Service manual

Fit Express

Prática Klimaquip
BR 459, Km 101, Ipiranga
Pouso Alegre - MG – Brasil

424 E. Church St.
Lewisville, TX 75057
USA

July 2023

SAFETY INSTRUCTIONS

Important safety instructions

ATENTION: When operating the unit, follow the instructions below to reduce the possibility of general healthy injuries as electric discharges, fire, damage to the oven or property near the oven, or possible exposure to excessive microwave energy.

General safety instructions

- Read all safety instructions before using this unit.
- This oven MUST be grounded. Be sure the outlet is properly grounded before connecting the plug to the power grid.
- Be sure to read the installation instructions to properly install the oven and avoid losing the warranty.
- This Prática oven should only be serviced by qualified/authorized service personnel.
- Keep the power cord away from hot / heated surfaces to avoid damage.
- Use only utensils / containers certified and approved by Prática.
- Warning: This unit is not designed for use with baby bottles or baby food jars, as the contents may become very hot and cause serious injuries.
- Do not allow the power cord to hang over a table or countertop to avoid damage and/or electric shock.
- Warning: Do not insert sealed packages inside the chamber as soon as they may explode during operation.
- Do not use metal lids or aluminum foil when cooking in this oven.
- Please avoid spraying water or liquid on the power cord and do not immerse it in water.
- Do not operate the oven if the power cord or outlet is damaged, if the oven has been dropped or physically damaged, or if the oven is not operating properly, as additional damage to the unit or components may result.
- Do not allow children to use this oven as it may cause serious injury to the child.
- Do not use a water hose or water gun to clean this oven. Refer to pages 14-21 for proper cleaning instructions.
- Store the oven in a controlled indoor environment.
- Do not block the ventilation openings of the unit, as this may damage components due to inadequate airflow.
- Do not use corrosive liquids, chemicals or vapors, as this may damage the oven and/or components (e.g., oven cavity, catalytic converter, fan motor, etc.).
- Use caution when heating liquids such as water, tea, coffee, etc., as they may reach temperatures above boiling point and show no signs of causing personal injury.
- Only operate this appliance if you are experienced or knowledgeable or if you have been given supervision or verbal/visual instructions.

Grounding connection instructions

This unit must be properly grounded to prevent electric shock. This unit is equipped with a 3-pin grounding plug that has a grounding wire. This plug must be plugged into a properly installed and grounded outlet. In the event of an electrical short circuit, proper grounding of the unit reduces the risk of electric shock by grounding the electrical current. If you are in any doubt about the grounding instructions or if you are unsure whether the outlet is properly grounded, contact a qualified electrician for assistance.

WARNING: To reduce the risk of electric shock, the unit must be properly grounded.

Power cord replacement

If the power cord is damaged in any way, it must be replaced by the manufacturer (Prática Klimaquip) or an authorized service agent.

Fire risk reduction

- Remove all contents from inside the oven before energizing it (paper or plastic utensil, food particles, etc.).
- Do not use the cooking cavity for storage.
- If a fire occurs inside the cavity, close the oven door and unplug the unit. Follow the fire regulations for your location as necessary.
- Do not overcook food.
- If smoke occurs, turn off the power and leave the door closed. Allow the unit to cool before removing contents and cleaning.

Precautions to be observed before and during servicing to avoid possible exposure to excessive microwave energy

(a) Do not operate or allow the oven to be operated with the door open.

(b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source and make repairs as necessary: (1) Interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.

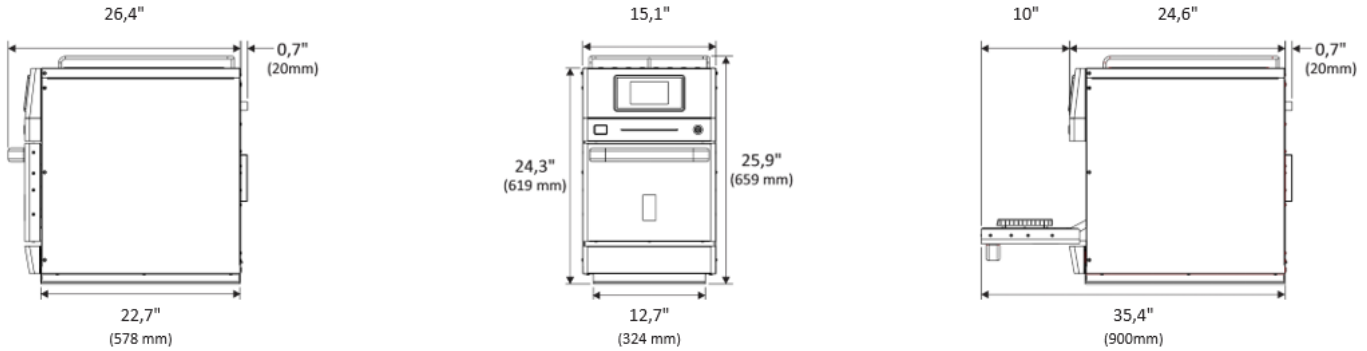
(c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.

(d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.

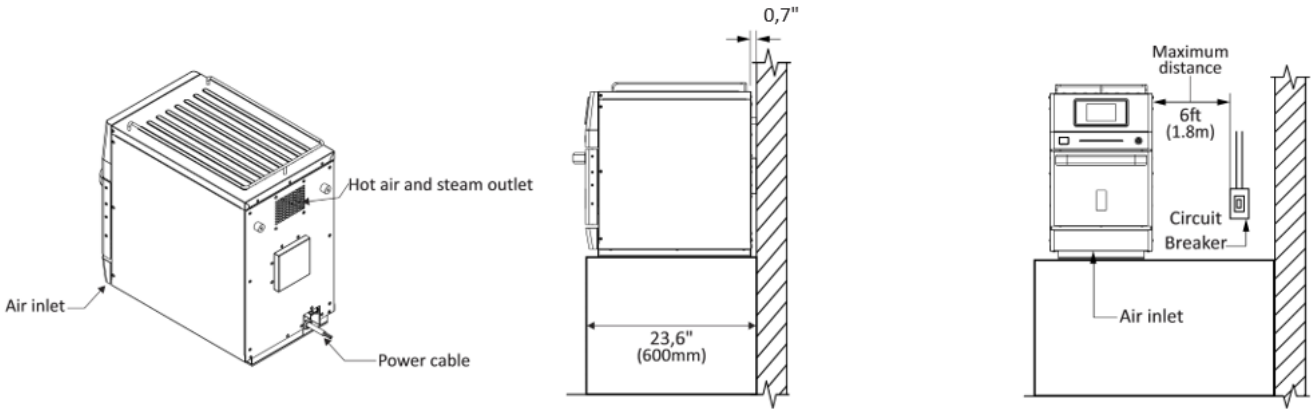
(e) A Microwave leakage check to verify compliance with the Federal performance standard should be performed on each oven prior to release to the owner.

INSTALLING SPECIFICATION

PRODUCT DIMENSIONS



INSTALLATION



ELECTRICAL SPECIFICATIONS

Ensure that the electrical characteristics of the building network are in accordance with the technical specifications located on the data badge located on rear panel of the unit.

The outlet should be located no more than 6ft / 1.8m away from the unit.

This plug must be connected to a properly installed and grounded outlet.

In the event of an electrical short, properly grounding the unit reduces the risk of electrical shock by grounding the electrical current.

The building electrical is the customer's responsibility.

Region	Voltage (V)	Phases	Freq. (Hz)	Power (kW)	Circuit Breaker (A)	Cable	Socket	
USA	208	Single	60	6.2	30	3x10 AWG	NEMA 6-30	
	240			7.0				
Canada	208	Single	60	6.2	30	3x10 AWG	NEMA 6-30	
	240			7.0				

GENERAL INSTRUCTIONS

The oven must be installed on a base or counter that supports the weight of the unit (approximately 147,7 lbs. / 67 kg). For proper ventilation, a minimum space of 0,7" (20mm) between the back of the oven and the wall.

Do not block the air inlets and exhaust outlets located on the front and back of the oven.

It is not recommended for the unit to be positioned near stoves, deep fryers, hot plates and other equipment that releases fat, fumes and heat.

The oven must be installed at a leveled and ventilated location.
Improper installation may void the equipment warranty.

DIMENSIONS

	Product dimensions				Boxed product dimensions			
Fit Express	Height	Width	Depth	Weight	Height	Width	Depth	Weight
	24,3" 619mm	15,1" 386mm	27,2" 693mm	147,7lbs 67kg	32,2" 820mm	21,6" 550mm	35,4" 900mm	189,5lb 86kg

Chamber dimensions	Capacity	Height	Width	Depth
	0.45 cu.ft 13L	6,6" 170mm	12,4" 315mm	13,4" 341mm

Wall clearance	Left side	Back	Right side
	0" 0mm	0" 0mm	0" 0mm

Electrical specification

FIT EXPRESS **DOUBLE MAGNETRON**								
Region	Voltage (V)	Phases	Freq. (Hz)	Power (kW)	Circuit Breaker (A)	Cable	Socket	
Europe	230	Single	50	6.8	32	3x4mm²	32A (2P+E)	
	380	Multi	50	6.5	16	5x2,5 mm²	16A (3P+N+E)	
	400	Multi	50	6.8	16	5x2,5 mm²	16A (3P+N+E)	
USA	208 240	Single	60	6.2 7.0	30	3x10 AWG	NEMA 6-30	
Canada	208 240	Single	60	6.2 7.0	30	3x10 AWG	NEMA 6-30	
FIT EXPRESS **SINGLE MAGNETRON**								
Europe	230	Single	50	3	13	3x1,5 mm²	13A (2P+E)	NOT PROVIDED

Unpackaging instructions

1. Remove the unit from the packaging.
2. Carefully check the packaging and oven cavity for accessories and literature.
3. Discard any packaging inside the cavity (cardboard, plastic, etc.).

Installation Instructions: Please read before lifting the oven to avoid injury.

WARNING: This unit weighs approximately 67 kg. Never attempt to lift this unit with less than 2 people.

WARNING: The oven must be properly installed on a level surface at all times. Prática Klimaquip will not recognize damage from a dropped oven as a warranty and may void the warranty completely.

WARNING: Never lift the oven by the door handle. Doing so may cause the door to become misaligned or cause damage to the door hinges which will not be covered under warranty.

WARNING: Never lift the unit by the removable front panel under the door, as it may be damaged or may come loose while lifting.

WARNING: This unit must not be stacked. Please contact Prática Klimaquip for more details.

WARNING: This unit should not be installed in an enclosed area without proper vents. Components may be damaged if the oven is installed in a structure that has 5 or more sides that prevent the minimum 10-15 cm clearance on the side and 15-30 cm clearance from the back to the wall.

Potential Microwave Exposure Prevention

a) Do not attempt to operate this oven with the door open as operation with the door open may result in harmful exposure to microwave energy. It is important not to circumvent or tamper with the safety interlocks.
b) Do not place any objects between the front face of the oven and the door or allow dirt or cleaner residue to accumulate on the sealing surfaces.
c) Do not operate the oven if it is damaged. It is particularly important that the oven door closes properly and that there is no damage to: (1) Door (warped), (2) Hinges and latches (broken or loose), (3) Door gaskets and sealing surfaces.
d) The oven should not be adjusted or repaired by anyone except properly qualified service personnel.
e) Include additional radiation safety precautions or instructions that may be necessary for particular oven designs or models, as determined by the Director, the Center for Devices and Radiological Health, or the manufacturer.

NOTE: If the microwave system of the oven is operational at the time of service, a microwave emission check must be performed prior to servicing the oven.

DAILY CLEANING AND QUARTERLY MAINTENANCE

Daily cleaning

Please follow the steps below when cleaning the oven. Be sure to use non-caustic cleaners, as they will not damage the oven or components. If damage to the unit or components occurs due to an incorrect cleaner, it will be considered a service call, not a warranty call.

Cleaning Supplies and personal protection appliances:

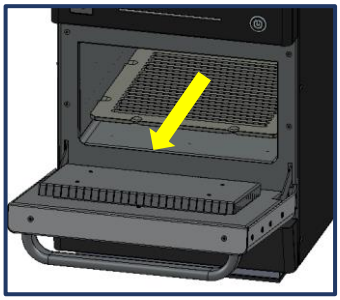
Prática Oven Cleaner PN# 200902
Prática Protective Guard PN# 200901
Protective gloves, clean, dry, and damp towels or cloths, goggles, nylon rag, food vacuum (optional) and dust mask (optional).

Step 1: Cool down the unit

WARNING: The unit normally operates at around 260°C and can cause serious injury if not allowed to cool properly.

- Turn the unit off by pressing the on/off button on the panel.
- Open the oven door slightly to allow the heat to disperse faster.
- Allow the unit to cool for approximately 30-40 minutes before cleaning.

Step 2: Quit the speed grill

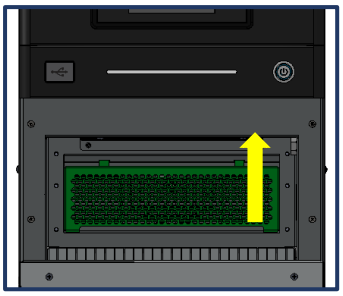


Step 2

- The Speed Grill is held in place by 4 metal pins installed on the sides of the cabinet to keep the Speed Grill securely suspended;
- Lift the front of the Speed Grill and then pull towards the front of the unit;
- The Speed Grill should release at this point and can be washed, rinsed and sanitized.

Step 3: Catalytic filter cleaning

WARNING: The Catalytic Filter must remain inside the oven during operation. Clean only when the unit is not in use.

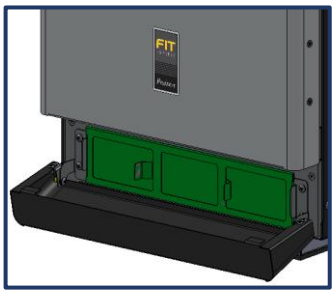


Step 3

- Lift the catalytic filter out of the retaining bracket until it disengages and can be removed from the cab;
- Clean the catalytic filter using approved cleaning materials and allow to dry before reinstalling the unit;
- The catalytic converter does not have to be cleaned daily if it is not contaminated with food particles but should be cleaned quarterly. See quarterly cleaning for further instructions.

Step 4: Air filter cleaning

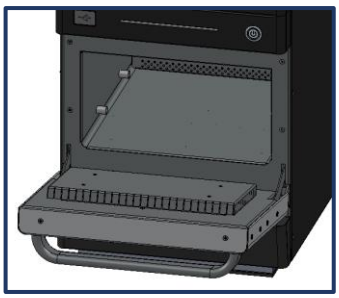
WARNING: The filter must be installed during oven use. Only remove it for cleaning when the oven is not in use.



Step 4

- The air filter is located under the door (shown in green in the illustration), protected by the black bottom cover.
- Locate the tab on the filter and pull toward the front of the unit.
- Rinse the filter with hot water to remove any buildup and allow the filter to dry before reinstalling.

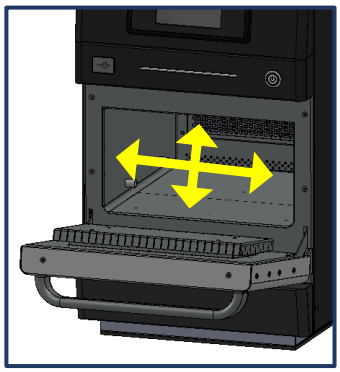
Step 5: Cleaning the chamber bottom



Step 5

- After pulling out the Speed Grill remove all dirt left on the floor during oven use.
- NEVER use wire brushes to clean the oven, as this can cause deep grooves that may cause an electric arc in microwave use.
- It is advisable to vacuum solid food residues and use a damp cloth with alcohol or vinegar to remove more stubborn dirt on the steel.

Step 6: Cleaning the cook cavity



Paso 6

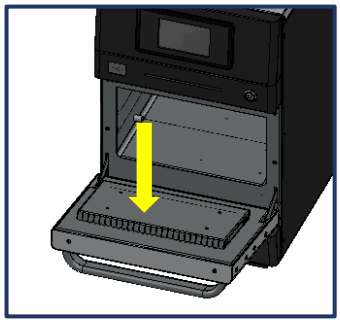
- Apply oven cleaner to a dry cloth or rag and wipe the sides of the cavity;
- If a large buildup occurs, you can spray the cleaner directly into the affected area and let it sit for a short period of time to allow the cleaner to break up the buildup.
- Do not use a wire brush or steel wool to clean the cavity, as it may damage the interior walls.
- Apply oven cleaner to a dry cloth or rag and wipe the sides of the cavity;
- If a large buildup occurs, you can spray the cleaner directly into the affected area and let it sit for a short period of time to allow the cleaner to break up the buildup;
- Do not use a wire brush or steel wool to clean the cavity, as it may damage the interior walls.

WARNING: Do not use a hose or water gun to clean the cavity

Step 7: Wipe the oven cook cavity using a wet cloth

- Wipe the oven cavity with a damp cloth or towel;
- Make a final pass with a dry cloth or towel to remove as much leftover cleaner and debris as possible.

Step 8: Wipe the oven door.



Step 8

- Spray the cleaner on a nylon cleaning cloth or rag to clean the oven door;
- If a buildup occurs, you can spray the cleaner directly on the affected area;
- Wipe dry with a dry cloth or towel.

Step 9: Apply oven protector

Step 9

- Apply the oven protector using a dry cloth or towel.
- The protector will help preventing large fat grease accumulation from occurring.

Step 10: Reinstalling oven components

- Reinstall the catalytic converter into the retaining brackets. Be sure to push it all the way down to prevent the bottom tray from pressing against it;
- Return the Speed Grill to the chamber
- Close the door and insert the filter into position;

Step 11: Cleaning oven exterior

- If any stains form on the exterior, wipe with a damp cloth or towel;
- You can also spray cleaner on a dry cloth and wipe the affected area to remove stains;
- Be sure not to spray cleaner directly on the exterior of the oven;

Quarter Cleaning

To ensure proper operation of the unit, maintenance should be performed quarterly or as often as necessary.

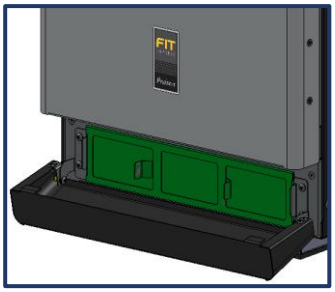
Supplies and Equipment

Needed: Phillips screwdriver, protective gloves, clean, damp and dry towels or cloths and goggles.
Recommended: Vacuum cleaner, dust mask and pipe cleaner.

Step 1: Cool the Oven and Disconnect the Oven

- Turn the oven off by pressing the on/off button on the panel and confirming power off;
- See daily cleaning for further instructions on how to clean the cavity;
- Once the oven has cooled, carefully unplug the power cord from the outlet.

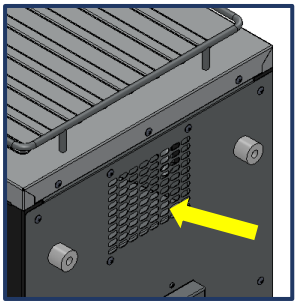
Step 2: Remove the air filter



Step 2

- Find the tab on the filter and pull it toward the front of the unit;
- Clean with a damp cloth, warm water and neutral detergent. Replace the filter in case of a bad condition.

Step 3: Clean the rear exhaust outlet

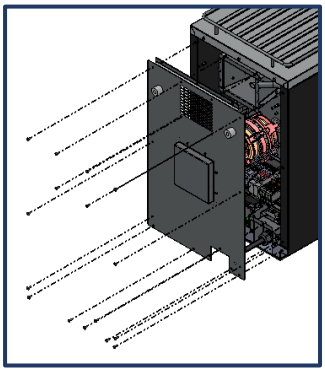


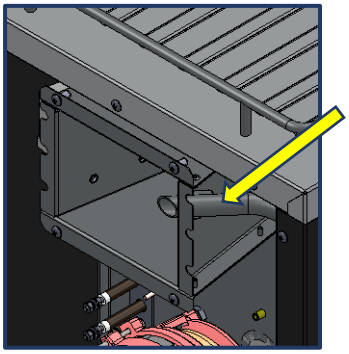
Step 3

Use a wet cloth to wipe off any accumulation of dirt on the rear panel heat outlet;

- It is also recommended that a soft brush and vacuum cleaner be used to pick up any debris or dust that may fall on other components;
- Do not spray any cleaner on the rear panel, as it may get into the component connections.

Step 4: Accessing the rear air outlet.





Step 4

- NOTE: The oven must be disconnected from the electrical outlet for this step;
- If there is excessive build-up of grease or dust in the heat extraction cavity remove the Phillips screws from the rear cover;
- Completely remove the back cover to gain access to the heat extraction cavity of the oven;
- You can use a clean, damp cloth with alcohol or the cleaner to clean the walls of the heat extraction cavity removing any grease or dust residue that may be stuck in that part of the oven;
- Visually check the exhaust pipe to make sure it is clean and free of obstructions;
- A pipe cleaner can be used to remove any buildup if necessary;
- Reinstall the rear cover.

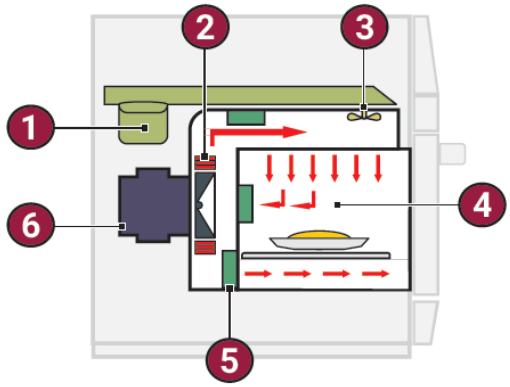
OPERATION THEORY

Fit Express technology

Fit Express ovens use a combination of high-speed air convection and microwave energy to heat and cook food faster than traditional cooking methods.
Using a single blower, air enters the cavity from the top and is distributed evenly over the product.
To allow for even cooking, be sure to leave the Speed Grill inside the cavity during use. If the Speed Grill is not installed during cooking, damage to the oven may occur.

The figure below illustrates the steps involved in the technology.

1. The magnetrons generate energy through microwaves, which uniformly heat up the water molecules inside the food;
2. Internal heating element transfer thermal energy to the air circulating in the chamber;
3. The "stirrer" distributes the microwaves evenly;
4. Forced air is directed to the food;
5. The catalytic converter traps and burns most of the grease and odors as the forced air passes through it. This component is what makes it possible to use the oven without a vent hood.
6. The fan motor spins at high RPM, causing high velocity air to circulate through the upper cavity, through the upper drive plate and lower pan, and back to the blower.



Fit Express

Microwave features

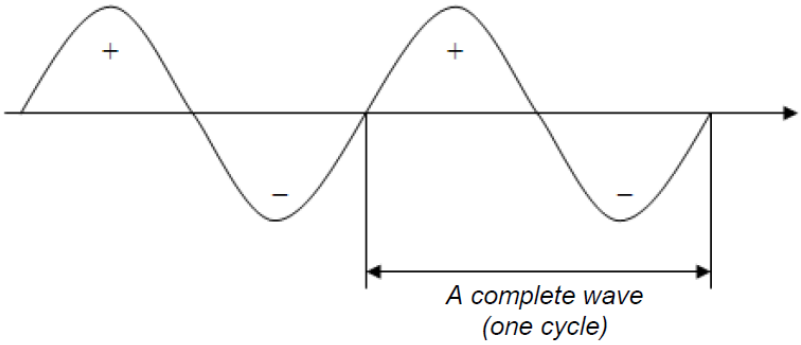
What are microwaves?

Before understanding the microwaves, we need to know what waves are. Physics describes a wave as a disturbance that spreads in a medium (space or mass).

When a stone is tossed into a lake or body of water, we can observe the waves that spread from the point where the stone hits the water. This is a very clear example of waves.

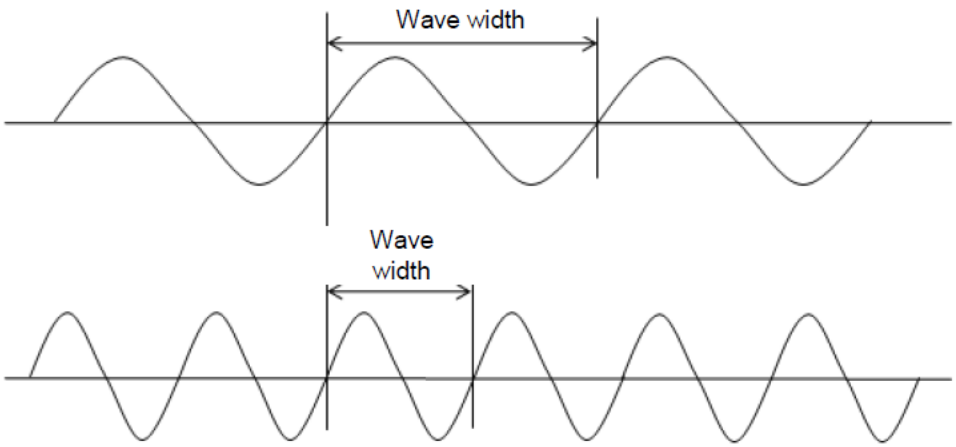
The waves may be classified as mechanical or electromagnetic. The mechanical waves are those that need a medium to spread such as waves on a rope or sound waves. The electromagnetic waves are those that do not need a medium to spread, they can spread through a vacuum or certain kind of materials. A few examples of electromagnetic waves are; sunlight, radio waves, microwaves, x-rays, and many others.

The waves may be represented by a solenoid similar like the picture below. The wave changes from positive to negative and returns to neutral, performing a complete cycle. The number of times this cycle repeats in one second determines the frequency of the wave.



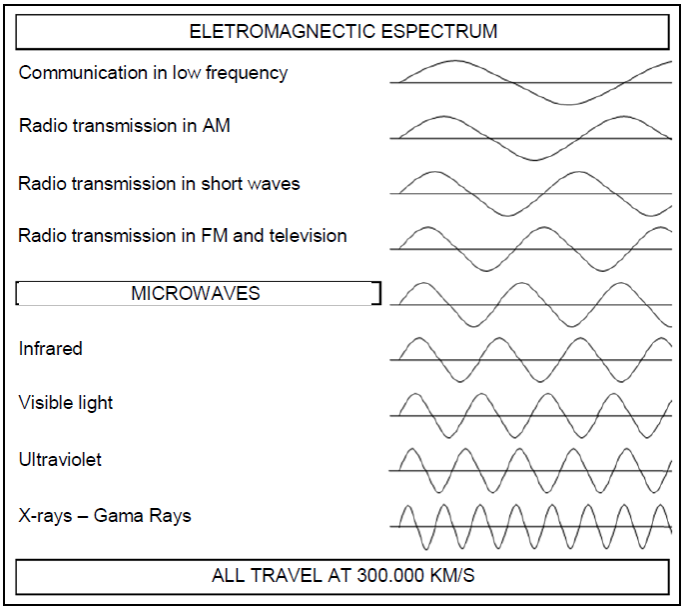
FREQUENCY: NO OF CYCLES PER SECOND

The size of the cycle of a wave determines its length. The waves differ for their length and frequency, but they have the same speed which equals 300.000 km/s. Since all of these waves have the same speed, the smaller the length, the greater its frequency will be as provided by the example from next picture.

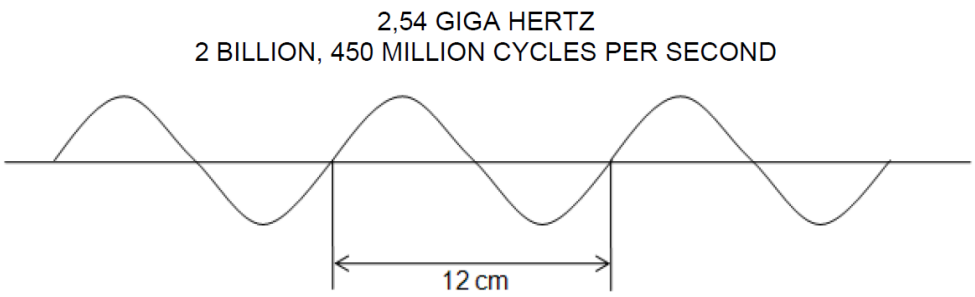


The smaller the wave width, the higher the frequency

The electromagnetic wave is classified in a scientific scale called Electromagnetic Spectrum. Observing the spectrum below, the communication waves have a relatively long length and a low frequency. As we move down the spectrum, the length of the waves become smaller, and the frequency becomes higher (ex. X-Rays and Gamma Ray). We also observe that the microwaves fit among the TV transmission waves and the infrared levels.

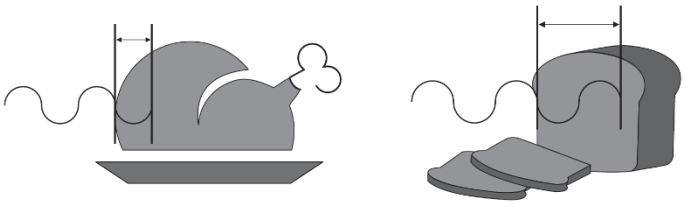


The microwaves utilized for microwave ovens have approximately 12 cm of length, with a frequency of 2.45GHz. In other words, they complete 2,450,000,000 cycles per second.



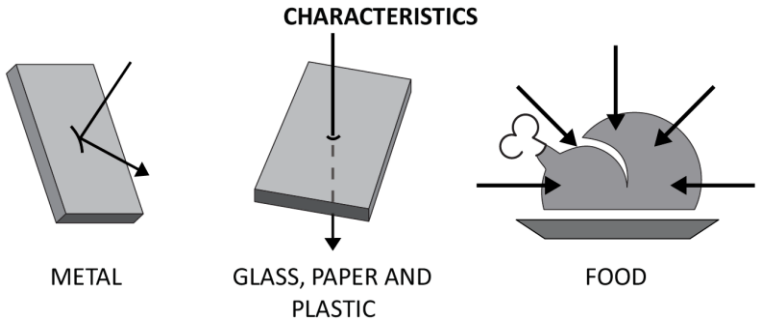
Microwaves are a type of radiant energy. As well as radio waves, visible light and infrared, the microwaves are part of the electromagnetic spectrum, i.e., it is a form of electromagnetic radiation. They are classified as non-ionizing radiation, because unlike x-rays and Alpha, Beta and Gamma rays, its effects are strictly thermal and therefore do not after the molecular structure of the item that is being irradiated.

The basic principle of microwaves is to cook by molecular vibration. They penetrate the food surface in a depth that ranges from two to seven centimeters, heating the molecules of water, fat and sugar by making them vibrate. The heat is transmitted to the interior of the food by thermal conduction, demystifying the idea that the microwaves cook food from the inside out.



These are three characteristics of the microwaves which are important:

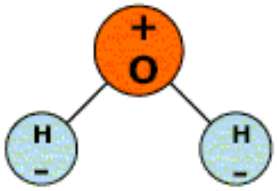
- Microwaves are reflected by the metals and can NOT pass through. The microwaves will bounce back and forth until they find something to get attracted to.
- Microwaves can pass through most glass, paper and plastic with little resistance.
- Microwaves are attracted to sugar, fat, and water molecules in the food and will cause the molecules to vibrate rapidly that converts into heat.



How do the microwaves heat the food?

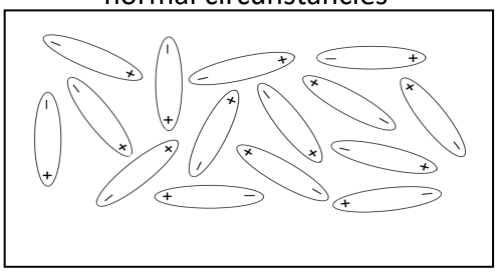
The food is formed by bipolar molecules, that is, they possess a positive and a negative pole. For example, water in its composition has hydrogen and oxygen which are positive and negative.

Water molecule

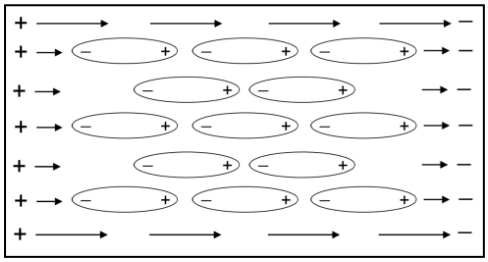


In normal circumstances, the bipolar molecules of a food are disorderly placed. As we know, equal charges repel each other, and different charges attract each other, so when a food is exposed to an electromagnetic field, the molecules are all aligned so that their charges point at the same direction.

Food molecules under normal circunstancies

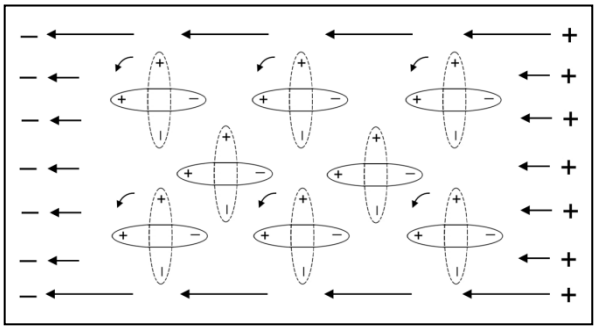


Food molecules under electromagnetic field



When the electromagnetic field inverts the polarity, the molecules also have their directions inverted. As the microwaves invert their polarity 2 billion and 450 million times per second, the molecules will also vibrate at the same frequency, hitting one another, resulting in friction and production of heat.

Polarity inverse of the electromagnetic field



Why is the heating in the microwave oven faster than in the conventional stoves and ovens?

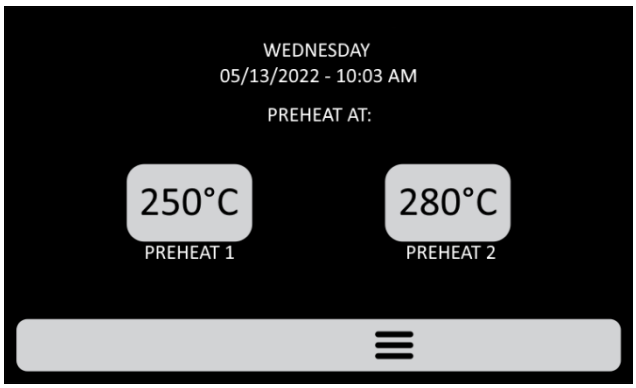
When food is cooked over a stove, we must first heat the surface, the container, and finally, the food. When cooking inside of s traditional oven, it must first heat the air in the internal cavity, then the ovens walls, shelves and finally, the food. In both cases, the heat begins to cook the outside of the food first, then slowly begins to cook the middle or center.

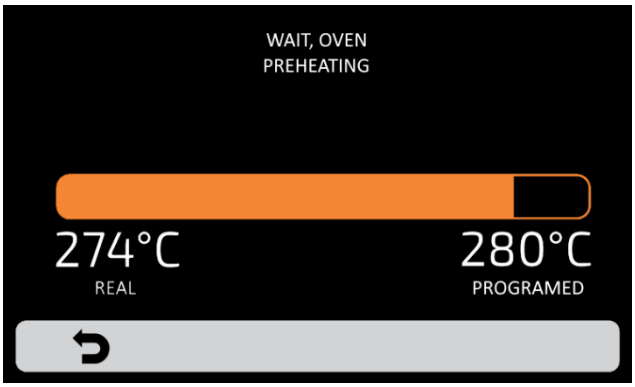
When product is cooked in a microwave oven, the microwaves will start to penetrate the food. The penetration of the microwaves in the food depends on the density of the food. For example, bread will be penetrated easier the meat because of its density. The center of the food is heated by conduction of heat generated from the molecules rubbing together.

CONTROLS AND OPERATION

Preheating

To start the oven preheating process, after turning on the equipment, choose between Preheating Group 1 or Preheating Group 2.
The following screen will present the CURRENT and PROGRAMMED temperature and the bar indicating the remaining time to utilize the equipment.

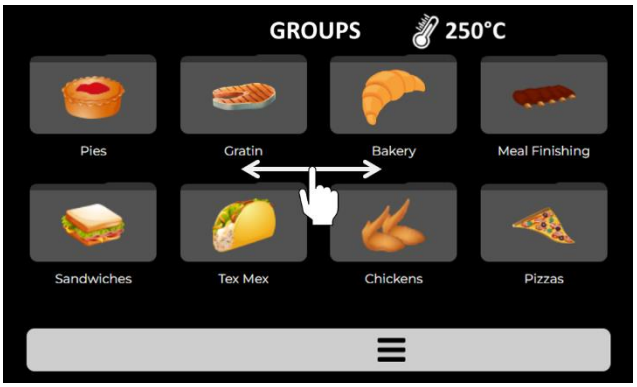




NOTE: The time is only initiated when the CURRENT temperature is next to the PROGRAMMED; that occurs so that the oven temperature enters in uniformity throughout the chamber.

