



Use and maintenance instructions

MANUFACTURER:

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Via Tarantelli, 15
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MACHINE:

SPIRAL MACHINE

MODEL:

L10 / L22 / L33 / L42 / L53 / L62
LR22 / LR33 / LR42



Original version in Italian

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Edition

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AG	February 2020	R0	First edition
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Conformity of the machine and instructions

For the design of the machine and the drafting of the instructions, the following were consulted:

Reference	Edition	Title
2006/42/EC	2006	Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 relating to machinery and amending directive 95/16/EC (redraft)
UNI EN ISO 12100	2010	Safety of machinery – General principles for design – Risk assessment and risk reduction
EN 453	2014	Food processing machinery – Dough mixers – Safety and hygiene requirements

Warnings for the operator

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¹ The signature of the manager referred to in note 1: validation of the document in DRAFT allows the issue of revision R0 and validates all sections/chapters of this document.

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1 General warnings

1.1 Intended use of the manual

This instruction manual provides detailed information regarding the safety, characteristics, operation, use, maintenance and demolition of the machine called "Spiral machine".

The machine must be used in accordance with what is specified in these instructions: therefore, it is necessary to **read them carefully** before carrying out any operation, without neglecting anything written and illustrated. Compliance with the standards and recommendations mentioned allows the operator to use the machine in the ways and methods permitted by the manufacturer.

If the operator detects discrepancies between what is described in this document and the machine, they must immediately inform the manufacturer, without using the machine: **incorrect or reckless manoeuvres** can be a source of danger to the health of the operator and/or to persons near the machine itself.

The user instructions are an integral part of the machine; it is therefore necessary to keep them in good condition, in a safe place and available to the operator (or to anyone who requests them, provided that they are authorised to use the machine) for the entire production life of the machine.

In the case of sale, rental, concession in use or financial leasing of the machine, the instructions must be attached to it.

These user instructions are prepared in such a way as to contain all the information useful for the correct **training** and **informing** of the operator in order to avoid improper and dangerous use of the machine.

Use of the machine for purposes other than those envisaged, or in any case improper use, therefore prohibited, of the same, invalidates any responsibility of the manufacturer.

Tampering, replacement, or modification not authorised by the manufacturer of one or more parts of the machine and, more generally, any intervention that is not part of the ordinary or extraordinary maintenance, entails the forfeiture of any responsibility of the manufacturer.

This document was originally issued in the Italian language.

In the event of any disputes due to translations, even if carried out by the manufacturer, the reference text will only be the Italian version.

1.2 How to read the manual

The instructions are identified by a code (Pg611_IU0642_it_00) and divided into chapters and paragraphs numbered in progressive order. The page numbering shows the number of the chapter to which it belongs and each chapter starts from page 1: in this way the manual can be easily consulted also by separating the various chapters. In addition to the information described by means of words (description of information), the instructions contain symbols, photographic images and drawings.

The photographic images and drawings (called figures) are numbered in progressive order and the number is followed by a brief description of the illustration.

Figure 1-1, where the first 1 is the indication of the chapter and the second 1 is the progression of the figure within the chapter (the next figure will be "Figure 1-2" and so on).

It is of fundamental importance for the operator assigned to operating the machine to know the meaning of the symbols which, in the technical language referring to the machines, are called pictograms.

The pictograms, depending on their shape and colour, can represent:



HAZARD

triangular pictogram, edged with black on a yellow background and a black graphic symbol.



PROHIBITION

circular pictogram, bordered in red on a white background and black graphic symbol.



OBLIGATION

pictogram of circular shape on a blue background and white graphic symbol.

1.3 Warranty

1.3.1 General conditions

1. The equipment warranty is 12 months from the effective delivery date. It is in any case subject to a complaint by registered letter within 8 days from the discovery of any flaws and defects after verification and recognition by the manufacturer.
2. The warranty includes the replacement or repair of the defective part with the exclusion of disassembly, reassembly and shipping costs.
3. The replacement of this part does not entail renewal of the equipment warranty period. The manufacturer therefore remains exempt from any obligation to pay compensation for any reason and the purchaser also waives any request for expenses or damages from third parties due to possible downtime of the equipment.
4. The warranty does not include parts subject to normal wear and tear due to external atmospheric and environmental agents and all faults deriving from failure, insufficient or incorrect maintenance, inexperience of use, improper use, unauthorised or unintended use, modifications or unauthorised repairs and/or tampering.
5. The validity of the warranty is subject to the correct execution of maintenance as described in the "Maintenance" chapter of this manual.
6. The warranty is excluded if the payment conditions are not respected.
7. For the parts supplied by third parties, the warranties that can be exercised with regard to their manufacturers are valid.
8. Any dispute will be presided over by the competent Court.

1.3.2 Request for warranty interventions

Any requests for spare parts or technical interventions under warranty must be reported to the manufacturer or to the authorised dealer immediately when a defect is found which falls within the specifications of the previous paragraph.

Always indicate the type, model and serial number of the equipment when requesting spare parts under warranty or technical interventions under warranty.

Failure to comply with what is prescribed in this manual will waive the manufacturer from any liability in the event of accidents suffered by persons and/or damage to property or equipment malfunctions.

1.4 Assistance

The Technical Assistance Service is provided directly by the authorised dealer.

2 Safety devices

2.1 General safety information

2.1.1 Directive and standards used for the design of the machine

For the project, reference was made to the following directives:

- Machinery Directive 2006/42/EC
- EMC Directive 2014/30/EU

And to the following harmonised standards:

- UNI EN ISO 12100:2010
- EN 453:2014

2.1.2 Operator characteristics

The operator assigned to use the machine to avoid creating dangerous situations for themselves, for persons exposed in danger areas, for animals or for materials, must have the following characteristics and be aware of the following dictates:

- they must be a physically fit person, in full possession of their mental faculties, aware of and responsible for the dangers that can be generated by using a machine.
- Before carrying out any operation, the employer must provide adequate operator information and training as required by Directive 89/391/EEC.
- The operator in non-optimal psychophysical conditions must not perform operations of any kind with the machine.
- The state of health of the operator assigned to use the machine is very important in order to avoid accidents in the workplace.
- It is considered of fundamental importance to emphasise that the operator who is not in perfect psychophysical conditions can cause serious damage, in addition to themselves, also to persons, animals or material goods present within the work area.
- The operator assigned to installation, operation or maintenance of the machine must not take substances that can alter their physical and mental abilities, (such as medicines, alcohol, drugs etc.).
- If for any reason an operator must, for a certain period of time, take substances that diminish the reactive properties of the human body, they must immediately inform the plant safety manager, who will temporarily suspend them from this task. The entire suspension and rehabilitation procedure must be overseen by adequate medical documentation.
- The operator must not allow non-authorized persons to approach the machine during its operation (as they are not informed of the dangers generated) and must prevent such persons from using it.
- Use of the machine is recommended for operators with a minimum age of 18 years. Use of the machine is prohibited for persons classified as apprentices.









2.1.3 Personal Protection Equipment (PPE)

To safeguard the operator's health when using the machine, it is necessary to use (or have available) the PPE (Personal Protection Equipment) mentioned below.

The employer obliges the operator to use the machine with compliant PPE.

Given the lack of knowledge of all the contexts of the operating environment of the machine, it is necessary to underline that the PPE mentioned refers only to the use of the machine: it will be the employer's task to prescribe additional PPE according to the requirements of the production environment.

2.1.3.1 PPE for operators

Table 1: P.P.E. for operators		
Pictogram	Designated operator	Description
	USE INSTALLATION MAINTENANCE	The constant use of safety shoes as prescribed by the current safety standards.
	USE INSTALLATION MAINTENANCE	Hand protection gloves available in case of the manipulation of objects that can cause damage.
	USE INSTALLATION MAINTENANCE	Suitable clothing , such as overalls: the use of clothing with wide sleeves and/or appendages that can be easily snagged by mechanical parts is prohibited.
	USE INSTALLATION MAINTENANCE	Hair collector cap as prescribed by the hygiene standards in food environments.
	USE	Protective mask to protect the operator from inhaling dust.
	INSTALLATION MAINTENANCE	Protective helmet , available, in case of lifting of parts with significant weights.
	MAINTENANCE	The use of dielectric footwear to prevent the dangers that can be generated by direct or indirect contacts.
	MAINTENANCE	Face protection visor when working on electrical parts, especially if live.

2.2 Safety information concerning the machine

2.2.1 Intended use

The machine was built and tested according to the provisions laid down by directive 2006/42/EC, and is intended exclusively for the mixing of food products for bakeries and pizzerias.



ATTENTION

EVERY OTHER USE ASIDE FROM THAT JUST DESCRIBED IS NOT PERMITTED BY THE MANUFACTURER.

2.2.2 Non-permitted uses

The following are prohibited:

1. use of the machine in a constructive configuration different from that foreseen by the manufacturer.
2. use of the equipment in places at risk of explosion and/or fire (the equipment is not certified pursuant to Directive 2014/34/EU ATEX);
3. integration within other systems and/or equipment not considered by the manufacturer;
4. use of the machine with the safety devices tampered with or removed;
5. connecting of the machine to energy sources other than those provided by the manufacturer;
6. use of the machine for operations other than those described in the intended use;
7. use of the machine without having read and fully understood the instructions for use and maintenance;
8. use of the machine if not maintained as described in the use and maintenance instructions.

2.2.3 Conventions and operator work stations

The machine is equipped with an operator station located on the right side where the control panel is installed.

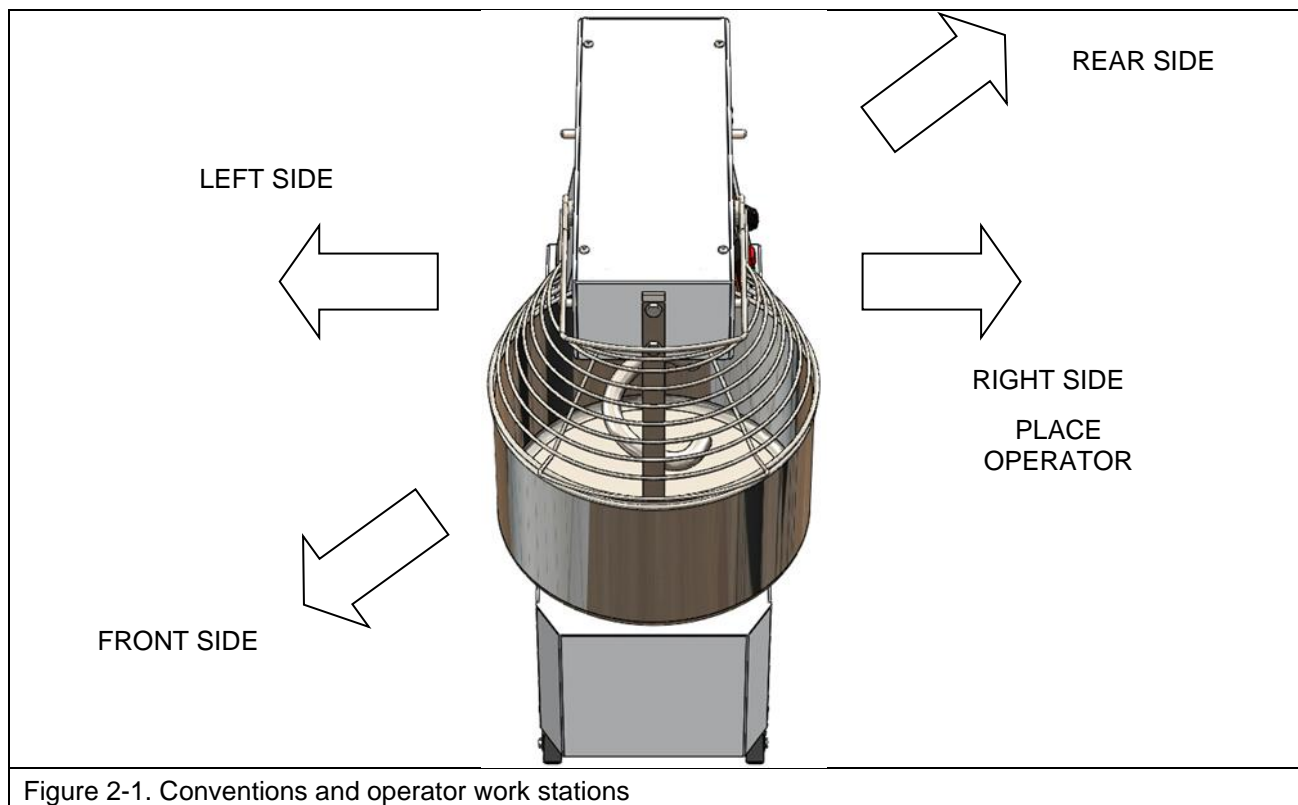


Figure 2-1. Conventions and operator work stations

2.2.4 Safety devices

The safety devices adopted are the following:

- no.1 mobile guard covering the bowl linked to a safety microswitch;
- no.1 fixed guard to protect the spiral movement parts;
- no.1 fixed guard to protect the moving parts of the bowl;
- no.1 fixed guard to protect the dangerous area between the bowl and the machine frame;
- no.1 safety microswitch to supervise the mobile guard covering the segregated bowl inside the machine head;
- no.1 maintained action cycle start button.
- no.1 proximity sensor located between the bowl and the machine frame (only for machine models with the tilting head and the removable bowl, see Figura 3 2).

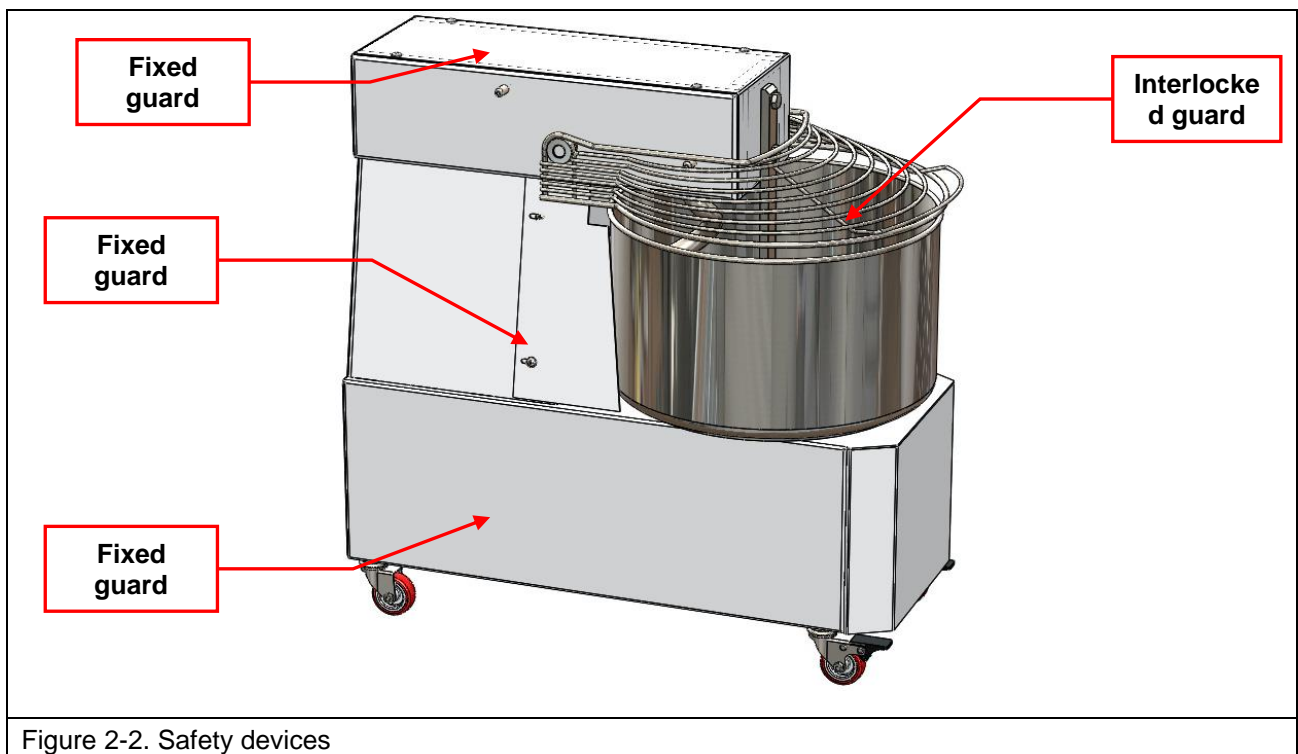


Figure 2-2. Safety devices

2.2.5 Residual risks

From the risk analysis conducted, the residual risk concerning the inhalation of dust from flour was identified. This residual risk was addressed with the obligation of the operator to use a protective mask.

Another source of risk can be generated by behaviours that are not permitted by the operator such as for example the failure to use the P.P.E. reported in the paragraph 2.1.3.

Warning signs for the operator have been applied to the machine shown in Table 2.

2.2.6 Warning plates



ATTENTION

IT IS STRICTLY FORBIDDEN TO REMOVE THE WARNING PLATES PRESENT ON THE MACHINE.

Following the identification of certain residual risks, a series of warning plates was installed on the machine, reported below, in accordance with UNI 7543-1. The Customer is obliged to immediately replace all the warning plates which, following wear, become illegible.

Table 2: Warning plates		
Installed	Description	Position
	Danger of electrocution	On the electrical panel
	Prohibition to remove the safety guards	Visible to the operator
	Prohibition to repair and/or lubricate moving parts	Visible to the operator
	Obligation to consult/read the instructions for use.	Visible to the operator
	Obligation to use a hair collector cap	Visible to the operator
	Obligation to use the protective mask	Visible to the operator
	Obligation to check the efficiency of protective devices	Visible to the operator

3 General description and technical data

3.1 Machine layout

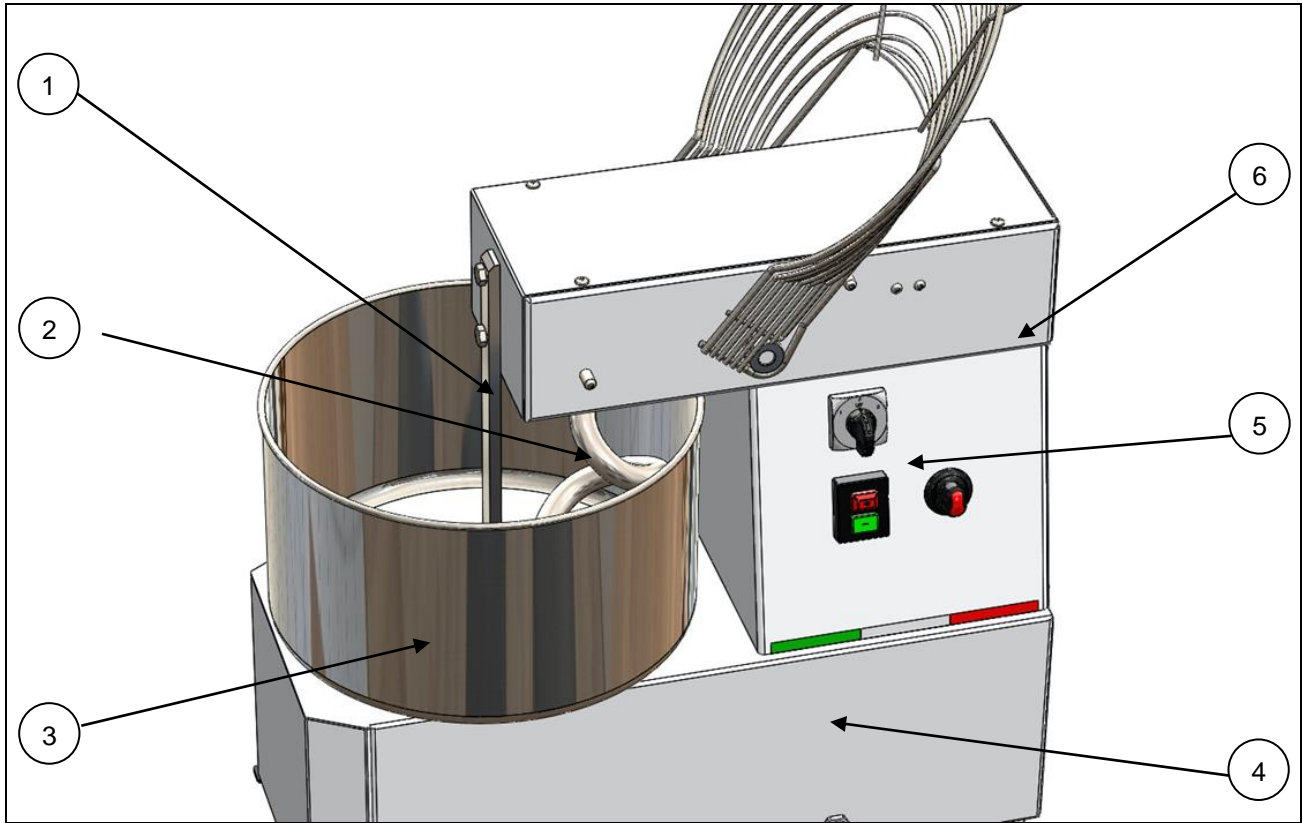


Fig. 3-1 Machine layout

REF.	PART	DESCRIPTION
1	Column	It facilitates mixing of the contents.
2	Spiral	It mixes and refines the ingredients, pushing them against the column.
3	Bowl	It contains the ingredients to be mixed.
4	Base	It contains the bowl movement parts.
5	Control panel	Operator commands for use of the machine.
6	Head	It contains the spiral movement parts.

