

# Inset Sønderskoven 20B

Installation and Operating Instructions



# Inset Sønderskoven 20B Technical Specification

<b>C €</b> 14	cleanburn	INSET SØNDERSKOVEN 20B Trevilla Park, Slaughterbridge, Camelford, Cornwall, PL32 9TT		
BS/EN 13229		UKAS# 0692		
Stove Mass: 127.67kg				
NOMINAL OUTPUT: 15.8KW				
NOMINAL OUTPUT TO WATER: 10.7KW				
NOMINAL OUTPUT TO SPACE: 5.1KW				
CO Emission at 13% O <sub>2</sub> : 0.33%				
Mean Flue Gas Temperature: 385°C				
EFFICIENCY: 69.9%				
Flue Gas Mass Flow: 14.1g/s				
Maximum operating water temperature in °C: 100°C				
Maximum operating pressure in bar: 1.2 Bar				
Minimum clearance to combustible material				
Top of I	Fire Surround:	150mm		
Side of	Fire Surround:	75mm		
Si	de Wall:	200mm		
This appliance is suitable for intermittent burning				
This appliance is not suitable for use in a shared flue				
Read and follow the operating instructions				
Use only recommended fuels				

### **General Guidance**

It is important that your stove is correctly installed as Cleanburn Stoves cannot accept responsibility for any fault arising through incorrect use or installation.

These instructions cover the basic principles to ensure satisfactory installation of the stove, although detail may need slight modification to suit particular local site conditions.

The installation must comply with current Building Regulations, national and European standards, Local Authority byelaws and other specifications or regulations as they affect the installation of the stove.

The Building Regulations requirements may also be met by adopting the relevant recommendations in the current issues of British Standards BS 8303 and BS EN 15287-1.

#### **COMPETENT PERSONS SCHEME**

Cleanburn Stoves recommend that this stove is installed by a member of an accredited competent persons scheme e.g. HETAS.

If the installer is not a member of a competent persons scheme, it is a legal requirement to notify your local building control body in advance of any work starting.

#### CO ALARMS

Building regulations require that whenever a new or replacement fixed solid fuel or wood/biomass appliance is installed in a dwelling, a carbon monoxide alarm must be fitted in the same room as the appliance.

Further guidance on the installation of the carbon monoxide alarm is available in BS EN 50292:2002 and from the alarm manufacturer's instructions.

Provision of an alarm must not be considered a substitute for either installing the appliance correctly or ensuring regular servicing and maintenance of the appliance and chimney system.

#### **HEALTH AND SAFETY PRECAUTIONS**

Special care must be taken when installing the stove such that the requirements of the Health and Safety at Work Act are met.

#### HANDLING

Adequate facilities must be available for loading, unloading and site handling.

#### Fire Cement

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

#### ASBESTOS

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

#### METAL PARTS

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

#### MODIFICATION

No unauthorized modification of this appliance should be carried out.

### <u>Safety</u>

**WARNING** – This appliance will be hot when in operation and due care should be taken. The supplied gloves may be used to open the door and operate the air controls.

#### AEROSOLS

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

#### **FIREGUARDS**

Always use a fireguard in the presence of children, the elderly or the infirm. The fireguard should be manufactured in accordance with BS8423 – Fireguards for use with solid fuel appliances.

#### **DO NOT OVER-FIRE**

It is possible to fire the stove beyond its design capacity. This could damage the stove so watch for signs of over-firing. If any part of the stove starts to glow red, the stove is in an over-fire situation and the controls should be adjusted accordingly. Never leave the stove unattended for long periods without first adjusting the controls to a safe setting. Careful air supply control should be exercised at all times.

#### **FUME EMISSION**

Properly installed, operated and maintained, this appliance will not emit fumes into the dwelling. The appliance door(s) must be kept closed at all times, except for when de-ashing and refueling, during which occasional fumes may occur. However, persistent fume emission is potentially dangerous and must not be tolerated.

