SOOT ABATEMENT SYSTEM
“MAXI GRILL”

INSTRUCTION MANUAL
(TRANSLATION OF THE ORIGINAL INSTRUCTIONS)



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1 FOREWORD

1.1 Use of the instructions

This instruction manual and all the attached documents are an integral part of the purchased machine, and provide useful instructions on how to operate it correctly.

IMPORTANT

USE OF THE INSTRUCTIONS

For your own safety and the safety of persons exposed to hazards during the life cycle of the machine, it is mandatory to refer to the instructions provided and always contact the manufacturer in the event of any doubt arising from the absence or difficult interpretation of these instructions, see **Chapter "Information for the user"**, section "Purpose of the instruction manual".

- This manual and all attached publications must always accompany the machine, of which they are an integral part, throughout the period of operation.
- Keep this manual and all the attached publications in an accessible place known to all users (operators and maintenance personnel).
- The "original instructions" are written in ITALIAN. Any different language is a "translation of the original instructions," in accordance with European Directive 2006/42/EC.
- The information contained in this manual is the property of the manufacturer.
- All reproduction rights of this manual are reserved to the manufacturer.
- Reproduction, even partial, without prior authorisation is prohibited.
- This manual may not be reproduced or disclosed to third parties without the written permission of the manufacturer.
- The manufacturer reserves the right to change the product characteristics and contents of this manual without prior notice.
- The descriptions and illustrations provided in this publication are not binding, see **Chapter "User Information", section "Illustrations"**.
- Before operating on the machine, read and understand the technical instructions contained in this publication and in the attached publications, carefully following the indications given.

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3 IDENTIFICATION

3.1 Purpose of the chapter

IMPORTANT

READ CAREFULLY THE CHAPTER

The chapter contains information on the identification of this publication, the manufacturer of the machine, the machine itself and its certification.

3.2 Identification of the instruction manual

Document: **MUM_SMOKI MAXI GRILL ABBATTITORE DI GRASSI E FULIGGINE_0_en**

Edition: **01/2023**

Revision:- **0**

Date: **13/06/2023**

3.3 Manufacturer identification

Name of the company: **Smoki S.r.l.**

Address: **Via Cella Raibano 16C**
47843 Misano Adriatico (RN)
ITALY

Telephone: **+39 0541 833748**

E-mail: **info@smoki.it – commerciale@smoki.it**

Website: **www.smoki.it**

3.4 Identification plate

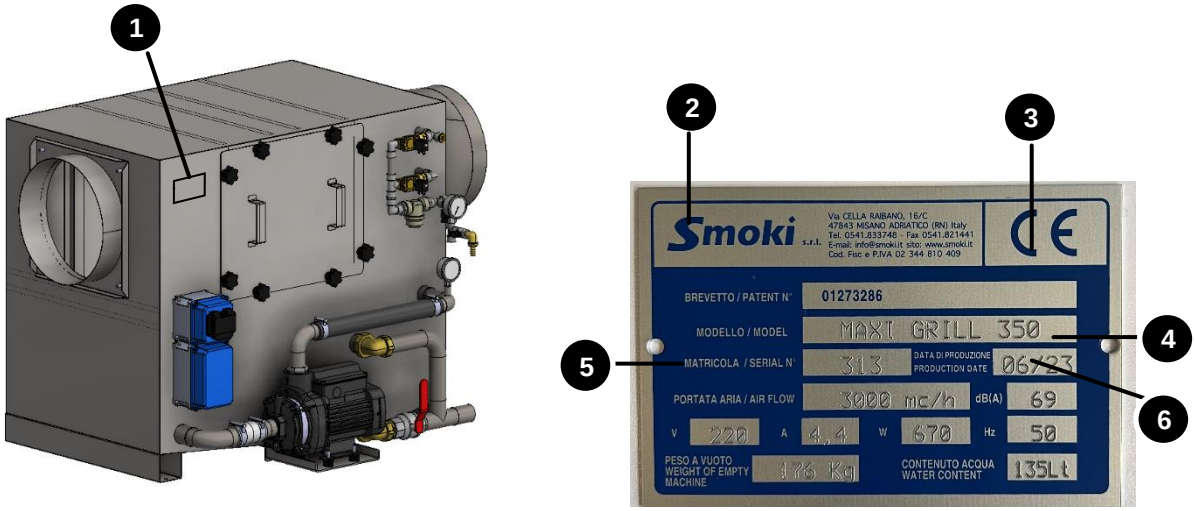
The identification data of the machine can be found on the identification plate (**1**), the position of which is shown in the figure below.

CAUTION

STORAGE OF PLATE DATA

The identification data must always accompany any request for information, for spare parts or other.

- It is forbidden to remove the plate or replace it.
- In case of damage always contact the manufacturer.
- It is advisable to write down the plate data in order to preserve them for future references.



Ref.	DATA	Description
1	-	Identification plate.
2	COMPANY NAME	Manufacturer identification.
3	MARKING IDENTIFICATION	In this area of the plate, the logo relating to the type of certification issued is affixed.
4	MODEL	Identification of the machine model.
5	SERIAL NUMBER	Unique machine identification number.
6	YEAR	Year in which the manufacturing process was completed.

The remaining characteristics will be listed in the machine characteristics reference table.

3.5 EC Declaration of conformity

SMOKI s.r.l.
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SOOT AND GREASE ABATEMENT SYSTEM

"CE" CONFORMITY CERTIFICATE

SMOKI S.R.L. DECLARES, UNDER ITS OWN CIVIL AND PENAL RESPONSIBILITY, THAT THE MACHINE DESCRIBED BELOW:

BRAND	FUNCTION	MODEL	THREE-PHASE VOLTAGE	WEIGHT	CONSTRUCTION YEAR
SMOKI srl	SOOT AND GREASE ABATEMENT SYSTEM	MAXI GRILL	PUMP:	.... kg	2023
				Water content	SERIAL NUMBER
COMPLIES WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS OF THE FOLLOWING DIRECTIVES:				.... lts	

EEC directives	EEC references	Italian laws	Main reference laws
Machine safety directive and subsequent amendments	2006/42/CE	D.L. N. 17 dd. 27/01/2010	UNI EN ISO 12100-1 UNI EN ISO 12100-2 UNI EN ISO 11202
Low voltage directive and subsequent amendments	2014/35/CE	D.L. N. 85 dd. 19/05/2016	CEI EN 61000-6-3 CEI EN 61000-6-1
Electromagnetic compatibility directive and subsequent amendments	2014/30/CE	D.L. N. 80 dd. 18/05/2016	EN 60335-1:2013 EN 60335-2-6:2015

Legal Representative of the Company
and person allowed to make up the
technical file
Marco Pirani

Misano Adriatico (RN) date__/../....

Smoki Maxi 04 27/11/2008

4 INFORMATION FOR THE USER

4.1 Purpose of the instruction manual

In accordance with paragraph 1.7.4 of the European Directive 2006/42/EC, this manual provides important instructions for the safety and correct handling of the machine.

IMPORTANT

READ THE CONTENTS AND ENSURE YOU UNDERSTAND THEM

In this manual, SMOKI s.r.l. provides the technical elements for correct use of its systems, indicating any possible risks.

This manual examines the most general cases. For particular information and better

understanding of the directives described here, we recommend that you contact our technical personnel.

The manual contains a complete description of the main parts, explaining how they work through diagrams, and recommendations for their maintenance.

Particular attention is given to safety, and all related aspects, in order to enable the operator to work with the maximum tranquillity.

IMPORTANT

READ THE CONTENTS AND ENSURE YOU UNDERSTAND THEM

This instruction manual is indispensable and necessary to train and inform the personnel assigned to operate the machine. Due to the specificity of the machine's use, the instructions have been written for professional operators, thus taking into account the level of general training and insight that can reasonably be expected from these operators.

- Although the manual provides information on how to operate properly the machine and on the residual risks of the operations, it does not replace the experience of "expert personnel", who are considered to be trained and informed for their tasks and familiar with the associated safety and operating procedures.
- For the selection of suitable personnel, see **Chapter "Security", section "Qualification of personnel"**.
- Carefully read and understand this manual in all its parts before operating on the machine.
- Only follow the instructions provided and always contact the manufacturer if in doubt.
- Do not perform operations for which no information has been provided by the manufacturer.
- Do not perform operations where the instructions provided by the manufacturer are difficult to interpret.
- Do not perform operations in a different way than described in this manual.
- Do not perform operations that are explicitly forbidden in this manual.
- Should any operating conditions occur that are not expected or not described within the instruction manual, contact the manufacturer immediately.
- The manufacturer accepts no liability for non-compliance with this manual.

4.1.1 Receipt and storage of instructions

The customer and/or employer is responsible for training and informing the personnel assigned to work on the machine and must pass on the information in the instruction manual to the end users.

It is mandatory to keep all instructions (instruction manual and accompanying documentation) in a safe place, accessible and known to all users for future reference. Such documentation must always accompany the machine even if it is transferred to a third party.

The manufacturer reserves the right to provide a copy of the instructions in electronic format.

4.1.2 Request for further copies and/or updates

Further copies of the instructions, in addition to those contractually agreed upon at the time of sale, must be requested with a regular purchase order.

Manual updates, where necessary, must be requested from the manufacturer who will evaluate the manual revision methods. The update must be requested with a regular purchase order and all old copies in the customer's possession must be destroyed and replaced, notifying the manufacturer.

Requests for specific notes on the manual as well as requests for interpretative notes and clarifications of the manual must be agreed with the manufacturer.

4.2 Consultation instructions

Warnings involving personal safety and proper use of machinery are represented in the following style:

"TYPE"
DESCRIPTION Consequence • Action to take. • ...

The word 'TYPE' can take on the following meanings:

HAZARD
Indicates an imminently dangerous situation which, if not avoided, could result in death or serious injury.

WARNING
Indicates a potentially dangerous situation which, if not avoided, could result in death or serious injury.

CAUTION
Indicates a potentially dangerous situation which, if not avoided, may result in minor or moderate injury.

IMPORTANT
Indicates an obligation for special behaviour or activities for the safe operation of the machine, or possible misuse of the machine.

Particularly useful tips and information are represented in the following style:

NOTE: useful information.

4.3 Glossary

4.3.1 Glossary of safety terms

In accordance with the EU Machinery Directive (Directive 2006/42/EC), the following definitions (Annex I, paragraph 1.1.1.) are given, which are used within the instruction manual.

HAZARD
A potential source of injury or damage to health.

DANGER ZONE
Any zone within and/or around machinery in which a person is subject to a risk to his health or safety.

EXPOSED PERSON
Any person wholly or partially in a danger zone.

OPERATOR
The person or persons with the task of installing, operating, adjusting, cleaning, repairing and transporting a machine, or carrying out its maintenance.

RISK
Combination of the probability and severity of an injury or damage to health arising in a hazardous situation.

GUARD
A part of the machinery used specifically to provide protection by means of a physical barrier.

PROTECTIVE DEVICE
A device (other than a guard) which reduces the risk, either alone or in conjunction with a guard.

INTENDED USE
The use of machinery in accordance with the information provided in the instructions for use;

REASONABLY FORESEEABLE MISUSE
The use of machinery in a way not intended in the instructions for use, but which may result from readily predictable human behaviour.

In accordance with the current European Directives on the safety and health of workers in the workplace, the following definitions used within the instruction manual are provided.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment (PPE) means any equipment intended to be worn and held by the worker for the purpose of protecting him against one or more risks likely to threaten safety or health at work, as well as any complement or accessory intended for that purpose. The following are not personal protective equipment:

- Ordinary work clothes and uniforms not specifically intended to protect the safety and health of the worker;
- The equipment of the emergency and rescue services;
- The personal protective equipment of the armed forces, police forces and service personnel for maintaining public order;
- The personal protective equipment specific to road transport vehicles;
- Sports materials;
- Materials for self-defence or deterrence;
- Portable devices for detecting and reporting hazards and harmful factors.

WORKER

A person employed by an employer, excluding domestic and family service workers, in an employment relationship, including a special employment relationship.

Members of cooperatives or societies, including de facto ones, who work on behalf of such companies and bodies, and users of school, university and vocational guidance or training services with employers in order to facilitate or perfect their career choices are treated as workers.

Students at educational and university establishments and participants in vocational training courses in which laboratories, machines, apparatus and work equipment in general, and chemical, physical and biological agents are used, are also treated in the same way. The persons referred to in the preceding sentence shall not be counted for the purposes of determining the number of workers from whom particular obligations are imposed by this decree.

EMPLOYER

The person who holds the employment relationship with the worker or, in any case, the person who, according to the type and organisation of the undertaking, has responsibility for the undertaking itself or the production unit as the holder of decision-making and spending powers.

INTERLOCKING DEVICE (INTERLOCK)

Mechanical, electrical or other device, the purpose of which is to prevent elements of a machine from operating under specified conditions (generally until the guard is closed).

INTERLOCKING GUARD

A guard associated with an interlocking device, so that:

- The hazardous functions of the machine 'affected' by the guard cannot be performed until the guard has been closed;
- If the guard is opened while the machine is performing hazardous functions, a stop command is given;
- Closing the guard allows the execution of the hazardous functions of the machine 'affected' by the guard, but does not command its start-up.

INTERLOCKED GUARD WITH GUARD LOCK

A guard associated with an interlocking device and a guard locking device, so that:

- The hazardous functions of the machine 'affected' by the guard cannot be performed until the guard has been closed and locked;
- The guard remains closed and locked until the danger of injury from the hazardous functions of the machine has stopped;
- Closing and locking the guard allows the execution of the hazardous functions of the machine 'affected' by the guard, but does not control its start-up.

GUARD LOCKING DEVICE

Device designed to lock a guard in the closed position and connected to the control system so that:

- The machine cannot operate until the guard has been closed and locked;
- The guard remains locked until the risk has stopped.

4.4 Illustrations

The illustrations in the manual may show the structure or parts of the machine in different colours to the one in your possession. Differences in colour do not invalidate the correctness of the information provided, with the exception of colours strictly related to the safety of exposed persons and the machine.

If used to exemplify certain machine functions, the illustrations in the manual may differ from the machine in your possession or may not be complete. If necessary, as a supplement to the instructions in the manual, it is advisable to consult the specific drawing to be requested from the manufacturer (e.g. installation layout, assembly layout, etc.) of the component or group of components on which work needs to be carried out.

HAZARD

VARIOUS RISKS ARISING FROM IMPROPER USE OF THE MACHINE.
For the sake of clarity, some illustrations may show the machine with guards and/or protective measures removed.

- It is FORBIDDEN to use the machine with guards and/or protective measures removed and/or disabled.

4.5 Warranty

The manufacturer guarantees its machine and equipment against defects and/or faults in material and/or workmanship up to a contractually agreed period, and in any case in accordance with the applicable legal warranty provisions. Any disputes shall be settled exclusively by the contractually agreed court of law.

IMPORTANT

TERMS OF THE WARRANTY

The warranty will only be valid if the assembly is carried out by the manufacturer's specialist staff. The following operations will also be a sufficient condition for the forfeiture of the aforementioned warranty.

1) The manufacturer guarantees its systems for the legally required period of 12 (twelve) months from the date of purchase shown on the invoice issued by the seller.

2) The warranty covers all parts of the machine except the electric parts.

Damages caused by careless shipment or handling of the product, negligence or inability to use the system,

improper or erroneous installation and maintenance, inadequacy of the electrical system to which the equipment is connected, tampering by unauthorized or unskilled personnel and any other cause independent of the manufacturer are not covered by the warranty.

3) During the warranty period, the manufacturer agrees, through the retailer who sold the machine and in accordance with the terms of the previous paragraph, to replace or repair free of charge any parts that should exhibit malfunctions due to flaws in the original materials or assembly. For repairs made on the premises, the user shall pay a service charge at the current rates. If the installation or part is repaired in the factory, the shipping costs are for the account of the user. Any repair made during the warranty period does not extend the warranty.

4) In order to qualify for repairs under the warranty, the user must exhibit, at the request of our representative, the invoice confirming the date of purchase of the appliance.

5) The manufacturer is not liable for any damages other than replacement of defective parts, and will not accept any charges for direct or indirect damages caused to persons or property by defective operation of the system or its parts, or caused after the expiration of the warranty.

6) The manufacturer recognizes only the terms of the warranty as outlined in this certificate. No one is authorized to modify or release others, whether written or verbal.

HAZARD

MODIFICATION OPERATIONS

The manufacturer accepts no liability in the event of injury due to disassembly, tampering (modification) or exclusion of guards and/or safety devices, or in the event of injury due to operations carried out by personnel with less specific training than defined in the instruction manual.

- Maintain the machine in efficiency according to the original design and as described in this instruction manual.
- Only employ personnel suitable for the tasks to be performed.

HAZARD

COMPONENT REPLACEMENT

Unauthorized tampering/replacement of one or more parts of the components of the machine, and the use of accessories, tools, consumables other than those recommended by the manufacturer, can create an accident hazard and relieve the manufacturer of civil liability and penalties.

- Use only original spare parts.

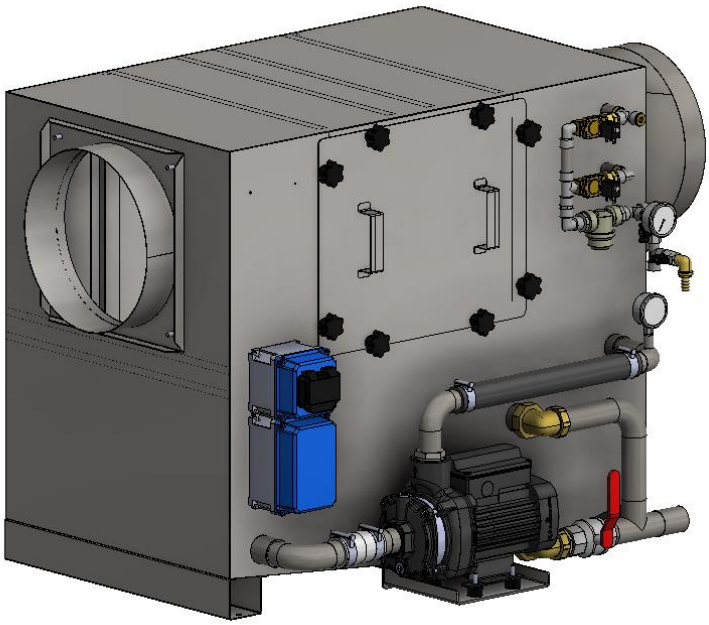
IMPORTANT

The above points are taken from the ***general conditions of sale*** attached to the sales contract; the latter are absolutely authentic and it is therefore necessary to refer to them for other considerations not reported in this section.

