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Installation and Operating Instructions

Solid Fuel Stove - "Nero 5"

Greymetal Ltd.

Hendre Centre,

Tal Y Bont,

Bangor,

Gwynedd,

LL57 3YP;

phone: +44 7876 043 049

e-mail: info@greymetal.co.uk

www.greymetal.co.uk

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Introduction:

The appliance is manufactured and tested in accordance with the requirements of the European standard BS EN 13240.



Installations must be carried out according to the Building Regulations Approved Document J, 2010, which can be downloaded at:

http://www.planningportal.gov.uk/uploads/br/BR_PDF_ADJ_2010.pdf

1. Stove installation.

Technical parameters are given on page 13.

Before the stove is first used, refer to '2. Stove Operation' on page 5.

The following includes a summary of the Regulations. It is not intended to replace the reading of and observation of all relevant requirements of the Approved Document J.



The local Building Control department must be consulted prior to any DIY installation.

1.1. Combustion Air requirement:

Stoves with a draught stabiliser fitted into the flue pipe, or stoves over 5kW will require a permanently open vent as per Building Regulations Table 1 Page 29 – "Other Appliances".

An air vent to the outside wall, ducted near to the base of the wood burner will prevent cold draughts travelling across the room and is highly recommended for all stoves.

Extractor fans must not be placed in the same space as the stove.

1.2. Hearths:

Building Regulations Approved Document J, Pages 37- 39, Diagrams 24-27.

Before installing the stove, you must ensure that the load-bearing capacity of the floor can withstand the weight of the stove plus flue pipe and connections.

Building Regulations Approved Document J, Pages 37- 39, Diagrams 24-27.

If the stove is placed on a combustible floor, the stove should always be installed on a non-combustible hearth. The hearth should extend 225 mm in front of the stove and 150 mm to each side.

None of our products exceed 100°C at hearth level. They may be placed on a 12 mm non-constructural hearth directly onto the floor.

1.3. Distance of stove to adjacent walls, combustible, non-combustible:

- The CE plate on the rear of the stove indicates the minimum distance to combustible surfaces to the back, sides, and to the front of the stove e.g. wooden partition wall, plasterboard, furniture. Heat shields can be used to reduce the distance required – refer to manufacturer's guidelines.

There is no requirement for minimum clearance to non-combustible surfaces around the sides and back of the stove. However, 100 mm is recommended to allow for heat and air circulation to the room. The further the stove is placed in the room, the better the heat distribution.

Refer to Diagram 30, Page 42 of Document J for further installation dimensions and requirements for non-combustible wall thickness etc.

1.4. Chimneys and Flue Pipes:

1. There is a minimum gap required between an un-insulated flue pipe and combustible material. To a combustible material it must be at least 3 x the outside diameter of the flue pipe (450 mm for 6" single wall flue pipe). To a proprietary non-combustible shield it must be at least 1.5 x the flue diameter (e.g. 225 mm for 6" single wall flue pipe).
2. The rear flue exit is normally used when the chimney is tall and provides a powerful draught. Where the chimney is short, the top flue exit will give better performance.
3. Flue connections should be sealed with a suitable proprietary sealant such as fire cement or high temperature rope seal. Gunnable cartridge sealing compounds work well, and are easy to apply. We recommend Fortafix Ceramix.
4. If a suitable approved factory made chimney system is to be used, it should be installed according to the manufacturer's instructions.
5. A Flue / chimney height of 4.5 m should be adequate in most situations measured from the stove's top air inlet to the top of the flue.
6. No horizontal sections are allowable.

7. Flues should have a maximum of 4 bends with angles of 45 degrees. And a maximum of two bends in-between each sweeping access point. [Page 27 Diagram 15].
8. The flue exit from the building should be positioned to comply with the requirements of the Building Regulations. These can be seen on page 31 Diagram 17.
9. If the chimney is too high (draught exceeds 35 Pa) or so that the chimney draught can be regulated on days with strong winds, it is necessary to fit the flue with a damper.
10. No other heating appliances should be connected to the same Flue or Chimney system.

1.5. Test the chimney:

1. The Flue or Chimney must be unblocked, clean and sound (no leaks), and should be professionally inspected and swept before use.
2. Check the flue draught. This should be done with all windows and doors closed and any extraction fans in adjoining rooms running at maximum speed.

