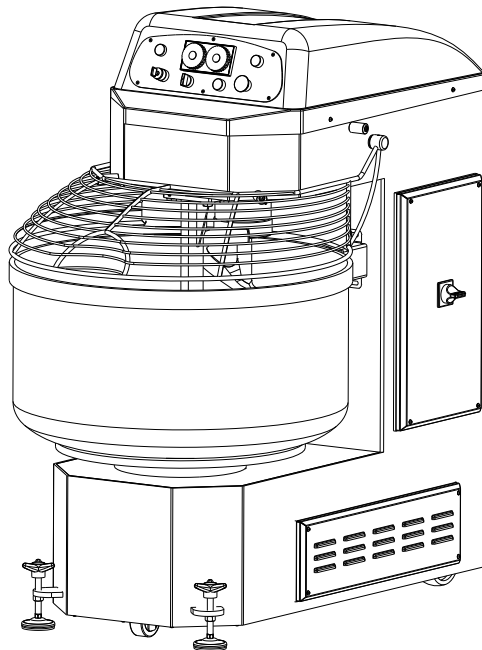


# INSTRUCTION MANUAL

## AUTOMATIC SPIRAL MIXER

SP60-80-100-130-160-200-250

SP80R-100R-130R-160R-200R-250R



# INDEX

<b>CHAPTER 1. GENERAL INFORMATIONS .....</b>	<b>4</b>
1.1 PREFACE.....	4
1.2 MACHINE IDENTIFICATION DETAILS.....	4
1.3 WARRANTY .....	4
1.4 MACHINE SPECIFICATIONS .....	4
1.4.1 TECHNICAL SPECIFICATIONS.....	5
1.5 RELEVANT REGULATIONS .....	6
1.6 OPERATING AREA .....	6
1.7 SAFETY AND HEALTH WARNINGS.....	7
1.7.1 POWDERS RISK.....	8
1.7.2 SAFETY DEVICES.....	8
1.8 SERVICE AND SPARE PARTS .....	8
1.9 DEMOLITION OF THE MACHINE .....	8
<b>CHAPTER 2. INSTALLATION OF MACHINE.....</b>	<b>9</b>
2.1 ENVIRONMENTAL CONDITIONS OF INSTALLATION SITE .....	9
2.2 TRANSPORT AND HANDLING.....	9
2.3 ADJUSTMENTS.....	10
2.4 ELECTRICAL CONNECTIONS .....	10
<b>CHAPTER 3. CONTROL DEVICES.....</b>	<b>12</b>
3.1 ELECTRO-MECHANICAL CONTROL PANEL .....	12
<b>CHAPTER 4. USE OF THE MACHINE.....</b>	<b>13</b>
4.1 TESTING .....	13
4.2 WORKING CYCLE DESCRIPTION .....	13
4.3 LOADING MACHINE .....	13
4.4 MACHINE START-UP .....	14
4.5 MANUAL MODE.....	14
4.5.1 MANUAL MODE AT 1 <sup>ST</sup> SPEED.....	14
4.5.2 MANUAL MODE AT 2 <sup>ND</sup> SPEED.....	15
4.6 AUTOMATIC MODE.....	15
4.6.1 AUTOMATIC MODE – ONE SPEED .....	15
4.6.2 AUTOMATIC MODO- TWO SPEEDS.....	16
4.7 STOPPING MACHINE.....	17
4.8 DOUGH DISCHARGE.....	17

<b>CHAPTER 5. MAINTENANCE .....</b>	<b>18</b>
5.1 ORDINARY MAINTENANCE .....	18
5.1.1 CLEANING THE MACHINE .....	18
5.2 PROGRAMMED MAINTENANCE .....	18
5.2.1 SPIRAL BELTS TENSION ADJUSTMENT .....	19
5.2.2 BOWL BELTS TENSION ADJUSTMENT .....	20
5.2.3 DOUBLE DRIVE TRANSMISSION BELTS TENSION ADJUSTMENT .....	20
5.2.4 SPIRAL BEARINGS REPLACE.....	21
5.3 POSSIBLE FAILURE AND/OR ANOMALIES .....	22
<b>CHAPTER 6. LIST OF ENCLOSED DOCUMENTS.....</b>	<b>23</b>
6.1 DRAWING SP 60-80-100-130-160-200-250 .....	24
6.2 SPARE PARTS SP60- SP80- SP100- SP130- SP160- SP200- SP250 .....	25
6.3 DRAWING SP 80R-100R-130R-160R-200R-250R.....	28
6.4 SPARE PARTS SP80R- SP100R- SP130R-SP160R-SP200R-SP250R .....	29
6.5 ELECTRICAL POWER SCHEME .....	30
6.6 CONTROL CIRCUITS.....	30
6.7 CONTACTS.....	30

# CHAPTER 1. GENERAL INFORMATIONS

---

## 1.1 PREFACE

This manual is directed towards those who install, operate and maintain the machine so that they can take advantage of the characteristics of the product in the best way. It is important that this manual is kept and remains with the machine if it is moved or if ownership changes so that it can be consulted under all circumstances and therefore the necessary information is available to operate it within safe conditions.

The manufacturer does not take upon themselves the obligation to give notice of possible successive modifications of the product. Furthermore, under the terms of law, this document remains the property of the manufacturer, and tampering, reproduction or transmission to a third party are prohibited without their consent.

The following symbols are used to better stress some passages

**ATTENTION:** indicates hazards that might cause serious damages; attention is required

**NOTE:** indicates particularly important technical information

## 1.2 MACHINE IDENTIFICATION DETAILS

The identification data of the machine are impressed on the plate placed on the rear of the machine.

MODEL	_____	CE
SERIAL NUMBER	_____	
DATE OF MANUF.	_____	
VOLTAGE	_____	
FREQUENCY	_____	
PHASE	_____	
AMPS	_____	

## 1.3 WARRANTY

The duration of the guarantee is for two years and runs from the date on the invoice or tax receipt was issued at the time of purchase. Within this period, components that have been unequivocally ascertained to be faulty due to manufacturing defects will be substituted or repaired freely by the manufacturer from their premises, except for electrical components and those subject to wear and tear. The guarantee excludes postage and labour costs.

The guarantee is forfeited in the case of the damage being caused by: transportation, wrong or insufficient maintenance, unskilled operators, tampering, repairs carried out by unauthorised personnel, or failure to comply with the instructions of the manual. Compensation from the manufacturer will not be given for direct or indirect damages arising during any time the machine is inoperative due to its breakdown, it being awaiting repairs, or in any way referable to the non- physical presence of the machine.

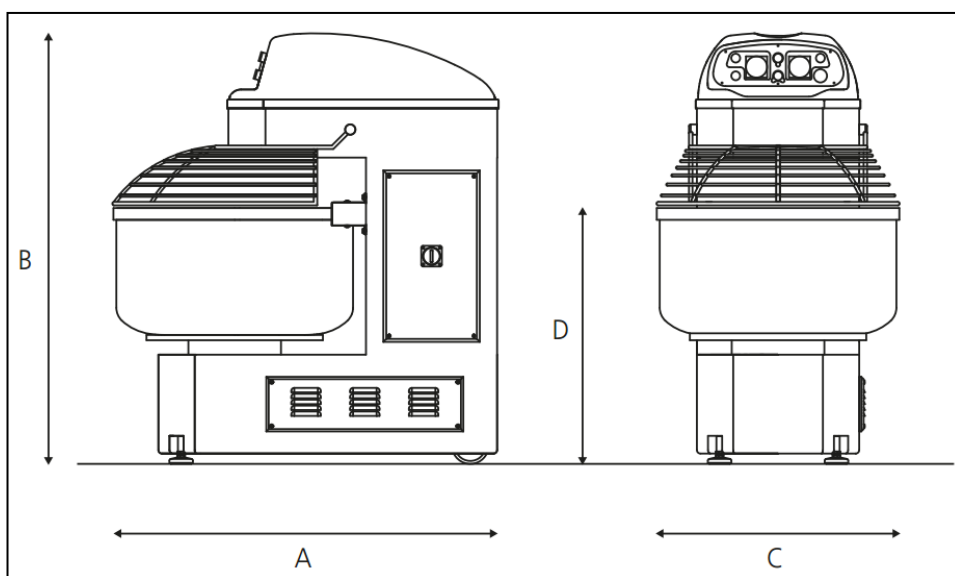
## 1.4 MACHINE SPECIFICATIONS

The machine has been built and designed for professional use in the bakery and pastry industry.

The working cycle can be manual or automatic with two speeds.

The machine (Pict.1.1) consists of:

- steel-bowl, spiral and shaft in strong high stainless steel
- protection cover in stainless steel
- head plate covered in stainless steel
- machine can be equipped with two operating speeds automatically adjustable
- two independent motors for spiral and bowl two electronic timers for an automatic management of operating speeds
- a bowl with rotation on impulse a predisposition for a flip-over mechanism on worktable or divider a reversible bowl
- a chain drive system made using trapezoidal belts to get the highest silence
- front feet made in stainless steel and they are adjustable
- rear wheels for an easy movement
- electric system and the safety devices conform to the European regulations



**Pict. 1.1 - Dimensions**

**Tab. 1.1 - Dimensions**

Model	A	B	C	D
	mm	mm	mm	mm
SP60-SP60R	1180	1312	630	800
SP80-SP80R	1305	1460	730	830
SP100-SP100R	1305	1460	730	850
SP130-SP130R	1355	1460	830	870
SP160-SP160R	1440	1560	930	870
SP200-SP200R	1490	1560	930	910
SP250-SP250R	1580	1560	1030	950

### 1.4.1 TECHNICAL SPECIFICATIONS

**Tab. 1.2 – Technical specifications SP 60-80-100-130-160-200-250**

Model	Kneading capacity	Flour capacity	Bowl volume	Spiral motor 1 <sup>th</sup> /2 <sup>th</sup> speed	Bowl motor	Weight
	kg	kg	Lt.	kW	kW	kg
SP60	60	40	100	1.5/3	0.55	370
SP80	80	53	130	3/5.2	0.75	510
SP100	100	66	160	3/5.2	0.75	520
SP130	130	86	200	3/5.2	0.75	580
SP160	160	106	250	4.5/7.8	1.1	790
SP200	200	133	290	6.5/11	1.1	830
SP250	250	166	390	6.5/11	1.1	860

**Tab. 1.3 - Technical specifications SP 80R-100R-130R-160R-200R-250R**

Model	Kneading capacity	Flour capacity	Bowl volume	Spiral motor 1 <sup>th</sup> /2 <sup>th</sup> speed	Bowl motor	Weight
	kg	kg	Lt.	kW	kW	kg
SP80R	80	53	130	3.5/5.2	0.75	564
SP100R	100	66	160	3.5/5.2	0.75	565
SP130R	130	86	200	3.5/5.2	0.75	600
SP160R	160	106	250	4.5/7.5	1.1	795
SP200R	200	133	290	5.9/10.3	1.1	815
SP250R	250	166	390	5.9/10.3	1.1	870

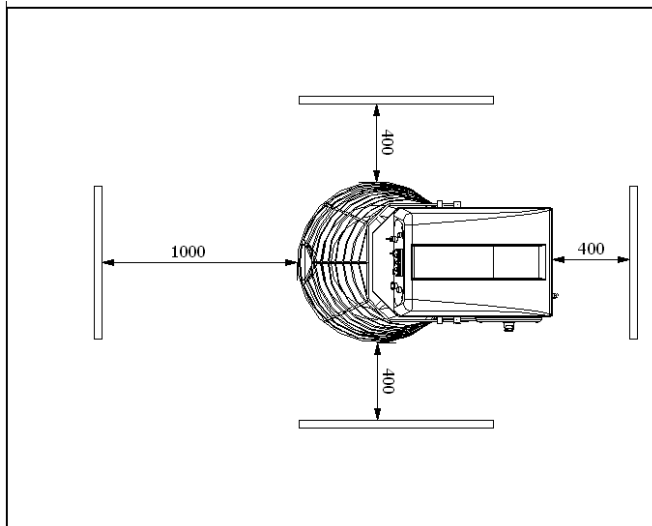
## 1.5 RELEVANT REGULATIONS

The machine has been designed and manufactured in accordance with the Machinery Directive 2006/42/CE and the following standards:

- UNI EN ISO14121-1: Safety of machinery
- UNI EN ISO12100: Safety of machinery - General principles for design
- UNI EN ISO13857: Safety distances
- UNI EN 349:2008: Minimum gaps to avoid crushing of parts of the human body
- IEC60204-1 Ed. 6.0: Electrical equipment of machines
- EN 453: Food Processing Machinery - Dough Mixers

## 1.6 OPERATING AREA

In the normal working conditions and to have the best exploration of the potentiality of the machine, the operator needs the area represented in Pict. 1.2



**Pict. 1.2: Operating area**

## **1.7 SAFETY AND HEALTH WARNINGS**

Although the machine is built in conformity to the required security rules regarding electrical, mechanical and hygienic regulation it can be dangerous if:

- Used in case and condition different to those described by the manufacturer.
- Manomission of the protection and of the safety devices.
- Innattention to the instruction of: Installation - Functioning - Usage - Maintenance.

