



bionic fire™



**BRUGERMANUAL
USER MANUAL
BRUKERVEILEDNING
BRUKSANVISNING
KÄYTTÖOHJE
MANUEL D'UTILISATEUR
GEBRUIKERSHANDLEIDING**

RAIS®
ART  OF FIRE

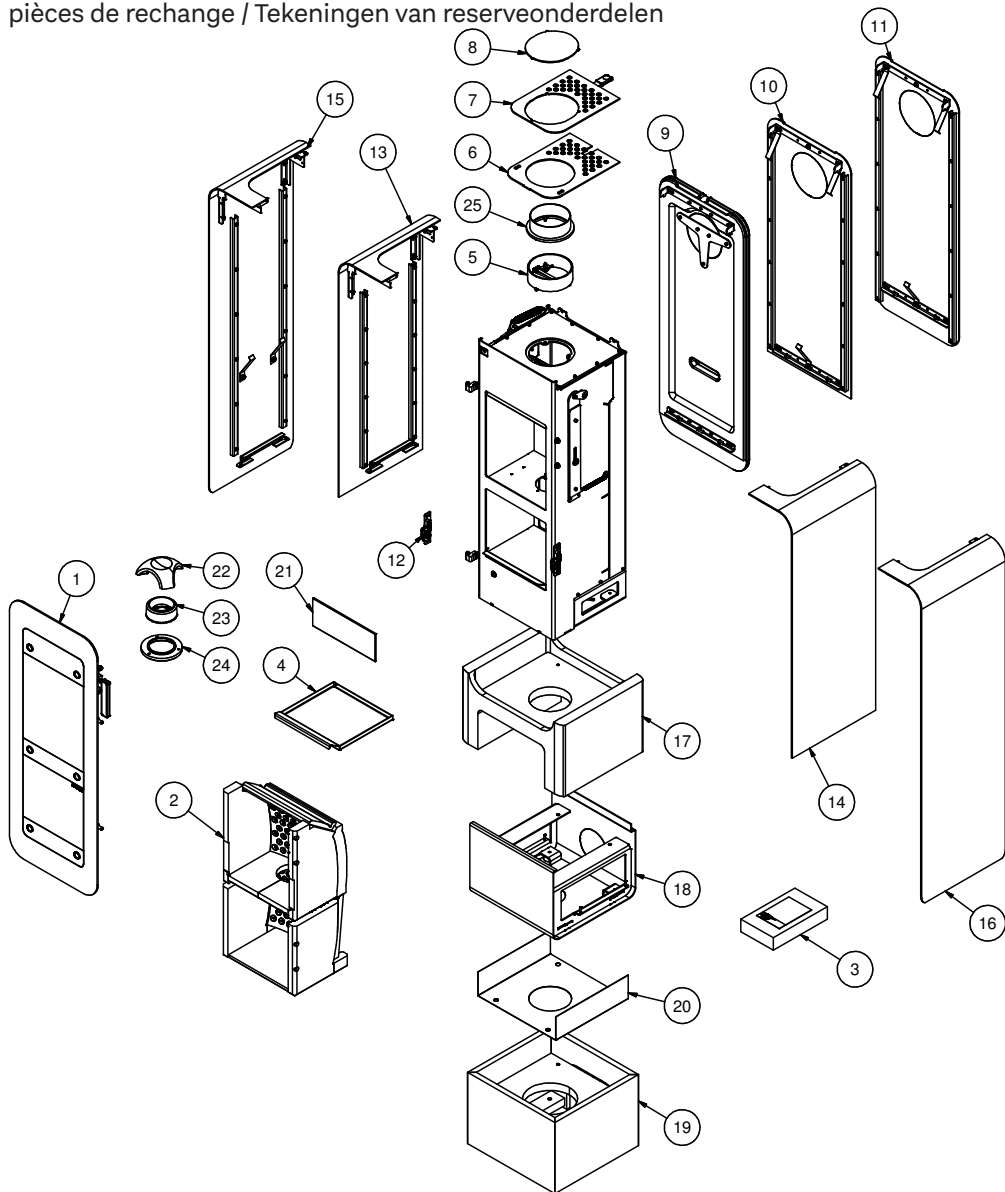
DK - Bruger Manual	4-23
UK - User Manual	24-49
N - Brukerveiledning	50-69
S - Bruksanvisning	70-89
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F - Manuel D'utilisateur	110-129
FL - Gebruikershandleiding	130-149

DOP - DECLARATION OF PERFORMANCE (back of the user manual)

RAIS **bionic fire**
Mærkeplade
Manufacture's plate
Merkeplate
Märkplät
Tyypikilpi
Plaque signalétique
Merkplaatje

