

## Cassette stove installation guide

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**BK605**

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# Cassette stove installation guide

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Please carefully read through the entirety of this installation guide before commencing installation. Should you have any questions about our stoves that are not covered in this manual, please contact the Arada retailer in your area, or call our technical support department on +44 (0)1297 632052.

Arada has a policy of continuous product development and therefore we reserve the right to amend specifications without prior notice.

Please check with your retailer or dealer if you are unsure about any aspect of your stove, its installation or correct use.

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# INTRODUCTION

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## Warnings

It is a legal requirement that the installation of all new or replacement, wood or solid fuel heating appliances obtain Building Control approval from your local authority. This can be done by using a qualified heating engineer, affiliated to a government approved Competent Persons Scheme such as those listed on [www.gov.uk/building-regulations-competent-person-schemes](http://www.gov.uk/building-regulations-competent-person-schemes)

You can also consult your local buildings inspector / controller.

All local regulations, including those referring to National and European standards, need to be complied with when installing the appliance.

Refer to the current issue of BS 8303 code of practice for the installation of domestic heating appliances burning solid mineral fuel.

This stove should not be installed into a chimney that serves any other heating appliance.

Any manufacturer's instructions must not be taken as overriding statutory requirements.

Arada Ltd will not be responsible for any consequential or incidental loss or injury however caused.

Any further warnings in this document will be marked out in a box such as this one. Ignoring the warnings could lead to damage/injury to persons and/or property.

## Health and Safety

Before any installation work is undertaken consideration must be given to the Health and Safety at Work Act 1974. Safe working practices should be followed at all times.

Please consult health and safety guidelines for advice on handling heavy and/or large items.

During installation ensure that adequate precautions are taken to avoid unnecessary risk to yourself or any householder.

The danger from the caustic nature of fire cement, should be avoided by using these accepted methods: Wear gloves when handling fire cement. Wear goggles when chiselling or looking up chimneys.

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

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# INSTALLATION REQUIREMENTS

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## Hearths and Recesses

The stove should be installed on a surface with adequate load bearing capacity. If the existing construction does not meet this prerequisite, suitable measures (e.g. load distributing plate) should be taken to achieve it. Please pay particular attention when examining existing building work for suitability to meet the following requirements.

Hearths and recesses for Cassette stoves should have a sufficiently flat surface to allow a good seal to the stove body to be created during its installation.

Stonework, uneven bricks etc. may need further work to ensure that this can be achieved.

Cassette stoves should be installed into a recess on a non-combustible surface not less than 125mm thick (conforming to Building Regulations) of suitable load bearing capacity. Allowances should be made for the expansion and contraction of materials which are fitted up to and near the appliance.

Dimensions of the constructional hearth for all stoves (including any 'hole in the wall' type installation) should project at least 500mm forward of the front of the appliance and 150mm at the sides. The surface of the hearth should be free of combustible materials.

The superimposed hearth for all installations should project at least 225mm forward from the front of the appliance and 150mm either side of the edge of the appliance.

In most buildings with solid concrete or stone floors, the requirement will be met by the floor itself, but mark the hearth to ensure floor coverings are kept well away or use different levels to mark the hearth perimeter.

Please be aware that hot air can cause staining above

in a similar fashion to walls above radiators.

To help prevent this and cracking we recommend that any plaster above the fire should be fitted with reinforcing expanding mesh for at least 220mm above, and the full width of the fire. You should also use a suitably heat resistant plaster.

When installing the stove into a recess it is important that the front outer jacket edges sit 5mm proud of the wall surface to enable the trims to clip onto the fire.

## Combustible Materials

Please view the product sheet which accompanied your stove for specific minimum distances to combustible measurements.

Ideally, adjacent walls should be of suitable non-combustible construction, preferably brickwork.

In large fireplaces take care that any supporting beam is protected by a 13mm sheet of heat resistant fire board spaced 12mm off the surface with strips of non-combustible material. Make sure that there is a gap between an un-insulated flue system and any combustible material. This gap must be at least 3X the outside diameter of the flue pipe, or 1.5X the flue diameter to non-combustible surfaces.