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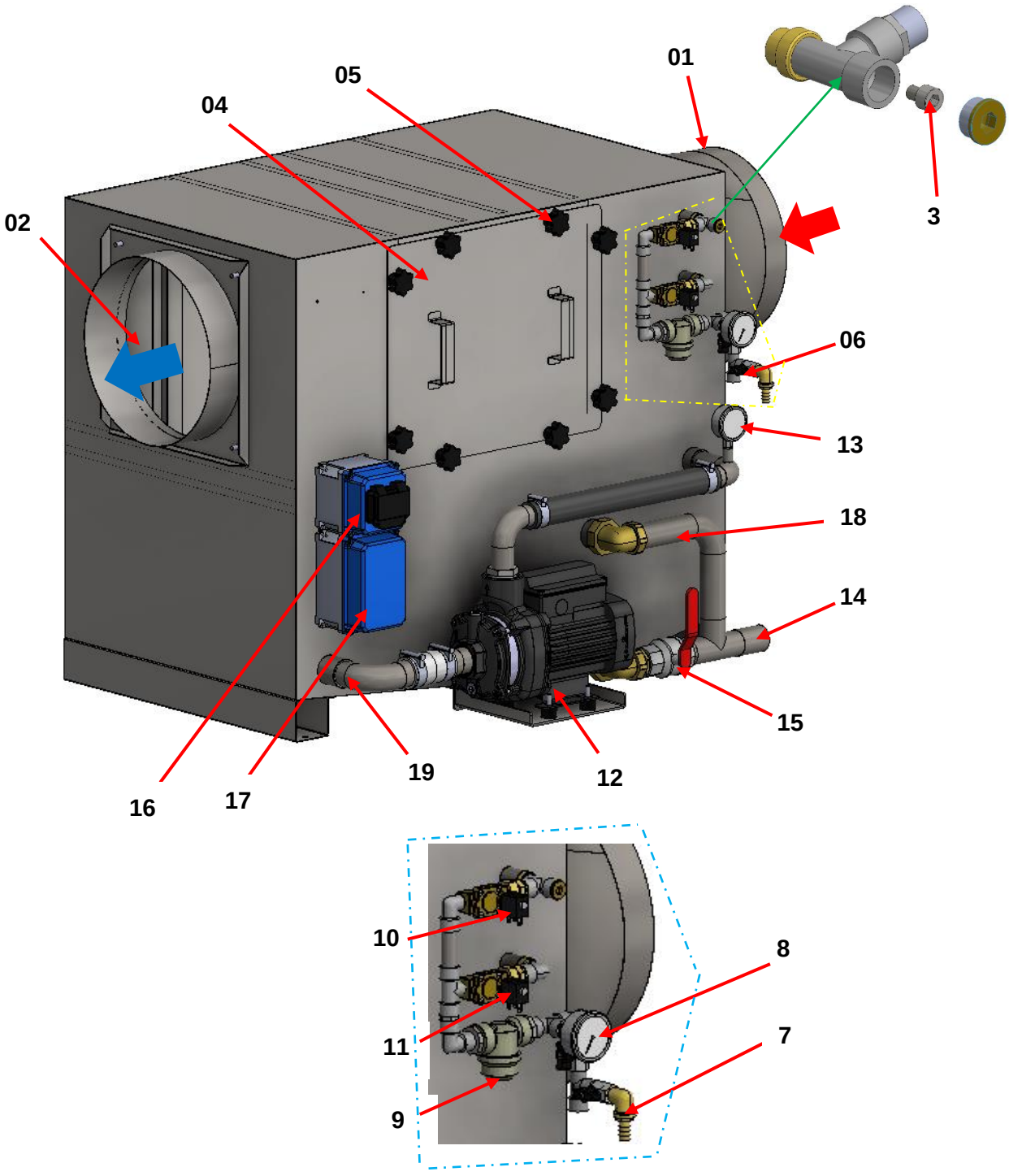
5 DESCRIPTION AND TECHNICAL DATA

5.1 General description of the system



The **"MAXI GRILL"** system was designed and built exclusively to filter soot and cooking grease present in exhaust smoke from cooking food on charcoal or wood-fired grills. It is strictly prohibited to use the machine for purposes other than those intended and highlighted in this manual.
The machine, combined at any point with the smokestack of a coal- or wood-fired grill, is an effective natural filter against air pollution. The product is designed and made using carefully **selected materials to ensure long life**.
The "**MAXI GRILL**" system uses water as a natural filter; **any other use** than as indicated in this manual is **strictly prohibited**.
This type of system must be equipped with a draft activator with simultaneous on/off. The smoke is conveyed inside the machine body equipped with nozzles which, by spraying water, filter the smoke, soot and suspended grease and drop the filtered particles into the recycling tank, subsequently conveying them to the wastewater. The exhaust fumes, purified and cooled, are sent into the atmosphere.
The filtration process achieves an abatement level of approximately: 60-70% of the colour of the smoke. 40-50% of odours and 90/95% of soot.
The electric starter consists of an automatic switch of a suitable amperage (see machine nameplate) placed in the immediate vicinity of the grille or in the power panel. The machine is also equipped with a circuit breaker (ON/OFF switch) and a max level indicator, inside an electric box.
All systems of protection and safety as well as all electrical parts comply with the standards in force.

5.1.1 Main external components

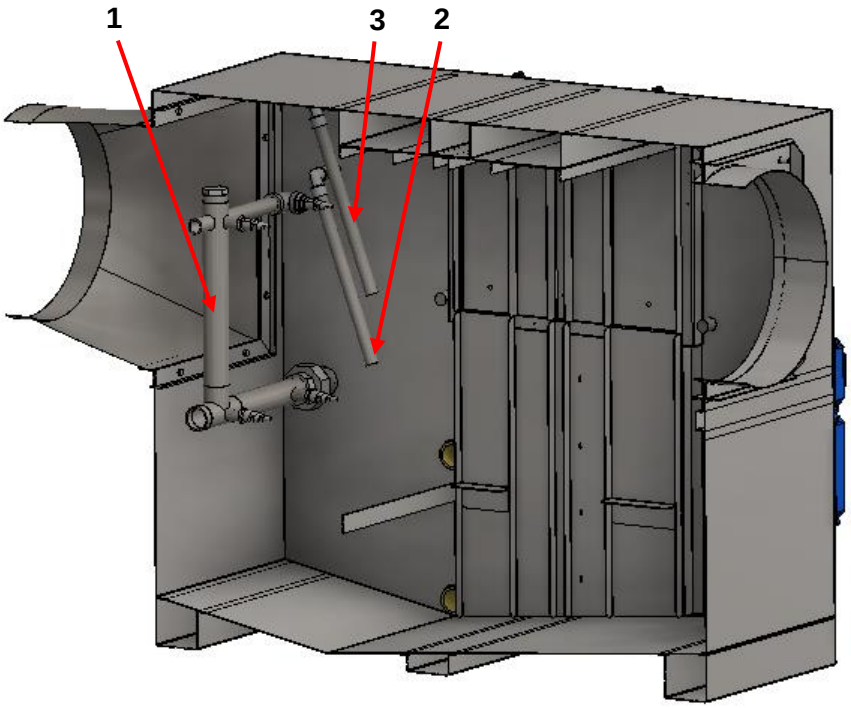


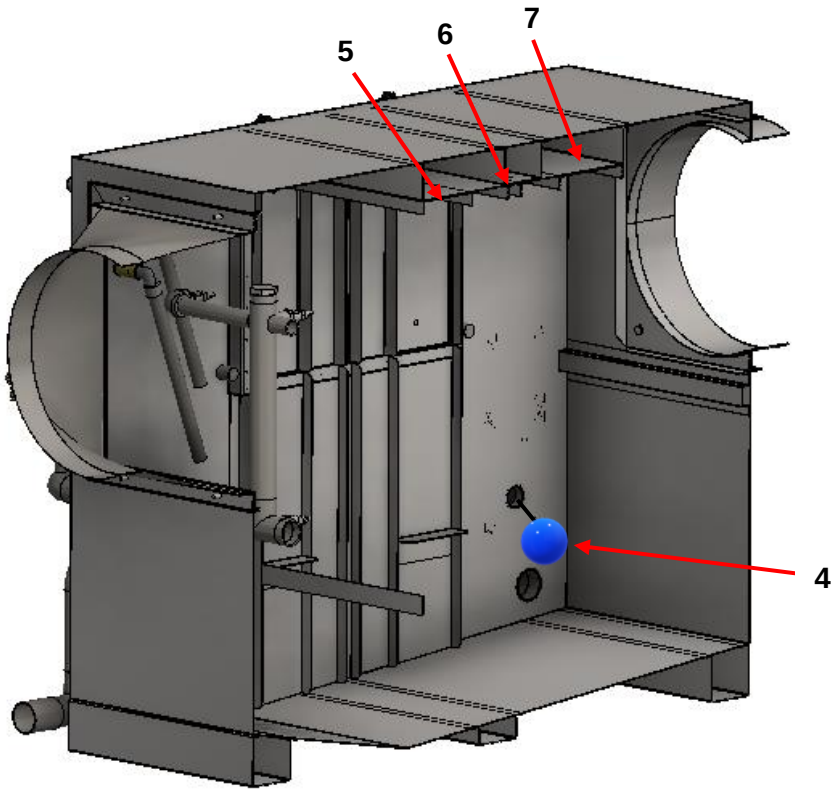
NAME OF PART:

1. **SMOKE SUCTION PORT**
2. **SMOKE EXPULSION FITTING**
3. **MAINTENANCE NOZZLE**
4. **MACHINE COVER**
5. **COVER FASTENING KNOBS**
6. **TAP "A" FOR PERMANENT WATER CONNECTION**
7. **AUXILIARY TAP "B"**
8. **WATER PRESSURE GAUGE**
9. **WATER CONNECTION FILTER**
10. **LEVEL MAINTENANCE SOLENOID**
11. **RAPID FILLING SOLENOID**
12. **PUMP**
13. **PUMP PRESSURE GAUGE**
14. **SEWER DISCHARGE**
15. **ELECTRICAL WATER DRAIN VALVE/MANUAL WATER DRAIN LEVER**
16. **POWER PANEL WITH CIRCUIT BREAKER AND MAX LEVEL INDICATOR**
17. **WATERTIGHT LEVEL GAUGE BOX**
18. **WATER DRAIN OVERFLOW**
19. **INTAKE PUMP**

IMPORTANT
Depending on the client's needs, the cylinders ("**OUT**" and "**IN**") can be reversed only if explicitly requested at the time of the order!

5.1.2 Main internal components





NAME OF PART:

1. **SET OF SPRAY NOZZLES**
2. **COUPLING TO SOLENOID (RAPID FILLING)**
3. **COUPLING TO MAINTENANCE SOLENOID**
4. **FLOAT**
5. **FIRST DROPLET SEPARATOR FILTER SECTIONS**
6. **MESH FILTER**
7. **SECOND DROPLET SEPARATOR FILTER SECTIONS**

IMPORTANT

Depending on the client's needs, the cylinders ("**OUT**" and "**IN**") can be reversed only if explicitly requested at the time of the order!

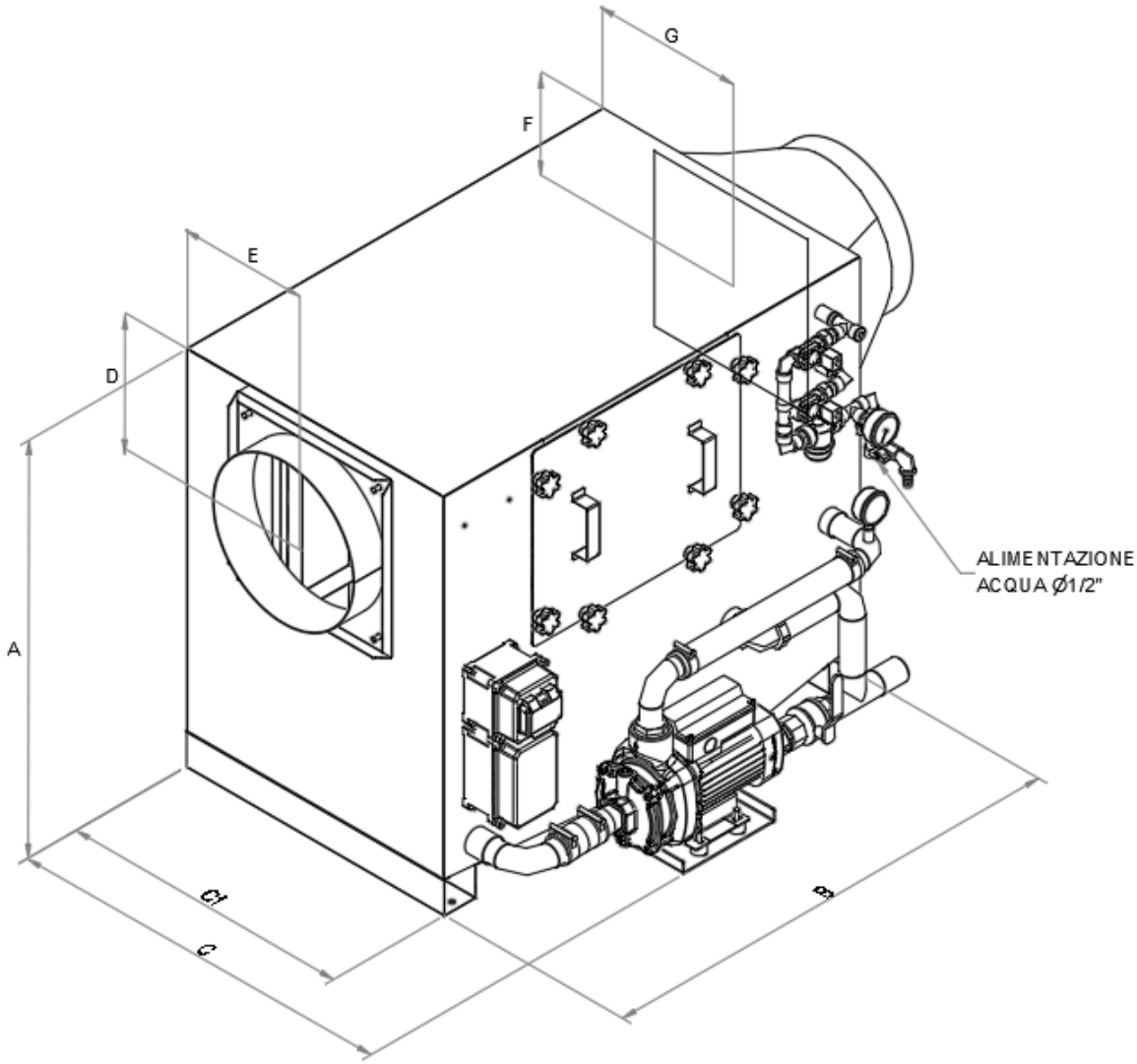
5.1.3 General characteristics

	A mm	B mm	C mm	C1 mm	D mm	E mm	OUT Ømm	F mm	G mm	K(scarico acqua) mm	ALIM. Volt + Hz	Pot.POMPA kW+A	ACQUA L	Q ARIA m³/h
MAXI GRILL 250	812	1050	740	540	160	270	250	210	270	50	monofase 230V 50-60 Hz	0,67kW 4,4 A	107	2000
MAXI GRILL 350	910	1050	850	650	210	325	350	260	325	50	monofase 230V 50-60 Hz	0,67kW 4,4 A	135	3000
MAXI GRILL 400	1100	1300	1045	800	235	400	400	310	400	63	monofase 230V 50-60 Hz	1,5kW 3,15 A	265	5000
MAXI GRILL 500	1200	1400	1180	900	280	450	500	360	450	63	monofase 230V 50-60 Hz	2,2kW 4,7A	349	7000
MAXI GRILL 600	1200	1400	1530	1250	330	625	600	360	625	63	monofase 230V 50-60 Hz	2,2kW 4,7 A	485	10000

5.1.4 Dimensions

Data	Value	Unit
APPLICATION	The machine is designed for installation either inside closed places or outside, connected in both cased to a fume discharge system (smokestack). Installation in cold, damp places is possible.	-
WORKING TEMPERATURE	10 ÷ 50	°C
WEATHER	The machine is protected against the weather by an insulated outdoor cover (separate accessory). However, a sharp drop in atmospheric temperature (below -10°C) or ice formation can cause damage to the system and compromise the correct operation. For lower temperatures, additional equipment should be used to heat/maintain a temperature **≥** 10 °C	
RUNNING TIME	CONTINUOUS	-
NOISE	The weighted equivalent continuous sound pressure level of the machine is **less than 70 dB(A).** However, it is the responsibility of the installer, after having correctly positioned the machine in the production facility, to carry out or update the phonometric survey as required by current safety regulations.	

The overall dimensions of the machine are shown below.



NOTE: *Measurements are in mm.*

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6 SAFETY

6.1 Purpose of the chapter

IMPORTANT

READ CAREFULLY THE CHAPTER

The chapter contains safety information about the machine. Knowledge and understanding of the contents of the chapter is a prerequisite for reading all chapters of the manual, which is why it is mandatory that the personnel in charge of operating the machine are trained and instructed in all the information in this chapter.

- Read and understand the contents.

6.2 Intended use

Intended use means the use of the machine in accordance with the information given in the operating instructions.

6.3 Reasonably foreseeable misuse

Reasonably foreseeable misuse means the use of machinery in a way not intended in the instructions for use, but which may result from readily predictable human behaviour.

HAZARD

VARIOUS RISKS ARISING FROM IMPROPER USE OF THE MACHINE.

Misuse of the machine is extremely dangerous. The manufacturer accepts no liability for any damage to persons or property resulting from use other than intended.

- Use the machine in accordance with its intended use and the instructions provided.

The experience of the manufacturer allows to report in advance the following cases of incorrect use for which it is not possible to use the machine:

A) INSTALLATION

It is considered misuse:

- Install the machine in environments where an explosive atmosphere remains or is likely to form during normal operation for short or long periods (classification according to 1999/92/EC ATEX Directive).
- Install the machine outdoors or in environments whose characteristics do not comply with the environmental technical data contained in the instructions.
- Install the machine without respecting the instructions provided by the manufacturer.

