

**REPORT NUMBER: SideNCAPMDB-MGA-25-004**

**NEW CAR ASSESSMENT PROGRAM (NCAP)  
Moving Deformable Barrier Side Impact Test**

**NISSAN MOTOR CO., LTD.  
2025 Nissan Kicks S 5-Door SUV  
NHTSA No.: M20255202**

**MGA RESEARCH CORPORATION  
5000 Warren Road  
Burlington, WI 53105**



**Test Date: December 3, 2024**

**Final Report Date: March 14, 2025**

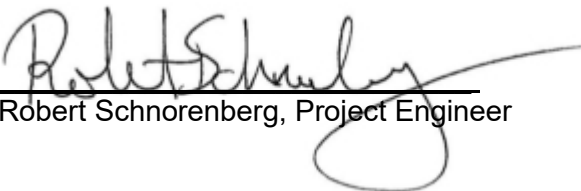
**FINAL REPORT**

**U.S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
Office of Crashworthiness Standards  
Mail Code: NRM-100  
1200 New Jersey Ave, SE  
Washington, DC 20590**

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Prepared by:   
Ben Fischer, Program Manager

Approved by:   
Robert Schnorenberg, Project Engineer

Approval Date: March 14, 2025

FINAL REPORT ACCEPTANCE BY OCWS:

\_\_\_\_\_  
Division Chief, New Car Assessment Program  
NHTSA, Office of Crashworthiness Standards

Date: \_\_\_\_\_

\_\_\_\_\_  
COR, New Car Assessment Program  
NHTSA, Office of Crashworthiness Standards

Date: \_\_\_\_\_



# **TECHNICAL REPORT DOCUMENTATION PAGE**

| <b>1. Report No.</b><br>SideNCAPMDB-MGA-25-004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>2. Government Accession No.</b>                         | <b>3. Recipient's Catalog No.</b>                                                                                                                                                                                              |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
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| <b>4. Title and Subtitle</b><br>Final Report of New Car Assessment Program<br>Side Impact MDB Testing of 2025 Nissan Kicks S 5-Door SUV,<br>NHTSA No.: M20255202                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                            | <b>5. Report Date</b><br>March 14, 2025                                                                                                                                                                                        |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
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| <b>7. Author(s)</b><br>Ben Fischer, Program Manager                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                            | <b>8. Performing Organization Report No.</b><br>SideNCAPMDB-MGA-25-004                                                                                                                                                         |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| <b>9. Performing Organization Name and Address</b><br>MGA Research Corporation<br>5000 Warren Road<br>Burlington, WI 53105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                            | <b>10. Work Unit No.</b>                                                                                                                                                                                                       |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
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| <b>12. Sponsoring Agency Name and Address</b><br>U.S. Department of Transportation<br>National Highway Traffic Safety Administration<br>Office of Crashworthiness Standards (NRM-100)<br>1200 New Jersey Ave, SE<br>Washington, D.C. 20590                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                            | <b>13. Type of Report and Period Covered:</b><br>Final Test Report<br>December 3, 2024 to March 14, 2025                                                                                                                       |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
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| <b>15. Supplementary Notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| <b>16. Abstract</b><br><p>A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2025 Nissan Kicks S 5-Door SUV in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP MDB Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at the MGA Research Corporation facility in Burlington, Wisconsin on December 3, 2024.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 62.11 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.8°C. The target vehicle post-test maximum crush was 159 mm at level 3. The test vehicle's performance was as follows:</p> <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Driver ATD (ES-2re)</th> </tr> <tr> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>36</sub>)</td> <td></td> <td>1000</td> <td>124.431</td> </tr> <tr> <td>Maximum Thorax Rib Deflection</td> <td>mm</td> <td>44</td> <td>16.930</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>561.829</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>1652.492</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82*</td> <td>32.168</td> </tr> </tbody> </table><br><table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Passenger ATD (SID-IIs)</th> </tr> <tr> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>36</sub>)</td> <td></td> <td>1000</td> <td>206.292</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>g</td> <td>82</td> <td>55.838</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>2976.819</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>14.600</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45*</td> <td>15.885</td> </tr> </tbody> </table> <p align="center">*Proposed IARV</p> <p>The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite door(s) did not open during the side impact event.</p> |                                                            |                                                                                                                                                                                                                                |                  | Measurement Description | Units | Driver ATD (ES-2re) |  | Threshold | Result | Head Injury Criteria (HIC <sub>36</sub> ) |  | 1000 | 124.431 | Maximum Thorax Rib Deflection | mm | 44 | 16.930 | Total Abdominal Force | N | 2500 | 561.829 | Pubic Symphysis Force | N | 6000 | 1652.492 | Resultant Lower Spine Acceleration | g | 82* | 32.168 | Measurement Description | Units | Passenger ATD (SID-IIs) |  | Threshold | Result | Head Injury Criteria (HIC <sub>36</sub> ) |  | 1000 | 206.292 | Resultant Lower Spine Acceleration | g | 82 | 55.838 | Total Pelvic Force (sum of acetabular and iliac forces) | N | 5525 | 2976.819 | Maximum Thoracic Rib Deflection | mm | 38* | 14.600 | Maximum Abdomen Rib Deflection | mm | 45* | 15.885 |
| Measurement Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Units                                                      | Driver ATD (ES-2re)                                                                                                                                                                                                            |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
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| Head Injury Criteria (HIC <sub>36</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                            | 1000                                                                                                                                                                                                                           | 124.431          |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Maximum Thorax Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | mm                                                         | 44                                                                                                                                                                                                                             | 16.930           |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Total Abdominal Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N                                                          | 2500                                                                                                                                                                                                                           | 561.829          |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Pubic Symphysis Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | N                                                          | 6000                                                                                                                                                                                                                           | 1652.492         |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Resultant Lower Spine Acceleration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | g                                                          | 82*                                                                                                                                                                                                                            | 32.168           |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Measurement Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Units                                                      | Passenger ATD (SID-IIs)                                                                                                                                                                                                        |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
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| Head Injury Criteria (HIC <sub>36</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                            | 1000                                                                                                                                                                                                                           | 206.292          |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Resultant Lower Spine Acceleration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | g                                                          | 82                                                                                                                                                                                                                             | 55.838           |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Total Pelvic Force (sum of acetabular and iliac forces)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | N                                                          | 5525                                                                                                                                                                                                                           | 2976.819         |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Maximum Thoracic Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | mm                                                         | 38*                                                                                                                                                                                                                            | 14.600           |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| Maximum Abdomen Rib Deflection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | mm                                                         | 45*                                                                                                                                                                                                                            | 15.885           |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| <b>17. Key Words</b><br>New Car Assessment Program (NCAP)<br>Side Impact<br>MDB<br>ES-2re<br>SID-IIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                            | <b>18. Distribution Statement</b><br>Copies of this report are available from:<br>National Highway Traffic Safety Administration<br>Technical Information Services Division<br>1200 New Jersey Ave, SE<br>Washington, DC 20590 |                  |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |
| <b>19. Security Classification of Report</b><br>Unclassified                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>20. Security Classification of Page</b><br>Unclassified | <b>21. No. of Pages</b><br>225                                                                                                                                                                                                 | <b>22. Price</b> |                         |       |                     |  |           |        |                                           |  |      |         |                               |    |    |        |                       |   |      |         |                       |   |      |          |                                    |   |     |        |                         |       |                         |  |           |        |                                           |  |      |         |                                    |   |    |        |                                                         |   |      |          |                                 |    |     |        |                                |    |     |        |

