

BEFORE



AFTER

VACUUM CHAMBER PM TECHNIQUE AXCELIS GSD 200E RESOLVING HOUSING CLEAN

OBJECTIVE:

TO EFFECTIVELY PM THE GSD RESOLVING HOUSING IN A TIMELY MANNER, WHILE IMPROVING TOOL RECOVERY AND PARTICLE PERFORMANCE, ELIMINATING THE USE OF H₂O₂, AND REDUCING HAZARDOUS WASTE

Vacuum Chamber:

AXCELIS GSD 200E ION IMPLANTER

Vacuum Chamber Process Residue:

PROCESS INDUCED RESIDUE

Vacuum Chamber Components:

RESOLVING HOUSING

Old Procedure:

H₂O₂, ScotchBrite[®], DI water, wipers and IPA

New Procedure:

Foamtec Products, DI water, MiraWIPES[®] and IPA

DANGER:

USE OF HYDROGEN PEROXIDE (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
- (1) [HT5790S-25](#) MiraWIPES[®]

NOTE: INITIAL CLEAN MAY REQUIRE THE USE OF ADDITIONAL PRODUCTS TO EFFECTIVELY CLEAN CHAMBER BACK TO BARE METAL

AXCELIS GSD 200E RESOLVING HOUSING CLEAN PM PROCEDURE:

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

Step 1: Using proper procedures and **safety guidelines**, properly shutdown, vent and remove all required parts from resolving housing

Step 2: Place [HT4754](#) UltraSOLV[®] Sponge, 360 Grit Diamond ScrubPAD into container with approximately 1 liter of DI water (See Fig 1)

Fig 1: ScrubPAD, ScrubDISK[®] & sponge in 1-liter DI water



Step 3: Vacuum the bottom of the resolving housing to remove excess flakes using an approved arsenic vacuum system

Step 4: Using the dampened UltraSOLV[®] Sponge, proceed to wipe down all areas throughout resolving housing

NOTE: **CONTINUE TO RE-SOAK AND DAMPEN THE ULTRASOLV[®] SPONGE AS NECESSARY**

Step 5: With UltraSOLV[®] Sponge, dampen a 6" to 8" scrubbing area within the resolving housing

AXCELIS GSD 200E RESOLVING HOUSING CLEAN PM PROCEDURE (CONT'D):

Step 6: Using 360 Grit Diamond ScrubPAD proceed to scrub deposition from moistened area within resolving housing

Step 7: Remove the deposition from the scrubbed area by wiping with the UltraSOLV[®] Sponge

Step 8: To un-load ScrubPAD of deposition, place the ScrubPAD onto the dampened UltraSOLV[®] Sponge and pull across in one direction (See Fig 2, 3 & 4)



Fig 2: ScrubPAD loaded with deposition

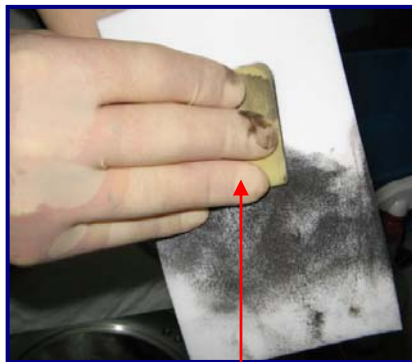


Fig 3: Pull ScrubPAD across UltraSOLV[®] Sponge



Fig 4: Unloaded ScrubPAD

Step 9: To un-load UltraSOLV[®] Sponge return back to container of DI water to rinse (See Fig 5 & 6)



Fig 5: UltraSOLV[®] Sponge loaded with deposition

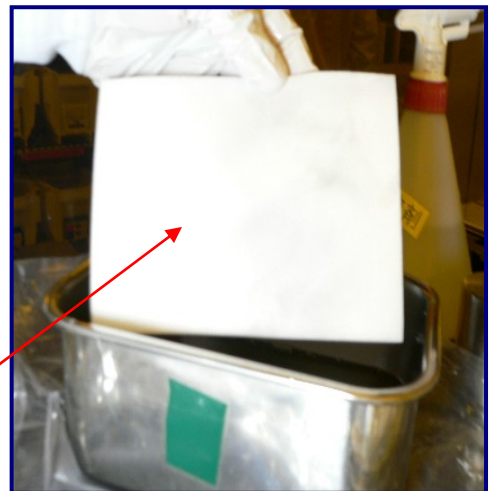


Fig 6: UltraSOLV[®] Sponge free of deposition after rinse in DI water

AXCELIS GSD 200E RESOLVING HOUSING CLEAN PM PROCEDURE (CONT'D):

Step 10: Continue to repeat process throughout entire resolving housing using 360 Grit Diamond ScrubPAD, unload ScrubPAD on UltraSOLV[®] Sponge as necessary

Step 11: Continue to repeat process throughout entire resolving housing until all deposition is removed

NOTE: **IT IS IMPORTANT TO KEEP THE SCRUBPAD MOIST WITH DI WATER DURING CLEAN**

Step 12: After all areas within entire chamber have been effectively cleaned, rinse out UltraSOLV[®] Sponge and thoroughly wipe out resolving housing as you prep the process chamber for FINAL WIPE PROCEDURE

FINAL WIPE PROCEDURE:

IMPORTANT NOTE

THE USE OF HT5790S MiraWIPES[®] DURING FINAL WIPE PORTION OF PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVE PARTICLE DEFECTS FROM THE AXCELIS GSD 200E RESOLVING HOUSING CLEAN

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 7a & 7b)

Fig 7a: Current fab wiper after completely wiping Axelis



Fig 7b: 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

AXCELIS GSD 200E RESOLVING HOUSING CLEAN PM PROCEDURE (CONT'D):

Step 13: Dampen the [HT5790S](#) MiraWIPES[®] with IPA and perform a **THOROUGH AND EFFECTIVE FINAL WIPE-DOWN** of the entire resolving housing, including o-ring grooves and all sealing surfaces

Step 14: Ensure to wipe down all spare parts placed back into the Axcelis GSD Resolving Housing using additional IPA dampened [HT5790S](#) MiraWIPES[®]