LCLS Linac Coherent Light Source — Stanford Synchrotron Radiation Laboratory, Stanford Linear Accelerator Center

# Quality Assurance Traveler



ATTACH THIS FORM TO LCLS SYSTEMS AND COMPONENTS TO CONTROL THE SEQUENCE OF QUALITY ASSURANCE TASKS. RETURN THE COMPLETED TRAVELER TO THE LCLS QUALITY ASSURANCE COORDINATOR UPON COMPLETION.

| | | |
|---|---|---|
| System or Component Name: *LCLS Undulator Main Assembly* | | |
| Part/Drawing Number: *L143-112000* | Revision: 05 | Serial Number: 03 |
| Manufacturer: Hi-Tech MFG | | Purchase Order Number: SA-13624 |

Special Instructions:

***This form is to be completed prior to the acceptance of LCLS Undulator Main Assemblies***

**Quality Assurance Tasks (attach continuation sheets if additional steps are required)**

| Seq No. | Task Description<br>*Inform the LCLS Technical Lead if a task cannot be competed or a requirement met | Completed by/Date* | Requirement Met | Requirement Not Met* |
|---|---|---|---|---|
| 1 | *Perform visual inspection of the completed assembly for workmanship and correctness.* | T M 7/5/04 | ☑ | ☐ |
| 2 | *Perform visual inspection of the completed assembly for correct the following markings on the Strongback:* L143-11200-05<br>SA-381-001-35<br>Serial number same as the Strongback | 7/5/04 T M | ☑ | ☐ |
| 3 | *Perform visual inspection of the completed assembly for correct the following markings on the Magnet Structure Assemblies:*<br>• Upper Left Magnet Structure Assemblies: L-143-110800-assembly no.<br>• Upper Right Magnet Structure Assemblies: L143-111200-assembly no.<br>• Upper Middle Magnet Structure Assemblies: L143-111000-1,2,3-assembly no.<br>• Lower Left Magnet Structure Assemblies: 143-110900-assembly serial no.<br>• Lower Right Magnet Structure Assemblies: L143-111300-assembly serial no.<br>• Lower Middle Magnet Structure Assemblies: L143-111100-1,2-3-assembly no. | 7/5/04 T M | ☑ | ☐ |
| 4 | *Verify correct gap size along the entire undulator length using contactor's go/no-go gages.* | 6/30/04 | ☑ | ☐ |
| 5 | *Verify correct gap size along the entire undulator length using calibrated gage blocks.* | 6/30/04 | ☑ | ☐ |
| 6 | *Check the peak field at each magnet location using a portable Hall probe.* | 6/30/04 | ☑ | ☐ |
| 7 | *Verify that the following quality assurance documentation has been completed by the contractor:*<br>• ANL Acceptance Criteria Listings E5-026046, E5-020020, E5-069069<br>• LCLS Inspection/Acceptance Report for LCLS Magnets<br>• LCLS Inspection/Acceptance Report for Supplier Inspection form for LCLS Magnet Assemblies<br>• Magnet Sort List<br>• Photographs showing correct magnet serial numbers and orientation<br>• ANL Supplier Disposition Reports documenting any noncomformance to specifications drawings or other contract requirements | T M 7/5/04 | ☑ | ☐ |
| 8 | *Verify that the magnet photographs of the magnet sub assemblies are in agreement with the magnet sort list.* | T M 11/3/04 | ☑ | ☐ |
| 9 | *Review shipping container and that the contractor has Shockwatch monitoring devices available* | T M 7/5/04 | ☑ | ☐ |
| 10 | *Forward completed traveler form to LCLS QA Coordinator Tom Barsz. B401, C4243.* | | ☐ | ☐ |

**LCLS Task Leader Pre-Approval:** _____ **Date:** _____

**LCLS QA Coordinator Pre-Approval:** _____ **Date:** _____

**Optional Approver Comments:**

**Distribute completed traveler to:** **Responsible Engineer, Task Leader, LCLS Quality Assurance Coordinator, Chief Engineer**

**Other:** _____

**Enter Quality Improvements Lessons-Learned resulting from this activity below.**

# ARGONNE NATIONAL LABORATORY

# ACCEPTANCE CRITERIA LISTING

1. DISTRIBUTION:

**INSPECTION REQUIRED:** ☑

4. ORIGINATOR'S NAME & DIVISION: Glen Lawrence/XFD 5. PHONE: 2-9298 6. DATE: 06/13/2005

9. FOR INSPECTION, DELIVER TO BLDG. NO.: DIVISION: XFD ATTN.: G. Lawrence

10. AFTER INSPECTION, DELIVER TO BLDG. NO.: SLAC DIVISION: LCLS ATTN.:

11. REFERENCES AND/OR REMARKS:

Item may be inspected by LCLS QA at Contractor site prior to shipment with follow-up inspection at receiving site. First Articles from each of the two contractors are to be shipped to ANL/APS to be magnetically shimmed and characterized in the APS Magnet Measurement room. The 38 remaining units shall be shipped directly to SLAC to be magnetically shimmed and characterized in the LCLS Magnet Measurement room.

15. ORIGINATOR OF PLAN: Glen Lawrence DATE: 06/13/2005

16. PLAN REVIEWED/APPROVED BY: DATE: 00/00/0000

17. QAR CONCURRENCE WITH PLAN: DATE: 00/00/0000

3. ACL NO.: E5-164018 LINE NBR: 1

7. PART NO. & NAME: L143-112000 LCLS Undulator Main Assy. 8. QUANTITY: 2

| 12. STEP NO. | 13. INSPECTION/TEST REQUIREMENT | 14. INSPECTION TEST LOCATION | 18. ACCEPTED BY OR NONCONFORMANCE REPORT NO. | 19. DATE |
|---|---|---|---|---|
| 1 | Inspect shipping container for evidence of damage or rough handling | eceiving / Inspectic | SLAC | |
| 2 | Inspect shipping sensors for record of temperature variations and shock/g loads in x,y and z during shipping | eceiving / Inspectic | SLAC | |
| 3 | Review all required certifications for compliance and completeness | actor Fac. or Rec. | Tmy | 7/5/06 |
| 4 | Visual inspection of Undulator Assy for shipping damage | eceiving / Inspectic | SLAC | |
| 5 | Visual inspection of Undulator Assy for completeness to print, including all loose parts | actor Fac. or Rec. | Tmy | 7/5/06 |

# ARGONNE NATIONAL LABORATORY

# ACCEPTANCE CRITERIA LISTING

| 12. STEP NO. | 13. INSPECTION/TEST REQUIREMENT | 14. INSPECTION TEST LOCATION | 18. ACCEPTED BY OR NONCONFORMANCE REPORT NO. | 19. DATE |
|---|---|---|---|---|
| 6 | Verify Undulator gap using Go-NoGo gauge | Contractor Facility | 6/30/06 | ~~7/5/06~~ 6/30/06 |

Not Required Fields



# ARGONNE NATIONAL LABORATORY

# ACCEPTANCE CRITERIA LISTING

1. DISTRIBUTION:

INSPECTION REQUIRED: ☑

4. ORIGINATOR'S NAME & DIVISION: Glen Lawrence/XFD 5. PHONE: 2-9298 6. DATE: 01/25/2005

9. FOR INSPECTION, DELIVER TO BLDG. NO.: N/A DIVISION: ATTN.:

10. AFTER INSPECTION, DELIVER TO BLDG. NO.: NA DIVISION: ATTN.:

11. REFERENCES AND/OR REMARKS:

The Magnet Poles are to be delivered to the Undulator Assembly Contractors by the Machining Contractor. Undulator Assembly Contractor shall inspect the Magnet Poles prior to acceptance. ANL shall review all Certifications and Machining Contractor's reported measurements & optionally perform on-site inspections.

15. ORIGINATOR OF PLAN: Glen Lawrence DATE: 01/27/2005

16. PLAN REVIEWED/APPROVED BY: DATE: 00/00/0000

17. QAR CONCURRENCE WITH PLAN: DATE: 00/00/0000

3. ACL NO.: E5-026046 LINE NBR: 1

7. PART NO. & NAME: L143-110105 Upper Magnet Structure Pole 8. QUANTITY: 192

| 12. STEP NO. | 13. INSPECTION/TEST REQUIREMENT | 14. INSPECTION TEST LOCATION | 18. ACCEPTED BY OR NONCONFORMANCE REPORT NO. | 19. DATE |
|---|---|---|---|---|
| 1 | Visual inspection of parts for shipping damage | ulator Assy Contra | Hi-Tech | 7/5/04 |
| 2 | Check that parts were "bagged and tagged" with serial no.'s and part no.'s (ANL & SLAC) per SOW L143-00031, Section 4.1.3 | ulator Assy Contra | | |
| 3 | Check that parts were marked with serial numbers per SOW section 4.1.3. | ulator Assy Contra | | |
| 4 | Check that accompanying certifications have correct part serial numbers | ulator Assy Contra | | |
| 5 | Check the material certification for compliance with ASTM A801, Type 1 | tor Assy Contracto | | |

Not Required Fields



# ARGONNE NATIONAL LABORATORY

# ACCEPTANCE CRITERIA LISTING

| 12. STEP NO. | 13. INSPECTION/TEST REQUIREMENT | 14. INSPECTION TEST LOCATION | 18. ACCEPTED BY OR NONCONFORMANCE REPORT NO. | 19. DATE |
|---|---|---|---|---|
| 6 | Check the anneal certification for compliance with AMS-A801, or a specified material supplier's annealing schedule. | tor Assy Contracto | Hi Tech | 7/5/04 |
| 7 | Check that the machining Contractor's certified dimensional measurements are in compliance with the drawing | ANL | TM | 7/5/04 |
| 8 | Verify the critical dimensions as listed in the SOW, Section 4.5.2 are in compliance with the drawing | ulator Assy Contra | Hi-Tech | 7/5/04 |

Not Required Fields



# ARGONNE NATIONAL LABORATORY

# ACCEPTANCE CRITERIA LISTING

1. DISTRIBUTION:

**INSPECTION REQUIRED:** ☑

4. ORIGINATOR'S NAME & DIVISION: Glen Lawrence/XFD 5. PHONE: 2-9298 6. DATE: 03/10/2005

9. FOR INSPECTION, DELIVER TO BLDG. NO.: 401 DIVISION: XFD ATTN.: Glen Lawrence

10. AFTER INSPECTION, DELIVER TO BLDG. NO.: 401 DIVISION: XFD ATTN.: Glen Lawrence

11. REFERENCES AND/OR REMARKS:

Most of the magnets will be drop shipped directly to the Undulator Assembly Contractor, who will only perform limited physical inspection of the parts as they are highly magnetized. A sampling from each lot will be sent to ANL for verification of the magnetic field properties.

