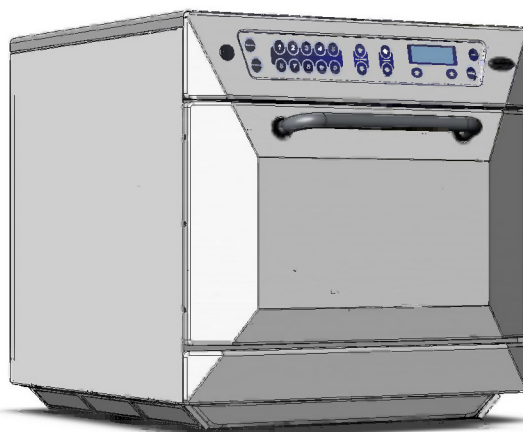


Version 3.0



Version 2.0



# EC402s

US Models including WAWA

## SERVICE & PARTS MANUAL

This manual covers US models manufactured from:

Version 2.0 Serial No. 000745 – 001199

Version 3.0 Serial No. 001200 onwards

ISSUE 5

23.02.2008

### CAUTION MICROWAVE EMISSIONS

**DO NOT BECOME EXPOSED TO EMISSIONS FROM THE MICROWAVE  
GENERATOR OR PARTS CONDUCTING MICROWAVE ENERGY**

SERVICE MANUAL

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## **MICROWAVE SAFETY PRECAUTIONS**

### **CAUTION WARNING TO SERVICE TECHNICIANS PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY**

- (a) Do not operate or allow the oven to be operated with the door open.
- (b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
  - 1) interlock operation.
  - 2) proper door closing.
  - 3) seal and sealing surfaces (arcing, wear, and other damage).
  - 4) damage to or loosening of hinges and latches.
  - 5) evidence of dropping or abuse.
- (c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity and connections.
- (d) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (e)(i) For U.S.A.  
A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.
- (e)(ii) For CANADA.  
A microwave leakage check to verify compliance with the Canadian Regulation, HEALTH AND WELFARE, SOR/79 920 should be performed on each oven prior to release to the owner.

## SAFETY CODE

This manual is designed to assist engineers who have been on a recognised product familiarisation and training course run by Merrychef. It has been prepared to offer technical guidance for the 402s range of Ovens.

Please remember that it is wiser **not** to attempt a service task if you are unsure of being able to complete it competently, quickly, and above all **safely**.

To avoid injury to yourself, and to protect the appliance from possible damage, please follow this Safety Code when servicing these ovens.

**Before attempting to repair the oven, check it for microwave emission using a calibrated emission detector.**

**Check that the oven is not emitting microwaves, even when supposedly not in operation.**

**Check that the oven is not operating continuously, whether the display indicates cooking or not.**

**Always discharge the HT capacitors before working on the oven using a suitably insulated 10 MΩ Resistor.**

**When testing the oven with covers off run for short periods of time only or magnetrons will overheat and the display will show Error condition.**

Before removing any covers from the oven, do all of the following.

- Switch off the mains supply and remove the plug from the wall socket.  
or
- If the oven is hard wired, ensure that the power is turned off at the isolator switch.

**Note:**

The On/Off switch on the oven is **not** adequate protection against electric shock, as it does not isolate all of the internal wiring from the mains.

Upon completion of a service the oven, or before reconnecting the appliance to the electrical supply for testing, check all of the following points:

- All internal electrical connections are correct (see wiring diagrams).
- All wiring insulation is correct and is not touching a sharp edge.
- All grounding connections are electrically and mechanically secure.
- All door safety interlocks are secure and mechanically sound.
- The door operation is smooth, and the arms run freely in the slots.
- The door activates all four of the door interlock switches and **in the correct order**
- The temperature sensor is correctly connected to the Power PCB.

Before finishing a service call, recheck the following points:

- All of the electronics are functioning correctly and all of the touch pads are working.
- Microwave emissions are below permissible limit of 4 mW/cm<sup>2</sup>.
- The power output of the oven is checked in accordance with the procedure page.
- Oven has correct 2 inch ( 50mm ) air gap all round and 2 inches ( 50mm ) above. Air flow should not be restricted.

## PRODUCT SPECIFICATIONS

**Model Number: 402S VVV F P C R TT ZZ**

Example 402S2086DK3GMUS

Model No. EC402s

208V, 60Hz, 2P + GND supply, MenuKey Revision 3, General Market, USA

| Supply Voltage  | Freq. Hz                               | Phase/Supply   | Control Type                         | Rev                              | Type                       | Country /Region |
|---|--|--|--------------------------------------|----------------------------------|----------------------------|-----------------|
| VVV   | F                                      | P  | C                                    | R                                | TT                         | ZZ              |
| Voltage (ac)<br><br><b>208</b> = 208V<br><b>220</b> = 220-230V<br><b>240</b> = 230-240V | <b>5</b> = 50Hz<br><br><b>6</b> = 60Hz | Phase Arrangement<br><b>A</b> = L + N + E (30 Amp)<br><br><b>B</b> = L1 + L2 + N + E<br><br><b>C</b> = 2 P + Gnd (20 Amps)<br><br><b>D</b> = 2 P + Gnd (30 Amps) | <b>K</b> =<br><br>Electronic MenuKey | <b>1</b><br><b>2</b><br><b>3</b> | <b>GM</b> = General Market | <b>US</b> = USA |

|                     |                                  |  |
|---------------------|----------------------------------|--|
| Power Requirements  | 208Volts<br>240Volts             | 208V ac 60Hz 30Amp 2P & G<br>240V ac 60Hz 40Amp 2P & G |
| Power Output        | Microwave 100%<br>Convection     | 1500watts<br>3250watts                                 |
| External Dimensions | Height<br><br>Width<br><br>Depth | 23.0 inches<br><br>23.0 inches<br><br>27.5 inches      |
| Weight              | Nett                             | 198lb.s ( 90kg )                                       |
| Construction        | Cavity Casework                  | 304 Stainless Steel                                    |
|                     |                                  |  |

## INSTALLATION INSTRUCTIONS

### Installation Instructions for Mealstream Combination Ovens

#### Power Supply Requirements

The Mealstream Series should be connected to a suitable electricity supply, which can cope with the switching-on surge that occurs with certain types of catering equipment, including microwaves. Because of this requirement, we strongly recommend that a separate, suitably rated supply is installed for the oven.

The supply for the oven should be fitted with a **Type "C"** or **Time Delay circuit breaker**.

If the oven is hard-wired to the supply, a double-pole isolator switch with a contact gap of at least 1/8 inch ( 3 mm ) should be fitted.

#### Grounding requirement

This appliance must be connected to a grounded, metallic, permanent wiring system, or an equipment grounding conductor should be run with the circuit conductors and connected to the equipment grounding terminal or lead on the appliance.

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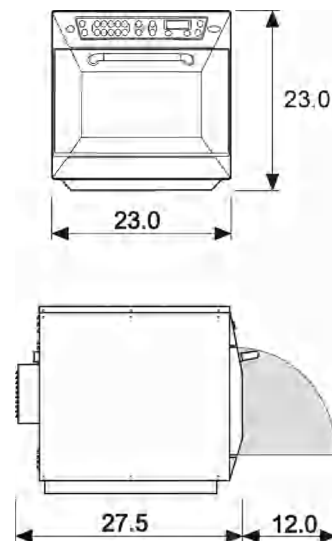
#### Positioning the Oven

In order to maintain adequate ventilation for air intake and exhaust, and to allow access for cleaning filters, you must allow a minimum of 2 inches ( 50 mm ) clearance at the sides and rear of the oven.

Air intake temperature should not exceed 110°F/45°C excessive temperature will lead to reduced operating duty cycle, or premature ageing of internal components. Failure to comply with these conditions will invalidate the warranty.

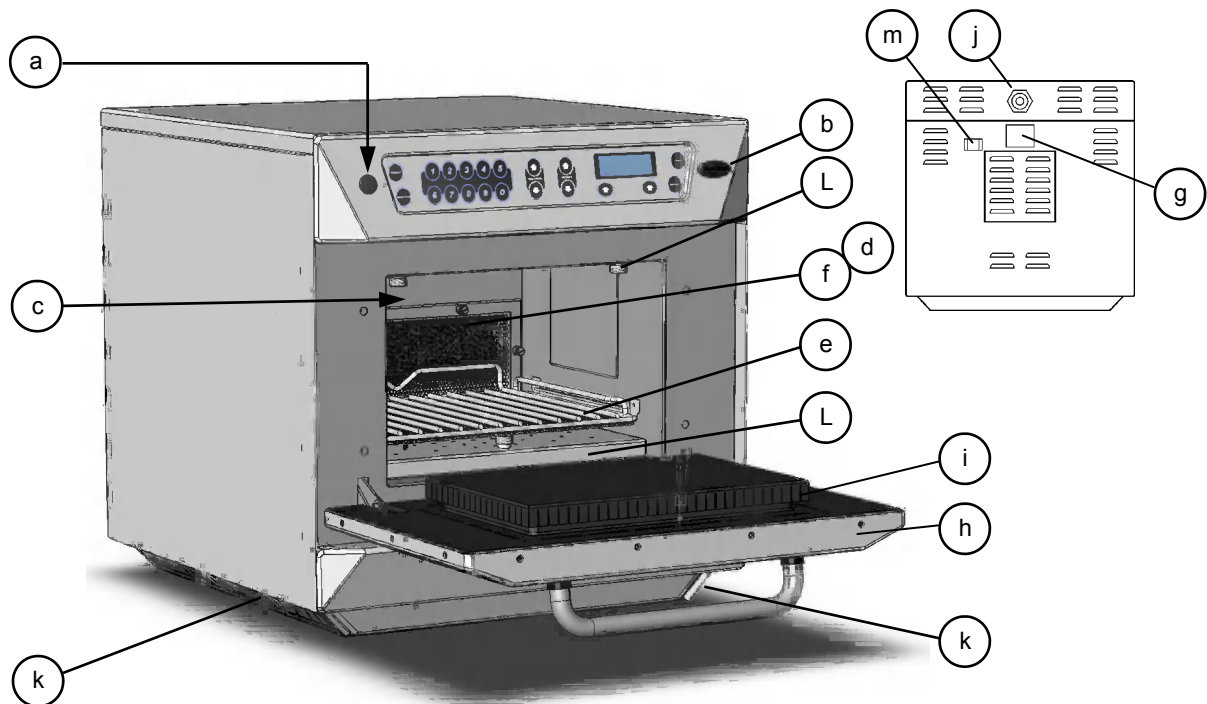
**NEVER** Install an oven above fryers, grills, griddles or any other major heat source.

**ALWAYS** Place containers in the cavity carefully - impact damage may chip the vitreous enamel coating on the runners and baffle plate.



Note:  
The minimum recommended clearance required for air flow

## MAIN FEATURES



### a On/Off SWITCH

This is used to turn the oven On or Off.

**IT DOES NOT ISOLATE INTERNAL WIRING FROM THE MAINS SUPPLY.**

### b MenuKey

The MenuKey System automatically changes all the cooking programs with an electronic key and allows program names to be identified.

### c OVEN CAVITY

The oven cavity is mainly constructed from stainless steel panels. It must be kept clean.

### d GREASE FILTER

The grease filter must be cleaned on a regular basis, and kept free of debris.

### e RACK

The cooking rack should be removed daily and cleaned

### f HOT AIR FAN

Situated behind the grease filter and circulates the hot air through the cavity.

### g RATING PLATE

The rating plate is situated on the rear of the oven, and states the Model, Serial Number, Electrical Ratings and Manufacturers telephone number.

### h DOOR

The door consists of a thermally insulated inner section, and an additional air gap provided by a twin skinned door front to lower the surface temperature.

### i DOOR SEAL

These ensure a tight seal around the door. They should be kept clean and checked regularly for signs of damage. Replace if worn or damaged.

### j ELECTRICAL SUPPLY CORD

Electrical supply cord is situated on the rear of the oven,

### k AIR FILTERS

Main intake for cooling air for internal components. Must be clear of obstructions.

### L IMPINGER PLATES ( Upper & Lower)

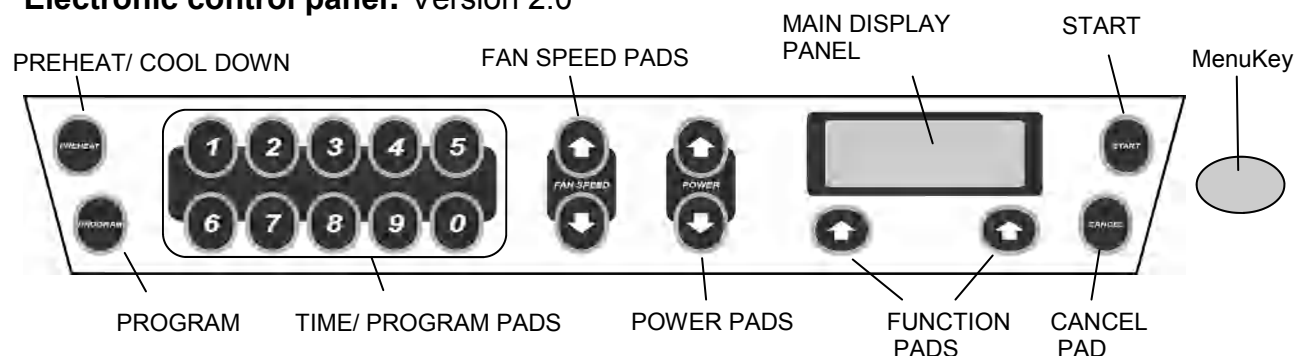
Direct the air in the cavity. They must be cleaned on a regular basis, and kept free of debris

### m STEAM VENT PIPE

Vents steam from the oven cavity

## MAIN FEATURES

### Electronic control panel: Version 2.0



#### CANCEL PAD

Cancels all timed cooking cycles, pre-programmed operations and stops the microwave energy. It does not alter the oven temperature. If the oven is hot, food will continue to cook and should be removed from the oven immediately. This pad will also cancel any incorrect operations. It will not erase programs.

#### FAN SPEED PADS

The Fan speed can be increased and decreased in 5% steps ( 10% to 100% )

#### FUNCTION PADS

Move through control functions in the Main Display

#### MAIN DISPLAY PANEL

Shows the principal functions of the oven.

When cooking, the time remaining counts down.

Also displays error messages and oven temperature. (See TROUBLESHOOTING )

When storing and recalling a program the display indicates the program number and details

#### MenuKey

The MenuKey System automatically changes all the cooking programs with an electronic key and allows program names to be identified.

#### POWER PADS

The microwave power can be increased or decreased adjusted in 10% steps. ( 0% to 100% )  
The default setting is 50% microwave power.

