User's Manual **EN**

Autopilot IHS™

05.09.2017 / 97-9688

www.hwam.com

HWAM intelligent heat

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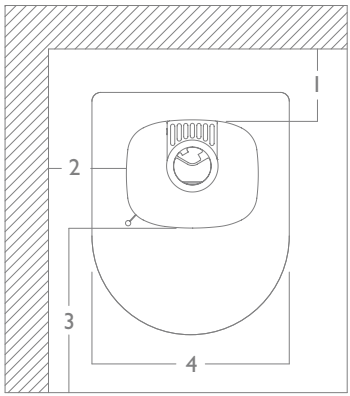

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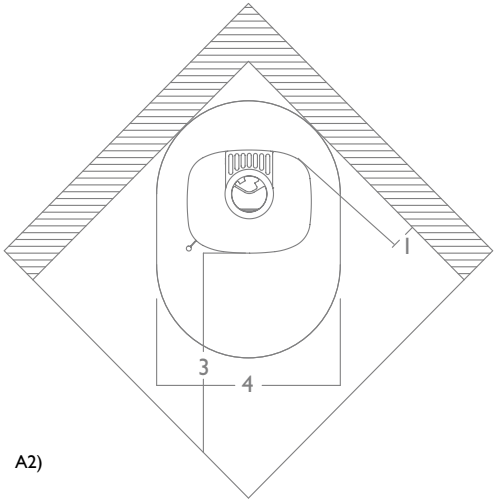

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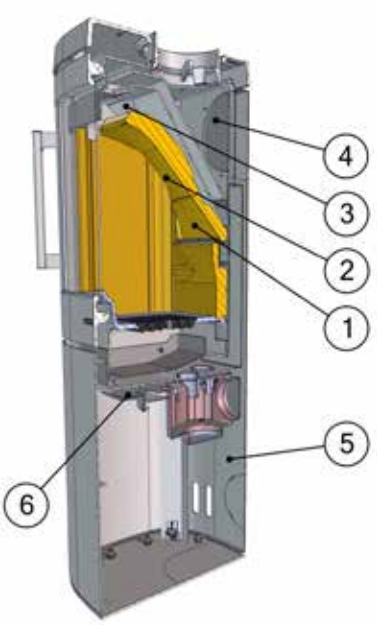

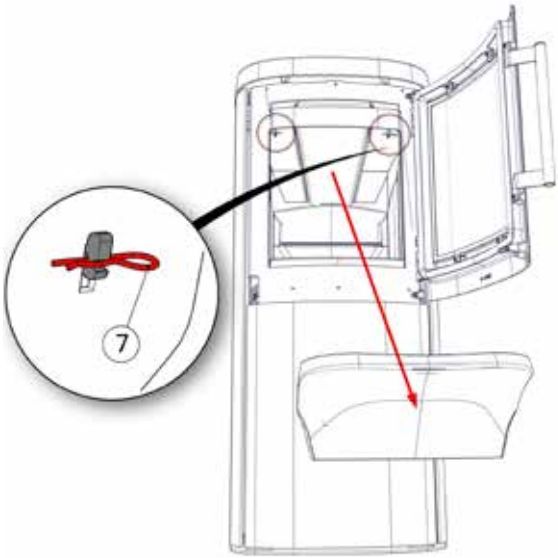

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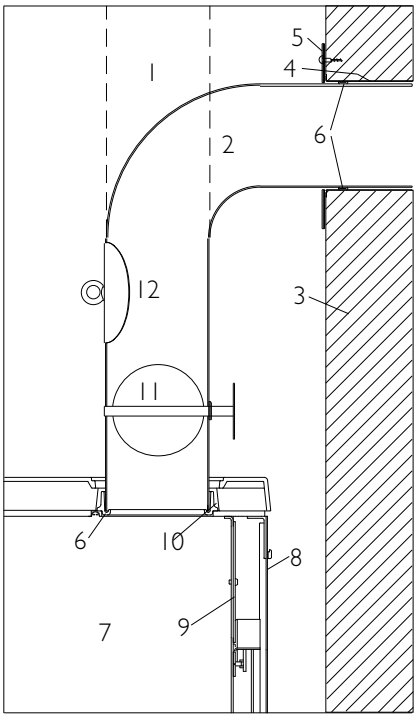

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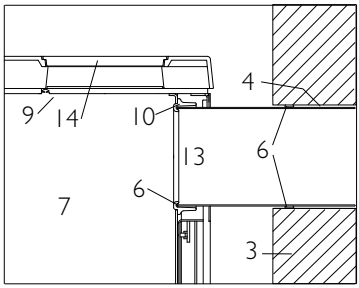

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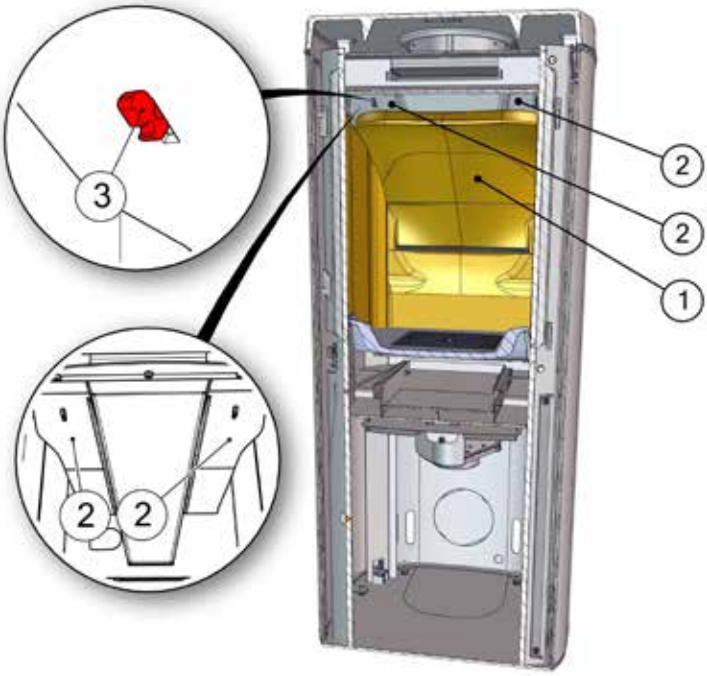

