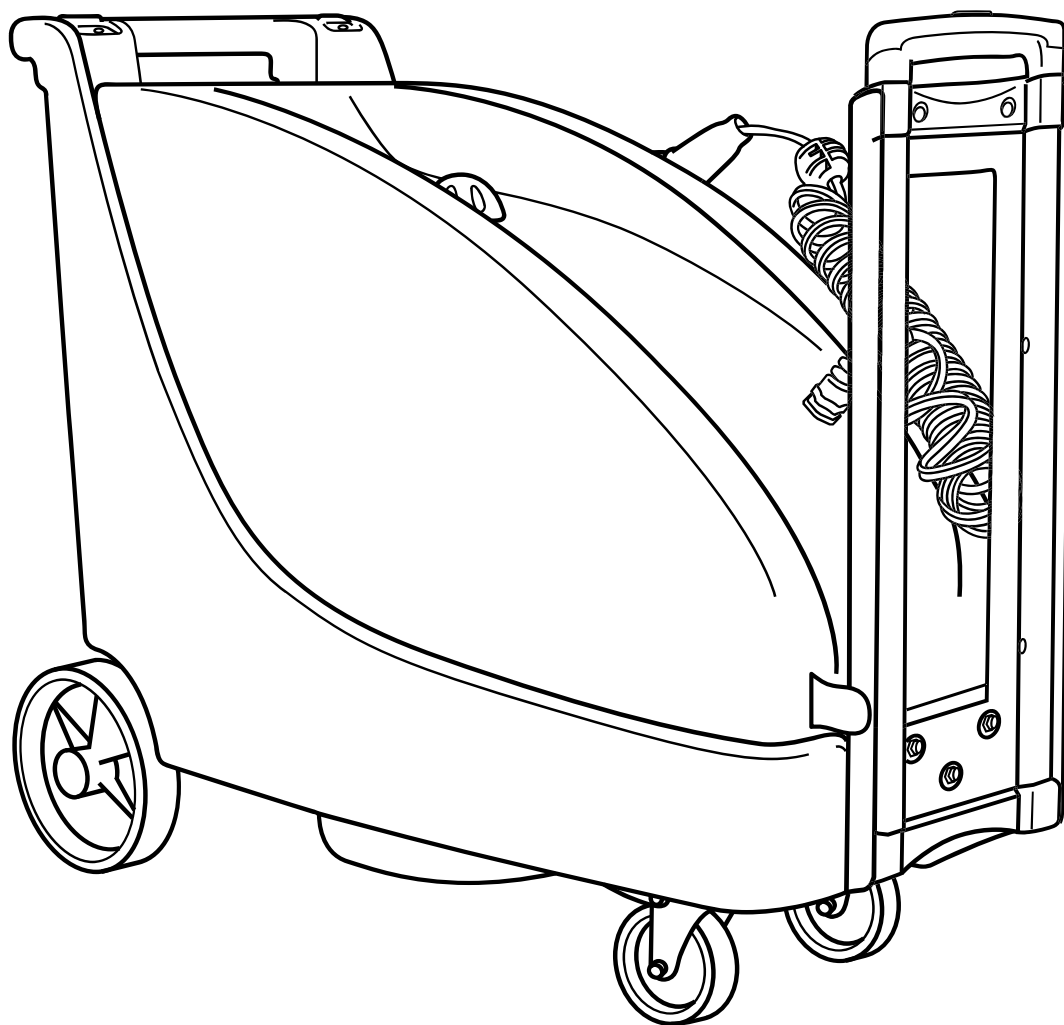




# Tornado



PROFESSIONAL SANITIZATION MACHINES

## *USE AND MAINTENANCE MANUAL*



ORIGINAL INSTRUCTION DOC. 10098249 - Ver. AA - 05-2020



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## GENERAL SAFETY REGULATIONS

The following symbols are used to indicate any potentially hazardous situations. Always read this information carefully and take the necessary precautions to protect any people and/or objects that may be present.

Operator cooperation is paramount for accident prevention. No accident prevention programme can be effective without the full cooperation of the person directly responsible for the machine's operation. Most accidents that occur at the workplace, during work activities, or while in transit, are caused by the failure to respect the most basic safety regulations. An attentive, careful operator is most effective guarantee against accidents and is fundamental in order to implement any prevention programme.

### KEEP THESE SAFETY WARNINGS WITH THE MACHINE USER MANUAL.



**DANGER:** indicates an imminent dangerous situation that, unless avoided, will result in death or serious injuries.



**WARNING:** Indicates a potentially dangerous situation that, unless avoided, could cause death or serious injury.



**ATTENTION:** Indicates a potentially dangerous situation that, unless avoided, could cause slight or moderate injuries.

### MACHINE WITH CONNECTION TO THE ELECTRICITY GRID



#### **DANGER:**

- In case of danger, act promptly: switch off the machine using the main switch and remove the power cable from the mains socket.
- To reduce the risk of fire, electric shocks or injury, please read and comply with all the safety instructions and warnings. This machine has been designed to be safe when it is used for sanitizing in the manner specified. If damage to electrical or mechanical components is found, the machine must be repaired at the relative authorized service center before use, in order to prevent further damage to the machine or physical injury to the user.
- Before connecting the machine to the electric socket, make sure the electrical information on the serial number plate corresponds to that of the mains supply. The machine must only be powered with alternating current and with a voltage

equal to that shown on the serial number plate.

- The power supply cable outlet must have an earth connection in compliance with the regulatory standards.
- If the machine packaging contains the cable to connect to the mains supply, it should only be used for the above-mentioned machine.
- Before using, check for any damage on the connection cable and on the power plug. If the cable is damaged, immediately contact a technician for restoring normal functioning.
- Connect the machine only to an electrical connection installed by an electrical installer in conformity with IEC 60364-1.
- Never touch the power plug with wet hands.
- Make sure that the cable to the mains or the extension cable have not been damaged by having been walked on, crushed, pulled or the like. Protect the cable from heat and from contact with oils or sharp edges.
- Regularly check that the cable connecting to the mains is not damaged, for example with signs of ageing or cracks. If the cable is damaged it should be replaced before using the machine again.
- Protection against splashes of water and the mechanical strength need to be ensured also after any replacement of the joints of the power cable or the extension cable.



#### **WARNING:**

- To prevent unauthorized use of the machine, the power supply should be cut off; switch off the machine using the main switch and pull out the power cable from the mains socket.



