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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-FPCWA-ASSY |
| Traveler Revision  | R1 |
| Traveler Author | Jacques Barsimantov |
| Traveler Date | 30-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 | A. OBRIEN | J. BUTTLES | N. HUQUE |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | Reviewer | Group Leader | Project Manager |

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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) | [Dogbone Field Probe Fabrication Plan](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-289437/Dogbone%20Field%20Probe%20Fabrication%20Plan.pptx) | [FPC Waveguide Fabrication Plan](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-289436/FPC%20Waveguide%20Fabrication%20Plan.pptx) | [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf) | [SRF-MSPR-CHEM-FBH-DEGR-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261899/SRF-MSPR-CHEM-FBH-DEGR-R1.pdf) |

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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 |

 | [[FPCWASN1]] <<FPCWASN>> |
| Step No. | Instructions | Data Input |
| FORMING |
| 1 | Form . [JL0140359](https://misportal.jlab.org/jlabDocs/documents/179215/download) (x2) | [[MachFormTech]] <<SRF>>[[MachFormTime]] <<TIMESTAMP>>[[MachFormJobNumber]] <<INTEGER>>[[MachFormComm]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 2 | Machine [JL0135516](https://misportal.jlab.org/jlabDocs/documents/179214/download) | [[MachStiffenerTech]] <<SRF>>[[MachStiffenerTime]] <<TIMESTAMP>>[[MachStiffenerJobNumber]] <<INTEGER>>[[MachStiffenerComm]] <<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 [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf) Acid Etching Proceedure  | [[Chem\_DBH\_BCPTech]] <<SRFCVP>>[[Chem\_DBH\_BCPTime]] <<TIMESTAMP>>[[Chem\_DBH\_BCPComm]] <<COMMENT>>[[Chem\_DBH\_BCPFile]] <<FILEUPLOAD>> |
| 3b | BCP weld region to a depth of 15 microns part [JL0135516](https://misportal.jlab.org/jlabDocs/documents/179214/download)According to [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf) Acid Etching Proceedure | [[Chem\_DBS\_BCPTech]] <<SRFCVP>>[[Chem\_DBS\_BCPTime]] <<TIMESTAMP>>[[Chem\_DBS\_BCPComm]] <<COMMENT>>[[Chem\_DBS\_BCPFile]] <<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) | [[FPCWASN2]] <<FPCWASN>>[[WeldStiffenerTech]] <<SRF>>[[WeldStiffenerTime]] <<TIMESTAMP>>[[WeldStiffenerComm]] <<COMMENT>>[[WeldStiffenerFile]] <<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 | [[VacStiffenerTech]] <<SRF>>[[VacStiffenerTime]] <<TIMESTAMP>>[[VacStiffenerPass]] <<YESNO>>[[VacStiffenerComm]] <<COMMENT>>[[VacStiffenerFile]] <<FILEUPLOAD>>[[VacStiffenerMail]] {{jacquesb}} <<EMAIL>>[[VacStiffenerMail]] {{ 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) | [[MachWaveGEndsTech]] <<SRF>>[[MachWaveGEndsTime]] <<TIMESTAMP>>[[MachWaveGEndsJobNumber]] <<INTEGER>>[[MachWaveGEndsComm]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| CHEMISTRY |
| 7 | Degrease [JL0136175](https://misportal.jlab.org/jlabDocs/documents/179216/download)According to [SRF-MSPR-CHEM-FBH-DEGR-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261899/SRF-MSPR-CHEM-FBH-DEGR-R1.pdf)Upload any relevant photos and/or comments | [[ChemDgrsTech]] <<SRF>>[[ChemDgrsTime]] <<TIMESTAMP>>[[ChemDgrsComm]] <<COMMENT>>[[ChemDgrsFile]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| DIMENSIONAL INSPECTION |
| 8 | Verify dimensions in red.Diagram  Description automatically generated with medium confidence | [[DimensionInspTech]] <<SRF>>[[DimensionInspDate]] <<TIMESTAMP>>[[DimensionInspComment]] <<COMMENT>>[[DimensionInspFile]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 9 | Machine [JL0135333](https://misportal.jlab.org/jlabDocs/documents/179213/download) | [[MachFPCWGEndTech]] <<SRF>>[[MachFPCWGEndTime]] <<TIMESTAMP>>[[MachFPCWGEndJobNumber]] <<INTEGER>>[[MachFPCWGEndComm]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| MACHINING |
| 10 | Machine [JL0140930](https://misportal.jlab.org/jlabDocs/documents/187378/download) | [[MachFPCDBTransTech]] <<SRF>>[[MachFPCDBTransTime]] <<TIMESTAMP>>[[MachFPCDBTransJobNumber]] <<INTEGER>>[[MachFPCDBTransComm]] <<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 [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf) Acid Etching Proceedure | [[WGEChemBCPTech]] <<SRFCVP>>[[WGEChemBCPTime]] <<TIMESTAMP>>[[WGEChemBCPComm]] <<COMMENT>>[[WGEChemBCPFile]] <<FILEUPLOAD>> |
| 11b | BCP weld region to a depth of 15 microns part [JL0140930](https://misportal.jlab.org/jlabDocs/documents/187378/download)According to [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf) Acid Etching Proceedure | [[FPCDBTChemBCPTech]] <<SRFCVP>>[[FPCDBTChemBCPTime]] <<TIMESTAMP>>[[FPCDBTChemBCPComm]] <<COMMENT>>[[DBTChemBCPFile]] <<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) | [[FPCWASN3]] <<FPCWASN>>[[WeldFPCPreMachTech]] <<SRF>>[[WeldFPCPreMachTime]] <<TIMESTAMP>>[[WeldFPCPreMachComm]] <<COMMENT>>[[WeldFPCPreMachFile]] <<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 | [[VacFPCPreMachTech]] <<SRF>>[[VacFPCPreMachTime]] <<TIMESTAMP>>[[VacFPCPreMachPass]] <<YESNO>>[[VacFPCPreMachComm]] <<COMMENT>>[[VacFPCPreMachFile]] <<FILEUPLOAD>>[[VacFPCPreMachMail]] {{jacquesb}} <<EMAIL>>[[VacFPCPreMachMail]] {{ 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) | [[MachFPCPortTech]] <<SRF>>[[MachFPCPortTime]] <<TIMESTAMP>>[[MachFPCPortJobNumber]] <<INTEGER>>[[MachFPCPortComm]] <<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 [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf) Acid Etching Proceedure | [[FPCWGWChemBCPTech]] <<SRFCVP>>[[FPCWGWChemBCPTime]] <<TIMESTAMP>>[[FPCWGWChemBCPComm]] <<COMMENT>>[[FPCWGWChemBCPFile]] <<FILEUPLOAD>> |
| 15b | BCP weld region to a depth of 15 microns part [JL0136178](https://misportal.jlab.org/jlabDocs/documents/180704/download)According to [SRF-MSPR-CHEM-NB-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261723/SRF-MSPR-CHEM-NB-ACID-R1.pdf) Acid Etching Proceedure | [[FPCPTChemBCPTech]] <<SRFCVP>>[[FPCPTChemBCPTime]] <<TIMESTAMP>>[[FPCPTChemBCPComm]] <<COMMENT>>[[FPCPTChemBCPFile]] <<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) | [[FPCWASN4]] <<FPCWASN>>[[WeldFPCWATech]] <<SRF>>[[WeldFPCWATime]] <<TIMESTAMP>>[[WeldFPCWAComm]] <<COMMENT>>[[WeldFPCWAFile]] <<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 | [[VacFPCWATech]] <<SRF>>[[VacFPCWATime]] <<TIMESTAMP>>[[VacFPCWAPass]] <<YESNO>>[[VacFPCWAComm]] <<COMMENT>>[[VacFPCWAFile]] <<FILEUPLOAD>>[[VacFPCWAMail]] {{jacquesb}} <<EMAIL>>[[VacFPCWGMail]] {{ 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) | [[MachFPCWATech]] <<SRF>>[[MachFPCWATime]] <<TIMESTAMP>>[[MachFPCWAJobNumber]] <<INTEGER>>[[MachFPCWAComm]] <<COMMENT>> |

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| Step No. | Instructions | Data Input |
| CHEMISTRY |
| 19 | Degrease [JL0136179](https://misportal.jlab.org/jlabDocs/documents/182975/download)According to [SRF-MSPR-CHEM-FBH-DEGR-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-261899/SRF-MSPR-CHEM-FBH-DEGR-R1.pdf) Upload any relevant photos and/or comments | [[ChemDegrTech]] <<SRF>>[[ChemDegrTime]] <<TIMESTAMP>>[[ChemDegrComm]] <<COMMENT>>[[ChemDegrFile]] <<FILEUPLOAD>> |

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| Step No. | Instructions | Data Input |
| DIMENSIONAL INSPECTION |
| 20a | Verify dimensions in red.Diagram, engineering drawing  Description automatically generatedText  Description automatically generated | [[SurfaceInspTech]] <<SRF>>[[SurfaceInspDate]] <<TIMESTAMP>>[[SurfaceInspComment]] <<COMMENT>>[[SurfaceInspFile]] <<FILEUPLOAD>> |
| 20b | Diagram, engineering drawing  Description automatically generatedVerify perpendicularity | [[PerpendicularityInspTech]] <<SRF>>[[PerpendicularityInspDate]] <<TIMESTAMP>>[[PerpendicularityInspComment]] <<COMMENT>>[[PerpendicularityInspFile]] <<FILEUPLOAD>> |
| 20c | Diagram, engineering drawing  Description automatically generated | [[FPCDimInspTech]] <<SRF>>[[FPCDimInspDate]] <<TIMESTAMP>>[[FPCDimInspComment]] <<COMMENT>>[[FPCDimInspFile]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| TECHNICAL REPRESENTATIVE |
| 21 | Engrave SN on [JL0136179](https://misportal.jlab.org/jlabDocs/documents/182975/download) | [[TechRep]] <<SRF>>[[ShippingFormNumber]] <<INTEGER>>[[PurchaseRequestNumber]] <<INTEGER>> |