

SCAN-LINE 800 AQUA

**APPROVED FOR USE IN SMOKE CONTROL
AREAS WHEN BURNING DRY WOOD LOGS OR
AUTHORISED FUELS**

OPERATING INSTRUCTIONS



Congratulations on your new stove. We are sure that you will be happy with your investment, especially if you follow the advice and instructions we have put together in these operating instructions.

The Scan-line 800 Aqua have been approved according to the EN 13240, NS 3058/3059, 15a B-VG Defra approved for use in smoke control areas throughout the UK.

Approval means that consumers can be sure, that the stove meets a range

of specifications and requirements intended to ensure that the materials used are of good quality, that the stove does not adversely affect the environment, and that it is economical to use.

With your new stove you should have received the following:

- a. Operating instructions
- b. A stove glove

INSTALLATION INSTRUCTIONS

Safety clearances

Stoves must always be installed in line with national and, if applicable, local regulations. It is important to abide by local regulations regarding setting up chimneys and connection to same. Therefore, always consult your local chimney sweep before installation, as you are personally responsible for ensuring that the applicable regulations have been met.

Distance regulations

A difference applies to installation next to flammable and non-flammable walls. If the wall is made of non-flammable material the stove can, in principle, be placed flush against it. However, we recommend leaving a gap of at least 5 cm to facilitate cleaning behind the stove. **The minimum distances to flammable material are stated on the boiler plate and are listed in the table on page 8.**

Warning



A stove gets hot. (In excess of 90 degrees) Take care to ensure that children can not come into contact with

it. Combustible materials should not be stored in the compartment below the ashpan.

IMPORTANT

1. Make sure there is adequate provision to sweep the chimney.
2. Make sure there is adequate ventilation to the room.
3. Please note that any extraction fans operating in the same room as the wood-burning stove can reduce the chimney draft – which may have an adverse effect on stove combustion properties. In addition, this may cause smoke to be emitted from the stove when the firing door is opened.
4. It must not be possible to cover any air vents.

The floor

It is essential to ensure that the floor surface can actually bear the weight of the stove and a top-mounted steel chimney, if applicable. The stove must stand on a nonflammable surface such as a steel floor plate or a brick or tile floor. The size of the nonflammable surface used to cover the floor area must match national and local regulations.

The chimney connection

The chimney opening must follow national and local regulations. However, the area of the opening should

never be less than 175 cm², which corresponds to a diameter of 150 mm. If a damper is fitted in the flue gas pipe, there must always be at least 20 cm² of free passage, even when the damper is in its “closed” position.

Wood-burning stoves must never be connected to chimneys that are also linked to a gasfired heater. An efficient stove makes high demand on chimney properties – so always have your local chimney sweep evaluate your chimney.

Connection to a brick chimney

Brick a thimble into the chimney and seat the flue gas pipe in this. The thimble and flue gas pipe must not penetrate the chimney opening itself, but must be flush with the inside of the chimney duct. Joins between brickwork, the thimble and flue gas pipe must be sealed with fireproof material and/or beading

Connection to a steel chimney

When fitting a connection from a top-output stove directly to a steel chimney, we recommend fitting the chimney tube inside the flue gas spigot so that any soot and condensation drops into the stove itself rather than collecting on the exterior surface of the stove.

For connections to chimneys that are run through ceilings, all national and local regulations regarding distance to flammable material must be followed. It is important that the chimney is fitted with roof support so that the top panel of the stove is not required to bear the entire weight of the chimney (excessive weight may cause damage on or noise from the stove).

Draft conditions

Poor draft may result in smoke being emitted from the stove when the door is opened. The minimum chimney draft to ensure satisfactory combu-

tion in stoves of this kind is 12 PA. However, there will still be a risk of smoke emission if the firing door is opened during powerful firing. The flue gas temperature at nominal output is 182°C when expelled to an exterior temperature of 20°C. The flue gas mass flow is 6.3 g/sec. The chimney draft is generated by the difference between the high temperature of the chimney and the low temperature of the fresh air. The length and insulation of the chimney, wind and weather conditions also have an effect on the ability of the chimney to generate appropriate under-pressure. If the stove has not been used in a while, check that the chimney and stove are not blocked with soot, bird nests, etc., before using it.