13			
EN 13240:2001+A2:2004, EC.NO: 950		Notified Body: 1235	
Produced at: RAIS A/S, Industrivej 20, 9900 Frederikshavn, Danmark			
bionic fire Anordningen må kun installeres i forbindelse med ubrændbart materiale.			
AFSTAND TIL BRÆNDBART, BAG/ÆG ABSTAND ZU BRENNBAREN BAUTEILEN, HINTEN DISTANCE TO COMBUSTIBLE BACK WALL DIST. ENTRE COMPOSANTS COMBUSTIBLES, ARRIÈRE	DK: 50mm SE BRUGERVEJLEDNING DE: 50mm SIEHE BEDIENUNGSANLEITUNG UK: 50mm SEE USER MANUAL FR: 50mm CONSULTEZ LE GUIDE DE L'UTILISATEUR		
AFSTAND TIL BRÆNDBART, SIDE/ÆG ABSTAND ZU BRENNBAREN BAUTEILEN, SEITE DISTANCE TO COMBUSTIBLE SIDE WALL DISTANCE ENTRE COMPOSANTS COMBUSTIBLES, CÔTÉ	DK: 200mm SE BRUGERVEJLEDNING DE: 200mm SIEHE BEDIENUNGSANLEITUNG UK: 200mm SEE USER MANUAL FR: 200mm CONSULTEZ LE GUIDE DE L'UTILISATEUR		
AFSTAND TIL BRÆNDBART, MØBLERING ABSTAND VORNE ZU BRENNBAREN MÖBELN DISTANCE TO FURNITURE AT THE FRONT DISTANCE ENTRE COMPOSANTS COMBUSTIBLES, DEVANT	DK: 500mm SE BRUGERVEJLEDNING DE: 500mm SIEHE BEDIENUNGSANLEITUNG UK: 500mm SEE USER MANUAL FR: 500mm CONSULTEZ LE GUIDE DE L'UTILISATEUR		
CO EMISSION (REL. 13% O2) CO EMISSION IN DEN VERBRENNUNGSPRODUKTEN (BEI 13%O2) EMISSION OF CO IN COMBUSTION PRODUCTS (AT 13%O2) EMISSION CO DANS LES PRODUITS COMBUSTIBLES (À 13%O2)	0,024 % / 300 mg/Nm ³		
STØV / STAUB / DUST / POUSSIÈRES: ROGGASTEMPERATUR / ABGASTEMPERATUR / FLUE GAS TEMPERATURE / TEMPÉRATURE DES GAZ DE FUMÉE:	<4 mg/Nm ³ 166 °C		
NOMINEL EFFEKT / HEIZLEISTUNG / THERMAL OUTPUT / PUISSANCE CALORIFIQUE:	4,6 kW		
VIRKNINGSGRAD / ENERGIEFFIZIENZ / ENERGY EFFICIENCY / EFFICACITÉ ÉNERGÉTIQUE:	86 %		
DK: Brug kun anbefalede brændsler. Følg instruktørerne i bruger manualen. Anordningen er egnet til reggasafledning og intervallfyring. DE: Lesen und befolgen Sie die Bedienungsanleitung. Zeitbrandfeuerstätte. Nur empfohlene Brennstoffe einsetzen. UK: Fuel types (only recommended). Follow the installation and operating instruction manual. Intermittent operation. F: Veuillez lire et observer les instructions du mode d'emploi. Foyer à durée de combustion limitée, homologué pour cheminée à connexions multiples. Utiliser seulement les combustibles recommandés.	DK: BRÆNDE DE: HOLZ UK: WOOD FR: BOIS		
Not to be used in a shared flue		Raumheizer für feste Brennstoffe Appliance fired by wood Poêle pour combustibles solides	
15a B-VG VKF-NR: xxxxxx Typ FCxxxFCxxx	Produced for: ATTIKA FEUER AG, Brunnmatt 16, CH-6330 Cham / RAIS A/S, Industrivej 20, DK-9900 Frederikshavn		

Reservedelstegning / Spare parts / Reservdelssritning / Varosapiitokset / Dessin des pièces de rechange / Tekeningen van reserveonderdelen



FIRE ENVIRONMENTALLY FRIENDLY!

3 Eco-friendly advices for sensible heating

- common sense both environmentally and economically.

1. Effective lighting. Use dry brushwood, kindling and possible a piece of newspaper.
2. Light the fire with only little wood at a time - this gives the best combustion.
3. Use only dry wood - ie wood with a humidity of 15 to 22 percent.

The oven is wrapped in packaging that is recyclable. This must be disposed of according to national rules regarding the disposal of waste.

The glass can not be reused.

The glass should be discarded along with the residual waste from ceramics and porcelain.

Pyrex glass has a higher melting temperature and therefore can not be reused.

If discarded you make an important positive contribution to the environment.

Revision : 6
Date : 12-04-2023



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Introduction

Thank you for purchasing a RAIS wood burning stove.

A RAIS wood burning stove is more than just a heat source: it also shows that you care about design and quality in your home.

To make the most of your wood burning stove it is important that you read the manual thoroughly, before installing and using it.

In the case of warranty coverage, and for general queries regarding your wood burning stove, it is important that you know the stove's production number. We therefore recommend that you note down the number in the table below. The production number is located on the back of the stove at the bottom.

Warranty

Your RAIS wood burning stove comes with a 5 year warranty. The warranty, however, does not cover heat-insulating materials, glass and seals.

Any alterations made to the stove will void the warranty.

The name **bionic fire** a registered trademark.

Production number:

Produced by:

RAIS A/S

9900 Frederikshavn, DK

Date:

Distributor:

Specifications

	bionic fire ^{socket}	bionic fire ^{socket}	bionic fire ^{socket}
Nominal output (kW)	4.6	4.6	4.6
Min./Max. output (kW):	3 - 5.5	3 - 5.5	3 - 5.5
Heating area (m ²)	45-83	45-83	45-83
Stove's width/depth/height (mm) without socket	472-482-1064	472-482-1064	472-482-1064
Combustion chamber's width/depth/height (mm): upper combustion chamber	280-200-300	280-200-300	280-200-300
Recommended amount of wood when fuelling (kg). Distributed on 1-2 logs of wood of approx. 25 cm	1.1	1.1	1.1
Min. uptake / Min. draught (Pascal)	-12	-12	-12
Weight socket included (kg)	approx. 180 kg	approx. 215 kg	approx. 175 kg
Efficiency (%)	86	86	86
CO-emission at 13% O ₂ (%)	0.024	0.024	0.024
Particles emission acc. to NS3058/3059 (g/kg)	0.635	0.635	0.635
Dust measured acc. to Din+ (mg/Nm ³)	< 4	< 4	< 4
Smoke gas mass flow (g/s)	5.1	5.1	5.1
Smoke gas temperature (°C)	166°	166°	166°
Intermittent operation	Refuelling should be undertaken within 1½ hours		

Installation instructions

The following pages give instructions for the safe and proper installation of this heating appliance in the UK. These instructions cover the basic principles of installation, although detail may need slight modification to suit particular local site conditions. In all cases the installation must comply with current UK Building Regulations, Local Authority Byelaws and other specifications or regulations as they affect the installation of the stove. Please note that it is a legal requirement under England and Wales Building Regulations that the installation of the stove is either carried out under Local Authority Building Control approval or is installed by a Competent Person registered with a Government approved Competent Persons Scheme. HETAS Ltd operate such a Scheme and a listing of their Registered Competent Persons can be found on their website at www.hetas.co.uk.

