



VACUUM CHAMBER PM TECHNIQUE DAVIDSON WILDER (DW) INDUSTRIAL OPTICS COATER CHAMBER

OBJECTIVE:

TO EFFECTIVELY REMOVE THE COATING FROM THE DW COATER CHAMBER IN A TIMELY MANNER WHILE IMPROVING CLEANLINESS IN THE CHAMBER

<u>Vacuum Chamber:</u>	DAVIDSON WILDER INDUSTRIAL OPTICAL COATER
<u>Vacuum Chamber Process Residue:</u>	OPTICAL COATING FILMS
<u>Vacuum Chamber Components:</u>	VACUUM CHAMBER

Old Procedure: Scotch-Brite™ and wire brush

New Procedure: Diamond ScrubPAD, ScrubDISK®, UltraSOLV® Sponge, and MiraWIPES®

Vacuum Chamber Products:

- (1) [HT4536D](#)-10-1 360 Grit Diamond ScrubPAD
- (1) [HT4518DC3](#)-1 180 Grit Diamond ScrubDISK®
- (1) [FT951](#) ErgoSCRUB® Handle
- (1) [HT4754](#) UltraSOLV® Sponge
- (2) [HT5790S](#)-5 MiraWIPES® (10 MiraWIPES®)

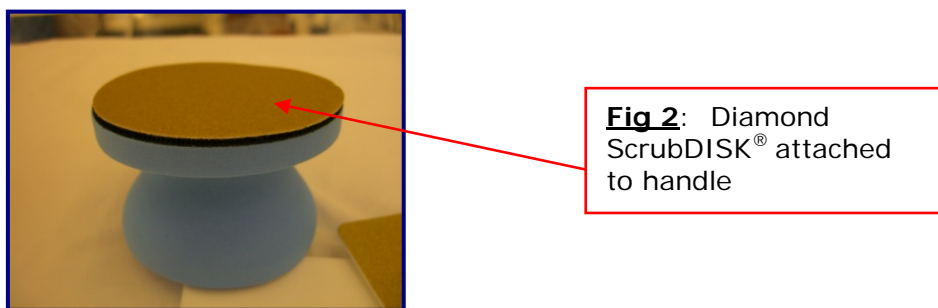


DW OPTICAL COATER PM PROCEDURE:

- Step 1:** Using proper procedures and **safety guidelines** prepare DW Coater Chamber for clean
- Step 2:** Stage a small amount of DI water next to the chamber and place the [HT4754](#) UltraSOLV[®] Sponge, and [HT4536D](#) 360 Grit Diamond ScrubPAD in the container (See Fig 1)



- Step 3:** Place the [HT4518DC3](#) Diamond ScrubDISK[®] onto the [FT951](#) ErgoSCRUB[®] Handle. Dip the Diamond ScrubDISK[®] into the water and shake off excess (See Fig 2)



NOTE: Minimize the amount of DI water into the coater chamber. Just enough is needed to keep the ScrubDISK[®] lubricated

DW OPTICAL COATER PM PROCEDURE (CONT'D):

Step 4: Scrub areas in the coater chamber bottom where there is deposition or overspray (See Fig 3)

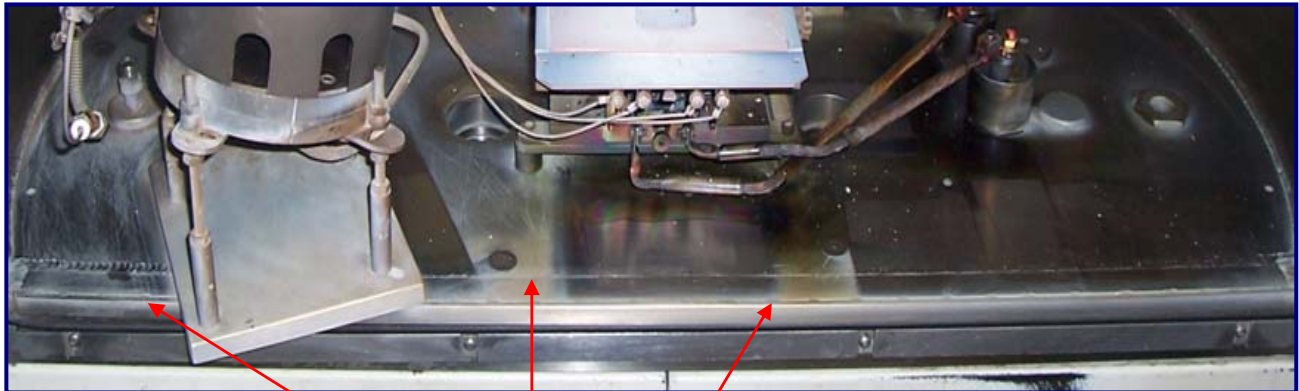


Fig 3: Scrub along the bottom of the chamber where there is overspray

Step 5: Once a small area is scrubbed wipe residue off with the **LIGHTLY** dampened UltraSOLV® Sponge before it dries back onto the chamber wall surface (See Fig 4)



Fig 4: Wipe residue with sponge before it dries onto the surface

DW OPTICAL COATER PM PROCEDURE (CONT'D):

Step 6: Continue scrubbing and wiping the other areas of the chamber (See Fig 5 & 6)

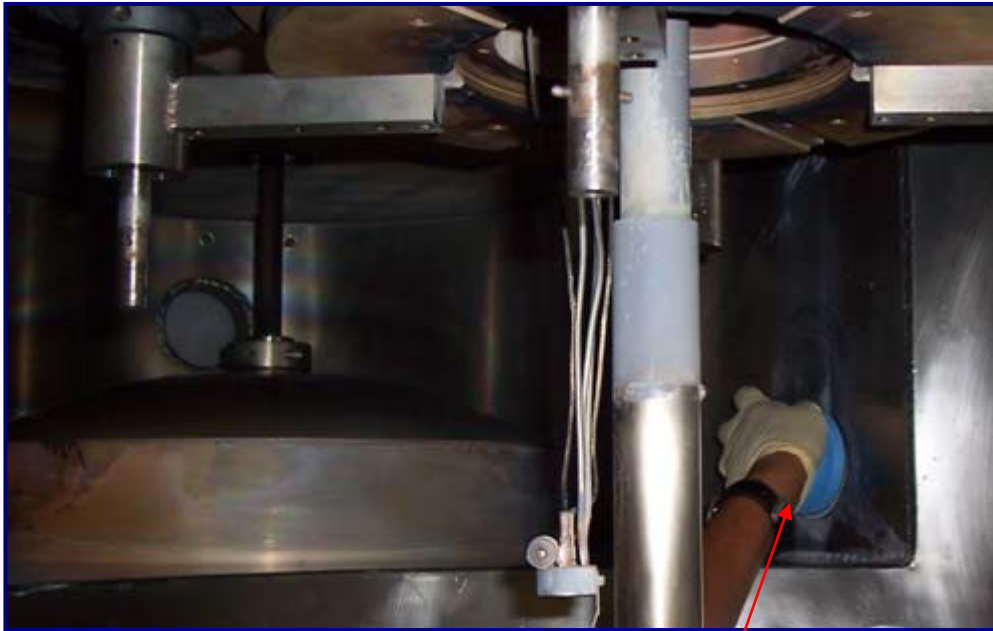


Fig 5: Scrub the back walls where shielding doesn't cover



Fig 6: Scrub the door where shielding doesn't cover

Step 7: As ScrubDISK[®] begins to load up with deposition, pull across dampened UltraSOLV[®] Sponge to unload ScrubPAD (See Fig 7, 8 & 9)



Fig 7: ScrubPAD loaded with deposition



Fig 8: Pull ScrubPAD across UltraSOLV[®] Sponge



Fig 9: Unloaded ScrubPAD

DW OPTICAL COATER PM PROCEDURE (CONT'D):

Step 8: Rinse the UltraSOLV® Sponge with DI water as sponge begins to load up with deposition (See Fig 10 & 11)



Fig 10: UltraSOLV® Sponge loaded with deposition

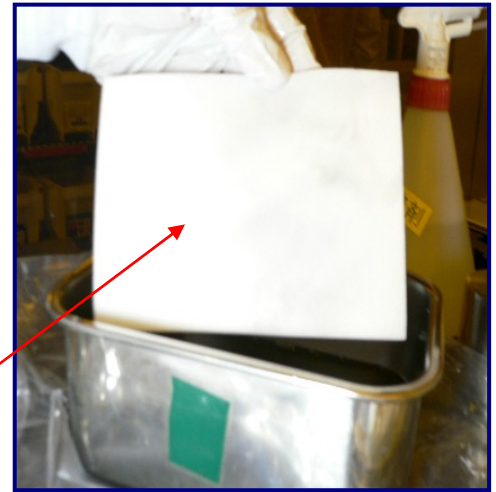


Fig 11: UltraSOLV® Sponge free of deposition after rinse in DI water

Step 9: Continue to perform steps 3 through 8 until the coater chamber has been scrubbed ensuring to rinse UltraSOLV® Sponge and unload 180 Grit Diamond ScrubPAD as necessary

Step 10: Take the [HT4536D](#) 360 Grit Diamond ScrubPAD from the DI water and wring out the excess

Step 11: Use the 360 Grit Diamond ScrubPAD to clean the copper crucible heater block (See Fig 12)

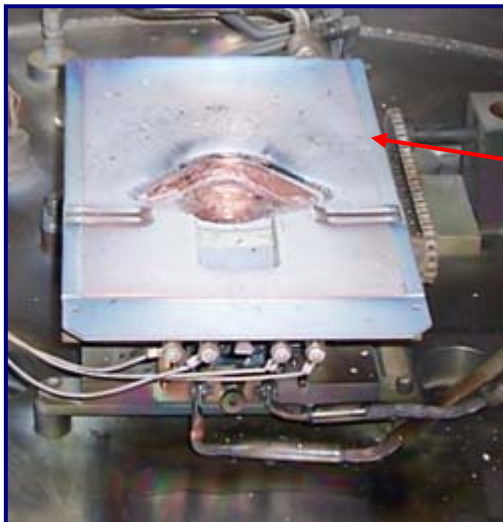


Fig 12: Clean crucible heater with 360 Grit Diamond ScrubPAD

DW OPTICAL COATER PM PROCEDURE (CONT'D):

Step 12: Use a vacuum to clean up any flakes left in the coater chamber

FINAL WIPE PROCEDURE:

IMPORTANT NOTE

THE USE OF HT5790S MiraWIPES® DURING THE FINAL WIPE PORTION OF THE PROCEDURE IS A CRITICAL STEP TO EFFECTIVELY REMOVE PARTICLE DEFECTS FROM COATER CHAMBER

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 13a & 13b)



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

Step 13: Replace MiraWIPE® with a fresh MiraWIPE® as necessary, and continue wiping coater chamber until MiraWIPE® no longer is able to remove residue from chamber

Step 14: Follow procedures to re-line the chamber and bring it back into production