Reduced draft can occur when:

- The difference in temperature is too small – due to insufficient chimney insulation, for example.
- The outdoor temperature is too high – in summer, for example.
- No wind is blowing.
- The chimney is too low and sheltered.
- The chimney contains false air.
- The chimney and flue gas pipe are blocked.
- The house is too airtight (i.e. when there is an insufficient supply of fresh air).
- Poor smoke extraction (poor draft conditions) due to a cold chimney or bad weather conditions can be compensated for by increasing the airflow into the stove.

Good draft occurs when:

- The difference in temperature between the chimney and outdoor air is high.
- The weather is fine.
- The wind is blowing strongly.

- The chimney is of the correct height: at least 4.00 m above the stove and free of the roof ridge.

INSTRUCTIONS FOR USE

First firing

The stove has been treated with a heat-resistant coating which hardens at a temperature of approximately 250 °C. This hardening process causes the production of smoke and malodorous fumes, so the room must be very well ventilated. During the first firing, which should be carried out using approximately 1 kg. of wood, the stoking door must be opened slightly every 10 minutes for the first two hours to prevent the sealing rope sticking to the stove.

Fuel

Your new stove is EN approved for firing with wood fuel. You must therefore only burn clean, dry wood in your stove. Never use your stove to burn driftwood, as this may contain a lot of salt which can damage both the stove and the chimney. Similarly, you must not fire your stove with refuse, painted wood, pressure-impregnated wood or chipboard, as these materials can emit poisonous fumes and smoke. Correct firing using well seasoned wood provides optimal heat output and maximum economy. At the same time, correct firing prevents environmental damage in the form of smoke and emissions and also reduces the risk of chimney fires. If the wood is wet and inadequately seasoned, a large proportion of the energy in the fuel will be used to vaporise the water, and this will all disappear up the chimney. Thus it is important to use dry, well seasoned wood, i.e. wood with a moisture content of no more than 20%. This is achieved by storing the wood for 1–2 years before use. Pieces

of firewood with a diameter of more than 10 cm should be split before storing. The pieces of firewood should be of an appropriate length (approx. 25 cm) so that they can lie flat on the bed of embers. If you store your wood outdoors, it is best to cover it.

Fuels used in smoke control areas

In a building in a smoke control area you are legally only allowed to use this appliance to burn dry/seasoned wood logs of the maximum length given above or authorised fuels. If you are unsure if your property is located in a smoke control area or need further guidance on fuels you should contact your Local Authority.

Examples of recommended woods types

and their typical specific gravity per cubic meter stated as 100% wood with a moisture content of 18%

Wood	kg/m ³	Wood	kg/m ³
Beech	710	Alder	540
Ash	700	Scotch pine	520
Elm	690	Larch	520
Maple	660	Lime	510
Birch	620	Spruce	450
Mountain pine	600	Poplar	450
Willow	560		

It is advised not to use very oil-containing woods like teak tree and mahogany, as this can cause damage to the glass.

Heating value in wood

You have to use about 2.4 kg normal wood to replace one litre of heating oil. All woods have almost the same heating value per kg, which is about 5.27 kW/hour for absolute dry wood. Wood with a moistness of 18% has a efficiency of about 4.18 kW/hour per kg, and one litre heating oil contains about 10 kW/hour.

CO₂ release

At combustion 1000 litres of heating oil forms 3.171 tons CO₂. As wood is a CO₂ neutral heat/ energy source, you save the environment about 1.3 kg CO₂ every time you have used 1 kg normal wood.

Chimney fires

In the event of a chimney fire – which often results from incorrect operation or protracted firing with moist wood – close the door and shut off the secondary/start-up air supply to smother the fire. Call the fire department.

Airflow regulation

To adjust combustion airflow, use the handle on the side (towards the rear). There is maximum combustion airflow in when the handle is in the top position (fig. 1). Reduce combustion airflow gradually by lowering the handle. When the handle is in the lowest position (fig. 2), combustion airflow is completely closed.

Fig. 1



Open

Fig. 2



Closed

The SL800 Aqua stoves are designed and tested to burn extremely cleanly with very little smoke discharge and are exempt for use in smoke control areas throughout the UK when burning dry wood logs. To comply, a permanent stop is fitted to ensure that the air control slider cannot be closed beyond 52% of its fully open position. A permanent amount of air will therefore enter the firebox to feed the fire producing negligible amounts of smoke and unburnt hydrocarbons. **The appliances will only be considered as an exempt appliances if this stop is in place.**

Lighting the stove

To light the stove, use firelighters, paraffin firelighter bags or small pieces of wood. Place over the grate. Place larger logs over the fire-lighting material, at right angles to the door. Turn handle to top position for max. Combustion- airflow. The stove door should be slightly ajar (about 1 cm). When the wood is well lit and the chimney is hot (after about 10 minutes), close the stove door. When lighting the stove from cold, we recommend that the combustion airflow is at maximum until the first stack of wood has burned out so that the stove and chimney are heated through.

