



Installation and Operating Manual

LINEAR Module XS / M



PREFACE / QUALITY PHILOSOPHY

You have chosen a SPARTHERM fireplace - thank you for your confidence in our company.

In a world of abundance and mass production, we connect our name with the credo „high technical quality combined with a contemporary style, as well as service for the sake of the customer's satisfaction and recommendation.“

We and our trade partners offer you first-class products that are emotionally moving and that provide feelings of security and comfort. To ensure that this occurs, we encourage you to read the operating instructions carefully so that you can become familiar with your fireplace quickly and thoroughly.

In addition to information about operation as well as valuable tips and suggestions, this manual also contains important care and operating instructions for your safety, as well as for maintaining the value of your stove.

Moreover, we show you how to operate your stove in an environmentally-friendly manner. 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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1. GENERAL INSTRUCTIONS

Please consult your district Local authorities before assembling and installing the fireplace. He will advise you of building law regulations and the suitability of your chimney and will conduct the acceptance procedure of your fireplace. The chimney calculation is executed in accordance with DIN EN 13384 with the value triplet specified in this manual.

Small children, elderly or infirm persons: As is the case with all heating devices, it is expedient that you attach a protective fixture for these groups of persons, as the view pane and the cladding parts of the fireplace can become extremely hot! **Danger of burn injuries!**

Never touch the fireplace when it is burning or has just been extinguished! Generally, the fireplace should not be operated for long periods of time without supervision!

IMPORTANT: The enclosed heat-resistant glove is only intended to provide protection from the heat when using the operating handle and the cold hand. The glove is not fire-proof.

National and European standards, the respective state-specific and local directives and regulations, in particular the respective firing installation directive of the German Federal State, must be complied with for the setup and operation of your fireplace insert and for the connection to the chimney.

The fireplace must always be operated with the door closed. Modification of the closing device is prohibited!

Negative pressures greater than 20-25 Pa can influence correct operation. The panel can become increasingly soiled or noise can be intensified as a result!

1.1 INSPECTED QUALITY / DEFINITION

Our LINEAR Module have been inspected pursuant to DIN EN 13240. Performance declaration available at www.spartherm.com.

These fireplaces have a self-closing fire door so that the door only opens for operating the fire area (e.g. cleaning the combustion chamber or for adding fuel). For safety reasons, the closing mechanism must not be tampered with; furthermore, any such action would render the warranty and operating licence null and void. Any technical modification made to the fireplace by the customer will also render the warranty and operating licence null and void.

1.2 SCOPE OF DELIVERY

LINEAR Module with the following features:

- Combustion chamber made of concrete / vermiculite
- Primary and secondary air flow
- Self-closing combustion chamber door with high-temperature-resistant ceramic glass
- Heat glove*
- Rating plate

* **Note:** The provided glove is intended solely as heat protection and is not fireproof!

1.3 DAMAGE WHILE IN TRANSIT

Immediately on arrival, please visually inspect the delivered goods for damage during transportation. Make a note of any damage on your delivery document. Inform your fireplace fitter of the damage before the installation work begins. Protect the unit against dirt and damage when installing the visual parts of the fireplace. Only approved and sufficiently viable transport

aids may be used for transporting your fireplace. The following points must always be followed to assure safe and problem-free transportation.

- For transportation purposes, the product must either be upright or be tilted slightly backwards!
- Hand trucks and transport aids may only be used on the back of the product.

2. ASSEMBLY INSTRUCTIONS

The setting up and installation of your LINEAR Module must be conducted by a professional. Before assembling and installing the fireplace, please consult your local authorities in order to clarify the suitability of the chimney system as well as the installation area and, if necessary, any other issues.

2.1 BASIC REQUIREMENTS FOR ASSEMBLY

For installation, connection and operation of the fireplace, all necessary national and European standards, as well as local regulations (DIN, DIN EN, state construction directives, firing directives, etc.) must be complied with and applied! The following relevant regulations are listed here without any claim to completeness.

FeuVo:	Firing directive of the respective state
LBO:	State building regulations or fire regulations of the
VKF:	VKF (Switzerland)
LRV:	(Switzerland)
1. BlmschV:	First regulation implementing the Federal Pollution Control Act
TROL:	Professional rules of the tiled stoves and air heating building trade (ZVSHK)
DIN 1298 / EN 1856:	Connecting flue pipes for heat-generating systems
DIN EN 13240:	Fireplaces/space heaters for solid fuels

DIN 18896:	Fireplaces for solid fuels. Technical regulations for installation and operation
DIN EN 13384:	Exhaust systems calculation methods
DIN 18160-1/2:	Exhaust systems / house chimneys
DIN 4751 / DIN EN 12828:	Heating systems in buildings Fireplaces/space heaters for solid fuels
VDI 2035:	Water treatment for heating systems
Art. 15a:	B-VG (Austria)

Fireplaces may only be installed in rooms and places in which the location, construction situation and type of utilization do not lead to hazards. The floor area of the installation must be of a design and size such that the fireplace can be operated properly and as intended. The LINEAR Module are open flue combustion fireplaces. This means that the simultaneous operation with a ventilation system (e.g. an extractor fan, bathroom fan, etc.) can lead to problems. In such cases, suitable measures (e.g. a low-pressure switch) have to be taken to ensure safe operation.

