www.monoequip.com

Enter **Serial No.** here._____

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

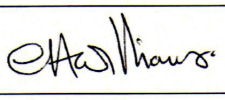
OPERATION AND MAINTENANCE MANUAL

AUTOMATIC DOUGHNUT FRYER

DECLARATION OF CONFORMITY

We hereby declare that this machine complies with the essential health and safety requirements of :-

- The Machinery Directive 2006 / 42 / EC
- The Low voltage Directive 2006 / 95 / EC
- The requirements of the Electromagnetic Compatibility Directive 2004 / 108EC, 91 / 263 / EEC, 92 / 31 / EEC
- The General Safety of Machinery and food processing Standards applicable
- Materials and Articles intended to come into contact with food - Regulation (EC) No. 1935 / 2004
- Good manufacturing practice for Materials intended to come into contact with food - Regulation (EC) No. 2023 / 2006

Signed	
G.A.Williams – Quality Manager	

Date	

Machine FG Code.		**Machine Serial No.**	

A technical construction file for this machine is retained at the following address:

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

MONO EQUIPMENT is a business name of **AFE GROUP Ltd**
Registered in England No.3872673 VAT registration No.923428136

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

Safety during emptying and cleaning of fryers

HSE information sheet

Catering Information Sheet No 17

Introduction

This information sheet was produced by the Hospitality and Catering Industry Liaison Forum, which has members from trade and professional associations, unions and enforcement authorities. Members' associations are free to reproduce and distribute this guidance to catering establishments. The guidance is issued by the Health and Safety Executive.

This sheet provides advice to employers in the catering industry on safe emptying and cleaning of fryers. It gives guidance on manual emptying and cleaning and guidance on fryers with automated or semi-automated filtering (using enclosed portable filtering units).

Automated and semi-automated filtering processes avoid operators coming into contact with hot oil, significantly reducing the risks. This enables filtering to take place safely even while the oil is at normal cooking temperature. Most automated or semi-automated systems require an oil temperature of at least 100 °C for the filtering process to work effectively.

You should only carry out manual emptying and filtering of fryers when the oil has been cooled to 40 °C or below.

Key messages

- Burns from hot oil can be very serious.
- Oil takes only 6-7 minutes to heat up but can take 6-7 hours to cool down again.

What the law says

The Health and Safety at Work etc Act 1974 places a duty on employers to ensure, so far as is reasonably practicable, the health, safety and welfare of their employees. This duty extends, amongst other things, to providing and maintaining systems of work which are, so far as is reasonably practicable, safe and without risks to health. The Act also places a duty on employees to take reasonable care of their own and others' health and safety.

Whichever type of fryer is used, it is essential that:

- you make sure the fryer is well maintained and any attachments used are suitable for their purpose, as recommended by the manufacturer;
- you have a procedure for reporting faults;
- you clean up oil spillages immediately, and ensure floor areas around equipment are completely clean and dry to avoid slip risks;
- you train staff in safe procedures for emptying and cleaning;
- you provide staff with suitable protective equipment, where required by the risk assessment, eg eye protection, heat-resistant gloves, aprons.

When to empty and clean

Many catering establishments are closed overnight. For fire safety and economy, switch off fat fryers when unattended. Carry out oil filtering and cleaning as a **first task of the day** rather than as part of the closing-down procedure.

Hazards

The hazards in emptying and cleaning fryers include:

- fire;
- burns from hot oil;
- contact with hot surfaces;
- fumes from boiling cleaning chemicals;
- boiling chemicals overflowing;
- eye injuries from splashes;
- slips from oil spillage;
- strains and sprains from lifting and moving containers of oil.

If the catering service runs for 24 hours and the appliance is required continuously, there are two safe options:

- use more than one fryer and clean them in rotation;
- use an automated filtering system or a semi-automated portable filtering unit that removes the hot oil directly from the fryer, filters the oil and holds it safely.

Automated and semi-automated filtering

Automated filtering systems

An automated system consists of an inbuilt oil filtration system. The oil is drained into an enclosed reservoir and an electric pump circulates it through a filter system and internal pipework back into the fryer. Since this process is enclosed within the equipment, the operator does not come into contact with hot oil, greatly reducing any risk.

Portable oil filtering units (semi-automated)

These units are not part of the fryer, but sit alongside it. The operator attaches an extension pipe to the fryer and the hot oil is drained into an **enclosed** container within the portable unit. The oil is then filtered and returned to the fryer.

If you have a fryer with automated oil draining system or a portable oil filtering unit, refer to the manufacturer's guidelines for draining/filtering temperatures and safe operational requirements.

These, together with your own risk assessment, will determine the need for suitable protective equipment. If there is still a risk from contact with hot surfaces or oil splashing, you may need to provide staff with eye protection, a protective apron and/or heat-resistant gloves/gauntlets.

Manual oil filtering

This involves the operator draining the oil from the fryer, through a filter, into a suitable metal holding or heat-resistant, hard, plastic container and manually lifting it back into the fryer (fryer oil is often supplied in hard, plastic, rigid containers). Serious accidents have occurred where oil that has not sufficiently cooled has been drained back into an empty plastic container and the base of the container has given way.

To drain oil safely and in the correct sequence, follow these guidelines:

- Turn off the appliance and the power supply at the wall socket for electric appliances, and the on/off control for gas appliances.
- Allow the oil to cool, ideally for at least six hours, and check the temperature, using a suitable probe thermometer before draining. Do not drain if the temperature is above 40 °C.
- Follow the manufacturer's instructions and use the correct equipment (eg a detachable spout for the type of fryer you are emptying), making sure to bring any equipment you need to the fryer before you start.
- Depending on the type of fryer, drain the oil by drain valve, removable spout, lifting container or by tilting.
- If the oil is too cold to drain easily, reheat it briefly and agitate with the fryer basket (for no more than one minute). Switch the appliance off and check the temperature again before emptying.
- Using a filter, run the oil into a suitable metal holding or heat-resistant, hard, plastic container. These containers will generally need carrying handles and a cover or lid. Before moving, make sure that the lid or cover is secure.
- Make sure the container is empty and big enough to take the volume of oil being drained at any time.
- When you are draining large volumes of oil, it is safer to drain off in smaller amounts. This avoids overfilling the container and will reduce the chance of spillages when you move it. Smaller amounts will also be easier to carry.
- Place the container in a safe place where it cannot be contaminated with chemicals, water or foreign bodies. Place the container on top of a drip tray to avoid any floor contamination.
- Do not dispose of waste oil down the drain – disposal must comply with environmental legislation.
- Clean up any spillages **immediately**.
- Make sure floor areas around equipment are completely clean and dry to avoid slip risks (see also *Preventing slips and trips in kitchens and food service*).

Other precautions

Make sure the design of the drain-off tap prevents it being turned on accidentally:

- mark clearly on it that the tap should not be touched;
- place warning signs near the tap;
- if possible, remove the tap handle when the fryer is switched on.

Cleaning procedure

This section applies to all types of fryers:

- Turn off the appliance, and the power supply at the wall socket for electric appliances and the on/off control for gas appliances.
- Wear suitable protective equipment, including eye protection (if appropriate).
- Check that other activities will not be put at risk by the cleaning activity.
- Check that the oil has been thoroughly drained and that there are no spillages that may cause slipping.
- Remove loose debris from the internal surfaces.
- Thoroughly wash all internal and external surfaces with suitable cleaning chemicals and check for any leaks.

- For stubborn residues, fill the fryer with your recommended cleaning agents and leave or simmer according to instructions.
- Do not leave the fryer unattended or allow it to boil as this may cause it to cascade liquid onto the floor, causing additional scalding and slipping hazards.
- Drain the appliance and rinse thoroughly with plenty of water.
- Dry all internal surfaces and make sure there is no water left in the fryer.
- Check the drain valve is closed and working properly, then refill and switch on as required.
- When refilling the fryer with oil, the oil container may be too large or heavy for one member of staff. Where possible, use smaller containers.
- Do not overfill the fryer. Follow the manufacturer's guidelines.
- Clean up any spillages **immediately**.
- Make sure floor areas around the equipment are completely clean and dry to avoid slip risks.

Training

This section applies to all types of fryers:

- Make sure only staff trained in the safe use of the cleaning chemicals and cleaning procedures for the fryer do this task.
- Train staff in reporting procedures, if they find the equipment is faulty, or if they have experienced any practical difficulties with cleaning the fryer in their specific work environment.
- Make staff aware of the reasons for using suitable protective equipment, ie gloves, eye protection.
- Complete risk assessments for hazardous chemicals and make staff aware of the correct procedures for using cleaning chemicals.
- Make safety data sheets available to staff.
- A short, written procedure can act as a reminder to staff for both draining and cleaning operations.

Further information

Preventing slips annd trips in kitchens and food service Catering Information Sheet CASI6(rev2) HSE Books 2012 www.hse.gov.uk/pubns/cais6.htm

HSE has produced a suite of Catering Information Sheets and other guidance for the catering and hospitality industry. These are available on the HSE website at www.hse.gov.uk/catering/index.htm.

