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



# **“OMEGA PLUS”**

## **INCLUDING WIRECUT VERSION DEPOSITOR (400, 450, 580)**

### **OPERATING AND MAINTENANCE MANUAL**


**The use of templates and/or accessories not produced or supplied by  
MONO Equipment will invalidate the machine’s warranty**



## 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 2014/35/EC
- The requirements of the Electromagnetic Compatibility Directive 2014/30/EU incorporating standards
  - o EN 55014-1:2017/A11:2020
  - o EN 55014-2:1997+A1:2001+A2:2008
- 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 in to contact with food – Regulation (EC) No.2023/2006

<b>Signed</b>			
<b>Craig Petherbridge – Quality Manager</b>			
<b>Date</b>			
<b>Machine FG Code.</b>		<b>Machine Serial No.</b>	

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

**MONO EQUIPMENT**

Queensway,  
Swansea West Industrial Park,  
Swansea  
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UK

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

Registered Office:  
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North Lynn Industrial Estate,  
Kings Lynn  
Norfolk  
PE30 2HZ  
UK

QD 001

Dated 22/07/2022



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



**WIRECUT VERSION**

**The use of templates and/or accessories not produced or supplied by MONO Equipment will invalidate the machine's warranty**

# SAFETY SYMBOLS

The following safety symbols are seen throughout this manual (available at [www.monoequip.com](http://www.monoequip.com)). Before using your new equipment, read the instruction manual carefully and pay special attention to information marked with the following symbols



**WARNING** Indicates a hazardous situation which, if not avoided, could result in death or severe injury.



**WARNING** Indicates a hazardous situation which, if not avoided, could result in death or severe injury.



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





## ELECTRICAL SAFETY AND ADVICE REGARDING SUPPLEMENTARY ELECTRICAL PROTECTION

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

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

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

### We Recommend:

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

### Your attention is drawn to:

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

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

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

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



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

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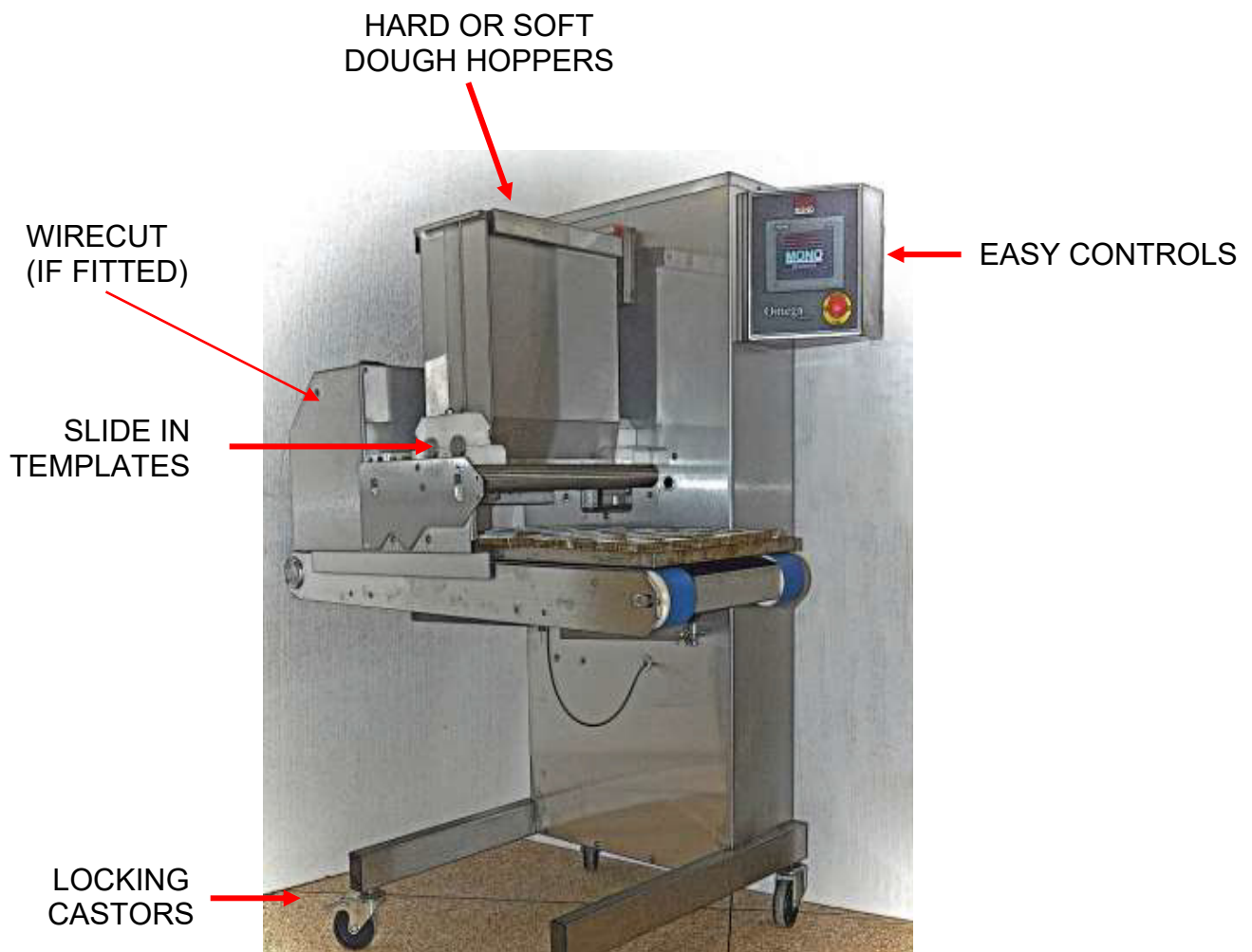
## Omega PLUS + WIRECUT

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# 1.0 INTRODUCTION

Omega  
PLUS +  
WIRECUT

- The innovative “five axis deposit” design of MONO’s “**Omega PLUS**” and “**Omega PLUS with wirecut**” depositor allows it to recreate most of the hand movements of the Master confectioner. This makes the “**Omega PLUS**” capable of exceptional accuracy of product weight, size and shape.
- Maintenance is kept to a minimum and the smooth body design makes daily cleaning quick and easy.
- Easy to use computer software gives access to 550 recipe programs, which are stored in the memory and easily recalled for use or modification. Recipes and settings can also be backed-up to, and restored from, a USB memory stick (pen drive). The Omega machine can also be updated with new software on a USB memory stick. Control is via a colour touch screen with graphically represented products, already installed, that can be created or edited to the required product.
- It is available with soft and hard dough hoppers. There is also a large selection of templates and nozzles as well as various shape biscuit dies to use with the wirecut version.



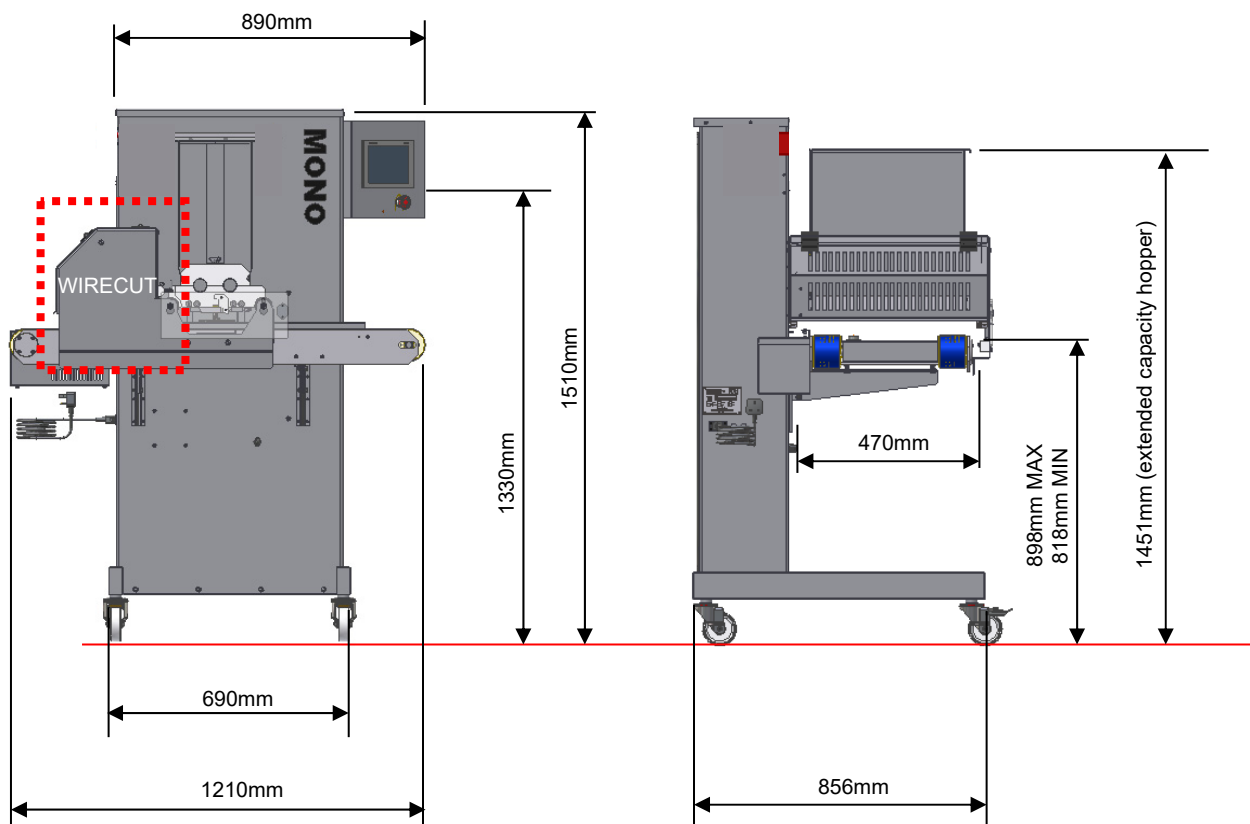
As it is our policy to improve our machines continuously, we reserve the right to change specifications without prior notice



## 2.0 DIMENSIONS

Omega  
PLUS

MODELS ARE AVAILABLE WITH OR WITHOUT WIRECUT OPTION



**WIRECUT VERSION**



**OMEGA PLUS**

## 3.0 SPECIFICATIONS

**Omega  
PLUS**

	<u>SOFT DOUGH</u>			<u>HARD DOUGH</u>		
<b>MODEL</b> (Nom. hopper width (mm))	<b>400</b>	<b>450</b>	<b>580</b>	<b>400</b>	<b>450</b>	<b>580</b>
<b>Approx. Weight</b> (with hopper fitted) (kg) : (Inc Wirecut)	<b>180</b> 197	<b>185</b> 204	<b>200</b>	<b>196</b> 210	<b>212</b> 224	<b>235</b>
<b>Standard hopper</b> <b>Approx. Capacity</b> (litre) :	<b>20</b>	<b>22.5</b>		<b>21</b>	<b>24</b>	
<b>Extended hopper</b> <b>Approx. Capacity</b> (litre) :	<b>36</b>	<b>41</b>	<b>53</b>	<b>31</b>	<b>35</b>	<b>45</b>

**Power:** Single phase, 13A max load. Suitable for 200v, 220v, 230v, and 240v, 50-60 Hz supply.

**MAX RATING** 2.5kW single phase fused at 13A



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

Cycles per minute	= Up to 35
Min distance between trays	= 50mm
Max vertical travel	= 80mm
Max program storage	= 650
Number of languages	= 18 (additional in future)
Noise level	= Less than 85dB
Electronics	= All microprocessor controlled

### **NOTE:**




The minimum deposit that can be made depends on several factors - recipe, mixing method, template size, nozzle size and deposit speed.

As a guide the following is the minimum that should be attempted:

Macaroons	6g.
Meringues	3g.
Choux Paste	5g.
Viennese	4g.
Sponge Drops	4g.

However, consult **Mono Equipment** if intended product falls outside the above general machine specification to determine the exact capabilities of the "Omega" with any specific product.

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

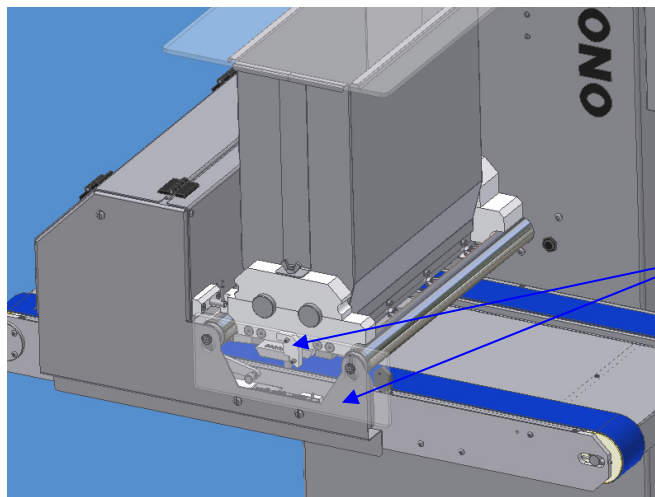
- 1 **Never use a machine in a faulty condition** and always report any damage.
  - 2 **Only trained engineers** may remove parts that need a tool to remove them.
  - 3  Always ensure hands are dry before touching any electrical appliance (including cable, switch and plug). **NEVER move machinery by pulling on the power cords or cables.**
  - 4 **Ensure that the floor area around the OMEGA is clean to avoid slipping** – especially if carrying heavy hopper and template components to and from the machine.
  - 5 **All operatives must be fully trained.**  
Use of the machine can prove dangerous if:
    - ☐ the machine is operated by **untrained or unskilled staff**
    - ☐ the machine is not used for its **intended purpose**
    - ☐ the machine is **not operated correctly**
- All safety devices applied to the machine during manufacture and the operating instructions in this manual are required to operate this machine safely. The owner and the operator are responsible for operating this machine safely.**
- 6 People undergoing training on the machine must be under **direct supervision**.
  - 7  **Do not operate the machine with any panels or guards removed.**  
They are there to protect you.
  - 8  **No loose clothing or jewellery** should be worn while operating the machine.  
They could cause damage to the machine and person.
  - 9 **Switch off power** at the mains isolator when machine is not in use and **before carrying out any cleaning or maintenance.**



- 10 The bakery manager or the bakery supervisor should carry out **daily safety checks** on the machine.



- 11 Do not operate machine without a hopper **template** and the **guard** fitted correctly.



**(11) HOPPER TEMPLATE AND  
GUARD FITTED**

**NOTE**

Guard can be plastic or metal depending on the machine model

- 12 Due to the essential requirement for handling heavy components during cleaning, it is recommended that **protective footwear** be worn when carrying out such procedures.



**ALL CLEANING AND MAINTENANCE OPERATIONS  
MUST BE MADE WITH THE MACHINE  
DISCONNECTED FROM THE POWER SUPPLY.**

## 5.0 INSTALLATION

Omega  
PLUS

1. Ensure that the depositor is connected to correct electric supply, as specified on the serial number plate on the side of the machine.



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

2. Ensure that the correct fuse rating is fitted in the electrical supply
3. Position the machine in the correct position for working and lock the two locking wheels to stop movement.

## 6.0 ISOLATION



**IN AN EMERGENCY, SWITCH OFF AT THE ELECTRICAL MAINS WALL ISOLATOR, OR PUSH THE EMERGENCY STOP BUTTON.**

*To release the emergency stop button, turn clockwise.*



**STOP BUTTON**

## 7.0 CLEANING INSTRUCTIONS

Omega  
PLUS

### **NOTE:**

- Cleaning must be carried out by fully trained personnel only.
- Isolate machine from mains supply before carrying out any cleaning.
- Do not steam clean or use a jet of water.



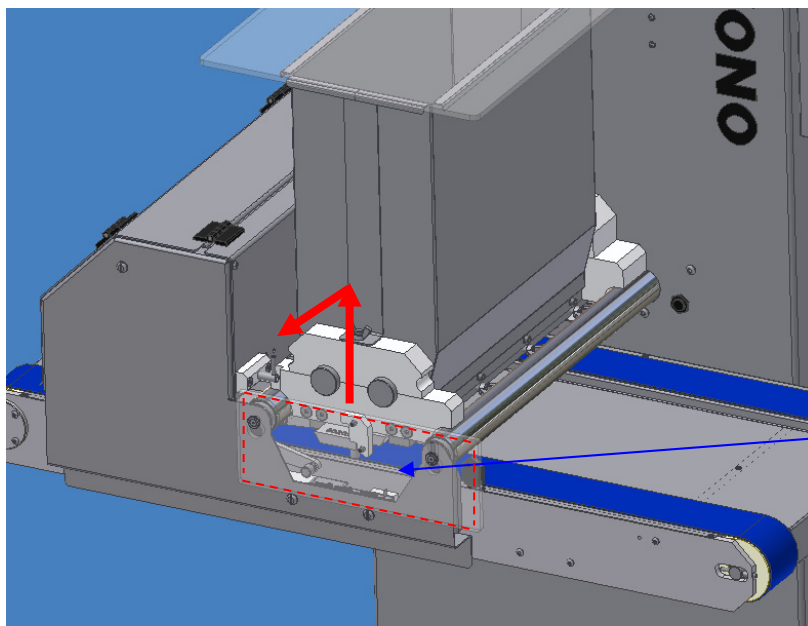
**-Do not use any form of caustic detergent or abrasive cleaners. -**

All the outer surfaces of the machine should be wiped over daily with warm soapy water.

### **HARD AND SOFT DOUGH HOPPERS BETWEEN PRODUCT MIX CHANGES**

*The feed hopper, pump assembly, template, nozzles etc. should be removed from the machine and dismantled for thorough cleaning between product mix changes.*

1. Open hopper and remove excess mixture remaining.
2. Lift off front safety cover.



**SAFETY COVER**

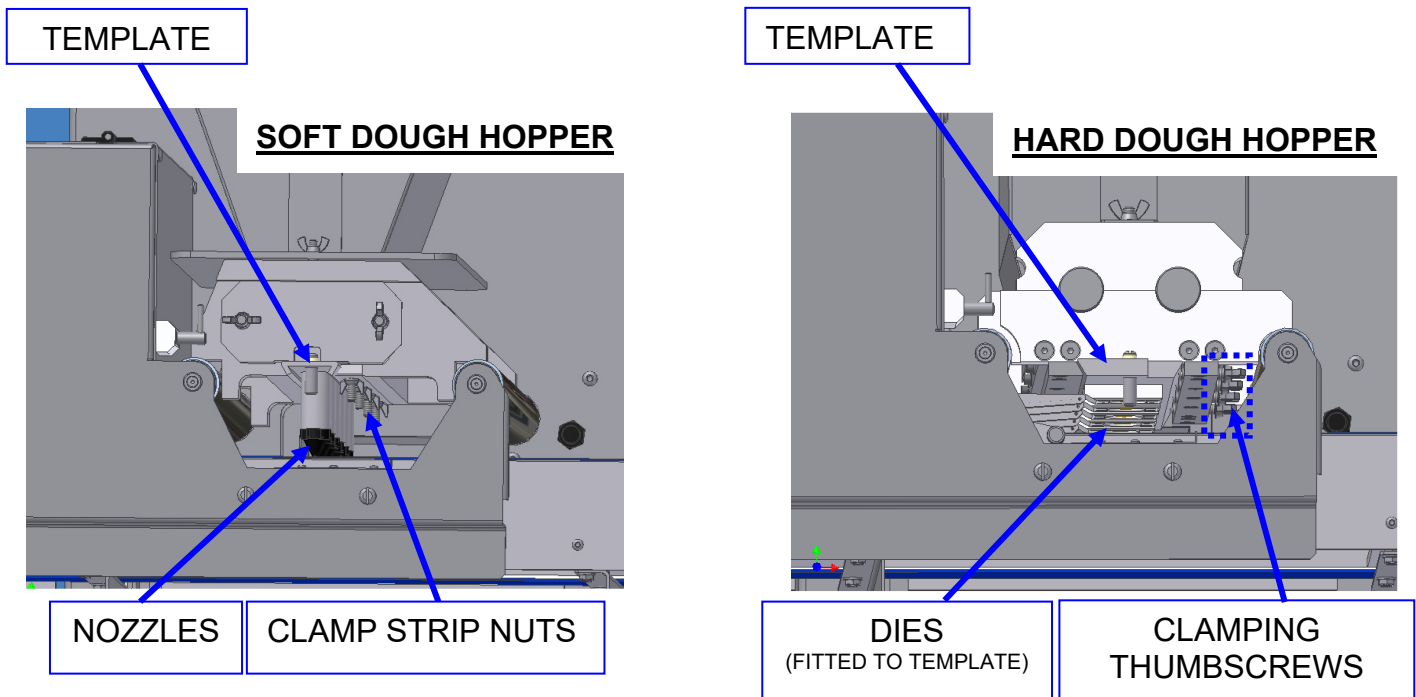
**NOTE**  
Guard can be plastic or metal depending on the machine model



3. Slacken template clamp strip nuts or thumbscrews (depending on type of hopper). Remove fitted template from pump assembly by sliding out to avoid subsequent damage.

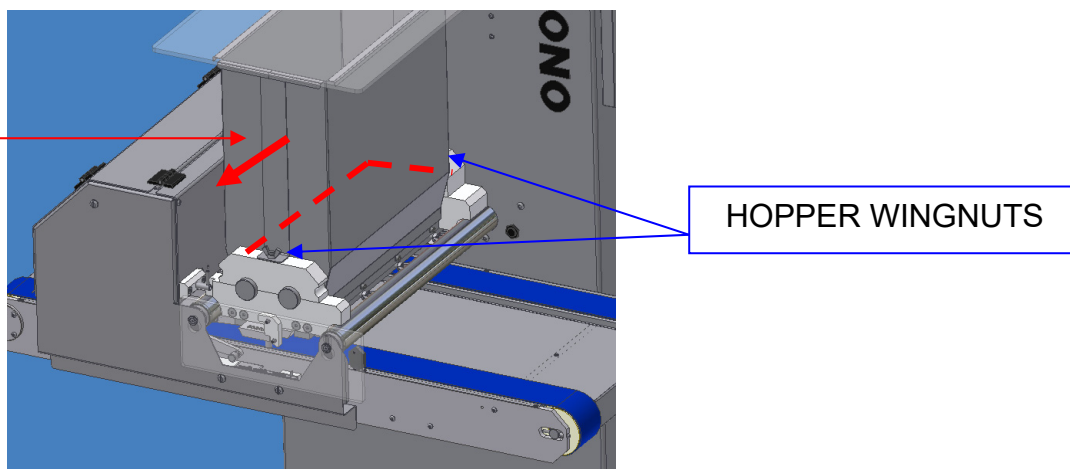
**NOTE.**

*Thumbscrews only need to be released slightly to allow the template to slide away from the pump assembly. If loosened too much, the template will have to be supported.*



- 4 To reduce weight and bulk, separate and remove empty feed hopper from pump assembly, whilst still on the machine, by unscrewing the wing nuts.

*To gain access to the inner wing nut, slide the complete hopper away from the machine body slightly (keep on support bars) - this will also disengage the pump assembly from the drive shaft.*



*Ensure that the nuts are placed where they will not be lost.*

# SOFT DOUGH HOPPER

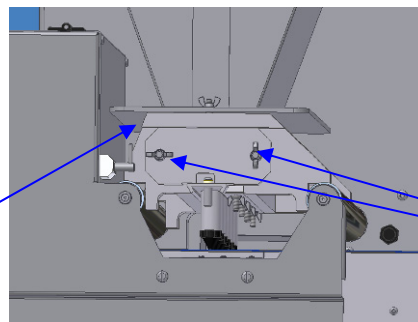


## CAUTION:

The feed hopper and pump assembly exceeds 25kg and will need to be lifted off by two people, or dismantled into smaller components while still on the machine.

Take care to avoid damage to the sealing surface of the feed hopper during removal, cleaning, assembly and storage.