#### PREHEAT/ COOL DOWN

Commences main oven heating cycle to a preset temperature. Press and hold for 5 seconds to commence cool down procedure ( See CLEANING )

#### PROGRAM

Activates program mode for storing programs in memory START PAD Commences a program

#### TIME/ PROGRAM PADS

These pads are used for setting the cooking time in 1 second steps to a maximum of 10 minutes. They are also used for storing and recalling programs from 0-499

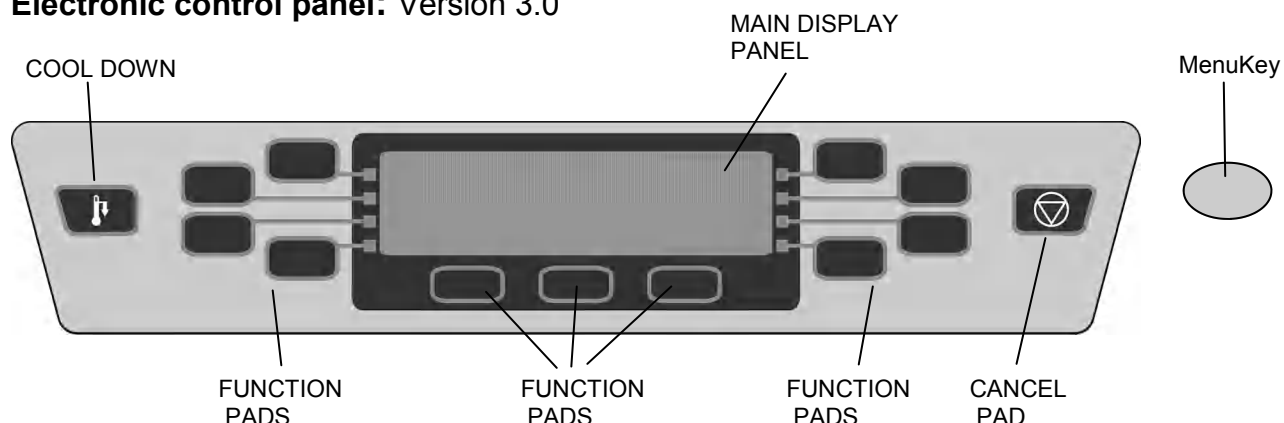
### Display Panel error messages

| Message               | Condition   | Possible cause   |
|-----------------------|---|--|
| ERROR MAGNETRON 1     | Magnetron 1 has overheated  | Blocked Air filter(s)<br>Oven located near hot air sources<br>Oven being used empty<br>Cooling fan failure<br>Magnetron failure                          |
| ERROR MAGNETRON 2     | Magnetron 2 has overheated  |  |
| ERROR MAGNETRON 1 & 2 | Magnetron 1 and 2 have overheated   |  |
| CAVITY SENSOR ERROR   | Cavity temperature exceeds more than 90°F above PREHEAT temperature setting during cook cycle | Indicates combustion ( fire ) in oven cavity<br>Note: In service operations when PREHEAT is set to 0°F this message can appear when the oven is operated |



## MAIN FEATURES

### Electronic control panel: Version 3.0



#### MenuKey 2

The MenuKey System automatically changes all the cooking programs with an electronic key and allows program names to be identified

#### CANCEL PAD

Cancels all timed cooking cycles, pre-programmed operations and stops the microwave energy. It does not alter the oven temperature. If the oven is hot, food will continue to cook and should be removed from the oven immediately. This pad will also cancel any incorrect operations. It will not erase programs.

#### DISPLAY PANEL

Shows the principal functions of the oven. When cooking, the time remaining counts down. Also displays error messages and oven temperature. When storing and recalling a program the display indicates the program number and details.

#### FUNCTION PADS

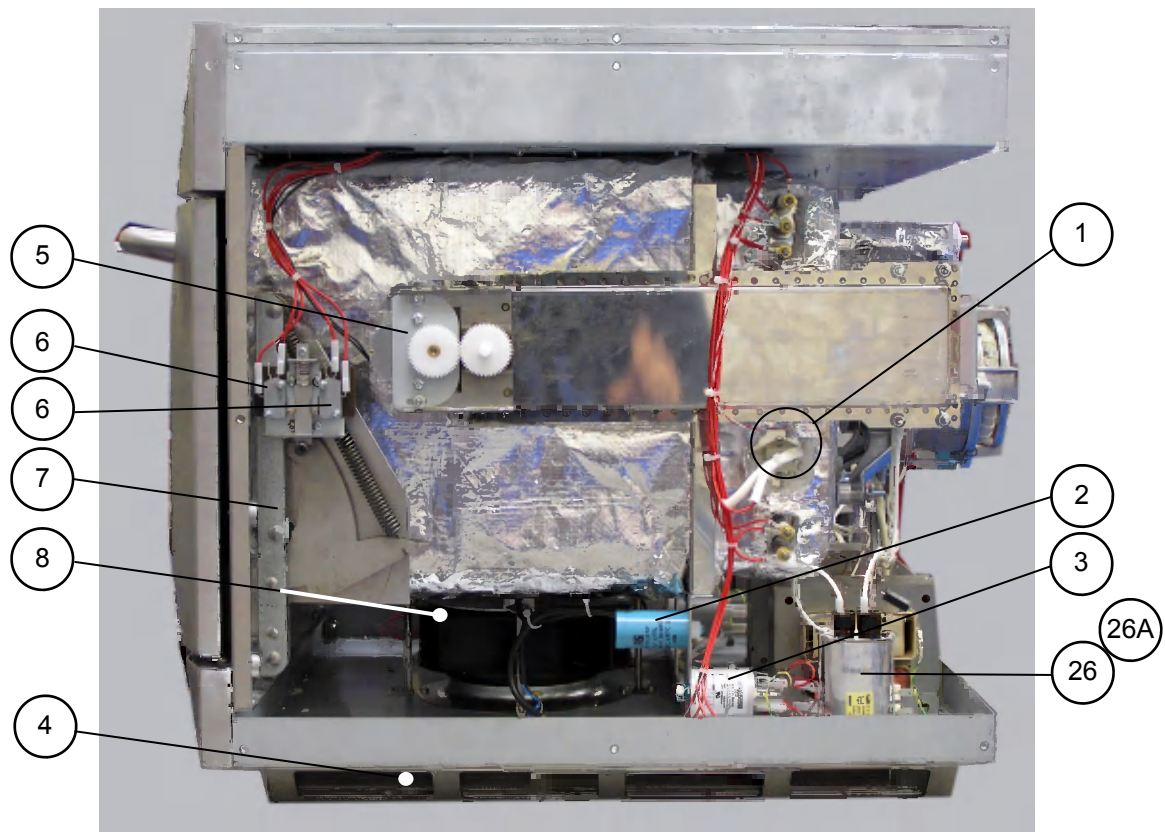
The function pads select options shown in the DISPLAY PANEL.

#### COOL DOWN PAD

Puts the oven into Cool Down Mode prior to cleaning

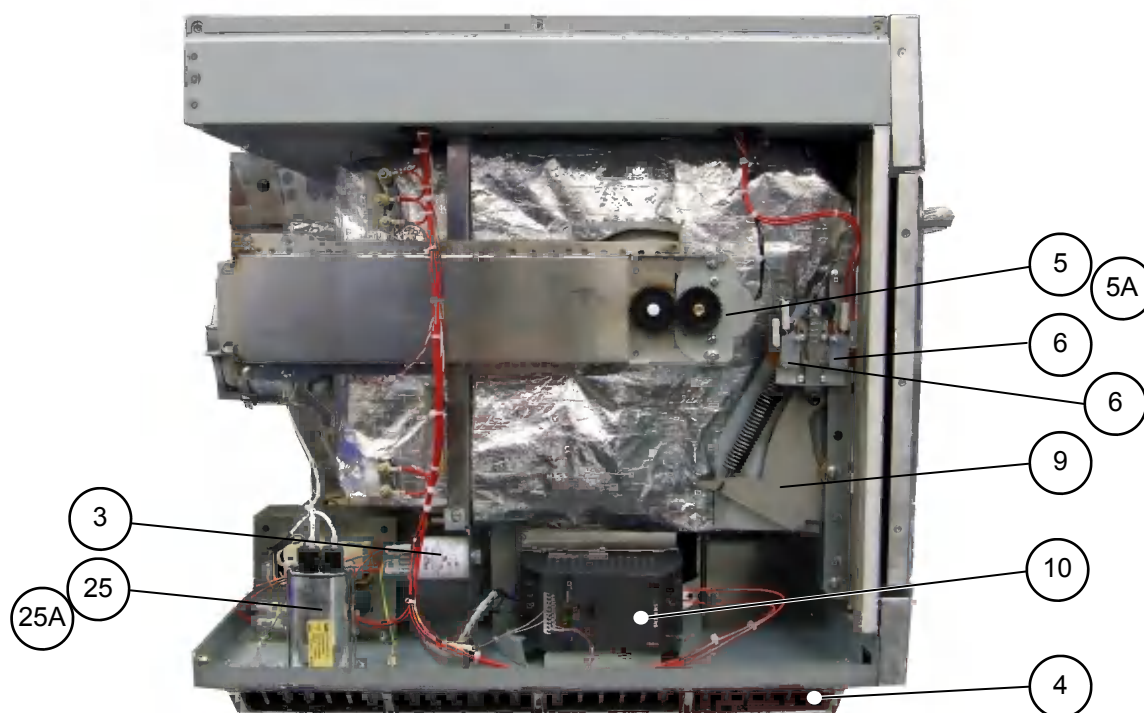
| Error Message  | Condition   | Possible Cause   |
|--|---|--|
| Magnetron 1 Overheat<br>Ensure air filters are clean<br>Allow oven to cool     | Magnetron 1 has overheated                                  | Blocked air filters<br>Oven located near hot air source<br>Oven being used empty<br>Cooling fan failure<br>Magnetron failure                           |
| Magnetron 2 Overheat<br>Ensure air filters are clean<br>Allow oven to cool     | Magnetron 2 has overheated                                  |  |
| Magnetron 1 & 2 Overheat<br>Ensure air filters are clean<br>Allow oven to cool | Magnetron 1 & 2 have overheated                             |  |
| Ambient Overheat<br>Ensure air filters are clean<br>Allow oven to cool         | Temperature inside casing has exceeded limit                | Blocked air filters<br>Restricted airflow to air filters<br>Oven located near hot air source<br>Circulation fan failure<br>Combustion (fire) in cavity |
| Cavity Overheat<br>Please contact service                                      | Cavity temperature has exceeded more than 565°F             | Blocked air filters<br>Restricted airflow to air filters<br>Combustion (fire) in cavity  |
| Heater Failure   | Cavity has not reached a temperature of 100°F in 10 minutes | One or more heater elements have failed and need to be replaced  |

## PRINCIPAL COMPONENTS: Right Side



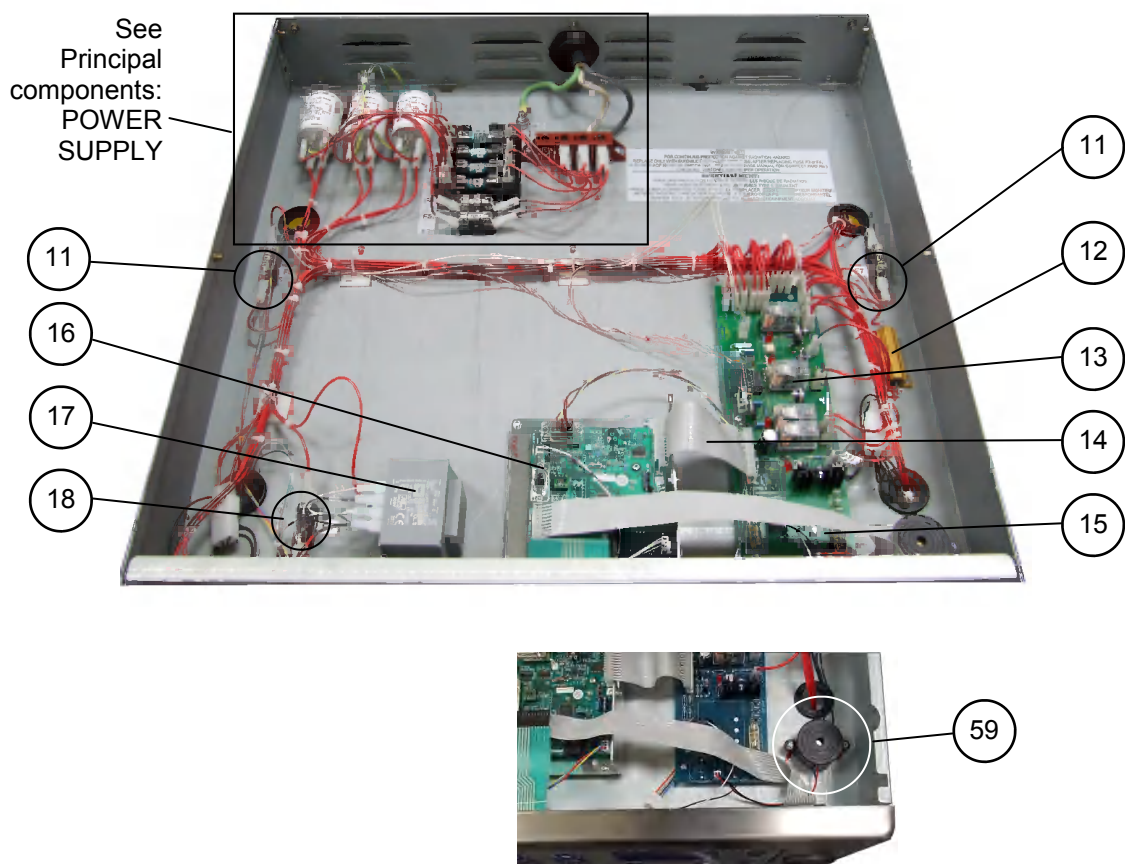
| No. | Description                                     | Part No. |
|-----|---|----------|
| 1   | Cavity High limit Stat                          | 30Z1024  |
| 2   | Motor Start Capacitor 2 $\mu$ F ( Blue )        | 30Z1298  |
| 3   | Filter 16A                                      | 30Z1339  |
| 4   | Air filter                                      | SA276    |
| 5   | Stirrer motor Assembly                          | SA238    |
| 5A  | Stirrer (inside cavity)                         | SA213    |
| 6   | Microswitch SW1<br>Microswitch SW2              | 30Z1294  |
| 7   | Door Hinge Assembly RH                          | SA202    |
| 8   | Magnetron Cooling Fan                           | 30Z1295  |
| 26  | HV Capacitor 2500V 0.88 $\mu$ F ( 60HZ models ) | 30Z1251  |
| 26A | HV Capacitor clip (0.88 $\mu$ F) 88mm           | 31Z0521  |

