VACUUM CHAMBER PM TECHNIQUE
VARIAN VIISION™ 80 SOURCE CHAMBER

OBJECTIVE:
TO EFFECTIVELY PM THE VARIAN VIISION™ 80 SOURCE CHAMBER IN A TIMELY MANNER, WHILE HELPING TO MINIMIZE PARTICLE ISSUES, IMPROVE TOOL PERFORMANCE AND REDUCE HAZARDOUS WASTE.

Vacuum Chamber:

Vacuum Chamber Process Residue: BF3, P, SB, IN, ASH3 BEAM DEPOSITION
Vacuum Chamber Components: SOURCE CHAMBER

Old Procedure: ScotchBrite®, hydrogen peroxide (H2O2), 40 grit sand paper, wire mesh
Solvent: DI water, IPA (only)

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 SCOURING WITH H2O2. SCOURING 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-10 360 Grit Diamond ScrubPAD
- (1) HT4536DC3-1 360 Grit Diamond ScrubDISK®
- (1) FT901 Soft handle w/Loop ErgoSCRUB®
- (3) HT179036D 360 Grit Diamond ScrubTIP®
- (25) HT5790S MiraWIPE® Wipers

NOTE: INITIAL CLEAN MAY REQUIRE THE USE OF ADDITIONAL PRODUCTS TO EFFECTIVELY CLEAN CHAMBER BACK TO BARE METAL. RECOMMEND: PERFORM A ROUND OF 2-3 PM’S ON SAME TOOL TO ESTABLISH SUFFICIENT DATA FOR EVALUATION.
VARIAN VIISION™ 80 SOURCE CHAMBER CLEAN PM PROCEDURE:

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

**Step 1:** Remove all source parts from source chamber (source head, bushing, etc...)

**Step 2:** Vacuum inside of the chamber using an approved arsenic vacuum system

**Step 3:** Wipe-down inside of the chamber using an H₂O dampened UltraSOLV® HT4754 Sponge

**Step 4:** Using a DI water dampened HT4536DC-1 ScrubDISK®, attached to the FT901 ErgoSCRUB®, scrub an 8”x8” area within the source chamber

**Step 5:** Wipe-down the affected chamber area using the DI water dampened UltraSOLV® HT4754 sponge

**Step 6:** Unload the ScrubDISK® of deposition by wiping the UltraSOLV® HT4754 Sponge with the ScrubDISK® in one direction (See Fig 1, 2 & 3)

**Step 7:** Unload the UltraSOLV® HT4754 Sponge by moistening with DI water and ringing out into a HazMat container (See Fig 4 & 5)
VARIAN VISION™ 80 SOURCE CHAMBER CLEAN PM PROCEDURE (cont’d):

**Step 8:** Repeat steps 4 – 7, using the HT4536D ScrubPAD and the HT179036D ScrubTIP® where necessary, until all deposition is removed

**FINAL WIPE PROCEDURE:**

**VERY IMPORTANT NOTE**

THE USE OF HT5790S MiraWIPE® DURING THE FINAL WIPE PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVE PARTICLE DEFECTS FROM PROCESS CHAMBER DOOR

**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 IPA Wipe the most CRITICAL STEP of the PM procedure (See Fig 6a & 6b)

**Fig 6a:** Current fab wiper after completely wiping chamber

**Fig 6b:** Particles picked up using HT5790S MiraWIPE® after completely wiping with current fab wiper

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

**Step 9:** Repeatedly wipe the inside of the source chamber using an IPA dampened HT5790S MiraWIPE®. Ensure to wipe entire chamber effectively until all areas are removed of deposition
**SOURCE CHAMBER – BEFORE CLEANING**

*Fig 7, 8 & 9*: Arsenic, Boron, Phosphorus, Antimony . . .
**SOURCE CHAMBER – AFTER CLEANING**

**Fig 10 & 11:** PM completed using only DI water and IPA for final wipe-down

**NO H₂O₂ (Hydrogen Peroxide)**

**Fig 12:** Total amount of hazardous waste generated