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**DOYON SPIRAL MIXER AEF 015/025/035/05x/08x/10x/15x**  
*OWNER'S MANUAL*

**Product :** \_\_\_\_\_

**Serial number :** \_\_\_\_\_

# DOYON SPIRAL MIXER AEF 015/025/035/05x/08x/10x/15x

**IMPORTANT SAFETY INSTRUCTIONS  
READ AND SAVE THESE INSTRUCTIONS**

**DANGER  
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,  
CAREFULLY FOLLOW THESE INSTRUCTIONS.**

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**TO GET THE BEST PERFORMANCE OF YOUR MACHINE, READ  
CAREFULLY THIS MANUAL.**

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# CHAPTER 1

## CAUTION

### READ ALL INSTRUCTIONS

The spiral mixers are manufactured with first quality material by experienced technicians. Proper installation and maintenance will guarantee a reliable service for years to come.

A nameplate specifies the model number, serial number, voltage, amperage, frequency and manufacturing date.

Drawings, electrical diagram and replacement parts numbers are included in this manual.

### ATTENTION

DOYON is not responsible for damages to the property or the equipment caused by personnel who is not certified by known organisations.

## SHIPPING

For your safety, this equipment has been verified by qualified technicians and carefully crated before shipment. The freight company assumes full responsibility concerning the delivery in good condition of the equipment in accepting to transport it.

## IMPORTANT

### RECEPTION OF THE MERCHANDISE

Take care to verify that the received equipment is not damaged before signing the delivery receipt. If a damage or a lost part is noticed, write it clearly on the receipt. If it is noticed after the carrier has left, contact immediately the freight company in order that they do their inspection.

We do not assume the responsibility for damages or losses that may occur during transportation.

## INSTALLATION WARNINGS

### CAUTION

**To ensure continued protection against risk or electric shock, connect to properly earthed outlets only.**

### INSTALLATION AND SERVICE

The spiral mixer must be connected to the utility and electrically grounded in conformity to the effective local regulations. If these are not established, the machine must be connected according to the National Electrical Code (NFPA 70-XX). This equipment has a male plug that meets those requirements.

## **IMPORTANT SAFEGUARDS**

**Read all instructions.**

**Remove plug from the outlet when the appliance is not in use, before putting on or taking off parts, and before cleaning.**

**Do not use outdoors.**

**Do not let cord hang over edge of table or counter or touch hot surfaces.**

**Do not operate any appliance with a damaged cord or plug or after the appliance malfunctions or is dropped or damaged in any manner. Return appliance to the nearest authorized service facility for examination, repair or electrical or mechanical adjustment.**

**The use of accessory attachments not recommended by the appliance manufacturer may cause injuries.**

**Do not place on or near a hot gas or electric burner or in a heated oven.**

**Always check if the control switch is OFF before plugging cord into wall outlet. To disconnect, turn the control switch to OFF, then remove plug from wall outlet.**

**Do not use appliance for other than intended use.**

# SAFETY INSTRUCTIONS

## SAFETY INSTRUCTIONS

- The machine must be used only for the functions that it has been conceived for. Doyon Equipment will not be responsible for the damages caused by an improper, bad or irrational use of the machine.
- Before cleaning or doing maintenance, turn the main switch off and unplug it.
- Do not remove security parts of the machine.
- If the machine has inactive security units, do not turn it on.
- The work of the machine may be stopped by using the red stop switch.
- If you detect any damages or bad functions of the machine, turn it off immediately and call for an authorised technician, otherwise it may cause irreversible damages in the machine.
- The electric connection must follow the procedures presented in the installation chapter.

## CAUTION

### 1. SPIRAL

The spiral (point 4, fig.2) in movement is the most dangerous part of the machine. The safety guard does not allow the access to this area (point 3, fig.2). You must not remove it, damage it or modify it.

### 2. TRANSMISSIONS

Danger, the transmission must be protected with fixed protections. In order to have access to them, you must respect the instructions of the manual.

## ELECTRIC CAUTION

The electric installation follows the Canadian, American and European security rules. Nevertheless, respect the basic security rules in a way to avoid the risk of fire, electric shocks, personal and material damages.

