

Aduro 5-1

Brugsvejledning · User Manual



Ecolabel - Sintef 110-0283 - EN 13240

www.aduro.dk / www.aduro.no



Version 2

Good luck with your new fireplace insert!

In order to get the best possible pleasure and benefit from your new Aduro fireplace insert, it is important that you read this User Manual thoroughly before you install your fireplace insert and start to use it.

1.0 General

1.1 Compliance

Aduro 5-1 complies with the EN 13240 European standards, as well as the NS 3058 Norwegian standard and is thereby approved for installation and use in Europe. At the same time, the manufacturing process is subject to external quality control. The product documentation for Norway has Sintef number 110-0283 and can be downloaded from our website at www.aduro.no or from www.nbl.sintef.no. Aduro 5-1 also carries the Nordic Swan Ecolabel, which guarantees that the fireplace insert complies with the most stringent environmental requirements and has been manufactured in an environmentally correct manner.

1.2 Technical data

| | |
|--|---|
| Nominal power | 7 kW |
| Flue outlet, diameter | Ø150 mm top/rear |
| Measurements (HxBxD) | 574 x 635 x 460 mm |
| Distance from centre of exhaust branch to rear edge of fireplace | 19 cm |
| Weight | 77 kg |
| Material | Steel |
| Fuel | Wood and woodbriquettes |
| Max wood lenght | 40 cm |
| Convection stove | ✓ |
| Primary-, sekundary- og tertiary air supply | ✓ |
| Air-wash system | ✓ |
| Ashpan | ✓ |
| Energy efficiency | 77% |
| Chimney draught | 12 Pa |
| Maximum combustion amount per hour: - Wood approx. | ca. 3,4 kg |
| Heat rating in buildings with - Optimum insulation - Average insulation - Inadequate insulation | 175 m ² 115 m ² 70 m ² |

1.3 IMPORTANT: PRODUCTION NUMBER

The fireplace insert has a production number at the bottom of the rating plate on the back of the fireplace. Besides this the number is also stamped inside at the bottom of the door. We recommend that you note down this number before mounting the fireplace insert. For the purposes of the guarantee and for other enquiries, it is important that you are able to quote this number.

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|--------|
| P/ Nr. |
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1.4 Transportation

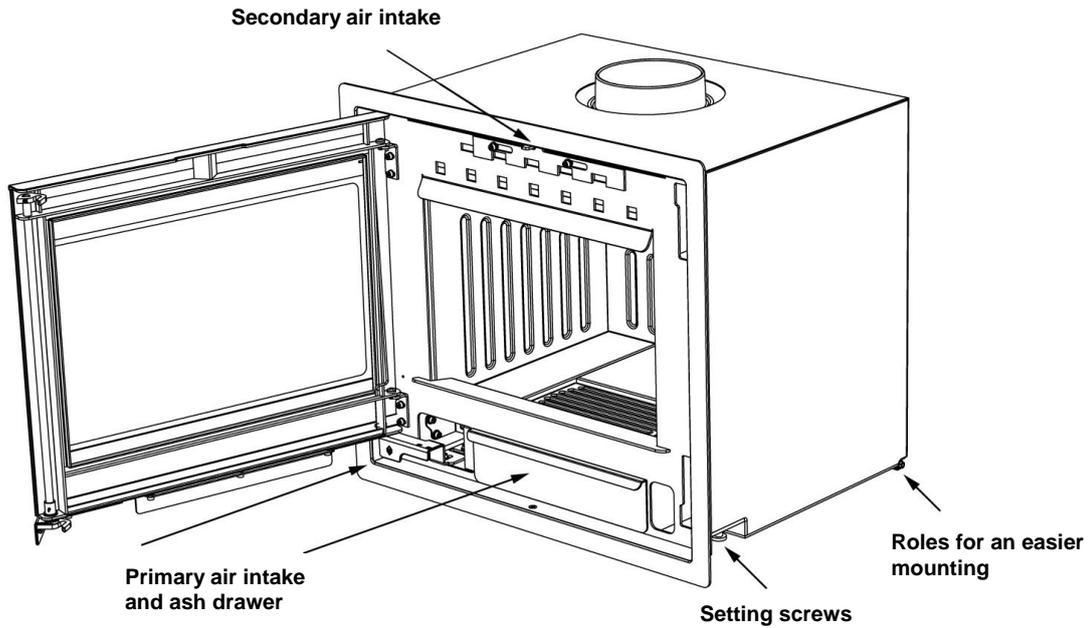
When taking your fireplace insert home, please ensure that it travels in an upright position. If you wish to lay it flat, it is important that you remove all loose parts from the combustion chamber (cast iron grate and loose fireproof tiles) and remove the ash drawer. Alternatively you could also fill the combustion chamber with excess packaging so the parts are kept in place.

