Installation Guide

BSO 03

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made in germany.

CONTENTS

1 Basic informations.....2
2 General Information.....3
3 Tolerances of thermal concrete parts.....5
4 Components of BSO 03.....7
5 Sequence of assembly.....9
6 Assembly.....12
7 Installing protective screens.....14
8 Minimal distances.....16
9 Heat radiation range.....17
10 Drawings and technical data.....19

1 BASIC INFORMATIONS



All instructions delivered with products must be observed. We do not accept any warranty claim or liability for damage resulting from failure to observe these installation instructions!
Improper installation can cause injury and material damage!

The installation may only be carried out by a registered specialist.

Fireplaces equipped with a water boiler must be pressure-tested after hydraulic connection to the heating system. Masonry work may follow only after this pressure test. Ulrich Brunner GmbH does not cover any costs incurred by necessary dismantling of masonry for rework at water boiler installation or replacement of the boiler.

The floor space of the room must have a suitable structure and sufficient dimensions to ensure proper functioning of the fireplace.

Please note that other installation and assembly instructions are included in other packaging units!

Dimensioning of downstream heat accumulator must be according to valid stove-setting rules.

During installation of the fireplace, all dimensions and minimal clearances of the fireplace casing must be held as specified by the manufacturer.

Fireplaces that meet the requirements of DIN EN 13240 or DIN EN 13229 and that can only be operated as intended with closed combustion chamber door or that have a self-closing firebox door are suitable for multiple occupancy.

All binding national or EU standards and local regulations for the installation of fireplaces must be observed.

All valid stove fitting rules and regulations of local construction law must be observed and followed.

Please follow the relevant regulations of your country.

When these instructions are followed and all works are done properly, this will ensure a safe, energy-saving and environmentally friendly operation of the stove. Pictures shown are not to be considered as complete representations of any kind.

Subject to technical and assortment changes.

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Please notify your supplier of any damage which might have occurred during transport.

Please keep these instructions.

2 GENERAL INFORMATION

Stove insert

The BSO stove fitting kits are designed for particular stove inserts manufactured by Ulrich Brunner GmbH.

BSO	Stove insert to be used	Recomm. load every 2h*)
BSO 01	HKD 2.2 short DR (with mounting frame R330)	2.5 kg
BSO 02	HKD 2.2 DF and HKD 2.2 D/DF (with mounting frame)	3 kg
BSO 03	HKD 2.2 DF and HKD 2.2 D/DF (with mounting frame)	4 kg
BSO 04	HKD 2.2 short SK (water bearing with mounting frame)	see user manual
BSO 05	HKD 7SK side opening door HKD 7SK Tunnel side opening/side opening door	see user manual

*) When the above loads are exceeded, or if the recommended load is burned in shorter times, cracks on external walls of the stove are possible. Please inform the user about this.
The components of BSO kits fulfil the requirements of exposed concrete class SB2.

Floor

On flammable floors, the fireplace must be placed on a slab made of non-flammable material. This slab must be at least 500 mm long in front and 300 mm wide on both sides of the fireplace.
The base plate must be carefully set to level; please pay attention, that it rests evenly on the entire surface. It is recommended to use the wall as reference and set the base plate at 90 degrees. The completely assembled accumulation stove cannot be moved or turned afterwards.

Acrylic joint seal

Used pointwise for setting of components.

24 hours after assembly you can paint the stove external casing. Plastered walls must be previously sanded with fine abrasive paper.

Hairline cracks

Joints between the elements of stove casing or between the house wall and the stove casing can tend to form small cracks. This is normal and no cause for concern. Small cracks can be repaired with the optionally available rework kit (item no.: 900300).

Bigger defects
Transportation damage must be reported immediately to the shipping company. Replacement parts can be ordered from Ulrich Brunner GmbH.
In the case of bigger defects which cannot be repaired with the optionally available rework kit (item no.: 900300), it is possible to request exchange at Ulrich Brunner GmbH, based on your warranty.

Replacement part requests:
When ordering replacement parts it is necessary to mark the damaged parts on the attached packing list and make a picture of the damage. Then, the printed picture and packing list should be sent back to Ulrich Brunner GmbH. The replacement part will be sent as soon as possible.

Concrete look exterior
Stove casings with concrete look, despite the best practices used during manufacturing and shipping, can show slight irregularities like air inclusions, small cracks or unclean edges. This corresponds entirely with the concrete look design and is not a reason for a claim. Cracked or significantly damaged elements will be replaced as part of your products' warranty.

Built-in components

If any additional components like electronics (EOS) or similar are installed inside the stove casing, the max. allowed ambient temperature must be respected. Electronics must be installed in such a way to provide for rear ventilation.

All safety distances are minimal required distances.

Subject to errors and changes!



Please follow the separate installation instructions for the stove insert.

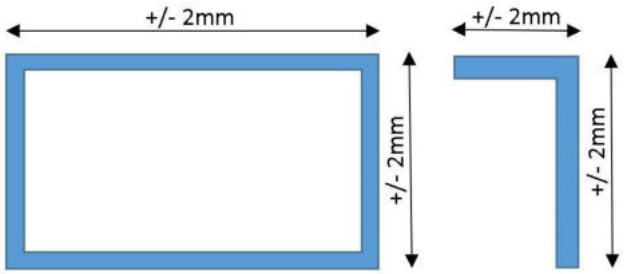
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3 TOLERANCES OF THERMAL CONCRETE PARTS

The following tolerances are valid for all parts of our system fireplace/stove casings. Except where otherwise indicated, all data refer to the nominal dimensions, as found in dimensional drawings.

Length Tolerances

For each part, the indicated tolerances apply.



Height Tolerances

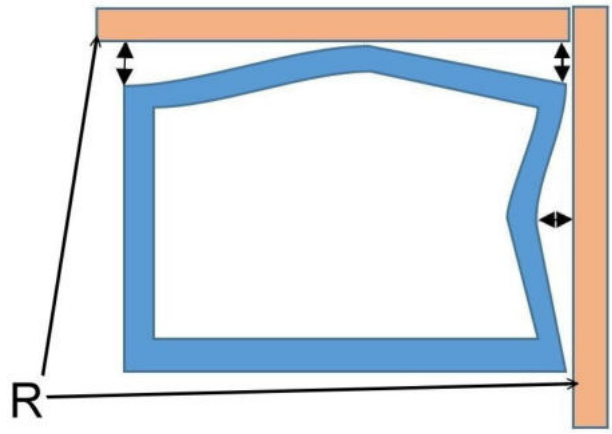
For each part, the indicated tolerances apply.



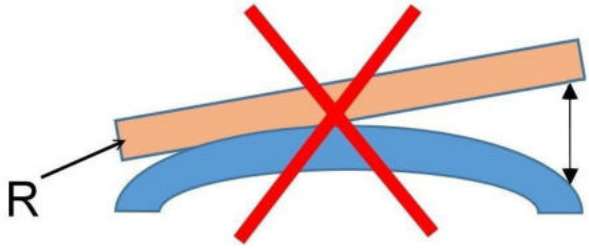
Tolerances of Flatness

For parts with nominal dimensions up to 950 mm, a tolerance of +/- 2.5 mm applies. Above this dimension, a tolerance of +/- 3 mm applies.

These tolerances apply also for the base support and top cover parts. The leveling board (R) must be placed in parallel to the basic body!



Im. 1: Leveling boards placed correctly



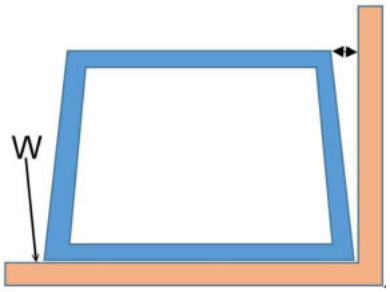
Im. 2: Incorrectly placed leveling board

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Tolerances of Angle

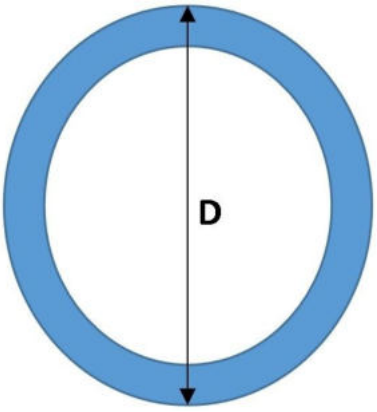
In order to determine the deviations of angles, place the square measuring tool along the long edge!