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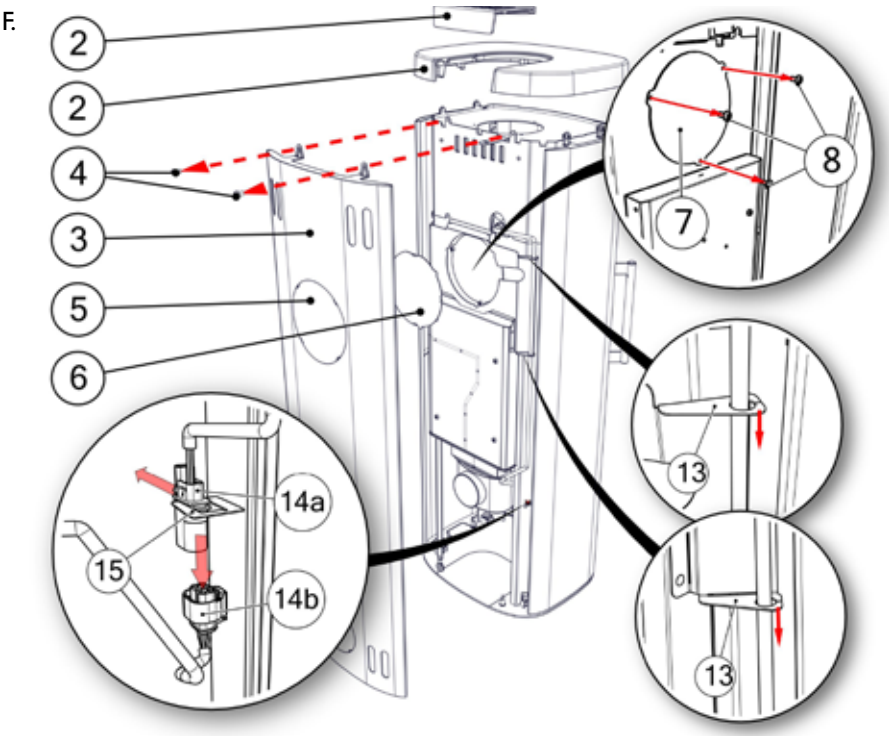

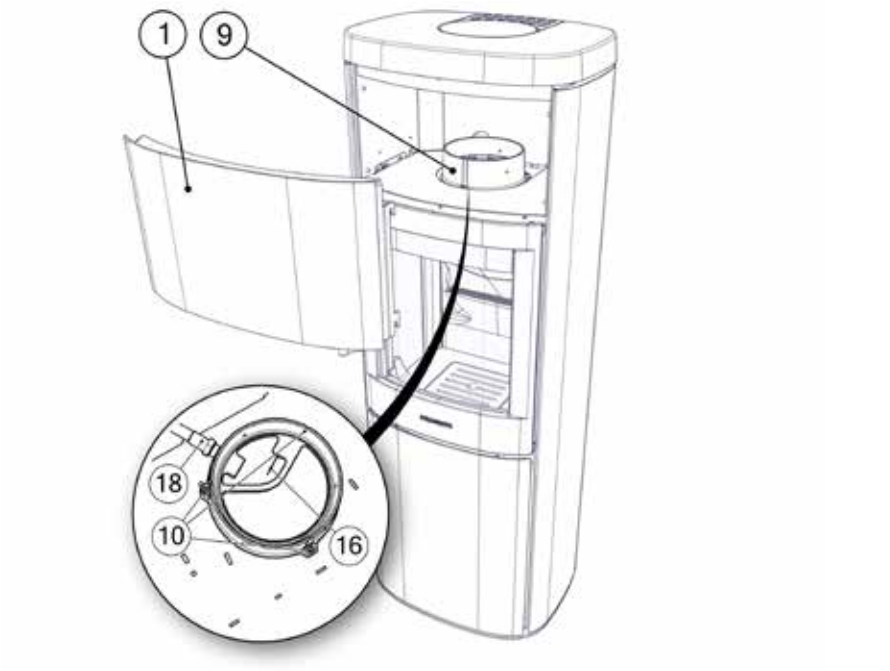

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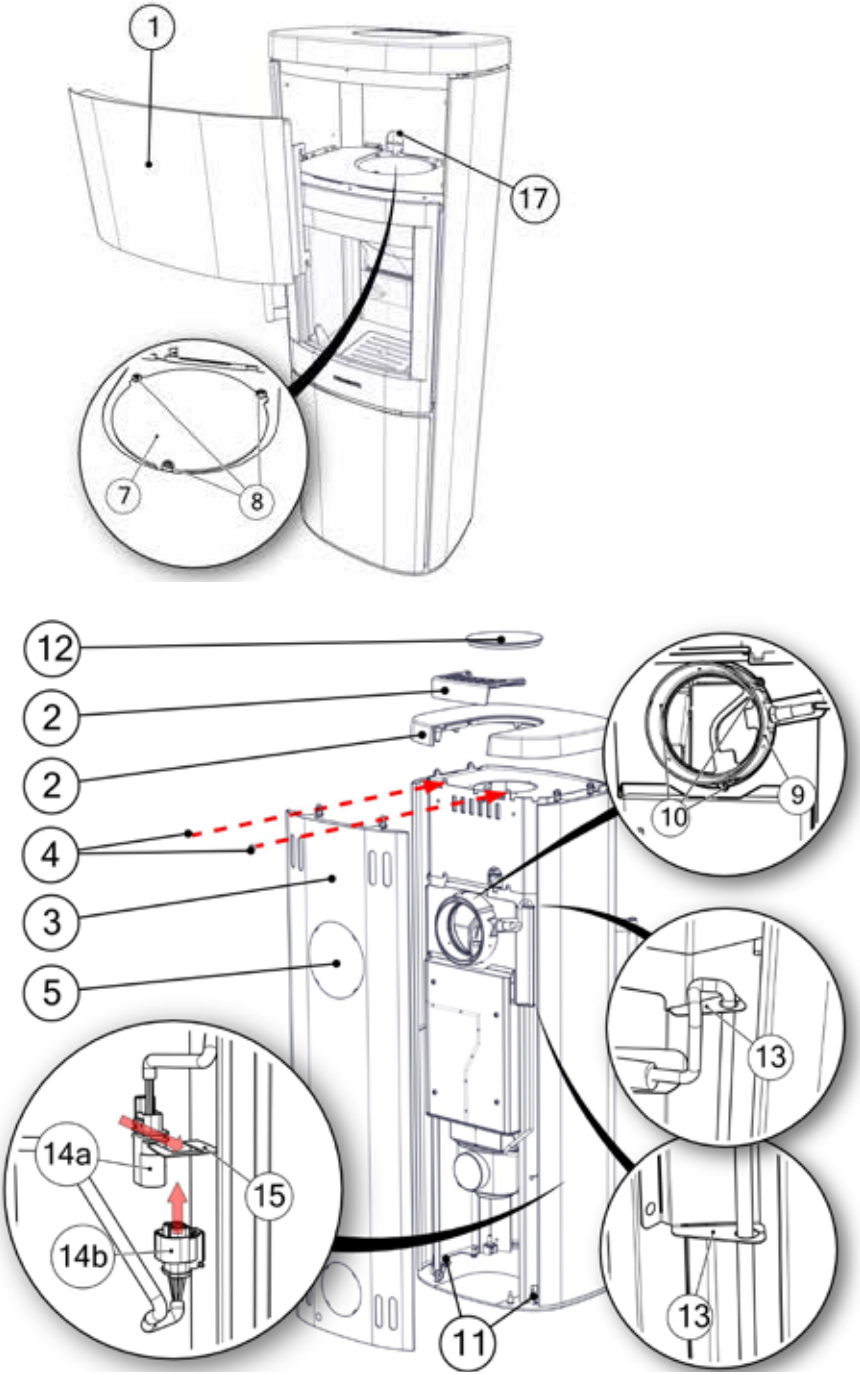