2.0 Installation of the fireplace insert

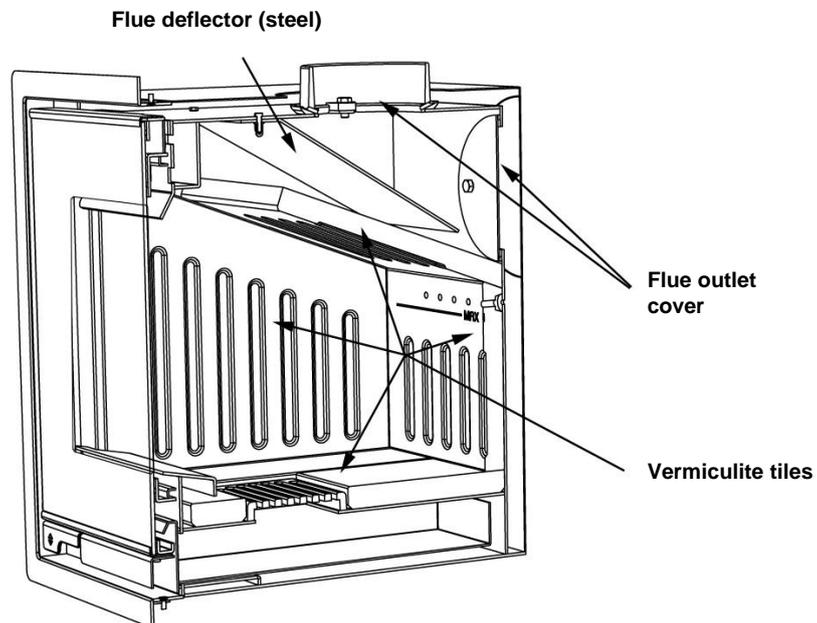
You are welcome to install your fireplace insert yourself – but we strongly recommend that you consult your chimney sweep before you begin the installation. Your dealer can also provide you with installation advice. It is important to ensure that all local rules and regulations, including ones relating to national and European standards, are complied with when installing this device.

Please note: You may not begin to use the fireplace insert until it has been inspected and approved by your local chimney sweep.

Aduro 5-1 Illustration



* Remember to mount the set screws before the insert is placed at the correct position. The set screws are in the ash drawer.



Surrounding aperture

The insert is constructed in a way that makes it possible to make the brickwork shut almost tight around the insert the first 10 cm in the depth from the front. This means that the hole in the front brickwork must be 54-55 cm high and 58.5-59 cm wide. After the first 10 cm in the depth there must be 2.5 cm air space around the insert which gives a minimum total width of 63.5 cm. and a total depth of minimum 49 cm in the hole. It is very important to ensure the 2.5 cm air space around the insert and that the installation is correct (see point 2.2); otherwise the fireplace insert will not cool down sufficiently. A correct cooling is crucial for the energy efficiency as well as for the function of the Aduro-tronic.

The front of the insert with the frame covers an area of 57.4 cm in height and 63.5 cm in width.

