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1 - INTRODUCTION

Dear customer, thank you for choosing a MORETTI DESIGN product, a cutting-edge product in the field of woodburning fireplaces for heating. The great attention to detail during the design phase, the use of advanced technology, the quality of the materials and the extreme care taken during the processing phase, are the best guarantee of an efficient, functional, safe and suitable product to fully meet your heating needs.

Moretti DESIGN vented fireboxes are made in compliance with current standards, in accordance with the provisions of the EN 13229 directive, using certified components, checking the appliance for safety and functionality, and carrying out the checks required by law. Moretti is in line with European legislation that allows each product to bear the CE marking.

For a correct installation of the appliance, for its optimal and safe use and for suitable maintenance, we invite you to read this manual very carefully, paying particular attention to the warnings below.

2 - GENERAL WARNINGS

This manual has been prepared to allow simple and safe use of the appliance, and is an integral part of MORETTI DESIGN vented fireboxes; therefore, it is recommended to store it carefully and to always keep it near the appliance so that it can be consulted when necessary. In case of loss or damage, ask your dealer for a copy.

Installation and maintenance must be carried out by qualified personnel, in compliance with the relevant regulations and laws in force. All local regulations, including those referring to national and European standards, must be respected when installing and using the appliance.

When installing the firebox, it is mandatory to pay the utmost attention to the instructions provided in this manual. The installer will assume full responsibility for the final installation and subsequent proper functioning of the installed product.

For the ordinary operation of the fireplace, the user must apply all the indications obtained from a thorough reading of this manual. To get started, it's important to know that:

- It is forbidden to install the firebox in environments such as garages, warehouses of combustible material, environments at risk of fire or with an explosive atmosphere, rooms where there are liquid fuel heating appliances that withdraw the vented air from the same room, or in environments where there are type B gas appliances intended for heating.
- The vented firebox as an incinerator or in any other manner other than that for which it was designed for. No fuel other than those expressly recommended in this manual should be used. It is absolutely forbidden to use liquid fuels.
- Some surfaces of the hearth, especially the glazed area, are subject to severe overheating and can cause serious burns on touch alone. For this reason, together with the fireplace, a special handle is provided for handling the door and levers. In the absence of the handle, use a special protective glove.
- The use of the firebox by children or persons with reduced physical, sensory and mental capabilities is prohibited, unless they are supervised and instructed in the use of the appliance by a person responsible for their safety. Children should be supervised to make sure they are not playing with the appliance.
- Do not perform any unauthorized modifications to the hydro stove. Only use original spare parts recommended by the manufacturer.

MORETTI FIRE srl is not responsible for the failure of the customer or the installer to comply with the instructions, obligations and prohibitions contained in this manual. Any liability of the manufacturer for damage to persons, animals or property resulting from incorrect installation, incorrect and/or approximate maintenance or improper use of the product, not in accordance with the purposes for which it was built, is excluded.

3 - WARRANTY CONDITIONS

The consumer (user of the goods for private use) is the holder of the rights provided for by the Consumer Code - Legislative Decree 206/2005 articles 128-15 (implementation of Directive 1999/44/EC of 25/05/99) and this does not affect these warranty rights.

The company guarantees the product, with the exception of elements subject to normal wear and tear, for a period of 2 (two) years from the date of purchase, which is proven by:

• A supporting document (invoice and/or tax receipt) showing the name of the seller and the date on which the sale was made.

• Product registration on the website www.morettidesign.it/registrazione-prodotto/

In addition, to make the warranty valid and operational, the installation and commissioning of the appliance must be carried out exclusively by qualified personnel, who in the cases provided for must issue the user with a declaration of conformity of the system and proper operation of the product.

If defects of conformity are detected within **2 (two) years** of purchase, the seller undertakes to repair the product. The seller will restore the conformity of the product within a reasonable period of time, taking into account the nature of the product, the purpose for which it was purchased and the methods to be adopted to restore conformity.

The right to resolve of any non-conformities is not applicable in the following situations:

- failure to comply with the installation and use requirements;
- · accidental causes and negligence of the buyer;
- modifications or repairs carried out by unauthorised personnel;
- improper maintenance;
- operation or storage not within the environmental conditions specified for the product;
- damage caused by anomalies on the electrical system, by atmospheric phenomena or by any other cause external to the product;
- use in conjunction with accessories not marketed by the seller and/or parts not designed to be used with the product.

Parts and materials subject to wear and tampering are excluded from the warranty. Masonry works of any kind, including those for disassembling and reassembling the product, are excluded. In the event of a malfunction, the firebox will not be replaced but repaired. Moretti Design shall not be held responsible for incorrect assembly or unauthorised tampering and interventions.

Installations that do not comply with current regulations void the product warranty, such as improper use and nonmaintenance as provided by the manufacturer

Objects NOT covered by warranty

- Iron and vermiculite deflectors;
- Glass;
- Thermostatic probe;
- Centrifugal fan;
- Cast iron slabs;
- Refractory ceramic;
- Control unit if it is opened or tampered with;
- Labour of all kinds;
- •