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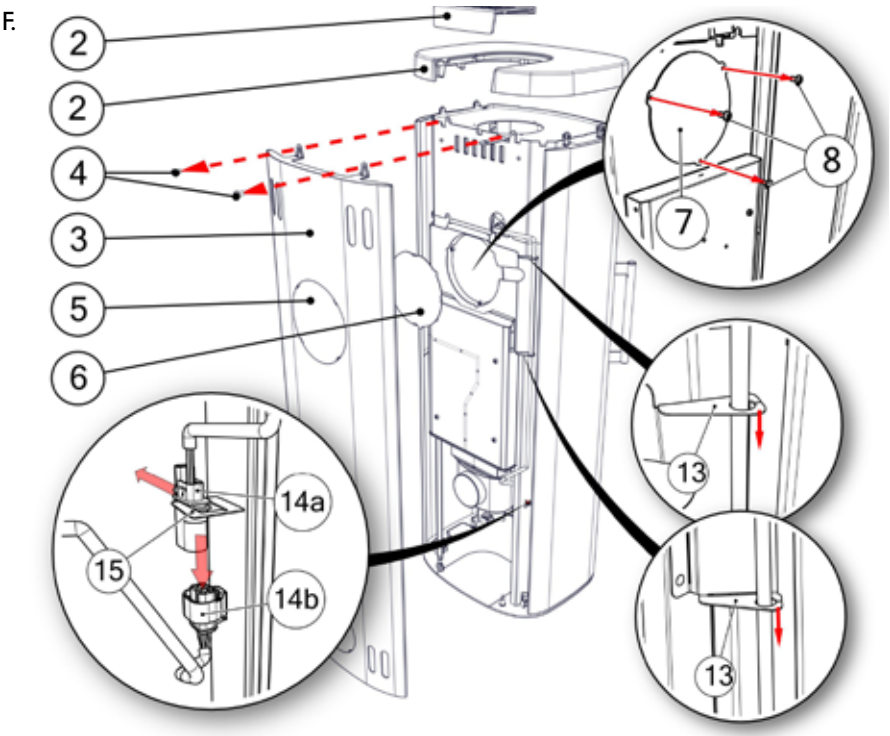

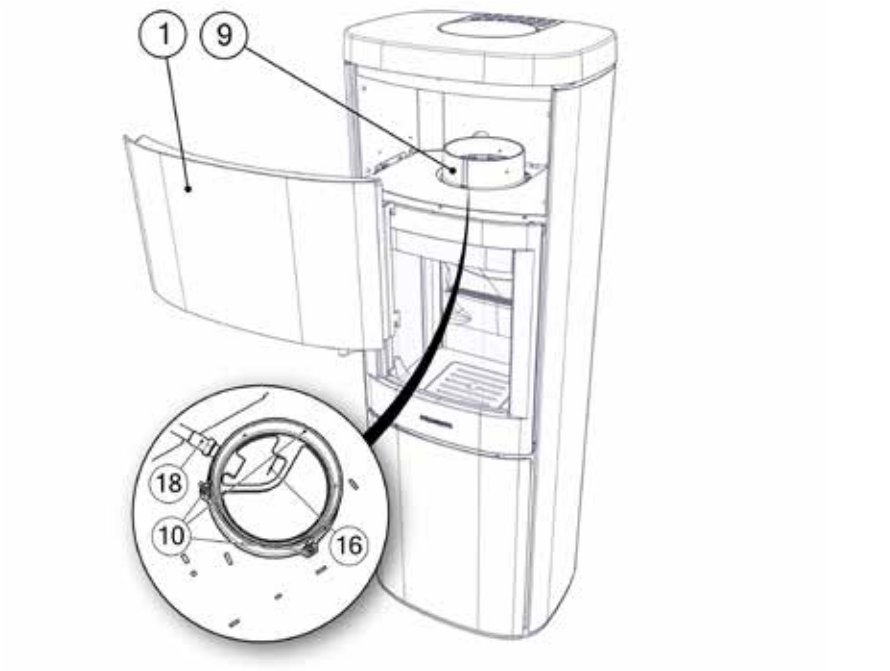

Congratulations on your new wood-burning stove complete with a HWAM Autopilot IHS™
IHS is short for "Intelligent Heat System", which is a digital control of the combustion in your new wood-burning stove. The purpose of the HWAM Autopilot IHS™ is to control the combustion in an environmentally optimal and economically efficient way, with a view to generating greater user comfort.

The HWAM Autopilot IHS™ is a new patented technology, which electronically adjusts the air supply to the combustion chamber. Your new wood-burning stove continually measures the temperature and the oxygen levels of the combustion. Moreover, it is programmed to supply oxygen to the fire through three important air inlets in the right amount, and at the right time and place in the combustion chamber. By downloading a free app for your smartphone or tablet, you can use the app among other things: to set the thermostat to the desired room temperature level, choose time for night-time reduction and keep your stove updated. The app also gives you current information on burning in the stove. See details in separate manual.

