

06/2022

Mod: PSB-61M/2V

Production code: SP601

Instruction Manual

PSB-41M/2V (SP401)

PSB-61M/2V (SP601)

SPIRAL MIXER



Edition 1/07/2015
Revision 10/10/2016

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0.0 Preface

1.0 Manual purpose and use

The information contained in the manual is addressed to:

- personnel responsible of the machine repair and maintenance
- personnel responsible of the machine installation
- personnel responsible of the machine use
- personnel responsible of the machine dismantling

The user must keep the manual, avoiding to damage it and making it easily accessible and searchable.

The manual is divided into four chapters: a preface and four chapters concerning the machine's description, security, use and maintenance.

- *Preface:* Manufacturer company indication and machine's plate data definition, manual purpose.
- *Chapter 2:* Warnings, general description.
- *Chapter 3:* Security reference norms and general information about the typology of the machine in question.
- *Chapter 4:* Machine technical and functional data, transport, installation, functioning, use.
- *Chapter 5:* Ordinary and programmed maintenance instructions, technical schemes and machine functional group sets assembly drawings.

For further information please contact the manufacturer company or an authorized commercial agent directly, giving the plate data reported on the machine as reference of the machine itself.

1.1 EC data marking

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

The contents of this manual are in compliance with the machine directives ECC 89/392, Attachment I, Paragraph 1.7.4

2.0 Warnings, description and security criteria

2.1 Warnings

The machine efficiency conditions keeping depends on the correct use and maintenance respect as described in this manual.

The manufacturer request that:

- Every argument treated in the manual must be read and clearly understood before using the machine.
- The machine must not be tampered, altered or modified even partially, in particular safeguards can't be removed.
- The machine can't be used in conditions or for uses not specified in this manual. The manufacturer will be relieved of any responsibility about breaks, malfunction or accidents caused by the non-observance of this rules.

The EC marking is secured at the center of head's rear side.

2.1 Machine general description

The machine was designed and built for professional use in the food industry.

The purpose of the mixer is to make a well blended dough for both bakery and confectionery.

The following are the technical data that define the use of the machine together with the functions available.

2.1.1 Work environment

Operating parameters for a good machine performance:

- *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.

The confinement environment of the machine must provide a space suitable for carrying out the cleaning and maintenance of the machine itself.

The noise level of the machine never exceeds 70dB, whatever the operating condition.

2.1.2 Disposal

In the eventuality that the machine has to be scrapped, its components must be selected on their composition and treated as industrial waste, according to the rules in force.

No component of the machine is classified as a toxic or harmful product.

3.0 Unacceptable conditions of use

It is forbidden to use the machine in the following conditions:

- Bigger loads than allowed.
- Security system tampering.
- Using equipment not supplied with the machine, not suitable for food contact or which can damage the bowl surface.
- Using the machine in a not suitable environment.

3.1 Cleaning

Since the machine is used for food processing, cleaning must be complete and executed on a daily basis.

For the removal of any incrustations it must be used only water together with non-abrasive sponges and plastic spatulas.

The machine surrounding area must be clean and the machine must be moved regularly to clean the surface occupied by the machine itself.

When the machine is moved the wheels brake must be unlocked (Brazil model) or the leveling feet must be lifted completely (Europe model) and the power outlet must be disconnected.

3.2 Reference norms

The machine described in this manual complies with the 89/392 / ECC directive, its amendments and the following regulations:

- UNI EN 292-1, UNI EN292-2. Basic notions for machine safety and general design principles.
- UNI EN 294 Safety distances.
- UNI EN 349 Minimal distance to avoid crushing body parts.
- EN 60204-1 Electrotechnical aspects.
- EN 453 Food processing machines - Dough mixers

3.3 Operators

The machine has been designed and built for professional use. Hence:

- The operator must know the deployed functions available on the control panel, the installed safety systems and must verify regularly their efficiency. He must know all possible work cycles and the quantities of product to be used. He must also clean the machine everyday.
- The maintenance technician (see chapter 5), must verify the control panel commands functionality, the safety systems and he must check the driving belts condition.
- The programmed maintenance and repair technician (see chapter 5) must be authorised by the manufacturer before performing any operations on the machine while the machine is under warranty. Refer to the maintenance chapter (chapter 5).

4.0 Use of the machine

The use of the machine is summarized in Table 4.1 which defines the maximum product quantities that can be processed according to the machine model.

The following paragraphs describe the stages of transposition, installation, commissioning.

4.1 Technical data

The maximum amount of dough for each machine model was estimated considering 60% of water compared to the amount of flour.

Table 4.1

Model	Dough specifications			Bowl specifications			Machine footprint & Bowl edge from ground					Motor power	Speed	
	Maximum capacity	Flour	Water	Volume	Diameter	Height	Length	Weidth	Height	Height bowl edge	Weight	1 st / 2 nd Speed	Spiral 1 st / 2 nd Speed	Bowl 1 st / 2 nd Speed
	kg	kg	L	L	cm	cm	cm	cm	cm	cm	kg	kw	rpm	rpm
SP401	40	25	15	68	53	32	101	56	125	70	250	1.5/3	112 224	12 24
SP601	60	37.5	22.5	92	58	36	107	62	125	74	270	1.5/3	112 224	12 24
SP801	80	50	30	132	70	37	118	74	128	75	310	3/5.2	112 224	12 24
SP801 Gold	80	50	30	132	70	37	123	73	145	81	512	3/5.2	107 214	12 24

4.2 Transport and handling

The machine lifting for handling and transporting must be done with the help of suitable means and equipment, avoiding oscillations during the various phases.

The machine weight is decentralised so the forklifts are positioned as shown in Figures 1 and 2. To handle the packaging refer to the precautions indicated on the sheet placed outside of the packaging and in Figure 1, Pos. 5 (Pos. = Position).

Fig. 1 Packaging Lifting

The machine is transported on a wooden pallet Pos. 1, blocked with a crossbar on C Pos. 2 through two threaded rods, Pos. 3.

Lifting by means of a forklift truck involves inserting the forks in the Pos. 4.

Check the suitability of the equipment before lifting.

The packaging material used Pos.1 and 2 is an industrial waste while the remainder can be recycled or disposed as urban waste.

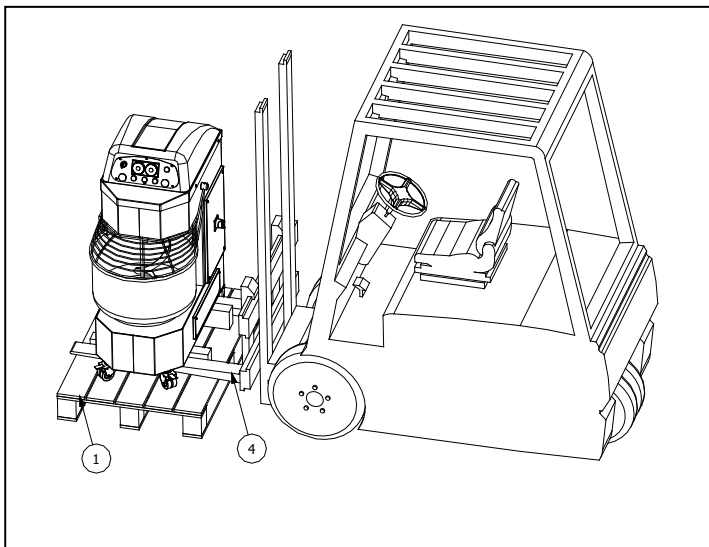


Fig. 2 Machine transport.

Remove the Pos.2 locking device, insert the Pos.4 forks as shown in the figure 2 and carefully lift the machine while maintaining an horizontal position, without jerk or oscillations.

4.3 Installation and commissioning

Preparatory stages for the machine installation and commissioning:

- Identify an area suitable for food-processing that is completely accessible for cleaning in which collocate the machine.
- It is not necessary to provide floor anchors but the floor must be well leveled because SP401,601 and SP801 models do not have leveling feet, whereas the SP801 Gold model comes with frontal legs.
- Check that the power line is properly connected by means of a suitable outlet.
- Check that any command and removable safety protections work properly.

4.3.1 Installation

Once the machine has been transported to the chosen location, the installation is carried out following the stages outlined below (see figs.3/4):

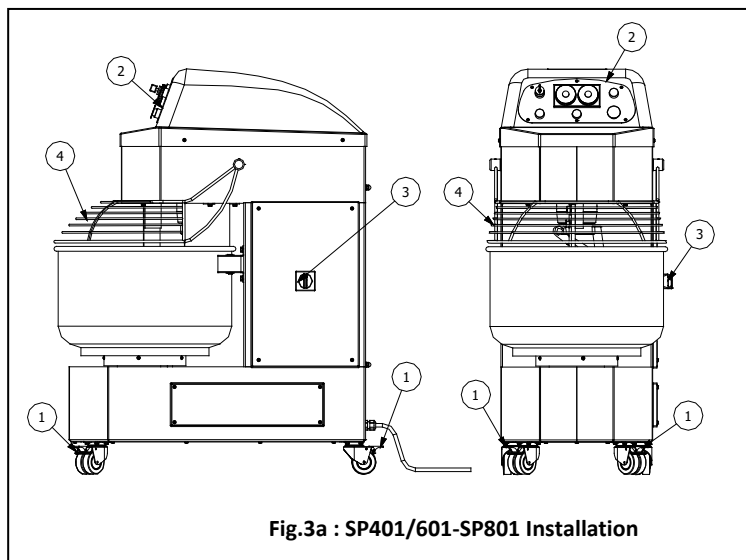


Fig.3a : SP401/601-SP801 Installation

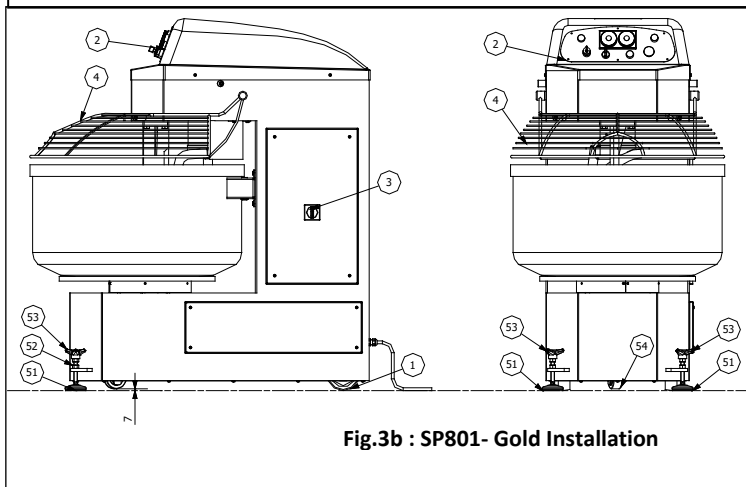


Fig.3b : SP801- Gold Installation

a) For SP401, SP601 and SP801 models, lock the wheels by pressing on the lever with the foot Pos.1 Fig.3a, until the lever remains locked. For the SP801 Gold model the positioning of the machine is done by adjusting the front legs Pos.51 fig.3b through the hand wheel Pos.53 and subsequently blocking by tightening the nut, Pos.52.

