Please refer to the numbered drawings
which correspond to the paragraph numbers of the instruction manual.
The reference language for these instructions is French.

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Contents

Different models

- **PSR 20E/PSR 100E:** "Spiral" kneader, 18 litre liquid capacity, 90 litre bowl, manually controlled cycle.
- **PSR 20/PSR 100:** "Spiral" kneader, 18 litre liquid capacity, 90 litre bowl, automatically controlled cycle.

• Check that the model matches its characteristics marked on the identification plate attached to the body.

Introduction

1.1 DESCRIPTION

• This "spiral" kneader is designed to knead all sorts of doughs and pastries (traditional and special breads, Viennese, pizzas, etc.). Its main advantages are its capacity to knead quickly as well as small quantities.

1.1

A Electrical component plate
B Mechanically welded body
C Bowl and tool drive
D Fascia
E Central stainless steel bar with blade
F Raisable safety guard
G "Spiral" stainless steel tool
H Flat bottomed stainless steel bowl

Installation

2.1 DIMENSIONS - WEIGHT (for information only)

- Gross weight packaged : 300 kg
- Net weight equipped : 250 kg
- Dimensions of packaging (mm) : 1266 x 796 x 1410
- Dimensions of machine (mm) : 2.1

2.2 HANDLING - MOVING

• The kneader is delivered on a wooden pallet, which means that it can be easily moved with a pallet transporter or a fork lift truck.

• **To raise the kneader:**

- Place a sling around the tool hub next to the head.

While handling, take all necessary precautions to prevent the machine from swinging (centre of gravity **G**). 2.1

• Narrow passages (doors, corridors, etc.), minimum width: 630 mm.

2.3 LOCATION

• The kneader is to be stood on a flat, stable floor, which is sufficiently resistant and non resonant. It does not usually need to be anchored in position.

• If the machine is to be anchored in position, ensure that there is enough space left around it for maintenance work to be carried out.

• **Blocking or levelling the machine (10 mm adjustment per foot):** 2.3

- Lean the kneader over and hold it steady or lift it (with a pallet transporter...).
- Unscrew the foot attachment screw (13 mm socket).
- Adjust the foot then tighten in position.
- Check that the machine is stable by running it at high speed.

• **Anchoring the machine:**

- Counter drill the attachment holes of the brackets (use 8 mm dia. screws maximum, min. length 30 mm and rawl plugs, not supplied).

2.4 ELECTRICAL CONNECTION

• Check that the voltage of the electrical system is the same as that marked on the rating plate.

• The machine must be protected by a differential circuit breaker and a fuse per phase of the rating shown in column **H** of the characteristics.

• **Motor characteristics**: 2.4

B Number of phases (3 three phase)

C Nominal voltage in Volts (value, range or switching)

D Frequency (Hertz)

E Motor speed (rpm)

F Nominal power (kWatts)

G Nominal current (Amperes)

H Rating of fuse protecting electrical line (Amperes)

I Approximate electrical consumption (Kwh)

Three phase motor - two speed - single voltage.

• Provide a single phase wall socket with 3 phases + earth, rating 20A and a matching watertight plug fitted on the power supply cable.

The machine must be earthed with a green / yellow wire.

• Check the direction of rotation of the tool and the bowl (anticlockwise direction ↺ - see the arrow marked on the top of the kneading head.

• If the direction of rotation is reversed, change over the two phase wires on the plug.

• Adjusting the current of the thermal relays which protect the motor:

- They are factory set to the nominal rated value shown on the motor, corresponding to each speed (see column G in table 2.4).

Use, safety

3.1 OPERATION, SAFETY

Important: Even though the kneader is fitted with a full guard, we recommend starting the kneading in low speed for at least two minutes in order to reduce clouds of flour being given off.

•The safety of the user is ensured by:

- The work zone of the tool being protected by an electrically locked guard, which stops the tool from turning within four seconds of being opened.
- The guard access zone opposite the tool being used to add products or scrape the bowl in mid-cycle.
- The drive parts of the machines having covers fitted.
- A “no volt” release which means that the START button has to be pressed to restart the machine following a STOPPAGE.
- Respecting the instructions of this manual for the use, cleaning and maintenance of the machine.

• The kneader is started normally if:

- The safety guard is lowered.
- The isolator switch is in the **I** position and the power on lamp is lit (depending on model).
- The timers are in the continuous or timed operation positions.