Your new wood-burning stove and the HWAM Autopilot IHS™ will ensure the cleanest possible combustion as well as a good fuel economy, regardless of external conditions such as the type of firewood used, the chimney, the user's experience, and other external circumstances.

The HWAM Autopilot IHS™ consists of the following components:

- Air box: the Air box contains a printed circuit board/software, as well as three motors that control primary, secondary, and tertiary combustion air. The fresh air system can be mounted on the Air box to the rear or in the bottom.
- Two sensors: a temperature sensor and an oxygen sensor transmit information from the wood-burning stove to the Air box.
- Room temperature sensor: The room temperature sensor with batteries communicates with the IHS system via a wireless connection. It should be placed so it does not have direct radiant heat from the stove. Note that the maximum distance between stove and room temperature indicator is about 10 metres. The range is reduced if there are walls or other obstructions between the stove and the room temperature indicator.
- Electricity supply: from the Air box to the nearest wall socket.
- App "IHS Smart Control™: The app can be downloaded free from the App Store or Google Play Store. See details in separate manual.

Wood-burning stove with HWAM Autopilot IHS™

Oxygen sensor
Temperature sensor

IHS app

Air box air inlet
Connection to fresh air system

Electricity supply
USB connection

For UK - The Clean Air Act 1993 and Smoke Control Areas

Under the Clean Air Act local authorities may declare the whole or part of the district of the authority to be a smoke control area. It is an offence to emit smoke from a chimney of a building, from a furnace or from any fixed boiler if located in a designated smoke control area. It is also an offence to acquire an "unauthorised fuel" for use within a smoke control area unless it is used in an "exempt" appliance ("exempted" from the controls which generally apply in the smoke control area).

In England appliances are exempted by publication on a list by the Secretary of State in accordance with changes made to sections 20 and 21 of the Clean Air Act 1993 by section 15 of the Deregulation Act 2015. Similarly in Scotland appliances are exempted by publication on a list by Scottish Ministers under section 50 of the Regulatory Reform (Scotland) Act 2014. In Northern Ireland appliances are exempted by publication on a list by the Department of Agriculture, Environment and Rural Affairs under Section 16 of the Environmental Better Regulation Act (Northern Ireland) 2016. In Wales these are authorised by regulations made by Welsh Ministers.

Further information on the requirements of the Clean Air Act can be found here: https://www.gov.uk/smoke-control-area-rules. Your local authority is responsible for implementing the Clean Air Act 1993 including designation and supervision of smoke control areas and you can contact them for details of Clean Air Act requirements.

The HWAM 4500 IHS stoves detailed below have been recommended as suitable for use in smoke control areas when burning wood logs.

Appliances recommended as suitable for use in Smoke Control Areas :

- HWAM 4510c/4510m IHS
- HWAM 4520c/4520m IHS
- HWAM 4530c/4530m IHS
- HWAM 4540c/4540m IHS, HWAM 4540c/4540m IHS with soapstone, HWAM 4540c/4540m IHS with sandstone
- HWAM 4550c/4550m IHS
- HWAM 4560c/4560m IHS, HWAM 4560c/4560m IHS with soapstone, HWAM 4560c/4560m IHS with sandstone

Refuelling on to a low fire bed

If there is insufficient burning material in the firebed to light a new fuel charge, excessive smoke emission can occur. Refuelling must be carried out onto a sufficient quantity of glowing embers and ash that the new fuel charge will ignite in a reasonable period. If there are too few embers in the fire bed, add suitable kindling to prevent excessive smoke.

Fuel overloading

The maximum amount of fuel specified in this manual should not be exceeded, overloading can cause excess smoke.

Operation with door left open

Operation with the door open can cause excess smoke. The appliance must not be operated with the appliance door left open except as directed in the instructions.

INSTALLATION

General information
Installation of your HWAM woodburning stove must always comply with local building regulations. It is a good idea to consult your local chimney sweep before installing, since he will be the one to sweep the chimney and stove.

Always follow the instructions of the manual carefully and make sure that the installation is carried out by a qualified professional. HWAM packaging material should always be handled in accordance with the local rules for waste handling.

Room requirements
There must be a constant supply of fresh air to the room in which the stove is to be installed. The woodburning stove uses approx. 9-20 m^3 air per hour. In comparison, a modern cooker hood sucks up to 1000m^3 air per hour. A window that opens or an adjustable air vent should be sufficient, but it is also possible to connect the stove to a HWAM fresh air system. The air inlet/grating must be placed so that they do not become blocked.

Technical data
Before installing the stove, you must ensure that the load-bearing capacity of the floor can withstand the weight of the stove and the chimney. The weight of the chimney should be calculated according to its dimensions and height. Weight of the stove:

Model	Weight	Height	Width	Depth
HWAM 4510c/4510m	99/97 kg	75,5 cm	50,0 cm	40,6 cm
HWAM 4510c/4510m with low plinth	105/103 kg	93,0 cm	50,0 cm	40,6 cm
HWAM 4510c/4510m with high plinth	109/107 kg	104,0 cm	50,0 cm	40,6 cm
HWAM 4520c/4520m	94/92 kg	75,5 cm	50,0 cm	40,6 cm
HWAM 4520c/4520m with low plinth	100/98 kg	93,0 cm	50,0 cm	40,6 cm
HWAM 4520c/4520m with high plinth	104/102 kg	104,0 cm	50,0 cm	40,6 cm
HWAM 4530c/4530m	124/122 kg	114,3 cm	50,0 cm	40,6 cm
HWAM 4540c/4540m	119/117 kg	114,3 cm	50,0 cm	40,6 cm
HWAM 4540c/4540m with soapstone	175/173 kg	114,3 cm	50,0 cm	40,6 cm
HWAM 4540c/4540m with sandstone	136/134 kg	114,3 cm	50,0 cm	40,6 cm
HWAM 4550c/4550m	134/132 kg	138,8 cm	50,0 cm	40,6 cm
HWAM 4560c/4560m	129/127 kg	138,8 cm	50,0 cm	40,6 cm
HWAM 4560c/4560m with soapstone	201/199 kg	138,8 cm	50,0 cm	40,6 cm
HWAM 4560c/4560m with sandstone	156/154 kg	138,8 cm	50,0 cm	40,6 cm
Heat storage stones HWAM 4550/4560	Approx. 29 kg			

The stove is mainly made of sheet iron, with some items made of cast iron. The HWAM Autopilot IHS™ is an electronic product primarily consisting of plastic, a printed circuit board and wires.