Executing a Recipe

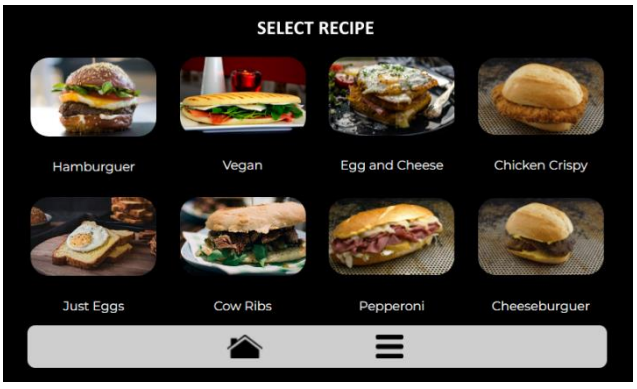
After the preheating, activate the desired GROUP. To access the next group page, utilize the paging arrows.



The RECIPES of the selected group will be displayed, press on the recipe you wish.

To return to the Groups screen push the button: .

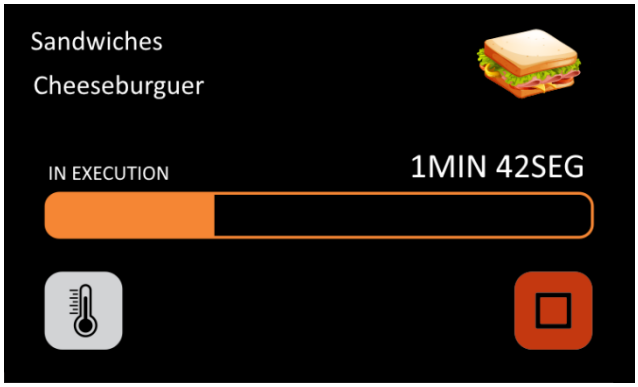
To access the next recipes page, utilize the paging arrows.



Make sure there is food inside the oven, otherwise it will cause damages to the equipment.

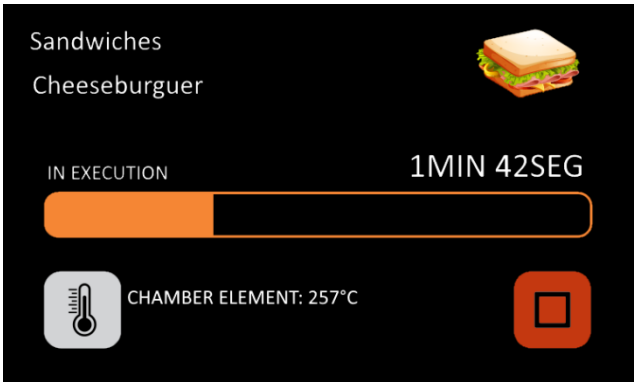
The recipe will enter in execution immediately.

The screen will present the group name, recipe name, situation of the operation (In progress or paused), and the remaining time for conclusion of the recipe.

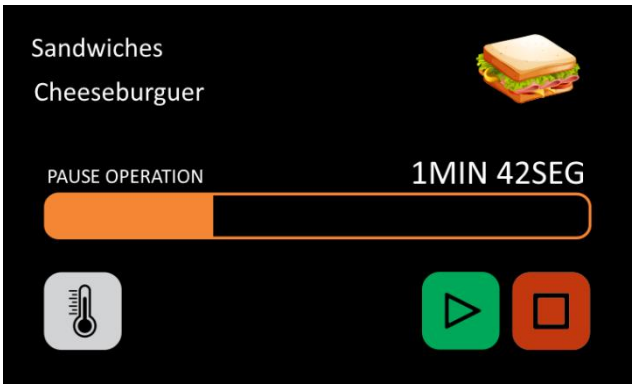


It is possible to verify the temperature of the TOP HEATER pressing the button.

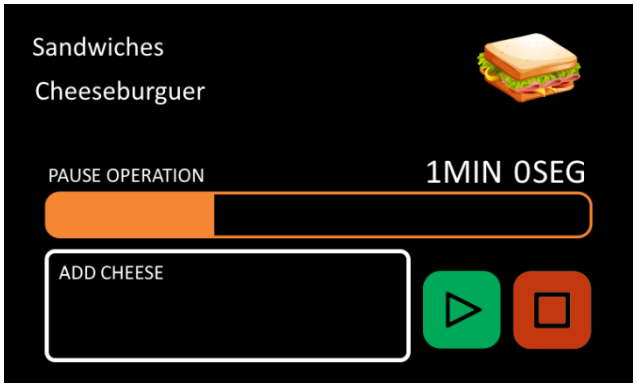
In case you wish to cancel the execution of a recipe, push the button.



If the equipment door is opened, the operation will be paused; ounce the door is closed again just push the to resume the operation.



If the programmer of the recipes adds information in one of the steps, for examples: “ADD TOMATOES”, the recipe will be paused and the description of the information will be presented beside the PLAY button, as in the opposite image: Push the button to resume the operation.



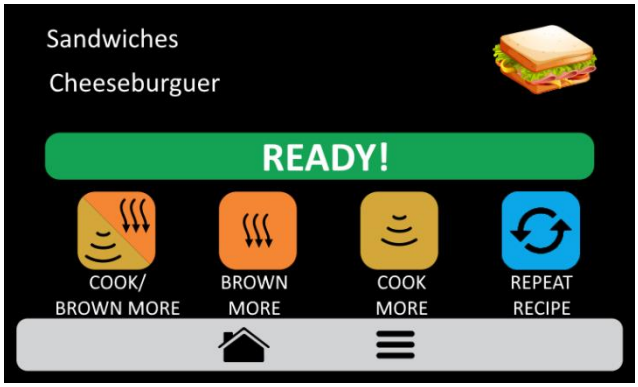
After the completion of a recipe, the following options will be released:

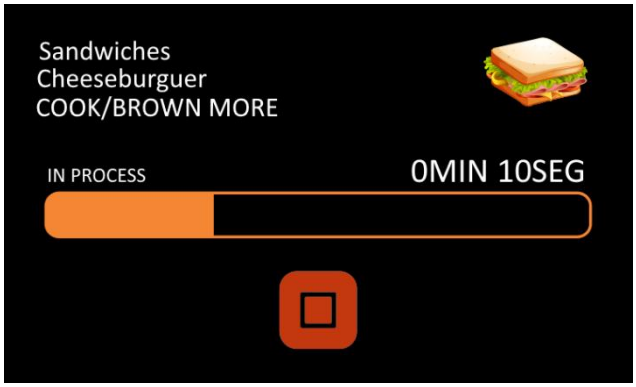
Cook/Brown More: Activates the microwave and hot air during a predetermined time.

Brown More: Activates only the hot air during a predetermined time.

Heat More: Activates only the microwave during a predetermined time.

Repeat Recipe: Repeats the same recipe chosen by the user.





In ‘Heat/Brown More’, ‘Brown More’ and ‘Cook More’, the time will be defined at the moment of creating the recipe.

The four options mentioned above may be disabled so that they do not a appear in any recipe. Learn more in the User’s Setting block: Edit Accesses (see page 34).

Accessing the Options

To access the settings, at any time, touch on the icon ☰ found in the fixed menu bar.

In the Options Screen, there will be information such as: Current Temperature in the Chamber, Current Temperature in the Heater, Test Mode, Favorites, Daily Cleaning Guide and Settings.

Touching on the icon ☰ once more will return to the origin screen.

Example: If the icon ☰ was pressed from the Recipes screen, pushing it once more will return to Recipes screen.

Manual Mode

In Manual Mode, it is possible to define the parameters of the step, execute it, and if the result of your test is approved, at the end of the operation, transform it in Recipe.

To access the Manual Mode, click on the Options button . In the Options screen, touch the button .

Define the parameters of Time, Temperature, Speed of Hot Air and Microwaves

Press the icon to start the operation of Test Mode.

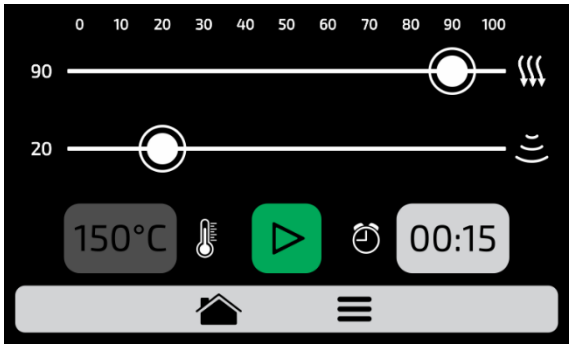
After the conclusion of the operation, the Copy Parameters icon will be enabled: .

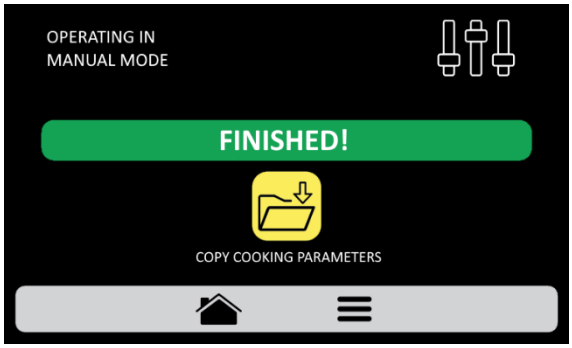
Copy Parameters enables the user to transport the parameters defined is test Mode for the Edition of Groups and Recipes, that is, when click on the icon , it will be necessary to inform the user's access password to the settings.

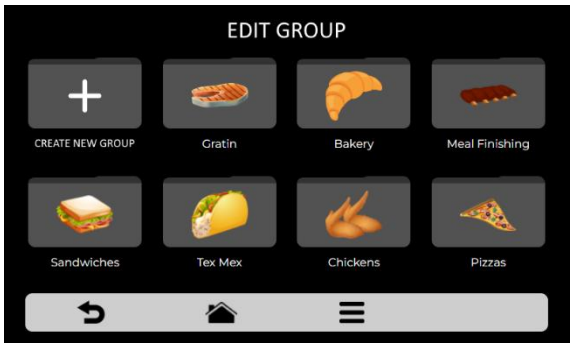
After informing the user's password, choose between creating a new group or allocating the transported parameters in a new recipe in an already existent group.

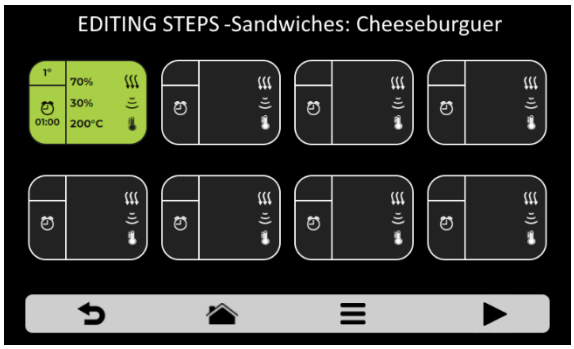
Define the name of the New Recipe, the Image and choose in which position (step) you wish to allocate the transported information.

To finalize, if you wish, define the other steps of the recipe.









Creating Recipes

When creating a recipe, all the variables mentioned earlier should be considered. The microwaves and the air speed are the critical factors for a successful preparation.

To get faster results in the recipe creation, we suggest beginning programming as 1/10 of the total time of preparation used in a conventional process.

The effect of microwaves is more efficient at the beginning of the processes. For frozen products. Create a recipe with two or three steps so the food will thaw at the beginning and the desired crispness and product presentation are achieved toward the end of the process.

Later, combine the hot air speed variations to reach the desired crispness and color. Remember, the hot air also transmits heat to the food so keep that in mind when setting blower percentage. The food's weight, size, and shape are critical when setting the total cook time.

The following information is critical when creating a new recipe.

- The initial temperature of the product will change the desired results if not considered (e.g.; frozen, cold, or room temperature).
- The size and/or weight variation of the portion of product will also play a big role in determining the correct settings.
- Only use containers approved for a microwave oven to prevent any damage and that the product gets properly cooked.

The microwave is adjustable between 0% and 10% for each 30 second fraction.

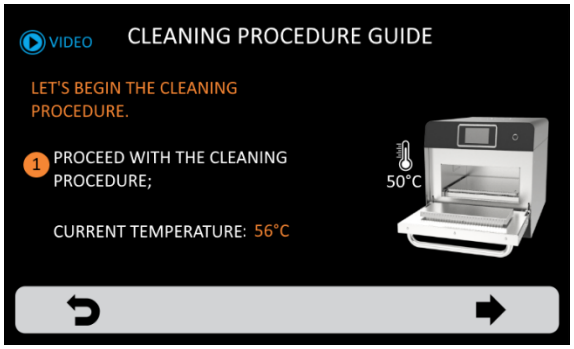
For example, the microwaves in a one-minute recipe with microwave programmed at 50% will run for 15 and stop for 15 seconds. Then they will energize for another 15 seconds and stop for the remaining 15 seconds. In 1 minute, they will act for a total of 30 seconds. The microwaves heat the food internally and do not require a specific mean to propagate.

Microwaves are reflected bey metals but will penetrate glass, plastics, and ceramics. The microwaves penetrate food and become attracted to sugar, fat and water molecules.

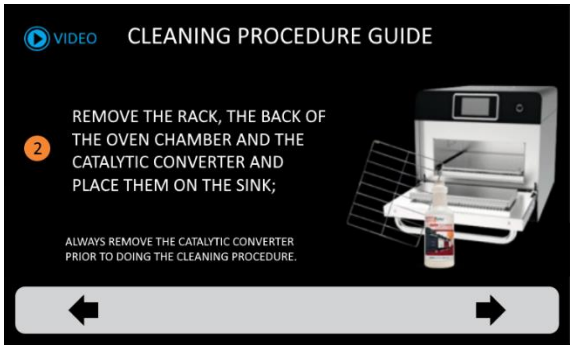
Daily Cleaning Guide

To help in the sanitation of the Fit Express, use the Daily Cleaning Guide. Access it through the Options screen, click on the Option icon , and then press the button , follow the steps informed on the screen carefully.

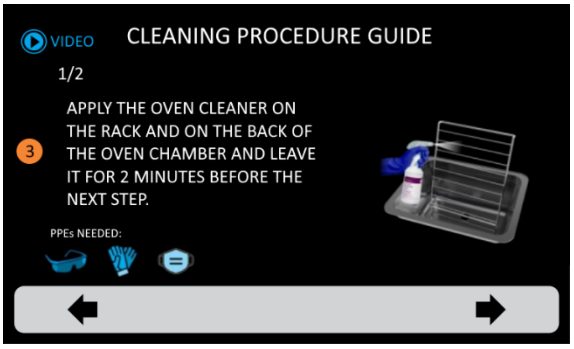
1st: Open the oven door and wait for the temperature to drop until 50°C. Proceed clicking on the arrow:

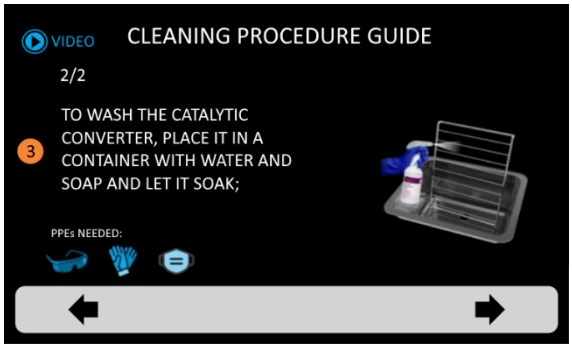


2nd: Remove the cook rack and bottom jet plat and place in the sink. Proceed clicking on the arrow:

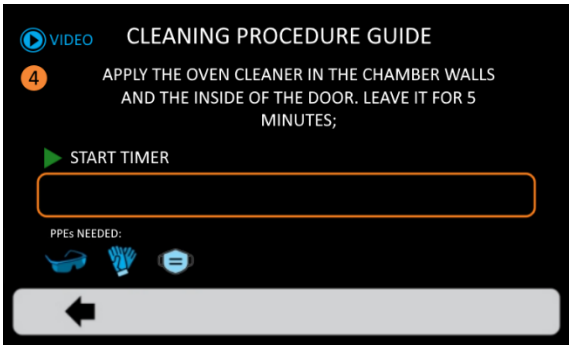


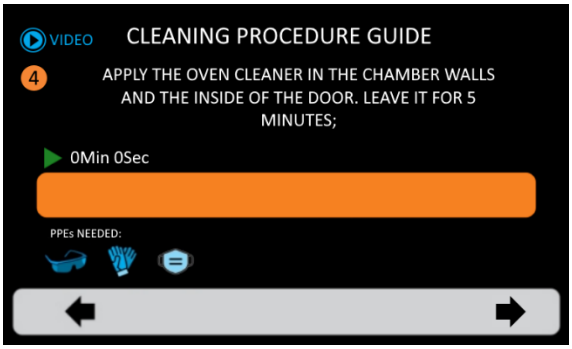
3rd: Apply the Cleaner to the cooking rack and jet plate, allow to stand. Soak the catalytic converter in a container of soapy water. Proceed clicking on the arrow:



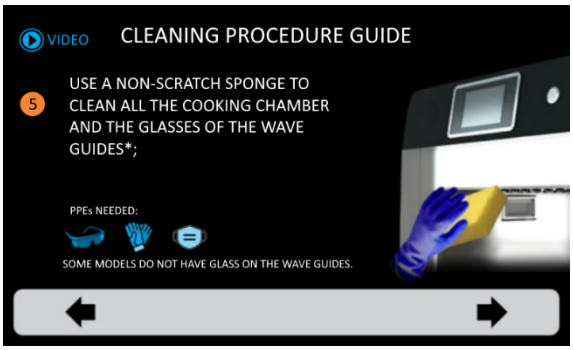


4th: Apply the Oven Cleaner to cavity walls and door, let stand for 5 minutes. Proceed clicking on the arrow: ➡



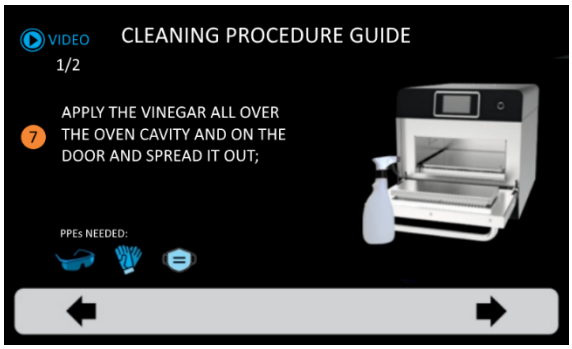


5th: Use a non-abrasive scrub pad to loosen any stubborn stains if necessary. Proceed clicking on the arrow: ➡



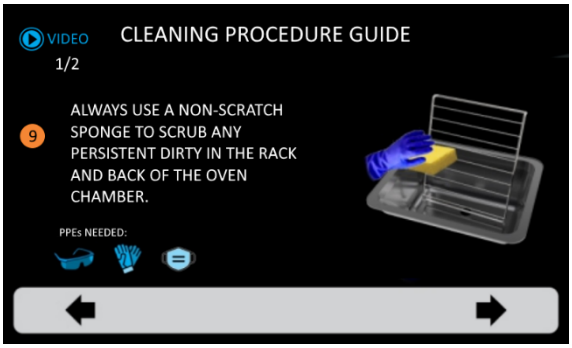
6th: Wipe/Rinse the cavity with a wet towel removing cleaner and debris and dry it with a new clean towel. Proceed clicking on the arrow: ➡

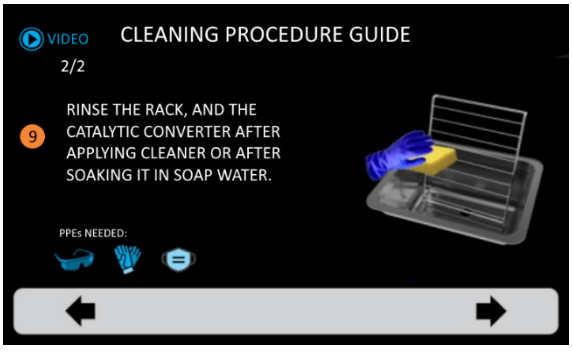
7th: Apply the vinegar all over the oven cavity and door and spread it well, then clean/rinse the cavity with a damp cloth to remove excess vinegar and wipe it with a dry towel. Click on the arrow to proceed:



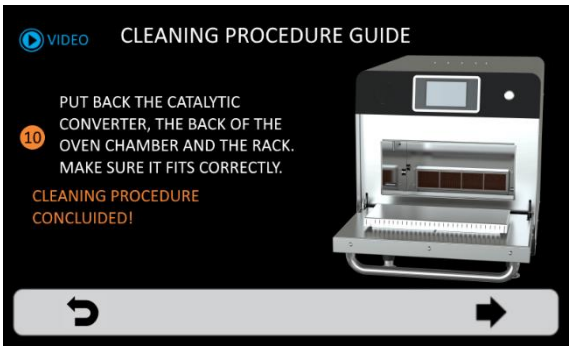
8th: Apply Oven Protector to the entire oven cavity and door and spread it out with a paper towel. No need to rinse. Click on the arrow to proceed:

9th: Use a non-scratch sponge to scrub any persistent dirty in the rack and the back of the oven chamber. Rinse the rack, and the catalytic converter after applying cleaner or after soaking it in soapy water. Proceed clicking on the arrow:





10th: Re-install the catalytic converter back on the oven chamber. Put back the rack and jet plate into the oven cavity. Make sure it fits correctly.
Cleaning Complete!

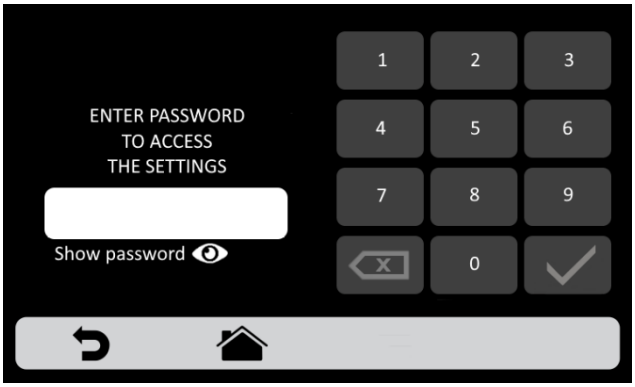


USER SETTINGS

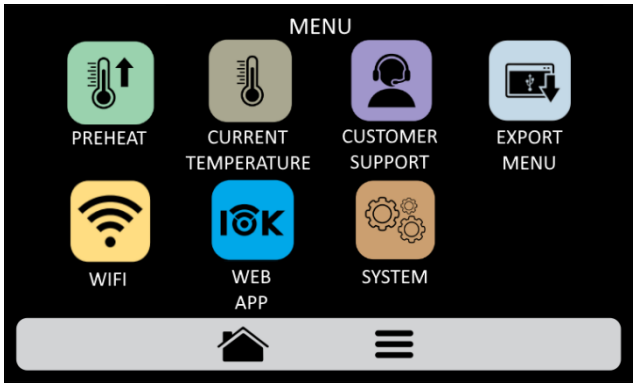
Accessing User Settings screen.

On the main menu, click on the icon  . A password screen will appear.

The standard password for accessing the user settings screen is “456789 ok”, but it is possible to change it, if desired.



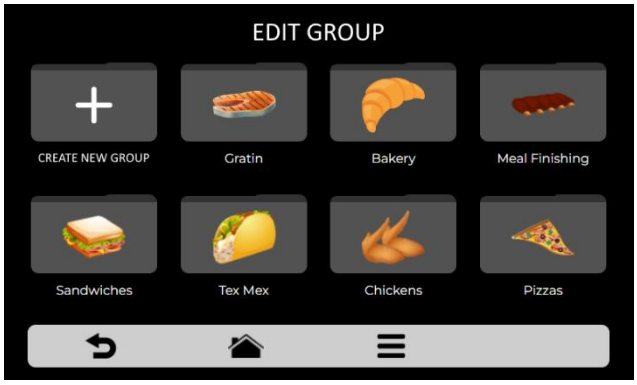
This screen is composed by ten functions as the picture shows:

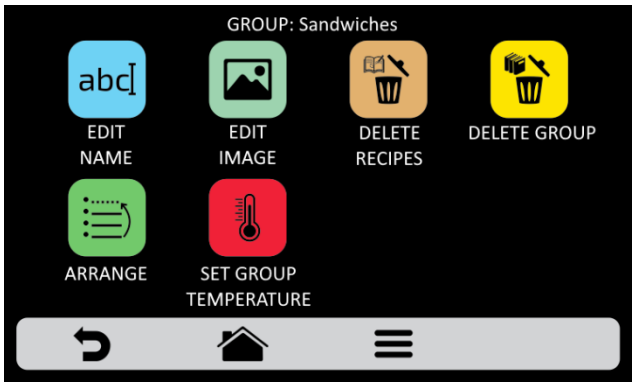


Edit Group

To edit the groups, touch on the icon, the groups screen will be presented. However, in the first position will be the icon which it is possible to Create New Group.

Choose between creating a new group or select the group you wish to edit. It is possible to have up to a total of sixteen groups.





The available choosing between editing or creating a group will be:

Edit Name: changes the group's name, you may use letters, numbers or special characters.

Edit Image: changes the image group icon takes.

Delete Recipes: deletes the previously selected recipes.

Delete Group: deletes all the information of the selected group, including the recipes.

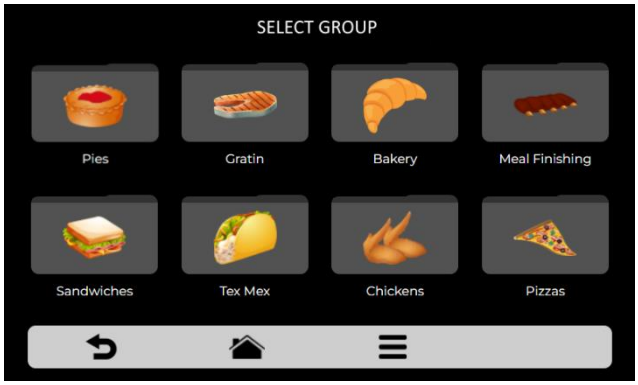
Order: orders the location in which the group appears among the existing groups.

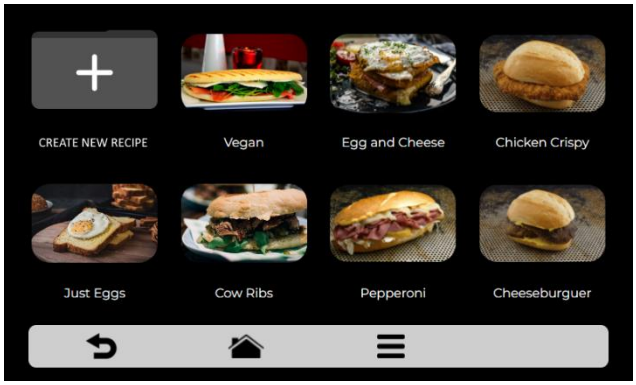
Change Group Temperature: Changes the preheating temperature group.

Edit Recipes

To edit the recipes, touch on the icon . The groups screen will be displayed. Choose in which group you wish to change the recipes.

When accessing the recipes, it will be possible to edit an already existent one or create a new recipe.





The available options after choosing between editing or creating a recipe will be:

Edit Name: changes the name of the recipe, you may use letters, numbers or special characters.

Edit Image: changes the image the recipe icon takes.

Edit Steps: accesses the options for edition of the steps of the selected recipe.

Delete Recipe: deletes all the information of the selected recipe, including the steps.

Order: orders the location in which the recipe appears among the other recipes of the group.

Edit Heat / Brown More: changes the time of Heat / Brown More function.

Add / Remove from Favorites: Adds or removes the recipe in the Favorites list.

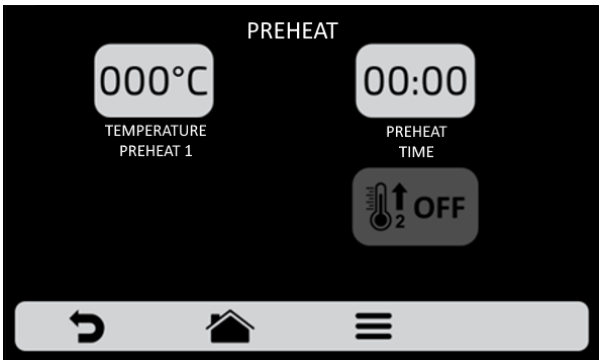
Preheating

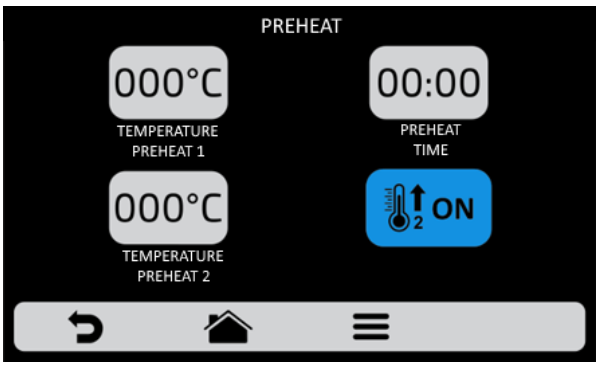
The editable parameters in Preheating are:

Temperature Group 1

Temperature Group 2

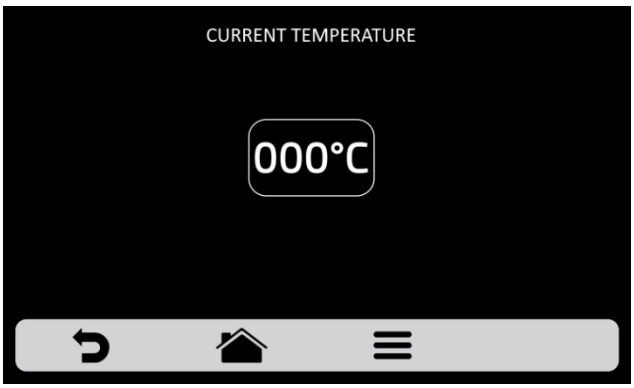
Preheating Time: Define the time of the stopwatch of the Preheating screen. The purpose is to equalize the temperature inside the chamber when the lower and upper resistances reach the temperature.





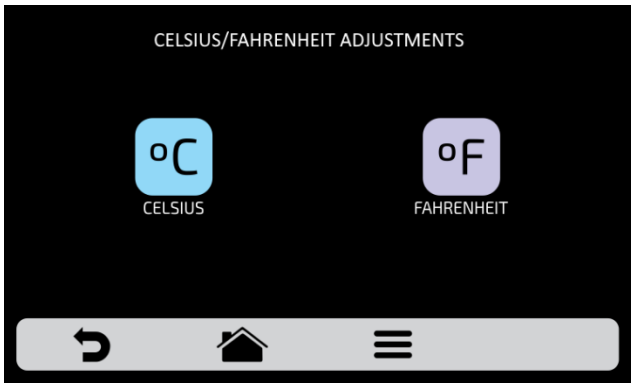
Current Temperature

The Current Temperature screen : is only informative. In it, it's possible to verify the temperature of both heaters: the chamber and bottom heater.



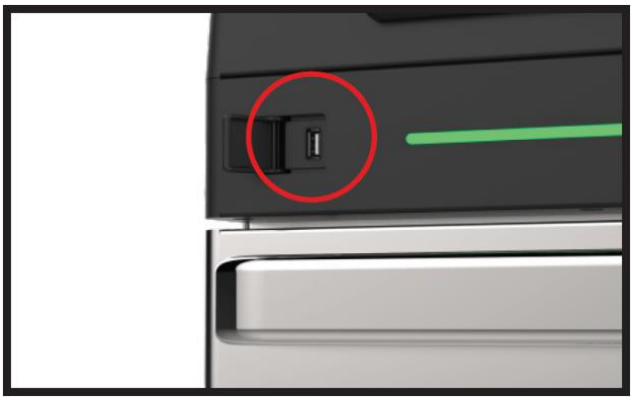
Celsius / Fahrenheit

Change the temperature format displayed in the oven between Celsius and Fahrenheit, click on the icon among the User's Settings and define the temperature format you wish.

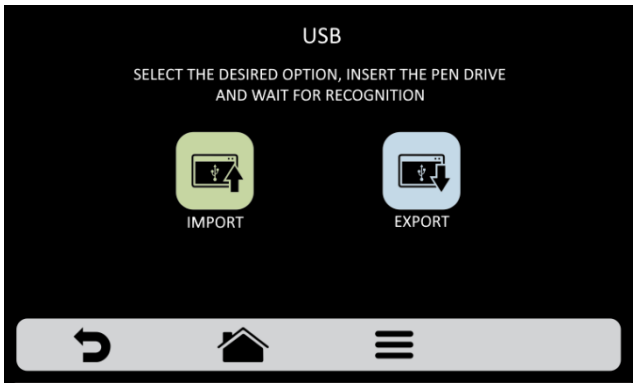


USB

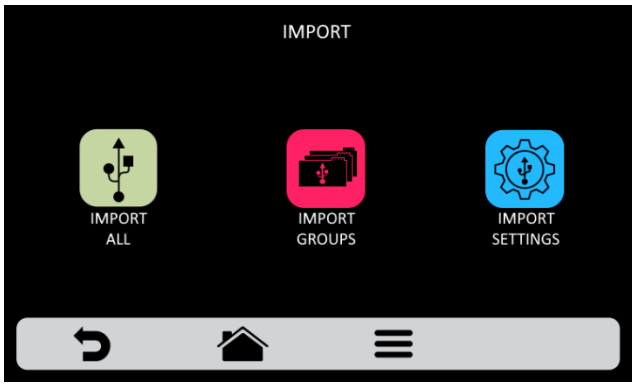
The USB input is located on the panel top left, protected by a plastic cover.



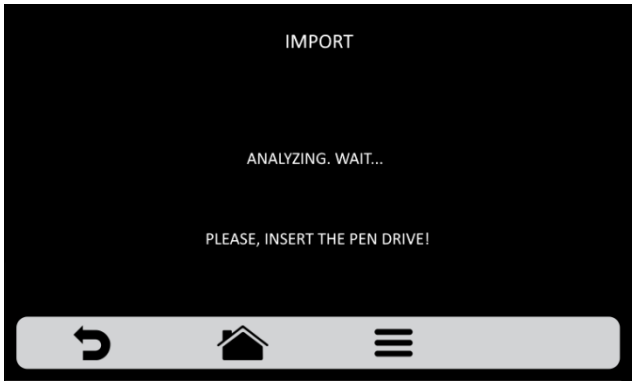
Press the icon  . The functions available in USB are: Import or Export.

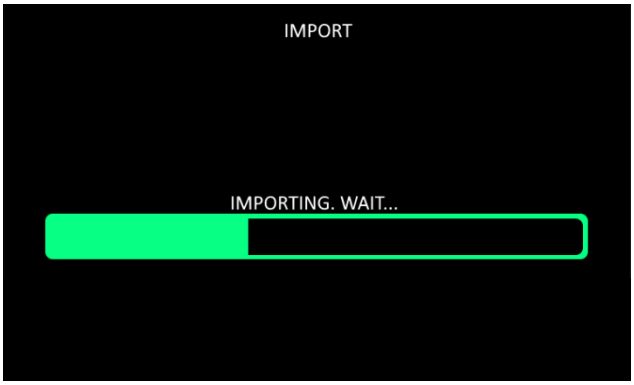


By selecting the "IMPORT" function, the user will be taken to the options "IMPORT ALL", "IMPORT GROUPS" or "IMPORT SETTINGS":



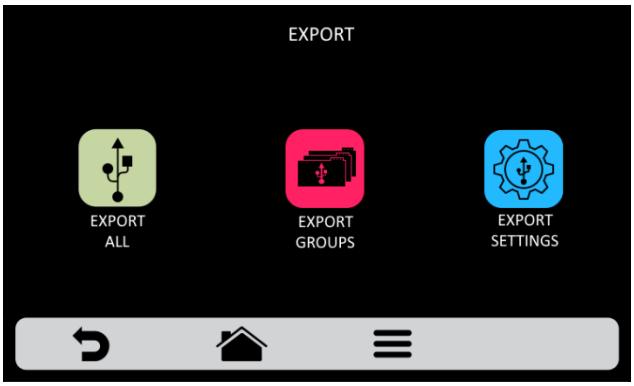
After selecting one of the options, the oven will recognise the pen drive and execute the chosen function.





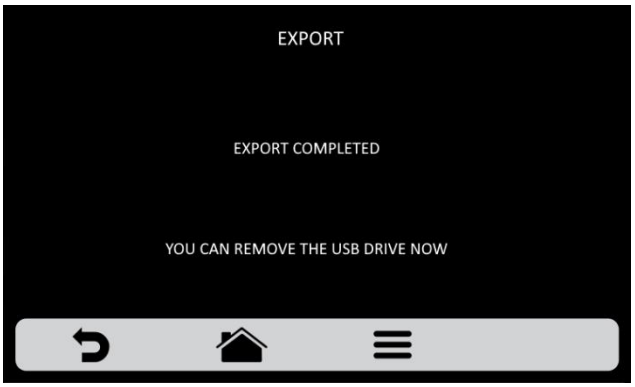
Only remove the pen drive from the oven after finishing the operation to avoid damage to the pen drive and the oven.

