OPERATING INSTRUCTIONS

Scan-Line 500D Series

(500D, 510D, 520D, 530D)

APPROVED FOR USE BY DEFRA IN SMOKE CONTROL AREAS
WHEN BURNING DRY WOOD LOGS
(when fitted with a permanent stops on primary and secondary air)

Heta

www.heta.dk

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 Scanline 500 series has been approved according to the EN 13240, DINplus, NS3058 and 15a B-VG and has been fully tested and approved for use in smoke control areas throughout the UK (see clean air act Appendix A).

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. Guarantee slip
c. A stove glove
d. Ashpan cover

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 stove plate and are listed in the table on page 6.**

Warning
A stove gets hot (in excess of 90 degrees) - take care to ensure that children, elderly or infirm people cannot 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. If local regulations permit, two contained fireplaces can be connected to the same chimney. However, you must abide by local regulations regarding the distance between the two connections. **Wood burning stoves must never be connected to chimneys that are also linked to a gas fired 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. Changing smoke outlet from top mounted to rear mounted (see fig. 11–18 on page 9).

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 damage 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 combustion in stoves of this kind is 10 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 270°C when expelled to an exterior temperature of 20°C. The flue gas mass flow is 5.5 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 ºC. 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 left slightly open and must not be closed until the stove is cold. This is 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. 25-30 cm**) so that they can lie flat on the bed of embers. If you store your wood outdoors, it is best to cover it.

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/m3	Wood	kg/m3
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.

Lighting and combustion
To open the flow of secondary air, use the operating handle at the back of the side panel. The secondary airflow is completely open in top position, fig 1. Shut off the secondary airflow gradually by lowering the handle. The supply is completely shut off when the handle is at its bottom position, fig 2.

Fig 1 - open

Fig 2 - closed

Start up airflow (primary air slider)
To open the start-up airflow for the stove, open the lower door on the stove and pull the handle on the primary air slider to the right, fig 3. To close the primary air slider push the lever all the way to the left to its stop, fig 4. Please note that that the stop position ensures that a constant preset bleed of air enters the stove to ensure minimum smoke discharge.

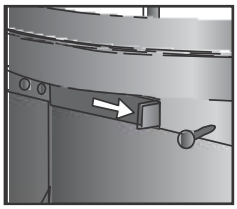


Fig 3 - open

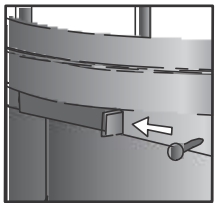


Fig 4 - closed

Lighting
To ignite the fuel, use fire lighters, small paraffin ignition bags or small pieces of wood placed on the bottom grate. Place larger pieces of wood on top of this kindling material, at right angles to the firing, doors. Completely open the start-up and secondary air supply and leave the firing door ajar – i.e. approx. 1 cm open. Once the fire has taken a good hold of the fuel and the chimney has heated up (after about 10 min) close the firing door. We recommend that you burn the entire first firing with the secondary air supply fully open to make sure that the chimney is thoroughly heated.

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 primary and secondary air controls. 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 airsliders. Shut the lower primary airslider and control the burning rate with the secondary air to give optimal 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 airsliders fully open. The wood will ignite in 2/3 minutes. Shut the primary air and adjust the secondary air 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.

Refuelling
You should normally refuel the stove while there is still a good layer of embers (insufficient burning embers will cause excessive smoke to occur when you refuel the stove). Distribute the embers across the bottom grate, place pieces of fuel (max 0.7 kg) on the embers in a single layer perpendicular to the firing opening. If there are not enough embers then use small pieces of kindling and space them apart for air to circulate. Close the firing door and fully open the start-up mechanism. The wood will then ignite very quickly – i.e. in 30 seconds or 1 minute. When the wood is burning with a steady flame, close the start-up mechanism. Then adjust the secondary airflow to the level required. For nominal operation (5 kW), the secondary air supply should be 100% open. When firing, take care not to place the pieces of fuel too closely together and do not overload the firebox, as this will result in poor combustion, excess smoke and insufficient exploitation of the fuel. Please note that both the door and air control mechanisms must not remain fully open during normal operation of the stove, as this may lead to both excess smoke being produced and the possibility of overheating. It must only be used until the fuel is burning with a steady flame.

Reduced burning
The stove is well suited to intermittent use. If you wish to operate the stove with reduced output, simply insert smaller volumes of wood at each firing, and apply a lower airflow. However, remember that the secondary combustion air supply must never be shut off completely during firing. It is important to keep a good bed of embers. Gentle heat is released when the fire settles - i.e. when the wood no longer generates flames and has been converted to glowing embers.