1. After removing the feed hopper, check condition of feed hopper seal.
2. Unscrew the end cap retaining nuts from the accessible side of the pump assembly.  
*[Ensure that the nuts are placed where they will not be lost.]*

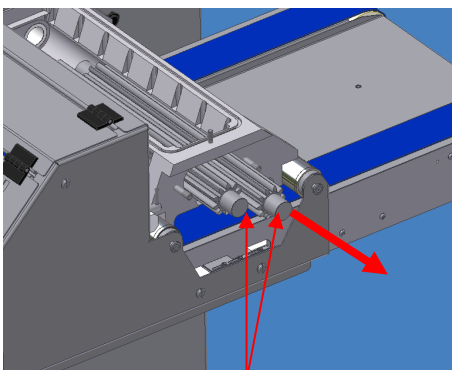


FEED HOPPER  
SEALING SURFACE

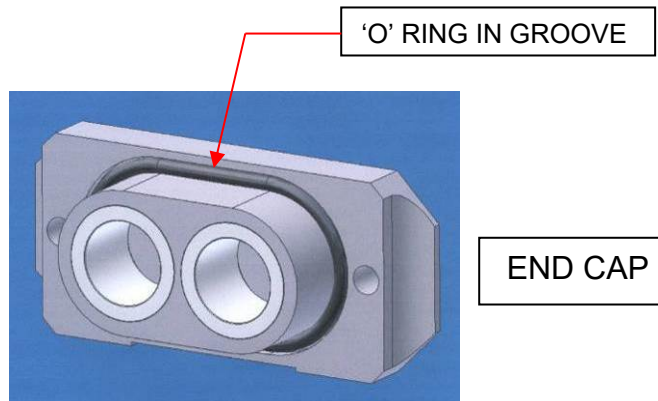
ENDCAP NUTS

3. Withdraw the end-cap with the pump gears.

*Ensure that the 'O' sealing ring on the inside of the end cap is not damaged during cleaning.*



PUMP GEARS  
REMOVE WITH END CAP  
(NOT SHOWN)



'O' RING IN GROOVE

END CAP

4. Remove remainder of pump assembly from the machine and remove remaining end-cap to fully dismantle pump assembly components for cleaning.

# HARD DOUGH HOPPER

## CAUTION:

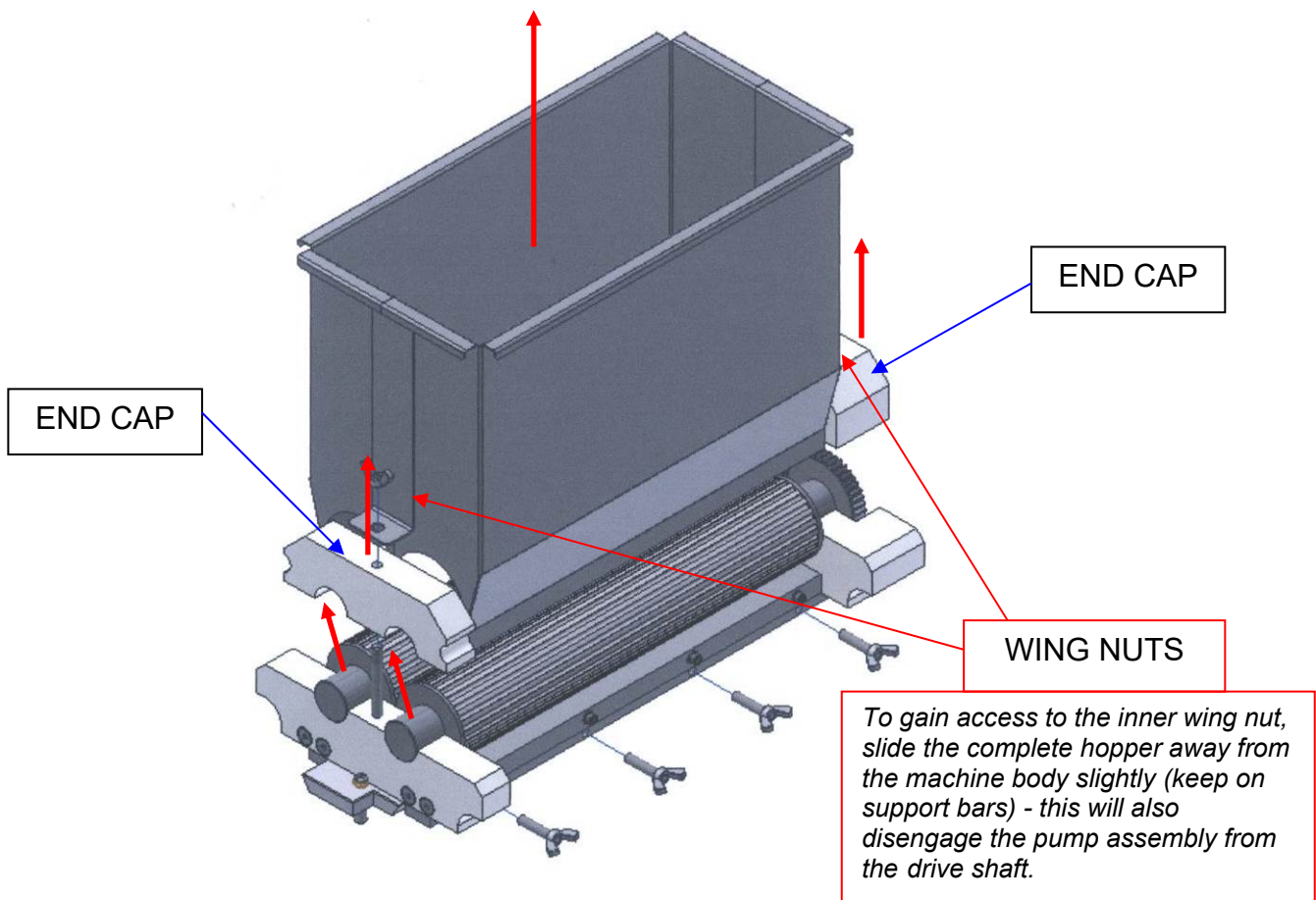
The feed hopper and pump assembly exceeds 25kg and will need to be lifted off by two people, or dismantled into smaller components while still on the machine.

To reduce weight and bulk, separate and remove empty feed hopper from pump assembly, whilst still on the machine, by unscrewing the wing nuts.

*(Ensure that the nuts are placed where they will not be lost.)*

The pump assembly will now be lighter and more easily removed.

1. Lift off both upper plastic end-caps.
2. Remove both gears from the assembly, one at a time, by lifting vertically.
3. Remove remainder of pump assembly from the machine for cleaning.



## NOTE:

Use only warm soapy water to clean these parts. They should be rinsed and thoroughly dried before re-assembly.

The greatest care must be taken not to drop any parts.



**Do not leave any components in the hopper.**





## 8.0 OPERATING CONDITIONS

To obtain the best product results and consistent operation,

- ✓ Make sure the depositor is used on a **level floor**.
- ✓ Ensure **flat trays** of consistent length, width, material and edge dimensions are used.
- ✓ Ensure **undamaged nozzles and templates** are used.
- ✓ Keep the machine **clean**.



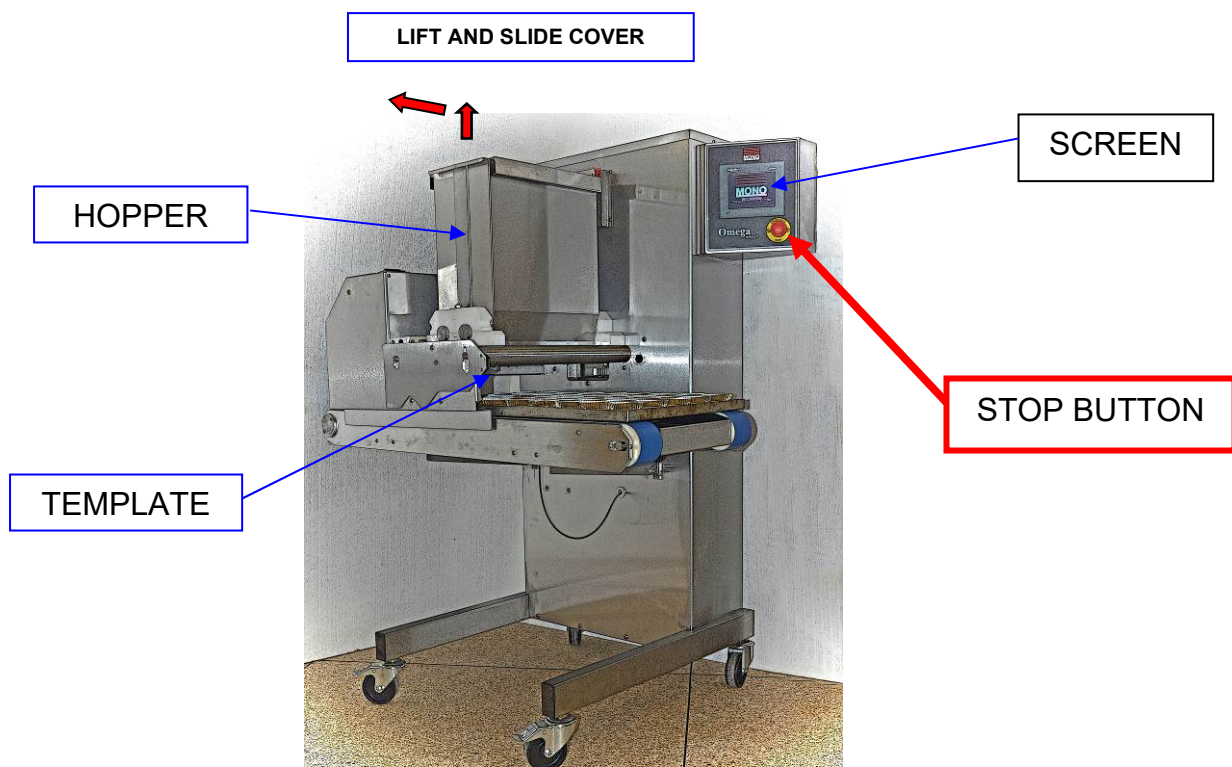
## 9.0 PREPARING FOR OPERATION

Omega

**The use of templates and/or accessories not produced or supplied by MONO Equipment will invalidate the machine's warranty**

- 1 Select template and nozzles (and finger frame, if wirecut is to be used) and fit as section 9a & 9b (following pages). Fill hopper with mix and close hopper cover.

*It is recommended that when heavy mixes are used, the inside of the hopper should be coated with vegetable oil; for lighter mixes such as meringue, dampen with water. The oil or water will help the mix to settle down the hopper walls and prevent air being sucked in.*



- 2 Connect power cable to electrical supply.  
*Make sure stop button is in released position (turn clockwise if required).*
- 3 Select an existing program or create a new program through the on-screen menus.  
(see section 10 operation)
- 4 The machine is now ready for operation.

## 9a FITTING THE HOPPER

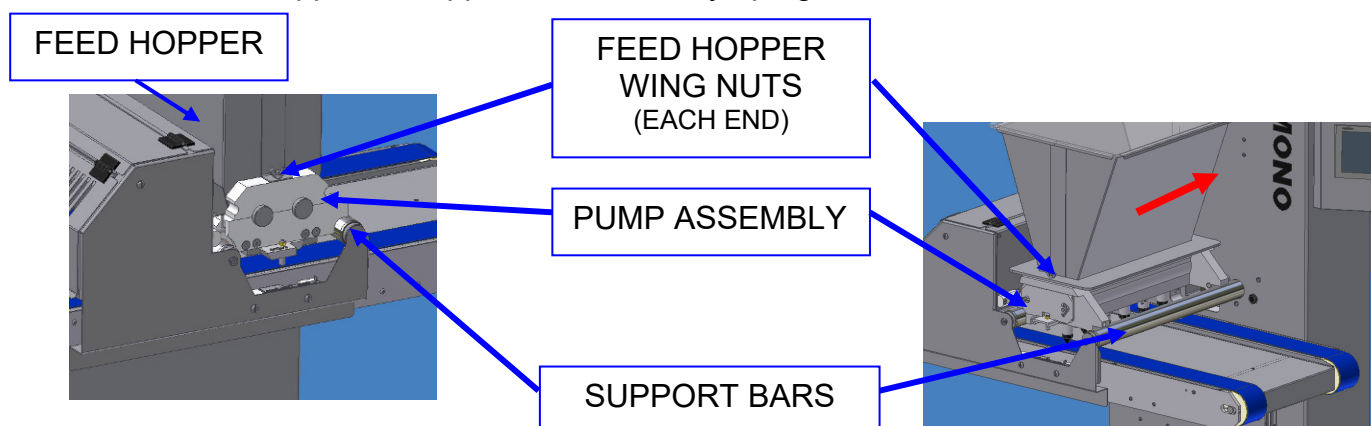


**CAUTION SHOULD BE TAKEN WHEN FITTING THE HOPPER AND PUMP ASSEMBLY, AS WEIGHT EXCEEDS 25kgs ON SOME MODELS. It will need to be lifted on by two people, or dismantled into smaller components before fitting on the machine. MAKE SURE THE FLOOR AREA AROUND THE MACHINE IS CLEAN**



To reduce weight and bulk, fit the complete hopper assembly in two stages - first the pump assembly onto the support bars, then the feed hopper body onto the pump assembly.

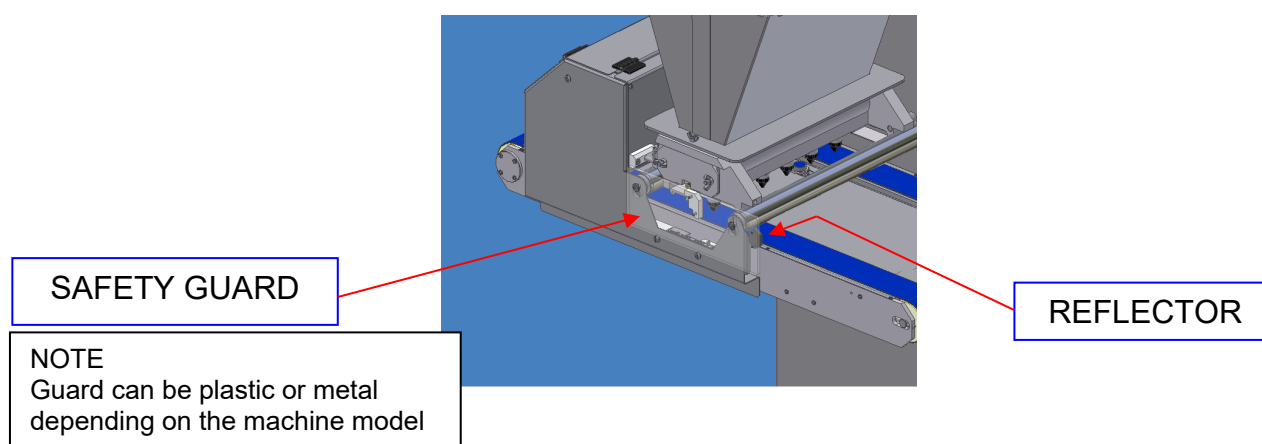
- 1 By hand, align pump assembly drive gear roller with drive shaft on machine.
- 2 Fit hopper to pump assembly and secure with wing nuts.
- 3 Slide hopper on support bars until fully up against machine.



**HARD DOUGH**

**SOFT DOUGH**

- 4 After the hopper is fitted, the safety guard **MUST BE** replaced with the reflector facing towards the machine body.



**DO NOT OPERATE MACHINE WITHOUT TEMPLATE FITTED**

## 9b FITTING A TEMPLATE

- **Soft dough**

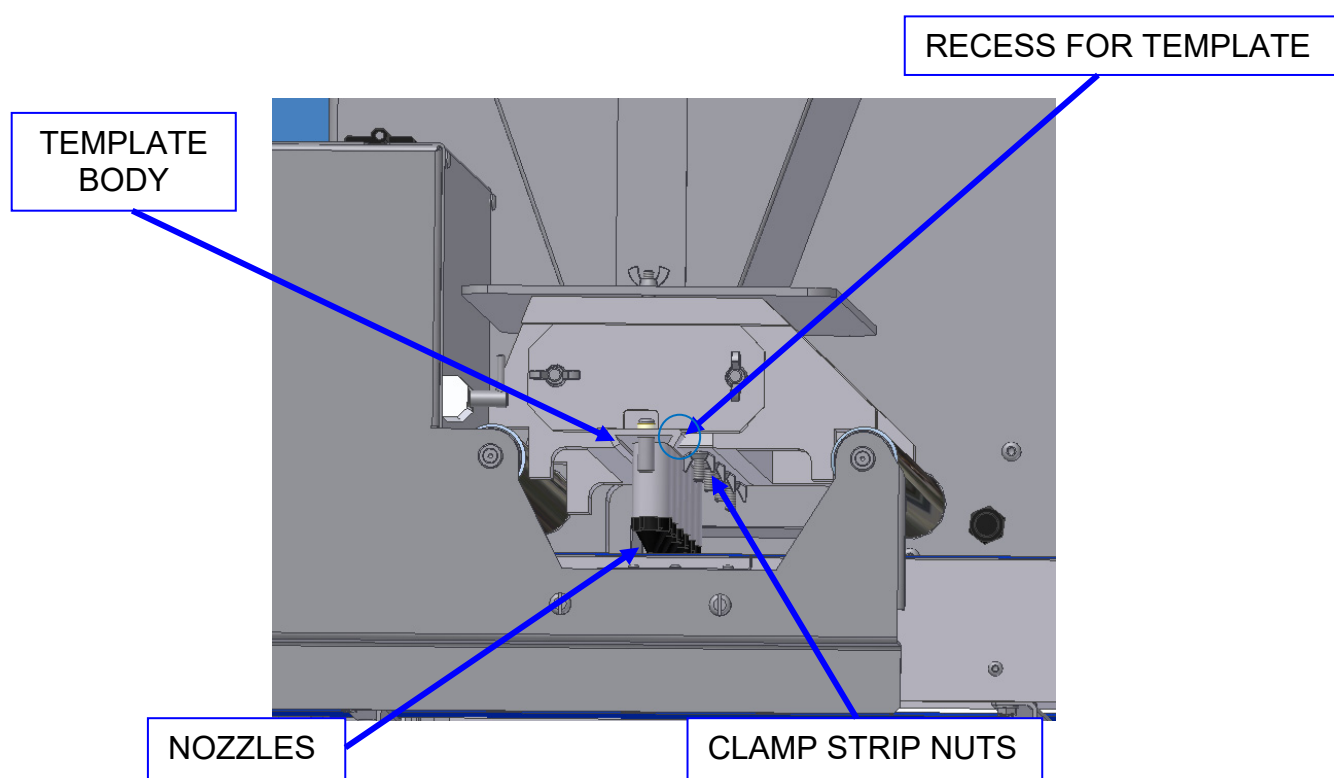
Non-rotary templates can be fitted with nozzles. This requires screwing the nozzles into the threaded holes provided.

Rotary templates can have plastic nozzles screwed into nozzle holders (straight or offset).

OR

Metal nozzles secured in place by a separate nut.

- 1 Select template and nozzles required.  
(Nozzles are not required for sheeting, staggered or stub templates)
- 2 Attach nozzles to template body:



- 3 Slide the template into the matching recess at the base of the pump assembly until the stop is in position.
- 4 Tighten the nuts on the clamp strip (on underside of pump assembly) to secure template.

**NOTE.** If the nuts are not securely tightened, leakage of mix will occur, affecting deposit weights.



**DO NOT OPERATE MACHINE WITHOUT TEMPLATE FITTED**



## **BEFORE USING STRAIGHT & OFFSET NOZZLE HOLDERS**

### **“O” RINGS MUST BE FITTED**

Nozzle holders provide the means of attaching standard plastic nozzles to the soft dough rotary templates and the sealing rings need to be fitted before using and may need replacing occasionally to ensure correct operation.

“O” RING PART NUMBER = A900-12-010 (SUPPLIED IN BAGS OF 20)



LOOP FIRST RING OVER END



SLIDE RING DOWN TO GROOVE



FIRST RING IN CORRECT POSITION



LOOP SECOND RING OVER END



SLIDE RING DOWN TO SECOND GROOVE,  
PASSING OVER FIRST RING



SECOND RING IN CORRECT POSITION

## Hard dough

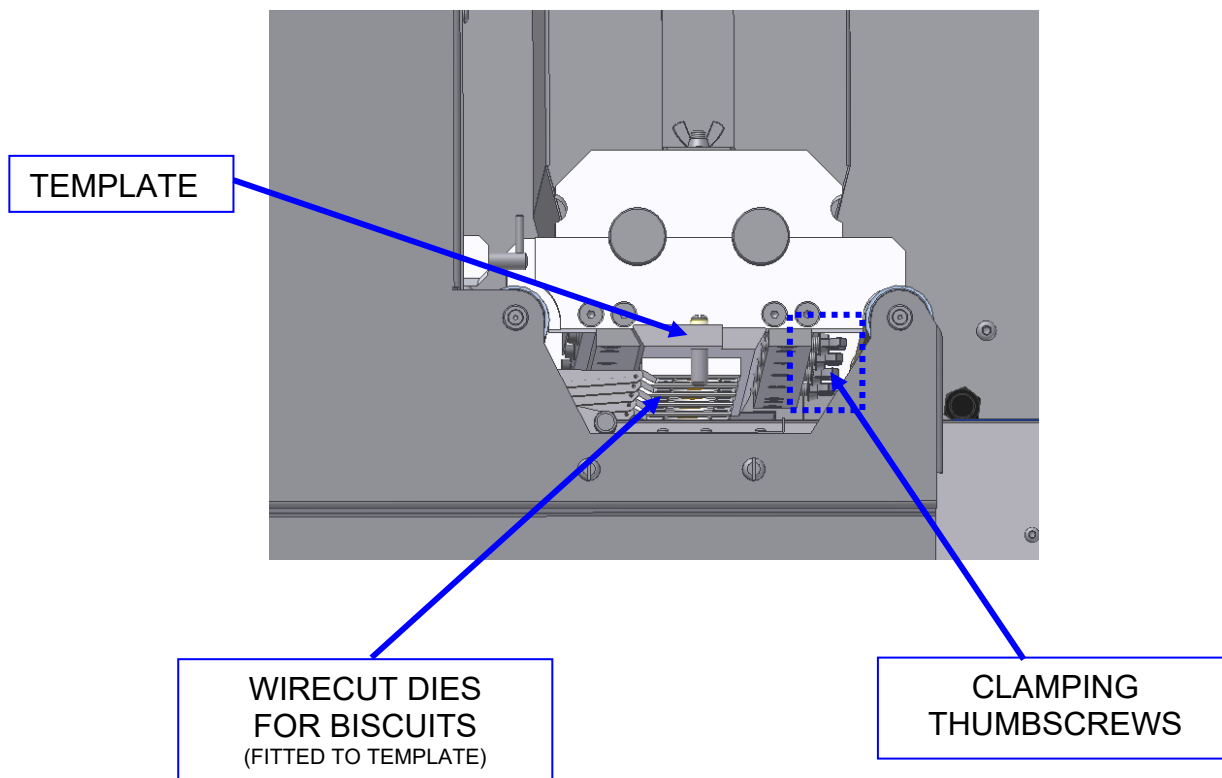
Non-rotary templates that can be fitted with nozzles require them to be secured in place with a separate nut. *Nozzles are not required for sheeting or wirecut templates.*

Rotary templates require nozzles to be secured in place with a separate nut.

- 1 Select wirecut template or template and nozzles required.
- 2 Attach nozzles (if required) to template body using special nut:
- 3 Slide template into position and hand-tighten thumbscrews.

**NOTE.**

*Thumbscrews only need to be released slightly to allow the template to slide away from the pump assembly. If loosened too much, the template will have to be supported while the screws are tightened.*

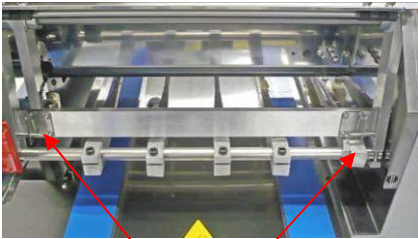


**DO NOT OPERATE MACHINE WITHOUT TEMPLATE FITTED**

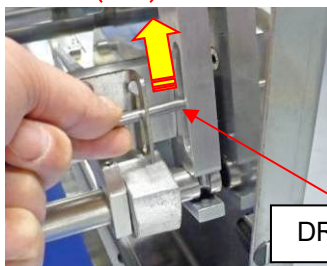
## IF WIRECUT IS FITTED

### FITTING WIRECUT FINGERS

1. Select wirecut fingers that suit the chosen template to be used.i.e. the correct number to match the number of dies across template.
2. Remove drop arm pins and insert finger frame into arms. Ensure that the follower arm roller is positioned on the cam track.



FOLLOWER ARM  
ROLLER

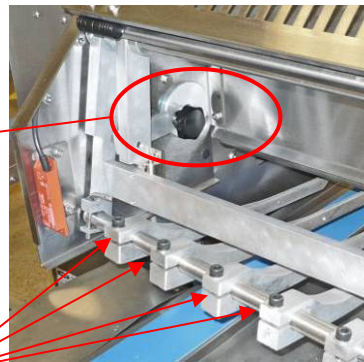


DROP ARM PINS

3. Replace drop arm pins.
4. Disconnect motor release knob and push fingers forward in order to line up the wire with the dies.



MOTOR RELEASE KNOB



FINGER ADJUSTING BOLTS

5. Adjust individual finger bolts to raise the wire to touch the bottom surface of the dies used in the template.

OR

Adjust the spring loaded screw to raise or lower all fingers at the same time.



