



MACADAMS ARTISAN DECK OVEN (with Smart Controller)

Rev.
1.2

EQUIPMENT MANUAL

SERIAL #

WE RESERVE THE RIGHT TO BOTH TECHNICAL AND DESIGN MODIFICATIONS.



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LIMITED AND CONDITIONAL WARRANTY

LIMITED TO:

- Equipment sold by Macadams International.
- Equipment fully paid for.
- New equipment.
- Defects in material and workmanship.
- 6 (Six) months from date of commissioning for electrical defects.
- 12 (Twelve) months from date of commissioning for mechanical defects.
- 12 (Twelve) months of commissioning for poor workmanship.
- The replacement of components only in the case of a component defect.
- Balance of warranty from date of first commissioning, where new owner is not original purchaser.

CONDITIONAL TO:

- A proper commissioning conducted by a certified Macadams International technician and gas technician.
- The Commissioning Checklist duly completed and returned to Macadams International at commissioning.
- In the case of a defect, the defective part being returned to Macadams International.
- The equipment being unaltered or unmodified by any means.
- The equipment being properly maintained by an authorised Macadams International technician.
- The equipment being operated in accordance with the manual and for its designated use within its designated range.

EXPRESS EXCLUSIONS:

- Consequential loss or injury of any kind.
- Minor adjustments, e.g. vent settings, chain re-tensioning, overload settings, tightening of fasteners and connections, fair wear and tear, etc.
- Heat exchange failure due to incorrect commissioning and maintenance.
- Damage as a result of any surge or fluctuations in the supply of air, water, voltage, current or frequency.
- Ingress of liquids into electrical components as a result of the equipment being exposed to elements, e.g. rain, or cleaning liquids.
- Damage as a result of incorrect or loose connections on incoming supply power lines, or on incoming terminal connections.
- Damage or blockage to filters, nozzles and valves as a result of contamination in the water or fuel supply lines.
- Damage or component failure as a result of any kind of abuse or neglect by the operator.
- Damage as a result of overloading equipment beyond its recommended capacity.
- Damage as a result of changes made to factory settings on safety components.
- Damage or injury as a result of removing or rendering any safety device or guard inoperative.
- Damage or injury as a result of curing freshly coated pans inside an oven.
- Transport damages (these must be claimed from insurance via the freight company).
- Premature failure to drive train components due to lack of lubrication and incorrect tensioning, e.g. drive wheels, chains, sprockets, V-belts, pulleys, bushes, bearings, belts, connectors, castors, and clutch plates.
- All elements, as well as glass and light bulbs.
- Transport costs of replacement components, e.g. all components under warranty are ex works.

This equipment manual contains **essential information** for the maintenance and correct use of the **Macadams Artisan Deck Oven**.

The **purpose of this manual** is to enable the technician and operator to implement **all measures and precautions necessary** for the **safe, efficient, long-term use** of the oven. This manual should **not be used as a substitute for proper oven training** and maintenance. It should be used as a **reference or guideline for the operation** of the oven.

The information referred to in this manual is **applicable to the standard models only** and cannot possibly cover all the combinations and changes required by regulations that vary from country to country, and the various customer/agent specific needs. **All pictures shown are for illustration purposes only and may not be an exact representation of the actual product/part.** Variations may occur due to product modifications or enhancements.

While we strive to keep this manual as up-to-date as possible at the time of going to print, **ongoing technical and design modifications may cause there to be some alterations on your equipment** that have not been documented in the manual as yet. Macadams International cannot be held liable for these technical or mechanical changes.

Read this manual carefully before starting the installation and operations of the deck oven.

Pay special attention to the following icons throughout the manual:



WARNING

Personal injury could occur if instructions are not followed.



CAUTION

Damage to the equipment could occur if instructions are not followed.



NOTE

Helpful operating instructions and tips are presented.

ANY MODIFICATION(S) OR ADAPTATION(S) WHICH CHANGES THE FUNCTION(S) OF THIS DECK OVEN, OR USE OF THE DECK OVEN FOR PURPOSES FOR WHICH IT WAS NOT DESIGNED, WILL RENDER THE WARRANTY NULL AND VOID.

NOTE

During the **first few hours of operation**, you may notice the **oven exuding some smoke** and a possible faint odour. **This is normal for a new oven** when used for the first time. This can last for a few hours.

NOTE

The deck oven is **designed for baking bread, confectionery and savoury bakery products**. **Do not use it for other items** without consulting Macadams International.

FOR YOUR SAFETY

Discontinue the use of the deck oven if there are broken or missing covers, a damaged cord, or loud or odd noises coming from the deck oven.

FOR YOUR SAFETY

Do not store or use fuel or other inflammable vapours and liquids in the vicinity of this or any other appliance. **Do not run fuel lines near any heat source** (i.e. On the roof of the oven).

NOTE

For any queries relating to the unit, send an email to technical@macadams.co.za or when requesting spare parts, contact the **Macadams International Spares Division** (spares@macadams.co.za) and specify the **Model, Serial number** and include a **comprehensive image of the unit**.

GENERAL SAFETY TIPS FOR TECHNICIANS

- Study the manual carefully and familiarise yourself with all the instructions before operating or cleaning the deck oven. Only trained persons should manage the deck oven.
- Do not wear thin fabric shoes, sandals, open-toed shoes or high-heeled shoes when assembling or operating the deck oven. Wear personal protective equipment/gear.
- Always keep hands and other body parts a safe distance away from moving machine parts, work pieces and cutters.
- Use hand tools for their designed purposes only.
- Report defective machinery, equipment or hand tools to the supervisor.

SAFETY GUIDELINES

- Be sure that all machines have effective and properly working guards and covers, and that they are always in place when machines are operating.
- Replace guards immediately after any repairs.
- Do not attempt to oil, clean, adjust or repair any machine while it is running. Stop the machine and lock the power switch in the “OFF” position.
- Only qualified or trained people are to set up and operate the machinery. Do not set up or operate machinery when an instructor is not present.
- Check tools before use to assure they are safe to use.
- Always see that work and cutting tools on any machine are clamped securely before proceeding with any work.

SAFETY WARNINGS

-  Before any job is started, the main switch of the oven must be switched off and the main isolator at the distribution board must be isolated by mechanical lock out. Close the box before switching on the main switch.
-  Repair work should only be carried out by an authorised technician who has experience on this specific type of oven. Never remove protection plates before having switched off the main switch of the oven.

SAFETY WARNINGS continued



Only qualified and equipped technicians are to carry out the calibrating instructions and must make sure to wear personal protective equipment/gear.



Always isolate the power supply by locking out the isolator or pulling the fuses before connecting any electrical cables. The main power should then only be connected. All electrical connections should only be undertaken by a qualified electrician only.



Beware of escaping hot steam. Open the door slowly and carefully. Always use heat resistant oven gloves when handling hot baking trays.



Use of combustible substances in the oven can create a fire hazard.



Only wipe the control panel down with a damp (not wet) cloth. Do not wash or spray down with a hose.

The **Macadams Artisan Deck Oven** has been carefully engineered and tested to deliver excellent baking results over a wide variety of baking products.



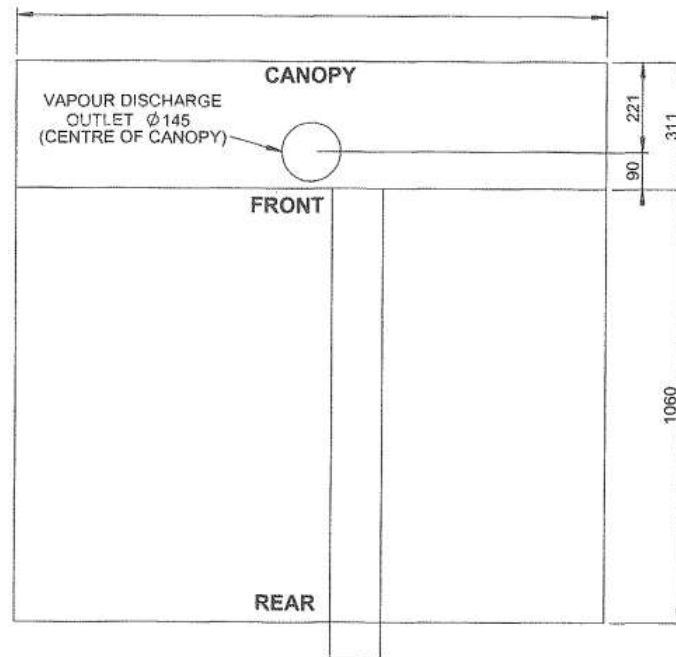
FEATURES AND BENEFITS

- Controls are easy to understand and operate.
- All stainless steel exterior and interior makes cleaning easy.
- Steam is generated quickly by the optional built-in steam systems (optional).
- Legs are fitted with castors
- User friendly instrument panel.
- Doors are supplied with fitted windows to allow the baker to observe the baking process.
- Individual adjustment of the 4-heat panel zones on each deck.