1) FASCIA OF THE MANUAL CYCLE KNEADERS

3.1a

A Emergency STOP push button.

B Timer knob.

C Timed operation timer position (0 to 30 minutes).

D Continuous operation timer position.

E START push button.

F High kneading speed selector position (runner logo).

G Bowl - tool speed selector (2 positions **F** and **H**).

H Low kneading speed selector position (walker logo).

A) Continuous operation:

- Turn the timer knob **B** in an anticlockwise ↺ direction to the continuous operation position **D**.
- Press the START button **E**.

B) Timed operation:

- Turn the timer knob **B** in a clockwise direction ↻, graduated from 0 to 30 minutes. For cycles of less than 5 minutes, turn past this mark then turn back to the desired value.
- Press the START button **E**.
- The machine stops automatically when the timer reaches 0.

If the kneader stops in mid-cycle, the mechanical timer mechanism continues the countdown.

Note: The timer must be set for each kneading operation, whether fast or slow.

C) Selecting the bowl - tool speeds:

- Always start kneading in low speed (position **H**) for slow kneading, then turn the selector knob **G** clockwise ↻ (position **F**) for fast kneading.
- Return to slow speed by turning **G** anticlockwise ↺ to the position **H**.

D) Stopping:

- Press the STOP button then raise the safety guard.

3.2 KNEADING CAPACITIES

• The “spiral” kneader allow a nominal load to be kneaded, which depends on the bowl capacity, as well as small quantities.

• **Recommended nominal loads (for information only)**

KNEADER MODELS	PSR 20/ PSR 100
Percentage hydration	60
Flour (kg)	30
Liquids (l)	18
Dough (kg)	48
Bowl capacity (l)	90

• Minimum quantity: 20 % of the nominal load.

• Maximum excess quantities: 115 % of the nominal load.

• Excessive quantities will be detrimental to the quality of the work and the life of the mechanical parts of the kneader. Reduce the quantities processed when there is a lower percentage of hydration.

3.3 CHOICE OF SPEEDS

• This “spiral” kneader have 2 tool and bowl rotation speeds:

SPEEDS (rpm)	TOOL	BOWL
SLOW KNEADING	110	8.5
FAST KNEADING	220	17

• The kneading must be started in low speed for at least 2 minutes, which will avoid clouds of flour from being given off.

• As soon as the mixture is consistent, switch to the high kneading speed (manual cycle kneader).

⚠ Never introduce a hard object into the bowl whilst it is rotating.

3.4 KNEADING CONDITIONS

They depend on:

1) The duration of the kneading

- Spiral kneaders knead faster than fork kneaders due to the fact that they rotate at a higher speed.
- The kneading time depends on the types of recipes used. Between 6 and 10 minutes are required for fast kneading, depending on the types of dough.

2) The pouring temperature

- Increasing the kneading time raises the temperature of the dough (approximately 1°C/minute for this type of kneader).
- The pouring temperature is calculated in function of the dough temperature desired after kneading, taking into account the temperatures of the room and the flour in line with the following formula:

Initial T° = T° Flour + T° Air + T° water

Example:

- If the dough needs to be at a temperature of 23 °C, this means that the temperature of each of the constituents of the dough (water, air and flour) at this moment is 23 °C. Or, if they are added together: 69 °C.
- If the kneading is to last 7 minutes, the temperature will be raised by about 6 to 7 °C.
- Therefore an initial temperature of 69 °C - 7 °C = 62 °C is required.
- If the flour and the room are at 20 °C, the pouring temperature will be: 62 °C - (20 °C + 20 °C) = 22 °C.

Cleaning and hygiene

⚠ Before carrying out any cleaning or maintenance operations, switch off the electrical power supply via the mains isolator switch.

4.1 FIRST USE

We recommend cleaning the inside of the bowl, the tool and the central bar with a damp sponge and degreaser.

4.2 AFTER USE

- Scrape the inside of the bowl to get rid of any crusts. Avoid using metal scrapers as they may scratch the bowl.
- Clean the bowl, the tool and the body with a damp sponge and detergent - disinfectant.

⚠ Do not use abrasive detergents on painted parts.

- Carefully rinse and wipe the bowl and tool.
- If necessary, remove any dust from the outside of the machine with a brush or a vacuum cleaner.