4 - TECHNICAL AND DIMENSIONAL CHARACTERISTICS

4.1 Technical characteristics

	U.M.	MONODESIGN				LATODESIGN				TRIODESIGN	
Description		60	70	80	90	120	60 RH	60 LH	90 RH	90 LH	90
Thermal power input	kW	19.50	21.80	23.00	24.60	24.60	19.50	19.50	24.60	24.60	24.60
Nominal thermal power	kW	17.00	19.00	20.00	21.40	21.40	17.00	17.00	21.40	21.40	21.40
Yield	%	87.00	87.00	87.00	87.00	87.00	87.00	87.00	87.00	87.00	87.00
CO (13% O ₂) at nominal power	mg/m3	290.00	498.00	498.00	498.00	498.00	290.00	290.00	498.00	498.00	498.00
Exhaust gas temperature	C°	198.10	210.30	216.40	225.00	225.00	198.10	198.10	225.00	225.00	225.00
Primary particulate (13% O ₂)	mg/m3	10.0	15.0	15.0	15.0	15.0	10.0	10.0	15.0	15.0	15.0
NOx (13% O ₂) at nominal power	mg/m3	79.00	79.00	79.00	72.00	72.00	79.00	79.00	72.00	72.00	72.00
OGC (13% O ₂) at nominal power	mg/m3	19.1	29.0	29.0	29.0	29.0	19.1	19.1	29.0	29.0	29.0
Lena consumption	Kg/h	4.59	5.15	5.43	5.81	5.81	4.59	4.59	5.81	5.81	5.81
Forced draft	Ра	10	10	10	10	10	10	10	10	10	10
Weight	Kg	230	245	280	280	290	210	210	280	280	300
Fumes outlet tube	mm	202	202	202	202	202	202	202	202	202	202
Primary air inlet duct	mm	80	80	80	80	80	80	80	80	80	80
DEC. 186	-	5 Stars	5 Stars	5 Stars	5 Stars	5 Stars	5 Stars	5 Stars	5 Stars	5 Stars	5 Stars
Eco Design	-	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+
Fuel		WOOD LOGS									
Minimum distance from flam- mable and non-flammable materials	Lateralmm	450	450	450	450	450	450	450	450	450	450
	Frontmm	800	800	800	800	800	800	800	800	800	800
	Rearmm	450	450	450	450	450	450	450	450	450	450

WARNING: For installation without a ventilation kit, the flue must be positioned at a minimum height greater than or equal to 21 cm between the support surface and the fire surface. (see page 7)

VENTILATION KIT ART. MORKV720 (OPTIONAL)

_	U.M.	MONODESIGN				LATODESIGN				TRIODESIGN	
Description		60	70	80	90	120	60 RH	60 LH	90 RH	90 LH	90
Nominal electrical power	kW	75	75	75	75	75	75	75	75	75	75
Nominal voltage	V	230	230	230	230	230	230	230	230	230	230
Nominal frequency	Hz	50	50	50	50	50	50	50	50	50	50

WARNING: For the installation of the ventilation kit, MORKV720 (optional), the flue must be positioned at a minimum height greater than or equal to 36 cm between the support surface and the fire surface. (see page 7)

MINIMUM DISTANCE WITHOUT INSTALLATION OF VENTILATION KIT (WITH STANDARD FOOT)



MINIMUM DISTANCE WITH VENTILATION KIT INSTALLATION ART. MORKV720 (OPTIONAL)



4.2 Technical drawings





















5 - SAFETY WARNINGS

- 1. **WARNING!!!** For the correct use of this appliance and its electrical components, the instructions given in this manual must always be observed.
- 2. WARNING!!! This appliance CANNOT be used on a shared flue
- 3. **WARNING!!!** Installation, electrical connections, verification of operation, maintenance and repairs are operations that must be carried out exclusively by qualified personnel
- 4. WARNING !!! This appliance must only be used for the purpose for which it was designed and built.
- 5. **WARNING!!!** In the event of a fire in the flue, it is necessary to turn off the appliance, closing the combustion air intake and calling the Fire Department, then also check that the smoke channel and the flue have no visible damage. Perform a repair before reactivating the combustion plant.
- 6. **WARNING!!!** During combustion, the fireplace door can only be opened when there is an embers bed and not on a high flame to avoid fumes leaking into the environment.
- 7. **WARNING!!!** It is important not to light the fire near the glass to avoid its deterioration (whitening). It is advisable to always stay inside the log guard.
- 8. **WARNING!!!** Never use flammable liquids (alcohol, nitro or gasoline) to accelerate the ignition of a wood fire: it is extremely dangerous. Alcohol or petrol vapours can easily catch fire and run the risk of serious burns.
- 9. **WARNING!!!** It is not allowed to load a greater weight of wood into the combustion chamber that what is indicated in paragraph 4.1 (technical characteristics).
- 10. **WARNING!!!** During operation, some surfaces of the appliance may reach high temperatures, therefore it is advisable to take the appropriate precautions especially in the presence of children, the elderly and the disabled.
- 11. **WARNING!!!** Refractories inside the combustion chamber may turn black during ignition and in the first hours of operation, they will clean up later during normal operation.
- 12. WARNING !!! It is forbidden to wash the product with jets of water.
- 13. **WARNING!!!** The door should be opened slowly, holding it in place for a few seconds as soon as it is lifted before fully opening.
- 14. **WARNING!!!** Unpleasant smells may occur during the first lighting of the fireplace. Air the room for a few hours.
- 15. **WARNING!!! It is forbidden** to operate the appliance with the door open, without the glass or with the damaged glass to avoid accidental smoke leakage into the environment.

6 - PRODUCT IDENTIFICATION AND TECHNICAL CHARACTERISTICS

The standard range of MORETTI DESIGN vented burners includes 14 different models. To allow the identification of the model and the related technical data, a plate like the one shown below is placed on each firebox.

The plate is located on the upper side of the sliding unit front, and contains the model identification code, the serial number, the main technical data, the minimum safety distances and the reference regulations.

To avoid that, once the covering of the firebox has been installed, the absence of inspections makes it difficult for the end user to read the serial number (useful for example during maintenance by the technical assistance for any order of spare parts), it is advisable to note the serial number and the identification code of the model on the manual.

It is absolutely forbidden to modify or alter the identification plate in any way.



7 - INSTALLATION

Before installing the firebox, it is essential to check the load capacity of the floor. The appliance must be mounted on flooring with adequate bearing capacity and if an existing construction does not meet this preliminary condition, appropriate measures must be taken (for example, placing the firebox above a load distribution plate). To check the weight of the firebox, refer to the data shown on the identification plate, or to the table containing the technical specifications in Appendix I of this manual.

All local regulations, including those referring to national and European standards, must be respected at the time of installation of the appliance. The firebox must be installed by qualified and authorised personnel, in compliance with Ministerial Decree no. 37 of 22 January 2008.