#### **ATTENTION:**

- When carrying out maintenance or deactivating the machine, switch it off using the main switch and disconnect the power cable from the mains socket.
- The procedure causes a short-term reduction in voltage.
- In unfavourable grid conditions the other appliances could be damaged.
- This damage could occur if the grid impedance is less than 0.15Ω.

## EXTENSION CABLE (electrical versions)



### **WARNING:**

- Only use the materials expressly recommended by a service technician as cable extensions (contact an authorized retailer) or else high quality models. When using an extension, respect its minimum cross-section.

## BATTERY-POWERED MACHINE



### **DANGER:**

- In case of danger, act promptly, moving the main switch to position “0”.



### **WARNING:**

- In order to prevent unauthorized use of the machine, the power supply must be disconnected: switch off the machine using the main switch.



### **ATTENTION:**

- The machine must only be powered with a voltage equal to that shown on the serial number plate.
- When doing maintenance work, switch off the machine using the main switch.
- If lead batteries (WET) have been installed on the machine, avoid tilting the machine beyond 30° with respect to the horizontal plane, as this could cause the highly corrosive liquid to leak out of the batteries.
- Avoid contact with the battery acid.
- Keep all metal objects away from the batteries.
- Use a non-conductive device for removing the battery.
- Use a suitable tool when lifting the batteries.
- The battery must be installed by qualified personnel.
- Always observe the safety measures of the site regarding removing the battery.
- Remove the batteries if the machine needs to be tilted in order to perform maintenance procedures.
- The machine should not be left unattended at the end of its working cycle because of the presence of toxic-harmful materials inside it (batteries, etc.), which are subject to regulations regarding their disposal at special centers (see the chapter on Scrapping).

## RECHARGING THE BATTERIES (battery-powered versions)

### **DANGER:**

- If the battery charger power cable is damaged or broken, it should be replaced by the charger manufacturer or authorized service personnel, or by another qualified person, in order to protect against hazards.
- The socket for the battery charger cable must have a prescribed earth connection.
- Keep sparks, flames, and incandescent materials at a safe distance from the batteries. Explosive gases are emitted during the charging phase.
- Charging the batteries produces highly explosive hydrogen gas; only carry out the charging procedure in areas that are well ventilated and away from open flames.
- Before charging check that the electric cable that connects the battery charger to the batteries is not damaged, and if it is damaged do not use it and contact technical assistance.
- Before charging check that the electric cable that connects the battery charger to the mains is not damaged, and if it is damaged do not use it and contact technical assistance.
- Before starting to charge the batteries, check there is no stagnant water or humidity in the battery charger socket.
- Do not disconnect the direct current cable of the battery charger from the socket of the machine when the battery charger is operating. This is necessary to prevent electric arcs forming. To disconnect the battery charger when charging, first disconnect the power cable from the mains socket.

### **WARNING:**

- Do not use incompatible battery chargers since they could damage the batteries and potentially cause a fire.
- Before using the battery charger, make sure that the frequency and the voltage indicated on the battery charger serial number plate or in the charger user manual (enclosed with the machine documentation) match the mains voltage.
- Keep the battery charger's cable at a safe distance from any hot surfaces.
- Never smoke in the machine's vicinity while the batteries are charging.
- Carefully read the user manual of the battery charger you want to use before recharging.

## USING THE MACHINE



### **DANGER:**

- The nebulized product must never be directed towards equipment containing electrical components.
- If the machine is used in dangerous areas (e.g. petrol stations), the relative safety standards must be observed. It is forbidden to use the machine in environments with a potentially explosive atmosphere.



### **WARNING:**

- The machine must not be used by persons (including children) with reduced physical, sensory or mental capabilities, or by those who lack the necessary experience or knowledge, unless they are under supervision or have received instructions for use.
- Keep the machine out of reach of children when it is connected to the power.
- Always use the machine in compliance with its intended use, taking into consideration local conditions and looking out for the presence of others when working, especially children.
- Do not use the machine on surfaces with a slope greater than the one indicated on the serial number plate.
- The machine is not suitable for cleaning rough or uneven floors. Do not use the machine on slopes.
- In the event of a fire, use a powder extinguisher. Do not use water.
- Do not use the machine if you do not have the requisite knowledge or authorisation.
- Do not use the machine if these safety warnings and the machine user manual have not been read and understood.
- Do not use the machine under the influence of alcohol or drugs.
- Do not use the machine when using a mobile phone or other types of electronic devices.
- Do not use the machine if it is not working correctly.
- Do not use the machine in areas where there are inflammable vapours or liquids or combustible powders.
- The machine must not be used if it has been dropped or if there are visible signs of damage or leakage from the sanitizing product tank.



## **ATTENTION:**

- Children must be supervised to ensure they do not play with the machine.
- During the working of the machine, pay attention to other people and especially to children.
- Read the labels on the machine carefully. Do not cover them for any reason, and replace them immediately if they become damaged.
- The machine must only be used and stored in an enclosed or covered environment.
- The machine must not be used or stored outdoors in damp conditions or directly exposed to rain.
- The machine does not cause harmful vibrations.
- Only use the machine in accordance with the instructions set out in these safety warnings and in the machine user manual.
- Always follow the instructions for mixing, use and disposal on the containers of the chemical substances.
- Always take appropriate measures to protect any individuals and/or objects that may be present while using this machine.
- Be careful to avoid collisions with shelving or scaffolding, above all if there is a risk of objects falling from heights.
- Do not place any liquid containers on the machine.
- When using detergents to sanitize the floor, always follow the instructions and respect the warnings indicated on the container labels.
- Always use appropriate gloves and protective equipment when handling the detergents used to sanitize the floor.
- Do not remove or alter any labels affixed to the machine.
- Before starting to work check that there are no leaks.
- Before starting to work check that all the safety devices have been installed and are working correctly.
- Only use the machine in well-lit areas.

## **DEACTIVATION OF THE MACHINE**

## **WARNING:**

- Always protect the machine against sunlight, rain, and other atmospheric agents, both while it is stationary and while it is in function. Store the machine in a dry, sheltered place: this machine is only designed for use under dry conditions, and must not be used or stored outdoors under humid conditions.
- Do not park the machine near combustible materials, powders, gases or liquids.



- Stop the machine on a flat surface.
- If the machine is left unattended, it must be protected from any accidental movements.
- When deactivating the machine, switch it off using the main switch; for electrical versions, you must also disconnect the power cable from the mains socket.