ARTISAN DECK OVEN OVERVIEW

TECHNICAL DATA

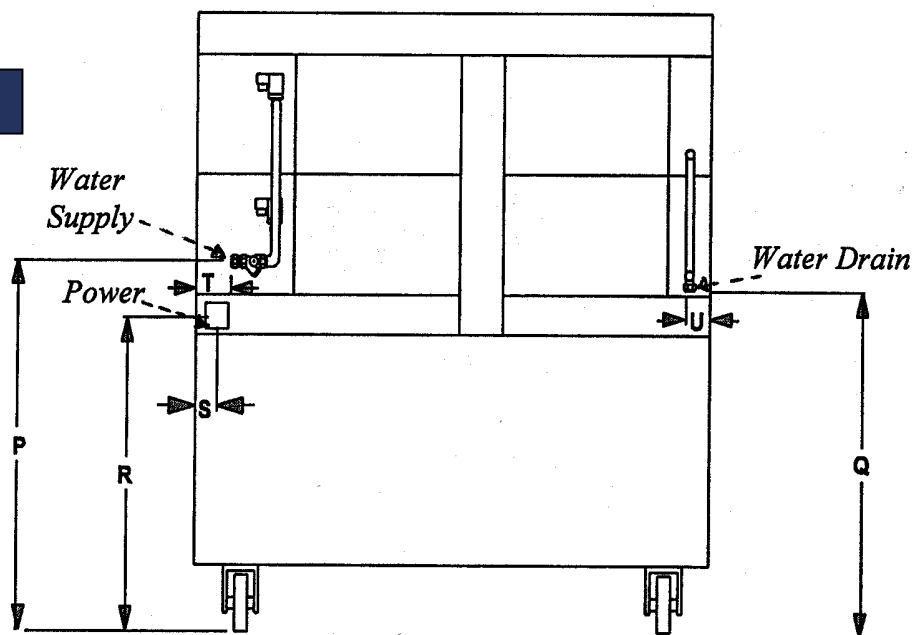
TOP



2 PAN: 1455

3 PAN: 1945

REAR



	2 & 3 PAN		
	P	Q	R
1 Deck	1290	1160	1000
2 & 3 Deck	890	760	600
4 Deck	435	345	225
1-3 Decks + Prover	660	1000	870

ARTISAN DECK OVEN OVERVIEW

TECHNICAL DATA

APPROX LOADING HEIGHTS FOR 2 PAN AND 3 PAN (from floor)		
1 DECK	First deck	1145mm
2 DECK	First deck	945mm
	Second deck	1345mm
3 DECK	First deck	750mm
	Second deck	1150mm
	Third deck	1550mm
4 DECK	First deck	375mm
	Second deck	775mm
	Third deck	1175mm
	Fourth deck	1575mm
Inside Dimension	980(w) x 820(d) x 190(h)	1470(w) x 820(d) x 190(h)

ARTISAN DECK OVEN WEIGHTS

APPROX DECK OVEN APPROXIMATE WEIGHTS IN KG		
DESCRIPTION	2 PAN (with steam and ceramics)	3 PAN (with steam and ceramics)
Deck	165	231
2 Deck	330	462
3 Deck	495	693
4 Deck	660	924
5 Deck	825	1155
Base	65	75
Top	40	50
1 Deck leg (4 off)	48	48
2 Deck leg (4 off)	36	36
3 Deck leg (4 off)	28	28
Castor (4 off)	6	6

APPROX TOTAL OVEN ASSEMBLED WEIGHT		
DESCRIPTION	2 Pan (with steam and ceramics)	3 Pan (with steam and ceramics)
1 Deck	324	410
2 Deck	477	629
3 Deck	634	852
4 Deck	771	1055
5 Deck	939	1286
Extras		
Underbuilt Prover	110	160
Canopy	18	20

ELECTRICAL INSTALLATION

- Remove the right hand side panel of the bottom deck.
- Connect the main supply cable through the back panel onto the terminal block provided.
- All 4 cores of the supply cable must be connected to the phases as marked on the terminal block, and the earth cable connected to the earth stud.



NOTE

Ensure that a qualified electrician undertakes all electrical work and that all connections are tight before energising the oven.

WATER CONNECTION

For the built-in steam generator (optional), a cold water connection is required. The water pressure must be in the following range:

Minimum: 200 kPa (28 psi)

Maximum: 450 kPa (63 psi)

Maximum temperature: 50°C

Riznar Stability Index (RI): 6.2 – 6.8°

Inlet pipe: ½" copper

Filter: in-line Y-strainer

Drain pipe: ½" copper

The water supply connection is located at the back of the oven (left side facing rear of oven). The overflow is on the right hand side, and should be connected to a drain.

INSTALLATION ON SITE

- The oven must be located on an even/level floor and be able to withstand the fully loaded weight of the oven.
- Ensure there is enough space around the oven to work and do maintenance. An advised minimum recommended space of approximately 1m is required between the back of the oven and the wall (or any other equipment it may stand against) 1m on the left-hand side of the oven and 2m on the right hand side of the oven.
- Ensure the required electrical supply is available (from building side). The required information is supplied on the oven rating plate, which is found on the back of the deck oven. **See an example below.**



- The ventilation around the oven must be controlled so that the ambient temperature inside the control panel does not exceed 50°C/122°F.

**CAUTION**

Do not leave the doors open during the heating up period.

Before operating the oven for the first time, follow these instructions:

1. Turn on the main switch for the electric power to the oven.
2. Set all digital temperature controllers to approximately 100°C/212°F and turn on the top and bottom heat regulators on each deck to the maximum position. Open the dampers on each deck.
3. When this temperature is attained, allow the oven to remain in this state for 30 minutes.
4. Wipe any grease off the deck plates and other parts of the chambers.
5. Set the digital temperature controller to 150°C/302°F with the heat regulators still in the maximum position.
6. When the temperature is attained, allow the oven to remain in this state for 30 minutes.
7. Set the digital controller to 200°C/392°F with the heat switches still in the maximum position.
8. When the temperature is attained, allow the oven to remain in this state for 30 minutes.
9. Set the digital temperature controller to 250°C/482°F with the heat switches still in the maximum position.
10. When this temperature is attained, allow the oven to remain in this state for 30 minutes.
11. After the above procedure has been followed the oven can be considered “heated-up”.

**WARNING**

Using combustible substances in the oven can create a fire hazard.

BAKING INSTRUCTIONS

Baking time and temperature vary for different types of bread, and also for different types of ovens. Times, temperatures and steaming for a new oven always require a certain initial amount of trimming and testing.

To assist the operator in achieving perfect baking results, a baking procedure and some useful hints are given below. With these tips and with the operator's experience, the correct settings for the products will be found.

- The oven consists of a number of independent decks assembled in one unit to form a composite oven.
- Each deck can be operated individually by means of the digital temperature controller.
- Any or all decks can be operated simultaneously if required.
- Each oven deck has a separate switch for top front, top rear, bottom front and bottom rear heat controls.
- The baker can therefore select the top front, top rear, bottom front and bottom rear heat setting for each product.
- The digital temperature controller controls the deck temperature and when the desired temperature is attained the heating elements are shut off and the red flame heat indication will disappear.

A little practice will soon enable the baker to find the best position for the various heat switches that suits this products and enables him/her to bake evenly without turning the trays around. The heat control system is designed to enable the baker to achieve perfect uniformity time after time.