For nominal dimensions up to 600 mm, a tolerance of 0.28%, i.e. 1.7 mm applies. For nominal dimensions up to 900 mm, a tolerance of 0.30%, i.e. 2.4 mm applies.



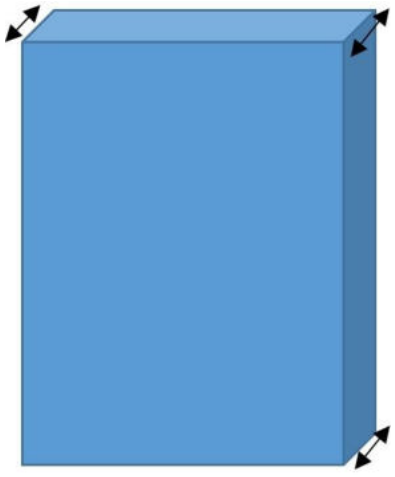
Roundness

Up to a nominal diameter of 650 mm, a tolerance of 0.25%, i.e. 1.62 mm applies. For diameters above this value, a tolerance of 0.28%, i.e. 2.38 mm applies.



Wall thicknesses

For wall thicknesses, a tolerance of 3.5% applies.

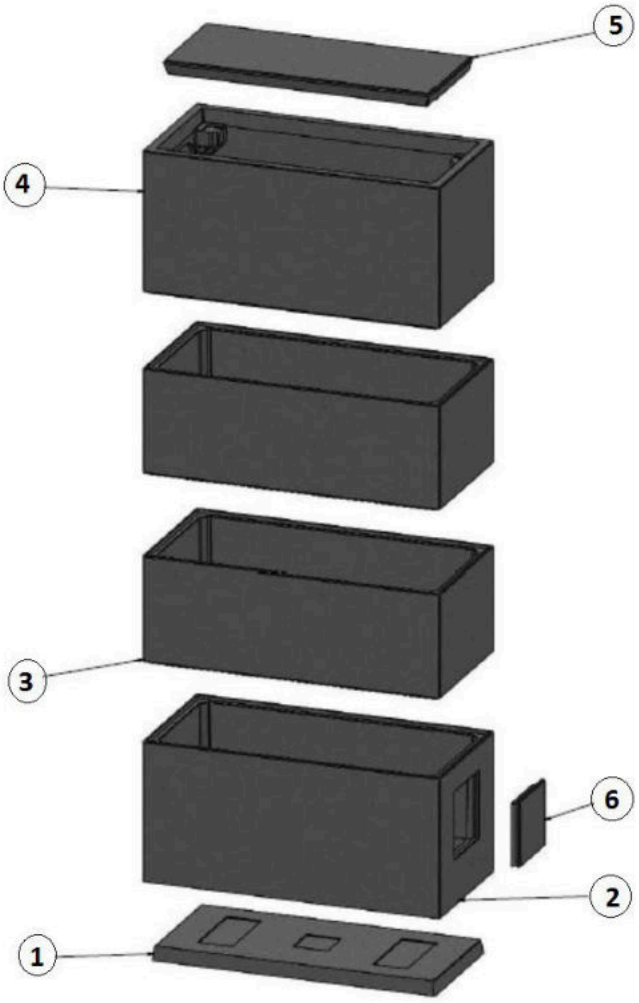


The overall appearance with color shade differences being present or not can be assessed in general only after a longer period of time (several weeks in some cases). The uniformity of color should be assessed from a typical viewing distance.

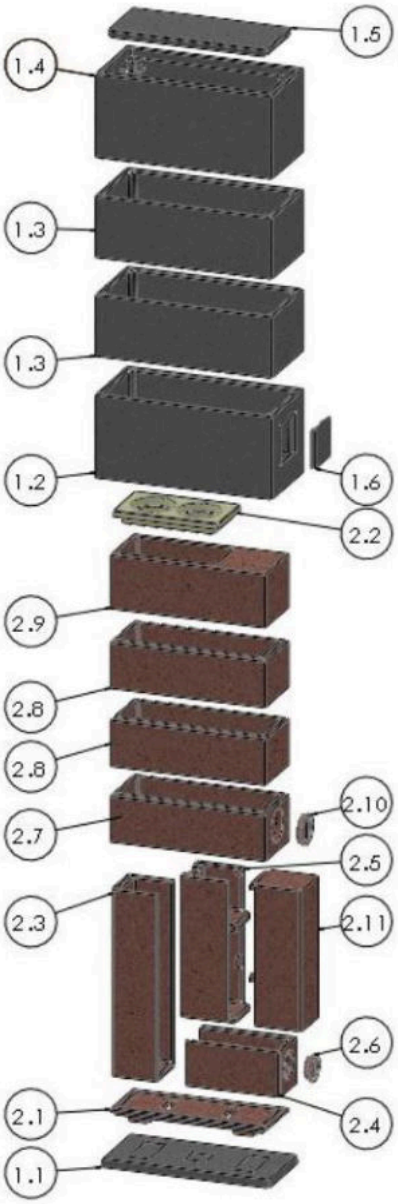
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4 COMPONENTS OF BSO 03

Item	Part no.	Designation
1	BSO3000-006	Base plate
2	BSO3000-003	Bottom ring
3	BSO3000-004	Upper ring 1 (additional ring for extension)
4	BSO3000-005	Upper ring 2
5	BSO3000-007	Storage mass top cover
6	BSO3000-019	Revision cover

