

RAIS Malta RAIS Bando

MANUAL **Rev. B 290802**

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Congratulations on the purchase of your new RAIS wood-burning stove. With this choice, you have shown an appreciation of superior quality and good design.

Installation

Please follow these steps carefully.

First, the stove must be installed according to the building codes. Consult your local building inspector or Fire Marshall before the installation. In some areas a "special permit" is required.

In order for the stove to work and draw properly, sufficient air is important ! Be especially aware of any mechanical fans (kitchen fans and bathroom, etc.), which may affect the proper draw.

We suggest that you have a professional mason or stove installer do a complete check-up of your existing chimney, liner, and flue.

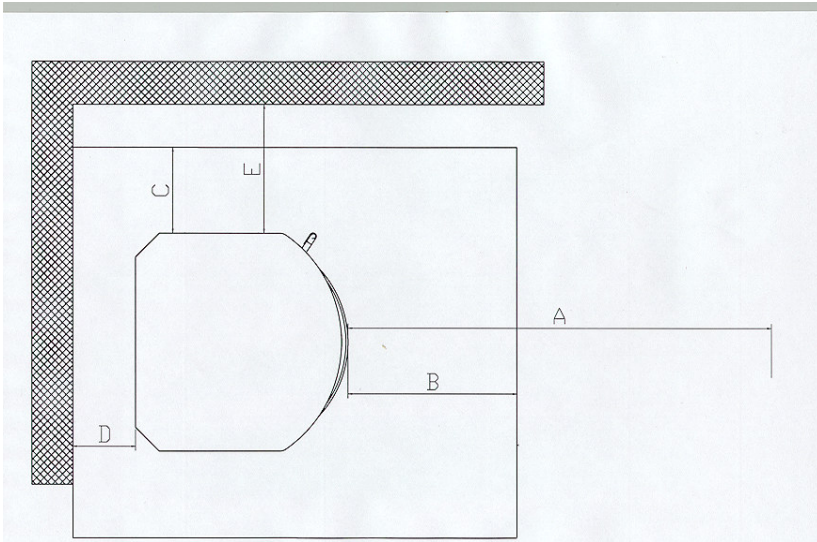
In addition, make sure that the floor and sub-flooring is designed to carry the extra weight of the stove. The floor plate material must be made of a non-combustible material !

When installing the stove the heat distribution to other rooms has to be taken into consideration, as the RAIS Malta/Bando has a heating capacity of approx. 100 m² (at standard ceiling height etc.).

Thermal Output	7 kW
Minimum pressure in the stove at output mentioned:	- 16 Pa

Minimum distance to non-combustible material is 2 inches.

Minimum distance to inflammable material:



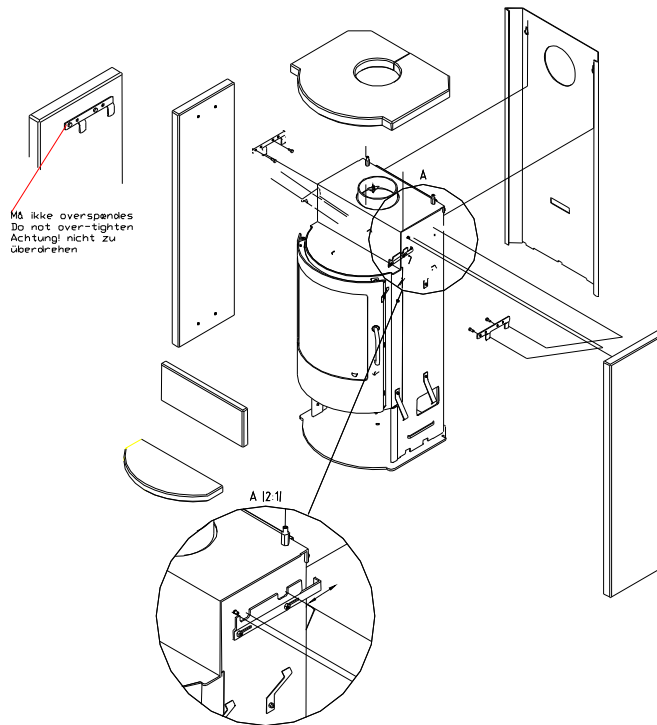
- A = Furnishing distance
- B = Distance to inflammable material front/floor
- C = Distance to inflammable material side/floor
- D = Distance to inflammable material back/wall
- E = Distance to inflammable material wall