There is also helpful advice in *Health and safety made simple: The basics for your business* www.hse.gov.uk/simple-health-safety/index.htm.

For more information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This document is available at: www.hse.gov.uk/pubns/cais17.htm.

Failure to adhere to the cleaning and maintenance instructions detailed in this booklet could affect the warranty of this machine.

CONTENTS

1.0 INTRODUCTION

The **MONO** fryer makes the doughnuts, you make the profits - it's as easy as that. Just set the controls, load a tray and the **MONO** Automatic takes over. Up to 900 doughnuts can be produced every hour with the minimum of supervision.
The **MONO** Fryer saves on cooking oil and electricity, as only the oil in the vicinity of the frying basket is heated to full working temperature, and is thermostatically controlled.

2.0 DIMENSIONS

Height:	Immersion frying unit in raised position	1232mm (48½").
	Float frying unit in raised position	1232mm (48½").
	Float frying unit with manual turnover device in raised position	1550mm (61").
Width:	Left hand fitted draining board	1892mm (74½).
	Right hand fitted draining board	1772mm (67¾").
	Two draining boards fitted	2521mm (99").
Depth:		762mm (30").

3.0 SPECIFICATIONS

Power:	12.37 kW; three phase
Output:	Float frying - up to 675 doughnuts per hour. Immersion frying - up to 900 doughnuts per hour.
Capacity:	45 doughnuts per tray.
Frying tank capacity:	77.25 litres (17 gallons)
Frying trays:	762mm x 457mm (30" x 18").
Weight:	160kg (353lb).
Noise level:	Less than 85dB.

4.0 SAFETY

Before work is commenced.

In the interests of safety and efficient operation of this fryer, it is essential that this manual should be made available to all personnel who may be required to operate it,

The following points should be closely observed and rigorously pursued at all times

1 Never use the fryer in a faulty condition and always report any damage.

2 No-one under the age of 16 may operate this machine.

3 No-one under the age of 18 may clean this machine under any circumstances.

4 Only trained personnel may remove any part from this fryer that requires a tool to do so.

5 Always ensure hands are dry before touching any electrical appliance (including cable, switch and plug).

6 All operatives must be fully trained.

7 People undergoing training on the machine must be under direct supervision.

8 Do not operate the machine with any panels removed.

9 All guards must be fixed in place with bolts or screws unless protected by a safety switch.

10 No loose clothing or jewellery to be worn while operating the fryer.

11 Switch off power at the mains isolator when fryer is not in use and before carrying out any cleaning or maintenance.

ALL CLEANING AND MAINTENANCE OPERATIONS MUST BE MADE WITH FRYER DISCONNECTED FROM THE POWER SUPPLY

12 The Bakery Manager or the Bakery Supervisor must carry out daily safety checks on the fryer.

5.0 INSTALLATION

1 It is recommended that the Automatic Doughnut Fryer should be sited away from any main thoroughfare and that the surrounding floor area should be covered with a proprietary brand of non-slip surfacing.

2 Ventilation should be provided with an extraction canopy to ensure that convected heat and cooking smells are removed from the building. The canopy should extend a minimum of 300mm (12") beyond each edge of the fryer and have its lowest point between 1980mm (78") and 2740mm (108") above the floor. The extraction canopy should be fitted with a grease trap.

4 Fittings are provided at both ends of the fryer for the attachment of draining boards

5 The fryer should be connected to a 20 Amp, 3 phase plus neutral isolator at 20amp with a BS 88 fuse.

VERY IMPORTANT INSTRUCTION. DAMAGE COULD OCCUR IF NOT FOLLOWED

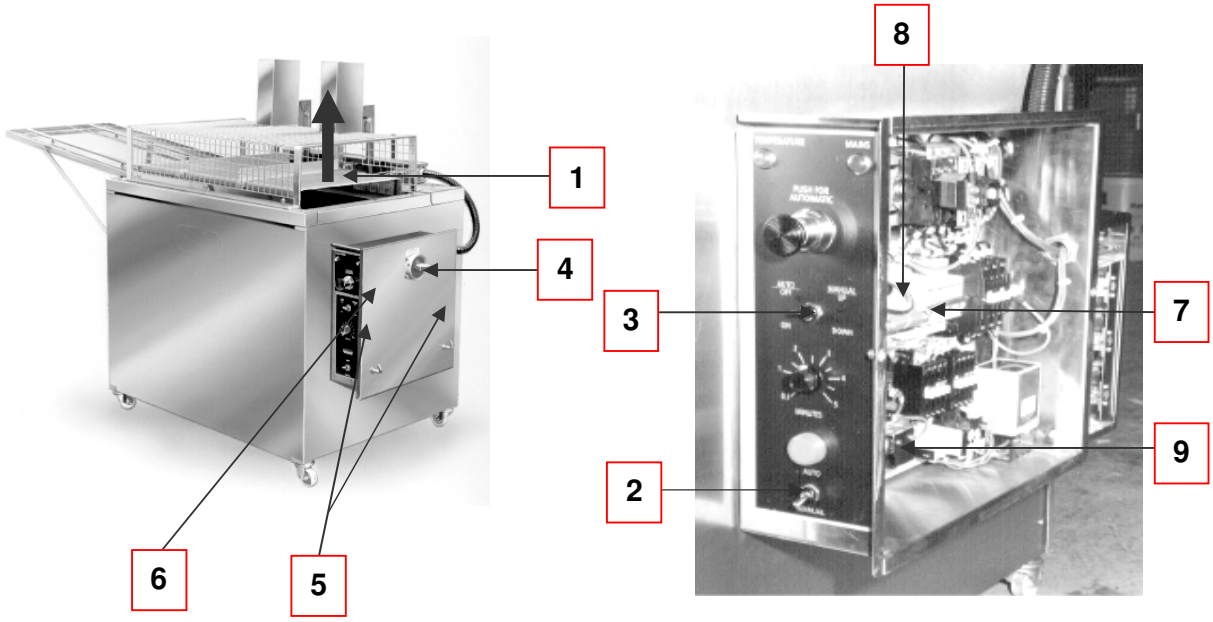
6 Automatic doughnut fryers are despatched with the carrier (1) in the mid way position to avoid damage during the following check procedure:

7 Set toggle switch (**2**) to '**AUTO**' position.

8 Set toggle switch (**3**) to '**UP** / **OFF'** position.

9 Turn main control switch (**4**) to '**ON**' (vertical position).

10 Briefly switch toggle switch (**3**) to '**ON** / **DOWN'** position, and then back again. If the carrier (**1**) moves upwards, motor rotation is correct. If the carrier moves downward, transpose any two of the three-phase carrying wires at the mains isolator feeding the fryer.



11 Turn main isolator switch (**4**) to '**OFF**' (horizontal position).

12 Remove two screws (**5**).

13 Remove cover (**6**).

14 Reset heater contactor circuit breaker (**7**) upwards to the '**ON**' position.

15 Whilst cover (**6**) is removed, check that the two thermostats are set correctly as below.

FRYING THERMOSTAT (8) SHOULD BE SET FOR 180º C.

SAFETY OVER-RIDE THERMOSTAT (9) MUST BE SET AT 210º C MAXIMUM.

16 Replace cover and fixing screws.

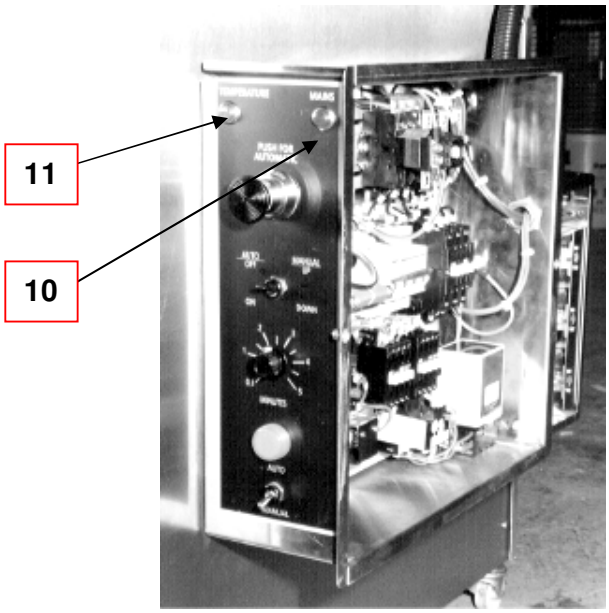
17 Fill tank with cooking oil/fat to a level no higher than 75mm (3") from the top of the frying tank and no lower than 85mm (3 3/8"). There are "MAX and "MIN" oil level indications located inside each end of the frying tank.

NOTE: To avoid damage to the heating element when filling the machine with solid fat, break up fat and melt gradually by replacing side panel and cycling machine on and off for 15 seconds periods, until the elements are completely immersed.

18 Switch on main isolator switch (**4**)

Red mains indicator lamp (**10**) and amber temperature indicator lamp (**11**) will illuminate, indicating that oil/fat is heating.