2.1.1 INSTALLATION SITE

Your fireplace may not be installed in the following places:

1. in stairwells, except in residential buildings with no more than two apartments.
2. in hallways with general access.
3. in garages.
4. in rooms or apartments that are ventilated through ventilation systems or warm air heating through the use of fans, unless the safe operation of the fireplace is ensured.
5. in rooms in which flammable or explosive substances or mixtures are processed, stored or produced in such quantities that there is the potential for hazards as a result of inflammation or explosion.

2.1.2 MULTIPLE USE

A multiple use of the chimney in accordance with DIN 18160 is possible, since the LINEAR Module has a self-closing fire door. All fireplaces connected to a chimney must also be approved for multiple use!

2.2 TECHNICAL DATA

Technical data	Unit	LINEAR Module XS	LINEAR Module M
Fuel type		Wood logs	
Nominal heat output	kW*	4,0	6,9
Wood feed quantity	kg/h	1,2	2,0
Heat output range	kW	4,0 - 5,2	4,8 - 9,0
Efficiency	%	> 80	> 80
CO content at 13% O ₂	mg/Nm ³	< 1250	< 1250
Dust content	mg/Nm ³	< 40	< 40
Average flue gas temperature at the duct	°C	252	370
Supply pressure	Pa	12	12
Mass flow of flue gas	g/s	3,8	5,0
Combustion air requirement	m ³ /h	11,8	16,6
Weight depending on model	kg	from 56 kg	from 90 kg
Requirements			
2nd Level BImSchV.		✓	✓
EN 13240		✓	✓
DIN Plus		✓	✓
Regensburg Directive		✓	✓
Munich Directive		✓	✓
Aachen Directive		✓	✓
15a B-VG Standard (for Austria)		✓	✓
DEFRA (for Great Britain)		✓	-
Clean Air Act as of January 2011 (for Switzerland)		✓	✓

2.3 DAMPER DEVICE

Damper devices may only be installed in the exhaust gas pipe stub or pipe-line connecting piece. Throttling devices must be easy to operate. They need to have cross-sectional areas at the pipe of at least 20 cm² and not less than 3% of connecting pipe cross-sectional area. The damper device setting must be readily discernible at the operating handle.

2.4 OPEN FLUE

Your fireplace draws the combustion air from the installation area (open flue operation). Ensure that the installation area has a sufficient supply of fresh air (for more details, please refer to your country-specific FeuVO, DIN 18896, the technical regulations, etc.). The fresh air supply must be checked by the installer and the operator. When using more than one fireplace in a single room or linked space, ensure that sufficient air is available for complete combustion! In the case of sealer doors or windows (e.g. in conjunction with energy conservation measures), it is possible for the volume of fresh air entering the room to be insufficient. As a result, the ventilation of the fireplace can be affected. This can affect your well-being and, potentially, your safety. If necessary, an air damper may need to be installed in the vicinity of the fireplace to provide an additional supply of fresh air. In particular, ensure that the necessary combustion air pipes are open during the operation of the fireplace. Simultaneous operation with a ventilation system (e.g. cooker hood, bathroom fan, etc.) in the same room or connected space can adversely affect the function of the fireplace (to the point of smoke or exhaust gas accumulating in the living room, despite the firebox door being closed). Therefore, the simultaneous operation of such devices with the fireplace is not permitted without appropriate measures being taken!

3. FIRE SAFETY

General information about fire safety

Fireplaces are heat generators and are subject to regulations and necessary measures for fire safety. When selecting the place of installation, the fire safety regulations and the recommended minimum clearances of the device must be observed. In general, a wall clearance of at least 5 cm from the back wall must be adhered to. For reasons of safety and fire protection, ensure greater distances from walls that require protection (e.g. flammable components).

The following table documents the permissible distances. Be sure to comply with the specified distances.

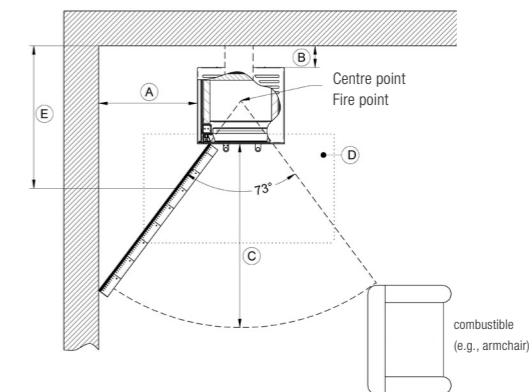
		LINEAR MODULE XS	LINEAR MODULE M
Distance to side wall A (cm)	combustible	10	15
	not to be protected	10	10
Distance to rear wall B (cm)	combustible	10	10
	not to be protected	5	10
Distance in area of direct radiant heat of Disc C (cm)	combustible	80	95
	not to be protected	80	80
Dimensions of Fire Safety Flooring D (cm)	Length x width	50 x 30	50 x 30
	Radius (in the case of round flooring)	50	50
Distance for area of direct radiant heat (E) cm	-	70	95

In this case,

- Distance A describes the minimum distance from the fireplace sidewall to the installation wall
- Distance B describes the minimum distance from the rear wall of the fireplace to the installation wall
- Distance C describes the the area of direct radiant heat in front of the viewing window of the fireplace oven

During installation, observe the instructions concerning fire safety and ask your local chimney sweeper about any questions.

