

KEDDY

K20

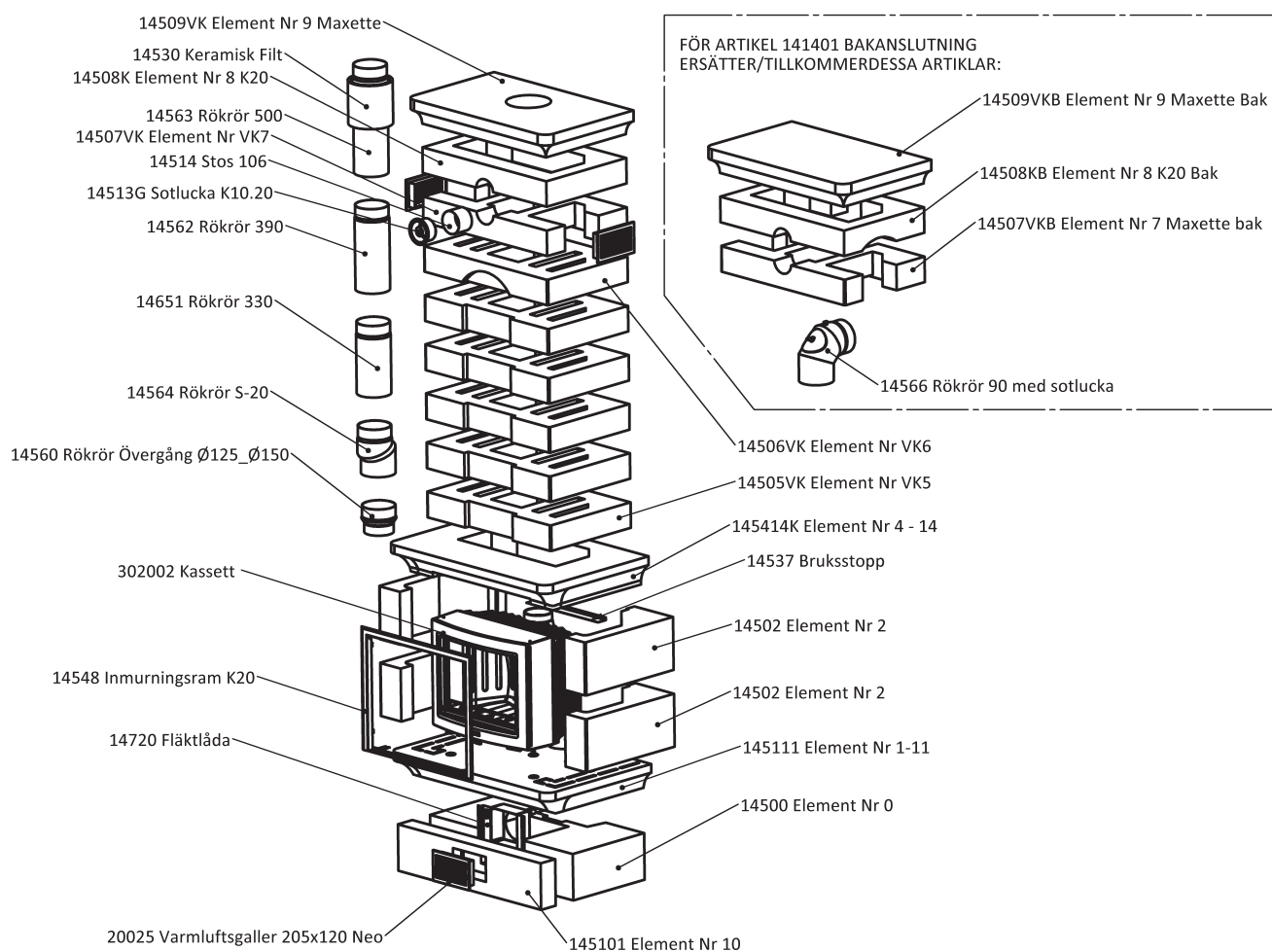
Installation Instructions
Care and firing instructions



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EXPLODED DIAGRAM



GENERAL

Thank you for choosing our masonry stove!

Keddy's masonry stoves have a number of unique characteristics, for example:

- * Flat-ground hatches
- * Good heat storage
- * Cast iron and concrete for long service life

The Keddy K20 has the following accessories:

- * Outdoor air connector
- * Fire walls
- * Fan unit
- * Floor plate
- * Floor stone

Important! These installation instructions and the associated firing instructions must be saved!

Quality approval

Keddy's masonry stoves are tested by a certified testing institute and comply with the requirements in the Swedish Building Regulations and for CE Marking.

Manufacturer's Declaration

Keddy's masonry stoves have been manufactured in accordance with the documents that form the basis for the respective certificates and their associated requirements for production inspections.