**In particular:**

- A) Do not use the machine in humid, wet or nadly lit environments, close to inflamable liquids or gas.**
- B) Keep away from children and non authorized personnel.**
- C) Only utilize the machine with the correct voltage. Normal usage gives better results.**
- D) Dress in adequate way. Do not wear hanging clothes or any items which can be caught in the machine. Use non-slip shoes. For hygiene and safety keep your hair tied back and wear protective gloves.**
- E) Protect the cable. Do not pull the cable to extract the plug. Do not leave the cable near high temperatures, sharp objects, water or solvents.**
- F) Take the plug out. When the machine is not in use, before cleaning, maintenance and moving it.**
- G) Check that the machine is not damaged. Before using the machine carefully check that all security devices are working. Check that: the mobile parts are not blocked, there are not any parts damaged, all the parts have been set up correctly and all the conditions that could influence the regular functioning of the machine are in working order.**
- H) Repairing the machine by qualified personnel. The repairs can only be done by qualified people, using original spare parts.**

**The manufacturer declines any responsibility for damages to people, animals or things caused by the non –**

**observance or non-respect of instructions s for installation, use and maintenance contained in this manual.**

### **1.7.1 POWDERS RISK**

During the loading operations of the dry products in the bowl or during the normal working some hanged dusts can be determined (for example flour dust).

The ingredients and the packaged products must be handled with care, reducing at minimum the height over the bowl from which they are poured.

The packages must be opened with care in the bowl inferior part to promote the flour dust release in the less possible time.

During the flour loading and during the machine functioning normal cycle, a suction centralized system must be prepared and functioning, placed in the machine superior part.

In any case, against the residual risk due to the lacked functioning of the suction system, the operator and the maintenance man besides to be adequately informed and trained, every time that approach in the working zones, must use respiratory ways protection devices, as for example anti dust respiratory masks or other suitable devices.

Besides, the working must be immediately interrupted and the internal maintenance service must be activated to function the suction system.

The same individual protection devices must be used from the operator and from the maintenance man when perform the machine cleaning operations.

### **1.7.2 SAFETY DEVICES**

The machine is equipped with the following safety devices:

- Safety guard which prevents access to the bowl during the work process
- Emergency stop button
- A microswitch which acts by stopping the machine during operation if the safety grill is lifted
- Safety guard for the electrical system

## **1.8 SERVICE AND SPARE PARTS**

For questions on service and spare parts please contact your local dealer and state the following information (see data plate):

- Type of machine
- Year of production
- Reference number of the required piece as indicated in the drawing enclosed).

**Use only genuine spare parts.**

## **1.9 DEMOLITION OF THE MACHINE**

In case of dismantling and demolition of the machine, the pieces which the machine is made of, do not present any kind of danger that necessitates any particular caution. To facilitate the recycling process, you must separate the different parts according to material type and provide the scrapping in compliance with the existing laws and regulations.



## CHAPTER 2. INSTALLATION OF MACHINE

---

The machine should be installed in a well-ventilated room protected from dust and direct contact with atmospheric agents.

The machine must remain packed until the final installation at the place of employment.

### 2.1 ENVIRONMENTAL CONDITIONS OF INSTALLATION SITE

The environmental conditions in which the machine must be installed must follow these characteristics:

- *Temperature:* +5/+40° C, with the average temperature not exceeding 35°C over a period of 24 hours.
- *Relative humidity:* from 30% to 95% in the absence of condensation
- Water and heat sources at safe distance from the machine
- Well-dimensioned flat and stable surface

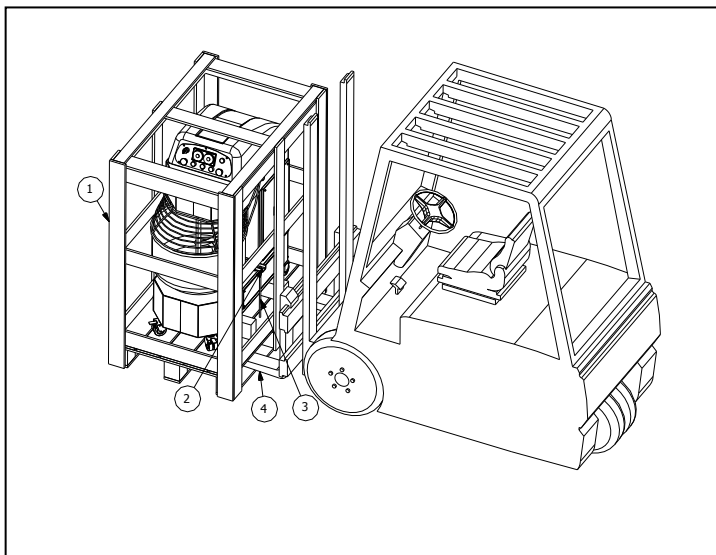
### 2.2 TRANSPORT AND HANDLING

The machine is delivered completely assembled and packaged with a fumigated wooden case and fixed onto a **wooden-pallet**.

Transport and handling of machine must be carried out under safety conditions using appropriate means of transport.

To lift and handle the pallet or the case use a suitable fork lift truck; the lifting forks are to be introduced in the pallet as shown in Pict. 2.1 and 2.2.

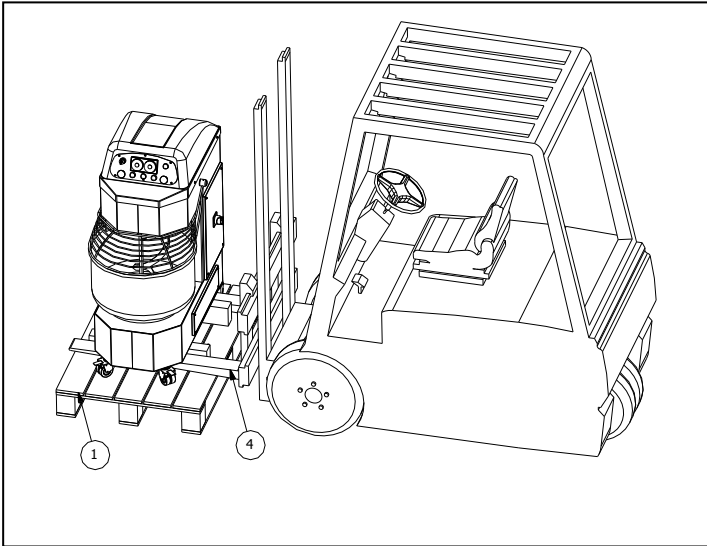
Separate the different materials according to material type and recycle them in accordance with relevant legislations.



**Pict. 2.1**

The machine is placed onto a wooden-pallet (Pos.1) and it's locked by a locking device (Pos.2) and two threaded bars Pos. 3

The lifting forks are to be introduced in the pallet as shown in Pict. 2.1 (Pos.4)



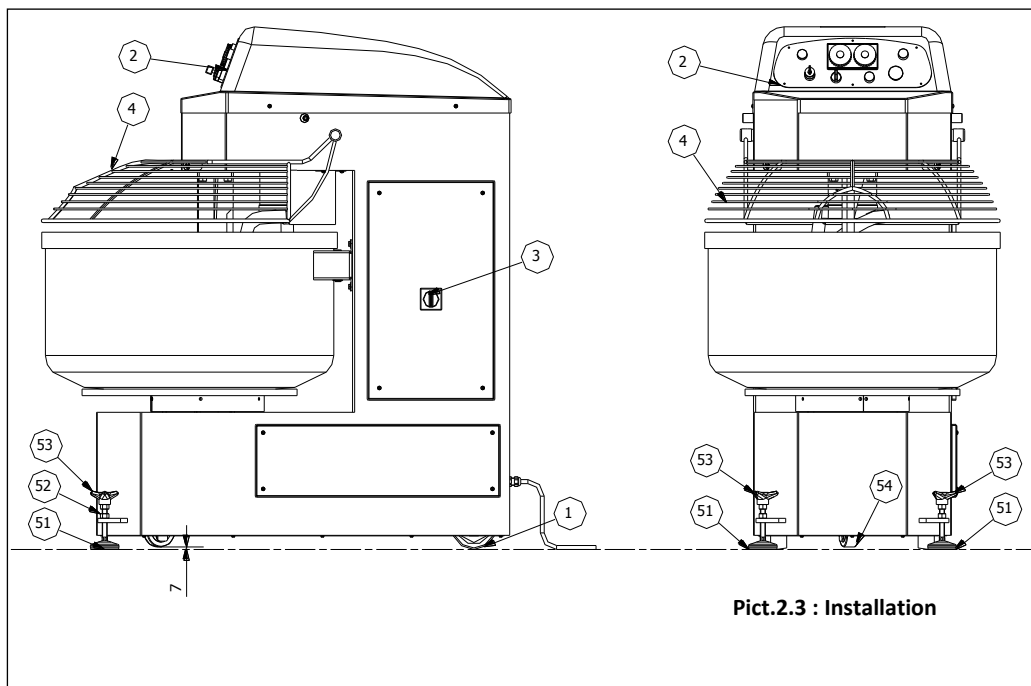
**Pict. 2.2**

Remove the docking device Pos. 2, introduce the lifting forks Pos.4 as shown in Pict. 2.2 and carefully lift the machine.

## 2.3 ADJUSTMENTS

After positioning in the selected area, adjust the front leveling feet Pos.51 Pict.2.3 with the 3 lobe handwheel Pos. 53 to get perfect leveling and then lock it by tightening the nut Pos. 52.

If the machine is unstable due to floor irregularity, adjust the support feet or wheels by inserting rubber pieces.



## 2.4 ELECTRICAL CONNECTIONS

The machine is equipped with connecting cable located on the back of the machine. It's essential to mount a normalised and polarised plug at the end of the cable.

**ATTENTION: Before proceeding to the electrical connection, ensure that voltage and frequency are the same declared by the Manufacturer and shown on the identification plate.**

The electric net must be provided with an automatic differential switch and this has to be suitable to the machine

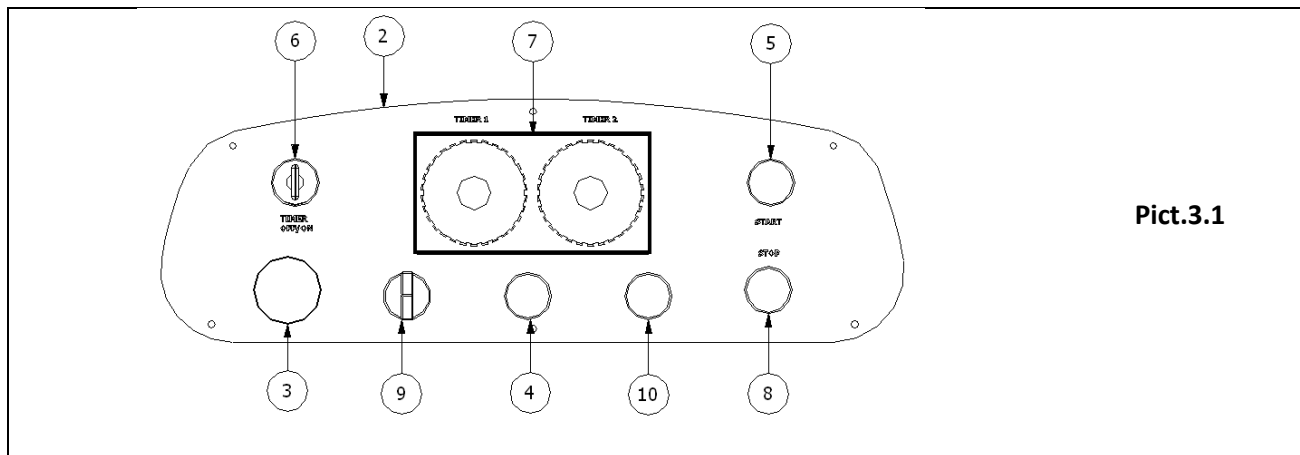
The electrical plug must be easy to access, no moving should be necessary.