- Installation walls which are non-combustible or not to be protected are suitable to be permanently subjected to temperatures > 85 °C, due to their construction and their materials.
- Installation walls which are combustible or to be protected (e.g. timber frame construction) must be protected against temperatures > 85 °C.



The sketch represents a possible installation situation and is symbolic of all installation situations of the LINEAR Module.

Prior to the installation of the fireplace, it is necessary to evaluate the installation wall. If the type of installation wall cannot be clearly determined, a specialist (chimney sweeper) must be consulted.

- Wallpaper as wall coverage is not a combustible component, according to DIN 4102-1, and does not require special precautions for fire safety. Please note in this case that the underlying structure of the wallpaper (e.g. wood frame construction) might very well be flammable or have to be protected, and that appropriate precautions must be taken!
- Be sure to observe the minimum distance from the chimney connector to the combustible material(s).
- No flammable objects may be located within a distance of 50 cm above the fireplace!

Special note regarding the minimum lateral clearance

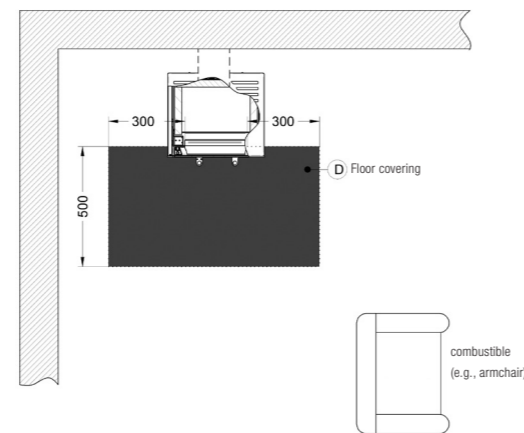
The minimum lateral distance (A) describes the minimum distance from the fireplace to the side installation wall and applies from the rear installation wall to the beginning of the area of direct radiant heat (E) of the windscreen. In certain installation situations, the minimum distance to the wall (A) must be adjusted with regard to the protruding radiation area.

3.1 AREA OF DIRECT RADIANT HEAT

Floor coverings near the fireplace

In front of the combustion chamber opening, floors are to be protected from combustible materials by a covering of non-combustible material. The covering must extend at least 50 cm to the front and at least 30 cm to each side (see Points C and D of the illustration), measured from the opening of the combustion chamber or the inspection glass!

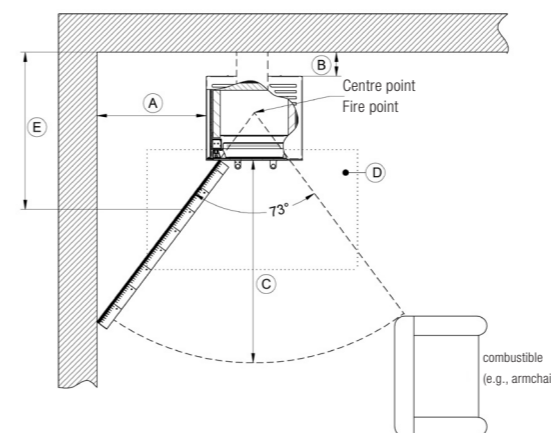
No combustible components, furniture, curtains or decorations may be placed in the area of direct radiant heat of the combustion chamber door or inspection glass. This distance may be reduced to 400 mm if a radiant heat protection plate is installed on both sides between the fireplace and the flammable elements.



3.2 AREA OF DIRECT RADIANT HEAT

Measuring the area of direct radiant heat

In order to lay out the area of direct radiant heat of the fireplace, put a measuring device (ruler or tape measure) on the surface of the fireplace door and measure past the side door pillar to the center of the fireplace. In the resulting angle and the Distance A, no combustible components or components which are to be protected may be placed to the sides. The inspection of your fireplace prior to initial operation will be conducted by the responsible chimney sweeper. He can also advise you in advance about the installation conditions on site and give you information about the proper construction of your fireplace.



3.3 SHUT-OFF DEVICE

The construction of exhaust systems must comply with the professional rules of the tiled stoves and air heating building trade (TROL). Fireplaces need to have a shut-off device in the exhaust path. These devices must not be self-closing and must not be positioned in a way that could prevent or hinder the inspection and cleaning of connecting pipework. The position of the shut-off device must be visible from the outside, e.g. from the position of the operating handle. Shut-off devices may only be installed in the exhaust manifold or collecting pipe, the flue gas pipe stub or the pipeline connecting piece.

3.4 CONNECTING PIECE

Your fireplace is connected to the chimney with \varnothing 130 mm connecting pieces made of steel plate which is at least 2 mm thick. These connecting pieces must satisfy the requirements specified in DIN 1298 and DIN EN 1856-2 and must be connected to the chimney / flue gas system in accordance with the requirements specified in DIN 18160 or the country-specific regulations. Ensure that the flue gas pipe takes the shortest possible route upwards towards the chimney. To achieve this, ensure that the flow of exhaust gas is redirected as few times as possible. Ensure that the exhaust pipe is stable/robust; where appropriate, the exhaust pipe may need to be secured with brackets. If the exhaust pipe leads through a combustible wall or is located close to any combustible components, the exhaust pipe is to be insulated according to the respective regulations. In all cases, the connecting pipe must be mounted in such a way that the connecting pipe can be cleaned at any time. To achieve this, ensure that a sufficient number of cleaning apertures is provided. The minimum distance from the chimney connector to any combustible components can increase the distance from the fireplace to combustible components, in accordance with manufacturer specifications. The specified minimum distances to combustible components as stated in these instructions refer to the fireplace and must be adjusted if necessary.