Never leave the oven doors open longer than is necessary when the oven is hot. **To cool down the decks, open the dampers and not the doors.** The doors may warp slightly if left open while the oven is hot. They will return to normal condition in 5-10 minutes after closing.

**WARNING**

When opening the door, beware of escaping steam.



WARNING

Always use heat resistant oven gloves when handling hot baking trays.



NOTE

Steam must be added directly after the oven door has been closed, so that the steam can condense on the surface of the unbaked bread before it starts drying and heating up.

STEAM (Optional)

For certain types of products, steam must be added to the baking chamber at the beginning of the baking process. The steam serves three important functions:

- To make the surface of the dough smooth and pliable in order to avoid cracking.
- To increase the heat transmission to the unbaked bread at the beginning of the baking process.
- To give the crust of the bread the right surface structure.

For best results, carry out as follows:

- Set steam timer to the desired time. If you are unsure as to what time to set, you have to conduct some trials. Start with a steam period of approximately 20 seconds and at every new start of baking, reduce the time.
- Too long a steam period or restarts of the steam timer do not give better steam, but only serve to cool down the steam generator and oven interior, which prolongs the temperature recovery time.
- The damper vent must be opened for the last 3-5 minutes of the baking time, so as to obtain a brittle crust on the surface of the product.

OVEN DOORS

- Never leave the oven doors open longer than is necessary when the oven is hot. To cool down the decks, open the dampers and not the doors.
- The doors may warp slightly if left open while the oven is hot. They will return to normal condition in 5-10 minutes after closing.



INDICATORS

1. Menu
2. Info Block
3. Temperature top and bottom
4. Time elapsed/left
5. Oven light
6. Heat zone setting
7. Help

8. Warning/Info indication
9. Setpoint top and bottom
10. Time setpoint
11. Timer buttons
12. Steam
13. Extraction fan

USING THE OVEN continued

SET TEMPERATURE FROM TOP

- Press in top actual temperature display area
- Press  to adjust temperature setpoint higher or  lower. Select the “Set” Button to enter setting, or “Cancel” to abandon setting.

SET TEMPERATURE FROM BOTTOM

- Press in bottom actual temperature display area
- Press  to adjust temperature setpoint higher or  lower. Select the “Set” Button to enter setting, or “Cancel” to abandon setting.

SET TIME

- Press in actual time display area.
- Press  to adjust bake time setpoint longer or  shorter. Select the “Set” Button to enter setting, or “Cancel” to abandon setting.

START BAKE

- Press “Start” to start timer.
- Press  to activate default steam time (if quick steam is selected in settings)
- To change the default steam setting, touch and hold  for 3 seconds
- Press  to open damper or  to close damper

END BAKE

- Press “Stop” to end bake
- Press “Done” to reset timer

PROGRAMMED BAKE

1. Press 
2. Press 
3. Select category
4. Select recipe
 - Pre-heat/cool sequence will start
5. Press start when oven has reached temperature
6. Press “done” to reset timer

SAVE RECIPE

1. Follow Steps 1-3 in Manual Bake
2. End bake
 - Press “Stop” to end Bake
 - Press “Save”
 - Select category to save to
 - Enter recipe name
 - Press  to save recipe

EDIT RECIPE

1. Press 
2. Press 
3. Select category and recipe to edit
4. Press 
5. Press 
 -  to adjust temperature at a certain time
 -  to adjust the bottom back heat zone
 -  to adjust the bottom front heat zone
 -  to adjust the top back heat zone
 -  to adjust the top front heat zone
 -  to start the bake
 -  to select steam duration at a certain time
 -  to open the damper at a certain time
 -  to close the damper at a certain time
 -  to activate the buzzer at a certain time
 -  to end the bake
 - Press “Cancel” to end adding feature
6. Select a feature to edit
 - Press 
 - Follow instructions
7. Press  to return to the home screen

ENTER RECIPE

1. Press 
2. Press 
3. Enter Password
4. Press  to add recipe
5. Select category
6. Enter recipe name
7. Save recipe 
8. Press  to add features:
 -  to adjust temperature at a certain time
 -  to adjust the bottom back heat zone
 -  to adjust the bottom front heat zone
 -  to adjust the top back heat zone
 -  to adjust the top front heat zone
 -  to start the bake
 -  to select steam duration at a certain time
 -  to open the damper at a certain time
 -  to close the damper at a certain time
 -  to activate the buzzer at a certain time
 -  to end the bake
9. Press "Cancel" to end adding feature
10. Press  to return to home screen

ADD FAVOURITES

1. Press 
2. Press 
3. Enter Password
4. Select category and recipe to add to favourites
5. Select  of the desired recipe
6. The  will change to  and the recipe will be added to favourites

FAVOURITES

1. Press 
2. Press 
3. Select recipe
 - Pre-heat /cool sequence will start
4. Press start when oven has reached temperature
5. Press “Done” to reset timer

7-DAY TIMER

1. Press 
2. Press 
3. Enter Password
4. Press  to add timer
5. Select  for auto start up
 - Select day of week
 - Enter time
6. Select  for auto shutdown
 - Select day of week
 - Enter time
7. To edit a timer
 - Select timer
 - Press 
 - Follow instructions
8. The oven needs to be turned off by pressing 

MULTI BAKE

1. Press 
2. Press 
3. Adjust temperature as in *Manual Bake*
4. When adjusting time setpoint:
 - Press  to adjust bake time setpoint longer or  shorter
 - In order to set another timer, select the coloured numbered button
 - Adjust as normal
 - Repeat the above two steps
 - When ready, press “Set” to activate timer
5. Continue as in *Manual Bake*

SLEEP MODE

1. The oven will automatically enter sleep mode after a pre-set time without any activity. The temperature will be controlled at the pre-set temperature.
2. Sleep mode can be user activate
 - Press 
 - Press 
3. To undo sleep mode, simply touch any area in the screen.

SHUTDOWN MODE

1. The oven will automatically shut down after a pre-set time in sleep mode. The oven will only shutdown after the temperature is at a safe level.
2. Shutdown mode can be user activated
 - Press 
 - Press 
3. To undo sleep mode, simply touch any area in the screen and press the 

TRANSFER RECIPES

1. Press 
2. Press 
3. Enter Password
4. Connect USB to port
5. Select one of the features below and follow instructions
 -  Import/Export recipe
 -  Import/Export category icons
 -  Export diagnostics
 -  Oven configuration
 -  Export error log
 -  Import/Export settings
 -  Import/Export recipe database

USING THE OVEN continued

SETTINGS

1. Press 
2. Press 
3. Enter Password and press arrow to the right.
4. Select settings to change as per table below and follow prompts.
5. Press save 

SETTING	DEFAULT	DESCRIPTION
Current date	Date	Set to current date
Current time	Time	Set to current time
Touch sensitivity	2	2 is the optimum sensitivity setting
Default screen	1	Default-screen is the screen that is shown on powerup/screen save/after recipe bake: 0: main menu 1: manual bake 2: program bake 3: favourites 4: history
Oven type	7	Oven type: 0: unknown 1: rack-2 element max 2: convector-2 element max 5: walkthrough rack 7: deck-artisan 99: terminal slave
Oven name		Choose a name for the oven
Broadcast	No	NA
HACCP logging	No	To allow login of HACCP data
Power on Setpoint	200	Start-up temperature for chamber
Power on Aux Setpoint	200	Start-up temperature for base
Powersave setpoint	100	Temperature to revert to when oven has not been in use for time to powersave
Low Temp Threshold	10	Temperature bandwidth to indicate "Temperature OK" below temperature setpoint
Up Temp Threshold	10	Temperature bandwidth to indicate "Temperature OK" above temperature setpoint