Once working temperature is reached, amber lamp (**11**) will extinguish.



6.0 ISOLATION

To stop the Doughnut Fryer in an emergency switch off at the mains wall isolator.

7.0 CLEANING INSTRUCTIONS
AND DRAINING COOKING OIL/MOLTEN FAT

WARNING:

HOT OIL IS DANGEROUS. ALLOW OIL TO COOL BEFORE ATTEMPTING TO CLEAN THIS MACHINE.

ISOLATE FRYER FROM MAINS SUPPLY BEFORE CLEANING

1 Wipe down exterior metalwork with a damp cloth.

2 While fat is still liquid (not hot), heating unit may be lifted out of the tank. This can be cleaned as a separate item. Do not immerse in water.

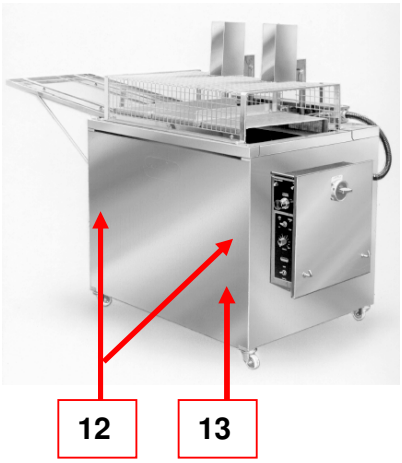
3 Drain the tank into suitable containers as follows:

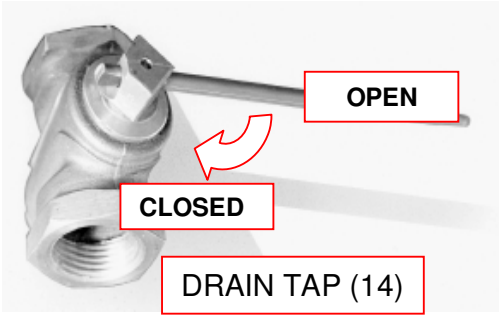
Remove two screws (**12**).

Remove front cover (**13**)

Place a collection container under the drain valve **(14**).

Open the drain valve (**14**) by turning in direction indicated and drain out contents of frying tank. Do not leave the tank draining and walk away, the tank will hold more than the container, which will need to be changed at regular intervals. Use the tap to turn off the oil flow between each container change.



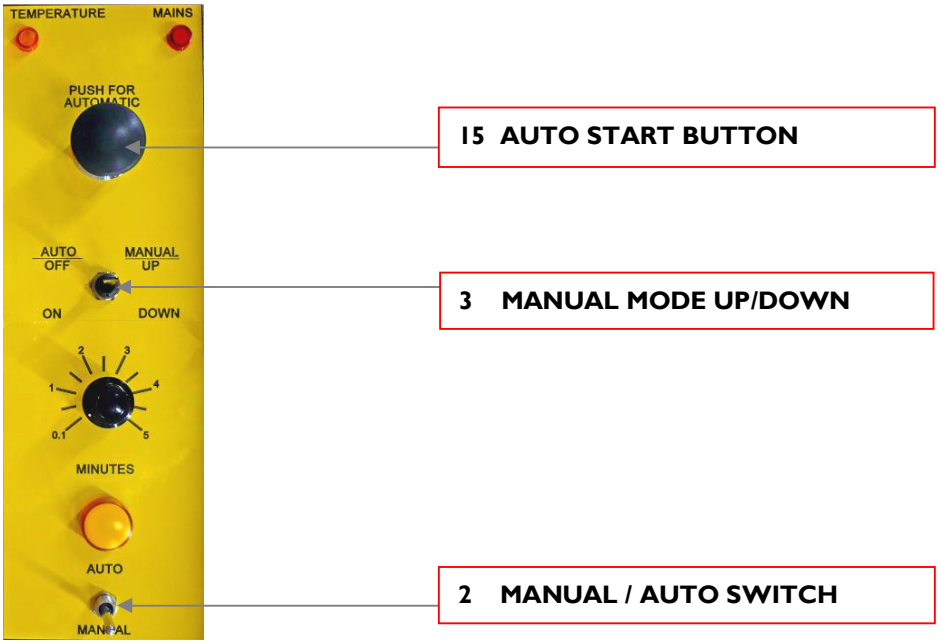


8.0 OPERATING INSTRUCTIONS

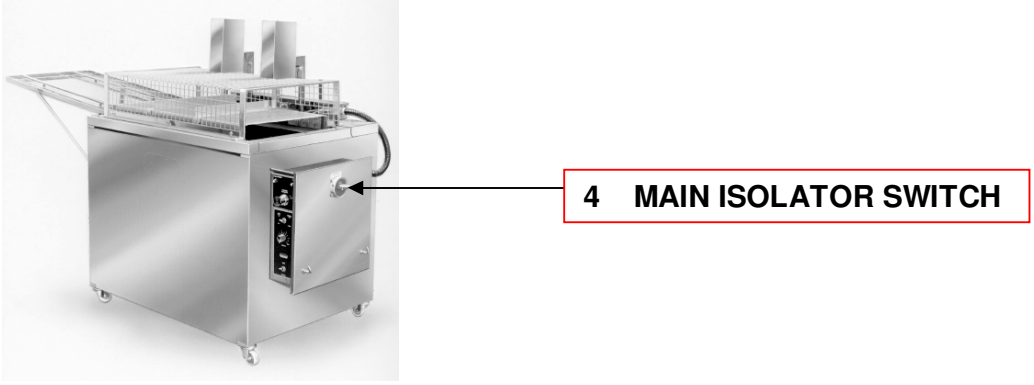
MACHINE CONTROLS

1 When toggle switch (**2**) is in the '**AUTO**' position and toggle switch (**3**) is set to '**ON**', depressing control button (**15**) starts the frying sequence, governed by timer (**16**).

2 When toggle switch (**2**) is in the '**MANUAL**' position, toggle switch (**3**) controls the up and down movement of the carrier.



3 A mains isolator (**4**) is provided, which must be switched to '**OFF**', (horizontal position) before cover (**6**) can be removed



AUTOMATIC MODE

1 Turn main isolator switch (**4**) vertically to '**ON**' position.

2 Set toggle switch (**2**) to '**AUTO**'.

3 Set toggle switch (**3**) to '**ON**'.

4 Set timer (**16**) to frying time required.

5 Wait for oil to heat up.
When indicator lamp (**11**) extinguishes, frying temperature has been reached.

6 Slide tray into basket.

7 Press control button (**15**) to **start** frying sequence.

NOTE:
IN AN EMERGENCY, TOGGLE SWITCH (3) MAY BE SWITCHED TO 'OFF' TO HALT CARRIER TRAVEL IRRESPECTIVE OF POSITION.

8 When tray returns to the top slide off tray on to drainer.

4 MAIN ISOLATOR SWITCH

15 AUTO START BUTTON

3 AUTO MODE ON/OFF

16 FRY TIME SETTING

2 MANUAL / AUTO SWITCH

MANUAL MODE

1 Turn main control switch (**4**) vertically to '**ON**' position.

2 Wait for oil to heat up.
When indicator lamp (**11**) extinguishes, frying temperature has been reached.

3 Slide tray into basket.

4 Set toggle switch (**3**) to '**down**' (carrier will lower)

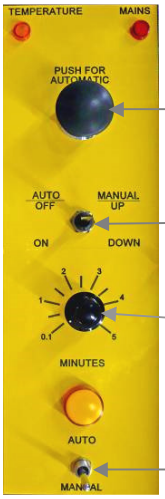
5 When required fry time has been reached, move toggle switch (**3**) to '**up**' and carrier will rise. Slide tray on to drainer.

NOTE:
IN AN EMERGENCY, TOGGLE SWITCH (3) MAY BE SWITCHED TO 'OFF' TO HALT CARRIER TRAVEL IRRESPECTIVE OF POSITION.

7 When tray returns to the top slide off tray on to drainer.

4 MAIN ISOLATOR SWITCH

11 TEMPERATURE LIGHT



15 AUTO START BUTTON

3 MANUAL MODE UP/DOWN

16 FRY TIME SETTING

2 MANUAL / AUTO SWITCH

TO CONVERT THE MACHINE FOR FLOAT FRYING:

1 Switch off mains isolator. (**4**)

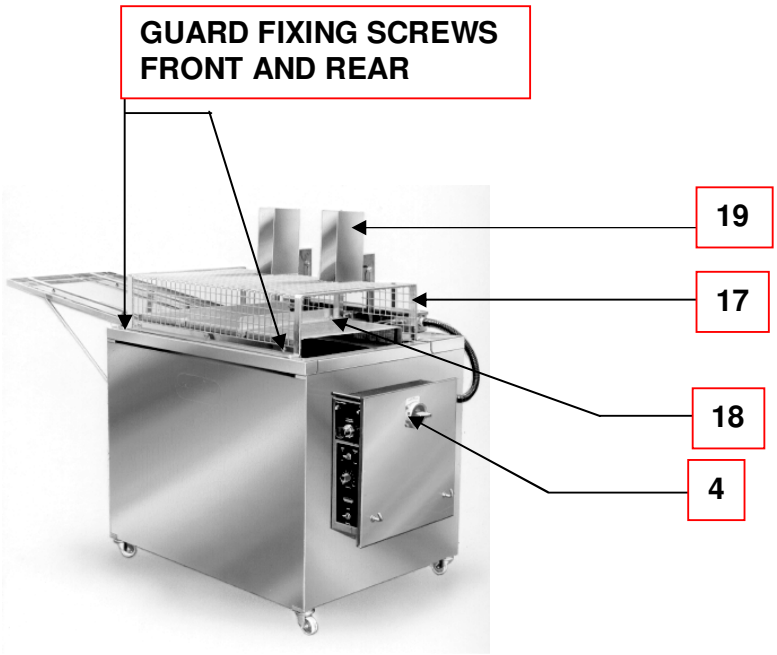
2 Remove guard screws.