4. INSTALLATION

Your LINEAR Module must only be installed on floors with an adequate load capacity. Please note the total weight!! The load capacity may have to be ensured through a sufficiently thick surface (weight distribution). When choosing the place of installation, please also note the necessary measures for fire safety in the floor area. To align the fireplace, the four leveling feet on the side, on the front or in the rear can be adjusted with a wrench so that the LINEAR Module and (if necessary) the base are balanced.

4.1 INSTALLATION WITH BASE

Base A is factory mounted on the LINEAR Module.

For the other optional Bases B, C and D (only with LINEAR Module XS), the installation of the LINEAR Module should occur at the desired position. During installation, ensure that the accompanying anti-slip pads are placed under the adjustable feet. These prevent slippage and scratches on the surface of the base.

4.2 DISASSEMBLY AND ASSEMBLY OF THE COMBUSTION CHAMBER DOOR

Please follow these steps for disassembly / assembly of a combustion chamber door. These activities should be conducted with caution; otherwise, damage to cladding parts / door can not be excluded. We recommend protecting cladding parts / benches through the use of padding.

DISASSEMBLY:

1. Use a screwdriver or similar tool to remove the securing clip from the hinge side of the door.



2. Use a screwdriver or similar tool to remove the securing clip from the hinge side of the door. Swing the door open. Then, tighten the Allen screw on the lower hinge with a 3 mm Allen key.



3. Grasp the door from below. With a slight lifting motion, lift the door slightly so that the lower pin of the hinge is exposed.



4. In this position, pull the door down and a little forward.



5. Now let the door drop a bit so that the door can be slid and removed from the upper track

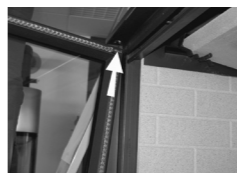


Now the door is free and can be carefully placed aside.

ASSEMBLY:

The assembly occurs in the reverse order:

1. Introduce the door at a slight angle in the slot of the hinge side. When doing so, support the door from below, so that the cladding parts do not get scratched.



2. Then, swivel the door and insert it with the lower pin into the lower slot. So that the Allen screw slides into the track, move (turn) the door a little.



3. Loosen the Allen screw on the lower hinge with a 3 mm Allen key.



Close the door and then slide the securing clip back on the pin.

4.3 COMBUSTION CHAMBER LINING

In the warm-up phase, it may be that the lining is covered with a dark surface. After reaching the operating temperature, however, the combustion chamber will be burned free. Cracks are not a reason for a complaint, because the linings are exposed to very high loads. A stress or strain crack is not serious and does not constitute a functional deficiency. However, combustion chamber lining parts which have changed their position should be replaced. If replacement parts are required, you can order them from your fireplace fitter (see Fig. 10).

Representation: LINEAR Module M

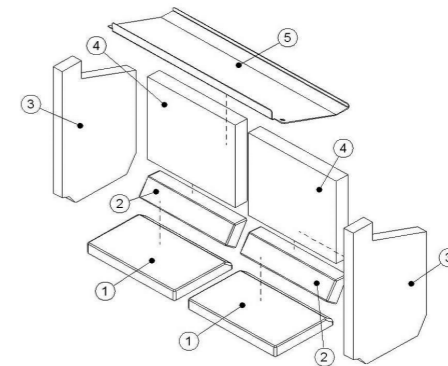


Fig. 10

Component	LINEAR Module XS		LINEAR Module M	
	Number	Part no.	Number	Part no.
1	1	1032854	2	1017404
2	-	-	2	1017405
3	2	1032859	2	1017461
4	1	1032855	2	1017462
5	1	-	1	-

Installation of the combustion chamber lining:

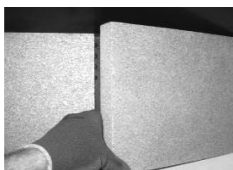
1. Install the floor stone(s) (Pos. 1), and only install border stones on LINEAR Module M (Pos. 2).



2. Then, insert a side wall stone (Pos. 3) and then the baffle plate Pos. 5). Insert the second side stone within easy reach, so that you can reach and insert it with one hand.



3. Finally, install the back wall stone(s) on version (Pos. 4).



The disassembly occurs in the reverse order!

5. OPERATING MANUAL

Read these installation and operating instructions carefully before the installation and commissioning of your fireplace. All objects are to be removed from the combustion chamber (except for the combustion chamber lining; Ask your dealer for instructions regarding the operation and functioning of the fireplace! National and European standards as well as local regulations must be observed in the operation of the fireplace!

