

Enter \$	Serial	No.	here.				

In the event of an enquiry please quote this serial number.



## SET UP, OPERATION AND PROGRAMMING INSTRUCTIONS

# MX ROTARY RACK OVEN ELECTRIC VERSION

STANDARD 45kW LOW POWER 36kW INCREASED SIZE 60 x 80 tray, 56kW

**ECOTOUCH** CONTROL

**FILE 141** 

## **MANUAL REVISIONS**

Revision	Publication Date	Author	Description
A22	25-Sep-2022 CD Added new global safety message (maintenance).		Added new global safety message (maintenance).
A23	12-Mar-2023	CD	Amended RCD statement to state it is Type A.
A23	12-Mar-2023	CD	Deleted Fax number.
A24	26-Aug-2024	CD	New Declaration of Conformity certificate.
B24	30-Sep-2024	CD	Added spare parts exploded diagrams.
A25	26-Jan-2025	CD	Added JAN-2025 cable statement to Specifications.



## **Declaration of Conformity**



We the manufacturer:

**MONO EQUIPMENT** 

Queensway, Swansea West Industrial Park, Swansea SA5 4EB UK

Machine:	
	_
FG Code:	
	_
Serial No:	

Hereby declare that this machine conforms with and complies with the following directives:

- → The Machine Directive 2006/42/EC
- → The Low Voltage Directive 2014/35/EC
- $\rightarrow$  The Electromagnetic Compatibility Directive 2014/30/EU Incorporating Standards EN 55014-1:2017/A11:2022 & EN 55014-2:1997+A1:2001+A2:2008
- → The General Safety of Machinery and Food Processing Standards
- → Materials and Articles Intended to Come into Contact with Food Regulation (EC) No. 1935/2004
- $\rightarrow$  Good Manufacturing Practices (GMP) for Materials Intended to Come into Contact with Food
  - Regulation (EC) No. 2023/2006

A technical construction file for this machine is retained at MONO Equipment

MONO Equipment is a business name of AFE Group Ltd Registered in England No. 3872673

VAT Registration No. 923428136

Registered office: Unit 35, Bryggen Road, North Lynn Industrial Estate, Kings Lynn Norfolk, PE30 2HZ

> Mr Craig Petherbridge Quality & Compliance Manager

Mr Alex Davies Engineering Manager

QD 001 Dated 01/11/2022

## **SAFETY SYMBOLS**

The following safety symbols are used throughout this product documentation and manual (available at <a href="https://www.monoequip.com">www.monoequip.com</a>).

Before using your new equipment, read the instruction manual carefully and pay special attention to information marked with the following symbols.



## WARNING

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



## **WARNING**

Indicates a hazardous situation which, if not avoided, will result in electric shock.



## CAUTION

Indicates a hazardous situation which, if not avoided, will result in minor or moderate injury.



## ELECTRICAL SAFETY AND ADVICE REGARDING SUPPLEMENTARY ELECTRICAL PROTECTION

Commercial bakeries, kitchens and food service areas are environments where electrical appliances may be located close to liquids, or operate in and around damp conditions, or where restricted movement for installation and service is evident.

The installation and periodic inspection of the appliance should only be undertaken by a qualified, skilled and competent electrician, and connected to the correct supply suitable for the load as stipulated by the appliance data label.

The electrical installation and connections should meet the necessary requirements of the local electrical wiring regulations and any electrical safety guidelines.

#### We Recommend:

- Supplementary electrical protection with the use of a residual current device (RCD)
- Fixed wiring appliances incorporate a locally situated switch disconnector to connect to, which is easily accessible for switching off and safe isolation purposes. The switch disconnector must meet the specification requirements of IEC 60947.

#### Your attention is drawn to:

#### BS 7671:2018 - Guidance Note 8 - 8.13 : Other locations of increased risk

It is recognised that there may be locations of increased risk of electrical shock other than those specifically addressed in Part 7 of BS 7671. Examples of such locations could include laundries where there are washing and drying machines in close proximity, and water is present, and commercial kitchens with stainless steel units, where once again, water is present. Where, because of the perception of additional risks being likely, the installation designer decides that an installation or location warrants further protective measures, the options available includes:

- Automatic Disconnection of Supply (ADS) by means of a residual current device having a residual operating current not exceeding 30 mA;
- Supplementary protective equipotential bonding; and
- Reduction of maximum fault clearance time.

The provision of RCDs and supplementary bonding must be specified by the host organisation's appointed installation designer or electrical contractor and installed by a suitably qualified and competent electrician so as to comply with Regulations 419.2 and 544.2.



The supply to this machine must be protected by a 30mA Type 'A' RCD.

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## **NOTE**

All reference to RIGHT HAND ovens means that the main door is hinged on the right and the control panel is on the left.



All reference to LEFT HAND ovens means that the main door is hinged on the left and the control panel is on the left.

#### 1.0 INTRODUCTION

The **MONO MX** rotary rack oven is a compact, electrically heated oven with a touchscreen control panel. The standard version of the MXTE oven accommodates a single **rotating rack** of up to eighteen trays capacity. Versions of the MXTE oven with a rack turntable option support a **standard rack**.

Eco-touch ovens are factory-fitted with touchscreen control panels. This user-friendly controller shows pictures of product types or program numbers as set by the user. When not being used, the screen can show your company logo.

A voice-prompt facility is also available for the basic instructions like "Bake over."



## SCREEN CONTROLS





The stainless steel construction of the oven has easily cleaned interior and exterior surfaces and a bright appearance. The fan and rack rotator have generously rated, totally enclosed motors and a sealed-for-life gearbox.

The high-speed fan, heating, and steam systems give efficient air circulation to produce a professional bake across a range of products via a diagonal cross-flow system with efficient air circulation. The steam system is connected to a standard water supply. (Pumps are available for very low-pressure areas).

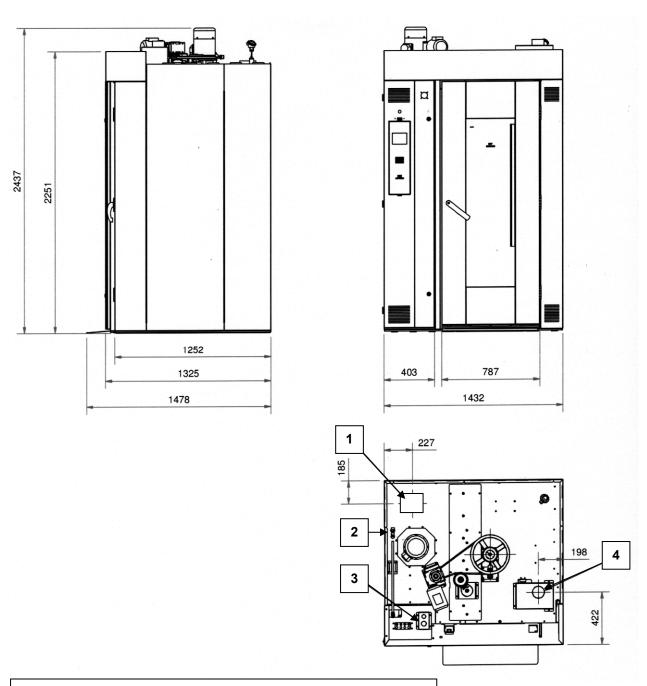
Steam is generated within the oven chamber by means of a multi-point, water injection cascade. The amount of steam to be generated is controlled by means of a programmable time period on the control panel. No drain is required for the baking and steaming process of this oven.

Programmed damper control is provided as part of the programming controls.

The oven door incorporates a large glass panel and LED lights to afford an excellent view of the baking progress. To optimise a bakery layout, the main oven door can be hinged on either side even if the oven is relocated after initial installation.

## 2.0 OVERALL DIMENSIONS

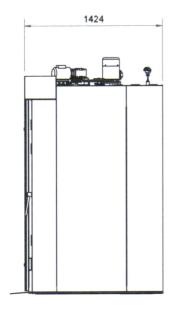
#### STANDARD VERSION

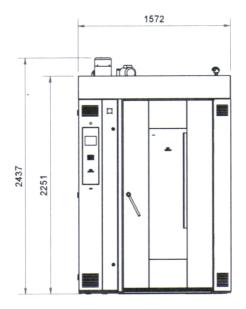


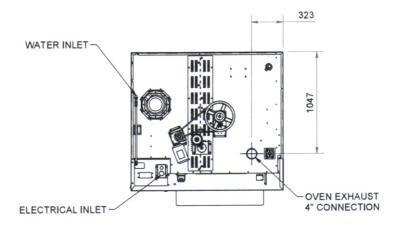
- I. FLUE GAS CONNECTION
  (BLANK PLATE ON ELECTRIC OVENS)
- 2. WATER CONNECTION: 3/4" BSP
- 3. POWER CABLE INLET (See **SPECIFICATIONS**)
- 4. STEAM DIVERTER BOX CONNECTION 10mm DIA.

MAX. RACK DIAGONAL = 885mm DOOR SWING RADIUS = 790mm

#### **LARGER 60 X 80 TRAY VERSION**







#### 3.0 SPECIFICATIONS

#### **Product**

Designation: Oven

#### **Electrical**



#### Warning

The supply to this oven **must be protected** by a 30mA Type A Residual Current Device (RCD).

Power supply: 415V 3ph + N + E

50Hz 47kW - 65amps per phase

Low power version 415V 3ph + N + E

50Hz 38kW - 53amps per phase

Larger 60 x 80 tray version

415V 3ph + N + E

50Hz 56kW - 80amps per phase

Connection point: A power cable is not supplied with the oven. The customer is to

supply the power cable in accordance with the appropriate

regulations.

See **OVERALL DIMENSIONS** for power cable inlet location.

Fuses: The oven is fitted with built-in automatic fuses, situated in the

uppermost region of the compartment behind the control door. The fuses are marked and can be accessed when the control

door is opened.

#### **Mechanical**

Width/depth/height: See OVERALL DIMENSIONS

Maximum tray size: 762mm (30") x 457mm (18")

Air circulation: Radial fan is driven by an electric powered motor – 1.5 kW

Steam system: Mass energy storage, no drain

Rack rotation: Electric powered motor/gearbox (0.18 kW) driven via belt drive

Hanger inside the baking chamber.

Rack turntable fitted to selected models (FG166-E\*\*\*TT), compatible with a range of standard racks. Contact MONO

Equipment to check for compatibility.

#### **Materials**

No materials containing asbestos have been used in the construction of this oven.

#### **Heating system**

Fuel: Electricity

Output: 45kW (15 elements of 3kW)

<u>Low power version - 36kW</u> (12 elements of 3kW)

Flue system

Flue connection: See **OVERALL DIMENSIONS** for flue location.

#### **Rack rotation**

The rack hanger is driven by an electric motor situated on the mid left-hand side of the oven roof. Power transmission to the rack-hanger's central drive shaft is by means of a single tensioned V-belt that affords slippage of the transmission in the event of a blockage to rack rotation.

A rack turntable option is fitted to selected models (FG166-E\*\*\*TT), allowing the use of a range of standard racks in the MONO MXTE oven.

#### Air circulation system

An electrically powered radial fan re-circulates air within the oven. Heated air enters the fan at the upper left-hand side of the oven and is driven within the roof structure to the vertically orientated air door at the rear corner of the baking chamber. Adjustable openings in the air door allow the amount of air entering the baking chamber at various heights to be adjusted to get the optimum baking result.

<u>The air door openings are set at the factory and should not require resetting</u>. The factory settings are given in the section **Setting the Air Slots** for reference. Should these factory setting fail to give a satisfactory baking performance then instructions for adjusting the openings are given.

#### **Steam system**

The steam generating system is completely contained within the oven and situated at its left hand side in the lowermost region of the air duct, outside of the baking chamber. Only cold water, at a pressure of 4-6 bar (58-87 PSI), needs to be connected to the oven for the purpose of steam generation.

From a cold oven start the steam system will typically require 20 minutes to accumulate sufficient energy to produce satisfactory steaming performance; and during repeated baking cycles it automatically re-energises itself during the bake cycle. No drain is required for the steam system.

Under normal conditions of use this oven is not considered a pressure vessel.

#### **Heating System**

Heat is transferred to the baking chamber through the interaction of re-circulating air passing over the hot surfaces of the heating elements.

#### **Ventilation**

To ensure the correct operation of the roof-mounted components the ambient temperature should not exceed 50 °C. The oven requires zero clearance on left, right and rear vertical faces for operation or maintenance.