15. ORIGINATOR OF PLAN: Glen Lawrence DATE: 02/07/2005

16. PLAN REVIEWED/APPROVED BY: DATE: 00/00/0000

17. QAR CONCURRENCE WITH PLAN: DATE: 00/00/0000

**3. ACL NO.: E5-069069 LINE NBR: 1**

7. PART NO. & NAME: L143-110106 Upper Left Magnet Structure 8. QUANTITY: 192

| 12. STEP NO. | 13. INSPECTION/TEST REQUIREMENT | 14. INSPECTION TEST LOCATION | 18. ACCEPTED BY OR NONCONFORMANCE REPORT NO. | 19. DATE |
|---|---|---|---|---|
| 1 | Visual inspection of parts for shipping damage | ulator Ass'y Contra | H. Jech | 7/5/04 |
| 2 | Visual inspection of parts for surface chips and pits | ulator Ass'y Contra | ↓ | ↓ |
| 3 | Dimensional check of part for conformance to the drawing | ulator Ass'y Contra | ↓ | ↓ |
| 4 | Review vendor certified test data agrees with SOW requirements | APS Bldg 401 | T Mg | 7/5/04 |
| 5 | Review Vendor sort list for agreement with sort procedure. | APS Bldg 401 | SS Shigeru Sasaki 11/7/06 | |

# ARGONNE NATIONAL LABORATORY

# ACCEPTANCE CRITERIA LISTING

| 12. STEP NO. | 13. INSPECTION/TEST REQUIREMENT | 14. INSPECTION TEST LOCATION | 18. ACCEPTED BY OR NONCONFORMANCE REPORT NO. | 19. DATE |
|---|---|---|---|---|
| 6 | On random sampling, inspect magnetic field with magnetic visualization film for magnetic defects. | APS Magnet Grou | SS | 11/6/06 |
| 7 | On random sampling, confirm Magnetic Moment magnitude and vector components agree with vendor reports | APS Magnet Grou | SS | |
| 8 | On radom sampling, verify the magnet s demagnetization and thermal stability. | APS Magnet Grou | SS | |

S/N 3

**Quality Tools and Abrasives, Inc.**
358 Country Club Drive • Bensenville, IL 60106
(630) 350-2110 • Fax (630) 350-2866
**1-800-640-2110**
Cutting Tools • Carbide • Shop Supplies • Inventory Management
Janitorial/Sanitation • Safety Supplies

Portable Hall Probe Measurements
of the LCLS undulator #3

~~0~~6/29/2006

at „Hi-Tech Mfg"

SN 3

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(630) 350-2110 • Fax (630) 350-2866
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| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 35 1.26 | 69. 1.26 | ~~101~~ | 135 1.25 | 169 1.27 | 203 1.26 |
| 2 | 36 1.27 | 70 1.26 | ~~102~~ | 136 1.27 | 170 1.25 | 204 1.27 |
| 3 1.23 | 37 1.28 | 71 1.26 | 103 1.27 | 137 1.26 | 171 1.25 | 205 1.27 |
| 4 1.29 | 38 1.26 | 72 1.26 | 104 1.26 | 138 1.27 | 172 1.26 | 206 1.26 |
| 5 1.27 | 39 1.26 | 73 1.25 | 105 1.26 | 139 1.27 | 173 1.25 | 207 1.28 |
| 6 1.27 | 40. 1.26 | 74 1.27 | 106 1.27 | 140 1.27 | 174 1.27 | 208 1.27 |
| 7 1.28 | 41 1.27 | 75 1.27 | 107 1.27 | 141 1.27 | 175 1.25 | 209 1.27 |
| 8 1.27 | 42 1.26 | 76 1.27 | 108 1.26 | 142 1.27 | 176 1.27 | 210 1.27 |
| 9 1.27 | 43 1.27 | 77 1.27 | 109 1.27 | 143 1.27 | 177 1.26 | 211 1.27 |
| 10. 1.26 | 44 1.26 | 78 1.26 | 110 1.26 | 144 1.26 | 178 1.25 | 212 1.26 |
| 11 1.26 | 45 1.26 | 79 1.26 | 111 1.26 | 145 1.27 | 179 1.26 | 213 1.26 |
| 12 1.27 | 46 1.25 | 80 1.26 | 112 1.25 | 146 1.27 | 180 1.27 | 214 1.25 |
| 13 1.26 | 47. 1.26 | 81 1.26 | 113 1.26 | 147 1.27 | 181 1.27 | 215 1.25 |
| 14 1.26 | 48 1.27 | 82 1.27 | 114 1.26 | 148 1.25 | 182 1.27 | 216 1.27 |
| 15 1.27 | 49 1.26 | 83 1.27 | 115 1.26 | 149 1.26 | 183 1.27 | 217 1.27 |
| 16 1.26 | 50 1.27 | 84 1.26 | 116 1.27 | 150 1.27 | 184 1.27 | 218 1.26 |
| 17. 1.26 | 51 1.26 | 85 1.27 | 117 1.26 | 151 1.27 | 185 1.26 | 219 1.26 |
| 18. 1.26 | 52 1.26 | 86 1.27 | 118 1.27 | 152 1.27 | 186 1.26 | 220 1.27 |
| 19. 1.26 | 53 1.25 | 87 1.27 | 119 1.26 | 153 1.27 | 187 1.26 | 221 1.27 |
| 20 1.26 | 54 1.26 | 88 1.26 | 120 1.26 | 154 1.27 | 188 1.27 | 222 1.29 |
| 21 1.25 | 55 1.26 | 89 1.27 | 121 1.25 | 155 1.26 | 189 1.27 | 223 1.21 |
| 22 1.26 | 56 1.26 | 90 1.27 | 122 1.27 | 156 1.25 | 190 1.27 | 224 0.74 |
| 23 1.26 | 57 1.26 | 91 1.27 | 123 1.26 | 157 1.27 | 191 1.27 | 225 |
| 24 1.27 | 58 1.25 | 92 1.27 | 124 1.27 | 158 1.27 | 192 1.27 | |
| 25 1.27 | 59 1.26 | 93 1.27 | 125 1.26 | 159 1.27 | 193 1.26 | |
| 26 1.26 | 60 1.26 | 94 1.26 | 126 1.27 | 160 1.27 | 194 1.26 | |
| 27 1.26 | 61 1.26 | 95 1.27 | 127 1.27 | 161 1.27 | 195 1.25 | |
| 28 1.27 | 62 1.26 | 96 1.27 | 128 1.27 | 162 1.26 | 196 1.26 | |
| 29 1.26 | 63 1.26 | 97 1.26 | 129 1.26 | 163 1.26 | 197 1.27 | |
| 30 1.26 | 64 1.27 | 98 1.26 | 130 1.27 | 164 1.25 | 198 1.28 | |
| 31 1.27 | 65 1.26 | 99 1.27 | 131 1.27 | 165 1.27 | 199 1.27 | |
| 32 1.26 | 66 1.26 | 100 1.27 | 132 1.28 | 166 1.27 | 200 1.26 | |
| 33 1.26 | 67 1.26 | 101 1.26 | 133 1.26 | 167 1.26 | 201 1.27 | |
| 34 1.26 | 68 1.25 | 102 1.27 | 134 1.27 | 168 1.26 | 202 1.26 | |

Vasen

#3

## LOT5 magnets Serial # 1921-2400

Bottom Jaw

| Slot Number | Serial No. | Main filed Orientation | x-axis orientation |
|---|---|---|---|
| 1 | 2276 | Upstream | Right |
| 2 | 2068 | Downstream | Left |
| 3 | 2381 | Upstream | Left |
| 4 | 2391 | Downstream | Right |
| 5 | 2235 | Upstream | Left |
| 6 | 2080 | Downstream | Right |
| 7 | 2365 | Upstream | Right |
| 8 | 2312 | Downstream | Right |
| 9 | 2087 | Upstream | Right |
| 10 | 2069 | Downstream | Right |
| 11 | 2191 | Upstream | Right |
| 12 | 1949 | Downstream | Right |
| 13 | 2325 | Upstream | Right |
| 14 | 2180 | Downstream | Right |
| 15 | 2281 | Upstream | Left |
| 16 | 2242 | Downstream | Right |
| 17 | 2151 | Upstream | Right |
| 18 | 2050 | Downstream | Right |
| 19 | 2128 | Upstream | Right |
| 20 | 2288 | Downstream | Right |
| 21 | 2196 | Upstream | Right |
| 22 | 2261 | Downstream | Right |
| 23 | 2363 | Upstream | Right |
| 24 | 2207 | Downstream | Right |
| 25 | 1963 | Upstream | Left |
| 26 | 2122 | Downstream | Right |
| 27 | 2161 | Upstream | Right |
| 28 | 2070 | Downstream | Left |
| 29 | 2076 | Upstream | Right |
| 30 | 1956 | Downstream | Left |
| 31 | 2316 | Upstream | Right |
| 32 | 2001 | Downstream | Left |
| 33 | 2268 | Upstream | Left |
| 34 | 2211 | Downstream | Right |
| 35 | 2236 | Upstream | Left |
| 36 | 2051 | Downstream | Right |
| 37 | 2253 | Upstream | Right |
| 38 | 2065 | Downstream | Left |
| 39 | 1987 | Upstream | Left |
| 40 | 2079 | Downstream | Right |
| 41 | 2377 | Upstream | Right |
| 42 | 2165 | Downstream | Right |
| 43 | 2173 | Upstream | Left |
| 44 | 2071 | Downstream | Right |
| 45 | 1999 | Upstream | Left |
| 46 | 2234 | Downstream | Left |
| 47 | 2011 | Upstream | Right |

Top Jaw

| Slot Number | Serial No. | Main filed Orientation | x-axis orientation |
|---|---|---|---|
| 1 | 2279 | Downstream | Right |
| 2 | 2114 | Upstream | Left |
| 3 | 2061 | Downstream | Left |
| 4 | 2055 | Upstream | Right |
| 5 | 2092 | Downstream | Right |
| 6 | 2158 | Upstream | Right |
| 7 | 2184 | Downstream | Left |
| 8 | 2101 | Upstream | Left |
| 9 | 1955 | Downstream | Right |
| 10 | 2299 | Upstream | Left |
| 11 | 2032 | Downstream | Left |
| 12 | 1975 | Upstream | Right |
| 13 | 2380 | Downstream | Right |
| 14 | 2140 | Upstream | Right |
| 15 | 1946 | Downstream | Right |
| 16 | 2396 | Upstream | Right |
| 17 | 2247 | Downstream | Left |
| 18 | 2263 | Upstream | Left |
| 19 | 1934 | Downstream | Right |
| 20 | 2147 | Upstream | Right |
| 21 | 2254 | Downstream | Right |
| 22 | 2131 | Upstream | Right |
| 23 | 2342 | Downstream | Left |
| 24 | 2389 | Upstream | Left |
| 25 | 2198 | Downstream | Left |
| 26 | 2353 | Upstream | Right |
| 27 | 1989 | Downstream | Right |
| 28 | 2120 | Upstream | Left |
| 29 | 2334 | Downstream | Left |
| 30 | 2135 | Upstream | Right |
| 31 | 2062 | Downstream | Left |
| 32 | 2332 | Upstream | Right |
| 33 | 2049 | Downstream | Right |
| 34 | 1978 | Upstream | Left |
| 35 | 2054 | Downstream | Right |
| 36 | 2137 | Upstream | Right |
| 37 | 2154 | Downstream | Right |
| 38 | 2029 | Upstream | Right |
| 39 | 2267 | Downstream | Left |
| 40 | 1942 | Upstream | Right |
| 41 | 2208 | Downstream | Right |
| 42 | 2350 | Upstream | Left |
| 43 | 2066 | Downstream | Left |
| 44 | 2339 | Upstream | Right |
| 45 | 2124 | Downstream | Right |
| 46 | 1990 | Upstream | Right |
| 47 | 2360 | Downstream | Left |