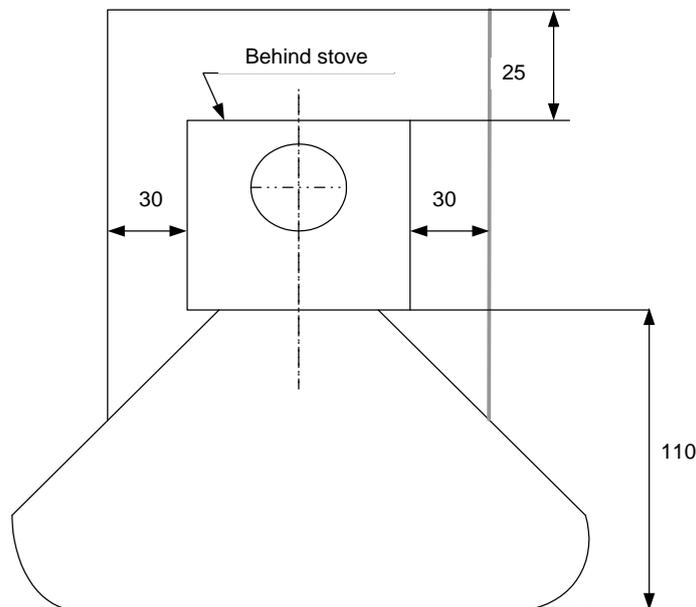
When making the whole in the brickwork then please also remember that you might need some extra space when the pipe has to be mounted.

2.1 Position of the fireplace insert/distance requirements

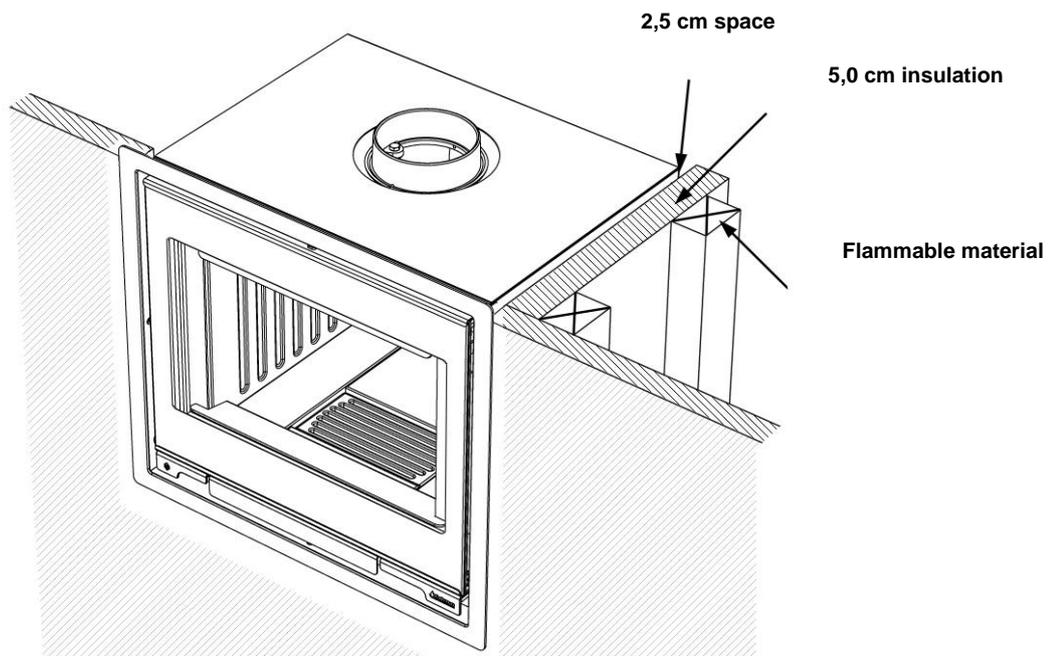
The new fireplace insert must be installed in a suitable and physically possible position. You need to be sure that the position complies with local regulations. Distance requirements will only apply if the fireplace insert is to be placed close to flammable materials. See below.

Distance to flammable material

| Behind the fireplace insert | To the sides of the fireplace insert | To furniture | Minimum height above floor level |
|-----------------------------|--------------------------------------|--------------|----------------------------------|
| 25 cm | 30 cm | 110 cm | 26 cm |



It is possible to reduce the distance to flammable material by insulating with at least 5.0 cm insulation with identical properties to Aduro Superisol, Isolrath 1000 or similar material around the Aduro 5-1. Please make very sure that there is still at least a 2.5 cm space around the Aduro 5-1. This means that the distance to flammable material can be reduced to 7.5 cm (2.5 cm space around the insert + 5 cm insulation).