#### **ATTENTION:**

- The machine must only be stored in temperatures ranging from +10 °C to +40 °C. The humidity level must be between 30% and 95%.

## **MAINTENANCE**



#### **DANGER:**

- In order to avoid short-circuits when working in the vicinity of electrical components, do the following: avoid the use of non-insulated tools; do not place or allow metallic objects to fall upon the electrically powered components; remove any rings, watches and/or clothing with metallic parts that might come into contact with the electrically powered components.
- do not work underneath the raised machine without adequate fixed safety supports.



#### **WARNING:**

- The cleaning and maintenance to be carried out by the user must not be performed by unsupervised children.
- Read all the relevant instructions carefully before performing any maintenance/repair operations.
- If the machine does not work properly, check this is not caused by failure to carry out maintenance. Otherwise, ask for intervention of the authorized technical assistance center.
- Restore all electrical connections after any maintenance interventions.

## **ATTENTION:**

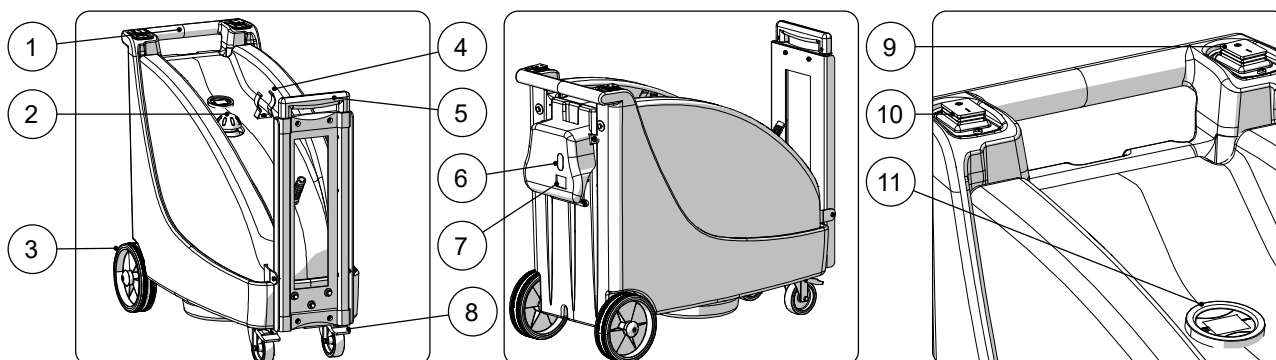
- Block the wheels before lifting the machine.
- Lift the machine with equipment that can sustain the weight to be lifted.
- Never tamper with the machine's protection devices for any reason; always follow the supplied routine maintenance instructions scrupulously.
- If any parts need to be replaced, always request ORIGINAL spare parts from an authorized Dealer or Retailer.
- In order to ensure the machine's safety and proper functionality, always have the scheduled maintenance interventions (specified in the appropriate section of this Manual) performed by authorized personnel or by an authorized service center.
- Do not wash the machine with direct jets of water, pressurized water or with corrosive substances, and do not wet it in the vicinity of electrical components.
- Have the machine checked by an authorized technical assistance center every year.
- When disposing of consumable materials, observe the laws and regulations in force. Once the machine has reached the end of its service life, the materials contained within it must be disposed of in an appropriate manner, keeping in mind that the machine itself has been built using fully recyclable materials.
- All repairs must be carried out by qualified personnel.
- Do not physically change the design characteristics of the machine.
- Use spare parts provided by authorized service centers.
- Wear personal protective equipment as required and as suggested in the manual.

## **TRANSPORT**

## **WARNING:**

- Drain the sanitizing product tank before transporting the machine.
- Secure the device according to the directives in force in the country of use, so that it cannot slide or tip over when being transported.

## LOCATION OF THE MAIN MACHINE COMPONENTS



The machine's main components are the following:

1. Control handlebars.
2. Sanitizing solution tank lid.
3. Rear wheel.
4. Spray gun support.
5. Telescopic handlebars (battery-powered versions).
6. Battery charger display (battery-powered versions).
7. Battery charger power socket (battery-powered versions).
8. Pivoting front wheel with parking brake.
9. Main machine switch.
10. Compressor control switch (battery-powered versions).
11. Control display (battery-powered versions).

## GENERAL DESCRIPTION

The descriptions contained in this document are not binding. The company therefore reserves the right to make any modifications at any time to elements, details, or accessory supply, as considered necessary for reasons of improvement or manufacturing/commercial requirements. The reproduction, even partial, of the text and drawings contained in this document is prohibited by law. **The company reserves the right to make any technical and/or supply modifications. The images are shown as reference only and are not binding as to the actual design and/or equipment.**

## DEFINITION OF LEVELS OF WARNING

**⚠ DANGER:** indicates an imminent dangerous situation that, unless avoided, will result in death or serious injuries.

**⚠ WARNING:** Indicates a potentially dangerous situation that, unless avoided, could cause death or serious injury.

**⚠ ATTENTION:** Indicates a potentially dangerous situation that, unless avoided, could cause slight or moderate injuries.

**i N.B.:** instructs the reader to pay particular attention to the topic that follows.

## SYMBOLS USED IN THE MANUAL



**Open book symbol with an "i":**  
Indicates the need to consult the instruction manual.



**Open book symbol:**  
Tells the operator to read the user manual before using the device.



**Covered place symbol:**  
The operations preceded by this symbol must always be carried out in a dry, covered area.









**Information symbol:**  
Indicates additional information for the operator, to improve the use of the device.



**Warning symbol:**  
Carefully read the sections preceded by this symbol meticulously following the instructions indicated for the safety of the operator and the device.



**Danger symbol (corrosive substances):**  
The operator should always wear protective gloves to avoid the risk of serious injury to the hands caused by corrosive substances.

	<b>Danger symbol (battery acid leakage):</b> Indicates the danger of leaking acid or acid fumes from the batteries while they are being recharged.
	<b>Danger symbol (moving carriages):</b> Indicates that the packed product should be handled with suitable carriages that conform to legal requirements.
	<b>Mandatory room ventilation symbol:</b> Informs the operator that the room must be ventilated while the batteries are being recharged.
	<b>Symbol indicating the compulsory use of protective gloves:</b> Indicates that the operator should always wear protective gloves, to avoid the risk of serious injury to his hands from sharp objects.
	<b>Recycling symbol:</b> Tells the operator to carry out the operations in compliance with environmental regulations in force in the place where the appliance is being used.
	<b>Disposal symbol:</b> Carefully read the sections marked with this symbol for disposing of the appliance.

