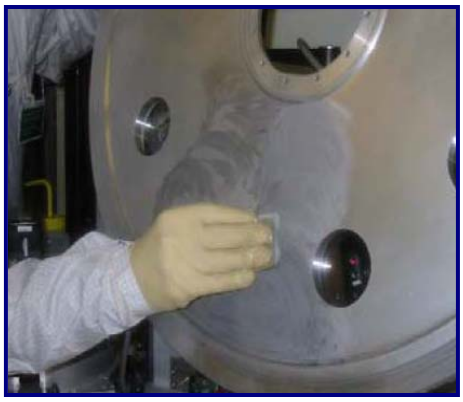

Foamtec International
Wilshire Contamination Control Division
cleaning critical surfaces

BEFORE **AFTER**

VACUUM CHAMBER PM TECHNIQUE
AMAT WXP BUFFER

OBJECTIVE:

TO PM THE AMAT WXP BUFFER IN AN EFFECTIVE AND TIMELY MANNER, WHILE IMPROVING TOOL RECOVERY AND PARTICLE PERFORMANCE

Vacuum Chamber: AMAT WxP
Vacuum Chamber Process Residue: HeWEB PROCESS INDUCED RESIDUE
Vacuum Chamber Components: BUFFER LID & BUFFER REGION

Old Procedure: ScotchBrite®, hydrogen peroxide (not recommended) DI water, wipers and IPA
New Procedure: Diamond ScrubPAD, DI water, MiraWIPES® and IPA

DANGER:

USE OF HYDROGEN PEROXIDE (H_2O_2) 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 H_2O_2. SCRUBBING WHILE USING H_2O_2 INCREASES THE RISK OF FIRES AND/OR THE RELEASE OF HAZARDOUS CHEMICAL FUMES, POTENTIALLY RESULTING IN PERSONAL INJURY AND PROPERTY DAMAGE

Vacuum Chamber Products:

- (3) HT4580D-10-1 800 Grit Diamond ScrubPAD
- (1) HT4513PD-10-1 1350 Grit Diamond ScrubPAD
- (1) HT4754 UltraSOLV® Sponge
- (1) HT5790S-25 MiraWIPES®

AMAT WxP Buffer Annual PM Procedure:

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

BUFFER LID

Step 1: Using proper procedures and **safety guidelines** shutdown, vent and prep buffer lid for PM

Step 2: Place HT4754 UltraSOLV® Sponge & 800 Grit Diamond ScrubPAD into container with approximately 1 liter of DI water (See Fig 1)

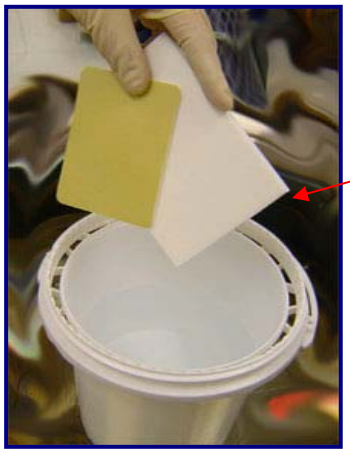

Fig 1: Diamond ScrubPAD & Sponge in 1-liter DI water

Step 3: Using the dampened UltraSOLV® Sponge, wipe down all areas throughout buffer lid

NOTE: Continue to re-soak and dampen the UltraSOLV® Sponge as necessary

Step 4: With a dampened UltraSOLV® Sponge wipe a 6" to 8" scrubbing area on the buffer lid

Step 5: Using the dampened 800 Grit Diamond ScrubPAD, scrub deposition from moistened area on buffer lid (See Fig 2)

Fig 2: Dampened 800 Grit Diamond ScrubPAD

AMAT WxP Buffer Annual PM Procedure (cont'd):

Step 6: Before area being scrubbed dries out, take the dampened UltraSOLV® Sponge and wipe off deposition from buffer lid (See Fig 3)

Fig 3: Dampened UltraSOLV® Sponge wiping off deposition

Step 7: As 800 Grit Diamond ScrubPAD becomes loaded with deposition, pull in one motion across UltraSOLV® Sponge (See Fig 4, 5 & 6)

Fig 4: Loaded Diamond ScrubPAD

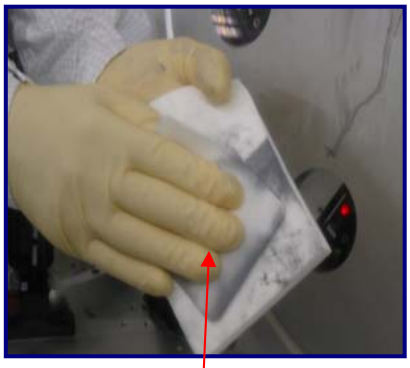

Fig 5: Unloading Diamond ScrubPAD onto UltraSOLV® Sponge

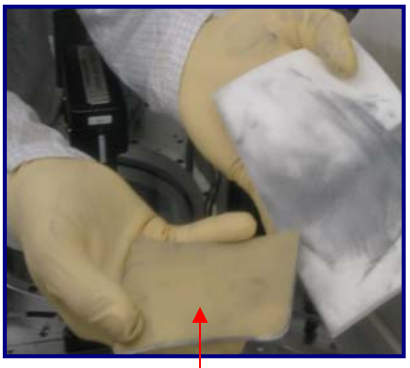

Fig 6: Clean & unloaded Diamond ScrubPAD

AMAT WxP Buffer Annual PM Procedure (cont'd):