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## **SECTION 1 PURPOSE AND SUMMARY OF TEST**

### **PURPOSE**

This moving deformable barrier side impact test is part of the MY 2025 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. 693JJ920D000017. The purpose of this test is to generate comparative side impact performance in a 2025 Nissan Kicks S 5-Door SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Laboratory Test Procedure dated March 2020.

### **SUMMARY**

A 2025 Nissan Kicks S 5-Door SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.11 km/h. The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin on December 3, 2024. Pre-test and post-test photographs of the test vehicle, the MDB, and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS NCAP Side Laboratory Test Procedure dated March 2020. The side impact event was documented by eleven (11) cameras. Camera locations are included in this report.

The dummies were instrumented in the following manner:

#### **DRIVER ATD (ES-2re)**

- Primary and Redundant Head CG Triaxial Accelerometers
- Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
- Abdomen Forward, Middle, and Rear Y-Axis Load Cells
- Lower Spine (T12) Triaxial Accelerometers
- Pubic Symphysis Y-Axis Load Cell

#### **PASSENGER ATD (SID-IIs)**

- Primary and Redundant Head CG Triaxial Accelerometers
- Head Triaxial Angular Rate Sensors
- Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
- Abdomen Upper Rib and Lower Rib Y-Axis Displacement Potentiometers
- Lower Spine (T12) Triaxial Accelerometers
- Acetabulum and Iliac Wing Y-Axis Load Cells

Appendix B contains the dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D contains the test equipment and instrumentation calibration data.

Dummy Injury readings were recorded as follows:

### DUMMY INJURY VALUES

| Measurement Description                   | Units | Driver ATD (ES-2re) |          |
|-------------------------------------------|-------|---------------------|----------|
|                                           |       | Threshold           | Result   |
| Head Injury Criteria (HIC <sub>36</sub> ) |       | 1000                | 124.431  |
| Maximum Thorax Rib Deflection             | mm    | 44                  | 16.930   |
| Total Abdominal Force                     | N     | 2500                | 561.829  |
| Pubic Symphysis Force                     | N     | 6000                | 1652.492 |
| Resultant Lower Spine Acceleration        | g     | 82*                 | 32.168   |

| Measurement Description                                 | Units | Passenger ATD (SID-IIs) |          |
|---------------------------------------------------------|-------|-------------------------|----------|
|                                                         |       | Threshold               | Result   |
| Head Injury Criteria (HIC <sub>36</sub> )               |       | 1000                    | 206.292  |
| Resultant Lower Spine Acceleration                      | g     | 82                      | 55.838   |
| Total Pelvic Force (sum of acetabular and iliac forces) | N     | 5525                    | 2976.819 |
| Maximum Thoracic Rib Deflection                         | mm    | 38*                     | 14.600   |
| Maximum Abdomen Rib Deflection                          | mm    | 45*                     | 15.885   |

\*Proposed IARV

Supplemental restraint information is given below:

| Restraint Type           | Left Front (Driver)<br>Occupant Location 1 |          | Left Rear (Passenger)<br>Occupant Location 4 |          |
|--------------------------|--------------------------------------------|----------|----------------------------------------------|----------|
|                          | Mounted                                    | Deployed | Mounted                                      | Deployed |
| Frontal Airbag           | Yes                                        | No       |                                              |          |
| Knee Airbag              | Yes                                        | No       |                                              |          |
| Side Curtain Airbag      | Yes                                        | Yes      | Yes                                          | Yes      |
| Side Torso/Pelvis Airbag | Yes                                        | Yes      | Yes                                          | Yes      |
| Side Airbag (Other)      |                                            |          |                                              |          |
| Seat Belt Pretensioner   | Yes                                        | Yes      | Yes                                          | Yes      |
| Seat Belt Load Limiter   | Yes                                        |          | Yes                                          |          |
| Other:                   | No                                         |          | No                                           |          |

The test data can be found on the NHTSA website at [www.nhtsa.gov](http://www.nhtsa.gov)

