MONO

MonoEquip.com

Enter Serial No. here._____

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

Auto Jammer / Injector

OLED COLOUR SCREEN

Setup and Operation Manual

DECLARATION OF CONFORMITY

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

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

Signed	
D. Osmundsen – Quality and Conformance Manager	

Date	

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

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

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

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

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

Safety symbols

The following safety symbols are used throughout this document and manual (available at 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 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 the 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 power 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 safety guidelines.

We recommend:-

- Supplementary electrical protection with the use of a Residual Current Device (RCD)
- Fixed wiring appliances should also 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 safety 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.

WARNING ▪ A 30mA-rated Type A RCD must protect the supply to this machine.

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

ONLY FOR USE WITH SEEDLESS FILLINGS

Contents

1. Introduction

Thank you for purchasing this MONO Automatic Jammer / Injector.

"The perfect solution for all your injecting needs."

MONO Equipment's Automatic Jammer / Injector consistently and accurately fill doughnuts and pastries – two at a time – with a wide range of fillings.

Featuring a OLED 65K colour screen, the Auto Injector can store up to 85 Pictorial and up to 99 Numerical programmes. The Auto Injector comes pre-loaded with a range of colourful icons featuring some of the most popular fillings available on the market; other pictorial icons can also be added to suit your specific needs. If you prefer to use the Numerical or Manual Modes, however, switching to your chosen mode is easily done at the touch of a button.

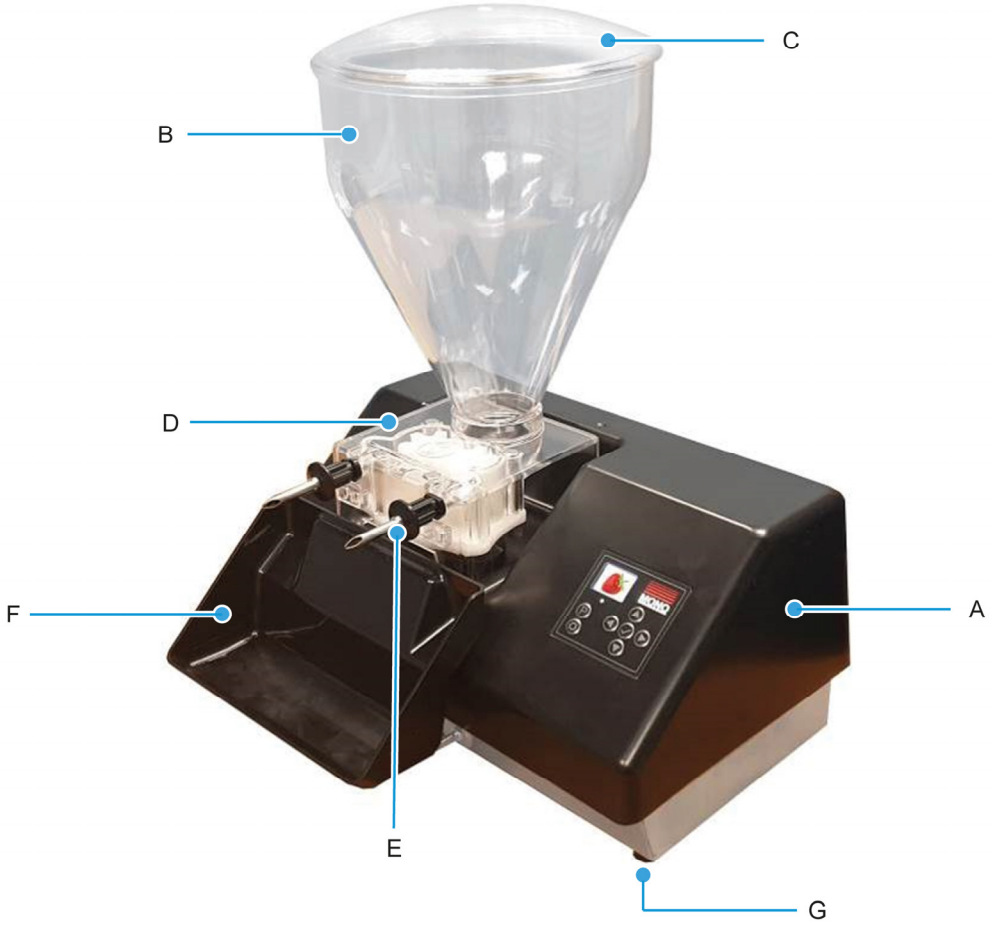
The controller incorporates Variable Speed and Suck Back settings which can be set for each programme to ensure exceptional accuracy. The Continuous Mode function allows the Auto Injector to produce a continuous stream of filling until stopped by the operator.

The Automatic Injector features two injector needles which make clean and accurate insertions into a wide range of products – without mess or waste. Fillings can be quickly and easily altered by simply changing the hoppers. To change fillings halfway through a run, just lift the filler unit from the console and replace it with another unit containing the new filling.

All hoppers are crafted in easy-to-clean reinforced plastic and have also been designed for easy viewing of the filling level inside.

A Foot Pedal is also available which means the Auto Injector can be activated using a convenient foot switch instead of the Activator Tray; ideal if you are injecting large volumes of product.