Lighting instructions for Heta stoves



1. Place some scrunched up newspaper and firelighters on the base of the stove and stack some small pieces of wood/ kindling on top into about 3 layers leaving gaps in between.



2. Fully open the "side" air control. Light the firelighters and leave the door slightly ajar to allow air to enter and the fire to establish.



3. With plenty of air the flames will burn brightly quickly warming the stove and chimney.



4. After about 5/10 minutes and with the fire established the door can be shut and the stove can be controlled by the airslider. Adjust the airslider to control the burning rate and to give optimum combustion.



5. After about 40/50 minutes and when the last flames go out a red hot ember bed will be left and further wood can be added.



6. Place 2/3 logs on the ash bed ensuring that the wood is not stacked too closely and with the adjust the side airslider to fully on position. The wood will light in 2/3 minutes. Adjust the air slider for optimum combustion.



Once the flames have taken hold, the air supply can be regulated to give the required amount of heat.

Note:

If the fire dies down completely or embers are smoldering then it will be necessary to place some screwed up paper or firelighters onto the grate with some kindling or small pieces of wood to reestablish the fire once again. Leave the airsliders fully open and allow the fire to build before refueling with larger pieces of wood and then adjust the sliders for optimum combustion.

Do not overload the firebox by loading above the tertiary air diffuser at the back of the firebox and ensure that the wood is retained by the log guard. Always ensure that the wood is not tightly stacked so that air can circulate freely.

Do not leave the door 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.

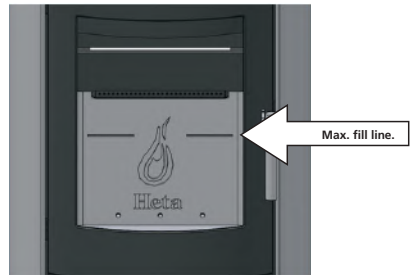
Do not leave the airsliders completely open: Operation with the airsliders permanently open can cause excess smoke. The appliance must not be operated with air controls or dampers left open except as directed in the instructions.

Refuelling

A fresh supply of fuel should normally be added while there is still a good layer of hot embers. Spread the embers over the base grate, most towards the front of the stove. Lay a single layer of wood fuel corresponding to about 1.5 kg over the embers, at right angles to the stove door. Turn handle into top position (max. Combustion- airflow). Keep door ajar if necessary. (The door should not be left open but fuel will ignite more quickly while the door is ajar.) The wood should ignite within a very short time (usually 1-3 minutes). If the door is ajar, close it as soon as the fuel is ignited. When the flames spread across the fuel stack, adjust the combustion airflow to the required level. Nominal operation 5.5 kW corresponds to 80% combustion airflow. When adding fuel, make sure that the fuel is not too tightly packed, as this will lead to poorer combustion and fuel inefficiency.

Never fill firewood over the stove's max. fill line. See fig. 3.

Fig. 3



Reduced rate of combustion

The stove is suitable for intermittent use. If you require a lower rate of heat effect, fill the combustion chamber with less wood. Allow lower combustion airflow. Do not forget that the combustion airflow must never be completely closed when lighting up. It is important to maintain the layer of

embers. Low-effect heating is achieved when the wood is glowing, i.e. there are no more flames because the wood fuel has been transformed into glowing charcoal.

Optimal combustion

For optimal combustion and heating, this stove is designed to provide an optimum mix of primary and secondary air (in these instructions, we call this combustion air). The stove provides excellent heating efficiency and the window is easy to maintain as the secondary air 'flushes' the surface of the glass. Note that the stove will, of course, blacken if the airflow is too low. If there is too little oxygen, there is a risk that the window, etc. will blacken due to the formation of soot deposits. A combination of incorrect combustion and damp wood fuel can cause a heavy, sticky coat of soot to form, which may cause the door

seal to tear off next time the door is opened.

Risk of explosion



After you add new fuel, it is very important that you do not leave the stove unattended until the wood is burning constantly. This will normally occur within 30 to 60 seconds.