B) USE

It is considered misuse:

- Use by operators who have not been previously trained and informed about all risks and the residual risks of the machine as well as trained on safety.
- Not to use personal protective equipment (PPE) as required in the instructions and by the regulations in force in the country of use.
- To temporarily remove or circumvent the protective measures
- To deliberately lock oneself inside the protective devices.
- To use the machine even when it shows signs of failure or is partially damaged.
- To use the machine not observing the technical data relating to the work limits (materials, speeds, etc.).
- If machine is being activated, by the only operator assigned to use it, without checking before acting on the controls, that there are no people exposed in the danger zones of the machine.

C) TRAINING AND INFORMING PEOPLE
It is considered misuse:

- Operate on the machine without having read and understood the instructions supplied by the manufacturer.
- Carry out operations for which no information has been provided by the manufacturer.
- Perform operations where the instructions provided by the manufacturer are difficult to interpret.
- Perform operations in a different way than described in the instructions.
- Perform operations explicitly prohibited in the instructions.

D) MODIFICATIONS
It is considered misuse:

- Make modifications of any kind that vary the intended use of the machine.

6.4 General safety rules

Listed below are a series of general rules for the correct use of the machine to be integrated with specific information on the operations that must be undertaken for its use and maintenance.

6.4.1 Safety rules for the client and/or employer

IMPORTANT

OBLIGATIONS OF THE EMPLOYER

When making the machine available to the personnel responsible for use and maintenance, it is the obligation of the customer and/or employer to comply with the provisions of the European Directives on health and safety in the workplace and in any case with the regulations of the State where the machine is installed and put into service. These obligations are beyond the responsibility of the manufacturer. Special attention should be paid to the following obligations in particular.

- It is mandatory to carry out a risk assessment of the machine in relation to the characteristics of the installation environment and the characteristics of the working methods of the user company. Assess and understand every risk, as well as the residual risks indicated in the manual, and adopt appropriate technical, organizational and procedural measures to inform and train staff who are appointed to use and maintain the machine.
- It is mandatory to select personnel and provide for their education and training. The personnel chosen must be made up of people who have reached the minimum age for admission to work, and are in adequate psycho-physical conditions for the duties to be performed.
- It is mandatory to choose the personal protective equipment (PPE) suitable for the tasks to be performed and to equip the staff with them. (if necessary)

6.4.2 Safety rules for ordinary people

IMPORTANT

INFORMATION AND SURVEILLANCE OBLIGATIONS

Ordinary people (untrained and uninstructed) cannot operate the machine and can only approach if duly informed.

- It is mandatory for the customer and/or employer to inform of the risks of the machine and supervise ordinary people who pass near it.
- It is forbidden for ordinary people to operate the machine.

6.4.3 Safety rules for the operator

IMPORTANT

OBLIGATIONS FOR THE OPERATOR

The operator actively participates in maintaining a high level of machine safety over time. Please consider the following aspects regarding your own responsibility for use.

- Operate on the machine only with the prior authorisation of the employer.
- Know and use this manual correctly.
- Before operating on the machine, you must undergo training, carried out by the manufacturer or your employer, and comply with the instructions in the instruction manual, respecting the provisions of the operating and safety procedures.
- Respect the warnings posted near dangerous areas.
- Use personal protective equipment (PPE).
- The clothing of those who work on the machine must comply with the essential safety requirements in force in their country, as indicated in the specific directives.
- Make sure that the work area and the machine are free from production residues and objects not necessary for its use.
- Check the efficiency of all guards, alarm devices and protective devices daily and before use; do not operate in the event of malfunctions and restore correct operation before using the machine.
- Do not operate if the guards and/or protective devices have been removed.
- Do not circumvent or voluntarily tamper with guards and protective devices.
- Preserve the characteristics of the machine by absolutely avoiding carrying out modifications that alter its functioning.
- Do not use the machine in the presence of operating anomalies or when fault conditions occur.

HAZARD

VARIOUS RISKS ARISING FROM IMPROPER USE OF THE MACHINE.

The work area must never be occupied, so that nothing can interfere with the operator's freedom of movement.

- In the event of an emergency, immediate access to the machine by the assigned personnel must be guaranteed.
- Access to this area is forbidden to people who are not directly involved in the operation of the machine so as to avoid dangers due to carelessness or negligence during the performance of a task.
- The operator is therefore recommended to keep the work area free of any equipment at all times and to prohibit access to unauthorised persons in order to achieve ideal safety conditions for working on the machine.

6.5 Protective measures adopted

The paragraph contains information on the protection measures adopted to eliminate or reduce the risks present on the machine.

When the adoption of a protective measure does not completely eliminate a risk, but the same remains in a reduced form, this is described in this manual in the form of a residual risk.

HAZARD

VARIOUS RISKS ARISING FROM IMPROPER USE OF THE PROTECTIVE MEASURES

The protective measures adopted must be checked and kept intact throughout the life of the machine.

- Carry out the periodic checks described in the manual.
- It is forbidden to remove or circumvent, even temporarily, the protective measures (e.g. guards, photocell barriers, etc.).

6.5.1 Time limits

The machine is intended for an operational life of 20 years. The command and control circuits having safety functions have been created considering this limit.

6.5.2 Checks of the protective measures

Ref.	MEASURE	CHECK PROCEDURE	FREQUENCY
B	Fixed and/or mobile guards	• Check for loss or damage to any part of the guard, especially if this causes a decrease in the safety functions (e.g. reduction in impact resistance, scratches on glass, etc.) • Replace the parts subject to wear, checking in particular the deterioration of the joints or fixing points. • Check for deterioration due to corrosion, temperature changes or chemical effects. • Check that there are no changes to the safety distances and opening dimensions	MONTHLY
N	Direct / indirect contacts	• Check that the protective sheath of the electric cables is present and intact in all its parts. • Check the intervention times of the power supply protection device (residual-current device). • Check, if present, the state of efficiency of the system against atmospheric discharges.	YEARLY

6.6 Information and warnings on the machine

In compliance with paragraph 1.7.1 of the European Directive 2006/42/EC, the information and warnings described below are supplied on the machine.

IMPORTANT

OBLIGATIONS FOR THE OPERATOR

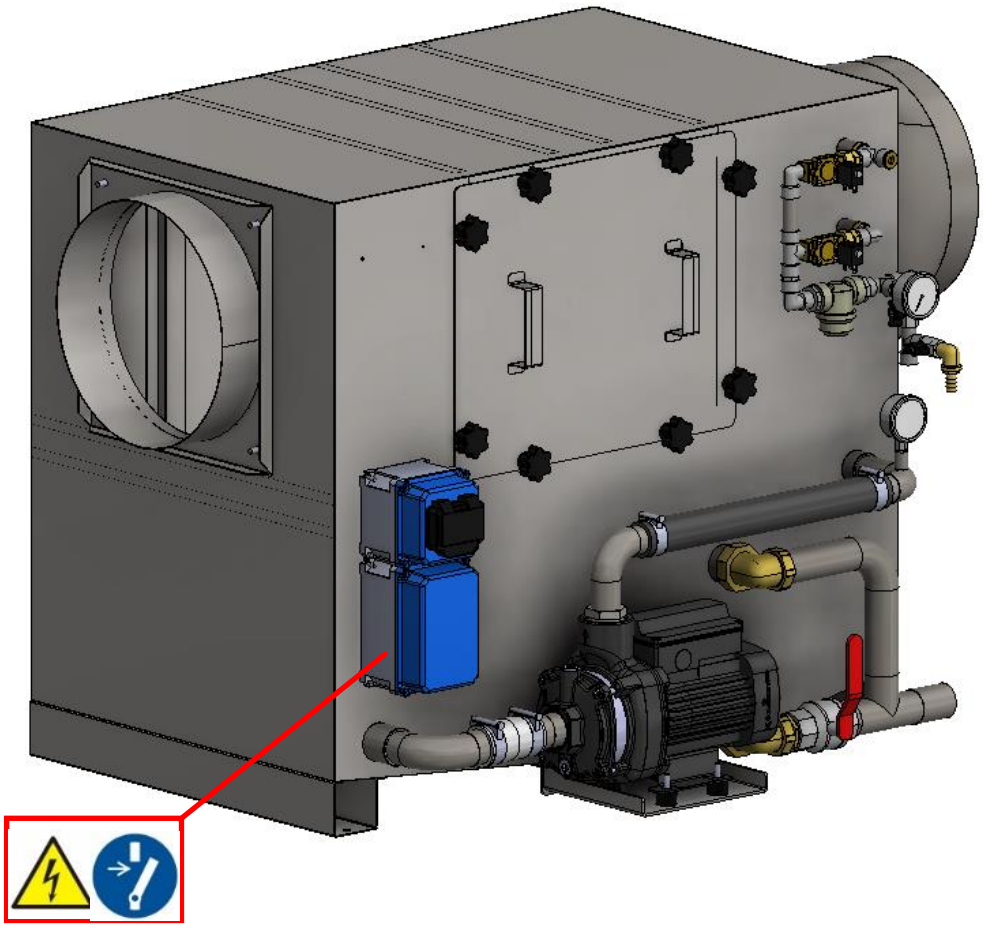
Failure to comply with any requirement, due to deterioration, loss or failure to consult a safety sticker, can cause serious accidents.

- It is mandatory to know and respect the information and warnings on the machine in accordance with the meaning and actions described in this instruction manual.
- The information and warnings on the machine must be kept intact throughout the life of the machine; in this regard, specific verification instructions are given in the following paragraphs.
- The Manufacturer declines all responsibility deriving from failure to comply with the instructions indicated on the machine and in the supplied manuals.

6.6.1 Summary table of notices and warnings

PICTOGRAM	INDICATIONS / WARNINGS
 Electrical hazards	Keep a safe distance to avoid dangers deriving from direct or indirect contact with live parts or equipment. Comply with the safety provisions and use the appropriate personal protective equipment (PPE) (protective gloves against electrical risks).
 Disconnection obligation	Positioned on the electrical panel, it indicates the obligation to disconnect the energy supply sources before carrying out maintenance operations or operations for which the isolation of the energy supply sources is foreseen.

6.6.2 Layout of the information and warning signs



6.7 Protective measures to be taken by the user

6.7.1 Type of personal protective equipment (PPE)

Symbol	Description	Technical standard
	**Whole body protection** (1, 2, 3, 4, 5 6, 7) Always wear protective clothing suitable for the job to be performed. The column to the side shows the reference standards based on the required protection requirements.	1) UNI EN ISO13688 Protective clothing general requirements 2) UNI EN ISO 342 Clothing for protection against the cold 3) UNI EN ISO 11612 Protective clothing against heat and flames 4) UNI EN 943-1-2 Protective clothing against chemicals 5) UNI EN 13034 Protective clothing against liquid chemicals 6) UNI EN 1149 Protective clothing – electrostatic properties 7) IEC EN 61482-1-2 Clothing against the thermal effect of the electric arc
	**Head protection** Always wear a protective hard hat (or helmet) when lifting and positioning the machine and in all cases where there is a risk of objects falling from above.	UNI EN 397 Protective hard hats for industry
	**Hand protection** (1, 2, 3) Always wear protective gloves if operations that expose you to various risk factors are necessary. The column to the side shows the reference standards based on the required protection requirements.	1) UNI EN 374 Protective gloves against chemicals 2) UNI EN 388 Protective gloves against mechanical and electrostatic risks 3) UNI EN 407 Protective gloves against thermal risks

	**Eye protection** Always wear if operations where there is a danger of projection of materials or exposure to splashes are necessary.	UNI EN 166 Personal eye protection - Specifications
	**Hearing protection** (1, 2) Wear personal hearing protection devices in accordance with the noise risk assessment of your work environment and with the regulatory provisions in force in your country. The column to the side shows the reference standards based on the required protection requirements.	1) UNI EN 352-1 Ear-muffs 2) UNI EN 352-2 Hearing protectors
	**Feet protection** (1, 2, 3) Always wear footwear for protection against accidents. The column to the side shows the reference standards based on the required protection requirements.	1) UNI EN ISO 20345 Safety footwear 2) UNI EN ISO 20346 Protective footwear 3) UNI EN ISO 20347 Work footwear
	**Respiratory protection** (1, 2, 3, 4) Always wear respiratory protection masks if it is necessary to clean the machine with solvents or chemical products. The column to the side shows the reference standards based on the required protection requirements.	1) UNI EN 149 Dust filtering half masks 2) UNI EN 405 Gas and particles filtering half masks 3) UNI EN 143 Particle filters 4) UNI EN 14387 Gas filters and combined filters
	**Protection against falls from height** (1, 2, 3, 4, 5, 6, 7, 8)	1) UNI EN 353-1-2 Guided type fall arresters

	Always wear safety belt and harnesses if work at height is required. The column to the side shows the reference standards based on the required protection requirements.	2) UNI EN 354 Lanyards 3) UNI EN 355 Energy absorbers 4) UNI EN 360 Retractable type fall arresters 5) UNI EN 361 Body harnesses 6) UNI EN 363 Fall arrest systems 7) UNI EN 795 Anchoring devices

6.7.2 Use of PPE

Phase	Task	Risk scenario	Measure (PPE)	Person
1. Transport	Packing/unpacking	Packing and unpacking operations that require the use of tools	Hand protection (mechanical risks)	TS
	Handling and transportation	Work near parts of the machine that have sharp edges or abrasive surfaces	Hand protection (mechanical risks)	TS
		Passing or standing near a suspended load	Head protection	TS
2. Assembly Installation and commissioning	Assembly	Work near suspended loads.	Head protection	TS MA
		Operate in the areas intended for assembly of the machine	Hand protection (mechanical risks)	TS MA

Phase	Task	Risk scenario	Measure (PPE)	Person
5. Maintenance	Lubrication/greasing	Lubrication operations performed on the machine	- Hand protection (products/chemical agents) - Respiratory protections - Eye protection	MA
	Cleaning and inspections	Using toxic and/or harmful substances to clean the machine.	- Hand protection (products/chemical agents) - Respiratory protections - Eye protection	MA
	Replacement of worn parts and adjustments on components	Maintenance operations involving the use of ladders and/or scaffolding	Protections for working at height	MA
7. Dismantling, scrapping, disposal	Disassembly	Operate in the areas dedicated to the assembly and disassembly of the machinery	Hand protection (mechanical risks)	TS MA

Warnings regarding residual risks
In accordance with paragraph 1.7.2 of the European Directive 2006/42/EC, the residual risks that remain despite having adopted the protection measures integrated in the design and the protections, and the complementary protection measures, are described.

The sections below describe the residual risks, sub-divided by the stage of the machine in its life cycle:

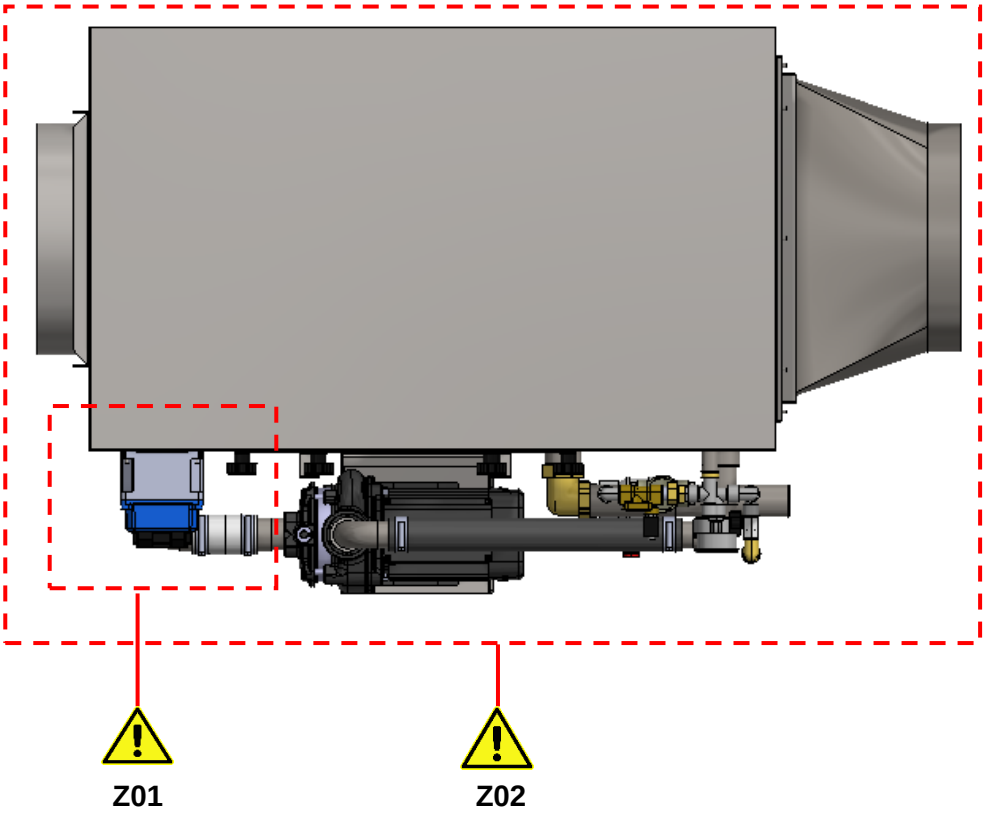
NOTE: In assessing the risks, the manufacturer, in compliance with current legislation, did not take into account (nor did he have the necessary information) the risks inherent in the working environment and the specific working methods of the user company.

NOTE: The following abbreviations are present in the risk sheets, reported in the following paragraphs
PC = Ordinary Person,
TS = Specialist Technician,
TS = Manufacturer Technician,
OP = Operator,
MA - Maintenance Technician.

6.7.3 Danger zones

Ref.	Description	Note
Z00	**All areas**	The risk could be present in all areas.
Z0A	**Areas dedicated to transport, assembly and installation and dismantling**	Areas where transport, assembly, installation and dismantling operations take place. The zones include both the machine and the parts of the site identified for the execution of these activities.
Z01	**Electrical equipment**	Electrical panels, boxes, machine edges where there are live parts. Operations on electrical equipment are intended exclusively for specialised technical personnel. NOTE: The external part of the electrical panel is accessible to the operator only for operating the on/off switch of the machine and for operating the machine controls (if present).
Z02	**Cleaning zone**	Area outside and inside the machine where cleaning operations are carried out by maintenance personnel only.

