Merrychef

SERVICE MANUAL

Mealstream 500

SERVICE MANUAL

Part No. 32Z3387 Issue No.3

For all Mealstream 501, 502 & 503 models manufactured
from January 2001 & Tim Hortons Models

CAUTION MICROWAVE EMISSIONS

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

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SAFETY CODE

This manual is designed to assist engineers who have been on a recognised product familiarisation and training course run by Merrychef Limited. It has been prepared to offer technical guidance for the Merrychef Mealstream 501 range of Combination Microwave 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 leakage.

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

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Before removing the rear cover from the oven, ensure you do 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 on a Mealstream oven, or before reconnecting the appliance to the mains supply for testing, check all of the following points:

- All internal electrical connections are correct (see wiring diagram Pages 26-27).
- All wiring insulation is correct and is not touching a sharp edge.
- All Earth 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 three of the door interlock switches **in the correct order**.
- The temperature sensor is correctly connected to the Power PCB.

Before finishing the service call, recheck the following points:

- All of the electronics are functioning correctly, and all of the touch pads are working.
- The power output of the oven is correct.
- Microwave emission is below permissible limit - 5 mW/cm² (see BS EN 60335-2-90).
- Oven has correct 50mm air gap all round and 50mm above.
  Air flow should not be restricted.
- Clean air filters are in place.

Product specifications:

Model Number: **CTMx v f c p MK C**

Example CTM524505MK
Mealstream EC501, High speed fan
230-240V, 50Hz, Series 5 electronic controls & MenuKey

CTMx **Fan Speed**	**v** **Voltage**	**f** **Frequency**	**c** **Control Type**	**p** **Phase**	**MK** **MenuKey**	**C** **Catalytic Converter**
CTM3 = Low speed **CTM5** = High speed	**22** = 220-230V EU **24** = 230-240V UK	**50** = 50 Hz **60** = 60 Hz	**5** = Electronic **CD2** = Rotary Dial Controls	**2** = 2 phase 1 = 1 phase Omitted	**MK** = MenuKey fitted	**C**= EC503 Catalytic Converter

Power Requirements	Refer to rating Plate	
Power Output: CTM3 CTM5	Microwave 100% Convection Combination Convection Combination	1425W (IEC 705) 2500W 1425W + 2500W 3000W 1425W + 3000W
External Dimensions	Height Width Depth	640mm (Plus 50mm minimum clearance above) 710mm (Plus 50mm minimum clearance each side) 630mm (Plus 50mm clearance behind)
Internal Dimensions	Height Width Depth Capacity	260mm 490mm 360mm 45.86 litres (1.62 ft^3)
Weight	Nett Gross packed	90kg 106kg
Construction	Cavity Casework	304 Stainless Steel
Settings	Microwave Temperature Timer	100%,75%,50%,25%, Convection only Off, 150°C, 175°C, 200°C, 225°C, 250°C Up to 30 minutes Up to 3 cooking stages of up to 30 minutes each Programmed (Series 5)

Installation instructions:

Installation Instructions for Mealstream 500 series Combination Ovens

Power Supply Requirements

The **Mealstream 500 series oven** should be connected to a suitable electricity supply, which can cope with the switching-on surge that occurs with certain types of catering equipment, such as 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"** circuit breaker, rated at:

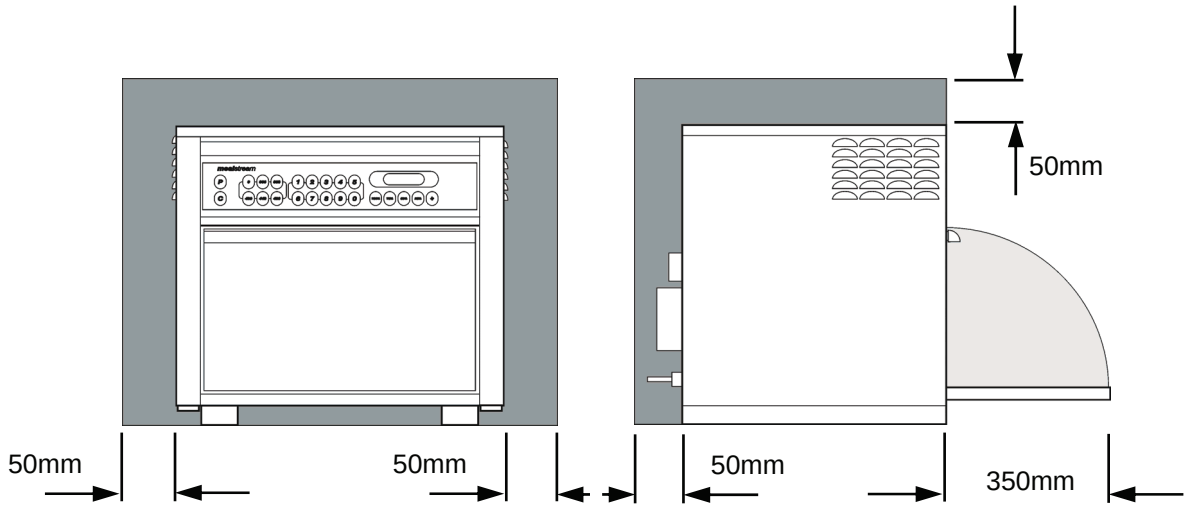
30 Amp for Mealstream 500 Series (all models)

If the oven is hard-wired to the supply, a double-pole isolator switch with a contact gap of at least 3mm should be fitted and positioned close to the oven to allow the oven to be moved for servicing.

Positioning the Oven

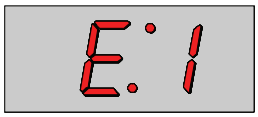
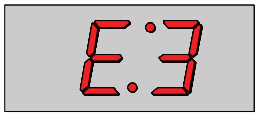
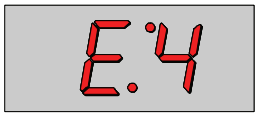
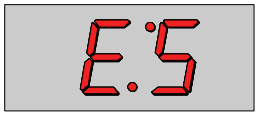
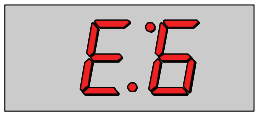
In order to maintain adequate ventilation for air intake and exhaust, and to allow access for cleaning filters, you must allow a minimum of 50mm clearance at the sides and rear of the oven, and at least 50mm above. Air intake temperature should not exceed 35°C - excessive temperature will lead to reduced 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.
NEVER	Stack machines on top of each other - always use a double stand.
ALWAYS	Place containers in the cavity carefully - impact damage may chip the vitreous enamel coating on the runners and baffle plate.

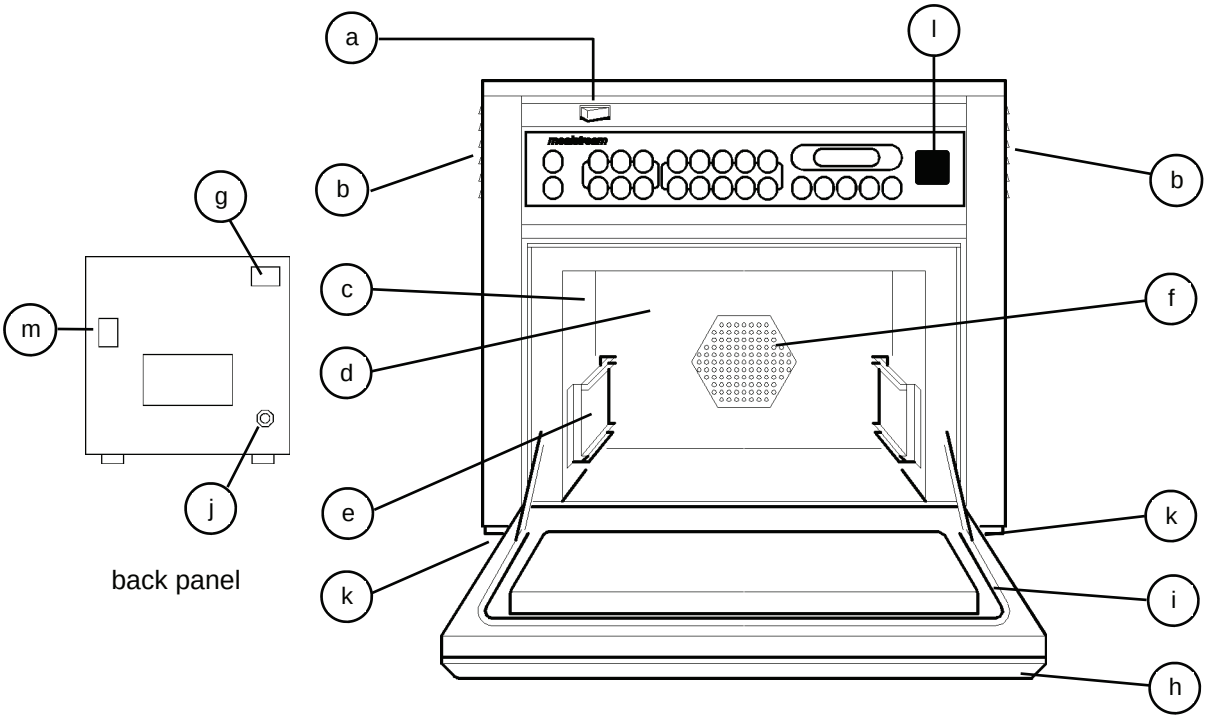


Error codes and diagnostics

Models with electronic controls identify some of the most common problems by flashing an error message code in the time display window.

Error Message		Possible Cause	Service
	1 2	Door not fully shut Possible electrical fault	Close door fully Check Microswitch Door Circuit Check Microswitch Connection to PCB Check Ribbon Cable Check Relay PCB & Logic PCB
 	1 2 3 4 5	No time has been set Invalid time has been set Invalid program has been set Number pad failure Memory Failure running a Program	Set a time Set a valid time Use call-back to check program (MenuKey: no key downloaded) Membrane key short circuit Re-Program Pad, if fault repeats replace Logic PCB
	1 2	Oven not heating up Possible Heater circuit fault	Check heater fuse Confirm operation of heater, overheat stat and heater circuit
	1	Oven Cavity overheating	Check cavity sensor Confirm heater relay is operating
 	1	Oven is not at correct temperature to start program **Operator Error !!**	Allow oven to reach correct Programmed temperature
	1	Oven control area is overheating.	Check air filters Check axial fan Check installation for hot air intake
		MenuKey removed before the download is complete or the process has been interrupted.	Switch oven off and begin the MenuKey download again.

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 HOT AIR VENTS

Allows steam and excess pressure to escape from the oven cavity. It must be kept clear.

c OVEN CAVITY

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

d BAFFLE PLATE

EC501 Models:
The convection fan draws air over the heating element into the cavity over the edges of the rear baffle plate producing perfect heat distribution for combination cooking. The metal grill covering the fan must be kept clean and free of debris.
502 & 503 Models:
The convection fan, which is located behind the cavity filter pulls air in through the catalytic converter which removes the majority of the smoke from the air flow.

e RUNNERS

These are mounted on each side of the oven cavity to support the rectangular racks or oven trays and are for use in **Convection mode only**.

f HOT AIR FAN

Situated behind the baffle plate, and circulates the hot air through the baffle plate, over the heating element, and around the edge of the baffle plate back into the cavity.
CTM3_ Low speed Fan
CTM5_ High Speed Fan

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.
It is important that the choke plate and the slots are free from debris.

i DOOR SEAL

j MAINS LEAD

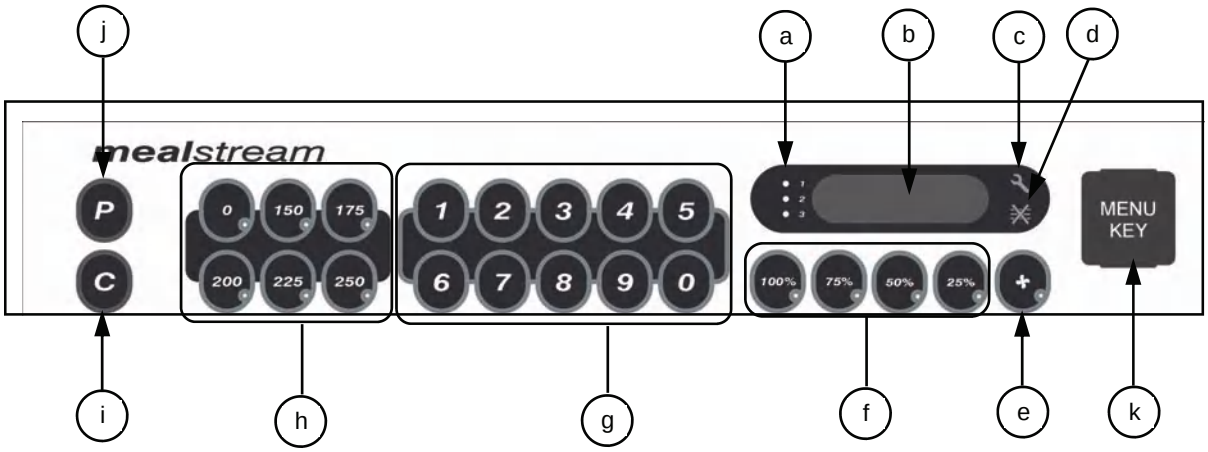
k AIR FILTERS

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

l MenuKey

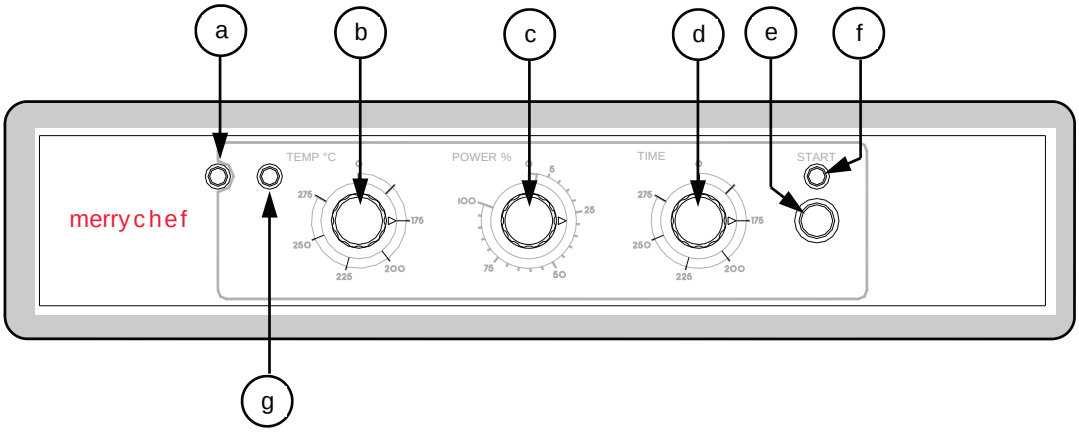
m STEAM OUTLET

Electronic controls:



a	Stage LED's
b	Program & Time Display
c	Service Indicator
d	Air Filter Block Indicator
e	Convection Pad
f	Power Pads
g	Time / Program Number Pads
h	Temperature Set Pads
i	Cancel / Callback Pad
j	Program Pad
k	MenuKey socket

Manual controls:



a	Power Neon (Amber)
b	Temperature Control
c	Power Control
d	Timer
e	Start Push button
f	Cook cycle Neon (Red)
g	Heater Neon (Amber)

Procedure A - Power Output Test in accordance with BS EN 60335-2-90 Annex AA

This test is given in the BSI test standard for microwave ovens. It is reproduced below - not so that you can follow it, but to show you why it is impractical in normal conditions. A simplified procedure, which gives a good approximation to the BSI power output, is given in Procedure B which follows.

Note: This test can only be carried out on a **COLD** oven. If the oven has been operating, even for only a few seconds, the power given will be lower than the oven rating. This test must also be carried out at a stable voltage - the voltage in most kitchens varies considerably even within the period of the test. If the oven has been operating, go to **Procedure B.**

You will need:

A thermometer capable of reading to ±0.1°C.
A cylindrical borosilicate glass container, 190 mm diameter, with a wall thickness of 3 mm or less.
A calculator.
A set of scales capable of reading 1kg to an accuracy of ± 1g.
A glass or plastic stirrer.
A jug capable of holding over 1 litre of water.
Drinkable water which is at a temperature of 10°C ± 1°C.
A "Variac" or similar variable transformer capable of supplying the oven to ensure a stable voltage.

WARNING: *The Borosilicate Glass container has thin walls and is therefore fragile - take care not to break it during use.*

Method

A cylindrical container of borosilicate glass is used for the test. It has a maximum thickness of 3mm, an external diameter of approximately 190mm and a height of approximately 90mm. The mass of the container is determined.

At the start of the test, the oven and the empty container are at ambient temperature. Potable water having an initial temperature of 10°C ± 1°C is used for the test. The temperature of the water is measured immediately before it is poured into the container.

A quantity of 1000g ± 5g of water is added to the container and its actual mass obtained. The container is then immediately placed in the middle of the oven base. The appliance is supplied at rated voltage and operated at the maximum power setting. The time for the water temperature to attain 20°C ± 2°C is measured. The oven is then switched off and the final water temperature is measured within 60seconds.

NOTES:

1 The water is stirred before its temperature is measured.
2 Stirring and measuring devices are to have a low heat capacity.

The microwave power output is calculated from the formula:

$$P = \frac{4.187\ M_W\ (T_2-T_1) + 0.55\ M_C\ (T_2-T_0)}{t}$$

where

P is the microwave power output, in watts;
M_W is the mass of the water, in grams;
M_C is the mass of the container, in grams;
T_0 is the ambient temperature, in °C;
T_1 is the initial temperature of the water, in °C;
T_2 is the final temperature of the water, in °C;
t is the heating time in seconds, excluding the magnetron filament heat-up time.

Procedure B - Simplified Power Output Test

You will need:

A thermometer capable of reading to ±0.1°C.
A Polypropylene tray approximately 200 mm x 200 mm.
A measuring jug.
A calculator.
Water which is at a temperature of 10°C ± 2°C.

For Tim Hortons see APPENDIX 8

1 Measure 1 litre of cold water into the tray using the measuring jug.
2 Measure the water temperature, and record it as T[s].
3 Place the tray in the oven and close the door.
4 Turn the oven on.
5 Set the timer to 1:02. (For Manual controls use a stopwatch set to 1 minute 2 seconds)
6 Press the "100%" power pad.
7 When the oven bleeps, open the door and remove the tray.
8 Stir the water thoroughly, and measure its temperature. Record this as T[e].