2. Stove operation.

Important points before initial use:

The paint finish should be gently baked on during the first two or three uses. Light only a small fire, do not put anything on the stove and do not touch the outer surface. The smell produced disappears after a few hours. The room should be well aired.

The paint can become soft for a short time during first lighting. Avoid all contact as the finish is easily damaged! The rope seal of the door can also stick to the body of the stove at this time - leave the door slightly open on first firing.

Vibration caused by transport may loosen nuts/bolts securing glass, door handles etc., check these and tighten before use. Do not over-tighten nuts securing the glass, & make sure seals are in place beforehand. Check that the internal components are in position. Remove all supplementary tools from the ash pan, as well as warming oven stones/bricks. The regulators for the primary and secondary air control must be opened.

For your own safety, please read the rest of the manual before using the stove.

2.1. Fuels.

The most appropriate fuels are correctly dried and seasoned wooden logs. Logs stored under cover, with sufficient air circulation should reach a humidity level of 10-20% after 2 years and will give the best performance.

Green wood will result in high fuel consumption and low heat output. The increased condensate and tar content in the flue gases will block the flue and darken the glass.

The type, the dimension and the recommended quantity of fuel for the stove is given on page 13.

Do not use the following fuels: wet, painted or tarred wood, wood shavings, high calorific value coal, pastics, paper or cardboard (except for lighting).



Do not use liquid fuels.

Do not use the stove as a furnace for burning waste materials.

Burning the above fuels voids the warranty.

2.2. Components.

Glass

The ceramic glass withstands temperatures up to 850°C. It cannot be damaged by heat, only by mechanical means such as putting oversized logs into the firebox.

There is no warranty on the glass.

Keeping the glass clear:

When the stove is run properly, the Airwash will work and the glass will remain clean! The causes of darkened glass include the following:

- The chimney does not supply sufficient draught due to insufficient height, diameter etc.
- Insufficient combustion air supply – reduced by the user.
- The correct fuel is not used.

In order to keep the glass as clean as possible, the logs should be placed in such a manner that the cut surface is not facing to the glass.

Refractory Plates – ‘Fire Bricks’.

The firebox is lined with refractory plates. The heavy build of the Nero and the fire bricks maintain a high combustion temperature and therefore a clean and efficient combustion.

The plates can be damaged by:

- Excessively high temperatures resulting from a strong flue draught, and the primary (bottom) and secondary (top) air controls open. This results in over-firing.
- Mechanical: e.g. throwing a heavy log into the firebox, using oversized logs, over-enthusiastic use of a poker.

The bricks are easily replaced. If there is only a crack in them then changing is not necessary. If the metal parts between or behind them can be seen, they should be changed.

The refractory plates can wear out or be damaged. They are not included in the warranty.

Seals

The door seals are fibreglass, they do not contain asbestos. They become worn during use and must be renewed periodically.

Seals are not included in the warranty.

Cast iron grate:

The lower part of the firebox is supplied with a cast-iron grate. This grate can become blocked by nails, ash, etc. Clean the grate regularly in order to maintain its function.

Using inappropriate fuel, high temperatures, excessive primary air draught, and allowing the ash pan to over fill, can permanently damage the grate.

The grate is not included in the warranty.

Paint

The stove is coated in high temperature-resistant paint. It is not waterproof.

Avoid placing objects on the painted surface. When dust eventually accumulates then clean with a brush or dry cloth.

The paint finish can be easily repaired. If as a result of overheating or other abuse, the color changes into white-grey, or rust appears, or a part of the surface is damaged, a spray can of the original colour is available from GreyMetal.

Handles and Knobs

The handles and knobs of the stove are made of brass and nickel-plated. Generally, they do not wear out. The handles and knobs must be handled with a heat-resistant glove.

2.3. Controls.

Before using the stove, note the stove's controls.

Primary air passes through the ashpan, the grate and goes into the firebox. When burning wood, primary air is not necessary. The primary air allows easier lighting and use of coal. The primary air is controlled by the air inlet at the bottom of the door. If the chimney has a strong draught, fully close the air inlet. The ashpan should be emptied regularly to allow the primary air to enter the stove.