6.7.4 Zones layout



6.7.5 Residual risks

1. Transport			
Task	Packing/unpacking		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Contact with tool parts that can cause cuts		
Type	9. Environment of use		
Source	Activities and/or processes carried out near the machine		
Situation	Packing and unpacking operations that require the use of tools		
Consequence	Various dangers (cutting of hands and fingers)		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risk of cutting due to the use of tools when packing and unpacking the machine.		
Instructions	- Before using the tools for the operations to be carried out, check the level of wear and replace them, if necessary. - During the packing and unpacking operations, use protective gloves against mechanical risks.		
PPE	Hand protection (mechanical risks)		

1. Transport			
Task	Packing/unpacking		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Environmental pollution		
Type	9. Environment of use		
Source	Pollution		
Situation	Disposal of packaging		
Consequence	Any other consequences caused by sources of risk of the machine or machine parts		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risks to the environment deriving from the disposal of packaging		
Instructions	- Packaging cannot be abandoned in the environment, but must be disposed of according to the regulations in force in the country where the machine is installed.		
PPE	NA		

1. Transport			
Task	Handling and transportation		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Slipping, tripping and falling from parts of machines or areas not prepared for the person to climb		
Type	1. Mechanical		
Source	Rough, slippery surface		
Situation	Climbing onto the transport vehicle platform, load unit or machine parts		
Consequence	Slipping, tripping and falling from height		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risk of falling from vehicles used for work at height		
Instructions	- IT IS FORBIDDEN to access any point of the structures of the machine which are not designed for this purpose. - The employer/client is required to use ladders or scaffolding that comply with the requirements of the legislation in force. - Use personal protective equipment (PPE) suitable for work at height		
PPE	NA		

1. Transport			
Task	Handling and transportation		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Loss of load stability		
Type	1. Mechanical		
Source	Instability		
Situation	Cargo handling on the vehicle platform and on the ground		
Consequence	Crushing of the body and head		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Personnel in charge of handling and transporting the load may be exposed to the fall of moving parts		
Instructions	- The operation is reserved exclusively to expert personnel with relevant knowledge and experience, such as to allow them to assess the risks and avoid the dangers that the job may create. - Cordon off the area where the work is to be carried out and prohibit access to unauthorised people. - Follow the lifting and handling instructions provided. - The employer is required to use only expert personnel for handling and transport operations.		
PPE	NA		

1. Transport			
Task	Handling and transportation		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Contact with machine sharp elements and edges		
Type	1. Mechanical		
Source	Sharp parts		
Situation	Work near parts of the machine that have sharp edges or abrasive surfaces		
Consequence	Hands and arms cuts		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Exposure to mechanical risks during transport, assembly and disassembly operations performed by the maintenance technician and the specialist technician		
Instructions	- The operation is reserved exclusively to expert personnel with relevant knowledge and experience, such as to allow them to assess the risks and avoid the dangers that the job may create. - Cordon off the area where the work is to be carried out and prohibit access to unauthorised people. - Follow the instructions for the operation to be performed. - The employer is required to use only expert personnel for transport, assembly and disassembly operations. - Do not carry out maintenance operations not described in the instructions provided or operations for which the specific knowledge and support of the manufacturer is required.		
PPE	Hand protection (mechanical risks)		

1. Transport			
Task	Handling and transportation		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Possible fall of the load during the handling phase also due to the breaking of straps or cables used for lifting		
Type	1. Mechanical		
Source	Falling objects		
Situation	Passing or standing near a suspended load		
Consequence	Crushing of the body and head		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Personnel in charge of handling and transporting the load may be exposed to the fall of moving parts		
Instructions	- The operation is reserved exclusively to expert personnel with relevant knowledge and experience, such as to allow them to assess the risks and avoid the dangers that the job may create. - Cordon off the area where the work is to be carried out and prohibit access to unauthorised people. - Follow the lifting and handling instructions provided. - The employer is required to use only expert personnel for handling and transport operations.		
PPE	Head protection		

1. Transport			
Task	Handling and transportation		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Working with poor mental effort Overexertion		
Type	8. Ergonomics		
Source	- Excessive / poor mental effort - Overexertion		
Situation	Loading and unloading of materials		
Consequence	Sickness Fatigue Stress		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	personnel responsible for loading and unloading the material may suffer physical injury due to insufficient awareness of the risk.		
Instructions	- The personnel responsible for loading and unloading materials must be adequately trained and informed on the risks present during the operation		
PPE	NA		

1. Transport			
Task	Passing or standing near danger zones (transport phase)		
Exposed person	PC	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Possible fall of the load during the handling phase also due to the breaking of straps or cables used for lifting		
Type	9. Environment of use		
Source	Various hazards (falling objects) arising from activities and/or processes		
Situation	Passing and standing near areas reserved for unloading from the vehicle		
Consequence	Crushing of the body and head		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

1. Transport			
Task	Passing or standing near danger zones (transport phase)		
Exposed person	PC	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Impact and collision caused by the presence of the moving vehicles		
Type	9. Environment of use		
Source	Traffic		
Situation	Passing and standing near the areas reserved for the movement of transport and unloading vehicles		
Consequence	Impact or collision		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

2. Assembly Installation and commissioning			
Task	Commissioning test		
Exposed person	TS TF	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Direct and indirect contact with live parts		
Type	2. Electrical		
Source	- Contact with live elements (direct contact) - Contact with live parts in the event of a fault (indirect contact)		
Situation	Working near electrical panels or live parts while testing machine movements		
Consequence	Electrocution		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Risk of electrocution due to direct and indirect contact with live parts.		
Instructions	- Operations on both energized and de-energized electrical equipment are reserved exclusively to expert personnel (PES) and informed personnel (PAV), according to the definition given by CEI 11-27. The IEC EN 60204-1 standard makes no difference between work performed on electrical equipment that is de-energized or energized, thus not necessarily requiring the use of Eligible Persons (PEI) for the latter, according to the definition given by CEI 11-27. - Live operations that take place inside the electrical panel are only possible after disconnecting the power supply and opening the panel door, and re-energizing the equipment by voluntarily turning the main switch to the ON position.		
PPE	NA		

2. Assembly Installation and commissioning			
Task	Connection to energy supply sources		
Exposed person	TS TF	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Direct and indirect contact with live parts		
Type	2. Electrical		
Source	- Contact with live elements (direct contact) - Contact with live parts in the event of a fault (indirect contact)		
Situation	Working near electrical panels or live parts		
Consequence	Electrocution		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risk of electrocution due to direct and indirect contact with live parts.		
Instructions	- Operations on both energized and de-energized electrical equipment are reserved exclusively to expert personnel (PES) and informed personnel (PAV), according to the definition given by CEI 11-27. The IEC EN 60204-1 standard makes no difference between work performed on electrical equipment that is de-energized or energized, thus not necessarily requiring the use of Eligible Persons (PEI) for the latter, according to the definition given by CEI 11-27. - Live operations that take place inside the electrical panel are only possible after disconnecting the power supply and opening the panel door, and re-energizing the equipment by voluntarily turning the main switch to the ON position.		
PPE	NA		

2. Assembly Installation and commissioning			
Task	Connection to energy supply sources		
Exposed person	TS TF	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Fire caused by electrical components and subsequent contact with flammable material		
Type	3. Thermal		
Source	Fire		
Situation	Working near electrical panels or live parts in the presence of flammable material		
Consequence	Burn Scalding		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Risk of fire due to possible faults in the electrical system and subsequent contact with flammable material		
Instructions	- The employer is required to provide extinguishing equipment near the electrical cabinets		
PPE	NA		

2. Assembly Installation and commissioning			
Task	Assembly		
Exposed person	TS MA	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Contact with sharp machine elements or edges		
Type	1. Mechanical		
Source	Sharp parts		
Situation	Operate in the areas intended for assembly of the machine		
Consequence	Hands and arm cuts		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Exposure to mechanical risks during transport, assembly and disassembly operations performed by the maintenance technician and the specialist technician		
Instructions	- The operation is reserved exclusively to expert personnel with relevant knowledge and experience, such as to allow them to assess the risks and avoid the dangers that the job may create. - Cordon off the area where the work is to be carried out and prohibit access to unauthorised people. - Follow the instructions for the operation to be performed. - The employer is required to use only expert personnel for transport, assembly and disassembly operations. - Do not carry out maintenance operations not described in the instructions provided or operations for which the specific knowledge and support of the manufacturer is required.		
PPE	Hand protection (mechanical risks)		

2. Assembly Installation and commissioning			
Task	Assembly		
Exposed person	TS MA	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Possible fall of the load during the assembly phase also due to the breaking of straps or cables used for lifting		
Type	1. Mechanical		
Source	Falling objects Position elevated above ground		
Situation	Work near suspended loads.		
Consequence	Crushing of the body and head		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Personnel in charge of handling and transporting the load may be exposed to the fall of moving parts		
Instructions	- The operation is reserved exclusively to expert personnel with relevant knowledge and experience, such as to allow them to assess the risks and avoid the dangers that the job may create. - Cordon off the area where the work is to be carried out and prohibit access to unauthorised people. - Follow the lifting and handling instructions provided. - The employer is required to use only expert personnel for handling and transport operations.		
PPE	Head protection		

2. Assembly Installation and commissioning			
Task	Passing or standing near danger zones (assembly, installation and commissioning phase)		
Exposed person	PC	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Impact and collision caused by the presence of the moving vehicles		
Type	9. Environment of use		
Source	Traffic		
Situation	Passing and standing near the areas reserved for the movement of transport and unloading vehicles		
Consequence	Impact or collision		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

2. Assembly Installation and commissioning			
Task	Passing or standing near danger zones (assembly, installation and commissioning phase)		
Exposed person	PC	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Construction site activities that can cause damage to uninformed people		
Type	9. Environment of use		
Source	Activities and/or processes carried out near the machine		
Situation	Passing and standing near assembly, installation and commissioning areas		
Consequence	Various hazards (mechanical, electrical, etc.) arising from activities and/or processes		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

4. Use			
Task	Passing or standing near dangerous areas (use phase)		
Exposed person	PC	**Zone**	Z00
TYPE OF HAZARD			
Hazardous event	Contact with moving parts of the machine		
Type	9. Environment of use		
Source	-Various hazards (mechanical, electrical, etc.) arising from activities and/or processes		
Situation	Passing or standing near the machine during operation		
Consequence	- Entrapment and entanglement, - Crushing of limbs and body		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

4. Use			
Task	Machine operation		
Exposed person	OP	**Zone**	Z02
TYPE OF HAZARD			
Hazardous event	Contact with the abrasive surface of the rotating input cylinder		
Type	1. Mechanical		
Source	Rotating elements		
Situation	Operating near the lamination zone		
Consequence	- Friction or abrasion,		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risk of abrasion when inserting limbs into the lamination unit rotation zone		
Instructions	- IT IS FORBIDDEN to put your hands near the laminating unit - Before intervening to recover the wire after breaking, stop the machine		
PPE	NA		

5. Maintenance			
Task	Intervention on the machine systems		
Exposed person	MA	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Direct and indirect contact with live parts even after the main switch has been disconnected: - Interface signals - Circuits upstream of the switch.		
Type	2. Electrical		
Source	- Contacts with live parts, - Contact with live parts in the event of a fault		
Situation	Maintenance operations on the electrical system (inspections, adjustments, replacement of components both inside and outside the casing)		
Consequence	Electrocution		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Risk of electrocution due to direct and indirect contact with live parts.		
Instructions	- Operations on both energized and de-energized electrical equipment are reserved exclusively to expert personnel (PES) and informed personnel (PAV), according to the definition given by CEI 11-27. The IEC EN 60204-1 standard makes no difference between work performed on electrical equipment that is de-energized or energized, thus not necessarily requiring the use of Eligible Persons (PEI) for the latter, according to the definition given by CEI 11-27. - Live operations that take place inside the electrical panel are only possible after disconnecting the power supply and opening the panel door, and re-energizing the equipment by voluntarily turning the main switch to the ON position.		
PPE	NA		

5. Maintenance			
Task	Intervention on the machine systems		
Exposed person	MA	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Direct and indirect contact with live parts		
Type	2. Electrical		
Source	- Contacts with live parts, - Contact with live parts in the event of a fault		
Situation	Maintenance operations on the electrical system (adjustments, components replacement)		
Consequence	Electrocution		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Risk of electrocution due to direct and indirect contact with live parts.		
Instructions	- Operations on both energized and de-energized electrical equipment are reserved exclusively to expert personnel (PES) and informed personnel (PAV), according to the definition given by CEI 11-27. The IEC EN 60204-1 standard makes no difference between work performed on electrical equipment that is de-energized or energized, thus not necessarily requiring the use of Eligible Persons (PEI) for the latter, according to the definition given by CEI 11-27. - Live operations that take place inside the electrical panel are only possible after disconnecting the power supply and opening the panel door, and re-energizing the equipment by voluntarily turning the main switch to the ON position.		
PPE	NA		

5. Maintenance			
Task	Passing or standing near dangerous areas (maintenance phase)		
Exposed person	PC	**Zone**	Z00
TYPE OF HAZARD			
Hazardous event	Contact with moving parts of the machine		
Type	9. Environment of use		
Source	-Various hazards (mechanical, electrical, etc.) arising from activities and/or processes		
Situation	Passing or standing near the machine during operation		
Consequence	- Entrapment and entanglement, - Crushing of limbs and body		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

5. Maintenance			
Task	Cleaning and inspections		
Exposed person	MA	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Direct and indirect contact with live parts		
Type	2. Electrical		
Source	- Contact with live elements (direct contact) - Contact with live parts in the event of a fault (indirect contact)		
Situation	Inspection and cleaning activities on the electrical panel (outside casing)		
Consequence	Electrocution		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Risk of electrocution due to direct and indirect contact with live parts.		
Instructions	- Operations on both energized and de-energized electrical equipment are reserved exclusively to expert personnel (PES) and informed personnel (PAV), according to the definition given by CEI 11-27. The IEC EN 60204-1 standard makes no difference between work performed on electrical equipment that is de-energized or energized, thus not necessarily requiring the use of Eligible Persons (PEI) for the latter, according to the definition given by CEI 11-27. - Live operations that take place inside the electrical panel are only possible after disconnecting the power supply and opening the panel door, and re-energizing the equipment by voluntarily turning the main switch to the ON position.		
PPE	NA		

5. Maintenance			
Task	Cleaning and inspections		
Exposed person	MA	**Zone**	Z00
TYPE OF HAZARD			
Hazardous event	Using toxic and/or harmful substances to clean the machine (either by contact with the skin or by inhaling hazardous vapours, e.g. accidental mixing of detergents).		
Type	7. Materials and substances		
Source	Fluids		
Situation	Using toxic and/or harmful substances to clean the machine.		
Consequence	Poisoning, sensitisation		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risk of sensitization/allergy deriving from the type of substance used for machine cleaning or due to the lubrication, either by contact with the skin or by inhaling hazardous vapours (e.g. accidental mixing of detergents).		
Instructions	Follow the instructions on the safety data sheets of the product used. It remains the obligation of the customer/employer to provide appropriate PPE for cleaning or lubrication operations based on the risks deriving from the use of any harmful substances.		
PPE	- Hand protection (products/chemical agents) - Respiratory protections - Eye protection		

6. Troubleshooting			
Task	Component failures		
Exposed person	TS TF	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Direct and indirect contact with live parts		
Type	2. Electrical		
Source	Contact with live parts, Contact with live parts in the event of a fault		
Situation	Maintenance work on the electrical system (inspections, adjustments, component replacements)		
Consequence	Electrocution		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Risk of electrocution due to direct and indirect contact with live parts.		
Instructions	- Operations on both energized and de-energized electrical equipment are reserved exclusively to expert personnel (PES) and informed personnel (PAV), according to the definition given by CEI 11-27. The IEC EN 60204-1 standard makes no difference between work performed on electrical equipment that is de-energized or energized, thus not necessarily requiring the use of Eligible Persons (PEI) for the latter, according to the definition given by CEI 11-27. - Live operations that take place inside the electrical panel are only possible after disconnecting the power supply and opening the panel door, and re-energizing the equipment by voluntarily turning the main switch to the ON position.		
PPE	NA		

6. Troubleshooting			
Task	Passing or standing near danger zones (troubleshooting/defect search phase)		
Exposed person	PC	**Zone**	Z00
TYPE OF HAZARD			
Hazardous event	Contact with moving parts of the machine		
Type	9. Environment of use		
Source	-Various hazards (mechanical, electrical, etc.) arising from activities and/or processes		
Situation	Passing or standing near the machine during operation		
Consequence	- Entrapment and entanglement, - Crushing of limbs and body		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

7. Dismantling, scrapping, disposal			
Task	Passing or parking near danger zones (dismantling, scrapping, disposal phase)		
Exposed person	PC	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Construction site activities that can cause damage to uninformed people		
Type	9. Environment of use		
Source	Activities and/or processes carried out near the machine		
Situation	Passing and standing near areas reserved for dismantling, scrapping, disposal		
Consequence	Various hazards (mechanical, electrical, etc.) arising from activities and/or processes		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

7. Dismantling, scrapping, disposal			
Task	Passing or parking near danger zones (dismantling, scrapping, disposal phase)		
Exposed person	PC	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Impact and collision caused by moving transport and loading equipment		
Type	9. Environment of use		
Source	Traffic		
Situation	Passing and standing near areas reserved for the transport vehicles movement and for materials loading		
Consequence	Impact or collision		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

7. Dismantling, scrapping, disposal			
Task	Passing or parking near danger zones (dismantling, scrapping, disposal phase)		
Exposed person	PC	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Possible fall of the load during the handling phase also due to the breaking of straps or cables used for lifting		
Type	9. Environment of use		
Source	-Various hazards (falling objects) arising from activities and/or processes		
Situation	Passing and standing near areas reserved for loading on the transport vehicle		
Consequence	Crushing of the body and head		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Untrained ordinary people can be exposed to various risks deriving from both the machine and the work environment.		
Instructions	Ordinary people who for some reason find themselves passing or stopping near the machinery must always be accompanied by personnel trained and informed about the risks present, who have the task of supervising ordinary people. The employer is requested that access to dangerous areas by ordinary people be limited through appropriate company procedures.		
PPE	NA		

7. Dismantling, scrapping, disposal			
Task	Waste disposal for scrapping		
Exposed person	TS	**Zone**	Z0A
TYPE OF HAZARD			
Hazardous event	Environmental pollution		
Type	9. Environment of use		
Source	Pollution		
Situation	Dismantling the machine for end-of-life		
Consequence	Any other consequences caused by sources of risk of the machine or machine parts		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risks generated by machine dismantling at end-of-life		
Instructions	- Final decommissioning and scrapping must be carried out by technical personnel working in a specialist waste treatment centre, to which the machine must be sent or its collection must be requested. -The machine cannot be disposed of in the environment, either intact or partially disassembled or demolished.		
PPE	NA		

7. Dismantling, scrapping, disposal			
Task	Disassembly		
Exposed person	TS MA	**Zone**	Z00
TYPE OF HAZARD			
Hazardous event	Contact with sharp machine elements or edges		
Type	1. Mechanical		
Source	Sharp parts		
Situation	Operate in the areas dedicated to the assembly and disassembly of the machinery		
Consequence	Hands and arm cuts		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Exposure to mechanical risks during transport, assembly and disassembly operations performed by the maintenance technician and the specialist technician		
Instructions	- The operation is reserved exclusively to expert personnel with relevant knowledge and experience, such as to allow them to assess the risks and avoid the dangers that the job may create. - Cordon off the area where the work is to be carried out and prohibit access to unauthorised people. - Follow the instructions for the operation to be performed. - The employer is required to use only expert personnel for transport, assembly and disassembly operations. - Do not carry out maintenance operations not described in the instructions provided or operations for which the specific knowledge and support of the manufacturer is required.		
PPE	Hand protection (mechanical risks)		

7. Dismantling, scrapping, disposal			
Task	Disassembly		
Exposed person	TS TF	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Direct and indirect contact with live parts		
Type	2. Electrical		
Source	Contact with live parts, Contact with live parts in the event of a fault		
Situation	Working near electrical panels or live parts		
Consequence	Electrocution		
RESIDUAL RISK			
Level of risk	**WARNING**		
Risk	Risk of electrocution due to direct and indirect contact with live parts.		
Instructions	- Operations on both energized and de-energized electrical equipment are reserved exclusively to expert personnel (PES) and informed personnel (PAV), according to the definition given by CEI 11-27. The IEC EN 60204-1 standard makes no difference between work performed on electrical equipment that is de-energized or energized, thus not necessarily requiring the use of Eligible Persons (PEI) for the latter, according to the definition given by CEI 11-27. - Live operations that take place inside the electrical panel are only possible after disconnecting the power supply and opening the panel door, and re-energizing the equipment by voluntarily turning the main switch to the ON position.		
PPE	NA		

7. Dismantling, scrapping, disposal			
Task	Disassembly		
Exposed person	TS TF	**Zone**	Z01
TYPE OF HAZARD			
Hazardous event	Fire caused by electrical components and subsequent contact with flammable material		
Type	3. Thermal		
Source	Fire		
Situation	Working near electrical panels or live parts in the presence of flammable material		
Consequence	Burn Scalding		
RESIDUAL RISK			
Level of risk	**CAUTION**		
Risk	Risk of fire due to possible faults in the electrical system and subsequent contact with flammable material		
Instructions	- The employer is required to provide extinguishing equipment near the electrical cabinets		
PPE	NA		

7 TRANSPORT AND UNLOADING

7.1 Purpose of the chapter

The chapter contains the information required to correctly transport and unload the machine.

