amt postpro®



postpro SF

USER MANUAL

SUBJECT TO CHANGE

V5.0 // OCTOBER 2025

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2 // RISKS AND SAFETY WARNINGS

⚠DANGER Danger indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

⚠WARNING Warning indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.

⚠CAUTION Caution indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.

⚠DANGER Chemical Hazard: FA326 may cause severe skin burns and permanent eye damage, including blindness. The chemical may also cause organ damage with prolonged exposure. Pregnant and breastfeeding women should not enter the processing room or operate PostPro SF. The client must have an eye wash station and emergency shower available when using this consumable and follow the general lab safety precautions. The consumables may also cause an allergic skin reaction. Do not breathe the mist or vapour.

⚠CAUTION Chemical Hazard: Avoid touching parts that have been partially or recently processed, even when wearing nitrile gloves. Ensure that all PostPro SF process steps are concluded to the manufacturer's instructions before touching any processed parts with bare hands.

⚠CAUTION Chemical Hazard: If an operator gets chemicals in their eye, immediately flush it out with water using the safety eye wash. Consult the MSDS for more information about treating eye exposure.

⚠CAUTION Chemical Hazard: If an operator gets chemicals on their skin, immediately rinse with water. Consult the MSDS for more information about treating skin exposure.

⚠CAUTION Chemical Hazard: If a processed part is sticky, even after full processing, something may have gone wrong with the processing steps or the part may be partially processed. Do not handle the part with bare hands and avoid any inhalation of fumes by using an appropriate mask with a filter.

⚠DANGER Chemical Hazard: Always keep the PostPro SF machine closed when not processing to ensure no fumes are inhaled by operators. Keep waste containers closed at all times.

⚠CAUTION Pinch Hazard: The door of the processing chamber is heavy. Close the door carefully using the buttons on the PostPro SF to avoid pinching fingers or hands.

⚠CAUTION Electrical Hazard: Do not open any door in the body of the device as there is an electric shock risk. The doors are for service entry only by AMT Support team only.

⚠WARNING Chemical warning: Do not place processed parts in the mouth or give processed parts to children or to animals.

⚠DANGER Tipping Hazard: Always use at least two people to move PostPro SF. Install the castor wheels at the base of the machine before attempting to move the machine. Lock the wheels once PostPro SF is in its new position and re-level.

3 // OPERATING THE POSTPRO SF SAFELY

AMT recommends that the client studies this section carefully and if the client has any questions, about how to create a safe operating environment or how to operate the PostPro SF safely, contact us immediately.

Prior to the installation of the machine, we recommend that the client gets all safety equipment and procedures in place. We can provide advice on how this is done.

The PostPro SF uses potentially toxic consumables if handled incorrectly. Safety Data Sheets (termed MSDS) are available for all consumables used. The client's safety procedures should rely solely on the information on the MSDS on handling chemicals, what to do if there is a spill and what to do if the chemical comes in contact with skin, etc.

3.1 SAFETY DATA SHEETS (MSDS)

The client should read and understand the chemical Material Safety Data Sheet (MSDS) for each chemical used by PostPro SF. A copy of the MSDS will be available on the PostPro SF user interface and AMT can make these sheets available online.

The client should ensure they place paper and electronic copies of the MSDS where machine operatives and visitors can access them quickly in the PostPro SF machine room.

3.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

While operating the PostPro SF the following PPE must be used:

- Disposable nitrile gloves.
- Closed-toed safety shoes.
- Laboratory Spill resistant coat.
- Close-fitting chemical eye protection.
- Half face mask with AX-P3 type filters.

3.3 GENERAL LAB SAFETY PRECAUTIONS

- Wear goggles.
- Wear a lab coat, disposable gloves, and closed-toed chemical-resistant shoes.
- Change disposable gloves often.
- Wash hands between glove changes and at the end of the processing.
- Always keep lab coats inside the lab area until they are sealed in a bag and removed by a laundry service.
- Tie long hair back to avoid catching it in mechanical parts or brushing it against chemicals on the lab bench.
- Remove jewellery, such as necklaces and rings, to avoid catching them in mechanical parts or trapping chemicals under them.
- No food or drink should be brought into or consumed in the processing room.
- Make sure the processing room has a well-maintained eye-wash station and safety shower.
- Never work alone in the lab.

3.4 SAFETY SUMMARY

PPE

- Disposable nitrile gloves.
- Closed-toed safety shoes.
- Laboratory spill-resistant coat.
- Close fitting-chemical eye protection.
- Half face mask with AX-P3 type filters.

EMERGENCY STOP

- Located on the front left-hand side of the machine.
- Stops all movement and power.
- Process run cannot be recovered.

FORCED DRYING CYCLE

- If the machine shuts down or E-stops during a cycle it will enter a forced drying cycle when the machine resumes.
- Short drying cycle to extract any potential solvent from the chamber.
- If this is interrupted it will continue to attempt the forced drying cycle until it completes.

UPS

- Uninterruptable Power Supply.
- Kicks in when the machine loses power or is powered off incorrectly.
- Approx. 5 minutes of operation before total shutdown.

TWO HAND START

- Door only moves when two-hand start is pressed.
- Located on both the right and left side of the machine.



4 // TRAINING

Prior to the installation taking place, users of the PostPro SF must undertake the online training modules provided to them by AMT. Access will be granted by your AMT representative, please contact them for more information.

AMT or an authorized representative will provide training for PostPro SF remotely or onsite once the machine has been installed.

All users of the PostPro SF should be present during the entirety of the training. The training is essential to understand how to operate the machine safely and how to achieve the best results from the system.

Only persons present at the time of training should use the machine. If necessary additional training can be provided by AMT, or an authorized representative.

5 // EQUIPMENT DESCRIPTION

5.1 OVERVIEW

The PostPro SF offers a controllable surface finish which reduces surface roughness (Ra values) of 3D printed polymer without the loss of detail and definition. In addition, the smoothing process naturally seals the surface of the 3D printed part, which significantly enhances the water-protective and mechanical properties of the material.

The machine has been successfully tested with a range of polymers including: Polyamide (PA)-12, PA-11, PA-6, Thermoplastic Polyurethane (TPU), TPE-210 elastomer materials, Polymethyl Methacrylate (PMMA) Acrylonitrile butadiene styrene (ABS) and many more. It is capable of processing Multi Jet Fusion (MJF),

Selective Laser Sintered (SLS), High Speed Sintered (HSS) and Fused Deposition Modelling (FDM) 3D printed parts to the desired surface roughness.

The PostPro SF can be supplied with or without an external extractor. The external extractor is used to cool the machine during operation and act as a additional safety feature.

5.2 ITEMS SUPPLIED

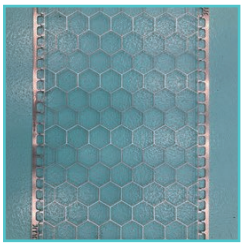
The PostPro SF machines are supplied with the following items:



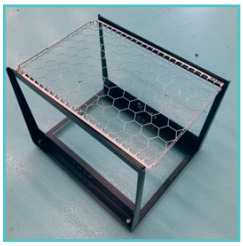
1 x PostPro SF



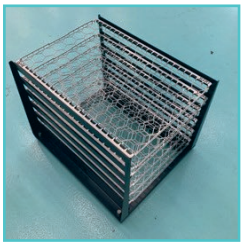
4 x Transport Wheels



6 x Processing Rack



1 x Preparation Stand



1 x Storage Stand



3 x User Access Cards



1 x Access Control Card



3 x Panel Keys

6 // MACHINE SPECIFICATION

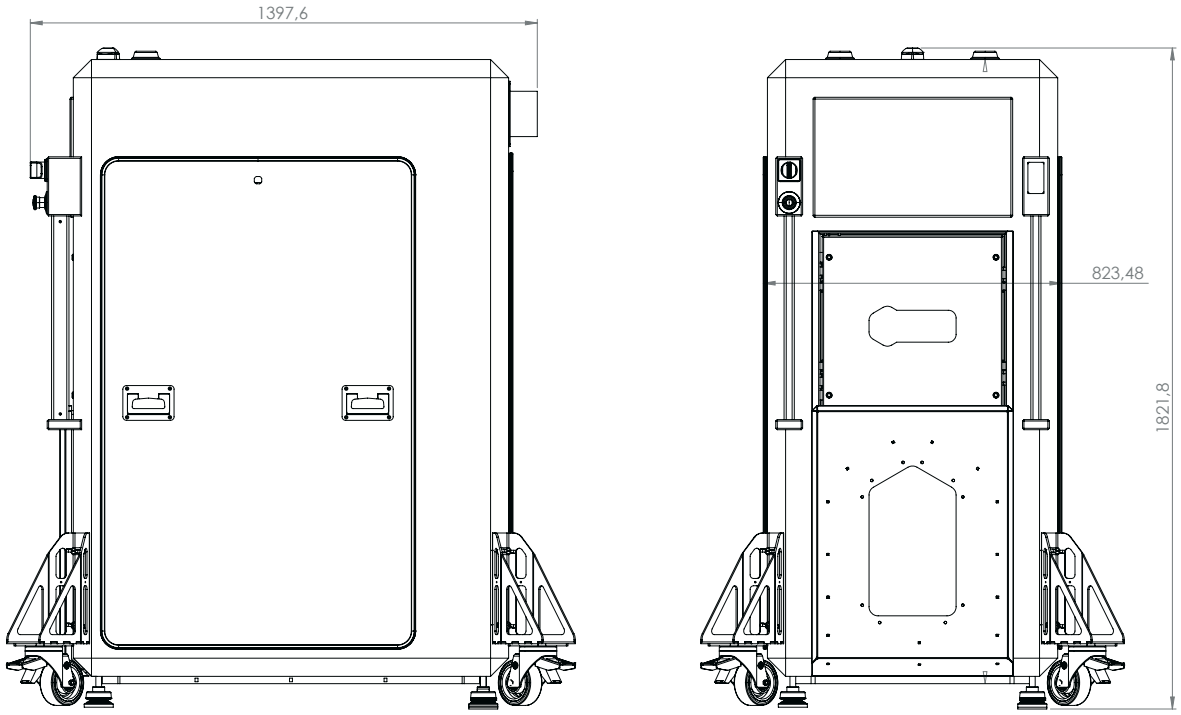
6.1 SF50 MACHINE SPECIFICATIONS

Description	EU	US
External Dimensions (WDH)	830 x 1400 x 1830 mm	33 x 55.5 x 72 in
Weight	800 Kg	1,765 lbs
Recommended Operating Area	2,350 x 3,200 mm	92.5 x 126 in
Capacity		
Process Chamber Dimensions (WDH)	400 x 300 x 400 mm	15.7 x 11.8 x 15.7 in
Process Chamber Volume	48 Litres	48 Litres
Consumable Canister Volume	10 Litres	10 Litres
Power		
Single Phase	220-240V 16A, 50/60Hz, (L+N+PE)	208V, 30A, 50/60Hz, (L+N+PE)
Or		
Three Phase	3 x 400V, 16A, 50/60Hz, (L1+L2+L3+N+PE)	3 x 480V, 30A, 50/60Hz, (L1+L2+L3+PE)

6.2 SF100 MACHINE SPECIFICATIONS

Description	EU	US
External Dimensions (WDH)	830 x 1400 x 1830 mm	33 x 55.5 x 72 in
Weight	850 Kg	1,875 lbs
Recommended Operating Area	2,350 x 3,200 mm	92.5 x 126 in
Capacity		
Process Chamber Dimensions (WDH)	400 x 600 x 400 mm	15.7 x 23.6 x 15.7 in
Process Chamber Volume	96 Litres	96 Litres
Consumable Canister Volume	10 Litres	10 Litres
Power		
Three Phase	3 x 400V, 16A, 50/60Hz, (L1+L2+L3+N+PE)	3 x 480V, 30A, 50/60Hz, (L1+L2+L3+PE)

6.3 MACHINE DIMENSIONS (MM)





6.4 POSTPRO SF50 DIMENSIONS AND WEIGHT

	mm / Kg	In / lbs
Width	824 mm	32.5 in
Depth	1,398 mm	55.5 in
Height	1,822 mm	72 in
Weight	750 Kg	1,654 lbs

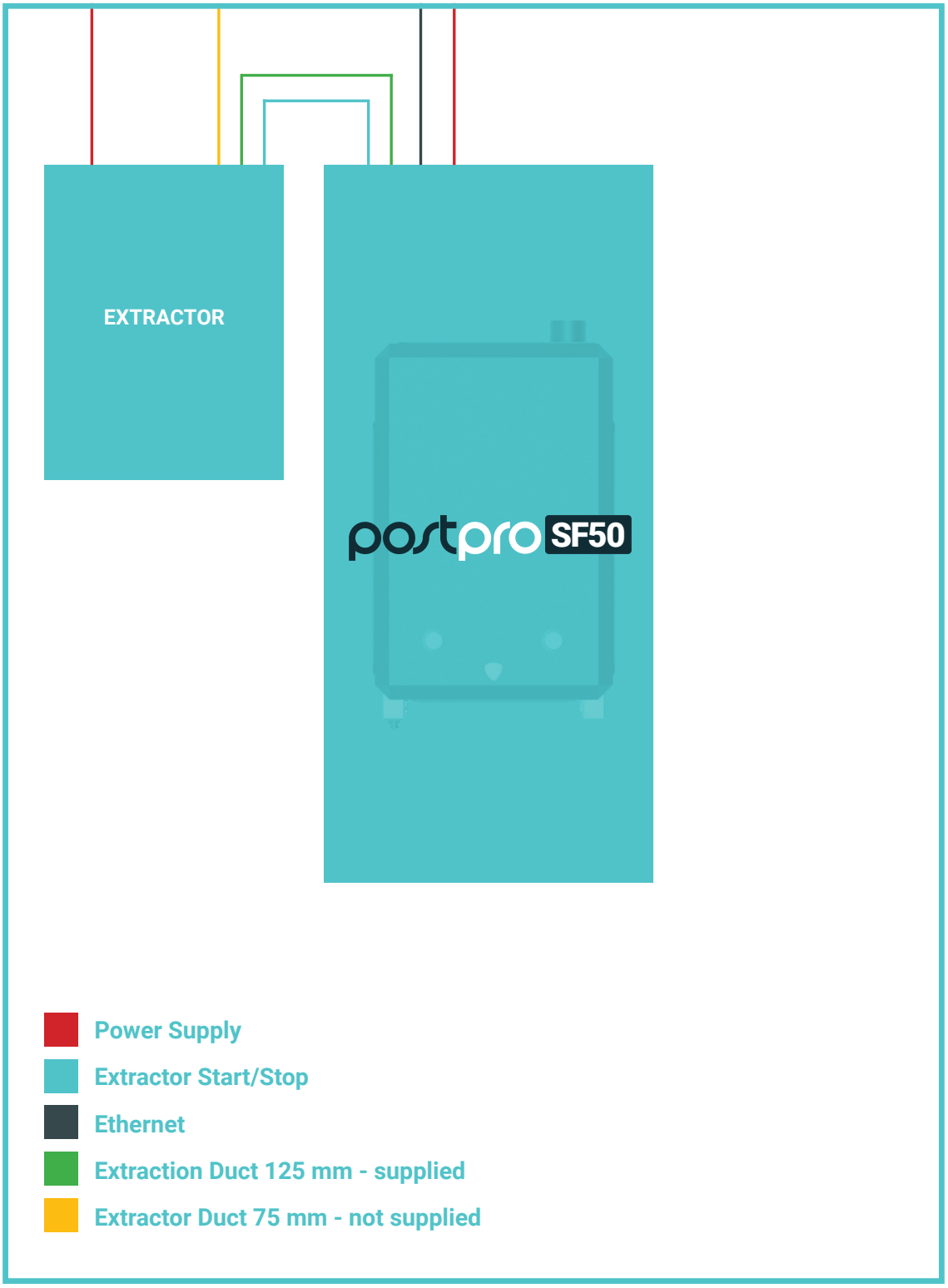
6.5 POSTPRO SF100 DIMENSIONS AND WEIGHT

	mm / Kg	In / lbs
Width	824 mm	32.5 in
Depth	1,398 mm	55.5 in
Height	1,822 mm	72 in
Weight	800 Kg	1,765 lbs

6.6 EXTRACTOR DIMENSIONS AND WEIGHT

	mm / Kg	In / lbs
Width	400 mm	17.5 in
Depth	515 mm	20.5 in
Height	975 mm	38.5 in
Weight	65 Kg	143 lbs

6.7 CONNECTION LAYOUT



6.8 ELECTRICAL POWER REQUIREMENTS

NOTE: The client is responsible for connecting all supplied equipment to the building's power supply prior to the installation date.

6.8.1 POSTPRO SF50

The PostPro SF50 is available in multiple electrical configurations to suit different facility electrical supplies. The electrical configuration must be specified at the point of sale. The tables below show the electrical supply specifications for each configuration.

ALWAYS CHECK THE MACHINE PLATE BEFORE CONNECTION.

Specifications	Option		Option
Phases	Single Phase		Three Phase
Voltage	220V – 240V		3 x 400V
Frequency	50/60Hz	or	50/60Hz
Mains Fuse Protection	16A		16A
Connection	L + N + PE		L1 + L2 + L3 + N + PE
Maximum Power Consumption	3.0 Kw		3.0 Kw

Specifications	Option		Option
Phases	Single Phase		Three Phase
Voltage	208V		3 x 480 V
Frequency	50/60Hz	or	50/60Hz
Mains Fuse Protection	30A		30A
Connection	L + N + PE		L1 + L2 + L3 + PE
Maximum Power Consumption	3.0 Kw		3.0 Kw

For additional information please consult the Site Preparation Guide or contact AMT Support.

6.8.2 POSTPRO SF100

The PostPro SF100 is available in multiple electrical configurations to suit different facility electrical supplies. The electrical configuration must be specified at the point of sale. The tables below show the electrical supply specifications for each configuration.

ALWAYS CHECK THE MACHINE PLATE BEFORE CONNECTION.

Specifications	Option 1		Option
Phases	Three Phase		Three Phase
Voltage	3 x 400V		3 x 480V
Frequency	50/60Hz	or	50/60Hz
Mains Fuse Protection	16A		30A
Connection	L1 + L2 + L3 + N + PE		L1 + L2 + L3 + PE
Maximum Power Consumption	6.0 Kw		6.0 Kw

For additional information please consult the Site Preparation Guide or contact AMT Support.

6.8.3 EXTRACTOR

Specifications	Option
Phases	Single Phase
Voltage	100-240V
Frequency	50/60Hz
Mains Fuse Protection	12.5A
Connection	L + N + PE

7 // MACHINE OVERVIEW

1. **HMI:** With the HMI the user can set process parameters, start a process run, diagnose the machine in case of warnings or errors and communicate with AMT's support.
2. **ON/OFF Isolator:** This switch is used to turn the power supply to the machine on and off.
3. **E-Stop:** An emergency button is placed on the front side and should be pressed in case of an emergency.
4. **Process Chamber Door:** The door lowers to give access to the processing chamber and raises again during processing.
5. **RFID Card Reader:** Holding an access card in front of the RFID reader logs the user into their respective access level.
6. **Door Movement Buttons:** To avoid getting trapped, the two buttons must be pressed simultaneously to activate the door opening and closing mechanism.
7. **Air extraction outlet:** Outlet which is connected to the extraction unit.
8. **Extractor connection:** Start-Stop connection to the Extraction Unit.
9. **Ethernet connection:** To connect the machine to the AMT server for remote monitoring.
10. **Power connection:** Power lead to connect to the mains power supply.