#### **Extraction**

Airborne emissions from the baking process, such as steam, oil, etc., will be discharged from the overpressure duct and the damper duct; both situated at roof level towards the front of the oven. Discharge will also occur from the front of the oven upon opening the door at the end of a bake.

See also INSTALLATION.

#### **Noise**

Emission of airborne noise is less than 70dB.

#### 4.0 SAFETY

In the interest of safety and efficient operation of the oven, it is essential that this manual should be made available to the operator before work is commenced.

The following points should be observed and followed at all times.

- This oven is designed for baking bread, confectionery and savoury bakery products. Do not use it for other items without consulting with **MONO**.
- 2. It is essential for proper and safe operation of the oven that users are familiar with its operation and use.

  Read the instructions provided in this document before use.
- 3. This appliance is not intended for residential use.
- 4. This appliance is not intended for outdoor use.
- 5. Unauthorised service or repairs to these ovens may cause personal injury or damage to the equipment, which may invalidate warrantee agreements.



- Only qualified engineers appointed by MONO EQUIPMENT should carry out service and repairs to this equipment. Electrical panels and electrical distributor boxes should not be opened until the main electrical supply to the oven has been turned off.
- 7. All connections to this oven must be made in accordance with the statutory and technical regulations of the country in which the oven is installed.
- 8. When work is being carried out inside the oven, the electrical mains isolator must be turned off and locked. The baking compartment door should be wedged open and a suitable warning notice hung on the door to prevent it being accidentally closed



- While the oven is in operation, and for some time after having been in operation, it is dangerous to touch the window glass or the metal surfaces in its vicinity. The oven must be allowed to cool before any form of cleaning is started.
- 10. Use only **MONO** spare parts for this oven.
- 11. The construction of the oven must not be changed.



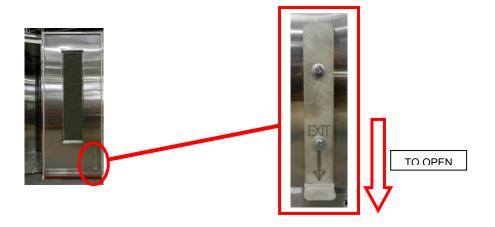
- 12. Oven gloves should be worn when moving products in or out of the oven.
- 13. The owner of the oven is **legally obliged to instruct staff** using the oven in its operation and in these safety regulations. The instruction manual for the oven must not be removed from the oven work area.

**WARNING:** WHEN DOING ANY MAINTENANCE ON TOP, KEEP CLEAR OF THE RECTANGULAR FLUE PIPE TOWARDS THE FRONT RIGHT HAND SIDE OF THE ROOF. **VERY HOT** AIR IS EJECTED.

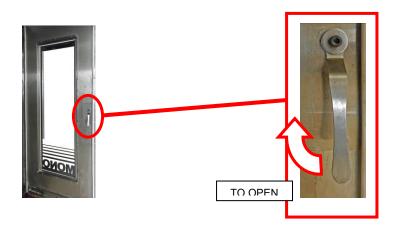


- 14. Moving parts remain unguarded on the oven roof as this area is out of reach of the operator and therefore deemed safe. Care must be taken to avoid these motorised parts when maintenance tasks are performed.
- 15. Unless trays/containers for the purpose of holding the oven products are supplied with the oven by the manufacturer, it is the responsibility of the customer to ensure that the nature and surface conditions of materials likely to come into contact with food shall be such that they cannot contaminate or spoil the food.
- 16. <u>Up until August 2017</u> the oven's main door has a safety release foot-plate on its inner side allowing the door to be opened from inside in an emergency lock-in situation.

#### **EMERGENCY INTERNAL-DOOR RELEASE**



After August 2017 the oven's main door has a safety release handle on its inner side allowing the door to be opened from inside in an emergency lock-in situation.



#### 5.0 INSTALLATION

- The **MONO MXE** oven is designed to operate as a freestanding unit, and must not be bolted down or fixed to the floor in any way.
- The concrete floor beneath the oven must be smooth, flat and clear of any obstructions, and must be at least 150mm (6") thick.
- The foundation must be flush with the overall bakery floor because racks are wheeled up a ramp (supplied with the oven) into the baking chamber.
- A minimum headroom clearance of 3 metres (180") between the floor and the bakery ceiling must be maintained at all times.

#### 5 WATER SUPPLY

The water supply to the oven shall be fitted with protective means against backflow in the water supply and installed according to the national regulations in force.

Customers in hard water areas must ensure that an efficient water treatment device protects the supply to the oven. It is the customers' responsibility to install and maintain an adequate water supply to the oven, which should comply with local water regulations.

Connect to a suitable water supply, making sure that the pipes are flushed out to remove all foreign bodies i.e. flux or solder.

#### **NOTE**

Set up of the pressure regulator should not be required as it is factory set to the optimum setting to provide the best steam during a bake.

#### 7. Oven evacuation --- Canopy/Hood

It is recommended that evacuation of the oven baking chamber products is achieved with a hood covering the entire oven top and projecting beyond the front of the oven by 600mm. the extraction rate from the hood should be approximately 1700m<sup>3</sup>/h.

The customer is responsible for providing adequate levels of make-up air if an extraction hood is fitted.

### How to load the oven when a rack turntable is fitted

(FG166-E\*\*\*\*TT models only)

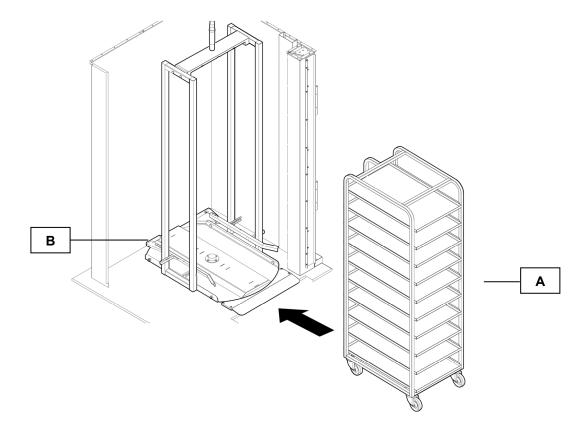


#### Caution

Surfaces on the oven will be hot – always wear protective gloves and appropriate clothing (including shoes).

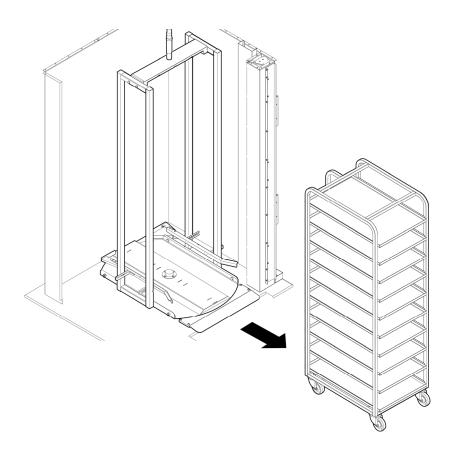
#### Before starting a bake

- 1. Open the oven door.
- 2. Push the rack (A) into the oven until it reaches the back stops (B) on the turntable.
- 3. Close the oven door.



#### After baking is complete

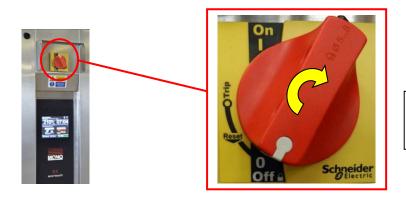
- 1. Open the oven door.
- **2.** Pull the rack out of the oven.
- **3.** Close the oven door.



### 6.0 ISOLATION



In case of an emergency, switch oven off at mains electrical isolator switch.



MAINS ELECTRICAL ISOLATOR SWITCH

<u>NOTE:</u> IF WORKING ON ELECTRICAL BOX AND PANEL, ensure oven is DISCONNECTED from <u>CONSUMER POWER SUPPLY</u>.

NOT ONLY OVEN ISOLATOR ABOVE, AS SOME PARTS STAY LIVE AFTER ISOLATOR SWITCH IS OPERATED

### 7.0 CLEANING INSTRUCTIONS

#### **Caution**

Do not use high-pressure equipment to clean the oven.

The oven has been designed with sealed components, which are used wherever possible. The minimum of routine cleaning is required, but it is essential that it be properly and regularly carried out.

- 1. Sweep out debris from the oven floor daily.
- 2. Clean up spillages of product on the oven floor.
- 3. Wipe off splashes on door window.

Do not use alkaline or abrasive detergents when cleaning the oven. Do not use detergents on the control panel overlay – wipe with a damp cloth only.

**Note:** Buildup of spillages may result caused by incorrectly placed racks. Also check for damage to door seals, particularly if operators are careless with rack handling.

## 8.0 GENERAL MAINTENANCE



#### WARNING

- This appliance must be maintained at regular intervals. The frequency of maintenance will depend upon your specific use and location. The maximum service interval should be 12 months.
- Service and maintenance should only be undertaken by suitably qualified, trained, and competent engineers.
- You must immediately report any damage or defect arising with the appliance.
- Unsafe equipment is dangerous. Do not use the appliance.
   Isolate the power supply and contact MONO or your appointed service agent.

To maintain the warranty conditions, the oven must undergo service at specific intervals. Below is the service program with the given intervals:

#### **Every 3 months**

Lubrication:

Door lock Heat resistant grease

#### **Every 12 months**

#### Check/adjust:

Door lock mechanism
Internal door release mechanism
Lighting, including cables
Damper function
Drive belt tension
Limit positions
Water connection tightness
Solenoid valve operation
Rack hanger bearing
Function check
Chamber temperature calibration

#### Lighting

If the lighting in the door fails to operate, contact the MONO Service Department. It cannot be replaced by the user.



## Section 9

## TOUCH SCREEN OPERATING INSTRUCTIONS

## **BASIC OPERATION**

## ALL OPERATIONS ARE ACTIVATED BY TOUCHING AREAS ON THE SCREEN, WHICH WILL PASS YOU ON TO THE NEXT INFORMATION PANEL.

DO NOT USE EXCESSIVE FORCE.

(THE PRESSURE REQUIRED TO OPERATE THE PANEL CAN BE ALTERED IN THE SETTINGS SECTION)

TOUCH THE SCREEN
ON THE AREA YOU
REQUIRE TO
ACTIVATE



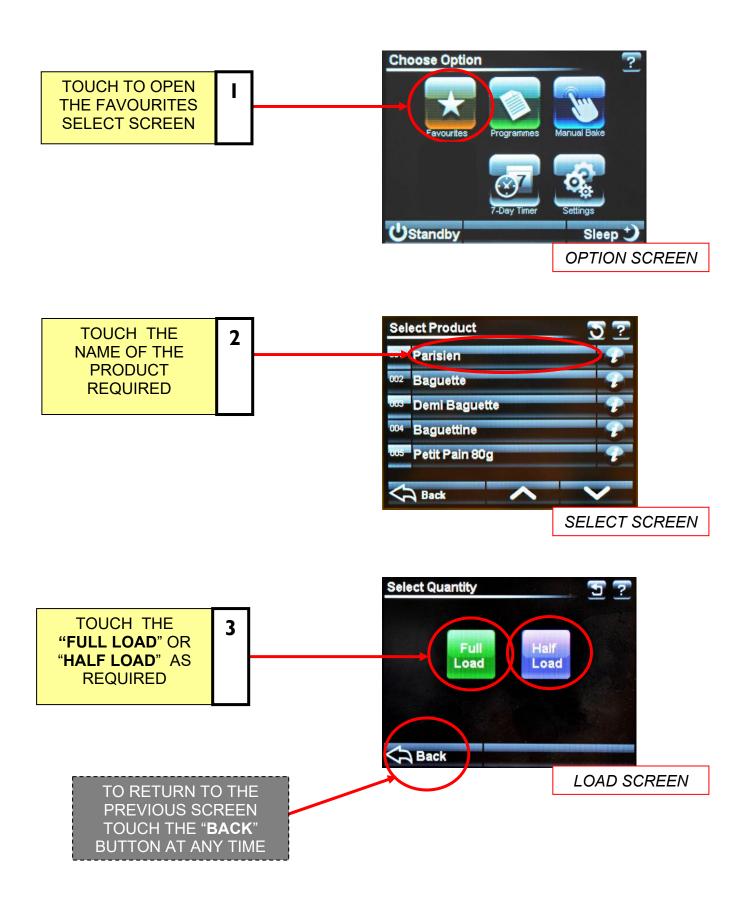


STANDBY
THE OVEN TURNS OFF.
TOUCH THE SCREEN TO GO TO
THE OPTION SCREEN.



