



Installation and Operating Manual

ebios-fire - Quadra Inside Automatic I / II SL





PREFACE / QUALITY PHILOSOPHY

You have decided in favour of a SPARTHERM ebios-fire - thank you for your confidence in our company.

In a world of excess and mass production, our company stands for the values expressed by our owner, Gerhard Manfred Rokossa:

'High technical quality combined with contemporary design and service to the satisfaction of our customers, so they will recommend us to others'.

Together with our specialist retail partners, we offer you first-class products that connect emotionally, and will inspire feelings such as a feeling of security, safety and comfort. To achieve this, we recommend that you read the operating instructions carefully in order to get a quick and comprehensive overview of your decorative fireplace.

In addition to information on use, these instructions also include important details on care and operation to guarantee your safety and to protect the value of your ebios-fire as well as useful tips and guidance.

For further enquiries, please contact your specialist dealer.
We hope you enjoy your new fireplace.

Your SPARTHERM Team
G.M. Rokossa

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IMPORTANT INFORMATION

As per the German Equipment and Product Safety Act (GPSG) and our statutory duty to notify, we would like to inform you about heating with this product:

The calorific value of 96% ethanol equates to approx. 29,600 kJ / kg. With fuel consumption of 0.5 l/h (approx. 0.4 kg/h) the heat released is approx. 3,300 W (Quadra Inside Automatic I SL). The Quadra Inside Automatic II SL consumes 1 l/hr, resulting in a combustion heating level of 6,600 W.

Operation of the decorative fireplace requires a plentiful supply of fresh air, otherwise the amount of carbon dioxide created may exceed the permitted concentration in the room air.

SPECIAL INSTALLATION NOTES FOR THE QUADRA INSIDE AUTOMATIC II SL

The design of the Quadra Inside Automatic II SL model qualifies it in Germany as a heating appliance, and it therefore requires official approval as a fireplace. Inform yourself in advance of building regulations, specifications and measures relating to the building of your heating appliance. Should you have any questions, your local chimney sweep will be able to provide you with professional advice. In addition, attention must be paid to national and European standards, relevant directives and specifications for individual federal states and local areas, in particular the combustion directive [Feuerungsverordnung] of the relevant German federal state.

1. GENERAL INFORMATION

Small children, older or frail persons: as is the case with all naked flames, it makes sense to install a safety device for these groups of people. **Danger of burn injuries!** Never leave people in these categories unsupervised beside a burning or recently extinguished ebios-fire appliance. The ebios-fire appliance must not be operated without supervision.

Attention must be paid to applicable German federal state-specific and local directives as well as specifications, including the relevant fire safety specifications of each German federal state and where necessary also the fire safety specifications of VKF, when setting up and operating your ebios-fire.

Ensure sufficient stability when setting up the fireplace and choose a location where movement of the burner during operation as a result of impacts etc. is ruled out.

Please note that the burner channel must never be refilled with fuel by hand from above. All filling must take place directly from the containers, using the integrated pumps.

Only permit people to change the fuel containers who are familiar with the appliance and its safety requirements, and who have received training from you in this operation.

The ebios-fire is not a heating device but a decorative fire. Ensure sufficient ventilation. For safety reasons, the appliance shuts down automatically after 7 hours at the latest.

Bio-ethanol is a hazardous substance and may only be stored in specified quantities and in accordance with legislative provisions. For this, comply with the regulations applicable at the place of use.

In Germany, this is the general ruling for residential accommodation:

Storage in a cellar:	max. 20 litres
Storage in the living area:	max. 5 litres

(Source: Data sheet of information on hazardous substances issued by the German trade association for raw materials and the chemicals industry [Berufsgenossenschaft Rohstoffe und chemische Industrie], as well as technical rules for combustible liquids 20)

Please pay attention to the contents of this Operating Manual.

1.1 SCOPE OF DELIVERY

ebios-fire with the following features:

- Quadra Inside Automatic I SL or II SL housing with burner channel made of stainless steel
- Installation frame for holding the burner (not in conjunction with other ebios products for installation of the burner)
- 1 x canister connection with 2 x hose connections
- 1 x inlet hose (standard length: 2.5 metres / Optional: up to max. 8 metres)
- 1 x overflow hose (standard length: 2.5 metres / Optional: up to max. 8 metres)
- Remote control
- Tabletop power unit with a 1.8 metre length of cable.

2. ASSEMBLY INSTRUCTIONS

Please follow the information below carefully. Bear in mind that bioethanol is a liquid fuel which is highly flammable and which results in high local temperatures when burnt. Please also note that the luminosity of the flame can decrease to such an extent that the flame is no longer clearly visible. Make children and others in the home aware of this. Failure to comply with the instructions for installation and operation can result in dangerous situations and even explosion of the fuel.

Proper installation and handling can ensure safe and reliable operation. The appliance must not be set up in a standalone configuration and must be positioned horizontally. The burner must not be moved while in operation. Construction measures must prevent it from toppling or tilting under any circumstances.

2.1 DESCRIPTION OF FUNCTION

Once the burner is supplied with an operating voltage, it can go into operational readiness mode by actuating the switch on top of the burner. The remote control is then used to initiate the combustion process. During this phase, a pump is operating all the time, and glow ignition is triggered once the level is high enough. At this point, the burner channel fills with fuel that then ignites.

The integrated pump delivers fuel to the channel until the level reaches the fill level sensor. At this point, the pump shuts down.

The level drops as the fuel burns. Whenever the level sensor no longer detects any fuel, the pumps are restarted until the level reaches the sensor again.

The burner is supplied with 2 hoses. One hose is provided to supply the ethanol. The other hose acts as an overflow. Both hoses are connected to the same container. For safety reasons, an empty container should only be replaced with a full one while the burner is switched off.

If the container is empty, the flame will go out and the burner will switch off. In addition, an acoustic alarm is sounded.

Otherwise, when the burner is switched off (by remote control), the pump is shut down. The fuel remaining in the burner channel at that time is pumped back into the tank. The remaining ethanol burns off within about 40 seconds. In isolated cases, this process can take longer.

Both hoses must always be connected to a container!