**ATTENTION: Any electrical intervention involving the working site is to be carried out by qualified and skilled technicians.. The manufacturer will not be liable for defects, breakdowns or malfunctioning arising from the non-compliance with the power supply values stated.**

## CHAPTER 3. CONTROL DEVICES

The control panel of the machine (Pict. 3.1) is placed in front of the machine and it includes all the necessary push-buttons for its working /driving gears, planning of the dough times, reversal of the rotator movement of the bowl)

### 3.1 ELECTRO-MECHANICAL CONTROL PANEL



Pict.3.1

POSITION	DESCRIPTION	FUNCTION
Pos.3	RED MUSHROOM EMERGENCY BUTTON	When pressed, it stops the machine completely by cutting off the voltage from the electric circuits.
Pos.4	INDICATOR LIGHT	After turning the main switch (look at Pict. 2.3, Pos. 3) to position " I " , if it lights, means that the machine is connected to the local electricity network.
Pos.5	START BUTTON	To start the cycle
Pos.6	TIMER SWITCH OFF/ON	When turned to the left : manual operation cycle is enabled. (the timers are excluded)  When turned to the right : automatic operation cycle is enabled.
Pos.7	TIMER 1 / TIMER 2	Timer 1: Controls time of 1 <sup>st</sup> speed Timer 2: Controls time of 2 <sup>st</sup> speed
Pos.8	STOP BUTTON	Stop the machine
Pos.9	REVERSE BOWL ROTATION SELECTOR	Left position: clockwise bowl rotation  Middle position: no bowl rotation  Right position: anticlockwise bowl rotation
Pos.10	JOGGING BUTTON	Jogs the bowl to help the dough extraction.

# CHAPTER 4. USE OF THE MACHINE

---

## 4.1 TESTING

Before starting the machine, the safety devices should be checked according to the following procedure:

- 1 while the machine is working, press the emergency button (Pos. 3 Pict.. 3.1). The machine should stop immediately.
- 2 while the machine is working lift the protection grid(Pos. 4 Pict. 2.3). The machine should stop immediately

Check that the control devices are functioning correctly, as described in the following paragraphs 4.4, 4.5, 4.6, 4.7.

Once the plug has been connected to the power supply socket, check the correctness of the bowl rotation direction (look at the direction shown by the arrow on the bowl). If the rotation direction is not correct, proceed as follows:

1. Stop the machine (Press STOP button Pos.8 Pict. 3.1 or the EMERGENCY BUTTON Pos.3 Pict. 3.1)
2. Take the plug out of the electric socket.
3. Reverse on the plug the position of two phases (example: L1 with L2 and vice versa).
4. Insert the plug into the electrical socket
5. Restart the machine and verify if the bowl is rotating the right way.

## 4.2 WORKING CYCLE DESCRIPTION

The dough **phase consists of the following steps:**

- a) Loading machine
- b) Execution of mixture cycle
- c) Dough discharge

## 4.3 LOADING MACHINE

Lift up the protection grid Pos.4 Pict. 4.1

Put all initial ingredients into the bowl and then close the bowl cover. Always pour water in the bowl before adding flour.

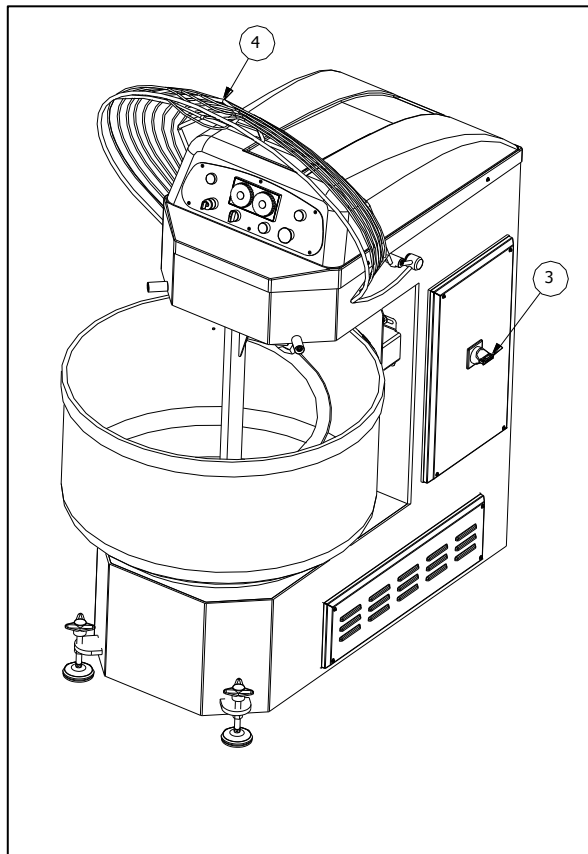
**ATTENTION: Do not introduce into the bowl any quantity of ingredients exceeding the capacity given by the Manufacturer in the present manual (look at Tab. 1.2 and 1.3). This might cause severe damage to the machine and in particular to the motion transmission system.**

**ATTENTION: During loading of dry ingredients in the bowl, powder suspended can be determined. (e.g. flour powder). Ingredients and packaged products must be handled with care by minimizing the height above the bowl base from which they are poured.**

**Careful slitting of bags in the lower part of the bowl to allow dust free discharge of flour as far as possible.**

**The manufacturer will be not responsible for any reasons and for any eventual damages caused from a non-observance of the instructions given in the same.**

To add ingredients during the work cycle, lift up Mobile Protect Pos.4 Pict.4.1, add the ingredients, lower the protection and press START.



Pict. 4.1

## 4.4 MACHINE START-UP

Before starting the machine:

1. Connect the feeling cable to the electric connection
2. Turn the main O- I switch (look at Pos. 3 Pict. 4.1) to position “ I ”.
3. Be sure the red mushroom emergency button (Pos. 3 Pict. 3.1) is not pressed; otherwise unlock it by turning the mushroom button in the direction of rotation indicated by the arrow
4. Be sure that the protection grid is lowered onto the bowl.

**NOTE: It's possible to reduce or increase the mixing time during machine operating**

## 4.5 MANUAL MODE

### 4.5.1 MANUAL MODE AT 1<sup>ST</sup> SPEED

To work in manual mode at 1<sup>st</sup> speed, proceed as follows:

1. Position the selector Pos.6 (Pict. 3.1) in position OFF
2. Press the START button (Pos 5 - Pict. 3.1) to start with the 1<sup>st</sup> speed
3. Press the STOP button (Pos 8 - Pict. 3.1) to stop the working cycle

**NOTE: The machine operates only in 1<sup>st</sup> speed; it is not possible to reverse the bowl rotation direction.**

## **ALTERNATIVELY, PROCEED AS FOLLOWS:**

1. Position the selector Pos.6 (Pict. 3.1) in position ON
2. Rotate the Timer 1 knob to the M position (manual)
3. Decide the bowl rotation direction with the selector Pos.9 Pict. 3.1 (otherwise the bowl does not rotate)
4. Press the START button (Pos 5 - Pict. 3.1) to start with the 1<sup>st</sup> speed
5. Press the STOP button (Pos 8 - Pict. 3.1) to stop the working cycle.

**NOTE: During the working cycle it is possible to reverse the rotation direction of the bowl through the selector Pos. 9 (Pict. 3.1).**

### **4.5.2 MANUAL MODE AT 2<sup>ND</sup> SPEED**

**To work in manual mode at 2<sup>nd</sup> speed, proceed as follows:**

1. Position the selector Pos.6 (Pict.3.1) in position ON
2. Rotate the Timer 1 knob to the E position (Timer 1 excluded)
3. Rotate the Timer 2 knob to the M position (manual)
4. Turning the selector switch Pos. 9 (Pict.3.1) to the right (otherwise the bowl does not rotate)
5. Press the START button (Pos 5 - Pict.3.1) the machine start at 1<sup>st</sup> speed and switches automatically to the 2<sup>nd</sup> speed after about 5 seconds
6. Press the STOP button (Pos 8 - Pict.3.1) to stop the working cycle

**NOTE: It is not possible to reverse the rotation direction of the bowl when the machine is operating in 2<sup>nd</sup> speed**

## **4.6 AUTOMATIC MODE**

### **4.6.1 AUTOMATIC MODE – ONE SPEED**

**To work in automatic mode at 1<sup>st</sup> speed, proceed as follows:**

1. Position the selector Pos.6 (Pict.3.1) in position ON
2. Rotate the Timer 1 knob clockwise (to the right) to desired time period
3. Rotate the Timer 2 knob clockwise (to the right) to the E position (Timer 2 excluded)
4. Decide the bowl rotation direction with the selector Pos.9 –Pict. 3.1 (otherwise the bowl does not rotate)
5. Press the START button (Pos 5 - Pict. 3.1) to start at 1<sup>st</sup> speed.

The machine will stop when the time has ended.

**NOTE: Through the selector Pos 9(Pict. 3.1), it is possible to reverse the rotation direction of the bowl.**

**To work in automatic mode at 2<sup>nd</sup> speed, proceed as follows:**

1. Position the selector Pos.6 (Pict.3.1) in position ON
2. Rotate the Timer 1 knob clockwise (to the right) to the E position (Timer 1 excluded)
3. Rotate the Timer 2 knob clockwise (to the right) to desired time period
4. Turning the selector switch Pos. 9 (Pict.3.1) to the right (otherwise the bowl does not rotate)
5. Press the START button (Pos 5 - Pict.3.1) to start the machine; it starts with the 1<sup>st</sup> speed and switches automatically to the 2<sup>nd</sup> speed after about 5 seconds

The machine will stop when the time has ended.

**NOTE: It is not possible to reverse the rotation direction of the bowl when the machine is operating in 2<sup>nd</sup> speed**

#### **4.6.2 AUTOMATIC MODO- TWO SPEEDS**

1. Position the selector Pos.6 (Pict.3.1) in position ON
2. Rotate the Timer 1 knob clockwise (to the right) to desired time period
3. Rotate the Timer 2 knob clockwise (to the right) to desired time period
4. Decide the bowl rotation direction with the selector Pos.9 – Pict.3.1 (otherwise the bowl does not rotate)
5. Press the START button (Pos 5 - Pict.3.1) to start the machine

When the time on the display of Timer 1 reaches the 0 , the machine switches automatically to the 2<sup>nd</sup> speed and it will stop when the time has ended.

**NOTE: It's possible to reverse the rotation direction of the bowl when the machine is operating in 1<sup>st</sup> speed**

**NOTE: When the machine is operating in 2nd speed, the bowl rotates only if the selector switch Pos. 9 (Pict.3.1) is turned to the right.**

**NOTE: It is not possible to reverse the rotation direction of the bowl when the machine is operating in 2nd speed**



## 4.7 STOPPING MACHINE

**MANUAL MODE:** Press STOP button Pos. 8 Pict. 3.1 or lift the protection grid

**AUTOMATIC MODE:** The machine will stop automatically at the end of the cycle (at the end of the time period set)

**EMERGENCY STOP:** Press Emergency stop button ( red mushroom-headed button) Pos. 3 (Pict. 3.1).

If the AUTOMATIC MODE is selected, when pressing the red mushroom emergency button (Pos. 3 Pict. 3.1), the timer will reset.

When pressing the STOP button (Pos.8-Pict.3.1), the timer will not reset, and you can resume working by pressing the START button (Pos.5-Pict. 3.1)

## 4.8 DOUGH DISCHARGE

After stopping the machine, let the bowl and spiral come to a complete rest.

Turn the main 0-I switch Pos.3 Pict.4.1 to position “ I ” and empty the bowl.

## CHAPTER 5. MAINTENANCE

---

**ATTENTION:** Before you start clearing or servicing the machine, verify that power has been turned off. In any case of malfunctioning or damage of the machine you must apply for authorized assistance from the manufacturer.

Maintenance is divided into two categories: ordinary maintenance and programmed maintenance

### 5.1 ORDINARY MAINTENANCE

For ordinary maintenance we intend all the operations that can be done by the operator only after having read carefully the instructions given in this section.

#### 5.1.1 CLEANING THE MACHINE

Cleaning the machine at the end of each operating cycle is highly recommended.

For the good functioning of the machine and for hygienic purposes, it is necessary to remove the dough crusts from the bowl, the guard, the central column and the spiral by means of a cleaning cloths soaked in water or appropriate detergent. If needed, try to remove the hardest remains by means of a plastic paddle.

