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| Traveler Title | C100R Cavity RF Incoming Inspection Traveler | | | |
| Traveler Abstract | This traveler collects data from incoming RF inspection measurement. | | | |
| Traveler ID | C100R-CAV-RFIN | | | |
| Traveler Revision | R2 | | | |
| Traveler Author | R. Overton | | | |
| Traveler Date | 8-Apr-22 | | | |
| NCR Informative Emails | kdavis,areilly,overtonr | | | |
| NCR Dispositioners | forehand,dreyfuss,haipeng | | | |
| D3 Emails | forehand,dreyfuss,overtonr,areilly,kdavis | | | |
| Approval Names | R. Overton | D. Forehand | K. Davis | A. Reilly |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | SME | Production Lead | Project Lead |

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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. | | | |
| [Frequency Compensation Spreadsheet](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-37179/Copy%20of%20Temperature_Related_Frequency_Compensation.xls) |  |  |  |  |
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| Revision Note |  |
| R1 | Initial release of this Traveler. |
| R2 | Removed tuning room conditions, added post HEP beadpull and HOM assignment sections, added QextFPC acceptance criteria |

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| **Step No.** | **Instructions** | **Data Input** |
| 1 | This is the initial RF inspection of the C100 cavities upon arrival after disassembly from Accelerator Cryomodules pulled from the tunnel to be refurbished.   * The cavity will need to be measured for frequency and field flatness specifications. * Record all seven mode frequencies. * Perform a beadpull at the pi-mode frequency. | [[CAVSN]] <<CAVSN>>  [[CavTagNo]] <<FLOAT>>  [[CavCouponNo]] <<FLOAT>>  [[CavDose]] <<FLOAT>>  [[TechStep1]] <<SRFCVP>>  [[Bead\_pullResults]] <<FILEUPLOAD>>  [[Pi\_modeFreqStep1]] <<FLOAT>>MHz  [[ModeFreq\_6Pi\_7]] <<FLOAT>>MHz  [[ModeFreq\_5Pi\_7]] <<FLOAT>>MHz  [[ModeFreq\_4Pi\_7]] <<FLOAT>>MHz  [[ModeFreq\_3Pi\_7]] <<FLOAT>>MHz  [[ModeFreq\_2Pi\_7]] <<FLOAT>>MHz  [[ModeFreq\_Pi\_7]] <<FLOAT>>MHz  [[CavityIsWithinSpec]] <<YESNO>>  [[TimeDate]] <<TIMESTAMP>> |
| 2 | Measure the Qext of the FPC body and record the results.  Acceptance Criteria for QextFPC is between 1.02E7 and 3.84E7.  If the measured QextFPC is not within the acceptance range, initiate an NCR. | [[QL]] <<INTEGER>>  [[Attenuation]] <<FLOAT>> dB  [[OffResonantReflection]] <<FLOAT>> mU  [[ResonantReflection]] <<FLOAT>> mU  [[QextFPC]] <<SCINOT>> |
| 3 | Measure the depths of both HOM filters with a used gasket in place on the HOM feed-through flange and record the results. The gasket should measure 0.085 +/- 0.002 in.  The filter depth should be 1.496 +/-0.002 in. If needed, move the filter with the tooling provided until the depth of the filter is within specification. Record the new filter depths for both HOM filters. | [[HOMA\_Filter\_Depth]] <<FLOAT>> in  [[HOMB\_Filter\_Depth]] <<FLOAT>> in  [[New\_HOMA\_Filter\_Depth]] <<FLOAT>> in  [[New\_HOMB\_Filter\_Depth]] <<FLOAT>> in |
| 4 | This is the post HEP bead pull RF inspection of the C100 cavities.   * The cavity will need to be measured for frequency and field flatness specifications. * Record all seven mode frequencies. * Perform a beadpull at the pi-mode frequency. | [[post\_HEP\_Tech]] <<SRFCVP>>  [[post\_HEP\_Bead\_pullResults]] <<FILEUPLOAD>>  [[post\_HEP\_Pi\_modeFreqStep1]] <<FLOAT>>MHz  [[post\_HEP\_ModeFreq\_6Pi\_7]] <<FLOAT>>MHz  [[post\_HEP\_ModeFreq\_5Pi\_7]] <<FLOAT>>MHz  [[post\_HEP\_ModeFreq\_4Pi\_7]] <<FLOAT>>MHz  [[post\_HEP\_ModeFreq\_3Pi\_7]] <<FLOAT>>MHz  [[post\_HEP\_ModeFreq\_2Pi\_7]] <<FLOAT>>MHz  [[post\_HEP\_ModeFreq\_Pi\_7]] <<FLOAT>>MHz  [[post\_HEP\_CavityIsWithinSpec]] <<YESNO>>  [[DateTime\_post\_HEP]] <<TIMESTAMP>> |
| 5 | Set field probe Qext to 1E12 IAW [C100 Cavity Probe Calibration Procedure](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-41438/C100_Cavity_Probe_Calibration%5B1%5D%5B1%5D%5B1%5D%5B1%5D.pdf) and record the results and length of probe tip as measured from the face of the feed-through flange. | [[Technician\_FP]] <<SRFCVP>>  [[DateTime\_FP]] <<TIMESTAMP>>  [[FieldProbeSN\_FP]] <<SN>>  [[ProbeTipLength\_FP]] <<FLOAT>>in  [[FieldProbeQext\_FP]] <<SCINOT>> |
| 6 | Assign HOM feedthroughs to both HOM filter A and HOM filter B and record the information.  Record the lengths of both probe tips  Measure both HOM filter depths with a used gasket in place on the flange and record the data. | [[Technician\_HOM\_assignment]] <<SRFCVP>>  [[DateTime\_HOM\_assignment]] <<TIMESTAMP>>  [[HOMA\_Feedthrough\_SN]] <<SN>>  [[HOMB\_Feedthrough\_SN]] <<SN>>  [[HOMA\_Probetip\_Length]] <<FLOAT>>in  [[HOMB\_Probetip\_Length]] <<FLOAT>>in  [[HOMA\_Depth]] <<FLOAT>>in  [[HOMB\_Depth]] <<FLOAT>>in  [[HOMA\_Gap]] <<FLOAT>>in  [[Subtract HOMA\_Probetip\_Length from HOMA\_Depth and provide result in HOMA\_Gap]] <<NOTE>>  [[HOMB\_Gap]] <<FLOAT>>in  [[Subtract HOMB\_Probetip\_Length from HOMB\_Depth and provide result in HOMB\_Gap]] <<NOTE>> |
| 7 | Tune HOM filters IAW with [C100 HOM Filter Tuning Procedure](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-41439/C100_HOM_Filter_Tuning_Procedure%5B1%5D%5B1%5D%5B1%5D%5B1%5D.pdf) and record all data. | [[FieldProbeAttenuation]] <<FLOAT>>dB  [[HOMATunedAttenuation]] <<FLOAT>>dB [[QextHOMA]] <<SCINOT>>  [[HOMBTunedAttenuation]] <<FLOAT>>dB  [[QextHOMB]] <<SCINOT>>  [[Comments\_HOMtune]] <<COMMENT>> |
| 8 | If for any reason assembly on this cavity is stopped due to a question or problem select the help request toggle. This will trigger a red status on the traveler dashboard showing a work stoppage. When the problem is resolved unselect the toggle for the dashboard status to go back to yellow.   * Create D3 to document activities requiring Help Request. | [[Comment\_RFin]] <<COMMENT>>  [[HelpRequest]] <<YESNO>> |
| 9 | Cavity can be moved to the next work center. Contact RadCon if necessary. |  |