### GENERAL COMMENTS

None.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

**SECTION 2**  
**OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS**

**DATA SHEET NO. 1**  
**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

**TEST VEHICLE INFORMATION AND OPTIONS**

|                          |                   |                                   |     |
|--------------------------|-------------------|-----------------------------------|-----|
| NHTSA No.                | M20255202         | Traction Control System (TCS)     | Yes |
| Model Year               | 2025              | Auto-Leveling System              | No  |
| Make                     | Nissan            | Automatic Door Locks (ADL)        | Yes |
| Model                    | Kicks S           | Power Window Auto-Reverse         | Yes |
| Body Style               | 5-Door SUV        | Other Optional Feature            | No  |
| VIN                      | 3N8AP6BA4SL315340 | Driver Front Airbag               | Yes |
| Body Color               | Fresh Powder      | Driver Curtain Airbag             | Yes |
| Odometer Reading (km/mi) | 16 km / 10 mi     | Driver Head/Torso Airbag          | No  |
| Engine Displacement (L)  | 2                 | Driver Torso Airbag               | No  |
| Type/No. Cylinders       | Inline 4          | Driver Torso/Pelvis Airbag        | Yes |
| Engine Placement         | Lateral           | Driver Pelvis Airbag              | No  |
| Transmission Type        | Automatic         | Driver Knee Airbag                | Yes |
| Transmission Speeds      | CVT               | Rear Pass. Curtain Airbag         | Yes |
| Overdrive                | Yes               | Rear Pass. Head/Torso Airbag      | No  |
| Final Drive              | FWD               | Rear Pass. Torso Airbag           | No  |
| Roof Rack                | No                | Rear Pass. Torso/Pelvis Airbag    | Yes |
| Sunroof/T-Top            | No                | Rear Pass. Pelvis Airbag          | No  |
| Running Boards           | No                | Driver Seat Belt Pretensioner     | Yes |
| Tilt Steering Wheel      | Yes               | Rear Pass. Seat Belt Pretensioner | Yes |
| Power Seats              | No                | Driver Load Limiter               | Yes |
| Anti-Lock Brakes (ABS)   | Yes               | Rear Pass. Load Limiter           | Yes |
|                          |                   | Other Safety Restraint            | N/A |

|                                                                           |    |
|---------------------------------------------------------------------------|----|
| Does owner's manual provide instruction to turn off automatic door locks? | No |
|---------------------------------------------------------------------------|----|

**DATA FROM CERTIFICATION LABEL**

|                     |                        |                 |      |
|---------------------|------------------------|-----------------|------|
| Manufactured By     | NISSAN MOTOR CO., LTD. | GVWR (kg)       | 1825 |
| Date of Manufacture | 09/24                  | GAWR Front (kg) | 1000 |
| Vehicle Type        | MPV                    | GAWR Rear (kg)  | 830  |

**VEHICLE SEATING AND WEIGHT CAPACITY DATA**

| Measured Parameter                         | Front | Rear | Third | Total |       |
|--------------------------------------------|-------|------|-------|-------|-------|
| Designated Seating Capacity (DSC)          | 2     | 3    |       | 5     |       |
| Capacity Weight (VCW) (kg)                 |       |      |       | 375   | (A)   |
| DSC x 68 kg                                |       |      |       | 340   | (B)   |
| Rated Cargo and Luggage Weight (RCLW) (kg) |       |      |       | 35    | (A-B) |

**VEHICLE SEAT TYPE**

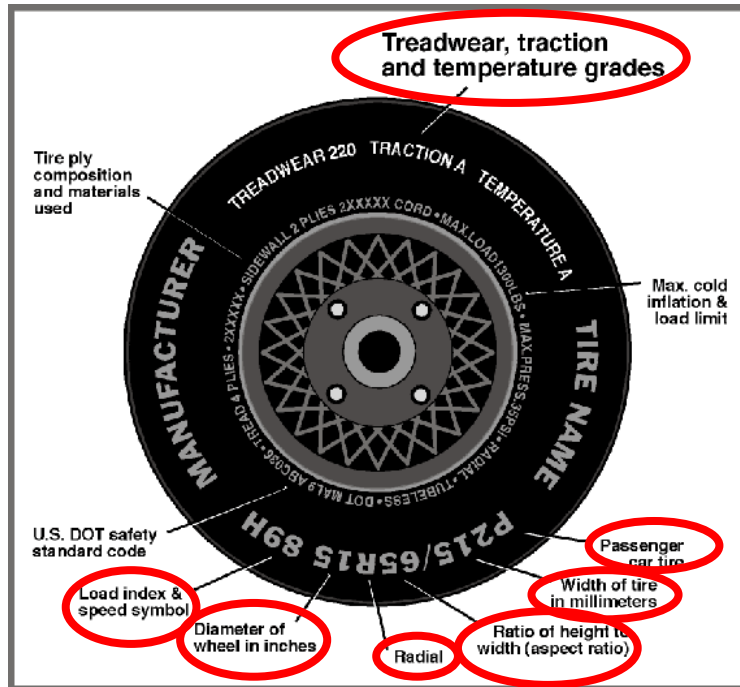
| Seating Location   | Type of Seat Pan |       |             |           | Type of Seat Back |            |         |
|--------------------|------------------|-------|-------------|-----------|-------------------|------------|---------|
|                    | Bucket           | Bench | Split Bench | Contoured | Fixed             | Adjustable |         |
|                    |                  |       |             |           |                   | w/ Lever   | w/ Knob |
| Front Seat         | X                |       |             |           |                   | X          |         |
| Rear or Second Row |                  |       |             | X         | X                 |            |         |
| Third Row Seat     |                  |       |             |           |                   |            |         |

**DATA SHEET NO. 1 (CONTINUED)**  
**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

**VEHICLE TIRE INFORMATION**



| Measured Parameter       | Front                         | Rear                          |
|--------------------------|-------------------------------|-------------------------------|
| Max. Tire Pressure (kPa) | 350                           | 350                           |
| Cold Pressure (kPa)      | 230                           | 230                           |
| Recommended Tire Size    | 215/65R16                     | 215/65R16                     |
| Tire Size on Vehicle     | 215/65R16                     | 215/65R16                     |
| Tire Manufacturer        | Kumho                         | Kumho                         |
| Tire Model               | Solus TA31                    | Solus TA31                    |
| Treadwear                | 380                           | 380                           |
| Traction                 | A                             | A                             |
| Temperature Grade        | A                             | A                             |
| Tire Plies Sidewall      | 2 Polyester                   | 2 Polyester                   |
| Tire Plies Body          | 2 Steel, 2 Polyester, 1 Nylon | 2 Steel, 2 Polyester, 1 Nylon |
| Load Index/Speed Symbol  | 98H                           | 98H                           |
| Tire Material            | Rubber                        | Rubber                        |
| DOT Safety Code Left     | 000 K4YAY1 3124               | 000 K4YAY1 3124               |
| DOT Safety Code Right    | 000 K4YAY1 3124               | 000 K4YAY1 3124               |