Before installing the firebox, make sure that the chosen place meets the characteristics required by the manufacturer, which will be indicated below, and by current regulations with particular reference to minimum safety distances.

7.1 - WASTE DISPOSAL

The products that make up the packaging are neither toxic nor harmful, therefore they do not require particular disposal processes. The management of packaging residues, which may include storage, disposal or possibly recycling, will be the responsibility of the user, in accordance with the regulations in force in the countries where the operation is carried out.

Warning: do not leave the elements of the packaging within reach of children because they are potential sources of danger.

7.2 - UNPACKING AND SLIDING UNIT MOVEMENT

At the time of delivery, the firebox is anchored on a wooden pallet and wrapped in a heat-shrinking nylon cover. The firebox is equipped with 1 (one) hook that allows the insertion of a carabiner for lifting and moving from the ground (fig. 1); the chains or any accessories used for this type of movement must be suitable to support the weight of the firebox.



All handling operations must be carried out by two or more persons, in accordance with current regulations, and with suitable means. It is recommended to carry out each procedure with extreme caution (do not tilt to avoid tipping, perform slow and gradual movements, etc.), making sure that there are no unskilled persons in the range of action.

Hooking hole

Fig. 1

Sliding unit movement

To allow the sliding unit to be closed, unscrew the door locking screw (fig. 2) only on the MONODESIGN 60, 70, 80, 90 & 120 models

The door locking screw prevents any vibrations during the transport of the firebox from causing the glass to break. The door locking screw is indicated on the firebox by a special label.

After removing the locking screw, check the correct sliding of the sliding door. In case of sliding problems, report it immediately to your dealer or installer.



7.3 - MINIMUM SAFETY DISTANCES

When installing the firebox, it is mandatory to respect certain minimum safety distances. In particular:

- the firebox must always be installed at least 5 cm from the surrounding walls;
- the flue must protrude about 20 cm from the ceiling (if it is already present in the house);

In the event that the firebox is installed near flammable materials, the following minimum safety distances must be respected:

- FLAMMABLE WALLS: if you want to install the firebox near flammable walls, it is necessary to insulate the wall itself with an insulating material with a thickness of at least 10 cm (e.g. against a fireproof plasterboard wall with rock wool). The firebox must be placed at a distance of at least 5 cm from the fireproof wall;
- FLAMMABLE CEILING: if the ceiling is made of flammable material (e.g. wooden beams), it is necessary to create a false ceiling with thermal insulation that is at least 10 cm thick; the chimney must necessarily protrude about 20 cm from the false ceiling.
- FLAMMABLE FLOOR: if the floor is made of flammable material, it is necessary to insulate it with a thickness of non-flammable material of about 3 cm.
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It is forbidden to place flammable objects (e.g. carpets, wooden furniture, flammable liquids, fire-lighting products, etc.) in the radiating area of the fireplace, i.e. within one metre of the sliding door.

It is forbidden to fix or place any type of material on the walls of the firebox (e.g. plasterboard, marble, adhesive tapes, etc.). It is absolutely forbidden to place, in any way, covering on the structure of the firebox, including the front of the appliance.

A minimum space of at least 5 cm must be left between the covering and the front of the firebox: this will allow the normal expansion of the fireplace structure over an open fire, thus avoiding damage to the covering and/or the firebox itself. In the event that local, regional or supervening national regulations impose compliance with greater safety distances, or more stringent requirements in general, the installation must take place in compliance with the latter.

In any case, the responsibility for the works carried out in the firebox installation space is borne by the end user of the appliance, who is also entrusted with the verification of the proposed installation solutions.

Moretti Design srl is not responsible for damage to persons, animals or property resulting from failure to comply with the safety distances indicated above, or for installations that do not comply with local, regional, national and European regulations.

INSULATION CHARACTERISTICS:

- Type: light insulation plates in calcium silicate for high temperature
- Density: 245 Kg/m³
- Thickness: 10cm
- Fire incombustibility

7.4 - FLUE PIPE CONNECTION

For connection to the flue pipe, we recommend the use of stainless steel pipes made in compliance with current regulations, and with a maximum inclination of 45°.

It is FORBIDDEN to use flexible metal pipes and/or fibre-cement for the connection of the flue pipe.

A flue with insulated stainless steel pipe with material resistant to temperatures of about 400°C (high density rock wool) is recommended. Insulation by expanded clay is prohibited.

The flue pipe must have a height and section such as to guarantee an optimal depression in order to dispose of the mass of fumes resulting from combustion. A vertical trend must be maintained, minimising curves, whose maximum inclination cannot in any case be greater than 45°. Bottlenecks and section changes capable of producing turbulence and pressure drops must be avoided. It must have airtight connections between the various elements which make up the fumes channel, so as to ensure the seal of the fumes.

The flue pipe must have a preferably round section in order to minimise pressure drops and facilitate the evacuation of fumes. If a duct with a square or rectangular section is used, it is preferable that the edges are rounded with a ratio between the sides of 1.5. The internal walls must be smooth and impermeable, in order to avoid the deposit of unburned materials and the absorption of condensation.

The section of the flue pipe for an ideal forced draft (about 10 Pascal) varies according to different parameters, including the height of the flue pipe itself, the power of the fireplace, the presence of curves, the length of the sub-horizontal sections and the height above sea level. Connect the flue pipe with stainless steel pipes of equal section to the flue pipe (see Technical characteristics in par. 4.1) perfectly sealing the fitting itself.

Each flue pipe must be placed at the service of a single system. It is therefore forbidden to connect the firebox to a flue already connected to other appliances.

Contact between the flue pipe and flammable or combustible materials must be avoided, either through the use of suitable insulating materials or through the creation of an air gap.

Check the outlet of the flue pipe on the roof: the length of the flue must exceed the top of the roof by at least 50 cm. In the case of side-by-side flue pipes, one flue pipe must exceed the other by at least 50 cm.