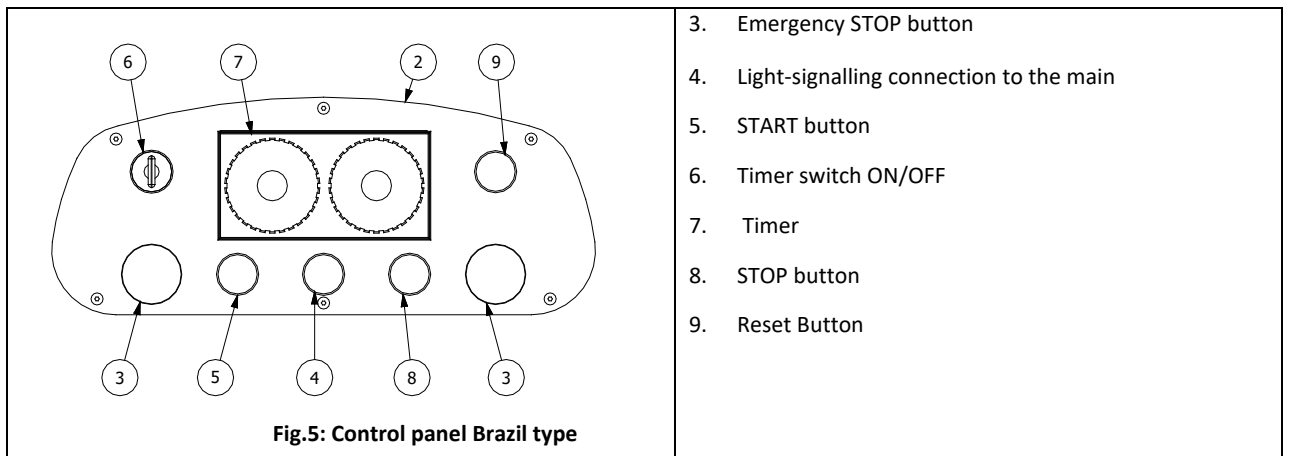
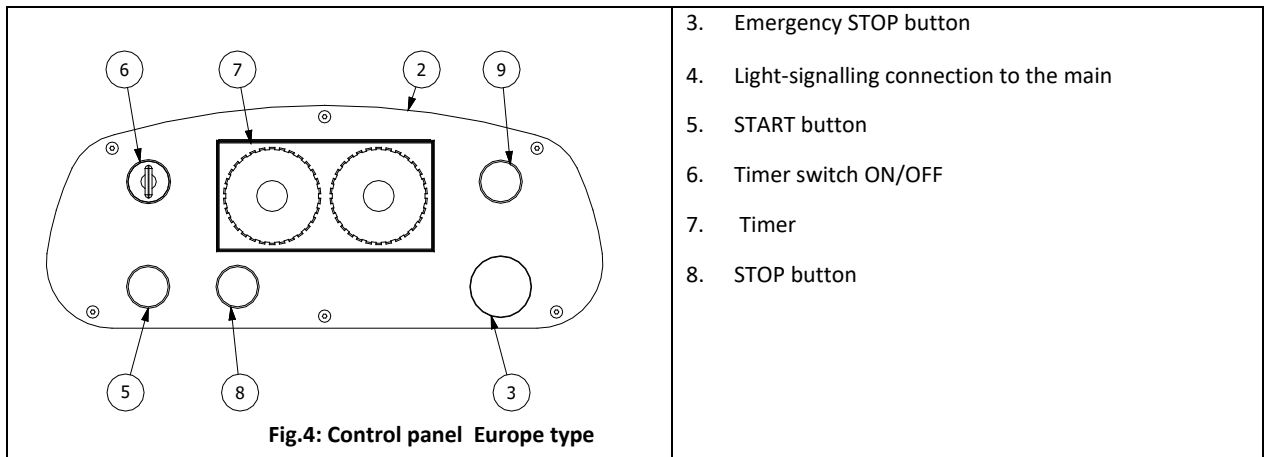
b) Connect the machine to the power outlet, turn the knob on Pos.3 and check that the ON lights up, Pos. 4, Fig.4/5.

c) Check that the bowl protection is turned down, Pos. 4, Figg.3a/3b.

d) Push on Start button, Pos. 5 Fig. 4/5

If the tank turns clockwise, ie opposite to the one indicated by the arrow on the side of the tank, the phases on the engine are incorrect, then swap two of the three phases in the socket.

The control panel Pos.2, figs.3/4/5 is composed of:



4.3.2 Correct functioning control

The machine works correctly if:

- a) The bowl rotation direction is counterclockwise, so in the same direction of the arrow on the bowl side,
- b) le funzioni presenti sul quadro comandi sono disponibili, ovvero, sono in grado di assicurare le modalità operative secondo quanto specificato nei paragrafi successivi,
- c) il sollevamento della protezione vasca arresta il motore.

4.4 Normal and safety stop

Stop mode depends on manual or automatic function modes and on the model type "Europe" or "Brazil".

4.4.1 Manual mode stop

The machine works on manual mode when:

- a) select 1st or 2nd speed by turning the left or right knob of Timer Pos.7 counterclockwise until the indicator light marked "M" lights up and the other speed is excluded by rotating the remaining Timer knob counterclockwise until the spy is marked with the letter "E"
- b) the Pos.7 figs.4/5 Timer is excluded by turning Pos.6 selector to "OFF", in this case only 1st speed is available.

In these cases the Brazilian model machine stops by pressing the Pos.8 button and the European model stops by partially pressing the Pos.3 Stop/Emergency button, without resetting.

4.4.2 Automatic mode stop

The machine operates in automatic mode when the item 6 figs.4/5 selector is rotated to "ON" and the 1st and 2nd speeds have been set with the respective left and right knobs of Pos.7 Timer.

The automatic mode stop depends on the "Europe" or "Brazil" model type.

4.4.2.1 Safety stop Europe model.

The machine stops by partially pressing the Stop/Emergency button, Pos.3 fig.4.

4.4.2.2 Safety stop Brazil model.

The machine stops by pressing Stop, Pos.6 fig.5. If the machine is stopped by pressing the Stop/Emergency button 3, the timer will be reset as well as stopping the machine.

4.4.3 Safety stop

Safety Stop is the machine stop made by the Stop/Emergency button, Pos.3 figg.4/5, fully or partially pressed for the Brazil model and fully pressed, therefore needing the reset, for Europe model or the stop caused by lifting the Pos.4 fig.3 grid in the Brazil model.

In case of Safety Stop the machine behaviour depends on "Europe" or "Brazil" model type.

4.4.3.1 Europe Model normal and safety stop behaviour

In the case of normal stop the machine behaves in the same way both during stopping and resuming ie if it is blocked by lifting the bowl shelter, Pos.4 fig.3, and if the Red Stop/Emergency button is partially switched on, Pos.3 figg.4/5.

In these two cases the stop causes engine brake to stop the tool and the bowl turning in less than 3s, while resuming process takes place by pressing Start without the need to reset machining times.

In the case of safety stop, in which the Stop/Emergency button is fully depressed and it is necessary to reset, the power is disconnected from the engine, so the engine brake does not intervene, the bowl and the tool will continue to rotate by inertia for some time depending on the presence of dough in the bowl and its viscosity.

In this case, resuming the machining process is done by resetting the Pos.3 fig.4 Stop/Emergency button and pressing Start, Pos. 5 fig.4, after resetting the machining times as the timer is reset.

4.4.3.2 Security stop Brazil model

The machine behaves in the same way during stopping and resuming both if it is blocked by lifting the bowl protection, Pos.4 fig.3, and if the Red Stop/Emergency button is partially switched on Pos.3 figg.4/5.

In these two cases the stop causes the engine brake to stop the tool and the bowl turning in less than 3s, while resuming the machining takes place by pressing first Reset button, Pos.9 fig.5, resetting the machining times on Timer, Pos.7 fig.5, and then Start, Pos.5 fig.5.

In the case of safety stop, in which the Stop/Emergency button is fully depressed and it is necessary to reset, the power is disconnected from the engine, so the engine brake does not intervene, the bowl and the tool will continue to rotate by inertia for some time depending on the presence of dough in the bowl and its viscosity.

Resuming the machining process is done by resetting the Stop/Emergency button, Pos.3 fig.4, pressing Reset, Pos.9 fig.5, resetting the timer processing time, Pos.7 fig.5, and pressing Start.

It should be noted that if, before opening the Pos.4 fig.3 bowl protection, Stop is pressed, Item 8 fig.5, resuming the machining does not require pressing the Reset button 9, fig.5 or resetting the working time, it is enough to lower the bowl protection and press Start.

Processing will resume by completing the remaining time, as this interrupt mode is not considered as an emergency stop but a "normal stop".

4.5 Processing cycles description, manual and automatic

As anticipated in the previous paragraphs the manual mode involves the timer exclusion, manually monitoring the processing time, manually passing from 1st to 2nd speed or directly excluding the timer by means of the Pos.6 figs.4/5 selector, manually monitoring the processing time, which takes place, in this case, only with the 1st speed. Instead in the automatic mode the duration of the phases in 1st and 2nd speeds is programmed a priori and the completion of the cycle is managed automatically by the machine.

A working cycle independently of the operating mode requires the following stages:

- a) Machine loading
- b) Work cycle execution
- c) Dough discharge

4.5.1 Machine loading

Once the machine has been installed and has been properly tested with all the machine and installation area cleaning requirements, as specified in the preceding paragraphs, the personnel can proceed as indicated below (see fig.6):

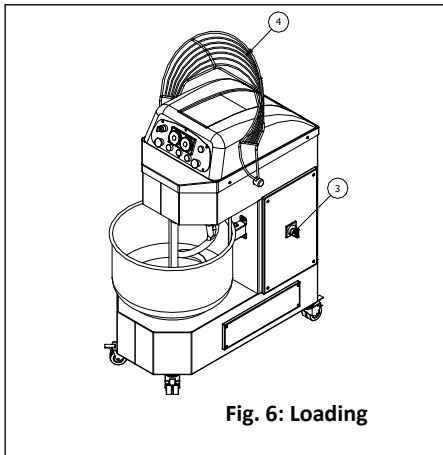


Fig. 6: Loading

Turn off the machine using the switch, Pos.3 figg.3/6 .

To lift the mobile protection, Pos.4 fig.3/6.

To put the ingredients into the bowl. Only ingredients for bread and pastry production and are allowed.

Verify that the quantity does not exceed the limits set in Table 4.1 for the machine model in question.

It is recommended to pour the required quantity of water first, then the flour in the right proportion to the water, as suggested in paragraphs 4 and 4.1. and then other ingredients such as salt, yeast,

etc.

It is advised not to charge the flour before the water, to avoid the formation of very dense lumps causing absorption peaks and a possible wear of the spiral-bowl transmission belts.

4.5.2 Work cycle execution

To low the mobile protection, bring the switch in line Pos.3 fig.3 to the ON position and select manual or automatic mode as indicated in the previous paragraphs.

4.5.2.1 Manual mode cycle

The manual mode allows 1st and 2nd speed using manually the Timer knob or excluding it by the selector Pos.6 figg.4/5 and mixing the dough only in 1st speed as described in the 4.5 paragraph. In both cases, the machine needs to be stopped manually once the process is finished. The exclusion of the Timer by means of the selector Pos. 6, using only 1st speed, is possible in the eventuality of a Timer breakdown Pos. 7 figg.4/5.

If an additional quantity of water is needed during the process, it is possible to pour it trough the grid.

If you need to verify the mixing degree of the dough during processing, you will need to open the shelter bowl. This will cause the machine stop.

Note that the machine is equipped with a motor brake, activated either when the stop button is pressed or if it is lifted.

Although in the Europe model the direct opening of the bowl shelter does not cause the timer reset, however, it is advisable to stop the machine by pressing the Stop/Emergency button partially and then open the bowl. This is the correct model because it ensures, the efficiency of the engine brake and the complete shutdown of the machine at the opening of the bowl shelter, in the time span between the two operations.

To resume the process it is necessary just to press Start, if the bowl shelter is raised or the Stop/Emergency button is pressed without first pressing Stop in the Brazil model, the machine undergoes a safety shutdown causing a reset of the timer, for details see §4.4.3.2

The processing time is determined by manually stopping the machine by means of the Stop or Stop/Emergency button.

In this case, stop mode is not important because before the final step of removing the dough from the bowl it is still necessary to bring the switch in line Pos.3 fig.3 to OFF and wait for the complete shutdown of the tool and the bowl.

4.5.2.2 Automatic mode cycle

The automatic mode allows to set the processing time in 1st and 2nd speed. Once starting the machine works in 1st speed for the set duration, then automatically goes to the 2nd speed at the end of this process the machine stops.