**DATA SHEET NO. 1 (CONTINUED)**  
**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

**TEST VEHICLE TIRE PRESSURES**

|                | Units | LF  | RF  | LR  | RR  |
|----------------|-------|-----|-----|-----|-----|
| As Delivered   | kPa   | 285 | 285 | 285 | 285 |
| Tire Placard   | kPa   | 230 | 230 | 230 | 230 |
| Owner's Manual | kPa   | 230 | 230 | 230 | 230 |
| As Tested      | kPa   | 230 | 230 | 230 | 230 |

**MDB TIRE SPECIFICATIONS**

|               | Requirement | Units | LF         | RF         | LR         | RR         |
|---------------|-------------|-------|------------|------------|------------|------------|
| Tire Size     | P205/75R15  | N/A   | P205/75R15 | P205/75R15 | P205/75R15 | P205/75R15 |
| Tire Pressure | 200 ± 21    | kPa   | 200        | 200        | 200        | 200        |

**TEST VEHICLE AXLE WEIGHTS**

|        | Units | As Delivered (UVW) |       |        | As Tested (ATW) |       |        | Fully Loaded |       |        |
|--------|-------|--------------------|-------|--------|-----------------|-------|--------|--------------|-------|--------|
|        |       | Front              | Rear  | Total  | Front           | Rear  | Total  | Front        | Rear  | Total  |
| Left   | kg    | 429.5              | 256.5 |        | 472.5           | 320.5 |        | 471.0        | 327.0 |        |
| Right  | kg    | 437.5              | 237.0 |        | 448.0           | 279.0 |        | 443.0        | 283.5 |        |
| Ratio  | %     | 63.7%              | 36.3% |        | 60.6%           | 39.4% |        | 60.0%        | 40.0% |        |
| Totals | kg    | 867.0              | 493.5 | 1360.5 | 920.5           | 599.5 | 1520.0 | 914.0        | 610.5 | 1524.5 |

**TARGET TEST WEIGHT CALCULATION**

| Measured Parameter                           | Units | Value  |         |
|----------------------------------------------|-------|--------|---------|
| Total Delivered Weight (UVW)                 | kg    | 1360.5 | (A)     |
| Sum of Actual Weight of 2 P572 ATDs Used     | kg    | 129    | (B)     |
| Rated Cargo/Luggage Weight (RCLW)            | kg    | 35     | (C)     |
| Calculated Test Vehicle Target Weight (TVTW) | kg    | 1524.5 | (A+B+C) |

Does the measured As Tested Vehicle Weight lie within the required weight range  
 (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)? **YES**

**TEST VEHICLE ATTITUDES AND CG**

|                                                                | Units | Fully Loaded | As Tested | Meets Requirement* |
|----------------------------------------------------------------|-------|--------------|-----------|--------------------|
| Left Front                                                     | mm    | 767          | 758       | Yes                |
| Right Front                                                    | mm    | 774          | 764       | Yes                |
| Right Rear                                                     | mm    | 757          | 761       | Yes                |
| Left Rear                                                      | mm    | 745          | 742       | Yes                |
| Vehicle CG (Aft of Front Axle)                                 | mm    | 1064         | 1048      |                    |
| Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline) | mm    | 36           | 34        |                    |

\* ND=Nose Down (-), NU=Nose Up (+)    \*\* LD=Left Down (-), LU=Left Up (+)

\*\*\* The "As Tested" vehicle attitude measurements must be equal to or within ± 10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well.

|                                                           |                |
|-----------------------------------------------------------|----------------|
| Test height adjustable suspension setting, if applicable: | Not Applicable |
|-----------------------------------------------------------|----------------|



**DATA SHEET NO. 1 (CONTINUED)**  
**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

**WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW**

| Component Description    | Units | Weight |
|--------------------------|-------|--------|
| Weight of Ballast Added  | kg    |        |
| Components Removed: none | kg    | 15     |

**TEST SURFACE MARKINGS**

|                       | Units | Distance from 63° Impact Angle Line |
|-----------------------|-------|-------------------------------------|
| Fore 25 mm Target     | mm    | 996                                 |
| Aft 25 mm Target      | mm    | 994                                 |
| Pre-Impact Angle Line | mm    | 100                                 |

| Parallel Track Target | Units | X Location | Y Location |
|-----------------------|-------|------------|------------|
| A                     | mm    | 0          | 0          |
| B                     | mm    | 1520       | 3085       |
| C                     | mm    |            |            |
| D                     | mm    | 3500       | 0          |

**DATA SHEET NO. 2**  
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

**SEAT POSITIONING**

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the mid-track, lowest, mid-angle position. The struck-side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rear-most, lowest, mid-angle position.

**SCRL ANGLE RANGE**

| Seat                      | SCRL (°) |       |       |
|---------------------------|----------|-------|-------|
|                           | Max      | Min   | Mid   |
| Driver Seat               | 17.7     | 13.3  | 15.5  |
| Front Passenger Seat      | Fixed    | Fixed | Fixed |
| Front Center Seat         |          |       |       |
| Struck Side Rear Seat     | Fixed    | Fixed | Fixed |
| Non-Struck Side Rear Seat | Fixed    | Fixed | Fixed |
| Rear Center Seat          | Fixed    | Fixed | Fixed |

**SEAT HEIGHT AND ANGLE**

| Seat                         | As-Tested<br>SCRL Angle<br>(Mid)<br>(°) | As-Tested<br>SCR Height<br>(mm) | SCR<br>Height<br>Position | SCR Height (mm) |       |                  |
|------------------------------|-----------------------------------------|---------------------------------|---------------------------|-----------------|-------|------------------|
|                              |                                         |                                 |                           | Rear-Most       | Mid   | Forward-<br>Most |
| Driver Seat                  | 15.5                                    | Fixed                           | Max                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Mid                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Min                       | Fixed           | Fixed | Fixed            |
| Front Passenger Seat         | Fixed                                   | Fixed                           | Max                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Mid                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Min                       | Fixed           | Fixed | Fixed            |
| Front Center Seat            |                                         |                                 | Max                       |                 |       |                  |
|                              |                                         |                                 | Mid                       |                 |       |                  |
|                              |                                         |                                 | Min                       |                 |       |                  |
| Struck Side Rear Seat        | Fixed                                   | Fixed                           | Max                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Mid                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Min                       | Fixed           | Fixed | Fixed            |
| Non-Struck Side Rear<br>Seat | Fixed                                   | Fixed                           | Max                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Mid                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Min                       | Fixed           | Fixed | Fixed            |
| Rear Center Seat             | Fixed                                   | Fixed                           | Max                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Mid                       | Fixed           | Fixed | Fixed            |
|                              |                                         |                                 | Min                       | Fixed           | Fixed | Fixed            |

