Installation and users manual **UK**

HWAM
3420

HWAM
3520

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www.hwam.com

AUTOPILOT™

hwam
intelligent heat

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Illustrationer

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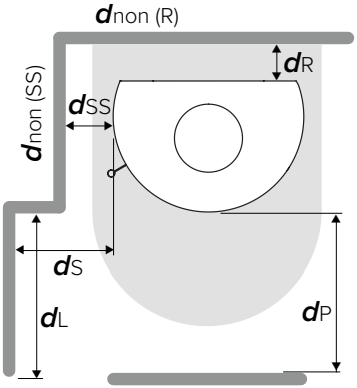

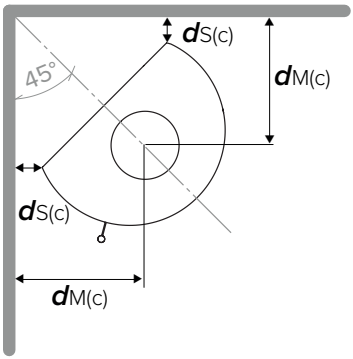

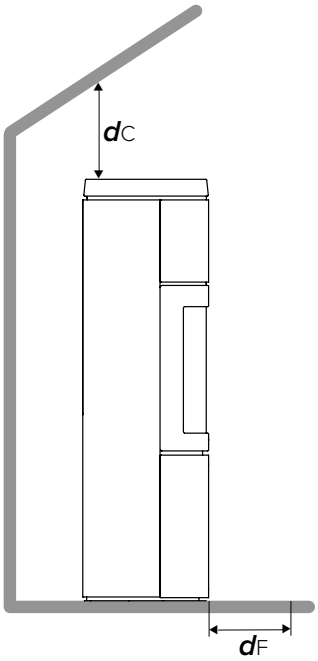

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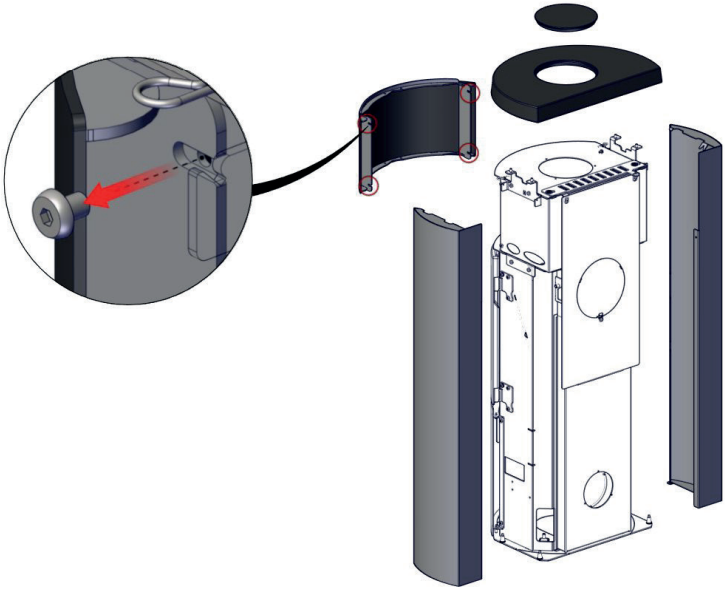

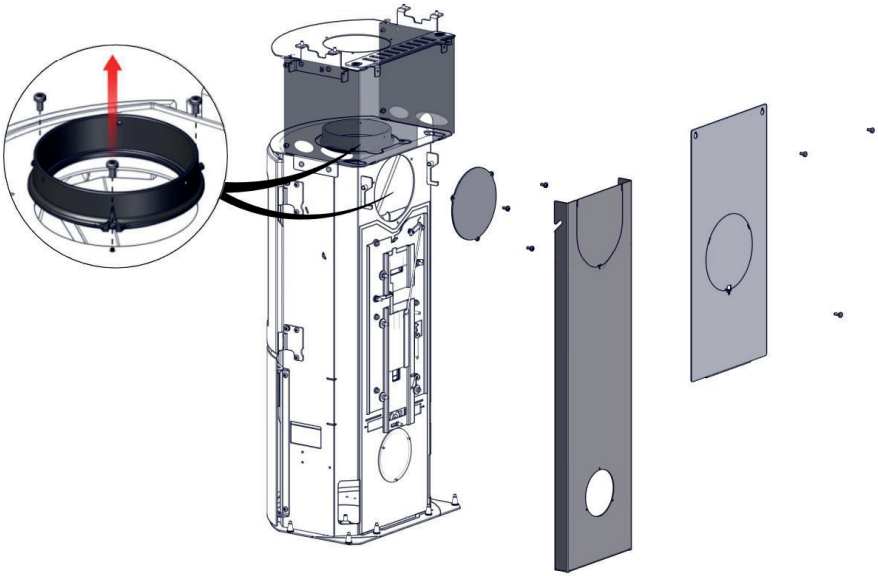

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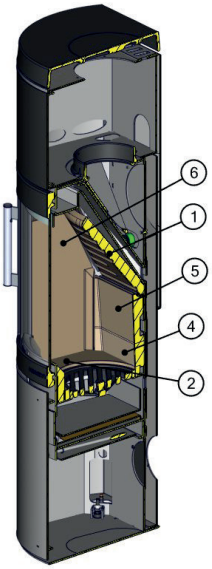

