OPERATING INSTRUCTIONS FOR

FLAM MULTI-TURBO INSET APPLIANCES - STOVES -

DESIGN SERIES - ON SOLID FUEL

INDEX

The local or national legislation concerning always primes these recommendations and instructions. In case of any doubt or large differences please inform us by writing before installation and/or any action taken.

IMPORTANT

Keeping a clean window-glass and heating the right way by:

1. Preparation and lighting of the appliance.

Fuel:

Only use dry wood (pt. 1 A/B)
Only use coals with a low ash content

Lighting stage:

Open the grills or the valve for the supply of fresh combustion air.
Chimney valve totally open.
Turbo-grate also totally open.
Place the lighting bloc in the rear centre of the grate.
Place the wood flat on the grate. Cover all the openings from the grate with wood.
Let it burn during 20 up to 30 minutes.

2. Regulating the fire / maintain.

Regulating the fire.

Only with the Multi-Turbo burning grates (not with the chimney valve).

Fans:

Only use the fans when the appliance is well heated (after 20 up to 30 minutes).

Maintain of the fire.

Frequently de-ashing by sliding the burning-grate with the poker from the left to the right.
Always position the fuel on top of the grate, but when burning continuously, position the fuel in the middle against the back (in pyramid-form).

3. General maintenance.

Note

By burning the appliance for the first time, the paint will be baked in in the appliance. Due to this, there can be a smell and a light smoke (good ventilating the room). During this baking in period, the paint is very sensitive for damaging by touching. Therefore it's very important to avoid touching the paint. Use the poker (included with the delivery) to regulate the appliance.

General

There may never be dirt in the spoiler opening at the bottom in the door.
The fans have to be kept dirt-free. Wet wood will form tar on the Bi-metals down the door.
These Bi-metals have to be kept well clean and dynamic.

Yourself

How to solve simple problems on your own.

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General guidelines:

Before installing and using the appliance, the installer and the user have to be aware of all the guidelines concerning the installation. With an existing chimney or in case of changes/adjustments of the chimney, the chimney has to be cleaned, all the inflammable substances have to be removed, totally check the chimney and approved as good by an sworn chimney sweep. Of this, a proof of request need to be delivered. The appliance has to be installed by an acknowledge expert, following the prescribed guides and following the rules of the art. The expert has to learn the user how to burn the appliance and give him the delivered guidelines. The user has to use the appliance well and may only use the appliance for the intention that it's build and installed, never burn it red-hot. In case an inspection organism or a safety office is authorized, the installer and the user have to follow the prescriptions from these authorities. In countries, where the chimney sweeper is also authorized for this, he has to license the initial starting.

Avoid contact from persons, animals and inflammable or damageable materials with the appliance and all his accessories and the direct environment of it. Without written permission from the producer, no changes may be done on the appliance. For countries, where the CE and/or DIN-inspection is obliged, the installation guidelines, operation manual and choice of fuel have to be respected precisely. When there are no guidelines, the appliance may not be used, these guidelines can be required in writing by the expert or by the producer VFM FLAM Ltd.

1. Fuel choice

The fuel choice depends on the objective to be achieved and the legislation per country or district concerned. Table with caloric values from some fuels (see table 1).

Which fuels are efficient in function of the intensity of the fire?

Unit	Fuel	Indicative heating value			Compared quantity for 1 kg dry wood
		Kj	kcal	kW	
kg	Dry wood (15% humidity)	15.000	3.600	4.2	1,00 kg.
kg	Wet wood (50% humidity)	7.800	1.850	2.2	1,95 kg.
kg	Oven dry wood (0% humidity)	18.000	4.300	5	0,84 kg.
kg	Woodbriquets	16.800	4.000	4,7	0,90 kg.
kg	Brown coal briquets	20.100	4.800	5.6	0,75 kg.
kg	Eggcoals	28.400	6.780	7.9	0,53 kg.
kg	Normal Anthracite	32.200	7.700	8.9	0,47 kg.
l	Fuel oil	35.800	8.500	9.9	0,42 l.

TABEL 1

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A. LARGE FIRE

a. Semi-fat charcoals, anthracite and eggcoals with a section between 25 till 50 mm.

b. Dry wood with a maximum moisture content between 8 and 15%. Air-dried wood has to dry ± 5 years in a well ventilated area for wood with a maximum thickness from Ø 10 cm.

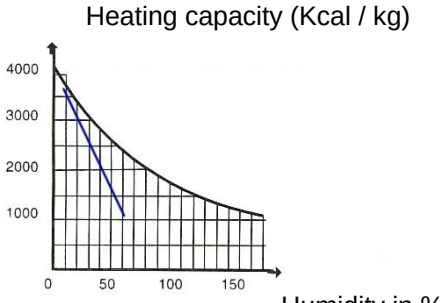
Light wet wood can be burned with the Flam Multi-turbo burningsystem, but the water in the wood can spoil till more than 75% from the heat energy and soils the glass. This is law of nature. Wood only dries 1 cm per year from the outside to the inside. The heating appliance may in no case be heated in overcapacity or red-hot.

B. SMALL FIRE

a. Cheap industrial anthracite 6/12, 10/16, 12/22 mm diameter and such is appropriated for very small, long term and continuous fire.
b. Little semi-fat charcoals with diameter 6/12 or 12/22 mm.
c. The fuels, mentioned by 'Large fire' can also be used. The appliance has to be installed following the installation guidelines and recommendations and the use has to be done very precisely.