**DATA SHEET NO. 2 (CONTINUED)**  
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

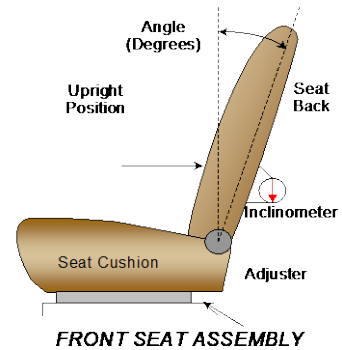
NHTSA No.: M20255202  
 Test Date: 12/3/2024

**SEAT FORE/AFT POSITIONS**

| Seat                      | Total Fore/Aft Travel |                                | Test Position from Forward-Most Position |                               |
|---------------------------|-----------------------|--------------------------------|------------------------------------------|-------------------------------|
|                           | mm                    | Detents (1 <sup>st</sup> as 1) | mm                                       | Detent (1 <sup>st</sup> as 0) |
| Driver Seat               | 240                   | 25                             | 120                                      | 12                            |
| Front Passenger Seat      | 240                   | 25                             | 120                                      | 12                            |
| Front Center Seat         |                       |                                |                                          |                               |
| Struck Side Rear Seat     | Fixed                 |                                | Fixed                                    |                               |
| Non-Struck Side Rear Seat | Fixed                 |                                | Fixed                                    |                               |
| Rear Center Seat          | Fixed                 |                                | Fixed                                    |                               |

**SEAT BACK ANGLE ADJUSTMENT**

The driver's seat back is positioned to the manufacturer's designated design angle. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck side rear seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as the struck-side rear seat back.



| Seat                      | Total Seat Back Angle Range |                                | Test Position from Vertical |                               |
|---------------------------|-----------------------------|--------------------------------|-----------------------------|-------------------------------|
|                           | Degrees                     | Detents (1 <sup>st</sup> as 1) | Degrees                     | Detent (1 <sup>st</sup> as 0) |
| Driver Seat               | 74.4                        | 38                             | 11.2                        | 10                            |
| Front Passenger Seat      | 73.5                        | 38                             | 10.6                        | 10                            |
| Front Center Seat         |                             |                                |                             |                               |
| Struck Side Rear Seat     | Fixed                       |                                | 15.2                        |                               |
| Non-Struck Side Rear Seat | Fixed                       |                                | 15.2                        |                               |
| Rear Center Seat          | Fixed                       |                                | 15.2                        |                               |

Seat back angles measured on outboard headrest post.

**DATA SHEET NO. 2 (CONTINUED)**  
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

**SEAT BELT ANCHORAGE ADJUSTMENT**

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on S1 - Vehicle Setup Information.

|             | Total # of Positions | Placed in Position # |
|-------------|----------------------|----------------------|
| Driver Seat | 3                    | 0 (Uppermost as 0)   |
| Rear Seat   | Fixed                |                      |

**HEAD RESTRAINT ADJUSTMENT**

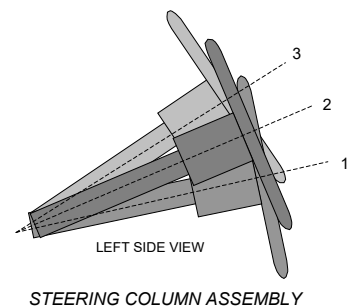
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

|             | Total # of Positions | Placed in Position #             |
|-------------|----------------------|----------------------------------|
| Driver Seat | 5                    | 4 (Lowest as 0) / Fixed Fore-Aft |
| Rear Seat   | Fixed                |                                  |

**STEERING COLUMN ADJUSTMENT**

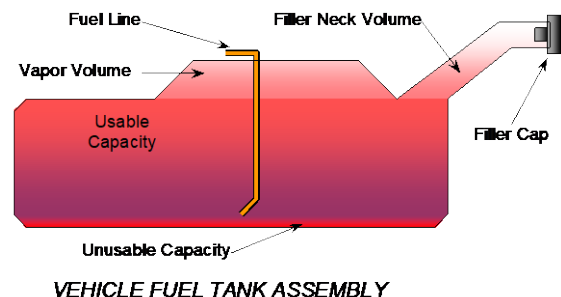
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of its geometric locus it describes when it moves through its full range of motion.

|                                   | Wheel Angle (°) | Fore/Aft Position (mm) |
|-----------------------------------|-----------------|------------------------|
| Lowermost, Position 1             | 65.8            |                        |
| Geometric Center, Position 2      | 63.8            |                        |
| Uppermost, Position 3             | 61.8            |                        |
| Telescoping Steering Wheel Travel |                 | 48                     |
| Test Position                     | 63.8            | 24                     |



**FUEL PUMP**

The vehicle is equipped with an electronic fuel pump. The fuel pump will run when the engine is running. The pump will also briefly run when the ignition key is turned to the "on" position. The filler neck is located on the passenger side.