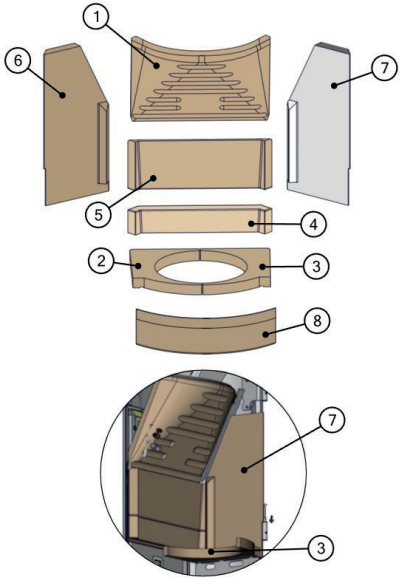

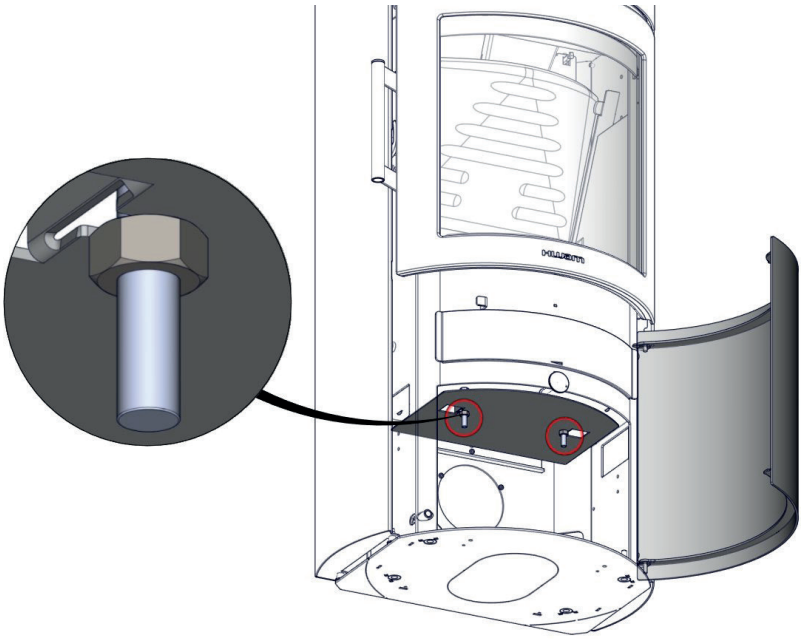

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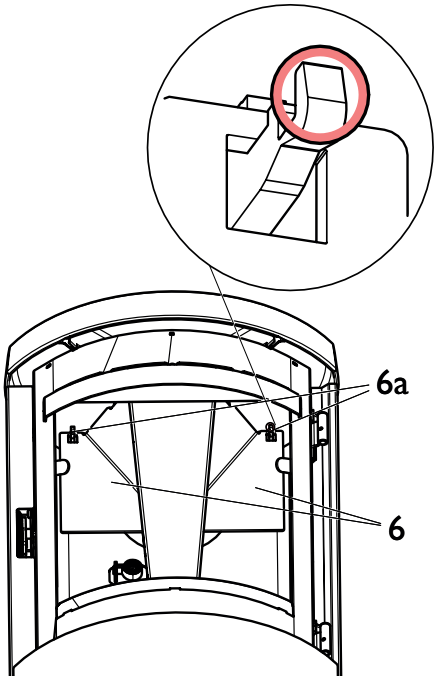

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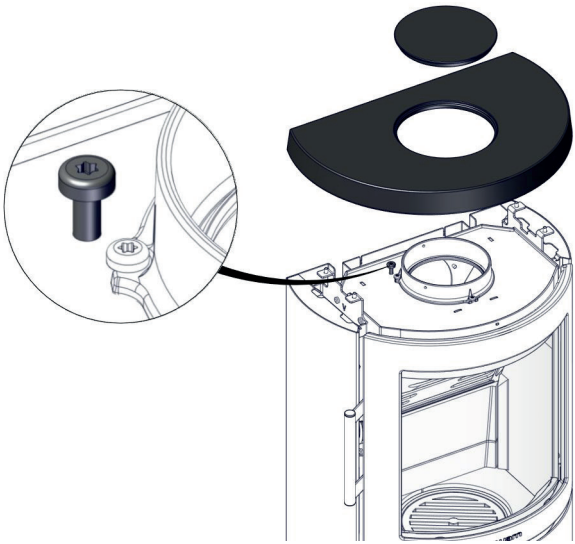

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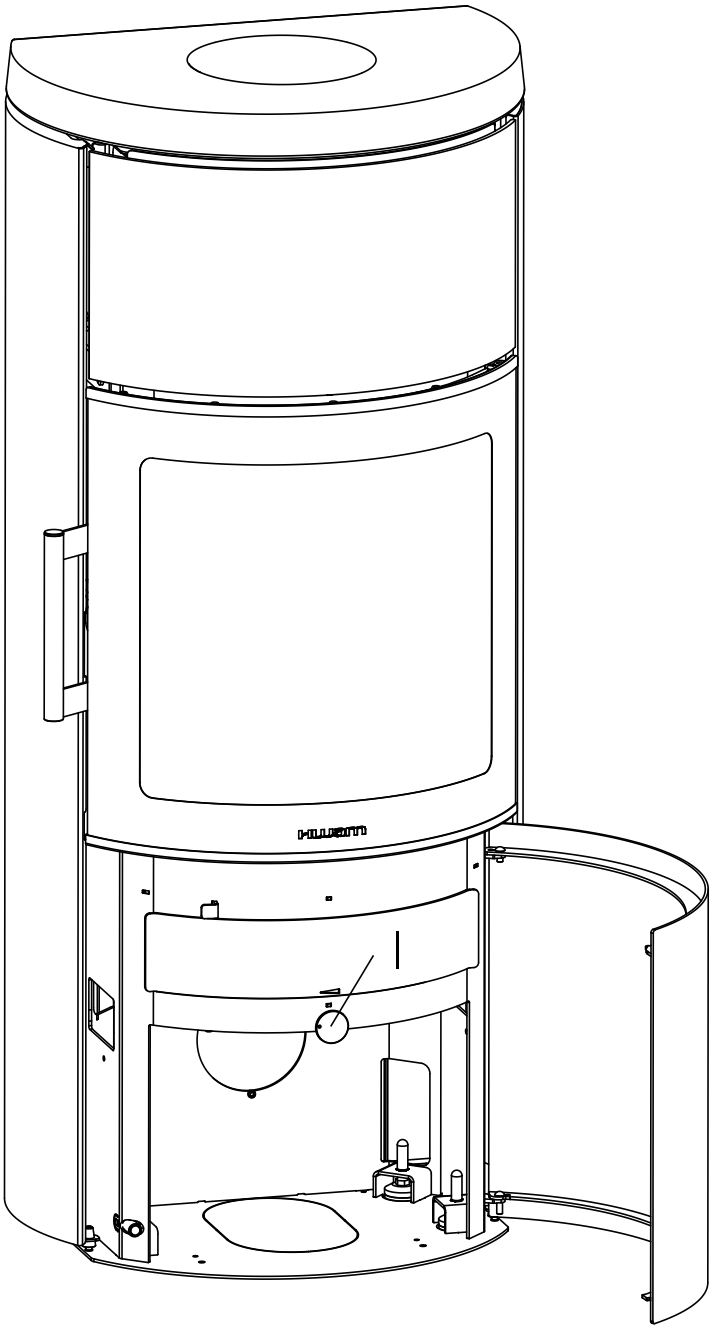