**ATTENTION:** During the cleaning operations some dusts can be determined (for example flour dust); it's recommended to use an extractor.

**ATTENTION:** Never use steel wool, compressed air jets or abrasive products to clean the machine.

**ATTENTION:** Do not use water jets to clean both the control panel and the electric board.

### 5.2 PROGRAMMED MAINTENANCE

Ordinary maintenance operations must only be carried out by qualified personnel.

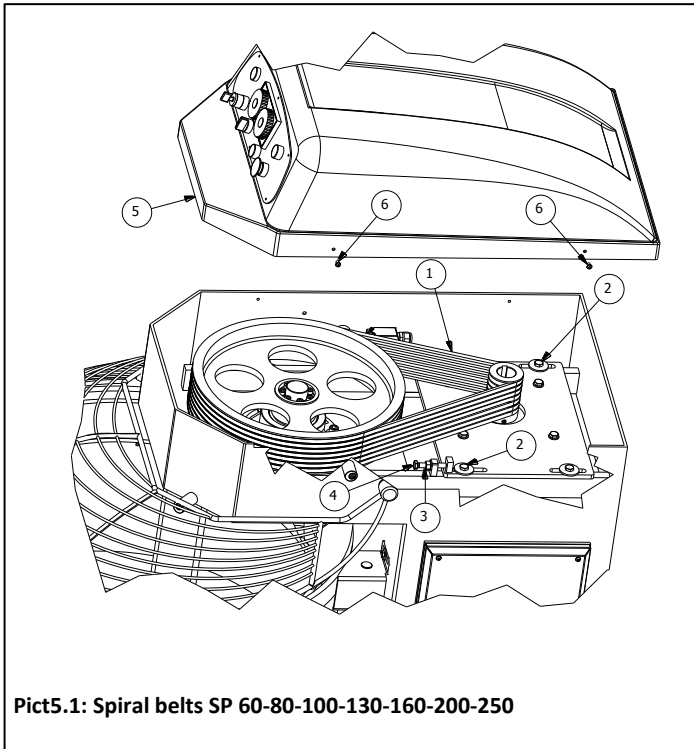
These are periodic inspections in order to prevent any future failure and to maintain the machines security standards

Particular attention must be paid to the belts tensioning.

**The tension and general condition of the belt should therefore be checked at least monthly**

## 5.2.1 SPIRAL BELTS TENSION ADJUSTMENT

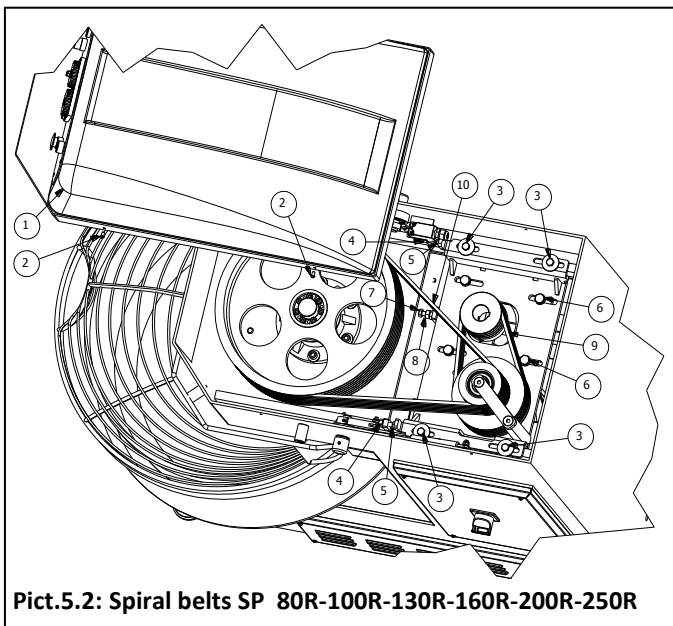
### 5.2.1.1 MOD. SP60,SP80,SP100,SP130,SP160, SP200,SP250



**Proceed as follows:**

1. Unscrew the screws Pos.6
2. Remove the head cover Pos.5
3. Loosen the four screws Pos.2 that sustain the motor without unscrewing them completely
4. Loosen the nut Pos.3
5. Restore the correct belts tension with the screw Pos.4
6. Retighten the screw Pos.3
7. Retighten the screws Pos.2 previously loosened
8. Re-assemble the head cover Pos.1

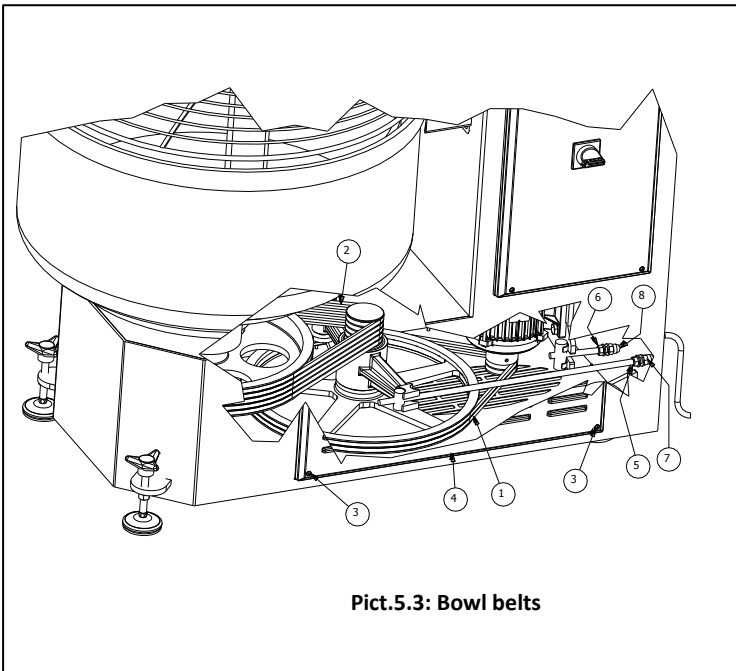
### 5.2.1.2 MOD. SP80R,SP100R,SP130R,SP160R,SP200R,SP250R



**Proceed as follows:**

1. Unscrew the screws Pos.2
2. Remove the head cover Pos.1
3. Loosen the four screws Pos.3 without unscrewing them completely
4. Loosen the nut Pos.5
5. Restore the correct belts tension with the screw Pos.4
6. Retighten the screw Pos.5
7. Retighten the screws Pos.3 previously loosened
8. Re-assemble the head cover Pos.1

### 5.2.2 BOWL BELTS TENSION ADJUSTMENT

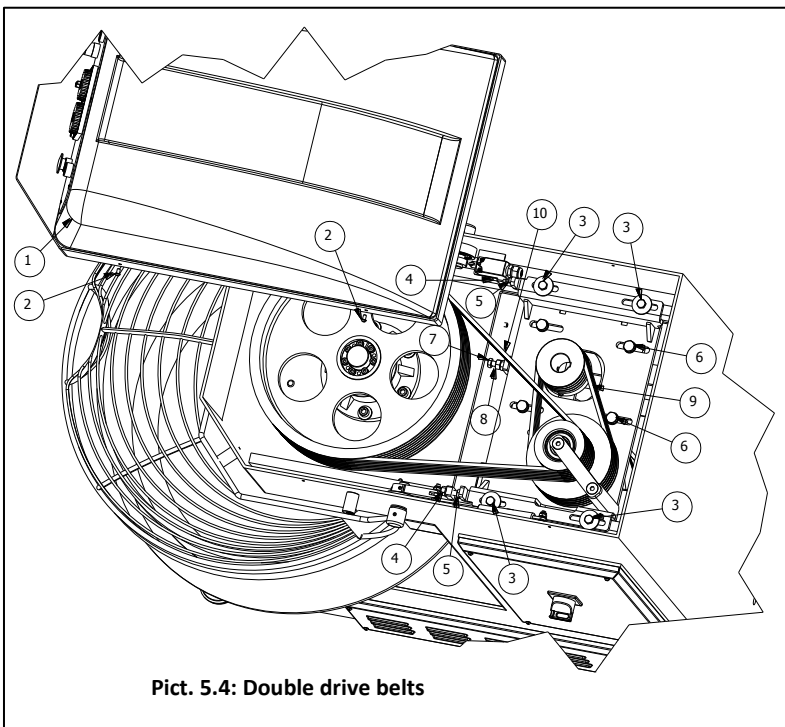


Pict.5.3: Bowl belts

**Proceed as follows:**

1. Unscrew the four screws Pos. 3
2. Disassemble the side cover Pos.4
3. To adjust the tension of belts Pos.1, loosen the nut Pos.6 and turn the nut Pos.8
4. To adjust the tension of belts Pos.1, loosen the nut Pos.6 and turn the nut Pos.7
5. Re-assemble the head cover Pos.4

### 5.2.3 DOUBLE DRIVE TRANSMISSION BELTS TENSION ADJUSTMENT

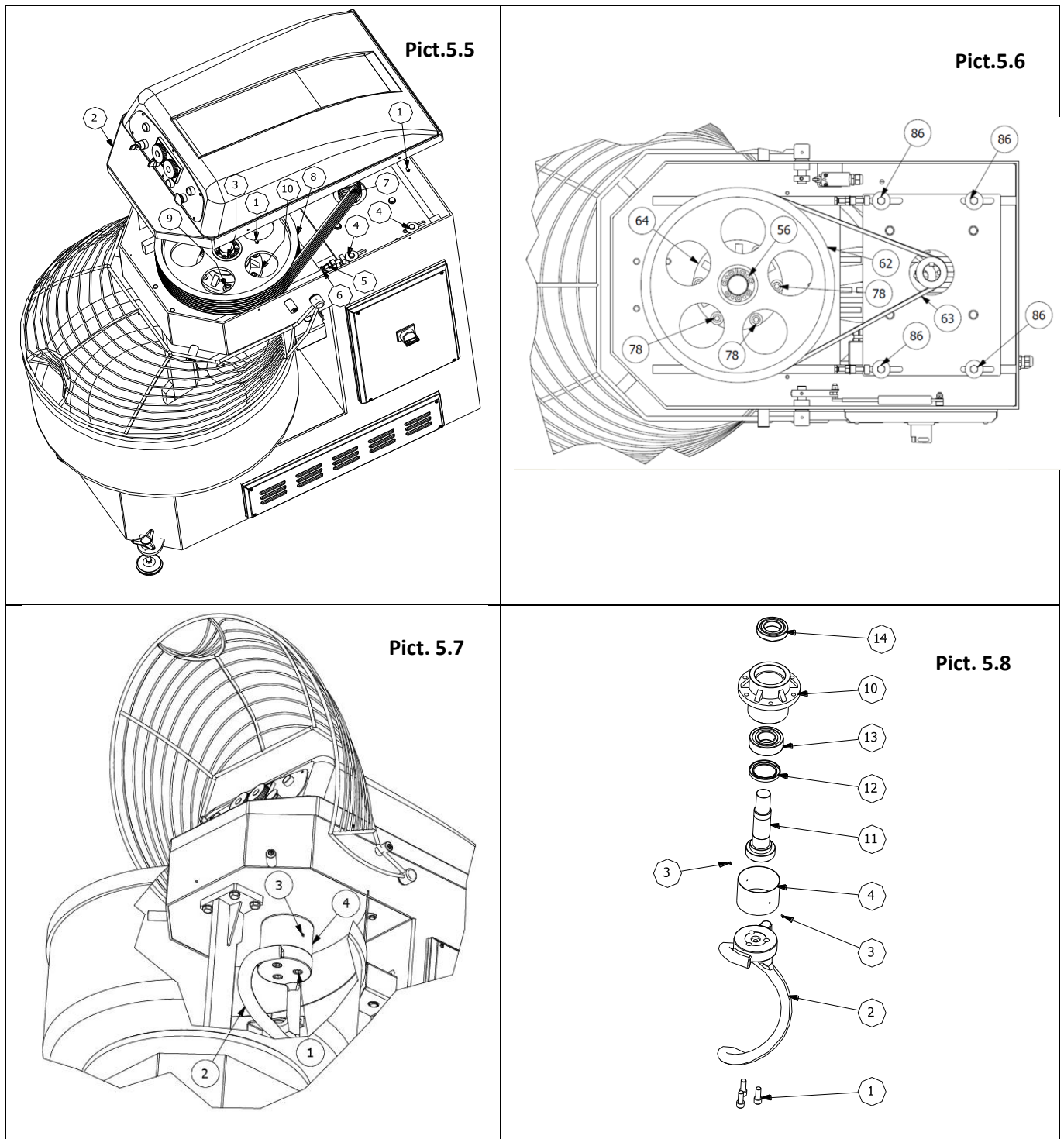


Pict. 5.4: Double drive belts

**Proceed as follows:**

1. Unscrew the screws Pos.2)
2. Remove the head cover Pos.1
3. Loosen the four screws Pos.6 that sustain the motor without unscrewing them completely
4. Loosen the nut Pos.8
5. Restore the correct belts tension with the screw Pos.7
6. Retighten the screw Pos.8
7. Retighten the screws Pos.6 previously loosened
8. Re-assemble the head cover Pos.1

## 5.2.4 SPIRAL BEARINGS REPLACE



### Proceed as follows:

1. Unscrew the screws Pos.2 and Remove the head cover Pos.1 (look at the Pict. 5.5)
2. Loosen the four nuts Pos.4(look at the Pict. 5.5)
3. Loosen the nuts Pos.5 (look at the Pict. 5.5) to loosen the belts tension
4. Unscrew the screws Pos.56 (look at Pict. 5.6) and remove the piece (Pos. 13 in the drawing enclosed)
5. Remove the pulley Pos. 62 (look at Pict. 5.6)
6. Unscrew the screws Pos.1 and remove the spiral Pos.2 (look at Pict. 5.7)

7. Unscrew the screws Pos.3 and remove the piece Pos.4 (look at Pict. 5.7)
8. Unscrew the screws Pos.78 (look at Pict. 5.7) than remove the element (look at Pict. 5.8) composed of pieces Pos. 10, Pos. 11, Pos. 12, Pos. 13
9. Remove the piece Pos. 11 (look at Pict. 5.8) and replace the bearings.