SLEEP
THE OVEN STAYS AT 100c AND
HEATS TO LAST PROGRAM
TEMPERATURE WHEN THE
SCREEN IS TOUCHED.
OPTION SCREEN THEN SHOWS.

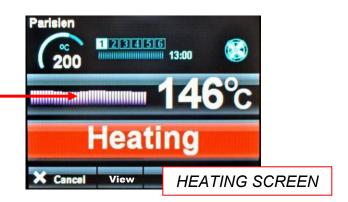
## 9 -1 BAKING USING FAVOURITES MENU



## IF THE OVEN IS NOT UP TO TEMPERATURE IT WILL SHOW THE HEATING SCREEN.

## WAIT FOR THE OVEN TO REACH TEMPERATURE

IF THE OVEN IS TOO HOT FOR THE TEMPERATURE CHOSEN, THE SCREEN WILL TELL YOU TO OPEN THE DOOR TO AID COOLING.



## WHEN OVEN IS AT THE CORRECT TEMPERATURE THE "**READY**" SCREEN WILL SHOW.

- 1. OPEN DOOR AND LOAD PRODUCT.
- 2. CLOSE THE DOOR FULLY.
- 3. TOUCH "START"

#### TIP

TO HELP TO KEEP THE OVEN HOT, TRY NOT TO KEEP THE DOOR OPEN MORE THAN NEEDED



4

#### **BAKE IN PROGRESS SCREEN**

THIS SCREEN WILL SHOW WHILE THE PRODUCT IS BAKING

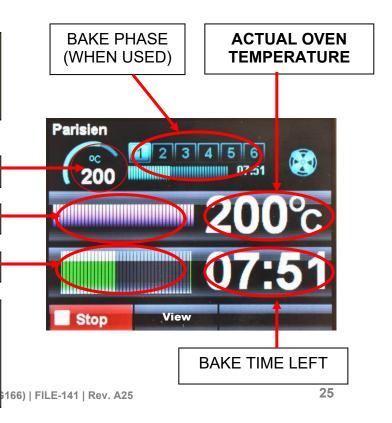
#### **SET TEMPERATURE**

TEMPERATURE PROFILE BAR

BAKE TIME PROGRESS BAR

#### NOTE

The actual temperature shown will rise and fall above and below the set temperature as the oven cools and reheats. This is not a fault



#### BAKE OVER SCREEN

5

AT THE END OF THE BAKE TIME A SOUNDER WILL BE HEARD AND "BAKE OVER" WILL FLASH.
TOUCH "STOP" AND OPEN THE DOOR TO REMOVE THE PRODUCT.

TO KEEP THE OVEN BAKING FOR EXTRA MINUTES
THE "+ 10 MIN" BUTTON CAN BE TOUCHED.
(THIS TIME CAN BE ALTERED IN SET UP)

#### TOUCHING "VIEW" BUTTON DURING A BAKE

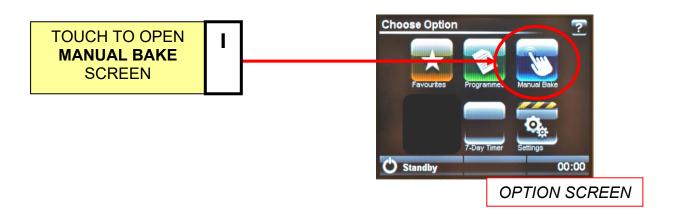
TOUCHING "VIEW" BUTTON
DURING A BAKE WILL SHOW THE
SETTINGS FOR THE BAKE IN PROGRESS.
TOUCH "CANCEL" TO GO BACK TO THE
PREVIOUS SCREEN.





VIEW SCREEN

## 9 - 2 BAKING USING MANUAL MENU



#### SET BAKE TIME AND TEMPERATURE



2

### SET BAKE TEMPERATURE

TOUCH TEMPERATURE ON THE SCREEN TO ACTIVATE THE KEYBOARD SCREEN.
KEY IN REQUIRED TEMPERATURE



#### **SET BAKE TIME**

TOUCH TIME ON THE SCREEN TO ACTIVATE THE KEYBOARD SCREEN. KEY IN REQUIRED TIME AND TOUCH "DONE"

7 8 9
4 5 6
1 2 3
0 

X Cancel

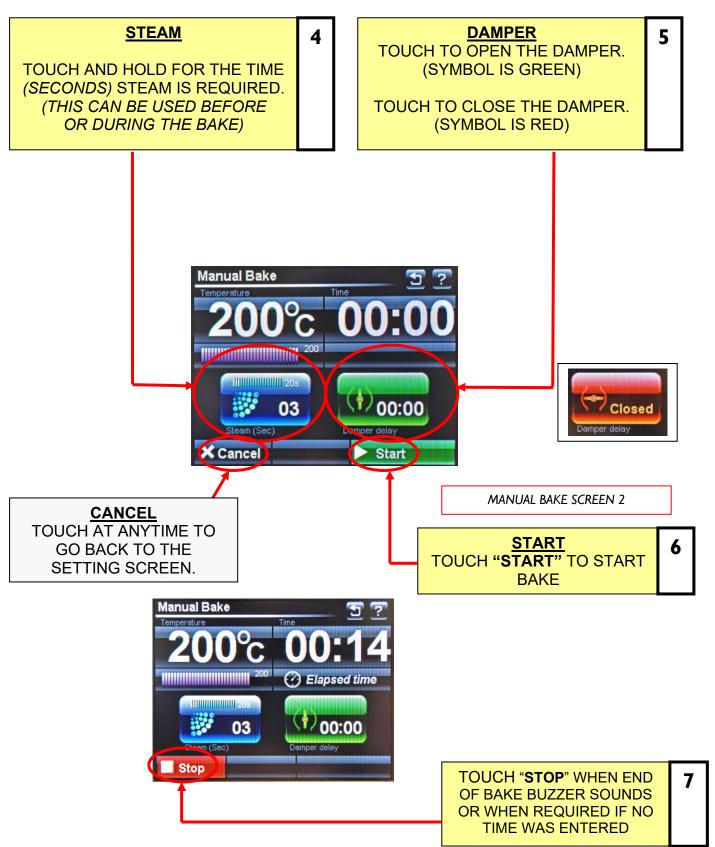
#### NOTE:

TIME DOES NOT HAVE TO BE SET IN MANUAL MODE. (ONLY TEMPERATURE) WHEN START IS PRESSED, THE TIME WILL COUNT UP INSTEAD OF DOWN.

TOUCH STOP TO FINISH BAKE.

3

### USE STEAM TIME AND DAMPER IF REQUIRED



## SAVE MANUAL PROGRAM, IF REQUIRED



MANUAL BAKE SCREEN 3

#### **SAVE SETTINGS**

IF NO TIME WAS ENTERED AT THE START OF THE BAKE, WHEN STOP IS TOUCHED "SAVE" WILL APPEAR AT THE BOTTOM OF THE SCREEN. "SAVE"CAN BE TOUCHED AND AN OPTION SCREEN WILL APPEAR.

#### TOUCH "ADD TO FAVOURITES" OR "SAVE AS"



USE KEYBOARD TO TYPE THE REQUIRED NAME AND TOUCH "SAVE"

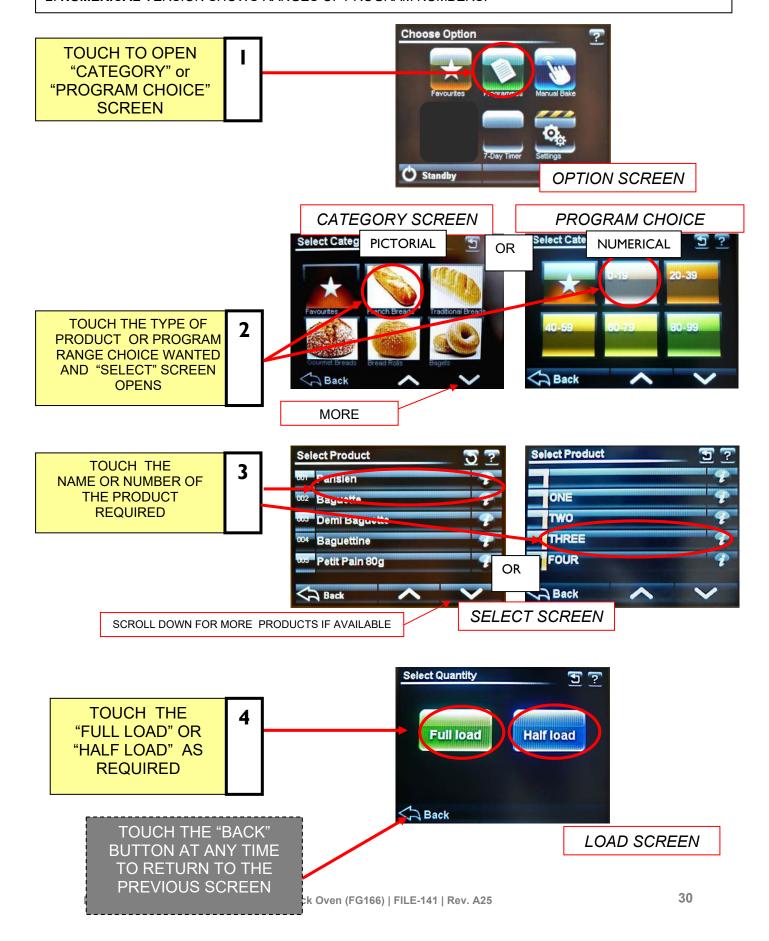


NOTE: In manual mode, only one operation of the steam or damper is saved.

### 9 - 3 BAKING USING PROGRAMMES MENU

NOTE: THIS COVERS TWO VERSIONS OF FIRMWARE. (THE OVEN CAN BE PRE-SET TO SHOW ONLY ONE OF THEM).

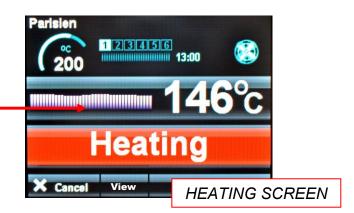
- 1. PICTORIAL VERSION SHOWS CHOICES OF PRODUCT CATERGORIES
- 2. NUMERICAL VERSION SHOWS RANGES OF PROGRAM NUMBERS.



#### IF THE OVEN IS NOT UP TO TEMPERATURE IT WILL SHOW THE HEATING SCREEN.

#### WAIT FOR THE OVEN TO REACH **TEMPERATURE**

IF THE OVEN IS TOO HOT FOR THE TEMPERATURE CHOSEN, THE SCREEN WILL TELL YOU TO OPEN THE DOOR TO AID COOLING.



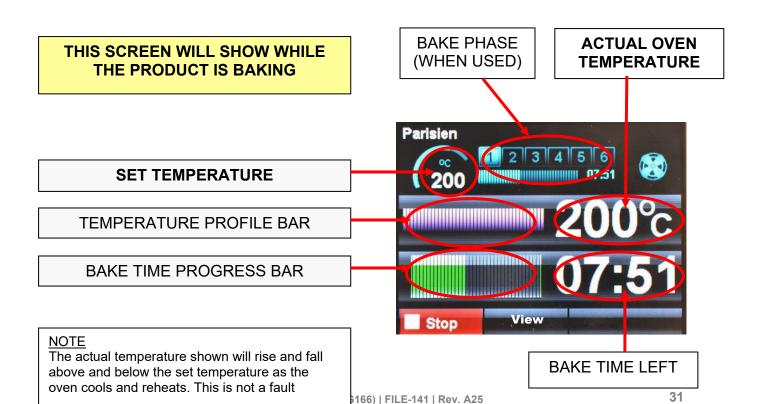
WHEN THE OVEN IS AT THE CORRECT TEMPERATURE, THE "READY" SCREEN WILL SHOW.

- 1. OPEN DOOR AND LOAD PRODUCT.
- 2. CLOSE THE DOOR FULLY.
- 3. TOUCH "START"

TIP

TO HELP TO KEEP THE OVEN HOT, TRY NOT TO KEEP THE DOOR OPEN MORE THAN NEEDED





5

#### BAKE OVER SCREEN



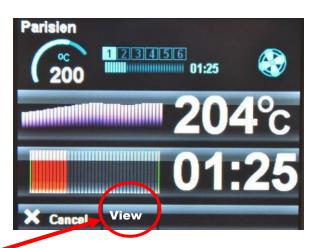
AT THE END OF THE BAKE TIME A SOUNDER WILL BE HEARD AND "BAKE OVER" WILL FLASH.
TOUCH "STOP" AND OPEN THE DOOR TO REMOVE THE PRODUCT.