Please consult the flue manufacturers specification for insulated flues.

# INSTALLATION REQUIREMENTS

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## Air For Combustion

All stoves require ventilation to burn safely and correctly. There are a number of requirements that need to be met when installing a stove, for example, allowing for the permeability of the house (air permeability is the general seepage of air into the house via air vents, doors and windows etc.).

There must always be a permanent means of providing air for combustion into the room in which the stove is installed. Air starvation will result in poor flue draw and may cause smoke to leak into the room.

For all installations it is recommended that a permanent vent with a total free area of at least 550mm<sup>2</sup> for every kW above 5kW should be connected directly to the outside air. Installations in properties built after 2008 should have their vent increased by a further 330mm<sup>2</sup> for each of the first 5kW. Alternatively this air can be supplied through an external wall of an adjacent room, which itself has to be connected to the room the appliance is installed by a permanent vent of the same size.

Note: If the appliance is fitted with a draught stabiliser (or if one is fitted to the flue pipe or chimney in the same room as the appliance) then the permanent air entry opening (or openings) should be increased by 300mm<sup>2</sup> for each kW of rated output up to 5kW and an additional 850mm<sup>2</sup> for each kW output over 5kW.

If there is more than one appliance in the property then each appliance must be supplied with adequate combustion air so that all appliances can be lit simultaneously.

The positioning of any air vent must be so that it cannot be liable to blockage or obstruction. Ideally it should also be positioned where it is unlikely to cause

a cold draught. It should not be positioned in the fireplace recess.

For more detailed guidelines on required ventilation sizes please refer to the Document J Building Regulations (Combustion Appliances) at the [www.planningportal.gov.uk](http://www.planningportal.gov.uk) website.

If you plan to use an external air supply on appliance, all I Series cassette stoves are factory fitted with an air supply adaptor located on the base of the appliance that will accept a flexible pipe of a diameter 102mm externally, see Fig. 1 and 4 for details.

The air duct fitted must be of a minimum diameter of 100mm, non combustible and ducted to the outside in a manner that will not effect the performance of the stove.

No sharp bends and a maximum duct length of 10 metres is permissible.

Where the duct terminates on an external wall ensure that there is no risk of blockage with leaves or accidental placement of items, ensure there is no risk of ingress of moisture or access for rodents.

Avoid fitting the air inlet pipe through a wall that may be unduly effected by prevailing winds that may cause a suction on the pipe bringing combustion products back down the flue.

In extreme cases the placement of the terminal on the external wall may pose problems and remedial action may be required to relocate the terminal or provide two terminals on apposite walls to balance the wind effect.

Where the stove is connected to outside air and there is NO draught stabiliser fitted, there is no requirement for a additional air vent, provided a successful 'smoke draw test' has been carried out as part of commissioning.

NOTE : If a requirement of the installation, a draught stabiliser IS fitted, then a permanent air vent will be required and should be increased by 300mm<sup>2</sup> for each kW of rated output up to 5kW and an additional 850mm<sup>2</sup> for each kW output over 5kW. Please refer to Building Regulations Part J (BS 8303 Part 1).

For further information on detailed guidelines on required ventilation sizes, please refer to the Document J or your local building control department.