3.1.1 Variations

The LR22 / LR33 / LR42 models include mixers with a tilting head and a removable bowl that are equipped with three additional components:

- A metal disc, if turned clockwise (UNLOCK) allows the bowl to be removed.
- Handles (one on each side) that, if rotated, allow the head to tilt.
- A proximity sensor located between the bowl and the machine frame that prevents rotation of the spiral with the bowl removed.

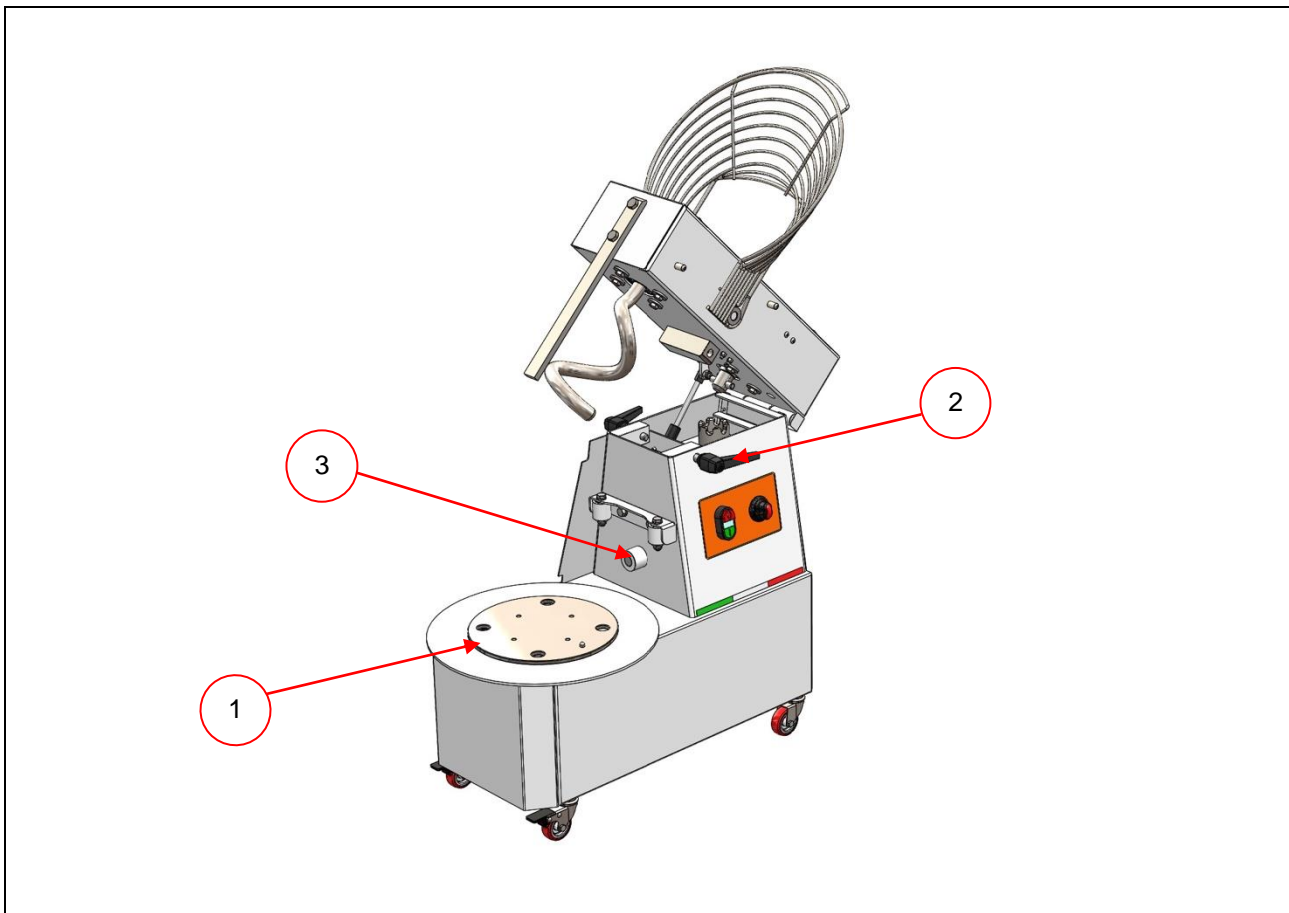


Fig. 3-2 Impastatrice con testa ribaltabile

REF.	PART	DESCRIPTION
1	Disc	Allows the bowl to be removed.
2	Handle	Allows tilting of the mixer head.
3	Proximity sensor	It detects the presence of the bowl.

3.2 Technical data

3.2.1 Model L

MODELLO	L10			L22			L33			L42			L53			L62		
	230V M.	400V T.	400V T.	230V M.	400V T.	400V T.	230V M.	400V T.	400V T.	230V M.	400V T.	400V T.	230V M.	400V T.	400V T.	230V M.	400V T.	400V T.
VERSIONE	1° VEL	2° VEL	2° VEL	1° VEL	2° VEL	2° VEL	1° VEL	2° VEL	2° VEL	1° VEL	2° VEL	2° VEL	1° VEL	2° VEL	2° VEL	1° VEL	2° VEL	2° VEL
VELOCITA' VASCA - RPM	10	10	20	10	10	20	10	10	20	10	10	20	10	10	20	10	10	20
VELOCITA' SPIRALE - RPM	88	97	180	97	97	180	97	97	180	97	97	180	97	97	180	97	97	180
CONSUMO - KW	0,37	0,75	0,75	0,75	1,1	1,1	1,1	0,75	1,1	1,5	1,5	2,2	1,8	1,8	1,5	2,2	1,8	1,5
POTENZA - HP	0,5	1	1	1	1,5	1,5	1,5	1	1,5	2	2	3	2,5	2,5	2	3	2,5	2
ASSORBIMENTO - A	3	4,9	2	2	3	3	7,3	3	2	3	3,3	3,3	9,6	3,3	4,5	11	4,4	3,3
CAPACITA' VASCA - L	10		22															
PESO MAX PASTA - KG	8		17															
DURATA CICLO IMPASTO - MIN	14		12\14															
DIMENSIONI MACCHINA - CM L*P*H (RUOTE COMPRESSE)	30 * 55 * 62		40 * 70 * 68															
PESO NETTO - KG	41		65															
DIMENSIONI IMBALLO - CM L*P*H	36 * 72 * 71		47 * 79 * 77															
CBM - M³																		
PESO LORDO - KG	47		75															

Fig. 3-3. L Technical data

3.2.2 Model LR

MODEL VERSION	LR22				LR33				LR42				
	230V M.	400V T.		230V M.	400V T.		230V M.	400V T.		230V M.	400V T.		400V T. 2V
		1°VEL	2°VEL		1°VEL	2°VEL		1°VEL	2°VEL		1°VEL	2°VEL	
BOWL SPEED – RPM	10	10	20	10	10	10	10	10	10	10	10	10	20
SPIRAL SPEED – RPM	97	97	180	97	97	180	97	97	180	97	97	97	180
CONSUMPTION – KW	0,75	0,75	1,1	1,1	1,1	0,75	1,1	1,5	1,1	1,5	1,5	1,5	2,2
POWER – HP	1	1	1,5	1,5	1,5	1	1,5	2	1	2	2	2	3
ABSORPTION – A	4,9	2	3	7,3	3	2	3	9,6	3,3	3,3	3,3	3,3	4,5
BOWL CAPACITY – L	22												
DOUGH MAX WEIGHT – KG	17												
MIXTURE CYCLE DURATION – MIN	12\14												
MACHINE DIMENSIONS – CM L*D*H (INCLUDING WHEELS)	40*70*70												
NET WEIGHT – KG	79												
PACKAGING DIMENSIONS – CM L*D*H	47*79*77												
CBM – M3	89												
GROSS WEIGHT – KG	89												
	22												
	33												
	25												
	12\14												
	45*74*75												
	87												
	51*83*81												
	57*90*83												
	98												
	125												

Figura 3-4. LR Technical data

3.3 Environmental limits

Unless otherwise specified in the contract, it is understood that the machine can function properly only in the environmental conditions referred to in the following points. Environmental conditions other than those prescribed may cause malfunctions or breakages with consequent dangerous situations for the health of the operator and of any exposed persons.

It is the task of the production plant manager to verify that these conditions are always met.

3.3.1 Explosion and/or fire

The machine was not designed to be used in places where substances in the form of a cloud of dust can cause an explosive atmosphere with air.



EXPLOSION AND/OR FIRE HAZARD

THE MACHINE MUST NOT BE USED IN AREAS WITH EXPLOSION HAZARD OR RISK OF FIRE.

3.3.2 Altitude

The machine is able to function properly at altitudes of up to **1000 meters** above sea level.

3.3.3 Ambient air temperature

The electrical equipment works correctly at air temperatures of between **+5°C** and **+40°C**.

The electrical equipment is able to function properly when the relative humidity does not exceed **50%** at a maximum temperature of **+40°C**. Higher relative humidity levels are permitted at lower temperatures.

3.3.4 Vibrations and shocks

The machine must be installed on surfaces that do **NOT** transmit vibrations and in environments where there is **NO** danger of impact with other mechanical assemblies.

3.3.5 Electromagnetic interference

The machine in question in this manual has been designed to operate correctly in an electromagnetic environment of an industrial type.

3.3.6 Noise

The noise emission of the machine during normal operation is less than **70 dB**.

3.3.7 Lighting

The plant's lighting system is to be considered important for the safety of persons. The installers of the lighting system must comply, within the EEA, with the minimum requirement set by the UNI EN 12464-1 standard, relating to the natural and artificial lighting of premises. The minimum lighting must be such as to guarantee the **correct perception** of symbols and marks.

The lighting level must always be such as to guarantee operation in the maximum possible safety.

The **installation** operations must be carried out in "normal" light conditions, that is, such as not to dazzle the operator's vision and not to strain it in case of low light.

Use battery lighting devices or devices installed on columns and connected to the plant's electricity supply network. Do not aim the auxiliary lighting devices directly towards the operator's eyes in order to avoid dazzling them.

3.3.8 Degree of protection of electrical equipment

The degree of protection with regard to the motor casings is IP23.

The degree of protection with regard to the enclosures of the control equipment is IP22.

3.3.9 Materials used

The metallic materials that come into contact with food have been examined and comply with regulation 1935/2004.

3.3.10 Cleaning of the work environment

the machine can only be used in environments suitable for storing and producing food. It is also necessary to respect the following operating conditions:

- absence of ventilation during loading of the ingredients and during the initial phase of the work cycle (mixing of the ingredients) in order to prevent the excessive emissions of food dust;
- the use of containers and utensils suitable for the treatment of food products.

3.4 Time limits

The expected life of the machine is 10 years.

4 Installation

4.1 General warnings

The operator assigned to installing the machine must be a person who is adequately trained and informed about the work they are preparing to undertake.

The operator must use suitable means to safely carry out the installation operations: therefore, it should be remembered that all the equipment used for the installation must be in a perfect condition and must be used as provided by the respective manufacturers.

The choice of the place or spaces is important for the quality of the work (maintenance, safety, etc.): this area must be well lit and ventilated.

The environmental and operating conditions must not constitute an obstacle for access to the controls.

Before starting to handle of the machine, it is necessary to check:

- the efficiency of the lifting equipment;
- the capacity of the same. For the lifting of machines or parts of it, means having a minimum capacity greater than the declared weight are required;
- the characteristics (weight, size, etc.) of the machine indicated in the paragraph 3.2.



ATTENTION

THE MACHINE MUST BE PLACED IN A COVERED AREA PROTECTED FROM DIRECT CONTACT WITH ATMOSPHERIC AGENTS.

4.2 Transporting the machine

The machine can be shipped by truck, container or in rare cases by air.

The packaging consists of a cardboard box containing the machine on wooden pallets.

The dimensions and gross weight of the packed machines are shown in Fig. 3-3.

4.3 Handling

Machine handling operations must be carried out by trained personnel (harnessers, forklift drivers, crane operators, etc.).



ATTENTION

FOR TRANSPORTATION OF THE MACHINES, VEHICLES WITH A MINIMUM CAPACITY HIGHER THAN THE DECLARED WEIGHT OF THE SAME ARE REQUIRED (SEE PARAGRAPH 3.2). BEFORE STARTING HANDLING, IT IS NECESSARY TO CHECK THE EFFICIENCY OF THE LIFTING MEANS AND THEIR CAPACITY.

The packed machine is moved by means of a transpallet by inserting the forks on the pallet making sure that they protrude from the pallet itself.

The unpacked machine is manually moved by the operator by pushing or dragging as the machine is equipped with 4 wheels, 2 of which are on the front with a mechanical brake device.

4.4 Positioning

The machine must be handled as indicated in the paragraph 4.3

When positioning the machine, check:

- that the floor is smooth, flat and resistant enough to allow the machine to rest safely;
- using a centesimal levelling device, check that the machine is level;
- that there is sufficient space around the machine to comply with the minimum recommended distance of 800 mm from the surrounding walls;
- that the machine is positioned near an adequate power supply;
- that the operator can easily load the ingredients and remove the mixture;
- that there is sufficient space around the machine for easy cleaning and maintenance;
- that the two front wheels are locked by the mechanical brake device.

4.5 Wiring and connection

4.5.1 Connection to the electrical power supply

Refer to the technical data shown in the paragraph 3.2 for connecting of the machine to the power supply.

Connection of the machine to the electrical network must be carried out by specialist personnel, in compliance with the good technical and safety standards in force.

It is essential to connect the machine to an efficient and controlled earthing network.

If in doubt about the efficiency of the network, do not connect the machine.

The user is required to provide an adequate disconnector for the power line upstream of the machine, as well as effective means of protection against overcurrents and indirect contacts.

Effective means of protection against overcurrents can be represented by:

- fuses,
- automatic switches,
- magnetothermic switches.

Effective means of protection against direct contacts, instead, can be represented by:

- differential switches,
- fault sensors.

When connecting, check:

- that the voltage of the power supply corresponds to the voltage and frequency indicated in the wiring diagram annexed to the machine (an incorrect supply voltage can damage the machine);
- that the power supply network is equipped with an adequate earthing system;
- the correct position and fixing of the microswitches;
- that the direction of rotation of the bowl is correct, i.e. clockwise seen from above (as indicated on the label applied on the bowl). If the direction of rotation of the bowl is not correct, it is necessary to invert the two wires of the power supply cable on the electrical box of the machine in order to correct the direction of rotation.

4.6 Storage

4.6.1 Storage of the machine in case of long periods of inactivity

- Disconnect the machine from the power supply.
- Clean the machine thoroughly as described in the paragraph 8.4.4.
- Protect the machine from atmospheric agents, dust and dirt.

4.6.2 Preservation of the packed machine

The machine must be stored in a hygienically clean, closed and covered environment, positioned on a flat and solid surface and protected from atmospheric agents, dust and dirt.

The ambient temperature must be between -20 and $+40^{\circ}\text{C}$, while the humidity of the environment must not be higher than 90%.

4.6.3 Preservation of the unpacked machine

Once the machine is unpacked, in addition to implementing the conditions specified above, it must also be lifted from the ground (on a suitable pallet or other stable platform) and carefully covered to protect it against humidity, dust and dirt. If the machine is wrapped in cellophane or other type of plastic, it is absolutely essential to make sure that it is not hermetically sealed, in order to avoid corrosion due to condensation. If possible, keep the original packaging.



ATTENTION

STORAGE OF THE MACHINE WITHOUT A COVERING IS ABSOLUTELY FORBIDDEN.

5 Description of commands and notifications

5.1 Control panel

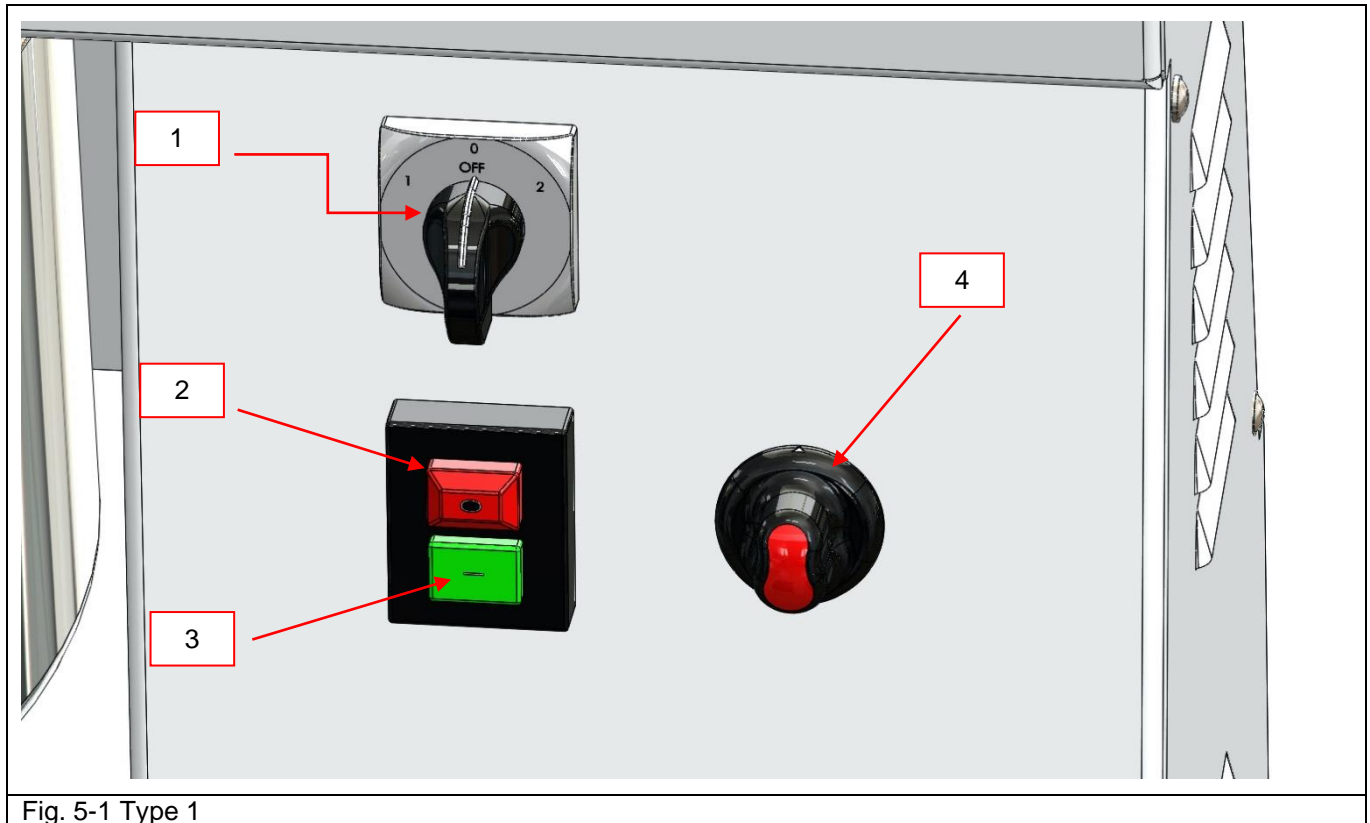


Fig. 5-1 Type 1

REF.	CONTROL	COLOUR	FUNCTION
1	Selector SPEED	//	Three-position selector that is used to adjust the rotation speed of the bowl and of the spiral. 1: Minimum speed. OFF: Machine stopped. 2: Maximum speed.
2	Button STOP	Red	If pressed it stops the mixing cycle.
3	Button START	Green	If pressed, it starts the mixing cycle at the selected speed.
4	Knob CYCLE TIMER	//	Timer for setting of the cycle time in minutes. If the arrow points to the hand, the cycle starts without a timer.



ATTENTION

THE CONTROL PANEL IS AVAILABLE IN TWO DIFFERENT CONFIGURATIONS:

1: WITHOUT THE SPEED SELECTOR.

2: WITHOUT THE SPEED SELECTOR AND WITHOUT THE CYCLE TIMER (MOD. L10).



NOTE

FOR THE ADDITIONAL COMMANDS RELATING TO THE LR MODEL, REFER TO PARAGRAPH 3.1.1.

6 Operation and use

6.1 Checks and verifications for safe use of the machine

Remember that:

- the machine can be used by only one operator at a time;
- the operator must never leave the machine unattended when it is turned on. If it is necessary to leave the workplace, disconnect the machine from the power supply;
- the user must not tamper with or alter the operation or efficiency of the protective devices on the machine;
- the user must possess the characteristics listed in the paragraph 2.1.2.

Before starting operations with the machine, on a daily basis, they will have to carry out checks to make sure that all the safety conditions exist to avoid accidents.

To facilitate the operator, we list below the **pre-start checks**.

