Installation Guide

Kompakt-Kessel

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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.

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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.

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

Please keep these instructions.

2 SAFETY PRECAUTIONS

Fireplaces may be set up only in rooms or areas with no risk of danger due to their location, structure or intended use.

Working on the stove	Installation, commissioning, servicing and maintenance works on the product may be carried out only by an authorized stove-fitter. Safety and efficiency of the system depend on this!
Working with electronics	Switch off the emergency switch or circuit breaker, and secure them against switching on again.



Fireplaces with external air supply are not independent from room air supply and must be considered and designed as roomsealed fireplaces. In connection with a ventilation or extraction system, we recommend the use of a negative pressure safety device USA.



If additional parts are installed on the fireplace which are not approved for this appliance by Ulrich Brunner GmbH (for example, an external control unit), it is a customized product that meets customer requirements. The resulting fireplace insert is not type-tested; the declaration of performance of this fireplace insert will be no longer valid.

The CE mark must be removed from the heating insert!

The responsibility for installation (according to TROL) and operation lies exclusively with the specialist craftsman!

Installation must be carried out by an authorized stove-fitter, because safety and efficiency of the system depend mostly on proper installation of the product. All valid stove fitting rules and regulations of building law must be observed and followed. Make sure to instruct the owner or user about the functions and controls of the system and possibly installed safety devices.

Fireplaces must be built to ensure safe operation and fire safety in order to eliminate possible risks and unacceptable loads. They have to be ready for use over an adequate period of time.

Make sure to instruct the owner or user about the functions and controls of the system and possibly installed safety devices.

Remember to use only genuine replacement parts.

Stoves with water boilers are ready for use only with a fully functional boiler section.

3 EQUIPOTENTIAL BONDING AND LIGHTNING PROTECTION



ATTENTION - lightning protection, earthing, equipotential bonding.

When connecting fireplaces with / without power connection to metallic exhaust systems (stainless steel exhaust systems, metal chimneys, refurbished chimneys, ...), the national regulations and existing association guidelines must be observed. The requirements and the design of lightning protection systems, surge protection as well as earthing and equipotential bonding for exhaust systems are regulated.

Equipotential bonding and surge protection (“internal lightning protection”) have been mandatory in new buildings since 2016. Equipotential bonding is therefore required by law for metallic exhaust systems. Metallic chimneys must always be integrated into the building's earthing system. If there is also a lightning protection system (“external lightning protection”), the exhaust system must be integrated into the lightning protection system.

The measures provided in individual cases must be carried out by qualified electricians and / or lightning protection specialists.

Overvoltage protection measures for electrical and information technology systems are not dealt with in the standards mentioned and must be created individually on site via the fine protection / terminal device protection.



The legally provided equipotential bonding is not covered by the connection of the fireplace with / without a power connection to the protective conductor!



In case of damage to current-carrying components caused by non-professional measures for lightning protection, earthing and equipotential bonding, there is no entitlement to guarantee and warranty.

4 PRODUCT DESCRIPTION

The compact boilers built as tiled stove inserts for hot water generation are manufactured and tested as self-closing devices according to EN 13229 and bear the type designation EN 13229 W.

Combustion air is supplied through a provided connecting piece. The volume of air supplied for combustion can be controlled by using a combustion air regulator.

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The size of the heat-emitting cladding surfaces must be matched to the heat generator.Thickness of insulation for building walls surrounding the fireplace stated in technical data has been determined during continuous operation with open air vents (safety test according to EN 13229 - heat transfer coefficient of the tested wall at 0,7 W/m2K), and must be amended accordingly for different conditions (for example, by providing air ventilation for walls).

When installing electrical or electronic components (controls, sensors, cables, etc.) or water-carrying components, the maximum permissible ambient temperatures of these components must be observed.

Avoid overheating the device! If the compact boiler is overheated, discoloration can occur, especially in the variants with a stainless steel panel. This discoloration is therefore not a reason for complaint.

Tiled stove inserts for hot water production are a combination of tiled stove heating insert with the combustion chamber of a tiled stove and a water-bearing boiler construction. The boiler construction itself corresponds to DIN EN13229 and the basic safety requirements according to the Pressure Equipment Directive 97/23/EG. All boiler designs are suitable and approved as heat generators for hot water heating systems with permissible flow temperatures of up to 100°C. The devices can be operated as sole heating and in connection with other heat generators. This can be done in open systems according to DIN 4751 Part 1 as well as in closed, thermostatically secured systems according to DIN 4751 Part 2.

Note on the B4 compact boiler with cleaning mechanism:

If there is insufficient delivery pressure, there is a risk of sooting. The resulting tarry or graphite-like deposits can no longer be removed even by operating the cleaning mechanism.

5 DELIVERY CONTENT

- Boiler body
- Front kit
- Combustion chamber fireclay lining and ISO combustion chamber
- cleaning brush only B5, B6 and B4 without cleaning mechanism)
- Thermal discharge safety device (TAS) 3/4“ with immersion sleeve 1/2” and 4 m long capillary

We offer the following installation accessories:

Art.Nr.:	00717	Pump group tiled stove. Pre-assembled unit consisting of: Circulation pump UPS 25-40 with gravity brake and shut-off fittings, thermometer and return flow increase with throttle, connections with compression fittings Ø 22 mm.
Art.Nr.:	00719.1	Tiled stove pump control KPS differential temperature control with minimum temperature limit, two immersion sensors ½ “ with 60 mm sensor length, digital display.
Art.Nr.:	00721	Return increase - thermal valve (when not using the pump group item no. 00717)
Art.Nr.:	11726	Conversion kit for cleaning B4 front
Art.Nr.:	11727	Conversion kit for cleaning B4 on side

Safety valve (to be provided on site) and thermal discharge safety device (TAS) must be installed outside the tile or stove casing! The maximum permissible ambient temperature for the safety valve is 60°C, for the TAS 70°C.

6 DESCRIPTION OF CONNECTIONS

VL	Flow line	E	Drain pipe coupling
RL	Return line	FTAS	Thermal probe coupling
SVL	Safety device supply	TF1	Temp. sensor coupling
SRL	Safety device return	TF2	Temp. sensor coupling
AE	Automatic breather	T1	Temp. sensor for EAS/EOS

Caution: Unused connections must be closed tight with plugs! At delivery, the pipe couplings and connecting pieces are secured by plastic caps or plugs. Remove them just before connecting. Those caps and plugs are not water-tight and cannot remain on the boiler connections.

7 REQUIREMENTS FOR LOCATION

Possible locations for a wood-burning stove or fireplace are only such rooms, where no danger can occur, if only the instructions for use are being followed and the system is properly used. The state, structure and intended use of the room must be considered, when choosing the location.

Please consider the massive weight of the system. If the floor is not strong enough to bear such load, it has to be distributed by suitable means.

A heating device **may not be located** in the following rooms:

1. Where sufficient volume of combustion air is not guaranteed.
2. Where flammable materials or explosives are stored, manufactured or processed.
3. Which are commonly accessible. Stairways in residential buildings with access from only two flats are not considered as commonly accessible rooms.

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4. Where exhaust fans of ventilation or air heating systems are running, unless safe operation of the fireplace is ensured. This is ensured, when:
   - The systems are causing only circulation of air within the room.
   - The systems are equipped with safety devices, which automatically and securely prevent negative pressure in this room.
   - If simultaneous operation of fireplace and ventilation systems is prevented by safety devices.
   - If the total negative pressure level caused by the stream of combustion air of the fireplace and the airflow volume of the ventilation systems in this room and other rooms included in one ventilation system does not exceed 0.04 mbar. This must be ensured even if easily accessible controls of the ventilation system are being manipulated or removed.
   - If exhaust gas flow is being monitored by special safety devices.
   - If the construction type or dimensioning of the systems are excluding the possibility of dangerous negative pressure.

Please consult the location of your fireplace, chimney connection and combustion air supply with your local chimney sweep.

8 COMBUSTION AIR

Sufficient combustion air supply

A fireplace may be installed only in rooms, where sufficient combustion air supply is guaranteed. Normal operation requires sufficient air supply using a separate **combustion air connection** for the fireplace.

Sufficient combustion air supply is present, when by natural means or using technical equipment a combustion air volume of 12,5 m^3 per 1 kg fuel throughput can stream into a room with wood-burning fireplace over a period of 1 hour at calculated negative pressure below 0,04 mbar (4 Pa) against outside air pressure. This is equivalent to a speculative heating power (PLF) of 8 kW per 1 kg fuel throughput.

When other fireplaces are in operation in the same room or different rooms included in one room combination, these fireplaces require at least 1.6 m^3 of combustion air per hour for each kW of their total rated heating power. When a room combination contains only a small volume of air and the building is relatively airtight, a separate combustion air supply from outdoors is required.

Combustion air supply is ensured in rooms with at least one window or one door which can be opened to outside of the building, or when these rooms are directly connected or interconnected with other rooms of such type. Rooms considered as directly connected or interconnected, can be only parts of one apartment or one facility of other kind. Particular attention to combustion air supply is to be paid, when exhaust fans and other heat generators in the same room combination are operated, or when multiple heating devices are connected to one single chimney.

Ventilation systems in this room combination cannot create negative pressure, which could affect the functioning of the fireplace. Exhaust ventilation systems operating in the same room or room combination together with fireplaces, can cause many problems.

Combustion air ducts

Stoves and fireplaces with BRUNNER heating inserts are classified by law as indoor air-dependent fireplaces.

The combustion air can be supplied from outside via a sufficiently dimensioned pipework. This for BRUNNER heating inserts are fitted with a combustion air connection piece. To avoid draughts in the room, the outside air connection should be routed to this combustion air connection piece. The outside air connection can also be established via a suitable chimney with integrated combustion air duct. Corresponding products have a separate combustion air shaft or an air duct between the casing brick and flue gas pipe

The combustion air duct must have sufficient cross-section. It must be laid using the shortest way and without unnecessary bends, to reduce flow resistance. Combustion air duct dimensioning must be according to EN13884; flow resistance has to be estimated by calculation and must be taken into account!

Components of combustion air duct must be made of non-flammable, dimensionally stable and abrasion resistant materials (DIN 4102 A1 or Class A1(B2) according to DIN EN 13501-1); they must ensure tightness und be accessible for inspection and cleaning.

Thermal insulation is necessary from the fire-protection point of view, if air temperatures >85°C are possible.

Temperatures below dew point can cause water condensation, therefore appropriate insulation must be used.

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For buildings with more than two storeys and when crossing fire protection walls, the construction of these ducts must prevent fire and smoke from penetrating other fire protection zones (their components must have a fire resistance rating of >90 minutes (F90)). See also national building law.

If the external air supply duct has a separate flap for closing, the position of this flap must be recognizable. It must be ensured, that the external air supply flap is open until the fire is burning. Air suction grilles or flaps cannot narrow the free cross section.