HAZARD

VARIOUS HAZARDS ARISING FROM LOAD HANDLING OPERATIONS

Load-handling operations may present various risks (crushing, shearing, etc.) to persons present in the areas where the operations take place.

- Unloading and handling of the machine must only be carried out by trained and experienced technicians who are familiar with load handling activities.
- The area for unloading and handling shall be delimited and accessible only to personnel assigned to the operations.

7.2 Transport information

The machine is shipped in perfect working condition after being tested at the manufacturer's factory.

Depending on the type and size of the components to be shipped, the manufacturer will use appropriate packaging to ensure integrity and preservation during transport until delivery to the customer.

Depending on the distance to the place of delivery, the customer's requirements and the storage time of the machine inside the packaging, the machine will be shipped directly on the truck bed or inside containers. The number and type of trucks and/or containers may vary depending on the load units to be shipped.

In anticipation of a long stay in the packaging or in the case of crossing stretches of sea, where necessary, appropriate precautions are taken to prevent oxidation and rusting of metal parts and the formation of moisture and condensation in electrical equipment.

7.3 Equipment required for unloading

The customer receiving the machine must equip himself with the unloading equipment listed below. The dimensioning of the equipment must be made according to the masses of the load units to be lifted and the characteristics of the environment in which the unloading will take place.

Device		Required
Pallet truck		**yes**
Forklift		**No/Yes**
Lifting straps		**No/Yes**
Shackle		**no**
Adjustable chains		**NO**
Traverse		**no**

Ladders and scaffolding		**no**

Preparation of the unloading area
Follow the instructions below in order to set up a dedicated area for unloading.

Procedure:

1) Reserve a working area that allows the machine to be unloaded easily. It must be possible to manoeuvre in the area the transport lorry and means provided for unloading.
2) Delimit the area and prohibit access to unauthorized people.



7.4 Unloading from the vehicle

Follow the instructions below for proper unloading from transport vehicles.

Procedure:

1) Use ladders and scaffolding to get on and off the vehicle. Do not climb on either the transport vehicle or the loading units.
2) Check that the load units have not been moved or damaged during transport. If this is the case, report it immediately to the transporter and the manufacturer.
3) Always start unloading the easily accessible load units by unloading one at a time.
4) Locate the attachment points of the load units and always secure the lifting devices before removing the straps and crossbars that secure the load.
5) Reach the attachment points of the load units. Secure the lifting devices by bringing them slightly under tension but without lifting the load.
6) Remove the blocks and straps used to stabilise the load units during transport so that they can be lifted.
7) Move away and unload.

7.5 Handling of load groups

Please follow the instructions below for the correct handling of the load units.

Procedure:

1) There may be illustrations on the load unit indicating the type of lifting or other useful information. Pay attention to the presence of these warnings and always follow their instructions. The following table describes the meaning of the symbols that can be used:

SYMBOL	DESCRIPTION
	**ISO 780 symbol 6.** Sling here. Point where lifting devices (straps, chains, etc.) can be passed.
	**ISO 780 symbol 1.** Fragile. Load and unload carefully.
	**ISO 780 symbol 7.** Keep the packaging dry and protect it from the weather.
	**ISO 780 symbol 3.** This way up. Do not turn the packaging upside down.
	**ISO 780 symbol 8.** Centre of gravity. Centre of gravity of the packaging.
	**ISO 780 symbol 2.** Do not use lifting hooks.
	**DIN 30600 N.02903** Do not use forklifts.

General notes for lifting and handling
The load groups can be lifted and then moved in two different ways:

Lifting from below:
Using the forks of a forklift or pallet truck properly inserted into the appropriate slots of the loading unit.

Procedure:

1) Ensure that the lifting devices are centred in relation to the centre of gravity.
2) Lift and move the load unit while keeping it horizontal, avoiding shocks and jolts.
3) Unload carefully by placing the loading unit as close as possible to the point of installation, laying it on the ground very slowly in order to avoid damage to the most delicate parts.
4) During this operation, the lifting equipment must be driven by trained personnel assisted on the ground by a person in charge of signalling, since the size of the machine does not allow sufficient visibility for manoeuvring.

WARNING

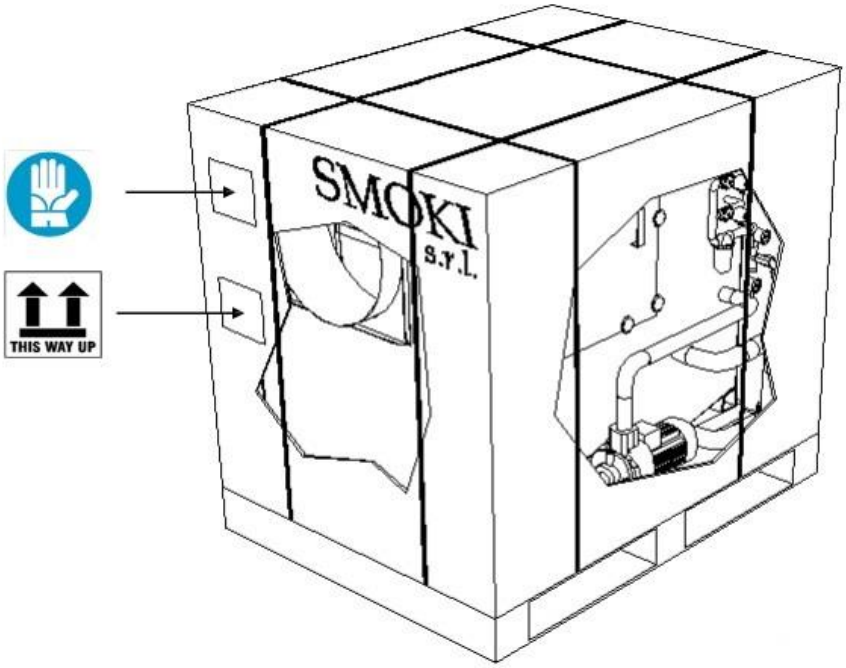
VARIOUS HAZARDS ARISING FROM LOAD HANDLING OPERATIONS
During the loads lifting and handling, there are risks of collision with the handled load and of crushing between the load and fixed parts (machinery, building structures, etc.).

- Entrust all lifting and handling operations to specialized personnel (riggers, crane operators, forklift operators, etc.) coordinated, if necessary, by an expert signalman.
- Lifting devices (if required) must necessarily be appropriate for the weight of the load groups to be handled. These devices must also be in excellent condition and certified to safely lift the weight of the machine.
- During moving of the various units, we recommend that only unloading and transport personnel operate in the work area. This is in compliance with common safety regulations that require buffer zones around suspended loads, forklifts, and/or moving bridge cranes.
- Do not stand or walk under the suspended load.
- Authorised operators must be equipped with the personal protective equipment required for material lifting operations.

7.6 Unpacking

Upon receipt of the material, follow the instructions below to unpack it properly.

SMOKI systems are delivered in a cardboard carton suitable for the shipment of equipment of this type, on a wood pallet not suitable for stacking, fastened to the pallet with straps.



Procedure:

1) Open the packaging protecting each individual module.
2) Check that the material is in perfect condition and that it corresponds to what is described on the accompanying documents.
3) Once the packaging has been removed, there must be no problems or signs of tampering. If it did occur, first notify the transporter, then the manufacturer.

WARNING

Use only a forklift or truck crane to handle and move the machine. Make sure the hoisting equipment has a capacity of at least 150 kg.

IMPORTANT

DISPOSAL OF PACKAGING

Disposal of the packaging material will be the responsibility of the recipient, which must do so in accordance with the laws in force in the country that the machine will be used in.

- Unpack the load units, taking care to separate and sort the waste from the packaging materials.

4) In some machines, the expedient of blocking certain mechanical parts by interposing wooden blocks is adopted in order to prevent movement and/or damage to the various assemblies during transport.
5) As a rule, this is not the case with our machines; if, however, in special cases, this is necessary, we will clearly mark this on the machine.

8 INSTALLATION AND COMMISSIONING

8.1 Systems connections

8.1.1 Electrical system connection

IMPORTANT

EXECUTION OF ELECTRICAL WORK

The installation of electrical equipment must be carried out in accordance with current legislation on safety and electrical installations.

- It is the obligation of the final machine manufacturer to assess compliance with the applicable directives and standards.

Prerequisites:

The customer receiving the machine must carry out the following work in advance:

- Provide electrical conduits between the machine's electrical cabinet and the distribution board.
- All “connection” operations must be performed by specialized personnel and are the customer’s responsibility in all cases.

HAZARD

RISK OF ELECTROCUTION

Poorly executed connection or wiring can cause electrical hazards.

- Make sure that the electrical panel of the machine is actually set up for the mains voltage. If necessary to change the supply voltage, contact the Manufacturer.
- If it is necessary to work on the electrical system upstream of the main switch (e.g. phase inversion), the main line switch must be locked in the "OFF" position so that only the maintenance operator can reactivate it (e.g. padlock).

8.2 Commissioning (first start-up)

HAZARD

VARIOUS MECHANICAL HAZARDS RESULTING FROM THE ABSENCE OR TEMPORARY DISABLING OF MACHINE PROTECTION MEASURES

During the initial start-up phase, protection measures may be removed or temporarily disabled for technical reasons.

- Only experienced personnel (maintenance technicians and/or the manufacturer's), trained and informed of the risks involved, are authorised to work on the machine with the protective measures removed or temporarily disabled.
- Personnel assigned to work on the machine (machine operator) must be informed of the risks present at this stage and remain away from the danger zones.
- It is mandatory to affix a warning sign and not to approach the dangerous zones of the machine.

8.2.1 Necessary checks for the first start-up

Carry out the following checks before testing the movements:

Procedure:

1) Check that the mechanical and electrical assembly operations, described in the previous paragraphs, have all been completed.
2) Power up the machine and check that all energy sources are working properly.
3) Before using the system, check carefully to make sure it is intact and working perfectly. Check the safety devices and make sure there are no damaged parts.
4) Checks that the moving parts are free to move and that there are no broken parts, make sure all the other parts have been correctly assembled and check for any conditions that could interfere with normal operation of the equipment - such as the capacity and drainage of water - and that the fume intake and exhaust are optimal.
5) Safety devices or damaged parts must be replaced or repaired in a workmanlike manner by a Service Centre, unless the user instructions state otherwise.
6) The switches, solenoids, pump, level meter and power cord must be replaced by a Service Centre when damaged.
7) Do not use the system with the switch that cannot be turned “ON” and “OFF”.
8) Before cleaning or performing maintenance on the machine, always turn the switch to OFF to disconnect the power.
9) Check periodically that the sheathing on the power cord is intact, without abrasions, cracks or swellings, and that it is not twisted. If you notice any alteration, check it and having it replaced without delay if necessary.

8.2.2 Machine first start-up

The first start-up of the machine must be performed by our after-sales service or by the maintenance technician, after having been authorised. The first start-up procedure can be carried out without the product, to check the correct operation of the machine assemblies, and then with the product to be processed to check the correct operation of the machine.

HAZARD

MACHINE START-UP
Starting the machine untimely with personnel operating on moving parts or power circuits causes danger to any "exposed persons".

8.2.3 Commissioning after a long period of inactivity

After a long period of inactivity of the machine, it is necessary to repeat the operations described for the first start-up of the machine

WARNING

- Do not use the system if it is not properly grounded!

8.2.4 Location of the system

When installing the Maxi Grill system, the client can decide one of the following options, depending on his needs:

INDOOR INSTALLATION (OPTION A)

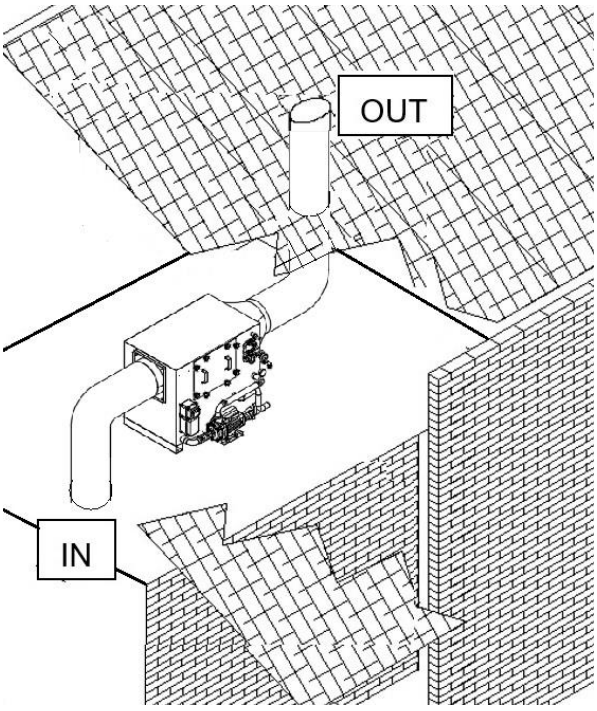
The Maxi Grill can be placed at any point in the ductwork, interrupting it at any point from the grill to the outflow to the roof.

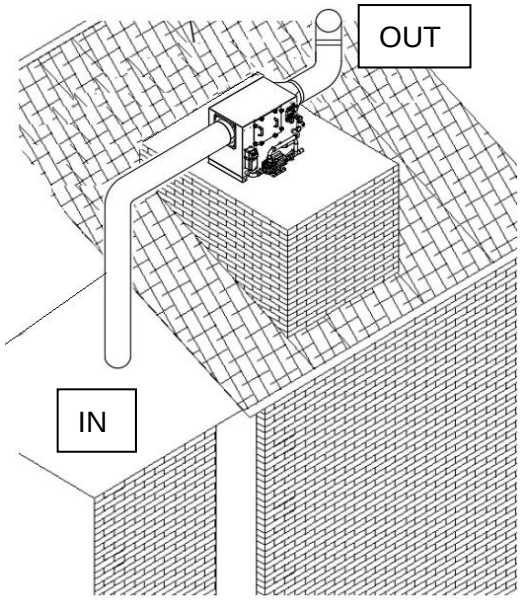
The machine must be combined with a suitable extraction system (250, 350,400,500 version).

The Maxi Grill can be installed either indoors or outdoors. If installed outdoors, it should be equipped with the appropriate insulated outdoor cover to protect the machine from the weather. A vertical flow ejection should always be created at the smokestack terminal to prevent any obstruction to the treated fumes,

The input and output of the machine are always marked "IN" and "OUT".

In the adjacent figure, the Maxi Grill is positioned indoors





INSTALLATION OUTSIDE OF BUILDING

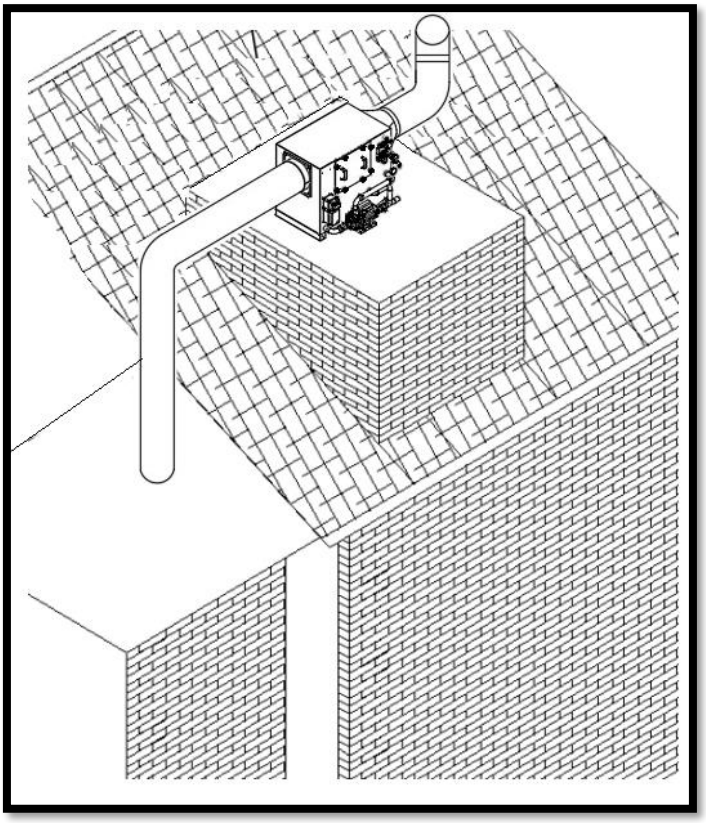
In the side image, the Maxi Grill is positioned outside on a masonry roof. Always check that the supporting base on which the machine is placed is able to support its weight (see dimensions and weights of the various versions in the table on page 30 of this manual).