If during the process you first press Stop and then lift the bowl shelter to check the mixing degree of the dough, just press Start to resume processing.

If you lift the mobile shelter directly or press the Stop/Emergency button, to resume processing, just press Start in the Europe model, while in the Brazilian model just press the Reset button first, also reset the processing times and then press Start.

For details on stopping modes, see the specific paragraph §4.4.2 and sub-paragraphs.

4.5.3 Machine discharge

At the end of the dough cycle the machine stops on automatic mode or is stopped by the on manual mode, wait until the bowl and tool are firm, bring the switch in line Pos.3 fig.3 on OFF and discharge the bowl.

5.0 Maintenance

The machine maintenance can be ordinary and specific.

All maintenance and cleaning operations that do not relate to the command functionality check and of the lights on the control panel require the machine to be switched off by means of the line switch button 3 fig.3a / 3b and disconnecting the power cord from the power outlet.

5.1 Ordinary maintenance

The ordinary maintenance involve daily cleaning, the monthly control of belts tension, the control of the correct command functioning, of the command panel lights and of the machine security system at every power-up.

5.1.1 Cleaning

The machine cleaning must be done daily, the allowed cleaning products are only those provided by the health rules of the country in which the machine is used, tools and/or products that can damage or scratch the machine are absolutely forbidden.

The bowl, spiral, column and fixed and movable protections cleaning must be done with a cloth wetted in water, any deposits should be removed with a plastic spatula that does not cause scratches on the surfaces.

The removal of the incrustations must be complete.

5.1.2 Command functioning and safety systems control

The commands functionalities illustrated in the Fig.3/4/5 are described in the following section.

- Line switch, Pos. 3, its function is to isolate the machine from the power supply, when it is on OFF no functions are available and in particular the network presence light, Pos.4, is off. When the switch is ON, the network presence indicator 4 is on. If the light is off but other functions are available such as Timer, Start, it means the network presence light is burned.
- Stop/Emergency button, Pos.3 figg.4/5, turns off all the machine functions, by interrupting the power supply to every electric component of the machine. It resets the timer in the automatic mode. Due to inertia, moving mechanical parts will not stop instantly. The button must be rotated clockwise until it is unlocked to restart the machine. This functionality is verified if the Stop/Emergency button behaves as described.
- Stop button, Pos. 8 fig.5, turns off the moving mechanical parts, in particular the bowl and the spiral. This function first applies a current pulse to block the engine rotation and then disconnects the power supply. This function occurs if the machine behaves as described. Otherwise, the button or contactor that enables the engine block if the "engine brake" is not present is broken.
- Start 1st/2nd speed, Pos.5 figg.4/5. This function allows the spiral and bowl rotation in 1st and 2nd speed depending on the manual or automatic mode as described above. This function occurs if the machine behaves as described.
- ON/OFF Timer, Pos.6 figg.4/5, enables or disables the timer that corresponds to the automatic/manual operation of the machine. A LED lights up on the Timer if the machine is on. If this function occurs, the machine behaves as described in the sections relating to manual/automatic operation.
- Timer Pos.7 figg.4/5. It is a digital timer that allows both automatic cycle and manual machining execution.

In automatic mode it allows to set the machining time at 1st and 2nd speeds and automatically performs the transition from one speed to another, stopping the machine when the elapsed time is equal to the sum of the times set for the two speeds. Pressing Start in this mode the LED marked with the letter C (Counter) of the 1st speed counter flashes. When the set time is reached, the 2nd speed counter LED flashes. When the 2nd speed machining time is completed the timer will disconnect the motor.

In manual mode the speed knob must rotate counterclockwise until the LED marked with the letter M (Manual) lights up, while the other one must rotate in the same direction until the LED marked with the letter E (Exclusion) lights up. The 1st speed knob is on the left Pos.7 figg.4/5 the 2nd speed knob is on the right. So press Start button. When machining is completed, the operator must manually stop the machine.

The Timer works correctly if the machine behaves as described above.

The machine safety systems consist mainly of the Pos.4 mobile protection, the engine brake and the safety module on the Brazil model.

The mobile protection prevent the access to the bowl while the machine is processing. If it is lifted up while the machine is processing it stops, in particular the motor is locked by an impulse contrary to the direction of rotation which stops it in less than 3s. The safety module on the Brazil model acts on the electrical part of the machine by interpreting the opening of the grid, not preceded by the stop button press, as an emergency stop, such as pressing the Stop/Emergency button. This will require reset button operation and rescheduling processing time before resuming the job by pressing the Start button.

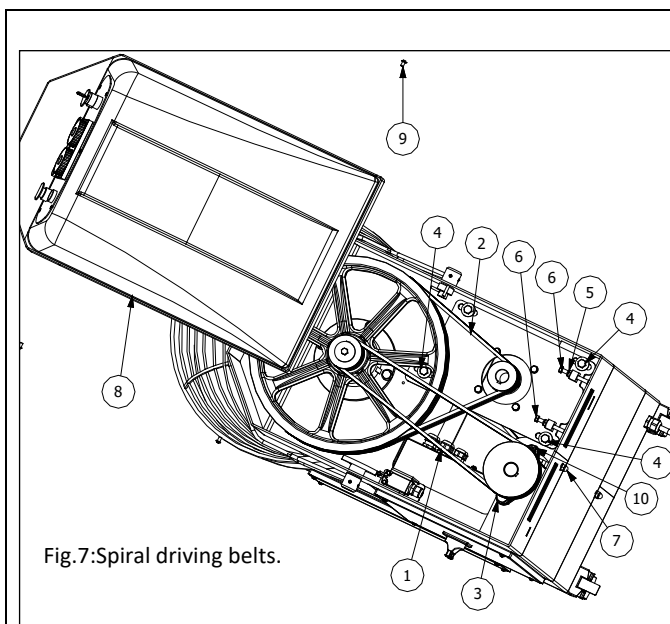
5.1.3 Belt tension control

The belt condition and tension must be checked monthly.

5.1.3.1 Spiral driving belts

5.1.3.1.1 Spiral transmission maintenance SP401,SP601,SP801 models

In order to inspect the spiral driving belts, it is necessary to access the headboard, see Fig.7/8, unscrewing the screws 9 and removing the carter head Pos.8.



If the spiral driving belts Pos.2, are loose proceed as follow:

- Loosen the screws, Pos. 4.
- Restore the correct tension Pos. 2 by acting on the self-locking nuts, Pos. 5
- Tighten the screws, Pos.4.
- Verify that the lock nuts, Pos.11 fig.8, of the Pos.6 screws are tightened.
- Replace the head carter, Pos.8.

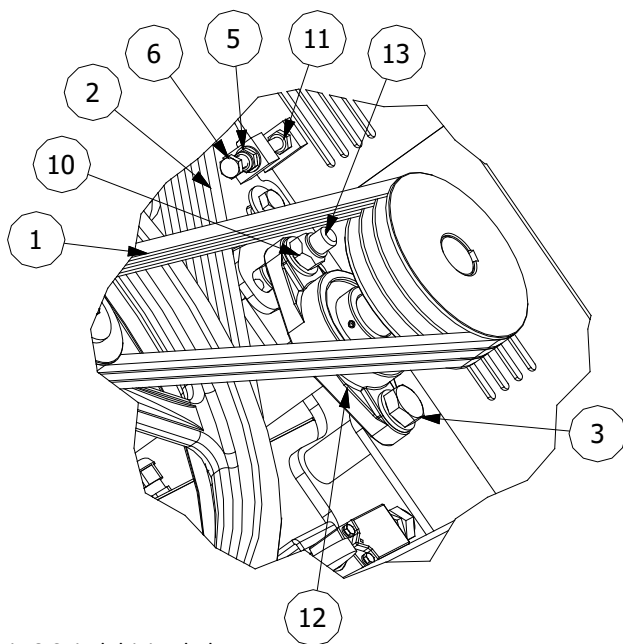


Fig.8:Spiral driving belts.

If the spiral driving belts are worn, they must be replaced by removing the bowl double drive belts as indicated below, see figg.7/8:

- a) Removing bowl double drive belts Pos.1 :
 - Loosen the screw Pos. 3 and Self Locking Nut Pos.10.
 - Loosen the Pos.1 straps by unscrewing the Pos. 7 nut.
 - Remove The belts Pos.1.
- b) Remove the Pos.2 straps by loosening the screws Pos.4 and the nuts Pos.5.
- c) Replace the Pos.2 straps and tension according to the steps given at the beginning of the paragraph.
- d) Bowl double drive tensioning Pos.1.

When reassembling the bowl drive belts Pos.1 particular attention must be paid in providing the right level of tension and in the meantime checking that the support Pos.12 is aligned with the corresponding one on the opposite end of the bowl drive shaft.

After securing the Pos.12 support, by tightening the screw Pos.3 and the nut Pos.10, it is recommended to tighten the Pos.7 nut to ensure proper preload and prevent it from being removed during operation.

5.1.3.1.2 Spiral transmission maintenance SP801 Gold model

In order to inspect the spiral drive belts, it is necessary to access the header compartment, see fig.9 / 10, unscrewing the screws 9 and removing the carter head Pos.8.

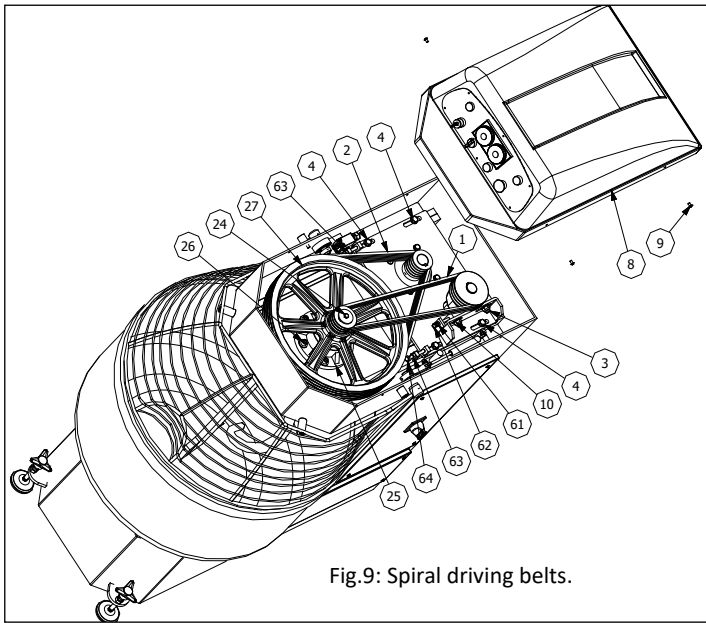


Fig.9: Spiral driving belts.

If the spiral driving belts Pos.2, are loosen proceed as follows:

a) Loose the belts, Pos.1:

- Loose the nuts, Pos.10.
- Loose the belts, Pos.1 acting on nut and screw, Pos.61 / 62.

b) Restore correct belts tension. Pos. 2, unscrew nuts Pos. 63 and tighten the screws Pos. 64.

- Tighten nuts Pos.63.

c) Restore correct belts tension Pos. 1 acting on the screw Pos.62.

- Tighten nuts Pos.61.
- Replace the head carter Pos.8.

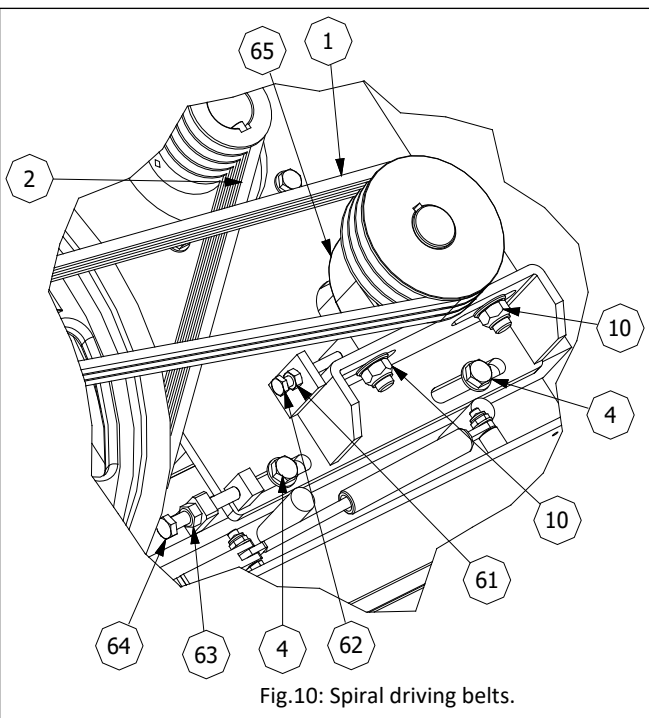


Fig.10: Spiral driving belts.