IMPORTANT POINTS

- * Contact the Planning and Building Committee in your municipality concerning the building notice.
- * It is also recommended that you contact a certified chimney sweep prior to installation.
- * **NOTE! Read through all of the installation instructions before beginning the installation.**
- * Make sure that you get the right dimension and length of the flue, see p. 4.
- * The installation has to be inspected by a certified chimney sweep before you start firing.
- * In order for the warranty to apply, it is important you follow the care and firing instructions carefully, see pages 10-11.

- * **WARNING!** Parts of the masonry stove become very hot during operation and may cause burn injuries if touched.

- * To guarantee the function and safety of the masonry stove, we recommend that a professional perform the installation. Our dealers can recommend suitable fitters. You can find information about our dealers on www.keddy.se.

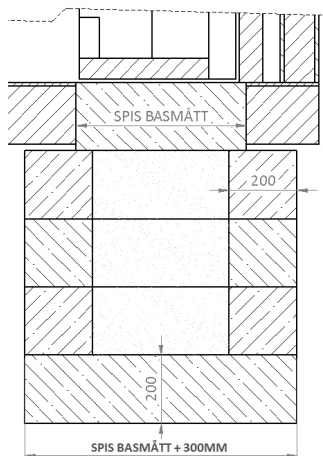
PRECONDITIONS

BUILDING NOTICE

When you install a stove and erect a chimney, you may need to give building notice to the local Planning and Building Committee. Contact the Planning and Building Committee in your municipality for up-to-date information.

SURFACE

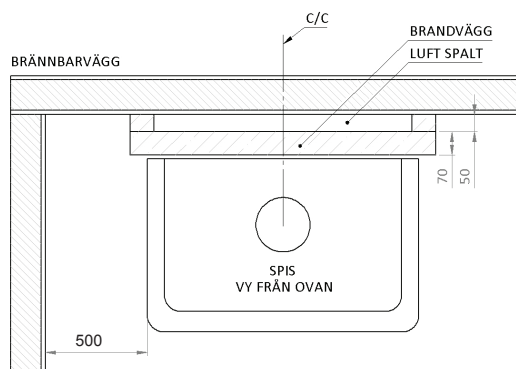
Keddy's heavy masonry stoves (K10, K20, K21) must be erected on a load-bearing surface with a fire resistant class of at least REI-60. The surface can comprise a concrete slab or a concrete vault. In the case of so-called crawl spaces, the foundations can be made according to the following principal drawing.



DISTANCE TO FLAMMABLE STRUCTURAL UNITS

The distance from the sides of the stove to flammable material must be 500 mm ventilated space. The distance from the stove's hot air vent to flammable structural units must be at least 400 mm upwards. Where necessary, the hot air grille has to be moved down. (Requires adjustment in place)

If the stove is to be installed against a wall of wood or other flammable material, a fire retardant wall must be installed. One example of such a wall is Keddy's fire wall elements consisting of 50 mm air space and 70 mm pumice concrete (see illus. below). Other examples are 50 mm light concrete or 50 mm so-called calcium silicate board; however, a 50 mm air space must be ensured up behind these fire walls.



FLOOR PLATE

A floor plate must be set in place to protect the floor from flying embers. The floor plate must extend at least 300 mm in front of the door. The width of the floor plate must be at least the width of the hearth plus 100 mm on each side (see illus. page 5).

The floor plate can consist of natural stone, concrete, clinker tiles or 0.7 mm steel plate.

OUTDOOR AIR SUPPLY

For the combustion of wood, supply air is required. The K20 can be provided with an external air supply, which is recommended for properties with mechanical ventilation.

A sheet metal drum is used for drawing an outdoor air duct. The connection diameter of the supply air hose to the stove is 100 mm. If the duct is more than 3 m long, the diameter of the sheet metal drum must be increased to 125 mm. The drum can be connected from below or from the rear, see the illustration on page 5. (The stove's maximum need for combustion air is approx. 20 m³/h)

The supply air must not be taken from crawl spaces. If there is a crawl space, the sheet metal drum must be extended to a ventilation grille in the foundation wall. If the space is heated, the supply air channel must be insulated against condensation.

FLUE

The K20 may be connected to a flue approved for a minimum of 350°C. As the area, length and material of the flue are of great importance for the draught formed in the flue, it is important the flue is not underdimensioned.

For the installation to function satisfactorily, the negative pressure (draught) must be at least 12 Pa during nominal operation. To obtain this, the minimum recommended chimney length is 3000 mm, measured from the top of the stove, and the suitable area is 150-200 cm² (approx. 150 mm in diameter).

The K20 is also approved for connection to older masonry chimneys with enclosing walls that are only half a brick thick.

Naturally, the K20 can also be connected to chimneys made of prefabricated elements, e.g. the Heda Chimney.