## PURPOSE AND CONTENT OF THE MANUAL

The aim of this manual is to provide customers with all the information needed to use the machine in the safest, most appropriate and most autonomous way. This includes information concerning technical aspects, safety, operation, downtime, maintenance, spare parts and scrapping. The operators and qualified technicians must carefully read the instructions in this manual before carrying out any operations on the machine. If in doubt about the correct interpretation of instructions, contact your nearest TMB Customer Service Center to obtain the necessary clarifications.

## TARGET GROUP

This manual is written both for operators and for qualified machine maintenance technicians. Operators must not perform operations that should be carried out by qualified technicians. The manufacturer is not liable for damages resulting from failure to comply with this veto.

## PRESERVATION OF THE USER

The Use and Maintenance Manual must be stored in its special pouch close to the machine, protected from liquids and anything else that could compromise its legibility.

## ON CONSIGNMENT OF THE MACHINE

When the machine is consigned to the customer, an immediate check must be performed to ensure all the material mentioned in the shipping documents has been received, and also to check the machine has not suffered damage during transportation. If this is the case, the carrier must ascertain the extent of the damage at once, informing our customer service office. It is only by prompt action of this type that the missing material can be obtained, and compensation for damage successfully claimed.

## INTRODUCTORY COMMENT

Any sanitizing machine can only work properly and effectively if used correctly and kept in full working order by carrying out the maintenance operations described in the attached documentation. We therefore suggest you read this instruction booklet carefully and read it again whenever difficulties arise while using the machine. If necessary, remember that our assistance service (organized in collaboration with our dealers) is always available for advice or direct intervention.

## IDENTIFICATION DATA

For technical assistance or to request replacement parts, always give the model, the version and the serial number (written on the relevant plate).

## TECHNICAL DESCRIPTION

**Tornado** is a sanitizing machine that can be used to clean and sanitize a wide range of floors, through the nebulization of a chemical product which is appropriate to the work to be carried out. **The machine must only be used for this purpose.**

## INTENDED USE

This machine was designed and built for the sanitization (nebulization of sanitizing product) of smooth, compact flooring in the commercial, residential and industrial sectors by a qualified operator in proven safety conditions. The machine is suitable for use in closed (or covered) places.



**ATTENTION:** The machine is not suitable for use in the rain, or under water jets.



**IT IS FORBIDDEN** to use the machine in environments with an explosive atmosphere to clean dangerous powders or flammable liquids. In addition, it is not suitable as a means of transport for people or objects.

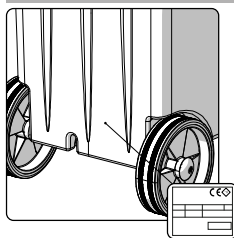
## SAFETY

Operator cooperation is paramount for accident prevention. No accident prevention programme can be effective without the full cooperation of the person directly responsible for machine operation. The majority of occupational accidents that happen either in the workplace or whilst moving are caused by failure to respect the most basic safety rules. An attentive, careful operator is most effective guarantee against accidents and is fundamental in order to implement any prevention programme.

## REGULATIONS

All references to forwards and backwards, front and rear, right and left indicated in this manual should be understood as referring to the operator in the driving position, with his/her hands on the control handlebars.

## SERIAL NUMBER PLATE



The serial number plate is located at the rear of the machine, and indicates the general characteristics thereof, specifically the serial number of the machine. The serial number is a very important piece of information and should always be provided together with any request for assistance or when purchasing spare parts.

## TECHNICAL DATA

TECHNICAL DATA	U/M [KMS]	Tornado 230V 50Hz	Tornado 110V 60Hz	Tornado Battery
Type of power supply	(V - Hz)	230- 50	110 - 60	24 - #
Nominal input power	kW	0,36	0,36	0,36
Nominal pump power	W	16	16	16
Nominal compressor power	W	350	350	350
Sanitizing product tank capacity	l	4,5	4,5	4,5
Sanitizing product consumption	rpm	50	50	50
Length of power supply cable	m	10	10	-
Maximum length of spray gun extendible hose	m	3	3	3
Machine dimensions (length - height - width)	mm	740 650 355	740 650 355	795 650 355
Dimensions of individual battery compartment (length - height - width)	mm	-	-	125 160 200
Recommended battery	N / (V-Ah <sub>CS</sub> )	2 / (12-33)	2 / (12-33)	2 / (12-33)
Machine weight when empty	kg	18	18	24
Machine weight with batteries	kg	-	-	48
Weight of the machine when ready for use (GVW)	kg	23	23	53
Sound pressure level in operator seat [ISO 11201] (L <sub>PA</sub> )	dB	<70	<70	<70
Sound power level [IEC 60335-2-72; IEC 62885-9; ISO 3744] (L <sub>WA</sub> )	dB	<80	<80	<80
Uncertainty K <sub>PA</sub>	dB	±1,5	±1,5	±1,5
Hand-arm vibrations [IEC 60335-2-72; IEC 62885-9; ISO 5349-1]	m/s <sup>2</sup>	<2.5	<2.5	<2.5
Vibration measurement uncertainty		±4%	±4%	±4%
IP test [IEC 60335-2-72; IEC 60529]		IP24	IP24	IP24
Electrical protection class (machine) [IEC 60335-2-72; IEC 60335-1]		ON	ON	-
Electrical protection class (machine # battery charger on board) [IEC 60335-2-72; IEC 60335-1]		-	-	II # I

## LABELS USED ON THE MACHINE



### Label indicating the need to read the Use and Maintenance Manual:

Applied in the vicinity of the steering column in order to remind the operator to read the user and maintenance manual before using the machine.



### Label warning of the danger of electrocution (versions 110-120 volt):

Used on the machine to warn the operator that there is a danger of electrocution with a voltage from 110-120 volt.



### Label warning of the danger of electrocution (versions 220-230 volt):

Used on the machine to warn the operator that there is a danger of electrocution with a voltage from 220-230 volt.