A risk of explosion can possibly arise if too much wood is placed in the stove. This may result in the production of large volumes of gas, and this gas can explode if the intake of primary and secondary air is insufficient. It is an advantage always to leave some ash lying in the bottom of the combustion chamber.

Take care when emptying the ash pan, as cinders can continue to burn in the ash for long periods of time.

Stove data table in accordance with EN 13240 testing.

Stove type Scan-Line series	Nominal fluegas temperature c°	Smoke stub mm	Fuel volume kg	Draught min mbar	Nominal output tested kW	Output to water kW	Output to the room kW	Output to water %	Output to the room %
800 Aqua	182	ø150	1.9	0.13	8.7	5.6	3.1	64	36

Stove type Scan-Line series	Maximal operation pressure bar	Water con- tence of the boiler litres	Efficiency %	Distance to flammable materials in mm behind at the the stove sides		Distance to furnitures from the stove in mm	Stove weight kg
800 Aqua	4	14	87	22	175	750	173

The nominal output is the output to which the stove has been tested. The test was carried out with the secondary air 70% open.

OPERATIONAL PROBLEMS

The chimney must be swept at least once a year, we recommend the use of a NACS (national association of chimney sweeps) registered chimney sweep. In the event of smoke or malodorous fumes being produced, you must first check to see whether the chimney is blocked. The chimney must, of course, always provide the minimum draught necessary to ensure that it is possible to regulate the fire. Please note, however, that chimney draft is dependent on the weather conditions. In high winds, the draft can become so powerful that it may be necessary to fit a damper in

the flue gas pipe to regulate the draft. When cleaning the chimney, soot and other deposits may come to fall on the smoke turning plate. In cases where the wood burns too quickly, this may be due to excessive chimney draught. You should also check to make sure that the door seal is intact and correctly fitting.

If the stove is generating too little heat, this may be because you are firing with wet wood. In this case, much of the heating energy is used to dry the wood, resulting in poor heating economics and an increased risk of soot deposits in the chimney.

VENTILATION

Adequate ventilation must be provided in accordance with building regulations (Doc J Oct 2010) especially when installing in newer build properties when the stove is not going to be installed to an outside air supply. The Heta SL800 requires a permanent air vent opening of minimum 550sq

mm under Building Regulations if the stove is not going to be fitted to an external outside fresh air supply. Houses built after 2008 where the air leakage rate is less than than $5\text{m}^3/\text{hour}/\text{m}^2$ then a ventilator equivalent to 550mm^2 per kW output will be required ($9\text{kW} \times 550\text{mm} = 4950\text{mm}^2$).

MAINTENANCE

The surface of the stove has been treated with heat-resistant paint. The stove should be cleaned with a damp cloth. Any damage to the surface in the form of chips or scratches can be repaired using touch-up paint, which is available in spray cans.

Cleaning the glass

Incorrect firing, for example using wet wood, can result in the viewing window becoming covered in soot. This soot can be easily and effectively removed by using proprietary stove glass cleaner.

GUARANTEE

The model Scan-Line 800 stoves are subjected to stringent quality control procedures both throughout the production process and immediately before delivery to the dealer. Therefore, the stoves are guaranteed against defects in manufacturing FOR FIVE YEARS.

This guarantee does not cover: Wearing parts/fragile parts such as:

- The fire-proof bricks in the combustion chamber.
- The smoke baffle
- The glass
- The sealing rope
- The grate frame

Damage resulting from incorrect use
Transport costs in connection with repairs carried out under guarantee
Installation/disassembly in connection with repairs carried out under guarantee. Should you have cause to make a complaint, please quote our invoice no.

Warning

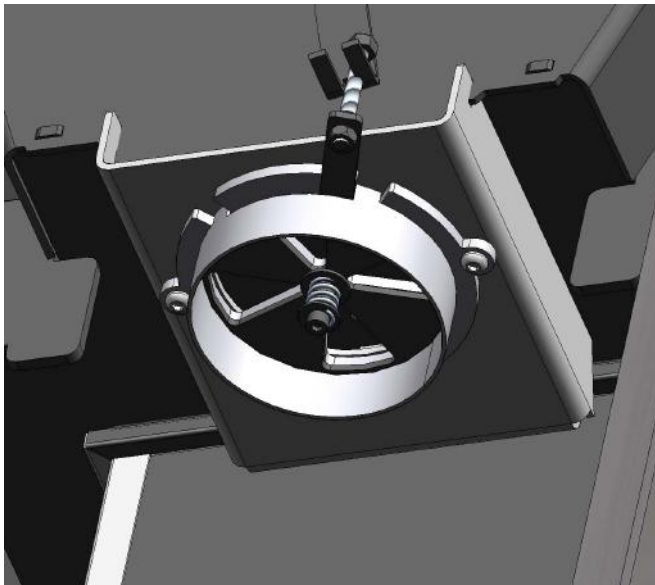


Any unauthorised modification of the stove and any use of non-original spares will void the guarantee.



