

**BEFORE**



**AFTER**

## VACUUM CHAMBER PM TECHNIQUE LAM 9600 METAL ETCH SUPER CLEAN-2

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### OBJECTIVE:

TO EFFECTIVELY PM THE LAM 9600 METAL ETCH IN A TIMELY MANNER, WHILE MINIMIZING PARTICLE ISSUES, REDUCING HAZARDOUS WASTE AND IMPROVING TOOL PERFORMANCE

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#### Vacuum Chamber:

LAM 9600 METAL ETCH

#### Vacuum Chamber Process Residue:

PROCESS INDUCED RESIDUE

#### Vacuum Chamber Components:

CHAMBER, PUMP PORT, TURBO TUNNEL, SLIT VALVE

#### Old Procedure:

ScotchBrite®, DI water, wipers and IPA

#### New Procedure:

Foamtec products, DI water, MiraWIPES® and IPA

#### Vacuum Chamber Products:

- (1) [HT4754](#) UltraSOLV® Sponge
- (2) [HT4528D](#)-10-1 280 Grit Diamond ScrubPAD
- (1) [HT5790S](#)-25 MiraWIPES®

**NOTE:** INITIAL CLEAN MAY REQUIRE THE USE OF ADDITIONAL PRODUCTS TO EFFECTIVELY CLEAN CHAMBER BACK TO BARE METAL.

**RECOMMEND:** PERFORM A ROUND OF 2-3 PM'S ON SAME TOOL TO ESTABLISH SUFFICIENT DATA FOR EVALUATION

**LAM 9600 METAL ETCH SUPER CLEAN PM PROCEDURE:**

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

**Step 1:** Using proper procedures and **safety guidelines**, properly shutdown and vent entire Metal ETCH chamber

**Step 2:** Reduce ETCH chamber heater settings to 35°C to 40°C

**Step 3:** Place [HT4754](#) UltraSOLV® Sponge, UltraSOLV® 280 Grit Diamond ScrubPAD in container with approximately 1 liter of DI water (See Fig 1)

**Fig 1:** 280 Grit Diamond ScrubPAD, sponge & 1 liter DI water **Note Time: 9:35**



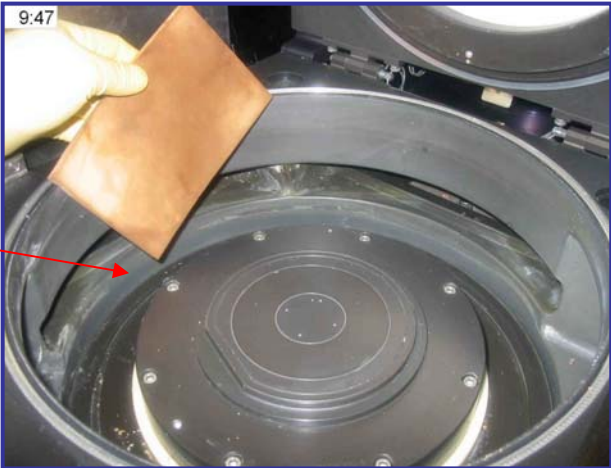
**LAM 9600 METAL ETCH SUPER CLEAN PM PROCEDURE (CONT'D):**

**Step 4:** Using the dampened UltraSOLV<sup>®</sup> Sponge, proceed to wipe down all areas throughout Metal ETCH chamber, slit valve and turbo tunnels as this will remove any flakes and gross deposition buildup (See Fig 2 & 3)

**NOTE:** CONTINUE TO RE-SOAK AND DAMPEN THE ULTRASOLV<sup>®</sup> SPONGE AS NECESSARY



**Fig 2:** Dampened UltraSOLV<sup>®</sup> Sponge initial wipe of chamber



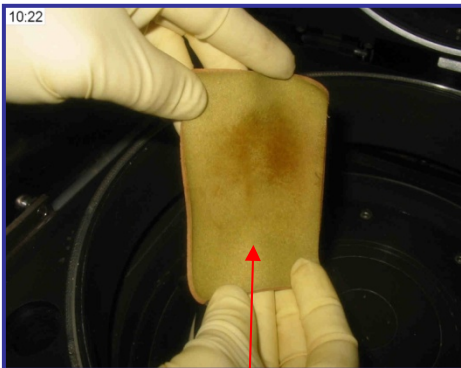
**Fig 3:** ETCH Chamber following initial wipe with UltraSOLV<sup>®</sup> Sponge