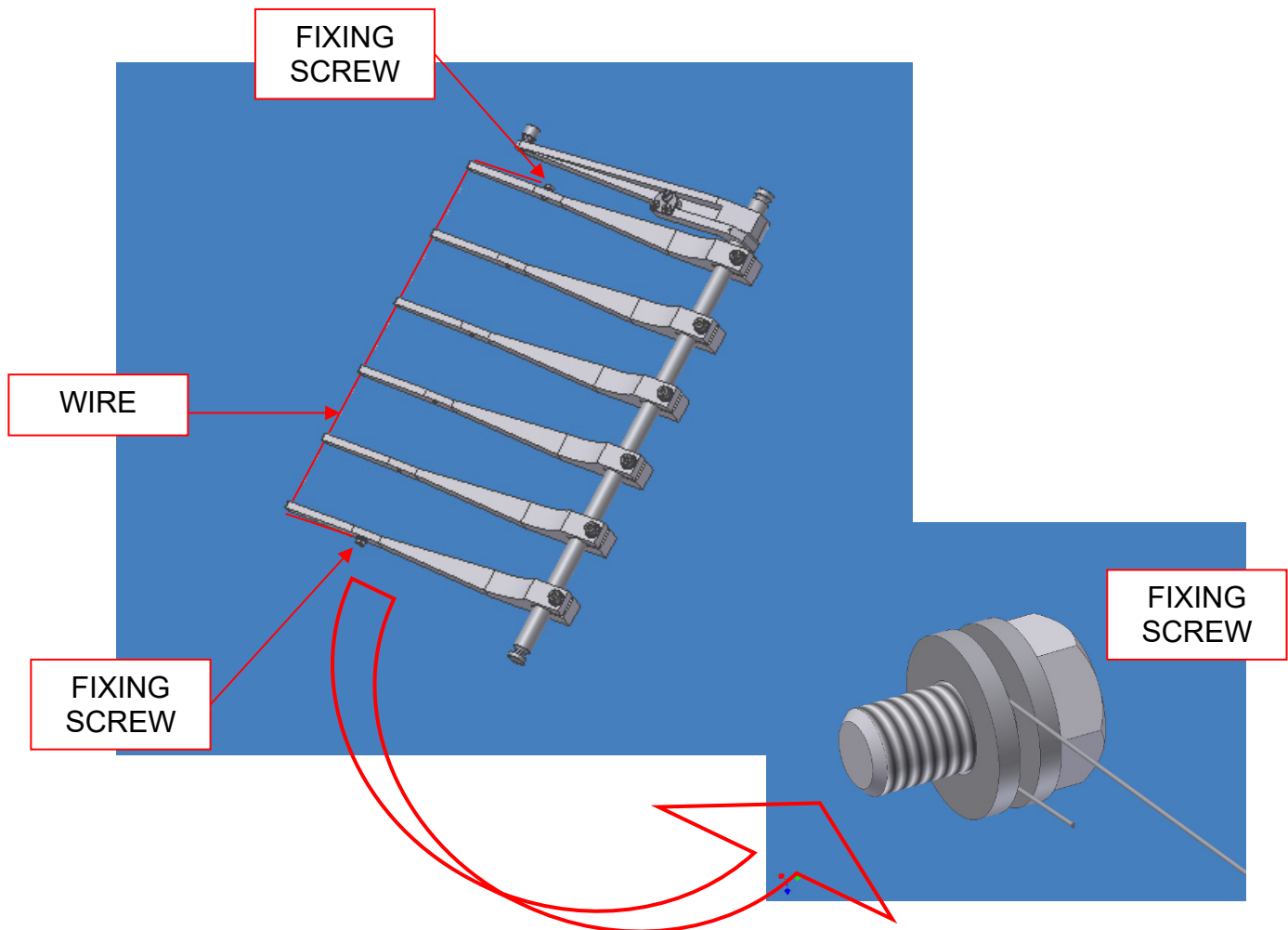
SPRING LOADED ADJUSTMENT SCREW

## IF WIRECUT FITTED

### REPLACING BROKEN WIRE

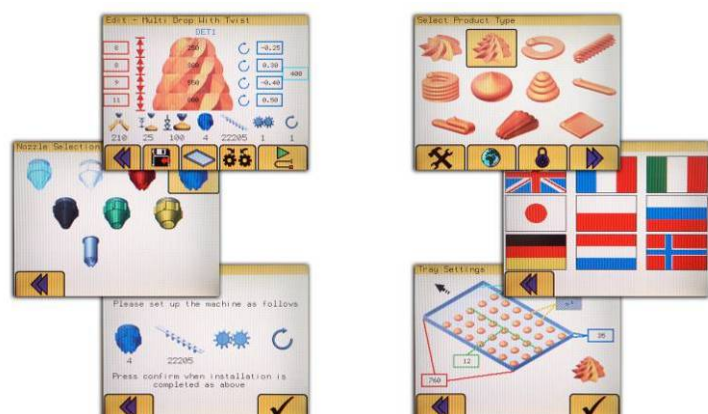
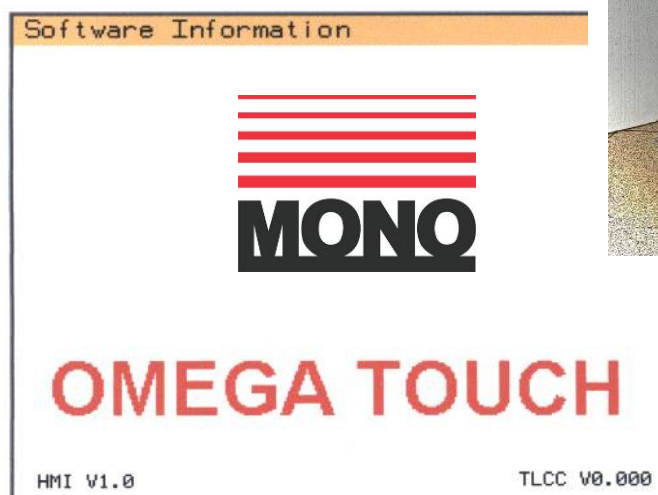
MAKE SURE THAT ALL PIECES OF WIRE HAVE BEEN FOUND BEFORE OPERATING MACHINE AFTER A WIRE REPLACEMENT.

1. Remove wirecut fingers from the machine.
2. Remove all parts of broken wire
3. Feed new wire round fixing screw, between washers and tighten screw.
4. Feed the wire through the eyehole in the end of each finger.
5. Feed new wire round other fixing screw, between washers. Pull wire tight and tighten screw. (wire should be like a guitar string).
6. Replace the fingers back in the machine and check set up and operation.



# 10.0 'OMEGA PLUS' OPERATION

Omega  
PLUS



ALL OPERATIONS ARE ACTIVATED BY TOUCHING AREAS ON THE SCREEN WITH A FINGER.  
DO NOT USE EXCESSIVE FORCE OR HARD OBJECTS AS THIS WILL INVALIDATE MACHINE WARRANTY.



# OPERATING KEY

## FOR FOLLOWING INSTRUCTIONS

**BLUE = OPERATION**

FOLLOW BLUE ARROWS AND BOXES TO OPERATE THE DEPOSITOR WITH ALREADY SAVED PROGRAMS

**RED = CHANGE SETTINGS**

FOLLOW RED ARROWS AND BOXES TO CHANGE SETTINGS AND CREATE NEW PROGRAMS

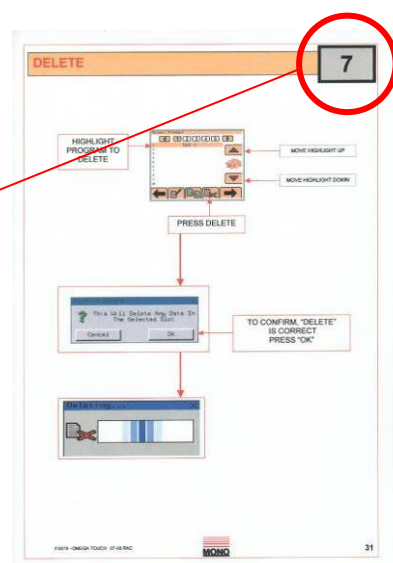
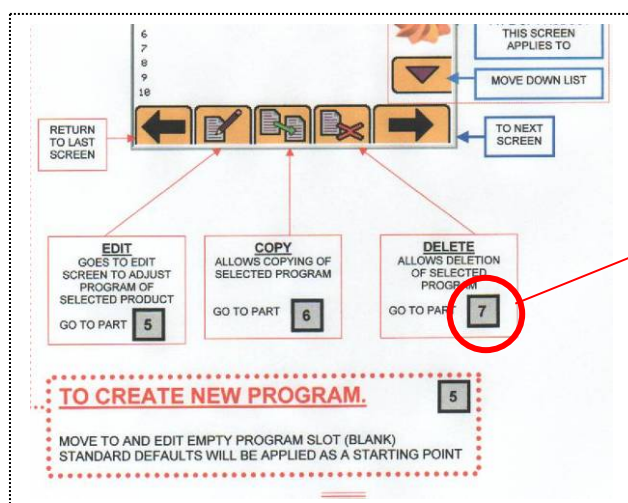


**= KEYBOARD ENTRY REQUIRED**

WHEN KEYBOARD APPEARS, A CODE MUST BE ENTERED BY TOUCHING THE NUMBERS IN THE CORRECT ORDER

IF A GREY BOX IS SHOWN IN THE BUTTON DESCRIPTION  
e.g. **7** GO TO THE CORRESPONDING PAGE FURTHER  
ON IN THE INSTRUCTIONS.

(MARKED IN TOP RIGHT HAND CORNER OF EACH PAGE)



# START

To turn on the machine, plug in the power cord and turn on the power supply.



This screen will be seen. Wait for the following screen to be displayed.



When this screen appears, the machine is ready for operation.  
Touch the screen anywhere to start setup and operation.

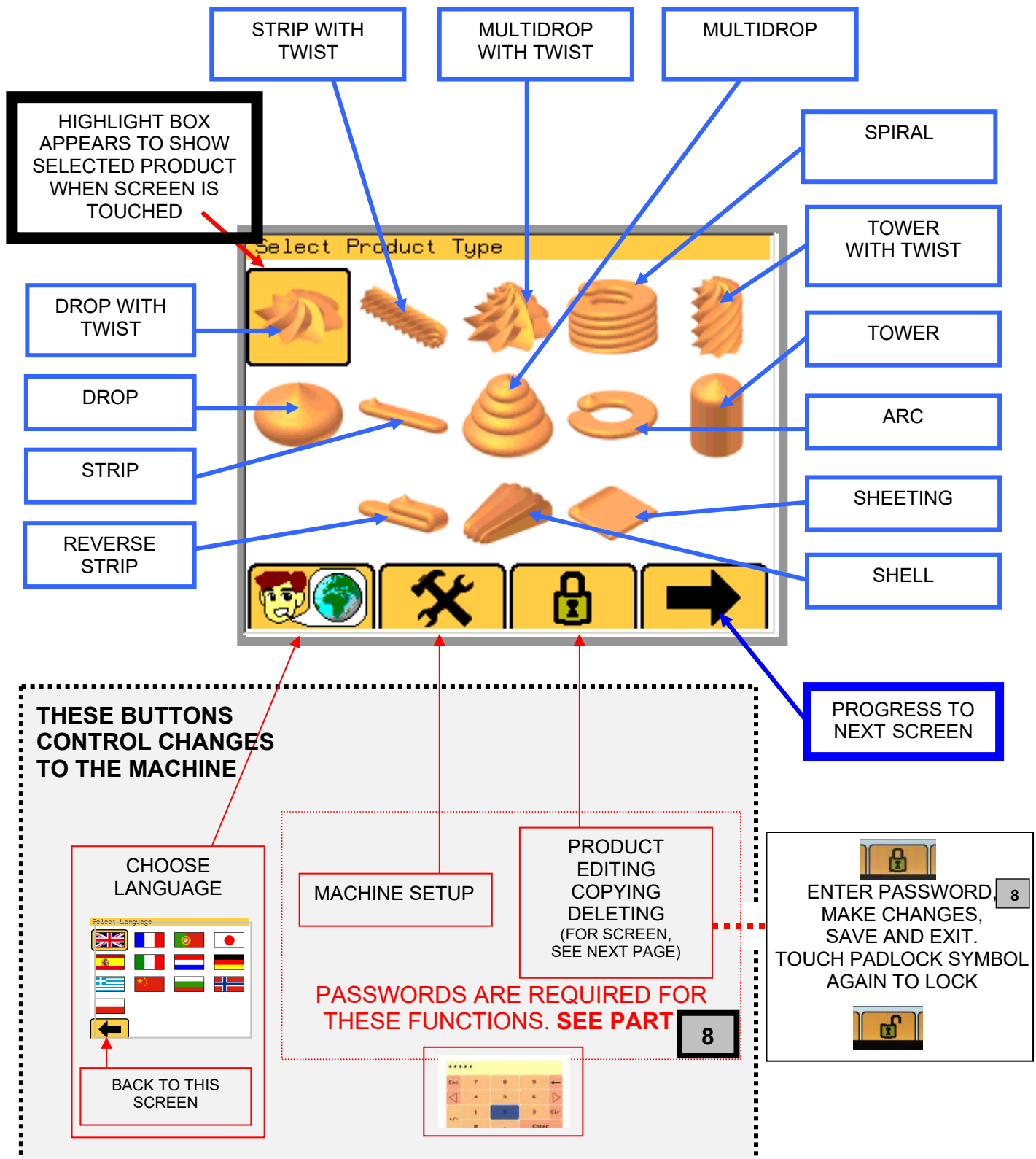
# SELECT PRODUCT TYPE

SELECT PRODUCT TO DEPOSIT OR TO CREATE A NEW PROGRAM

1

ALL OPERATIONS ARE ACTIVATED BY TOUCHING AREAS ON THE SCREEN WITH A FINGER.  
DO NOT USE EXCESSIVE FORCE OR HARD OBJECTS AS THIS WILL INVALIDATE MACHINE WARRANTY.

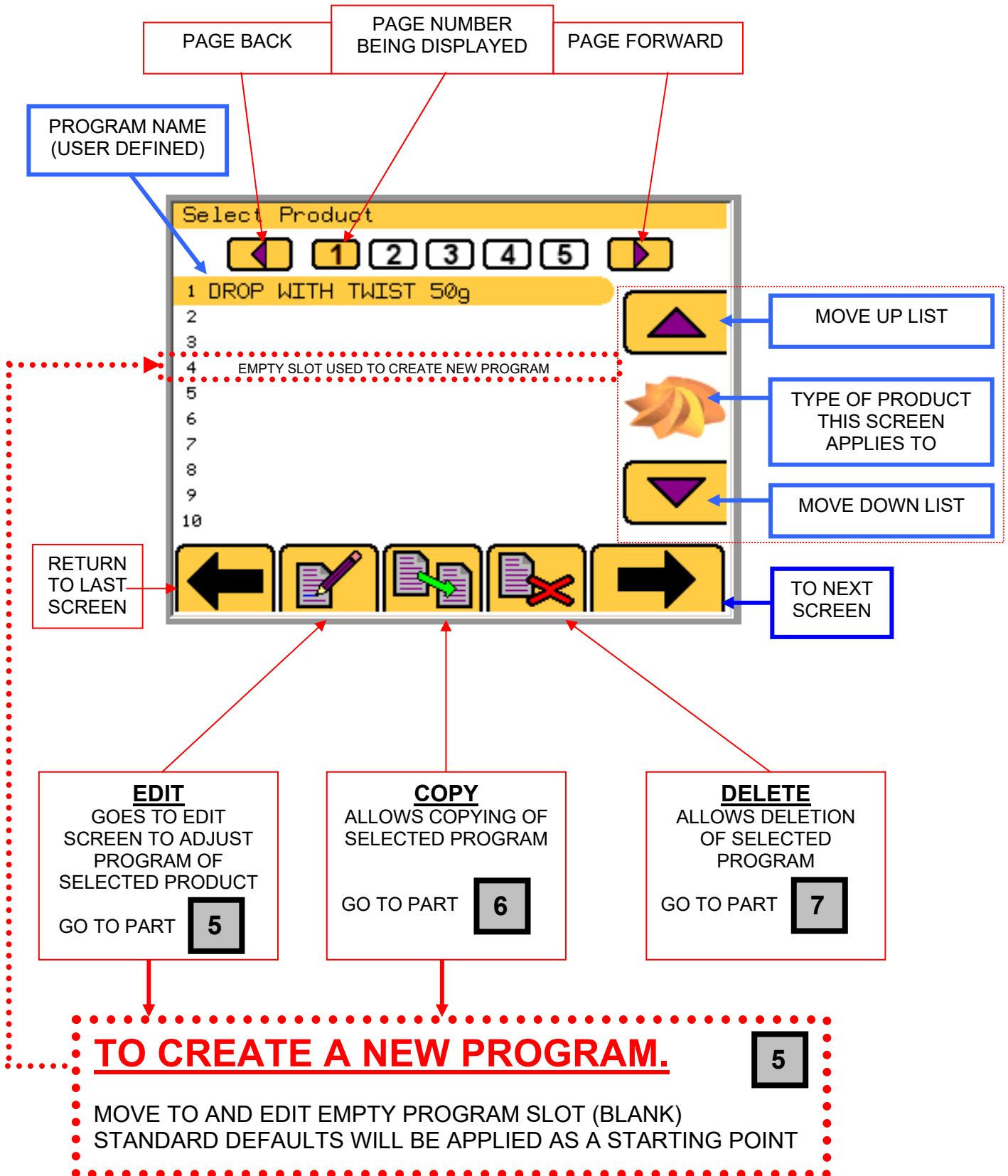
**TOUCH THE SCREEN FOR THE TYPE OF PRODUCT REQUIRED  
THEN ➡ TO MOVE TO THE NEXT SCREEN**



# SELECT SAVED PRODUCT TYPE

OR CHOOSE EMPTY SLOT TO CREATE A NEW PROGRAM

2



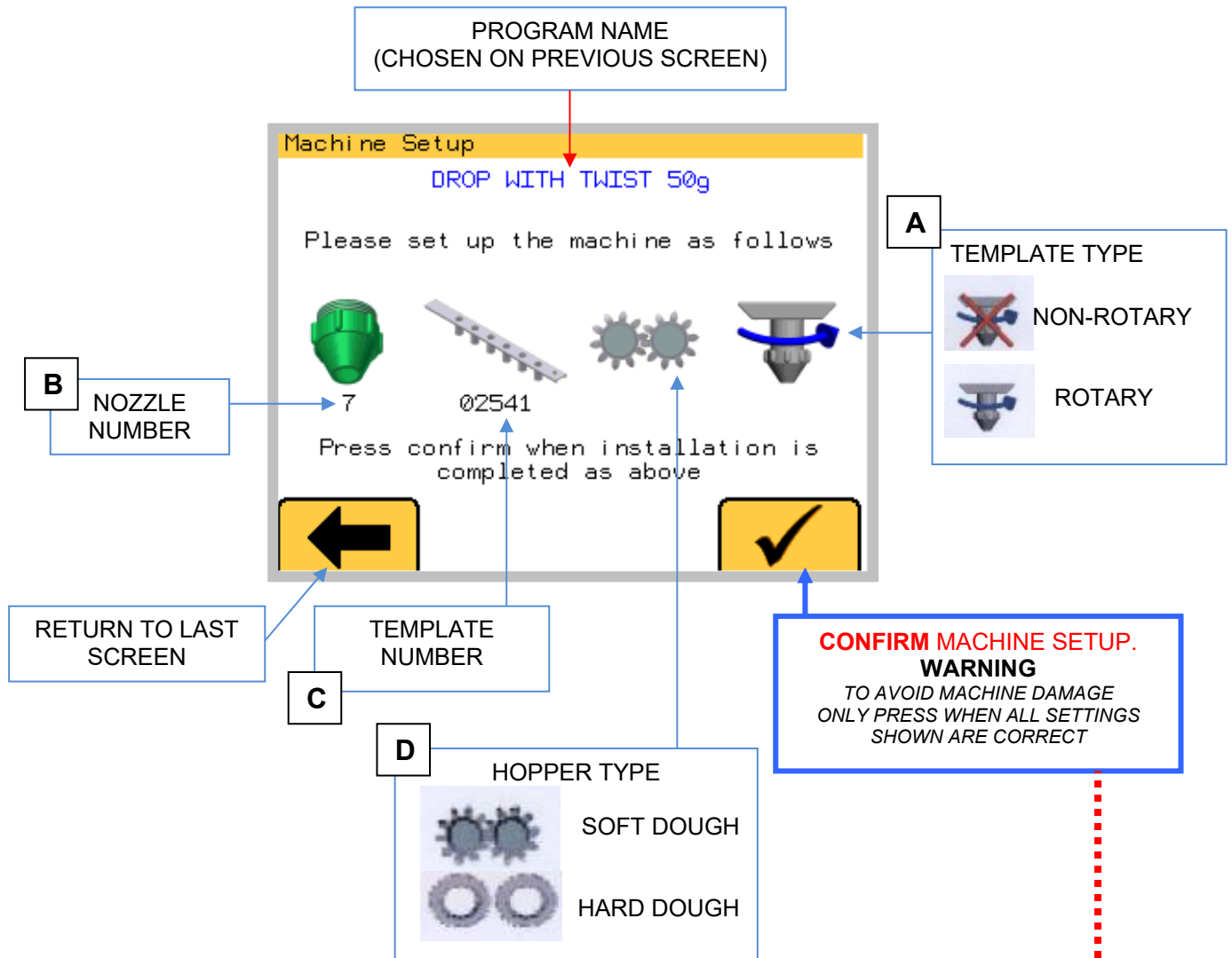
# CONFIRM SETUP OF MACHINE

3

MACHINE MUST BE SET AS SHOWN ON THE SCREEN.

- A. Check template type (Rotary/Non-rotary)
- B. Check nozzle type (Number)
- C. Template number
- D. Check hopper type (Soft dough/Hard dough)

THEN PRESS CONFIRM BUTTON.



**TO AVOID MACHINE DAMAGE**  
**ONLY PRESS CONFIRM BUTTON WHEN ALL PARTS ATTACHED TO THE MACHINE ARE AS SHOWN ON THE SCREEN**



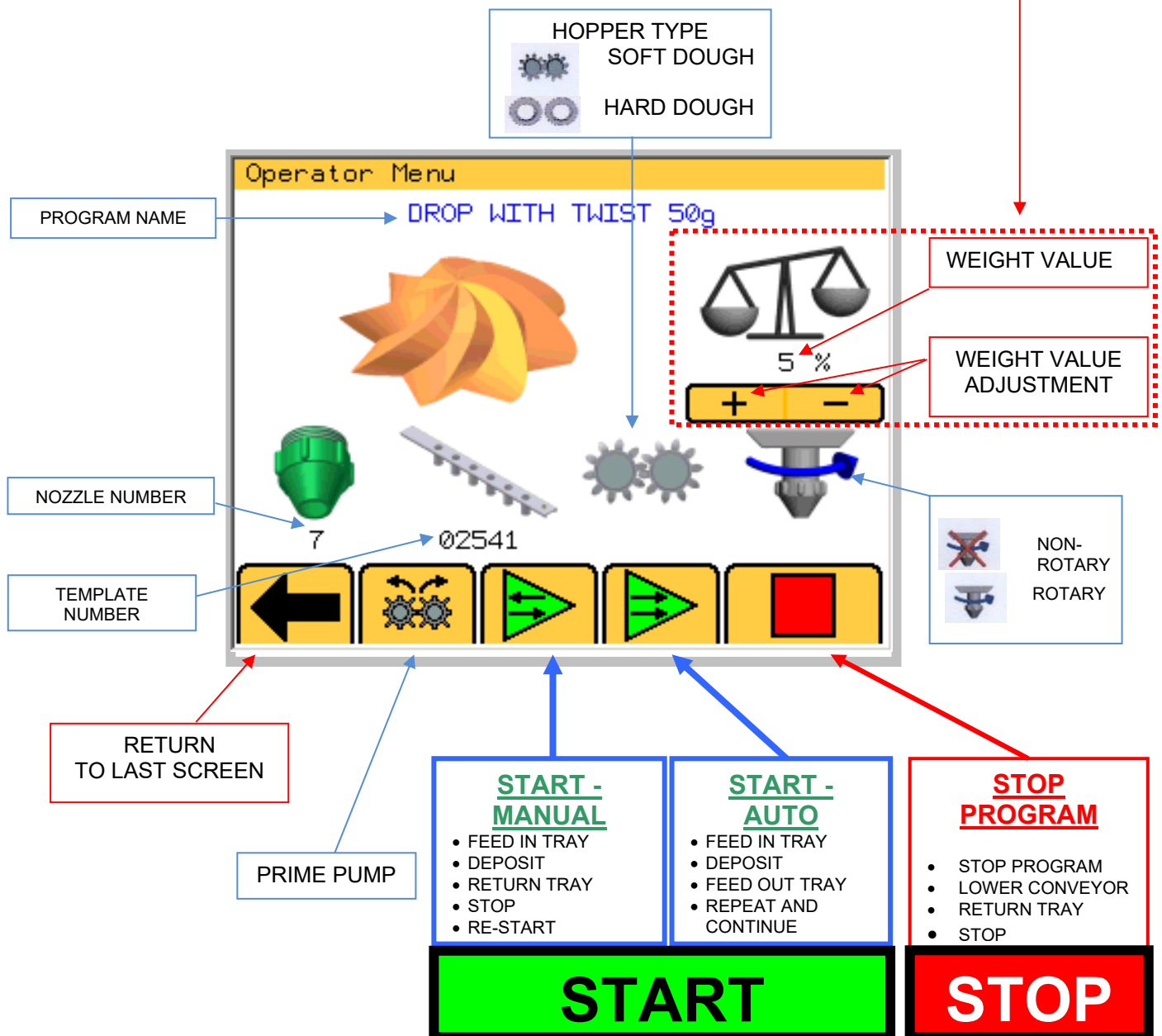
# OPERATOR (START) SCREEN

4

MACHINE SHOULD BE SET AS SHOWN ON THE SCREEN.  
THIS SCREEN CONTROLS THE ACTIONS REQUIRED BY THE OPERATOR.

