rev.10/2017

USE AND MAINTENANCE MANUAL

TUNNEL

INTRODUCTION

The present manual provides safety directions and instructions for the oven use and maintenance. This manual must be consigned to the people working on the oven or doing the maintenance.

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CHAP.1 - PRESENTATION

The present manual forms an integral part of the oven and must be carefully conserved for the entire duration of the oven itself up until its final demolition.

The TUNNEL ovens are part of the belt ovens series, specifically designed for the automatic baking of pizza, bread, biscuits and related products.
Two versions are available: the “Stone” version (with belt in refractory stone) and the “Classic” one (with stainless steel mesh belt). The “Stone” family is formed by three models different in capacity and power: TSA, TSB and TSC. The same is for the “Classic” family, with TCA, TCB and TCC models.

The particular feature of this oven is that excellent baking results are achieved without having to check the baking itself, and thanks to its simplicity of use and very limited consumption rates making it ideal for use by non-specialized personnel also.

The required temperature is achieved gradually and automatically, thereby reducing the set value variations to zero thanks to the special insulating system.

The bakery is either directly on the baking plate or using baking trays or moulds.

These Tunnel ovens may be included in any automatic production line.

The manufacturing company will not accept liability for any damage to persons and/or things as the result of the following:

- Improper use of the system
- Any non-authorized modifications or technical interventions
- The use of non-original spare parts
- The either partial or total failure to follow the instructions

We wish to thank you for having chosen this oven.

1.1 – Checks on consignment

Unless other specific agreement are made, the products are carefully packaged in sturdy wooden crates with nylon bubble packing to protect it from knocks and humidity during transportation.
However we would advise you to check the packaging on taking delivery, for evidence of any signs of damage. Should they be found they must be noted on the delivery receipt to be signed by the driver.
On unpacking the appliance, check for any signs of damage. In the event of any damage do not attempt to use the appliance and contact professionally trained personnel.

1.2 – Packaging disposal

All the parts that constitute the packaging must be disposed in a specific collection site. The disposal of the aforementioned material in non appropriate sites is prohibited.

1.3 – Shifting

To shift the system or to temporarily place it out of order the following needs to be done:

- Disconnect the power supply
- Clean all parts
- Lubricate and protect

To start up again, specialized personnel need to check that it is in good working order.

1.4 – Demolition

To demolish the system it is always necessary to contact an authorized demolition company to undertake the necessary operations-

1.5 – Safety norms and residual hazards

The oven has been built in such a way to ensure the functional convenience and safety for those using it, however certain residual hazards remain, and to eliminate them it is necessary to:

- Keep non-authorized personnel away from the operating vicinity
- Not to use the oven for any other purposes than those for which it is intended
- Always wear gloves and pay attention to hot parts
- Not to carry out any modifications or technical interventions on the oven without producer's authorization
- Do not remove safety devices
- Immediately disconnect the power supply in the event of risk situations

CHAP.2 – TECHNICAL SPECIFICATIONS

		DIMENSIONI Interne Camera Cottura Inside DIMENSIONS Baking Chamber Cm - Inc			DIMENSIONI Esterne Outside DIMENSIONS Cm - Inc			DIMENSIONI Nastro Conveyor DIMENSIONS Cm - Inc	Potenza Power	Potenza Power	Temperatura Temperature	Peso Weight
		L	P	H	L	P	H	L	Massima Max Kw	Min Min Kw	Massima Max	Kg.
TSA	Cm	53	80	11	101,5	145	52	45	12,5	6	°C 500	200
	Inc	20	32	5	39	56	16	18			°F 932	
TSB	Cm	67	114	11	117	211	52	59	19,5	10	°C 500	308
	Inc	26	45	5	44	81	16	24			°F 932	
TSC	Cm	87	150	11	137	247	52	79	34	17	°C 500	420
	Inc	34	59	5	52	95	16	32			°F 932	
TCA	Cm	53	80	11	103	172	41	50	12,5	6	°C 500	114
	Inc	20	32	5	39	56	16	18			°F 932	
TCB	Cm	67	114	11	117	206	41	63	19,5	10	°C 500	163
	Inc	26	45	5	44	81	16	25			°F 932	
TCC	Cm	87	150	11	137	242	41	83	34	17	°C 500	233
	Inc	34	59	5	52	95	16	33			°F 932	

TC: Rete in acciaio inox - Mesh belts in stainless steel

TS: Tapparelle in refrattario - Refractory fillets

CHAP.3 - INSTALLATION

IMPORTANT: The present installation instructions are intended for the exclusive use of qualified personnel

Installation by non-qualified personnel may cause damage to the oven, persons, animal or things.

