



Eco Design Advisor

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Eco Building Design Advisor

HEATING - ISSUES AND OPTIONS

- **Free**
- **Independent**
- **Personalised**

sustainable building advice

Your questions

- We are here to help with advice on how to keep your homes warm, dry and how to best heat your homes.
- These are answers to questions that people often ask us.
- We are happy to answer any other questions you may have.

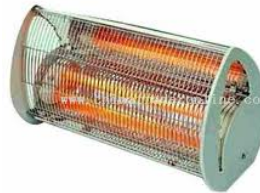
Please show me what type of heating you use?



Wood Burner



Heat Pump



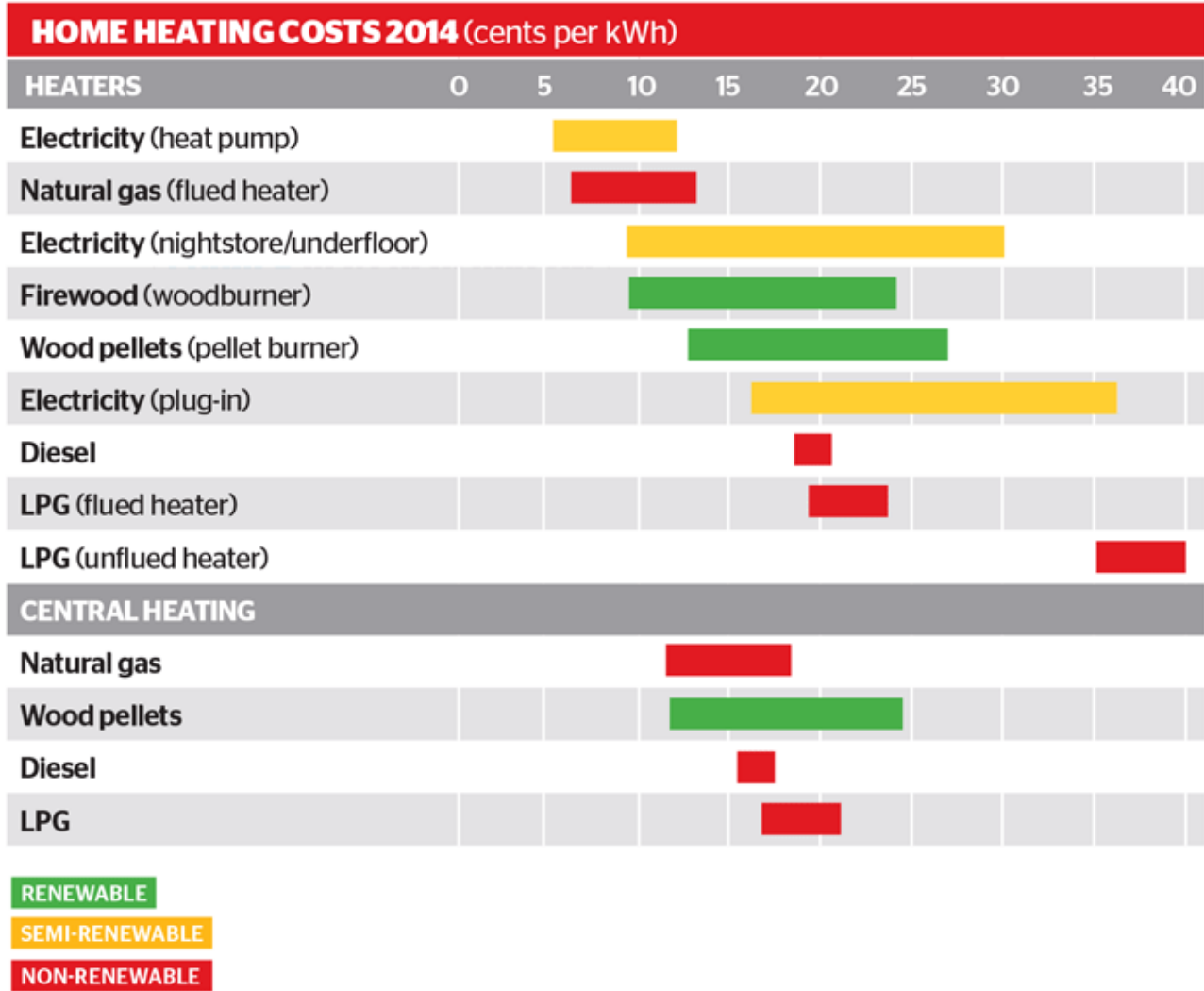
Electric Heaters



Portable Gas Heater



Flued Gas Fire



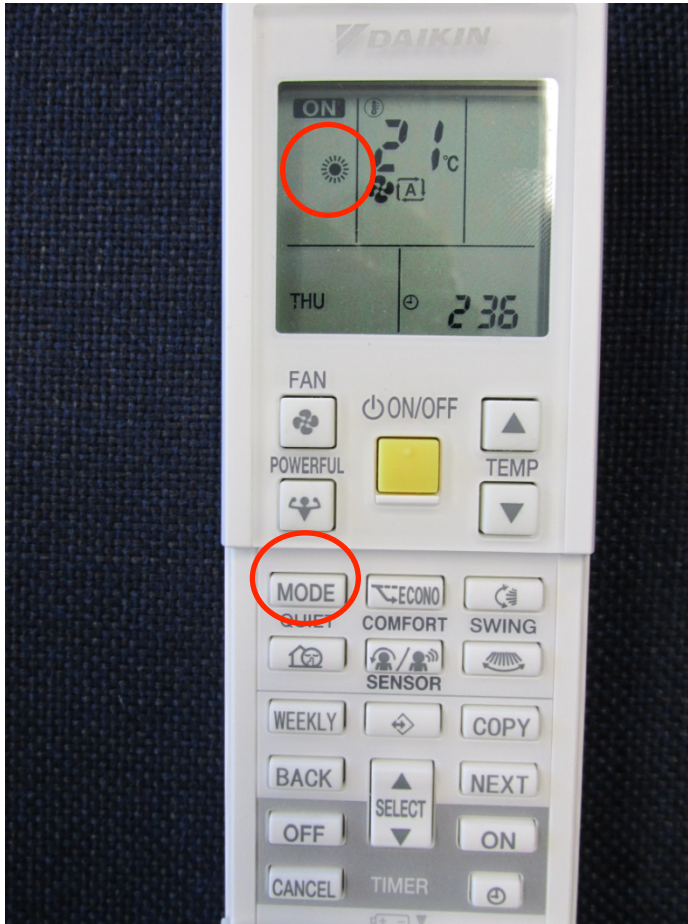
Source Consumer New Zealand

Do NOT use portable gas heaters



- They create lots of water and put poisonous gasses into your home.
- They are the most expensive type of heating!!!

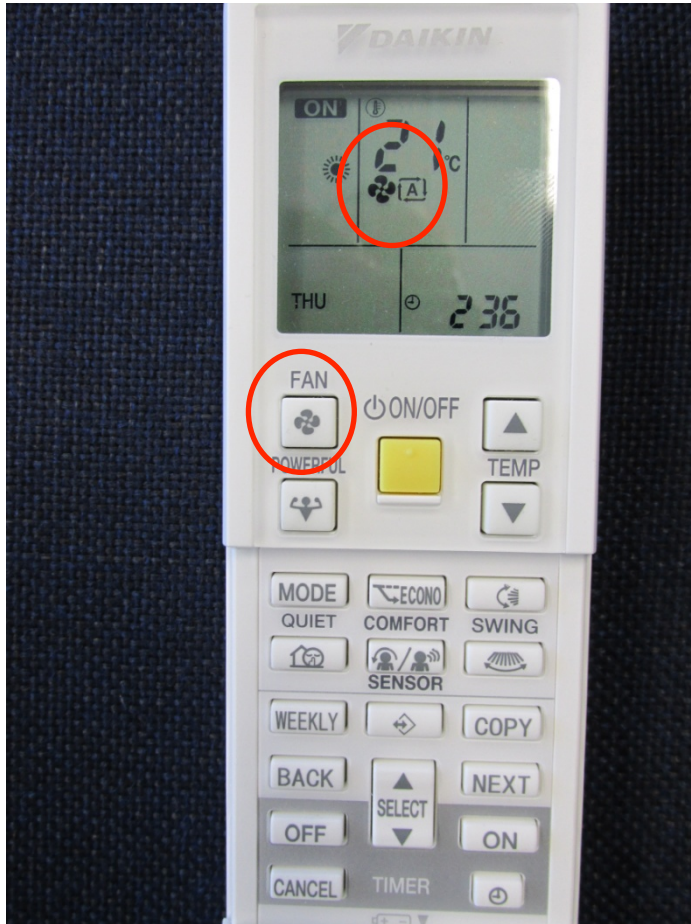
How to operate your Heat Pump correctly



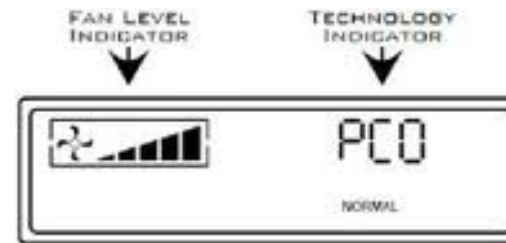
- Press **MODE** or **MASTER CONTROL** button until you have selected the **Heat (Sun)** setting.