Step 8: Unload UltraSOLV® as much as possible by placing it in container of DI water and **RINSE-OUT** thoroughly. Repeat step 7 and 8 as necessary. (See Fig 7 & 8)

Fig 7: Loaded-up UltraSOLV® Sponge

Fig 8: UltraSOLV® Sponge AFTER rinse

SLOTTED AREAS ON BUFFER LID:

Step 9: As 800 Grit Diamond ScrubPAD becomes softer throughout PM fold in half and gently clean slotted areas on buffer lid (See Fig 7a & 7b)

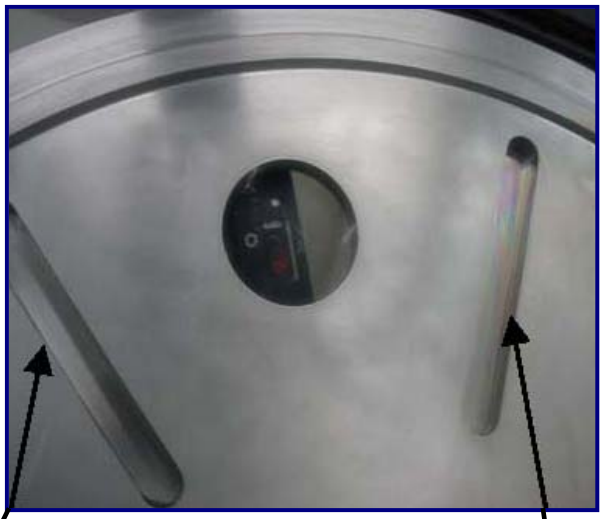

Fig 7a: Slot cleaned with 800 Grit ScrubPAD

Fig 7b: Slot **NOT** cleaned with 800 Grit ScrubPAD

QUARTZ WINDOWS:

Step 10: Using same technique used to clean buffer lid, take a moistened 1350 Grit Diamond ScrubPAD and clean off deposition from quartz window

AMAT WxP Buffer Annual PM Procedure (cont'd):

NOTE: **DO NOT USE DRY SCRUBPAD ON QUARTZ WINDOWS AS SCRATCHING MAY OCCUR**

Step 11: Take 1350 Grit Diamond ScrubPAD and polish all vacuum sealed areas on buffer lid

Step 12: Repeat steps 5 – 11 until entire buffer lid assembly has been effectively cleaned

BUFFER LID FINAL IPA WIPE PROCEDURE:

VERY IMPORTANT NOTE

THE USE OF HT5790S MiraWIPES® DURING THE FINAL WIPE PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVE PARTICLE DEFECTS FROM AMAT WxP BUFFER

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)

Fig 8a: Current fab wiper after completely wiping chamber

Fig 8b: 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 13: Dampen the HT5790S MiraWIPES® with IPA and perform a **THOROUGH AND EFFECTIVE FINAL WIPE-DOWN** of the entire buffer lid assembly – including quartz windows, slots and all vacuum sealing surfaces

AMAT WxP Buffer Annual PM Procedure (cont'd):

IMPORTANT:

This important step must be effectively followed in order to achieve the maximum efficiency of tool recovery and performance. Continue to wipe-down all of the affected PM areas on Buffer lid until all MiraWIPES® no longer remove any more deposition

Step 14: Ensure to wipe down all shields and spare parts placed back on the buffer lid using additional IPA dampened HT5790S MiraWIPES®

BUFFER REGION

Step 15: Using the remainder 800 Grit Diamond ScrubPADS available, and the same technique outlined above, effectively clean all areas and parts throughout buffer region

This will include actuator pistons, slit valves and covers within buffer region (See Fig 9a - 9d)

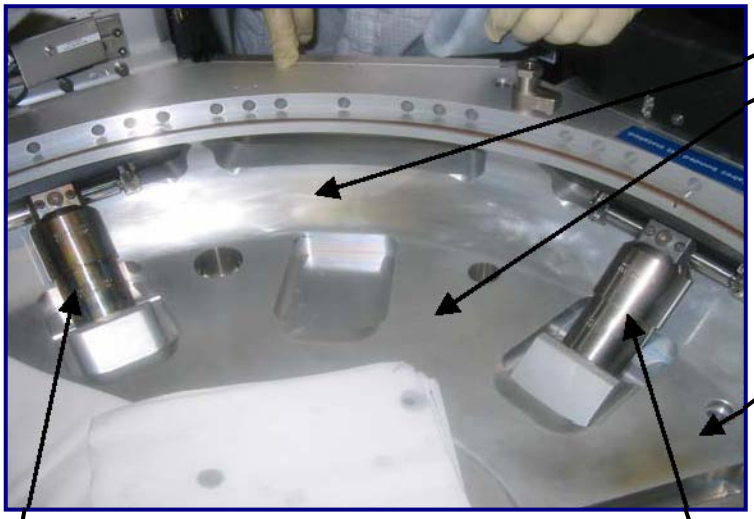

Fig 9a: CLEANED area within buffer region

Fig 9b: DIRTY area within buffer region

Fig 9d: DIRTY actuator piston

Fig 9c: CLEANED actuator piston

AMAT WxP Buffer Annual PM Procedure (cont'd):

BUFFER REGION FINAL IPA WIPE-DOWN:

Step 16: Ensure to effectively wipe down the entire buffer region using the Foamtec HT5790S MiraWIPES®

NOTE: **When entire buffer PM is completed and just before the buffer lid is closed, perform one last FINAL WIPE of all critical areas and vacuum sealing surfaces with the HT5790S MiraWIPES®**