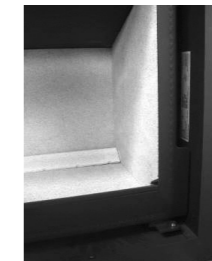
5.1 GENERAL OPERATING INSTRUCTIONS

- Small children, elderly or infirm persons: As is the case with all heating devices, it is expedient that you attach a protective fixture for these groups of persons, as the view window and the cladding parts can become extremely hot! **Danger of burn injuries!** Never leave these groups of persons unattended near the fireplace when a fire is burning or has just been extinguished! Please draw the attention of these groups of people to this source of danger.
- Never place combustible objects on the free surfaces and cladding parts of the fireplace. Never place laundry items to dry on this fireplace. Stands for drying clothes should only be set up outside the area of direct radiant heat!
- Through the burning process, heat energy is released, which leads to an intensive heating of the fireplace components, such as the surfaces, the door, the door and operating handles, the glass, the flue pipes, etc. Do not attempt to touch these components without adequate protection (i.e. heat-resistant glove).
- The included heat-resistant glove is only intended to provide protection from the heat when using the operating handle and the cold hand. The glove is not fire-proof
- The fireplace must only be operated with a closed combustion chamber door. The door should always be kept closed, even in the cold state. The door is only to be opened for the purposes of lighting, refueling and cleaning the fireplace!

- The fireplace must not be altered! Do not insert any foreign component (any component not expressly approved by SPARTHERM) into the combustion chamber, combustion passages or exhaust gas flue. Your fireplace warranty will be rendered invalid by any fireplace modification carried out using components not approved by SPARTHERM.
- You may find that extractor hoods, ventilation equipment, etc. installed in the same room (or linked space) as your fireplace have a negative effect on its operation (such as the release of smoke into the room). These devices should not be used at the same time as your fireplace without first ensuring that the necessary room heating system precautions have been taken
- Particularly when using more than one fireplace in a single room or linked space, ensure that sufficient air is available for complete combustion for all the devices!
- Your appliance is designed to operate as a temporary or short-term combustion device. Continuous burning cannot be achieved even through withdrawal of the combustion air and is not permitted! Longer heating time is achieved by a repeated and suitable reloading of fuel.
- Only non-combustible materials may be placed in the lower compartment of the panel!

5.2 RATING PLATE

On your LINEAR Module fireplace, the rating plate is located to the right on the convection air jacket. This rating plate includes technical data and information. The rating plate must not be removed, because it confirms the testing of the device and is required for the acceptance procedure and yearly inspections by the chimney sweep.



Rating plate

6. COMBUSTION

6.1 INITIAL COMMISSIONING

The fireplace may only be installed and assembled by qualified companies. The initial commissioning must only be executed by an expert employee of the installation company. A certificate confirming proper installation and appropriate adjustment / function of all control components and safety components must be given to the owner / operator of the system. When first putting your appliance into service, only start a moderate fire. In this way, you can reduce the risk of cracking the lining of the combustion chamber as a consequence of residual moisture content. Slowly increase the heating for about 3 to 5 firings each to about 30% above the nominal heat output; This will give the corrosion coating applied to the surfaces time to „burn in“ properly. The paint may soften slightly in this process, so please do not place objects on the fireplace or touch the unit. During this burning-in

process, an unpleasant odor (somewhat light smoke) may appear. Therefore, ensure good ventilation during this burning-in process. Open all doors and windows to the outside of the building.

6.2 COMBUSTION AIR REGULATOR

The combustion air regulator controls the secondary air (flows from the top of the combustion chamber window downwards) as well as the primary air (flows under the lower inclined sill in the ember bed).

To start heating, the combustion air regulator must be pushed completely to the right (Figure A). Then, the secondary air and primary air are opened.



Figure A

During combustion, the setting of the „closed position“ (controller almost all the way to the left, see Figure B) is available up to Position C.

During combustion, the combustion air regulator may never be closed less than 10 mm!

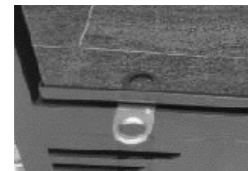


Figure B



Figure C

At the end of the combustion, the combustion air regulator has to be fully close; Position it all the way to the left!

6.3 INITIAL HEATING / BURNING

The firing up of your fireplace is very simple if you follow the instructions below. We recommend the so-called upper combustion because it is lower in emissions, causes less smoke, and therefore results in less soiling of the combustion chamber and screen.

1. The fireplace may only be ignited with a correctly inserted combustion chamber liner.
2. Turn off the air exhaust fans (kitchen, bathroom, toilet, etc.). This will prevent the formation of a negative pressure in the installation area, which may cause the suction of flue gases from the fireplace. Check the combustion air supply (if necessary, open the shutter!)
3. Open the combustion air regulator; push it all the way to the right! See Point 6.2 Combustion controller.
4. Open the combustion chamber door (by pivoting it).
5. Insert 2 split logs into the combustion chamber and add smaller kindling.
6. Place commercially available fire-lighter cubes under the wood to help start the fire. (Paper is not recommended because it burns too fast and causes ashes).
7. Do not use alcohol, petrol, oil or other flammable liquids
8. For more information about the right amount of wood to add, see the chapter on wood feed quantity per hour („6.4.1 Wood feed quantity per hour“).
9. When the wood has burned completely, more can be added as needed (hardwood is ideal).
10. Do not open the door forcefully; otherwise, gases may enter your living room through a suddenly produced negative pressure. At first, open the door slowly and only a crack



11. By stoking the fire during the ember or slow-burning phase, you avoid any smoke escaping when opening the door.

12. Do not repeatedly put more than the recommended amount of wood onto the fire

6.4 ADDING WOOD / END OF THE BURNING CYCLE

Wood may only be added when the fuel has burned down and become embers.