USING THE OVEN continued

SETTING	DEFAULT	DESCRIPTION
Temperature Offset	0	To be used to fine tune the temperature calibration (do not offset more than 5 deg)
Overshoot limit	-1	NA
Hysteresis	5	Delta temperate from setpoint to turn elements on
2 stage delta temp	NA	NA
Units of measure	°C	-
Steambox setpoint	250	Steambox control temperature
Steambox threshold	150	Min temperature to allow steam
Steambox default state	On	Select to start steam box on power on
Dflt. Zone: top front	100	Adjust evenness in the top front of the oven
Dflt. Zone: top rear	100	Adjust evenness in the top back of the oven
Dflt. Zone: bottom front	100	Adjust evenness in the bottom front of the oven
Dflt. Zone: bottom rear	100	Adjust evenness in the bottom back of the oven
Oven has steam	Yes	Add or remove steam function
Quick steam on	Yes	Launch default steam time on activation of steam button if on. Otherwise, will prompt the user for time input
Start on steam	Yes	Timer will start when steam is selected
Default steam time	5	The default steam setting to be used (if quick steam is on)
Oven has damper	Yes	Add or remove damper function
HB damper trip	6	Refer to manual for set up
HB damper timeout	6	Refer to manual for set up
Oven has extractor	No	Add or remove extraction fan function
Ex/Fan status only	No	NA
Time to power save	60	Time to activate power save mode after no activity
Time to standby	60	Time to activate standby mode after powersave setpoint was reached
Cooldown time	30	Time to allow the oven to cool off when power down.
Cooldown temp.	150	Temperature that the oven must reach before it will turn off. If both time and temperature is set, the first target will turn it off.
Time to screensave	5	Time to set the screen saver – 1 will turn it off
Reset on standby	Yes	Reset and clear memory on every stand by
Next maintenance	Date	The next required maintenance as per the agreement with customer

USING THE OVEN continued

SETTING	DEFAULT	DESCRIPTION
Maintenance advice days	30	Warning before maintenance is due
Maintenance warning days	10	Warning before maintenance is due
Commission date	NA	Set on commissioning
Service representative	Telephone number	Add technicians number
IP address	NA	Address different to slave
Confirm recipe display	No	If no, user will not be prompted to confirm not to save recipe
Flash on alarm	Yes	Lights will flash at end of bake (with alarm)
Bake on door closed	No	
Allow batch size	No	Half load, 1/3 load, 2/3 load and custom load available
Allow idle mode	No	NA
Language	Eng	Afr, Eng, Rus, Swd, Nor, Ndl
Basic password	11111	
Baker password	22222	
Supervisor password	33333	
Technical password	44444	

INFORMATIONAL MESSAGES	
Powersave mode:	Oven is in powersave mode
Cooldown mode:	Oven in cooldown mode
Standby mode:	Oven in standby mode
Bake complete:	Programmed bake has completed
Multi bake:	Multibake mode operational
Manual bake:	Manual bake mode operational
Bake complete:	Manual/programmed bake sequence has completed
Disconnected: slave terminal	Communications not operational
Steambox temp LOW:	Steambox temperature below threshold
Steambox temp OK:	Steambox temperature at or over threshold tolerance
E-stop loop OK:	Non-continuity has been rectified
Temperature Low:	Temperature below set threshold
Temperature high:	Oven temperature above set threshold
At temperature:	Oven temperature within set threshold limits

USING THE OVEN continued

ERROR MESSAGES	
Recipe error:	Error detected while reading a recipe from the database
Save error:	Error saving to recipe database
Recipe not saved:	Follow on message from above
Please reset:	Follow on instruction to a critical error
IO Board comms error:	Bad communication sequence detected – may not be critical but is sustained, IO board will trip
Oven type error:	Oven type designated on IO board and processor board is not the same – will trip IO board
Setpoint error:	Setpoint designated on IO board and processor board is not the same – set temperate to rectify this
Circfan overload:	Overload state changed to tripped state – will clear when input rectified
Invalid pin code:	Password entered did not match known list of passwords
IO board error:	Error detected on IO Board
Safety tripped:	Safety relay has tripped
Safety OK:	Safety relay has been switched on
E-Stop loop broken:	Detected non-continuity on e-stop loop
Thermocouple fault:	Detected fault on main oven thermocouple

DAMPER SETUP

The H-Bridge circuit allows a 24V DC motor to be driven clockwise & anti-clockwise. The current delivered to the motor is continually monitored and can stop the motor if it exceeds a preset threshold. Furthermore, and as a backup “stopping” function, the motor on/drive time is monitored and will also stop the motor if a present time threshold is exceeded.

This functionality has been included to allow driving the motor or damper between 2 mechanical limits. Please note that the circuit has not been designed/tested for continual motor drive – its operation is more intended for these short duty cycle operations.

A potentiometer (POT) can be found on the IO Board near the 2-way damper/H-bridge connector which allows a speed adjustment – using PWM (pulse width modulation) – of the motor output if required. It is recommended to prioritise correct motor selection and set this POT to max speed, rather than relying on adjusting the POT as the over current and time out settings are directly related to this speed setting.

Suggested setup of an on-board auto damper is thus:

1. Adjust Pot to its anti-clockwise limit for maximum speed;
2. Adjust Processor board ‘*HB Damper Trip*’ current threshold to ensure motor stops when hitting a mechanical limit but does not trip due to inrush currents. This setting appears to be of the order of 8-10 (digital measurement units).
3. Adjust the Processor board ‘*HB Damper Timeout*’ time threshold to just greater than the damper run time as a back-up stopping function.

The on-board auto damper operates in sync with the damper relay output signal – that could be used to control an external auto damper. The state of this relay is continually monitored and if a change is detected, the H-bridge circuit is instructed to drive either clockwise or anti-clockwise.

The circuit should operate with any suitable geared 24VDC motor with an output RPM of the range 1-3RPM.

CHECKLIST SUMMARY

In order for the oven to operate reliably and for it to give the best baking results, it has to be maintained at regular intervals. A simple service procedure must be carried out at regular intervals.

**WARNING**

Before any job is started the main switch of the oven must be switched off.

**NOTE**

All major maintenance procedures and technical work done on the rack oven must be carried out by a qualified and authorised Macadams technician.

ARTISAN DECK OVEN	DAILY	WEEKLY	3 MONTHLY	6 MONTHLY
Clean interior with soapy water.	•			
Clean the stainless steel front and the door glass with water and a liquid detergent.	•			
Brush away any crumbs or debris in the baking chamber.	•			
Deep clean the baking chamber.		•		
Test steam solenoid valve for operation (refer to Commissioning instructions).		•		
Check that there's no visible damage to electrical cables as well as the oven itself.		•		
Clean steam outlet (refer to further instructions below).			•	

CLEANING (Daily)

- For hygienic reasons, the oven chamber should be cleaned at the end of each working day.
- When required, the stainless steel front and the door glass can be cleaned with water and a liquid detergent.
- The door glass must be **cold** before it is cleaned.
- If the stainless steel is very dirty, a non-abrasive polish may be used.
- If the glass is very dirty, oven cleaner may be used on the glass only.



WARNING

Oven cleaner is corrosive and may attack the stainless steel if it comes in contact with it.

PLUMBING (Monthly)

- The water to the steam generator passes through a dirt filter (Y-strainer) located on the rear of the oven. The filter has to be cleaned at regular intervals.
- Close the water mains, remove the filter cap and clean the filter with a warm soap solution. Fasten the cap again, tightening it thoroughly. Open the mains and check that there are no leaks.





CAUTION

Failure to clean the filter will result in deteriorating steam output.



NOTE

Make sure that there is water in the wet heat element bath at all times while proving.



NOTE

Electrical work/maintenance must only be done by a qualified electrician with the correct statutory/legal qualifications.

ELECTRICAL BOX (3-monthly)

- Before any job is started, the main switch of the oven must be switched off at the distribution board and padlocked.
- Clean all the cables, wires and electrical components with a soft brush or by means of a vacuum cleaner.
- Ensure that all connections are very tight.
- Close the box before switching on the main switch.
- Do not try to blow the electrical box clean using a blower.



CAUTION

Beyond general maintenance, contact the local representative or authorised local service company to perform maintenance and repairs.

DOOR SEALS

- It is important that the door seal on all ovens are in an acceptable condition. The seals should be free and clear of any foreign material.
- Poor contact of the door to the surface of the seal could result in an increase temperature as well as energy loss.

