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:**


**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)

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

Fig 7b: Particles picked up using HT5790S MiraWIPES® after completely wiping with current fab wiper

MiraWIPE® 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®.