



BEFORE



AFTER

VACUUM CHAMBER PM TECHNIQUE VARIAN VIISTA 80 BEAMLINE CLEAN

OBJECTIVE:

TO PM THE VARIAN VIISTA 80 BEAMLINE IN AN EFFECTIVE AND TIMELY MANNER WHILE IMPROVING PARTICLE PERFORMANCE, TOOL RECOVERY AND MAXIMIZING TOOL UPTIME

Vacuum Chamber:

Vacuum Chamber Process Residue:

Vacuum Chamber Components:

VARIAN VIISTA 80 HIGH CURRENT
PROCESSED INDUCED RESIDUE
BEAMLINE CHAMBER

Old Procedure:

2 hours using H₂O₂, ScotchBrite[®], IPA & 100+wipes
Recovery time: 4 to 6 hours

New Procedure:

1 hour using Foamtec PM Kit with DI water
Recovery time: 1 to 2 hours

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:

PM Kit P/N: HT4500 – VAR2 PM KIT

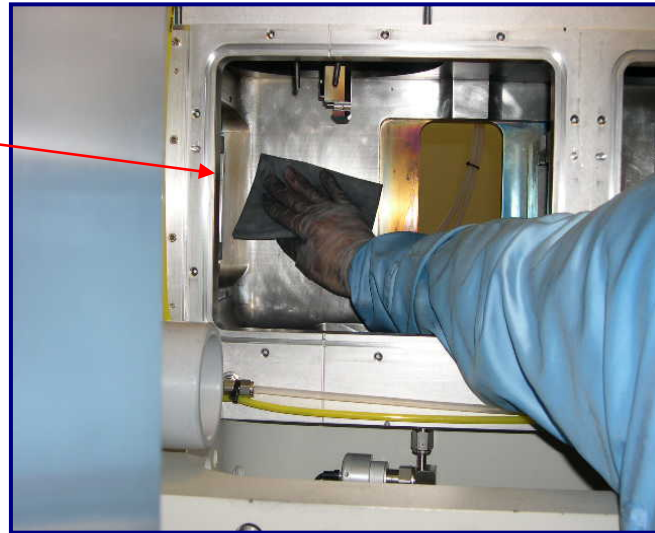
- (1) HT4754 UltraSOLV[®] Sponge
- (1) HT4536DC3-1 360 Grit Diamond ScrubDISK[®]
- (1) HT4528D-10-1 280 Grit Diamond ScrubPAD
- (1) FT901 ErgoSCRUB[®] w/hook
- (2) HT5790S-5 MiraWIPES[®]



VARIAN VIISTA 80 BEAMLIN CLEAN PM PROCEDURE (CONT'D):

Step 7: As loose deposition begins to build up within the Beamline, take UltraSOLV[®] Sponge and wipe the area free of deposition (See Fig 2)

Fig 2: UltraSOLV[®] Sponge used to wipe out loosened deposition



Step 8: Continue to rinse out sponge in container of DI water as necessary to free UltraSOLV[®] Sponge of excess deposition as necessary (See Fig 3 & 4)



Fig 3: UltraSOLV[®] Sponge loaded with deposition

Fig 4: UltraSOLV[®] Sponge free of deposition after rinse in DI water



VARIAN VIISTA 80 BEAMLINE CLEAN PM PROCEDURE (CONT'D):

Step 9: As ScrubDISK[®] loads up with deposition, pull & twist ScrubDISK[®] across UltraSOLV[®] Sponge to unload ScrubDISK[®] (See Fig 5, 6 & 7)



Fig 5: ScrubDISK[®] loaded with deposition



Fig 6: Pull & twist ScrubDISK[®] across UltraSOLV[®] Sponge

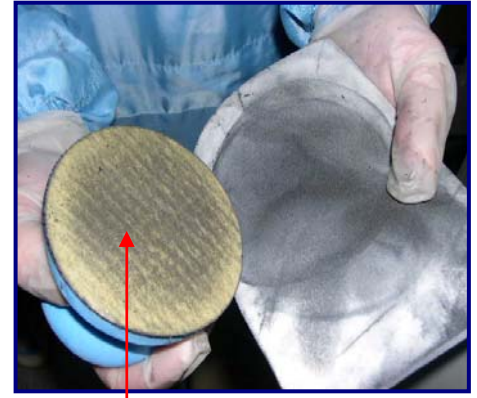


Fig 7: Unloaded ScrubDISK[®]

Step 10: Repeat steps 6 – 9, scrubbing the remaining areas of the VIISTA 80 Beamline as much as possible. Ensure to rinse out UltraSOLV[®] Sponge and unload 360 Grit Diamond ScrubDISK[®] as necessary

Step 11: Moisten 280 Grit Diamond ScrubPAD in container of DI water and re-scrub all areas of the VIISTA 80 Beamline using the same technique described above, concentrating on the areas of heavier deposition buildup and hard to reach areas throughout the Beamline (See Fig 8)



Fig 8: 280 Grit Diamond ScrubPAD scrubbing Beamline

VARIAN VIISTA 80 BEAMLINE CLEAN PM PROCEDURE (CONT'D):

Step 12: When deposition has been sufficiently removed throughout the entire VIISTA 80 Beamline, rinse out UltraSOLV[®] Sponge with fresh DI water and re-wipe the entire VIISTA 80 Beamline in preparation for FINAL WIPE PROCEDURE (See Fig 9)

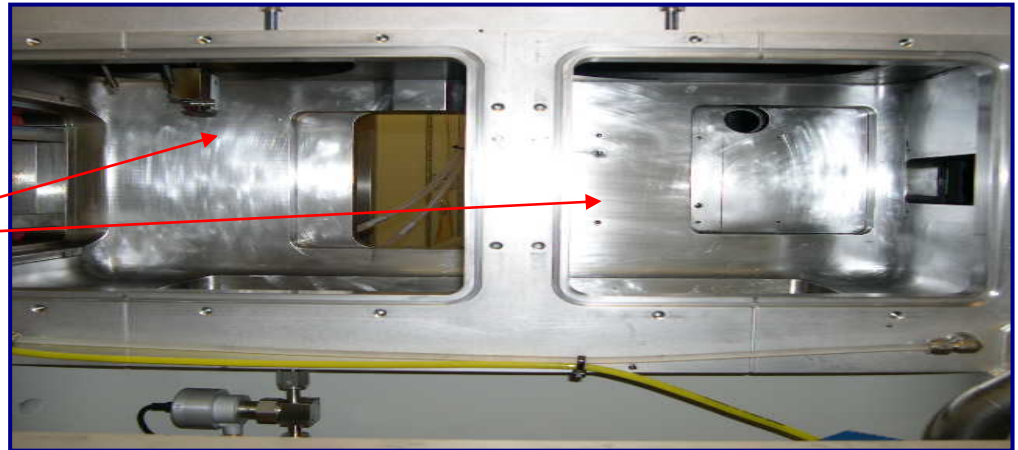


Fig 9: VIISTA 80 Beamline after scrub portion of PM

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 VARIAN VIISTA 80 BEAMLINE

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 10a & 10b)



Fig 10a: Current fab wiper after completely wiping Varian VIISTA

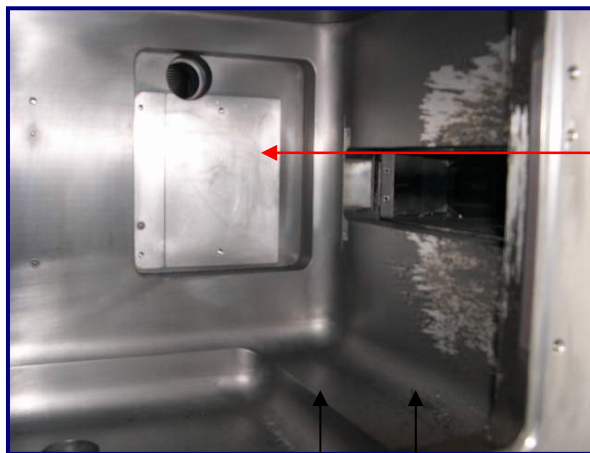
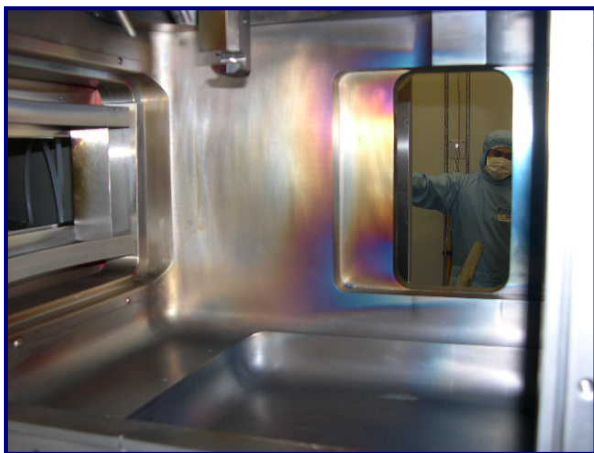
Fig 10b: Particles picked up using HT5790S MiraWIPES[®] after completely wiping with current fab wiper

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

VARIAN VIISTA 80 BEAMLINE 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 VIISTA 80 Beamline – including o-ring grooves and all vacuum sealing surfaces

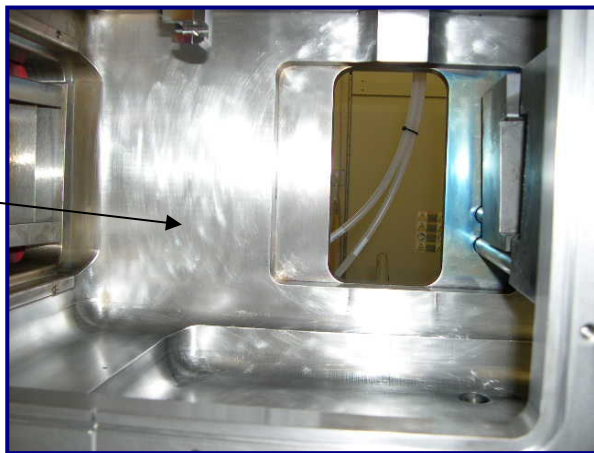
Step 14: Ensure to wipe down all shields and spare parts and place back into the Beamline using additional dampened [HT5790S](#) MiraWIPES[®]



Recommend removing all subassemblies to prevent any loose deposition from accumulating in o-ring grooves or leach-check ports

VIISTA 80 BEAMLINE CHAMBER BEFORE

VIISTA 80 BEAMLINE CHAMBER AFTER



HAZARDOUS WASTE ACCUMULATED