### Battery gas emissions warning label (battery-powered versions):

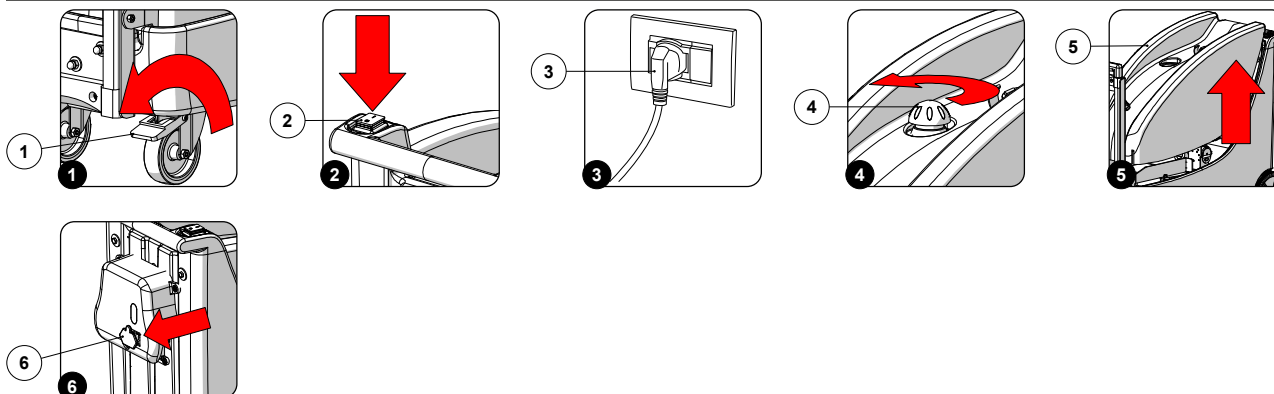
Used on the back of the machine. The label indicates when and how to charge the batteries.



### Battery gas emissions warning label (battery-powered versions):

Used on the back of the machine. The label indicates the dangers that may be present when recharging the batteries.

## PREPARATION OF MACHINE



## HANDLING THE PACKAGED MACHINE

The machine's overall weight including packaging is 20Kg.

The external dimensions of the package are: width 35cm; length 84cm and height 75cm.



**N.B.:** it is recommended that all the packaging components be kept for any future machine transportation.



**DANGER:** Move the packaged product with handling equipment that complies with legal requirements regarding size and mass of the packaging.

## HOW TO UNPACK THE MACHINE

The machine is shipped in specific packaging. To remove it, proceed as follows:

1. Place the lower part of the outer packaging in contact with the floor.



**N.B.:** Use the pictograms printed on the box as reference.

2. Remove the outer package.



**WARNING:** The machine is contained in specific packaging materials, whose elements (plastic bags, staples, etc.) can pose potential hazards, and must not be left within reach of children, disabled persons, etc.




**ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.





## HOW TO MOVE THE MACHINE

To transport the machine safely, proceed as follows:


 **DANGER:** before starting any task, make sure the current regulations concerning the safe transport of dangerous substances are scrupulously observed.


1. Check that the sanitizing solution tank is empty, otherwise empty it.

 **ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.


 **ATTENTION:** the place designated for this operation must comply with current environmental protection regulations.

2. Stand at the back of the machine.
3. Use a ramp to move the machine up onto the transport vehicle.

 **ATTENTION:** during this operation, check there are no people or objects near the machine.

 **N.B.:** the ramp gradient must not be such as to cause damage to the machine as it goes up.


4. Place the machine on the means of transport, and engage the front wheel stops (**Fig.1**).


 **WARNING:** Secure the device according to the directives in force in the country of use, so that it cannot slide or tip over.

## MACHINE SAFETY


To ensure that work is carried out in the best safety conditions, proceed as follows:


1. Switch off the machine by positioning the main switch to position "0", press the button (2) (**Fig.2**).
2. For electrical versions, disconnect the plug (3) of the power cable from the mains supply socket (**Fig.3**).

 **CAUTION:** We recommend handling the power cable with dry hands to avoid serious injury.

 **CAUTION:** To prevent damaging the power cable, disconnect the plug from the mains socket by directly pulling the plug and not the cable.

3. Check that the sanitizing solution tank is empty, otherwise empty it.

 **ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

 **ATTENTION:** the place designated for this operation must comply with current environmental protection regulations.


4. Engage the front wheel stops (1) (**Fig.1**).

## TYPE OF BATTERY TO BE USED (battery-powered versions)

Used batteries must meet the requirements set out in DIN EN 50272-3 "Traction batteries for industrial trucks".


**To ensure proper performance, the machine must be powered with 24V.**

We advise using two 12V 33Ah<sub>CS</sub> AGM batteries to power the machine, as seen here to the side.

 **N.B.:** We advise using two 12V 33Ah<sub>CS</sub> AGM batteries.


## BATTERY MAINTENANCE AND DISPOSAL (battery-powered versions)


For battery maintenance and recharging, respect the instructions provided by the battery manufacturer. When the batteries reach the end of their service life, they must be disconnected by a specialized and properly trained operator, and must be subsequently removed from the battery compartment using suitable lifting devices.

 **N.B.:** dead batteries are classified as dangerous waste and as such must be delivered to an authorized body for disposal.

## INSERTING THE BATTERIES INTO THE MACHINE (battery-powered versions)

The batteries must be housed in the special compartment inside the machine and should be handled using lifting equipment that is suitable both regard to the weight and the coupling system used.

 **ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

 **ATTENTION:** to prevent an accidental short circuit use insulated tools to connect the batteries, and do not place or drop metal objects on the battery. Remove rings, watches and any clothing with metal parts that may come into contact with the battery terminals.



The various phases for inserting the batteries in the battery compartment are as follows:

1. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 16.
2. Go to the front of the machine and remove the cap (4) from the tank (**Fig.4**)
3. Remove the plastic chassis (5) of the machine (**Fig.5**).



**ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.



**N.B.:** The equipment needed for removing the bolts is not included with the machine.



**N.B.:** for battery maintenance and daily recharging, you must fully respect the indications provided by the manufacturer or retailer.



**ATTENTION:** all installation and maintenance operations must be carried out by specialized personnel.



**N.B.:** before installing the battery, clean the battery compartment.



**N.B.:** Check that the connectors on the cables supplied are functioning correctly.



**ATTENTION:** check that the characteristics of the battery that you are looking to use are appropriate for the type of work to be performed.



**ATTENTION:** Check the battery charge and the condition of the contacts on the battery.



**N.B.:** you are advised to only lift and move the batteries with lifting and transportation means suitable for the specific weight and size



**ATTENTION:** the lifting hooks must not damage the blocks, connectors or cables.



**N.B.:** Before inserting the batteries into the machine, remember to cover the terminals with a little grease to protect them against external corrosion.