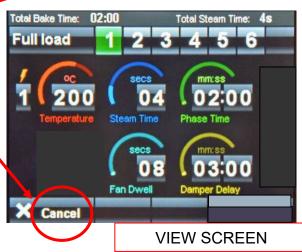
6

TO KEEP THE OVEN BAKING FOR EXTRA MINUTES THE "+ 10 MIN" BUTTON CAN BE TOUCHED. (THIS TIME CAN BE ALTERED IN SET UP)

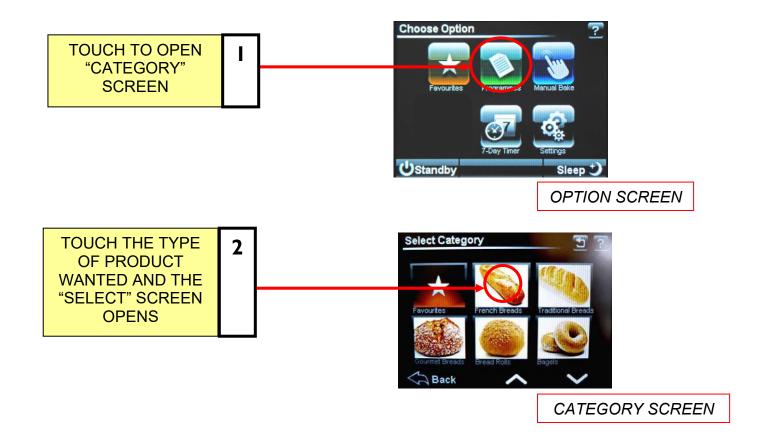
#### TOUCHING "VIEW" BUTTON DURING BAKE

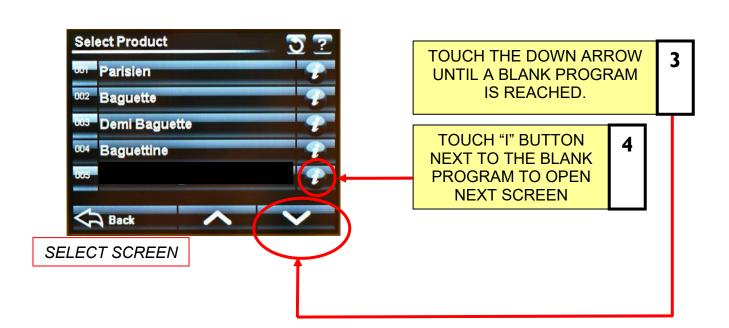
TOUCHING "VIEW" BUTTON
DURING BAKE WILL SHOW THE SETTINGS
FOR THE BAKE IN PROGRESS.
TOUCH "CANCEL" TO GO BACK TO THE
PREVIOUS SCREEN.

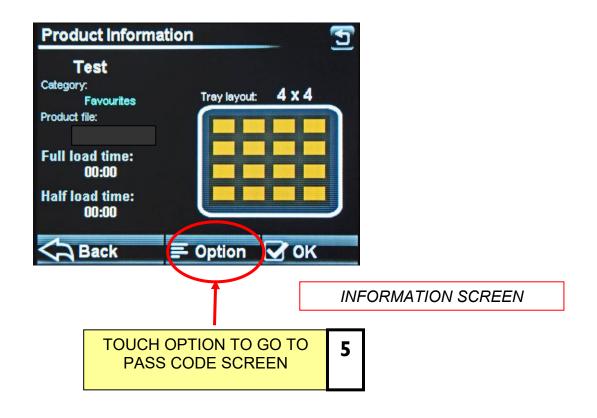


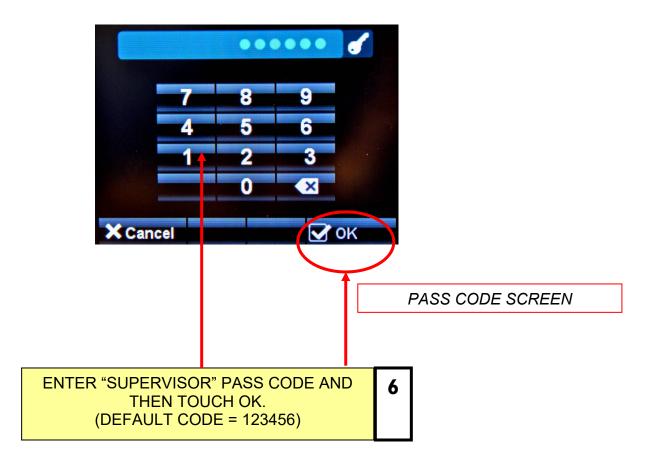


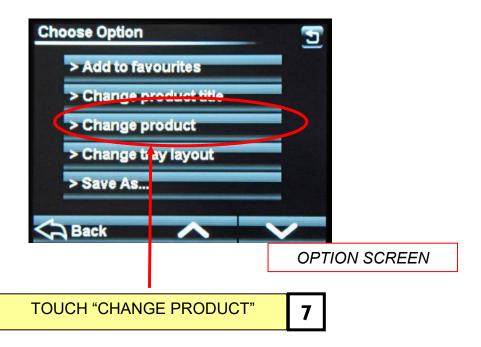
## 9 - 4 CREATING A PROGRAM

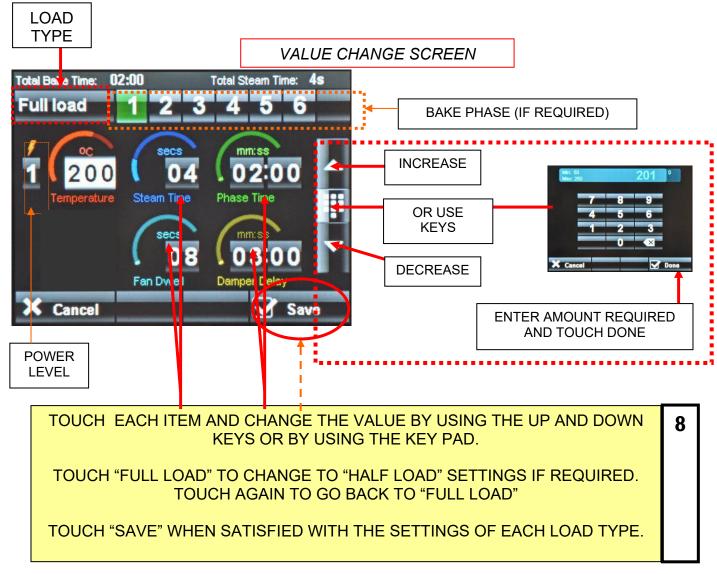




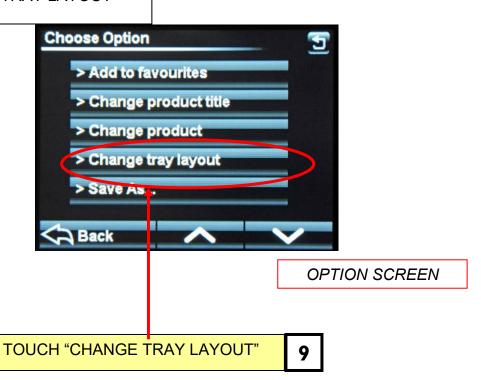


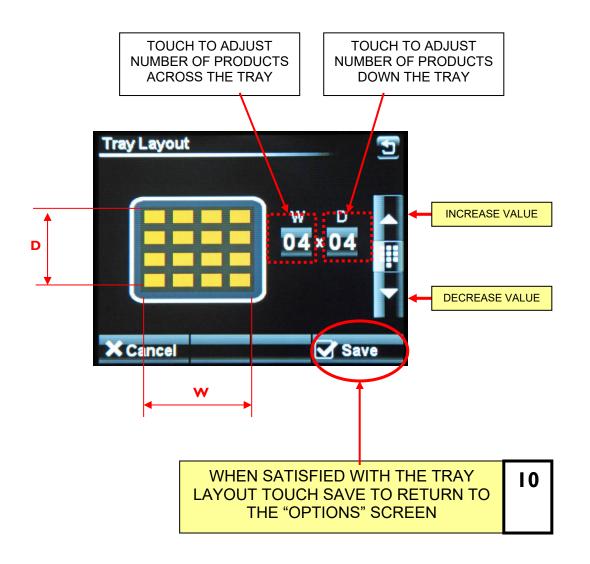


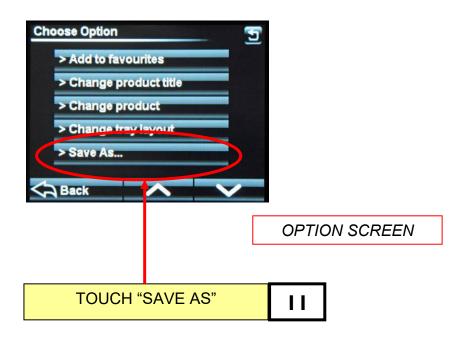


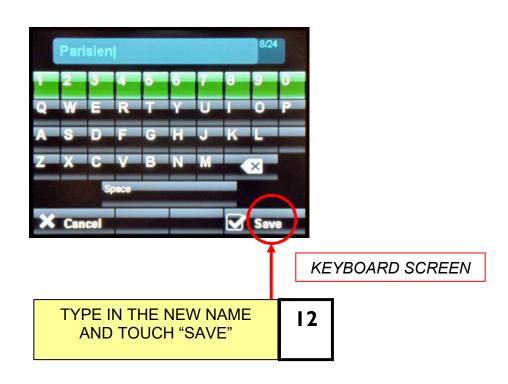


#### **CHANGE TRAY LAYOUT**

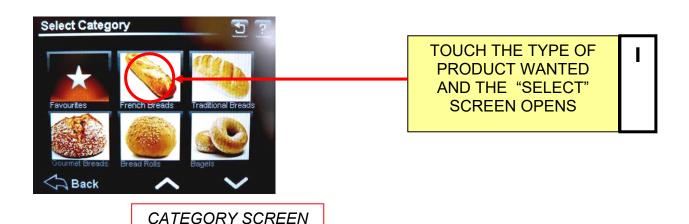


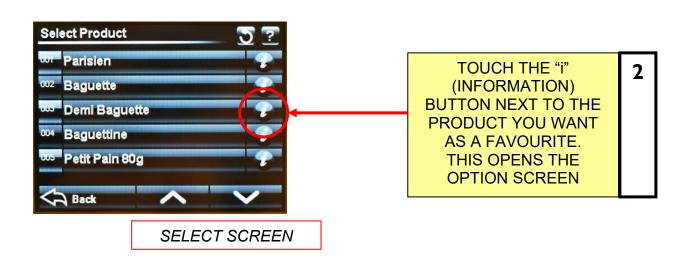


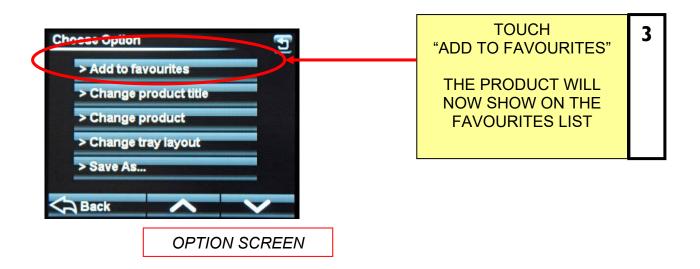




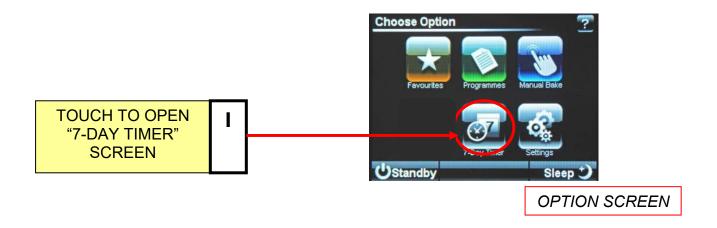
#### ADD A PRODUCT TO THE FAVOURITES LIST

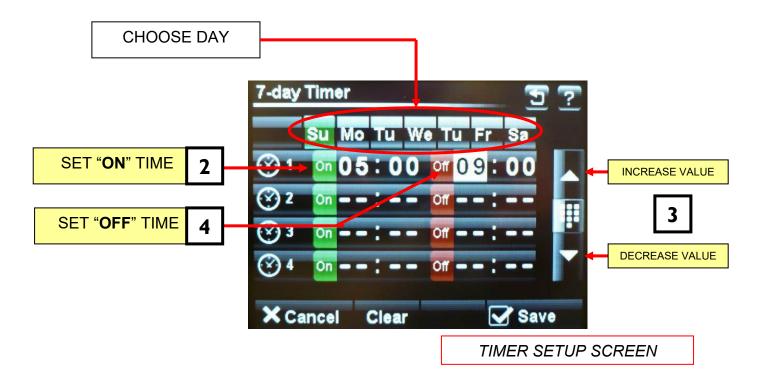






## 9 - 5 SETTING 7-DAY TIMER





#### **NOTE**

Up to four on/off times can be set for each day.