2.2 TECHNICAL DATA

	Quadra Inside Automatic I SL	Quadra Inside Automatic II SL
Fuel type	Bioethanol (ethanol content 96%)	
Fuel consumption	approx. 0.5 l/hr	approx. 1.0 l/hr
Combustion power	3300 W	6600 W
Minimum room volume per burner *		
Air exchange rate 0.2 hr-1**	418 m ³	836 m ³
Air exchange rate 0.5 hr-1**	167 m ³	334 m ³
Air exchange rate 1 hr-1**	84 m ³	168 m ³
Permitted humidity	max. 60% rel.	
Permitted ambient temperature	0 - 40°C	
Permitted mains voltage	110 - 230 VAC	
Maximum power consumption	approx. 36 W	

** At a maximum combustion time of 5 hours. These details relate solely to the air required by the ebios-fire. Should you have additional air-consuming devices installed in the room, these must be taken into consideration separately.

** The following air exchange rates are given as rough guide values¹⁾:

Air exchange [1/hr]	Comments
0...0.5	Windows and doors closed
0.3...1.5	Window tilted, no roller blinds
5...10	Window half open

¹⁾ Recknagel, Sprenger, Schrameck: Heizung+Klimatechnik, Oldenbourg Verlag

2.3 BASIC INSTALLATION REQUIREMENTS

During installation and operation of the ebios-fire, all relevant national and European standards as well as local specifications (storage and fire safety specifications etc.) must be observed and applied. The list of regulations given below is not exhaustive and relates only to operation in Germany. In other countries, comply with applicable legislative provisions.

BetrSichV	Operational safety ordinance
TRbF	Technical regulations for flammable liquids
BsV	Fire protection directive of the relevant German federal state (Bundesland)
LBO	Federal state construction directives
GefStoffV	Hazardous substances directive

The ebios-fire may only be set up in rooms and locations where there are no hazards due to the site, structural conditions and type of use. The floor area of the installation space must be of a design and size such that the ebios-fire can be operated properly and as intended.

Only permitted and sufficiently strong transport aids may be used to transport the ebios-fire. During transport, there must not be any fuel in the burner channel.

DAMAGE DURING TRANSIT should be reported immediately to your supplier. Protect the cladding and visible elements of the fireplace furniture from soiling and damage during installation and transportation.

It is advisable to keep appropriate fire-fighting equipment on site for liquid fires (fire class B).

Important notice: In Switzerland, special specifications apply to the hourly rate of fuel consumption. Please inform yourself in advance of local provisions.

2.4 INSTALLATION LOCATION

When setting up or installing the ebios-fire, please ensure that the appliance is not located immediately adjacent to major heat sources (heaters, stoves etc.) or in rooms subject to high temperatures (e.g. saunas).

Your ebios-fire must not be installed:

1. In stairways, unless they are in residential buildings with two or fewer apartments.
2. In hallways with general access.
3. In garages
4. In rooms in which highly combustible or potentially explosive substances or mixtures are processed, stored or manufactured in quantities that would be hazardous in the event of ignition or explosion
5. In insufficiently ventilated rooms.
6. In areas accessible to the public which are not supervised.
7. In areas which are not protected against transverse ventilation
8. On (unbuilt) tables, pieces of furniture, shelves etc.
9. In the open air without protection from the elements, and exposed to high humidity levels
10. In the entrance areas of hotel lobbies where draughts are likely to be more prevalent, and where substantial differences in air pressure can be expected.

When setting up the ethanol canisters, always ensure that they cannot topple over. Furthermore, these canisters should only ever be stored in cupboards or cabinets where any accumulation of combustible gases is avoided. There must not be any combustion sources in the immediate vicinity of the ethanol containers and pipework.

Please note that the ethanol container must be located under the burner (maximum height difference of 4 metres, minimum height difference between top edge of burner and top edge of canister opening to be 0.5 metres for every 4 metres), otherwise there is a risk, in the event of a leak, of the uncontrolled escape of ethanol. For this purpose, keep the hoses as short as possible (maximum hose length 8 metres) and protect the hoses against contact with sharp, pointed, hot or abrasive objects.

The storage location for the ethanol canisters, assuming that the ebios-fire 5-litre containers are being used, should have minimum dimensions of 350 mm x 180 mm x 240 mm (H x W x D). Furthermore, the location must be designed to prevent any accumulation of combustible gases, where escaping ethanol can be caught and where the propagation of fire is prevented.

Please also ensure that the drain hose from the ethanol burner to the canister is not on a gradient, and also that it is not U-shaped. Failure to observe this can prevent any reasonable drainage from taking place in the event of an overflow.

Important installation notices:

Ensure that the appliance is absolutely balanced. IMPORTANT! Any failure to observe this point can cause the burner channel to overflow.

The Allen screws in the corners of the installation frame are there to level the entire appliance, not to secure it in its frame.

2.5 INSTALLATION / ASSEMBLY

The ebios-fire Quadra Inside Automatic I SL and II SL are ready-to-use appliances for installation in the top plate of an individually created item of furniture (combustible materials) or in a bespoke open fireplace (non-combustible materials).

The ebios-fire furniture item, whether free-standing or wall-mounted, must be aligned horizontally and secured to prevent it from toppling over. Secure wall-mounted models to the wall and floor-mounted models to either the wall or the floor. Please note the safety distances. (Fig. 10 Radiation range). Rear ventilation must not be closed. Place the burner in the installation frame provided in the Quadra Inside Automatic I SL or II SL.

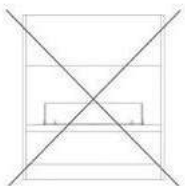
Floor-mounted furniture may only be set up on floors with sufficient load-bearing capacity. If the load bearing capacity is not sufficient, suitable measures must be taken (e.g. a panel for load distribution) to remedy this.

Use suitable fastening material (wall plugs, screws etc.) when securing to the wall.

Without exception NO modifications are permitted to the design of the Quadra Inside Automatic I SL or II SL.

2.6 GENERAL INSTRUCTIONS FOR INSTALLATION IN BESPOKE ITEMS OF FURNITURE

- In order to sell an ebios Quadra Inside Automatic for installation in a bespoke item of furniture, the builder must first accept and sign for the product information for this type of installation (see Chapters 7 and 8).
- Without exception, the furniture design of a bespoke item of furniture for the installation of a Quadra Inside Automatic I SL or II SL must consist as a minimum requirement of a top / table plate and a housing compartment with air supply. In the case of table installations, no housing space is required, but it is still advisable to have such a space.
- For installation in a bespoke item of furniture (combustible materials), always ensure that the Quadra Inside Automatic I SL or II SL may NOT be installed in a furniture niche. **Fire hazard!**



- No objects are permitted above the Quadra Inside Automatic I SL or II SL, up to the room ceiling (ceiling distance >1000 mm).
- The Quadra Inside Automatic I SL or II SL may only ever be installed in the top plate or table plate of a furniture item. (example: bureau, sideboard, pull-out cabinet, table)
- The furniture items must always be anchored to the wall or floor and must be secured to prevent accidental movement, pushing and/or lifting forces. For this, appropriate fastening materials must be selected.