4. House the batteries in the compartment, positioning the poles "+" and "-" opposite each other.



**ATTENTION:** The battery compartment cover acts as a support surface when it is in a horizontal position, and the handle (5) acts as a reinforcement and therefore must be positioned perpendicularly to the floor.

## CONNECTING THE BATTERIES TO THE MACHINE'S ELECTRICAL SYSTEM (battery-powered versions)



**N.B.:** The batteries should be connected so as to obtain a total voltage of 24V.



**ATTENTION:** It is recommended that the electrical connection operations be carried out by specialized and trained personnel.



**ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.



**ATTENTION:** to prevent an accidental short circuit use insulated tools to connect the batteries, and do not place or drop metal objects on the battery. Remove rings, watches and any clothing with metal parts that may come into contact with the battery terminals.



**N.B.:** When the connection is complete, reposition the chassis on the machine.



**N.B.:** The equipment needed for removing the bolts is not included with the machine.

## RECHARGING THE BATTERIES (battery-powered versions)

The batteries must be charged prior to first use, and whenever they no longer provide sufficient power to perform the desired work.



**ATTENTION:** to avoid any permanent damage to the batteries, it is essential to avoid their complete discharge; begin recharging them within a few minutes of noting the "discharged batteries" signal.



**ATTENTION:** Never leave the batteries completely discharged, even if the machine is not being used.

1. Bring the machine to the battery recharging area.



**ATTENTION:** park the machine in an enclosed place, on a flat and level surface; near the machine there must be no objects that could either damage it, or be damaged through contact with it.



**DANGER:** the room used to recharge the batteries must be adequately ventilated to prevent the accumulation of gases that leak from batteries.

2. Carry out the steps necessary to secure the machine (see paragraph "MACHINE SAFETY" on page 16).

**⚠ ATTENTION:** the following operations must be carried out by qualified personnel. An incorrect connection of the connector may cause a malfunction of the device.

**📖 N.B.:** Carefully read the use and maintenance instructions of the battery charger that is used for charging, this document is delivered along with the machine.

3. Remove the cap (6) from the battery charger socket (**Fig.6**).

**⚠ ATTENTION:** before connecting the batteries to the battery charger, make sure it is suitable for the batteries used.

**⚠ WARNING:** Before inserting the battery charger power cable into the socket, verify that there is no condensate or other forms of liquids.

**📘 N.B.:** the battery charger power cable is delivered inside the bag containing this instruction booklet.

4. Plug the battery charger cable into the mains socket.
5. Connect the battery charger's power cable to the socket on the battery charger itself.

**⚠ ATTENTION:** Keep the machine's external chassis off for the whole duration of the battery recharging cycle to allow gas fumes to escape.

6. When the recharge cycle is complete, disconnect the battery charger cable from the mains.
7. Disconnect the battery charger's power cable from the socket on the battery charger itself.
8. Reposition the cap in the battery charger socket.

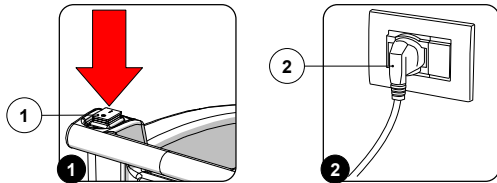
## FILLING THE SANITIZING PRODUCT TANK

To fill the sanitizing product tank, proceed as follows:

**⚠ CAUTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

1. Go to the front of the machine and remove the cap (4) from the tank (**Fig.4**).
2. Fill the tank with the sanitizing product you wish to use; please note that the maximum capacity of the tank is 4.5 litres.
3. Replace the cap previous removed from the tank.

## PREPARING TO WORK



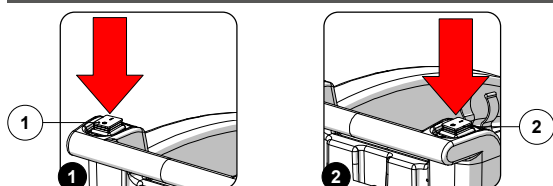
Before beginning to work, it is necessary to:

1. Make sure the machine is off; if not set the main switch (1) to position "0" (**Fig.1**).
2. Go to the front of the machine and check that the sanitizing product tank is full; if not, read the following paragraph "FILLING THE SANITIZING PRODUCT TANK" on page 18.
3. Check that the spiral hose is free and not tangled; if necessary, free it.
4. For electrical versions, connect the plug (2) of the power cable to the mains supply socket (**Fig.2**).

**⚠ CAUTION:** We recommend handling the power cable with dry hands to avoid serious injury.

**📘 N.B.:** Always unroll the power cord completely to prevent it from overheating.

## STARTING WORK



To start working, proceed as follows:

1. Make all the checks listed in [“PREPARING TO WORK”](#).
2. Go to the rear of the machine and switch it on, turning the main switch (1) to position “I” (**Fig.1**).
3. Remove the spray gun from the holder.
4. For battery-powered versions, turn the compressor on; move the compressor control switch (2) to position “I” (**Fig.2**).
5. Start nebulizing the sanitizing product by pressing the lever on the spray gun.

**CAUTION:** During this phase and throughout the work, do not point the jet of the spray in the direction of your face or the people around you.

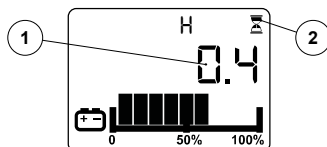
**N.B.:** Wait a few seconds for the sanitizing product to be circulated and nebulized.

6. Proceed with the work that you wish to carry out.

**CAUTION:** When working, do not point the jet of the spray in the direction of your face or the people around you.

**CAUTION:** When working, do not point the jet of the spray in the direction of electrical or electronic components.

### HOURLY METER (battery-powered versions)



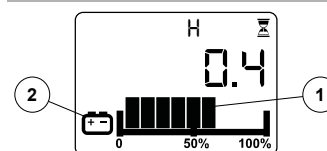
The control display is present on the body of the machine, and this shows the total usage time via a series of numbers (1).

The digits that precede the “.” symbol identify the hours, whereas the numbers that precede the “.” symbol identify the tenths of an hour (a tenth of an hour corresponds to six minutes).

**N.B.:** When the “hour glass” symbol (2) is flashing it indicates that the hour meter is counting the appliance's operating time.