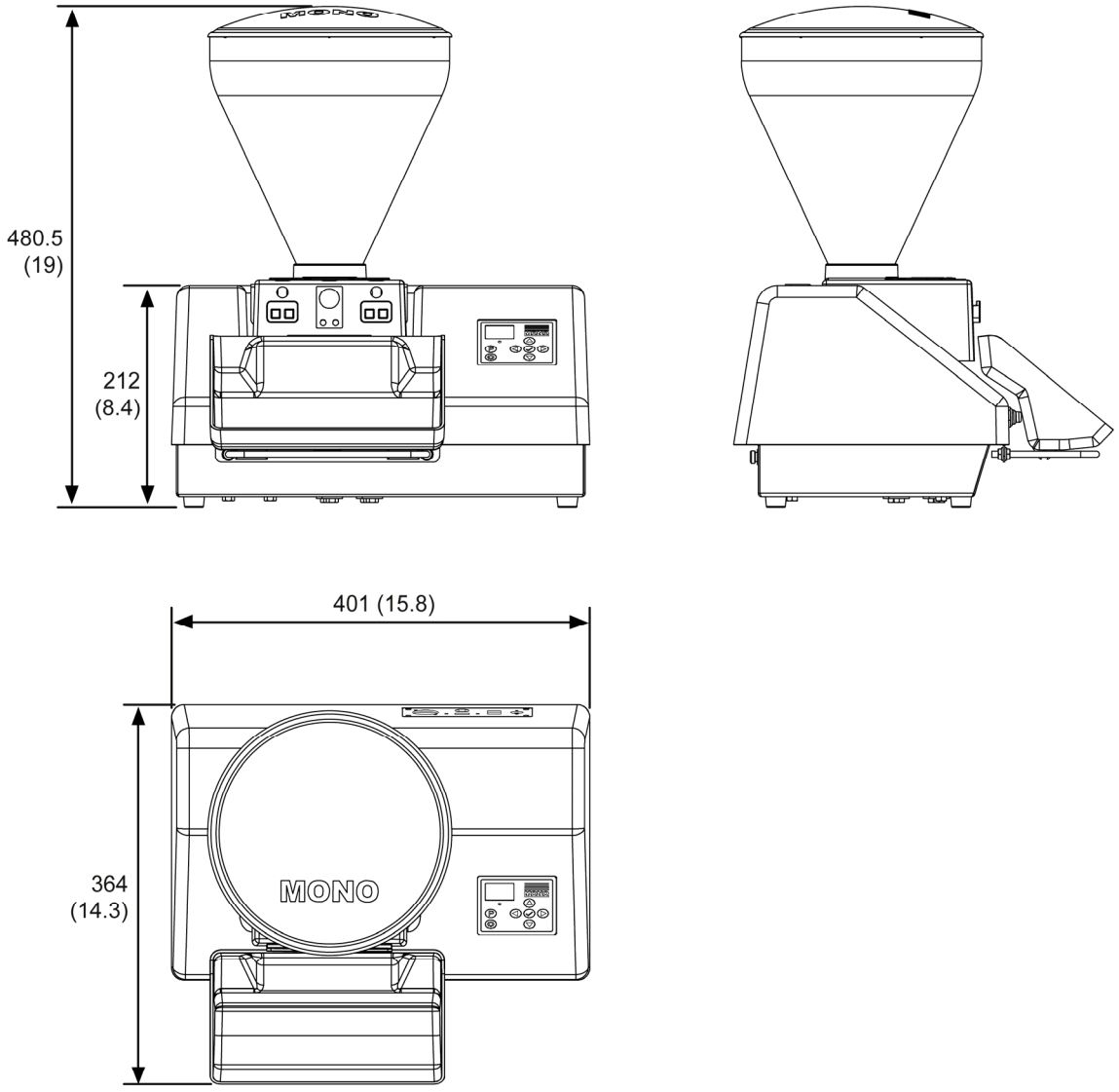
Figure 1: Features



A. Base unit
B. Hopper
C. Hopper lid
D. Pump unit
E. Nozzles
F. Actuator tray
G. Adjuster feet

2. Dimensions

Figure 2: Dimensions of the Automatic Jammer / Injector



3. Specifications

Environmental specifications

Weight of base (boxed)	8 kg (17.7 lbs)
Weight of hopper (boxed)	1.9 kg (4.2 lbs)
Hopper capacity	9.1 kg (20 lbs)
Single delivery capacity	1200 pcs per hour

These figures can vary depending on the filling used.

WARNING

- Only use seedless jams and fillings.

Electrical specifications

Mains supply	100 to 250 Vac (50/60 Hz), single phase, 13 Amps
Power cables	Country-specific cables (base unit requires 24 Vdc)
Maximum power	150 Watts @ 24 Vdc, 6.26 Amps

WARNING

- An electrical socket must be protected by a 30mA-rated Type A Residual Current Device (RCD). Always check electrical requirements on the nameplate before connecting the plug to the protected socket.

Environmental specifications

Noise level	Less than 85 dB

4. Safety

WARNING

- Before using the Auto Injector, check that:
  - All cover panels and cables are securely fitted.
  - There is no visible damage.
- If the Auto Injector is damaged or malfunctioning, stop using it.
  - Do not attempt any repairs.
  - Contact the MONO Service Department for advice.
- Operate the Auto Injector only as described in this manual.
- Only use the seedless fillings.

WARNING

- All electrical connections to the Auto Injector must comply with the statuary requirements of the country of installation.
- An electrical socket must be protected by a 30mA-rated Type A Residual Current Device (RCD). Always check electrical requirements on the nameplate before connecting the plug to the RCD-protected socket.
- Always use the nearest available socket to the machine.
  - Avoid cables trailing across the floor.
  - Plugs on flexible cables must be correctly connected and the cable secured by the cord grip.
  - Flexible cables should be positioned and protected such that heavy equipment or materials cannot damage them.
- Cables should be checked regularly for damage.
  - Checks should be made with the cable disconnected from the mains.
  - Damaged cables should be taken out of service straight away. Only use MONO spare parts.
- Never immerse the base console in water,

CAUTION

- When in use and when cleaning be aware that the injection nozzles are sharp.
- Never leave the machine unattended without switching it off.
- Always remove hopper before lifting or moving the base unit.
- Unauthorised modifications or repairs to the machine (including cables) are not permitted. Only use MONO spare parts.
- Repairs and maintenance must only be carried out by authorised electricians.
- Only trained and authorised personnel may operate or clean this machine.

5. Installation

WARNING

- An electrical socket must be protected by a 30mA-rated Type A Residual Current Device (RCD). Always check electrical requirements on the nameplate before connecting the plug to the protected socket.

1. The Auto Injector should be plugged into an RCD-protected 13 Amp socket.
2. For best results, the Auto Injector should be placed in a clean work area and on a level surface at a normal work top height.
3. Before first use, wash out the hopper parts with a suitably approved cleaner and water. Allow to air dry.

6. Isolation

Isolating the Auto Injector from the electrical supply

To stop the Auto Injector **in an emergency**, switch off the electricity at the wall socket.

7. Cleaning Instructions

WARNING

- **Always** isolate the machine from the electrical supply before cleaning.
- **Never** immerse the base unit in water.

CAUTION

- Take care when removing the nozzles – they can be very sharp.

The machine should be cleaned and all components allowed to air dry after every period of use.

1. Remove the nozzles by twisting each one until the flat of the plastic ring lines up with the flat on the pump unit. Pull completely out and wash with an approved mild detergent/sanitizer and hot water. Allow to air dry.

2. Empty the hopper into a container and cover over for future use. **Do not top-up a half-full container**.

3. Dismantle the pump chamber (B) components (as shown in step 6) and wash thoroughly with an approved cleaner and water.

