

## VACUUM CHAMBER PM TECHNIQUE

### 200 MM AMAT HDP CHAMBER SCRUB

#### **OBJECTIVE:**

TO PM THE 200 MM AMAT HDP CHAMBER IN AN EFFECTIVE AND TIMELY MANNER, WHILE IMPROVING TOOL RECOVERY AND PARTICLE PERFORMANCE

**Vacuum Chamber:** 200 MM AMAT HDP DOME  
**Vacuum Chamber Process Residue:** FILM FROM HDP/CVD RESIDUE  
**Vacuum Chamber Components:** CHAMBER WALLS

**Solvent:** DI water  
**Old Procedure:** Scotch-Brite® with DI water  
**New Procedure:** Foamtec Products, DI water & Final Wipe – MiraWIPE® W/IPA (DI water optional)

#### **Vacuum Chamber Products:**

- (1) [HT4754](#) UltraSOLV® Sponge
- (1) [HT4536D](#)-10-1 360 Grit Diamond ScrubPAD
- (1) [HT4513PD](#)-10-1 1350 Grit Diamond ScrubPAD
- (1) [HT5790S](#)-25 MiraWIPES®



**NOTE:** FIRST CLEAN MAY REQUIRE THE USE OF MORE PRODUCTS DUE TO THE CURRENT CONDITION OF THE HDP CHAMBER

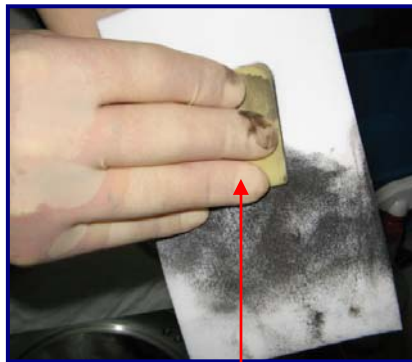
**200 MM AMAT HDP CHAMBER PM PROCEDURE:**

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

- Step 1:** Using all **safety procedures and guidelines**, prepare AMAT 5200 Centura HDP Tool for chamber scrub
- Step 2:** Properly stage Foamtec Products for chamber scrub with HazMat bag readily available
- Step 3:** Moisten the [HT4754](#) UltraSOLV<sup>®</sup> Sponge with DI water and proceed to wipe out entire chamber. This will remove any flakes or loose deposition from chamber surface
- Step 4:** Moisten the [HT4536D](#) 360 Grit Diamond ScrubPAD with DI water and proceed to scrub a 6" X 6" area within the HDP chamber surface
- Step 5:** Moisten the [HT4754](#) UltraSOLV<sup>®</sup> Sponge with DI water and wipe-out the deposition from the area scrubbed in "step 4"
- Step 6:** Unload the 360 Grit Diamond ScrubPAD as needed by wiping onto the [HT4754](#) UltraSOLV<sup>®</sup> Sponge in ONE direction (See Fig 1, 2 & 3)



**Fig 1:** ScrubPAD loaded with deposition



**Fig 2:** Pull ScrubPAD across UltraSOLV<sup>®</sup> Sponge



**Fig 3:** Unloaded ScrubPAD

**200 MM AMAT HDP CHAMBER PM PROCEDURE (CONT'D):**

**Step 7:** Return [HT4754](#) UltraSOLV<sup>®</sup> Sponge to container of DI water and re-moisten the 360 Grit Diamond ScrubPAD with DI water. Diamond ScrubPAD and UltraSOLV<sup>®</sup> Sponge will remain in good condition throughout entire clean (See Fig 4 & 5)



**Fig 4:** Loaded-up UltraSOLV<sup>®</sup> Sponge



**Fig 5:** UltraSOLV<sup>®</sup> Sponge AFTER rinse

**Step 8:** Repeat steps 4 through 7 until entire chamber has been effectively cleaned. 360 Grit Diamond ScrubPAD will be **more effective** if kept slightly moist with DI water

**Step 9:** When entire chamber scrub is completed with 360 Grit Diamond ScrubPAD, moisten 1350 Grit Diamond ScrubPAD

**Step 10:** Perform a Final Chamber Polish using the 1350 Grit Diamond ScrubPAD in the same manner as the 360 Grit Diamond ScrubPAD was used

**NOTE:** Ensure to keep the 1350 Diamond ScrubPAD slightly moist and continue to effectively wipe all parts of the chamber with the [HT4754](#) UltraSOLV<sup>®</sup> Sponge during the Final Polish

**Step 11:** After all areas within the chamber are effectively polished take a freshly rinsed out [HT4754](#) UltraSOLV<sup>®</sup> Sponge and wipe-out chamber again preparing for FINAL WIPE PROCEDURE

**200 MM AMAT HDP CHAMBER PM PROCEDURE (CONT'D):**

**FINAL WIPE PROCEDURE:**

**IMPORTANT NOTE**

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**THE USE OF [HT5790S](#) MiraWIPES<sup>®</sup> DURING FINAL WIPE PORTION OF PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVING PARTICLE DEFECTS FROM AMAT HDP CHAMBER**

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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 6a & 6b)

**Fig 6a:** Current fab wiper after completely wiping the AMAT HDP Chamber



**Fig 6b:** Particles picked up using [HT5790S](#) MiraWIPES<sup>®</sup> after completely wiping with current fab wiper

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

**Step 12:** Using 100% IPA (DI water optional), dampen the [HT5790S](#) MiraWIPES<sup>®</sup> and perform a **THOROUGH AND EFFECTIVELY WIPEDOWN** of the HDP Chamber

**Step 13:** Ensure to wipe down all o-ring grooves, pump ports, slit valves and spare parts placed back into the HDP Chamber using additional [HT5790S](#) MiraWIPES<sup>®</sup>