



# **SPIRAL KNEADING MACHINE**

**CE**



Models: SX50-SX60-TSX50-TSX60  
TSVX50-TSVX60

**INSTALLATION OPERATING AND MAINTENANCE  
INSTRUCTIONS**

## **INTRODUCTION**

**READ THIS ENTIRE MANUAL BEFORE UNPACKING AND INSTALLING THIS PRODUCT.**

Dear client,

Thank you for choosing a quality product manufactured by us.

Our expert production follows the guiding principle of the strictest quality control of each component so as to guarantee that our products will function efficiently far into the future. The mechanical, electrical, and electronic parts were designed and manufactured to guarantee reliability and high-quality functioning.

The use of parts that are not original could cause functioning problems or damage to the product. Therefore, always ask for any spare parts from authorized dealers to return the product to perfect working order and to guarantee that it will last longer.

All the machines we manufacture are made using modern technology and systems of tested reliability. We systematically referred to the current standards and regulations for mechanical products, specifically the UNI standards and the CEI standards for electric and electronic equipment. The units that are described in this manual, like all our products, are manufactured according to criteria of good practice and in strict compliance with the European directives and related regulations.

**Note:**

**The unit that is illustrated or described could be different from your unit for commercial or technical reasons, depending on the standards and safety regulations in force in the different countries in Europe and in the world. The technical specifications and dimensions, the described functioning, and any equipment cited are not binding. The figures show a generic unit only for illustrative purposes.**

**Before operating on the machine, read carefully the technical instructions included in this manual and follow the indications described.**



**Keep this manual and all the annexed literature in a readily accessible place and known to all the users (operators and maintenance personnel).**

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## SECTION 1



### GENERAL INFORMATION - INSTRUCTIONS

#### 1.1 Introduction and safety recommendations

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These operating and maintenance instructions are intended to operators and qualified personnel for the correct use of the machine.

In order to facilitate understanding of the content of this manual, we provide a list of terms and symbols used:

<b>Definition - Symbol</b>	<b>Description</b>
<i>Danger Zone</i>	Any area within and/or around the machine in which an exposed person is subject to a risk to his health or safety.
<i>Exposed Person</i>	Any person who is wholly or partially in a danger zone.
<i>Operator</i>	Person in charge of installing, operating, adjusting, servicing and cleaning the machine.
	Provides significant information.
	Indicates a potentially hazardous situation that may arise if the operations described are not carried out correctly, and which may result in damage to the machine and/or serious injury to operators.

Warnings of precautions and safety are written in this manual in order to remind the operator and staff on the possible dangers due to improper use of this machine.

The instructions or the warnings do not want to substitute the safe working practice but to complete them and to stimulate their compliance.



**Only warning does not eliminate the hazard.**

**Failure to observe this safety recommendations and improper use of the device may pose risk of accidents for the operator or other people.**

**1.1.1 Residual risks**

In compliance with section 1.7.3 "Warning of residual risks" of the Machine Directive 89/392 and subsequent amendments, if the protections applied, also in compliance with the aforementioned Directive, do not observe the following recommendations regarding:

- ▶ clothing that must be used (with no loose parts and/or accessories hanging down from the body);
- ▶ connection to the mains (respect the cyclic frequency of the phases to avoid that the spiral and the bowl turn in opposite directions);

the risk of crushing and/or shearing of pieces will not be completely eliminated.

**1.2 Machine data and use**



The manual describes the operating instructions for the **spiral kneaders with fixed or removable bowl.**

Models: **SX-50; SX-60; TSX-50; TSX-60;**  
**TSVX-50; TSVX-60.**




This type of electrical machine transforms, with the addition of water and, sometimes, vegetable or animal fats and oils or any other ingredient, a mix of flour, into a doughy and homogeneous mass used to make pizza, bread, pastry or sweets.

The model identification plate, placed at the rear part of the machine, next to the power line is as follows:

**47813 Bellaria - Igea Marina (ITALY)**

Model: _____			
Serial Nr. 1055/04895	Year 2010		
___ Volt	_ N~	___ kW	
50 Hz		___ Kg	

### 1.2.1 Application sectors

All the models are suitable to be used in the field of handmade or professional products, therefore, they can be used in:

- ▶ Kitchens of restaurants, communities, canteens, pizza houses, etc.
- ▶ In bakeries or pasta factories.
- ▶ Wherever it is necessary to prepare flour dough.

### 1.3 EC Declaration of Conformity

**DICHIARAZIONE  DI CONFORMITÀ**

  
**Il Costruttore:**  
Via F. Filzi, 28/30 - Zona Artigianale  
47813 BELLARIA - IGEA MARINA RN

Tel. +39 0541 33 23 22 - Fax. +39 0541 33 23 50  
Web: [www.gaminternational.it](http://www.gaminternational.it) # e-mail: [gam@gaminternational.it](mailto:gam@gaminternational.it)

**DICHIARA CHE LA MACCHINA:**

Marca: **GAM International s.r.l.** - Modello:

Numero di matricola  Anno di costruzione:

Tensione d'alimentazione

**Macchina Impastatrice:** idonea all'impasto di farine per la produzione di pane e pizza per l'alimentazione umana; e/o gli accessori specifici, od i dispositivi aggregati, sono destinati al servizio diretto ed esclusivo della macchina sopra identificata, destinata ad operare nel settore della ristorazione collettiva, in ambiente di tipo civile od industriale leggero.

Costruttore: **GAM International s.r.l.**- Via F. Filzi, 30 - Zona Artigianale -  
47813 BELLARIA - IGEA MARINA RN - Tel. +39 0541 332322 - Fax.+39 0541 332350

**È CONFORME:**

- Alla Direttiva Europea 2006/95/CE (Direttiva Sicurezza Elettrica),
- Alla Direttiva Europea 2004/108/CE (Direttiva Compatibilità Elettromagnetica),
- Alla Direttiva Europea 98/37/CE (Direttiva Macchine), pubblicata nella GUCE n. L 207 del 23/7/98,
- E loro successive modifiche ed integrazioni, secondo le specifiche parti applicabili delle pertinenti norme armonizzate e nazionali.

**RISPETTANDO INOLTRE:**

- Le disposizioni del Regolamento CE n. 1935/2004 riguardante i materiali e gli oggetti destinati a venire a contatto con i prodotti alimentari,
- Le Disposizioni del Regolamento CE n. 2023/2006 riguardante le buone pratiche di fabbricazione dei materiali e degli oggetti destinati a venire a contatto con prodotti alimentari.

**RISPETTANDO INFINE:**

- La norma EN 1672-2 (Macchine industria alimentare – Requisiti Igiene)
- La norma EN 14159 (Sicurezza del macchinario)

Bellaria – Igea Marina (RN) Data:

GAM International srl

**1.4 Technical specifications**

<b>Model</b>	<b>External measurements (mm)</b>	<b>Bowl capacity (mm)</b>	<b>Packages dimensions (mm)</b>	<b>Weight (Kg)</b>	<b>Gears motors in oil bath</b>
<b>SX 50</b>	L x P x H 530x940x930	53 lt 45 kg Ø500x300	L x P x H 690x1040x1100	207	X
<b>SX 60</b>	L x P x H 640x990x930	76 lt 64 kg Ø600x300	L x P x H 690x1040x1100	213	X
<b>TSX 50</b>	L x P x H 530x940x930	53 lt 45 kg Ø500x300	L x P x H 690x1040x1100	217	X
<b>TSX 60</b>	L x P x H 640x990x930	76 lt 64 kg Ø600x300	L x P x H 690x1040x1100	223	X
<b>TSVX 50</b>	L x P x H 530x940x930	53 lt 45 kg Ø500x300	L x P x H 690x1040x1100	218	X
<b>TSVX 60</b>	L x P x H 640x990x930	76 lt 64 kg Ø600x300	L x P x H 690x1040x1100	224	X

<b>Model</b>	<b>Single-phase installed power 230V 50Hz</b>	<b>Three-phase installed power 400V 50Hz</b>	<b>2 Speed Three-phase installed power TR 400V 50Hz</b>
<b>SX 50</b>	//	2,5 kW	3,3/2,6 kW
<b>SX 60</b>	//	2,5 kW	3,3/2,6 kW
<b>TSX 50</b>	//	2,5 kW	3,3/2,6 kW
<b>TSX 60</b>	//	2,5 kW	3,3/2,6 kW
<b>TSVX 50</b>	//	2,5 kW	3,3/2,6 kW
<b>TSVX 60</b>	//	2,5 kW	3,3/2,6 kW

Transmission with gear motors in oil bath and chain.