It should be noted that the current Building Regulations requirements are given in Approved Document J. These requirements may also be met by adopting the relevant recommendations given in British Standards BS 8303 and BS EN 15287-1.

WARNING: Health and Safety Advice Notice

The installation of this heating appliance is governed by the Health and Safety at Work Act 1974. It is the responsibility of the installer to ensure that all requirements of this Act are met during the installation works. Attention is drawn in particular to the following:

Handling:

The appliance is a heavy item and adequate facilities must be available for loading, unloading and site handling.

Fire Cement:

Some types of fire cement are caustic and should not be allowed to come into contact with the skin. Protective gloves should be worn when handling fire cement. In case of contact with the skin wash immediately with plenty of water.

Asbestos:

This stove contains no asbestos. If there is a possibility of disturbing any asbestos in the course of installation then please seek specialist guidance and use appropriate protective equipment.

Metal Parts:

When installing or servicing this stove care should be taken to avoid the possibility of personal injury.

Important Warning – Preparatory Work and Safety Checks:

- This stove must not be installed into a chimney that serves any other heating appliance.
- It's recommended not have an extractor fan fitted in the same room as the stove as this can cause the stove to emit fumes into the room.
- If this appliance is installed into an existing chimney, the chimney must first be swept and examined for soundness and suitability before the appliance is installed (see also section headed "Chimney").

Convection

RAIS stoves are convection stoves. This means that the stove's back and side panels are not over-heated. Convection means that there is a circulation of air, which ensures that the heat is distributed more evenly throughout the entire room. The cold air is sucked in at the base of the stove up through the convection channel, which runs along the stove's combustion chamber. The heated air pours out at the top of the stove, which ensures a circulation of warm air throughout the room.

Chimney

The chimney is the driving force which makes the stove function. In order for the stove to perform satisfactorily the chimney height must be sufficient to ensure the correct draught of 14 to 18 Pa so as to clear the products of combustion and prevent problems of smoke emanating into the room when firing.

NOTE: A chimney height of not less than 4.5 metres measured vertically from the outlet of the stove to the top of the chimney should be satisfactory. Alternatively the calculation procedure given in BS 5854:1980 may be used as the basis for deciding whether a particular chimney design will provide sufficient draught.

The outlet from the chimney should be above the roof of the building in accordance with the provisions of Building Regulations Approved Document J.

If installation is into an existing chimney then it must be sound and have no cracks or other faults which might allow fumes into the house. Older properties, especially, may have chimney faults or the cross section may be too large i.e. more than 230 mm x 230 mm. Remedial action should be taken, if required, seeking expert advice, if necessary. If it is found necessary to line the chimney then a flue liner suitable for solid fuel must be used in accordance with Building Regulations Approved Document J.

Any existing chimney must be clear of obstruction and have been swept clean immediately before installation of the stove. If the stove is fitted in place of an open fire then the chimney should be swept one month after installation to clear any soot falls which may have occurred due to the difference in combustion between the stove and the open fire.

If there is no existing chimney then either a prefabricated block chimney in accordance with Building Regulations Approved Document J or a twin walled insulated stainless steel flue to BS 1856-1 can be used. These chimneys must be fitted in accordance with the manufacturer's instructions and Building Regulations.

A single wall metal fluepipe is suitable for connecting the stove to the chimney but is not suitable for using for the complete chimney. The chimney and connecting fluepipe must have a minimum diameter of 125 mm. Any bend in the chimney or connecting fluepipe should not exceed 45°. 90°bends should not be used.

Combustible material should not be located where the heat dissipating through the walls of fireplaces or flues could ignite it. Therefore when installing the stove in the presence of combustible materials due account must be taken of the guidance on the separation of combustible material given in Building Regulations Approved Document J and also in these stove instructions.

If it is found that there is excessive draught in the chimney then either an adjustable flue damper or alternatively a draught stabiliser should be fitted. The adjustable flue damper should not close off the flue entirely but should in its closed position leave a minimum continuous opening free area of at least 20 % of the total cross sectional area of the flue or fluepipe.

Adequate provision e.g. easily accessible soot door or doors must be provided for sweeping the chimney and connecting fluepipe.

You should also familiarise yourself with the draught conditions for chimneys with 2 flues.

The flue outlet spigot is either 150 mm (6") in diameter, or 129 mm (5") in diameter.

For strong draughts, the chimney or flue should be fitted with a draught stabiliser. In which case, it is important to ensure that there is a free flow-through area of minimum 20 cm² when the regulating gate is shut. Otherwise, the fuel energy may not be used optimally. If, at any time, you are unsure about the condition of the chimney, you should contact a chimney sweep.

Remember that access to the access door should be kept clear.

Installation

The **bionic fire**; a free standing stove and can be placed on various types of sockets.

When installing the wood burning stove, there are some rules which **MUST** be followed:

The stove must be set up and installed in accordance with all current national and local rules and regulations. Local authorities and a chimney specialist should be contacted prior to set up.