4. Wash the hopper unit and the entire lid with an approved mild detergent/sanitizer and hot water. Allow to air-dry.

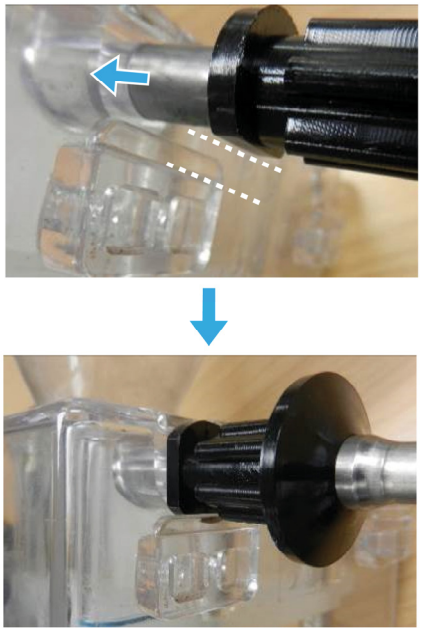
5. Air-dry all the pump components and reassemble the impellers (C) on the correct spindles with the recessed side facing down. **Do not use force.**

6. Replace the impellor unit in the pump chamber ensuring the seal (D) is in place and fasten with the thumb screws (A). *These screws should only be finger tight as the use of tools to over tighten could lead to the chamber cover fracturing.*

Figure 3: Pump chamber assembly

7. Unclip the actuator tray and wash thoroughly using an approved cleaner and water. Allow to air-dry.
8. **Wipe over** all external surfaces with an approved mild detergent/sanitizer and hot water. Allow to air-dry.
9. Fit the nozzle (Figure 4).
   (**a**) Insert each nozzle into the pump unit with the flat of the plastic ring facing down.
   (**b**) When the nozzle has been inserted as far as the ring, twist it through 90 degrees.

Figure 4: Fit the nozzles



8. Operating Conditions

Warning!

- **Never** power on the machine if liquid has leaked and gone inside the plastic case. Contact the Service Department at MONO for a service engineer.
- **Never** replace the 6.3A 5x20 Ceramic Slow-Blow fuse at the rear panel with a different type. Contact the Service Department at MONO for a service engineer.
- **Never** pour liquid over the machine.
- **Never** use a different power supply.

Caution!

- **Never** use a knife or other sharp object to press the keyboard buttons.
- **Never** press the OLED display screen; it is not a touch screen and the circuitry underneath can be damaged.

1. For best results, the electronic jammer should be placed on a level surface at a normal worktop height.
2. All cleaning and operation instructions should be followed meticulously.

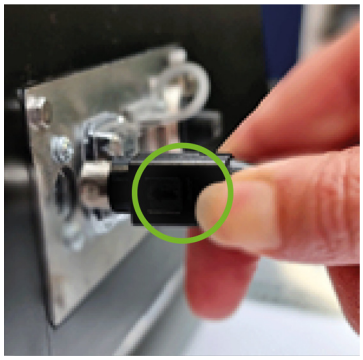
9. Operating Instructions

The Auto Injector is delivered with a standard set of programs but can be easily reprogrammed. This section will show how to program the Auto Injector.

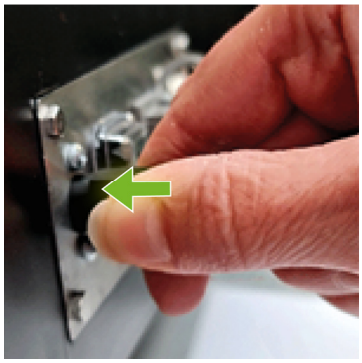
9.1 Starting the Auto Injector

1. Connect the Power Supply Lead to the back of the Auto Jammer / Injector Base Unit.
The following three-step process ensures the power lead is connected correctly, safely and securely.

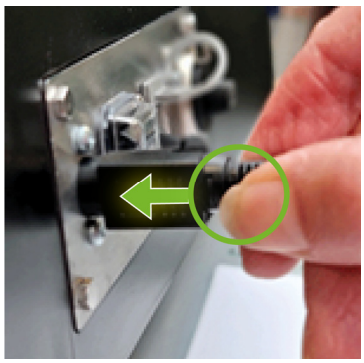
a. **Always** ensure the flat side of the connector, with the arrow symbol, is facing to the left, when connecting the power supply.



b. Holding the flat side of the connector between finger and thumb, push until the silver part of the connector is no longer visible.



c. Grip the power-lead immediately behind the flat area of the connector and push forwards until you feel or hear a click.



When unplugging, grip the flat area of the connector between thumb and finger and pull gently to remove the power supply. Never pull when holding any other part of the cable.

2. Insert the plug of the cable into a 13 Amp wall socket.

9.2 Select the operation mode

After powering-up, the Auto Injector starts by displaying the icon **P01**.

Using the "**Operation Mode / Program**" key, you can now choose the **operation mode** by selecting the **Numeric**, **Icon**, **Manual**, or **Continuous** mode. Just use the key to cycle through these modes on the display.

In sequence, you will see the display show:

P01 for the "**Numeric mode**"

 for the "**Icon mode**"

 for the "**Manual mode**"

 for the **"Continuous mode"**

Once you have chosen the operation mode, it's immediately active. No need to confirm.

9.3 Select the program you want to create or modify

After you have chosen the **operation mode**, you can move from icon to icon using the or the keys to select the desired program inside the list.

The Auto Injector comes with pre-set programs. Using the procedures described below, you will be able to create new programs or to modify these pre-set programs when in Numeric or Icon Operation mode.
The Manual Operation mode has – instead – a unique choice. The Continuous mode will also be different.

Moving through the Numerical Operation mode

- If you have previously selected the "**Numerical Mode**", you will see progressive numbers of the icon, like **P01**, **P02**, and **P03**.
  You can move forward with the key or move back with the key until you have selected the Program inside the list, which you want to create or modify.
- Once the screen shows the program you want, it is active. No need to confirm.

Moving through the Icon Operation mode

- If you have selected the "**Icon Operation Mode**", you will see icons, like

  You can move forward with the key or move back with the key until you have selected the program which you want to create or modify.
- Once you have selected the program, that program is already active. No need to confirm.

If the Icon is the Manual Operation mode

- If you have previously selected the "**Manual Operation mode**", then you will see only one icon 

If the Icon is the Continuous Operation mode

- If you have selected the "**Continuous Operation mode**" then you will see only one icon, which is: 

9.4 Enter new or modify existing parameters

The actions described below are valid for all the four operation modes: Numerical, Icon, Manual, and Continuous.

Press the key  **for at least 5 seconds** to enter the programming sequence for setting the injection duration time, speed of the injection, suck-back duration time, and program order.

Setting the injection duration time

Note: This step will not appear (i.e., automatically by-passed) when operating in the Continuous Operation mode.

Unless previously set, the display will show the **Time** icon with an initial time value of **0.6** seconds: 

At this point, using the **Up**  and **Down**  keys, you can modify the value until you get the desired value, for example:  , then confirm your choice by pressing:  .