1. Check that the machine is clean and that the bowl does not contain foreign bodies.
2. Check that the machine is in a stable position on a flat, smooth and solid surface.
3. Check that the machine has been correctly connected to the power supply.
4. Check that the machine is equipped with all the pictograms and warning plates provided.
5. Visually check the general condition of the machine and that there is no damage or conditions of obvious deformation, especially with regard to ageing, wear and fatigue.
6. Check the efficiency of the safety devices. If the machine has been tampered with, **do not use the machine**.

6.2 Loading the ingredients



ATTENTION

DO NOT EXCEED THE MAXIMUM PERMITTED QUANTITIES OF THE RESPECTIVE MACHINE MODEL USED REFERRED TO IN THE PARAGRAPH 3.2.

The recommended sequence for loading of the ingredients is as follows:

1. Pour the required amount of water into the bowl.
2. Pour in the flour (in the correct proportion with respect to the water) by positioning the bag inside the bowl and cutting it with a cutting tool at the bottom in order to avoid the formation of dust clouds.
3. Next, add the other ingredients for the mixture, lifting the movable guard and pouring them into the bowl. If the movable guard is raised while the machine is working, the machine stops; it is therefore necessary to close the movable guard and restart the machine to complete the work cycle by pressing **START**.



ATTENTION

IT IS INADVISABLE TO INTRODUCE THE FLOUR INTO THE BOWL BEFORE THE WATER BECAUSE THIS GENERATES COMPACT MASSES OF HIGH DENSITY FLOUR IN THE MIXTURE THAT COULD CAUSE IRREGULAR MACHINE OPERATION.

6.3 Operation

To switch on the machine proceed as follows (refer to chapter 5):

1. follow the procedure given in the paragraph 6.2;
2. check that the mobile guard is closed;
3. adjust the cycle time using the CYCLE TIMER (if present) or set it towards the hand to proceed with the cycle without a timer;
4. set the speed of the work cycle using the SPEED selector (if present);
5. press the START button to start the processing cycle;
6. the machine stops automatically at the end of the set time, if not if a time has been set for the working cycle, press the STOP button to stop the machine manually.

6.4 Removing the mixture

To facilitate removal of the mixture, it is possible to keep the START button pressed to operate the machine manually and to allow the operator to rotate the bowl and remove the dough from different positions with the mobile guard open.



ATTENTION

IT IS FORBIDDEN TO USE ANY TOOL THAT CAN SCRATCH OR DAMAGE THE MACHINE AND MACHINE TOOLS.

6.5 Disconnection

When putting the machine out of service, it is advisable to:

1. Disconnect the machine from the electrical system.
2. Clean the machine carefully as indicated in the paragraph 8.4.4.
3. Protect the machine from atmospheric agents as indicated in the paragraph 4.6.

7 Malfunctions

7.1 Anomalies

Table 3: Anomalies		
Anomaly	Cause	Intervention
The machine is not electrically powered.	The power outlet is not connected to the electrical system.	Connect the plug to the electrical system.
The machine is electrically powered but does not work.	The machine has been connected incorrectly.	Check the electrical connection (paragraph 4.5.1).
	A time has not been set for the processing cycle.	Turn the CYCLE TIMER towards the desired time for the processing cycle.
	The movable guard of the bowl is open.	Close the mobile guard of the bowl.
The spiral rotates inconsistently or the machine makes more noise than usual.	The chain is loose.	Tension the chain as described in the paragraph 8.4.2.

8 Maintenance

8.1 Warnings

The user must set up a system (if this has not already been done) to record all the maintenance work performed.

Failure to record an intervention is to be considered as "maintenance not performed".

All the maintenance information relates only to ordinary maintenance with interventions aimed at the correct daily operation of the machine.

Maintenance must be carried out by the following categories of persons:

- **specialist mechanical maintenance technician:** A qualified technician able to operate the machine in normal conditions, to operate it with the protections disabled, to intervene on the mechanical parts to perform all the necessary adjustments, maintenance and repairs;
- **specialist electrical maintenance technician:** A qualified technician capable of operating the machine in normal conditions and operating it with the protections disabled; they are responsible for all electrical adjustments, maintenance and repairs. They are capable of operating in the presence of voltage.

It is good practice to use only original materials for repairs in order to guarantee the safety of the machine in any case.

Check that the tools available are suitable for use and always avoid the improper use of tools or equipment.

8.2 Precautions when undertaking maintenance

Maintenance personnel must be aware that carrying out these operations can cause dangers. It is therefore necessary to comply with all the warnings contained in these user instructions.

The following are essential:

- use the **personal protection equipment**;
- avoid physical contact with moving parts of the machine;
- unqualified and unauthorised personnel must **not** enter the work area of the machine when it is under maintenance;



PROHIBITION

PROHIBITION OF ACCESS TO THE WORK AREA OF THE MACHINE FOR NON-QUALIFIED AND UNAUTHORISED PERSONNEL.

- the maintenance operations must be carried out with sufficient lighting; in the case of maintenance located in areas that are not sufficiently illuminated, portable lighting devices must be used, taking care to avoid shadow cones that prevent or reduce the visibility of the point to be worked on or the surrounding areas (follow the instructions in the paragraph 3.3.6 "Lighting the operating environment").



ELECTRICITY HAZARD

MAINTENANCE OPERATIONS THAT REQUIRE THE PRESENCE OF ELECTRICITY, SUCH AS TROUBLESHOOTING IN THE ELECTRICAL PANEL, **MUST BE PERFORMED ONLY BY QUALIFIED PERSONNEL FOLLOWING THE SAFETY PROCEDURES FOR WORK INSIDE THE SYSTEM WHERE THE MACHINE IS INSTALLED.**



CHECK THAT GUARDS AND PROTECTIONS ARE EFFICIENT

THE GUARDS AND SAFETY DEVICES MAY BE REMOVED IN PART OR FULLY DURING MAINTENANCE OPERATIONS BY SPECIALIST AND/OR AUTHORISED PERSONNEL WHO WILL REASSEMBLE THEM IN THE ORIGINAL POSITION AS SOON AS THE MAINTENANCE OPERATIONS ARE COMPLETE: AT THE END OF THE MAINTENANCE IT IS NECESSARY TO VERIFY THAT THE PROTECTIONS ARE CORRECTLY ASSEMBLED AND EFFICIENT. THE MACHINE CANNOT BE STARTED AFTER A MAINTENANCE INTERVENTION WITHOUT THE PROTECTIONS AND OTHER DEVICES HAVING BEEN REASSEMBLED.

8.3 Procedures for putting into maintenance status

Proceed as follows:

1. Follow the instructions in the paragraph 6.5.
2. Enclose the machine and affix the "MACHINE UNDER MAINTENANCE" sign.

8.4 Periodic maintenance

8.4.1 Daily checks

EACH start of shift.

1. Efficiency control of the microswitch connected to the movable guard of the bowl.
2. Control operation of the control panel (see paragraph 5.1).
3. Clean the machine as described in the paragraph 8.4.4.
4. Checking the efficiency of the proximity sensor between the bowl and the machine frame.

8.4.2 Monthly checks

At least **ONCE A MONTH:**

1. Check the tension of the upper chain located inside the machine head which must be adjusted when there is a slowdown in the rotation of the spiral or if the rotation movement is not fluid during the execution of a processing cycle by loosening the screws and removing the upper fixed guard. At this point it is necessary to loosen the screws that fix the spiral support by a few turns and to pull the spiral until the chain tension is optimised. Finally lock the spiral support by tightening the screws and reassembling the fixed guard.

At least **ONCE EVERY 6 MONTHS:**

1. Grease the hardened joint and the chains located inside the head and inside the base of the machine by loosening the screws that lock the fixed guard to protect the head and the fixed guard located behind the machine; deposit within the chains a reasonable amount of suitable and sufficient grease to ensure the lubrication of all the links of the chains; when the operation is completed, reassemble the two fixed guards.

8.4.3 Annual controls

At least **ONCE EVERY 5 YEARS:**

1. Provide for the replacement of the safety microswitch to protect the front mobile guard located inside the head cover of the machine as, following the analysis of the performance level carried out, it has been found that the device no longer guarantees an adequate level of reliability.

At least **ONCE EVERY 10 YEARS:**

2. Provide for the replacement of the switch block consisting of the protective START and STOP button which guarantees the safety function of the control with maintained action as, following the analysis of

the performance level carried out, it has been found that the device no longer guarantees an adequate level of reliability.

8.4.4 Cleaning the machine



PROHIBITION

IT IS FORBIDDEN TO CLEAN THE MACHINE IN A WAY OTHER THAN AS INSTRUCTED BY THE MANUFACTURER.

GGF S.R.L. NO LIABILITY IS ASSUMED FOR ANY DAMAGE TO THE MACHINE FOR FAILURE TO COMPLY WITH THE RECOMMENDATIONS CONTAINED IN THIS DOCUMENTATION.

The machine has been designed for the production of food products and it is therefore essential that it is cleaned and sanitised thoroughly every day, according to the local health and hygiene standards for the environments being used for the production of food. The first and most effective form of preventive maintenance is to keep the machine clean. Careful and regular cleaning prevents the formation of mixture residues which, in the long term, could damage moving parts.

Cleaning the external body of the machine

The external body of the machine must be cleaned using only a damp cloth previously immersed in water and sufficiently wrung out. The cloth must be chosen and sanitised as specified by the local hygienic-sanitary standards relating to the environments being used for the production of food. For cleaning, it is absolutely forbidden to use tools that can scratch or damage the machine.

Cleaning the inside of the bowl and the kneading tools

Remove any dough residues with a dedicated scratch-resistant tool that does not damage the internal surface of the bowl and the kneading tools. Clean the bowl with water and, if necessary, with food soap. Rinse the bowl well and sanitise it as specified by the local health and hygiene standards relating to the environments used for the production of food.

9 Demolition and disposal



ATTENTION

CONSULT THE LEGISLATION IN FORCE IN THE COUNTRY OF THE USER RELATING TO DEMOLITION TO ASCERTAIN ANY PROCEDURES FOR THE "RESPONSIBLE BODY INSPECTION" OR "DOCUMENTATION" TO BE ACTIVATED.



ATTENTION

DURING THE PERIODS IN WHICH THE MACHINE IS PUT OUT OF OPERATION FOR EXTENDED TIMES AWAITING DISMANTLING, IT IS APPROPRIATE TO CORDON OFF THE AREA AND SIGNAL THE PROHIBITION OF ACCESS TO UNAUTHORISED PERSONS.

The machine was built with materials that do not present, at the time of demolition, particular aspects of danger for the operator.

The operator or persons assigned to disposal must take into consideration the fact that the materials of which the machine is made are not of a dangerous nature and essentially consist of steel, stainless steel; cast iron, copper, aluminium, electric motors, plastic, electric cables with relative sheaths and rubber seals.

In the event of demolition and disposal of the machine, the operator must take all the necessary precautions to avoid the generation of risks associated with dismantling of the equipment, in accordance with what is prescribed in the chapter 4.

In particular, special precautions must be taken during the phases of:

- Dismantling and removal of the machine from the operating area.
- Transportation and handling.
- Separation of materials.

The operator must manage the waste (i.e. the substance or object which the holder disposes of or has decided or has the obligation to discard) as required by the EU directives 91/156/EEC on waste, 91/689/EEC on hazardous waste and 94/62/EC on packaging and packaging waste so that the waste can be recovered or disposed of without endangering human health and without using procedures or methods that could harm the environment, in particular:

- without causing risks for water, air, soil, fauna and flora;
- without causing problems due to noise or odours;
- without damaging the landscape and sites of particular interest, protected according to current legislation.



ATTENTION

ALL MATERIAL USED FOR PACKAGING MUST BE RECOVERED AND DISPOSED OF IN COMPLIANCE WITH THE LAW PROVISIONS DEFINED FOR THE TYPE OF MATERIAL, IN COMPLIANCE WITH THE LAWS IN FORCE, FOR SAFEGUARDING AND PROTECTION OF THE ENVIRONMENT.



DISPOSAL OF ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) SUBJECT TO THE ROHS DIRECTIVE

ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) DISPLAYING THIS SYMBOL MUST BE SUBJECT TO DIFFERENTIATED COLLECTION.

10 Documentation attached

10.1 Copy of the EC Declaration of Conformity

Versione originale in lingua italiana

Pg611_DC0642_it_00



DICHIARAZIONE CE DI CONFORMITÀ

di una macchina

(2006/42/CE, All. II, p. 1, let. A)

*Il fabbricante e
Nome e indirizzo della persona autorizzata a costituire il fascicolo tecnico:*

GGF S.R.L.
Via Tarantelli, 15
31030 Casier (TV) Italia

Dichiara
sotto la propria responsabilità che la macchina:

DENOMINAZIONE COMMERCIALE

Denominazione generica: _____

Modello: _____

Matricola: _____

Funzione: _____

è conforme a tutte le disposizioni pertinenti delle seguenti direttive comunitarie:
Direttiva Macchine 2006/42/CE
Direttiva EMC 2014/30/UE

e alle seguenti norme armonizzate, norme e/o specifiche tecniche applicate:
UNI EN ISO 12100:2010
EN 453:2014

e ai seguenti regolamenti comunitari:
Regolamento (CE) 1935:2004, Regolamento (CE) 2023:2006

Luogo:

Data:

Timbro e Firma

Ernesto Giacomini
(persona autorizzata a redigere la dichiarazione)



GGF s.r.l.
Via Tarantelli, 15
31030 Casier (TV)

Figure 10-1. Copy of the EC Declaration of Conformity

10.2 Copy of the EC Conformity Plate



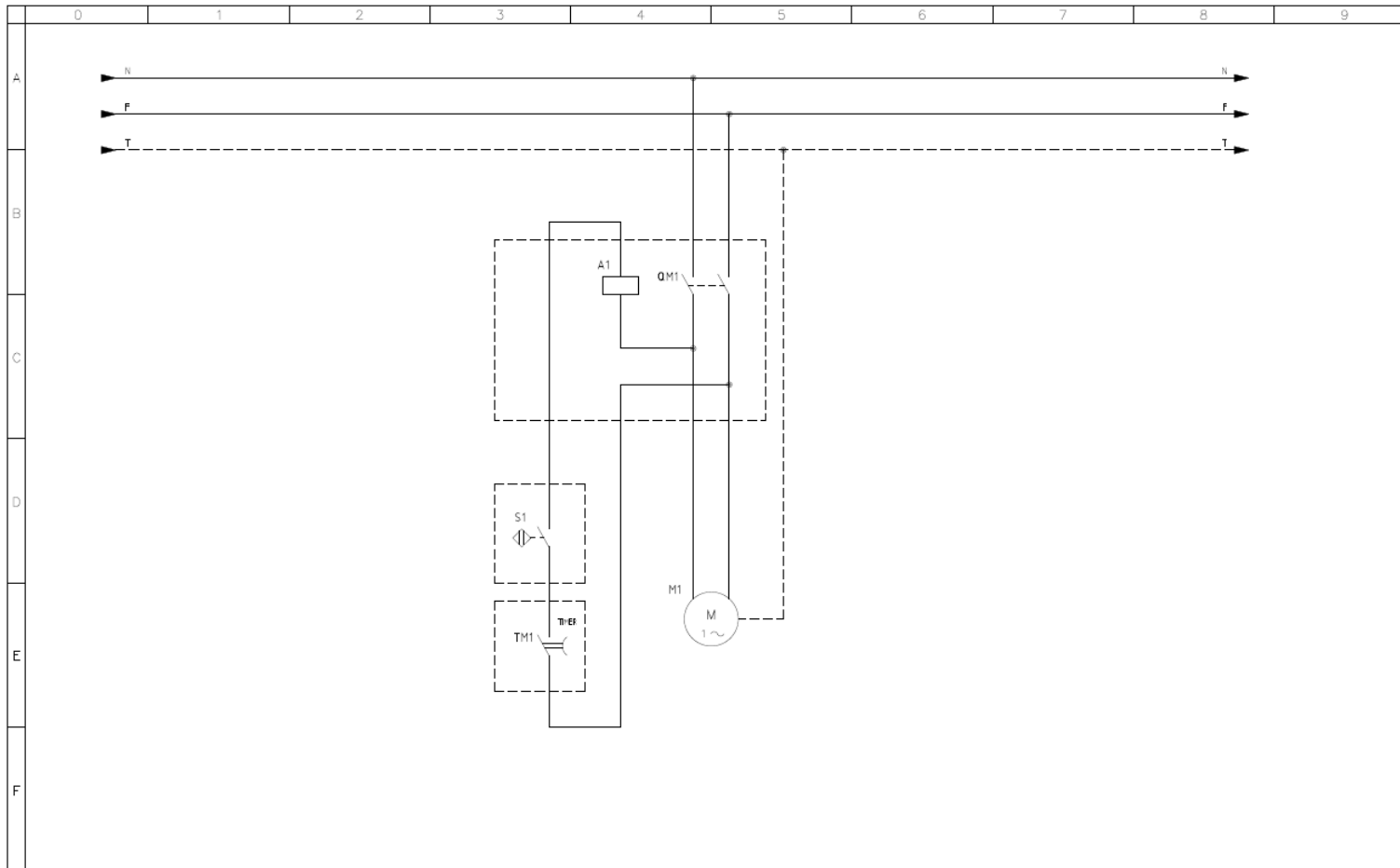
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MODELLO	<input type="text"/>	
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ANNO DI COSTRUZIONE	<input type="text"/>	
DATI ELETTRICI	<input type="text"/>	<input type="text"/>

Figure 10-2. Copy of the EC Conformity Plate

10.3 Electrical diagram.

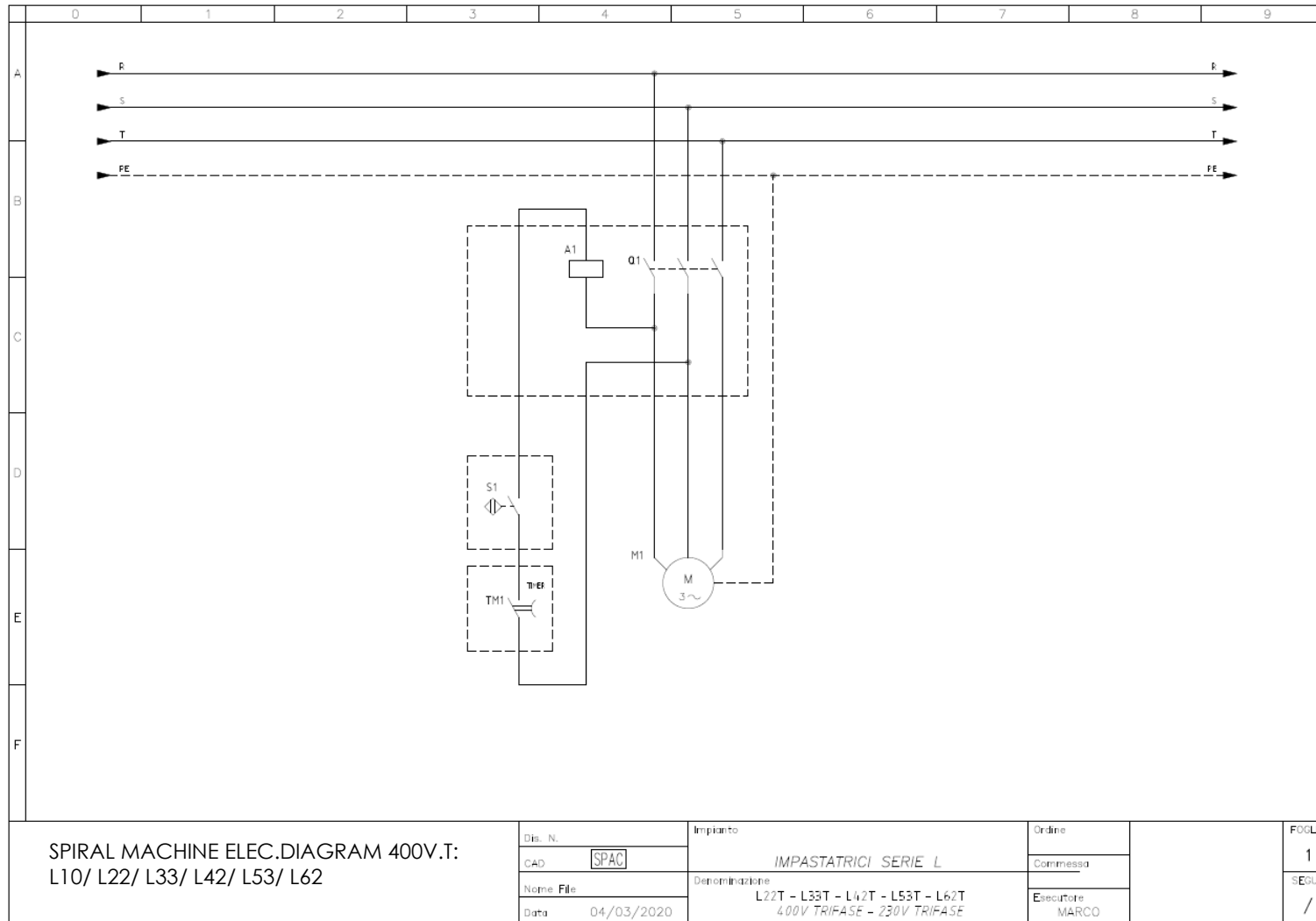


REF.	DESCRIPTION	Q.TY
M1	Motor	1
S1	Bowl guard sensor	1
S2	Raised head sensor	-
S3	Bowl detection sensor	-
TM1	Unipol mechanical timer.	1
HL1	Bulb	-
SB1	Button	-
SB2	Button	-
TGCE TSP	Board	-
QM1	Power switch	1
A1	Motor starter	1
D1	Dahlander Switch	-