	A	B	C	D	E
RAIS Malta/RAIS Bando	900	300	150	150	400

When using smoke outlet at the top and non-insulated tube the distance to flammable wall must be 400 mm from the tube.

The stove can be installed with smoke outlet at the top or at the back. The vent pipe socket is mounted using the 3 screws and nuts. These parts are delivered with the stove.

Assembly instruction RAIS Bando



Assembly instruction for soapstone on RAIS Bando

Disassemble the back-panel

Push back the assembly fittings on the stove.

Mount the holding fittings on the soapstone-panels. Remember to put the screws into the right holes.

NB ! Do not over-tighten the screws.

Mount the soapstone-panels on the stove and push the assembly fittings forwards, in this way they lock the soapstone-panels.

Mount the back-panel.

Mount the remaining stones to the stove.

Chimney

The condition of the chimney and the height is very important. We suggest a minimum of 16 – 20 Pascal, however no less than 10 feet/3 metres. If you do not have the minimum of 16 Pascal, smoke will come out of the door. Special attention should be made to chimneys with double flues.

The chimney/stove pipe must not be smaller than 6 inches/150 mm in diameter.

If the stove pipe is fitted with a baffle this must be manually worked. It must be easy to operate and placed so that it is stable and visible. The baffle must not close completely. This is ensured by cutting away 20 % of the baffle area – minimum 20 cm². Consult your chimney expert if you have any questions.

Important ! Make sure that there is easy access to the clean out door.

Operating instructions

First fire

Your new RAIS should be broken in gently for top performance and to prevent paint damage, cracks in the fire brick, and excessive wear and tear. Start with a small fire (never overload the firebox) to allow the materials to get accustomed to higher temperatures, and then gradually increase the intensity.

For the first few fires you may detect a strange smell that comes from “heat Treating” the paint and materials. This is normal and will soon disappear. – Just see to plenty of fresh air ! Furthermore you should pay attention to the fact that during the heating up and cooling down some “click-sounds” might arise due to the large differences in temperature which the material is exposed to.

Never use products such as gasoline, kerosene or lighter fluid to start the fire ! You risk an explosion !

For wood to burn correctly, the right amount of air has to be supplied at the right places.

RAIS Malta/RAIS Bando is equipped with an air control handle placed on the right side below the door, when the handle is pulled out all the way to position 1, the primary air and secondary air are both fully open. When the handle is pushed in a notch to position 2 the stove gets only full secondary air and if the handle is pushed in further to position = the air supply is reduced. At position 0 the stove will shut down.

The handle on the left side just below the door serves the shaking grate, it simplifies the cleaning of the stove – you just shake the ashes through the grate into the ash pan.

Primary air is defined as the combustion air for burning “the mass of wood” and stipulates the production of volatile.

Secondary air is used to burn off the volatile at high temperatures (above 1000 degrees °F/540 °C) and to keep the glass free of soot.

Basically, the primary air is used to start the fire, and the secondary air is used to maintain the fire.

Firewood used should be split wood with an adequate low degree of moisture 15 – 22 %, length 30 – 34 cm. In order to achieve this wood should be stored in a dry place under roof with sufficient fresh air for at least one full year for soft tree sorts and minimum two full years for harder wood sorts.

Building the fire

To start the fire lay 2 or 3 kindling blocks topped with twigs or dry kindling wood at the back of the firebox (app. 2 kg). Build the wood directly on the stove hearth, and do not use a grate or elevate the fire.