Note: The possible values range from 0.6s to 99s; you have intervals of 1/10th of seconds from 0.6s to 9.9s, then from 10s to 99s the interval is 1s.

After you confirm, the display will change to next step, showing the **Speed** icon.

Setting the speed of the injection

Note: This step is valid for all 4 operation modes.

Unless previously set, the display will show the **Speed** icon with an initial speed value in **rpm**:  .

At this point, using the **Up**  and **Down**  keys, you will modify the value of the speed until you get the desired value. Confirm your choice by pressing  .

After you confirm, the display will change to next step, showing the **Suck-Back** icon.

Setting the suck-back duration time

Note: This step is valid for all 4 operation modes.

Unless previously set, the display will show the **Suck-Back** icon with the initial time value in **seconds**: 

.
At this point, using the **Up** and **Down** keys, you can modify the value of the speed Then confirm your choice by pressing .

Note: The possible values range from 0.6s to 99s; you have intervals of 1/10th of seconds from 0.6s to 9.9s, then from 10s to 99s the interval is 1s.

If you have selected the Manual or Continuous Operation mode, the procedure ends here and shows ✓ .
This means the input values are only temporarily saved and will be lost at next power off/on of the machine.
If your previous choice was either the **Numerical Operation** or the **Icon** mode, the display will move on to next step, showing the **Order-in-Menu** icon.

Setting the program order in the menu

Note: This step will not appear for the Manual and Continuous Operation modes.

The display will show the **"PROGRAM ORDER**" icon **with the actual Program's value e.g.,** 

.
We have assumed, just for example, that at the beginning you have selected the Program #13 or the Icon in the 13th place of the Icons' list. (This is **not** valid for the **Manual Operation mode)**.

To understand this feature, let's say that the program which you have just created, as new or modified (either **Numerical** or **Icon** mode) can be stored in a position in the list.
For example, if you have worked on a program which was originally **P13**, and you think it will be the most used, rename it as **P01**, so that it's your first choice when you power-up the machine.

To do this, use the **Up** and **Down** keys to modify the value of the position until you get the desired position. When you have selected the position, just press to confirm.
The machine will show the icon: to confirm that everything has been stored correctly.

Note: The new or modified parameters will be stored only for the Numerical and Icon Operation modes. They will not be stored for the Manual and Continuous Operation modes.

If you change the position of a program (icon) in the list, the other programs will move down one position.

Examples of changing the program order

- **P01**, **P02**, **P03**, …

  If you modify P03 and then rename it P01, then the new list will be:

  P01 (formerly P03), **P02** (formerly P01), **P03** (formerly P02)

-  **GUEST**

  If you are working on the Raspberry Icon and you would like it to become the first one.
  After you save your work, you will have this new list:

   **GUEST**

What to do if you make a programming error

If you have entered a wrong value during the programming section, you must re-enter the programming mode from the beginning. Select the program (be careful if you have changed the position in the list!) and enter new values.

9.5 Running a program

Below, you will see how to choose your operation mode and how to choose the program to be run.

Choose an operation mode

After switching on the power, the Auto Injector starts by displaying the icon **P01**.
Using the **Operation Mode / Program** key, choose the mode required.
Press the key repeatedly to cycle through the modes on the display.
In sequence, you will see the display show:

P01 for the “**Numeric mode**”

 for the “**Icon mode**”
(A raspberry is shown here, but the icon can be whatever was previously loaded to position #1).

 for the “**Manual mode**”

 for the **“Continuous mode”**

After choosing Numerical or Icon Operation modes, scroll through the icons using the or the keys to select a desired program. The Manual or the Continuous Operation modes have choices as below:

Run a program in the Numerical Operation mode

If you have previously selected the "**Numerical mode**", you will see progressive number icons like **P01**, **P02**, **P03.**
Move forwards with the key or backwards with the key until you see the program you wish to run.
When you are ready, start the program by pushing either the tray or the optional foot pedal. This will start the flow of the filling from the nozzle.

Run a program in the Icon Operation mode

If you have previously selected the "**Icon Operation Mode**", you will see progressive icons, such as:


GUEST

Move forwards with the key or backwards with the key until you see the program you wish to run.
When you are ready, start the program by pushing either the tray or the optional foot pedal. This will start the flow of the filling from the nozzle.

If you have selected the **GUEST** icon, it means that you are running a "test program" for a new kind of Jam or Cream which is not in the icon list. Factory settings for the Guest program can be modified (and saved).

The scope of the **GUEST** program is to give the opportunity to experiment with new settings, without "damaging" the settings of the other programs associated to the other icons.

GUEST is a program which can be used for 'promotional' flavours that the store may be running from time to time. It means that the flavour can be used for a while and then changed when the next promotion is run.
Therefore, the icon can be used for a variety of fillings that are to be on promotion for a limited period.

Run the Manual program in Manual Operation mode

If you have selected the "**Manual Operation Mode**", then you will see only one icon: .
When you are ready, start the program by pushing either the tray or the optional foot pedal. This will start the flow of the filling from the nozzle.

IMPORTANT NOTICE FOR RUNNING MANUAL PROGRAM

Note that if you have selected the **Manual Operation** mode then parameter changes are not saved.
The **Manual Operation** mode runs with the last entered parameters after the machine has been powered on.
If you do not change anything, you will run with the factory settings which are:

- Ejection Time = 05 seconds
- Motor Speed = 99 rpm
- Suck-Back Time = 03 seconds

You can modify these settings and work with new parameters until the Auto Injector is next powered off/on.

Run the Continuous program in Continuous Operation mode

If you have selected the **Continuous Operation** mode, then you will see only one icon, which is: .
When you are ready, start the program by pushing either the tray or the optional foot pedal. This will start the flow of the filling from the nozzle.

You do not have to keep the foot pedal pressed all the time. The flow will stop (with the pre-set suck-back time) when you press the foot pedal again. The sequence for the Continuous Mode is:

- Press the foot pedal…….starts the flow
- Release the foot pedal…….flow continues
- Press the foot pedal…….flow stops (with pre-set suck-back).

IMPORTANT NOTICE FOR RUNNING CONTINUOUS PROGRAM

Note that if you have selected the **Continuous Operation mode** then parameter changes are not saved.
The **Continuous Operation mode** runs with the last entered parameters since the Auto Injector was powered on.
If you do not change anything, you will run the **Continuous Operation mode** with the factory settings, which are:

- Motor Speed = **99** rpm
- Suck-Back Time = **03** seconds

9.6 Changing parameter settings on-the-fly

Sometimes you have chosen and run a program but want to experiment with the settings. Maybe, you have a larger pastry and want to change the program's injection time parameter to allow more jam flow into the pastry.

