|  |  |
| --- | --- |
| Traveler Title | L2HE Nine Cell Cavity Transfer to Test Stand for Dewar 5 |
| Traveler Abstract | This traveler verifies proper transfer of three L2HE 9-cell cavities to test stands for dewar 5 in preparation for VTA testing. |
| Traveler ID | L2HE-CLNRM-CAV-TSTD5 |
| Traveler Revision | R3 |
| Traveler Author | J. Vennekate |
| Traveler Date | 23-Mar-23 |
| NCR Informative Emails | adamg,forehand,dreyfuss |
| NCR Dispositioners | adamg,hannesv,kdavis,reece |
| D3 Emails | adamg,hannesv,kdavis,reece,forehand,dreyfuss |
| Approval Names | J. Vennekate | C. Dreyfuss | D. Forehand | M. Bevins |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | Reviewer | Reviewer | Project Manager |

|  |  |
| --- | --- |
| 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. SLOW PUMP PROC |
| L2PRO Cavity Transfer to Test Stand Procedure (link not available) |  |  |  |  |
|  |  |  |  |  |

|  |  |
| --- | --- |
| Revision Note |  |
| R1 | Initial release of this Traveler. |
| R2 | Revise step 3 & 4 to leave RAV closed for leak check and test on new from vender cavities |
| R3 | Synced with TSTD, overhauled all steps, updated RGA mass setting, added link to slow pump procedure |

|  |  |  |
| --- | --- | --- |
| Step No. | Instructions | Data Input |
| 1 | Prior to transfer to the test stand, all three cavities should have received incoming RF and CMM inspection as well as a cleaning in the chem room.The cavities should be on a CTV either coming from the chem room (new cavities) or from the HPR (re-work cavities).Hang the first cavity in the dewar 5 test stand using the two-arm lifting fixture and secure the plates to the square blocks attached to the helium vessel.\*\*Repeat this two more times for the other cavities. \*\*The test stand will need to be rotated in the hole to accommodate the installation of the third cavity.Verify that cavity right angle valves (RAVs) are in the fully closed position. | [[CAVSNPosition1]] <<CAVSN>>[[CAVSNPosition2]] <<CAVSN>>[[CAVSNPosition3]] <<CAVSN>>[[CAVSN]] <<TEXT>>[[CAVSN = CAVSNPosition1 + CAVSNPosition2 + CAVSNPosition3]] <<NOTE>> [[Technician1]] <<SRFCVP>>[[Technician2]] <<SRFCVP>>[[CavComment]] <<COMMENT>> |
| 2 | For each cavity position:Remove four bolts from the bellows blank on the test stand down-tube.Spray the flange and holes with ionized nitrogen while watching a particle counter.Wait until the counts are below fifty at all sizes for a minimum of ten seconds. Repeat this procedure for the blank flange located on the RAV.Remove the remaining two bolts on the valve blank and spray the inside the RAV (bellows area) until the counts are less than ten at all sizes for 10s.Remove the remaining two bolts from the test stand bellows blank on the down-tube. DO NOT spray the bellows flange after the blank is removed.Place a clean copper gasket onto the joint and connect the test stand flange to the RAV.Tighten all fasteners.(repeat for all three cavities – see above) | [[VTATSN]] <<VTATSSN>>[[HangComment]] <<COMMENT>> |
| 3 | Check if there is any tape on the RAV marking a new cavity which is already under vacuum.Check the tape field and proceed correspondingly.reworked cavities. | [[StandLkChkTechnician]] <<SRFCVP>>[[RAVTapeCav1]] <<YESNO>>[[RAVTapeCav2]] <<YESNO>>[[RAVTapeCav3]] <<YESNO>>[[StandLkChkComment]] <<COMMENT>> |
| 4 | 1. If all cavities have tape on their RAV, i.e. only new cavities are hung on the test stand, start the pumping system on the test stand top plate (no slow pump down required).Pump down the vacuum below 8e-7 mbar.Set the RGA for an analog scan looking at mass 2 thru 100.Upload scan.Perform a leak check of all down pipes.There shall be no detectable leak with an MDL less than 4E-10 std cc/sec.Upload lk check file.Remove the tape from the RAV.
2. If any of the cavities has no tape on the RAV i.e. at least one re-work cavity is hung on the test stand, isolate the turbo-pump from the test stand and and connect the slow pump down system.Carefully open all RAVs that have NO TAPE at the bottom of the cavities.Perform a slow pump down until the system is below 8e-7 mbar.Set the RGA for an analog scan looking at mass 2 thru 100.Upload scan.Leak check all mechanical joints on cavities with open RAV from top to bottom.There shall be no detectable leak with an MDL less than 4E-10 std cc/sec.Upload leak check file.After the leak check, close all RAVs and remove tape on previously closed RAVs.

In the case of a leak on more than one re-worked/non-taped cavity, isolate the affected cavities and leak checked individually. The files for these leak checks shall be uploaded to a D3 associated with this traveler.After all three cavities are proven to be leak tight, the test stand can be moved to the VSA for sensor attachment, HOM tuning and VTA test. | [[CavitiesAnlogScan]] <<FILEUPLOAD>>[[CavitiesLkChk]] <<FILEUPLOAD>>[[CAVPosition1LkTight]] <<YESNO>>[[CAVPosition2LkTight]] <<YESNO>>[[CAVPosition3LkTight]] <<YESNO>>[[CavitiesLkChkTechnician]] <<SRFCVP>>[[CavityLkComment]] <<COMMENT>>[[CavityLkDate]] <<TIMESTAMP>> |