### 1.4.1 Sound level

The machine has been designed to operate within the power limits established by the legislation in force. You should encounter these average sound levels in your work place during the main operating phases:

- ▶ No load noise 55dB(A).
- ▶ Full load noise 67dB(A).
- ▶ Half load noise 61dB(A).

### 1.4.2 Productivity

Model	Maximum productive capacity per cycle
<b>SX50</b>	± 45 Kg di impasto
<b>SX60</b>	± 64 Kg di impasto
<b>TSX50/TSVX50</b>	± 45 Kg di impasto
<b>TSX60/TSVX60</b>	± 64 Kg di impasto

Adding water or other kinds of ingredients to the partially kneaded dough inside the bowl has to be gradual, following the proportion: about 2 Kg of flour for every litre of liquid. It is recommended to pour first the water and then the flour.



**Do not exceed the maximum quantity of dough that the machine can cope with during each productive cycle.**

The duration of the working cycle, according to the machine model, may vary from 14 to 20 minutes approximately.



### 1.5 Machine description

The machine consist mainly of the following groups:

- 1) Base;
- 2) Mixing bowl;
- 3) Cover;
- 4) Release lever;
- 5) Push button control panel (1 or 2 speed);
- 6) Column.



### 1.6 Packaging and standard equipment

In order to avoid any damage during handling or transport, the machines are supplied with:

Type of packaging	Objective
Box of heavy corrugated cardboard	Protection against careless impacts and movements
Anti-static PVC bag	Protection against dust

Protective wrapping of semi-rigid expanded polystyrene shaped to the machine

Internal stability and anti-shock protection

The packaging of all the models is secured to a wooden support (pallet) so that they can be perfectly handled with lifting means/transport.

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The standard equipment of all the models consists of the following:

- ▶ An operations and maintenance instructions manual
- ▶ A catalogue of spare parts with exploded diagram
- ▶ Warranty Certificate
- ▶ EC Declaration of Conformity



Only the price list and the order confirmation of Your machine certify the effective general configuration with standard equipment and accessories.

### 1.7 Safety devices

In order to ensure observance of the Essential Safety and Health Protection Requirements (ESHRs), all our products comply with the requirements of the following European Directives:

- ▶ Electrical Safety Directive (2006/95/EC).
- ▶ Electromagnetic Compatibility Directive (2004/108/EC).
- ▶ Machine Directive (2006/42/EC).

and include the criteria and the suitable devices that ensure all the provisions.



All the protection and safety devices of the machine and the equipment installed and all the signs that indicate danger, or provide information or recommendations must be kept in good conditions in their corresponding places.



**To tamper, modify or change the elements of the machine and the safety devices constitute fraudulent actions and bear civil and penal responsibilities for any direct or indirect damage to people, animals, objects or the environment.**

### 1.7.1 Safety devices of the electrical equipment – Wiring diagram

The electrical circuits of the machine, the wiring diagram, the buttons, the switches and the selectors are all designed and manufactured in conformity with the specific standards

To preserve safety:

- ▶ The electrical system that supplies the auxiliary circuits is powered by a low voltage transformer (IEC 96-2).
- ▶ A specific micro-switch with forced opening of contacts blocks operation at the moment the protection of the rotating bowl (cover) is lifted
- ▶ A specific micro-switch with forced opening of contacts blocks operation at the moment the head is lifted.
- ▶ An interface circuit between the command and the power ones prevents the spontaneous restart after a voltage reduction or after the interruption of the supply voltage, by making indispensable the voluntary reset intervention of the machine operation circuit.
- ▶ The electrical appliances and the circuit are inserted in the corresponding containers with IP 55 protection level.

The wiring diagram has been carried out according to the standard instructions related to the electric equipments of industrial machines.



There is a copy of the wiring diagram in the appendix of this manual.

### 1.7.2 Safety devices of the mechanical equipment

In order to obtain the maximum degree of safety and reliability, the mechanical safety devices are integrated to the structure of the machine and can't be violated:

- ▶ The cover of the bowl allowing the introduction of water without lifting it or interrupting the system operation.
- ▶ A vertical polycarbonate protective glass, permanently fixed to the bowl, prevents that hands, fingers and other parts of the body get crushed or trapped between the kneading column and the bowl.



**Keep hands, arms or any other part of the body away from the rotating bowl or the moving parts inside it.**

**Do not remove the rear or upper crankcase, or the polycarbonate protection during machine operation.**

### 1.7.3 Operator safety

The operators must:



- ▶ reach the age foreseen by the social laws,
- ▶ have good general competence and manual ability for coordination and be precise;
- ▶ have received proper technical and practical preparation (training) from an skilled operator;
- ▶ be aware of the dangers that derive from an improper use of the machine or from carrying out the prescriptions of this manual in a different way;
- ▶ operate the machine without using scarves, ties, rings, watches, bracelets or any other object that may get caught between the parts of the machine;
- ▶ observe working clothes (with tight sleeves) and have your hair up;
- ▶ wear personal protection equipment (thermal insulation gloves, glasses, masks, etc.) in compliance with the safety legislation and regulations in force in the respective country, as prescribed by Directive 89/391/EEC and annexed directives.




## SECTION 2

### INSTALLING THE MACHINE

#### 2.1 Unpacking

Normally unpacking involves:

Step	Action	
1	Remove the fastening strap from the cardboard box and the wooden bedplate (pallet) by using a suitable tool (pair of scissors, cutter, etc).	
2	Introduce the point of a screwdriver between the cardboard and the points that fasten the lower part of the packaging and remove them by pulling outwards.	

<b>3</b>	Remove the upper cover of the cardboard packaging.	
<b>4</b>	Take away the anti-static PVC bag and the expanded polystyrene.	
<b>5</b>	Unscrew the "L" elements around the machine.	
<b>6</b>	Open the packaging completely and introduce the ropes and the lifting belts under the bedplate, towards both ends (make sure the capacity of the ropes are adequate for the weight of the machine). <b>Adjust the ropes or the belts so that all the lifting points are wrapped around and there is no chance that they slip off and the weight loses its balance.</b>	
<b>7</b>	Carefully sling the machine by protecting the parts of the structure that make direct contact with the lifting ropes/belts.	
<b>8</b>	Lift the machine from the wooden bedplate (pallet) and unload it in the allotted site on the ground.	
<b>9</b>	If necessary, use a soft and dry cloth to clean the outside part.	



**The machine must be handled only by personnel who are trained and familiar with the risks and the procedures related to unpacking, lifting and correct handling.**

## 2.2 Position in place

To position the machine in place proceed as follows:

Step	Action
1	Place the machine in a suitable area protected against atmospheric agents; considering the size and the space necessary for the containers of raw and finished materials. Check that there is an electricity distribution system in the area suitable to provide the machine with the required power.
2	Place the feet under the bedplate on a solid levelled surface.



The machine does not need to be fastened with any kind of strap onto the work table.