Secondary air: Wood burns most efficiently when the air for combustion is supplied from above the fire bed rather than below. The oxygen supplied above the fire by the secondary air vents above the door ensures the combustion of the gases given off by the wood as it heats. This heats the appliance instead of the energy being wasted up the chimney, condensing and forming tarry deposits inside the stove, the flue pipe or on the door glass. As the draw on the fire is determined by the height of the chimney, the correct control of the secondary air will be achieved by trial and error.

The secondary air is pre-heated, which increases the combustion temperature, the efficiency of the stove and prevents darkening of the glass. **Do not run the stove with the top air control fully closed, this will darken the glass.** The top air control supplies air for the 'airwash' system. The further open the top air control the more effective the airwash system. A minimum opening of at least 5 mm is recommended.

Closing all vents to achieve overnight burning causes a smouldering fire. This will cause blackened glass, blocked flues, and a great deal of pollution. There is a risk of (a small) explosion if the gasses suddenly ignite.

2.4. Lighting the fire.

1. Open the primary and secondary air controls fully.
2. Place rolled up and crumpled newspaper at the back of the stove. Put small tinder on top of the newspaper and then a few slightly larger pieces of wood on top of this. Light the newspaper and close the fire door.
3. Let the fire burn until all the pieces of wood are alight and burning. Then add larger pieces of wood.
4. When burning wood: Once the fire is established the primary air control can be closed so that all the air enters via the secondary air control. The burning rate of the fire can now be controlled by adjusting the secondary air control and by regulating the amount of wood added. The primary air control should normally remain closed once the stove is running. If the fire has been allowed to die too low then the primary air control can be opened to allow air to the base of the fire in an attempt to revive it. If the ambient temperature is above 14°C, then there may be insufficient draught, and use of the primary air control will be necessary.
5. Burning coal and other solid fuels requires primary air.

6. Note that the glass will darken initially but will eventually clear under correct operation with the correct fuel. Wood that is not sufficiently dried and seasoned will always darken the glass.
7. The first stage of the fire, just after lighting, is usually the smokiest. During this stage, ensure both air inlets of the stove are fully open to get a hot flame. The extra heat "primes" the chimney to produce a strong draft, and helps keep the flue clean by loosening creosote that might have been deposited by the previous fire. The hot initial burn also drives moisture out of the firewood and gives an ignition source for the smoke that is released from the wood.
8. If the ambient temperature exceeds 14°C, insufficient draught might occur. In this case, load the stove with less fuel and open the air inlets so that the fuel burns faster with a high flame, to achieve a stronger flue draught in the chimney.

2.5 Maintaining the Fire.

- Adding small amounts of fuel gradually will help maintain a steady temperature and burning rate so that the stove burns efficiently and cleanly. Adding a large amount of fuel all at once will dramatically reduce the temperature inside the stove. After adding a large piece of wood/log it is a good idea to increase the secondary air opening slightly more until the new fuel begins to burn and the stove returns to temperature.
- Adjusting the air controls gradually will also help maintain a steady combustion rate.
- Do not run the stove with the secondary air control fully closed. The secondary air control supplies air for the "airwash" system. The further open the secondary air control the more effective the "airwash" system.
- Use a piece of newspaper to wipe the inside of the window glass before lighting the stove each time to prevent the gradual build up of deposits.
- Small, hot fires are more efficient than large smouldering fires. As wood heats up, it releases gasses, or smoke. If the fire is hot enough, these gasses ignite, produce a flame and create heat. The turbulence in the flames creates good mixing between the combustion air and the gasses. In contrast, the smoke from a smouldering fire is heat energy that goes up the chimney unused, and either sticks to the flue as creosote or pollutes the atmosphere. To gain the most heat from each load of firewood, the wood should be flaming throughout the burn cycle until it is reduced to ash.
- When refueling, place wood towards the back of the stove where it will burn hotter and more efficiently. Try to place logs length ways so that any spitting from the end grain does not go onto the glass window.
- To get the best results from your stove it is recommended that a wood stove thermometer be fitted to the flue pipe just above the stove. Most thermometers are

magnetic and if attached to the single wall flue pipe just above your stove will give a good indication of the flue gas temperatures.