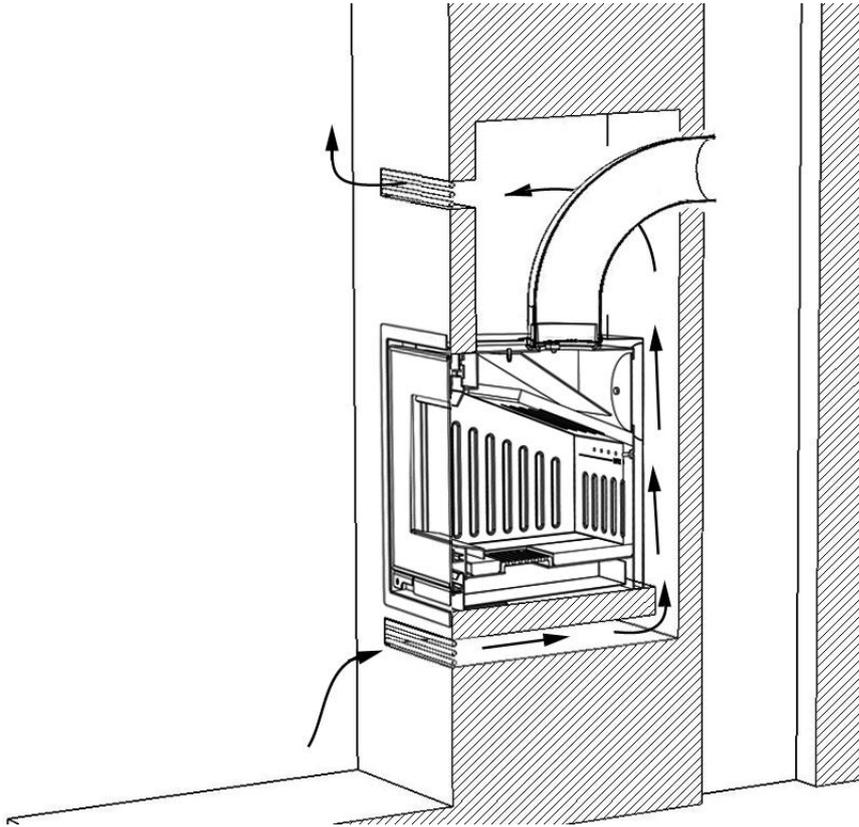
Please note: that the Aduro 5-1 must be installed on a floor with the adequate load-bearing capacity. If the existing construction does not meet this requirement, appropriate adaptation measures must be taken (e.g. a load-distributing plate).

If the fireplace insert is to be placed close to flammable material, such as a wooden floor or carpet, it must be placed on a non-flammable base. The floor plate should extend for at least 30 cm in front of the fireplace insert, and 15 cm on each side.

2.2 Convection and ventilation

The Aduro 5-1 is built as convection stove. This means that air from the room circulates between the inner stove and the outer covering. As a result, the heated air is distributed evenly throughout the room. In order to fully exploit the energy in the wood, however, the heat generated around the fireplace insert and the flue pipe (that connects the fireplace insert to the insulated chimney) should also be used. The calorific values depend on the length of the uninsulated flue pipe – initially, the first metre of uninsulated flue pipe will increase the efficiency by approx. 5 %. There should be at least 25 mm space around the fireplace insert. It is important that the space around the fireplace insert and the flue pipe is ventilated. There should be ventilation openings of at least 200 cm² both below and above the fireplace insert. There are many ways to create ventilation around the flue pipe. Some examples are given below.

Illustration: installation with ventilation around the flue pipe



2.3 Connecting the flue pipe

The fireplace insert can be connected using either flexible piping or regular flue piping. If you use flexible piping, you must ensure that the piping is designed for flue gas use, and can withstand high temperatures. Flexible piping may only be used in an existing fireplace installation. Therefore we recommend that you consult your chimney sweep before using flexible piping. You can use both the top and rear outlets on the fireplace insert, depending on what suits your installation best. The Aduro 5-1 is supplied ready for fitting the flue pipe on the top. If the flue pipe is to be fitted on the back, the round circle should be removed from the rear plate of the fireplace insert. The cover plate (that covers the rear outlet) should then be moved to the top outlet. A flue pipe with an internal diameter of 150 mm should be used for the Aduro 5-1.