| | | | |
|---|---|---|---|
| 48 | 2090 | Downstream | Left |
| 49 | 1980 | Upstream | Right |
| 50 | 2308 | Downstream | Left |
| 51 | 2083 | Upstream | Right |
| 52 | 2388 | Downstream | Left |
| 53 | 2385 | Upstream | Right |
| 54 | 2238 | Downstream | Right |
| 55 | 2384 | Upstream | Left |
| 56 | 2170 | Downstream | Left |
| 57 | 2109 | Upstream | Left |
| 58 | 2241 | Downstream | Left |
| 59 | 1992 | Upstream | Left |
| 60 | 1970 | Downstream | Left |
| 61 | 2176 | Upstream | Right |
| 62 | 2304 | Downstream | Right |
| 63 | 2320 | Upstream | Left |
| 64 | 1982 | Downstream | Right |
| 65 | 2356 | Upstream | Right |
| 66 | 2195 | Downstream | Left |
| 67 | 2289 | Upstream | Right |
| 68 | 1965 | Downstream | Left |
| 69 | 2227 | Upstream | Left |
| 70 | 2015 | Downstream | Right |
| 71 | 1951 | Upstream | Right |
| 72 | 2244 | Downstream | Left |
| 73 | 2259 | Upstream | Right |
| 74 | 2012 | Downstream | Right |
| 75 | 2239 | Upstream | Right |
| 76 | 1937 | Downstream | Left |
| 77 | 2348 | Upstream | Right |
| 78 | 2156 | Downstream | Right |
| 79 | 2218 | Upstream | Right |
| 80 | 2309 | Downstream | Left |
| 81 | 1943 | Upstream | Left |
| 82 | 2048 | Downstream | Right |
| 83 | 1945 | Upstream | Left |
| 84 | 2370 | Downstream | Right |
| 85 | 2132 | Upstream | Right |
| 86 | 2044 | Downstream | Left |
| 87 | 2095 | Upstream | Left |
| 88 | 2111 | Downstream | Left |
| 89 | 2301 | Upstream | Left |
| 90 | 2202 | Downstream | Right |
| 91 | 2034 | Upstream | Right |
| 92 | 2273 | Downstream | Left |
| 93 | 1957 | Upstream | Right |
| 94 | 2026 | Downstream | Left |
| 95 | 2343 | Upstream | Left |
| 96 | 1954 | Downstream | Left |
| 97 | 1959 | Upstream | Left |
| 98 | 2041 | Downstream | Right |
| 99 | 2129 | Upstream | Right |

| | | | |
|---|---|---|---|
| 48 | 2378 | Upstream | Left |
| 49 | 2249 | Downstream | Right |
| 50 | 2344 | Upstream | Left |
| 51 | 2040 | Downstream | Right |
| 52 | 2307 | Upstream | Right |
| 53 | 2286 | Downstream | Right |
| 54 | 2035 | Upstream | Left |
| 55 | 2045 | Downstream | Right |
| 56 | ~~1969~~ | Upstream | Left 2033 |
| 57 | 2216 | Downstream | Left |
| 58 | 2390 | Upstream | Left |
| 59 | 2266 | Downstream | Right |
| 60 | 2300 | Upstream | Left |
| 61 | 2025 | Downstream | Left |
| 62 | 2272 | Upstream | Right |
| 63 | 1931 | Downstream | Right |
| 64 | 1993 | Upstream | Left |
| 65 | 2258 | Downstream | Right |
| 66 | 2126 | Upstream | Right |
| 67 | 2094 | Downstream | Right |
| 68 | 2233 | Upstream | Right |
| 69 | 2204 | Downstream | Right |
| 70 | 2155 | Upstream | Right |
| 71 | 2201 | Downstream | Right |
| 72 | 2175 | Upstream | Right |
| 73 | 2262 | Downstream | Left |
| 74 | 2397 | Upstream | Right |
| 75 | 1933 | Downstream | Left |
| 76 | 2148 | Upstream | Left |
| 77 | 2098 | Downstream | Left |
| 78 | 1953 | Upstream | Left |
| 79 | 2013 | Downstream | Right |
| 80 | 2219 | Upstream | Left |
| 81 | 2313 | Downstream | Right |
| 82 | 2374 | Upstream | Right |
| 83 | 2362 | Downstream | Right |
| 84 | 2205 | Upstream | Left |
| 85 | 2387 | Downstream | Left |
| 86 | 2157 | Upstream | Right |
| 87 | 2237 | Downstream | Right |
| 88 | 1930 | Upstream | Right |
| 89 | 2290 | Downstream | Left |
| 90 | 1996 | Upstream | Right |
| 91 | 2274 | Downstream | Left |
| 92 | 2246 | Upstream | Right |
| 93 | 1947 | Downstream | Left |
| 94 | 2282 | Upstream | Right |
| 95 | 1991 | Downstream | Left |
| 96 | 2287 | Upstream | Left |
| 97 | 2038 | Downstream | Left |
| 98 | 2171 | Upstream | Right |
| 99 | 2256 | Downstream | Right |

| | | | |
|---|---|---|---|
| 100 | 2352 | Downstream | Left |
| 101 | 2383 | Upstream | Left |
| 102 | 2115 | Downstream | Right |
| 103 | 1981 | Upstream | Right |
| 104 | 2226 | Downstream | Right |
| 105 | 2042 | Upstream | Right |
| 106 | 2136 | Downstream | Left |
| 107 | 2223 | Upstream | Right |
| 108 | 2189 | Downstream | Left |
| 109 | 2349 | Upstream | Left |
| 110 | 2081 | Downstream | Right |
| 111 | 1940 | Upstream | Left |
| 112 | 2209 | Downstream | Left |
| 113 | 2354 | Upstream | Left |
| 114 | 1962 | Downstream | Right |
| 115 | 2369 | Upstream | Left |
| 116 | 1941 | Downstream | Left |
| 117 | 2167 | Upstream | Left |
| 118 | 2283 | Downstream | Right |
| 119 | 2217 | Upstream | Left |
| 120 | 2224 | Downstream | Left |
| 121 | 1973 | Upstream | Left |
| 122 | 1998 | Downstream | Right |
| 123 | 2213 | Upstream | Left |
| 124 | 1984 | Downstream | Right |
| 125 | 2225 | Upstream | Right |
| 126 | 2007 | Downstream | Right |
| 127 | 2193 | Upstream | Right |
| 128 | 2099 | Downstream | Left |
| 129 | 2240 | Upstream | Left |
| 130 | 2371 | Downstream | Right |
| 131 | 2318 | Upstream | Left |
| 132 | 2172 | Downstream | Left |
| 133 | 2372 | Upstream | Left |
| 134 | 2183 | Downstream | Left |
| 135 | 2125 | Upstream | Right |
| 136 | 2197 | Downstream | Right |
| 137 | 2091 | Upstream | Right |
| 138 | 2311 | Downstream | Left |
| 139 | 2139 | Upstream | Right |
| 140 | 2022 | Downstream | Right |
| 141 | 2082 | Upstream | Right |
| 142 | 2285 | Downstream | Right |
| 143 | 2335 | Upstream | Left |
| 144 | 2133 | Downstream | Right |
| 145 | 1922 | Upstream | Right |
| 146 | 2085 | Downstream | Right |
| 147 | 1950 | Upstream | Left |
| 148 | 2178 | Downstream | Left |
| 149 | 1977 | Upstream | Left |
| 150 | 2399 | Downstream | Right |

| | | | |
|---|---|---|---|
| 100 | 1927 | Upstream | Left |
| 101 | 2257 | Downstream | Right |
| 102 | 2039 | Upstream | Right |
| 103 | 2347 | Downstream | Left |
| 104 | 2024 | Upstream | Left |
| 105 | 1997 | Downstream | Right |
| 106 | 1976 | Upstream | Right |
| 107 | 1986 | Downstream | Right |
| 108 | 2310 | Upstream | Left |
| 109 | 2317 | Downstream | Right |
| 110 | 1974 | Upstream | Right |
| 111 | 2277 | Downstream | Right |
| 112 | 2146 | Upstream | Right |
| 113 | 2220 | Downstream | Left |
| 114 | 1971 | Upstream | Left |
| 115 | 2023 | Downstream | Right |
| 116 | 2231 | Upstream | Left |
| 117 | 1960 | Downstream | Right |
| 118 | 2117 | Upstream | Right |
| 119 | 2212 | Downstream | Left |
| 120 | 2367 | Upstream | Left |
| 121 | 2228 | Downstream | Right |
| 122 | 1958 | Upstream | Left |
| 123 | 2088 | Downstream | Right |
| 124 | 2248 | Upstream | Right |
| 125 | 2104 | Downstream | Right |
| 126 | 2210 | Upstream | Right |
| 127 | 1936 | Downstream | Right |
| 128 | 1972 | Upstream | Left |
| 129 | 2021 | Downstream | Left |
| 130 | 2291 | Upstream | Left |
| 131 | 2168 | Downstream | Left |
| 132 | 2364 | Upstream | Left |
| 133 | 2108 | Downstream | Right |
| 134 | 2185 | Upstream | Left |
| 135 | 2002 | Downstream | Left |
| 136 | 2368 | Upstream | Right |
| 137 | 1948 | Downstream | Right |
| 138 | 2359 | Upstream | Right |
| 139 | 2112 | Downstream | Left |
| 140 | 2398 | Upstream | Left |
| 141 | 2181 | Downstream | Left |
| 142 | 2103 | Upstream | Left |
| 143 | 2192 | Downstream | Left |
| 144 | 1921 | Upstream | Right |
| 145 | 2107 | Downstream | Right |
| 146 | 2345 | Upstream | Right |
| 147 | 2073 | Downstream | Right |
| 148 | 2003 | Upstream | Left |
| 149 | 2214 | Downstream | Right |
| 150 | 2000 | Upstream | Right |