## PRINCIPAL COMPONENTS: Left Side



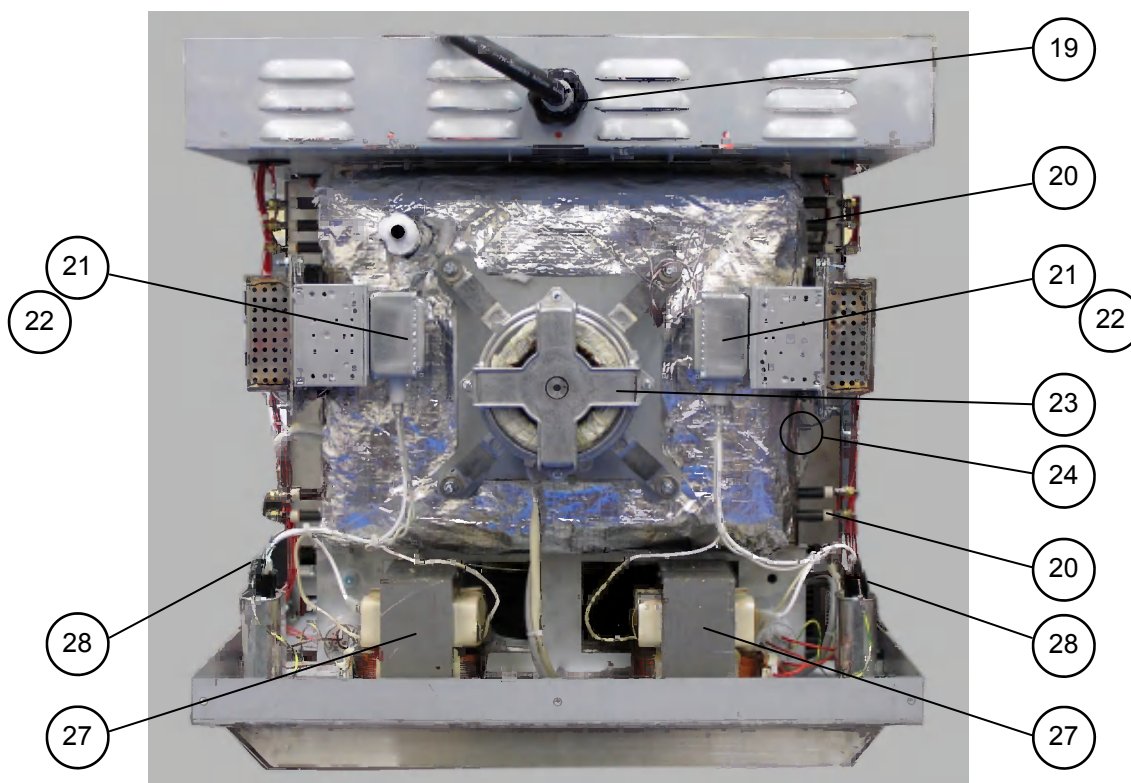
| No. | Description                               | Part No. |
|-----|---|----------|
| 3   | Filter 16A                                | 30Z1339  |
| 4   | Air filter                                | SA302    |
| 5   | Stirrer motor Assembly                    | SA238    |
| 5A  | Stirrer (inside cavity)                   | SA213    |
| 6   | Microswitch SW3<br>Microswitch SW4        | 30Z1294  |
| 9   | Door Hinge Assembly LH                    | SA203    |
| 10  | Motor Controller                          | 30Z1293  |
| 25  | HV Capacitor 2500V 0.88μF ( 60Hz models ) | 30Z1251  |
| 25A | HV Capacitor clip (0.88μF) 88mm           | 31Z0521  |

## PRINCIPAL COMPONENTS: Control Box



| No. | Description                    | Part No. |
|-----|--------------------------------|----------|
| 11  | Fuse 10A HRC                   | 30Z0217  |
| 12  | Gold resistor ( 220R )         | 30Z0235  |
| 13  | Relay PCB Assembly             | 11K0004  |
| 14  | Ribbon Cable 15way             | 11Z0298  |
| 15  | Ribbon Cable 10way MenuKey     | 11M0117  |
| 16  | Logic PCB Assembly Version 2.0 | SA231    |
| 16  | Logic PCB Assembly Version 3.0 | SA260    |
| 17  | Transformer LT (Low voltage)   | 30Z1155  |
| 18  | Fuse 1A                        | 30Z0957  |
| 59  | Sounder                        | SA257    |

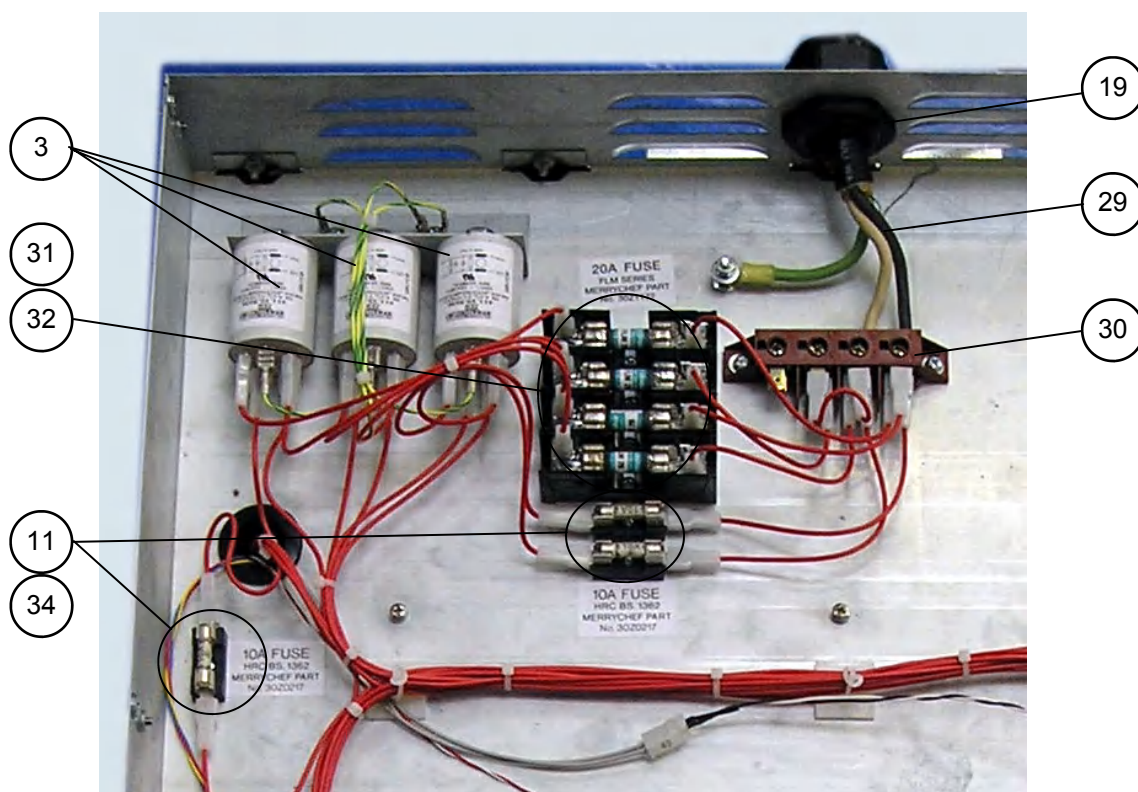
## PRINCIPAL COMPONENTS: Back view



| No. | Description                           | Part No. |
|-----|---------------------------------------|----------|
| 19  | Cable Gland                           | 31Z0500  |
|     | Cable Gland Nut                       | 31Z0499  |
| 20  | Heater Element <b>208V</b> 650W       | DV0576   |
| 20  | Heater Element <b>220V</b> 650W       | DV0606   |
| 20  | Heater Element <b>240V</b> 650W       | DV0607   |
| 21  | Magnetron                             | 30Z1171  |
| 22  | Magnetron Thermistor Assembly         | SA234    |
| 23  | Convection ( Hot Air ) Motor Assembly | SA208    |
| 24  | Thermistor Cavity                     | 30Z1315  |
| 27  | Transformer 208/220/240V 60Hz         | 30Z1230  |
| 28  | HT Rectifier                          | 11H0010  |



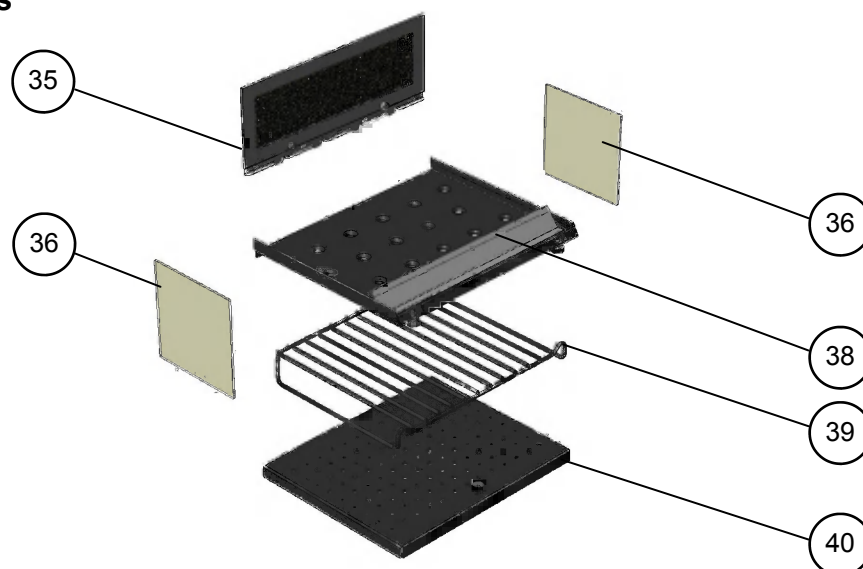
## PRINCIPAL COMPONENTS: Power Supply



| No. | Description                     | Part No. |
|-----|---------------------------------|----------|
| 3   | Filter 16A                      | 30Z1339  |
| 11  | Fuse 10A HRC                    | 30Z0217  |
| 19  | Cable Gland                     | 31Z0500  |
| 19  | Cable Gland Nut                 | 31Z0499  |
| 29  | Electrical Supply Lead Assembly | SA217    |
| 30  | Terminal Block                  | 31Z0447  |
| 31  | Fuse 20A FLM                    | 30Z1177  |
| 32  | Fuse Holder 30A                 | 30Z1178  |
| 34  | Fuse Holder 10A                 | 30Z0231  |

## PRINCIPAL COMPONENTS

### Cavity parts



| No. | Description                | Part No.       |
|-----|----------------------------|----------------|
| 35* | Grease Filter ( 2 parts )  | SA340<br>SA339 |
| 36  | Stirrer Glass              | DV0492         |
| 37* | Rack Support ( Not shown ) | DV0114         |
| 38  | Upper Impinger plate       | SA211          |
| 39  | Rack                       | DV0275         |
| 40  | Lower Impinger plate       | SA266          |

\* Parts 35 & 37 Contact Service Department

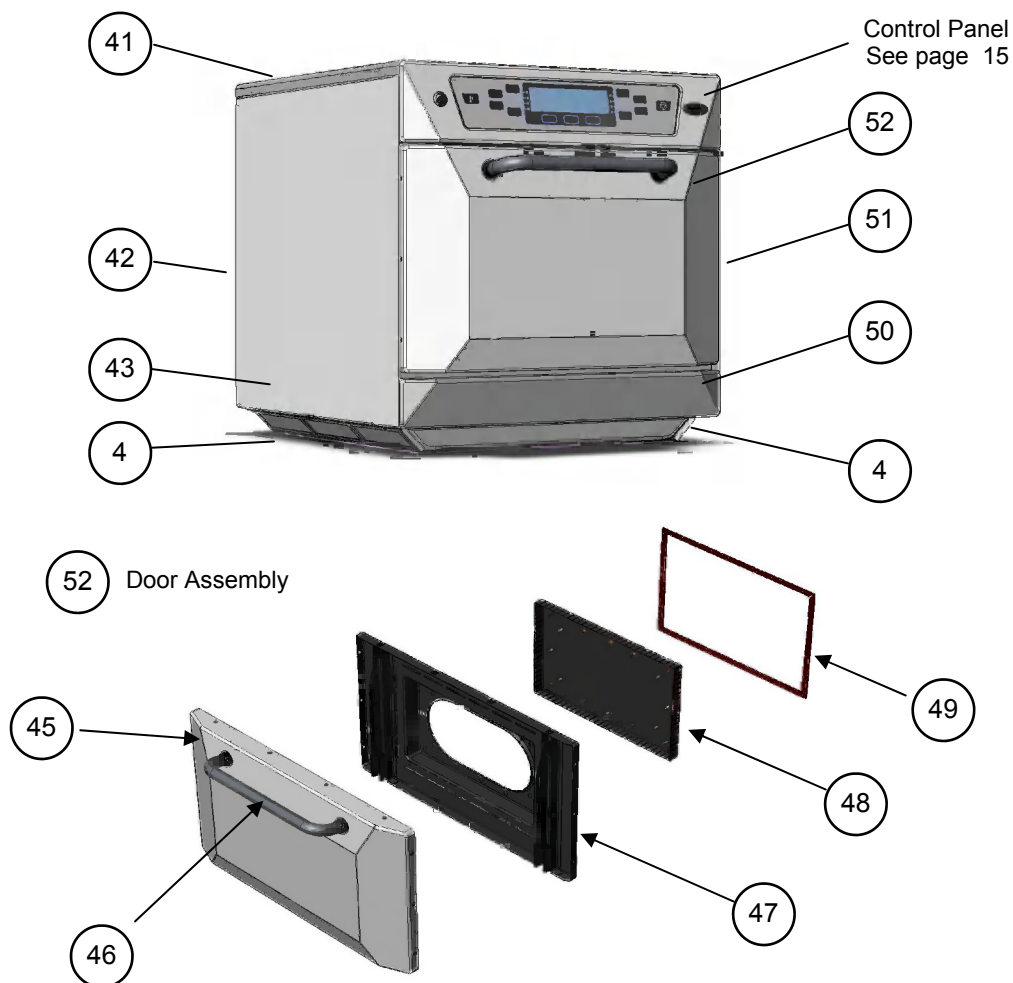
### KFC Accessories



| No. | Description                               | Part No. |
|-----|---|----------|
| 60  | Cool-down pan                             | 32Z4028  |
| 61  | Oven tray                                 | MC3175   |
| 62  | Handle                                    | SA267    |
| 63  | Griddle                                   | DV0221   |
| 64  | Griddle carrier                           | SA350    |
| 65  | Chicken Griddle (SA350 + DV0221 + DV0267) | SA133    |

## PRINCIPAL COMPONENTS

### External Parts



| No. | Description   | Part No. |
|-----|---------------|----------|
| 4   | Air Filter    | SA276    |
| 41* | Top Trim      | DV0187   |
| 42* | Rear Panel    | SA329    |
| 43* | Side Panel LH | DV0091   |
| 45  | Door Skin     | DV0501   |
| 46  | Door Handle   | 32Z1066  |
| 47* | Door Inner    | SA331    |
| 48* | Door Choke    | DV0168   |
| 49  | Door Seal     | DV0305   |
| 50* | Bottom Trim   | DV0037   |
| 51* | Side Panel RH | DV0092   |
| 52* | Door Assembly | SA111    |

\*Note:

On Ovens with Serial No.s before 000745 ( WAWA Models )

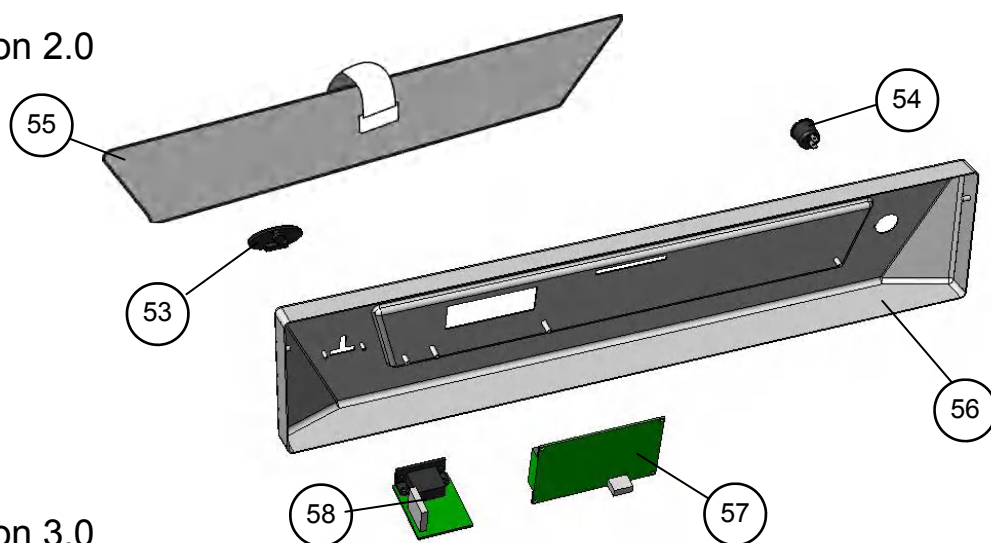
External Panels Items 41,42, 43, 45, 47,48, 50, 51, 52 are only available to special order.