WARNING: In the event of a fire in the flue pipe, it is necessary to extinguish the fireplace and call the Fire Department. After extinguishing the fire, check that the flue pipe has no visible damage. Before turning on the fireplace again, make the necessary repairs.

INFO: A too wide opening of the flue pipe leads to a decrease in the speed of the fumes, a greater accumulation of unburned substances on the walls, favours the cooling of the fumes and the formation of acid condensation along the walls, considerably slowing down the ignition of the wood and the combustion. On the contrary, an undersized section causes the accumulation of fumes in the combustion chamber due to the inability of complete disposal, leading to the extinguishing of the flame and the suffocation of the combustion itself.

MORETTI DESIGN only guarantees the materials of its own production and declines all responsibility if the instructions provided in the manual are not respected. Figures 8-9-10 and Table 1 indicate the measures to be respected in the installation of the flue pipe.

7.5 - THE CHIMNEY

The chimney allows the forced draft of the fireplace, that is, the evacuation of fumes. When we talk about the height of the chimney, we refer to the evacuation rings, excluding the size of the final rain cap.

A suitable dimensioning of the chimney is essential for a correct forced draft. In this regard, the useful outlet section of the chimney must not be less than twice the section of the flue pipe, while the internal section must be identical to that of the fireplace. The chimney must also be easily inspected in order to facilitate maintenance and cleaning.

The chimney is also intended to protect the flue pipe and the entire fireplace from rainwater and must be able to continue to perform its function even in the presence of wind from all directions. The images below show the correct positions of the chimney (Figures 3-4-5 and Table 1).

Fig. 3







Table 1

α	A	Н	Z
Roof slope	Distance between roof axis (ridge) and upstream side of the chimney	Minimum height out- let from the roof(h minimum)	Reflux zone height
15°	1.85 m	1.00 m	0.50 m
30°	1.50 m	1.30 m	0.80 m
45°	1.30 m	2.00 m	1.50 m
60°	1.20 m	2.60 m	2.10 m

7.6 - AIR INTAKES

7.6.1 - NATURAL CONVENTION AIR INTAKE (OPTIONAL art. MORKRX)

According to current legislation, all appliances must be equipped with air intake ducts to the firebox with adequate dimensions to ensure efficient and complete combustion.

The appliance is designed to perform two functions: to generate hot air by means of the "Natural Convection" or "Forced Ventilation" system and at the same time to replenish the oxygen consumed during combustion. The absence of a sufficient inflow of combustion air from the outside that replenishes the oxygen burned during the normal combustion of wood, causes the consumption of oxygen inside the place of installation of the appliance and can therefore be a source of danger for people. In addition, the lack of combustion air can cause poor combustion and difficulties in the evacuation of fumes.

For the suction of external air, the appliance is equipped with 4 inlets \emptyset 12 cm (use only 2) no. 2 located on the back and no. 2 on the sides of the appliance for natural convection (see figure 6).

To allow the passage of aluminium flexible pipes to the outside (or to a sufficiently ventilated environment), two holes must be drilled in the wall that communicate with the outside (see figures 6 and 7). Place the appliance at a distance of about 15 cm from the wall (or the protective structure, if the walls are flammable)

Adjust the height and levels using the adjustable feet (with a 17 mm hex key), which are accessible from outside the appliance.





Fig. 6



Insert the two sections of aluminium flexible pipe into the holes previously made and cut them facing the outer wall. Mount the two PVC grilles on the aforementioned hoses; the use of the air intakes provided ensures safe and energy-efficient operation.

WARNING: Regularly check that the air intakes are not obstructed (through each grid, an air passage of at least 170 cm² for natural convection appliances and 100 cm² for forced ventilation appliances must be guaranteed).

7.6.2 - PRIMARY AIR INTAKE (OPTIONAL art. MORKERM)

The appliance can also be installed with only the primary air ducting. Place the joint behind the appliance and insert the 8 cm length of aluminium flexible pipe, securing it with a hose clamp.

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Drill two holes in the wall communicating with the outside (or with a sufficiently ventilated environment): one suitable for the passage of the 8 cm aluminium flexible pipe and another 15 cm in diameter inside the support structure (see figure 8). After correctly positioning the appliance as described above, insert the manifold into the section of aluminium flexible pipe and secure it with a hose clamp, then insert the section into the hole previously made. Finally, mount the two PVC grilles, one on the 8 cm diameter flexible pipe and the other on the 15 cm diameter hole.

Precise installation and testing techniques are necessary in order to guarantee the optimal thermal performance of the appliance (consumption, efficiency, emissions), in accordance with the technical data declared and certified by the approval laboratory. Excessive forced draft with respect to the specifications can cause defective operation with excessive fuel consumption, overheating of the structure and annoying noises in the combustion chamber.



WARNING: It is forbidden to take the combustion air from environments such as garages, warehouses of combustible material, environments at risk of fire or with an explosive atmosphere, rooms where there are liquid fuel heating appliances that withdraw the vented air from the same room, or in environments where there are type B gas appliances intended for heating.

If in the room where the fireplace is installed there are suction hoods or other extraction fans, these must not be in operation when the fireplace is lit. Failure to do so may result in malfunctions or smoke escaping into the room.

7.6.3 - INTAKES FOR HEATING AIR

For forced ventilation with the MORKV720 kit (optional) the motor box for heating air inlets of diameter Ø=120 mm (see figure 9-a) located one on the right and the other on the left. It is necessary to connect the two related sections of aluminium flexible pipe to the aforementioned intakes and secure them with 2 hose clamps.

In the event that it is not possible to create a second external air intake for the heating air, it is possible to connect one intake of the motor box to an internal air intake, while the other intake must be closed. This solution is allowed solely and exclusively where the installation of the optional centrifugal fan is not provided.

In no case should the air intakes of the engine box be left open, to prevent the combustion air from the external air intake from being sucked from them.