**DATA SHEET NO. 2 (CONTINUED)**  
**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

**FUEL TANK CAPACITY DATA**

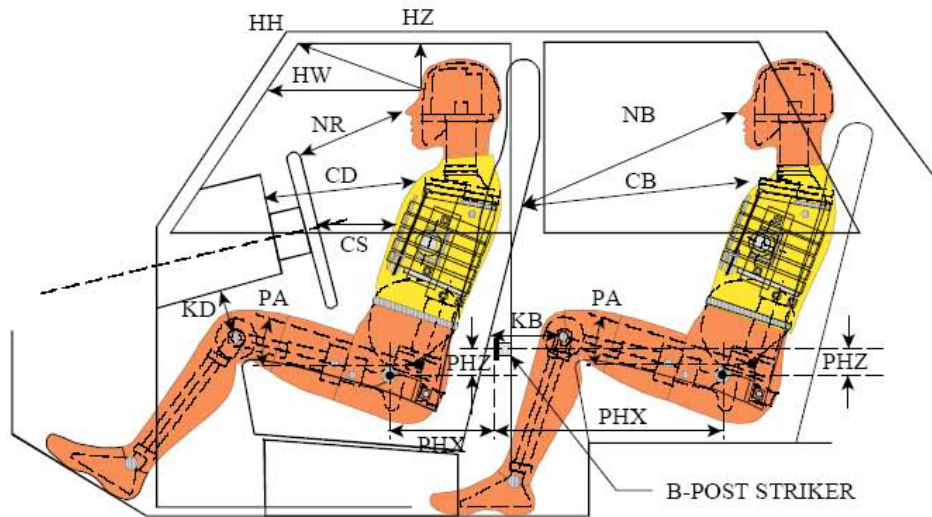
|                                                                       | <b>Liters</b> |
|-----------------------------------------------------------------------|---------------|
| Usable Capacity of Standard Tank (see S1 - Vehicle Setup Information) | 45.0          |
| Usable Capacity of Optional Tank (see S1 - Vehicle Setup Information) |               |
| Usable Capacity of Standard Tank as Specified in Owner's Manual       | 45.0          |
| Usable Capacity of Optional Tank as Specified in Owner's Manual       |               |
| 93% of Usable Capacity                                                | 41.9          |
| Actual Amount of Solvent Used                                         | 41.6          |
| 1/3 of Usable Capacity                                                | 15.0          |

Is the actual amount of solvent used in the test equal to  $93\% \pm 1\%$   
 of the Usable Capacity stated in S1 - Vehicle Setup Information? **YES**

### DATA SHEET NO. 3 DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
Test Date: 12/3/2024



**LEFT SIDE VIEW**

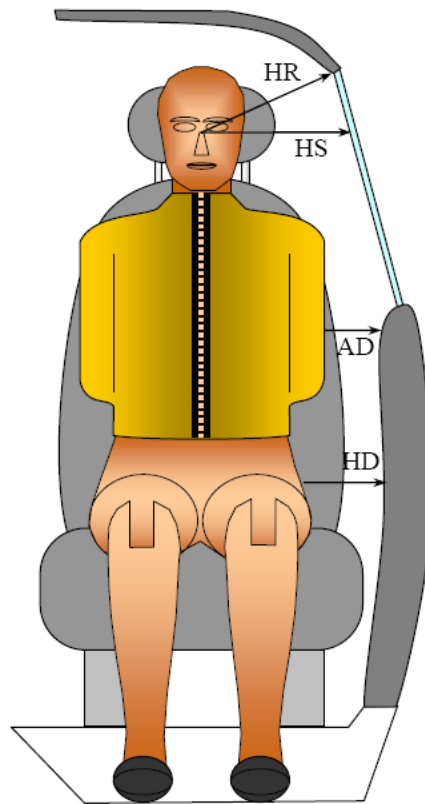
NOTE: 2-DOOR VEHICLE SHOWN.  
REAR DUMMY PHX & PHZ  
MEASUREMENTS FOR A 4-DOOR  
VEHICLE WOULD USE THE C-POST  
STRIKER AS A REFERENCE POINT

| Driver Code | Pass. Code | Measurement Description       | Driver      |           | Passenger   |           |
|-------------|------------|-------------------------------|-------------|-----------|-------------|-----------|
|             |            |                               | Length (mm) | Angle (°) | Length (mm) | Angle (°) |
| HH          |            | Head to Header                | 440         | 11.3      |             |           |
| HW          |            | Head to Windshield            | 645         | 0         |             |           |
| HZ          | HZ         | Head to Roof Liner            | 163         | 90        | 269         | 90        |
| NR          | NB         | Nose to Rim/Seat Back         | 498         | 15.1      | 527         | 10.3      |
| CD          | CB         | Chest to Dashboard/Seat Back  | 640         | 0.6       | 515         | 2.7       |
| CS          |            | Chest to Steering Wheel       | 386         | 13.8      |             |           |
| KDL         | KBL        | Left Knee to Dash/Seat Back   | 192         | 53.7      | 279         | 25.4      |
| KDR         | KBR        | Right Knee to Dash/Seat Back  | 157         | 53.7      | 266         | 22.7      |
| PAX         | PAX        | Pelvic Tilt Angle X           |             | 27.8      |             | 24.8      |
| PAY         | PAY        | Pelvic Tilt Angle Y           |             | -0.3      |             | -0.5      |
| PHX         | PHX        | Hip Point to Striker (X-Axis) | 191         |           | 221         |           |
| PHZ         | PHZ        | Hip Point to Striker (Z-Axis) | 135         |           | 242         |           |

**DATA SHEET NO. 4**  
**DUMMY LATERAL CLEARANCE DIMENSIONS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

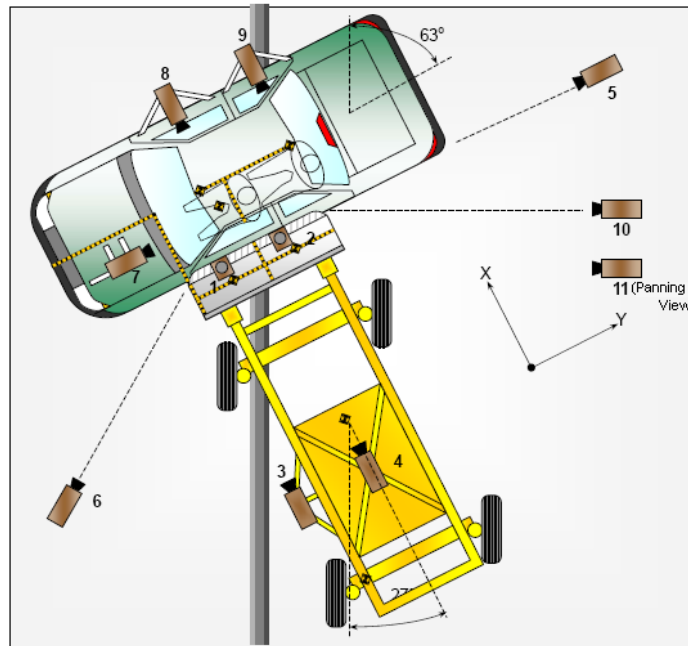


| Code | Measurement Description | Driver      | Passenger |
|------|-------------------------|-------------|-----------|
|      |                         | Length (mm) |           |
| HR   | Head to Side Header     | 189         | 265       |
| HS   | Head to Side Window     | 309         | 387       |
| AD   | Arm to Door             | 65          | 199       |
| HD   | Hip Point to Door       | 146         | 189       |