When selecting the "EXPORT" function, the user will be taken to the options "EXPORT ALL", "EXPORT GROUPS" or "EXPORT SETTINGS":



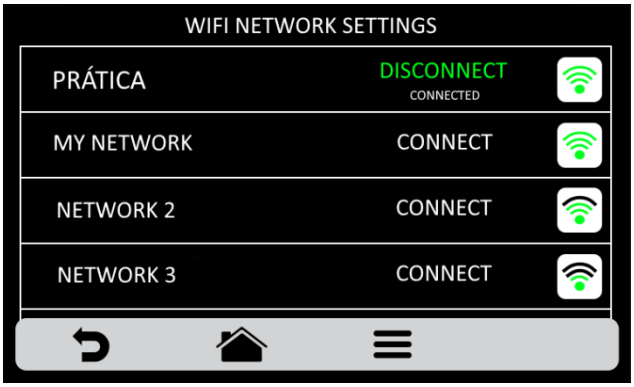
After selecting one of the options, the oven will recognise the pen drive and execute the chosen function.

Only remove the pen drive from the oven after finishing the operation to avoid damage to the pen drive and the oven.

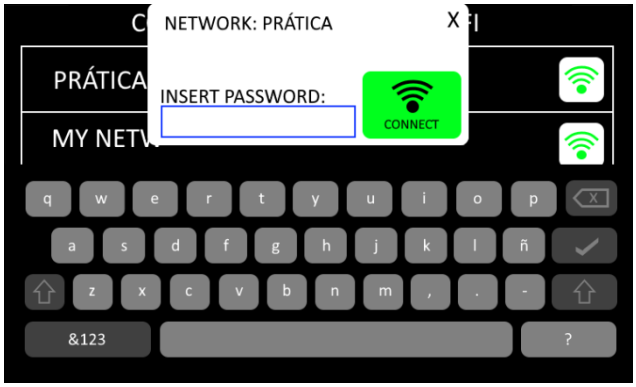


WIFI

To connect the oven to a WIFI network, click on the icon to Access the network screen and see the WIFI networks available near the unit.



Click on the desired network to connect the oven to the Internet and log in with the password configured for the network to access.



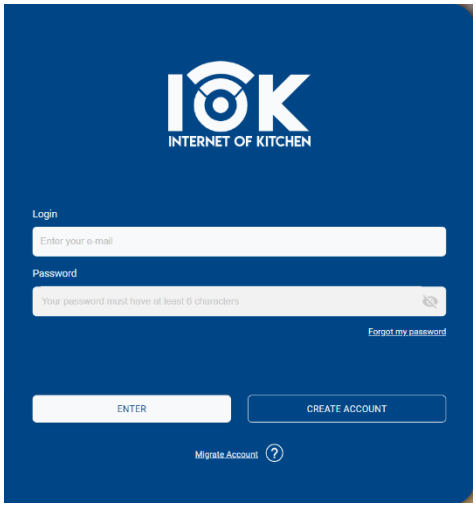
IOK platform

IOK (or Internet of Kitchens) is a platform that can be accessed from a computer, tablet or smartphone, interacting these devices with the oven. Once the platform is accessed, the customer can modify or program recipes on the unit and update the software version to ensure that the oven interface always offers the most advanced features available.

The tutorial below is only applicable to the Speed Ovens line with the linkable firmware version. Follow the steps below to link the oven to the IOK:

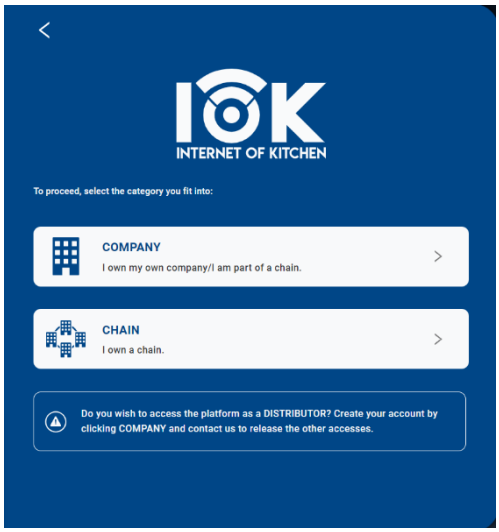
https://new.praticaiok.com/ ;

On the web page, click on the "Create account" option:

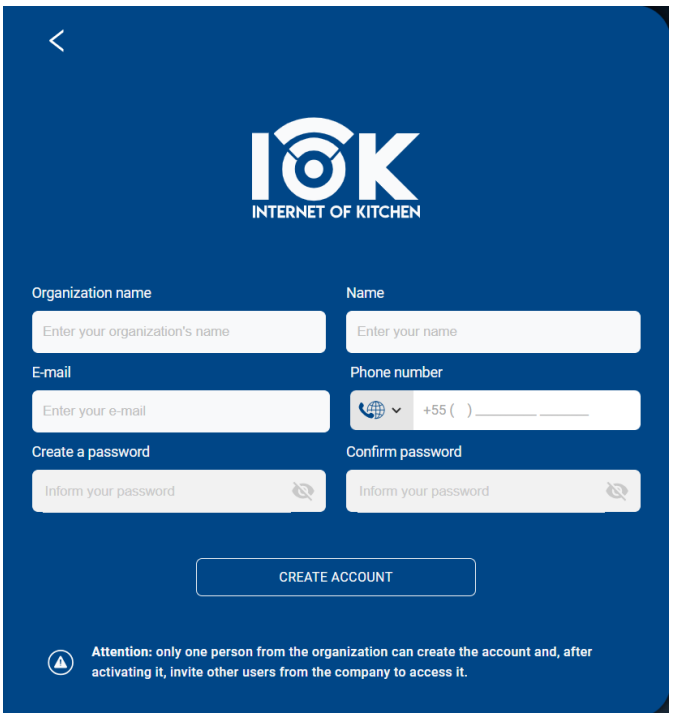


Select what kind of category your store will fit in:

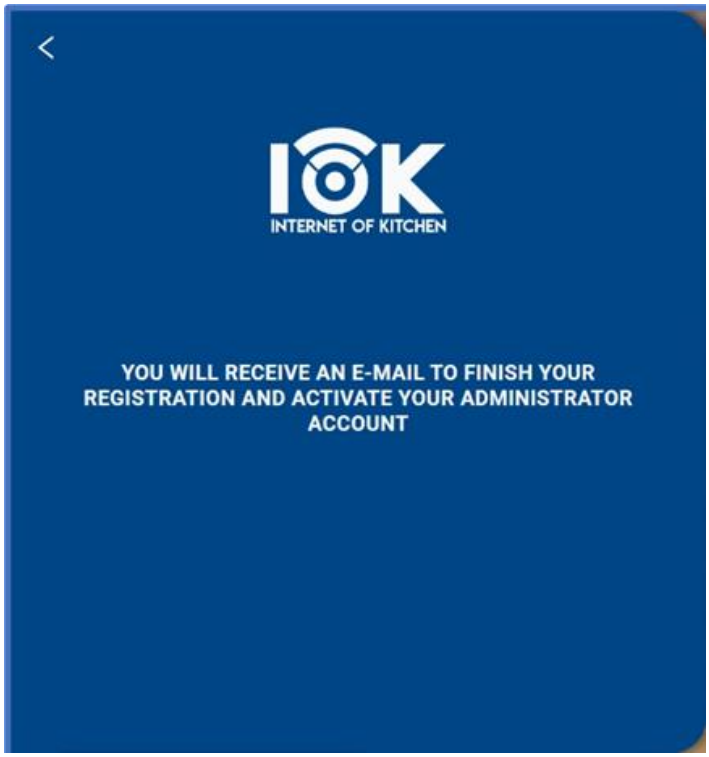
- Company: For cases where the oven is only for one restaurant.
- Chain: If you are a chain of restaurants that uses Prática ovens.nter your name, email, and password desired.



Fill in your organization's details and your registration details on the platform:

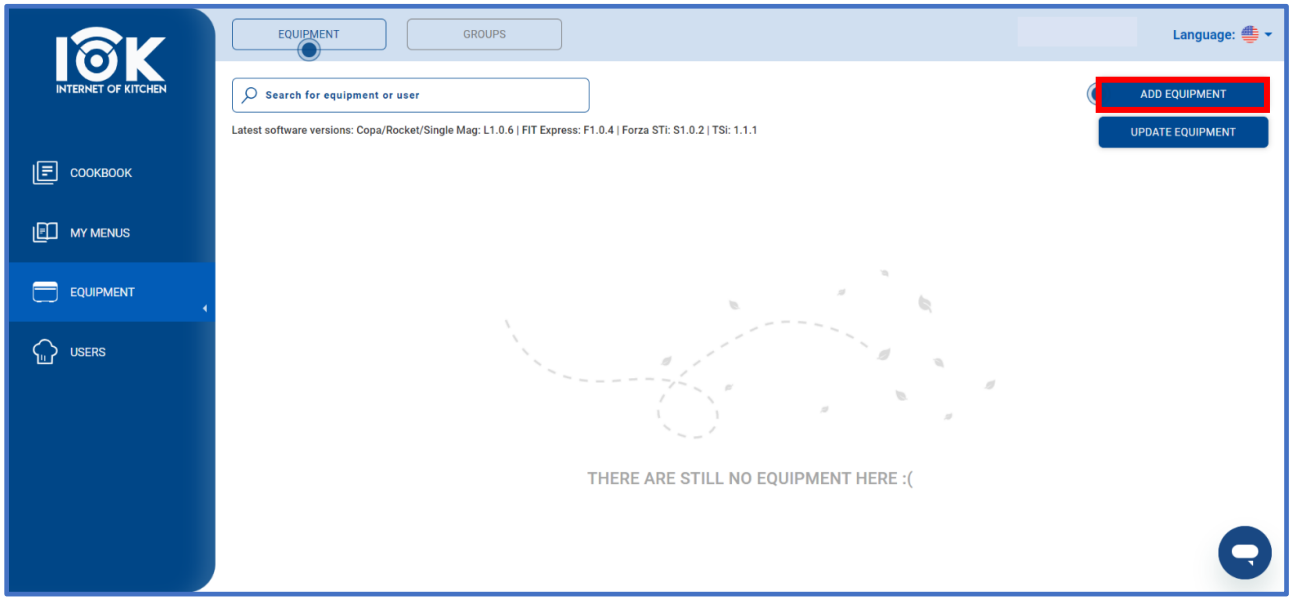


The person responsible for registering the oven in the IOK will receive an e-mail to confirm.

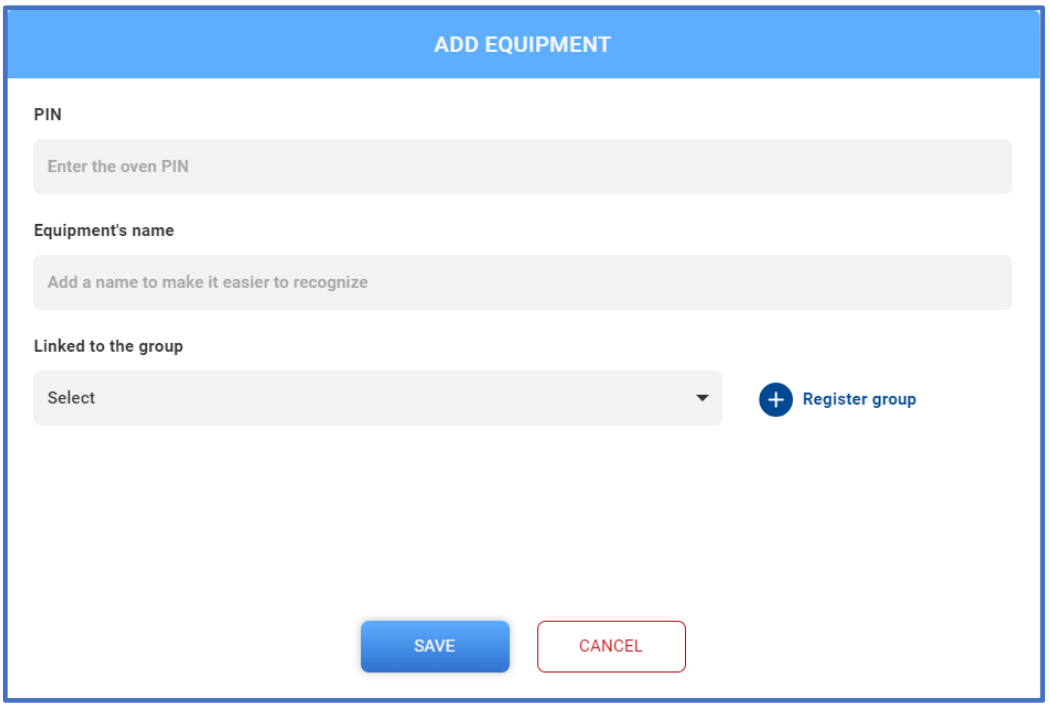


After entering the page, you must click on “equipment” to register your oven;

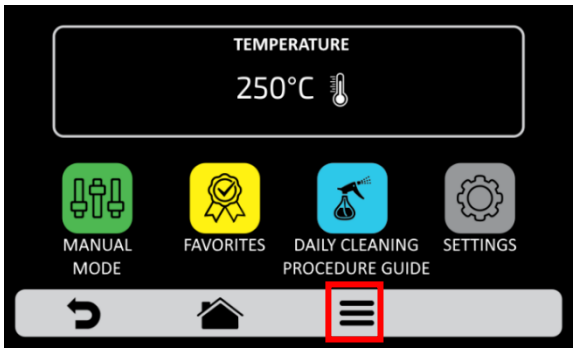
Click on the option “ADD EQUIPMENT”.



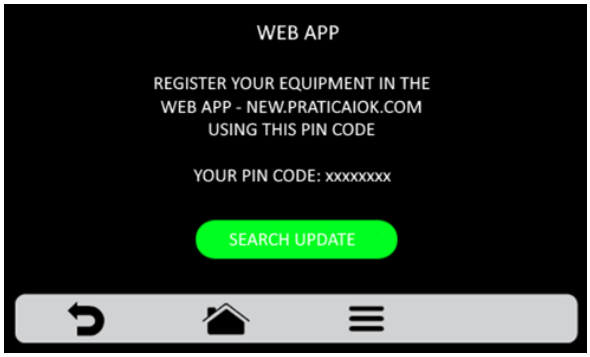
A window will appear; keep it on the screen and go back to the oven to get the PIN number



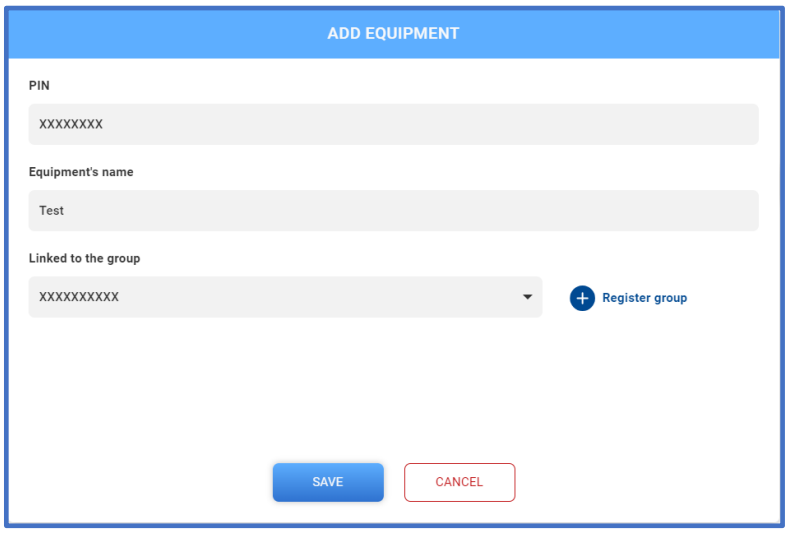
Power up the unit and, on the main menu, click on the three stripes icon and then click on “Settings”;



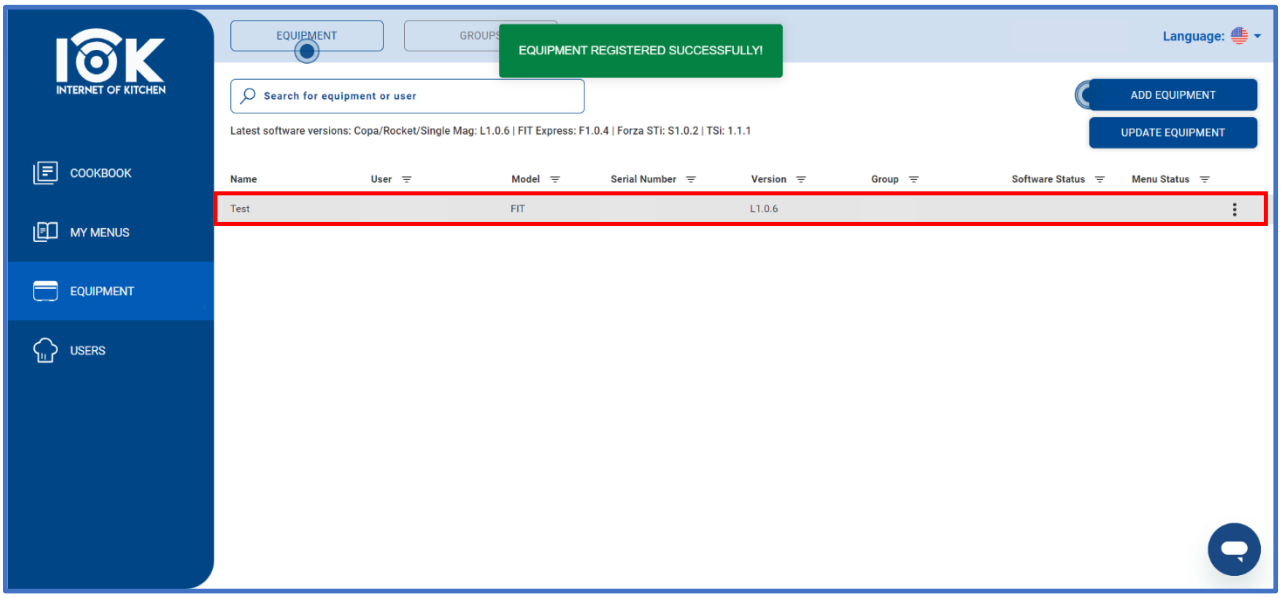
Note: At this moment, it is important to be sure that the oven is connected to the internet. Enter the password “456789 ok” and select the icon “web app” IOK. When the oven is connected to the internet and it is not connected to any IOK account yet, the PIN number will appear on the screen.



Get this PIN number and enter this on the window that appeared on the computer by accessing the platform; select a name for your equipment and click on “SAVE”



Once the oven gets connected to the IOK, its serial number, firmware version and other information Will appear on the “Equipment” tab;



It is now possible to create menus on the website and export them to the oven and reverse the procedure, and it is also possible to check the software version and update the equipment.

NOTE: To disconnect the oven from the IOK platform account it is necessary to go back to the "web app" icon on the oven screen and click on "DISCONNECT". In the Equipment screen on the website it is also possible, just look for the desired oven and, at the end of the line there is a "three

dots" icon, click on it, select the "delete equipment" option, wait five seconds and reload the web page (by pressing F5 on the computer keyboard, for example).

Technical support

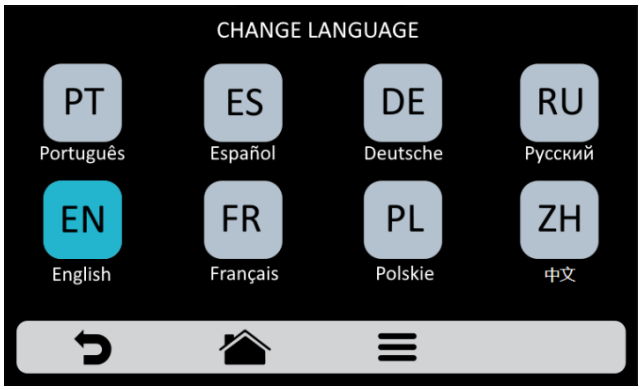
In the Tech Support screen will give you all the information contact PRÁTICA in case you have questions, need to request repairs or the technical visits.

SYSTEM

At the option System, icons regarding oven configuration will appear, in accord to the following options;

Language selection

To change the language, just click on the icon and choose the desired language: English, Spanish, French or Portuguese.



Date/Time adjustments

It is possible to adjust the Date, Time and also the format it is presented to the user, respecting the following standards:

European: dd / mm / yyyy

American: mm / dd / yyyy

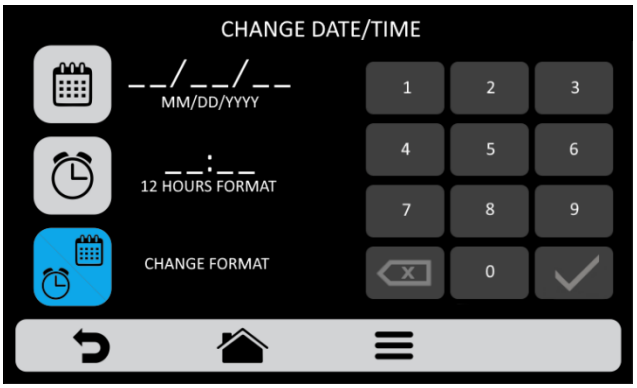
ISO: yyyy / mm / dd

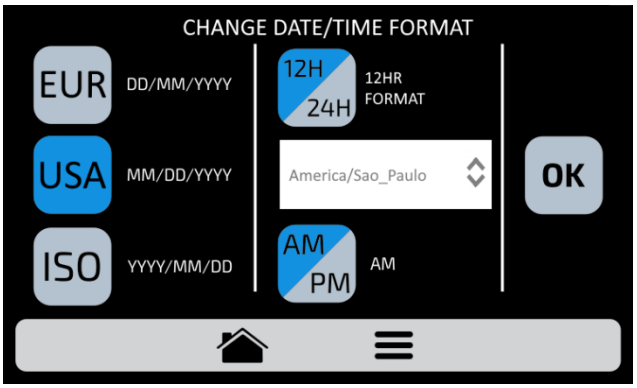
Time: 24h Format

12h Format

Click on  and  to edit, respectively, the date and time.

Press  to change the date / time format. The opposite screen will be displayed. Choose the date and time format and click on  to confirm and return to the options.

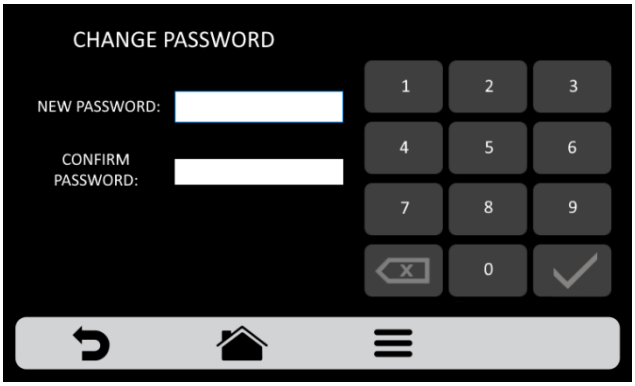




Use  to return to the user editing options.

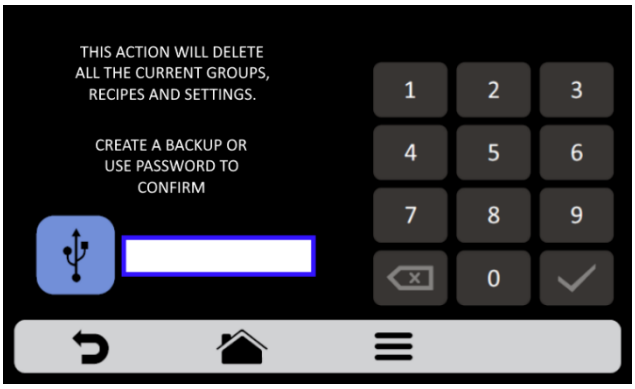
Change password

To change the user's password, just type the new password and then confirm it.



Restore factory standards

ATTENTION: The Restore Factory standards option will delete all Groups, Recipes and their Steps, and also the User Defined Settings. Be sure to create a backup via USB before proceeding. After inserting the password and touching OK: IT IS NOT POSSIBLE TO RECOVER THE INFORMATION.

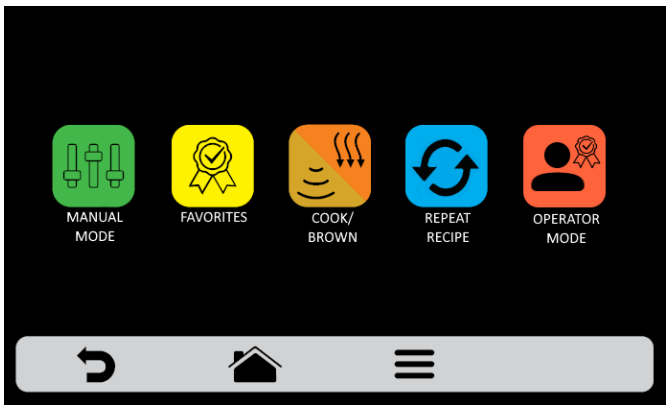


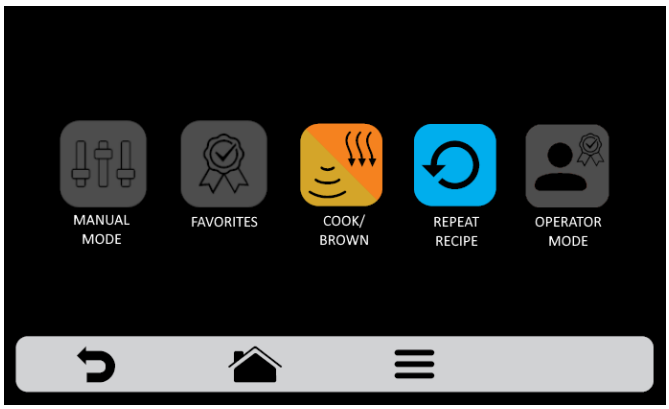
Edit Access

Edit Accesses corresponds to the function where you can block functions that operators have access to.

For example: If desired that operators do never access the “Favorites” and “Test Mode” functions, select both, which will turn them dark gray, indicating that they are locked until such time as you wish to unlock them.

To unblock it, click once again on the icon:





Manufacturer information

At this screen it is possible to see oven serial number, its firmware version and manufacturing date.

System update

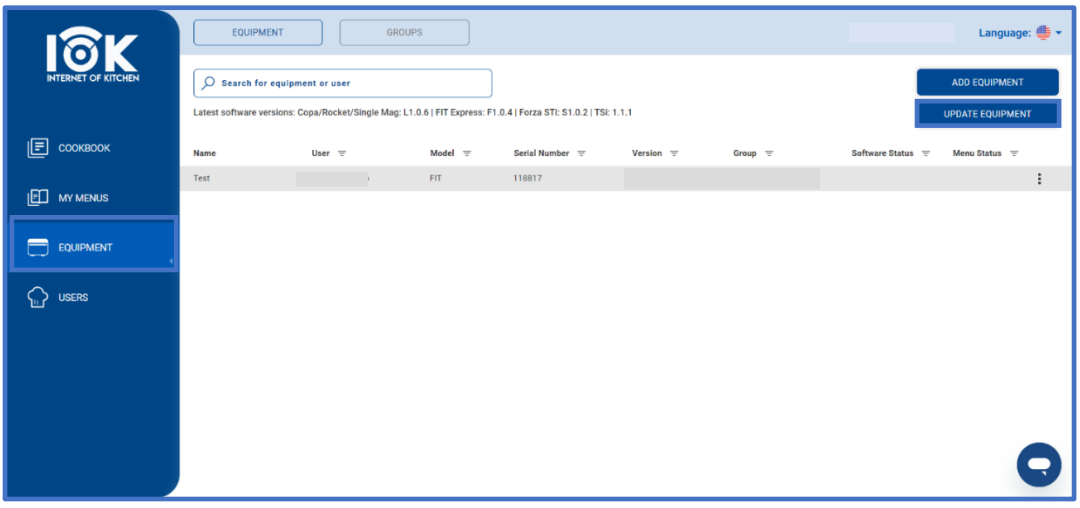
It is possible to update the oven in two ways: The first way is to use the Pratica IOK communication platform and perform the update process with the unit connected to the internet network and the second way is to use an USB device with the update file into it.

Updating the unit through the IOK platform

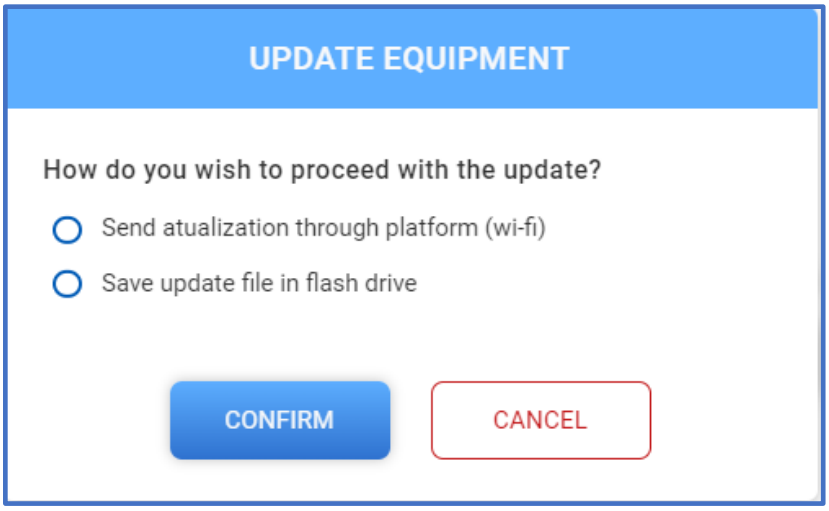
To perform the update through the Prática IOK platform, it is necessary that the oven is registered on the platform. To register the oven just follow the steps of the Technical Bulletin 002-2022 - Registration of the oven to the IOK Platform through the following link:

https://suportetecnico.praticabr.com/hc/en-us/articles/5476036150426-Technical-Bulletin-002-2022-IOK-Oven-Linking

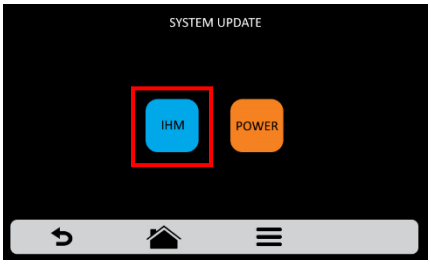
Once the oven has been registered on the platform, it is necessary to send the platform update to the unit. To do this, in the 'Equipment' screen click on the top right option called 'Update equipment'.

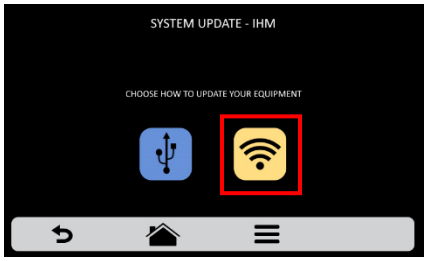


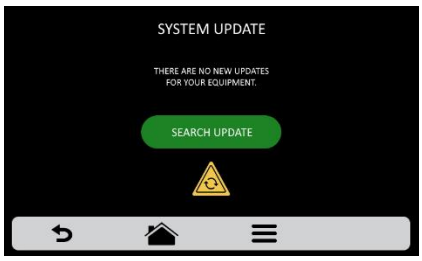
Select what type of update that will be used to update the oven and click on “Confirm”:



After having clicked on update, it is necessary to go back to the oven and access the user settings and enter the option System - System Update - HMI - WiFi - Check for update - YES.







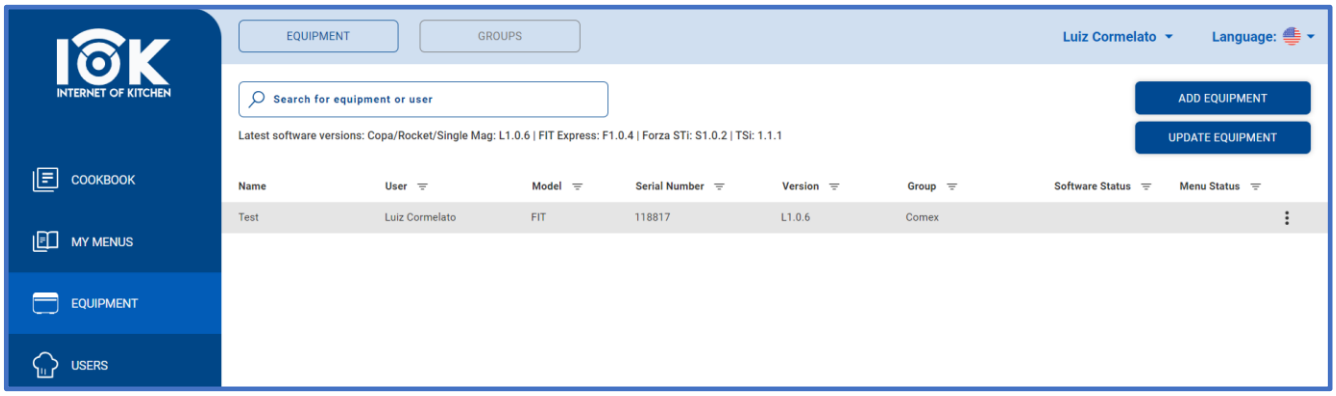
At this point there will be a file upload process. It is critical at this stage of the update that you DO NOT TURN OFF OR UNPLUG THE OVEN. If this happens, the file will be corrupted and the oven will stop working.

Firmware update through the USB.

To perform the update process through an USB device, you can access the update file through the following link:

https://new.praticaiok.com:3001//download/updateFile/Fit

It is also possible to download the update file on the IOK platform, through the 'Equipment' screen in the 'Download Update' option. This option is viable for when local Wi-Fi internet is unstable or inaccessible for the oven.

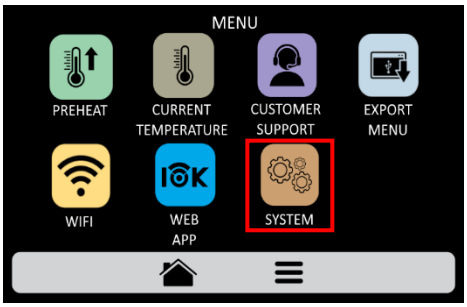


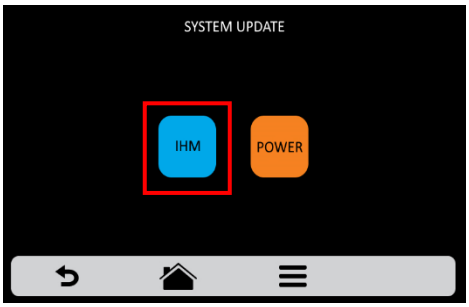
With the file on the computer, it is essential to make sure that the file has the following name: FIT.tar

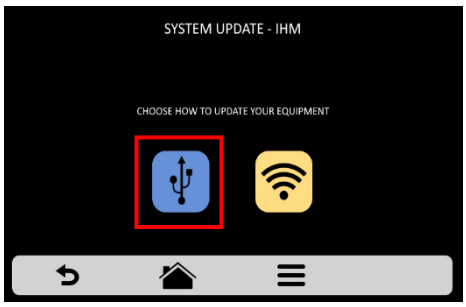
There is differentiation in lowercase and uppercase letters. So, if there is any divergence in that name, it is necessary to re-edit it. Even if there is FIT(1).tar with duplication of file in the same folder, it is necessary to adapt it to FIT.tar.

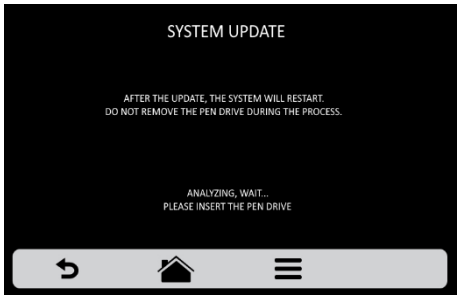
The file will be compressed and so it must be inserted in the root of the pen drive, without any folders and subfolders.

With the file on a pen drive, it is necessary to access the USER SETTINGS - SYSTEM - SYSTEM UPDATE - HMI - USB. At that moment, the USB device must be inserted and wait for the completion of the process until it returns the screen and preheating.









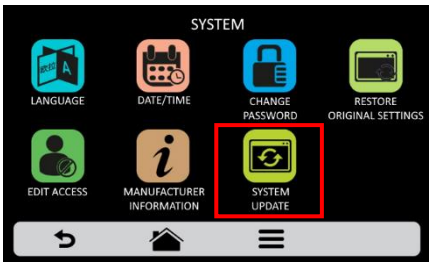
WARNING: DO NOT REMOVE THE USB DEVICE, TURN OFF THE OVEN OR DE-ENERGIZE IT WHILE IT IS IN THE PROCESS OF UPDATING! WAIT UNTIL THE PREHEATING SCREEN RETURNS. IF THE AUTHENTICATION PROCESS IS INTERRUPTED, THE FILE WILL BE CORRUPTED AND THE UNIT WILL BE INOPERATIVE!

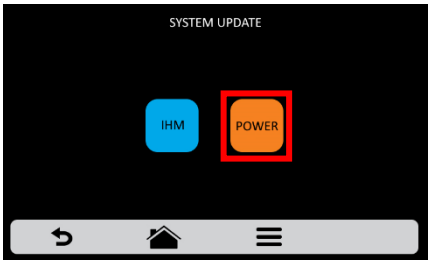
Power board update

To update the Power board, it is necessary to download an update file that is only available from Prática technical support.

