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| Traveler Title | Vertical HOM-Damper Fabrication | | | |
| Traveler Abstract | This traveler defines the steps for fabricating VHOMs for the AUP RFD Cavity | | | |
| Traveler ID | AUPPS-FAB-VHOM-ASSY | | | |
| Traveler Revision | R3 | | | |
| Traveler Author | N. HUQUE | | | |
| Traveler Date | 23-May-22 | | | |
| NCR Informative Emails | AREILLY,AOBRIEN,GROSE | | | |
| NCR Dispositioners | HUQUE,DOBRENZ | | | |
| D3 Emails | HUQUE,DOBRENZ,AREILLY,AOBRIEN,GROSE | | | |
| Approval Names | Naeem Huque | Adam OBrien | Greg Grose | Tony Reilly |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | Reviewer | Reviewer | Department Head |

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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. | | | |
| [**11141S0029**](https://misportal.jlab.org/jlabDocs/items/70285) | [**AUP-PR-LEAK-CMA-LN2**](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260916/AUP-PR-LEAK-CMA-LN2-R1(2).pdf) | [**CP-AUP-CAV-CHEM-ACID**](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260914/CP-AUP-CAV-CHEM-ACID-R2(2).pdf) | [**CP-AUP-CAV-CHEM-DEGR**](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260913/CP-AUP-CAV-CHEM-DEGR-R2(2).pdf) | [**JL0089760**](https://misportal.jlab.org/jlabDocs/documents/versions/149518/download) |
| [**JL0089865**](https://misportal.jlab.org/jlabDocs/documents/versions/160950/download) | [**JL0090122**](https://misportal.jlab.org/jlabDocs/documents/versions/181012/download) | [**JL0092614**](https://misportal.jlab.org/jlabDocs/documents/versions/178857/download) | [**JL0124777**](https://misportal.jlab.org/jlabDocs/documents/versions/181066/download) | [**JL0124782**](https://misportal.jlab.org/jlabDocs/documents/versions/181007/download) |
| [**JL0124783**](https://misportal.jlab.org/jlabDocs/documents/versions/181009/download) | [**JL0124784**](https://misportal.jlab.org/jlabDocs/documents/versions/181011/download) | [**LHCACFHC0206**](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-260912/LHCACFHC0206.pdf) |  |  |

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| Revision Note |  |
| R1 | Initial release of this Traveler. |
| R2 | Added Step 7a-1. Removed Step 8f. Updated NCR Informative and D3 emails. Updated Reviewer from Scott Williams to Greg Grose. Updated images in Step 2a, 4a, 8b, and 9b. |
| R3 | Removed Ed Daly from NCR Dispositioners and D3 emails |

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| Step No. | Instructions | Data Input |
|  | Serial Number of top assembly | [[VHOMSN]] <<VHOMSN>> |
| PART INSPECTION | | |
| 1a | Serial number of JL0090122 – Hook | [[VHOOKSN]] <<VHOOKSN>> |
| 1b | Upload Material Certificates, along with any relevant photos and/or comments | [[Doc1Tech]] <<SRF>>  [[Doc1Time]] <<TIMESTAMP>>  [[Doc1Comm]] <<COMMENT>>  [[Doc1File]] <<FILEUPLOAD>> |
| 1c | Machine the component as per drawing JL0090122.  Upload any relevant photos and/or comments | [[Mach1Tech]] <<SRF>>  [[Mach1Time]] <<TIMESTAMP>>  [[Mach1Comm]] <<COMMENT>>  [[Mach1File]] <<FILEUPLOAD>> |