Calculation:

1 T[r] = T[e] - T[s].
2 Power = 70 x T[r]. Power is in Watts.

The power given by the above test should be within ±10% of the rated power.

Procedure C - Power Transformer Test

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

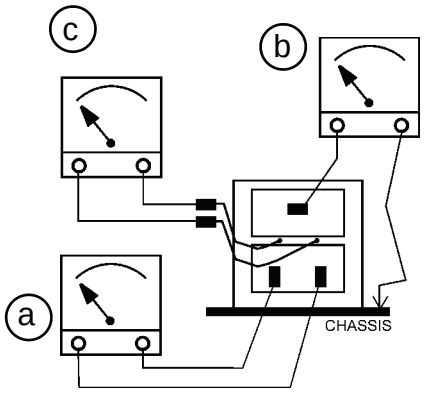
1 Isolate the oven from the mains supply.

WARNING: *High voltages and large currents are present at the secondary winding and filament winding of the Power Transformer. 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 Power Transformer has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.*

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 continuity of the windings. Results should be as follows:

a	Mains winding between tags	Approx. 1.3 Ω
b	High Voltage winding	Approx. 82 Ω
c	Filament winding between terminals	Less than 1 Ω



5 Using a Megger, test the insulation resistance between:

Primary winding and chassis	Pass if over 10 MΩ
Filament winding and chassis	Pass if over 10 MΩ

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

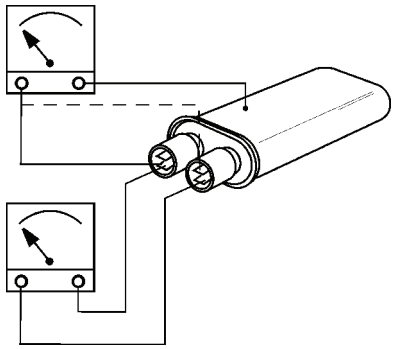
Procedure D - High Voltage Capacitor Test

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.

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 &



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

Procedure E - 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 Rectifier. 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 .

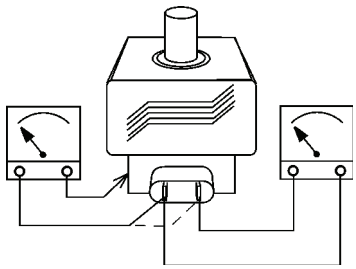
WARNING: Even when the oven is not cooking, the High Voltage Rectifier has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

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	**FAIL**
Conducts one way only	**PASS**
Short Circuit both ways	**FAIL**
Conducts one way, leaks the other	**FAIL**

Procedure F - Magnetron Test

You will need:
A Megger or similar resistance meter using 500V d.c.

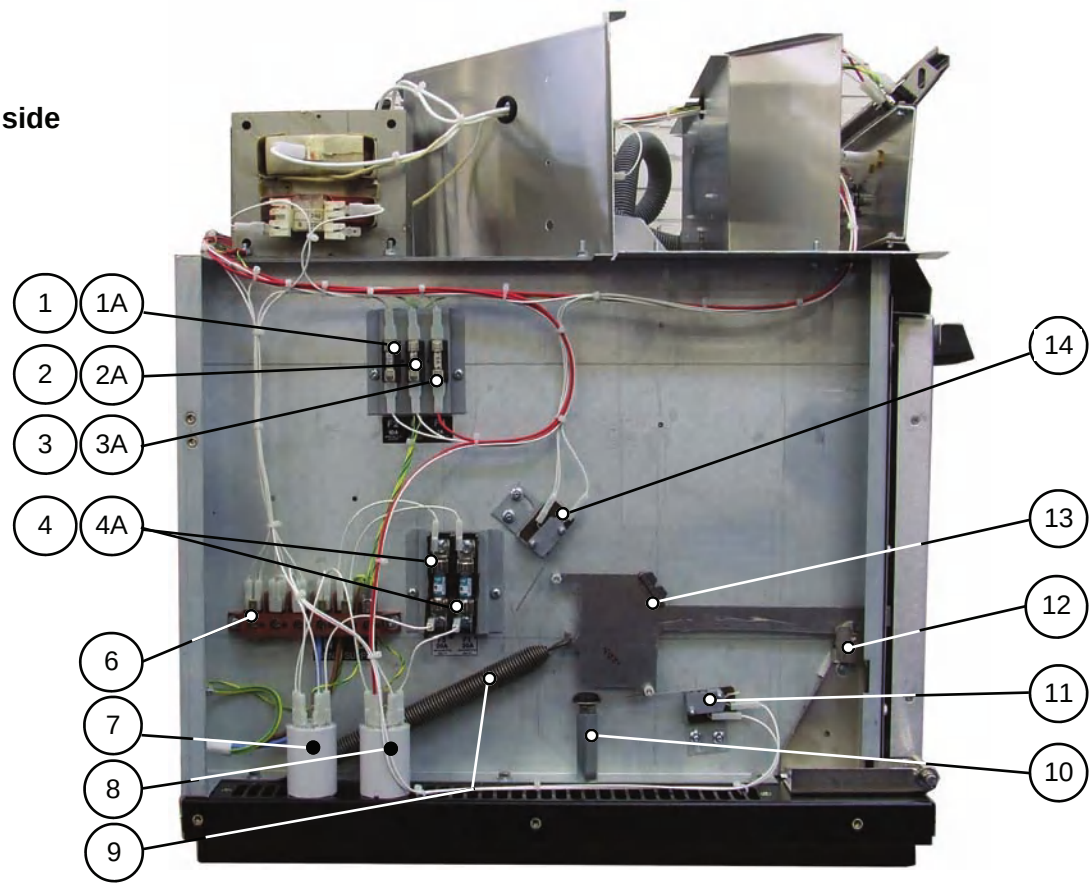


A Magnetron can be tested for an open filament or a short circuit by carrying out a continuity check.

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.

Principle components:

Left side



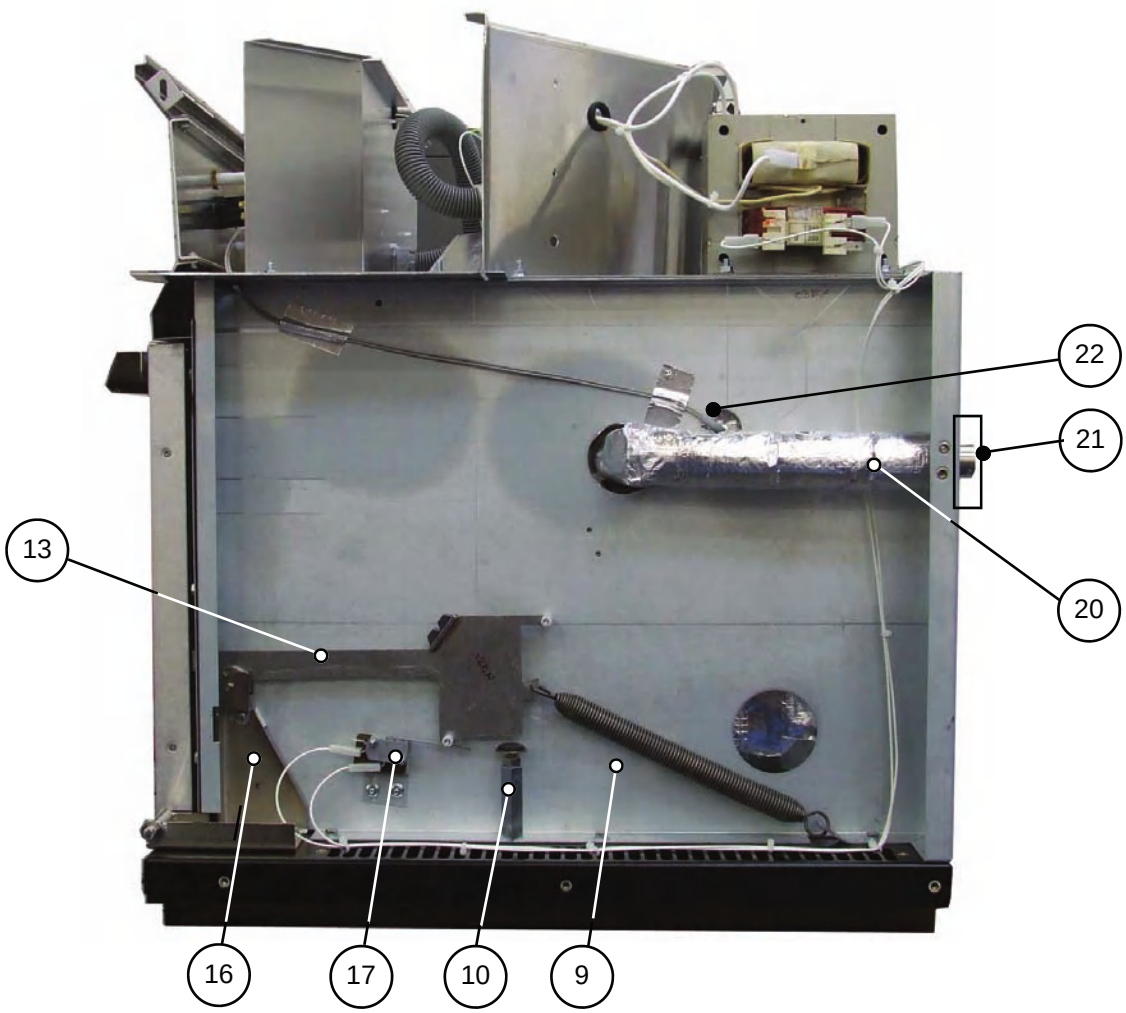
No	Description	EC 501/2/3	RD 501
1	Fuse holder	30Z0231	30Z0231
1A	Fuse 10 amp	30Z0217	30Z0217
2	Fuse holder	30Z0231	30Z0231
2A	Fuse 10 amp	30Z0217	30Z0217
3	Fuse holder	30Z0231	30Z0231
3A	Fuse 1 amp	30Z0957	30Z0957
4	Fuse holder 30amp (FLM Series)[B]	30Z1178	30Z1178
4A	Fuse 20 amp Littlefuse FLM020[B]	30Z1177	30Z1177
6	Mains terminal block	31Z0149	31Z0149
7	Filter (Heater circuit)	30Z0997	30Z0997
8	Filter (Microwave circuit)	30Z0997	30Z0997
9	Door spring short	520000	520000
9	Door spring long	40C1141	40C1141
10	Door arm stop assembly	11C0279	11C0279
11	Microswitch (Primary)	30Z0240	30Z0240
12	Door hinge assembly (LH)[A]	11C0167	11C0167
13	Door arm assembly	11C0300	11C0300
14	Microswitch (Monitor)	30Z0240	30Z0240

Note A: see page 17 for parts

Note B: see appendix for models before March 2004

Principle components:

Right side



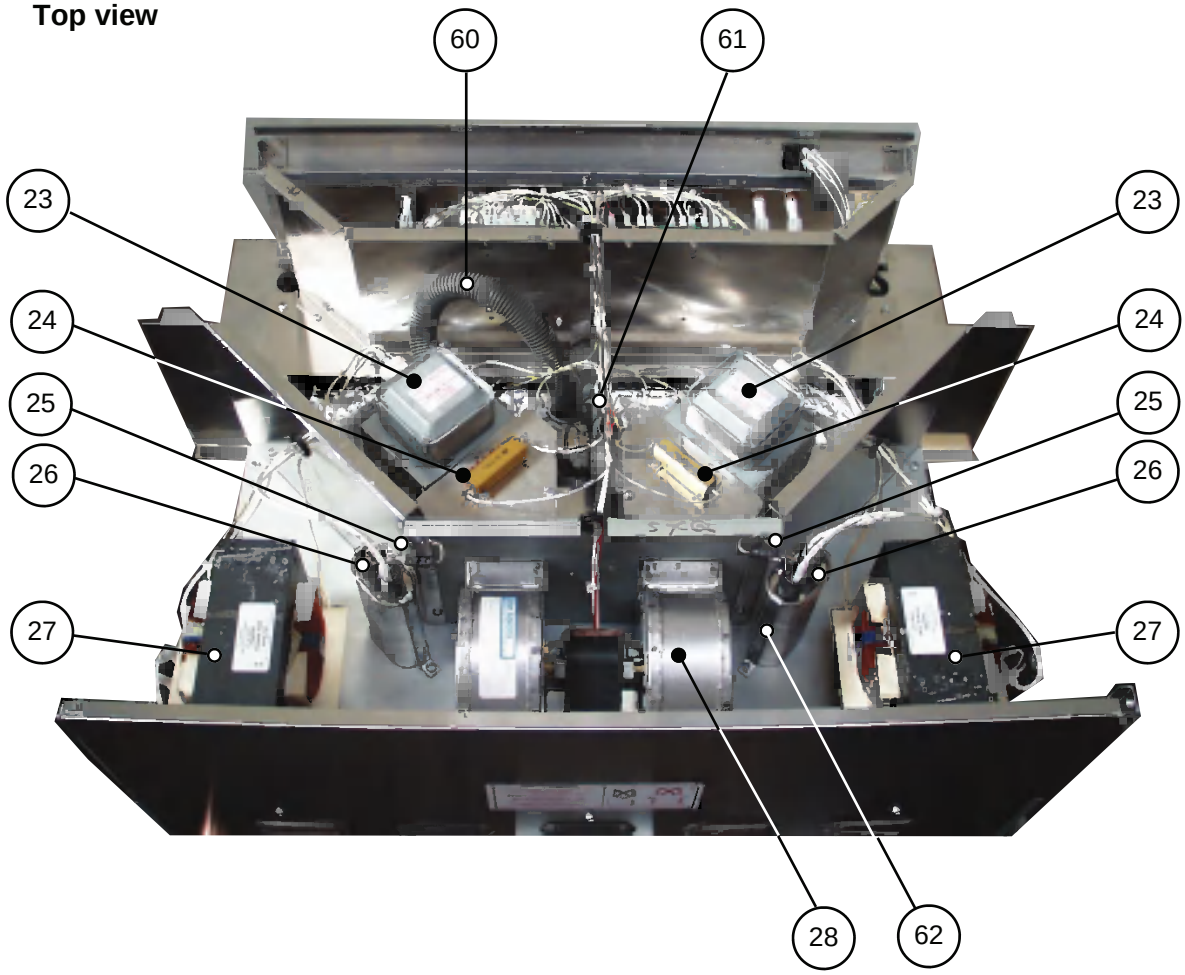
No	Description	EC 501/2/3	RD 501
9	Door spring short	520000	520000
9	Door spring long	40C1141	40C1141
10	Door arm stop assembly	11C0279	11C0279
13	Door arm assembly	11C0300	11C0300
16	Door hinge assembly (RH)[A]	11C0166	11C0166
17	Microswitch (Secondary)	30Z0240	30Z0240
20	Steam pipe	790046	790046
21	Steam vent guard	790061	790061
22	Temperature sensor[C]	50E123	50E123

Note A: see page 17 for parts

Note C: see appendix for models before March 2004

Principle components:

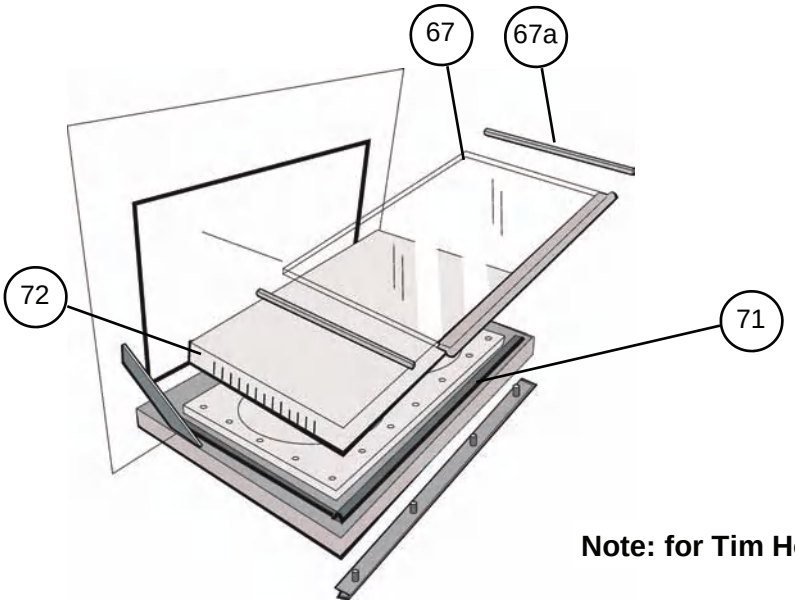
Top view



No	Description	EC 501/2/3	RD 501
23	Magnetron	30Z0264	30Z0264
24	Resistor Gold 470 R	30Z0283	30Z0283
25	HT diode	11C0266	11C0266
26	Capacitor 1.1µF	30Z1077	30Z1077
27	Transformer 220V 50Hz	30Z0083	30Z0083
27	Transformer 240V 50Hz	30Z1018	30Z1018
28	Twin blower motor	310110	310110
60	25mm OD Flexible conduit	314402	314402
61	20mm OD Flexible conduit	314401	314401
62	Capacitor clip	31Z0175	31Z0175

Principle components:

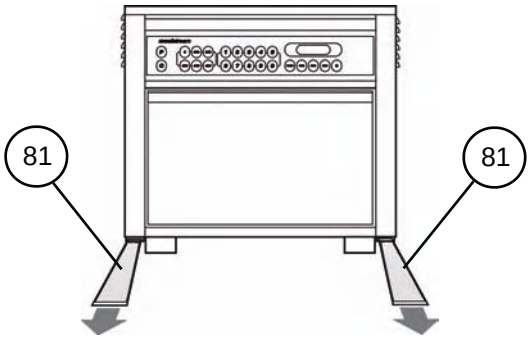
Door & cavity roof



Note: for Tim Hortons see Appendix 8

No	Description	EC 501/2/3	RD 501
67	Stirrer glass & long seals	40C0954	40C0954
67a	Stirrer glass short side seal	790052	790052
71	Door seal kit	11C0292	11C0292
72	Door choke	790007	790007