The file provided by technical support must be placed in the root of a USB device, with no folders or subfolders. The file cannot be duplicated and cannot be renamed.

With the file on a USB flash drive, access the USER SETTINGS - SYSTEM - SYSTEM UPDATE - POWER. At that moment, the USB device must be inserted and wait for the completion of the process until it returns the screen and preheating.





TECHNICAL SETTINGS

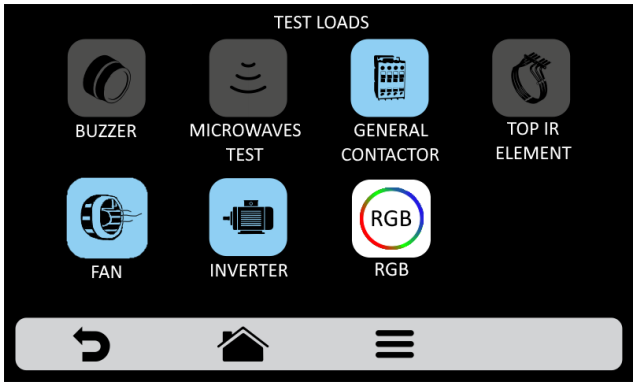
Accessing Technical Settings

Within the Options Screen, click on the icon  . The Password screen will appear. The standard password for the manufacturer's configuration is 459381.

The Manufacturer Configuration screen consists of seven elements.

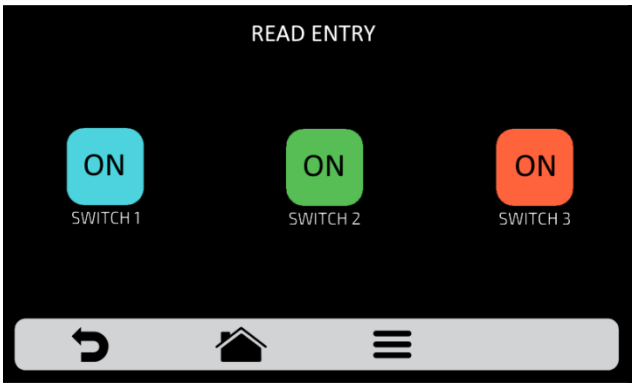
Test Load

The test load function will allow you to check components operations like: buzzer, microwaves, top heater, speed control, cooling fan and LED bar.



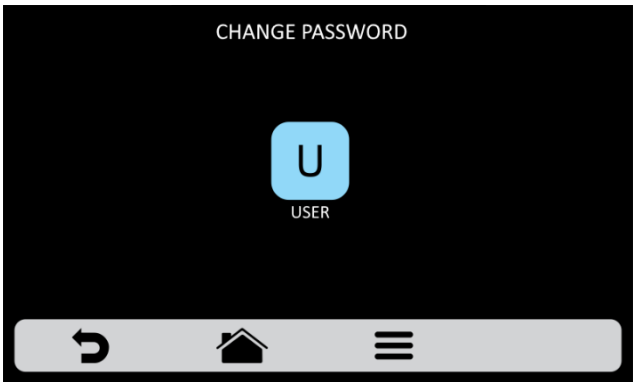
Read Inputs

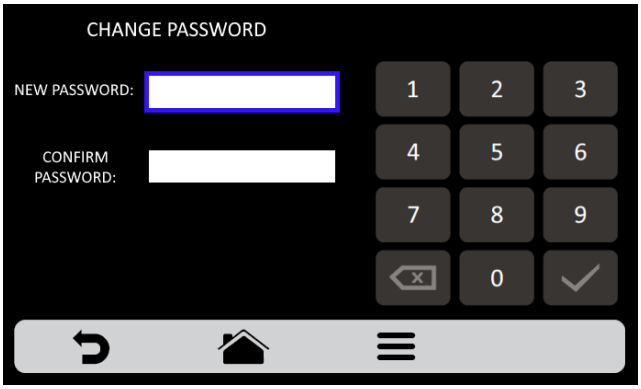
Show the status of the microswitches.



Change Password

This function allows the customers and manufactures password to be changed.

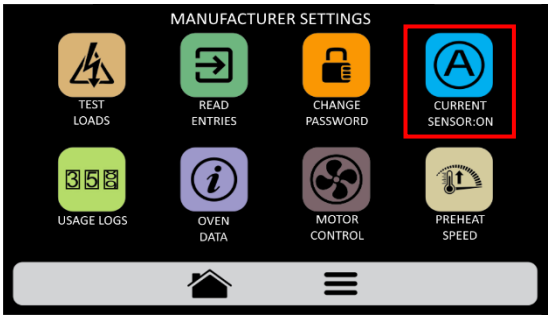




Current Sensor

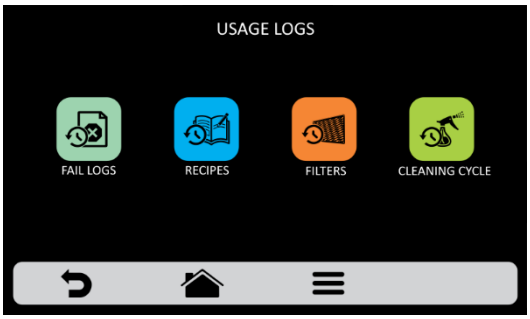
The oven counts on a current sensor located on the output of the microwave system fuse holder. This sensor monitors the current of the microwave system, identifying when the amperage gets lower than 10 amperes, presenting the alert of microwave error on the oven display.

When this function is enabled, the icon gets blue, and the icon is being monitored. When the function is disabled, the icon gets grey, and the monitoring does not work.



Counters

Counters function displays information on faults, recipes, filter cleaning.

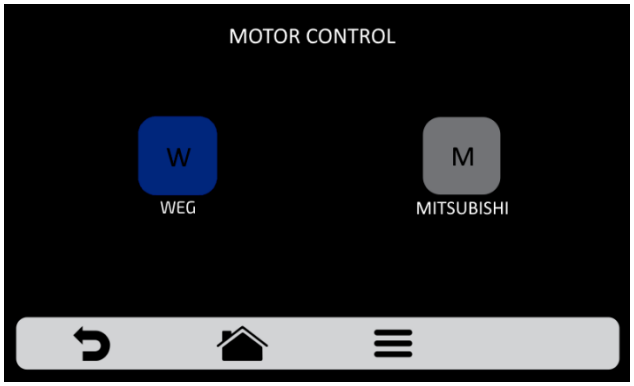


Oven Data

Oven data function displays information of serial number, manufacturing date and oven type.

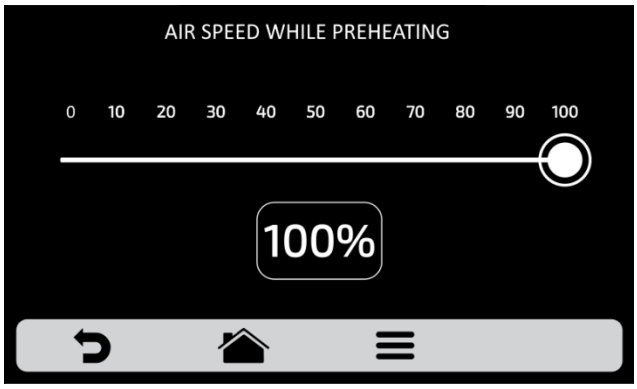
Engine Control

Select each model of inverter will control the motor: Weg or Mitsubishi.



Preheating Speed

Adjust the air speed that will be used during the preheating.



GENERAL SETTINGS ACCESS

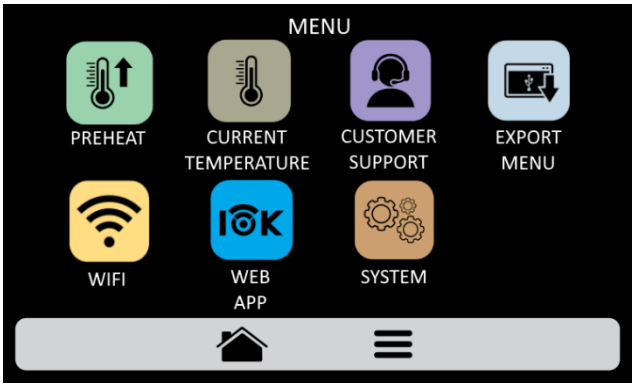
General Setting Access

The Fit Express oven has access codes for user and technical settings. The technical access codes are for use only by authorized technicians for maintenance or installation of the oven or the IHM panel.

To enter the codes, when necessary, turn on the oven with the Power button on the panel and when the screen turns on click on 'Menu' ☰, then on 'Settings' ⚙. When you click on 'Settings' the oven will ask you to enter the password and then you will enter the access code to the desired configuration:

User Settings: 456789.

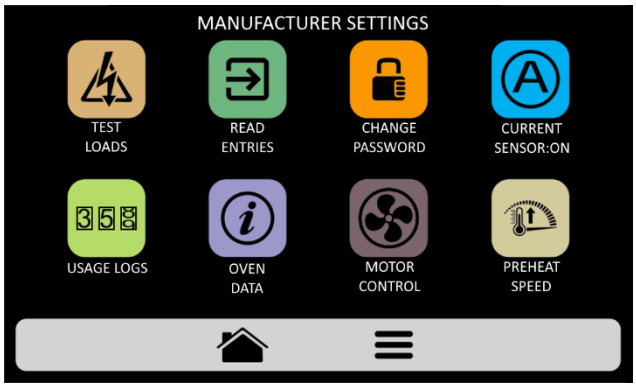
Customer access to the user settings is important so that the person responsible for the oven, properly trained, can manipulate recipes and data in a way that gives you full use of the oven without compromising your safety and the safety of the oven components.



Technical Configurations: 459381.

The technical configurations MUST NEVER BE ACCESSED BY PERSONS who are not authorized and properly trained technicians to work on the oven.

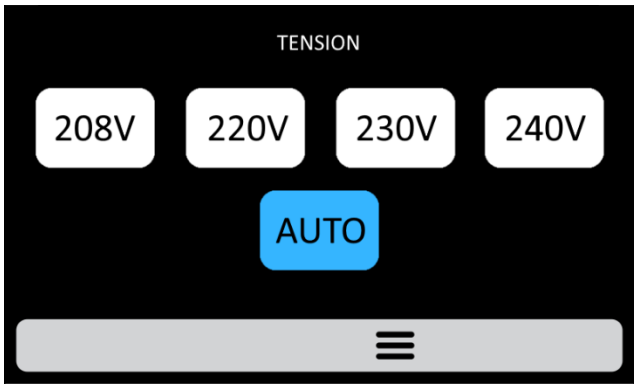
In these settings the technician will be able to test components, verify important data from operating records and set up basic furnace functions.



Voltage selection 220000

In the Fit Express furnace, it is possible to select the working voltage of the furnace by entering the code 220000 in the configuration password. The voltage must be selected according to the working voltage where the oven is installed.

Setting the correct voltage is very important because the oven has an intelligent system of power equalization according to the selected working voltage. This system ensures that the products prepared in the oven always have the same results regardless of the voltage differences that may occur from one store to another.

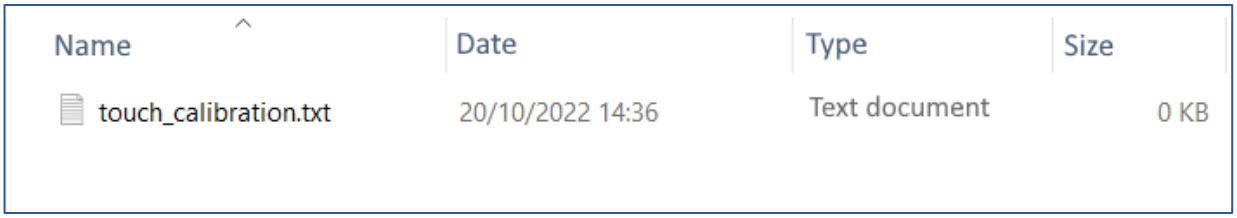


Ignore Preheat 1 and Preheat 2 process: 300000 and 300001

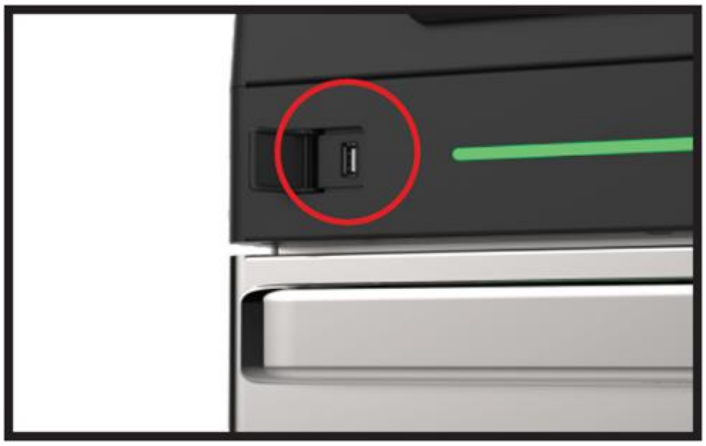
On a maintenance occasion where the technician needs to have quick access to the recipe group menu of preheat group 1, it is possible to get to the group screen without the need to wait for the oven to finish the preheat process. To do this, enter the code 300000. When you want to access the recipe groups of preheating groups 2, the procedure is the same, but the code to be entered is 300001.

Calibration of the Screen

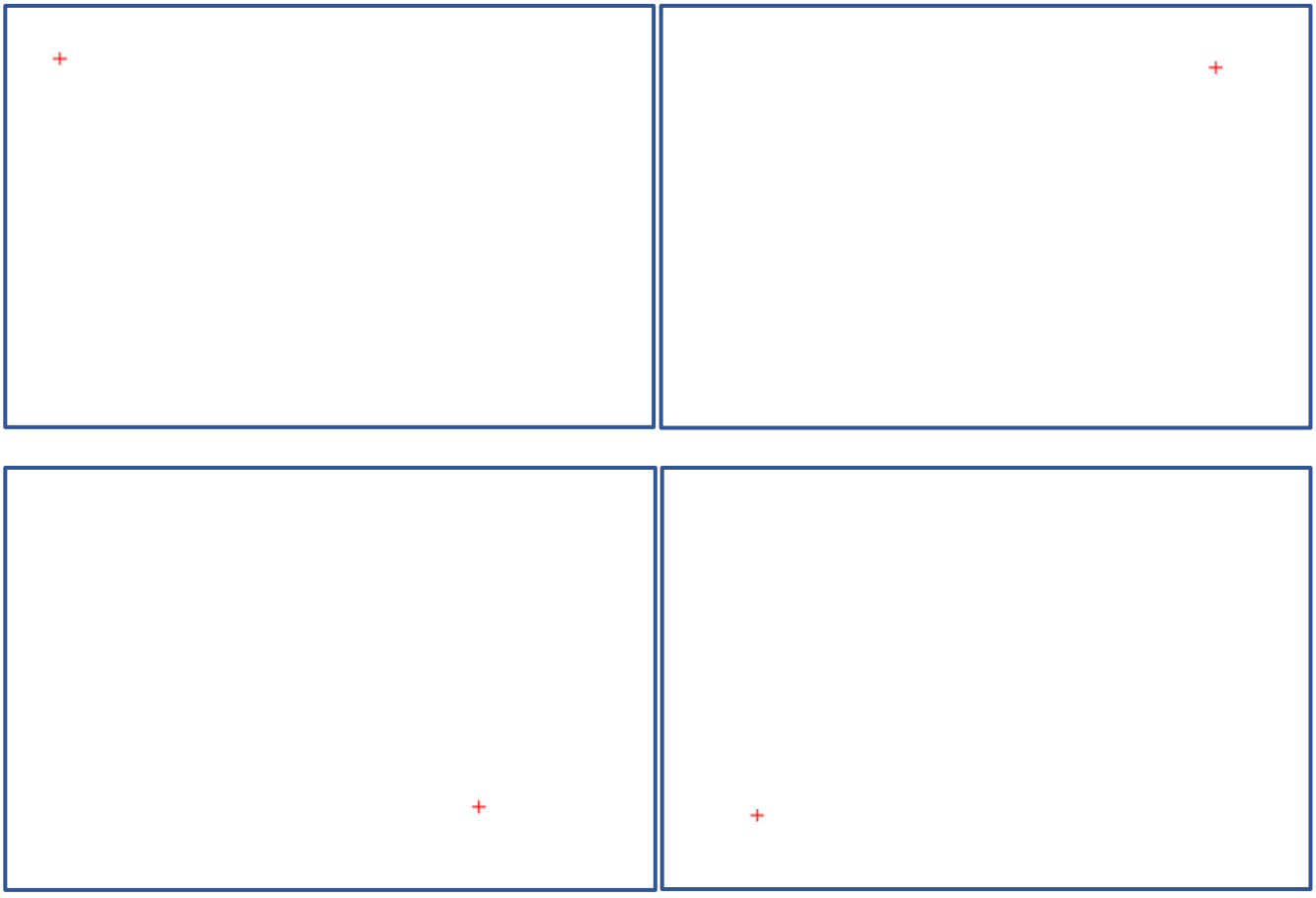
To perform the calibration of the display, you first need a pen drive. On this pen drive, you must create a .txt file with the name "touch_calibration" and there must not be any other files or folders on the device. The file must remain on the root of the pen drive.



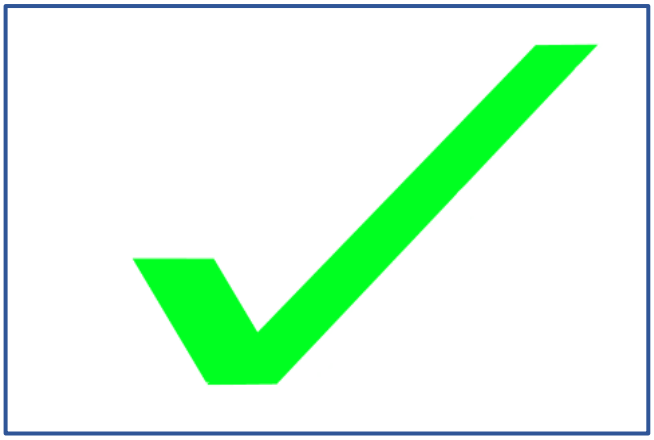
With the oven switched off, insert the pen drive into the USB socket on the panel top left, protected by a plastic cover. To access the USB port, simply open the plastic panel.



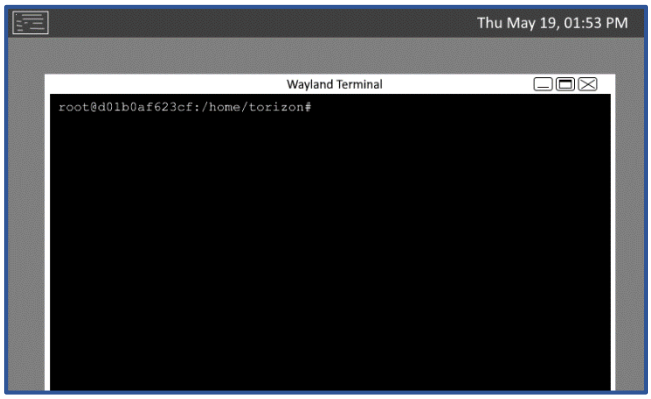
Switch on the oven with the pen drive inserted and wait for the calibration screen to appear.



Touch the red dots (+) that appear on the screen. For each point pressed, a confirmation will appear on the screen.



At the end of the calibration, the screen will turn grey. Tap the square in the top left corner of the screen until a new black window opens.



Touch the "X" in the corner of the black window to close it and switch off the device by pressing the on/off button for 5 seconds.

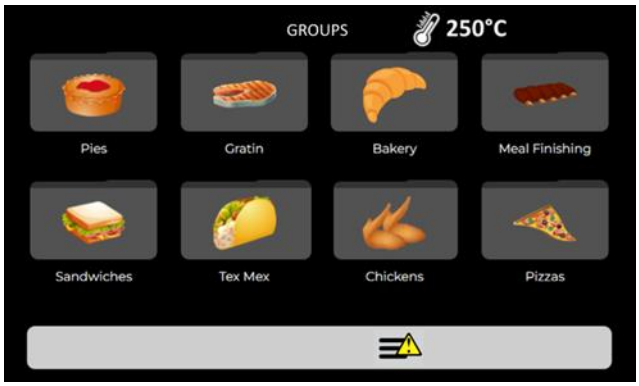
Calibration completed!

ALERTS AND ERRORS

Alerts and Errors: Possible Solutions

The Fit Express was Programmed to signal any possible error and alerts that may occur during the operation.

On the Option icon ☰, a yellow signal will appear for alerts (⚠) and red for errors (⚠).

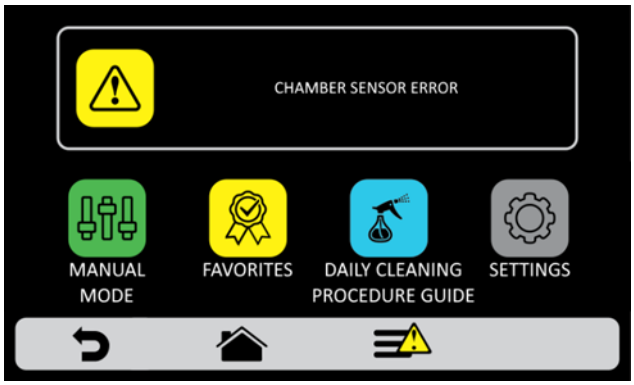


Alerts

Click on the Options icon ☰.

The Options screen will bring, instead of the Chamber and Bottom Heater temperatures, a description of the alert.

For example: **ALERT - SENSOR - TURN OFF AND TURN ON THE OVEN**



Follow the orientation as described in the screen. In this case, turn off and turn on the oven using the panel button: 

When turning the oven back on, the screen that must be displayed is:

Just wait for the system to reset. After the reset, the oven returns to operate normally.

Errors

In case of several unsuccessful reset attempts, the alert will become an error, and it will be necessary to contact Technical Assistance.

Alerts & Errors Table

Component	***Becomes alert when:***	***Becomes error when:***
Inverter	-	more than ten reset attempts
CLMG Low Magnetron Current	thirty seconds without reaching the current	-
Can Network Communication	-	cables disconnected or faulty
Chamber Sensor and IR	only one inactive	both inactive
Panel Temperature	From 65°C to 80°C	exceeding 80°C for 10 minutes

MICROWAVE SYSTEM

The Microwave System

The Microwave is the most complex system in the oven. Extreme caution must be taken during servicing to protect both the operator and technician.

The Microwave portion of the unit consist of several components that make up a left and right system. For safety precautions, both left and right microwave systems utilize a 20A fuse that will blow if an over-current situation occurs shutting off the microwave system immediately preventing further component damage.

How It Works

When the transformer is supplied with power, a voltage of 3.6V and 2000V are generated in the secondary. The 3.6V voltage, as we have seen, heats the filament of the Magnetron that emits electrons. The 2000V volts supply the positive half cycle of the alternate current voltage and charges the capacitor. In this half cycle, the diode works as a short circuit allowing the entire current pass through it.

In the negative half cycle, the voltage of the capacitor and the 2000 volts are added resulting in a 4000V system. In this half cycle, the diode works as bridge allowing the current to flow to the Magnetron that generates the microwaves.

Then the supply of the circuit is turned off, all the voltage stored in the capacitor is discharged by the drainage resistor.

Microwave Protection System

The microwave protection system is responsible for protecting the circuit components and assuring the oven functions correctly. The system will prevent the microwave circuit from operating while the door is open.

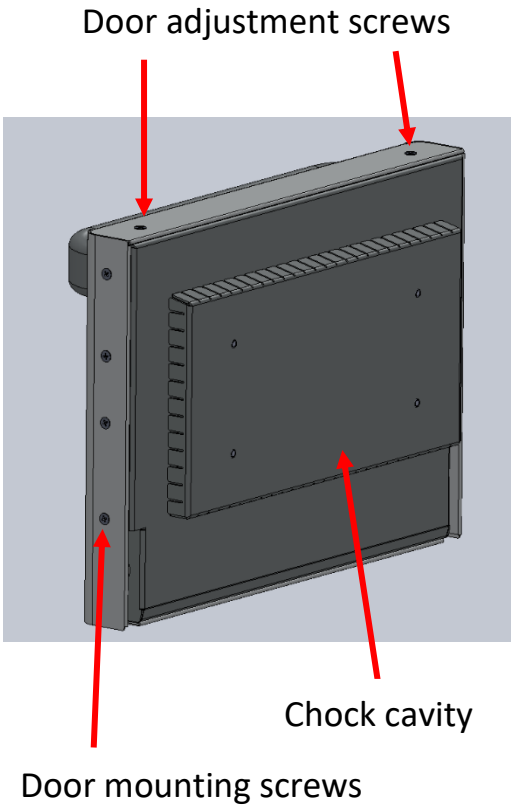
The Microwave Circuit Protection System is formed by two 20A fuses (one for each circuit), two 302°F/150° thermostats, two relays and three micro switches.

Door and Door Switches

The Fit Express oven door utilizes a choke design. This design protrudes into the oven cavity slightly to improve the microwave sealing capabilities and functionality.

The ovens leave the factory only after conforming to all the stringent testing required by multiple governing agencies. Field service adjustments are rarely needed but can easily be performed based on this design.

The door is mounted to the hinges with 4 – security screws. This mounting point does not allow for any adjustments to the sealing surfaces. However, the adjustments to the door and the sealing surface are made by loosening the 9 – security screws around the perimeter. After loosening, the inner door (choke assembly) is free to move closer to the oven cavity as necessary. Retighten screws to secure the adjustment.



An RF leakage test should be performed after the following service tasks:

- Door removal, replacement and/or adjustment
- Waveguide removal and/or replacement
- Magnetron removal and/or replacement
- Door switch adjustment and/or replacement

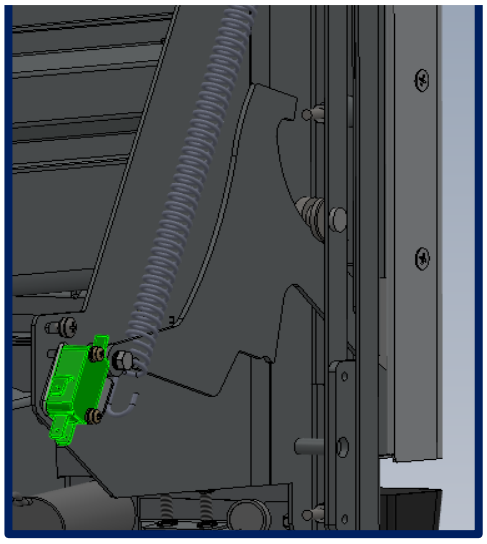
Door Switches

The Fit Express oven utilizes three independent door switches to monitor the position of the door during microwave operation. The switches are referenced throughout this section as well as the wiring diagram as: Primary, Secondary, and Monitor.

Primary and secondary switches

The Primary and the Secondary switches are located on the right side of the oven. They can easily be accessed by removing the right-side cover. The purpose of these switches is to give two separate signals back to the control board to ensure the door is properly closed before the microwave can be energized.

The Monitor switches is locked on the left side of the oven and is used to act as a "fail safe" if both the Primary and the Secondary switches were to fail. This switch is wired in series with a separate relay (Interlock Relay) used to open a fuse and disable the circuit. This dead short condition will occur if the Monitor switch opens before either the Primary or Secondary switch during a microwave event. The three door switches must open in a specific order when the oven door is opened: Primary, Secondary, then lastly Monitor.



Monitor switch

Note: In the event of a "fail safe" condition and the fuse has opened, all three door switches are required to be replaced to insure continued functionality and performance.

Door Switch Adjustments

LED lights are used on the control board to indicate the position of the contacts of the three door switches. When the LED is illuminated, the switch position is opened and vice versa. The control board identifies the LED's as SW1 (Primary) , SW2 (Secondary) and SW3(Monitor Switch).

The LED's will illuminate when the overpower is connected, (and the door is opened). The oven does not need to be in the "ON" position to test the switch positions. Care should be taken when servicing the oven with the power connected. Observe the LED's from a safe distance.

The Primary and Secondary switches are engaged with a single actuator attached to the right-side hinge. Because of this design, the door position has a direct and precise relationship with the switch contacts.

The actuator is a part with a step machined into one side to allow for the Primary switch to open before the Secondary switch (mounted beside it). This step is hardly noticeable due to its height of 0.01" (0.25mm)

The two switches share the same adjustment and mounting hardware, but do not share the same actuator surface. The 0.001" step allows for the required timing separation.

The proper distance to adjust the Primary and Secondary switches is 0.040" (1.0mm). This distance is measured between the switch body and the metal paddle. At this distance, the opening sequence of the three switches is correct and the microwave emission are well within the safety specifications.

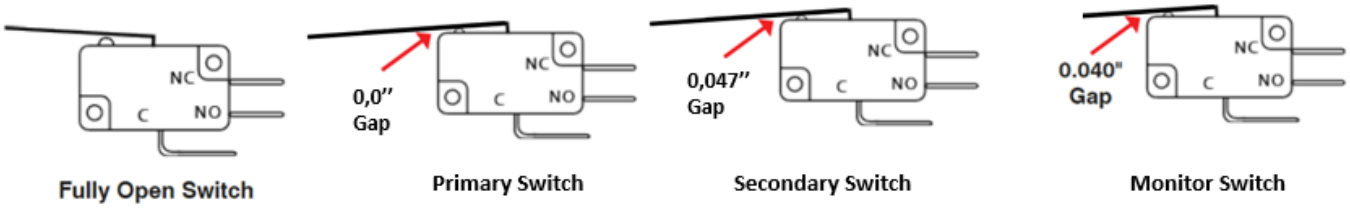
The Monitor switch is located on the left side of the oven and is actuated per a round post with a step machined into one side. The proper distance to adjust the Monitor switch is 0" (0mm). This switch is to be adjusted fully closed to support the Primary and Secondary switch contacts opening first.

Primary and Secondary switch adjustment steps:

1) Open and close the door to verify the door moves freely and fully closes. The door springs must be pulling the door closed to the oven cavity.
2) Remove both sides and the top cover top access the LED and the switches.
3) Loosen the #2 Phillips screw on the mounting bracket and the two #1 Phillips screws holding the switch body.
4) Place a 0.040" (1.0mm) gauging tool between the switch body and the metal paddle.
5) Confirm the adjustment is correct and tighten mounting hardware.
6) Open and close the door while checking the sequence of de LED lights on the control board, SW1 first, SW2 second, and SW3 is last to switch off when the door is opened.
7) Install a thread locking material to the mounting hardware (Optional).

Monitor switch adjustment steps:

Same as above with one exception: Change the dimension in step 4 above to 0” (0mm). This switch must be fully closed when the door is in the closed position.



Refer to page 74 for proper microwave leak testing procedures.

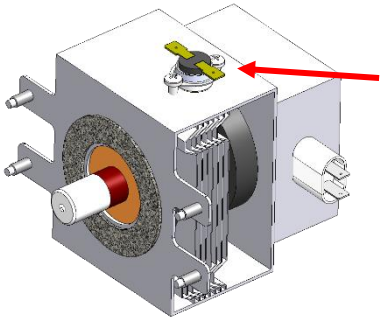
An RF leakage test should be performed after the following service tasks:

- Door removal, replacement and/or adjustment
- Waveguide removal and/or replacement
- Magnetron removal and/or replacement
- Door switch adjustment and/or replacement

Components

Magnetron Thermostat 1 and 2

The bimetal is mounted on the Magnetron chassis as shown in picture. This device is utilized to monitor the magnetron temperature to prevent the magnetron from overheating. These thermostats are self-re-setting. When the temperature in the Magnetron exceeds 302°F/150°C, the thermostat will open its contacts, cutting power to the microwave circuit. When the magnetron cools, the contacts will reset and close.



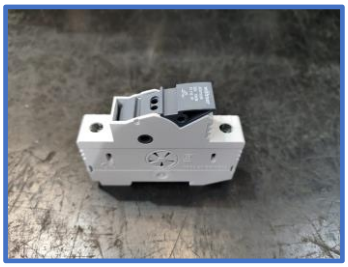
Magnetron Thermostat Test

1) Unplug the oven and remove both side and top panels.
2) Disconnect the thermostat wires and measure the continuity between the terminals of the thermostat, as show in the picture.

- If continuity is present, the thermostat is good.
- If no continuity is present, replace the thermostat.

20 Amp Fuses

The 20-amp fuses are utilized to protect each microwave circuit from over-current. Both fuses are located inside a fuse terminal as shown in the pictures.



20 Amp Fuse Test

1) Unplug the oven remove the right-side panel.
2) Push down on the fuse holder and remove the 20A fuse.
3) Check continuity on fuse from one end to the other (do not set fuse on metal table).

- If fuse has no continuity, replace fuse.

Microwave Relay

The microwave relay is responsible for energizing the magnetrons by sending power to the high voltage transformers. The control board is monitoring the position of the door through the primary and secondary door switches (right side). If either one of these switches open the board will de-energize this relay.

Interlock Relay

The interlock relay works in series with the monitor door switch (left side). This switch is an integral part of the interlock safety system. The control board sends constant 12V DC power to this relay to open the normally closed contacts. These contacts are connected to L1 and L2 power. If the magnetron relay is energized and this monitor switch opens, a dead short will occur blowing the 20-amp fuses and disabling the oven for safety. This is the third method to prevent microwave energy from leaving the cavity during an open-door condition.

Voltage Relay

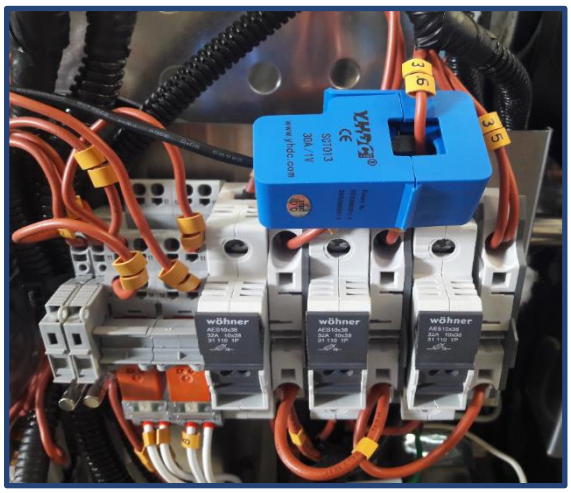
The voltage relay is responsible for applying the correct voltage to the microwave high voltage transformers. The control board determines the voltage based on the current transformer and then sends the control voltage to the relay to switch between 208V and 240V accordingly.

Relay Test

1) Unplug the oven and disconnect the white 12V DC coil voltage wires.
2) Measure the continuity between the terminals of the relay coil.
   - If the multimeter measures continuity, the relay is good.
   - Is no continuity is present, replace the relay.
3) If continuity is present on the coil terminals, plug wires back in and test for 12V DC across the coil terminals.
   - If DC voltage is present, the main control board is good and relay must be replaced.
   - If DC voltage is not present, check continuity on coil voltage wires going back to the board and if continuity is present, replace the control board.

How to Take an Amp Draw

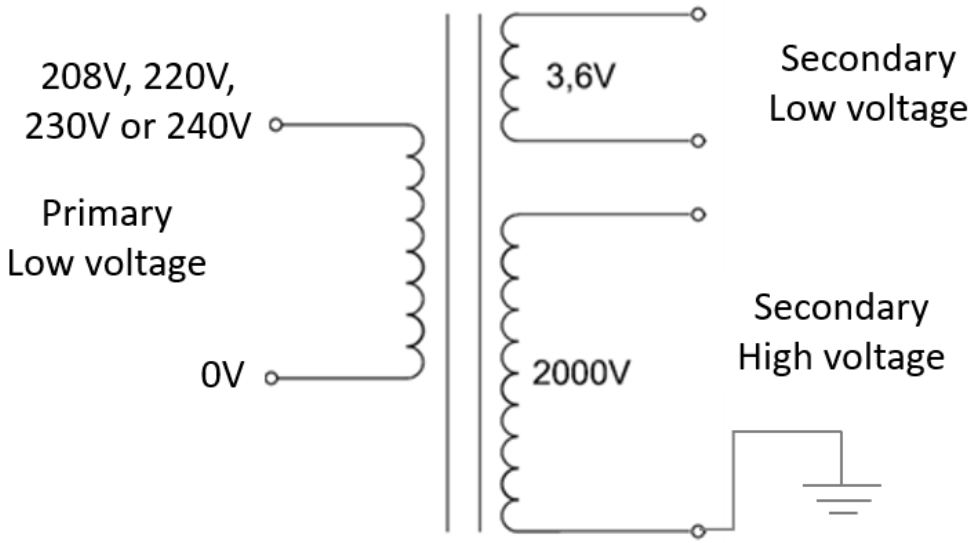
If any component from the microwave circuit fails or the food is not cooking properly, the first thing that should be done is take an amp draw on the CT wire. The target amp draws on both circuits for a 208V unit is between 14-15 amps, a unit supplied with 240V will be between 13-14 amps. Each microwave circuit can be isolated by removing both primary wires to the HV transformer. Never attempt to isolate by removing the secondary wires due to high voltage.