### 5.3 POSSIBLE FAILURE AND/OR ANOMALIES

ANOMALY	POSSIBLE CAUSE	POSSIBLE REMEDY
<b>By pressing the key start, the machine does not start</b>	<p>Mancanza di energia elettrica nella rete</p> <p>Emergency button pressed</p> <p>Bowl cover lifted up</p> <p>Main power switch on position " O "</p> <p>Start button defective</p>	<p>Verificare il contatore generale, la presa, la spina e il cavo di alimentazione</p> <p>Re-set the emergency button in turning it in clockwise direction.</p> <p>Close the cover bowl</p> <p>Turn the main O- I switch to position " I ".</p> <p>Check and, if needed, replace the defective parts.</p>
<b>During mixture cycle phase spiral and/ or bowl slow down</b>	The transmission belts concerned are loosen	Adjust the belt tension
<b>The rotation direction of the bowl is not correct</b>	The phases are inverted	Reverse on the plug the position of two phases

## **CHAPTER 6. LIST OF ENCLOSED DOCUMENTS**

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6.1 –Drawing SP60-SP80-SP100-SP130-SP160-SP200-SP250

6.2 – Spare parts SP60-SP80-SP100-SP130-SP160-SP200-SP250

6.3 –Drawing SP80R-SP100R-SP130R-SP160R-SP200R-SP250R

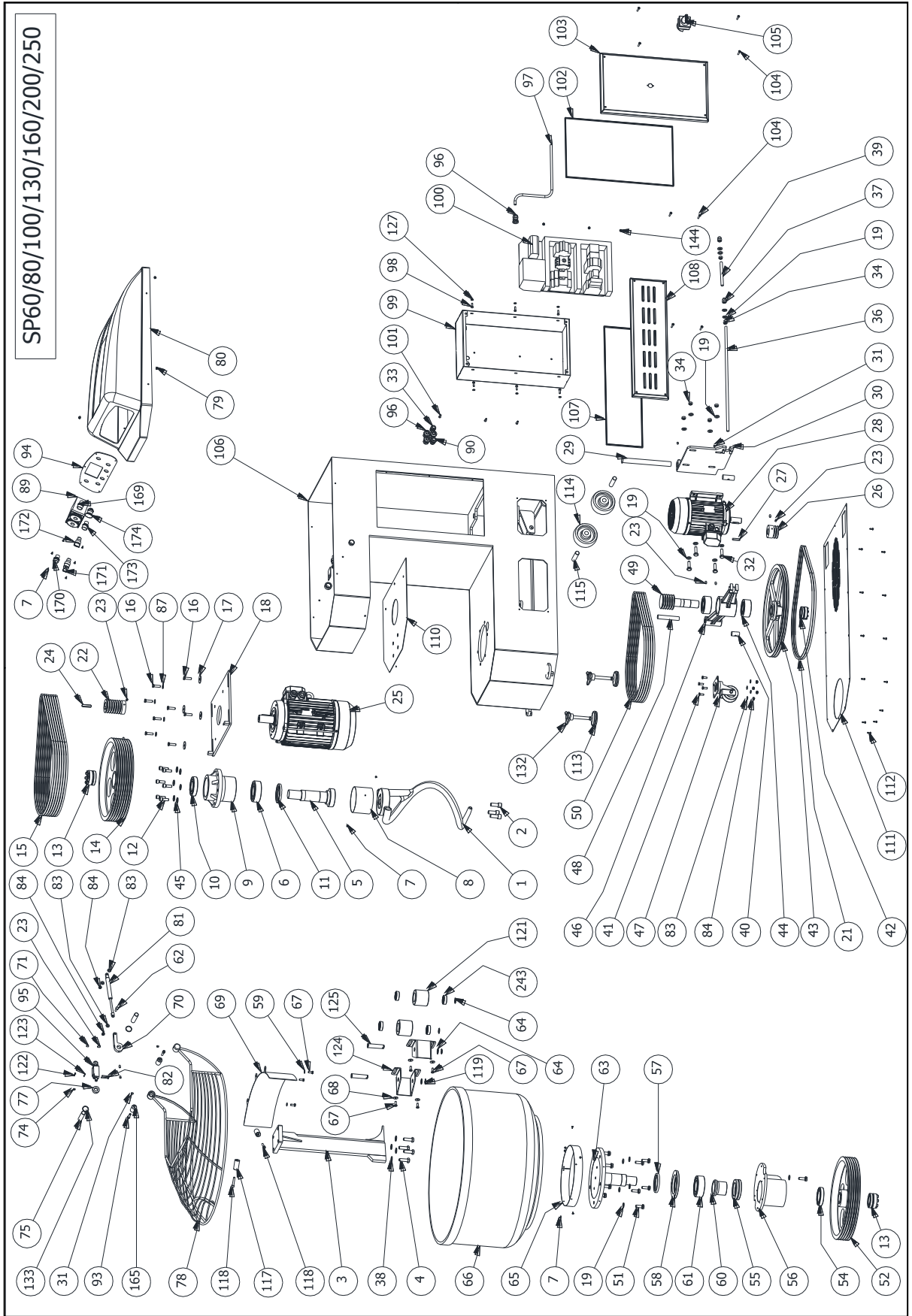
6.4 - Spare parts SP80R-SP100R-SP130R-SP160R-SP200R-SP250R

6.5 - Power scheme

6.6 – Control circuit

6.7 - Contacts

**6.1 DRAWING SP 60-80-100-130-160-200-250**





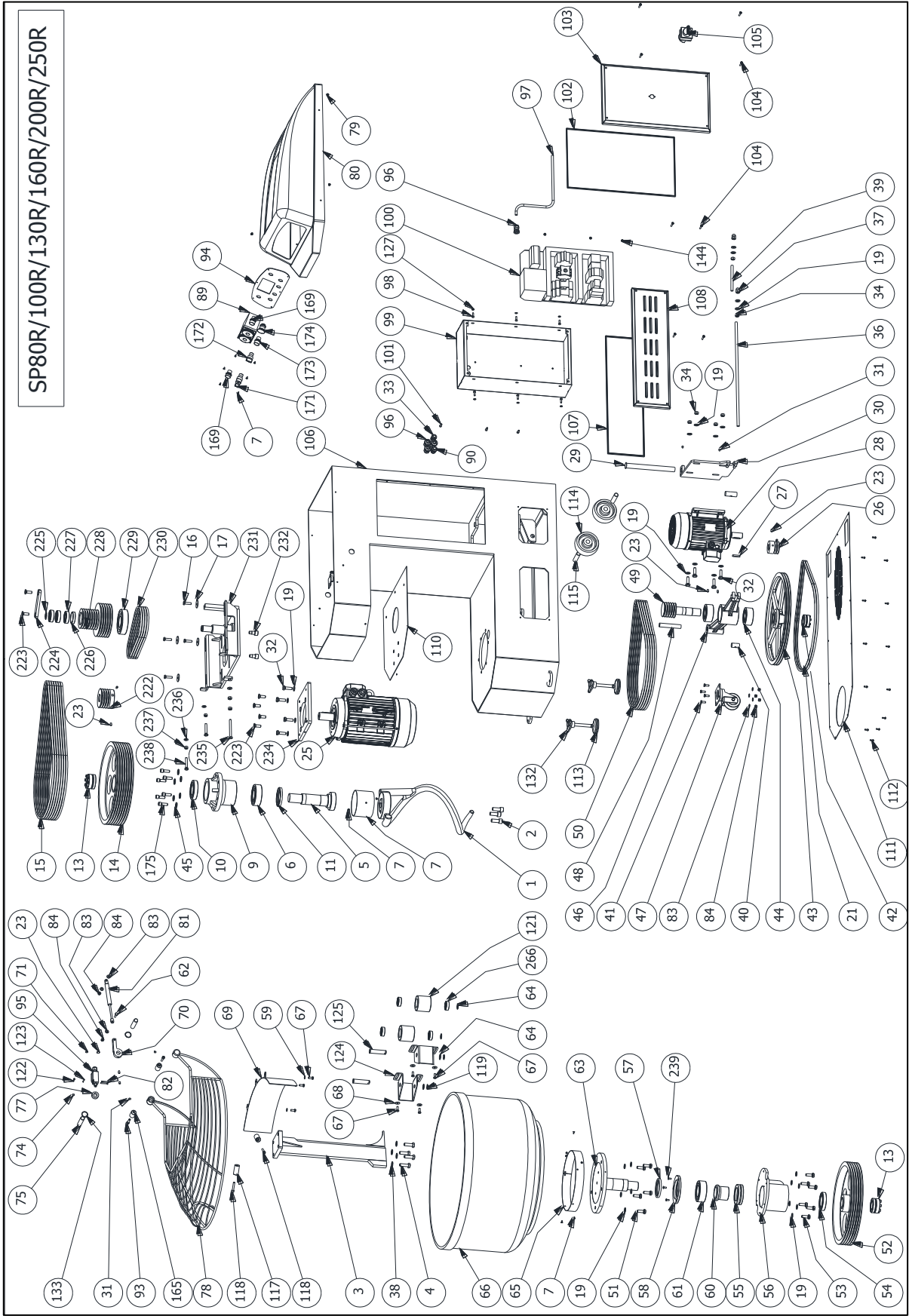
## 6.2 SPARE PARTS SP60- SP80- SP100- SP130- SP160- SP200- SP250