4.3 PERIODICALLY (at least once a month)

- Clean the outside of the machine with a non-abrasive detergent
- If necessary, unblock the ventilation holes of the motor compartment.
- Lightly oil the guard pivot pins.

⚠ Do not clean the machine with a pressure cleaner.

4.4 STRAY FLOUR PARTICLES:

In order to reduce the emission of stray flour particles while loading the bowl, it is recommended as follows:

- Empty the flour bag or the container containing the flour without shaking it.
- Use a long flour chute which goes down to the bottom of the bowl
- Pour in the water before putting the flour in if that is possible
- Always start at slow speed during the water/flour mixing for at least 2 minutes
- Do not shake an empty flour bag. Roll it with care.

Keeping to these simple rules will contribute to reducing the emission of flour dust and consequently reducing the risks of allergy linked to that dust.

Fault finding

5.1 THE MACHINE WILL NOT START, CHECK THAT:

- The machine is plugged in.
- The electrical power supply reaches the socket.
- The isolator switch is in the START position **I**.
- The guard is lowered.
- The mechanical timer (manual cycle kneaders) is in the timer or continuous operation position.
- The electronic timers (automatic cycle kneaders) display a cycle time when the selector is in the AUTO mode.
- The transformer circuit breakers of the control circuit do not require resetting.

- **If the machine stops in mid-cycle:**
- One of the thermal relays of the motor has been tripped. Wait for a few minutes until it resets itself automatically.
- Overloading due to stiff dough may have caused the guard to lift and tripped the safety device.
- Press the START button to start the machine again.

• Before carrying out work in the electrical housing, discharge the condensers by short circuiting the terminals, for example with a screwdriver with an insulated handle.

⚠ If the problem persists, contact the service department of your local dealer.

5.2 ABNORMAL OPERATION

- **Noise:**
- Defective or slack belt(s) (see §6.2).
- Foreign body in the bowl: stop the kneader and remove it.
- Guard rubbing against the bowl: repair or change the defective part.
- **Lack of power:**
- Three phase motor operating on two phases (see § 6.5).
- Incorrect supply voltage causing overheating of motor.
- Excess loading (see §3.2).
- Slack belt(s) (see §6.2).

⚠ If the problem persists, contact the service department of your local dealer.

• The correct operation of the kneader depends on regular maintenance and cleaning, as described in the PREVENTIVE MAINTENANCE SHEET supplied with the instruction manual.

This maintenance sheet is in the form of a table and summarises the operations to be carried out on the machine and their frequency, as recommended by the manufacturer, as well as the amount of time required to perform them.

The maintenance sheet must be located visibly and near to the machine. Each operation carried out by an authorised person must be recorded in the summary table supplied with the maintenance sheet.

Before carrying out any cleaning or maintenance operations, switch off the electrical power supply via the mains isolator switch.

6.1 MECHANISM

• It is recommended that at least once a year the top cover, and the base plate be removed to check the following:

- the tension of the head and bowl belts (see §6.2).
- the cleanliness inside the head and body, if necessary, remove any dust with a vacuum cleaner.
- the condition of the electrical connections.

Note: Refit the covers, plates and panels after cleaning or checking, along with all of their fasteners.

6.2 CHANGING - TENSIONING THE BELTS

1) Tool transmission belt **A** *(tooling: 13 and 17 mm spanners):*

- Remove the screw from the top cover and lift it into the raised position.
- Loosen off (by 1 turn) the 4 motor attachment screws D to slide it and the locknut of the tensioning screw E.
- Completely unscrew the tensioning screw E if changing the belt.
- Tighten with the screw E so that a deflection of around 5 mm is obtained on one side of the belt when pressed with the finger.
- Tighten the locknut E and the attachment screws D in position.

2) Intermediate bowl transmission belt **B** *(tooling: 17 mm spanner):*

Note: If the intermediate belt **B** *requires tensioning or changing, the lower belt* **C** *must first be slackened by means of the tensioning roller* **F** *(see §6.2.3) to avoid twisting the intermediate shaft* **G***.*

Proceed as follows:

- Raise the top cover (see §6.2.1).
- Loosen off (by 1 turn) the 3 screws of the intermediate bushes **H** and **K** (see §6.2.3) so that the shaft may be slid on its bushes.
- Tension by means of the locknuts and tensioning screws, **I** then **J**, as per the instructions in §6.2.1.
- Adjust the bowl transmission belt **C** (see §6.2.3).

