



## 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<sup>®</sup>, 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<sup>®</sup> Sponge
- (1) [HT4528D](#)-10 280 Grit Diamond ScrubPAD<sup>\*\*</sup>
- (1) [HT4580D](#)-10 800 Grit Diamond ScrubPAD
- (5) [HT179028D](#) 280 ScrubTIP<sup>®\*\*</sup> (for the removal of hardened deposition from corners and tracks)
- (5) [HT1000](#) CleanWIPE<sup>®</sup> Swab
- (1) [HT5790S](#)-25 MiraWIPE<sup>®</sup> Wipers

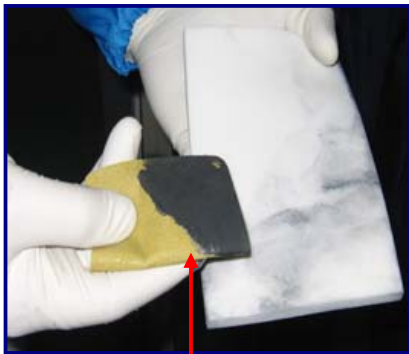
\*\*Various diamond grit abrasives can be selected for this process depending on the amount of deposition build-up within the Metal Etch Chamber – Range from 140 to 800 diamond grit available.

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.

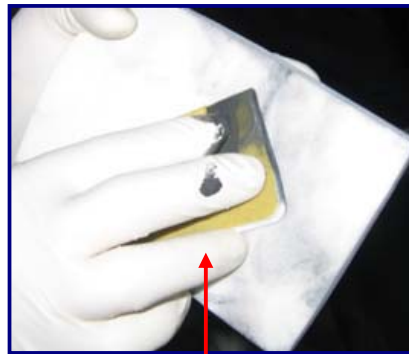
**METAL ETCH CHAMBER CLEAN:**

View "How to" instructional videos on <http://www.foamtecintlwcc.com/flash/>

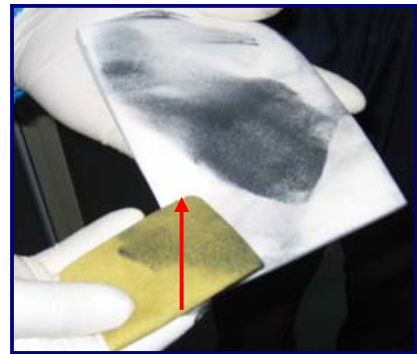
- Step 1:** Remove all necessary parts from within Metal Etch Chamber
- Step 2:** Thoroughly wipe-down inside of the chamber using a DI water dampened UltraSOLV® [HT4754](#) Sponge. This will be necessary to remove any flaking or large deposits that would unnecessarily load up the ScrubPADs
- Step 3:** 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)



**Fig 1:** ScrubPAD loaded with deposition water



**Fig 2:** Pull ScrubPAD across a damp UltraSOLV® Sponge

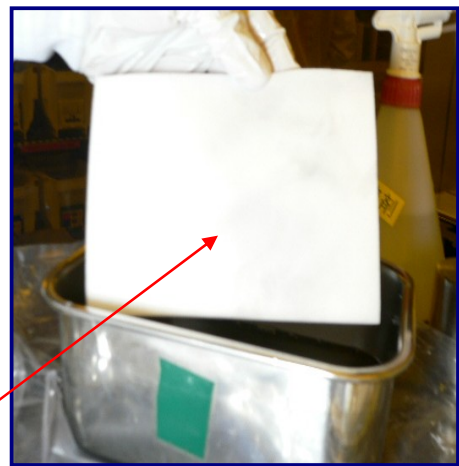


**Fig 3:** Unloaded ScrubPAD

- Step 6:** Unload the UltraSOLV® [HT4754](#) Sponge by moistening with DI water and ringing out into a HazMat container (See Fig 4 & 5)



**Fig 4:** UltraSOLV® Sponge loaded with deposition



**Fig 5:** UltraSOLV® Sponge free of deposition after rinse in DI water

**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:**

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**IMPORTANT NOTE**

**THE USE OF [HT5790S](#) MIRAWIPES® DURING FINAL WIPE PORTION OF PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVING PARTICLE DEFECTS**

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**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)



**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

**MiraWIPES® are the KEY STEP for DEFECT REDUCTION and IMPROVED TOOL RECOVERY**

- 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

**Metal Etch Chamber – Pre-Clean**



**Metal Etch Chamber – Post-Clean**