Wet wood is energy-wasted and soils the glass.
Wet wood is totally dissuaded, if not forbidden.
Fabrics which become explosive by heating, are not allowed to be heated.

Graphic A.



Graphic A

Changes from the heating ability from wood in function of the humidity, from his gross mass or from his anhydrous mass.
Example: wood with heating ability, in anhydrous mass, from 18 MG/kg (4.300 Kcal/kg).
Graphic A indicates the changes of the heating ability.

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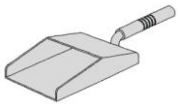
2. Lighting and heating

First make sure that you've got a good heating tool (drawing 1a – 1b – 1c) set. This is necessary to employ the appliance well and to heat safe.

1a



1b

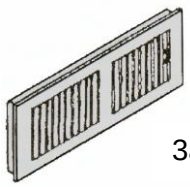
1c

1d

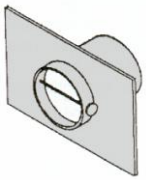
Always utilize for the use of the appliance the delivered poker (drawing 1d) Good heating tool sets are available by Flam. Each part is also separately available. You've got a very good appliance, which contains a lot of heat (accumulate). Depending on the model and the installation this is between 6.000 Kcal and 25.000 Kcal. On that issue our appliances are comparable with a tiled stove (soapstone stove). Only when the appliance is well heated, it can give a lot of warmth.
To obtain almost 100% of heating profit, we have to reach very high temperatures, this without going in overcapacity. This is only possible with a complete heated appliance.
A good indication of sufficient heath is a log retainer turned grey.

2

1. The chimney valve (drawing 2, with the help of the sliding controller in the door) always needs to be in a completely open position during the lighting and during the heating, when closed, the glass will be soiled. All the grids and valves for the supply of fresh air (from outside) also need to be totally open (drawing 3a – 3b).



3a



3b

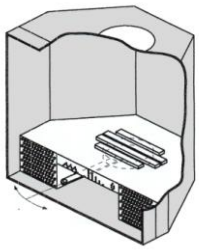
The local or national legislation concerning always primes these recommendations and instructions. In case of any doubt or large differences please inform us by writing before installation and/or any action taken.

2. a. When you burn with coals, always use the Super-turbo-grate SLVV (drawing 4), this to protect the cast iron from the Multi-Turbo burner grill and to burn continuously. While burning wood, leave the SLVV grate in the stove. When heating frequently or continuously, it's necessary to use the Super-Turbo-grill SLVV.

4

Before lighting, clean the Flam appliance totally. Pay attention that the spoiler opening (this is the air gap between the glass and the bottom of the doorframe) is always clean. Be aware that the Bi-metals on the spoiler are not full of tar e.g. Due to wet wood and because of that they may get stuck and can't be closed or slide anymore. So they also need to be kept clean.

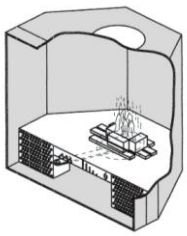
b. Move the Turbo burning grills with the poker from the left to the right. Repeat this action several time, until the ashes are totally disappeared (drawing 5).



5

Repeat this 2 till 3 times per day during the heating on large fire, this to de-ash and to break possible cinders. On small fire, you can de-ash every 12 hours. The number of de-ashes depends on the ash content (%) from the used fuel. **Never heat with a full ashtray.**

3. Put the grill grip totally to the left (drawing 6). Put some lighting blocs or paper at the back of the turbo grill. Make fire (drawing 6). It's strictly forbidden to use fluid, gasiform or explosive products to light the fire or continue to heat.



6

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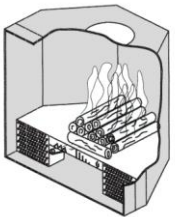
4. Lay the dry wood (length ± 20 cm) cross the Turbo grill with the head against the back of the appliance and make sure that the wood is laying as flat as possible on the grill and that all the openings of the grill are covered. Also seal the front with a flat piece of wood (drawing 7).



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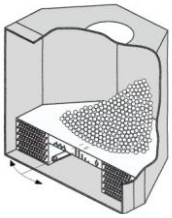
5. Close the door. Let the appliance burn during ± 10 minutes. Fill lengthwise direction up with 2 or 3 blocs of wood or 3 shovels of coals (in pyramid form) and let the appliance burn like this during 20 minutes with the grip totally to the left (drawing 8).



8

6. When the appliance is well heated up, it can be refilled. Always bring the glowing fuel in the appliance to the front with a Flam-shovel and foresee the new fuel (wood, briquet, charcoals) against the back of the appliance. After ± 20 till 30 minutes, depending chimney draft and which kind of fuel (when the appliance is warm enough) the fire can be arranged. Following the steps: the grip totally to the right (position 0) and now immediate back to the left in the desired position.
   Never change suddenly, during the heating process, from large to small fire (drawing 9).

9

7. During the heating: repeat the acts described in point 2b and this in function of the size of the fire and the level of ashes of the fuel.

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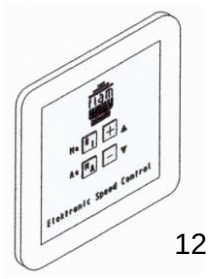
8. The fans will start only when the appliance is heated enough (good indication of enough warmth is the log retainer who becomes grey). The Flam appliances equipped with fans are accomplished with an electronic speed controller (drawing 12) and will turn automatically when the appliance is heated and when the controller is in position ‘A’.