Pull out the handle for air control out to position 1. Light the fire – and during start up leave the door slightly cracked (with supervision) about 1-2 inches/10-15 mm, until you have clear flames. After 3 – 5 minutes close the door completely. After approx. 10 – 20 minutes of burning, you may add 1 – 2 pieces of split logs. Again after app 10 minutes (or after the logs have caught fire) the air control handle can be pushed in step by step to dampen the fire. Never, however, completely reduce the air intake while logs are still burning. This will cause incomplete combustion and soot up the glass.

Tip. Always leave a few inches of ashes in the firebox for better insulation.

When firing with closed door and correct air intake you do not have to supervise your RAIS wood-burning stove.

RAIS Malta/RAIS is developed to a nominal thermal output of 7 kW, which corresponds app 2,0 kg wood/hour with a water content of 18 %. If the fire is fed more than recommended (exceeding 7 – 9 kW) there is a danger that the stove will be overloaded and might discolour. Over firing is unnecessary and will void the guarantee.

Firewood

Burn only wood that has been seasoned for at least one full year (2 years is best !). If the wood has not been “seasoned” or dried, much of the energy of the fire will go into evaporating the water.

Air-dried wood has less moisture (15 – 20 %) than freshly-cut timber (40%), and typically yields 20 % more available heat. Wet wood burns at a lower temperature and causes incomplete combustion (soot and “creosote” formation, which in extreme cases, can lead to a chimney fire). The logs should have a length of the width of the firebox less 5-6 cm.

Furthermore condense might arise in the tube or the stove if you burn moist wood.

Burn only the fuel your stove was designed for. Also, trash should not be burned in your stove. Besides increasing the chance of starting a chimney fire, so plastics and other trash emit harmful gases, which is unhealthy for you and the environment. Driftwood, treated wood, and artificial logs should not be burned either.

Burning value of wood

All types of wood heat up equally per kilogram; however, the density of wood is not the same, as shown in the following table:

<u>Type of wood</u>	<u>Kg dry wood per m³</u>	<u>Compared to beech</u>
Beech and oak	580	100 %
Ash	570	98 %
Maple	540	93 %
Birch	510	88 %
Mountain pine	480	83 %
Fir	390	67 %
Poplar	380	65 %

A few reminders

Store your wood cut and split (split logs dry faster).

Keep the wood pile in a dry sunny place, protected from the rain. Don't cover the pile with plastic, because that will prevent the wood from drying out properly.

Stack the wood with enough space between the rows to ensure a good air circulation !

Verification

For a proper burn, the inside of the firebox and the glass panel should be free of soot, and the ashes in the bottom should be light grey (not black).

Surface temperature

RAIS Malta is a convection stove, which means that the sides and back never get too hot. Convection means that a circulation of air in the room is created so that the spreading of the heat becomes more even. The stove is equipped with a “cold” handle – a speciality from RAIS - which enables you to touch the handle without the use of a glove.

RAIS Bando is a convection stove with accumulating soapstone, the sides can therefore get rather hot. The stove is equipped with a “cool” handle – a speciality from RAIS - , which enables you to touch the handle without the use of a glove.

