



# ML-90 CERTIFIED TORTILLA MACHINE

OPERATION'S MANUAL



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## GENERAL SAFETY INSTRUCTIONS

**WARNING:** To reduce the risk of injury, read all instructions properly. Failure to follow the instructions listed below can cause electric shock, fire, serious injuries, mutilation, and/or damage to the equipment.

### A. SAFETY IN THE WORK AREA.

- \* Keep the work area clean and lit. Crowded or dark areas lead to accidents.
- \* Do not operate the equipment without first checking all gas connections with soapy water, to ensure that there are no leaks that could cause an explosion.
- \* Keep children, customers, and non-company personnel away from the electrical and mechanical operation area of the equipment.
- \* It is recommended to have a minimum space of one meter or three feet around the machine for safety measures and to optimize work.

### B. ELECTRICAL SAFETY.

- \* Machinery connections must be adapted to the power outlets.
- \* Do not use adapters for the switches: since you run the risk of receiving an electric shock.
- \* Do not expose the switches and/or electrical connections to rain or humidity. If water enters these elements, there is a risk that they will break down or suffer an electric shock.
- \* Use cable in a single piece, if there are joints in the connections these can produce a short circuit.
- \* Do not expose cables or electrical connections to heat, oil, sharp edges, or moving parts, as damaged cables can cause electric shock or short circuits.

### C. PERSONAL SAFETY

- \* Do not operate the equipment if you are tired, or under the influence of alcohol or drugs.
- \* Wear appropriate clothing, do not wear loose clothing, necklaces, earrings, or watches, if you have long hair wear a tie to keep it up.
- \* Do not climb on the structure of the machine for any reason, falls or injuries may occur.
- \* Avoid using headphones, cell phones, or any other equipment that works as a distraction to the operator.
- \* Make correct use of personal protective equipment if any maintenance is to be carried out on the machine.
- \* If any change is made to the model or component of the equipment, be it electrical, mechanical, or gas related, it must be de-energized, cut off the gas supply, and stop the machine completely to avoid accidents.
- \* Keep limbs away from all moving parts.

## CAUTION

The following symbols indicate the safety measures that must be taken before and after starting up the equipment.



**HOT HAZARD** Some parts of the machine are hot while in operation.



**ELECTRICAL RISK** In which you can suffer electric shocks if you do not comply with the electrical safety provisions.



**GEAR RISK** Keep your hands away from the chains and gears of the machine.



**DO NOT COVER THE BARREL'S AIR INTAKE.** Keep your hands away from the air inlet of the barrel.

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## GAS AND ELECTRICAL INSTALLATION