3 Remove guard (**17**).

4 Lift off carrier assembly (**18**) from pillars (**19**).

5 Replace with float frying carrier assembly.

6 Replace guard and screws before attempting to use the machine.



9.0 MAINTENANCE

The fryer must not be used if bare cables are visible.

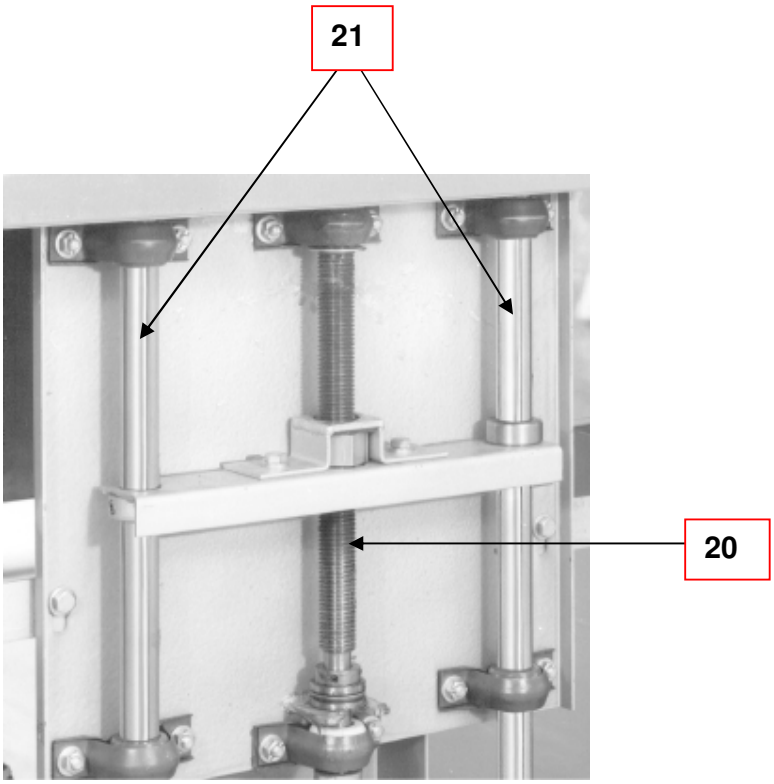
Follow cleaning instructions.

Twice yearly

1 Isolate machine from mains supply.

2 Remove back sheet and grease drive shaft (**20**) and guide shafts (**21**) with high temperature grease.

3 Replace back sheet before starting machine.



VIEW INSIDE REAR OF MACHINE WITH BACK SHEET REMOVED

10.0 SERVICE AND SPARES

If a fault arises, please do not hesitate to contact the
Customer Service Department, quoting the **machine serial number**
on the silver information plate of the machine and on the front cover of this manual

SPARES and OVERSEAS SUPPORT:

MONO
Queensway
Swansea West Industrial Estate
Swansea.
SA5 4EB
UK

email:spares@monoequip.com
Spares Tel. +44(0)1792 564039

Web site:www.monoequip.com

Main Tel. 01792 561234
Fax. 01792 561016

11.0 SPARES INFORMATION

IF IN ANY DOUBT - ASK	PT-REf	QUANTITY	DESCRIPTION	PART No.	LABELLED
	PT-1	1	MAIN ISOLATOR SWITCH	B807-07-007	ON/OFF
	PT-2	1	HEATER CONTACTOR	B801-08-034	
	PT-3 /4	1	UP/DOWN CONTACTOR	B801-08-033	
		1	ELECTRICAL/MECHANICAL INTERLOCK FOR UP DOWN CONTACTOR	B801-18-005	
	PT-5	1	MAIN MOTOR OVERLOAD	B801-01-043	
	PT-6	1	MAINS ON INDICATOR LIGHT	B842-43-001	MAINS
	PT-7	1	TEMPERATURE INDICATOR LIGHT	B842-43-002	TEMPERATURE
	PT-8	1	HEATER CONTACTOR C/BREAKER	B872-22-001	
UP TO Sept 2003	PT-10	1	AUTOMATIC PUSH BUTTON	B808-12-001	
	PT-10a-1	1	AUTOMATIC PUSH BUTTON	B801-12-039	AUTOMATIC
	PT-10b-1	1	CONTACT BLOCK	B801-14-002	
	PT-10c-1	1	ADAPTOR KIT	B801-18-003	
	PT-11	1	UP LIMIT SWITCH BODY	B801-11-013	
		1	UP LIMIT SWITCH ACTUATOR	B801-45-005	
	PT-12	1	DOWN LIMIT SWITCH BODY	B801-11-013	
		1	DOWN LIMIT SWITCH ACTUATOR	B801-45-006	
	PT-13	1	IMMERSION TIMER	B819-34-004	
	PT-14	1	MAIN MOTOR CIRCUIT BREAKER	B872-22-052	
UP TO Sept 2003	PT-15	3	HEATER CIRCUIT FUSE	B823-39-001	
	PT-15	3	HEATER CIRCUIT MCB	B872-22-008	
	PT-16	1	COOKING TEMP THERMOSTAT	B873-30-002	
	PT-17	1	EXCESS TEMP THERMOSTAT	B873-30-001	
	PT-18	1	AUTO/MANUAL TOGGLE SWITCH	B816-07-001	AUTO/MANUAL
	PT-19	1	OFF/UP DOWN/ON TOGGLE SWITCH	B816-07-006	OFF/UP : ON/DOWN
	PT-20	1	IMMERSION TIME POTENTIOMETER	B842-59-007	0-5 MINS
	PT-21	3	IMMERSION ELEMENTS **240V**	B906-04-001	
		3	IMMERSION ELEMENTS **220V**	B906-04-005	
	PT-22	1	OVERHEAT BUZZER	B883-92-001	
	PT-23	1	AMBER LENS } OVERHEAT LIGHT	{ B801-44-007 }	OVERHEAT
		1	LENS BODY }	{ B801-43-012 }	
	PT-27	1	MAIN UP/DOWN MOTOR	B859-74-033	

REV	SIG	DATE	REVISION	ECN NO.
D	RAC	30-01-12 05-06-17	motor B859-74-033 was 009	DN-001-12
C	JC	25-06-07	CONTACTORS & O/LOADS B801 WERE B859	3011
B	RAC	24-09-03	SEE ECN's 1948/1949	
A	PB	1-9-93	ITEMS 11 & 12 WERE B809-11-001	4441