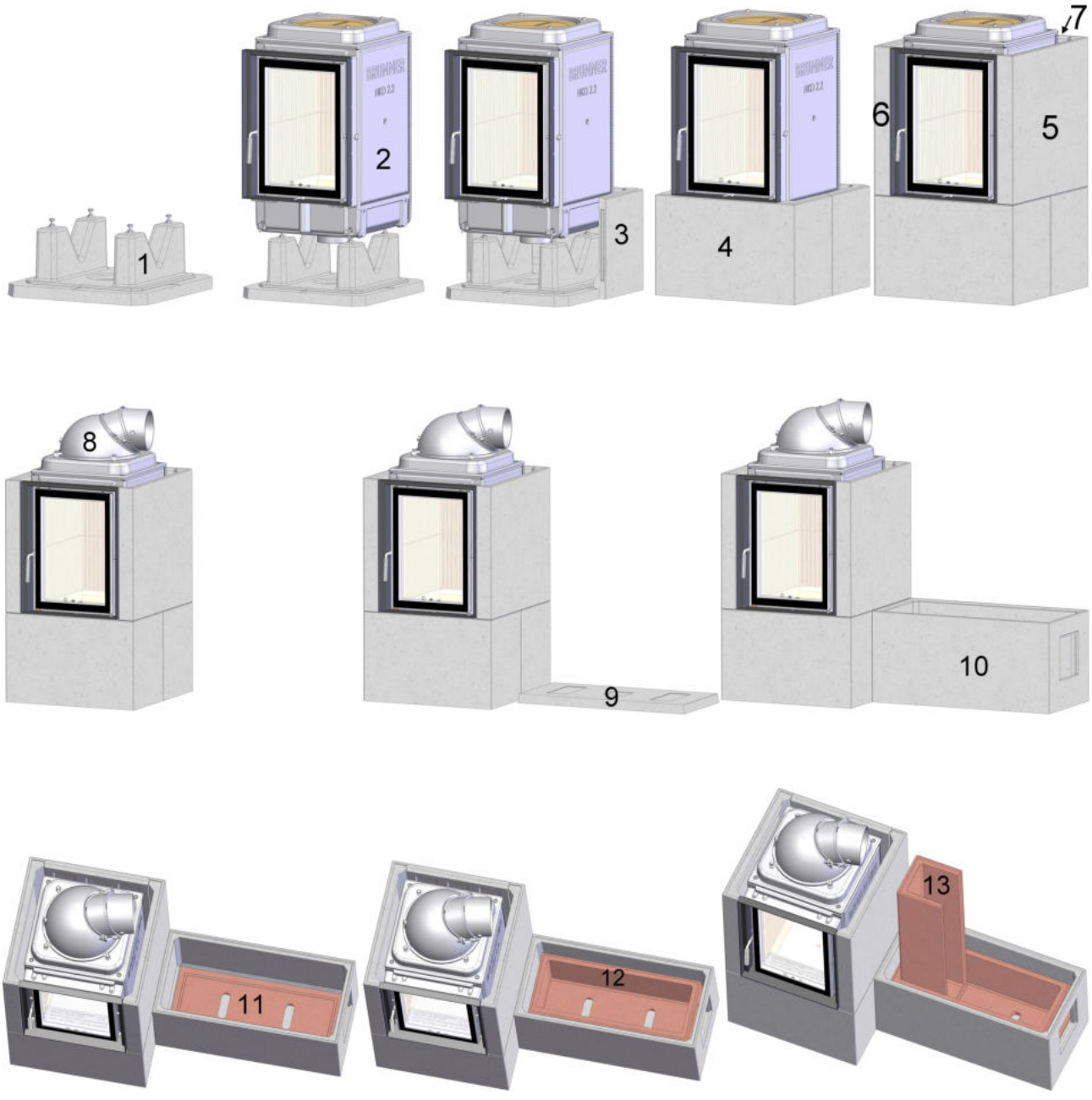


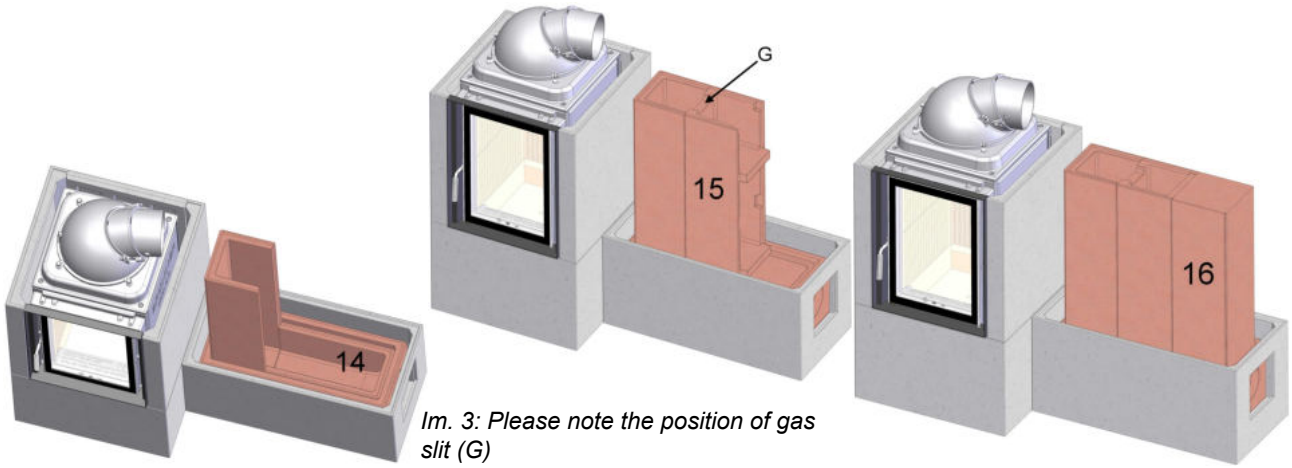
Item	Part no.	Designation
1	BSO3000-001	Storage mass cladding elements
1.1	BSO3000-006	Base plate
1.2	BSO3000-003	Bottom ring
1.3	BSO3000-004	Upper ring 1 (additional)
1.4	BSO3000-005	Upper ring 2
1.5	BSO3000-007	Storage mass top cover
1.6	BSO3000-019	Revision cover
2	BSO3000-002	Reheating surface
2.1	BSO3000-008	Base plate
2.2	BSO3000-011	Connecting piece D160-D180
2.3	BSO3000-010	Modular block 1
2.4	BSO3000-014	Modular block 2
2.5	BSO3000-009	Modular block 3
2.6	BSO3000-017	Cleanout cover D120
2.7	BSO3000-012	External shell 1
2.8	BSO3000-016	External shell 3
2.9	BSO3000-013	External shell 2
2.10	BSO3000-018	Cleanout cover D140
2.11	BSO3000-015	Modular block 4



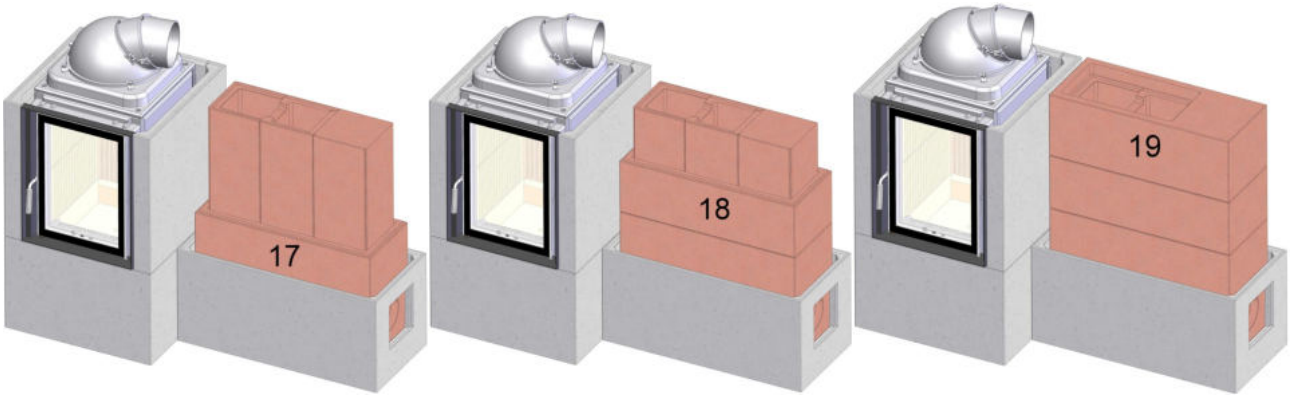
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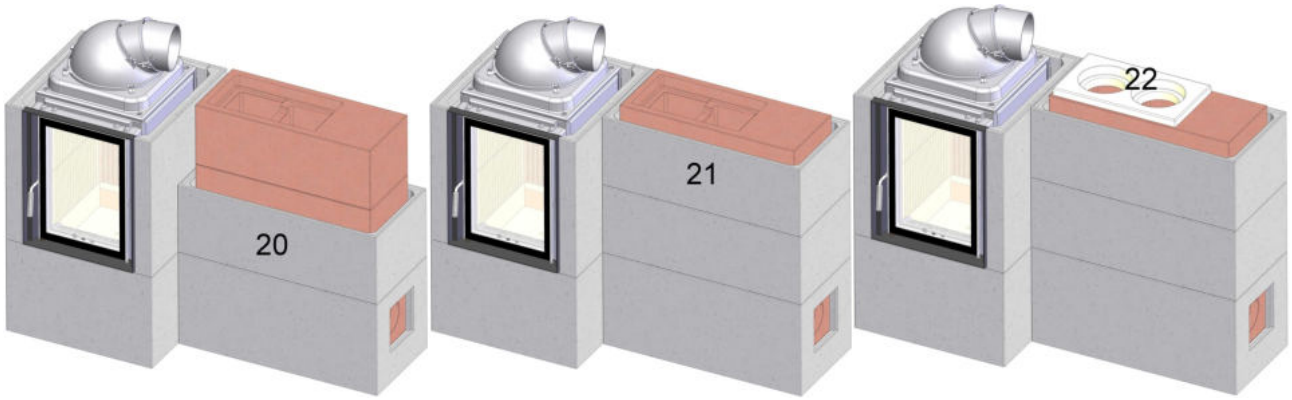
5 SEQUENCE OF ASSEMBLY