If fume emission does persist, then the following immediate action should be taken:-

- 1. Open doors and windows to ventilate the room and then leave the premises.
- 2. Let the fire go out.
- 3. Check for flue or chimney blockage and clean if required.
- 4. Do not attempt to re-light the fire until the cause of the fume emission has been identified and corrected. If necessary, seek expert advice.

The most common cause of fume emission is flue way or chimney blockage. For your own safety these must be kept clean at all times.

Adverse weather – In a small number of installations, occasional weather conditions (e.g. wind from a particular direction) may cause downdraught in the flue and cause the stove to emit fumes. In these circumstances, the stove should not be used. A professional flue installer will be able to advise on solutions to this problem (e.g. anti-downdraught cowl).

#### CO ALARM

Your installer should have fitted a CO alarm in the same room as the appliance. If the alarm sounds unexpectedly, follow the instructions given under "Warning Note" above.

DO NOT FIT AN EXTRACTOR FAN IN THE SAME ROOM AS THIS APPLIANCE.

#### IN THE EVENT OF A CHIMNEY FIRE -

- Raise the alarm
- Call the Fire Brigade
- Close appliance air controls

- Move furniture, ornaments etc away
- Place a fireguard in front of stove
- Check the chimney breast for signs of excessive heat.

If the wall is becoming excessively hot, move furniture away. Ensure the Fire Brigade can gain access to your roof space in order to check for fire spread.

### **Installation**

#### **APPLIANCE DIMENSIONS**



#### AIR SUPPLY

The room or space containing this appliance should have purpose provided ventilation (where necessary) in accordance with Building Regulations.

Due consideration should be given to air requirements for any other appliance in the same room or space.

Any air opening must be kept clear from blockage or obstruction.

#### **APPLIANCE OPENING**

This stove must be fitted on a hearth or base with adequate load-bearing capacity.

The opening into which this stove is fitted should be constructed wholly from non-combustible materials. The dimensions of the opening should be **at least** those shown in the diagram.



This appliance will fit into a standard 16" fireplace opening if the clay fire back is removed. *Any non-combustible walls within 50mm of this appliance should be at least 200mm thick and should extend at least 30mm above the top of the appliance and at least 1.2 metres above the hearth. Any walls more than 50mm from the appliance may be reduced to a thickness of 75mm. Ensure the inter-connecting flue pipe also has adequate clearances to combustible materials* 

The walls surrounding the stove will become hot and should therefore be finished in a heat resistant plaster.

Do not hang pictures, plasma screen televisions or ornaments above the stove, as these could be damaged and could potentially create a fire hazard.

Please check the suitability of any fireplace / surround for closed solid fuel appliances before installation. Cleanburn cannot be held responsible for any fault arising through incorrect use or installation. Fire surround back panels suitable for solid fuel are usually in three sections and slabbed. Many fire surrounds are suitable only for gas and electric fires and therefore not suitable for solid fuel.

#### HEARTH REQUIREMENTS

A constructional hearth with a minimum thickness of 125mm should be provided. This constructional hearth should extend to at least 300mm in front of the stove and 150mm at the sides The constructional hearth should be made of solid non-combustible material and can include any solid non-combustible floor. The boundary of the hearth must be clearly marked. This can be done by adding a super-imposed hearth on top of the constructional hearth – e.g. a slate slab on top of a solid concrete floor.



#### FLUE REQUIREMENTS

The flue serving this appliance must be dry, free from cracks and obstructions and be in accordance with relevant standards.

The diameter of the flue should not be less than 150mm and not more than 200mm. If these requirements are not met the chimney should be lined by a suitable method. If there is no existing chimney then either a prefabricated block chimney in accordance with Building Regulations Approved Document J or a twin-walled insulated stainless steel flue to BS EN 1856 can be used. These chimneys must be fitted in accordance with the manufacturer's instructions and Building Regulations.

The chimney/flue should have a vertical height of at least 4.5 meters and should terminate in accordance with Table 1.

If the chimney is believed to have previously served an open fire installation, it is possible that the higher flue gas temperature from the stove may loosen deposits that were previously firmly adhered, with the consequent risk of flue blockage. It is therefore recommended that the chimney is swept a second time within a month of regular use after installation.