MONO EQUIPMENT
QUEENSWAY
SWANSEA WEST IND PARK
SWANSEA.
SA5 4EB.
TEL: (01792) 561234
FAX: (01792) 561016

TITLE: AUTOMATIC DOUGHNUT COOKER COMPONENTS PARTS LIST

ELECTRICAL SPECIFICATIONS:- 380-415V

DRAWN: REDRAWN JC

ELECTRICALLY APPROVED BY:-

DATE: 7-9-89 6-10-98

DRAWING NO. M029E25D01100 SHT 2 of 2

REV: D

REDRAWN ON CAD 10-98

IF IN ANY DOUBT - ASK

	PT-REf	QUANTITY	DESCRIPTION	PART No.	LABELLED
	PT-1	1	MAIN ISOLATOR SWITCH	B807-07-007	ON/OFF
	PT-2	1	HEATER CONTACTOR	B801-08-034	
	PT-3	1	DOWN CONTACTOR	B801-08-033	
	PT-4	1	UP CONTACTOR	B801-08-033	
		1	ELECTRICAL/MECHANICAL INTERLOCK FOR UP DOWN CONTACTOR	B801-18-005	
	PT-5	1	MAIN MOTOR OVERLOAD	B801-01-043	
	PT-6	1	MAINS ON INDICATOR LIGHT	B842-43-001	MAINS
	PT-7	1	TEMPERATURE INDICATOR LIGHT	B842-43-002	TEMPERATURE
	PT-8	1	HEATER CONTACTOR C/BREAKER	B872-22-001	
UP TO Sept 2003	PT-10	1	AUTOMATIC PUSH BUTTON	B808-12-001	
	PT-10a-1	1	AUTOMATIC PUSH BUTTON	B801-12-039	
	PT-10b-1	1	CONTACT BLOCK	B801-14-002	
	PT-10c-1	1	ADAPTOR KIT	B801-18-003	AUTOMATIC
	PT-11	1	UP LIMIT SWITCH	B801-11-013	SWITCH
		1	UP LIMIT SWITCH	B801-45-005	OPERATING HEAD
	PT-12	1	DOWN LIMIT SWITCH	B801-11-013	SWITCH
		1	DOWN LIMIT SWITCH	B801-45-006	OPERATING HEAD
	PT-13	1	IMMERSION TIMER	B819-34-004	
	PT-14	1	MAIN MOTOR CIRCUIT BREAKER	B872-22-052	
UP TO Sept 2003	PT-15	3	HEATER CIRCUIT FUSE	B823-39-001	
	PT-15	3	HEATER CIRCUIT MCB	B872-22-008	
	PT-16	1	COOKING TEMP THERMOSTAT	B873-30-002	
	PT-17	1	EXCESS TEMP THERMOSTAT	B873-30-001	
	PT-18	1	AUTO/MANUAL TOGGLE SWITCH	B816-07-001	AUTO/MANUAL
	PT-19	1	OFF/UP DOWN/ON TOGGLE SWITCH	B816-07-006	OFF/UP ; ON/DOWN
	PT-20	1	IMMERSION TIME POTENTIOMETER	B842-59-007	0-5 MINS
	PT-21	3	IMMERSION ELEMENTS 240V	B906-04-001	
		3	IMMERSION ELEMENTS 220V	B906-04-005	
	PT-22	1	OVERHEAT BUZZER	B883-92-001	
	PT-23	1	AMBER LENS	B801-44-007	OVERHEAT
		1	LENS BODY (OVERHEAT LIGHT)	B801-43-012	
		1	240 VOLT NEON	B842-94-001	
	PT-24	1	"KILLER" THERMOSTAT	B873-30-005	
	PT-25	1	"KILLER" THERMOSTAT	B873-30-005	
	PT-26	1	"KILLER" THERMOSTAT	B873-30-005	
	PT-27	1	MAIN UP/DOWN MOTOR	B859-74-009	
	PT-28	1	3 POLE + N + E 32-45 AMP PLUG	B814-25-012	

REV	SIG	DATE	REVISION	ECN NO.
D	JC	25-06-07	CONTACTORS & O/LOADS B801 WERE B859	3011
C	RAC	24-09-03	SEE ECN's 1948/1949	
B	JC	4-2-99	MARTIN LUNEL PLUG FITTED	09/12
A	PB	1-9-93	ITEMS 11 & 12 WERE B809-11-001	4441

MONO EQUIPMENT LIMITED
SWANSEA IND EST.
FFORESTFACH,
SWANSEA.
SA5 4EB.
TEL: (01792) 561234
FAX: (01792) 561016
Email: 100432.505@compuserve.com

ELECTRICAL SPECIFICATIONS:-
380-415V

TITLE:
AUTOMATIC DOUGHNUT COOKER WITH "KILLER THERMOSTATS" COMPONENTS PARTS LIST

DRAWN: REDRAWN JC
ELECTRICALLY APPROVED BY:-
DATE: 24-8-89 6-10-98
DRAWING NO. SHT 2 of 2 M029E25-02800
REV: D

IF IN ANY DOUBT - ASK

	PT-REf	QUANTITY	DESCRIPTION	PART No.	LABELLED
	PT-1	1	MAIN ISOLATOR SWITCH	B807-07-007	ON/OFF
	PT-2	1	HEATER CONTACTOR	B801-08-035	
	PT-3/4	1	UP/DOWN CONTACTOR	B801-08-033	
		1	ELECTRICAL/MECHANICAL INTERLOCK FOR UP DOWN CONTACTOR	B801-18-005	
	PT-5	1	MAIN MOTOR OVERLOAD	B801-01-043	
	PT-6	1	MAINS ON INDICATOR LIGHT	B842-43-001	MAINS
	PT-7	1	TEMPERATURE INDICATOR LIGHT	B842-43-002	TEMPERATURE
	PT-8	1	HEATER CONTACTOR C/BREAKER	B872-22-001	
UP TO Sept 2003	PT-10	1	AUTOMATIC PUSH BUTTON	B808-12-001	
	PT-10a-1	1	AUTOMATIC PUSH BUTTON	B801-12-039	AUTOMATIC
	PT-10b-1	1	CONTACT BLOCK	B801-14-002	
	PT-10c-1	1	ADAPTOR KIT	B801-18-003	
	PT-11	1	UP LIMIT SWITCH BODY	B801-11-013	
		1	UP LIMIT SWITCH ACTUATOR	B801-45-005	
	PT-12	1	DOWN LIMIT SWITCH BODY	B801-11-013	
		1	DOWN LIMIT SWITCH ACTUATOR	B801-45-006	
	PT-13	1	IMMERSION TIMER	B819-34-004	
	PT-14	1	MAIN MOTOR CIRCUIT BREAKER	B872-22-052	
	PT-15	3	HEATER CIRCUIT M.C.B.	B872-22-070	
	PT-16	1	COOKING TEMP THERMOSTAT	B873-30-002	
	PT-17	1	EXCESS TEMP THERMOSTAT	B873-30-001	
	PT-18	1	AUTO/MANUAL TOGGLE SWITCH	B816-07-001	AUTO/MANUAL
	PT-19	1	OFF/UP DOWN/ON TOGGLE SWITCH	B816-07-006	OFF/UP ; ON/DOWN
	PT-20	1	IMMERSION TIME POTENTIOMETER	B842-59-007	0-5 MINS
	PT-21	6	IMMERSION ELEMENTS 240V	B906-04-001	
		6	IMMERSION ELEMENTS 220V	B906-04-005	
	PT-22	1	OVERHEAT BUZZER	B883-92-001	
	PT-23	1	AMBER LENS } OVERHEAT LIGHT	B801-44-007 }	OVERHEAT
		1	LENS BODY }	B801-43-012 }	
	PT-27	1	MAIN UP/DOWN MOTOR	B859-74-033	

REV	SIG	DATE	REVISION	ECN NO.
C	RAC	30-01-12 05-06-17	Motor B859-74-033 was 009	DN-001-12
B	JC	25-06-07	CONTACTORS & O/LOADS B801 WERE B859	3011
A	RAC	25-09-03	see ecn 1948	