It will usually be easier to use flexible piping if there is not particularly good access to the chimney. If, on the other hand, you have complete access, we recommend that you use a regular 2.0 mm steel flue pipe.

Flue piping in new installations

The easiest way of installing the flue pipe is through a chimney with an aperture of 160 mm straight above the exhaust connector on the inset. In this case, a straight 2.0 mm flue pipe with an internal diameter of 150 mm of a suitable length should be used. 3 x gasket bands should be placed around the flue pipe, which is then pushed up into the chimney. The fireplace insert is placed in position and the flue pipe is pulled down over the exhaust connector.

The fireplace insert can also be fitted with a steel chimney. The steel chimney should be placed directly above the exhaust connector. We recommend the use of a steel chimney that is self-supporting and fitted with a telescopic flue pipe. This solution allows you to lift the flue pipe and remove the insert without affecting the chimney. Remember that the space above the fireplace insert should be sealed off with a horizontally positioned non-flammable plate. This plate should be installed at least 85 cm below the ceiling. The space under this plate (above the fireplace insert) should be ventilated as described on the previous page.

If the chimney goes directly down into the fireplace insert without sharp angles or significant bending, a wall sleeve will usually not be needed. It is also important that there is no edge inside the chimney where soot can collect.

Flue pipe installation in a large chimney

A chimney that is larger than the flue pipe can be sealed with fixed rockwool batts, that are trimmed so that they adhere tightly around the flue pipe. The batts should be laid in 3 layers and spread with fireplace mortar before they are pushed up into the chimney from below. The fireplace mortar will stiffen and fix the batts to form a floor in the chimney.

If you do not have free access to the chimney and are using flexible piping

The flexible piping should be trimmed to the appropriate length. Please note that the flexible piping should protrude approx. 10 cm into the pipe sleeve. Then a thin gasket should be placed between the flexible pipe and the pipe sleeve in the chimney and the flexible pipe should be pushed securely into place in the pipe sleeve.

Adjust with the setting screws until it is in the correct horizontal position.

The fireplace insert can be connected to a chimney to which other heat sources are connected.

3.0 Lighting a fire in the fireplace insert

3.1 Important safety information

- The fireplace insert will become warm during use and therefore it should be treated with all necessary caution.
- Never keep easily combustible fluids such as petrol in the vicinity of the fireplace insert – and never use easily combustible fluids to light the fire in the fireplace insert.
- Never empty the ash drawer when the fireplace insert is warm. Embers may still be found in the ash drawer for up to 24 hours after the fire has gone out. Please wait to empty the ash drawer until you are sure that there are no embers in the ash.
- The door should be kept closed while the fireplace insert is in use. While lighting the fire, the door can stand ajar for the first few minutes.
- In the event of a chimney fire: Close all the dampers on the fireplace insert and call the fire-fighting service.

3.2 Recommended fuels?

Wood and wood briquettes. We recommend the use of split hardwood that has been stored outdoors under cover for at least 1 year. Wood that has been stored indoors has a tendency to become too dry and will burn too quickly. The wood should preferably be felled in the winter, when a lot of the moisture in the wood will have been drawn down into the roots. In order to achieve optimum combustion, the wood's moisture level should not exceed 18 %, which roughly corresponds to storing the wood under cover outdoors for one year. The moisture level of the wood can be measured using a moisture meter or by applying washing up liquid to one end of the log and blowing air in the other end. If the wood is dry enough, soap bubbles will appear. The wood should be chopped into logs with a diameter of approx. 10 cm and a log length of max. 40 cm.

Correct firing provides optimal heat output and maximum economy. At the same time, correct firing prevents environmental damage in the form of smoke and malodorous fumes and also reduces the risk of chimney fires. Well-seasoned wood fuel is essential for correct use. Make sure your fuel is kept dry. If the fuel is wet, a large proportion of the heat will be used to vaporize the water, and this energy will disappear up the chimney. It is clearly not only uneconomical to fire with wet fuel but also, as mentioned above, increases the risk of producing soot, smoke and other environmentally damaging by-products.