Furthermore, should it be necessary to make any modifications or additions to the wiring systems of the building in which the oven is to be installed, those undertaking the work must be able to certify that it is carried out to the "state of the art".

3.1 – Choice of installation site

The efficient, safe and long-lasting function of the oven also depends on the choice of installation site, so that is important to carefully decide on where it is to be installed before actual delivery.
The appliance is to be installed in a dry place which is easily accessible both for operational purposes and for cleaning and maintenance. The area surrounding the oven must be kept clear, and it is important to ensure that the cooling vents are not obstructed.
The appliance must also be installed at a distance of at least 20 cm from the walls of the building or from other appliances

3.2 – Electrical connection

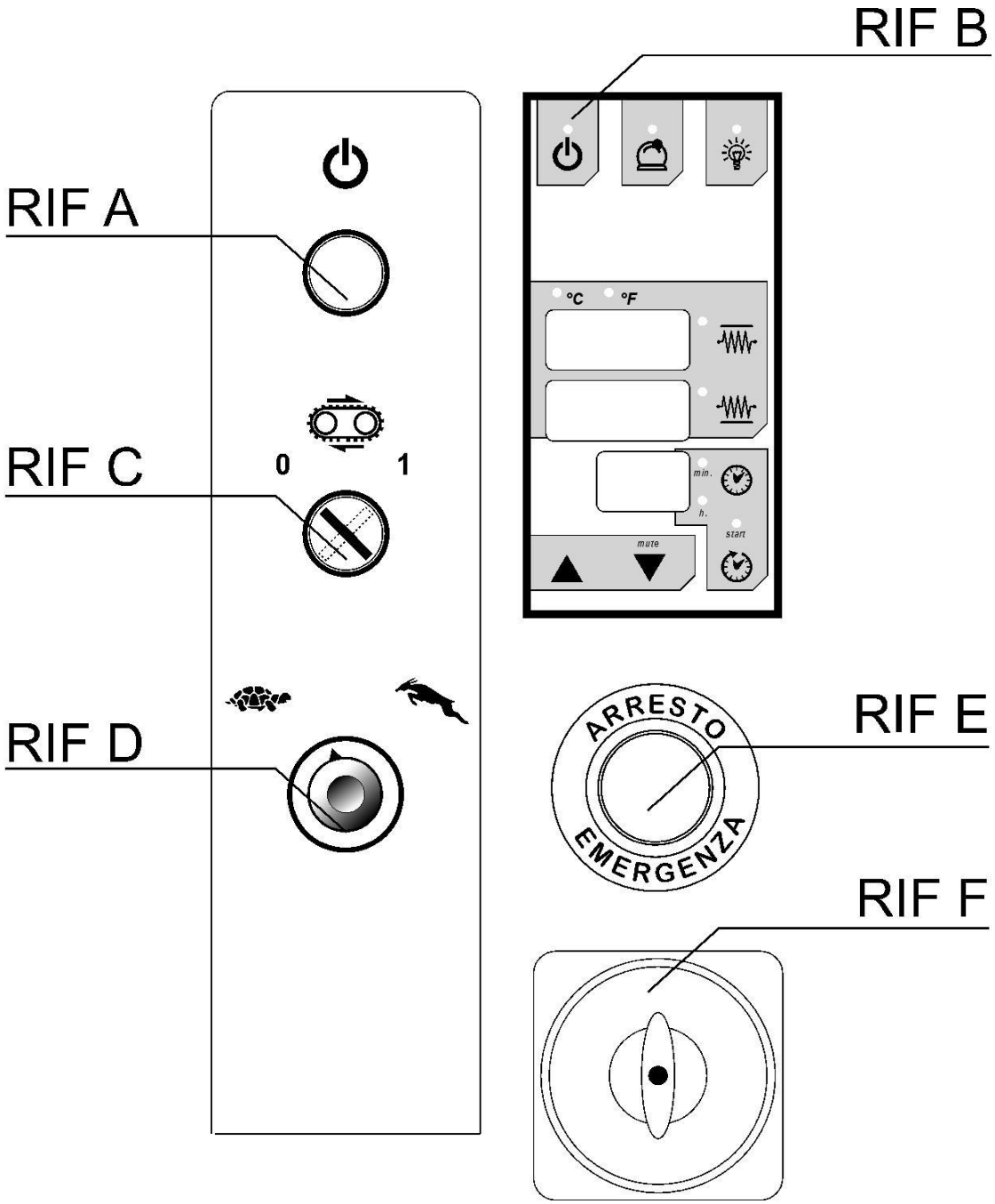
Our ovens are supplied with an electrical connection cable complete with earthing connection, in accordance with current safety regulations, ***it is necessary to connect the earthing conductor (yellow-green) to an equi-potential system the efficiency of which must be checked in accordance with the current norms.***