To achieve this, be in the "run program" state i.e., ready to press the tray pushbutton or optional foot pedal.
At any time, press the key and follow the procedure below (which is like the programming sequence).

- For Injection and Suck-Back times, the possible values range from 0.6 to 99 seconds.
  Intervals are tenths of a second (from 0.6 to 9.9 seconds) and a second (from 10 to 99 seconds).
- For Speed, values range from 01 to 99 rpm (revolutions per minute).

Changing the Injection Duration Time setting

Note: This step will not appear for the Continuous Operation mode.

The display will show the **Time** icon with the actual preset value (e.g.: 12 seconds): 12.
Now, using the **Up** and **Down** keys, you can modify the value until you get the desired value.
For example, 14 . Confirm the choice by pressing . The display then changes to the next step, the **Speed** icon.

Changing the Injection Speed setting

Note: This step is valid for all four operation modes.

The display will show the **Speed** icon with the actual speed value in **rpm**: 99.

Now, using the **Up** and **Down** keys, you can modify the value of the speed until you get the desired value. For example, 91. Confirm the choice by pressing . The display then changes to the next step, the **Suck-Back**.

Changing the Suck-back Duration Time setting

Note: This step is valid for all four operation modes.

The display will show the **Suck-back** icon with the actual time value in seconds: 01.

Now, using the **Up** and **Down** keys, you can modify the time until you get the desired value.

For example, 03. Confirm the choice by pressing .

The final procedure ends when a ✓ appears. Note that input values are only temporary and will be lost at next power off/on of the Auto Injector. However, this handy feature helps you to experiment with values until you find a good (new) setting. Make a note of the new settings, and then enter the programming sequence to input (and permanently save) the new tested values.

CAUTION

- If the actuator tray is accidentally operated, filling will be dispensed out of the nozzles.

10. Maintenance

WARNING

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

By keeping the machine cleaned after every period of use, it should operate smoothly, hygienically, and economically. If not kept clean, it may clog up and fail to operate. No other maintenance should be required.

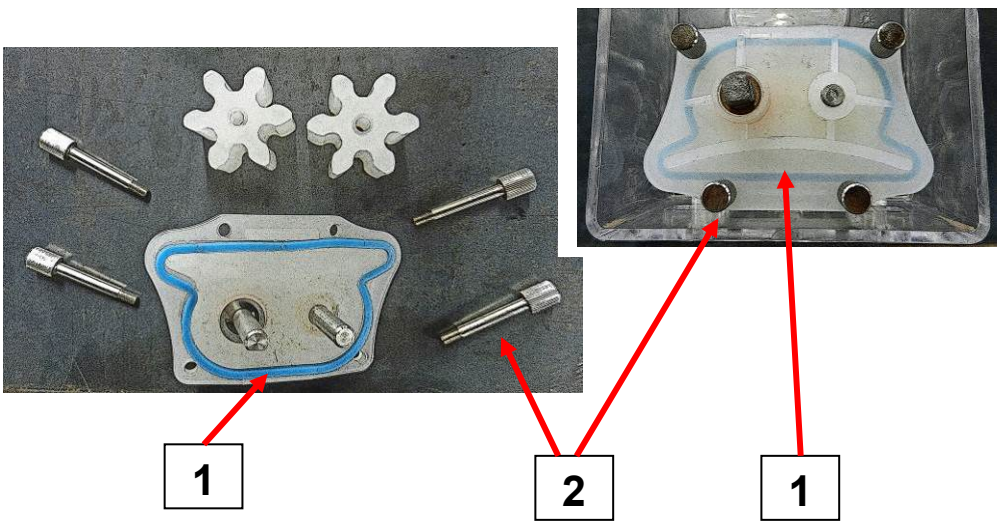
10.1 Problem solving

There is no filling coming from the nozzle(s)

1. Check the power lead is correctly plugged into the machine and the power socket.
   See Section 9 for detailed instructions.
2. Check that there is a filling in the hopper.
3. Check that the filling is not solid.
   *Always breakdown jam from a jell state **before** placing in hopper, and only use seedless fillings.*
4. If machine still has a problem, please contact the MONO Service Department for assistance (Section 11).

The filling is leaking from the base of the hopper

1. Check that the pump plate seal (1) has not been left out after cleaning.



2. Check that pump assembly is not damaged.
3. Check that the thumbscrews (2) are tight but not over-tight (finger-tight only).
4. If machine still has a problem, contact the MONO Service Department for assistance (Section 11).

10.2 Service port operation

WARNING

- Never use the USB port to power or recharge electronic devices e.g., mobile phones. Incorrect usage causes damage to the oven and could result in a fire.

The rear panel USB port is used to plug a common USB Pen-Drive (USB stick).
You can either:

- Load data from the Pen-Drive
- Save data to the Pen-Drive.

10.3 Features of the Pen-Drive

Format of the Pen-Drive

You need any commercially available USB 2.0 (or even 3.0) Pen-Drive, formatted with FAT32.

Files on the Pen-Drive

You do not need to have a “dedicated” Pen-Drive for the Jammer.
You can use your personal one, but you must have a folder named **JAMMER**.
This folder is the place where you can either store your data from Jammer or where you can load data to the Jammer.

The **JAMMER** main folder must include another two sub-folders, named **TO** and **FROM**.

- **TO**
  is the sub-folder (inside the main JAMMER folder) where data from the Jammer is saved to the Pen-Drive.
- Files include:
  - Recipes
  - Bitmaps of the Icons
  - Actual Bootloader of the Jammer’s mainboard
  - Actual Firmware of the Jammer’s mainboard

- **FROM**
  is the sub-folder (inside the main JAMMER folder) where data from the Pen-Drive is loaded into the Jammer.
- Files include:
  - Recipes
  - Bitmaps of the Icons
  - Actual Bootloader of the Jammer’s mainboard
  - Actual Firmware of the Jammer’s mainboard

10.4 Update Jammer software and data from the Pen-Drive

The procedure is very simple.

1. Power Jammer OFF.
2. Plug the Pen-Drive into the USB port at the rear I/O Panel.
3. Press  (“Down”) key on the keyboard.
4. Keep the key pressed and power Jammer ON.
5. Keep the key pressed and look at the keyboard LED: it should blink (slowly) to signal that the Jammer has “understood” an update session.
6. Keep the key pressed until the keyboard LED blinks quickly.
7. You can release the key now.
8. The LED turns fixed ON while the update is in progress.
9. At the end of the procedure:
   - If all has gone OK, the display will show the updated bootloader version and the updated firmware version.
   - If anything has gone wrong, the keyboard LED blinks continuously and the Jammer is blocked. **If this should happen, you can restore the Jammer to Factory Defaults.**

10.5 Saving the Jammer software and data to the Pen Drive

The procedure is very simple.