Touch "clear" to clear the settings on the day shown.

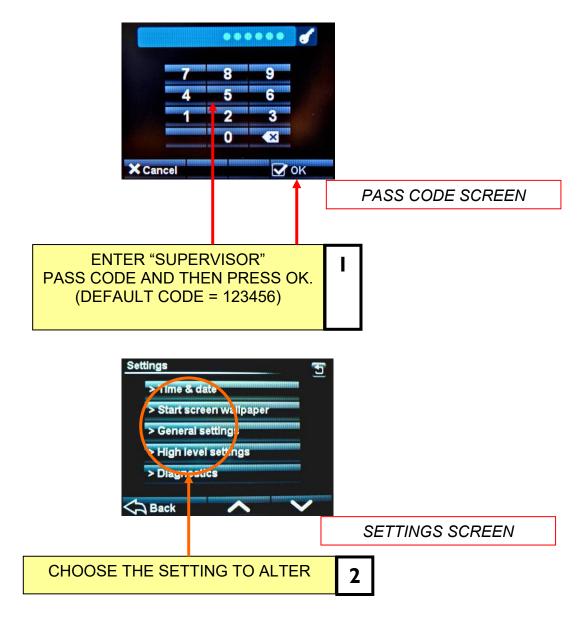
Touch "save" to activate the times set.

# 9-6 SETTINGS

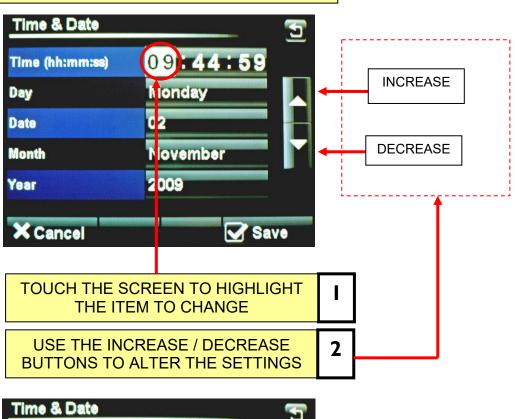


**OPTION SCREEN** 

TOUCH TO OPEN THE "SETTINGS" SCREEN



### TIME AND DATE





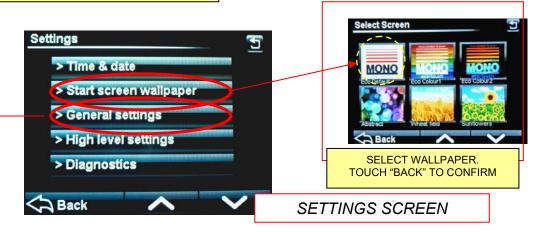
TIME AND DATE SCREEN

WHEN ALL INFORMATION IS CORRECT, TOUCH "SAVE". THIS WILL RETURN TO THE SETTINGS SCREEN



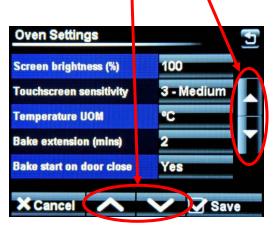
SETTINGS SCREEN

## **OVEN SETTINGS (GENERAL)**



TOUCH "GENERAL SETTINGS" AND THE FOLLOWING SCREEN WILL APPEAR.

SCROLL DOWN TO MOVE THROUGH ALL CHOICES AND ADJUST EACH ONE AS REQUIRED, USING THE ARROW KEYS.









### **OVEN SETTINGS EXPLAINED - GENERAL LEVEL**

#### **SCREEN BRIGHTNESS -**

Adjusts the brightness of the viewing screen for user comfort.

#### **TOUCHSCREEN SENSITIVITY -**

Adjusts the pressure required to operate the touch screen. (5 settings)

#### **TEMPERATURE UNIT OF MEASURE -**

Centigrade (Celsius) or Fahrenheit

#### **BAKE EXTENSION (mins) –**

Adjusts the extra time at the end of a bake for each "extra time" button touch. (10mins max)

#### **BAKE START ON DOOR CLOSE -**

This will start the set bake program as soon as the door closes.

#### SLEEP MODE DELAY -

Oven will go into sleep mode after the set minutes, providing it is up to temperature and has been through at least one bake cycle.

#### **8 HOUR COUNTDOWN TIMER -**

After 8 hours the oven gives a warning and then turns off.

Touch any button for an extra hour if required.

#### POWER LEVEL (1-4) -

Set these as required for each level to be used.

#### CHART INTERVAL -

Time interval in seconds that the bars show on the heat and bake time progress charts.

#### **SOUNDER SELECT -**

Set as external or onboard.

#### **SOUNDER TONE -**

Select a tone - Voice or Off

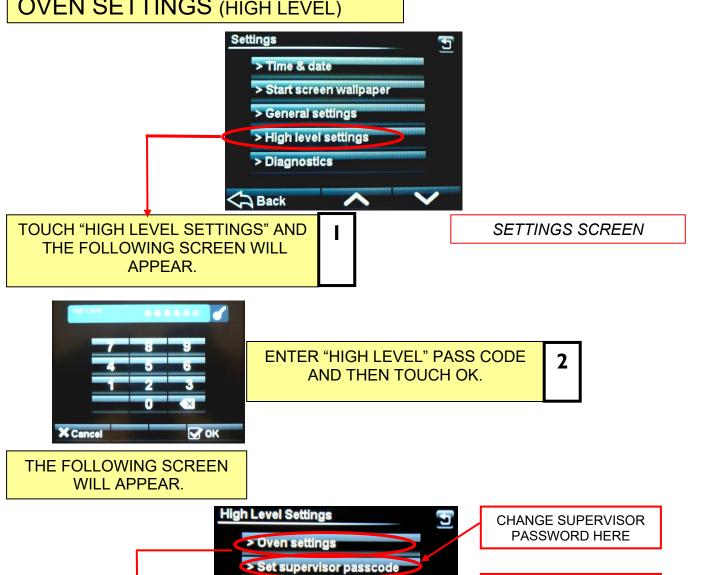
#### **SOUNDER VOLUME -**

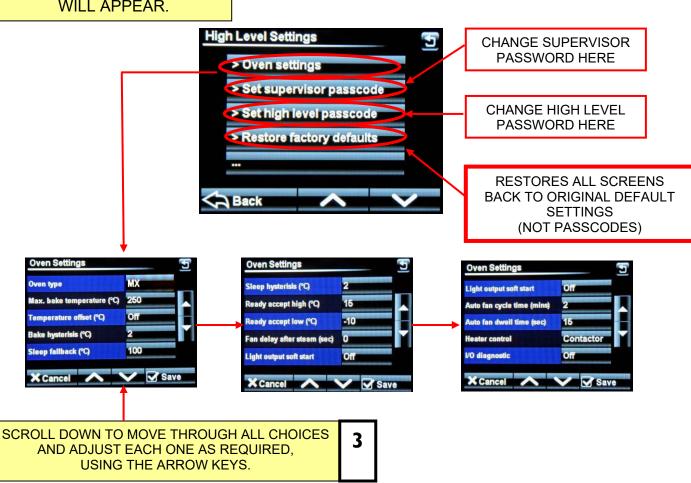
Adjust to suit the volume required. (onboard sounder only)

#### SHORTCUT BUTTONS -

1 fn 2 fn	Gives the choice of what buttons are active and in which order they appear on the options screen.
3 fn	Options available = Favourites, Programs, Manual bake, Multi bake,
4 fn	7-day timer . (Settings at <b>6fn</b> cannot be changed)
5 fn	

## **OVEN SETTINGS (HIGH LEVEL)**





### **OVEN SETTINGS EXPLAINED - HIGH LEVEL**

#### **OVEN TYPE -**

Set this to MX.

#### MAX. BAKE TEMPERATURE -

Can be set up to 300C, (depending on the oven type)

#### **TEMPERATURE OFFSET -**

Can be used to adjust the display to the actual temperature in the oven.

#### **BAKE HYSTERISIS -**

Sets bake temperature cycling around a set point. (Above and below).

#### SLEEP FALLBACK -

Temperature of the oven in "sleep mode" (100C is suggested).

#### SLEEP HYSTERISIS -

Sets "sleep mode" temperature cycling around a set point. (Above and below).

#### **READY ACCEPT HIGH -**

Highest temperature for the oven to display "READY"

#### **READY ACCEPT LOW -**

Lowest temperature for the oven to display "READY"

#### **FAN DELAY AFTER STEAM -**

Delay before fan starts after the oven has steamed. (60 seconds max)

#### **LIGHT OUTPUT SOFT START -**

On/Off Some lights need this for cold start up to stop them blowing.

#### **AUTO FAN CYCLE TIME (MINS) -**

Set time required. Only used in manual and multibake modes.

#### **AUTO FAN DWELL TIME -**

Set time required. Only used in manual and multibake modes.

#### **HEATER CONTROL -**

Contactor or solid state. Defaults to contactor. (solid state not used at the moment)

#### I/O DIAGNOSTIC -

Displays outputs and inputs at the top of the screen to aid fault finding if needed.

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# **SUPERVISOR (LOW LEVEL) -- 123456**

**HIGH LEVEL** -- 654321

MASTER -- 314159 (This is fixed)

## **SUGGESTION**

To stop unauthorised changes to the oven setup, it is suggested that this page is removed from this manual and kept in a safe place for future reference.

If tampering could be a problem, It is a good idea to change the passcodes at regular intervals.

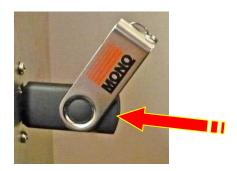
## 9-7 USING THE USB PORT



Ensure the Start screen is showing

I

START SCREEN



Insert the USB memory stick into the socket on the oven panel. (Rubber plug may have to be removed first).

2

#### **NOTE**

The USB stick will only fit in one way.

<u>Do not force into the socket.</u>



Wait for the USB symbol to finish moving

3



If old firmware is found, the firmware version screen will appear.

Touch "OK" to update firmware -Wait-

Remove USB stick

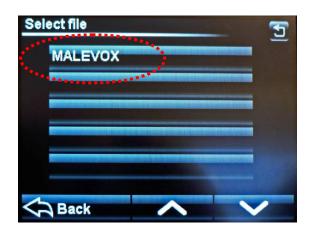
Touch "CANCEL" to choose other items to update or change. (see next page)

4



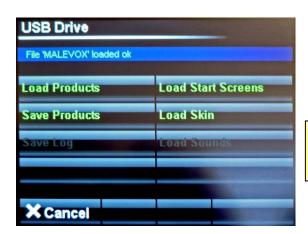
Choose action you would like to do.

5



Select the file required.

6



When confirmation of "file loaded ok" Shows, remove the usb stick.

7

## **NOTES ON USING USB STICKS**

For a USB stick to function correctly it must have the following folder in the root folder .

#### Mono

Then into that folder add the following:

**Firmware** 

**Products** 

Skins

Sounds

Start-up

Place your recipe/product files in the "products" folder.

The oven will find the "**Mono**" folder automatically when the stick is plugged into the oven. Any stick can be used (does not have to be blank) but the Mono folder must be in the root folder.

The most used folders are explained below:

#### **SKINS**

These control the way the screen looks in different modes.

Pictorial is when the screen displays catergories using pictures.



**Numerical** is when the screen displays program numbers.



#### **STARTUP SCREENS**

This is the picture/logo you see when the oven is started.



#### **PRODUCT FILES** (PROGRAM FILES)

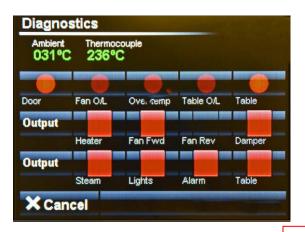
These are the files that contain the information for baking each product e.g. bread, buns, cakes etc.