## 2.3 Connection to the electrical power supply



**The electrical connection to the power supply and the operation of the machine must be done, pursuant to the law, only by a qualified technician, who will previously check (IEC standards), with suitable means and tools, the effectiveness of the ground electrodes and the earthing system to which the device will be connected.**

**For installations outside the national territory, observe strictly the regulations in force in the country where the machine will be used.**


## 2.4 Preliminary installation requirements

Install the machine only after you have checked that:

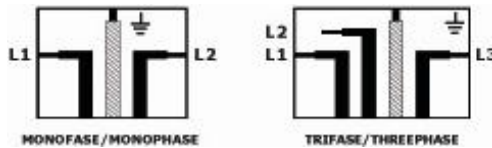
- ▶ the voltage indicated on the plate is the voltage the machine will be supplied with;
- ▶ the voltage and absorbed power characteristics of each machine model (Sec. 1.4) are suitable for the available voltage and power;
- ▶ the distribution system has an effective earthing system and safety switch.

All the components and materials necessary to perform the installation must: be done in full compliance with the laws in force and abide by the dictates of the low voltage directive and the electromagnetic compatibility directive in force.

The installation technician must:

Step	Action
1	Strictly follow the technical specifications contained in the IEC 64-8 standard to determine the electrical features of the disconnecting switch (with possible interlocking control) and the differential thermo-magnetic switch.
2	Check that the power plug of the machine is connected to a suitable socket (interlocking type preferred) in compliance with IEC 309 and EN 60 309 standard.
3	<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <p>Check that the direction of rotation of the bowl coincides with the direction of rotation indicated by the arrow on the bowl. If they do not coincide in models with three-phase power supply, invert the two phases on the plug so that the correct direction of rotation is restored.</p> </div> <div style="flex: 1; text-align: center;">  </div> </div>

The machine with three-phase power supply should be connected to a safety grip according to the cyclic frequency of the phases.



Once operating checks and inspections are finished, the installer will have to issue the Declaration of Conformity in compliance with the provisions of Act 46/90

**2.4.1 Technical information reserved to the qualified installer**



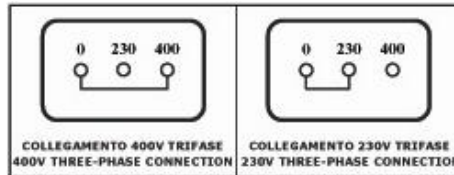
**The following informations are aimed, only, at qualified technical staff.**

The three-phase motor 400V 50Hz has two flexible wires, each of them consisting of three wires, in three different colours:

- ▶ the three wires of different colours of one of the two straps are short-circuited and segregated at a terminal or at a terminal board;
- ▶ the other three wires are directly connected to the interface card of the machine control panels.

If you want to change the provided connection to 400V three-phase (star connection) for the operation at 230V three-phase (delta connection), proceed as follows:

Step	Action
1	Separate the three short-circuited wires from each other.
2	Combine the wires with the same colour, then restore the connection of the wires grouped together to the card terminal marked with the references U1 - V1 - W1.
3	Proceed to the new connection of the bridge cable between the references 0 - 400V by sliding these last ends to the new value of 230V.
4	Carry out the functional test and the control of the correct direction of the motor rotation.



Disposing the machine with single-phase power supply:

Step	Action
1	Install to the ends of the power supply cable to a corresponding loose plug, conforming to the IEC 309-1 and 2 standard.
2	Install to the wall or to the connector box, close to the machine, the corresponding power socket attached to the plug.

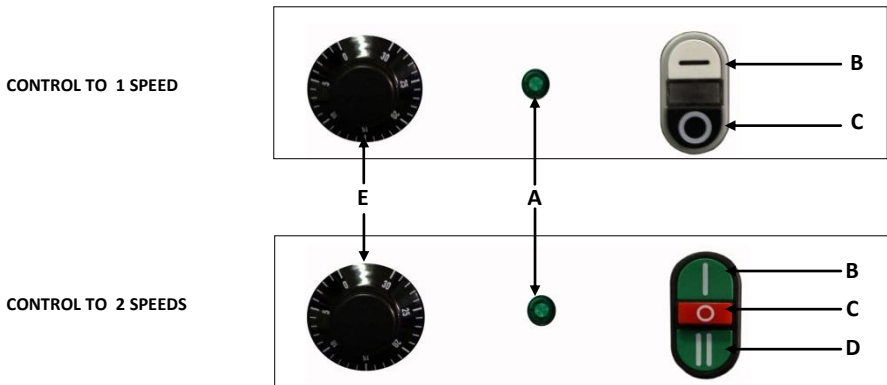


SECTION 3

MACHINE USE

3.1 Controls description

The electrical control panel is placed in front of the machine in an ergonomic position, next to the mechanical controls and is configured as follows:



- A. The green warning light, if ON, indicates that there is voltage.
- B. "OPERATION/START-UP" button: when pressed the machine starts.
- C. "STOP" button: when pressed, the machine stops. Under normal conditions of use, the operating cycle can be restored at any time by activating the operation (B) button.
- D. "OPERATION/START-UP" button for second speed: when pressed, the machine starts at the highest speed.
- E. TIMER.



Do not open the cover during the operation. This operation stops the machine by deactivating the general connector.





### 3.2 Machine start-up





Before starting an operating cycle, ensure that the materials that will be used are suitable and available in the quantity needed based on the kind of product that will be produced.

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This is the correct procedure that the operator must follow to start the machine:

Step	Action
1	Ensure that the main switch on the switchboard installed near the machine is in "0/DISINSERITO/OFF".
2	Remove the plug from the socket. 
3	Lift the cover of the bowl. 
4	Pour the water in the bowl and add other liquids necessary for the dough. 
5	Add about the 50% of the flour and other solid ingredients. 
6	Close the cover of the bowl by lowering it to the end of the stroke.

7	Introduce the plug in the socket and turn the main switch on the switchboard to "ON".	
8	<p>Check pre start-up by verifying:</p> <ul style="list-style-type: none"> <li>I. mains voltage (green light ON of the control panel of the machine);</li> <li>II. that the protection cover of the rotating bowl is closed in the right position.</li> <li>III. The locking head lift.</li> </ul>	
9	<p>Start the machine by pressing the "MARCIA/ON" button of the control panel of the machine.</p> <p>For machines equipped with second speed, start the working procedure with second speed by pressing the button "D" (see p.18).</p>	
10	<p>After about 1 minute:</p> <ul style="list-style-type: none"> <li>I. stop the machine ("ARRESTO/STOP" button on the control panel);</li> <li>II. lift the cover, add the remaining flour and close it;</li> <li>III. restart the device ("MARCIA/ON" button) and it will mix the water with the flour producing homogeneous dough.</li> </ul> <p><b>For 2-speed machine start with at about 5 minutes cycle in second speed (the higher one) using the TIMER. Then go to the first speed to end the work.</b></p>	
11	<p>When the cycle ends, detach the dough from the bowl and take it to the work table.</p>	
12	<p>Clean the bowl thoroughly (see section "Cleaning the machine").</p>	



**During operation, no matter its stage, it is strictly forbidden to carry out or try to carry out mechanical or other kind of adjustments on the machine.**

### 3.3 Cleaning the machine



It is recommended to clean the machine daily, both for it to be clean and to preserve it over time and ensure proper operation.



**It is recommended to use odourless non toxic cleaning products and for food use.**

**Do not use abrasive detergents, anti-calcareous detergents, solvents or diluents.**

**Do not use synthetic abrasives or metallic sponges.**

Before carrying out cleaning (or maintenance) procedures:

- ▶ turn the main switch to 0/DISINSERITO/OFF;
- ▶ remove the machine plug from the socket.