It is prohibited to carry out unauthorised alterations to the stove.

There must be plenty of fresh air in the room where the stove is being installed, in order to ensure proper combustion. Note that any mechanical exhaust ventilation - e.g. an extraction hood - may reduce the air supply. Any air grates must be placed in such a manner, that the air supply is not blocked.

The floor structure must be able to carry the weight of the wood burning stove, as well as the weight of a chimney, if necessary.

The stove is placed on fireproof material.

When you choose where to set up your RAIS wood burning stove, you should consider the heat distribution to the other rooms. This will enable you to get the best use out of your stove.

The stove should be set up at a safe distance from inflammable materials.

See the manufacturer's plate on the wood burning stove.

Upon receiving the stove must be inspected for defects.

NOTE!!

RAIS A/S recommends that the stove is installed by a qualified/competent Rais dealer or a fireplace fitter recommended by an authorized RAIS dealer.

See www.rais.com for dealer list.

Change of chimney connection

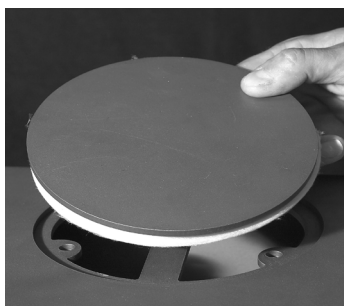
The stove is delivered ready for top outlet, but may be changed to back outlet in the following way:



Strike out the knock out plate at the rear of stove.



Remove the blanking plate and the packing, and position them in the hovel at the top. Ensure that the packing is positioned correctly. Screw all elements together with the three M6 nuts.



Mount the flue collar (supplied by the dealer) and the clamp for the upper smoke conductor with three M6x20 cylinder screws and M6 nuts.



Mount the parts in reverse order.

Installation distance in case of combustible wall

To determine whether the wall next to where the stove is going to be installed is flammable, you should contact your building contractor or the local building authorities.

The hearth should be able to accommodate the weight of the stove. The chimney must be independently supported by wall brackets or a ceiling support plate. The weight of the stove is indicated in the brochure.

The stove should always be installed on a non-combustible hearth of a size and construction that is in accordance with the provisions of the current UK Building Regulations Approved Document J.

If the stove is to be installed on a wooden floor, it must be covered with a non-combustible material at least 12 mm thick, in accordance with UK Building Regulations Approved Document J, to at distance of 300 mm in front of the stove and 150 mm to each side measuring from the door of the combustion chamber.

The clearance distances to combustible material beneath, surrounding or upon the hearth and walls adjacent to the hearth should comply with the guidance on the separation of combustible material given in UK Building Regulations Approved Document J and also in these stove instructions.

Installation distance in case of combustibile wall

Normal set-up - corner setting

Uninsulated flue

A. Distance to furniture (min.) 500 mm

Distance to flammable materials (min.)

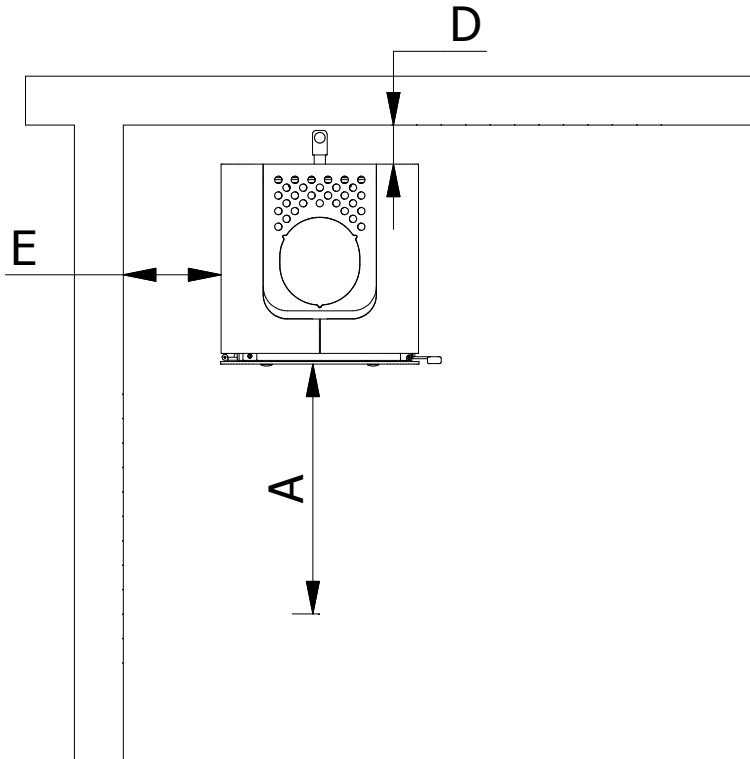
B. in front (floor) - if distances are not shown, national/local regulations are followed

C. to the side (floor) - if distances are not shown, national/local regulations are followed

D. to the rear (wall) 80 mm

E. o the side of the wall 200 mm

The distance D is changed to 80 mm due to the handle for the convection plate.