Only qualified people may access the parts that have electric current, which are obliged to:

1. Stop the machine
2. Turn off the main switch
3. Unplug the machine
4. Do the necessary operations
5. Plug the machine again

**Save these instructions.**

## **CHAPTER 2**

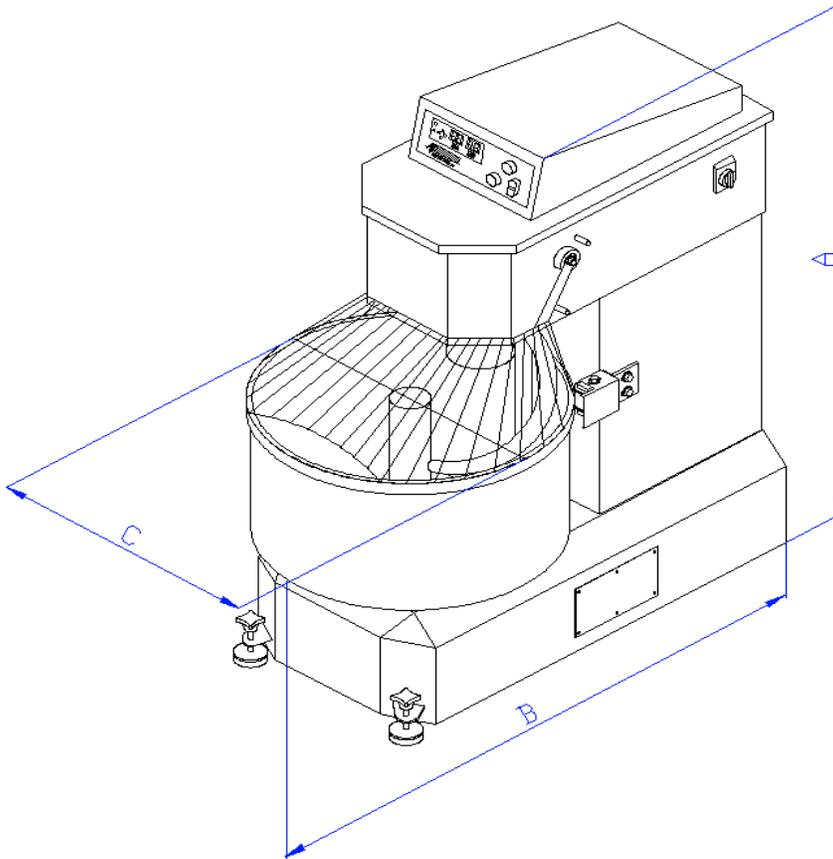
### **GENERAL DESCRIPTION**

Doyon Spiral Mixers are designed to be used by qualified people in the Bakery production. The particular shapes and speeds of the spirals and bowls allow you to have in a short period of time, very smooth dough, even when small quantities of water are used. Our spiral mixers are able to work with small quantities of flour (for instance, the mixer of 220 Lbs. of flour may work with 11 Lbs. of flour). It also has a very simple control panel, easy to work with. You may choose between the automatic or manual mode, each mode come with two speeds.

## CHAPTER 3

### TECHNICAL DATA

#### 3.1 – GENERAL DIMENSIONS AND SPECIFICATIONS



**Fig.1**

Dimensions and specifications of spiral mixers:

Model	A Inch (cm)	B Inch (cm)	C Inch (cm)	Flour Capacity Lbs (kg)	Dough Capacity Lbs. (kg)
AEF 015SP	41"(104)	29"(73.5)	16"(40.5)	2.2-33 (1-15)	3.5-50 (1.5-25)
AEF 025SP	41.5"(105.4)	32. ¼(82)	19"(48.25)	4.5-55 (2-25)	3.5-80 (3.5-40)
AEF 035SP	46 ¼ "(118.5)	41"(104)	21 ½"(54.5)	4.5-75 (2-35)	8-130 (3.5-55)
AEF 035	46 ¼ "(118.5)	41"(104)	21 ½"(54.5)	4.5-75 (2-35)	8-130 (3.5-55)
AEF 05x	51"(129.5)	46"(117)	27"(68.5)	7-110 (3-50)	12-175 (5.5-80)
AEF 08x	54"(142)	60"(152.4)	31"(75.5)	11-175 (5-80)	18-280 (8-125)
AEF 10x	54"(142)	64"(162)	34"(86.5)	22-240 (10-110)	35-380 (16-175)
AEF 15x	54"(142)	64"(162)	39"(99)	22-330 (10-150)	35-520 (16-235)