12

9. Each time the door will be opened (slowly) for refilling the fire (with Flam-shovel), it has to be closed as fast as possible and well sealed and watch out that there will fall no hot or glowing fuel out of the combustion-chamber while the door is open.
10. Never suffocate the fire by refilling with too many fuel.
11. Always respect preface rules, by troubles or doubt, on any level while using the appliance, directly stop heating, close the turbo grill and consult an acknowledged Flam expert.

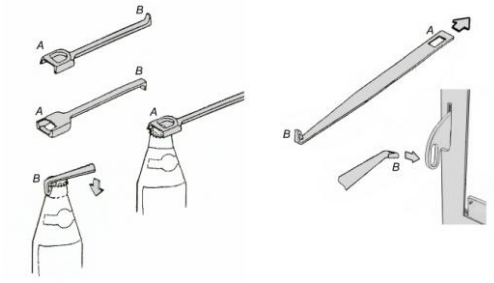
Warning

By certain weather circumstances or badly insulated chimney canals, there is a possibility that there will be condense or a could fuse in the chimney canal. When this happens, it’s advisable to heat the chimney canal. This by blowing warm heath (with the help of a hairdryer) into the openings on top of the appliance, which flow into the chimney canal.

3. Regulate the fire with the Multi-Turbo grill (for all appliances).

Regulation of the appliance.

The regulation of the appliance is always partly dependant of the underpressure in the chimney (page 35).
The underpressure in the chimney has to be with large fire maximal 0,25 mbar and with small fire minimal 0,08 mbar and this strictly considering the section, mentioned in the chimney table (look installation guide and recommendations).
When your chimney has got to much under-pressure cause of the wind, colder weather of other extreme circumstances, this sensibility on weather circumstances can be kept constantly by installing 1 or 2 draught regulators (for the installation and adjusting of this draught regulator, consult an expert).

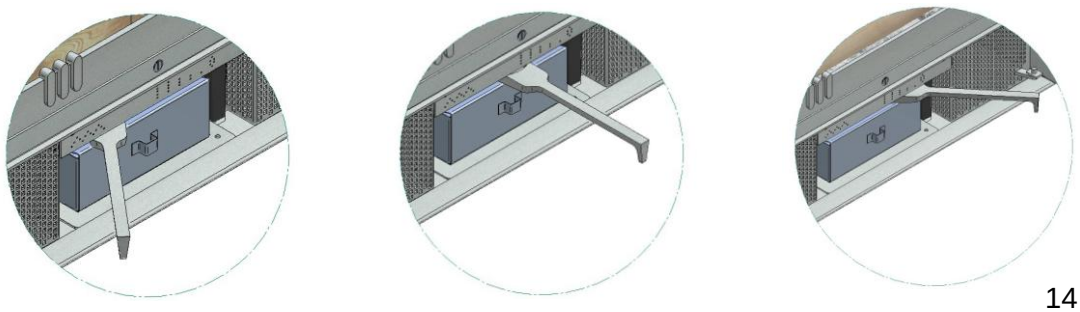


13

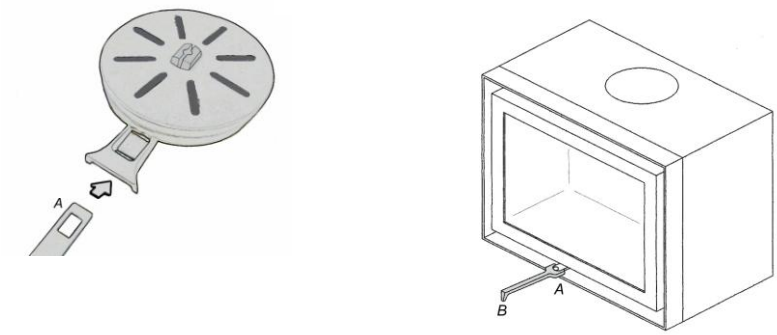
Always use the little poker (drawing 13). The Turbo grill will be regulated by side (A) by sliding the poker over the handle from the grill (large side).
Side (B) from the poker will be used to open the door (small side).
The spoiler opening (air gap in the door for the supply of secondary air at the bottom, inside the ceramic glassdoor) is served for most types of the appliances automatically through Bi-metals. For most of the fuels and chimney canals, the spoiler opening is adjusted in the fabric.

A. LARGE FIRE (drawing 14)

1. For large fire, pull the multi-turbo grill first in position 0 (totally right) and then directly in position IV (=4) (centre).
2. Only for appliances with fans; let the fans turn on maximal speed (look point 6 – regulation of warm air).



14



14

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B. SMALL FIRE (drawing 14)

1. For small fire, pull the multi-turbo grill first in position 0 (totally right) and then directly in position I (=1) or regulate a bit bigger, a little bit to the left.
2. Only for appliances with fans; let the fans turn on minimal speed (look point 6 – regulation of warm air).

C. MEDIUM FIRE (drawing 14)

For medium fire the multi-turbo grill has to be placed in a position between I (= 1) and IV (= 4), always starting from position 0 or the position totally to the right.

Always put the multi-turbo grills in position 0 and then regulate into the desired position.
For charcoals always use the super-turbo grill.
This grill may also be used when burning wood.