Remember about noise protection!

9 CHIMNEY AND SMOKE PIPE CONNECTION

Chimney and smoke pipe connection design must be in accordance with DIN 18160.1 or DIN EN 15287-1; dimensions must be calculated according to DIN EN 13384.

Connection of multiple fireplaces to the same chimney is possible, when it can be proven that the chimney is suitable, even if the design of these fireplaces is different (calculation of flow and thermal balance and approval from chimney sweep are necessary). However, it is not possible for fireplaces designed for open door use. Remember to use a separate chimney connection in this case.

If the connecting pipe between additional reheating devices (radiators, storage mass) and chimney is a steel flue gas pipe, it must be suitable for this application, it must conform to DIN EN 1856-2 standard and have a CE mark. The connecting pipe must be connected directly to the chimney.

A soot fire resistant chimney of T400 type is necessary for safe operation.

All smoke pipe connections must be sealed tightly! Remember to provide access for cleaning!

10 ASSEMBLY

1 Place the boiler body vertically on a level, stable floor with a floor clearance of > 15 cm. Note the maximum permissible weight load on the floor. Install measures for load distribution, if necessary.
2 Insert the main combustion chamber as described in the supplementary sheet for the fireclay lining set.
3 Insert the afterburning chamber as described in the supplementary sheet for the afterburning chamber.

If the compact boiler is placed on a commercially available support bearing, it is essential to ensure that the air supply to the combustion air socket is not blocked.

The technical rules of the tiled stove and air heating craftsmanship must be observed during planning and execution.

The heat exchanger pipes of the B4 must be cleaned after every third burn at the latest. The operating lever must therefore be installed so that it is easily accessible. The cleaning mechanism is to be operated with the full stroke, do not use only the spring play. After cleaning, the mechanism must be placed in the middle position. Suitable conversion kits are available to make it easier to use the cleaning aid.

UMatching conversion kits are available to make it easier to use the cleaning aid.



If the heat exchanger tubes are cleaned too seldom, there is a risk that the springs of the cleaning aid in the heat exchanger tube can no longer be moved.

It is essential to inform the system operator of the need for frequent and regular cleaning of the heat exchanger tubes!

In order to avoid heating problems, the installation of a heating flap is recommended!

Connection of the molded hose

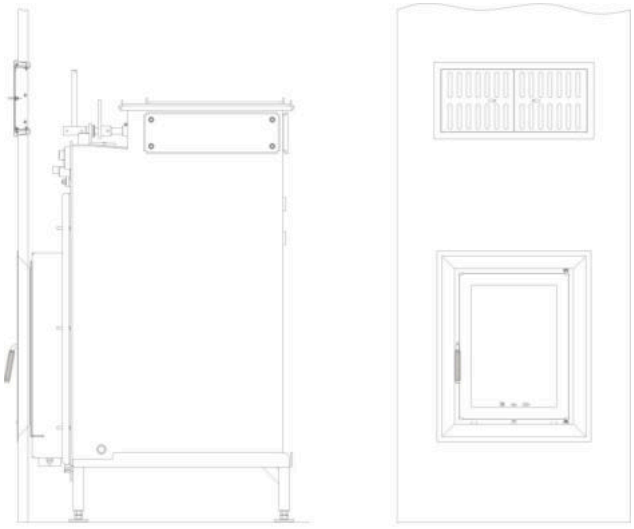
A flexible molded hose is used as a connecting piece between the device socket and the outdoor air line or EOS servomotor, which is adapted to the shape of the socket on one side and is circular on the other side. The molded hose is secured with the enclosed hose clamps.

Planning information for the B4

The compact boiler B4 has a pre-assembled cleaning aid for the heat exchanger tubes. This cleaning aid consists of springs that are movably mounted in the heat exchanger tubes. The suspension of the springs on a rocker enables them to be moved in the heat exchanger tube in order to remove deposits.

Sufficiently large inspection openings must be provided to enable the springs to be changed if necessary. The replacement can be done via one of the side socket covers (13cm*41cm) or via the upper cover (51cm*51cm).

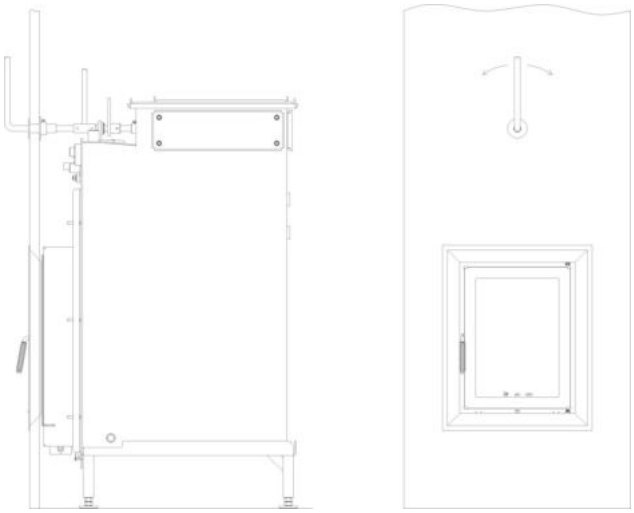
The cleaning aid is operated using the lever above the combustion door. When delivered, this can be reached and operated via a warm air grille or similar installed above the combustion door (see variant 1).



Im. 1: Cleaning aid B4 variant 1

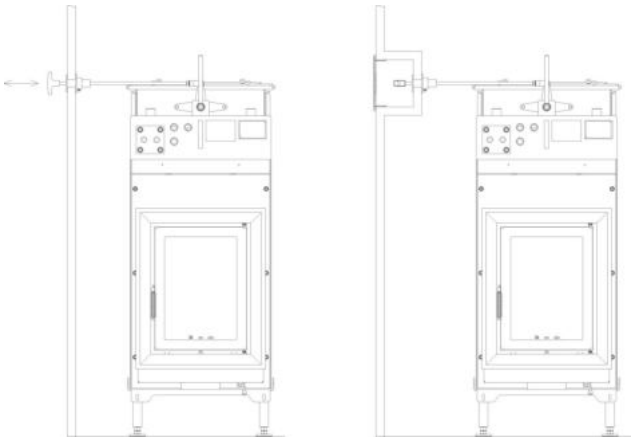
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Alternatively, the cleaning aid can be operated from the front using a removable stainless steel handle (see variant 2). The 'conversion kit for cleaning B4 front', item no.: 11726, is required for this.



Im. 2: Cleaning aid B4 variant 2

Another option is the 'conversion kit for cleaning B4 on the side', item no.: 11727 (see variant 3).



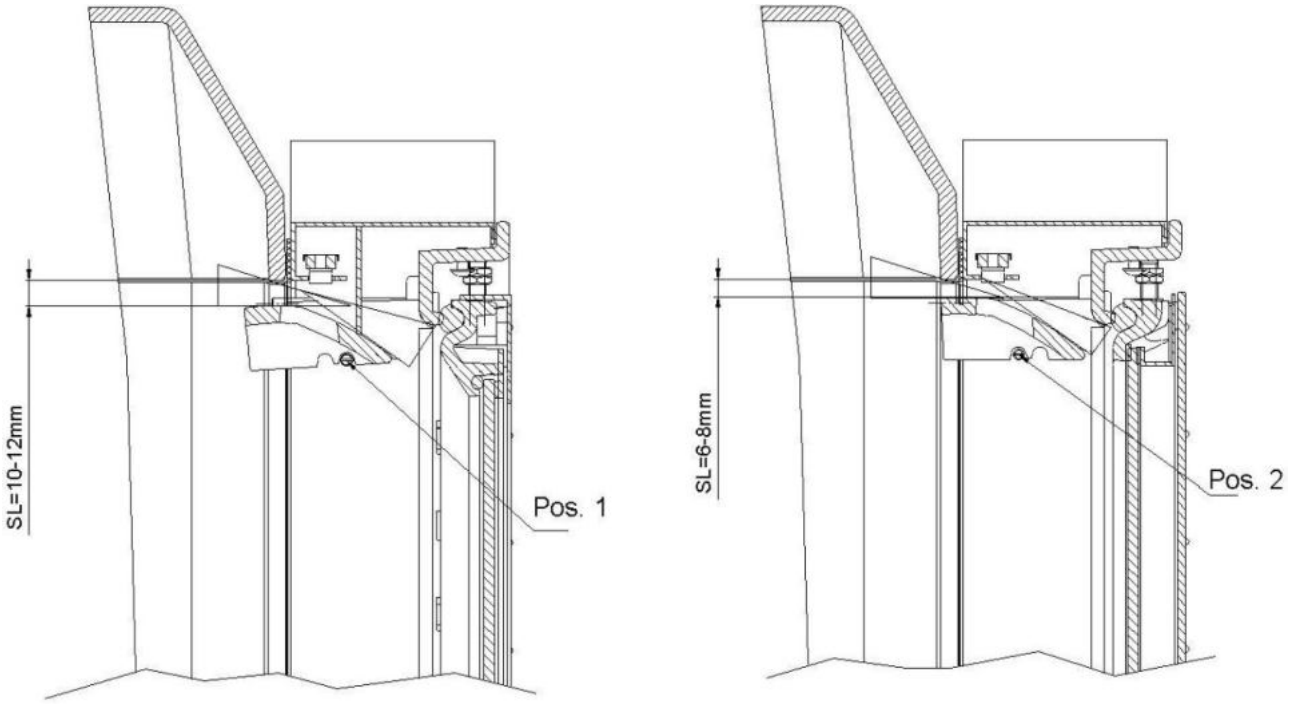
Im. 3: Cleaning aid B4 variant 3

In order for the B4 to function properly, it is essential to observe the required delivery pressure! The chimney height and draft length must be observed here. Non-compliance with the necessary delivery pressure leads to sooting and tarring of the cleaning mechanism!