Care and maintenance

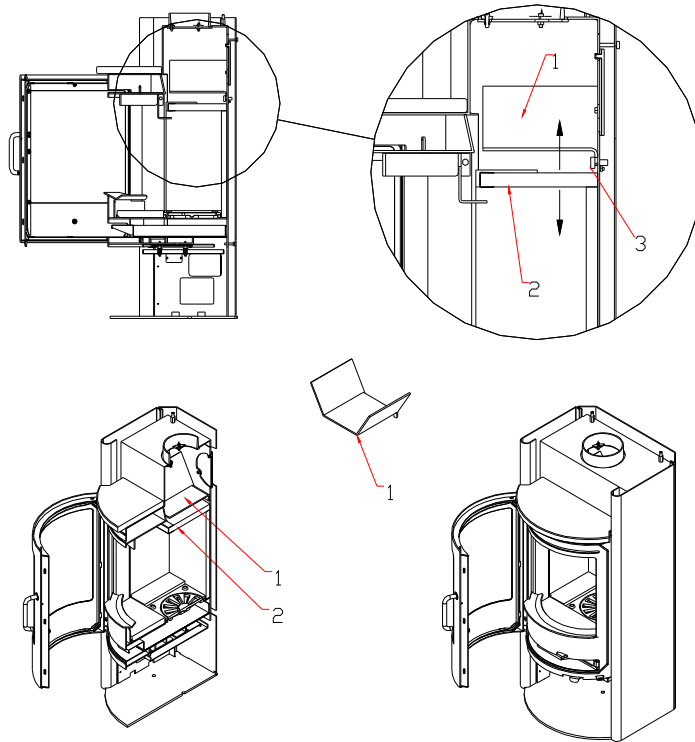
Your RAIS requires very little day to day upkeep. The outer surfaces can be wiped with a dry soft rag, and if needed, a small amount of mild detergent, but try not to scrub !

Minor scratches and other surface damage can easily be touched up with RAIS paint . Remove any dirt, tar or rust, and make sure repairs are made only when the stove is cool (room temperature).

Important: You should have your chimney and stove checked at least once a year by a professional chimney sweep and cleaned as needed.

Clean the soapstone with regular paint thinner. Should there be any spots that the thinner might not remove, then grind it very carefully.

Maintenance smoke outlet:



Remove the baffle plate (2) by pushing it towards the top in one of the sides, into a slanted position and pull it out carefully.

Push up the smoke leader (1), lift it from the rivets (3) and take it out.

Please notice : The baffle plate is made out of vermiculite slab insulation/skamol. This is a porous material and must therefore be handled with care.

Sweep the smoke box using an ordinary hand sweeping brush.

Replace everything in reverse order.

Firebox lining

The firebox bottom lining is made out of firebrick and the side lining is made out of vermiculite slab insulation/skamol, protecting the outer steel plates against overheating. With time, small cracks might appear, but this is normal. Should the material, however, break it must be replaced. It is a porous, high-insulation material and must therefore be handled with care.

Gaskets

The door gaskets should be replaced about every 2 years. Gasket around the ash pan can also be replaced.

When replacing the door gasket make sure the door glass is not pressed too hard against the gasket.

Cooking

RAIS Malta/RAIS Bando is equipped with a baking compartment. Use it to keep the tea hot or to warm up the buns for the coffee. – Remember to protect the soapstone liner with foil.

Trouble shooting:

Smoke coming out of the door – not enough draft in the chimney < 16 Pa.

Soot on the glass – take care that the stove is warmed up sufficiently before closing the door.

If the stove is burning too quickly, check the door gaskets first. Remember to replace as recommended. The chimney could also be too high and thus create too much draft > 22 Pa. Installation of a damper could be needed.

If the stove is burning too slowly, it could be due to too little air getting to the stove. Check to see that you're not running too many other exhaust fans (kitchen and bath), or chimney not being tight, or not tight between chimney and tubes or to thermal output being too small.

At disturbances we recommend you to contact your chimney sweeper or your dealer.

If you should experience a chimney fire – quickly close all doors, dampers, vents, and call your local fire department. Don't use water to extinguish the fire.

Important: To ensure a proper and safe combustion, there must be bright and lasting flames/embers. Don't let the wood smoulder. Do not completely close the air inlets during normal usage.



Guarantee

We grant a 5 year guarantee on your RAIS stove. This guarantee covers any defect in material or workmanship. It does not cover damage from misuse or neglect. The glass, gaskets, firebrick and vermiculite are not covered.

ENJOY YOUR NEW RAIS !