Before doing the regulations described in point 4, 5 and 6, check which Flam appliance you've got.

4. Regulate the brake-blocs.

MT 44/49 – MT 57/50 – MT 61/50 corner – MT 63/50
MT 68/75 Front – MT 68/75 view-through
MT 68/57 – MT 74/56 corner – MT 75/56
MT 72/56 view-through – MT 80/56 panoramic
Des 57/45 – Des 57/64 – Des 68/64 Front
Des 63/45 – Des 68/45
Des 63/45 corner + Des 68/45 corner
Des 63/45 panoramic + Des. 68/45 panoramic
Des 63/45 view-through + Des 68/45 view-through + Des 68/64 view-through
Des 75/52
MT 75/75
Louis XVI MT 68
TK 63/50 – TK 63 Des – Duo 57
Palazzo – Cello – Arco (solid fuel)
Eleganza jr.
Pikku
Monza MT 63/50
Soapstone stove MT 63/50-72
Soapstone stove Theater MT 68/75 view-through
Soapstone stove MT 57/75-150
Soapstone stove Palazzo MT 57/75-121
Cubix

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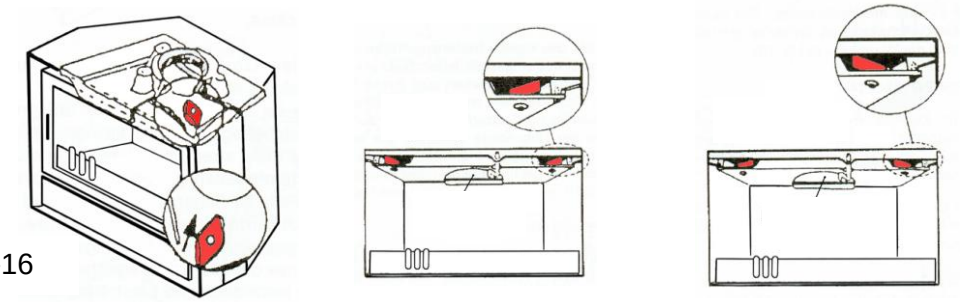
The brake-blocs left and right on top of the plate in cast iron where the valve is in, only have to be installed once in function of the quality of the chimney.
Normally these brake-blocs are placed in a way that they are parallel with the direction where the flue gases disappear to the chimney (= minimal resistance). (drawing 15-16).
Closed position of the brake-blocs is only used for a chimney of which the draught is to strong.

15-16



5. Regulate the chimney valve.

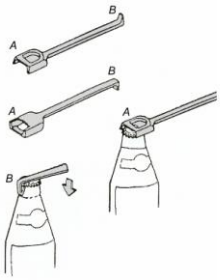
The chimney valve always has to be open.
The chimney valve only will be closed a little (max. 50%), when the draught in the chimney is to high, so the fire can't be regulated with the Multi-Turbo grill and the brake-blocs.

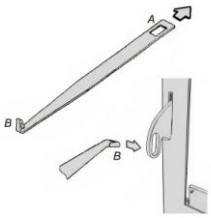
When the fire still can't be regulated when the valve is closed for 50%, other methods have to be used to block. For example installing a draught regulator or another resistance.

Closing the valve too much, the glass will soil and causes an incomplete combustion which results in not much warmth. Also heating continuously will be difficult.

Use of the valve. How to put the valve in a totally open position?

A. (Drawing 18)
MT 44/49 – MT 44/70
Millo Jr. flat/round – Millo flat/round
Pikku – Kivi
Eleganza Jr. flat/round – Eleganza 44/88 flat/round
Eleganza 44/95 flat/round – Eleganza 44/100 flat/round
Eleganza 44/108 flat/round
Soapstone stove MT 44/70-128
Soapstone stove MT 44/70-150 + Cubix
Slide with the poker, the mechanism on the inner side of the door totally to the side where the lock is (= position 5) (drawing 13).





13

B. MT 57/50 – MT 61/50 – MT 63/50 – MT 68/75 Front/through view
MT 68/57 – MT 74/56 corner – MT 75/56 – MT 75/75
MT 72/56 through view – MT 80/56 panoramic
Des. 57/45 – Des. 57/64 – Des. 68/64 Front/through view
Des. 63/45 – Des. 68/45
Des. 63/45 corner – Des. 68/45 corner
Des. 63/45 panoramic – Des. 68/45 panoramic
Des. 63/45 through view – Des. 68/45 through view
Des. 75/52
Louis XVI MT 68
TK 63/50 – TK 63 Des. – Duo 57
Palazzo – Cello – Arco (solid fuel)
Monza MT 63/50 flat/round
Soapstone stove Theater MT 68/75 through view
Soapstone stove MT 57/75-150
Soapstone stove Palazzo MT 57/75-121
Soapstone stove 63/50-72
Slide with the poker, the mechanism on the inner side of the door totally to the back (to the hinges of the door) (= position 5) (drawing 13).

18

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The regulation of the fire only happens with the Multi-Turbo grills (look point 3). Always consult, when necessary an expert.

Use of the mechanism for the position of the valve for all the appliances mentioned in point 5A.

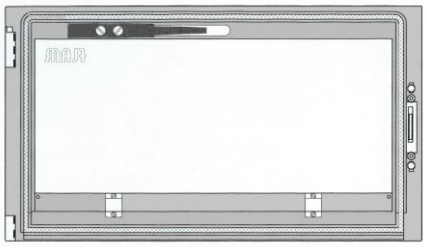
Position 5: valve open
Position 0: valve closed

18

Use of the mechanism for the position of the valve for other appliances mentioned in point 5B.

