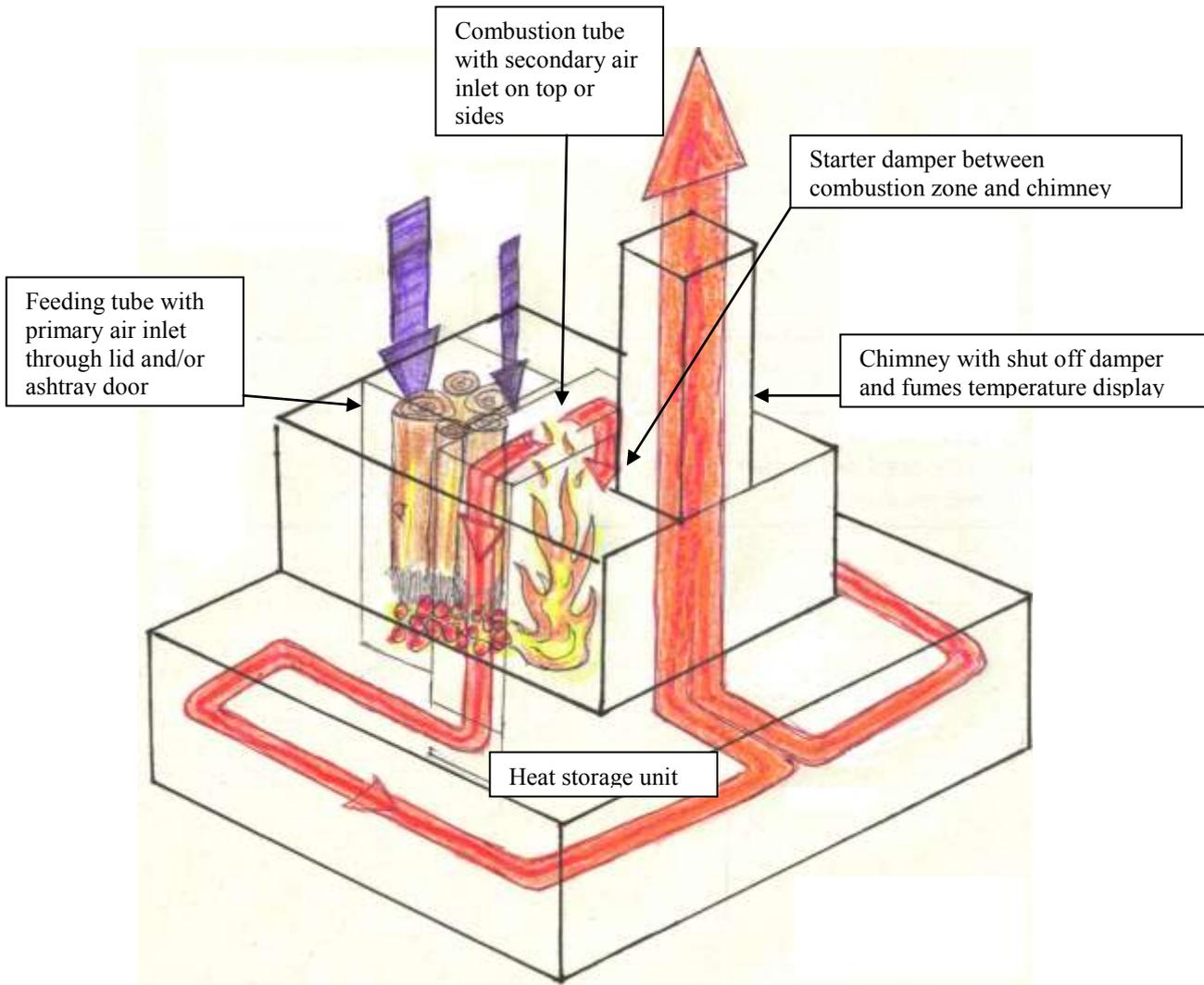


FLEXO+ INSTRUCTIONS

Please read carefully and display near the heater!!!

General overview



How it works

This heater is a vertical loading, lateral draft burning unit with 3 elements. The core itself that is separated into 2 vertical tubes connected by a throat: the loading tube receives the wood which is turned into flammable gas by contact with embers and the combustion tube in which flammable gas turn into flames thanks to hot air injection in the throat. Then the storage unit that can be either a bench or a partition wall, or even a floor in which hot fumes circulate to release their heat. Finally the chimney that is dedicated to providing a good draft to the core and evacuating the fumes outside.

Special requirements

This heater requires a particular understanding and a very good draft. The wood must be particularly dry and well split. Pallets or sawmills leftovers are much more suitable than cordwood, mostly if this one is not very straight and split.

How to use

FIRST START

The masonry requires a slow curing process. Then first let the heater dry for 2 to 3 weeks with all doors open. Then start with very small fires (1 kg of wood and about 10 min fire at a time) several times a day. Progressively increase the amount of wood and time of firing. Do that for 3 days minimum.