## 9 - 8 DIAGNOSTICS

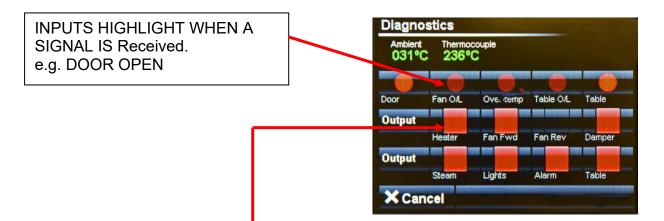


SETTINGS SCREEN

TOUCH "DIAGNOSTICS" AND THE FOLLOWING SCREEN WILL APPEAR.



**DIAGNOSTICS SCREEN** 



TOUCH THE REQUIRED OUTPUT AND A SIGNAL IS SENT TO THAT ITEM. THE OUTPUT BEING CHECKED IS HIGHLIGHTED WHEN ACTIVE. TO STOP THE OUTPUT, PRESS AGAIN.

# **10.0 TROUBLE SHOOTING**

#### **IMPORTANT!**

All repairs and adjustments to the oven must be carried out by authorised experts. Isolate oven before attempting repairs or removing protective panels.

Symptom	Possible cause	Probable solution
The oven does not	The main isolator switch	Switch on the isolator.
start, no fault shown	is off.	
on control panel	The auxiliary fuse is	Reset the fuse.
	tripped.	
	The main fuse is	Change the fuse (before
	tripped.	the oven).
Neither fan, hanger,	Door is not closed.	Close door.
steam or heat starts	Door switch is defective.	Replace door switch.
Rack hanger does not	Drive belt slipping.	Check belt tension.
rotate and no fault	Drive belt broken	Replace belt.
shown on control		
panel	1110	
Oven light is not	Lighting strip is	Replace the light strip.
working	defective.	Repair wiring.
	Faulty wiring to light.	
Oven temperature fails	Damper is open.	Close damper.
to rise/rises slowly/	Fan motor tripped.	Reset fan trip.
cannot be maintained	Element failure	Call service engineer.
during baking	\\( \lambda \) \( \lambda \) \	0
Little or no steam	Water mains	Connect water supply or
	disconnected or closed.	open supply valve.
	Water spreader tube blocked.	Clean/unblock spreader tube.
	Filter in water line	tube.
	blocked.	Clean filter.
	Solenoid valve	Olcari filter.
	defective.	Replace solenoid valve.
Oven bakes unevenly	Air slots not adjusted	Adjust air slots. See
	correctly.	section Adjusting air
	<b>,</b> -	slots.
	Fan motor running in the	Switch electrical
	wrong direction.	connections. Direction
	3	of rotation is indicated
		by arrow adjacent to
		motor.

# DO NOT ATTEMPT TO MAKE ADJUSTMENTS UNLESS YOU ARE FULLY AWARE OF THE RESULTS

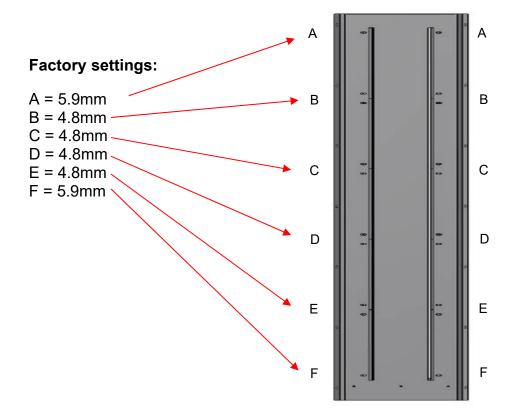
### **Setting the air slots**

The oven has an air panel situated in the rear right-hand corner of the baking chamber with adjustable slots, which are accurately set prior to leaving the factory (the factory settings are given in the diagram below). It is through these slots that heated air passes into the baking chamber to perform the baking task. However, external factors can negatively affect the baking result, such as a poorly designed baking programme or the combination of trays and products to be baked, and adjustment of the air slots may be necessary.

However, before making adjustments please consider the following:

- Make sure that differences in baking results are not due to differences in product batches;
- Make sure that the plates that determine the width of the air slot have not come loose thereby causing a change from the factory setting;
- Do not be too hasty in changing air slot settings in response to a sudden change in bake evenness as this may have been caused by other factors, such as, after maintenance of the oven, or a related fault with the oven. Any adjustments to the air slots would be unlikely to cure bake unevenness under these circumstances;
- Check that the air circulation fan's rotation is correct especially after maintenance or replacement.

If it is considered that adjustments to the air slots are necessary, these should be made in small increments and one slot at a time. Measure the slot opening before adjustment then slacken the screw(s) associated with the slot that requires adjustment, adjust slot opening then retighten screw. Measure slot opening after adjustment is complete to confirm the desired dimension has been achieved.



### 11.0 SERVICES

If a fault arises, please do not hesitate to contact MONO Equipment's Service and Spares department. Be prepared to provide the Serial Number from the machine's information plate or the front page of this User Manual in all communications.

#### Contact information for customer services

#### **MONO Equipment Limited**

Queensway Swansea West Industrial Park Swansea SA5 4EB United Kingdom

www.monoequip.com

#### Contacts

spares@monoequip.com +44 (0)1792 564039

techsupport@monoequip.com +44 (0)1792 564041

service@monoequip.com +44 (0)1792 564048

Switchboard +44 (0)1792 564039

#### **Further information**

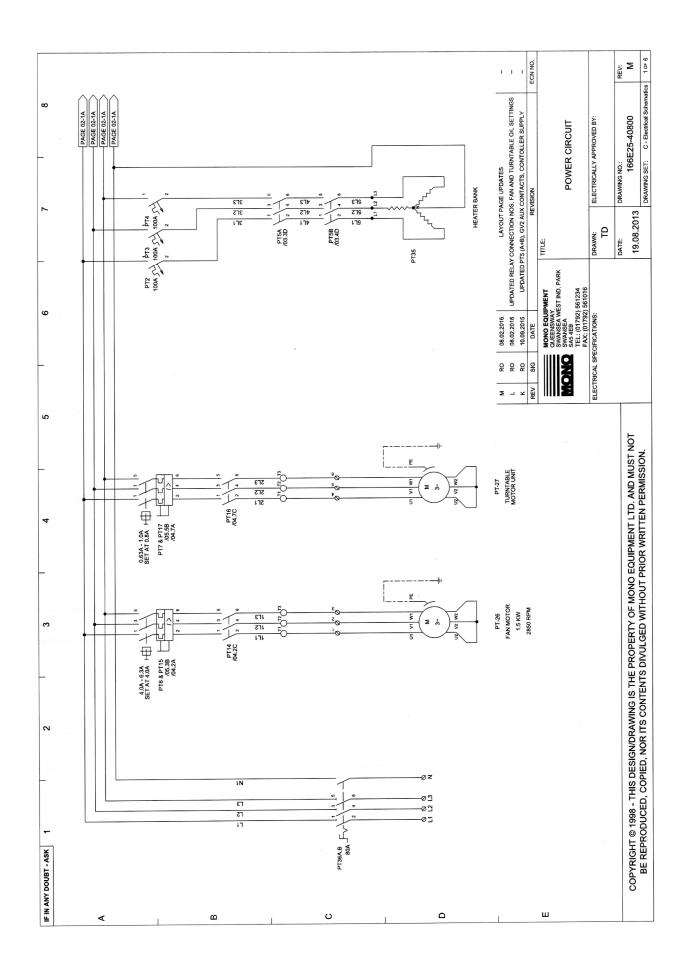
Visit **MonoEquip.com** the for the latest versions of this user manual. Also find up-to-date information about all MONO's products.

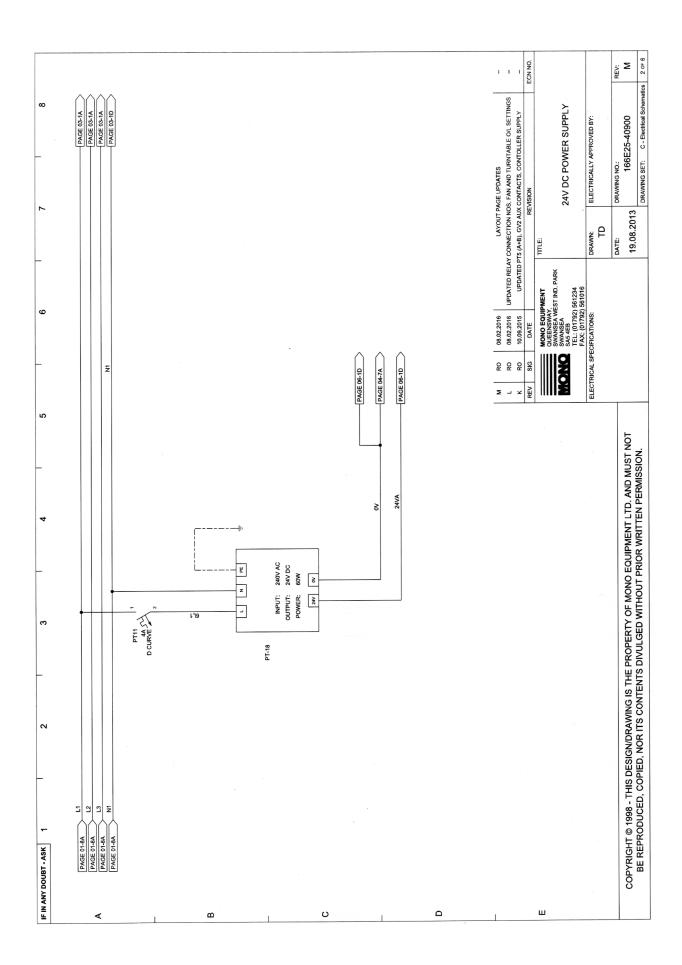
### **Environmental disposal**

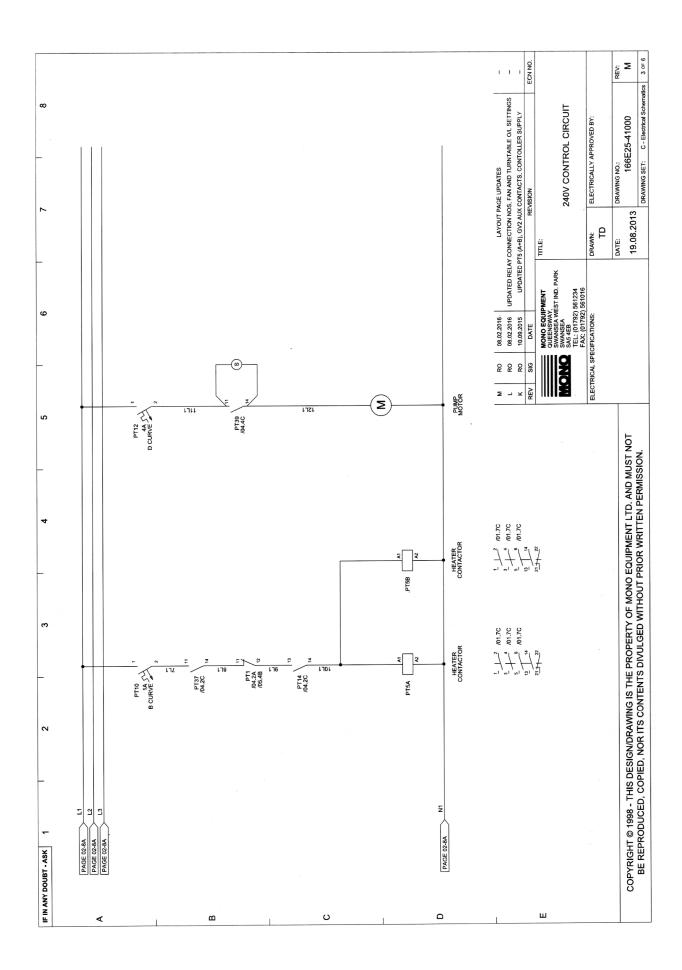
Dispose of the machinery with care when it comes to the end of its working life. Use the most environmentally friendly manner possible by recycling or other means of disposal which complies with local regulations. Only dispose of the machine safely and legally. The Environmental Protection Act 1990 applies in the United Kingdom.