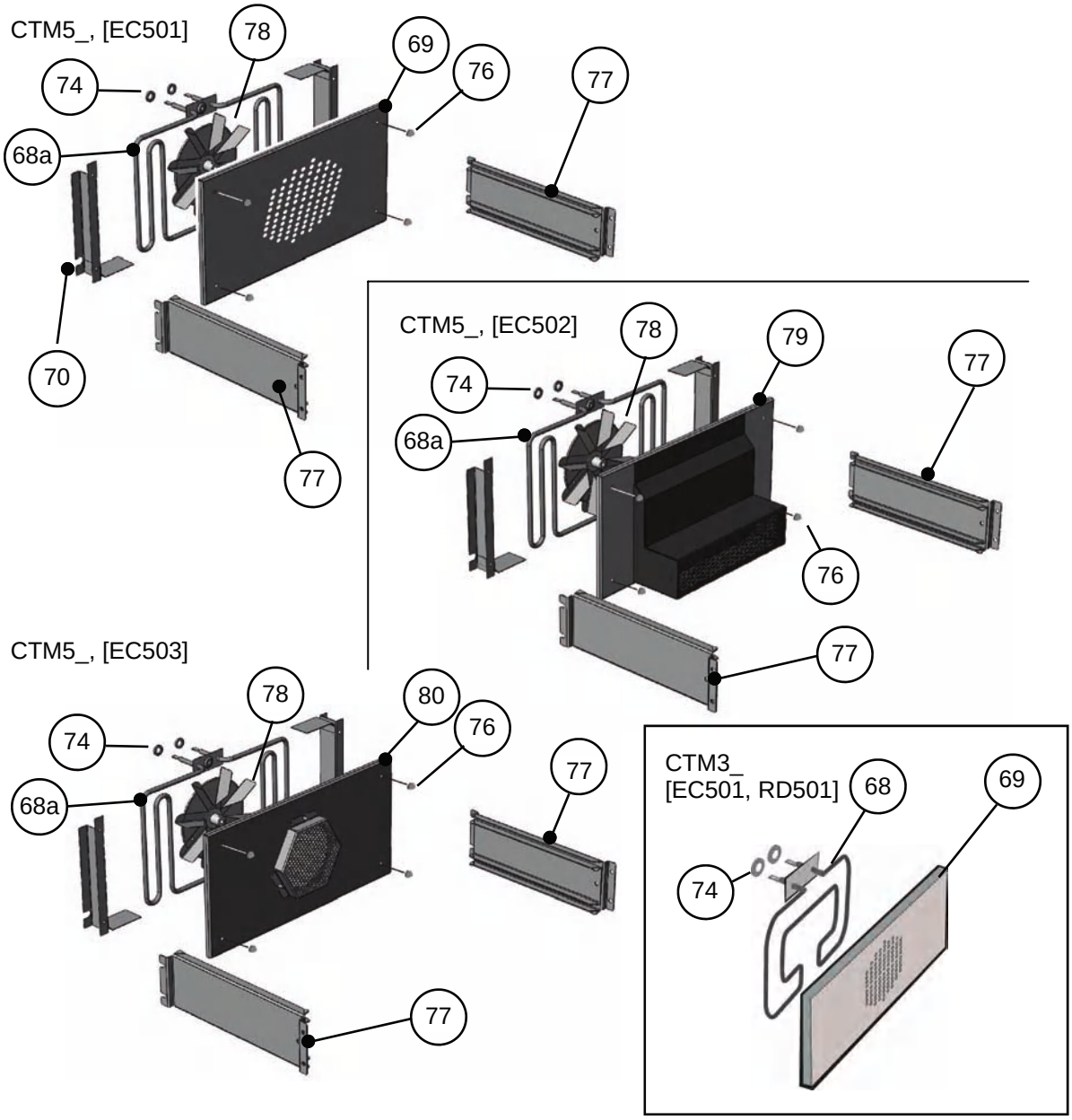
Air Filters



No	Description	EC 501/2/3	RD 501
81	Air filter panel (removable)	40C0868	40C0868

Principle components:

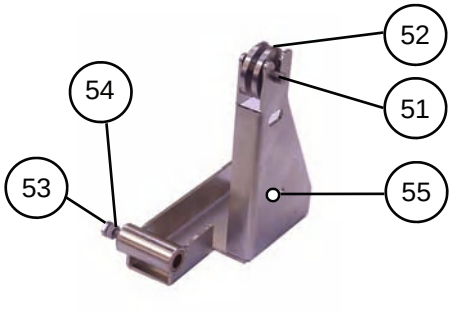
Heater Element, Catalytic Converter & Cavity parts:



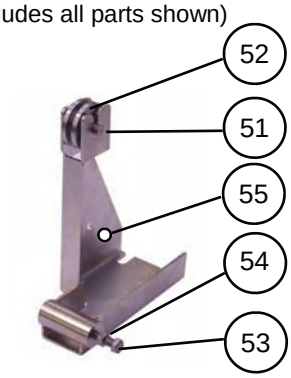
No	Description	Part No.
68	Heater element (2.5kW)	40C0954
68a	Heater element (3.0kW)	40C0948
69	Heater element cover plate	790047
70	Baffle	11C0311
76	Dome Nut	80X7025
77	Shelf Support	40C0950
78	Hot Air Impeller	MC3703B
79	Element cover plate Assembly	11C0474
80	Element cover plate Assembly	11C0467

Principle components: (not shown in main views)

12 Left Hand Door Hinge Assembly
(Includes all parts shown)



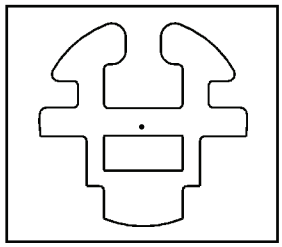
16 Right Hand Door Hinge Assembly
(Includes all parts shown)



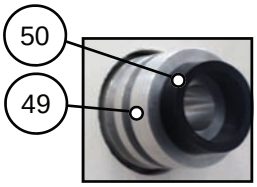
57 Hot air motor: Low Speed

57 Hot air motor: High Speed

58 Stirrer motor assembly

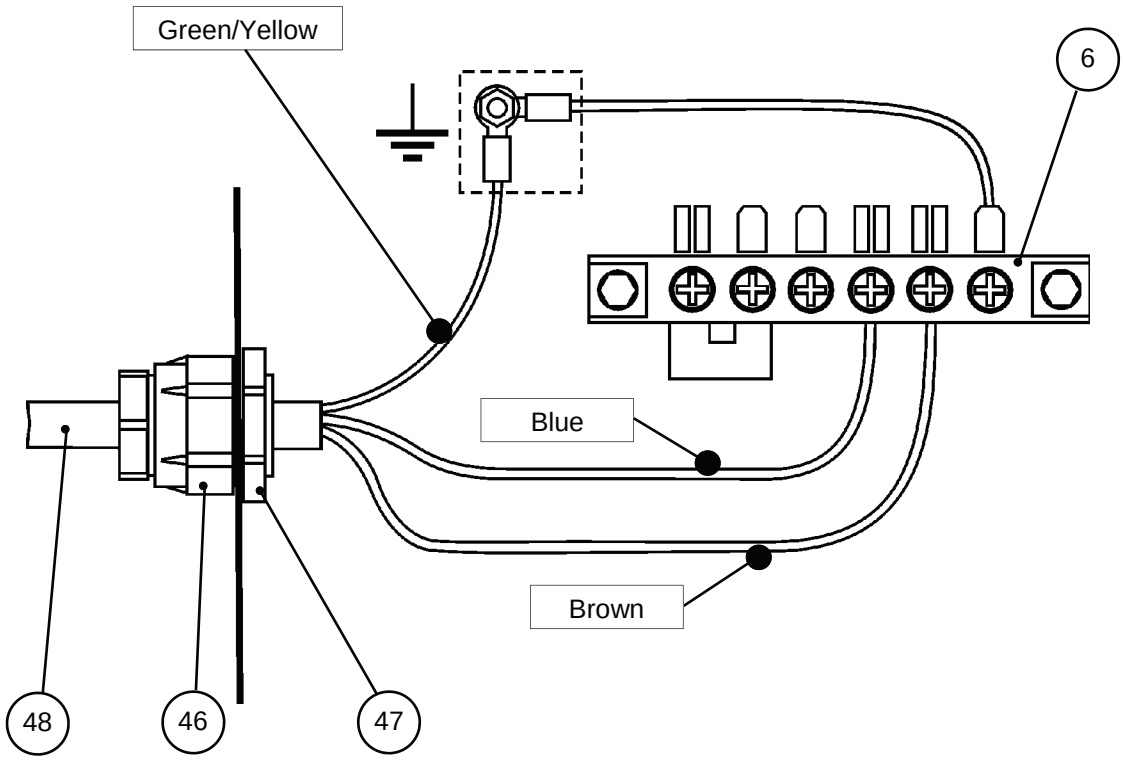


Motor shaft screen and seal assembly



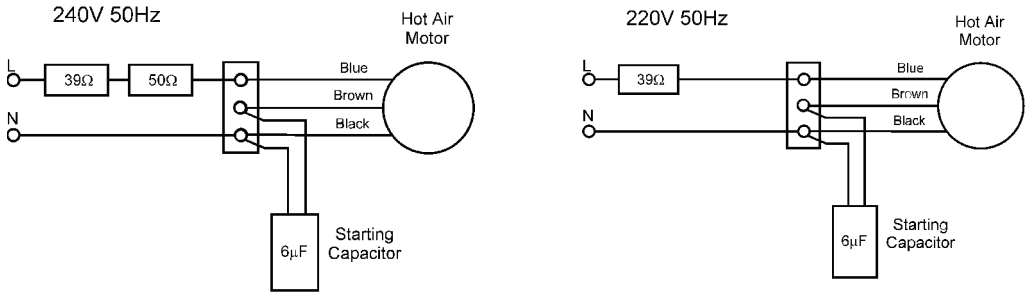
No.	Description	EC501/2/3	RD501
12	Door Hinge Assembly LH	11C0167	11C0167
16	Door Hinge Assembly RH	11C0166	11C0166
49	Motor shaft screen	40C1005	40C1005
50	Hot air motor damper/seal	40C1008	40C1008
51	Pin	790027	790027
52	Roller	40C0752	40C0752
53	M5 Hex/hd s/s Screw	101825	101825
54	M5 stainless steel Nut	80X7003	80X7003
55	LH Hinge bracket	790024	790024
56	RH Hinge bracket	790025	790025
57	Hot air motor Low Speed [CTM3]	11C0161	11C0161
57	Hot air motor High Speed [CTM5]	11C0526	—
58	Stirrer motor assembly	11C0162	11C0162

Input wiring details



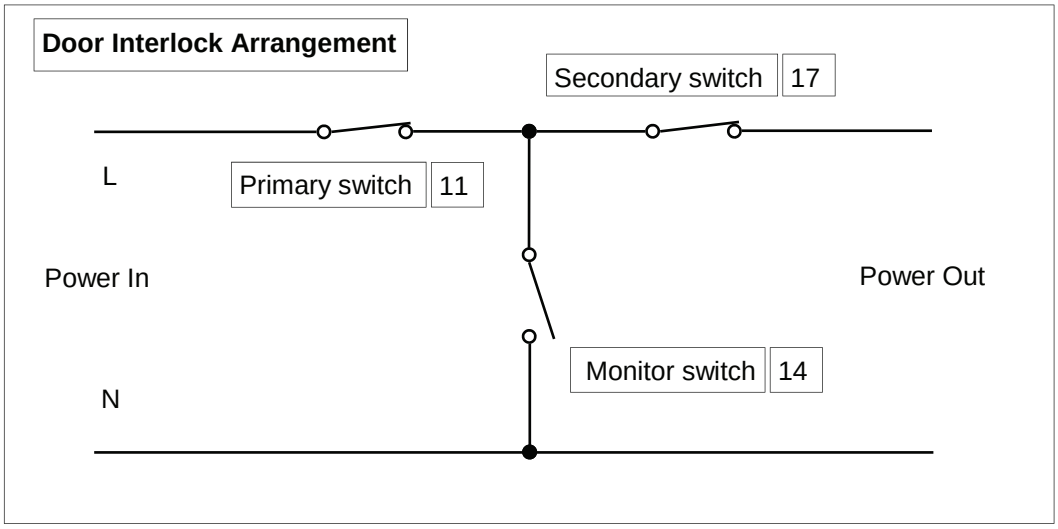
No	Description	Part No.
6	Mains Terminal Block	31Z0149
46	Cable Gland	31Z1070
47	Gland Nut	31Z1082
48	Mains Cable 3 Core	31Z0148

High Speed Hot Air Motor [CTM5] connections and wiring



Door interlock operation

The door on the oven is monitored by three microswitches. These are used in the conventional “Primary, Secondary and Monitor” switch arrangement shown below.
The switches operate as follows:



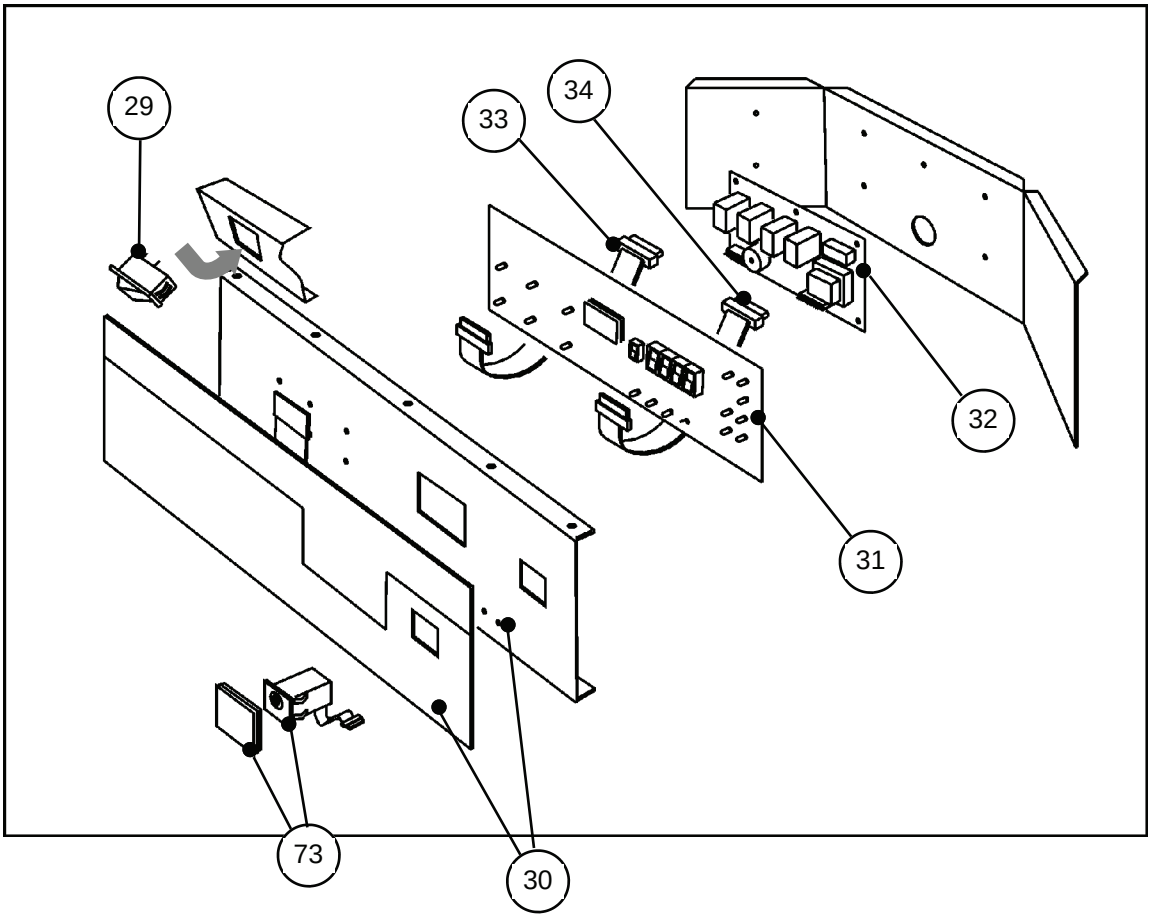
The diagram shows the microswitches in door closed position

1. **Primary Interlock [11 , Bottom left-hand] and**
   Secondary Interlock [17 , Bottom right-hand] Switches.
   Operate simultaneously.
   The Primary switch or Secondary switch will cut off the microwave emissions from the oven when the door is opened by breaking the mains supply circuit to the transformers.

2. **Monitor [14 ,Top left-hand Side]**
   The Monitor switch will produce a short circuit across the mains supply if the Primary interlock switch is faulty, thus blowing the microwave fuse and rendering the oven inoperative.
   The Secondary interlock switch will cut off the microwave emission if the other switches have failed.

