

BEFORE

AFTER

VACUUM CHAMBER PM TECHNIQUE AMAT 5500 TxZ CHAMBER SUPER CLEAN

OBJECTIVE:

TO PM THE AMAT 5500 TxZ CHAMBER IN AN EFFECTIVE AND TIMELY MANNER, WHILE IMPROVING PARTICLE PERFORMANCE, TOOL RECOVERY AND MAXIMIZE TOOL UPTIME

Vacuum Chamber:

Vacuum Chamber Process Residue:

Vacuum Chamber Components:

AMAT

TDMAT PROCESS DEPOSITION

CHAMBER, CHAMBER WALLS, VIEW PORT,
PUMP PORT

Old Procedure:

SiC pads, IPA and wipers (at times H₂O₂) (This current method uses an abundance of SiC pads and Alpha 10 wipes)

Solvent:

IPA

DANGER: USE OF H₂O₂ CAUSES A VARIETY OF ENVIRONMENTAL, HEALTH, AND SAFETY CONCERNS. CAN CAUSE PROLONGED PUMP DOWN TIMES AND HIGH VOLTAGE ARCING. BREATHING APPARATUS AND FULL ACID PPE IS RECOMMENDED WHILE SCRUBBING WITH H₂O₂. SCRUBBING PHOSPHORUS WHILE USING H₂O₂ INCREASES THE RISK OF FIRES AND/OR THE RELEASE OF HAZARDOUS CHEMICAL FUMES, POTENTIALLY RESULTING IN PERSONAL INJURY AND PROPERTY DAMAGE

Vacuum Chamber Products:

- (1) [HT4754](#) UltraSOLV[®] Sponge
- (1) [HT4536D](#)-10-1 360 Grit Diamond ScrubPAD
- (2) [HT4580D](#)-10-1 800 Grit Diamond ScrubPAD
- (1) [HT179080](#) 800 Grit Diamond ScrubTIP[®]
- (1) [HT5790S](#)-25 MiraWIPES[®]
- (1) [HT1790](#) UltraSOLV[®] Swabs

AMAT 5500 TxZ CHAMBER SUPER CLEAN PM PROCEDURE:

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

NOTE: INITIAL CLEAN MAY REQUIRE THE USE OF ADDITIONAL PRODUCTS TO EFFECTIVLY CLEAN CHAMBER BACK TO BARE METAL. IT IS RECOMMENDED TO PERFORM A ROUND OF 2-3 PM'S ON SAME TOOL TO ESTABLISH SUFFICIENT DATA FOR EVALUATION

Step 1: Using all **safety procedures and guidelines**, remove the parts that are required to be removed from within the TxZ Chamber to complete the Super Clean PM

Step 2: Properly stage Foamtec TxZ Super Clean Kit with HazMat bag readily available (See Fig 1)

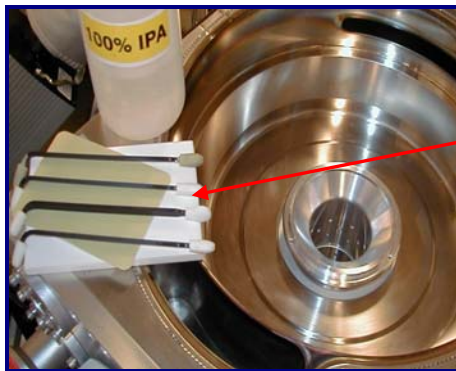


Fig 1: Products used for TxZ Super Clean

Step 3: Lightly dampen the [HT4580D-10-1](#) 800 Grit Diamond ScrubPAD with IPA and scrub an approximate 9"x 9" area within the TxZ Chamber (See Fig 2 & 3)



Fig 2: Lightly dampen 800 Grit ScrubPAD w/IPA

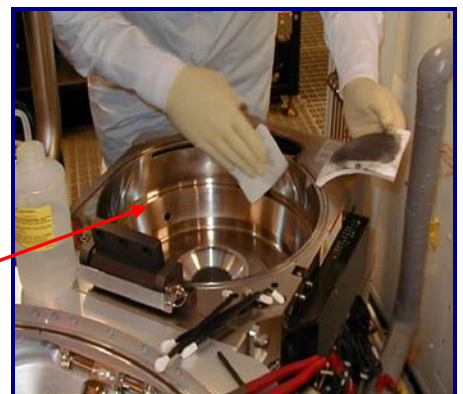


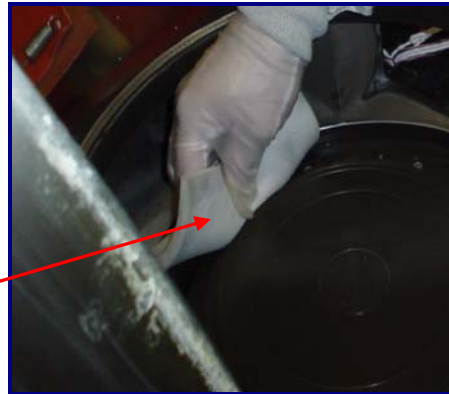
Fig 3: Scrub an approximately 9" X 9" area