7.1 CANISTER LOCATION AND CONNECTIONS

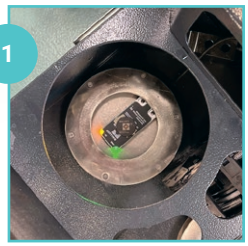
1. RFID Reader – This is used to read the canister information RFID tag.
2. Load Cell – This is used to measure the liquid remaining in the canisters.
3. Canister Connections – Male and Female quick-release fittings to avoid misconnection by the operator.
4. Finishing Agent Canister – Finishing agent canister containing virgin solvent.
5. Recovery Agent Canister – Recovery Agent Canister containing liquid used for solvent recovery.







Male & Female Quick Connector





RFID Reader and Chip

The PostPro SF is compatible for use with different consumables. Each consumable is supplied in a pair; Finishing Agent and Recovery Agent. The PostPro SF is a closed-loop system so waste and unused solvent from the Process Cycle is recovered. Subsequently, there are two canisters within the PostPro SF; a Finishing Agent Canister, which contains fresh consumables, and a Recovery Agent canister, which contains the recovery consumables.

These canisters are located inside the machine in the drawer underneath the chamber door. Each canister is labelled to identify between the Finishing Agent canisters and Recovery Agent canisters.

When the Finishing agent consumable level is below 5% an error will be displayed on the HMI.

Both canisters must be stored in a suitable location that meets the machine`s environmental specifications as outlined in the PostPro SF Site Preparation Guide.

7.1.1 UNPACKAGING A CANISTER

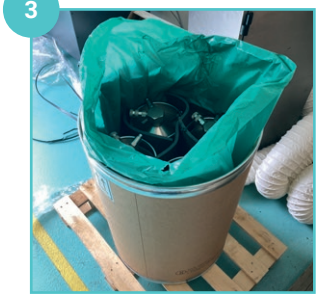
The canisters will be supplied in dedicated packaging. Ensure the packing is kept so the canister can be safely returned to AMT after consumption.

Ensure the PPE outlined in Section 3 of this manual is being worn when handling the canisters.

1. Open the clip on the top of the barrel.
2. Remove the Lid.
3. Open the sealed bag containing the canisters.
4. Pull the canister upwards and out of the barrel.
5. Keep all packing materials including barrel, bag etc. for shipping back to AMT.











7.1.2 RETURNING A CANISTER

Following consumption of a Finishing Agent or Recovery Agent Canister, it is important to correctly package the canister for shipment. Please follow the below instructions:

Ensure the PPE outlined in Section 2 of this manual is being worn when handling the Canisters.

1. Place the canister in the plastic bag and seal.
2. Place the sealed bag containing the canister in the barrel.
3. Fill the barrel with vermiculite.
4. Place the lid on the barrel.
5. Fix the lid in place using the clip.
6. The canister is now ready for shipment. Please contact AMT to arrange collection and shipment.

1



2



3



4



5



6

CONTACT US

7.2 PROCESSING CHAMBER

1. Processing Rack Hanging Pins – These pins are used to locate processing racks in the chamber.
2. Air/Solvent Injection Ports – Air and solvent are circulated through these ports. There are 8 ports in total for SF50 and 16 for SF100.
3. Solvent Drainage Port and Filter – Drainage port for liquid solvent and processing chamber solvent filter used to recover solvent.



7.3 CARBON FILTER LOCATION

Located behind the right-hand panel of the machine.

1. Carbon Filter – Consumable carbon filter to capture solvent.
2. Carbon Filter Clamp – Over centre clamp to keep the filter in position.
3. Filter Connection Inlet – Carbon filter connection inlet port.
4. Filter Connection Outlet – Carbon filter connection outlet.



7.4 USER INTERFACE

The PostPro SF is primarily controlled via the touchscreen user interface located on the front of the machine.

The owner can define levels of access for different users, such as operator and engineer. Based on the assigned access levels the user will be able to carry out different functions or tasks.

Please note, not all buttons will be active or accessible depending on the user access level.

7.4.1 BUTTON COLOUR CODING

The colours of the control buttons on the user interface (UI) will vary depending on the machine status and the access rights of the logged-in user. The following colours are used:

GREEN – Ready for operation

BLUE – Operation in progress

GREY – Unable to operate/access

8 // POSTPRO SF HMI SCREENS

MAIN SCREEN

Process status: Click to see the status of a current process.

User: Identifies who is logged into the machine.

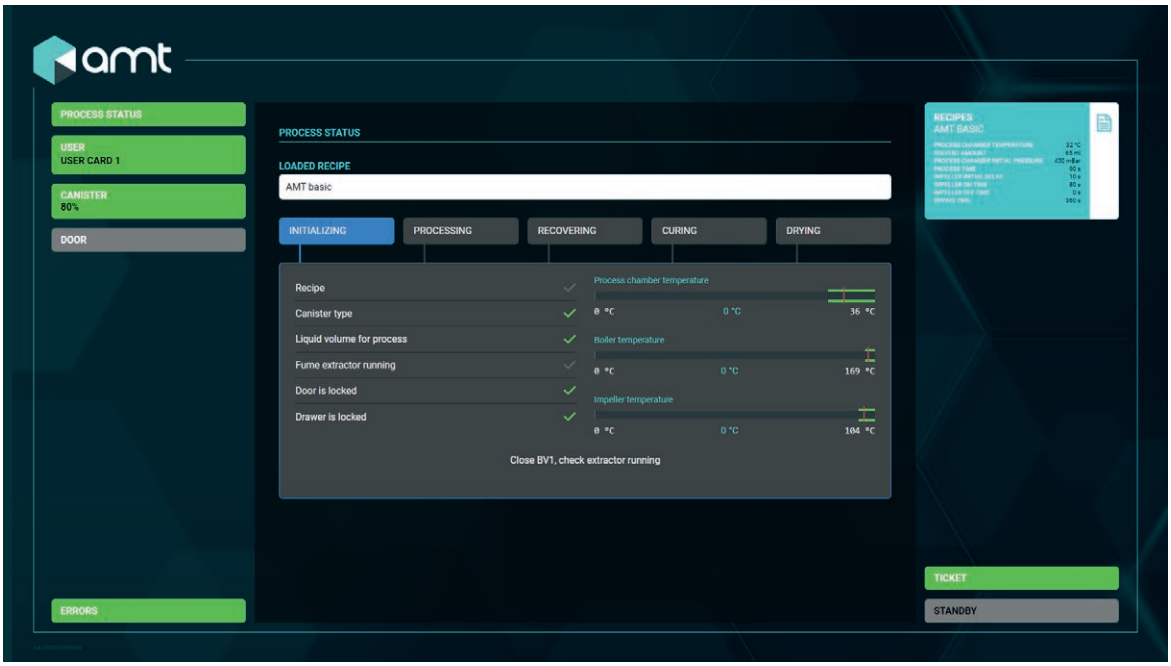
Canisters: Displays information about the inserted canisters.

Errors: Lists the present errors.

Recipes: Lists the stored recipes on the machine.

Ticket: Allows tickets to be created and sent directly to AMT support.

Standby: Sends the machine to “Standby Mode”.



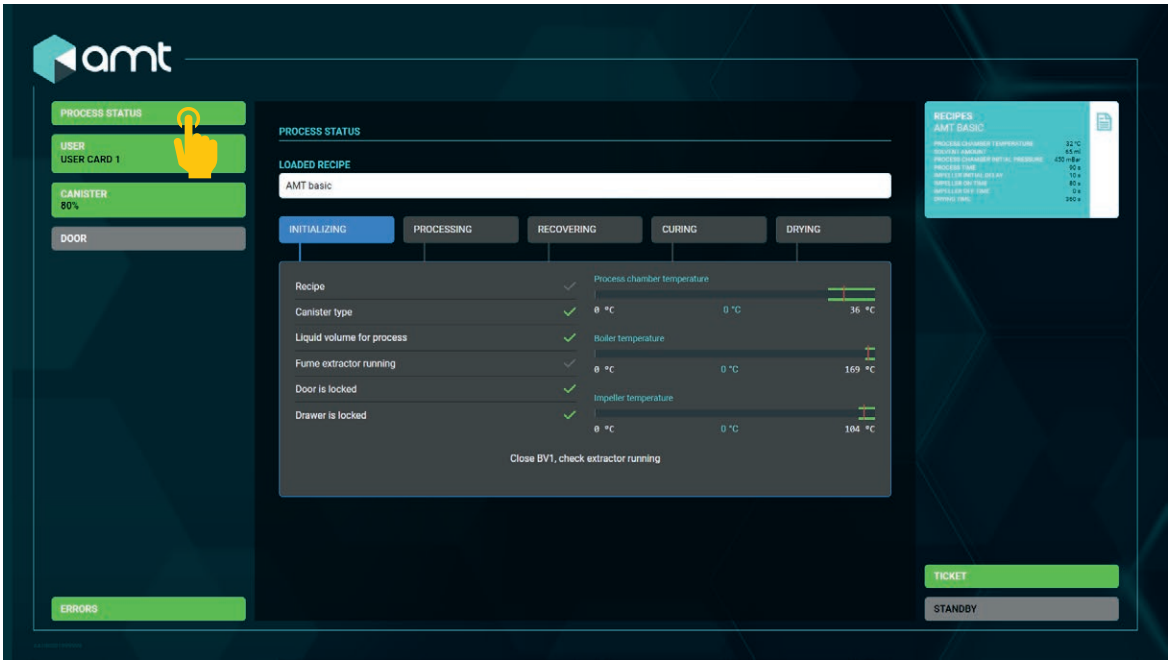
8.1 PROCESS STATUS SCREEN

The five stages of the recipe are as follows:

- Initialization
- Processing
- Recovering
- Curing
- Drying

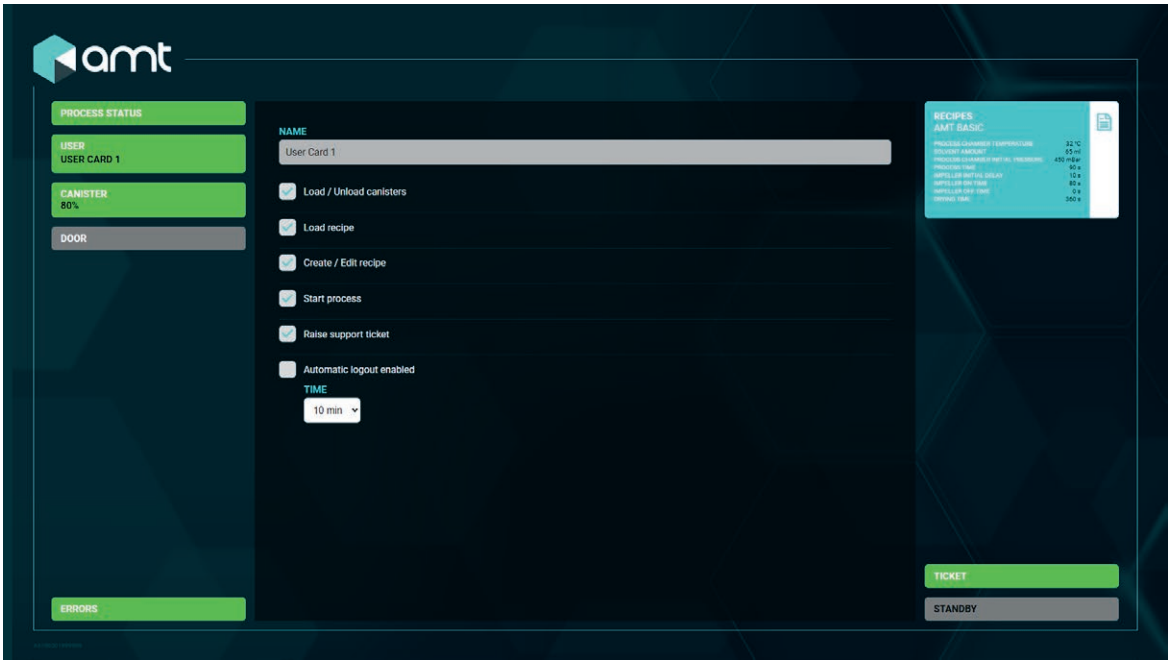
The current stage of the process is highlighted in blue.

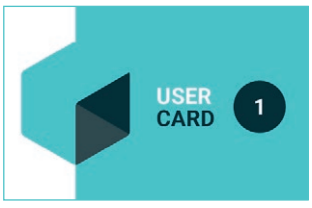
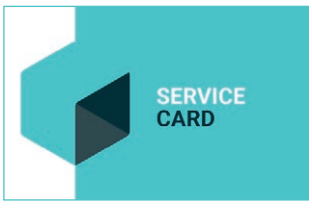
Within each stage, the main parameters, including the time remaining, can be seen.



8.2 USER

Identifies who is logged into the machine and the permissions of the selected user.

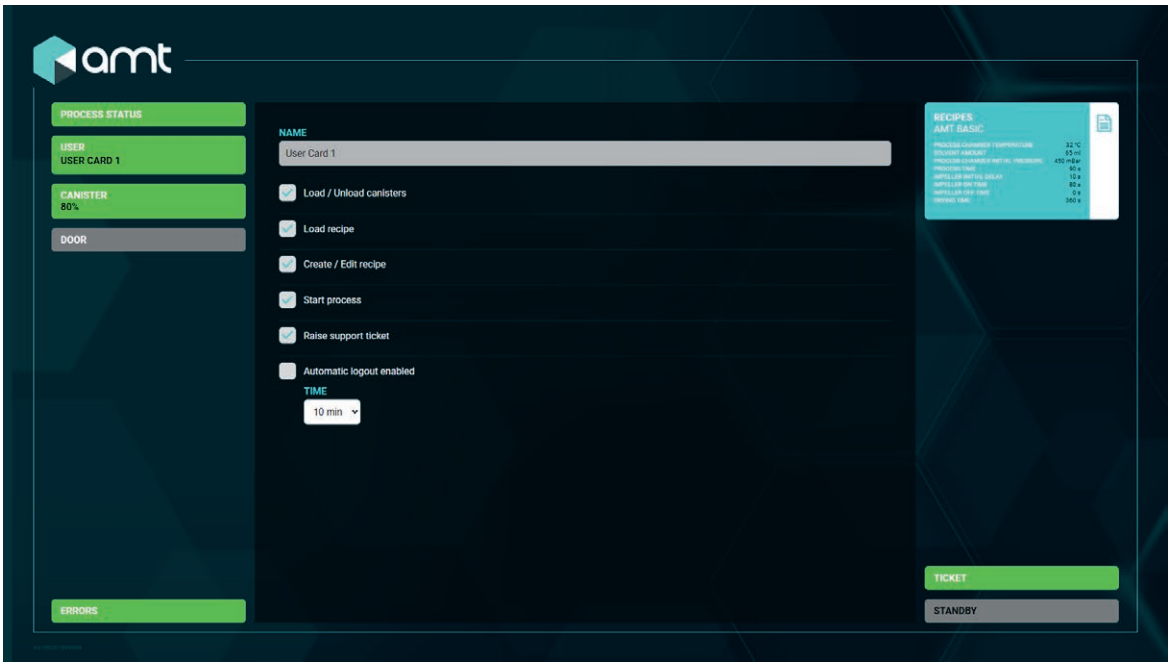


USER CARD	ACCESS CARD	SERVICE CARD/USER CARD 3
Load/Unload canisters. Load recipe. Create/Edit recipe. Start process. Automatic logout enabled. View/clear errors. Customizable access level.	This card can be used to set up the different access levels on the user cards. Cannot be used as a user card.	Full unrestricted access. Access to the “Manual mode” menu. For AMT/authorized engineers only.
		

8.3 HOW TO CHANGE THE USER CARD'S PERMISSIONS

1. Scan the User Card on the RFID to log in.
2. Click the **"USER"** button on the left-hand side.
3. Hold the "Access Card" in front of the RFID reader. You now have permission to edit the access of the User Card.
4. Do any modifications to the card which you require.
5. Hold the User Card in front of the RFID reader again until the following message is displayed "PERMISSION HAS BEEN CHANGED"
6. Use the machine as normal.

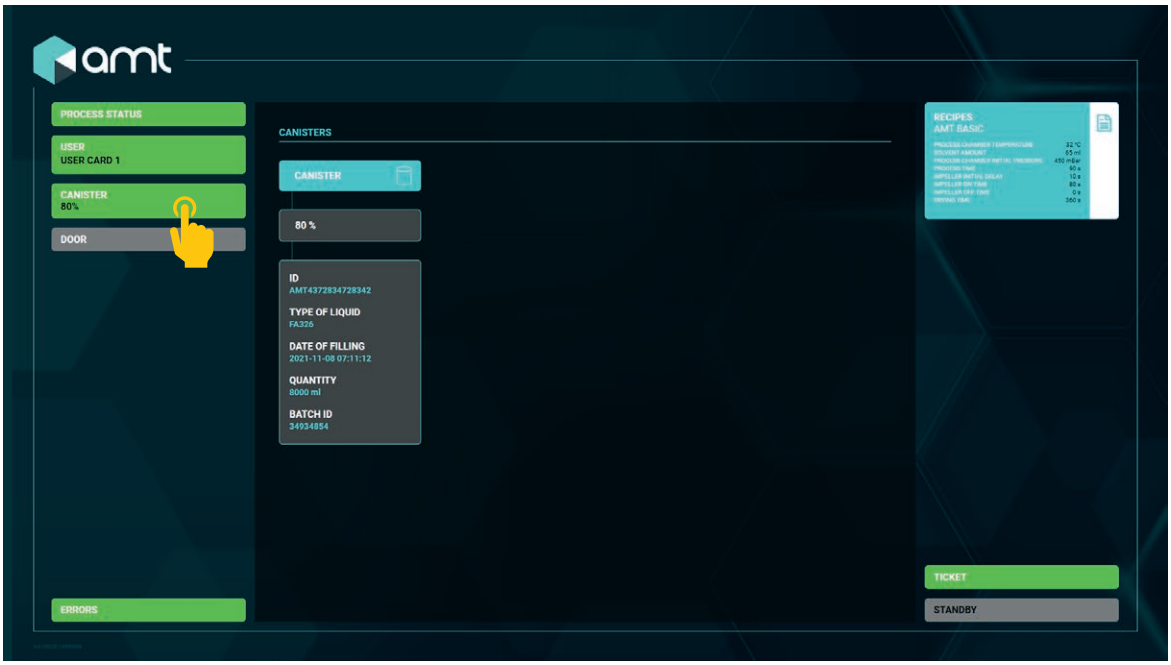
Keep the "Access Control Card" secure so that only authorized users are able to re-program user cards.



