

BERKEL

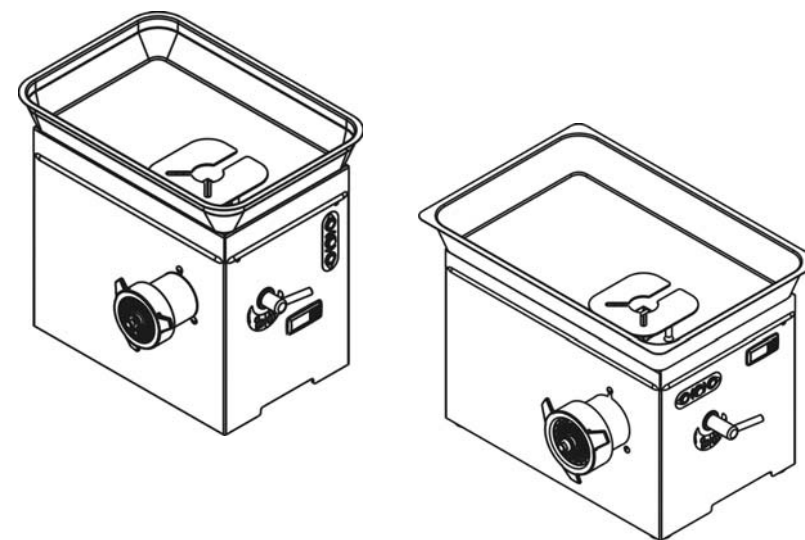
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AUTHORISED DEALER CENTER

BERKEL

BMR+ 22T
BM3+ 32T

REFRIGERATED MEAT MINCER



Ver. 002 Ed. 08/2017

INSTRUCTION MANUAL FOR USE AND MAINTENANCE

English

9 - Problems and solutions

9.1 - Problems, causes and solutions

Problems

- 1 - The machine does not start
- 2 - The propeller turns in the opposite direction of the one indicated by the arrow (on the three-phase model)
- 3 - The product is not ground correctly
- 4 - it's not cold

Causes

- 1 - The differential switch is in the position "0"
- 1 - The plug switch is in the position "0"
- 1 - Start push button does not work
- 1 - The electric motor is defective
- 2 - Contact technical assistance
- 3 - Plate and blade have not been correctly tightened
- 3 - grooves on the plate or blade is not perfectly sticking (on the plate plane)
- 3 - Outlet not perfectly introduced into the housing
- 4 - The condenser is not clean and not able to carry out its function of heat exchange.
- 4 - The air intakes are not blocked
- 4 - The appliance is not near air currents or heat sources

Solutions

- 1 - Put the switch at position "I"
- 1 - Put the switch at position "I"
- 1 - Contact technical assistance
- 1 - Contact technical assistance
- 3 - Correctly tighten the plate and blade
- 3 - Replace the defective plate couple and the blade
- 3 - Correctly introduce the outlet in the proper housing
- 4 - clean the condenser
- 4 - move eventual blocking
- 4 - move the machine

If the problem continues after the various checks call the nearest assistance center.

Attention: In the case of gas leaks or fire do not go near the motor opening and remove electrical tension from the appliance. Do not use water to extinguish the flames but only dry extinguishers. All materials that make up the appliance are fire-retardant or self-extinguishing and are not combustible.

CONTENTS

1. Delivery and warranty	5
1.1 Introduction	
1.2 Conservation and use of this manual	
1.3 Warranty	
1.4 Description of the machine	
1.5 Intended use	
1.6 Prohibited uses	
1.7 Identifying data	
1.7.1 Warning signs and danger	
1.8 Protections and safety devices	
1.8.1 Lock handle for meat output feed	
1.8.2 Protections of meat grinder plates with holes greater than or equal to 8 mm	
1.9 Work position	
2. Specifications	11
2.1 Main parts	
2.2 Specifications	
2.3 Size and weight of the machine.	
2.4 Noise level	
2.5 Wiring diagrams	
3. Controls and Indicators	15
3.1 List of controls and indicators	
4. Thermostat	16
4.1 Technical features	
4.2 Display	
4.3 Alarms and signaling	
5. Testing, transport, delivery and installation	17
5.1 Testing	
5.2 Delivery and handling of machine	
5.3 Installation	
5.3.1 Disposal of packaging	
5.3.2 Handling the machine	
5.4 Connection to the electric mains	
5.4.1 Three-phase machine	
5.4.2 Single-phase machine	
6. Starting and stopping	19
6.1 Check for correct electrical connection	
6.2 Check for the presence and effectiveness of guards and safeties	
6.3 Check for efficiency of the stop button	
6.4 Starting the machine	
6.5 Stopping the machine	

7. Using the machine	19
7.1 Requirements	
7.2 Preparation of the output feed	
7.3 Using the meat grinder	
8. Maintenance	21
8.1 Requirements	
8.2 Lubrication	
8.3 Cleaning the machine	
8.4 WEEE Waste Electrical and Electronic Equipment	
9. Troubleshooting	22
9.1 Faults, causes and remedies.	