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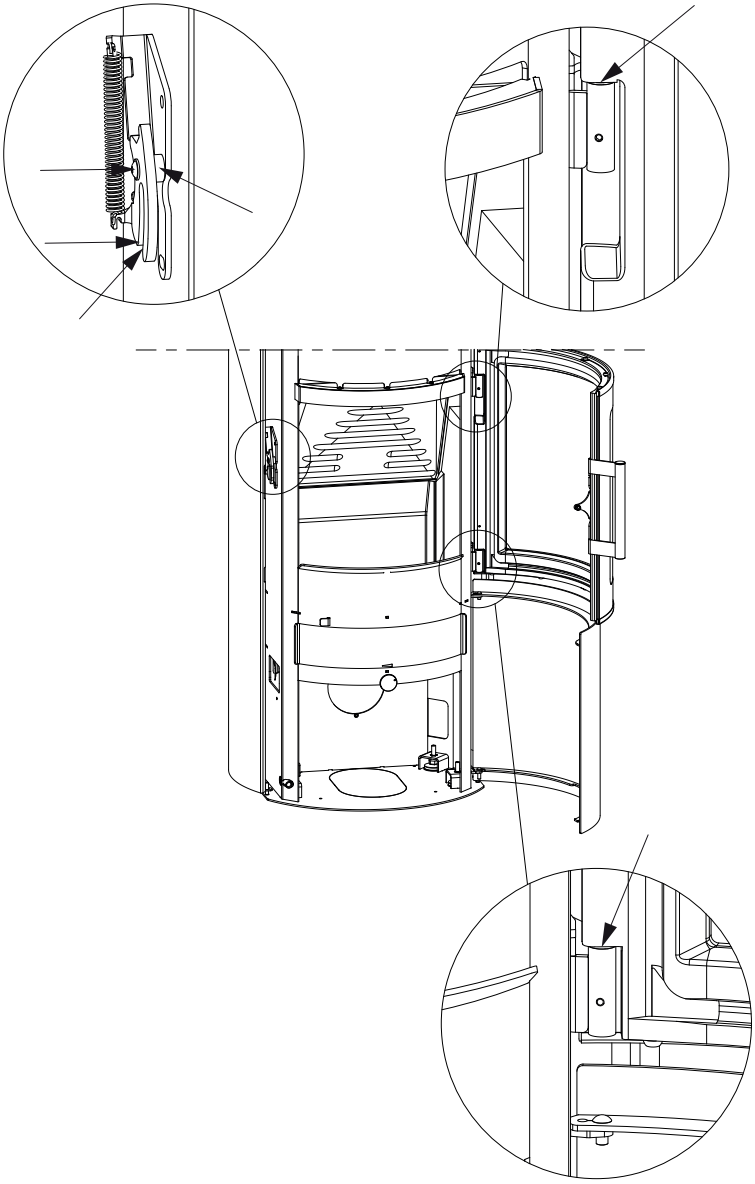

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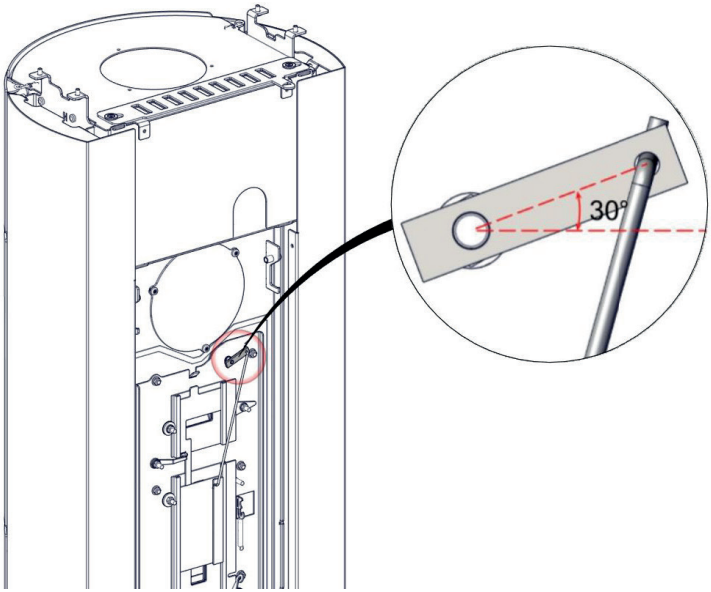

For UK - The Clean Air Act 1993 and Smoke Control Areas

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 exempted 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 3500 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 3420c
- HWAM 3520c, HWAM 3520m
- HWAM 3520c, HWAM 3520m with soapstone cladding
- HWAM 3520c, HWAM 3520m with natural stone cladding Tobacco
- HWAM 3520c, HWAM 3520m with natural stone cladding Moca Cream
- HWAM 3520c, HWAM 3520m with natural stone cladding Nordic Sky

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.

Dampers left open
Operation with the air controls or appliance dampers open can cause excess smoke. The appliance must not be operated with air controls, appliance dampers or door left open except as directed in the instructions.

