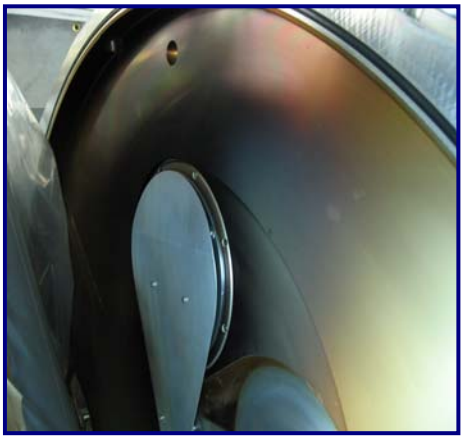
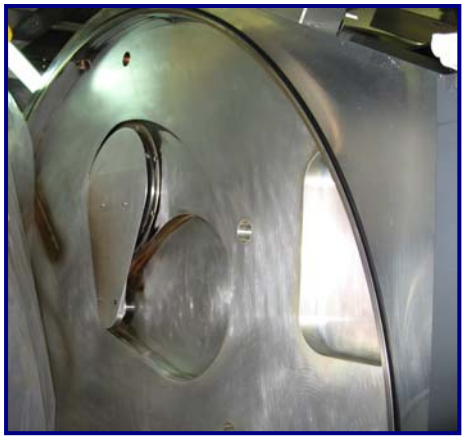


Foamtec International
Wilshire Contamination Control Division
cleaning critical surfaces



BEFORE **AFTER**

VACUUM CHAMBER PM TECHNIQUE
AXCELIS GSD PROCESS CHAMBER

OBJECTIVE:

TO PM THE AXCELIS GSD PROCESS CHAMBER IN A TIMELY AND EFFECTIVE MANNER, WHILE IMPROVING PARTICLE PERFORMANCE, TOOL RECOVERY TIME AND MAXIMIZING TOOL UPTIME

Vacuum Chamber: AXCELIS GSD
Vacuum Chamber Process Residue: PROCESSED INDUCED RESIDUE
Vacuum Chamber Components: PROCESS CHAMBER

Old Procedure: 6 - 8 hours using ScotchBrite®, IPA & 250+ wipes
Recovery time: 12+ hours

New Procedure: 1.5 hours using FOAMTEC INTERNATIONAL PM KIT with DI water
Recovery time: 6 - 8 Hours
OVER 10+ HOURS OF TOOL UPTIME IMPROVEMENT

Vacuum Chamber Products:
AXCELIS GSD PROCESS CHAMBER PM PARTS

- (1) HT4528DC3-1 280 Grit Diamond ScrubDISK®
- (1) HT4528D-10-1 280 Grit Diamond ScrubPAD
- (1) HT4580D-10-1 800 Grit Diamond ScrubPAD
- (1) FTPEN-1 ScrubWRIGHT™ PEN
- (1) HT4536DW5-1 360 Grit Diamond ScrubBELT®
- (1) HT4754 UltraSOLV® Sponge
- (1) FT901 ErgoSCRUB®, Soft
- (1) HT1790-5 Foam SWABS (5 Swabs)
- (1) HT5790S-25 MiraWIPES® (25 MiraWIPES®)

AXCELIS GSD PROCESS CHAMBER PM PROCEDURE:

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

Step 1: Using proper procedures and **safety guidelines** properly prepare Axcelis GSD Process Chamber for wet clean

Step 2: Stage Foamtec International products next to process chamber and have bottle DI water available (See Fig 1)

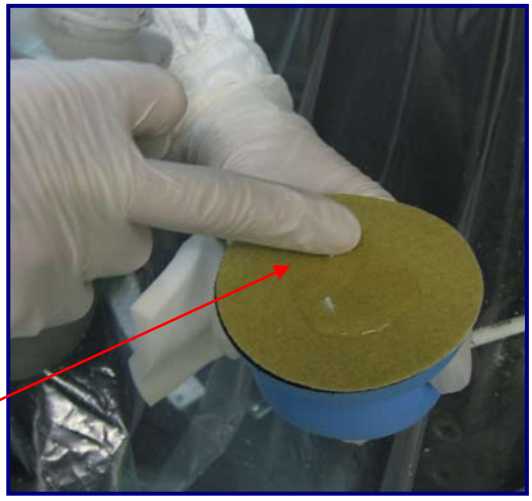
Fig 1: Foamtec International products staged next to process chamber

Step 3: Stage a hazardous material waste bag next to process chamber

Step 4: Attach HT4636DC3-1 280 Diamond Grit ScrubDISK® to FT901 ErgoSCRUB® and over hazardous material waste bag, dampen HT4754 UltraSOLV® Sponge and 280 Grit Diamond ScrubDISK® with DI water (See Fig 2 & 3)

Fig 2: Dampen UltraSOLV® Sponge with DI water

Fig 3: Dampen ScrubDISK® with DI water



AXCELIS GSD PROCESS CHAMBER PM PROCEDURE (CONT'D):

Step 5: Take dampened UltraSOLV® Sponge and wipe out process chamber, removing any loose deposition or flakes. Continue to re-moisten the UltraSOLV® Sponge with DI water as necessary