Test result based on EN 13240	
Nominal heating effect	4.9 kW
Flue gas temperature EN 13240 measurement point	270°C
Flue gas temperature measured in the outlet socket	324°C
Exhaust gas flow	4.0 g/s
Efficiency	81%
Test result based on NS 3058	
Particle emissions	3.29 g/kg

Distance to inflammable materials

Your HWAM stove must always be installed on a non-combustible foundation. If it is set up on a wooden floor or another combustible material, the floor must always be covered with non-combustible material, e.g. a floor plate. The width and depth (distance in front of the stove) of the non-combustible material are determined according to relevant national and local building regulations. If there is risk of embers falling under the stove, the non-combustible material must also cover the floor under the entire bottom plate of the stove as well as the area next to the stove in accordance with national rules. The non-flammable material must be of a size that is sufficient to prevent embers from falling out on the combustible floor.

Min. distances - uninsulated flue gas pipe: (drawing A)	**With steel cladding**		**With stone cladding**
	HWAM 4510 HWAM 4530 HWAM 4550	**HWAM 4520 HWAM 4540 HWAM 4560**	**HWAM 4540 HWAM 4560**
1. Recommended for brick wall, back, cm	10	10	10
2. Recommended for brick wall, side, cm	30	10	10
1. For inflammable wall, back, cm	10	10	10
2. For inflammable wall, side, cm	59	35	40
1. To inflammable wall, corner installation, cm	33	7	7
3. Distance to furnishings in front, cm	120	110	110

IMPORTANT FOR UK (for all other countries please see separate text below)

- **In case of wall installation, HWAM 4510/4520 must be suspended at least 17.5 cm above an inflammable floor (measured from the bottom plate of the stove). The above requirement applies even if the floor is fitted with a floor plate.**
- **The variant HWAM 4510/4520 without a plinth must be installed on a BS non combustible/constructional hearth. The non combustible/constructional hearth must extend 425 mm in front of the appliance. It is still considered a combustible floor even if an ember catching, non-combustible floor plate is placed on top of the combustible floor. Floor in front exceed 100°C demand closer than 425 mm in front of the stove installed without a plinth.**
- **Floor directly beneath the stove installed without a plinth does exceed 100°C.**

Take note of the applicable regulations for the distance between the wall and flue pipe.
The distance to a brick wall is set to faciliate the servicing of the HWAM Autopilot IHS™.

Please be aware that not all glass parts are heat-resistant. For this reason, a glass wall should sometimes be treated as a flammable wall, in which case we ask you to contact your local chimney sweep or glass producer to hear at what distance the stove should be kept from glass.

IMPORTANT FOR ALL COUNTRIES BUT UK (for UK please see separate text above)

- **In case of wall installation, HWAM 4510/4520 must be suspended at least 28.5 cm above an inflammable floor (measured from the bottom plate of the stove). The above requirement applies even if the floor is fitted with a floor plate.**
- **HWAM 4510/4520 without a plinth and HWAM 4510/4520 with a low plinth must not be mounted on combustible floors. It is still considered a combustible floor even if an ember catching, non-combustible floor plate is placed on top of the combustible floor.**
- **A non-combustible structure under HWAM 4510/4520 without a plinth and HWAM 4510/4520 with a low plinth must extend at least 480 mm in front of the stove.**

Take note of the applicable regulations for the distance between the wall and flue pipe.
The distance to a brick wall is set to faciliate the servicing of the HWAM Autopilot IHS™.

Please be aware that not all glass parts are heat-resistant. For this reason, a glass wall should sometimes be treated as a flammable wall, in which case we ask you to contact your local chimney sweep or glass producer to hear at what distance the stove should be kept from glass.

Requirements for chimney and smoke pipe

The chimney must be of a sufficient height to enable an adequate draft and to prevent smoke problems. The stove requires a draft of at least 12 Pa. The chimney must have a minimum opening equivalent to Ø 15 cm. The chimney opening should always be at least the size of the outlet socket of the stove. The chimney must have an easily accessible soot door. Smoke pipe and chimney must always be suitable for a stove connection. Ask your HWAM dealer for more information.

Changing the smoke outlet from top outlet to rear outlet - HWAM 4510/4520/4530/4540 (Drawing F)

1. Lift the top plate (2) off the stove.
2. Remove the rear plate (3) by loosening the two screws (4). The rear plate has a cut-out for the flue pipe. Cut out the plate (5) within this cut-out.
3. The heat shield has a cut-out for the flue pipe. Cut out the plate (6) within this cut-out.
4. Remove the cover plate (7) on the rear of the stove (behind the cut-out plate in the heat shield) by removing the three screws (8).
5. Remove the smoke ring (9) above the combustion chamber by removing the three screws (10).
6. Place the smoke ring (9) in front of the flue outlet hole on the rear of the stove and affix using the three screws (10).
7. Place the cover plate (7) so that it closes the flue outlet on top of the combustion chamber (where the smoke ring was just removed) and affix using the three screws (8).
8. Place the rear plate (3) on the guide taps (11) on the rear side of the stove's base plate and affix the rear plate using the two top screws (4).
9. Lie the top plate (2) on the stove.
10. Place the cast-iron or stone top cover (12) in the hole in the top plate.

Changing the smoke outlet from top outlet to rear outlet - HWAM 4550/4560 (Drawing F)

1. Remove the heat storage compartment front (1) by lifting the front and pulling away from the stove.
2. Lift the top plate (2) off the stove.
3. Remove the rear plate (3) by loosening the two screws (4). The rear plate has a cut-out for the flue pipe. Cut out the plate (5) within this cut-out.
4. The heat shield has a cut-out for the flue pipe. Cut out the plate (6) within this cut-out.
5. Remove the cover plate (7) on the rear of the stove (behind the cut-out plate in the heat shield) by removing the three screws (8).
6. Open the metallic tabs (13) and take the wires out.
7. Disassemble the lambda sensor coupling (14a+14b) and pull its upper part free from the wire fastener (15).
8. Remove the temperature monitor (16) from the smoke ring (9) and then pull it out of the hole (17) at the rear end of the heat storage compartment.
9. Remove the smoke ring (9) above the combustion chamber by removing the three screws (10). Remove the smoke ring (9) through the front opening of the heat storage compartment and then pull the lambda sensor, including the topmost part of the wire, through the hole (17) at the rear end of the heat storage compartment.
10. Place the smoke ring (9) in front of the flue outlet hole on the rear of the stove and affix using the three screws (10).
11. Reattach the temperature monitor (16) in the smoke ring, leading the sensor about 3 cm into the smoke ring.
12. Assemble the lambda sensor (14a+14b) and fit it back into the wire fastener (15).
13. Fix the two wires by closing the metallic tabs (13) again.