To clean adequately the:

- ▶ *bowl, spiral and fixed bar*: Use a clean sponge soaked in hot water to remove all remaining dough; once this operation is finished, dry thoroughly the elements with a soft, clean and dry cloth.
- ▶ *Outside the machine*: Use a clean sponge with a small amount of adequate detergent and cleaning products.

For machines equipped with bowl and spiral, both extractible, proceed as follow :

Step	Action
1	Pull and turn the release lever of the head (see paragraph 1.5) in anticlockwise direction.
2	Lift the head with both hands.
3	Remove the bowl lifting it from its support using both hands.
4	Carry out a clearing cycle of the bowl and of the spiral as described in this paragraph.



Once cleaning operations of the different pieces of the machine are finished, refit them in their initial position and make sure they are correctly placed by tightening the corresponding fixing devices when necessary.



**Do not wash and/or clean:**

- I. by spraying water jets on the machine or its components;**
- II. by immersing the machine in liquids or detergents.**

**3.4 Regular maintenance**

If the machine is used as prescribed and indicated in this manual, the adequate manufacture of the mechanical pieces and the choice for suitable materials will allow the machine to operate with no faults and no need for maintenance for many years.

Whenever regular maintenance operation is performed on the machine, make sure that the machine is not connected to the mains (cable disconnected and green warning light off).

**3.5 Troubleshooting**

<b>Problem</b>	<b>Probable cause</b>	<b>Recommended solution</b>
Machine does not start	No power supply	<ul style="list-style-type: none"> <li>I. Check that the plug is properly connected;</li> <li>II. check that the thermo-magnetic switch has been activated ("ON");</li> <li>III. verify that the differential switch is active (if you press the "TEST" button and the lever remains still in high/upper position, this may indicate that there is no power);</li> <li>IV. check if there is power in other points close to the machine;</li> <li>V. have the machine installed by a duly trained technician.</li> </ul>
Burnt fuses. Short-circuit	Lightning or sudden change in voltage	Have the machine installed by a duly trained technician.
Trip operation	Clearance/abnormal chain lengthening	Have the machine installed by a duly trained technician.



**In case of faults during operation, stop the machine, disconnect it from the mains and immediately contact a specialized technician.**



It is absolutely forbidden for the user to modify the machine for any reason. The manufacturer shall not be liable for any damages to people, animals, objects or the environment that may derive from:

- ▶ tampering with the machine;
- ▶ installation of non original spare parts;
- ▶ modifications to safety devices and systems;

carried out by the user or any other person not expressly authorized by the manufacturer.

### 3.6 Long inactivity periods

If the machine is not used for an extended period of time, it is compulsory to:

- ▶ clean it thoroughly;
- ▶ protect it against dust, by wrapping it, up to the base, with a clean and dry cloth (avoid the use of synthetic materials and bags).

### 3.7 Machine disposal

If the machine needs to be dismantled or destroyed, its parts are not as dangerous as to require the adoption of special precautions.

To facilitate material recycling, all the components of the electrical system, the thermoplastic components and the drive belts of the machine must be separated.

**USER INFORMATION – pursuant to art. 13 of the Legislative Decree No 151 of July 25<sup>th</sup>, 2005, “Implementation of Directives 2002/95/EC, 2002/96/EC and 2003/108/EC, on the reduction of use of hazardous substances in electrical and electronic equipment, as well as waste disposal”.**

The appliance and packaging are marked with the crossed-out dust bin symbol, which indicates that the product must be collected separately from other waste at the end of its lifetime.



Adequate separated collection of waste for later recycling, treatment and environmentally-friendly disposal is an important contribution towards avoiding a negative impact on the environment and health, and it also facilitates the recycling and/or re-use of the appliance's components.

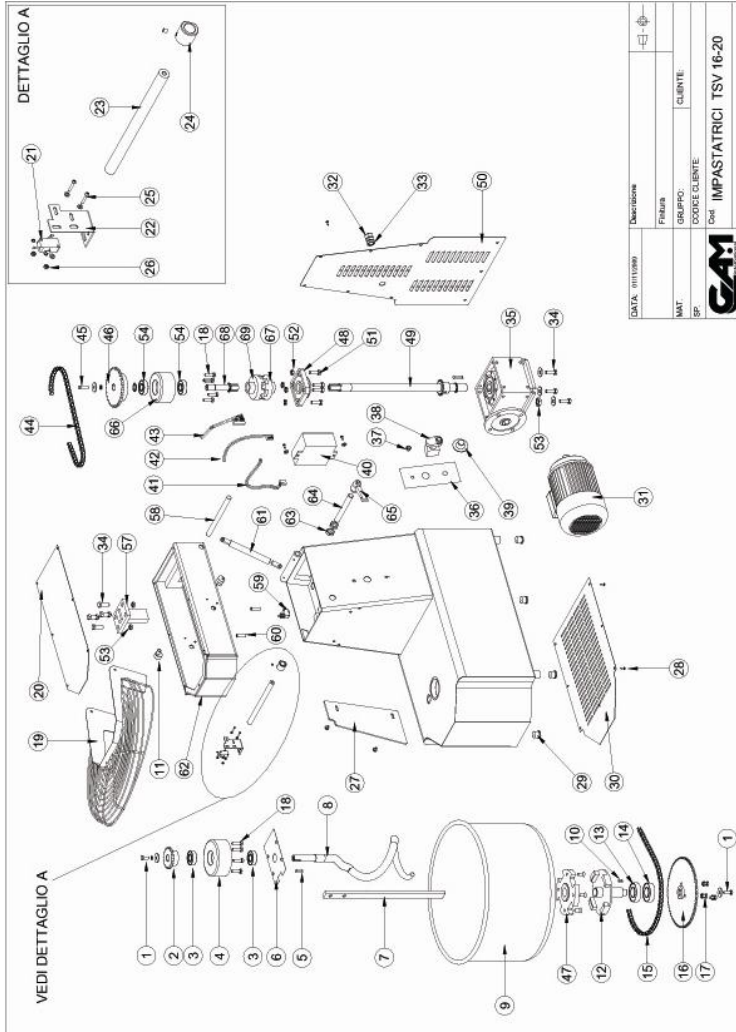
Users who dispose of products in an unauthorised manner shall be liable for administrative penalties in compliance with the legislation in force.

Registration in the electrical and electronic material manufacturer's register with the number: **IT08030000004407**.