SPIRAL MACHINE ELEC.DIAGRAM 230V.M:
L10/ L22/ L33/ L42/ L53/ L62

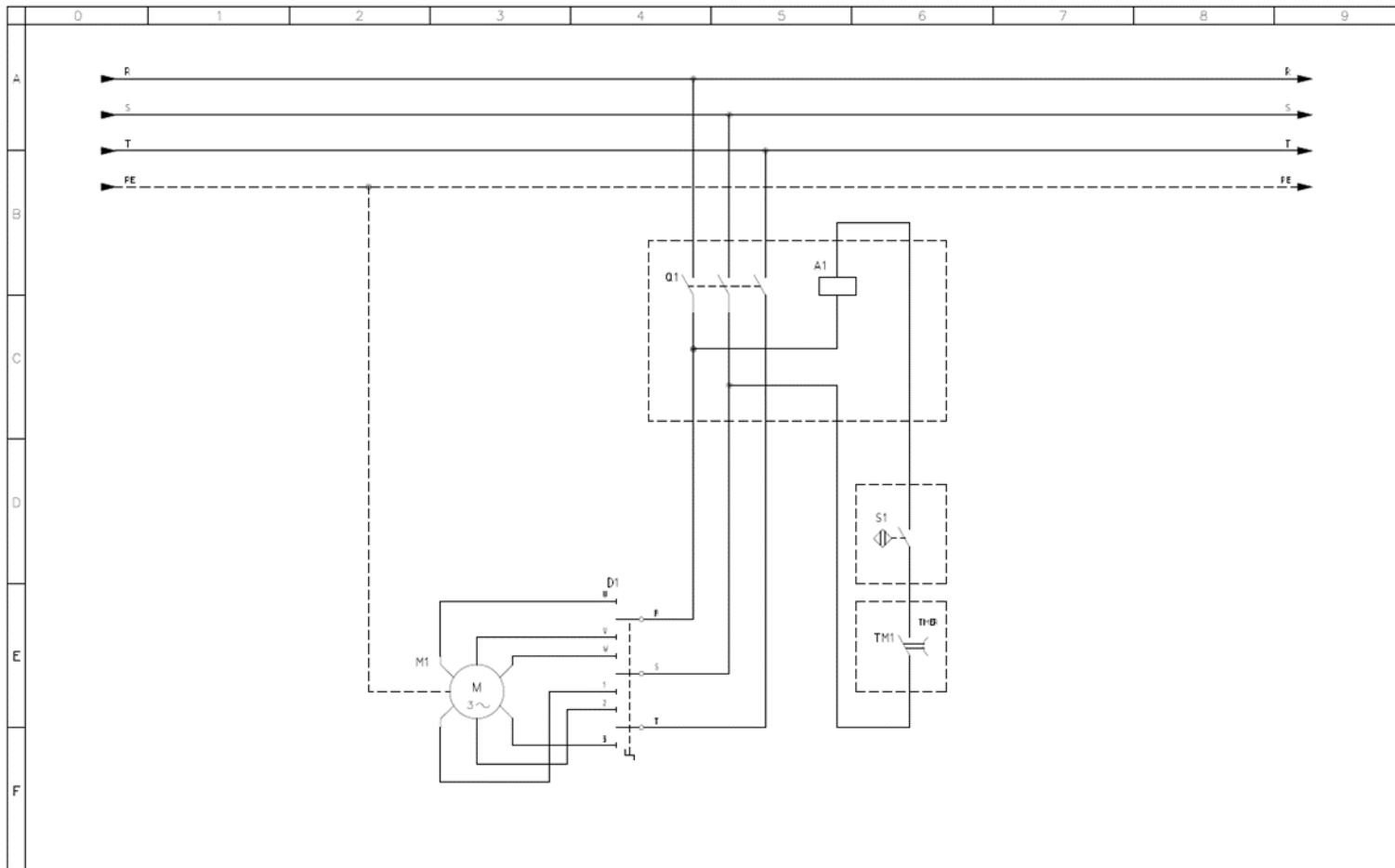
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CAD SPAC	<i>IMPASTATRICI SERIE L</i>	Commissa	1
Nome File	Denominazione	Esecutore	SEQUE
Data 04/03/2020	L10M - L22M - L33M - L42M - L53M - L62M 230V - MONOFASE	MARCO	/

SPIRAL MACHINE
L10/L22/L33/L42/L53/L62
LR22/LR33/LR42



REF.	DESCRIPTION	Q.TY
M1	Motor	1
S1	Bowl guard sensor	1
S2	Raised head sensor	-
S3	Bowl detection sensor	-
TM1	Unipol mechanical timer.	1
HL1	Bulb	-
SB1	Button	-
SB2	Button	-
TGCE TSP	Board	-
QM1	Power switch	1
A1	Motor starter	1
D1	Dahlander Switch	-

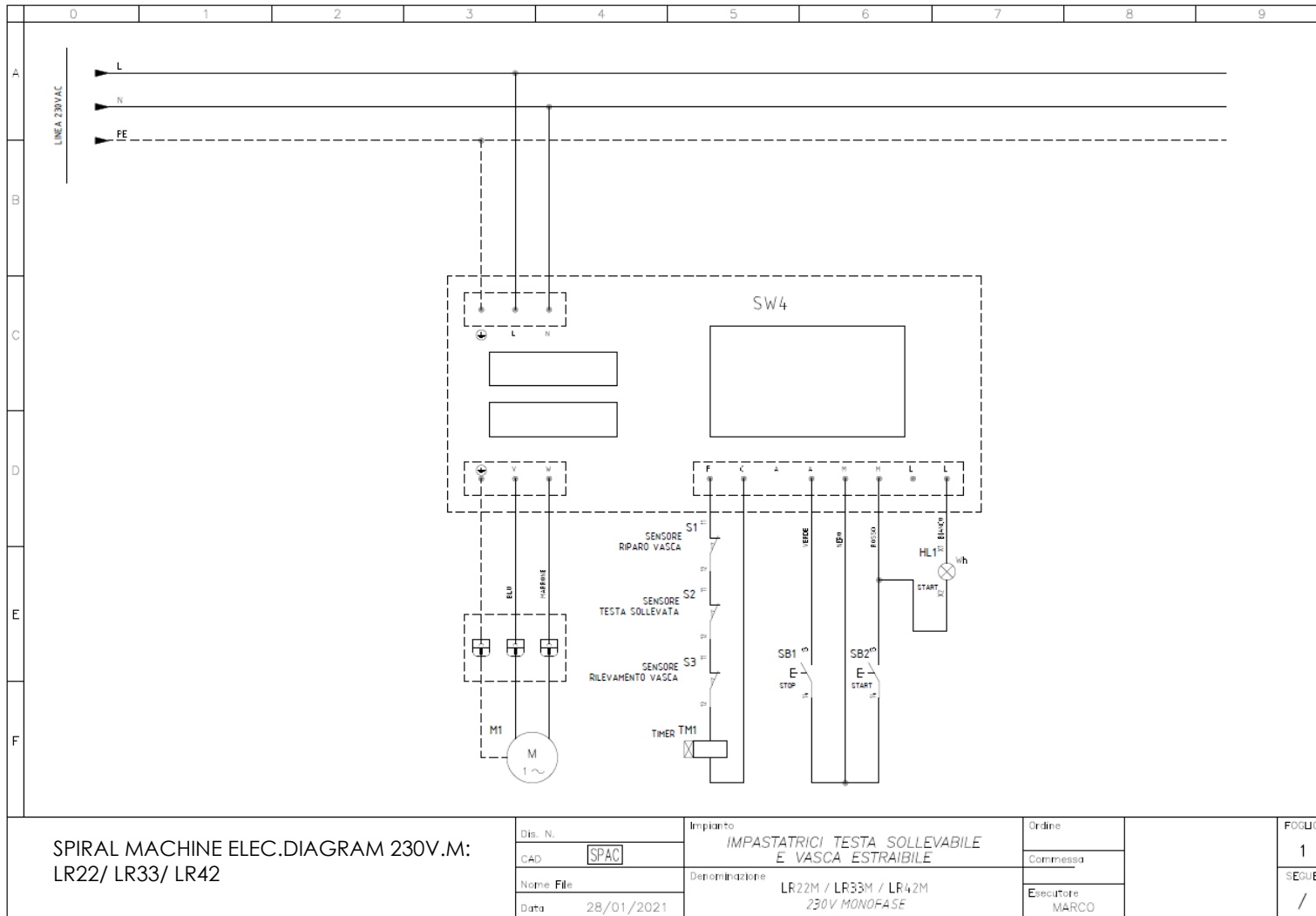
SPIRAL MACHINE
L10/L22/L33/L42/L53/L62
LR22/LR33/LR42



REF.	DESCRIPTION	Q.TY
M1	Motor	1
S1	Bowl guard sensor	1
S2	Raised head sensor	-
S3	Bowl detection sensor	-
TM1	Unipol mechanical timer.	1
HL1	Bulb	-
SB1	Button	-
SB2	Button	-
TGCE TSP	Board	-
QM1	Power switch	1
A1	Motor starter	1
D1	Dahlander Switch	1

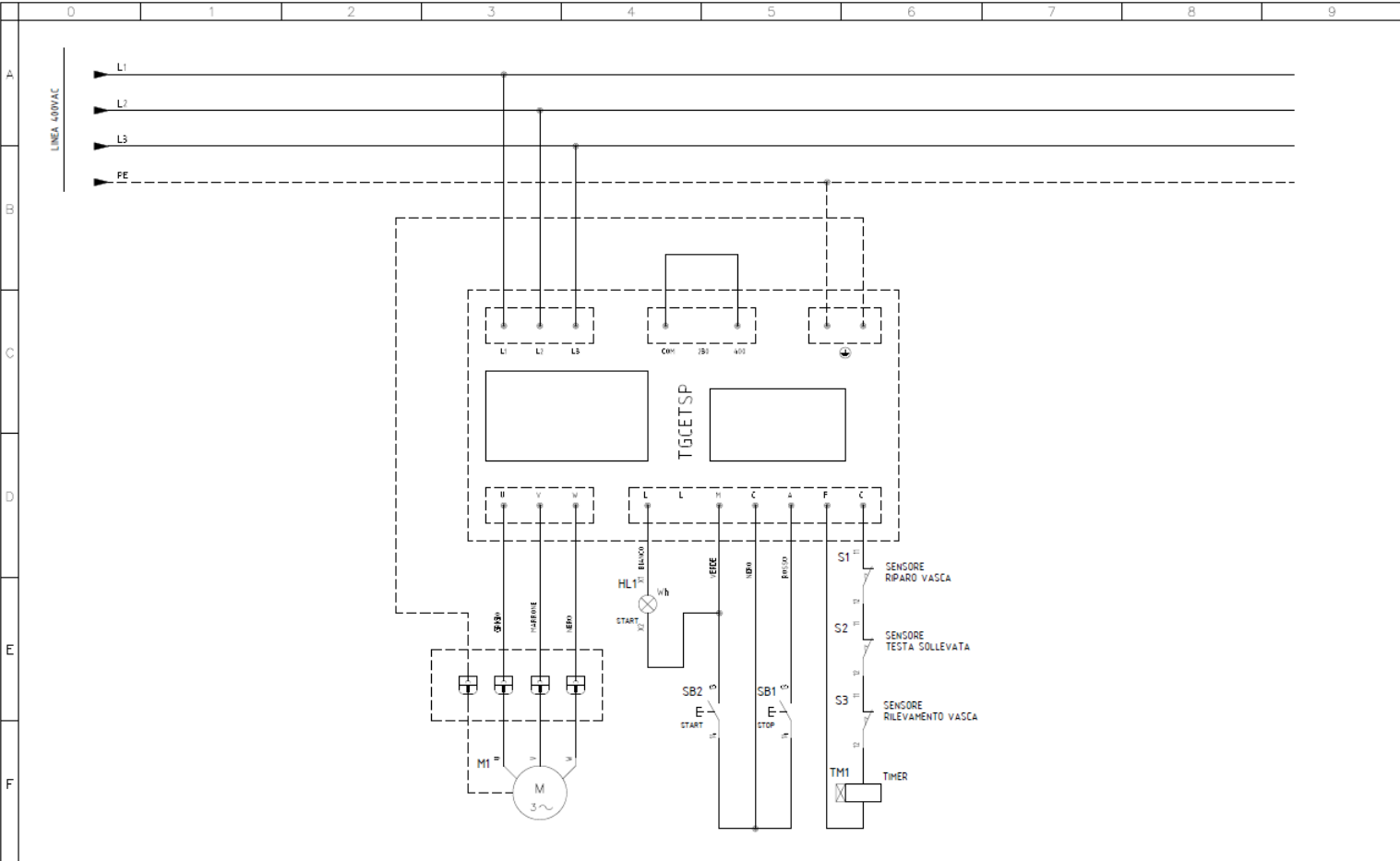
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	CAD SPAC	IMPASTATRICI SERIE L	Commessa	
	Nome File	Denominazione	Esecutore	
	Data 04/03/2020	L22T2V - L33T2V - L42T2V - L53T2V - L62T2V 400V TRIFASE	MARCO	

SPIRAL MACHINE
L10 / L22 / L33 / L42 / L53 / L62
LR22/LR33/LR42



REF.	DESCRIPTION	Q.TY
M1	Motor	1
S1	Bowl guard sensor	1
S2	Raised head sensor	1
S3	Bowl detection sensor	1
TM1	Unipol mechanical timer.	1
HL1	Bulb	1
SB1	Button	1
SB2	Button	1
TGCE TSP	Board	1
QM1	Power switch	-
A1	Motor starter	-
D1	Dahlander Switch	-

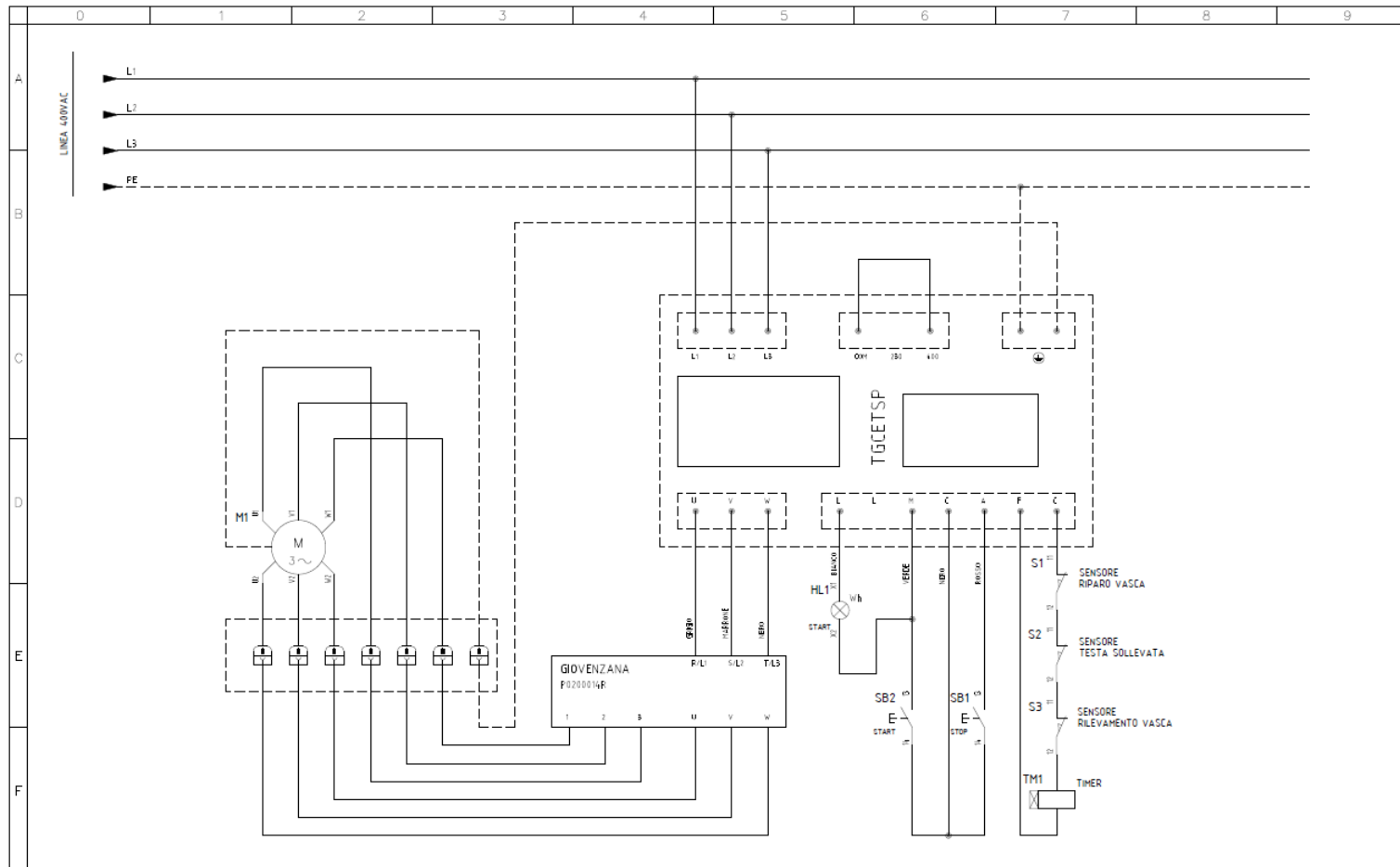
SPIRAL MACHINE
L10/L22/L33/L42/L53/L62
LR22/LR33/LR42



REF.	DESCRIPTION	Q.TY
M1	Motor	1
S1	Bowl guard sensor	1
S2	Raised head sensor	1
S3	Bowl detection sensor	1
TM1	Unipol mechanical timer.	1
HL1	Bulb	1
SB1	Button	1
SB2	Button	1
TGCE TSP	Board	1
QM1	Power switch	-
A1	Motor starter	-
D1	Dahlander Switch	-

SPIRAL MACHINE ELEC.DIAGRAM 400V.T: LR22/ LR33/ LR42	Dis. N.	Impianto	Ordine	FOGLIO 1 SEGUE /
	CAD SPAC	IMPASTATRICI TESTA SOLLEVABILE E VASCA ESTRAIBILE	Commessa	
	Nome File	Denominazione	Esecutore	
	Data 28/01/2021	LR22T / LR33T / LR42T 400V - TRIFASE	MARCO	

SPIRAL MACHINE
L10/L22/L33/L42/L53/L62
LR22/LR33/LR42



REF.	DESCRIPTION	Q.TY
M1	Motor	1
S1	Bowl guard sensor	1
S2	Raised head sensor	1
S3	Bowl detection sensor	1
TM1	Unipol mechanical timer.	1
HL1	Bulb	1
SB1	Button	1
SB2	Button	1
TGCE TSP	Board	1
QM1	Power switch	-
A1	Motor starter	-
D1	Dahlander Switch	1

SPIR.MACHINE ELEC.DIAGRA 400V.T-2spe: LR22/ LR33/ LR42	Dis. N.	Impianto	Ordine	FOGLIO 1 SEGUE /
	CAD	IMPASTATRICI TESTA SOLLEVABILE E VASCA ESTRAIBILE	Commessa	
	Nome File	Denominazione	Esecutore	
	Data	LR22T 2V / LR33T 2V / LR42T 2V 400V - TRIFASE	MARCO	

