are correctly fitted over the injectors with the top of the sleeve slightly above the fire base. If the aeration sleeves feel lose or you have removed them at some point, check the o-rings in the injector end are properly sealed before refitting.

Centre log

Take the centre log and fit it into the valley in the middle of the base panel. There is a slot in the front of the panel that lines up with the notch in the end of the log, refer photo on next page.

Glass

Place a layer of glass over the holes in the base panel. Don't pour the glass out of the bag as there will be dust that has settled that will make the installation look messy when finished.

Avoid covering the area beyond the holes. You should only use about 80% of the glass for this step. If the layer of glass is too thick the lighting from below will be reduced.

FlameTech logs

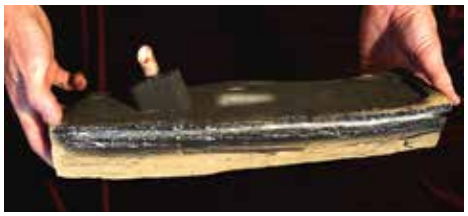
Identify the left and right hand FlameTech logs. The left log is slightly shorter than the right. Inspect both logs. Check that the block and the copper sleeve on the base of the log are firmly attached. Inspect the channel where the wire wool wraps around the burner, look for chips or cracks in the channel.

Look for any large cracks in the burner. The gas flows through the burner itself and anything other than a small surface fissure could be a sign of damage. If the crack is big enough to see the inside edge of the crack, the log should not be installed.

The wire wool should sit inside the channel around the burner with only the occasional strand of wool sticking out, and not so far back that you can see the sides of the channel. These logs have been tested before leaving the factory, but if the wire wool is not correctly placed, you may need to adjust it later.

Right hand log approx. 10-15 mm longer

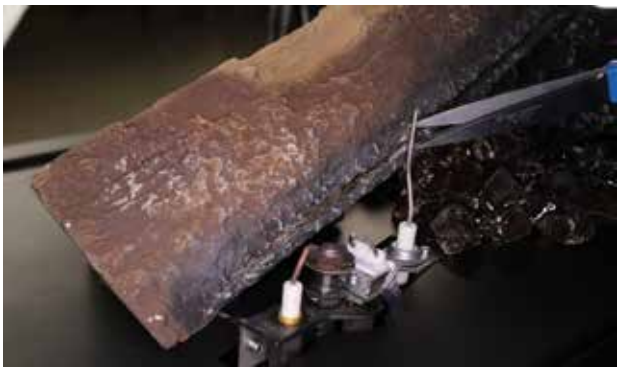
Inspect the wire wool channel



Position right hand FlameTech log
Place the right hand log in position. Fit the copper sleeve on the base of the burner over the aeration sleeve. The outer, or right hand end of the log should sit in the base panel with the other end resting on top of the centre log. There should be a gap between the base panel and the block in the underside of the burner.

When correctly installed the log should sit evenly on the centre log, with a gap of around 5 mm between the log and the long flame rod to the left of the pilot.

Snip off any strands of wire wool sticking out around the flame rod. These are the most common source of ignition problems. These strands can short the flame rod and cause flame failure errors or pre-ignition flame rod failures.



Position left hand FlameTech log
Place the left hand log in position. The outer edge should sit on the base panel and the other end resting on the centre log. There should be a gap between the base panel and the burner block.

When correctly positioned, the gap between the two FlameTech burners will be about 5 mm with both burners sitting evenly on the centre log.

Start the fire
Start the fire and check for complete ignition around both burners. If the burners don't cross light you might need to adjust the gap between them.

If the fire starts and then goes out within a few seconds, it will almost certainly be a strand of wire touching the main burner flame rod.

Make sure to run the burners on high and low flame settings to ensure the flame rod is working correctly.

If the flames are a bit thin, with no glow around the wire wool, it could be the wire wool is pushed too tightly in the channel. Carefully tweeze the wool out of the channel in the affected areas.

If the flames look like a row of candles with no flames burning around the rim of the log, it could be that the wire wool is sitting too far out in the channel. Carefully push the wool back into the channel where necessary.

It might be necessary to adjust the position of the burners or, in some cases, the flame rod, to get reliable operation.

Take care if adjusting the flame rod, the rod does not need to be in the middle of the flame to detect its presence, it works best on the edge of the flame.

The burners may work differently with the glass on, so briefly fit the glass to double check the operation. Once happy with the operation of the burners it is times to dress the rest of the bed.

Place three remaining logs
Place the three remaining logs as shown.

When fitting the back pilot log, take care not to dislodge the FlameTech burner or to put the log where it could compromise the operation of the pilot.