Burning varnished wood, impregnated wood, chipboard, paper and other waste is strictly forbidden. Burning these materials will damage the environment, the fireplace insert and your own health. Fossil fuels must not be used.

3.3 How do I light a fire in the fireplace insert?

The fire lighting method is very important for starting combustion quickly and efficiently.

- 1) Open the primary air intake/damper to the lower left and open the secondary air intake behind the door. The primary damper is used at the start to get the fire going, while the secondary air intake keeps the fire burning evenly. To open the primary air intake the damper should be pulled out.
- 2) Place a log of wood crosswise in the combustion chamber and put 2 firelighters close to the log. Light the firelighters and quickly put a new log close to the firelighters and several small logs at an angle above it. Air must be able to reach the firelighters, but the logs should be touching to "warm" each other.

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- 3) Keep the door approx. 1 cm ajar, until the glass is too hot to touch. Then close the door. When there are distinct, visible flames and the fire has taken hold, close the primary air intake/damper.

Important: The control handle will get warm when the fireplace insert is being used. Please use the glove provided when you operate the fireplace insert.

3.4 The first time a fire is lit

The fireplace is packed in recycling packaging (wood and plastic). This must be disposed according to national rules regarding disposal of waste. The wood from the packaging can be sawed into smaller pieces and used the first time a fire is lit.

The first few times the fireplace insert is used, there may be some smoke and unpleasant odours from the fireplace insert, which is fairly normal. This is caused by the heat-resistant paint hardening. Make sure there is sufficient ventilation during this stage. It is also important not to let the fire burn too fiercely the first 2–3 times, so that the fireplace insert has time to expand slowly. You should also be aware that the fireplace insert may make clicking sounds as it heats up and cools down – rather like pouring boiling water into a sink. These are caused by the great differences in temperature to which the materials are being exposed.

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 fireplace insert is cold. This is to prevent the sealing rope sticking to the fireplace insert.

3.5 How should I use my fireplace insert?

The fireplace insert is intended for intermittent combustion. This means that each stoking should burn down to embers before new logs are added.

In order to obtain the best possible combustion, you should regulate the effect/heat output with the fuel. Burning small logs provides more powerful combustion than burning large logs as the surface area is greater and more gas is released. The amount of wood in the combustion chamber is another factor that affects combustion. In normal circumstances, you should not place more than two logs in the fireplace insert. If you want an enhanced effect, you can add more logs. The nominal heat output is reached by burning approx. 2.2 kg per hour.

3.6 Secondary damper

The secondary damper above the door should always be open while the fireplace insert is in use. This damper allows you to adjust the fireplace insert to the chimney draft and the heat output you require. In normal circumstances, the fireplace insert should be working with this damper open between 60 % and 100 %. You should never close the air intake so far that the flames are extinguished. There should always be visible flames in order to achieve clean and efficient combustion. The air-wash system, that minimizes soot collecting on the glass panes, is also adjusted by this damper.

Aduro Key: provides easier control of the secondary damper. The key is fitted onto the control handle, so you can more easily adjust the airflow from side to side. Turning to the left decreases the airflow, and turning to the right increases the airflow.



3.7 Primary damper

When you add a new log, the primary air intake/damper should be opened until the fire is burning properly. In order to utilize the fuel to the fullest extent, the embers should have burnt for so long that it is necessary to open the primary air intake for approx. 2 minutes to get the new log to burn.

In order to reduce the risk of ash falling from the fireplace insert when the door is opened to add more fuel, it is a good idea to open the primary air intake/damper for approx. 1 minute before the door is opened. This increases the draught through the fireplace insert and reduces the risk that ash will drop on the floor.

Please note: if you overload the fireplace insert and burn more than approx. 3.4 kg wood/hour, there is a risk that the lacquered surface of the fireplace insert will become discoloured and eventually fall off. The fireplace insert can be resurfaced, but this is not covered by the manufacturer's guarantee. In the same way, any other damage to the fireplace insert caused by overloading will not be covered by the guarantee.