POS	DESCRIZIONE	SP60	SP80	SP100	SP130	SP160	SP200	SP250
1	SPIRALE	SP060001	SPX80001	SPX80001	SP013001	SPX16001	SPX16001	SP025001
2	VITE	07112035	07116040	07116040	07116040	07116040	07116040	07116050
3	PIANTONE	SP060003	SPX80003	SPX80003	SP013003	SPX16003	SPX16003	SPX16003
4	VITE	07012050	07014045	07014045	07014045	07014045	07014045	07014045
5	ALBERO SPIRALE	SP060005	SPX80005	SPX80005	SPX80005	SPX16005	SPX16005	SP025005
6	CUSCINETTO	C32102RS	C32112RS	C32112RS	C32112RS	C33122RS	C33122RS	C33122RS
7	VITE	10406010	10406010	10406010	10406010	10406010	10406010	10406010
8	SCODELLINO SUPPORTO SPIRALE	SP060008	SPX80008	SPX80008	SPX80008	SPX16008	SPX16008	SPX16008
9	SUPPORTO SPIRALE	SP060009	SPX80009	SPX80009	SPX80009	SPX16009	SPX16009	SPX16009
10	CUSCINETTO	C62102RS	C62112RS	C62112RS	C62112RS	C63122RS	C63122RS	C63122RS
11	ANELLO DI TENUTA	-	SPX80011	SPX80011	SPX80011	SPX16011	SPX16011	SPX16011
12	VITE	03212035	03212035	03212035	03212035	03212035	03212035	03212035
13	CALETTATORE	SPX60013	SPX80013	SPX80013	SPX80013	SPX16013	SPX16013	SPX16013
14	PULEGGIA SPIRALE	SP060014	SPX80014	SPX80014	SP013014	SPX16014	SPX16014	SP025014
15	CINGHIA SPIRALE	SP013050	SPX80015	SPX80015	SPX80015	SPX16015	SPX16015	SPX16015
16	VITE	02608030	02610040	02610040	02610040	02612040	02612040	02612040
17	RONDELLA	05410040	05410040	05410040	05410040	05410040	05410040	05410040
18	PIASTRA MOTORE SPIRALE	SP060018	SPX80018	SPX80018	SPX80018	SPX16018	SPX16018	SPX16018
19	RONDELLA	05812000	05812000	05812000	05812000	05812000	05812000	05812000
21	CINGHIA VASCA	SP060041	SPX80015	SPX80015	SPX80015	SPX16041	SPX16041	SPX16041
22	PULEGGIA MOTORE SPIRALE	SP060022	SPX80022	SPX80022	SP013022	SPX16022	SPX16022	SP025022
23	GRANO	03508014	03508014	03508014	03508014	03508014	03508014	03508014
24	LINGUETTA	CH080740	CH080740	CH080740	CH080740	CH128100	CH128100	CH128100
25	MOTORE SPIRALE	M2112003	M2132001	M2132001	M2132001	M2160003	M2160001	M2160003
26	PULEGGIA	SP060026	SPX80026	SPX80026	SPX80026	SPX16026	SPX16026	SP025026
27	LINGUETTA	CH070835	CH080740	CH080740	CH080740	CH080740	CH080740	CH080740
28	MOTORE VASCA	MT090004	MT100002	MT100002	MT100002	MT100003	MT100003	MT100003
29	ALBERO PIASTRA MOTORE VASCA	SP060029	SPX80029	SPX80029	SPX80029	SPX80029	SPX80029	SPX80029
30	PIASTRA MOTORE VASCA	SP060030	SPX80030	SPX80030	SPX80030	SPX13030	SPX13030	SPX13030
31	GRANO	03508010	03508010	03508010	03508010	03508010	03508010	03508010
32	VITE	02610040	02612040	02612040	02612040	02612040	02612040	02612040
33	PRESSACAVO	PG135000	PG135000	PG135000	PG135000	PG135000	PG135000	PG135000
34	DADO	041M1200	041M1200	041M1200	041M1200	041M1200	041M1200	041M1200
36	BARRA TENSIONAMENTO CINGHIE RINVIO	SP060036	SPX80036	SPX80036	SPX80036	SPX16036	SPX16036	SPX16036
37	DADO	079M1200	079M1200	079M1200	079M1200	079M1200	079M1200	079M1200
38	RONDELLA	05812000	05814000	05814000	05814000	05814000	05814000	05814000
39	BARRA TENSIONAMENTO CINGHIE MOTORE	SP060039	SPX80039	SPX80039	SPX80039	SPX16039	SPX16039	SPX16039
40	CILINDRO FILETTATO	SPX60040	SPX60040	SPX60040	SPX60040	SPX60040	SPX60040	SPX60040
41	VITE	02608025	02608025	02608025	02608025	02608025	02608025	02608025
42	CALETTATORE	SP060042	SPX80042	SPX80042	SPX80042	SPX80042	SPX80042	SPX16051
43	PULEGGIA RINVIO	SP060043	SPX80043	SPX80043	SPX80043	SPX16043	SPX16043	SP025043

POS	DESCRIZIONE	SP60	SP80	SP100	SP130	SP160	SP200	SP250
44	CUSCINETTO	C33082RS	C33082RS	C33082RS	C33082RS	C33082RS	C33082RS	C33082RS
45	MOLLA A TAZZA	064D1200	064D1200	064D1200	064D1200	064D1200	064D1200	064D1200
46	SUPPORTO RINVIO	SPX60046	SPX60046	SPX60046	SPX60046	SPX60046	SPX60046	SPX60046
47	RUOTA GIREVOLE	SPX60047	SPX60047	SPX60047	SPX60047	SPX60047	SPX60047	SPX60047
48	SPINOTTO SUPPORTO RINVIO	SPX60048	SPX60048	SPX60048	SPX60048	SPX60048	SPX60048	SPX60048
49	ALBERO PULEGGIA	SP060049	SPX80049	SPX80049	SPX80049	SPX16049	SPX16049	SPX16049
50	CINGHIA	SP060050	SPX60015	SPX60015	SP013050	SPX80015	SPX80015	SPX80015
51	VITE	07112020	02612035	02612035	02612035	02612035	02612035	02612035
52	PULEGGIA VASCA	SP060014	SPX80014	SPX80014	SPX80014	SPX16014	SPX16014	SP025014
54	CUSCINETTO	C62092RS	C60122RS	C60122RS	C60122RS	C62142RS	C62142RS	C62142RS
55	CUSCINETTO	-	C5121400	C5121400	C5121400	C5121600	C5121600	C5121600
56	SUPPORTO VASCA	SP060056	SPX80056	SPX80056	SPX80056	SPX16056	SPX16056	SPX16056
57	ANELLO DI TENUTA	SP060057	SPX80057	SPX80057	SPX80057	SPX16057	SPX16057	SPX16057
58	FLANGIA	SP060058	SPX80058	SPX80058	SPX80058	SPX16058	SPX16058	SPX16058
59	RONDELLA	09008024	09008024	09008024	09008024	09008024	09008024	09008024
60	DISTANZIALE	-	SPX80060	SPX80060	SPX80060	SPX16060	SPX16060	SPX16060
61	CUSCINETTO	C62112RS	C32122RS	C32122RS	C32122RS	C32142RS	C32142RS	C32142RS
62	VITE	02608030	02608030	02608030	02608030	02608030	02608030	02608030
63	ALBERO SUPPORTO VASCA	SP060090	SPX80063	SPX80063	SPX80063	SPX16063	SPX16063	SPX16063
64	SPESSORE	SPX40064	SPX40064	SPX40064	SPX40064	SPX40064	SPX40064	SPX40064
65	PROTEZIONE SUPPORTO VASCA	SP060065	SPX80065	SPX80065	SPX80065	SPX16065	SPX16065	SPX16065
66	VASCA	SP060066	SP080066	SP010066	SP013066	SP016066	SP020066	SP025066
67	VITE	07008020	07008020	07008020	07008020	07008020	07008020	07008020
68	RONDELLA	09008024	09008024	09008024	09008024	09008024	09008024	09008024
69	PROTEZIONE VASCA	SP060069	SP080069	SP010069	SP013069	SP016069	SP020069	SP025069
70	LEVA AZIONAMENTO MOLLA A GAS	SP060070	SPX80070	SPX80070	SPX80070	SPX80070	SPX80070	SPX80070
71	GRANO	03508010	03508010	03508010	03508010	03508010	03508010	03508010
74	GRANO	03506010	03506010	03506010	03506010	03506010	03506010	03506010
75	ALBERO GRIGLIA	SPX60075	SPX60075	SPX60075	SPX60075	SPX60075	SPX60075	SPX60075
77	AZIONATORE FINECORSA	SPX60077	SPX60077	SPX60077	SPX60077	SPX60077	SPX60077	SPX60077
78	GRIGLIA INOX	SP060078	SP080078	SP010078	SP013078	SP016078	SP020078	SP025078
79	VITE	10506010	10506010	10506010	10506010	10506010	10506010	10506010
80	CARTER TESTATA	SP060080	SPX80080	SPX80080	SPX80080	SPX16080	SPX16080	SPX16080
81	MOLLA A GAS	SP060081	SP060081	SP060081	SP060081	SP060081	SP060081	IMX12043
82	VITE	02604035	02604035	02604035	02604035	02604035	02604035	02604035
83	RONDELLA	05808000	05808000	05808000	05808000	05808000	05808000	05808000
84	DADO	050M0800	050M0800	050M0800	050M0800	050M0800	050M0800	050M0800
87	RONDELLA	05408024	05810000	05810000	05810000	05812000	05812000	05812000
89	TIMER DOPPIO	SPX60089	SPX60089	SPX60089	SPX60089	SPX60089	SPX60089	SPX60089
90	PRESSACAPO	PG110000	PG110000	PG110000	PG110000	PG110000	PG110000	PG110000
93	VITE	07108040	07108040	07108040	07108045	07108045	07108045	07108045
94	PANNELLO SERIGRAFATO	SP060094	SPX80094	SPX80094	SPX80094	SPX80094	SPX80094	SPX80094
95	MICROINTERRUTTORE	MIC00102	MIC00102	MIC00102	MIC00102	MIC00102	MIC00102	MIC00102
96	PRESSACAPO	PG160000	PG160000	PG160000	PG160000	PG160000	PG160000	PG160000
97	CAVO ELETTRICO	SPX60097	SPX60097	SPX60097	SPX60097	SPX16097	SPX16097	SPX16097
98	VITE	02606020	02606020	02606020	02606020	02606020	02606020	02606020

POS	DESCRIZIONE	SP60	SP80	SP100	SP130	SP160	SP200	SP250
99	SCATOLA QUADRO ELETTRICO	SP060099	SPX80099	SPX80099	SPX80099	SPX80099	SPX80099	SPX80099
100	IMPIANTO ELETTRICO	SP060167	SPX80167	SPX80167	SPX80167	SPX16167	SPX16167	SPX16167
101	VITE	02606020	02606020	02606020	02606020	02606020	02606020	02606020
102	GUARNIZIONE	SPX60102	SPX80102	SPX80102	SPX80102	SPX60102	SPX60102	SPX60102
103	CARTER QUADRO ELETTRICO	SP060103	SPX80103	SPX80103	SPX80103	SPX80103	SPX80103	SPX80103
104	VITE	10406040	10406040	10406040	10406040	10406040	10406040	10406040
105	INTERRUTTORE GENERALE	SP000105	SP000105	SP000105	SP000105	SP000105	SP000105	SP000105
106	TELAIO	SP060106	SPX80106	SPX80106	SPX80106	SPX16106	SPX16106	SPO25106
107	GUARNIZIONE	SP060107	SPX80107	SPX80107	SPX80107	SPX80107	SPX80107	SPX80107
108	CARTER BASE	SP060108	SPX80108	SPX80108	SPX80108	SPX80108	SPX80108	SPX80108
110	PIASTRA TESTATA	SP060110	SPX80110	SPX80110	SPX80110	SPX16110	SPX16110	SPO25110
111	CARTER INFERIORE	SP060111	SPX80111	SPX80111	SPX80111	SPX16111	SPX16111	SPO25111
112	VITE	02005538	02005538	02005538	02005538	02005538	02005538	02005538
113	PIEDE LIVELLAMENTO	IMX60104	IMX60104	IMX60104	IMX60104	IMX60104	IMX60104	IMX60104
114	RUOTA POSTERIORE	IMX60013	SPX80114	SPX80114	SPX80114	SPX80114	SPX80114	SPX80114
115	MOZZO RUOTA POSTERIORE	IM060141	SPX80115	SPX80115	SPX80115	SPX80115	SPX80115	SPX80115
117	FERMO GRIGLIA	SPX60117	SPX60117	SPX60117	SPX60117	SPX60117	SPX60117	SPX60117
118	VITE	07108050	07108050	07108050	07108050	07108050	07108050	07108050
119	SEEGER	051D1600	051D1600	051D1600	051D2000	051D2000	051D2000	051D2000
121	RULLO VASCA	IMX60134	SPX80121	SPX80121	SPX80121	SPX80121	SPX80121	SPX80121
122	DADO	050M0400	050M0400	050M0400	050M0400	050M0400	050M0400	050M0400
123	RONDELLA	05804000	05804000	05804000	05804000	05804000	05804000	05804000
124	SUPPORTO RULLO VASCA	SP060124	SPX80124	SPX80124	SPX13124	SPX13124	SPX13124	SPO25124
125	ALBERO SUPPORTO RULLO VASCA	IM060133	SPX80125	SPX80125	SPX80125	SPX80125	SPX80125	SPX80125
127	RONDELLA	05406024	05406024	05406024	05406024	05406024	05406024	05406024
132	VOLANTINO	IMX60103	IMX60103	IMX60103	IMX60103	IMX60103	IMX60103	IMX60103
133	RONDELLA IN NYLON	SPX60133	SPX60133	SPX60133	SPX60133	SPX60133	SPX60133	SPX60133
144	DADO	050M0600	050M0600	050M0600	050M0600	050M0600	050M0600	050M0600
165	FERMO GRIGLIA	SPX80165	SPX80165	SPX80165	SPX80165	SPX80165	SPX80165	SPX80165
169	PULSANTE START	SP000169	SP000169	SP000169	SP000169	SP000169	SP000169	SP000169
170	SPIA LUMINOSA BIANCA	SP000170	SP000170	SP000170	SP000170	SP000170	SP000170	SP000170
171	SELETTORE TIMER ON-OFF	SP000171	SP000171	SP000171	SP000171	SP000171	SP000171	SP000171
172	SELETTORE INVERSIONE MOTO VASCA	SP000172	SP000172	SP000172	SP000172	SP000172	SP000172	SP000172
173	PULSANTE MOVIMENTO VASCA AD IMPULSO	SP000173	SP000173	SP000173	SP000173	SP000173	SP000173	SP000173
174	FUNGO DI EMERGENZA	SP000174	SP000174	SP000174	SP000174	SP000174	SP000174	SP000174
243	CUSCINETTO	C62042RS	C62042RS	C62042RS	C62042RS	C62042RS	C62042RS	C62042RS

