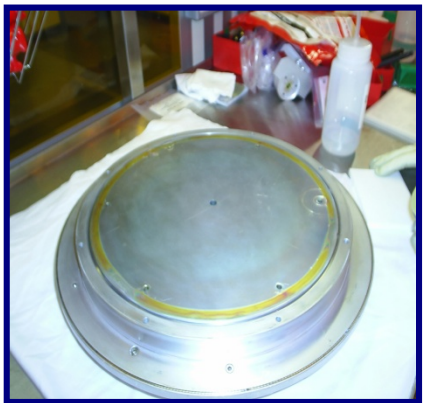
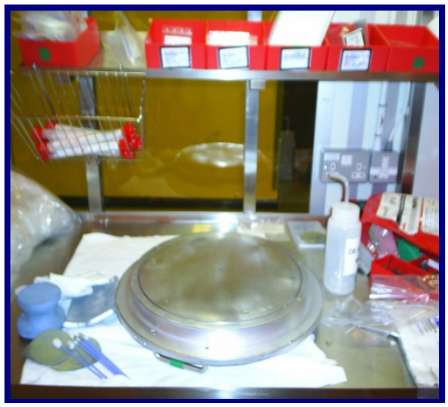


BEFORE

Foamtec International
Wilshire Contamination Control Division
cleaning critical surfaces



AFTER

VACUUM CHAMBER PM TECHNIQUE
AMAT ENDURA®* CVD / PVD LID CLEAN

OBJECTIVE:

TO EFFECTIVELY PM THE AMAT ENDURA® CVD / PVD LID IN A TIMELY MANNER, WHILE IMPROVING TOOL RECOVERY, PARTICLE PERFORMANCE, ELIMINATING THE USE OF H_2O_2, AND REDUCING HAZARDOUS WASTE

Vacuum Chamber:	AMAT ENDURA® CVD/ PVD
Vacuum Chamber Process Residue:	TiN DEPOSITION
Vacuum Chamber Components:	LID
Old Procedure:	SiC scrubbing pads and wipes
Solvent:	DI water, IPA (only)

Vacuum Chamber Products:

- (1) HT4536D-10-1 360 Grit Diamond ScrubPAD
- (1) HT4580DC3 800 Grit Diamond ScrubDISK®
- (1) HT1702-5 UltraSOLV® Swab 3” Semi Flexible Tip
- (1) HT6638 Pipe Plug
- (1) HT4754 UltraSOLV® Sponge
- (1) HT174980D-5 800 Grit Diamond Grit ScrubTIP®
- (1) HT4513PDC3-1 1350 Grit Diamond ScrubDISK®, 3.5” Disc, backed with loop
- (1) HT5790S-25 MiraWIPE® 9”X 9” with sealed edge
- (1) FT901 ErgoSCRUB® Soft Handle w/Loop
- (1) HT9423 Cushion Pad

*Endura® is a registered trademark of Applied Materials, Inc.

AMAT ENDURA®* CVD / PVD LID CLEAN PM PROCEDURE:

Step 1: Using all safety procedures and guidelines, remove the parts that are required to be removed from within the tool to complete the PM

Step 2: Effectively place HT9423 Cushion Pad underneath lid to soak up any excess DI water (See Fig 1)

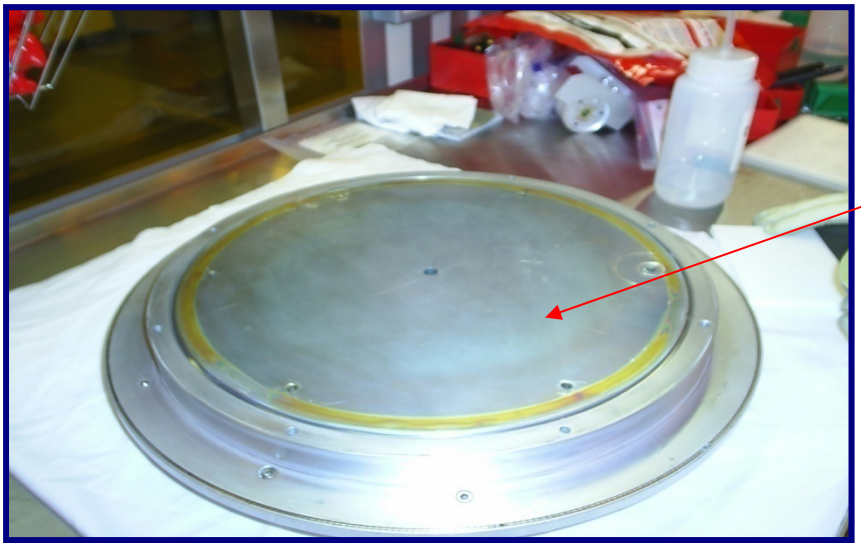


Fig 1: TiN deposition ring

Step 3: Insert HT6638 Pipe Plugs into holes on the perimeter of the lid. This will stop DI water leaking in the holes (See Fig 2)