1. Fill the hopper with the required product.
2. If the settings are correct, press the prime button to deposit a small amount onto a spare tray until all nozzles are depositing equally.
3. Place tray in place
4. Press “start-manual” or “start-auto”.
5. Press “stop” at any time to stop the program, lower the conveyor and return the tray.

Note: Temporary weight value adjustments can be made but the setting is not saved in the program.



# EDIT AND SAVE SCREEN

5

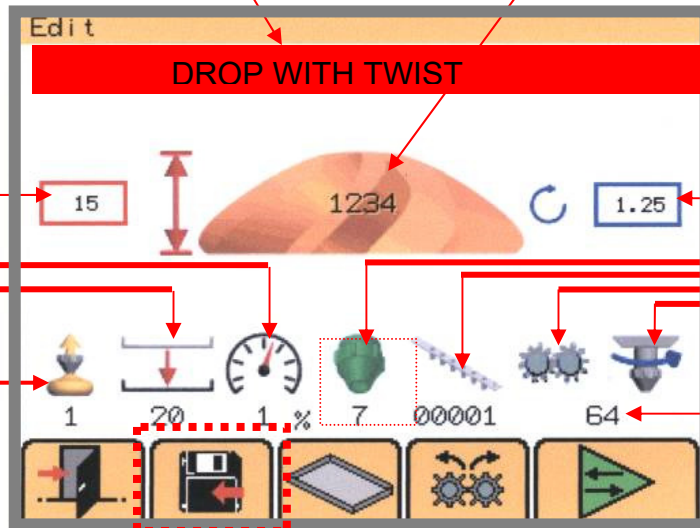
## EXAMPLE: DROP WITH TWIST

**PROGRAM NAME**  
MUST BE ENTERED TO  
ALLOW PROGRAM TO SAVE

**PRODUCT QUANTITY**  
THIS IS A SETTING NUMBER AND  
DOES NOT INDICATE A MEASURE OF  
ACTUAL VOLUME

**NOZZLE HEIGHT**  
(mm)  
ABOVE TRAY SURFACE

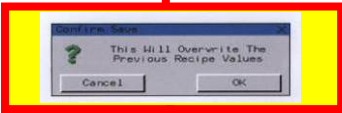
**NOZZLE ROTATIONS**  
NUMBER OF TURNS  
DURING A DEPOSIT CYCLE



EXIT THIS SCREEN



**SAVE EDITS**



**SUCK BACK  
QUANTITY**

**TABLE  
JOG DISTANCE (mm)**

**OVERALL  
MACHINE SPEED  
(% OF MAXIMUM)**

ENTER  
TRAY  
SETUP  
SCREEN

GO TO PART  
5A

**MAX HEIGHT FOR  
HOPPER/TEMPLATE  
COMBINATION**

**START  
MANUAL MODE**

**PRIME PUMP  
(SOFT DOUGH SHOWN)**

**TEMPLATE TYPE**  
ROTARY  
NON-ROTARY

**SELECT HOPPER**  
HARD DOUGH  
SOFT DOUGH

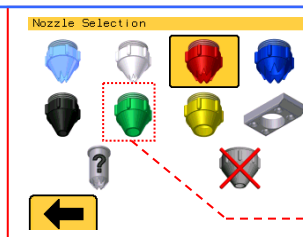
**TEMPLATE NUMBER**  
ENTER VIA KEYPAD  
THAT APPEARS WHEN  
PRESSED



## NOTE

A RED BACKGROUND  
TO ANY SETTING MEANS  
THAT THE VALUE MUST  
BE CORRECTED  
BEFORE STARTING

CHOOSE **NOZZLE TYPE**



**EXAMPLE:  
MULTIDROP  
WITH TWIST**

**DEPOSIT QUANTITY FOR EACH LAYER**

**SETTING ERROR INDICATOR**  
BOXES TURN RED WHEN INCORRECT SETTING MADE

**NOZZLE HEIGHT (mm) FOR EACH LAYER**

**NOZZLE HEIGHT (mm) FROM TRAY SURFACE**

**NUMBER OF TURNS FOR EACH LAYER (-VE VALUES POSSIBLE)**

**PRIME PUMP (HARD DOUGH SHOWN)**

OTHER SETTING BUTTONS ARE THE SAME AS LAST PAGE

The screenshot shows the 'Edit' screen for 'MULTIDROP'. It features a central graphic of a product being formed. To the left, there are four input boxes for nozzle height, each with a red arrow pointing to it. To the right, there are four input boxes for the number of turns, each with a red arrow pointing to it. Above the central graphic, there are four input boxes for deposit quantity for each layer, each with a red arrow pointing to it. A red box with a question mark is in the top right corner. Below the central graphic, there are several icons and a row of buttons. A red box with a question mark is also in the top right corner of the screen.

**EXAMPLE:  
SHEETING /  
STRIP**

**DEPOSIT QUANTITY FOR BEGINNING OF PRODUCT**

**DEPOSIT QUANTITY FOR LENGTH**

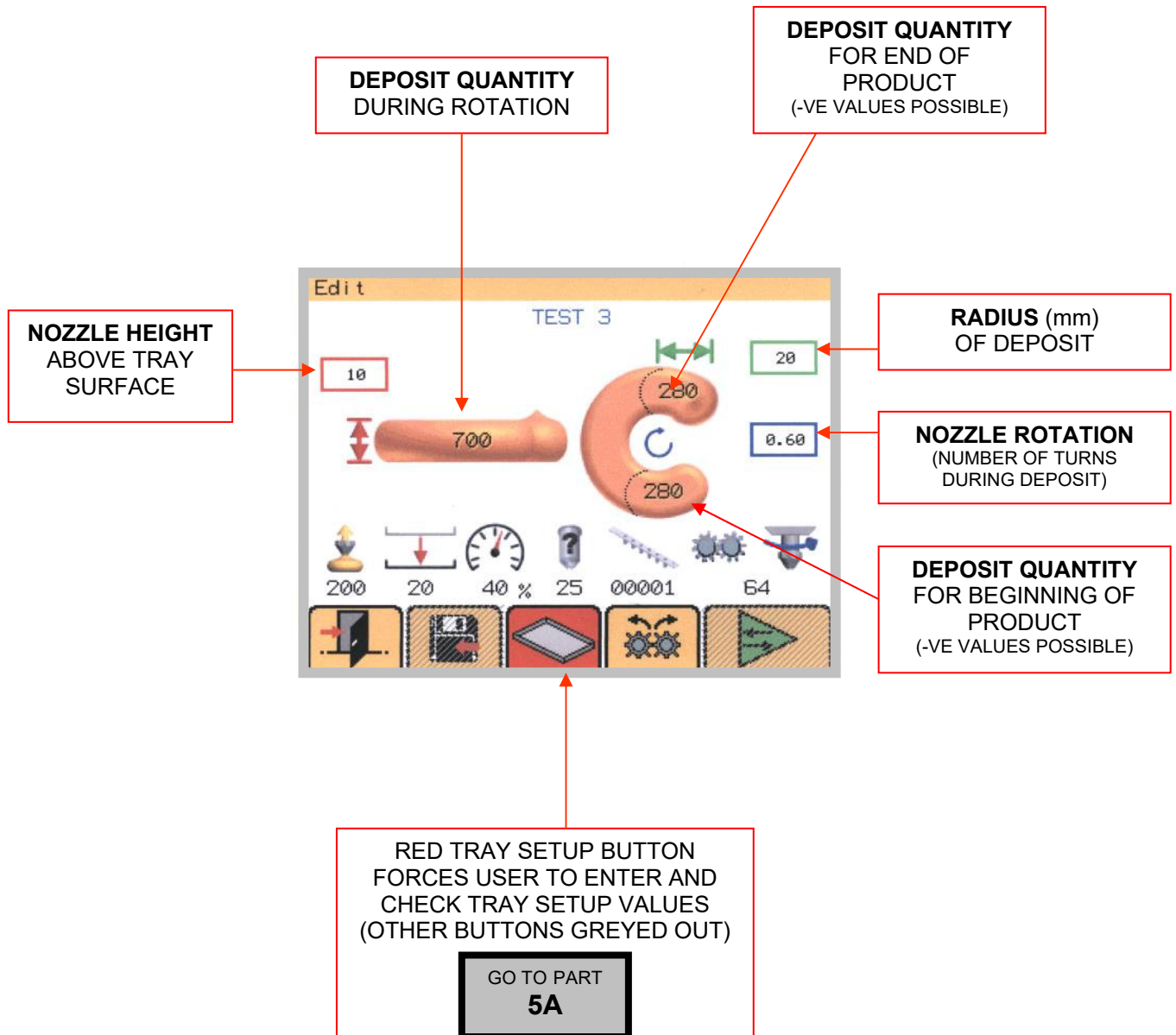
**DEPOSIT QUANTITY FOR END OF PRODUCT (-VE VALUES POSSIBLE)**

**NOZZLE HEIGHT ABOVE TRAY SURFACE**

**LENGTH (mm) OF TRAY MOVEMENT**

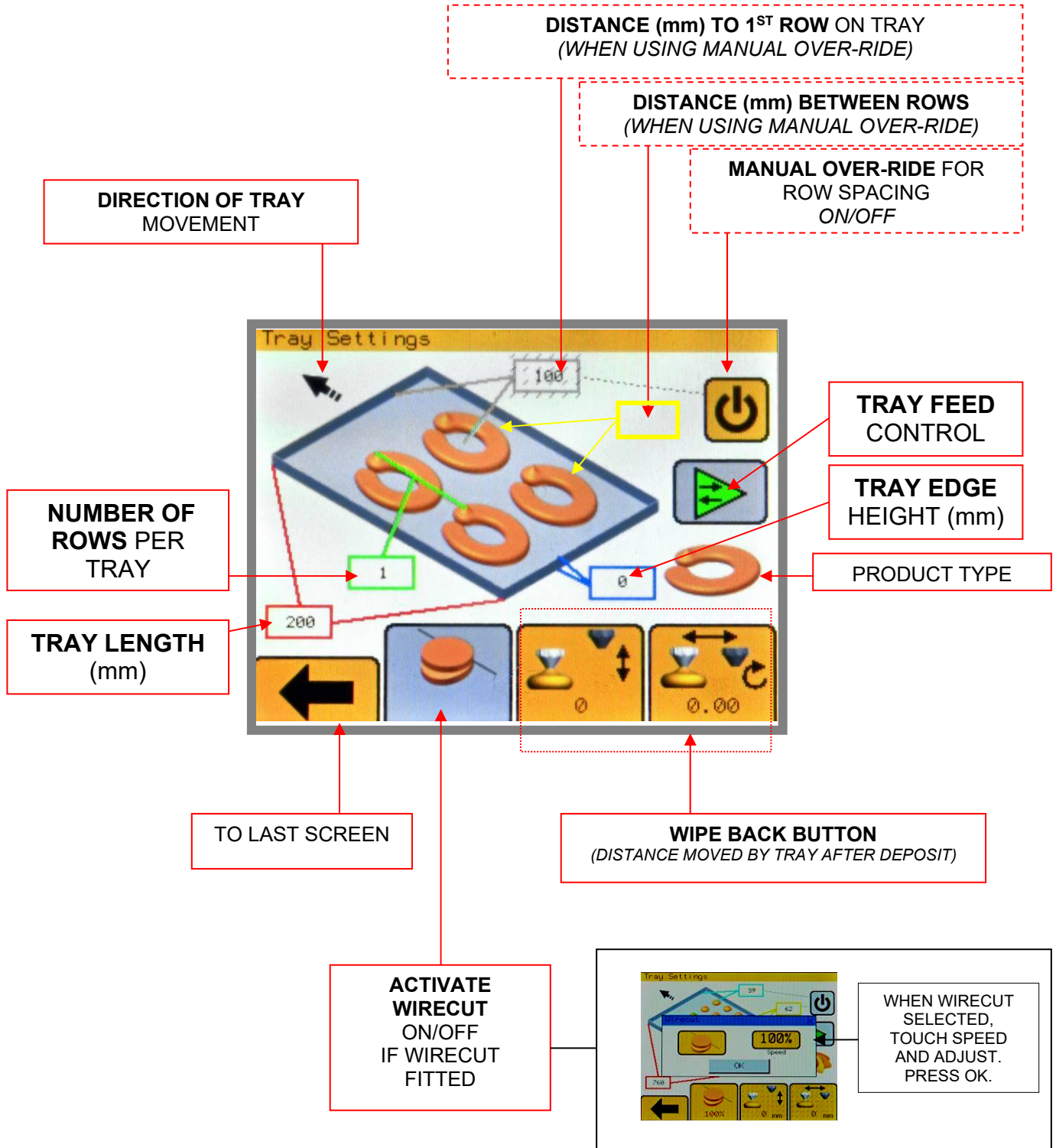
The screenshot shows the 'Edit' screen for 'TEST 12'. It features a central graphic of a product being formed. To the left, there are four input boxes for deposit quantity, each with a red arrow pointing to it. To the right, there are four input boxes for nozzle height, each with a red arrow pointing to it. Below the central graphic, there are several icons and a row of buttons. A red box with a question mark is in the top right corner of the screen.

**EXAMPLE:  
“C” SHAPE  
(ARC)**

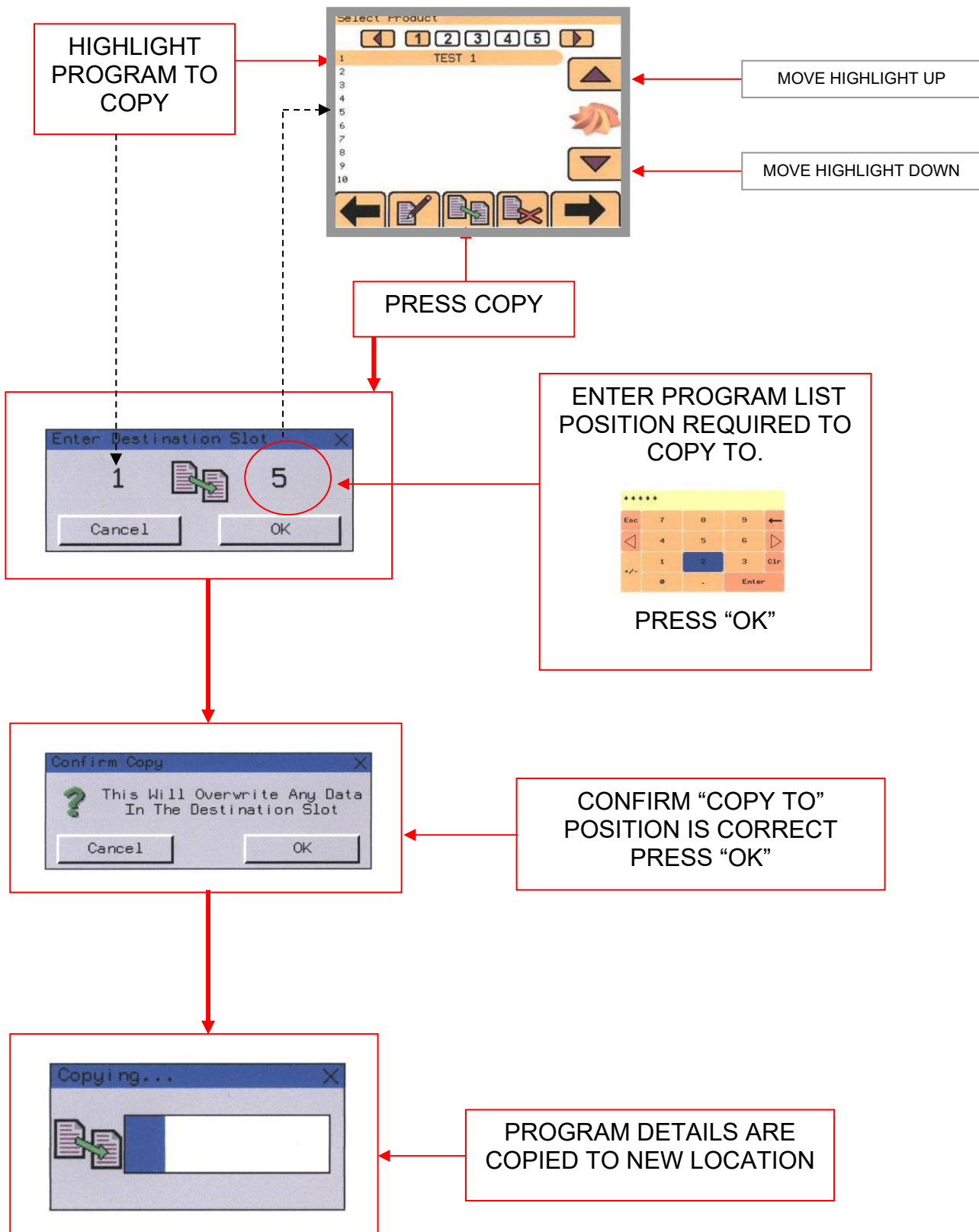




TOUCH WINDOWS AND ENTER VALUES VIA KEYPAD

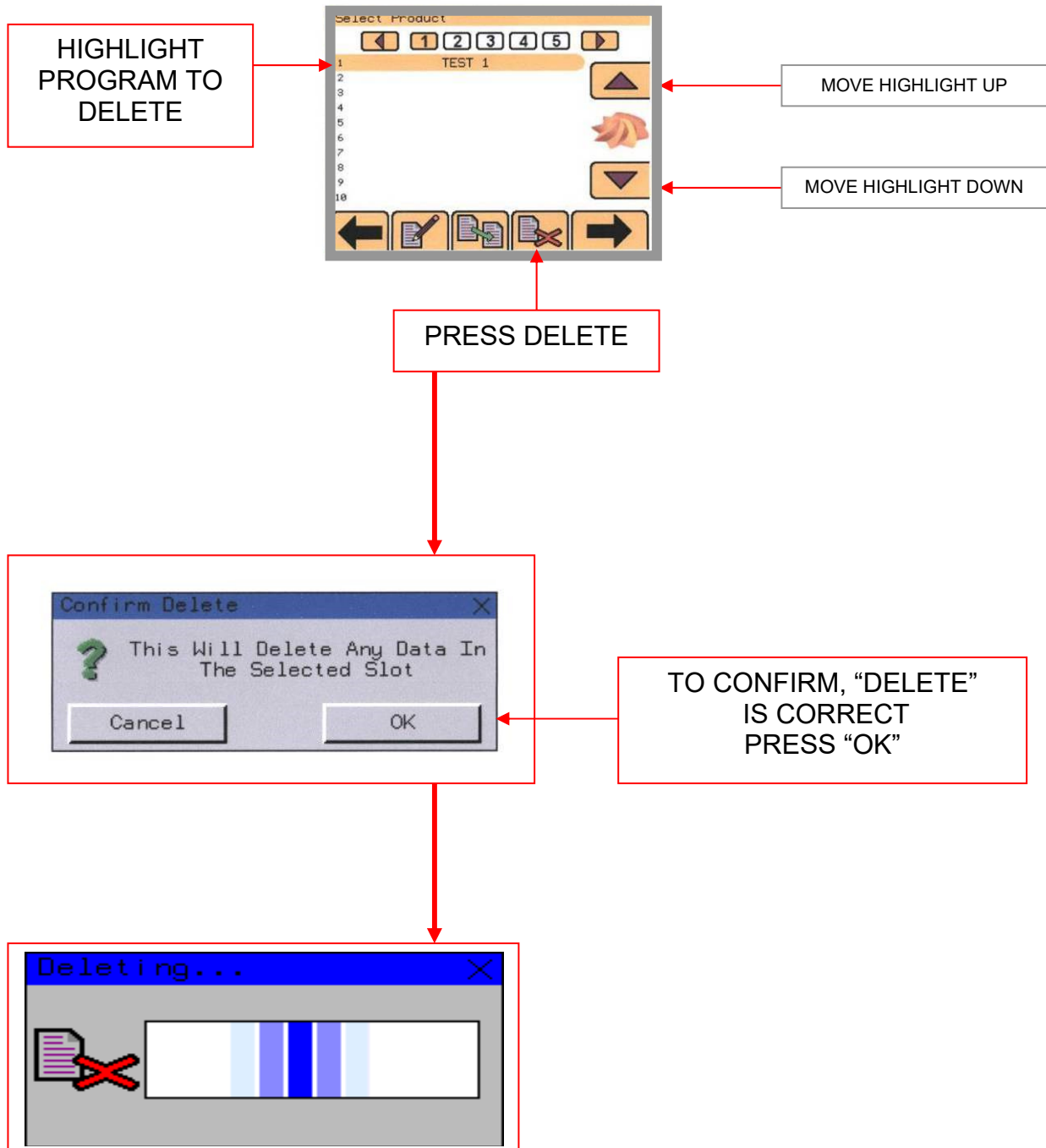






# DELETE

7



# PASSCODES

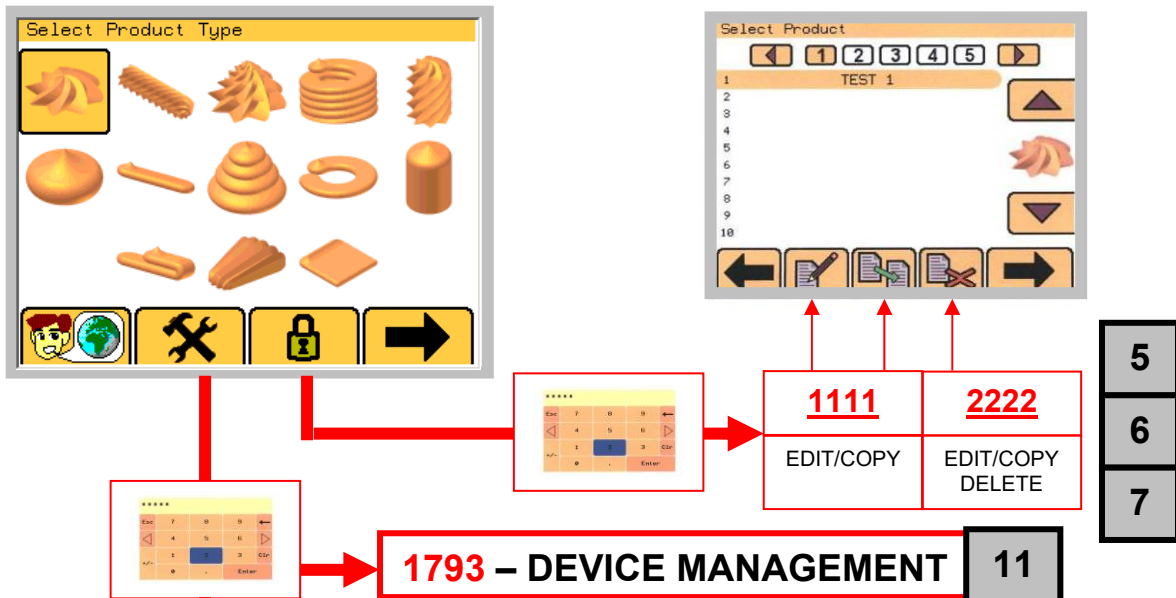
8

## SUGGESTION

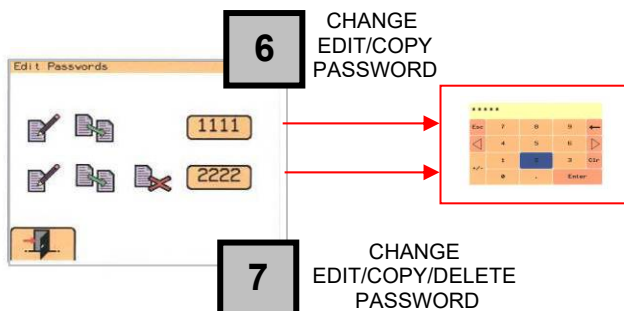
To stop unauthorised changes to the Omega setup, it is suggested that this page is removed from this manual and kept in a safe place for future reference. If tampering could be a problem, It is also a good idea to change the passcodes at regular intervals.