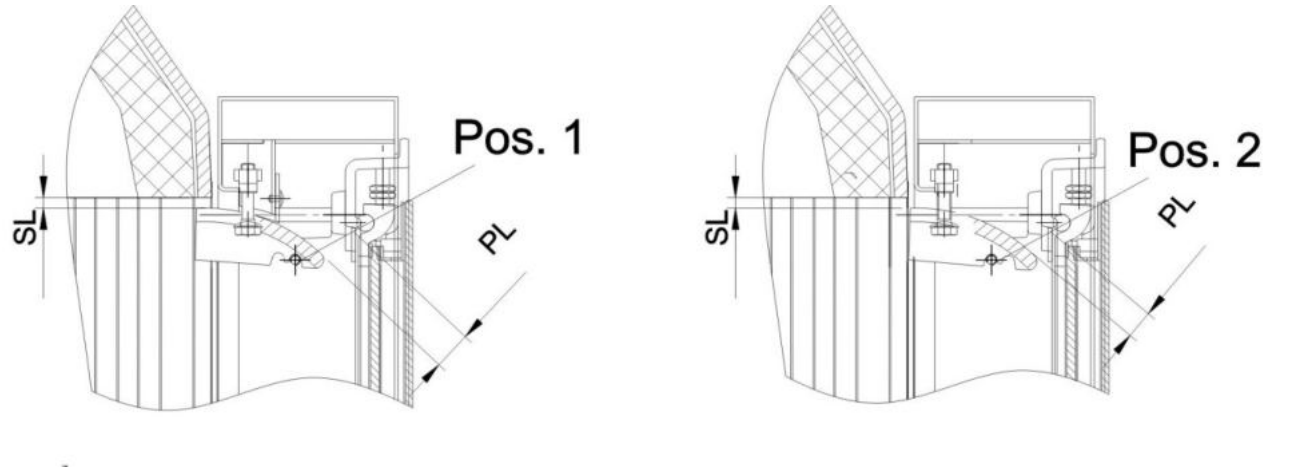
The installation of a heating flap is necessary for the B4 with an adjoining post-heating surface

Adjustment of primary and secondary air

The combustion air is adjusted at the factory. However, should a readjustment be necessary. so note the following information.



Im. 4: Air setting B5 / B6 / B7 / B8: left image EOR (setting item 1) - right image EOS and manual mode (setting item 2



Im. 5: Air setting B4: left image EOR (setting item 1) - right image EOS and manual mode (setting item 2)

EOR:		**EOS and manual operation:**	
SL	6mm - 8mm	SL	6mm - 8mm
PL	22mm	PL	16mm

Setting values for B4

Please note

The combustion air flows to the air duct via the combustion air connector. The air inlet opening of the combustion air socket must not be blocked by the stove casing. Provide sufficient free space!

The combustion air supply required for the operation of the fireplace must be ensured. This is particularly important with very airtight windows or ventilation systems. If necessary, provide a room air-independent combustion air duct (outside air supply to the combustion air socket).

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When using the variant with electronic stove control (EOS), it must be ensured that there is sufficient space for the door contact line in the stove shell below the stove door.

A very strong draft in the chimney (negative pressure 20 Pa and more) can lead to a significantly reduced water output. In this case, a damper flap must be installed.

Before first use

The combustion chamber must be aligned horizontally so that the full functionality of the self-closing door is guaranteed. Check functionality!

Before using the compact boiler for the first time, make sure that the edge protection on the front window has been removed. Deduct if necessary.

Be sure to observe the additional information in the installation and operating instructions!

11 ADJUSTING THE COMBUSTION DOOR

Variants with self-closing firing door Variants with self-closing firing door

The door adjustment is done in factory and must not be changed. If you want to remove the door, please observe the following. The lower turning point of the door is furnished with a lifting hinge. The door has a threaded bolt, which is screwed into a brass nut mounted on the frontal frame. You can change the height of the door by turning the hexagon brass nut. To remove the door, the nut must be turned until the threaded bolt is removed from the nut. Then lift the door up shortly and lower it slightly to the front.

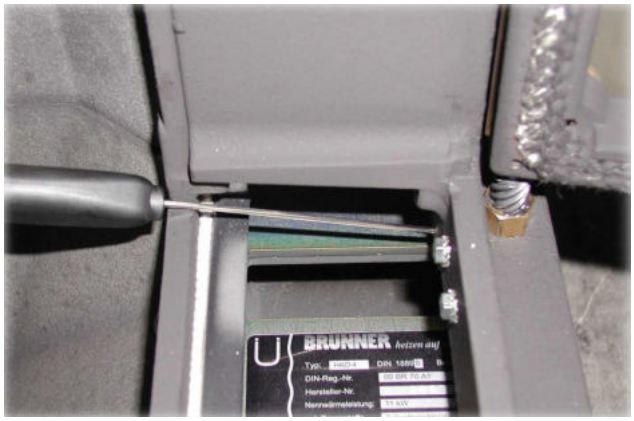


Im. 6: Turning the brass nut

The brass nut is secured with a threaded pin against turning. The hexagon nut may be turned only after the threaded pin is turned loose.

The threaded pin is accessible after removal of air leading plate from the inside (see picture “Position of threaded pin”). After the adjustments are done, the brass nut must be secured again with the threaded pin.

If the door is set to high, the thread is loose in the open door position, and the door may fall out. Always check after adjustments, if the mounting is safe in the opened position.



Im. 7: Position of threaded pin

With the EAS/EOS version, lowering the threaded bolt when closing the door triggers the door contact. Raising the door can result in the door contact no longer being switched.

It is essential to check the function of the door contact switch. Risk of deflagration!

Variants with non-self-closing firing door

To change the height setting of the firing door on variants with a non-self-closing firing door, it is necessary to unhinge the firing door.

To be able to remove the combustion door, it is necessary to dismantle the panel. To do this, loosen the four screws of the panel fastening and pull off the panel. See also the assembly instructions for the stove or the assembly instructions for the panel.

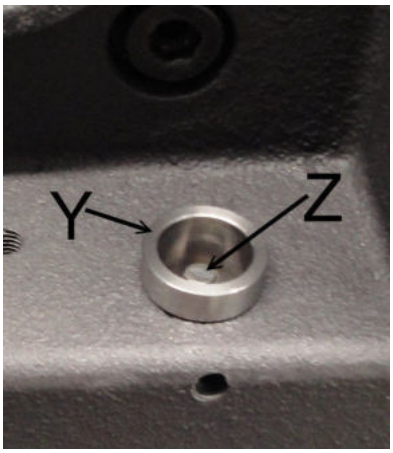
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To be able to unhinge the fireplace door, the upper door stop must first be loosened. To do this, unscrew the two countered screws completely, as shown in the picture 'Loosening the door stop'.

The furnace door can now be lifted out.



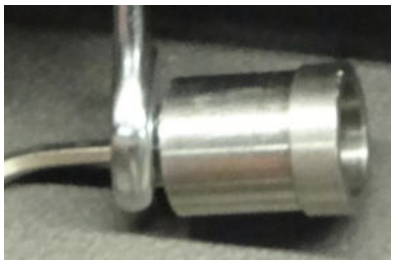
Im. 8: Loosening the door stop



Im. 9: Hinge sleeve



Im. 10: Hinge sleeve with lock nut



Im. 11: Locking

Now lift out the hinge sleeve (Y). Adjust the height of the firing door using the grub screw (Z) on the hinge sleeve and lock.

Replace the firing door and check its function.

Unscrew the two screws on the upper hinge and lock them again.

Variant with non self closing door

In order to change the height setting of the stove door in the case of variants with a non-self-closing door, it is necessary to unhinge the door.

In order to be able to remove the door, it is necessary to dismantle the frame. To do this, loosen the four screws on the frame fastening and pull off the frame. See also the assembly instructions for the fireplace stove or the assembly instructions for the frame.

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12 INSTALLATION OF COMBUSTION AIR CONTROL ELEMENT FOR MANUALLY OPERATED STOVES

CAUTION: The following instructions for the installation of combustion air control element are applicable only for stoves with manual operation! For stoves with EOS/EOR, the sliding plate is secured with a screw against accidental position change.

During transport, the combustion air control element is mounted onto the sliding plate of the combustion air supply as a protection against damage (see arrow on the picture in the middle of page).

To install the combustion air control element for the manual stove operation, lift off the warning plate (see arrow on the upper picture) and remove the adjusting lever (see arrow on the picture in the middle of page) from the sliding plate.

Now attach the control element as shown in the lower picture and put the warning plate in place again.

Check function!







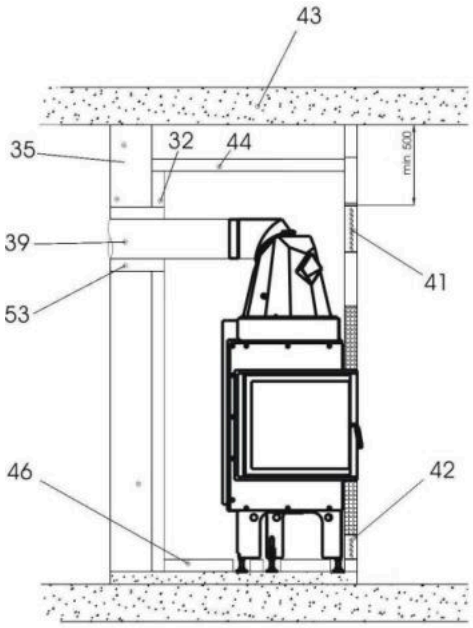
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13 OVERVIEW OF FIRE SAFETY AND PROTECTION OF OTHER STRUCTURES AGAINST HEAT

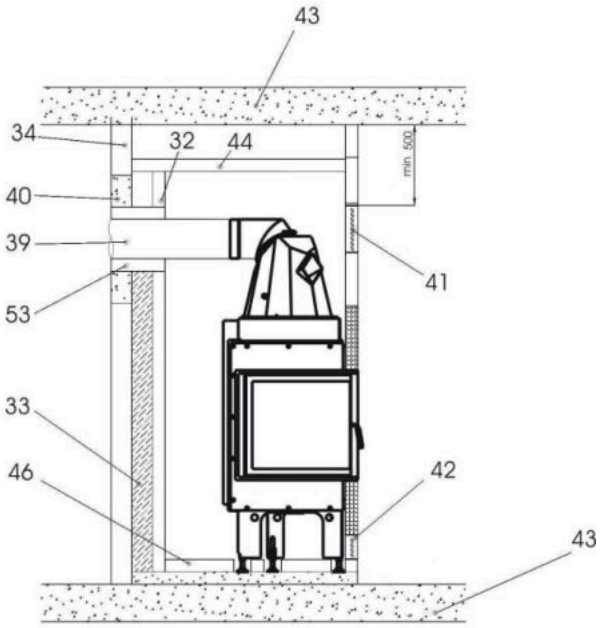
Fireplace without convection casing

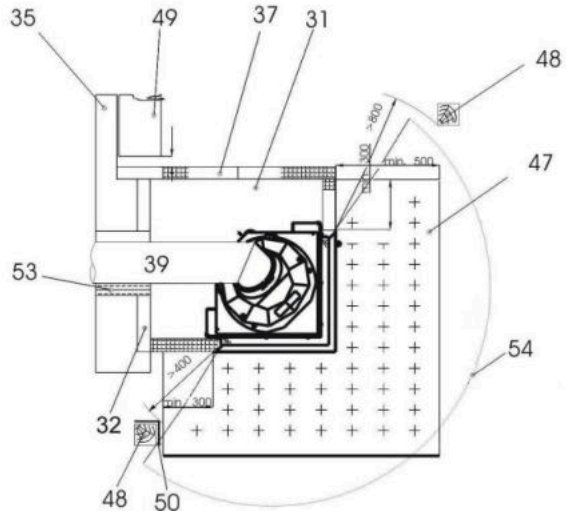
(shown on the example of an Eck-Kamin fireplace)