115°C - 260°C (240°F - 475°F)

The flue gases should be in this temperature band for the safest, most efficient and most economical use.

Below 115°C (240°F)

This is below the condensation point of wood gases and may cause the build up of tar in the chimney, darken the stove glass and result in the inefficient burning of fuel.

Above 260°C (475°F)

Too hot. Heat will be wasted up the chimney. Excess heat may damage the stove (voiding the warranty) or may ignite an existing accumulation of tar, resulting in a chimney fire.

- The ash-tray is taken out for cleaning only after it cools down.



If the natural flue draught is insufficient it can be increased by use of an exhaust ventilator or an additional device.

3. Safety advice.

- Over firing of the stove (running at too high a power) is dangerous, can cause damage and voids the warranty.
- The door of the firebox should always be firmly closed even when the stove is not working.
- Install according to the installation document and Building regulations.
- Flammable liquids must not be used to start a fire.
- Do not place objects that may cause explosions in the stove. E.g. empty lighters, batteries.
- Cleaning and maintenance should only be carried out after the stove has cooled down.
- Ash should only be disposed of in a metal container & after it has cooled down.
- Do not put any combustible objects on or near the stove.
- Do not use or spill cold liquids on hot glass!

Use a fire guard to keep children at a safe distance from the stove.

Chimney fires can be avoided by regular Sweeping and cleaning.

However, in the case of a chimney fire:

- Close the door and all the air inlets.

- If the fire does not go out quickly, call the fire brigade!
- Do not try to extinguish the fire with water by yourself.
- If it is safe to do so, move all flammable materials away from the chimney
- Have the chimney checked by a competent professional for damage before use.



When the stove has been overfired over the normally expected heat output, or for an excessive period, or when using fuels other than those recommended, then we cannot guarantee continued reliable and safe operation of the stove.

With the help of a specialist, regularly undertake a full check of the stove's condition. Replace defective parts only with spare parts supplied by the manufacturer.

Do not make any changes to the construction of the stove.

4. Cleaning.

The correct maintenance and cleaning of the stove guarantee its reliable work and keeping its good appearance. Should only be carried out when the stove is cold.

- Never use solvents to clean the stove, as this can remove the paint.
- Never use sharp objects or abrasive materials when cleaning.
- The stove may be vacuumed externally, or brushed down with a soft dry brush.
- The flue pipe and chimney should be inspected every six months and swept at least once a year, as should the inside of the stove.
- The glass can be cleaned only after cooling down by washing with a soap solution, and dried afterwards.

While cleaning do not use sharp objects or abrasive materials!

5. Troubleshooting.

Blackened glass:

- The wood is too damp. Only use wood stored for at least 18 months under cover and with a moisture level not exceeding 18%. Use a moisture meter such as "Testo".
- Insufficient intake of air from the top air control. Open the top air control further. The air shield system is more efficient the more air is allowed to run over the glass panel.
- The stove is run at too low a temperature: open the air vents. You may require a smaller, lower kW rated stove for the room.

Smoke in the room when opening door:

- Poor chimney performance - consult chimney sweep.
- Never open the door when there are high flames.
- Try moving the baffle towards the front of the stove so that some of the flue gasses exit at the rear of the stove.
- Check the position of any fitted flue damper or stabiliser and make sure it is in the correct position.

Uncontrollable combustion:

- Damaged door seal. Fit new seal.
- If there is an excessive chimney draft - fit a draft stabiliser in the flue pipe - consult a chimney sweep.

Excessive smoke and no draught when igniting the fire:

- Flue pipes and/or chimney not sealed
- Flue of insufficient length

Room cannot be heated effectively:

- Stove with higher output required
- Poor quality fuel
- Ash blocking the grate
- Insufficient combustion air provided

Stove radiates too much heat:

- Too much air provided
- Excessive draw from the chimney - fit a draught regulator

Grate damaged or slag formed:

- Too much primary air provided
- Inappropriate fuel is being used
- Stove is repeatedly overloaded
- Excessive chimney draw

The manufacturer reserves the right to improve the design of the stove without notice.



The manufacturer is not responsible for any changes made on the stove by the user.