1) Remove the right-side panel of the unit.
2) Locate the CT that is connected around the wire number 36 of the power distribution bar.
3) Inside the Option Screens, click on the icon “Settings” and insert the password from manufacturer: 459381.
4) Go to menu “Electrical Loads Test”.
5) Place your amp clamp on one side of the brown wire.
6) Press the icon “Microwaves Test” to start the magnetron test. This function will engage both microwave circuits and give a combined amp draw.

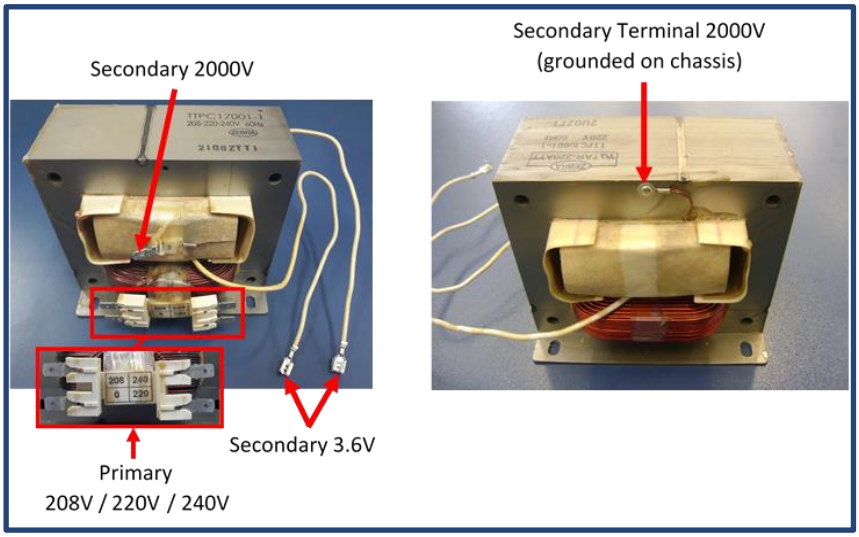
High Voltage Transformer

The HV transformer of the microwave circuit is formed by three windings. The primary low/line tension winding (208/220/230/240V), the secondary low voltage winding (3.6V) and the secondary high voltage winding (2000V), as shown in the scheme below.



The secondary low voltage winding (3.6 volts) acts as a filament transformer and begins to energize the magnetron by heating the cathode. The magnetron will fully energize when the 2000V are applied from the secondary high voltage winding causing the emission of electrons that start to produce the microwave radiation.

The two longer wires of the transformer are the secondary low voltage wires (3.6V) and the wire grounded to the transformer chassis belongs to the secondary high voltage side (2000V) as seen in the picture below.

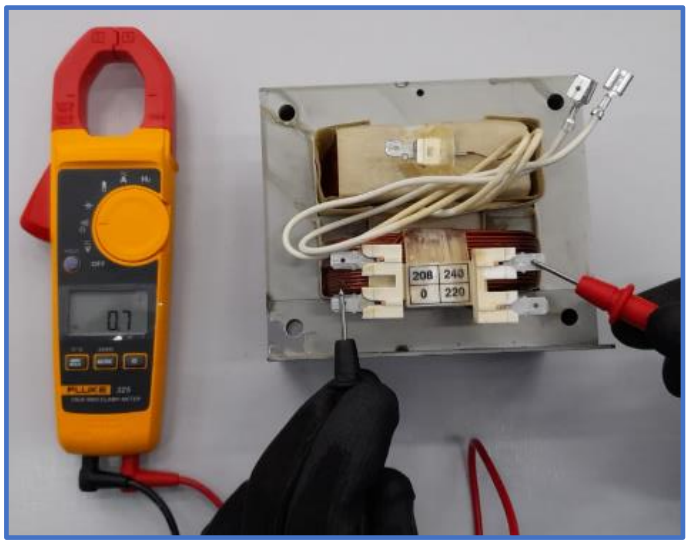


WARNING: Never attempt to measure high voltage directly. It could result in death or serious injury. Always make sure the oven has been turned off and unplugged for at least 5 minutes before removing high voltage components for tests.

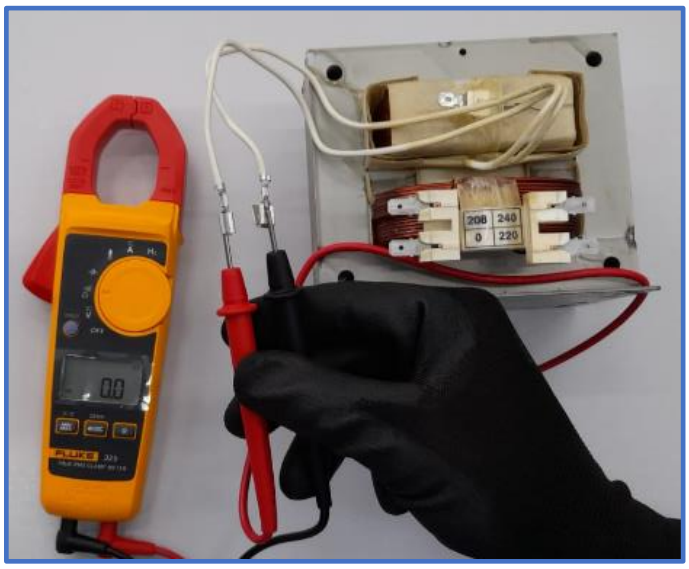
Testing Primary Winding (208/220/230240V)

1) Remove the rear panel from the unit.
2) Unplug the oven and wait 5 minutes for the high voltage capacitor to discharge.
3) Unplug the wires from the HV transformer terminals.
4) With an multimeter, measure the resistance across the terminals of the primary as shown in picture on the right.
5) The measured resistance value should not be higher than 1 ohm.

- If the ohm reading is open or very high, replace the transformer.



Testing Filament Winding (3.6V)



1) Remove the rear panel from the unit.
2) Unplug the oven and wait 5 minutes for the high voltage capacitor to discharge.
3) Unplug all the wires from the HV transformer terminals.
4) With the multimeter, select the resistance/continuity scale and measure the resistance across the filament wires as shown in the picture on the right.
5) The measured resistance value should be 0.0 ohms or a very low reading.

- If the ohm reading is open or very high, replace the transformer.

Testing Secondary HV Winding (2000V)

1) Remove the rear panel from the unit.
2) Unplug the oven and wait 5 minutes for the high voltage capacitor to discharge.
3) Unplug all wires from the HV transformer terminals.
4) With a multimeter, select the resistance/continuity scale and measure the resistance across the secondary terminal and ground as shown in the picture on the right.
5) The measured resistance value should be 50 ohms.

- If the ohm reading is very low, very high, or open, the replace the transformer.

High Voltage Capacitor

The capacitor utilized in the microwave circuit stores energy during half of the power cycle. It releases it during the other half of the cycle and aids the transformer to produce the 4.000V of continuous current to the Magnetron.

The capacitor has an internal drainage resistor (10MΩ) to assist with discharging when power is cut off. The necessary time for the complete discharge is of approximately 5 minutes.

Testing High Voltage Capacitor

WARNING: Never attempt to measure high voltage directly. It could result in death or serious injury. Always make sure the oven has been turned off and unplugged for at least 5 minutes before removing high voltage components for tests.

To perform the capacitor test, a multimeter will be necessary.

The multimeter has the function of testing capacitance. Connect the two probes of the multimeter, one in each input of the capacitor and check if the value in µF is in accord to the value presented in the label of the diode. For 50Hz capacitors, the value is 1,1 µF and, for 60Hz capacitors, the value is 0,92 µF.

High Voltage Diode

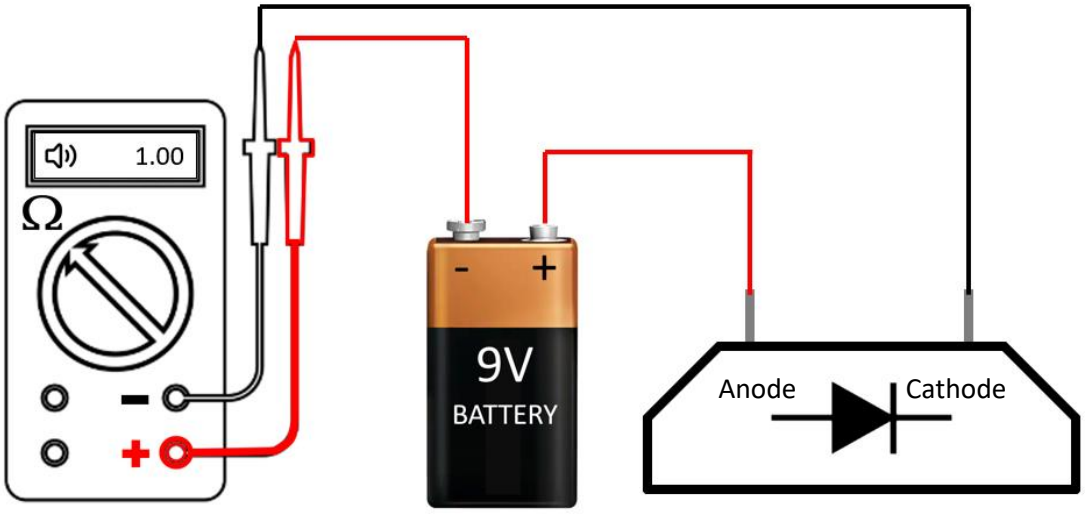
The high voltage diode is a device that acts as a bridge by connecting several semi-conductor diodes in a series to increase the reverse voltage capability and enables the current to flow in one direction, but not the other. The diode transforms the alternating current into continuous and prevents the filament voltage from becoming positive. The diode utilized in the Chef Express oven is of 16KV/750mA.

Testing HV Diode

WARNING: Never attempt to measure high voltage directly. Death or serious injury could result. Always make sure to discharge the capacitor manually before commencing repair.

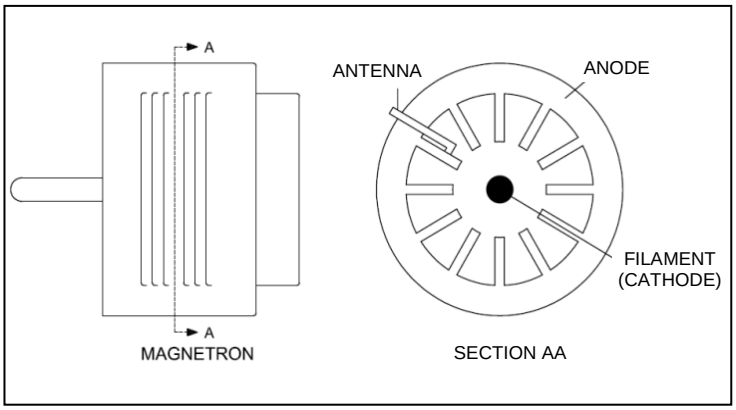
To perform the diode test, a multimeter and an extra 9V battery will be necessary.

1) Remove the rear panel of the unit.
2) Unplug the oven and wait 5 minutes.
3) Disconnect the cables from the diode.
4) Get the multimeter positive probe and connect to the battery negative pole.
5) Get the battery positive pole and connect to the diode anode input.
6) Get the multimeter negative probe and connect to the diode cathode input.
7) The multimeter display must show continuity. When the connection is done.
8) Invert the multimeter probes position to see if the diode conduces in both sides, it must present “open circuit” condition. If the diode presents continuity on both sides, replace the diode.

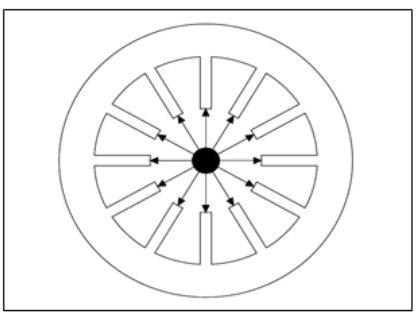


Magnetron

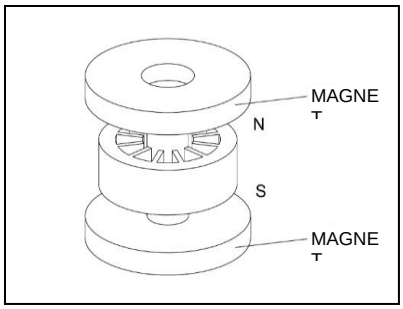
The Fit Express is equipped with two magnetrons in the microwave circuit. The structure of the Magnetron is basically composed of anode, filament (cathode), and the antenna. The anode is a hollow iron piece with several open cavities which are constituted by an even number of flaps pointing to the filament. The antenna is connected to the anode flaps. The filament (cathode) is in the center of the Magnetron.

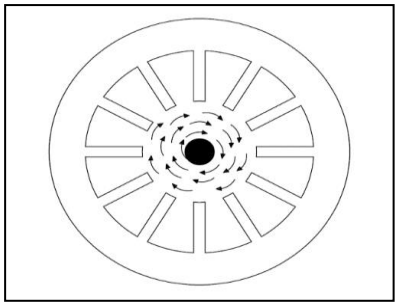


The cathode in the Magnetron is a filament that is supplied by the low voltage secondary (3.6 V) of the transformer which emits electrons when heated. These negatively charged electrons are attracted by the anode which is positively charged when the 4.000V are applied to the cathode.

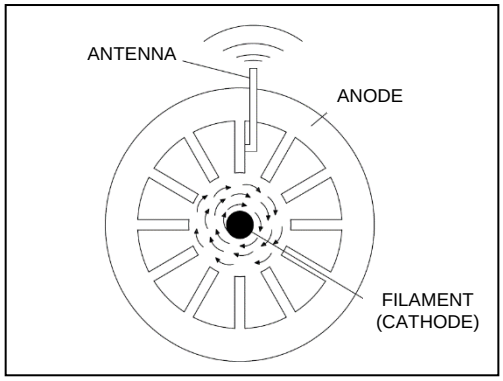


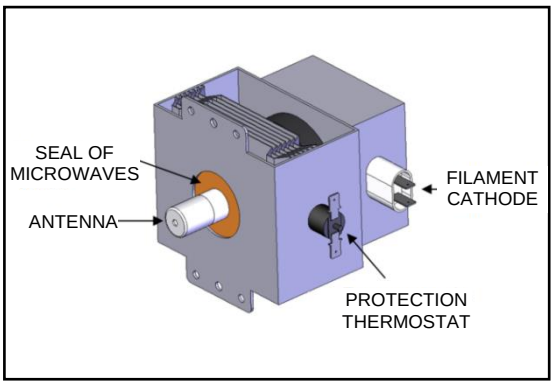
Powerful magnets are placed above and underneath the anode to generate a magnetic field along the length of the antenna. The magnetic field causes the electrons to follow a curved path around the cathode and the anode as seen in the picture below.





As the electrons pass by the cavities, the cavities begin to resonate and emit microwave radiation. The microwave radiation that is produced by the cavities is captured by the antenna and funneled into the waveguide which will guide the microwave radiation into the cook cavity. The microwave then gets attracted to the food product(s) due to the moisture.





Testing Magnetron

WARNING: Never attempt to measure high voltage directly. Could result in serious injury or death. Always make sure to discharge the capacitor manually before commencing repair.

1) Remove both sides, back and top covers from the unit.
2) Unplug the oven and wait 5 minutes.

3) Look for physical damage to the component.

4) Disconnect both cables from the magnetron.

5) With a multimeter set to resistance/continuity scale, measure the continuity between both magnetron terminals as shown in the picture beside.

   - If the resistance measure zero ohms as shown in picture below, move on to step 6.
   - If the reading shows high resistance or open, the magnetron is faulty and will need to be replaced.

6) With the multimeter set to resistance/continuity scale, measure the continuity between each terminal and ground as shown in the picture below.

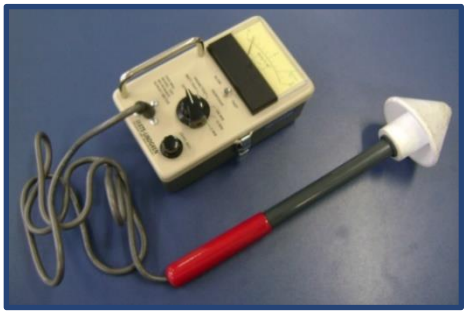
   - If the resistance measures zero ohms from the terminal to ground, the magnetron is good.
   - If the resistance measures continuity from the terminal to ground, the magnetron is faulty and needs to be replaced.

Microwave Seals and Gaskets

The oven equipped with seals and gaskets to eliminate excessive microwave exposure. These seals need to be inspected at the time of service by the field technician for proper functionality.

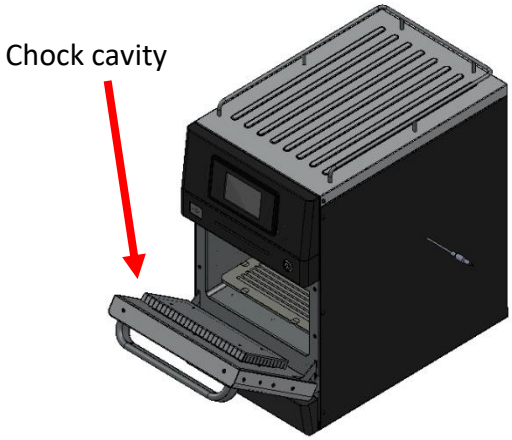
Proper leak testing is performed with a quality test meter designed to sense at 2.45Ghz frequency. A higher quality meter with an analog dial or digital display is highly recommended to reduce any false

readings. Lees expensive meters with only an audible alarm are not recommended. The meter needs to register readings of less than 1.0mW/cm2 and greater than 5.0mW/cm2 for proper documentation by the field technician.

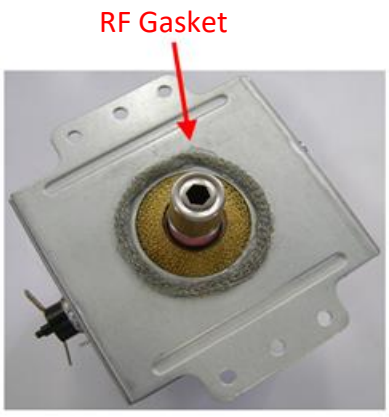


The Fit Express oven utilizes a door choke design to efficiently seal the microwaves in the oven cavity. The technician needs to inspect the door surfaces for debris build up and remove any build up that may have accumulated between the door and the oven cavity surfaces.

The slots or openings of door choke must also be open and free of any food debris to operate at top performance.

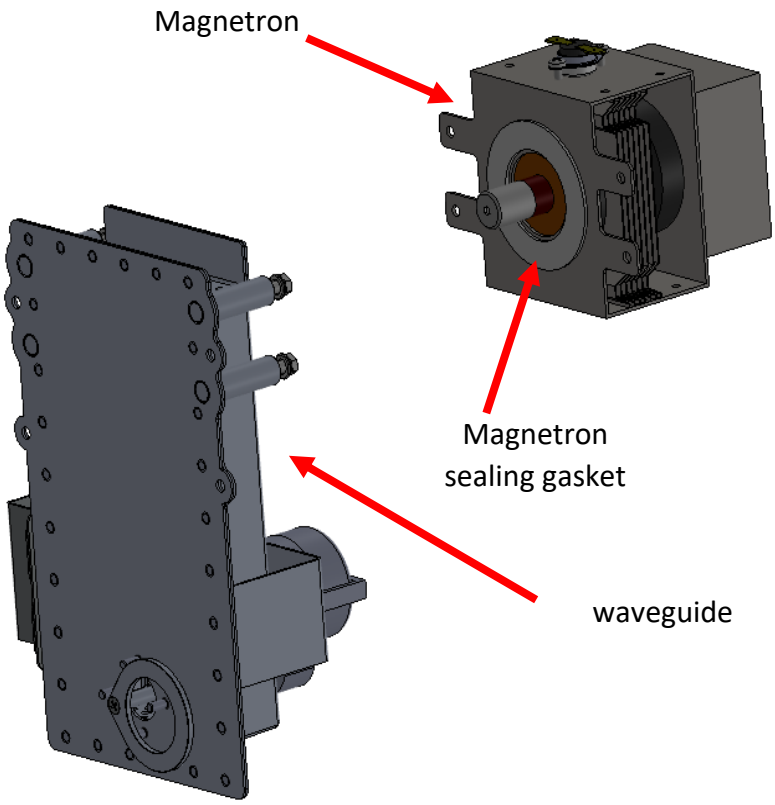


The magnetrons are equipped with an additional RF gasket that is placed around the antenna and the existing magnetron gasket. This additional gasket must have both ends of the material meet without any gaps to ensure a proper seal. The purpose of these gaskets is to provide the seal between the magnetron and the waveguide.



Inspect both gaskets for proper alignment and performance every time the magnetrons are removed during a service visit for any reason.

The microwave enters the cook cavity through the waveguides. These waveguides are attached to the cook cavity sides with a special stainless-steel gasket between the two surfaces. This gasket is held in place by the compression of the mounting hardware. High temperature silicone must not be used to seal the gasket to the waveguide because the gasket needs an electrical connection to the waveguide. The silicone is transparent to microwave which could allow microwave leakage around the opening. If replacing or servicing the waveguide, ensure that the surfaces are clean, and the gasket makes even contact over the entire surfaces. Replace the gasket if necessary.



Microwave leakage test.

An RF leakage test should be performed after the following service tasks:

- Removal, replacement and/or adjustment of the gate.
- Removal and/or replacement of the waveguide
- Removal and/or replacement of Magnetron
- Door switch adjustment and/or replacement

WARNING: This procedure requires work when the oven surfaces are extremely hot. Please be careful to avoid burns during testing.

1) Turn on the oven and allow the unit to reach the set temperature.

2) Once the unit has reached temperature, fill a microwave and high temperature safe container with 275 ml of water at 20°C / 68°F +/- 5° and place it in the center of the cavity and close the door (Pyrex or similar product recommended).

3) Turn on the exploratory meter and perform all applicable battery and self-test checks according to the manufacturer's instructions.

4) Choose or create a menu program that is set to 100% microwave power and 30-45 seconds duration to allow sufficient time to move the probe around the entire perimeter of the door.

5) Mark the cooking cycle and measure the microwave emission with the meter, placing it perpendicular to the surface being measured. Be sure to move the meter at 1.0 inch per second while performing the test.

6) While performing the leak test, note the peak areas of the meter that approach 5 mW/cm2 for later re-measurement.

illustrative image only

7) Replace the water after scanning the door or every 30-45 seconds. If testing is still required, do not test with boiling water. The water should start the test at the required temperature of 20C / 68F +/- 5 degrees.
8) Be sure to retest areas that have a peak reading, allow the meter to remain in that area for approximately 15 seconds and measure the highest reading.

9) If microwave leakage is found, check for damage and adjust the door to make a proper seal.

10) Final readings should be less than 5 mW/cm2. If a higher level is observed, notify Practice Technical Support and take the oven out of service until proper repairs or adjustments can be made to bring the oven back within a safe operating level.

IMPINGMENT SYSTEM

Blower Motor

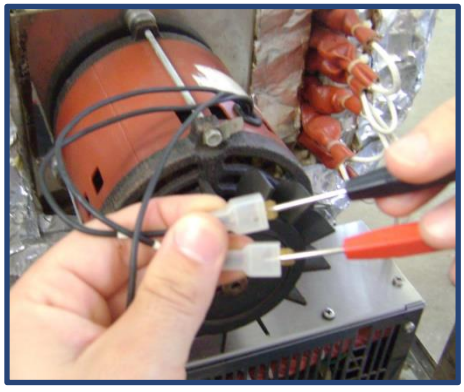
The Fit Express oven utilizes a three-phase motor to spin the turbine clockwise and is controlled by a frequency inverter (Speed Control).

Testing Blower Motor

WARNING: The blower motor is located on the back of the unit in between the microwave circuits. For safety reasons, please unplug the unit and discharge the capacitors before continuing repairs.

Please follow the instructions below to test the blower motor:

1) Unplug the oven and discharge the capacitors for safety purposes.
2) Remove the rear panel from the unit.
3) Unplug all 3 wires from the blower motor labeled V, W, U.
4) Check continuity across all 3 windings in different combinations.
   - Each combination should have around 5.6 ohms (ex. V to W, V to U, W to U).
   - If no continuity is present across the windings or if the continuity is significantly different across one or more windings, replace blower motor.
5) If continuity reading is good, pull blower motor out and try to physically spin with your hand. If blower motor wheel is seized, replace the blower motor.



Frequency inverter (MITSUBISHI D700)

The Fit Express furnace regulates the blower motor speed with frequency. This inverter uses a data communication protocol called MODBUS to communicate with the main control board. The following picture shows the connections of the frequency inverter.

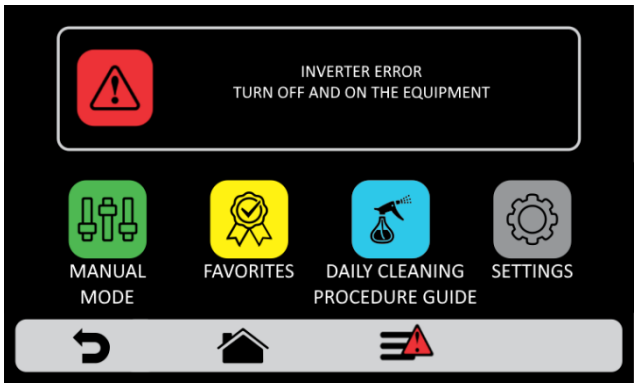
Note: The ground wire must be properly grounded to the oven chassis.

Frequency inverters troubleshoot

The frequency inverter is in constant communication with the electronic board. If the control board registers a problem (e.g., communication lost), the control board restarts the inverter to solve the problem.

The electronics board will attempt to re-establish communication with the frequency converter. If the reset solves the problem, the oven will continue normal operation.

If communication is not re-established immediately, the main control board will attempt to restart the inverter ten times before an error message appears on the display, as shown below.



Frequency Inverter Errors

The main control board will keep a record of the count of faults occurring in the inverter. To find out this information, follow the steps below:

1) Within the Options screens, click on the "Configuration" icon and insert the manufacturer's password: 459381.

2) Go to the "COUNTERS" menu and select "ERRORS".

3) The following screen will appear showing the inverter error count.

The following table shows the description of each status as well as the indication on the HMI display.

INDICACIÓN DEL PANEL DE OPERACIÓN		***Description***
E---	E---	fault log
HOLd	HOLD	Operating panel locking
Er 1 to Er4	Er1 – Er4	Parameter typing error
LOCd	LOCD	Blocked password
Err.	Err.	Frequency inverter reset
OL	OL	Overcurrent prevention
oL	oL	Overvoltage prevention
rb	RB	Regenerative brake pre-alarm
TH	TH	Pre-alarm function of electronic thermal relay
PS	PS	Electronic thermal relay pre-alarm function
MT	MT	Maintenance signal output
Uu	UV	Low voltage
SA	SA	Safety stop
Fn	FN	Blower alarm
E.OC 1	E.OC1	Overcurrent disconnection during acceleration
E.OC2	E.OC2	Overcurrent cut-off during constant speed
E.OC3	E.OC3	Overcurrent disconnection during deceleration or standstill

E.OV1	E.OV1	Disconnection of regenerative overvoltage during acceleration
E.OV2	E.OV2	Disconnection of regenerative overvoltage during continuous speed
E.OV3	E.OV3	Disconnection of regenerative overvoltage during deceleration or standstill
E.THT	E.THT	Inverter overload shutdown (electronic thermal O/L relay function)
E.THM	E.THM	Motor overload disconnection (electronic thermal O/L relay function)
E.FIN	E.FIN	Heat sink overheating
E.ILF	E.ILF	Input phase loss
E.OLT	E.OLT	Stall prevention stop
E. BE	E. BE	Brake transistor alarm detection
E. GF	E. GF	Ground fault (earth) overcurrent on the output side at start-up
E. LF	E. LF	Output phase loss
E.OHT	E.OHT	External thermal relay operation
E.PTC	E.PTC	PTC thermistor operation
E. PE	E. PE	Parameter storage device failure
E.PUE	E.PUE	PU disconnection
E.RET	E.RET	Excessive retry count
E. 5	E. 5	CPU failure
E.CPU	E.CPU	

E.CdO	E.CDO	Exceeding the output current detection value
E.IOH	E.IOH	Inrush current limit circuit failure
E.AIE	E.AIE	Analog input failure
E.SAF	E.SAF	Failure of the safety circuit

High Limit Thermostat

The high limit thermostat has an automatic reset bulb and does not need to be manually pushed. There are two high limit thermostats installed on the right side of the unit next to the heater breakers to protect the convection heater and Infrared element. The high limit bulbs are installed outside of the bottom chamber surface and on the rear next to the convection heater.

The high limit thermostat protects the oven against overheating. When the oven temperature rises above 752°F / 400°C, the contacts open and shuts off power to the heaters.

The high limit will reset automatically and usually happens within 5 minutes.

Testing High Limit Thermostat

1) Unplug the oven.
2) Remove the right-side panel of the unit.
3) Unplug the wires and test or continuity.
    - If continuity is present, the high limit is not tripped.

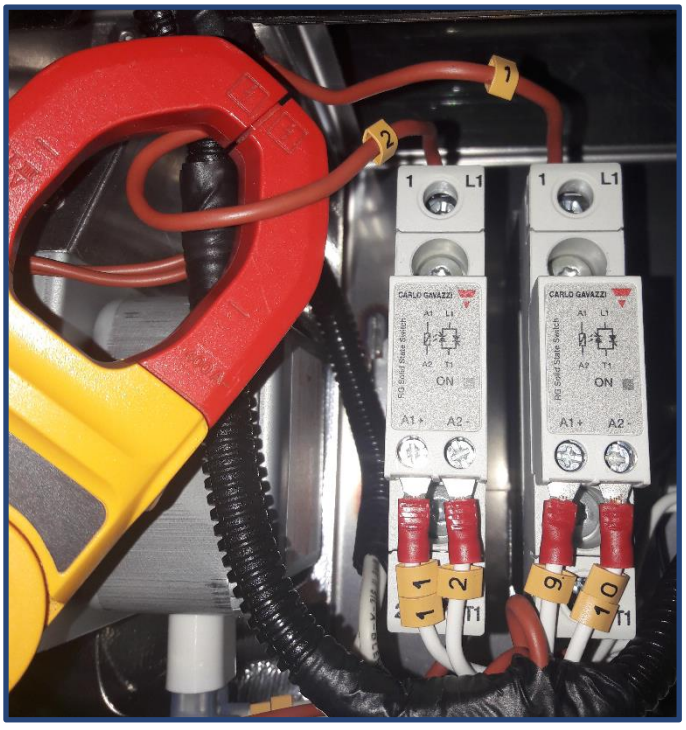
- If there is not continuity between both terminals, the high limit has tripped and will need to be replace or further troubleshooting is required to find the cause.

Convection Heater

The Fit Express oven utilizes a 3000W, 208/240V (3X1000W) circular convection heater that is installed inside the rear chamber around the blower turbine.

Testing Convection Heater

1) Remove the side covers and top oven panels.
2) Look for any physical damage to the heater or wires. If any damage is seen, remember to unplug the unit before continuing.
3) Locate the top heater solid state switch on top of unit to get amp draw.
4) Place amp clamp around top heater wire (cable number 2) and turn unit on.

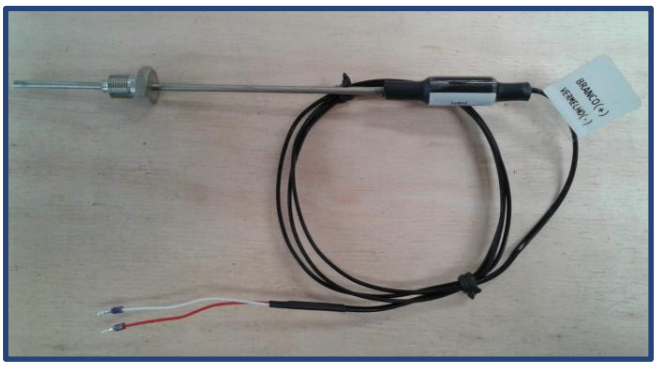


- The amp draw should be between 14-16 amps on the cable “2”.

- If there is no amp draw, verify the heater solid state switch is not damage. If the solid state switch is not damage, replace the heater located in the back of the unit.

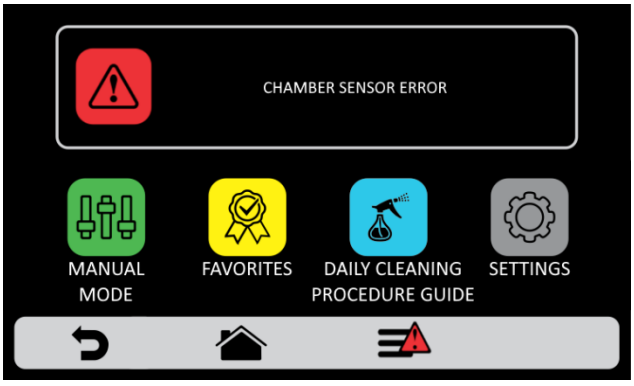
Temperature Sensor

The Fit Express oven utilizes a type J temperature sensor. The sensor is responsible for registering the temperature for the cook cavity and relaying the information to the main control board.



Testing Temperature Sensors

If the sensors has a problem, the board will stop the operation of the oven and will display the following fault message on the screen: **CHAMER SENSOR ERROR.**

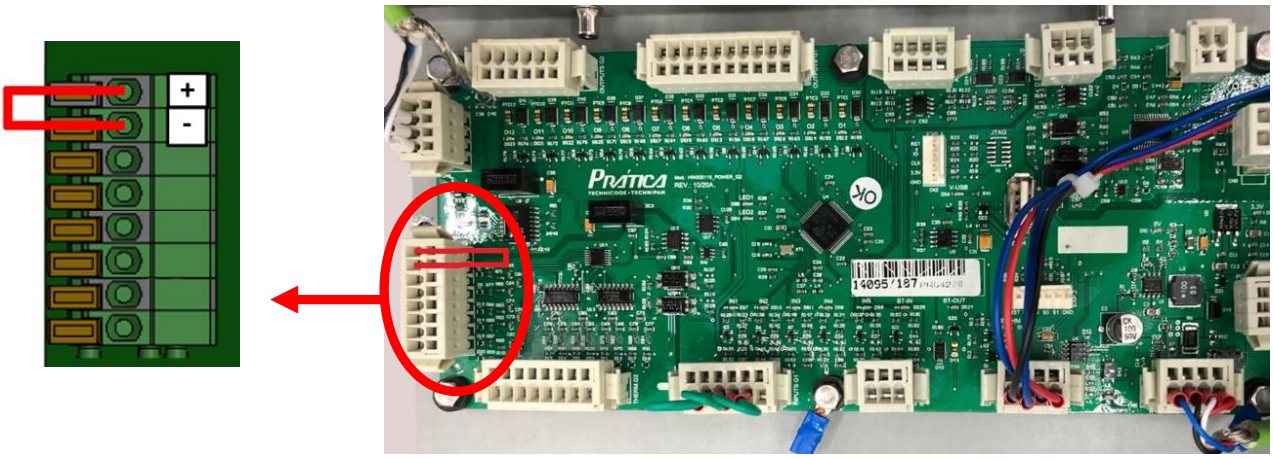


To test the temperature sensor, follow the steps below.

1) Unplug the oven.
2) Remove both side and top panels from the unit.
3) Visually check for physical damage to the sensor or wires.
4) Remove both wires from the main control board and test for continuity.
    - If continuity is present, move on to step 5.
    - If no continuity is present, the sensor is open and needs to be replaced.

5) If continuity is present, a jumper wire can be placed on the control board terminals where the temperature sensor wires were installed. Once the jumper wire is installed, the board should register room temperature on the temperature sensor verification screen.

WARNING: Make sure to unplug the unit before installing jumper wire.



6) Once the jumper wire is installed, plug the unit back in and in the Options Screen, verify:

- If the sensor is reading the room temperature, then the board is registering correctly, and the sensor needs to be replaced.
- If the board registers any other reading besides room temperature, the Power Module Board is faulty and needs to be replaced.

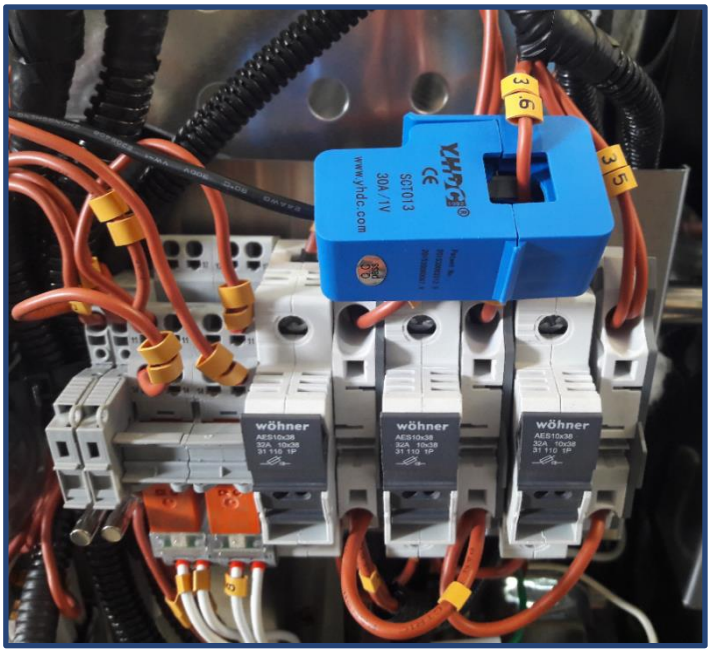
CONTROL SYSTEM

Main Control Board/Display

The control board signals each oven component based on commands sent from the IHM electronic board that were selected by the operator.