1. Power Jammer OFF.
2. Plug the Pen-Drive into the USB port at the rear I/O Panel
3. Press  (“Up”) key on the keyboard.
4. Keep the key pressed and power Jammer ON.
5. Keep the key pressed and look at the keyboard LED: it should blink (slowly) to signal that the Jammer has “understood” a save-data session.
6. Keep the key pressed until the keyboard LED blinks quickly.
7. You can release the key now.
8. The LED turns fixed ON while the saving procedure is in progress.
9. At the end of the procedure the Jammer restarts as if it had just turned on.

NOTE:
During the save action to the Pen-Drive the Jammer checks for a correct file save to the Pen-Drive, so if the Jammer restarts, you can be sure the data on the Pen-Drive is okay.

10.6 Check the software version

In case you need to know the actual version of the Bootloader and of the Firmware, which are running inside the internal control board's processor, follow this procedure:

1. Turn Jammer OFF.
2. Press the  "Program" key.
3. Keep this key pressed and power the Jammer ON.
4. Keep the key pressed for at least another 5 seconds after power on.
5. You can release the key
6. You will see the display showing the bootloader current version and the firmware current version.
7. Turn the Jammer OFF.
8. To use the Jammer now, power it ON without any key pressed.

10.7 Dust proof covers for the rear I/O panel

We provide dustproof rubber covers for both the USB port and for the foot pedal socket. These are easily removed by pulling them out of their respective sockets. After use, plug them back into the sockets. Do not lose them!

11. Spares and Service

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.

