

CHOFU WOOD FIRED

WATER HEATER



NORTHERN LIGHTS HOT TUBS & SAUNAS

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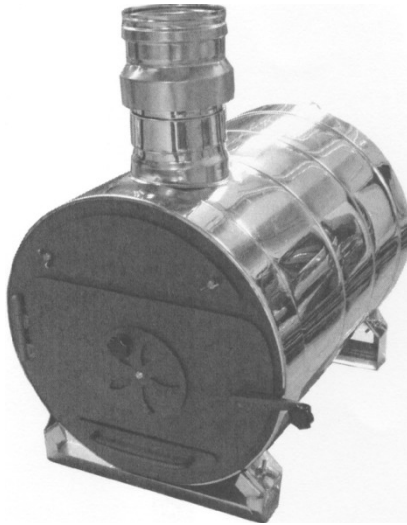
[www.northernlightshotubs.com](http://www.northernlightshotubs.com)    [info@northernlights.be](mailto:info@northernlights.be)

### **WARNING**

- Heater must be under supervision when it is in use
- Read the technical descriptions before installing the heater
- Read the manual before starting the heater
- Improper use of the heater can be dangerous
- The heaters chimney pipes and fire door can become very hot during use.
- Keep children away from the heater.
- Never use damp wood as it drastically reduces efficiency.
- Do not drain the hot tub and heater before all the wood has burned out and the embers have faded



## Chofu Wood Fired Heater



The heater is fired with wood and connected to a hot tub on the outside. For the heater chimney pipes (100cm) and chimney top for effective removal of sparks can be bought separately. Need varies based on location.

### Wood-burning water heater

This is a precision-built water heater, especially designed for Hot Tubs. Water is self-circulating using the "thermo siphon" principle. Hot water rises and creates low pressure, which sucks the water from below. This eliminates the need for a circulation pump and electricity, making it possible to heat the water with the heater placed externally. One great advantage is that there will be more space in the tub, making it possible to choose a smaller model.

Both the outer stove body and firebox are made of stainless steel. The doors are made of special steel, which will guarantee you years of trouble-free use. The heater must be drained via the drain hole after every use.

The heat from the fire is efficiently transferred to the water through a unique sophisticated construction, making the entire firebox a heat-transferring surface. The total heating efficiency is 15 kW.

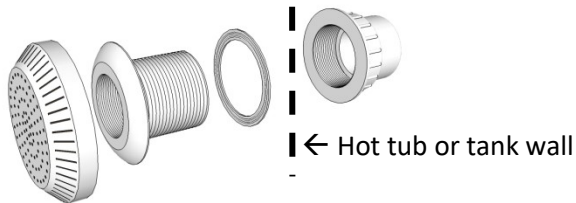
To get a good enough water circulation going the heater must be placed at least 15 cm lower than the foundation the hot tub stands on. This only applies under the condition that the following instructions are followed.

## INSTALLING THE WOOD HEATER

WARNING! Read the last page before beginning installation.

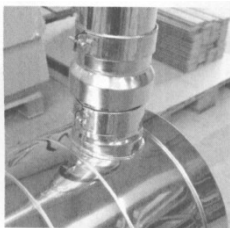
### Installation

The heater is connected to the hot tub or water tank with a connection kit included in a complete package. It is not included when ordering only the heater but can be ordered separately as an accessory, the kit consists of 50 mm wall fittings.



Connection set (2 sets are needed)

1. Place the heater on an even wood, brick or concrete surface. The heater should be placed at least 15 cm lower than the Hot Tub to ensure that the upper pipe is leaning upwards. This is important for circulation and to ensure that the water drains out of the heater during cold weather.
2. Drill two 60 mm holes for the connection wall fittings in the side of the Hot Tub. The upper hole should be a bit higher than the top hole (outlet) at the back of the heater so that the warm water flows in a slightly upward angle back into the hot tub.
3. Install the wall fittings and tighten firmly. The gaskets must be placed at the inside of the hot tub or tank.
4. Place the heater not further than 50cm away from the hot tub or tank and connect with pvc flexible swimming pool hoses and clamps. (not included)



**Chimney Pipe holder** Fasten the chimney fitting. Then assemble the chimney pipe and put in place. NOTE! Turn the seam on the pipe backwards.