## DATA SHEET NO. 5 CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
Test Date: 12/3/2024



### CAMERA LOCATIONS AND DATA

| No. | Camera View             | Coordinates* (mm) |       |       | Lens (mm) | Frame Rate (fps) |
|-----|-------------------------|-------------------|-------|-------|-----------|------------------|
|     |                         | X                 | Y     | Z     |           |                  |
| 1   | Overhead Overall        | 570               | 1280  | -4995 | 8         | 1000             |
| 2   | Overhead Close-Up       | 0                 | 795   | -4895 | 20        | 1000             |
| 3   | Left Impact Point (MDB) |                   |       |       | 50        | 1000             |
| 4   | Side Overall (MDB)      |                   |       |       | 16        | 1000             |
| 5   | Rear                    | -30               | 7930  | -1425 | 24        | 1000             |
| 6   | Left Front              | -1495             | -4490 | -1450 | 24        | 1000             |
| 7   | Driver Front (OB)       |                   |       |       | 16        | 1000             |
| 8   | Driver Side (OB)        |                   |       |       | 8         | 1000             |
| 9   | Passenger Side (OB)     |                   |       |       | 8         | 1000             |
| 10  | Real Time Left Rear     |                   |       |       |           | 30               |
| 11  | Real Time Inrun         |                   |       |       |           | 30               |

Reference: Impact Point projected to Ground; +X = To Front of MDB, +Y = To Right of MDB, +Z = Down

\*All measurements accurate to  $\pm 6$  mm

### INSTRUMENTATION

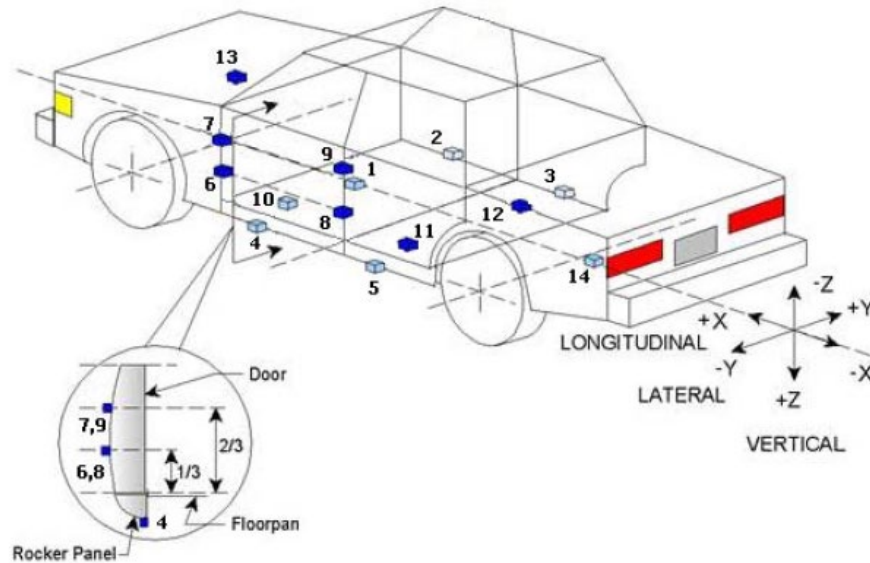
|                    | Number of Channels |
|--------------------|--------------------|
| Driver Dummy       | 16                 |
| Passenger Dummy    | 19                 |
| Vehicle Structure  | 23                 |
| MDB Accelerometers | 5                  |
| Total              | 63                 |



**DATA SHEET NO. 6**  
**TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
Test Date: 12/3/2024



**TEST VEHICLE ACCELEROMETER LOCATIONS**

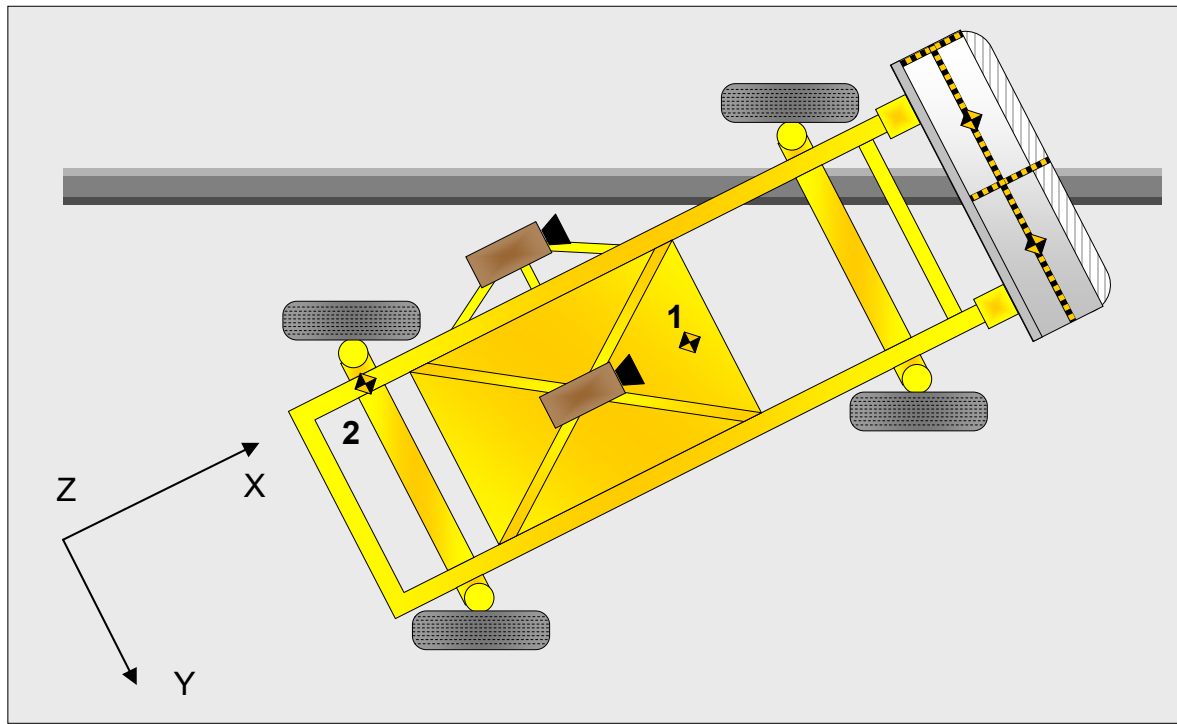
| No. | ID                        | Coordinates (mm) |      |      |
|-----|---------------------------|------------------|------|------|
|     |                           | X                | Y    | Z    |
| 1   | Vehicle CG                | 2366             | -24  | -414 |
| 2   | Right Sill at Front Seat  | 2448             | 700  | -275 |
| 3   | Right Sill at Rear Seat   | 1518             | 697  | -284 |
| 4   | Left Sill at Front Door   | 2415             | -693 | -269 |
| 5   | Left Sill at Rear Door    | 1509             | -687 | -274 |
| 6   | Left Lower A-Post         | 2945             | -811 | -547 |
| 7   | Left Middle A-Post        | 2937             | -796 | -751 |
| 8   | Left Lower B-Post         | 1850             | -677 | -656 |
| 9   | Left Middle B-Post        | 1858             | -687 | -907 |
| 10  | Front Seat Track          | 2028             | -348 | -352 |
| 11  | Rear Seat Structure       | 1623             | -254 | -386 |
| 12  | Rt. Rear Occ. Compartment | 1620             | 262  | -428 |
| 13  | Engine Block              | 3613             | 33   | -870 |
| 14  | Rear Above Axle           | 993              | 30   | -565 |

