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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 | 24-Mar-22 | | | |
| NCR Informative Emails | kdavis,areilly,overtonr | | | |
| NCR Dispositioners | forehand,dreyfuss | | | |
| 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 |
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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>> |
| 3 | Measure the Qext of the FPC body and record the results. | [[QL]] <<INTEGER>>  [[Attenuation]] <<FLOAT>> dB  [[OffResonantReflection]] <<FLOAT>> mU  [[ResonantReflection]] <<FLOAT>> mU  [[QextFPC]] <<SCINOT>> |
| 4 | 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 |
| 5 | 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>>  [[TimeDate\_Step5]] <<TIMESTAMP>> |
| 6 | 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>> |
| 7 | 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>> |
| 8 | 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>> |
| ~~9~~ | 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>> |
| 10 | Cavity can be moved to the next work center. Contact RadCon if necessary. |  |