## CAUTION

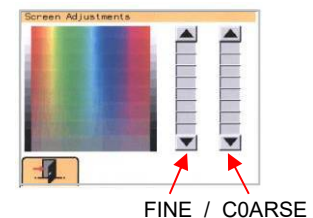
DO NOT ATTEMPT TO MAKE ADJUSTMENTS UNLESS YOU ARE FULLY AWARE OF THE RESULTS



## 561234 - CHANGE PASSCODE



## 1234 - SCREEN ADJUSTMENT



THIS SECTION IS FOR TRAINED ENGINEERS ONLY

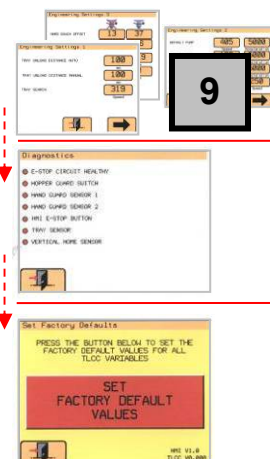
## 3142 -- ENGINEERING SETTINGS

## 2808 -- DIAGNOSTICS

**RESET FACTORY DEFAULTS**  
**01554777460**

OR

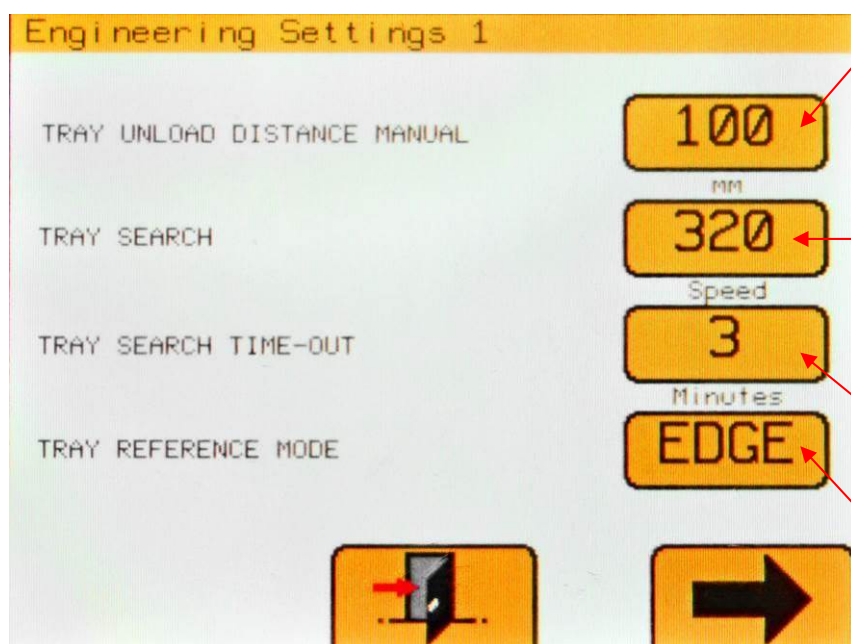
OR



# ENGINEERING SETTINGS (1)

9<sub>/1</sub>

THIS SECTION IS FOR TRAINED ENGINEERS ONLY



IN MANUAL MODE:  
DISTANCE THE LEADING EDGE  
OF THE TRAY IS BROUGHT BACK  
PASSED THE TRAY SENSOR, WHEN  
RETURNING TO OPERATOR

SPEED VALUE THAT  
TRAY IS FED UP TO  
TRAY SENSOR

TRAY SEARCH  
TIMEOUT

HOME OR EDGE

## CAUTION

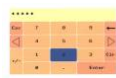
**DO NOT ATTEMPT TO MAKE ADJUSTMENTS UNLESS YOU ARE FULLY AWARE OF THE RESULTS**

# ENGINEERING SETTINGS (2)

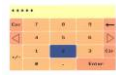
9<sub>12</sub>

THIS SECTION IS FOR TRAINED ENGINEERS ONLY

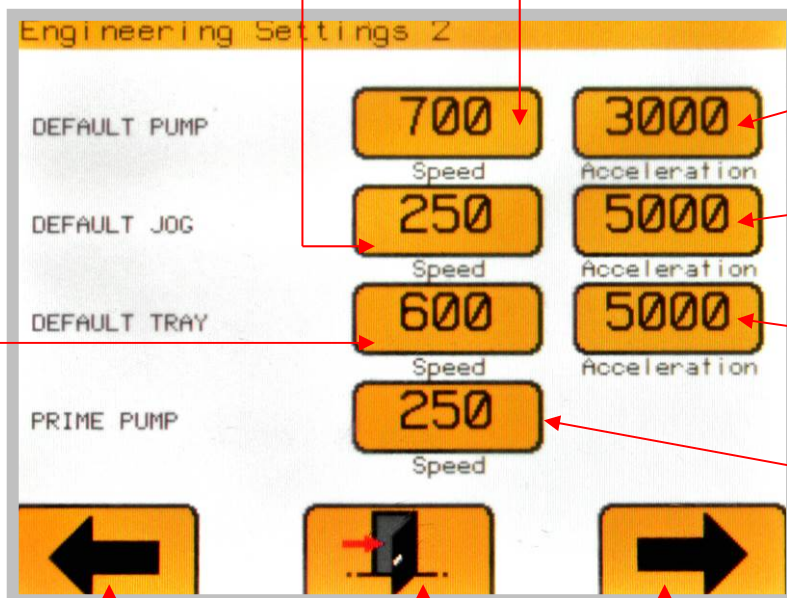
DEFAULT  
TRAY SPEED  
(MOVEMENT BETWEEN ROWS)



DEFAULT  
JOG SPEED  
(VERTICAL AFTER DEPOSIT)



DEFAULT SPEED OF PUMP  
(100% VALUE IN PRODUCT SETUP PROGRAM)



DEFAULT  
ACCELERATION  
FOR PUMP



DEFAULT  
ACCELERATION  
FOR JOG



DEFAULT  
ACCELERATION  
FOR TRAY



PUMP SPEED  
WHEN USING  
PRIME BUTTON



EXIT  
THIS SCREEN

GO TO PREVIOUS SCREEN  
**ENGINEERING SETTING 1**  
(PREVIOUS PAGE)

GO TO NEXT SCREEN  
**ENGINEERING SETTING 3**  
(NEXT PAGE)

## CAUTION

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



# ENGINEERING SETTINGS (3)

9<sub>/3</sub>

THIS SECTION IS FOR TRAINED ENGINEERS ONLY

OFFSET HEIGHT VALUE (mm)  
**HARD DOUGH HOPPER  
NON-ROTARY TEMPLATE**

OFFSET HEIGHT VALUE IS  
FACTORY SET AND SHOULD NOT  
BE CHANGED UNLESS  
INSTRUCTED TO DO SO.  
**DAMAGE TO THE MACHINE  
COULD OCCUR**

OFFSET HEIGHT VALUE (mm)  
**HARD DOUGH HOPPER  
ROTARY TEMPLATE**

OFFSET HEIGHT VALUE (mm)  
**SOFT DOUGH HOPPER  
ROTARY TEMPLATE**

OFFSET HEIGHT VALUE (mm)  
**SOFT DOUGH HOPPER  
NON-ROTARY TEMPLATE**

DISTANCE (mm) FROM **HARD**  
DOUGH HOPPER DEPOSITING  
CENTRELINE TO TRAY EDGE  
DETECTION POINT  
(USED IN ROW SPACING CALCULATIONS)

DISTANCE (mm) FROM **SOFT**  
DOUGH HOPPER DEPOSITING  
CENTRELINE TO TRAY EDGE  
DETECTION POINT  
(USED IN ROW SPACING CALCULATIONS)

EXIT  
THIS SCREEN

GO TO PREVIOUS SCREEN  
**ENGINEERING SETTING 2**  
(PREVIOUS PAGE)

GO TO NEXT SCREEN  
**ENGINEERING SETTING 4**  
(NEXT PAGE)

Engineering Settings 3

HARD DOUGH OFFSET	13	37
SOFT DOUGH OFFSET	0	16
HARD DOUGH CENTRE LINE OFFSET	-19	
SOFT DOUGH CENTRE LINE OFFSET	0	

← [Hopper Icon] →

## CAUTION

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

THIS SECTION IS FOR TRAINED ENGINEERS ONLY

## GEARBOX RATIOS

The screenshot shows the 'Engineering Settings 4' screen with the following settings:

Setting	Value 1	Value 2
PUMP GEARBOX RATIO	28	1
TRAY GEARBOX RATIO	10	1
JOG GEARBOX RATIO	15	1
ROTARY GEARBOX RATIO	10	1

Navigation buttons at the bottom:

- Left arrow: GO TO PREVIOUS SCREEN ENGINEERING SETTING 3 (PREVIOUS PAGE)
- Exit button (door icon): EXIT THIS SCREEN
- Right arrow: GO TO NEXT SCREEN ENGINEERING SETTING 5 (NEXT PAGE)

Labels on the right side of the screen:

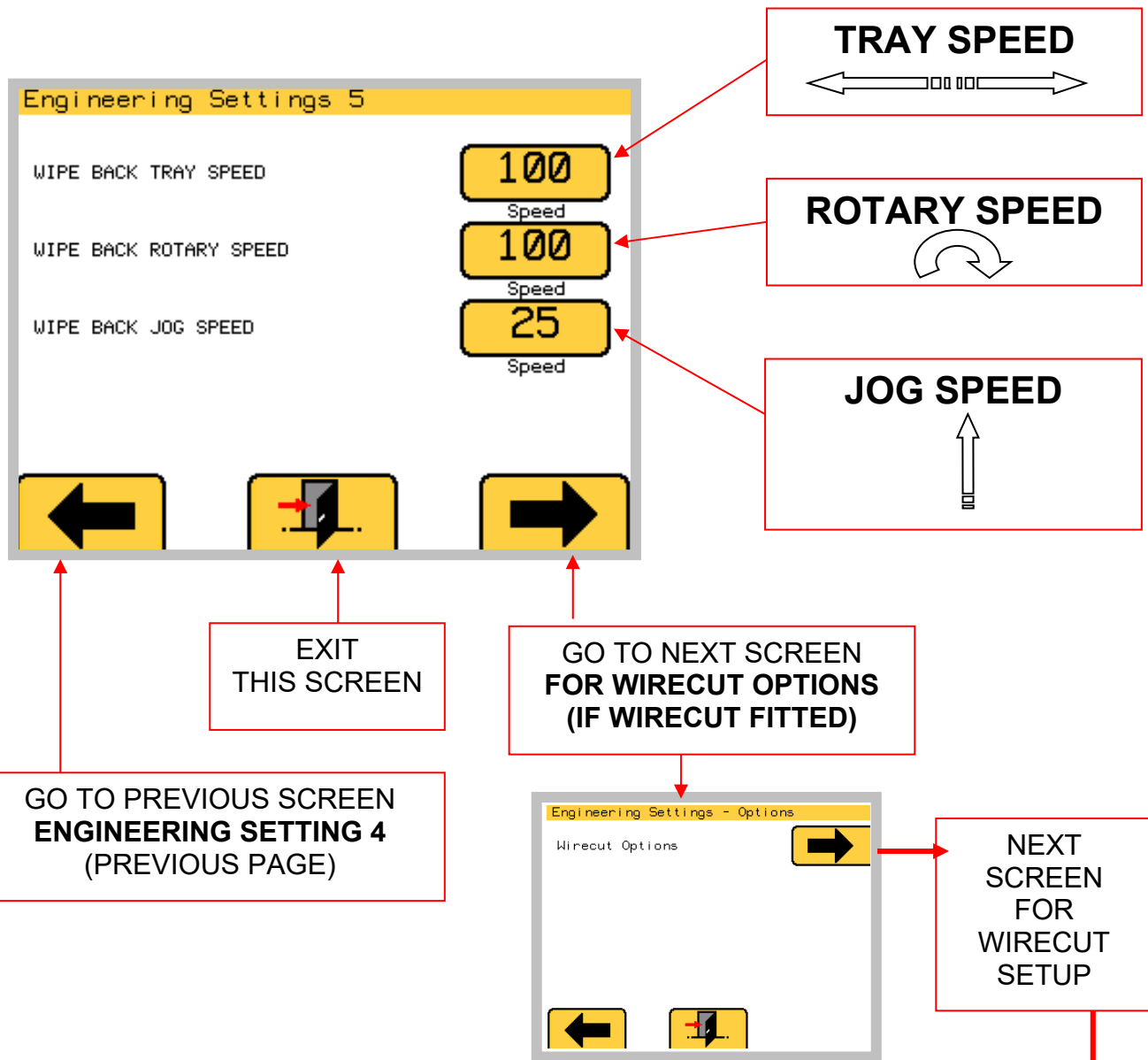
- PUMP
- TRAY
- JOG
- ROTARY

### **CAUTION**

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

THIS SECTION IS FOR TRAINED ENGINEERS ONLY

## WIPE BACK DEFAULT SETTINGS (SEE **5A** )

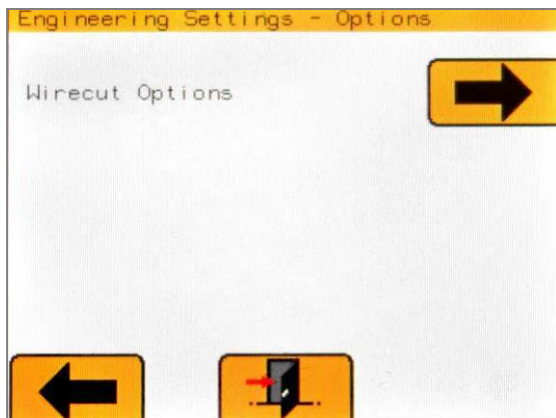


### **CAUTION**

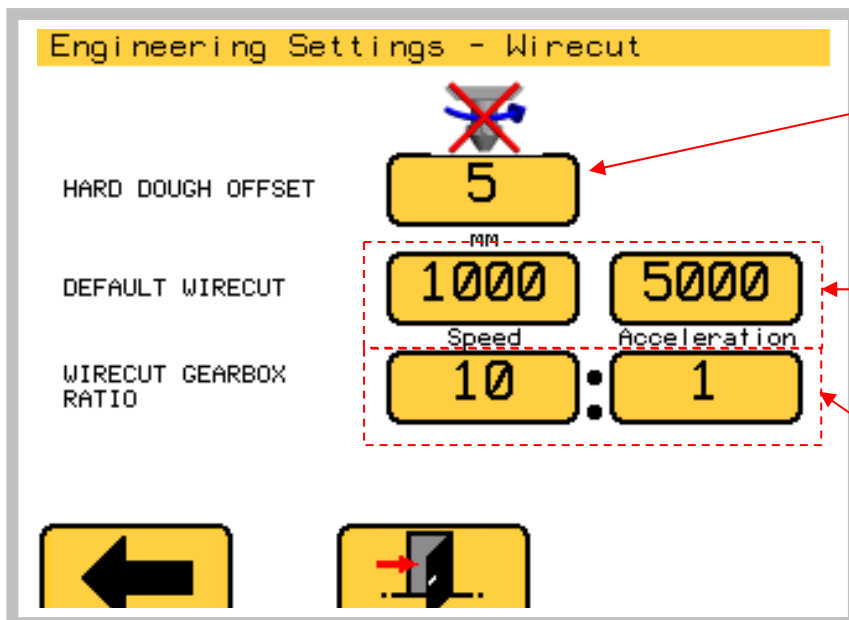
**DO NOT ATTEMPT TO MAKE ADJUSTMENTS UNLESS YOU ARE FULLY AWARE OF THE RESULTS**

NEXT PAGE

## WIRECUT SETTINGS



**PROCEED TO  
WIRECUT  
SETTINGS PAGE**



**HARD DOUGH  
OFFSET**

**WIRECUT  
SPEED +  
ACCELERATION**

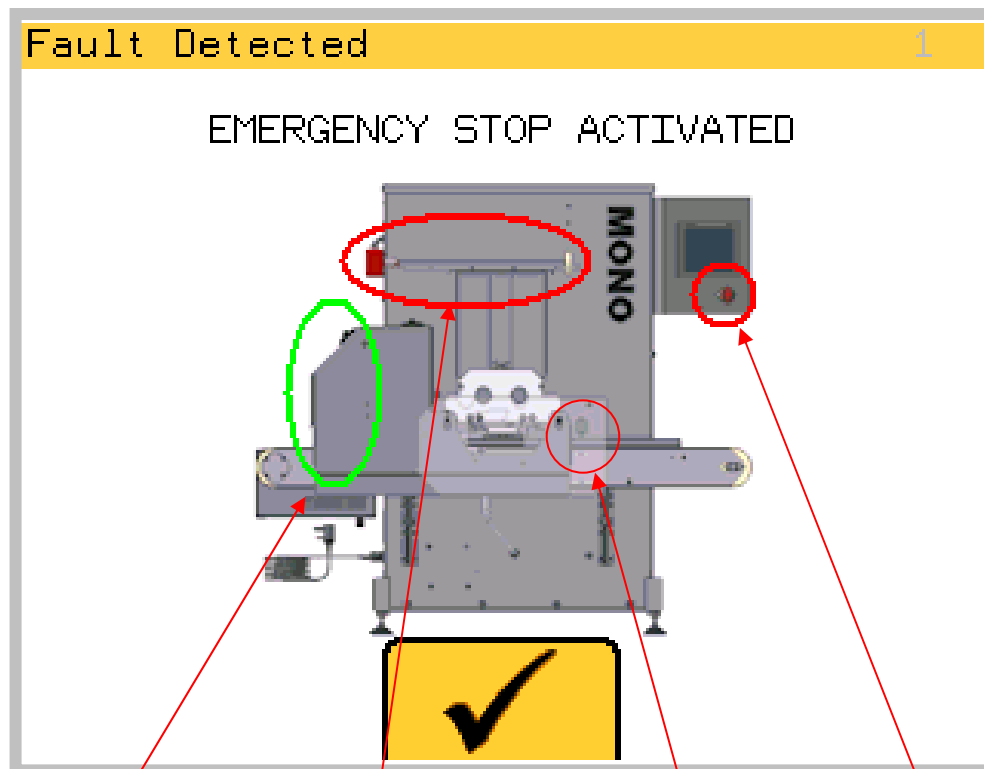
**WIRECUT  
GEARBOX RATIO**

**EXIT  
ENGINEERING  
SETTINGS**

**GO TO PREVIOUS SCREEN  
ENGINEERING SETTING 4  
(PREVIOUS PAGE)**

### **CAUTION**

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



WIRECUT  
COVER  
(IF FITTED)

HOPPER COVER

SAFETY BEAM


STOP BUTTON

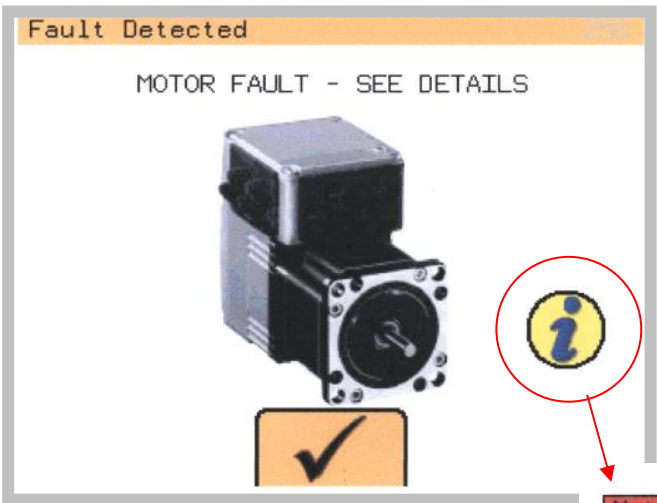
THIS SCREEN INDICATES A FAULT CONDITION IN THE SAFETY AREAS.

WHEN **RED**, CLOSE COVER OR CLEAR OBSTRUCTIONS TO CLEAR FAULT.  
WHEN INDICATOR GOES **GREEN**, FAULT HAS BEEN CORRECTED AT THAT POSITION.

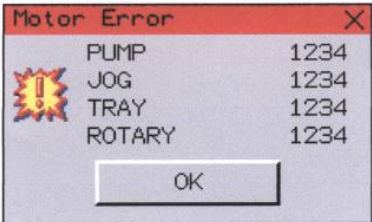
WHEN ALL FAULTS HAVE BEEN CORRECTED, PRESS  BUTTON TO CLEAR SCREEN



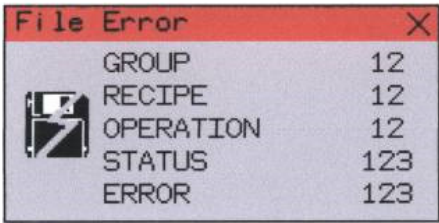
IF THE FOLLOWING SCREEN APPEARS, CHECK THAT THE TABLE MOVEMENT ETC. IS NOT JAMMED WITH SOMETHING. IF IT IS, CLEAR THE OBSTRUCTION AND PRESS  TO PROCEED.



PRESS THIS BUTTON IF MORE INFORMATION IS REQUIRED AS TO WHICH MOTOR IS AT FAULT



**IF THE FAULT IS NOT OBVIOUS AND NOT ABLE TO BE CLEARED SAFELY, A SUITABLY TRAINED ENGINEER SHOULD BE CALLED**



ERROR WHEN LOADING/SAVING RECIPE DATA TO HMI STORAGE CARD  
PLEASE CONTACT SERVICE DEPT. / ENGINEER IF PROBLEM PERSISTS

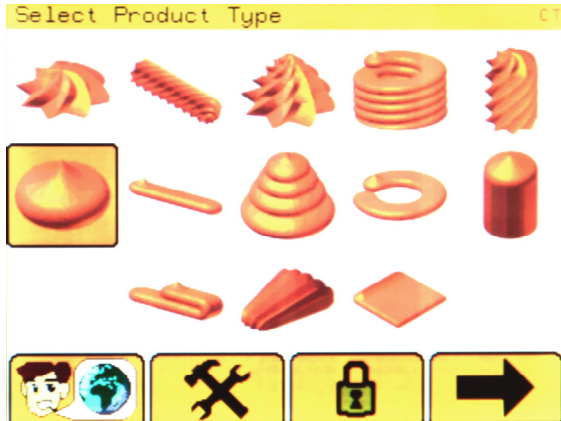
# DEVICE MANAGEMENT

11

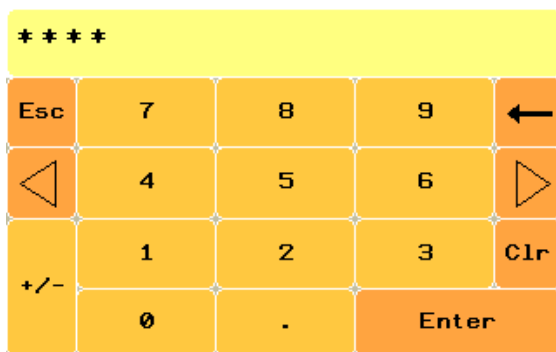
Device Management allows you to **backup / restore recipes and settings.**  
and **update your system software.**

## How to access the device management functions

1. Touch the **Settings** icon at the bottom of the screen (Hammer and Spanner).



2. Input the Password **1793** and press the **Enter** button.



3. If backing up or restoring recipes/settings, now insert a USB memory stick (pen drive) into the USB port below the control panel enclosure. **(The software update requires this step later).**



4. When the **Device Management Screen** appears, select from Backup, Update, and Restore.



## BACKUP

1. Touch the **BACKUP** button on the Device Management Screen.
2. Touch **Back up to USB** to save recipes and settings to the USB memory stick (pen drive).

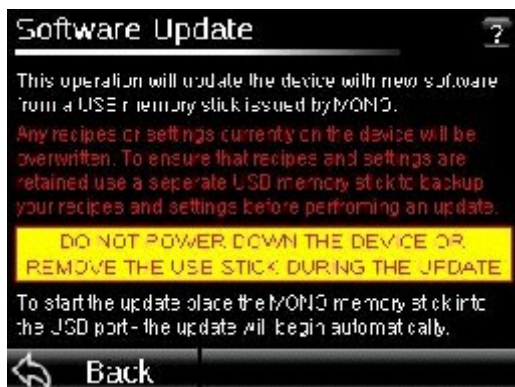
**Note that any existing recipes or settings on the USB memory stick are erased.**



3. Touch the **Back** button (bottom of the screen) to return to the Select Product Type screen.

## UPDATE (Software Update Only)

1. Touch the **UPDATE** button on the Device Management Screen.
2. When the screen below is displayed, insert the USB memory stick (pen drive) containing the software update. The update will then automatically begin.