**N.B.:** The hourglass symbol flashes when the compressor starts working.

### BATTERY CHARGE LEVEL INDICATOR (battery-powered versions)



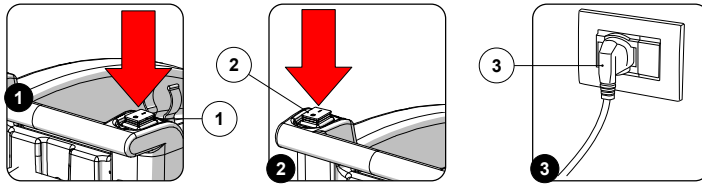
The control display is on the control panel, the battery charge level can be seen at the bottom.

The indicator is composed of two charge level symbols, the first represented by a graphic symbol (1), the second by a symbol that represents a battery (2).

The graphic symbol (1) is composed of 9 charge levels, each of which represents a residual charge percentage.

With a residual charge of 20%, the battery symbol (2) will start flashing; when this occurs, the machine will automatically turn off the compressor.

## AT THE END OF THE WORK



At the end of the work, and before carrying out any type of maintenance, perform the following operations:

1. For battery-powered versions, turn the compressor off; move the compressor control switch (1) to position "0" (**Fig.1**).
2. Turn off the machine, turning the main switch (2) to position "0" (**Fig.2**).
3. For electrical versions, disconnect the plug (3) of the power cable from the mains supply socket (**Fig.3**).

**CAUTION:** We recommend handling the power cable with dry hands to avoid serious injury.

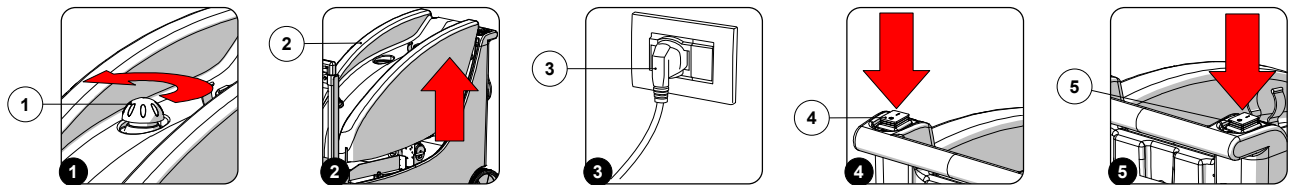
**CAUTION:** To prevent damaging the power cable, disconnect the plug from the mains socket by directly pulling the plug and not the cable.

4. Perform all procedures indicated in the chapter "ROUTINE MAINTENANCE OPERATIONS".
5. Once the routine maintenance operations are complete, take the machine to the designated storage location.

**ATTENTION:** Park the machine in an enclosed place, on a flat surface; near the machine there must be no objects that could either damage it, or be damaged through contact with it.

6. Secure the machine, see paragraph "MACHINE SAFETY" on page 16.

## ROUTINE MAINTENANCE



Before carrying out any routine maintenance operations, proceed as follows:

1. Take the machine to the maintenance area.

**WARNING:** the place designated for this operation must comply with current regulations concerning safety at work and current environmental protection regulations.

2. Carry out the steps necessary to secure the machine, see paragraph "MACHINE SAFETY" on page 16.

**ATTENTION:** It is recommended to wear the appropriate PPE (Personal Protective Equipment), suitable for the work to be carried out.

## EMPTYING THE SANITIZING PRODUCT TANK

To empty the sanitizing product tank, proceed as follows:

1. Go to the front of the machine and remove the cap (1) from the tank (**Fig.1**).
2. Remove the plastic chassis (2) of the machine (**Fig.2**).

**N.B.:** The equipment needed for removing the bolts is not included with the machine.

3. Remove the sanitizing product tank and empty it.

**N.B.:** the place designated for this operation must comply with current environmental protection regulations.

4. Repeat the operations in reverse order to reassemble all the parts.

## CLEANING THE NEBULIZER SYSTEM

To clean the nebulizer system, proceed as follows:

1. Go to the front of the machine and remove the cap (1) from the tank (**Fig.1**)
2. Remove the plastic chassis (2) of the machine (**Fig.2**).



**N.B.:** The equipment needed for removing the bolts is not included with the machine.

3. Remove the sanitizing product tank and fill it with clean water.
4. Repeat the operations in reverse order to reassemble all the parts.
5. For electrical versions, connect the plug (3) of the power cable to the mains supply socket (**Fig.3**).



**CAUTION:** We recommend handling the power cable with dry hands to avoid serious injury.



**N.B.:** Always unroll the power cord completely to prevent it from overheating.

6. Go to the rear of the machine and switch it on, turning the main switch (4) to position "I" (**Fig.4**).
7. Remove the spray gun from the holder.
8. For battery-powered versions, turn the compressor on; move the compressor control switch (5) to position "I" (**Fig.5**).
9. Start nebulizing the water by pressing the lever on the spray gun.



**CAUTION:** During this phase and throughout the work, do not point the jet of the spray in the direction of your face or the people around you.



**N.B.:** Wait a few seconds for the sanitizing product to be circulated and nebulized.

10. Spray the water for at least a few minutes.

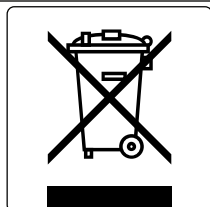


**CAUTION:** When working, do not point the jet of the spray in the direction of your face or the people around you.



**CAUTION:** When working, do not point the jet of the spray in the direction of electrical or electronic components.

## DISPOSAL



Dispose of the machine in accordance with the waste disposal regulations in force in the country in which the machine is being used.



## TROUBLESHOOTING

This chapter lists the most common problems linked with the use of the machine. If you are unable to resolve the problems with the information given here, please contact your nearest assistance center.