8 - Maintenance

8.1 - Requirements

WARNING! All the maintenance and cleaning must be performed with the machine at a standstill, disconnected from the power mains. The area where maintenance operations are performed must always be kept clean and dry. Do not allow unauthorized personnel to service machinery. Any replacement of parts, including replacement of the utensils must be made with original parts from authorised shops or directly from the manufacturer.

8.2 - Lubrication

The machine does not require lubrication.

8.3 – Cleaning the Machine

WARNING! Unplug the machine from the mains before cleaning. Do not clean the machine with a water jet. Use only non-toxic cleaners, and specifically for the cleaning of components for use with food. Plates and knives are made of AISI 430 steel, if left wet or to soak, they can rust. It is advisable to dry them after washing. Clean the condenser regularly, at least once a month. Use a scrub brush (no metal) or a vacuum cleaner (suggested). Carefully remove dust and dirt between fins. Pay attention not to damage them. Please note that a long time dirty condenser means more power consumption and an overall bad performance of the cooled mincer.

8.4 WEEE Waste Electrical and Electronic Equipment INFORMATION FOR USERS

Pursuant to Article 13 of Legislative Decree 25 July 2005, No.151
"Implementation of Directive 2002/95/EC, 2002/96/EC and 2003/108/EC on the reduction of use of Hazardous Substances in electrical and electronic equipment, and disposal of waste



The symbol of the barred trash bin as shown on the equipment or on its packaging indicates that the product at the end of its life must be separated from other waste.

The recycling of this equipment at the end of its life is organised and managed by the manufacturer. The user who wishes to dispose of this equipment shall contact the manufacturer and follow the system that has been adopted to allow the separate collection at the end of its life.

Proper differentiated collection by subsequent sending of the equipment waste to recycling, treatment and environmentally compatible disposal helps to avoid possible negative environmental and health effects and promotes the reuse and/ or recycling of materials making up the product.

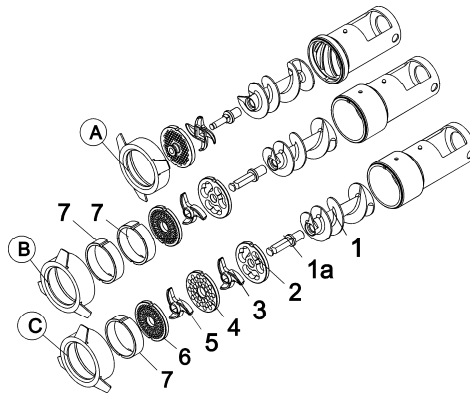
Illegal disposal of the product by the owner will lead to the application of administrative sanctions provided by law.

7.2 - Preparation of the output feed

The machine can be set to use three different meat cutting units:

- A - Enterprise or normal
- B - Partial UNGER
- C - Total UNGER

Fig. 7.2.1



- The system-C-(total UNGER), includes: a rotor "1" to transport the meat, a fringer plate "2", a first knife "3" and the related perforated plate "4", a second knife "5" with the final perforated plate "6", a spacer "7"
- The system-B-(partial UNGER), replaces the knife "5" and plate "4" with the spacer "7".
- The system-A-(Normal) is the easiest method of transport, composed only of the rotor, a knife and an output plate.
- It is not possible to mount the plates of the B or C unit on models with A- grinder; it is necessary to change the entire unit.

7.3 - Using the grinder

1. Make sure that the supply voltage matches the value on the rating plate. The voltage indicator will be lit to indicate the connection to the electric grid.
2. Slightly tighten the ring nut of the meat grinder and put in some meat, press the start button, making sure that the direction of rotation is the same as that indicated by the arrow (counterclockwise).
3. If the meat output is cut well, the adjustment of the ring nut is fine, if not, tighten the ring nut more until you get a perfect cut of meat.
4. Stop the machine by pressing the stop button
5. To loosen the ring nut it is not necessary to use a tool, simply turn the handle that locks the feed, because the ring nut is free and can be easily extracted.
6. After a thorough cleaning, first mount the feed, making sure it is in the correct position and secure it with the side handle.
7. Now you can reassemble the rotor, the knife, the plate and the ring nut.

1 - Delivery and Warranty

1.1 - Introduction

WARNING!

The symbols used in this manual are intended to draw the reader's attention to issues and operations hazardous to the personal safety of the operators, or where there is risk of damage to the machine itself.

Do not operate the machine if you are not sure that you correctly understand what has been shown in these notes.

WARNING!

Some of the illustrations in this manual, for reasons of clarity, show the machine or parts of it with the panels or guard removed.