Attention:

After restoring the right tension level to Pos.1 it is necessary to the bowl driving belts verify that the Pos. 65 support is aligned with the corresponding one on the opposite end of the bowl drive shaft.

Otherwise check the the basement compartment of the bowl driving belts tension level, see §5.1.3.2.2.

However, the Pos.65 supports tolerate a misalignment of about $\pm 2^\circ$.

5.1.3.2 Bowl driving belts

5.1.3.2.1 Bowl transmission maintenance SP401,SP601,SP801 models.

For the bowl driving belts maintenance see figure 7,8,11,12.

To verify the bowl transmission is necessary to remove the Pos.8 head carter, and the Pos.13 carter.

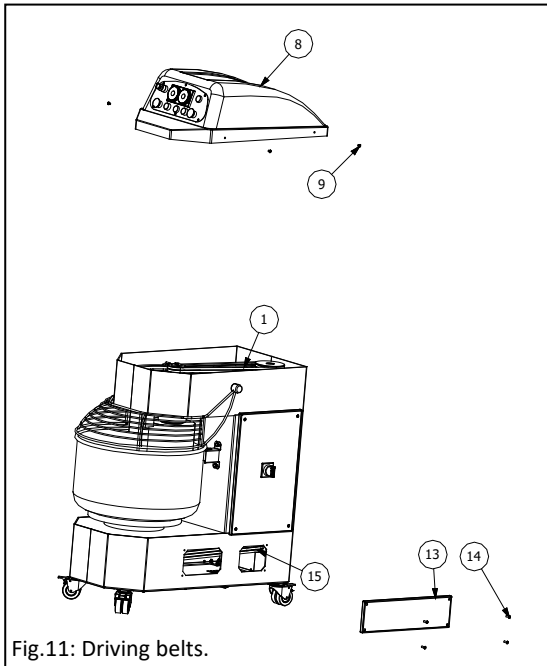


Fig.11: Driving belts.

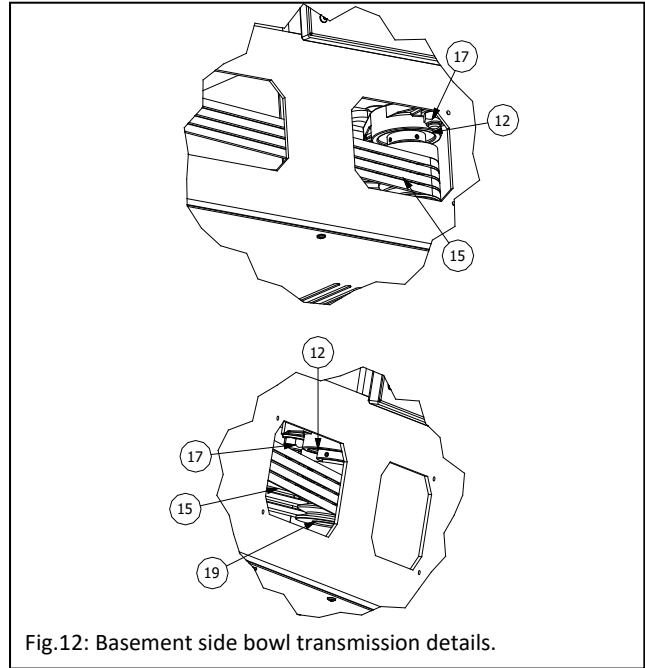


Fig.12: Basement side bowl transmission details.

If the Pos.1 driving belts are loosen proceed as follows:

- loosen the 3 fig.8 screw and the self-locking nut, Pos.10.
- restore the belt tension by screwing the nut, Pos.7.

The operation just made turns the shaft, so you also need to adjust the belts in the Pos.15 basement, as indicated for belts Pos.1, in this case it is necessary to loosen the nuts Pos. 17 fig. 10 and tighten the nut Pos.7 on the machine basement.

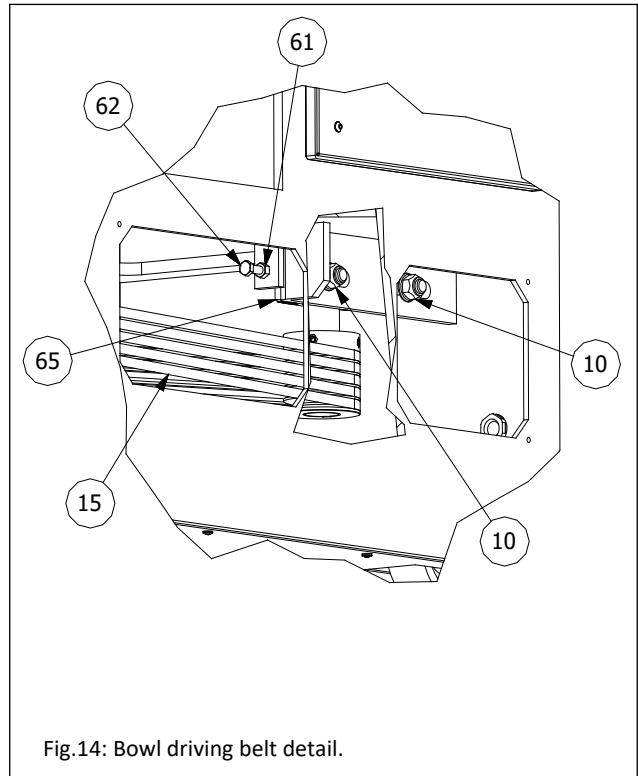
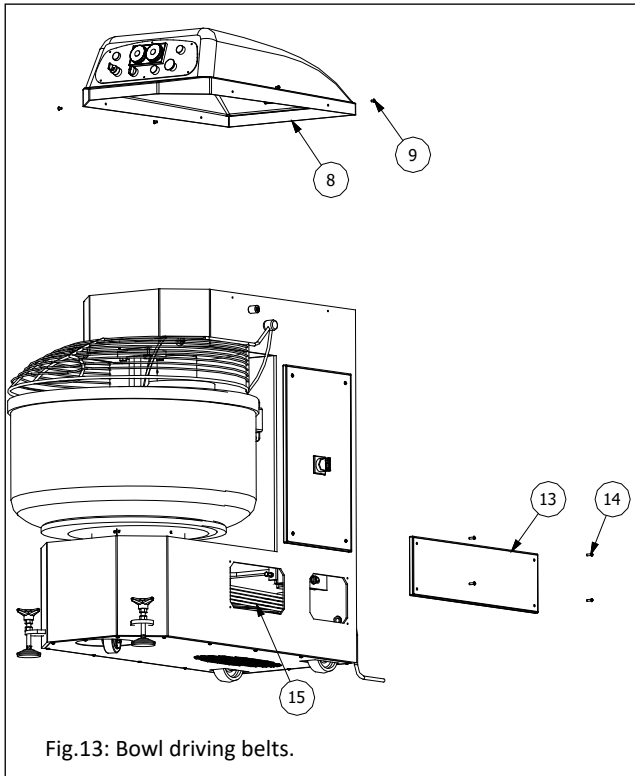
After resetting the belt tension, make sure that the Pos.19 shaft is parallel to the frame.

If the wear condition requires partial replacement of the belts, it may happen that the shaft is rotated excessively, in this case it is sufficient to use belts of the same mark. The possibility described above is still unusual since the supports compensate for misalignments of $\pm 2^\circ$.

5.1.3.2.2 Bowl transmission maintenance SP801-Gold model

For the bowl driving belts maintenance see figures 7,8,13,14.

The inspection and control of bowl transmission require both the head carter removal Pos.8, the Pos.13 carter.



If the driving belts Pos.1 are loosen proceed as follows:

- loosen the nuts Pos. 10, fig.8,
- unlock the nut Pos. 61 fig.8,
- restores the belt tension by tighten the Pos.62 screw.

The operation just made will rotate the transmission shaft, so check and if necessary adjust the belts to the Pos.15 basement. The necessary steps to record the Pos.15 belts are the same as described for belts at Pos.1.

After resetting the belt tension, make sure that the Pos.19 shaft is parallel to the frame.

If the wear condition requires partial replacement of the belts, it may happen that the shaft is rotated excessively, in this case it is sufficient to use belts of the same mark. The possibility described above is still unusual since the supports compensate for misalignments of $\pm 2^\circ$.

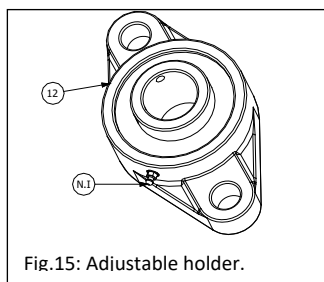
5.1.4 Adjustable holders greasing

5.1.4.1 Adjustable holders for SP401, SP601, SP801 models

The bowl drive shaft auto-aligned supports of figg.8/12/15 require greasing every 4 months, with normal lithium grease.

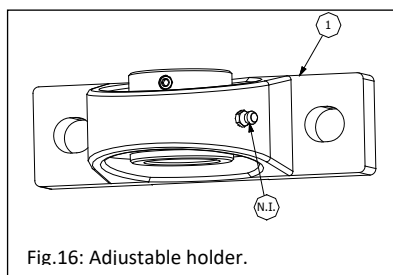
The grease nipple is indicated with "N.I." in the Fig. 15. The holders are two, one of them is in the head compartment Pos.12 fig.8 and the other one is in the basement compartment fig.12. They can be reached,

respectively, by disassembling the head carter, Pos.8 fig.7 and the basement belts inspection carter, Pos.13. fig.9.



5.1.4.1 Adjustable holders for SP801 Gold model

The bowl drive shaft auto-aligned supports of figg.8/10/16 require greasing every 4 months, with normal lithium grease.



The grease nipple is indicated with "N.I." in the Fig 16. The holders are two, one of them is in the head compartment Pos.65 fig.10 and the other one is in the basement compartment fig.14. They can be reached, respectively, by disassembling the head carter ,Pos.8 fig.13 and the basement belts inspection carter, Pos.13. fig.13.

5.2 Overtime maintenance

The specific maintenance operations are not recurring events, so they are not planned. Those operations can be preventive or due to malfunctions and/or breaks.