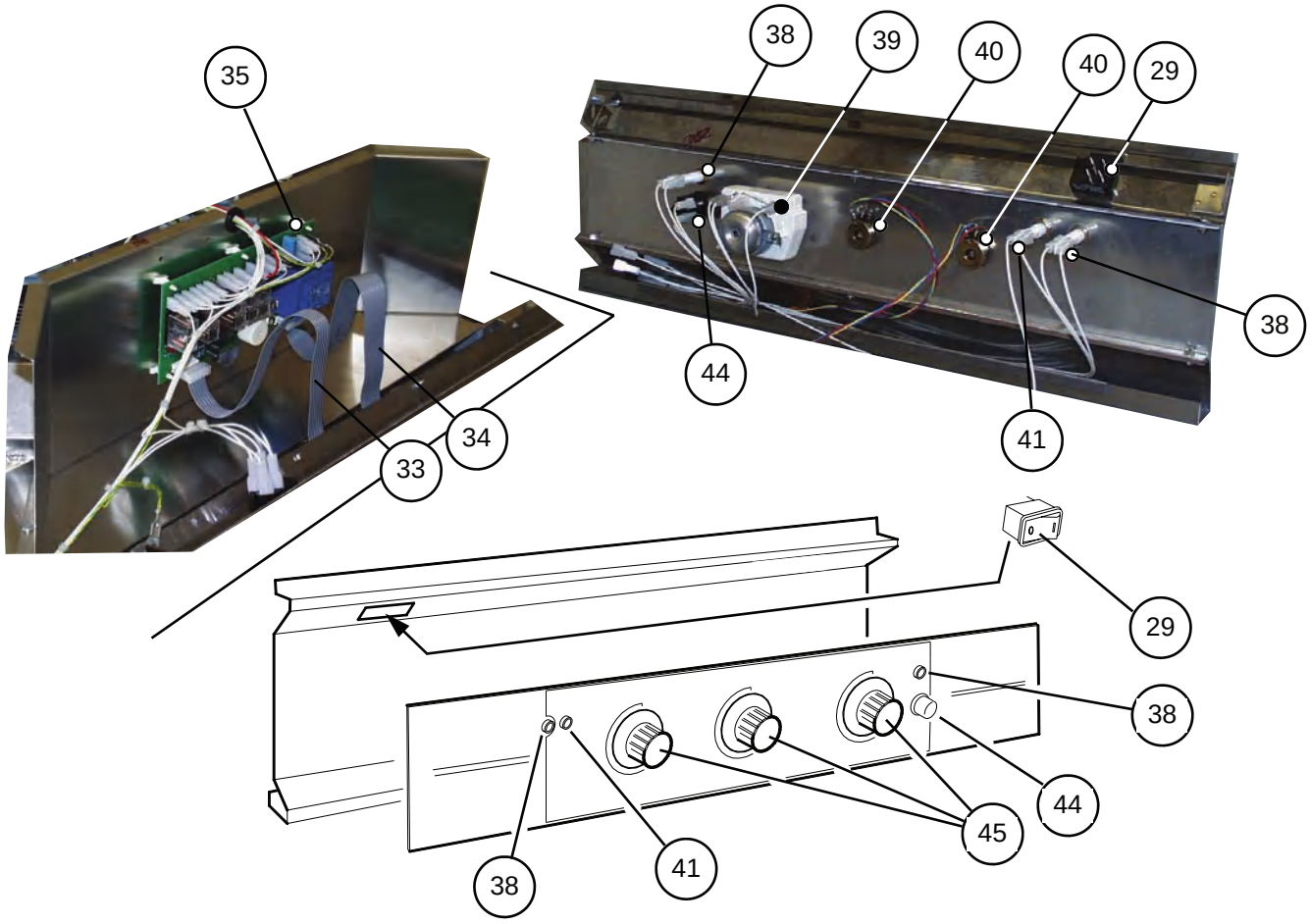
   Note:
   If operation of the Monitor switch has caused the Microwave Fuse to blow, the Primary and Monitor microswitches must be changed, as they may have been damaged by the high short-circuit currents involved.

Electronic control panel assembly: EC501, EC502 & EC503



No	Description	Part No.
29	On/Off Switch	30Z0503
30	Control Panel Assembly (without MenuKey)	11C0294
30	Control Panel Assy with MenuKey	11C0438
30	Locare Control Panel Assy with MenuKey	11C0458
31	Logic Board (without MenuKey)	11C0291
31	Logic Board with MenuKey	11C0377
32	Relay Board	11C0212
33	AC Ribbon connector	11M0116
34	DC Ribbon connector	11M0117
73	MenuKey Assembly	10C0148

Manual control panel assembly: RD501



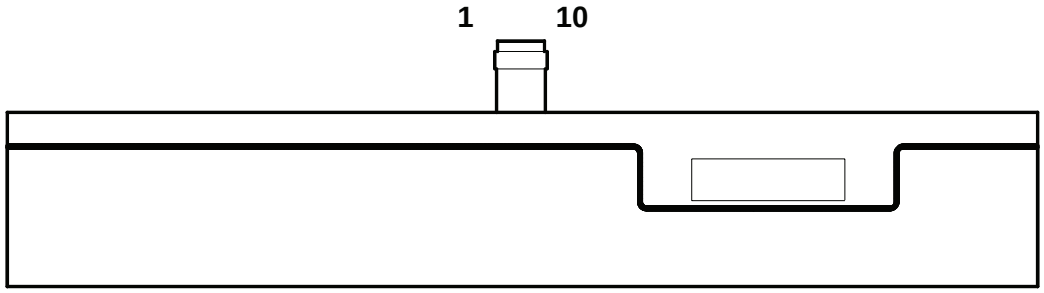
No	Description	Part No.
29	On /off switch	30Z0503
33	ac voltage connector 6 way	11M0116
34	dc voltage connector 10 way	11M0117
35	PCB Assembly	11C0295
38	Red Neon	316030
39	Timer	30Z0991
40	Potentiometer 5k	40C0892
41	Amber Neon	316031
43	Panel assembly	11C0307
44	Pushbutton	31Z0349
45	Control knob Red/Grey	11C0173
45	Control knob Blue	11C0406

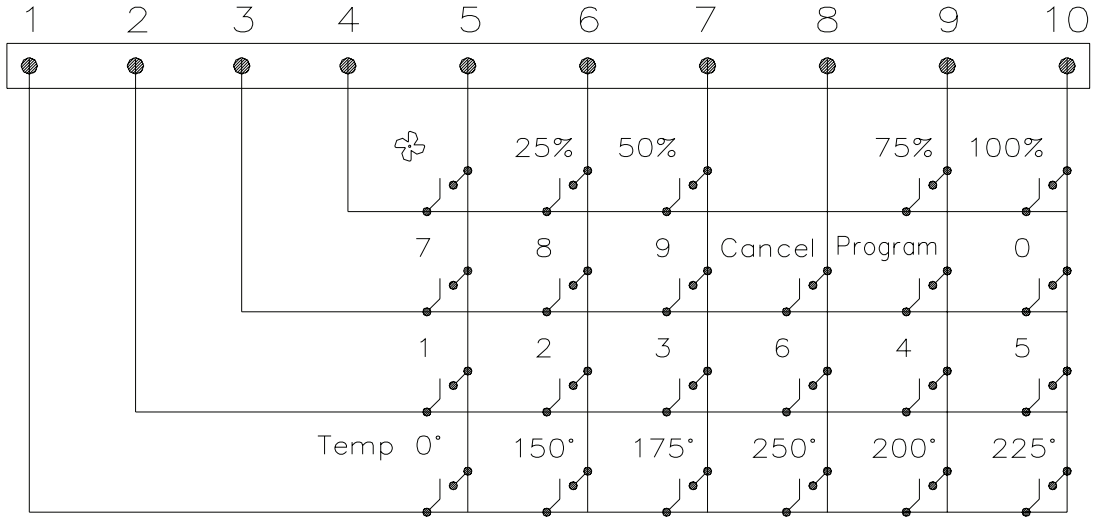
Membrane panel circuit

You will need:

A Digital Multi-meter (D.M.M.)

1. Isolate the oven from the mains supply.
2. Remove the Logic Assembly from the Control Panel Housing.
3. Unplug the membrane “tail” from the Logic PCB Assy.
4. Using a D.M.M., check for continuity between the correct terminals when the pads are pressed.
5. When the panel has been tested, re-assemble and re-test the control housing.





Part number identification chart:

No	Description	EC501/2/3	RD501
1	Fuse holder	30Z0231	30Z0231
1a	Fuse 10 amp	30Z0217	30Z0217
2	Fuse holder	30Z0231	30Z0231
2a	Fuse 10 amp	30Z0217	30Z0217
3	Fuse holder	30Z0231	30Z0231
3a	Fuse 1 amp	30Z0957	30Z0957
4	Fuse holder 30amp (FLM Series)[B]	30Z1178	30Z1178
4A	Fuse 20 amp Littlefuse FLM020[B]	30Z1177	30Z1177
6	Mains terminal block	31Z0149	31Z0149
7	Filter (Microwave circuit)	30Z0997	30Z0997
8	Filter (Heater circuit)	30Z0997	30Z0997
9	Door spring short	520000	520000
9	Door spring long	40C1141	40C1141
10	Door arm stop assembly	11C0279	11C0279
11	Microswitch (Primary)	30Z0240	30Z0240
12	Door hinge assembly (LH)	11C0167	11C0167
13	Door arm assembly	11C0300	11C0300
14	Microswitch (Monitor)	30Z0240	30Z0240
16	Door hinge assembly (RH)	11C0166	11C0166
17	Microswitch (Secondary)	30Z0240	30Z0240
20	Steam pipe	790046	790046
21	Steam vent guard	790061	790061
22	Temperature sensor[C]	50E123	50E123
23	Magnetron	30Z0264	30Z0264
24	Resistor Gold 470 R	30Z0283	30Z0283
25	HT diode	11C0266	11C0266
26	Capacitor 1.1 µF 50Hz	30Z1077	30Z1077
26	Capacitor 0.88µF 60Hz	30Z1075	30Z1075
27	Transformer 220V 50Hz	30Z1018	30Z1018
27	Transformer 240V 50Hz	30Z1183	30Z1183
27	Transformer 220V 60Hz	30Z1192	30Z1192
27	Transformer 240V 60Hz	30Z1191	30Z1191
28	Twin blower motor	310110	310110
29	On/Off Switch	30Z0503	30Z0503
30	Control Panel Assembly (without Menukey)	11C0294	———
30	Control Panel Assy with Menukey	11C0438	———
30	Locare Control Panel Assy with Menukey	11C0458	———
31	Logic Board (without Menukey)	11C0291	———
31	Logic Board with Menukey	11C0377	———
32	Relay Board	11C0212	———
33	AC Ribbon connector 6 way	11M0116	11M0116
34	DC Ribbon connector 10 way	11M0117	11M0117

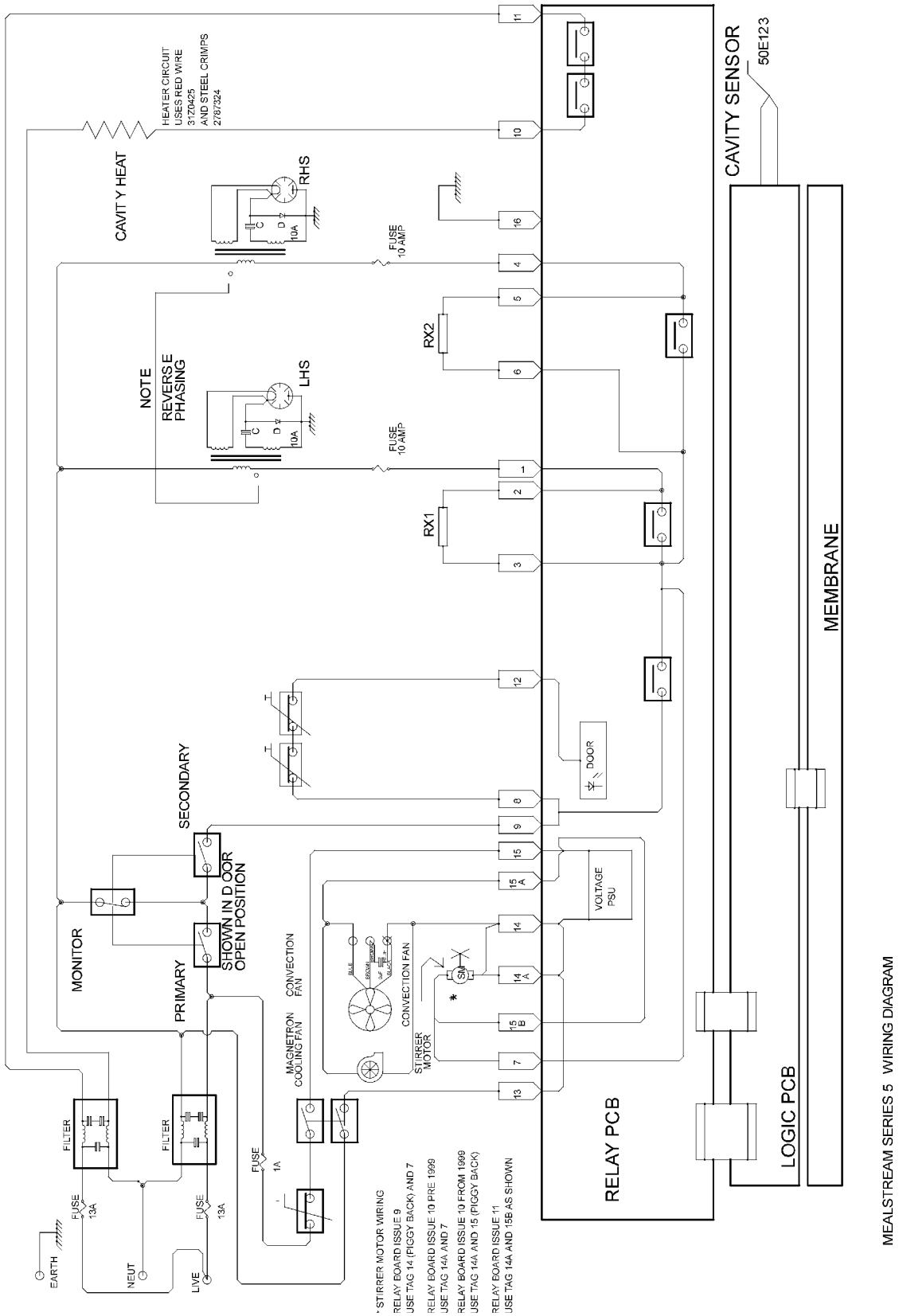
Note B: see APPENDIX 7 for models before March 2004

Note C: see APPENDIX 6 for models before March 2004

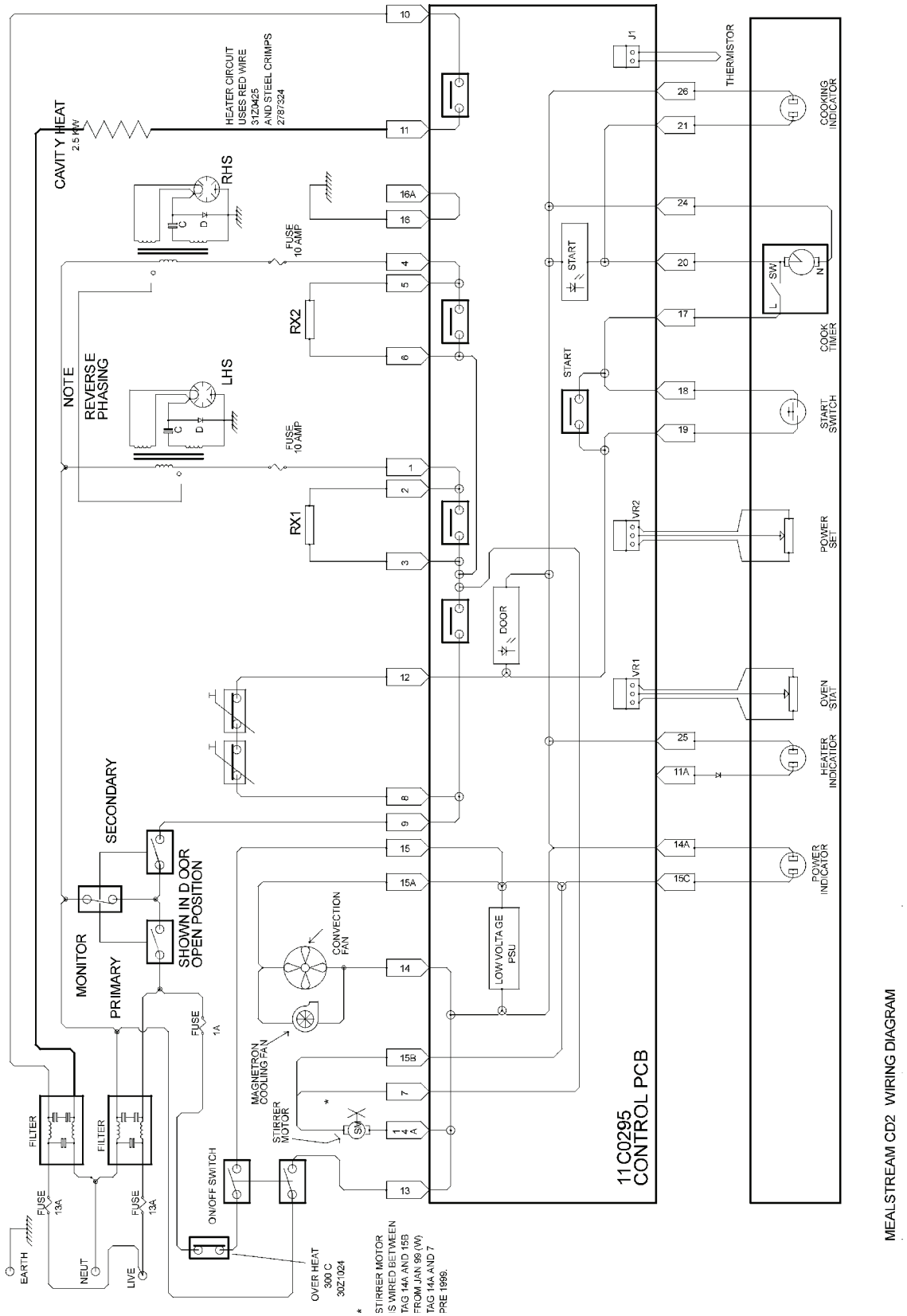
Part number identification chart:

No	Description	EC501/2/3	RD501
35	PCB Assembly	———	11C0295
38	Red Neon	———	316030
39	Timer	———	30Z0991
40	Potentiometer 5k	———	40C0892
41	Amber Neon	———	316031
43	Panel assembly	———	11C0307
44	Pushbutton	———	31Z0349
45	Control knob Red/Grey	———	11C0173
45	Control knob Blue	———	11C0406
46	Cable Gland	31Z1070	31Z1070
47	Gland Nut	31Z1082	31Z1082
48	Mains Cable 3 Core	31Z0148	31Z0148
49	Motor shaft screen	40C1005	40C1005
50	Hot air motor damper/seal	40C1008	40C1008
51	Pin	790027	790027
52	Roller	40C0752	40C0752
53	Bolt	101825	101825
54	Nut	80X7003	80X7003
55	LH Hinge bracket	790024	790024
56	RH Hinge bracket	790025	790025
57	Hot air motor Low Speed [CTM3]	11C0161	11C0161
57	Hot air motor High Speed [CTM5]	11C0526	——
58	Stirrer motor assembly	11C0162	11C0162
60	25mm OD Flexible conduit	314402	314402
61	20mm OD Flexible conduit	314401	314401
62	Capacitor clip	31Z0175	31Z0175
67	Stirrer glass	40C0954	40C0954
67a	Stirrer glass short side seal	790052	790052
68	Heater element 2.5kW	——	790063
68a	Heater element 3.0kW	40C0948	——
69	Baffle Plate	790047	790047
70	Baffle Side (2 No.)	11C0311	11C0311
71	Door seal kit	11C0292	11C0292
72	Door choke	790007	790007
73	MenuKey Assembly	10C0148	——
74	Mesh washer RFI gasket	31Z5044	31Z5044
75	Shelf support	40C0864	40C0864
76	Dome Nut	80X7025	80X7025
77	Shelf Support	40C0950	40C0950
78	Hot Air Impeller	MC3703B	MC3703B
79	Element cover plate Assembly	11C0474	11C0474
80	Element cover plate Assembly	11C0467	11C0467
81	Air filter panel (removable)	40C0868	40C0868
82	PCB stand off	2243033	2243033

Circuit diagram: EC501, EC502, EC503



Circuit diagram: RD501, CTM3__CD2



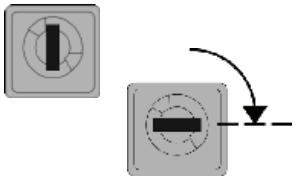
APPENDIX 1: MenuKey Download Procedure

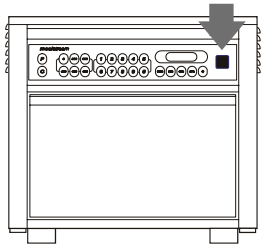
The MenuKey™ System automatically changes all the cooking programs on the numbered icon pads with the turn of a key.