Do not use the machine in such conditions, only use if provided with every protection properly fitted and working perfectly.

The manufacturer prohibits the reproduction, even partial, of this manual, and its contents cannot be used for purposes not permitted by the same. Violators will be prosecuted according to law.

1.2 - Conservation and use of this manual

The purpose of this manual is to inform users about the machine using text and figures to clarify the requirements and criteria essential for the transport, handling, use and maintenance of the machine.

Thus, before using the machine read this manual carefully.

Keep it safe near the machine, in a place easily and quickly accessible for future reference.

If the manual is lost or damaged, obtain a copy from your dealer or directly from the manufacturer.

In case of selling the machine, inform the manufacturer of the details and contact information of the new owner.

The manual reflects the state of the art at the moment of its sale of the machine and cannot be considered unsuitable if, subsequent to new experiments, it were to be further upgraded.

In this regard, the manufacturer reserves the right to update products and manuals without having to upgrade the product and previous manual, except in exceptional cases.

If in doubt consult your nearest service centre or the manufacturer directly.

The manufacturer is striving for the continuous improvement of its product.

For this reason, the manufacturer is pleased to receive any suggestion or proposal intended to improve the machine and/ or manual. The machine was delivered with the warranty conditions applicable at the time of purchase.

For assistance, contact your supplier.

1.3 - Warranty

The user is not allowed to tamper with the machine for any reason. For each problem encountered, contact the manufacturer.

Every attempt to disassemble, modify or generally tamper with any component of the machine by the user or by unauthorized personnel will result in the revocation of the **Declaration of Conformity** prepared in accordance with EEC directives 2006/42, and will avoid the warranty and release the Manufacturer from liability for damage resulting from such tampering.

The manufacturer also is released from any responsibility in the following cases: incorrect installation;

- misuse of the machine by personnel not properly trained;
- use contrary to the regulations of the country of use;
- lack of or unskilful maintenance;
- use of spare parts, not original and not specific for the model;
- total or partial failure to comply with the instructions.

1.4 - Description of the machine

The meat grinder in your possession is a simple, compact, highly efficiency and powerful machine.

- As it is supposed to be used for chopping food, the components that can come in contact with the product have been carefully chosen to ensure maximum hygiene. The housing is made of stainless steel.
- The hopper is made of stainless steel to ensure maximum hygiene and easy cleaning.
- The utensils are made of stainless steel to ensure durability and maximum hygiene.
- Sturdy machines of modern design, made of aluminium alloy and a stainless steel housing.
- Feeds of cast stainless steel with the possibility of applying the UNGER system in whole or part.
- Possibility of reversing the direction of rotation using a switch.
- Rigid locking of the feed to improve the cut of the meat and extend the life of the plates and blades.
- Ventilated motors either three-phase or single phase with the following advantages:
 - consistency of performance and durability of the engine;
 - increase in the effective operating time due to fewer interruptions;
 - low rate of heat to keep the meat fresh and unaffected.

The models shown in this manual have been produced according to **EEC Directive 2006/42**, as amended.

In case of accident, no liability can be assigned to the manufacturer if the machine has been modified, tampered with, deprived of safety guards or used for purposes not intended by the manufacturer.

6 - Starting and stopping

6.1 – Check for correct electrical connection

Plug into the electrical socket;

Press the button ("1" Figure 3.1.1), checking the direction of rotation of the utensils (in 380 three-phase version). The direction of rotation must be counterclockwise. If the rotation direction is backward, disconnect the machine from electricity and contact our dealer.

Note: For machines connected to a single-phase line and built at such a power, the correct direction of rotation is determined by the manufacturer.

6.2 – Check for the presence and effectiveness of guards and safeties

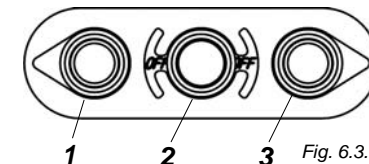
- 1 - The outlet feed of the product.** Make sure that the outlet feed of the product has holes with a diameter of less than 8 mm. Otherwise, the guard must be installed on the feed.
- 2 - Hand guard protection.** The hopper must have hand guard protection
- 3 - Stainless steel hopper.** The stainless steel hopper is solidly attached to the loading feed.
- 4 - Guard for protection of electrical components.** Check for the presence, integrity and the proper mounting of the guard for internal components of the machine.

6.3 - Check for efficiency of the stop button

With the machine connected to the grid and the utensils in motion, press the stop button "2" Fig. 5.3.1. The machine must stop.

6.4 - Starting the machine

To start the machine, just press the start button "1" Fig. 5.3.1, after having properly connected the plug to the electric mains supply and the machine is activated.



6.5 - Stopping the machine

To stop the machine, press the stop button, "2" Fig 5.3.1 and the machine stops

7 - Using the machine

7.1 - Requirements

WARNING! Only authorized personnel can service the machine.