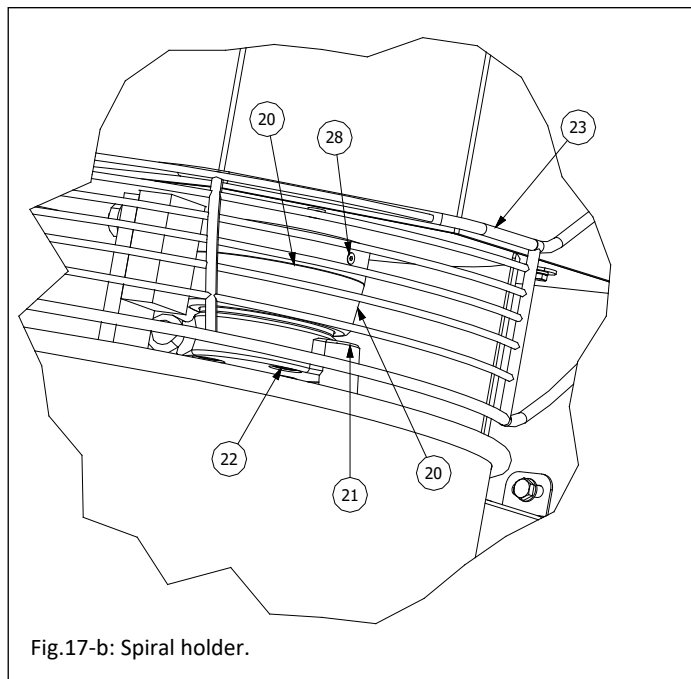
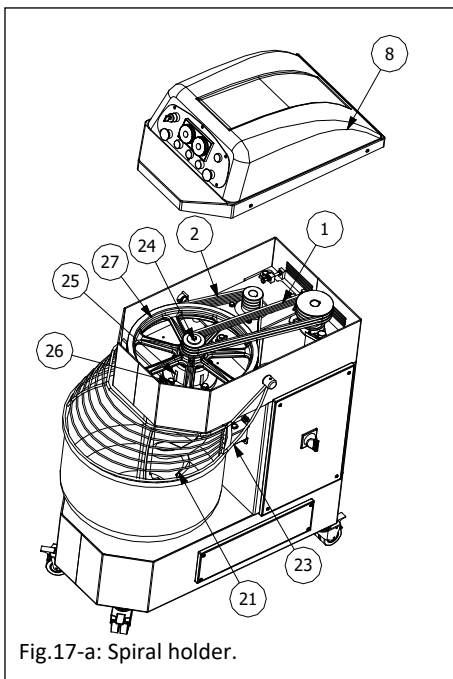
Preventive measures are recommended in the case of certain mechanical parts starting to produce abnormal noises or vibrations that can result in malfunctions or failures and compromise the functionality of other parts of the machine.

Transmission systems and bearings preventive inspections must be done anyway every 2000 processing hours.

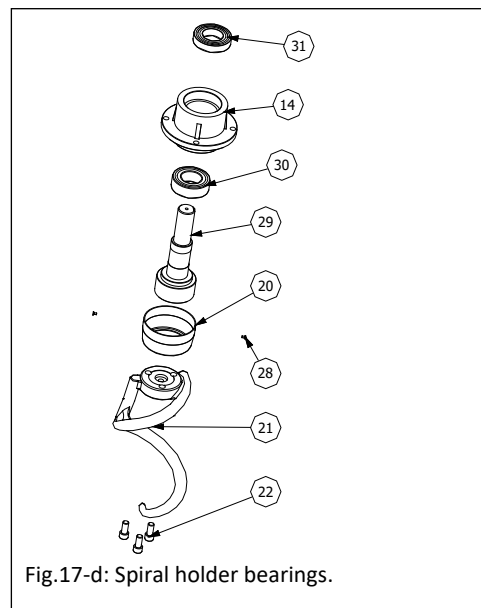
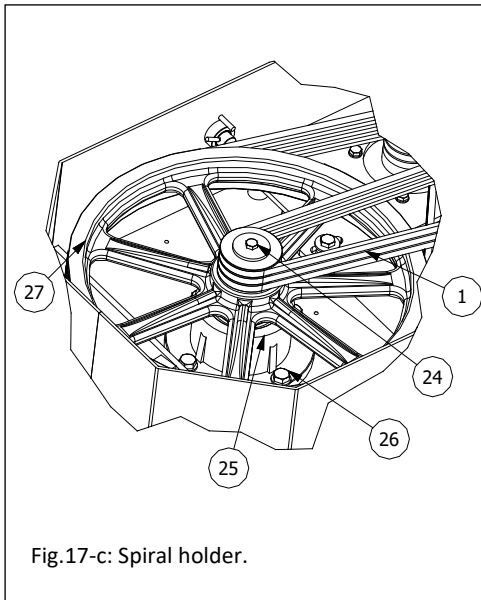
Anyway these operations must be authorised by the manufacturer or by one of its direct reseller. If the machine is no longer covered by warranty and the user has qualified personnel, he may ask the manufacturer for more technical information about the machine in terms of drawings, parts lists and mechanical parts. In this case, the user is responsible for any damage caused to people and/or machine.

5.2.1 Spiral holder bearing replacement

These bearings hardly need to be replaced, because oversized to work load.



Bearings replacement requires the removal of tool Pos.21 figg.17a:d, head compartment belts, Pos.1/2, carter Pos.20, pulley Pos.27 and spiral holder. The stages outlined below illustrate how to this operation.



- a) Tool removal Pos.21, by untighten the screws Pos.22.
- b) Carter removal Pos.20 untighten the screws Pos.28.
- c) Head carter removal Pos.8 untighten the screws Pos.9.
- d) Belts removal:
 - as illustrated in §5.1.3.1.1 for SP401,SP601,SP801 models and
 - as illustrated in §5.1.3.1.2 SP801-Gold model.
- e) Pulley removal untighten the screw Pos.24.
- f) Spiral holder removal Pos.25 untighten the screws Pos.26.
- g) Spiral holder shaft removal Pos.29.
- h) Integrity bearings control Pos.30/31.

If a bearing is damaged it must be replaced, then the whole machine must be reassembled following back the stages described in this paragraph.

5.2.2 Spiral holder bearing replacement

5.2.2.1 Bowl holder bearings SP401, SP601, SP801 models

For bowl holder bearings control and eventual replacement it is necessary to the removal of the spiral, as indicated in the previous paragraph, the column protection Pos.36 and then access the basement compartment to remove the bowl and finally remove the bowl holder. The necessary stages are shown below:

To access the basement compartment is necessary to place the machine on one side, taking care not to damage the bowl then remove the carter Pos.33 fig.18 untighten the screws Pos.32.

Fig.18 Basement compartment

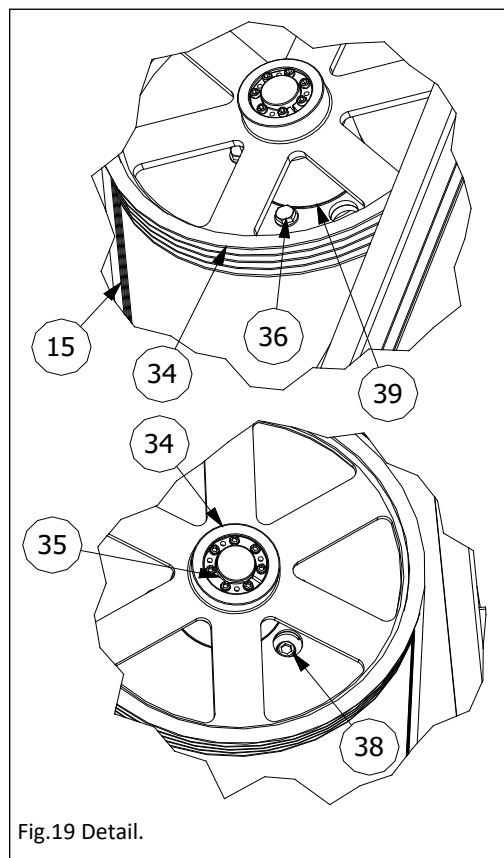
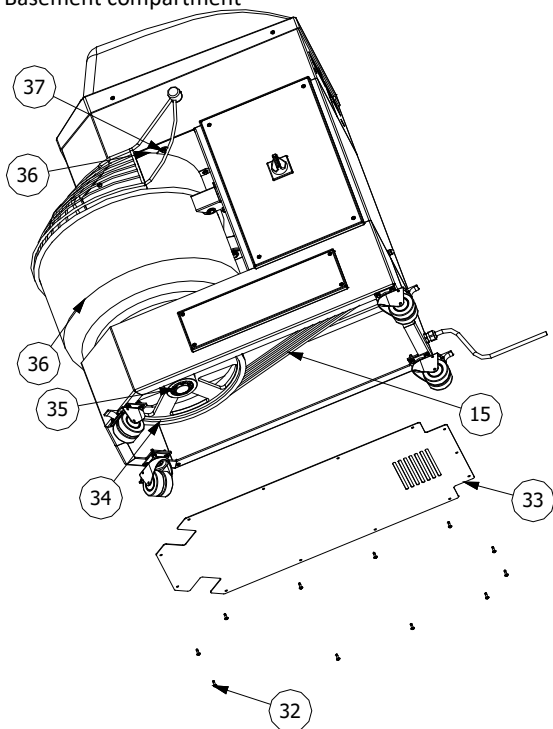


Fig.19 Detail.

Remove the belts Pos.15 fig.18, as indicated in §5.1.3.2.1 for the SP401, SP601, SP801 models and in §5.1.3.2.2 for the SP801-Gold model, remove the Pos.34 pulley, releasing the coupling Pos.35 figg.19 / 20.

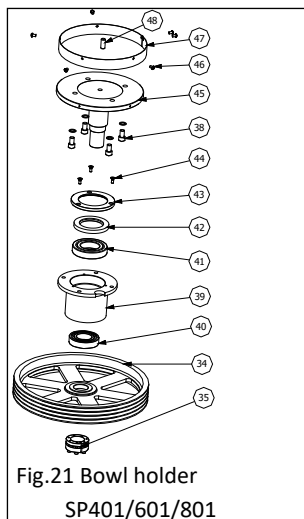


Fig.21 Bowl holder
SP401/601/801

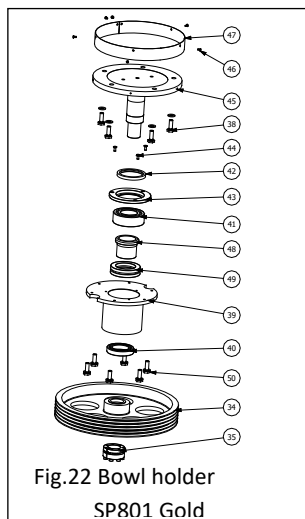


Fig.22 Bowl holder
SP801 Gold

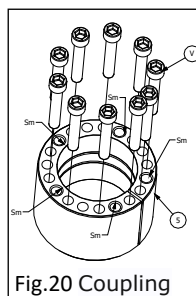


Fig.20 Coupling

To unlock the coupling untighten the "V" screws and retighten them in the "Sm" hole until the pulley is axially free.

Untighten the bowl fastener screws Pos.38, then remove the bowl; remove the screws Pos.36 and remove the bowl holder Pos.39.

Fig. 21 shows the bowl holder components of SP401/601 and SP801 models.

Fig. 22 shows the bowl holder components of SP801-Gold model.