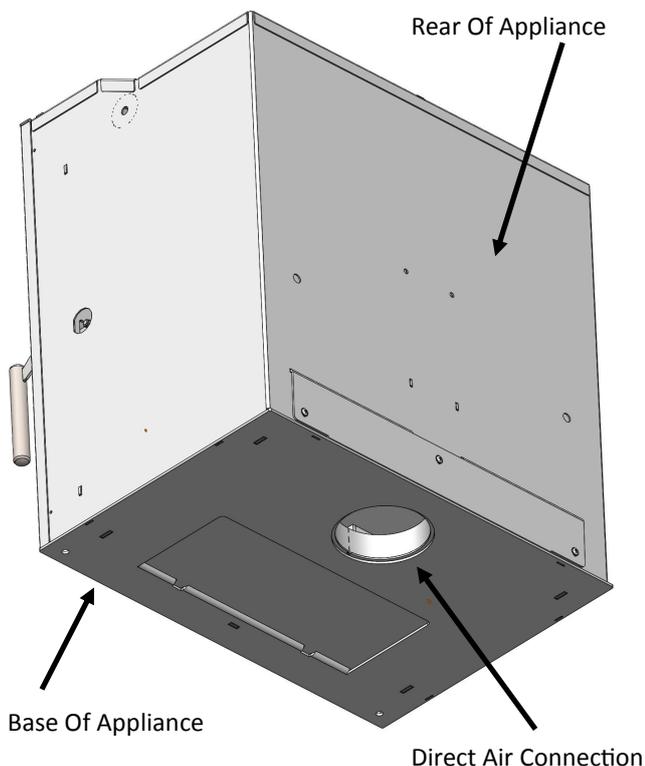


Fig. 1. Direct Air Connection (Combustion Air)

## Flues and Chimneys

The stove must be connected to a suitable and efficient flue so that products of combustion (fumes) from the stove are expelled to the outside air. Please remember that chimney draught is dependent on four main factors :

- Flue gas temperature
- Flue height
- Flue size
- Flue terminal

To ensure a good up draught it is important that the flue gases are kept warm and that the flue size suits the stove. The termination of the outlet at the top of the flue also needs to comply with Building Regulations. The minimum effective height of the flue must be at least 4.5 metres from the top of the stove to the top of the flue outlet. When warm the flue draught should be between 0.1 to 0.2mb.

The draw of a chimney / flue can vary in different weather conditions and the customer should be made aware of this. Failure to correct an over-drawing flue will invalidate the warranty.

A chimney may comply with regulations but could still be subject to down draught and similar problems. A chimney terminating above the ridge level is generally less likely to suffer such problems.

If a new chimney is being provided it should fully comply with the relevant Building Regulations that specify the requirements for solid fuel burning installations.

Suitable types of chimney include the following :

## FLUES AND CHIMNEYS

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- **Masonry Chimney:** Built with clay or concrete liners, or a chimney block system meeting Building Regulations. These types of chimneys should be installed in accordance with the Building Regulations and BS EN 15287-2:2008
- **Factory Made Insulated Chimney:** Complying with BS 4543:Part 2 (often called Class 1 prefabricated metal chimney). These types of chimneys should be installed in accordance with Building Regulations and BS EN 15287-2:2008.

Due to the gradual introduction of European Chimney Standards chimneys will be specified according to their performance designation as defined in BS EN 1443 that covers the General Requirements for chimneys. The minimum performance designation required for use with solid fuel burning stoves is T450 N2 S D3.

The flue and chimney installation must be carefully checked by a competent person before fitting the stove to ensure it is suitable and will work safely.

If the chimney is old (i.e.: built of brick or stone without a liner) or being opened up for reuse additional checks and smoke testing as described in Appendix E of the Approved Document J 2010 Edition should also be carried out to ensure the flue and chimney are in good operating condition.

Check the existing flue is in good condition with suitable access for collection and removal of debris.

It is also important that suitable flue pipe (recommended at least 600mm in length) complying with the Building Regulations is used to connect the stove to the flue in the chimney. Suitable access should be provided into the flue for regular inspection and sweeping of the flue ways. The installer should comply with Building Regulations requirements in respect of providing a Notice Plate giving details on

the chimney, flue lining, hearth and fireplace installation.

Chimneys should be as straight as possible.

Horizontal runs should be avoided except where the rear outlet of the appliance is used, in which case the horizontal section should not exceed 150mm in length. If necessary a combination of 45° and 90° bends can be used as long as the sum of their angles is not greater than 180° in total. i.e. four 45° bends, or two 45° and a 90° bend.