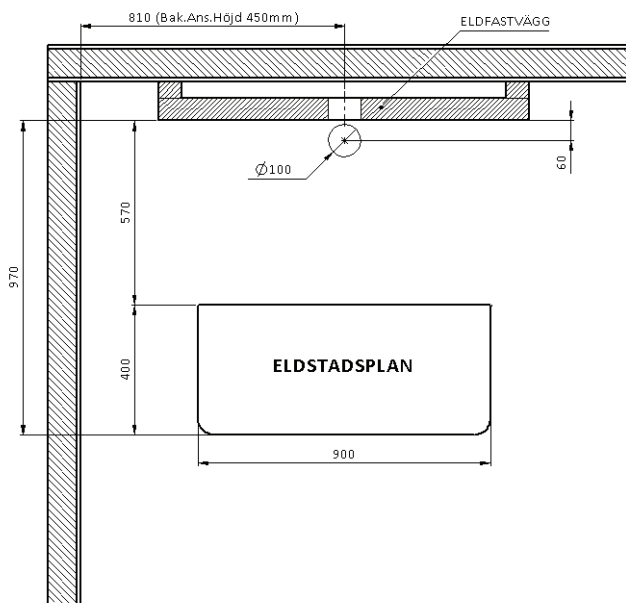
PREPARATIONS

1. FLOOR PLATE AND OUTDOOR AIR CONNECTION

Arrange the floor plate according to the instructions on page 4 under the heading Floor plate. If you choose to make your own floor plate, the minimum dimensions stated in the above-mentioned point must be followed at all times.

The illustration to the right show the dimensions of the ready-made floor plate, which is available as an accessory.

If a connection to the outdoor air is required, a sheet metal drum must be installed according to one of the alternatives illustrated, either below or through the rear wall.



2. FLUE CONNECTION

There are two alternatives for connecting the flue.

Alternative 1: Rear connection

Alternative 2: Top connection

Height from the floor to the centre of the flue at the rear: 1905 mm

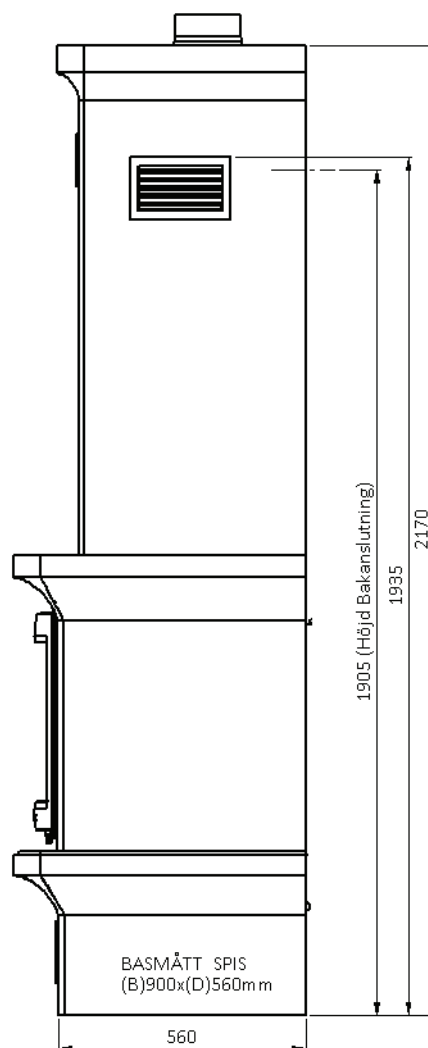
Height from the floor to the height of the connection top: 2170 mm

Outer diam. of the rear/top sleeve connection: $\varnothing 150$

For so-called top connection of the chimney, this has to be done after the stove has been installed. We will return to this at the end of the Installation instructions on p. 9.

For so-called rear connection of the stove, this has to be prepared before the stove is put into place. Note that side routing and long horizontal routing affect the draught negatively. For satisfactory function with a chimney pot of 3.5 m, the length of the horizontal flue must not exceed 0.5 m.

For more about rear connection, see installation instruction point 11-14.



INSTALLATION INSTRUCTIONS

Before starting on the installation of the stove, the following steps need to be fully completed:

The chimney:

- Alternative 1 An existing chimney prepared for rear connection.
- Alternative 2 A newly installed chimney prepared for rear connection.
- Alternative 3 Preparation for a new top connection chimney.

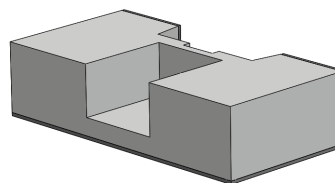
Erection of fire wall, where applicable.

Outdoor air supply (if so required)

Hearth floor plate (unless a floor plate or floor stone is to be installed afterwards)

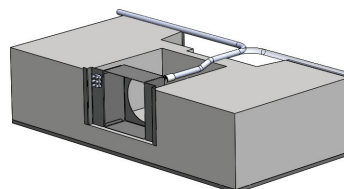
Before starting: The final thickness of all mortared joints must be 10 mm, both to walls and between the parts. Check at every stage that the parts have been installed level. It is a good idea to use the dimensions on page 12 to check your construction height. For putting the stove together, we recommend you use a B mortar. For rendering the stove, we recommend you use a C mortar.