Before making any connections check that the features of the electrical mains to which the device must be connected, complies with the necessary power supply requirements.
The power cable must end with a plug to be connected to an electricity supply board complete with corresponding socket and differential magneto-thermal switch.

The plug-socket pair must be such as to ensure that the earthing conductor is connected first and disconnected last and must be of adequate dimensions for the nominal current. Plugs and sockets for industrial purposes of **CEE17** type are suited for this purpose, or to any event those which comply with European norms **EN 60309.**
The thermal protection device must be calibrated at the total nominal voltage, the magnetic protection device must be calibrated to the maximum instant voltage, while the differential device must be calibrated to a voltage of **30 mA.**

The producer will not accept liability for any damage caused as the result of the non-compliance with the above-mentioned regulations.

CHAP.4 – OVEN CONTROLS



4.1 – Switching on the oven

IMPORTANT: before the initial switching on of the oven all the protective nylon film used for stainless steel panels must be removed.

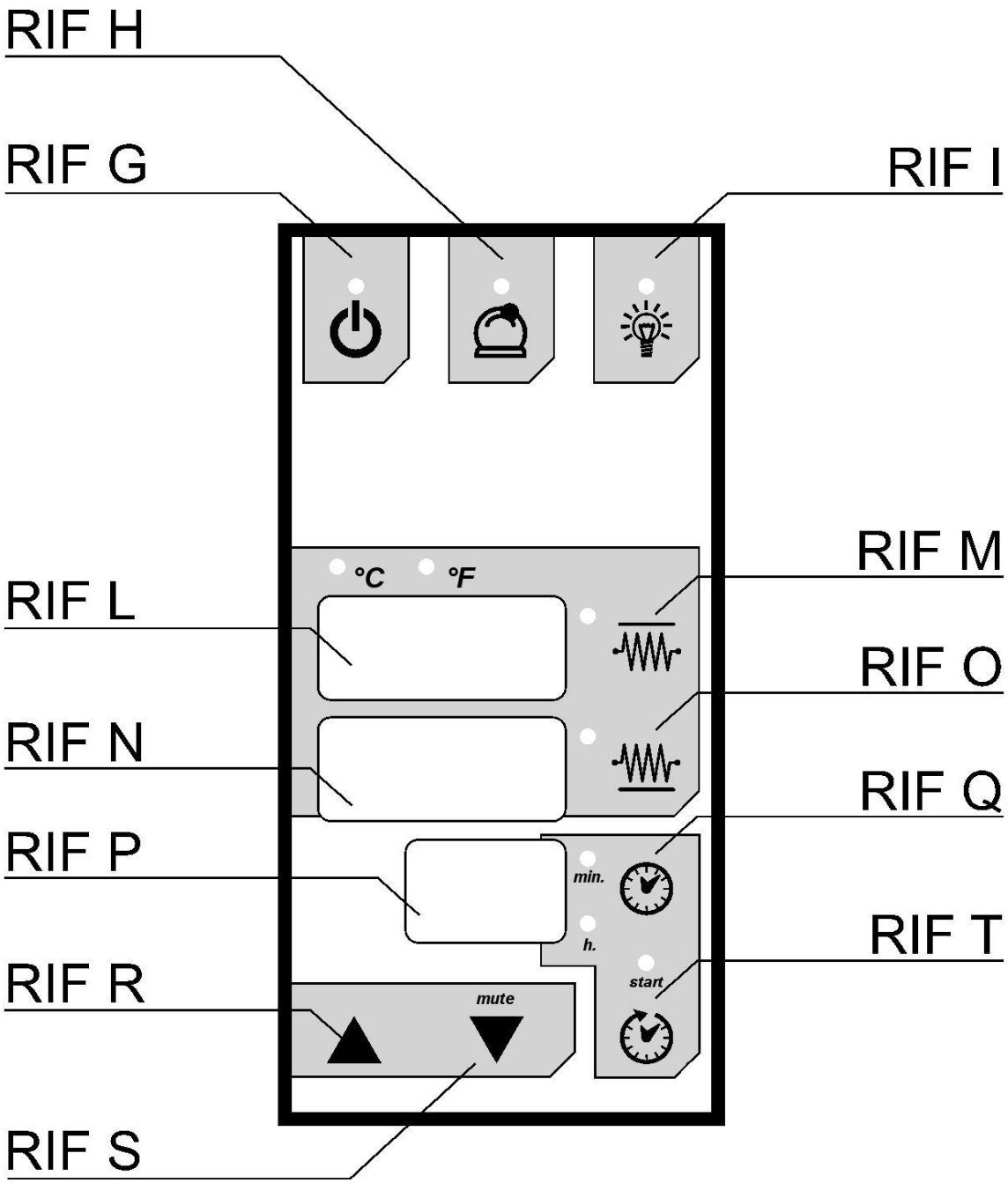
After connecting the plug to the wall socket, turn the main switch (**RIF. F**) to position 1 then press the running button (**RIF. A**) and check that this will come on with a green light.
After having completed these operations, press the button on the electronic card (**RIF. B),** keeping it pressed for a few seconds.
Start up the conveyor belt by turning the switch (**RIF. C**) to position 1. The belt will begin to move and to adjust the speed it is necessary to use potentiometer (**RIF. D**) which will increase the speed when turned to the right and will reduce it when turned to the left.
The belt speed must be regulated according to the decimal scale around the handle and according to the baking requirements.

