Installation Guide

HKD SK

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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.

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4 PRODUCT DESCRIPTION

Caution: All available variants of the SK (“Stubenkessel”) series must not be used without a functional water boiler (please refer to our general Installation Guide for water boilers).

Tiled stove inserts with hot water functionality include a combustion chamber of a specific stove type and a water conducting boiler section. The boilers comply with TRD 702 “Heating water generators” group II and are built from St 37-2 quality steel according to DIN17100; the heat exchanger elements are made according to DIN1626 / DIN1629. All water boilers are designed and approved as heating generator devices for hot water heating systems with max. allowed supply temperatures up to 110# (212°F).

Those devices can be used in stand-alone applications or in combination with other heating generator devices. These applications include open installations according to DIN 4751 Part 1 as well, as closed installations with thermostatic safety devices according to DIN 4751 Part 2.

SK series water boilers are in general dimensioned to turn all available energy of the flue gases into hot water. Additional warm air generating or heat accumulating devices cannot be installed behind a water boiler section. The flue gas must be led away into the chimney on shortest possible way.

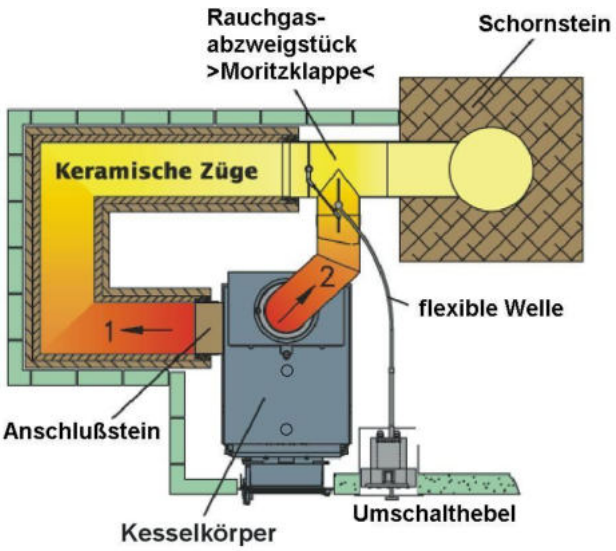
Some of the waterbearing devices of the SK series can be activated and deactivated by using a special three-way flow control valve (optional “Moritzklappe”) installed between the boiler and the chimney entrance. Using this smoke valve you can switch between two available operating modes, hot water (the water boiler mode) and warm air or heat projection (the radiator/accumulator mode). Both flue gas streams (mode 1 or 2) are connected by the three-way flow control valve just before they enter the chimney.

Note: Some hot water is produced also, when the system is switched into “warm air” or “heat projection” mode. Please make sure that this hot water can be led away safely into the heating system (for example, into a buffer tank).

For HKD 2.2k SK and HKD 2.6k SK it is not possible to switch off the water boiler section!

Flue gas flow:

The HKD 4.1 models have two available flue gas outlets (see picture: way 1 & 2). If the outlets must be re-arranged on-site, please make sure to install a high temperature resistant outlet, Art. No. 7444 (Ø180mm) or 7443 (Ø200mm) for the lower connection leading straight from the combustion chamber. For the boiler section (upper connection) please use Art. No. 07139 (Ø180mm).



Im. 1: Flue gas flow with “Moritzklappe”

5 DELIVERY CONTENTS

• Water boiler set

• Front kit (already installed for HKD 2.2k SK and HKD 2.6k SK)

• Combustion chamber linings with ISO hood or deflector

• Cleaning brush

• Thermal discharge safety device ¾“ with immersion sleeve ½“ and 4m long capillary

Safety valve (not included) and thermal discharge safety device must be installed outside the tiled stove/ oven shell! The max. allowed ambient temperature for safety valve cannot exceed 60°C (140°F), and 70°C (158°F) for thermal discharge safety device.

The following options can be ordered:

Art. No.:	00717	Tile stove pump unit. Preassembled unit, consisting of: Grundfoss UPS 25-40 circulation pump with gravitational brake and shut-off valves, thermometer and return flow increasing valve with choke, connections supplied with clamp ring fittings Ø 22mm.
Art. No.:	00719	Pump control unit for tiled stove heating circuit with minimal temperature limiter and two immersion sensors ½ “, 60mm long, and digital display.
Art. No.:	00721	Return flow increasing valve (when pump unit Art.No. 00717 is not used)

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.

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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.
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 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!

9 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.

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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.

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!

10 COMBUSTION AIR ADJUSTMENT

Combustion air adjustment in HKD2.2XL-SK/h / HKD 2.2 SK

The combustion air flows into the appliance above the glass and laterally via combustion air nozzles.

These are set at the factory, but should be checked and readjusted if necessary before commissioning the stove.



In order to obtain a symmetrical flame pattern, it is necessary to set columns A, B and C evenly and symmetrically!

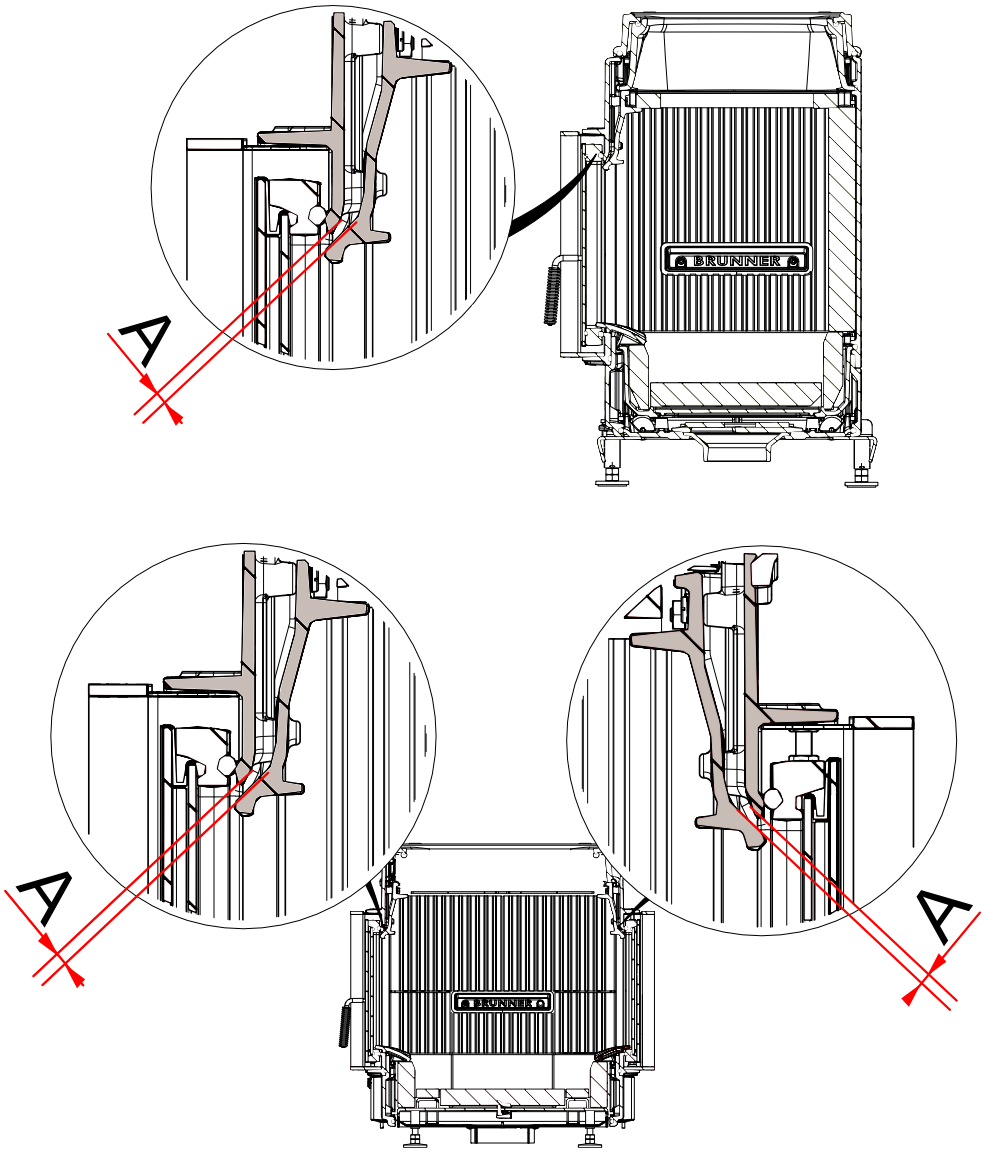
	Gap dimensions for version with one door				Gap dimensions for “tunnel” version (two doors)		
Fuel quantity	**A**	**B**	**C**		**A**	**B**	**C**

**delivery level / **storage loading*

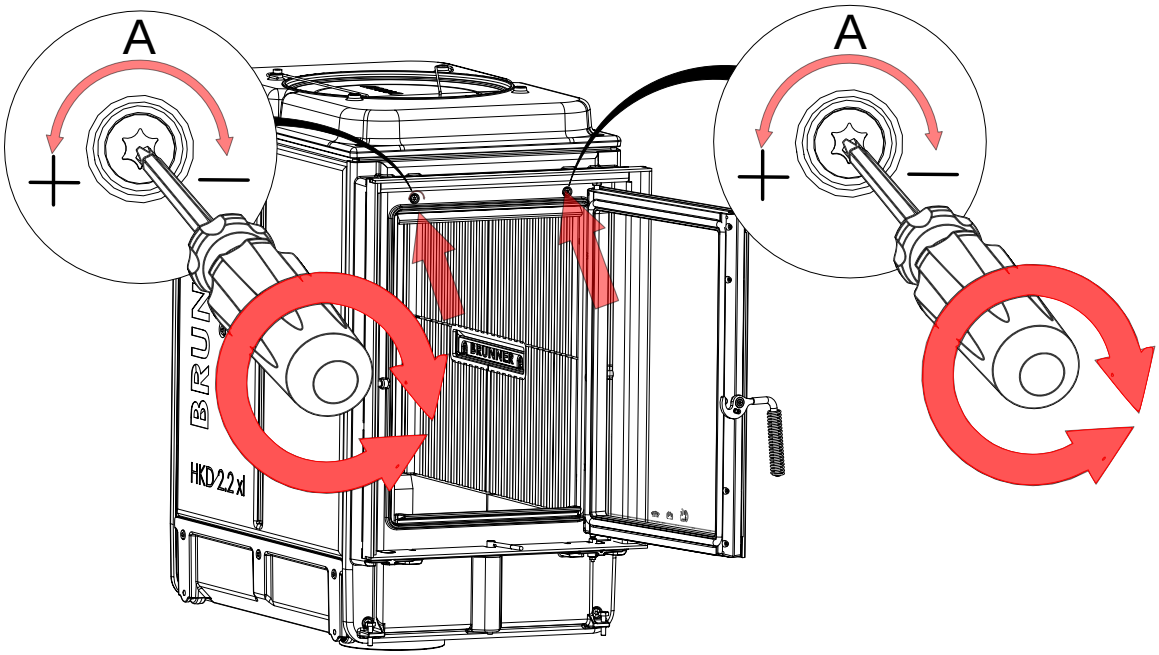
3 kg - 8 kg*	6	2	2		4	2	2
8 kg - 12 kg**	8	2	2		6	2	2

**delivery level / **storage loading*

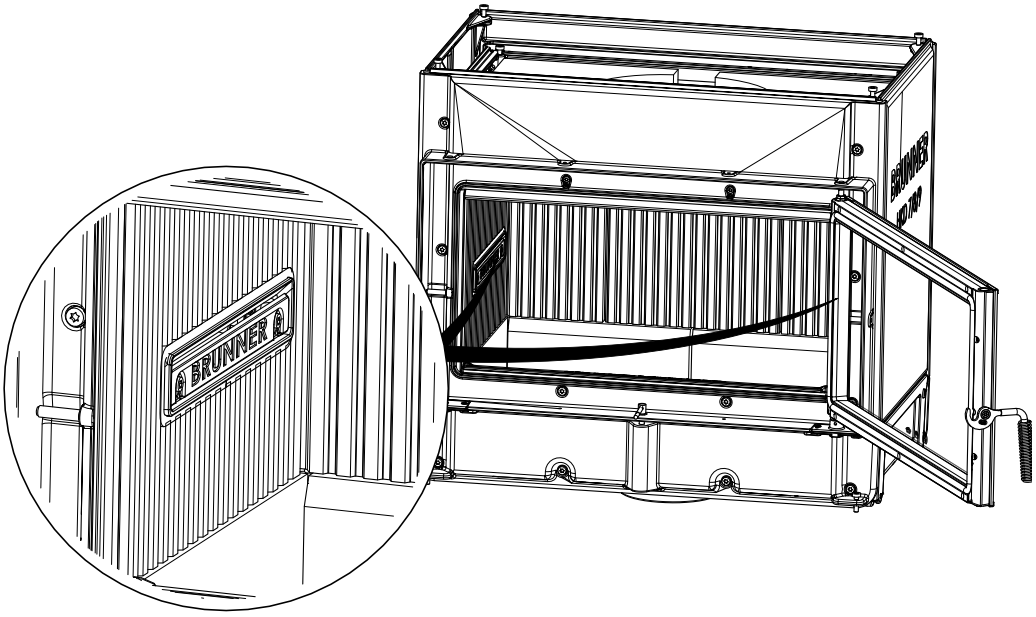
Adjusting the windshield purge air:

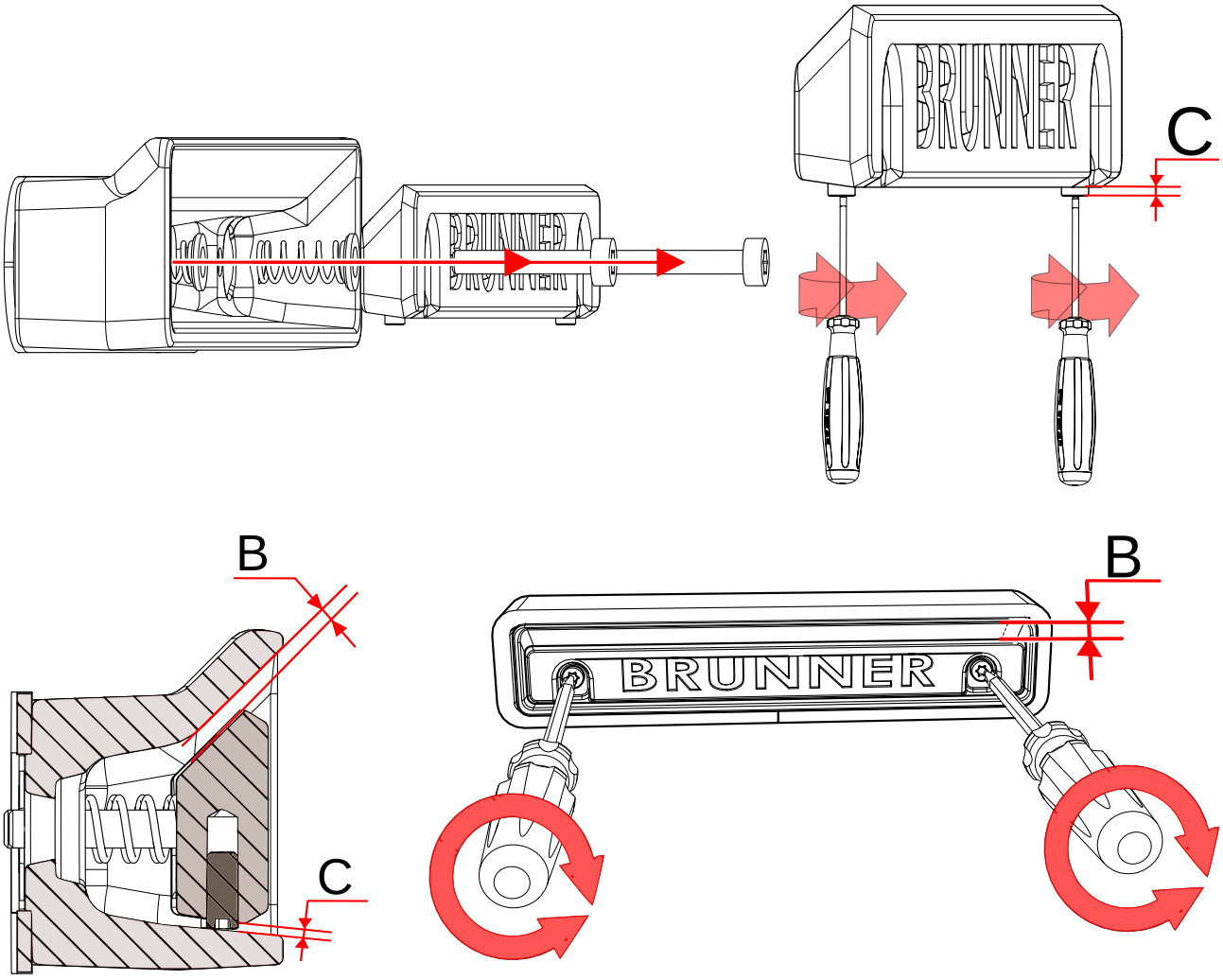


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Adjusting the side combustion air nozzles:

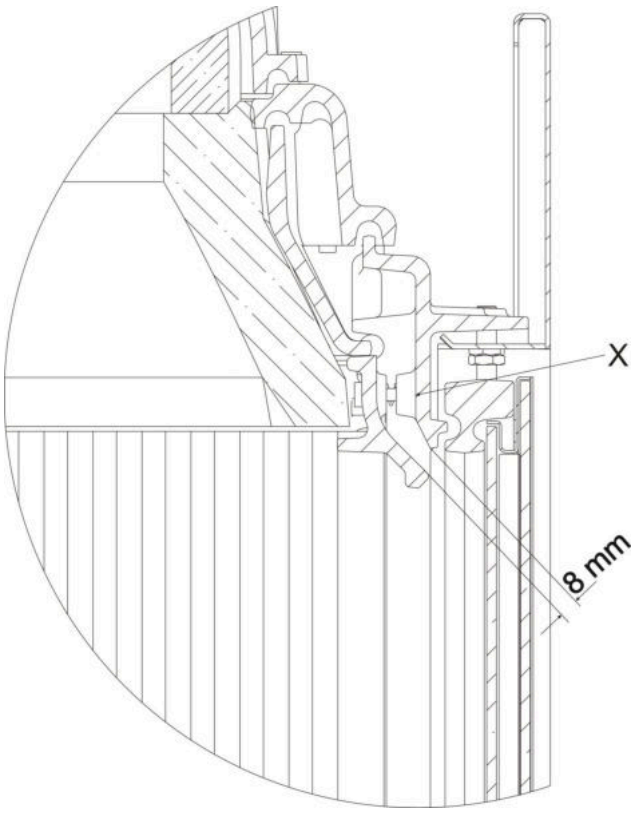




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Combustion air adjustment on HKD 2.2k SK

Combustion air supply has a default factory setting. If you need to adjust it, please pay attention to the following instructions. The air supply gap is adjusted with the X-marked screws. The lower air distribution plate (the 'warning plate') is adjusted with the integrated grub screw until it will rest flat on the chamotte lining.



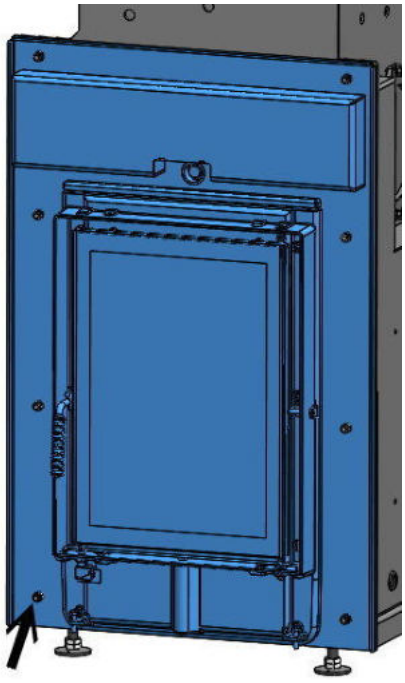
11 ASSEMBLY OF AN HKD SK

The HKD SK must be set onto a support frame or a suitable supporting construction of a different kind. Combustion chamber (fireclay linings and protecting hood or smoke deflector) and front kit must be assembled on-site. The necessary water connections must be made. Not used connections must be closed tight with plugs.

In order to mount the burning chamber into the HKD2.2XL-SK/h and HKD 2.2 SK, it is necessary to dismount the front kit assembly. The front kit assembly is mounted from outside with 6 or 8 screws. In picture, a screw is shown with an arrow for example.

CAUTION: The front is just attached to the stove body and must be held in place when removing the screws. Do not bend the threaded bolts!

Please note, that the hot combustion gases cannot enter any other reheating device behind the boiler section.



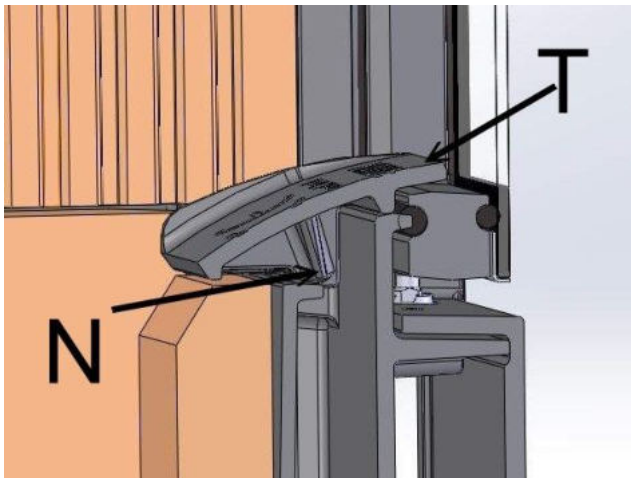
Im. 2: SK front plate

Mounting of combustion chamber

Combustion chamber linings are set using fire-resistant mortar. Please make sure to cover the whole surface of the linings with mortar to optimize heat transfer through combustion chamber walls and ensure highest possible efficiency of the water boiler. Please refer to instructions delivered with the combustion chamber linings for details.

The attached warning plate (T) must be put in place after the installation of the combustion chamber linings, as shown in picture. The protruding 'nose' (N) at the bottom is laid between the bottom pan and the front.

In Tunnel variants, both warning plates must be placed respectively.



Front plate assembly

Before assembling the front of stove, please check if all mounting bolts are in good shape, because they could get eventually bent during transportation. Please make sure, that all nuts are tightened very carefully; the sealing ropes can change their place when the nuts are tightened too fast. Tighten all nuts “crosswise” to allow for even pressure on the sealing ropes.

Radiators & accumulators

With the exception of HKD 2.2k SK, all SK water boilers can be used with appropriately dimensioned ceramic accumulators or metallic radiators.

The radiator/accumulator must be connected to the heating gas outlet, which is available on side or rear of the stove. In Tunnel variants, the rear outlet cannot be used, and the connection is possible only at one of the available lateral outlets.

The HKD 2.2k SK can be used only without any additional heating surfaces. The HKD 2.2k SK must be connected to the chimney on shortest possible way (at the top or rear of the stove).

Cleaning aid on HKD 2.2 SK and HKD2.2XL-SK/h

The heat exchanger tubes of the HKD 2.2 SK and HKD2.2XL-SK/h must be cleaned at least after every third combustion cycle. Therefore, the operating lever must be easily accessible for use. The cleaning mechanism must be operated with full stroke, do not use the spring clearance only. After cleaning is complete, the mechanism must be returned to its central position.

In order to provide for better use of cleaning aid, suitable conversion kits are available.



If the periods for cleaning of heat exchanger tubes are too long, there is a risk that the cleaning aid will get stuck on the heat exchanger tubes.

It is absolutely necessary to remind the user about the need of frequent and regular cleaning of the heat exchanger tubes!

To avoid eventual ignition problems, the installation of a start-up flap is recommended!

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Planning notes for HKD 2.2 SK and HKD2.2XL-SK/h

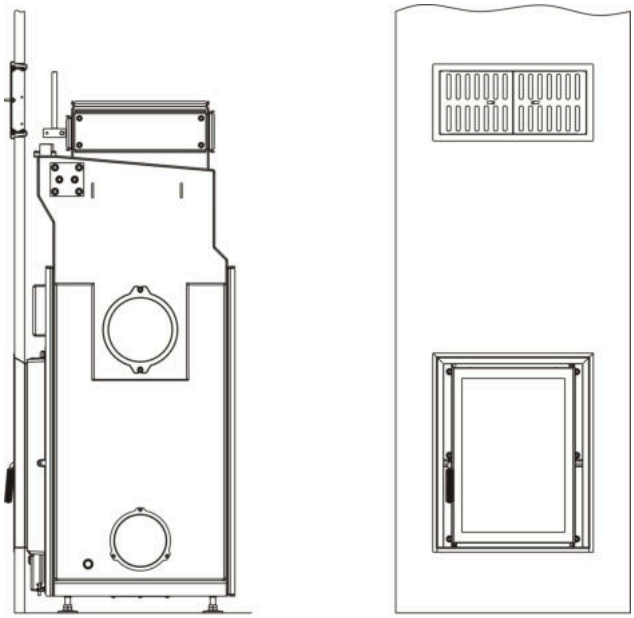
The HKD 2.2 SK and the HKD2.2XL-SK/h models have a factory-mount cleaning aid for heat exchanger tubes. This cleaning aid consists of springs, which are moving on the heat exchanger tubes. The suspension of springs on a rocker mechanism allows for their movement and the removal of debris on the heat exchanger tube.

To allow for required exchange of springs in case of damage, sufficiently dimensioned revision openings must be foreseen. The exchange can be performed through the connecting piece cover on side (13cm*41cm) or the big cover on top (51cm*51cm).

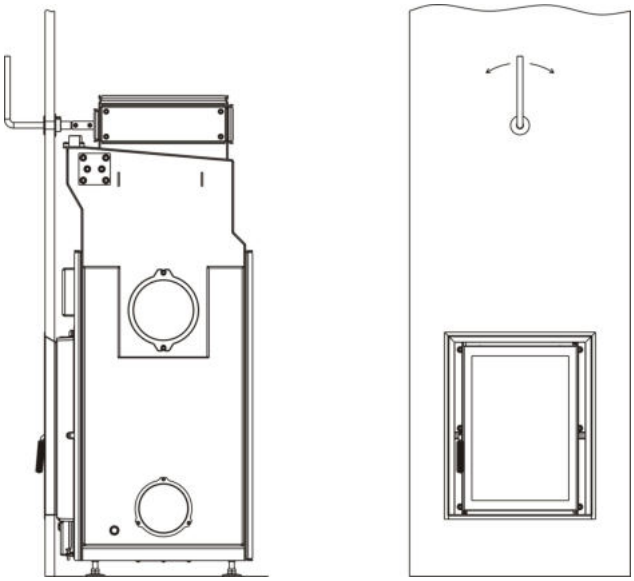
The cleaning aid is operated with the lever above the firing door. In standard delivery status it can be reached and operated through a warm air grating or similar, which is installed above the firing door (see variant 1, analogous for HKD2.2XL-SK/h).

Alternatively, the cleaning aid can be operated by using a detachable stainless steel handle at the front (see variant 2, analogous for HKD2.2XL-SK/h).

For this, the ‘conversion kit for HKD 2.2 SK front cleaning’, art.no.: 11726 is necessary.

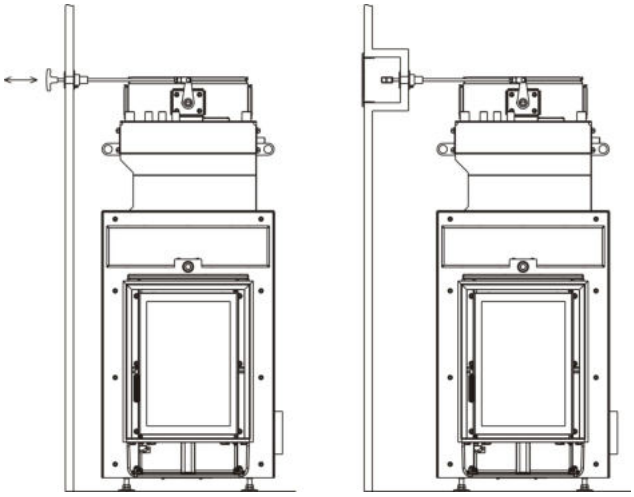


Im. 3: Cleaning aid HKD 2.2 SK variant 1



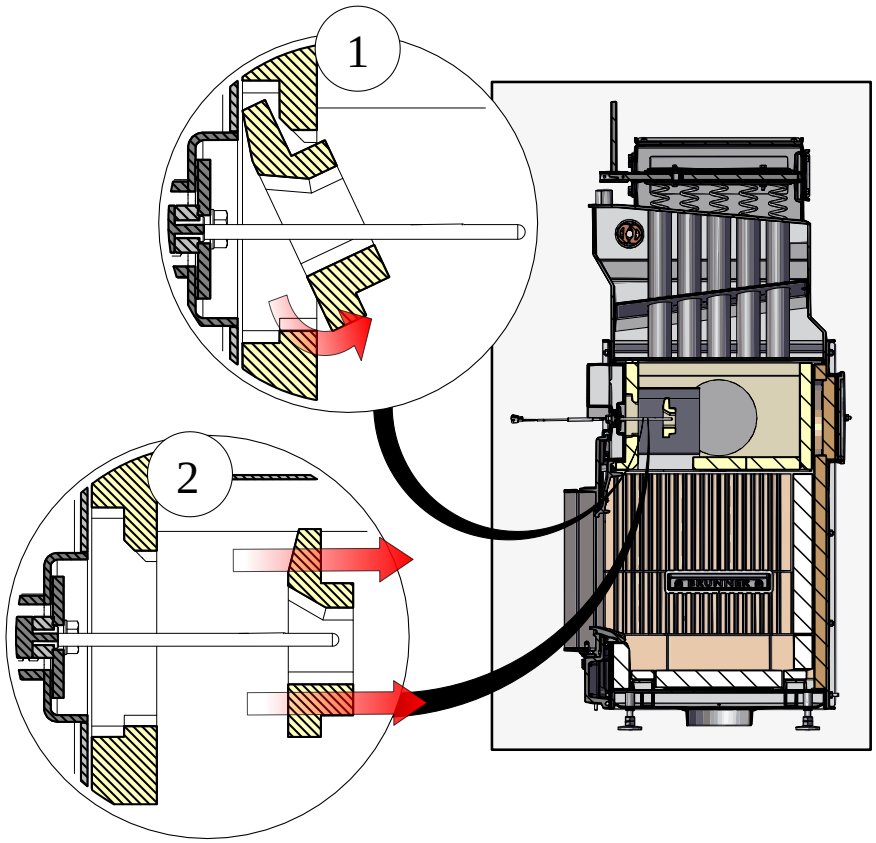
Im. 4: Cleaning aid HKD 2.2 SK variant 2

As another option, the ‘conversion kit for HKD 2.2 SK side cleaning’, art.no.: W043135 is available (see variant 3, analogous for HKD2.2XL-SK/h).