If you can, connect the Wi-Fi unit. Use the Rinnai app to turn the LED lights under the burner bed on without the fire burning. This is helpful when finishing the media bed.

Place any remaining glass pieces around the logs to try and cover any parts where you can see directly through the base panel. This includes the log location slot.

Place the black granules over the top of the glass. The granules are purely decorative and can be placed anywhere on the base panel as long as they don't block the pilot area.

If installing a double-sided fire, check the media bed from both sides to make sure there are no places where you can directly see the lights below the bed.

Sprinkle vermiculite over and around the media bed to get the desired look.

Refit the glass and operate the fire for at least ten minutes to make sure the burner is operating with nice even flames in high and low burner settings. The installation of the media is now complete.


Left hand front log, and left hand back log


Right hand front log


Back pilot log

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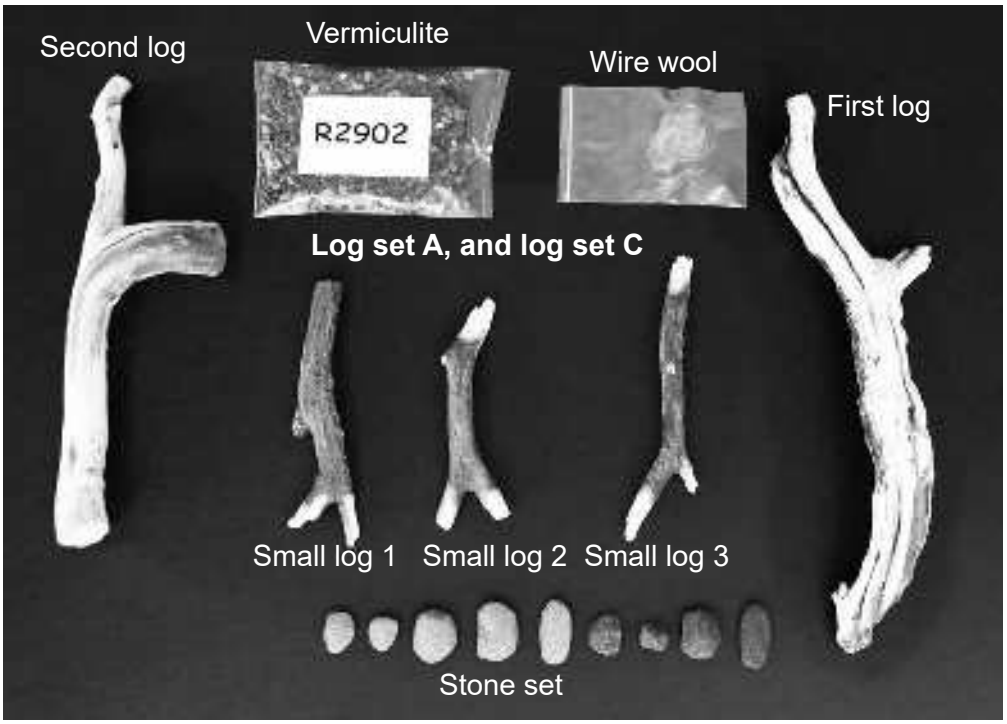
Linear 1000 designer log set

