|  |  |
| --- | --- |
| 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 |

|  |  |
| --- | --- |
| 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) |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Revision Note |  |
| R1 | Initial release of this Traveler. |
| R2 | Removed tuning room conditions, added post HEP beadpull and HOM assignment sections  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **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 tipsMeasure 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.  |  |