| | | | |
|---|---|---|---|
| 151 | 2394 | Upstream | Left |
| 152 | 2020 | Downstream | Right |
| 153 | 2382 | Upstream | Right |
| 154 | 1929 | Downstream | Left |
| 155 | 2177 | Upstream | Left |
| 156 | 2152 | Downstream | Right |
| 157 | 2203 | Upstream | Left |
| 158 | 2296 | Downstream | Left |
| 159 | 2006 | Upstream | Left |
| 160 | 2123 | Downstream | Right |
| 161 | 2361 | Upstream | Left |
| 162 | 1983 | Downstream | Left |
| 163 | 2199 | Upstream | Right |
| 164 | 2306 | Downstream | Left |
| 165 | 2373 | Upstream | Right |
| 166 | 2294 | Downstream | Left |
| 167 | 2016 | Upstream | Right |
| 168 | 2005 | Downstream | Left |
| 169 | 2009 | Upstream | Right |
| 170 | 1935 | Downstream | Left |
| 171 | 2264 | Upstream | Left |
| 172 | 1928 | Downstream | Right |
| 173 | 2047 | Upstream | Right |
| 174 | 2093 | Downstream | Left |
| 175 | 2027 | Upstream | Left |
| 176 | 2063 | Downstream | Left |
| 177 | 2351 | Upstream | Right |
| 178 | 2018 | Downstream | Left |
| 179 | 2319 | Upstream | Left |
| 180 | 2232 | Downstream | Right |
| 181 | 1979 | Upstream | Left |
| 182 | 2145 | Downstream | Right |
| 183 | 2116 | Upstream | Right |
| 184 | 2010 | Downstream | Left |
| 185 | 2134 | Upstream | Left |
| 186 | 2019 | Downstream | Right |
| 187 | 2275 | Upstream | Left |
| 188 | 2164 | Downstream | Right |
| 189 | 2187 | Upstream | Left |
| 190 | 2200 | Downstream | Left |
| 191 | 1939 | Upstream | Left |
| 192 | 2138 | Downstream | Right |
| 193 | 2031 | Upstream | Right |
| 194 | 2127 | Downstream | Left |
| 195 | 2113 | Upstream | Left |
| 196 | 2366 | Downstream | Right |
| 197 | 2314 | Upstream | Left |
| 198 | 2182 | Downstream | Left |
| 199 | 1988 | Upstream | Right |
| 200 | 2322 | Downstream | Right |
| 201 | 2119 | Upstream | Left |
| 202 | 2064 | Downstream | Right |

| | | | |
|---|---|---|---|
| 151 | 1938 | Downstream | Right |
| 152 | 2400 | Upstream | Left |
| 153 | 1924 | Downstream | Left |
| 154 | 2297 | Upstream | Left |
| 155 | 2186 | Downstream | Left |
| 156 | 1968 | Upstream | Left |
| 157 | 2110 | Downstream | Right |
| 158 | 1985 | Upstream | Right |
| 159 | 2053 | Downstream | Left |
| 160 | 2395 | Upstream | Right |
| 161 | 2190 | Downstream | Right |
| 162 | 2321 | Upstream | Right |
| 163 | 2194 | Downstream | Left |
| 164 | 2179 | Upstream | Left |
| 165 | 2102 | Downstream | Left |
| 166 | 2298 | Upstream | Right |
| 167 | 2379 | Downstream | Right |
| 168 | 2143 | Upstream | Right |
| 169 | 1995 | Downstream | Right |
| 170 | 2265 | Upstream | Right |
| 171 | 2337 | Downstream | Right |
| 172 | 2329 | Upstream | Left |
| 173 | 2270 | Downstream | Left |
| 174 | 2346 | Upstream | Left |
| 175 | 2303 | Downstream | Left |
| 176 | 2017 | Upstream | Left |
| 177 | 2260 | Downstream | Left |
| 178 | 2252 | Upstream | Left |
| 179 | 1925 | Downstream | Right |
| 180 | 2315 | Upstream | Left |
| 181 | 2077 | Downstream | Left |
| 182 | 2245 | Upstream | Right |
| 183 | 2160 | Downstream | Left |
| 184 | 2340 | Upstream | Right |
| 185 | 2250 | Downstream | Right |
| 186 | 2295 | Upstream | Right |
| 187 | 1926 | Downstream | Right |
| 188 | 2072 | Upstream | Right |
| 189 | 2004 | Downstream | Left |
| 190 | 2305 | Upstream | Left |
| 191 | 2028 | Downstream | Right |
| 192 | 1964 | Upstream | Left |
| 193 | 2386 | Downstream | Right |
| 194 | 2222 | Upstream | Right |
| 195 | 2142 | Downstream | Left |
| 196 | 2229 | Upstream | Left |
| 197 | 2333 | Downstream | Right |
| 198 | 2130 | Upstream | Left |
| 199 | 1967 | Downstream | Right |
| 200 | 2149 | Upstream | Right |
| 201 | 2074 | Downstream | Right |
| 202 | 2269 | Upstream | Left |

| | | | |
|---|---|---|---|
| 203 | 2100 | Upstream | Left |
| 204 | 2206 | Downstream | Left |
| 205 | 2280 | Upstream | Left |
| 206 | 2230 | Downstream | Right |
| 207 | 2293 | Upstream | Right |
| 208 | 2075 | Downstream | Right |
| 209 | 2221 | Upstream | Left |
| 210 | 2153 | Downstream | Right |
| 211 | 2330 | Upstream | Right |
| 212 | 2336 | Downstream | Left |
| 213 | 2338 | Upstream | Right |
| 214 | 2393 | Downstream | Left |
| 215 | 2159 | Upstream | Left |
| 216 | 2060 | Downstream | Left |
| 217 | 2084 | Upstream | Right |
| 218 | 2059 | Downstream | Right |
| 219 | 2118 | Upstream | Right |
| 220 | 2292 | Downstream | Left |
| 221 | 2162 | Upstream | Left |
| 222 | 2067 | Downstream | Left |
| 223 | 2174 | Upstream | Right |
| 224 | 2052 | Downstream | Left |
| 225 | 2169 | Upstream | Left |

| | | | |
|---|---|---|---|
| 203 | 1966 | Downstream | Left |
| 204 | 2105 | Upstream | Right |
| 205 | 2030 | Downstream | Right |
| 206 | 2358 | Upstream | Right |
| 207 | 2078 | Downstream | Left |
| 208 | 2278 | Upstream | Left |
| 209 | 2163 | Downstream | Left |
| 210 | 2251 | Upstream | Left |
| 211 | 2188 | Downstream | Left |
| 212 | 2141 | Upstream | Right |
| 213 | 2008 | Downstream | Left |
| 214 | 2106 | Upstream | Right |
| 215 | 2357 | Downstream | Left |
| 216 | 2144 | Upstream | Left |
| 217 | 1944 | Downstream | Right |
| 218 | 2097 | Upstream | Right |
| 219 | 2057 | Downstream | Right |
| 220 | 2392 | Upstream | Right |
| 221 | 2243 | Downstream | Right |
| 222 | 2284 | Upstream | Right |
| 223 | 2355 | Downstream | Right |
| 224 | 2166 | Upstream | Left |
| 225 | 2058 | Downstream | Left |

**For "X-Axis Orientation" column**
"Right" stands for right-numbered surface should face to the undulator axis.
"Left" stands for left-numbered surface should face to the undulator axis.
This "Right", "Left" procedure applies for both Right and Left Jaw

**For "Main-Field Orientation" column** **(see Assembly Procedure Document)**
"Downstream" side corresponts to the direction of lower-numbered slot.
Arrow should point toward the lower numbered slots.
"Upstream" side corresponds to the direction of higher-numbered slot.
Arrow should point toward the higher numbered slots.

**Spare magnets**

| serial No. | Reduced Magnetization |
|---|---|
| 2086 | 33% |
| 2302 | 80% |
| 2336 | Btm212 |
| 2341 | |
| 1961 | |
| 2150 | |
| 2056 | |
| 2328 | |
| 2331 | |
| 2072 | Top188 |

**Sample magnets**

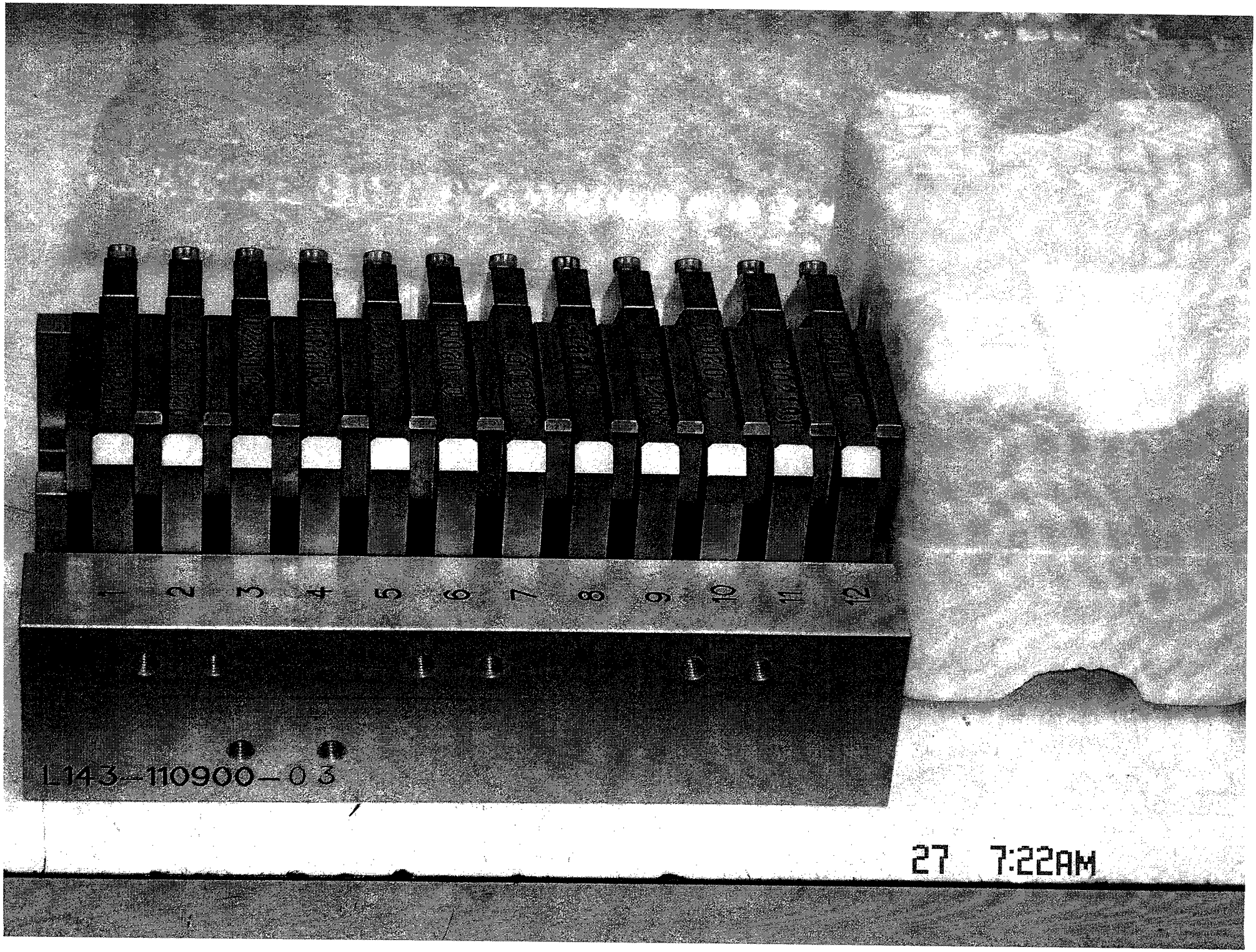
| serial No. |
|---|
| 1952 |
| 2089 |
| 2121 |
| 2255 |
| 2375 |