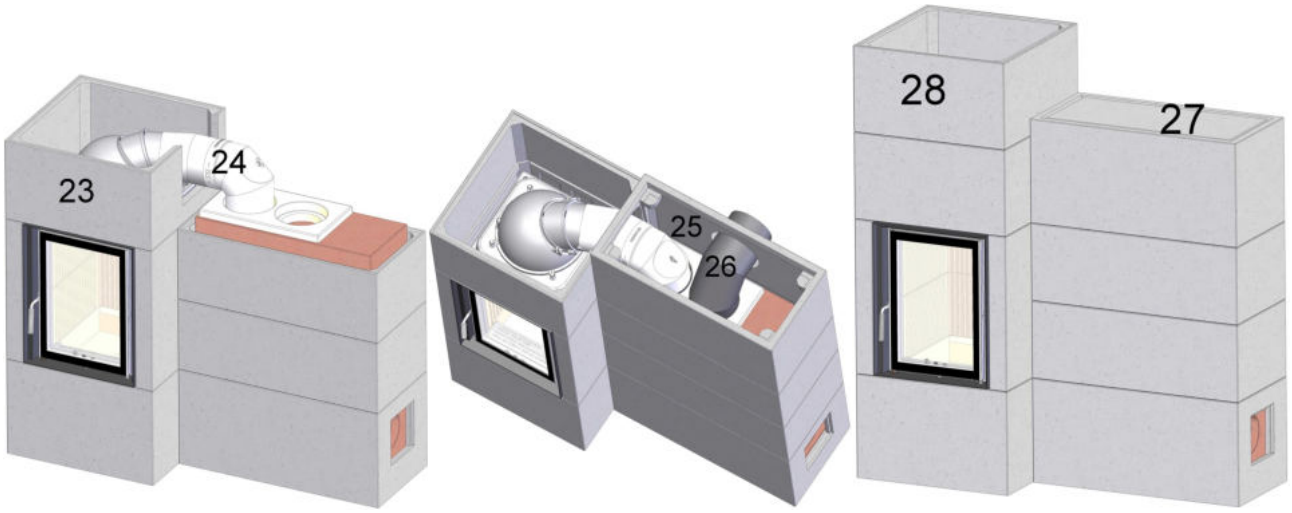


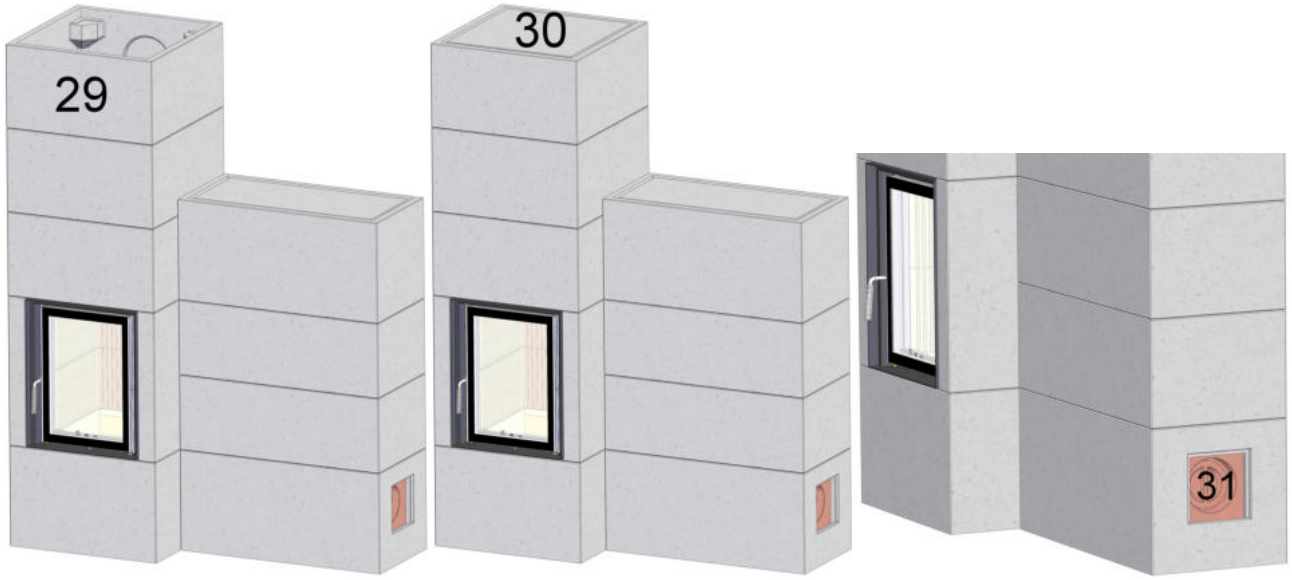
Im. 3: Please note the position of gas slit (G)





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6 ASSEMBLY

Sequence of assembly

For sequence of assembly, please follow the instructions in chapter 'Sequence of assembly'. It shows each and every step of assembly.

Always keep to the specified order!

The single elements must be examined closely before installation to ensure correct position. Don't forget the pointwise bonding of elements with acrylic adhesive.

The assembly sequence of protective panels is only an example and can be different in various cases.

Fireplace insert

To compensate for the different thermal expansions between the fireplace insert and casing, a gap of ca. 2-3 mm must be left around the doors.



If the fireplace casing is in direct contact with the fireplace insert, it leads to damage of the fireplace casings, which are not covered by our warranty.

The mounting frame must have an overlap of about 4 mm.

Breakthroughs and breakouts

Breakthroughs for smoke pipe connection, air gratings or other components within the fireplace casing must be created on site. These are to be made with extreme caution to prevent breakage of the components.

Damage caused by improper work is not covered by the warranty.

The safest way to create the breakthroughs is using a jigsaw.

Setting of the ring elements

The ring elements of the fireplace casings must be lifted over the fireplace insert previously set on the base plate. To avoid damages during setting, it is recommended to place the elements on pieces of wood, and then set down the ring element carefully after pulling out the wood pieces.



Im. 4: Wood pieces as supports

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Plastering

Before plastering the fireplace casing, the fireplace should have been heated once. As a result, the fireplace casing can expand and break down the biggest stresses. This prevents or reduces subsequent cracks in the surface of the plastered fireplace.

The surface of the fireplace casing must be cleaned with a damp cloth. A pre-wetting of the surface is not required.

Keep processing temperature above 5°C (41 deg. Fahrenheit).

To avoid stress cracks as much as possible, a fiberglass mesh is applied with adhesive plaster (optional) Brunner Universal (Art.Nr.: 900384) or Brunner Spezial (Art.Nr.: 900284) on the fireplace casing.

The actual plaster layer is then drawn with adhesive plaster over this layer.

Please note the processing instructions for the adhesive plaster.

Excerpt from the processing instructions: Mix dry mass before removal of processing volumes in a clean container. Set small quantities in a mason pan with a spatula or trowel with clean tap water into application-specific consistency and process quickly; for large-area coating, stir with a mortar agitator in low speed intensively, allow to soak, stir again and then process quickly.

Before the lower elements are set, it is necessary to provide for the required air supply. The necessary dimensions can be found in chapter 'Technical Data'.

The hot air outlet is provided by the free cross sections in the ceiling region. If they are blocked, it is necessary to prepare a sufficient hot air outlet (see section 'Technical Data') on site. **Risk of overheating!**

The openings for air supply and hot air outlets with the specified cross sections are required, even if the fireplace is provided with external air supply.

For procedure on how to create air intake opening, please refer to section 'Breakthroughs and outbreaks'.

The stove cannot be used without sufficient air intake or hot air outlets.

Please observe the installation instructions provided with the fireplace/stove insert.

The first step of assembly shows the base plate with pre-assembled bolts. These bolts are used to adjust the height and level of HKD 2.2.

The HKD 2.2 is placed on these bolts.

Before the stove casing is assembled, the HKD 2.2 inner linings should be installed.

Set the lower front part of casing (assembly step 4) and bring the stove insert to level.



Im. 5: Bolt in base plate

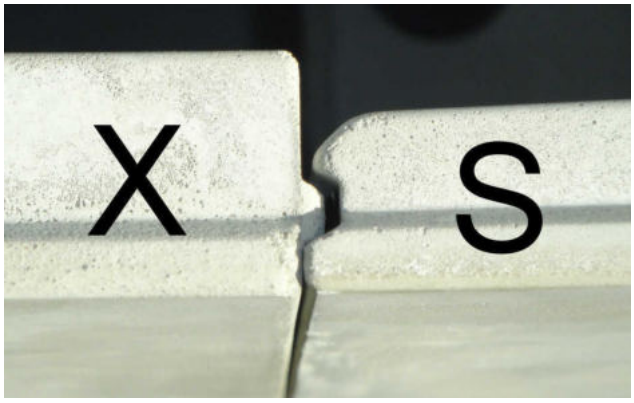
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Inserting of back wall plate

The back wall plate (X) is not used with Tunnel variants.