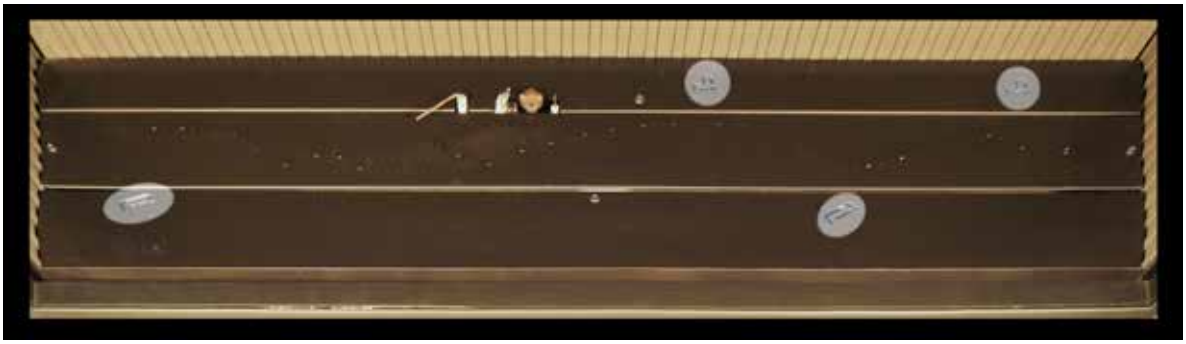


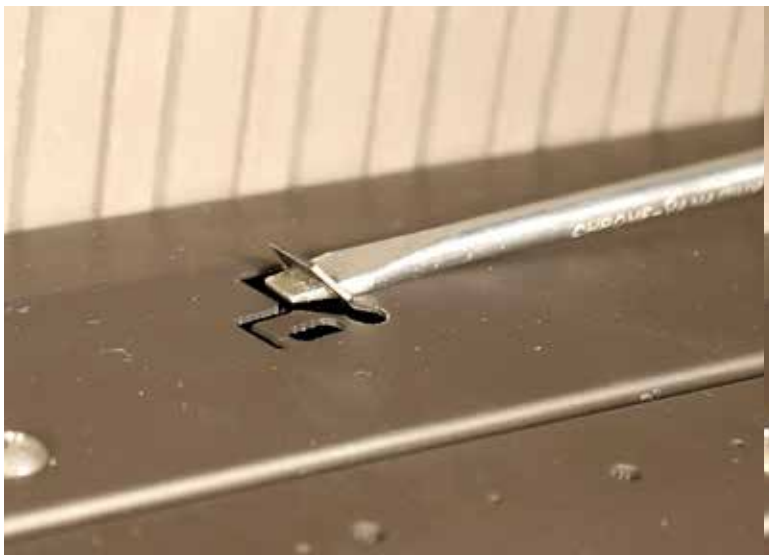
Before starting the installation, carefully unpack the entire burn media set. Inspect each part for damage and lay them out as shown above, making sure that everything has been supplied. Use this guide and the one-page sheet fixed to the fire for further guidance.

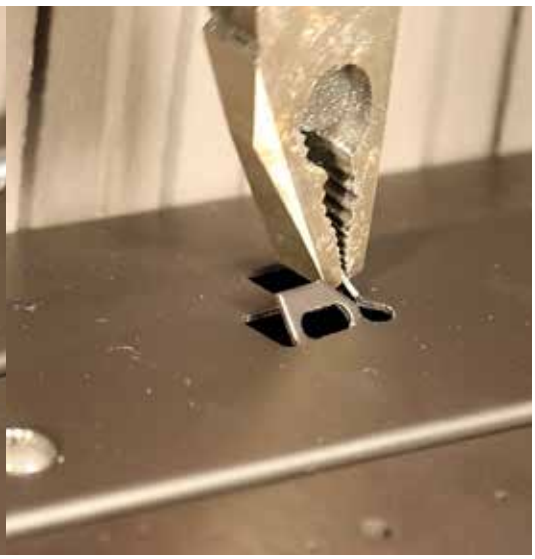
These instructions show a single sided fire, but the process for the double sided is the same as long as the media is installed from the front of the fire, with the pilot to the back of the burner.

It is important to note that the NZ LPG burner differs from the natural gas burner, this is indicated by a ‘U’ stamped in the left hand corner.

There are four log location points along the burner and burner surrounds. These need to be folded up before proceeding any further, refer image on next page.







Place a thin layer of vermiculite across the entire burner bed. Don't pour the vermiculite, there will be dust that has settled in the bag, this can block the burner ports and cause cross lighting and performance issues with the fire.

Avoid putting excessive vermiculite over the burner ports at this stage. The first layer should use less than a third of the vermiculite.

Make sure the burner ports in front of the pilot and main burner flame rod are not covered, circled below.

Start the fire and make sure that the flames track across the entire burner bed. Move the vermiculite around as required.

You may need to use the remote control or control panel to keep the fire burning on high.

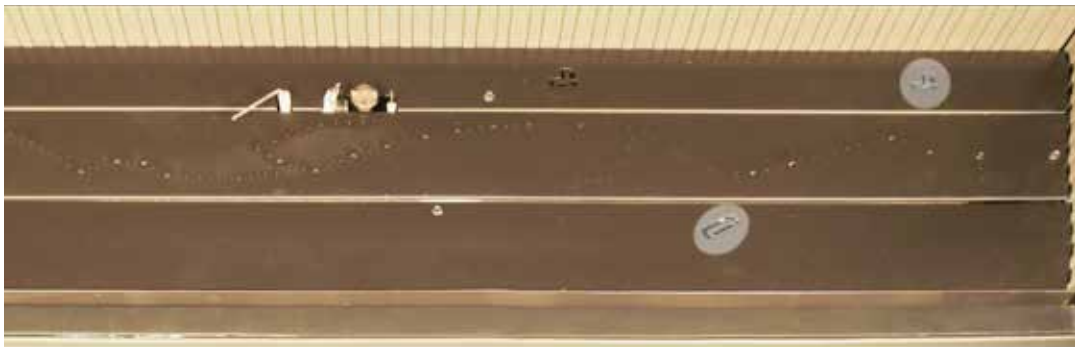
First log

Take the first log and carefully lay it over the burner using the location tab behind the pilot and the tab on the burner surround. Notice how the log sits in the front of the location tab.