Optimal firing
To achieve optimal firing and the highest possible effect, it is important to make sure that the air supply is used correctly. As a general rule, the secondary air is to be used to control the fire to ignite the flue gases. This produces a high effect and keeps the glass window completely clear of soot as the secondary air "washes" down over it. Please note that the stove will, naturally, produce soot if both the start-up mechanism* and secondary air intakes are closed completely. This will prevent oxygen from being drawn into the stove, and the viewing window and other parts will become covered with soot. If this situation is combined with firing with wet wood, the build-up of soot can become so thick and sticky that the sealing rope can, for example, become detached when the door is opened the next day.

* The **Scanline 500 (500D, 510D, 520D, 530D)** stoves are considered suitable for use in smoke control areas throughout the UK and is fitted with permanent stops to ensure that the primary and secondary air controls can not be closed beyond 95% and 50% respectively. **The appliances will only be considered as exempt appliances if these stops are in place.**

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 EN13240 testing.

Stove type	Nominal flue gas temperature	Flue outlet dia	Fuel Volume	Draught min	Nominal output	Efficiency	Distance to flammable materials (mm)		Distance to furniture	Stove weight
	C	mm	kg	mbar	kW	%	Behind	sides	mm	kg
500	270	150	1.6	0.1	5	81	150	400	800	115-250

The nominal output is the output to which the stove has been tested. The test was carried out with the secondary air 100% 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 and seal on back of the stones is intact and correctly fitting.

If the stove it 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.

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. Check whether the air holes in the stones are blocked with for example ashes etc. Below the casted shaking grate is it possible to clean the air channel for the start-up airflow becoming covered in soot. This soot can be easily and effectively removed by using proprietary stove glass cleaner.

Door sealing
It is recommended at least once a year to check the sealing of the door to see if it is intact and correctly fitting. (See figure 2)

GUARANTEE

The model Scan-Line 500 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.

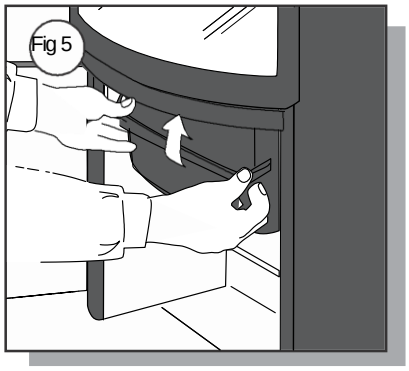
This guarantee does not cover: Wearing parts/fragile parts such as:

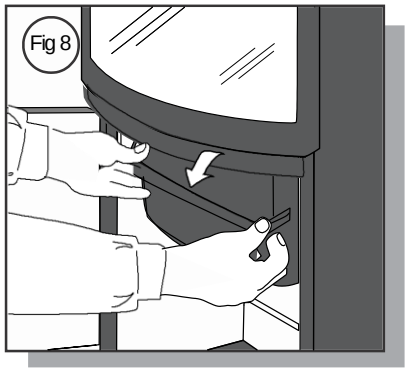
- The fire-proof bricks in the combustion chamber.
- The smoke baffle
- The glass
- The sealing rope
- The grate frame.

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.

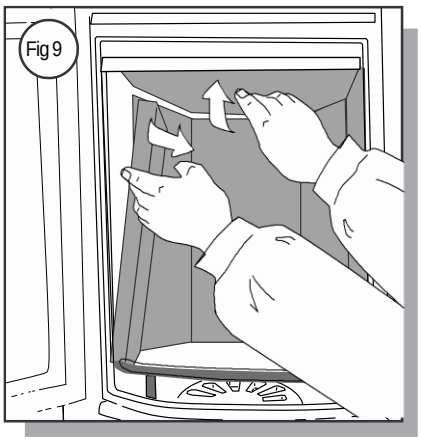
Warning
Any unauthorised modification of the stove and any use of non-original spares will void the guarantee.

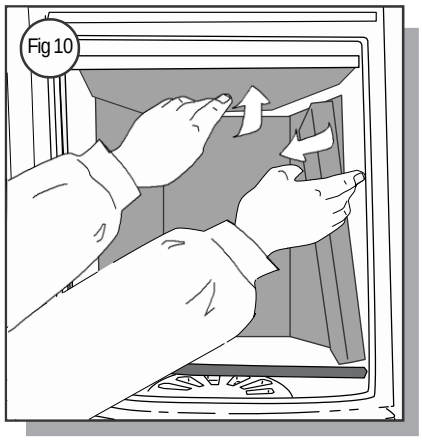
Emptying the ash pan, fig 5-8

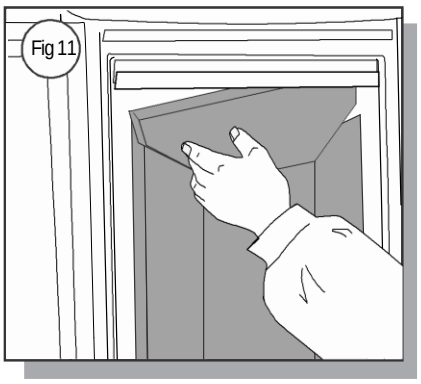




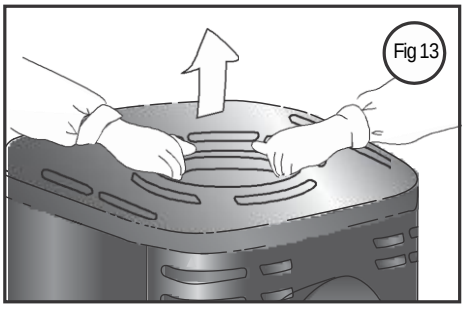
Cleaning and replacing the fire bricks fig 9-12