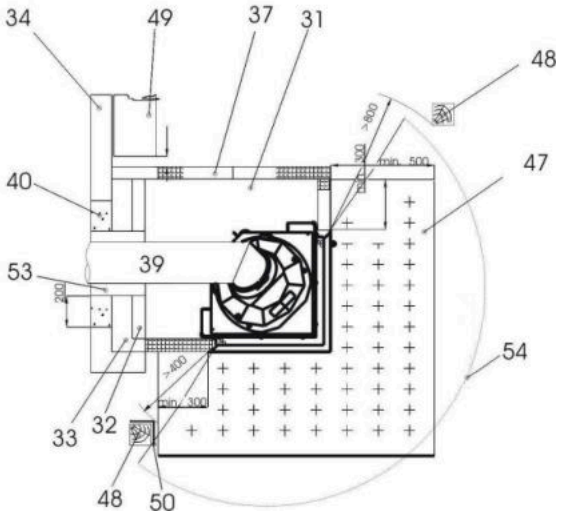
Installation in front of or next to an adjacent wall (U value ≥0.4W/m²K):



Installation in front of or next to a flammable wall (U value ≤0.4W/m²K):







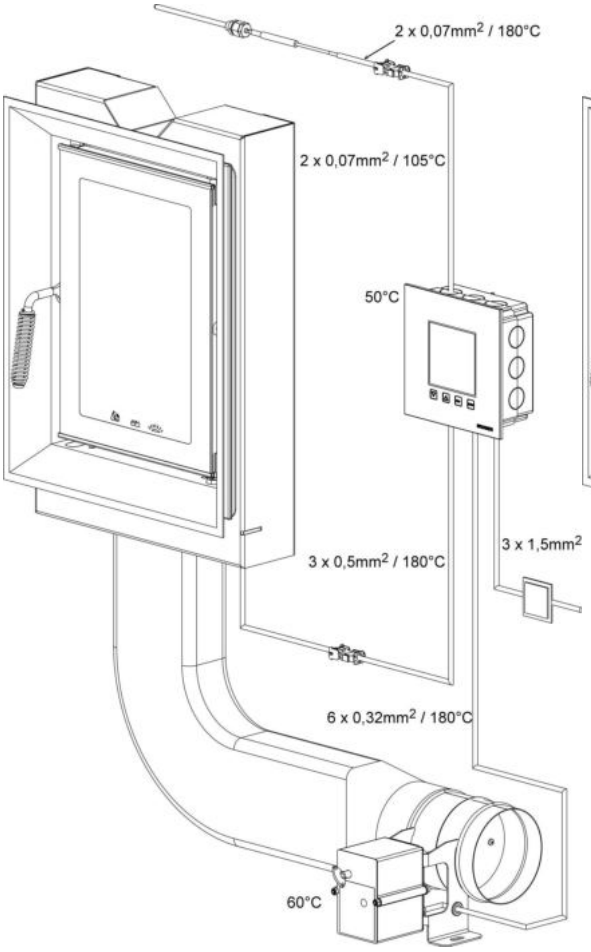
Im. 12: Basic principles of fire safety and heat insulation

Number reference:

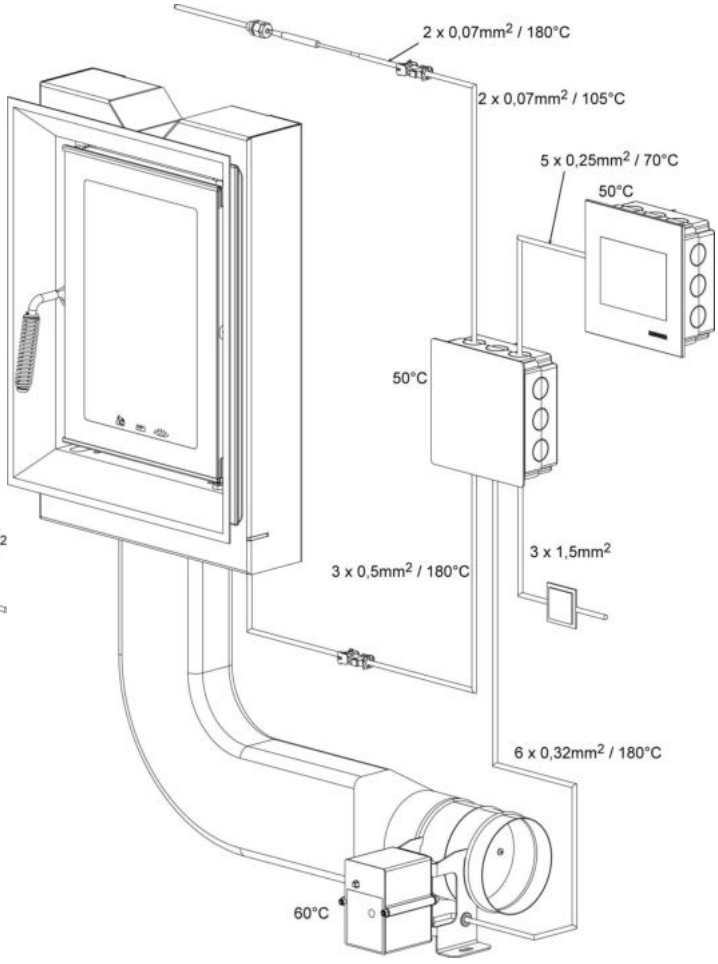
21	Heating gas pipe
31	Convection space, distance between fireplace surface and external cladding / thermal insulation
32	Thermal insulation; see “Approved insulation materials”
33	Brick lining, at least 10 cm, mineral building materials, such as bricks according to DIN 105 or sand-lime bricks according to DIN 106
34	Protected wall: these are walls from flammable materials or containing flammable materials, main walls from reinforced concrete, as well as all walls with built-in furniture or wooden panels behind them (heat accumulation).
35	Adjacent walls: walls from mineral building materials, such as aerated concrete, bricks, sand-lime bricks, without flammable objects behind them.
36	Convection space, distance between reheating surface and thermal insulation
37	Active (heat-transferring) trim made of non-flammable materials (A1 class according to DIN EN 13501-1), such as ceramic stove tiles, fireclay bricks or plates.
39	Smoke pipe connecting piece
40	Fire protection on smoke pipe entrance
41	Warm air grating/opening
42	Circulating air grating/opening
43	Room ceiling
44	Thermal insulation for protection of room ceiling
46	Thermal insulation for protection of floor
47	Non-flammable floor covering
48	Structure made of flammable materials
49	Furniture or flammable objects on adjacent wall
50	Air cooled heat protection
51	Distance between floor insulation and air intake
52	Decorative beam over fireplace door
53	Thermal insulation of the smoke pipe connecting piece
54	Heat radiation range

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14 MOUNTING INSTRUCTIONS FOR EAS / EOS VARIANTS



Im. 13: Schematic layout of EAS



Im. 14: Schematic layout of EOS

The indicated temperatures are maximal permissible temperatures of components!
The indicated cable dimensions are minimal dimensions!

Installation of electronic components must be prepared and performed carefully. Please pay attention to the following points:

• The flush-mounting box must be fitted in level and clean, to ensure easy, tension-free installation of electronics.

• Prevent any physical contact with electronic components - possible electrostatic discharge can damage them.

• Humidity can affect electronic components. Therefore, it is very important to ensure clean and dry installation of electronics.

• If possible, avoid installation of electronic components in exterior walls to prevent risk of corrosion at temperatures below dew point.

• The control unit must not be installed in hot parts of the tiled stove casing.

• The selected type of installation must ensure that temperatures do not exceed +40# (140°F) and the unit is not exposed to direct heat radiation.

For units with external air supply, the motorized combustion air flap assembly cannot be installed in such way that the motor is located under the flap. Condensate could penetrate the motor and destroy it.

To avoid risk of damage, all cable conduits leading from electronics into the heating chamber must enter at the bottom of the stove casing. Cable conduits cannot end in upper parts of the heating chamber due to excessive temperature.

All electronic components must be accessible after installation for revision and replacement. When selecting place of installation, keep in mind the max. permitted temperature for the component. Components cannot be installed in closed spaces; proper ventilation must ensure sufficient heat discharge.

15 BUILDING PROTECTION

All building areas and (adjacent) walls which are in contact with the heating chamber must be protected against overheating. Fire protection and static considerations must be taken into account. From a static point of view, the admissible temperatures must be lower than specified by fire protection requirements.

Adjacent walls cannot be exposed to temperatures above 85°C (fire protection requirement). The same is valid for built-in furniture. Required insulation measures depend on the type and design of the surface. The load bearing capacity of the mounting surface must be checked; appropriate means for load distribution must be taken if necessary.

Heat insulation

Heat insulation layers (32/44/46/54) must be laid smoothly and overlapping. The surface must be clean and resistant to abrasion. Their planned position must be permanently stable and durable. Insulation layers from abrasive materials must have an appropriate covering (for example, using steel panels). Only approved insulation materials must be used (see “Approved insulation materials”). The insulation thicknesses specified in Technical Data for flammable materials or other materials including flammable components are valid only for components with a heat transfer coefficient (U value) ≥ 0,4W/m²K. For U value < 0,4W/m²K, additional measures for thermal insulation must be taken (see DIN 18896:2013-12).

Protection of building walls

There are two types of building walls: “protected walls” and (other) “adjacent walls”. For protected walls, a thermal insulation layer (32) and a brick lining (33) must be used. The brick lining must reach up to the insulation of ceiling or to the height of external casing, and must extend at least **20 cm (7.87 in)** above the smoke pipe connecting piece (39).

- walls to be protected are walls from flammable materials or containing flammable materials, and all walls with flammable objects behind them (e.g. built-in furniture, wooden panels).

- other walls (35), these are: walls from mineral building materials, such as aerated concrete, bricks, sand-lime bricks, with thickness of more than **10 cm (3.94 in)**. For these walls, the insulation layer (32) is enough; a brick lining (33) is not necessary.

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Protection of ceiling above the fireplace

If the stove casing reaches up to the ceiling (43), it must be protected by a sufficient insulation layer (44), if only the ceiling is made from flammable materials or includes supporting elements of the building structure.

Floor protection

Floors without sufficient load distribution must be provided with a reinforced concrete slab (45) of at least 6 cm (2.36 in) thickness. The mounting surface must be protected against excessive temperatures by sufficient insulation layer (46).

Firewood storage

The surface temperature of the walls surrounding a recessed firewood storage must not exceed **85 °C**. This must be ensured by appropriate construction or insulation of walls.

