



Säätötuli  [®]
CANADA

**Biomass retrofit
burners**

The furnace is placed half-way inside a small shelter
(furnace shown through the walls)



An example of a successful retrofit



This HeatMaster MF20000 (about 800 000 BTU) is used to heat two big houses and a garage at a farm located in St. Melanie in Quebec.

In December 2018, it was modified by adding a hatchway at the rear of the furnace in order to fit a 150kW (511 821 BTU/hr) Säättötuuli biomass burner.

Now the furnace provides a steady flow of heat without any visible smoke, increasing the comfort in the houses.

It uses woodchips made at the farm with a PTO-driven chipper from all the leftover wood from the owner's woodlot.





The biomass combustion system is operated with a Säättötuli C110 control box with Unitronics automation. Connected to the furnace's own thermostat, it will control the burner between heating and idle modes to maintain the furnace at the desired temperature. The control box is CSA certified.



Fuel is fed into a hopper located at the rear of the furnace. In this case, the customer has a Säättötuli Kaks2 feeding bottom and he built a hopper of about 5 cubic meters on top. The hopper is easy to load with the front loader of a tractor. It needs to be filled once or twice a week vs. twice a day before the retrofit.





Biomass retrofit on maple syrup evaporator

This maple syrup evaporator evaporates about 25 gallons of maple sap per hour. In March 2019, it was retrofitted with a Säättö tuli Strong 420/80kW (272 921 BTU/hr) biomass burner. The 420 liter fuel hopper allows using the burner about 2.5 hours at full power. With firewood, the evaporator had to be filled every 6 to 8 minutes, so this represents also a great save in workhours. For more comfort, the silo will be replaced by a Metri2 system in 2020. The Metre2 can be loaded with the tractor front loader, saving even more on manpower.

In addition to the savings in workhours, the other great advantages of biomass retrofit on an evaporator are:

- a more constant and easy to set heat.
- no visible smoke nor smells.
- a simple automation with a 2-line digital display.
- the possibility to put the burner on idle when changing pans.

To buy maple products made with biomass: <https://lasucriere.ca>



Säätötuli STRONG



The Säätötuli Strong is a biomass burner with a compact hopper. It can use pellets or energy woodchips as fuel. Strong is available with different outputs from 136 485 BTU/hr up to 272 921 BTU/hr and with 2 hopper sizes: 420 and 920 liters.

The Säätötuli Strong can be easily mounted in any heating device. It is on wheels, making it easy to move from one place to another. It can for example be used to heat a home during wintertime, and then installed on a maple syrup evaporator during the sugar season.

The burner can be inserted in the heating device's firechamber by the loading door, or by a specially made hole. The most important is to have enough room inside the firechamber for the flame to develop fully and that the chimney has a good draft.

The Säätötuli Strong comes with a Säätötuli C110 control panel with 2-line digital display. The easy-to-use scrolling software is available in English and French.

The C110 can be controlled by a boiler thermostat or with an on/idle switch, depending on the type of heating device it is connected to.

Model	Strong 420	Strong 920
Hopper size	420 liters 110 gallons 14.8 cu. ft.	920 liters 243 gallons 32.5 cu. ft.
Auger extension	500mm / 19.7 inch	1000mm / 39.4 inch
Burner output	40kW / 136 485 BTU/hr 60kW / 204 728 BTU/hr 80kW / 272 921 BTU/hr	40kW / 136 485 BTU/hr 60kW / 204 728 BTU/hr 80kW / 272 921 BTU/hr
Maximum size for fuel particle	40mm / 1.6 inch	40mm / 1.6 inch
Control automation	C110 – 120VAC C110 – 240VAC	C110 – 120VAC C110 – 240VAC



The burner installed on the Strong is made with cast iron and steel with a fixed or mobile combustion grid depending on the model.

The bottom of the auger is fitted with one or two mixing plates and the auger. An auger extension is always provided to be fitted between hopper and burner. The hopper is watertight.





Säätötuli Metri2 and Kaks2

The Säätötuli Metri2 and Kaks2 feeding bottoms can be used to make a biomass hopper with a great size. They can be sold with or without steel walls and lid. In many cases our customers prefer to manufacture themselves the hopper on top, making it bigger. The Kaks2 and Metri2 can hold up to 8 feet (2.5 meter) of height of woodchips.