### **3.2. – TECHNICAL CHARACTERISTICS**

- Steel body.
- Independent electric motors for stainless steel hook and bowl (except AEF015 & AEF025).
- Belt driven transmission.
- Two speeds on stainless steel hook.
- Two speeds on stainless steel bowl.
- Safety guard with micro switch.
- Manual and automatic digital control with 9 memories of desired working time.
- Heavy-duty painting.

### **3.3 – ELECTRICAL CHARACTERISTICS**

- The spiral mixers AEF015SP, AEF025SP & AEF035SP are available 208-240 volts. 1 Phase only.
- The spiral mixers AEF035 to AEF150 are available 208-240 volts. 3 Phases only.
- Speed – 900 R.P.M. for 1<sup>st</sup> speed and 1800 R.P.M. for 2<sup>nd</sup> speed.
- Frequency – 60 Hz
- 208-240 volts
- 1 or 3 phases
- 3 or 4 wires (2 or 3 lines + Gnd)

### **3.4 – THE MANUFACTURER IS NOT RESPONSIBLE FOR THE MACHINE'S DAMAGES IN THE FOLLOWING SITUATIONS:**

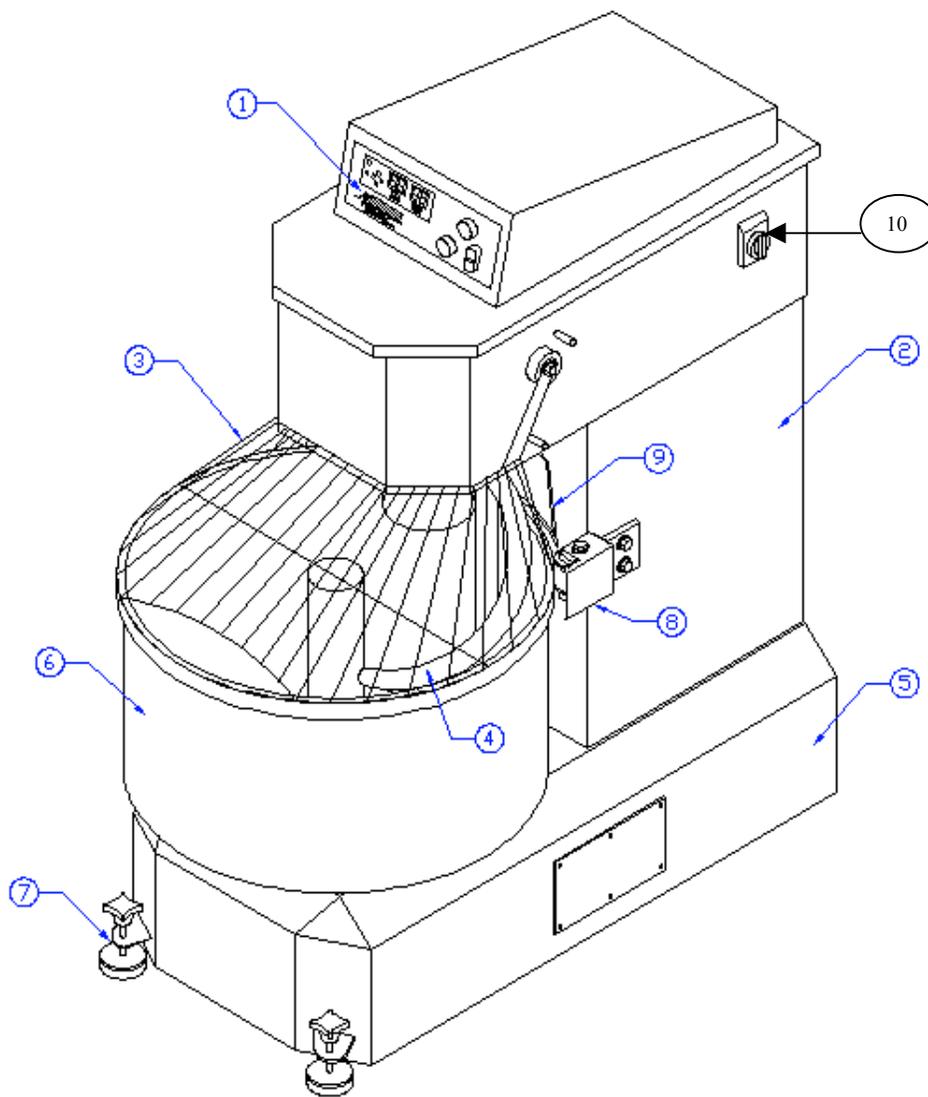
- Bad use of the machines.
- Using them out of the national laws.
- Problems with electric power.
- Non-authorized changes.
- Deficient upkeep.
- Use of unoriginal parts and products of the machines.
- Not following this manual.
- Repairs made by unauthorized technicians.