In the event of any problems or anomaly press the emergency button (**RIF. E**) which will immediately cut off the power supply to the appliance.
Once the problem has been verified, it is possible to restart the oven after having released the emergency button (by turning it to the right and slightly pulling it towards the operator).
Once this operation is complete it is possible to proceed to switch on the oven again by pressing the running button **(RIF. A**).

4.2 – Shots periods of inactivity

When you do not need to bake any products, but wish to maintain the oven at a certain temperature it is advisable to lower the power regulator so that the oven always maintains the set temperature without wasting electric energy.

CHAP.5 – ELECTRONIC CONTROL CARD



Once all the operations for switching on the oven have been correctly completed (paragraph 4.1) you are now ready to set the operating parameters in the electronic control card. Here below follows a description of the functions of the electronic control card so that you can set the oven according to your requirements.

5.1 – Push-button panel

RIF.	DESCRIPTION
G	*ON/OFF BUTTON*
H	*"ECONOMY" FUNCTION*
I	*LIGHT*
L	*CEILING TEMPERATURE DISPLAY*
M	*CEILING RESISTANCES IGNITON BUTTON*
N	*BASE TEMPERATURE DISPLAY*
O	*BASE RESISTANCES IGNITON BUTTON*
P	*BAKING TEMPERATURE DISPLAY*
Q	*TIME SETTING*
R	*"UP" BUTTON*
S	*"DOWN" BUTTON*
T	*BAKING TIME "START" BUTTON*

5.2 - Switching on and off of the device

To switch the appliance on or off press the ON/OFF button (**RIF.G)** for 2 seconds.

Once the oven has been switched on, the appliance will display: the temperature recorded by the ceiling probe **(RIF.L)**, the temperature recorded by the base probe (**RIF.N**) and the duration of the baking timer (**RIF.P**).

5.3 - Alarm silencing

To silence the buzzer press for a few seconds the "DOWN" button (**RIF.S**).

5.4 - "ECONOMY" function

During the "Economy" function the ceiling and the base resistances are alternatively engaged and the oven works using approx. the 50% of its power.
It is advisable not to use this function when the maximum production is required.

To engage or disconnect the "Economy" function press the assigned button (**RIF.H**).

5.5 - "Buzzer" function

When the "Buzzer" function is activated an acoustic signal will advise you when a certain assigned time has elapsed. This function is very useful when more than one work has to be carried out at the same time in the laboratory.

To activate this function:

- Ensure that the instrument is on.
- Press the timer button (**RIF.Q**).
- Set the timer using the "UP" (**RIF.R**) e "DOWN" (**RIF.S**) buttons within 4 seconds. The set value will be shown in the lowest display (**RIF.P**).
- Press again the timer button (**RIF.Q**) to confirm.
- To activate the function press the "Start" button (**RIF.T**). The lighting of the LED placed above the button (**RIF.T**) will confirm that the function is activated.