AMAT 5500 TxZ CHAMBER SUPER CLEAN PM PROCEDURE (CONT'D):

Step 4: Lightly moisten the [HT4754](#) UltraSOLV® Sponge with IPA and proceed to wipe the chamber area where the deposition had been removed by 800 Grit Diamond ScrubPAD (See Fig 4)

IMPORTANT
THIS STEP COMPLETELY
ELIMINATES THE USE OF WIPERS
NEEDED DURING THE SCRUB
PORTION OF SUPER CLEAN

Fig 4: Wipe deposition with UltraSOLV® Sponge



Step 5: Continue to scrub remaining areas of TxZ Chamber using same technique described in steps 2 & 3

Step 6: For the heavier built up areas, such as pump ports and edges of chamber seal may need to use the [HT4536D](#)-10-1 360 Grit Diamond ScrubPAD to effectively remove deposition (See Fig 5 & 6)



Fig 5: Heavy deposition build-up within pump port

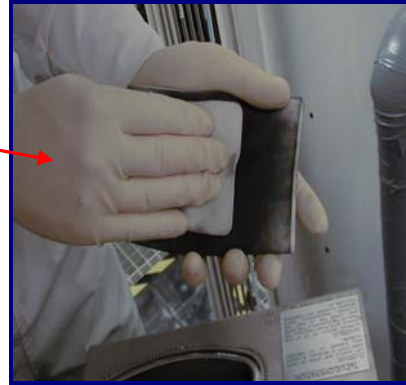
Fig 6: Heavy deposition easily removed with 360 Grit Diamond ScrubPAD



AMAT 5500 TxZ CHAMBER SUPER CLEAN PM PROCEDURE (CONT'D):

Step 7: As necessary, unload Diamond ScrubPADS of deposition by wiping the ScrubPADS with [HT4754](#) UltraSOLV[®] Sponge in one direction (See Fig 7)

Fig 7: Unload Diamond ScrubPAD onto UltraSOLV[®] Sponge



Step 8: Unload the [HT4754](#) UltraSOLV[®] Sponge by lightly moistening with IPA and ringing out into a properly labeled HazMat container (See Fig 8 & 9)



Fig 8: UltraSOLV[®] Sponge loaded with deposition

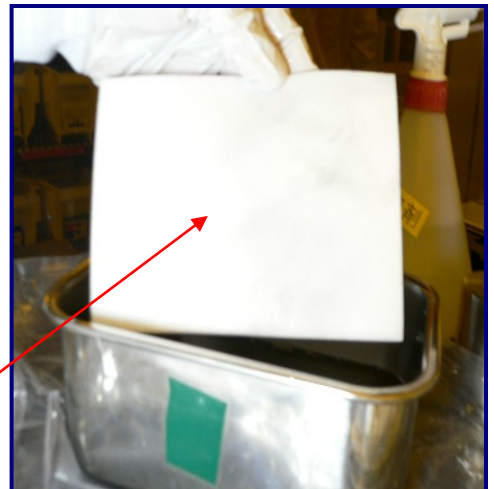


Fig 9: UltraSOLV[®] Sponge free of deposition after rinse in DI water

Step 9: In order to remove deposition from remaining hard to reach areas (such as view port & slit valve), use the [HT179080D](#) 800 Grit Diamond ScrubTIP[®] to effectively reach these areas (See Fig 10) Unload ScrubTIP[®] as necessary using same method as described above



Fig 10: 800 Grit Diamond ScrubTIP[®] used to effectively clean view port

AMAT 5500 TxZ CHAMBER SUPER CLEAN PM PROCEDURE (CONT'D):

FINAL WIPE PROCEDURE:

IMPORTANT NOTE

THIS IMPORTANT STEP MUST BE EFFECTIVELY FOLLOWED IN ORDER TO ACHIEVE THE MAXIMUM EFFICIENCY OF TOOL RECOVERY AND PERFORMANCE. CONTINUE TO WIPE ALL OF THE EFFECTED PM AREAS WITHIN THE TXZ CHAMBER REPEATEDLY UNTIL ALL MIRAWIPES[®] AND ULTRASOLV[®] SWABS 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 the most **CRITICAL STEP** of the PM procedure (See Fig 11a & 11b)



Fig 11a: Current fab wiper after completely wiping the AMAT TxZ

Fig 11b: Particles picked up using [HT5790S](#) MiraWIPES[®] after completely wiping with current fab wiper

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

Step 10: Using 100% IPA, dampen the [HT5790S](#) MiraWIPES[®] along with the [HT1790](#) UltraSOLV[®] Swabs and perform a **THOROUGH AND EFFECTIVE FINAL WIPE-DOWN** of the TxZ Chamber, chamber lid, o’ring grooves and all sealing surfaces.

Step 11: Ensure to wipe down all spare parts placed back into the TxZ Chamber using additional IPA dampened [HT5790S](#) MiraWIPES[®]