### **3.5 – ELECTRIC INSTALLATION**

Doyon's machines have an electric installation in compliance with the American (ANSI/UL std. 763), Canadian (CSA std. C22.2 no. 195) and European rules.

**Figure # 2**

1. Control panel
2. Machine structure
3. Security bars
4. Spiral
5. Bottom body
6. Stainless steel bowl
7. Machine floor fixer
8. Roller
9. Side board
10. Main switch



### **3.6 – SECURITY SYSTEM**

The potentially most dangerous area on these machines is the one that surrounds the moving spiral.

So, there is a safety guard that obstructs the entry in this area. This safety guard is designed in a way to allow the user to watch the dough.

If you lift the safety guard, the machine will activate the micro switch and stop immediately. To restart it, close the safety guard and press the green button “start”.

It is forbidden to remove, modify or damage the machine’s security bars.

### **3.7 – EMERGENCY STOP**

The machine has a mechanism that allows the user to stop it when necessary, blocking the electric power. To re-establish the normal work of the machine, after having pressed this button, the user must turn it as shown by the arrows.

### 3.8 – PARTS DESCRIPTION

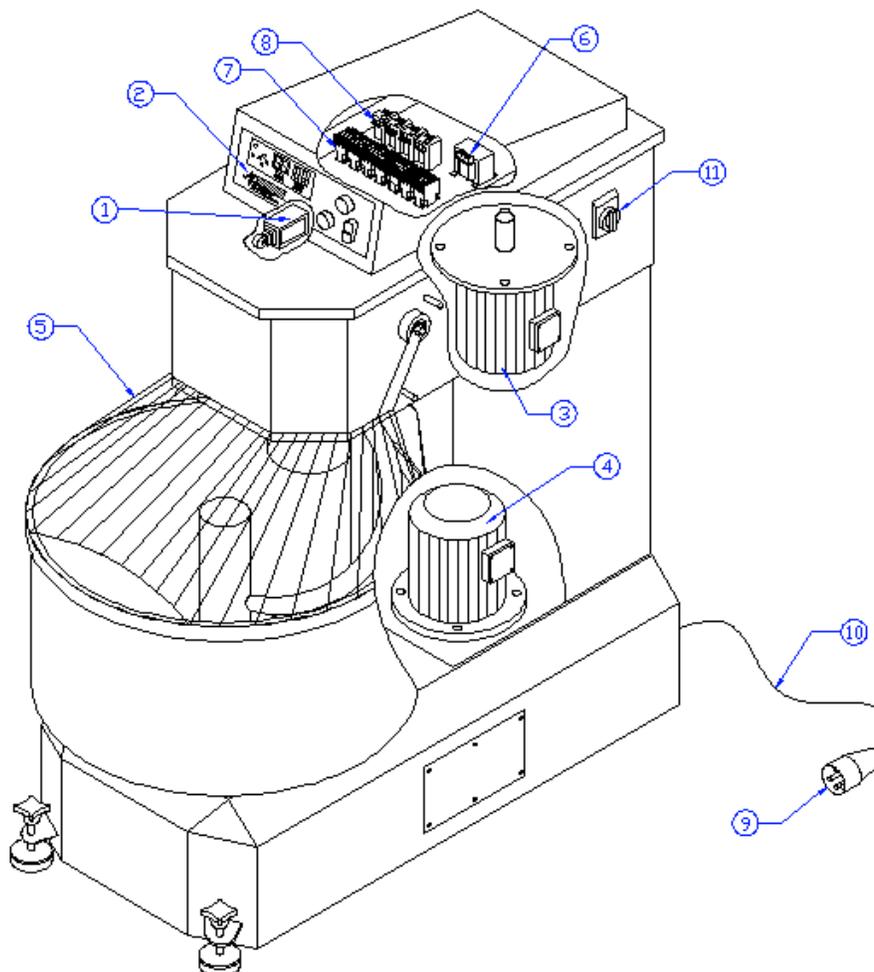
AEF 015/025/035/05x/08x/10x/15x Fig.3

#### Figure # 3

1. Micro switch
2. Control panel