The Power Module board has connected a current sensor which measures the amp draw of the microwave circuit through the brown CT wire looping through it. The current sensor is what determines if the microwave circuit is working correctly by communicating the registered amp draw to the board.

The current sensor is connected around the wire number 36 of the power distribution bar on the right side of the oven.



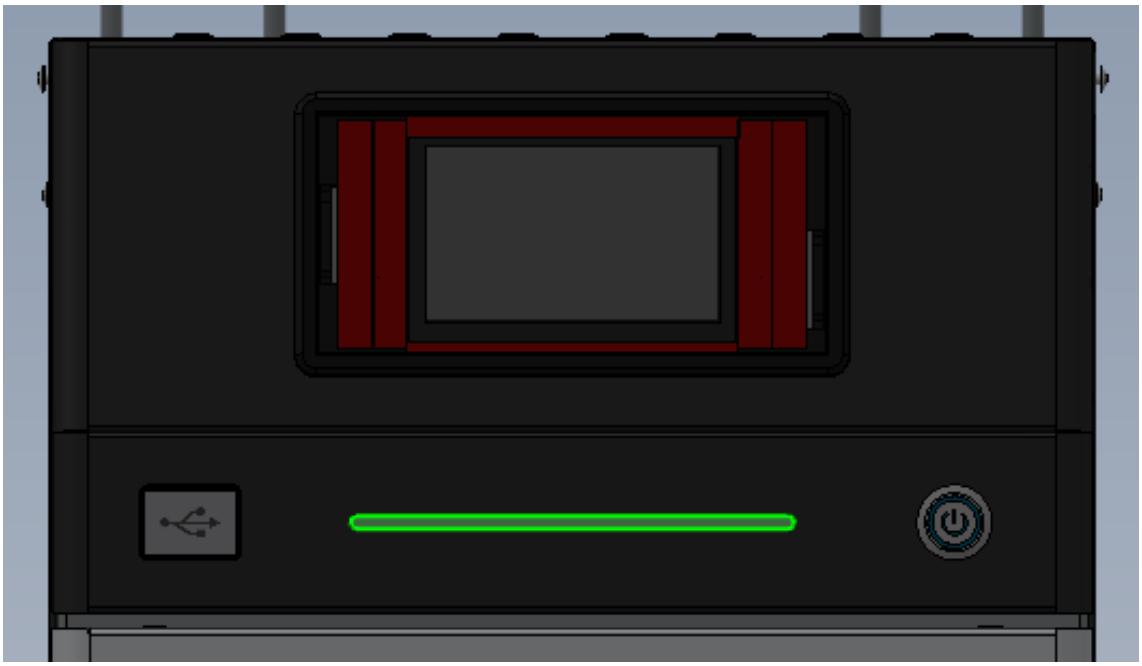
The IHM electronic board can sound in different ways. The sounds indicate different errors or card details so that you can identify the maintenance needed for the situation.

The table below presents the indications of the IHM card through the sounds:

ID	*Indication*	*Type*	*Description*
1	1 short beep	Normal operation	Firmware OK. Update files not found
2	2 shorts beeps	Update	New firmware found and successfully updated.
3	2 long beeps	Hardware error	Memory initialization error or memory not inserted in the card.
4	3 long beeps	Firmware error	Hardware without client firmware and update files not found.
5	4 long beeps largos	Firmware error	Error during firmware update process

LED BAR RGB CODES

The RGB LED plate has the function of indicating, in luminous form, the functions that the oven is performing. The colors vary according to the function currently enabled.



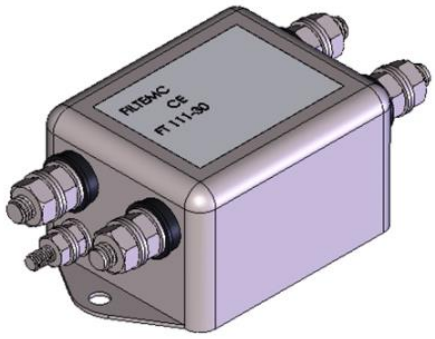
The following table indicates the color that the LEDs will assume according to each function:

FUNCTION	COLOR	COLOR CODE (RGB)			BEHAVIOR
		R	G	B	
TURNING ON		50	50	255	INTERMITENT (5s)
STAND BY		50	50	255	INTERMITENT (5s)
PREHEATING		150	50	0	POWERED ON
TEMPERATURE CONTROL		0	0	255	POWERED ON
CLEANING		222	0	222	POWERED ON
RECIPE CYCLE		150	50	0	POWERED ON
END OF RECIPE		0	255	0	INTERMITENT (3s)
FAULT		255	255	0	POWERED ON
ERROR		150	0	0	POWERED ON

POWER COMPONENTS

EMI Filter

The EMI Filter helps suppress the amount of RF interface through the electrical system that is emitted by the microwave circuit. The EMI filter is installed on back of the unit below the blower motor.



Testing EMI Filter

To test the EMI Filter, test across both terminals for incoming and outgoing AC voltage to verify that the voltage is passing through correctly.

1) Remove rear panel from unit.
2) Measure voltage across both input terminals (should be (208 or 240V).
3) Measure voltage across both output terminals, if the voltage is the same as input, the EMI Filter is good. If the voltage is different by a large margin, replace the EMI Filter.

12VDC Power Supply

The DC Power Supply outputs 12V DC to the main control board.

Testing Power Supply

WARNING: Make sure to connect the positive (red) Power Supply wire to terminal 1 and negative (black) to terminal 2 on the control board. Switching polarities will cause damage to the control board.

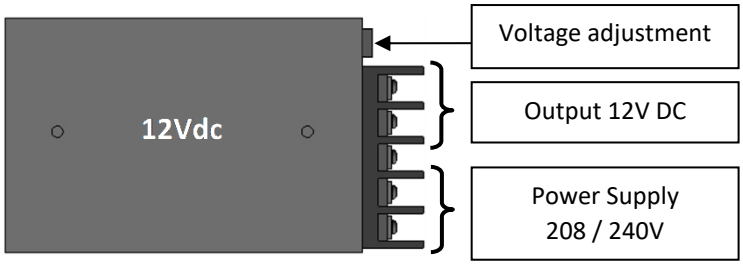
1) Remove both side and top panels from unit.

2) With the unit on, measure across L1 and L2 terminals for AC voltage (208/240) as show in the picture below.

- If the multimeter reads correct line voltage, move on to step 3.
- If the multimeter does not read line voltage, verify the wires are secure, the store breaker is not tripped and correct voltage is getting to the unit, or oven fuse is not blown.

3) Measure the DC voltage in the bottom two terminals labeled V- and V+ as shown in the picture.

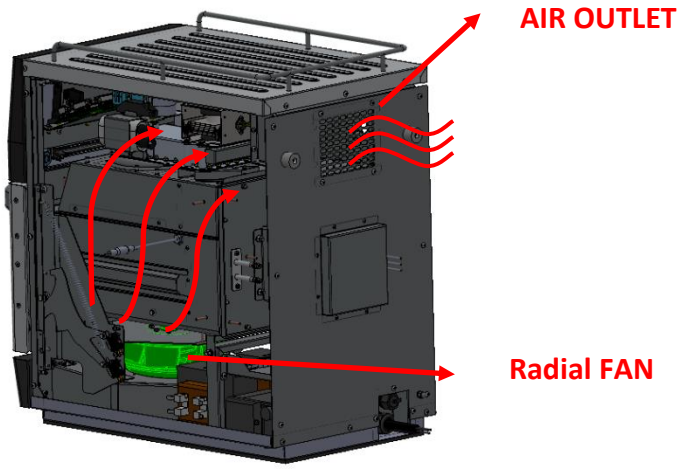
- If the multimeter registers 12V DC, then power supply is good.
- If the multimeter registers a voltage of 10% higher or lower than 12V DC, adjust the voltage using the regulator screw located on the side of the terminals.



- If line voltage is present and there is no DC output, replace the power supply.

Ventilation System

The Fit Express oven ventilation system uses one radial fan that exhaust all of the hot air from the motor, electronic compartment and high voltage compartment.



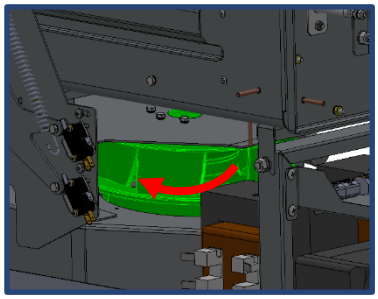
Testing Cooling Fans

WARNING: For safety purposes, manually discharge capacitors before troubleshooting the radial fan due to proximity.

1) Unplug the unit and remove the side panels

2) Manually verify the cooling fan spins freely and not seized.

   - If cooling fan is seized / not spinning, replace the cooling fan.

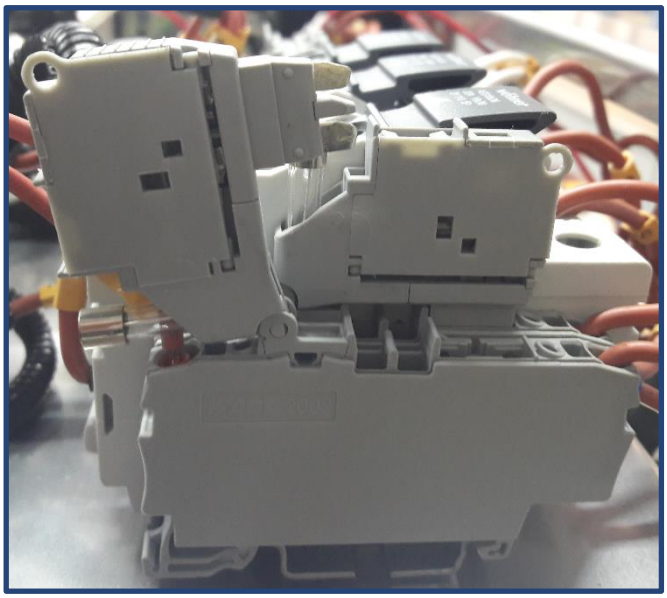

Illustrative image only

3) Disconnect the cooling fan cables from the connectors and check for continuity.

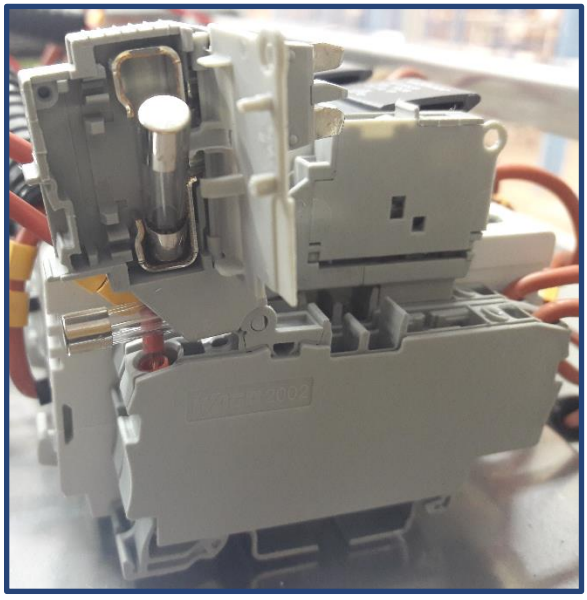
   - If the meter registers continuity, then the cooling fan is fine.
   - If the meter registers no continuity or open, replace the cooling fan.

Testing Control System Fuses

The fuses are mounted on a din rail and can be removed with the use of a flathead screwdriver.



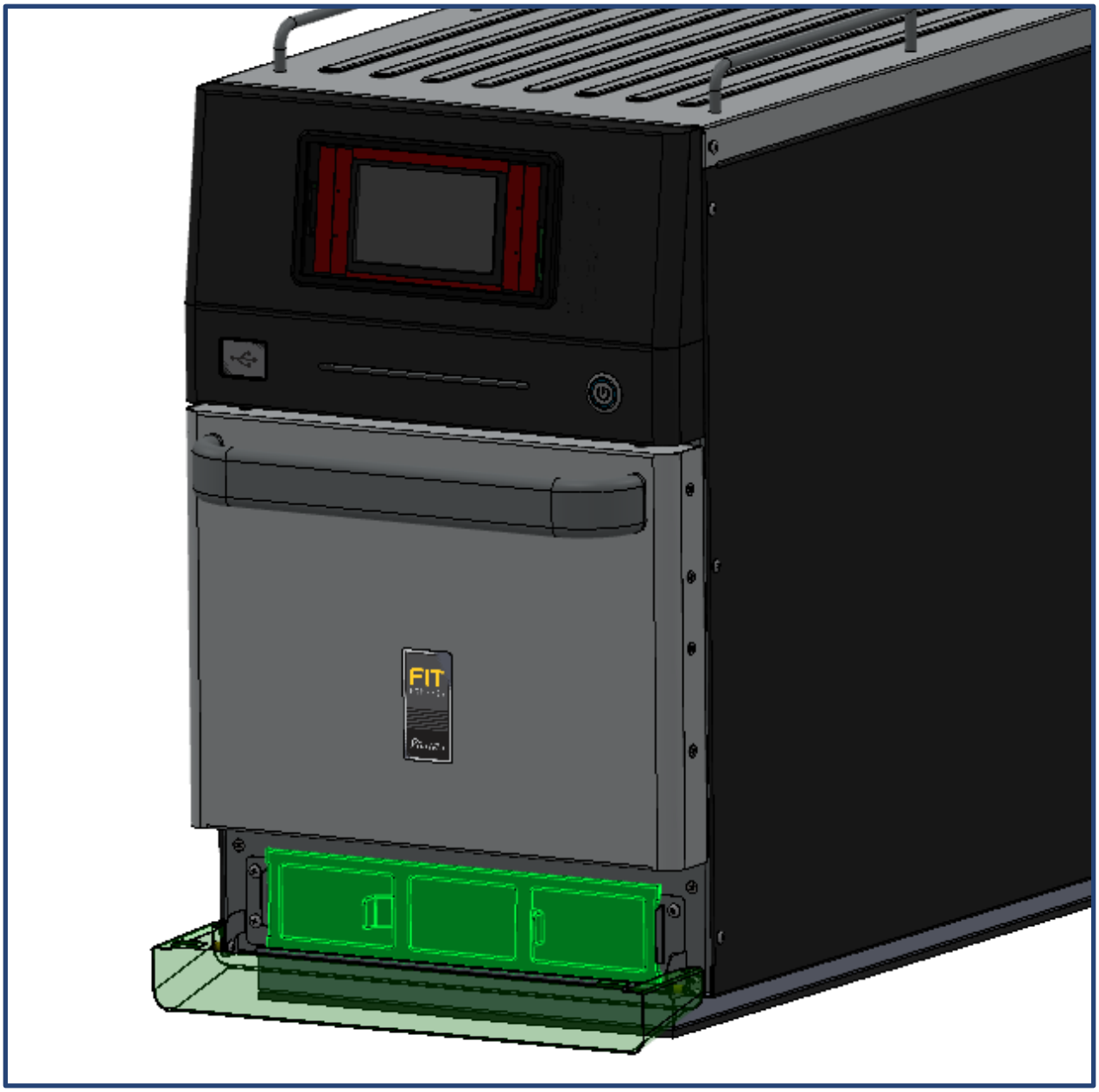
1) Unplug the oven and remove the right-side panel.
2) With a flathead screwdriver, locate the tab on the bottom and push down with the screwdriver. At this point, the fuse and holder will release allowing you access to open the side tab where the fuse is located.
3) Remove the fuse and check for continuity.
    - If the fuse reads open, replace the fuse.



FILTERING SYSTEM

Air Filter

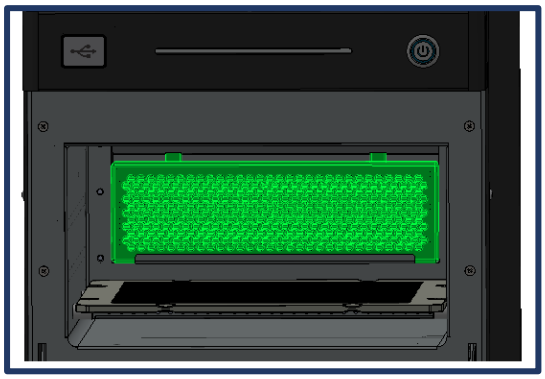
The main purpose of the air filter is to prevent dirt from entering the unit. The filter will block dirt, dust, lint and other particles that can cause buildup in the ventilation system and other components. The filter is located on the bottom of the unit and can be removed by opening the guard under the door and disengaging the filter from its holder. The filter can be rinsed with water and reinstalled (allow the filter to air dry before reinstalling it in the oven). This filter requires regular maintenance and occasional replacement (if damaged). The filter must be kept clean to ensure proper ventilation of the oven components.

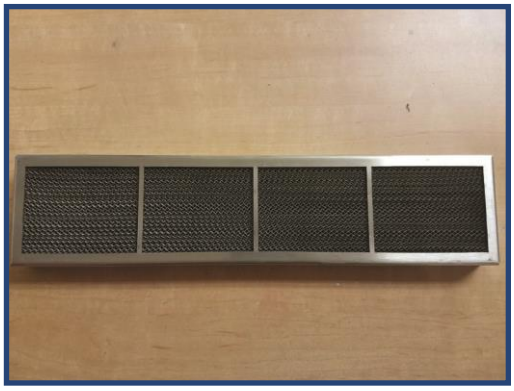


Catalytic converter

The catalytic converter is located inside the cooking cavity in the rear wall and is responsible for cleaning the recirculation air flow. The catalyst works by burning the grease-laden vapors and breaking them down into CO2 and H2O as it passes through the catalytic converter. The catalytic converter will operate most efficiently at temperatures above 246 °C.

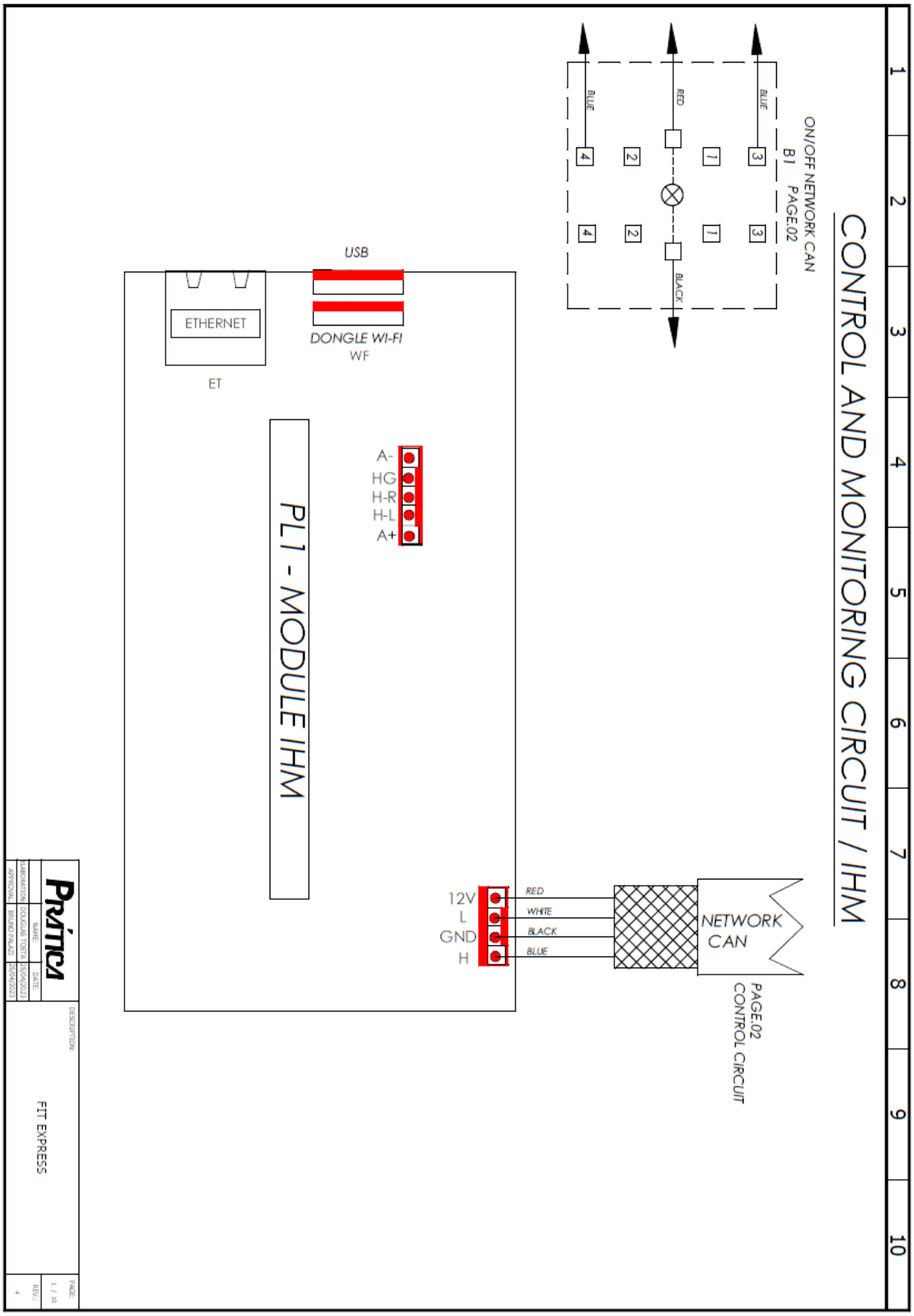
CAUTION: The catalytic converter can only be cleaned with a Prática Klimaquip approved non-caustic oven cleaner and rinsed with distilled water. The catalytic converter can be seriously damaged if cleaned with any other product.