Installation manual

In general
Congratulations on your new HWAM woodburning stove. We are pleased that you have chosen a woodburning stove and confident that it will give you much pleasure.

To ensure optimum operation and safety, we recommend that the installation should be carried out by an authorised HWAM retailer or a fitter recommended by the retailer. An overview of HWAM retailers can be found at www.hwam.com under “Retailer locations”.

Before installation, it is important to read **the installation and User's manual carefully and follow the instructions and guidances.** This installation and User's manual apply to HWAM wood-burning stoves in the 3400 and HWAM 3500 series with HWAM® Autopilot™, classified according to EN16510-1 type B and type CA (room sealed stove). The type is indicated on the type plate on the wood-burning stove.

The installation of your HWAM woodburning stove must always comply with all European, national and local building regulationsand subsequently registered with the local authorities. Upon installation, the chimney sweep must approve the installation before you can start using the woodburning stove. All HWAM woodburning stove packaging material must be handled in accordance with local waste management regulations.

Room requirements
It is required to have an approved CO monitor in the same room as the wood burning stove. Always ensure a supply of fresh combustion air to the room where the stove is to be installed. The woodburning stove uses approx. 14.4 m^3 of air per hour. Extraction fans installed in the same room as the wood-burning stove can cause problems. A window that can be opened or an adjustable air valve will be sufficient. It must not be possible to block the adjustable air valve/grate. In newly built/airtight dwellings, we recommend that a fresh air system should be installed for the direct supply of external air to the combustion. This fresh-air system may be bought separately.

Before installing the wood-burning 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.

Ensure that no combustible objects (e.g. furniture) are placed closer to the wood-burning stove than the distances specified in the tables on the following pages (fire hazard).

Room sealed appliances - only applies to type CA
The models in the HWAM 3500 series supply the combustion process with controlled external air and are specially designed for use in homes with very tight construction. The combustion air must be supplied to the stove from outside via a sealed pipe or via a LAS chimney system. The design even allows the stove to operate at a negative pressure of up to 15 Pa in the room where it is installed.

Room sealed wood-burning stoves may only be installed in rooms where the air is extracted by means of fans, such as ventilation or hot air systems, cooker hoods or tumble dryers, provided that the supply is dimensioned to ensure that the operation of these systems does not create a negative pressure greater than 15 Pa in relation to the free air in the room.

The room sealed wood-burning stove requires a minimum room size of 39.5 m^3 where it is installed.

Floor plate

European, national and local regulations must be observed in terms of the size and thickness of a non-combustible floor covering the floor in front of the combustion chamber opening. Ask your HWAM retailer for assistance. The combustion chamber opening is 34.0 cm wide.

Technical specifications and data

Parameter	Explanation	Value
P_{nom}	Nominal heat output	4.8 kW
P_{SHnom}	Nominal heat output	4.8 kW
η_{nom}	Efficiency at nominal heat output	79 %
η_s	Seasonal space heating efficiency	69 %
EEI	Energy efficiency index	105
CO_{nom} (13 % O_2)	CO emission at 13 % oxygen content at nominal heat output	906 mg/m³
NO_{xnom} (13 % O_2)	NOx emission at 13 % oxygen content at nominal heat output	88 mg/m³
OGC_{nom} (13 % O_2)	Hydrocarbon emission at 13 % oxygen content at nominal heat output	60 mg/m³
.PM $_{nom}$ (13 % O_2)	Particulate matter emission at 13 % oxygen content at nominal heat output	13 mg/m³
p_{nom}	Minimum flue draught at nominal heat output	12 Pa
s	Material type and thickness of protective insulation	25 mm
T_{snom}	Flue gas outlet temperature at nominal heat output	288°C
T-Klasse	Chimney designation	T400
$\phi_{f.g\ nom}$	Flue gas mass flow at nominal heat output	5.3 g/s
V_h	Standing air loss	Not tested
CON or INT	Capable of continuous operation (CON) or intermittent operation (INT)	INT
d_{out}	Diameter of the flue gas outlet	Ø125 mm or Ø150 mm
L, H, W	Overall dimensions of the appliance (length, height, width)	See table
m	Weight of the woodburning stove	See table
m_{chim}	Maximum load of a chimney	120 kg
	Read and follow the Installation and User Manual	

Measurement and Weight

Model	Weight	Height	Width	Depth
HWAM 3420c	107 kg	1006 mm	540 mm	375 mm
HWAM 3520c/3520m	118/115 kg	1261 mm	540 mm	375 mm
HWAM 3520c/3520m, natural stone Tobacco	174/171 kg	1270 mm	543 mm	375 mm
HWAM 3520c/3520m, natural stone Moca Cream	179/176 kg	1270 mm	543 mm	375 mm
HWAM 3520c/3520m, natural stone Nordic Sky	167/164 kg	1270 mm	543 mm	375 mm
HWAM 3520c/3520m, soapstone	167/164 kg	1270 mm	543 mm	375 mm
Heat storage stones, HWAM 3520	44 kg			

Distance to combustible and non combustible materials

Min. distances - uninsulated flue gas pipe (illustration A)		**HWAM 3420 HWAM 3520**
d_R	To combustible wall, rear	165 mm
d_S	To combustible side, in front of the stove	450 mm
d_{SS}	To combustible wall, side	255 mm
d_C	To combustible ceiling	750 mm
d_P	To combustible materials in front of the stove	1050 mm
d_F	To combustible floor in front of stove	0 mm
d_L	To combustible sidewall in the radiation area	-
d_B	To combustible floor under the stove	0 mm
$d_{non(R)}$	To non-combustible wall, rear, recommended	100 mm
$d_{non(SS)}$	To non-combustible wall, side, recommended	100 mm
$d_{S(C)}$	Corner installation, 45°,from wall to stove	125 mm
$d_{M(C)}$	Corner installation, 45°, from wall to center flue outlet	420 mm

Min. distances - insulated flue gas pipe (illustration A)		**HWAM 3420 HWAM 3520**
d_R	To combustible wall, rear	115 mm
d_S	To combustible side, in front of the stove	450 mm
d_{SS}	To combustible wall, side	220 mm
d_C	To combustible ceiling	750 mm
d_P	To combustible materials in front of the stove	1050 mm
d_F	To combustible floor in front of stove	0 mm
d_L	To combustible sidewall in the radiation area	-
d_B	To combustible floor under the stove	0 mm
$d_{non(R)}$	To non-combustible wall, rear, recommended	100 mm
$d_{non(SS)}$	To non-combustible wall, side, recommended	100 mm
$d_{S(C)}$	Corner installation, 45°,from wall to stove	100 mm
$d_{M(C)}$	Corner installation, 45°, from wall to center flue outlet	395 mm

Remember to pay attention to the applicable regulations concerning the required distance between the wall and smoke pipe.