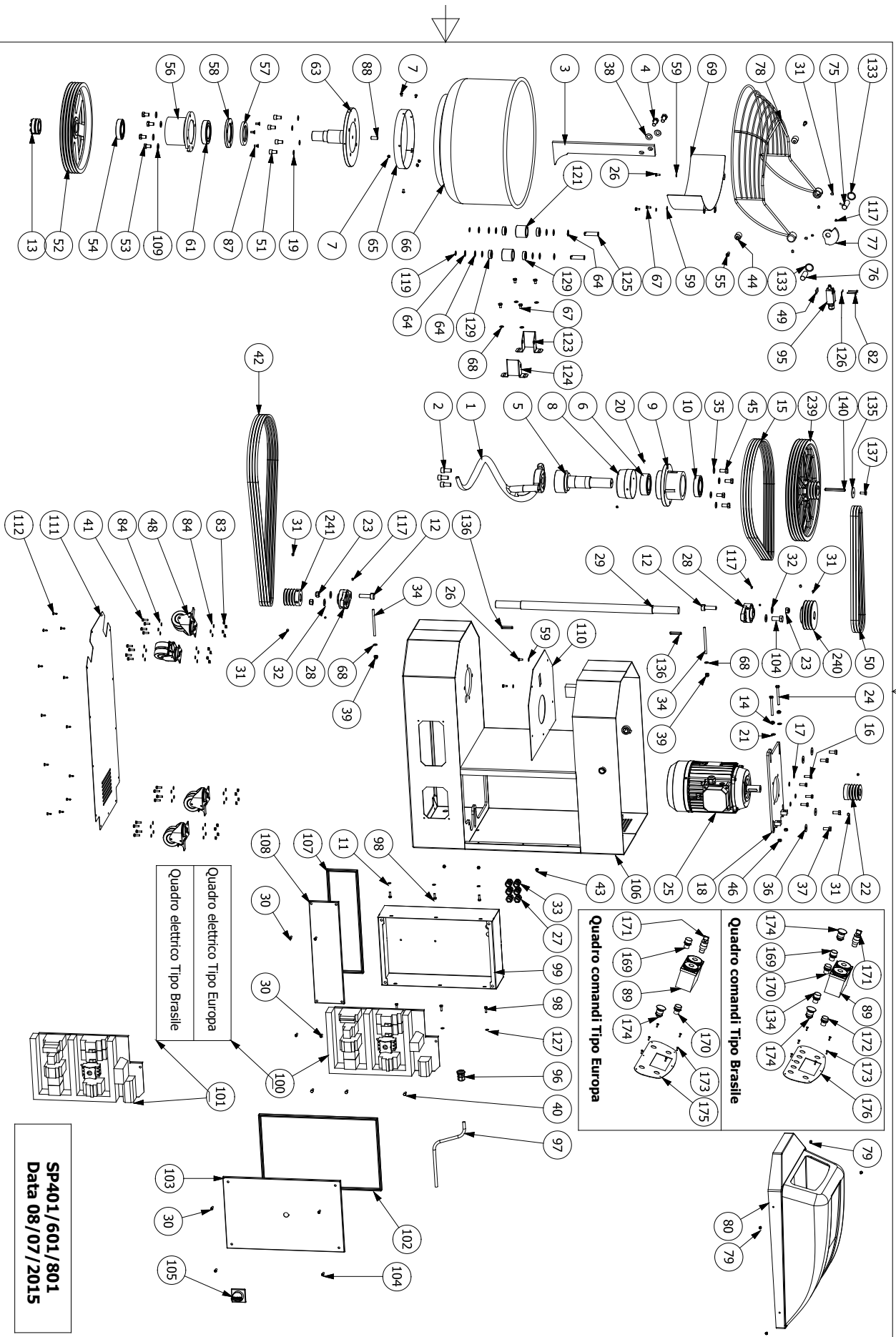
The 40 and 41 positions refer to the bearings subject to verification for possible replacement.

6.0 Attachments

The annexes below refer to the constituent groups of the structural and mechanical parts of the machine and the electrical diagrams.

6.1 Main groupsets

The component lists attached to the drawing refer to the SP401, SP601, SP801, and SP801 Gold models.



Components list of SP401, SP601, SP801 models

SP401/601/801 Common elements			
ITEM	QTY	STOCK NUMBER	DESCRIPTION
2	3	07114030	Vite inox M14X30 Testa Cil.
4	2	07014030	Vite inox M14X30 Testa Esag.
5	1	SPX40005	Albero spirale SP401-601-801
6	1	C32102RS	Cuscinetto 3210-2RS
7	6	10506010	Vite M6x10
8	1	SP060008	Scodellino supporto spirale
9	1	SP060009	Supporto spirale
10	1	C62102RS	Cuscinetto 6210-2RS
12	2	SPX40012	Tirante tensionamento cinghie trasm. vasca
13	1	SPX60013	RCK60 - 40X65
14	2	050M0800	Dado autobloccante M8
15	4	XPZ01562	Cinghia SPZX 1562
16	4	02608025	Vite M8X25
17	4	05808000	Rondelle Per M8
19	4	11013019	Rosetta 13X19
20	2	07204008	Viti inox M4X8
21	2	05808000	Rondella 8X17 ZN
22	1	SPX40022	Puleggia Motore SPZ66 -4 gole
23	3	050M1400	Dado autobloccante M14
24	2	02608080	Vite M8X80
26	5	07006014	Vite inox M6X14
27	2	PG110000	Pressacavo PG 11
28	2	UCFL0206	Supporto UCFL206
30	8	10506020	Vite inox M6X20
31	10	03508010	Grano M8X10
32	3	05814000	Rondelle per M14
33	4	PG135000	Pressacavo PG13.5
34	2	SP040034	Barra filettata M8X120
35	4	05812000	Rondelle per M12
36	4	05410030	Rondelle 10X30
37	4	02610030	Vite M10X30
38	2	08714000	Rondelle inox per M14
39	2	079M0800	Dado inox calotta sferica M8
40	3	02606020	Vite M6X20
41	16	02606020	Vite M6X20
43	3	050M0600	Dado autobloccante M6
44	2	IM060073	Fermo griglia IM60 25X25
45	4	02612025	Vite M12X25
46	2	038M0800	Dado M8
48	4	SPX40048	Ruota con freno

49	1	SPX40049	Flangia fissaggio finecorsa
51	4	07212020	Vite inox M12X20
52	1	SP060014	Puleggia vasca SPZ D387/4 (cal.40X65)
53	4	02612020	Vite M12X20
54	1	C062092RS	Cuscinetto 6209-2RS
55	2	03210020	Vite M8X20
56	1	SP060056	Supporto vasca
57	1	SP060057	Anello di tenuta 65X100X10-A
58	1	SP060058	Flangia alloggiamento paraolio s/vasca
59	5	08706000	Rondella inox per M6
61	1	C62112RS	Cuscinetto 6211-2RS
63	1	SP060063	Albero-flangiato per supporto vasca
64	12	SPX60064	Spessore inox rullo vasca 16X24.5X1
65	1	SP060065	Fascia inox di protezione supporto vasca
67	4	07008012	Vite inox M8X12
68	6	08708000	Rondella inox per M8
75	1	SPX40075	Assieme perno rotazione griglia Sx
76	1	SPX40076	Perno rotazione griglia Dx
77	1	SPX40077	Azionatore finecorsa
79	4	10506010	Vite M6x10
80	1	SP060080	Carter testata
82	2	02604035	Vite M4 x 35
83	16	041M0600	Dado M6
84	32	05406000	Rondelle Per M6
87	3	03306010	Vite M6X16 esag. incass.
88	1	SP060088	Spina riferimento vasca
89	1	SPX60089	Timer doppio
95	1	SPX60095	Microinterruttore
96	1	PG160000	Pressacavo PG16
97	1	SPX60097	Cavo elettrico
98	6	02606020	Vite esagonale M6x20
99	1	SP040099	Scatola quadro elettrico
102	1	SPX40102	Guarnizione carter quadro elettrico
103	1	SPX40103	Carter quadro elettrico
104	1	02616035	Vite M16X35
105	1	SP000105	Interruttore generale
106	1	SP040106	Telaio SP401
107	1	SPX40107	Guarnizione carter ispezione cinghie basamento
108	1	SPX40108	Carter ispezione cinghie basamento
109	4	05812000	Rondelle per M12
112	13	02204816	Vite autoforante VTAC M4.8X16 inox
115	1	PG160000	Pressacavo PG16
117	6	03506008	Grano M6X8
119	2	051D1600	Seeger D16-UNI-UNI7435
121	2	IMX60134	Rullo vasca IM60/SP60
123	1	SPX40123	Staffa supporto rullo vasca SX

124	1	SPX40124	Staffa supporto rullo vasca Dx
125	2	IM060133	Alberino supporto rullo vasca
126	2	05804000	Rosetta 4.3X8X0.8
127	6	05806000	Rondella Per M6
129	4	C62022RS	Cuscinetto 6202-2RS
133	2	SPX60133	Rondella in nylon d.36 foro 28
134	1	ESX16134	Pulsante stop
135	1	SPX40135	Rondella 8.5X45X4
136	2	CH080740	Linguetta parallela 8X7X50
137	1	02608020	Vite M8X20
140	1	CH080790	Linguetta 8X7X90
169	2	SP000169	Pulsante Start
173	12	07204015	Vite INOX M4X15
239	1	SPX40239	Puleggia spirale SPZ434 - 4 gole / 70 - 3 gole
240	1	SPX40240	Puleggia SPZ De 123 - 3 gole
241	1	SPX40241	Puleggia SPZ De 70 - 4 gole

SP401 Europe Model			
1	1	SP040001	Spirale
3	1	SP040003	Piantone SP401
18	1	SP040018	Piastra supporto motore SP401
25	1	M2112002	Motore MEC112-B14
29	1	SP040029	Albero trasmissione vasca
42	4	XPZ01962	Cinghia SPZX 1962
50	3	XPZ01202	Cinghia SPZX 1202
66	1	SP040066	Vasca
69	1	SP040069	Protezione vasca inox
78	1	SP040078	Griglia inox protezione vasca SP401
100	1	SPX40100	Impianto elettrico per SP401 Tipo Europa
106	1	SP040106	Telaio SP401
110	1	SP040110	Lamiera inox di rivestimento testata
111	1	SP040111	Carter Basamento
169	1	SP000169	Pulsante Start
170	1	SP000170	Spia luminosa
171	1	SP000171	Selettore timer ON/OFF
174	1	SP000174	Stop/emergenza a fungo rosso
175	1	SPX40175	Pannello quadro comandi serigrafato

SP401 Brazil Model			
1	1	SP040001	Spirale
3	1	SP040003	Piantone SP401
18	1	SP040018	Piastra supporto motore SP401
25	1	M2112002K	Motore MEC112-B14
29	1	SP040029	Albero trasmissione vasca

42	4	XPZ01962	Cinghia SPZX 1962
50	3	XPZ01202	Cinghia SPZX 1202
66	1	SP040066	Vasca
69	1	SP040069	Protezione vasca inox
78	1	SP040078	Griglia inox protezione vasca SP401
101	1	SPX401002B	Impianto elettrico per SP401 Tipo Brasile V. 230/50-60/3
106	1	SP040106	Telaio SP401
110	1	SP040110	Lamiera inox di rivestimento testata
111	1	SP040111	Carter Basamento
169	1	SP000169	Pulsante Start
170	1	SP000170	Spia luminosa
171	1	SP000171	Selettore timer ON/OFF
172	1	SPX40172	Pulsante reset
174	2	SP000174	Stop/emergenza a fungo rosso
176	1	SPX40176	Pannello quadro comandi serigrafato (Tipo Brasile)

SP601 Europe Model			
1	1	SP040001	Spirale
3	1	SP040003	Piantone SP401
18	1	SP040018	Piastra supporto motore SP401
25	1	M2112002	Motore MEC112-B14
29	1	SP040029	Albero trasmissione vasca
42	4	XPZ02000	Cinghia SPZX 2000
50	3	XPZ01187	Cinghia SPZX 1187
66	1	SP160066	Vasca
69	1	SP160069	Protezione vasca inox
78	1	SP160078	Griglia inox protezione vasca SP601
100	1	SPX40100	Impianto elettrico per SP401 Tipo Europa
106	1	SP160106	Telaio SP601
110	1	SP040110	Lamiera inox di rivestimento testata
111	1	SP160111	Carter Basamento
169	1	SP000169	Pulsante Start
170	1	SP000170	Spia luminosa
171	1	SP000171	Selettore timer ON/OFF
174	1	SP000174	Stop/emergenza a fungo rosso
175	1	SPX40175	Pannello quadro comandi serigrafato