3.8 Aduro-tronic

The patent-applied Aduro-tronic is designed to operate the fireplace insert for you. All you have to do is put dry wood in the fireplace insert, and activate the control system - Aduro-tronic does the rest, leaving you to enjoy the flames and the benefits of efficient



combustion. Aduro-tronic is a patent-applied mechanical solution, which works without the use of electricity.

Please note: Use of dry wood of the right size is important to achieve optimum combustion.

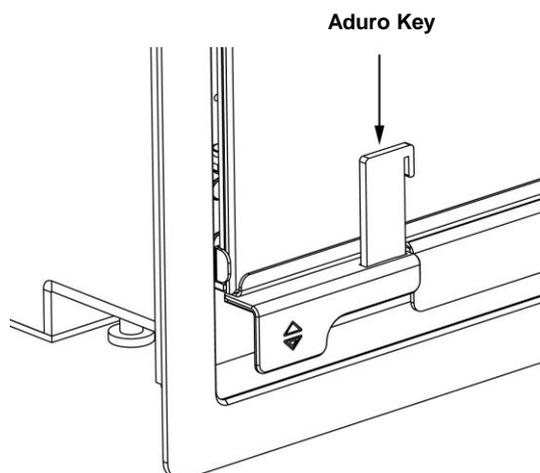
3.8.1 How to operate Aduro-tronic

When lighting

When lighting a fire in the fireplace insert for the first time, the maximum amount of primary air will be needed to light the fire. For that reason, the primary damper can be kept “forcibly open”. This is done by pulling the primary damper forward as far as possible and then fixing it with the Aduro Key (see illustration). When the fireplace insert is warm and a layer of embers has been created on the bottom of the combustion chamber, the Aduro-tronic can be set to the automatic position, i.e. the Aduro Key can be removed.

When stoking

Each time fresh wood is put in the fireplace insert, a precise amount of primary air will be allowed in for the first few minutes. What’s more important is that the primary air is not allowed in for too long. This is to ensure optimum combustion. The Aduro-tronic control will ensure intake of primary air at the right tempo. The automatic is activated by pulling the primary damper out each time fresh wood is put in the fireplace insert. The automatic closes then the primary air gradually.



Regulation of the Aduro-tronic control

The control is pre-set to allow primary air intake for the first 5 minutes. This setting has been used during testing at the Danish Technological Institute using ‘standard’ sized logs and with optimum moisture content of 17%. Standard size logs are approx. 30 cm long and 10 x 10 cm in thickness. A standard chimney was also used for testing. In practice, such circumstances can differ, which is why the Aduro-tronic control can be adjusted to your circumstances. If you want a slower intake of primary air: (e.g. for a slower flue draught, larger sized wood or for longer intervals between stoking) Adjust the screw on the front of the control level using a small screwdriver to slow closure rate. If the screw is turned to the right closing time is increased and if turned to the left closing time is reduced.

3.9 Ventilation/fresh air supply

In order for the fireplace insert to function at optimum efficiency, air is needed for the combustion process. There must be sufficient fresh air coming into the room containing the fireplace insert. In very well-insulated houses, or houses with powerful cooker hoods and/or air conditioning systems, a vacuum can be created around the fireplace insert, leading to smoke leakage and poor combustion. In these circumstances, it might be necessary to open a window to provide air for combustion and to equalize the vacuum. Alternatively, you could fit an air vent in the room containing the fireplace insert. The amount of air needed for combustion is 25 m³/h.

4.0 The chimney

Data for chimney calculation:

| | |
|--|---------|
| | Wood |
| Flue temperature at [20 °C] | 266 |
| Chimney draught at testing power [mbar]/[Pa] | 0.12/12 |
| Flue gas mass flow [g/s] | 7.5 |

The optimum combustion is achieved at a constant chimney draught of 0.10 to 0.14 mbar measured in the flue pipe above the fireplace insert. There are many factors that affect the chimney draught, including the outside temperature, wind strength and surrounding buildings. If it is impossible to establish a sufficiently natural chimney draught, the chimney can be fitted with a smoke extractor. If the chimney draught is too strong, a damper can be fitted to regulate the chimney draught. Contact your local chimney sweep for more advice.