1. Assemble element no. 1 in mortar. Fill the crack in the wall with mortar.



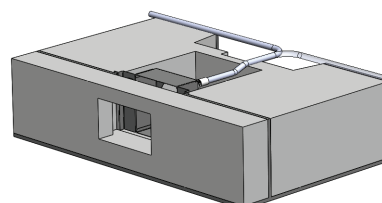
NOTE! Check that the elements are level.

2. Install the fan box and the enclosed electricity pipe as shown in the illustration. If a fan has been ordered (Accessory), run the cable to the outside of the stove. The electrical connection must be done by a certified electrician.

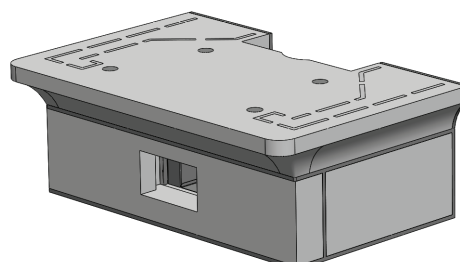


NOTE! If you do not install a fan box now, it cannot be installed at a later date.

3. Assemble element no 10 in mortar with 10 mm mortared joint between both the base and the floor.



4. Place mortar on element 1 and element 10 and install element 2.



INSTALLATION INSTRUCTIONS

5. It is now time to place the hearth on to element 2. If outdoor air is to be connected, the outdoor air sleeve must be installed on the hearth (see the instructions in the accessory box for the outdoor air kit.) To facilitate the installation of the hearth, you can choose to unscrew and separate the body from the front/door. This reduces the weight of the hearth by just over 40 kg.

Open the door fully. Unscrew the four bolts in each corner. After this, carefully pull the front towards you until it comes free from the two guide rails. Carefully put the front to one side, to avoid damage to the opening handle. The front and door weigh approx. 40 kg.

Place the feet of the hearth on the places marked on element 1-11. A suitable place to check horizontally and vertically with the help of a spirit level is on the hearth's sealing plate.

Tip! The stove is vertical and horizontal when the door stays open at an opening angle greater than 90-95 degrees and when it closes automatically at an opening angle less than 85-90 degrees.

Where applicable, connect outdoor air to the hearth.

6. Protect the hearth from damp and mortar by wrapping it in plastic during installation.

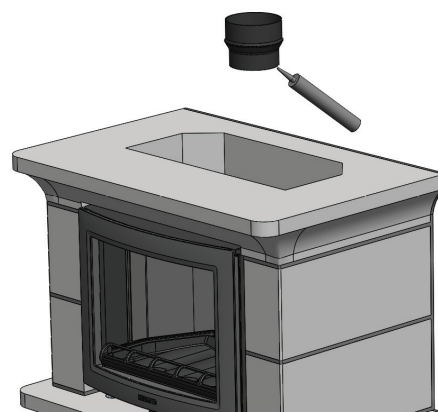
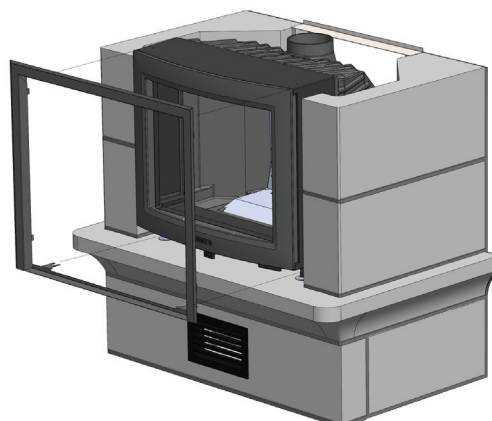
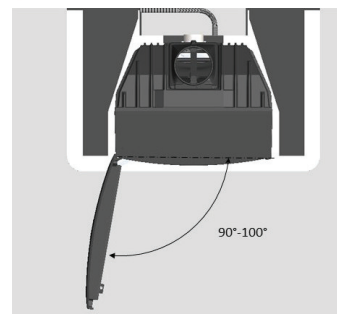
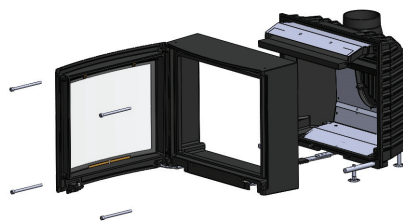
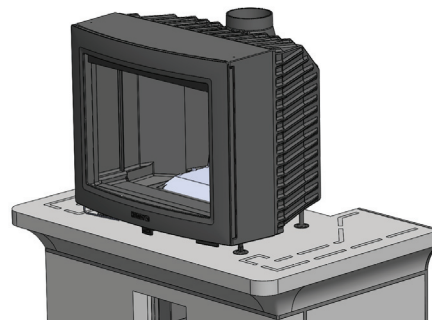
After this, assemble the four elements 3 in mortar 50 mm from the side of element 2. Place the L-shaped angled plate, with the short angle pointing up, completely against the wall between the upper elements no. 3.