If the back wall plate (X) is required, the sidewall parts (S) must be placed in such a way, that the back wall plate can be pushed inside the nut.

The sidewall parts have the necessary nut only on one side.



Im. 6: Inserting of back wall plate (X)

Please note the position of gas slit in assembly step 15!

Use the attached Orfix mortar for bonding the components of ceramic storage mass! Mix the dry mortar with tap water to receive a toothpaste-like consistence.

Smoke pipe connections and cleanout covers must be sealed with attached sealing ropes. Please check also instructions provided with the assembly cement.

Please note that the last part for assembly is the one with supports for top cover.

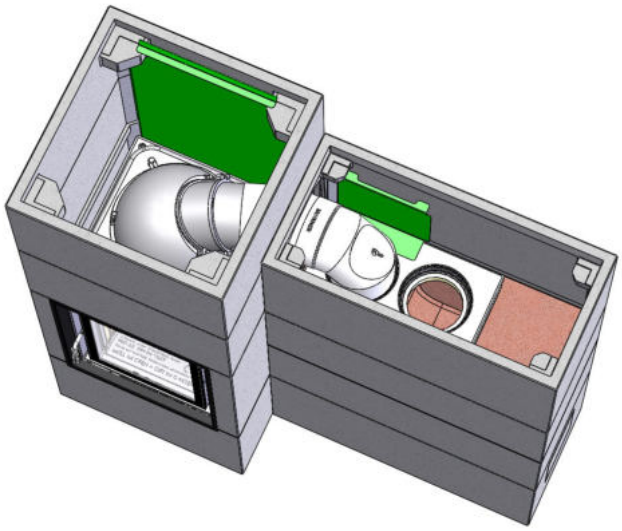
7 INSTALLING PROTECTIVE SCREENS

If the BSO3 is assembled close to a wall (a building wall), it is necessary to keep the minimal clearances (see “Technical Data”). The minimal clearance must avoid overheating of the building wall. Additional brick lining for protection is generally required, if the building wall is made of flammable materials or if it contains such materials.

The wall clearance can be reduced, if protective screens are used inside the thermal concrete stove casing within the area of the heaviest thermal loads on the nearby wall. These screens are contained in delivery contents.

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Protective screen for stove insert	The protective screen is inserted from above after setting the top ring of stove casing and attached at two corners used for setting of the top cover plate. Move the protective screen towards the stove casing to align with the vertical edges on both sides. The protective screen is placed always at the surface between flue gas pipe and building wall.
Protective cover for storage mass	The protective cover is placed on the storage mass and rests on the external casing. The circular opening allows for centring of the protective screen around the flue gas pipe at the ceramic storage mass entrance.



Im. 7: Position of the protective screens (green)

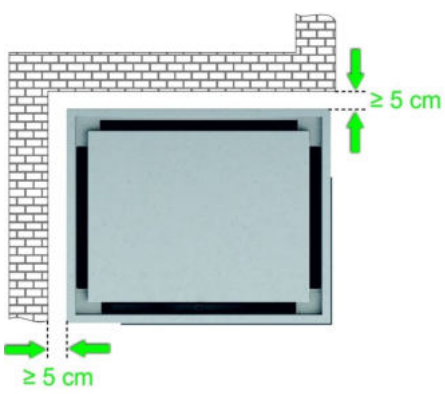
8 MINIMAL DISTANCES

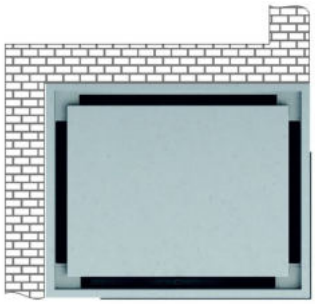
Minimal distances to adjacent walls

Depending on wall type (flammable or non-flammable wall), the minimal distances are different. With installed heat protection screen it is possible to minimize the distance to adjacent wall.

Without heat protection screen:

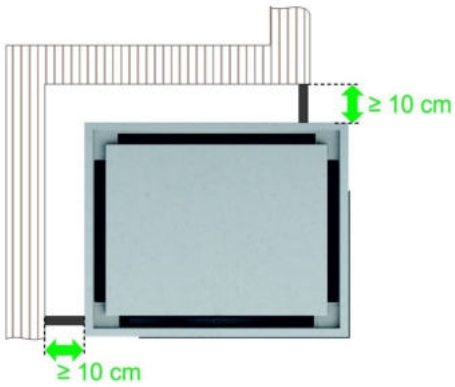
With installed heat protection screens:

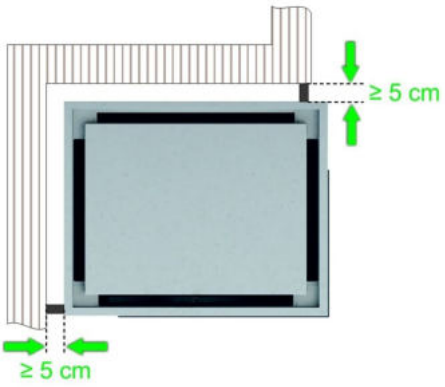




Other walls:

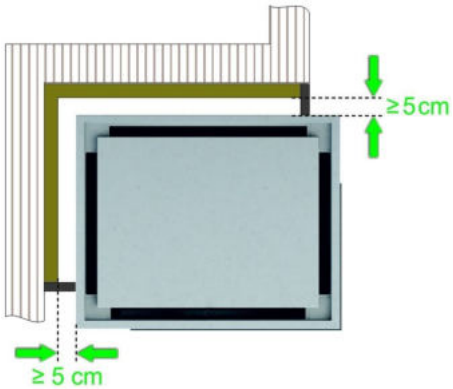
- aerated concrete
- ceramic bricks
- sand-lime bricks
- mineral building materials with wall thicknesses > 10 cm

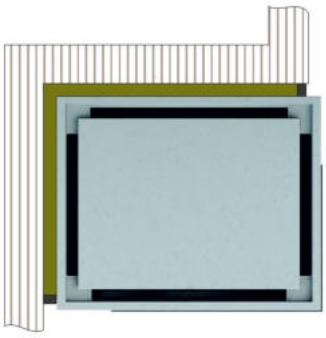




Walls requiring protection:

- flammable walls and wall structures
- load-bearing reinforced concrete walls
- other walls up to 10 cm thickness
- walls with built-in furniture behind them (heat accumulation)





Walls requiring protection with 10 cm brick lining or alternative insulation

Thermal concrete slabs (assembled by craftsman, with exposed joints)

Non-flammable wall, not requiring protection (other walls)

