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| MFTTraveler Title | L2HE Components Preparation | | | |
| Traveler Abstract | This document captures the degreasing and flange etching of serialized L2HE components, other than a cavity. | | | |
| Traveler ID | L2HE-CHEM-COMP-DEGR | | | |
| Traveler Revision | R3 | | | |
| Traveler Author | Ashley Mitchell | | | |
| Traveler Date | 11-Oct-22 | | | |
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| Approval Names | A. Mitchell | A. Wildeson | T. Ganey | M. Bevins |
| Approval Signatures | | | | |
| Approval Dates | | | | |
| Approval Title | Author | Reviewer | Reviewer | Project Manager |

| References | List and Hyperlink all documents related to this traveler. This includes, but is not limited to: safety (THAs, SOPs, etc), drawings, procedures, and facility related documents. | | | |
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| L2HE-PR-CHEM-CAV-CLN-COMP<br>LCLS-II HE Cavity Parts Cleaning Procedure | SRF-MSPR-CHEM-NB-ACID-R1<br>BCP Etch Rate measurement | | | |
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| Revision Note | |
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| R1 | Initial release of this Traveler. |
| R2 | Added BPM to components, added step 7, changed wording in step 8, updated references |
| R3 | Added Components; Bellows, BPM Feedthru, Spool, Faraday Window Manifold & Port<br>Updated Etch Rate Procedure to MSPR |

| Step No. | Instructions | Data Input |
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| 1 | Select component type and Serial Number:<br><br>AMGV: All Metal Gate Valve<br>FPFT: Field Probe Feedthru<br>HMFT: HOM Feedthru<br>BPM: BPM Housing<br>BPMFT: BPM Feedthru<br>BLBP: Beam Line PrCM Bellows<br>BLBS: Beam Line Downstream Bellows<br>BLBU: Beam Line Upstream Bellows<br>BLXD: Beam Line Downstream Extension Spool<br>FWM: Faraday Window Manifold<br>FPW: Faraday Port Window | [[L2HEComponent]]<br>{{AMGV,FPFT,HMFT,BPM,BMPFT,BLBP,BLBS,BLBU,BLXD,FWM,FPW}}<br><<SELECT>><br>[[AMGVSN]] <<AMGVSN>><br>[[FPFTSN]] <<FPFTSN>><br>[[HMFTSN]] <<HMFTSN>><br>[[BPMSN]] <<BPMSN>><br>[[BPMFTSN]] <<BPMFTSN>><br>[[BLBPSN]] <<BLBPSN>><br>[[BLBSSN]] <<BLBSSN>><br>[[BLBUSN]] <<BLBUSN>><br>[[BLXDSN]] <<BLXDSN>><br>[[FWMSN]] <<FWMSN>><br>[[FPWSN]] <<FPWSN>><br>[[DropSN]] <<TEXT>><br>[[Combine component and matching SN into DropSN for the traveler select box]]<br><<NOTE>> |
| 2 | Inspect the component, particularly the flanges and select whether defects are found. Add comments and upload any necessary photos or files. If it does not pass inspection submit an NCR.<br><br>If the component is a HOM FT, does the tip show evidence of being BCP'd prior? If not, stop work on this component and notify the project for guidance.<br><br>If the component is a FP FT, does the tip show evidence of being BCP'd and does the length measure 11.1 mm +/- 0.1 mm? If not, stop work | [[PreInspectionOK]] <<YESNO>><br>[[PreInspectedBy]] <<SRF>><br>[[TimeAndDatePreInspection]] <<TIMESTAMP>><br>[[PreInspectionComment]] <<COMMENT>><br>[[PreInspectionDocs]] <<FILEUPLOAD>><br>[[HOMFT_OK]] <<YESNO>><br>[[FPFT_OK]]<<YESNO>> |

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| | on this component and notify the project for guidance. | |
| 3 | Has the component been degreased?<br><br>Record Process, Operator, and Date/Time.<br><br>Add comments and upload any necessary photos or files. | [[DegreasedUSC]] <<CHECKBOX>><br>[[DegreaseTech]] <<SRF>><br>[[TimeAndDateDegr]] <<TIMESTAMP>><br>[[DegreaseComment]] <<COMMENT>><br>[[DegreaseFile]] <<FILEUPLOAD>> |

| Step No | Instructions | Data Inputs |
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| 4 | Do the flanges need to be etched by BCP?<br><br>Enter Operator and Date/Time of completion<br><br>Select whether the old acid mixture was used or a new one was mixed for this process.<br>Enter the date the acid mixture was prepared.<br>Measure the etch rate of the BCP 1:1:1 solution to be used at **15-17 C**.<br>If the etch rate is **< 3 microns /min** for BCP 1:1:1 the acid should not be used and a fresh solution should be mixed.<br>Enter the temperature of the acid during etch rate test [it should be between 15-17 C (59-63 F)].<br>Enter the average value of the etch rate from the measurement by weight loss.<br>Enter the etch rate measured by thickness reduction.<br>If the etch rate values determined by both methods differ by more than 20%, the measurement should be repeated.<br>Click in the box to calculate the etching time to remove 25 microns.<br>Etch each flange for the calculated duration as per "C75 flange BCP " procedure. Check the acid temperature before etching each flange to assure it is maintained below 20 C (68 F).<br><br>Comment on which flanges have been etched by BCP, if not all of them and any other information relevant to the BCP etch. | [[BCP]] <<CHECKBOX>><br>[[OperatorBCP]] <<SRF>><br>[[TimeAndDateBCP]] <<TIMESTAMP>><br>[[BCPState]] {{Old,Fresh}} <<RADIO>><br>[[BCPAcidDate]] <<TIMESTAMP>><br>[[AcidTemperature]] <<FLOAT>> C<br>[[Etch_Rate_Weight]] <<FLOAT>> microns/min<br>[[Etch_Rate_Thickness]] <<FLOAT>> microns/min<br>[[AvgEtchRate]] <<FLOAT>><br>[[AvgEtchRate: Please add code to calculate average etch rate = (EtchRateWeight + EtchRateThickness)/2. Please limit to 1st decimal value]] << NOTE>><br>[[Etch_Rate_Meas_Tech]] <<SRFCVP>><br>[[EtchTime]] <<FLOAT>> min<br>[[25/(AvgEtchRate). Please limit to 1st decimal value]] <<NOTE>><br>[[Flange_BCP_Comment]] <<COMMENT>> |

| Step No | Instructions | Data Inputs |
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| 5 | Select if Q-tip HF cleaning, Stainless Steel etch, Nitric, or any other acid was applied to the flanges.<br>Specify in the Comment box to which flanges each process was applied to. | [[HF]] <<CHECKBOX>><br>[[SS]] <<CHECKBOX>><br>[[NitricSoak]] <<CHECKBOX>><br>[[OtherAcid]] <<COMMENT>><br>[[Flange_Acid_Comment]] <<COMMENT>><br>[[OtherAcidTech]] <<SRF>><br>[[TimeAndDate_OtherAcid]] <<TIMESTAMP>> |
| 6 | Select if the component has been baked in the nitrogen oven at 100C overnight (10-12hours). | [[Baked]] <<CHECKBOX>><br>[[BakeTech]] <<SRF>><br>[[BakeTimeAndDate]] <<TIMESTAMP>><br>[[BakeComment]] <<COMMENT>> |
| 7 | Do the flanges need polishing? Describe work performed in comments. | [[PolishingPerformed]] <<YESNO>><br>[[PolishTech]] <<SRF>><br>[[Polish_TimeAndDate]] <<TIMESTAMP>><br>[[Polish_Comment]] <<COMMENT>><br>[[Polish_File]] <<FILEUPLOAD>> |
| 8 | Perform a final inspection of the flanges and critical areas of the item (probe tip, seal surfaces).<br>Add comments and upload any necessary photos or files.<br>If it does not pass inspection submit an NCR. | [[FinalInspectionOK]] <<YESNO>><br>[[FinalInspectionTech]] <<SRF>><br>[[FinalInspection_TimeAndDate]] <<TIMESTAMP>><br>[[Final_Inspection_Comment]] <<COMMENT>><br>[[FinalInspection_File]] <<FILEUPLOAD>> |
| 9 | Final Location of component | [[Cleanroom]] <<YESNO>> |