3) Bowl transmission belt **C** *(tooling: 17 mm spanner):*

- Remove the base plate **M** (6 screws).
- Loosen off (by 1 turn) the 2 screws of the tensioning roller **F** to slide it.
- Tension by means of the locknut and tensioning screw as per the instructions in §6.2.1.
- Tighten the 2 screws **F** of the tensioning roller.

6.3 VERIFICATION OF THE GUARD SAFETY DEVICE

• A frequent check should be made that the guard safety device is operating correctly. The safety switch should be tripped when the guard is opened (75 mm MAX. from the edge of the bowl).

• If this function does not work:

- Do not use the machine.
- Have it adjusted by the service department of your local dealer.

• To adjust the trip distance of the safety device:

- Raise the top cover.
- Bring the switch onto the cam **L** so that it trips 75 mm from the edge of the bowl.

6.4 ADJUSTING THE DISTANCE BETWEEN THE TOOL AND THE BOTTOM OF THE BOWL

• **To obtain good quality results when kneading**, the tool must be less than 7 mm from the bottom of the bowl.

- Check this distance by placing a 7 mm dia. rod between the bottom of the bowl and the tool.

• **If the distance is greater than 7 mm:**

- Remove the tool (4 screws - 17 mm spanner).
- Change the tool or rectify it using a hydraulic jack.

6.5 ELECTRICAL COMPONENTS

6.5 See electrical diagrams

• Check the condition of the cable of the electrical components regularly.

• **Identification of the colours of the wires:**

- Earth : B/C green and yellow
- Phases : (L1) (L2) (L3)
- Control circuit : red
- Power circuit : black

• **Identification of the components (manual cycle kneaders):**

M : Three phase motor, 2 speeds (bowl - tool)
KM1 : Contactor
F1 : Thermal relay
Q1 : Mains isolator switch
I : START push button
0 : STOP push button
CM : 2 position speed change switch
Mi : Mechanical timer
S : Guard safety device

6.6 ADDRESS FOR SERVICE REQUIREMENTS

We advise you to contact the dealer who sold you the machine.

For any information or orders for spare parts, specify the type of machine, its serial number and the electrical characteristics.

The manufacturer reserves the right to modify and make improvements to the products without giving prior warning.

Dealer's stamp

Date of purchase:.....

Conformity with regulations

The machine has been designed and manufactured in conformity with:

- Machine directive 2006/42 EEC
- The CEM directive 2014/30/EU
- 2011/65/EU Directive on the restriction of the use of certain hazardous substances

2002/96/CEE « WEEE »

The symbol « » on the product indicates that this product may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact the sales agent or dealer for your product, your after-sales service, or the appropriate waste disposal service.

2006/12/CEE"Waste"

The machine is designed so that it does not contribute, or as little as possible, to increasing the quantity or harmfulness of the waste and the risks of pollution.

Make sure to observe the recycling conditions.

94/62/CEE"Packaging and packaging waste"

The packaging for the machine is designed so that it does not contribute, or as little as possible to increasing the quantity or harmfulness of the waste and the risks of pollution.

Make sure to eliminate the various parts of the packaging in appropriate recycling centres.

- **To the European standards:**

  EN 453 - Kneaders - Safety and hygiene regulations

This conformity is certified by:

- The CE conformity mark, attached to the machine
- The corresponding CE declaration of conformity, associated with the warranty.
- This instruction manual, which must be given to the operator.

Acoustic characteristics:

- The acoustic pressure level measured in conformity with the EN ISO 3743.1-EN ISO 3744.< 70 dBA

Protection indices as per the EN 60529-2000standard:

- IP55 electrical controls
- IP23 overall machine

Integrated safety devices

- The machine has been designed and manufactured in accordance with the relevant regulations and standards shown above.
- Before using the machine, the operator must be trained to use the machine and informed of any possible residual risks.

Food hygiene:

The machine is made from materials that conform to the following regulations and standards:

- directive 1935/2004/EEC: materials and objects in contact with foodstuffs
- EN 601-2004 standards: cast aluminium objects in contact with foodstuffs

The surfaces of the food area are smooth and easy to clean. Use detergents that are approved for food hygiene and respect the instructions for their use.