8.4 CANISTERS SCREEN

Provides all the important information about the canisters which are loaded into the machine:

- Current canister level (%)
- ID Number of canister
- Type of Liquid
- Date of filling
- Current canister level (ml)
- Batch ID Number



8.5 ERRORS SCREEN

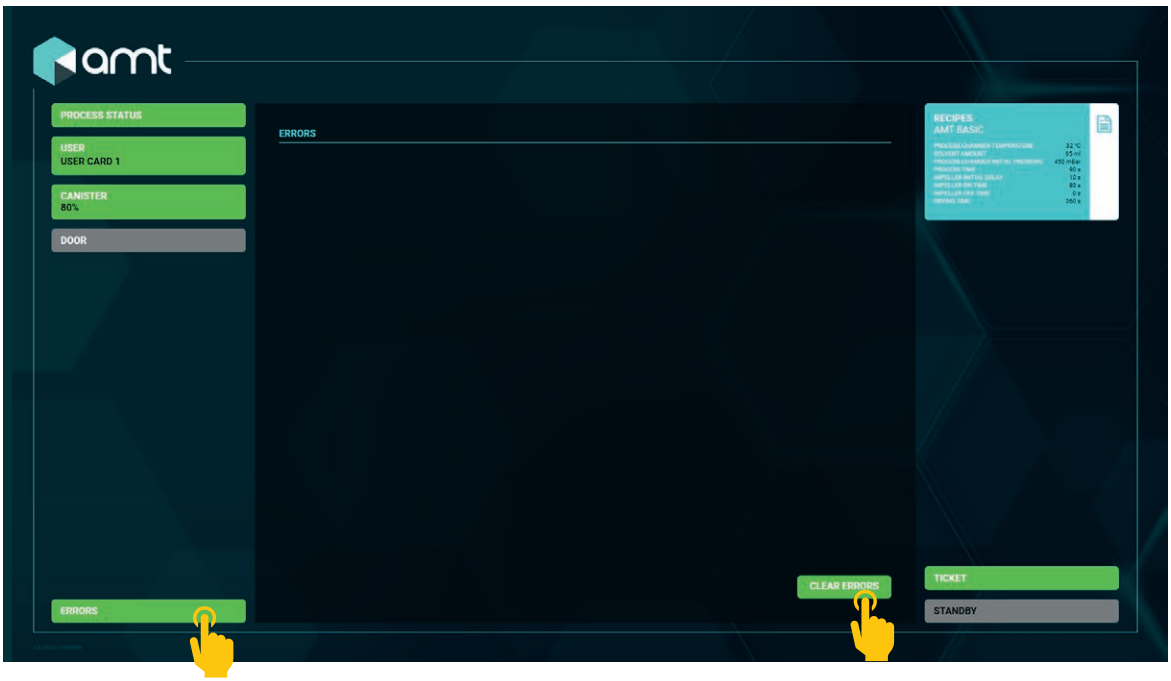
Errors can be:

I = Informative error: Provides information related to different components in the system. Can be cleared by the operator, by pressing the 'Clear Errors' button, and the machine will continue to operate as normal

S = Soft error: Informs the machine operator about a minor issue (e.g. measurement out of tolerance). If it continues to occur, it can turn into a Hard error. Soft Errors can be cleared by the operator, by pressing the 'Clear Errors' button, and the machine will continue to operate as normal.

H = Hard error: Informs the machine operator about a major issue in the system.

Cannot be cleared and the machine won't start a process until it is resolved.



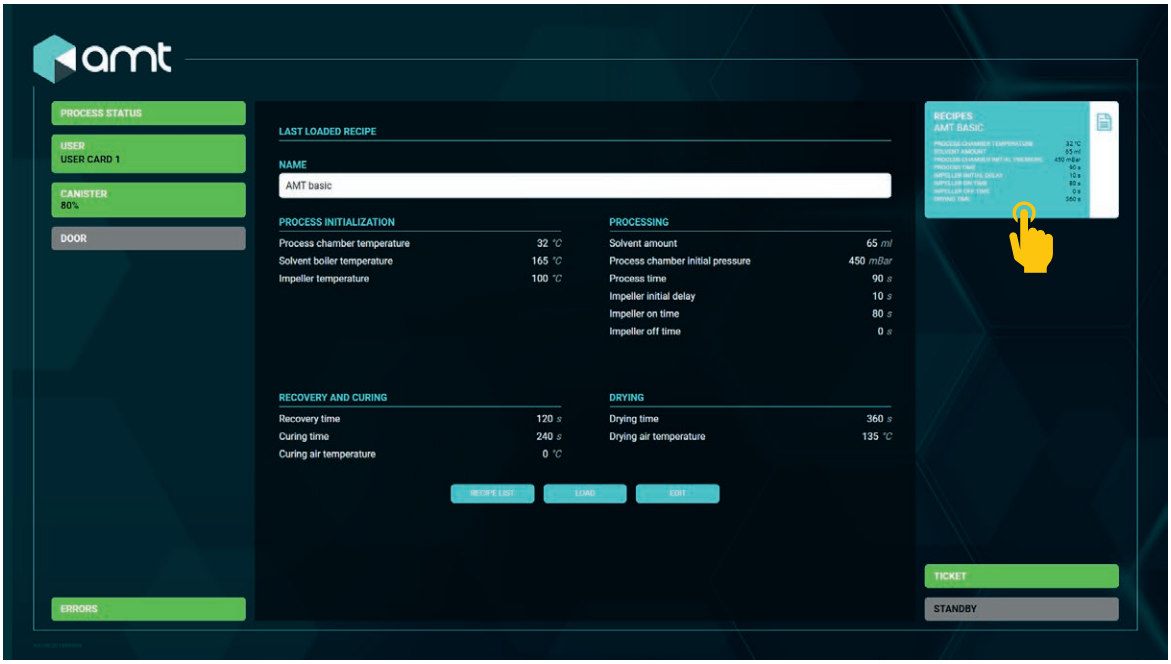
8.6 LOADED RECIPE SCREEN

When a recipe is selected, all of the saved parameters within the recipes can be viewed.

By clicking on **"Edit"** these can then be adjusted. It is only possible to do this if logged in as a user with the required access level.

Clicking on **"Load"** will load the selected recipe so that a process can be started.

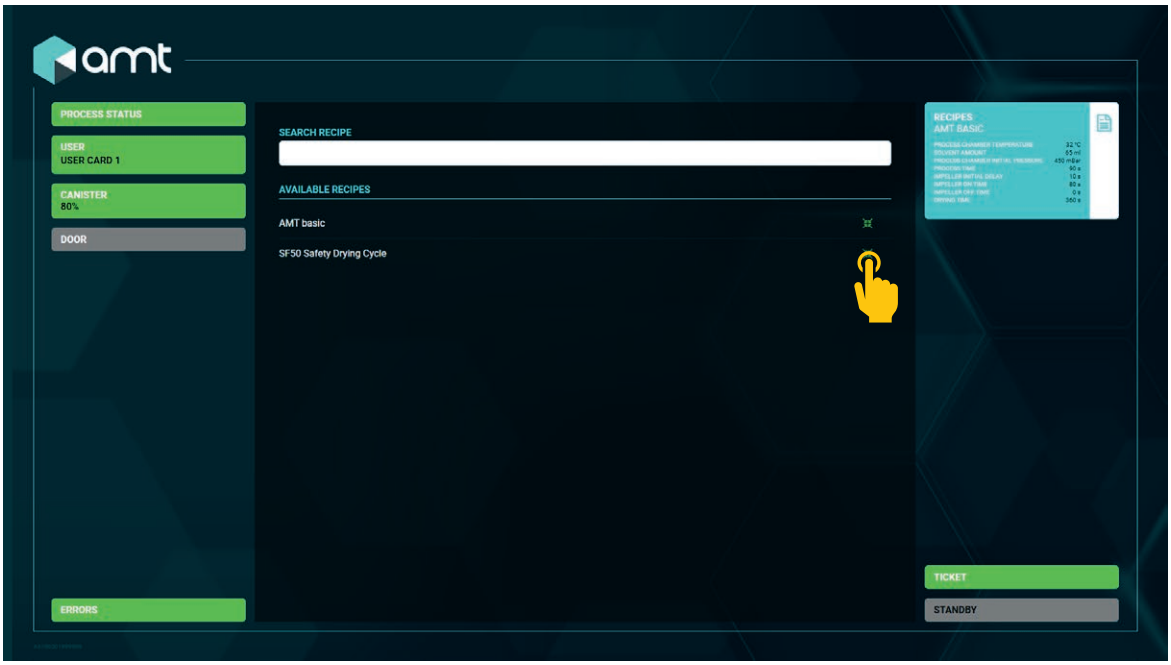
To go back to the list of saved recipes click on **"Recipe list".**



8.7 RECIPE LIST SCREEN

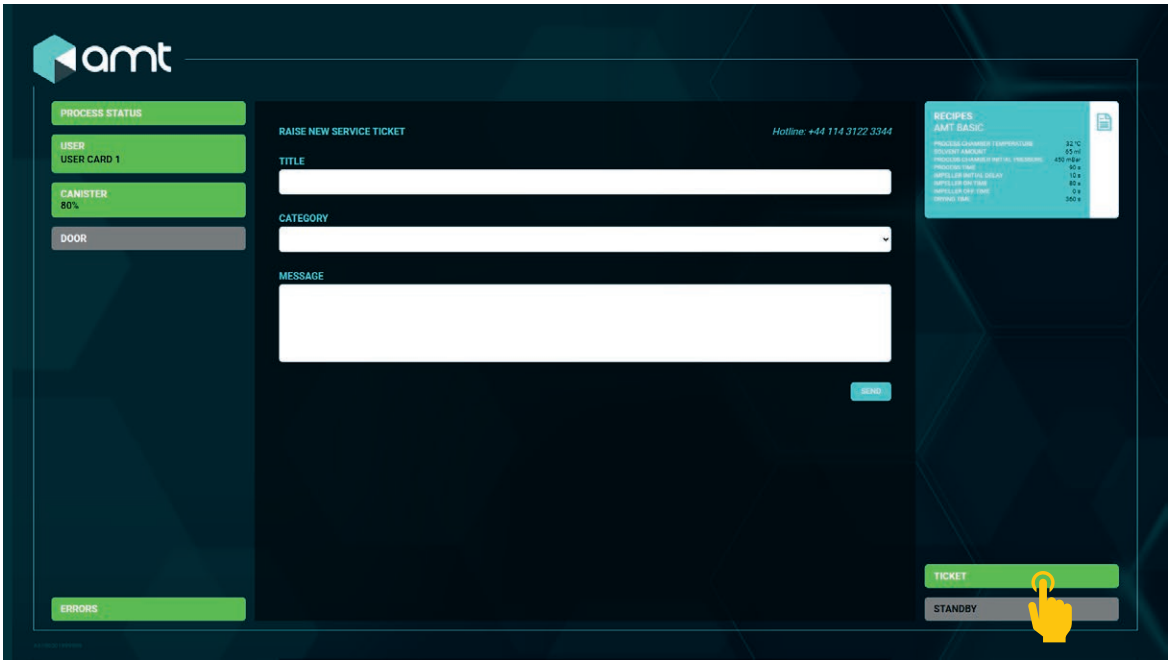
By clicking the **"Recipe list"** button on the previous screen the following screen is displayed. This allows for the different recipes programmed on the machine to be loaded. This is done by clicking the green icon at the end of each recipe.

There is also a Search Recipe function to search for the desired recipe.



8.8 TICKET

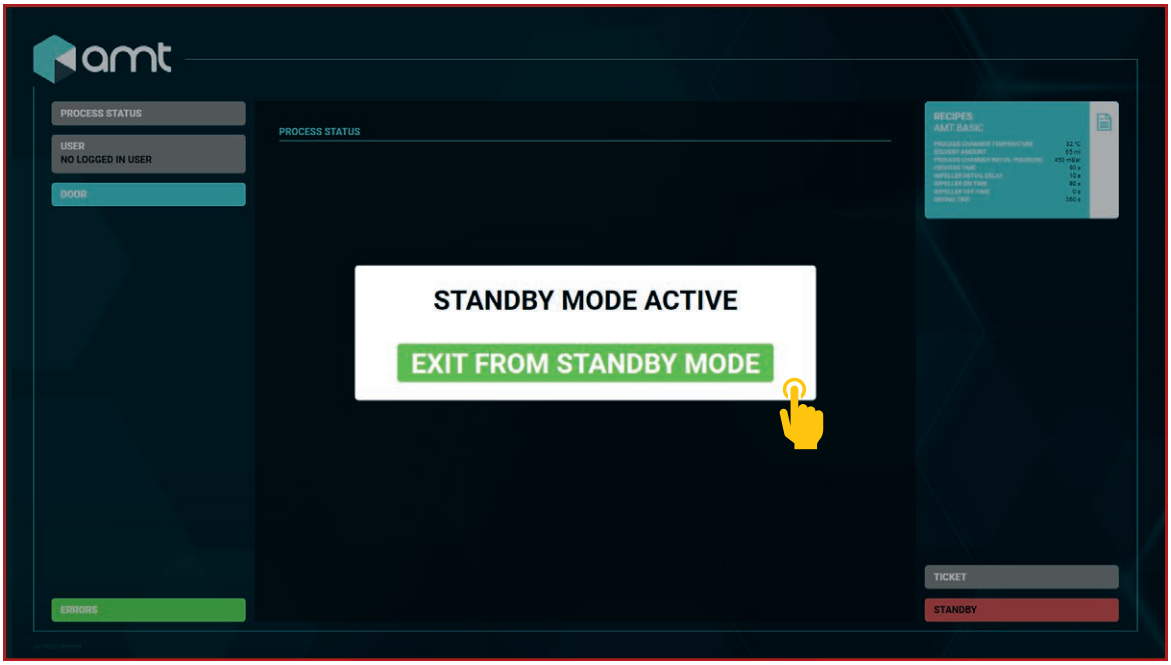
By clicking the **"Ticket"** button, you will be able to submit a ticket through the AMT ticketing system.



8.9 STANDBY SCREEN

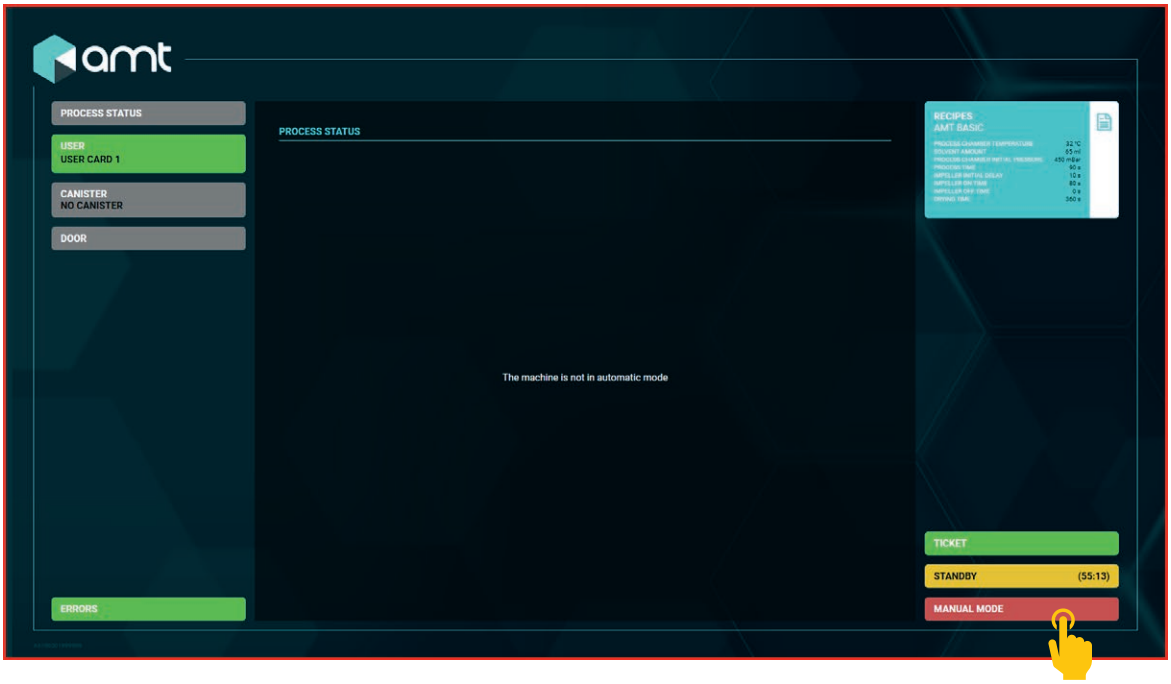
If the system is not going to be used for a short period of time click on **"STANDBY "** in the bottom right corner. The machine will automatically go into "Standby mode" which consumes less energy.

Click **"EXIT FROM STANDBY MODE"** to start using the machine again.



8.10 MANUAL MODE

Only accessible to AMT Engineers or trained personnel in possession of a Service Card.
It is useful for troubleshooting and settings adjustment.



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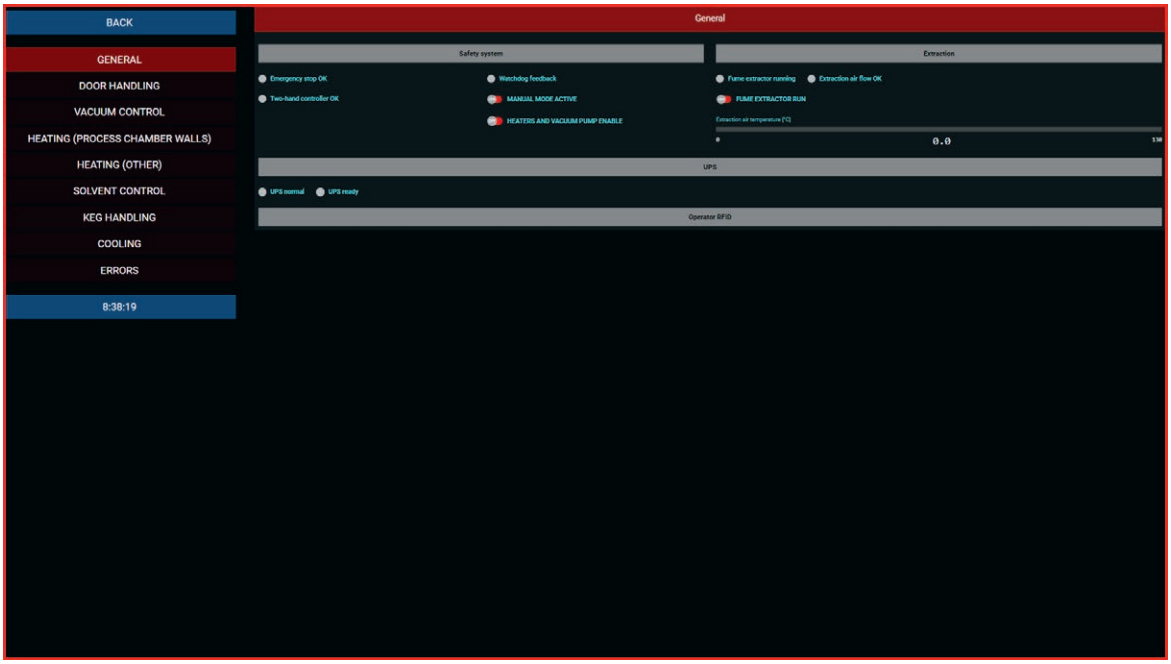


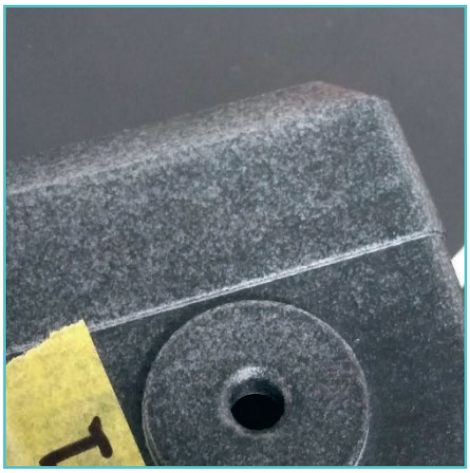
9 // PRE-PROCESSING TIPS AND TRICKS

9.1 PRINTING

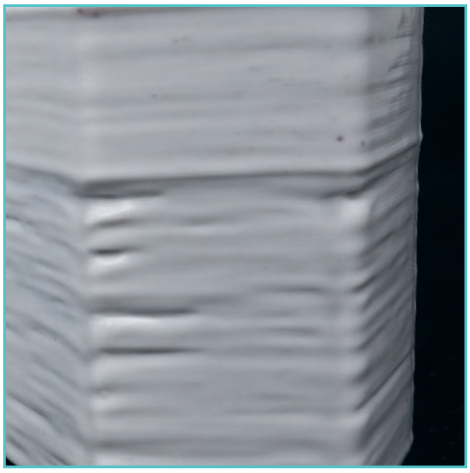
- Many factors can affect the printing quality, this includes:
- Design and geometry of the part
- Orientation within the build
- Printing technology used
- Material
- Printing parameters

For example, parts may have large layer lines due to poor layer adhesion using FDM technology or have suffered from thermal bleeding during the MJF printing process. Each of these impacts the results of the smoothing process so these issues must be eliminated first.

Please note that if the printing quality is poor, the post-processed surface quality will be affected.







9.2 DEPOWDERING

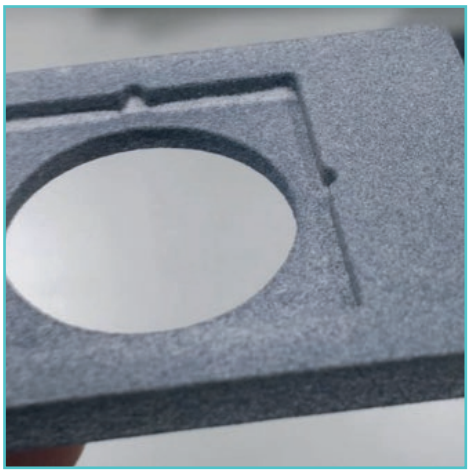
Ensure the parts have been thoroughly depowdered!

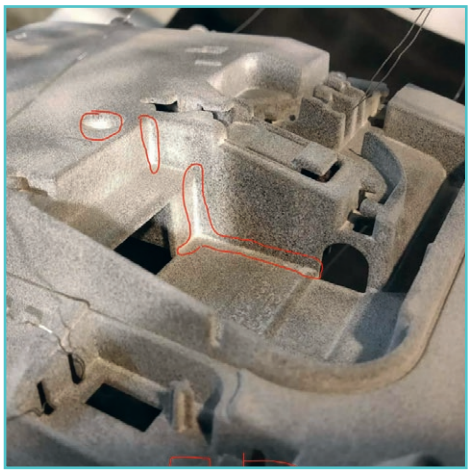
There must be no powder left on the parts, especially in internal cavities and around sharp features. In general, poor depowdering leads to bad smoothing results as the powder will cause imperfections as it processes.

If necessary, do a secondary blasting step to remove all residual powder from the corners and intricate shapes.

Ensure there is no contamination in the blasting media!

Poor blasting media can also result in contamination being applied to the parts, for this reason, it is important to ensure your blasting media is filtered/replaced frequently.



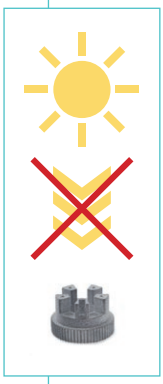


9.3 VAPOR SMOOTHING



Try to keep the part's temperature as constant as possible before the Vapor Smoothing!

Condensation of the solvent on the parts' surface is highly dependent on the difference in temperature between the parts and the solvent. The warmer the parts are when the process starts, the less condensation will take place and in turn, the less the surface will smooth.



For this reason, store parts out of direct sunlight in a temperature and humidity-controlled room which is between 18-22 degrees Celsius.



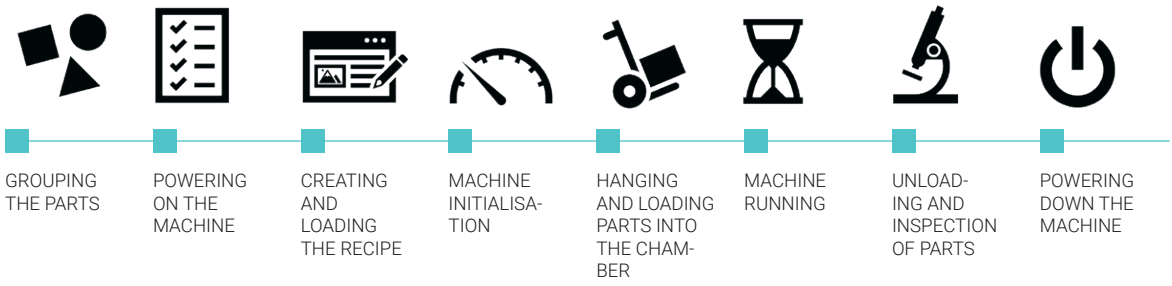
Keep the Vapor Smoothing room clean!

Good housekeeping practices in and around the machine are crucial in preventing unwanted contamination. Parts surfaces are very sensitive to dust from the environment, and contaminated surfaces are highly visible after smoothing.



The processing chamber should be cleaned after every run using a "lint-free" wipe and IPA.

10 // HOW THE PROCESS WORKS



10.1 GROUPING THE PARTS

What **Technology** was used to manufacture the parts?	SLS / MJF / FDM, etc.
What is the **Material** of the parts?	PA12 - 11 / TPU, etc.
What is the average **Wall Thickness** of the parts?	E.g. 1-2 mm / 3-4 mm / >5 mm, etc.
How **Full** is the processing chamber?	E.g. half full, completely full?

Group the parts before smoothing!

Do not mix parts of different technologies, materials or wall thicknesses within the same process run. Processing conditions vary depending on these characteristics and mixing parts up will lead to inconsistent results.

Furthermore, do not mix coloured or dyed parts with white parts as contamination, in the form of black dots, can be found all over the white parts after smoothing.

10.2 POWERING ON THE MACHINE

To power “ON” the machine, firstly make sure that all connections are still secure as per the installation guide.

If an external extractor is being used, power this on before the PostPro SF machine and check the power supply to the machine is on.

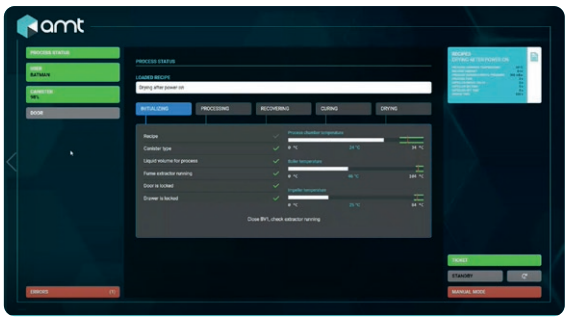
Turn on the BOFA extractor using the standby button on the front (where applicable).



Turn the Isolator to the ON position (on the left side of the screen) to power on the SF machine.



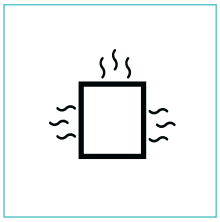
After a few minutes, the SF screen will then display the Main Screen. It will enter to “Drying after power on” recipe automatically.



10.3 EXPLANATION OF PROCESS PARAMETERS

The process has 5 main stages:

1 INITIALIZATION



Processing chamber warms up

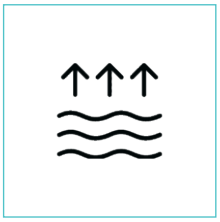
After reaching the setpoint parts can be loaded into the chamber

2 PROCESSING



Solvent is introduced into the chamber and a condensation process takes place. This causes the surface of the parts to reflow and smooth

3 RECOVERY



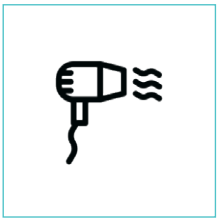
Recovery of the solvent starts

4 CURING



Parts start to harden again

5 DRYING



Any remaining trace of solvent in the parts and processing chamber is removed

- Each of these stages has their own parameters which are adjustable.
- It is necessary to change the process parameters depending on the material, geometry and quantities of the parts being processed.
- By changing the parameters, different levels of smoothing and sealing can be achieved.

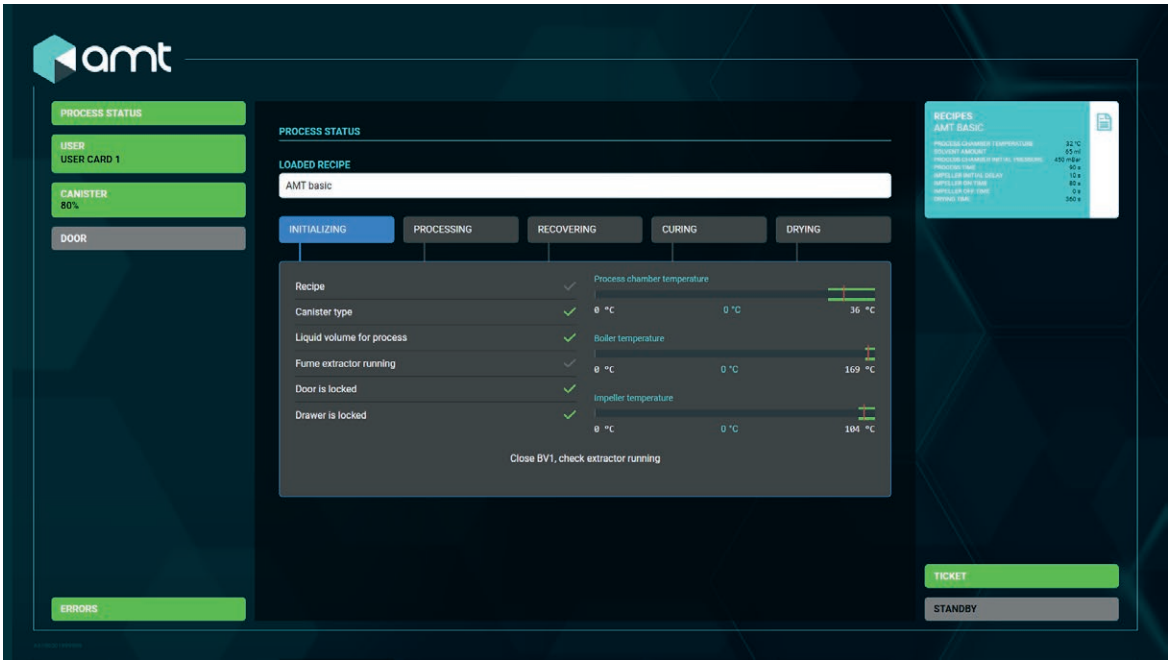
10.3.1 INITIALIZATION STAGE

The following parameters can be adjusted:

Process chamber temperature (°C): The setpoint of the walls in the processing chamber which needs to be reached before the process starts.

Solvent boiler temperature (°C): The temperature at which the boiler is set, to ensure that the solvent is heated to its boiling point.

Impeller temperature (°C): Temperature that the impeller above the processing chamber reaches before the solvent is dosed into the processing chamber.



GREEN: Regular Change

ORANGE: Occasional Change

RED: Rarely Change

10.3.2 PROCESSING STAGE

The following parameters can be adjusted:

Solvent Amount (ml):

The volume of solvent which is dosed into the chamber.
The larger the quantity of solvent the more processing occurs in a given time.
Increase the Consumable Volume for more aggressive smoothing or when higher surface areas require processing.
The typical range for Consumable volume for a full chamber of parts is between 100 – 250ml.

Process chamber initial pressure (mbar):

Pressure that the vacuum pump pulls inside the processing chamber.
A lower pressure results in a less aggressive smoothing process.
Higher pressure results in a more aggressive smoothing process. Typical Process Chamber pressure is between 300 – 500mBar

Processing time (s):

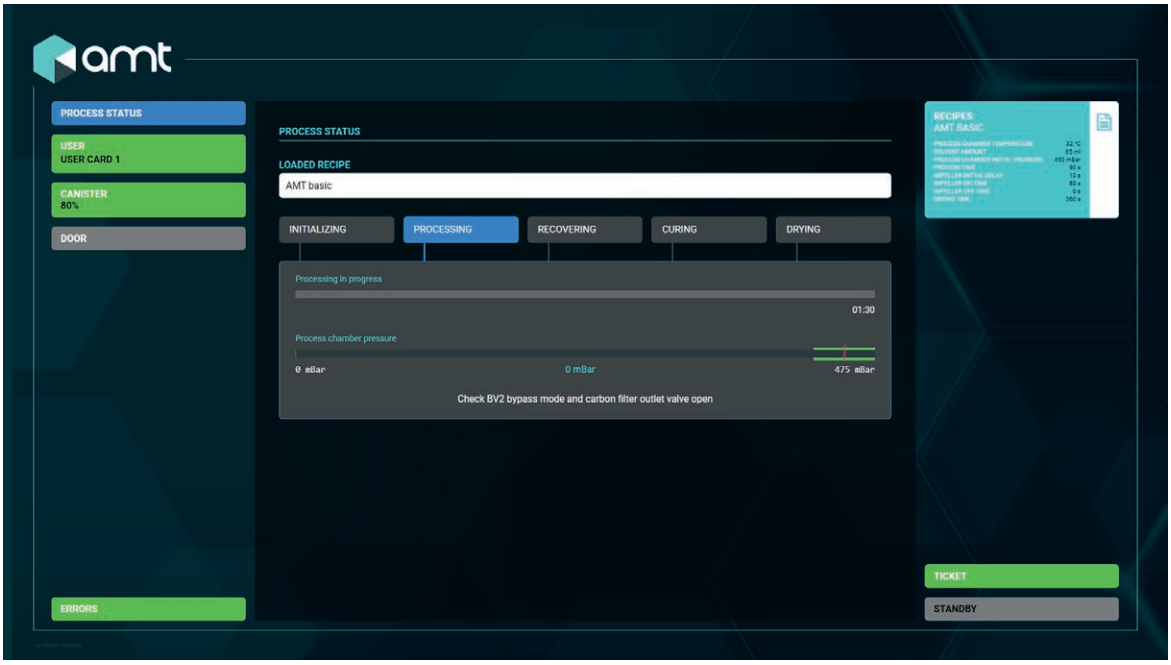
Exposure time of the solvent on the surface of the parts.
A higher process time will result in increased smoothness on the parts.
If the Process Time is too long this could result in over processing or damaging the parts. Typical range for processing time is 100 seconds – 250 seconds.

Impeller initial delay (s):

Time after which the impeller starts working.

Impeller ON/OFF time (s):

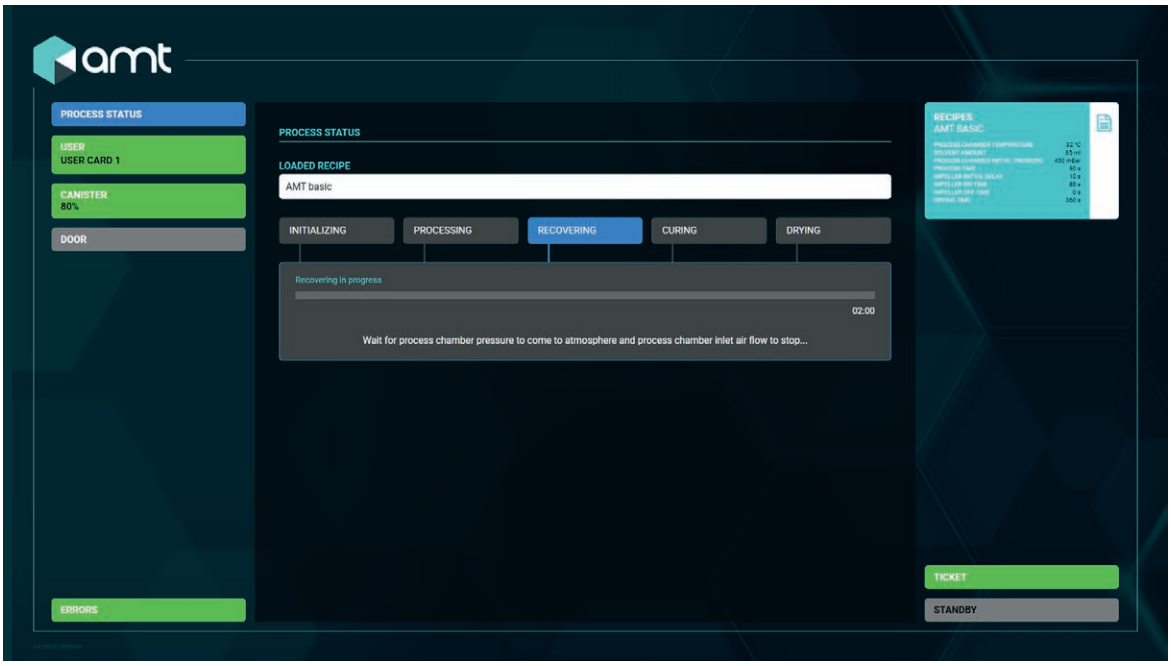
Defines whether the impeller is working constantly or in intervals.
The impellers are used to circulate the solvent around the processing chamber.
When parts are being processed through the chamber it is recommended to cycle the fans on and off to ensure a consistent and steady flow of solvent around the chamber.



10.3.3 RECOVERY STAGE

The following parameter can be adjusted:

Recovery time (s): Period in which the machine recovers most of the solvent.



GREEN: Regular Change

ORANGE: Occasional Change

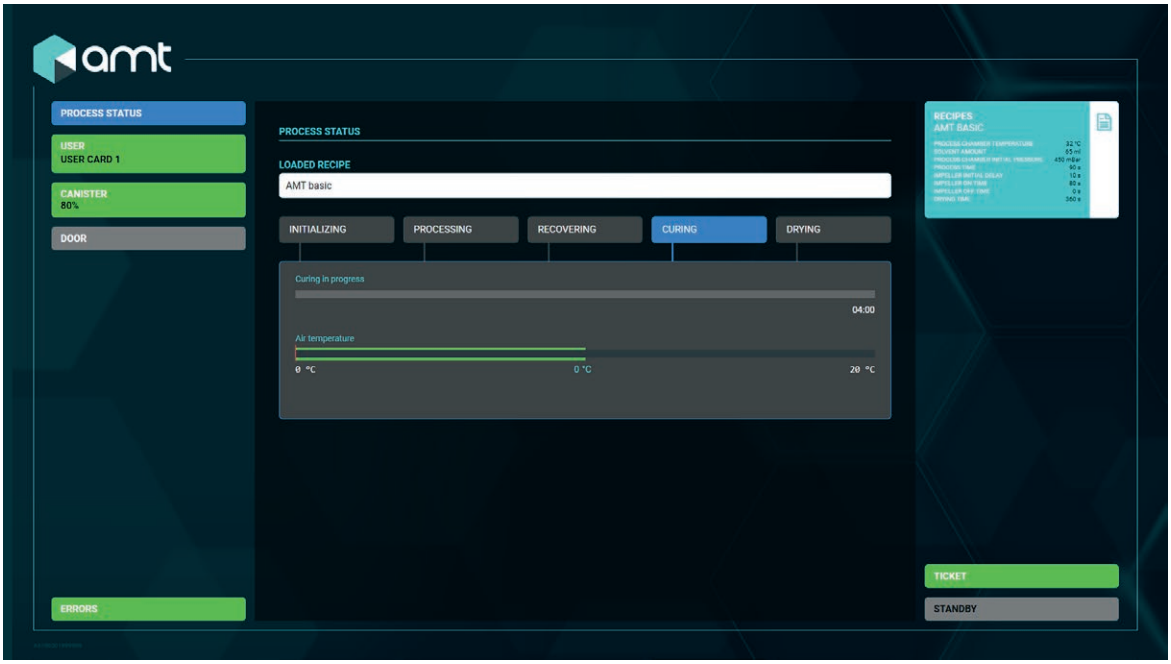
RED: Rarely Change

10.3.4 CURING STAGE

The following parameters can be adjusted:

Curing time (s): Duration in which the parts resolidify.

Curing air temperature (°C): Temperature of the air blown into the processing chamber.



GREEN: Regular Change

ORANGE: Occasional Change

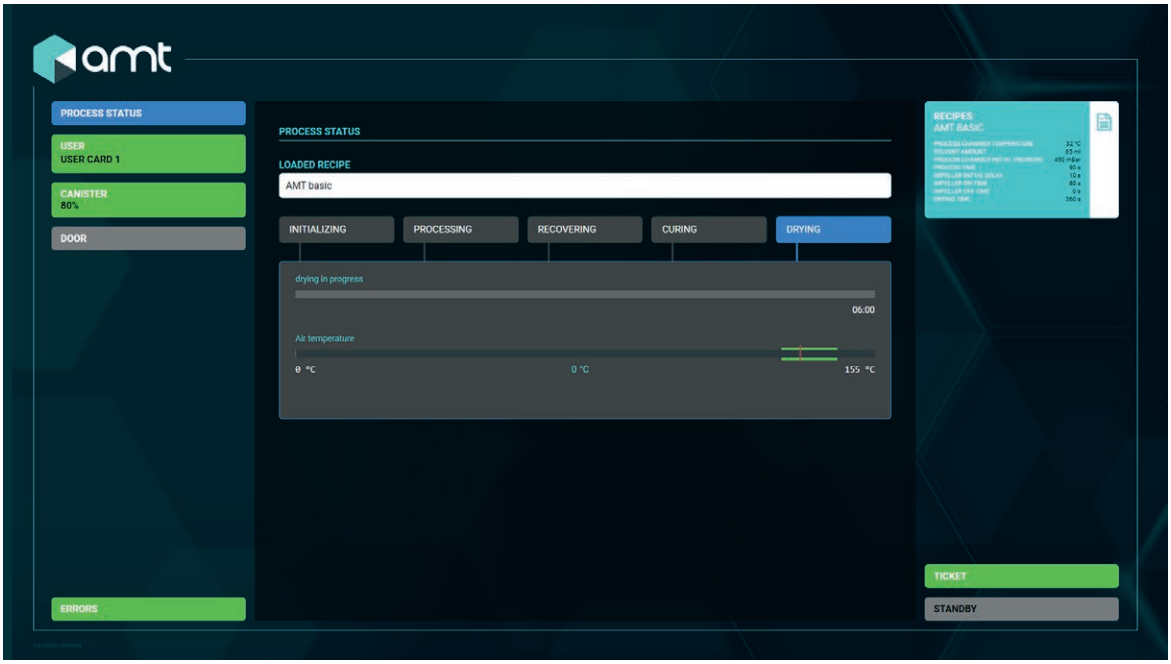
RED: Rarely Change

10.3.5 DRYING STAGE

The following parameters can be adjusted:

Curing time (s): Duration of the drying cycle to remove any traces of the solvent.

Curing air temperature (°C): Temperature of the air blowing into processing chamber.



GREEN: Regular Change

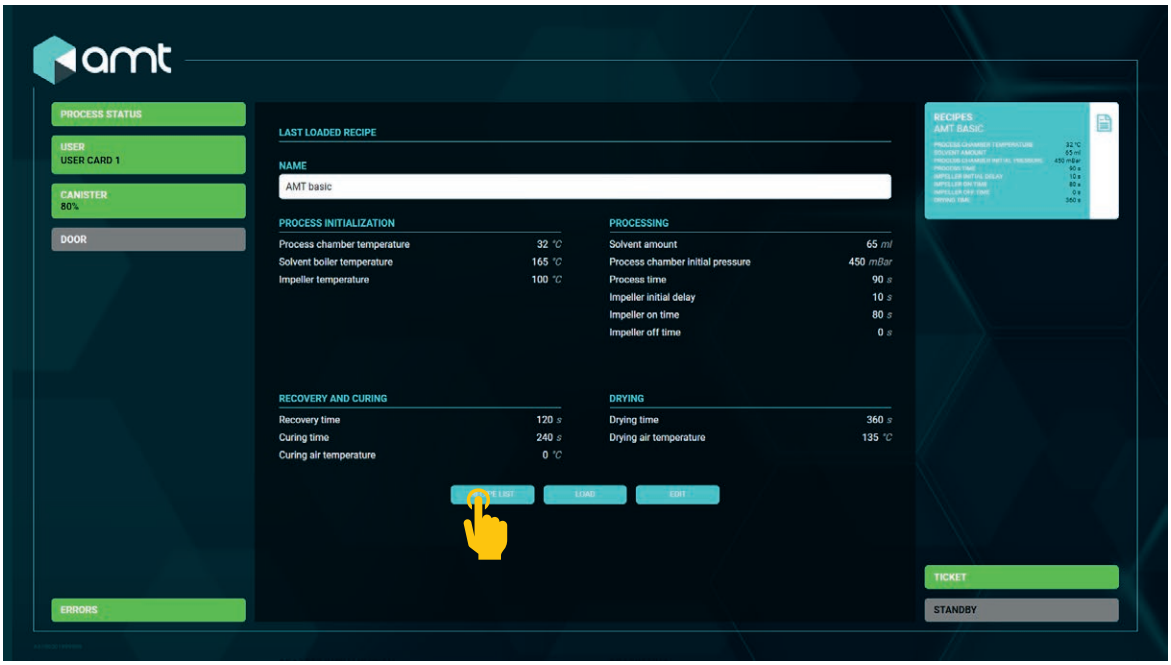
ORANGE: Occasional Change

RED: Rarely Change

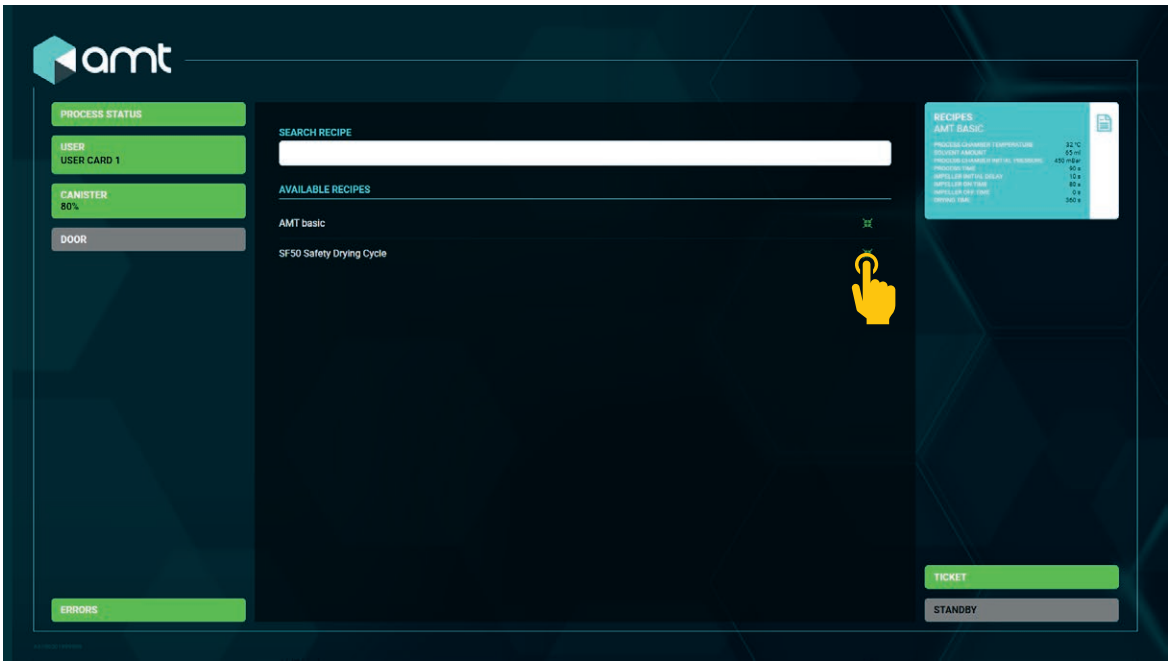
10.4 HOW TO CREATE A RECIPE

By clicking on the recipe box on the right-hand side of the screen, the last loaded recipe will be displayed.

To view all the recipes, click on the **"Recipe List"** button at the bottom of the screen.

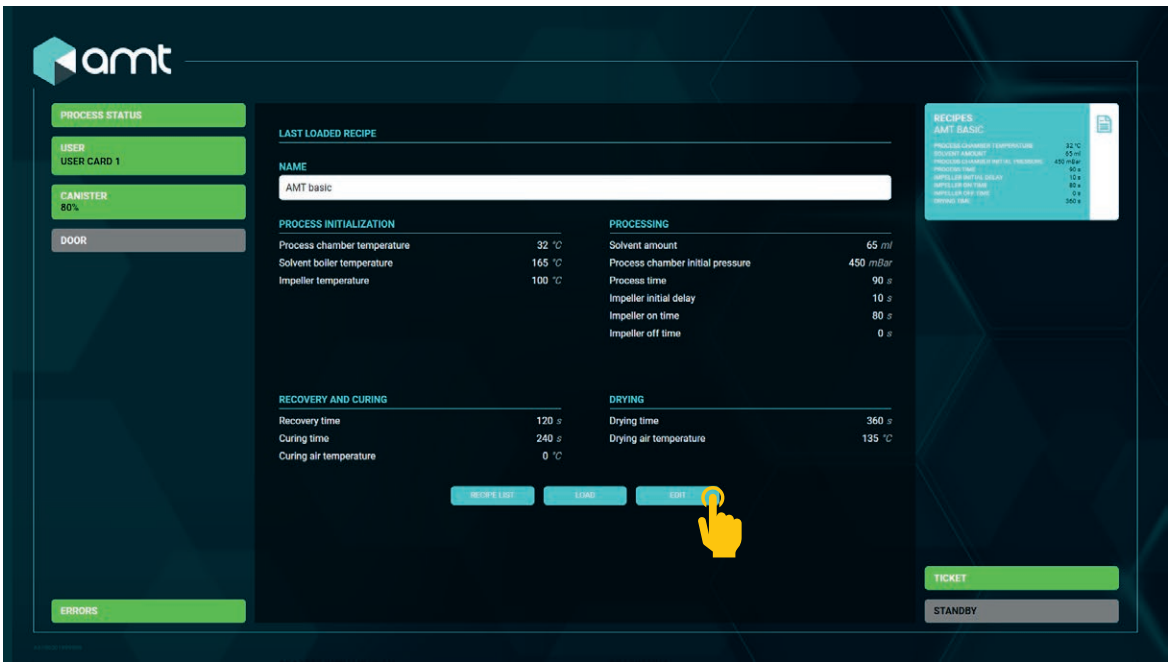


Select a recipe which you want to edit or use as the base for the new recipe. To do this, click on the green icon at the end of the recipe.



After clicking the green icon, the recipe will be displayed and all the processing parameters for the selected recipe can be seen.

Next, click on the **"Edit"** button.



The different parameters can be adjusted either by moving the red indicator along the bar or by clicking on the small keyboard and entering the value manually. If a new recipe is being created, it is important to rename the recipe using the text box at the top.

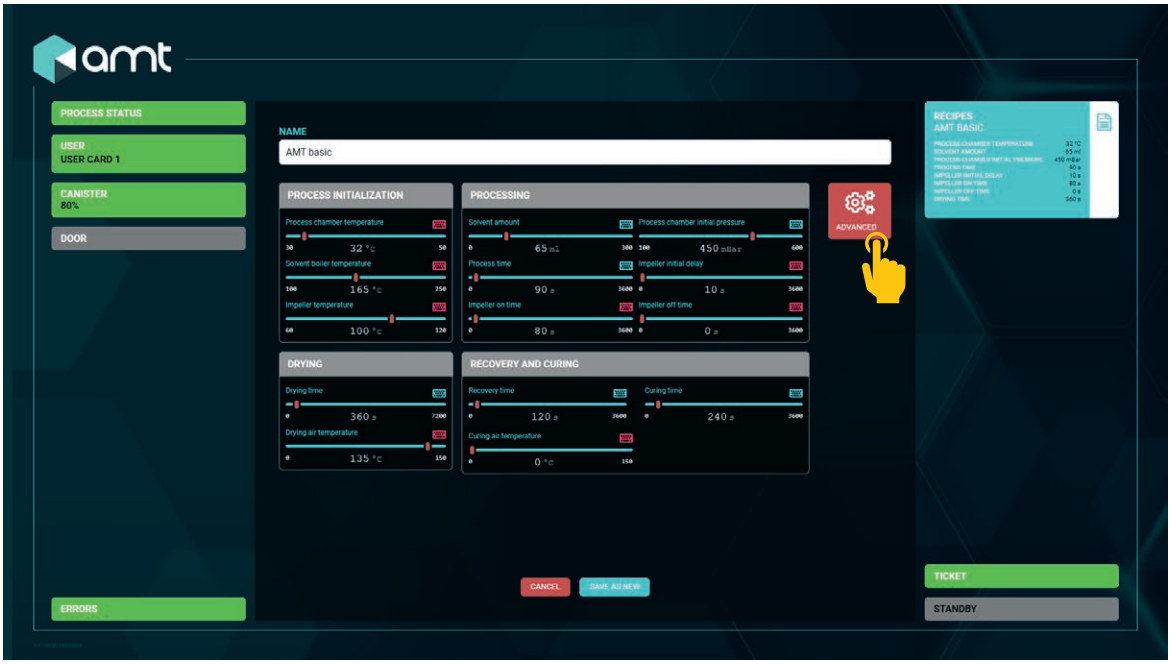
To edit the advanced parameters, click on **"Advanced"**.



The advanced parameters can also be adjusted by either moving the red indicator on the bar, or by clicking on the small keyboard and entering the value manually.

Once finished, click on **"Save as new"** to save the recipe.

The new recipe can be found under the list of Recipes.

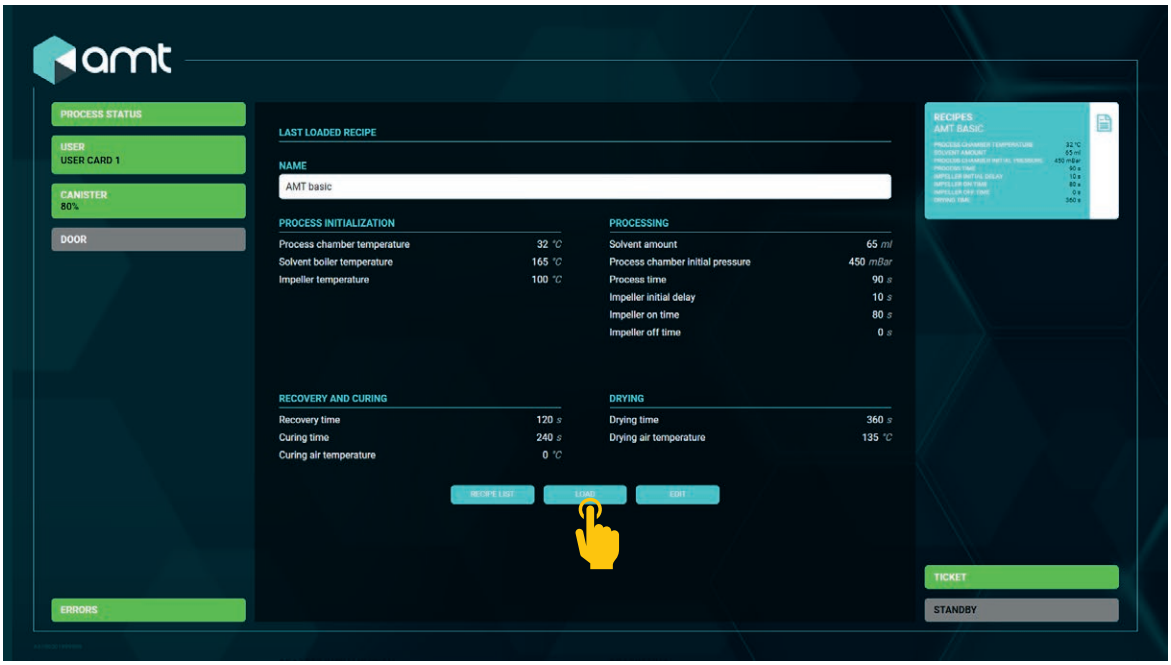


If modifying a global AMT recipe, the user can only "SAVE AS NEW".

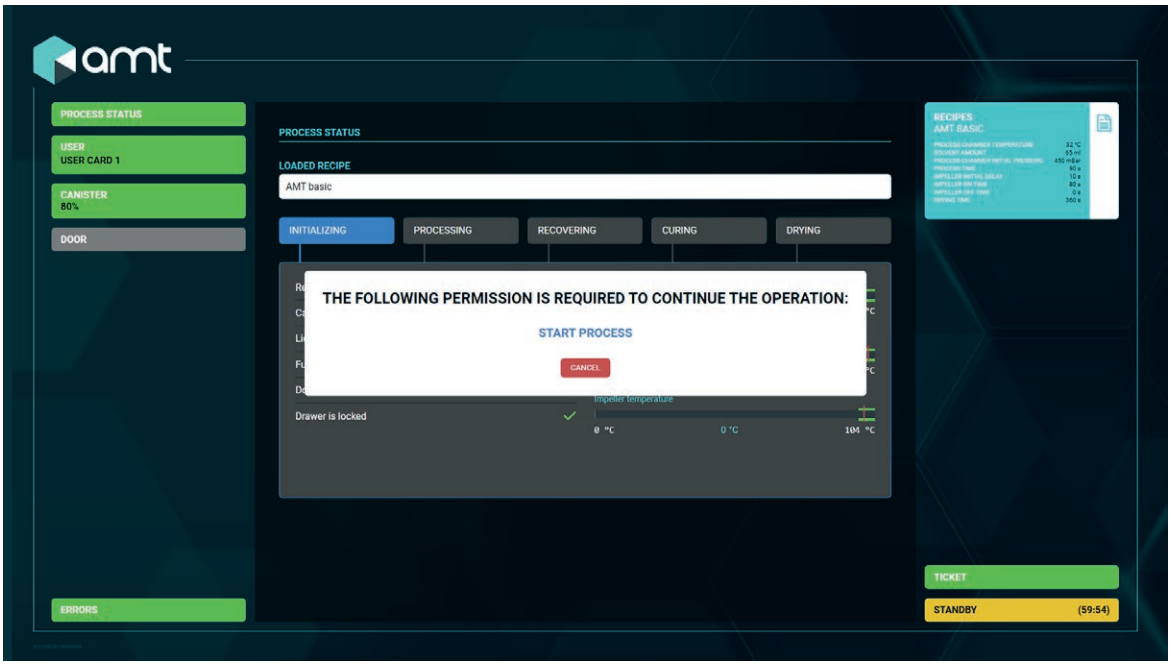
The user can use the "SAVE" button with their own recipe.

10.5 MACHINE INITIALISATION

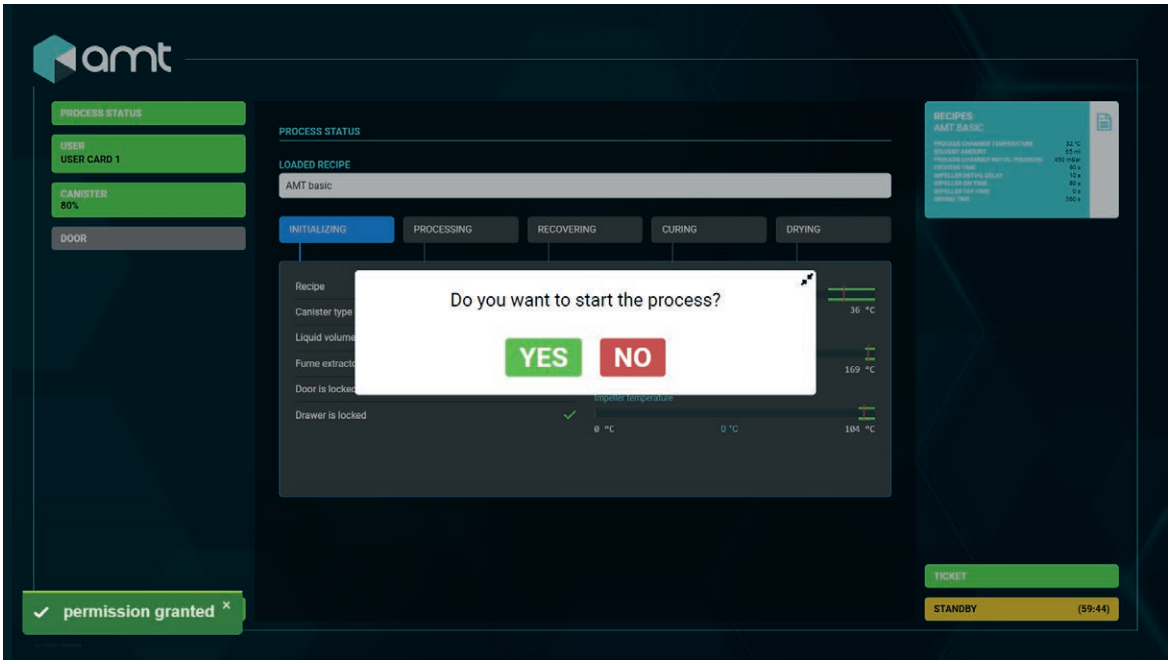
1. After setting up the recipe, please select the **"LOAD"** recipe button. Make sure the upper right recipe has changed to the recipe you want to run.



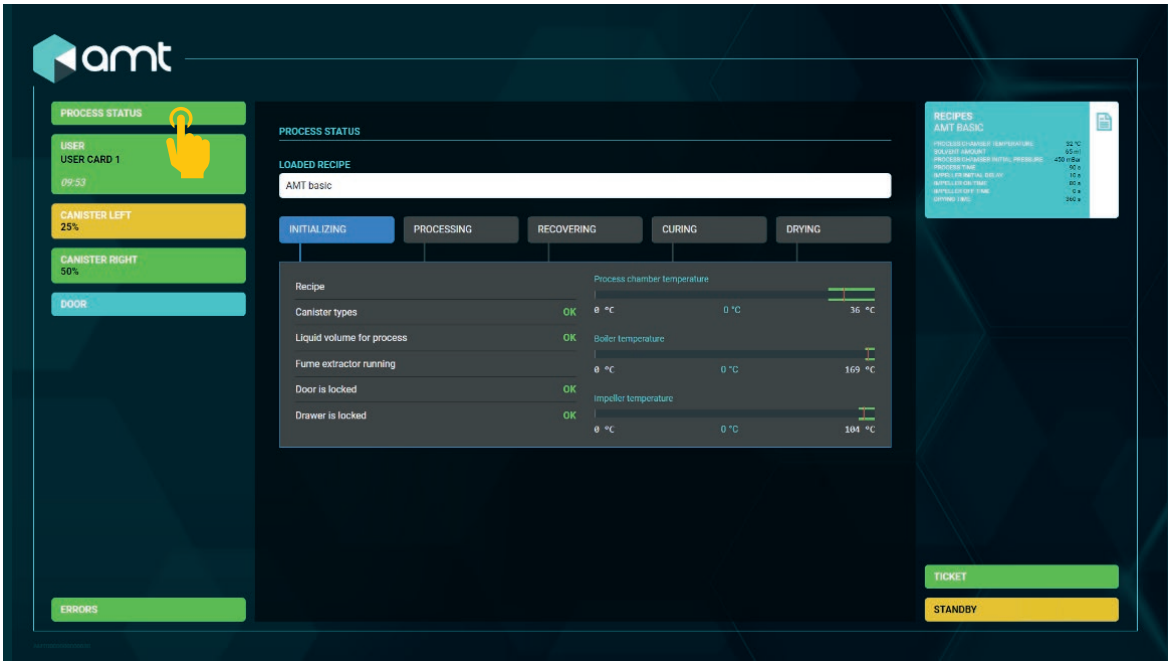
2. Scan the user card.



3. Press **"Yes"**, the machine will start the initialization process.



4. By selecting **"Process Status"**, the current machine state is displayed.



10.6 HANGING AND LOADING PARTS INTO THE CHAMBER

Design for Post Processing

Incorporating hanging features into the part design can save time when loading processing racks and prevent parts from having sink marks.

The most common approach is to design sacrificial hooks on the parts which can be removed after processing.





Use Stainless Steel wires and hooks to hang parts

Some materials can react or oxidize during the process which can lead to contamination on the parts. Stainless steel is an inert material that is readily available to purchase and works very well for suspending parts onto the process racks.

Make sure to use thin clips/hooks or “welding rods” to reduce the amount of condensation they attract.

This will help to prevent drip marks forming on the parts.







HANG PARTS CORRECTLY

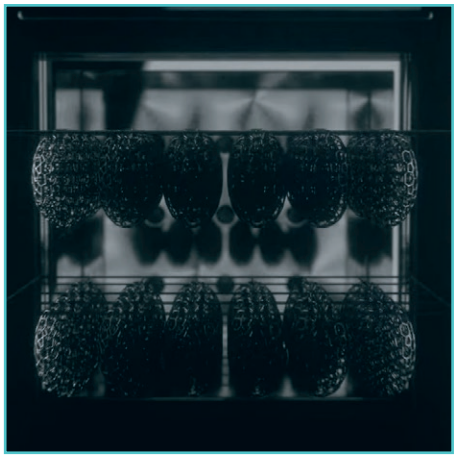
For best results:

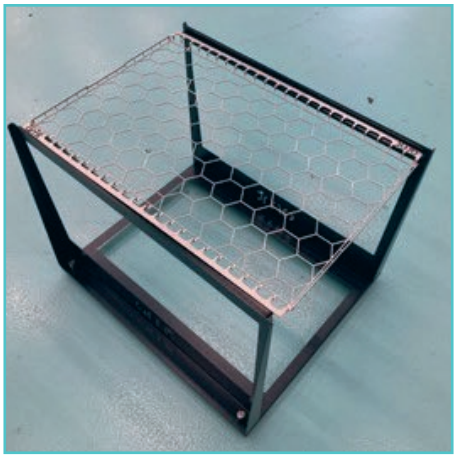
Parts should be placed at least 25 mm away from chamber walls.

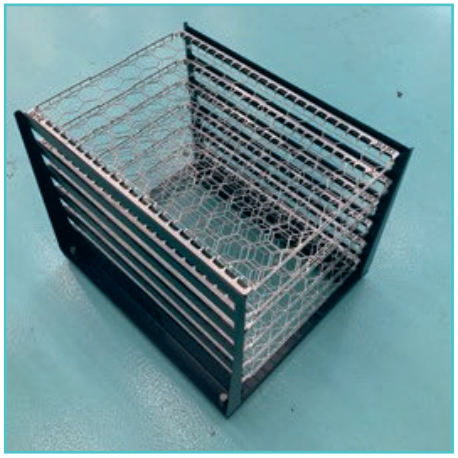
Parts should be placed at least 10 mm away from each other. Ensure parts are not touching each other.

Cupping geometries should be hung with the openings facing downwards at a 10º - 20º angle.

Minimize the contact points between the clips/wire and the part to reduce the severity of witness marks after processing.

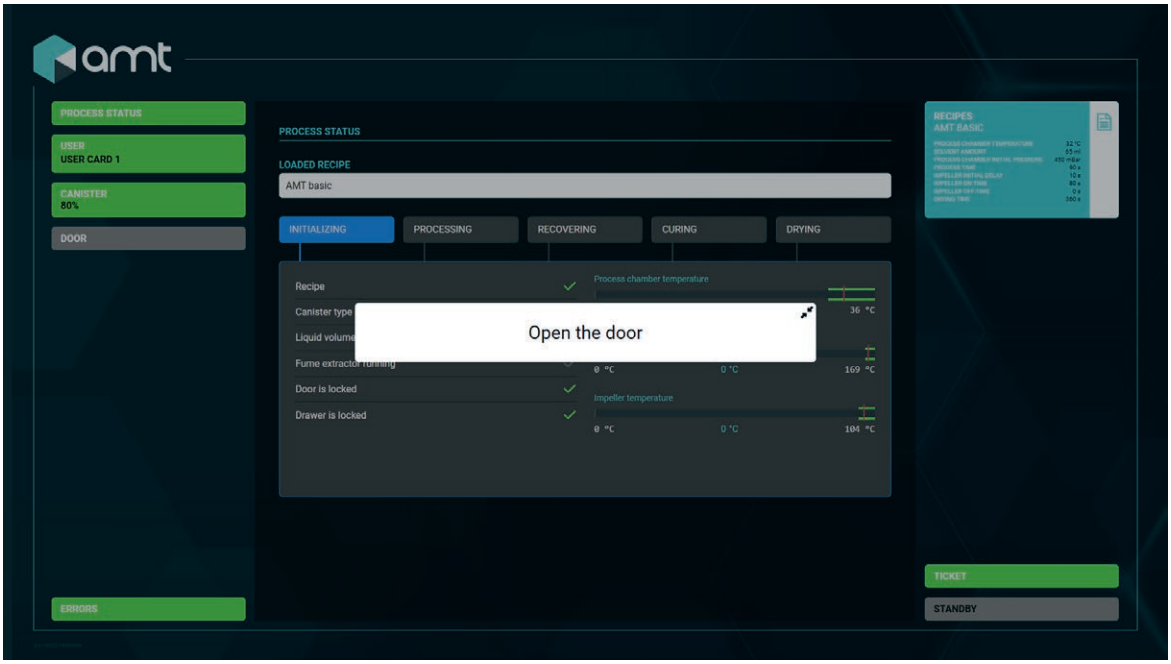




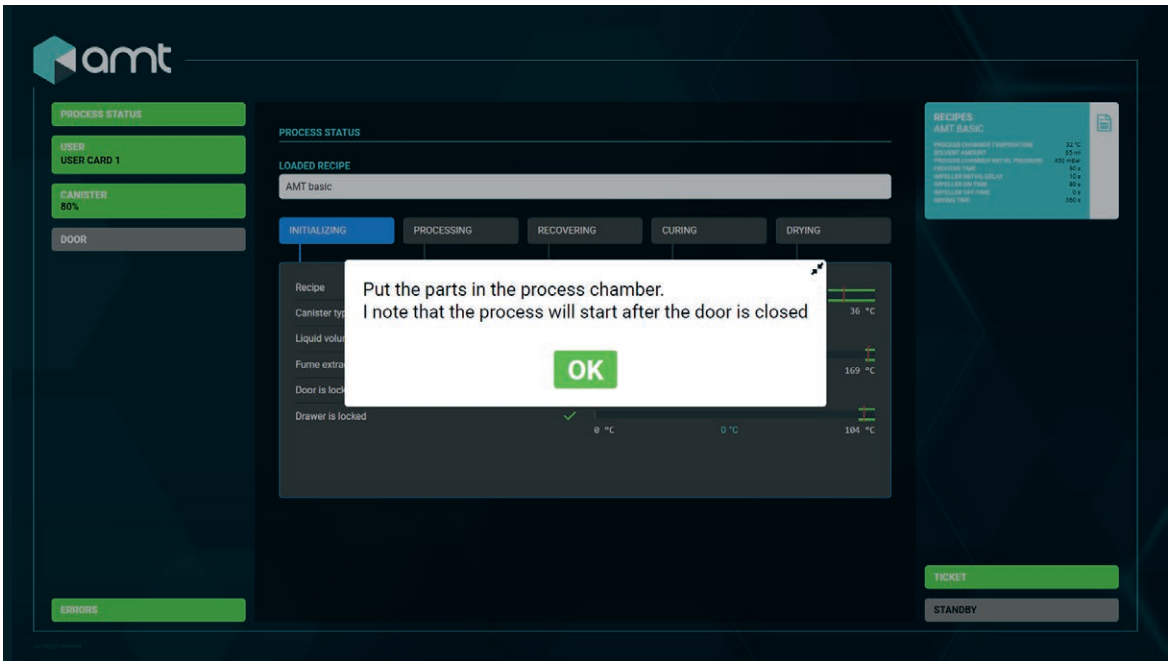


Note: preferably place the parts/racks in the middle of the processing chamber.

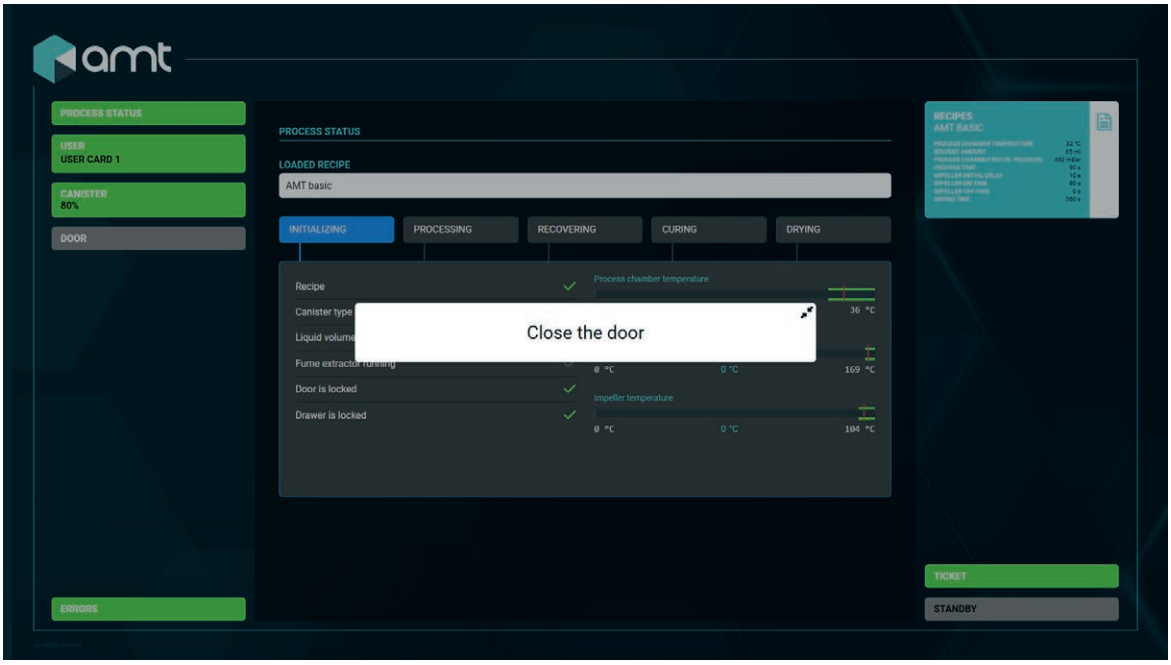
Loading parts into the chamber



1. When the machine is ready, press the two-hand door buttons. To avoid getting trapped, the two buttons must be pressed **simultaneously.**

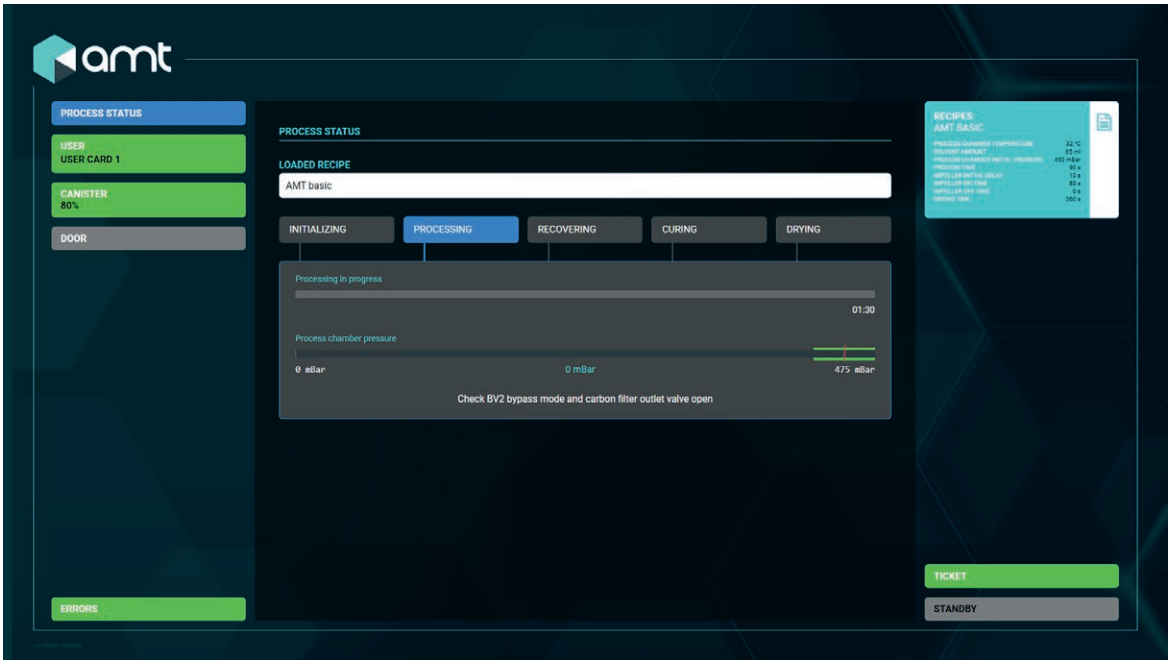


2. Place the racks and samples into the chamber. Press **"OK"** when the parts hanging properly.



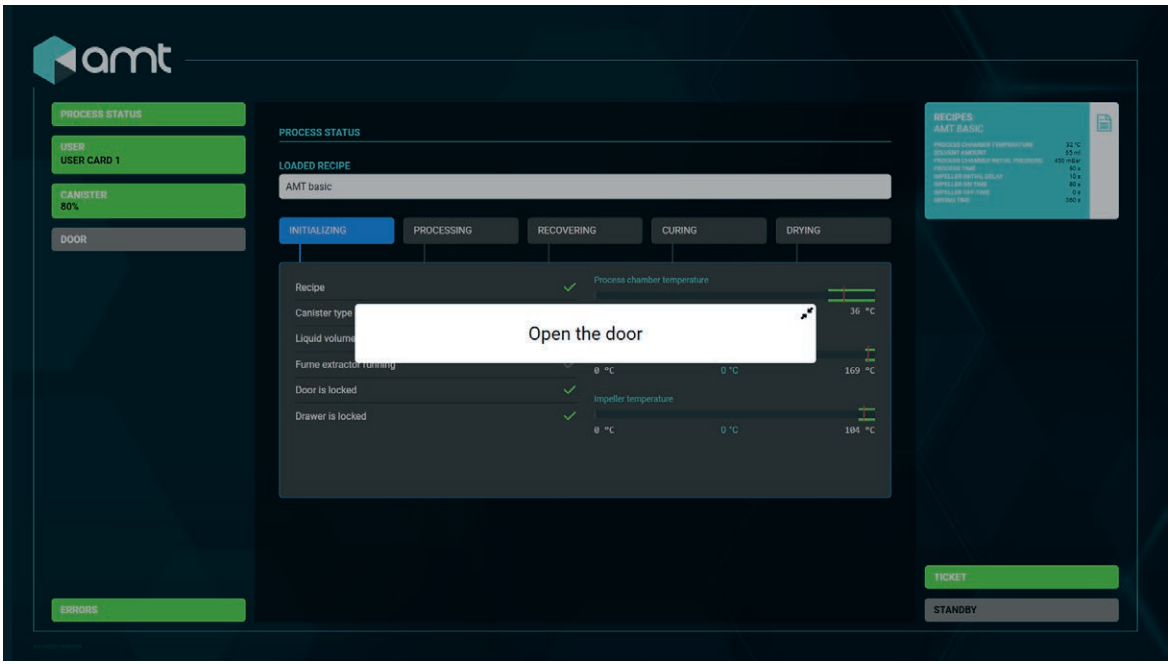
3. Press two-hand door buttons again simultaneously to close the door properly.

10.7 MACHINE RUNNING



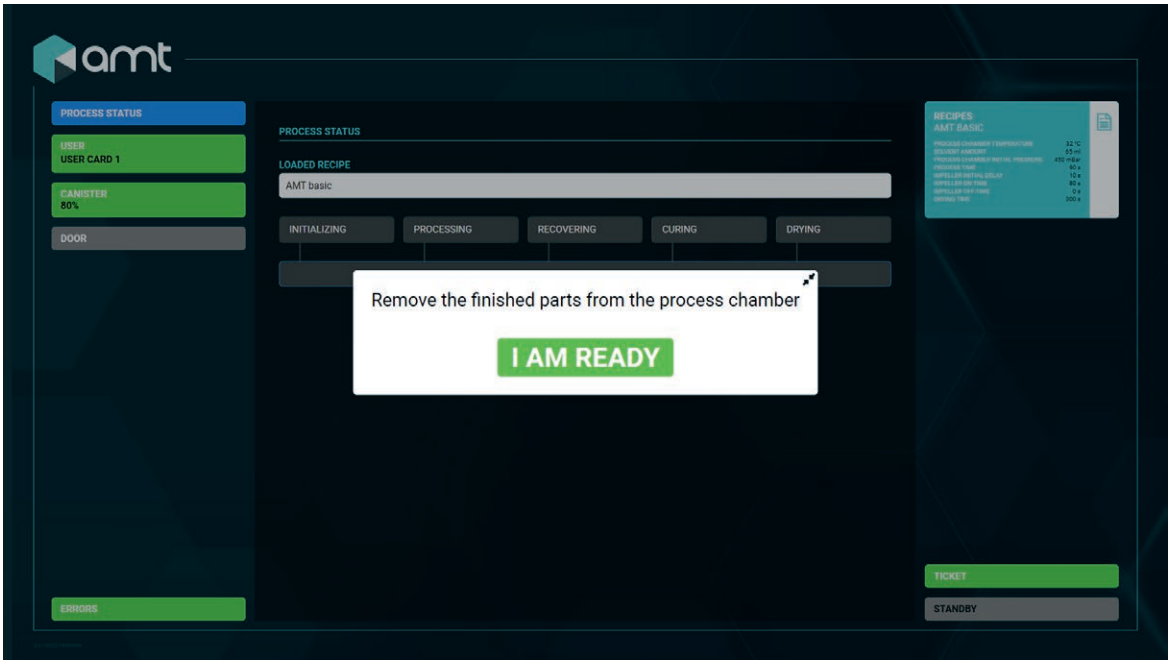
The machine starts to run the process.

10.8 UNLOADING AND INSPECTION OF PARTS

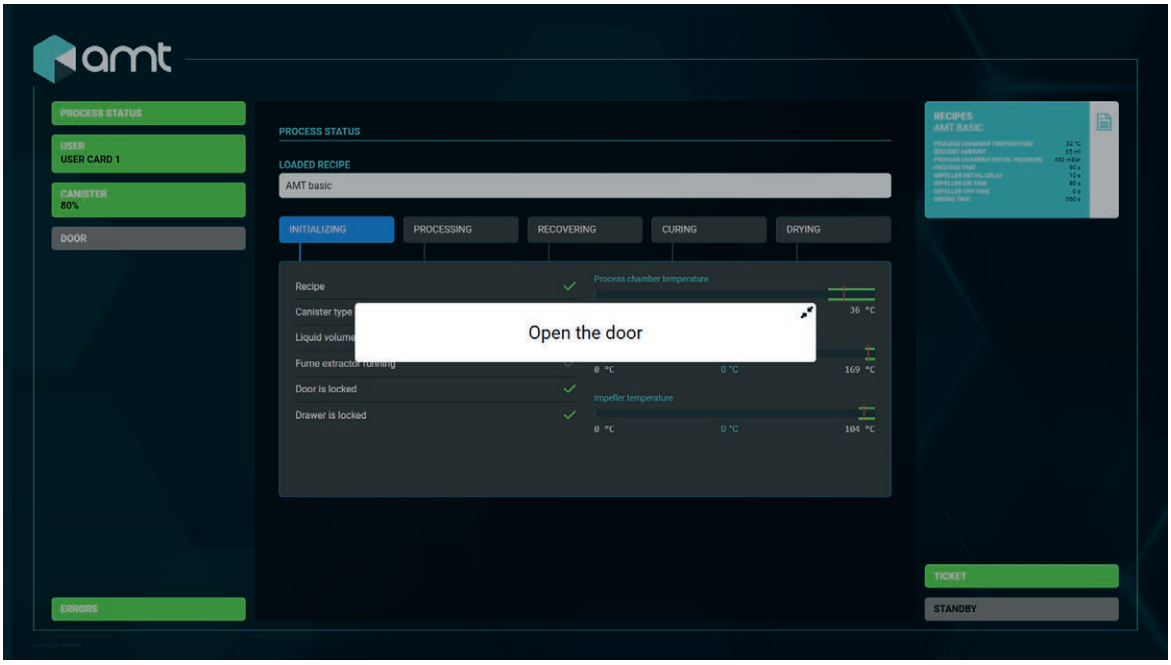


1. When the machine finishes all the cycles, press two-hand door buttons simultaneously to open the door.

Please make sure you wear all the PPE before opening the door.



2. Remove the finished parts from the process chamber. Press **"I AM READY"** after taking out all the parts.



3. Press two-hand door buttons again simultaneously to close the door properly.

10.9 POWERING DOWN THE MACHINE

Properly shutting down your PostPro SF system is essential to maintain reliable operation. A correct shutdown cycle allows the system to cool safely, protects internal components from damage caused by residual heat or solvent vapors, and helps maintain the integrity of the HMI. Following the shutdown procedure also reduces the risk of power issues on the next startup and extends the overall lifespan of the equipment.

1

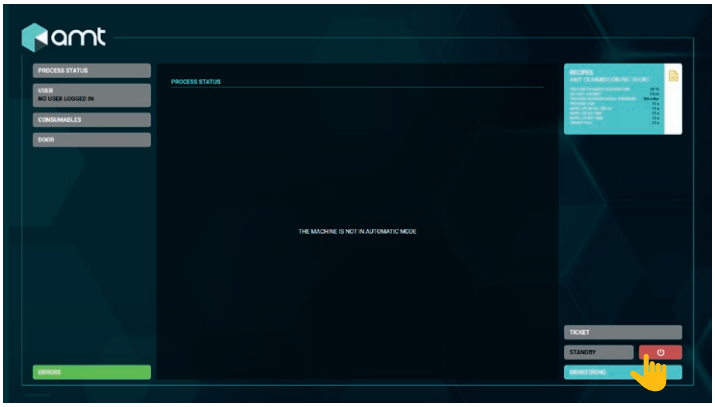
First, de-press the emergency stop button on the front of the machine.

Note: Only do this when the machine has finished the processing cycle and the parts have been removed.



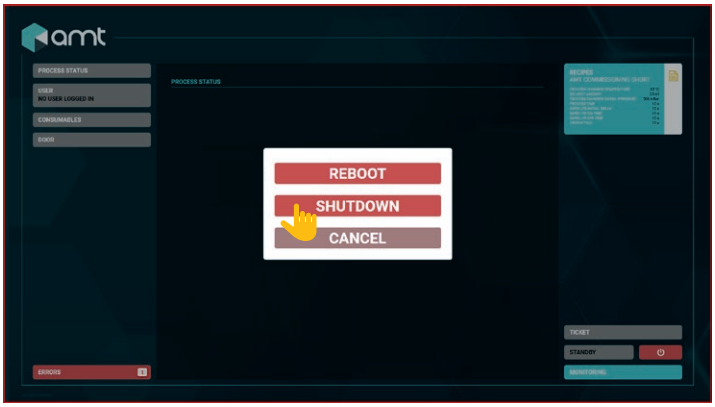
2

Press the **Power Button** on the screen.



3

On the next screen, select the required option. For powering the machine down, select **SHUTDOWN**.



4

Once the HMI screen is black, and the beacon on the top of the machine is off, turn the main isolator on the front of the machine to the off position.

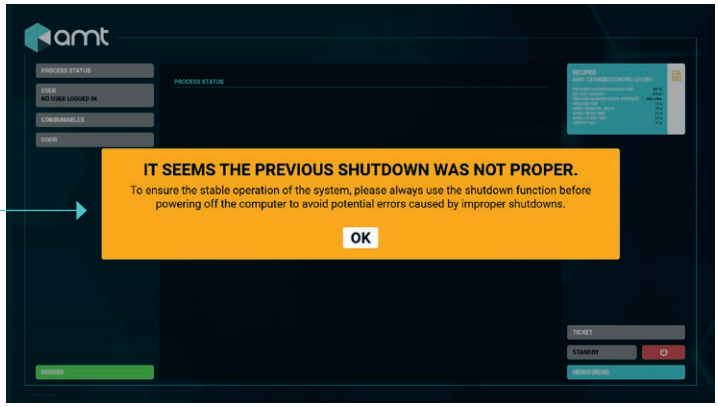


5

Finally turn off the external extractor using the power button on the front of the machine.

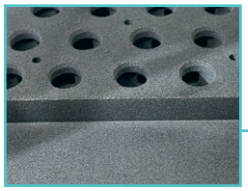


Note: If the machine was improperly shutdown, the following screen will display.

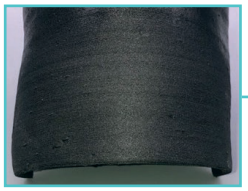


DO NOT POWER THE MACHINE ON AGAIN UNTIL IT HAS FULLY SHUT DOWN.

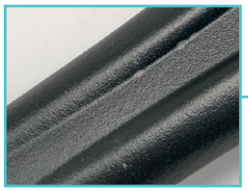
11 // TROUBLESHOOTING



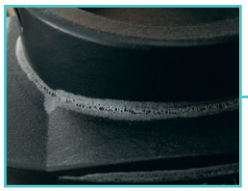
UN-PROCESSED
Parts look the same as when they went in.



UNDER-PROCESSED
Some of the part has smoothed but overall, more smoothing is needed.



SLIGHTLY OVER-PROCESSED
Sharp edges have been rounded and blisters are present in corners.



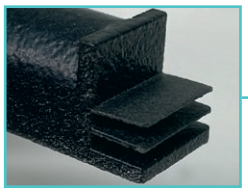
OVER-PROCESSED
Sharp edges are rounded, blisters are present, and the flat surfaces have defects too.



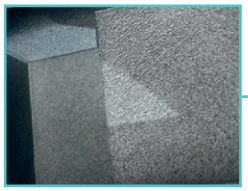
BUBBLES
There are bubbles spread over the surface of the part.



CONTAMINATION
Dust and/or dots of contamination are stuck to the surface of the part.



THIN PARTS
Parts will a wall thickness (<1mm) are not processing well.



UN-PROCESSED INTERNAL SURFACES
There is a variation in smoothing between internal/external surfaces.

11.1 UN-PROCESSED

Parts look the same as when they went in.

What can cause this issue?

1. The material is not approved for use with the AMT Vapor Smoothing technology and is not listed in the “Compatible Material List”.

2. The recipe used is not aggressive enough to smooth the parts.

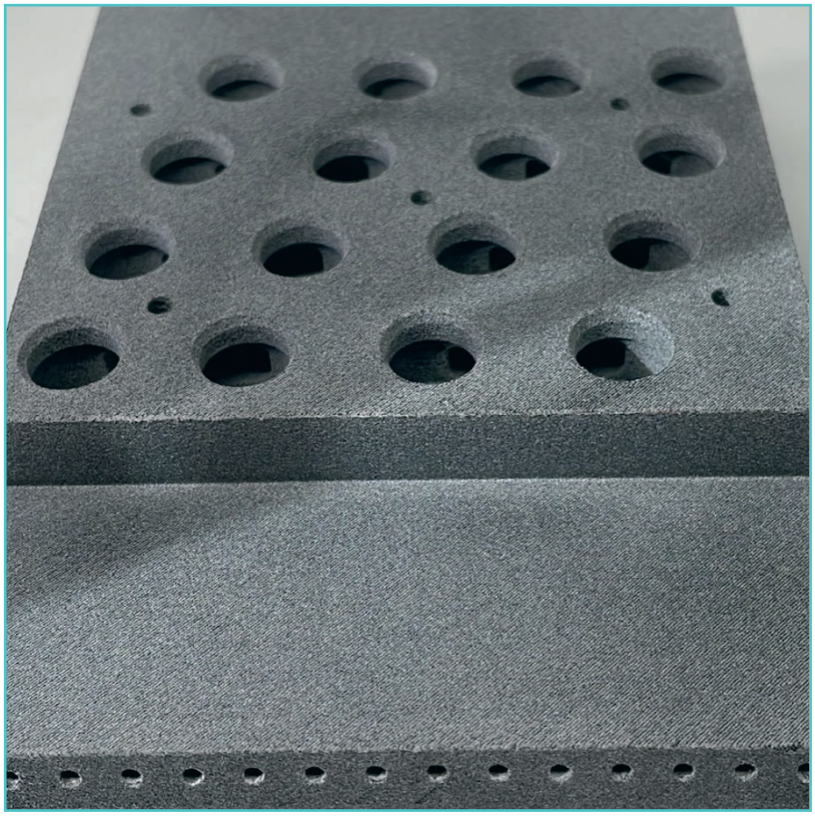
3. Part temperature exceeds the recommended range.

How to fix it?

1. Check the material is listed in the “AMT PostPro Compatible Material List”.

2. Ensure the processing chamber pressure, processing time and consumable volume are within the recommended range. If not, increase these accordingly.

3. Store parts in a climate-controlled environment where temperature and humidity can be monitored.



11.2 UN-PROCESSED

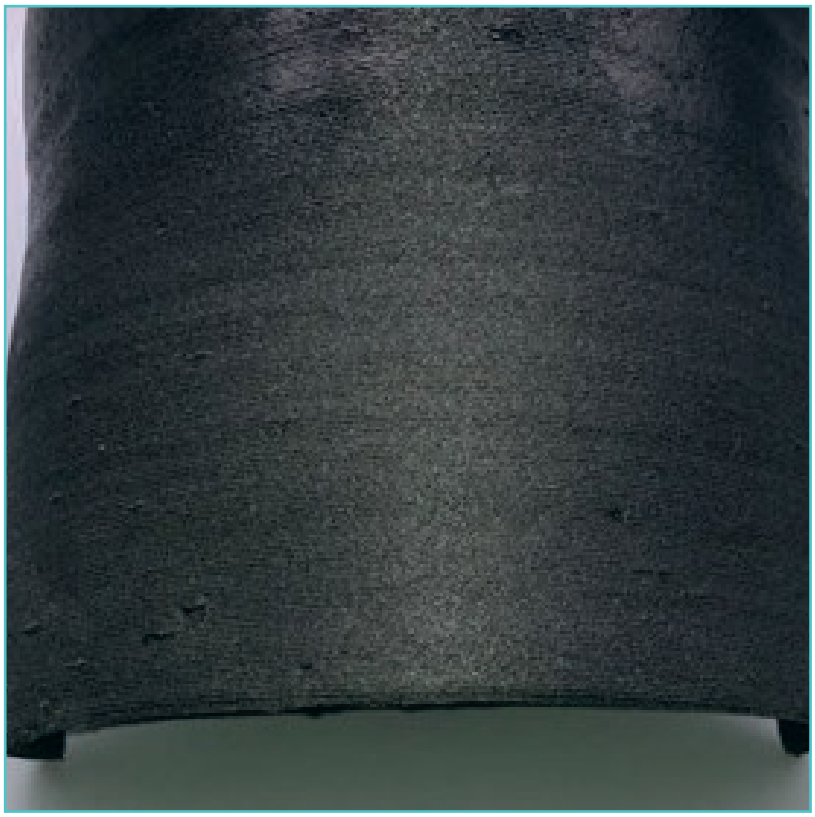
Some of the part has smoothed but overall, more smoothing is needed.

What can cause this issue?

1. The recipe used is not aggressive enough to smooth the parts:
    - Pressure during processing was too low.
    - Not enough solvent was used.
    - Processing time was too short.
2. Part temperature exceeds the recommended range.

How to fix it?

1. Ensure the processing chamber pressure, processing time and consumable volume are within the recommended range. If not, increase these accordingly. This can vary but typically ranges between 10-40 ml/s/mbar (Depending on how complicated the geometry is and the number of parts).
2. Store parts in a climate-controlled environment where temperature and humidity can be monitored.



11.3 SLIGHTLY OVER-PROCESSED

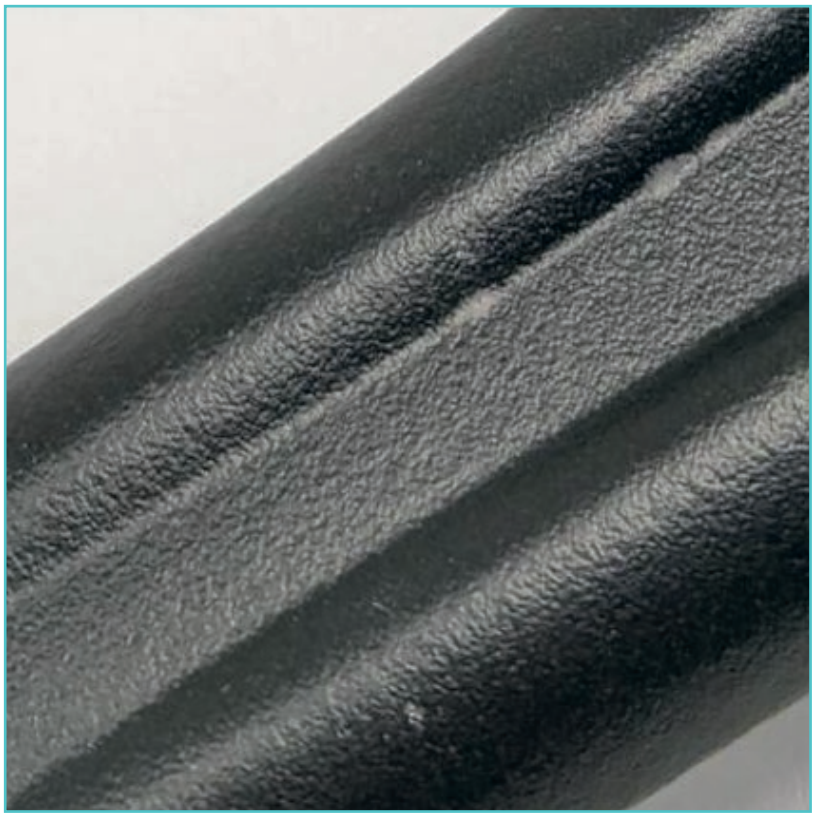
Sharp edges have been rounded and blisters are present in corners.

What can cause this issue?

1. The recipe used is a little too aggressive to smooth the parts:
    - Pressure during processing was too high.
    - Too much solvent was used.
    - Processing time was too long.
2. Part temperature is below the recommended range.

How to fix it?

1. Ensure the processing chamber pressure, processing time and consumable volume are within the recommended range. If not, decrease these accordingly. This can vary but typically ranges between 10-40 ml/s/mbar (Depending on how complicated the geometry is and the number of parts).
2. Store parts in a climate-controlled environment where temperature and humidity can be monitored.



11.4 OVER-PROCESSED

Sharp edges are rounded, blisters are present, and the flat surfaces have defects too.

What can cause this issue?

1. The recipe used is too aggressive to smooth the parts
    - Pressure during processing was too high.
    - Too much solvent was used.
    - Processing time was too long.
2. Hanging orientation is not correct.
3. Depowdering was not completed effectively.
4. The chamber was overfilled and caused solvent to drip onto the parts' surface (vapor dripping from the parts or racks)
5. Part temperature is below the recommended range.

How to fix it?

1. Ensure the processing chamber pressure, processing time and consumable volume are within the recommended range. If not, decrease these accordingly.
2. Adjust the hanging orientation.
3. Ensure the parts have been thoroughly de-powdered.
4. Parts hanging neatly to avoid dripping from parts or racks.
5. Store parts in a climate-controlled environment where temperature and humidity can be monitored.



11.5 BUBBLES

There are bubbles spread over the surface of the part.

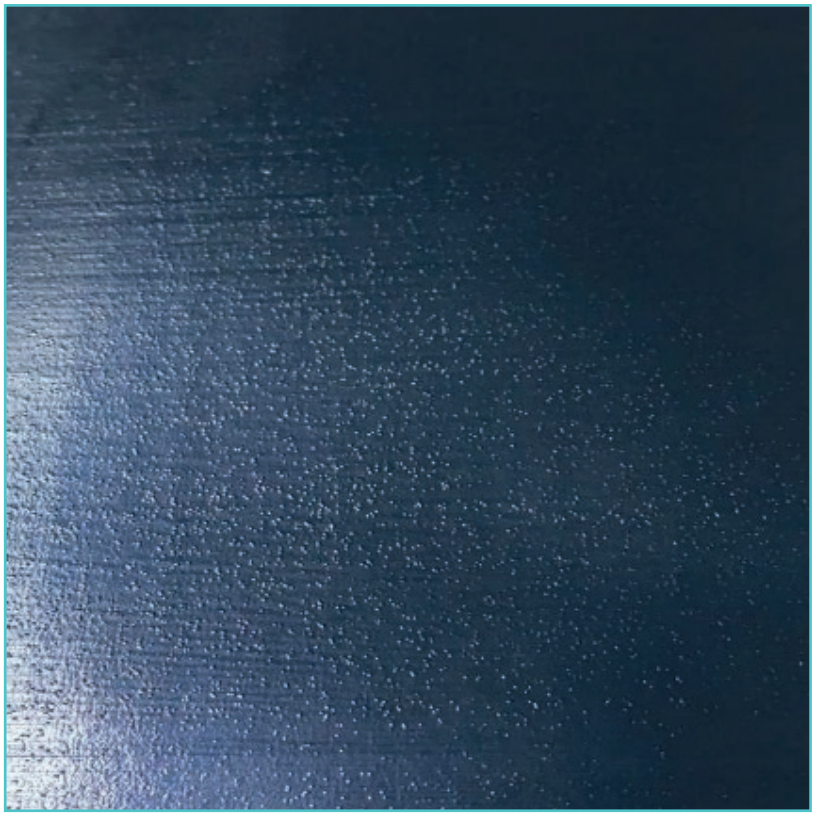
What can cause this issue?

During the curing cycle, the solvent is extracted slowly from the surface and the boundary layer of the part solidifies resulting in a smooth surface.

If the curing time is too short the part could be damaged as the solvent is extracted too fast. Especially in FDM parts.

How to fix it?

1. Increase curing time using the recipe book for guidance. (e.g. 600sec > 1200sec)
2. Reduce the amount of solvent.
3. Reduce drying temperature.



11.6 CONTAMINATION

Dust and/or dots of contamination are stuck to the surface of the part.

What can cause this issue? / How to fix it?

1. Bad Printing quality

    There have been a lot of impurities before processing (not visible to the naked eye).

    The quality of the printing powder is not good enough (It is contaminated or has been reused too many times).

2. Poorly Controlled Preparation

    The quality of the blasting medium - cleanliness, humidity - in your depowdering /blasting process.

    The handling after the printing

        Are they mixed with other parts?

        Are the parts left in dirty environments or transported in not clean boxes?

        Were the parts placed with similar materials/colours in the same run (same parameters)?

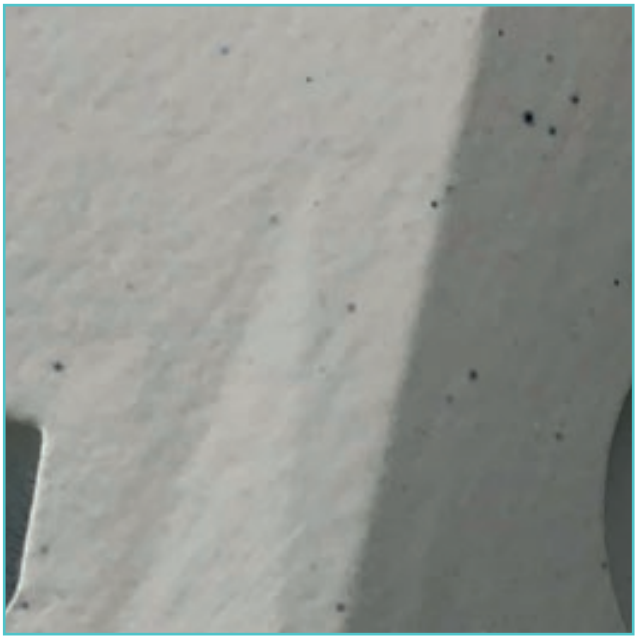
3. Dusty environment and insufficient cleaning process

    The environment is not the standards outlined in the AMT Site Preparation Document

    Contamination inside the SF.

        Is the chamber clean enough?

        If you smooth previously dyed parts, some contamination could be left in the chamber.



11.7 THIN PARTS

Parts will a wall thickness (<1mm) are not processing well.

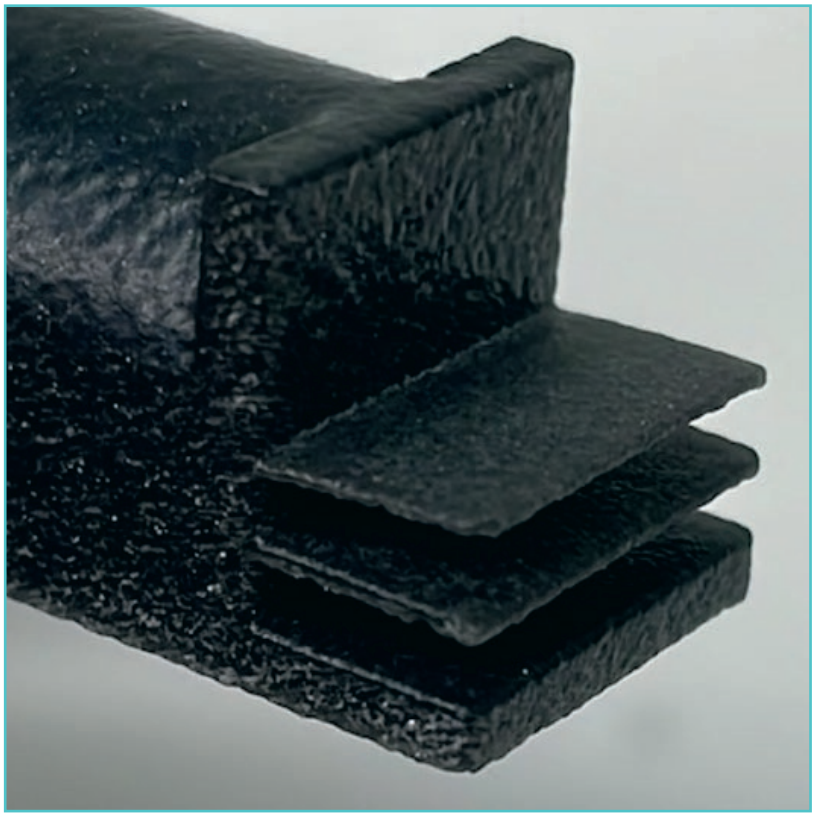
What can cause this issue?

Very thin parts tend to warm up quickly inside the processing chamber.

How to fix it?

Freeze or chill the parts. The condensation of the solvent can be improved by increasing the difference in temperatures between the parts and the chamber walls.

We recommend freezing thin parts (<1mm) for at least 30 minutes in a blast freezer to achieve this.



11.8 UN-PROCESSED INTERNAL SURFACES

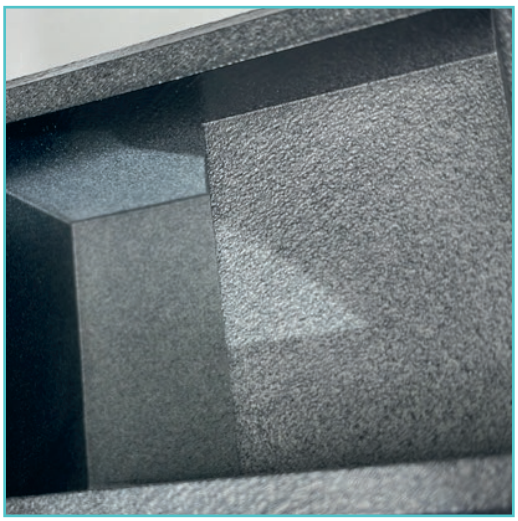
There is a variation in smoothing between internal/external surfaces

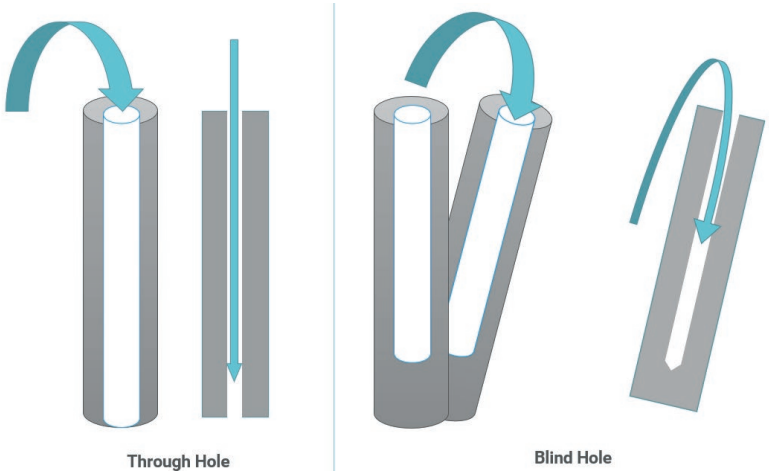
What can cause this issue?

The vapor cannot enter the internal surfaces easily.

How to fix it?

1. Make sure the opening is facing up
2. A slightly inclined angle improves the vapor flow through the hole.
3. The through-hole can be placed vertically, but it depends on the length, geometry, and material.
4. How deep the vapor can go through depends on the length, geometry, and material. In some cases, it may not be possible to smooth the entire internal surface.





12 // MAINTENANCE SCHEDULE

To ensure continued and ongoing safe and successful operation of the PostPro SF the following maintenance schedule is recommended.

Note: prior to performing any maintenance procedure the PostPro SF must be switched off and unplugged from the power supply. Auxiliary units must also be switched off and unplugged.

Note: Operations that involve the systems where the consumable is contained (i.e. replacing the carbon filter or canisters) must be carried out by personnel trained by AMT. The person in charge shall make sure that all the safety measures specified in the training are taken.

Before the operation of the PostPro SF ensure the operator is wearing the appropriate PPE and is following the procedures for safe operation as outlined at the start of this manual.

WEEKLY

- [ ] Clean the machine and ensure it is free of dust and contaminants.
- [ ] Clean the process chamber with IPA or a similar cleaning solution to prevent contamination of parts during processing.
- [ ] Using a clean cloth apply a silicone-based spray to the sealing surface of the machine, especially around the chamber(the recommended spray is “novation silicon spray H1”).

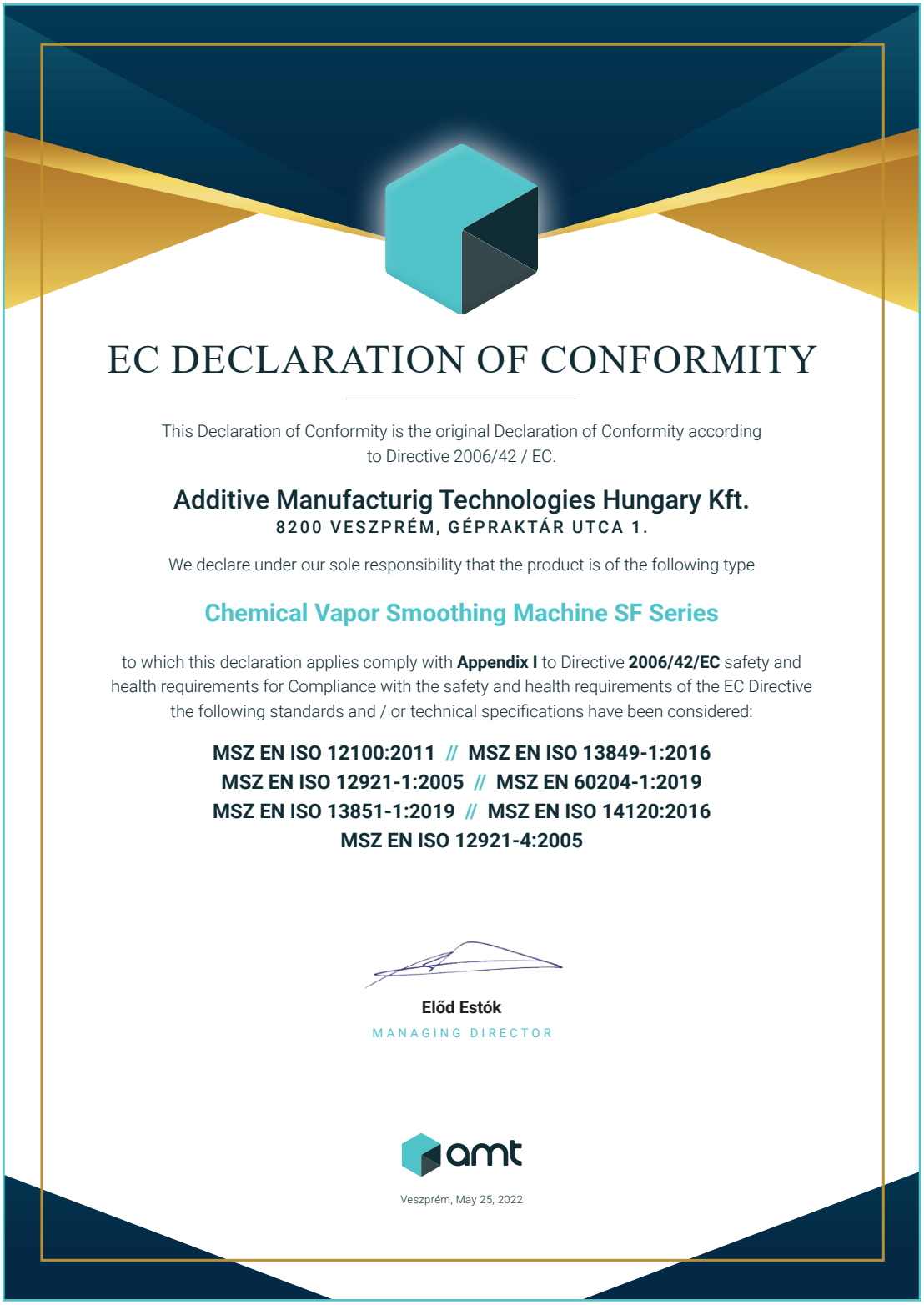
MONTHLY

- [ ] Check the quick connections from the canisters.
- [ ] Check consumable line tubes and fittings for possible leakages.
- [ ] Check the vacuum pump coupling and fan. Cooling fan and vent holes should be kept clean.
- [ ] While processing, check vacuum pump pressure and temperature readings.
- [ ] Check the door cable to see if there is any damage.

YEARLY

- [ ] Replace the quick fitting in the canisters.
- [ ] Replace the filters in the extractor.
- [ ] Replace the filters in the bubbling tank.
- [ ] Contact AMT to calibrate flowmeters.

13 // DECLARATION OF CONFIRMITY



EC DECLARATION OF CONFORMITY

This Declaration of Conformity is the original Declaration of Conformity according to Directive 2006/42 / EC.

Additive Manufacturig Technologies Hungary Kft.
8200 VESZPRÉM, GÉPRAKTÁR UTCA 1.

We declare under our sole responsibility that the product is of the following type

Chemical Vapor Smoothing Machine SF Series

to which this declaration applies comply with **Appendix I** to Directive **2006/42/EC** safety and health requirements for Compliance with the safety and health requirements of the EC Directive the following standards and / or technical specifications have been considered:

MSZ EN ISO 12100:2011 // MSZ EN ISO 13849-1:2016
MSZ EN ISO 12921-1:2005 // MSZ EN 60204-1:2019
MSZ EN ISO 13851-1:2019 // MSZ EN ISO 14120:2016
MSZ EN ISO 12921-4:2005

Előd Estók
MANAGING DIRECTOR

Veszprém, May 25, 2022

14 // CONTACT INFORMATION

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