3. Electric hook motor. (Drive Hook and bowl for AEF015SP & AEF025SP)
4. Electric bowl motor. (except for AEF015SP & AEF025SP the hook motor also drive the bowl)
5. Security bars
6. Current transformer
7. Switch
8. Contactor
9. Electric plug
10. Electric cable / cord
11. Main switch

**Note:** The AEF015 and AEF025 do not have part # 4, only the motor part # 3 to drive the hook and the bowl

**Note :** on The AEF015SP and AEF025SP parts # 6, 7 and 8 are replace by a motor drive inverter.



## CHAPTER 4

### DOYON SPIRAL MIXER AEF 015/025/035/05X/08X/10X/15X

#### OPERATION

##### 4.1.- GENERAL CHARACTERISTICS

- Electric commands with two modes: manual or automatic mode.
- 9 different program capacities.
- In each program, you may adjust the time of work for the 1<sup>st</sup> and 2<sup>nd</sup> speed.
- Low tension.
- Initial program is 1.
- Protection fuse of 750mA.

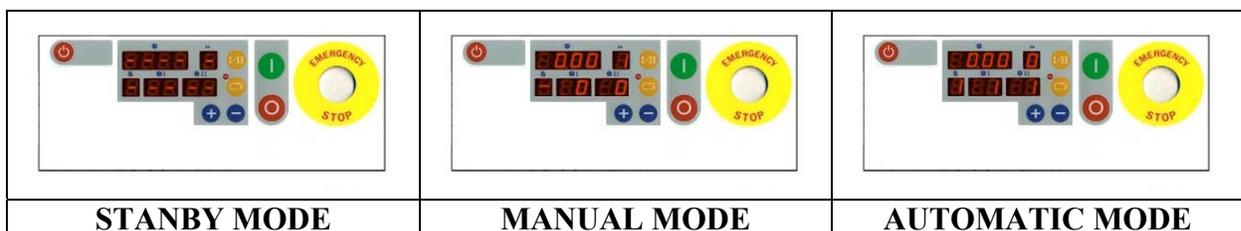
##### 4.2.- ELECTRICAL INFORMATION

- Electrical supply installation must be in accordance with the electrical rating on the nameplate.
- The plug must be as near as possible of the machine and easily accessible.

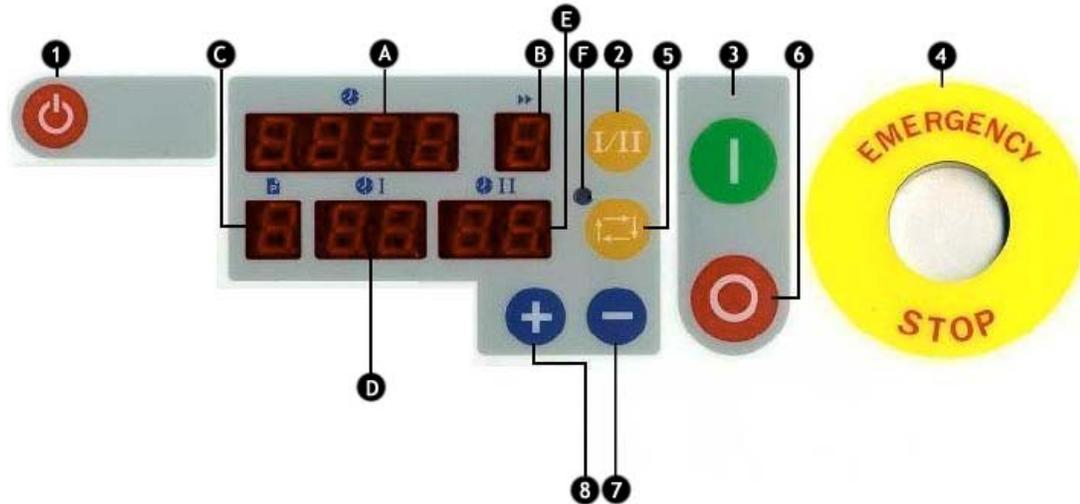
MODEL number	NEMA Plug configuration
AEF015SP	6-20P
AEF025SP	6-30P
AEF035SP	6-30P
AEF035	L15-20P
AEF050	15-30P
AEF08x	15-50P
AEF10x	15-50P
AEF15x	15-50P