- Open the combustion chamber door very slowly (use the heat-protective glove!) so that no turbulence can arise which can make smoke escape.
- Lay the firewood onto the hot embers (with the bark upwards and the cut face to one side).
- Close the combustion chamber door (use the heat-protective glove!)

The end of the burning process is achieved when the wood has burned completely, and no smoldering or incomplete combustion can occur.

6.4.1 HOURLY WOOD CONSUMPTION RATE

In order to avoid damage due to over-heating (discoloration of the steel, deformation, etc.) and to guarantee optimum performance over the lifetime of the appliance, ensure that the fireplace is fueled in the proper manner. To prevent any risk of over-heating, make sure that the maximum heating capacity is never exceeded. The proper amount of wood feed per hour can be found in the technical data. The individual wood logs should be about 20 cm in circumference! Please note: larger feed quantities cause overheating and damage of the fireplace. Wood briquettes have a significantly higher heat output than does hardwood. The hourly feed rates should be maintained at about 20% less than in the case with wood logs. In the case of damage resulting from overheating (excessive feed quantities per hour), we will refuse any warranty claims.

6.5 CONTROLLING HEAT OUTPUT

Ensure that the combustion chamber door is always tightly closed so that combustion is not accelerated by uncontrolled exposure to air.

The output of your fireplace is also dependent upon the current from your chimney. The current may be affected by the cross-section of the chimney or by environmental influences (such as strong winds, etc.).

6.6 ROOM HEATING CAPACITY

Room heating capacity was previously indicated in accordance with the standard DIN 18893 (last published in August 1987) and is no longer useful for modern homes after 1990. As a comparison value or for use in older buildings that do not yet correspond to the heat insulation standard of 1977, however, the old specification of the room heating capacity can also be still of interest. When operating for the purpose of temporary heating (i.e. with interruptions of less than 8 hours), the nominal heat output of the LINEAR Module yields the following room heating capacity:

		LINEAR Module XS	LINEAR Module M
Nominal heat output		4,0 kW	6,9 kW
Room heating capacity	favorable	88 m ³	> 189 m ³
	less favorable	53 m ³	107 m ³
	unfavorable	34 m ³	73 m ³

Precise descriptions of the terms ‚favorable‘, ‚less favorable‘ and ‚unfavorable‘ can be found in DIN 18893. Simple put, „favorable“ means a situation in which the space has only one exterior wall and otherwise mostly borders heated spaces, while „unfavorable“ is based on the existence of two external walls and adjacent unheated spaces.

The above figures relate to buildings which do not yet meet the requirements of the Heat Insulation Directive of 1977, along with presenting a simplification which is valid for room sizes up to 200 m³. Already for room sizes of 200 m³ or more, the standard DIN 18893 recommends a calculation pursuant to DIN 4701. Nowadays, room heating capacity estimates are made in accordance with TROL guidelines and more detailed calculations in accordance with DIN 12831.

6.7 HEATING IN THE TRANSITIONAL PERIOD / ADVERSE WEATHER CONDITIONS

In the transitional period, which means when ambient temperatures are relatively high (above 15 °C), or upon unfavorable conditions (orographic winds, etc.), a sudden rise in temperature may lead to disturbances in the chimney current, with the result that the heating gases will not be completely removed. To combat this, less fuel should be used and the air supply setting should be increased. This allows more flame to develop and burns the fuel more quickly. The chimney current can also be stabilized as a result. To avoid resistance in the grate, the ashes should be raked carefully and relatively often. Once the chimney current has stabilized, the supply air setting can be reduced (e.g. in the middle position).

6.8 FUEL

Wood has no debts to nature. The foundation „Wald in Not“ [„Forest in Distress“] formulated this very aptly as follows: „Wood is stored solar energy. It is produced sustainably in our forests from solar energy, carbon dioxide, water and dissolved nutrients. Heating with wood therefore means heating according to the cycle of nature. With the help of the energy of the sun and through the growth of trees in our forests, the carbon dioxide released by combustion is stored back in the trees' timber. This timber is then available again as raw material.“(see also www.wald-in-not.de)”.

Fireplaces can only be operated with fuels that are in compliance with the 1st BImSchV. Only logs (with a recommended residual moisture of 20% or less) or wood briquettes pursuant to DIN 51731 are permitted for the fireplace. By the way: A measuring device for determining the moisture content of firewood does not cost much and quickly pays for itself.

No other fuels may be used! The following fuels area also accordingly not permitted:

- varnished or plastic-coated wood
- chipboard or wood treated with timber preservatives
- wood from Euro pallets
- rubbish, household waste, old clothes
- paper, paper briquettes, cardboard
- coal, coal briquettes, lignite
- wet wood (residual moisture content over 25%)
- plastic or foam of any kind
- solid or liquid non-timber materials

It is prohibited to burn these or other inappropriate materials in your fireplace. The burning of fuels other than the firewood and briquettes specified in DIN 51731 can lead to the formation of harmful exhaust gases, impair combustion and result in deflagration.

Operating the fireplace with fuel other than that which is approved will render the warranty invalid!

Use small-sized timber to light the fire. For firewood, use only split wood that is not thicker than about 8 cm at its thickest point. The optimum length is approximately 20 cm. In the case of prolonged heating, do not add too much wood; it is better to add smaller quantities of wood instead.