Test the fit for the frame for wall installation. This is installed permanently after rendering and painting the stove.

NOTE! The frame for the wall installation must not be cemented into place; instead, it must be clamped securely using the springs, otherwise, there is a risk that cracks will form.

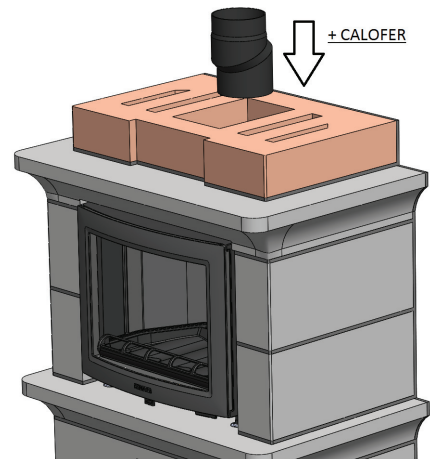
7. Assemble element 4.

Assemble the transition pipe 125-150 mm using jointing compound.



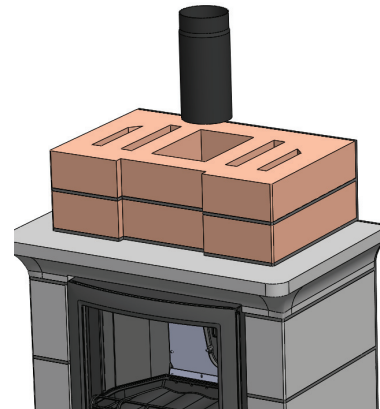
8. Install the first element, no. 5. Centre it on element, no. 4.

Install the S-bend using jointing compound.



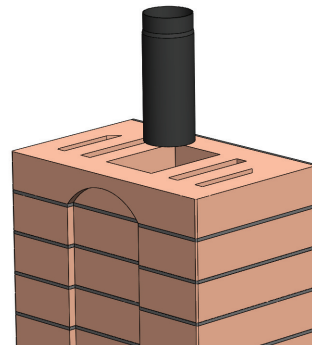
9. Install a further element no. 5 in mortar.

Install pipe 330 mm.



10. Install a further three elements no 5 and one element no 6 in mortar.

Install pipe 390 mm.



K20 Rear connection

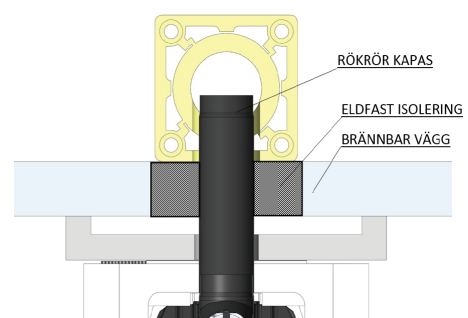
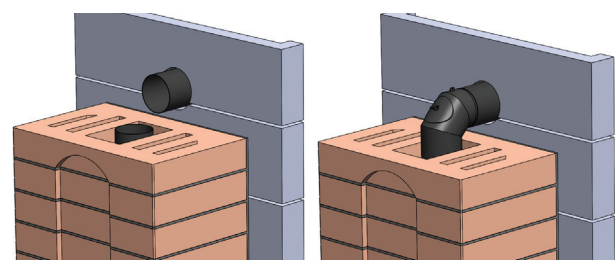
11. **For rear connection.** Cut the 500 mm pipe to a suitable length. Hang the pipe in the hole prepared in the chimney breast. After this, fit the 90-degree pipe on to the 390 mm pipe. Finish by sliding the pipe in the wall with the 90-degree pipe.

NOTE! Rear connection through a flammable wall.

If the flue is to be run through a flammable wall, the connection pipe must be enclosed by a fire-resistant, lined shaft (Masterboard, Minerit or similar) and fireproof insulation that is at least 100 mm thick. Thus, there must not be any flammable material closer than 100 mm from the flue.

If the outer diameter of the flue is $\varnothing 153$ mm, the shaft must be at least 353 mm x 353 mm.

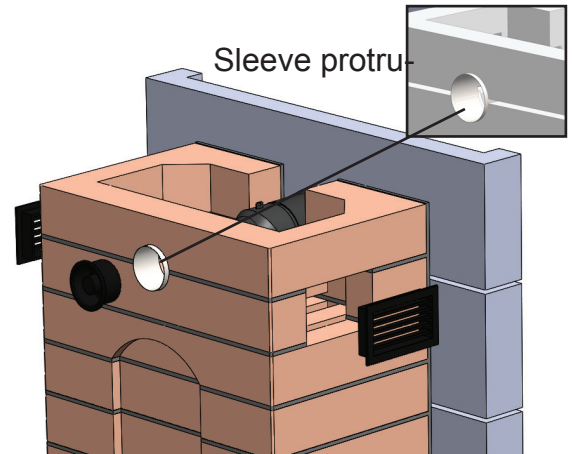
For top connection of the stove, jump forwards to point 13.