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.

Changing the smoke outlet - HWAM 3420

If changing the smoke outlet from top outlet to back outlet, proceed as follow (illustration B):

1. Removing sides. Lift one side about 10 mm and pull it away from the stove so that it disengages from the guide pins on the bottom plate of the stove. Repeat on the other side.
2. Removing the top plate (1). Remove the four screws (Torx Bit no. 30 or M6 nut) beneath the top plate, two on each side, and lift the top plate off.
3. Removing the rear plate (2a). Lift the rear plate and pull it away from the stove so that it disengages from the guide pins on the bottom plate of the stove. There is a cut-out in the rear plate for the smoke outlet. Break off the plate within this cut-out to make a hole in the rear plate so there is room for the smoke outlet.

4. Removing the cover plate (3). Remove the cover plate on the back of the stove by removing the three screws (Torx Bit no. 30).
5. Removing the flue ring (4). Remove the three screws. Lift the flue ring off the top of the stove.
6. Installing the flue ring (4). Insert the flue ring into the smoke outlet hole in the rear of the stove and secure it with the three screws.
7. Installing the cover plate (3). Place the cover plate above the hole on the top of the stove and secure it with the three screws.
8. Installing the rear plate (2a). Place the rear plate on the guide pins at the back of the bottom plate of the stove; then press it in towards the stove. Lift the rear plate and press it lightly inwards until it engages with the guide pins.
9. Installing the top plate of the stove (1). Place the top plate on the fittings and secure it with the four screws, two on each side.
10. Installing sides. Put the sides on the guide pins in the bottom plate of the stove and press them in towards the stove. Lift the sides and press them lightly inwards until they engage with the guide pins.

An accessory top flue blaning plate is available to cover the hole in the stove top plate if the smoke outlet is connected at the rear of the stove.

Changing the smoke outlet - HWAM 3520

If changing the smoke outlet from top outlet to back outlet, proceed as follow (illustration B):

1. Removing sides. Lift one side about 10 mm and pull it away from the stove so that it disengages from the guide pins on the bottom plate of the stove. Repeat on the other side.
2. Removing the top plate (1). Remove the four screws (Torx Bit no. 30 or M6 nut) beneath the top plate, two on each side, and lift the top plate off.
3. Remove the front of the heat storage compartment (18). Loosen the two screws (19) on each side of the front of the heat storage compartment without removing them. Then pull the front forward.
4. Removing the heat shield (2b). Uninstall the heat shield on the outside of the rear plate by removing the three screws. The heat shield has a cut-out for the flue duct. Break off the pre-cut plate; the resulting hole fits the flue duct.
5. Removing the rear plate (2a). Lift the rear plate and pull it away from the stove so that it disengages from the guide pins on the bottom plate of the stove. There is a cut-out in the rear plate for the smoke outlet. Break off the plate within this cut-out to make a hole in the rear plate so there is room for the smoke outlet.
6. Removing the cover plate (3). Remove the cover plate on the back of the stove by removing the three screws (Torx Bit no. 30).
7. Removing the flue ring (4). Remove the three screws. Lift the flue ring off the top of the stove.
8. Installing the flue ring (4). Insert the flue ring into the smoke outlet hole in the rear of the stove and secure it with the three screws.
9. Installing the cover plate (3). Place the cover plate above the hole on the top of the stove and secure it with the three screws.
10. Installing the rear plate (2a). Place the rear plate on the guide pins at the back of the bottom plate of the stove; then press it in towards the stove. Lift the rear plate and press it lightly inwards until it engages with the guide pins.
11. Installing a heat shield (2b). Replace the heat shield at the back of the stove.
12. Installing the front on the heat storage compartment (18). Place the front on the heat storage compartment and fasten with the four screws (19).
13. Installing the top plate of the stove (1). Place the top plate on the fittings and secure it with the four screws, two on each side.
14. Installing sides. Put the sides on the guide pins in the bottom plate of the stove and press them in towards the stove. Lift the sides and press them lightly inwards until they engage with the guide pins.

An accessory top flue blaning plate is available to cover the hole in the stove top plate if the smoke outlet is connected at the rear of the stove.

The adjustable feet
HWAM 3400 and HWAM 3500 are delivered with four adjustable feet that can be fitted, as needed. Scan the QR code and follow the instratuction on how the fit them.

Mounting of combustion air - applies only to type CA
A Ø100 mm connector for the fresh air connection is fitted to the wood-burning stove. Flexible pipes, insulation sleeves, cable ties and clamps are supplied with the wood-burning stove. It is important to note that there must be sufficient chimney draught if the flexible pipe is bent when installing the fresh air system, as a bend creates resistance. If fresh air is supplied via a damper flap, ensure that this damper flap is open when the stove is in use.

If the combustion air system is to be connected at the rear, do the following:
Pull the insulation sleeve over the flexible pipe and place it on the connector on the rear plate. Continue the flexible pipe outwards or connect it to the LAS.

If the combustion air system is to be connected through the stove's base plate, do the following:
Open the stove's bottom door. Pull the insulation sleeve over the flexible pipe and insert it into the opening in the base plate. Attach the flexible pipe to the connector. Extend the flexible pipe further out or connect it to the LAS.

Fitting the loose parts
Before the stove is installed, you must ensure that all loose parts are fitted correctly.