##### 4.3.- START

**BEFORE GETTING STARTED, YOU WILL HAVE TO RECOGNISE THE MANUAL MODE, THE STANDBY MODE AND THE AUTOMATIC MODE.**



## YOU WILL ALSO HAVE TO STUDY THE CONTROL PANEL.



### BUTTON

1. ON and OFF switch
2. Speed change (Manual Mode)
3. Start the machine, bowl motor and hook motor, simultaneously
4. Emergency STOP
5. Select automatic mode (AM)
6. Stops the machines bowl and hook motors simultaneously
7. Decrease value on displays C, D, E
8. Increase value on displays C, D, E

### DISPLAY

- A. Information timer
- B. Working speed
- C. Program number
- D. At automatic mode (AM) : Low speed "I" working time  
At manual mode (MM) : Low speed "I" elapsed working time
- E. At automatic mode (AM): High speed "II" working time  
At manual mode (MM): High speed "II" elapsed working time

### CONTROL MECHANISM

Control panel of the spiral mixer:

- Point 1:  ON/OFF button
- Point 2:  Speed change (Manual Mode)
- Point 3:  Switch ON ; starts the motors
- Point 5:  Select automatic mode (AM)
- Point 6:  Switch OFF ; stops the motors
- Point 7:  Decrease value
- Point 8:  Increase value

## GETTING STARTED :

- Supply the machine according to the plate specifications
- Turn the main switch into position I 
- Verify if the Emergency STOP button is unlocked 
- All displays stay ON during 2 seconds displaying number “8”
- All led stay ON during 2 seconds
- Simultaneously is emitted a continuous beep (during 2 seconds)
- The mixer will be on Stanby Mode
- Press the button  and the displays will light up. You will be on Manual Mode.
- Press the green button 
- Verify if the bowl and spiral rotations are the same as indicated by the arrow on the spiral. If not, stop immediately the machine, unplug it, open the electric plug and reverse one phase for another.
- When the machine starts working, verify if the safety guards work correctly, when you lift it, the machine must stop. If not, contact a technician.
- After that, push the Start button , the machine will restart. Then, press the red button  to stop the machine. If it doesn't stop, pull the emergency stop, unplug it and call a technician.

**When the machine is new, you should, before starting production, try it with some dough. That will remove the lubricator's residuum that may remain in the bowl and on the tools.**

### 4.4.- MANUAL OPERATION (MANUAL MODE)

- If in Standby Mode, pulse button 
- Close the safety guards. If you lift up the safety guards, the machine will stop immediately.
- The machine always starts working in Manual Mode.
- Use button  to change speed. Display B shows speed “I” or “II”.
- To start and stop the mixer, use buttons  and .
- **To change speed “I” to speed “II”:**  
At any moment, pulsing button , speed “I” stops, and after a pause of 1 second, speed “II” starts.
- **In order to change from speed “II” to “I”:**  
Stop the machine by pulsing button 6;  
Pulse button  to change display B from “II” to “I”.  
Pulse button  to restart the machine.
- **To count and visualize the operating time:**  
Display A indicates the elapsed time at speed “I” in progress.  
After switching from speed “I” to “II”, display A adds the elapsed time speed “I” to elapsed time speed “II” in progress.  
Display D and E indicate the current elapsed time for speed “I” and speed “II” respectively.
- At any time, it is possible to stop the machine by using the emergency stop.