Corner setting 45°

Uninsulated flue

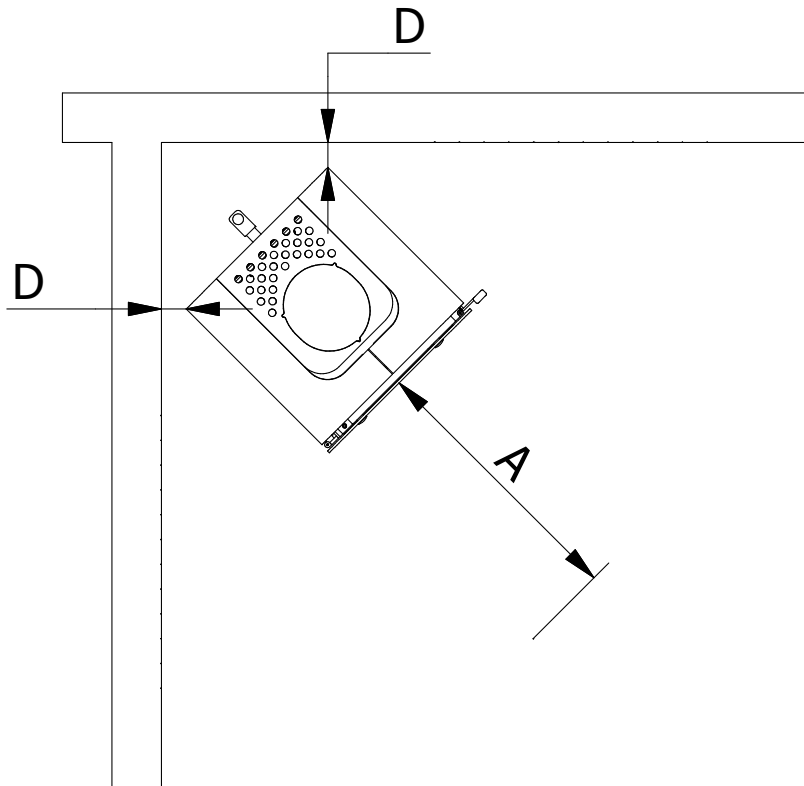
A. Distance to furniture (min.) 500 mm

Distance to flammable materials (min.):

B. in front (floor) - if distances are not shown, national/local regulations are followed

C. to the side (floor) - if distances are not shown, national/local regulations are followed

D. to the rear (wall) 50 mm

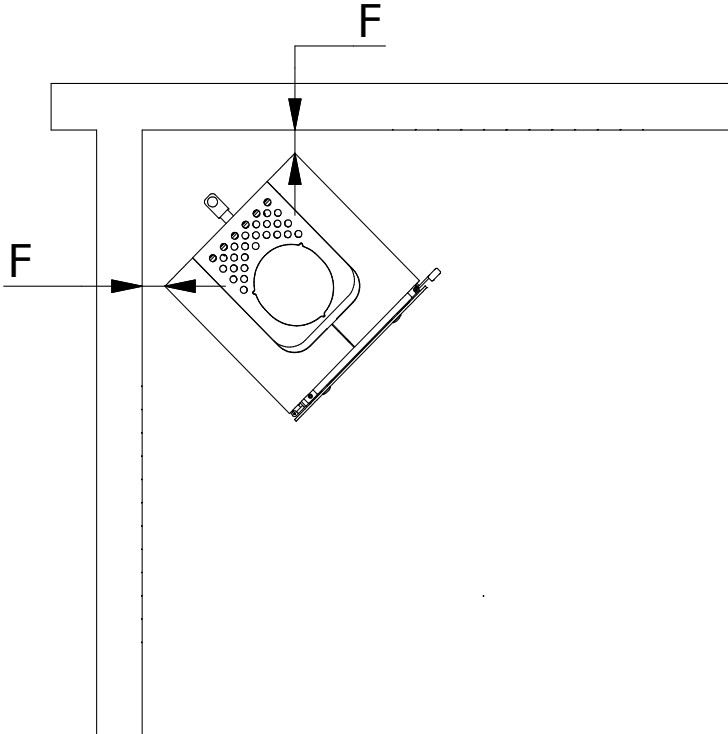


Installation distance in case of non-combustible wall

We recommend a minimum distance to non-combustible material of 50 mm (F) for cleaning considerations.

It should always be possible to access the access door.

At normal set-up - corner the distance F to back wall is 80mm due to the handle for the convection plate.



For the Installer

Finally before firing the stove for the first time a check should be made to ensure that the assembly and stove installation has been satisfactory and that there are no leaks in any seals in the appliance and appliance connections to the chimney.

Ensure that the appliance and chimney flue are functioning correctly before finally handing over to the user. If necessary read the later parts of this manual for guidance on care required when first lighting.

Inform the user that the appliance has been commissioned and ready to use and give instruction on the safe operation of the stove.

These Instructions must be left with the user and the user should be instructed to keep them in a safe place.

Operating instructions

Please note that HETAS Ltd Appliance Approval only covers the use of dry seasoned wood logs on this appliance. HETAS Ltd Approval does not cover the use of other fuels either alone or mixed with the wood logs, nor does it cover instructions for the use of other fuels.

Fuel

The stove is designed and approved in accordance with EN 13240 and NS 3058 for stoking split, dried firewood. The firewood must have a water content of 15-22% and its max. length should be the width of the combustion chamber minus 50-60 mm.

Stoking with wet firewood causes both soot, environmental pollution and bad fuel economy. Freshly cut wood contains approx. 50-70% water and is thoroughly unsuitable for stoking. Count min. 1 year of storage time for newly cut wood before using. Wood with a diameter of more than 100 mm should be split. Regardless of wood size, it should always have at least one surface area free of bark.

We do not recommend stoking with painted, laminated or impregnated wood, wood with a synthetic surface, painted refuse wood, chipboard, plywood, domestic waste, paper briquettes and pit coal, as this will produce malodorous smoke, which could be poisonous.

When firing with the above-mentioned items and amounts larger than those recommended, the stove is subjected to a larger amount of heat, which results in a higher chimney temperature and lower efficiency. This can result in the stove and chimney becoming damaged and would void the warranty.

The calorific value of the firewood is closely connected to the moisture level of the firewood. Moist firewood has a low heat value. The more water the wood contains, the more energy it takes for this water to vaporise, resulting in this energy being lost.