14. Place the cover plate (7) so that it closes the flue outlet on top of the combustion chamber (where the smoke ring was just removed) and affix using the three screws (8).
15. Place the rear plate (3) on the guide taps (11) on the rear side of the stove's base plate and affix the rear plate using the two top screws (4).
16. Lie the top plate (2) on the stove.
17. Place the cast-iron or stone top cover (12) in the hole in the top plate.
18. Re-attach the front (1) to the heat storage compartment.

Fitting the loose parts

Before the stove is installed, you must ensure that all loose parts are fitted correctly. Make sure that the chimney is tight and that no false draft is caused around neither the cover plate, in connection with a covered smoke outlet, nor the cleanout door and pipe connections. Please note that bent and/or horizontal smoke pipes will reduce the effect of the chimney draft.

Vertical cross-section of the stoves (Drawing B)

1. Bottom smoke shelf. Must rest on the steel rail at the back of the combustion chamber.
2. Top smoke shelf. Must rest on the bottom smoke shelf.
3. The steel smoke guide plate is in two parts. Each half hangs on a hook under the top plate and is equipped with two pins (7) that serve as protection during transportation. Remember to remove the two pins before you start using the stove.
4. Rear flue outlet. Closed at the factory using a plate affixed with screws. The flue outlet is thus concealed behind the rear plate.
5. Removable rear plate. Must always be installed if the stove is next to a flammable wall.
6. Loose heat shield under the ash pan.

Adjustment feet

The stove comes with four adjustment feet. Mount and adjust the adjustable feet screws in accordance with the separate instructions, 2 in each side, to the desired height.

Connecting and preparing the HWAM Autopilot IHS™

Before the stove can be used it must be connected and prepared. Start by connecting the power adapter to the Airbox that sits in the space under the combustion chamber.

Air box withour power supply. *Air box with power supply.*

Follow the instructions in the separate manual for linking stove, room temperature sensor and app. If you do not wish to use an app to control the stove, a remote control can be purchased. In this case, follow the instructions in the manual supplied with the remote control. The remote control replaces the use of room temperature sensor and app.

Before the first lighting of the stove, it is important to run a self-test of the system to ensure that everything works as it should. See separate instructions for either app or remote control for more information.

Connection to chimney

All the stoves have both rear and top smoke outlet that can be connected to an approved steel chimney on top or directly out at the rear to a chimney.

Make sure that the chimney is tight and that no false draft is caused around neither the cover plate, in connection with a covered smoke outlet, nor the cleanout door and pipe connections. Please note that bent and/or horizontal smoke pipes will reduce the effect of the chimney draft.

Vertical cross-section of smoke flue (Drawing C)
C1: Top smoke outlet
C2: Rear smoke outlet
1. Steel chimney.
2. Flue gas elbow. Fits into smoke flue socket.
3. Brick-built jamb of flue.
4. Built-in pipe sleeve. Fits smoke flue.
5. Wall rosette. Covers disruption to wall around pipe sleeve.
6. Joint. Sealed with packing material.
7. Smoke outlets of the HWAM stove.
8. Cover plate in the external rear plate – break off if a rear outlet is required.
9. Cover screwed in position: secure it to the top plate with screws if a rear outlet is required.
10. Smoke bushing: to be screwed to the back of the stove if a rear outlet is required.
11. Adjusting damper in smoke pipe.
12. Cleaning hatch.
13. Smoke pipe to rear outlet.
14. Loose cast iron cover: to be placed on the top plate when there is a rear outlet.

Chimney
The chimney is the "engine" of the stove and it is crucial for the functioning of the woodburning stove. The chimney draft provides a partial vacuum in the stove. The partial vacuum removes the smoke from the stove, sucks air through the damper to the so-called pane flush mechanism, which keeps the window pane soot free, and sucks air into the combustion via the HWAM Autopilot IHS™.

The chimney draft is created by the differences in temperature inside and outside the chimney. The higher the temperature within the chimney, the greater the draft (a brick chimney takes longer to warm up than a steel chimney). On days where the weather and wind conditions create insufficient draught inside the chimney, it is even more important to warm up the chimney as quickly as possible. The trick is to quickly get some flames going. Split the wood into extra fine pieces, use an extra firelighter, etc.

If the stove has not been used for a longer period, it is important to check that the chimney pipe is not blocked. It is possible to connect several devices to the same chimney. However, it is important to first check the applicable rules.

Even a good chimney can function badly if it is not used correctly. Similarly, a bad chimney may function well if used correctly.

Chimney sweeping
To prevent the risk of chimney fires, the chimney must be cleaned every year. The flue duct and the smoke chamber above the baffle plate must be cleaned together with the chimney. If the chimney is too tall to be cleaned from above, it must be equipped with a soot door.

In case of a chimney fire and overheating, the HWAM Autopilot IHS™ will enter a security mode and automatically adjust all dampers, effectively quenching the fire. Do not open the stove door, since that might cause the fire to rekindle. Contact the fire brigade. After a fire, the stove should be checked by a chimney sweep before use.

FIRING MANUAL - WOOD

When you light the stove for the first time it should not be stoked excessively as all the materials must be given time to adapt to the effects of heat. The lacquer will be fully hardened after the stove has been used, and the door and the ashpan should be opened very carefully as there will otherwise be a risk that the gaskets will stick to the lacquer. In addition the lacquer may initially give off an unpleasant odour, so make sure that the room is well ventilated.

Tips about fuel

Approved fuel types

The wood burning stove is EN approved for combustion of wood only. It is recommended to use dried chopped wood with a water content of a maximum of 18%. Stoking a fire with wet wood results in soot, environmental problems, and a less efficient fuel economy. It is recommended to purchase a hygrometer to continuously check that the firewood has the correct moisture content before using it for firing.