#### 4.5.- AUTOMATIC OPERATION (AUTOMATIC MODE)

- When the machine is in Manual mode, press 
- If the machine is in Standby mode, press  and after pulse 
- Close the safety guards. If you lift up the safety guards, the machine will stop immediately.
- To select the program numbers, use the buttons  and . Display C shows the selected program.
- The button  starts and restarts the selected program and the button  stops the program and the working process.
- The displays will show:
  - Display A : shows the total elapsed time (speed “I” + speed “II”)
  - Display B : shows speed “I” or “II”
  - Display C : shows the selected program
  - Display D : shows the elapsed time on speed “I”
  - Display E : shows the elapsed time on speed “II”
- It is possible to adjust the programmed time by using the button  and . This change will not be programmed.
- When the working time is the same as the programmed time, the machine will stop automatically. That is the end of the working cycle.
- At the end of the working cycle, press the red stop button  and the display comes to zero, so you can resume the work or start a new cycle.
- You may stop the machine at any time by pressing button stop  and resume the work by pressing button . The working cycle will start from the stop point.
- If you lift up the safety guards during the working process, the machine will stop and give a sonorous signal.
- To restart the process, close the safety guards and press again the button .

#### 4.6. - PROGRAMMING THE WORKING TIME

- You can program 9 different programs, with time to speed “I” and speed “II”.
- To program you must :
  - Put the machine in automatic mode by pressing button .
  - With buttons  and , select the program.
  - For example, program 1.
- Edit the program by pressing the button  during 3 seconds until it shows PROG in the display A.
- Use the buttons  and  to select the number of the program that is to change (display C).
- Press the button  to go to the speed “I” (display D). Use the buttons  and  to select the working time for speed “I”.
- Press the button  to go to the speed “II” (display E). Use the buttons  and  to select the working time for speed “II”.
- Press button  and hold it until it shows in the display A the word “SAVE”.
- The program is now memorised.
- Now it is possible to execute this program, change it or make changes to another program number.

#### 4.7.- HOW TO STOP THE SPIRAL MIXER

There are four different ways to switch off the spiral mixer:

- Lift the safety guards.
- Push the red stop button .
- Push the red emergency stop switch.
- When in automatic mode, if the programmed time expires, the machine will stop automatically.

#### 4.8. ALARM MESSAGES

Display Message	Cause	
OPEn	Manual mode (MM) or Automatic mode(AM): Safety guard opened.	
Prog	Successful access in program mode (AM).	
SAVE	Successfully leaving and saving edited program (AM).	
Erro	Thermal relay protection activated. Effort of the machine, with activate of the thermal protection of engine, or caused by the effort of hard dough; Or by various frictions. Shut the machine of the plug. Reduce the load on the machine. Try to work again.	
DonE	Automatic program cycle has ended.	

In case of “erro” message, switch off the general switch of the machine  for approximately 10 minutes. The error can be eliminated if it was caused by a punctual cause, but if not, call the after sales Service.

## CHAPTER 5

### OPERATOR MAINTENANCE AND CLEANING

**Attention: Before doing maintenance and cleaning, switch off the machine with the main switch and unplug it, some operations might be dangerous.  
If you need to remove some protections, do not start working without them.**

#### 5.1. – WHEN THE MACHINE IS NEW

- When the machine is new, you should, before starting the production, try it with some dough. This way, it will remove some lubricator's residuum, resultant of manufacture.
- After the 1st working month, you have to check the belts tension:
  - a) The transmission's belts of the spiral can be examined by opening the cover of the machine.
  - b) The transmission's belts of the bowl can be examined by removing the access panel on the bottom side of the machine.
  - c) To verify if the belt needs to be stretched, press a finger in the middle of the belt, and if the looseness is superior to ½" (1 cm), there is a need to stretch it.
  - d) To stretch it, it is necessary to call an authorised technician.
- To check the electric equipment, it is necessary lift the cover of the machine and opening the electric board.
- To check the motor, it is necessary to remove the access panel in the back of the machine.

#### 5.2. - EVERY DAY

##### 5.2.1. - MACHINE'S CLEANING

The machine must be cleaned every day, especially in the areas that have contact with the dough (bowl, spiral, side board).