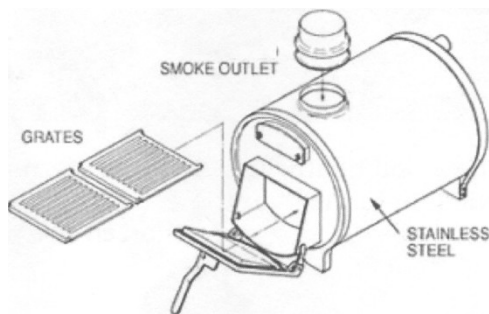
**Operation** The heater operates as a conventional wood stove, achieving the fastest heating rate from dry wood. The firebox is 46 cm long and 36 cm in diameter. The most efficient heating comes from using dry wood, 40-43 cm long chopped into a thickness of 4 X 4cm. One load burns for approximately at 30 min.

The heater has a high and low-speed draft for controlling the heating rate. It's run with the draft wide open for fast heating, and slowed down to maintain temperature once the water is hot.

**Design** The design of the heater is made so that it will lean slightly downwards in the front when it stands on a stable and even base. Never put the heater in sand or any other type of soft foundations as it will cause an air pocket that prevents proper circulation and will damage the heater. If the heater is installed with a pump (for instance for a pool) the connection must be outfitted with an adjustable valve on the suction side that enables you to regulate the water flow and pressure. Too high water flow and pressure can damage the heater. Adjust the valve so that the hot water coming from the heater stays around 50- 60 degrees Celsius.

## Features

- Weather resistant construction
- Stove body of stainless steel
- Doors of special steel
- Connection parts to the Hot Tub
- Large fire place
- Discharging vent for the water in order to protect the heater from frost



## Specifications

- 43 cm (height) x 56 cm (length) x 41 cm (width)
- Weight: 20 kg
- Firebox: 43 x 35 x 23 cm
- Heat exchanger surface: 0.85 m<sup>2</sup>

## Heating

The heating effect varies according to the quality of the wood and how often you put in more wood. The approximate heating effect is 14.9 kW. The heating rate of 1 000 litres of water is approximately 12° C per hour.

## WINTER USE

**If there is a risk of freezing damage then the heater must be drained of water after use. Self circulation will cease when the wood has burnt out and the small amount of water remaining in the heater can easily freeze and cause damage to the heater. To keep the water in the hot tub there is a rubber plug complete with accessories. See images below. You can also supply the pipes with valves that can be opened and closed. Depending on how this is arranged it can become necessary to insulate the pipes and valves for the bath. If electricity is available then a freezing guard can be installed in the heaters firebox to avoid freezing damages when it's not in use. Upper and lower connection pipes must then be insulated.**

HINT! The wood heater has a large external surface that is in direct contact with air and therefore it is recommendable to insulate the exterior with, e.g. some kind of "flexible insulation material" which helps to shorten the warming up phase considerably.

### WARNING!

- Stir the water before entering the hot tub or water tank
- Check the temperature before entering the hot tub or tank
- Keep the in- and outlets open
- The heater may not be used till the water level rises above the highest pipe.
- Get used to empty always the heater when it won't be used especially when the temperature sinks below 0.
- When using saltwater the heater should always be rinsed with fresh water after each use.
- The same applies for chlorinated water or something similar when chemicals are used.

**ASSEMBLE CORRECTLY** or the heater can end up like this. The heater have here been in the same height as the bath which caused disruptions in the water circulation and the heater was destroyed. **Note!** This is an older model, but with the same function.