3. Touch the **Back** button (bottom of the screen) to return to the Select Product Type screen.

## RESTORE

1. Touch the **RESTORE** button on the Device Management Screen.
2. Touch **Restore From USB** to import recipes and settings from the USB memory stick (pen drive) to the Omega machine.

**Note that this overwrites existing recipes and settings on the Omega machine.**



3. Touch the **Back** button (bottom of the screen) to return to the Select Product Type screen.

## RESTORE (Advanced)

1. Touch the **RESTORE** button on the Device Management Screen.
2. Touch the **Advanced** button at the bottom-right of the screen.
3. Touch **RESTORE RECIPES** to import only recipes from the USB memory stick (pen drive) to the Omega machine. **Note that this overwrites existing recipes on the Omega machine.**
4. Touch **RESTORE SETTINGS** to import only settings from the USB memory stick (pen drive) to the Omega machine. **Note that this overwrites existing settings on the Omega machine.**





### WARNING

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

Under most conditions the machine only needs to be kept clean and used as instructed in this manual.



**WARNING: Under no circumstances use a water hose or pressure washer to clean this machine.**

## Check and Maintenance Schedule

Operation	Daily	Weekly	Monthly	Yearly
Clean depositor as per instructions in the manual	*			
Check condition of supply lead and plug	*			
Check fit of guards	*			
Clean under conveyor belts		*		
Check hopper seals		*		
Check end cap seals		*		
Check condition and tension of conveyor (adjust or replace, as required)			*	
Check end cap bearings			*	
Check alignment of sensor on guards			*	
Check tray sensor is secure			*	
Check condition of idle roller bearings				*
Check condition of drive shaft bearings				*
Check condition and tension of chain and grease as required				*
Grease slides as required				*
Adjust eccentric guide rollers as required				*
Adjust concentric guide rollers as required				*
Check and grease all slide plates as required				*
Check all motor mounts are tight				*
Inspect electrical connections and tighten as required				*
Replace the button battery (M251 controller) <sup>(1)</sup>				*

<sup>(1)</sup> Internal data can be lost if the battery is depleted and should be replaced every 1 to 2 years (depending on the ambient temperature).



**WARNING: Under no circumstances should maintenance or cleaning of this product machine be done with the power connected.**



## 12.0 SPARES AND SERVICE

Omega PLUS

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

### UK SERVICE, SPARES and OVERSEAS SUPPORT:



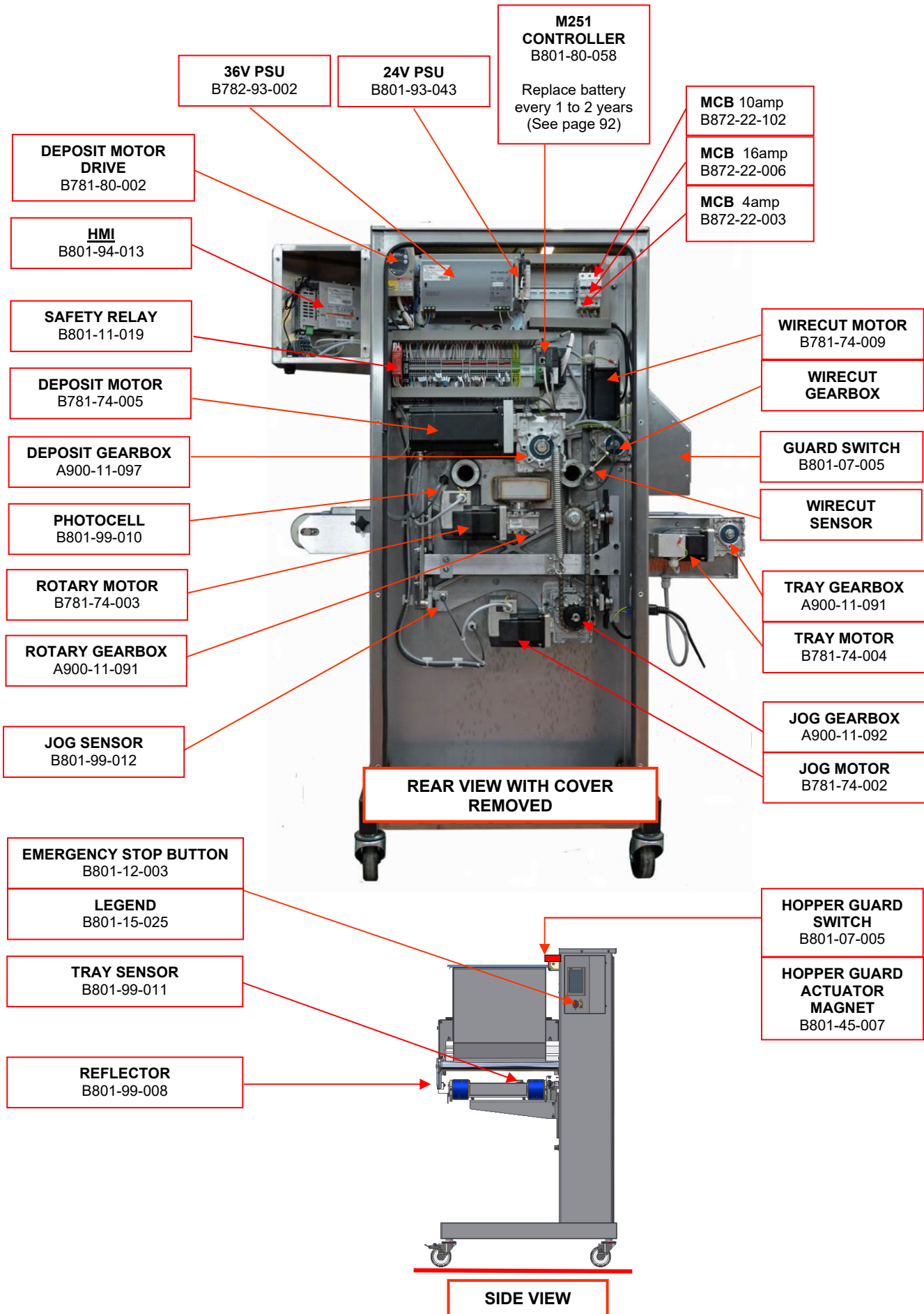
Queensway  
Swansea West Industrial Estate  
Swansea.  
SA5 4EB  
UK

email: [spares@monoequip.com](mailto:spares@monoequip.com)  
Spares Tel. +44(0)1792 564039  
Website: [www.monoequip.com](http://www.monoequip.com)

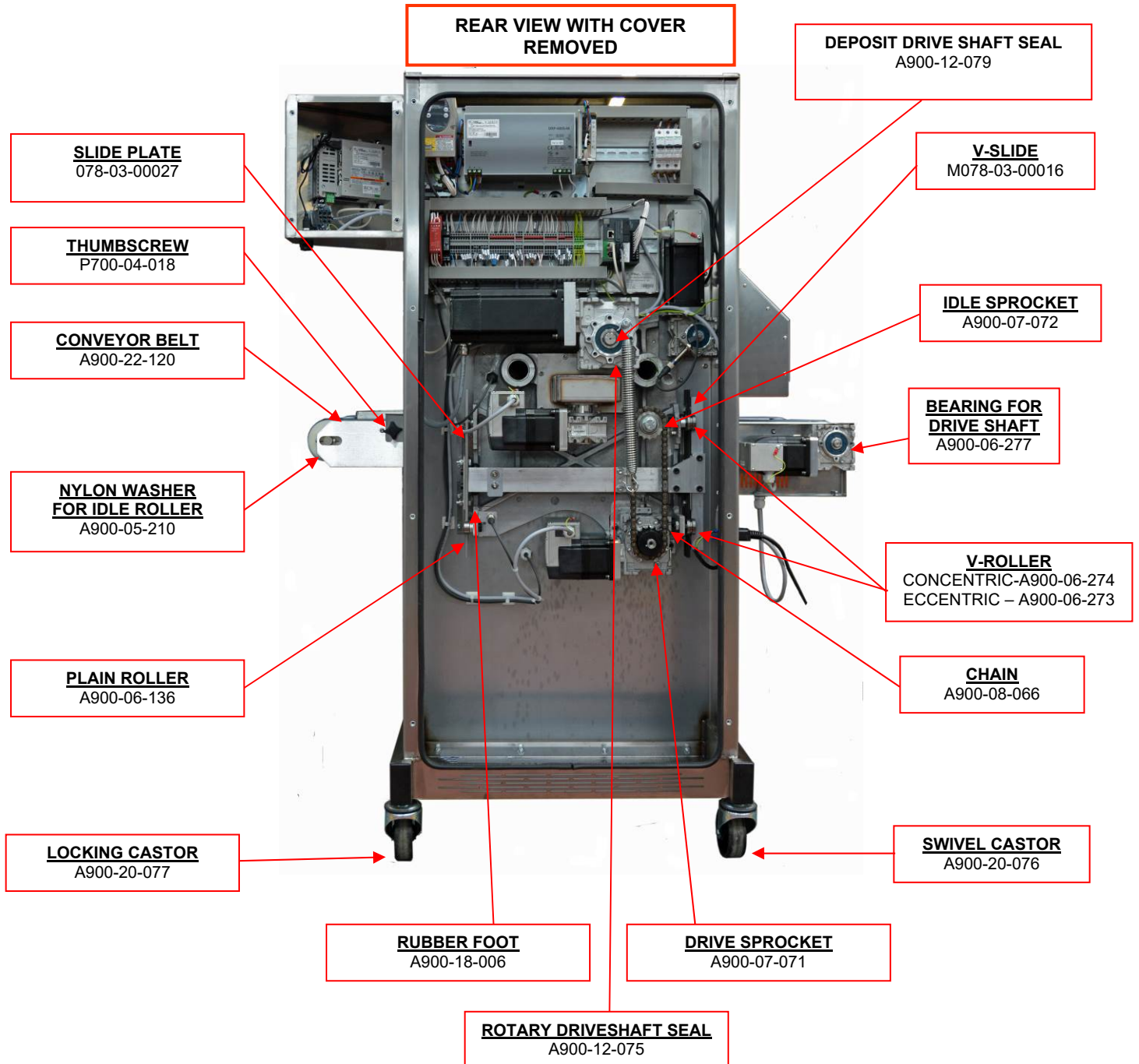
Main Tel. 01792 561234

**BASE MACHINE SPARES LIST****Omega PLUS -- WIRECUT VERSION**

Spares Item Description	Mono Part No.	Qty Req. per M/C
Deposit Gearbox	A900-11-097	1
Jog Gearbox	A900-11-092	1
Rotary Gearbox	A900-11-091	1
Tray Gearbox	A900-11-091	1
Concentric Guide Roller	A900-06-274	2
Eccentric Guide Roller	A900-06-273	2
V Slide	078-03-00016	1
Slide Plate	078-03-00027	1
Jog Drive Chain	A900-08-066	1
Simplex Sprocket 16T 1/2" Pitch	A900-07-071	1
Idler Sprocket 16T 1/2" Pitch	A900-07-072	1
Circlip-Ext Metric 14mm Dia	A900-01-280	1
Circlip-Ext Metric 24mm Dia	A900-01-193	1
Drive Shaft – Hopper	078-03-00015	1
Rotary Drive Shaft	078-03-00011	1
Drive Gear - Rotary Template	078-03-00010	1
Lip Seal (Rotary Drive Shaft)	A900-12-075	1
Lip Seal (Deposit Drive Shaft)	A900-12-079	1
End Guard (Earlier plastic version)	078-11-00036 078-11-00005)	1
Retainer – End Guard (Earlier plastic version)	078-11-00035 078-11-00002)	2
Spacer – 450mm/580mm Hopper	078-11-00003	1
Spacer – 400mm Hopper	078-11-00004	1
Seal-Rear Cover	A900-25-309	1

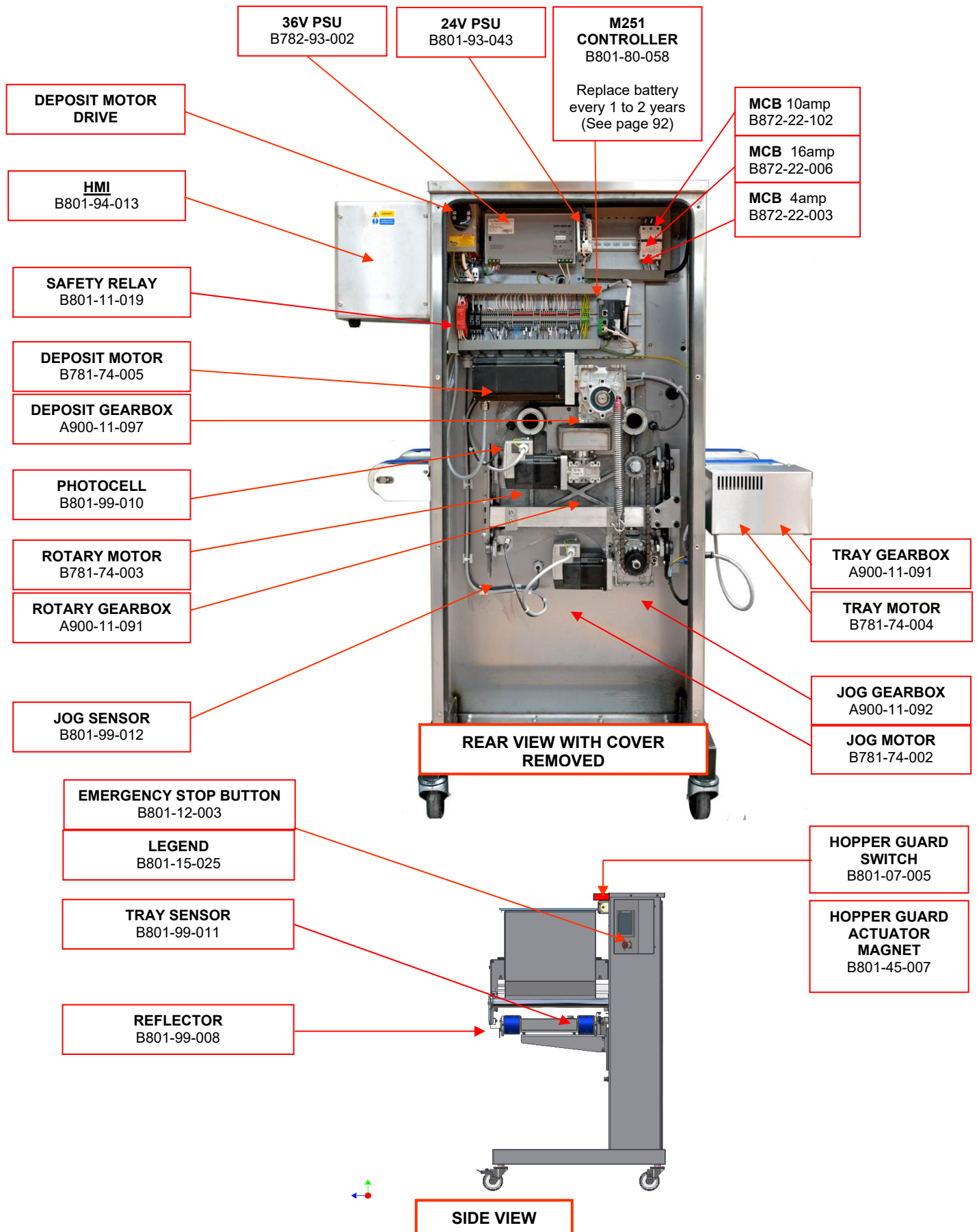


## REAR VIEW WITH COVER REMOVED



**BASE MACHINE SPARES LIST****Omega PLUS -- NO WIRECUT VERSION**

Spares Item Description	Mono Part No.	Qty Req. per Machine
Deposit Gearbox	A900-11-097	1
Jog Gearbox	A900-11-092	1
Rotary Gearbox	A900-11-091	1
Tray Gearbox	A900-11-091	1
Concentric Guide Roller	A900-06-274	2
Eccentric Guide Roller	A900-06-273	2
V Slide	078-03-00016	1
Slide Plate	078-03-00027	1
Jog Drive Chain	A900-08-066	1
Simplex Sprocket 16T 1/2" Pitch	A900-07-071	1
Idler Sprocket 16T 1/2" Pitch	A900-07-072	1
Circlip-Ext Metric 14mm Dia	A900-01-280	1
Circlip-Ext Metric 24mm Dia	A900-01-193	1
Drive Shaft – Hopper	078-03-00015	1
Rotary Drive Shaft	078-03-00011	1
Drive Gear - Rotary Template	078-03-00010	1
Lip Seal (Rotary Drive Shaft)	A900-12-075	1
Lip Seal (Deposit Drive Shaft)	A900-12-079	1
End Guard (Earlier plastic version)	078-11-00036 078-11-00005)	1
Retainer – End Guard (Earlier plastic version)	078-11-00035 078-11-00002)	2
Spacer – 450mm/580mm Hopper	078-11-00003	1
Spacer – 400mm Hopper	078-11-00004	1
Seal-Rear Cover	A900-25-309	1





### HOPPER FABRICATION

#### STANDARD CAPACITY

M078-09-00086 (400mm)  
M078-09-00042 (450mm)  
M078-09-00089 (580mm)

#### EXTENDED CAPACITY

M078-09-00087 (400mm)  
M078-09-00088 (450mm)  
M073-09-00092 (580mm)

**WINGNUT**  
A900-04-147

**UPPER END BLOCK**  
(DRIVEN SIDE)  
M078-09-00144

### ROLLER OPTIONS

**M078-KMX004 400mm**  
4MM GROOVE - ALUMINIUM

**M078-KMX005 400mm**  
6MM GROOVE - ALUMINIUM

**M078-KMX006 400mm**  
8MM GROOVE - ALUMINIUM

**M078-KMX015 400mm**  
8MM GROOVE - PLASTIC

**M078-KMX007 450mm**  
4MM GROOVE - ALUMINIUM

**M078-KMX008 450mm**  
6MM GROOVE - ALUMINIUM

**M078-KMX009 450mm**  
8MM GROOVE - ALUMINIUM

**M078-KMX010 580mm**  
4MM GROOVE - ALUMINIUM

**M078-KMX011 580mm**  
6MM GROOVE - ALUMINIUM

**M078-KMX012 580mm**  
8MM GROOVE - ALUMINIUM

#### STANDARD(St Steel) ROLLERS

DRIVE	400MM	078-09-00066
	450MM	078-09-00060
	580MM	078-09-00074
DRIVEN	400MM	078-09-00067
	450MM	078-09-00061
	580MM	078-09-00075

**UPPER END BLOCK**  
(DRIVE SIDE)  
M078-09-00143

**LOWER END BLOCK**  
(DRIVE SIDE)  
M078-09-00141

**THUMBSCREW**  
M078-09-00043

### TEMPLATES TO CUSTOMER REQUIREMENTS

#### ROTARY

- SMALL BORE
- LARGE BORE

#### STANDARD

- SMALL BORE
- LARGE BORE

#### DIE

#### SHEETING

**LOWER END BLOCK**  
(DRIVEN SIDE)  
M078-09-00142

### POUR-THROUGH TOP GUARD (NOT SHOWN)

HARD DOUGH	400MM	078-11-00060
	450MM	078-11-00061
	580MM	078-11-00062



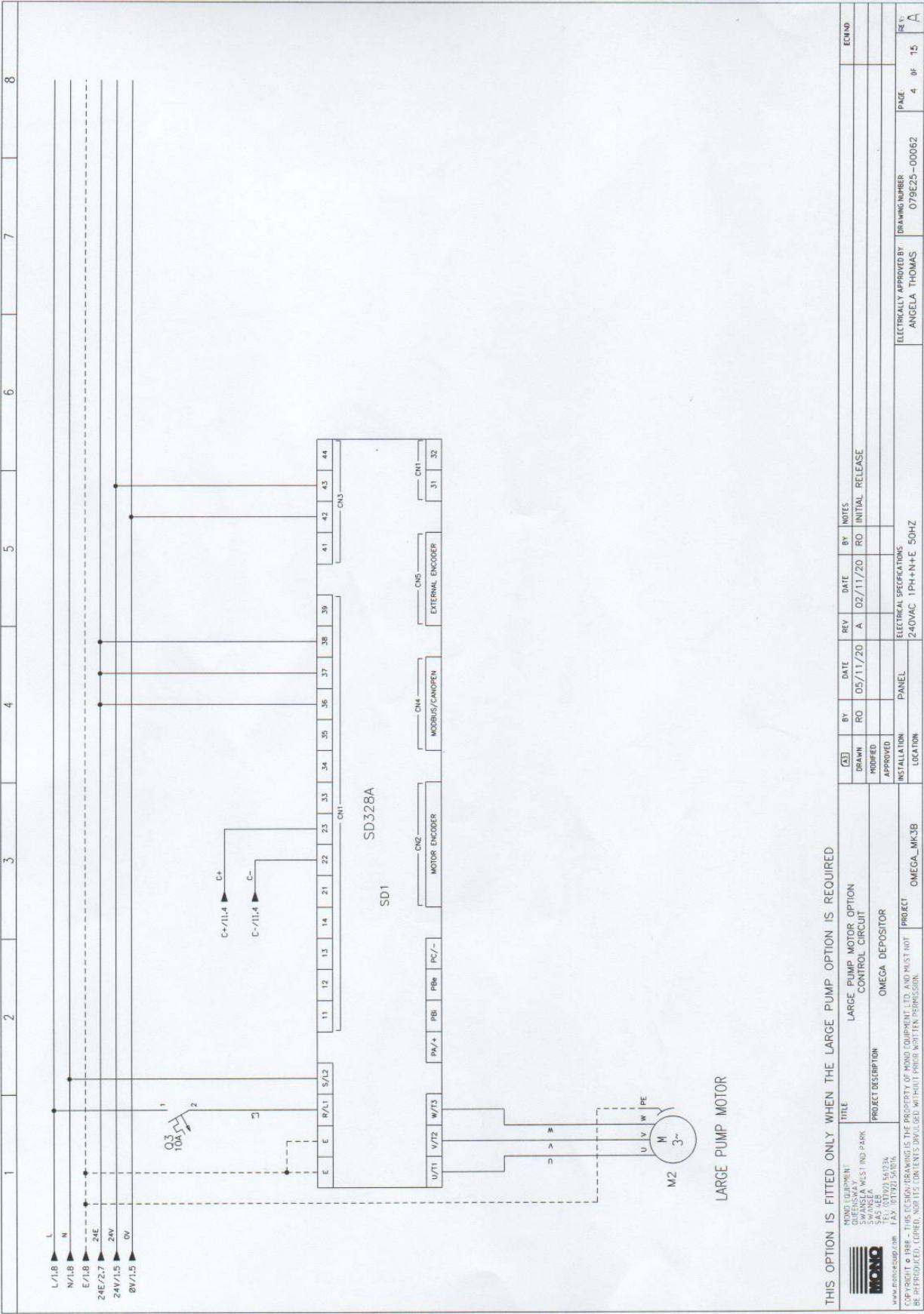
## 13.0 ELECTRICAL INFORMATION












THIS OPTION IS FITTED ONLY WHEN THE LARGE PUMP OPTION IS REQUIRED

 MONO EQUIPMENT QUEENSWAY SWANSEA WEST IND PARK SWANSEA WYLLS TEL: 01792 547234 FAX: 01792 547676 www.monoequip.com	TITLE		LARGE PUMP MOTOR OPTION CONTROL CIRCUIT		NOTES		ECNO		
	PROJECT DESCRIPTION		OMEGA DEPOSITOR		DATE		REV		
	PROJECT		OMEGA_MK3B		DATE		REV		
	INSTALLATION		LOCATION		DATE		REV		
ELECTRICALLY APPROVED BY ANGELA THOMAS				DRAWING NUMBER 079E25-00062				PAGE 4 OF 15	
COPYRIGHT © 1988 - THIS DESIGN/DRAWING IS THE PROPERTY OF MONO EQUIPMENT LTD. AND MUST NOT BE REPRODUCED, COPIED, NOR ITS CONTENTS DISCLOSED WITHOUT WRITTEN PERMISSION.				ELECTRICAL SPECIFICATIONS 240VAC 1PH+N+E 50HZ				A	