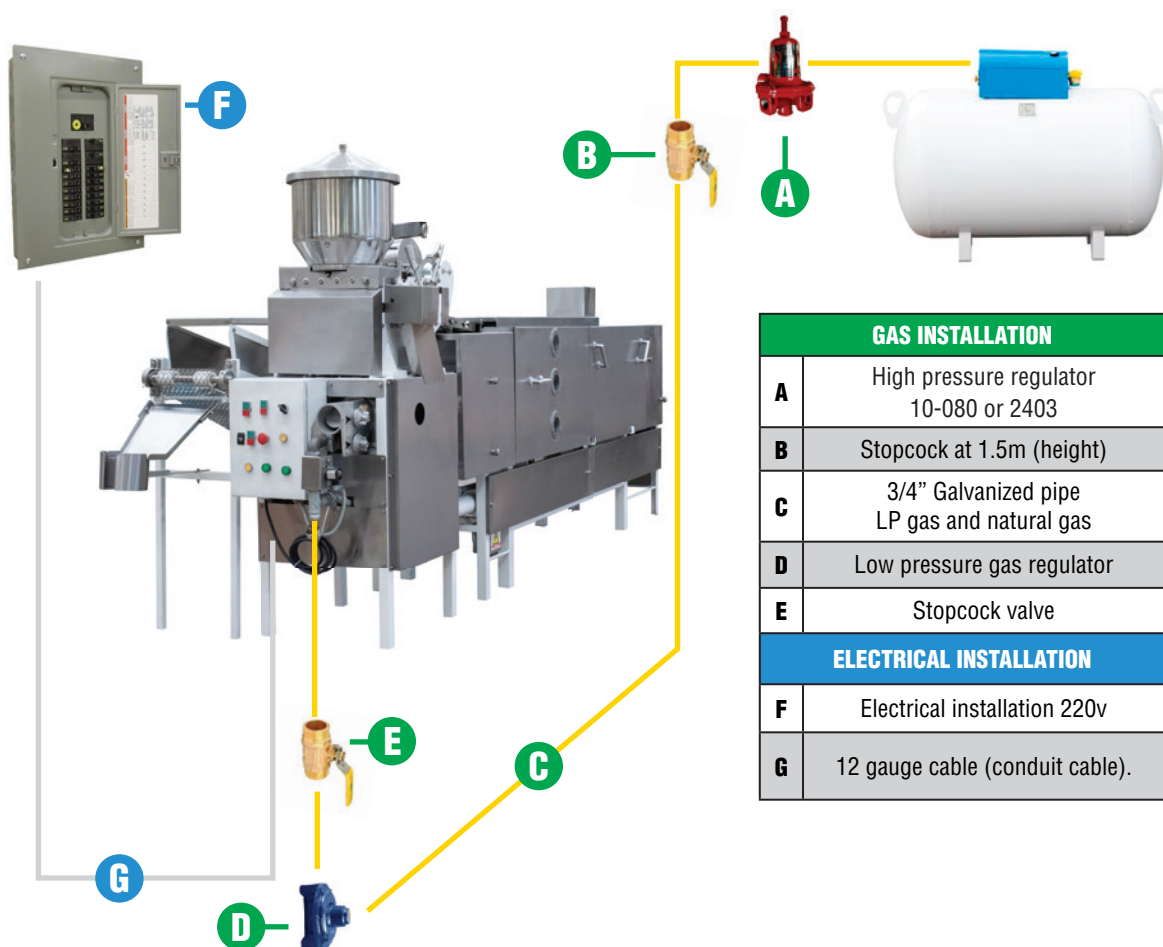
At the outlet of the gas tank, a model 10-080 high-pressure regulator must be installed, with a pressure gauge (0-7 Kg.) to verify the correct supply pressure. The pipe used for the connection is 3/4" in diameter, either L-type copper or 40-gauge black tubing.

The length of the pipe should not exceed 10 meters, from the outlet of the gas tank.

A union nut must be installed between the stopcock and the low-pressure regulator.

Before the machine's gas input, a low-pressure regulator must be installed.