**Step 5:** With UltraSOLV<sup>®</sup> Sponge, dampen and moisten a 6" to 8" scrubbing area within the chamber

**Step 6:** With dampened UltraSOLV<sup>®</sup> 280 Grit Diamond ScrubPAD, proceed to scrub off deposition from moistened area

**LAM 9600 METAL ETCH SUPER CLEAN PM PROCEDURE (CONT'D):**

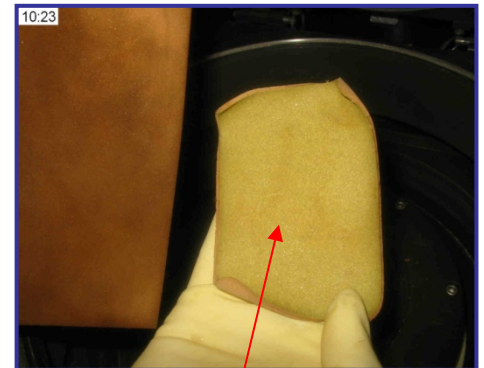
**Step 7:** To help unload ScrubPAD and UltraSOLV<sup>®</sup> Sponge of deposition, continually return them back into container of DI water as necessary. It will also be effective to un-load the ScrubPAD of deposition by pulling across the UltraSOLV<sup>®</sup> Sponge in one direction (See Fig 4, 5 & 6)



**Fig 4:** Loaded Diamond ScrubPAD



**Fig 5:** Unloading technique onto UltraSOLV<sup>®</sup> Sponge



**Fig 6:** Clean, unloaded Diamond ScrubPAD

**Step 8:** Continue to repeat process throughout entire chamber until all deposition is removed. It is important to keep the ScrubPAD and chamber moist with DI water during clean

**Step 9:** As water becomes filled with deposition, recommend disposing dirty DI water in appropriate hazardous waste collection tank and replacing with fresh DI water

**Step 10:** After all areas within entire chamber have been effectively cleaned, take freshly rinsed out UltraSOLV<sup>®</sup> Sponge and thoroughly wipe out and prep the chamber for FINAL IPA WIPE PROCEDURE (See Fig 7)



**Fig 7:** Chamber Scrub Complete

Diamond ScrubPAD & UltraSOLV<sup>®</sup> Sponge ONLY products used for scrub portion of PM. **Note time: 10:06**  
**Less than 1 hour to complete scrub**

**LAM 9600 METAL ETCH SUPER CLEAN PM PROCEDURE (CONT'D):**

**ETCH CHAMBER PREPARED FOR FINAL MIRAWIPE & IPA WIPE DOWN**

**FINAL IPA WIPE PROCEDURE:**

**IMPORTANT NOTE**

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**THE USE OF HT5790S MiraWIPES<sup>®</sup> DURING THE FINAL WIPE PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVE PARTICLE DEFECTS FROM THE LAM 9600. CONTINUE TO WIPE-DOWN ALL OF THE AFFECTED PM AREAS WITHIN THE ETCH CHAMBER REPEATEDLY UNTIL ALL MIRAWIPES<sup>®</sup> NO LONGER REMOVE ANY MORE DEPOSITION**

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**NOTE:** Figure below shows how much more deposition the Foamtec International MiraWIPE<sup>®</sup> can remove from a critical surface compared to the standard fab wiper, making the MiraWIPE<sup>®</sup> FINAL WIPE PROCEDURE the most **CRITICAL STEP** of the PM procedure (See Fig 8a & 8b)



**MiraWIPES<sup>®</sup> are the KEY STEP for DEFECT REDUCTION and IMPROVED TOOL RECOVERY**

**Step 11:** Using 100% IPA, dampen the HT5790S MiraWIPES<sup>®</sup> and perform a **THOROUGH AND EFFECTIVE FINAL WIPE-DOWN** of the ETCH Chamber, chamber door, slit valve, turbo tunnel, o-ring grooves and all sealing surfaces

**LAM 9600 METAL ETCH SUPER CLEAN PM PROCEDURE (CONT'D):**

**Step 12:** Ensure to wipe down all spare parts placed back into the LAM 9600 Metal ETCH chamber using additional IPA dampened [HT5790S](#) MiraWIPES<sup>®</sup>