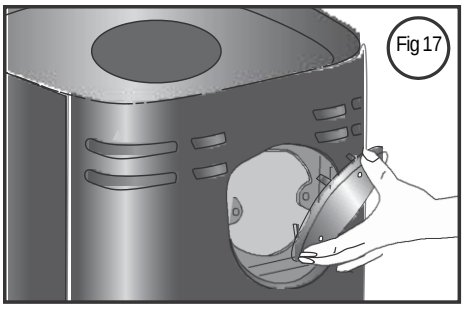


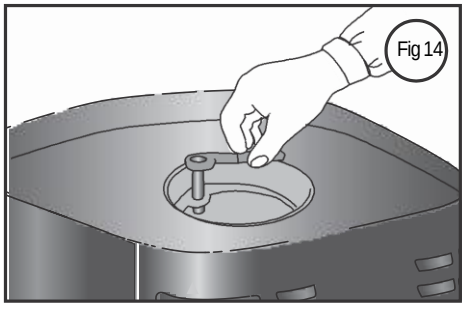


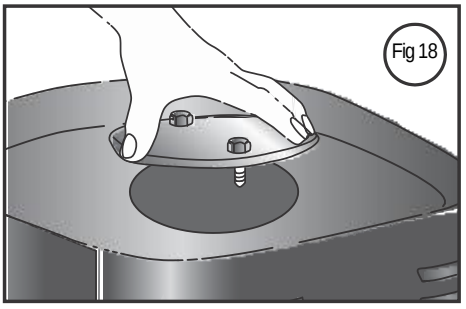


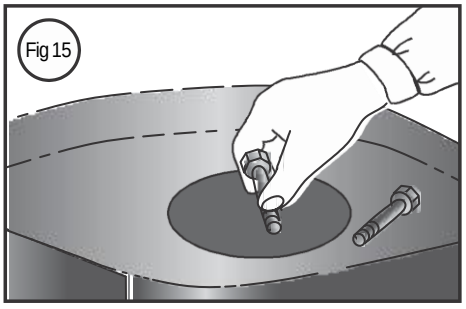
Changing to back smoke outlet fig. 13-20

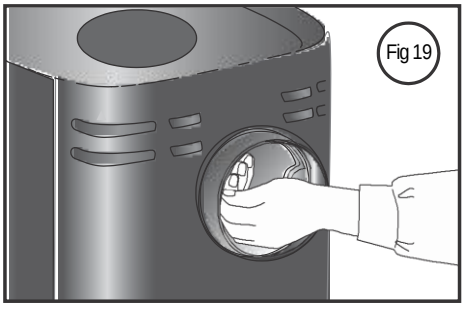


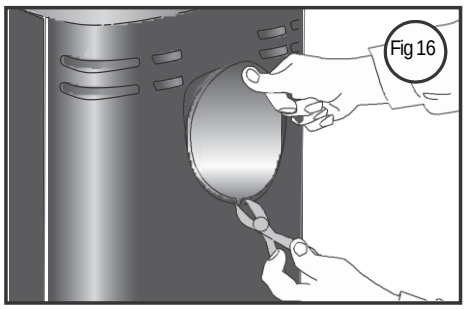


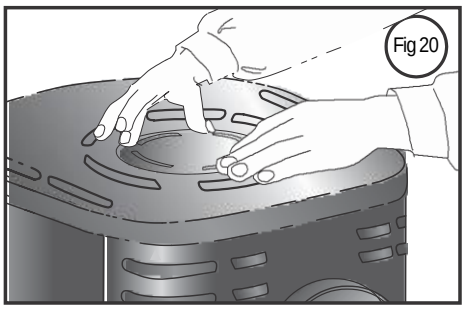




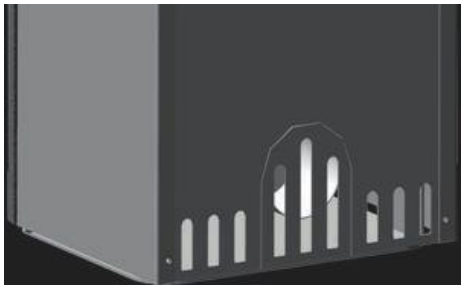








The stove is prepared for a fresh air intake.



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 **Scanline 500 Series (500, 510, 520, 530)** have been recommended as suitable for use in smoke control areas when burning wood fuel.

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.