10.4 Esplosi modello L10

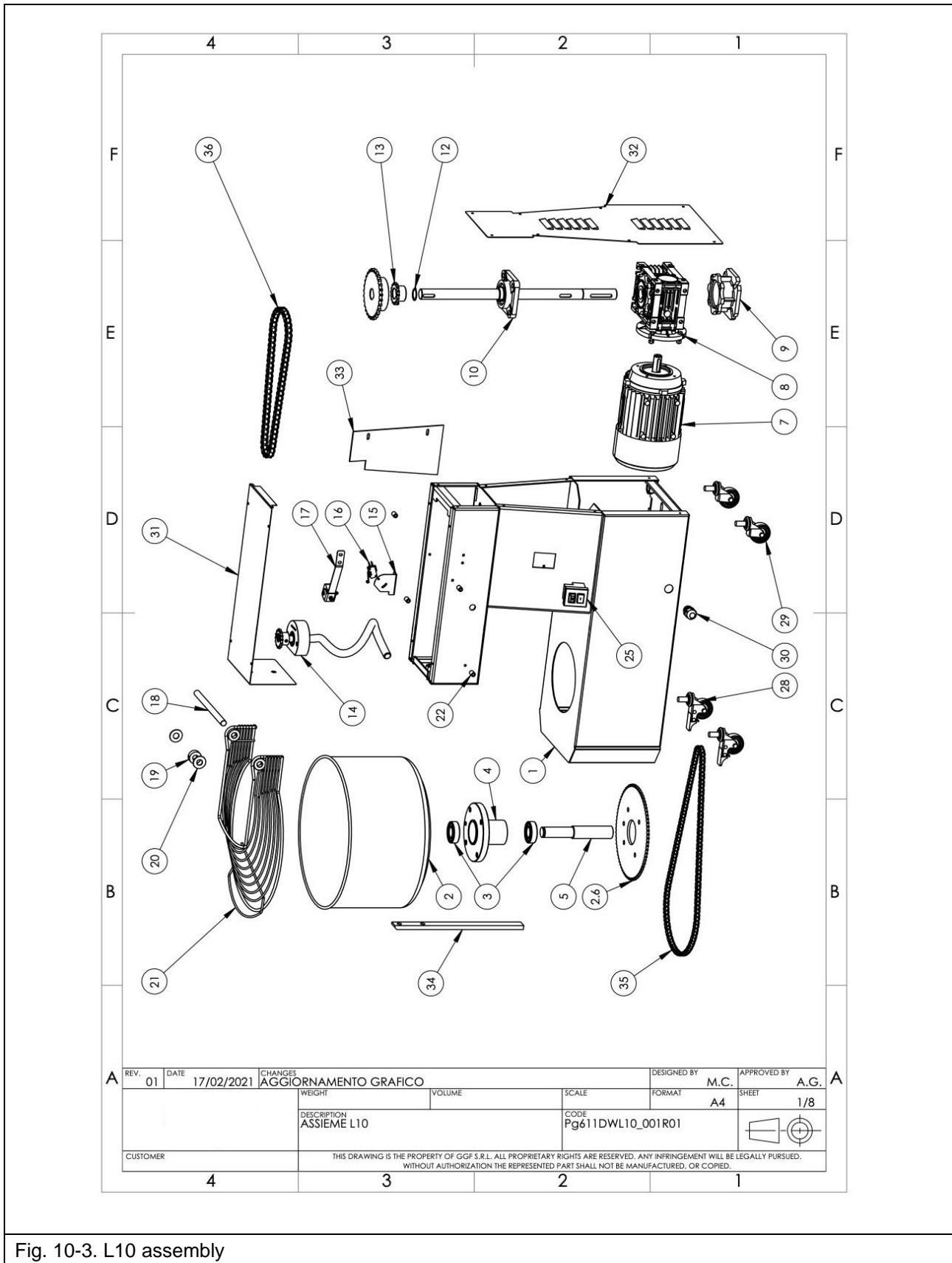
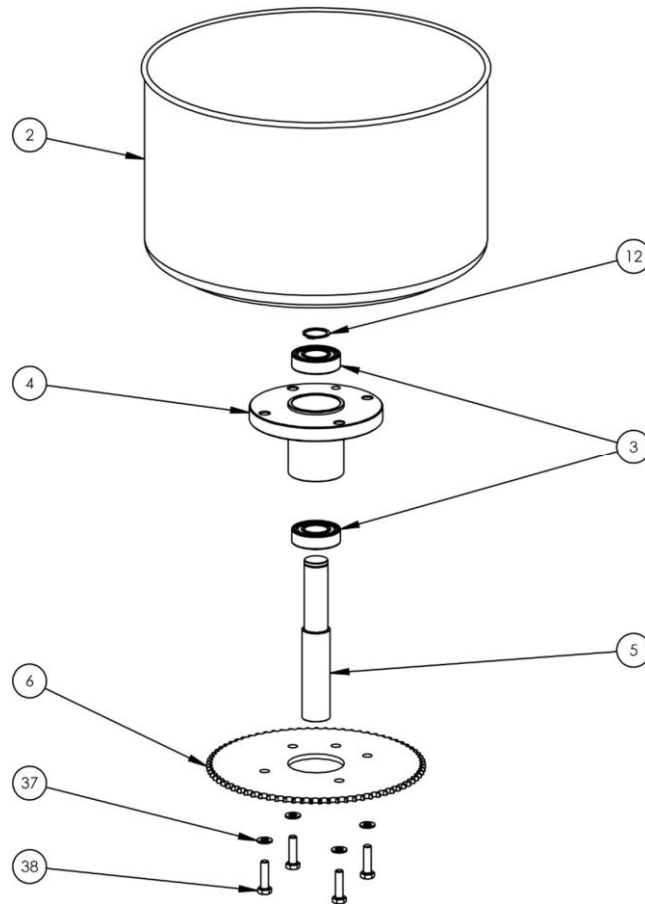


Fig. 10-3. L10 assembly

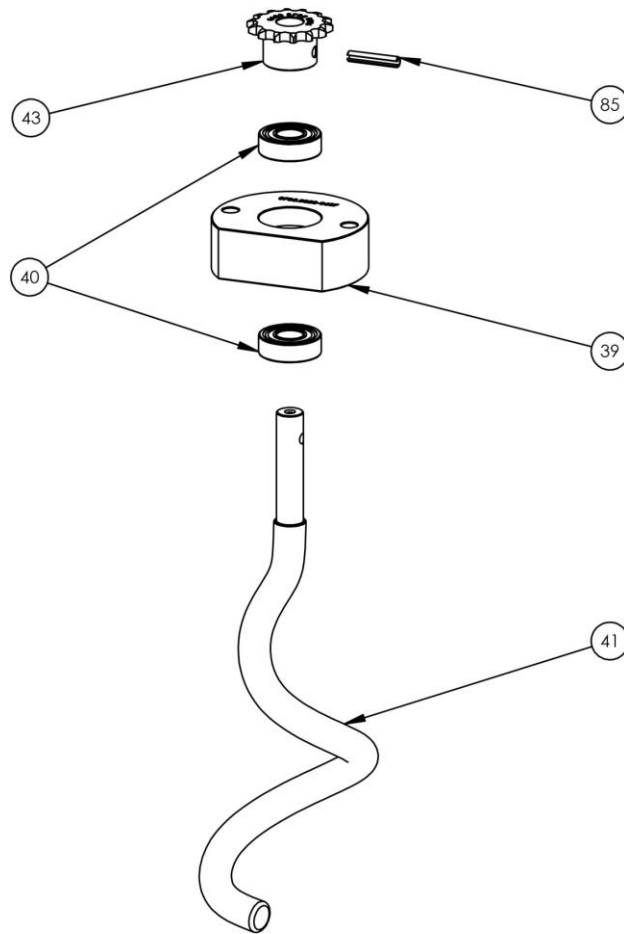
REF.	CODE	DESCRIPTION	Q.TY
1	CIL00001	L10 STRUCTURE	1
2	CIL00021	BOWL L10 260 x 200	1
3	CIL00093	BEARING 6205 2RS	2
4	CIL00074	BOWL SUPPORT L10	1
5	CIL00066	BOWL SUPPORT SHAFT L10	1
6	CIL00079	BOWL CROWN L10 Z65 3/8"	1
7	CIL00045	MOTOR L10 230V – 0.37Kw	1
8	CIL00055	GEAR BOX	1
9	CIL00058	REDUCER FLANGE S40 (L10)	1
10	CIL00077	UCF204 (D20mm) (DRIVE SHAFT SUPPORT)	1
11	CIL00061	TRANSMISSION SHAFT L10	1
12	BIL00008	EXTERNAL SEEGER D20	2
13	CIL00087	DRIVE PINION BOWL L10 Z14 3/8" D20	1
14	CIL00140	SPIRAL ASSEMBLY L10	1
15	CIL00114	LID MICROSWITCH BRACKET L10	1
16	CIL00113	MICROSWITCH D3V-166-1C5	1
17	CIL00123	CHAIN TENSIONER ASSEMBLY	1
18	CIL00068	LID SHAFT L10	1
19	CIL00038	MICROSWITCH HUB	1
20	CIL00127	NYLON LID WASHER	2
21	CIL00032	LID L10	1
22	CIL00104	PLASTIC STOP SPACER 10X15	4
25	CIL00110	SINGLE-PHASE SWITCH	1
28	CIL00106	WHEEL WITH BRAKE D50 M12	2
29	CIL00107	UNBRAKED WHEEL D50M12	2
30	CIL00119	PLASTIC CABLE GLAND M20 x 1.5	1
31	CIL00002	UPPER PANEL L10	1
32	CIL00003	REAR PANEL L10	1
33	CIL00004	SIDE PANEL L10	1
34	CIL00040	DOUGH REMOVER PIN L10	1
35	CIL00099	BOWL CHAIN L10 3/8" 69P	1
36	CIL00094	SPIRAL CHAIN 3/82 69P	1

Fig. 10-4. L10 assembly component list



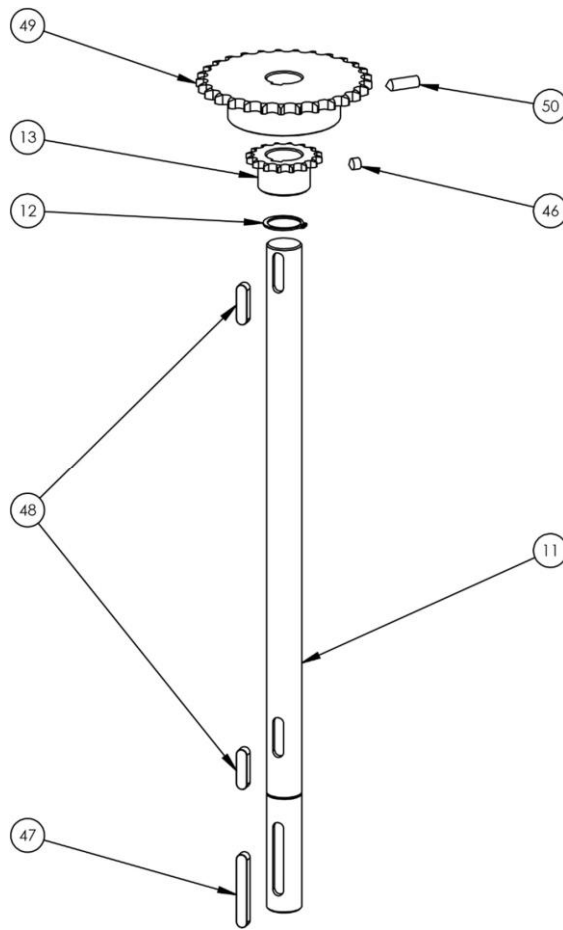
REF.	CODE	DESCRIPTION	Q.TY
2	CIL00021	BOWL L10 260 x 200	1
3	CIL00093	BEARING 6205 2RS	2
4	CIL00074	BOWL SUPPORT L10	1
5	CIL00066	BOWL SUPPORT SHAFT L10	1
6	CIL00079	BOWL CROWN L10 Z65 3/8"	1
12	BIL00008	EXTERNAL SEEGER D20	1
37	BIL00035	FLAT WASHER 8 ZN	4
38	BIL00034	HEX HEAD SCREW M8 x 30 ZN	4

Fig. 10-5. Bowl assembly



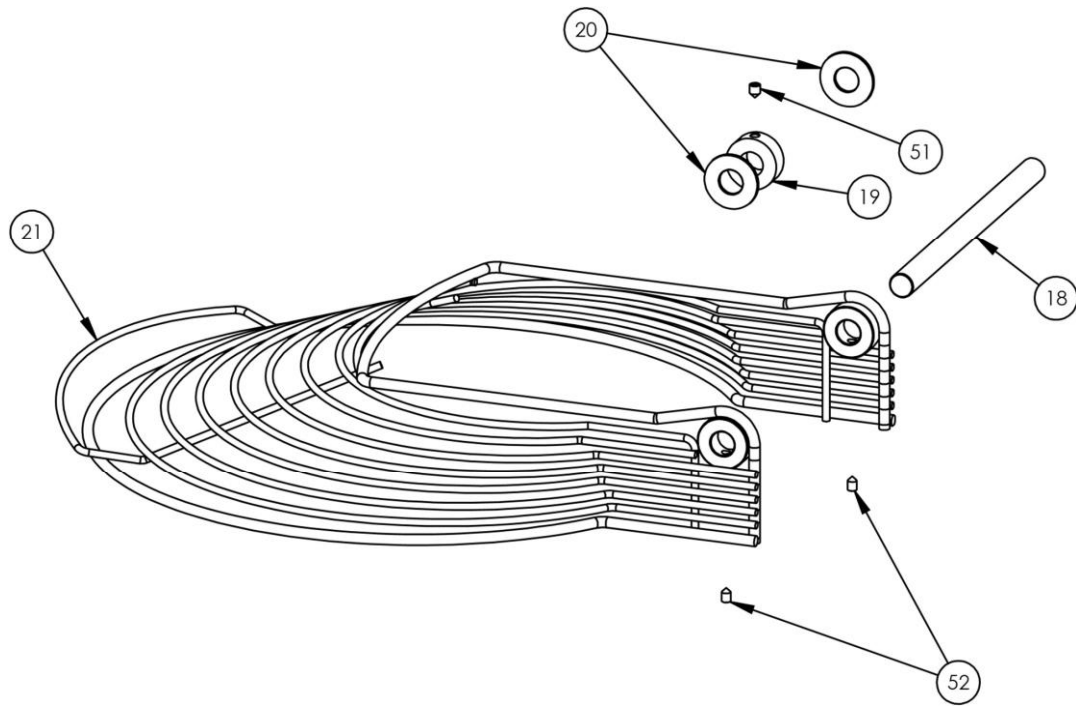
REF.	CODE	DESCRIPTION	Q.TY
39	CIL00071	SPIRAL SUPPORT L10	1
40	CIL00090	BEARING 6202 2RS	1
41	CIL00027	SPIRAL L10	1
43	CIL00082	SPIRAL PINION L10 Z14 3/8" D15	1
85	BIL00006	ROLL PIN 6 x 30	1

Fig. 10-6. Spiral assembly



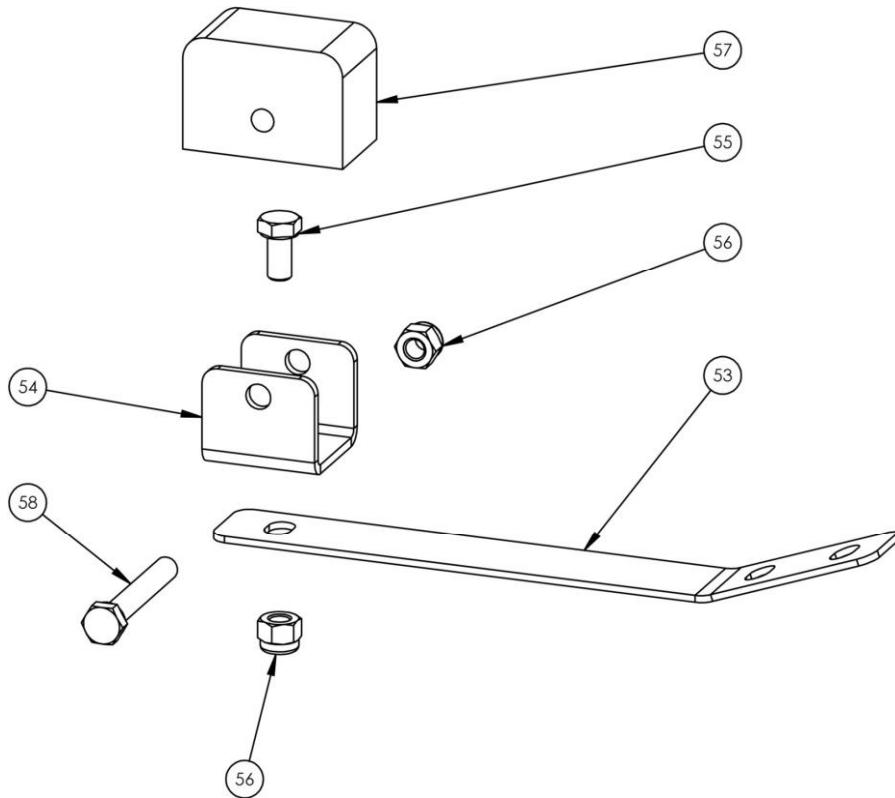
REF.	CODE	DESCRIPTION	Q.TY
11	CIL00061	DRIVE SHAFT L10	1
12	BIL00008	EXTERNAL SEEGER D20	1
13	CIL00087	BOWL DRIVE PINION L10 Z14 3/8" D20	1
46	BIL00020	M8 x 8 POINT GRUB SCREW UNPROCESSED	1
47	BIL00003	INTERLOCKING TAB 6 x 40	1
48	BIL00004	INTERLOCKING TAB 6 x 30	2
49	CIL00085	SPIRAL DRIVE PINION L10 Z25 3/8" D20	1
50	BIL00021	M8 x 25 POINT GRUB SCREW UNPROCESSED	1

Fig. 10-7. Drive shaft assembly



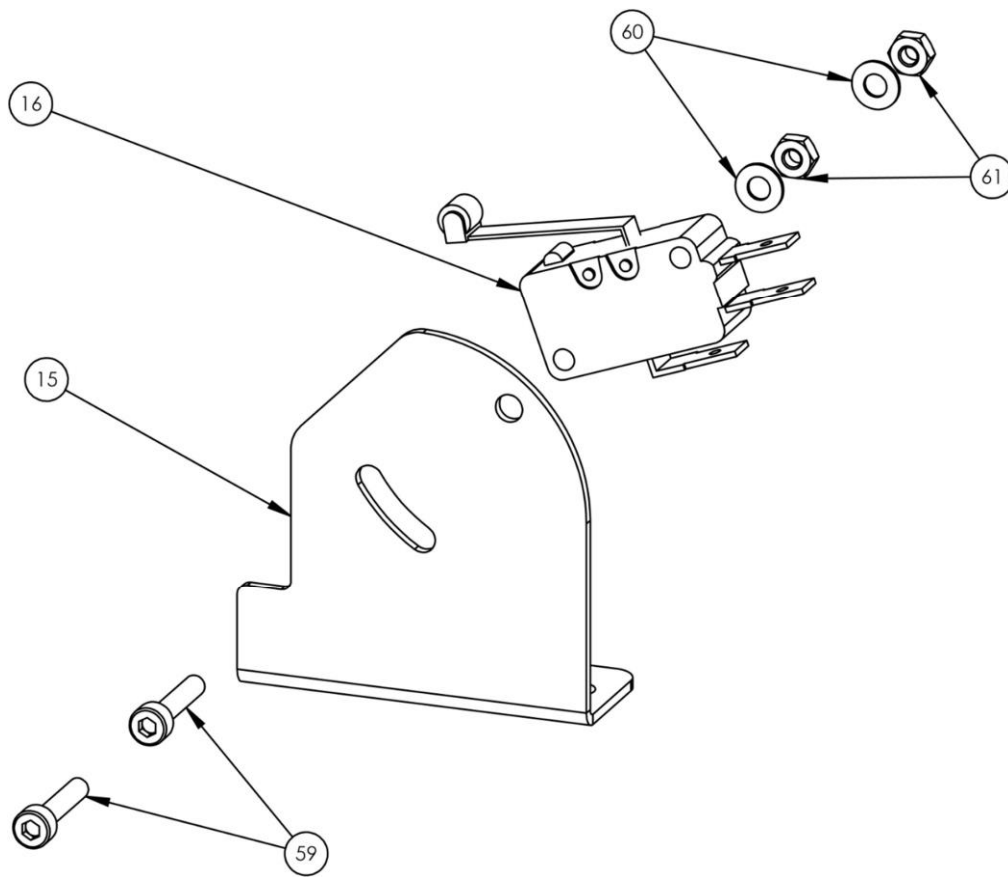
REF.	CODE	DESCRIPTION	Q.TY
18	CIL00068	LID SHAFT L10	1
19	CIL00038	MICROSWITCH HUB	1
20	CIL00127	NYLON WASHER FOR GRILLED LID	2
21	CIL00032	LID L10	1
51	BIL00019	POINT GRUB SCREW M6 x 8 ZN	1
52	BIL00018	POINT GRUB SCREW M6 x 8 ZN	2

Fig. 10-8. Lid assembly



REF.	CODE	DESCRIPTION	Q.TY
53	CIL00124	CHAIN TENSIONER SPRING	1
54	CIL00125	NYLON INSERT SUPPORT FOR CHAIN TENSIONER	1
55	BIL00013	HEX HEAD SCREW M5 x 10 ZN	1
56	BIL00010	SELF-LOCKING NUT M5 ZN	2
57	CIL00126	NYLON CHAIN TENSIONER INSERT	1
58	BIL00014	HEX HEAD SCREW M5 x 35 ZN	1

Fig. 10-9. Chain tensioner assembly



REF.	CODE	DESCRIPTION	Q.TY
15	CIL00114	LID MICROSWITCH BRACKET L10	1
16	CIL00113	MICROSWITCH D3V-166-1C5	1
59	BIL00015	SOCKET HEAD SCREW M3 x 16 A2	2
60	BIL00043	FLAT WASHER 3 x 7 x 0.5	2
61	BIL00016	NUT M3 A2	2