Please note: The combustion chamber is covered with plates made of vermiculite, which is a heat-insulating material. These plates ensure that the optimal combustion temperature is quickly reached, and they must therefore remain inside in the wood-burning stove.

Vertical cross-section of the stoves (illustration C):
- The smoke shelf (5). To be placed on top of the steel rail and on the holders in the sides.
- Two-piece smoke defector plate (6). Each half is hung on the hooks located beneath the top plate. The two halves join in the holders behind the air pipe. Once the stove has been installed, twist the protection off the two hooks by using pliers or a screwdriver.
- Removable rear plate (2a), covering the HWAM® Autopilot™. This must always be mounted if the stove is placed next to a combustible wall.
- Removable heat shield (2b) - HWAM 3520. This must always be mounted if the stove is placed next to a combustible wall.
- Loose heat shield (8) under the ash pan. This can be used as a lid when the ash pan is removed for emptying. This must always be mounted when the stove is burning

Draught measurement
When installing the stove or when troubleshooting, it may be necessary to check the draught of the stove to ensure that the stove works together with the chimney and that the correct amount of air is being added. Behind the chimney outlet of the stove there is a hole with a diameter of 7.5 mm (illustration E) through which the draught can be measured. During normal operation, an M8 bolt is screwed into the hole and this should always be present.

The data plate and the serial number
On HWAM 3400 and HWAM 3500 the data plate and the serial number are placed on the inside of the lower door.

Locate the unique serial number of your wood-burning stove and make a note of it below so that it is always easily accessible. The serial number must always be provided when contacting your HWAM retailer.
Requirements for chimney and flue duct
The height of the chimney must ensure sufficient draught and prevent any smoke nuisance. As a general rule, satisfactory draught conditions are achieved if the chimney is 4 m above the stove and at least 80 cm above the ridge.

It is important that the applicable standards for the chimney are complied with (EN 15287-1:2023 and EN 15287-2:2023). The function of the chimney must also, in accordance with EN 13384-2:2015+A1:2019, depend on the individual situation at the installation site.

If the chimney is placed on a side wall, the top of the chimney should always be higher than the ridge or the tallest point of the roof.

The woodburning stove requires a minimum draught of 12 Pa. If measured just above the smoke flue socket, the chimney draught must be 18-20 Pa.

The chimney must have a minimum diameter of 125 mm or 150 mm. The chimney may need to be provided with an easily accessible cleaning door, if the flue system requires one. The chimney and flue duct must be of flue class T400 and be CE marked. Furthermore, it must have obtained the classification of G in soot fire testing. The required distance to combustible material must be complied with in accordance with the data plate. Ask your HWAM retailer for further information.

Connection to chimney
All the stoves have both back 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 draught is caused around either the cover plate, in connection with a covered smoke outlet, or the cleanout door and pipe connections. Please note that bent and/or horizontal smoke pipes will reduce the effect of the chimney draught.

Chimney
The chimney is the “motor” of the stove and it is crucial for the functioning of the woodburning stove. The chimney draught provides a partial vacuum in the stove. This vacuum removes the smoke from the stove, draws air through the dampers for the so-called glass air wash rinse which keeps the glass free of soot, and sucks in air through both the primary and secondary dampers for the combustion.

The chimney draught is created by the differences in temperature inside and outside the chimney. The higher the temperature within the chimney, the greater the draught. It is crucial, therefore, that the chimney is warmed up properly before closing the damper and limiting the combustion in the stove (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 flue system is not blocked.

Shared flue system
In the UK it is not allowed to connect more than one wood-burning stove to the chimney.

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, close all dampers and call the firefighters. Before any further use, have the wood-burning stove and chimney checked by the chimney sweep and a qualified heating engineer.

Fuel

Approved fuel type
The wood-burning stove is EU approved (EN-15610) for burning wood logs with a moisture content of 12-18% exclusively. Stoking a fire with wet wood results in soot, environmental problems, and a less efficient fuel economy.

It is recommended to purchase a wood moisture meter to continuously check that the firewood has the correct moisture content before using it for burning. Split the wood and measure the moisture content of the split surfaces.

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)	25-30	2-5
Chopped wood	25-30	7-9

Banned fuel types
It is not allowed to stoke a fire with the following:
- Printed matter
- Plywood
- Plastic
- Rubber
- Fluid fuels
- Waste such as milk cartons
- Lacquered wood or impregnated wood
- Fossil fuels

The reason that you should not use 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 products warranty void.

Liquid fuels
Never use petrol, petrol-like lamp oils, paraffin, lighter fluid, ethyl alcohol or similar liquids to light or relight the stove. All such liquids must be kept away from the stove when it is in use.

Operation

Your first heating session

When you light the wood-burning stove for the first time, you must do it carefully as all materials must be heated up gradually. The lacquer will be fully hardened after the wood-burning stove has been lit up for the first time. The door must be opened carefully; otherwise, there is a risk that the seals 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.

Warning: The accompanying glove may wear the surface paint off. Be careful not to touch the painted surfaces the first two to three times you light the fire. Even after the paint has hardened, repeated use of the glove may wear the surface paint off.

Using the air control knob

To achieve good combustion, which results in better heating efficiency, it is important to add the right amount of air to the fire. Air is regulated with a user-friendly, one-lever system that is located under the stove door; see drawing F.

When lighting a cold stove and stoking with new wood, the air control knob must be pushed to the extreme right to give the fire maximum air supply. When the fire is burning well, the air supply can be gradually reduced by moving the regulating air control knob to the left.

The air supply can be reduced further by moving the air control knob to the extreme left. This setting should only be used in the case of overheating, if there is a fire in the chimney or when the fire in the stove has been allowed to go out completely in connection with cleaning, for instance.

Lighting the stove

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. It is important to achieve a high flue gas temperature quickly.

Turn the air control knob (1) clockwise to maximum. Place two pieces of wood (7-9 cm in diameter) horizontally in the bottom of the combustion compartment (corresponding to 1-2 kg). Place 5-8 pieces of kindling randomly on top. Place two firelighters between the top layer of kindling. Light up the fire-lighters and close the stove door. If condensation forms on the glass, keep the door ajar for a little while and close again.