SECTION 4

SPARE PARTS – ELECTRIC DIAGRAM

4.1 List of spare parts



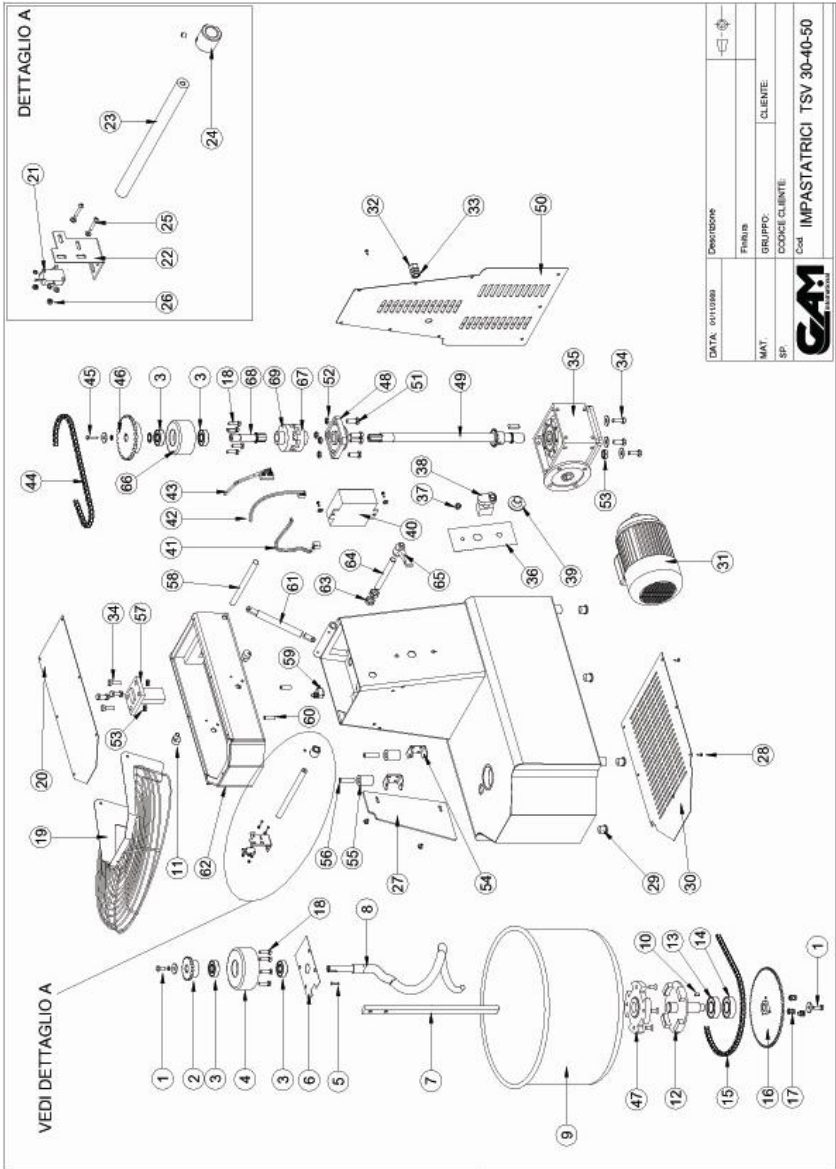
ENG

## IMPASTATRICE TS-TSV16/20 / SPIRAL MIXER TS-TSV16/20

NR	CODICE/CODE	DESCRIZIONE / DESCRIPTION	U.M.	Q.TA/Q.TY
1	RG100842	VITE / SCREW TE M8X20 ZINC.	PZ	2
2	RG101015	PIGNONE SPIRALE / SPIRAL PINION Z17x1/2 MOD. 16/20	PZ	1
3	RG101055	CUSCINETTO / BEARING 6303 2RS MOD. 16/20	PZ	2
4	RG102042	SUPPORTO / HOLDER D120 MOD. 16/20	PZ	1
5	RG101029	CHIAVETTA / KEY 6X8X25	PZ	1
6	RG101995	LAMIERA COPRIASOLE / SLOT COVER PLATE IMP MOD. 16/20	PZ	1
7	RG101054	ASTA SPACCAPASTA / DOUGH BREAKER MIXER MOD. 16/20	PZ	1
8	RG101002	SPIRALE IMPASTATRICE / SPIRAL FOR MIXER MOD. 16/20	PZ	1
9	RG101044	VASCA IMPASTATRICE / BOWL FOR MIXER MOD. 16 320X210	PZ	1
9	RG101018	VASCA IMPASTATRICE / BOWL FOR MIXER MOD. 20 360X210	PZ	1
10	RG101521	CHIAVETTA / KEY 8x7x20	PZ	1
11	RG102452	ECCENTRICO PER COPERCHIO / ECCENTRIC FOR COVER	PZ	2
12	RG101019	SUPPORTO VASCA / BOWL HOLDER MOD. TSV16/20	PZ	1
12	RG101000	SUPPORTO VASCA / BOWL HOLDER MOD. 16/20	PZ	1
13	RG100829	CUSCINETTO / BEARING 6206 2RS	PZ	1
14	RG100823	CUSCINETTO / BEARING 6206 ZZ	PZ	1
15	RG101026	CATENA VASCA / BOWL CHAIN 3/8 119 P. + G	PZ	1
16	RG101001	CORONA VASCA / CROWN FOR BOWL Z75 x 3/8 S/L	PZ	1
17	RG100841	VITE / SCREW TE M8X18 ZINC.	PZ	4
18	RG100908	VITE / SCREW TE M8X25 ZINC.	PZ	8
19	RG102719	COPERCHIO / BOWL LID MIXER IMP MOD. S 16	PZ	1
19	RG101736	COPERCHIO / BOWL LID MIXER IMP MOD. S 20	PZ	1
20	RG101068	COPERCHIO SUPERIORE / LID MIXER MOD. S 16/20	PZ	1
21	RG100198	MICROINTERR. DI SICUREZZA / SECURITY MICROSWITCH 1NC+1NO F	PZ	1
22	RG100855	SUPPORTO MICRO IMPASTATRICE / MICROSWITCH HOLDER	PZ	1
23	RG101021	ASTA COPERCHIO / LID SPINDLE S 16/20	PZ	1
24	RG100796	CAMME DI REGOLAZIONE COPERCHIO / LID ADJUSTEMENT CAMS	PZ	1
25	RG100856	VITE / SCREW TC 3X20 ZINC.	PZ	2
26	RG100064	DADO AUTOBLOCCANTE / SELF LOCKING NUT M3 ZINC	PZ	2
27	RG101022	PROTEZIONE LATERALE / SIDE SHIELD PLX S 16	PZ	1
27	RG101041	PROTEZIONE LATERALE / SIDE SHIELD PLX S 20	PZ	1
28	RG100846	VITE AUTOPERFORANTE / SELF PERFORATING SCREW 4,2X13	PZ	20
29	RG100828	PIEDINO IN PLASTICA / PLASTIC FOOT	PZ	4
30	RG101066	FONDO / BASE S 16/20	PZ	1
31	RG101080	MOTORE / MOTOR T71 TR 400V B14 kW 0,55 PER MOD. 16	PZ	1
31	RG101075	MOTORE / MOTOR T71 TR 400V B14 kW 0,75 PER MOD. 20	PZ	1
31	RG101047	MOTORE / MOTOR S 80 MN 230V B14 kW 0,55 PER MOD. 16	PZ	1
31	RG101084	MOTORE / MOTOR S 80 MN 230V B14 kW 0,75 PER MOD. 20	PZ	1
31	RG101082	MOTORE / MOTOR D80 2 VEL. B14 kW 0,75/1,1 PER MOD. 16/20	PZ	1
32	RG100038	PRESSACAVO MAXIBLOCK / CABLE GLAND STUFFING BOX M20x1,5	PZ	1
33	RG100830	GHIERA PER PRESSACAVO / FERRULE FOR CABLE GLAND M20X1,5	PZ	1
34	RG100848	VITE / SCREW TE M10X30 ZINC.	PZ	8
35	RG101081	RIDUTTORE / REDUCTION GEAR NMRV 040 (71B14) X MOD. 16 TR	PZ	1
35	RG101086	RIDUTTORE / REDUCTION GEAR NMRV 040 (80B14) X MOD. 16 MN	PZ	1
35	RG101076	RIDUTTORE / REDUCTION GEAR NMRV 050 (71B14) X MOD. 20 TR	PZ	1
35	RG101083	RIDUTTORE / REDUCTION GEAR NMRV 050 (80B14) X MOD. 20 MN	PZ	1
36	RG100827	MOSTRINA ADESIVA 2 FORI / STICKER 2 HOLES	PZ	1
36	RG101097	MOSTRINA ADESIVA 3 FORI / STICKER 3 HOLES	PZ	1
37	RG100895	SEGNALATORE LUMINOSO / LIGHT SIGNAL	PZ	1
38	RG100894	PULSANTE / PUSH BUTTON ON/OFF	PZ	1
38	RG102846	PULSANTE 2 VELOCITA' / 2 SPEEDS PUSH BUTTON (I/OFF/II)	PZ	1
39	RG100143	TEMPORIZZATORE / TIMER	PZ	1
40	RG100890	CENTRALINA TR / PCB BOARD THREEPHASE	PZ	1
40	RG100897	CENTRALINA MN / PCB BOARD SINGLEPHASE	PZ	1
40	RG100896	CENTRALINA TR 2 VEL. CON CAVI / PCB BOARD 2 SPEEDS WITH CABLES	PZ	1
41	RG100891	CAVO ALIMENTAZIONE TR. 1 VEL. / FEEDER CABLE THREEPHASE 1 SPEED	PZ	1
41	RG100898	CAVO ALIMENTAZIONE MN. 1 VEL. / FEEDER CABLE SINGLEPHASE 1 SPEED	PZ	1