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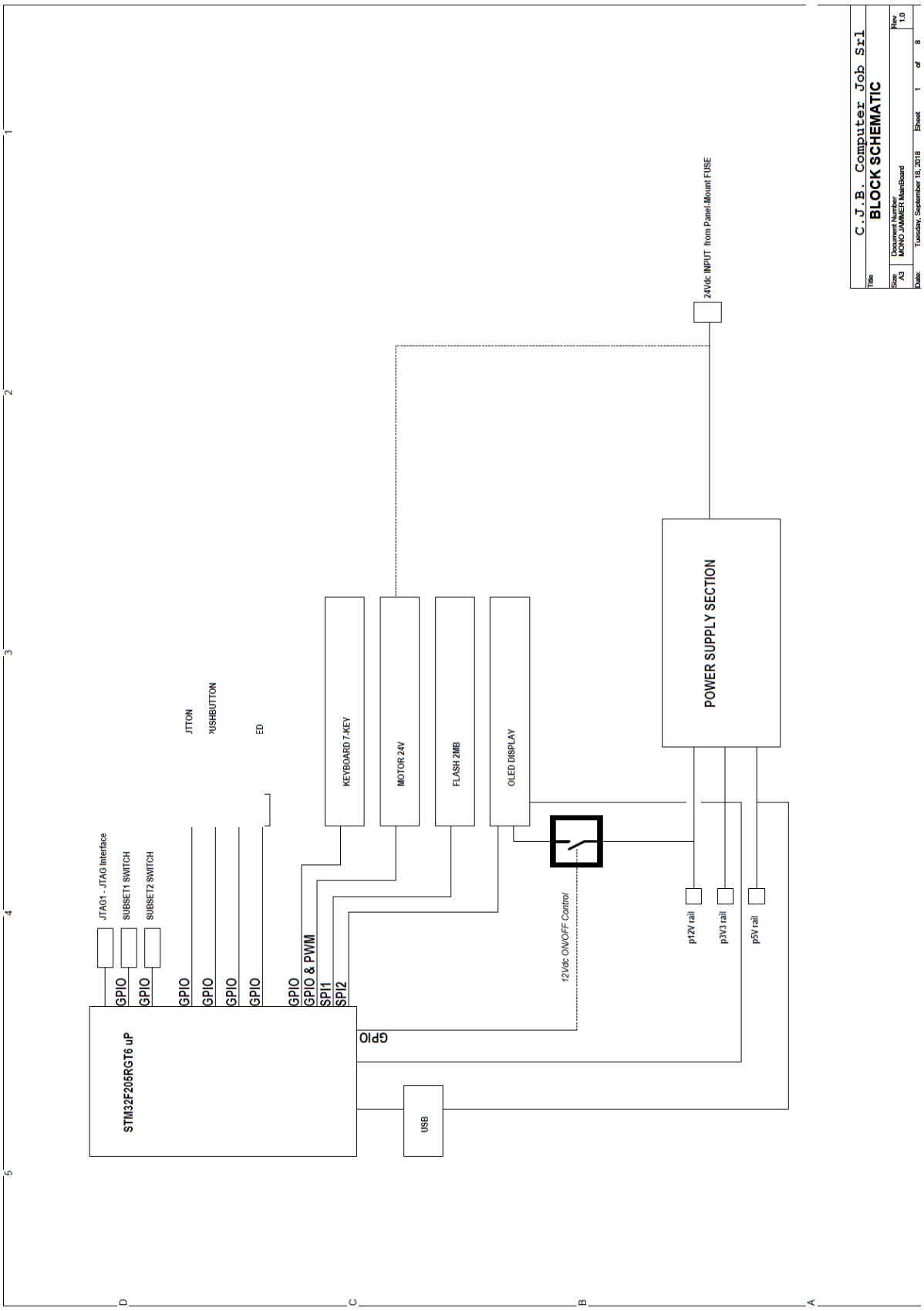
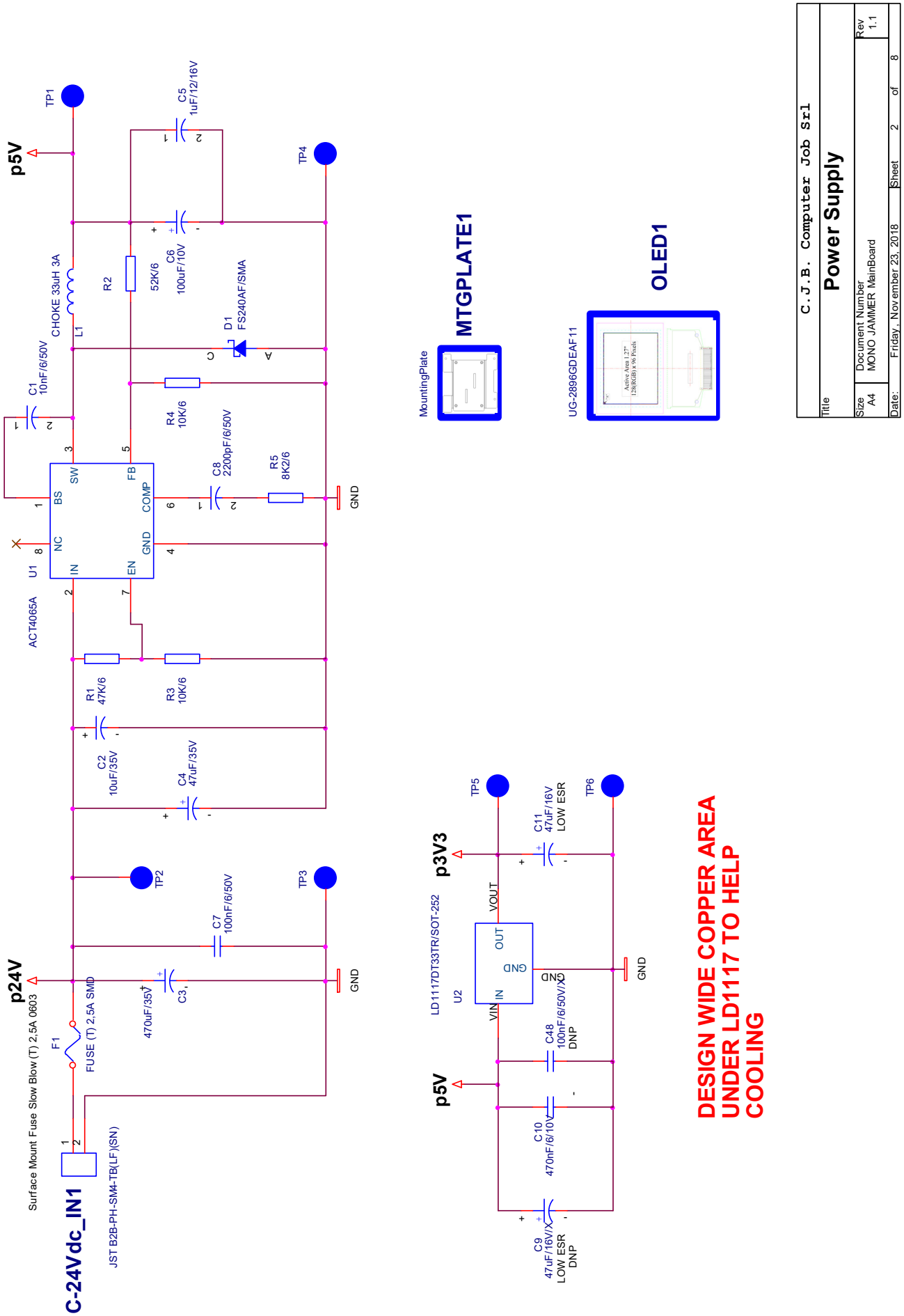
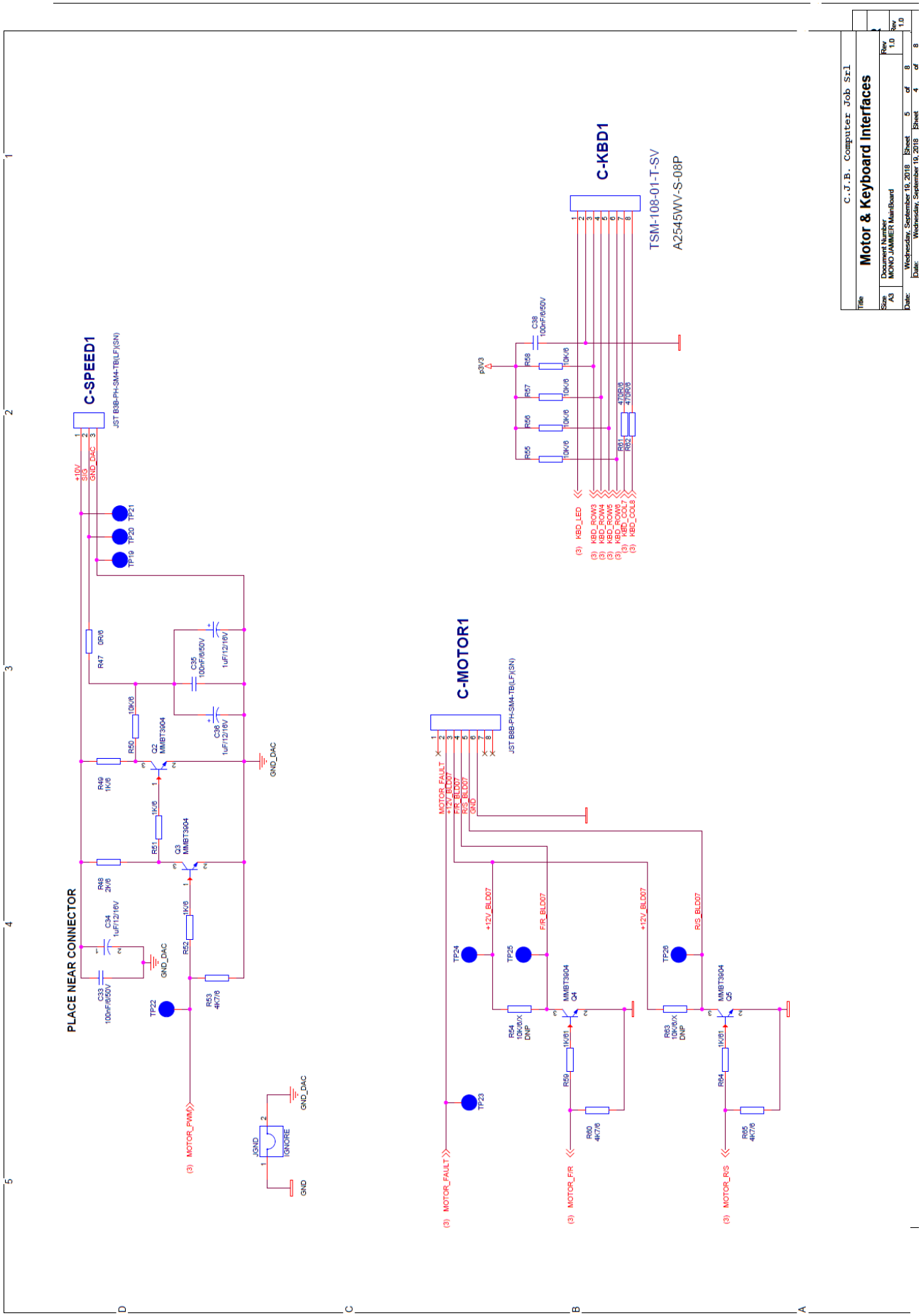
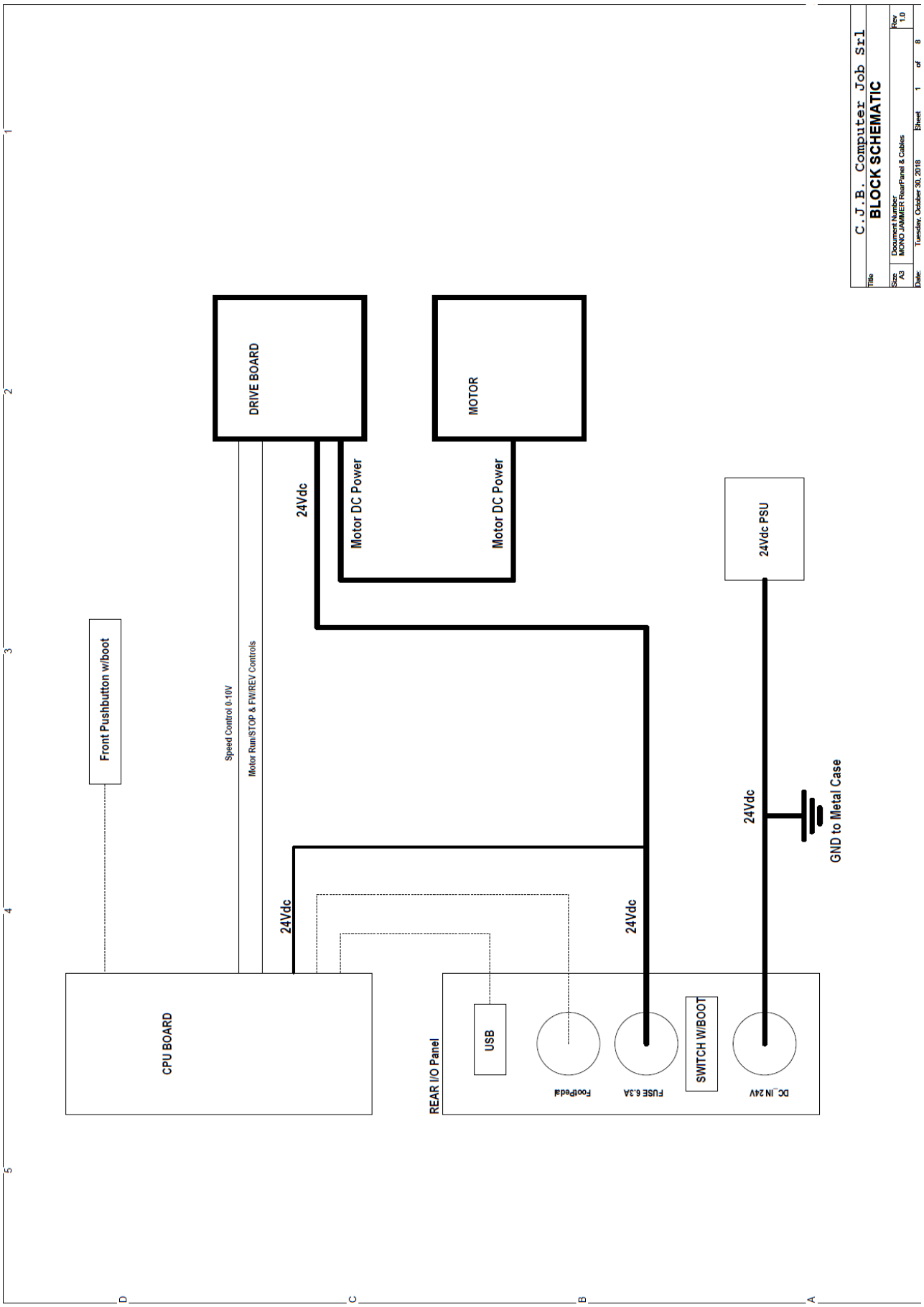
12. Electrical Information




C.J.B. Computer Job Srl
Title
Power Supply
Size A4
Document Number MONO JAMMER MainBoard
Rev 1.1
Date: Friday, November 23, 2018
Sheet 2 of 8
MTGPLATE1
MountingPlate
OLED1
UG-2896GDEAF11
p5V
p24V
p3V3
TP1
TP2
TP3
TP4
TP5
TP6
GND
C-24Vdc_IN1
JST B2B-PH-SM4-TB(LF)(SN)
Surface Mount Fuse Slow Blow (T) 2.5A 0603
F1
FUSE (T) 2.5A SMD
U1
ACT4065A
NC
IN
BS
SW
GND
EN
FB
COMP
U2
LD1117DT33TR/SOT-252
VIN
VOUT
C1 10nF/6/50V
C2 10uF/35V
C3, 470uF/35V
C4 47uF/35V
C5 1uF/12/16V
C6 100uF/10V
C7 100nF/6/50V
C8 2200pF/6/50V
C9 47uF/16V/X LOW ESR DNP
C10 470nF/6/10V
C11 47uF/16V LOW ESR
C48 100nF/6/50V/X DNP
L1 CHOKE 33uH 3A
D1 FS240AF/SMA
R1 47K/6
R2 52K/6
R3 10K/6
R4 10K/6
R5 8K2/6
DESIGN WIDE COPPER AREA
UNDER LD1117 TO HELP
COOLING


C.J.B. Computer Job Srl
Motor & Keyboard Interfaces
Document Number
MONO JAMMER MainBoard
Rev 1.0
Wednesday, September 19, 2018
Sheet 5 of 8
C-SPEED1
JST B3B-PH-SM4-TB(LF)(SN)
C-KBD1
TSM-108-01-T-SV
A2545WV-S-08P
C-MOTOR1
JST B8B-PH-SM4-TB(LF)(SN)
PLACE NEAR CONNECTOR
MMBT3904
GND_DAC
MOTOR_PWM
MOTOR_FAULT
MOTOR_F/R
MOTOR_R/S
KBD_LED
KBD_ROW3
KBD_ROW4
KBD_ROW5
KBD_ROW6
KBD_COL7
KBD_COL8


C.J.B. Computer Job Srl
BLOCK SCHEMATIC
Rev 1.0
Size A3
Document Number MONO JAMMER RearPanel & Cables
Date: Tuesday, October 30, 2018
Sheet 1 of 8
DRIVE BOARD
MOTOR
24Vdc
Motor DC Power
Motor DC Power
24Vdc PSU
Front Pushbutton w/boot
Speed Control 0-10V
Motor Run/STOP & FW/REV Controls
24Vdc
24Vdc
24Vdc
GND to Metal Case
CPU BOARD
REAR I/O Panel
USB
FootPedal
FUSE 6.3A
SWITCH W/BOOT
DC_IN 24V

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