When the kindling is burning well, turn the air control knob (1) to middle position. If the fire goes out when the air control knob is turned, return it to maximum position again until the fuel catches fire and then turn it to middle position again. Allow the kindling to burn up completely until there are no longer any visible flames. The stove can then be stoked again.

Important! The ash pit must not be opened when lighting up. It must always be closed when the stove is in use. Otherwise the HWAM® Autopilot™ 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!

Important! Room sealed appliances must not be used if the door seal is damaged.

Stoking
When there are no more visible yellow flames, and a right ember is there, you can fire again. The layer of embers is suitable when the pieces of wood begin to disintegrate and the bottom of the stove is covered by embers. Carefully open the door to prevent smoke and embers from escaping. Put at least two pieces of wood into the stove, weighing up to 1 kg each. The wood must not be placed higher than the air channel in the vermiculite back plate. Do not regulate the stove again as the HWAM® Autopilot™ will do this, but the temperature can be adjusted with the air control knob (1). Turning it to minimum (counter-clockwise) will reduce the rate of combustion and make the stove burn slower. Turning to maximum (clockwise) will increase the rate of combustion and make the stove burn faster. Wait until the layer of embers is suitably low before stoking again.

During combustion, the exterior surfaces of the wood-burning stove will become hot, and necessary caution must be exercised. Use the glove provided if necessary.

When burning is complete
When the stove is not in use, turn the air control knob all the way to the left.
We recommend wiping the glass after a fire. This is best done using a paper towel.

Operating the heat compartment damper - HWAM 3520
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.

We recommend that the convection damper is kept closed when fuelling the stove in order to heat up and thereby store heat in the heat storage stones in the heat compartment as rapidly as possible.
Keeping the convection damper closed retains the heat stored in the heat storage stones as long as possible. When the damper is opened, the heat from the heat storage stones in the heat compartment will rapidly be transferred to the room.

Firing In General

Maximum amounts of fuel:
The maximum allowed amount of fuel per hour is:
Wood: 1.95 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 glass may turn white, for example. The stove has been approved for intermittent use.

Typical re-firing interval
Typical re-firing interval at nominal performance
Wood: 45 min (1.1 kg)

Prolonged burning time
You will obtain the longest burning time if you reduce the air supply to an absolute minimum when the flames are dying, as this will prolong the ember phase. When adding new firewood, always remember to check that the wood has caught fire properly. If not, the air supply must be increased by pushing the air control lever to the left.

Insufficient firing
If the fireproof materials in the combustion chamber are blackened after a fire, then the stove is polluting, and the automatic air flow regulation system is malfunctioning. Therefore, more air must be supplied by turning the air control knob clockwise (to the right). It may also be necessary to burn more wood.

How to achieve the best combustion

- **Use clean and dry wood**
  Wet wood results in inefficient combustion, plenty of smoke, and soot. Furthermore, the heat will dry the wood, not heat up the room.
- **The fire should only be stoked with a little wood at a time**
  You achieve the best combustion by starting up a fire often and using only a little wood. If you use too much firewood, it will take some time before the temperature reaches a level where you achieve good combustion.
- **Make sure there is the right amount of air**
  You should also make sure that there is plenty of air – especially in the beginning - so the temperature in the wood burning stove climbs quickly. In this way the gases and particles released during the combustion will be consumed by the fire. Otherwise, they build up soot in the chimney (constituting a chimney fire risk) or will be released in a non-combusted state into the environment. The wrong amount of air supply creates inefficient combustion and a modest effect.
- **Don’t slumber the fire during night time**
  We advise against adding firewood to your stove and reducing the air supply at night in an attempt to still have some embers left in the morning. If you do so, large amounts of hazardous smoke will be emitted, and your chimney will be exposed to unnecessarily large amounts of soot with the risk of a chimney fire.

Cleaning & 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 grase spray (heat-resistant up to 1100°C). Lift the door approx. ½ cm and spray copper grase onto the hinge leaf (illustration G).

Before chimney sweeping can be performed, the air control knob must be set to its minimum position to prevent soot and ash from entering the HWAM® Autopilot™. Unless the safety fittings for transportation have not already been removed, twist the safety fittings for transportation (illustration D) off the two hooks by using pliers or a screwdriver. The smoke shelf and baffle plate is to be removed from the stove before cleaning (illustration C).

- First lift the smoke shelf (1) out of the steel rail (2) at the back of the combustion chamber. Next, lower it beneath the holders (3) and slide it out.
- Lift each half of the steel smoke plate (4) off the holder (5) behind the smoke pipe, and remove them from the hook (6) beneath the top plate.

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

- Thorough cleaning of the stove.
- Check the spring in the HWAM® Autopilot™ unit and replace if necessary.
- Checking gaskets. Replace gaskets if they are not intact or have softened.
- Checking of heat insulating material and possibly replacement.
- Checking of the bottom/shaking grate.
- Lubricating the hinges and the locking hook with cobber grease (illustration G).

Emptying the ash pan
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!

Vermiculite
The efficient, but porous insulation of the combustion chamber may, in time, be worn and damaged. Cracks in the insulation are irrelevant to the efficiency of the stove. A crack in the back plate can cause secondary air to become incorrectly distributed in the combustion chamber, and it should therefore be replaced. However, it should be replaced if there are actual holes due to parts of the lining falling off or when, due to wear and tear, it has been reduced to less than half its original thickness.

HWAM® Autopilot™
The spring in the HWAM® Autopilot™ should be checked at least once every second year. This is done as follows (illustration H):
Remove the top plate. Loosen and remove the bolt that holds the two sides together. Loosen the bolt that holds the left side in position slightly, but do not remove it. Lift the left side about 10 mm and pull it away from the stove so that it is lifted free of the guide pins in the bottom plate of the stove. Repeat with the right side. Loosen and remove the 4 Allen bolts behind the heat shield. Lift the heat shield slightly and pull it away from the stove.

