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| Traveler Title | C75 HOM Load Brazed Assembly |
| Traveler Abstract | The purpose of this document is to capture the brazing process and run parameters associated with brazing the HOM Load to the Copper Support Pedestal and SS Mounting Flange Assembly. |
| Traveler ID | C75-FURN-HOML-BRAZ |
| Traveler Revision  | R2 |
| Traveler Author | S. Williams |
| Traveler Date | 5-May-20 |
| NCR Informative Emails | macha |
| NCR Dispositioners | Scott,jguo,kdavis,forehand |
| D3 Emails | Scott,jguo,kdavis,forehand |
| Approval Names | S. Williams  | J. Guo | K. Macha |  |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | 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. |
| [C75 HOM Load Assy. JL0024622](file:///C%3A%5CUsers%5Cmegan%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CHOM%20Load%20Drawings%5CJL0024622_B_C75%20HOM%20LOAD.pdf) | [C75 HOM ABSORBER FLANGE JL0024623](file:///C%3A%5CUsers%5Cmegan%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CHOM%20Load%20Drawings%5CJL0024623-B-HOM%20ABSORBER%20FLANGE.pdf) | [C75 HOM LOAD JL0006805](file:///C%3A%5CUsers%5Cmegan%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CHOM%20Load%20Drawings%5CJL0006805_-_C50%20HOM%20LOAD%204.0.pdf) | [C75 HOM PEG BOARD JL0041239](file:///C%3A%5CUsers%5Cmegan%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CHOM%20Load%20Drawings%5CJL0041239_-_C50%20HOM%20PEG%20BOARD%287%29.pdf) |  [C75 HOM Load Retainer JL0027665](file:///C%3A%5CUsers%5Cmegan%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CHOM%20Load%20Drawings%5CJL0027665_A_%20RETAINER%204.0%282%29.pdf) |
| [C75 HOM Retainer Screw JL0038398](file:///C%3A%5CUsers%5Cmegan%5CAppData%5CLocal%5CMicrosoft%5CWindows%5CINetCache%5CContent.Outlook%5CHOM%20Load%20Drawings%5CJL0038398_-_SH%20SH%20SCREW%20.125%20D%20X%200.313%20LG%20X%204-40%20THREAD%281%29.pdf) | [CP-STP-CAV-CHEM-ACID-R1](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-141848/CP-STP-CAV-CHEM-ACID-R1.pdf) | [CP-STP-CAV-CHEM-DEGR-R3](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-132364/CP-STP-CAV-CHEM-DEGR-R3.pdf)  |  |  |

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| Revision Note |  |
| R1 | Initial release of this Traveler. |
| R2 | Addition of Step9 - Cryocycling of brazed assembly. |

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| Step No. | Instructions | Data Input |
| 1 | Record Load, Flange, and Copper Pedastal numbers. | [[DataCaptureTech]] <<SRF>>[[HOMLSN]] <<HOMLSN>>[[HOMAFSN]] <<HOMAFSN>>[[HOMPBSN]] <<HOMPBSN>>[[DataCaptureDate]] <<TIMESTAMP>>[[DataCaptureComment]] <<COMMENT>> |
| 2 | Verify that all components are clean and properly packaged prior to use (HOM Loads, SS Flanges, Cu Pedastals, Fixturing, Braze Alloy, etc.). | [[PartsCleaned]] <<YESNO>>[[Date\_CleaningStatus]] <<TIMESTAMP>>[[Comment\_CleaningStatus]] <<COMMENT>> |
| 3 | Handle with gloves & visually inspect ceramic load, SS flange and copper pedastal for imperfections (chipped ceramics, burrs, scratches, staining, oxidation, etc.) | [[SSFlangeAndCopperVisInspTech]] {{Williams,other}} <<SELECT>>[[SSFlangeAndCopperVisInspDate]] <<TIMESTAMP>>[[SSFlangeAndCopperVisInspComm]] <<COMMENT>> |
| 4 | Using the required ceramic fixturing and molybdenum alignment pins, assemble HOM Load Assembly for brazing. Place .008” Thick Cusil ABA Foil between surfaces to be brazed (SS Flange/Copper Pedestal & Copper Pedestal/HOM Load). | [[Technician\_Assembly]] {{Williams,other}} <<SELECT>>[[Date\_Assembly]] <<TIMESTAMP>>[[Comment\_Assembly]] <<COMMENT>> |
| 5 | Place (2) additional ceramics (approx.. 190 gms Ea.) on top of the ceramic alignment fixture, parallel with (1EA) on each side of load. | [[Technician\_Ceramics]] <<SRF>>[[Date\_Ceramics]] <<TIMESTAMP>> |
| 6 | Place fixtured brazement on individual 4” alumina wafer, load in furnace with close proximity to thermal couples, initiate braze run, and start Labview temperature profile recording. | [[Technician\_BrazeRun]] {{Williams,other}} <<SELECT>>[[Date\_BrazeRun]] <<TIMESTAMP>>[[Comment\_BrazeRun]] <<COMMENT>> |
| 7 | Record brazing program run profile number and upload Labview Temperature Profile file of braze run. | [[Technician\_ProfileDataNo1]] {{Williams,other}} <<SELECT>>[[Brazement]] <<TEXT>>[[FurnaceUsedNo1]] {{Big Blue,Little Blue}} <<SELECT>>[[ProgramName\_LittleBlueNo1]] <<FLOAT>>[[ProgramProfileNo\_BigBlueNo1]] {{1,2,3,4,5,6,7,8,9,10}} <<SELECT>>[[TemperatureProfileFileNo1]] <<FILEUPLOAD>>[[QuantityOfPartsRanNo1]] <<INTEGER>>[[Date\_ProfileDataNo1]] <<TIMESTAMP>>[[Comment\_ProfileDataNo1]] <<COMMENT>> |
| 8 | Vent furnace once cooled, remove brazed HOM Load Assembly, and visually inspect ( alignment retained, proper alloy wetting, good adhesion, chipping of load material, discolorations, etc…).  | [[HOMLAssyVisInspTech]] <<SRF>>[[HOMLAssyVisInspDate]] <<TIMESTAMP>>[[HOMLAssyVisComm]] <<COMMENT>> |
| 9 | Cryocycle HOM Load Assembly **six times** in cryocycle cabinet from 20°C to -192°C and then back to 20°C. When the last cycle has completed, the warm N2 gas valve will remain open and the temperature displayed will be about 20°C. | [[Technician\_Cryocycle]] <<SRF>>[[Date\_RetainerInstall]] <<TIMESTAMP>>[[RetainerInstall]] <<COMMENT>> |
| 10 | Install Load Retainer onto brazement as per drawing [C75 HOM Load Assy. JL0024622](file:///%5C%5Cjlabhome%5Chome%5Cscott%5CJde%5CScotts%20Work%20J%5CSRF%20Work%5CHOM%20Load%20Drawings%5CJL0024622_B_C75%20HOM%20LOAD.pdf), torqueing shoulder screws to 4 in/lbs as noted on drawing. | [[Technician\_RetainerInstall]] <<SRF>>[[Date\_RetainerInstall]] <<TIMESTAMP>>[[RetainerInstall]] <<COMMENT>> |
| 11 | Verify HOM Load Assembly is complete and ready to proceed to QA Work Center for final inspection.  | [[Technician\_AssyComplete]] <<SRF>>[[Date\_AssemblyCompletion]] <<TIMESTAMP>>[[AssemblyCompletion]] <<COMMENT>> |