Before starting use the operator is required to ensure that all the guards are in place and that the safety devices are in place and effective.

Otherwise, turn off the machine and contact the maintenance manager.

The product to be ground must be cut up to a size that can fit into the loading feed and must be pressed with the aid of the special pusher (pestle)

NEVER USE YOUR HANDS FOR THIS.

5.3 - Installation

WARNING! The area where you plan to install the machine must be level, solid and on a flat shoring and must ensure its support in safety. The machine must also be placed so as to maintain ample space around it. This allows greater manoeuvrability in the work stages and ensures access for subsequent maintenance. Provide suitable lighting around the machine to ensure proper visibility to the operator using the machine.

- Remove the cellophane wrapping of the machine and any other packaging inside.

5.3.1 - Disposal of packaging

The packing materials such as cardboard, nylon, and wood products are comparable to municipal solid waste. They can then be disposed of freely. The nylon material is a pollutant that produces toxic fumes if burned. Do not burn and do not disperse but dispose of according to applicable laws. If the machine is delivered in countries where there are special rules, dispose of the packaging as required by the applicable legislation.

5.3.2 - Handling the machine

WARNING! Handle the machine with care and attention, avoiding accidental falls that could damage it severely. To avoid muscle strain in lifting the machine, lift using your legs.

5.4 - Connection to the electric mains

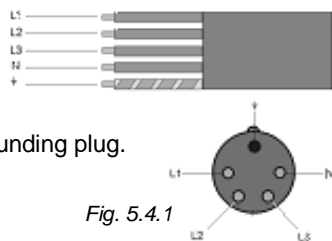
WARNING! Verify that the power supply line corresponds to the value on the nameplate of the machine. Any operation should be performed solely by qualified personnel expressly authorized by the manager in charge. Connect to a grid provided with efficient grounding plug.

5.4.1 - Three-phase machine

In these arrangements, the machine is supplied with a power cord of a section 4 x 1.5 mm.

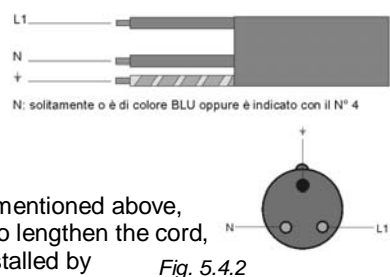
This is connected to a three-phase three-pole + grounding plug.

Connect the cable to the three-phase power supply by putting a 16 Amp circuit breaker switch.



5.4.2 - Single-phase machine

In this arrangement, the machine is supplied with a power cord of section 3 x 1.5 mm. This is connected to a single-phase three-polar plug. Connect the cable to the single phase power supply 220 Volt-50 Hz by inserting a 16 Amp circuit breaker switch.



In installations with voltages other than those mentioned above, please contact the manufacturer. If you need to lengthen the cord, use a cable of the same section as the one installed by the manufacturer.

1.5 - Intended Use

The machine was designed and built for grinding meat and similar products. It must be used in a professional environment and the person designated to use the machine must be an operator in the industry who must have read and understood this manual. Use the machine only when safely supported on a solid work table.

The size of the meat to be ground must be such as to fit completely in the inlet feed and not overflow the hopper.

1.6 - Prohibited uses

The machine must only be used for the purposes intended by the manufacturer, in particular:

- **do not** use the machine for chopping foods other than meat and the like.
- **do not** use the machine if not properly installed with all the guards intact and properly installed to avoid the risk of severe injury.
- **do not** access the electrical components without first disconnecting the machine from the mains supply: **risk of electric shock**.
- **do not** process products that are larger than what can be totally contained in the loading hopper.
- **do not** wear garments that do not comply with safety regulations. Consult your employer about the requirements of safety in effect and the protective devices to be used.
- **do not** start the machine during a breakdown.
- Before using the machine, make sure that any unsafe condition has been properly removed. In case of any irregularities, stop the machine and warn those responsible for maintenance.
- **do not** allow unauthorized personnel to service the machinery.
- The first aid emergency treatment in case of accident caused by electric current is to remove the person from the conductor (as he has usually passed out).
- This operation is dangerous.
- The victim in this case has become a conductor: touching him means being electrocuted.
- Therefore remove the contacts directly from the supply valve of the line, or if that is not possible, remove the victim using insulating materials (sticks of wood or PVC, fabric, leather, etc.). The patient should be immediately seen by medical staff and admitted to a hospital.

1.7 - Identifying Data

An exact description of the "Model", the "Serial number" and the "Year built" of the machine will facilitate rapid and effective responses by the our Support Service. It is recommended to indicate the equipment model and serial number whenever you contact the support service. Collect the data from the plate shown in Fig. 1.7.1. As a reminder, we suggest reporting the data in the machine you have, in the table below:

Meat grinder model
Serial number
Year built
Type.....