REGULAR USE

1. Clean up: Check the volume of ashes before each use and remove them if they start reaching the grid. Too much ash will stuff the bottom and make air entrance under the grid impossible.

1. Start up fire: Open up both the shut off damper and the starter damper (to make the start easier but also less polluting). The purpose of the start up fire is to preheat the core and the chimney and to provide the bed of embers required for normal running afterwards. This pre heating fire should be lit up from the top (top down burning) to make it progressive and clean. **In case the draft is too low and smokes come out the feeding tube (bad weather, cold chimney) boost it up by burning some newspaper in the base of the chimney.**

Use roughly 2 kg of short wood laid flat on the grid, preferably in crossed layers. Use wood from half wrist diameter (maximum) at the bottom to half finger size at the top, preferably a mix of hard wood (at the bottom for good ambers) and resinous wood (on top for better ignition). Add some kindle on top of all this and light up with lid half open maximum. At the beginning of the ignition process the ash tray door air inlet should be closed to avoid reversed draft. Once well started you can reduce lid opening and open the ashtray inlet a little bit. It will make the start up fire shorter.

CAUTION 1: for proper normal running **the fumes temperature in the chimney should be over 100°C** and the bed of embers should be thick and glowing. If not add some more small wood.

CAUTION2: when the lid is partly open **draft can reverse** at any time during the start up fire. Be aware of that and remain attentive.

2. Normal running: When all flames are gone (only embers remaining) load the feeding tube with wood cut short enough to permit closing the lid (very important). Use maximum 8 to 10 cm diameter split logs or branches (sawmills leftovers are even better). Bigger pieces burn slower and unevenly. Diversifying the diameter of the wood pieces improves the filling up of the feeding tube (big gaps cause combustion to move upwards). Never overload the feeding tube as the wood should be able to move down as it burns (overstuffing = jamming!).

Once loaded close the lid as swiftly as possible and quickly open the ashtray air inlet widely for a few minutes. As it starts roaring nicely open the 2ry air (not to be tuned, always fully opened when running) then reduce the ash tray air inlet to reduce roaring to minimum (air excess is prejudicial but too little air will stop the combustion). The roaring should turn muffled but never off. Wait until chimney temperature reaches about 120°C and shut off the starter damper. If closing the damper reduces the temperature under 100°C (target temperature) then let it half open. It is mostly necessary when the bench is very cold. It is always better not to wait until the unit is cold to make a fire in it.

Combustion speed is now going to be steady all along the burning process, with nothing else to do that sometimes checking the wood is going down well, and eventually shake it a

bit. No tune of air is necessary. **CAUTION:** any time you want to open the lid while combustion is on, always open the bypass damper first, and operate slowly. The fire does not like to be changed in speed when cruising. Fast operation might cause back flame through the lid.

3. Reload : You can reload the feeding tube when all wood is burnt away and embers are reduced enough to release some room under throat opening. However it is recommended not to burn too much wood at once. Starting a fire again 6 hours later is preferable for heat storage efficiency. A temperature rising too much in the chimney indicates that storage unit is loaded and efficiency is lowered. If you want to partly load the feed tube don't play on the stuffing, but on the length of the wood (the whole section of the tube should always be filled).

3. Turn off: Once there is no more unburned wood you can close 2ry air and open the ashtray widely to speed up the embers reduction. Breaking up big embers will also help speeding up reduction process. Once all ambers are burnt off (or very little glowing particles are left) then close the shut off damper on the chimney, close the lid and all air inlets.

Maintenance

Once a year minimum your heater requires a global cleaning. In this purpose it is equipped with cleanout openings through which you can sweep the smoke channels with a nylon brush. **DO NOT** use an iron brush. Then use a vacuum cleaner to removes fly ashes. Be sure you clean up the zone located under the combustion zone and the bottom of the combustion tube (by removing the top cooking plate). You can usually use a 20 cm diameter brush unless your smoke channels are smaller.

Clean out the chimney the same way. As some draft booster fires might have produced some extra ashes vacuum its base well.

Replace any joint looking damaged with an equivalent one (mineral rope). The most important one make the feeding tube lid tight.

Trouble shooting

Most of the time a **cold heater is hard to start**, so it is recommended not to let it cool down too much before making next fire. If still warm it is very likely that something is wrong: poor draft (use a booster fire in the base of the chimney), start up wood is too big, too little kindling is used (using a lot makes life easier), wood is too wet...

Most common problem is having a loss of draft through a **cleanout door that is badly closed**, or a cooking plate of which joint is damaged. Target any leakage by passing a lighter flame along the suspected places.

Best wishes

I sincerely hope this heater will make you enjoy wintertime. If any unsolvable problem occurs, feel free to contact me. I will do my best to answer your question.

Generous sharing

If you enjoyed being shared a Flexo+ building experience then please spread what you learnt to your neighbours. Even better, share your experience on <http://poelexoplus.unblog.fr> Contact: poelexoplus@gmail.com