



## Practical tips around the Bionic Fire – the Fine Art of Modern Green Living

### What makes the Bionic Fire different

The Bionic Fire is a double combustion burner that uses technology different from that of most other fires. Wood burning in the fire's top chamber releases gas that is automatically transferred to the lower chamber, where it ignites and creates energy in the form of heat. This operating system results in the Bionic Fire having very low emissions and very high energy efficiency.

Follow the simple instructions below to achieve maximum efficiency from your Bionic Fire.

**Lighting the fire – please use only dry wood, optimum 12-18% moisture content. Moisture content must be measured from inside the log when split.**

1. Flip out the hinge on the frame below the door and hook it over the knob to hold the door open.
2. Close the shutter plate on top of the fire.
3. Place two logs (about 400 gm each) parallel to each other in the upper combustion chamber.
4. Place a fire lighter or screwed newspaper on top of the logs.
5. Arrange three or four pieces of kindling over the fire lighter or newspaper and light the fire.
6. Do not close the door fully, lean it on its latch for a few minutes to allow the fire to establish.
7. Close the door fully and leave the fire to burn undisturbed until embers begin to appear.

### Refuelling the fire – once embers are seen, usually after about 20 minutes

1. Open and lean the door on its latch for 3-4 seconds to let the fire settle then open the door fully.
2. Use the glove to add another log to the fire then close the door. The aim is to build heat in the fire.
3. After about 40 minutes the fire should switch to 'down draft mode,' and the gas being automatically directed to the lower chamber will ignite.
4. At this point the shutter plate on top of the fire can be opened to release more heat.
5. Refuel the fire again with 1-2 logs when the fire has burned down to small flames or embers.

### Points worth reading:

1. Use only dry wood (moisture <20%), cut to 250 mm or less in length.
2. When refuelling, always lean the door on its latch for 3-4 seconds before fully opening it.
3. Once the fire is burning well, regulate the heat output by using fewer or more logs to refuel.
4. For safety reasons, the down draft will stop immediately the handle of the door is turned.
5. A large fire with a lot of heat ensures down draft burning, low emissions, and high energy efficiency.

### Much wood sold as 'dry,' in reality needs further drying. Signs the wood being used is not dry are:

- Smoke building in the upper chamber and smothering the fire indicates very wet wood.
- Smoke or water droplets (wood humidity >20%) appearing on the lower chamber glass during the start-up phase. In this case, do not open the door, the smoke and water will disappear once the fire heats.

NB – For any fire to achieve maximum fuel efficiency, wood sold as kiln-dried should be stored for at least one summer in an airy position before being dried further under cover.

## **Maintaining the bionic fire.**

### **Cleaning the glass:**

Clean the glass with wet paper dipped in ash and worked to a paste on the glass surface, or

Spray the glass with oven cleaner, e.g. Easy-Off. Wait 5 minutes, then clean with a wet cloth. Finish by wiping the glass with paper towels.

### **Door lock maintenance**

Maintain the two door lock mechanisms and the door handle mechanism with a little CRC, WD 40, or salad oil to ensure the door closes easily.

### **Removing ash**

Ensure the ash in the upper combustion chamber does not build higher than the steel trivet. It is important to leave some ash behind, but the trivet's three openings must be clear of ash to allow wood gas to reach the lower combustion area and for the down draft to operate. Keeping the trivet openings clear also prevents the door glass from blackening.

The upper chamber ash can be pushed through the centre hole into the ash pan beneath for removal.

Do not push ash in the ash pan to the back of the fire, it will block the fire's air flow and prevent down draft operation.

### **Air Channel maintenance**

Once a month, vacuum clean the two air channels behind the ashpan with a crevice nozzle. This will ensure air can circulate when the fire goes into the down draft mode.

Please view the video on my website [www.envirosolve.co.nz](http://www.envirosolve.co.nz) for further information on the Bionic fire.