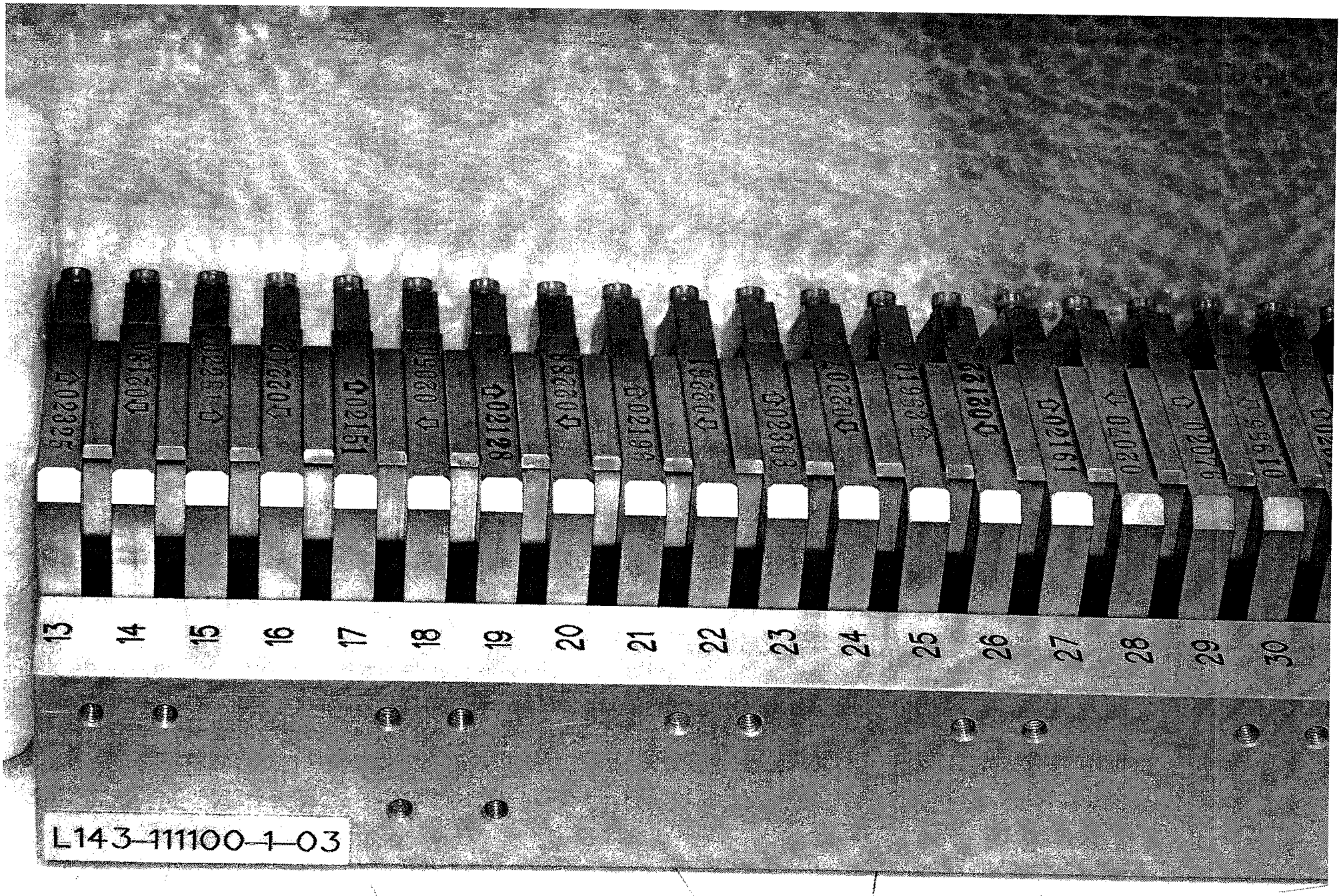
**Damaged magnets**

| serial No. |
|---|
| 2323 |
| 2324 |
| 2326 |
| 2327 |

| | |
|---|---|
| **2215** | |
| **2271** | |
| **2376** | |
| **2033** | |
| **2025** | Top61 |
| **2037** | |
| **2043** | |
| 1950 | Btm147 |
| **1932** | |
| 2132 | Btm085 |
| 2021 | Top129 |
| **2185** | Top134 |
| **1984** | Btm124 |
| **2096** | |
| **1994** | |

Red-numbered magnets were used for replacement in LOT5.


1 2 3 4 5 6 7 8 9 10 11 12
L143-110900-03
27 7:22AM

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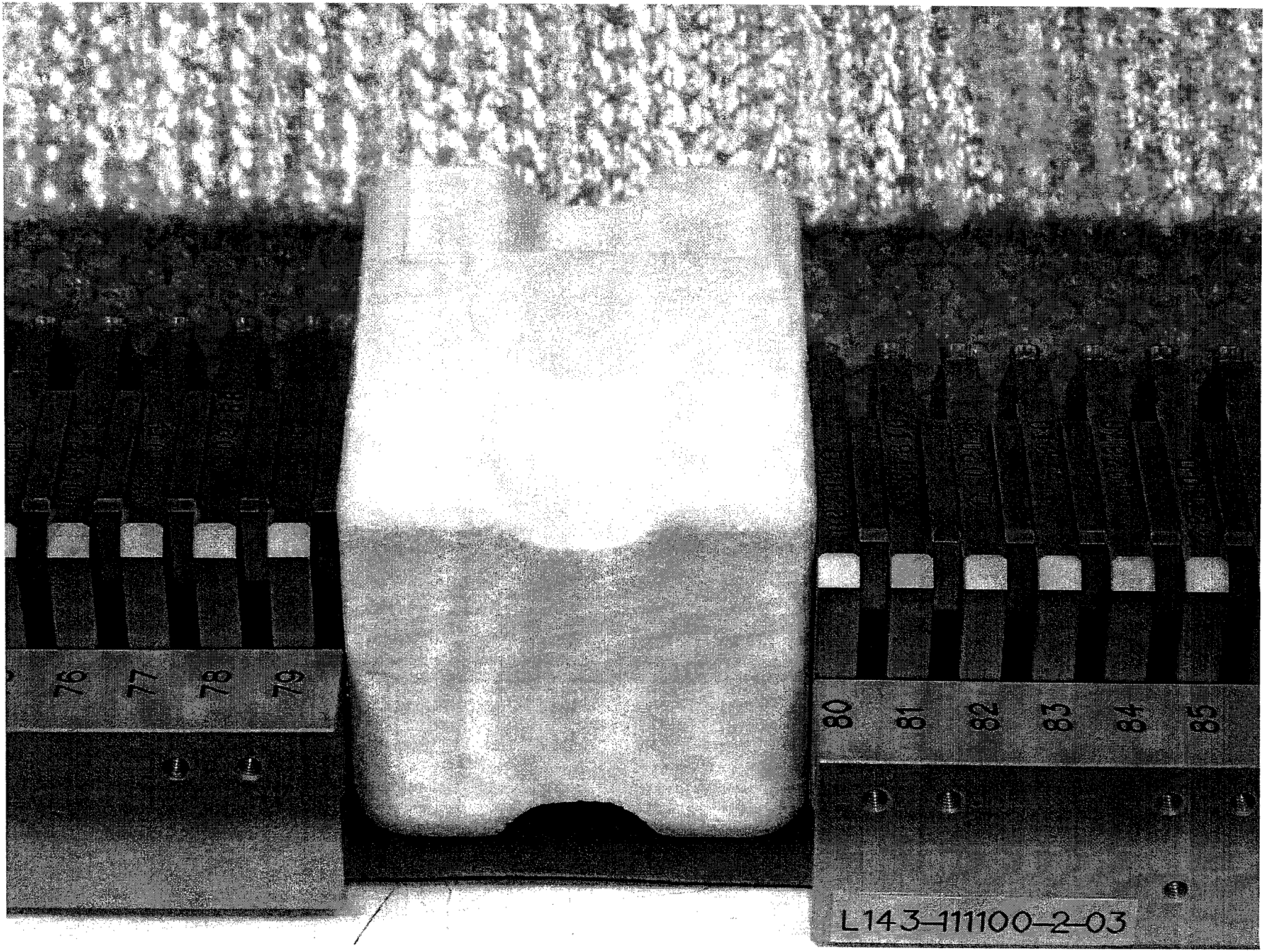
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MICROCOPY RESOLUTION TEST CHART
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27 1:19PM

06/23/2006 07:36 FAX 6302529303 ADVANCE 001/001

**Subject:** Another replacement for LOT5 undulator
**From:** Shigemi Sasaki <sasaki@aps.anl.gov>
**Date:** Thu, 22 Jun 2006 18:46:02 -0500
**To:** Emil Trakhtenberg <emil@aps.anl.gov>, Isaac Vasserman <isaac@aps.anl.gov>
**CC:** "Marion M. White" <mwhite@aps.anl.gov>, Liz Moog <moog@aps.anl.gov>

Emil, Isaac;

The damaged magnet #1969 in the slot 56 in upper jaw should be replaced to #2033. The x-axis orientation is the same with original. The #2033 magnet is one of the spare magnets for LOT5

Shigemi

I will be off tomorrow (Friday). But, if you have any urgent question, please e-mail me. I think I will have a chance to see e-mail.

Attn: Simon

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: **Dial Machine, Inc.**

PART NAME: **LCLS Strongback**

DRAWING #: **L143-110700**

SERIAL #: 03

P.O.#: **5A-13624**

DATE: 06-21-06

| # | Inspection/Test Requirement | Inspection Test Location | Accepted by or Nonconformance Report No. | Date |
|---|---|---|---|---|
| 1 | Visual inspection of part for shipping damage.<br>A) Were critical surfaces protected per SOW L143-00030 Section 4.1.4?<br>B) Is there any visible damage? | H.T. | SIMON | 06/21/06 |
| 2 | Check Strongback is marked with serial number & part no.'s (ANL & SLAC) per SOW Section 4.1.3? | H.T. | SIMON | 06/20/06 |
| 3 | Check all accompanying Certifications have correct part serial number | H.T. | SIMON | 06/21/06 |
| 4 | Check Material Certification for compliance with ASTM B381-03, Grade F2 | H.T. | SIMON | 06/21/06 |
| 5 | Check Forging Annealing Certification for annealing conformance to AMS-H-81200A, Table V, commercial Pure, Bars & Forgings, including Note 8 | H.T. | SIMON | 06/21/06 |
| 6 | Check Rough Machining Anneal Certification for annealing conformance to AMS-2801B section 3.2.9 | H.T. | SIMON | 06/21/06 |
| 7 | Check the Strongback contractor's reported dimensional measurements against the part drawing | H.T. | SIMON | 06/21/06 |
| 8 | Verify the Strongback critical dimensions as listed in the SOW section 4.5.2 are in compliance with the print | H.T. | SIMON | 06/21/06 |

INSPECTOR: SIMON

QA Supervisor: Murlaze

TEST EQUIPMENT USED: VISUAL

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR:

PART NAME: LCLS Strongback

DRAWING #: L143-110700

SERIAL #: 03

P.O. #: SA-13624

DATE: 06-21-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Overall length | 3400.00 | +0 / -.04 | 3400.00 | Accept/Reject |
| Gap height | 167.00 | +0.05 / -.0 | 167.00 | Accept/Reject |
| Gap flatness (top and bottom) | <= .05 | N/A | <= 1.03 | Accept/Reject |
| Gap depth | 130.00 | +/- .08 | 130.06 | Accept/Reject |
| Flatness of front face | <= .05 | N/A | <= .03 | Accept/Reject |
| Perpendicularity of front face to A | <= .1 | N/A | <= .03 | Accept/Reject |
| End face perpendicularity to A and B | <= .05 | N/A | <= 1.03<br><= 1.03 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Mullage

TEST EQUIPMENT USED: DROP INDICATOR
DIAL CALIPER
SQUAR PRECISION

COMMENTS:

LCLS Linac Coherent Light Source — Stanford Synchrotron Radiation Laboratory, Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR AS-BUILT DRAWINGS

VENDOR: Dial Machine, Inc.