MONO [redacted]
QUEENSWAY
SWANSEA WEST IND PARK
SWANSEA.
SA5 4EB.
TEL: (01792) 561234
FAX: (01792) 561016

TITLE: TWIN ELEMENT AUTOMATIC DOUGHNUT COOKER COMPONENTS PARTS LIST

ELECTRICAL SPECIFICATIONS:- 380-415V

DRAWN: REDRAWN JC

ELECTRICALLY APPROVED BY:-

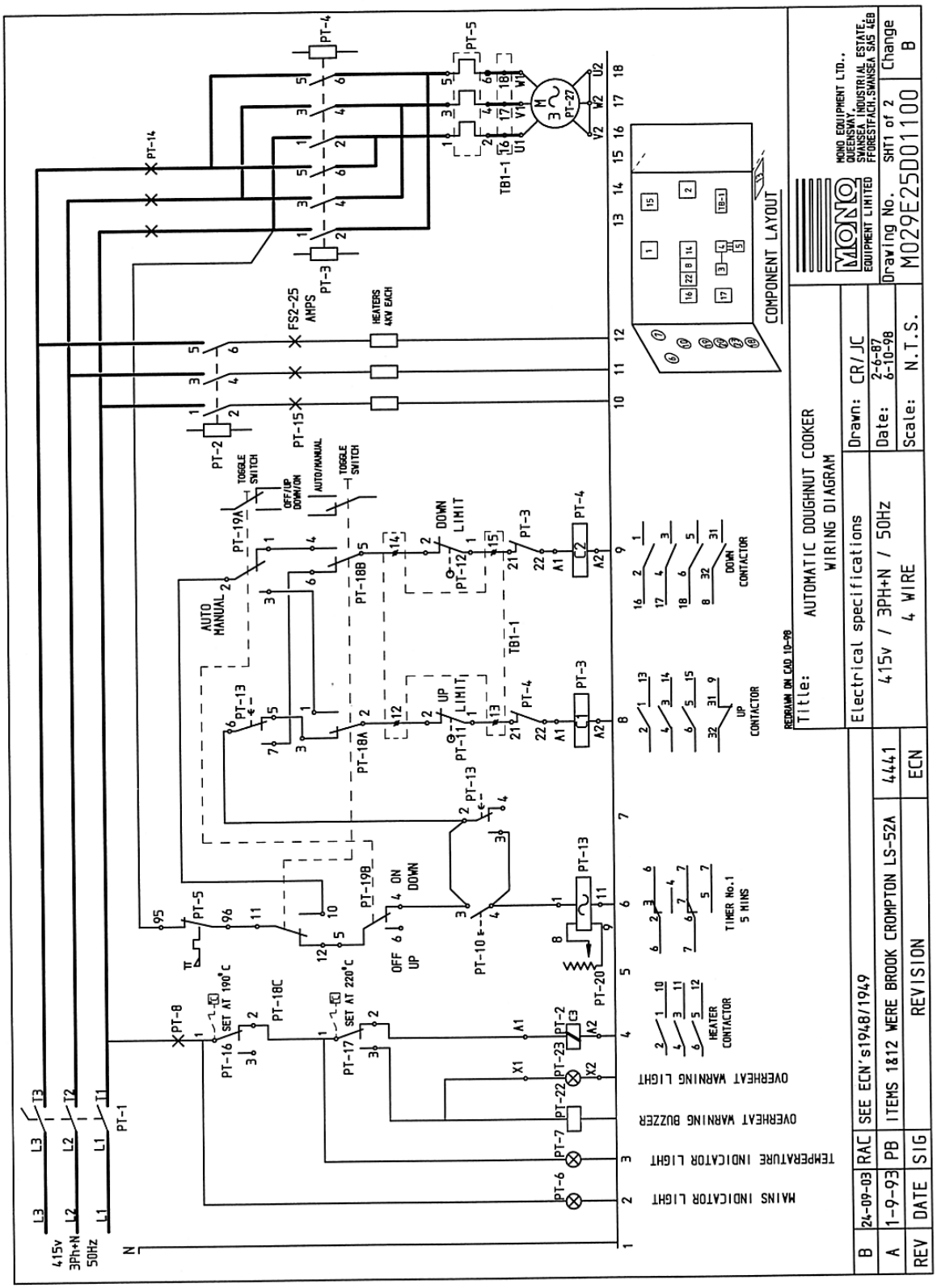
DATE: 1-3-94 8-12-98

DRAWING NO. M049E25-02000 SHT 2 of 2

REV: C

REDRAWN ON CAD 12-98

12.0 ELECTRICS


415v 3Ph+N 50Hz
L3 L2 L1 N
PT-1
PT-14
PT-4
PT-5
PT-3
PT-2
PT-15
FS2-25 AMPS
HEATERS 4KW EACH
TB1-1
PT-27
COMPONENT LAYOUT
PT-19A
TOGGLE SWITCH
OFF/UP DOWN/ON
AUTO/MANUAL
PT-18B
AUTO MANUAL
PT-12
DOWN LIMIT
PT-3
DOWN CONTACTOR
PT-13
PT-18A
PT-11
UP LIMIT
PT-4
PT-3
UP CONTACTOR
PT-19B
ON DOWN
OFF 6 UP
PT-10
PT-20
TIMER No.1 5 MINS
PT-8
PT-16
SET AT 190°C
PT-18C
PT-17
SET AT 220°C
PT-2
HEATER CONTACTOR
PT-23
PT-22
PT-7
PT-6
OVERHEAT WARNING LIGHT
OVERHEAT WARNING BUZZER
TEMPERATURE INDICATOR LIGHT
MAINS INDICATOR LIGHT
REDRAWN ON CAD 10-98
Title: AUTOMATIC DOUGHNUT COOKER
WIRING DIAGRAM
Electrical specifications
415v / 3PH+N / 50Hz
4 WIRE
Drawn: CR/JC
Date: 2-6-87 6-10-98
Scale: N.T.S.
MONO EQUIPMENT LTD.. QUEENSWAY INDUSTRIAL ESTATE, FFORESTFACH, SWANSEA, SA5 4EB
Drawing No. M029E25D01100
SHT1 of 2
Change B
B 24-09-03 RAC SEE ECN's1948/1949
A 1-9-93 PB ITEMS 1&12 WERE BROOK CROMPTON LS-52A 4441
REV DATE SIG REVISION ECN

IF IN ANY DOUBT - ASK

	PT-REf	QUANTITY	DESCRIPTION	PART No.	LABELLED
	PT-1	1	MAIN ISOLATOR SWITCH	B807-07-007	ON/OFF
	PT-2	1	HEATER CONTACTOR	B801-08-034	
	PT-3 /4	1	UP/DOWN CONTACTOR	B801-08-033	
		1	ELECTRICAL/MECHANICAL INTERLOCK FOR UP DOWN CONTACTOR	B801-18-005	
	PT-5	1	MAIN MOTOR OVERLOAD	B801-01-043	
	PT-6	1	MAINS ON INDICATOR LIGHT	B842-43-001	MAINS
	PT-7	1	TEMPERATURE INDICATOR LIGHT	B842-43-002	TEMPERATURE
	PT-8	1	HEATER CONTACTOR C/BREAKER	B872-22-001	
UP TO Sept 2003	PT-10	1	AUTOMATIC PUSH BUTTON	B808-12-001	
	PT-10a-1	1	AUTOMATIC PUSH BUTTON	B801-12-039	AUTOMATIC
	PT-10b-1	1	CONTACT BLOCK	B801-14-002	
	PT-10c-1	1	ADAPTOR KIT	B801-18-003	
	PT-11	1	UP LIMIT SWITCH BODY	B801-11-013	
		1	UP LIMIT SWITCH ACTUATOR	B801-45-005	
	PT-12	1	DOWN LIMIT SWITCH BODY	B801-11-013	
		1	DOWN LIMIT SWITCH ACTUATOR	B801-45-006	
	PT-13	1	IMMERSION TIMER	B819-34-004	
	PT-14	1	MAIN MOTOR CIRCUIT BREAKER	B872-22-052	
UP TO Sept 2003	PT-15	3	HEATER CIRCUIT FUSE	B823-39-001	
	PT-15	3	HEATER CIRCUIT MCB	B872-22-008	
	PT-16	1	COOKING TEMP THERMOSTAT	B873-30-002	
	PT-17	1	EXCESS TEMP THERMOSTAT	B873-30-001	
	PT-18	1	AUTO/MANUAL TOGGLE SWITCH	B816-07-001	AUTO/MANUAL
	PT-19	1	OFF/UP DOWN/ON TOGGLE SWITCH	B816-07-006	OFF/UP ; ON/DOWN
	PT-20	1	IMMERSION TIME POTENTIOMETER	B842-59-007	0-5 MINS
	PT-21	3	IMMERSION ELEMENTS **240V**	B906-04-001	
		3	IMMERSION ELEMENTS **220V**	B906-04-005	
	PT-22	1	OVERHEAT BUZZER	B883-92-001	
	PT-23	1	AMBER LENS } OVERHEAT LIGHT	{ B801-44-007 }	OVERHEAT
		1	LENS BODY }	{ B801-43-012 }	
	PT-27	1	MAIN UP/DOWN MOTOR	B859-74-033	

REV	SIG	DATE	REVISION	ECN NO.
D	RAC	30-01-12 05-06-17	motor B859-74-033 was 009	DN-001-12
C	JC	25-06-07	CONTACTORS & O/LOADS B801 WERE B859	3011
B	RAC	24-09-03	SEE ECN's 1948/1949	
A	PB	1-9-93	ITEMS 11 & 12 WERE B809-11-001	4441