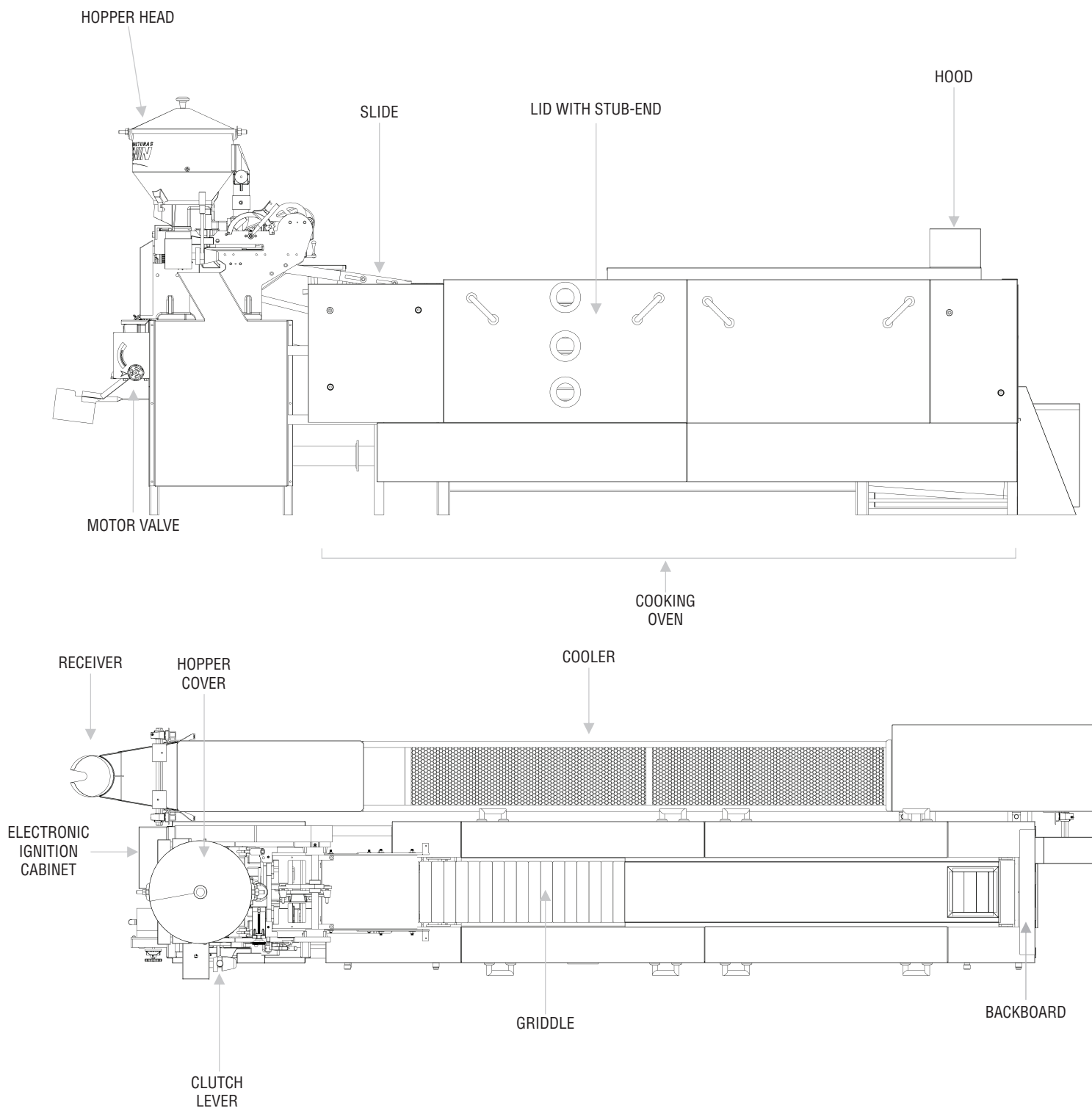
Verify that the electrical connection is 220v. No short circuits, no loose or bare wires.