- All inlet apertures and rear ventilation features must be left unobstructed, and must not be blocked since otherwise a heat build-up would take place. **Risk of fire!**
- **The minimum cross section of the free opening for air intake in to a furniture item measures 200 cm² / 400 cm² (I SL / II SL). The rear ventilation features must be dimensioned appropriately.**
- The area below the Quadra Inside Automatic I SL or II SL housing (housing area, Fig. 1) must not be used as a storage area. Storage area and housing area must be separated spatially by a partition floor and a rear panel.

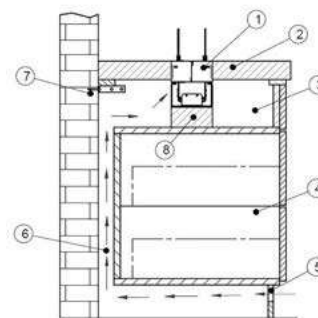


Fig. 1 Example of pull-out cabinet

1	Quadra Inside Automatic I SL or II SL	5	Air inlet aperture 200 cm² / 400 cm² (I SL / II SL)
2	Cover plate / table-top	6	Rear ventilation
3	Housing area	7	Wall mounting
4	Storage room	8	where necessary a plinth base

2.6.1 MINIMUM DIMENSIONS FOR FURNITURE CONSTRUCTION

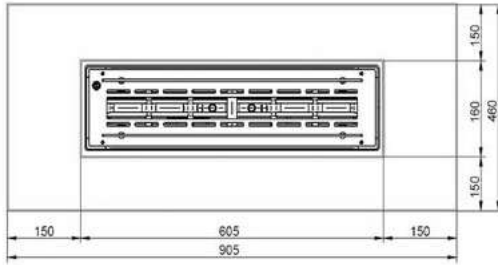


Fig. 2a Minimum dimensions for top/table plate on Quadra Inside Automatic I SL with frame

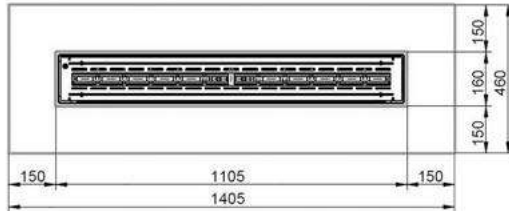


Fig. 2b Minimum dimensions of top / table plate on Quadra Inside Automatic II with frame

2.6.2 FIRE SAFETY/MINIMUM DISTANCES WHEN SETTING UP AS FURNITURE

When setting up a bespoke furniture item against a non-combustible wall, maintain a minimum distance of 150 mm at the back and to the side. The reference point is the outside edge of the Quadra Inside Automatic I SL or II SL housing (see Figs. 4 and 5).

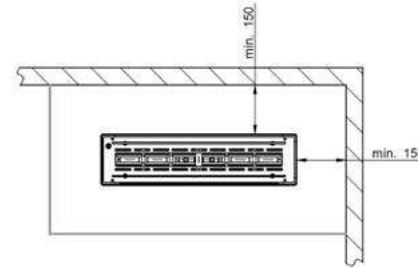


Fig. 4 Minimum distances from the non-combustible wall

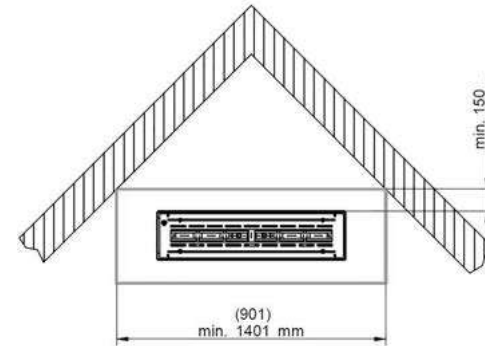


Fig. 5 Minimum distances in a room corner

- A minimum distance of 1000 mm (see Fig. 7) must be kept on either side to combustible components, furniture items, decorations or curtains to ensure sufficient thermal protection. No objects are permitted above the ebios-fire furniture item, up to room ceiling height (min. 1000 mm) (see Fig. 6)!

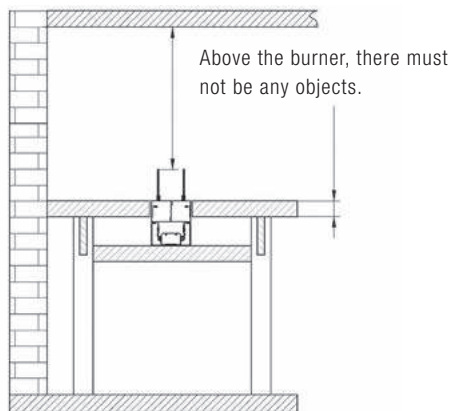


Fig. 6 Minimum distance from ceiling

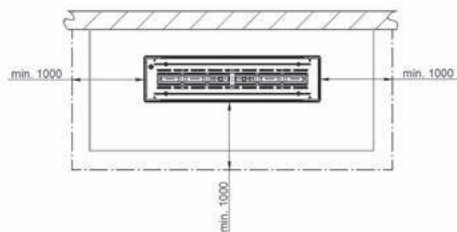


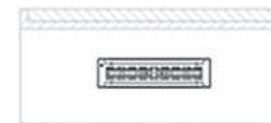
Fig. 7 Minimum distances from combustible components

2.7 GENERAL NOTES FOR INSTALLATION IN CRAFTSMAN-BUILT OPEN FIREPLACE INSERTS / FIREPLACES

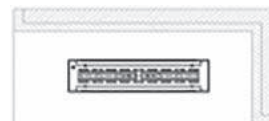
- In all cases, a craftsman-built open fireplace consists of the combustion chamber or firebox, the housing area with air intake and the insulation or front-mounted masonry.
- The fire compartment must NOT be sealed by means of a fire door.
- All inlet apertures and rear ventilation features must be left unobstructed, and must not be blocked since otherwise a heat build-up would take place. **Risk of fire!**
- **The minimum cross section of a free opening for inlet air in to a furniture item measures 200 cm² / 400 cm² (I SL / II SL). The rear ventilation features must be dimensioned appropriately.**
- The floor plate of the combustion chamber (with a cutaway for the Quadra Inside Automatic I SL or II SL) must be dimensioned properly.