6.9 CO₂ NEUTRALITY

Wood only emits as much carbon dioxide as it had previously incorporated when it was a living tree. It is immaterial whether the wood burns or rots in the forest – the carbon dioxide output remains constant, and a closed natural carbon cycle results.

Conclusion: When wood burning, nature remains in balance. Germany law regulates the sustainable management of forests. This obligation leads to an increase in timber volumes, so that the amount of wood which is burned is not greater than that which grows.

6.9.1 WOOD STORAGE

As a rule, it is recommended that firewood be protected from moisture and stored in well-ventilated conditions for approximately 2- 3 years (e.g. under a roof overhang turned away from weather-related elements). A wood-moisture level of < 25% is achieved much more quickly under optimal storage conditions.

That is why you should store your firewood in split form: the bark prevents moisture from escaping. For good ventilation, a hand's distance should be left between the logs; this will allow air to circulate properly and softening moisture to be removed by the air. Below the wood pile, there should be a distance from the floor of about 20-30 cm. The additional intake of moisture through precipitation (e.g. rain or snow) should be avoided. Timber storage in garages, under plastic or in poorly ventilated basements is not recommended because the moisture which is present in the wood cannot easily escape.

6.10 YOUR CONTRIBUTION TO ENVIRONMENTAL PROTECTION

Whether or not your fireplace burns in an environmentally-friendly way is very much dependent on the choice of fuel and the manner in which the fire is operated. The following tips should help you operate your fireplace with minimum harm to the environment:

- If possible, avoid using resinous wood (spruce, pine, fir). With these types of wood, the shield of your fireplace can be covered with soot more quickly, and it is more likely for sparks to spread. Therefore, for safety reasons, please use only the wood of deciduous trees (birch, beech, oak and fruit trees).
- Adapt the amount of wood to the respective need for heat.

To verify whether the combustion in your fireplace is clean and low in emissions, you can do the following:

- The ashes should be white. A dark colour indicates remaining charcoal and incomplete combustion.
- The exhaust gases at the chimney head should have as little visibility as possible (the less smoke, the better the combustion).
- The combustion chamber liner in your fireplace is bright and not covered with soot after a fire has burnt.

Note: The fireplace must not be used as a waste incinerator! Furthermore, remember that your stove is designed only for temporary burning. Continual burning is not permitted!

7. CLEANING AND CARE

The fireplace may only be cleaned when cold. Bear in mind that through cleaning, the installation room and your clothing can become dirty. We recommend that the area around the combustion chamber opening be protected with foil or cloth to prevent soiling, and that you wear work clothes. After cleaning, all the dismantled parts are to be reinstalled again.

7.1 CLEANING THE COMBUSTION CHAMBER / CLADDING PARTS

- The fireplace, the combustion chamber, the smoke collecting chamber with the heating gas diverter, the combustion air system and the connection pieces to the chimney must be inspected and cleaned at regular intervals each year and, if necessary, also during and after each heating season; consult your fireplace dealer or district chimney sweeper in the case of any relevant questions. Remove the deposits by means of a hand brush and/or an ash vacuum (commercially available). The chimney should be cleaned at regular intervals by the chimney sweeper! Furthermore, the fireplace should be inspected annually by a professional.
- Ash removal: Your fireplace is suitable for burning dry wood, which burns best in its own ashes. If you still want to remove the ash from the combustion chamber, open the fireplace door and sweep the ash, e.g. on a dustpan, or vacuum the combustion chamber with the ash vacuum. Then dispose of the ashes properly
- Please note that the embers can continue burning for up to 24 hours or more
- Cleaning the ceramic glass pane: The glass can be cleaned easily by using a commercially available fireplace glass cleaner, which you can acquire at your local retailer. The fiberglass seals should not be soaked with detergent! Wipe dry afterwards with a dry cloth (do not scrub the glass pane!).
- Painted surfaces and the cladding parts can be cleaned with a damp cloth without detergent (do not use microfiber!)

- Stainless steel surfaces can be cleaned with standard stainless steel cleansers. Only use this in the direction of the grain!

During the heating season, regularly remove dust from on and under the fireplace, because the dust particles can burn or char. This can lead to the contamination of the installation area and its furnishings, or even to odors.

7.2 CHIMNEY FIRE

The combustion of wood (especially coniferous wood) will cause sparks to travel from the fireplace into the chimney. This may ignite the soot in the chimney. (This rarely happens if the chimney is cleaned regularly by the chimney sweep). The chimney burns. This can be recognized by flames that blaze from the chimney opening, excessively flying sparks, smoke and odors, as well as the chimney walls becoming progressively hotter. It is important to act properly in such a case. You can alert the fire brigade via an emergency call. The chimney sweep should also be informed. Combustible objects should be located away from the chimney

Warning: Under no circumstances should the fire be extinguished with water in the meantime. Temperatures in a chimney fire can reach up to 1,300 °C. Extinguishing water would immediately create steam. A 10-liter bucket of water yields 17 cubic meters of steam. The enormous pressure created as a result could push apart the chimney. After the chimney is burned out, an expert has to be commissioned to examine the chimney for cracks or leaks and, if necessary, to put it back in working condition.