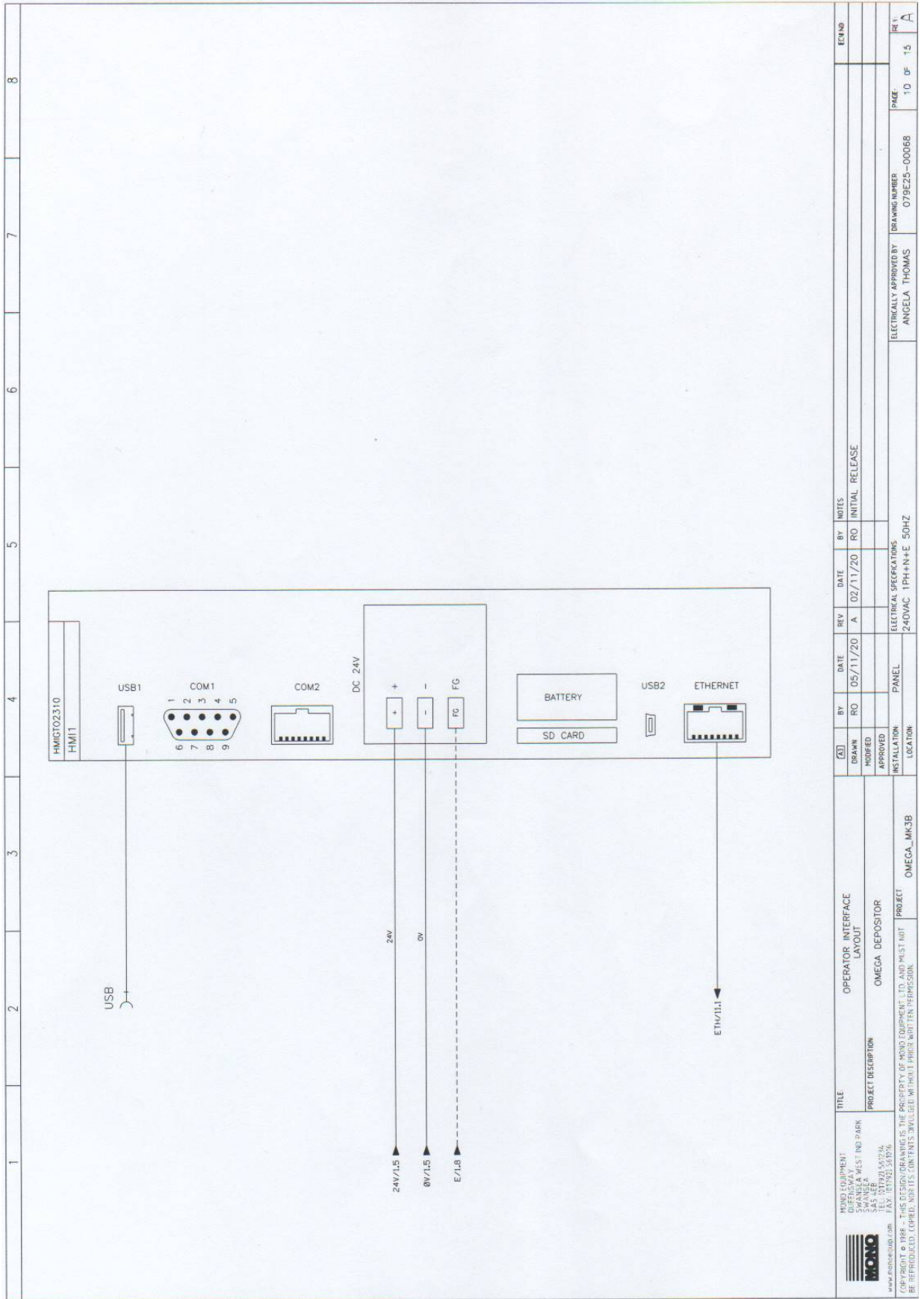






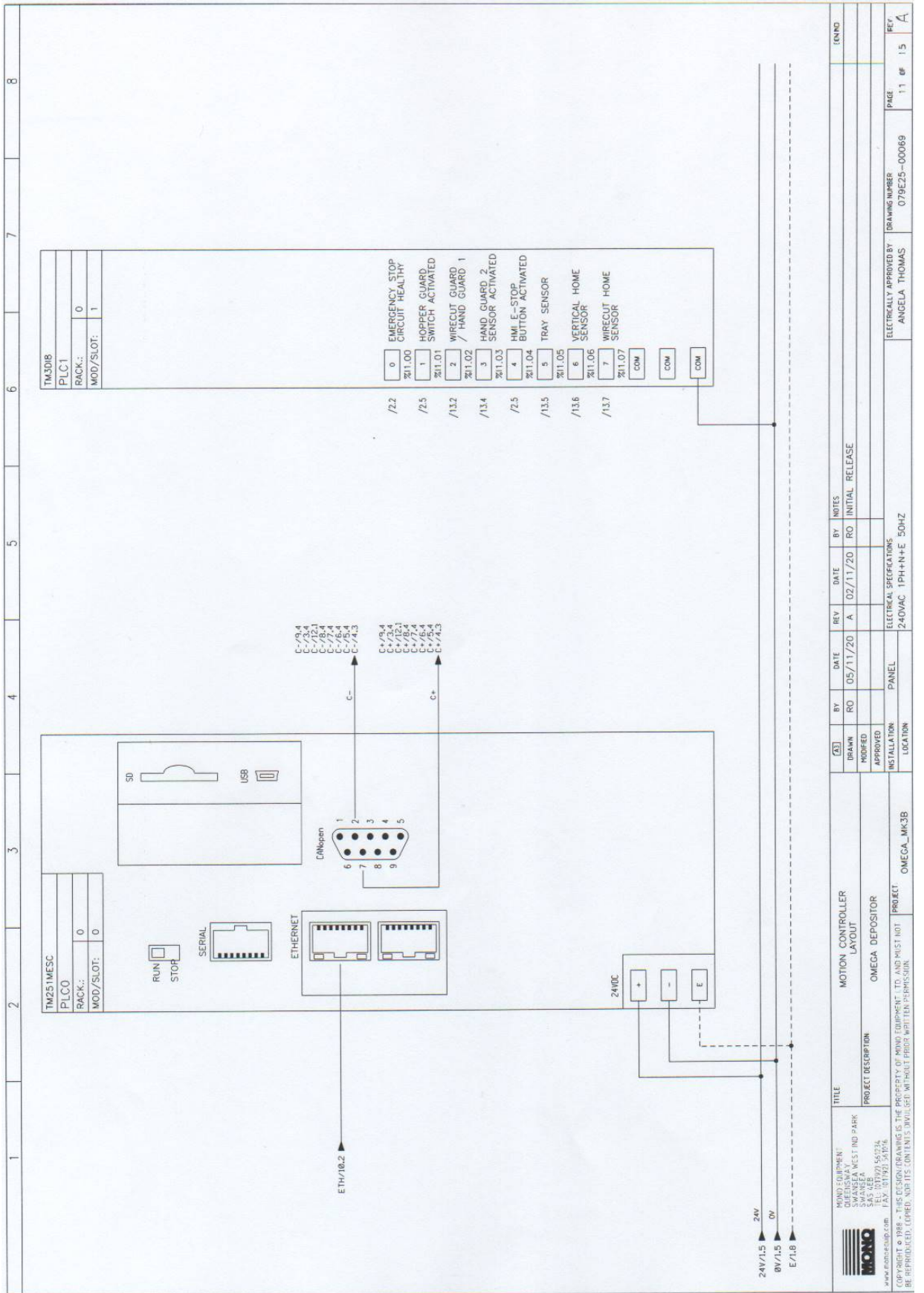


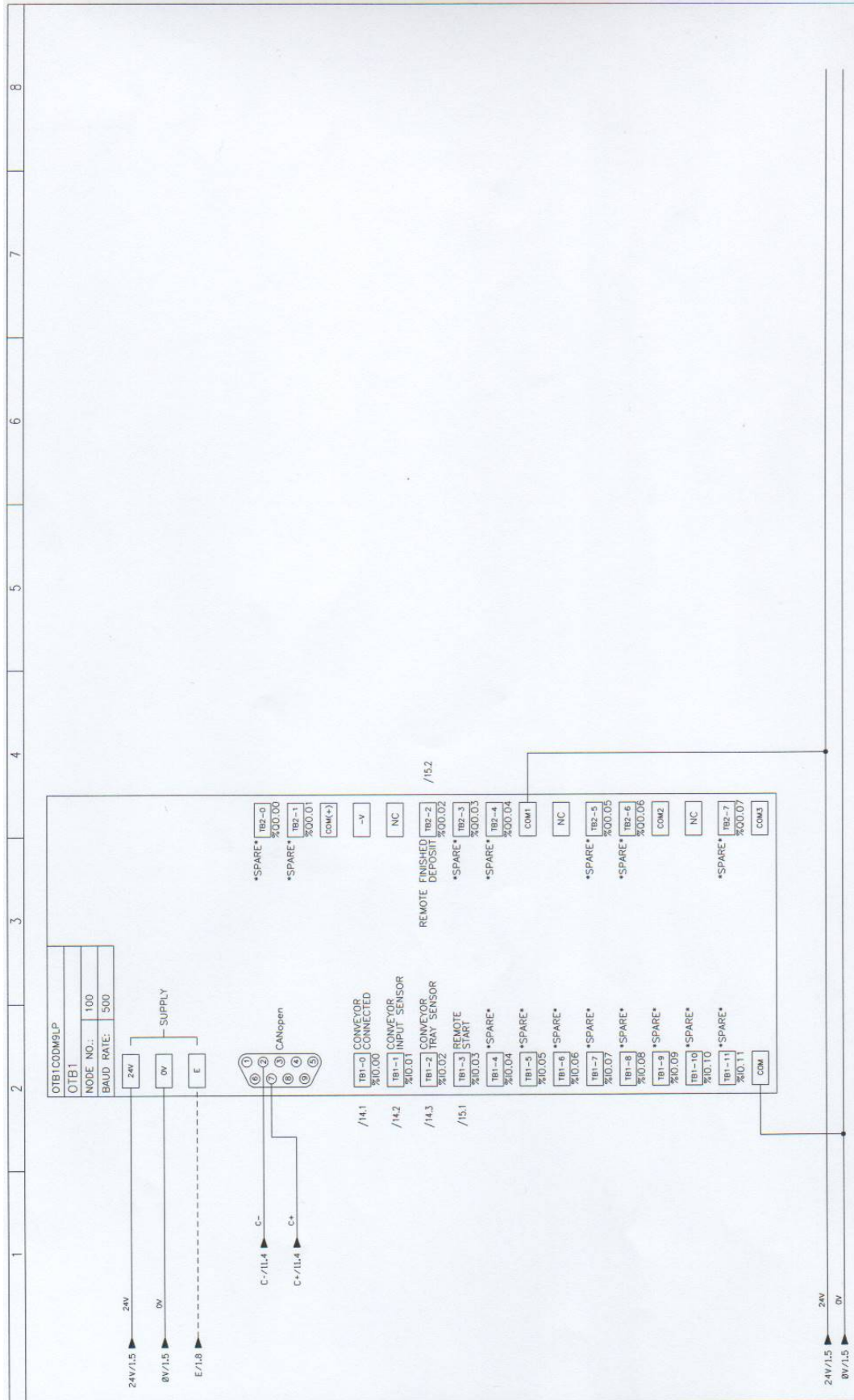




		MONO EQUIPMENT DIFFERSWAY 30 ANSEL A WEST IND PARK SAS 4EB TEL: 01773 221576 www.holoequipment.com		TITLE		OPERATOR INTERFACE LAYOUT		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY		NOTES		DATE		REV		BY	
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THIS OPTION IS FITTED ONLY WHEN EITHER THE CONVEYOR OR REMOTE CONTROL OPTIONS ARE REQUIRED

MONO EQUIPMENT		TITLE		PROJECT DESCRIPTION		PROJECT		ELECTRICALLY APPROVED BY		DRAWING NUMBER		PAGE		REV		TCNO	
MONO EQUIPMENT		MONO EQUIPMENT		MONO EQUIPMENT		MONO EQUIPMENT		ANGELA THOMAS		079E25-00070		12 OF 15		A			
SWANSEA WEST IND PARK		REMOTE INPUT/OUTPUT MODULE OPTION		OMEGA DEPOSITOR		OMEGA_MW3B											
TEL: 01792 545324		LAYOUT		OMEGA DEPOSITOR		OMEGA_MW3B											
FAX: 01792 545325		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
		REV		REV		REV		REV		REV		REV		REV		REV	
		BY		BY		BY		BY		BY		BY		BY		BY	
		RO		RO		RO		RO		RO		RO		RO		RO	
		DATE		DATE		DATE		DATE		DATE		DATE		DATE		DATE	
		A		A		A		A		A		A		A		A	
		02/11/20		02/11/20		02/11/20		02/11/20		02/11/20		02/11/20		02/11/20		02/11/20	
		INITIAL RELEASE		INITIAL RELEASE		INITIAL RELEASE		INITIAL RELEASE		INITIAL RELEASE		INITIAL RELEASE		INITIAL RELEASE		INITIAL RELEASE	
		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS		ELECTRICAL SPECIFICATIONS	
		240VAC 1PH+N+E 50HZ		240VAC 1PH+N+E 50HZ		240VAC 1PH+N+E 50HZ		240VAC 1PH+N+E 50HZ		240VAC 1PH+N+E 50HZ		240VAC 1PH+N+E 50HZ		240VAC 1PH+N+E 50HZ		240VAC 1PH+N+E 50HZ	
		PANEL		PANEL		PANEL		PANEL		PANEL		PANEL		PANEL		PANEL	
		LOCATION		LOCATION		LOCATION		LOCATION		LOCATION		LOCATION		LOCATION		LOCATION	
		OMEGA_MW3B		OMEGA_MW3B		OMEGA_MW3B		OMEGA_MW3B		OMEGA_MW3B		OMEGA_MW3B		OMEGA_MW3B		OMEGA_MW3B	
		PROJECT		PROJECT		PROJECT		PROJECT		PROJECT		PROJECT		PROJECT		PROJECT	
		AND MUST NOT		AND MUST NOT		AND MUST NOT		AND MUST NOT		AND MUST NOT		AND MUST NOT		AND MUST NOT		AND MUST NOT	
		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.		BE REPRODUCED, COPIED, NOR ITS CONTENTS INVOLVED WITHOUT PRIOR WRITTEN PERMISSION.	









## **OMEGA TLCC/LMC TO M251 CONVERSION KITS**

**(Converts older machines to latest specification controller and screen)**

### **M079-KSE009      OMEGA DEPOSITOR TLCC TO M251 CONVERSION KIT**

Comprises of :

078-25-00051      CONVERSION BRACKET & FIXINGS (manufactured)  
M079-KSE006      TLCC TO M251 CONVERSION (HAC Ref: H300-001-0063)  
H200-004-038      Omega depositor MK3 M251 controller  
H200-005-011      Omega depositor MK3 HMI  
H200-007-010      Ethernet cat 6 patch cable 1.5m  
H200-100-060      Omega TLCC to M251 IO and power loom  
H200-007-011      Omega TLCC to M251 canopen comms cable.  
H100-007-012      TM3 expansion module 8 input 24V DC  
H200-003-073      USB stick blank FAT32  
TS35 DIN Rail for mounting M251 (TLCC 90mm)  
Also to include instructions - M251 Conversion procedure (TLCC)

### **M079-KSE007      OMEGA DEPOSITOR LMC (GT) TO M251 CONVERSION KIT**

HAC Ref: H300-001-0064

Comprises of :

H200-004-038      Omega depositor MK3 M251 controller  
H200-005-011      Omega depositor MK3 HMI  
H200-007-010      Ethernet cat 6 patch cable 1.5m  
H200-100-061      Omega LMC to M251 IO and power loom  
H200-007-012      Omega LMC to M251 canopen comms cable.  
H100-007-012      TM3 expansion module 8 input 24V DC  
H200-003-073      USB stick blank FAT32  
TS35 DIN Rail for mounting M251 (LMC 410mm)  
Also to include instructions - M251 Conversion procedure (LMC)

### **M079-KSE008      OMEGA DEPOSITOR LMC (GTO) TO M251 CONVERSION KIT**

HAC Ref: H300-001-0065

Comprises of :

H200-004-038      Omega depositor MK3 M251 controller  
H200-003-064      Omega depositor MK3 HMI USB stick 4.3.0.0.A  
H200-007-010      Ethernet cat 6 patch cable 1.5m  
H200-100-061      Omega LMC to M251 IO and power loom  
H200-007-012      Omega LMC to M251 canopen comms cable.  
H100-007-012      TM3 expansion module 8 input 24V DC  
H200-003-073      USB stick blank FAT32  
TS35 DIN Rail for mounting M251 (LMC 410mm)  
Also to include instructions - M251 Conversion procedure (LMC)



# TLCC to M251 Conversion Procedure



**ONLY COMPETENT PERSONS TRAINED IN ELECTRICAL MAINTENANCE SHOULD ATTEMPT TO CARRY OUT THIS PROCEDURE. FAILURE TO OBSERVE SAFE WORKING PRACTICES AND FOLLOW THE INSTRUCTIONS IN THIS PROCEDURE COULD LEAD TO SERIOUS INJURY OR DEATH.**

**YOU MUST ISOLATE THE POWER SUPPLY BEFORE PROCEEDING.**

**YOU MUST WAIT FOR AT LEAST 10 MINUTES AFTER ISOLATION OF THE POWER SUPPLY BEFORE WORKING ON THE MACHINE.**

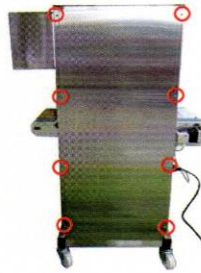


## REMOVE TLCC MOTION CONTROLLER AND WIRING

**A**

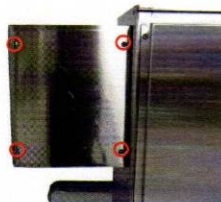
Follow the steps below to update the remove the TLCC motion controller and associated wiring :-

**1**



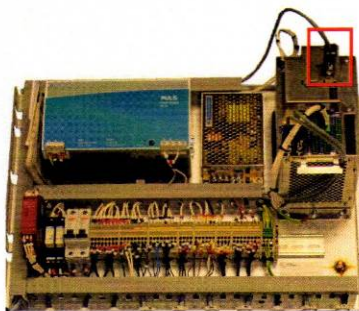
Remove the 8 screws securing the main enclosure cover to gain access to the electrical control panel.

**2**



Remove the 4 screws securing the HMI enclosure cover to gain access to the rear of the HMI.

**3**



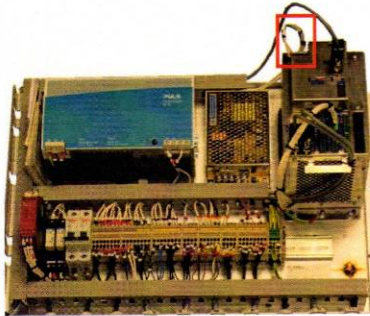
Remove the 'D' connector from the TLCC using a small screwdriver.

4



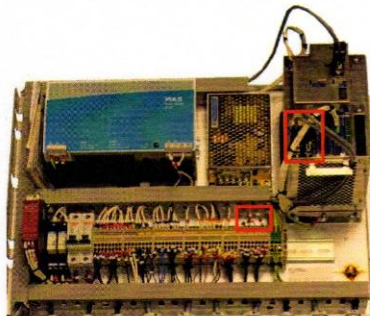
Remove the 'D' connector from the HMI using a small screwdriver.

5



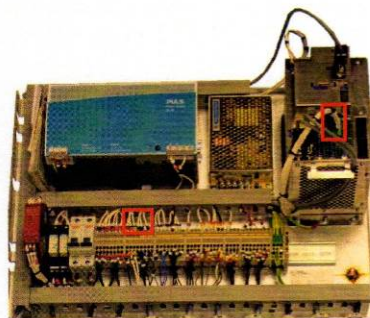
Remove wires to the power supply of the TLCC using a small screwdriver.

6



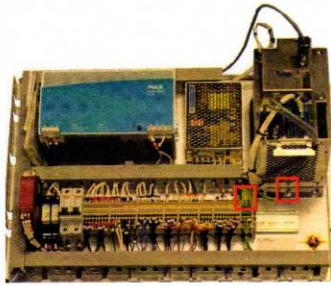
Remove the 2x 'D' connectors from the TLCC using a small screwdriver. Remove the trunking lids. Trace the wires back to the terminals (C1+ / C1- / C2+ / C2-) and remove using a small screwdriver.

7



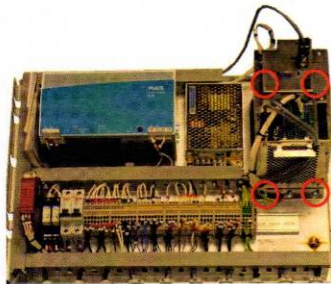
Remove the I/O connector from the TLCC (pull to remove). Trace the wires back to the terminals (I02 to I08) and remove using a small screwdriver. Trace the wire back to the emergency stop relay (I01) and remove with a small screwdriver.

8



Remove the earth wire from the TLCC using an M8 spanner/socket. Trace the wire back to the terminals and remove using a small screwdriver.

9



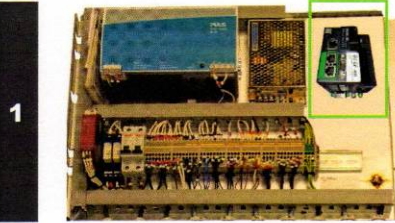
Remove 4x screws using a posidrive screwdriver and remove TLCC motion controller.



## INSTALL M251 MOTION CONTROLLER AND WIRING

**B**

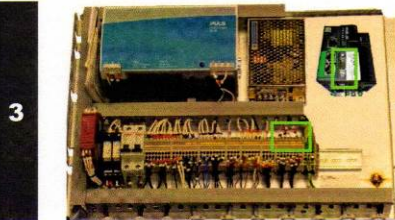
Follow the steps below to install the M251 motion controller and associated wiring :-



Fix the M251 to the control panel using the fixing kit supplied.



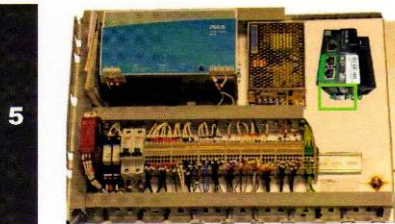
Take the CANOpen comms cable from the conversion kit.



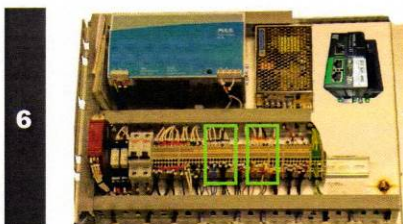
Connect the CAN cable to the port at the top of the M251. Connect the wires at the other end of this cable to the terminals with the corresponding wire numbers (to the same location as the ones previously removed)



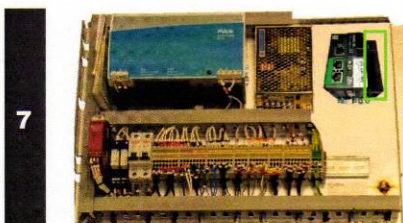
Take the IO and power loom from the conversion kit.



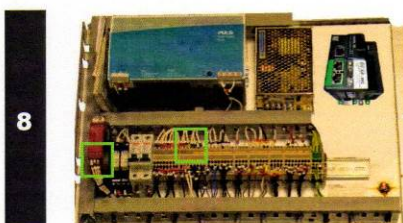
Connect the power supply plug to the M251 (connector at bottom).



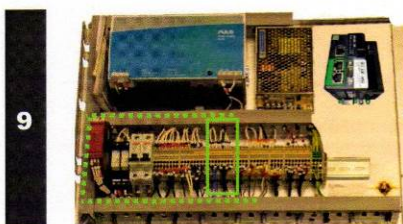
Connect the wires at the other end of the power cable to the terminals with the corresponding wire numbers (to the same location as the ones previously removed).



Connect the IO cable plug to the M251 expansion module at the right.



Connect the wires at the other end of the IO cable to the terminals with the corresponding wire numbers (to the same location as the ones previously removed) for wires I02 to I08. Connect I01 to the emergency stop relay connection point 14.



Connect the wire marked 0V to the terminals with the corresponding wire numbers. You will have to find a spare/unused terminal on the terminal rails, this may mean routing the cable to the bottom of the terminals.



Remove the Modbus cable from the COM1 connector on the HMI by using a small screw driver to loosen the fastening screws and then pulling to release.

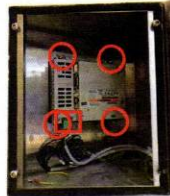
This cable will no longer be used and can be completely removed.

1  
1



Unplug the HMI power cable and remove the old HMI by loosening and removing the 4x retaining clips with a small posidrive/flat head screwdriver. Then push the HMI out of the cut out.

1  
2



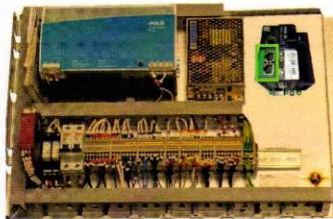
Fit the new HMI (HMIGTO3210) using the 4x retaining clips supplied in the box with a small posidrive/flat head screwdriver. Then plug in the power connector.