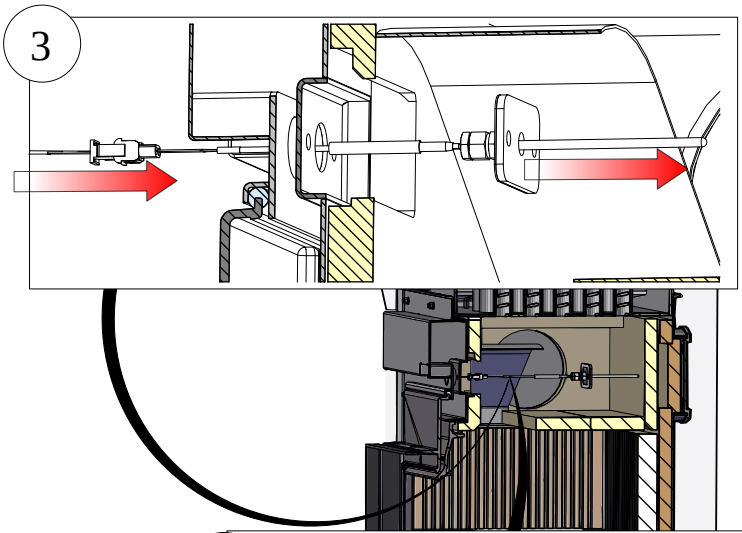
Im. 5: Cleaning aid HKD 2.2 SK variant 3

12 CHANGING THE THERMOCOUPLE ON THE HKD 2.2 SK AND HKD 2.2 XL SK/H

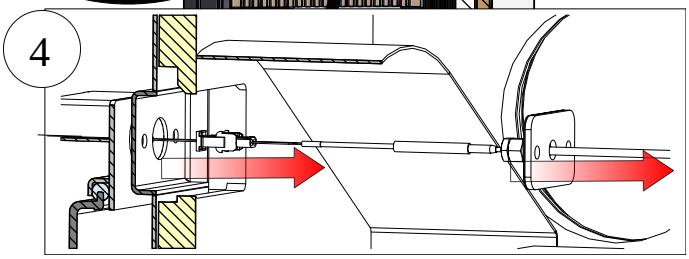


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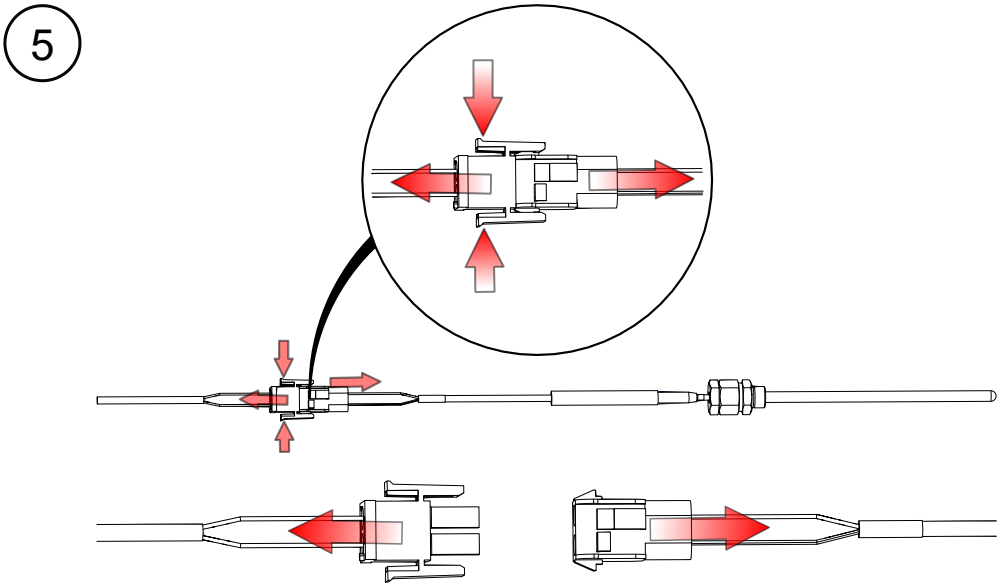
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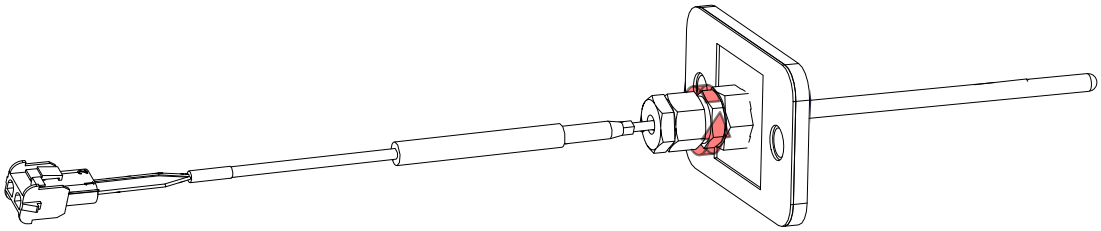
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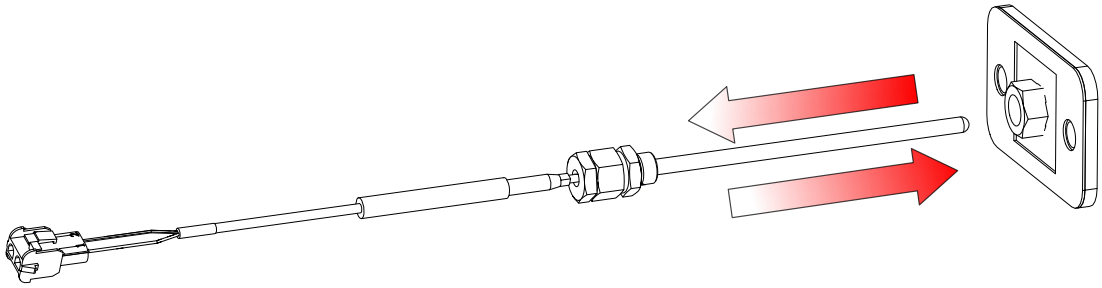
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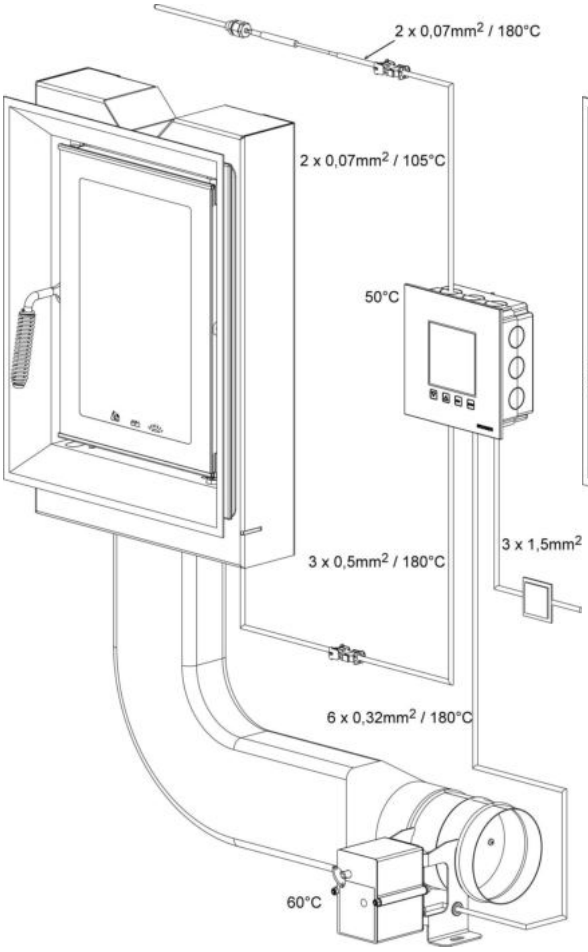
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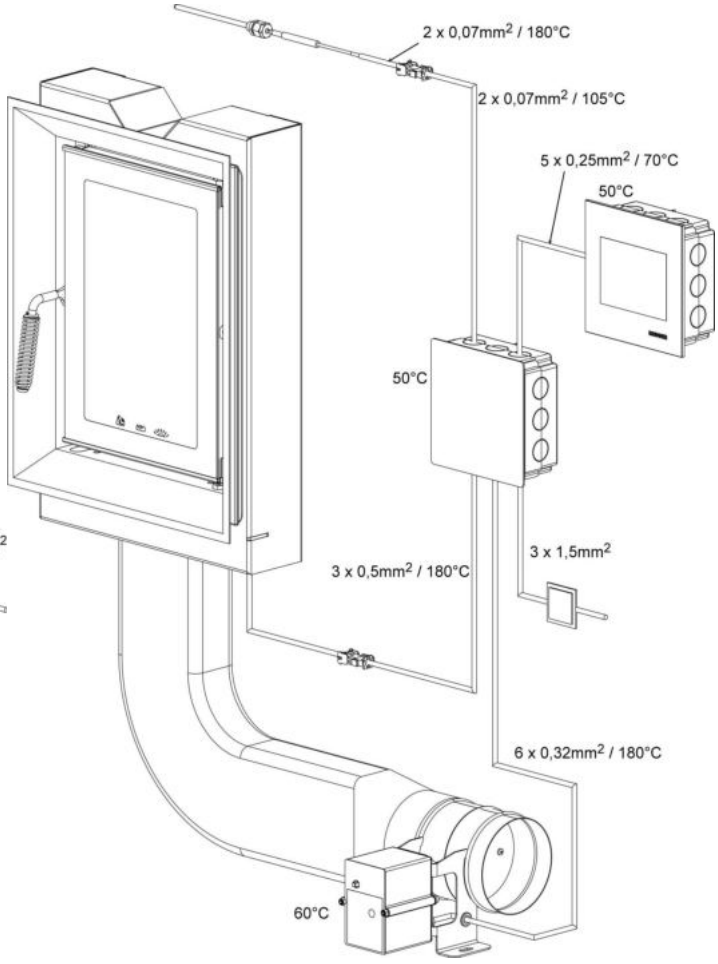
7 → 6 → 5 → 4 → 3 → 2 → 1

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13 MOUNTING INSTRUCTIONS FOR EAS / EOS VARIANTS



Im. 6: Schematic layout of EAS



Im. 7: 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.

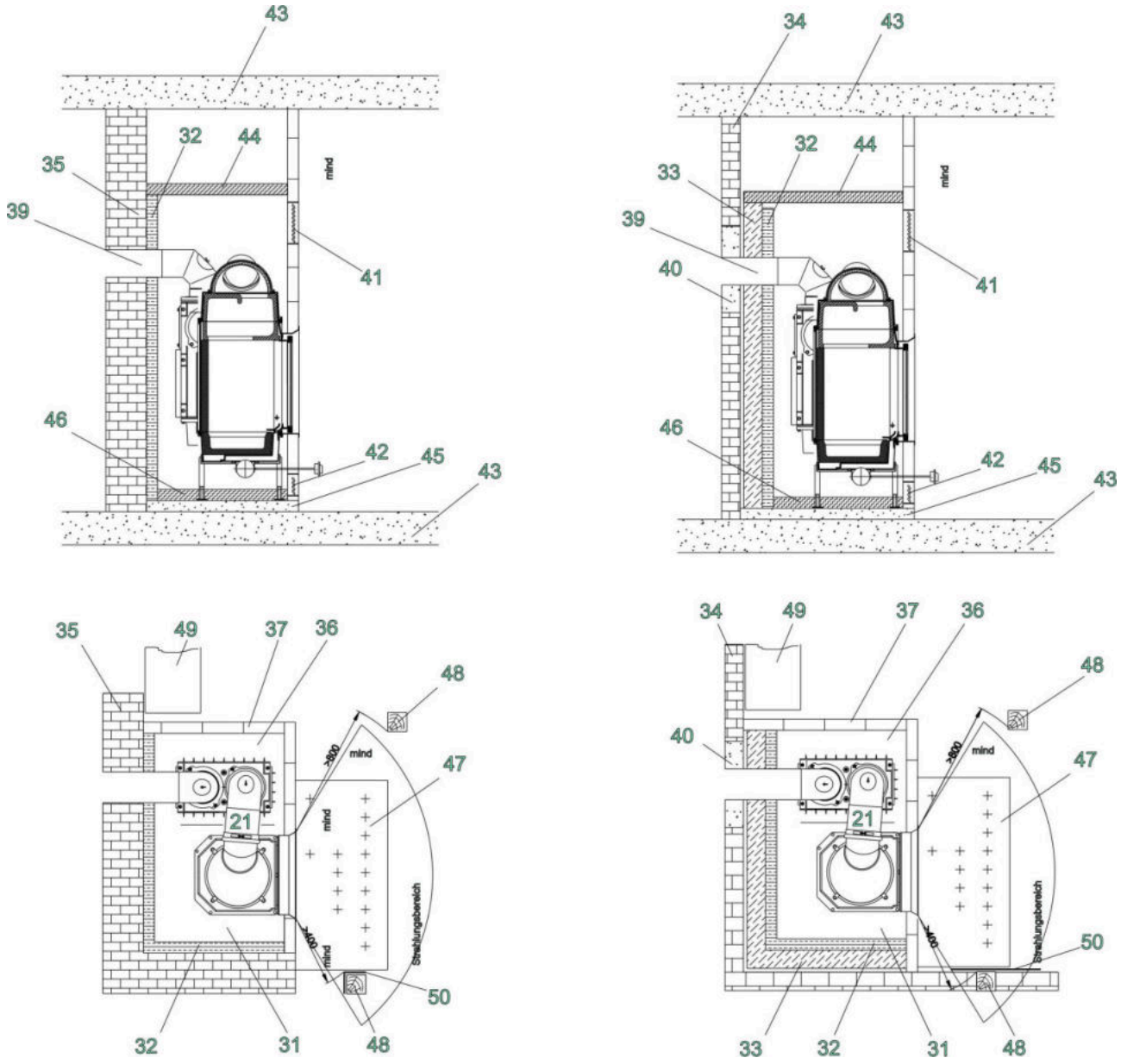
All electronic components must be accessible after installation for revision and replacement. When selecting place of installation, keep in mind the max. permitted temperature for the component. Components cannot be installed in closed spaces; proper ventilation must ensure sufficient heat discharge.