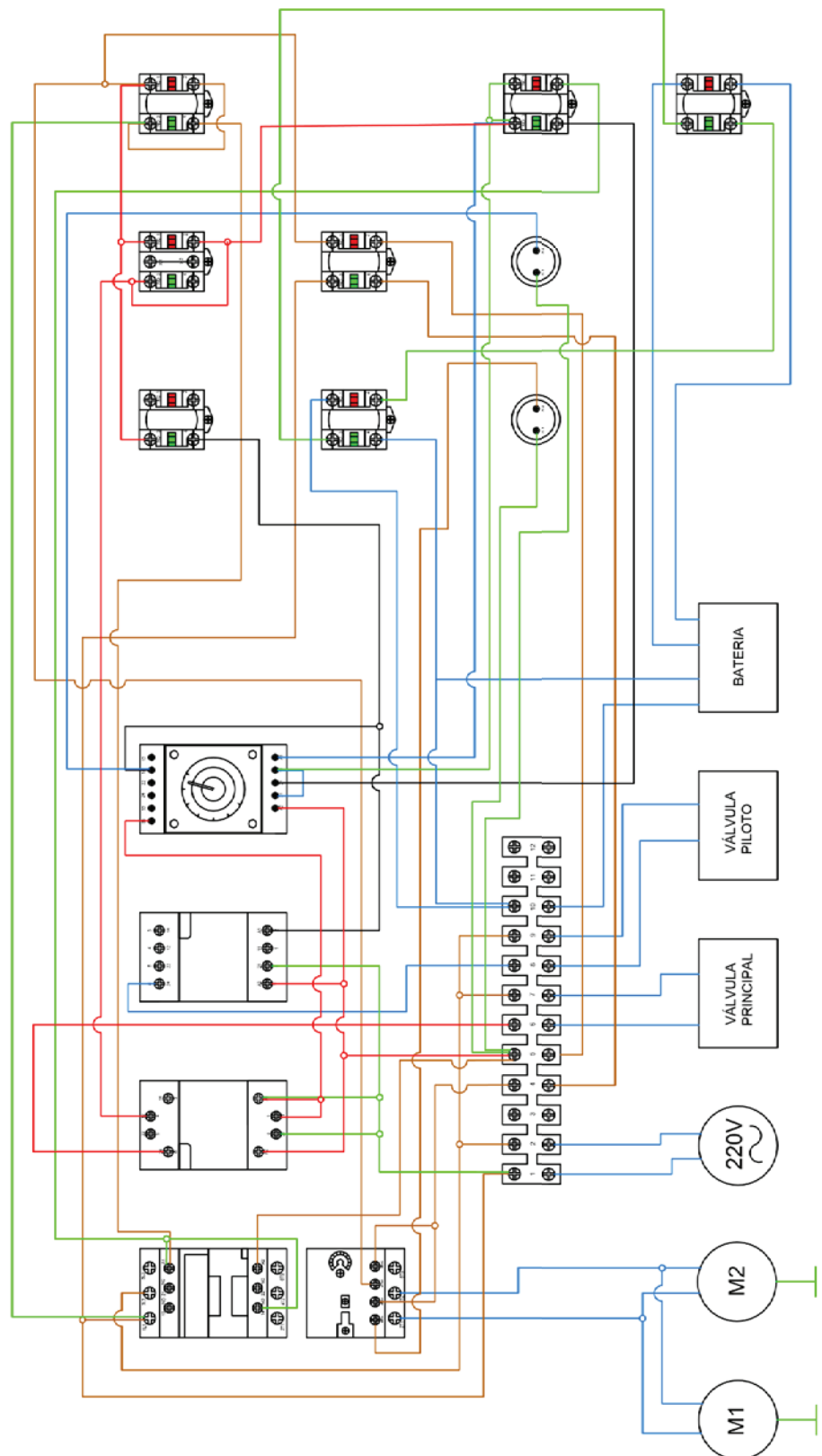
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## COMPONENTS