7.6.4 - DECOMPRESSION NOZZLE

In addition to the external air intake, a heat recovery grille (**decompression nozzle**) must be made on the firebox covering. The grille allows the heat that accumulates inside the covering to escape, ensuring both protection against excessive overheating in the firebox cavity and the recovery of otherwise unused heat. The nozzle must be made at a distance of about 50 cm from the ceiling and must be positioned at the top of the fireplace hood, compulsorily on the covering made, and must not be connected to any pipes (figure 9-b).



7.7 - INSTALLATION OF VENTILATION KIT (OPTIONAL art. MORKV720)

All MORETTI DESIGN fireboxes allow the installation (optional) of a ventilation kit that makes it possible, through flexible pipes, to bring hot air also into adjacent rooms and/or away from the fireplace (heat distribution by forced convection), thus ensuring the same comfort of the installation tion environment.

Optional ventilation kit contains:

- No. 1 Centrifugal fan art. 251001101;
- No. 1 Control unit and thermostatic probe art. 112000301;
- Mt 2 Power supply cable art. 267000601;
- No. 1 Cable gland art. 206000201
- No. 1 Decompression nozzle art. 215000101;
- No. 2 Hot air nozzles art. 215000801
- No. 4 Flexible pipes (Φ=120 mm; Lmax pipe = 1.5 m) art. FLEAL120;
- No. 2 White ABS round grille Φ=120 mm art. 215000201;
- No. 4 Rings Φ=120 mm art. 215000501
- No. 6 Connection clamps art. 20FASC1113
- No. 1 Fan box with block art. 620005401 & 2106000801



The technical specifications of the centrifugal fan are indicated in paragraph 4.1.

WARNING!!! For the installation of the ventilation kit, MORKV720 (optional), carry out the assembly near the installation site considering a height equal to or greater than 36 cm between the support surface and the fire surface. Raise the chimney above 4 (four) elements of building works of proven solidity and durability. Take all safety precautions during installation

WARNING!!! The installation of the ventilation kit, MORKV720 (optional), must be carried out before the installation of the covering.

WARNING!!! The access from inside the combustion chamber allows only the assembly of the fan, not the realisation of the necessary tubing for the recovery of the heating air.

7.7.1 ASSEMBLY PHASES

The next page shows the sequences for installing the MORKV720 kit

- Once the fireplace is positioned, remove the log guard, the refractory base and the cast iron of the firebox using a hook. (seq. 1, 2 & 3)
- Remove the ash drawer (seq. 4)
- At the bottom of the fireplace you will see a rectangular plate fixed with 4 three-lobed screws, unscrew them with a screwdriver and remove the cap. (seq. 5, 6 & 7)

Warning: Between the cap and the support surface there is a gasket that must not be removed.

- Install the 2 (two) nozzles on the FAN BOX (seq. 8)
- Insert the Fan Box on the bottom with the fan and screw the TCEI M6 screws from the inside (seq. 9, 10 & 11)
- Reinstall the plate at the bottom of the fireplace eliminating the 4 (four) pre-cut segments on the corners (seq.12, 13 & 14)
- Reposition the internal components. (seq. 15, 16, 17 & 18)

Warning: For the connection of the fan cable and the probe, see paragraph 4.6.6

• For the assembly of flexible pipes for hot air, follow the sequences 19, 20 & 21.

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7.7.2 - CENTRIFUGAL FAN

The fan sucks the air from the side and, after passing it through the heating areas of the firebox, sends it to the environment whose air is to be heated. The fan must be inserted into the appropriate motor box located at the bottom of the firebox.

WARNING! For the installation of the fan, it is **mandatory** to have the necessary air grilles (paragraph 7.6.3) appropriately connected to the engine box by means of the special flexible pipes provided in the **MORKV720** ventilation kit. Mounting the fan without the necessary connections to the air intake grilles may result in malfunctions.

7.7.3 - AIR GRILLES

Once the centrifugal fan is inserted, the air intake pipes must be connected to the engine box. For optimal mixing of the air supply to the fan, we recommend the placement of an external air intake and an internal intake to the environment in which the firebox will be placed. These air intakes will be connected to the fan box through the pipes included in the kit (Φ =120 mm).

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WARNING!!! The grilles for the heating air must be understood as additional to the intakes for the combustion air. Therefore, in the case of installation of the ventilation kit, it will be necessary to provide an external and an internal air intake, plus two outlets for the heating air.

External air intake Φ =120 mm: it must be connected to the motor box by means of a flexible pipe and placed next to the firebox. If this is not possible, it is advisable to pass pipes or ducts under the floor by making an opening on it, as shown in the figure on the side. The external air intake must be equipped with a special cover.

Internal air intake (intake): it must be connected to the motor box by means of a flexible pipe, it must be installed about 30 cm from the floor and placed near the firebox or on the covering made (but never in the direction of the mouth of the firebox, to prevent the fan from sucking in smoke when the fireplace door is open).

Figure 10-a & 10-b shows a correct installation of the air intakes in the presence of ventilation kits.



Fig. 10-b



7.7.4 - HOT AIR DUCTING

The hot air produced by the firebox can be conveyed to neighbouring rooms through flexible pipes (Φ =120 mm). These pipes must be connected to the two hot air outlet sections located in the upper part of the firebox.

Through special outlet nozzles, hot air is introduced from above into the room, allowing uniform heating of the room without raising dust. It is recommended to install these nozzles at a distance of 70 cm from the ceiling.

The hot air intake nozzles are provided with a closure, so that the air flow can be adjusted as needed. For good heating, the ductwork sections must be insulated and as short as possible, as the shorter the air travel, the higher the outlet temperature.

7.7.5 - CONTROL UNIT

WARNING: The control unit must not be installed near the firebox or the covering to prevent heat from overheating it and negatively affecting its operation.

The start of the centrifugal fan is controlled through the control unit (figure 11), which provides three operating modes: manual (MAN), automatic (AUTO) and proportional (PROP). To select the mod, e just press the button

When in manual mode (MAN light on), the fan operates at the set speed independently of the probe.