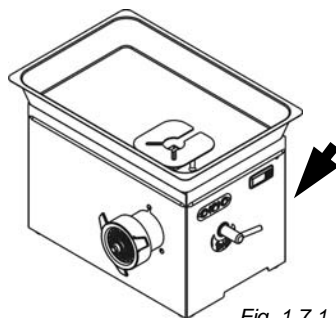


Fig. 1.7.1

MOD: [A]
VOLT: [B] WATT: [C]
HZ: [D] KG: [E]
AMPS: [F] ANNO: [G]
SERIAL NO: [H]
[I]
[L]

A= model of the machine
B = Power supply
C = motor power
D = motor frequency Hz
E = Weight
F = Amperage
G = Year of manufacture
H = Serial Number
I = Manufacturer
L = Bar code

WARNING! Do not alter the data on the plate for any reason.

1.7.1 - Warning signs and danger (fig. 1.7.2)

WARNING! With the machine connected to the electricity mains, do not work on the electrical components. There is a risk of electric shock. **Follow the instructions referred to on the plates. Failure to comply may cause injury.** Make sure the plates are present and readable. If not, apply or replace them.

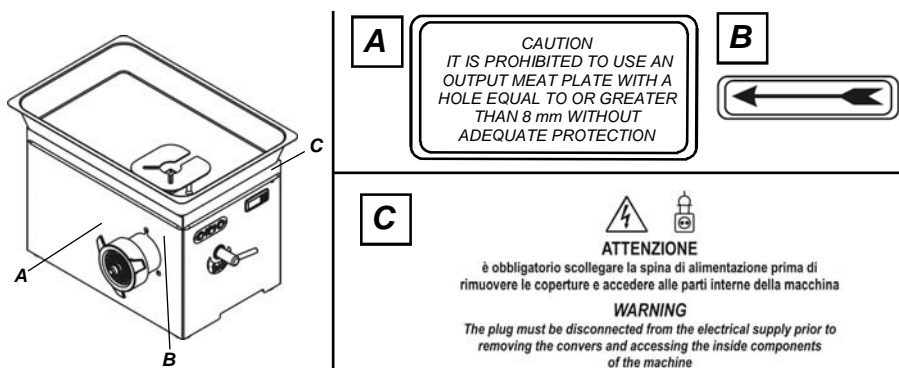


Fig. 1.7.2

4.3 - Alarms and signaling

Error	Reason	Action
E1 -E1	The probe may be interrupted (E) or in short circuit (-E) or may measure a value outside the range allowed	Check the probe connection with the instrument and check that the probe works correctly
EPr	Internal EEPROM memory error	Press P key
Err	Fatal memory error	Replace the instrument or ship to factory for repair

Additional reports:

Message	Reason
Od	Delay at power-on in progress
Ln	Keyboard locked
Hi	Maximum temperature alarm in progress
Lo	Minimum temperature alarm in progress
AL	Digital Input alarm in progress
oP	Door Open
dEF	Defrost in progress with "d.dL" = Lb
PdF	Post-defrosting in progress with "d.dL" = Lb
Eco	Eco Mode in progress

5 - Testing, transport, delivery and installation

5.1 - Testing

The machine in your possession has been tested at our factory to ensure its smooth operation and proper adjustment. During this testing, tests were conducted in operation on material similar to that processed by the user.

5.2 - Delivery and handling of the machine

All the material shipped has been thoroughly checked before delivery to the carrier. Unless otherwise agreed with the customer, the machine is wrapped with nylon and strapped onto a pallet; the carton sheathes it from above which will also be strapped on the pallet. Upon receipt of the machine, verify the integrity of the packaging. If the packaging is damaged, the carrier must sign the bill of receipt with a note such as " Accepted, with reservation ..." and reason. After opening the package, if damaged machine parts are present, make a claim to the carrier within three days of the date indicated on the documents.

4 - Thermostat

4.1 - Technical features

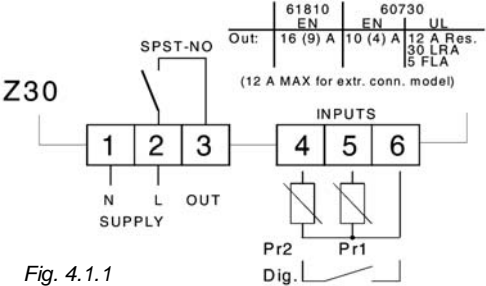


Fig. 4.1.1

Power supply: 115/230 $\pm 10\%$;
AC Frequency: 50/60 Hz;
Power consumption: about 3 VA;
Inputs: 2 inputs for temperature probes:
 NTC (103AT-2, 10 kW @ 25°C);
 PTC (KTY 81-121, 990 W @ 25°C);
 Pt1000 (1000 W @ 0°C);
 1 free of voltage digital input as an alternative to input 2;
Output: 1 relay output SPST-NO;

	EN 61810	EN 60730	UL 60730
Out - 16A - 1HP 250V, 1/2HP 125 VAC	16 (9) A	10 (4) A	12 A Res., 30 LRA, 5 FLA

Relay output Electrical life: 100000 operazioni (secondo la EN60730);
Action type: Tipo 1.B (secondo la EN 60730-1);
Overvoltage category: II;
Protection class: Classe II;
Isolation: Reinforced insulation between the low voltage part and front panel;
Reinforced insulation between the low voltage section and the extra low voltage section (inputs).