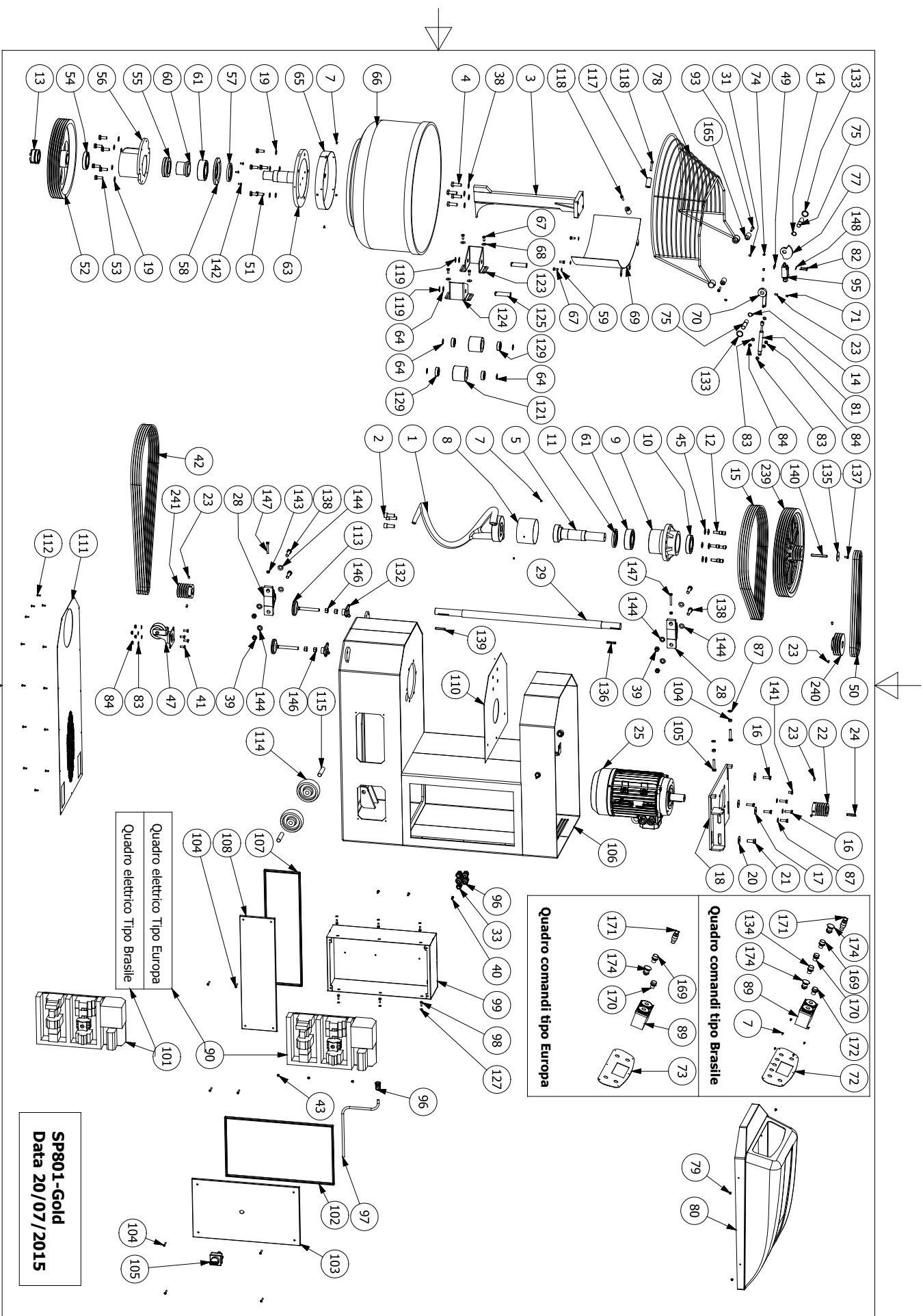
SP601 Brazil Model			
1	1	SP040001	Spirale
3	1	SP040003	Piantone SP401
18	1	SP040018	Piastra supporto motore SP401
25	1	M2112002K	Motore MEC112-B14
29	1	SP040029	Albero trasmissione vasca
42	4	XPZ02000	Cinghia SPZX 2000

50	3	XPZ01187	Cinghia SPZX 1187
66	1	SP160066	Vasca
69	1	SP160069	Protezione vasca inox
78	1	SP160078	Griglia inox protezione vasca SP601
100	1	SPX401002B	Impianto elettrico per SP401 Tipo Brasile V. 230/50-60/3
106	1	SP160106	Telaio SP601
110	1	SP040110	Lamiera inox di rivestimento testata
111	1	SP160111	Carter Basamento
169	1	SP000169	Pulsante Start
170	1	SP000170	Spia luminosa
171	1	SP000171	Selettore timer ON/OFF
172	1	SPX40172	Pulsante reset
174	2	SP000174	Stop/emergenza a fungo rosso
176	1	SPX40176	Pannello quadro comandi serigrafato (Tipo Brasile)

SP801 Europe Model			
1	1	SP060001	Spirale
3	1	SP060003	Piantone SP60
18	1	SP180018	Piastra supporto motore SP801
25	1	M2132001	MEC132 B14 KW 5.2/3.5-4/8 poli
29	1	SP180029	Albero trasmissione vasca
42	4	XPZ02087	Cinghia SPZX 2087
50	3	XPZ01180	Cinghia SPZX 1180
66	1	SP180066	Vasca
69	1	SP180069	Protezione vasca inox
78	1	SP180078	Griglia inox protezione vasca SP401
100	1	SP180100	Impianto elettrico per SP801 Tipo Europa
106	1	SP180106	Telaio SP801
110	1	SP180110	Lamiera inox di rivestimento testata
111	1	SP180111	Carter Basamento
169	1	SP000169	Pulsante Start
170	1	SP000170	Spia luminosa
171	1	SP000171	Selettore timer ON/OFF
174	1	SP000174	Stop/emergenza a fungo rosso
175	1	SPX40175	Pannello quadro comandi serigrafato

SP801 Brazil Model			
1	1	SP060001	Spirale
3	1	SP060003	Piantone SP60
18	1	SP180018	Piastra supporto motore SP801
25	1	M2132001K	MEC132 B14 KW 5.2/3.5-4/8 poli
29	1	SP180029	Albero trasmissione vasca
42	4	XPZ02000	Cinghia SPZX 2000
50	3	XPZ01187	Cinghia SPZX 1187

66	1	SP180066	Vasca
69	1	SP180069	Protezione vasca inox
78	1	SP180078	Griglia inox protezione vasca SP801
100	1	SP1801002B	Impianto elettrico per SP801 Tipo Brasile V. 230/50-60/3
106	1	SP180106	Telaio SP801
110	1	SP180110	Lamiera inox di rivestimento testata
111	1	SP180111	Carter Basamento
169	1	SP000169	Pulsante Start
170	1	SP000170	Spia luminosa
171	1	SP000171	Selettore timer ON/OFF
172	1	SPX40172	Pulsante reset
174	2	SP000174	Stop/emergenza a fungo rosso
176	1	SPX40176	Pannello quadro comandi serigrafato (Tipo Brasile)



Components list of SP801 Gold model

SP801 Gold			
ITEM	QTY	STOCK NUMBER	DESCRIPTION
1	1	SPX80001	Spirale SP80-100
2	3	07116X40	Vite testa cilindrica M16X40 INOX A4 80
3	1	SPX80003	Piantone SP80-100
4	4	07014045	Vite M14X45 INOX A2 70
5	1	SP080005	Albero supporto spirale SP80 Gold
6	1	C32112RS	Cuscinetto 32112RS
7	14	07204010	Vite M4X10 inox
8	1	SPX80008	Scodellino supporto spirale
9	1	SPX80009	Supporto spirale SP80/100/130
10	1	C62112RS	Cuscinetto 6211 2RS (Supporto spirale)
11	1	SPX80011	Paraolio 70X100X10
12	6	03212035	Vite M12X35 classe 12.9
13	1	SPX80013	Calettatore RCK60 45X75
14	2	108D2000	Seeger D20
15	9	XPZ01800	Cinghia SPZX 1800
16	6	02610035	Vite M10X35
17	3	05410040	Rondella 10x40x3 ZN
18	1	SP180018	Piastra motore supporto trasm. vasca
19	11	05813000	Rondella 13X24X2.5 ZN
20	1	02614035	Vite M14X35
21	1	05414040	Rondella 10x40x3 ZN
22	1	SPX80022	Puleggia SPZ-5-70
23	8	03508014	Grano M8X14 con punta
24	1	CH100850	Linguetta 10x8x50
28	2	UCP0207	Supporto UCP207
29	1	SP080029	Albero trasmissione vasca
31	2	03508010	Grano M8X10 ZN con punta
33	1	PG130000	Pressacavo PG 13.5
38	4	08715000	Rosetta inox 15X27X2.5
39	4	050M1400	Dado autobloccante M14
40	3	02606020	Vite esagonale M6X20 ZN
41	4	02608025	Vite a testa esagonale M8X25
42	5	XPZ02240	Cinghia SPZX 2240
43	3	050M0600	Dado autobloccante M6
45	12	064D1200	Molla a tazza 12X28X1.4
47	1	SPX60047	Ruota sterzante
49	1	SPX40049	Flangia fissaggio finecorsa
50	3	XPZ01287	Cinghia SPZX 1287
51	5	02612035	Vite M12X35
52	1	SPX80014	Puleggia vasca D430/5 (cal.45X75)
53	6	02612030	Vite M12X30

54	1	C60122RS	Cuscinetto 6012-2RS
55	1	C5121400	Cuscinetto reggispinta 51214
56	1	SPX80056	Supporto vasca
57	1	SPX80057	Anello di tenuta 80-100-10
58	1	SPX80058	Flangia di supporto anello di tenuta
59	3	08708000	Rondella 8X16X1 inox
60	1	SPX80060	Bussola distanziale supporto vasca
61	1	C32122RS	Cuscinetto 3212 2RS
62	1	02408030	Vite M8X30
63	1	SPX80063	Albero-flangiato per supporto vasca
64	6	SPX60064	Spessore inox
65	1	SPX80065	Fascia inox di protezione supporto vasca
66	1	SP080066	Vasca SP80
67	7	07008020	Vite INOX M8X20
68	4	08708000	Rondella inox 8X24X2
69	1	SP008069	Protezione vasca inox
70	1	SPX80070	Leva azionamento molla a gas
71	2	03508010	Grano M8X10 piatto
74	1	03508010	Grano M8X10 con punta
75	2	SPX60075	Alberino griglia
77	1	SPX40077	Azionatore finecorsa
78	1	SP080078	Griglia inox protezione vasca
79	4	10506010	Vite M6x10
80	1	SPX80080	Carter testata
81	1	IMX12043	Molla a gas 800N
82	2	02604035	Vite M4 x 35
83	7	05808000	Rondella 8X17 ZN
84	6	050M0800	Dado autobloccante M8
87	5	05810000	Rosetta 10.5X21X2 UNI 6592
89	2	SPX60089	Timer doppio
93	2	07108045	Vite con esagono incassato M8X45 inox
95	1	MIC00102	Microinterruttore
96	2	PG160000	Pressacavo PG16
97	1	SPX60097	Cavo elettrico
98	6	02606020	Vite esagonale M6x20
99	1	SPX80099	Scatola quadro elettrico
102	1	SPX40102	Guarnizione carter quadro elettrico
103	1	SPX40103	Carter quadro elettrico
104	8	10506040	Vite testa bombata con esagono incassato M6X1X40
105	1	SP000105	Interruttore generale
106	1	SP280106	Telaio SP801 Gold
107	1	SPX80107	Guarnizione carter ispezione cinghie basamento
108	1	SPX80108	Carter ispezione cinghie basamento
110	1	SPX80110	Piastra inox di rivestimento testata
111	1	SPX80111	Carter basamento
112	14	02205016	Vite autoforante VTAC M4.8X16 inox