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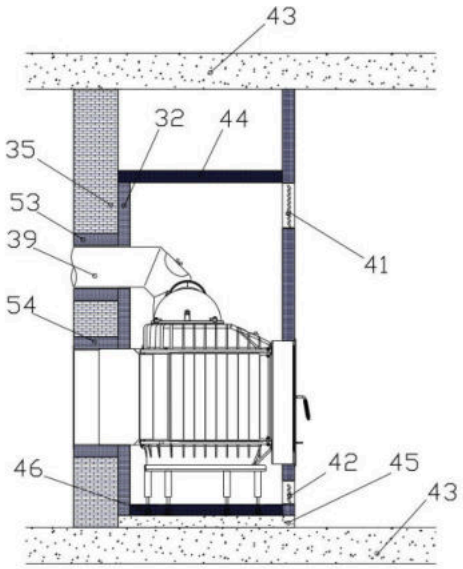
14 OVERVIEW OF FIRE SAFETY AND HEAT INSULATION GUIDELINES

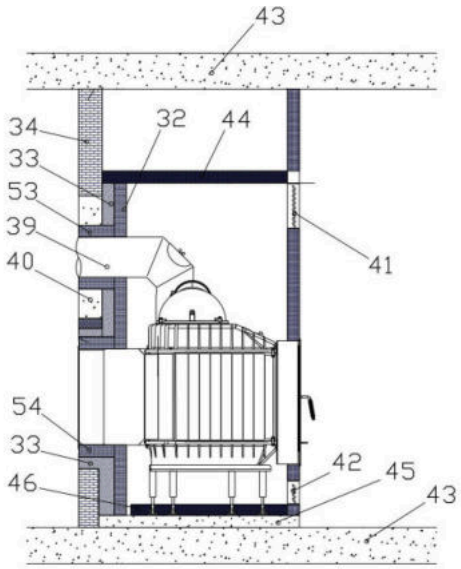
(shown on the example of an HKD stove)

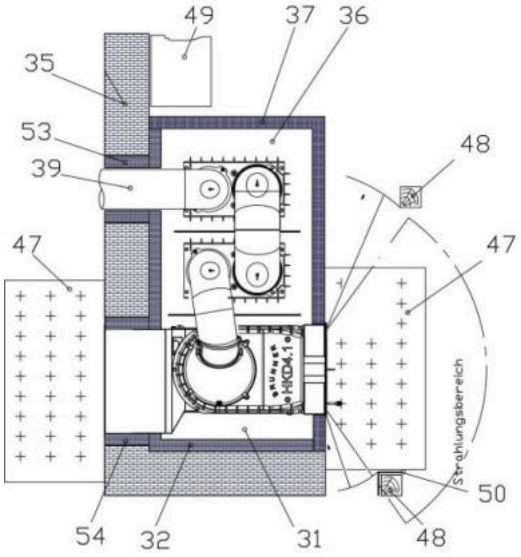
Installation in front of or next to an adjacent wall: Installation in front of or next to a flammable wall

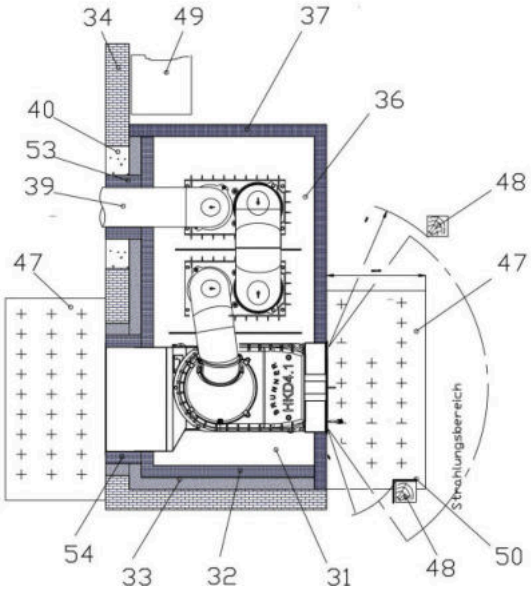


Installation in front of or next to a protected wall: Installation in front of or next to a flammable wall









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 re-inforced 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.

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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
45	Concrete slab, at least 6 cm thick, with sufficient reinforcement for weight distribution.
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 surface

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.

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

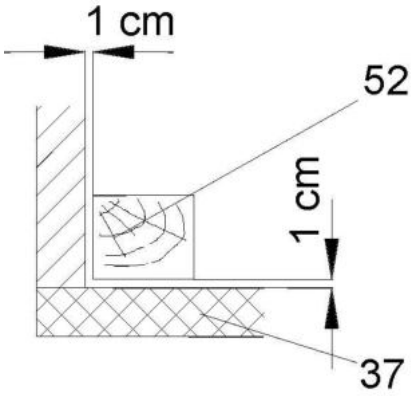
Warm air vents (41) must be situated at least 50 cm (19.69 in) below ceiling level and 30 cm (11.81 in) away from lateral built-in furniture, flammable materials or supporting concrete walls. Air gratings or vents must be located possibly high, to prevent heat accumulation within the external fireplace 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.



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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).

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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:

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	02	Mats, stitched, Limit 2	12	120	03	30
13	Slag wool	06	Mats, stitched	10	Shells, Limit 1	14	140	04	40
		07	Slabs	11	Shells, Limit 2	16	160	05	50
		08	Shells	20	Slabs, Limit 1	.	.	06	60
		09	Segments	21	Slabs, Limit 2	.	.	.	.
		10	Braids	99	*)	72	720	.	.
		11	Panels			74	740	18	180
						76	760	99	**)

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

**) 99 is valid only for shells.

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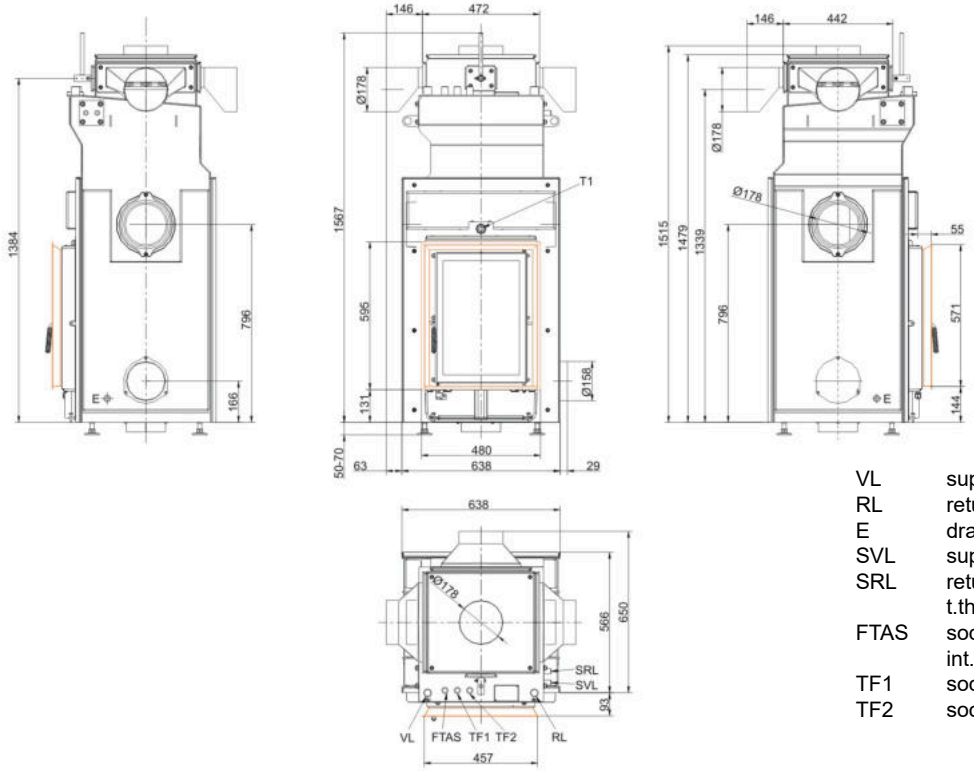
17 DIRECTIVES

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.	

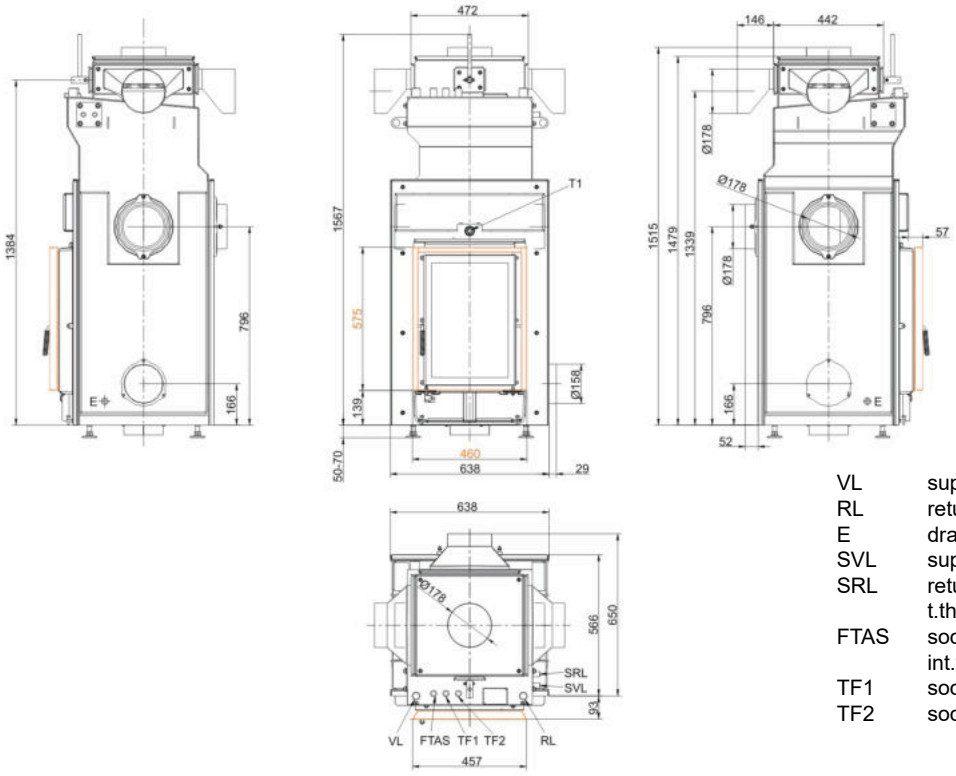
The listing does not claim to be complete!

Dimension sheets - HKD 2.2 SK with cleaning mechanism



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.

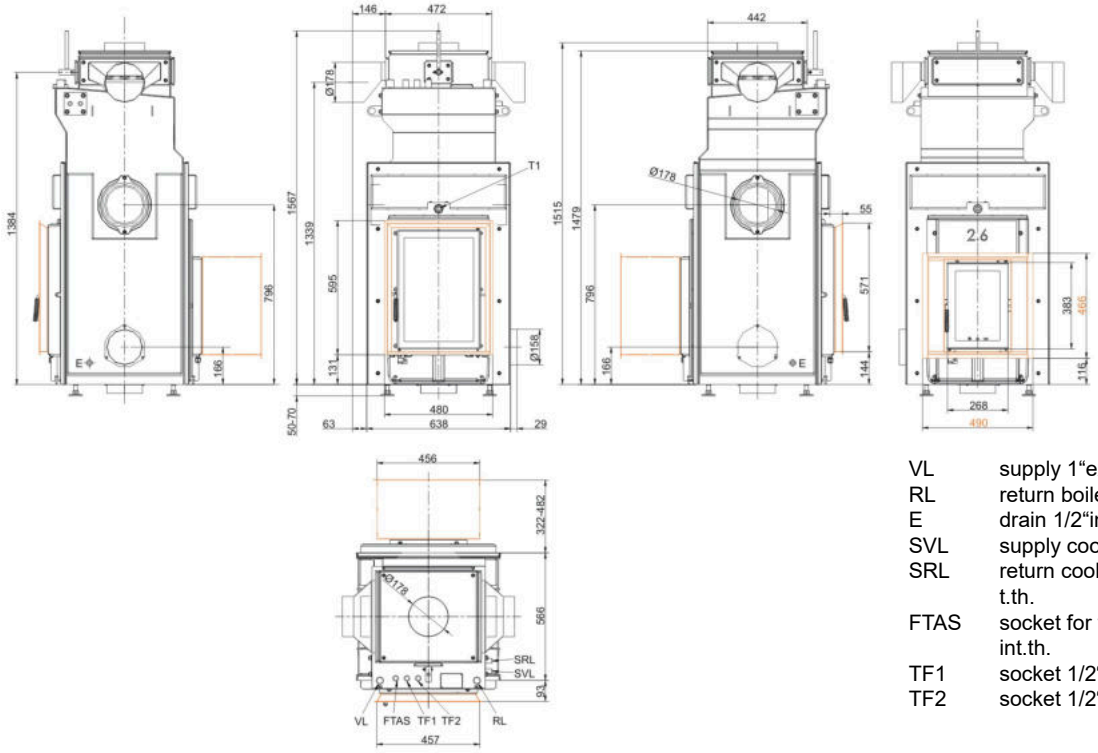
… flat with door frame



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
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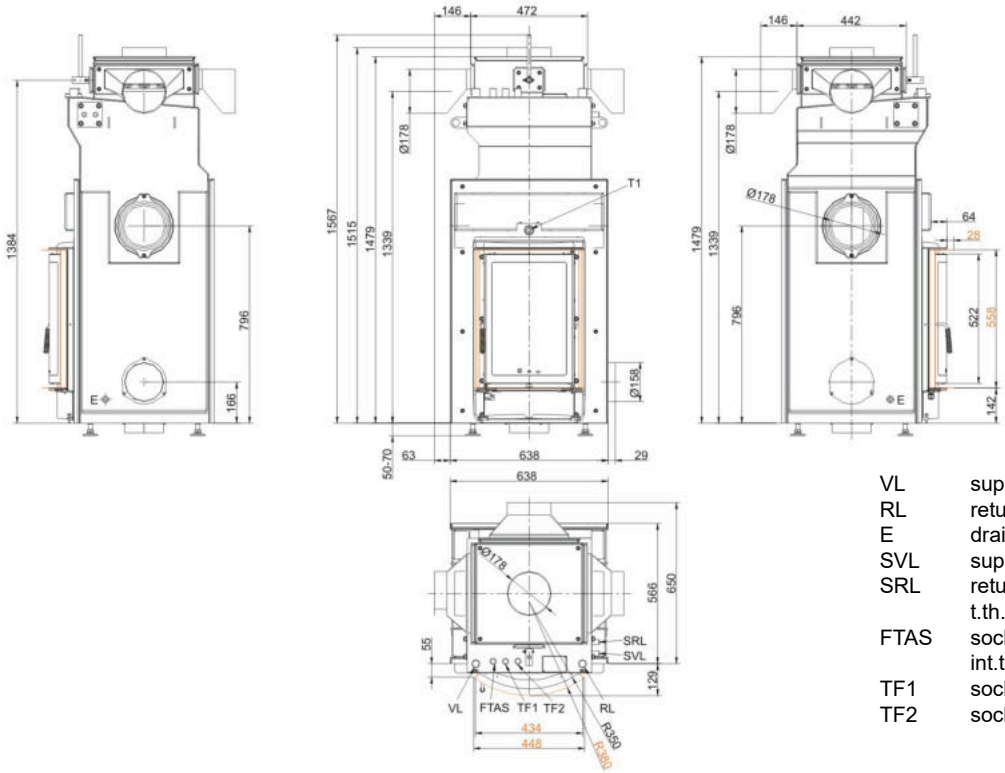
… flat with mounting frame, burn-through

Dimension sheets - HKD 2.2 SK with cleaning mechanism



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.
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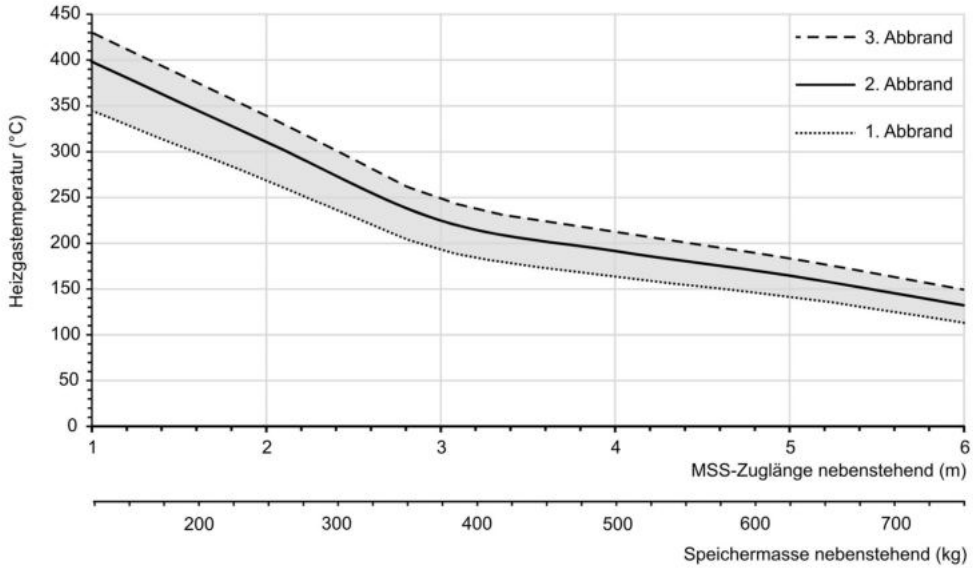
… flat with door frame, DHT



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.