Fig. 10-10. Microswitch assembly

10.5 MODELS L22 / L33 / L42 / L53 / L62

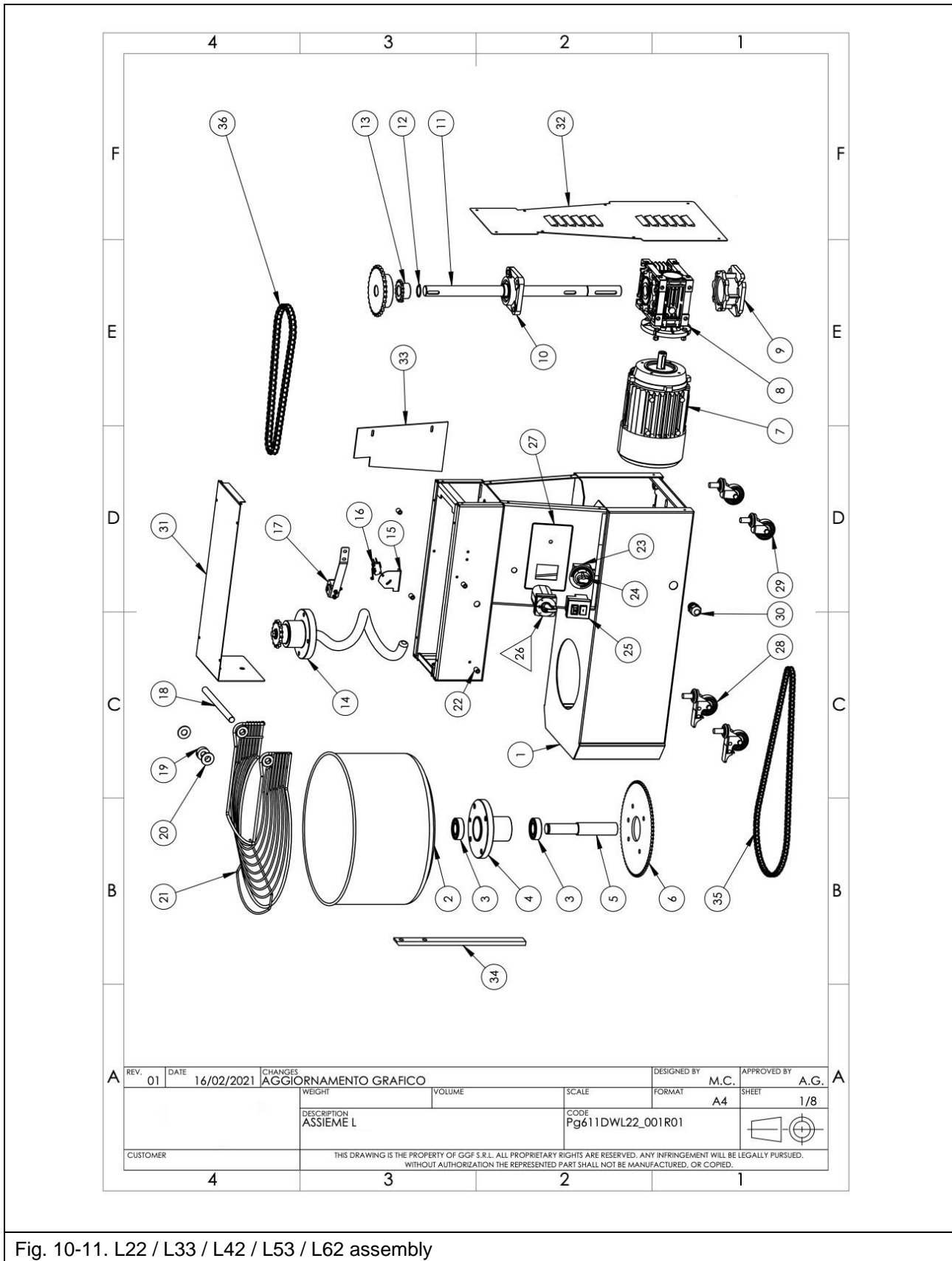
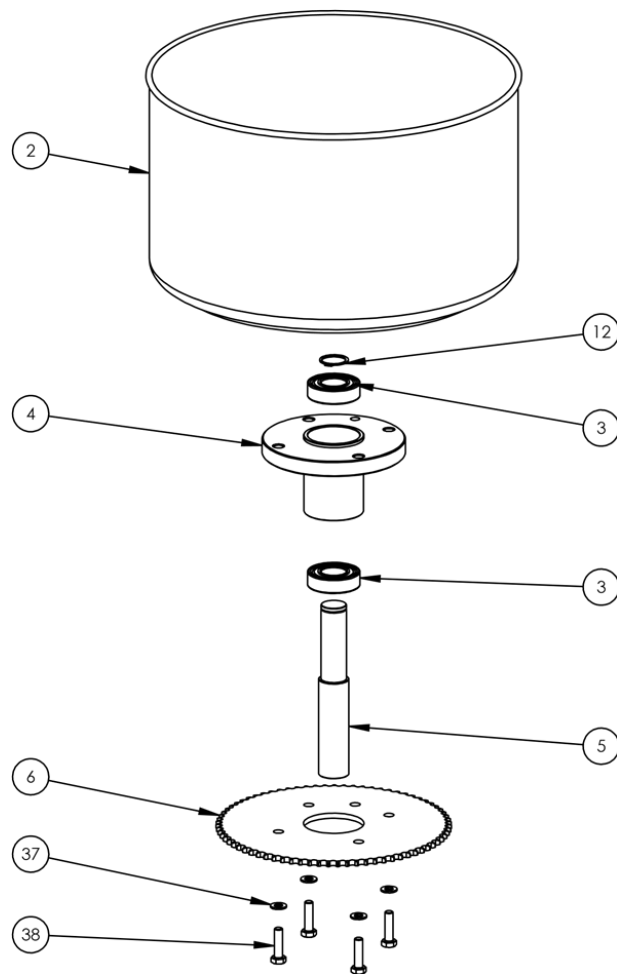


Fig. 10-11. L22 / L33 / L42 / L53 / L62 assembly

SPIRAL MACHINE
L10/L22/L33/L42/L53/L62
LR22/LR33/LR42

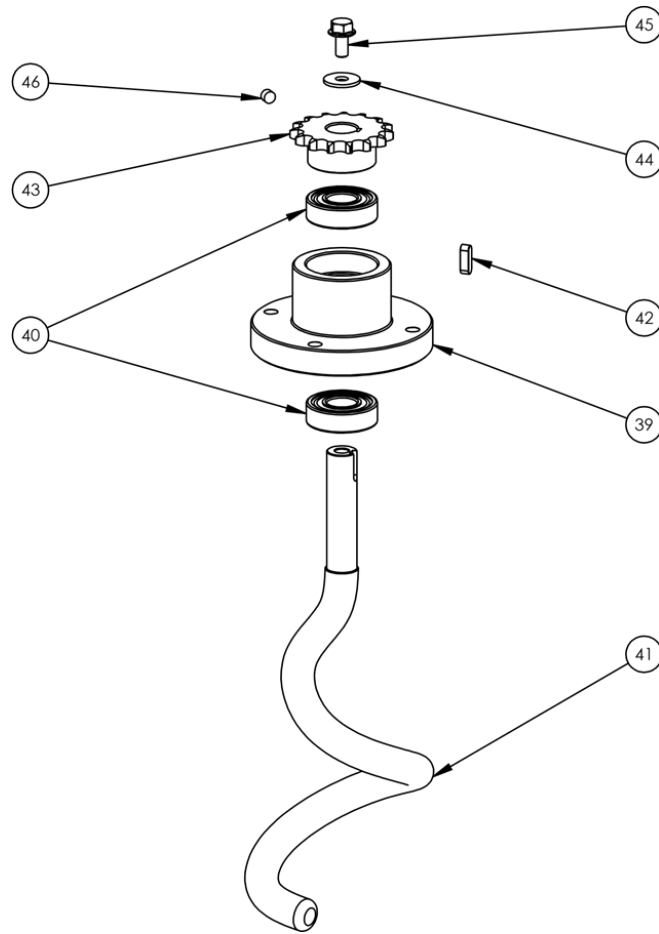
REF.	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
1	CIL00005	CIL00009	CIL00013	CIL00017	CIL00017	STRUCTURE
2	CIL00022	CIL00023	CIL00024	CIL00025	CIL00026	BOWL
3	CIL00093	CIL00093	CIL00093	CIL00093	CIL00093	BEARING 6205 2RS
4	CIL00075	CIL00075	CIL00075	CIL00075	CIL00075	SHARED BOWL SUPPORT
5	CIL00067	CIL00067	CIL00067	CIL00067	CIL00067	SHARED BOWL SUPPORT SHAFT
6	CIL00080	CIL00080	CIL00081	CIL00081	CIL00081	BOWL CROWN
7	CIL00046	CIL00050	CIL00135	CIL00052	CIL00052	MOTOR
8	CIL00056	CIL00056	CIL00057	CIL00057	CIL00057	GEAR BOX
9	CIL00059	CIL00059	CIL00060	CIL00060	CIL00060	REDUCER FLANGE
10	CIL00078	CIL00078	CIL00078	CIL00078	CIL00078	DRIVE SHAFT SUPPORT
11	CIL00062	CIL00063	CIL00064	CIL00065	CIL00065	DRIVE SHAFT
12	BIL00007	BIL00007	BIL00007	BIL00007	BIL00007	EXTERNAL SEEGER D25mm
13	CIL00088	CIL00088	CIL00138	CIL00138	CIL00138	BOWL DRIVE PINION
14	CIL00141	CIL00141	CIL00142	CIL00143	CIL00143	SPIRAL ASSEMBLY
15	CIL00115	CIL00115	CIL00115	CIL00115	CIL00115	MICROSWITCH BRACKET
16	CIL00113	CIL00113	CIL00113	CIL00113	CIL00113	MICROSWITCH D3V-166-1C5
17	CIL00123	CIL00123	CIL00123	CIL00123	CIL00123	CHAIN TENSIONER ASSEMBLY
18	CIL00069	CIL00069	CIL00070	CIL00070	CIL00070	LID SHAFT
19	CIL00038	CIL00038	CIL00038	CIL00038	CIL00038	MICROSWITCH HUB
20	CIL00127	CIL00127	CIL00127	CIL00127	CIL00127	NYLON LID WASHER
21	CIL00232	CIL00233	CIL00234	CIL00235	CIL00236	LID
22	CIL00104	CIL00104	CIL00104	CIL00104	CIL00104	PLASTIC STOP SPACER 10 x 15
23	CIL00112	CIL00112	CIL00112	CIL00112	CIL00112	TEMPOMATIC TIMER M1 130 M10 SM-T
24	MANOP005	MANOP005	MANOP005	MANOP005	MANOP005	NON-GRAD. BLACK KNOB
25	CIL00110	CIL00110	CIL00110	CIL00110	CIL00110	BUTTON 0-1
25	CIL00111	CIL00111	CIL00111	CIL00111	CIL00111	BUTTON 0-1 400V
25	CIL 00162	CIL00162	CIL00162	CIL00162	CIL00162	BUTTON 0-1 230V
26	CIL000116	CIL000116	CIL000116	CIL000116	CIL000116	SPEED SELECTOR
27	CIL00144	CIL00144	CIL00144	CIL00144	CIL00144	SCREEN-PRINTED ADHESIVE LABEL
28	CIL00106	CIL00106	CIL00106	CIL00106	CIL00106	WHEEL WITH BRAKE D50 M12
29	CIL00107	CIL00107	CIL00107	CIL00107	CIL00107	UNBRAKED WHEEL D50 M12
30	CIL00119	CIL00119	CIL00119	CIL00119	CIL00119	PLASTIC CABLE GLAND M20 x 1.5
31	CIL00006	CIL00010	CIL00014	CIL00018	CIL00018	UPPER PANEL
32	CIL00007	CIL00011	CIL00015	CIL00019	CIL00019	REAR PANEL
33	CIL00008	CIL00012	CIL00016	CIL00020	CIL00020	SIDE PANEL
34	CIL00041	CIL00042	CIL00043	CIL00044	CIL00044	DOUGH REMOVER PIN
35	CIL00100	CIL00101	CIL00102	CIL00103	CIL00103	CHAIN

Fig. 10-12. L22 / L33 / L42 / L53 / L62 assembly component list



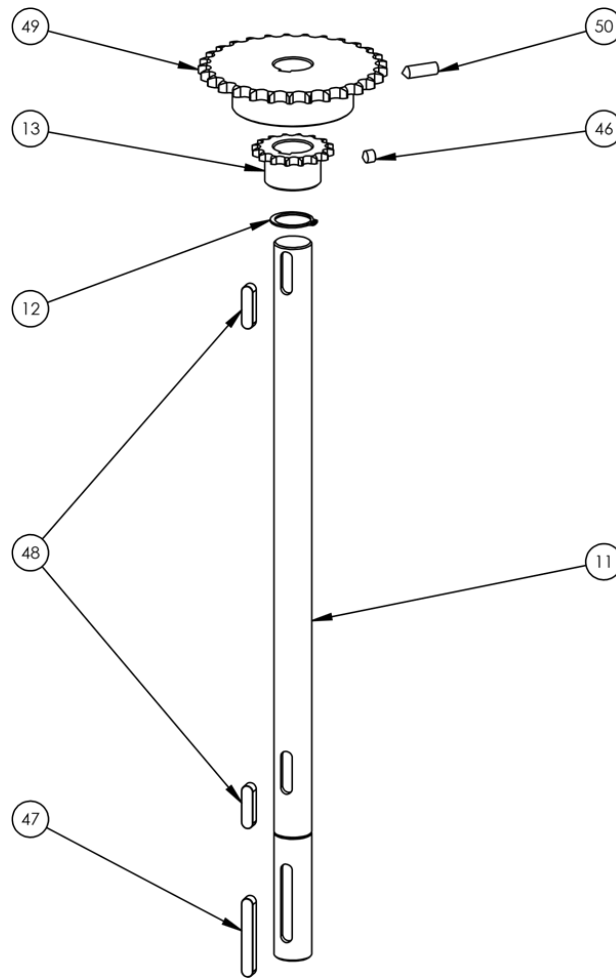
REF.	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
2	CIL00022	CIL00023	CIL00024	CIL00025	CIL00026	BOWL
3	CIL00093	CIL00093	CIL00093	CIL00093	CIL00093	BEARING 6205 2RS
4	CIL00075	CIL00075	CIL00075	CIL00075	CIL00075	SHARED BOWL SUPPORT
5	CIL00067	CIL00067	CIL00067	CIL00067	CIL00067	BOWL SUPPORT SHAFT
6	CIL00080	CIL00080	CIL00081	CIL00081	CIL00081	BOWL CROWN Z75 3/8"
12	BIL00007	BIL00007	BIL00007	BIL00007	BIL00007	EXTERNAL SEEGER D25
37	BIL00035	BIL00035	BIL00035	BIL00035	BIL00035	FLAT WASHER 8 ZN
38	BIL00034	BIL00034	BIL00034	BIL00034	BIL00034	HEX HEAD SCREW M8 x 30 ZN

Fig. 10-13. Bowl assembly



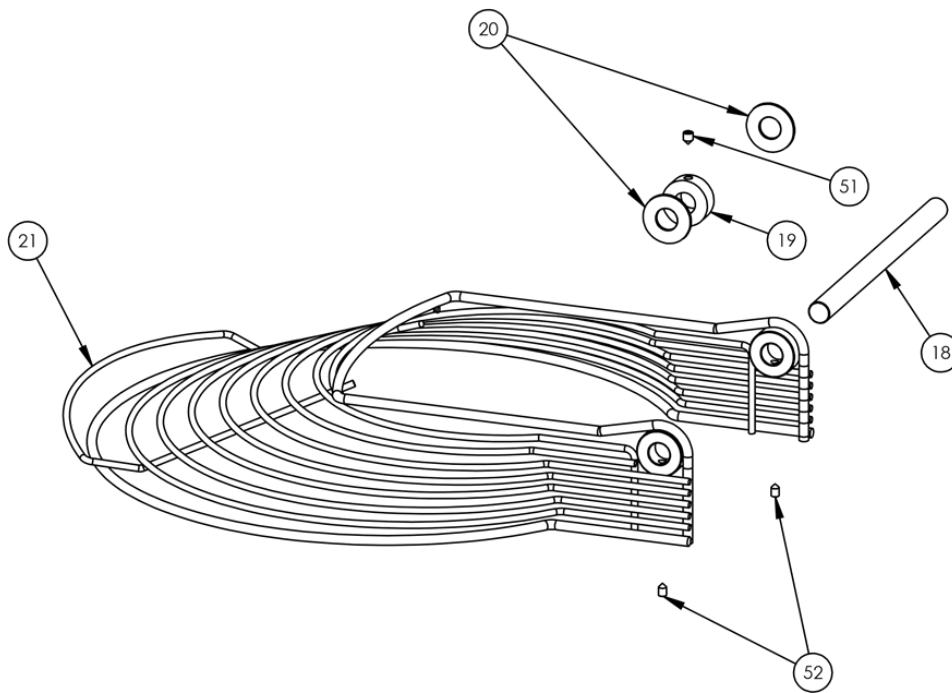
REF.	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
39	CIL00072	CIL00072	CIL00073	CIL00073	CIL00073	SPIRAL SUPPORT
40	CIL00091	CIL00091	CIL00092	CIL00092	CIL00092	BEARING 6202 2RS
41	CIL00028	CIL00029	CIL00030	CIL00031	CIL00031	SPIRAL
42	BIL00005	BIL00005	BIL00005	BIL00005	BIL00005	ROLL PIN 6X30
43	CIL00083	CIL00083	CIL00084	CIL00136	CIL00136	SPIRAL PINION
44	BIL00036	BIL00036	BIL00036	BIL00036	BIL00036	FLAT WASHER 8 X 24 ZN
45	BIL00030	BIL00030	BIL00030	BIL00030	BIL00030	HEX HEAD SCREW M8 x 16 ZN
46	BIL00020	BIL00020	BIL00020	BIL00020	BIL00020	M8 x 8 POINT GRUB SCREW UNPROCESSED

Fig. 10-14. Spiral assembly



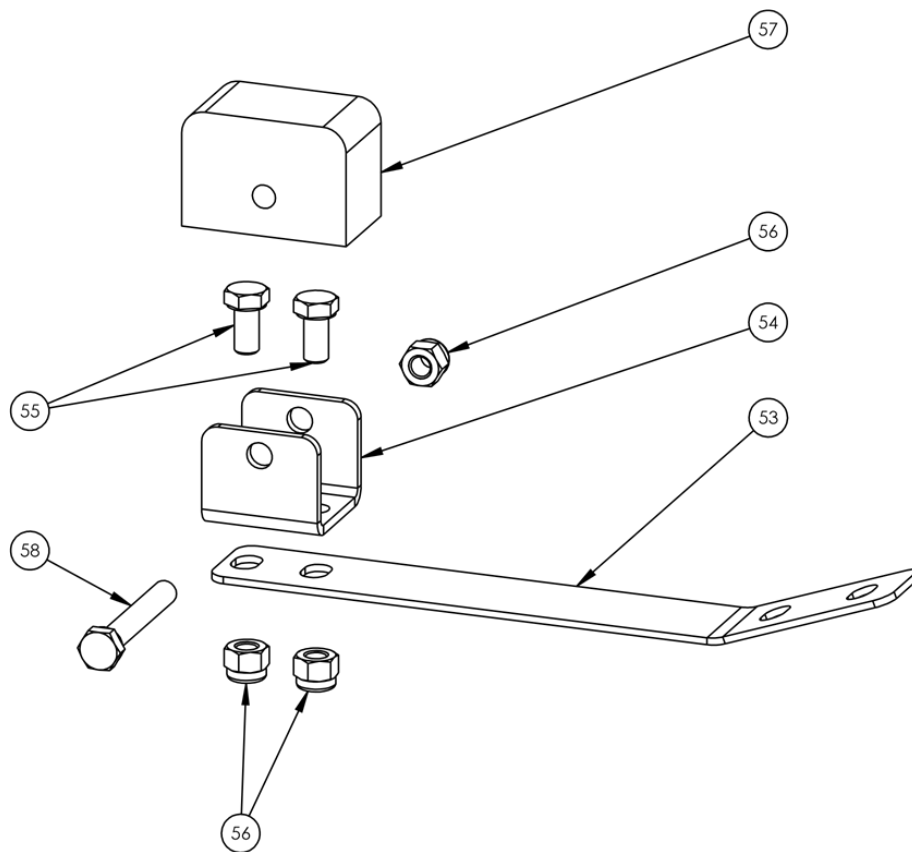
REF.	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
11	CIL00062	CIL00063	CIL00064	CIL00065	CIL00065	DRIVE SHAFT
12	BIL00007	BIL00007	BIL00007	BIL00007	BIL00007	EXTERNAL SEEGER
13	CIL00088	CIL00088	CIL00138	CIL00089	CIL00089	BOWL DRIVE PINION
46	BIL00020	BIL00020	BIL00020	BIL00020	BIL00020	M8 x 8 POINT GRUB SCREW UNPROCESSED
47	BIL00001	BIL00001	BIL00001	BIL00001	BIL00001	INTERLOCKING TAB 8 x 55
48	BIL00002	BIL00002	BIL00002	BIL00002	BIL00002	INTERLOCKING TAB 8 x 30
49	CIL00137	CIL00137	CIL00137	CIL00086	CIL00086	SPIRAL DRIVE PINION
50	BIL00021	BIL00021	BIL00021	BIL00021	BIL00021	M8 x 25 POINT GRUB SCREW UNPROCESSED