To change the menus on the oven:

1 Ensure the power switch is **off**.

2 Lift the MenuKey cover in the front panel of the oven and put the key in the keyhole
Turn the key clockwise to the stop (¼ turn).
Do not remove the key at this stage.





3 Switch the power switch **on**.
The oven will now go through the program download sequence by displaying the following:

The Key Code example: Key C02

The number of programs and each program number on the key.

example: 27 Programs

When the display shows 00:00.

Remove the key and close the cover. The oven is now ready to use with the new programs.

EPS - FAIL - REDO
External Program System ERROR.
If the key is removed before the download is complete or the process is interrupted the display shows “EPS” then “FAIL” then “REDO”. Switch the oven off and begin the MenuKey download again.

To confirm the download is successful
Switch off the oven.
Switch on and the display briefly will show the following:

1. The new key code
2. 00:00 (oven ready to use)

If the download is not successful the key number will not be displayed and if the program pads are pressed an E3 error will display.

APPENDIX 2: Cleaning procedure Mealstream 501

For the oven to operate at peak efficiency, the cavity, door and the air filters must be kept clean.

A daily cleaning routine will ensure that you comply with the required hygiene standards and will help to maintain and prolong the efficiency of your oven.
Follow the SAFETY INSTRUCTIONS at the beginning of this manual.

- **ALWAYS switch off at the electrical supply and allow oven to cool for at least 20 minutes before cleaning.**
- **As required, wipe out spillage's with disposable paper wipes**
- **NEVER use steel wool, knives or harsh abrasives on any part of the oven**

As with all electrical appliances, it is wise to have the electrical connections inspected periodically.

Faults arising from neglect or misuse including use without clean filters in place are not covered by the guarantee. Service visits as a result of such faults will be chargeable.

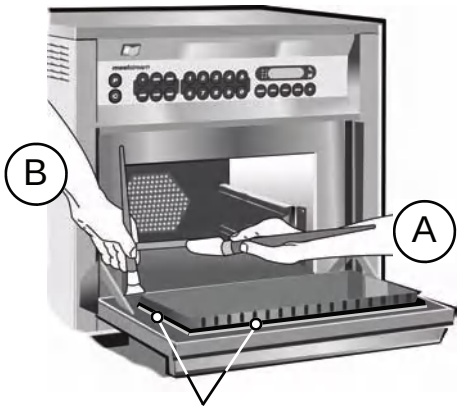
DO NOT USE THE OVEN WITHOUT CLEAN AIR FILTERS IN POSITION

Cleaning the Air Filters

1 Remove the air filters from each side of the oven by sliding the filter out from the front.
2 Wash in clean, warm soapy water, rinse and pat dry. Slide back into position through slots.

Cleaning the oven cavity and door

1 Remove food particles from the gap between the rear baffle plate and the floor of the oven with a clean, dry brush. (Location A)
Remove food particles from between the inside edge of the door and the front of the oven floor using a clean, dry brush. (Location B)
2 Apply non-caustic oven cleaner to interior surfaces except door seals. Leave for the recommended time. Wash off using a clean cloth and plenty of clean, warm water. Dry using a fresh, clean cloth.
3 Wipe hinges with a clean, damp cloth.
DO NOT apply lubricating oil.
4 Wipe door seals carefully with a clean damp cloth. Examine for signs of wear or damage.



Door Seal

If the door seals are damaged, the oven must be repaired by an approved Servicer.

Cleaning the control panel and exterior surfaces

Wipe down regularly with a damp cloth.

Hints and Tips for stubborn stains in the oven cavity

1 Switch on oven with microwave power only (without heat).
2 Place a container of water (1.5 litres) into the centre of the oven cavity.
3 Set microwave power to 100%.
4 Set timer to 30 minutes and press start button at end of steam cycle wipe out cavity with a clean cloth.

APPENDIX 2: Cleaning procedure Mealstream 502, Mealstream 503

For the oven to operate at peak efficiency, the cavity, door and the air filters must be kept clean.

A daily cleaning routine will ensure that you comply with the required hygiene standards and will help to maintain and prolong the efficiency of your oven.
Follow the SAFETY INSTRUCTIONS at the beginning of this manual.

- **ALWAYS switch off at the electrical supply and allow oven to cool for at least 20 minutes before cleaning.**
- **As required, wipe out spillage's with disposable paper wipes**
- **NEVER use steel wool, knives or harsh abrasives on any part of the oven**

As with all electrical appliances, it is wise to have the electrical connections inspected periodically.

Faults arising from neglect or misuse including use without clean filters in place are not covered by the guarantee. Service visits as a result of such faults will be chargeable.

Cleaning the Air Filters

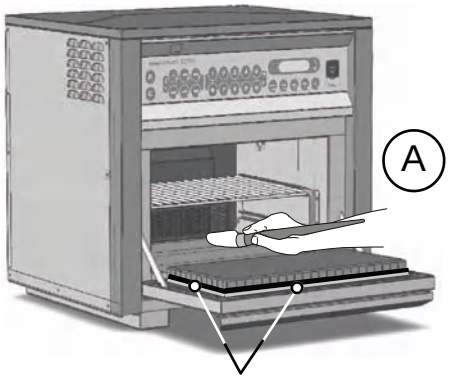
1 Remove the air filters from each side of the oven by sliding the filter out from the front.
2 Wash in clean, warm soapy water, rinse and pat dry. Slide back into position through slots.

DO NOT USE THE OVEN WITHOUT CLEAN AIR FILTERS IN POSITION

Cleaning the oven cavity and door

1 Remove food particles from the gap between the rear baffle plate and the floor of the oven with a clean, dry brush. (Location A)
Remove food particles from between the inside edge of the door and the front of the oven floor using a clean, dry brush. (Location B)

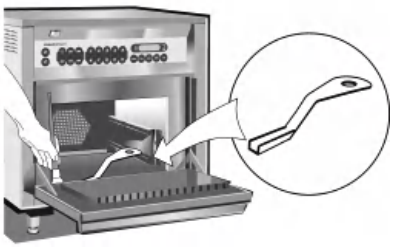
Do not spray any cleaning fluid directly into the cavity filter



Door Seal

2 Apply non-caustic oven cleaner to interior surfaces except door seals. Leave for the recommended time. Wash off using a clean cloth and plenty of clean, warm water. Dry using a fresh, clean cloth.
3 Wipe hinges with a clean, damp cloth.
DO NOT apply lubricating oil.
4 Wipe door seals carefully with a clean damp cloth.
Examine for signs of wear or damage.

B



If the door seals are damaged, the oven must be repaired by an approved Servicer.

Cleaning the control panel and exterior surfaces

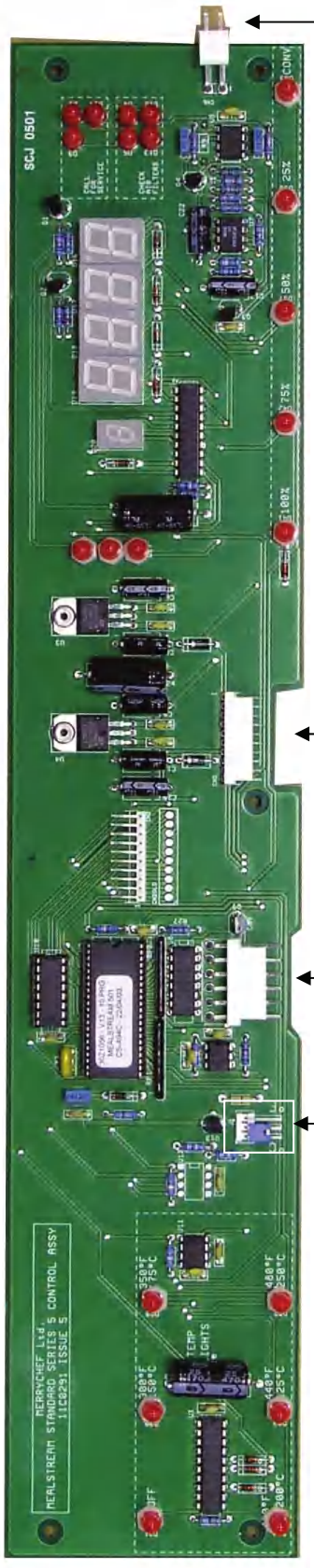
Wipe down regularly with a damp cloth.

Hints and Tips for stubborn stains in the oven cavity

1 Switch on oven with microwave power only (without heat).
2 Place a container of water (1.5 litres) into the centre of the oven cavity.
3 Set microwave power to 100%.
4 Set timer to 30 minutes and press start button at end of steam cycle wipe out cavity with a clean cloth.

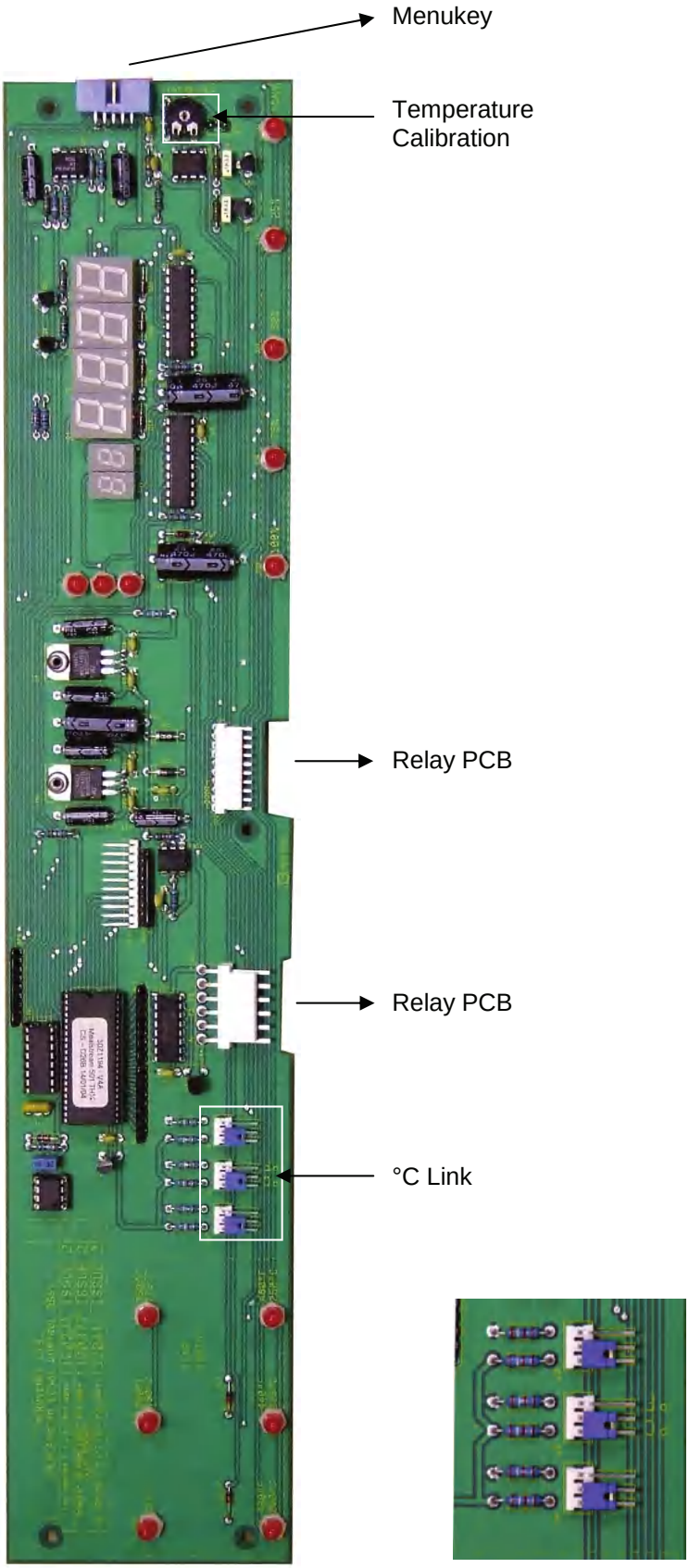
APPENDIX 3: PCB Connection Points and key features, EC501, EC502 & EC503

11C0291 Issue 5



APPENDIX 3: PCB Connection Points and key features EC501, EC502 & EC503

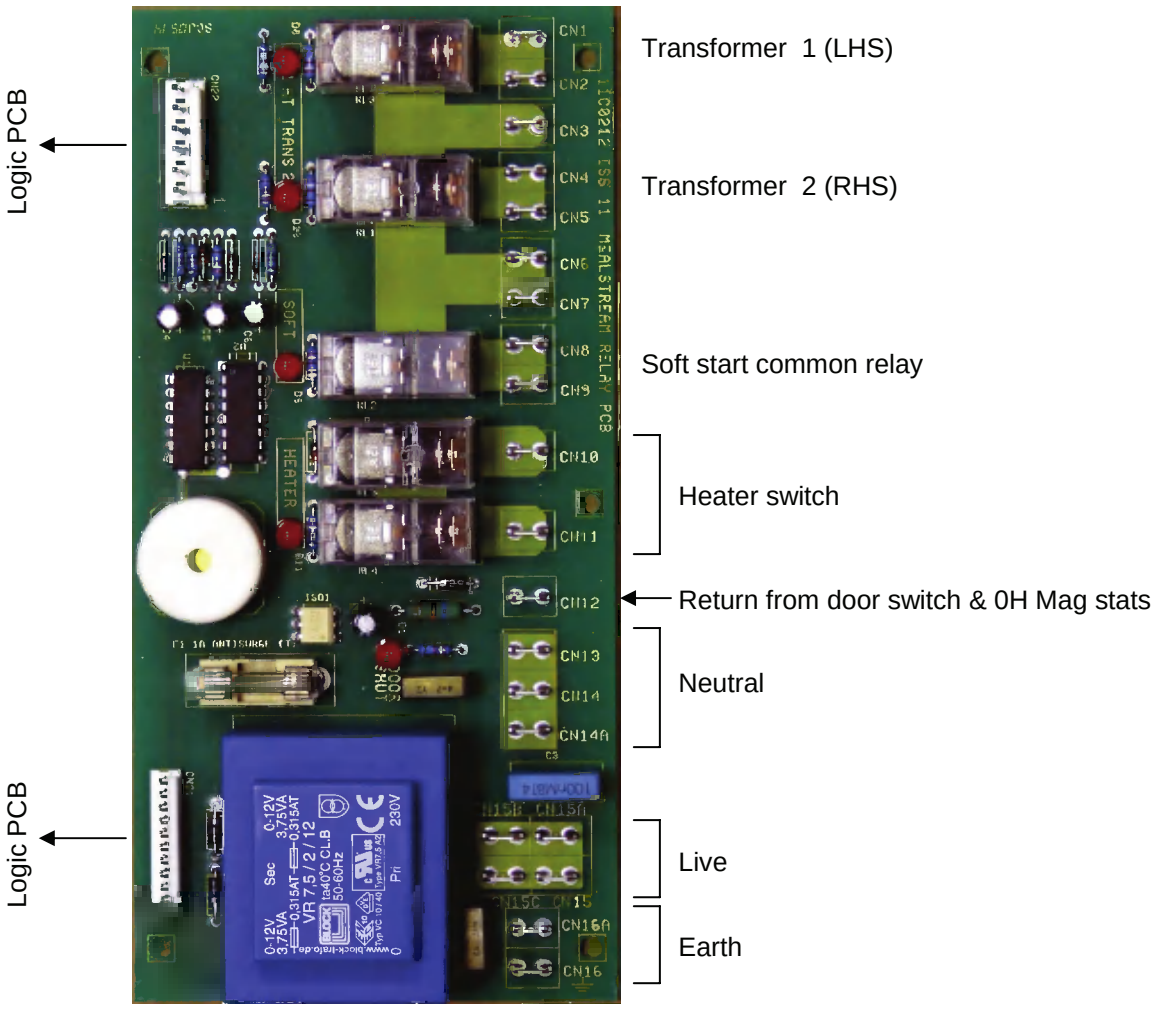
11C0377 Issue 2



APPENDIX 3: PCB Connection Points and key features EC501, EC502 & EC503

11C0212 Issue 11

Relay PCB



APPENDIX 4: Transformer Upgrade

In partnership with our supplier Tabuchi, we have developed a multi-tap transformer that will output 208V, 220V & 240V. There are 2 models for 50Hz and 60Hz power supply.