PART NAME: LCLS Strongback

DRAWING #: L143-110700

SERIAL #: 03

P.O.#: 5A-13624

DATE: 6-20-06

FEATURE: Gap Flatness

| # | Distance (mm) | Measured A | Measured B | Comments |
|---|---|---|---|---|
| 1 | 50 | .0002 | .0006 | OK |
| 2 | 350 | .0005 | .0002 | OK |
| 3 | 650 | .0008 | .0002 | OK |
| 4 | 950 | .0011 | .0014 | OK |
| 5 | 1250 | .0016 | .0012 | OK |
| 6 | 1550 | .0014 | .0012 | OK |
| 7 | 1850 | .0004 | .0014 | OK |
| 8 | 2150 | .0002 | .0008 | OK |
| 9 | 2450 | .0005 | .0006 | OK |
| 10 | 2750 | .0004 | .0005 | OK |
| 11 | 3050 | -.0003 | .0003 | OK |
| 12 | 3350 | .0000 | .0000 | OK |

INSPECTOR: SIMON

QA Supervisor: Muzlaza

TEST EQUIPMENT USED: CUBIC PRECISION MODEL: 711010

SERIAL # 231067

COMMENTS:

DIAL MACHINE, INC.
2902 Eastrock Drive • Eastrock Industrial Park • P.O. Box 5246
Rockford, Illinois 61125
Phone 815/397-6660 • Fax 815/397-0562
www.dialmachine.com

# Packing Slip No. 23282



**Bill To**

ARGONNE NATIONAL LABORATORY
ATTN: ACCOUNTS PAYABLE BLDG 201
9700 SOUTH CASS AVENUE
ARGONNE IL 60439-4874

**Ship To**

HI-TECH MANUFACTURING INC
4637 NORTH 25TH AVENUE
SCHILLER PARK IL 60176

| | |
|---|---|
| **Ship Date** | 04/28/2006 |
| **Your Order** | 5A-04889 |
| **FOB** | ROCKFORD |
| **Ship Via** | OUR TRUCK |
| **Terms** | NET 30 |
| **Our Order** | 21279 |

| Order Qty | Ship Qty | Part ID/Description | Rev | U/M |
|---|---|---|---|---|
| 1 | 1 | SA-381-000-86<br>TITANIUM STRONGBACK<br>SERIAL #03 | | EA |
| 1 | 1 | SA-381-000-86<br>TITANIUM STRONBACK<br>SERIAL #11 | | EA |

MACHINED COMPLETE PER PRINT
INSPECTION REPORTS ENCLOSED

R Juarez

# Argonne National Lab
## Strongback -L143-110700
## Inspection and Test Results

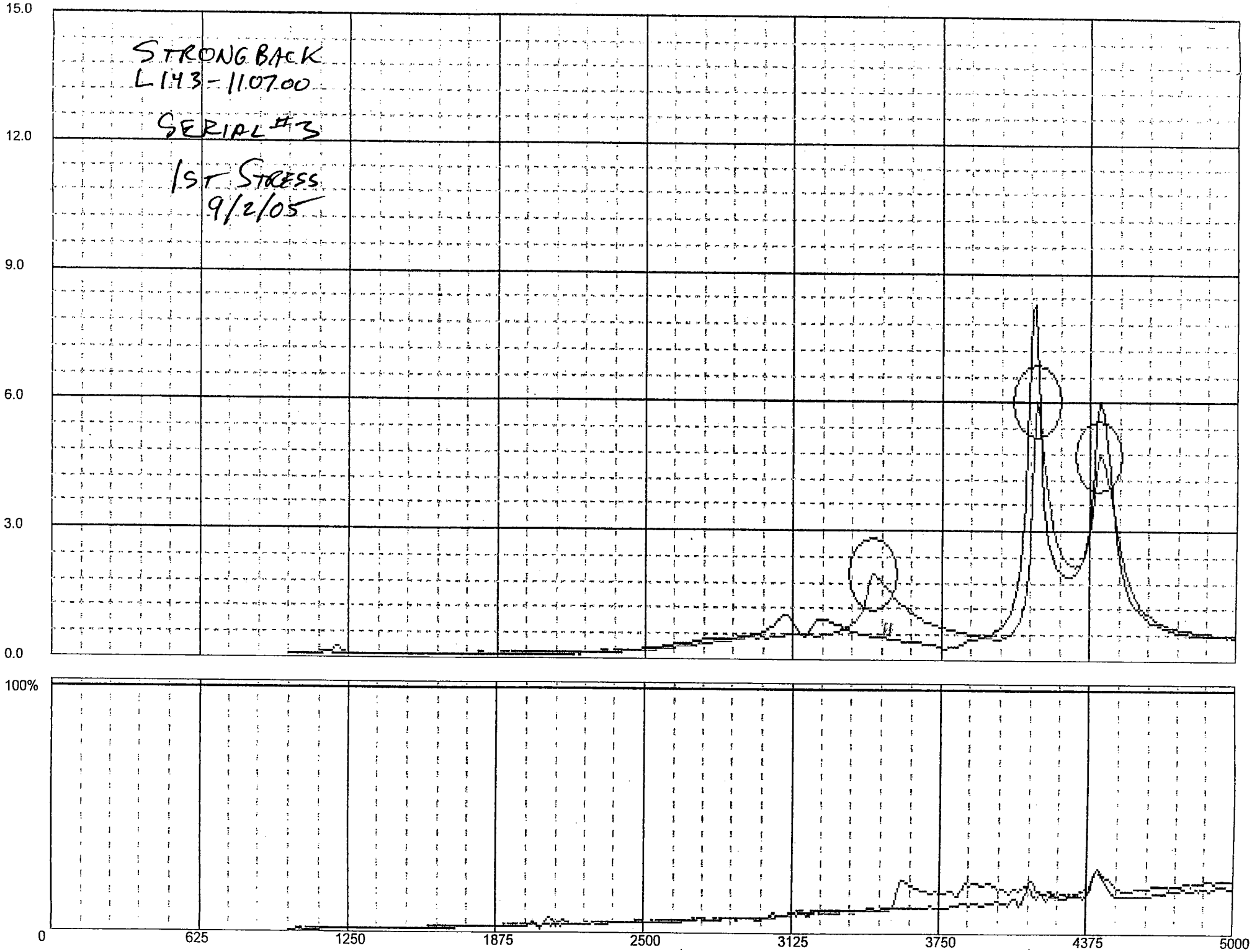
| | | | | |
|---|---|---|---|---|
| Serial Number | # 3 | | Inspector | Floyd |
| Date | 3/14/2006 | | | |

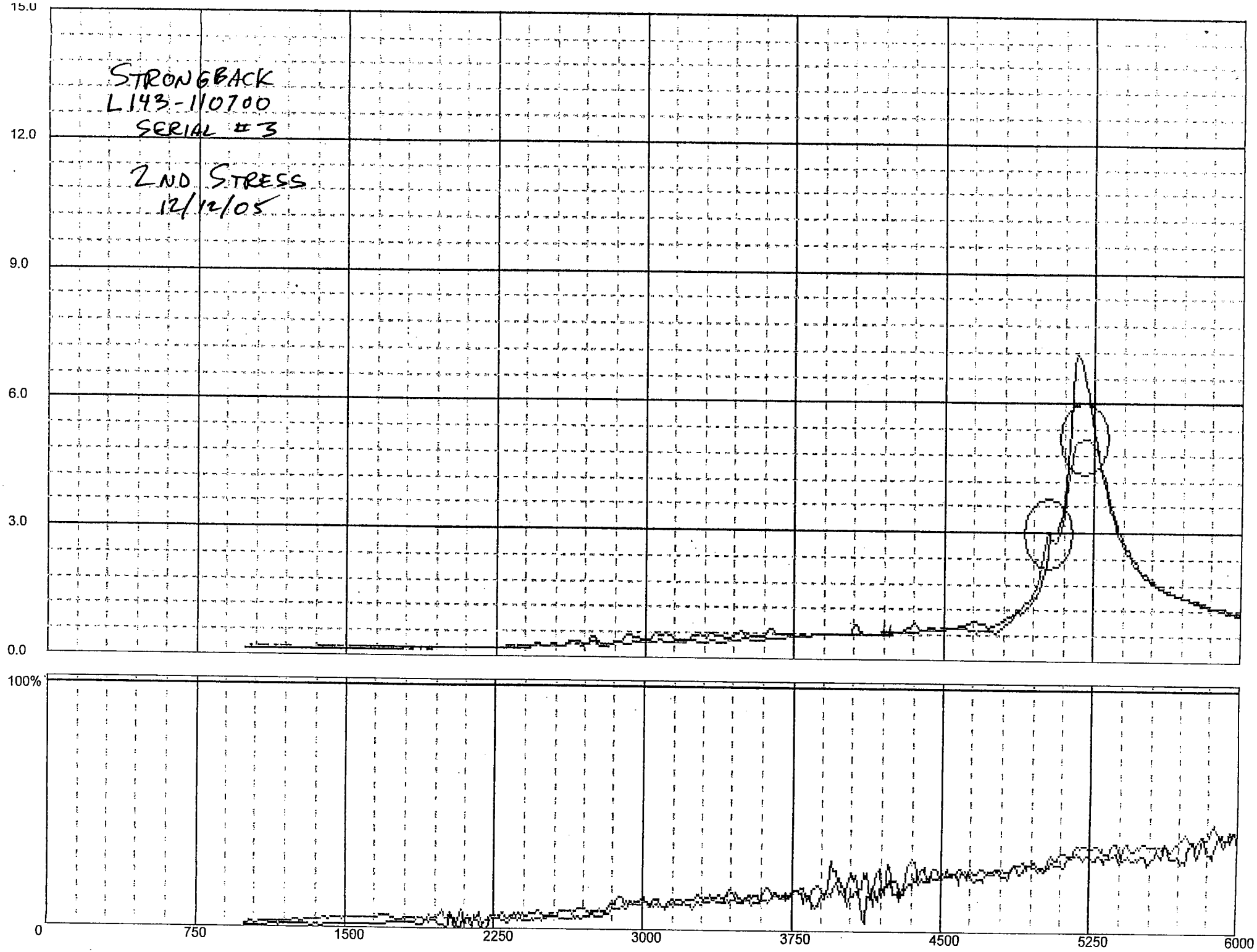
| *CMM Critical Feature Results* | *Req* | *Tolr* | *Actual* | |
|---|---|---|---|---|
| flatness - plane -A- | | .050 | .016 | |
| side opposite -A- flatness | | .050 | .017 | |
| surface finish -A- | 1.6 | | .63 | |
| surface finish side opposite -A- | 1.6 | | .63 | |
| -B- surface flatness | | .050 | .050 | |
| -B- surface perp to -A- | | .100 | .039 | |
| | | | | |
| Pads | | | | |
| RH Mounting Pad parallel to -A- | | .050 | .006 | |
| LH Mounting Pad parallel to -A- | | .050 | .055 | |
| | | | | |
| Overall Length | 3400.00 | +.000/-.200 | 3399.902 | |
| LH end to 1700mm holes right | 1700.00 | +.000/-.100 | 1699.902 | |
| LH end to 1700mm holes left | 1700.00 | +.000/-.100 | 1700.00 | |
| side opposite -A- 167.00 dim | 167.00 | +.050/-.000 | 167.011 | plane to plane |
| Individual Gaps | 167.00 | | 167.005 | direct gaps |
| side -A- to Centerline 83.5 | 83.50 | +/- .080 | 83.504 | |
| | | | | |
| | | | | |
| | | | | |
| ***Other Dimensions*** | | ***Date*** | ***Reviewer*** | |
| | | 3/14 | SKL | no deviations |