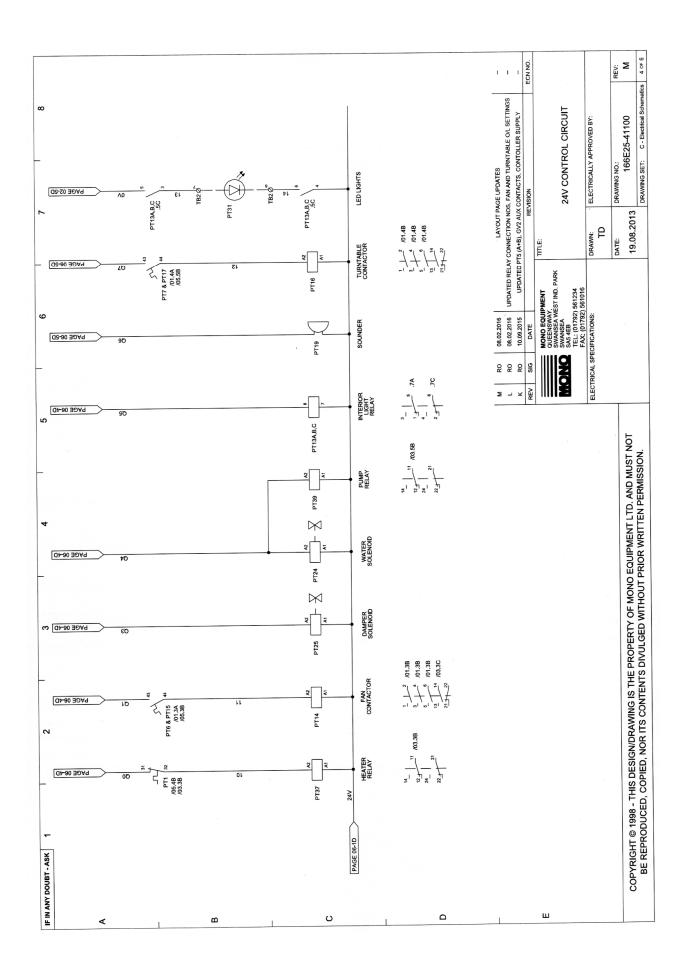


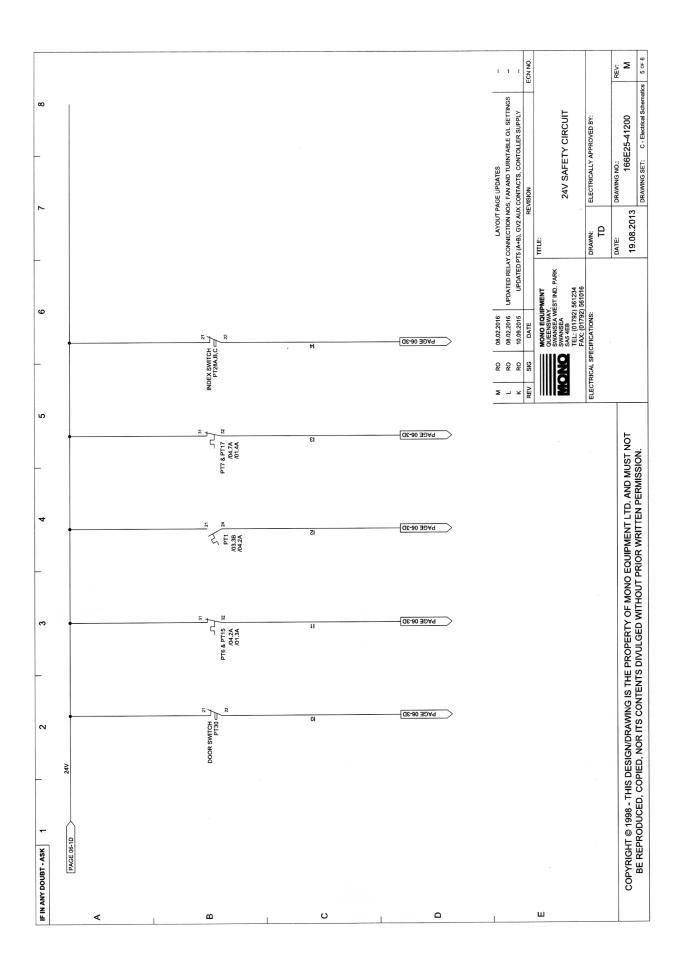
# 12.0 ELECTRICAL INFORMATION

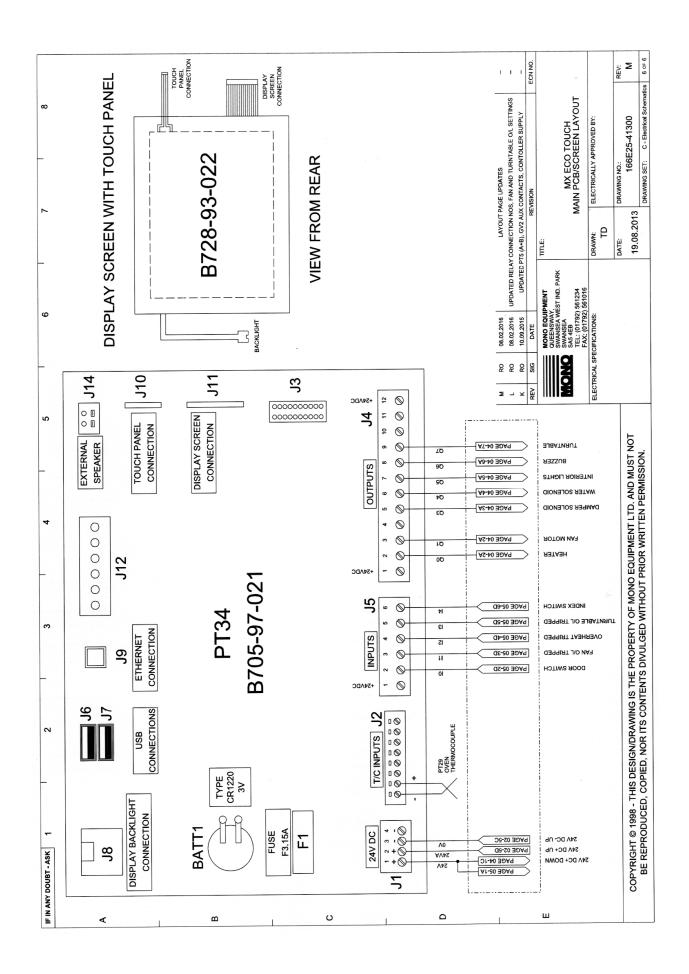




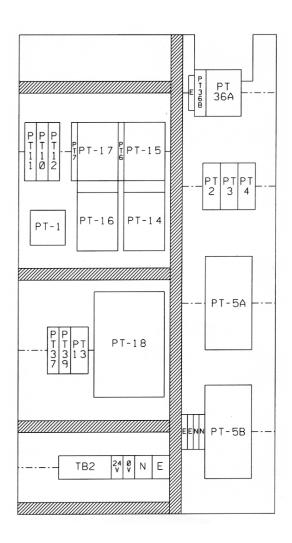








MXT ECOTOUCH ELECTRIC OVEN - DEVICE LIST		
PART REFERENCE	DESCRIPTION	Mono Part Numbe
PT-1	Overheat Thermostat	B888-30-014
PT-2	Heating Element MCB	B872-22-074
PT-3	Heating Element MCB	B872-22-074
PT-4	Heating Element MCB	B872-22-074
PT-5	Heating Element Contactor	B801-08-032
PT-6	Main Fan Motor Auxiliary Contact	B801-14-006
PT-7	Turntable Motor Auxiliary Contact	B801-14-006
PT-10	Contactor Control Circuit MCB	B872-22-001
PT-11	Control Circuit MCB	B872-22-062
PT-12	Pump Motor MCB	B872-22-062
PT-13	Interior Light Relay	8723-37-021
PT-14	Main Fan Motor Contactor	B801-08-031
PT-15	Main Fan Motor Starter (GV2)	B801-03-024
PT-16	Turntable Motor Contactor	B801-08-031
PT-17	Turntable Motor Starter (GV2)	B801-03-016
PT-18	24V DC Power Supply	B801-93-005
PT-19	Buzzer (Option)	B723-92-002
PT-24	Steam Solenoid	B965-83-007
PT-25	Damper Solenoid	B749-83-004
PT-26	Main Fan Motor	B912-74-035
PT-27	Turntable Motor Unit	B912-74-036
PT-28A	Turntable Index Switch Body	B801-11-013
PT-28B	Turntable Index Switch Head roller plunger	B801-45-008
PT-29	Thermocouple	B709-95-001
PT-30	Door Switch	B801-11-001
PT31	Led light assembly	166-13-00063
PT-34	PCB Assy	158-25-80000
PT-35	Heating Element	B979-04-001
PT36	VCCF4 80A Isolator	B801-07-002
PT-37	Heater Contactor Relay	B723-37-021
PT-38	USB Cable	, B705-25-009
PT-39	Pump Relay (If Pump Fitted)	B723-37-021
PT-40	Suppressor Unit (If Pump Fitted)	B842-48-010
PT-41	Water Pump (If Fitted)	A900-28-005
PT-42	Speaker	B842-92-005





13.0 SPARES

## 13.1 Main assembly spares list

Figure 13.1: Exploded parts drawing of main assembly

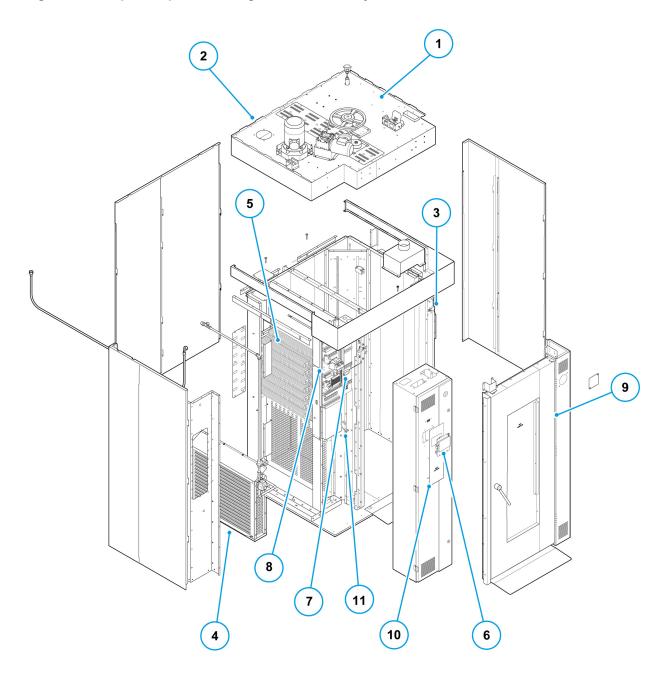


Table 13.1: Parts list for main assembly

Item	Part number	Description
1	166-02-00052	Roof assembly, right-hand – see Figure 13.2 for parts
2	166-04-00029	Roof assembly, left-hand – see Figure 13.3 for parts
3	B801-11-001	Limit switch
4	166-14-00001	Steam unit – see Figure 13.4 for parts
5	166-KMX007	Electrical component kit (MX) – see Figure 13.5 for parts
6	158-25-80000	Touchscreen, PCB and mounting plate
7	B842-92-005	Speaker-AK-603308BC3. 2 Watt, 8 Ohm
8	166-KEB001	Electrical oven control (MX) and top box electrical kit – see Section 13.2
9	166-KMX001	Right-hand door kit – see Figure 13.6 for parts
10	164-90-00001	Overlay panel (MX)
11	B705-25-009	USB 'A' male to USB 'A' female extension wire, 90 degrees

Figure 13.2: Exploded parts drawing of roof assembly (right-hand)

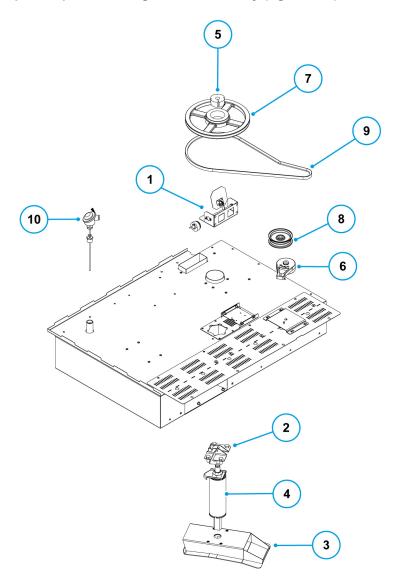


Table 13.2: Parts list for roof assembly (right-hand)

Item	Part number	Description
1	166-04-00097	Damper flap assembly
2	166-06-00002	Hanger bracket
3	166-06-00009	Rack hanger
4	166-06-00016	Rack drive assembly
5	A900-06-308	2012 20mm taperlock bush
6	A900-07-073	EFSON RT2002 tensioner
7	A900-09-109	SPA315-1 1 groove 315mm diameter pulley
8	A900-09-111	Pulley – idlet 13mm bore 101mm outer diamter
9	A900-21-114	V belt SPA1582 - 1600mm
10	B709-95-001	Thermocouple