4.2 - Display

During normal functioning the value observed by the environment probe or the second probe (parameter/4) is displayed. In case of alarm the temperature flashes alternately with the alarm code.

1.8 - Protection and safety devices

WARNING! Before using the machine, check the correctness of the positioning of safety devices and their integrity. Check their presence and efficiency at the beginning of each work shift. If it is not right, contact the maintenance manager.

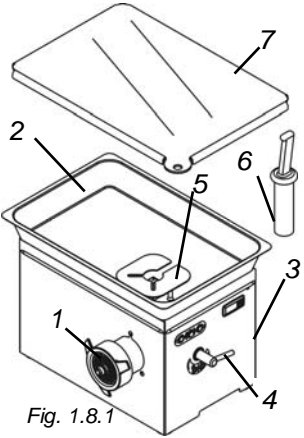


Fig. 1.8.1

1. Meat exit, plate holes of less than 8 mm.
In this case the fingers cannot enter the holes.
On request, it is possible to install plates with outlet holes larger than 8 mm.
In this case the user must provide a protection for this opening.
2. Stainless steel hopper rigidly set to the loading feed.
3. Protective casing for electrical components.
The bottom of the machine is closed by a guard, preventing accidental access to the electrical components inside.

4. Lock handle for the output feed for ground beef
- Turn the handle to allow the dismantling of the feed and its related pieces (see sticker).
- Turn the handle to lock the outlet feed in operating position making sure it is set inside the housing provided (see sticker).
5. Protective hand guard.
The hopper, in the model, shows the guard "2" Fig.1.8.1 rigidly fixed, in accordance with the circular of the Ministry of Labour and Social Insurance No.. 66 of 05.09.79. The smaller models do not require this guard due to the small size of the loading feed.
- 6 Pestle
- 7 Plexiglass feed tray lid

WARNING! Do not tamper with the safety devices for any reason.

1.8.1 Lock handle for meat output feed

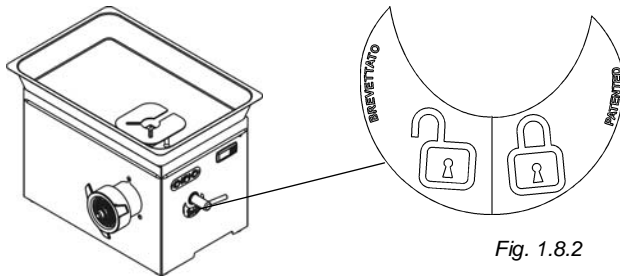


Fig. 1.8.2

Proper use:

If you want correct operation and precise grinding, all meat grinders need to have the feed tightly locked.

In order to avoid inaccurate fitting, it is important always to follow this installation process:

1. Insert the feed, make sure that the position is correct and secure it with the clamping handle
2. Check that the handle is in the locked position
3. Insert the grinding rotor
4. Insert the knife and plate
5. Make sure the knife is assembled with the blade toward the plate
6. Screw on the lock nut and tighten it slightly.

Standard on all models is a microswitch that is activated by the rotation of the handle:

UNLOCKING
THE FEED

- with the handle as shown in figure 1.8.3.1, the microswitch is shut off, the feed is free and the machine will not start;

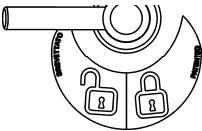


Fig. 1.8.3.1

- with the handle as shown in figure 1.8.3.2, the microswitch is turned on, the feed is locked and the machine works.

LOCKING
THE FEED

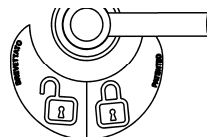
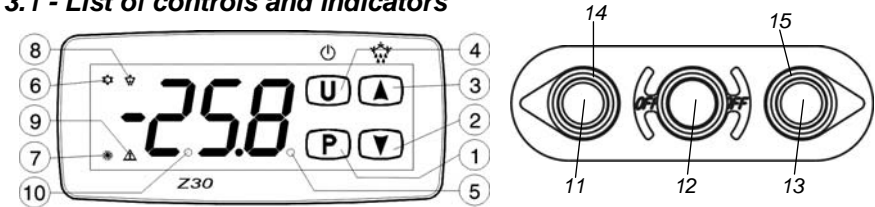