If you have any doubts about the suitability of your chimney, consult your local dealer/stockist. Both the chimney and flue pipe must be accessible for cleaning and if ANY part of the chimney cannot be reached through the stove (with baffle removed), a soot door must be fitted in a suitable position.



Terminal	Position	Clearances to Flue
		Outlet
а	At or within 600mm of the ridge	At least 600mm above the ridge
b	Elsewhere on a roof (whether pitched or flat)	At least 2300mm horizontally from the nearest point on the weather surface and:
		highest point of intersection of the chimney and the weather surface or At least as high as the ridge
C	Below (on a pitched roof) or within 2300mm horizontally to an openable roof light, dormer window or other opening.	At least 1000mm above the top of the opening.
d	Within 2300mm of an adjoining or adjacent building, whether or not beyond the boundary.	At least 600mm above any part of the adjacent building within 2300mm

**Table 1** – Flue Terminal Positions

#### Flue Draught

If the draught exceeds the recommended maximum, a draught stabiliser must be fitted so that the rate of burning can be controlled and to prevent over firing.

If the reading is less than the recommended minimum then the performance of the appliance will be compromised.

The flue draught should be checked under fire at high output.

#### Minimum Draught – 1.2mm Water Gauge Maximum Draught – 2.5mm Water Gauge

#### **CLEARANCES TO COMBUSTIBLE MATERIALS**

Excluding some fire surround installations (see below) there should be no combustible material within 200mm of either side of the stove or 275mm above.

No combustible furniture should be placed any closer than 700mm from the front of the stove.



#### FIRE SURROUNDS

Please check the suitability of any fireplace/surround for closed solid fuel appliances before installation.

Cleanburn Stoves cannot be held responsible for any fault arising through incorrect use or installation.

Fire surround back panels suitable for solid fuel are usually in three sections and slabbed. Many fire surrounds are suitable only for use with gas and electric fires and therefore not suitable for solid fuel. A combustible fire surround with a depth of up to 100mm requires a minimum clearance of 100mm from the side of the stove. For combustible fire surrounds with a depth in excess of 100mm this clearance must be increased to 200mm.



### **Removing Internal Components**

All internal components must be removed prior to fitting the stove. This will make handling the stove easier; allow access to fixings and the flue outlet; as well as protect the internal components from damage during the installation process.

1. Open the door(s) and remove the ashpan.



2. Remove the fuel retainer by lifting off of its supports and remove from firebox.



3. Remove the catch bar (front plate) by lifting until the widest section of the keyhole slots are in line with the catch bar supports. Then pull forward until clear of the supports and remove.





4. Remove the bricks by sliding forward so they are clear of their supports and tilting the bottom edge into the fire box.





5. Remove the grate bars by lifting the front up off the cam bar and sliding forward off the rear grate support and lifting out of the firebox. Repeat with remaining grate bars.



6. Remove the baffle by sliding it forward until it reaches its stop. Then lift and slide forward until clear of its supports and lower into the firebox.







### **Installing the Stove**

- 1. Check positions of pipe connections.
- 2. Make suitable access holes so you can access the tapings and infill with vermiculite concrete.



3. Apply fire cement around the rope seal. This will help seal the stove when in position.



- 4. Move the stove into position inside the fireplace opening, being careful not to damage the hearth or paintwork on the stove and making sure that the rope seal is compressed forming a tight seal between the stove and fireplace.
- 5. Connect the boiler see 'Installation of boiler models'.
- 6. Fill the boiler and check for leaks.
- 7. Connect the flue see 'Flue connection'.
- 8. Infill the stove with vermiculite concrete.
- 9. Fill in the access for the boiler pipe connections.
- 10. Fill in the top access.
- 11. Drill hole into hearth through base using a 10mm drill bit.
- 12. Position anchor bolt provided through base plate and fix stove in place.