12. Install elements no. 7B, 8B and 9B in mortar. Secure the connection sleeve with insulation in the hole on the front. Let the connection sleeve protrude an equal distance to the thickness of the rendering (approx. 10 mm)

Test fit the hot air grilles. **NOTE! The grilles must not be cemented into place, they should be loose. Otherwise, there is a risk that cracks may form**

The cleaning cover and the hot air grilles are permanently installed after the stove has been rendered and painted.

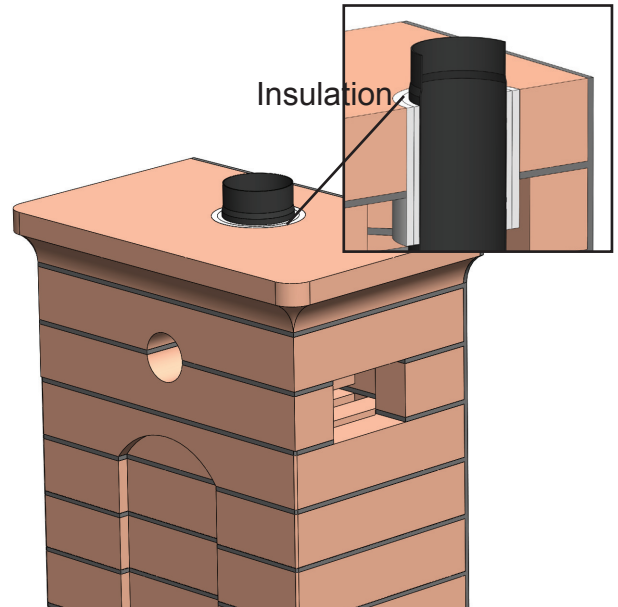


K20 Top connection cont.

13. Assemble elements 7 and 8 in mortar. Secure the connection sleeve with insulation in the hole on the front. Let the connection sleeve protrude an equal distance to the thickness of the rendering (approx. 10 mm)

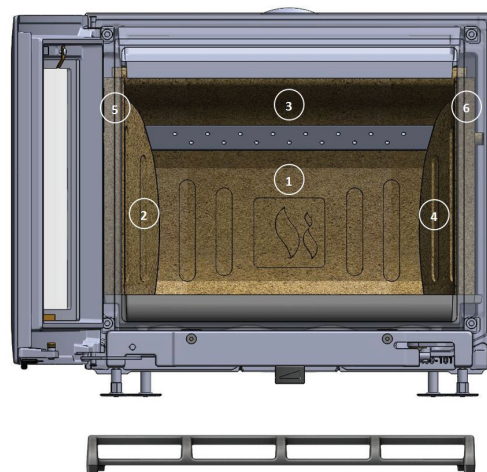
Test fit the hot air grilles. **NOTE! The grilles must not be cemented into place, they should be loose. Otherwise, there is a risk that cracks may form**

The cleaning cover and the hot air grilles are permanently installed after the stove has been rendered and painted.



14. Install the 500 mm long pipe. Then, assemble element no. 9 in mortar. Make sure that the insulation is completely sealed between the pipe and element 9. The pipe must protrude approx. 50 mm above element no 9.

15. Install the hearth plates in the number order shown in the illustration. Finish by installing the log guard.



The stove is now ready for rendering. In connection with rendering, all grilles, cleaning covers and frames for wall installation must be fitted to prevent the dried rendering mortar from obstructing the final assembly. TIP! In connection with fitting, it is best to carefully press in grates, cleaning covers and frames for wall installation a few millimetres into the wet mortar. In this way, these parts are slightly recessed into the rendering when the stove has dried and you finally install these parts.

Once the rendering is completed, the stove must dry for a week. After this time, you can fire with care on three to four evenings (two to three fires per evening). After this, you can paint the stove. Suitable paints are water based wall paints.

CARE & FIRING INSTRUCTIONS

The Keddy K20 has been tested by a certified testing institute. It has extremely good environmental values and a useful efficiency exceeding 80%. For the stove to work optimally, it is of key importance that you follow the care and firing instructions below. Non-compliance will invalidate the warranty.

FUEL

The K20 must be fired with firewood. Most types of firewood can be used. The most suitable are birch, beech, ash, and elm, but conifers and oak can also be used if they are mixed 50/50 with another type of hardwood. Oak contains acids, which may affect the stove and chimney during combustion.

The firewood must be dry, i.e. with a maximum moisture content of 20%. If the firewood is moist, an unnecessary amount of energy is used boiling the water away before it starts burning normally. This also forms large amounts of soot and tar, which are deposited on the walls of the hearth and chimney, which in turn significantly increases the risk of a chimney fire.

