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| Traveler Title | FPC Waveguide Fabrication Traveler |
| Traveler Abstract | Outlines the inspection and fabrication steps for the FPC Waveguide Assembly for the EIC 197MHz Crab Cavity Prototype |
| Traveler ID | EIC197-FAB-FPCWV-ASSY |
| Traveler Revision  | R1 |
| Traveler Author | JACQUESB |
| Traveler Date | 29-Aug-24 |
| NCR Informative Emails | AREILLY,GEORGED,MOSBY,KDAVIS |
| NCR Dispositioners | HUQUE,JACQUESB,BUTTLES |
| D3 Emails | HUQUE,JACQUESB,BUTTLES,KDAVIS,GEORGED,MOSBY,AREILLY |
| Approval Names | J. BARSIMANTOV | Approval Names | J. BARSIMANTOV | Approval Names |
| Approval Signatures |  | Approval Signatures |  | Approval Signatures |
| Approval Dates |  | Approval Dates |  | Approval Dates |
| Approval Title | Author | Approval Title | Author | Approval Title |

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| --- | --- |
| 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. |
| [JL0140359](https://misportal.jlab.org/jlabDocs/documents/179215/download) | [JL0127968](https://misportal.jlab.org/jlabDocs/documents/162300/download) | [JL0132924](https://misportal.jlab.org/jlabDocs/documents/167569/download) | [JL0135516](https://misportal.jlab.org/jlabDocs/documents/179214/download) | [JL0140820](https://misportal.jlab.org/jlabDocs/documents/184800/download) |
| [JL0136175](https://misportal.jlab.org/jlabDocs/documents/179216/download) | [JL0135333](https://misportal.jlab.org/jlabDocs/documents/179213/download) | [JL0140930](https://misportal.jlab.org/jlabDocs/documents/187378/download) | [JL0148259](https://misportal.jlab.org/jlabDocs/documents/183939/download) | [JL0141293](https://misportal.jlab.org/jlabDocs/documents/179217/download) |
| [JL0141292](https://misportal.jlab.org/jlabDocs/documents/179218/download) | [JL0136178](https://misportal.jlab.org/jlabDocs/documents/180704/download) | [JL0141291](https://misportal.jlab.org/jlabDocs/documents/179224/download) | [JL0136179](https://misportal.jlab.org/jlabDocs/documents/182975/download) | [JL0143010](https://misportal.jlab.org/jlabDocs/documents/183839/download) |
| [11141-S-0033](https://misportal.jlab.org/jlabDocs/documents/70285/download) | [Fabrication Plan](https://jeffersonlab.sharepoint.com/%3Ap%3A/r/sites/EICPartnerProject-TJNAF/Accelerator/RF%20Systems/Cryomodules/197%20MHz%20DVC/Cavity%20Fabrication%20Files/Fabrication%20Plans/FPC%20Waveguide%20Fabrication%20Plan.pptx?d=w94656b4829314df6b35f32c128d257cb&csf=1&web=1&e=2CmWwT) |  |  |  |

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| Revision Note |  |
| R1 | Initial release of this Traveler. |

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| Step No. | Instructions | Data Input |
| PART IDENTIFICATION |
| 0 | Enter Serial Number of Finished Part

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| **STEPS** | **WORK CENTER AREAS** | **ACTIONS** |
| 1 | MACHSHOP | Part Forming |
| 2 | MACHSHOP | Part Machining |
| 3 | CHEM | BCP |
| 4 | EBW | EBW |
| 5 | CMA | Leak Check |
| 6 | MACHSHOP | Part Machining |
| 7 | CHEM | DEGR |
| 8 | INSP | CMM |
| 9 | MACHSHOP | Part Machining |
| 10 | MACHSHOP | Part Machining |
| 11 | CHEM | BCP |
| 12 | EBW | EBW |
| 13 | CMA | Leak Check |
| 14 | MACHSHOP | Part Machining |
| 15 | CHEM | BCP |
| 16 | EBW | EBW |
| 17 | CMA | Leak Check |
| 18 | MACHSHOP | Part Machining |
| 19 | CHEM | DEGR |
| 20 | INSP | CMM |

 | [[FPCWVSN]] << FPCWVSN>> |

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| Step No. | Instructions | Data Input |
| FORMING |
| 1 | Form . [JL0140359](https://misportal.jlab.org/jlabDocs/documents/179215/download) (x2) | [[MachTech1]] <<SRF>>[[MachTime1]] <<TIMESTAMP>>[[MachJobNumber1]] <<INTEGER>>[[MachComm1]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 2 | Machine [JL0135516](https://misportal.jlab.org/jlabDocs/documents/179214/download) | [[MachTech2]] <<SRF>>[[MachTime2]] <<TIMESTAMP>>[[MachJobNumber2]] <<INTEGER>>[[MachComm2]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| CHEMISTRY |
| 3a | BCP weld region to a depth of 15 microns part [JL0140359](https://misportal.jlab.org/jlabDocs/documents/179215/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching Proceedure  | [[ChemTech2]] <<SRFCVP>>[[ChemTime2]] <<TIMESTAMP>>[[ChemComm2]] <<COMMENT>>[[ChemFile2]] <<FILEUPLOAD>> |
| 3b | BCP weld region to a depth of 15 microns part [JL0135516](https://misportal.jlab.org/jlabDocs/documents/179214/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching Proceedure | [[ChemTech3]] <<SRFCVP>>[[ChemTime3]] <<TIMESTAMP>>[[ChemComm3]] <<COMMENT>>[[ChemFile3]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| EBW |
| 4 | Using fixture [JL0140820](https://misportal.jlab.org/jlabDocs/documents/184800/download), EBW [JL0140359](https://misportal.jlab.org/jlabDocs/documents/179215/download) to [JL0140359](https://misportal.jlab.org/jlabDocs/documents/179215/download) and [JL0135516](https://misportal.jlab.org/jlabDocs/documents/179214/download) to create part [JL0136175](https://misportal.jlab.org/jlabDocs/documents/179216/download) | [[FPCWVSN]] << FPCWVSN>>[[InsTech1]] <<SRF>>[[InsTime1]] <<TIMESTAMP>>[[InsComm1]] <<COMMENT>>[[InsFile1]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| LEAK CHECK |
| 5 | Leak check the assembly ([JL0136175](https://misportal.jlab.org/jlabDocs/documents/179216/download)) in accordance with [11141-S-0033](https://misportal.jlab.org/jlabDocs/documents/70285/download) Vendor Standard Helium Leak Check ProcedureUpload any relevant images/comments | [[VacTech1]] <<SRF>>[[VacTime1]] <<TIMESTAMP>>[[VacPass1]] <<YESNO>>[[VacComm1]] <<COMMENT>>[[VacFile1]] <<FILEUPLOAD>>[[VacMail1]] {{jacquesb}} <<EMAIL>>[[VacMail1]] {{ Leak check on [JL0136175](https://misportal.jlab.org/jlabDocs/documents/175540/download) has finished }} <<EMAILSUBJ>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 6 | Machine the ends of the waveguide [JL0136175](https://misportal.jlab.org/jlabDocs/documents/179216/download) | [[MachTech3]] <<SRF>>[[MachTime3]] <<TIMESTAMP>>[[MachJobNumber3]] <<INTEGER>>[[MachComm3]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| CHEMISTRY |
| 7 | Degrease [JL0136175](https://misportal.jlab.org/jlabDocs/documents/179216/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching ProceedureUpload any relevant photos and/or comments | [[ChemTech4]] <<SRF>>[[ChemTime4]] <<TIMESTAMP>>[[ChemComm4]] <<COMMENT>>[[ChemFile4]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| DIMENSIONAL INSPECTION |
| 8 | Verify dimensions in red. | [[DimensionInspTech2]] <<SRF>>[[DimensionInspDate2]] <<TIMESTAMP>>[[DimensionInspComment2]] <<COMMENT>>[[DimensionInspFile2]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 9 | Machine [JL0135333](https://misportal.jlab.org/jlabDocs/documents/179213/download) | [[MachTech4]] <<SRF>>[[MachTime4]] <<TIMESTAMP>>[[MachJobNumber4]] <<INTEGER>>[[MachComm4]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 10 | Machine [JL0140930](https://misportal.jlab.org/jlabDocs/documents/187378/download) | [[MachTech5]] <<SRF>>[[MachTime5]] <<TIMESTAMP>>[[MachJobNumber5]] <<INTEGER>>[[MachComm5]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| CHEMISTRY |
| 11a | BCP weld region to a depth of 15 microns part [JL0135333](https://misportal.jlab.org/jlabDocs/documents/179213/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching Proceedure | [[ChemTech4]] <<SRFCVP>>[[ChemTime4]] <<TIMESTAMP>>[[ChemComm4]] <<COMMENT>>[[ChemFile4]] <<FILEUPLOAD>> |
| 11b | BCP weld region to a depth of 15 microns part [JL0140930](https://misportal.jlab.org/jlabDocs/documents/187378/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching Proceedure | [[ChemTech5]] <<SRFCVP>>[[ChemTime5]] <<TIMESTAMP>>[[ChemComm5]] <<COMMENT>>[[ChemFile5]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| EBW |
| 12 | Using fixture [JL0148259](https://misportal.jlab.org/jlabDocs/documents/183939/download), EBW [JL0136175](https://misportal.jlab.org/jlabDocs/documents/179216/download)to [JL0135333](https://misportal.jlab.org/jlabDocs/documents/179213/download) and [JL0140930](https://misportal.jlab.org/jlabDocs/documents/187378/download)to create part [JL0141293](https://misportal.jlab.org/jlabDocs/documents/179217/download) | [[FPCWVSN]] << FPCWVSN>>[[InsTech3]] <<SRF>>[[InsTime3]] <<TIMESTAMP>>[[InsComm3]] <<COMMENT>>[[InsFile3]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| LEAK CHECK |
| 13 | Leak check the assembly ([JL0141293](https://misportal.jlab.org/jlabDocs/documents/179217/download)) in accordance with [11141-S-0033](https://misportal.jlab.org/jlabDocs/documents/70285/download) Vendor Standard Helium Leak Check ProcedureUpload any relevant images/comments | [[VacTech2]] <<SRF>>[[VacTime2]] <<TIMESTAMP>>[[VacPass2]] <<YESNO>>[[VacComm2]] <<COMMENT>>[[VacFile2]] <<FILEUPLOAD>>[[VacMail2]] {{jacquesb}} <<EMAIL>>[[VacMail2]] {{ Leak check on [JL0141293](https://misportal.jlab.org/jlabDocs/documents/175540/download) has finished }} <<EMAILSUBJ>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 14 | Machine the FPC Port on [JL0141293](https://misportal.jlab.org/jlabDocs/documents/179217/download) to create part [JL0141292](https://misportal.jlab.org/jlabDocs/documents/179218/download) | [[MachTech5]] <<SRF>>[[MachTime5]] <<TIMESTAMP>>[[MachJobNumber5]] <<INTEGER>>[[MachComm5]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| CHEMISTRY |
| 15a | BCP weld region to a depth of 15 microns part [JL0141292](https://misportal.jlab.org/jlabDocs/documents/179218/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching Proceedure | [[ChemTech6]] <<SRFCVP>>[[ChemTime6]] <<TIMESTAMP>>[[ChemComm6]] <<COMMENT>>[[ChemFile6]] <<FILEUPLOAD>> |
| 15b | BCP weld region to a depth of 15 microns part [JL0136178](https://misportal.jlab.org/jlabDocs/documents/180704/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching Proceedure | [[ChemTech7]] <<SRFCVP>>[[ChemTime7]] <<TIMESTAMP>>[[ChemComm7]] <<COMMENT>>[[ChemFile7]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| EBW |
| 16 | Using fixture [JL0143010](https://misportal.jlab.org/jlabDocs/documents/183839/download), EBW [JL0141292](https://misportal.jlab.org/jlabDocs/documents/179218/download) to [JL0136178](https://misportal.jlab.org/jlabDocs/documents/180704/download) to create part [JL0141291](https://misportal.jlab.org/jlabDocs/documents/179224/download) | [[FPCWVSN]] << FPCWVSN>>[[InsTech4]] <<SRF>>[[InsTime4]] <<TIMESTAMP>>[[InsComm4]] <<COMMENT>>[[InsFile4]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| LEAK CHECK |
| 17 | Leak check the assembly ([JL0141291](https://misportal.jlab.org/jlabDocs/documents/179224/download)) in accordance with [11141-S-0033](https://misportal.jlab.org/jlabDocs/documents/70285/download) Vendor Standard Helium Leak Check ProcedureUpload any relevant images/comments | [[VacTech2]] <<SRF>>[[VacTime2]] <<TIMESTAMP>>[[VacPass2]] <<YESNO>>[[VacComm2]] <<COMMENT>>[[VacFile2]] <<FILEUPLOAD>>[[VacMail2]] {{jacquesb}} <<EMAIL>>[[VacMail2]] {{ Leak check on [JL0141291](https://misportal.jlab.org/jlabDocs/documents/175540/download) has finished }} <<EMAILSUBJ>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 18 | Machine the ends of [JL0136179](https://misportal.jlab.org/jlabDocs/documents/182975/download) | [[MachTech5]] <<SRF>>[[MachTime5]] <<TIMESTAMP>>[[MachJobNumber5]] <<INTEGER>>[[MachComm5]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| CHEMISTRY |
| 19 | Degrease [JL0136179](https://misportal.jlab.org/jlabDocs/documents/182975/download)According to [CP-AUP-CAV-CHEM-ACID](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2%282%29.pdf) Acid Etching ProceedureUpload any relevant photos and/or comments | [[ChemTech8]] <<SRF>>[[ChemTime8]] <<TIMESTAMP>>[[ChemComm8]] <<COMMENT>>[[ChemFile8]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| DIMENSIONAL INSPECTION |
| 20a | Verify dimensions in red. | [[SurfaceInspTech5]] <<SRF>>[[SurfaceInspDate5]] <<TIMESTAMP>>[[SurfaceInspComment5]] <<COMMENT>>[[SurfaceInspFile5]] <<FILEUPLOAD>> |
| 20b | Verify perpendicularity | [[PerpendicularityInspTech6]] <<SRF>>[[PerpendicularityInspDate6]] <<TIMESTAMP>>[[PerpendicularityInspComment6]] <<COMMENT>>[[PerpendicularityInspFile6]] <<FILEUPLOAD>> |
| 20c |  | [[FPCDimInspTech7]] <<SRF>>[[FPCDimInspDate7]] <<TIMESTAMP>>[[FPCDimInspComment7]] <<COMMENT>>[[FPCDimInspFile7]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| TECHNICAL REPRESENTATIVE |
| 21 | Enter SRF OPS Shipping form number and Purchase Requisition number for ultrasonic testing. | [[TechRep]] <<SRF>>[[ShippingFormNumber]] <<INTEGER>>[[PurchaseRequestNumber]] <<INTEGER>> |