Position 5: valve open
Position 0: valve closed

19



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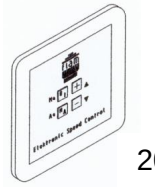
6. Regulation of warm air (only for appliances with fans).

Through the fans, cold air is sucked (always keep the supply grid free) and transported through the double side of the appliance, that warm air is transported into the room via the warm air exits.

Solid fuels:

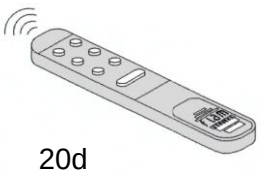
MT 44/49
MT 44/70
MT 57/50
MT 57/75
MT 61/50 corner
MT 63/50
MT 68/57
MT 68/75 through view
MT 74/56 corner
MT 75/56
MT 72/56 through view
MT 80/56 panoramic
MT 75/75
Des 57/45
Des 57/64
Des. Front / through view 68/64
Des 63/45
Des 63/45 corner
Des panoramic 63/45
Des through view 63/45
Des 68/45
Des 68/45 corner
Des 68/45 panoramic
Des 75/52
Louis XVI MT 68
TK 63 MT
Duo 57/105
Duo 63/105
Palazzo 57/118
Cello 57/106
Arco 57/73
Eleganza 44/88 flat
Eleganza 44/88 round
Eleganza 44/95 flat
Eleganza 44/95 round
Eleganza 44/100 flat
Eleganza 44/100 round
Eleganza 44/108 flat
Eleganza 44/108 round
Kameleon flat
Kameleon round
Eleganza jr. flat
Eleganza jr. Round
Pikku
Kivi
Monza MT 63/50 flat
Monza MT 63/50 round
Soapstone stove :
MT 63/50-72 flat
MT 63/50-72 round
Theater MT 68/75
Theater MT 68/75 through view
MT 44/70-128
MT 44/70-150
MT 57/75-150
Palazzo MT 57/75-121
Cubix

The appliances with fans are standard delivered with the electronic speed controller (drawing 20a).


20a


20b


20c


20d

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In option:

- Plug plate independent of temperature (drawing 20b).
- Incorporate dimmer with construction frame (drawing 20c).
- Flam remote control (drawing 20d).

Remarque :

A. The time until the fans will function depends on the draught of the chimney and when using no wet fuel (max. 15% humidity or water) and the energy of the house (supply of combustion air to low) and the weight of the appliance. If the fans turn when the appliance is cold, it gives a bad combustion, result the glass and the chimney will be soiled. Turn the ESC regulator in automatic position and let it in this position. Between 30 minutes and 2 hours the fans will be activated.

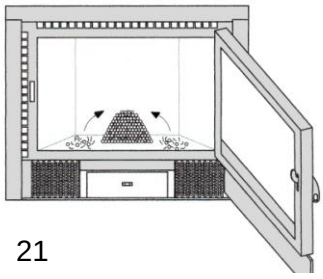
B. By damage of the supplied cable, this one only may be replaced by an original supplied cable out of one piece (not longer than 6 meters), delivered by the producer, when not the guarantee will expire.

7. Electric connection

The installation and using guides are delivered with the ESC regulator.
Pay attention for these guides.

8. De-ashing

When using dry wood, anthracite, low or semi-fat charcoals of good quality, the residual ash is minimum.
It's good to put the residual ash and the rest of the used fuel once a day together on the turbo grate (drawing 21) and shake well. This by moving the grate from totally left to totally right (drawing 22). Now the ashes are easier to remove. When there are cinders between the 2 grates, they are grinded in this way and fall into the ashtray.
Possible cinders on top of the Turbo grate are best removed with a shovel before filling (see point 9).
When this happens, let the ashes burn very well by adjusting the appliance in large fire (look guides large fire). Afterwards shake the ashes well. Fill the appliance with fuel, heat it and regulate for the night. The next day bring the ashes together to the centre of the turbo grate (drawing 21), shake the ashes and let it burn well. Afterwards it can be refilled.



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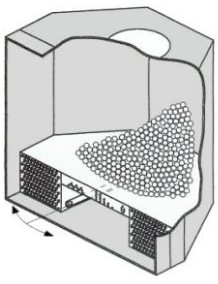

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9. Cinder-forming (snail-forming)

Cinders are melted ashes of coals. When you see bouncing sparkles that fall down, than you heat over more than ± 1200° C (better to heat on low temperatures) and by presence from ashes or from early formed cinders, these ashes and cinders can be melted into lava.

You cause cinders by:

- The heating of charcoals with high ash-calibre.
- When the heating temperature and by presence of ash ± 1200° C is crossed, caused by a chimney of which the draught is too high or when passing from large fire to small fire or otherwise in a very abruptly way.
- To heat the appliance in overcapacity.
- When the ashes aren't shaked on time (de-ashing).
- When the preface cinders aren't removed on time or ash that can be forced to re-melt.

Cinders cause obstructions in the grates. These obstructions prevent the air pass through and make a steady chilling from the grates impossible with as result damage of the grates.

