

# TGMi

## GLASS CRUSHER MR6

### Operating Manual



Manufactured by: **The Green Machine Ind.**

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**Notice**

- Specifications/information in this manual may change without notice.
- Conversions from metric are approximate, including weights.
- The manufacturer/dealer accepts no responsibility for this manual, or for the usability of the manual for special purposes.
- The manufacturer/dealer cannot be held responsible for errors in this manual or for direct or indirect loss as a consequence of the issue, presentation, or use of this material.
- The contents of this manual shall not be photocopied, reproduced or translated, as a whole or in part, without prior permission.
- The manufacturer/dealer accepts no responsibility for any claims for compensation arising from injury to a third party as consequence of unintentional or intentional disregard of the safety stipulations stated in this manual.
- Warranty period is as stated on the sales invoice. Ordinary wear and tear or breakage due to incorrect use are not covered.

# 1. Operator Sign-off Sheet

The following operators have read and understood this entire manual, and have paid particular attention to the safety section:			
Forename	Surname	Date	Signature

### 3. Safety

#### 3.1. Safety Notice

Specific safety instructions may be required for particular jobs. These safety instructions can be found in this operating manual with the corresponding activity. They are clearly highlighted by the danger symbol (pictogram). Different hazard words are used depending on the grade of the associated hazard.








Signal word	Potential consequences if safety advice is not followed:
<b>DANGER</b> 	DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
<b>WARNING</b> 	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
<b>CAUTION</b> 	CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
<b>NOTICE</b> 	NOTICE indicates a situation that may lead to material damage to the baler or the environment.

Table 1: Hazard signal words and their meaning

<b>WARNING</b> 	<b>This machinery should be operated only by instructed adults. Check your local health and safety regulations regarding minimum age requirement.</b>
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<b>WARNING</b> 	<p><b>It is extremely important that all personnel operating the machine read and understand this manual before operating the machine.</b></p> 
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## 3.2. Personal protective equipment

The minimum personal protective equipment (PPE) required by operators using this machine is:

- Ear protection
- Safety glasses
- Protective gloves
- Safety shoes




Extra PPE may be required depending on the type of waste material being processed in the machine. If you have any questions about the PPE requirements for the material being processed in this machine consult with your HSE manager or supervisor.

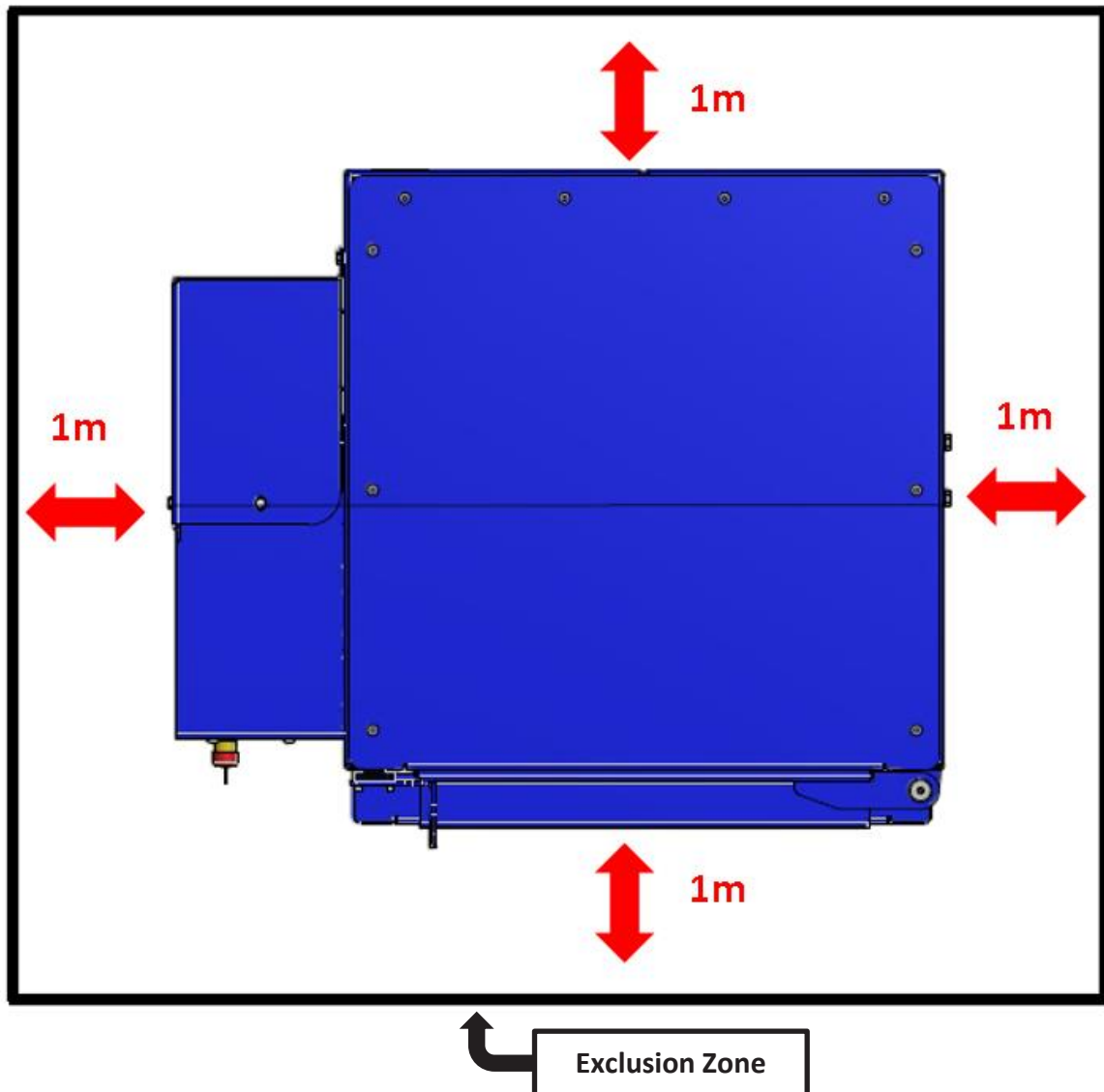
Loose clothing or jewellery should not be worn while operating this machine.

## 3.3. Danger zone

The diagrams below show the danger zones and exclusion zones around the machine. No persons are allowed to enter in the danger zone under any circumstances during the operation of the machine.



<p><b>WARNING</b></p> 	<p><b>During the operation of the machine, only the operator should stand within the exclusion zone. All other personnel MUST stand clear of the exclusion zone.</b></p> <p><b>While operating the machine the operator must remain standing to the side of the machine, beside the operator station and must remain alert, looking for any possible dangers to themselves or others.</b></p>
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**DANGER & EXCLUSION ZONES**





Term	Meaning
Danger zone	<p>A “danger zone” is a section/area (zone) of the machine where an operator may be exposed to hazards. The danger zones for the TGMi glass crusher are considered to be:</p> <ul style="list-style-type: none"> <li>- the glass crushing chamber area (during crushing),</li> <li>- underneath the glass crushing chamber area (inside bottom door during crushing),</li> <li>- inside motor cover during operation.</li> </ul> <p>No persons are allowed to enter in the danger zone under any circumstances during operation of the machine.</p>
Exclusion zone	<p>An “exclusion zone” is a section/area (zone) around the machine where only the operator should enter during operation; all other persons must stand clear!</p>





<p><b>NOTICE</b></p> 	<p>It is recommended that the floor area around the machine be marked out to show the exclusion zone.</p> 
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### 3.4. Safety warnings

<p><b>DANGER</b></p> 	<p>Before operating the machine <b>ALWAYS</b> check that there are no persons or animals in the chamber.</p> <p>When not in use, lock the machine using the key on the E-Stop.</p>
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<p><b>WARNING</b></p> 	<p>Never operate this machine if there is evidence of any of the following:</p> <ul style="list-style-type: none"> <li>• damage to the electrical cables or electrical components of the machine,</li> <li>• damage to hydraulic hoses (if applicable),</li> <li>• oil leaks (if applicable),</li> <li>• loose, damaged or missing parts,</li> <li>• the machine is unstable or not mounted on a firm surface,</li> <li>• the correct electrical plugs and sockets are not present.</li> </ul> <p>If any of the above points or another problem were to occur, take the machine out of service immediately and report the problem to your supervisor. If further assistance is required contact your selling agent to arrange the repair of the machine.</p>
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<p><b>WARNING</b></p> 	<p>Never remove and/or bypass barriers, covers or safety related components, doing so will expose operators to danger.</p>
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<p><b>WARNING</b></p> 	<p>Exercise caution when opening and closing the machine doors. Open and close the doors slowly to prevent injury from impact or crushing. Keep vigilant, be sure no personnel are in danger of being injured by opening or closing the doors.</p>
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<p><b>WARNING</b></p> 	<p><b>The glass crusher is only designed to crush glass. Attempting to crush anything else may lead to injury and/or damage to the machine.</b></p>
<p><b>CAUTION</b></p> 	<p><b>Exercise caution when loading waste material into the machine and removing the bin. Only lift a comfortable amount of material and use safe handling techniques.</b></p>
<p><b>WARNING</b></p> 	<p><b>Always allow 5-10 seconds after the stop button has been pressed before opening the door. Ensure all moving parts of the machine have stopped completely before proceeding to open doors.</b></p>
<p><b>CAUTION</b></p> 	<p><b>Exercise extreme caution when removing the bin of crushed glass from the machine. Ensure the bin is removed slowly and carefully, especially if almost full.</b></p>

**CAUTION**



**Do not climb or stand on top of the machine. Use an appropriate ladder to access to the top of the machine.**



### 3.5. Customer responsibilities

When installing, operating and maintaining the glass crusher, the customer is responsible for ensuring that:

- the installation of the plug and socket on the electrical power supply is carried out in accordance with EN/ISO or country of installation electrical standards,
- all operating personnel read the operating manual and understood all aspects of safety and operational procedures,
- the operators have access to the operating manual (or a copy) at all times and in a language they understand,
- the electrical cable, from the machine to the plug and socket, is located in a safe position; is not stretched and does not pose any hazard to operators,
- the machine is plugged directly into the main supply, without the use of extension leads (the use of extension leads may lead to increased supply current and cause plug top fuse to blow/MCB to trip out).




## 4. Instructions for transport and handling

### 4.1. Lifting

TGMi Glass Crusher are designed to be lifted using a forklift truck or a pallet truck. Each of these machines has channels along their base to receive the forks of a forklift or a pallet truck. These channels ensure that the forklift or pallet truck forks are in the correct position and prevent the machine to slide during the lifting operation. Do not attempt to lift this machine if the forklift or pallet truck forks are not in the correct position.

Lifting of the machine must only be carried out by a forklift or a pallet truck rated for the weight of the machine (please refer to section 4.2). Forklift trucks should be operated by a trained forklift driver.

<p><b>CAUTION</b></p>	<p><b>To reduce the risk of damage and injury make sure all doors are fully closed and locked before lifting the machine.</b></p>
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<p><b>DANGER</b></p> 	<p><b>Ensure that the glass chamber and bin chamber is empty before lifting the glass crusher.</b></p>
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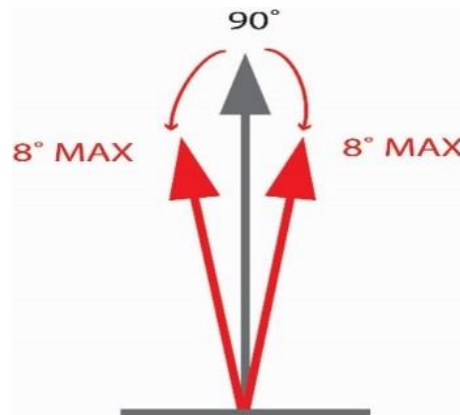



Fig. 1: The prongs of the forklift are inserted into the lifting channels for a safe and secure handling of the machine. Do not tilt the machine more than 8°

<p><b>DANGER</b></p> 	<p><b>The lifting of the machine must not be attempted by any other means other than the method outlined in this manual.</b></p>
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### 4.2. Weight

The weight of the TGMi Glass Crusher is listed in the table below:

Model	Weight
TGMi Glass Crusher	260 kg

### 4.3. Transportation

The instructions for the transport of TGMi Glass Crusher are outlined below:

**Step 1** Lift the glass crusher using the method outlined in the section 4.1.

**Step 2** Carefully raise the machine and position onto the trailer. Position the machine centrally if possible.

**Step 3** Use tightening straps to firmly secure the baler to the trailer.



**Unloading:** Above lifting procedure must be followed when unloading.

<p><b>DANGER</b></p>	<p><b>During the transport, the machine should be held in place by suitable strapping anchored to the trailer.</b></p>
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## 5. Instructions for installation

Common tools used during the installation can be found in the maintenance section 7.1.

### 5.1. Site requirements

The following requirements must be considered when choosing a location for the machine:

- a solid level floor surface is required for the machine. The floor must be capable of supporting the weight of the machine itself plus the weight of a bin of crushed glass; as well as forklifts and operators working in the general area. If the floor is on a slope or in a mobile application the machine must be securely anchored;
- ample room around the machine is required to facilitate loading, inspection, maintenance and removal of the bin;
- the proximity of an electrical supply to power the machine. The glass crusher standard power supply is 220/240V/20A, C type MCB, single phase;
- lighting at the location of the machine must be in accordance with local health and safety legislation requirements for a workplace;
- adequate ventilation should be provided in the location of the machine;
- in an area that is not directly accessible by the public.

While the glass crushers are suitable for outdoor operation, it is recommended that the machine is located indoors or in a covered area. Doing so will increase the working life of the machine.


It is recommended that the glass crusher is located in a corner, with a wall to one side and along the back, to protect the machine as much as possible away from vehicle/forklift


traffic. If it is not possible it is recommended that some form of protective barrier (e.g. metal barrier) be placed around the back and sides of the machine to reduce the risk of impact from forklifts or other vehicle traffic.



## 5.2. Installation

When a location for the glass crusher has been selected, the machine must be carefully lifted into position following the instructions outlined in section 4. Once in position, the machine must be levelled from front to back and from side to side. It is essential that the machine is level and does not rock due to imperfections of the floor surface. Use the levelling feet at the base at the front of the machine to achieve this.

The TGMi Glass Crusher, unless otherwise specified, requires a single phase electrical supply of 220/240V/20A. It should be connected to this power supply using a plug and socket. If the machine is to be located outdoors a suitable waterproof plug and socket should be used. **It is the responsibility of the purchaser to comply with local electrical standards when providing an electrical power supply to the machine.**

<p><b>DANGER</b></p> 	<p><b>Electrical work MUST only be carried out by a qualified electrician or electrical engineer.</b></p>
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<p><b>DANGER</b></p> 	<p><b>Before operating the machine ALWAYS check that there are no persons or animals in the glass &amp; bin chambers.</b></p> <p><b>When not in use, lock the machine using the key on the E-Stop.</b></p>
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<p><b>WARNING</b></p> 	<p><b>It is extremely important that all personnel operating the machine read and understand this manual before operating the machine.</b></p> 
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### 5.3. Pre-commissioning check list

Before the operator puts the machine into operation it is important to review that the machine is in good working order. Please complete this check list before commissioning the machine.

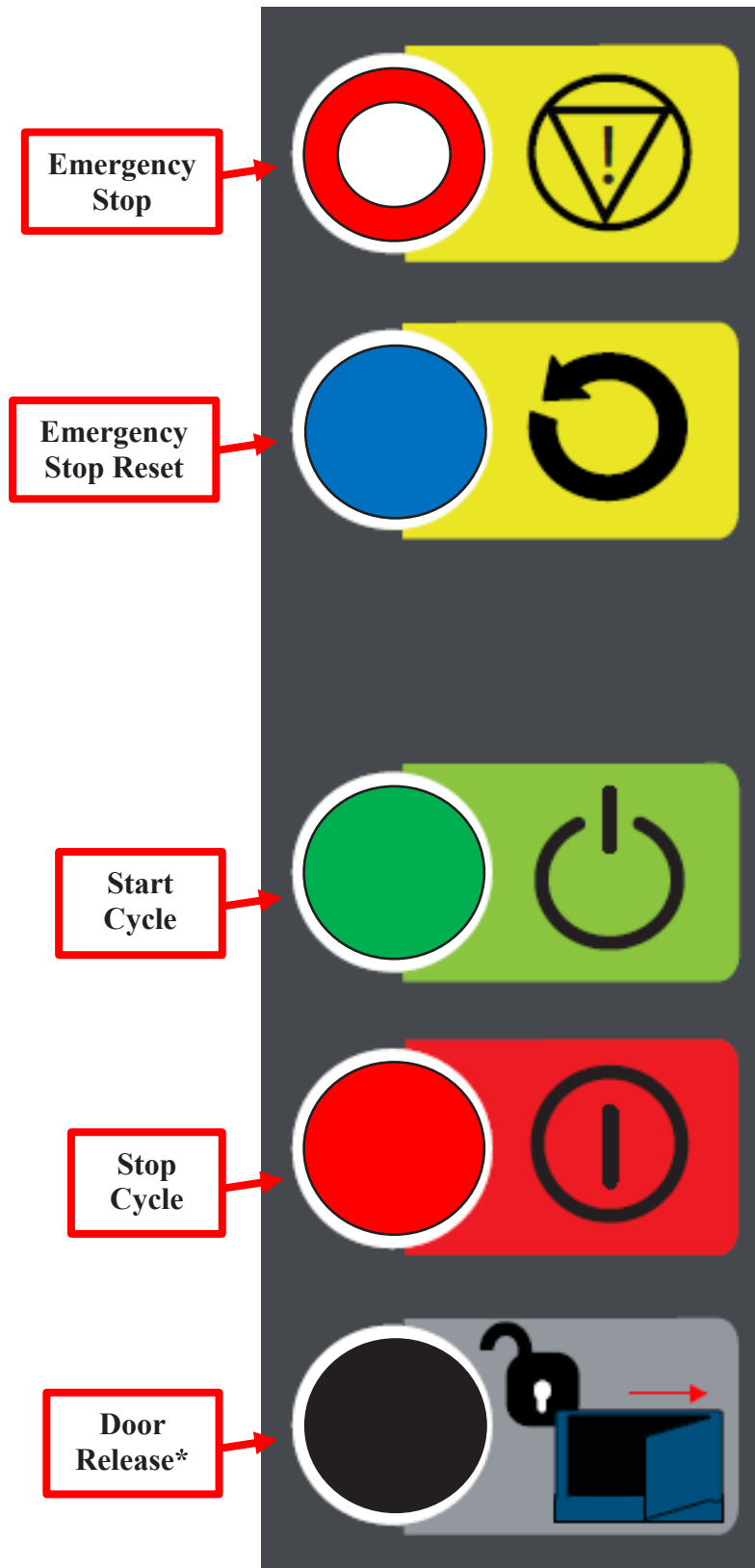
Items	Checks	Yes/No
General	The floor is solid and level.	
	Machine is stable and not rocking. Levelling feet used where required.	
	There is sufficient operating room around the machine.	
	There is no loose, damaged or missing parts.	
	All safety covers are in place and securely fastened.	
Fasteners	All nuts and bolts are in place and securely fastened.	
Electrical system	The machine is connected to an appropriate electrical power supply.	
	The machine is directly connected to the power supply (no extension leads).	
	There is no damaged, worn or torn cables.	
	The electrical cable (from the machine to the plug and socket) is located in a safe position, not stretched and not a hazard to operators.	

<p><b>WARNING</b></p> 	<p><b>It is extremely important that all personnel operating the machine read and understand this manual before operating the machine.</b></p> 
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## 6. Instruction for normal operation

### 6.1. Operator station



\*Note: there is an inbuilt time delay

Fig. 2: Operator station

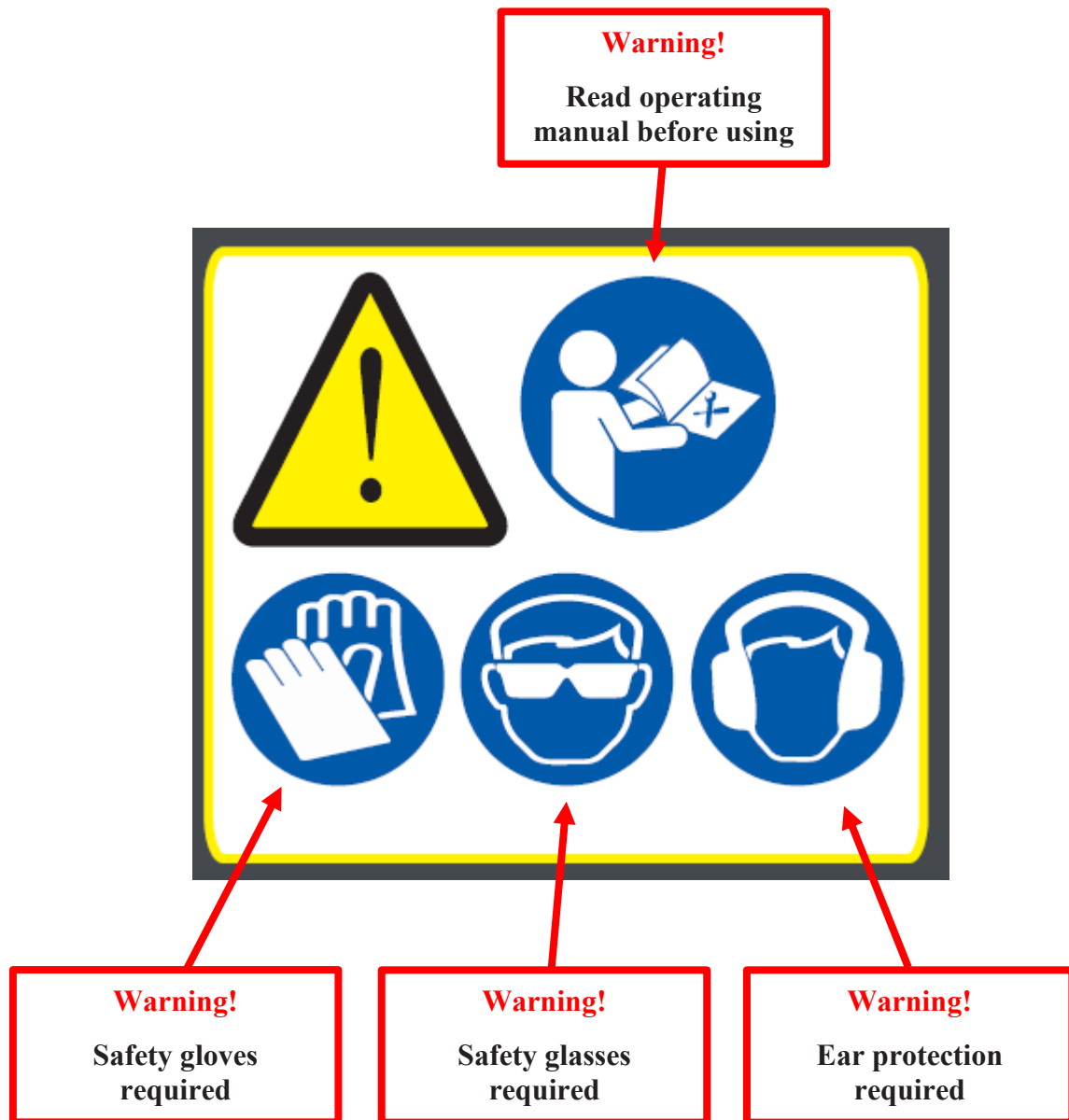
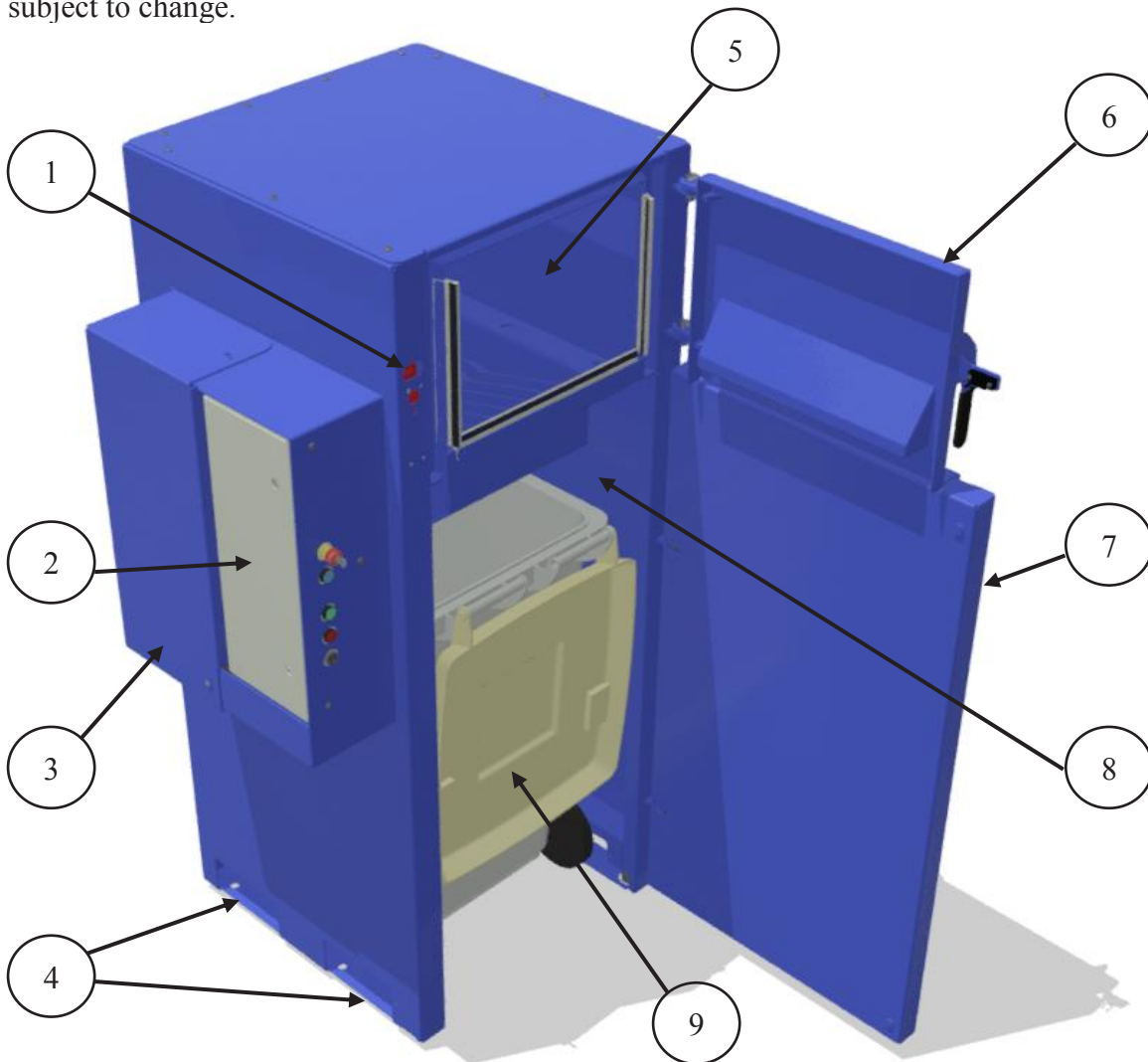


Fig. 3: Warning decal

## 6.2. Main components of the machine



The following illustration show the main components of the Glass Crusher and can be subject to change.




- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Door safety switch:<br/>This switch does not allow the doors to be opened for a period of time until the motor has stopped and parts are no longer moving.</li> <li>2. Main electrical control panel and operator station</li> <li>3. Motor cover</li> </ol> | <ol style="list-style-type: none"> <li>4. Lifting point for forklift/fork truck</li> <li>5. Glass crushing chamber</li> <li>6. Top door/glass feed door</li> <li>7. Bottom door</li> <li>8. Bin Chamber</li> <li>9. 240L waste bin (for representation purposes only, not included with machine)</li> </ol> |
|--|---|

### 6.3. Daily / pre-operation checklist


Before operating the machine, please follow the daily / pre-operation routine stated in the section 7.5.


<p><b>WARNING</b></p> 	<p><b>It is extremely important that all personnel operating the machine read and understand this manual before operating the machine.</b></p> <div style="text-align: center;">  </div>
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### 6.4. Loading the machine with waste glass

<p><b>DANGER</b></p> 	<p><b>Before operating the machine ALWAYS check that there are no persons or animals in either chamber.</b></p> <p><b>When not in use, lock the machine using the key on the E-Stop.</b></p>
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1. Ensure that a suitable bin is positioned directly underneath the flail chamber in order to catch all crushed glass that is processed. The Glass Crusher is designed for use with both 140 litre and 240 litre wheeled bins. Please refer to section 11.1 for more information on the recommended bin size.
2. Ensure that the bottom door of the machine is closed.
3. With the top door open, the machine is ready to load glass.
4. The top chamber can be loaded with glass until full.

<p><b>WARNING</b></p> 	<p><b>Exercise caution when opening and closing the machine doors. Open and close the doors slowly to prevent injury from impact or crushing. Keep vigilant, be sure no personnel are in danger of being injured by opening or closing the doors.</b></p>
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<p><b>CAUTION</b></p> 	<p><b>Exercise caution when loading waste material into the machine. Only lift a comfortable amount of material and use safe handling techniques.</b></p>
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<p><b>CAUTION</b></p> 	<p><b>Any bottles containing liquid must be emptied before loaded into the machine.</b></p> <p><b>Any spillage around the machine should be cleared up immediately.</b></p>
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### 6.5. Crushing glass

The flails inside the top chamber crush the glass upon impact as they are spun around by the shaft.




The procedure for crushing is outlined as follows:

**Step 1** Once the top chamber is full, close the feed door of the machine.

<p><b>WARNING</b></p> 	<p><b>Exercise caution when opening and closing the machine doors. Open and close the doors slowly to prevent injury from impact or crushing. Keep vigilant, be sure no personnel are in danger of being injured by opening or closing the doors.</b></p>
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**Step 2** To begin crushing, press the green start button on the operator station (see section 6.1). The machine will commence crushing the glass. Press the stop button when complete.

<p><b>WARNING</b></p> 	<p><b>During the operation of the machine, only the operator should stand within the exclusion zone. All other personnel MUST stand clear of the exclusion zone.</b></p> <p><b>While operating the machine the operator must remain standing to the side of the machine, beside the operator station and must remain alert, looking for any possible dangers to themselves or others.</b></p>
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**Step 3** Press the door release button when the flails have come to a stop to open the top door. This button has a time delay for safety reasons: the machine is fully locked while crushing; and neither the top nor bottom door can be opened.

**Step 4** Repeat this process of filling and crushing glass until the bin is filled to the required level.

**Step 5** The machine can be stopped at any time by pressing the E-Stop button on the operator station (see section 6.1).

<p><b>WARNING</b></p> 	<p><b>The glass crusher is only designed to crush glass. Attempting to crush anything else may lead to injury and/or damage to the machine.</b></p>
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<p><b>WARNING</b></p>	<p><b>Always allow 5-10 seconds after the stop button has been pressed before opening the door.</b></p> <p><b>Ensure all moving parts of the machine have stopped completely before proceeding to open doors.</b></p>
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<p><b>CAUTION</b></p>	<p><b>Exercise extreme caution when removing the bin of crushed glass from the machine. Ensure the bin is removed slowly and carefully, especially if almost full.</b></p>
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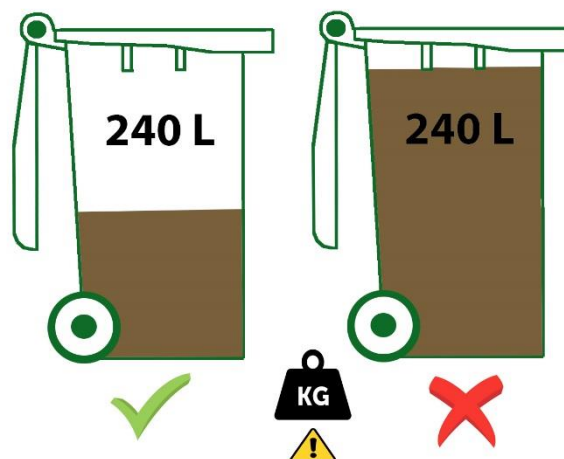
### 6.6. Removing crushed material

After the machine has stopped, the crushed glass may be removed by opening the doors and carefully removing the bin.

<p><b>CAUTION</b></p>	<p><b>Ensure that the handles and surrounding areas of the bin are clear of glass particles before attempting to move it.</b></p> <p><b>Use a brush to clean top of bin before attempting to remove it.</b></p>
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<p><b>CAUTION</b></p>	<p><b>Glass cullets are extremely sharp. Exercise extreme caution at all times when handling containers containing glass and/or glass cullet. At all times wear cut-proof gloves or similar recommended for handling glass.</b></p>
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It is recommended that the bin should be removed from the chamber when the level of glass is approximately 40% full in a 240 litre bin and 30% full in a 140 litre bin. These percentages correspond to the max weight given by various bin manufacturers. Please check with bin manufacturer to ensure maximum load is not exceeded.



**DO NOT EXCEED BIN MANUFACTURERS STATED MAX LOAD**

## 7. Maintenance instructions

<p><b>WARNING</b></p> 	<p>The machine <b>MUST</b> be disconnected from its power supply (unplugged) and a lock out tag out procedure followed before carrying out any maintenance or adjustment.</p>
<p><b>DANGER</b></p> 	<p>Electrical work <b>MUST</b> only be carried out by a qualified electrician or electrical engineer.</p>
<p><b>CAUTION</b></p> 	<p>Do not climb or stand on top of the machine. Use an appropriate ladder to access to the top of the machine.</p>
<p><b>Useful tip</b></p> 	<p>TGMi recommends to keep written records of an maintenance work carried on the machine. Check your local regulation regarding documented examination on machinery.</p>

### 7.1. Ordering spare parts for your TGMi Glass Crusher

When ordering spare parts, locate the serial plate on your machine and quote its serial number. This number starts by MF and the following underlined letters are the most important information to provide TGMi


<p>SERIAL NUMBER</p> <p>MF <u>      </u> R0000 <u>      </u></p>
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### 7.2. Common tools used during the installation and maintenance





### 7.3. Guidelines for preparing the machine before maintenance


<p><b>WARNING</b></p> 	<p>The machine <b>MUST</b> be disconnected from its power supply (unplugged) and a lock out tag out procedure followed before carrying out any maintenance or adjustment.</p>
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<p><b>CAUTION</b></p> 	<p>Do not climb or stand on top of the machine. Use an appropriate ladder to access to the top of the machine.</p>
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### 7.4. Tightening torques

Use the following tightening torques for all the fasteners of the machine.

Dimension	Prescribed tightening torque (Nm)	
	Nut and bolt connections	For aluminium connections
M5	3	
M6	5.2	
M8	12.5	
M10	24.5	
M12	42	
M16	106	
M20	204	





<p><b>WARNING</b></p> 	<p>Don't fall short of or exceed the prescribed torques</p>
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### 7.5. Preventive maintenance plan

The **daily / pre-operation** maintenance checks are to be carried out by the **operator**, before commencing operation of the machine.

The **monthly** maintenance checks are to be carried out by a **maintenance technician**.

The **annual** maintenance checks are to be carried out by your **selling agent** as part of the full-service of the machine.

<p><b>WARNING</b></p> 	<p><b>Never operate this machine if there is evidence of any of the following:</b></p> <ul style="list-style-type: none"> <li>• <b>damage to the electrical cables or electrical components of the machine,</b></li> <li>• <b>loose, damaged or missing parts,</b></li> <li>• <b>the machine is unstable or not mounted on a firm surface,</b></li> <li>• <b>the correct electrical plugs and sockets are not present.</b></li> </ul> <p><b>If any of the above points or another problem were to occur, take the machine out of service immediately and report the problem to your supervisor. If further assistance is required contact your selling agent to arrange the repair of the machine.</b></p>
<p><b>WARNING</b></p> 	<p><b>The machine MUST be disconnected from its power supply (unplugged) and a lock out tag out procedure followed before carrying out any maintenance or adjustment.</b></p>
<p><b>DANGER</b></p> 	<p><b>Electrical work MUST only be carried out by a qualified electrician or electrical engineer.</b></p>
<p><b>CAUTION</b></p> 	<p><b>Do not climb or stand on top of the machine. Use an appropriate ladder to access to the top of the machine.</b></p>

When	Where	To do
Daily / Pre-operation	All sides and inside the glass chamber	Inspect for any signs of excessive wear and tear.
		Look for any loose, damaged or missing parts.
		Check that all safety covers are in place and securely fitted. Where appropriate retighten the screws (see section 7.4).
		Remove any debris from inside and around the machine. Pay particular attention to the glass chamber and doors.
	Complete machine	All daily inspections. Where applicable: <ul style="list-style-type: none"> <li>- remedy any problems,</li> <li>- replace defective parts,</li> <li>- tighten loose parts (see section 7.4).</li> </ul>

Monthly	Complete machine	Clean the machine as per section 7.6.
		Check for any signs of damage, wear and tear. Replace if necessary.
	Electrical cables	Check for any signs of damage, wear and tear. Replace if necessary.
	Doors hinges	Apply grease if required.
	Shaft	Ensure bolts fastening the shaft bearings are correctly tightened (see section 7.4).
	Flail Assembly	Ensure bolts fastening the flails are correctly tightened (see section 7.4).
	Doors	Check all bolts and nuts. If necessary retighten the bolts and nuts (see section 7.4).
	Operator station	<p>Check the safety switches functions:</p> <p><b>Step 1</b> With the feed door open, start a cycle. Nothing should happen.</p> <p><b>Step 2</b> With the doors closed, start a cycle. The shaft should rotate. Open the handle of the feed door, it should not open until 5-10 seconds after stop button is pressed, and door release button is then pressed.</p> <p>Check the E-stop function:</p> <p><b>Step 1</b> With the doors closed, press the start button and when the shaft starts to move, press the E-stop. The cycle should stop.</p> <p><b>Step 2</b> With the E-stop still activated, press the green button. Nothing should happen.</p> <p><b>Step 3</b> Reset the machine.</p>

	Main electrical control panel	<p>Check the motor overload safety function:</p> <p><b>Step 1</b> Press the red button of the Q1 block. The green and amber lamps/button should flash.</p> <p><b>Step 2</b> With the doors closed, start a cycle. Nothing should happen.</p> <p><b>Step 3</b> Press the black button of the Q1 block to reset. The green and amber lamps/button should turn off.</p> <p><b>Step 4</b> With the doors closed, start a cycle. The shaft should move.</p>
Annual	Complete machine	<p>All daily and monthly inspections.</p> <p>Where applicable:</p> <ul style="list-style-type: none"> <li>- remedy any problems,</li> <li>- replace defective parts,</li> <li>- tighten loose parts (see section 7.4).</li> </ul> <p>Thorough visual and functional inspection of all parts of the machine.</p> <p>Follow national guidelines &amp; documentation requirements in regard to machinery maintenance.</p>

### 7.6. Cleaning the machine

Before to begin any cleaning operation, the machine should be disconnected from its power supply (unplugged).

It is best to clean your machine with a brush and a soft cloth. A degreaser or soapy solution can be used inside the glass chamber but not near any electrical components.

It is not recommended to use a power washer as this can damage the electrical components on the machine.



## 8. Troubleshooting

Faults	Possible Causes	Solutions
The machine will not power up when switched on.	The machine may not be plugged in.	Check if the machine is plugged.
	A fuse in the plug (where applicable) may be blown.	Replace the defective fuse.
	A MCB at the distribution board of the building or at the main electrical control panel (see section 6.2) may be tripped.	Ensure the machine is plugged directly into the main supply, without the use of extension leads.
		Check the MCBs and reset the tripped MCB.
The E-Stop has been pressed (see section 6.1).	<p>The machine needs to be reset.</p> <p>Release the E-Stop by rotating the button to a ¼ turn and press the blue reset button (see section 6.1).</p>	
There has been a power outage in the building and the baler has stopped working.	The blue lamp/button (see section 6.1) is illuminated and the baler needs to be reset.	Press the blue reset button (see section 6.1).
The machine is powered on but will not operate.	The feed door is not fully closed and locked.	A safety switch prevents from starting any operation if the feed door is not fully closed and locked, ensure it is the case.
	Both doors are fully closed and locked and the safety switch is not making contact with the feed door.	Check if the safety switch (see section 6.2) is loose or damaged. If necessary, readjust its position or repair/replace it.
	The fan is obstructed.	Remove all obstructions that can block the fan of the motor.
	The power supply is incorrect.	Check the power supply voltage and frequency.

The machine is operating at reduced efficiency.	The motor is not running in the correct direction.	Check that the fan rotates in the clockwise direction.
	Missing flails/hammers.	Replace missing/worn flails where required.

**Additional information:**

MCB = Miniature Circuit Breaker

PLC = Programmable Logic Controller

## 9. Noise emission

The table below shows the level of noise emissions for the machine covered by this manual:

Model	Airborne noise emissions
TGMi Glass Crusher	100dB*

\*NOTE: These noise levels have been established by carrying out tests on identical machines. Measurements were taken 1 metre from the surface of the machine, on all sides. The maximum sound level recorded is listed in the table.

## 10. End-of-life information

The total service life span of the machine strongly depends on factors related to the application and operational conditions. Please follow the instructions of the section 7.5 “Preventive maintenance plan” for regularly checks to increase the life time of the machine.

TGMi machines are primarily constructed of steel. Other standard engineering materials used in the construction of our machines include: copper wire, electrical switches, rubber and nylon.

If the baler is to be finally taken out of service, e.g. due to irreparable damages, please follow these instructions:

- Dispose the machine in compliance with the standard operating procedures of your workplace and the applicable environmental regulations as well as further applicable statutory rules.
- Disassemble the machine completely and dispose the parts sorted by material type and in an environmentally compatible fashion.
- Steel components have a scrap value and can be sold to scrap merchants. Alternatively, steel components can be disposed of at your local recycling centre.
- All copper wire, electrical components, rubber and nylon should be brought to your local recycling centre for disposal.


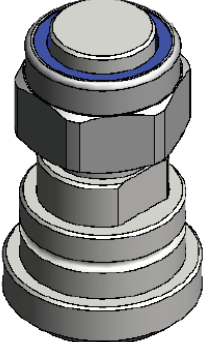
## 11. Technical information

### 11.1. Technical specifications

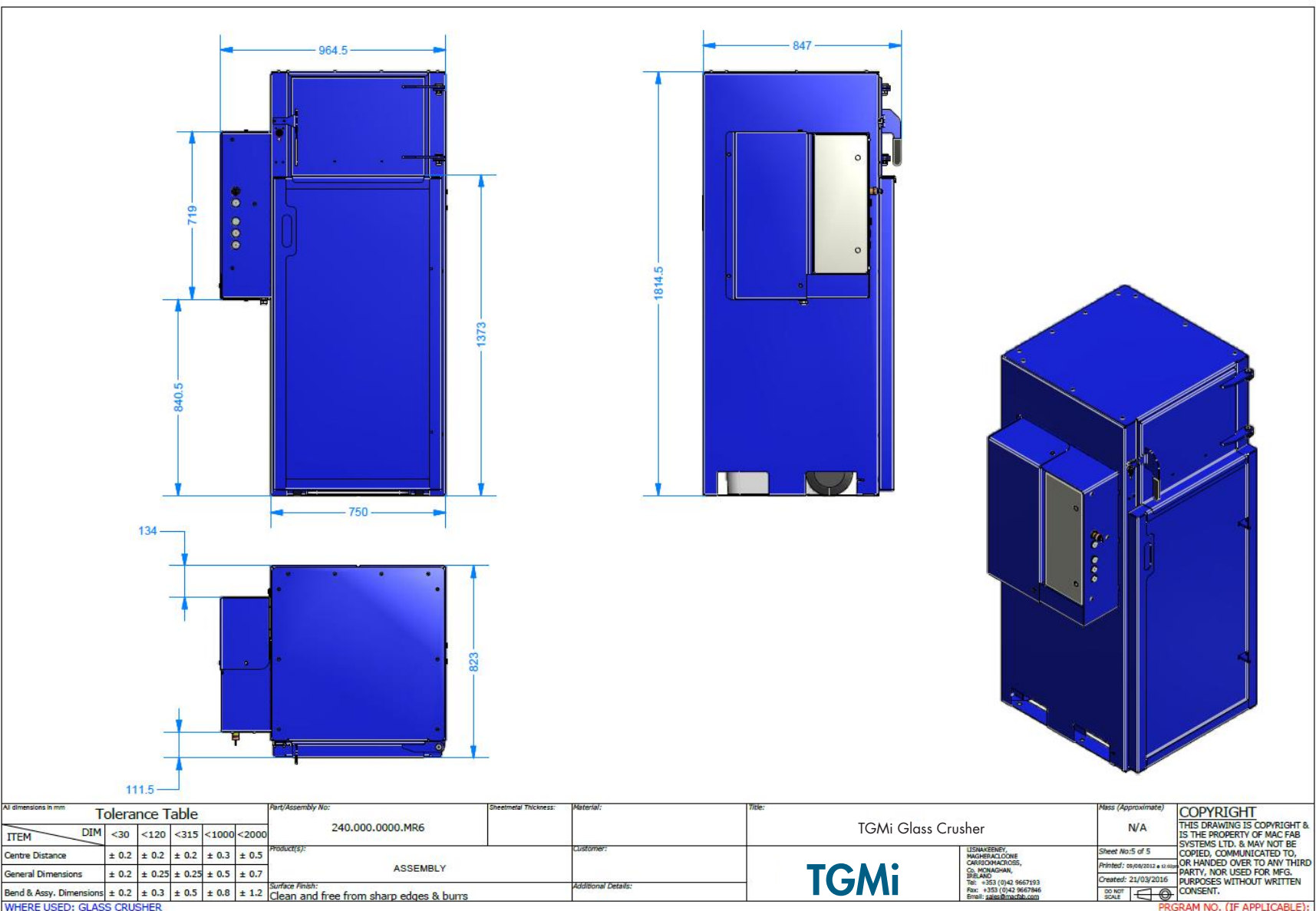
<b>TGMi GLASS CRUSHER</b>	
<b>MACHINE DIMENSIONS</b>	
Height	1.85 m
Width	1.00 m
Depth	0.90 m
Weight	260 kg
Power supply	220/240V/50Hz/20A C type MCB single phase
Motor	1.5 kW
Motor Speed	1450 RPM
Noise Level	100 dB
Noise level	
<b>LOADING APERTURE SIZE</b>	
Height	0.35 m
Width	0.50 m
<b>RECOMMENDED BIN SIZES</b>	
140 Litre Wheeled Bin (H x W x D)	1105 x 480 x 553 mm
240 Litre Wheeled Bin (H x W x D)	1148 x 582 x 736 mm



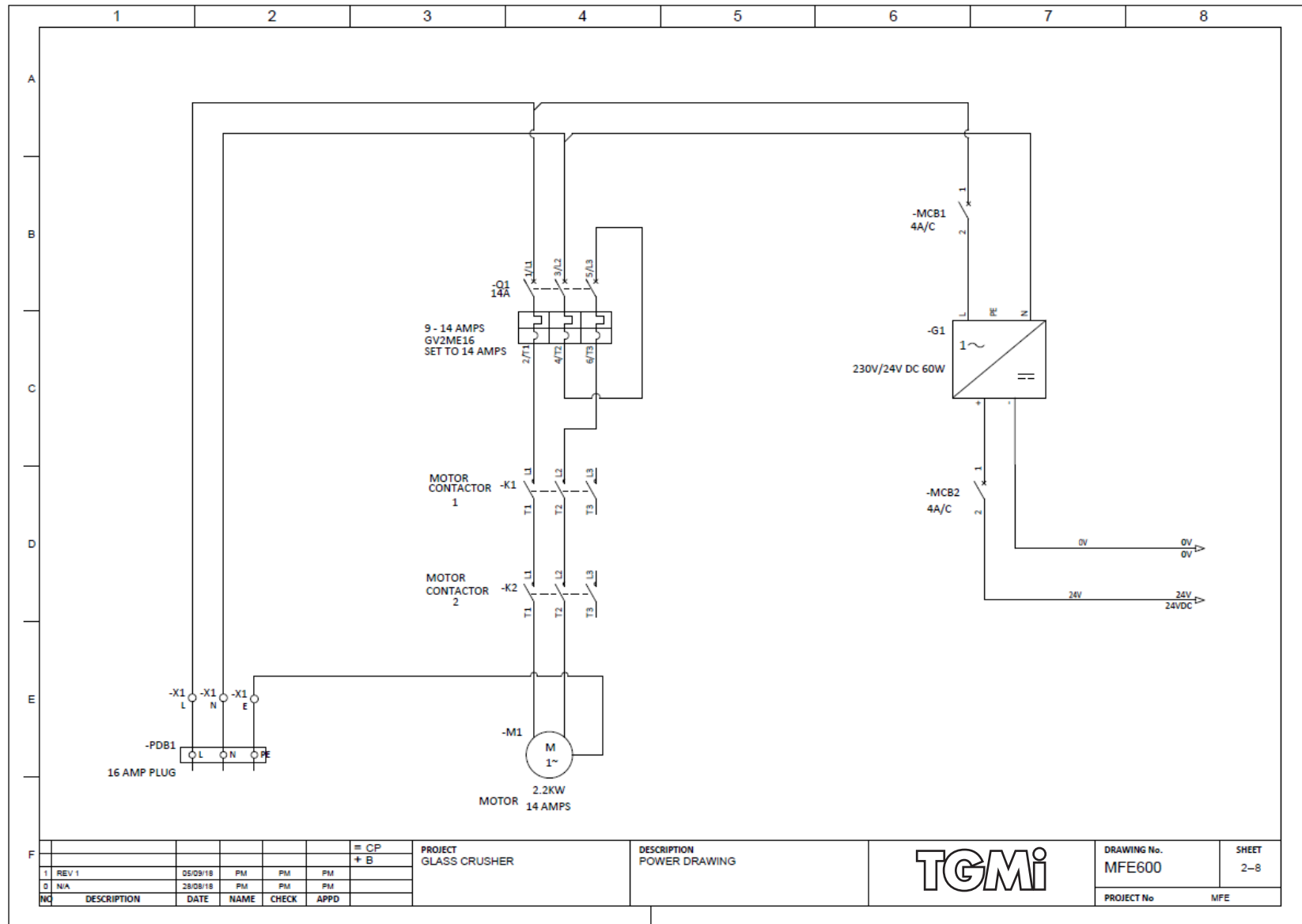
**11.2.Spare parts list – GLASS CRUSHER**

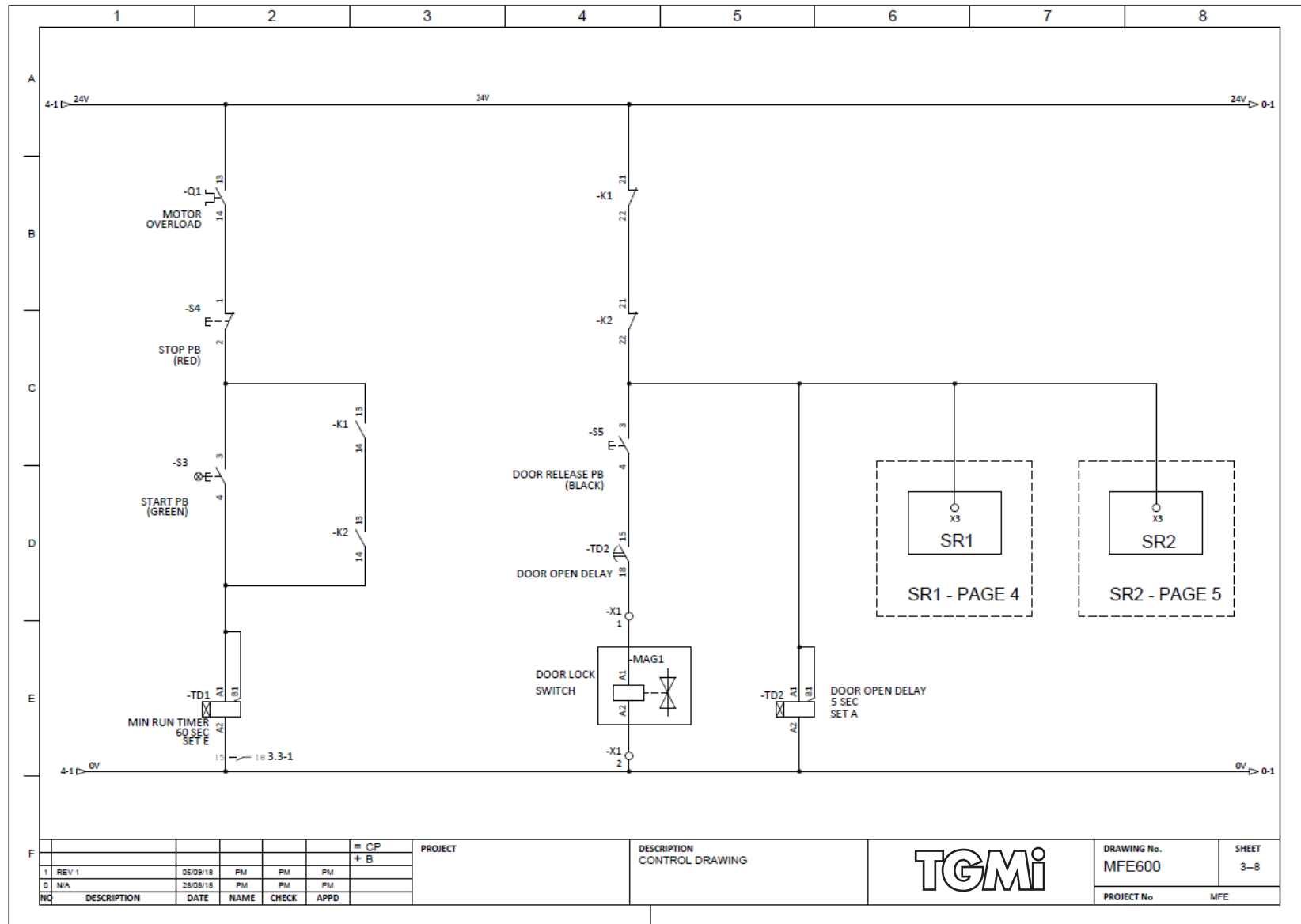
Item	Description	Stock Code
	Allen Bradley Safe Guard Switch	KB-5090
	Allen Bradley Flexible Actuator	KB-5003
	Hammer/Flail Assembly	KB-9996
	1.5KW Motor Kit	KB-4106
	25mm Greaseable Hinge Pin (Short)	KB-9421

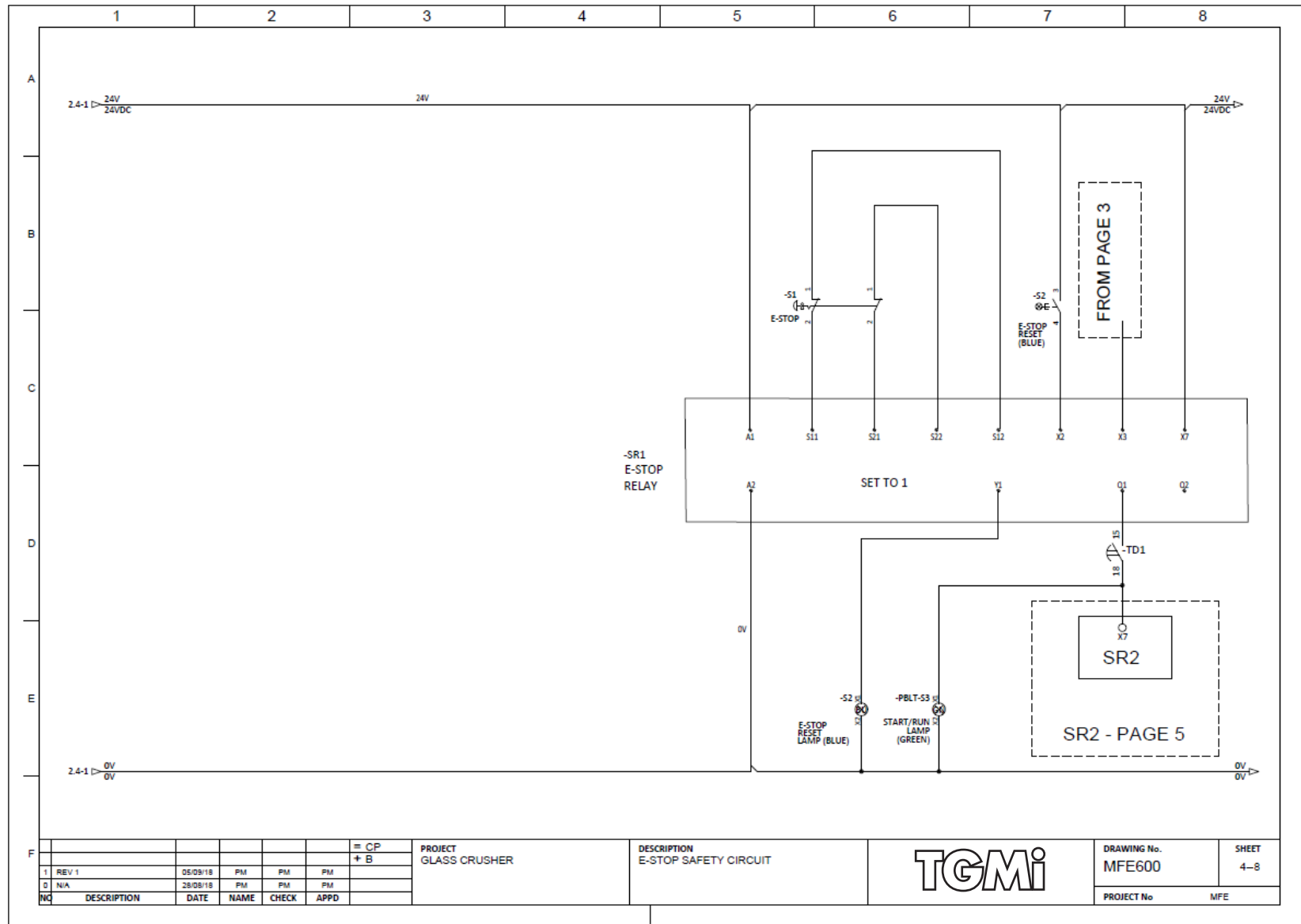
### 11.3. Technical drawing – GLASS CRUSHER

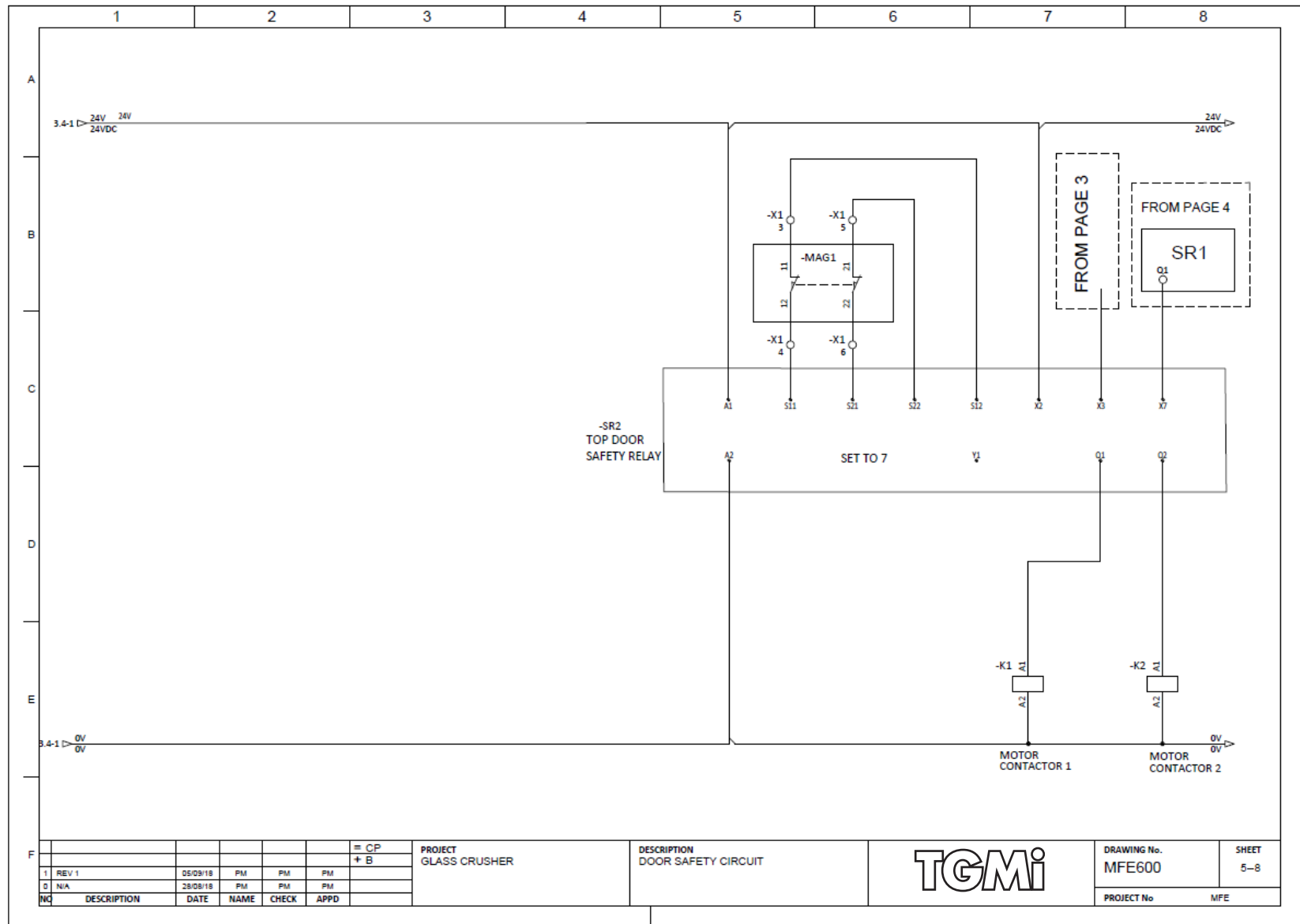


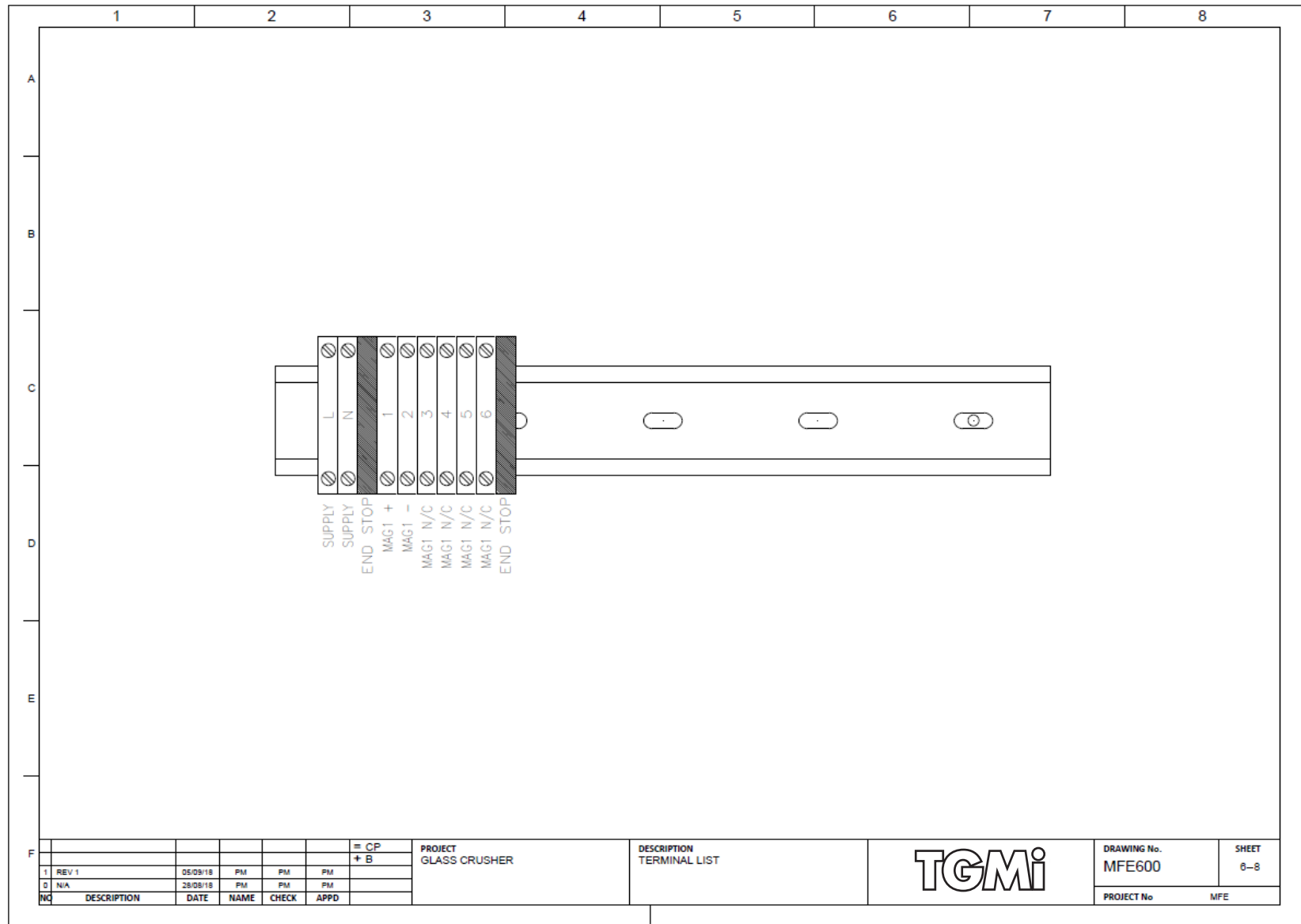




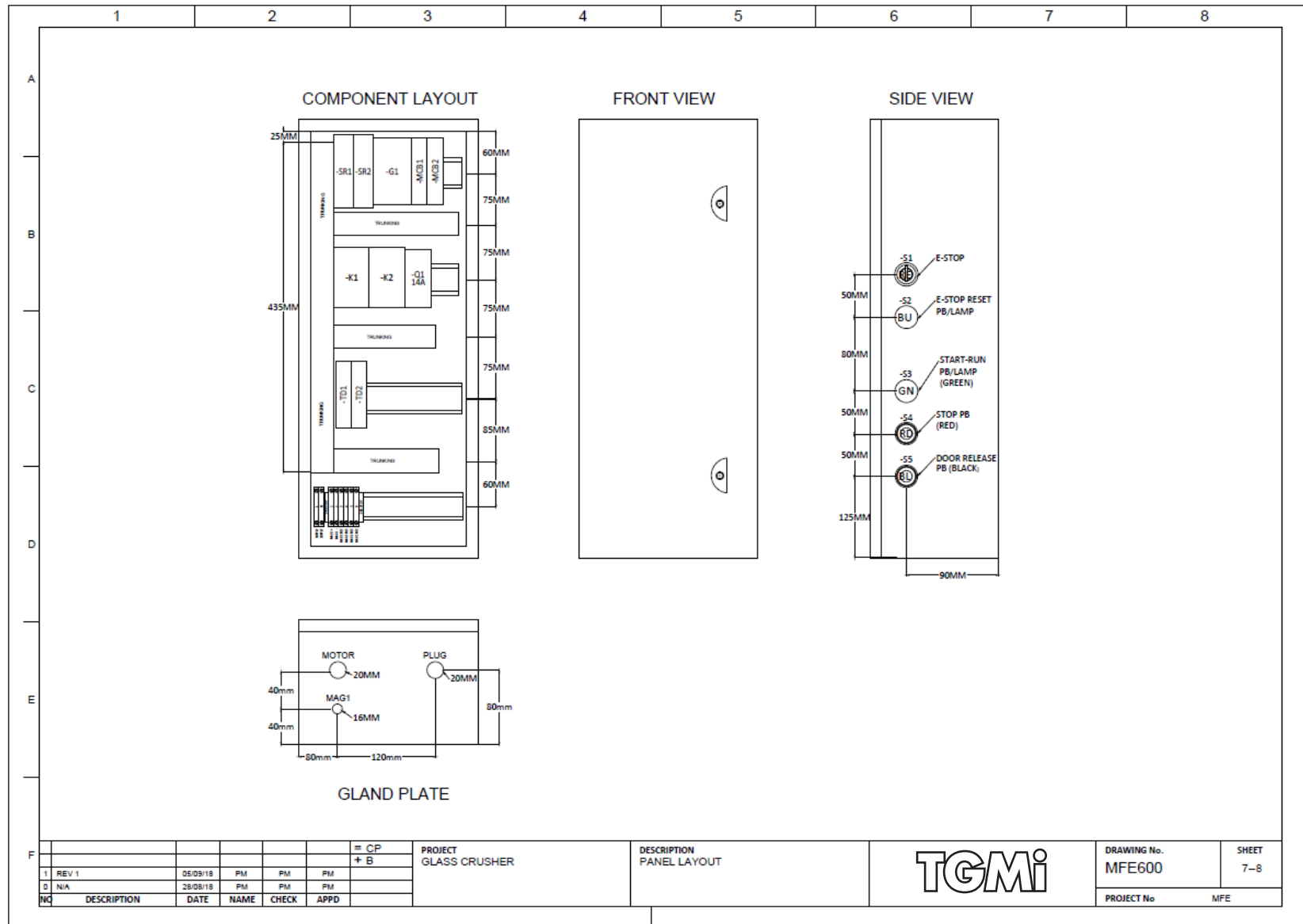


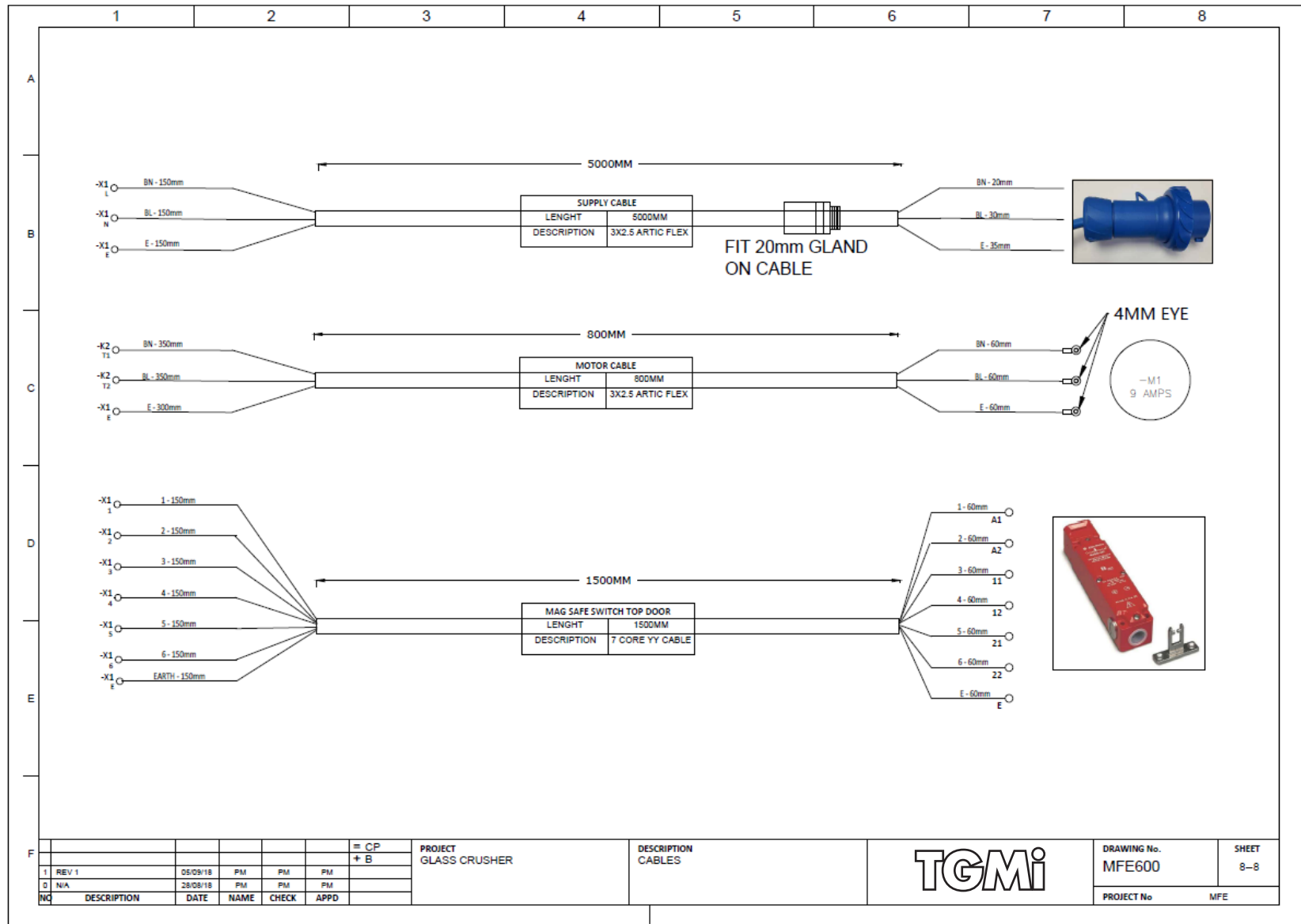












## 12. EC Declaration of Conformity

(in accordance with Annex IIA of the Machinery Directive 98/37/EC)

*We MacFab Systems Ltd.*

*Of Carrickmacross, Co. Monaghan, Ireland*

**Declare that the machinery:**

**Make:** *MacFab*

**Model:** *Glass Crusher*

**Year of Construction:** \_\_\_\_\_;

**has been manufactured using the following transposed harmonized European Standards and technical specifications:**

<i>EN 1050</i>	<i>Safety of machinery. Principles for risk assessment</i>
<i>EN ISO 12100-1</i>	<i>Safety of Machinery. Basic terminology and methodology</i>
<i>EN ISO 12100-2</i>	<i>Safety of Machinery. Technical principles</i>
<i>EN 60204-1</i>	<i>Safety of machinery. Electrical equipment of machines. General requirements</i>
<i>EN ISO 14120:2015</i>	<i>Safety of machinery – Guards - General requirements for the design and construction of fixed and movable guards</i>
<i>EN ISO 13849-1:2006</i>	<i>Safety of Machinery – Safety-related parts of control systems – Part 1: General principles of design</i>

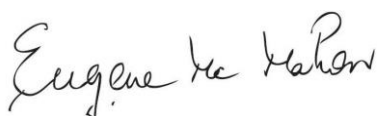
**and is in conformity with:**

*Directive 2006/42/EC Machinery directive*

*Directive 2014/30/EC EMC directive*

**Signed in:** *MacFab Systems Ltd, Carrickmacross, Co. Monaghan, Ireland.*

**on the 1<sup>st</sup> day of September 2018.**

**Signature:** 

**Name:** Gene Mc Mahon

**Position:** Managing Director