If the stove appears to be working hard but produces very little output to the room, it is likely that excess draw is present in the flue and that heat is being sucked out of the appliance via the chimney.

To remedy this problem, we recommend fitting of a draught stabiliser in preference to a flue damper, in the interest of safety and efficiency, together with insulating around the exterior of the appliance, this will ensure heat loss into the fabric of the building is kept to a minimum.

## Installing The Stove

To make the stove easier to manoeuvre (and safer) we recommend you remove the following parts which can then be refitted when the stove is in its final position:

- Grate Bars
- Liners
- Door (To help prevent the glass from breaking)
- Operating Tool
- Ash pan
- Throat Plate

## Removing The Door

Open the door so that it is perpendicular to the stove body and then carefully lift the stove door upwards, off its hinges.

To replace the door reverse the instructions above.

## Removing The Throat Plate And Liners

The throat plate rests on liners and (in some models) a tertiary air bar.

With the fire door removed or open, push up on the throat plate with the palm of one hand. With the other, remove the side liners and then lower the throat plate forward. It is easier to lower one side of the throat plate first to help remove it from its position and to allow it to fit through the opening of the stove. Once the throat plate has been removed you can also remove the rear liner(s).

To replace the liners/throat plate follow the steps above in reverse.

## Assembling The Grate Bars

In a multi fuel stove the grate comprises of a series of cast iron grate bars, seated on a pair of combs. All bars in the grate are identical.

In stoves with a riddling grate system the bars should be seated with every other bar rotated 180 degrees, so the ends marked 'H' and 'L' alternate on each comb. When assembling the grate, fit bars to the low sections of the comb first by seating the ends marked 'L' onto the low part of the comb, whilst the ends marked 'H' should then be seated on the high sections.

In stoves with non-riddling grate systems the grate is assembled with the ends of the bars marked 'H' sitting on the front comb, and the ends marked 'L' sitting on the rear comb.



Fig. 2: Bars shown seated on their comb outside the stove.

## INSTALLING THE STOVE

### Connecting The Spigot Outlet To The Flue System

The flue spigot outlet is inbuilt into the top section of the appliance. The flue pipe must be fitted inside the outlet spigot as shown in Figure 3. Failure to do so, could result in the spillage of condensation running down the outside of the flue.

Fire cement should be used to create an airtight seal between the flue and spigot.

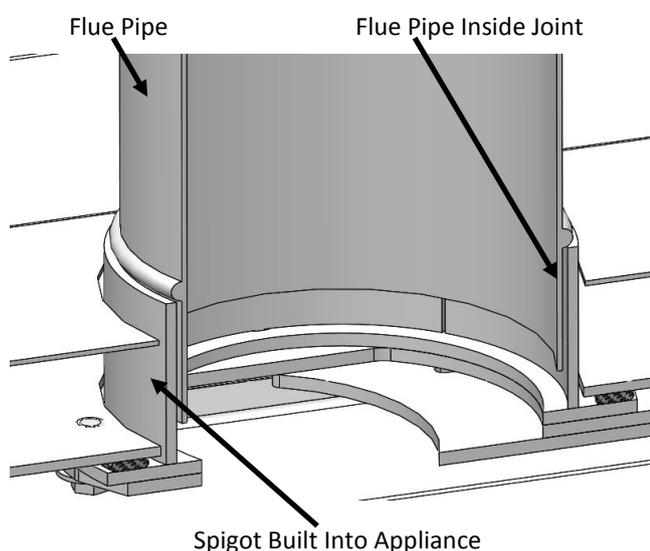


Fig. 3: Fitting The Flue Pipe Inside The Spigot Collar.

### Sealing The Stove To The Fire Surround

In order for the stove to operate correctly and at maximum efficiency it is necessary to achieve a good seal between the back face of the stove convector section, the stove back base sections and the decorative fire surround and hearth.