*Once the set time has elapsed an acoustic signal will activate: to silence it, press the start button (**RIF.T**).*

5.6 – Ceiling temperature setting

To modify the temperature of the upper resistances, that is of the ceiling, proceed as follows:

- Press the ceiling resistances button (**RIF. M**)
- Set the temperature by pressing the "UP" (**RIF.R**) and "DOWN" (**RIF.S**) buttons within 4 seconds. The set value will be shown in the upper display (**RIF.L**).
- Press again the ceiling resistances button (**RIF.M**) to confirm.

5.7 – Base temperature setting

To modify the temperature of the lower resistances, that is of the base, proceed as follows:

- Press the base resistances button (**RIF. O**)
- Set the temperature by pressing the "UP" (**RIF.R**) and "DOWN" (**RIF.S**) buttons within 4 seconds. The set temperature will be shown in the central display (**RIF.N**).
- Press again the base resistances button to confirm (**RIF.O**)

5.8 – LED descriptions

	Ceiling LED when on, the ceiling resistances are on
	Base LED when on, the base resistances are on
	“Economy” LED when on, the “Economy” function is engaged
°C	**Celsius degrees LED** when on, the temperature measurement unit is in Celsius degrees
°F	**Fahrenheit degrees LED** when on, the temperature measurement unit is in Fahrenheit degrees
h	**Hours LED** when on, the time measurement is displayed in hours
min	**Minutes LED** when on, the time measurement is displayed in minutes
start	**Start LED** when flashing, the timer countdown is under way for “Buzzer” function
	On/Stand-by LED when on, the instrument is in STAND-BY condition (off)

5.9 – Card errors guide

CODE	DESCRIPTION	SOLUTION
"E2" flashing + intermittent alarm *present in RIF.L* + **"---"** *present in RIF.N*	▪ corruption of the memorized configuration data.	▪ interrupt the instrument power supply. If the alarm does not disappear, replace the instrument.
"E0" flashing + intermittent alarm *present in RIF.L*	▪ incorrect type of connected ceiling probe. ▪ faulty ceiling probe. ▪ faulty instrument-ceiling probe connection. ▪ recorded temperature of the ceiling probe beyond the permitted measurement tolerance limits.	▪ check the parameters of the probe type. ▪ check the condition of the probe. ▪ check that the instrument-probe connections are correct.
"E1" flashing + intermittent alarm *present in RIF.N*	▪ incorrect type of connected base probe. ▪ faulty base probe. ▪ faulty instrument-base probe connection. ▪ recorded temperature of the ceiling probe beyond the permitted measurement tolerance limits.	▪ check the parameters of the probe type. ▪ check the condition of the probe. ▪ check that the instrument-probe connections are correct.
"E0C" flashing + intermittent alarm *present in RIF.L* + **"---"** *present in RIF.N*	▪ fault exist in the thermocouple cold joint compensation circuit.	▪ interrupt the instrument. Should the alarm fail to disappear, replace the instrument.
"AL1" and correct value, alternately + intermittent alarm *presente in RIF.L*	▪ temperature recorded by the ceiling probe is beyond the tolerance limit.	▪ check the temperature in the vicinity of the probe.
"AL2" and correct value, alternately + intermittent alarm *presente in RIF.L*	▪ temperature recorded by the ceiling probe is beyond the tolerance limit.	▪ check the temperature in the vicinity of the probe.

CHAP.6 - CLEANING

Clean must always be undertaken with the oven off and at room temperature.

6.1 – Cleaning of any removable parts

When cleaning the removable parts, after they have been washed using water, sponges and normal detergents, it is advisable to also rinse well with a jet of water, to prevent any risk of accumulation of dirt or detergent residue which risk contaminating the products.
Furthermore, we advise against using abrasive objects as they could gradually remove the shine from these parts.

6.2 – Baking chamber cleaning

When cleaning the baking chamber use a soft, damp sponge using non-abrasive detergent if necessary.
Should there be a substantial build up of grease or residues, remove gently using a spatula, avoiding to damage the resistances and the instruments.

WARNING: never use jets of water or liquids directly on the surfaces as they risk penetrating the electrical components or the resistance area, with a risk of damaging the oven or even risking mortal electrocution.