Fig. 1.8.3.2

3 - Controls and Indicators

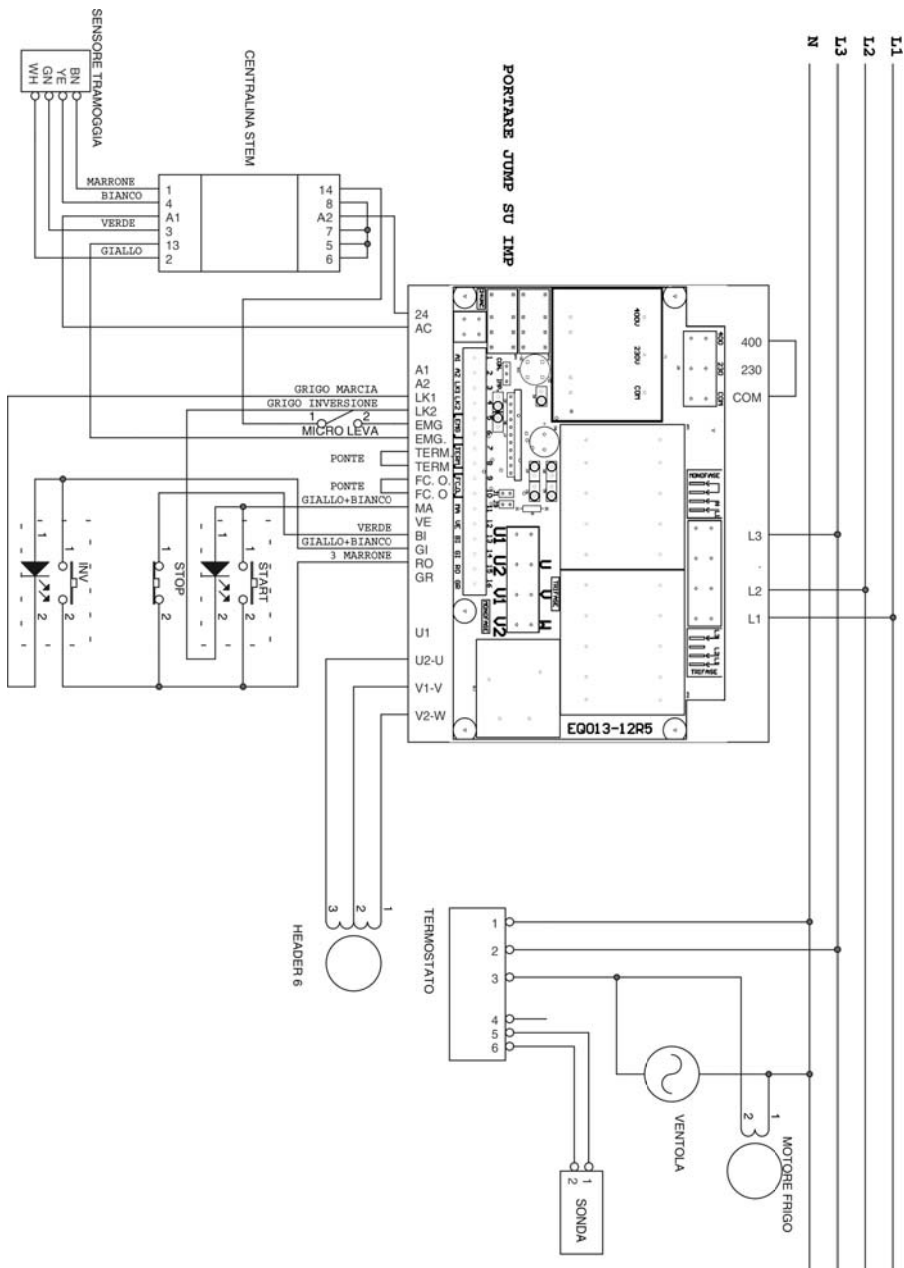
3.1 - List of controls and indicators

Fig. 3.1.1



- 1 - **Key P**: Used for setting the Set point (short press) and for programming the function parameters (pressed for 5 s). In programming mode is used to enter in parameters edit mode and confirm the values. In programming mode it can be used together with the UP key to change the programming level of the parameters. When the keyboard is locked it can be used together with the UP (hold pressed for 5 s) key to unlock the keyboard.
- 2 - **Key DOWN**: In programming mode is used for decreasing the values to be set and for selecting the parameters.
- 3 - **Key UP/DEFROST**: In normal mode can be used to start/stop manual defrosting (hold pressed for 5 s). In programming mode is used for increasing the values to be set and for selecting the parameters. In programming mode can be used together with key P to change parameters level. Pressed together with the key P for 5 s allows the keyboard unlock.
- 4 - **Key U**: Used (short press) for displaying the instrument variables (measured temperatures etc.). In programming mode can be used to return in normal mode (hold for 2 s). It can also be programmed via the parameter "t.UF". In Normal mode and if "t.UF" = 4 it can be used to turning on and off (standby) the device (pressed for 1 s).
- 5 - **Led SET**: In normal mode shows when a key is pressed. In programming mode indicates the programming level of the parameters.
- 6 - **Led OUT - COOL**: Indicates the output status (compressor or temperature control device) when the instrument is programmed for cooling operation; on (on), off (off) or inhibited (flashing).
- 7 - **Led OUT - HEAT**: Indicates the output status (compressor or temperature control device) when the instrument is programmed for heating operation; on (on), off (off) or inhibited (flashing).
- 8 - **Led DEFROST**: Indicates defrosting in progress (on).
- 9 - **Led ALARM**: Indicates the alarm status (on), off (off) and silenced (flashing).