Step 6: Take dampened 280 Grit Diamond ScrubDISK® and scrub areas throughout the Axcelis GSD Process Chamber (See Fig 4)

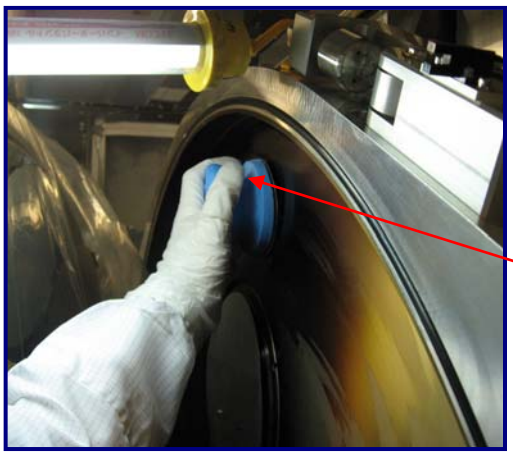
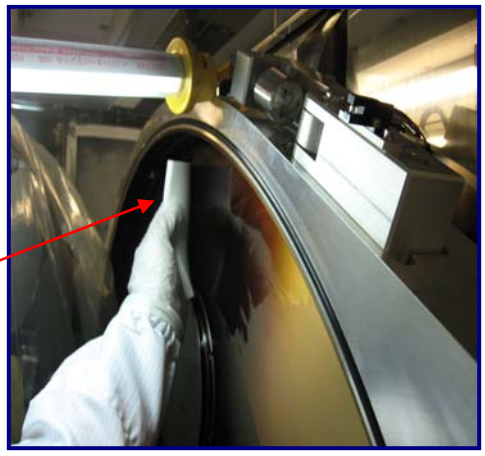


Fig 4: 280 Grit Diamond ScrubDISK® scrubbing process chamber

Step 7: As loose deposition begins to build up within the process chamber, take UltraSOLV® Sponge and wipe the area free of deposition (See Fig 5)

Fig 5: UltraSOLV® Sponge used to wipe out loosened deposition



Step 8: Over hazardous material waste bag, continue to rinse out UltraSOLV® sponge and 280 Grit Diamond ScrubDISK® with DI water to free excess deposition and keep products moist

AXCELIS GSD PROCESS CHAMBER PM PROCEDURE (CONT'D):

Step 9: As ScrubDISK® loads up with deposition, pull and twist ScrubDISK® across UltraSOLV® Sponge to unload ScrubDISK® (See Fig 6, 7 & 8)

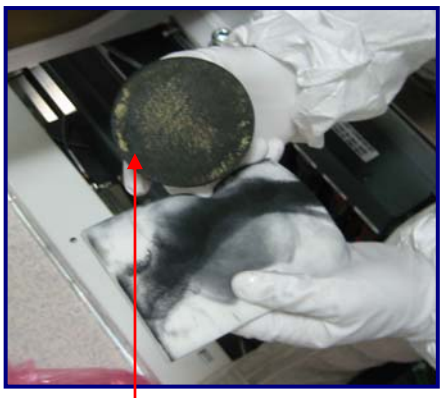


Fig 6: ScrubDISK® loaded with deposition

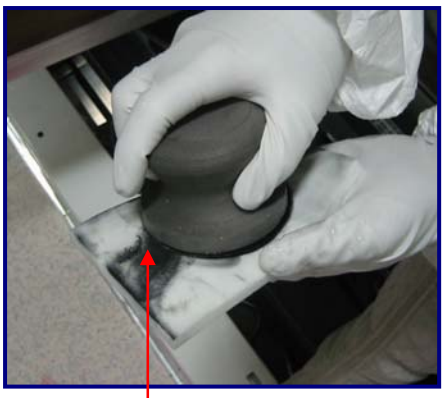


Fig 7: Pull & twist ScrubDISK® across UltraSOLV® Sponge

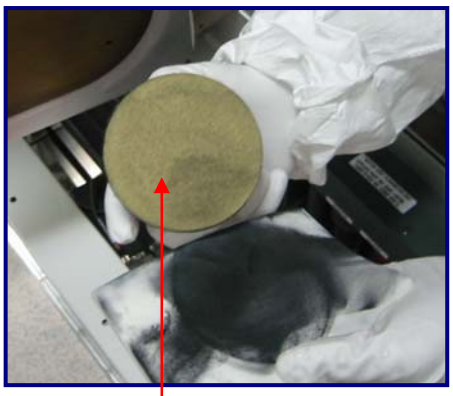


Fig 8: Unloaded ScrubDISK®

Step 10: Continue to rinse out sponge in container of DI water as necessary to free UltraSOLV® Sponge of excess deposition as necessary (See Fig 9 & 10)

Fig 9: UltraSOLV® Sponge loaded with deposition

Fig 10: UltraSOLV® Sponge free of deposition after rinse in DI water

AXCELIS GSD PROCESS CHAMBER PM PROCEDURE (CONT'D):

Step 11: Repeat steps 6 - 10, scrubbing the remaining areas of the Axcelis GSD Process Chamber as much as possible. Rinse out UltraSOLV® Sponge and unload 280 Grit Diamond ScrubDISK® as necessary

Step 12: Dampen the HT4528D-10-1 280 Grit Diamond ScrubPAD with DI water over the hazardous waste material bag and scrub the remaining areas of the process chamber that you were not able to reach with the 280 Grit Diamond ScrubDISK® and ErgoSCRUB®

Step 13: Use the same procedure listed above and unload HT4790 UltraSOLV® Sponge and 280 Grit Diamond ScrubPAD as necessary, and keep products moist with DI water

Step 14: After scrubbing entire process chamber, open isolation valve V-3 using proper safety procedures and guidelines

Step 15: Using same procedure as above, take 280 Grit Diamond ScrubPAD and scrub remaining areas behind isolation valve V-3

Step 16: Scrub the hard to reach areas and tight corners behind V-3 using the ScrubWRIGHT™ FTPEN-1 with 360 Grit Diamond ScrubBELT® with the same technique described above

Step 17: When all areas behind V-3 have been scrubbed, using the same procedure outlined above, take 800 Grit Diamond ScrubPAD and polish the areas behind V-3

Step 18: Using **proper safety procedures and guidelines,** close isolation valve V-3

AXCELIS GSD PROCESS CHAMBER PM PROCEDURE (CONT'D):

Step 19: Use the FTPEN-1 with 360 Grit Diamond ScrubBELT® and use the same technique described above to scrub the hard to reach areas and tight corners remaining in process chamber (See Fig 11)

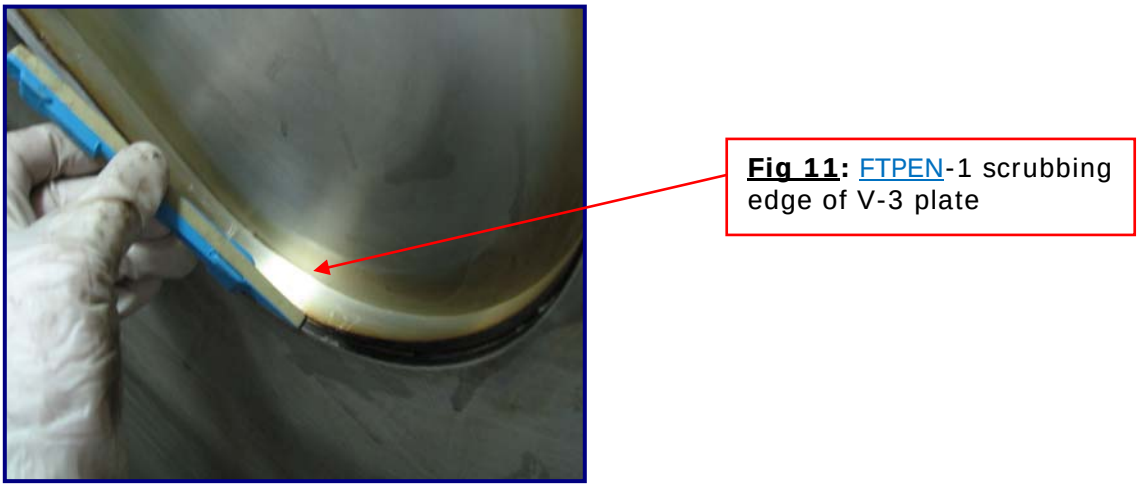


Fig 11: FTPEN-1 scrubbing edge of V-3 plate

Step 20: After completely scrubbing all areas of Axcelis Process Chamber, including edges and hard to reach areas, take the 800 Grit Diamond ScrubPAD and using the same technique described above, do a quick POLISH of the entire process chamber

Step 21: When the Axcelis process chamber has been sufficiently polished, rinse out the UltraSOLV® Sponge with fresh DI water and re-wipe the entire process chamber in preparation for FINAL WIPE PROCEDURE

AXCELIS GSD PROCESS CHAMBER PM PROCEDURE (CONT'D):

FINAL WIPE PROCEDURE:

IMPORTANT NOTE:

THE USE OF HT5790S MIRAWIPES® DURING FINAL WIPE PORTION OF PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVING PARTICLE DEFECTS FROM AXCELIS GSD PROCESS CHAMBER

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 12A & 12B)

Fig 12a: Last standard fab wiper used to wipe out source chamber **SHOWS NO MORE DEPOSITION**

Fig 12b: HT5790S MiraWIPE® used after standard fab wiper. **SHOWS MUCH MORE DEPOSITION LEFT IN CHAMBER**

MiraWIPES® are the KEY STEP for DEFECT REDUCTION and IMPROVED TOOL RECOVERY

Step 22: Dampen the HT5790S MiraWIPES® with IPA and perform a **THOROUGH AND EFFECTIVE FINAL WIPE-DOWN** of the entire Axcelis GSD Process Chamber – including o-ring grooves and all vacuum sealing surfaces

Step 23: Wipe down all spare parts placed back into the Axcelis GSD Process Chamber using additional dampened HT5790S MiraWIPES®