Warm air vents/gratings

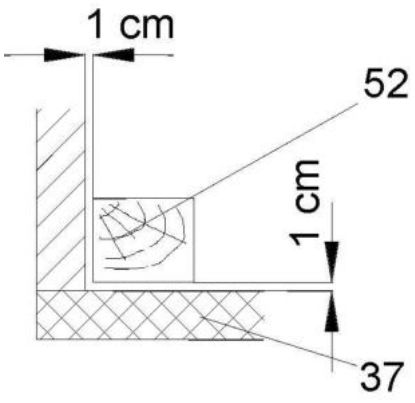
Warm air vents (41) must be situated at least 50 cm (19.69 in) below ceiling level and 30 cm (11.81 in) away from lateral built-in furniture, flammable materials or supporting concrete walls. Air gratings or vents must be located possibly high, to prevent heat accumulation within the external fireplace casing. Air gratings or vents must allow for easy cleaning. The required unobstructed area of air gratings depends on the type of reheating device. The air gratings or air vents must be arranged to avoid clogging up.

Active air cooling

Active air cooling is a permanently open, non-closing shaft, gap or empty space, where part of the heat projected by the fireplace is dissipated by convection to protect the building or flammable components in adjacent walls or mounting surface.

Decorative beam over fireplace door

Decorative beams (52) are allowed with **1 cm** clearance between the beam and the wall of the fireplace casing (37), only outside the heat radiation range. The clearance must not allow for heat accumulation between the beam and the fireplace wall. Decorative beams cannot be parts of the building structure.



Floor before fireplace door

Floors from flammable materials must be protected by a cover (47) from non-flammable materials or replaced by non-flammable materials with the following dimensions:
- in front of the fireplace = at least **50 cm (19.69 in)**
- on both sides of the fireplace = at least **30 cm (11.81 in)**

above the fireplace door opening

Within heat radiation range of the fireplace

Structures from flammable building materials or including flammable components (48), as well as built-in furniture (49) must be separated from the combustion chamber opening in front, to the sides and above the fireplace by at least **80 cm** air clearance. When the combustion chamber door is designed without a “window with integrated heat protection”, the radiation area is maintained with a minimum distance of 55 cm. If these parts are protected by a heat protecting screen cooled by air on both sides, a distance of 40 cm must be kept.

Outside the heat radiation range

Structures from flammable materials (48) or with flammable components, as well as built-in furniture (49) must have at least **5 cm** air clearance to the outside walls of the fireplace. In this clearance, the room air must be able to circulate without any obstacles. Heat accumulation must be avoided. Structures covering only small areas of the fireplace casing walls, like flooring, adjoining wall coverings and insulation layers on ceiling and building walls, can be led right up to the fireplace casing.

Electric lines

Mounting surface must be free from typical electrical wiring, unless it is protected by special measures against permanent influence of temperatures >30°C (86°F). Special wiring with higher heat resistance is permitted (see TROL).

16 APPROVED INSULATION MATERIALS

Thermal insulation materials used must fulfil the following requirements according to AGI-Q 132 standard:

Material:	Group 12, 13	Rock wool or slag wool
Delivered as:	Group 06, 07, 08	slabs, stitched mats or shells
Thermal conductivity:	Group 01 - 21	
Upper temperature limit:	Group 70 - 76	equivalent to 700 °C - 760 °C
Nominal density kg/m³:	Group 08 - 18	equivalent to 80 kg/m³ - 180 kg/m³

Thermal insulation materials used must be at least equivalent to class A1 building materials according to DIN 4102, Part 1. The temperature limit for use must exceed 700°C and the density must be greater than 80 kg/m³ for these materials. The insulation material rating (heat index) must be known. In addition, insulation materials inside convection space must be abrasion-resistant and covered with non-reflecting material. Instead of brick lining and insulation materials according to AGI-Q 132, any other insulation materials approved for the given purpose by DIBt (Deutsches Institut für Bautechnik) might be used. For necessary insulation thicknesses please refer to the manufacturer's specifications.

Insulation material rating for mineral wool according to AGI Worksheet Q 132:

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Insulation materials		Delivered as		Thermal conductivity		Upper temperature limit		Nominal density	
Gr.	Type	Gr.	Form	Gr.	Delivered as	Gr.	°C	Gr.	kg/m³
11	Glass wool	04	Felts	01	Mats, stitched, Limit 1	10	100	02	20
12	Rock wool	05	Lamella mats		Mats, stitched, Limit 2	12	120	03	30
13	Slag wool		Mats, stitched	02	Shells, Limit 1	14	140	04	40
		06	Slabs		Shells, Limit 2	16	160	05	50
			Shells	10	Slabs, Limit 1	.	.	06	60
		07	Segments	11	Slabs, Limit 2	.	.	.	.
		08	Braids	20	*)	72	720	.	.
		09	Panels	21		74	740	18	180
		10		99		76	760	99	**)
		11							

*) 99 is valid only for delivery forms in column 2, which have no declared limits.

**) 99 is valid only for shells.

17 DIRECTIVES

The following standards and directives must be respected when setting up or using a heating system:

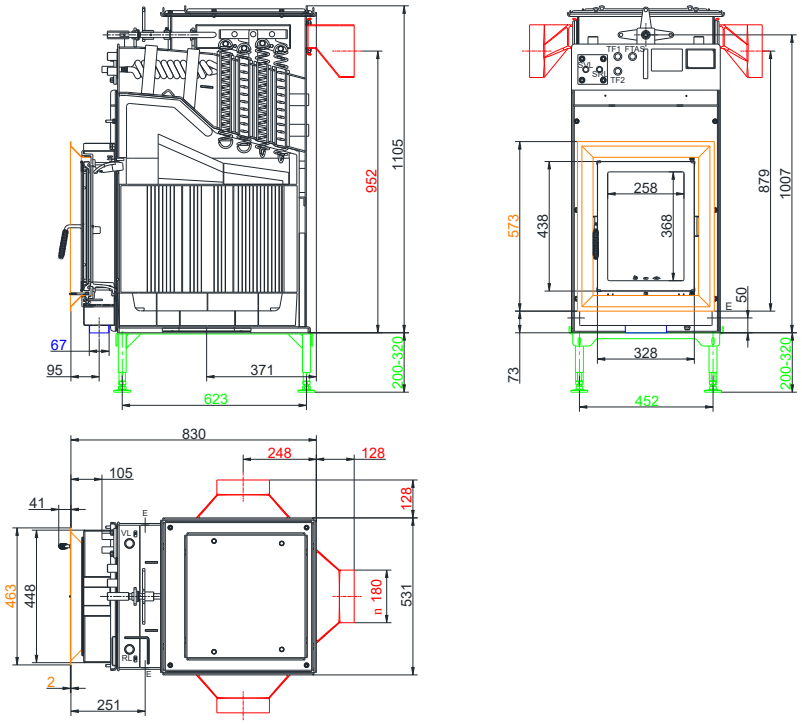
TROL	Stove fitting rules and regulations for warm air heating systems
FeuVo	“Feuerungsverordnung” (Fireplace Act; relevant for German Federal Lands)
EnEV	Energy Saving Regulation
LBO	Regional building codes
VDE	electronic installation instructions
	List of technical building regulations
DIN EN 12831	Calculation of the standard heating load
DIN EN 12828	Heating systems in buildings
DIN EN 14597	Temperature control devices and limiters for heat generating systems

TRD 721 oder DIN EN ISO 4126	Safety devices against excessive pressure - safety valves Safety devices against impermissible overpressure - safety valves
DIN V 18160-1	Exhaust systems
DIN EN13384	Exhaust systems: Thermal and fluidic calculation methods - Part 1: exhaust systems with a fireplace - Part 2: exhaust systems with several fireplaces
DVGW-Worksheet W551	Technical rules for drinking water installations
In addition, it is necessary to observe the local building law and regulations for heating systems valid in your country.	

The listing does not claim to be complete!

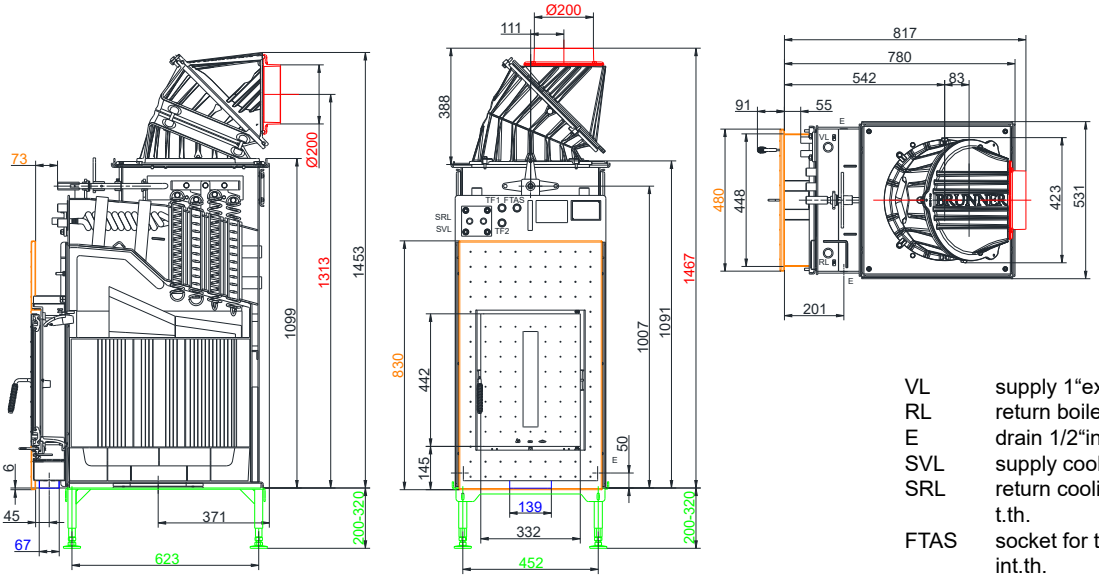
 © 2023 Brunner GmbH

Dimension sheets - Kompakt-Kessel B4



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ex-t.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.