Make sure there is a clear path in the vermiculite where the log crosses the burner. The logs have a charred section on them, and when correctly installed, the charring will always be facing down.

Second log

Take the second log and install it using the tabs as a location guide. Note how the vermiculite has been cleared away from the left hand end of the log.



Three remaining smaller logs

Continue fitting the three smaller logs using the colour installation sheet on the front of the appliance as a guide.

Light the burner and check for complete cross-lighting. Force the fire into high burner mode using either the remote control or the front control panel. Adjust the vermiculite if required. It may be necessary to clean out some of the bigger burner ports (circled below) but sometimes a larger piece of vermiculite can help with cross-lighting or diffusing a flame.

Remaining vermiculite
Make sure there is minimal impingement on any of the logs or smaller logs, and adjust if necessary. This is especially important for LPG or propane fires.

If the flames look to be leaning back too much, try briefly fitting the glass front and see what it will look like under normal operation. Don't worry if the flames look a but dull at this stage, when the wire wool is installed, the flame will improve.

Place the remaining vermiculite on the burner surrounds. This is a decorative aspect of the installation and can be adjusted to customer requirements. If they only want vermiculite on the burner, that's ok, and similarly, if they want the vermiculite spread across the entire burner, that's ok to.

Do not place more vermiculite on the burner itself at this stage. take care not to block the gap between the burner and the front and back surrounds. This gap is required for secondary air to get to the burner.

Stones
Place the stones using the colour installation sheet as a guide. These are decorative and are not necessary if the customer doesn't want them used. Rinnai recommends using them to camouflage the places where the log location tabs are visible. Take care not to directly block any of the burner ports.

If you are setting up a double-sided fire, make sure it looks good from both sides.

Start the fire again and make sure that the burner lights completely. Force the fire into high burner mode using either the remote or the front control panel. Adjust the stones and vermiculite as required.

Wire wool

Take the wire wool out and tease into thin strands. There is nothing to be gained by having a thick rope of wire wool.

Most installations will use less than a third of the supplied wool. The remainder of the wool can be left with the customer or can be used as a replacement when the fire is serviced.

The wool is used to enhance the flame, but if the customer doesn't like it, it doesn't have to be installed.

Place thin strands of wire wool over the flames to make them brighter and more vibrant. There is no benefit in having wool where there is no flame, and having too much wool can make the flames too yellow and streaky, and will look odd when the fire is off.

Be careful to avoid getting the wire wool anywhere near the flame rods. If you find that the fire is cutting out, there is a good chance that it is a strand of wool shorting out one of the flame rods. If there is a loss of flame or a short circuit on either the pilot or the main burner flame rod for more than five seconds, the fire will shut down.

Checking the final assembly

Once you are happy with the way the flame bed looks, replace the glass and start the fire. Make sure that you are getting good cross-lighting and that there is no impingement or long streaky flames that might cause sooting.

It is important to leave the fire running for at least ten minutes to get a good idea of how yellow the flames might get and if there are any patches of major impingement on any of the logs. These need to be fixed to prevent soot appearing on the logs, especially with LPG or propane installations.

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Linear 1000 modern media

Before starting the installation, carefully unpack the burn media set. Inspect each part for damage and lay them out as shown above, making sure that everything has been supplied. Use this guide and the one-page sheet fixed to the fire for further guidance.

These instructions show a single sided fire, but the process for the double sided is the same as long as the media is installed from the front of the fire, with the pilot to the back of the burner.

Note that this is specialty glass, there is a risk of damage to the fire if anything other than Rinnai supplied products are used.