Number	Description	Stock Code	Wiring diagram label
01	New p.board + screen + kit	ESC-70084B	NA
02	Push button ON/OFF	ESP-71409	PB
03	Piezo buzzer	ESB-71002	H10
04	IO Board + 1.5m power cable	ESC-70081	NA
05	Geared motor 24VDC	ESC-70009	Damper motor
06	MCB 10A DP (B10C2010) ¹	ESM-70123D	Q6
07	MCB 20A SP (B10C1020)	ESM-70198D	Q2, Q3, Q4, Q5
08	MCB 6A SP (B10C1006A)	ESM-70055D	Q7
09	Contactor 10A	ESC-71264	KM7, KM4, KM5, KM6, KM1, KM8
10	Relay 4 pole RXM-4AD1P7	ESR-72090	KA2
11	DC relay HY21PN24DC	ESR-71992	KA1, KA4
12	MCB 6A DP (B10C2006) ²	ESM-70076D	Q1
13	MCB 10A SP (B10C1010)	ESM-70088D	Q8
14	Terminal ER35 BEIGE Terminal 35mm BLUE Terminal EARTH ERPE	EST-77060 EST-77001 EST-77009	NA
15	Power supply 24v, 350w	ESC-70087S	PSU1
16	Element 0.8kW 230V (3pan) Element 1.0kW 230V (3pan)	ESE-72342 ESE-72343	NA
17	Temp type K probe	EST-72123	NA
18	Door c/w glass (3pan) Door c/w glass (2pan)	ISA-70014 ISA-70024	NA
19	Solenoid valve (optional)	ESS-70722	Y1
20	Temp type K probe STY5192A	EST-72133	BOTTOM PROBE/ TOP PROBE
21	Element (steam) 1.5kW, 400V	ESE-72055	STEAMPROBE

¹ Mount circuit breakers may differ depending on each unit. Contact the Macadams Spares department with the serial number of your unit when buying spares.

PARTS LIST continued

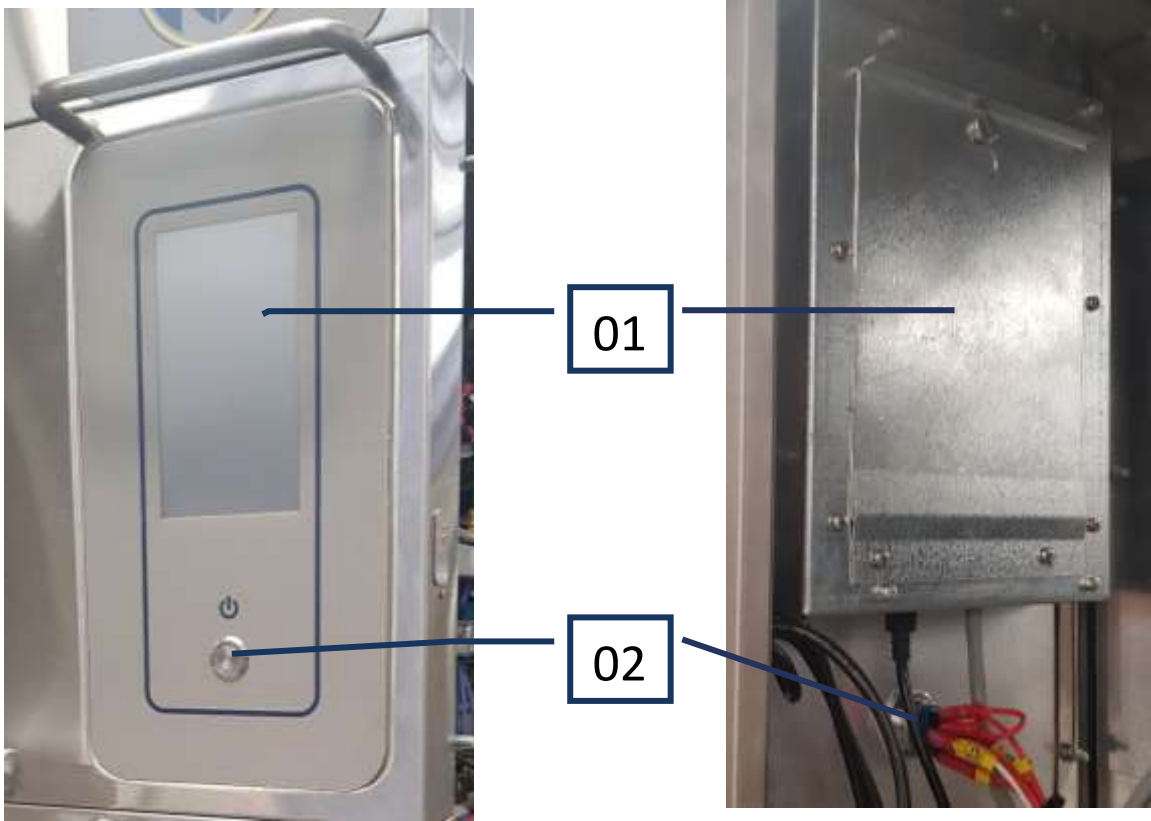
DESCRIPTION	STOCK CODE
IF THE UNIT HAS OPTIONAL STEAM AND UNDERBUILT PROVER	
Steam element (2P)	ESE-72052
(3P)	ESE-72055
Solenoid valve (with optional steam)	ESS-70722
Steam unit (2P)	ISA-70025
(3P)	ISA-70015
Temp type K Probe STY5192A	EST-72133
Contact K3-14A 102-5.5kW	ESC-70499
Element 2kW	ESE-72802
Element 1.5kW	ESE-72810
Isolator 20A	ESI-70080D
LED pilot light green	ESP-71012
LED pilot light red	ESP-71014
LED pilot light white	ESP-71013
Regulator	ESR-74310
Thermostat .30-90c	EST-70015
Terminal 6mm ER6BEIGE	EST-76982
Terminal 6mm ERPE6/10	EST-76983

All pictures shown are for illustration purposes only and may not be an exact representation of the actual product/part.

Stock codes, descriptions and images were correct at the time of this manual going to print. Contact **Macadams Spares Department** with the **serial number of your unit** when ordering and buying spares.

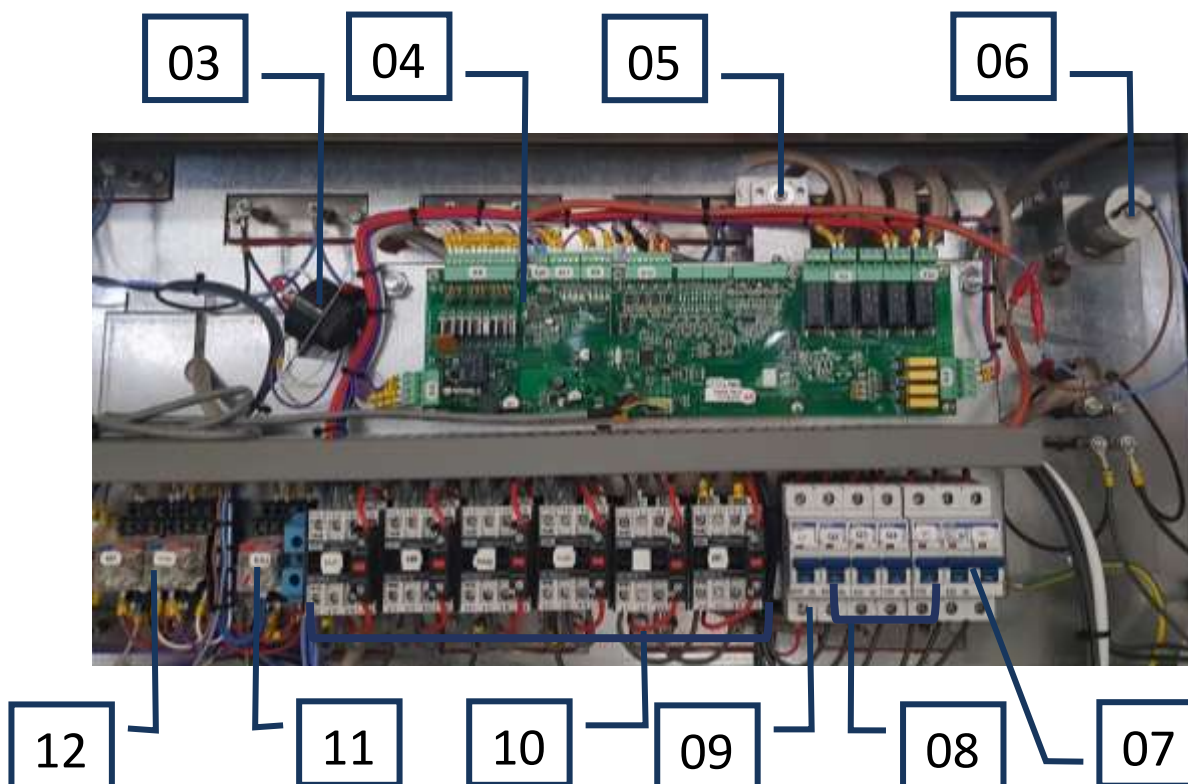
Contact Macadams for spares if you want to add another deck to your unit.