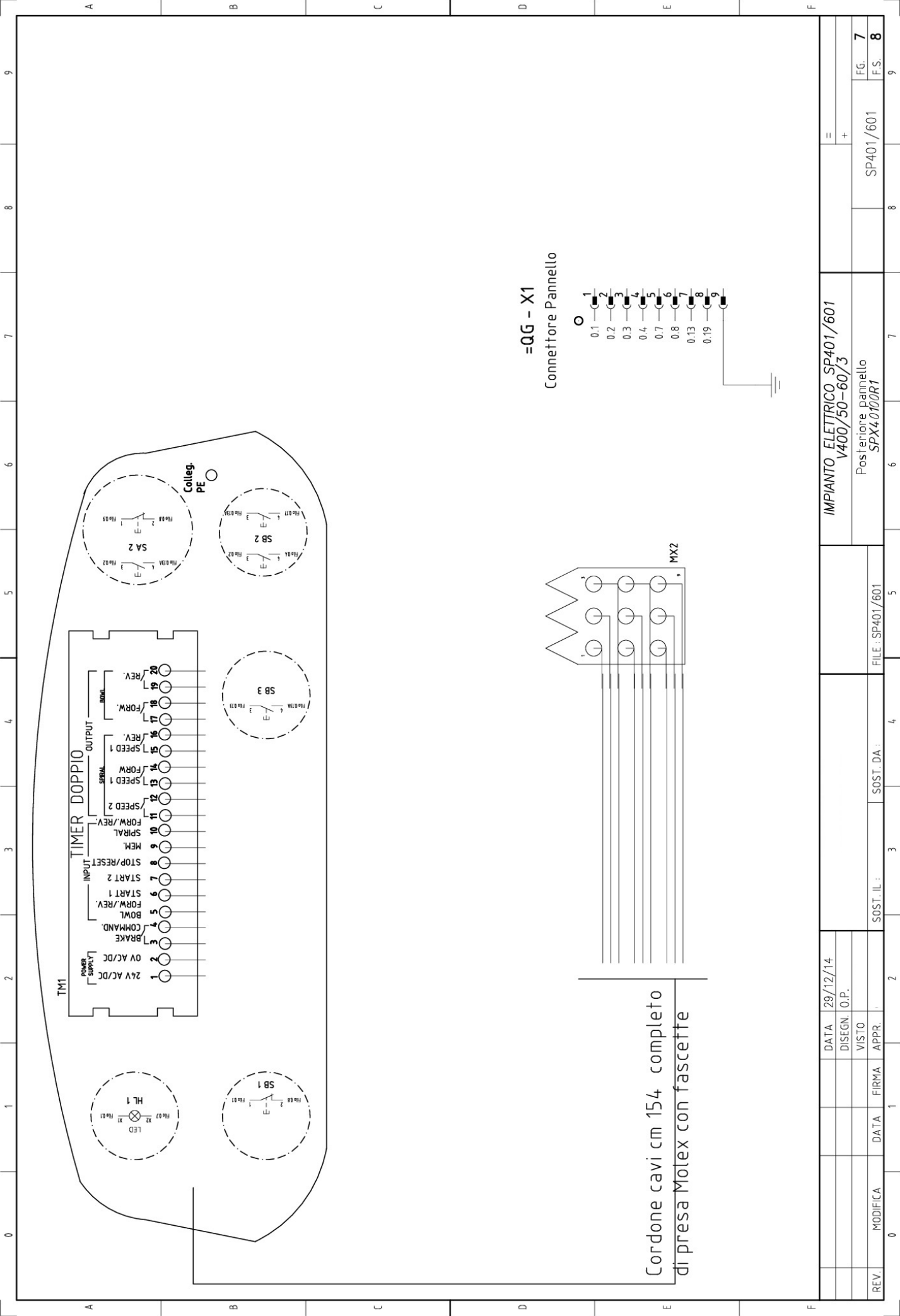
113	2	IMX60104	Piede livellamento
114	2	SPX80114	Ruota posteriore
115	2	SPX80115	Mozzo ruota posteriore
117	2	SPX60117	Rullo fermo griglia 25X50
118	2	07108050	Vite con esagono incassato M8X50 inox
119	2	051D2000	Anello seeger 20-UNI-7435
121	2	SPX80121	Rullo vasca 82X70
123	1	SPX80123	Supporto rullo vasca Sinistro SP80/100/250
124	1	SPX80124	Supporto rullo vasca destro SP80/100/250
125	2	SPX80125	Alberino supporto rullo vasca
127	6	05806000	Rondella Per M6
129	4	C62042RS	Cuscinetto 6204-2RS
132	2	IMX60103	Volantino 3P- D 90- boccola in ottone cieca 14MA
133	2	SPX60133	Rondella in nylon d.36 foro 28
135	1	SP280135	Rondella 8.5X50X4
136	1	CH080750	Linguetta 8X7X50
137	1	02608014	Vite M8X14
138	4	02614050	Vite M14X50 Zn
139	1	CH080760	Linguetta 8X7X60
140	1	CH100890	Linguetta 10X8X90
141	1	03310020	Vite M10X20
142	3	07206016	Vite M6X16
143	2	041M0800	Dado M8 Zn
144	8	05815000	Rondelle15X28
146	4	041M1400	Dado M14 Zn
147	2	02608060	Vite M8X60
148	2	05804000	Rosetta 4.3X8X0.8
165	2	SPX80165	Rullo fermo griglia 25X40
239	1	SPX80239	Puleggia SPZ De 484 - 5 gole/ De80 - 3 gole
240	1	SPX80240	Puleggia SPZ De120 - 3 gole Trasmissione vasca
241	1	SPX80241	Puleggia SPZ De 75 - 5-gole

SP801-Gold Europe Model			
25	1	M2132001	MEC132 B14 KW 5.2/3.5-4/8 poli
73	1	SPX80072	Pannello quadro comandi serigrafato SP 801-Gold
90	2	SP280100	Impianto elettrico SP801-Gold (Tipo Europa)
169	2	SP000169	Pulsante Start
170	2	SP000170	Spia luminosa
171	2	SP000171	Selettore timer on/off
174	1	SP000174	Stop/emergenza a fungo rosso

SP801-Gold Brazile Model			
25	1	M2132001K	MEC132 B14 KW 5.2/3.5-4/8 poli
72	1	SPX80072	Pannello quadro comandi serigrafato SP 801-Gold (Tipo Brasile)
101	2	SP2801002B	Impianto Elettrico SP801-Gold (Tipo Brasile) V. 230/50-60/3
134	1	ESX16134	Pulsante stop
169	2	SP000169	Pulsante Start
170	2	SP000170	Spia luminosa
171	2	SP000171	Selettore timer on/off
172	1	SPX40172	Pulsante reset
174	2	SP000174	Stop/emergenza a fungo rosso

WIRING DIAGRAM

EUROPE MODEL



0 1 2 3 4 5 6 7 8 9

A B C D E F

TM1

POWER SUPPLY

24V AC/DC

0V AC/DC

INPUT

STOP/RESET

START 2

START 1

FORW./REV.

BOWL

COMMAND

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

REV.

FORW.

SPEED 1

REV.

SPEED 2

FORW./REV.

SPIRAL

MEM.

OUTPUT

REV.

FORW.

SA 2

SB 2

SB 3

SB 1

HL 1

LED

Colleg. PE

MX2

1

2

3

4

5

6

7

8

9

0.1

0.2

0.3

0.4

0.7

0.8

0.13

0.19

=QG - X1

Connettore Pannello

Cordone cavi cm 154 completo di presa Motex con fascette

IMPIANTO ELETTRICO SP401/601 V400/50-60/3

Posteriore pannello SPX4.0100R1

FILE : SP401/601

SOST. IL :

SOST. DA :

DATA 29/12/14

DESIGN. O.P.

VISTO

FIRMA

APPR.

REV. MODIFICA

SP401/601

FG. 7

F.S. 8

0 1 2 3 4 5 6 7 8 9

A B C D E F

TM1

POWER SUPPLY

24V AC/DC

0V AC/DC

INPUT

STOP/RESET

START 1

START 2

MEM.

SPIRAL

FORW./REV.

SPEED 2

SPEED 1

FORW.

REV.

SPEED 1

FORW.

REV.

OUTPUT

FORW.

REV.

SA 2

SB 2

SB 3

SB 1

HL 1

Colleg. PE

MX2

1 2 3 4 5 6 7 8 9

0.1 0.2 0.3 0.4 0.7 0.8 0.13 0.19

=QG - X1

Connettore Pannello

Cordone cavi cm 154 completo di presa Motex con fascette

IMPIANTO ELETTRICO SP401/601 V400/50-60/3

Posteriore pannello SPX4.0100R1

FILE : SP401/601

SOST. IL :

SOST. DA :

DATA 29/12/14

DESIGN. O.P.

VISTO

FIRMA

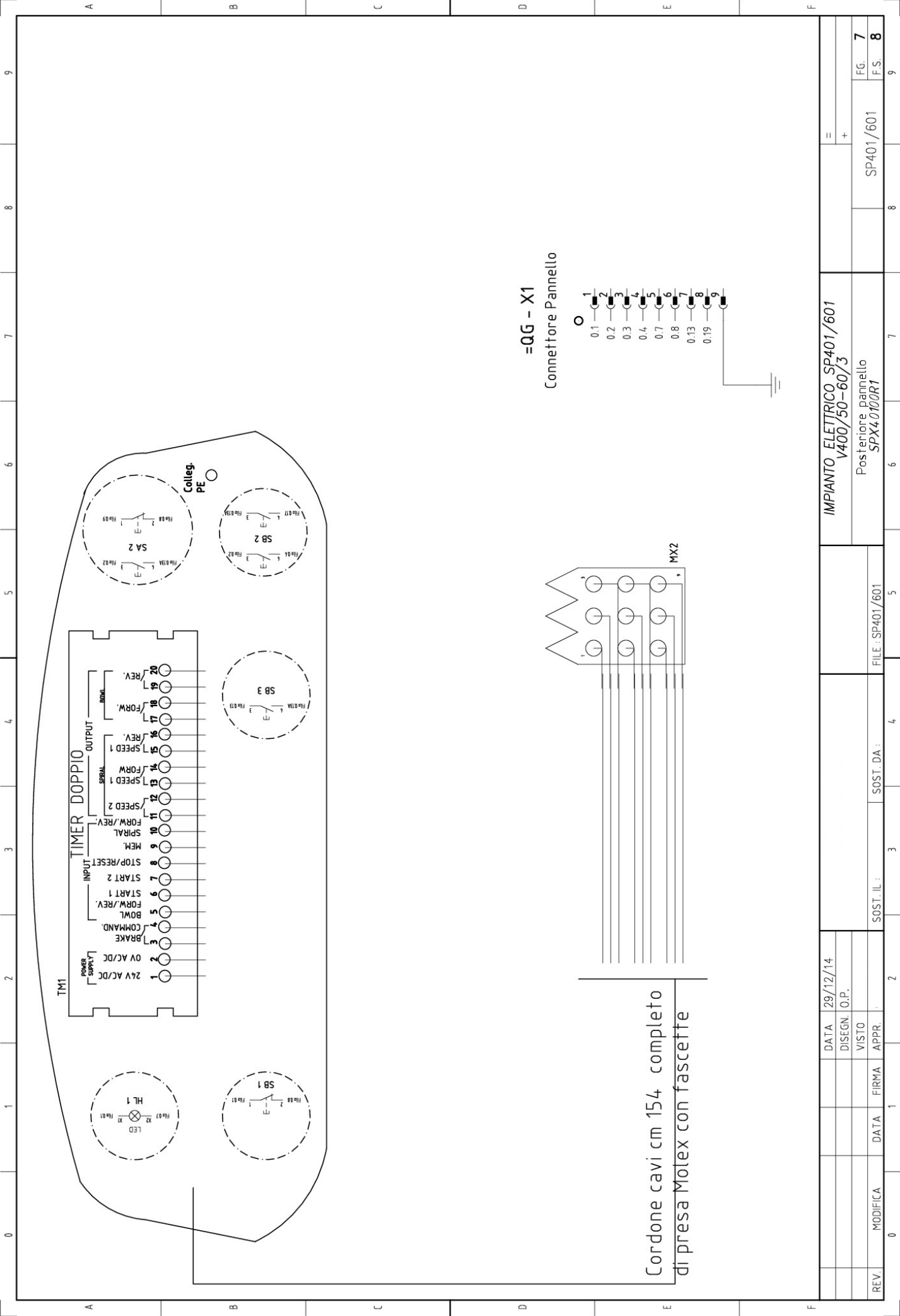
APPR.

REV. MODIFICA DATA

SP401/601

FG. 7

F.S. 8

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