Figure 13.3: Exploded parts drawing of roof assembly (left-hand)

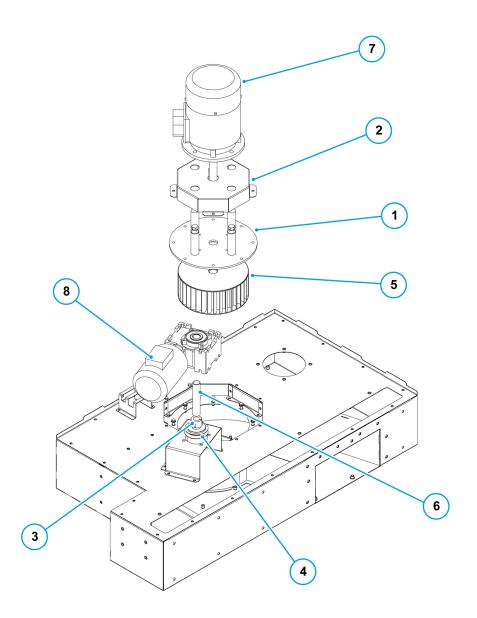


Table 13.3: Parts list for roof assembly (left-hand)

Item	Part number	Description
1	166-04-00110	Motor plate assembly
2	166-04-00111	Motor insulation box
3	A900-06-309	1108 20mm taperlock bush
4	A900-09-110	SPA75-1 1 groove 75mm diameter pulley
5	A900-27-230	Fan type TLR 225 x 92 L / 24mm bore
6	A900-31-057	AS50 single extension output shaft
7	B912-74-035	1.5kW three-phase two-pole IEC90 / B5 flange motor
8	B912-74-036	MRT50 ratio 80:1, 0.18kW three-phase four-pole AC motor

Figure 13.4: Exploded parts drawing of steam unit

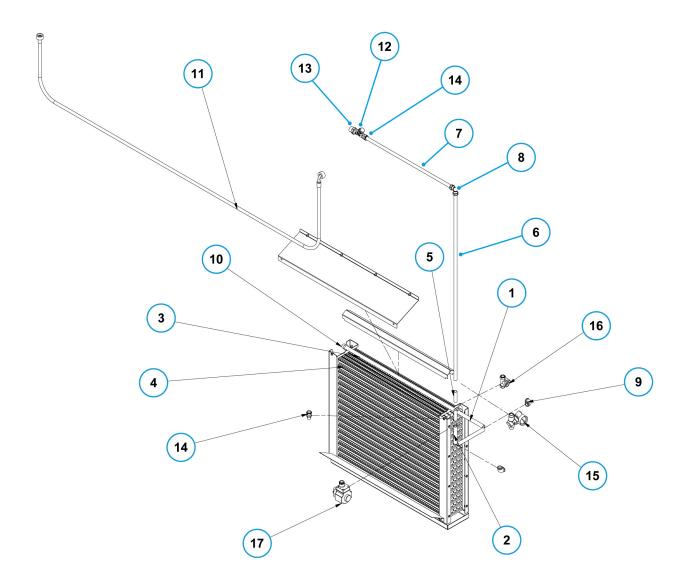


Table 13.4: Parts list for steam unit

Item	Part number	Description
1	166-14-00003	Water inlet pipe 1
2	166-14-00004	Water inlet pipe 2
3	166-14-00013	Spray pipe
4	166-14-00021	20mm diameter ribbed bar (720mm long)
5	166-14-00022	Water pipe 70mm
6	166-14-00024	Water pipe 1105mm
7	166-14-00025	Water pipe 590mm
8	A900-34-013	Equal elbow 15mm x 90degrees compression
9	A900-34-057	3/8" BSP female elbow
10	A900-34-062	3/8" BSP end cap
11	A900-34-088	Connecting hose (2.5m long)
12	A900-34-127	Y strainer, 3/8" BSP
13	A900-34-218	3/4" to 3/8" reducer
14	A900-34-261	Male 3/8" BSPT x15mm compression coupling
15	A900-34-418	Honeywell pressure reducing valve with gauge, 15mm
16	A900-34-419	15mm x 15mm x 3/4" Tee valve
17	B965-83-007	Solenoid vave, body type EV210B 6BG, 3/8" BSP

Figure 13.5: Exploded parts drawing of 45kW element bank assembly

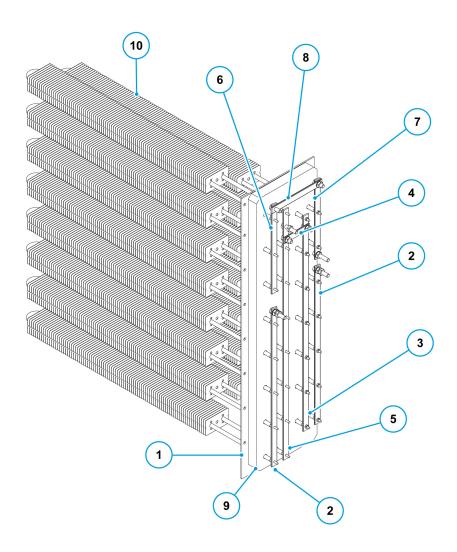


Table 13.5: Parts list for 45kW element bank assembly

Item	Part number	Description
1	166-07-00002	Electrical element plate
2	166-07-00009	Busbar, 410mm
3	166-07-00010	Busbar, 560mm
4	166-07-00011	Busbar, 75mm
5	166-07-00012	Busbar, 650mm
6	166-07-00013	Busbar, 230mm
7	166-07-00014	Busbar, 205mm
8	166-07-00015	Busbar, 150mm
9	166-07-00016	Element insulation board
10	B979-04-001	15 x heating elements, 240V, 3kW – see also Section 13.2

Figure 13.6: Exploded parts drawing of right-hand assembly

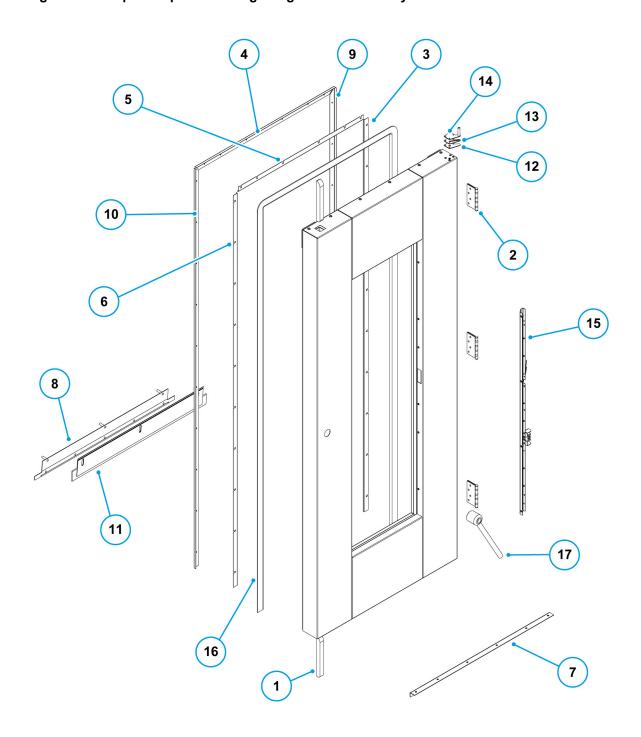


Table 13.6: Parts list for right-hand door assembly

Item	Part number	Description
1	150-03-02100	Door bolt
2	160-06-08500	Hinge
3	166-13-00022	'P'-seal retaining strip left-hand (inner)
4	166-13-00023	'P'-seal retaining strip - top
5	166-13-00024	'P'-seal retaining strip
6	166-13-00025	'P'-seal retaining strip right-hand (inner)
7	166-13-00027	Bottom seal rail
8	166-13-00028	Door bottom seal (fixed plate)
9	166-13-00029	'P'-seal retaining strip left-hand
10	166-13-00030	'P'-seal retaining strip right-hand
11	166-13-00034	Door bottom seal (retaining plate)
12	166-13-00045	Cable guide plate (bottom)
13	166-13-00046	Cable guide plate (middle)
14	166-13-00047	Cable guide assembly (right-hand door)
15	166-13-00057	LED light unit
16	166-13-00059	'P' seal
17	166-13-00068	Rack oven handle

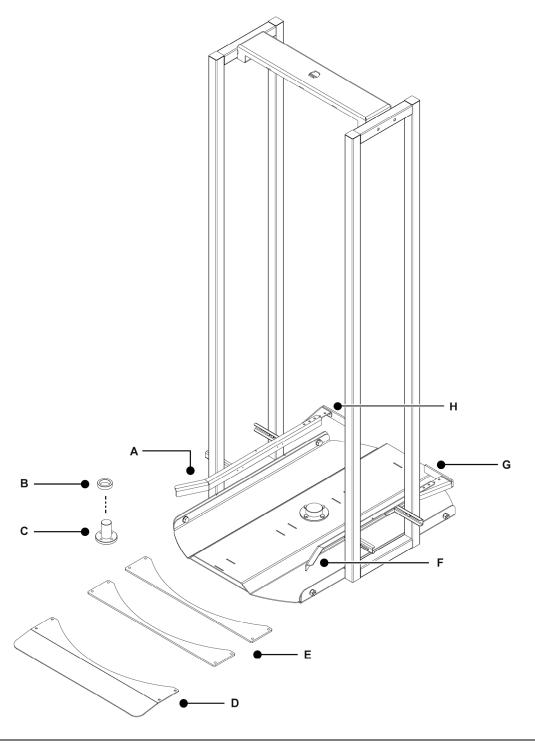
# 13.2 Electricals components list

MXT ECOTOUCH ELECTRIC OVEN - DEVICE LIST		
PART REFERENCE	DESCRIPTION	Mono Part Numbe
PT-1	Overheat Thermostat	B888-30-014
PT-2	Heating Element MCB	B872-22-074
PT-3	Heating Element MCB	B872-22-074
PT-4	Heating Element MCB	B872-22-074
PT-5	Heating Element Contactor	B801-08-032
PT-6	Main Fan Motor Auxiliary Contact	B801-14-006
PT-7	Turntable Motor Auxiliary Contact	B801-14-006
PT-10	Contactor Control Circuit MCB	B872-22-001
PT-11	Control Circuit MCB	B872-22-062
PT-12	Pump Motor MCB	B872-22-062
PT-13	Interior Light Relay	B723-37-021
PT-14	Main Fan Motor Contactor	B801-08-031
PT-15	Main Fan Motor Starter (GV2)	B801-03-024
PT-16	Turntable Motor Contactor	B801-08-031
PT-17	Turntable Motor Starter (GV2)	B801-03-016
PT-18	24V DC Power Supply	B801-93-005
PT-19	Buzzer (Option)	B723-92-002
PT-24	Steam Solenoid	B965-83-007
PT-25	Damper Solenoid	B749-83-004
PT-26	Main Fan Motor	B912-74-035
PT-27	Turntable Motor Unit	B912-74-036
PT-28A	Turntable Index Switch Body	B801-11-013
PT-28B	Turntable Index Switch Head roller plunger	B801-45-008
PT-29	Thermocouple	B709-95-001
PT-30	Door Switch	B801-11-001
PT31	Led light assembly	166-13-00063
PT-34	PCB Assy	158-25-80000
PT-35	Heating Element	B979-04-001
PT36	VCCF4 80A Isolator	B801-07-002
PT-37	Heater Contactor Relay	B723-37-021
PT-38	USB Cable	, в705-25-009
PT-39	Pump Relay (If Pump Fitted)	B723-37-021
PT-40	Suppressor Unit (If Pump Fitted)	B842-48-010
PT-41	Water Pump (If Fitted)	A900-28-005
PT-42	Speaker	B842-92-005

## 13.3 Optional rack turntable

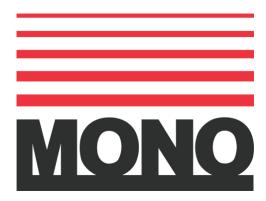
(Factory-fitted to FG166-E\*\*\*\*TT models only)

Figure 13.7: Parts list for rack turntable



- **A.** Left-hand adjustable side guide (166-17-00051) **E.** Ramp packer (166-17-00021)
- **B.** Base bearing (166-17-00014)
- **C.** Floor turntable boss (166-17-00017)
- **D.** Turntable ramp (166-17-00019)

- **F.** Right-hand adjustable side guide (166-17-00053)
- **G.** Back stop plate (166-17-00064)



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