

BEFORE



AFTER

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

OBJECTIVE:

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

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® 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® SPONGE AS NECESSARY



Fig 2: Dampened UltraSOLV® Sponge initial wipe of chamber

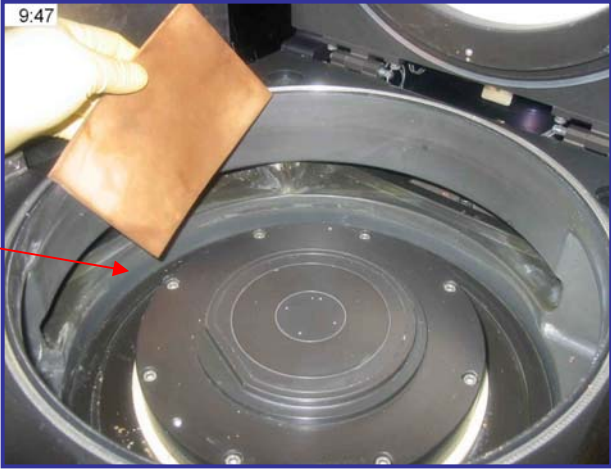


Fig 3: ETCH Chamber following initial wipe with UltraSOLV® Sponge

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

Step 6: With dampened UltraSOLV® 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[®] 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[®] Sponge in one direction (See Fig 4, 5 & 6)

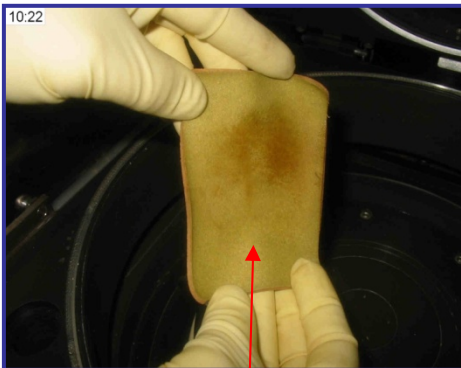


Fig 4: Loaded Diamond ScrubPAD



Fig 5: Unloading technique onto UltraSOLV[®] Sponge

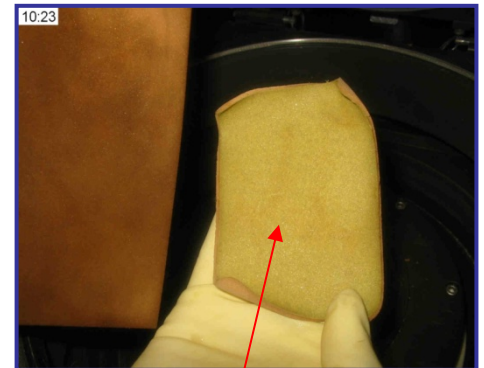


Fig 6: Clean, unloaded Diamond ScrubPAD

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[®] 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[®] 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

THE USE OF HT5790S MiraWIPES[®] 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[®] NO LONGER REMOVE ANY MORE DEPOSITION

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 8a & 8b)



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

Step 11: Using 100% IPA, dampen the HT5790S MiraWIPES[®] 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®