When the abatement system is installed outdoors it must be provided with the special insulated cover for outdoor installation to protect the system from the weather. A sharp drop in temperature (below -10° C) could affect the safety and efficiency of the machine. In this case, it is recommended to use equipment to heat and maintain the temperature at levels no lower than -10°C. (14°F). If the Maxi Grill is not used for more than three consecutive days with particularly cold outside temperatures, we recommend draining the water from the system completely to prevent ice forming and subsequently damaging some parts of the machine.

8.2.4.1 Accessories and optionals

Outdoor cover
The purpose of the insulated outdoor cover is to protect the parts on the front of the machine from inclement weather.

Especially in countries where winter temperatures are particularly rigid (below 0°C), insulation is effective in preventing possible damage to some parts of the machine.
Opening the outdoor cover. The outdoor cover is removed by turning the appropriate levers.



9 COMMANDS

9.1 Purpose of the chapter

IMPORTANT

READ CAREFULLY THE CHAPTER

The chapter contains information on the controls provided for the operation and control of the machine.

- It is MANDATORY that the personnel in charge of operation be duly trained and instructed in the location of the controls on the machine and their correct use.
- Read and understand the contents.

10 USE

10.1 Purpose of the chapter

IMPORTANT

READ CAREFULLY THE CHAPTER

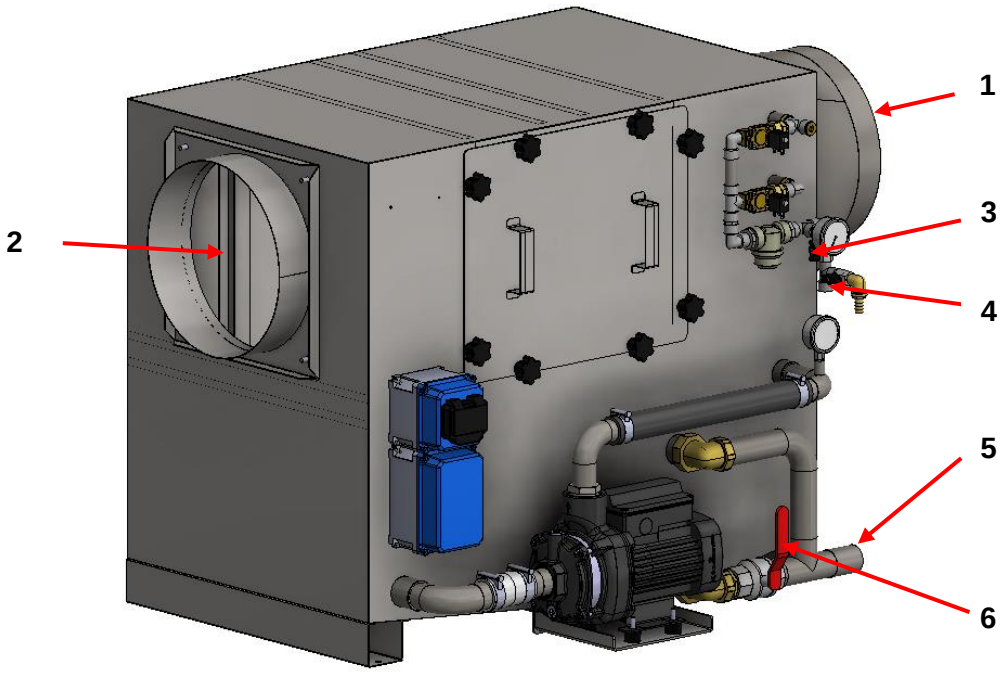
This chapter will provide descriptions of the intended use operations.

- Correct instructions for future operators, maintenance and service technicians implies a general theoretical knowledge of all described operations.
- Read and understand the contents.

WARNING

Do not place the grill on unstable or non-compact surfaces (e.g., on gravel or crushed stone, sand, etc.)

10.2 System operation



1. INSTALLATION

The machine must be located on a perfectly flat surface that is not slippery, not shaky and sufficiently far away from any obstacle. Positioning and subsequent installation should be carried out only by qualified personnel.

It is essential that the floor is suitable in terms of position, stability and levelling of the machine considering the overall weight of the machine (see individual model characteristics). The flooring must be suitable, i.e., free of potholes, sagging parts, etc., and its load-bearing capacity must be sufficient to support the weight of the machine and accessory parts considering an adequate safety coefficient. If the machine is to be placed on a mezzanine, upper floor or elevated area, check that the maximum load-bearing capacity of the floors or flooring is greater than the weight of the machine plus the weight of accessory parts considering an appropriate safety coefficient.

When installing the machine/equipment, consideration should be given to the space required to allow for safe cleaning and maintenance.
If the machine is installed on shelves, raised floors, etc., it must be attached to the shelves with screws using the holes already provided on the baseplate.

2. ELECTRICAL CONNECTION

Before making the electrical connection of the machine, check that the data on the nameplate matches the data and mains voltage of the user's electrical system.

If the data does not match, do not make any connection or start the system. Contact the service department.

Connection to the electrical system, including compulsory grounding, must be made by specialized personnel only. The electrical system to which the MAXI GRILL machine is connected must be controlled upstream by a differential magnetothermal switch.

Before the machine is made available for sale, it undergoes an electrical functional test.

The system is supplied with a 3P+N+E or 1P+N+E electrical extension cable (depending on the model) which must be connected to the power panel.

The power supply line of the machine must be provided with differential protection in accordance with current safety regulations.

After making the electrical connections and before starting the equipment, perform all checks according to electrical safety regulations.

Pay careful attention to the passage of power conductors to the machine ensuring they do not obstruct or hinder use and normal cleaning operations of the system.

The additional extraction system is supplied without electrical connections on the machine panel. Therefore, the installer of the system should provide the electrical connection of the system and correctly position a switch to control the extraction system near the grill, kitchen, etc. (remote switch) and switch/disconnector near the machine for safe maintenance.

Installation must be carried out in full compliance with current regulations.

3. CONNECTION TO SMOKESTACK

Make sure that the system is correctly connected to the smokestack, so that smoke enters through opening "1" and exits through opening "2" using a suitable pipeline (pipes and elbows) in AISI 316 stainless steel 250, 350, 400, 500 e 600 smooth, not corrugated, and watertight (resistant to acid condensation produced by wood and coal).

4. WATER CONNECTION

Permanently connect the system to the existing water supply with the water tap “3". Make sure that the water connection has been made reading the water pressure from the pressure gauge (correct operating value 1.5 to 3 bar). If the operating

pressure is higher, install a pressure reducer, which, among other things, allows water consumption to be reduced (tests performed: 40L./h at 2bar). Close auxiliary tap “4" in the "OFF" position indicated by the arrow on the lever.

WARNING

Water hardness. In order for the machine to operate correctly, water hardness must be ≤ 20/25°F. For values ≥ 20/25°F, installation of a water softener is recommended.

5. CONNECTION TO SEWER SYSTEM

Permanently connect the system to the existing sewer system through drain (“5”), taking special care to make sure that the water drain gate (“6”) is closed (vertical position).

It is indispensable to install a trap in the immediate vicinity of the system!

10.2.1 SYSTEM START-UP

Before starting up, verify the following:

the direction of rotation of the extraction system (for three-phase extractors) and the electric pump (if three-phase) is correct. All mechanical connections and fixings have been carried out correctly.

After all connections have been made (see previous points), to start the system, make sure the circuit breaker on the power panel is turned to “ON”, and then switch on the automatic electric line switch:

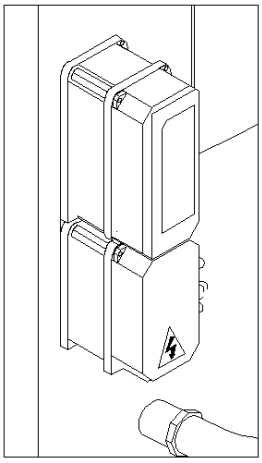
Power switch ("ON" position), (The switch is generally located in the electrical panel of the kitchen or in the immediate vicinity of the grill).

For greater operator safety, SMOKI s.r.l. considers it fundamental for the electrical system to which the “MAXI GRILL" system is connected to comply with the standards according to the current law, and therefore to be equipped with a differential magneto-thermal switch.

10.2.2 SWITCHING OFF THE SYSTEM

To switch the system off use the electric line switch:

Power switch ("OFF" position), (The switch is generally located in the electrical panel of the kitchen or in the immediate vicinity of the grill)



WARNING

When carrying out any work on the machine, the disconnect switch located on the power panel of the machine must always beset to "OFF". A separate disconnect switch should also be installed near the machine for the extraction system.

WARNING

Before performing any type of repairs, maintenance or cleaning, switch off the automatic power line switch, the circuit breaker on the power panel on the machine, and provide yourself with adequate safety gear such as gloves, goggles and footwear.

11 MAINTENANCE

11.1 Purpose of the chapter

The chapter contains information on the maintenance operations that must be carried out to keep the machine in proper working order at all times, in accordance with the purposes for which it was built.

By definition, MAINTENANCE is the combination of all technical and administrative actions, including supervisory actions, aimed at maintaining or returning an entity to a state in which it can perform the required function.

This information is divided according to the type of maintenance:

- Inspection work
- Cleaning work
- Lubrication and greasing work
- Mechanical maintenance work
- Electrical maintenance work

IMPORTANT

SAFETY OF MAINTENANCE PERSONNEL

It is MANDATORY that maintenance personnel is trained and instructed regarding the residual hazards that remain during maintenance operations.

- The complete list of risks and related safety measures are described in the **chapter 'Safety'**.
- Knowledge of the contents of the **chapter "Safety"** is a prerequisite for machine maintenance.
- For all work not described in this chapter, it is MANDATORY to always contact the manufacturer for support.

11.2 System maintenance frequency

The **maintenance procedures** described below cover the entire maintenance process (bi-weekly, routine and special). These procedures must be carried out in order to ensure correct operation. The operator should perform them in their proper chronological order. Once the initial maintenance has been performed, it is advisable to perform the operations even more frequently if deemed necessary.

Maintenance operations are divided into:
a. biweekly maintenance every 15 days,
b. routine maintenance every 60 days
c. special maintenance every 6 months

11.2.1 Biweekly maintenance procedures

The BIWEEKLY maintenance procedures must be carried out at regular intervals every 15 (fifteen) days.
They consist mainly of changing the recycle water, so as to improve the effectiveness of the smoke washing system and reduce atmospheric pollution. Visual inspection and possible cleaning of filters inside the machine (disassembly and cleaning with water and non-foaming detergent suitable for stainless steel).

11.2.2 Routine maintenance procedures

The ROUTINE maintenance procedures must be carried out at regular intervals every 30 (thirty) days.
They mainly consist of biweekly maintenance operations and cleaning the recycle tank, checking and cleaning the water filter, paying special attention to the drains and float arm.
Visual inspection and possible cleaning of filters inside the machine (disassembly and cleaning with water and non-foaming detergent suitable for stainless steel).

11.2.3 Special maintenance procedures

The SPECIAL maintenance procedures must be carried out at regular intervals every 6 (six) months.
They consists mainly of the biweekly and routine maintenance procedures, plus cleaning the maintenance nozzle.
Carry out inspection and possible maintenance/cleaning of the suction unit blades. The special maintenance procedures are described below.

WARNING: In the event of machine malfunction due to negligence from lack of maintenance, Smoki srl will not guarantee warranty coverage.

11.3 Maintenance procedures

Before proceeding with any operations of maintenance, comply with the following warnings:

CAUTION! 

Do not touch the electric parts with wet hands. DANGER OF ELECTROCUTION!

CAUTION! 

Do not perform maintenance procedures outdoors in case of rain. DANGER OF SHORT CIRCUIT AND LIGHTNING!

CAUTION! 

Before performing any type of repairs or maintenance, switch off the automatic power line switch, the circuit breaker on the power panel on the machine, and provide yourself with adequate safety gear such as gloves, goggles and footwear.

IMPORTANT!

Maintenance of the Maxi Grill must be assigned exclusively to qualified personnel (persons with adequate technical experience in the field). Failure to perform maintenance with the frequency indicated by the manufacturer will cause immediate loss of the benefits of the warranty!

For operations of maintenance proceed as follows, respecting the exact sequence of chronological order:

Disconnecting the automatic switch

Turn off the system by disconnecting the automatic switch of the electric line ("OFF" position) as shown in fig.11

Repeat the operation for the additional suction system.

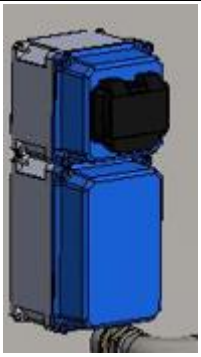


Fig. 11

Disconnecting circuit breaker

Switch off the circuit breaker on the power panel of the machine, as shown in fig. 12

Repeat the operation for the additional suction system.

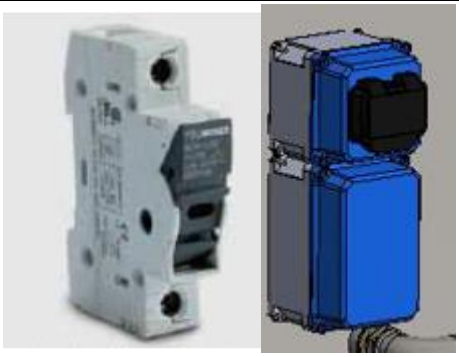


Fig. 12

Closure of water connection tap

Turn the lever of the tap upward to the horizontal "OFF" position as shown in fig. 13

The water pressure gauge should drop gradually until, with the tap closed, it reaches 0 bar. To open, turn the tap lever until it reaches the vertical position shown in the figure opposite.

The water pressure gauge should rise gradually to reach the value, with the tap open, of 1.5 - 3 bar.

The water tap must be left open!

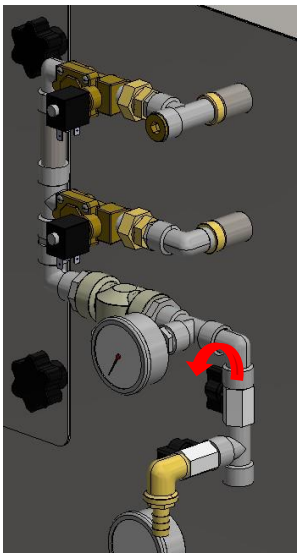


Fig. 13

Cleaning water supply filter Turn the rung on the glass of the water filter clockwise and empty it into a bucket. Remove the filtering cartridge and clean by washing it with clean water (see fig. 14).

To reassemble proceed as follows:
- place the filter cartridge in its housing
- place the gasket on the edge of the glass
- turn the rung on the glass clockwise

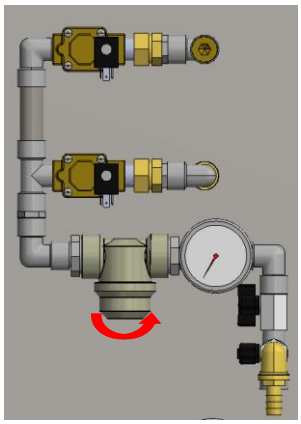


Fig. 14

Opening water drain gate

In the case of a manual gate, turn the control lever to the horizontal position.
The water level in the machine will start to fall.

Turn the gate lever counter-clockwise to the vertical position as shown in the adjacent figure.

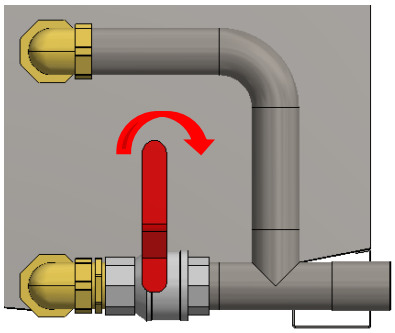


Fig. 15

Cover removal
Turn clockwise to unscrew the fastening knobs on the cover and remove them.
Place all the knobs in one spot near the machine so as not to lose them. Now carefully remove the cover from the machine body (see fig. 16).
Repositioning is done by reattaching the machine cover to the inspection window, paying special attention to the gasket when positioning it.
Position the fixing knobs in their seats provided in the lid and machine body and screw them clockwise

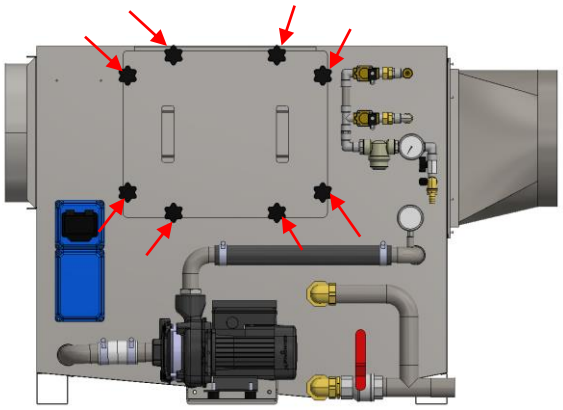


Fig. 16

Cleaning the water tank and filters

Disassemble the cover as indicated in the previous step. Remove the filters by pulling them out of their housings.

Apply a rubber to the appropriate connection, open the auxiliary tap, and remove the impurities with the water jet in the tank having previously pulled out the filters.

In the case that the water level does not go down, check to make sure:

1) The drain lever is open (horizontal position);

2) The water drain inside the tank is not clogged with muddy waste, etc. In which case remove the waste manually;

3) thoroughly clean the float arm in the tank.

4) clean the overflow drain hole.