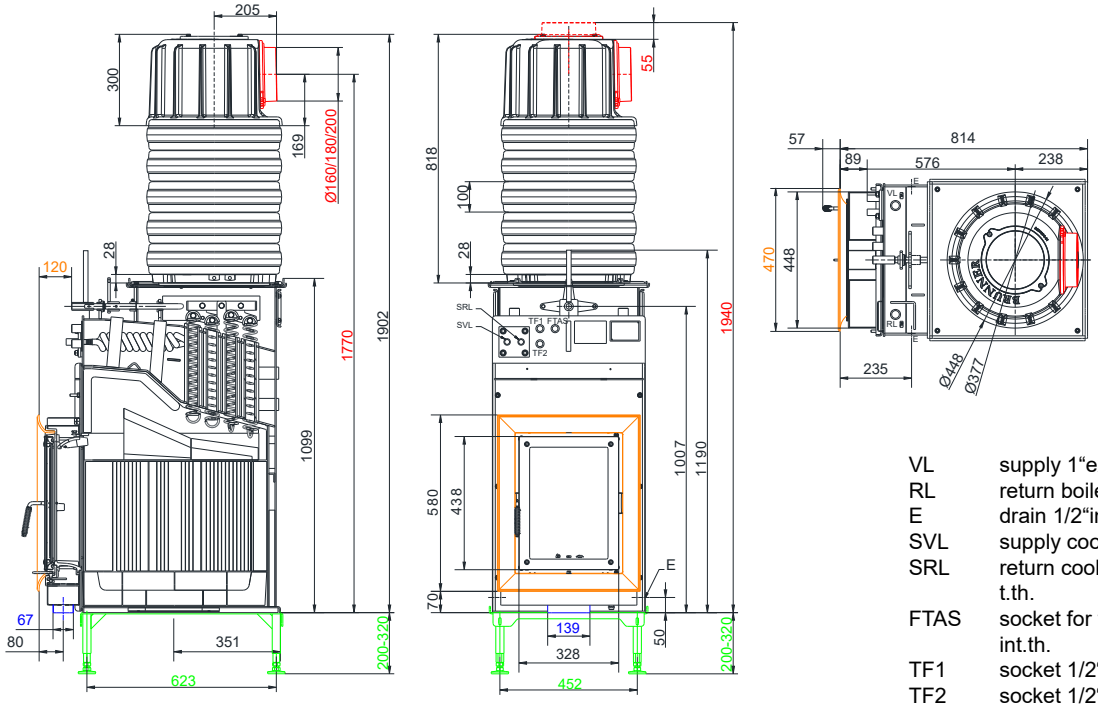
… with steel door frame and smoke pipe adapter, side outlet



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ex-t.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.

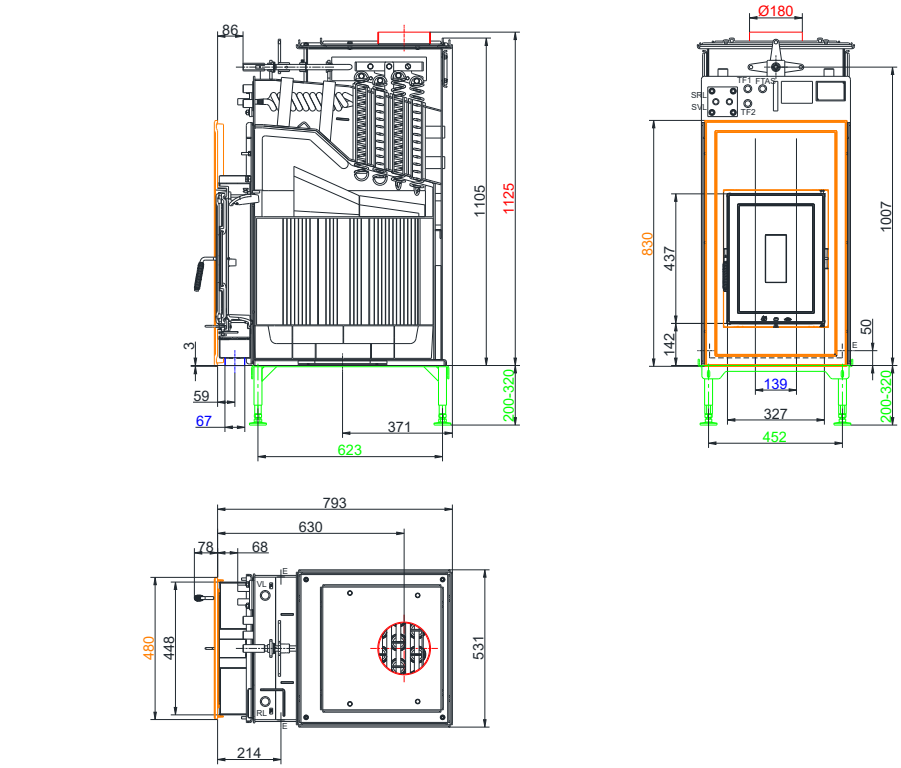
… with steel front plate and cast iron hot air hood

Dimension sheets - Kompakt-Kessel B4



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.

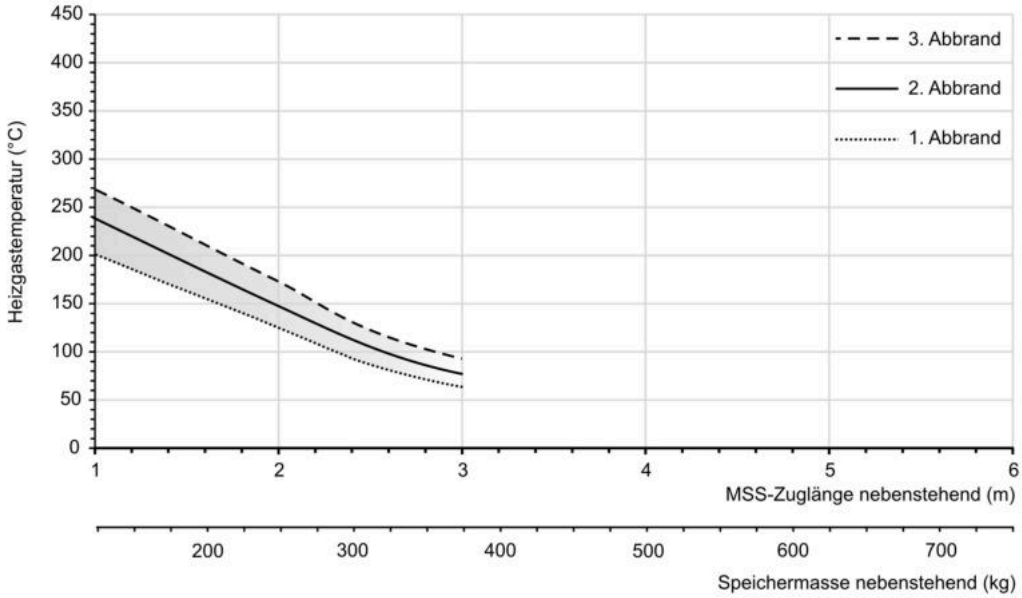
… with cast iron frame and MAS



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.

… with cast iron front plate and smoke pipe adapter, vertical outlet

Dimension sheets - Kompakt-Kessel B4



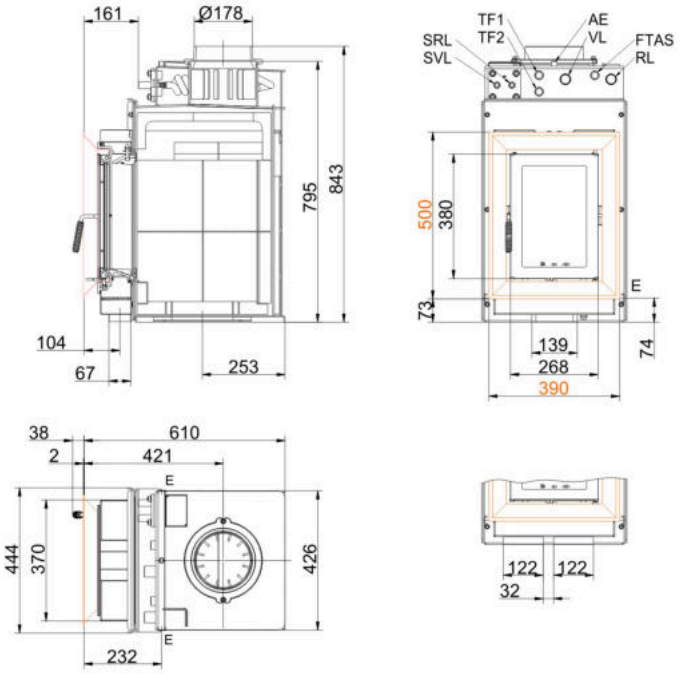
We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Planning and installation - Kompakt-Kessel B4

Tested according to		EN 13229 W	EN 13229 W
Values measured at		Rated power	Practical avg.
Data for functional demonstration			
Rated heat power	kW	14.5	-
Room heating power	kW	6.5	-
Water heating power	kW	8.0	-
Fire wood volume	kg/h	3.8	8
Combustion performance	kW	16.5	32
Flue gas mass flow	g/s	14.5	28
Outlet temperature (before reheating surface)	°C	210	280
Flue gas temperature after:			
cast iron hot air hood	°C	130	210
5 x accumulation rings incl. MAS casted cover [1)]	°C	125	200
2,5 m ceramic accumulator [2)]	°C	-	180
1,7 m accumulation stones (MSS) [2)]	°C	-	180
Necessary supply pressure	Pa	12	15
Combustion air consumption	m^3/h	35	80
Combustion air connection Ø	mm	125	125
Heating gas temperature (before the hood/dome variant)			
insert flue outlet nozzle	°C	210	280
Heat distribution			
Insert / reheating surface	%	10 / 25	10 / 25
Glass pane (single / double)	%	- / 10	- / 10
Boiler	%	55	55
Boiler part without insulation, double glass	%	55	55
Cross-section of gratings [3)]			
exhaust warm air	cm^2	200 / 200 / 400	200 / 200 / 400
Recirculation air	cm^2	200 / 200 / 400	200 / 200 / 400
Minimal distances of the fireplace			
to cladding, insulation layer	cm	6	6
to mounting floor	cm	15	15
Thermal insulation without / with air gratings [4)]			
Mounting wall	cm	12 / 8	12 / 8
Floor	cm	0 / 0	0 / 0
Ceiling	cm	25 / 18	25 / 18
Brick lining for combustible wall	cm	10	10
Water boiler data			
Max. operating pressure	bar	3	3
Max. flow temperature	°C	100	100
Water volume	liter	71	71
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	243 / 98	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / - / -	

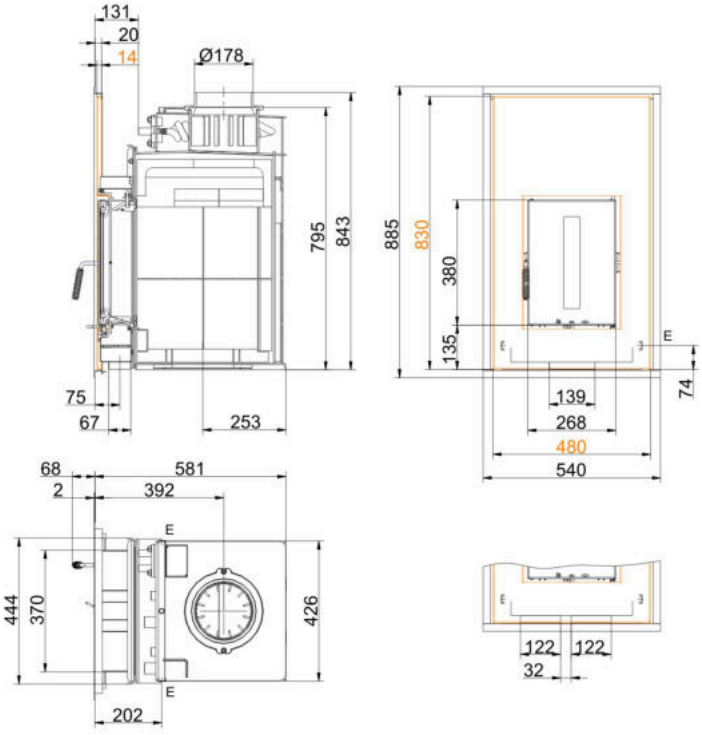
1) Damper flap recommended
2) Approximate value. Determination according to design characteristics for adjacent storage mass or proof of function provided by calculation
3) for fireplace inserts / flue gas pipe / metallic reheating surface
4) Values determined with upper air cross- sections; stove cladding is heat emitting