7.3 MAINTENANCE

The door seal is to be checked regularly. This seal might need to be replaced (in the case of wear, breakage, etc.). The combustion chamber lining must be checked at regular intervals. It consists of natural products that are subject to expansions and contractions during every heating process. As a result, cracks can appear. As long as the combustion chamber lining

maintains its position in the combustion chamber and does not break, it is fully functional. For proper function, annual maintenance of the fireplace by a specialist (preferably before the heating season) is essential! The fireplace must not be altered! Only original spare parts that have been approved by the manufacturer may be used! If you have any questions, please contact your specialist dealer.

8. TROUBLESHOOTING

You can resolve the following problems regarding your fireplace on your own; for other issues, please contact your dealer, installer or tile fireplace builder.

8.1 GLASSWARE QUICKLY BECOMES IRREGULARLY AND SEVERELY SOOT

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

- have the correct burning materials and equipment been used?
- no transition period?
- no temperature inversion?
- does the accumulation of soot occur quickly within half an hour? (becoming progressively dirty from the operation of the system is normal. When driving, a car window becomes dirty, too!)
- is the seat of the seal undamaged?
- is the wood dry enough?
- is there enough wood on the fire? (An insufficient amount of wood can result in temperatures in the oven not being high enough).

8.2 A FIRE CAN ONLY BE IGNITED WITH DIFFICULTY

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

- have the correct burning materials and equipment been used?
- is the wood dry enough?
- is the wood too thick?
- is the air supply sufficiently ensured?
- no transition period?
- no temperature inversion?

8.3 SMOKE ESCAPING WHEN ADDING WOOD

- See Point 8.1 regarding all questions .
- is the chimney free?
- has your fireplace already reached the operating temperature?
- did you open the door slowly at the beginning?

8.4 BURNING TOO FAST / WOOD CONSUMPTION IS TOO HIGH

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

- has the wood been split sufficiently?
- is the chimney current light enough?
- are you using hardwood with 15-20 % remaining moisture?
- is the door completely closed?
- have you complied with the recommended amount of wood?

9. GENERAL WARRANTY CONDITIONS

9.1 RANGE OF APPLICATION

These standard warranty terms apply for the contractual relationship between the manufacturer, Spartherm Feuerungstechnik GmbH, and the dealer/distributor. These warranty conditions are not identical to those warranty terms governing relations between the dealer or distributor and his customers.

9.2 GENERAL INFORMATION

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

9.3 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 takes over a 5-year guarantee in respect of:

- Main carcass of fireplace inserts
- Main carcass of fireplace stoves
- Main carcass of fireplace cassettes
- Main carcass of fireplace doors

Spartherm Feuerungstechnik GmbH offers a 24-month guarantee in respect of the sliding door mechanism, operating components such as handles, setting levers, shock absorbers, electrical and electronic components such as fans, rotational speed controllers, the manufacturer's original spare parts, all items purchased as additional extras and all safety appliances.

Spartherm Feuerungstechnik GmbH offers a 6-month warranty in respect of consumables mounted in the combustion / firebox area, such as fire clay, vermiculite, fire grates, seals and glass ceramic.

9.4 WARRANTY REQUIREMENTS

The warranty period shall begin on the date, on which the product is delivered to the dealer / distributor. Invoices or delivery notes 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.

9.5 EXCLUSIONS FROM THE WARRANTY

These guarantee provisions do not cover:

- Wear to the product
- Fireclay / vermiculite: These are natural products which expand and contract on exposure to cyclical heating and cooling. As a result, cracks can appear. The combustion chamber linings will remain fully functional, provided they are still in position and are not broken.
- The surfaces: Discolouration of the coating or galvanic surfaces, due to excessive thermal loading or over-heating.
- The vertical sliding mechanism: Failure to comply with installation guidelines, resulting in over-heating of the guide rollers and bearings.

- The gaskets and seals: Reductions in sealing strength due to seal hardening as a result of thermal loading.
- The glass ceramics: Soiling, due to soot or other burnt-on combustion materials and visual deterioration due to thermal loading.
- Careless transportation and/or incorrect storage:
- Inappropriate or careless handling of fragile components, such as glass or ceramics
- Incorrect operation and/or use
- Lack of maintenance
- Incorrect installation or equipment connection
- Failure to comply with installation guidelines or operating instructions
- Technical modifications made to the appliance by staff from other companies

9.6 ELIMINATION OF DEFECTS / REPAIR

Independent of any statutory provisions acknowledged as taking precedence over the terms of this guarantee, all necessary repair works resulting from material or manufacturing defect shall be carried out free-of-charge 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 device free of charge. The elimination of defects shall take precedence.

The terms of this warranty shall not extend to any damage or compensation not covered by statutory provisions.

9.7 EXTENSION TO THE WARRANTY PERIOD

If a claim is made vis-à-vis the warranty, whether this be for the elimination of defects or the replacement of the device, the warranty period shall be extended for the device/components replaced.

9.8 SPARE PARTS

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

9.9 LIABILITY

Damages and claims for compensation which are not the result of delivery of a defective device 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.

9.10 CLOSING REMARKS

In addition to these warranty conditions and our commitment to them, our dealers and contractual partners are pledged to assist you in both word and deed. We expressly recommend that our fireplaces and stoves are regularly inspected by a qualified technician .

We reserve the right to make alterations to the technical data contained herein and accept no liability in respect of any errors made.

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Spartherm Feuerungstechnik GmbH · Maschweg 38 · D-49324 Melle
Phone +49 (0) 5422 94 41-0 · Fax +49 (0) 5422 9441-14 · www.spartherm.com