ONLY USE RECOMMENDED FUELS

The following table shows the calorific value of different types of wood, which have been stored for 2 years, and which have a residual moisture of 15-17%.

Wood	Kg dry wood pr. m ³	compared to beech/oak
Hornbeam	640	110%
Beech and oak	580	100%
Ash	570	98%
Maple	540	93%
Birch	510	88%
Mountain pine	480	83%
Fir	390	67%
Poplar	380	65%

1 kg of wood yields the same heat energy irrespective of wood type. 1 kg beech merely takes up less space than 1 kg of fir.

Drying and storage

Drying wood takes time: proper air drying takes approx. 2 years.

Here are some tips:

- Store the wood sawn, split and stacked in an airy, sunny place, which is protected against rain (the south side of the house is particularly suitable).
- Store the firewood stacks at a hand's breadth apart, as this ensures that the air flowing through takes the moisture with it.
- Avoid covering the firewood stacks with plastic, as this prevents the moisture from escaping.
- It is a good idea to bring the firewood into the house 2-3 days before you need it.

Room ventilation and stoves

There must not be an extractor fan fitted in the same room as the stove as this can cause the stove to emit smoke and fumes into the room.

The stove requires a permanent and adequate air supply in order for it to operate safely and efficiently.

In accordance with current Building Regulations the installer may have fitted a permanent air supply vent into the room in which the stove is installed to provide combustion air. This air vent should not under any circumstances be shut off or sealed.

Stove functioning

The stove has 2 combustion chambers:

- the upper combustion chamber (UCC) is for kindling/refuelling
- the lower combustion chamber (LCC) is for post-combustion and may **not** be used for kindling and refuelling

A post-combustion provides a good usage of the fuel energy and an almost complete combustion of the toxic and harmful substances from the smoke.

Upon lighting the air flows through the UCC and to the flue pipe (chimney). When the stove reaches a certain temperature, the air flow is diverted, and the still unburned gasses is lead from the UCC through an opening in the bottom stone plate to the LCC. Over the opening is placed a steel dome.

Flames are thus lead through the opening to the LCC for post-combustion of the gases.

Automatic regulation of combustion air

This stove is equipped with an independent and self-regulating air damper. Hence there is no damper handle.

The primary air is added to the primary combustion zone, i.e. the bed of glowing embers.

This cold air is only used in the lighting stage.

Secondary air is air added in the gas combustion zone, i.e. air which contributes to the combustion of the pyrolysis gasses (preheated air, which is used for the cleaner glass system and combustion). This air is sucked through the damper and is pre-heated through the side channels and then emitted as hot scavenging air onto the glass. The hot air rinses the glass and keeps it soot-free.

A clean combustion is indicated by clear yellow flames.

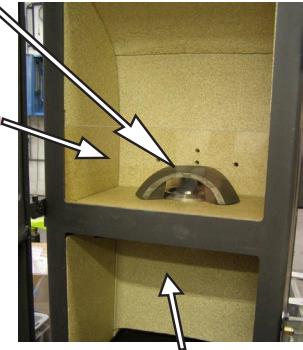
The pilot nozzles are placed in the back plate of the upper combustion chamber. They ensure that the bed of glowing embers is fed with air and therefore holds a high temperature. It provides a quick start when refuelling and reduces the risk of fire going out.

IMPORTANT! - during kindling/refuelling

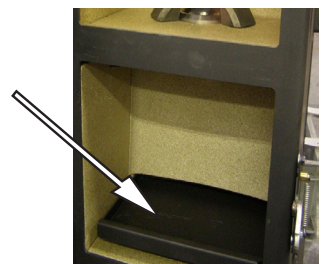
If an ash pan is used, it **must** be placed at the bottom of the lower combustion chamber.

Dome

Upper combustion chamber (UCC)



Lower combustion chamber (LCC)



First usage

IMPORTANT:

Place wood only in the upper combustion chamber This applies for kindling and refuelling.

A careful start pays off. Start with a small fire, so that the wood burning stove can get accustomed to the high temperature. This gives the best start and any damage is avoided.

Be aware that a strange but harmless odour and smoke concoction may emanate from the surface of the stove, the first time you fire up. This is because the paint and materials need to harden. The odour disappears quickly, but you should check the ventilation and draught, if possible. See also, the IMPORTANT warning notice below about persistent fumes.

During this process you must be careful not to touch the painted surfaces, and it is recommended that you regularly open and close the door to prevent the door seal from sticking.

The stove may also produce “clicking noises” during heating and cooling, caused by the large temperature differences which the material is subjected to.

Never use any type of liquid fuel for kindling or maintaining the fire. There is a danger of explosion.

The stove gets very hot when in use always wear protective gloves when tending the stove.

If the stove has not been used for a while, follow the steps as if you were using it for the first time.

IMPORTANT - Warning Note!

Properly installed, operated and maintained this appliance will not emit fumes into the dwelling. Occasional fumes from de-ashing and re-fuelling may occur. However, persistent fume emission is potentially dangerous and must not be tolerated. If fume emission does persist, the following immediate actions should be taken:

1. Open doors and windows to ventilate room.
2. Let the fire out or eject and safely dispose of fuel from the appliance.
3. Check for flue or chimney blockage, and clean if required.
4. Do not attempt to relight the fire until the cause of the fume emission has been identified and corrected. If necessary seek expert advice.

IMPORTANT - Warning Note!

Do not use an aerosol spray on or near the stove when it is alight.

IMPORTANT - Safety advice!

When using the stove in situations where children, aged and/or infirm persons are present a fireguard must be used to prevent accidental contact with the stove. The fireguard should be manufactured in accordance with BS 8423:2002 (Replaces BS 6539).