This should be achieved using fire cement. Any void surrounding an inset stove when installed should be

filled with fire cement, vermiculite or similar in the interest of safety and efficiency .

### Combustion Air Connection

If the installation requires the combustion air to be taken from the exterior of the building (Direct air), as described earlier in this manual (page , then the connection for this supply, is located on the base of the appliance.

The connection hole is central to the appliance and is 90mm inboard from the rear of the appliance, as fig. 4 below.

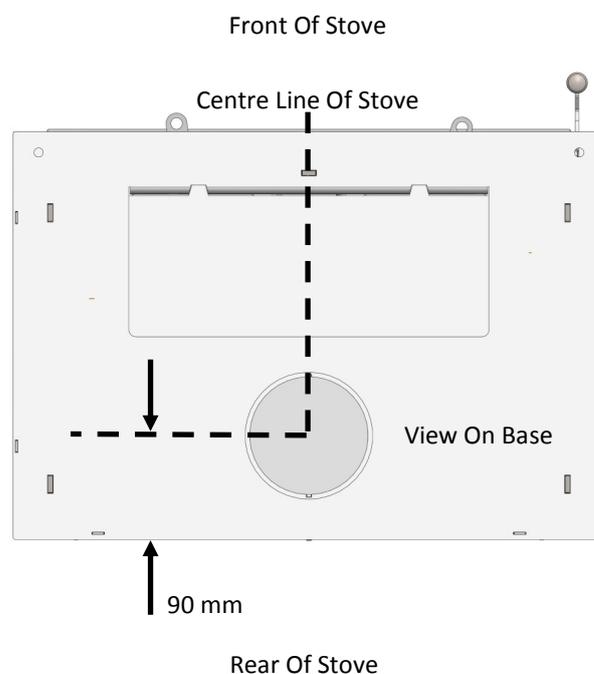


Fig. 4: Plan View Of Appliance—Showing air connection

### Sealing The Stove To The Fire Surround

In order for the stove to operate correctly and at maximum efficiency it is necessary to achieve a good seal between the back face of the stove convector (rear body section), the stove back base sections and the decorative fire surround and hearth.

This should be achieved using fire cement. Any void surrounding an inset stove when installed should be filled with fire cement, vermiculite or similar, in the interests of safety and efficiency.

### Fitting The Surround Trim

Please refer to the instructions supplied with the decorative trim, on the information on how to install them.

### Commissioning The Stove

Before handing over the installation to the customer, it is a requirement under Document J (of the Building Regulations for England & Wales) that the appliance is lit and the functioning of the chimney system is checked for satisfactory operation.

- For a registered Competent Persons scheme (such as those referred to by [www.gov.uk/building-regulations-competent-person-schemes](http://www.gov.uk/building-regulations-competent-person-schemes)), please complete a Certificate of Compliance, which is used for checking and reporting the installation as imposed by the Government. Otherwise, please ensure the installation is approved by your local building control officer.
- Ensure a carbon monoxide alarm is fitted. This must be between 1m to 3m from the appliance and approximately 150mm below the ceiling level.
- A fireguard conforming to BS8423:2010 +A1:2016 should be used in the presence of children or infirm people.
- A notice plate should be provided containing information on the performance characteristics of the hearth, fireplace or chimney.
- Explain the following to the customer :
  1. How to operate the riddling mechanism and air control lever.
  2. The importance of an adequate air supply to the room.
  3. The importance of regularly having the chimney swept / inspected.
  4. That a protective glove should be used when operating the stove.
  5. How changes in the weather can affect the performance of the stove.
  6. Using the correct fuels.
- Be sure that the chimney is operating and all smoke and fumes are vented to the atmosphere through the chimney / flue terminal.
- Check all joints and seals.
- Clean the outside of the cold appliance with a lint free cloth or shoe brush to prevent any stains becoming burnt on.
- Check the flue draught which should read 10—20 pa, or 0.1 to 0.2 mbar.
- Consult a suitably qualified person who will have the knowledge and equipment to perform a test.