In automatic mode (AUTO light on) the fan is switched to the set mode if the temperature exceeds the set thermostat (SET) level.

In proportional mode (PROP light on) the fan varies the speed according to the temperature within a certain set range.

WARNING: For the operation of the control unit, follow the user manual attached to the control unit itself.



WARNING: For the installation of the control unit, rely on qualified personnel. MORETTI DESIGN is not liable for any errors or tampering that may compromise its functionality (e.g. failure as a result of incorrect connection to the mains, opening and changes to the electronic board). In such cases, the control unit will not be covered by a warranty.

7.7.6 - INSTALLATION OF THERMOSTATIC PROBE

The presence of a thermostatic probe allows the fan to start and turn off automatically: it gives the consent to start the motor when it senses the threshold hot air temperature set by the manufacture, and turns it off when it falls below this value.

The thermostatic probe must be positioned inside one of the two hot air ducting pipes and must be fixed using the appropriate clamp provided in the kit. The probe can be positioned either near the air outlet grille (preferred solution if no inspection is foreseen in the upper part of the firebox), or as close as possible to the connection point of the flexible pipe with the firebox structure (if an inspection is foreseen that allows the probe to be replaced in the future in case of malfunction). The other end of the probe with the green terminals must be brought directly into the control unit and connected as shown in figure 13.

7.7.7 - CONTROL UNIT ELECTRICAL CONNECTIONS

Check that the nominal mains voltage is suitable for the operation of the control unit. Before making the connection, check the operation of the earthing system. Grounding of the appliance is mandatory by law. The manufacturer declines all responsibility for any damage to persons or property resulting from failure to comply with this law.

Three electrical sheaths must reach the housing box of the control unit as shown in figure 12.

The electrical connection must be made on the terminal block of the control unit with mains power disconnected, using suitable equipment, by authorised technicians. The company is not liable for damage due to incorrect connections or improper use of the device. For the correct operation and installation of the control unit, follow the technical data sheet inside the package present in the kit.

For the connection of the fan and the thermostatic probe to the control unit, follow the diagram below, referring to the terminal block connections (Figure 13).



	Initials	Clamps	Device	Characteristics				
	LINE	1 - 2	Mains power supply	230 Vac 50 Hz ± 10% Absorption 2 VA				
INPUTS	S1	9 - 10	Air Temperature Probe	Operating range: -10°C ÷ 180°C NTC100K Measurement: -10°C ÷ 300°C ± 1°C				
	S2	11 - 12	Room Temperature Probe	Operating range: -10°C ÷ 80 °C NTC100K Measurement: -10°C ÷ 110 °C ± 1°C				
	VENT	5 - 6	Fan	230 Vac 0.8A/1.5A enhanced version				
OUTPUTS	SERV	7 - 8	Thermostat	Free connectors: COM. (7) - N.O. (8)				

7.8 - POSITIONING OF THE FUMES DEFLECTORS

The fumes deflectors are fundamental elements for the correct functioning of the fireplace, since they direct the smoke towards obligatory passages allowing the adjustment of the draft and thus improving both the efficiency of the fireplace and the consumption of wood. The deflectors are positioned at the top of the combustion

MONODESIGN 60

LATODESIGN 60 LH



LATODESIGN 60 RH

MONODESIGN 70





MONODESIGN 90

MONODESIGN 80



LATODESIGN 90 LH

LATODESIGN 90 RH





TRIODESIGN 90

MONODESIGN 120



7.8.1 - REMOVING THE UPPER DEFLECTORS

To carry out the general cleaning operations, paragraph 5.5.2, it is necessary to remove some internal elements of the appliance, taking great care when handling the vermiculite elements. To remove the deflectors 2, 3, 4, 5 & 6 follow the pictures below.











8 - USE AND MAINTENANCE OF THE FIREBOX

Warning: It is suggested to ventilate the room at the first ignition and not to stay near the fireplace, to evacuate any odours and/or fumes emitted by the paint during drying and curing due to heat. The odours and/ or fumes will disappear after about 4 hours of operation, however, remembering that they are not harmful to health.

8.1 - RECOMMENDED FUELS

Moretti fireboxes are designed to work only with firewood. Wood is divided into two main categories:

- hardwood (oak, hornbeam, beech, ash, birch, etc.) has a high calorific yield because it burns slowly and produces a great deal of embers.
- soft wood (poplar, willow, tremolo, etc.) is more resinous and has less tight fibres, producing a lively flame that burns very quickly (Table 2). A negative characteristic of softwood is that it creates creosote incrustations inside the smoke passage due to the high resinosity.

It is recommended to use only seasoned (dry) hardwood, with a humidity level of less than 20%, thus guaranteeing a high caloric value. Dry wood has a calorific value of about 4.5kw/h per kg unlike green wood, with only 2.1 kw/h per kg. Wet wood is more difficult to consume, while dry wood burns better and more slowly, releasing a greater amount of heat. Wet wood that reaches humidity levels of 50-60% also does not heat, has bad combustion, releases excessive water vapour and leads to the formation of tar in the combustion chamber, glass and flue pipe.

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The higher the specific weight of the type of wood used, the higher the thermal yield. Table 3 shows the specific weights for different types of wood (it is preferable to store the wood in a ventilated room, keeping it cut into small pieces of about 40 cm in length, for a time ranging from 18 to 24 months). For correct wood storage, see figure 14.

|--|

Type of wood	Kg/m3
Hornbeam	400/500
Oak	380/480
Beech	350/450
Birch	300/400
Larch	300/400
Pine	300/400
Poplar	250/350
Spruce	250/350
Maple	250/350





PROHIBITED FUELS

Do not use wood with resin, damp wood, chipboard, painted wood, etc. Do not use plastic of any kind, cardboard, etc. It is forbidden to use, for combustion or to facilitate ignition, chemicals, oil, alcohol, petroleum derivatives and all highly flammable materials.