Moist firewood also results in poor combustion, which leads to greater smoke generation with sooty glass and deterioration of the local environment as a consequence.

To be certain you will have dry wood when the heating season begins, it must be cut in the winter. The wood is then stored in a ventilated place under a roof and left to dry during the spring and summer. Before using the wood, you should keep it indoors for a couple of days so there is time for the surface moisture to evaporate.

WARNING! It is absolutely forbidden to fire the stove with painted, glued (e.g. Hardboard or chipboard) or pressure-impregnated wood. It is also forbidden to burn plastic and other waste in the insert. The combustion of such fuels and substances releases acids and heavy metals, which are very harmful for both people and the environment.

BEFORE FIRING - WHEN THE STOVE IS NEW

During the first week, firing can be started carefully. Start with one to two fires during the first couple of days.

A particular smell will occur during the first firings in the stove. This is the cast iron's paint and rust proofing hardening. Ventilate as required and ensure that there is good air exchange. The smell will normally disappear after a few fires.

FIRING

When you optimise firing manually, you should measure the amount of burned wood per hour. The stove is not intended for an output exceeding 10 kWh, i.e. never exceed the maximum amount of recommended wood per hour. This not only impairs the efficiency, there is also a risk of overheating the insert and chimney. Suitable firewood sizes and quantities for the K20 are:

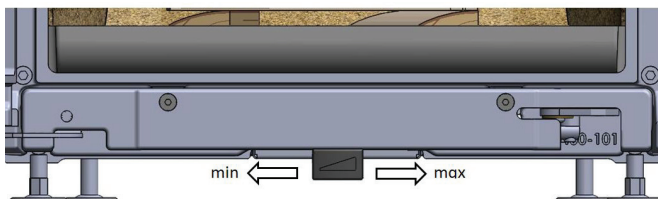
Kindling:	
Length	approx. 25-35 cm
Diameter	approx. 2-5 cm

Split logs:	
Length	approx. 25-35 cm
Diameter	approx. 6-10 cm

Quantity	ca 2.0 kg /
load/hour	
Max. quantity	3.0 kg / hour

NOTE! Every load should burn down completely before you add new firewood. In which case, the stove works at its best and you avoid the inconvenience of possible blow back.

The damper is closed completely when it is turned to the left and is open to the maximum when it is turned to the right (see the illustration below).



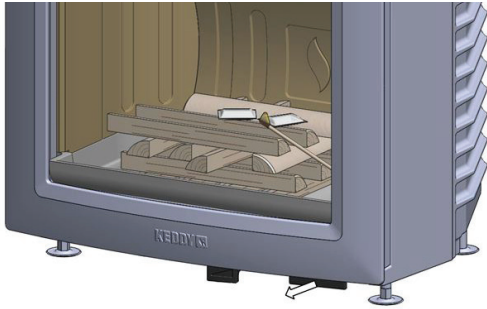
The amount of air needed for burning for example 2 kg of wood in one hour depends on several parameters. The length of, and the draught in your chimney, how hot the stove and chimney are, i.e. how long you have fired. The basic principle, however, is that the stove has to burn calmly and harmoniously and, for a hot stove, the damper control does not usually exceed 30-40% in order to achieve this at an output of 5-7 kW. (The damper control stands at 50% in the illustration above.)

As a rule of thumb, if you want to reduce the output, a load of 2.0 kg firewood should burn for about 60 minutes. The stove will then provide approx. 5 kW.

CARE & FIRING INSTRUCTIONS Cont...

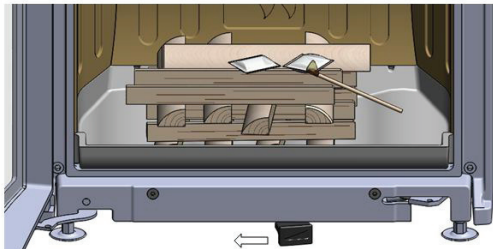
Lighting a fire

1. Open the door by pulling on the fixed handle under the edge of the door. Then, lay kindling across this until you have a total quantity of firewood of approx. 2.0 kg. (Approx. 15-20 pieces of kindling) (See picture below)



2. Push the damper control as far to the right as it will go, place a couple of firelighters on top of the heap and light. In the majority of cases, you can close the hatch immediately after lighting.

(If the chimney is cold or if there are unfavourable weather conditions, you may need to keep the door ajar during the first couple of minutes in order to establish a satisfactory chimney draught.)



3. Let the first fire burn down with maximum air supply. This is to allow the stove to reach its operating temperature quickly. Light a new fire of the desired size and close the door. Wait a couple of minutes, until the fire has started burning properly. Then turn the damper to the left, until you have achieved a calm and harmonious fire.

Note! The reason why we want to achieve the optimum operating temperature in the stove quickly is that it works with the best efficiency at this temperature. This minimises the emissions and maximises the heat generation.