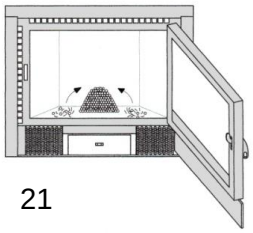
Very important:

By cinder-forming remove the cinders very quick with a Flam-shovel and bring to the side of the combustion chamber. Adjusting the fire can happen step by step. Never move by large fire the turbo-grills totally from totally open to totally closed. Empty the astray regularly. Then the super-turbo grate and the turbo grate have got a maximal lifespan.

10. Heating continuously during day or night

To make it possible to heat continuously it's important that the ashes and cinders are being removed (point 9). With the Flam-shovel, move the possible cinders from the turbo grate and scratch them to the sides of the combustion chamber. Afterwards shake well with the turbo-grates from totally left to totally right to de-ash. Then we make large fire with the charcoals that are still on the super-turbo grill.
When the fire is burning well, bring the half burned charcoals and the ashes together on this fire (drawing 21) and let it burn well, in the meantime shake the turbo-grates well.
When your charcoals contain a lot of ashes or when there are ashes from heating more than 12 hours, shake them well.
When there is enough glowing present, bring the totally de-ashed well burned charcoals to the front. Refill the charcoals in pyramid-form against the back of the appliance, this in a manner that the fire doesn't suffocate (don't cover the glowing charcoals in the front).
When there's enough fire present, the appliance can be refilled by making a high combustion-pyramid. After a few minutes the turbo-grates can be tuned for the night ('small fire' point 3B). After refilling, let the heap of charcoals burn for a little time and make small fire. It's advisable, to take care of the fire as mentioned on top.

Refill at least 1x per day and if you've got charcoals with a high calibre of ashes, refill 2 x more in the morning and the evening. When the fire is almost out, you can refill with wood to bring the fire back on.



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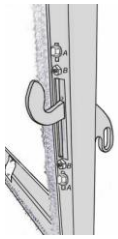
11. To heat longer with wood:

Better to do this with big blocs and with a hard type of wood, lay them well to the back of the appliance (hard types of wood are oak, beech, ash, hazel, chestnut, wood of fruit etc…).

12. Regulate the lock system

- The lock system is adjusted in a way that the joint on the door closes hermetically on the frame from the appliance (drawing 23).
- When the appliance has been used several times, the joint in the door will take his final position. It's advisable, to regulate the lock system, so that there's again a hermetic connection between the door and the frame.
    - Turn the hexagon (A) a little more loose.
    - Regulate the depth of the closing grip with regard to the doorframe with the 2 set-screw (B) (sense of the clock = locking fixer) (against sense of the clock = locking more loose).
    - Fasten the hexagon (A).



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13. Maintenance of the appliance and the glassdoor.

- In order not to damage the ceramic glass the joint of the door it's very important not to use ammonia containing cleaning products and after cleaning, always clean with clear water.
- To de-ash the combustion bottom and the combustion grills totally, it's advisable to take the grates frequently out of the appliance, so that the collar of the combustion net also can be cleaned (only remove the grills en take off the ashes from a appliance in cold position).
- Also the spoiler opening has to be cleaned regularly (scratch clean).
- Empty the ashtray before this it overfull.
- Remove the ashes and cinders in cold position in a sealed metal bucket.

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Yearly maintenance:

- Check the tension of the door-joint and eventually adjust the lock.
- Check if possible wreckages for the chimney canal did fall on the valve.
- Check if the flue gas transport, air entrances and outlets are totally free of obstructions.
- Damage on the paint can easily be corrected with a Flam-aerosol (always in cold position, without that the appliance is on fire).
- After inactivating the electricity, remove the dust from the fans (be very careful with the rotor of the fans).
- The local or national legislation concerning cleaning and maintenance of the flue, have to be respected.
- A the start of the heating season, always check the chimney canal for possible blockages as a result of spider's web, bird's nest, stuff… Also with the help of the starting fire, you can assure yourself that the chimney canal isn't blocked.

If necessary, contact an expert.

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14. How to solve small problems? Troubleshooting list.

PROBLEM	CAUSE	WHAT TO DO ?
The glass gets dirty.	- the opening of the spoiler is blocked (debris of fuels or tar).	- clean spoiler (scraping)
	- the chimney valve is closed or too far closed.	- always heat with an open valve.
	- wet wood.	- Use dry wood with a max. of 15% humidity.
	- deranged spoiler.	- adjust the spoiler and clean it completely so they slide again (contact your expert).
	- No sufficient supply of fresh air for combustion.	- Make sure there is sufficient supply of fresh air (contact your expert).
	- Joints and sealing of door do not close correctly.	- Check joints and sealing and replace if necessary
	- Diving- wind in the chimney.	- Place the correct Flam diving-wind divertor or take chimney out of the overpressure zone.
	- Condensation due to a to large chimney canal or to much cooling down.	- Reduce the chimney canal or isolate it (contact Your expert).
	- The chimney connection is not airtight.	- Close the chimney canal hermetically (contact your expert).
	- A to small section of the chimney canal.	- when the error is not to you can heighten the chimney or have your appliance equipped with isolated glazing (contact your expert).