Front variant



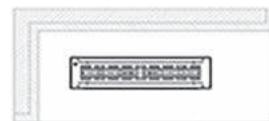
Three-sided open variant



Corner variant, left



See-through variant



Corner variant, right

Fig. 8 Versions

2.7.1 MINIMUM DIMENSIONS FOR A CRAFTSMAN-BUILT FIRE COMPARTMENT

- The width of the combustion chamber is dependent upon the length of burner, and must measure at least 905 mm (Quadra Inside Automatic I SL) and 1405 mm (Quadra Inside Automatic II SL) respectively.
- The minimum fire compartment height measures 600 mm.
- The depth of the fire compartment is defined as being at least 460 mm.
- The distance from the front edge of the burner compartment to the housing frame is defined as 150 mm.
- The minimum width of the housing area base measures 300 mm.
- **The free cross section for the inlet air opening in the housing area measures at least 200 cm² / 400 cm².**
- The storage room for the ethanol canisters must be at least the size defined in 2.4.

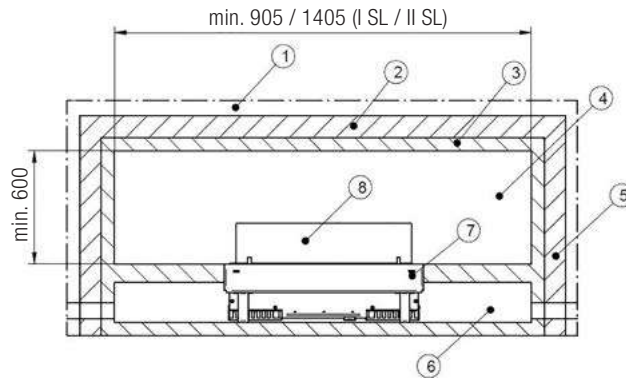


Fig. 9a Minimum dimensions for combustion chamber

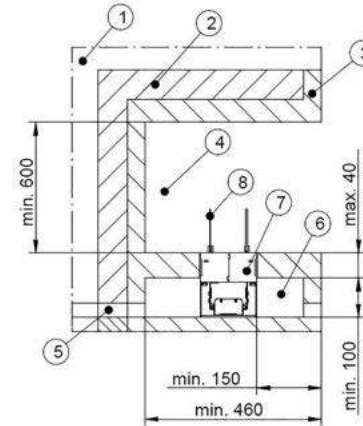


Fig. 9b Minimum dimensions for combustion chamber with frame

1	External cladding
2	Mineral wool insulation (in acc. with AGI-Q 132) $t \geq 60$ mm
3	Vermiculite or calcium silicate panel $t \geq 40$ mm
4	Firebox
5	Inlet air opening 200 cm² / 400 cm² (I SL / II SL)
6	Housing area
7	Quadra Inside Automatic burner
8	Viewing panes

- **Note:** The air inlet opening (5) can be located at the front, back, left or right side of the fireplace structure. It is important that the free air cross section is complied with to assure optimum cooling for the appliance.
- The combustion chamber must be made of vermiculite slabs or calcium silicate slabs with a material thickness of at least 40 mm. These building materials must be approved by the German Institute of Building Technology in Berlin (DIBt), to verify their suitability for use as combustion chamber lining.
- Thermal insulation in the form of mats, slabs or pipe sections made of silicate-based insulation materials (rock, slag and ceramic fibres) in building material class A1 as defined in DIN 4102 Part 1, and that must have an upper application boundary temperature of at least 700°C after testing in accordance with DIN 52271, and must also have a nominal raw density of 80 kg/m³ must be used. These materials must have a corresponding insulation material ID code in accordance with AGI-Q 132 (the details of thermal insulation thickness in Figs. 9a & 9b refer to mineral wool, as defined in AGI Q 132).
- **Ensure that additional air can flow into the housing area without obstruction. Free minimum cross section for inlet air measures 200 cm² / 400 cm². For this, provide appropriate additional air apertures.**

2.7.2 FIRE SAFETY/MINIMUM DISTANCES FOR CRAFTSMAN-BUILT FIREPLACES

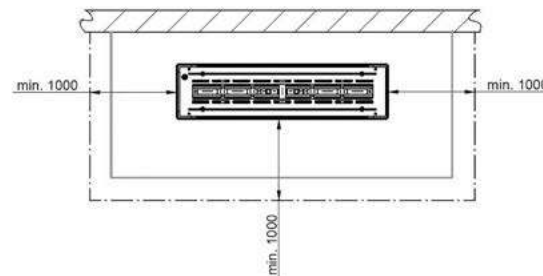


Fig. 10 Minimum distances from combustible components

2.8 SUPPLY OF COMBUSTION AIR

Your ebios-fire removes combustion air from the installation space (closed flue). Ensure that the installation room has a sufficient supply of fresh air. It is possible that there is not a sufficient supply of fresh air if the windows and doors are sealed (e.g. in combination with energy saving measures). Please therefore note without fail the required air exchange rate, the maximum permitted duration for combustion, and comply with the specified room sizes. Failure to do the above can compromise your well-being (headaches, poor concentration) and, under certain circumstances, also your safety and the combustion performance. To protect yourself against these hazards, appliances similar to smoke detectors can be purchased from specialist dealers. These warn of excessively high carbon monoxide concentrations. In addition, air quality indicators are advisable. These analyse the carbon dioxide concentration as well as measuring the temperature.

Open a window to ensure a sufficient supply of fresh air.

3. OPERATING MANUAL

Read these installation and operating instructions carefully before installing and starting up your ebios-fire. Remove all objects from the burner channel of the ebios-fire Quadra Inside Automatic SL.

Please follow the regulations for fire protection and dangerous goods!

3.1 GENERAL INFORMATION ON OPERATION

- Young children, elderly or infirm people: as with all naked flames, it is advisable to fit a protective fixture (available as an accessory from specialist retailers) for these groups of people **Combustion hazard!** Never leave these groups of persons unattended near the stove when an ebios-fire is burning or has just been extinguished! Make these individuals aware of these risks.
- No combustible objects must be placed on the surface of the ebios-fire Quadra Inside Automatic I SL or II SL, either permanently or temporarily. Do not place items of clothing on the furniture to dry. Drying racks for clothes must be set up outside the radiant heat area (Fig.10). Risk of fire!
- Thermal energy is released during the combustion process which causes the burner, the housing surfaces, the glass panes (depending on the model) and the protective glass panes to heat up. Do not attempt to touch these components without adequate protection (i.e. heat-resistant gloves). **Danger of burn injuries!**
- Never leave the fire unattended while it is lit.