… round with door frame

Dimension sheets - HKD 2.2 SK with cleaning mechanism



Design characteristics for adjacent storage mass

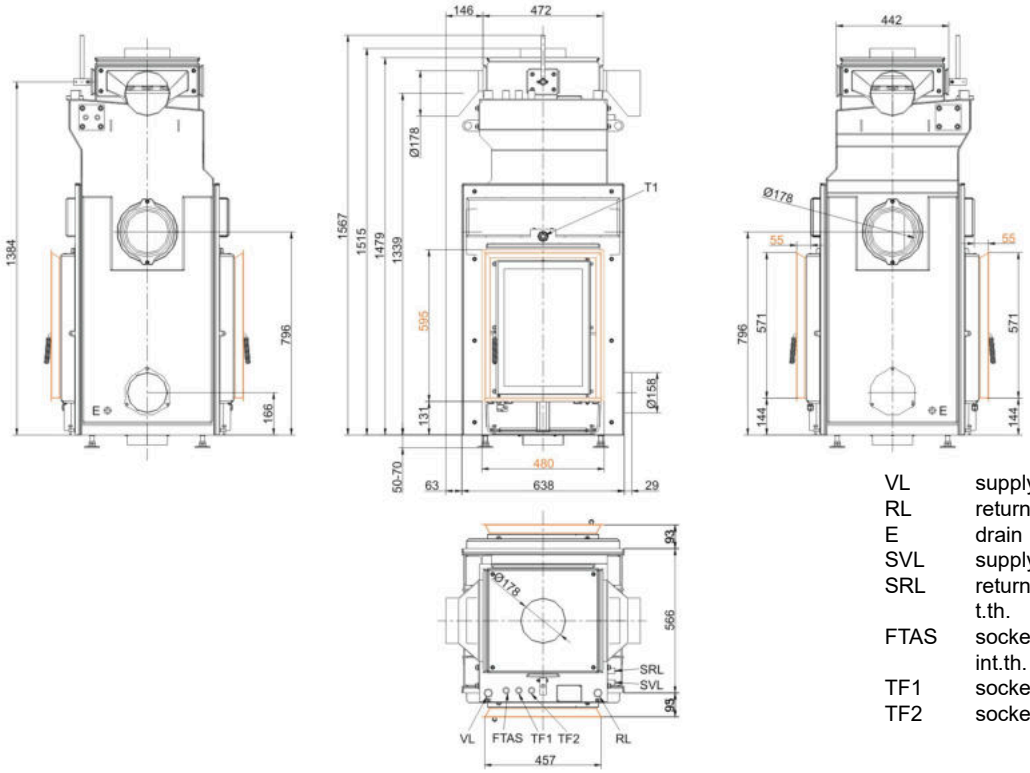
We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Planning and installation - HKD 2.2 SK with cleaning mechanism

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	3.4	5.0
Combustion performance	kW	13.5	17
Flue gas mass flow	g/s	10	21
Outlet temperature (before reheating surface)	°C	335	385
Flue gas temperature after:			
1 x adjoining cast iron radiator (GNF 8/10)	°C	125	200
4,9 m ceramic accumulator [1)]	°C	-	180
3,4 m accumulation stones (MSS) [1)]	°C	-	210
boiler	°C	125	210
Necessary supply pressure	Pa	15	15
Combustion air consumption	m^3/h	34	50
Combustion air connection Ø	mm	160	160
Heating gas temperature (before the hood/dome variant)			
insert flue outlet nozzle	°C	335	385
Heat distribution			
Insert / reheating surface	%	10 / 10 - 50	10 / 10 - 50
Glass pane (single / double)	%	25 / 20	25 / 20
Boiler	%	30 - 70	30 - 70
Cross-section of gratings [2)]			
exhaust warm air	cm^2	400 / 200 / 300	400 / 200 / 300
Recirculation air	cm^2	400 / 200 / 300	400 / 200 / 300
Minimal distances of the fireplace			
to cladding, insulation layer	cm	6	6
to mounting floor	cm	6	6
Thermal insulation without / with air gratings [3)]			
Mounting wall	cm	8 / 6	8 / 6
Floor	cm	0	0
Ceiling	cm	10 / 8	10 / 8
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	78	78
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	324 / 81	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -	

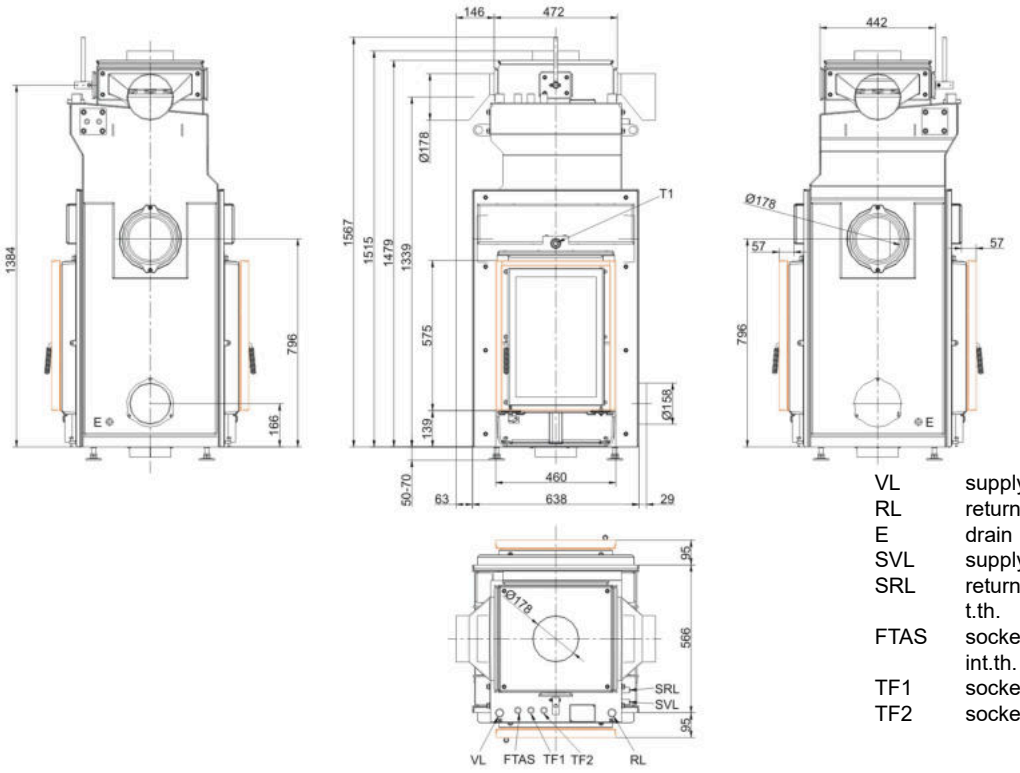
1) Approximate value. Determination according to design characteristics for adjacent storage mass or proof of function provided by calculation
2) for fireplace inserts / flue gas pipe / metallic reheating surface
3) Values determined with upper air cross- sections; stove cladding is heat emitting

Dimension sheets - HKD 2.2 SK Tunnel with cleaning mechanism



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
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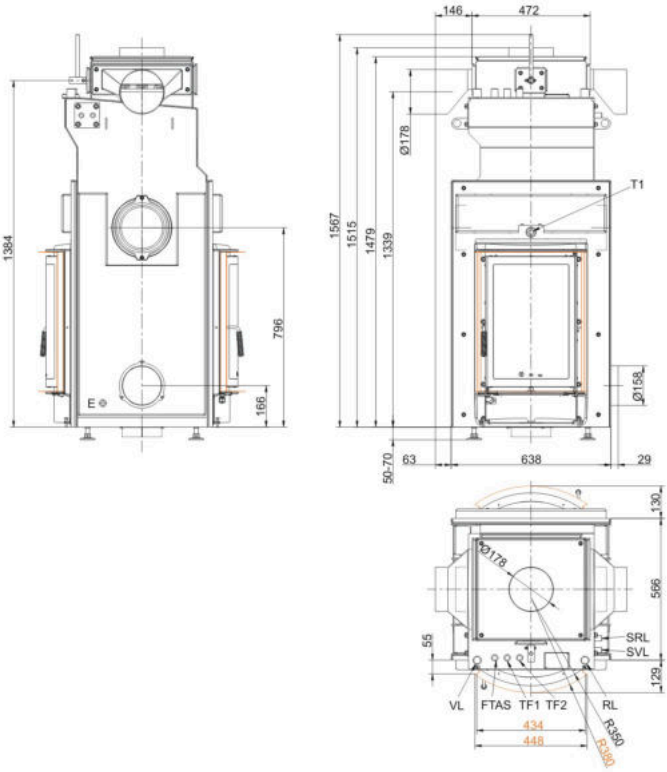
… flat with door frame



VL	supply 1“ext. th.
RL	return boiler 1“ext.th.
E	drain 1/2“int. th.
SVL	supply cooling pipe outlet ext.th.
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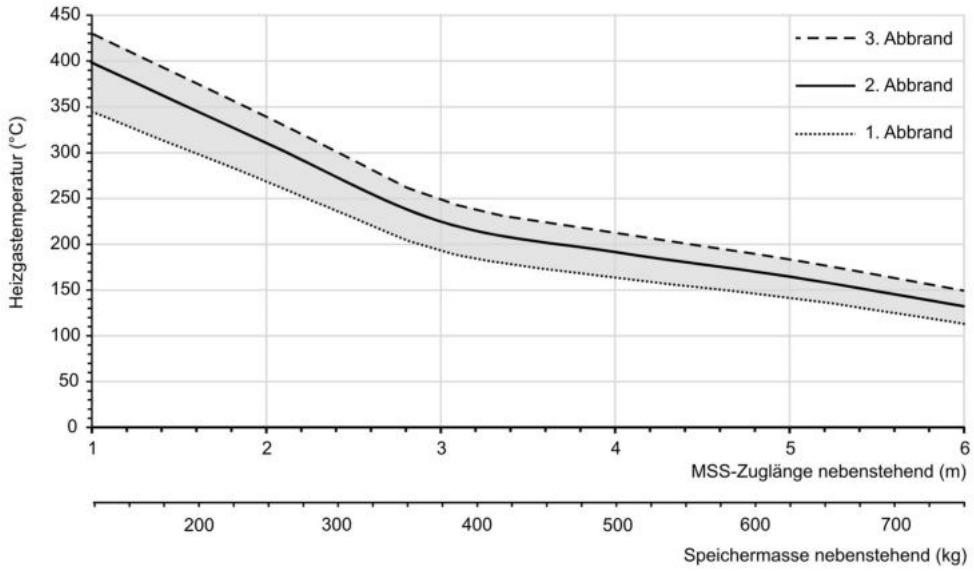
… flat with mounting frame

Dimension sheets - HKD 2.2 SK Tunnel with cleaning mechanism



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.

… round



Design characteristics for adjacent storage mass

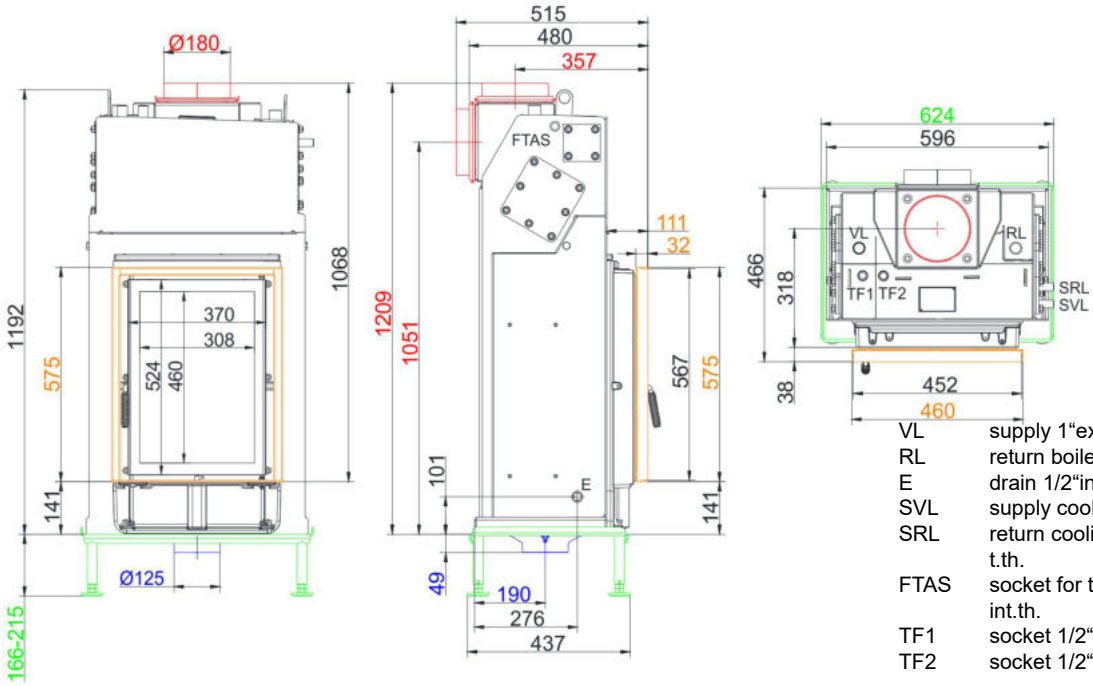
We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Planning and installation - HKD 2.2 SK Tunnel with cleaning mechanism

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	3.4	5.0
Combustion performance	kW	13.5	17
Flue gas mass flow	g/s	10	21
Outlet temperature (before reheating surface)	°C	335	385
Flue gas temperature after:			
1 x adjoining cast iron radiator (GNF 8/10)	°C	125	200
4,9 m ceramic accumulator [1)]	°C	-	180
3,4 m accumulation stones (MSS) [1)]	°C	-	210
boiler	°C	125	210
Necessary supply pressure	Pa	15	15
Combustion air consumption	m^3/h	34	50
Combustion air connection Ø	mm	160	160
Heating gas temperature (before the hood/dome variant)			
insert flue outlet nozzle	°C	335	385
Heat distribution			
Insert / reheating surface	%	5 / 10 - 50	5 / 10 - 50
Glass pane (single / double)	%	30 / 25	30 / 25
Boiler	%	30 - 70	30 - 70
Cross-section of gratings [2)]			
exhaust warm air	cm^2	400 / 200 / 300	400 / 200 / 300
Recirculation air	cm^2	400 / 200 / 300	400 / 200 / 300
Minimal distances of the fireplace			
to cladding, insulation layer	cm	6	6
to mounting floor	cm	6	6
Thermal insulation without / with air gratings [3)]			
Mounting wall	cm	8 / 6	8 / 6
Floor	cm	0	0
Ceiling	cm	10 / 8	10 / 8
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	78	78
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	357 / 64	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -	