MONO EQUIPMENT
QUEENSWAY
SWANSEA WEST IND PARK
SWANSEA.
SA5 4EB.
TEL: (01792) 561234
FAX: (01792) 561016

TITLE: AUTOMATIC DOUGHNUT COOKER COMPONENTS PARTS LIST

ELECTRICAL SPECIFICATIONS:- 380-415V

DRAWN: REDRAWN JC

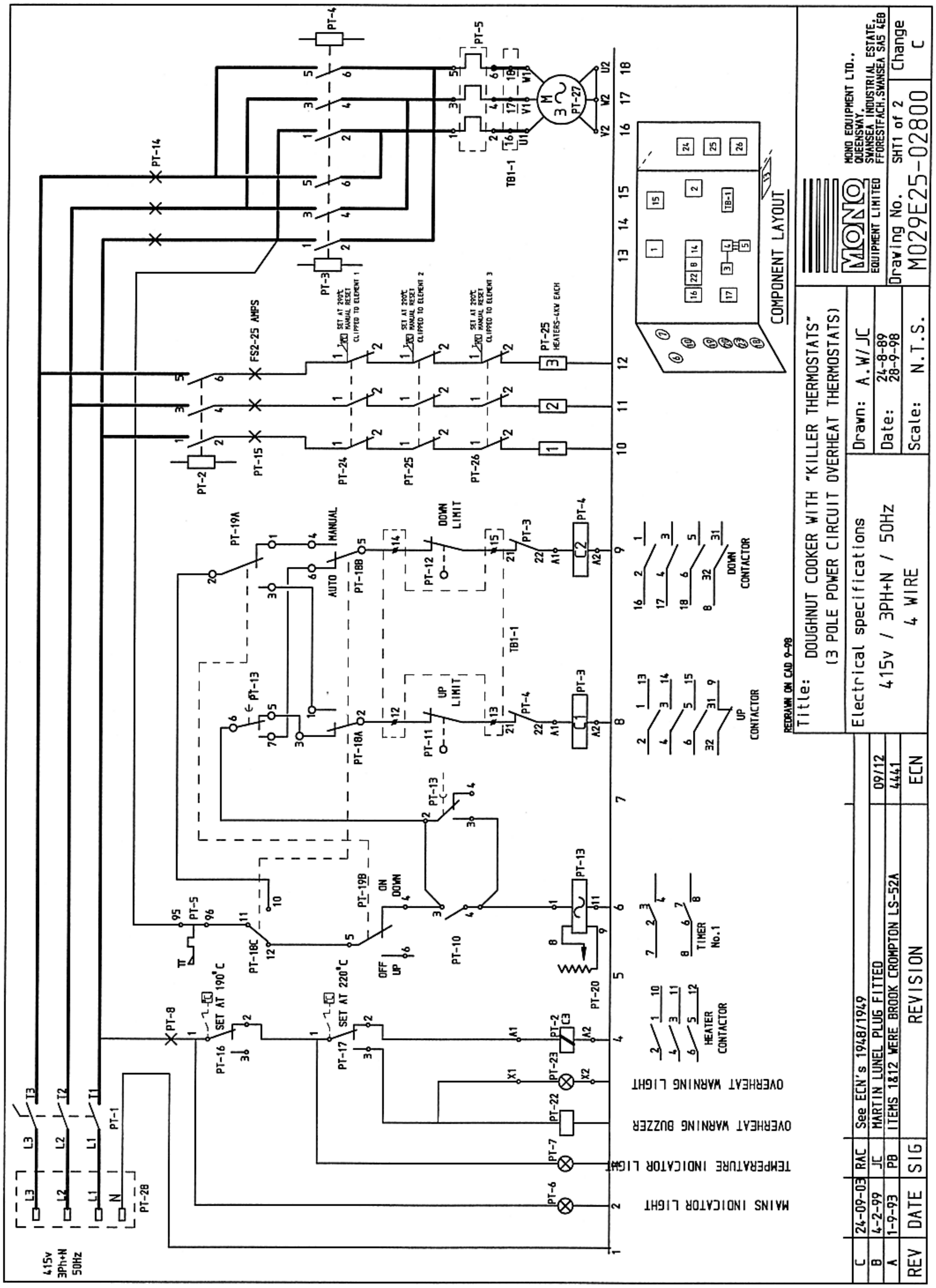
ELECTRICALLY APPROVED BY:-

DATE: 7-9-89 6-10-98

DRAWING NO. M029E25D01100 SHT 2 of 2

REV: D

REDRAWN ON CAD 10-98


Title: DOUGHNUT COOKER WITH "KILLER THERMOSTATS"
(3 POLE POWER CIRCUIT OVERHEAT THERMOSTATS)
Electrical specifications
415v / 3PH+N / 50Hz
4 WIRE
Drawn: A.W/JC
Date: 24-8-89 28-9-98
Scale: N.T.S.
MONO EQUIPMENT LIMITED
MONO EQUIPMENT LTD., QUEENSWAY, SWANSEA INDUSTRIAL ESTATE, FFORESTFACH, SWANSEA SA5 4EB
Drawing No. M029E25-02800
SHT1 of 2
Change C
COMPONENT LAYOUT
REDRAWN ON CAD 9-98
MAINS INDICATOR LIGHT
TEMPERATURE INDICATOR LIGHT
OVERHEAT WARNING BUZZER
OVERHEAT WARNING LIGHT
HEATER CONTACTOR
TIMER No.1
UP CONTACTOR
DOWN CONTACTOR
FS2-25 AMPS
PT-25 HEATERS-4KW EACH
415v 3Ph+N 50Hz
C 24-09-03 RAC See ECN's 1948/1949
B 4-2-99 JC MARTIN LUNEL PLUG FITTED 09/12
A 1-9-93 PB ITEMS 1&12 WERE BROOK CROMPTON LS-52A 4441
REV DATE SIG REVISION ECN

IF IN ANY DOUBT - ASK

	PT-REf	QUANTITY	DESCRIPTION	PART No.	LABELLED
	PT-1	1	MAIN ISOLATOR SWITCH	B807-07-007	ON/OFF
	PT-2	1	HEATER CONTACTOR	B801-08-034	
	PT-3	1	DOWN CONTACTOR	B801-08-033	
	PT-4	1	UP CONTACTOR	B801-08-033	
		1	ELECTRICAL/MECHANICAL INTERLOCK FOR UP DOWN CONTACTOR	B801-18-005	
	PT-5	1	MAIN MOTOR OVERLOAD	B801-01-043	
	PT-6	1	MAINS ON INDICATOR LIGHT	B842-43-001	MAINS
	PT-7	1	TEMPERATURE INDICATOR LIGHT	B842-43-002	TEMPERATURE
	PT-8	1	HEATER CONTACTOR C/BREAKER	B872-22-001	
UP TO Sept 2003	PT-10	1	AUTOMATIC PUSH BUTTON	B808-12-001	
	PT-10a-1	1	AUTOMATIC PUSH BUTTON	B808-12-039	
	PT-10b-1	1	CONTACT BLOCK	B808-14-002	
	PT-10c-1	1	ADAPTOR KIT	B808-18-003	AUTOMATIC
	PT-11	1	UP LIMIT SWITCH	B801-11-013	SWITCH
		1	UP LIMIT SWITCH	B801-45-005	OPERATING HEAD
	PT-12	1	DOWN LIMIT SWITCH	B801-11-013	SWITCH
		1	DOWN LIMIT SWITCH	B801-45-006	OPERATING HEAD
	PT-13	1	IMMERSION TIMER	B819-34-004	
	PT-14	1	MAIN MOTOR CIRCUIT BREAKER	B872-22-052	
UP TO Sept 2003	PT-15	3	HEATER CIRCUIT FUSE	B823-39-001	
	PT-15	3	HEATER CIRCUIT MCB	B872-22-008	
	PT-16	1	COOKING TEMP THERMOSTAT	B873-30-002	
	PT-17	1	EXCESS TEMP THERMOSTAT	B873-30-001	
	PT-18	1	AUTO/MANUAL TOGGLE SWITCH	B816-07-001	AUTO/MANUAL
	PT-19	1	OFF/UP DOWN/ON TOGGLE SWITCH	B816-07-006	OFF/UP ; ON/DOWN
	PT-20	1	IMMERSION TIME POTENTIOMETER	B842-59-007	0-5 MINS
	PT-21	3	IMMERSION ELEMENTS	B906-04-001	
	PT-22	1	OVERHEAT BUZZER	B883-92-001	
	PT-23	1	AMBER LENS (OVERHEAT LIGHT)	B801-44-007	
		1	LENS BODY (OVERHEAT LIGHT)	B801-43-012	OVERHEAT
		1	240 VOLT NEON (OVERHEAT LIGHT)	B842-94-001	
	PT-24	1	"KILLER" THERMOSTAT	B873-30-005	
	PT-25	1	"KILLER" THERMOSTAT	B873-30-005	
	PT-26	1	"KILLER" THERMOSTAT	B873-30-005	
	PT-27	1	MAIN UP/DOWN MOTOR	B859-74-009	
	PT-28	1	3 POLE + N + E 32-45 AMP PLUG	B814-25-012	

REV	SIG	DATE	REVISION	ECN NO.
D	JC	25-06-07	CONTACTORS & O/LOADS B801 WERE B859	3011
C	RAC	24-09-03	SEE ECN's 1948/1949	
B	JC	4-2-99	MARTIN LUNEL PLUG FITTED	09/12
A	PB	1-9-93	ITEMS 11 & 12 WERE B809-11-001	4441

SWANSEA IND EST.
FFORESTFACH,
SWANSEA.
SA5 4EB.
TEL: (01792) 561234
FAX: (01792) 561016
Email: 100432.505@compuserve.com