PROBLEM	POSSIBLE CAUSE	SOLUTION
THE MACHINE DOES NOT START (valid for electric versions)	the machine is off.	Turn on the machine; move the main switch to position "I".
	The power cable is not connected to the mains socket, valid for electrical versions.	Connect the machine's power cable plug to the mains socket.
THE MACHINE DOES NOT START (valid for battery-powered versions)	the machine is off.	Turn on the machine; move the main switch to position "I".
	When switched on, an alarm message appears on the control display, valid for battery-powered versions.	Stop the machine immediately, and contact a specialized service center.
	The machine's batteries are not properly connected to each other, valid for battery-powered versions.	Correctly connect the batteries, see paragraph "CONNECTING THE BATTERIES TO THE MACHINE'S ELECTRICAL SYSTEM (battery-powered versions)" on page 17.
	The output voltage of the batteries is lower than the supply voltage required by the machine, valid for battery-powered versions.	The machine must be powered with a voltage of 24V, see paragraph "TYPE OF BATTERY TO BE USED (battery-powered versions)" on page 16.
	Check the battery charge level, valid for battery-powered versions.	If the battery charge level is critical, perform a complete charge cycle; see paragraph "RECHARGING THE BATTERIES (battery-powered versions)" on page 17.
THE BATTERIES ARE NOT CHARGED CORRECTLY (valid for battery-powered versions)	The plug on the battery charger's cable is not correctly inserted into the socket on the battery charger itself.	Reconnect the battery charger's power cable.
	The plug on the battery charger's power cable is not correctly inserted into the electrical outlet.	Check that the battery charger power supply cable plug is connected to the mains socket.
	The characteristics of the mains power supply do not correspond to those required by the battery charger.	Check that the characteristics in the battery charger plate are the same as those of the mains supply.
	The LEDs of the battery charger blink repeatedly.	Referring to the battery charger use and maintenance manual, check the meaning of the flashing signals that the battery charger emits during the battery recharge stage.
THE MACHINE DOES NOT NEBULIZE THE SANITIZING PRODUCT	The compressor is not working.	For battery-powered versions, turn the compressor on; move the compressor control switch to position "I".
	The nebulizer release lever has not been pressed.	Press the lever on the spray gun.
	The sanitizing product in the tank has run out.	Refill the tank with sanitizing product, see the paragraph "FILLING THE SANITIZING PRODUCT TANK" on page 18.
	The battery charge level is critical.	Check the battery charge level via the control display, see paragraph "BATTERY CHARGE LEVEL INDICATOR (battery-powered versions)" on page 19.
		If the battery charge level is critical, perform a complete charge cycle; see paragraph "RECHARGING THE BATTERIES (battery-powered versions)" on page 17.
NOT ENOUGH SANITIZING SOLUTION HAS BEEN NEBULIZED	The quantity of sanitizing solution in the nebulizer system is not sufficient for the work to be carried out.	Check that the amount of sanitizing solution present in the machine's nebulizer system is sufficient for the work to be carried out; if this is not the case, top up the tank, see paragraph "FILLING THE SANITIZING PRODUCT TANK" on page 18.

## EC DECLARATION OF CONFORMITY



The undersigned company:  
**TMB S.r.l.**  
Via Cà Nova Zampieri, 5  
37057 San Giovanni Lupatoto (VR)  
declares under its sole responsibility that the products

**SANITIZER MACHINE mod.  
Tornado B**

comply with the requirements of the following Directives:

- 2006/42/EC: Machinery Directive.
- 2014/35/EU: Low Voltage Directive.
- 2014/30/EU: Electromagnetic compatibility directive.

They also comply with the following standards:

- EN 60335-1:2012/A11:2014
- EN 60335-2-54:2008+A1:2015
- EN 12100:2010
- EN 60335-2-29:2004/A2:2010
- EN 61000-6-2:2005/AC:2005
- EN 61000-6-3:2007/A1:2011/AC:2012
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 55014-1:2006/A1:2009/A2:2011
- EN 55014-2:2015
- EN 62233:2008/AC:2008

The person authorized to compile the technical file:

Mr. Giancarlo Ruffo  
Via Cà Nova Zampieri, 5  
37057 San Giovanni Lupatoto (VR) - ITALY

San Giovanni Lupatoto (VR), 18/09/2020

TMB S.r.l.  
Legal representative  
Giancarlo Ruffo

**Agent:** TMB S.r.l.  
Via Cà Nova Zampieri, n°5  
37057 - S. Giovanni Lupatoto (VR) - Verona - Italia  
Tel. 0039 045 8774299  
Fax. 0039 045 8774245  
E-mail: [tmb@tmbvac.it](mailto:tmb@tmbvac.it)  
Web: [www.tmbvacuum.com](http://www.tmbvacuum.com)

**Manufacturer:** COMAC S.p.A.  
Via Maestri del Lavoro, n°13  
37059 - S. Maria di Zevio (VR) - Verona - Italia  
Tel. 0039 045 8774222  
Fax. 0039 045 8750303  
E-mail: [com@comac.it](mailto:com@comac.it)  
Web: [www.comac.it](http://www.comac.it)



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Via Cà Nova Zampieri, 5  
37057 San Giovanni Lupatoto (VR)

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**SANITIZER MACHINE mod.**

**Tornado 230V 50Hz - Tornado 110V 60Hz**

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- EN 61000-6-2:2005/AC:2005
- EN 61000-6-3:2007/A1:2011/AC:2012
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 55014-1:2006/A1:2009/A2:2011
- EN 55014-2:2015
- EN 62233:2008/AC:2008

The person authorized to compile the technical file:

Mr. Giancarlo Ruffo  
Via Cà Nova Zampieri, 5  
37057 San Giovanni Lupatoto (VR) - ITALY

San Giovanni Lupatoto (VR), 18/05/2020

TMB S.r.l.  
Legal representative  
Giancarlo Ruffo

**Agent:** TMB S.r.l.  
Via Cà Nova Zampieri, n°5  
37057 - S. Giovanni Lupatoto (VR) - Verona - Italia  
Tel. 0039 045 8774299  
Fax. 0039 045 8774245  
E-mail: [tmb@tmbvac.it](mailto:tmb@tmbvac.it)  
Web: [www.tmbvacuum.com](http://www.tmbvacuum.com)

**Manufacturer:** COMAC S.p.A.  
Via Maestri del Lavoro, n°13  
37059 - S. Maria di Zevio (VR) - Verona - Italia  
Tel. 0039 045 8774222  
Fax. 0039 045 8750303  
E-mail: [com@comac.it](mailto:com@comac.it)  
Web: [www.comac.it](http://www.comac.it)











**Your Better Choice**

TMB s.r.l. - Via Cà Nova Zampieri, 5 - 37057 S. Giovanni Lupatoto - Verona - Italy  
Tel. +39 045 8774299 - Fax +39 045 8774245 - E-mail: [info@tmbvac.com](mailto:info@tmbvac.com)  
[www.tmbvacuum.com](http://www.tmbvacuum.com)