The K20 is equipped with an innovative self-closing and self-locking door. When putting firewood in or removing ash, carefully place the door at 90 to 95 degrees opening angle, so the door will stay open. Give the door a light push, back past the 90 degrees position, and the door closes automatically and locks.

NOTE! For further information on firing in our stove, see the film "firing tips" on keddy.se.

GOOD TO KNOW

Since it can take some time for a cold chimney to start working properly, i.e. to force the smoke in the right direction, you can place a firelighter on the baffle and light it. In this way, you eliminate the down-draught and avoid the nuisance of smoke entering the room in the initial stage.

If the premises are equipped with mechanical ventilation, i.e. if there are one or more fans to evacuate the air from the building, there may be such a large negative pressure in the building that it could be difficult to light the stove. We suggest that you turn off the ventilation temporarily or open a window until the negative pressure has dissipated.

Firing with too coarsely chopped wood or with too little oxygen supply, so-called smoulder combustion, can be risky. In part, this increases the amount of soot and tar due to poor combustion, which could cause a chimney fire. It could also lead to small gas explosions, which may damage the insert. In addition to this, the smoke from the chimney will be unhealthy and cause inconvenience to your neighbours.

REMOVAL OF SOOT AND MAINTENANCE

Soot must be removed at least once per season. The soot from the chimney and the connections should be removed by a chimney sweep. The vermiculite baffle should be removed during soot removal.

If the glass becomes sooty, it is best to use a special soot remover, which you can buy from your local stove dealer. Never use detergents containing abrasive materials. This will damage the glass.

When emptying the stove, the ash should be placed in a sheet metal container. **Pay attention to the risk of fire when you throw out the ash, as the ash may contain live embers for a very long time!**

IMPORTANT! If there is a chimney fire, the stove door and the supply air control must be closed. If necessary, call the fire brigade. After a chimney fire, the chimney must be inspected and approved by a certified chimney sweep before the stove can be put into use again.

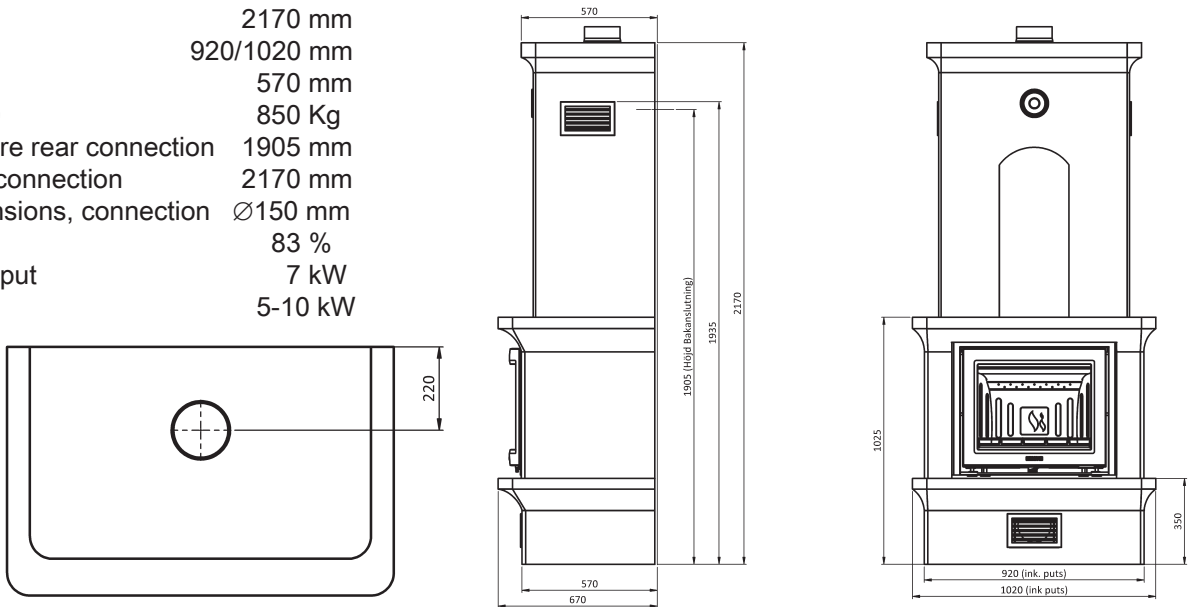
PACKAGING

The stove is delivered on an untreated wooden pallet, which can be sorted as combustible material or burned in the insert. Other packaging is corrugated paper or paperboard, which should be sorted and disposed of in the intended container at your nearest recycling centre.

K20 TECHNICAL SPECIFICATION

DIMENSIONS AND PERFORMANCE

Height	2170 mm
Width	920/1020 mm
Depth	570 mm
Weight K20	850 Kg
Height, centre rear connection	1905 mm
Height, top connection	2170 mm
Outer dimensions, connection	∅150 mm
Efficiency	83 %
Nominal output	7 kW
Output	5-10 kW



DIMENSIONS