USEFUL TIPS

For maximum performance, it is important to use dry wood with a diameter of 12-15 cm and a length of 30-40 cm, always placing it above the live embers bed (obviously during operation). During ignition, insert small pieces into the combustion chamber to create live embers (see paragraph 5.3).

WARNING! Do not use the hydro stove as an incinerator or in any other manner other than that for which it was designed for. Do not use fuels other than those recommended. Do not use liquid fuels.

8.2 - AIR REGISTERS

8.2.1 - COMBUSTION AIR REGISTER

Some firebox models are equipped with a lever that allows you to regulate the combustion air entering the combustion chamber. The combustion air enters through the slots that are located on the bottom of the fireplace front, and the lever is located under the sliding door, at the level of the fire floor, on the left side (figure 15-a).

By pushing the lever outwards, you will have a greater intake of combustion air (more intense flame), while by pushing the lever inwards you will have a smaller intake of combustion air (slower flame).



The lever acts on both the primary air and the air for the second combustion. When switching on, the lever must be held outwards (air intake fully open).

8.2.1 - COMBUSTION AIR REGISTER "FIRE TECH MODE"

Some firebox models are equipped with the new FIRE TECH MODE lever. (figure 15-b).

The intuitive lever gives you complete control of the airflow and ignition of the Moretti Design fireplace. This innovative feature allows you to choose between different adjustment options:

Power ON: In this mode it allows the fireplace to be switched on

Slow Mode [1]: In this mode, you will enjoy a slow and gentle flame that allows the fireplace to run for a longer period, minimising wood consumption.

Economy Mode [2]: Economy mode gives you optimal efficiency, ensuring low wood consumption without compromising heating power.

Efficiency Mode [3]: Thanks to the Efficiency mode, the fireplace adjusts the airflow speed optimally to ensure better performance in terms of energy efficiency, reduced emissions and heating. **Speed Mode [4]:** If you need to warm up the room quickly, you can select the Speed mode to get the maximum power-up and heating speed. **The X Button:** Allows shutdown

With the **Fire Tech Mode**, you will have the opportunity to customise the experience of your Moretti Design fireplace, adapting it to your specific needs and enjoying optimal thermal comfort



8.3 - FIRST IGNITIONS

Once the firebox has been placed in its final location, the flue pipe has been connected and the external air intake for the combustion air has been made, some ignitions MUST BE carried out before installing the covering on the firebox. This will allow you to test the appliance and verify its correct operation without making it difficult to carry out any corrective actions (for example, for smoke leaks).

WARNING! In the event that there are malfunctions with the covering installation completed, MORETTI DESIGN will not be responsible for any work for masonry works necessary to resolve the fault. For more information, please refer to the warranty conditions on page 4.

The first lighting of the firebox must be carried out by the end user, proceeding as follows:

- Make sure that the smoke deflector is correctly positioned; open the combustion air register completely;
- Place the most suitable fuel for ignition (paper, firelighters, etc.) in the centre of the firebox, put small pieces of wood atop them and proceed with ignition. To facilitate the process, it is advisable to keep the sliding door half-open (max 1 cm) until the fire is lit; For the correct positioning of the wood in ignition see fig. 16
- Once the fire is lit, put a load of medium-sized dry wood (diameter 10-15 cm) atop the live embers. The
 wood load must not exceed the kilograms of wood described in the technical specifications (paragraph 4.1),
 so that the first expansion of the metal sheets is gradual and the structure is not damaged. Once the wood
 is loaded, close the sliding glass door completely;
- Adjust the combustion air register according to the flame: if the combustion is very fast and the flame is high, close the register (lever inwards); if the combustion is slow and the flame is low, open the register (lever outwards).

WARNING: If the combustion continues to be slow and the flame is low even with the register open, it is recommended to change the position of the central deflector by retracting it by 3 cm as shown in fig. 17 & 18.

If even this operation does not improve the forced draft, it is also possible to rotate the side deflectors as shown in fig. 19.

- Check that the sliding door, during the work phase, works correctly, otherwise follow the instructions in paragraph 8.4
- Carry out multiple loads of wood to verify the correct functioning of the firebox and to allow the drying of the
 processing greases on the fireplace. With the first ignition, in fact, there will be a substantial exhalation
 of fumes due to the processing greases; it is therefore advisable to ventilate the rooms well, leaving
 doors and windows open to allow them to flow out. After the first ignition, or at most after a few days, the
 fireplace structure will have completely dried and any smoke or bad smell will disappear.

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Fig. 16

Fig. 18











8.4 - SLIDING DOOR ADJUSTMENT

In all models of the MORETTI DESIGN range, the screws for adjusting the sliding door are placed in front of the guides.

MODELS: MONODESIGN 60, MONODESIGN 70, MONODESIGN 80, MONODESIGN 90, MONODESIGN 120, LATODESIGN 60 RH, LATODESIGN 60 LH, LATODESIGN 90 RH & LATODESIGN 90 LH.

- To loosen the screws from the guide, use a 10 mm fixed wrench and loosen the three screws on both sides as shown in fig. 20-a / 20-b
- Once the firebox has warmed up well, open and close the downward door several times, until the guides have widened and the door moves freely.
- Tighten the screws of the guides again.



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MODEL: LATODESIGN 60 RH, LATODESIGN 60 LH, LATODESIGN 90 RH & LATODESIGN 90 LH.

- The screws of the sliding door are located: 3 (three) inside the firebox and 3 (three) outside as shown in fig. 21-• a / 21-b
- Close the sliding door and light the fireplace.
- Once the firebox has warmed up well, open and close the downward door several times, until the guides have widened and the door moves freely.
- Tighten the screws of the guides.





MODEL: TRIODESIGN 90

- The screws of the sliding door are located inside the firebox. To loosen the screws, lift the sliding door and loosen the 3 screws on both sides as shown in fig. 22-a / 22-b
- Close the sliding door and light the fireplace.
- Once the firebox has warmed up well, open and close the downward door several times, until the guides have widened and the door moves freely.
- Tighten the screws of the guides.





