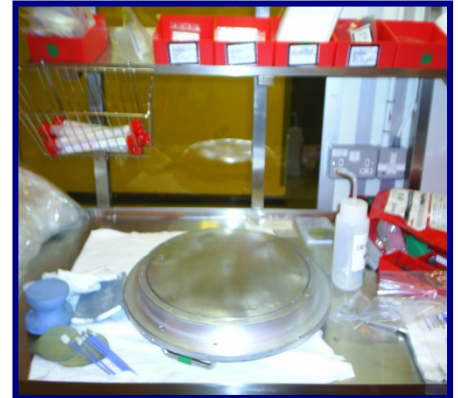


BEFORE



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 H₂O₂, 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

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

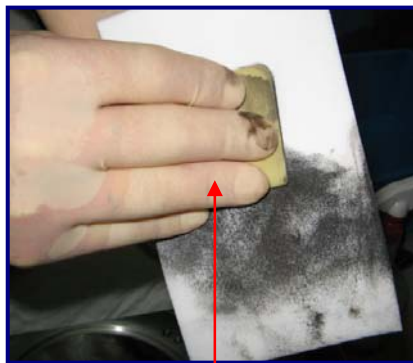


Fig 4: Pull ScrubPAD across UltraSOLV® Sponge



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

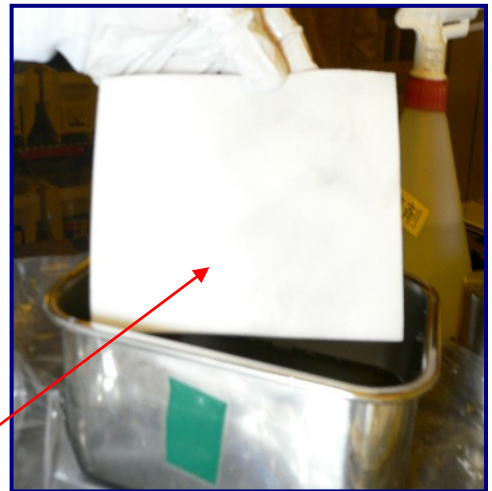


Fig 7: UltraSOLV® Sponge free of deposition after rinse in DI water

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

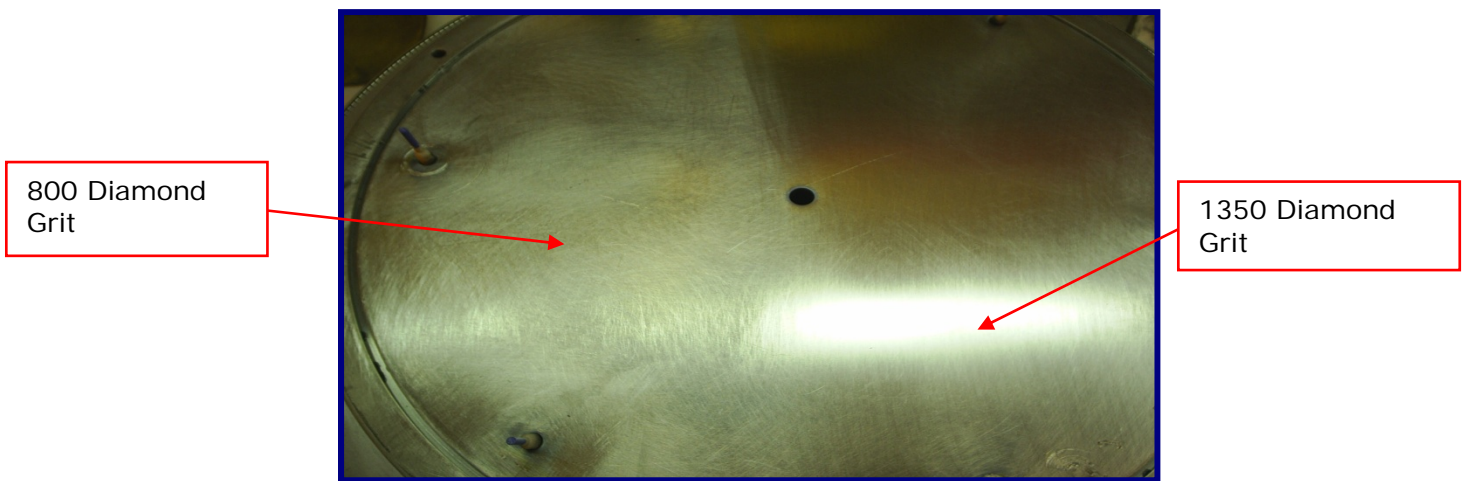


Fig 8: For a more polished finish use the higher grit size

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

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

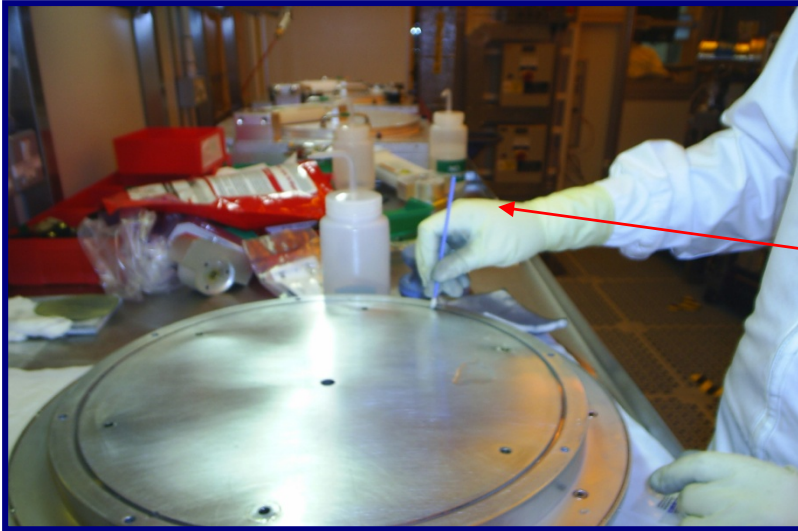


Fig 9: Using swabs to remove residue in plug holes

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)



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®