

Hamatech Mask Mask processor User Manual

Version of 8.22.2016. Get the latest one at <http://cmi.epfl.ch/photo/files/HAMATEC/HAMATECH.std.manual.pdf>

1. Introduction

This user manual explains how to operate the Hamatech HMR 900 mask-processor. **Default Recipe are for Cr-blank develop– Cr Etch– Resist stripping**

2. Login & System Initialization

- Login on “Hamatech mask Processor ...” with CAE on zone 6 accounting computer.
- Start with power on to activate display. A short initialize sequence runs automatically. Lines and chamber rinse with water.



3. Preparation: Chuck Loading

- Default chuck for 5inch and 6 inch Cr-plate is installed.by default (double stage clamps). A special chuck for processing 7inch Cr-plate is also available on demand (single stage clamps) read [special safety recommendation](#) for more.

4. Preparation: Load a Cr-plate

- Put the mask to process correctly inside the 4 corners at the stage adapted to the Cr-plate size. No vacuum is used to fix the plate during processing. Safe position need to be check at least for 2 corners in the following picture.



Check the position of the plate corners (black arrow)

- Rotate plate both direction briefly but firmly to check that plate movement results to consistent chuck rotation

5. Choose a recipe

5.1 Specific preventive maintenance recipe (for LithoStaff). For standard mask fabrication skip to regular recipe table below.

“Purging lines” (i.e. after weekend) **with active chemistry** is performed using **Recipe N° 8**. A **dummy plate must be inserted** on the chuck. Users are recommended to use this recipe if nobody was logon for more than 6 hours (see logon info on the CAE running on zone 6 accounting computer)

“Rinse/Dry” **program N° 5** can be used after a manual “stop” or use of **EMergency Off.(EMO)**

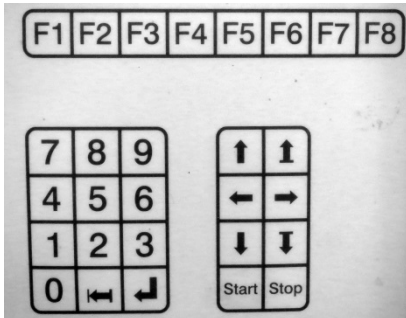
After a manual stop take care of corrosive chemicals inside the chamber. Refer to section “7.5 Process was stopped by user or by unexpected alarm” at the end of this document to know how to proceed.

5.2 Regular recipes

By default equipment is in automatic mode. Display at idle looks like.



Example idle mode. Program No 5 selected 1



Use simple arrows up/down to navigate in available programs


List of currently available programs available for mask fabrication are as follow:

Prg:	Name	Purpose/
1	DEV/ETCH/STRIP (Prog 6 + 7 + 4 in one)	Full mask fabrication process (5 to 7 inch Cr-plate). Include standard development, Cr etching, resist stripping and final rinse dry
2	DEV/ETCH (Prog 6 + 7 in one)	Development followed by Cr-etch. Intermediate rinse and dry for safe inspection. Skip to Prog. No 4 to continue fabrication.
3	ETCH/STRIP (Prog 7 + 4 in one)	For use after recipe 1 and inspection. Final rinse included.
4	STRIP KOH 50s	
5	RINSE/DRY 50s	As final rinse and drying sequence after a manual stop.
6	DEVELOP 110SEC	
7	ETCH 80SEC	
8	Lines Purge	For use after long standby period (> 6 hours) ! Use dummy !

To start the recipe

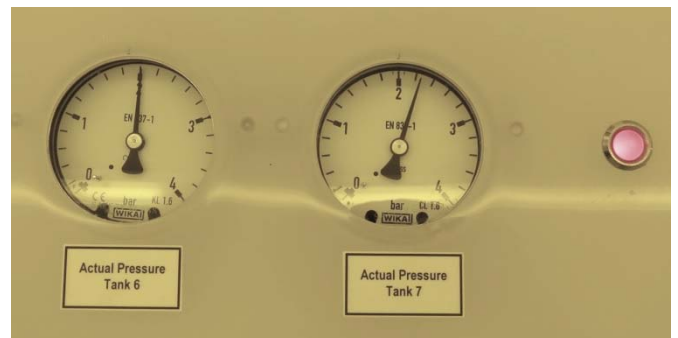
- Press start. In case warnings for temperature occurs.




- Press F8 to stop the beep.,next ()
- Warning for N2 missing beep.



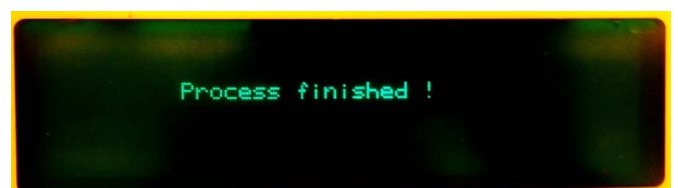
- Press F8 to stop the beep. Front safety door will close.
- Wait for rise up of canisters pressure to be stable (Tank 6 > 2 bars)



- Press Quit. (). Recipe starts and run till end of last step. Current step with parameters are displayed on line.



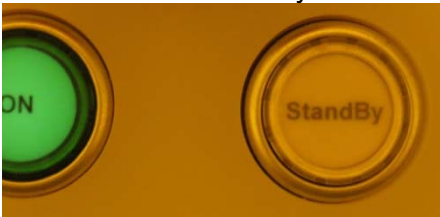
Safety door open at end of process. Message will disappear after a few seconds.



6. Unload and Close

Chamber is rinsed by not dry. Remove plate from the chuck without touching the walls or the chuck. Some DI-water moisture still remains at the very center of the plate backside. We recommend to let the mask dry in air for 30 minute before use. (A specific storage/drying area is available in the Plade wetbench divers in zone 6)

Put the tool in Standby. **Press Standby**



Don't forget to sign out immediately after Unloading.

7. FAQ

7.1 Initialization at power on:

A dummy plate was inserted and not accessible. Dummy is wet and need to be removed:

- **Power on and next Run program No 5 "RINSE/DRY" and removed it**

7.2 ON button did not light:

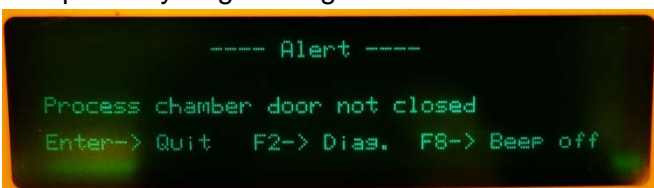
Release EMO

(Emergency Off button) or call for the staff



7.3 Initialization stops with "door not closed" error

You probably forgot to sign in to access the tool.



Login on "Hamatech mask Processor ..." with CAE on zone 6 accounting computer. and press "Quit"

7.4 Tank refill error:

Call staff for refill. No handling of chemicals by users allowed

7.5 Process was stopped by user or by unexpected alarm:

Take care of presence of active chemicals on the plate inside the chamber and of the walls of the chamber. A manual rinse is mandatory to avoid contamination with corrosive liquid dispensed during the process. A water gun feed with deionized water is always available on the left side of the chamber. Wash chamber walls and plate for about 60 sec and next try to run program No 5 to finish with a standard rinse and drying sequence



Proceed with manual rinse before unloading a plate with remaining corrosive liquid.



Use DI-water gun/washer to rinse inside chamber (including the plate inserted on the chuck)

Press "water gun" button simultaneously with the gun trigger