42	RG100893	CAVO PULSANTIERA MICRO 1 VEL. / MICROSWITCH CABLE 1 SPEED	PZ	1
43	RG100892	CAVO MOTORE TR. 1 VEL. / MOTOR CABLE 1 SPEED SINGLEPHASE	PZ	1
43	RG100899	CAVO MOTORE MN. 1 VEL. / MOTOR CABLE 1 SPEED THREEPHASE	PZ	1
44	RG101150	CATENA SPIRALE / SPIRAL CHAIN S16 1/2 63,5 P.+ G.	PZ	1
44	RG100928	CATENA SPIRALE / SPIRAL CHAIN S20 1/2 61 P.+ G.	PZ	1
45	RG101492	VITE / SCREW TSPEI M6X20 ZINC	PZ	1
46	RG101012	PIGNONE SUP. ALBERO GEN. / UPPER PINION GEN. SHAFT Z31x1/2 foro 25	PZ	1
47	RG101020	FLANGIA VASCA ESTRAIBILE / REMOVABLE BOWL FLANGE TSV 16/20	PZ	1
48	RG100831	SUPPORTO / HOLDER UCF 205 D. 25	PZ	1
49	RGA00285	ALBERO GENERALE IMPAST / GEN. SHAFT MIXER TS-TSV16/20	PZ	1
50	RG101254	SCHIENALE IMPASTATRICE / BACK SIDE MIXER TS-TSV16/20	PZ	1
51	RG100997	VITE / SCREW TE M8X30 ZINC	PZ	4
52	RG100071	DADO / NUT M8 ZINC	PZ	4
53	RG100849	DADO / NUT M10 ZINC	PZ	8
54	RG101182	CUSCINETTO / BEARING 6204 2RS	PZ	2
57	RG101485	SUPPORTO PER BLOCCAGGIO / SUPPORT FOR BLOCKING TS	PZ	1
58	RG102196	BARRA Ø 15 L. 164 PER / BAR Ø 15 L. 164 FOR TS-TSV	PZ	1
59	RG100198	MICROINTERRUTTORE DI SICUREZZA / SAFETY MICROSWITCH 1NC+1NO F	PZ	1
60	RG101953	GRANO PIANO / FLAT DOWEL M 8X30 ZINC.	PZ	2
61	RG102208	MOLLA A GAS 500N PER / GAS SPRING 500N FOR TS/TSV 16/20	PZ	1
62	RG101257	TESTA / HEAD TS-TSV 16-20	PZ	1
63	RG101488	DADO / NUT M16X1,5	PZ	2
64	RG101739	PERNO BLOCCAGGIO TESTA / PIVOT BLOCKING HEAD TS 16/20	PZ	1
65	RG101457	LEVA A SCATTO / TOGGLE M16	PZ	1
66	RG102044	SUPPORTO UNIV. GHISA / CAST IRON SUPPORT Ø 100	PZ	1
67	RG101481	GIUNTO INFERIORE IMP. / LOWER JOINT MIXER TS	PZ	1
68	RG101490	ALBERINO TRASMISSIONE SUPERIORE / UPPER TRANSMISSION SHAFT TS	PZ	1
69	RG101480	GIUNTO SUPERIORE IMP. TS / UPPER JOINT MIXER TS	PZ	1



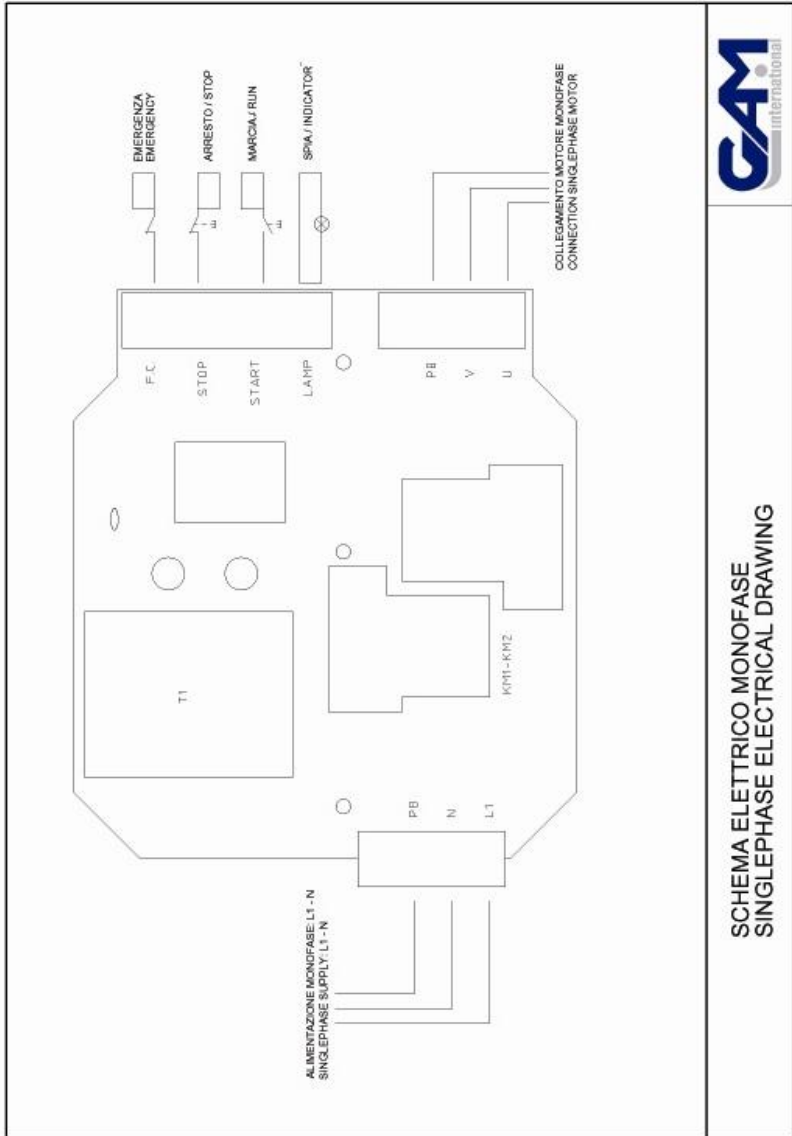
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MAT.	FILIBUS	
SP	GRUPPO	CLIENTE
	COOCE CLIENTE	
	Cod. IMPASTATRICI TSV 30-40-50	