- 10 - **Led Stand-By**: Indicate the Stand-by status. When in Stand By mode is the only lighted LED.
- 11 - **Start push button (continuous)** Press to start the machine
- 12 - **Stop push button** Press to stop the machine
- 13 - **Gear inversion push button (discontinuous)** Enables inverting the propeller rotation direction
- 14 - **On led** It lights up when the machine is started
- 15 - **Return led** It turns on when the gear inversion push button is pressed

2.5.2 - Three-phase diagram



1.8.2 - Protection of meat grinder plates with holes greater than or equal to 8mm

When the customer requires the ability to use plates with holes greater than or equal to 8 mm, by law it is required to provide a guard (1) to be inserted in the feed so that the hand of the operator cannot touch it. The guard is attached on two support pins (2) so that the magnet comes into contact with the sensor inside the machine, which otherwise will not start.

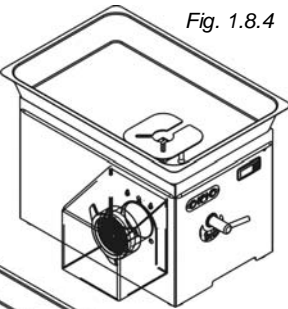


Fig. 1.8.4



1.9 – Work position

The correct work position that the operator must occupy to optimize the operation with the machine is shown in Fig. 1.9.1.

2 - Specifications
2.1 - Main parts

To facilitate understanding of the manual the main components of the machine are listed below and shown in fig. 2.1.1.

- 1. Pestle
- 2. Feed release handle
- 3. Machine controls
- 4. Feet
- 5. Output feed of ground meat
- 6. Loading hopper
- 7. Loading feed

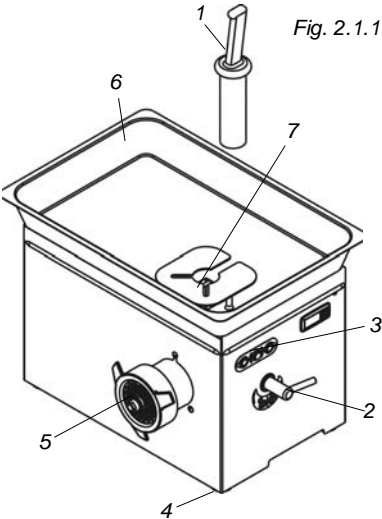


Fig. 2.1.1

2.2 - Specifications

	Motor	Power	Output	Standard plates
	watt/hp		kg/h.	ø mm
BMR 22T	1472/2	230-400V/50Hz	300	4,5
BMR 32T	2208/3	230-400V/50Hz	500	4,5

2.3 - Size and weight of the machine

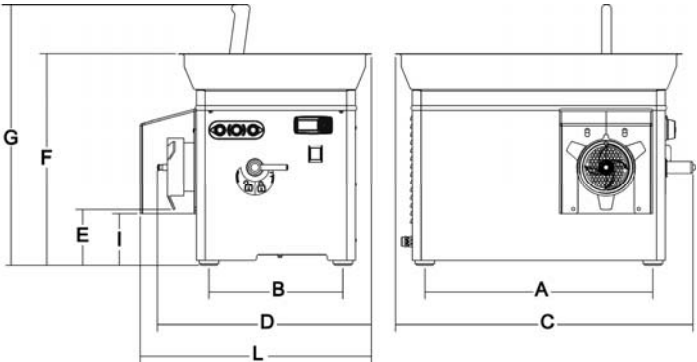


Fig. 2.3.1

	A	B	C	D	E	F	G	I	L	Net weight
	mm	mm	mm	mm	mm	mm	mm	mm	mm	Kg
BMR 22T	374	221	510	439	111	424	534	100	479	48
BMR 32T	485	285	635	495	120	451	555	110	542	60

2.4 – Noise level

Noise measurements of the machine indicate that the level of noise is less than 70 dBA.

2.5 - Wiring diagrams
2.5.1 - Single-phase diagram