| *Material and Certifications* | | *Date* | *Reviewer* | |
|---|---|---|---|---|
| Material Certs | | 3/14 | skl | |
| Heat Treat Certs | | 3/14 | skl | |
| Visual inspection of Material | | 3/22 | skl | 1 bad thread - SDR #5 |

| *Approvals* | |
|---|---|
| | |
| | |

| Temps | |
|---|---|
| 20.5 | Start |
| 21.2 | Finish |


STRONGBACK
L143-1107.00
SERIAL #3
1ST STRESS
9/2/05
15.0
12.0
9.0
6.0
3.0
0.0
100%
0
625
1250
1875
2500
3125
3750
4375
5000


STRONGBACK
L143-110700
SERIAL #3
2ND STRESS
12/12/05
15.0
12.0
9.0
6.0
3.0
0.0
100%
0
750
1500
2250
3000
3750
4500
5250
6000

#1 — #11

# CORROSION MATERIALS TEST REPORT

2262 Groom Rd.
Baker, LA 70714
(225) 775 - 3675 (Main Office)
(225) 778 - 6436 (Quality Control)
(225) 778 - 6489 (Fax)



Date: 11/9/2005

Customer: DIAL MACHINE
PO No: 102437
Alloy: Ti GR2 Heat No: 063-1 CMI No: C71263
Item Description: 12" DIA RD BAR X R/L Quantity:

Specifications DIN 50049 3.1B ASTM B348, ASTM B381
EN 10204 3.1B

**Chemical Components**

| C | CO | CR | CU | FE | MN | MO | NI | P | S |
|---|---|---|---|---|---|---|---|---|---|
| 0.01 | — | — | — | 0.05 | — | — | — | — | — |
| SI | TI | V | W | CB+TA | SN | AL | ZN | PB | N |
| — | — | — | — | — | — | — | — | — | 0.013 |

**Mechanical Properties**

Tensile Strength:
Yield Strength:
Hardness:
Elongation in 2":
Reduction in Area:

Remarks: O=0.04, H=0.002, Ti=BAL

HEAT# PBA1063778 ANNEAI FCC 5 SOAK TIME 4HR SOAK TEMP 1250

The information stated in this document is true and accurate based upon information acquired by and maintained on file at Corrosion Materials.

Certified by: Tom Holstein
Title: Quality Control Coordinator

According to records provided by mill sources, all material has been manufactured free from mercury.
Corrosion Materials is an ISO 9001-2000 certified company, registered with RWTUV USA.

# SUPPLIER DISPOSITION REQUEST (SDR)

(Form ANL-311 includes instructions and continuation sheet.)

Page ___ of ___

(CHECK ONE)

☐ 1A. **Deviation Request**

☒ 1B. **Nonconformance Action Request**

2. SDR No. 4

3. SDR Date 2/2/06

4. Supplier Name, Address, Telephone, Fax

DIAL MACHINE, INC
2902 EASTROCK DRIVE
ROCKFORD, IL 61109

5. Purchase Order No. 5A-04889

6. Related Documents

6.1 _____ Date _____

| 7. Qty. | 8. Describe Nonconforming Condition | 9. Identify Requirement | 10. Cause & Corrective Action |
|---|---|---|---|
| 1 | (4) MOUNTING HOLES ON TOP OF PART ARE CALLED OUT FOR 5/16-18 THREAD ARE TAPPED M8 | | CAUSE - OPERATOR ERROR<br>POSSIBLE DISPOSITIONS<br>1. USE AS IS WITH 8MM BOLT<br>2. HELICOIL TO 5/16-18 |

SUPPLIER'S COMMENTS
(IF YES, EXPLAIN):

11. Affects Form, Fit or Function
☐ Yes ☒ No

12. Affects Price
☐ Yes ☒ No

13. Affects Delivery
☐ Yes ☒ No

14. Recommended Disposition and Comments:
Recommend rework, add non-magnetic insert or helicoil to 5/16-18 THD

15. SUPPLIER REPRESENTATIVE – TITLE – DATE

16. ANL REPRESENTATIVE – DATE

17. ANL Disposition and Remarks: Rework as stated above

18. Approved

02/09/06
TECHNICAL REPRESENTATIVE – DATE

2/21/06
QUALITY ASSURANCE REPRESENTATIVE – DATE

PROCUREMENT REPRESENTATIVE – DATE

ANL-311 (4-94)

# SUPPLIER DISPOSITION REQUEST (SDR)

(Form ANL-311 includes instructions and continuation sheet.)

Page ___ of ___

(CHECK ONE)

☐ 1A. **Deviation Request**

☒ 1B. **Nonconformance Action Request**

2. SDR No. 5

3. SDR Date 3/22/06

4. Supplier Name, Address, Telephone, Fax

DIAL MACHINE, INC
2902 EASTROCK DRIVE
ROCKFORD, IL 61109

5. Purchase Order No. SA-04889

6. Related Documents

6.1 _____ Date _____

| 7. Qty. | 8. Describe Nonconforming Condition | 9. Identify Requirement | 10. Cause & Corrective Action |
|---|---|---|---|
| 1 | (6) X M12 X 1.75-6H TAP HOLES IN SUPPORT PADS<br><br>(1) OF (6) HOLES HAS A TORN THREAD<br><br>SERIAL #3 | | CAUSE - CHIPS IN TAP<br><br>CORRECTIVE ACTION - PLUG HOLE WITH THREADED 1" TITANIUM. DRILL & RE-TAP HOLE. |

SUPPLIER'S COMMENTS
(IF YES, EXPLAIN):

11. Affects Form, Fit or Function
☐ Yes ☒ No

12. Affects Price
☐ Yes ☒ No

13. Affects Delivery
☐ Yes ☒ No

14. Recommended Disposition and Comments:

15. SUPPLIER REPRESENTATIVE – TITLE – DATE 3/21/05

16. ANL REPRESENTATIVE – DATE

17. ANL Disposition and Remarks:

18. Approved

TECHNICAL REPRESENTATIVE – DATE

QUALITY ASSURANCE REPRESENTATIVE – DATE

PROCUREMENT REPRESENTATIVE – DATE

ANL-311 (4-94)

# SUPPLIER DISPOSITION REQUEST (SDR)

(Form ANL-311 includes instructions and continuation sheet.)

Page ___ of ___

(CHECK ONE)

☐ 1A. **Deviation Request**

☐ 1B. **Nonconformance Action Request**

2. SDR No. 5

3. SDR Date 2/27/06

4. Supplier Name, Address, Telephone, Fax

DIAL MACHINE, INC.
2902 EASTROCK DRIVE
ROCKFORD, IL 61125

5. Purchase Order No. 51-0488

6. Related Documents

6.1 _____ Date _____

| 7. Qty. | 8. Describe Nonconforming Condition | 9. Identify Requirement | 10. Cause & Corrective Action |
|---|---|---|---|
| 3 | OUTSIDE DIAMETER OF BAR IS OVERSIZE<br>ACT 311.2 MM<br>NOM 304.8 +2.-2.0/-.00<br><br>SER #19 - 309.6 MM<br>SER #17 - 311.9 MM<br>SER #3 - 308.4 MM | | CAUSE - SUPPLIER DEVIATION |

SUPPLIER'S COMMENTS (IF YES, EXPLAIN):

11. Affects Form, Fit or Function
☐ Yes ☐ No

12. Affects Price
☐ Yes ☐ No

13. Affects Delivery
☐ Yes ☐ No

14. Recommended Disposition and Comments:
Accept the deviation for these three cases

Glen Lewis
15. SUPPLIER REPRESENTATIVE – TITLE – DATE

Glen L Lawrence
16. ANL REPRESENTATIVE – DATE

17. ANL Disposition and Remarks: Accept the O.D. oversize for these three parts

18. Approved

06/6/06 — TECHNICAL REPRESENTATIVE – DATE

6/9/06 — QUALITY ASSURANCE REPRESENTATIVE – DATE

PROCUREMENT REPRESENTATIVE – DATE

ANL-311 (4-94)

SDR #5

**Steve Lewis**

**To:** stevel@dialmachine.com
**Subject:** FW: Strongback bars

I talked to Emil on 3/3/06 about this. Reviewed our measured actual sizes.

He said that he could, and would work around these size parts.

We do not need to take any action.

Steve

-----Original Message-----
From: Emil Trakhtenberg [mailto:emil@aps.anl.gov]
Sent: Friday, March 03, 2006 11:29 AM
To: SteveL@dialmachine.com
Subject: Re: Strongback bars

Steve,
I have add 5mm over nominal diameter of the titanium strong back for the earth field shield. Tell me if I have to add more.
Thank you.
Emil

Steve Lewis wrote:

> Emil, Glen,
>
> I know that Glen is gone for a few days.
>
> I had asked him if there was possibility for bars to be used if the outside
> diameter was oversized. He consulted Emil and gave me the answer.
>
> I took his call in the shop and do not remember whether he said that it was
> 4mm over nominal, or 4mm over high limit.
>
> Could you help refresh my memory.
>
> I did submit this as SDR #5.
>
> Thanks very much.
>
>
>
> Steve Lewis
> Dial Machine
>
> ph 815-397-5660
> fax 815-397-0562
> SteveL@dialmachine.com
>
> 2902 Eastrock Dr.
> Rockford, IL 61125
>
>

# SUPPLIER DISPOSITION REQUEST (SDR)

(Form ANL-311 includes instructions and continuation sheet.)