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	- Wrong construction of the chimney canal, to many resistance errors because of to many and to sharp curves, internal errors. Not enough under-pressure.	- Have your expert check how certain mistakes can be corrected.
	- Leaks of air in the chimney canal, cracks or connections with hollow tissues or cavity walls.	- Detect leaks of air and close them (contact your expert).
When the glass only gets dirty in the ignition phase.	- The fuel touches the glass.	- Install a log retainer.
	- The draught regulator is not well adjusted. There is to much or to little under-pressure.	- Have your draught regulator adjusted to chimney under-Pressure 2 mm WK (contact your expert).
	- The appliance is not lit in the correct way and the wrong wood to start the fire is used.	- Cut your wood to start the fire to the right length. Place the headsides of the wood well against the back of the combustion chamber. Close all parts of the multi-turbo-grill as good as possible with fuel. place one piece of wood cross-wise in the front (see drawing 7 page 8).
When continuously heating with charcoal is not possible.	- The chimney valve is closed or to far closed.	- Always have the chimney valve open.
	- Deranged spoiler.	- Re-adjust the spoiler (contact your expert).
	- No sufficient supply of fresh air for combustion.	- Make sure there is sufficient supply of fresh air (contact your expert).
	- Condensation due to a to large chimney canal or to much cooling down.	- Reduce the chimney canal or isolate it (contact your expert).

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	- The chimney valve is to far closed in flam heating appliances for solid fuels.	- Open the chimney valve completely. Arrange the fire with the fire-grills.
	- The chimney connection is not airtight.	- Close the chimney canal hermetically (contact your expert).
	- A to small section of the chimney canal.	- when the error is not to you can heighten the chimney or have your appliance equipped with isolated glazing (contact your expert).
	- Leaks of air in the chimney canal, cracks or connections with hollow tissues or cavity walls.	- Detect leaks of air and close them (contact your expert).
	- The appliance is not filled enough with fuel.	- Always fill with sufficient coals and in a pyramid-shape
	- You are burning coals without using the multi-fuel-grill.	- Purchase a multi-fuel-grill (see page 8-2a).
	- The draught regulator is not well adjusted. There is to much or to little under-pressure.	- Have your draught regulator adjusted to chimney under-pressure 2 mm WK (contact your expert).
	- The chimney valve is closed.	- Always have the chimney valve open.
When you don't get enough heat.	- Wet wood.	- Use dry wood with a max. of 15% humidity.
	- Deranged spoiler.	- Re-adjust the spoiler (contact your expert).
	- No sufficient supply of fresh air for combustion.	- Make sure there is sufficient supply of fresh air (contact your expert).

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- A to small section of the chimney canal.	- when the error is not to you can heighten the chimney or have your appliance equipped with isolated glazing (contact your expert).
- Wrong construction of the chimney canal, to many resistance errors because of to many and to sharp curves, internal errors. Not enough under-pressure.	- Have your expert check how certain mistakes can be corrected.
- Leaks of air in the chimney canal, cracks or connections with hollow tissues or cavity walls.	- Detect leaks of air and close them (contact your expert).
- The number of grills to re-direct the air of the hot-air-system is not in proportion with the number and/or section of the distribution canals of the hot air. The grills to re-direct the cold air have to have a +- 25% larger section.	– the number of grills to re-direct the air of the hot-air system has to be equal to number of distribution grills of the hot air. These always have to be placed in the room where the appliance is placed and need to have +- 25% more free section (contact your expert).
- The draught regulator is not well adjusted. There is to much or to little under-pressure.	- Have your draught regulator adjusted to chimney under-pressure 2 mm WK (contact your expert).
- The chimney connection is not airtight.	- Close the chimney canal hermetically (contact your expert).

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When the smoke blows back into the room when opening the door.	- No sufficient supply of fresh air.	- Make sure there is sufficient supply of fresh air
	- Joints and sealing of door do not close correctly.	- Check joints and sealing and replace if necessary.
	- wet wood.	- Use dry wood with a max. of 15% humidity.
	- Diving- wind in the chimney.	- Place the correct Flam diving-wind divertor or take chimney out of the overpressure zone.
	-	
	- Condensation due to a to large chimney canal or to much cooling down.	- Reduce the chimney canal or isolate it (contact your expert).
	- The chimney connection is not airtight.	- Close the chimney canal hermetically (contact your expert).
	- A to small section of the chimney canal.	- when the error is not to you can heighten the chimney or have your appliance equipped with isolated glazing (contact your expert).
	- Wrong construction of the chimney canal, to many resistance errors because of to many and to sharp curves, internal errors. Not enough under-pressure.	- Have your expert check how certain mistakes can be corrected.
	- Leaks of air in the chimney canal, cracks or connections with hollow tissues or cavity walls.	- Detect leaks of air and close them (contact your expert).

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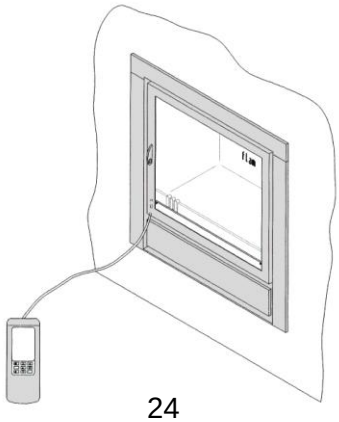
- The appliance is not lit in the correct way and the wrong wood to start the fire is used.

- Cut your wood to start the fire to the right length. Place the headsides of the wood well against the back of the combustion chamber. Close all parts of the multi-turbo-grill as good as possible with fuel. place one piece of wood cross-wise in the front (see drawing 7 page 8).