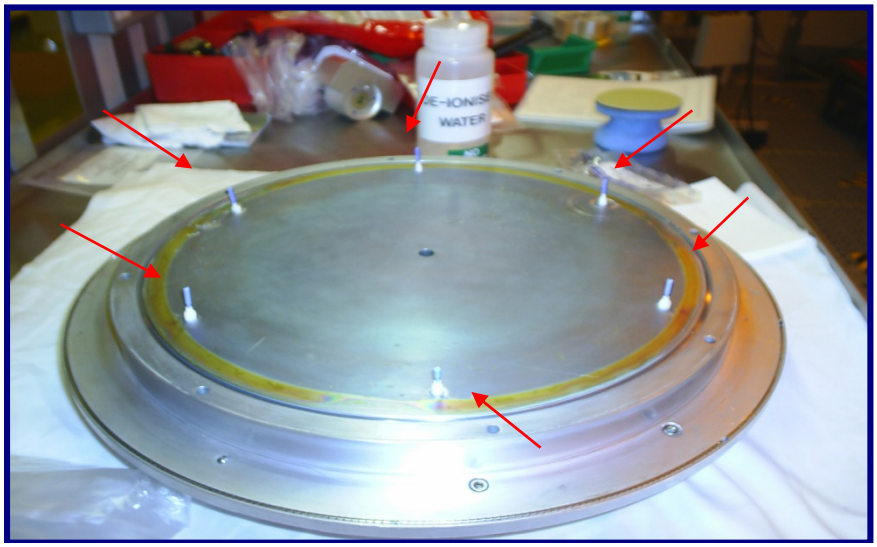


Fig 2

AMAT ENDURA®* CVD / PVD LID CLEAN PM PROCEDURE(Cont'd)

Step 4: Dampen the HT4754 UltraSOLV® Sponge and effectively wipe the inside of the lid, to remove excess deposition

Step 5: Using a DI water dampened HT4536D-10, 360 Grit Diamond ScrubPAD scrub an approximately 6"x6" area within the lid. Scrub this area until deposition is effectively removed

Step 6: Wipe-down the affected chamber area using the DI water dampened HT4754 UltraSOLV® sponge

Step 7: As necessary, unload the ScrubPADS of deposition by wiping the ScrubPADS with HT4754 UltraSOLV® Sponge in one direction (See Fig 3, 4 & 5)

Fig 3: ScrubPAD loaded with deposition

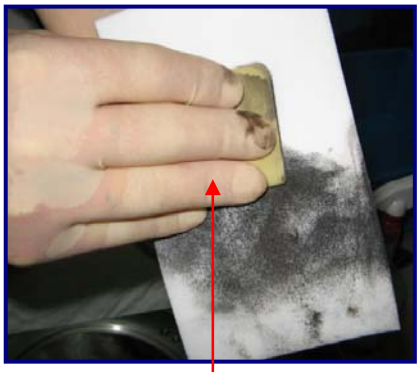


Fig 4: Pull ScrubPAD across UltraSOLV® Sponge

Fig 5: Unloaded ScrubPAD

Step 8: Unload the HT4754 UltraSOLV® Sponge by moistening with DI water and ringing out into a properly labeled HazMat container (See Fig 6 & 7)

Fig 6: UltraSOLV® Sponge loaded with deposition

Fig 7: UltraSOLV® Sponge free of deposition after rinse in DI water

AMAT ENDURA®*: CVD / PVD LID CLEAN PM PROCEDURE (CONT'D):

Step 9: Using the HT4536D-10, 360 Grit Diamond ScrubPAD and the HT4754 UltraSOLV® sponge, continue to remove deposition from affected area of the lid. Using the same method as described above

Step 10: In order to remove deposition from the remaining hard to reach areas, (such as the o-ring grooves and holes) use the HT174980D-5 800 Grit Diamond ScrubTIP®, to effectively reach these areas. Unload the ScrubTIP® as necessary, using the same method as described above to unload the ScrubPADS

Step 11: For the flatter surfaces, apply the HT4580DC3-1 800 Grit Diamond ScrubDISK®, or the HT4513PDC3-1 1350 Grit Diamond ScrubDISK® to the FT901 ErgoSCRUB®. Dampen ScrubDISK® with DI water and scrub affected area. Unload excess deposition from the ScrubDISK®, using the same method as the ScrubPADS described above

