VACUUM CHAMBER PM TECHNIQUE
LAM 9600 PTX METAL ETCH CHAMBER CLEAN

OBJECTIVE:
TO EFFECTIVELY PM THE METAL ETCH CHAMBER IN A TIMELY MANNER, WHILE IMPROVING TOOL RECOVERY AND PARTICLE PERFORMANCE

Vacuum Chamber:
LAM METAL ETCHER (**THIS TECHNIQUE IS A SIMILAR METHOD USED FOR OTHER ETCH TOOLS)

Vacuum Chamber Process Residue:
PROCESS INDUCED RESIDUE

Vacuum Chamber Components:
METAL ETCH CHAMBER AND CHAMBER LID

Old Procedure:
ScotchBrite®, 40 grit sand paper, wire mesh, scrapers, IPA and Texwipes
Some facilities are not able to clean Metal Etch Chamber due to the fact that the current method is not very effective

Solvent:
DI water, IPA (only)

Time:
After initial clean is completed down to bare metal (see pictures below), future cleans take less than 20 minutes

Vacuum Chamber Products:
• (1) HT4754 UltraSOLV® Sponge
• (1) HT4528D-10 280 Grit Diamond ScrubPAD**
• (1) HT4580D-10 800 Grit Diamond ScrubPAD
• (5) HT179028D 280 ScrubTIP®** (for the removal of hardened deposition from corners and tracks)
• (5) HT1000 CleanWIPE® Swab
• (1) HT5790S-25 MiraWIPE® Wipers

**Various diamond grit abrasives can be selected for this process depending on the amount of deposition build-up within the Metal Etch Chamber – Range from 140 to 800 diamond grit available.
Most PM’s can be performed with 280 or 360 grit pads but the use of more aggressive pads may be required for certain processes or on the first PM that takes the tool down to bare metal.
METAL ETCH CHAMBER CLEAN:

View “How to” instructional videos on http://www.foamtecintlwcc.com/flash/

Step 1: Remove all necessary parts from within Metal Etch Chamber

Step 2: Thoroughly wipe-down inside of the chamber using a DI water dampened UltraSOLV® HT4754 Sponge. This will be necessary to remove any flaking or large deposits that would unnecessarily load up the ScrubPADs

Step 3: Using a DI water dampened HT4528D-10 ScrubPAD, scrub a 5”x5” area within the Metal Etch Chamber

Step 4: Wipe-down the affected chamber area using the DI water dampened UltraSOLV® HT4754 Sponge

Step 5: Unload the ScrubPAD of deposition by wiping the UltraSOLV® HT4754 Sponge with the ScrubPAD in one direction (See Fig 1, 2 & 3)

Step 6: Unload the UltraSOLV® HT4754 Sponge by moistening with DI water and ringing out into a HazMat container (See Fig 4 & 5)
METAL ETCH CHAMBER PM PROCEDURE (CONT'D):

Step 7: Repeat steps 3 - 5, using the HT4528D ScrubPAD and the HT179028D ScrubTIP® where necessary, until all deposition is removed.

Step 8: After effectively cleaning the Metal Etch Chamber use the HT4580D ScrubPAD and the HT4754 UltraSOLV® Sponge in the same manner as the ScrubPADS used before to lightly scrub the fine scratches that may be left behind from using the 280 Grit Diamond ScrubPAD. This is a very important step to be performed on all of the vacuum sealed surfaces to ensure an effective pump-down is achieved.

FINAL WIPE PROCEDURE:

IMPORTANT NOTE

THE USE OF HT5790S MIRAWIPES® DURING FINAL WIPE PORTION OF PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVING PARTICLE DEFECTS

NOTE: Figure below shows how much more deposition the Foamtec International MiraWIPE® can remove from a critical surface compared to the standard fab wiper, making the MiraWIPE® FINAL WIPE PROCEDURE the most CRITICAL STEP of the PM procedure (See Fig 6a & 6b)

Step 9: Repeatedly wipe the inside of the Metal Etch Chamber using an IPA dampened HT5790S MiraWIPE®. Dampen the HT1000 CleanWIPE® Swab and effectively remove any deposition left in the hard to reach areas. Ensure to wipe entire chamber effectively until all areas are cleaned of deposition.

Fig 6a: What the MiraWIPE® was able to remove, AFTER the standard fab wiper

Fig 6b: The last standard fab wiper used to wipe the

MiraWIPE® are the KEY STEP for DEFECT REDUCTION and IMPROVED TOOL RECOVERY
**Metal Etch Chamber – Pre-Clean**

![Pre-Clean Image 1](image1)

![Pre-Clean Image 2](image2)

**Metal Etch Chamber – Post-Clean**

![Post-Clean Image 1](image3)

![Post-Clean Image 2](image4)

![Post-Clean Image 3](image5)