Fig. 10-15. Drive shaft assembly



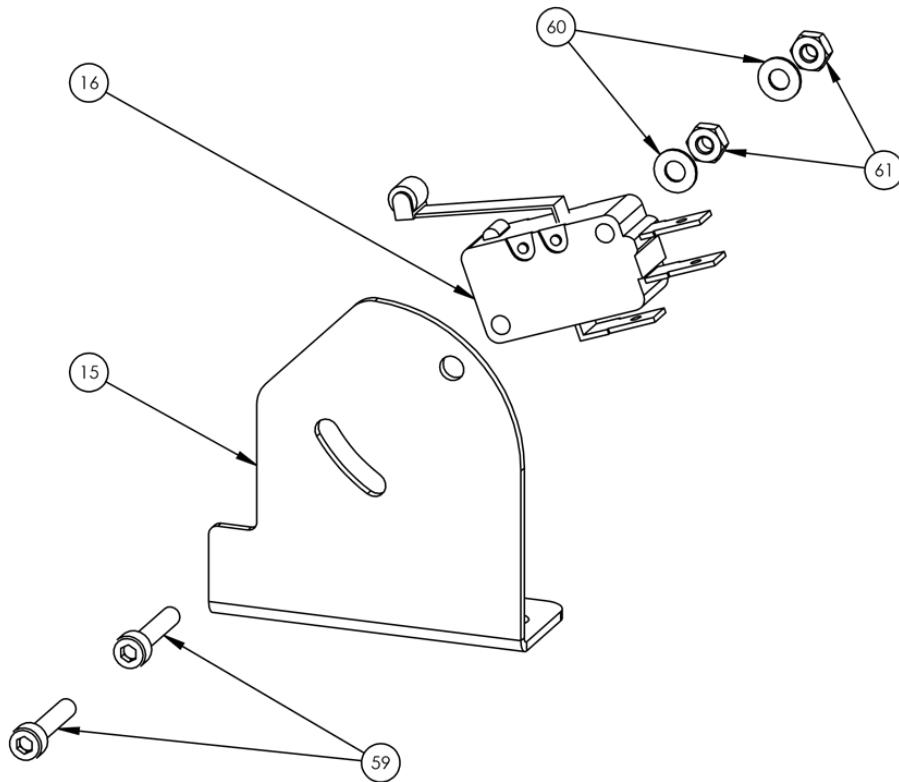
REF.	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
18	CIL00069	CIL00069	CIL00070	CIL00070	CIL00070	LID SHAFT
19	CIL00038	CIL00038	CIL00038	CIL00038	CIL00038	MICROSWITCH HUB
20	CIL00127	CIL00127	CIL00127	CIL00127	CIL00127	NYLON WASHER
21	CIL00033	CIL00034	CIL00035	CIL00036	CIL00037	LID
51	BIL00019	BIL00019	BIL00019	BIL00019	BIL00019	POINT GRUB SCREW M6 x 8 ZN
52	BIL00018	BIL00018	BIL00018	BIL00018	BIL00018	POINT GRUB SCREW M5 x 8 ZN

Fig. 10-16. Lid assembly



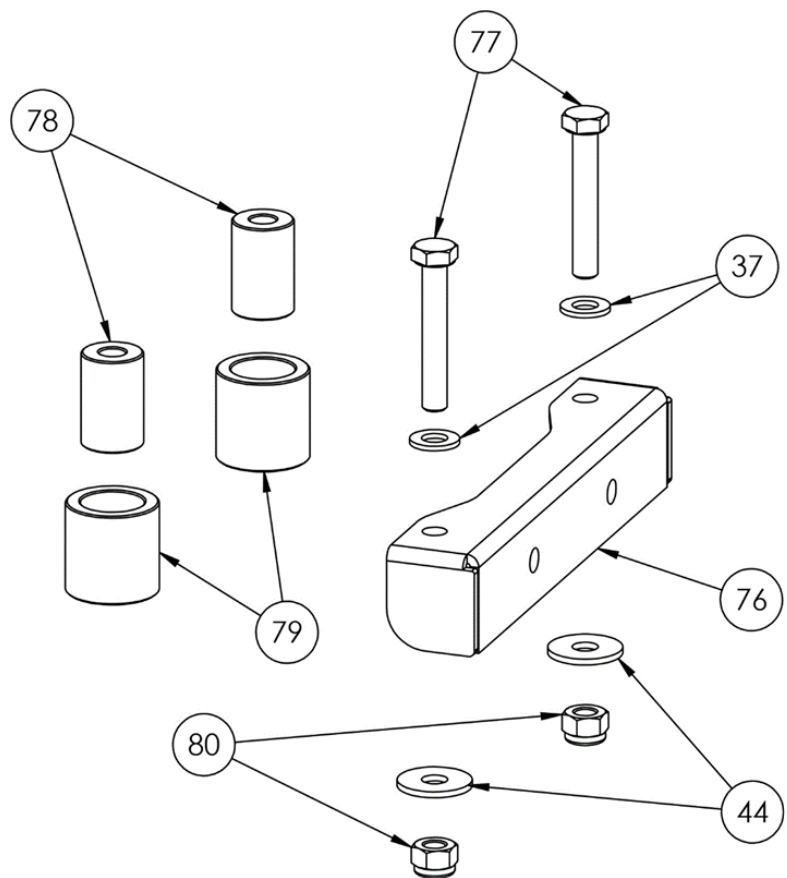
REF.	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
53	CIL00124	CIL00124	CIL00124	CIL00124	CIL00124	CHAIN TENSIONER SPRING
54	CIL00125	CIL00125	CIL00125	CIL00125	CIL00125	NYLON INSERT SUPPORT
55	BIL00013	BIL00013	BIL00013	BIL00013	BIL00013	HEX HEAD SCREW M5 x 10 ZN
56	BIL00010	BIL00010	BIL00010	BIL00010	BIL00010	SELF-LOCKING NUT M5
57	CIL00126	CIL00126	CIL00126	CIL00126	CIL00126	NYLON CHAIN TENSIONER INSERT
58	BIL00014	BIL00014	BIL00014	BIL00014	BIL00014	HEX HEAD SCREW M5 x 35 ZN

Fig. 10-17. Chain tensioner assembly



REF	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
15	CIL00115	CIL00115	CIL00115	CIL00115	CIL00115	LID MICROSWITCH BRACKET
16	CIL00113	CIL00113	CIL00113	CIL00113	CIL00113	MICROSWITCH D3V
59	BIL00015	BIL00015	BIL00015	BIL00015	BIL00015	SOCKET HEAD SCREW
60	BIL00043	BIL00043	BIL00043	BIL00043	BIL00043	FLAT WASHER 3 x 7 x 0.5
61	BIL00016	BIL00016	BIL00016	BIL00016	BIL00016	NUT M3 A2

Fig. 10-18. Microswitch assembly



REF.	COD. L22	COD. L33	COD. L42	COD. L53	COD. L62	DESCRIPTION
37	-	-	BIL00035	BIL00035	BIL00035	FLAT WASHER 8 ZN
44	-	-	BIL00036	BIL00036	BIL00036	FLAT WASHER 8 x 24 ZN
76	-	-	CIL00131	CIL00131	CIL00131	BOWL ROLLS SUPPORT
77	-	-	BIL00051	BIL00051	BIL00051	TE SCREW M8 x 50 ZN
78	-	-	CIL00133	CIL00133	CIL00133	GV ROLLER BUSH D20 x 31
79			CIL00132	CIL00132	CIL00132	BOWL GUIDE ROLLERD
80			BIL00050	BIL00050	BIL00050	SELF BLOCKING NUT M8 ZN

Fig. 10-19. Bowl guide assembly

10.6 MODELS LR22 / LR33 / LR42

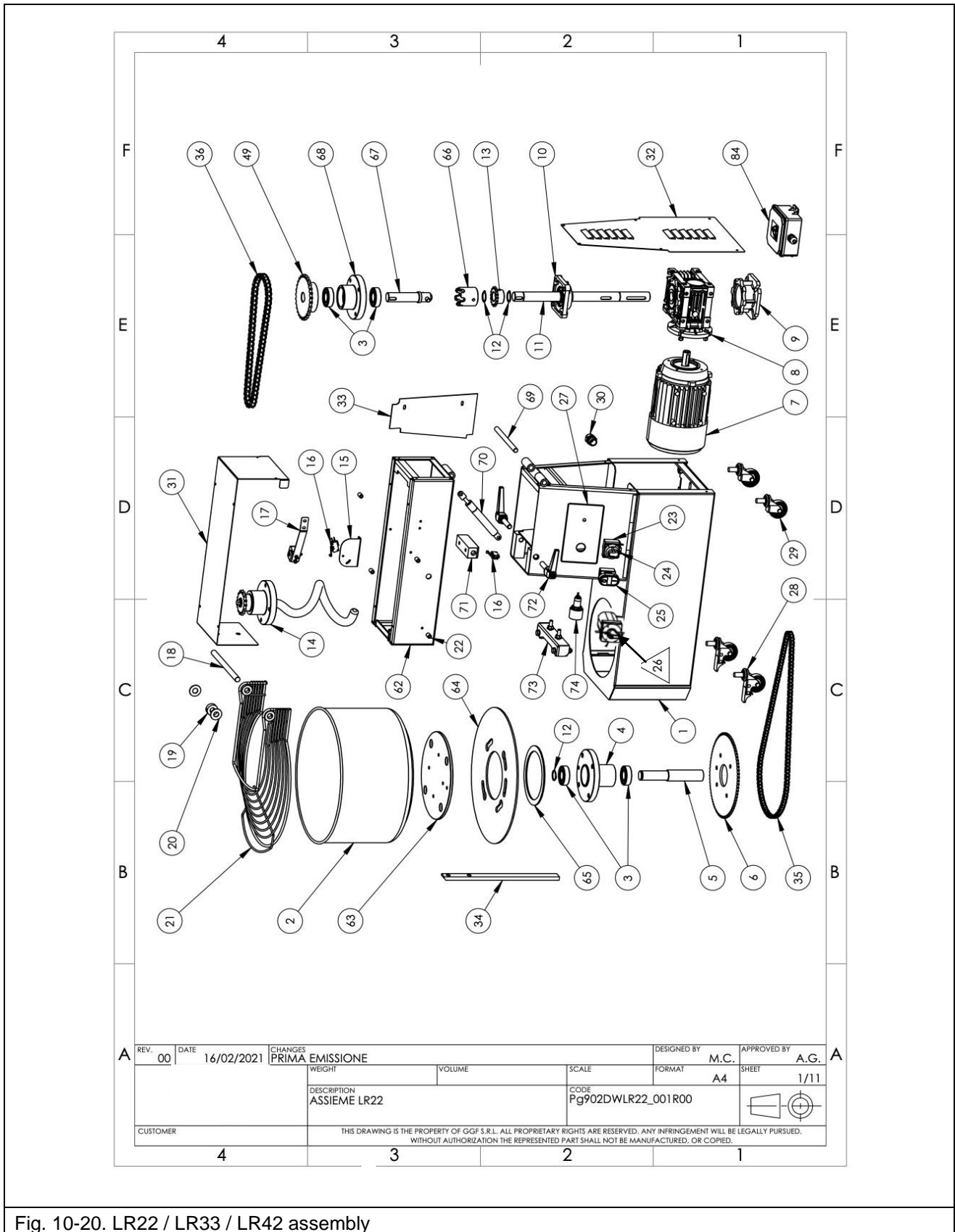
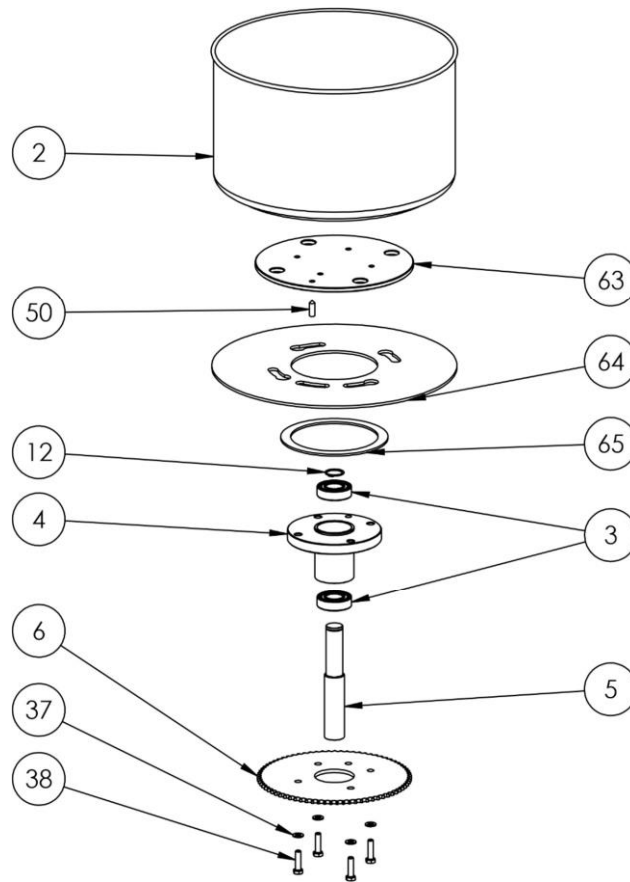


Fig. 10-20. LR22 / LR33 / LR42 assembly

SPIRAL MACHINE
L10/L22/L33/L42/L53/L62
LR22/LR33/LR42

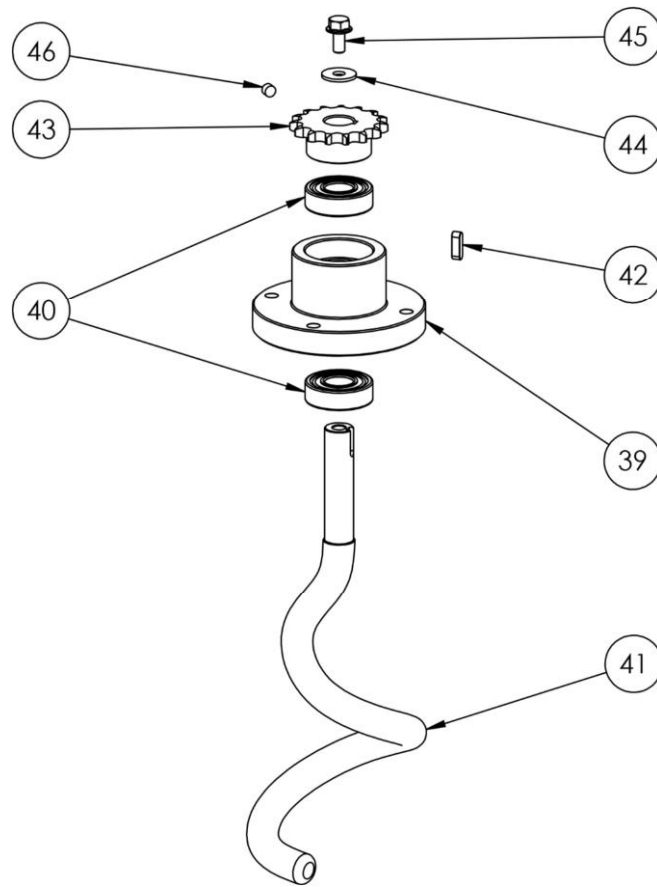
REF.	COD.LR22	CODLR33	COD.LR42	DESCRIPTION	Q.TY
1	CIL00200	CIL00205	CIL00210	STRUCTURE	1
2	CIL00022	CIL00023	CIL00024	BOWL	1
3	CIL00093	CIL00093	CIL00093	BEARING 6205 2RS	2
4	CIL00075	CIL00075	CIL00075	SHARED BOWL SUPPORT	1
5	CIL00067	CIL00067	CIL00067	SHARED BOWL SUPPORT SHAFT	1
6	CIL00080	CIL00080	CIL00081	BOWL CROWN	1
7	CIL00046	CIL00049	CIL00135	MOTOR	1
8	CIL00056	CIL00056	CIL00057	GEAR BOX	1
9	CIL00059	CIL00059	CIL00060	REDUCER FLANGE S63	1
10	CIL00077	CIL00077	CIL00077	UCF204 DRIVE SHAFT SUPPORT	1
11	CIL00215	CIL00216	CIL00217	DRIVE SHAFT	1
12	BIL00007	BIL00007	BIL00007	EXTERNAL SEEGER D25mm	1
13	CIL00088	CIL00088	CIL00138	BOWL DRIVE PINION	1
14	CIL00141	CIL00141	CIL00142	SPIRAL ASSEMBLY	1
15	CIL00115	CIL00115	CIL00115	LID MICROSWITCH BRACKET	1
16	CIL00113	CIL00113	CIL00113	MICROSWITCH D3V-166-1C5	1
17	CIL00123	CIL00123	CIL00123	CHAIN TENSIONER ASSEMBLY	1
18	CIL00069	CIL00069	CIL00070	LID SHAFT	1
19	CIL00038	CIL00038	CIL00038	MICROSWITCH HUB	1
20	CIL00127	CIL00127	CIL00127	NYLON LID WASHER	2
21	CIL00033	CIL00034	CIL00035	LID	1
22	CIL00104	CIL00104	CIL00104	PLASTIC STOP SPACER 10 x 15	4
23	CIL00112	CIL00112	CIL00112	TEMPOMATIC TIMER M1 130 M10 SM-T	1
24	MANOP005	MANOP005	MANOP005	NON-GRAD. BLACK KNOB, WITH INSERT	1
25	CIL00161	CIL00161	CIL00161	BUTTON 0-1	1
26	CIL000116	CIL000116	CIL000116	SPEED SELECTOR	
27	CIL00144	CIL00144	CIL00144	SCREEN-PRINTED ADHESIVE LABEL	1
28	CIL00106	CIL00106	CIL00106	WHEEL WITH BRAKE D50 M12	2
29	CIL00107	CIL00107	CIL00107	UNBRAKED WHEEL D50 M12	2
30	CIL00119	CIL00119	CIL00119	PLASTIC CABLE GLAND M20 x 1.5	1
31	CIL00201	CIL00206	CIL00211	UPPER PANEL	1
32	CIL00202	CIL00207	CIL00212	REAR PANEL	1
33	CIL00203	CIL00208	CIL00213	SIDE PANEL	1
34	CIL00041	CIL00042	CIL00043	DOUGH REMOVER PIN	1
35	CIL00100	CIL00101	CIL00102	CHAIN 3/8" 153P	1
36	CIL00095	CIL00095	CIL00096	CHAIN 1/2" 69P	1
62	CIL00321	CIL00322	CIL00323	HEAD STRUCTURE	1
63	CIL00221	CIL00221	CIL00221	BOWL SUPPORT FLANGE	1
64	CIL00204	CIL00209	CIL00214	BOWL LOCKING DISC	1
65	CIL00222	CIL00222	CIL00222	RING, 3mm, BOWL-HOLDER DISC	1
66	CIL00219	CIL00219	CIL00219	HARDENED JOINT	1
67	CIL00218	CIL00218	CIL00218	DRIVE SUPPORT SHAFT WITH PIN	1
68	CIL00220	CIL00220	CIL00220	DRIVE SUPPORT SHAFT SUPPORT	1
69	CIL00133	CIL00133	CIL00133	GALVANISED PIN D12 x 128mm FOR BOWL ROLLER	1
70	CIL00229	CIL00229	CIL00229	GAS PISTON	1
71	CIL00324	CIL00325	CIL00326	HEAD FIXING BLOCK	1
72	CIL00230	CIL00230	CIL00230	HEAD LOCK LEVER HANDLE	1
73	-	-	CIL00131	BOWL ROLLERS SUPPORT	1
74	CIL00233	CIL00233	CIL00233	PROXIMITY ASSEMBLY	1
84	CIL00239	CIL00239	CIL00239	SINGLE-PHASE ELECTRICAL SYSTEM BOX	1
84	CIL00240	CIL00240	CIL00240	TRHEE-PHASE ELECTRICAL SYSTEM BOX	1