8.5 - DAILY USE

Once the test ignitions have been carried out with a positive result, it is possible to proceed with the covering of the firebox, in compliance with the instructions provided in this manual (in particular in chapter 4) and in compliance with all local regulations, including those referring to national and European standards.

During normal use of the firebox, the user must always pay the utmost attention to avoid dangerous situations, operating in compliance with the instructions provided in this manual. In particular, please note that:

- The appliance must not be used as an incinerator, but must be used exclusively in the ways and with the fuels indicated in this manual.
- During normal operation, the surfaces of the firebox, especially the glass, reach high temperatures and can cause touch burns. It is therefore recommended to manoeuvre with caution to avoid burns, using the special handle provided or a protective glove resistant to high temperatures.
- The firebox must be kept with the glass completely lowered during normal operation, except during wood refilling operations; it is recommended never to open the sliding door with a live flame, but to wait for the formation of embers in the firebox in order to avoid possible damage to the user, the home and the environment. Every time we open the door, we inject oxygen into the combustion chamber, greatly increasing CO emissions into the environment. It is also advisable to open the door slowly: an excessively rapid opening causes a sudden pressure change in the combustion chamber that can cause smoke to escape from the door.
- Do not use more wood than recommended, in order to keep the structure intact. Damage caused by excessive loads of wood is not subject to any warranty.
- WARNING: We believe that this is the most important point for the proper functioning of the fireplace and to have a longer use life. We analyse as described in paragraph 8.1, that the amount of dry wood has a calorific value of 4.5kw/h, the maximum power of a firebox is about 16/20 kW, this means that the amount of fuel to be inserted is about 5kg and it must burn for an hour. We recommend everyone to weigh the wood during the first months of use to really understand what the hourly consumption should be.
- Some particular adverse weather conditions, such as wind, can cause a malfunction of the forced draft and hinder the exit of fumes. To overcome the problem, it is advisable to load a smaller amount of wood and properly adjust the air register system by acting on the combustion air lever, the fumes deflector or the fumes valve.
- Never extinguish the fire by throwing water into the combustion chamber: thermal shock could damage the materials. In case of fire, extinguish the fire using a fire extinguisher.
- In case of non-use for an extended period, before re-ignition check that there are no obstructions to the flue pipe.
- The loading of the wood must take place solely and exclusively when the bed of embers is present. Only in that case is it possible to open the door, using the supplied key, and load the necessary wood. (fig. 23a & 23b)



Fig. 23-a

8.6 - CLEANING AND MAINTENANCE

To maintain excellent firebox efficiency over time, constant cleaning and maintenance must be carried out. Some cleaning operations must be carried out daily, or at most once a month, directly by the user of the appliance; others must be carried out annually, and concern a more thorough cleaning of the firebox, the flue pipe, any replacement of the seals (if worn) and in general a complete check of the appliance. For these last operations, it is advisable to always contact qualified personnel, who meet the requirements of the regulations in force both locally and nationally.

8.6.1 - DAILY OPERATIONS

Before each ignition, it is advisable to free the firebox from the ash residues produced by the previous combustion. If the ash is still hot, it must be deposited in a metal container that allows it to cool; then it is possible to dispose of it or, if desired, use the ash as fertiliser.

8.6.2 - GENERAL CLEANING

Cleaning of the firebox: carry out a general cleaning of the firebox on **an annual basis**, through the use of a brush, proceeding to the elimination of ash and creosote deposited on the walls;

During the cleaning of the firebox it is necessary to disassemble and clean the deflectors from the ash, being very careful when handling the vermiculite elements. It is also necessary to disassemble the fire surface to remove the ash underneath.

Cleaning of the flue pipe: carry out a cleaning of the flue pipe **every end of the season** or before putting the fireplace back into operation, carry out a further check.

It is advisable to entrust the cleaning to a professional chimney sweep.

In case of faults that require the replacement of some parts of the hearth, it is recommended to use only original spare parts. The use of non-original spare parts entails the immediate forfeiture of the warranty and the non-recognition by Moretti Design of any damage caused to persons, animals or property.

8.6.3 - CLEANING OF THE GLASS

It should only be done with a cold fireplace, using special products with paper or a soft cloth. Do not use corrosive or abrasive products. The opening of the glass for cleaning differs depending on the firebox model. The following pictures illustrate the different ways of opening the door.

- MONODESIGN60, MONODESIGN70, MONODESIGN80, MONODESIGN90 & MONODESIGN 120

The opening is a flap door, and opens through two lever handles (or a handle for the MONODESIGN60 & MONO-DESIGN70) that are located at the top of the door. Pull the handles outwards to open the glass, push them inwards to close it fig. 24-a & 24-b

WARNING: Make sure that when the door is closed, the handle does not protrude but remains completely inserted in its seat, to prevent the handle from touching the protective casing when the door is raised.







- LATODESIGN 60 LH, LATODESIGN 60 RH, LATODESIGN 90 LH & LATODESIGN 90 RH

The opening is side-hinged, and takes place by pulling out the lever that is on the door stop on the short side using the supplied key (fig. 25-a, 25-b, 25-c). Pulling the lever unhooks the door and you can open it for cleaning. Once the door is closed, push the lever inwards until it correctly returns to its seat.

Fig. 25-c





- TRIODESIGN 90

The opening is side-hinged, and is done by pulling out the levers that are on the corners of the door between the short side and the long side using the supplied key. Pulling the levers unhooks the door on the short side and it can be opened for cleaning (from fig. 26-a to fig. 26-g). Once the door is closed, push the lever inwards until it correctly returns to its seat



8.6.4 - SUPPLIED KEYS - (COLD HAND)

Figures 27-a and 27-b show the methods of use of the keys supplied, both for opening the LATODESIGN door and for opening the sliding door, thus avoiding contact with hot parts of the firebox.





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