Auto or		
Cool or		
Dehumidify		
Fan only		
Heat or		

How to operate your Heat Pump correctly



- Press the **FAN** button until you have selected the **Auto Fan** setting.



Run the fan in “**Auto**” mode.

Fan “Auto”



How to operate your Heat Pump correctly



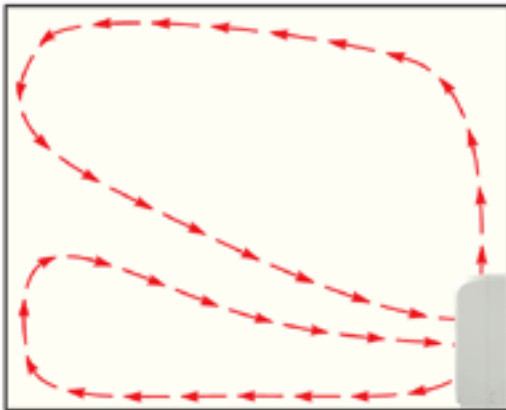
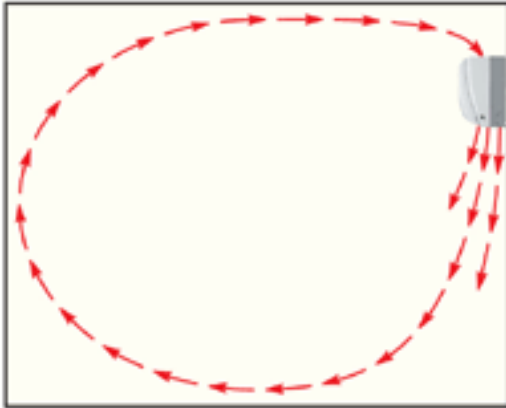
- Set the temperature between 20° C and 22° C
- Setting it higher makes it work harder and it will be less efficient.
- Running a heat pump at 26° C will use 50% more power than at 21° C.
- If you are not at home during the day, turn the heat pump off when you go out.

Adjusting the Vertical Air Flow Direction



- Use the SWING button to adjust it.
- Watching the flap movement, press the SWING button at the position of your choice
- The position is saved in the memory.
- Next time you use the Heat Pump, the flap will stop at that position.

Air flow direction



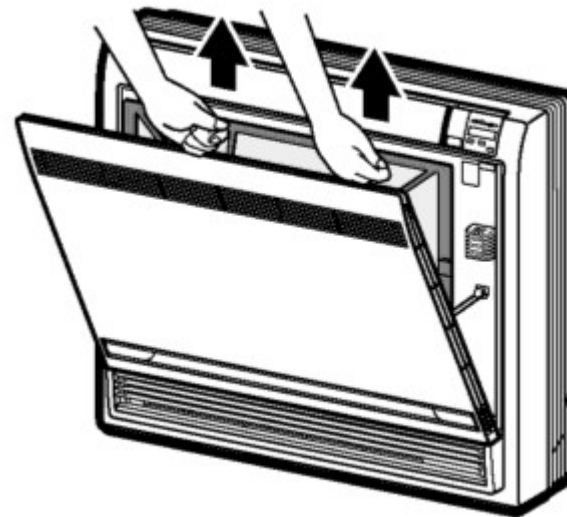
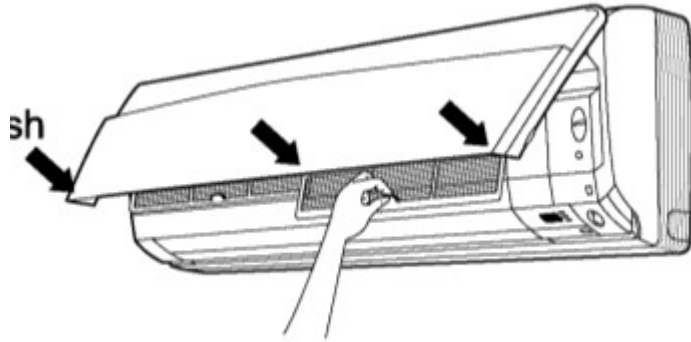
- If cooling, direct the cold air high across the room where it will sink down.
- If heating direct the warm air down across the floor where it will rise up

Online demo

http://www.ductless.ca/ac/ductless_remote.html

How to operate your Heat Pump correctly

- Clean the air filters monthly, every two weeks if using it a lot



Heat pumps

Question:

- How much does it cost to run a heat pump?