Dimension sheets - Kompakt-Kessel B7



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.
AE	socket 1/2“ for ventilation

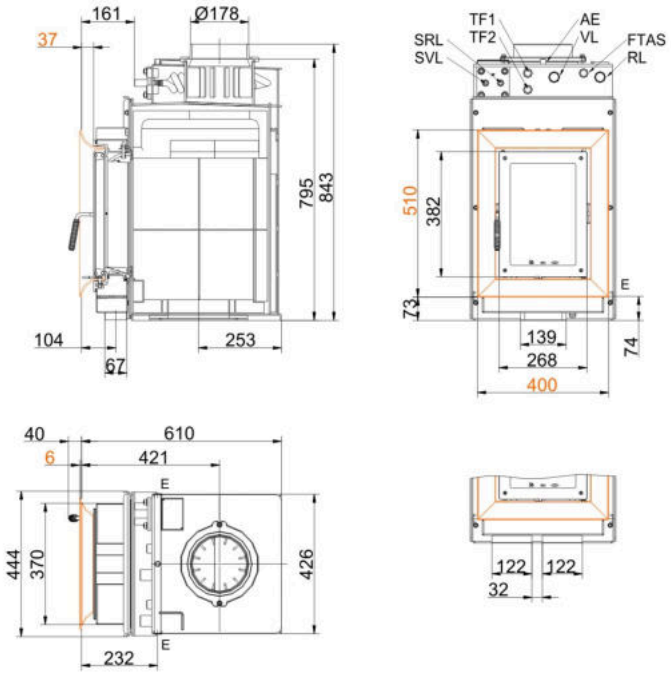
… with steel door frame



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.
AE	socket 1/2“ for ventilation

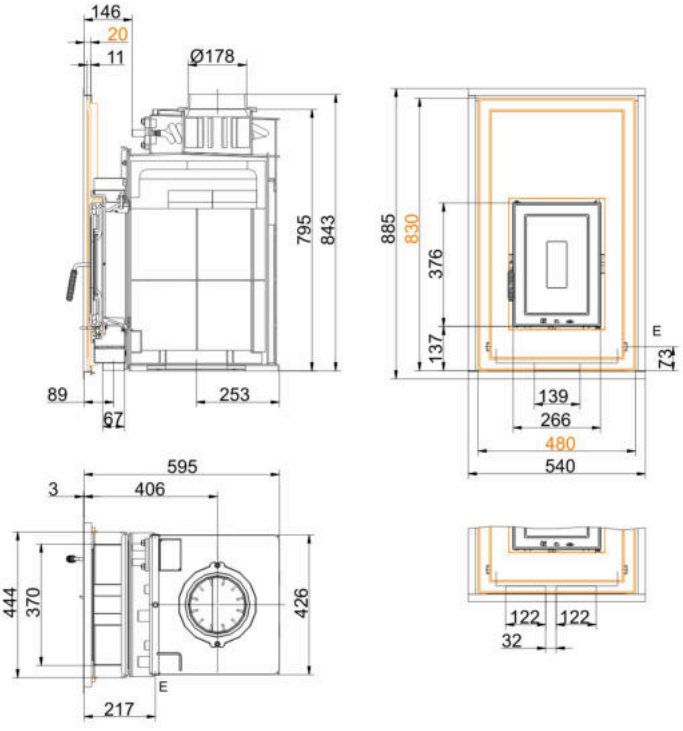
… with steel front plate

Dimension sheets - Kompakt-Kessel B7



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.
AE	socket 1/2“ for ventilation

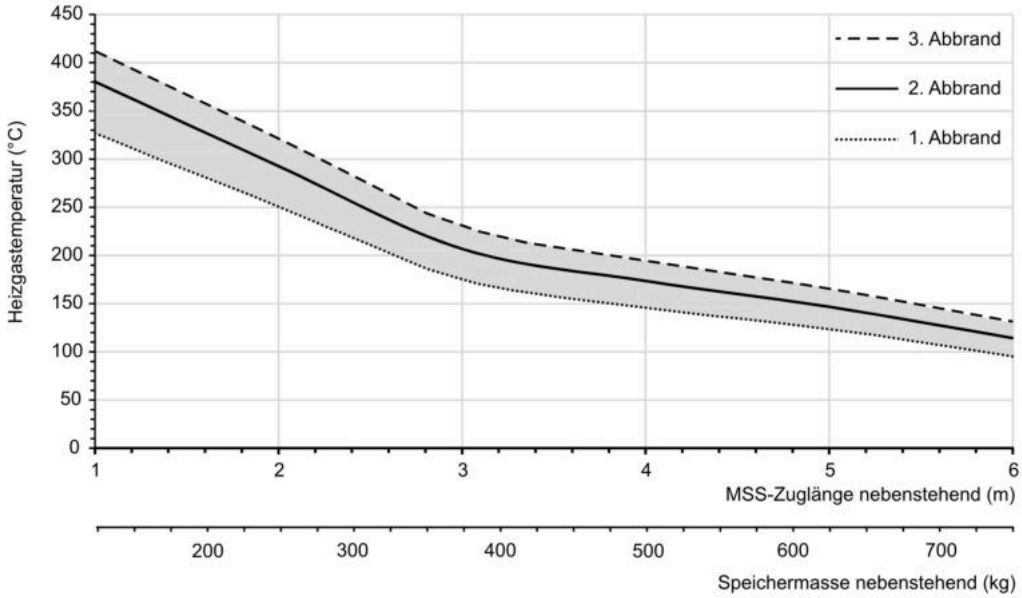
… with cast iron frame



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.
AE	socket 1/2“ for ventilation

… with cast iron front plate

Dimension sheets - Kompakt-Kessel B7



Design characteristics for adjacent storage mass

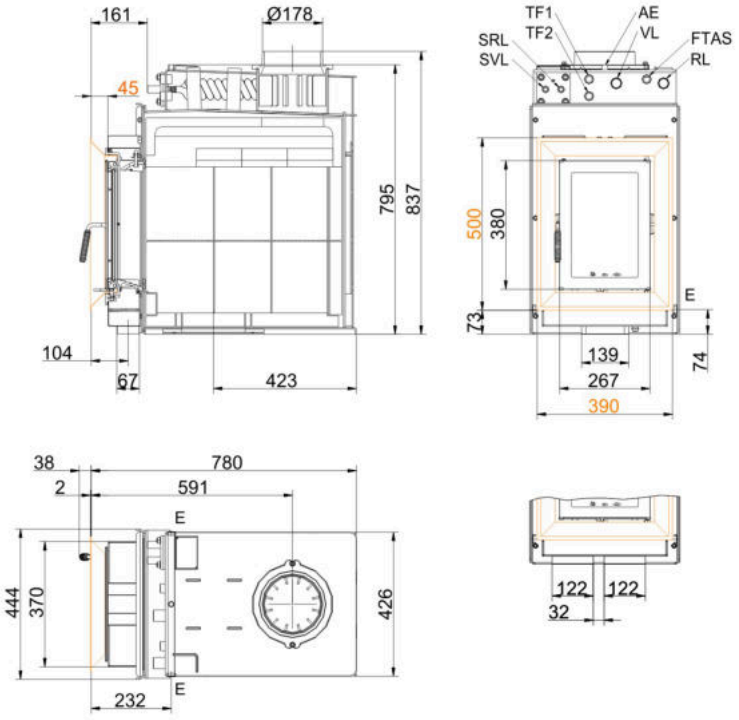
We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Planning and installation - Kompakt-Kessel B7

Tested according to		EN 13229 W	EN 13229 W
Values measured at		Rated power	Practical avg.
Data for functional demonstration			
Rated heat power	kW	12	-
Fire wood volume	kg/h	3.5	4.6
Combustion performance	kW	15	20
Flue gas mass flow	g/s	10.9	17.9
Outlet temperature (before reheating surface)	°C	484	491
Flue gas temperature after:			
1 x adjoining cast iron radiator (GNF 8/10)	°C	207	247
4,1 m ceramic accumulator [1)]	°C	-	180
2,8 m accumulation stones (MSS) [1)]	°C	-	215
Necessary supply pressure	Pa	12	15
Combustion air consumption	m^3/h	35	45
Combustion air connection Ø	mm	125	125
Heating gas temperature (before the hood/dome variant)			
insert flue outlet nozzle	°C	484	491
Heat distribution			
Insert / reheating surface	%	12 / 45	12 / 45
Glass pane (single / double)	%	- / 10	- / 10
Boiler	%	33	33
Boiler part without insulation, double glass	%	33	33
Cross-section of gratings [2)]			
exhaust warm air	cm^2	150 / 250 / 500	150 / 250 / 500
Recirculation air	cm^2	150 / 250 / 500	150 / 250 / 500
Minimal distances of the fireplace			
to cladding, insulation layer	cm	6	6
to mounting floor	cm	15	15
Thermal insulation without / with air gratings [3)]			
Mounting wall	cm	10 / 7	10 / 7
Floor	cm	0 / 0	0 / 0
Ceiling	cm	16 / 12	16 / 12
Brick lining for combustible wall	cm	10	10
Water boiler data			
Max. operating pressure	bar	3	3
Max. flow temperature	°C	100	100
Water volume	liter	31	31
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	134 / 44	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / - / -	