Flammable walls requiring protection

Brick lining or equivalent alternative insulation material, insulating panel

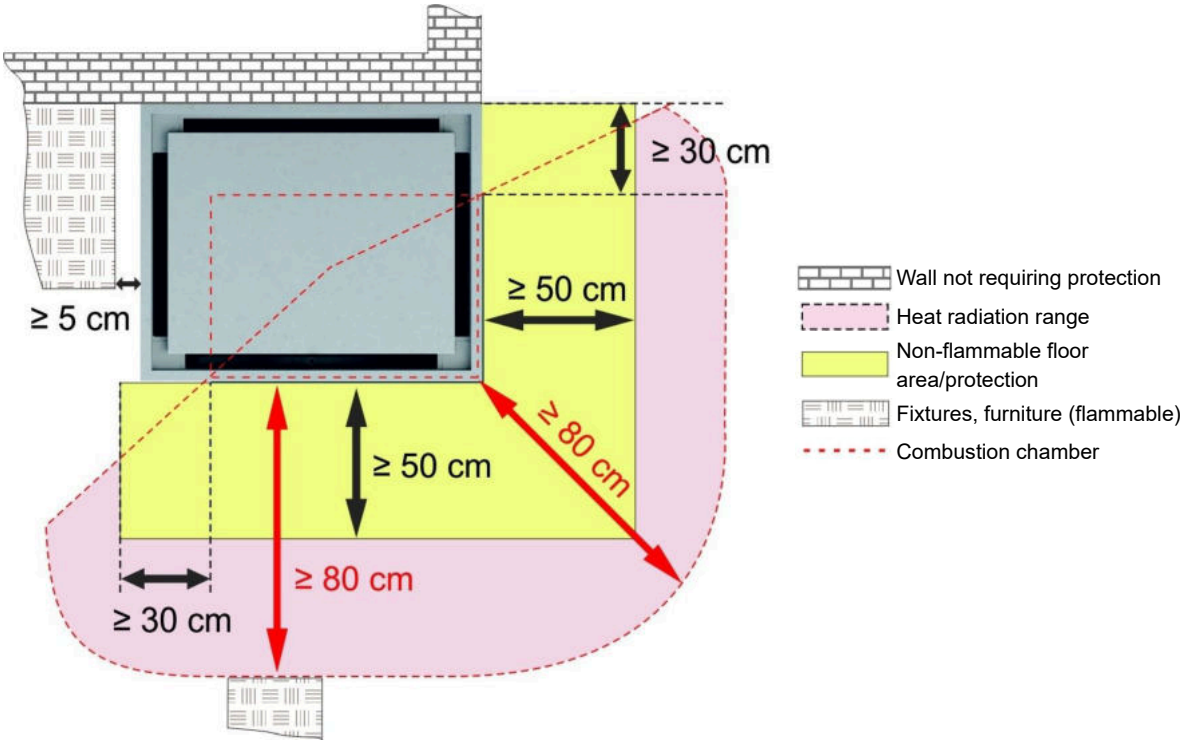
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9 HEAT RADIATION RANGE

Within the range of heat radiation through the fireplace door (glass pane) there must be a minimal distance to all flammable parts (e.g. built-in furniture, fixtures) of at least 80 cm.

Outside the heat radiation range, any flammable fixtures cannot be exposed to temperatures above 85°C. Large-dimensioned parts from flammable materials or built-in furniture must have a clearance of at least 5 cm to external fireplace cladding. In this clearance, the room air must be able to circulate without any obstacles.

In general, parts of external fireplace cladding are allowed to be installed without any clearances, if such parts are not exposed to temperatures above 85°C under any circumstances.



INSTALLATION INSTRUCTIONS FOR THE SEALING SET

All flue connection points need to be sealed!

Content

1 Flat sealing

2 Glue and adhesive tape

3 Flue pipe sealing

4 Plaster cover sealing

5 Fiber fleece



Installation



Im. 8: Sealing around the smoke pipe



Im. 9: Sealing around the plaster cover



Im. 10: Flat sealing

Kink the gasket at the pre-stamped position and lay it around the smoke tube.

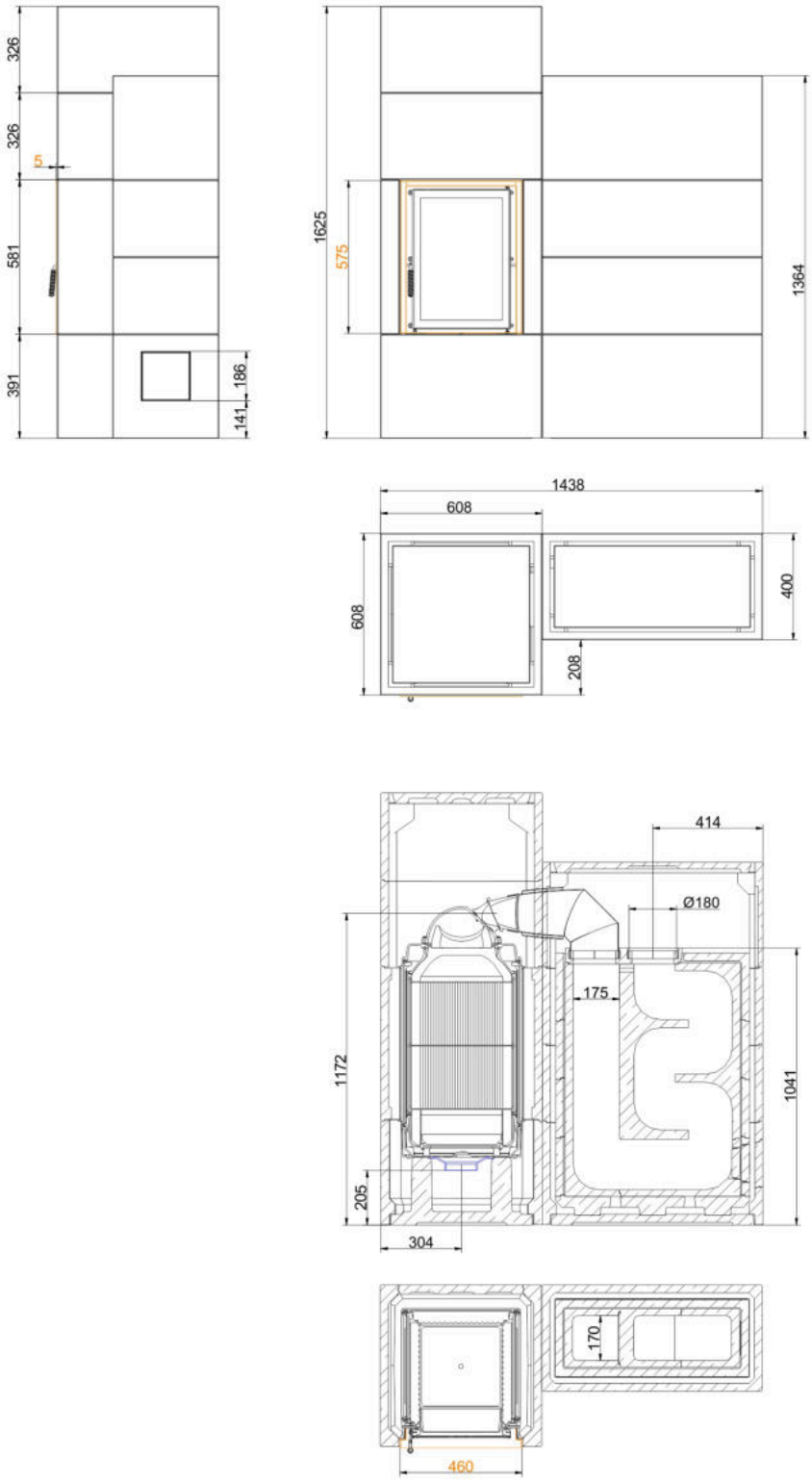
The seal is only placed around the plaster cover.

Cut the flat sealing, wrap the ends with the adhesive tape and place it between the upper part of the memory block and the connector for the flue pipes.