6.3 – External part cleaning

For the cleaning of the external part in stainless steel and of the panels use a damp sponge and non-abrasive detergents if necessary.

WARNING: never use jets of water or liquids directly on the surfaces as they risk penetrating the electrical components or the resistance area, with a risk of damaging the oven or even risking mortal electrocution.

6.4 - Cleaning of the refractory material shutters ("Stone" version)

For a correct cleaning of the refractory shutters use a very fine stainless steel filament brush, which should be brushed against the shutter from right to left and vice versa applying light pressure.

The dirt removed by this brush must be removed using a vacuum cleaner.

CHAP.7 - MAINTENANCE

WARNING: The present maintenance instructions are solely for the use of personnel qualified in installation and maintenance of electrical devices.

Any maintenance carried out by non-qualified personnel may cause damage to the oven, to persons, animal or things.

In order to undertake repairs and checks, it is, in most cases necessary to remove the fixed guard elements: this will render the live conductors accessible, involving some risks.
Before removing any fixed guard element it is therefore advisable to ensure that the electricity supply plug of the oven unit is detached from the power panel.

N.B. Every 40 hours of operation is necessary to grease the conveyor chain (Tunnel Stone only) with the appropriate lubricant supplied.

THE MANUFACTURING COMPANY WILL NOT ACCEPT LIABILITY FOR ANY DAMAGE TO PERSONS AND/OR THING AS THE RESULT OF THE FAILURE TO FOLLOW THE INSTRUCTIONS OR OF TECHNICAL INTERVENTIONS CARRIED OUT BY NON-AUTHORIZED PERSONNEL.

Compulsory Maintenance Schedule

DAILY MAINTENANCE

Stone Cleaning
• Clean the conveyor/stones using a stiff-bristle natural brush to remove loose debris and food particles, with a movement in the same direction of the stones from left to right. This operation must be done at the end of the work day with the oven still on as it is much easier to clean the stones when they are still hot. Repeat throughout the day.
Oven cabinet cleaning
• Turn off the oven. Allow the oven to completely cool down. Turn off the electrical supply to the oven or unplug the power cord from the receptacle. Clean the exterior of the oven using a mild detergent solution and a soft cloth. Always clean in the direction of the steel grain to avoid visible scratches.
Crumb drawers cleaning
• Remove, empty and clean the two crumb drawers

PERIODIC MAINTENANCE

Fan filter cleaning
• At least once a month (more if necessary), remove and clean the fan cover filters using an air compressor. You can also use a soft brush, or a vacuum cleaner or wash the filters under water. Dry completely before reinstallation.
Chain lubrication
• Every 40 hours of operation of the oven, grease the conveyor belt chain. This operation must be carried out when the oven is switched on (but still cold), on the loading side of the belt, using a specific ITALFORNI lubricant.

WARNING
The oven can be used even if some stones are cracked, providing that no stone parts or rivets are missing. If stone parts or rivets are missing, replace immediately before using the oven. Using the oven with missing stone parts or rivets prevents proper functionality.

FAILURE TO COMPLY WITH ALL OF THE PROCEDURES DETAILED ABOVE WILL VOID ANY AND ALL WARRANTY CLAIMS.

On the oven side it is applied a sticker with the indication of the Compulsory Maintenance Schedule to be performed by the shop attendants.

Stone Conveyor Oven – Compulsory Ordinary Maintenance Schedule

CAUTION

- Never use a water hose, pressure washer, or steam cleaner on ovens.
- Never use metal scrapers, razor blades, steel wool, scouring pads, or any other ferrous abrasives when cleaning ovens.

Daily Maintenance

Stone Cleaning

- Clean the conveyor/stones using a stiff-bristle natural brush to remove loose debris and food particles, with a movement in the same direction of the stones from left to right. This operation must be repeated throughout the day and at the end of the working day with the oven still on as it is much easier to clean the stones when they are still hot.

Oven cabinet cleaning

- Turn off the oven. Allow the oven to completely cool down. Turn off the electrical supply to the oven or unplug the power cord from the receptacle. Clean the exterior of the oven using a mild detergent solution and a soft cloth. Always clean in the direction of the steel grain to avoid visible scratches.

Crumbs collection drawer cleaning

- Remove, empty and clean the two crumb drawers. This operation must be carried out while the oven is cool.

Periodic Maintenance

Fan filter cleaning

- At least once a month (more if necessary), remove and clean the fan cover filters using an air compressor. You can also use a soft brush, or a vacuum cleaner or wash the filters under running water. Dry completely before reinstallation.