#### **INSTALLATION OF HEATING & HOT WATER SYSTEM**

We strongly recommend that a knowledgeable, experienced and qualified plumbing and heating

engineer is responsible for the design and installation of the heating and hot water system. Cleanburn Stoves Ltd cannot accept responsibility for any consequential loss, however caused, due to under or over specification of the appliance in any installation.

- Do Not Under any circumstances connect the stove to a sealed (pressurised) heating system or unvented hot water cylinder.
- **Do Not** Link the stove into a heating or hot water system with an existing boiler without the use of suitable equipment such as a neutralizer. When fitting this type of system the neutralizer manufacturer's instructions must be followed.
- Do Fit an open cold feed and expansion cistern with separate cold feed and vent pipes. The cold feed and vent pipes must be unvalved. The open vent pipe should have a diameter of 22mm and rise continuously from the boiler. It is common practice to form the vent pipe from an extension of the primary flow (see diagram).
- Do Connect the stove to a **double feed**, indirect hot water cylinder via 28mm copper flow and return pipework, rising continuously from the boiler to the cylinder. The cylinder and heat leak radiator must be sited higher than the stove.

Semi pumped systems should be used on heating and hot water systems with gravity circulation to the hot water cylinder and one unvalved 2 KW radiator to act as a heat leak when the central heating is switched off.

All four tappings on wraparound boilers should be used for systems incorporating separate gravity and pumped heating loops. Each flow and return should be taken from diagonally opposite sides of the boiler. If a common flow and return is used, these should also be taken from diagonally opposite sides of the boiler, and plugs inserted into the sockets not used.

Systems using a common flow and return to the boiler should incorporate an injector tee on the primary return connection from the central heating pump (see diagram).

A HIGH LIMIT thermostat should be fitted to the gravity flow pipe close to the boiler and set at 90°C. This should override any pump control, switching the pump on and dissipating any excess heat around the radiator circuit.

To prevent boiler corrosion due to condensation it is necessary to maintain the return water temperature above 45°C. This can be achieved by the use of a LOW LIMIT thermostat on the return pipe from the hot water cylinder, close to the boiler. The thermostat should make on temperature rise, preventing the circulating pump from operating until the gravity circuit is up to temperature.

#### FLUE CONNECTION

# N.B. An adjustable flue bend may be required for some installations.

<u>If connecting to a stainless liner</u>, a proprietary single wall flue adaptor will be required. It is recommended that a short length of flue pipe is connected before the liner.



*If connecting to an existing masonry* chimney it is recommended that a flue forming pipe (short length of flue pipe) is used and the void between the flue forming pipe and the chimney is filled with vermiculite concrete.

A suitable access hole will need to be made in the chimney breast to allow the back filling to be carried out and then filled and sealed once the installation is complete.



Alternatively a connection can be made using a register plate although it will be necessary to allow access for fitting the flue pipe to the register plate, infilling with vermiculite concrete and sealing all joints.



**<u>RE-ASSEMBLING THE STOVE</u>** Refit all the internal parts by following the 'removing internal components' instructions in reverse orders.



### **Commissioning and Handover**

Upon completion of the installation, allow a suitable period of time for any fire cement and mortar to dry out. A small fire may then be lit and checked to ensure the smoke and fumes are taken from the stove up the chimney and emitted safely to atmosphere. Do not run the stove at full output for at least 24 hours.

On completion of the installation and commissioning, ensure that the operating instructions and operating tools for the stove are left with the customer. Advise the customer on the correct use of the appliance with the fuels likely to be used on the stove and warn them to use only the recommended fuels for the stove.

Advise the user on what to do should smoke or fumes be emitted from the stove.

The user should be warned to use a fireguard to BS 6539 in the presence of children, aged and/or infirm persons.

### **Operating Instructions**

Read the 'General Guidance' Section at the start of these instructions before operating your stove for the first time.

Allow sufficient clearance between the stove and pictures, plasma screen televisions or ornaments etc, as these could be damaged and could potentially create a fire hazard (For more information read the 'Material Clearance' section of these installation instructions).