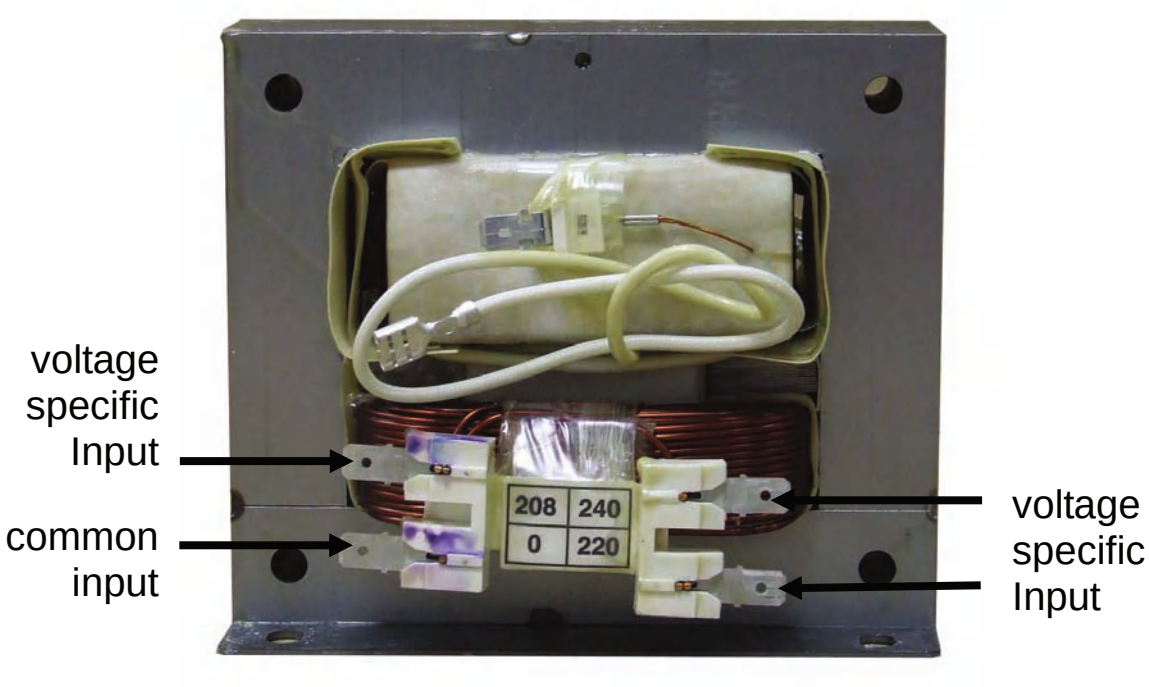
Should you need to change a transformer to any Mealstream 501 product, you should use the new 30Z1233 (50Hz power supply) or 30Z1230 (60Hz power supply) multi-tap transformer, see matrix below.

Should you have an oven where just one transformer has failed, you can mix an old transformer with a new transformer on the oven.

Note: The capacitor values remain the same when using the new 30Z1233 or 30Z1230 transformer.

Replacement Transformer Matrix		
Voltage	**Frequency**	**Part No.**
220V	50Hz	30Z1233
240V		
208V	60Hz	30Z1230
220V		
240V		

Transformer 30Z1230 shown for clarification



APPENDIX 5: Hot air motor replacement procedure 1

we have improved the hot air motor assembly by enhancing the wave trap and balancing the impeller which is now fitted by a grub screw to a flat on the shaft. The tolerances to manufacture the motor shaft have also been tightened to improve the fit of the balanced impeller.

Parts required: **10C0192** service kit (consists of the following parts):

Part No.	Description	Quantity
11C0472	501Hot air motor service kit	x1
40C1201	Hot air motor Wave Trap	x1
2747048	Motor spacer board	x1
101520	M4x10 Hex HD Screw	x4
31Z4016	M5 flange nut	x4
31Z5007	M5 steel spring washer	x4
31Z5008	M5 steel washer large	x4

Recommended tools:

RS Components Pt. No. 547-379	Quickset driver 1-6Nm with 0.1Nm increments
RS Components Pt. No. 769-002	1/4” hex to 1/4” square converter 50mm long

Procedure for fitting new RF trap and Motor assembly

Step 1 Isolate oven from mains supply.

Step 2 Remove necessary covers to obtain access to the rear of the oven.

Step 3 Remove shelf supports.

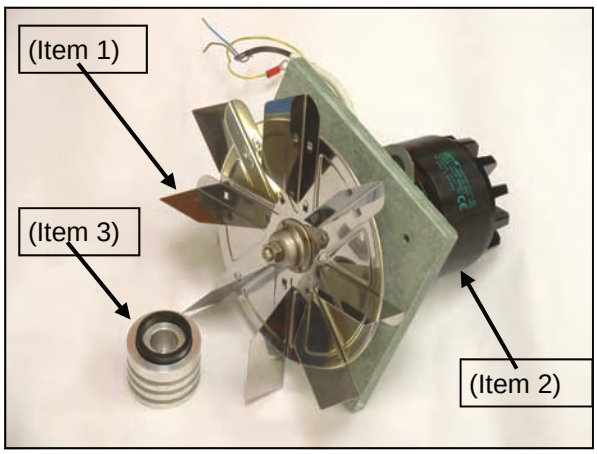
Step 4 Remove element cover plate.

Step 5 Remove and discard impellor. (Item 1)

Step 6 Disconnect motor at terminal block.
(note where each wire is connected)

Step 7 Remove and discard hot air motor assembly. (Item 2)

Step 8 Remove and discard motor screen tube with seal. (Item 3)
(check cavity surface and clean if necessary)



Parts to be removed

APPENDIX 5: Hot air motor replacement procedure 2

Step 9 Fit new wave trap Pt. No. 40C1201 to cavity. **See figures 1(a) & 1(b)**
(Making sure it is centred in the hole)
Ensure wave trap is fitted correctly and not caught around the edge of the hole.
See figure 2

Figure 1(a)

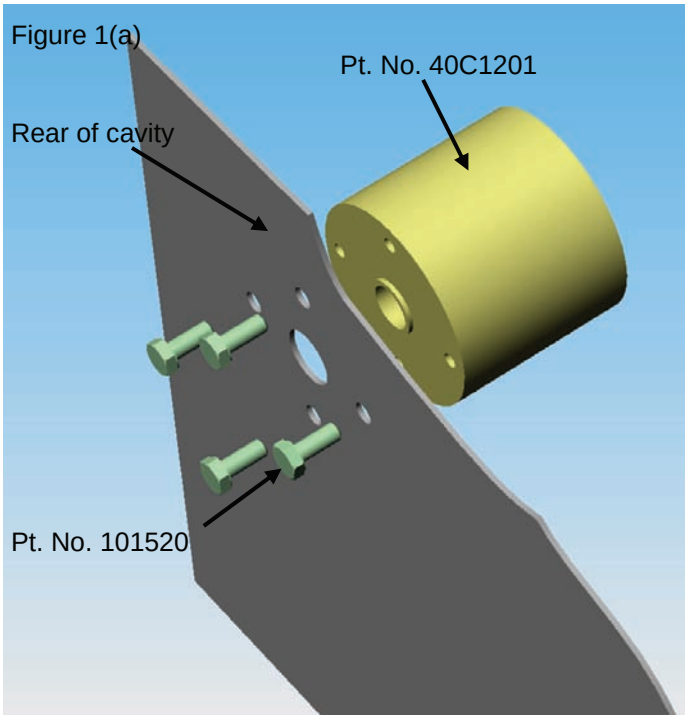


Figure 1(b)

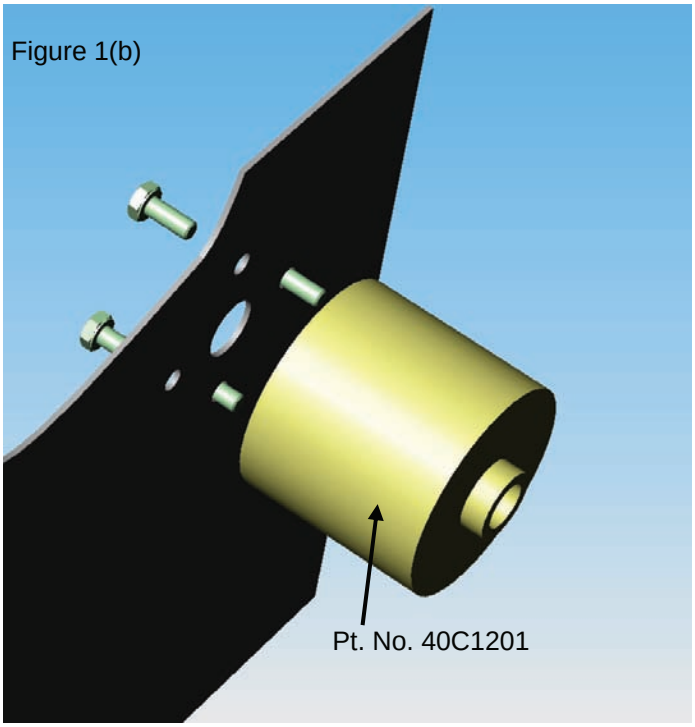
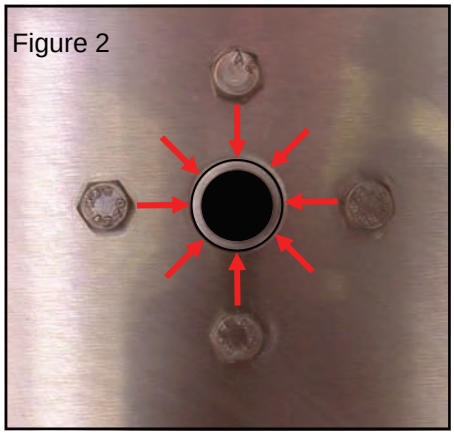


Figure 2



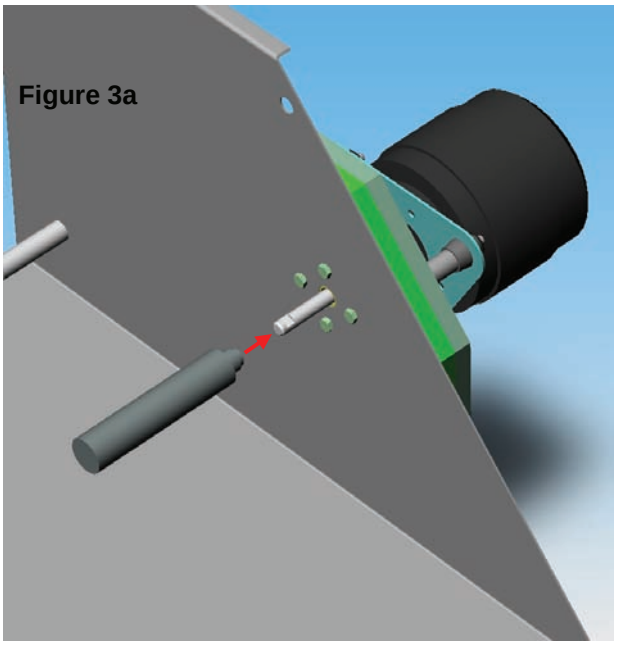
Note: Ensure wave trap is fitted correctly and not caught around the edge of the hole.

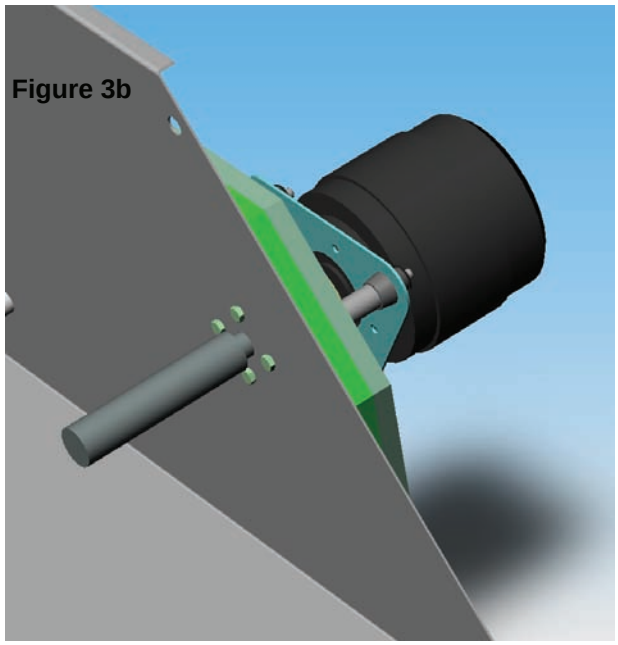
APPENDIX 5: Hot air motor replacement procedure 3

Step 10 Fit new hot air motor assembly Pt. No. 11C0472 (see diagrams below)
Make sure the motor shaft is centred in the hole

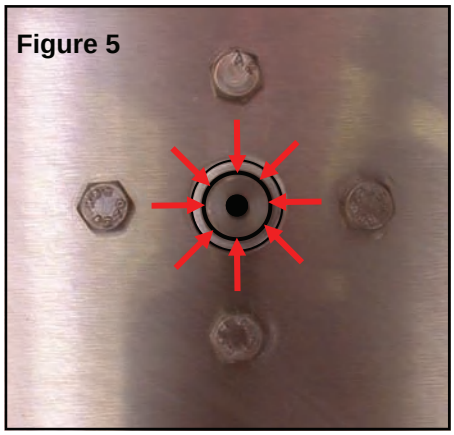
A) Fit motor assembly Pt. No. 11C0472 and secure finger tight with flange nuts & washers.
B) Push the alignment tool (40C1211) onto the motor shaft and ensure initial step of the tool locates into the wave trap. **See figures 3a & 3b** (see alignment tool **figure 8**)
C) Whilst supporting the weight of the motor assembly in one hand, tighten up the securing nuts to **3.5Nm.** This should align the shaft to the centre of the wave trap. **See figure 4**
D) Remove the alignment tool and check shaft is centrally located. **See figure 5**

Note: Should the motor shaft not be central to the wave trap, follow the adjustment instructions on the next page.

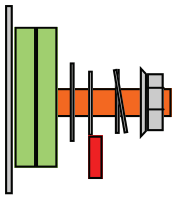


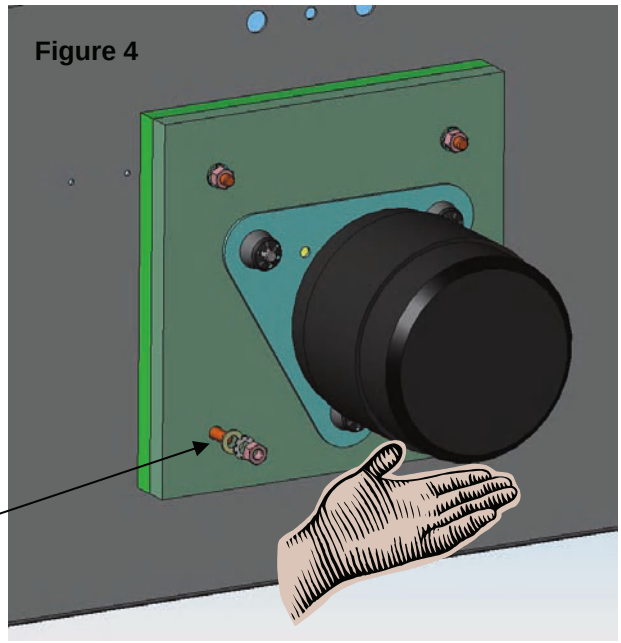


Note: Ensure motor shaft is centrally located through the wave trap hole.



Earth point on bottom left mounting stud.





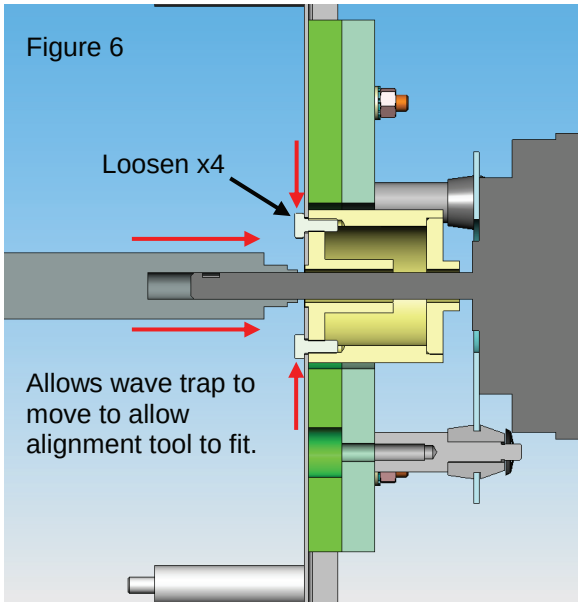
APPENDIX 5: Hot air motor replacement procedure 4

Adjusting alignment procedure

To ensure correct alignment of the assembly there are 2 procedures that may be required:

Procedure 1

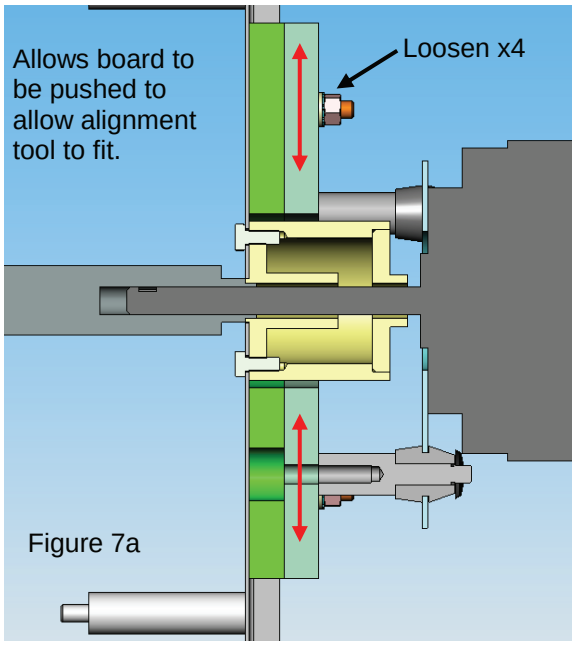
The 4 bolts holding the wave trap to the cavity need to be loosened off sufficiently to allow movement of the wave trap.
See figure 6 (see Alignment tool **figure 8**)
You must then slide the alignment tool onto the motor shaft, keeping pressure on the rear of the tool only and not applying any sideways pressure. At the same time pushing on the bolts of the wave trap to manipulate the trap into a position where the outer diameter of the tool goes into the hole of the wave trap.Once the tool is located, tighten up the 4 bolts and remove the alignment tool.