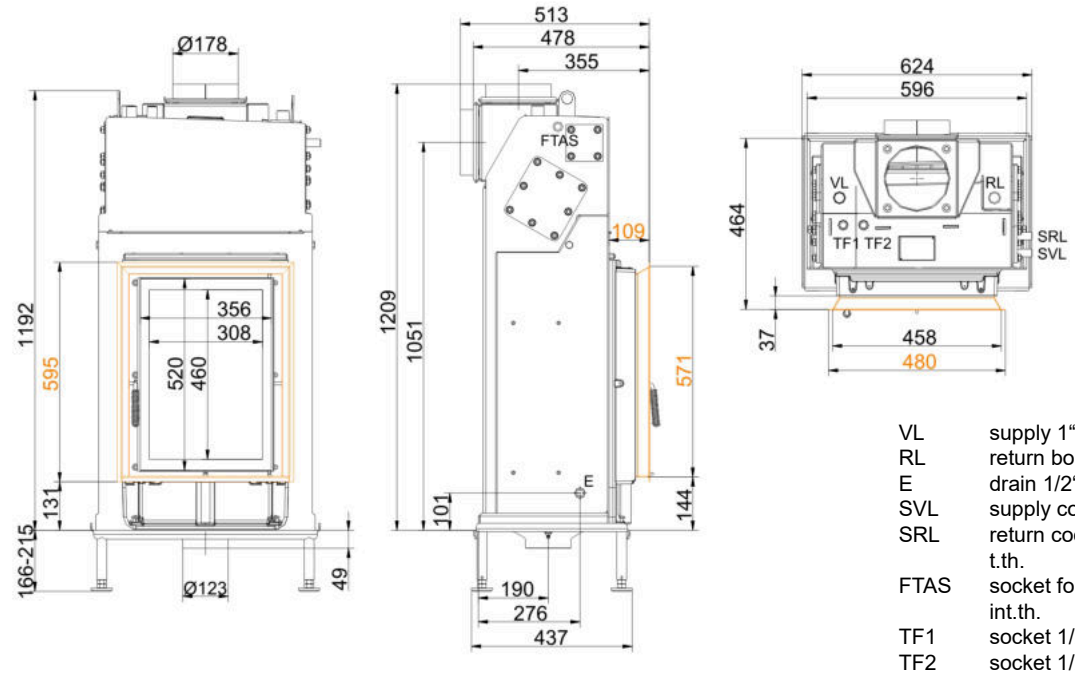
1) Approximate value. Determination according to design characteristics for adjacent storage mass or proof of function provided by calculation
2) for fireplace inserts / flue gas pipe / metallic reheating surface
3) Values determined with upper air cross- sections; stove cladding is heat emitting

Dimension sheets - HKD 2.2k-SK



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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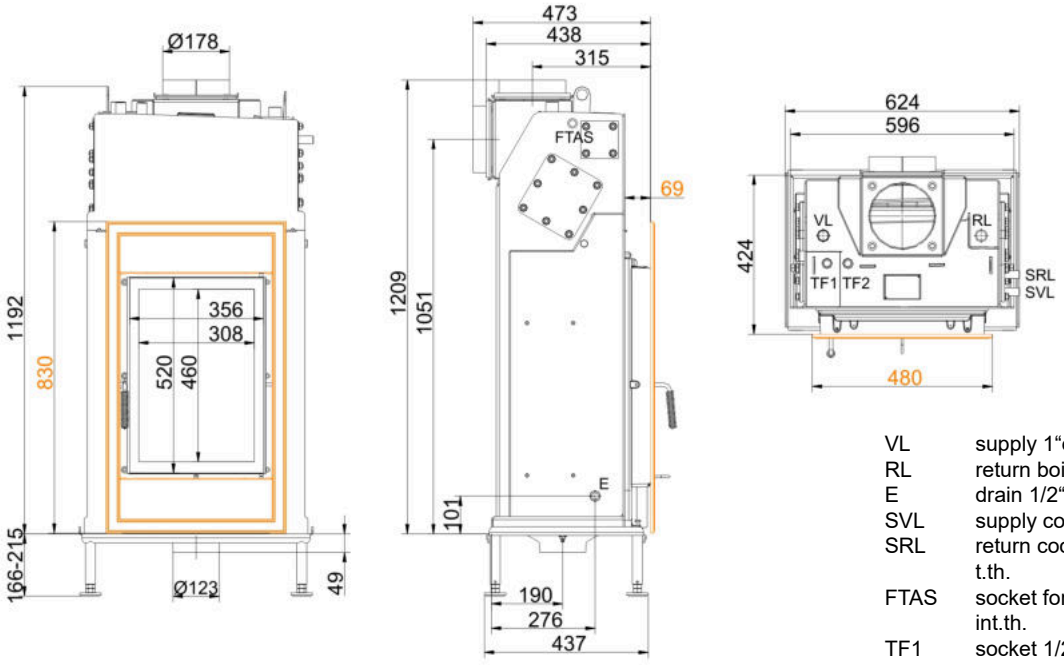
… with mounting frame



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.

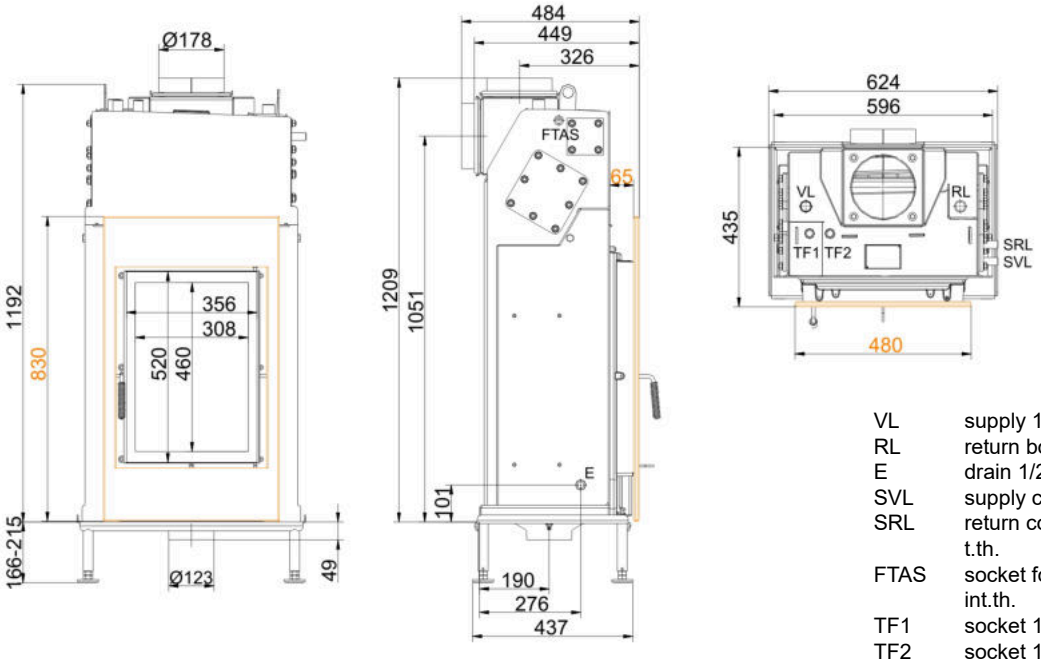
… with door frame

Dimension sheets - HKD 2.2k-SK



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.

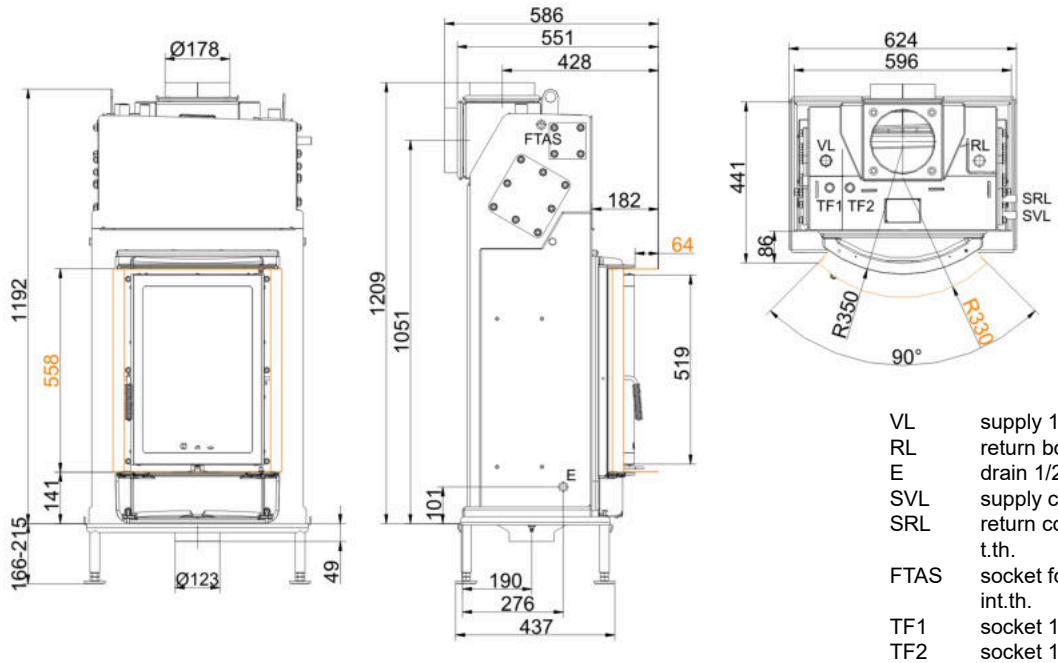
… with cast iron front plate



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.

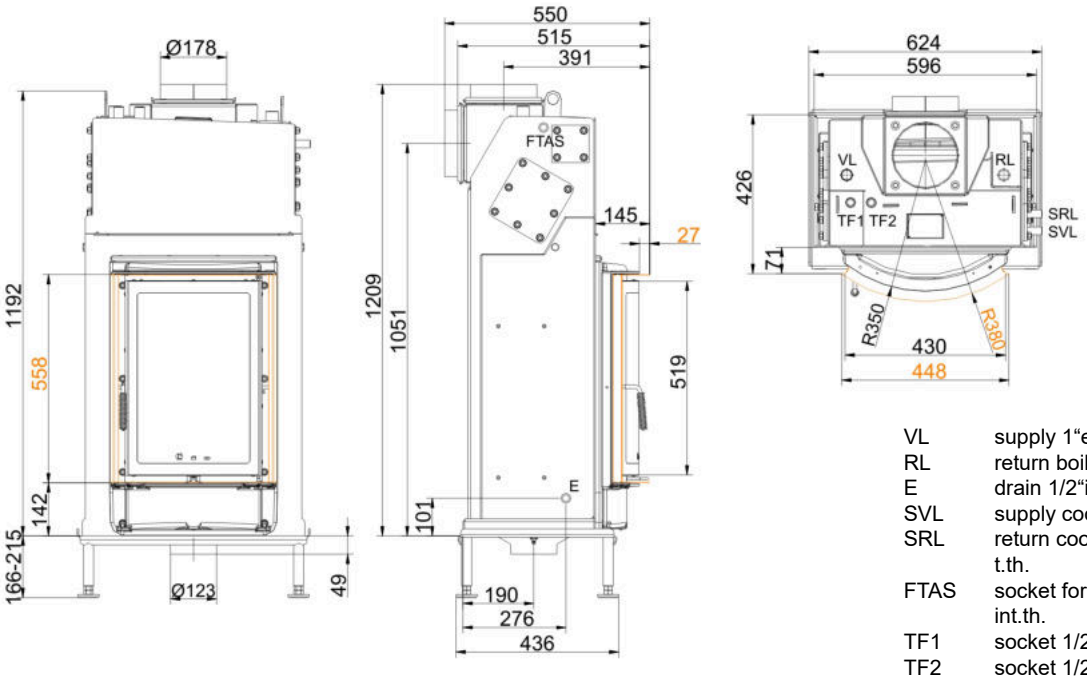
… with steel front plate

Dimension sheets - HKD 2.2k-SK



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.

… round with mounting 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“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.

… round with door frame

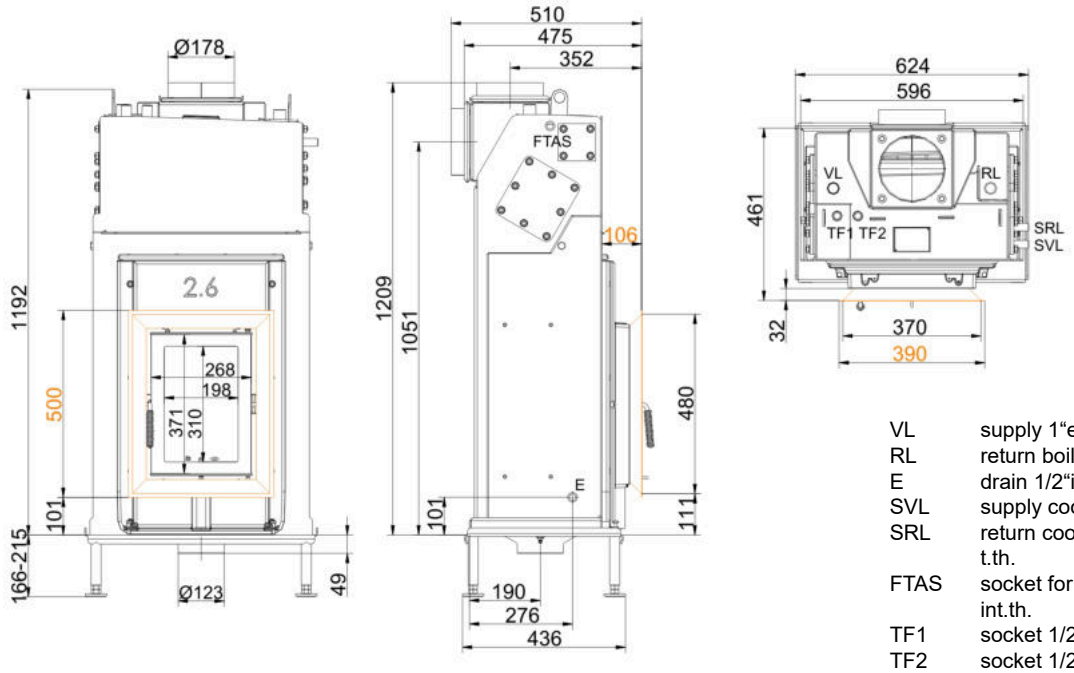
We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Planning and installation - HKD 2.2k-SK

Tested according to		EN 13229 W	EN 13229 W
Values measured at		Rated power	Practical avg.
Data for functional demonstration			
Rated heat power	kW	8	-
Fire wood volume	kg/h	2.5	4
Combustion performance	kW	10	17
Flue gas mass flow	g/s	9	15
Flue gas temperature after:			
boiler	°C	210	255
Necessary supply pressure	Pa	12	12
Combustion air consumption	m^3/h	25	40
Combustion air connection Ø	mm	125	125
Heat distribution			
Insert / reheating surface	%	10 / -	10 / -
Glass pane (single / double)	%	25 / 20	25 / 20
Boiler	%	65 / 70	65 / 70
Boiler part without insulation, double glass	%	70	70
Boiler part without insulation, single glass	%	65	65
Cross-section of gratings			
exhaust warm air	cm^2	400	400
Recirculation air	cm^2	400	400
Minimal distances of the fireplace			
zur Heizkammerwand	cm	6	6
to mounting floor	cm	15	15
Thermal insulation without / with air gratings [1)]			
Mounting wall	cm	0	0
Floor	cm	0	0
Ceiling	cm	4	4
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	36	36
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	276 / 52	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -	

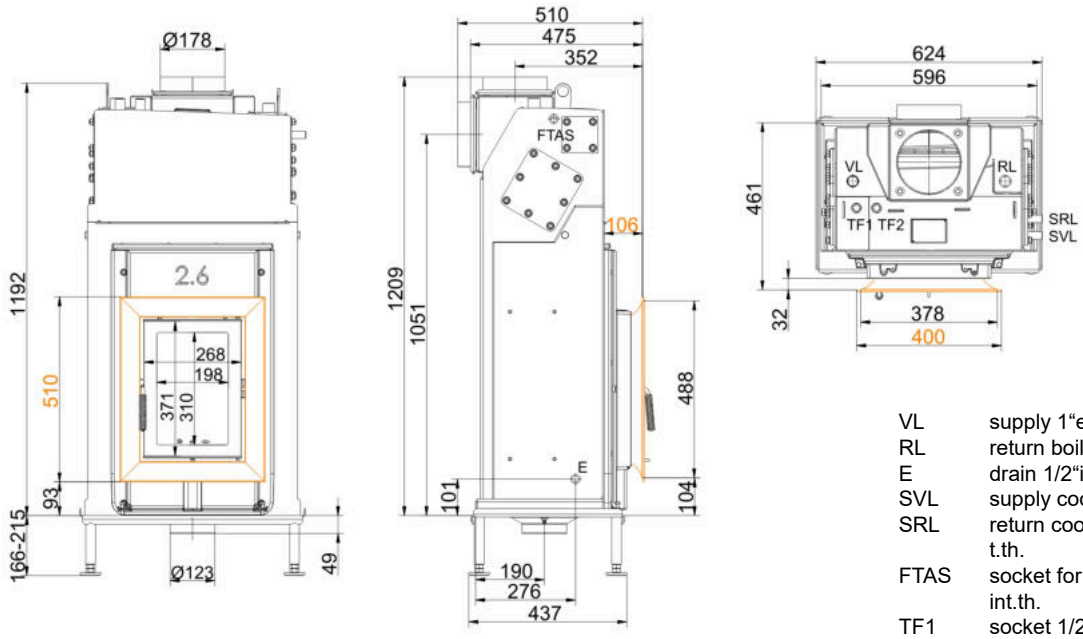
1) Values determined with upper air cross- sections; stove cladding is heat emitting

Dimension sheets - HKD 2.6k-SK



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 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“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 cast iron frame

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.