- Ensure that the safety panels are installed for the Quadra Inside Automatic I SL and II SL appliances.
- It is recommended to open a window during operation.
- Several decorative ethanol fireplaces may only be operated together if the combined fuel consumption rate of all those devices does not exceed the value permitted under local legislation, and additional measures must be taken to ensure sufficient ventilation. In this context, please pay attention to the table on page 6 of Technical data 2.2.
- It is prohibited to make any modifications to ebios-fire appliances.
- This is merely a decorative fireplace for use in the home and is not intended for heating or continuous operation! Nevertheless, it should be taken into account that heat is generated as a by-product of the combustion process. Amongst other things this can cause increased heating in the room where the fireplace is installed.
- If the burner is not used for an extended period, it is advisable to seal the ethanol container tightly with the correct lid, and to disconnect the power-supply unit from its socket.
- NEVER fill the burner from outside / above. **DANGER TO LIFE**



- The handling of fuel in the vicinity of the hot or burning appliance is associated with significant risk and is prohibited! Note that static discharge is capable of generating a spark and this is enough to trigger combustion.
- Should you accidentally spill ethanol, clean this up immediately and before lighting the burner!
- This burner is only suitable for operation inside rooms. Operation outdoors or in a draught is not permitted.
- The burner can only be operated at ambient temperatures of +15°C to +35°C.

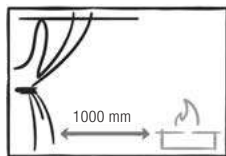
- High humidity and condensation on the burner can cause it to malfunction. You should therefore switch off the appliance, or not switch it on in the first place.
- Please note that the luminosity of the flame can decrease to such an extent that the flame is no longer clearly visible. Make children and others in the home aware of this.
- Do not smoke when handling fuel and operating the ebios-fire.

Failure to follow these basic rules can result in uncontrolled ignition or even explosions!

3.2 FIRE PROTECTION

There must be no flammable objects (decorations, clothing etc.) in the radiation area. In order to guarantee sufficient thermal insulation, there must be a minimum distance of 1000 mm to flammable components at the side, furniture, decorations and curtains!

There must be no objects between the fireplace and the room ceiling (distance to the ceiling 1000 mm).



3.3 FUEL

Bioethanol (chemical formula C_2H_6O) with an ethanol content of 96.6% is used as the fuel. This can be purchased from specialist dealers. It is a hazardous substance as per ADR: Class 3 PG II, UN 1170.

Under no circumstances should other fuels such as petrol, spirit or similar flammable liquids be used. Do not mix the fuels together or with other substances. The burners may only be operated using the prescribed fuel, otherwise the warranty will be rendered void and the appliance may be unsafe or dangerous to operate.

Ethanol is a highly flammable liquid which must be stored well sealed, protected from light and away from sources of fire. Please note that static discharge can cause an ignition spark. It is permitted to store max. 5 litres in the living space and max. 20 litres in the cellar*. Keep bioethanol out of the reach of children.

Please note that ethanol is used exclusively for combustion and it is not suitable for consumption. Supervise your children! If swallowed consult a doctor immediately and present the label on the fuel container.

*(Source: Data sheet of information on hazardous substances issued by the German trade association for raw materials and the chemicals industry [Berufsgenossenschaft Rohstoffe und chemische Industrie], as well as technical rules for combustible liquids 20)

3.4 COMMISSIONING

The ebios-fire-Quadra Inside Automatic I SL and II SL appliances are supplied with empty delivery hoses to prevent any ethanol from escaping or evaporating while in transit.

Ensure that the appliance is absolutely balanced. IMPORTANT! Any failure to observe this point can cause the burner channel to overflow.

Important information on start-up:

- The circular apertures down the longitudinal side of the burner housing must remain free, and must not be plugged or narrowed. They act as inlet air openings.
- Access to the height adjustment screws must be possible at all times.
- The adjustment path of the height adjustment screws is limited. If no satisfactory levelling is possible in this way, construction measures (e.g. rebasing of the installation frame) must be employed to improve the installation situation.
- During first-time operation (commissioning), the hose is still empty. If the ignition interval fails, it is possible that insufficient ethanol is left in the burner channel.
- Ensure that the hoses do not bend excessively while being connected and routed. Always avoid nip and chafing points and tensile stresses.
- Never secure the hoses to the outside of the burner housing. Instead, leave them hanging free.
- Pull the quick-release couplings gently to check that they are firmly connected to the filler adapters.
- Check all hose connections to ensure that the hose clamp is positioned correctly. It must not be possible to pull the hoses off their grommets by pulling them gently.
- The ethanol canister must always be set up under the burner. Never

place the canister above the burner channel.

- Only ever connect the appliance to a professionally installed socket! The power socket should be easy to access and should have a switch.

3.4.1 ASSEMBLY AND SETUP

1. Connect the small round low-voltage connector on the mains power unit to the burner. The connector only fits the socket provided for it on the underside. This socket is located at the same end of the burner as the end where the hoses are connected. (Fig. 1)
2. Then the hoses supplied must be connected to the burner. Slide the ends of the hoses firmly home over the connection grommets on the underside of the burner until the stop. (Fig. 2)
3. Install the Quadra Inside Automatic I SL or II SL in the prefabricated cutaway in the top plate or table plate. To do this, first lower the installation frame into the cutaway. Then install the burner in the installation frame until it locates against the screws in the edges. (Fig. 3) Ensure that the hoses do not jam or damage the cable. Check to ensure that the burner insert is horizontal
 - Please check with a spirit level, but only when the appliance is cold, to ensure that the burner is horizontal.
 - The height adjustment screws must be accessible at all times.
 - The height adjustment screws only have limited adjustment travel. If no satisfactory levelling is possible in this way, construction measures (e.g. rebasing of the installation frame) must be employed to improve the installation situation.
4. Remove the sealing cover from the full ethanol canister. Next, screw the filler adapter to the container. The hose ends with the metal suction grommet should be on the base of the canister to ensure that the container can be emptied as completely as possible.
5. Connect the suction hoses to the filler adapters using quick-release couplings. (Fig. 4)

6. Place the glass panes supplied in the bushes in the top side. (Fig. 5)
7. Plug the mains power unit into a socket.

Important notes for assembly and setup

- No gradients are permitted on the pipework of the drain hose.
- The drain hose must not exhibit a U shape.
- The ethanol canister must be set up at least 0.5 metres below the burner, and not more than 4 metres below it.



