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| Traveler Title | End Lever Tuner Mechanical Frame Inspection Traveler |
| Traveler Abstract | Traveler defines inspection process for End Lever Tuner Mechanical Frame |
| Traveler ID | L2HE-INSP-TUNC |
| Traveler Revision  | R1 |
| Traveler Author | Peter Owen |
| Traveler Date | 10-Aug-2021 |
| NCR Emails | Powen, Wilson |
| NCR Dispositioners | Powen, DeKerlegand |
| D3 Emails | Powen, Wilson, Fischer |
| Approval Names | P Owen | DeKerlegand | Huque | Wilson / Hogan |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | Reviewer | 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. |
| [F10147497](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245343/F10147497_A_DWG1.pdf) | [F10007032](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245301/F10007032_C_DWG1.pdf) | [F10147499](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245345/F10147499_A_DWG1.pdf) | [F10147498](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245344/F10147498___DWG1.pdf) | [F10132301](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245334/F10132301___DWG1.pdf) |
| [F10147500](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245346/F10147500___DWG1.pdf) | [F10132292](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245330/F10132292_B_DWG1.pdf) | FC0051653 | [F10008764](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-245310/F10008764_E_DWG1.pdf) | [ED0004463](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-123152/ED0004463-REV-A--Specification%20and%20Measurement%20Procedures%20of%20Magnetic%20Properties%20of%20Parts%20for%20LCLS%20II%20Cryomodule%20Assembly%281%29.doc) |

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| Revision Note |  |
| R1 | Initial release of this Traveler. |

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| Step No. | Instructions | Data Input |
| 1 | **General Inspection** |
| Technician NameDate of InspectionSerial Number of part | [[TechName]] <<SRF>>[[InspectionDate]] <<TIMESTAMP>>[[TUNCSN]] <<TUNCSN>> |
| Check for damage to Tuner Frame body. Check for any obvious signs of weld spatter on body Upload photos if damage found | [[DamagePhoto]] <<FILEUPLOAD>> |
| Detach WELDMENT, MAIN LEVER LINK (F10007032) from ASSY, MAIN LEVER (F10147499) by removing screws. Check the thread on the four 5/16-18 threaded holes. | [[MCThreadedHole1Ok]]<<YESNO>>[[MCThreadedHole1Comm]]<<COMMENT>> |
| Remove items 1, 3, and 13 from ASSY, TUNER SUPPORT MOTOR SIDE (F10147498) and check the 5/16-18 threaded holes | [[MCThreadedHole2Ok]]<<YESNO>>[[MCThreadedHole2Comm]]<<COMMENT>> |
| Remove items 10 and 32 from ASSEMBLY, MAIN LEVER (F10147499) and check the 5/16-18 threaded holes | [[MCThreadedHole3Ok]]<<YESNO>>[[MCThreadedHole3Comm]]<<COMMENT>> |
| Check threads on Item 1 of WELDMENT, MOTOR ARM (F10132301) | [[MCThreadedStud1Ok]]<<YESNO>>[[MCThreadedStud1Comm]]<<COMMENT>> |
| Ensure all hardware listed in F10132292, F10147499 and F10147498 are included in the kit | [[MCKitOk]]<<YESNO>>[[MCKitComm]]<<COMMENT>> |
| Check that Ceramic Balls (FC0051653) are held in the ball holders (F10008764) as shown in F10147499. | [[MCBallOk]]<<YESNO>>[[MCBallComm]]<<COMMENT>> |
| Upload any other relevant documents | [[DocUpload]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| 2 | **Tuner Frame Fit Test** |
| Technician Name | [[MCFitTech]] <<SRF>>[[MCFitDate]] <<TIMESTAMP>> |
| Install the tuner on to the Tuner Test Stand (JL0037518) using 5/16-18 Brass hardware. The Dummy Piezos (JL0037055) should be used, along with a spare Phytron motor. Check for the following:1. The two tuner frame arms should sit visually flush with the lugs on the Test Stand
2. Install the two Piezo Supports (brass rods) at each Piezo location, then install the Dummy Piezos. The Dummy Piezos should line up between the ceramic balls in the Tuner Frame and Tuner Stand in a perpendicular manner via visual inspection. If the Dummy Piezo interferes with the brass rod, make a note, before removing the brass rod.
 | [[MCFitOk]]<<YESNO>>[[MCFitComm]]<<COMMENT>>[[FitPhoto]] <<FILEUPLOAD>> |

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| **Step No** | **Instructions** | **Data Inputs** |
| 3 | **Expanded Inspection** |
| To be done on every inspection. Only 1 out of 8 frames per batch will be inspected. |  |
| Technician Name | [[ExInsTech]] <<SRF>>[[ExInsDate]] <<TIMESTAMP>> |
|  | **Dimensional Inspection** |  |
|  | Dimension | Nominal | Tolerance |  |
|  | F10147497 |
|  | Measure the 5 degree angle shown in F10147497. Angle should be between the mid-plane of Item 2 (shown in Section A-A) and the surface of the inside of the slot in Item 1 | 5° | +/- 1° | [[ExAngle1]] <<FLOAT>>[[ExAngleCom1]] <<COMMENT>> |
|  | F10147500 |
|  | Measure the 5 degree angle shown in F10147500. Angle should be between the central axis of Item 2 (shown in Section A-A) and the surface of the inside of the slot in Item 1 | 5° | +/- 1° | [[ExAngle2]] <<FLOAT>>[[ExAngleCom2]] <<COMMENT>> |
|  | **Hardware Torque** |  |
|  | Ensure that all #8-32 PHMS-PH are torqued to the required values (F10147499 and F10147498). If any are loose, remove them from position and re-torque. | 17 in.lbs | +/- 2 in.lbs | [[ExTorq1]] <<COMMENT>> |