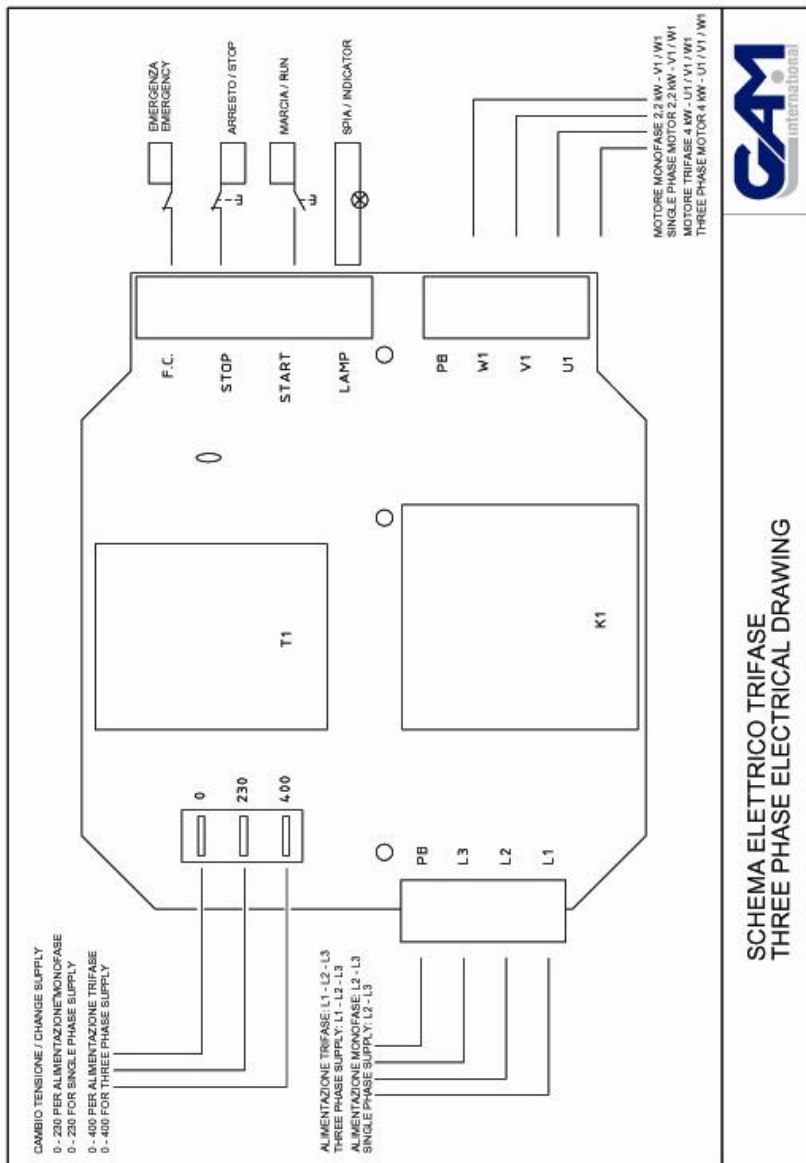
IMPASTATRICE TS-TSV30/40/50 / SPIRAL MIXER TS-TSV30/40/50				
NR	CODICE/CODE	DESCRIZIONE / DESCRIPTION	U.M.	Q.TA/Q.TY
1	RG100842	VITE / SCREW TE M8X20 ZINC.	PZ	2
2	RG100791	PIGNONE SPIRALE / SPIRAL PINION Z16x1/2 TS-TSV30/S40	PZ	1
3	RG101182	CUSCINETTO / BEARING 6204 2RS TS-TSV30/S40	PZ	4
3	RG100876	CUSCINETTO / BEARING 6205 2RS TS-TSV50	PZ	2
4	RG102043	SUPPORTO / HOLDER Ø 120 TS-TSV30/S40	PZ	1
4	RG101525	SUPPORTO / HOLDER Ø 120 TS-TSV50	PZ	1
5	RG101029	CHIAVETTA / KEY 6X6X25	PZ	1
6	RG101504	LAMIERA COPRIASOLE / SLOT COVER PLATE IMP 30/S40/50	PZ	1
7	RG101261	ASTA SPACCAPASTA / DOUGH BREAKER MIXER 30/40/50	PZ	1
8	RG102337	SPIRALE IMPASTATRICE / SPIRAL FOR MIXER 30/S40	PZ	1
8	RG100938	SPIRALE IMPASTATRICE / SPIRAL FOR MIXER 50	PZ	1
9	RG100832	VASCA IMPASTATRICE / BOWL FOR MIXER 30 Ø 400X260	PZ	1
9	RG100929	VASCA IMPASTATRICE / BOWL FOR MIXER 40 Ø 450X260	PZ	1
9	RG100944	VASCA IMPASTATRICE / BOWL FOR MIXER 50 Ø 450X300	PZ	1
10	RG101521	CHIAVETTA / KEY 8x7x20	PZ	1
11	RG102452	ECCENTRICO PER COPERCHIO / ECCENTRIC FOR COVER	PZ	2
12	RG100802	SUPPORTO VASCA / BOWL HOLDER TSV 30/40	PZ	1
12	RG102935	SUPPORTO VASCA / BOWL HOLDER TSV 50	PZ	1
12	RG100793	SUPPORTO VASCA / BOWL HOLDER TS 30/40	PZ	1
12	RG100936	SUPPORTO VASCA / BOWL HOLDER TS 50	PZ	1
13	RG100829	CUSCINETTO / BEARING 6206 2RS	PZ	1
14	RG100823	CUSCINETTO / BEARING 6206 ZZ	PZ	1
15	RG100818	CATENA VASCA / BOWL CHAIN 30/40/50 3/8 143 P. + G	PZ	1
16	RG100794	CORONA VASCA / CROWN FOR BOWL Z90 x 3/8 S/L	PZ	1
17	RG100841	VITE / SCREW TE M8X18 ZINC.	PZ	4
18	RG100908	VITE / SCREW TE M8X25 ZINC.	PZ	8
19	RG102718	COPERCHIO / BOWL LID MIXER IMP 30	PZ	1
19	RG102720	COPERCHIO / BOWL LID MIXER IMP 40	PZ	1
19	RG102723	COPERCHIO / BOWL LID MIXER IMP 50	PZ	1
20	RG101256	COPERCHIO SUPERIORE / LID MIXER 30/40/50	PZ	1
21	RG100198	MICROINTERR. DI SICUREZZA / SECURITY MICROSWITCH 1NC+1NO F	PZ	1
22	RG100855	SUPPORTO MICRO IMPASTATRICE / MICROSWITCH HOLDER	PZ	1
23	RG100797	ASTA COPERCHIO / LID SPINDLE 30/40/50	PZ	1
24	RG100796	CAMME DI REGOLAZIONE COPERCHIO / LID ADJUSTEMENT CAMS	PZ	1
25	RG100856	VITE / SCREW TC 3X20 ZINC.	PZ	2
26	RG100064	DADO AUTOBLOCCANTE / SELF LOCKING NUT M3 ZINC	PZ	2
27	RG100798	PROTEZIONE LATERALE / SIDE SHIELD PLX 30	PZ	1
27	RG100921	PROTEZIONE LATERALE / SIDE SHIELD PLX 40	PZ	1
27	RG100940	PROTEZIONE LATERALE / SIDE SHIELD PLX 50	PZ	1
28	RG100846	VITE AUTOPERFORANTE / SELF PERFORATING SCREW 4,2X13	PZ	20
29	RG100828	PIEDINO IN PLASTICA / PLASTIC FOOT	PZ	4
30	RG101260	FONDO / BASE 30/40/50	PZ	1
31	RG100901	MOTORE / MOTOR M80 TR 400V B14 kW 1,1 PER S30	PZ	1
31	RG100933	MOTORE / MOTOR M90 TR 400V B14 kW 1,5 PER S40/50	PZ	1
31	RG100911	MOTORE / MOTOR M90 MN 230V B14 kW 1,1 PER S30	PZ	1
31	RG102046	MOTORE / MOTOR M90 MN 230V B14 kW 1,5 PER S40/50	PZ	1
31	RG100906	MOTORE / MOTOR M90 2 VEL. B14 kW 1,7/1,3 PER S30	PZ	1
31	RG102631	MOTORE / MOTOR M90 2 VEL. B14 kW 2,2/1,5 PER S40/50	PZ	1
32	RG100038	PRESSACAVO MAXIBLOCK / CABLE GLAND STUFFING BOX M20x1,5	PZ	1
33	RG100830	GHIERA PER PRESSACAVO / FERRULE FOR CABLE GLAND M20X1,5	PZ	1
34	RG100848	VITE / SCREW TE M10X30 ZINC.	PZ	8
35	RG100902	RIDUTTORE / REDUCTION GEAR NMRV 050 (80B14) X S30 TR	PZ	1
35	RG100907	RIDUTTORE / REDUCTION GEAR NMRV 063 (90B14) X S30 MN / S40/50	PZ	1
36	RG100827	MOSTRINA ADESIVA 2 FORI / STICKER 2 HOLES	PZ	1
36	RG101097	MOSTRINA ADESIVA 3 FORI / STICKER 3 HOLES	PZ	1
37	RG100895	SEGNALATORE LUMINOSO / LIGHT SIGNAL	PZ	1