| 1d | Verify dimensions on JL0090122  Upload inspection report along with any relevant photos and/or comments. | [[CMM1Tech]] <<SRF>>  [[CMM1Time]] <<TIMESTAMP>>  [[CMM1Comm]] <<COMMENT>>  [[CMM1File]] <<FILEUPLOAD>> |
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| 2a | Serial number of JL0124782 – Connector | [[CONNSN]] <<CONNSN>> |
| 2b | Upload Material Certificates, along with any relevant photos and/or comments | [[Doc2Tech]] <<SRF>>  [[Doc2Time]] <<TIMESTAMP>>  [[Doc2Comm]] <<COMMENT>>  [[Doc2File]] <<FILEUPLOAD>> |
| 2c | Machine the component as per drawing JL0124782.  Upload any relevant photos and/or comments | [[Mach2Tech]] <<SRF>>  [[Mach2Time]] <<TIMESTAMP>>  [[Mach2Comm]] <<COMMENT>>  [[Mach2File]] <<FILEUPLOAD>> |
| 2d | Verify dimensions on JL0124782  Upload inspection report along with any relevant photos and/or comments. | [[CMM2Tech]] <<SRF>>  [[CMM2Time]] <<TIMESTAMP>>  [[CMM2Comm]] <<COMMENT>>  [[CMM2File]] <<FILEUPLOAD>> |
|  |  |  |
| 3a | Serial number of JL0089865 – Copper Ring | [[CURNGSN]] <<CURNGSN>> |
| 3b | Upload Material Certificates, along with any relevant photos and/or comments | [[Doc3Tech]] <<SRF>>  [[Doc3Time]] <<TIMESTAMP>>  [[Doc3Comm]] <<COMMENT>>  [[Doc3File]] <<FILEUPLOAD>> |
| 3c | Machine the component as per drawing JL0089865.  Upload any relevant photos and/or comments | [[Mach3Tech]] <<SRF>>  [[Mach3Time]] <<TIMESTAMP>>  [[Mach3Comm]] <<COMMENT>>  [[Mach3File]] <<FILEUPLOAD>> |
| 3d | Verify dimensions on JL0089865  Upload inspection report along with any relevant photos and/or comments. | [[CMM3Tech]] <<SRF>>  [[CMM3Time]] <<TIMESTAMP>>  [[CMM3Comm]] <<COMMENT>>  [[CMM3File]] <<FILEUPLOAD>> |
|  |  |  |
| 4a | Serial number of JL0124784 – VHOM Rod | [[VRODSN]] <<VRODSN>> |
| 4b | Upload Material Certificates, along with any relevant photos and/or comments | [[Doc4Tech]] <<SRF>>  [[Doc4Time]] <<TIMESTAMP>>  [[Doc4Comm]] <<COMMENT>>  [[Doc4File]] <<FILEUPLOAD>> |
| 4c | Machine the component as per drawing JL0124784.  Upload any relevant photos and/or comments | [[Mach4Tech]] <<SRF>>  [[Mach4Time]] <<TIMESTAMP>>  [[Mach4Comm]] <<COMMENT>>  [[Mach4File]] <<FILEUPLOAD>> |
| 4d | Verify dimensions on JL0124784  Upload inspection report along with any relevant photos and/or comments. | [[CMM4Tech]] <<SRF>>  [[CMM4Time]] <<TIMESTAMP>>  [[CMM4Comm]] <<COMMENT>>  [[CMM4File]] <<FILEUPLOAD>> |
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| 5a | Serial number of JL0089760 – DN40 Flange | [[DN40SN]] <<DN40SN>> |
| 5b | Upload Material Certificates, along with any relevant photos and/or comments | [[Doc5Tech]] <<SRF>>  [[Doc5Time]] <<TIMESTAMP>>  [[Doc5Comm]] <<COMMENT>>  [[Doc5File]] <<FILEUPLOAD>> |
| 5c | Machine the component as per drawing JL0089760.  Upload any relevant photos and/or comments | [[Mach5Tech]] <<SRF>>  [[Mach5Time]] <<TIMESTAMP>>  [[Mach5Comm]] <<COMMENT>>  [[Mach5File]] <<FILEUPLOAD>> |
| 5d | Verify dimensions on JL0089760  Upload inspection report along with any relevant photos and/or comments. | [[CMM5Tech]] <<SRF>>  [[CMM5Time]] <<TIMESTAMP>>  [[CMM5Comm]] <<COMMENT>>  [[CMM5File]] <<FILEUPLOAD>> |
|  |  |  |
| 6a | Serial number of LHCACFHC0206 – Ceramic | [[CRMCSN]] <<CRMCSN>> |
| 6b | Upload Material Certificates and Metrology Report, along with any relevant photos and/or comments | [[Doc6Tech]] <<SRF>>  [[Doc6Time]] <<TIMESTAMP>>  [[Doc6Comm]] <<COMMENT>>  [[Doc6File]] <<FILEUPLOAD>> |
| 6c | Verify dimensions on LHCACFHC0206  Upload inspection report along with any relevant photos and/or comments. | [[CMM6Tech]] <<SRF>>  [[CMM6Time]] <<TIMESTAMP>>  [[CMM6Comm]] <<COMMENT>>  [[CMM6File]] <<FILEUPLOAD>> |
| 6d | Clean LHCACFHC0206 as per CP-AUP-CAV-CHEM-DEGR | [[Deg1Tech]] <<SRF>>  [[Deg1Time]] <<TIMESTAMP>>  [[Deg1Comm]] <<COMMENT>>  [[Deg1File]] <<FILEUPLOAD>> |
| 6e | Heat treat the ceramic at At 800C for 2hr, in vacuum <10-5 mbar. Upload pressure and temperature graphs. | [[Heat1Tech]] <<SRF>>  [[Heat1Time]] <<TIMESTAMP>>  [[Heat1Comm]] <<COMMENT>>  [[Heat1File]] <<FILEUPLOAD>> |

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| BRAZING | | |
|  | Inform SRF Inventory that the assembly location is Brazing Room |  |
| 7a | Degrease and Acid-Etch components of JL0092614 as per AUP-CAV-CHEM-ACID and CP-AUP-CAV-CHEM-DEGR | [[Chem1Tech]] <<SRF>>  [[Chem1Time]] <<TIMESTAMP>>  [[Chem1Comm]] <<COMMENT>>  [[Chem1File]] <<FILEUPLOAD>> |
| 7a-1 | Heat treat the Stainless Steel flange (JL0089760) at 950°C for 2 hours | [[HT1Tech]] <<SRF>>  [[HT1Time]] <<TIMESTAMP>>  [[HT1Comm]] <<COMMENT>>  [[HT1File]] <<FILEUPLOAD>> |
| 7b | Braze assembly as per JL0092614. Upload brazing report and photos. Include any applicable comments | [[Brz1Tech]] <<SRF>>  [[Brz1Time]] <<TIMESTAMP>>  [[Brz1Comm]] <<COMMENT>>  [[Brz1File]] <<FILEUPLOAD>> |
| 7c | Visual Inspection after Brazing. Upload visual inspection report | [[Vis1Tech]] <<SRF>>  [[Vis1Time]] <<TIMESTAMP>>  [[Vis1Comm]] <<COMMENT>>  [[Vis1File]] <<FILEUPLOAD>> |
| 7d | Leak Test the assembly as per 11141S0029. Upload leak test report (PS-7 form) | [[Leak1Tech]] <<SRF>>  [[Leak1Time]] <<TIMESTAMP>>  [[Leak1Comm]] <<COMMENT>>  [[Leak1File]] <<FILEUPLOAD>> |
| 7e | Inform SRF Inventory that the assembly location is the Machine Shop. Machine the ID as per JL0092614. Upload images of finished parts and any other notable features | [[Mach7Tech]] <<SRF>>  [[Mach7Time]] <<TIMESTAMP>>  [[Mach7Comm]] <<COMMENT>>  [[Mach7File]] <<FILEUPLOAD>> |
| 7f | Inform SRF Inventory that the assembly will be shipped to the testing vendor. Perform Ultrasonic Testing of the braze. Upload test report.  Does the braze pass? | [[UT1Tech]] <<SRF>>  [[UT1Time]] <<TIMESTAMP>>  [[UT1Comm]] <<COMMENT>>  [[UT1File]] <<FILEUPLOAD>>  [[UT1\_Pass]] <<YESNO>> |

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| BRAZING | | |
|  | Inform SRF Inventory that the assembly location is Brazing Room |  |
| 8a | Degrease and Acid-Etch components of JL0124783 as per CP-AUP-CAV-CHEM-ACID and CP-AUP-CAV-CHEM-DEGR | [[Chem2Tech]] <<SRF>>  [[Chem2Time]] <<TIMESTAMP>>  [[Chem2Comm]] <<COMMENT>>  [[Chem2File]] <<FILEUPLOAD>> |
| 8b | Braze assembly as per JL0124783. Upload brazing report and photos. Include any applicable comments | [[Brz2Tech]] <<SRF>>  [[Brz2Time]] <<TIMESTAMP>>  [[Brz2Comm]] <<COMMENT>>  [[Brz2File]] <<FILEUPLOAD>> |
| 8c | Visual Inspection after Brazing. Upload visual inspection report | [[Vis2Tech]] <<SRF>>  [[Vis2Time]] <<TIMESTAMP>>  [[Vis2Comm]] <<COMMENT>>  [[Vis2File]] <<FILEUPLOAD>> |
| 8d | Leak Test the assembly as per 11141S0029. Upload leak test report (PS-7 form) | [[Leak2Tech]] <<SRF>>  [[Leak2Time]] <<TIMESTAMP>>  [[Leak2Comm]] <<COMMENT>>  [[Leak2File]] <<FILEUPLOAD>> |
| 8e | Inform SRF Inventory that the assembly will be shipped out to the testing vendor. Perform Ultrasonic Testing of the two brazes. Upload test report.  Does the braze pass? | [[UT2Tech]] <<SRF>>  [[UT2Time]] <<TIMESTAMP>>  [[UT2Comm]] <<COMMENT>>  [[UT2File]] <<FILEUPLOAD>>  [[UT2\_Pass]] <<YESNO>> |
| 8g | Verify dimensions on JL0124783  Upload inspection report along with any relevant photos and/or comments. | [[CMM7Tech]] <<SRF>>  [[CMM7Time]] <<TIMESTAMP>>  [[CMM7Comm]] <<COMMENT>>  [[CMM7File]] <<FILEUPLOAD>> |

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| EBW | | |
|  | Inform SRF Inventory that the assembly location is EBW |  |
| 9a | Degrease and Acid-Etch components of JL0124777 as per CP-AUP-CAV-CHEM-ACID and CP-AUP-CAV-CHEM-DEGR. Upload BCP report. | [[Chem3Tech]] <<SRF>>  [[Chem3Time]] <<TIMESTAMP>>  [[Chem3Comm]] <<COMMENT>>  [[Chem3File]] <<FILEUPLOAD>> |
| 9b | EB weld as per JL012777. Upload images | [[EBWTech]] <<SRF>>  [[EBWTime]] <<TIMESTAMP>>  [[EBWComm]] <<COMMENT>>  [[EBWFile]] <<FILEUPLOAD>> |
| 9c | Visual Inspection after EBW. Upload visual inspection report | [[Vis3Tech]] <<SRF>>  [[Vis3Time]] <<TIMESTAMP>>  [[Vis3Comm]] <<COMMENT>>  [[Vis3File]] <<FILEUPLOAD>> |
| 9d | Leak Test the assembly as per 11141S0029, using the leak checking fixture and a new flat gasket (LHCACFHC0259). Upload leak test report (PS-7 form) | [[Leak3Tech]] <<SRF>>  [[Leak3Time]] <<TIMESTAMP>>  [[Leak3Comm]] <<COMMENT>>  [[Leak3File]] <<FILEUPLOAD>> |
| 9e | Inform SRF Inventory that the assembly will be shipped out to the testing vendor. Perform Radiographic testing on JL0124777 EB welds. Upload RT report and films | [[RTTech]] <<SRF>>  [[RTTime]] <<TIMESTAMP>>  [[RTComm]] <<COMMENT>>  [[RTFile]] <<FILEUPLOAD>> |
| 9f | Verify dimensions on JL0124777  Upload inspection report along with any relevant photos and/or comments. | [[CMM8Tech]] <<SRF>>  [[CMM8Time]] <<TIMESTAMP>>  [[CMM8Comm]] <<COMMENT>>  [[CMM8File]] <<FILEUPLOAD>> |
| FINAL ASSEMBLY | | |
|  | Inform SRF Inventory that the assembly location is Cleanroom |  |
|  | Clean JL0124777 and components of JL0118832 as per CP-AUP-CAV-CHEM-DEGR | [[Deg2Tech]] <<SRF>>  [[Deg2Time]] <<TIMESTAMP>>  [[Deg2Comm]] <<COMMENT>>  [[Deg2File]] <<FILEUPLOAD>> |
|  | Assemble JL0118832 in the cleanroom. | [[AssyTech]] <<SRF>>  [[AssyTime]] <<TIMESTAMP>>  [[AssyComm]] <<COMMENT>>  [[AssyFile]] <<FILEUPLOAD>> |
|  | Return JL0118832 to SRF Inventory | [[INVTech]] <<SRF>>  [[INVTime]] <<TIMESTAMP>>  [[INVComm]] <<COMMENT>>  [[INVFile]] <<FILEUPLOAD>> |