There are no requirements with respect to specific chimney heights, but a chimney must be tall enough to provide a good draught – above 12 Pa. If the recommended chimney draught is not achieved, there may be problems with smoke out of the door by firing.

4.1 Inadequate draught in the chimney

If the chimney is too short, leaks or is inadequately insulated, there may be problems with the chimney draught (let the chimney sweep assess this). The draught should be approx. 0.10–0.14 mbar in order to provide satisfactory combustion and prevent smoke leakage.

If the chimney sweep judges the draught to be satisfactory, but you still have problems lighting a fire, try extending the fire lighting phase/using more thin pieces of kindling, so that the chimney gets thoroughly warm. The chimney will not draw at optimum effect until it is warm. The fire lighting phase can be prolonged by using a lot of kindling and 1-2 firelighters. When a layer of embers has been formed, add 2–3 dry logs.

5.0 Maintaining and cleaning your fireplace insert

Gaskets

With time, the gaskets will wear, and, in order to avoid wild combustion, they must be replaced as required.

Glass

If the wood you burn is too moist, you will get soot stains on the glass pane. They can be easily removed using a damp cloth that you dip in cold ash and rub on the sooty glass. Special cleaning agents are also available to remove soot from glass, i.e. the Aduro Easy Clean pad.

Combustion chamber

The yellow tiles in the combustion chamber eventually wear out and they should be replaced when the cracks are more than 0.5 cm. The durability of the tiles will depend on how often and how intensively the fireplace insert is used. You can change the tiles yourself. They are available as a ready-to-use set. You can also buy one-piece tiles that you can cut to the size of the worn plates yourself. Please consult your dealer.

Ash

Empty the ash drawer before it becomes completely full. Always leave a layer of ash on the bottom of the fireplace insert, as this insulates the combustion chamber and makes lighting a fire easier.

Cleaning the fireplace insert

The fireplace's surface is treated with a heat-resistant Senotherm® paint, which will stay at its best just by being vacuumed with a small, soft mouthpiece or dusted with a soft, dry cloth. Do not use water, spirit or other solvents which will remove the paint.

The inside of the fireplace insert and the flue pipe can be cleaned via the door and the cleaning aperture in the flue pipe/chimney. The upper fireproof tile (the exhaust deflector) can be removed. To allow free access to the top of the fireplace insert and the flue pipe, remove the exhaust deflector in steel (mounted with two screws). Cleaning of the inside of the fireplace insert and the flue pipe should be undertaken at least once a year, or more frequently if necessary, depending on how often the fireplace insert is used. This work can also be carried out by the chimney sweep.

Repairing the surface

If the surface of your fireplace insert gets scratched or worn, it can easily be refaced/renewed using the original Senotherm® paint in an aerosol can. It is available in black or grey from your local dealer.

Please note: All maintenance and cleaning of the fireplace insert should be carried out when it is cold.

Spare parts and unauthorized alterations

You may only use original spare parts in the fireplace insert. Consult your dealer for advice and when purchasing spare parts. All forms of unauthorized alterations to the fireplace insert are strictly forbidden, as the fireplace insert will no longer comply with the approved specifications.

6.0 Accessories

There are a wide product range of accessories for Aduro stoves:

- Aduro companion sets and fire baskets
- Glass and steel floor plates
- Aduro Steel chimney
- Flue pipes
- Gaskets and other spare parts

7.0 Product liability and warranty

In accordance with the Danish Sale of Goods Act, product liability will exist for two years from the date of purchase of the fireplace insert. The dated receipt will be sufficient proof. Product liability will not cover damage caused by incorrect installation and use of the fireplace insert. Likewise, product liability will not cover loose parts and wear parts (fireproof tiles, glass, gaskets, rails, cast iron grate and control), as they are worn by ordinary use. These parts can be purchased as spare parts.

7.1 Free online warranty registration

Aduro will give you the opportunity to extend the above warranty on your fireplace insert from two to five years. All you need to do is to access our website at www.aduro.dk and register your new fireplace insert in our warranty database. The warranty will only come into force once you have entered the required information in all the data fields. The deadline for registering your fireplace insert is one month from the date of purchase.

8.0 FAQ

If you need more information, please go to www.aduro.dk.

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