38	RG100894	PULSANTE / PUSH BUTTON ON/OFF	PZ	1
38	RG102846	PULSANTE 2 VELOCITA' / 2 SPEEDS PUSH BUTTON (I/OFF/II)	PZ	1
39	RGAA0143	TEMPORIZZATORE / TIMER	PZ	1
40	RG100890	CENTRALINA TR / PCB BOARD THREEPHASE	PZ	1
40	RG100897	CENTRALINA MN / PCB BOARD SINGLEPHASE	PZ	1
40	RG100896	CENTRALINA TR 2 VEL. CON CAVI / PCB BOARD 2 SPEEDS WITH CABLES	PZ	1
41	RG100891	CAVO ALIMENTAZIONE TR. 1 VEL. / FEEDER CABLE THREEPHASE 1 SPEED	PZ	1
41	RG100898	CAVO ALIMENTAZIONE MN. 1 VEL. / FEEDER CABLE SINGLEPHASE 1 SPEED	PZ	1
42	RG100893	CAVO PULSANTIERA MICRO 1 VEL. / MICROSWITCH CABLE 1 SPEED	PZ	1
43	RG100892	CAVO MOTORE TR. 1 VEL. / MOTOR CABLE 1 SPEED SINGLEPHASE	PZ	1
43	RG100899	CAVO MOTORE MN. 1 VEL. / MOTOR CABLE 1 SPEED THREEPHASE	PZ	1
44	RG102726	CATENA SPIRALE / SPIRAL CHAIN S30 1/2 69,5 P.+ G.	PZ	1
44	RG102727	CATENA SPIRALE / SPIRAL CHAIN S40/50 1/2 65,5 P.+ G.	PZ	1
45	RG101492	VITE / SCREW TSPEI M6X20 ZINC	PZ	1
46	RG101479	PIGNONE SUP. ALBERO GEN. / UPPER PINION GEN. SHAFT Z35x1/2 foro 20	PZ	1
47	RG100803	FLANGIA VASCA ESTRAIBILE / REMOVABLE BOWL FLANGE TSV 30/40	PZ	1
47	RG102936	FLANGIA VASCA ESTRAIBILE / REMOVABLE BOWL FLANGE TSV 50	PZ	1
48	RG100831	SUPPORTO / HOLDER UCF 205 D. 25	PZ	1
49	RGAA00272	ALBERO GENERALE IMPAST / GEN. SHAFT MIXER 30/40/50	PZ	1
50	RG101253	SCHIENALE IMPASTATRICE / BACK SIDE MIXER S30/40/50	PZ	1
51	RG100997	VITE / SCREW TE M8X30 ZINC	PZ	4
52	RG100071	DADO / NUT M8 ZINC	PZ	4
53	RG100849	DADO / NUT M10 ZINC	PZ	8
54	RG101162	STAFFA RULLO VASCA / CLAMP BOWL ROLL	PZ	2
55	RG102096	MOLLA ADIPOL / SPRING ADIPOL 13,5x32x45 IMP TSV 40/50	PZ	2
56	RG101947	BOCCOLA / BUSHING 12x14x20	PZ	2
57	RG101485	SUPPORTO PER BLOCCAGGIO / SUPPORT FOR BLOCKING TS	PZ	1
58	RG102195	BARRA Ø 15 L. 205 PER / BAR Ø 15 L. 205 FOR TS-TSV	PZ	1
59	RG100198	MICROINTERRUTTORE DI SICUREZZA / SAFETY MICROSWITCH 1NC+1NO F	PZ	1
60	RG101953	GRANO PIANO / FLAT DOWEL M 8X30 ZINC.	PZ	2
61	RG101456	MOLLA A GAS 700N PER / GAS SPRING 700N FOR TS/TSV 30/40/50	PZ	1
62	RG101257	TESTA / HEAD	PZ	1
63	RG101488	DADO / NUT M16X1,5	PZ	2
64	RG101487	PERNO BLOCCAGGIO TESTA / PIVOT BLOCKING HEAD TS 30/40/50	PZ	1
65	RG101457	LEVA A SCATTO / TOGGLE M16	PZ	1
66	RG102044	SUPPORTO UNIV. GHISA / CAST IRON SUPPORT Ø 100	PZ	1
67	RG101481	GIUNTO INFERIORE IMP. / LOWER JOINT MIXER TS	PZ	1
68	RG101490	ALBERINO TRASMISSIONE SUPERIORE / UPPER TRANSMISSION SHAFT TS	PZ	1
69	RG101480	GIUNTO SUPERIORE IMP. TS / UPPER JOINT MIXER TS	PZ	1

4.2 Connecting diagram



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### **Warranty conditions**

- 1) *The manufacturer guarantees the operation and the duration of the products it manufactures. These products were built in a professional manner and underwent a functioning test in the manufacturer's workshop according to the specifications listed on the information plate and according to the theoretical normal working conditions. This warranty is valid for 12 (twelve) months from the date of purchase which is listed on the delivery documents or which can be deduced from the receipt issued by the dealer.*
- 2) *The warranty covers all the unit's components except for the electrical parts, the plastic parts and other fragile parts, the knobs, the removable parts, the painting and the chromium plating, and any accessories, since their condition depends directly on the user's care. The following are also not covered by the warranty: all damage caused by carelessness when transporting or handling the product, by negligence or incompetence when using the machine, by incorrect or bad installation or maintenance, by an inadequate electrical system to which the machine is connected, and by tampering by unauthorized personnel and/or personnel who are not qualified to work on the machine in a professional manner, as well as for any other reason that does not depend on the manufacturer.*
- 3) *During the warranty period the manufacturer pledges, through the dealer that made the sale and according to what is stated in the previous paragraph, to replace or repair free of charge those parts that are defective due to original material defects or due to defects in workmanship. If on-site service is requested, the user must pay a fixed charge for service calls according to the local rates in force or according to the national industry rates. If the machine must be repaired at the factory, the user will be exclusively responsible for all transport costs. Any repairs performed during the warranty period will not extend it.*
- 4) *To be eligible for service under warranty, the user must exhibit the warranty certificate and the receipt or delivery document to validate the purchase date of the machine. These documents must be impeccably compiled and absolutely free of tampering, corrections, erasures, etc.*
- 5) *The manufacturer does not undertake any other responsibilities except for those regarding the replacement of parts found to be defective according to its own unquestionable judgment. No responsibility is undertaken for any damages to the client due to the machine not running, or due to the time necessary to perform any service under warranty.*
- 6) *The manufacturer acknowledges only the warranty conditions listed on this certificate. No one is authorized to modify them or to issue other verbal or written warranty conditions.*
- 7) *The Court of Manufacturer's Town will be the exclusive competent court for any dispute arising concerning the interpretation and/or the application of these warranty conditions. Italian law will be applied exclusively regarding all legal aspects.*



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