WARNING – This appliance will be hot when in operation and due care should be taken. The supplied operating tool or gloves may be used to open the door and operate the air controls.

#### **AEROSOLS**

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

#### AIR CONTROLS

Installed and used correctly this stove will burn cleanly and efficiently. Therefore, to avoid the disappointment of poor performance, please familiarize yourself with the controls and their recommended settings before use.

#### **THERMOSTAT**

The thermostat is controlled by the knob on the side of the stove with settings from 0 - 10. The thermostat generally operates between 50° to 90°. Experiment with the settings to find the desired temperature.



#### SECONDARY AIR

Secondary air is controlled via the slider above the door(s), it is this "Airwash" that keeps a clean and uninterrupted view of the fire.



#### **LOCOMOTIVE GRATE**

Your Cleanburn Stove is fitted with a locomotive type grate. So that de-ashing can be carried out cleanly and easily, it is riddled from the outside of the stove with the doors closed.



#### **BAFFLE OPERATION**

Your Cleanburn Stove if fitted with a sliding baffle. The baffle needs to be slid into its open position when lighting and re-fuelling your stove. This will prevent spillage while the stove door is open.



To slide the baffle forward you will need to use the tool provided. Hook the tool onto the tab at the front of the baffle and pull forward until it hits the stop. This will create a 30mm gap at the back of firebox.



The baffle will automatically slide back into its closed position when the door is closed. This is achieved by the door pushing onto the fixing on the baffle arm.



#### <u>Lighting</u>

We recommend that you have two or three small fires before you operate your stove to its maximum heat output. This is to allow the paint to cure in steadily and to give a long service life to the paint finish. During this curing in process you may notice an unpleasant smell. It is non-toxic, but for your comfort we would suggest that during this period you leave all doors and windows open.

Slide the baffle into its open position (see Baffle Operation) and open secondary air control fully and light one or two firelighters placed centrally on the grate, allowing the flames to become established before placing several pieces of small dry kindling in a criss-cross fashion above the firelighters, taking care not to smother the fire. Close the stove door. Once the kindling is well alight open the door and build the fire by gradually adding fuel, closing the door afterwards.

Once the fire is established gradually close the secondary air control until around 20% open (slide control to your left) and add more fuel as necessary.

**Should the fire fail to light correctly** open the door and use a poker to spread the fuel across the bottom of the firebox. Close the door and allow the fuel and stove to cool before attempting to relight the fire.

When the stove is up to operating temperature the operating tool or gloves should be used to operate the air controls.

#### **REDUCED COMBUSTION**

In order to shut down the stove, reduce the thermostat control to '0' and close the secondary air by sliding control to the left.

If the controls are left in this position, the fire will be starved of air and will die down.

If you want to revive the fire it is recommended that the thermostat control is opened first, and then the secondary air control.

**Warning!-** The stove will remain **hot** for a considerable time after the fire has been extinguished.

#### **Refuelling**

When the fuel has burnt down to the fire bed, add new fuel. The air controls should not need adjusting while refuelling.

When refuelling it is important to slide the baffle into its open position to reduce any spillage. (see Baffle Operation) The baffle will be hot when refuelling so due care should be taken.

#### **Recommended Fuels**

Cleanburn Stoves recommend that approved smokeless fuels are burnt in this appliance.

Only authorised smokeless fuels may be used in smoke control areas.

**Warning!** - Petroleum coke fuels or household waste must not be burnt on this appliance. This appliance must not be used as an incinerator.

Burning wet or unseasoned wood will create tar deposits in the stove and chimney and will not produce a satisfactory heat output.

Should any difficulties arise over fuel quality or suitability, consult your local approved coal merchant or:

HETAS Ltd – Telephone 01242 673257 – www.hetas.co.uk

Solid Fuel Association – Telephone 0800 600 000 – www.solidfuel.co.uk

### **General Maintenance**

Important! —In order to ensure continued compliance with current Building Regulations and Local Authority Byelaws, this appliance requires regular maintenance of the following –

N.B. Refer to the 'Removing Internal Components' section of the installation instructions for details on how to remove each component.