PARTS LIST continued



Number	Description	Stock Code	Wiring Diagram Label
01	New p.board + screen + kit	ESC-70084B	NA
02	Push button ON/OFF	ESP-71409	PB

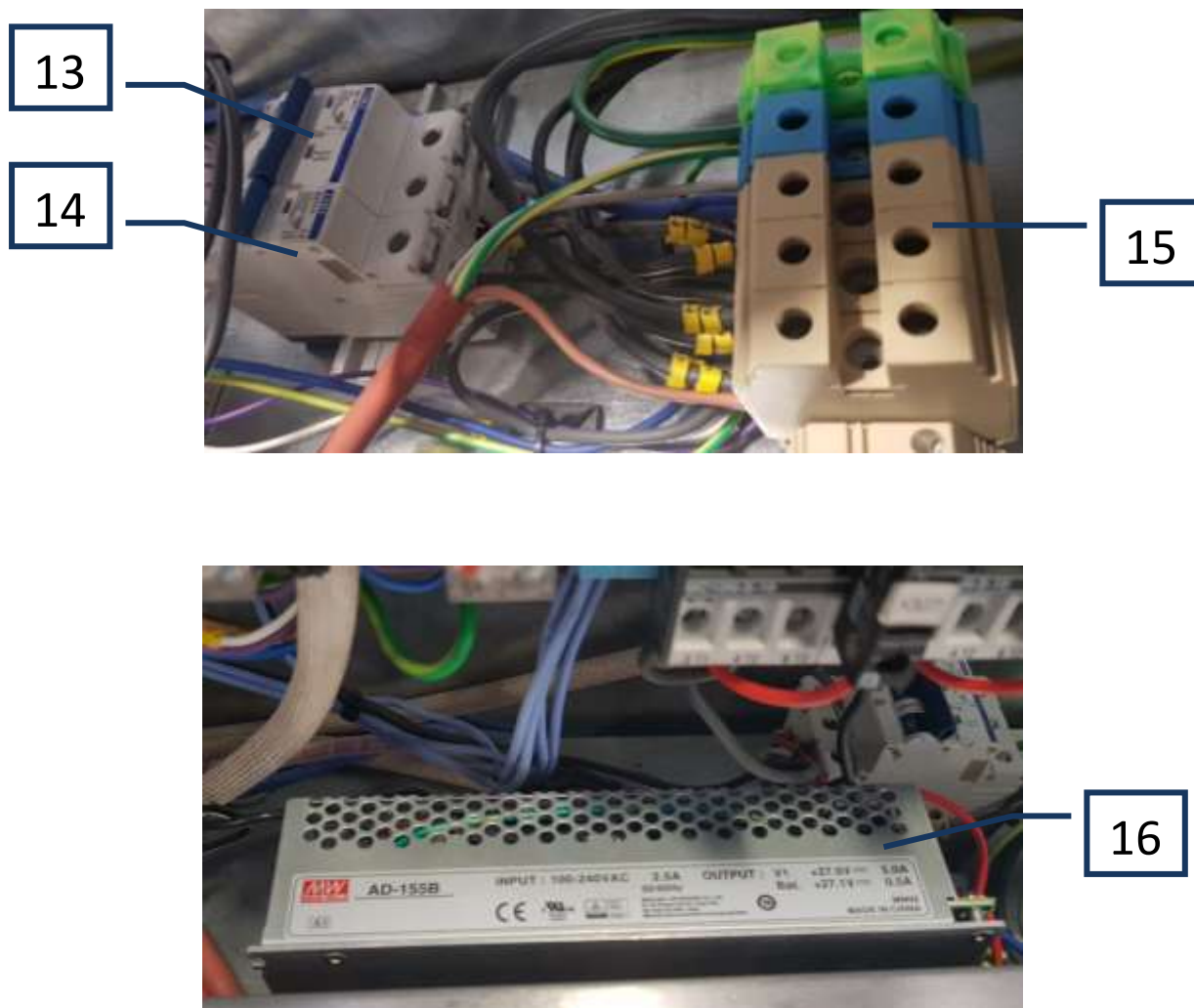
PARTS LIST continued



Number	Description	Stock Code	Wiring Diagram Label
03	Piezo buzzer	ESB-71005	H10
04	IO Board + 1.5m power cable	ESC-70081	NA
05	Thermostat 0-350C	EST-70076	B2
06	Geared motor 24VDC	ESC-70009	Damper motor
07	MCB 10A DP (B10C2010) ³	ESM-70123D	Q6
08	MCB 20A SP (B10C1020)	ESM-70198D	Q2, Q3, Q4, Q5
09	MCB 6A SP (B10C1006A)	ESM-70055D	Q7
10	Contactor 10A	ESC-71264	KM7, KM4, KM5, KM6, KM1, KM8
11	Relay 4 pole RXM-4AD1P7	ESR-72090	KA2
12	DC relay HY21PN24DC	ESR-71992	KA1, KA4

³ Mount circuit breakers may differ depending on each unit. Contact the Macadams Spares department with the serial number of your unit when buying spares.

PARTS LIST continued



Number	Description	Stock Code	Wiring Diagram Label
13	MCB 6A DP (B10C2006) ⁴	ESM-70076D	Q1
14	MCB 10A SP (B10C1010)	ESM-70088D	Q8
15	Terminal ER35 BEIGE Terminal 35mm BLUE Terminal EARTH ERPE	EST-77060 EST-77001 EST-77009	NA
16	Power supply 24v, 350w	ESC-70087S	PSU1

⁴ Mount circuit breakers may differ depending on each unit. Contact the Macadams Spares department with the serial number of your unit when buying spares.