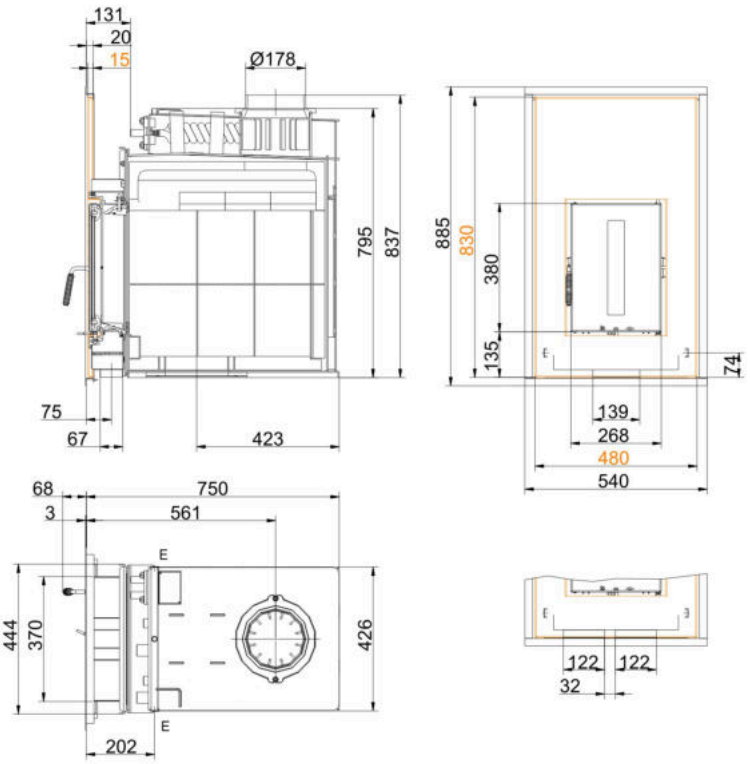
1) Approximate value. Determination according to design characteristics for adjacent storage mass or proof of function provided by calculation
2) for fireplace inserts / flue gas pipe / metallic reheating surface
3) Values determined with upper air cross- sections; stove cladding is heat emitting

Dimension sheets - Kompakt-Kessel B8



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.
AE	socket 1/2“ for ventilation

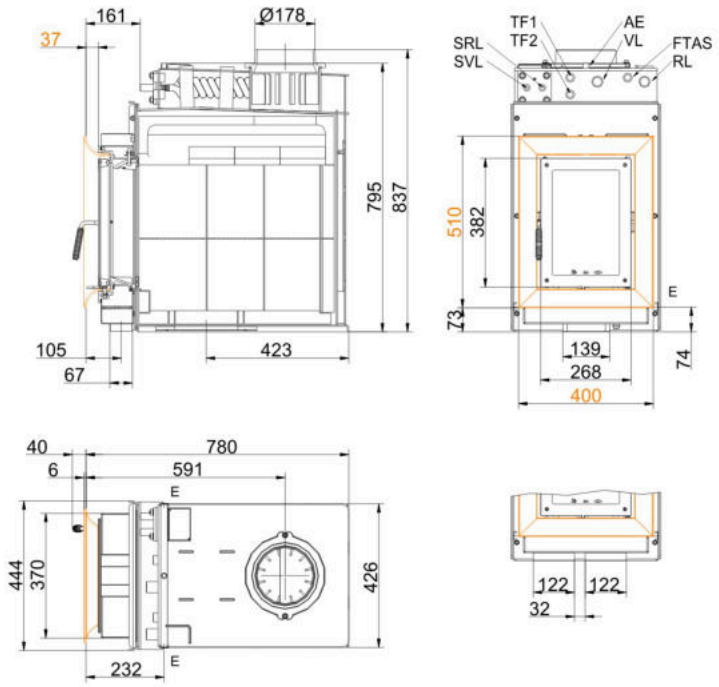
… with steel door frame



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.
AE	socket 1/2“ for ventilation

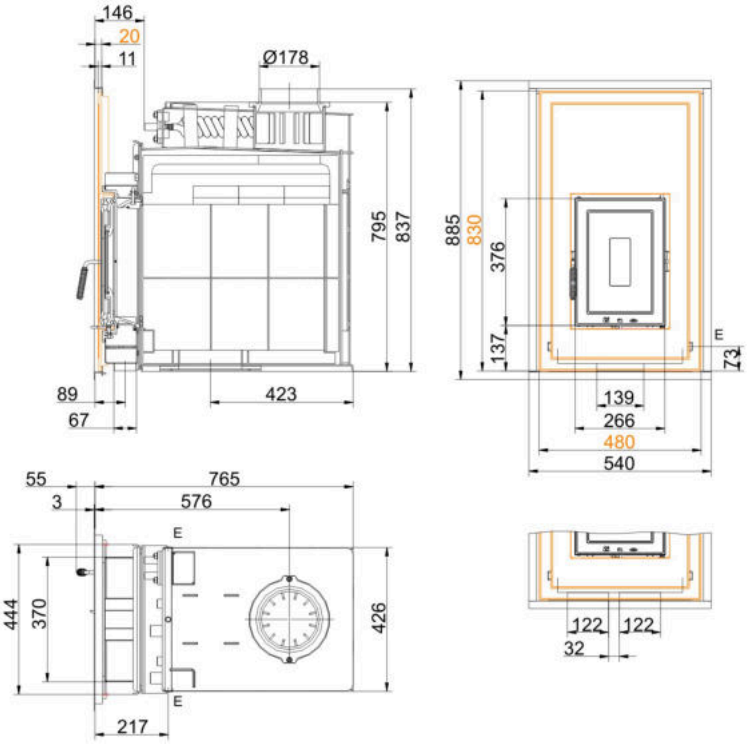
… with steel front plate

Dimension sheets - Kompakt-Kessel B8



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
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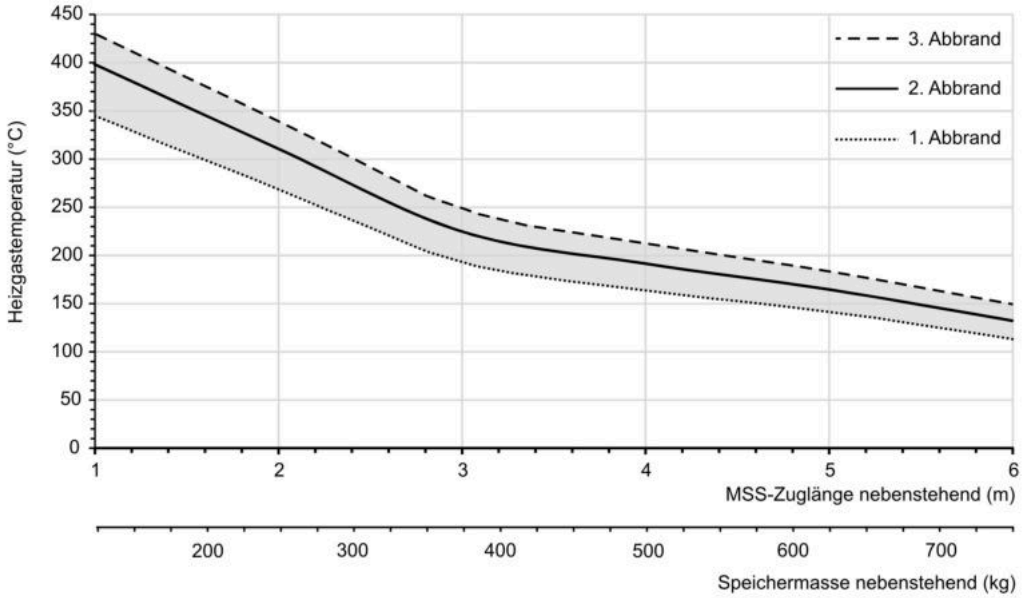
… with cast iron frame



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
SRL	return cooling pipe outlet 1/2“ext.th.
FTAS	socket for thermal safety sensor int.th.
TF1	socket 1/2“ for sensor int.th.
TF2	socket 1/2“ for sensor int.th.
AE	socket 1/2“ for ventilation

… with cast iron front plate

Dimension sheets - Kompakt-Kessel B8



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.

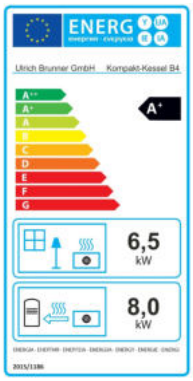
Planning and installation - Kompakt-Kessel B8

Tested according to		EN 13229 W	EN 13229 W
Values measured at		Rated power	Practical avg.
Data for functional demonstration			
Rated heat power	kW	13	-
Fire wood volume	kg/h	3.8	5.3
Combustion performance	kW	15.8	22.5
Flue gas mass flow	g/s	11.3	18.9
Outlet temperature (before reheating surface)	°C	498	520
Flue gas temperature after:			
1 x adjoining cast iron radiator (GNF 8/10)	°C	181	241
4,9 m ceramic accumulator [1)]	°C	-	180
3,4 m accumulation stones (MSS) [1)]	°C	-	210
Necessary supply pressure	Pa	12	15
Combustion air consumption	m^3/h	35	45
Combustion air connection Ø	mm	125	125
Heating gas temperature (before the hood/dome variant)			
insert flue outlet nozzle	°C	498	520
Heat distribution			
Insert / reheating surface	%	12 / 45	12 / 45
Glass pane (single / double)	%	- / 10	- / 10
Boiler	%	33	33
Boiler part without insulation, double glass	%	33	33
Cross-section of gratings [2)]			
exhaust warm air	cm^2	200 / 250 / 550	200 / 250 / 550
Recirculation air	cm^2	200 / 250 / 550	200 / 250 / 550
Minimal distances of the fireplace			
to cladding, insulation layer	cm	6	6
to mounting floor	cm	15	15
Thermal insulation without / with air gratings [3)]			
Mounting wall	cm	10 / 7	10 / 7
Floor	cm	0 / 0	0 / 0
Ceiling	cm	16 / 12	16 / 12
Brick lining for combustible wall	cm	10	10
Water boiler data			
Max. operating pressure	bar	3	3
Max. flow temperature	°C	100	100
Water volume	liter	42	42
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	160 / 59	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / - / -	

1) Approximate value. Determination according to design characteristics for adjacent storage mass or proof of function provided by calculation
2) for fireplace inserts / flue gas pipe / metallic reheating surface
3) Values determined with upper air cross- sections; stove cladding is heat emitting

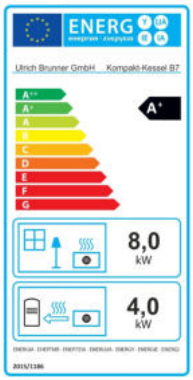
Product data sheet according to (EU) 2015/1186:

Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	Kompakt-Kessel B4
Energy efficiency class:	A+
Direct heat output:	6,5 kW
Indirect heat output:	8,0 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	



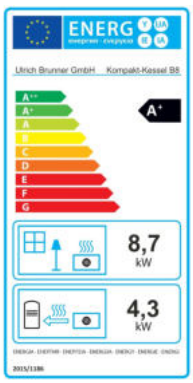
Product data sheet according to (EU) 2015/1186:

Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	Kompakt-Kessel B7
Energy efficiency class:	A+
Direct heat output:	8,0 kW
Indirect heat output:	4,0 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:	Kompakt-Kessel B8
Energy efficiency class:	A+
Direct heat output:	8,7 kW
Indirect heat output:	4,3 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	



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