TITLE: AUTOMATIC DOUGHNUT COOKER WITH "KILLER THERMOSTATS" COMPONENTS PARTS LIST

ELECTRICAL SPECIFICATIONS:-

REDRAWN ON CAD 10-98

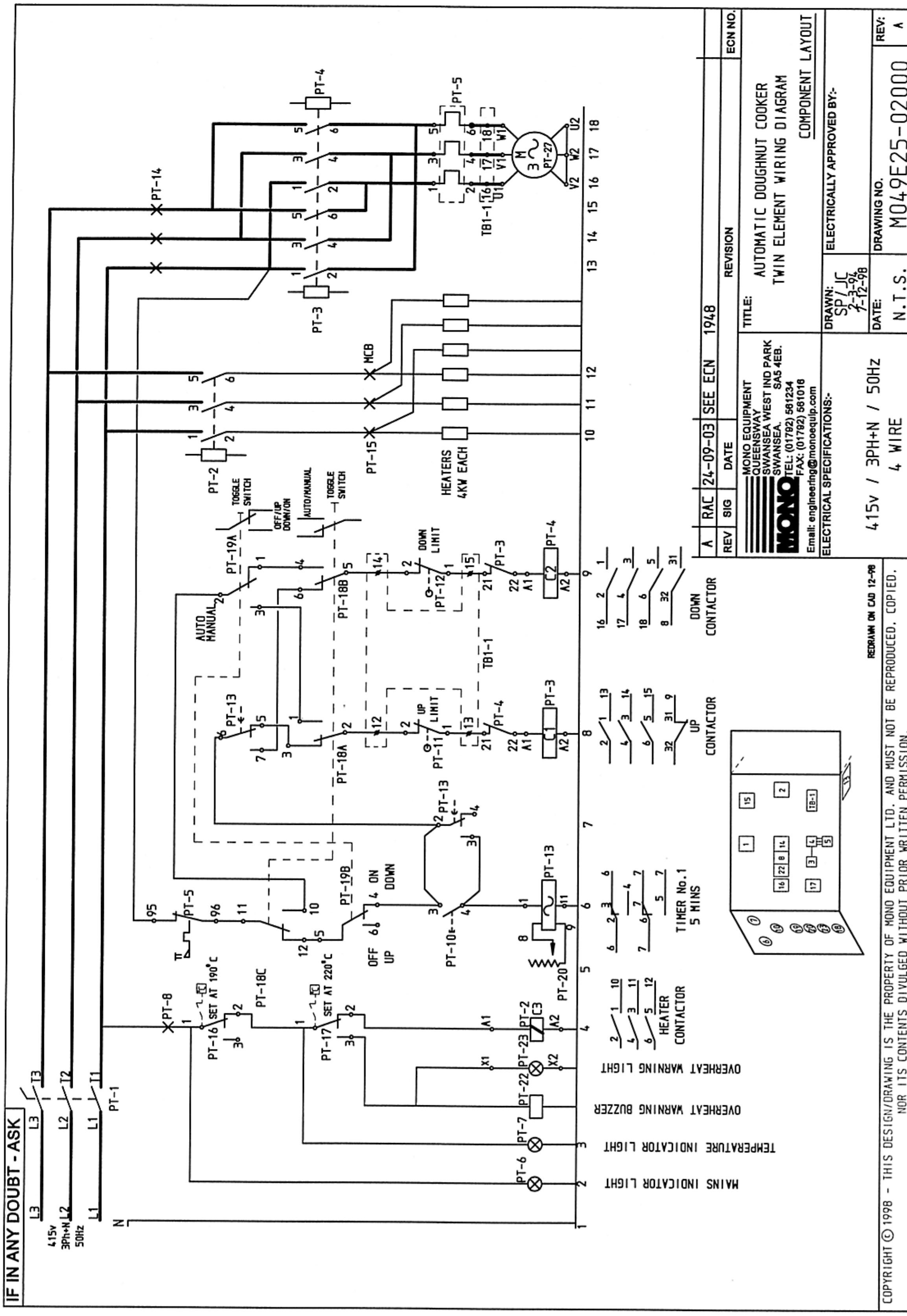
DRAWN: REDRAWN JC

DATE: 24-8-89 6-10-98

ELECTRICALLY APPROVED BY:-

DRAWING NO. SHT 2 of 2 M029E25-02800

REV: D


IF IN ANY DOUBT - ASK
415v 3Ph+N 50Hz
MAINS INDICATOR LIGHT
TEMPERATURE INDICATOR LIGHT
OVERHEAT WARNING BUZZER
OVERHEAT WARNING LIGHT
HEATER CONTACTOR
SET AT 190°C
SET AT 220°C
TIMER No.1 5 MINS
UP CONTACTOR
DOWN CONTACTOR
HEATERS 4KW EACH
AUTO MANUAL
TOGGLE SWITCH
UP LIMIT
DOWN LIMIT
A RAC 24-09-03 SEE ECN 1948
REV SIG DATE REVISION ECN NO.
TITLE: AUTOMATIC DOUGHNUT COOKER TWIN ELEMENT WIRING DIAGRAM
COMPONENT LAYOUT
MONO EQUIPMENT QUEENSWAY SWANSEA WEST IND PARK SWANSEA. SA5 4EB. TEL: (01792) 561234 FAX: (01792) 561016
Email: engineering@monoequip.com
ELECTRICAL SPECIFICATIONS:-
415v / 3PH+N / 50Hz 4 WIRE
ELECTRICALLY APPROVED BY:-
DRAWING NO. M049E25-02000
REV: A
N.T.S.
REDRAWN ON CAD 12-98
COPYRIGHT © 1998 - THIS DESIGN/DRAWING IS THE PROPERTY OF MONO EQUIPMENT LTD. AND MUST NOT BE REPRODUCED, COPIED, NOR ITS CONTENTS DIVULGED WITHOUT PRIOR WRITTEN PERMISSION.

IF IN ANY DOUBT - ASK

	PT-REf	QUANTITY	DESCRIPTION	PART No.	LABELLED
	PT-1	1	MAIN ISOLATOR SWITCH	B807-07-007	ON/OFF
	PT-2	1	HEATER CONTACTOR	B801-08-035	
	PT-3/4	1	UP/DOWN CONTACTOR	B801-08-033	
		1	ELECTRICAL/MECHANICAL INTERLOCK FOR UP DOWN CONTACTOR	B801-18-005	
	PT-5	1	MAIN MOTOR OVERLOAD	B801-01-043	
	PT-6	1	MAINS ON INDICATOR LIGHT	B842-43-001	MAINS
	PT-7	1	TEMPERATURE INDICATOR LIGHT	B842-43-002	TEMPERATURE
	PT-8	1	HEATER CONTACTOR C/BREAKER	B872-22-001	
UP TO Sept 2003	PT-10	1	AUTOMATIC PUSH BUTTON	B808-12-001	
	PT-10a-1	1	AUTOMATIC PUSH BUTTON	B808-12-039	AUTOMATIC
	PT-10b-1	1	CONTACT BLOCK	B808-14-002	
	PT-10c-1	1	ADAPTOR KIT	B808-18-003	
	PT-11	1	UP LIMIT SWITCH BODY	B801-11-013	
		1	UP LIMIT SWITCH ACTUATOR	B801-45-005	
	PT-12	1	DOWN LIMIT SWITCH BODY	B801-11-013	
		1	DOWN LIMIT SWITCH ACTUATOR	B801-45-006	
	PT-13	1	IMMERSION TIMER	B819-34-004	
	PT-14	1	MAIN MOTOR CIRCUIT BREAKER	B872-22-052	
	PT-15	3	HEATER CIRCUIT M.C.B.	B872-22-070	
	PT-16	1	COOKING TEMP THERMOSTAT	B873-30-002	
	PT-17	1	EXCESS TEMP THERMOSTAT	B873-30-001	
	PT-18	1	AUTO/MANUAL TOGGLE SWITCH	B816-07-001	AUTO/MANUAL
	PT-19	1	OFF/UP DOWN/ON TOGGLE SWITCH	B816-07-006	OFF/UP ; ON/DOWN
	PT-20	1	IMMERSION TIME POTENTIOMETER	B842-59-007	0-5 MINS
	PT-21	6	IMMERSION ELEMENTS 240V	B906-04-001	
		6	IMMERSION ELEMENTS 220V	B906-04-005	
	PT-22	1	OVERHEAT BUZZER	B883-92-001	
	PT-23	1	AMBER LENS } OVERHEAT LIGHT	{ B801-44-007	OVERHEAT
		1	LENS BODY } OVERHEAT LIGHT	B801-43-012 }	
	PT-27	1	MAIN UP/DOWN MOTOR	B859-74-009	

REV	SIG	DATE	REVISION	ECN NO.
B	JC	25-06-07	CONTACTORS & O/LOADS B801 WERE B859	3011
A	RAC	25-09-03	see ecn 1948	

MONO EQUIPMENT
QUEENSWAY
SWANSEA WEST IND PARK
SWANSEA.
SA5 4EB.
TEL: (01792) 561234
FAX: (01792) 561016

TITLE: TWIN ELEMENT AUTOMATIC DOUGHNUT COOKER COMPONENTS PARTS LIST

ELECTRICAL SPECIFICATIONS:- 380-415V

DRAWN: REDRAWN JC

ELECTRICALLY APPROVED BY:-

DATE: 1-3-94 8-12-98

DRAWING NO. M049E25-02000 SHT 2 of 2

REV: B

REDRAWN ON CAD 12-98

DISPOSAL

CARE SHOULD BE TAKEN WHEN THE MACHINE COMES TO THE END OF ITS WORKING LIFE. ALL PARTS SHOULD BE DISPOSED OF IN THE APPROPRIATE PLACE, EITHER BY RECYCLING OR OTHER MEANS OF DISPOSAL THAT COMPLIES WITH LOCAL REGULATIONS.

(IN UK, ENVIRONMENTAL PROTECTION ACT 1990 APPLIES)

MONO Equipment
Queensway, Swansea West Industrial Park, Swansea, SA5 4EB UK
Tel. 01792 561234 Fax. 01792 561016
Email:mono@monoequip.com

www.monoequip.com

As it is our policy to improve our machines continuously, we reserve the right to change specifications without prior notice.