Lighting and fuelling

NOTE: If aircsystem is connected, the valve must be open.

TIPS before firing up:

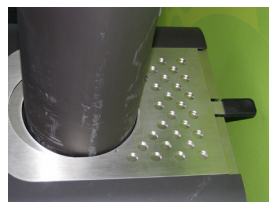
Open a door or window close to the wood burning. If there is a “storm” in the stove coming from the chimney, it is advisable to place a screwed-up piece of newspaper between the upper baffle plate and the chimney, set the paper on fire, and wait until you hear a “rumbling” noise in the chimney. This means that there definitely is a draught in the chimney and you avoid smoke in the room.

”Top-Down” lighting (see back of manual)

- Open the door and lock it using the small bracket at the bottom of the door.



- Start by placing 1 piece of split log - approx. 1 kilograms - at the bottom of the upper combustion chamber UCC in front of the dome close to the small front glas (1).
- Place approx. 1.2 kilograms of dry firewood, split into kindling sticks, behind the log (2) and a couple of alcohol briquettes or similar.
- Light the fire (3) and close the upper convection plate of the stove.



- Close the door and leave it ajar by tipping the handle.



- When the fire has caught the kindling (4) close the door completely (after approx. 5 min.).
- When the temperature reaches a certain value, the damper will divert the smoke. This causes a downward flame from the upper to the lower combustion chamber LCC (5-6).
- When the last flames are extinguished and there is a nice layer of embers (7), add 1-2 pieces wood - about 1-1 ½ kg (8). Place the wood on top of the dome at the rear of the UCC! Close the door completely.

NOTE!

If the fire has burned down too low (too small an ember), it may take longer time for the flames to be diverted to the LCC and thus achieve a cleaner burn.

When firing the smoke out of the chimney should be almost invisible; just a 'flicker' in the air is observed.

When refueling, open the door carefully to avoid smoke escaping. Never add wood while it is burning (flames!) in the stove.

RAIS recommends to refuel with 1-2 pieces wood - approx. 1-1 ½ kg - within 1½ hours (intermittent operation).

ATTENTION!!!

Keep an eye on the stove when lighting. During operation the door should always remain shut.

Control

Look for signs that indicates a correct firing in the stove:

- ash is white
- the walls of the combustion chamber is free of soot
- the wood is sufficiently dry

Recommended amount of wood for stoking the fire

To find the recommended amount of wood for stoking the fire, please refer to the table below.

The recommended amount of wood to burn after lighting depends on your stove model. Based on the nominal output of your stove, you can read the recommended amount of wood to use for stoking.

The nominal output can be read on both your oven's CE marking plate and our website.

STOKING TIME INTERVAL

The recommended fuel quantity should be stoked within 45–60 minutes from the last stoking.

The exact interval for when to stoke the volume of wood can be seen under "Specifications" in the stove's installation manual under "Intermittent operation".

RECOMMENDED VOLUME OF WOOD FOR STOKING WOOD-BURNING STOVES

Find the nominal output of your wood-burning stove to determine the recommended volume (kg) of wood you can burn.

Nominal output, kW (according to the CE marking plate)	Recommended volume of wood (kg)*
4 - 4.9	1.3 - 1.5
5 - 5.9	1.3 - 1.5
6 - 6.9	1.8

* The exact indication of the recommended volume of wood to be stoked (kg) is found in your stove's installation manual under "Specifications".

EXAMPLE OF DETERMINING THE RECOMMENDED VOLUME OF WOOD

By reading the CE marking plate on the Bionic Fire (or finding the nominal output on our website), you will see that the stove has a nominal output of 4.9 kW. See an example of a CE marking plate on the next page.

Based on the nominal output, the recommended volume of firewood for wood-burning stoves found in the table is 1.3–1.5 kg.

Nominal output, kW	Recommended volume of wood (kg)
4 - 4.9	1.3 - 1.5

Warning!!

If the firewood is only burning slowly without flames or is smoking, and too little air is added, unburned exhaust gasses are developed.

Exhaust gasses can be ignited and explode, leading to damage to material and possibly personal injury.



If there are only a few embers remaining you must light the fire again.

If you just add firewood the fire will not be lit, but unburned exhaust gasses will develop.



Here firewood has been added to an ember layer which is too small, and the air flow is too small - smoke is developed.



Avoid heavy smoke - danger of exhaust gas explosion.

In case of very heavy smoke, open the door and light the fire again.

Cleaning and care

Glass

Most woodstoves use a ceramic glass product which is resistant to heat but requires cleaning to keep its appearance.

Soot or opaque marks can easily be cleaned if the marks are fresh, however if you leave the glass dirty for any length of time the acid from the wood can etch the surface of the glass permanently (wet unseasoned wood, soft wood such as used in the building industry, pallet wood should be avoided).

Only clean when cold.

Use only stove glass cleaners to re-move heavy tar/ soot deposits.

All other marks can normally be removed with a damp cloth, then dry with a clean cloth or newspaper, do not let the glass dry before applying a dry clean cloth.

With more stubborn marks i.e. opaque areas/frosting, you need put a small amount of wood ash on a clean damp cloth. If the opaque mark/frosting doesn't come out, contact your dealer for a special remover.

Paint finish

The appliance has been coated with a high temperature paint which can last for years.

Do not clean with a damp cloth or any cleaning products as they can cause rust or discolouration. Only clean when cold use a brush with soft bristles or dust with a lint free cloth.

Only re-spray when necessary.

The wood burning stove and the chimney must be serviced by a chimney sweep twice a year. During cleaning and care, the stove must be cold.