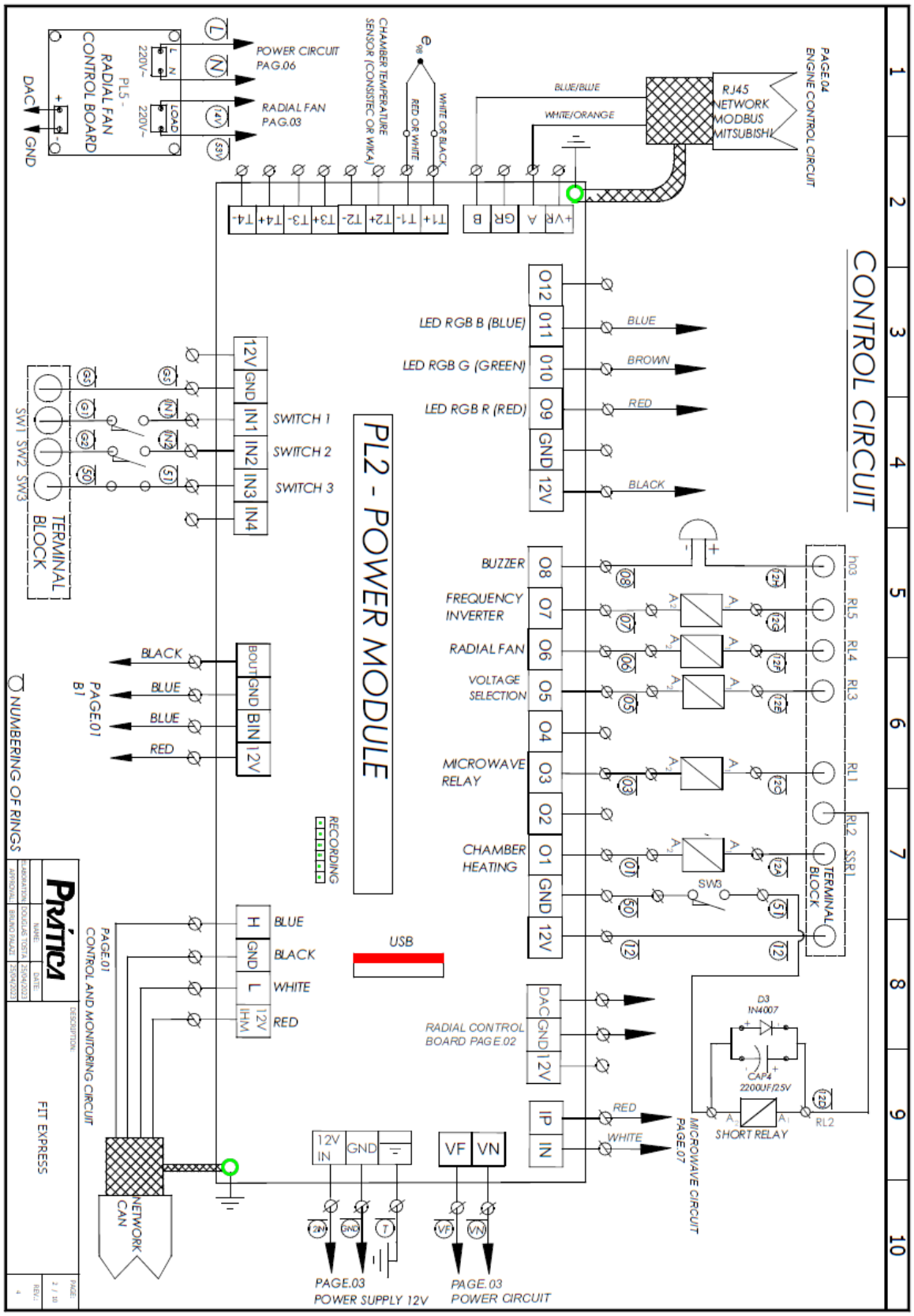


ELECTRICAL DIAGRAM FIT EXPRESS

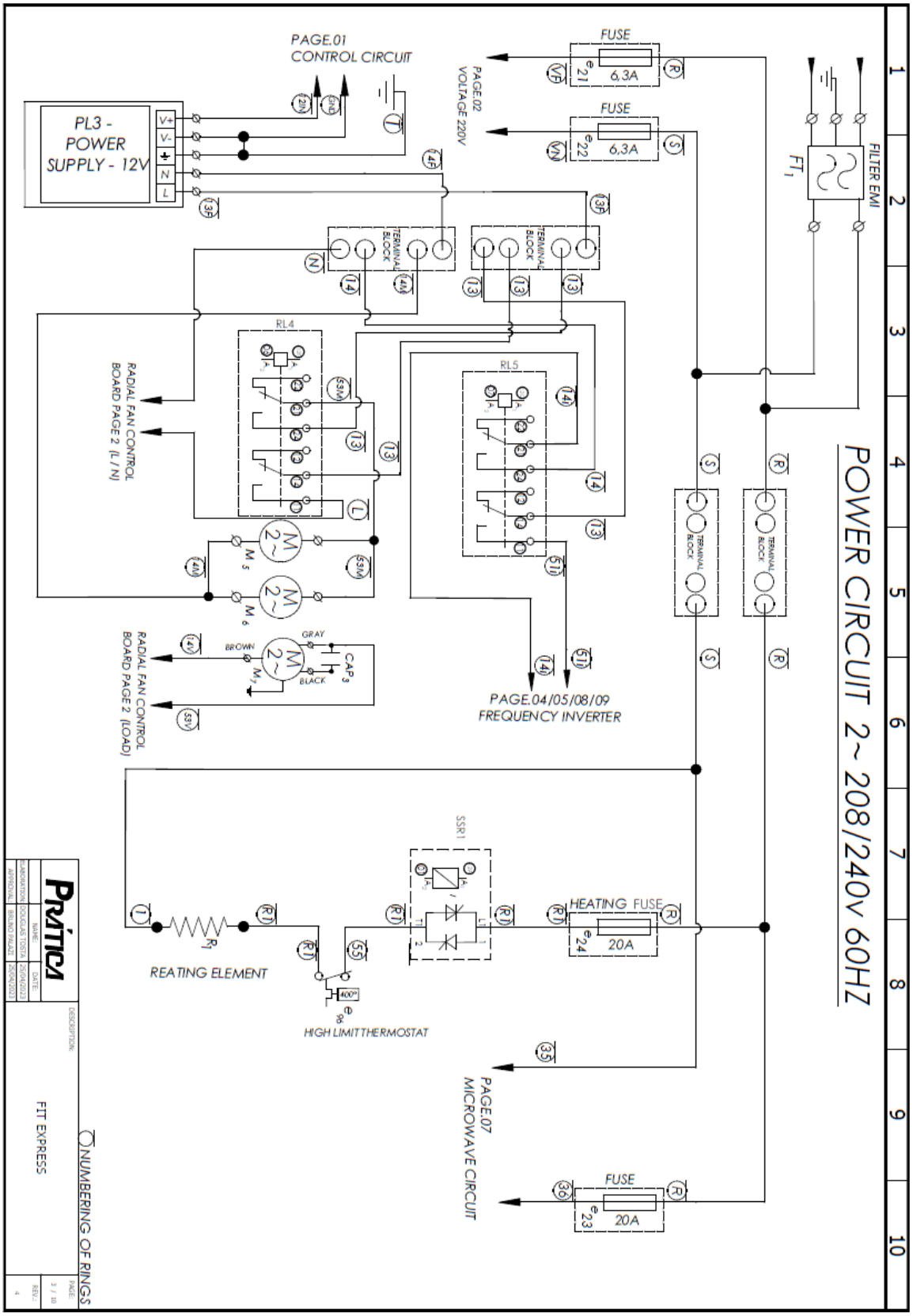
Display IHM – US/Canada



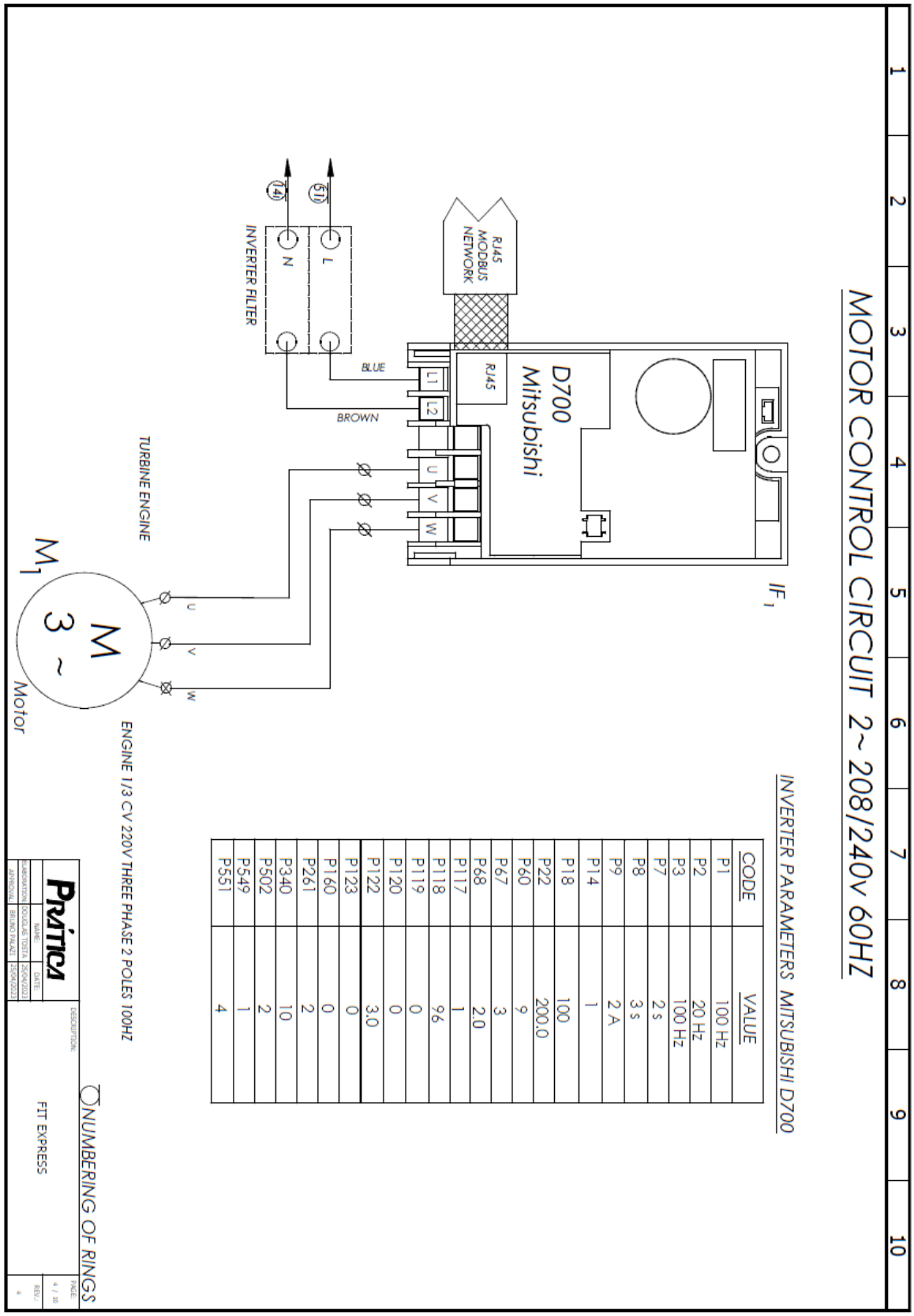
Control board – US/Canada



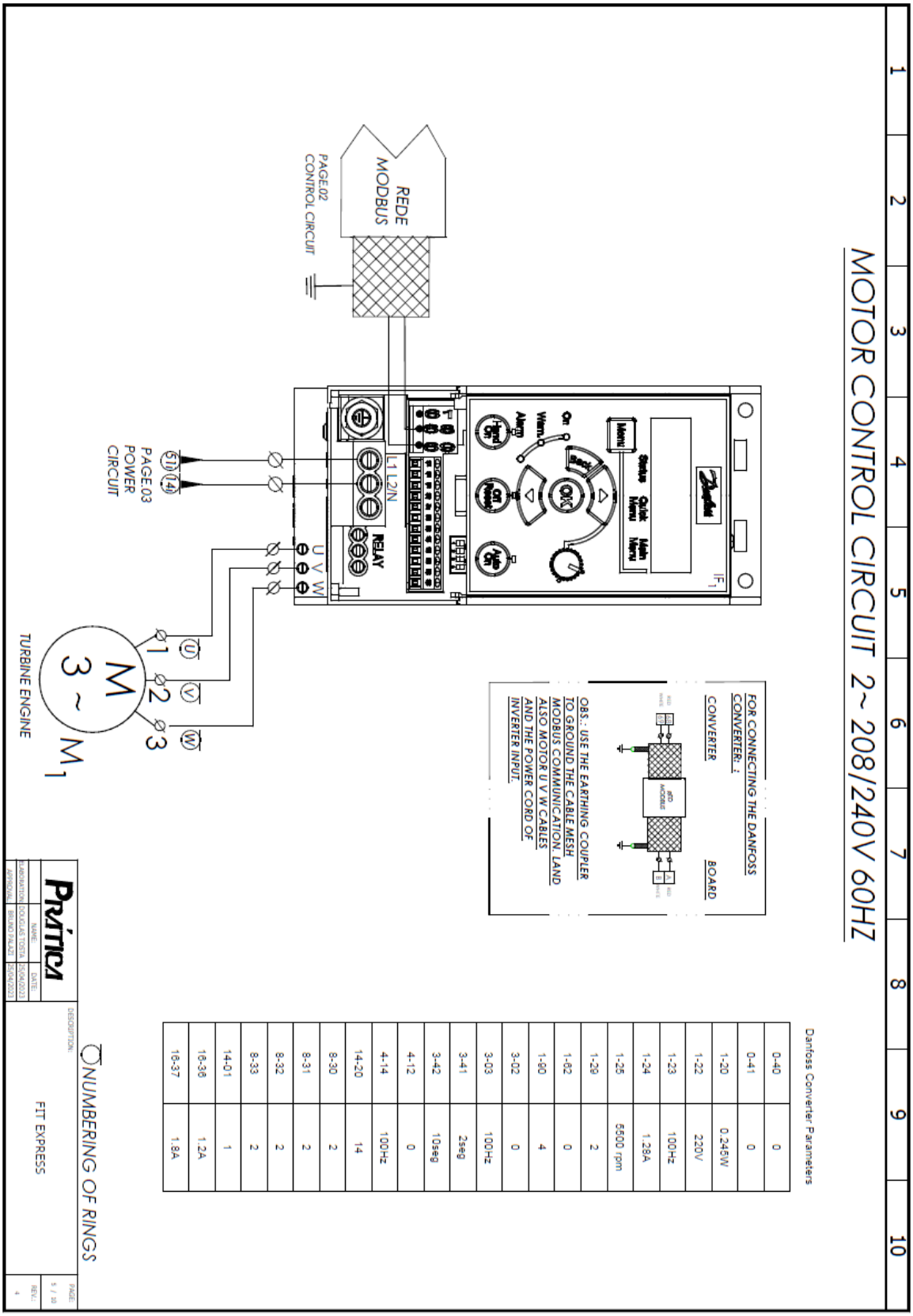
Power circuit – US/Canada



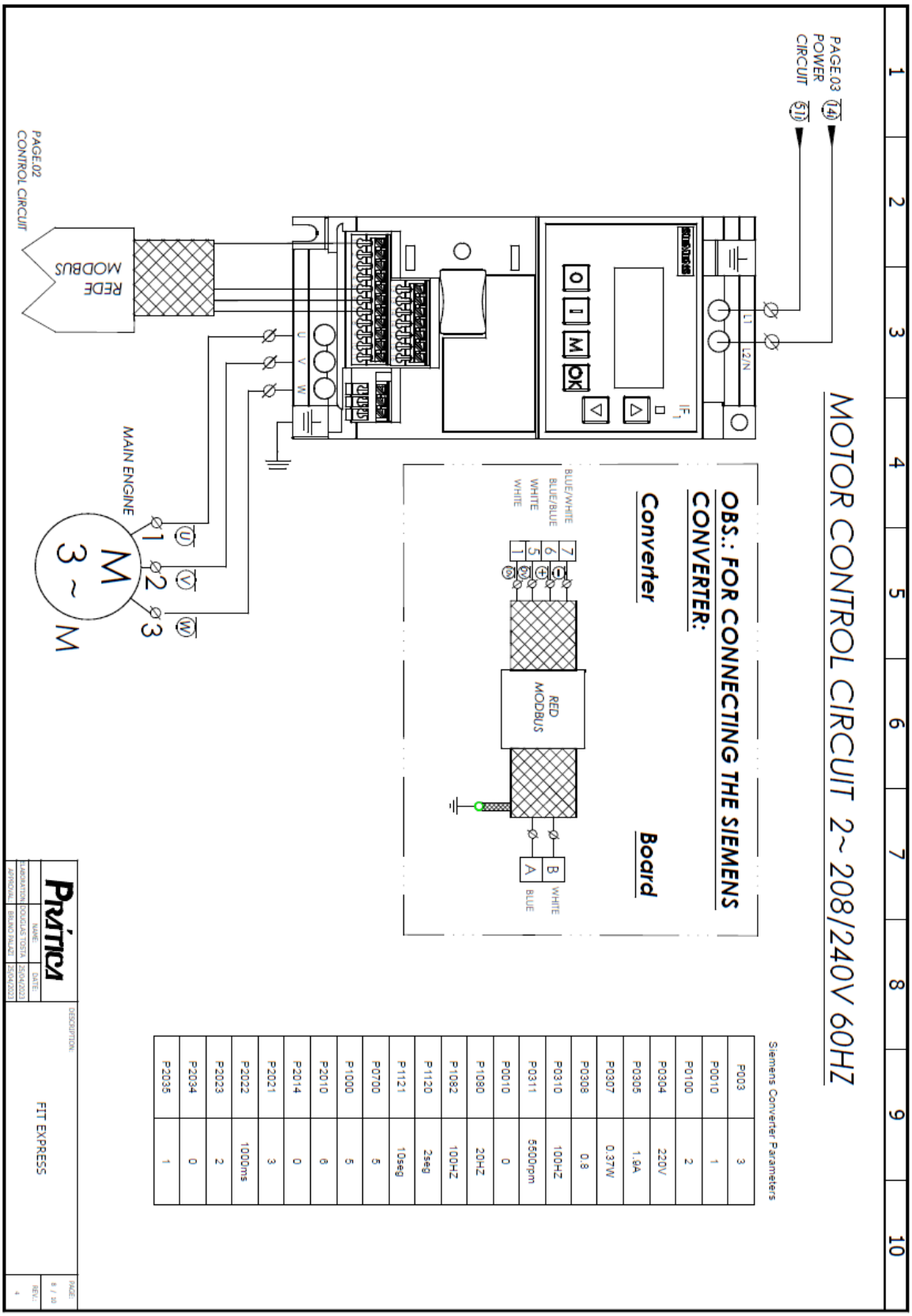
Blower control Mitsubishi – US/Canada



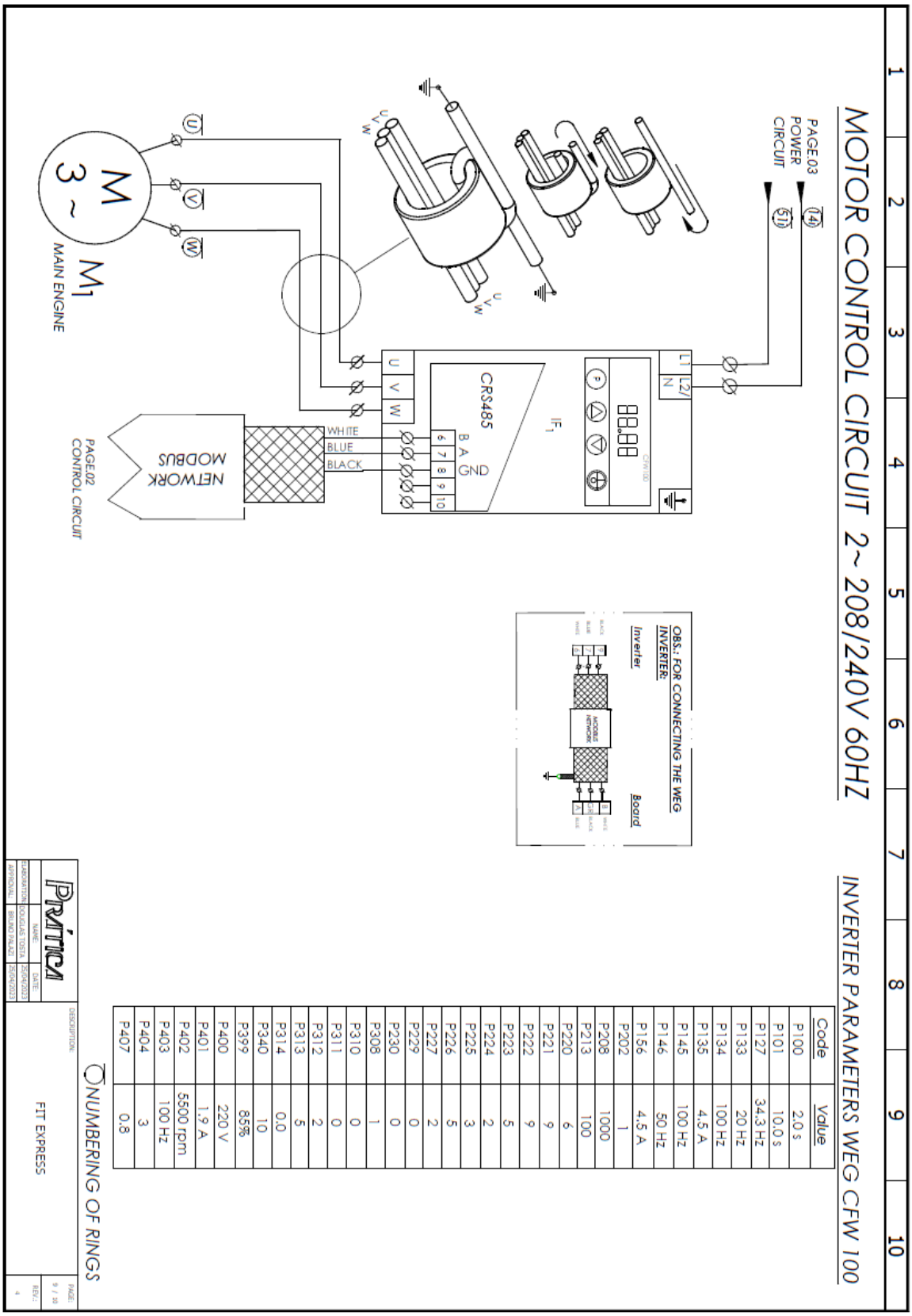
Blower control Danfoss – US/Canada



Blower control Siemens – US/Canada

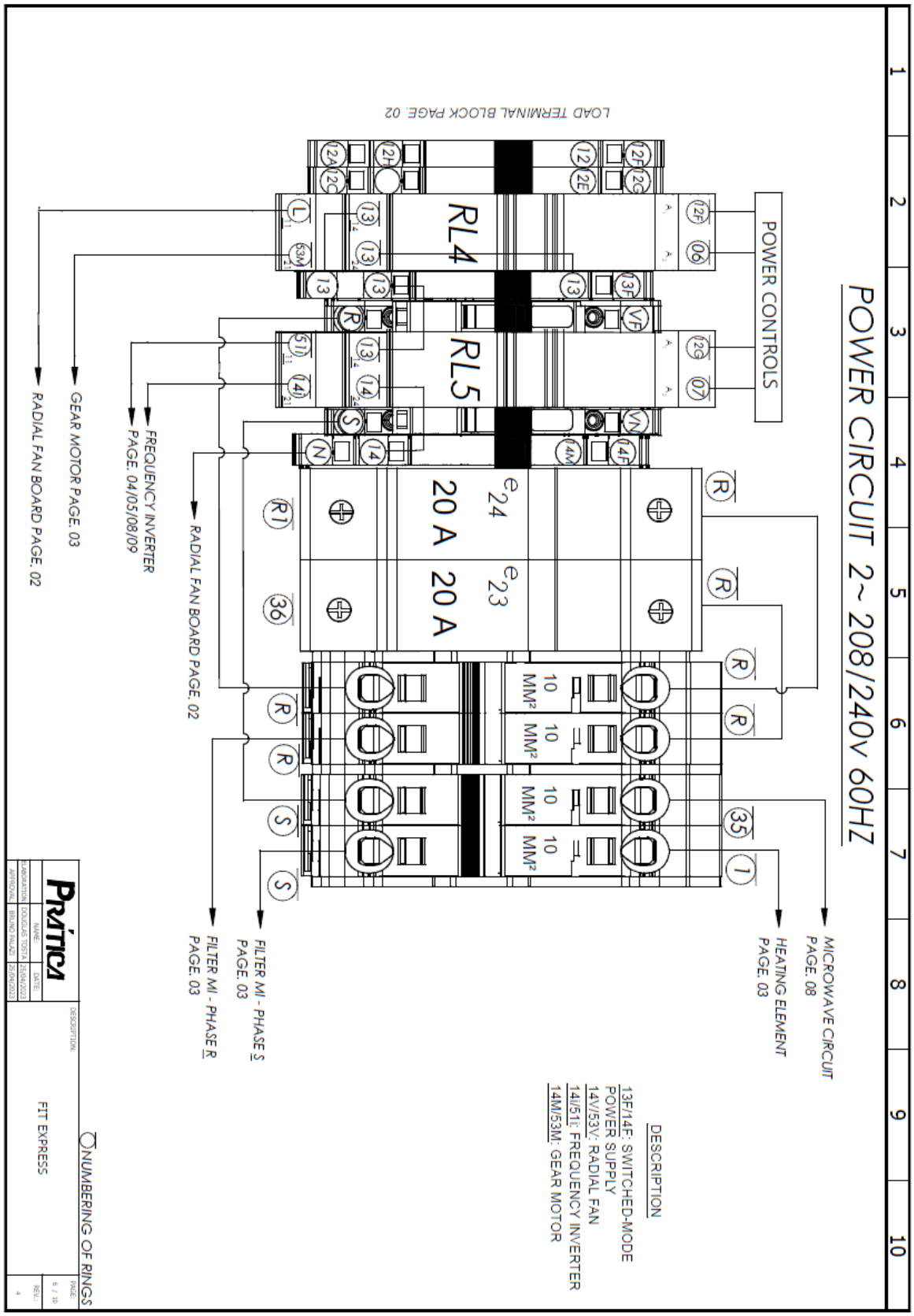


Blower control Weg – US/Canada

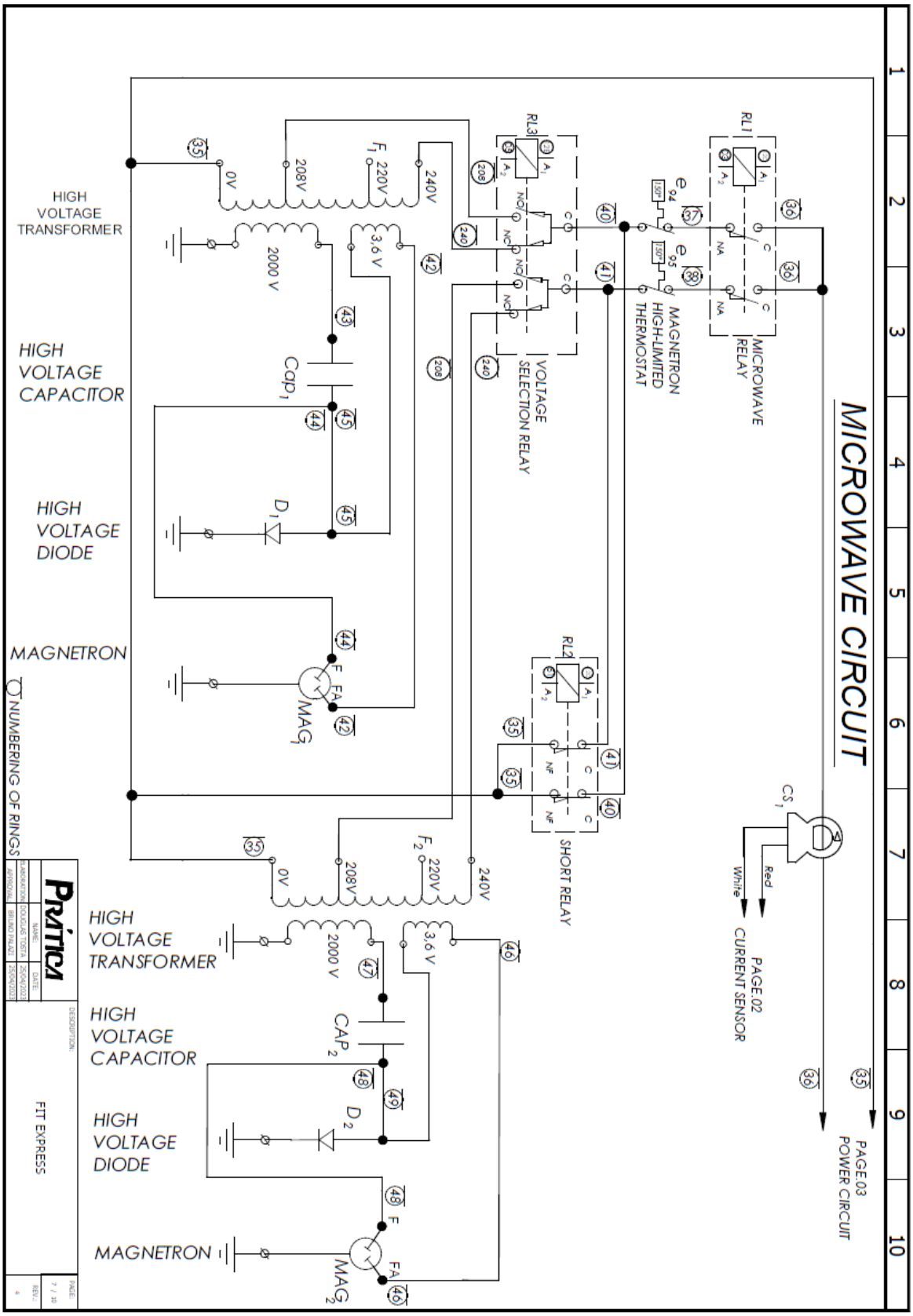


Code	Value
P100	2.0 s
P101	10.0 s
P127	34.3 Hz
P133	20 Hz
P134	100 Hz
P135	4.5 A
P145	100 Hz
P146	50 Hz
P156	4.5 A
P202	1
P208	1000
P213	100
P220	6
P221	9
P222	9
P223	5
P224	2
P225	3
P226	5
P227	2
P229	0
P230	0
P308	1
P310	0
P311	0
P312	2
P313	5
P314	0.0
P340	10
P399	85%
P400	220 V
P401	1.9 A
P402	5500 rpm
P403	100 Hz
P404	3
P407	0.8

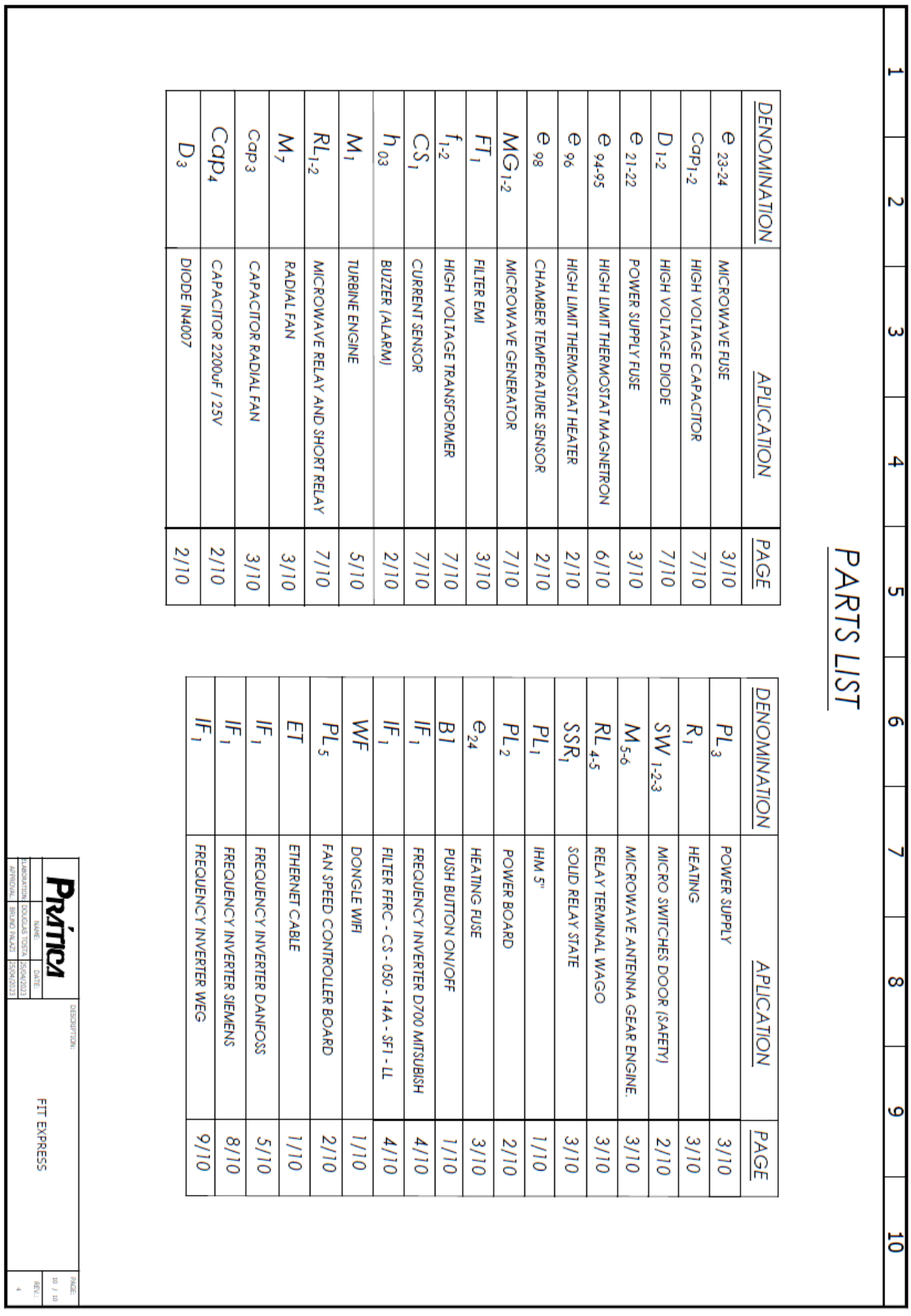
Power circuit assembly – US/Canada



Microwave circuit – US/Canada



Components – US/Canada



PARTS LIST

DENOMINATION	APLICATION	PAGE
e_{23-24}	MICROWAVE FUSE	3/10
$Cap1_{-2}$	HIGH VOLTAGE CAPACITOR	7/10
D_{1-2}	HIGH VOLTAGE DIODE	7/10
e_{21-22}	POWER SUPPLY FUSE	3/10
e_{94-95}	HIGH LIMIT THERMOSTAT MAGNETRON	6/10
e_{96}	HIGH LIMIT THERMOSTAT HEATER	2/10
e_{98}	CHAMBER TEMPERATURE SENSOR	2/10
MG_{1-2}	MICROWAVE GENERATOR	7/10
FT_1	FILTER EMI	3/10
f_{1-2}	HIGH VOLTAGE TRANSFORMER	7/10
CS_1	CURRENT SENSOR	7/10
h_{03}	BUZZER (ALARM)	2/10
M_1	TURBINE ENGINE	5/10
RL_{1-2}	MICROWAVE RELAY AND SHORT RELAY	7/10
M_7	RADIAL FAN	3/10
Cap_3	CAPACITOR RADIAL FAN	3/10
Cap_4	CAPACITOR 2200uF / 25V	2/10
D_3	DIODE IN4007	2/10

DENOMINATION	APLICATION	PAGE
PL_3	POWER SUPPLY	3/10
R_1	HEATING	3/10
SW_{1-2-3}	MICRO SWITCHES DOOR (SAFETY)	2/10
M_{5-6}	MICROWAVE ANTENNA GEAR ENGINE	3/10
RL_{4-5}	RELAY TERMINAL WAGO	3/10
SSR_1	SOLID RELAY STATE	3/10
PL_1	IHM 5"	1/10
PL_2	POWER BOARD	2/10
e_{24}	HEATING FUSE	3/10
$B1$	PUSH BUTTON ON/OFF	1/10
IF_1	FREQUENCY INVERTER D700 MITSUBISH	4/10
IF_1	FILTER FFRC - CS - 050 - 14A - SF1 - LL	4/10
WF	DONGLE WIFI	1/10
PL_5	FAN SPEED CONTROLLER BOARD	2/10
ET	ETHERNET CABLE	1/10
IF_1	FREQUENCY INVERTER DANFOSS	5/10
IF_1	FREQUENCY INVERTER SIEMENS	8/10
IF_1	FREQUENCY INVERTER WEG	9/10

PRÁTICA

	NAME	DATE
ELABORATION	DOUGLAS TOSTA	25/04/2023
APPROVAL	BRUNO PALAZI	25/04/2023

DESCRIPTION:

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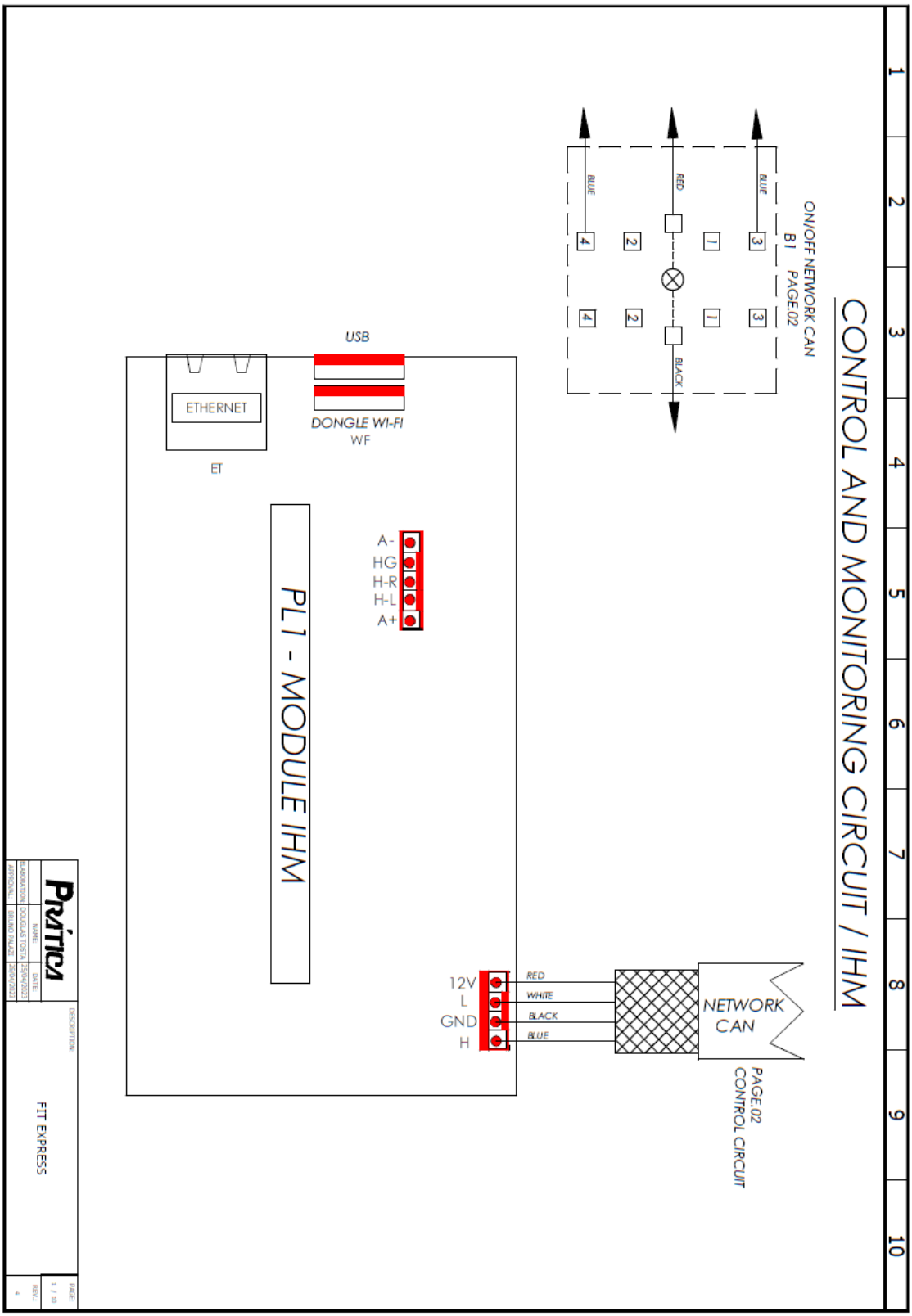
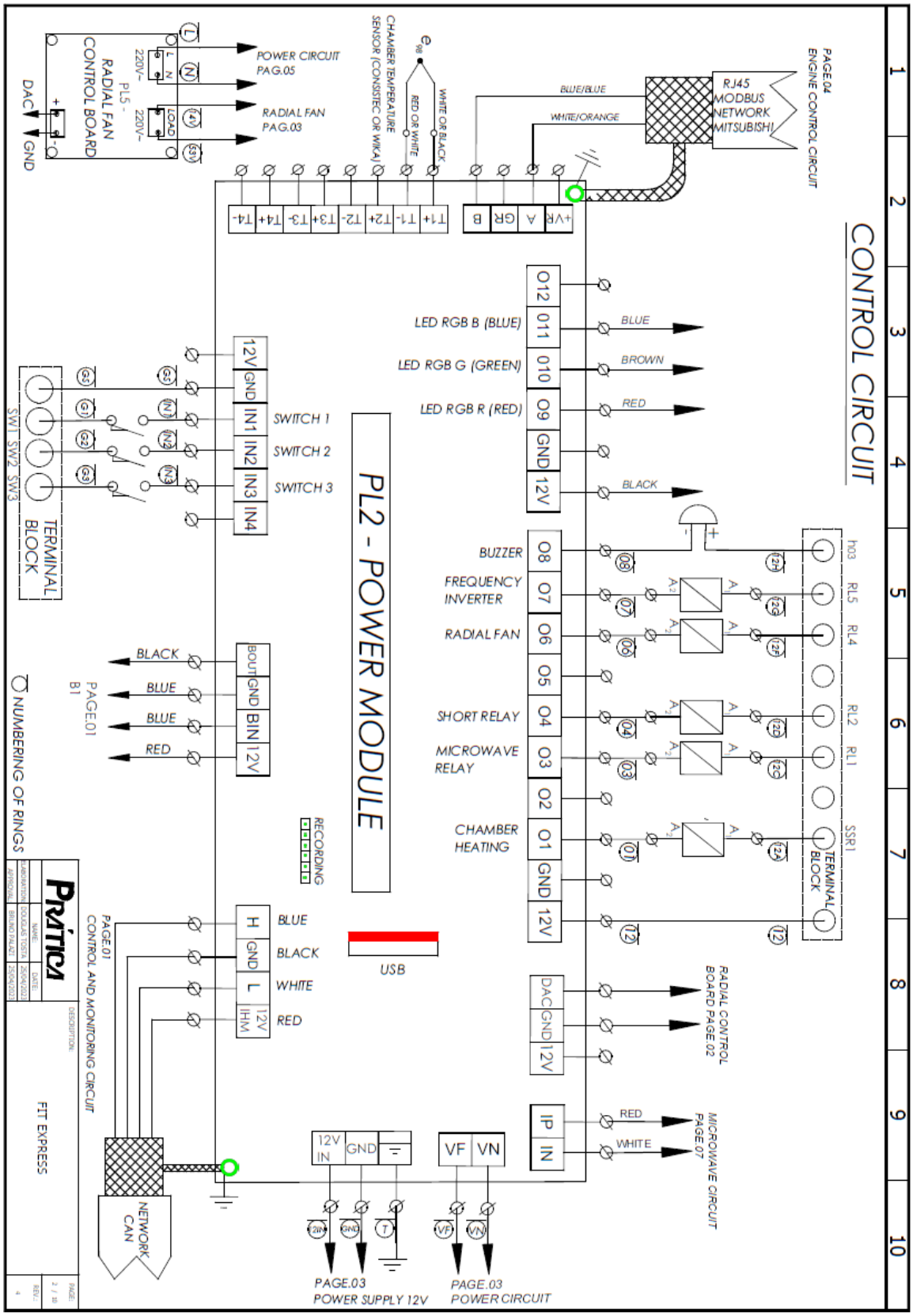
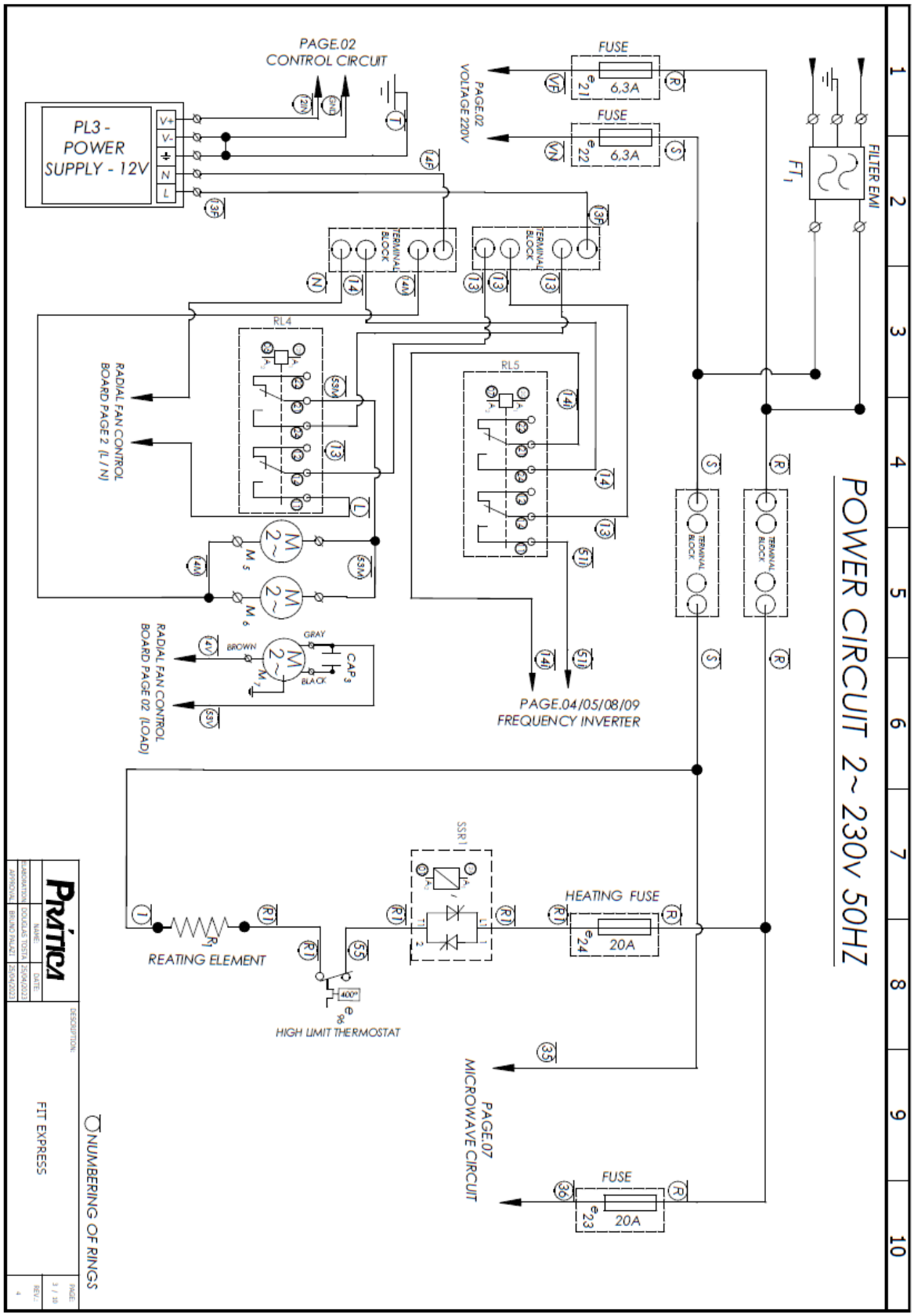
Display IHM – Other regions