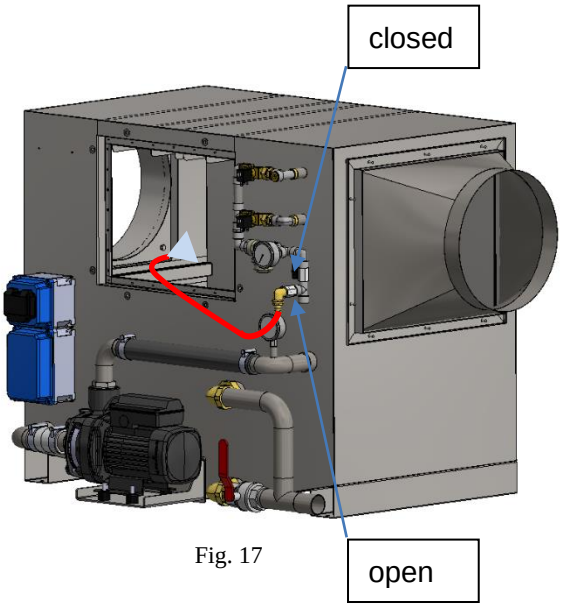


Fig. 17

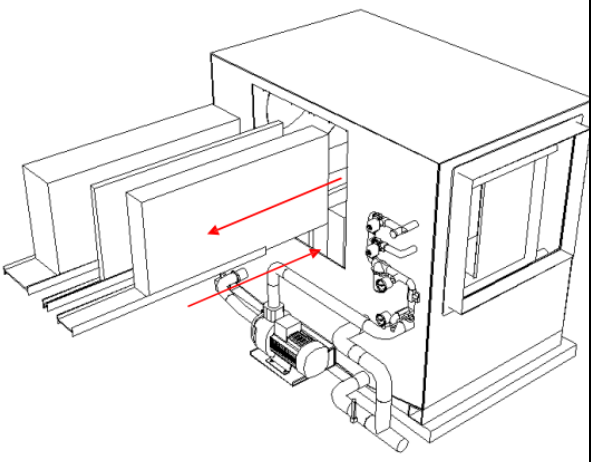
To clean the filters:

1) Manually pull the filters out of the machine body by sliding them on the appropriate guides (see the drawing)

2) Clean them thoroughly (see paragraph above)

3) Reinsert the filters into the machine up to the stop by sliding the appropriate guides.

After cleaning the water tank, close the auxiliary tap and remove the cleaning rubber.



Maintenance nozzle cleaning

Clean the maintenance nozzle by turning cap "A" shown in Fig. 18 with an Allen key (size 10)

Remove nut "A" and clean the nozzle to remove any residues with water or compressed air.

To reassemble proceed as follows:

Position the maintenance nozzle in its housing.

Use a 10 mm Allen key to tighten cap "A".

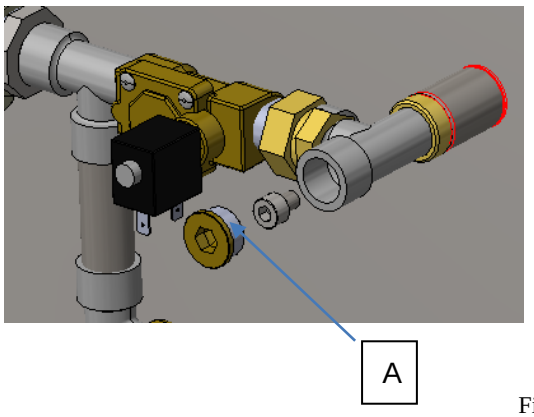


Fig.18

Connecting circuit breaker

Turn the circuit breaker on the machine power panel to "ON"

The system can now be started with the automatic switch on the power line at any time!

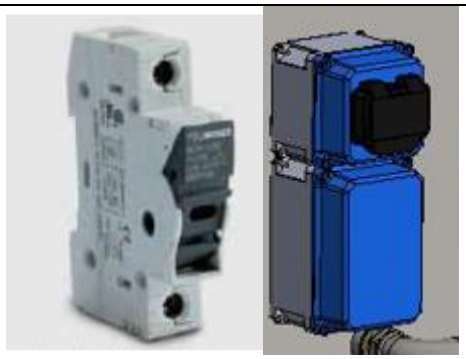


Fig.22

Connecting automatic switch

Switch the system on by turning the automatic switch on the power line to "ON" as shown in fig. 23

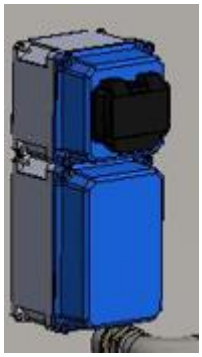


Fig. 23

IMPORTANT

The pump will not start until the water tank has filled up again. Wait about 10 minutes. Make sure the water tap remains open and the pressure gauge shows a value of about 1.5 - 3 bar.!

11.3.1 Cleaning stainless steel

To ensure good preservation of the equipment, clean the machine, paying careful attention to ensure that cables and electrical connections are not damaged in the process.

When cleaning stainless steel appliances, it is advisable to use specific detergents suitable for the type of material, and the following precautions should be observed:

- Do not use preparations containing salt or sulfuric acid to remove limescale. Suitable products are commercially available, but a dilute acetic acid solution can also be used;
- Avoid using detergents containing abrasive powders or bleaching agents of any kind;
- Do not use sharp objects that can cut or damage stainless steel parts.

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12 DISMANTLING AND SCRAPPING

12.1 Purpose of the chapter

IMPORTANT

READ CAREFULLY THE CHAPTER

All the operations described in this chapter are reserved exclusively for technical personnel specialized in load handling and waste disposal.

- Final decommissioning and scrapping must be carried out by technical personnel working in a specialized waste treatment centre, to which the machine must be delivered or requested to be collected.
- The machine cannot be disposed of in the environment, either intact or partially disassembled or demolished.
- Always contact the manufacturer for the necessary support.

12.2 Decommissioning for long periods

If you decide not to use the machine for long periods, carry out the following operations to ensure correct storage and conservation.

Storage location requirements:

- Whether the machine is dismantled or left inactive, it is important that the storage place has the temperature and humidity characteristics that comply with the technical data.
- The storage place should not be dirty and exposed to the accumulation of dust and dirt.
- Always store the machine in a closed place protected from bad weather.

Procedure:

1) Always contact the manufacturer for disassembly and handling of the machine.
2) Disconnect all energy sources.
3) Clean the machine by completely removing machining residues and dust.
4) Grease and lubricate all components.
5) If the machine is not to be used for a period exceeding 3 months, protect the parts subject to rust formation with a suitable protective product. Protect electrical and electronic equipment by placing bags of anti-humidity salt in electrical cabinets.
6) Cover the machine with cloths to avoid dust deposits.

Decommissioning and scrapping

Procedure:

1) Carefully consult the laws in force in the user's countries regarding environmental protection and safety procedures. In accordance with the provisions of the law, activate the inspection procedure of the competent body and the consequent recording of the demolition.
2) Disconnect all energy sources.
3) Disassemble the electrical panel and all the plastic components such as covers and pipes and send them to separate collection. Electrical cabinets and control panels will have to be completely dismantled by separating the electrical components from the cables. The electric cables on board the machine will be collected with the electric cables of the cabinets.
4) Disassemble the various components of the machine and then disassemble them to divide the parts according to the type of metal or alloy, taking care to eliminate oil or grease residues from the various parts.
5) Once the first division has been made, the plastic pipes will be separated from the rubber pipes and gaskets.
6) The electric motors will be stacked separately from the reducers. As for the reducers, they will have to be emptied of oil. The recovered oil must be collected in drums, stored and not dispersed into the environment. The same procedure must be followed when in the presence of grease.

12.2.1 Separation, classification and disposal of waste

Waste is defined as any substance or object that is the product of human activities or natural cycles, abandoned or destined to be abandoned.

The following categories of waste must be considered special waste:

- Machinery and equipment in general deteriorated and obsolete.
- Out of use motor vehicles and their components.

European directive 2008/98/EC sets out a legal framework for the treatment of waste within the European Union.



Waste Electrical and Electronic Equipment may contain dangerous substances with potentially harmful effects on the environment and human health. It is therefore recommended to dispose of it correctly using suitable precautions. With reference to the WEEE directive (Waste Electrical and Electronic Equipment - WEEE directive 2012/19/EU), the user, during disposal, must separate the electrical and electronic components and dispose of them in the appropriate authorized collection centres.

12.2.2 Type of waste produced by demolishing the machine

IMPORTANT



WASTE MANAGEMENT

The following table summarizes and classifies the type of waste produced by demolishing the machine.

- Inquire with the competent authorities regarding the waste storage and disposal methods in force.
- Always contact the manufacturer for the necessary support.

Component / material	Location
Electrical cables	Electrical equipment wiring
Iron material	Structure, fixed and/or mobile guards
Stainless steel	Structure
Lubricants	Pumps
Plastic	Other machine parts

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13 TROUBLESHOOTING

13.1 Purpose of the chapter

The information below is intended to assist in the identification and correction of any anomalies and/or malfunctions that may occur when using the machine.

IMPORTANT

STAFF SAFETY

It is MANDATORY to section off power supply sources and lock them with suitable padlocks and jaws

- Before carrying out any operations, read the **chapter "Safety"** carefully.
- Some faults can be solved by the operator; others require precise technical expertise or special skills, and must only be carried out by experienced and qualified personnel with recognised experience in the specific field of intervention.
- For all work not described in this chapter, it is MANDATORY to always contact the manufacturer for support.

13.2 Faults

PROBLEM	CAUSE	REMEDY
The MAXI GRILL system does not start	• No electric connection • Automatic “mains switch” in “OFF” position • Circuit breaker in “OFF” position • No water in tank	- Have the system connected as instructed in the user manual, by qualified personnel. - Set the automatic “Mains” switch to the “ON” position. Set the circuit breaker to the “ON” position - Make sure the intake tap is open - Check the water pressure on the gauge - Wait about 10 minutes until the tank refills to the set level.
The WATER PRESSURE gauge remains on 0 bar	• No water connection • Permanent water tap closed • Pressure gauge broken	- Permanently connect the water tap - Open the permanent water tap by turning it to "ON” Replace pressure gauge. -replace pressure gauge
The PUMP does not start	• No electric connection • Automatic line switch deactivated, in "OFF" position • Circuit breaker in “OFF” position • Insufficient water level	- Have the system connected as instructed in the user manual, by qualified personnel. - Set the line automatic switch to the “ON” position - Set the machine circuit breaker to the “ON” position - Check the water pressure on the gauge. - Wait about 10 minutes until the tank refills to the set level. - During these 10 minutes, the rapid filling solenoid has to start and draw water through the coupling

PROBLEM	CAUSE	REMEDY
The PUMP does not start	■ The level meter blocked or faulty	Thoroughly clean the float arm in the tank. Replace the faulty level meter.
The pump pressure gauge remains on 0 bar	■ The pump does not run or is dirty/clogged ■ Pressure gauge faulty ■ The level meter blocked or faulty	- Replace the pump or clean the impellers. - Check the water pressure on the gauge - Replace pressure gauge. Thoroughly clean the float arm in the tank - Replace the faulty level meter
MAX LEVEL indicator light on	■ Water level above maximum setting ■ Rapid filling solenoid faulty ■ overflow clogged by muddy waste ■ The level meter blocked or faulty	- Check the function of the permanent sewer connection - Open the water drain gate - Replace or clean the solenoid. - Manually remove waste - Thoroughly clean the float arm in the tank - Replace the faulty level meter
CIRCUIT BREAKER not working	■ Circuit breaker faulty	-Replace the circuit breaker
AUTOMATIC SWITCH not working cont.'d ./..	■ Automatic switch faulty	-Replace automatic switch

PROBLEM	CAUSE	REMEDY
LEVEL METER BLOCKED	■ Insufficient cleaning	- Perform biweekly, routine and special maintenance with the required frequency as indicated in the user manual, - Thoroughly clean the float arm in the tank
PUMP goes on and off after long intervals	Maintenance nozzle clogged blocked ■ Level maintenance solenoid faulty	Clean the maintenance nozzle as explained in the special maintenance procedures - Replace or clean the solenoid.
Water pressure gauge shows a reading below 2.0 bar	■ Nozzles clogged Pump worn	Replace worn nozzles. -Overhaul the pump and replace if necessary.

14 WIRING DIAGRAMS

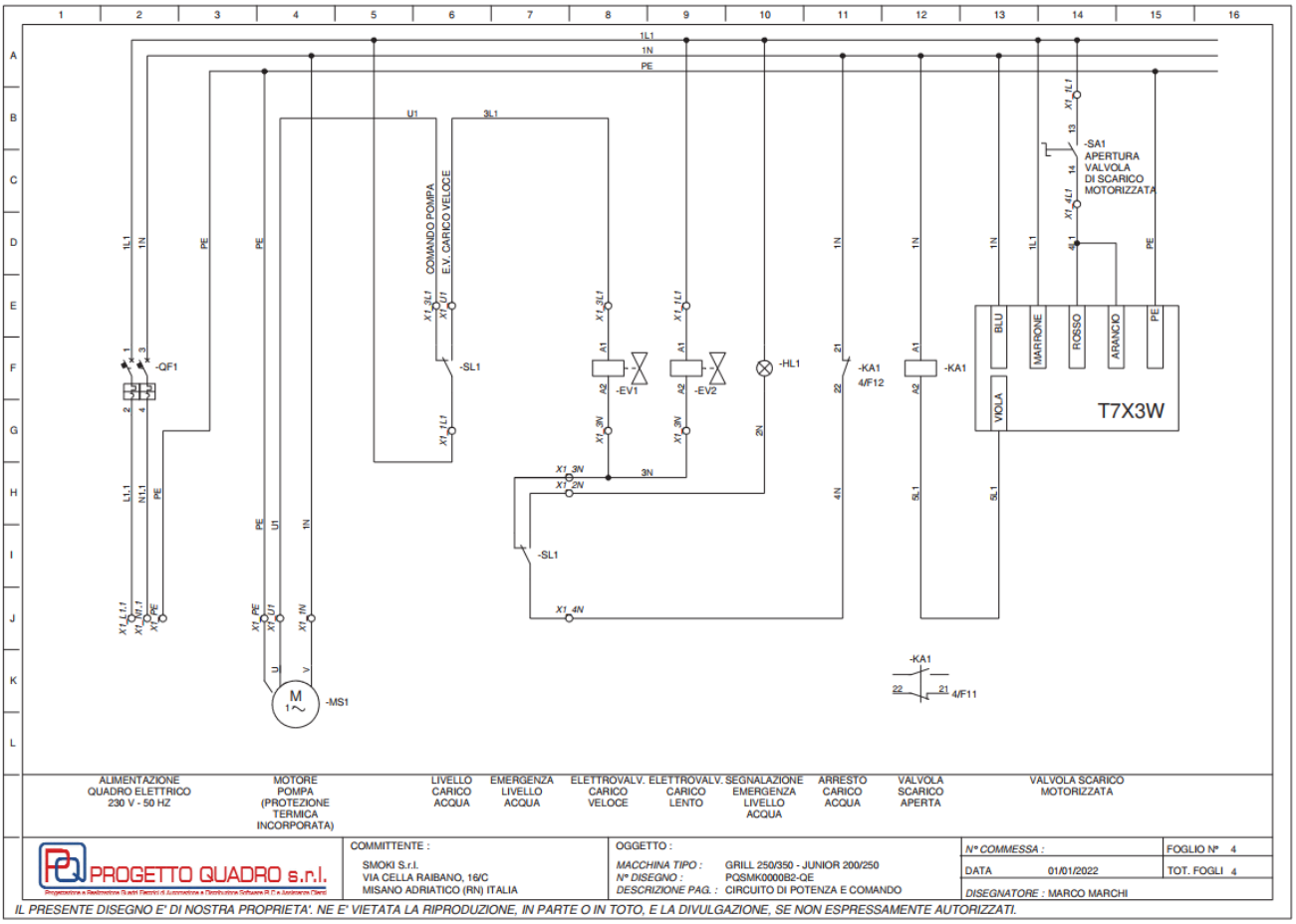
14.1 Purpose of the chapter

The wiring diagram of the soot abatement system is shown below.
The following wiring diagrams will be inserted

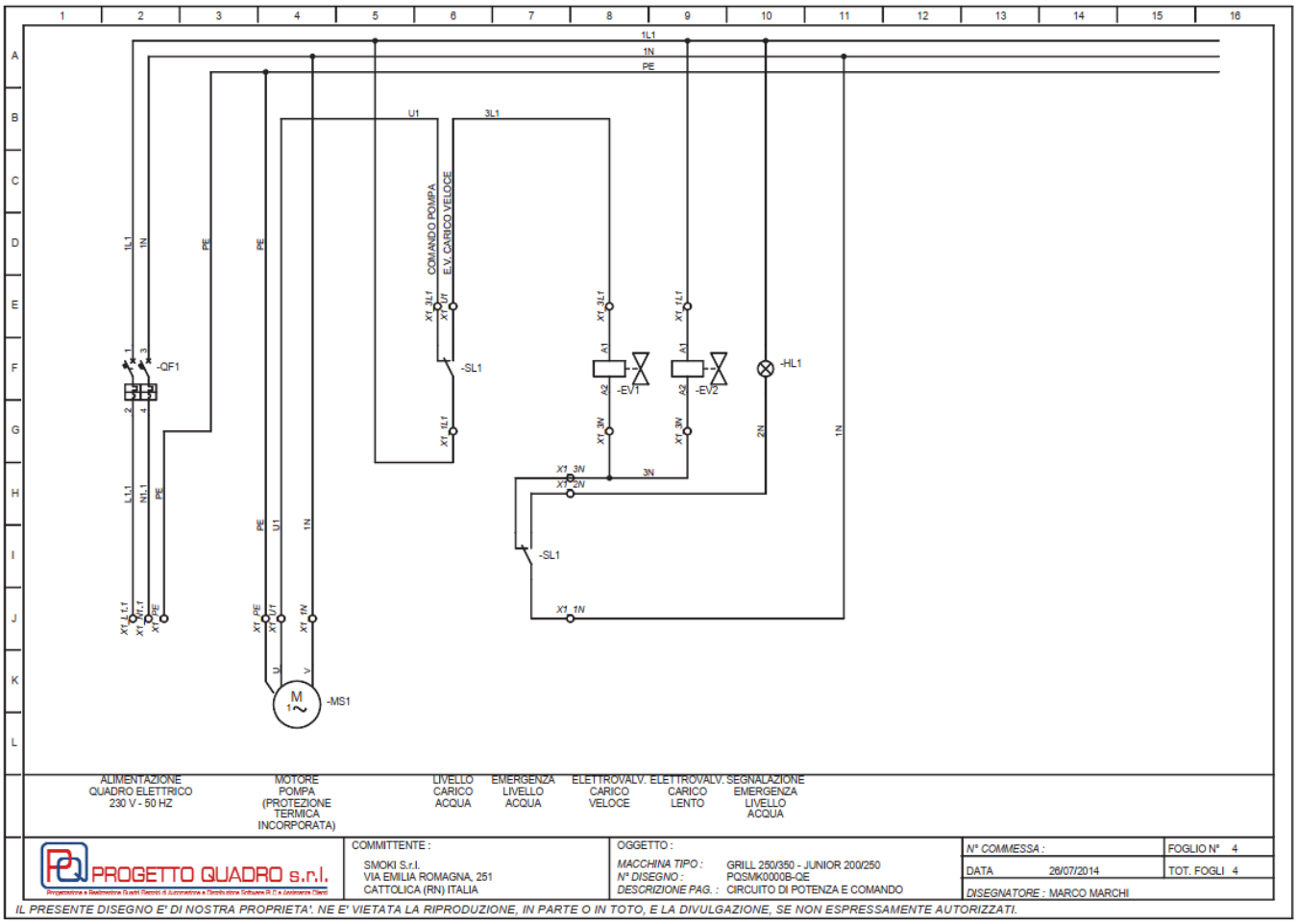
- **MAXI GRILL 250-350 without motorised drain valve**
- **MAXI GRILL 250-350 with motorised drain valve**
- **MAXI GRILL 400-500-600 without motorised drain valve**
- **MAXI GRILL 400-500-600 with motorised drain valve**