Recommended wood types

All types of wood, for instance birch, beech, oak, elm, ash, conifers, and fruit trees can be used as fuel in your wood burning stove. The great difference is not in the fuel value, but in the weight of the wood types per cubic metre. Since beech weighs more per cubic metre than for instance common spruce, it will take more common spruce to produce the same amount of heat that you would get from a cubic metre of beech.

Banned fuel types

It is not allowed to stoke a fire with the following: printed matter, plywood, plastic, rubber, fluid fuels, and rubbish such as milk cartons, lacquered wood or impregnated wood or fossil fuels. The reason that you should not apply any of the above is that during combustion they develop substances that are health hazardous and harmful to the environment. These substances could also damage your wood burning stove and chimney, rendering the product warranty void.

Storage of wood

The wood's water content of a maximum of 18% is reached by storing the wood for a minimum of one year, preferably outdoors in an open shed exposed to sun and wind.
The wood must be dry (max. 18% water contents) before it is stored indoors. It is recommended that kindling wood is stored indoors for a couple of days prior to use.

Recommended dimensions

The dimensions of the fuel are important to good combustion. The dimensions should be as follows:

Fuel type	Length in cm	Diameter in cm
Wood for kindling a fire (finely chopped)	20-31	2-5
Chopped wood	20-31	7-9

Special fire lighting guide for stoves with soapstone or sandstone cladding

Soapstone and sandstone are natural products which need to adjust to temperature changes. We recommend following the procedure below:

1. The first stoking

Open the door. Place two pieces of wood (5-8 cm in diameter) horizontally in the bottom of the combustion compartment (corresponding to 0.9-1.15 kg). Place 6-10 pieces of kindling randomly on top. Place 2-4 firelighters between the top layer of kindling. Light up the fire-lighters and close the stove door. Set the temperature level to level 1. Let the fire burn out and do not restoke even if there is a restoking alarm. When the fire has died out completely, the door must be opened and stay open while the stove cools down to room temperature.

2. The second stoking
Open the door. Place two pieces of wood (5-8 cm in diameter) horizontally in the bottom of the combustion compartment (corresponding to 0.9-1.15 kg). Place 6-10 pieces of kindling randomly on top. Place 2-4 firelighters between the top layer of kindling. Light up the fire-lighters and close the stove door. Set the temperature level to level 2. When there is a restoking alarm, you should restoke. Place 2 pieces of new firewood (up to 1.15 kg each) with a diameter of approx. 7-9 cm in the combustion chamber. Let the fire burn and let the stove cool down to room temperature before the next lighting.

3. The third stoking
Repeat the second stoking, but use more wood this time. Set the temperature level to level 3. Let the fire burn and allow the stove to cool down after the fire has died out.

Lighting Up
A successful combustion process requires that the wood is lit in the right way. A cold stove and a cold chimney challenge the combustion process. Be careful to make a good lighting with suitably dry wood, using kindling and lighting the fire in the top layers of kindling.

Open the door. Place two pieces of wood (5-8 cm in diameter) horizontally in the bottom of the combustion compartment (corresponding to 0.9-1.15 kg). Place 6-10 pieces of kindling randomly on top. Place 2-4 fire-lighters in between the top layers of kindling. Light up the fire-lighters and close the stove door. Select the desired room temperature level.

When the door of the stove is opened the IHS system is activated. If lighting up does not occur within 15 minutes, the system will automatically go back to standby and the dampers will be closed.

If the flue gases do not reach a high enough temperature for kindling or firing, IHS Smart Control™ and the wireless room temperature sensor emit a stoking alarm, even if there is still unburned wood and flames in the combustion chamber. The stoking alarm is emitted to make you aware that the fire needs more energy. Restoking with small pieces of kindling wood can often provide a more rapid and sufficient temperature rise.

HWAM Autopilot IHS™ closes all three air dampers when the stove is in standby mode. This prevents hot air from the room to enter the chimney (heat loss). This might on the other hand result in a very cold chimney when the stove is lit. In certain cases it is necessary to assist the draught in the chimney by burning a couple of newspaper pages on top of the wood ready to be lit. Read more on www.hwam.com about the function of the chimney.

Important!
The door must not be opened when lighting up. It must always be closed when the stove is in use. Otherwise the stove's intelligent control system does not function. The door should only be opened when lighting up, when restoking, and when cleaning the stove. Never leave a stove before there are lasting flames in the wood after firing!

The Thermostat Function
The HWAM Autopilot IHS™ will in general have an environmentally friendly combustion and adapt to the desired room temperature. The thermostat function is designed as a radiator valve. The user enters a desired heat level, which suits the room in which the stove is installed. When the thermostat is set at a heat level, the control function will adapt to this temperature.

- If the room temperature is lower than the desired heat level, the control function increases the flue gas temperature in order to increase the heat radiation from the stove.
- If the room temperature is higher than the desired heat level, the control function decreases the flue gas temperature, thereby giving the layer of embers as long a life as possible before re-stoking. This will reduce the heat radiation from the stove and facilitate re-stoking without having to light up the fire

anew. If the room temperature drops below the desired level, the ember phase will be shortened, and the system will activate a re-stoking alarm. The system will signal that a re-stoking is due at the flue gas temperature of 180° C, and at 100° C the system will enter standby mode and all dampers will close.

- Should the room temperature be much lower than the desired heat level, the control function increases the flue gas temperature. If a satisfactory increase in temperature does not occur, the control will activate a re-stoking alarm, since it expects that more wood is needed to increase the heat level in the room.
- If the room temperature after a new re-stoking still does not reach the desired level, the water content in the firewood may be too high or the draught in the chimney too weak. The IHS system always strives for a sufficiently high flue gas temperature to ensure an environmentally friendly combustion.

Stoking

When alarm for re-stoking sounds the stove is ready for re-stoking. The alarm for re-stoking will come via the room temperature sensor or the acquired remote control. The app IHS Smart Control™ will also come with a notification that it is time for re-stoking if the app is opened. For more information on the app, see separate manual.

The amount of woo that is used for re-stoking should be adjusted based on the current heat demand.


Small amount of wood (700 - 1200 g)


Medium amount of wood (1000 - 1800 g)


Large amount of wood (1600 - 2300 g)

In terms of combustion technique, you should always stoke the stove with at least two pieces of wood at a time even if you only use a small amount of wood. You can also choose not to restoke. After a while the stove will then automatically go into hibernation.

Important!

