

FOAMTEC INTERNATIONAL WCC VALUE ANALYSIS
HITACHI STR M712 NON-METAL ETCH PM

HITACHI STR M712 Non-Metal ETCH PM	FOAMTEC INTL CHAMBER CLEANING TECHNIQUE	CURRENT METHOD
Hitachi STR M712 Non-Metal ETCH PM	1 HT4580DC3-1 ScrubDISK 800Grit Diamond @ \$20.40/pc 1 HT4580D-10-1 ScrubPAD 800Grit Diamond @ \$20.40/pc 1 HT4754 UltraSOLV® Sponge @ \$3.82/pc 30 HT5790S MiraWIPE® @ \$0.56/pc = \$16.80 <u>TOTAL: \$61.42/PM</u>	(15) HT4560-10 ScrubPAD 600 Grit SiC @ \$2.32/pc = \$34.80 (250+) TX1010 Vectra Alpha 10 Wipes @ \$0.26/pc = \$65.00 (20) Pre Saturated Alpha Wipes @ \$0.84/pc = \$16.80 <u>TOTAL: \$116.60/PM</u>
Tool Availability	Scrub Time – <u>1 Hr</u>	Scrub Time – <u>5 Hrs</u>
Waste Removal Cost	Estimated disposal costs @ \$5-7 per pound of solid waste significant savings TBD	TBD
<u>TOTAL COST/M712 NON-METAL ETCH</u> PM performed every 6 to 8 Weeks	(7) Non-Metal ETCH (2) Chamber/Tool (14) Chambers Total PM every 6 to 8 Weeks <u>\$6,387 Total Cost/YR</u> <u>104 Hrs Total Tool Downtime/YR</u>	(7) Non-Metal ETCH (2) Chamber/Tool (14) Chambers Total PM every 6 to 8 Weeks <u>\$12,126 Total Cost/YR</u> <u>520 Hrs Total Tool Downtime/YR</u>

The following areas of a Hitachi STR M712 Non-Metal ETCH Tool were cleaned:

STR Non-Metal ETCH – ETCH Chamber 2
Chamber Walls
Tunnel
Tunnel Door
Turbo Top Plate

It was clearly understood that the amount of tool downtime and cost were the main concern during this evaluation. Corporation is currently paying \$0.32/pc for the TX1010 Vectra Alpha 10 Wipes and \$2.94/pc for the 600 SiC Grit ScrubPAD.

Hitachi STR M712 Non-Metal ETCH PM:

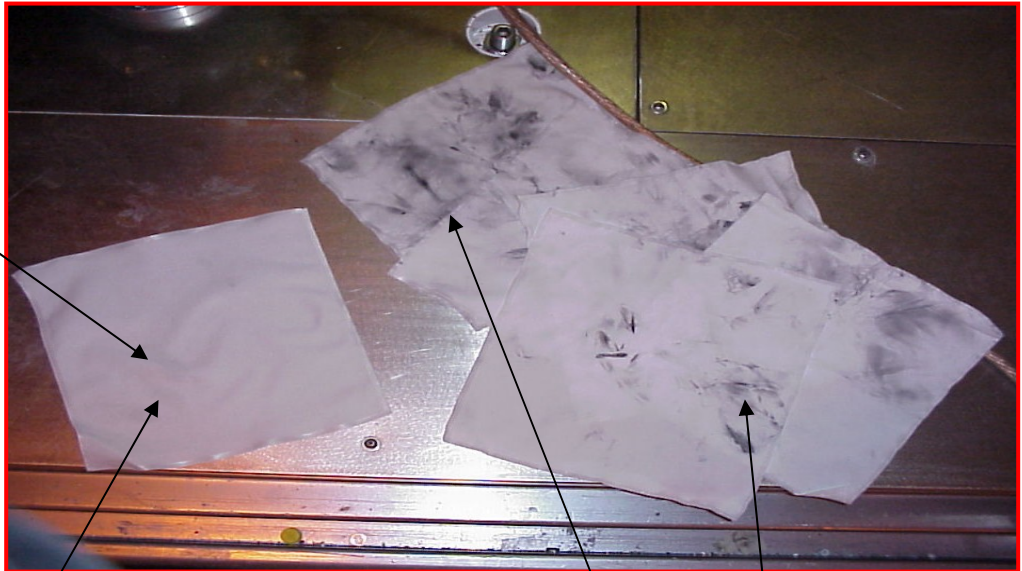
Current Method (Using SiC Pads):

- Technician Soaks 600 Grit SiC Pad with IPA.
- Technician proceeds to scrub ETCH Chamber with IPA dampened 600 Grit SiC Pad.
- During Scrub technician will repeatedly wipe out the chamber area with an abundance of TX1010 Vectra Alpha 10 Wipes.
- Upon completion of clean the technician will perform a final IPA Wipe Down using Texwipe IPA Pre Saturated Wipes.
- **This Method requires over 4 to 6 hours of PM time, (12 to 15) SiC Pads, (250+) TX1010 Vectra Alpha 10 Wipes and (20) Texwipe IPA Pre Saturated Wipes.**

Foamtec International WCC UltraSOLV[®] Chamber Cleaning Technique (Using Diamond Pads):

- Using DI water lightly dampened HT4580DC3-1 ScrubDISK[®] and scrub the associated areas within the chamber.
- One side of the chamber was completed in less than three minutes.
- Diamond ScrubDISK[®] was much more effective as the Diamond ScrubDISK[®] did not break down or leave any residue.
- During the process the technicians used the HT4754 UltraSOLV[®] Sponge to wipe down chamber, which eliminated the use of the countless Alpha 10 Wipes that were needed before.
- Upon completion of PM, technicians wipe out entire chamber using the Alpha 10's until it was determined the chamber was clean. Technicians then followed with the **MiraWIPES[®]**.
- **The MiraWIPES[®] were still able to remove a considerable amount of deposition left behind in the chamber (see below).**

**PICTURE
SHOWING
LAST FAB
WIPER USED**



CURRENT FAB WIPER: TECH WIPED OUT HITACHI STR NON METAL ETCH CHAMBER UNTIL WIPER WAS NO LONGER REMOVING DEPOSITION FROM CHAMBER.

FOAMTEC INTERNATIONAL MiraWIPE®: AMOUNT OF DEPOSITION MiraWIPE® WAS ABLE TO REMOVE AFTER USING CURRENT FAB WIPERS.

- Using this method, this portion of the PM, took approximately 30 minutes (1) 800 Diamond ScrubDISK®, (1) 800 Diamond Grit ScrubPAD, (1) UltraSOLV® Sponge and 25 to 35 MiraWIPES®.