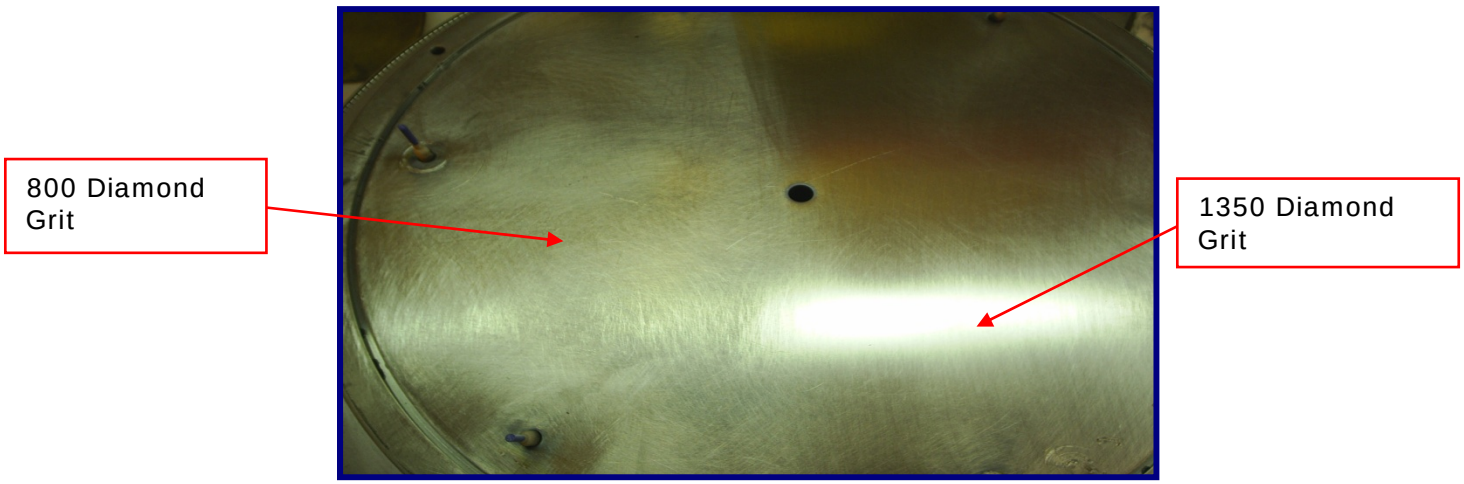


Fig 8: For a more polished finish use the higher grit size

AMAT ENDURA®*: CVD / PVD LID CLEAN PM PROCEDURE (CONT'D):

Step 12: Using IPA dampen the HT1702-5 swabs and wipe o-ring grove, until all deposition is removed. Also use HT1702-5 to remove any process residue in the plug holes (See Fig 9)

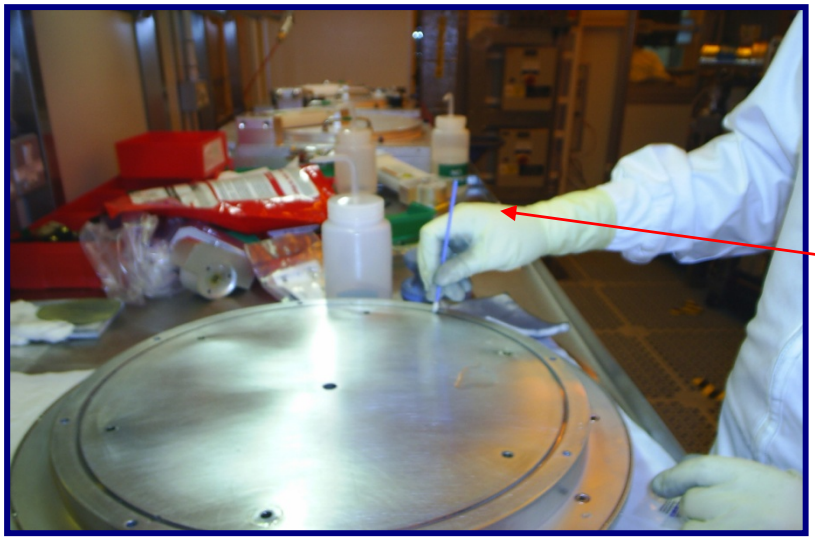


Fig 9: Using swabs to remove residue in plug holes

FINAL WIPE PROCEDURE:

Step 13: Using IPA, dampen the HT5790S MiraWIPES® perform a **THOROUGH AND EFFECTIVE FINAL WIPE PROCEDURE** of the entire lid

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 AFFECTED PM AREAS WITHIN THE AMAT ENDURA® LID REPEATEDLY, UNTIL ALL MIRAWIPES® HAVE BEEN USED AND NO DEPOSITION IS SEEN ON THE WIPES

AMAT ENDURA®*: CVD / PVD LID CLEAN PM PROCEDURE (CONT'D):

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 10a & 10b)

Fig 10a: Current fab wiper after completely wiping AMAT Endura

Fig 10b: 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 14: For added efficiency, ensure to wipe down all spare parts to be placed back on to the AMAT Endura® using IPA dampened HT5790S MiraWIPES®