### 6.3 DRAWING SP 80R-100R-130R-160R-200R-250R



SP80R/100R/130R/160R/200R/250R

## 6.4 SPARE PARTS SP80R- SP100R- SP130R-SP160R-SP200R-SP250R

POS	DESCRIZIONE	SP80R	SP100R	SP130R	SP160R	SP200R	SP250R
1	SPIRALE	SPX80001	SPX80001	SP013001	SPX16001	SPX16001	SP025001
2	VITE	07116040	07116040	07116040	07116040	07116040	07116050
3	PIANTONE	SPX80003	SPX80003	SP013003	SPX16003	SPX16003	SPX16003
4	VITE TE	07014045	07014045	07014045	07014045	07014045	07014045
5	ALBERO SPIRALE	SPX80005	SPX80005	SPX80005	SPX16005	SPX16005	SP025005
6	CUSCINETTO	C32112RS	C32112RS	C32112RS	C33122RS	C33122RS	C33122RS
7	VITE	10406010	10406010	10406010	10406010	10406010	10406010
8	SCODELLINO SUPPORTO SPIRALE	SPX80008	SPX80008	SPX80008	SPX16008	SPX16008	SPX16008
9	SUPPORTO SPIRALE	SPX80009	SPX80009	SPX80009	SPX16009	SPX16009	SPX16009
10	CUSCINETTO	C62112RS	C62112RS	C62112RS	C63122RS	C63122RS	C63122RS
11	ANELLO DI TENUTA	SPX80011	SPX80011	SPX80011	SPX16011	SPX16011	SPX16011
12	VITE	03212035	03212035	03212035	03212035	03212035	03212035
13	CALETTATORE	SPX80013	SPX80013	SPX80013	SPX16013	SPX16013	SPX16013
14	PULEGGIA SPIRALE	SPX80014	SPX80014	SP013014	SPX16014	SPX16014	SP025014
15	CINGHIA SPIRALE	SPX80015	SPX80015	SPX80015	SPX16015	SPX16015	SPX16015
16	VITE	02610040	02610040	02610040	02612040	02612040	02612040
17	RONDELLA	05410040	05410040	05410040	05410040	05410040	05410040
18	PIASTRA MOTORE SPIRALE	SPX80018	SPX80018	SPX80018	SPX16018	SPX16018	SPX16018
19	RONDELLA	05812000	05812000	05812000	05812000	05812000	05812000
21	CINGHIA VASCA	SPX060041	SPX80015	SPX80015	SPX16041	SPX16041	SPX16041
22	PULEGGIA MOTORE SPIRALE	SPX80022	SPX80022	SP013022	SPX16022	SPX16022	SP025022
23	GRANO	03508014	03508014	03508014	03508014	03508014	03508014
24	LINGUETTA	CH080740	CH080740	CH080740	CH128100	CH128100	CH128100
25	MOTORE SPIRALE	M2112003	M2132001	M2132001	M2132001	M2160003	M2160001
26	PULEGGIA MOTORE VASCA	SPX80026	SPX80026	SPX80026	SPX16026	SPX16026	SP025026
27	LINGUETTA	CH070835	CH080740	CH080740	CH080740	CH080740	CH080740
28	MOTORE VASCA	MT090004	MT100002	MT100002	MT100002	MT100003	MT100003
29	ALBERO PIASTRA MOTORE VASCA	SPX80029	SPX80029	SPX80029	SPX80029	SPX80029	SPX80029
30	PIASTRA MOTORE VASCA	SPX80030	SPX80030	SPX80030	SPX13030	SPX13030	SPX13030
31	GRANO	03508010	03508010	03508010	03508010	03508010	03508010
32	VITE	02612040	02612040	02612040	02612040	02612040	02612040
33	PRESSACAVO	PG135000	PG135000	PG135000	PG135000	PG135000	PG135000
34	DADO	041M1200	041M1200	041M1200	041M1200	041M1200	041M1200
36	BARRA TENSIONAMENTO CINGHIE RINVIO	SPX80036	SPX80036	SPX80036	SPX16036	SPX16036	SPX16036
37	DADO	079M1200	079M1200	079M1200	079M1200	079M1200	079M1200
38	RONDELLA	05814000	05814000	05814000	05814000	05814000	05814000
39	BARRA TENSIONAMENTO CINGHIE MOTORE	SPX80039	SPX80039	SPX80039	SPX16039	SPX16039	SPX16039
40	CILINDRO FILETTATO	SPX60040	SPX60040	SPX60040	SPX60040	SPX60040	SPX60040
41	VITE	02608025	02608025	02608025	02608025	02608025	02608025
42	CALETTATORE	SPX80042	SPX80042	SPX80042	SPX80042	SPX80042	SPX16051
43	PULEGGIA RINVIO	SPX80043	SPX80043	SPX80043	SPX16043	SPX16043	SP025043
44	CUSCINETTO	C33082RS	C33082RS	C33082RS	C33082RS	C33082RS	C33082RS
45	MOLLA A TAZZA	064D1200	064D1200	064D1200	064D1200	064D1200	064D1200
46	SUPPORTO RINVIO	SPX60046	SPX60046	SPX60046	SPX60046	SPX60046	SPX60046

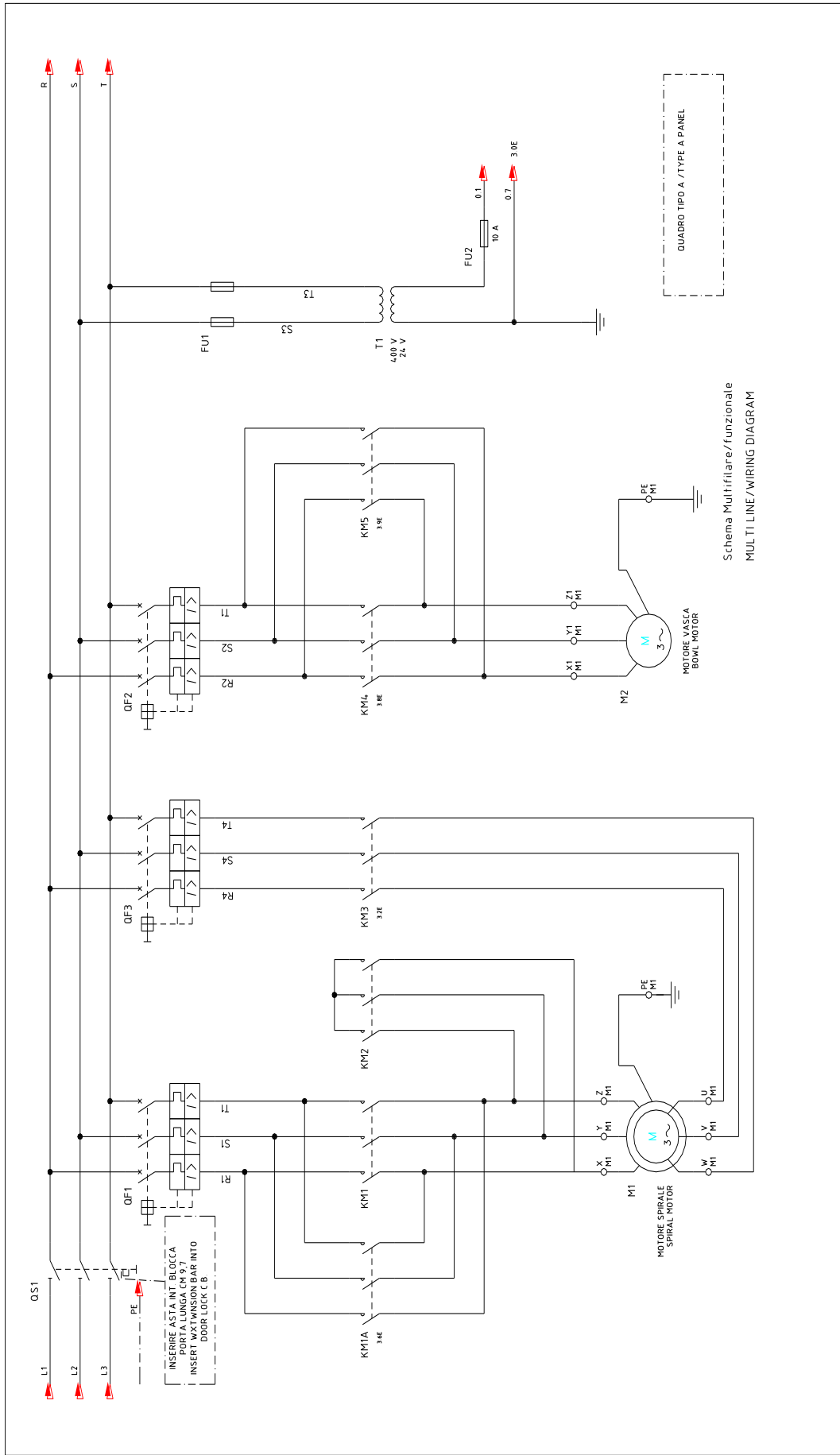
POS	DESCRIZIONE	SP80R	SP100R	SP130R	SP160R	SP200R	SP250R
47	RUOTA GIREVOLE	SPX60047	SPX60047	SPX60047	SPX60047	SPX60047	SPX60047
48	SPINOTTO SUPPORTO RINVIO	SPX60048	SPX60048	SPX60048	SPX60048	SPX60048	SPX60048
49	ALBERO PULEGGIA	SPX80049	SPX80049	SPX80049	SPX16049	SPX16049	SPX16049
50	CINGHIA	SPX60015	SPX60015	SP013050	SPX80015	SPX80015	SPX80015
51	VITE	02612035	02612035	02612035	02612035	02612035	02612035
52	PULEGGIA	SPX80014	SPX80014	SPX80014	SPX16014	SPX16014	SP025014
54	CUSCINETTO	C60122RS	C60122RS	C60122RS	C62142RS	C62142RS	C62142RS
55	CUSCINETTO	C5121400	C5121400	C5121400	C5121600	C5121600	C5121600
56	SUPPORTO VASCA	SPX80056	SPX80056	SPX80056	SPX16056	SPX16056	SPX16056
57	ANELLO DI TENUTA	SPX80057	SPX80057	SPX80057	SPX16057	SPX16057	SPX16057
58	FLANGIA	SPX80058	SPX80058	SPX80058	SPX16058	SPX16058	SPX16058
59	RONDELLA	09008024	09008024	09008024	09008024	09008024	09008024
60	DISTANZIALE	SPX80060	SPX80060	SPX80060	SPX16060	SPX16060	SPX16060
61	CUSCINETTO	C32122RS	C32122RS	C32122RS	C32142RS	C32142RS	C32142RS
62	VITE	02608030	02608030	02608030	02608030	02608030	02608030
63	ALBERO SUPPORTO VASCA	SPX80063	SPX80063	SPX80063	SPX16063	SPX16063	SPX16063
64	SPESSORE	SPX40064	SPX40064	SPX40064	SPX40064	SPX40064	SPX40064
65	PROTEZIONE SUPPORTO VASCA	SPX80065	SPX80065	SPX80065	SPX16065	SPX16065	SPX16065
66	VASCA	SP080066	SP010066	SP013066	SP016066	SP020066	SP025066
67	VITE	07008020	07008020	07008020	07008020	07008020	07008020
68	RONDELLA	09008024	09008024	09008024	09008024	09008024	09008024
69	PROTEZIONE VASCA	SP080069	SP010069	SP013069	SP016069	SP020069	SP025069
70	LEVA AZIONAMENTO MOLLA A GAS	SPX80070	SPX80070	SPX80070	SPX80070	SPX80070	SPX80070
71	GRANO	03508010	03508010	03508010	03508010	03508010	03508010
74	GRANO	03506010	03506010	03506010	03506010	03506010	03506010
75	ALBERO GRIGLIA	SPX60075	SPX60075	SPX60075	SPX60075	SPX60075	SPX60075
77	AZIONATORE FINECORSA	SPX60077	SPX60077	SPX60077	SPX60077	SPX60077	SPX60077
78	GRIGLIA INOX	SP080078	SP010078	SP013078	SP016078	SP020078	SP025078
79	VITE	10506010	10506010	10506010	10506010	10506010	10506010
80	CARTER TESTATA	SPX80080	SPX80080	SPX80080	SPX16080	SPX16080	SPX16080
81	MOLLA A GAS	SP060081	SP060081	SP060081	SP060081	SP060081	IMX12043
82	VITE	02604035	02604035	02604035	02604035	02604035	02604035
83	RONDELLA	05808000	05808000	05808000	05808000	05808000	05808000
84	DADO AUTOBLOCCANTE	050M0800	050M0800	050M0800	050M0800	050M0800	050M0800
87	RONDELLA	05810000	05810000	05810000	05812000	05812000	05812000
89	TIMER DOPPIO	SPX60089	SPX60089	SPX60089	SPX60089	SPX60089	SPX60089
90	PRESSACAVO	PG110000	PG110000	PG110000	PG110000	PG110000	PG110000
93	VITE	07108040	07108040	07108045	07108045	07108045	07108045
94	PANNELLO SERIGRAFATO	SPX80094	SPX80094	SPX80094	SPX80094	SPX80094	SPX80094
95	MICROINTERRUTTORE	MIC00102	MIC00102	MIC00102	MIC00102	MIC00102	MIC00102
96	PRESSACAVO	PG160000	PG160000	PG160000	PG160000	PG160000	PG160000
97	CAVO ELETTRICO	SPX60097	SPX60097	SPX60097	SPX16097	SPX16097	SPX16097
98	VITE	02606020	02606020	02606020	02606020	02606020	02606020
99	SCATOLA QUADRO ELETTRICO	SPX80099	SPX80099	SPX80099	SPX80099	SPX80099	SPX80099
100	IMPIANTO ELETTRICO	SPX80167	SPX80167	SPX80167	SPX16167	SPX16167	SPX16167
101	VITE	02606020	02606020	02606020	02606020	02606020	02606020
102	GUARNIZ.PANNELO QUADRO ELETTRICO	SPX80102	SPX80102	SPX80102	SPX60102	SPX60102	SPX60102