To clean the machine do not use knives, sandpaper, metallic objects, hard brushes or any tool that may damage its surface. You may use plastic tools or soft sponges.

Do not use: toxic products, solvents, abrading agents or any products that may damage the surfaces or the dough's composition.

## CHAPTER 6

### **THIS SECTION NEEDS TO BE DONE BY A QUALIFIED TECHNICIAN.**

#### **6.1 – EVERY 6 MONTHS**

##### **6.1.2 – CONTROL OF BELT'S STRETCHING**

It is necessary to control the belts' stretching every 6 months in all transmissions. If the belts are too loose, the machine will lose power.

- a) The transmission's belts of the spiral can be examined by opening the cover of the machine.
- b) The transmission's belts of the bowl can be examined by removing the access panel on the bottom side of the machine.
- c) To verify if the belt needs to be stretched, press a finger in the middle of the belt, and if the looseness is superior to ½" (1 cm), there is a need to stretch it.
- d) To stretch it, it is necessary to call an authorised technician.

##### **6.1.3 – SAFETY INSTRUCTIONS**

- The machine must be used only for the functions that it has been conceived for. Doyon Equipment will not be responsible for the damages caused by an improper, bad or irrational use of the machine.
- Before cleaning or doing maintenance, turn the main switch off and unplug it.
- Do not remove security parts of the machine.
- If the machine has inactive security units, do not turn it on.
- The work of the machine may be stopped by using the red stop switch.
- If you detect any damages or bad functions of the machine, turn it off immediately and call for an authorised technician, otherwise it may cause irreversible damages in the machine.
- The electric connection must follow the procedures presented in the installation chapter.

##### **6.1.3 – CAUTION**

###### **CAUTION**

The spiral (point 4, fig.2) in movement is the most dangerous part of the machine.

The safety guard does not allow the access to this area (point 3, fig.2). You must not remove it, damage it or modify it.

###### **CAUTION**

Danger, the transmission must be protected with fixed protections. In order to have access to them, you must respect the instructions of the manual.

## **CHAPTER 7**

### **7.1 – EVERY YEAR**

#### **7.1.1 – CONTROL OF THE STAINLESS STEEL BOWL**

Once a year, it is necessary to control the stainless steel bowl. Verify if the bowl has any damages. If you follow the procedures of 5.2., it is not normal that the bowl's surface have damages, but if there are some, you should replace it. Even with a small deterioration of the surface, that will possibly reduce the working capacity of the machine, and its capacity to prevent dough contamination.

# **LIMITED WARRANTY**

## **(Continental United States Of America And Canada Only)**

Doyon Equipment Inc. guarantees to the original purchaser only that its product are free of defects in material and workmanship, under normal use.

This warranty does not cover any light bulbs, thermostat calibration or defects due to or resulting from handling, abuse, misuse, nor shall it extend to any unit from which the serial number has been removed or altered, or modifications made by unauthorized service personnel or damage by flood, fire or other acts of God. Nor will this warranty apply as regards to the immersion element damaged by hard water.

The extent of the manufacturer's obligation under this warranty shall be limited to the replacement or repair of defective parts within the warranty period. The decision of the acceptance of the warranty will be made by Doyon Equipment service department, which decision will be final.

The purchaser is responsible for having the equipment properly installed, operated under normal conditions with proper supervision and to perform periodic preventive maintenance.

If any parts are proven defective during the period of one year from date of purchase, Doyon Equipment Inc. hereby guarantees to replace, without charge, F.O.B. Linière, Quebec, Canada, such part or parts.

Doyon Equipment Inc. will pay the reasonable labor charges in connection with the replacement parts occurring within one year from purchase date. Travel over 50 miles, holiday or overtime charges are not covered. After one year from purchase date, all labor and transportation charges in connection with replacement parts will be the purchaser's responsibility.

Doyon Equipment Inc. does hereby exclude and shall not be liable to purchaser for any consequential or incidental damages including, but not limited to, damages to property, damages for loss of use, loss of time, loss of profits or income, resulting from any breach or warranty.

In no case, shall this warranty apply outside Canada and continental United States unless the purchaser has a written agreement from Doyon Equipment Inc.