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| Traveler Title | Recycled Waveguide Inspection – 12 GeV Upgrade Waveguides |
| Traveler Abstract | This traveler is to be used for the inspection of wavguides and waveguide window weldments. |
| Traveler ID | C100R-CAV-INSP-WGD-RCYC |
| Traveler Revision  | R2 |
| Traveler Author | Aaron DeKerlegand |
| Traveler Date | 11-Feb-22 |
| NCR Informative Emails | Grose |
| NCR Dispositioners | Scott,ganey,forehand |
| D3 Emails | Scott,ganey,forehand |
| Approval Names | Aaron DeKerlegand | Greg Grose | Scott Williams | Tiffany Ganey |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | Reviewer | Reviewer | 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. |
| [JL0076419-A-C100 WELD WINDOW TO WAVEGUIDE](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-236375/JL0076419-A-C100%20WELD%20WINDOW%20TO%20WAVEGUIDE.pdf) | 12 GeV Waveguide Assembly, [CRM1207070-0000](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-41252/CRM1207070-0000%5B1%5D.pdf) |  |  |  |
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| Revision Note |  |
| R1 | Initial release of this Traveler. |
| R2 | Latest drawing JL0076419 added to traveler. Also, a final visual step (step 4) was added for final inspection after welding. |

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| Step No. | Instructions | Data Input |
| 1 | **Note**: Follow the requirements of [22632-S-001](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-41257/22632-S-001%5B1%5D.pdf) (including wearing gloves) at all times when handling these components. Make sure that the faces of the flanges are protected from handling damage. **Note**: For this entire traveler, if any of the inspection items in this traveler are not as they should be, please generate either a D3 or an NCR, based on the inspector's judgment. Enter technician name:Enter date:Enter serial number of waveguide being inspected: | [[InspectionTech]] <<SRF>>[[InspectionDate] <<TIMESTAMP>>[[WGDSN]] <<WGDSN>>[[VisualExamStart]] <<TIMESTAMP>>[[WGDCouponNo]] <<FLOAT>>[[WGDRadTag]] <<FLOAT>> |
| 2 | Upon receiving of Waveguide/Window subassembly, perform a leak check according to Spec. 11141-S-0029A. Leak rate should be less than 1 x 10-10 atm cc/sec of helium. Use appropriate tooling to ensure the bellows are not crushed. Leaktest should be performed as a subassembly as removed from module, allowing technician to leaktest both window & waveguige in one setup if possible. Note: Radcon’s involvement will be required when handling & relocating any tagged hardware. | [[LeakCheckTech]] <<SRF>>[[LeakCheckDate]] <<TIMESTAMP>>[[LeakCheckPassed]] <<YESNO>>[[LeakCheckComment]] <<COMMENT>>[[LeakCheckFiles]] <<FILEUPLOAD>>[[LeakCheckStart]] <<TIMESTAMP>>[[LeakCheckEnd]] <<TIMESTAMP>> |

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| Step No. | Instructions | Data Input |
| 3 | Enter technician name:Enter date:Initial inspection of waveguide. Visually check wavguide flanges, bellows and plating. NOTE – small flange may have seal imprint after cryomodule disassembly. This flange will be reworked/machined and re-inspected at final inspection step in this traveler.  | [[OuterConductorTech]] <<SRF>>[[OuterConductorDate]] <<TIMESTAMP>>[[OuterConductorComment]] <<COMMENT>>[[OuterConductorUpload]] <<FILEUPLOAD>> |
| Copper plating must be continuous and uniform, without blisters, flaking, gouges or other damage. There should be no foreign material (fingerprints, excessive dust) on RF exposed surfaces. Okay? |  [[CopperPlatingOk]] <<YESNO>> |
| There should be no unusual discoloration to the base material, especially around welds. No unsual discoloration to copper other than minor oxidation. Okay? | [[ColorationOk]] <<YESNO>> |
| Inspect small flange for any scratches, pits or damage. Okay? | [[SurfacesOk]] <<YESNO>> |
| Examine the knife edge on large flange carefully. There should be no damage at all (including burrs, scratches, nicks) to knife edge. Okay? | [[KnifeEdgeOk]] <<YESNO>> |
| Visually check o-ring groove for any damage. Okay? | [[SealingSurfaceOk]] <<YESNO>> |
| Visually inspect the bellows convolutions. Check for dents, kinks, or any other damage to metal. Okay? | [[BellowsConvolutionsOk]] <<YESNO>> |

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| Step No. | Instructions | Data Input |
| 4 | Enter technician name:Enter date:Final inspection after welding. Visually check all flanges, bellows and plating. Window waveguide weldment Drawing # JL0076419.NOTE – Record serial number of window assembly welded onto waveguide. | [[OuterConductorTech1]] <<SRF>>[[OuterConductorDate1]] <<TIMESTAMP>>[[WINSN]] <<WINSN>>[[DamageComment1]] <<COMMENT>>[[DamageFiles1]] <<FILEUPLOAD>> |
| Copper plating must be continuous and uniform, without blisters, flaking, gouges or other damage. There should be no foreign material (fingerprints, excessive dust) on RF exposed surfaces. Okay? |  [[CopperPlatingOk1]] <<YESNO>> |
| There should be no unusual discoloration to the base material, especially around welds. No unsual discoloration to copper other than minor oxidation. Okay? | [[ColorationOk1]] <<YESNO>> |
| Inspect small flange for any scratches, pits or damage. Okay? | [[SurfacesOk1]] <<YESNO>> |
| Examine the knife edge of window flange carefully. There should be no damage at all (including burrs, scratches, nicks) to knife edge. Okay? | [[KnifeEdgeOk1]] <<YESNO>> |
| Visually check o-ring groove for any damage. Okay? | [[SealingSurfaceOk1]] <<YESNO>> |
| Visually inspect the bellows convolutions. Check for dents, kinks, or any other damage to metal. Okay? | [[BellowsConvolutionsOk1]] <<YESNO>> |
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| Step No. | Instructions |  | Data Input |
| 5 | Enter technician name:Enter date:Verify the dimensions shown below (Drawing # CRM12070700000). |  | [[DimensionalTech]] <<SRF>>[[DimensionalDate]] <<TIMESTAMP>>[[DimensionalCheckStart]] <<TIMESTAMP>> |
|  | Tolerance |  |
| Small flange flatness. Nominal 0.000”  | 0.003” |  [[FlatnessOk]] <<YESNO>> |
| Small flange finish. Nominal 16 microinch  | 16 u inch | [[SurfaceFinishFlgOk]] <<YESNO>> |
|  | Describe any discrepancies in the comment field. | [[DimensionalComment]] <<COMMENT>>[[DimensionalFiles]] <<FILEUPLOAD>>[[DimensionalCheckEnd]] <<TIMESTAMP>> |

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| Step No. | Instructions |  | Data Input |
| 6 | Repackage items with lint free wipes and flange covers on each flange. |  | [[RepackageTech]] <<SRF>>[[RepackageDate]] <<TIMESTAMP>>[[RepackageLocation]] <<COMMENT>>[[RepackageFiles]] <<FILEUPLOAD>> |