Answer:

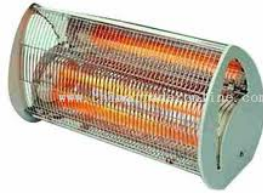
- A 6 kW heat pump running for 8 hours a day will add around \$60 to \$70 a month to your power bill.
- That is based on running it in the correct settings.

Heat pumps

Question:

- Sometimes cold air comes from the heat pump – what can we do?
- First check the fan setting
- If the fan is on low or quiet, you will only get about $\frac{1}{4}$ of the heat the heat pump is capable of delivering.
- Make sure the fan setting is on “Auto” or “high”.
- If the temperatures are very low sometimes the heat pump will go into defrost mode.
- Try using the timer to turn on the heat pump in the morning before you get up, or leave the heat pump on 16°C overnight.

Heater efficiency

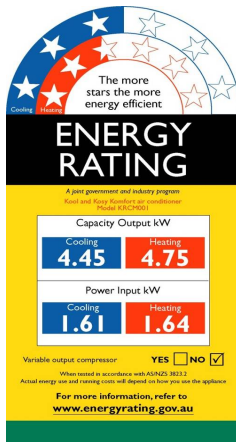


- All these heaters have the same efficiency
- If you buy **one unit of power** and use it through any of these heaters, **you will get one kW of heat** into the room

Heat pump efficiency



- Energy Star rated heat pumps have a COP from 3.5 up to 5.8
- So for each unit of power you buy will give you 3.5 to 5.8 kW of heat into the room.



How much does it cost to run electric heaters ?

- First you need to look at the appliance label to find how many watts or kilowatts the appliance uses. Then find out how much you are paying per unit of power.

400 watt = 0.4kW

0.4kW x \$0.25 =
will cost 10 cents
per hour to run.

2000 watts (2.0kW)

2.0kW x 25 cents =
50 cents per hour
to run.

What type of electric heater to use?

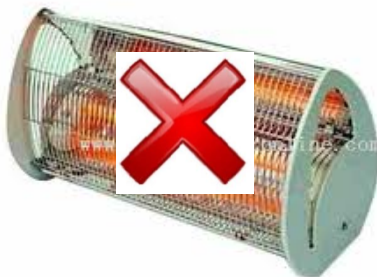


- Heat pumps in living areas.
- Fan heaters or radiant heaters in living areas.

What type of electric heater to use?



- Panel or convection heaters in bedrooms
- Never ever use radiant heaters in bedrooms!!!



Heating

Questions:

- My house is cold even though we have a fireplace
- How can I keep the house warm?
- How can we keep warm with only one heater?

Answers:

- If you can't keep the house warm, either your heaters are too small and inefficient, or
- Your house needs more insulation.
- Or both

Burning treated timber - poisonous and **BANNED**



**Treated wood –
DO NOT BURN!**

- Timber from outdoor use (furniture/decks/fences) is often treated with chemicals
- When burnt creates poisons in the air and ash
- Dangerous levels of arsenic are being recorded in the air
- Some treated timber is coloured (pink, blue, red) or looks green, some has no colour.
- If unsure BIN IT - DON'T BURN IT!

Firewood

- Use Good Wood



- Seasoned, dry wood less than 25% moisture
- 'Seasoned' = left long enough after cutting to dry out before using – can take up to 12 months
- Council has a list of Good Wood suppliers

Firewood sorting

- Collect/order lots of wood early for next winter (before Christmas)
- Using right size at right time is important
 - split/sort into 3 sizes: kindling, small logs (<11cm); larger logs.



Firewood storage



- Split & stack in dry, ventilated, covered place.
- Dry out rain wet wood before burning.

Lighting your burner



- Scrunch up lots of newspaper and put in bottom of burner (don't use glossy paper/ plastic).
- Stack lots of small kindling (cut up wood) on top of paper. Half fill burner with paper & kindling.
- Light paper in 3 places.

Get fire burning hot & bright



- Have air control open & door closed.
- Add small bits of wood (<11cm thick) as fire catches hold.
- Unless reloading keep burner door closed.

Keep fire burning hot & bright



- Leave airflow on high & wait until wood burned down to half original size before adding next load.
- Keep firebox hot – add bigger logs but only fill firebox $\frac{3}{4}$ of the way.

Burner maintenance

- Can I clean the chimney/flu myself?



- Yes but better to get done properly by chimney sweep
- Clean before each winter to prevent chimney fires & help it burn better
- Replace broken parts/fire bricks

Keep your family safe

- Handrails to stairs
- Smoke alarms