Therefore, pay attention when consulting them

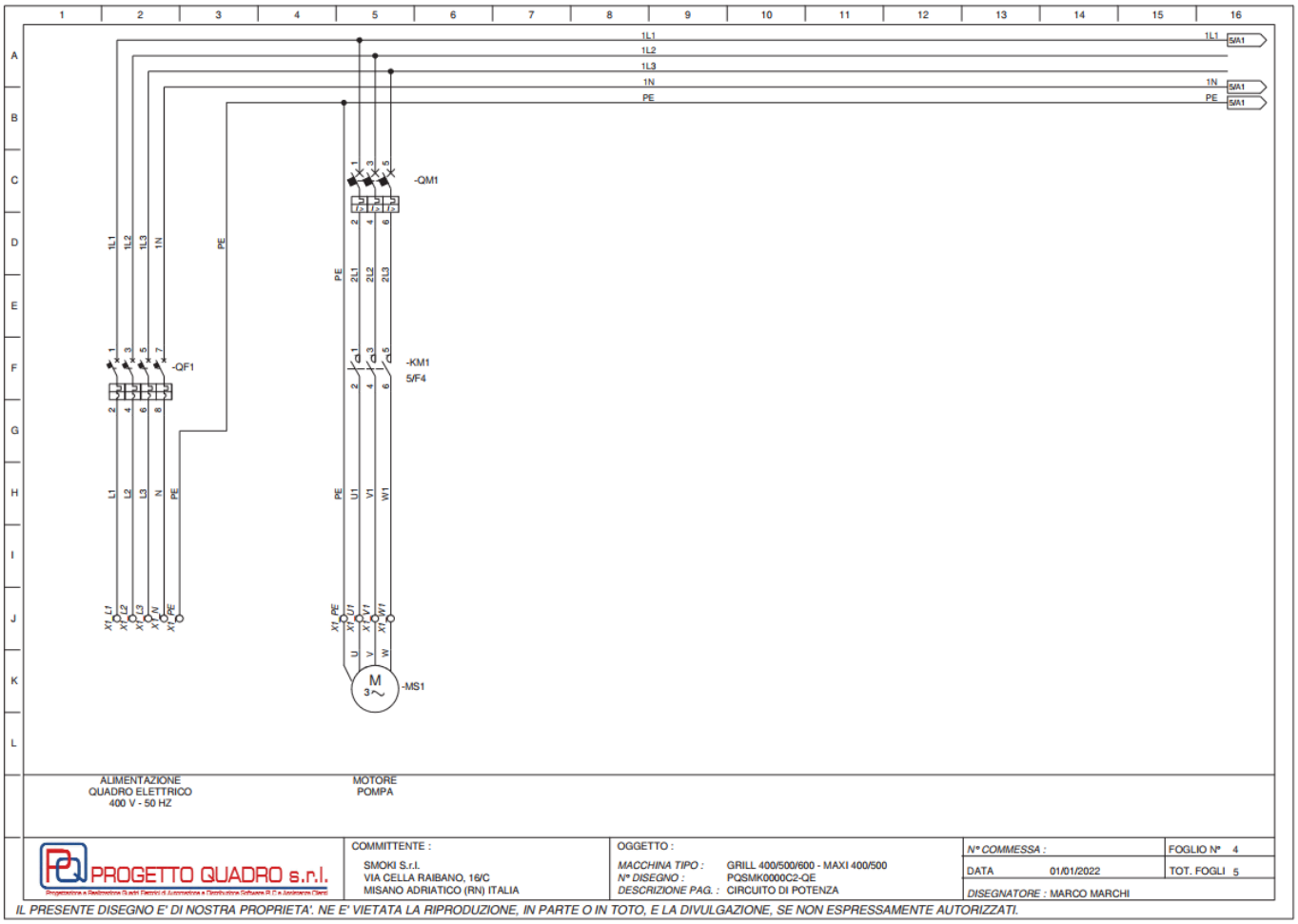
14.2 Wiring diagram MAXI GRILL 250-350 WITHOUT DRAIN VALVE

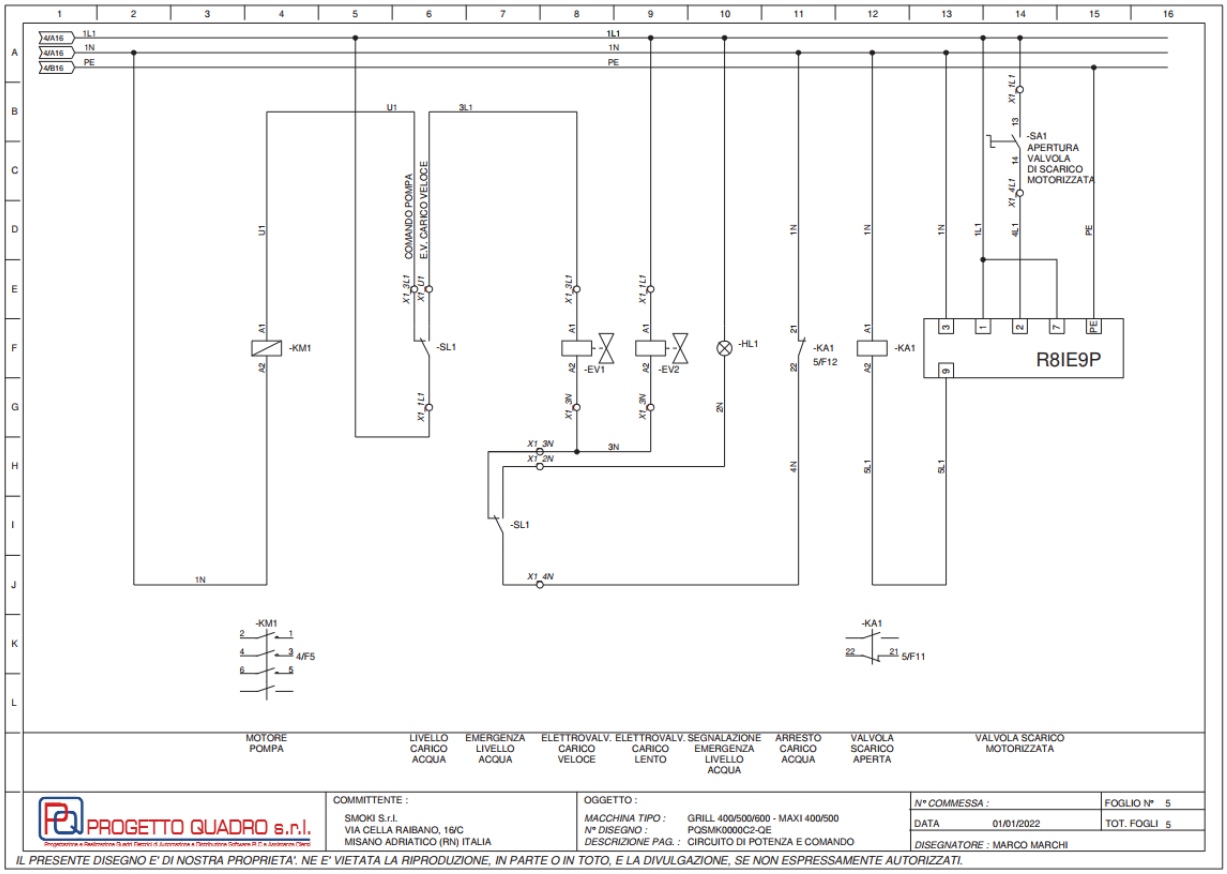


14.3 Wiring diagram MAXI GRILL 250-350 with motorised drain valve

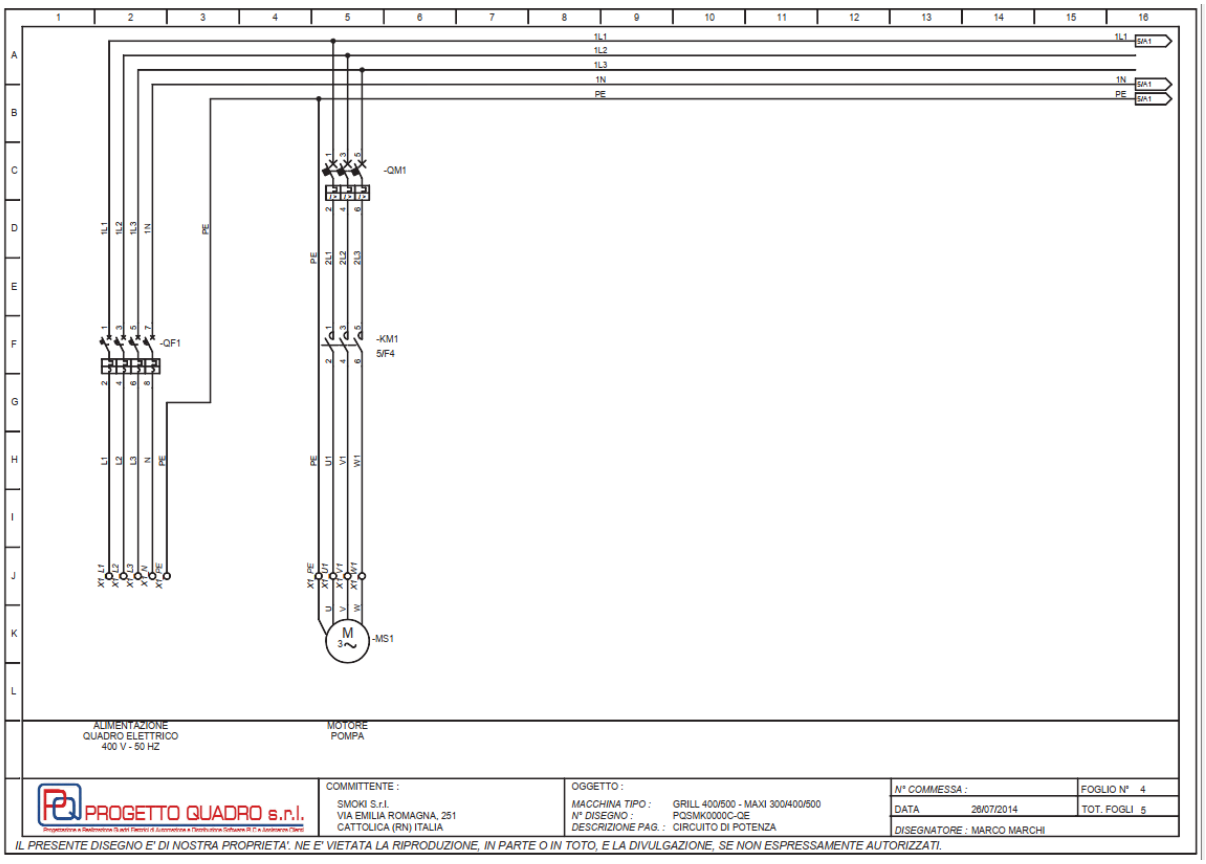


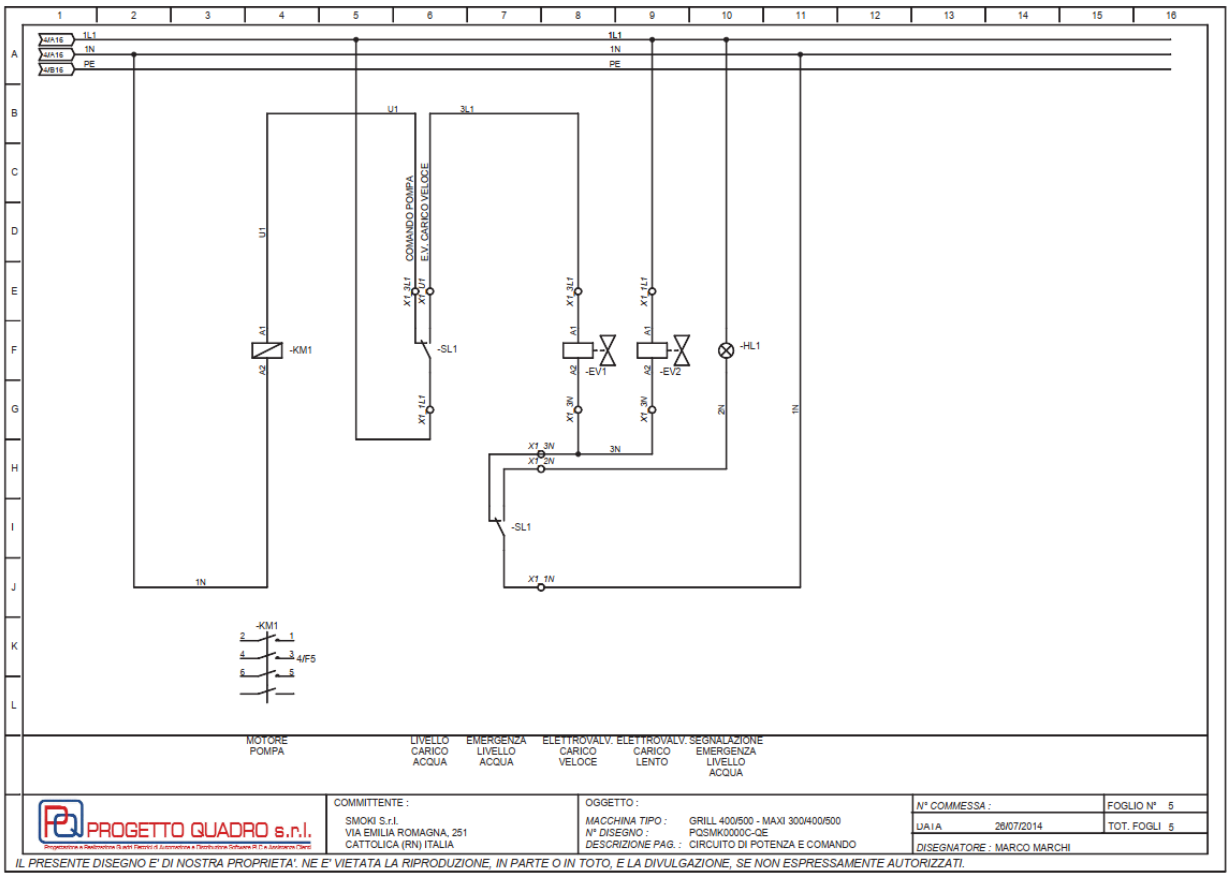
14.4 Wiring diagram MAXI GRILL 400-500-600 with motorised drain valve




1L1
1N
PE
U1
3L1
COMANDO POMPA
EV. CARICO VELOCE
-KM1
-SL1
-EV1
-EV2
-HL1
-KA1
5/F12
-SA1
APERTURA
VALVOLA
DI SCARICO
MOTORIZZATA
R8IE9P
-KM1
4/F5
-KA1
5/F11
MOTORE POMPA
LIVELLO CARICO ACQUA
EMERGENZA LIVELLO ACQUA
ELETTROVALV. CARICO VELOCE
ELETTROVALV. CARICO LENTO
SEGNALAZIONE EMERGENZA LIVELLO ACQUA
ARRESTO CARICO ACQUA
VALVOLA SCARICO APERTA
VALVOLA SCARICO MOTORIZZATA
PROGETTO QUADRO s.r.l.
COMMITTENTE :
SMOKI S.r.l.
VIA CELLA RAIBANO, 16/C
MISANO ADRIATICO (RN) ITALIA
OGGETTO :
MACCHINA TIPO : GRILL 400/500/600 - MAXI 400/500
N° DISEGNO : PQSMK0000C2-QE
DESCRIZIONE PAG. : CIRCUITO DI POTENZA E COMANDO
N° COMMESSA :
FOGLIO N° 5
DATA 01/01/2022
TOT. FOGLI 5
DISEGNATORE : MARCO MARCHI
IL PRESENTE DISEGNO E' DI NOSTRA PROPRIETA'. NE E' VIETATA LA RIPRODUZIONE, IN PARTE O IN TOTO, E LA DIVULGAZIONE, SE NON ESPRESSAMENTE AUTORIZZATI.

14.5 Wiring diagram MAXI GRILL 400-500-600 without motorised drain valve




1L1
1N
PE
U1
3L1
COMANDO POMPA
E.V. CARICO VELOCE
-KM1
-SL1
-EV1
-EV2
-HL1
-SL1
1N
-KM1
4/F5
MOTORE POMPA
LIVELLO CARICO ACQUA
EMERGENZA LIVELLO ACQUA
ELETTROVALV. CARICO VELOCE
ELETTROVALV. CARICO LENTO
SEGNALAZIONE EMERGENZA LIVELLO ACQUA
PROGETTO QUADRO s.r.l.
COMMITTENTE :
SMOKI S.r.l.
VIA EMILIA ROMAGNA, 251
CATTOLICA (RN) ITALIA
OGGETTO :
MACCHINA TIPO : GRILL 400/500 - MAXI 300/400/500
N° DISEGNO : POSMK0000C-QE
DESCRIZIONE PAG. : CIRCUITO DI POTENZA E COMANDO
N° COMMESSA :
DATA 28/07/2014
FOGLIO N° 5
TOT. FOGLI 5
DISEGNATORE : MARCO MARCHI
IL PRESENTE DISEGNO E' DI NOSTRA PROPRIETA'. NE E' VIETATA LA RIPRODUZIONE, IN PARTE O IN TOTO, E LA DIVULGAZIONE, SE NON ESPRESSAMENTE AUTORIZZATI.

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