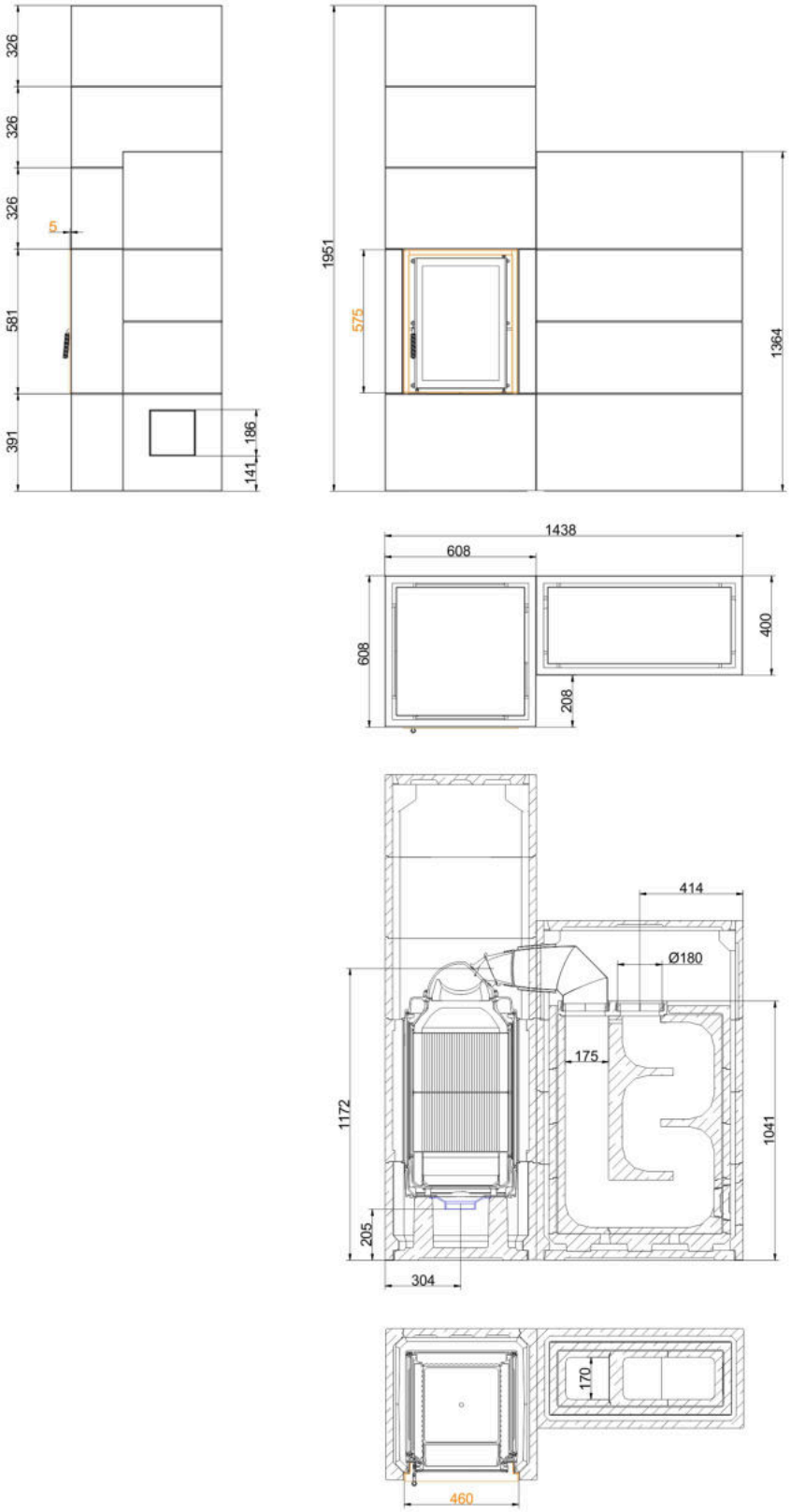
The enclosed glue can be used to fix the sealing before assembly. The fiber fleece is suitable for e.g. to seal the chimney connection.

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Dimension sheets - BSO 03 with HKD 2.2



Dimension sheets - BSO 03 with HKD 2.2



… high

We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

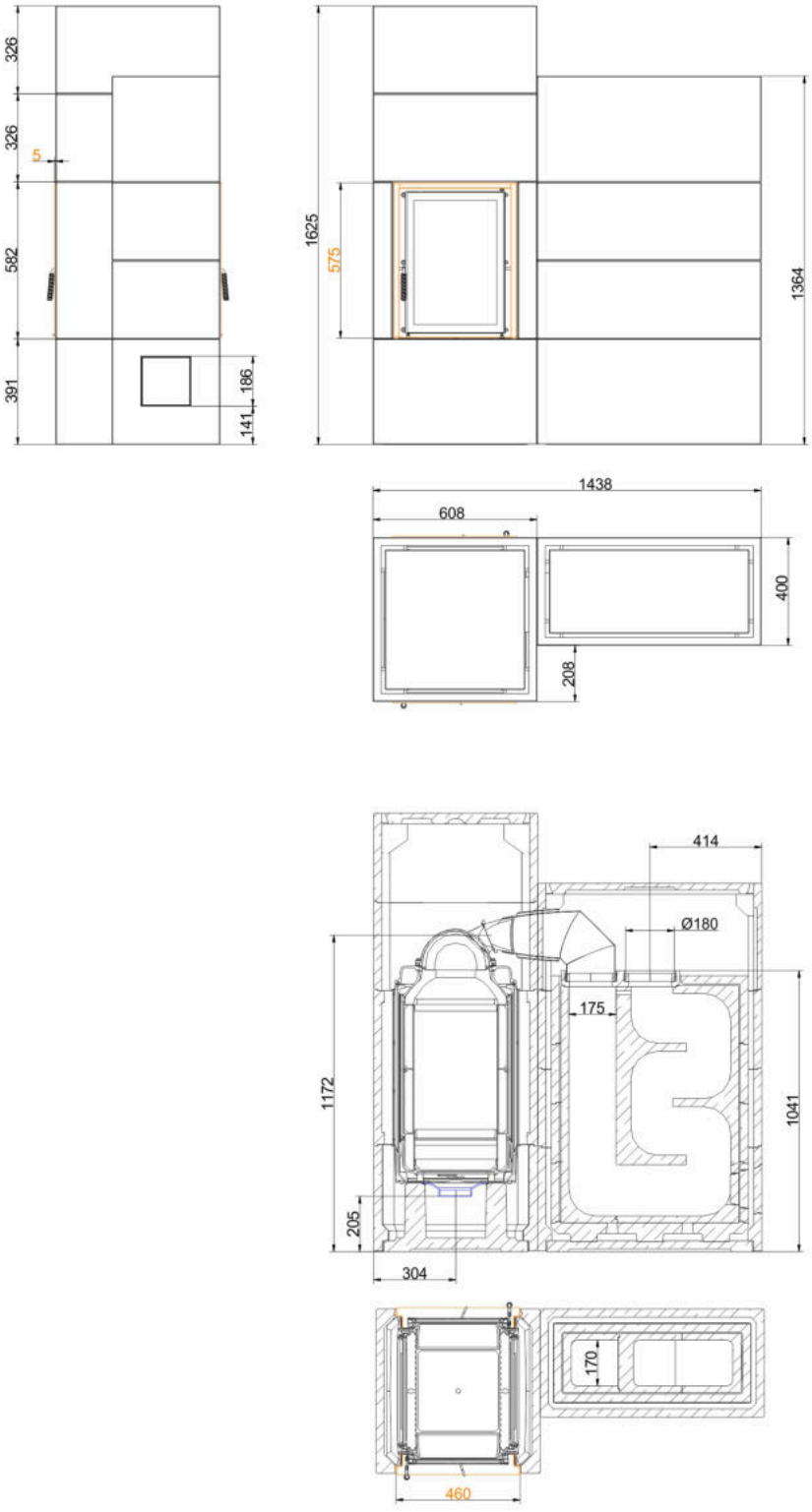
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Planning and installation - BSO 03 with HKD 2.2