The Säätötuli Metri2 and Kaks2 feeding bottoms can be connected to different burners. Therefore, they are quite versatile in their applications. They come also with a C110 control automation with 2-line digital display, available in English and French.

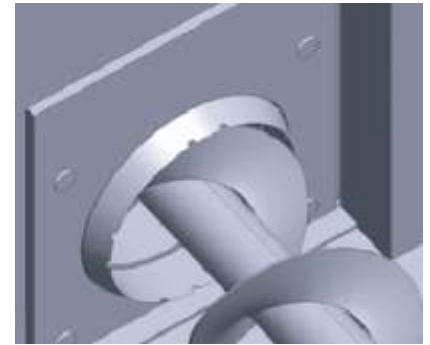
Model	Metri2	Kaks2
Hopper bottom size	About 1 x 2 meters 3.3 ft x 6.6 ft	About 2 x 2 meters 6.6 ft x 6.6 ft
Auger extension	1400mm / 55inch	1400mm / 55inch
Burner output	40kW / 136 485 BTU/hr 60kW / 204 728 BTU/hr 80kW / 272 921 BTU/hr 120kW / 409 457 BTU/hr 150kW / 511 821 BTU/hr 200kW / 682 428 BTU/hr 300kW / 1 023 642 BTU/hr 400kW / 1 364 857 BTU/hr 500kW / 1 706 071 BTU/hr	40kW / 136 485 BTU/hr 60kW / 204 728 BTU/hr 80kW / 272 921 BTU/hr 120kW / 409 457 BTU/hr 150kW / 511 821 BTU/hr 200kW / 682 428 BTU/hr 300kW / 1 023 642 BTU/hr 400kW / 1 364 857 BTU/hr 500kW / 1 706 071 BTU/hr
Control automation	C110 – 240VAC C110 – 600VAC	C110 – 240VAC C110 – 600VAC



Just like the Säättötuli Strong, the burner of a Metri2 or Kaks2 can be inserted in the heating device's firechamber by the loading door, or by a specially made hole. The most important is to have enough room inside the firechamber for the flame to develop fully and that the chimney has a good draft.



A 55-inch auger extension is always placed between the hopper and the burner. The auger extension has a 1-foot (300 mm) part that is divided in two and bolted. With this configuration, the burner can be backed up along the auger for maintenance.



To ensure a constant heat output even with lowly screened fuels, a round counter-blade is installed at the entry of the tube. If a chunk of wood is too big to go inside the tube, the auger will press it against that blade and cut it.

Burners from 40 to 120kW are cast-iron and steel burners with a fixed or mobile burning grid. Burners from 150 to 500kW are cast-iron and ceramic with mobile grids.

Output	40kW – 60kW	80kW – 150 kW	200kW-400kW	500kW
Auger diameter	110 mm 4.3 in	150 mm 6 in	200 mm 8 in	200 mm 8 in
Maximum size for fuel particles	40 mm 1.6 in	45 mm 1.8 in	63 mm 2.5 in	63 mm 2.5 in
Fans	1 pc	2 pcs	2 pcs	4 pcs

With their clever design, the Säättötuli retrofit biomass burners are able to use as well pellets as woodchips. They can also burn peat and agricultural residues like haypellets, corn cobs, nutshells and fruit kernels. Please note that burning agricultural residues may be forbidden or subject to environmental permitting depending on your Province.

With their optimized combustion technology, retrofitting a firewood device with an automated Säättötuli burner will reduce particulate emissions between 3 and 5 times for the same energy output.

For more information, please visit our website at :

www.saatotuli.ca

We also welcome you on our other websites :



www.wood-chippers.ca

PTO-driven chippers that are able to make high quality chips even with branches, treetops and side panels.

www.firewoodprocessors.ca

Modern wood heating is made with woodchips... But we will always need firewood for barbecue, campfires and grilling.



www.woodprocessors.ca

Transform your tractor into a forestry machine with these implements that will delimb and cut-to-length your trees.



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