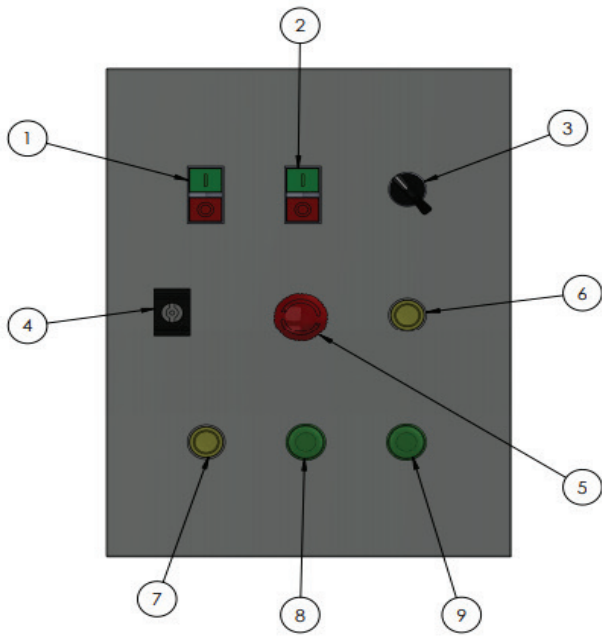


## MANUAL AND AUTOMATIC IGNITION ELECTRONIC CIRCUIT





## ELECTRONIC IGNITION CABINET



ITEM	DESCRIPTION
1	MOTOR'S IGNITION
2	MAIN VALVE'S IGNITION
3	MANUAL PILOT VALVE'S IGNITION
4	CABINET LOCK
5	EMERGENCY STOP
6	SPARK PLUG'S MANUAL IGNITION
7	AUTOMATIC IGNITION
8	AUTO START INDICATOR LIGHT
9	FLAME FAILURE INDICATOR LIGHT

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## MANUAL IGNITION



**A**

Plug the machine into an electrical outlet and gas outlet



**B**

Turn the emergency stop button to deactivate it



**C**

Open the gas intake valve and press the oven engine start button



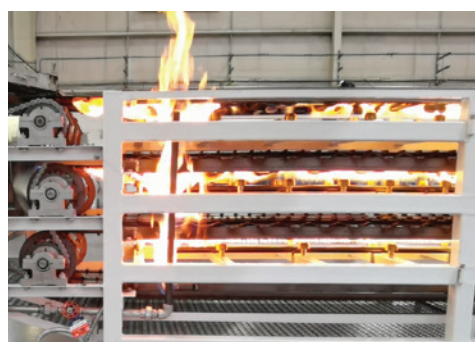
**D**

Turn the pilot valve knob, the indicator will illuminate



**E**

Press the electronic ignition spark plug button



**F**

The burners will light up

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**G**

Push the work valve off button



**H**

The oven nozzles will turn on



**I**

Turn the pilot valve knob, and indicator and the burners will turn off



**J**

Check the intensity of the flame in the nozzles, and wait 3 minutes for the griddle to heat up



**K**

Turn the upper carburetor valve knob to adjust the air intake



**L**

Turn the lower carburetor valve knob to adjust the gas input

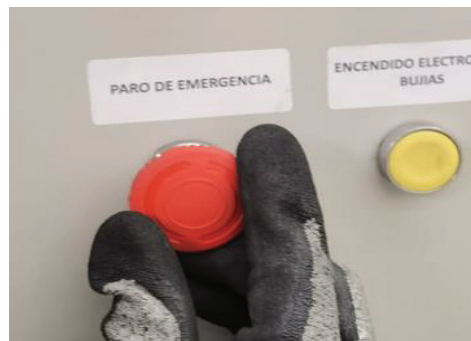
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**M**

Push the work valve off button



**N**

Turn the emergency stop button to activate it



**Ñ**

At the end of the day's production it is important to turn off the WORKING VALVE first, then turn off the oven motors second, once the griddles have cooled



**DO NOT LET THE GRIDDLES HEAT UP FOR TOO LONG WITHOUT PRODUCT. OVERHEATING CAN DAMAGE THE TEFLON.**

## TEFLON COATED METAL BELT

- Heating time of metal belt to start cooking: 2 minutes 50 seconds
- Ideal temperature for cooking on metal belt first level: 330°C (626°F)
- Temperature of metal belts with product in cooking process:
  - First level 295°C (743°F) to 310°C (590°F)
  - Second level 335°C (635°F) to 365°C (689°F)
  - Third level 335°C (635°F) to 345°C (653°F)

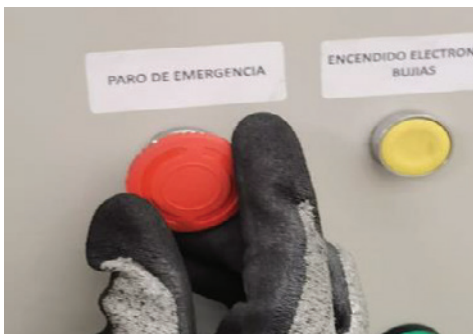
**Important note 1:** Control the temperature increase of the Teflon-coated metal belts without exceeding 370°C (698°F) (when there is no product being cooked, close valves and gas flow).