#### PERIODS OF PROLONGED NON-USE

If the stove is to be left unused for a prolonged period, then it should be given a thorough clean to remove ash and unburned fuel residues. To enable a good flow of air through the appliance to reduce condensation and subsequent damage, leave the air controls fully open. If the appliance has been unused for a long period, such as during the spring and summer months, a competent person should check the chimney for potential obstructions before lighting the stove *i.e.* get the chimney swept before the start of the heating season.

#### AS NECESSARY

**Baffle**- This should be removed and cleaned at least once a month to prevent any build up of soot or fly ash that could lead to blocked flueways and dangerous fume emission.

If the baffle is removed the chimney/flueway can be swept through the appliance.

**Stove body** – the stove is finished with a heat resistant paint and this can be cleaned with a soft brush. Do not clean the stove whilst it is hot; wait until it has cooled down. The finish can be renovated with proprietary stove paint.

*Glass Panel(s)* - Clean the glass panel when cool with proprietary glass cleaner.

Highly abrasive substances should be avoided as these can scratch the glass and make subsequent cleaning more difficult.

Wet logs on heated glass, a badly aimed poker or heavy slamming of the door could crack the glass panel.

The glass will not fracture from heat.

*Firebricks* - In normal use, these can last for many years. It is possible however, to crack them if fuel is continually jammed against them or if they are frequently struck with a poker.

Check periodically for seriously cracked bricks, which can be replaced with new, available from your dealer.

**Door Catch** - The door catch may require adjustment to maintain the door seal. To adjust the catch, follow the procedure below;

- Loosen the M6 grub screw.
- Rotate the catch shaft one complete turn to achieve the correct door operation.
- Tighten the grub screw.

**Rope** - Check the rope around the door. If rope is becoming detached, use Cleanburn Stoves rope glue to reattach it. If the rope is in a poor condition, a replacement rope kit may be ordered from the Cleanburn Stoves spares range.

**Chimney & Flueways** - It is important that the chimney, flueways and any connecting flue pipe are swept regularly. This means at least once a year for smokeless fuels and at least twice a year for wood and other fuels.

The baffle will need to be removed from its supports in order to sweep the chimney (see 'Removing internal components' instructions). Only wire-centred sweeps' brushes fitted with a guide wheel should be used.

If it is not possible to sweep all parts of the chimney through the appliance, ensure there is adequate access to cleaning doors.

**Seasonal use** - If the appliance has been unused for a long period of time, such as during the spring and summer months, the chimney should be checked for potential obstructions by a competent person before lighting the stove.

*Gaskets* - all gaskets used on this appliance are produced from a heat resistant material called Manniglas. The glass gasket will have to be replaced when a new piece of glass is fitted as the gaskets become brittle after firing the stove. Over time you may find that the gasket changes colour. This is due to a reduction in the pigment used in the manufacture of the product and no cause for concern.

**De-ashing** – De-ashing should be carried out on a regular basis to avoid a build up of ash and ensure sufficient primary air flow. Empty the ashpan regularly to prevent ash reaching the underside of the great bars. When de-ashing ensure the primary air channel at the front left of the stove is clear of ash. If necessary this can be periodically cleared with a vacuum cleaner. The primary air cover can be removed by undoing the two screws if required.

### Trouble Shooting

### FIRE WILL NOT BURN

Check that –

- Chimneys and flueway are clear.
- A suitable fuel is being used.
- There is an adequate air supply into the room.
- An extractor fan is not fitted in the same room.
- Flue draught is above minimum level (see installation instructions).

### FIRE BLAZING OUT OF CONTROL

Check that –

- The door is tightly closed.
- The air controls are in the closed position.
- A suitable fuel is being used.
- The glass is not loose.
- The door rope seal is in good condition.

Flue draught is below maximum level (see installation instructions).

## **Spares Information**

#### SINGLE DOOR SPARES



#### LEFT HAND DOOR



#### **BODY ASSEMBLY SPARES**

