|  |  |
| --- | --- |
| Traveler Title | SNS PPU Supply Warm-Cold Bellows Weldment Inspection Traveler |
| Traveler Abstract | Traveler defines inspection process for supply warm-cold bellows weldment |
| Traveler ID | SNSPPU-CST-INSP-SUBP |
| Traveler Revision  | R1 |
| Traveler Author | K. M. Wilson |
| Traveler Date | 1-Oct-20 |
| NCR Informative Emails | kwilson, edaly, forehand, huque |
| NCR Dispositioners | kwilson, edaly, huque |
| D3 Emails |  |
| Approval Names | K. M. Wilson | A. DeKerlegand | E. Daly |  |
| Approval Signatures |  |  |  |  |
| Approval Dates |  |  |  |  |
| Approval Title | Author | 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. |
| [104210300-M8U-8200-A103\_-\_SUPPLY WARM - COLD BEAMPIPE WELDMENT](https://misportal.jlab.org/jlabDocs/document.seam?id=118673) | [104210300-M8U-8200-A101\_-\_SUPPLY WARM - COLD BELLOWS](https://misportal.jlab.org/jlabDocs/document.seam?id=118671) | [104210300-M8U-8200-A102\_-\_BELLOWS FLANGE](https://misportal.jlab.org/jlabDocs/document.seam?id=118672) | [104210300-M8U-8200-A203\_-\_4-5-8 CF R FLANGE MOD](https://misportal.jlab.org/jlabDocs/document.seam?id=118677) |  |
|  |  |  |  |  |

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

|  |  |  |
| --- | --- | --- |
| Step No. | Instructions | Data Input |
| **General handling guidelines: Bellows are extremely fragile. They should be handled carefully at all times. Particular care should be taken to protect seal surfaces, which are easily scratched, and convolutions, which can dent with minor contact. When being transported or stored, flanges should be covered with plastic caps, and bellows should be covered by bellows protection. Bellows covers/protection may be removed (carefully) for inspection, but should be reinstalled after inspection.** |
| 1 | **Initial Inspection** |
| Technician NameDate of InspectionSerial Number of part | [[TechName]] <<SRF>>[[InspectionDate]] <<TIMESTAMP>>[[SUBPSN]] << SUBPSN>> |
| Is part clean, free from dust, oil, finger prints or other contaminants? | [[PartCleanOk]] <<YESNO>> |
| Visually inspect the bellows convolutions. There should be no dents of 1/8” or larger, or any dents with sharp edges, or other damage. (Smaller, shallow dents should be noted in comments, but no NCR should be issued.) | [[DamageOk]]<<YESNO>> |
| There should be no deep pits on inside or outside surfaces. (Shallow indentations should be noted in comments, but no NCR should be issued.) | [[PitsOk]] <<YESNO>> |
| There should be no unusual discoloration to the stainless steel, especially around the welds. | [[ColorationOk]] <<YESNO>> |
| Welds are good; i.e., welds on ID of part should be smooth and flush, with no crevices, cracks or protrusions. Are all welds present that are supposed to be? Example of unacceptable weld is shown below. | [[WeldsOk]] <<YESNO>> |
| Comments Upload photos of any damage. | [[VisualInspComment]] <<COMMENT>>[[VisualInspPhoto]] <<FILEUPLOAD>> |

|  |  |  |
| --- | --- | --- |
| **Step No** | **Instructions** | **Data Inputs** |
| 2 | **Examine Seal Surfaces** |
| Carefully examine the knife edge on the large flange for any scratches, knicks, or other damage to the knife edge. Indicate “no” if any damage is found. | [[KnifeLargeOk]] <<YESNO>>[[KnifeLargeComment]] <<COMMENT>> |
| Carefully examine the knife edge on the small flange for any scratches, knicks, or other damage to the knife edge. Indicate “no” if any damage is found. | [[KnifeSmallOk]] <<YESNO>>[[KnifeSmallComment]] <<COMMENT>> |
| Any files can be uploaded here. | [[Step2Upload]] <<FILEUPLOAD>> |
| 3 | **Dimensional check. To verify dimensions, the following is needed: a 5/16-24 UNF go/no-go gauge. All dimensions are from drawings 104210300-M8U-8200-A102\_-\_BELLOWS FLANGE and 104210300-M8U-8200-A203\_-\_4-5-8 CF R FLANGE MOD.** |
| On the front surface of the large flange, there are 22 threaded holes measuring 5/16-24 UNF depth 0.469, and an additional 6 threaded holes on the back of the flange, for 28 total. Using go/no-go gauge, verify that any 6 of the 28 are correctly tapped to 5/16-24 UNF depth 0.469. | [[ThreadLargeOk]] <<YESNO>>[[ThreadLargeComment]] <<COMMENT>> |
| On the small flange (104210300-M8U-8200-A203\_-\_4-5-8 CF R FLANGE MOD), there are 10 holes measuring 5/16-24 with a depth of 0.31 located on the OD of the flange. Using go/no-go gauge, check any 2 of these to verify they are tapped correctly. | [[ThreadSmallOk]] <<YESNO>>[[ThreadSmallComment]] <<COMMENT>> |
| Any files can be uploaded here. | [[Step3Upload]] <<FILEUPLOAD>> |

|  |  |
| --- | --- |
| 4 | **Dimensional check.** **May be performed with CMM, calipers, or other method.** |
| 104210300-M8U-8200-A101\_-\_SUPPLY WARM - COLD BELLOWS |
| Diameter of heat sink ring | 3.125 | +/-0.005 | [[Dimension1Ok]] <<YESNO>> |
| Width of heat sink ring  | 0.50 | +/-0.01 | [[Dimension2Ok]] <<YESNO>> |
| 104210300-M8U-8200-A102\_-\_BELLOWS FLANGE |
| Diameter to OD of boss | 5.620 | +/-0.005 | [[Dimension1Ok]] <<YESNO>> |
| Height of boss | 0.899 | +/-0.005 | [[Dimension2Ok]] <<YESNO>> |
| Diameter to OD of o-ring groove | 8.190 | +/-0.005 | [[Dimension3Ok]] <<YESNO>> |
| Depth of o-ring groove | 0.173-0.176 |  | [[Dimension4Ok]] <<YESNO>> |
| Width of o-ring groove | 0.171-0.175 | +/-0.005 | [[Dimension5Ok]] <<YESNO>> |
| Any files can be uploaded here. | [[Step4Upload]] <<FILEUPLOAD>> |

|  |  |
| --- | --- |
| 4 | **Storage** |
| Plastic caps should be applied to the flanges at both ends for storage. Convolutions should be covered with bellows protection.  | [[StorageTech]] <<SRF>>[[StorageDate]] <<TIMESTAMP>> |