**Important note 2:** When keeping burners on without any product being cooked, the temperature of the Teflon-coated metal belts may exceed 500°C (932°F) after 10 minutes, which will cause the Teflon coating to come off.

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## AUTOMATIC ELECTRONIC IGNITION



**A**

Turn the emergency stop button to energize the machine



**B**

Press the automatic ignition button for 5 seconds



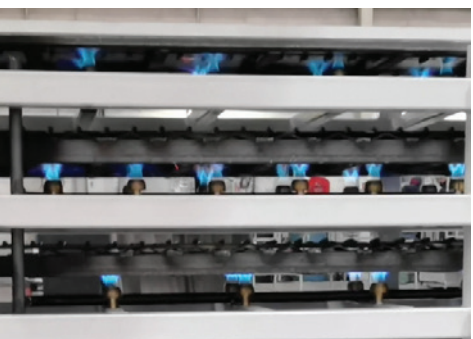
**C**

The burners and nozzles will ignite, and after 15 seconds the burners will turn off and the nozzles will remain lighted



**D**

By pressing the automatic ignition button, the indicator will illuminate for 15 seconds and then turn off



**E**

Check flame intensity coming from the nozzles



**F**

In case of failure, the indicator will illuminate. Extinguish the flame by pressing the emergency stop button



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## OPERATION



1

Insert cutter into the head unit



2

Put the dough in the hopper



3

Raise clutch lever so that dough begins to recirculate



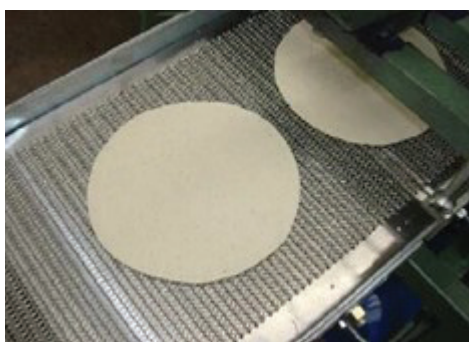
4

Adjust the thickness of the tortilla with the ratchet



5

Adjust the roundness of the tortilla with the knob



6

Check shape and thickness of the tortilla

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**7**

Check uniform cooking, shape and roundness of the tortilla at the exit of the cooler



**8**

Upon obtaining the desired result, start production



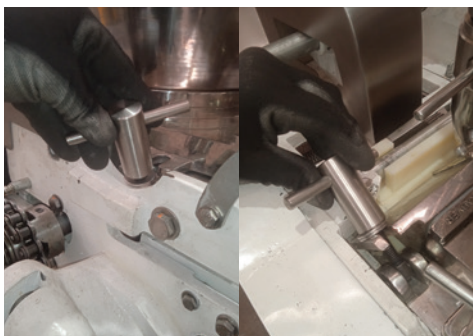
**9**

Feed the hopper whenever necessary

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## HOPPER DISASSEMBLY



1

Loosen pressure chamber box knobs



2

Lower coupling and extract pressure chamber



3

Loosen nut and remove crossbar rod



4

Remove assembled auger by turning counter-clockwise and pulling up



5

Loosen frame knob and remove the hopper from the head.



6

Extract the augers by turning the central ones clockwise and the lateral ones counter-clockwise.



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7

Remove cutter

## CLEANING PROCEDURE

**WARNING:** Cleaning the base and hopper must be carried out with the machine completely stopped to avoid accidents.

## CLEANING THE HOPPER

1. Remove the dough residue in the hopper by hand.
2. Disassemble the hopper
3. Remove the dough from the augers, pressure chamber, base and cutter.
4. Wash the components removing all dough residues.
5. Dry components and reinstall them in the head.