Fig. 1

1	Low-voltage connector
2	Fuel connection
3	Overflow



Fig. 2



Fig. 3



Fig. 4



Fig. 5

3.4.2 STARTING THE EBIOS-FIRE

1. Actuate the switch on top of the appliance. This establishes operational readiness. You can shut down the appliance at any time with this switch. (Fig. 6)
2. To do this, press the top button on the remote control (Fig. 7). To shut it down, press this button once again.



Fig. 6



Fig. 7

3. The red illuminated ring on the switch on the top of the burner lights up. The burner then beeps twice briefly, then starts the filling process. Initially, the ethanol collects in the middle of the burner channel. Once it reaches the right level, it can be ignited. Wait until the pumping action has stopped and for the end of the ignition interval.
 - Never bend with your head directly over the burner channel, especially not during the ignition phase.
 - Keep a safe distance of 1 metre away until the appliance has ignited the fuel.
 - Initially, the flames are scarcely visible, especially while the fuel is still cold. As the burner channel heats up, the flames get higher and brighter.
4. If the level when hot is significantly higher at one end of the burner channel than it is at the other end, it must be adjusted using an Allen key on the adjusting screws on the frame.
 - Never perform adjustments while the appliance is lit. Never bend directly over the burner channel.

5. The ignition interval ends automatically after a short period. If the fuel has not burned off by then, switch off the appliance, wait for 10 seconds, then switch it back on again. This then starts a new ignition sequence. This can occur during initial start-up, and after extended periods when the system has not been in use. If no fuel is directed into the burner channel, even after this second attempt, or if the fuel does not ignite, switch off the appliance. Remove the mains power connector from its socket and contact After-Sales Service.

Note: A temperature switch is installed in the appliance that measures the temperature of the burner channel. If you operate and then switch off the appliance, it takes approx. 15 – 20 minutes until the appliance can be switched back on again. This is for your own safety. During this phase, the red LED on the operating switch will flash. Once the cooling phase has been reached, the burner issues an acoustic signal and the LED stops flashing.

For your own safety, please do not light the burner manually, i.e. by hand!!!

3.4.3 CHECKING DURING INITIAL COMMISSIONING

If the initial commissioning process is not documented using a corresponding pre-printed form. Please answer the following questions:

- Is the appliance undamaged?
- Are the accessories all present and correct?
- **Is there a sufficient air flow present during the installation process?**
- Have all distances been complied with in accordance with the specification?
- Is the canister underneath the burner?
- Are all hoses and connections tight?
- Does the operating indicator (red ring on switch) function?
- Can the ethanol reach the burner channel?
- Is the ethanol distributed across the entire burner channel?
- Is the flame pattern uniform?
- The temperatures on the surrounding surfaces are not critical (measure if necessary)?

3.5 TOPPING UP / REPLACING FUEL

- NEVER fill the burner above the burner channel.
- When replacing the container, keep it as far as possible from hot components and combustion sources. **DANGER TO LIFE!**

Unscrew and remove the lid from the new full container (Fig. 8). Pull the quick-release coupling off the hose on the canister (Fig. 9) and unscrew the cover with the hose end from the empty canister. Remove the filler adapter by pulling it upwards out of the empty container (Fig. 10) and lower the suction hose back down into the full container (Fig. 11). Then screw the filler adapter from above onto the full container (Fig. 12). Reconnect the quick-release coupling to the filler adapter (Fig. 13).



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12



Fig. 13

3.6 EXTENDED PERIODS OF DOWNTIME

To shut down the appliance safely, unplug the power unit from its wall socket, then press the switch on the burner or the top button on the remote control.

The red LED that indicates the operating status will go out after a few seconds. The remaining ethanol in the burner channel should burn up after approximately 5-10 minutes.

Before any extended period of downtime, it is advisable to remove the hoses from the containers before switching off the appliance, then wait until a signal indicates that both canisters are empty. This ensures that the hoses are almost completely empty. Then the canisters should be sealed tightly with a lid (not the filler adapter). Remove the quick-release couplings from the filler adapter.

4. MAINTENANCE, CLEANING AND CARE

- Wait until the device has cooled down before cleaning (at least 1 hour)!
- Once a month, the appliance should be checked over and cleaned.

As time passes, different deposits can form into sediment in the burner channel. When cold, this sediment can be removed with a paintbrush, normal brush or cloth, then a vacuum cleaner can be used to remove any residue from the burner channel. It is important that the burner channel is clean and free of loose particulate at all times, otherwise the level control may malfunction.

After a short time, ethanol combustion marks can form on surrounding surfaces and on the slotted cover plate. You can wipe away this residue with a damp cloth or glass cleaner when the appliance is cold.

Remove dust on a regular basis because particles of dust can combust and/or char. This can cause dirt in the room and on the furnishings where the fire is installed.

During the cleaning process, also check the following components to ensure that the appliance is functioning properly.

- Seal integrity of all pipework, containers and connections
- Condition of the copper pipe
- Damage or distortion on the appliance
- Air apertures clean and unobstructed
- Functioning of the remote control and the pumps

Regular maintenance by Spartherm Feuerungstechnik GmbH is required in the event of a fault, when an acoustic signal sounds or after no later than 3 years.

This maintenance work includes replacement of the following materials and the following checks:

- Replacement of inlet and drain hoses
- Inspection of the overflow
- Replacement of the ignition wire
- Replacement of the neoprene hose on the pump
- Triggering and checking of the leakage sensors on the body and pump housing
- Checking of installation location and installation angle

4.1 FURNITURE ITEMS AND GLASS PANES SOOT UP A LOT, DOING SO RAPIDLY AND UNEVENLY

If this did not occur from the very start, please check the following points:

- Has the correct fuel been used?
- Draught in the room?

4.2 INCREASE IN ODOUR LEVEL

- Is there any fuel in the burner channel, although the burner is switched off?
- Was fuel spilt when filling the device?
- Is there sufficient ventilation?
- Are there any particles or foreign bodies in the burner channel?
- Does this odour occur with other types of ethanol?

4.3 FLAME PATTERN CHANGES

Has the correct fuel been used?

Were all safety distances observed?

Is the installation space well enough ventilated?

Is the installation site protected from transverse ventilation?

Are the circular inlet apertures unobstructed?