Page ___ of ___

(CHECK ONE)

☒ 1A. **Deviation Request**

☐ 1B. **Nonconformance Action Request**

2. SDR No. 6

3. SDR Date 3/24/06

4. Supplier Name, Address, Telephone, Fax

DIAL MACHINE, INC
2902 EASTROCK DRIVE
ROCKFORD, IL 61109

5. Purchase Order No. 51-0488

6. Related Documents

6.1 _____ Date _____

| 7. Qty. | 8. Describe Nonconforming Condition | 9. Identify Requirement | 10. Cause & Corrective Action |
|---|---|---|---|
| 1 | SERIAL #3<br><br>ONE MOUNTING PAD<br>142.4 MM DIMENSION.<br>11.050 NOM.<br>11.055 ACTUAL | | POSSIBLE CORRECTIVE ACTION<br>1. ACCEPT AS IS<br>2. DUST MILL TO CORRECT |

SUPPLIER'S COMMENTS
(IF YES, EXPLAIN):

11. Affects Form, Fit or Function
☐ Yes ☒ No

12. Affects Price
☐ Yes ☒ No

13. Affects Delivery
☐ Yes ☒ No

14. Recommended Disposition and Comments:

15. SUPPLIER REPRESENTATIVE – TITLE – DATE: 3/21/05

16. ANL REPRESENTATIVE – DATE

17. ANL Disposition and Remarks:

18. Approved

TECHNICAL REPRESENTATIVE – DATE

QUALITY ASSURANCE REPRESENTATIVE – DATE

PROCUREMENT REPRESENTATIVE – DATE

ANL-311 (4-94)

**Subject:** Strongback #3 Corrective Action
**From:** Steve Lewis <SteveL@dialmachine.com>
**Date:** Wed, 19 Apr 2006 14:20:37 -0700
**To:** Tom Barsz <tbarsz@aps.anl.gov>, gsl@aps.anl.gov

Tom,

re: our Strongback #3
Our SDR # 5 and SDR #6

SDR #5 is to repair torn threads using non-magnetic Helicoil. This is done.

SDR #6 is to dustmill the 142.4mm mounting pad.
The CMM report showed one pad out of parallel to -A- surface by .055mm, or .005mm above the tolerance band. When we had the Strongback on the machine for tap hole repair, we milled the pad surface as well. We used the machine and dial indicators to record before and after measurements, witnessed by the Manufacturing Manager. We improved the surface by .013mm.

Tom, will you accept this e-mail report of the corrective action and measurement of results in lieu of putting the bar back on the CMM?

If so, this bar is ready for shipment. This is the bar that you and Glen reviewed during your last visit.

Please let me know.

Thanks.

Steve Lewis
Dial Machine

ph 815-397-6660
fax 815-397-0562
SteveL@dialmachine.com

2902 Eastrock Dr.
Rockford, IL 61125

LCLS
Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

#3

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: [redacted] 2276

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.01 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.97 | Accept/Reject |

INSPECTOR: Simon.

QA Supervisor: Hultage

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: [redacted]02191

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.06 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muelaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02196

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.05 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8,95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02316

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.05 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muelcy

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02377

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.02 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muntaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02083

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.01 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mwlaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02176

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulloze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 01951

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: [redacted]1943

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mullaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 020349

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.99 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.05 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02383

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.05 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 01940

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 01973

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Murlaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02318

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.01 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mullaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02082

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 65.84 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Mwlaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02394

P.O. #: **5A13624**

DATE: 06-12-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.99 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.97 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Murlaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02361

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.06 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mullaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02264

P.O. #: **5A13624**

DATE:

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mullaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 01979

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muelar

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 01939

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.97 | Accept/Reject |

INSPECTOR: S. Sorab

QA Supervisor: Muelaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02119

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.99 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Murlage

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02330

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.99 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02162

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.05 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaza

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

#3

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02279

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Murlage

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS: Magnet Lot 5

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02032

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02254

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.02 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muhaza

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02062

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.02 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mullaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02208

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.02 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.05 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Smod

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02040

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.01 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mustafa

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02201

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.09 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Nuelage

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 01931

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muelaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02315

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.00 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muñoz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02274

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.96 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muelaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02257

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.99 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.00 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon.

QA Supervisor: Muelle

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02277

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simod

QA Supervisor: Murlaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02228

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.01 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02168

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Muelage

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02181

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.08 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.02 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mullaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

Procedure Number: L143-00076
Revision: 0
Issue Date: April 14, 2005

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 01938

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.02 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02190

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.98 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02337

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.02 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.03 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: SIMON

QA Supervisor: Muelage

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02077

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 65.85 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muñoz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02028

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.04 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mulaze

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 020724

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.01 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 65.86 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muñoz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02188

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 56.97 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.05 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.95 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Muelaz

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: **Shin-Etsu**

PART NAME: **LCLS Magnet**

DRAWING #: **L143-110106-04**

SERIAL #: 02243

P.O. #: **5A13624**

DATE: 06-13-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE | |
|---|---|---|---|---|
| Magnet height | 57.00 | +/- .05 | 57.00 | Accept/Reject |
| Magnet Width | 66.00 | +/- .25 | 66.06 | Accept/Reject |
| Magnet thickness | 9.00 | +0 / -.10 | 8.96 | Accept/Reject |

INSPECTOR: Simon

QA Supervisor: Mullar

TEST EQUIPMENT USED: **Drop Indicators**

COMMENTS:

#3

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Lower Middle Magnet Structure Base

DRAWING #: L143-111101-01 SERIAL #: L143-111100-3-03

P.O. #:5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.00/29.98 | Accept/Reject |
| Bottom surface flatness | </= .04 | N/A | .04 | Accept/Reject |
| Overall length | 1005 | +0 / -.1 | 1004.92 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.98 | Accept/Reject |

INSPECTOR: Mullaze QA Supervisor: Mullaze

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Lower Middle Magnet Structure Base

DRAWING #: L143-111101-01 SERIAL #: L143-111100-2-03

P.O. #:5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 29.99/29.97 | Accept/Reject |
| Bottom surface flatness | </= .04 | N/A | .04 | Accept/Reject |
| Overall length | 1005 | +0 / -.1 | 1004.94 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.99 | Accept/Reject |

INSPECTOR: Mullaze QA Supervisor: Mullaze

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Lower Middle Magnet Structure Base

DRAWING #: L143-111101-01 SERIAL #: L143-111100-1-03

P.O. #:5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.0/29.99 | Accept/Reject |
| Bottom surface flatness | </= .04 | N/A | .04 | Accept/Reject |
| Overall length | 1005 | +0 / -.1 | 1004.92 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.97 | Accept/Reject |

INSPECTOR: Muñoz QA Supervisor: Muñoz

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Upper Middle Magnet Structure Base

DRAWING #: L143-111001-01 SERIAL #: L143-111000-3-03

P.O. #: 5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.0/29.975 | Accept/Reject |
| Bottom surface flatness | <= .04 | N/A | .04 | Accept/Reject |
| Overall length | 1005.0 | +0 / -.1 | 1004.95 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.97 | Accept/Reject |

INSPECTOR: Mulaza QA Supervisor: Mulaza

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Upper Middle Magnet Structure Base

DRAWING #: L143-111001-01 SERIAL #: L143-111000-2-03

P.O. #: 5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.0/29.98 | Accept/Reject |
| Bottom surface flatness | </= .04 | N/A | .04 | Accept/Reject |
| Overall length | 1005.0 | +0 / -.1 | 1004.93 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.96 | Accept/Reject |

INSPECTOR: Mulaze QA Supervisor: Mulaze

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Upper Middle Magnet Structure Base

DRAWING #: L143-111001-01 SERIAL #: L143-111000-1-03

P.O. #: 5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.0/29.97 | Accept/Reject |
| Bottom surface flatness | </= .04 | N/A | .04 | Accept/Reject |
| Overall length | 1005.0 | +0 / -.1 | 1004.92 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.98 | Accept/Reject |

INSPECTOR: Mwelaza QA Supervisor: Mwelaza

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

LCLS
Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory
Stanford Linear Accelerator Center

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Upper Right Magnet Structure Base

DRAWING #: L143-111201 SERIAL #: Ll43-111200-03

P.O. #: 5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.00/29.995 | Accept/Reject |
| Bottom surface flatness | </= .04 | N/A | 0.02 | Accept/Reject |
| Overall length | 189 | +0 / -.1 | 188.98 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.98 | Accept/Reject |

INSPECTOR: Mullaza QA Supervisor: Mullaza

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

.

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Upper Left Magnet Structure Base

DRAWING #: L143-110801 SERIAL #: L143-110800-03

P.O. #: 5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.00/29.98 | Accept/Reject |
| Bottom surface flatness | <= .04 | N/A | 0.012 | Accept/Reject |
| Overall length | 195 | +0 / -.1 | 194.96 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.96 | Accept/Reject |

INSPECTOR: Mullaze QA Supervisor: Mullaze

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

LCLS Linac Coherent Light Source Stanford Synchrotron Radiation Laboratory Stanford Linear Accelerator Center

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Lower Right Magnet Structure Base

DRAWING #: L143-111301 SERIAL #: L143-111300-03

P.O. #: 5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.00/29.998 | Accept/Reject |
| Bottom surface flatness | <= .04 | N/A | 0.015 | Accept/Reject |
| Overall length | 189 | +0 / -.1 | 188.99 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.98 | Accept/Reject |

INSPECTOR: Mulaze QA Supervisor: Mulaze

TEST EQUIPMENT USED: CMM & Micrometer.

COMMENTS:

# INSPECTION / ACCEPTANCE REPORT OF COMPONENTS FOR LCLS MAGNET ASSEMBLIES

VENDOR: Hi-Tech Manufacturing, Inc. PART NAME: Lower Left Magnet Structure Base

DRAWING #: L143-110901 SERIAL #: L143-110900-03

P.O. #: 5A13624 DATE: 06-29-06

## ACCEPTANCE CRITERIA

| | |
|---|---|
| 1. Visually inspect for shipping damage. | Accept/Reject |

## CRITICAL DIMENSIONS (mm)

| FEATURE | TARGET | TOLERANCE | MEASURED VALUE(S) | |
|---|---|---|---|---|
| Bottom surface to pole base surface (all surfaces) | 30 | +0 / -.03 | Max / Min 30.00/29.985 | Accept/Reject |
| Bottom surface flatness | <= .04 | N/A | .015 | Accept/Reject |
| Overall length | 195 | +0 / -.1 | 194.99 | Accept/Reject |
| Overall width | 128 | +0 / -.1 | 127.98 | Accept/Reject |

INSPECTOR: Muelaza QA Supervisor: Muelaza

TEST EQUIPMENT USED: CMM & Micrometer .

COMMENTS: .