On a cold stove, the starting point of the feeler is controlled. The starting point on a cold stove is about 30^0 above horizontal. It should feel easy going and bouncy when you push it, no matter if the stove is cold or hot. By rising or falling temperatures it must not move at a bound. The damper plates must be dry and clean and slide together unhindered.

Place the bottom of the heat shield between the stove and the guide pins at the back of the bottom plate on the stove and press it in towards the stove. Secure the heat shield with the 4 Allen bolts. Place the right side on the guide pins on the bottom plate of the stove and press it in towards the stove. Lift the side and press it lightly inwards until it engages behind the bolt at the top. Secure the bolt. Repeat with the left side. Finally secure the bolt that holds the two sides together. Replace the top plate on top of the stove.

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. You should also ensure that air gaps in the door frame are free of ash and soot particles.

Seals
Check frequently to ensure that seals in the door and ash pan are intact and not brittle. Failing this, they should be replaced. Use original seals only.

Surface
treatment to the painted surfaces of the wood-burning stove can be necessary, if the surfaces are touched frequently, e.g. the door handle and the lower door. Damage to the paintwork may occur if the stove is touched while it is hot. However, this can be repaired with spray paint, which can be purchased from the HWAM retailer where the stove was purchased.

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

Market surveillance
In the nominal test, ignition, pre-burn and four test firings were performed. Birch wood was used.

Ignition was performed with 2686 g at an air setting starting at maximum air. After six minutes, the setting was reduced to 50% and after a further 15 minutes, it was reduced to the minimum position.

During ignition, four pieces of firewood weighing 300 g and measuring 18 cm in length were placed at the bottom with the ends facing the glass, on top of three pieces of firewood weighing 400 g and measuring 26 cm in length, placed crosswise. At the top, something very small.

For the pre-ignition and the four test ignitions, two pieces of firewood weighing a total of 1100 g and measuring 18 cm in length are ignited. The wood is placed along the vermiculite back plate, close together and with a small distance to the vermiculite back plate. The piece of firewood facing the glass weighs 60 g more than the rear piece.

The door is kept open for 10 seconds after ignition until there are small flames. The air control is set to maximum air during ignition. After 30 seconds, it is adjusted down to 80% and after 3 minutes it is adjusted down to the minimum position.

A test firing is completed after CO2. At ignition, CO2 is at 5.1%. The base layer has a starting weight of 270 g. The average increase in the base layer from one ignition to the next is 13 g.

Trouble Shooting

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 12-18% RH.
- Faulty gasket in the door. The gaskets should be soft and flexible. If they are not, replace them. New gaskets can be purchased from your retailer.
- The temperature inside the stove is too low. Put more wood in the stove and open the air inlet.

The vermuculite-plates in the combustion chamber are blackened after firing

- You have got the stove hot enough, i.e., there is not enough air or firewood. Open the air inlet. Moreover, using a larger quantity of wood might be needed.

The stove is making ”clicking” sounds during heating up and cooling down

- Due to temperature differences to which materai is exposed to. This is normal and does not indicate any defects on the wood-burning stove.

Smoke in the room when opening door

- The damper in the chimney is closed. Open the damper.
- Poor chimney draft. Ensure that the smoke pipe or chimney is not blocked. Ensure that the chimney height is correct in relation to its surroundings..
- The firewood is in flames. Never open the door if the firewood is in flames.

Uncontrollable combustion

- Faulty gasket in the door. The gaskets should be soft and flexible. If they are not, replace them. New gaskets can be purchased from your retailer.
- If there is an excessive chimney draft, it may be necessary to close the air inlet. Always close the air inlet when the stove is not in use.
- If the steel plates in the combustion chamber develop scales or become deformed, this is due to excessive heat. Stop using the stove and contact the retailer.

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

Disposal

At the end of its service life, the wood-burning stove must be sorted as follows:
Combustion chamber, door, combustion chamber base, smoke outlet, air control, and top plate - sorted as iron

Ceramic glass - must not be mixed with ordinary glass

Gaskets on glass, door and ash pan – sorted as landfill, as they contain fibreglass

Vermiculite – sorted as landfill

Heat storage stones – made of concrete – are sorted as concrete

Natural stones and soapstones – sorted as stones and gravel

Floor plates – tempered glass – sorted as glass

Declaration of Performance, Conformity & EcoDesign

The DoP can be downloaded from our website via the following links:
www.hwam.com/dop/EN16510/3400_UK
www.hwam.com/dop/EN16510/3500_UK

Scan the QR code to find the Declaration of Conformity (DoC).

Product information on solid fuel local space heaters according to Commission regulation (EU) 2015/1185

Model	HWAM 3420
Direct heat output [kW]	4,8
Indirect heating functionality	No
Indirect heat output [kW]	-
Type of heat output/room temperature control	Two or more manual stages, no temperature control

Space heating performance at nominal heat output		
Fuel	**Preferred fuel**	**Seasonal space heating energy efficiency [%]**
Wood logs with moisture content 12-18 %	Yes	69
Emissions	**mg/m^3 (13% O_2)**	
Particulate matter (PM)	13	
Organic gaseous compounds (OGC)	60	
Carbon monoxide (CO)	906	
Nitrogen oxides (NO_x)	88	

Characteristics when operating with the preferred fuel only	
Nominal heat output [kW]	4,8
Electric power consumption nominal heat output [kW]	-
Electric power consumption minimum heat output [kW]	-
Electric power consumption standby mode [kW]	-
Useful efficiency at nominal heat output [%]	79
Energy efficiency index	105
Energy efficiency class	A

Specific Precautions during Assembling, Installing & Maintenance:
See installation instructions for more information

Product End-of-Life/Recycling:
To dispose of the stove after the product life has expired, please observe the following information

- Dispose of the items correctly i.e. separate the parts to be disposed of in material groups
- Always dispose of items in a way that is as sustainable as possible and that is in line with the current environmental protection, reprocessing/recycling and disposal technology

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