Fig. 10-21. LR22 / LR33 / LR42 assembly component list



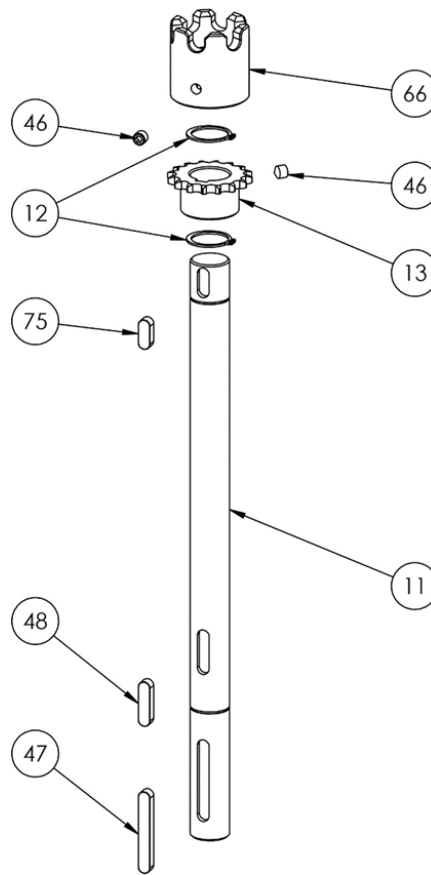
REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
2	CIL00022	CIL00023	CIL00024	BOWL	1
3	CIL00093	CIL00093	CIL00093	BEARING 6205 2RS	2
4	CIL00075	CIL00075	CIL00075	SHARED BOWL SUPPORT	1
5	CIL00067	CIL00067	CIL00067	BOWL SUPPORT SHAFT	1
6	CIL00080	CIL00080	CIL00081	BOWL CROWN Z75 3/8"	1
12	BIL00007	BIL00007	BIL00007	EXTERNAL SEEGER D25	1
37	BIL00035	BIL00035	BIL00035	FLAT WASHER 8 ZN	4
38	BIL00034	BIL00034	BIL00034	HEX HEAD SCREW M8 x 30 ZN	4
50	BIL00021	BIL00021	BIL00021	M8 x 25 POINT GRUB SCREW UNPROCESSED	1
63	CIL00221	CIL00221	CIL00221	BOWL SUPPORT FLANGE	1
64	CIL00204	CIL00209	CIL00214	LOCKING DISC	1
65	CIL00222	CIL00222	CIL00222	BOWL-HOLDER DISC RING	1

Fig. 10-22. Bowl assembly



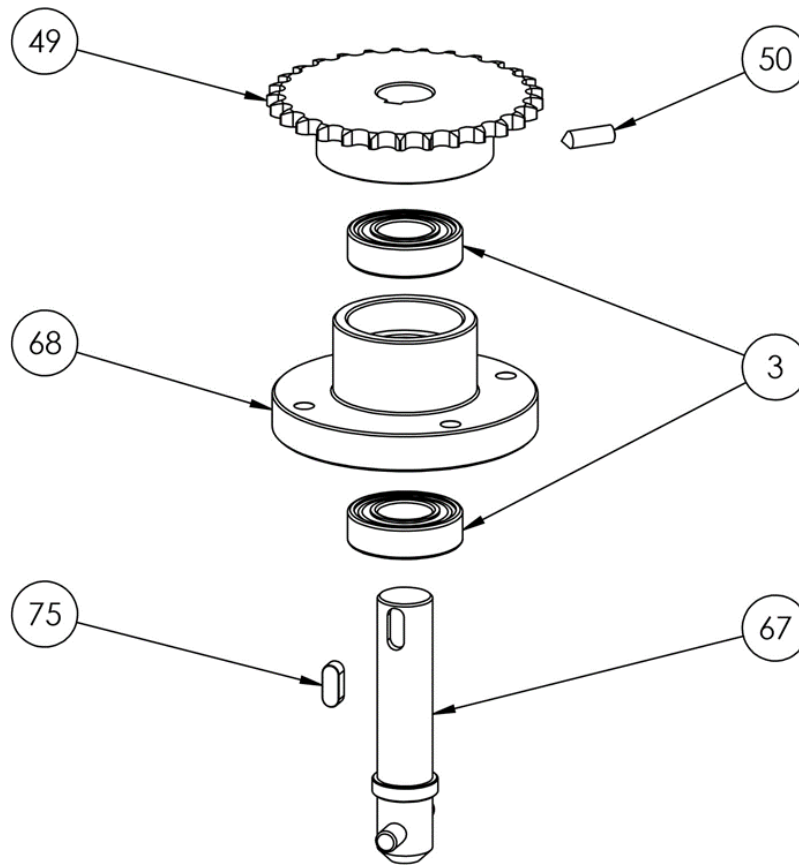
REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
39	CIL00072	CIL00072	CIL00073	SPIRAL SUPPORT	1
40	CIL00091	CIL00091	CIL00092	BEARING 6204 2RS	2
41	CIL00028	CIL00029	CIL00030	SPIRAL	1
42	BIL00005	BIL00005	BIL00005	INTERLOCKING TAB 6 x 20	1
43	CIL00083	CIL00083	CIL00084	SPIRAL PINION	1
44	BIL00036	BIL00036	BIL00036	FLAT WASHER 8 X 24 ZN	1
45	BIL00030	BIL00030	BIL00030	TE HEAD SCREW M8 X 16 ZN	1
46	BIL00020	BIL00020	BIL00020	M8 x 8 POINT GRUB SCREW UNPROCESSED	1

Fig. 10-23. Spiral assembly



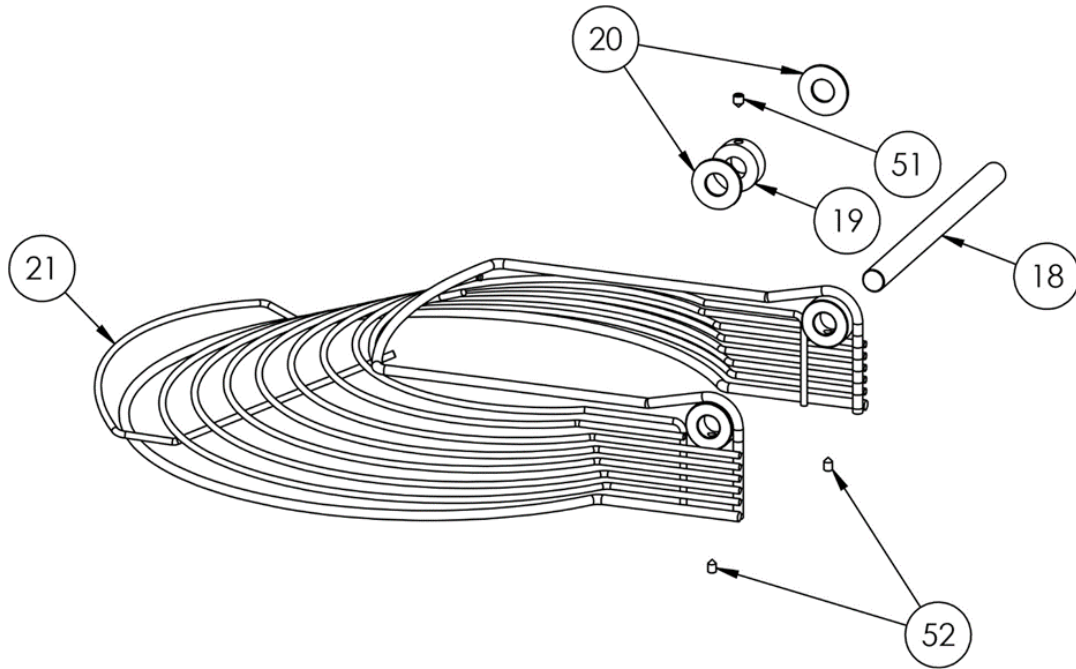
REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
11	CIL00215	CIL00216	CIL00217	DRIVE SHAFT	1
12	BIL00007	BIL00007	BIL00007	EXTERNAL SEEGER D25	2
13	CIL00088	CIL00088	CIL00138	BOWL DRIVE PINION	1
46	BIL00020	BIL00020	BIL00020	M8 x 8 POINT GRUB SCREW UNPROCESSED	2
47	BIL00001	BIL00001	BIL00001	INTERLOCKING TAB 8 x 55	1
48	BIL00002	BIL00002	BIL00002	INTERLOCKING TAB 8 x 30	1
66	CIL00219	CIL00219	CIL00219	HARDENED JOINT D50 x 50	1
75	BIL00047	BIL00047	BIL00047	INTERLOCKING TAB 8 x 20	1

Fig. 10-24. Down drive shaft assembly



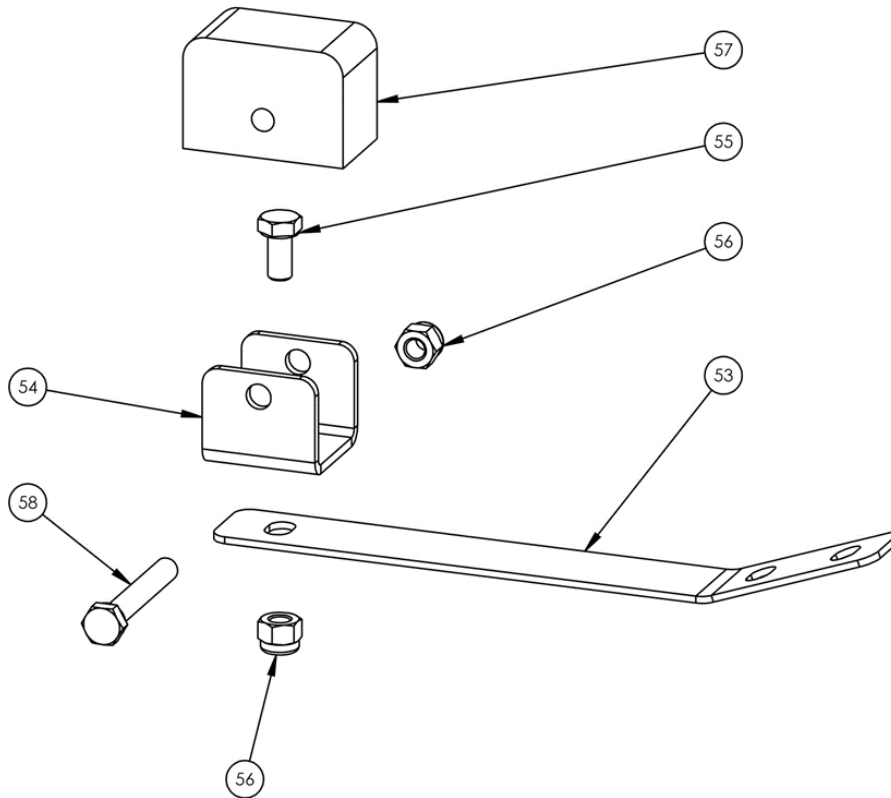
REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
3	CIL00093	CIL00093	CIL00093	BEARING 6205 2RS	2
49	CIL00137	CIL00137	CIL00137	SPIRAL DRIVE PINION L10 Z25 3/8" D20	1
50	BIL00021	BIL00021	BIL00021	M8 x 25 POINT GRUB SCREW UNPROCESSED	1
67	CIL00218	CIL00218	CIL00218	DRIVE SUPPORT SHAFT WITH PIN	1
75	BIL00047	BIL00047	BIL00047	INTERLOCKING TAB 8 x 20	1
68	CIL00220	CIL00220	CIL00220	DRIVE SUPPORT SHAFT SUPPORT	1

Fig. 10-25. Top drive shaft assembly



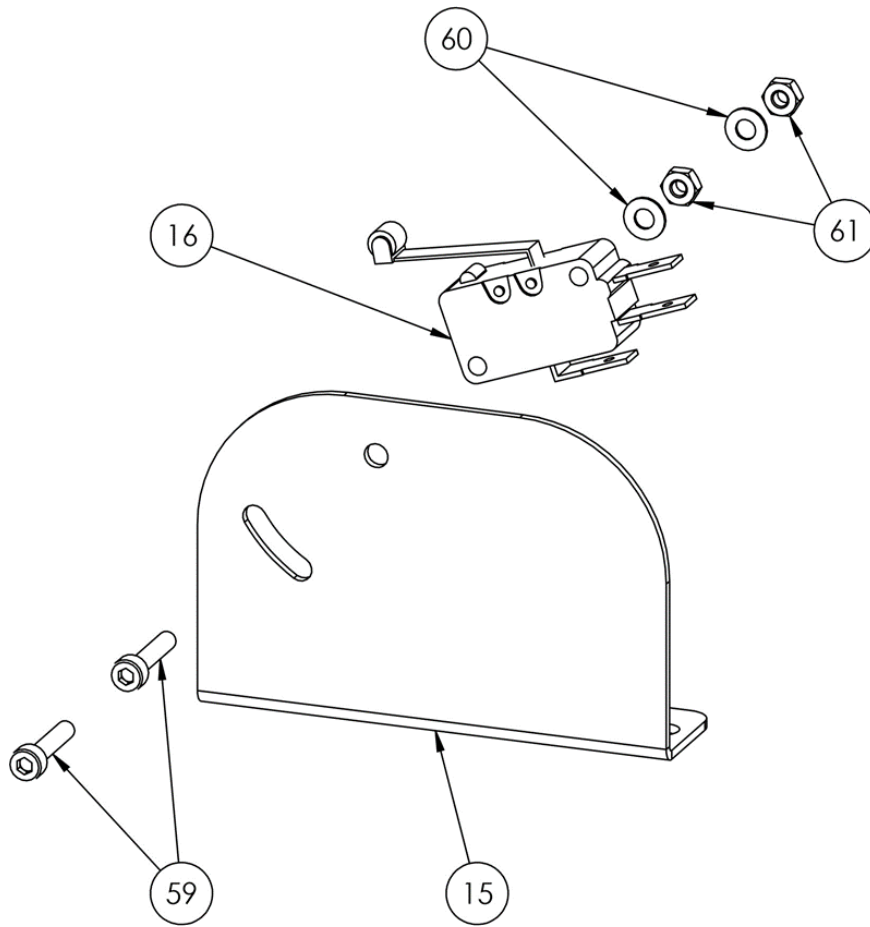
REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
18	CIL00069	CIL00069	CIL00070	LID SHAFT	1
19	CIL00038	CIL00038	CIL00038	MICROSWITCH HUB	1
20	CIL00127	CIL00127	CIL00127	NYLON WASHER FOR GRILLED LID	2
21	CIL00022	CIL00023	CIL00024	LID	1
51	BIL00019	BIL00019	BIL00019	POINT GRUB SCREW M6 x 8 ZN	1
52	BIL00018	BIL00018	BIL00018	POINT GRUB SCREW M5 x 8 ZN	2

Fig. 10-26. Lid assembly



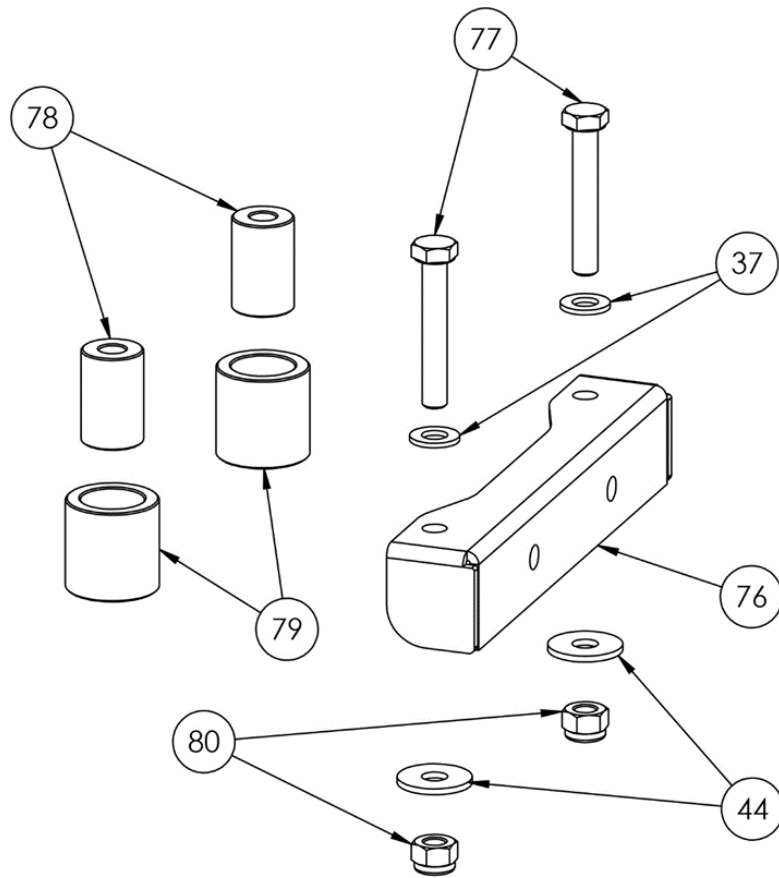
REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
53	CIL00124	CIL00124	CIL00124	CHAIN TENSIONER SPRING	1
54	CIL00125	CIL00125	CIL00125	NYLON INSERT SUPPORT	1
55	BIL00013	BIL00013	BIL00013	HEX HEAD SCREW M5 x 10 ZN	2
56	BIL00010	BIL00010	BIL00010	SELF-LOCKING NUT M5 ZN	3
57	CIL00126	CIL00126	CIL00126	NYLON CHAIN TENSIONER INSERT	1
58	BIL00014	BIL00014	BIL00014	HEX HEAD SCREW M5 x 35 ZN	1

Fig. 10-27. Chain tensioner assembly



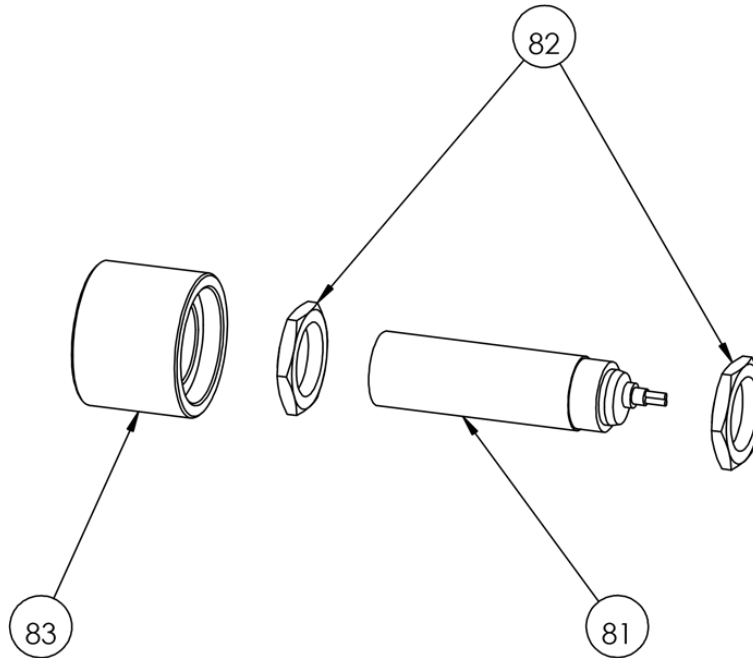
REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
15	CIL00506	CIL00506	CIL00506	LID MICROSWITCH BRACKET	1
16	CIL00113	CIL00113	CIL00113	MICROSWITCH D3V-166-1C5	1
59	BIL00015	BIL00015	BIL00015	SOCKET HEAD SCREW M3 x 16 A2	2
60	BIL00010	BIL00010	BIL00010	FLAT WASHER 3 x 7 x 0.5	2
61	BIL00013	BIL00013	BIL00013	NUT M3 A2	2

Fig. 10-28. Microswitch assembly



RIF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
37	-	-	BIL00035	FLAT WASHER 8 ZN	2
44	-	-	BIL00031	FLAT WASHER 8 x 24 ZN	2
76	-	-	CIL00131	BOWL ROLLS SUPPORT LR42	1
77	-	-	BIL00051	TE SCREW M8 x 50 ZN	2
78	-	-	CIL00133	GV ROLLER BUSH D20 x 31	2
79	-	-	CIL00132	BOWL GUIDE ROLLER D30 x 30	2
80	-	-	BIL00050	SELF BLOCKING NUT M8 ZN	2

Fig. 10-29. Bowl guide assembly



REF.	COD. LR22	COD. LR33	COD. LR42	DESCRIPTION	Q.TY
81	CIL00236	CIL00236	CIL00236	PROXIMITY	1
82	CIL00237	CIL00237	CIL00237	PROXIMITY_RING NUT	2
83	CIL00238	CIL00238	CIL00238	PROXIMITY PROTECTION D35X27	1

Fig. 10-30.proximity assembly

10.7 Machine-motor combination

MACHINE MOTOR COMBINATION BOARD

MOTOR	CODE	L10	L22	L33	L42	L53	L62	LR22	LR33	LR42
Motor 0.37 kW; 230V. M	CIL00045	V	-	-	-	-	-	-	-	-
Motor 0.75 kW; 230V. M	CIL00046	-	V	-	-	-	-	V	-	-
Motor 0.75 kW; 230 - 400V. T	CIL00047	-	V	-	-	-	-	V	-	-
Two-speed motor 0.75 ÷ 1.1 kW – 400V. T	CIL00048	-	V	V	-	-	-	V	V	-
Motor 1.1 kW; 230V. M	CIL00049	-	-	V	-	-	-	-	V	-
Motor 1.1 kW; 230 - 400V. T	CIL00050	-	-	V	-	-	-	-	V	-
Motor 1.5 kW; 230V. M	CIL00135	-	-	-	V	-	-	-	-	V
Motor 1.5 kW; 230 - 400V. T	CIL00051	-	-	-	V	-	-	-	-	V
Motor 1.8 kW; 230V. M	CIL00052	-	-	-	-	V	V	-	-	V
Motor 1.8 kW; 230 - 400V. T	CIL00053	-	-	-	-	V	V	-	-	-
Two-speed motor 1.5 ÷ 2.2 kW – 400V. T	CIL00054	-	-	-	V	V	V	-	-	V