Reference: X – Rear Surface of Vehicle (+ forward)  
Y – Vehicle Centerline (+ to right)  
Z – Ground Plane (+ down)

# **DATA SHEET NO. 7** **MDB ACCELEROMETER LOCATIONS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024



## **MDB ACCELEROMETER LOCATIONS**

| No. | Accelerometer Location | Coordinates (mm) |      |      |
|-----|------------------------|------------------|------|------|
|     |                        | X                | Y    | Z    |
| 1   | MDB CG                 | -1105            | 0    | -330 |
| 2   | MDB Rear               | -2580            | -650 | -625 |

Reference: X – MDB Face (+ forward)  
 Y – MDB Centerline (+ to right)  
 Z – Ground Plane (+ down)

|                                                   |    |      |
|---------------------------------------------------|----|------|
| Width between left and right MDB contact switches | mm | 1406 |
|---------------------------------------------------|----|------|

**DATA SHEET NO. 8**  
**POST-TEST OBSERVATIONS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
Test Date: 12/3/2024

**TEST DUMMY INFORMATION AND CONTACT POINTS**

| Description       | Front Seat Dummy (ES-2re)           | Rear Seat Dummy (SID-IIs)          |
|-------------------|-------------------------------------|------------------------------------|
| Face              | Curtain Airbag                      | Seatback                           |
| Top of Head       | Headliner                           | Curtain Airbag, Headrest           |
| Left Side of Head | Curtain Airbag, Headliner           | Curtain Airbag                     |
| Back of Head      | Curtain Airbag, Headliner, Headrest | Curtain Airbag, Headrest, Seatback |
| Left Shoulder     | Curtain Airbag                      | Side Torso/Pelvis Airbag           |
| Upper Torso       | Side Torso/Pelvis Airbag, Seatback  | Side Torso/Pelvis Airbag, Seatback |
| Lower Torso       | Side Torso/Pelvis Airbag, Seatback  | Side Torso/Pelvis Airbag, Seatback |
| Left Hip          | Side Torso/Pelvis Airbag            | Side Torso/Pelvis Airbag           |
| Left Knee         | Door Panel                          | Door Panel                         |

**POST-TEST DOOR PERFORMANCE**

| Description                                                        | Struck Side |      | Non-Struck Side |      | Rear Hatch |
|--------------------------------------------------------------------|-------------|------|-----------------|------|------------|
|                                                                    | Front       | Rear | Front           | Rear |            |
| Remained Closed and Operational                                    | No          | No   | Yes             | Yes  | Yes        |
| Total Separation from Vehicle at Hinges or Latches                 | No          | No   | No              | No   | No         |
| Latch or Hinge Systems Pulled Out of Their Anchorages              | No          | No   | No              | No   | No         |
| Disengaged from Latched Position                                   | No          | No   | No              | No   | No         |
| Latch Separated from Striker                                       | No          | No   | No              | No   | No         |
| Jammed Shut                                                        | Yes         | Yes  | No              | No   | No         |
| If Door Opened at Striker, Record Width of Opening at Striker (mm) |             |      |                 |      |            |

**POST-TEST SEAT PERFORMANCE**

| Description                              | Struck Side |      | Non-Struck Side |      |
|------------------------------------------|-------------|------|-----------------|------|
|                                          | Front       | Rear | Front           | Rear |
| Seat Movement Along Seat Track           | No          | No   | No              | No   |
| Seat Disengagement from Floor Pan        | No          | No   | No              | No   |
| Seat Back Movement from Initial Position | No          | No   | No              | No   |
| Seat Back Collapse                       | No          | No   | No              | No   |

**POST-TEST STRUCTURAL OBSERVATIONS**

| Critical Areas of Performance | Observations and Conclusions |
|-------------------------------|------------------------------|
| Pillar Performance            | No                           |
| Sill Separation               | No                           |
| Windshield Damage             | No                           |
| Side Window Damage            | None                         |
| Other Notable Effects         | None                         |

**DATA SHEET NO. 8 (CONTINUED)**  
**POST-TEST OBSERVATIONS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
Test Date: 12/3/2024

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

| Restraint Type           | Struck Side<br>Driver |          | Struck Side<br>Left Rear Passenger |          |
|--------------------------|-----------------------|----------|------------------------------------|----------|
|                          | Mounted               | