

DP650 Troubleshooting

My credentials are not working when I try to connect on the tool

- Your credentials on the DP650 are not related to your CMi ones. The username is the same as your CMi username. Try your first name as password.
- Try again! The touch screen might be a bit buggy sometimes.
- If you have been trained recently, your credentials are maybe not yet created. The user account cannot be created when a process is running. Please ask responsible staff if you need it asap.

1. I've started my recipe but I've entered the wrong times or the wrong recipe.

Don't rush to the "production immediate stop" button!!!

If the robot is loading the shuttle in the chamber, **don't click on stop**.

Wait on the shuttle to be placed on the post, the robot to be back in the load lock and the gate to be closed. You can check on Pumping Synoptic window.

2. I've loaded my sample but I can not pump down the load lock

To be able to pump down the load lock, the following conditions need to be fulfilled:

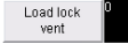
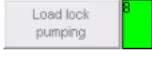
- You have to be logged in on the tool
- The load lock lid has to be properly close. Go to the pumping synoptic and check the load lock. When the lid is not properly closed, "**OPEN**" is showing on the load lock. Try to open and close again the load lock's lid. **OPEN** should disappear.
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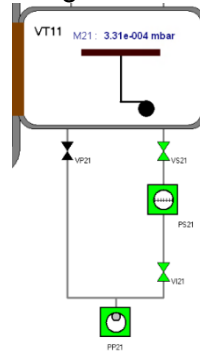
3. The process is ongoing but the shuttle stays in the load lock

- Sometimes, the pressure gauge of the load-lock is not working properly. The reading is then wrong and prevents the pumping sequence to switch to the turbo pumping required to reach the transfer pressure. The following message will appear:

Pompage / Pompage sas /	Défaut temps de pompage primaire
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To Troubleshoot:

1. Stop the recipe.
2. Vent the load-lock  . Do not open the lid.
3. Click again on Load Lock pumping  . Wait and check that the pressure has reach the transfer pressure. The pumping should go through the turbo pump (see image below) and the load lock pumping button should appear green.



4. If it is not working. Repeat once the points 2-3
 5. If it is still not working, call the staff.
- Another reason could be an outgazing sample (for instance porous materials, polymers, or even your custom metal shadow mask machined at the EPFL workshop that still has some lubricants on it!)

4. The process has stopped

If the process is stopped the following message will appear in the messages window:

· Interruption procédé sur défaut

This message will be followed by the error description. See below for typical errors.

4.1.  Puissance / Générateur RF RF2/ Défaut de puissance réfléchie trop importante

If you are using a process with some RF bias on your substrate, either during the deposition, for an Ar etch or an O2 activation. The match box minimizing the reflected power of the plasma might struggle to find the correct load and tune parameters. The reflected power will therefore be too high and trigger an alarm, stopping the process.


If you are inside the staff support hours, call the process engineers. They will change the load and tune initial values and acknowledge the error on the generator.

If you are outside the staff support hours. Stop the recipe, unload the chamber from the production tab and unload your sample. The staff needs to be on site to acknowledge some errors.

This message appears when a flow meter of the cooling water circuit measures a low flow. The reason can be either a real low flow or false reading due to a trapped air bubble, a faulty valve or some dirt. To troubleshoot:

1. Check at which step the process stopped and write down the remaining time of this step. If you are not sure, here below few points to look at:
 - a. Look at the purple window, it shows at which step you are.
 - b. Look at the synoptic, is the shutter open? If it is open, the process stopped during a deposition! Check under which target is the cold post and write down the step's remaining time if not yet done.
 - c. If you are still not sure at which step it has stopped, call the staff.

2. Continue your process.

- a. Click on production immediate stop
- b. In the production tab, click on chamber unloading. Your sample will go back to the loadlock.
- c. Check the status of the cooling circuit, Click on 
- d. Everything should look green, see image on the right. If one flow meter is grey, call the staff.
- e. If everything green, re-run either your recipe or the one to finish your remaining layer. Don't forget to eventually correct the deposition time, if the process has stopped during a layer deposition.



5. The process is ongoing, the shuttle is inside the chamber but it is waiting base pressure.

The shuttle is waiting on the pressure inside the chamber to reach the “base pressure” which is the pressure at which the process will continue. Having a good vacuum in the chamber helps for the film quality. When the targets are changed, the chamber is fully open. The moisture or any volatile species inside the room will be able to adsorb on the internal surfaces of the chamber. Once the chamber is placed back under pumping, it takes time to get ride of these adsorbed species. This is the reason why the tool cannot be used for few hours after the targets change.

Therefore, this long delay can happen when:

- 1) You are using the tool after one of the targets change (Monday, Wednesday or Friday right after 12h30. Only thing you can do is to

wait and be patient.

- 2) You have loaded a sample that outgas some volatiles species (porous sample, polymers, etc). Make sure that your sample has been authorized in your process flow and discuss about it with the process engineers. Only thing you can do is to be patient.
- 3) When the Cryogenic pump needs a regeneration. The cryogenic pumps gather humidity over time which ultimately lower its efficiency. To get rid of it, the pump needs to be slowly warm up back to room temperature under a N2 flush and then cool down back to its operating temperature. This process can take few hours.

In any of these cases, it is always good to inform CMi staff!

6. The process is finished but the shuttle stays inside the chamber. The production tab shows “waiting chamber availability”.

Program	Order	State	RAZ TOUS
1 RTU_NbTN_5050	1	Waiting chamber availability	Reset

Load lock pumping ■
 Load lock vent ■
 Chamber unloading ■

Production

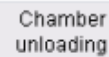
This error might appear when you are using reactive sputtering recipes or multi-layers recipes. A recipe is made of multiple segments (Gas flow, plasma ignition, power ramp up, deposition etc). Reactive sputtering and multi-layers recipe contain a lot of these segments. Although not clearly identified, we suspect that the reason of this bug is the large number of segments. The following error message usually appears on the screen:

	Procédé / Moteur exécution 1 /	Substrat - Procédé : - Défaut étape n° impossible
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However, this error usually arrives at the end of the process when the shuttle has to be unloaded and has no incidence on the deposition itself.

To unload your sample:

1. Check that you are still logged in on the tool.

A rectangular button with a light gray background and a thin black border. The text "Chamber unloading" is centered on the button in a dark gray, sans-serif font.

2. In the production tab, click on chamber unloading button. The shuttle will come back to the load lock.
3. Click on the reset button at the right of the recipe bar. If it is not working, click on RAZ TOUS just above the reset button.

7. The touch screen is off and is not responding

- The touch screen is activated once you are logged in on the CAE computer. Did you log yourself in?
- If you are actually logged in on the CAE but the touch screen is still not responding, call the staff.

8. The touch screen is on and is not responding

- Probably some communications problems. Call the staff.