The stove is supplied with one heat-resistant glove.

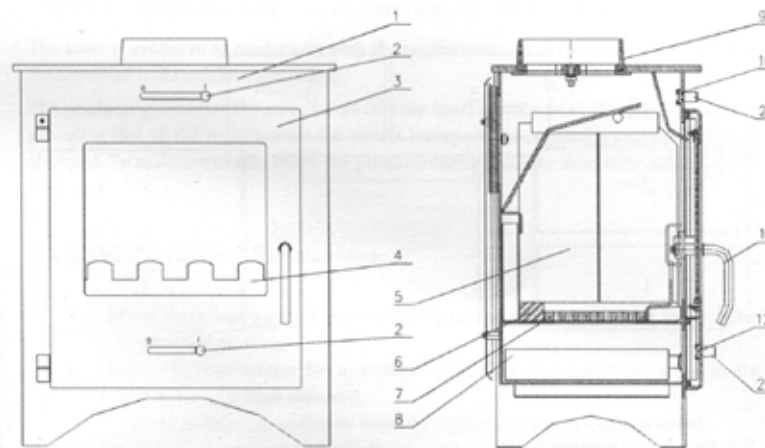
6. Technical data.

Fig.1.

1.Body; 2. Primary and secondary air controls; 3.Firedoor; 4.Front firebar; 5.Refractory plates. 6.Fire bricks; 7.Bottomgrate; 8.Ashpan; 9.Flue socket; 10.Secondary (top) air inlet control; 11.Handle; 12.Primary (bottom) air inlet control.

TECHNICAL DATA

Category 1 - appliances operating with firedoors closed

Model	Fuel type	Nominal heat output	Average flue gas temperature	Flue gas mass flow	Minimal draught at nominal heat output	Fuel quantity	Distance to adjacent combustible materials (cm)			Dimensions	Mass
		(kW)	(°C)	(kg/h)	(Pa)		side	rear	front	(mm)	
Nero 5	Wood	5.00	269	5.38	12	1.71	40	40	80	490 / 398 / 650	72
	Coal	5.00	282	4.95	12	1.43	40	40	80		

Flue socket: Ø154 mm

Control of the burning process:

Air inlet controls	Position "0"	Position "1"
Primary (bottom)	Closed	Open
Secondary (top)	Closed	Open

Refractory plates plan

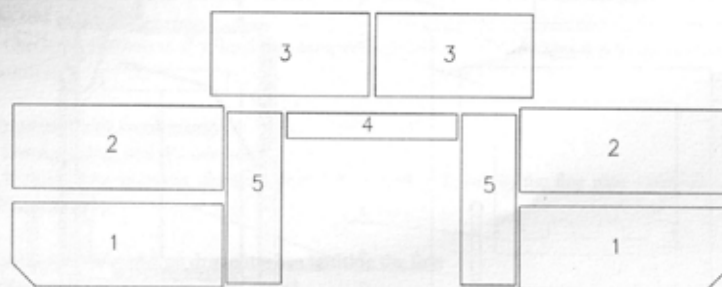


Fig. 2.

1. Side plate flat vermiculite -2 pcs
2. Side plate (25x125x315) flat vermiculite -2 pcs
3. Back plate (25x125x235) flat vermiculite -2 pcs
4. Fireclay brick (30x38x255) -1 pce
5. Fireclay brick (30x82x255) -2 pcs

WARRANTY CARD

of solid fuel stove for intermittent burning with firedoor closed

The stove is produced in conformity with the requirements of EN 13240. It complies with the approved technical documentation.

The producer guarantees the stove for 24 (twenty-four) months from the date of purchase, providing that all the requirements for correct transportation, assembly and operation are observed. To make a warranty claim, the purchase Invoice and the Warranty card should be produced.

The manufacturer satisfies all claims, except:

- When there has been an attempt to repair the stove by the user or by other unauthorised persons;
- When the instructions for assembly, installation and operation, given in the manual have not been observed;
- When installation according to building regulations has not been observed.
- Damage during transit whilst in the possession of the purchaser;
- Defects discounted for at purchase.

DIARY

for servicing during the warranty period

Service	Issuing date	Order №	Denomination of the repairing	Delivering date	Person