POS	DESCRIZIONE	SP80R	SP100R	SP130R	SP160R	SP200R	SP250R
103	CARTER QUADRO ELETTRICO	SPX80103	SPX80103	SPX80103	SPX80103	SPX80103	SPX80103
104	VITE	10406040	10406040	10406040	10406040	10406040	10406040
105	INTERRUTTORE GENERALE						
106	TELAIO	SPX80106	SPX80106	SPX80106	SPX16106	SPX16106	SP025106
107	GUARNIZIONE CARTER	SPX80107	SPX80107	SPX80107	SPX80107	SPX80107	SPX80107
108	CARTER BASE	SPX80108	SPX80108	SPX80108	SPX80108	SPX80108	SPX80108
110	PIASTRA TESTATA	SPX80110	SPX80110	SPX80110	SPX16110	SPX16110	SP025110
111	CARTER INFERIORE	SPX80111	SPX80111	SPX80111	SPX16111	SPX16111	SP025111
112	VITE	02005538	02005538	02005538	02005538	02005538	02005538
113	PIEDE LIVELLAMENTO	IMX60104	IMX60104	IMX60104	IMX60104	IMX60104	IMX60104
114	RUOTA POSTERIORE	SPX80114	SPX80114	SPX80114	SPX80114	SPX80114	SPX80114
115	MOZZO RUOTA POSTERIORE	SPX80115	SPX80115	SPX80115	SPX80115	SPX80115	SPX80115
117	FERMO GRIGLIA	SPX60117	SPX60117	SPX60117	SPX60117	SPX60117	SPX60117
118	VITE	07108050	07108050	07108050	07108050	07108050	07108050
119	ANELLO SEEGER	051D1600	051D1600	051D2000	051D2000	051D2000	051D2000
121	RULLO VASCA	SPX80121	SPX80121	SPX80121	SPX80121	SPX80121	SPX80121
122	DADO	050M0400	050M0400	050M0400	050M0400	050M0400	050M0400
123	RONDELLA	05804000	05804000	05804000	05804000	05804000	05804000
124	SUPPORTO RULLO VASCA	SP060124	SPX80124	SPX13124	SPX13124	SPX13124	SP025124
125	ALBERO SUPPORTO RULLO VASCA	SPX80125	SPX80125	SPX80125	SPX80125	SPX80125	SPX80125
127	RONDELLA	05406024	05406024	05406024	05406024	05406024	05406024
132	VOLANTINO	IMX60103	IMX60103	IMX60103	IMX60103	IMX60103	IMX60103
133	RONDELLA IN NYLON	SPX60133	SPX60133	SPX60133	SPX60133	SPX60133	SPX60133
144	DADO	050M0600	050M0600	050M0600	050M0600	050M0600	050M0600
165	FERMO GRIGLIA	SPX80165	SPX80165	SPX80165	SPX80165	SPX80165	SPX80165
169	PULSANTE START	SP000169	SP000169	SP000169	SP000169	SP000169	SP000169
170	SPIA LUMINOSA BIANCA	SP000170	SP000170	SP000170	SP000170	SP000170	SP000170
171	SELETTORE TIMER ON-OFF	SP000171	SP000171	SP000171	SP000171	SP000171	SP000171
172	SELETTORE INVERSIONE MOTO VASCA	SP000172	SP000172	SP000172	SP000172	SP000172	SP000172
173	PULSANTE MOVIMENTO VASCA AD IMPULSO	SP000173	SP000173	SP000173	SP000173	SP000173	SP000173
174	FUNGO DI EMERGENZA	SP000174	SP000174	SP000174	SP000174	SP000174	SP000174
222	PULEGGIA MOTORE SPIRALE	SPX80222	SPX80222	SPX80222	ESX16022	ESX16022	ESX16022
223	VITE	07212025	07212025	07212025	07212025	07212025	07212025
224	STAFFA RINFORZO	SPX80224	SPX80224	SPX80224	SPX80224	SPX80224	SPX80224
225	ANELLO SEEGER	051D3000	051D3000	051D3000	051D3000	051D3000	051D3000
226	DISTANZIALE	SPX80226	SPX80226	SPX80226	SPX80226	SPX80226	SPX80226
227	CUSCINETTO	C62062RS	C62062RS	C62062RS	C62062RS	C62062RS	C62062RS
228	PULEGGIA RINVIO	ESX16094	ESX16094	ESX16094	ESX16094	ESX16094	ESX16094
229	CUSCINETTO	C63122RS	C63122RS	C63122RS	C63122RS	C63122RS	C63122RS
230	CINGHIA RINVIO SPIRALE	XPZ00812	XPZ00812	XPZ00812	XPZ00812	XPZ00812	XPZ00812
231	SUPPORTO RINVIO SPIRALE	SPX80231	SPX80231	SPX80231	SPX16231	SPX16231	SPX16231
232	VITE	03216040	03216040	03216040	03216040	03216040	03216040
234	PIASTRA SUPP. MOT. RINVIO	SPX80234	SPX80234	SPX80234	SPX16234	SPX16234	SPX16234
235	VITE	02610120	02610120	02610120	02610120	02610120	02610120
236	RONDELLA	05810000	05810000	05810000	05810000	05810000	05810000
237	DADO	041M1000	041M1000	041M1000	041M1000	041M1000	041M1000

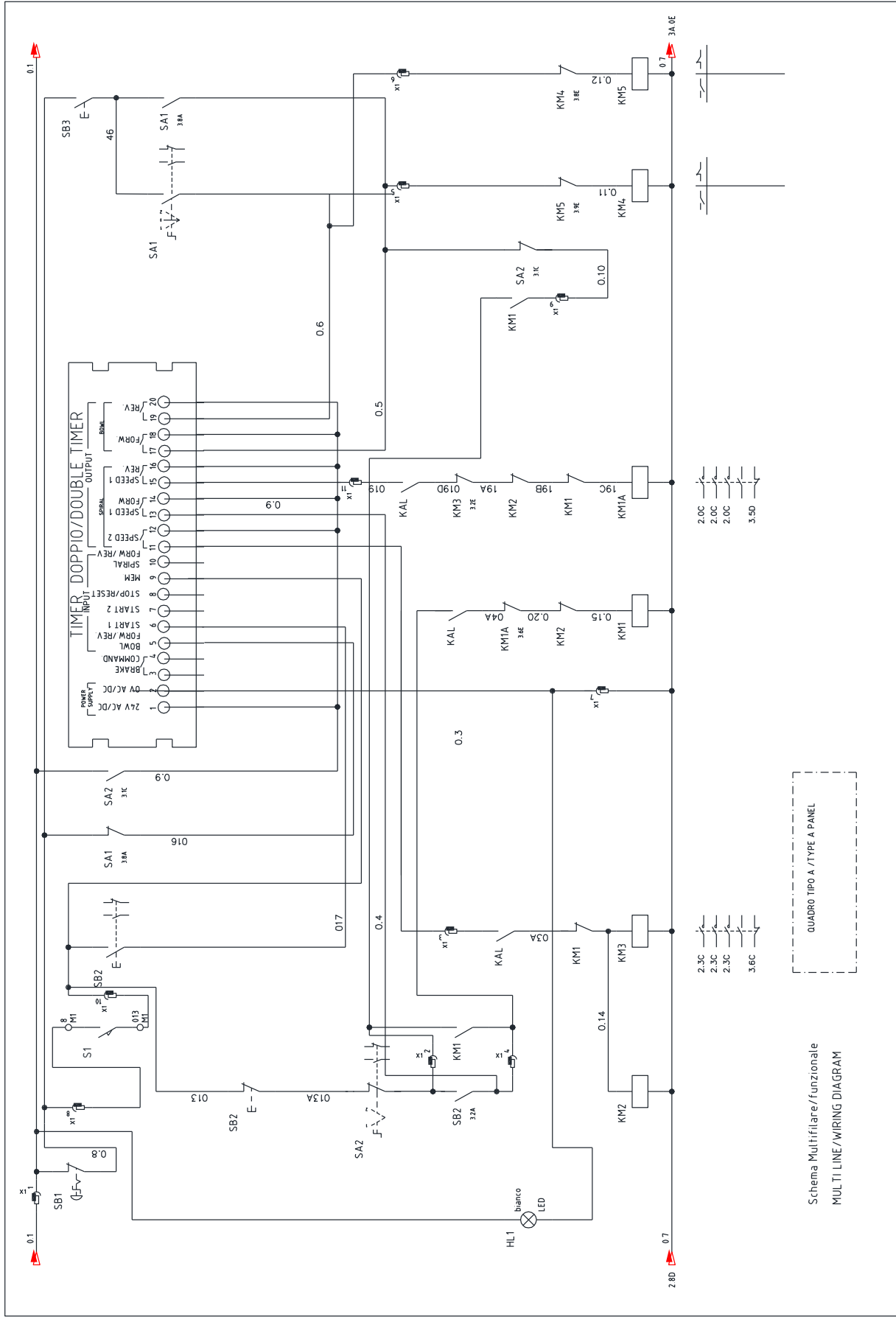
<b>POS</b>	<b>DESCRIZIONE</b>	<b>SP80R</b>	<b>SP100R</b>	<b>SP130R</b>	<b>SP160R</b>	<b>SP200R</b>	<b>SP250R</b>
<b>238</b>	VITE	02610060	02610060	02610060	02610060	02610060	02610060
<b>266</b>	CUSCINETTO	C62042RS	C62042RS	C62042RS	C62042RS	C62042RS	C62042RS



## 6.5 ELECTRICAL POWER SCHEME



## 6.6 CONTROL CIRCUITS



## 6.7 CONTACTS