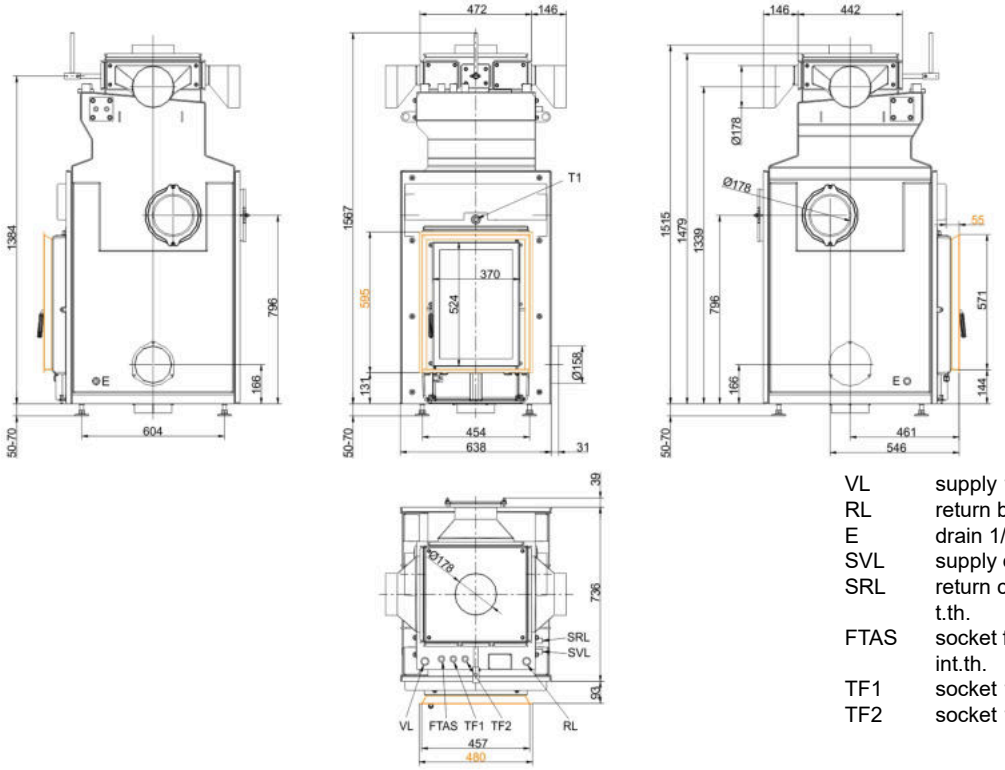
Stand: 2023-11-07

Planning and installation - HKD 2.6k-SK

Tested according to		EN 13229 W	EN 13229 W
Values measured at		Rated power	Practical avg.
Data for functional demonstration			
Rated heat power	kW	8	-
Fire wood volume	kg/h	2.5	4
Combustion performance	kW	10	17
Flue gas mass flow	g/s	9	15
Flue gas temperature after:			
boiler	°C	210	255
Necessary supply pressure	Pa	12	12
Combustion air consumption	m^3/h	25	40
Combustion air connection Ø	mm	125	125
Heat distribution			
Insert / reheating surface	%	15 / -	15 / -
Glass pane (single / double)	%	20 / 15	20 / 15
Boiler	%	65 / 70	65 / 70
Boiler part without insulation, double glass	%	70	70
Boiler part without insulation, single glass	%	65	65
Cross-section of gratings			
exhaust warm air	cm^2	400	400
Recirculation air	cm^2	400	400
Minimal distances of the fireplace			
zur Heizkammerwand	cm	6	6
to mounting floor	cm	15	15
Thermal insulation without / with air gratings [1)]			
Mounting wall	cm	0	0
Floor	cm	0	0
Ceiling	cm	4	4
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	36	36
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	276 / 52	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -	

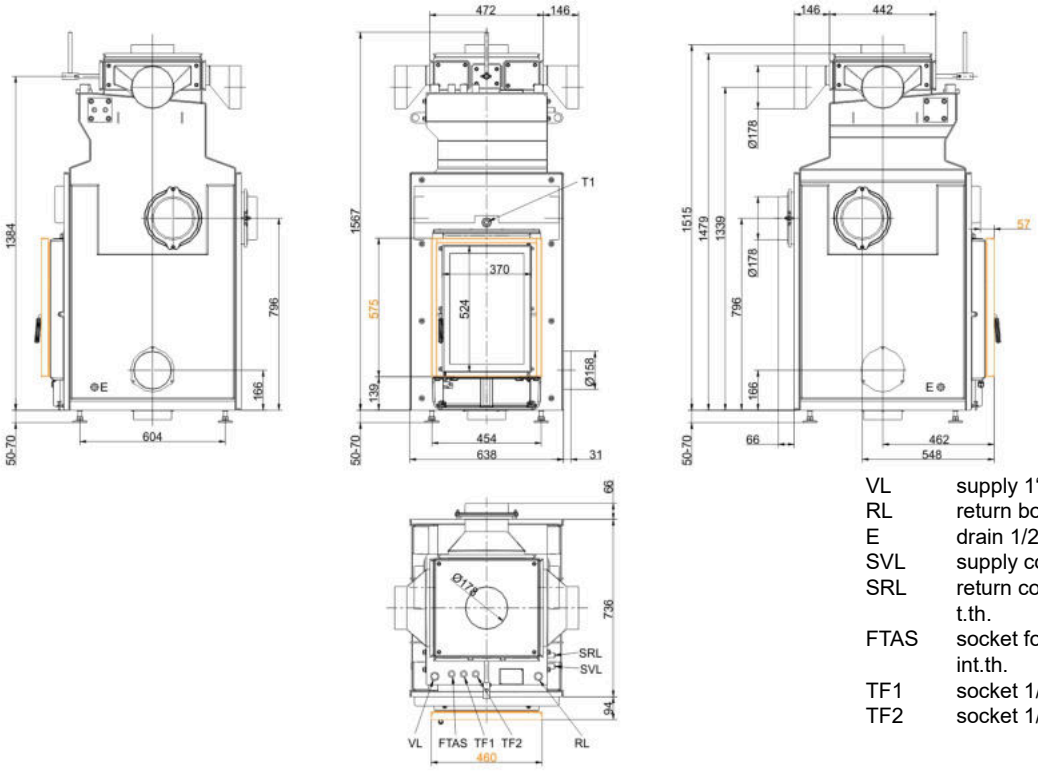
1) Values determined with upper air cross- sections; stove cladding is heat emitting

Dimension sheets - HKD 2.2 XL-SK/h



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.

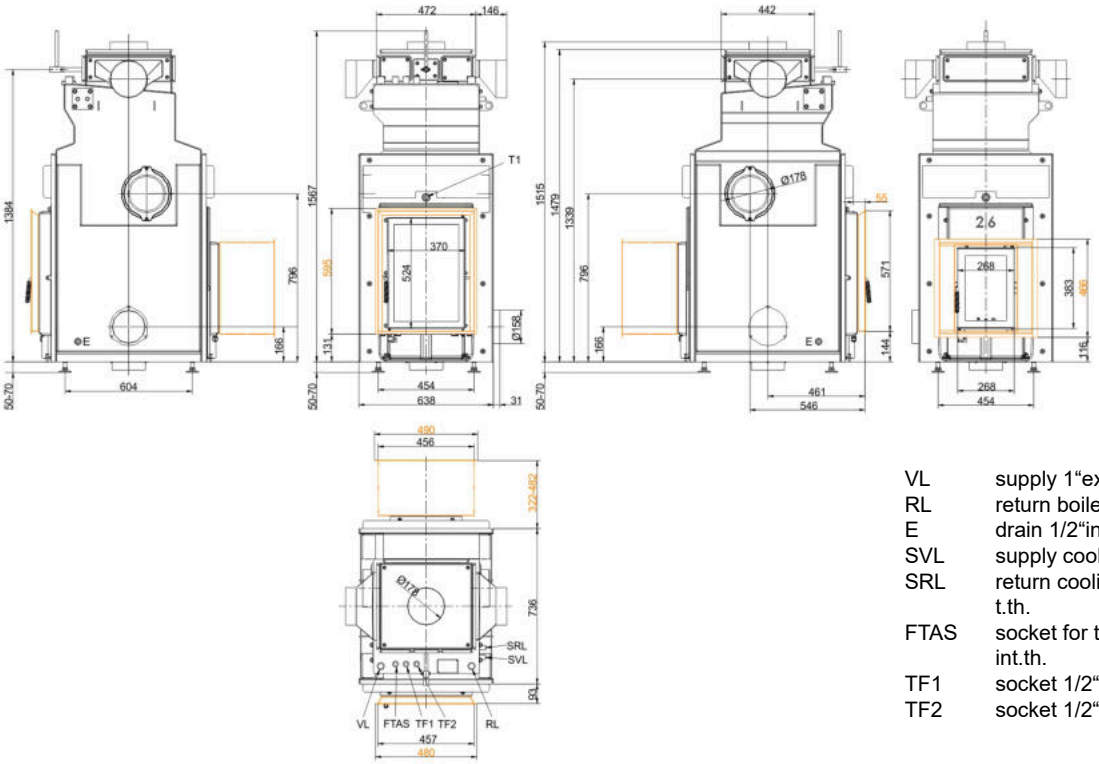
… flat with door frame



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.

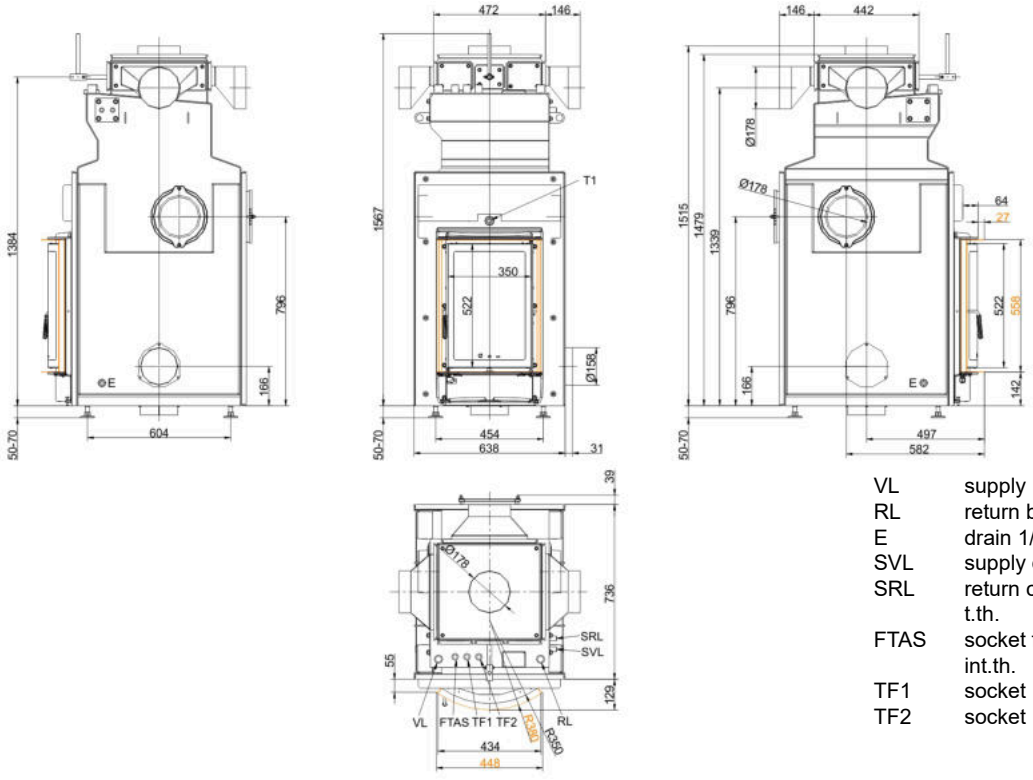
… flat with mounting frame

Dimension sheets - HKD 2.2 XL-SK/h



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.

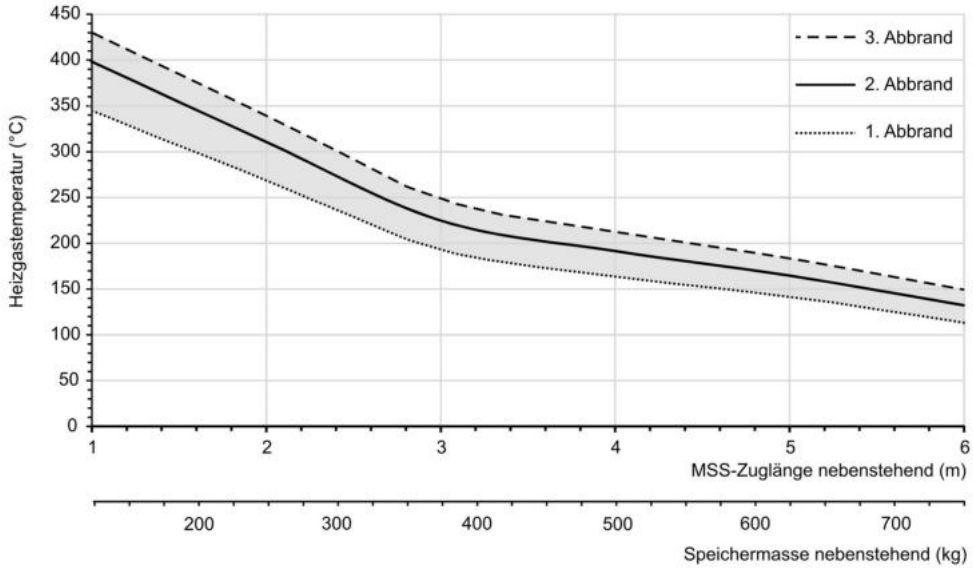
… flat with additional fire door



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.