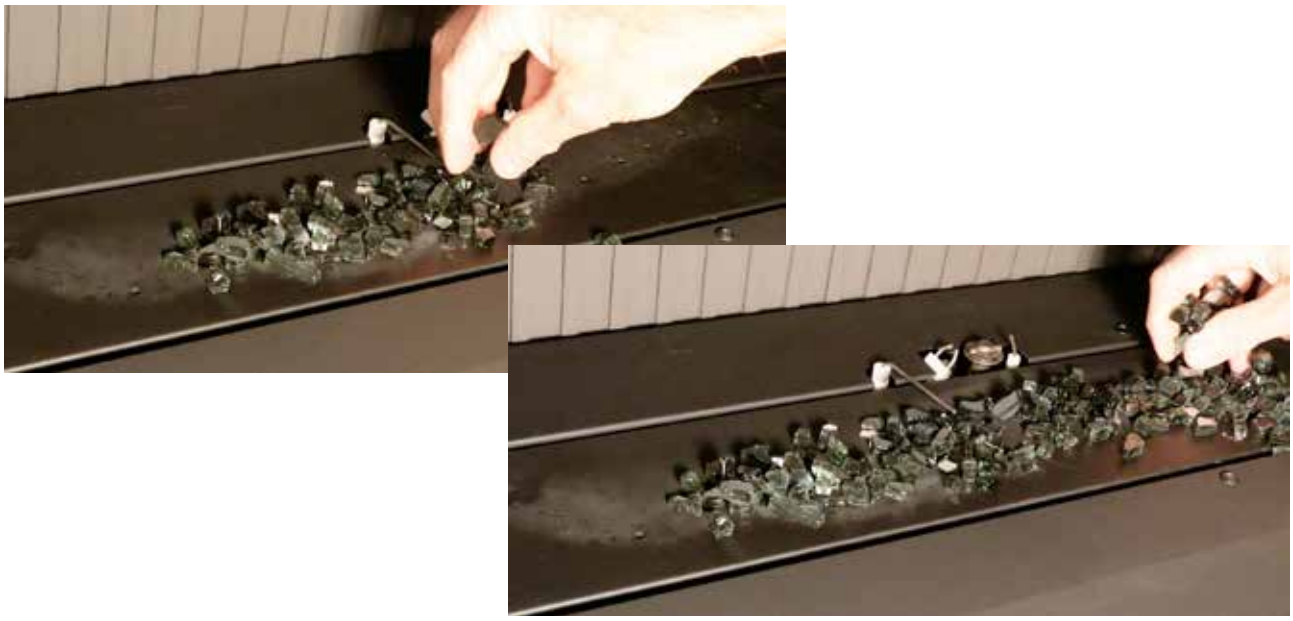
There are log location tabs along the burner and burner surrounds. These are not used when installing the glass media. The tabs in the burner surround should be left flat. If changing from a log set to glass, flatten these tabs before proceeding. The tabs on the burner top can be left folded up.

Log location tabs

Start using the smaller bag of glass. Spread out a thin layer across the entire burner top. Don’t pour the glass out, as there will be dust that has settled in the bag. This can block the burner ports and cause cross-lighting and performance issues with the fire.

Try to avoid putting excessive glass over the burner ports at this stage.

You should not require much more than the smaller bag of glass on the burner to start with.



Start the fire and make sure that the flames track across the entire burner bed. Move the glass around as required.

These instructions have images using natural gas, the flames will behave differently when using LPG or propane, but the principles are the same. You may need to use the remote control or control panel to keep the fire burning on high.

Wire wool

Take the wire wool out and tease it into thin strands. There is nothing to be gained by having a thick rope of wire wool.

Most installations will use less than a third of the supplied wool. The remainder of the wool can be left with the customer or can be used as a replacement when the fire is serviced.

The wool is used to enhance the flame, but if the customer doesn't like it, it doesn't have to be installed.

Place thin strands of wool over the flames to make them brighter and more vibrant. There is no benefit in having wool where there is no flame, and having too much wool can make the flames too yellow and streaky, and will look odd when the fire is off.

Be careful to avoid getting the wire wool anywhere near the flame rods. If you find that the fire is cutting out, there is a good chance that it is a strand of wool shorting out one of the flame rods. If there is a loss of flame or a short circuit on either the pilot or the main burner flame rod for more than five seconds, the fire will shut down.

You can now install the remaining glass. How much of the fire base you cover with the glass is up to the customer. If they only want glass on the burner that's fine, but they need to be aware that the log locating tabs in the burner surrounds will be left visible. Our recommendation is to place a layer of glass between the burner and the fold on the burner surrounds, but some customers prefer to have glass across the entire fire base.

Make sure that the gap between the burner and burner surrounds is left clear of glass, this gap is required for secondary air to reach the burner.

Fit the glass front and make sure that you are getting good cross-lighting and that there are no long streaky flames that might cause sooting.

It is important to leave the fire running for at least ten minutes to get a good idea of how yellow flames might get and if there are any flames that might be sooty. These need to be fixed by either clearing the glass away from the burner ports or moving any wire wool that is causing flames to join together. This is especially important with LPG or propane installations.

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** Cost of a local call higher from mobile or public phones*

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