## MAINTENANCE

Clean the machine before and after using it.

The duration of the spare parts will depend on the preventive maintenance and care taken to the machine.

The more frequently this maintenance is done, the parts will have a longer life.

## LUBRICATION

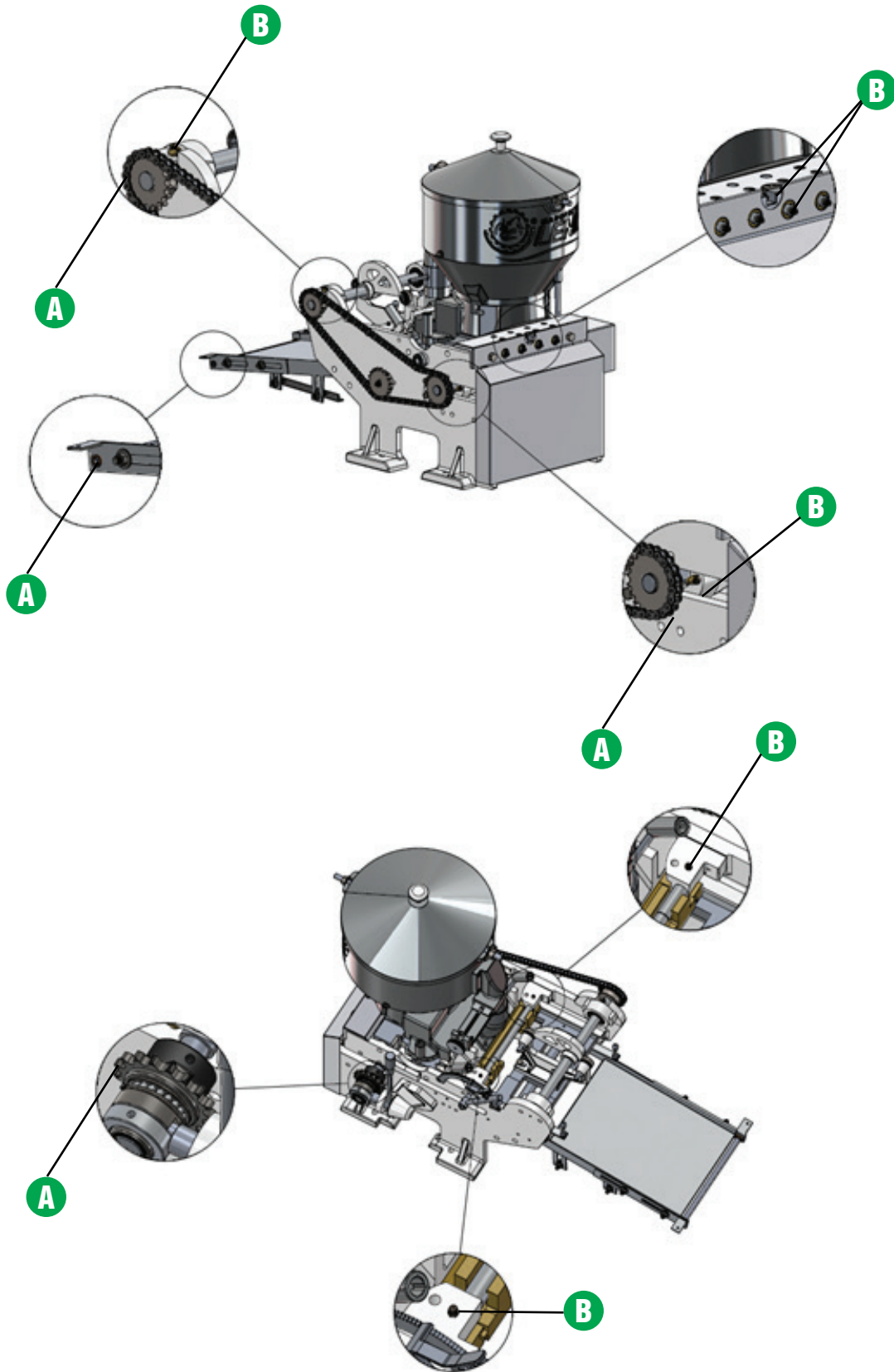
The following table shows the parts, the type of lubricant, and the frequency with which the machines and their parts must be lubricated.