Is the appliance almost horizontal or is the ethanol distributed across the entire length of the burner channel?

4.4 BURNER FAILS TO IGNITE

- Does the ring on the switch light up red?
- Is there ethanol in the containers?
- Is it possible to see in the hoses that ethanol is being pumped? Is there ethanol in the burner channel?

4.5 THE BURNER GOES OUT SUDDENLY

- After 8 hours the burner shuts down automatically to prevent accidental continuous operation. (after cooling down, the red ring around the switch remains lit, and it is possible to restart the appliance)
- Was the power supply interrupted? After a power failure, the Quadra Inside Automatic I SL and II SL must be restarted.
- Has the burner been set up properly and do the inlet and outlet apertures comply with the specifications? To prevent overheating, the Quadra Inside Automatic I SL and II SL shuts down when housing temperatures rise too far. The red light on the switch then starts to flash.

4.6 AUDIBLE & VISUAL ALARMS



Below is a list of audible and visual signals that the Quadra Inside Automatic can emit. This list shows both the beeps as well as the LED signals of an action / an alarm.

Key:



 Active

 Inactive



Startup

Audible signal	Two short beeps	
LED signal	LED lights up	



Start / Stop

Audible signal	Short beep	
LED signal	LED lights up	



No fuel in the appliance

Audible signal	Two beeps with a pause	
LED signal	LED on	



No flame despite full trough

Audible signal	Beep with a longer pause	
LED signal	LED on	



Overheating

Audible signal	Longer beep with a pause	
LED signal	LED flashes alternating with the beep	



Ethanol spilt (not volatilised)

Audible signal	Continuous tone	
LED signal	LED off	



350 operating hours of the pump reached, after switching on using the main switch

Audible signal	No beep	
LED signal	LED flashes rapidly 3 times	

Ethanol spilt (volatilised)

Audible signal	Long beep with interruption	
LED signal	LED off	

900 operating hours of the pump reached, appliance blocked

Audible signal	Quick, single tone sequence	
LED signal	LED flashes	

Caution: A long continuous beep means that the ethanol has overflowed. This happens, for example, if the appliance is not installed completely horizontally. In this case, disconnect the appliance from the power supply and call customer services.

5. GENERAL WARRANTY CONDITIONS

5.1 AREA OF APPLICATION

These standard warranty terms apply to the contractual relationship between the manufacturer, Spartherm Feuerungstechnik GmbH, and the dealer/distributor. They are not congruent with the contractual and warranty terms which the dealer/distributor offers their customers in individual cases.

5.2 GENERAL INFORMATION

This product has been manufactured in compliance with current standards of quality control. The materials used have been carefully selected and are - like the production process - subject to on-going quality control. Specialist knowledge is required when assembling and installing the product. Therefore, our products must only be installed and started up by specialist technical staff in compliance with current statutory provisions.

5.3 WARRANTY PERIOD

The standard warranty terms only apply within Germany and the European Union. The warranty period and scope of the warranty are ensured within the framework of these conditions outside the statutory warranty which remains unaffected.

Spartherm Feuerungstechnik GmbH provides 24 months of warranty cover for all ebios-fire appliances (standalone and inserts). Spartherm Feuerungstechnik GmbH grants a 6 month warranty on wearing parts in the fire area, e.g. seals and glass ceramic.

5.4 EFFECTIVENESS REQUIREMENT FOR THE WARRANTY

The warranty period shall begin on the date on which the product is delivered to the dealer / distributor. Invoices with delivery notes from the dealer/distributor may be used as confirmation of the warranty commencement date. The warranty certificate for the product must be presented by the claimant upon making a warranty claim. Spartherm Feuerungstechnik GmbH is not obliged to satisfy any claim if such documentation is not presented.

5.5 EXCLUSIONS FROM THE WARRANTY

This warranty does not cover:

- Wear to the product
- Wick / burner fleece due to thermal stress
- The surfaces: discolouration of the finish or on the galvanic surfaces of the furniture and/or burner which are a result of thermal stresses or overloading.
- The viewing panes: contamination, due to soot or burnt-on residues of combustion materials and colour changes or other visual alterations due to thermal loading.
- Use of unsuitable or non-designated fuel. We recommend bioethanol from Spartherm Feuerungstechnik GmbH with a concentration in excess of 96% for your ebios-fire device.
- Careless transportation and/or incorrect storage
- Inappropriate or careless handling of fragile components, such as glass or ceramics
- Improper handling and/or use
- Incorrect filling of system

- Lack of maintenance
- Incorrect set-up/installation of the appliance
- Failure to comply with installation instructions and operating instructions
- Technical modifications made to the appliance by staff from other companies

5.6 RECTIFICATION OF DEFECTS / MAINTENANCE

Independent of any statutory provisions acknowledged as taking precedence over the terms of this warranty, all necessary repair works demonstrably resulting from material or manufacturing defects shall be carried out free-of-charge in the context of this warranty and shall not invalidate the remaining provisions of the warranty.

Within the scope of this warranty promise, Spartherm Feuerungstechnik GmbH reserves the right to either remedy the fault or replace the appliance free of charge. The elimination of defects shall take precedence. The terms of this warranty shall explicitly not extend to any damage or compensation not covered by statutory provisions.

5.7 EXTENSION TO THE WARRANTY PERIOD

The warranty period for this replaced device/the components shall be extended, where claims made in respect of these warranty provisions result in the repair or replacement of defective equipment.

5.8 SPARE PARTS

Only the manufacturer's own components, or replacement parts recommended and approved by the manufacturer, shall be used for appliance servicing and repair.

5.9 LIABILITY

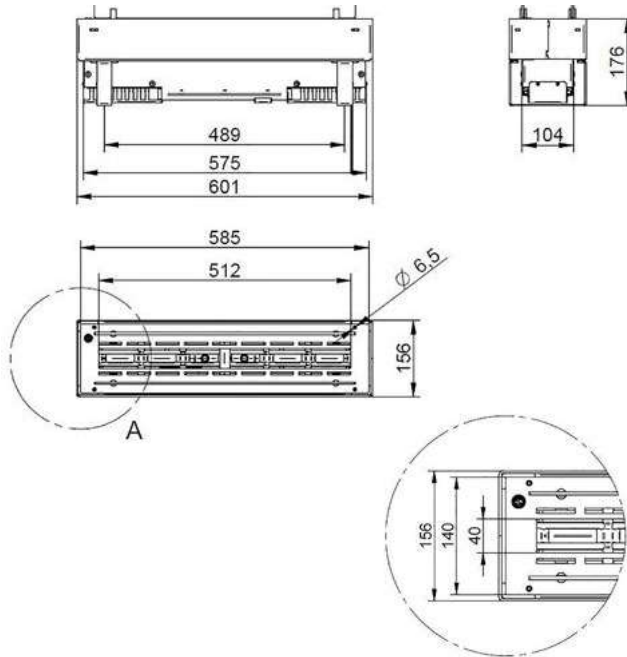
Damages and claims for compensation which are not the result of delivery of a defective appliance from Spartherm Feuerungstechnik GmbH are excluded and are not part of this warranty promise. The above shall not include claims made in respect of statutory legal requirements.