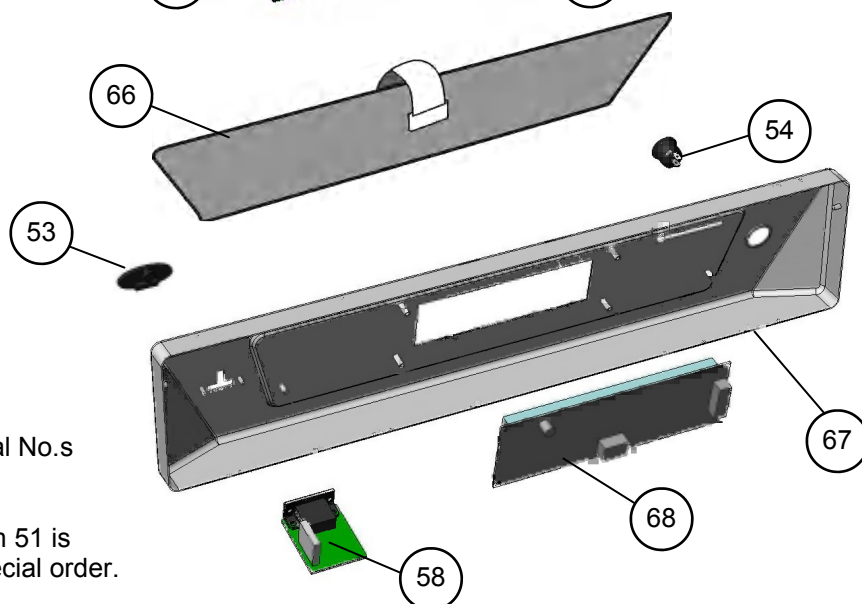
## PRINCIPAL COMPONENTS

### Electronic Control Panel Assembly

Version 2.0



Version 3.0



\*Note:  
On Ovens with Serial No.s  
before 000745  
( WAWA Models)  
External Panels Item 51 is  
only available to special order.

| No. | Description                           | Part No. |
|-----|---------------------------------------|----------|
| 53  | MenuKey Dust Cover                    | DV0052   |
| 54  | Power switch (On/Off)                 | 30Z1318  |
| 55  | GM Membrane Version 2.0               | DV0055   |
| 55  | Membrane WAWA version                 | DV0192   |
| 56* | Front Panel Version 2.0               | DV0036   |
| 57  | Display Assembly & Header Version 2.0 | 30Z1299  |
| 58  | MenuKey Socket                        | 11K0005  |
| 66  | GM Membrane Version 3.0               | DV0254   |
| 67  | Front Panel Version 3.0               | DV0249   |
| 68  | Display Assembly & Header Version 3.0 | 30Z1324  |

## Part number identification chart 1

| Ref. No. | Description  | Part No. |
|----------|--|----------|
| 1        | Cavity High limit Stat                                 | 30Z1024  |
| 2        | Motor Start Capacitor 2 $\mu$ F ( Blue )               | 30Z1298  |
| 3        | Filter 16A   | 30Z1339  |
| 4        | Air filter   | SA276    |
| 5        | Stirrer motor Assembly                                 | SA238    |
| 5A       | Stirrer (inside cavity)                                | SA213    |
| 6        | Microswitch SW1, SW2, SW3, SW4                         | 30Z1294  |
| 7        | Door Hinge Assembly RH                                 | SA202    |
| 8        | Magnetron Cooling Fan                                  | 30Z1295  |
| 9        | Door Hinge Assembly LH                                 | SA203    |
| 10       | Motor Controller                                       | 30Z1293  |
| 11       | Fuse 10A HRC   | 30Z0217  |
| 12       | Gold resistor ( 220R )                                 | 30Z0235  |
| 13       | Relay PCB Assembly                                     | 11K0004  |
| 14       | Ribbon Cable 15way                                     | 11Z0298  |
| 15       | Ribbon Cable 10way MenuKey                             | 11M0117  |
| 16       | Logic PCB Assembly Version 2.0                         | SA231    |
| 16       | Logic PCB Assembly Version 3.0                         | SA260    |
| 17       | Transformer LT (Low voltage)                           | 30Z1155  |
| 18       | Fuse 1A  | 30Z0957  |
| 19       | Cable Gland  | 31Z0500  |
|          | Cable Gland Nut  | 31Z0499  |
| 20       | Heater Element <b>208V</b> 650W                        | DV0576   |
|          | Heater Element <b>220V</b> 650W                        | DV0606   |
|          | Heater Element <b>240V</b> 650W                        | DV0607   |
| 21       | Magnetron  | 30Z1171  |
| 22       | Magnetron Thermistor Assembly                          | SA234    |
| 23       | Convection ( Hot Air ) Motor Assembly                  | SA208    |
| 24       | Thermistor Cavity                                      | 30Z1315  |
| 25       | HV Capacitor 2500V 0.88 $\mu$ F ( <b>60Hz</b> Models ) | 30Z1251  |
| 25A      | HV Capacitor clip (0.88 $\mu$ F) 88mm                  | 31Z0521  |
| 27       | Transformer 208/220/240V <b>60Hz</b>                   | 30Z1230  |
| 28       | HT Rectifier   | 11H0010  |
| 29       | Electrical Supply Lead Assembly                        | SA217    |
| 30       | Terminal Block   | 31Z0447  |
| 31       | Fuse 20A FLM   | 30Z1177  |

## Part number identification chart 2

| Ref. No. | Description                            | Part No.       |
|----------|--|----------------|
| 32       | Fuse Holder 30A                        | 30Z1178        |
| 34       | Fuse Holder 10A                        | 30Z0231        |
| 35*      | Grease Filter ( 2 parts )              | SA339<br>SA340 |
| 36       | Stirrer Glass                          | DV0492         |
| 37       | Rack Support                           | DV0114         |
| 38       | Upper Impinger plate                   | SA211          |
| 39       | Rack                                   | DV0275         |
| 40       | Lower Impinger plate                   | SA266          |
| 41*      | Top Trim                               | DV0187         |
| 42*      | Rear Panel                             | SA329          |
| 43*      | Side Panel LH                          | DV0091         |
| 45*      | Door Skin                              | DV0501         |
| 46       | Door Handle                            | 32Z1066        |
| 47*      | Door Inner                             | SA331          |
| 48*      | Door Choke                             | DV0168         |
| 49       | Door Seal                              | DV0305         |
| 50*      | Bottom Trim                            | DV0037         |
| 51*      | Side Panel RH                          | DV0092         |
| 52*      | Door Assembly                          | SA111          |
| 53       | MenuKey Dust Cover                     | DV0052         |
| 54       | Power switch (On/Off)                  | 30Z1318        |
| 55       | Membrane WAWA version                  | DV0192         |
| 55       | Membrane GM Version Version 2.0        | DV0055         |
| 56       | Front Panel Version Version 2.0        | DV0036         |
| 57       | Display Assembly & Header Version 2.0  | 30Z1299        |
| 58       | MenuKey Socket                         | 11K0005        |
| 59       | Sounder                                | SA257          |
| 60       | Cool-down pan                          | 32Z4028        |
| 61       | Oven tray                              | MC3175         |
| 62       | Handle                                 | SA267          |
| 63       | Griddle                                | DV0221         |
| 64       | Griddle carrier                        | SA350          |
| 65       | Chicken Griddle (SA350+DV0221+ DV0267) | SA133          |
| 66       | GM Membrane Version 3.0                | DV0254         |
| 67       | Front Panel Version 3.0                | DV0249         |
| 68       | Display Assembly & Header Version 3.0  | 30Z1324        |
| —        | Door seal sealant ( tube )             | 31Z0186        |
| —        | Stirrer cover sealant ( tube )         | 31Z0527        |
| —        | Grease Filter Cartridge                | SA340          |
| —        | Microswitch interlock spring           | 31Z1247        |

\*Note:  
On Ovens with  
Serial No.s before 000745  
( WAWA Models )  
Grease Filter 35, Rack 39  
External Panel Parts  
41,42, 43, 45, 47, 48,  
50, 51, 52  
are only available  
to special order.

## PROCEDURE FOR MICROWAVE EMISSION TEST (1)

### Warning

Check for radiation emission after servicing. Should the emission be more than 4mW/cm<sup>2</sup> Inform Merrychef service centre immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation.

This requirement must be strictly observed. In addition, the emission reading must be recorded on the service repair documentation while in the customer's premises.

### Please Note

**DO NOT** attempt to carry out the following procedure unless you have the following tools.

Tools required for microwave leakage test

|                                |
|--------------------------------|
| 1.0 Pint ( 600ml) glass beaker |
| Supply of cold water           |
| Microwave leakage meter        |

### Changing the Oven Profile

In order to carry out the test the oven **PREHEAT** must be set to **OFF**[ V3.0 ] or **0°F**[ V2.0 ] to switch off the convection heaters and the **Manual** controls must be set to **ON** [ V3.0 ] or **PROGRAM/MANUAL**[ V2.0 ].

When the test is completed the oven must be returned to its original settings or the appropriate MenuKey can be used to reset the oven automatically.

See Appendix 6 for changing the Oven Profile

**Read and understand all of these notes and procedure before carrying out this operation.**

### Note before measuring.

- Make sure that the survey meter you are using has been calibrated and is suitable for measuring frequencies of 2,450 MHz.
- Do not exceed meter full scale deflection, leakage meter should initially be set to the highest scale, then adjusted down as necessary to ensure that low readings are measured on the most sensitive range.
- To prevent false readings, hold the probe on the grip provided and move along the areas indicated on the following page.  
The probe should be moved at 1 inch/second (2.5cm/second)).
- With any casework removed the leakage should not exceed 4mW/cm<sup>2</sup>.
- When measuring the leakage, always hold the probe at 2inches (50mm) from the test area using the probe supplied with the instrument.
- Always hold the probe at right angles to the oven and point of measurement

### Procedure:

1. Place 0.5 pint (275ml) of cold water in the 1.0 Pint ( 600ml ) glass beaker.
2. Place the 1.0 Pint ( 600ml ) glass beaker in the centre of oven.
3. Set the leakage meter to the appropriate scale/range.
4. Set a time of 30 seconds with Fan speed at 10% and Power at 100%.
5. Press Start and move the survey meter probe along the areas indicated on page 21. Open the door at 30 seconds and taking care change the water. If the water boils the meter readings will be inaccurate.


On completing the test remember to return the Oven Profile and PREHEAT temperature to the original settings.

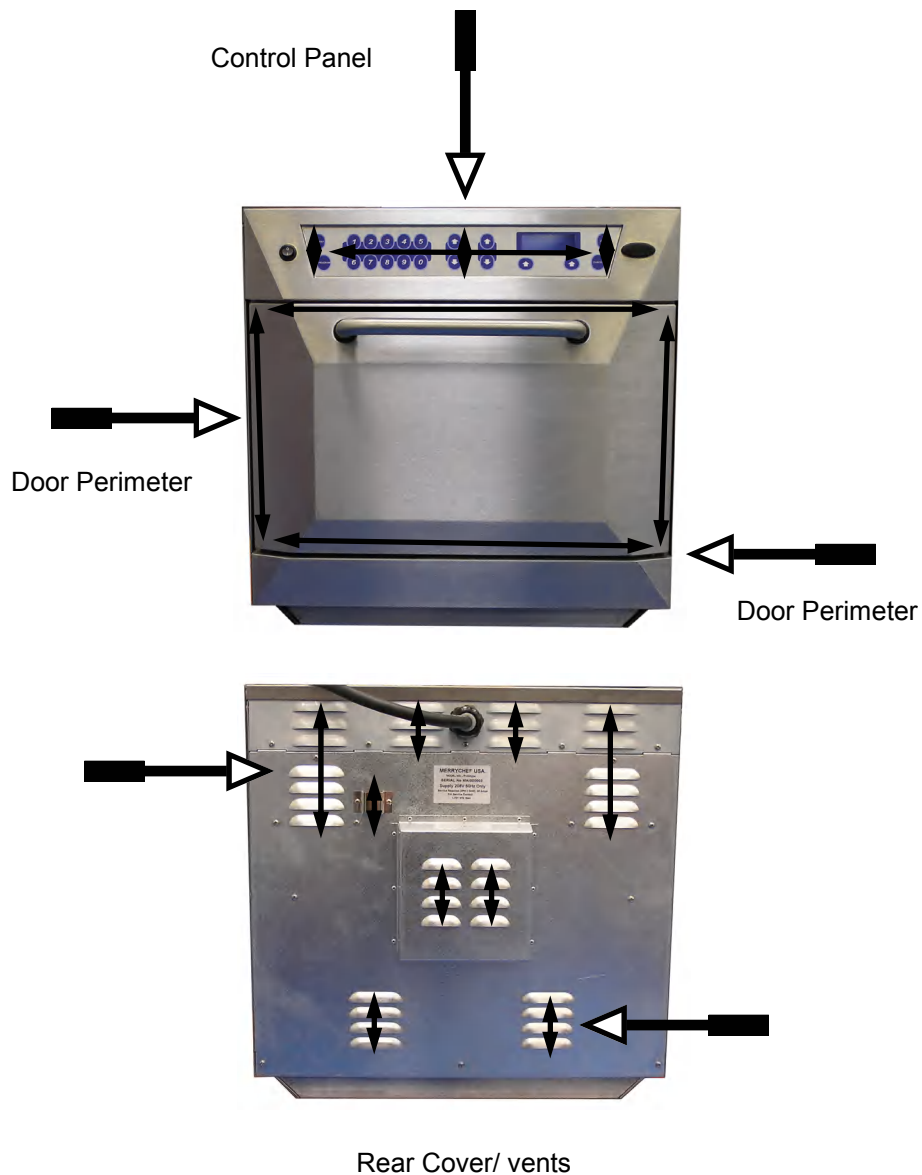
### Manual Mode

If the manual mode screen does not appear it must be changed in the OVEN PROFILE see Appendix 6

## PROCEDURE FOR MICROWAVE EMISSION TEST (2)

- Readings must be **below** 4mW/cm<sup>2</sup>. If a level greater than 4mW/cm<sup>2</sup> is observed, this should be reported to Merrychef Service Division immediately.
- In any case, notes should be kept of the leakage that is observed. In terms of level and position on the oven. This should be kept with the service documentation.