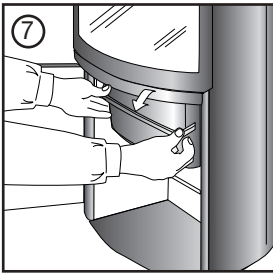
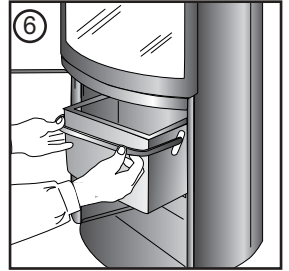
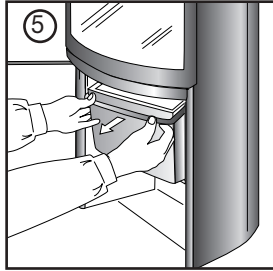
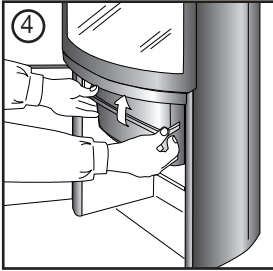
The stove is prepared for a fresh air intake.

Connection of external air flow (fresh air) through the floor on Scan-Line 800 Aqua

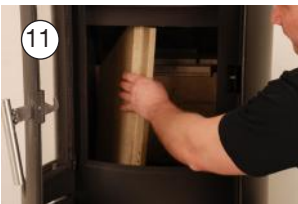


When connection external air flow use a $\varnothing 100$ air conduit (for instance Lindab) with matching collar band.

Emptying the ash pan, fig. 4-7



Cleaning after sweeping the chimney and replacing the stones. Fig 8-14 - Scan-Line 800 Aqua



Removal of plates between the cooling pipes and cleaning of cooling pipes. Fig. 15-19



It is very important that the plates between the cooling pipes lies as assembled on the picture (as when you receive it from Heta), otherwise it will result in great loss of efficiency and raise the temperature of the chimney.



Tip the top plate so that possible soot can fall down into the combustion chamber, afterwards it is very important that the plate is put back in place, as it otherwise will result in great loss of efficiency and raise the temperature of the chimney.

Connection water to Scan-Line 800 Aqua

Fig. 20



Scan-Line 800 Aqua is delivered from Heta so that it can be fitted on an existing system with matching circulating pump and safety valve.

By connection you should make sure that the stove is supplied minimum 140 litres of water per hour and that the existing system has a safety valve which opens by maximum 2.5 bar overpressure.

The SYR valve (point 5) is an extra safety device which opens by a temperature over 95° in the boiler.

Connect cold water pressure on maximum 15° on the ½" water connection (point 1) (make sure that your water company supplies approx. 600 litres per hour. This could be checked by seeing if you can fill a 10 litres bucket on 1 minute.).

Connect the 12 mm copper pipe for (point 2) water for outlet to the existing outlet so that you visually can see if the extra safety device has been activated.

NB!! The installation should always be carried out in accordance with valid standards and regulations by an authorized electrician.

Appendix A

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).

The Secretary of State for Environment, Food and Rural Affairs has powers under the Act to authorise smokeless fuels or exempt appliances for use in smoke control areas in England. In Scotland and Wales this power rests with Ministers in the devolved administrations for those countries. Separate legislation, the Clean

Air (Northern Ireland) Order 1981, applies in Northern Ireland. Therefore it is a requirement that fuels burnt or obtained for use in smoke control areas have been "authorised" in Regulations and that appliances used to burn solid fuel in those areas (other than "authorised" fuels) have been exempted by an Order made and signed by the Secretary of State or Minister in the devolved administrations.

The Scan-Line 800 Aqua and Aqua low have been recommended as suitable for use in smoke control areas when burning dry wood logs.

Further information on the requirements of the Clean Air Act can be found here : <http://smokecontrol.defra.gov.uk/>

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.