PARTS LIST continued

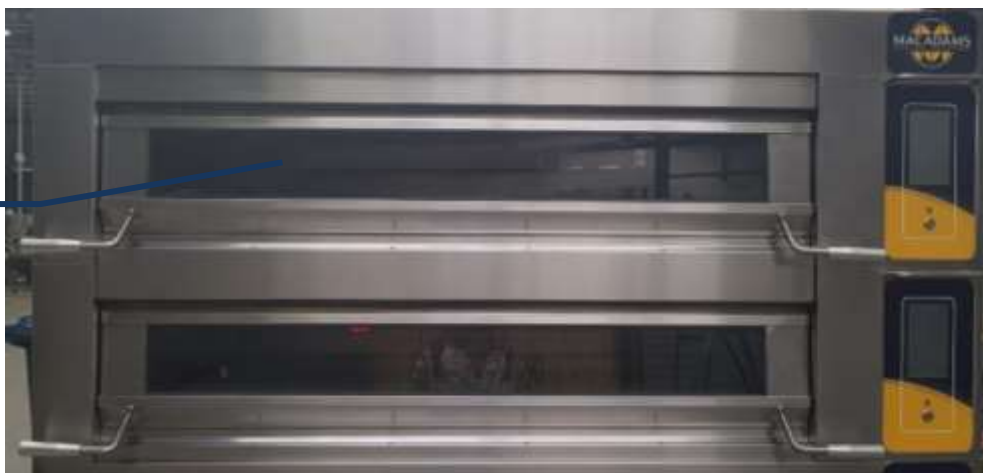
17



18



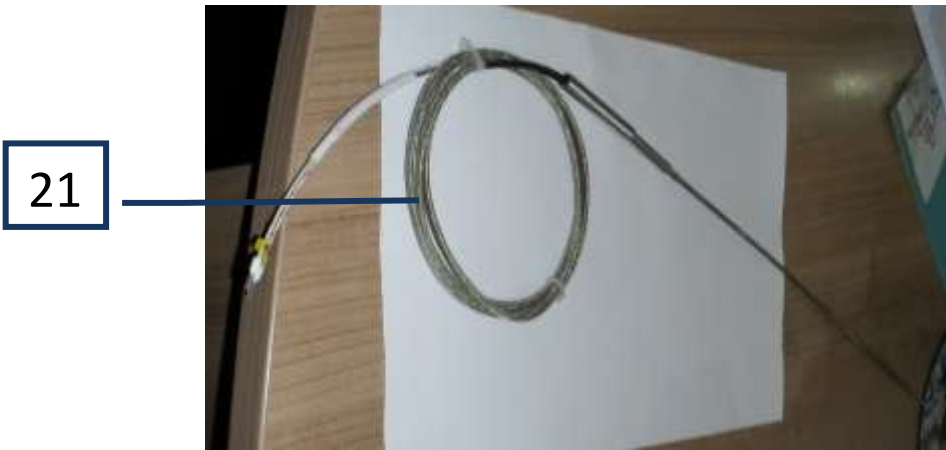
19



Number	Description	Stock Code	Wiring Diagram Label
17	Element 0.5kW 230V (2pan)	ESE-72340	NA
	Element 0.8kW 230V (3pan)	ESE-72342	
	Element 1.0kW 230V (3pan)	ESE-72343	
18	Temp type K probe	EST-72123	NA
19	Door c/w glass (2pan)	ISA-70024	NA
	Door c/w glass (3pan)	ISA-70014	

PARTS LIST continued

IF THE UNIT HAS STEAM



Number	Description	Stock Code	Wiring Diagram Label
20	Solenoid valve	ESS-70722	Y1
21	Temp type K probe STY5192A	EST-72133	BOTTOM PROBE/ TOP PROBE
22	Element (steam) 1.5kW, 400V (3P) Element (steam) 1kW, 380V (2P)	ESE-72055 ESE-72052	STEAMPROBE

Certain problems may arise when utilising the oven. The troubleshooting chart below will assist in solving these problems.



WARNING

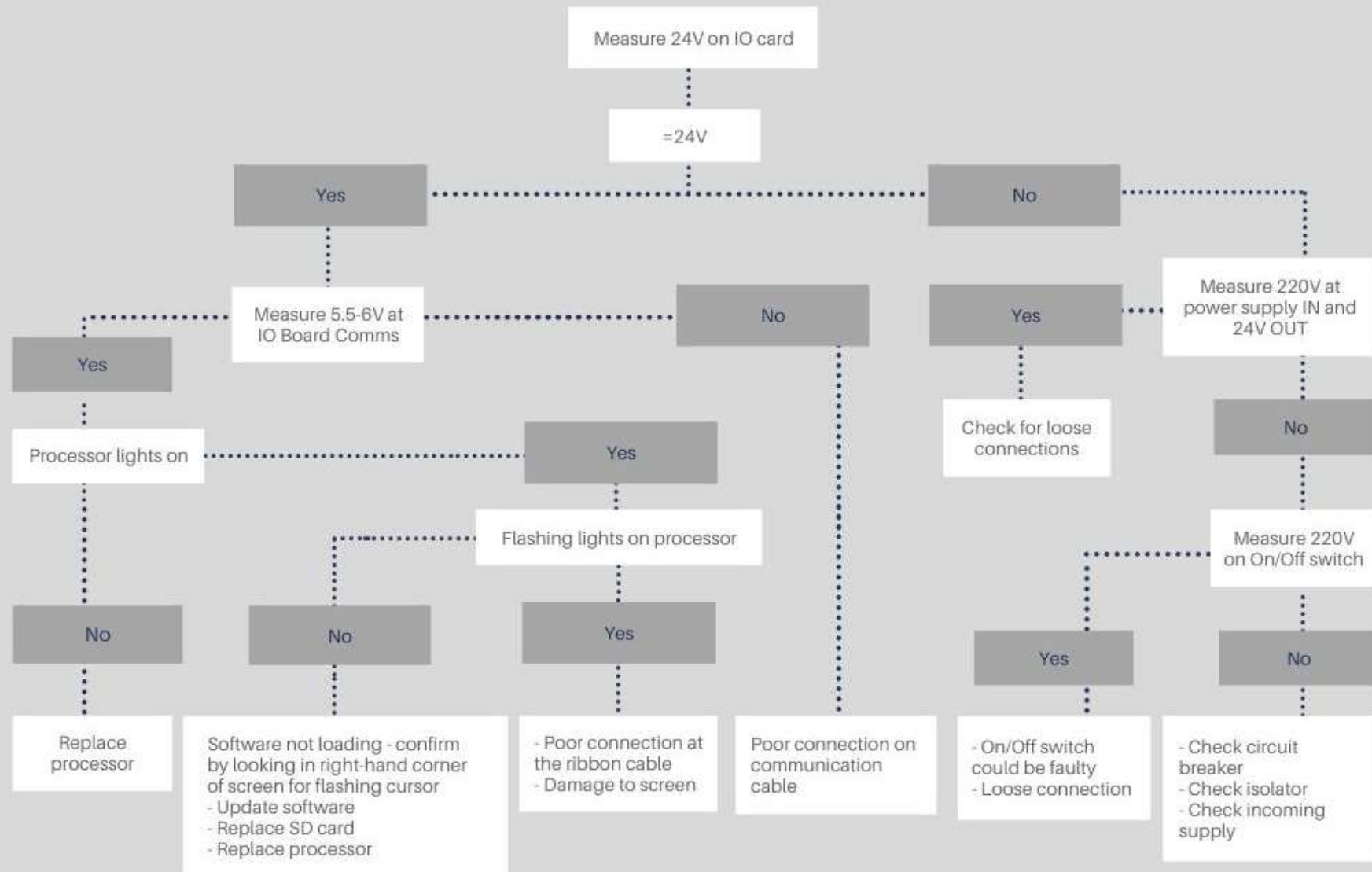
Repair work must always be carried out by authorised personnel. Never remove protection plates before having switched off the main switch of the oven.

PROBLEM	FAULT	ACTION
The oven does not start.	The main switch is off. The auxiliary circuit breaker has tripped.	Switch on the main switch. Reset the circuit breaker situated inside the control box.
There is no light.	The bulb has fused. The transformer is faulty.	Replace the bulb. Replace the transformer.
Oven temperature rises slowly and cannot be maintained during baking.	The damper is open. The circuit breaker has tripped. The elements have an open circuit. The overheat protection has tripped.	Close the damper. Reset the circuit breaker. Replace the elements. Reset the overheat protection.
No or little steam.	The water mains are closed. The dirt filter is clogged.	Open the water mains. Clean the filter.
Digital temperature controller malfunctioning.	The digital temperature controller is overheating.	Clean the filter in the panel fan and check that the fan is working.