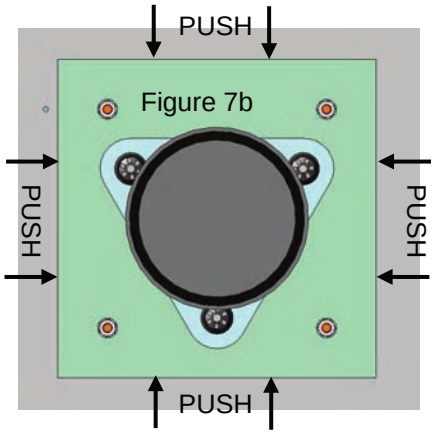


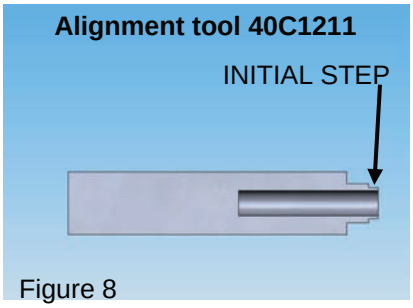
If procedure 1 is successful go to step 11

Procedure 2

With both wave trap and hot air motor secure, you must then slide the alignment tool onto the motor shaft, keeping pressure on the rear of the tool only and not applying any sideways pressure until it bottoms out on the cavity face. You must then push sideways and forward on the tool to allow the initial step of the tool to go into the wave trap, making note of which direction you had to push the tool for when aligning the motor.
See figures 7(a) & 7(b) (see tool **figure 8**)
With the alignment tool in position, you must then loosen the 4 nuts holding the fibre board that the motor is mounted to.This will allow you to push the board **not the motor** in the same direction as they pushed the tool. This will then bring the motor into alignment with the wave trap.
Note: If you are looking into the cavity and had to push the tool to the right, when looking at the motor







APPENDIX 5: Hot air motor replacement procedure 5

Step 11 With the alignment correct Reconnect motor wires at terminal block. **See figure 9a & 9b**

Step 12 Fit new impeller to motor shaft. **See figure 10a & 10b**
(ensure grub screw lines up with the flat on the shaft)
Fit the screw to the impeller and wind down until you feel it touch the motor shaft. Then gently push and pull the impeller back and forth to verify that the screw has located in the slot. Pull the screw to the front of the slot prior to securing.

Step 13 Refit element cover plate.

Step 14 Refit shelf supports.

Step 15 Test oven.
(Care should be taken when powering up ovens with covers removed)
(check motor is running freely and check emissions near new RF trap)

Step 16 Refit covers.

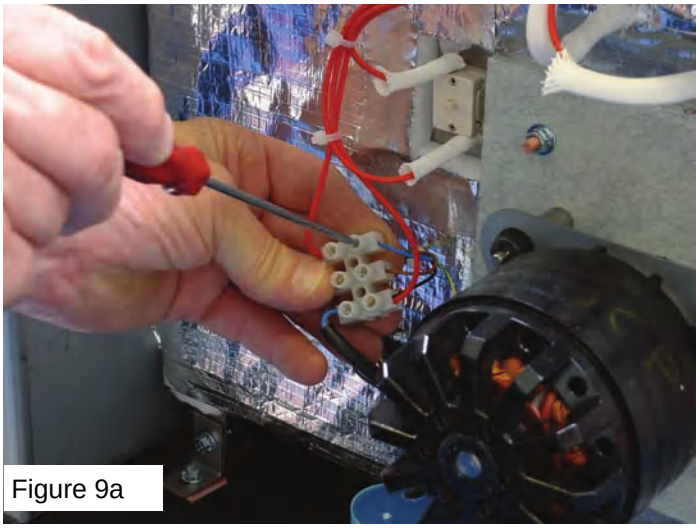


Figure 9a

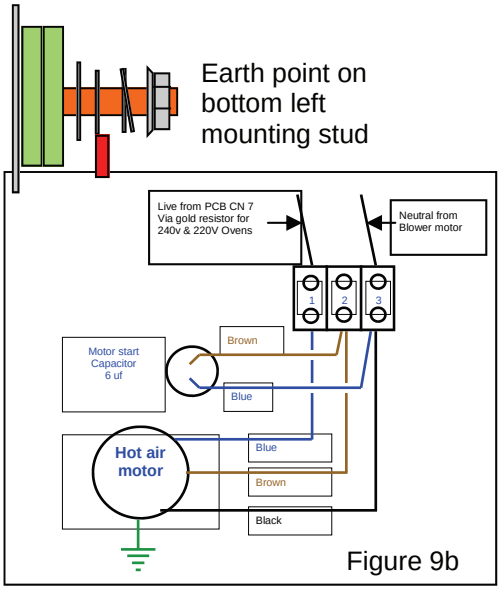


Figure 9b

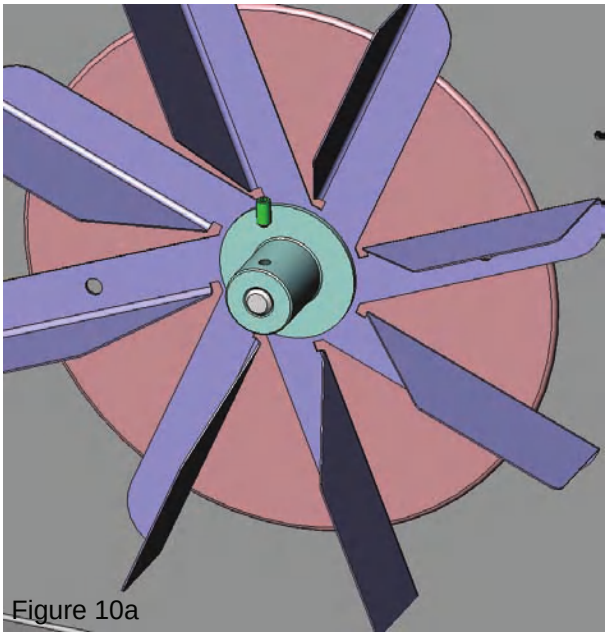


Figure 10a

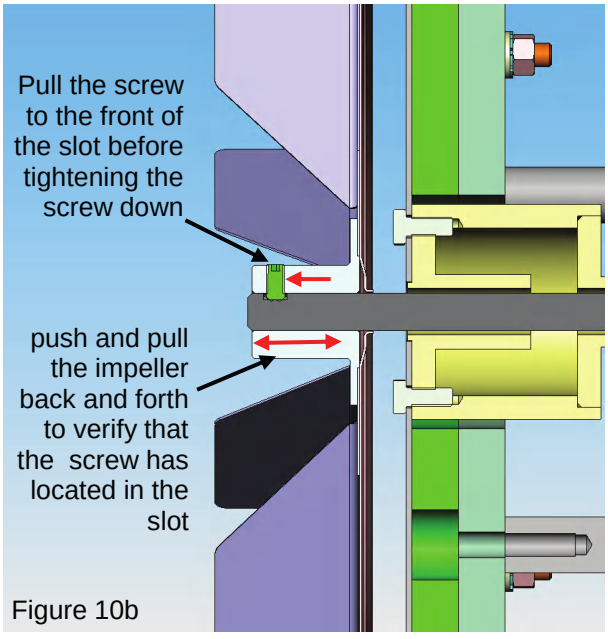


Figure 10b

APPENDIX 6: Temperature Sensor replacement

Mealstream ovens manufactured before March 2004

If you are required to fit a new temperature sensor to a Mealstream 501 oven on a service call, you need to follow the procedure below to verify that the sensor is holding firm in the pocket.

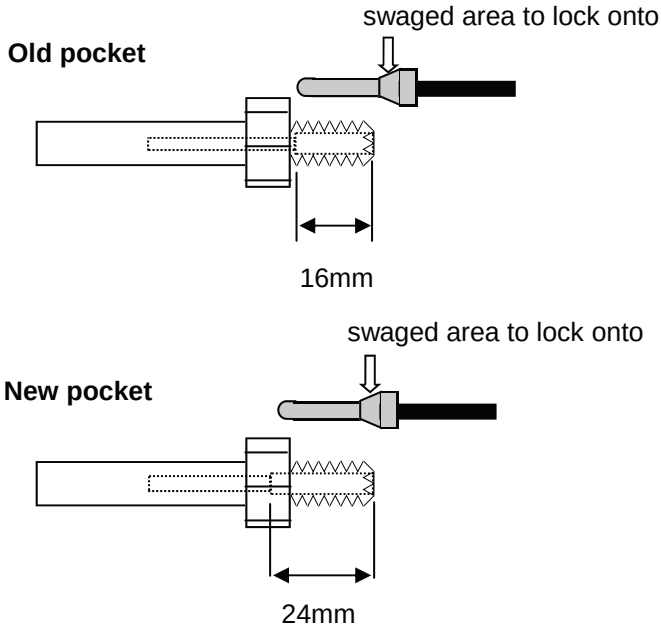
The diagram below shows the area of the thermistor causing the problem. This problem has been eliminated by increasing the hole depth in the temperature sensor pocket thus allowing the thermistor to goes further into the pocket and lock into position.

Procedure for checking the temperature sensor fit in the sensor pocket

1. Fit the temperature sensor Pt. No. 50E123 as normal with a slight twist to lock the sensor into the pocket.
2. If the sensor you have does not lock into the pocket and comes out of the pocket with little or no effort, you will need to replace the pocket with one that has been modified as shown.

Part No.	Description	Quantity
11C0301	Temperature sensor pocket assembly	1
50E123	Thermistor	1

The temperature sensor pocket has been modified to accommodate the longer temperature sensor.



APPENDIX 7: Fuse change (FLM20) 1

Mealstream ovens manufactured before March 2004

Brief description:
13A anti-surge fuses Pt. No. 30Z0168 are no longer manufactured these are now replaced with FLM020 fuses Pt. No. 30Z1177 for the Microwave circuit on all Mealstream 501 ovens.

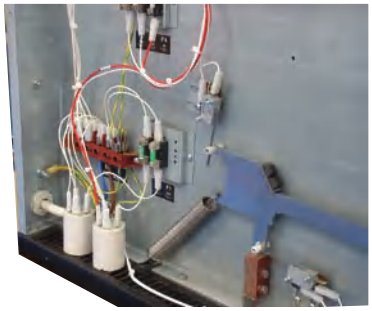
To replace a fuse on an oven manufactured before March 2004 and fitted with this fuse type it is necessary to replace the fuses and fuse holders with FLM 020 type.

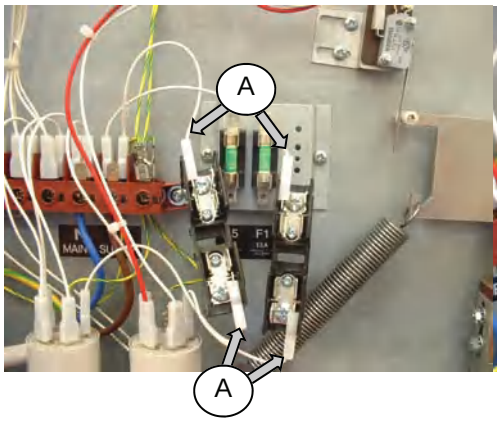
Part No.	Description	Quantity
30Z1177	20A littlefuse FLM020	2
30Z1178	30A fuse holder (FLM Series)	2
31Z2092	Label - 20A FLM fuse	1
31Z3116	6x1/2" self tap pan	2

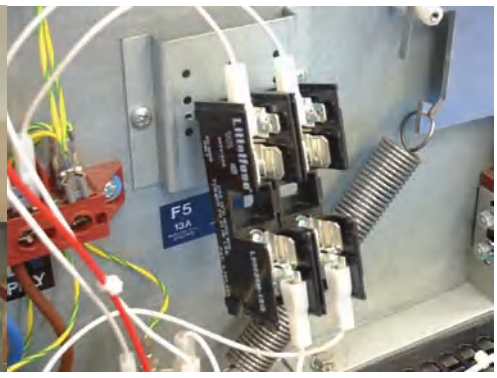
Procedure for replacing 13A anti-surge Fuses with FLM020 type

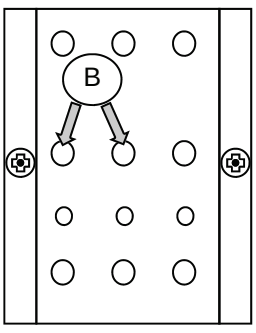
1. Isolate oven from mains power supply.
2. Remove necessary covers to obtain access to the L/H inner side panel.

3. Remove the wires from the existing fuse holders and fit them to the FLM20 fuse holders Pt. No. 30Z1178. (A)
4. Remove fuses and unscrew the existing fuse holders, discard all parts.
5. Secure the new fuse holders into positions using No.6x1/2" self tap screw Pt. No. 31Z3116 x2. The fuse holders are to be locked together prior to fitting into the hole shown in the diagram. (B)



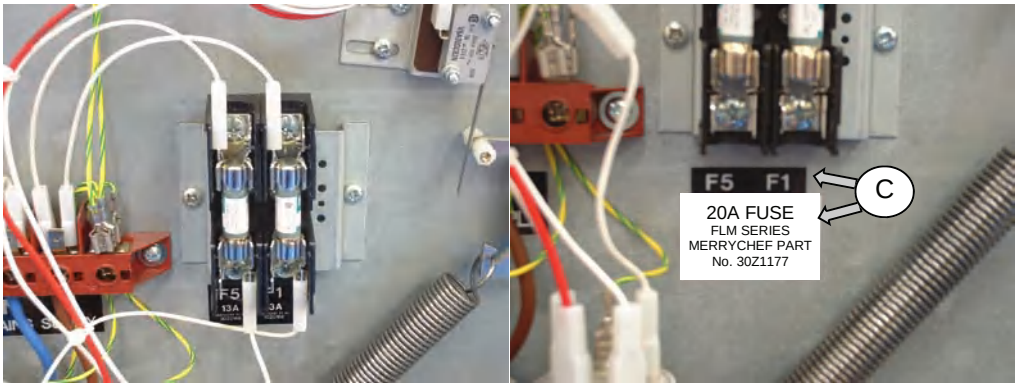






APPENDIX 7: Fuse change (FLM20) 2

6. Push fit the new fuses Pt. No. 30Z1177 into the fuse holders.
7. Fit new label Pt. No. 31Z2092 over the existing label leaving the F5 and F1 still showing (C)
8. Power up the oven and check machine functions correctly.
   (Care should be taken when powering up ovens with covers removed).
   If fuse still blows, check microswitch setup is correct and replace if necessary.
9. Turn off the power and isolate the oven from the mains power supply.
10. Replace covers.



APPENDIX 8: Tim Hortons Ovens 1

This appendix list the parts and procedures for Tim Hortons Mealstream 501 models which are a vend type oven pre-programmed from a MenuKey.

In order to carry out the Power Test on Tim Hortons variant Ovens, the Icon Pad programs on the control panel need to be switched to Engineering Program Mode. Engineering Mode does not affect the current Menukey program settings for the Icon pads and the current Menukey programs are automatically restored when the oven is next switched on.

To switch to Engineering Mode Programs:

1 With the oven switched off hold down the CANCEL Pad and switch the oven ON, the display shows the current Menukey Code, continue to hold the CANCEL Pad for approximately 10 seconds until the display shows *EE 00:00* indicating the oven is now in engineering mode

2 Programs will be set as follows:

Program Number		Time	Temp	Power
Pad 01		1 minute 3 secs	Off	100%
Pad 02		3 minutes	Off	100%
Pad 03		59 minutes 59secs	480 °F	None
Pad 04	Stage 1	30 minutes	480 °F	100%
	Stage 2	29 minutes 59 secs	480 °F	50%

All other programs will be blank

3 Follow the Power test procedure as detailed on Page 24 using Program Pad 01 (Cake) to give the required 1 minute 3 seconds at 100% Microwave Power setting.

4 On completion the current Menukey programs are automatically restored when the oven is next switched on.

APPENDIX 8: Tim Hortons Ovens 2

PROCEDURE FOR POWER OUTPUT MEASUREMENT

The power output specification, 1425W 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:

To carry out this test the Icon Pads need to be switched to ENGINEERING MODE PROGRAMS See previous page

1 Fill one beaker (glass or plastic) with one litre (1.78 pints) of tap water (at about 20ºC/68ºF) and measure the water temperature. (Use a thermometer with a $^{1}/_{10}$, 0.1 degree gauge).

2 Place the beaker in the centre of the cavity.

3 Tim Hortons Ovens only
With the oven in ENGINEERING MODE Press Pad 01 (Cake) and any Load Pad (Quarter, Half, Full) Wait until the counter reaches zero.

4 Take the beaker out immediately stir the water with a plastic implement and measure the water temperature.

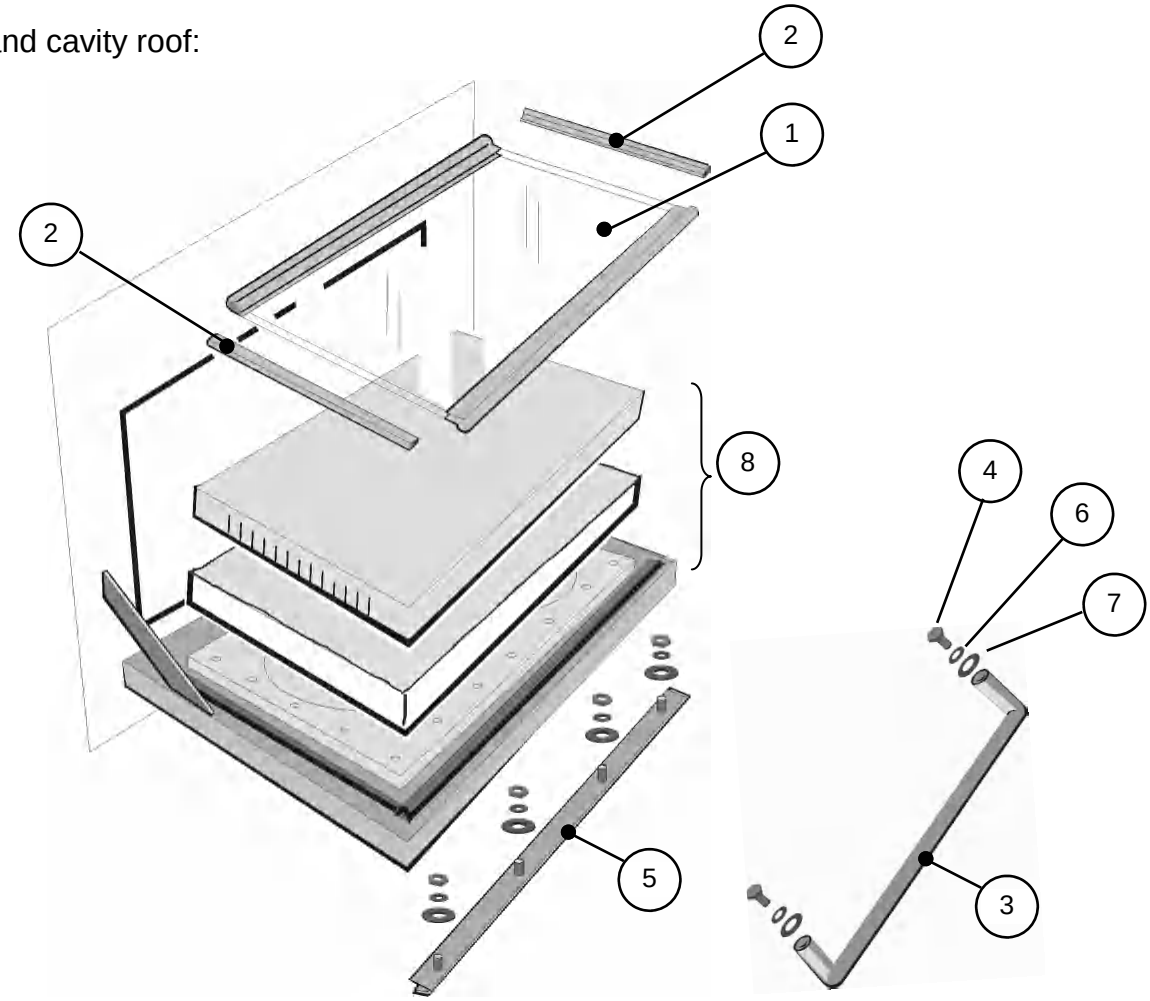
5 Calculate the temperature rise of water in the beaker. The temperature rise of the water should be within the following range:

Temperature **Rise**
15ºC (27ºF) Minimum
20ºC (36ºF) 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.