Never leave a stove before there are lasting flames in the wood after re-stoking!

During combustion, the outer surfaces of the stove will become hot, and due care must therefore be shown.

Fuelling with coal, wood briquettes or pet coke

The stove is not approved to use coal or pet coke as a fuel. However, wood briquettes can be used to fuel the fire and should be placed on the embers produced by the burned wood.

Be aware that using fuels other than wood, will cause soot to form on the glass pane.

Operating the heat compartment damper

There is a damper at the back of the stove between the top plate and the heat compartment that opens and closes the flow of convection air in the heat compartment. The supply of convection air can be opened by moving the damper to the left and closed by moving the damper to the right.

To store heat in the heat storage stones in the heat storage compartment as quickly as possible, it is recommended that the convection vent be kept closed while the fire is lit.

With the convection vent closed, the heat storage compartment retains the heat stored in the heat storage stones for the longest possible duration. If the vent is opened, the heat stored in the stones in the heat storage compartment will be released into the room as quickly as possible.

FIRING IN GENERAL

Rapid or fierce heat
Rapid or fierce heat is obtained by burning many small pieces of wood.

Maximum amounts of fuel:
The maximum allowed amount of fuel per hour is:

Model	Wood
HWAM 4500	2.4 kg

If these limits are exceeded, the stove will no longer be covered by the factory guarantee, and it may also become damaged due to excessive heat. The stove has been approved for intermittent use.

Typical re-firing interval
Typical re-firing interval at nominal performance:

Model	Re-firing interval	Wood
HWAM 4500	45 min.	1.1 kg

Long burning times
You achieve the slowest combustion by setting the desired room temperature at level 0. At this level the combustion takes place with the lowest possible flue gas temperature and the ember phase will be drawn out as long as possible.

How to achieve the best combustion
The HWAM Autopilot IHS™ is purposely designed to generate the cleanest and the most economical combustion. A good combustion is achieved when the fire gets the right amount of oxygen supply at the right time and place in the combustion chamber. The HWAM Autopilot IHS™ allows for variations in external circumstances. Nevertheless, it is important to use clean and dry wood (humidity approx. 16-18%). Read more on www.hwam.com.

Cleaning the glass
We recommend wiping the glass after a fire. This is best done using a paper towel.

Types of fuel
The stove may be damaged by very high temperatures and the glass may turn white, for example. This can be avoided by never allowing the stove to burn with the ashpan open and taking great care with types of fuel that develop excessive heat, such as briquettes. If the flue gas temperature exceeds 580°C, the HWAM Autopilot IHS™ will revert to safety adjustments and automatically turn down the air valves to avoid overheating. When the temperature is reduced to 450°C, the normal functions apply again.

It is recommended that you use birch or beech wood that has been chopped and stored for at least one year in an open shed exposed to sun and wind. The wood must be dry (max. 18% water contents) before it is stored indoors. It is recommended that kindling wood is stored indoors for a couple of days prior to use.

Briquettes give off a lot of heat. Certain types expand considerably, thus causing an uncontrollable combustion.

The stove is EN 13240 approved for firing wood only. No particle board, lacquered, painted or treated wood, plastics, or rubber may be burned.

Maintenance

Cleaning
Any maintenance of the stove should only be carried out when it is cold. Daily maintenance is limited to vacuum cleaning the stove externally, using the soft brush attachment. You can also dust the stove using a dry, soft cloth or brush. But remember, only when the stove is cold. Do not use water, spirit or any other kind of cleaner, as this will damage the lacquer.
Once a year, the stove should be thoroughly serviced. The combustion chamber should be cleared of ashes and soot.
The hinges and the closing hook must be greased with liquid copper fat spray (heat-resistant up to 1100 degrees Celsius), see drawing G. Lift the door approx. ½ cm and spray copper fat onto the hinge leaf.

Service inspection
Your stove should be given a thorough, preventive inspection once every two years. This includes:

- Thorough cleaning of the stove.
- Checking gaskets. Replace gaskets if they are not intact or are no longer soft.
- Checking and/or replacing insulation material.
- Checking the combustion chamber base.
- Use copper grease for hinges and locking hooks (see drawing G).

All service checks must be performed by an authorised fitter. Use only original spare parts.

Inside cleaning
Remove the top smoke shelf and the two-part steel smoke guide plate from the stove before cleaning (Drawing E):
- Lift the smoke shelf (1) out of the combustion chamber.
- Unhook each half of the smoke guide plate (2) from the hook (3) under the top plate.

Ashes
It is easiest to empty the ash pan by pulling a plastic bag over it, turning it upside down and then carefully removing it from the bag. Ashes are disposed of via the domestic waste collection.
Please note that there may be embers in the ashes for up to 24 hours after the fire has gone out!

Insulation
The efficient, but porous insulation of the combustion chamber may, in time, become worn and damaged.

Cracks in the insulation have no effect on the efficiency of the stove. The insulation should be replaced, however, when it is reduced to less than half the original thickness due to wear and tear.

Door/glass
A sooty glass door can easily be cleaned with a piece of moist kitchen roll dipped in ash. Go about it in vertical movements (up and down). Follow up with a dry piece of kitchen roll. Check frequently to ensure that seals in the door are intact and not brittle. Failing this, they should be replaced. Use original seals only.

Surface
The surface normally requires no treatment. Any damage to the coating may be remedied using a Senotherm spray.

Guarantee
The guarantee does not cover damage due to insufficient maintenance!

Maintenance Alarms
If a maintenance alarm goes off, you can continue using the wood-burning stove, but contact your dealer as soon as possible. Your stove could be affected by impure combustion.

Operational problems

Blackened glass
- The wood is too damp. Only use wood stored for at least 12 months under cover and with a moisture level not exceeding 18% RH.
- The door gasket may be leaking.

Smoke in the room when opening door
- The grate in the chimney may be closed. Open the grate.
- Insufficient chimney draft. See section on chimney or contact chimney sweep.
- Soot door leaking or dislodged. Replace or refit.
- Never open the door when there are still flames on the wood.

Uncontrollable combustion
- Faulty seal in door. Fit new seal.

Safety Alarms
In case the safety alarms go off, you must not use the stove. Contact your dealer as soon as possible.

At interruptions that you cannot yourself rectify, you should contact the dealer.

Declaration of Performance

The DoP can be downloaded from our website via the following links:
www.hwam.com/dop/4500ihs

www.hwam.com