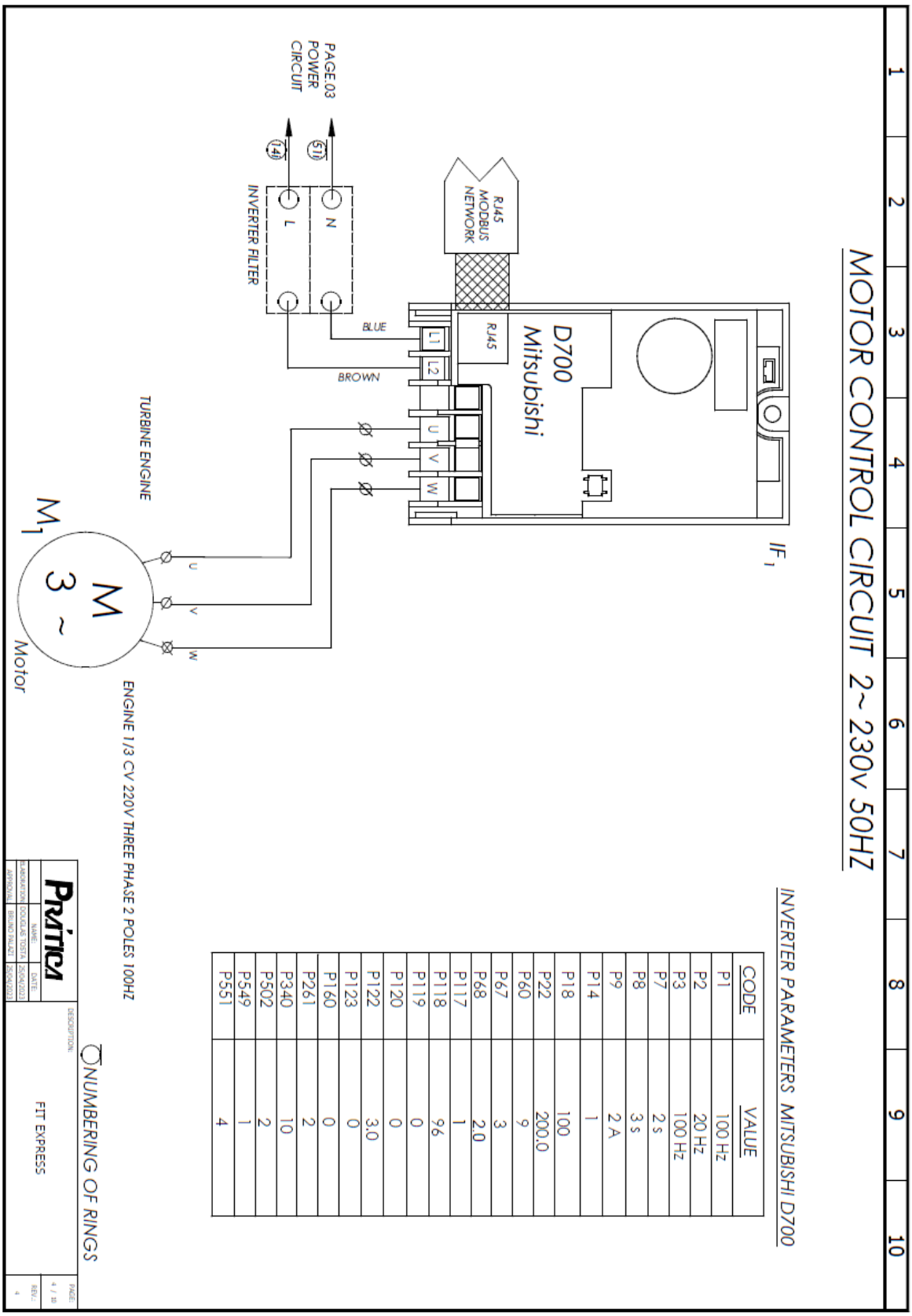
Control board – Other regions



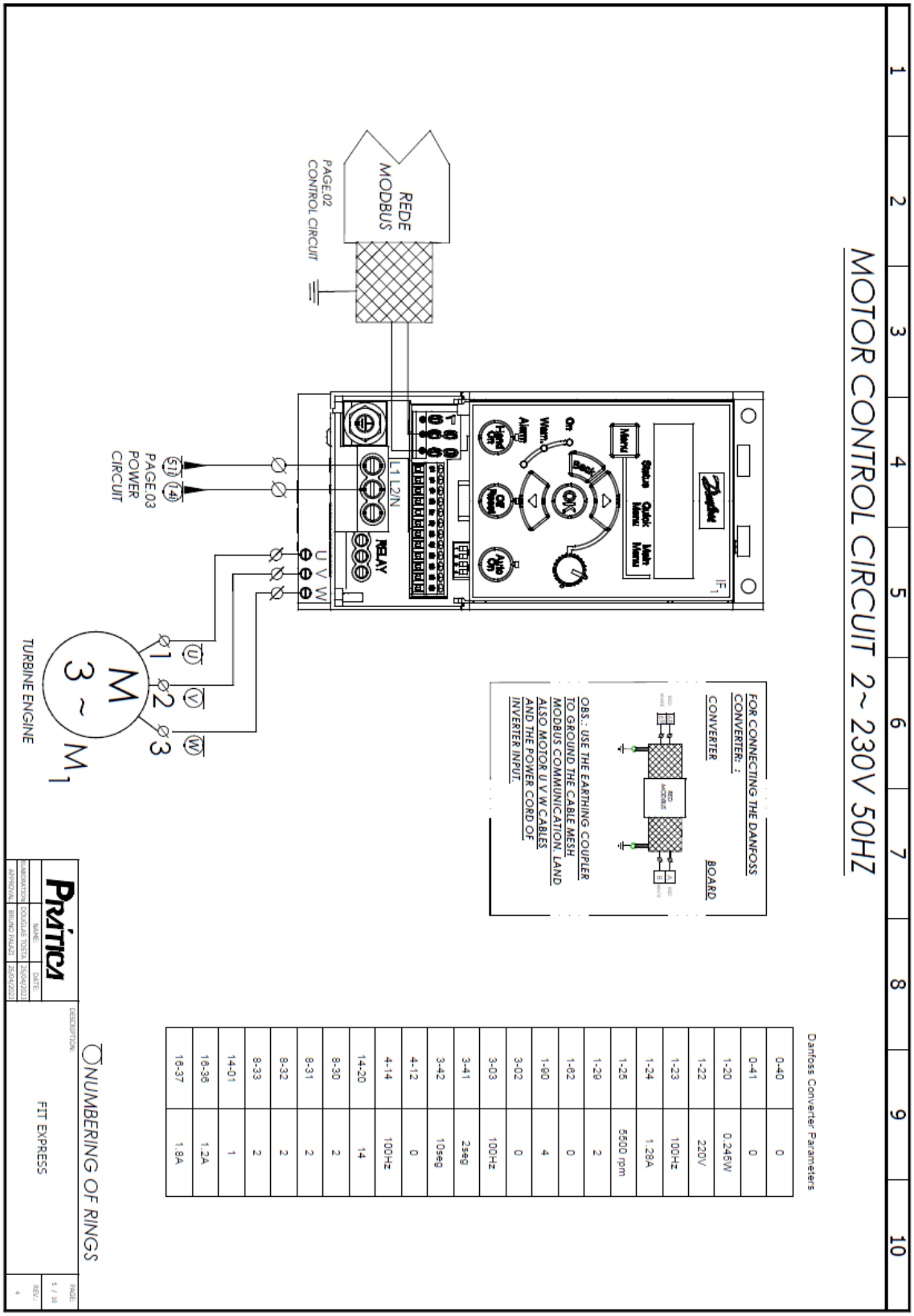
Power circuit – Other regions



Blower control Mitsubishi – Other regions

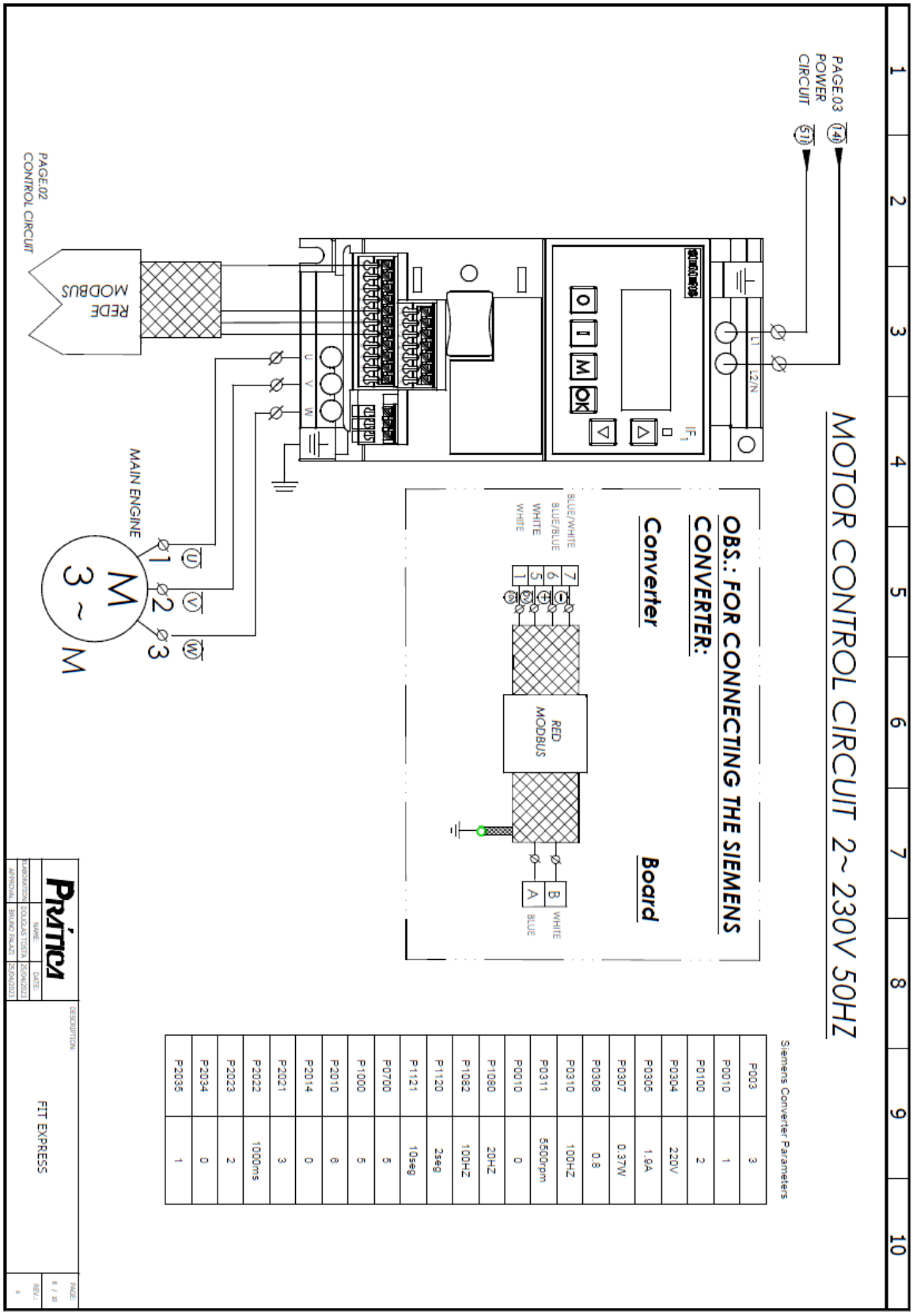


Blower control Danfoss – Other regions

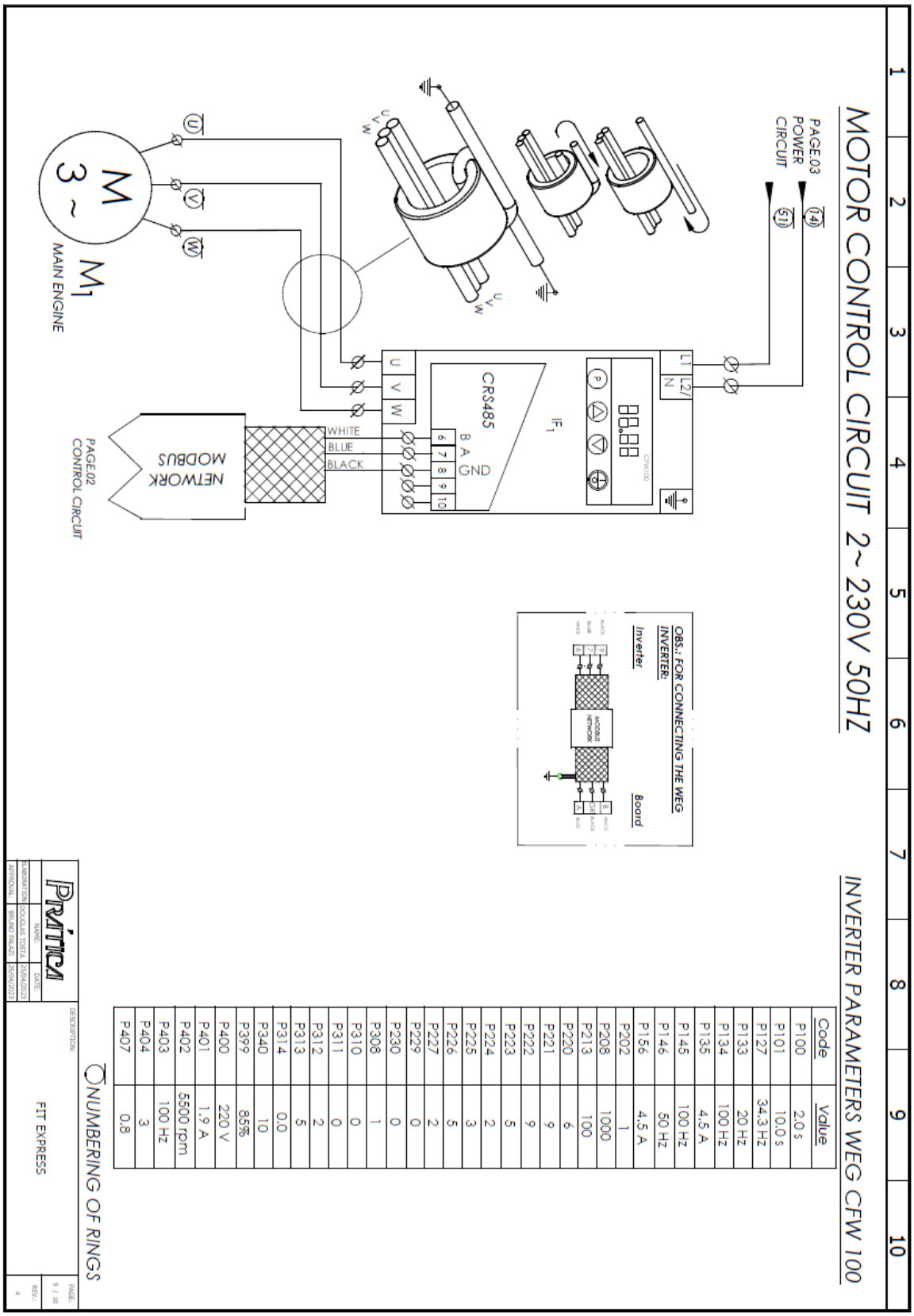


0-40	0
0-41	0
1-20	0.245W
1-22	220V
1-23	100Hz
1-24	1.28A
1-25	5500 rpm
1-29	2
1-82	0
1-90	4
3-02	0
3-03	100Hz
3-41	2seg
3-42	10seg
4-12	0
4-14	100Hz
14-20	14
8-30	2
8-31	2
8-32	2
8-33	2
14-01	1
16-36	1.2A
16-37	1.8A

Blower control Siemens – Other regions

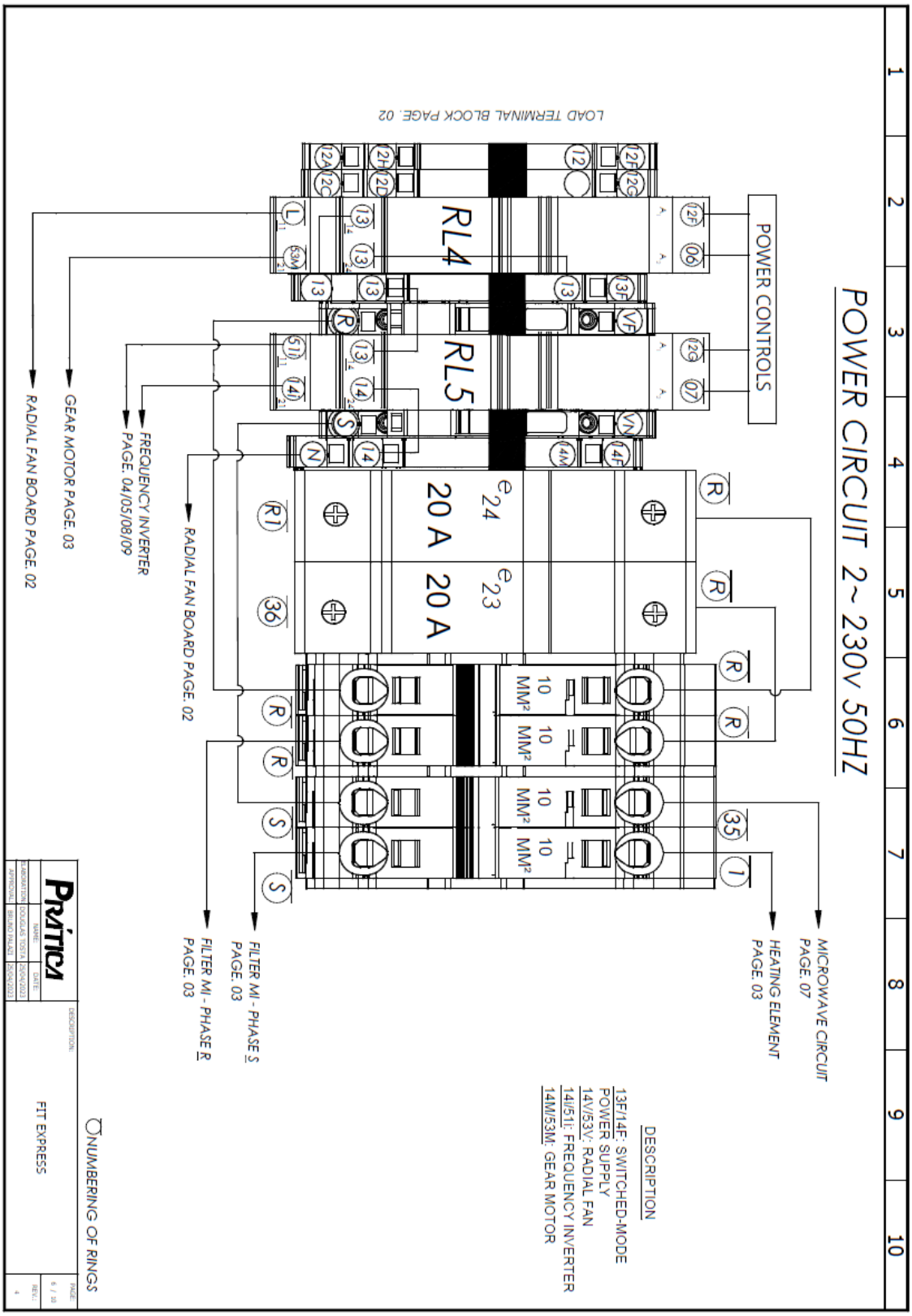


Blower control Weg – Other regions

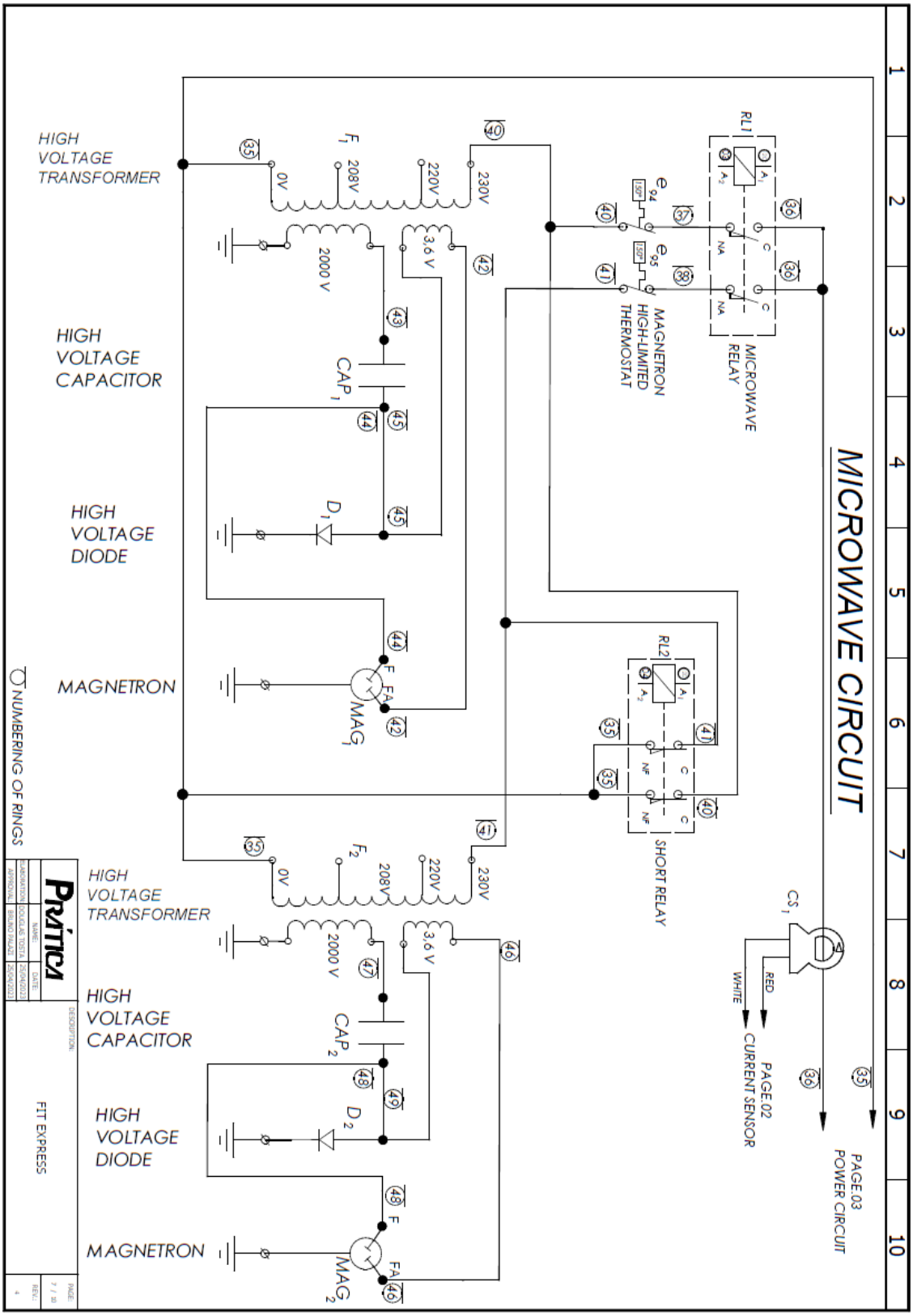


Code	Value
P100	2.0 s
P101	10.0 s
P127	34.3 Hz
P133	20 Hz
P134	100 Hz
P135	4.5 A
P145	100 Hz
P146	50 Hz
P156	4.5 A
P202	1
P208	1000
P213	100
P220	6
P221	9
P222	9
P223	5
P224	2
P225	3
P226	5
P227	2
P229	0
P230	0
P308	1
P310	0
P311	0
P312	2
P313	5
P314	0.0
P340	10
P399	85%
P400	220 V
P401	1.9 A
P402	5500 rpm
P403	100 Hz
P404	3
P407	0.8

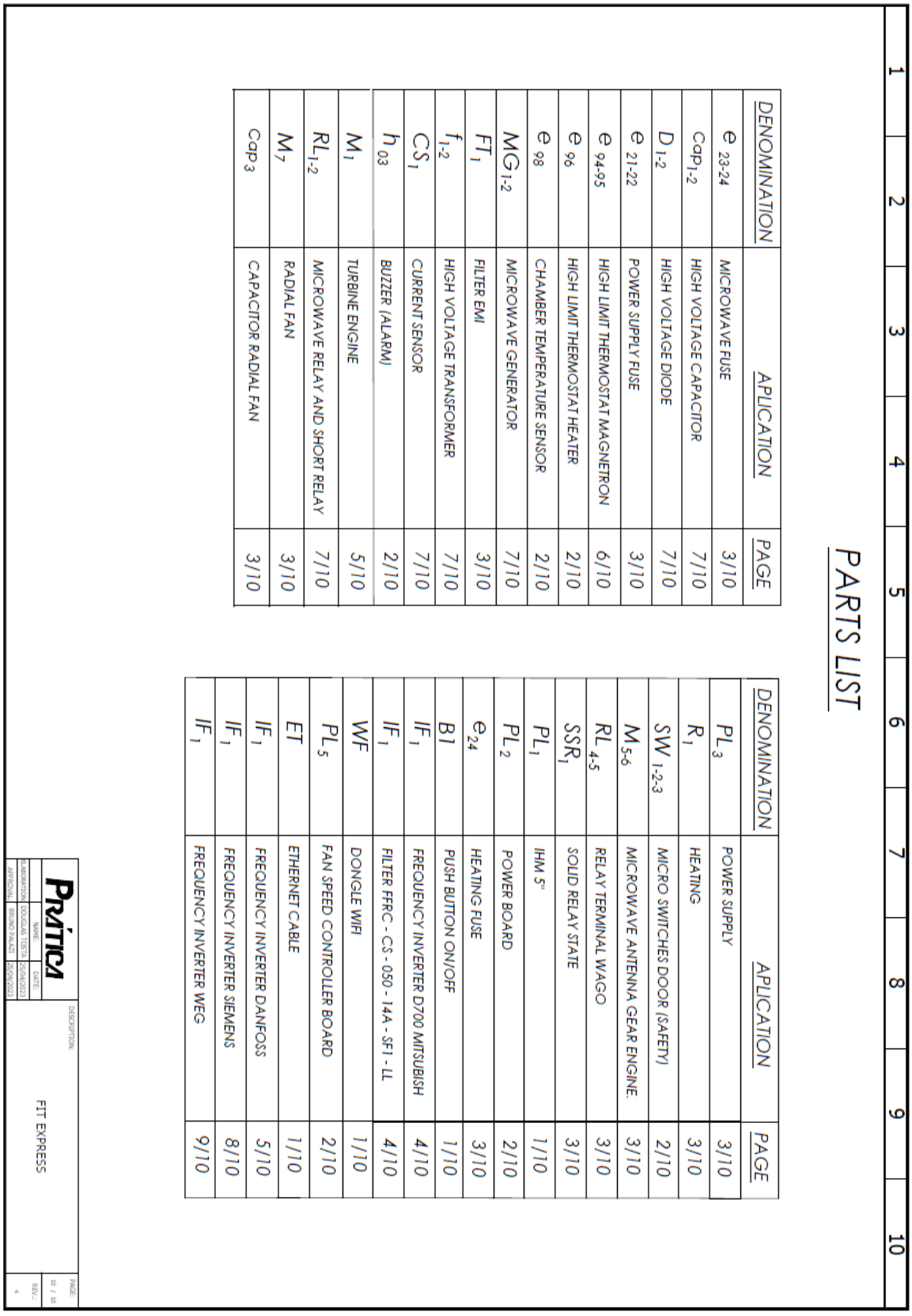
Power circuit assembly – Other regions



Microwave circuit – Other regions



Components – Other regions



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e_{94-95}	HIGH LIMIT THERMOSTAT MAGNETRON	6/10
e_{96}	HIGH LIMIT THERMOSTAT HEATER	2/10
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Cap_3	CAPACITOR RADIAL FAN	3/10

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IF_1	FREQUENCY INVERTER SIEMENS	8/10
IF_1	FREQUENCY INVERTER WEG	9/10

PRÁTICA

	NAME	DATE
ELABORATION	DOUGLAS TOSTA	22/04/2023
APPROVAL	BRUNO PAIAZI	22/04/2023

DESCRIPTION: FIT EXPRESS

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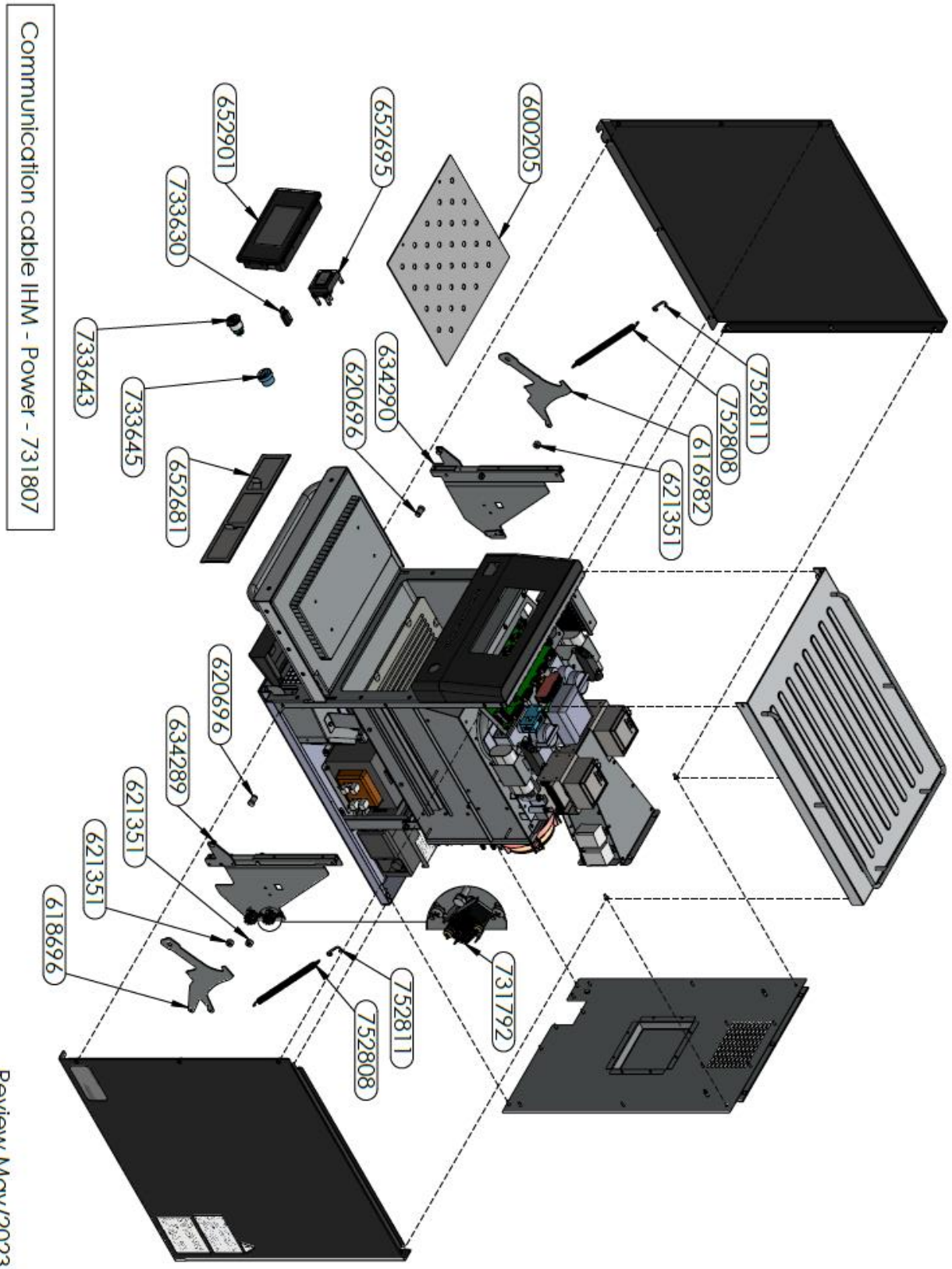
EXPLODED VIEW
FIT EXPRESS


Communication cable IHM - Power - 731807
600205
652695
652901
733630
733643
733645
652681
634290
620696
752811
752808
616982
621351
620696
634289
621351
621351
618696
731792
752811
752808
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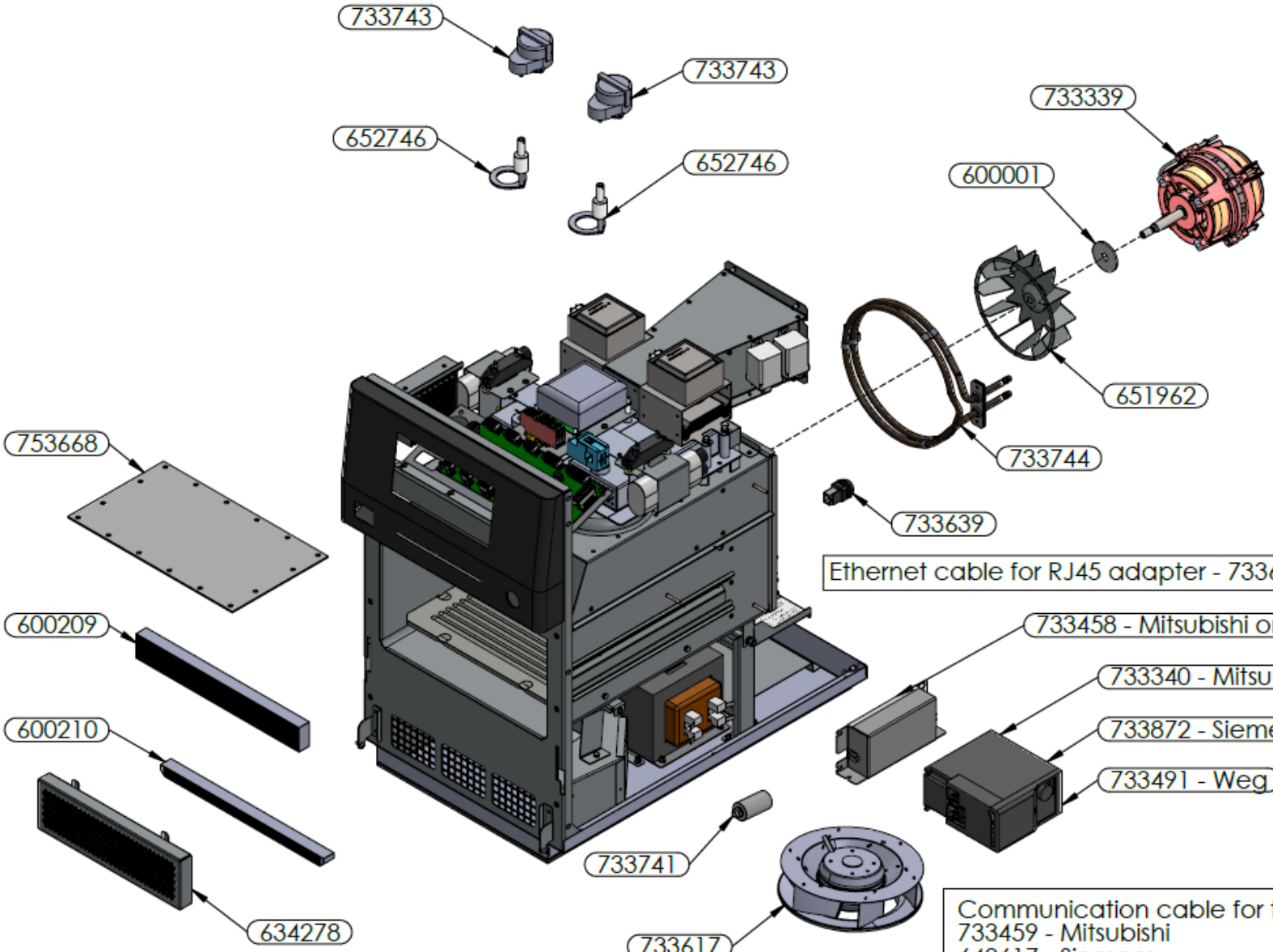
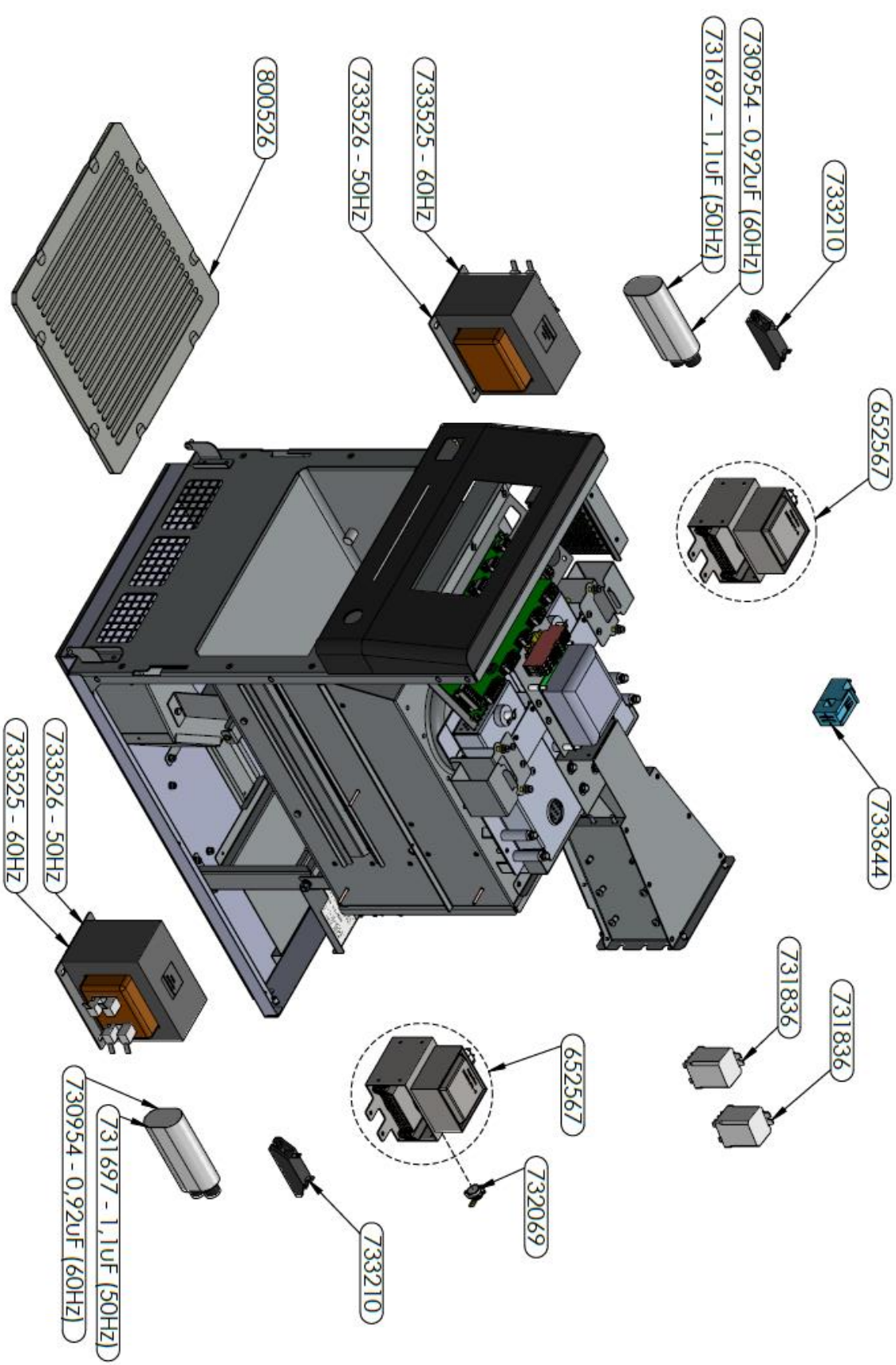

733743
733743
652746
652746
733339
600001
651962
733744
733639
753668
600209
600210
634278
733741
733617
Ethernet cable for RJ45 adapter - 733640
733458 - Mitsubishi only
733340 - Mitsubishi
733872 - Siemens
733491 - Weg
Communication cable for the inverters:
733459 - Mitsubishi
640617 - Siemens
640475 - Weg


733210
730954 - 0,92uF (60Hz)
731697 - 1,1uF (50Hz)
652567
733644
731836
731836
652567
732069
733210
731697 - 1,1uF (50Hz)
730954 - 0,92uF (60Hz)
733526 - 50Hz
733525 - 60Hz
800526
733525 - 60Hz
733526 - 50Hz

733642
732443
730063
733751
732394
732335
732335
732394
732335
732394
733711
731147
731608
731144
731144
731147
731147
733768
731852
733768
730580
732335
733614
732394
732394
732335
731144
731147
731144
731144
731852
731296
732109
732394
732335
733614
732109
732394
732394
732335
731296
731296
731296
731296
732191
732191
732888
733046
733517

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May 2024