Prolonged period of non-use:

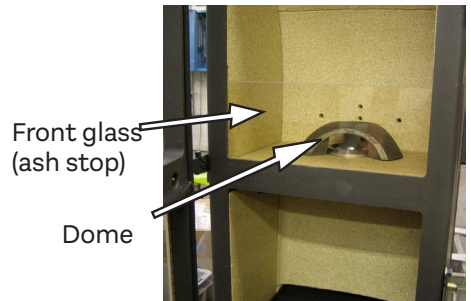
If the stove is to be left unused for a prolonged period of time then it should be given a thorough clean to remove ash and unburned fuel residues. To enable a good flow of air through the appliance to reduce condensation and subsequent damage, leave the air controls fully open.

Prior to a new heating season, it should be checked that the chimney and smoke gas connector are not blocked.

Cleaning the combustion chamber

Scrape/shovel the ash out and store it in a non-flammable container until it has cooled down. You can dispose of ash with your normal household waste.

REMEMBER!! Never remove all the ashes from the combustion chamber - the wood will burn at its best with a layer of ashes of approx. 20 mm. Remove gently the steel dome and the small front glass (ash stop).



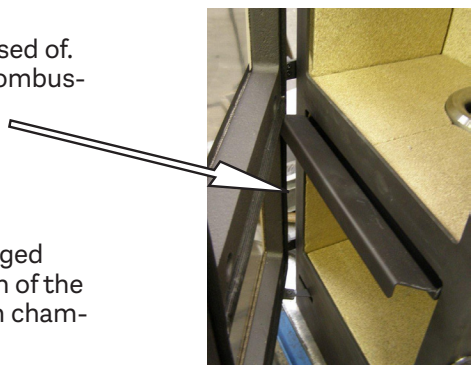
Regarding the cleaning of the upper combustion chamber the ash pan can be used. The pan is placed underneath the UCC in 2 brackets.



The ashes are swept on to the ash pan and disposed of. Replace the ash pan in its position in the lower combustion chamber again.

The ash pan must **not** remain under the upper combustion chamber:

- the door cannot be closed and can be damaged
- the ash pan will damage the special function of the stove (afterburning in the lower combustion chamber)



Cleaning of flue ways

Upper combustion chamber (UCC)

In order to access the flue way gently remove the smoke converter plate (vermiculite) by tilting it to one side and turning it a little slantwise.



Pull out the plate carefully.

Remove dirt and dust, and mount the parts in reverse order.

NOTE!!

Be careful when replacing the smoke converter plate.

Lower combustion chamber (LCC)

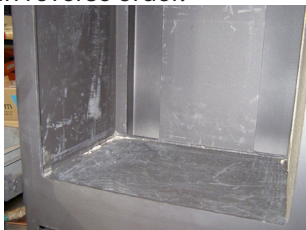
1. One bracket for the ash pan underneath the UCC is removed (use Allen key 4mm).
2. The bottom plate is gently lifted out of its position with f. ex. a wide slotted screwdriver.



3. The side plate is gently removed.
4. The back plate is gently removed.



5. Remove dirt and dust, and mount the parts in reverse order.



NOTE!!

- Be careful when replacing the plates.

Interruption of operation

Smoke spillage around door:

could be due to too low draught in the chimney $<12\text{Pa}$

- check whether the flue or chimney is blocked
- check whether the extraction hood is switched on; if it is, switch it off and open a window/door in the proximity of the stove for a short while.

Soot on glass:

could be caused by the firewood is too wet.

- make sure that the stove is heated properly when firing up, prior to closing the door

Stove is burning too strong:

could be caused by:

- leak around the door seal
- chimney draught too large $>22\text{ Pa}$, draught control regulator should be installed.

Stove is burning too weakly:

could be caused by:

- too small amount firewood
- too little air supply for room ventilation
- unclean smoke channels
- leaky chimney
- leakage between chimney and flue

If your stove continues to malfunction, we recommend that you contact your RAIS distributor or chimney sweep.

WARNING!!

In case of chimney fire:

- shut off all air supply from outside (if installed) to the stove
- contact the fire department
- never attempt to put out fire with water!
- afterwards, you should ask your chimney sweeper to check the stove and chimney

IMPORTANT!!

- to ensure safe burning there must be clear yellow flames or clear embers at all times.
- the firewood should not be smouldering.

Spare parts **bionic fire**

If spare parts other than those recommended by RAIS are used, the warranty is voided.

All replaceable parts can be bought as spare parts from your RAIS distributor. For reference see spare parts drawing (back of user manual).

Pos.	Quantity	Part no.	Description
1	1	8501090	Glass door
2	1	9502200	Fire brick set
3	1	1015500	Seal set for glass door
4	1	61-00	Flue collar 6"
5	1	8500912SV	Convection bottom plate
6	1	8500911mon	Convection top plate
7	1	8500913	Top outlet cover
8	1	8507010mon	Concrete back panel
9	1	8500127sort	Back panel for steel/wooden socket
10	1	8500107sort	Back panel for concrete socket
11	2	9501890	Closing mechanism
12	1	8500101sort	Side panel left – concrete/wooden socket
13	1	8500102sort	Side panel right – concrete/wooden socket
14	1	8500121sort	Side panel left – steel socket
15	1	8500122sort	Side panel right – steel socket
16	1	8500401	Concrete socket
17	1	8500402sort	Steel socket
18	1	850041190	Wooden socket
19	1	8504101	Reflector plate for wooden socket
20	1	9505010	Stop for ashes (glass)
21	1	9502250	Dome top
22	1	9502251	Dome bottom
23	1	9502252	Flame guard
24	1	61-105	Flue collar 5"



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Rev	Dato	Tekst
5	15-12-2022	Nye CE labels med UKCA tilføjet
6	12-04-2023	Anbefalet fyringsmængde og overfyring tilføjet