Chain lubrication

- Every 40 hours of operation of the oven, lubricate the conveyor belt chain using approved ITALFORNI lubricant. This operation must be carried out when the oven has been just switched on and it is still cold, on the loading side of the belt.

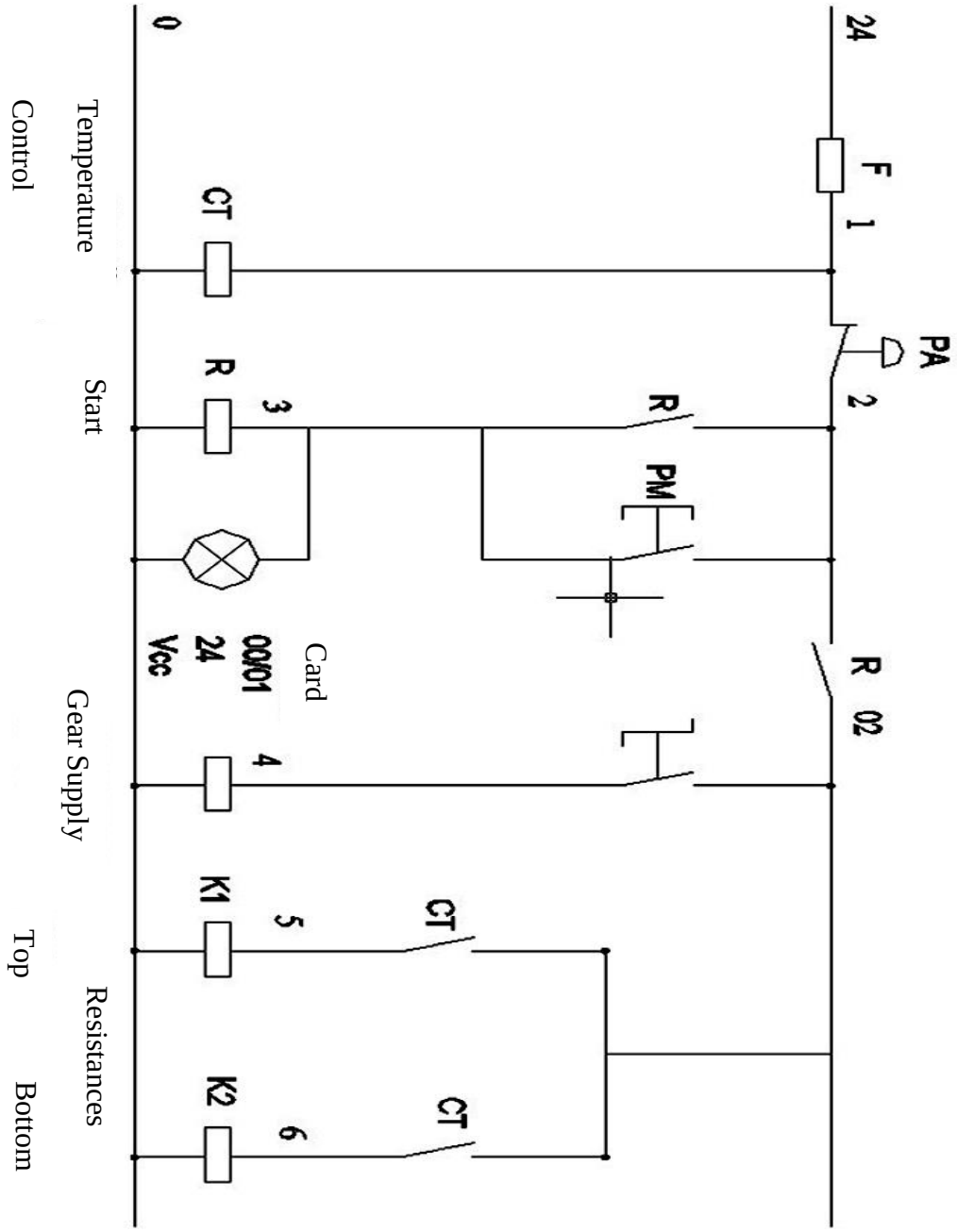
WARNING

The oven can be used even if some stones are cracked, providing that no stone parts or rivets are missing. If stone parts or rivets are missing, replace immediately before using the oven. Using the oven with missing stone parts or rivets prevents proper functionality.