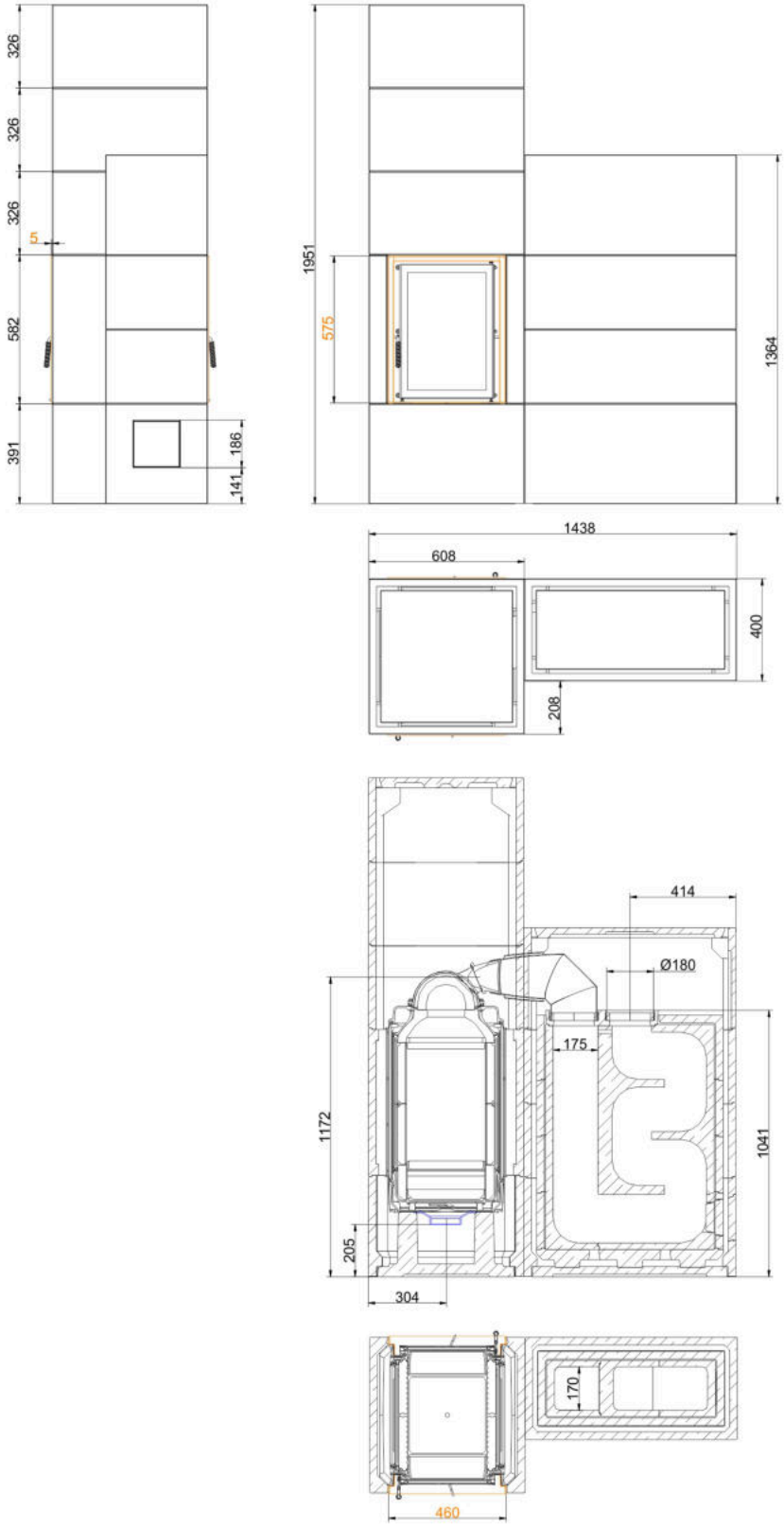
Tested according to		EN 13229
Data for functional demonstration		
System power [1]	kW	3.3
Fire wood volume	kg/h	4.0
Flue gas mass flow	g/s	17
Flue gas temeperature	°C	210
Necessary supply pressure [2]	Pa	15
Combustion air consumption	m^3/h	45
Combustion air connection Ø	mm	125
Cladding components [3]		
Foot print (W x D)	mm	1438 x 608
Overall height	mm	1625
Height of extension ring	mm	326
Minimal distances		
to mounting wall	cm	-
to mounting wall with heat protection panels	cm	0
to combustible mounting wall	cm	-
to combustible mounting wall with heat protection panels	cm	5
from top of fireplace to ceiling	cm	40
Cross-section of gratings		
Convection air [4]	cm^2	416 / 215
Convection air [5]	cm^2	400
Weight		
Total weight	kg	980
Meets requirement/limit values for:		
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -

1) Load of wood 1st/2nd combustion cycle 4 + 3 kg (based on EN 15250)
2) Damper flap recommended
3) Quality features of the cladding components in concrete look (fair-faced concrete class 2-3)
   Dimensional tolerances of the casting mold parts
   Straightness: +- 2 mm/m
   Length/width/thickness: +- 2 mm
   Squareness: +- 2 mm
   Flatness: +- 2,5 mm
   Surface to visible side
   Textur: closed and largely uniform; repair areas with color changes and hairline cracks permissible.
   Porosity: max. three holes with diameter <10 mm and depth <10 mm (reference area 100x100 mm).
   Colour shade: uniform, large-area light/dark discolouration and cement haze permissible; no rust and dirt spots as well as different bulk layers.
   Note: deviations in color tone (e.g. extension rings) can be adjusted by applying a glaze-like paint (our recommendation: DecoLasur Matt tinted in the colour shade Schiefer16, Caparol).
   With the BRUNNER revision set (Art. No. 900300), touch-up work can be carried out on the cladding components.
4) Existing convection air openings. If the construction differs from the supplied system kit (e.g. construction up to the ceiling or closed construction), the information in the data sheet is decisive for carrying out the cross section of the convection air openings.
5) Air recirculation opening required without combustion air duct.

Dimension sheets - BSO 03 Tunnel with HKD 2.2 Tunnel



Dimension sheets - BSO 03 Tunnel with HKD 2.2 Tunnel



… high

We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Stand: 2023-10-30

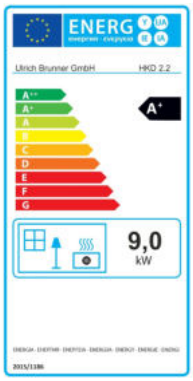
Planning and installation - BSO 03 Tunnel with HKD 2.2 Tunnel

Tested according to		EN 13229
Data for functional demonstration		
System power [1]	kW	3.3
Fire wood volume	kg/h	4.0
Flue gas mass flow	g/s	17
Flue gas temeperature	°C	210
Necessary supply pressure [2]	Pa	15
Combustion air consumption	m^3/h	45
Combustion air connection Ø	mm	125
Cladding components [3]		
Foot print (W x D)	mm	1438 x 608
Overall height	mm	1625
Height of extension ring	mm	326
Minimal distances		
to mounting wall	cm	-
to mounting wall with heat protection panels	cm	0
to combustible mounting wall	cm	-
to combustible mounting wall with heat protection panels	cm	5
from top of fireplace to ceiling	cm	40
Cross-section of gratings		
Convection air [4]	cm^2	416 / 215
Convection air [5]	cm^2	400
Weight		
Total weight	kg	960
Meets requirement/limit values for:		
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -

1) Load of wood 1st/2nd combustion cycle 4 + 3 kg (based on EN 15250)
2) Damper flap recommended
3) Quality features of the cladding components in concrete look (fair-faced concrete class 2-3)
   Dimensional tolerances of the casting mold parts
   Straightness: +- 2 mm/m
   Length/width/thickness: +- 2 mm
   Squareness: +- 2 mm
   Flatness: +- 2,5 mm
   Surface to visible side
   Textur: closed and largely uniform; repair areas with color changes and hairline cracks permissible.
   Porosity: max. three holes with diameter <10 mm and depth <10 mm (reference area 100x100 mm).
   Colour shade: uniform, large-area light/dark discolouration and cement haze permissible; no rust and dirt spots as well as different bulk layers.
   Note: deviations in color tone (e.g. extension rings) can be adjusted by applying a glaze-like paint (our recommendation: DecoLasur Matt tinted in the colour shade Schiefer16, Caparol).
   With the BRUNNER revision set (Art. No. 900300), touch-up work can be carried out on the cladding components.
4) Existing convection air openings. If the construction differs from the supplied system kit (e.g. construction up to the ceiling or closed construction), the information in the data sheet is decisive for carrying out the cross section of the convection air openings.
5) Air recirculation opening required without combustion air duct.

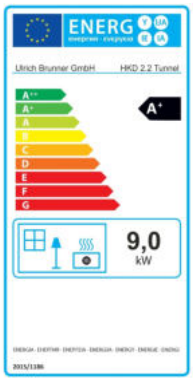
Product data sheet according to (EU) 2015/1186:

Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	HKD 2.2
Energy efficiency class:	A+
Direct heat output:	9,0 kW
Indirect heat output:	N.A. kW
Energy efficiency index:	109
Fuel energy efficiency (at nominal heat output):	82,0 %
Fuel energy efficiency (at minimum load):	N.A. %
Special precautions: see supplied product documentation	



Product data sheet according to (EU) 2015/1186:

Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	HKD 2.2 Tunnel
Energy efficiency class:	A+
Direct heat output:	9,0 kW
Indirect heat output:	N.A. kW
Energy efficiency index:	109
Fuel energy efficiency (at nominal heat output):	82,0 %
Fuel energy efficiency (at minimum load):	N.A. %
Special precautions: see supplied product documentation	



Ulrich Brunner GmbH
Zellhuber Ring 17-18
D-84307 Eggenfelden
Tel.: +49 (0) 8721/771-0 / Fax: +49 (0) 8721/771-100
Email: info@brunner.de

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