PART	LUBRICANT	PERIOD
Chain and collars	SAE 80/90 Mineral Oil	3 times per week
Reducer	SAE 80/90 Mineral Oil	Every 3 months or 1000 working hours
Bearings	BAT 3 Grease	Every 3 days
Griddle hinges	Graphite	When the machine grinds
Gears	BAT 3 Grease	Every week

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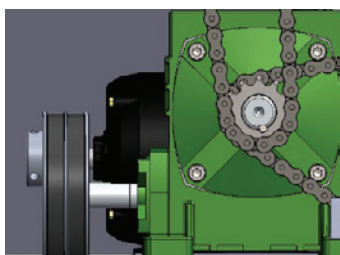
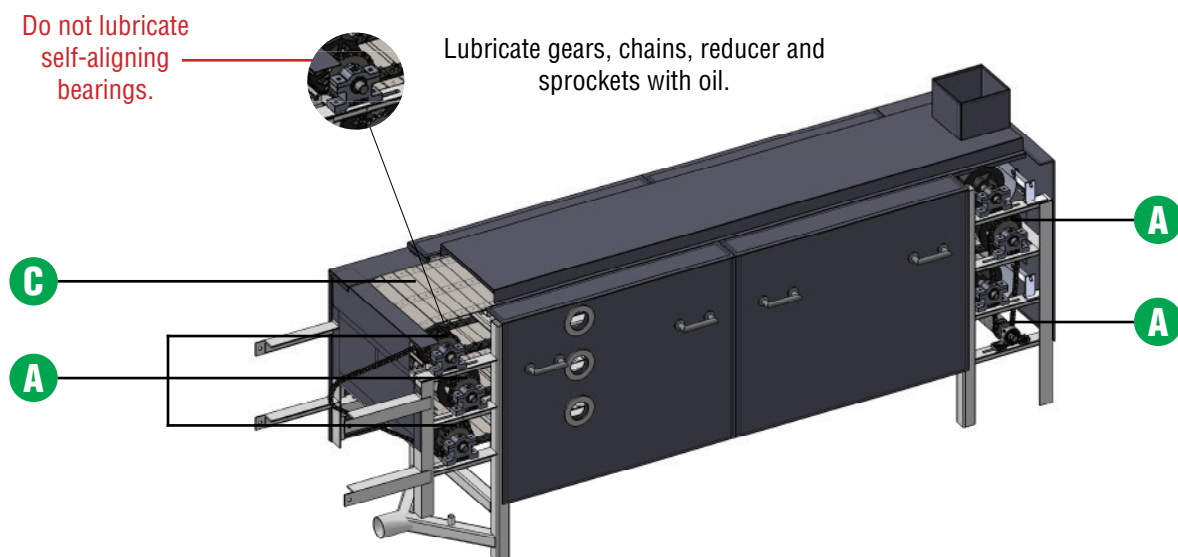
The following figures show the schematic location of the parts that require lubrication.



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Lubricate griddle hinges with graphite



It is recommended to change oil according to its use:  
 0-4 hours daily - change every 3 months  
 4-8 hours daily - change every 2 months

The used oil must be drained and 400 ml of new SAE 80/90 mineral oil must be added.

The following table shows the type of lubricant to put in all parts of the machine.

LUBRICANT
A) SAE 80/90 mineral oil
B) BAT 3 Grease
C) Graphite





## **HEADQUARTERS**

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