… round with door frame

Dimension sheets - HKD 2.2 XL-SK/h



Design characteristics for adjacent storage mass

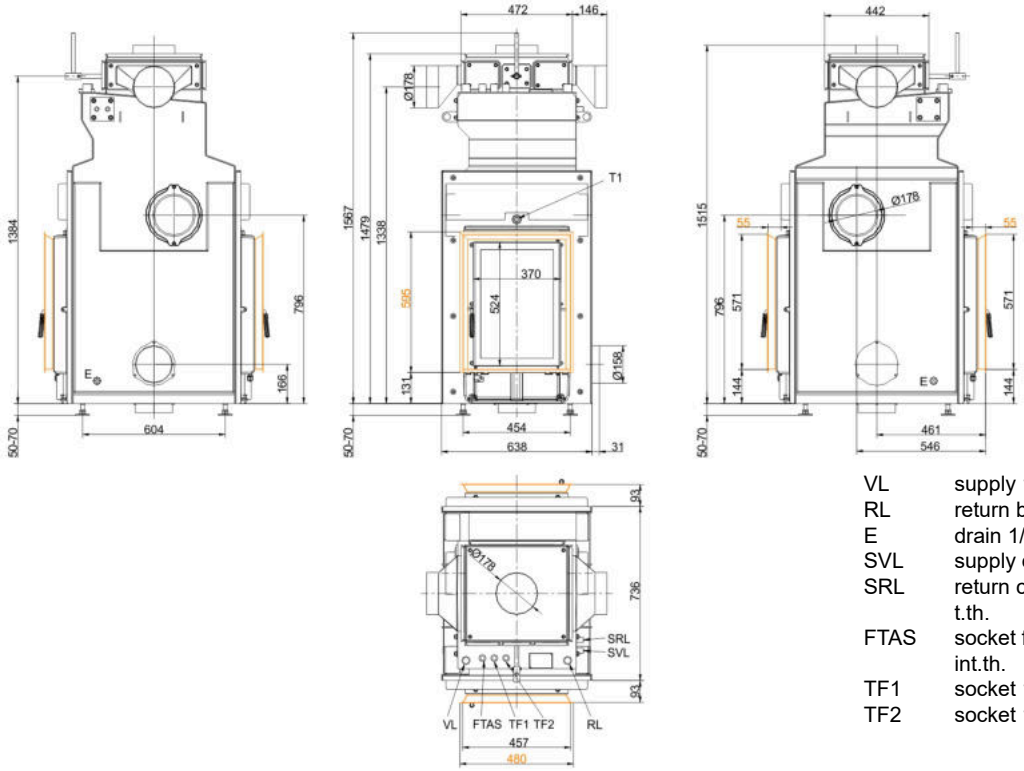
We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Planning and installation - HKD 2.2 XL-SK/h

Tested according to		EN 13229 W	EN 13229 W
Values measured at		-	Practical avg.
Suitable for all construction types according to rules		OK	-
Data for functional demonstration			
Rated heat power	kW	13	-
Fire wood volume	kg/h	3.6	6.0
Combustion performance	kW	15	25
Flue gas mass flow	g/s	13.5	21
Outlet temperature (before reheating surface)	°C	335	410
Flue gas temperature after:			
1 x adjoining cast iron radiator (GNF 8/10)	°C	135	200
4,9 m ceramic accumulator [1)]	°C	-	180
3,4 m accumulation stones (MSS) [1)]	°C	-	210
boiler	°C	135	210
Necessary supply pressure	Pa	15	15
Combustion air consumption	m^3/h	34	55
Combustion air connection Ø	mm	160	160
Heating gas temperature (before the hood/dome variant)			
insert flue outlet nozzle	°C	335	410
Heat distribution			
Insert / reheating surface	%	5 / 5 - 50	5 / 5 - 50
Glass pane (single / double)	%	25 / 20	25 / 20
Boiler	%	25 - 70	25 - 70
Cross-section of gratings [2)]			
exhaust warm air	cm^2	500 / 200 / 300	500 / 200 / 300
Recirculation air	cm^2	500 / 200 / 300	500 / 200 / 300
Minimal distances of the fireplace			
to cladding, insulation layer	cm	6	6
to mounting floor	cm	6	6
Thermal insulation without / with air gratings [3)]			
Mounting wall	cm	8 / 6	8 / 6
Floor	cm	0 / 0	0 / 0
Ceiling	cm	10 / 8	10 / 8
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	91	91
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	378 / 93	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -	

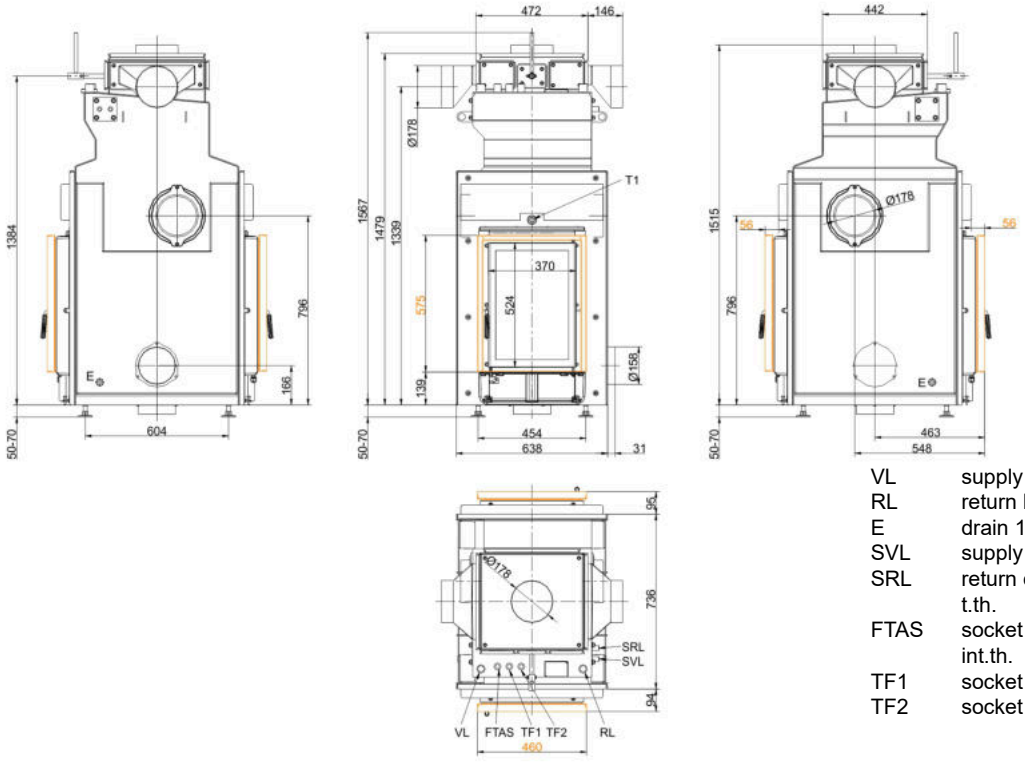
1) Approximate value. Determination according to design characteristics for adjacent storage mass or proof of function provided by calculation
2) for fireplace inserts / flue gas pipe / metallic reheating surface
3) Values determined with upper air cross- sections; stove cladding is heat emitting

Dimension sheets - HKD 2.2 XL-SK/h Tunnel



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.

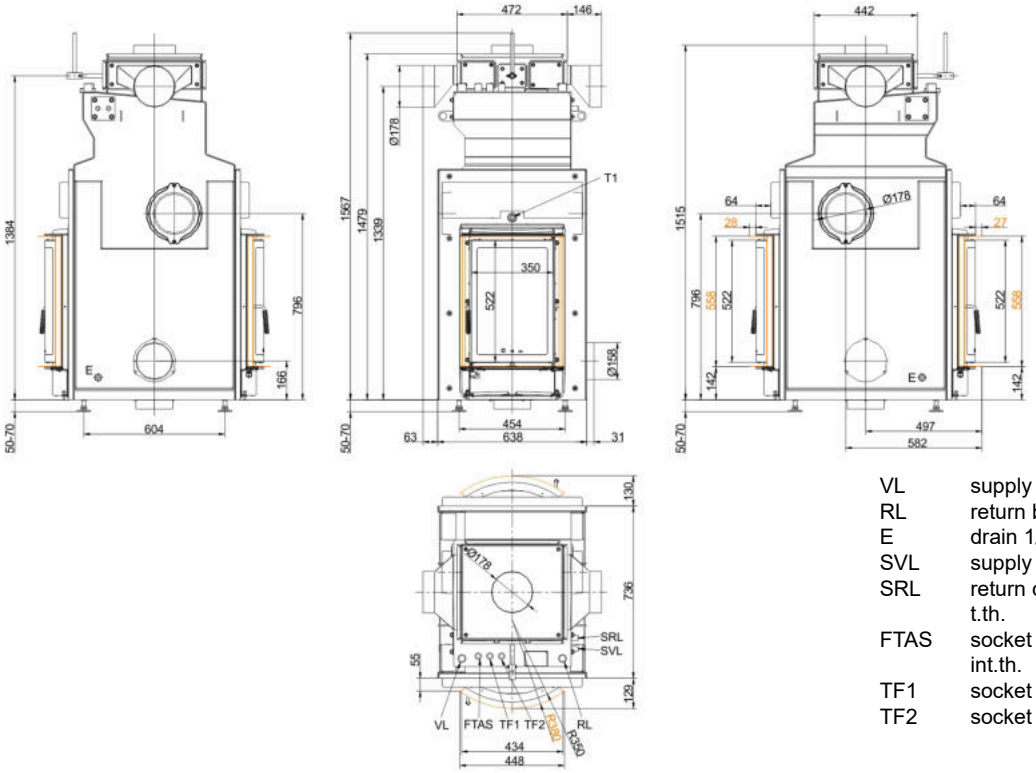
… flat with door frame



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.

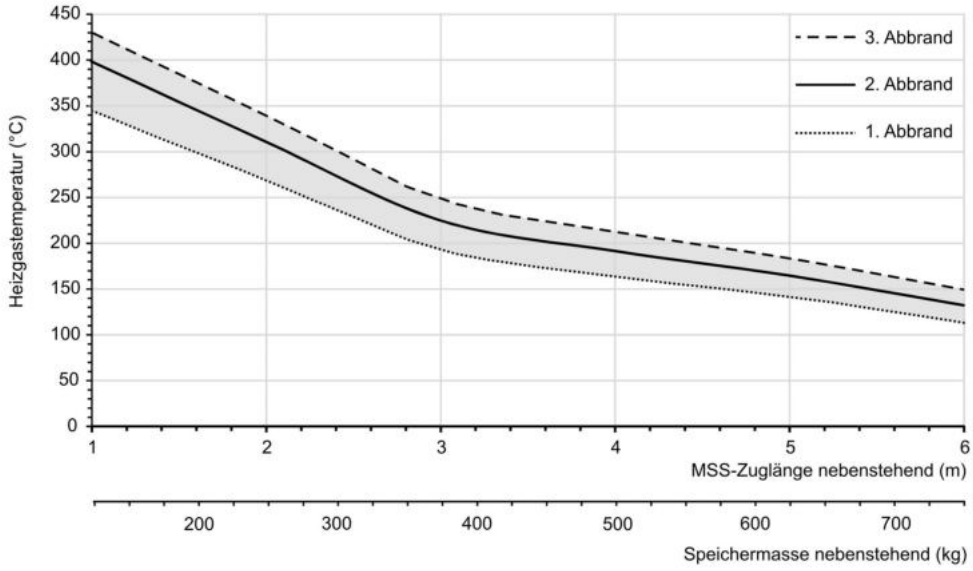
… flat with mounting frame

Dimension sheets - HKD 2.2 XL-SK/h Tunnel



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.

… round with door frame



Design characteristics for adjacent storage mass

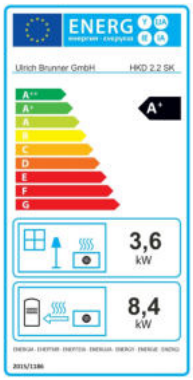
We suggest for CAD planning Palette CAD. Permanent updated drawings: www.brunner.de
Frames/ flue gas outlet connection/ combustion air supply connection/ front variants/ support bearing are marked in color.

Planning and installation - HKD 2.2 XL-SK/h Tunnel

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	3.6	6.0
Combustion performance	kW	15	25
Flue gas mass flow	g/s	13.5	21
Outlet temperature (before reheating surface)	°C	335	410
Flue gas temperature after:			
1 x adjoining cast iron radiator (GNF 8/10)	°C	135	200
4,9 m ceramic accumulator [1)]	°C	-	180
3,4 m accumulation stones (MSS) [1)]	°C	-	210
boiler	°C	135	210
Necessary supply pressure	Pa	15	15
Combustion air consumption	m^3/h	34	55
Combustion air connection Ø	mm	160	160
Heating gas temperature (before the hood/dome variant)			
insert flue outlet nozzle	°C	335	410
Heat distribution			
Insert / reheating surface	%	5 / 5 - 45	5 / 5 - 45
Glass pane (single / double)	%	30 / 25	30 / 25
Boiler	%	25 - 65	25 - 65
Cross-section of gratings [2)]			
exhaust warm air	cm^2	500 / 200 / 300	500 / 200 / 300
Recirculation air	cm^2	500 / 200 / 300	500 / 200 / 300
Minimal distances of the fireplace			
to cladding, insulation layer	cm	6	6
to mounting floor	cm	6	6
Thermal insulation without / with air gratings [3)]			
Mounting wall	cm	8 / 6	8 / 6
Floor	cm	0 / 0	0 / 0
Ceiling	cm	10 / 8	10 / 8
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	91	91
Connections flow / return	inches	1	1
Weight			
Fireplace / combustion chamber	kg	411 / 86	
Meets requirement/limit values for:			
Germany/ Austria / Switzerland / Norway		1.BImSchV (Stufe 2) / 15a BVG (2015) / LRV / -	

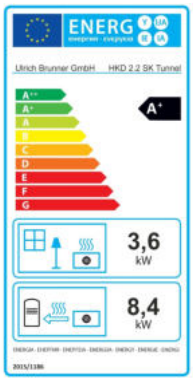
1) Approximate value. Determination according to design characteristics for adjacent storage mass or proof of function provided by calculation
2) for fireplace inserts / flue gas pipe / metallic reheating surface
3) Values determined with upper air cross- sections; stove cladding is heat emitting

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



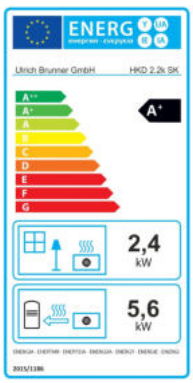
Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	HKD 2.2 SK
Energy efficiency class:	A+
Direct heat output:	3,6 kW
Indirect heat output:	8,4 kW
Energy efficiency index:	109
Fuel energy efficiency (at nominal heat output):	82,0 %
Fuel energy efficiency (at minimum load):	N.A. %
Special precautions: see supplied product documentation	

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



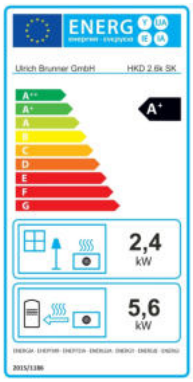
Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	HKD 2.2 SK Tunnel-DHT
Energy efficiency class:	A+
Direct heat output:	3,6 kW
Indirect heat output:	8,4 kW
Energy efficiency index:	109
Fuel energy efficiency (at nominal heat output):	82,0 %
Fuel energy efficiency (at minimum load):	N.A. %
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 2.2k SK
Energy efficiency class:	A+
Direct heat output:	2,4 kW
Indirect heat output:	5,6 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	

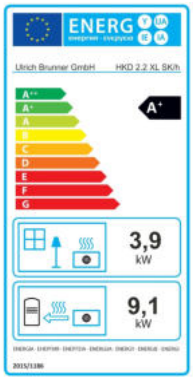
Product data sheet according to (EU) 2015/1186:



Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	HKD 2.6k SK
Energy efficiency class:	A+
Direct heat output:	2,4 kW
Indirect heat output:	5,6 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	

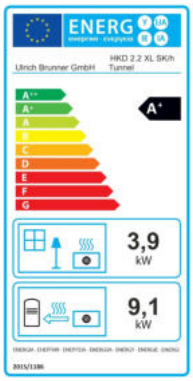
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Product data sheet according to (EU) 2015/1186:



Supplier's name or trademark	Ulrich Brunner GmbH
Model identifier:	HKD 2.2 XL SK/h
Energy efficiency class:	A+
Direct heat output:	3,9 kW
Indirect heat output:	9,1 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 XL SK/h Tunnel
Energy efficiency class:	A+
Direct heat output:	3,9 kW
Indirect heat output:	9,1 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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Email: info@brunner.de

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