APPENDIX 8: Tim Hortons Ovens 3

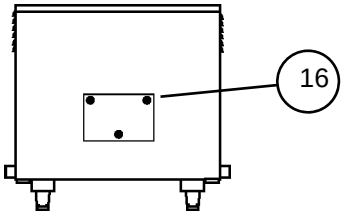
Door and cavity roof:

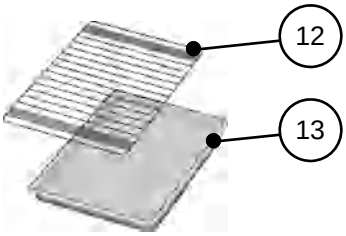


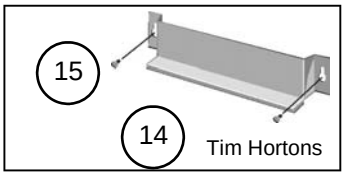
No	Description	Part No.
1	Stirrer glass assy. (inc. long seals)	11C0319
2	Cavity roof seal (short)	790052
3	Door Handle Towel Rail	32Z1064
4	Bolt 1/4" 20 UNC 3/4" Hex	109050
5	Door Handle	40C1020
6	Spring Washer	31Z5005
7	Flat Washer S/S M6 x 20	104054
8	Door Assembly Tim Hortons	11C0380

APPENDIX 8: Tim Hortons Ovens 4

Tim Horton special parts:



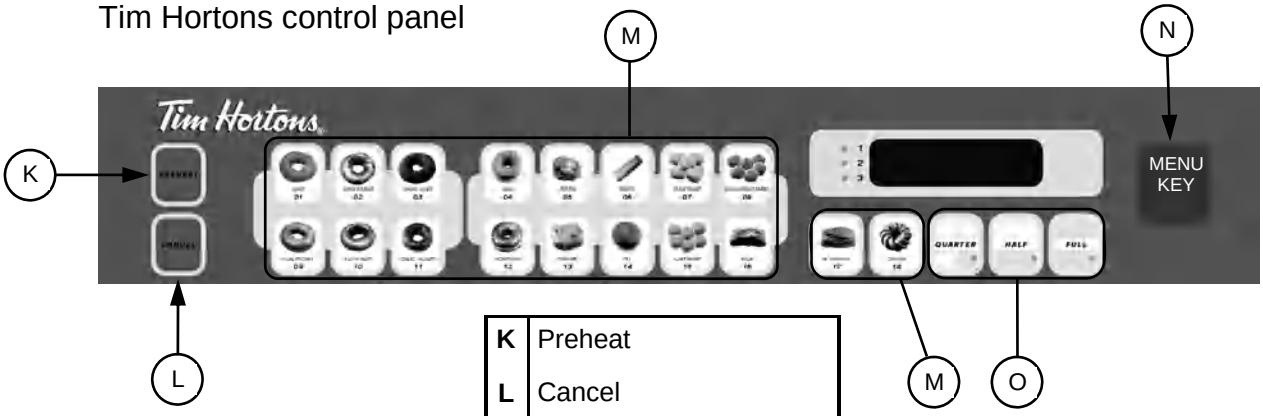




No	Description	Part No.
12	Wire Rack	40C1011
13	Crumb Tray	RBR290X02
14	Shelf Support Tim Hortons	10C0174
15	Shelf support fixing bolt	80T7133
16	Push fit bumper (Rear Panel)	31Z1187

APPENDIX 8: Tim Hortons Ovens 5

Tim Hortons control panel

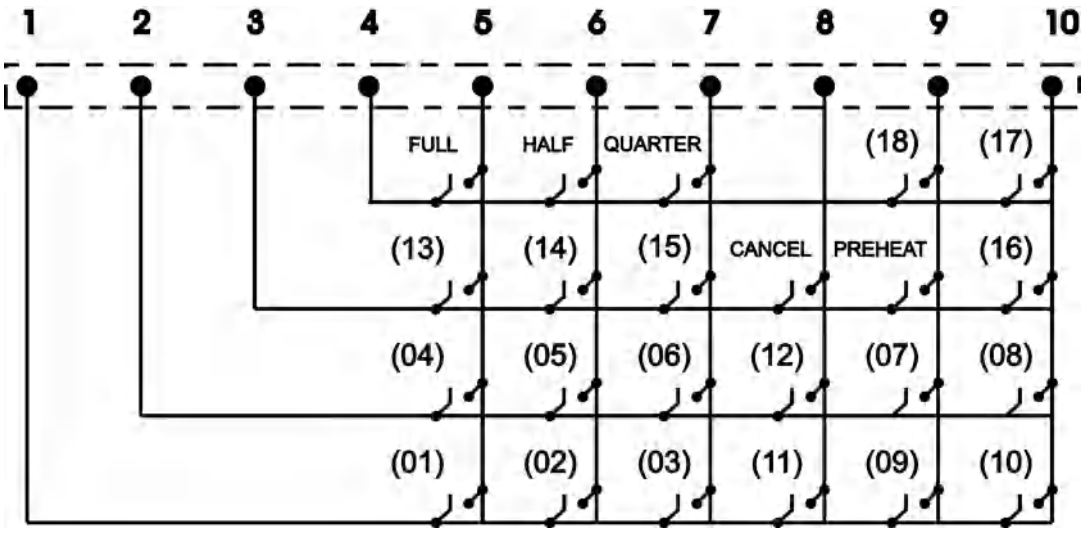


K	Preheat
L	Cancel
M	Icon Cook Pads
N	MenuKey™
O	Quarter, Half & Full Batch Load

For 240V model

No	Description	Part No.
30	Control Panel Assy with Menukey	11C0414
31	Logic Board	11C0411
32	Relay Board	11C0403

Mealstream 501 US Tim Hortons & Unbranded Variant

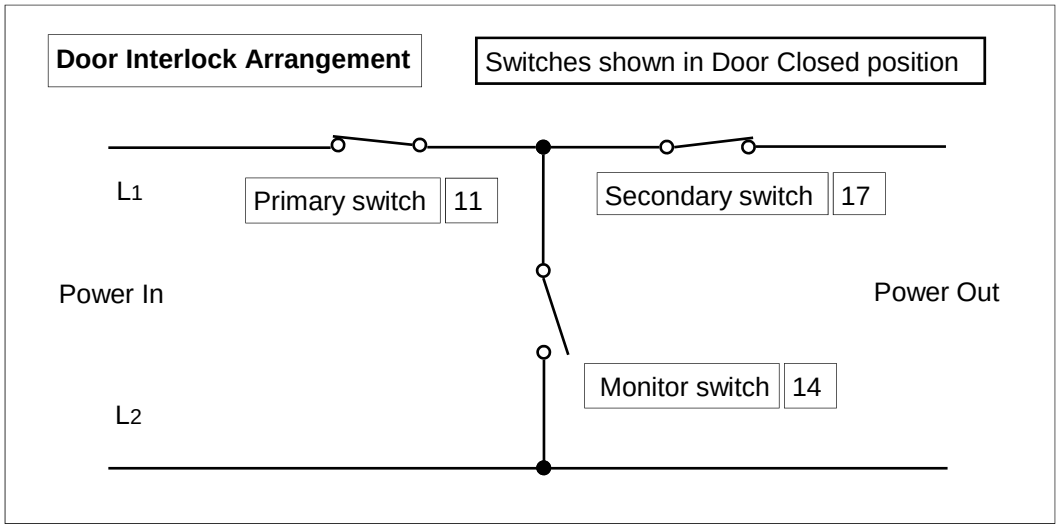


Note:PINS 1-4 Lower Layer & Pins 5-10 upper layer

APPENDIX 9:

PROCEDURE FOR DOOR INTERLOCK ADJUSTMENT AND TEST (1)

The door on the Mealstream oven is monitored by three microswitches. These are used in the conventional “Primary, Secondary and Monitor” switch arrangement shown below.
The switches operate as follows:



1. **Monitor switch (14 ,Top left-hand Side).** The Monitor switch will produce a short circuit across the mains supply if the Primary interlock switch is faulty, when the door is opened, thus blowing the microwave fuse and rendering the oven inoperative.

2. **Primary Interlock (11 , Bottom left-hand) and Secondary Interlock (17 , Bottom right-hand) Switches.** Operate simultaneously.
   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 have 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.

PROCEDURE FOR DOOR INTERLOCK ADJUSTMENT AND TEST (2)

Please Note
DO NOT attempt to carry out the following procedure unless you have the following tools and parts.

Continuity Meter			
Door Spacer Kit Part No. 10C0171	Spacer	No. required	Part No.
	S10 Door Spacer 10mm	2	40C1119
	S5 Door Spacer 5mm	2	40C1118
	S1 Door Spacer 1mm	2	40C1114

WARNING

Before starting this test procedure please make sure that the oven is disconnected from the electrical supply and that the oven power switch (ON/OFF) is in the OFF position.

After each step check that the interlocks are operating in the correct order using a continuity meter.

See Safety Code (Page 3)

Disconnect the microswitches and check for the continuity of the switches with a continuity meter

Step 1: Set the interlock so that they activate in the following order.

When closing the door.

Interlock	**Order**
SW1 (Monitor)	1st
SW2 (Primary)	2nd Note both SW2 and SW3 activate together
SW3 (Secondary)	2nd Note both SW2 and SW3 activate together

When opening the door.

Interlock	**Order**
SW1 (Monitor)	3rd
SW2 (Primary)	1st Note both SW2 and SW3 activate together
SW3 (Secondary)	1st Note both SW2 and SW3 activate together

PROCEDURE FOR DOOR INTERLOCK ADJUSTMENT AND TEST (3)

Step 2: Insert S10 10mm spacer into door.
(See figure 1 below for inserting spacer correctly).

Interlock	Order
SW1 (Monitor)	CLOSED
SW2 (Primary)	OPEN
SW3 (Secondary)	OPEN

Step 3: Remove S10 10mm spacer and insert S1 1mm spacer into the door and close the door.

Interlock	Order
SW1 (Monitor)	OPEN
SW2 (Primary)	CLOSED
SW3 (Secondary)	CLOSED

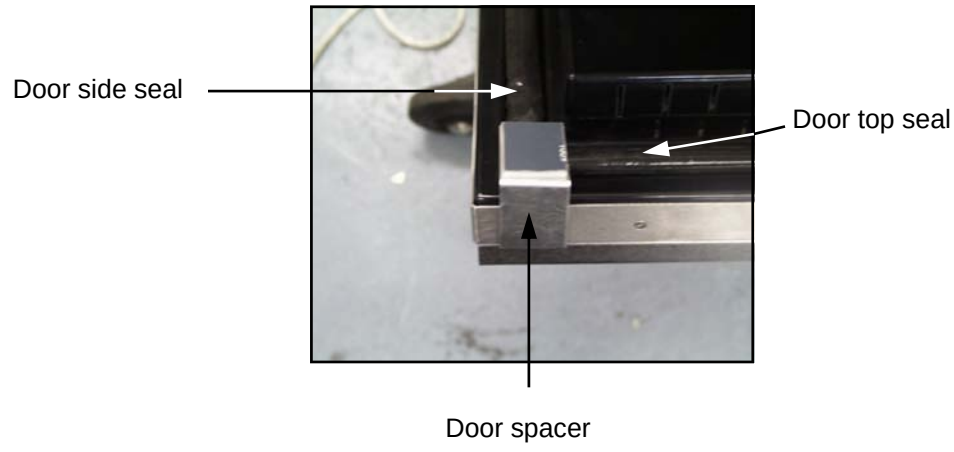
Step 4: Remove S1 1mm spacer and insert S5 5mm spacer into the door and close the door.

Interlock	Order
SW1 (Monitor)	OPEN
SW2 (Primary)	OPEN
SW3 (Secondary)	OPEN

If an oven fails this sequence
then check the microswitches are functioning correctly and repeat steps 1 to 4.

After carrying out this procedure make sure that the interlock monitor switch is properly connected according to the circuit diagram on pages 44-46.

Figure 1



The door spacer must always be located on the point where the side seals and top seals meet.

Please note.
It is very important after completing this procedure to carry out a microwave emissions test procedure. See pages 51-52.

PROCEDURE FOR MICROWAVE EMISSIONS TEST (1)

Warning

Check for radiation leakage after servicing. Should the leakage be more than 4mW/cm² Inform Merrychef service centre immediately. After repairing or replacing any radiation safety device, keep a written record for future reference this requirement must be strictly observed. In addition, the leakage 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

600ml glass beaker
Supply of cold water
Microwave leakage meter

Tim Hortons

To carry out this test the Icon Pads need to be switched to ENGINEERING MODE PROGRAMS See Appendix 8

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 2.5cm/second.
- With any casework removed the leakage should not exceed 4mW/cm².
- When measuring the leakage, always hold the probe at 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 275ml of cold water in the 600ml glass beaker.

2 Place the 600ml glass beaker in the centre of oven.

3 Close the door and set time for 30 seconds then press Power pad 100%

(change water every 30 seconds to prevent boiling).

Tim Hortons: In ENGINEERING MODE (see Appendix 8) press Pad 01 then any Load pad (QUARTER, HALF, FULL) watch time display and open door at 30 seconds.

4 Set the leakage meter to the appropriate scale/range.

5 Move the survey meter probe along the areas indicated in (Figures 1 to 4 page 52).

6 Remember to change the water after 30 seconds since water that boils will result in inaccurate readings.

PROCEDURE FOR MICROWAVE EMISSIONS TEST (2)

- Readings must be **below** 4mW/cm². If a level greater that 4mW/cm² is observed, this should be reported to Merrychef Service Department 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.

Control Panel	- Figure 2
Door Perimeter	- Figure 2
Rear and Side Covers	- Figure 1, 3 & 4
Left & right Side Air Filters.	- Figure 3 & 4

Test for microwave leakage at all points marked with a ↔

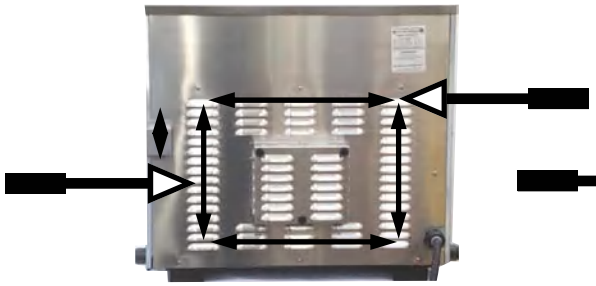


Fig. 1

Fig. 2

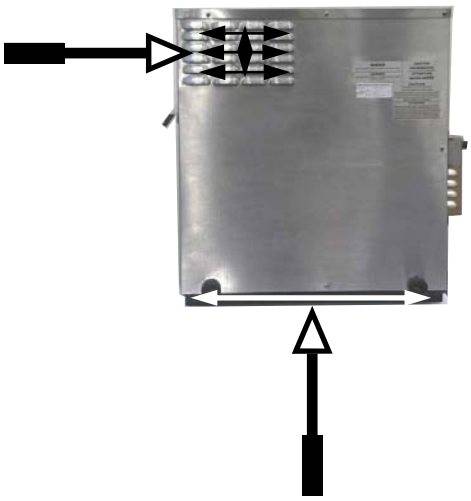


Fig. 3

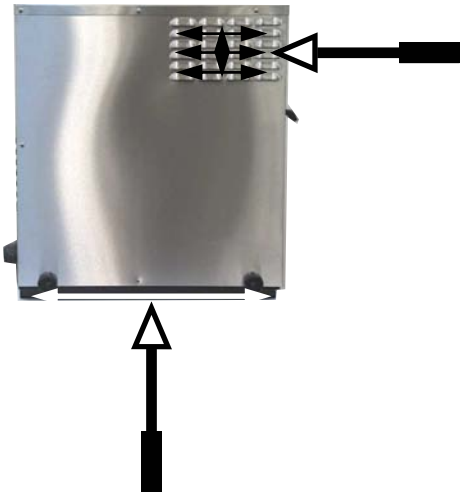


Fig. 4

Manual corrections and modifications

Whilst every effort has been made to ensure that the information contained in this manual is accurate and complete, if you believe that an error has been made, or if you have any suggestions for how the manual could be improved, please fill in and return this form. A review of any forms returned will be made on a regular basis, and the manual will be updated if required.

Name
Address
Page on which error occurs (if applicable) - **Mealstream 500 Series**
Description of error
Suggestion for improvement to manual
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