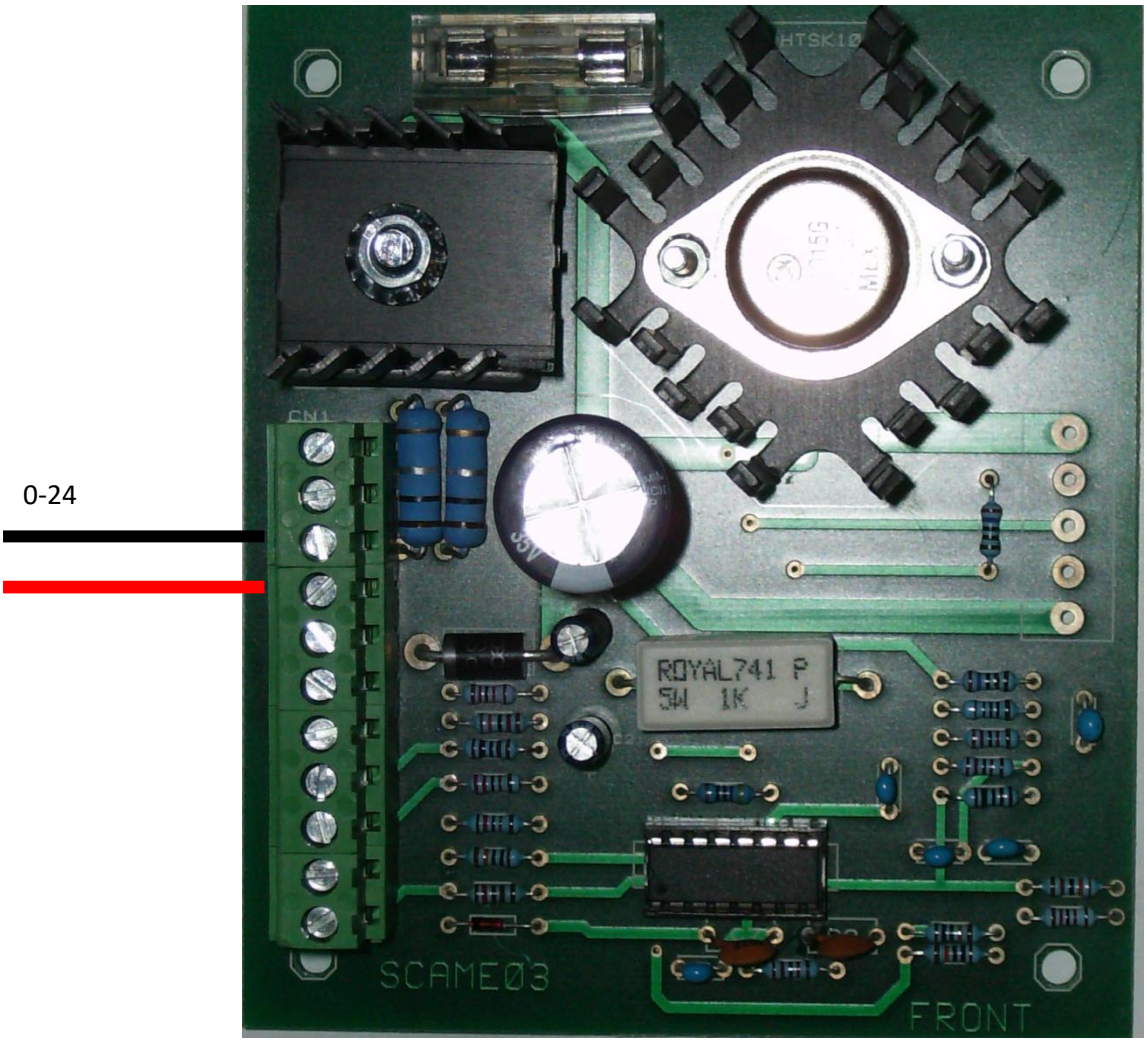
FAILURE TO COMPLY WITH ALL OF THE PROCEDURES DETAILED ABOVE WILL VOID ANY AND ALL WARRANTY CLAIMS.

ITALFORNI PESARO

CHAP.8 – WIRING DIAGRAM



8.1 Motor connection



In case of motor's replacement, pls follow the indications shown into the picture for connecting the same one. Wires cannot be inverted because their inversion could produce the motor rotation's reversal and consequent damages to the framework and baking belt.

NOTE: