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| Traveler Title | MDC Gate Valve Leak Check/End Dish Assembly Traveler |
| Traveler Abstract | The following Traveler is to define the steps for the assembly of the cavity pair end dish and MDC valve assembly including leak check of MDC gate valve |
| Traveler ID | ER5C-TUNE-GV15-ASSY |
| Traveler Revision  | R1 |
| Traveler Author | C. Dreyfuss |
| Traveler Date | 31-Jan-23 |
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| Approval Dates |  |  |  |  |
| Approval Title | Author | 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. |
| Magnetic Field Measurement Procedure | [CP-C75-COR-CLN-ION](https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-74896/IonizedNitrogenCleaningParticleCounterProcedure.docx)  |  | Marked-up drawing with magnetic field limit on components | Leak check of small items procedure |
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| Revision Note |  |
| R1 | Initial release of this Traveler. |

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| Step No. | Instructions | Data Input |
| 1 |  **MDC Valve:**Record MDC gate valve serial numbers. | [[GV15SN1]] <<SN>>[[GV15SN2]] <<SN>>[[Type in SNs that will push the SN to the database for use in future travelers]] <<NOTE>>[[CombSN]] <<TEXT>>[[Combin SN1 and SN2 to this field for the traveler select dropdown]] <<NOTE>>[[AssyStartDate]] <<TIMESTAMP>> |
| 2 | **Componets and Hardware:****Dish and Valve Components:**2. End Dishes2. Gate valves2 Conflat blanks and 2 3/4" conflat gasket**Protective flange covers and spring clamps needed:**2 pcs. End Dish flange cover4 pcs. Gloved Spring Clamps**Tools needed:**1/4" x 5/16" combo wrench1/4" x 5/16" combo wrench with 90 degree bendForseps**Magnetic Field Test:**Make sure magnetic field check was done before these items came into the clean room. | [[CompTech]] <<SRFCVP>> [[MagFieldChck]] <<YESNO>> |
| 3 | **Prepare and Organize:**Clean the handles and upper shelf of a clean room cart with an isopropyl soaked wiper. Clean the cart with ionized nitrogen.. Prepare the cleaned cart with clean room wipes arranged on the upper shelf to place clean components on. Individually remove MDC valve from the plastic container and clean with ionized nitrogen as per Spec 1 of the *Ionized N2 Cleaning* procedure. Visually inspect the oring on the MDC valve for any cracks or inperfections.Contact the supervisor if there are any discrepancies. | [[PrepTech]] <<SRFCVP>>[[PrepAndOrgComment]] <<COMMENT>> |

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| 4 | **Prepare the MDC gate valve for leak testing:**Open the gate valve and clean the assembled valve as per Spec. 1 of the *Ionized N2 Cleaning* procedure. Close the valve and clean again. Close the valve and clean again.Clean the blank conflat flange and gasket as per Spec. 1 of *Ionized N2 Cleaning* procedure Assemble the blank conflat flange with gasket onto the seal plate side of the gate valve and tighten | [[VLVPrepTech]] <<SRFCVP>> |
| 5 | **Leak test the MDC gate valve assembly:**Connect the gate valve to the turbo cart.Open the gate valve and pump down.Leak test as per the *Leak test cavity components procedure*.Close the gate valve.Remove the conflat blank flange and leak test the valve seal. **The valve seal will show a leak about one minute after spraying with helium. This leak will show a slow steady rise in helium partial pressure.** **This is due to helium permeating the o-ring and is normal. If a large, quick response is seen contact your supervisor.**Upload the leak test data file.Remove the valve from the leak test station | [[GateVlvLeakChckTech]] <<SRFCVP>>[[GateVlvLeakTest]] <<FILEUPLOAD>>[[GateVlvSN]] <<CAVSN>>[[LeakCheckPass]] <<YESNO>> |

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| 6 | **End Dish:**Ensure the dish/bellows assembly has passed leak**Assemble the MDC gate valve onto the end-dish:**Visually inspect the End Dish sealing surface It should be smooth and free of cracks, scratches, stains, and residual indium. Clean the closed gate valve, 2 3/4" conflat gasket and dish assembly as per Spec. 1 of the *Ionized N2 Cleaning* procedure. Properly orient and assemble the gate valve onto the end-dish and evenly tighten the conflat hardware. The smooth valve seal plate must face the cavity. The valve body must straddle the taped holes of the end dish flange. The end-dish assembly can be moved to pair strong-back fixture and is ready for cavity pair assembly. Install end dish assembly in accordance with procedure C75-CPR-ASSY. Contact the supervisor if there are any discrepancies. | [[ENDDSN]] <<ENDDSN>>[[ENDDSN]] <<ENDDSN>>[[EndDishLeakCheck]] <<YESNO>>[[EndDishAssyTech]] <<SRFCVP>>[[EndDishAssemComment]] <<COMMENT>>  |