Test for microwave leakage at all points marked with a 



## PROCEDURE FOR POWER OUTPUT MEASUREMENT

The power output specification 1500W on this model is established under IEC 705 standard method. This method is only workable in Laboratory controlled conditions.

An approximate method is as follows:

### Ensure the oven is cold before commencing the test

#### Changing the Oven Profile

In order to carry out the test the oven **PREHEAT** must be set to **OFF** [ V3.0 ] or **0°F** [ V2.0 ] to switch off the convection heaters and the **Manual** controls must be set to **ON** [ V3.0 ] or **PROGRAM/MANUAL** [ V2.0 ]

When the test is completed the oven must be returned to its original settings or the appropriate MenuKey can be used to reset the oven automatically.

See Appendix 6 for changing the Oven Profile

#### Test procedure:

1. Fill one beaker ( glass or plastic ) with 2.11 pints ( one litre ) of tap water at about 68°F ( 20°C ) and measure the water temperature.  
( Use a thermometer with a  $\frac{1}{10}$ , 0.1 degree gauge ).
2. Place the beaker in the centre of the cold cavity.
3. Version 2.0 Press the Manual Function Pad to enter **Manual Mode**  
Version 3.0 Press the lower RH function pad below the display to enter **Manual Mode**  
Set **Time** to 1 minute 3 seconds, Power to 100% and Fan to 0%.  
Press the **Start** pad and wait until the counter reaches zero.
4. Take the beaker out immediately stir the water with a plastic implement and measure the water temperature.

#### Manual Mode

If the manual mode screen does not appear it must be changed in the OVEN PROFILE see Appendix 6

Calculate the temperature rise of water in the beaker.

The temperature rise of the water should be within the following range:

#### Temperature Rise

27°F ( 15°C ) Minimum

36°F ( 20°C ) Maximum

#### Note:

Power Output is affected by the line voltage under load.

For correct Power Output measurement the line voltage under load must be correct.

## PROCEDURES FOR PRINCIPAL COMPONENTS TEST (1)

### 1. Power Transformer Test

You will need:

- A Digital Multi-meter (D.M.M.)
- A Megger or similar resistance meter using 500V d.c.

**WARNING:** High voltages and large currents are present at the High Voltage Capacitor. It is very dangerous to work near this part when the oven is on. **NEVER** make any voltage measurements at the High Voltage circuits, including the magnetron filament.

**WARNING:** Even when the oven is not cooking, the High Voltage Capacitor has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

**See Safety Code ( Page 4 )**

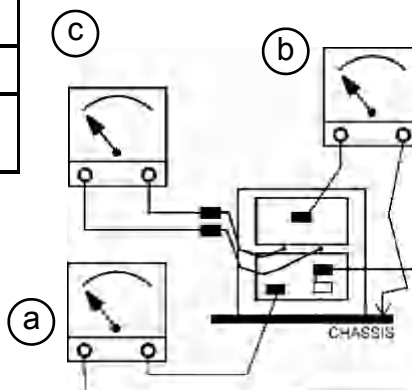
- 1 Isolate the oven from the mains supply.
- 2 Ensure that the High Voltage Capacitor is discharged before commencing work.
- 3 Remove all connections from the Power Transformer.
- 4 Using a D.M.M., check the resistance of the windings. Results should be as follows:

|   |                                    |                      |
|---|------------------------------------|----------------------|
| a | Mains winding between tags         | Approx. 1.1 $\Omega$ |
| b | High Voltage winding               | Approx. 60 $\Omega$  |
| c | Filament winding between terminals | Less than 1 $\Omega$ |

- 5 Using a Megger, test the insulation resistance between:

|                              |                            |
|------------------------------|----------------------------|
| Primary winding and chassis  | Pass if over 10 M $\Omega$ |
| Filament winding and chassis | Pass if over 10 M $\Omega$ |

One end of the High Voltage winding is connected to the chassis, so this is not tested.



### 2. High Voltage Capacitor Test

You will need:

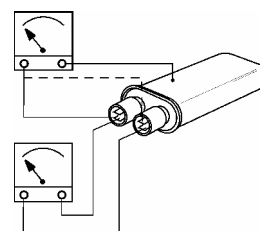
- A Digital Multi-meter (D.M.M.)
- A Megger or similar resistance meter using 500V d.c.

**WARNING:** High voltages and large currents are present at the High Voltage Capacitor. It is very dangerous to work near this part when the oven is on. **NEVER** make any voltage measurements at the High Voltage circuits, including the magnetron filament.

**WARNING:** Even when the oven is not cooking, the High Voltage Capacitor has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

**See Safety Code ( Page 4 )**

1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the High Voltage Capacitor.
4. Using a D.M.M., check for continuity between the terminals & compare results with table on next page.



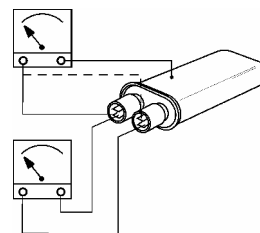
## PROCEDURES FOR PRINCIPAL COMPONENTS TEST (2)

( High Voltage Capacitor Test continued, ensure steps 1-4 on previous page have been completed)

|                            |                             |
|----------------------------|-----------------------------|
| Between Terminals          | Pass if approximately 10 MΩ |
| Between Terminals and Case | Pass if open circuit        |

5. Using a Megger, test the insulation resistance between the terminals and the case.

|                            |                     |
|----------------------------|---------------------|
| Between Terminals and Case | Pass if over 100 MΩ |
|----------------------------|---------------------|



### 3. High Voltage Rectifier Test

**You will need:**

A Megger or similar resistance meter using 500V d.c.

**WARNING:** High voltages and large currents are present at the High Voltage Capacitor. It is very dangerous to work near this part when the oven is on. **NEVER** make any voltage measurements at the High Voltage circuits, including the magnetron filament.

**WARNING:** Even when the oven is not cooking, the High Voltage Capacitor has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

**See Safety Code ( Page 4 )**

1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the High Voltage Rectifier.
4. Using the Megger, test for continuity in both directions. Compare results with the table.

|                                   |             |
|-----------------------------------|-------------|
| Open Circuit both ways            | <b>FAIL</b> |
| Conducts one way only             | <b>PASS</b> |
| Short Circuit both ways           | <b>FAIL</b> |
| Conducts one way, leaks the other | <b>FAIL</b> |

### 4. Magnetron Test

**You will need:**

A Megger or similar resistance meter using 500V d.c.

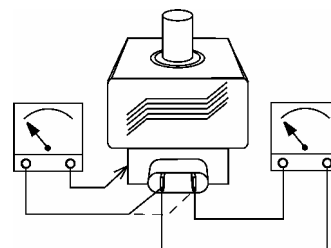
A Magnetron can be tested for an open filament or a short circuit by carrying out a continuity check.

**WARNING:** High voltages and large currents are present at the High Voltage Capacitor. It is very dangerous to work near this part when the oven is on. **NEVER** make any voltage measurements at the High Voltage circuits, including the magnetron filament.

**WARNING:** Even when the oven is not cooking, the High Voltage Capacitor has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

**See Safety Code ( Page 4 )**

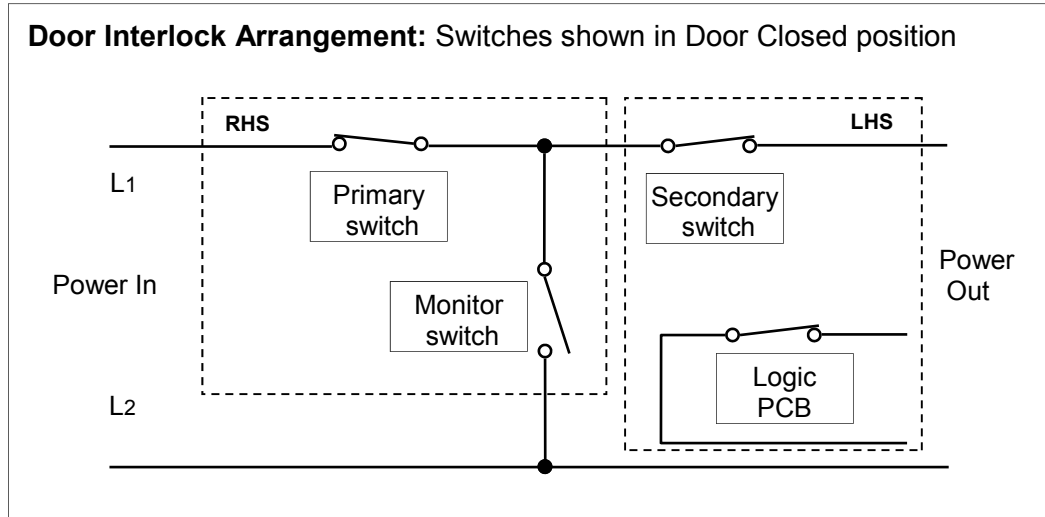
1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the Magnetron.
4. A continuity check across the Filament terminals should be 1ohm or less
5. A continuity check between each filament terminal and the metal outer should read open.





## PROCEDURE FOR DOOR INTERLOCK ADJUSTMENT AND TEST 1

The door on the 402s oven is monitored by four microswitches. Three are used in the conventional "Primary, Secondary and Monitor" switch arrangement shown below and the fourth sends a signal to the Logic PCB. The switches operate as follows:



### 1. Monitor switch

The Monitor switch will produce a short circuit across the mains supply when the door is opened if the Primary interlock switch is faulty, thus blowing the microwave fuse and rendering the oven inoperative.

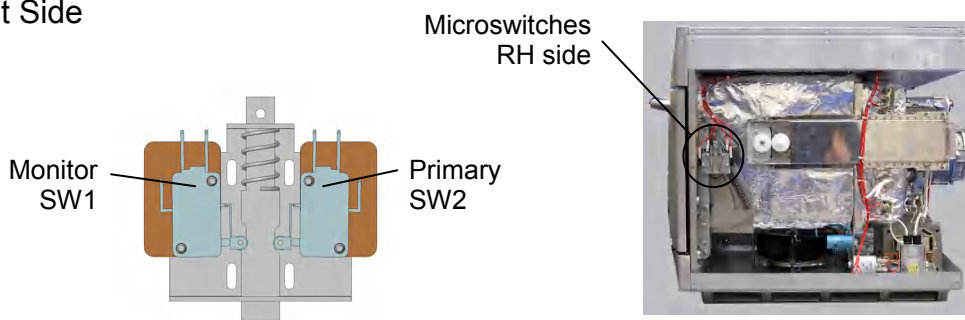
### 2. Primary Interlock and Secondary Interlock

The Primary switch will cut off the microwave emissions from the oven when the door is opened by breaking the electrical supply circuit to the transformers. The Secondary interlock switch will cut off the microwave emission if the Primary switch has failed.

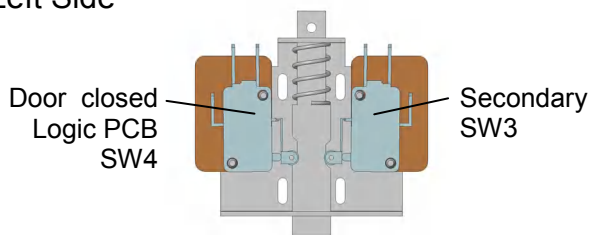
### Note:

If operation of the Monitor switch has caused the Microwave Fuse to blow, the Primary and Monitor microswitches must be changed as they may have been damaged by the high short-circuit currents involved.

### Right Side



### Left Side



## PROCEDURE FOR DOOR INTERLOCK ADJUSTMENT AND TEST 2

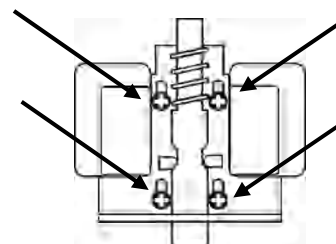
It is vital that the microswitches are adjusted to the correct position. There are two sets of switch assemblies located either side of the oven.

The interlocks ensure that the oven will not operate microwave with the door open.

### WARNING

**Before adjusting the microswitch assemblies ensure that the oven has been isolated from the electrical supply.**

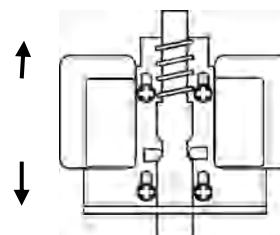
**Please note the terminals on the microswitches remain live when the oven is switched off, so complete isolation is essential.**



### Objective

With a 1mm spacer located as shown, both switches on both sides should be activated/ closed position.

With a 5mm spacer located as shown SW2 and SW3 should be open.

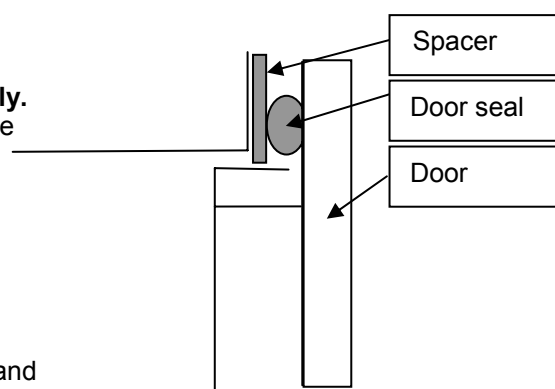


### Method of adjustment.

By loosening the four screws on each mounting bracket the microswitch assembly can be raised or lowered and thereby the switches can be made to operate at different door positions.

### Procedure.

1. **Isolate the oven from the Electrical supply.**
2. Place a 1mm spacer between the cavity face and the door seal as shown.
3. Working on the right hand side, adjust the bracket so the SW2 'just' operates.
4. Working on the left hand side, adjust the bracket so that SW3 'just' operates.
5. Remove the 1mm spacer and then place a 5mm spacer in the same position. Check that SW2 and SW3 are open circuit and not operated.
6. Repeat the steps above to ensure the setup is correct.
7. Ensure that all the screws are tightened.
8. Reconnect the electrical supply.



## PRINCIPAL COMPONENTS: Hot Air Motor & Controller 1

### Convection and Fan Speed Control

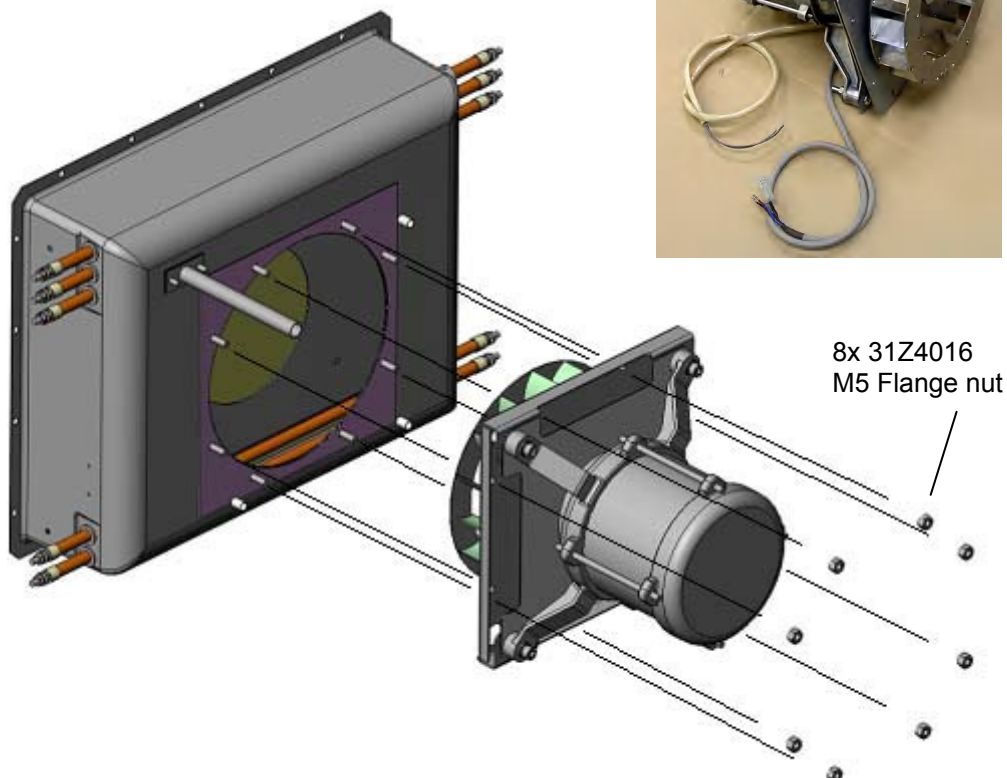
The convection heat is provided by 5 elements located in the hot box at the rear of the oven cavity. The hot air from the hot box passes over catalytic converters and is circulated into the bottom and top of the cavity through the impinger plates. It returns through the removable grease filter at the back of the cavity and into the fan.

### Convection motor

The convection motor is a 3-phase AC motor having a maximum speed of 7200 rpm controlled by a motor speed controller.

The windings are thermally protected and in the event of a thermal fault a trip will operate and shut down the motor speed controller.

| Step | Motor/ controller fault finding   |
|------|---|
| 1    | 208V/240V, 60Hz Electrical supply into motor controller   |
| 2    | Three phase connections to motor  |
| 3    | Speed Controller connections to logic board   |
| 4    | Motor thermal cut-out (short circuit)   |
| 5    | Motor rotates freely/ not seized  |
| 6    | Motor winding resistances:<br>Blue-Black 3 Ohms—4 Ohms<br>Black-Brown 3 Ohms—4 Ohms<br>Brown-Blue 3 Ohms—4 Ohms<br>Black or Brown or Blue to Earth (Open circuit) |



## PRINCIPAL COMPONENTS: Hot Air Motor & Controller 2

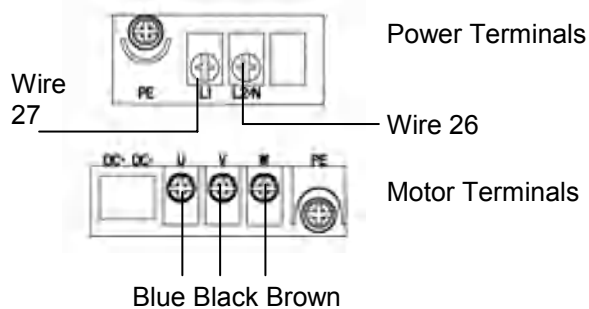
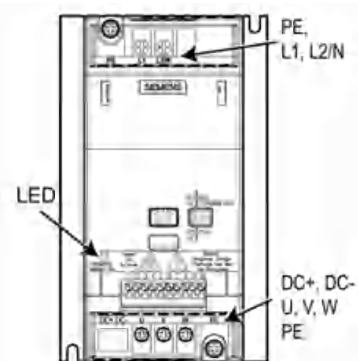
### Motor Controller

Provides an AC, 3-phase switched mode drive to the convection motor and is controlled by a 0 - 10 Volt signal from the logic board. This allows the motor to be adjusted from approximately 1500 rpm to 7000 rpm in steps of 5%.

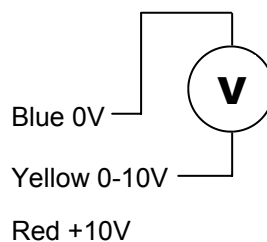
Door Open = 1500 RPM  
 Door Closed (not cooking) = 3500 RPM  
 Door Closed (cooking) = as specified by program or setting

Motor Speed and Logic board voltage table

| Fan speed % | Voltage dc | RPM  | Condition   |
|-------------|------------|------|-------------|
| 100%        | 10V        | 7000 | Full Speed  |
| 50%         | 5V         | 3000 | Door Closed |
| 20%         | 2V         | 1500 | Door Open   |

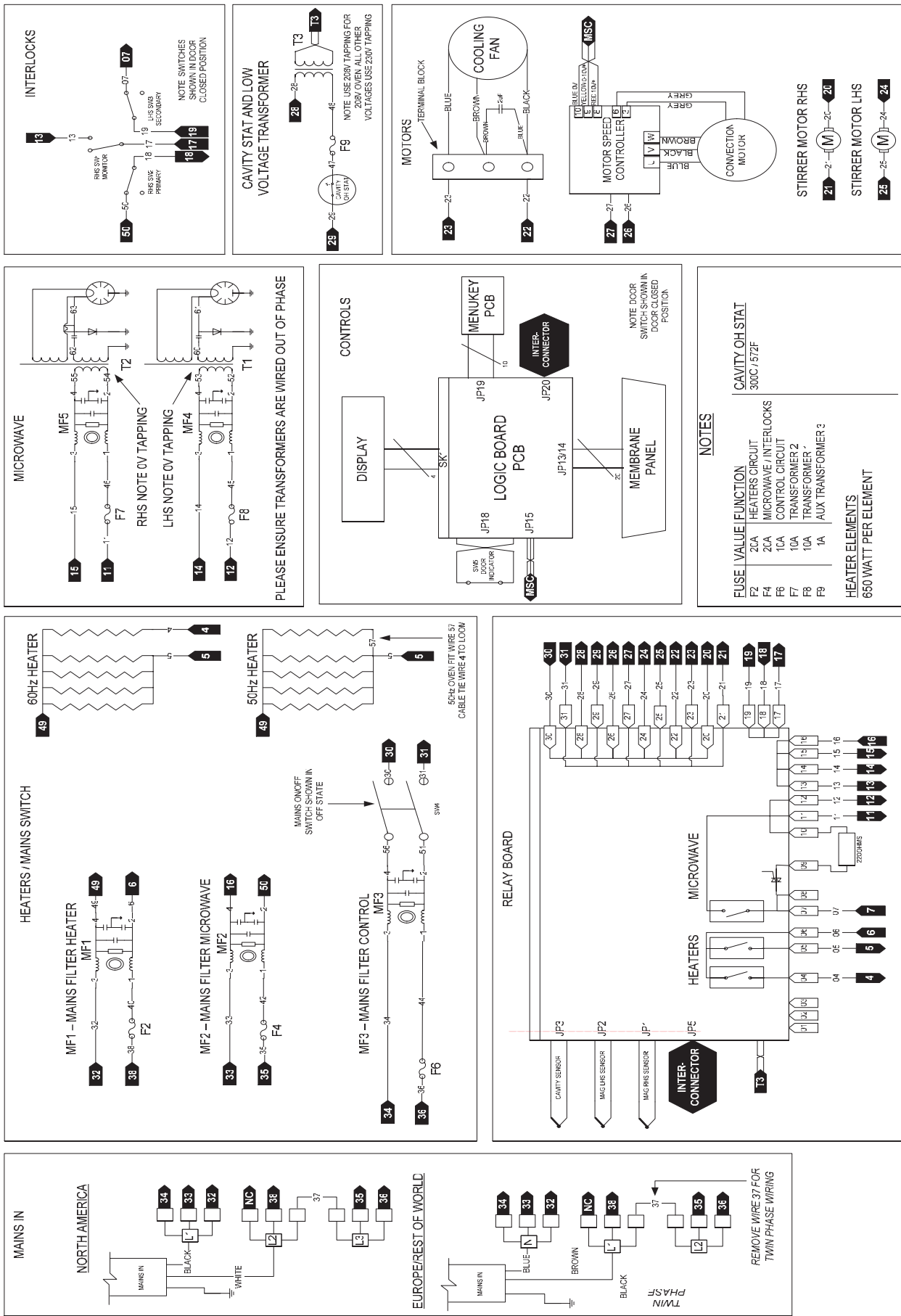


Grey wire to Motor



### Displays and messages: LED status display

| LED                    | Meaning                  | Position |
|------------------------|--------------------------|----------|
| LED Off                | Inverter Off / No supply | LED      |
| 1000 ms On/1000 ms Off | Power On / Ready         |          |
| LED On steadily        | Inverter Running         |          |
| 500 ms On / 200 ms Off | General Warning          |          |
| 100 ms On / 100 ms Off | Fault Condition          |          |



CIRCUIT DIAGRAM: Issue 11

# Trouble-Shooting Guide

**Is the problem Food Quality or Fundamental Operational Issue?**

## Food Quality



### Standard Food Quality Checks

- Check that the PREHEAT temperature is set correctly.  
See User Manual.
- Check that the food being cooked has been stored at the correct temperature.
- Check that the correct program is being used.

Still Have a problem:  
Select a Category.

- **Cold Food Page 32**
- **Core TemperaturesLow Page 32**

## Fundamental



### Standard Electrical Checks

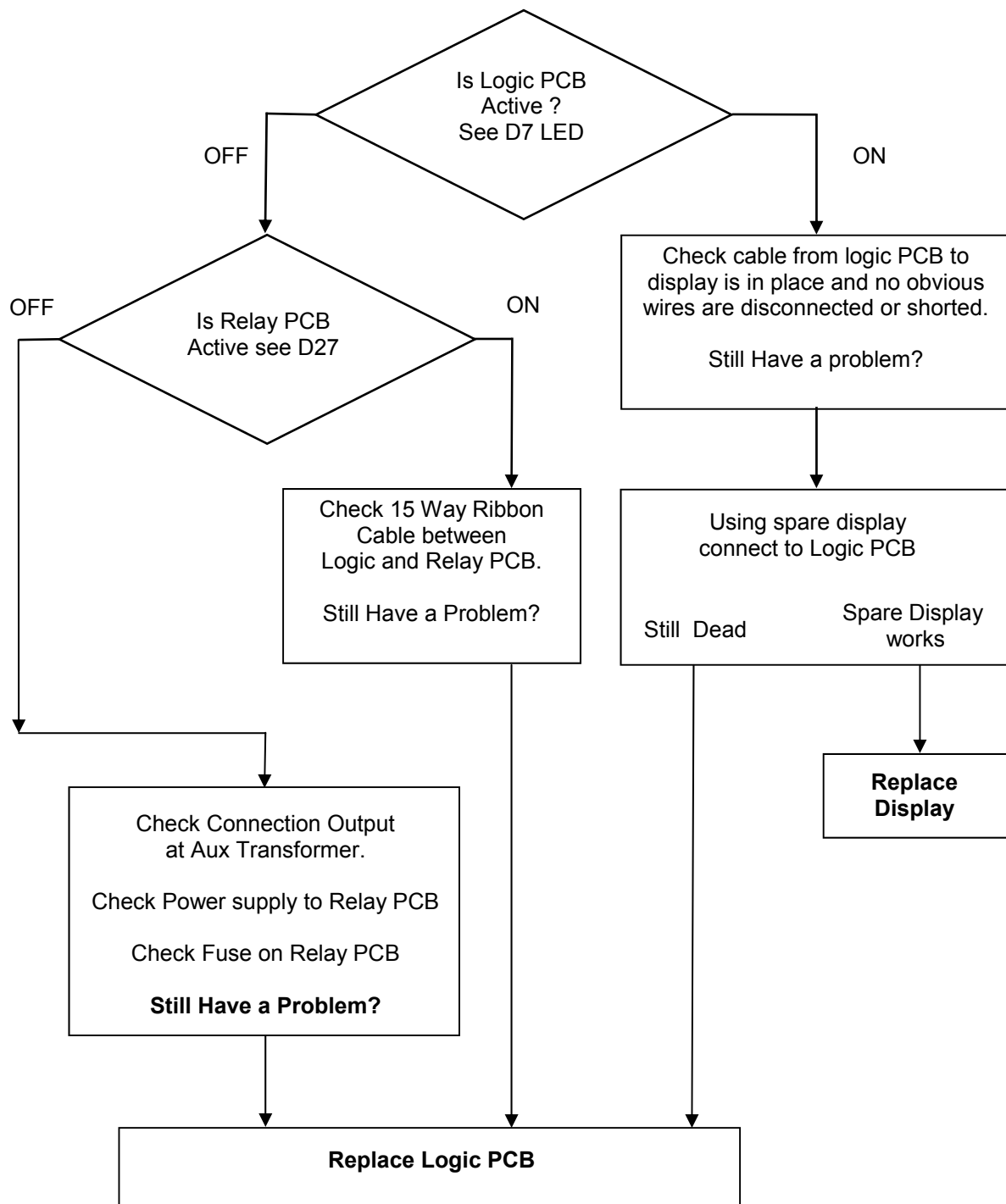
- Check that oven is connected to an Electrical Power supply and that any trip that supplies the unit is not switched off.
- Check that the oven is switched on.
- Check the Electrical Power supply voltage at the input terminal block.
- Check that all fuses are intact.
- Check that the overheat stat has not tripped this can be checked by measuring the voltage across the Auxiliary transformer.

Still Have a problem:  
Select a Category.

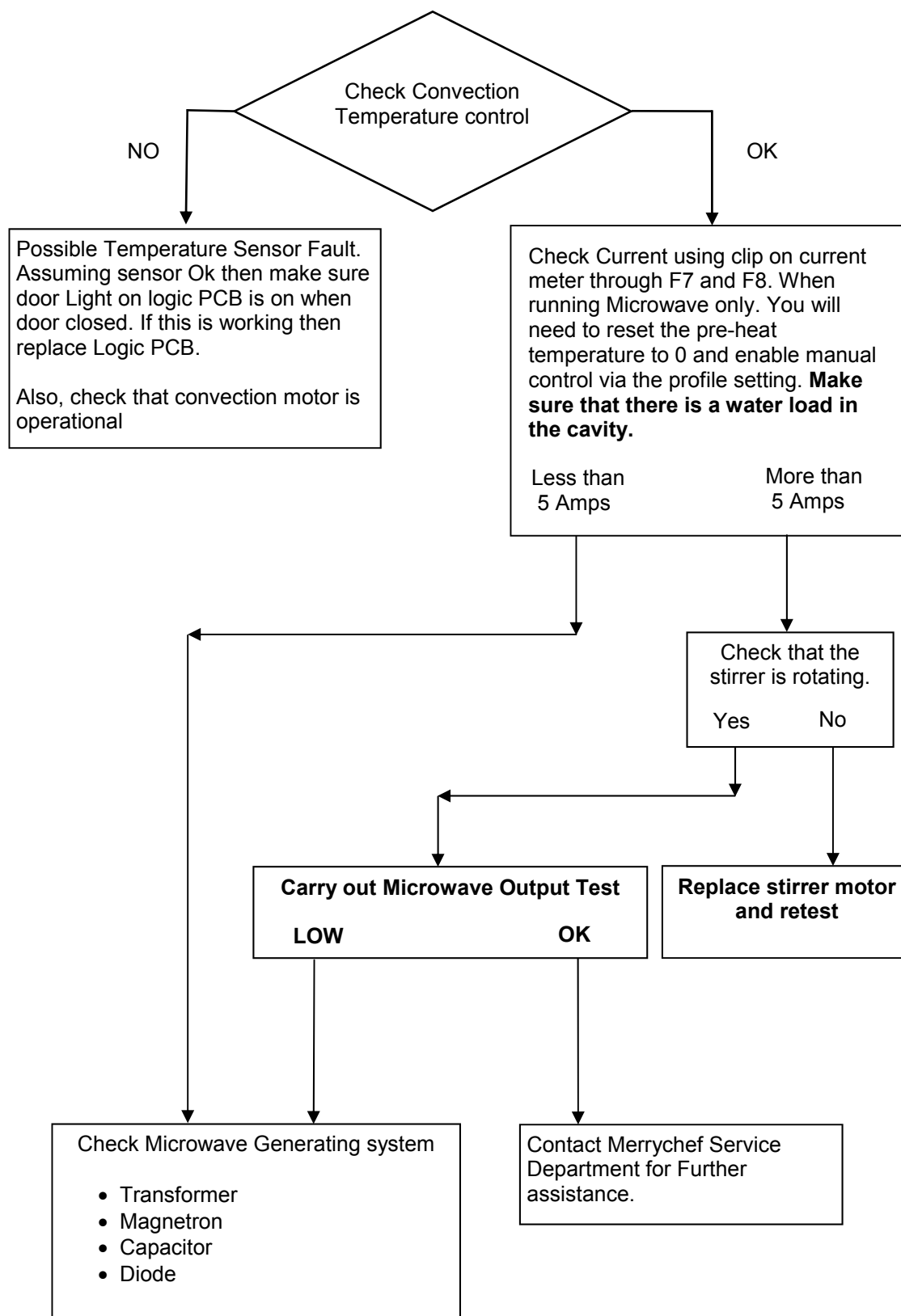
- **No Display Page 31**
- **Cavity Sensor Error Page 33**
- **Magnetron / Over heat errors Page 34**

**Note :** The following Diagnosis procedures may not expose all possible errors but have been included for general guidance.

# No Display

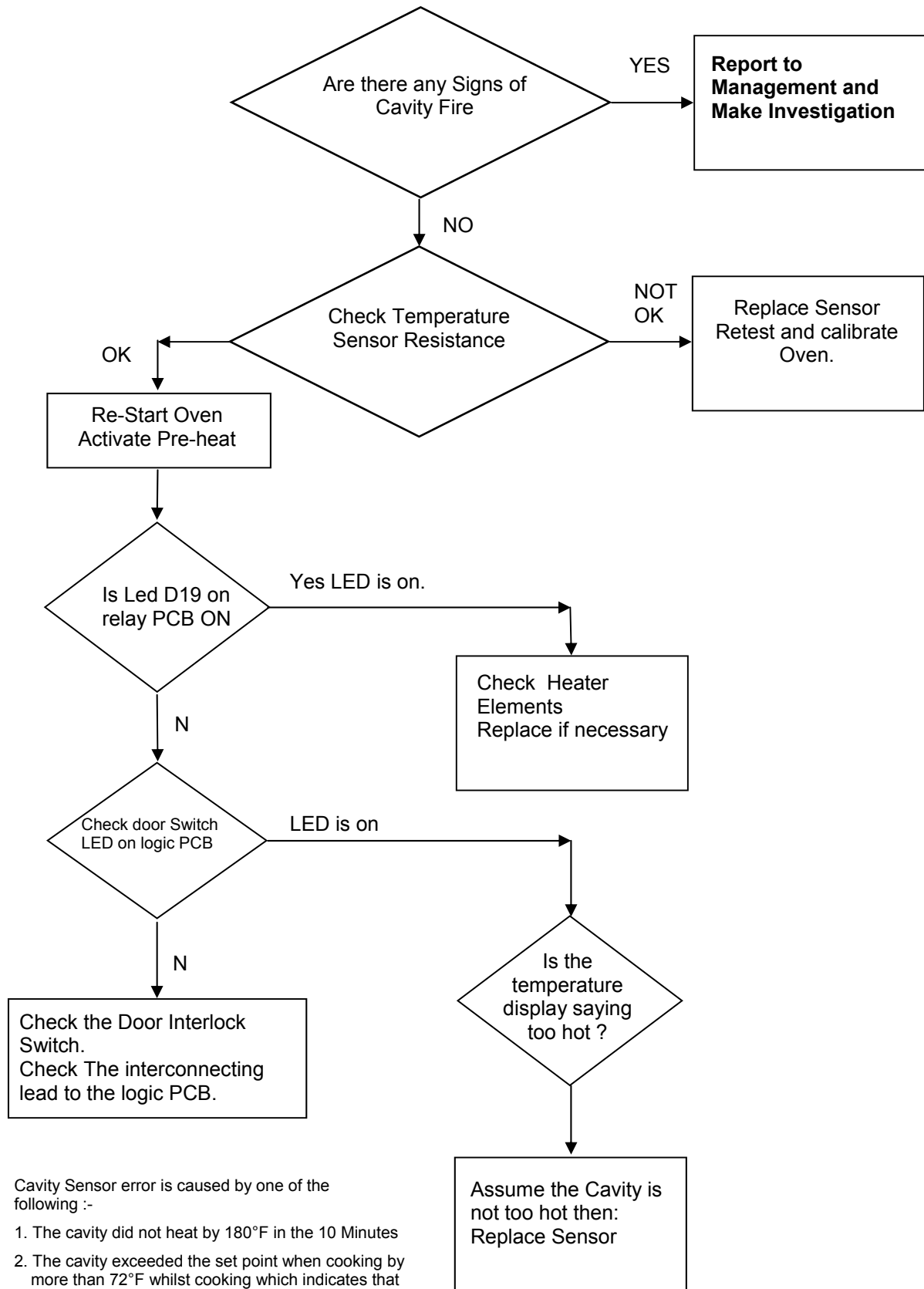


# Cold Food

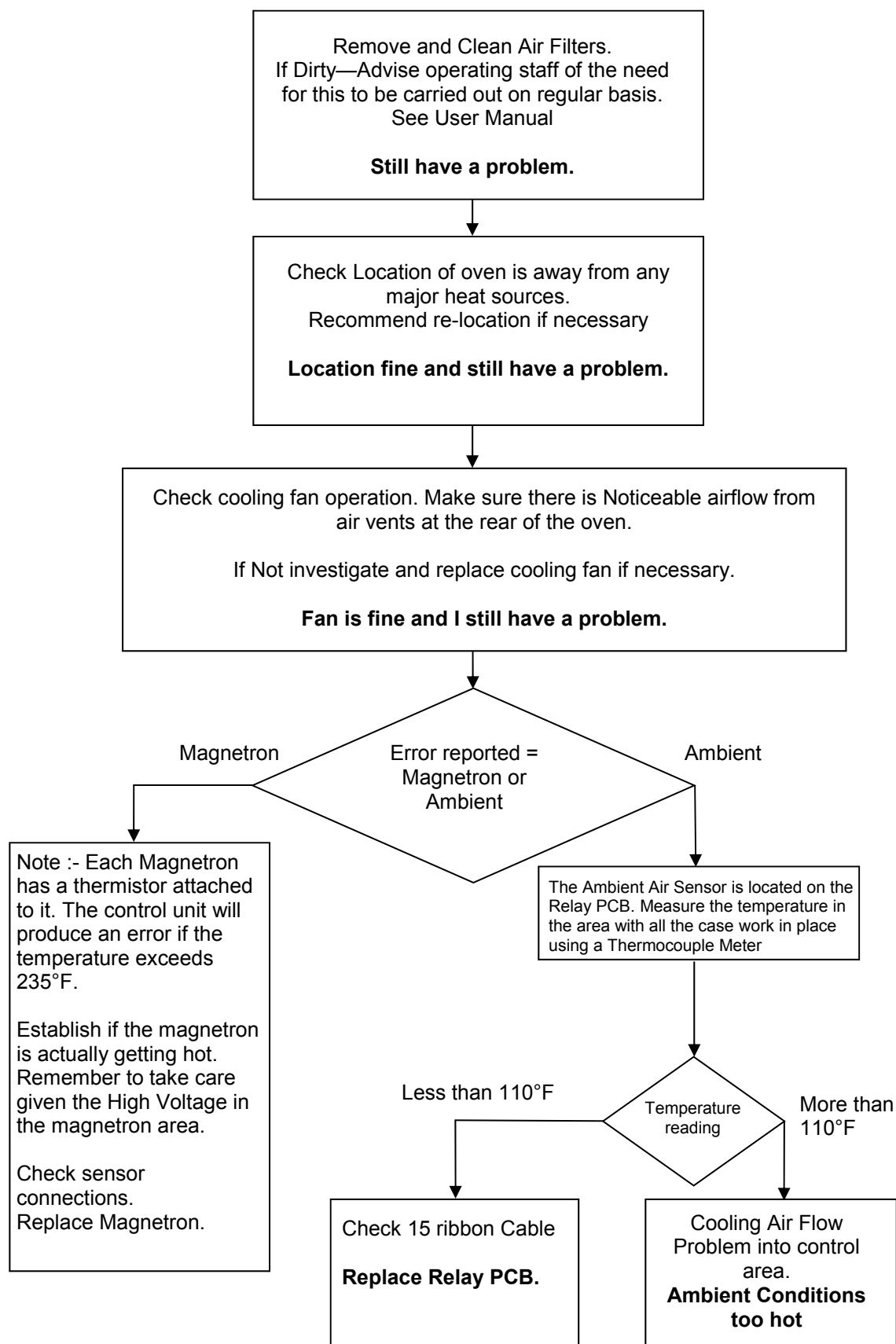




# Cavity Sensor Error



# Magnetron / Overheat issues



## APPENDIX 1: TEMPERATURE SENSOR RESISTANCE DATA

### Temperature Sensor Resistance

| Temp °F | Temp °C | Min. Rate<br>kΩ | Standard<br>Rate kΩ | Max. Rate<br>kΩ |
|---------|---------|-----------------|---------------------|-----------------|
| 212     | 100     | 11.490          | 13.060              | 14.810          |
| 302     | 150     | 2.803           | 3.161               | 3.434           |
| 392     | 200     | 0.950           | 1.000               | 1.050           |
| 482     | 250     | 0.3572          | 0.3865              | 0.4171          |

$$R(200)^{\circ}\text{C} = 1 \text{ k}\Omega \pm 5\%$$

**Note:**





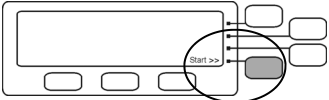


These resistances will only be apparent in a stable cavity temperature as the sensor has a slow response time.





## APPENDIX 3: Cool Down Procedure

To cool down and clean a hot oven

| Action   | EC402s V2.0   | EC 402s V3.0   |
|--|---|--|
| To commence <b>Cool Down</b> procedure Press   |              |           |
| Place Ice in cavity<br> | COOL DOWN MODE<br>PLACE ICE IN CAVITY   | COOL DOWN MODE<br>PLACE LOAD IN CAVITYAND<br>PRESS START                                     |
| Press  | Continue<br> | <br>Start |
| The oven cools down for approximately 30 minutes   | COOL DOWN MODE<br>OVEN HOT<br>PLEASE WAIT<br>( Also in Spanish)                               | COOL DOWN MODE<br>OVEN HOT<br>PLEASE WAIT  |
| Cycle ends<br>        | COOL DOWN COMPLETE<br>READY FOR CLEANING  | Turn oven off and ensure<br>Air Filters are clean  |
| Switch oven off ready for cleaning   |           |  |



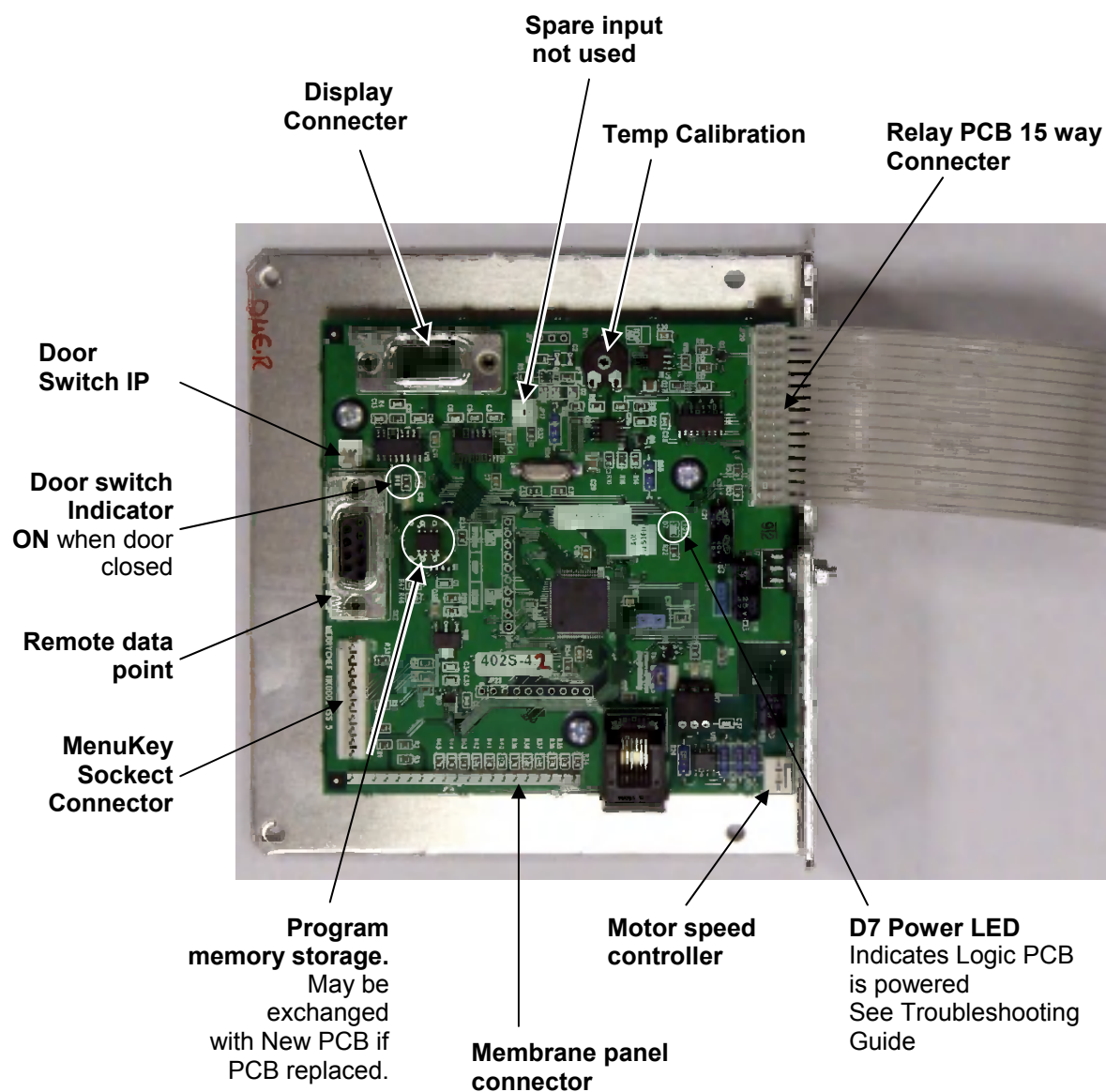




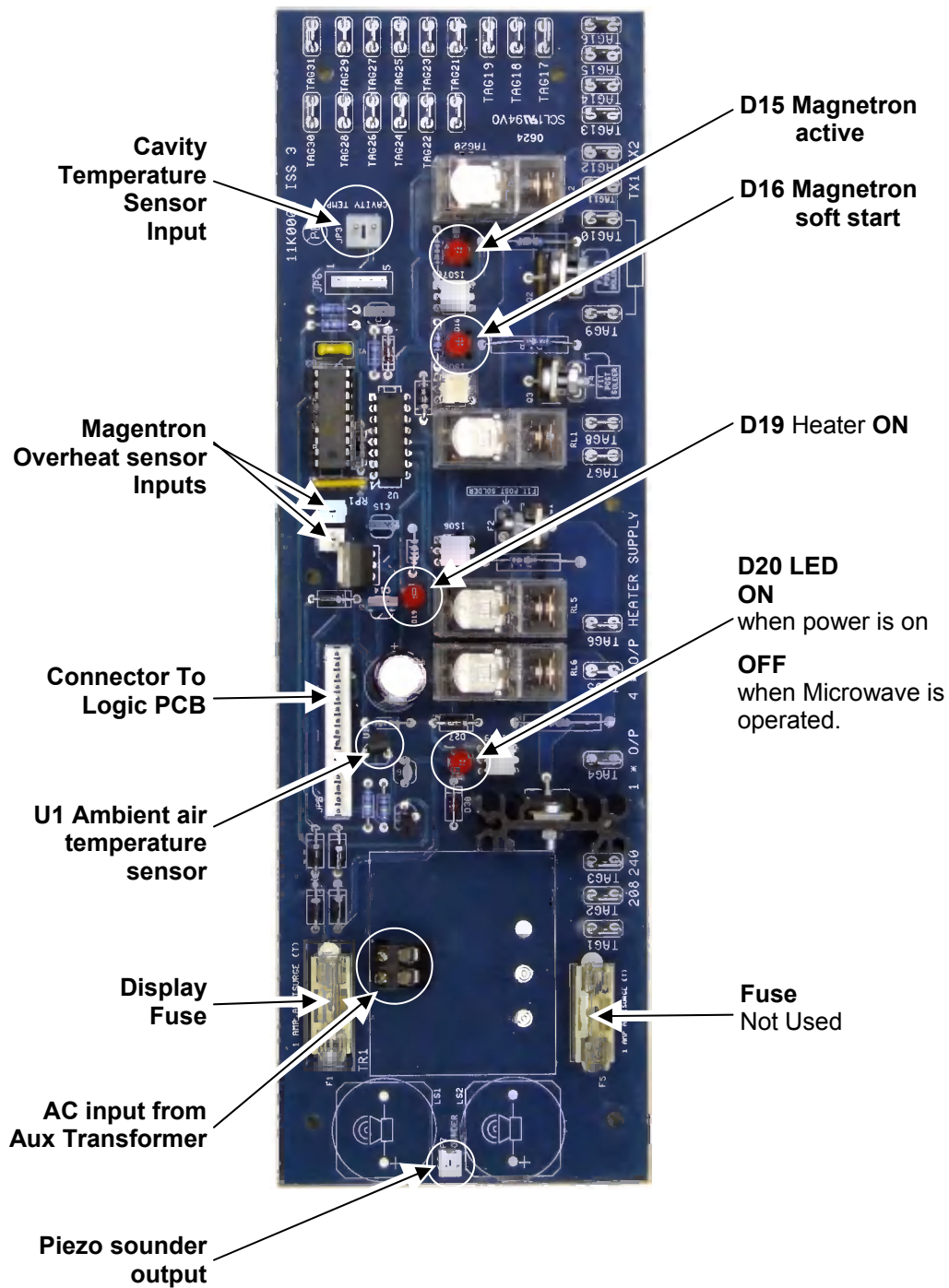
## APPENDIX 4: Recommended spares lists USA

| Part No. | Description                         | Qty | Unit | First Aid Kit | Service Kit | 1-5 Ovens | 5-50 Ovens | 50-100 Ovens | Piece Qty for 600 Ovens |
|----------|-------------------------------------|-----|------|---------------|-------------|-----------|------------|--------------|-------------------------|
| 11H0010  | HT DIODE ASSY                       | 2   | EA   | 2             | 2           | 2         | 6          | 12           | 72                      |
| 11K0004  | RELAY PCB                           | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| 11M0117  | DC VOLTAGE CONNECTOR 10 WAY         | 1   | EA   | 1             | 1           | 1         | 3          | 6            | 36                      |
| 11Z0298  | 15 WAY 0.1 RIBBON CABLE ASSY        | 1   | EA   | 1             | 1           | 1         | 3          | 6            | 36                      |
| 30Z0217  | FUSE 1in 10A HRC                    | 5   | EA   | 5             | 5           | 5         | 15         | 30           | 180                     |
| 30Z0231  | FUSE HOLDER 1IN (13A)               | 3   | EA   | 3             | 3           | 3         | 9          | 18           | 108                     |
| 30Z0957  | FUSE 1x1/4in 1A HBC (MAINS)         | 1   | EA   | 1             | 1           | 1         | 3          | 6            | 36                      |
| 30Z1339  | FILTER 16A                          | 2   | EA   | 2             | 2           | 2         | 6          | 12           | 72                      |
| 30Z1155  | BLOCK TRANSFORMER B0012024          | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| 30Z1171  | MAGNETRON PANASONIC 2M244           | 2   | EA   | 1             | 2           | 2         | 6          | 12           | 72                      |
| 30Z1177  | 20 AMP LITTELFUSE FLM020            | 4   | EA   | 4             | 4           | 4         | 12         | 24           | 144                     |
| 30Z1178  | 30A FUSE HOLDER                     | 4   | EA   | 2             | 4           | 4         | 12         | 24           | 144                     |
| 30Z1230  | TRANS MULTI 208 220 240 <b>60HZ</b> | 2   | EA   | 1             | 2           | 2         | 6          | 12           | 72                      |
| 30Z1251  | 0.88uF 2500V (60Hz Model)           | 2   | EA   | 2             | 4           | 2         | 6          | 12           | 72                      |
| 30Z1294  | MICROSWITCH WITH ROLLER             | 4   | EA   | 2             | 2           | 2         | 6          | 12           | 72                      |
| 30Z1295  | MAGNETRON COOLING FAN               | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| 30Z1298  | CAPACITOR - MOTOR START - 2uF       | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| 30Z1299  | DISPLAY ASSY + HEADER               | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| SA234    | THERMISTOR SENSOR 50K NTC           | 2   | EA   | 2             | 2           | 2         | 6          | 12           | 72                      |
| 30Z1315  | THERMISTOR 150MM + LEAD 900MM       | 1   | EA   | 1             | 1           | 1         | 3          | 6            | 36                      |
| 30Z1318  | 2 POLE ROUND ROCKER SWITCH          | 1   | EA   | 1             | 1           | 1         | 3          | 6            | 36                      |
| 30Z1293  | MOTOR SPEED CONTROLLER              | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| 31Z0186  | DOOR SEAL SEALANT - 1 TUBE          | 1   | TUBE | 1             | 1           | 2         | 6          | 12           | 72                      |
| 31Z0527  | STIRRER COVER - SEALANT 1 TUBE      | 1   | TUBE | 1             | 1           | 2         | 6          | 12           | 72                      |
| 31Z1247  | MICROSWITCH SPRING INTERLOCK        | 1   | EA   | 1             | 1           | 1         | 3          | 6            | 36                      |
| 32Z4028  | COOL DOWN TRAY                      | 1   | EA   |               |             | 2         | 6          | 12           | 72                      |
| DV0037   | BOTTOM TRIM                         | 1   | EA   |               |             | 1         | 1          | 2            | 12                      |
| DV0055   | MEMBRANE PANEL V2.0 - 2.5           | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| DV0091   | SIDE PANEL L/H                      | 1   | EA   |               |             | 1         | 1          | 2            | 12                      |
| DV0092   | SIDE PANEL RH                       | 1   | EA   |               |             | 1         | 1          | 2            | 12                      |
| DV0187   | TOP TRIM                            | 1   | EA   |               |             | 1         | 1          | 2            | 12                      |
| DV0305   | DOOR SEAL 402s                      | 1   | EA   | 1             | 1           | 2         | 6          | 12           | 72                      |
| DV0203   | SEAL - CERAMIC COVER                | 2   | EA   | 2             | 2           | 2         | 6          | 12           | 72                      |
| DV0254   | MEMBRANE PANEL V3.0                 | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| DV0275   | RACK V3.0                           | 1   | EA   |               |             | 1         | 3          | 6            | 36                      |
| DV0492   | STIRRER COVER - CERAMIC             | 2   | EA   | 2             | 2           | 2         | 6          | 12           | 72                      |
| DV0576   | HEATER ELEMENT <b>208V</b>          | 5   | EA   | 3             | 5           | 5         | 15         | 30           | 180                     |
| DV0606   | HEATER ELEMENT <b>220V</b>          |     |      |               |             |           |            |              |                         |
| DV0607   | HEATER ELEMENT <b>240V</b>          | 5   | EA   | 3             | 5           | 5         | 15         | 30           | 180                     |
| SA111    | DOOR ASSEMBLY V2.0 V3.0             | 1   | EA   |               |             | 1         | 1          | 2            | 12                      |
| SA208    | HOT AIR MOTOR ASSY                  | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| SA217    | ELECTRICAL SUPPLY LEAD ASSY         | 1   | EA   |               | 1           | 1         | 2          | 4            | 24                      |
| SA231    | LOGIC BOARD MAIN ASSY 2.0 & 2.5     | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| SA238    | STIRRER MOTOR                       | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| SA260    | LOGIC BOARD MAIN ASSY V3.0          | 1   | EA   |               | 1           | 1         | 3          | 6            | 36                      |
| SA276    | AIR FILTER                          | 2   | EA   | 2             | 2           | 2         | 6          | 12           | 72                      |
| SA314    | CATALYST ASSY UPPER                 | 1   | EA   |               |             | 1         | 1          | 1            | 6                       |
| SA315    | CATALYST ASSY LOWER                 | 1   | EA   |               |             | 1         | 1          | 1            | 6                       |
| SA329    | REAR PANEL                          | 1   | EA   |               |             | 1         | 1          | 2            | 12                      |
| SA339    | GREASE FILTER HOUSING               | 1   | EA   |               |             | 1         | 1          | 2            | 12                      |
| SA340    | GREASE FILTER CARTRIDGE             | 1   | EA   |               | 1           | 1         | 2          | 3            | 18                      |

## APPENDIX 5: LOGIC PCB Connection Points and key features.



## APPENDIX 5: Relay PCB Connection Points and key features.



## APPENDIX 6: Engineering Test Settings

### Engineering Test Settings - Changing the Oven Profile

In order to carry out an oven test procedure the oven PREHEAT must be set to 0°F/OFF to switch off the convection heaters and the Manual controls must be enabled.

When the test is completed the oven must be returned to its original settings or the appropriate MenuKey can be used to reset the oven automatically.

To set the PREHEAT temperature to 0°F/OFF

#### 402s Version 3.0 models

1. Switch the oven **OFF**
2. Switch **ON** and immediately press **Edit Preheat Temp.**



3. Make a note of the Preheat temperature in the display.



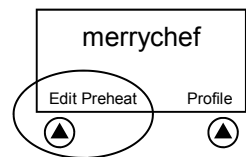
Press **>>>** for **OFF**

(note pressing either **>>>** or **<<<** will cycle through all the available temperatures)

Then Press **Save** to store this setting

#### 402s Version 2.0/ 2.5

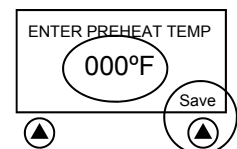
1. Switch the oven **OFF**
2. Switch **ON** and immediately press **Edit Preheat** to show the ENTER PREHEAT TEMP screen.



3. Make a note of the Preheat temperature in the display.

4. Press **0, 0, 0** to overwrite the current temperature setting.

Then press **Save** to store this setting

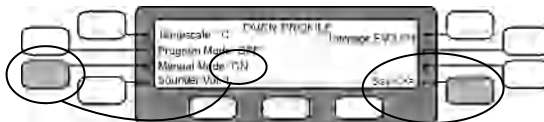


To set the Oven controls to allow Manual operation

1. Switch the oven **OFF** then
2. Switch **ON** and immediately press the lower right pad to display the OVEN PROFILE screen.



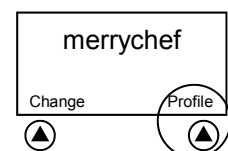
3. Press to set Manual Mode to **ON** Then Press **Save**



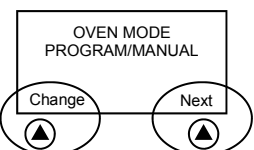
To use Manual Mode: from the CATEGORIES standby screen press the lower centre right pad To display the Manual mode screen.



1. Switch the oven **OFF**
2. Switch **ON** and immediately press **Profile** to edit the oven operating profile



3. Press **Change** to set OVEN MODE to **PROGRAM/MANUAL**



Then press **Next** five times to return to the OVEN COLD standby screen.

To use MANUAL MODE: from the OVEN COLD/PREHEAT standby screen press the **PREHEAT/COOL DOWN** pad on the control panel and then press Manual.