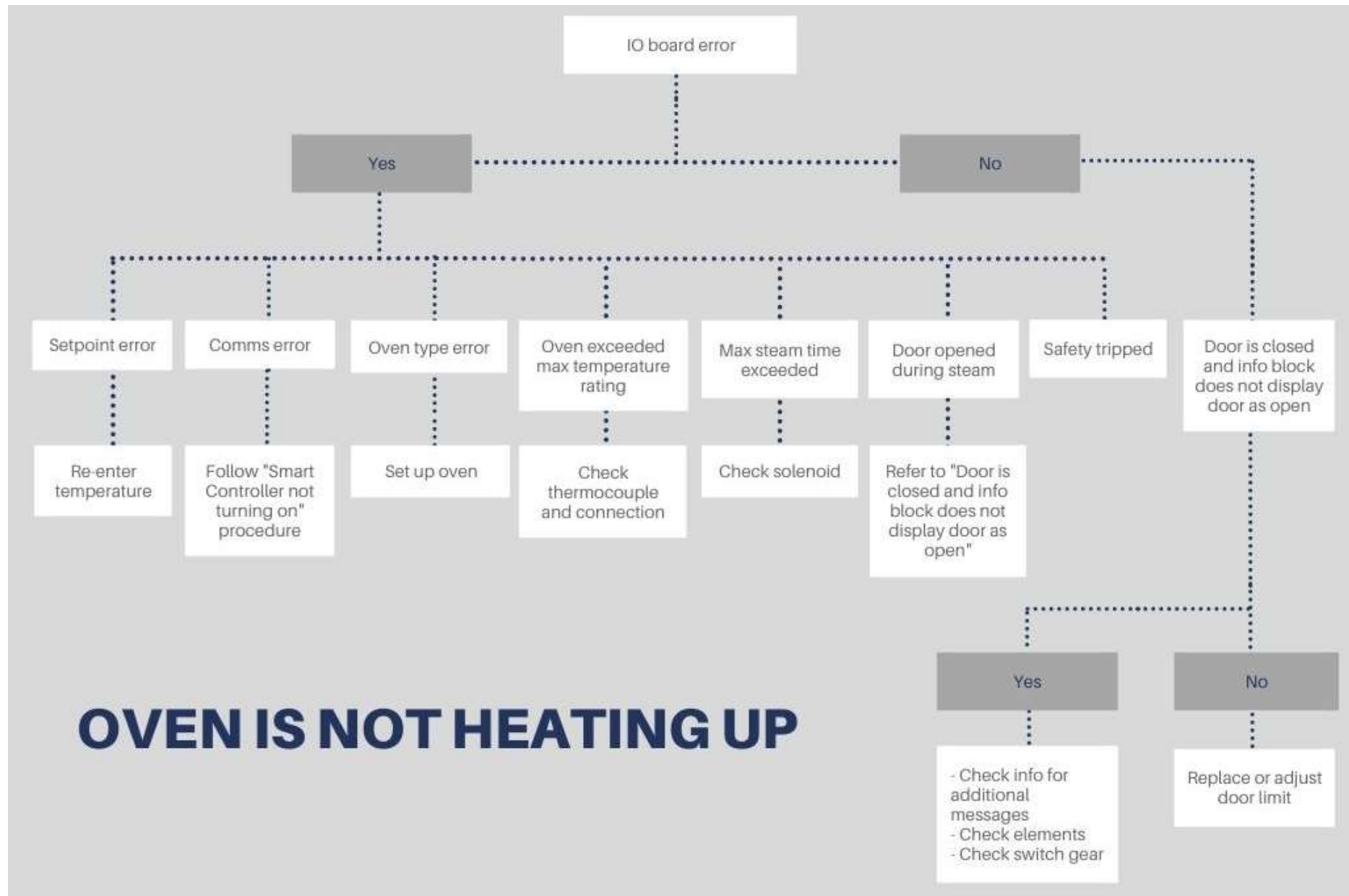
TROUBLESHOOTING continued

PROBLEM	FAULT	ACTION
Unresponsive screen	- Cracked screen - Software malfunction	- Replace screen - Restart - Update software
Screen does not turn off - Latching on/off switch - Pulsing on/off switch	Faulty switch - Wrong version IO card - Software problem - Faulty switch	Replace switch Check IO version Press and hold switch for at least 4 seconds and release Repeat sequence Update software Replace switch
Screen is flickering	Bad connection at comms cable Bad connection at ribbon cable Incorrect voltage	- Check connections - Follow flow chart diagnostics
USB is not working	Incorrect procedure Incorrect USB port used Outdated software	Refer to manual Use bottom port Update software to latest Use different USB
Controller not keeping memory	Corrupt software Loose battery soldering	Update software Replace processor
Irregular temperature fluctuations	Power supply not earthed	Check bridge between earth and V + on power supply
Damper not opening fully	Incorrect setting	Follow procedure in manual
Red spanner is flashing	Maintenance is overdue	Contact service provider
Temperature reading negative	Thermocouple is connected incorrectly Temperature offset too big	Change positive and negative Recalibrate
Temperature reads higher than 350deg	No input to thermocouple	Check connection of thermocouple. Replace thermocouple.

SMART CONTROLLER NOT TURNING ON



TROUBLESHOOTING continued



TROUBLESHOOTING continued

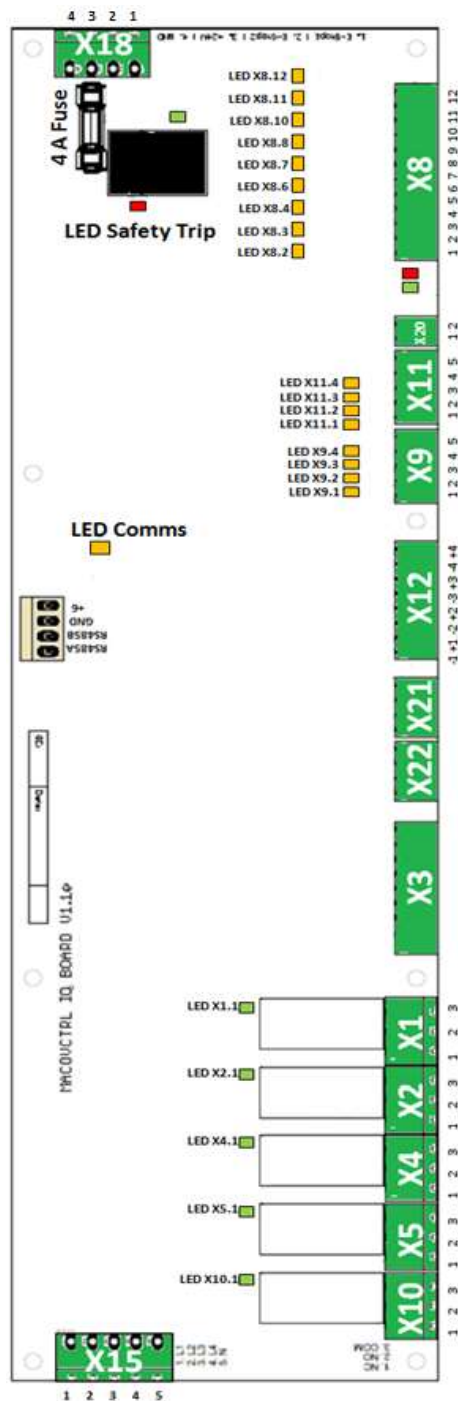
IO BOARD LAYOUT

CONNECTOR	PIN	LED	ARTISAN
X18 – Power and E-stop loop	1		E-stop loop
	2		E-stop loop
	3		24V DC
	4		0V
X8 – 24V DC Outputs	1		24V DC output
	2	1	Heat element
	3	2	Heat element
	4	3	Heat element
	5		24V DC output
	6	4	Heat element
	7	5	Steam
	8	6	Lights
	9		24V DC output
	10	7	Ext-fan
	11	8	
	12	9	Steam element
X20 – 24V DC Output	1		Damper
	2		
X9 – 24V DC Inputs	1	1	Ex-fan overl
	2	2	
	3	3	
	4	4	Ex-fan On
	5		0V
X11 – 24V DC Inputs	1	1	
	2	2	
	3	3	
	4	4	24V1
	5		0V
X12 – Probes	1+		Top probe
	1-		Top probe
	2+		Bottom probe
	2-		Bottom probe
	3+		
	3-		
	4+		Steam probe
	4-		Steam probe
X1 – Relay 5	1		Damper - Ballimo
	2		
	3		
X2 – Relay 4	1		Buzzer
	2		
	3		
X4 – Relay 3	1		
	2		
	3		
X5 – Relay 2	1		
	2		
	3		

TROUBLESHOOTING continued

IO BOARD LAYOUT

CONNECTOR	PIN	LED	ARTISAN
X10 – Relay 1	1		OVEN SWITCH OFF
	2		
	3		
X15 – 220V Inputs	1		
	2		
	3		
	4		SWITCH OFF
	5		NEUTRAL



WIRING DIAGRAMS ARE DEPENDANT ON THE SERIAL NUMBER OF THE UNIT.
CONTACT MACADAMS INTERNATIONAL WITH THE SERIAL NUMBER OF YOUR
UNIT FOR THE WIRING DIAGRAM RELATING TO YOUR UNIT.

***Wiring diagrams are dependent on the serial number of the unit.**