15. Measuring the under-pressure.



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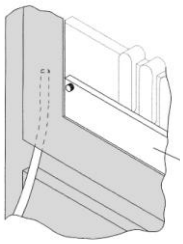

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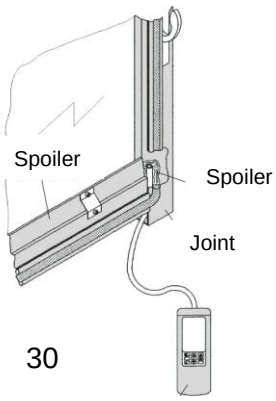

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Under-pressure measuring tool

Under-pressure measurement.

The under-pressure measurement has the purpose o checking if the chimney-draught is not too high or too low. The under-pressure needed for the well-functioning of the appliance has to be between 1,8 and 2,2 mm WK, with a maximum of 2,5 mm KW. You measure the under-pressure as follows:

- Place the rubber tube of the under-pressure measuring tool in the left corner of the door as shown in drawing 24.
- In order to do so, you first need to remove the joint in the corner of the door.
- Then put the rubber tube in the opening via the downside of the door and put the joint back in place around the rubber tube. Make sure that the rubber tube stays clear and is not covered by the joint (drawing 25).

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- Heat the appliance on large fire.
- Once the appliance has reached its temperature, connect the rubber tube onto the (-) point of the under-pressure measuring tool.
- You can now read the value on the under-pressure measuring tool.

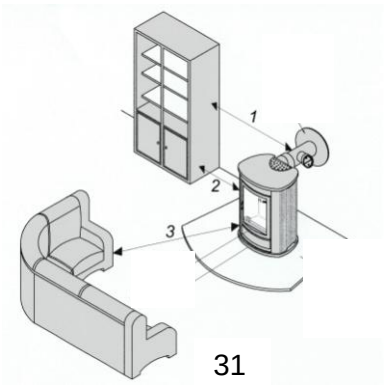
16. Fire prevention of the floor with stoves (drawing 31).

With the installation of stoves on solid fuels, the floors that are made of flammable materials where the stove will be standing on, have to be protected by a floor made out of non-flammable materials.

This floor covering has to stick out at least 50 cm from the door opening of the combustion chamber and at least 30 cm towards the right and left side of the stove.

Drawing 31:

1) Minimum distance between the exhaust-canal and flammable materials as f.ex. furniture = 40 cm.
2) Minimum distance between the sides of the stove and flammable materials as f.ex. furniture = 100 cm for the Millo stove and all other stoves 40 cm.
3) Minimum distance between the glass and flammable materials as f.ex. furniture = 150 cm.



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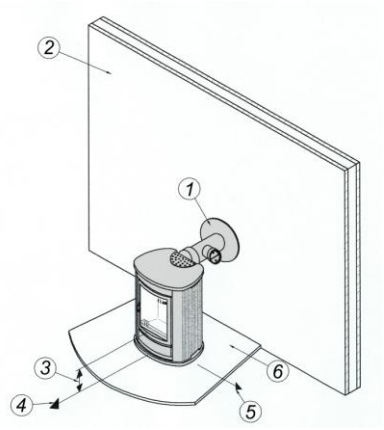

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Drawing 32:

1) The diameter of the opening of the smoke gas-exhaust in the flammable wall has to be at least 40 cm larger then the diameter of the smoke-gas-canal.

2) Maximum allowed surface-temperature = room temperature + 60K (maximum 85°C).

3) Height of socket.

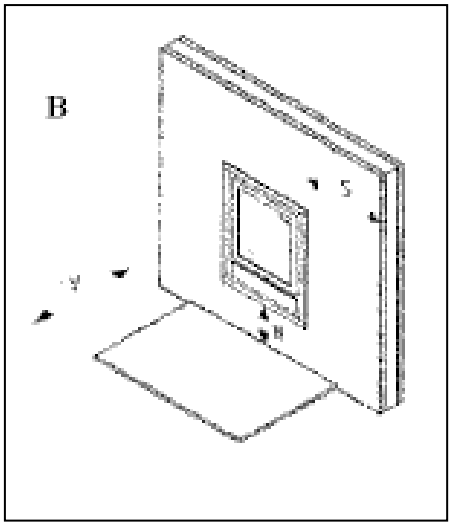
4) Distance of the fireproof underground to the front = height of socket + 30 cm with a minimum of 50 cm.

5) Distance sideways to the fireproof underground = height of socket = 20 cm with a minimum of 30 cm.

6) Fireproof bottom plate when flammable floor.

Fire prevention of the floor with inset appliances (drawing 33).

When the appliance is build-in, the floors that are made out of flammable materials, have to be protected with fireproof materials of a certain thickness, from the opening of the fire-place until the following distances mentioned below. These distances have been measured from the socket of the appliance towards the front and the sides:



- V = to the front, in accordance with the height of the bottom of the combustion chamber, respectively from the built-in socket, above the floor increased with 30 cm, but at least 50cm

- S = Towards the sides, in accordance the height of the bottom of the combustion chamber, respectively from the built-in socket, above the floor increased with 20 cm, but at least 30 cm. When there is a log-retainer with a minimum height of 10 cm built-in, then the above mentioned minimum distances comply, and measured different from the log-retainer.

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Drawing 33:

S. Height of socket H + 20 cm with a minimum of 30 cm.

H. Height of socket.

V. Height of socket H + 30 cm with a minimum of 50 cm.