5.10 CLOSING REMARKS

In addition to these warranty conditions and our commitment to them, our dealers and contractual partners are available to advise and assist you. We expressly recommend that our fireplaces and stoves are regularly inspected by a stove fitter or specialist dealer.

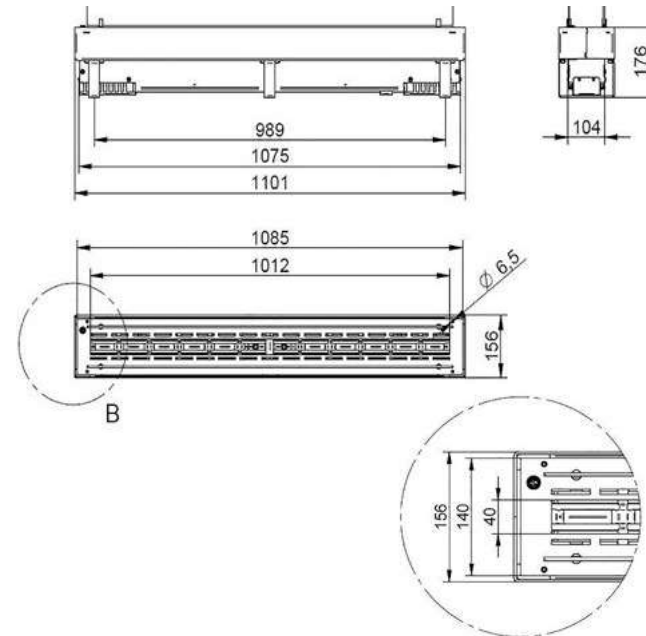
6. DIMENSIONAL DRAWINGS

Quadra Inside Automatic I SL with frame



Detail A

Quadra Inside Automatic II SL with frame



Detail B

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7. CONSTRUCTOR / SPECIALIST TRADE PRODUCT INFORMATION FOR FIRE- PLACE SYSTEMS WITH INDIVIDUAL EBIOS QUADRA INSIDE AUTOMATIC SL BURNERS

ebios Quadra Inside Automatic burner systems include safe burners for decorative fireplaces that use bio-ethanol as a fuel.

With all ebios Quadra Inside Automatic burner systems from Spartherm Feuerungstechnik GmbH, the liquid ethanol in the burner channel is separated by hoses from the ethanol supply stored in external containers. There is always a small amount of combustible liquid in the burner strip that burns up within 5-10 minutes.

The design of the ebios Quadra Inside Automatic Burner was developed to state-of-the-art standards. These burners have safety features that ensure reliable and problem-free operation.

Although the ebios Quadra Inside Automatic burner systems are intended as decorative elements, they do give off some heat as a by-product. This arises from the combustion of ethanol, which on the one hand creates the decorative flame and on the other hand generates heat of about 3,300 W (Quadra Inside Automatic SL 500 with a consumption rate of approx. 0.5 litres an hour) or 6,600 W (Quadra Inside Automatic SL 1000 with a consumption rate of approx. 1 litre per hour). Although the burners emit this heat, under the terms of existing provisions, they are not classed as heating appliances, nor was their technology designed for this purpose.

Please read the "Installation and Operating Manual" carefully and in full, with particular emphasis on the safety notices and measures to take for rear ventilation prior to initial installation and before starting up the ebios

Quadra Inside Automatic burner systems for the first time.

We recommend if you build your own fireplace systems that you measure operating temperatures. For this, suitable contact thermometers or also digital laser temperature measuring instruments are available (e.g. VOLT-CRAFT® IR 900-30S infra-red thermometer, measuring range -50 to +900°C).

For measurements on fireplace inserts made of glass (possibly room dividers in spa and wellness areas or in restaurants, hotels and the like), use adhesive to attach appropriate measuring points. Please pay attention to the notices in the manual of your temperature measuring instrument.

When building your own designs of fireplace systems with ebios Quadra Inside Automatic burner systems, assuming that you also produce your own operating manuals for your products, you should record the temperatures measured by you in that document before handing it over to the buyer and/or first-time operator.

Bespoke installations of fireplace systems with Ebios Quadra Inside Automatic burner systems must not be decorated with seasonal decorative items such as strings of fairy lights, scarves and cloths etc., nor with Christmas or Easter decorations. These could block the air inlet ducts.

Our "Installation and Operating Manual" can only provide advice on the fundamentals of handling and operating the ebios Quadra Inside Automatic burner, and needs to be supplemented with your own manual, detailing the particular features of your end product.

Instructions on use and safety are elementary components of the purchase contract and are always included in the scope of delivery of products from Spartherm Feuerungstechnik GmbH.

If these get lost, please contact us directly for another copy.

8. DECLARATION OF THE BUILDER OF AN INDIVIDUALLY CREATED DECORATIVE FIREPLACE CONTAINING AN EBIOS QUADRA INSIDE AUTOMATIC SL BIO-ETHANOL BURNER AS AN INDIVIDUAL COMPONENT

- The signatory accepts sole responsibility for proper and safe operation.
- The signatory confirms that all contents of the enclosed product information and instructions for use have been read, understood and assimilated.
- The signatory undertakes to produce a dedicated set of instructions for the decorative fireplace he has built that contains the ebios Quadra Inside Automatic Burner, and to present these instructions to the operator at the time of handover of the decorative fireplace.
- The signatory undertakes to provide the operator with detailed training in the operation of the decorative fireplace, also drawing attention to the potential hazards.
- The ebios Quadra Inside Automatic Burner is only supplied once the signed declaration has been delivered, i.e. it cannot be installed until that has happened

Place, date

Signature / Stamp

ATTENTION: Keep in a safe place!

Store these instructions with valid and clearly dated proof of purchase and have the documents ready for our technicians in the event of service work.

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