1  
3



Take the HMI cable from the conversion kit.

1  
4



Connect the HMI cable to one of the connectors marked ETHERNET. Ensure that the cable is pushed in firmly, you should hear a "click".

1  
5



Connect the HMI cable to the connector marked ETHERNET. Ensure that the cable is pushed in firmly, you should hear a "click".



## CONFIGURE MACHINE FOR USE

C

Follow the steps below to configure the machine to recognise the connected hardware and to set factory defaults :-

- 1

From the Select Product OR Fault page activate the tools password entry (Hidden button at top left of fault page) and type in **01792561234**
- 2

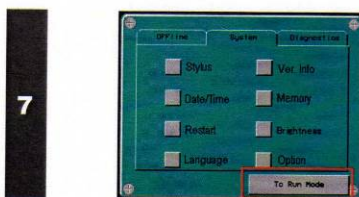
Select the options installed on your machine. Press the exit button.
- 3

From the Select Product OR Fault page activate the tools password entry (Hidden button at top left of fault page) and type in **01554777460**
- 4

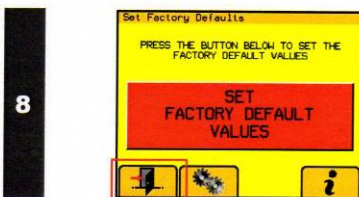
Press the **SET FACTORY DEFAULTS BUTTON**. Then press The **COGS** Button to enter the System Menu.
- 5

Select the **DATE/TIME** option to enter the date and time setting page.
- 6

Set the Date and Time to the correct settings and press **OK**.



Press the **TO RUN MODE** button to return to the set factory defaults page.



Press the **EXIT** button to return to the main menu.

**CYCLE POWER TO THE MACHINE BEFORE CONTINUING**

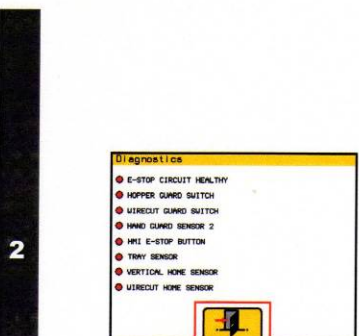
#### CHECK I/O FUNCTIONALITY

**D**

Follow the steps below to verify that the wiring has been completed correctly and that the I/O to the M251 is correct :-



From the Select Product page activate the tools password entry and type in **2808**



Test that **ALL** inputs are working correctly using the diagnostics page.

Inputs are shown as **RED** for **OFF** and **GREEN** for **ON**.

The E-Stop circuit healthy input will switch if any one of the safety devices is switched (e-stop button / hand guard sensor / hopper guard)

To activate the tray / vertical / wirecut sensors you will need to place a metallic object in front of the sensor.

Press the **EXIT** button when all inputs are verified OK.

## SET MOTOR PARAMETERS (WHERE REQUIRED)

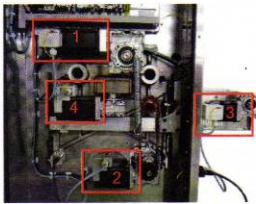


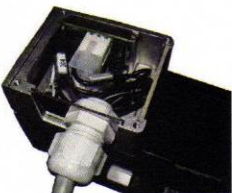
E



**YOU MUST ISOLATE THE POWER SUPPLY BEFORE PROCEEDING.**  
**YOU MUST WAIT FOR AT LEAST 10 MINUTES AFTER ISOLATION OF THE POWER SUPPLY BEFORE WORKING ON THE MACHINE.**



If the machine was previously running with a TLCC software version of v1.0, v1.1, v1.2 or v1.3 then the motor configuration will need to be updated in order for the machine to function :-

- |          |   |   |
|----------|---|---|
| <b>1</b> |    | <p>Identify the motors present in the rear of the machine.</p> <ul style="list-style-type: none"><li>1 – Pump Motor</li><li>2 – Jog Motor</li><li>3 – Tray Motor</li><li>4 – Rotary Motor</li></ul> |
| <b>2</b> |   | <p>To access the tray motor remove the cover plate. There are 2 screws on the top and 2 screws on the bottom</p>  |
| <b>3</b> |  | <p>Locate the motor control box for each motor and remove the 4 screws to gain access (tamper proof screws).</p>  |
| <b>4</b> |  | <p>Remove the motor control box lid.</p>  |

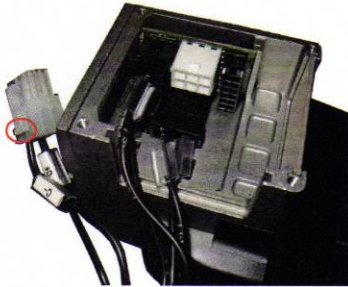


5



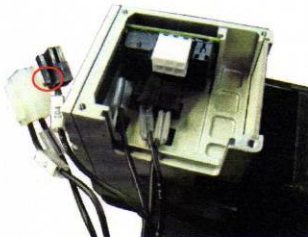
Slide the cable gland plate from the motor housing to gain access to the connectors.

6



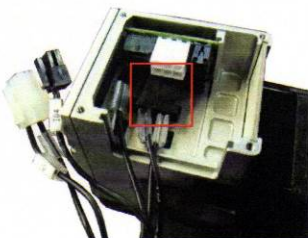
Carefully remove the CAN connector, press the locking pin to release and pull to remove.

7



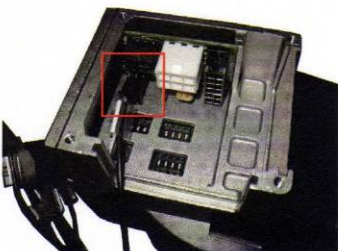
Carefully remove the I/O connector, press the locking pin to release and pull to remove.

8

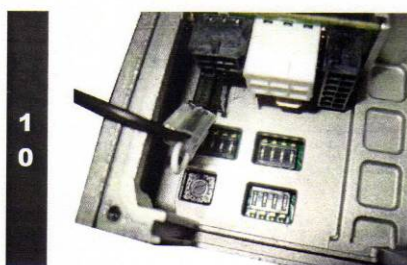


Carefully remove the POWER connector, pull to remove (long nosed pliers can be used).

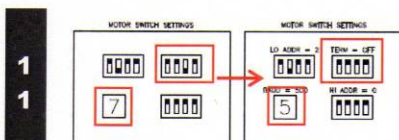
9



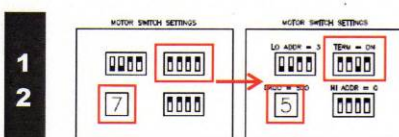
Do **NOT** remove the STOP connector, this cable can be moved out of the way to gain access to the switches.



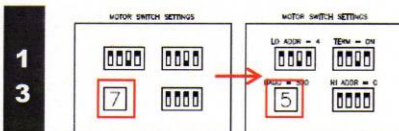
Using a small screwdriver adjust the settings of the switches and rotary dial as per the motor configurations below.



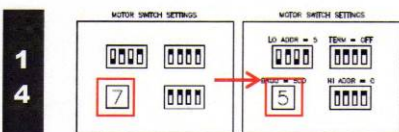
**Pump Motor (Standard)**  
Set the rotary dial to 5 and the DIP switches to the settings shown.



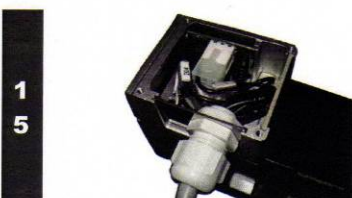
**Jog Motor**  
Set the rotary dial to 5 and the DIP switches to the settings shown.



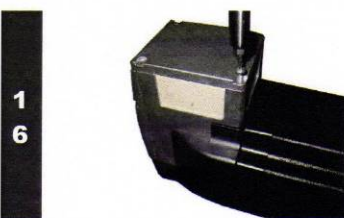
**Tray Motor**  
Set the rotary dial to 5 (as shown)



**Rotary Motor**  
Set the rotary dial to 5 (as shown)



Re-fit all the motor wiring connectors (in reverse order to removal) and fit the gland plate in place.



Re-fit the motor control box lid for each motor (ensure that the earth cable is connected).



# LMC20 to M251 Conversion Procedure



ONLY COMPETENT PERSONS TRAINED IN ELECTRICAL MAINTENANCE SHOULD ATTEMPT TO CARRY OUT THIS PROCEDURE. FAILURE TO OBSERVE SAFE WORKING PRACTICES AND FOLLOW THE INSTRUCTIONS IN THIS PROCEDURE COULD LEAD TO SERIOUS INJURY OR DEATH.

YOU MUST ISOLATE THE POWER SUPPLY BEFORE PROCEEDING.

YOU MUST WAIT FOR AT LEAST 10 MINUTES AFTER ISOLATION OF THE POWER SUPPLY BEFORE WORKING ON THE MACHINE.

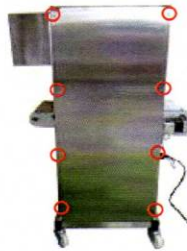


## REMOVE LMC20 MOTION CONTROLLER AND WIRING

**A**

Follow the steps below to update the remove the LMC20 motion controller and associated wiring :-

**1**



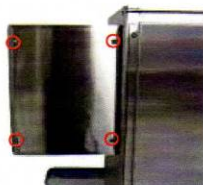
Remove the 8 screws securing the main enclosure cover to gain access to the electrical control panel.

**2**



Remove the 4 screws securing the main enclosure lid (2 on each side) using 1 4mm allen key and 10mm spanner/socket to gain access to the electrical control panel. To remove the lid lift the lid at the front and slide to the rear then lift to remove.

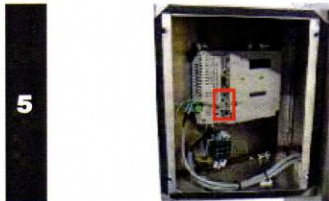
**3**



Remove the 4 screws securing the HMI enclosure cover to gain access to the rear of the HMI.

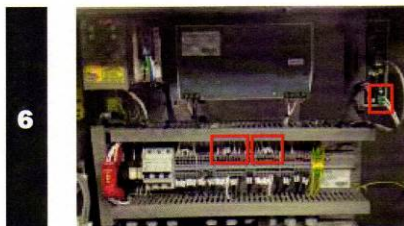


Remove the Modbus cable from the Modbus connector on the LMC20 by pressing the small tab on the connector and pulling.



Remove the Modbus cable from the RS485 connector on the HMI by pressing the small tab on the connector and pulling.

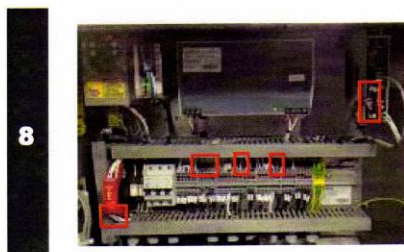
This cable will no longer be used and can be completely removed.



Remove the wires to the power supply of the LMC20 by pulling the green connector. Remove the trunking lids. Trace the wires back to the terminals (0V / 24V) and remove using a small screwdriver.



Remove the 'D' connector from the bottom of the LMC20 by pulling the connector. Trace the wires back to the terminals (C+ / C-) and remove using a small screwdriver.



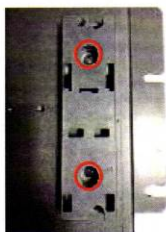
Remove the I/O connector from the LMC20 by releasing the retaining clips (top and bottom) and pulling the cable. Trace the wires back to the terminals (I01 to I07, 0V, 24V) and remove using a small screwdriver. Trace the wire back to the emergency stop relay (I00) and remove with a small screwdriver.

9



Unscrew the LMC20 from its mounting bracket using a posidrive screwdriver (you will need to access from the top of the machine). Then pull the LMC20 forward from the top, and then lift to remove from the mounting bracket.

10



Remove 2x screws using a posidrive screwdriver and remove LMC20 mounting bracket.

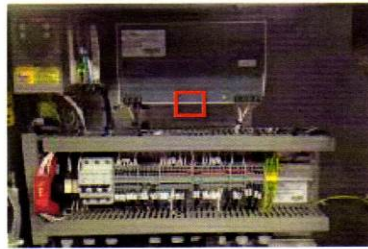


## INSTALL M251 MOTION CONTROLLER AND WIRING

**B**

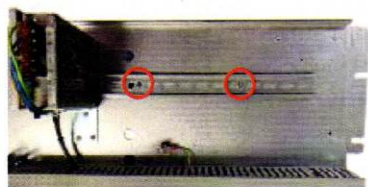
Follow the steps below to install the M251 motion controller and associated wiring :-

**1**



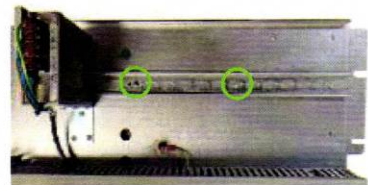
Release the 36 Volt power supply from the DIN rail by using a large flat head screwdriver to pull down on the retaining clip. Lift the power supply off the DIN rail.

**2**



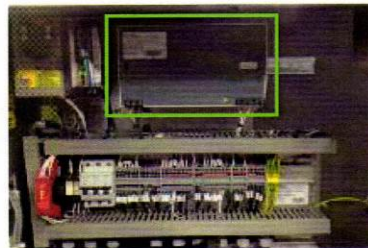
Remove the 2x DIN rail screws using a posidrive screwdriver and remove the DIN rail.

**3**



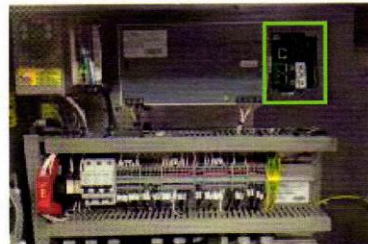
Fix the extended DIN rail in place using the 2x screws.

**4**



Fix the 36 Volt power supply onto the DIN rail – ensure it is mounted securely.

**5**



Fix the M251 to the DIN rail – ensure that the 3x retaining clips are in the out position before offering up to the DIN rail, then use a screwdriver to push the 3x retaining clips in – ensure it is mounted securely.

**6**



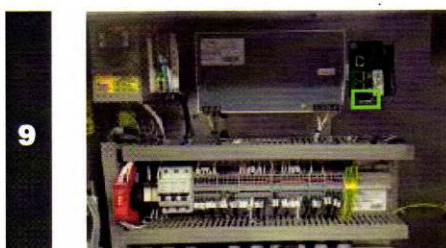
Take the CANOpen comms cable from the conversion kit.



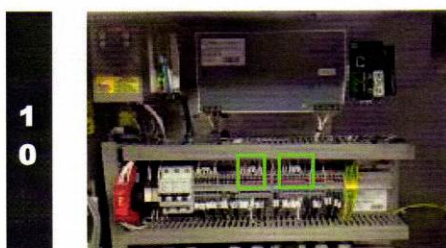
Connect the CAN cable to the port at the top of the M251. Connect the wires at the other end of this cable to the terminals with the corresponding wire numbers (to the same location as the ones previously removed)



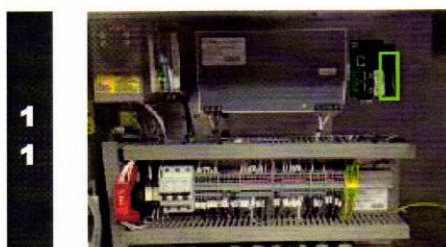
Take the IO and power loom from the conversion kit.



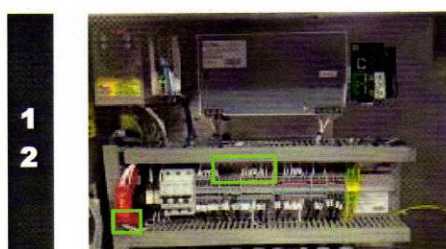
Connect the power supply plug to the M251 (connector at bottom). Note the retaining shroud hinges up to enable the connector to be inserted, insert then hinge the shroud down to fully engage.



Connect the wires at the other end of the power cable to the terminals with the corresponding wire numbers (to the same location as the ones previously removed).



Connect the IO cable plug to the M251 expansion module at the right. Push the connector into the housing – ensure it is fully engaged.

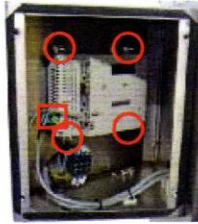


Connect the wires at the other end of the IO cable to the terminals with the corresponding wire numbers (to the same location as the ones previously removed) for wires I01 to I07 and 0V. Connect I00 to the emergency stop relay connection point 14.



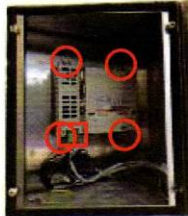
**IF YOU ALREADY HAVE THE HMIGTO2310 FITTED SKIP TO STEP 15**

**1  
3**



Unplug the HMI power cable and remove the old HMI by loosening and removing the 4x retaining clips with a small posidrive/flat head screwdriver. Then push the HMI out of the cut out.

**1  
4**



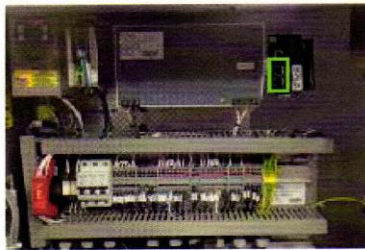
Fit the new HMI (HMIGTO3210) using the 4x retaining clips supplied in the box with a small posidrive/flat head screwdriver. Then plug in the power connector.

**1  
5**



Take the HMI cable from the conversion kit.

**1  
6**



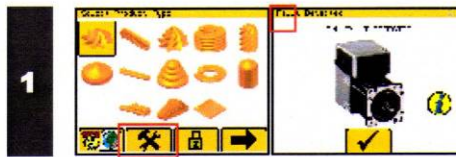
Connect the HMI cable to one of the connectors marked ETHERNET. Ensure that the cable is pushed in firmly, you should hear a "click".

**1  
7**



Connect the HMI cable to the connector marked ETHERNET. Ensure that the cable is pushed in firmly, you should hear a "click".

Restore power to the machine. Follow the steps below to configure the machine to recognise the connected hardware and to set factory defaults :-



From the Select Product OR Fault page activate the tools password entry (Hidden button at top left of fault page) and type in **01792561234**



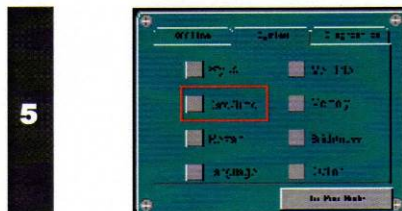
Select the options installed on your machine. Press the exit button.



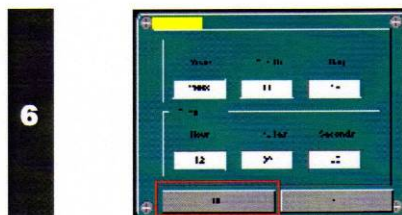
From the Select Product OR Fault page activate the tools password entry (Hidden button at top left of fault page) and type in **01554777460**



Press the **SET FACTORY DEFAULTS BUTTON**. Then press The **COGS** Button to enter the System Menu.

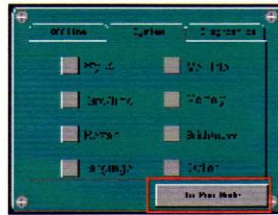


Select the **DATE/TIME** option to enter the date and time setting page.



Set the Date and Time to the correct settings and press **OK**.

7



Press the **TO RUN MODE** button to return to the set factory defaults page.

8



Press the **EXIT** button to return to the main menu.

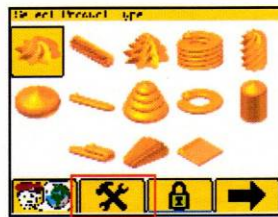
**CYCLE POWER TO THE MACHINE BEFORE CONTINUING**

## CHECK I/O FUNCTIONALITY

**D**

Follow the steps below to verify that the wiring has been completed correctly and that the I/O to the M251 is correct :-

1



From the Select Product page activate the tools password entry and type in **2808**

2



Test that **ALL** inputs are working correctly using the diagnostics page.

Inputs are shown as **RED** for **OFF** and **GREEN** for **ON**.

The E-Stop circuit healthy input will switch if any one of the safety devices is switched (e-stop button / hand guard sensor / hopper guard)

To activate the tray / vertical / wirecut sensors you will need to place a metallic object in front of the sensor.

Press the **EXIT** button when all inputs are verified OK.



# Battery Replacement Procedure (M251 Motion Controller)



**ONLY COMPETENT PERSONS TRAINED IN ELECTRICAL MAINTENANCE SHOULD ATTEMPT TO CARRY OUT THIS PROCEDURE. FAILURE TO OBSERVE SAFE WORKING PRACTICES AND FOLLOW THE INSTRUCTIONS IN THIS PROCEDURE COULD LEAD TO SERIOUS INJURY OR DEATH.**

**YOU MUST ISOLATE THE POWER SUPPLY BEFORE PROCEEDING.**

**YOU MUST WAIT FOR AT LEAST 10 MINUTES AFTER ISOLATION OF THE POWER SUPPLY BEFORE WORKING ON THE MACHINE.**



---

## Real Time Clock (RTC)

### Overview

The M251 Logic Controller includes an RTC to provide system date and time information, and to support related functions requiring a real-time clock. To continue keeping time when power is off, a non-rechargeable battery is required (see reference below). A battery LED on the front panel of the controller indicates if the battery is depleted or absent.

This table shows how RTC drift is managed:

RTC Characteristics	Description
RTC drift	Less than 60 seconds per month without any user calibration at 25 °C (77 °F)

### Battery

The controller has one battery.

In the event of a power interruption, the backup battery maintains the RTC for the controller.

This table shows the characteristics of the battery:

Characteristics	Description
Use	In the event of a transient power outage, the battery powers the RTC and user data.
Backup life	At least 2 years at 25 °C max (77 °F). At higher temperatures, the time is reduced.
Battery monitoring	Yes
Replaceable	Yes
Controller battery type	Lithium carbon monofluoride, type Panasonic BR2032

Installing and Replacing the Battery

While lithium batteries are preferred due to their slow discharge and long life, they can present hazards to personnel, equipment and the environment and must be handled properly.

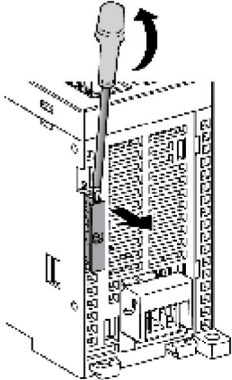
DANGER

EXPLOSION, FIRE, OR CHEMICAL BURNS

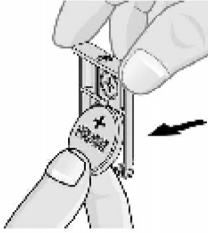
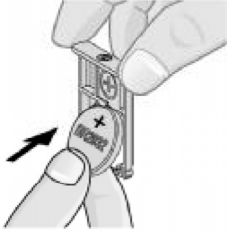
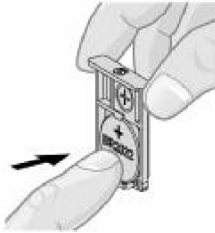
- Replace with identical battery type.
- Follow all the instructions of the battery manufacturer.
- Remove all replaceable batteries before discarding unit.
- Recycle or properly dispose of used batteries.
- Protect battery from any potential short-circuit.
- Do not recharge, disassemble, heat above 100 °C (212 °F), or incinerate.
- Use your hands or insulated tools to remove or replace the battery.
- Maintain proper polarity when inserting and connecting a new battery.

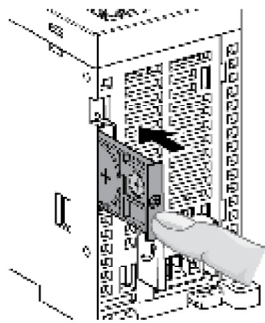
Failure to follow these instructions will result in death or serious injury.

To install or replace the battery, follow these steps:

Step	Action
1	Remove power from your controller.
2	Use an insulated screw-driver to pull out the battery holder. <div></div>
3	Slide out the battery holder of the controller



Step	Action
4	Remove the battery from the battery holder. 
5	Insert the new battery into the battery holder in accordance with the polarity markings on the battery. 
6	Replace the battery holder on the controller and verify that the latch clicks into place. 

Step	Action
7	Slide in the battery holder of the controller. 
8	Power up your M251 Logic Controller.
9	Set the internal clock. For further details on the internal clock, refer to M251 Logic Controller Programming Guide (see <i>Modicon M251 Logic Controller, Programming Guide</i> ).

**NOTE:** Replacement of the battery in the controllers other than with the type specified in this documentation may present a risk of fire or explosion.

## **WARNING**

### **IMPROPER BATTERY CAN PROVOKE FIRE OR EXPLOSION**

Replace battery only with identical type: Panasonic Type BR2032.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**



The equipment mentioned in this manual has CE accreditation.

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



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## **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 recycling or other means as the law permits at the time.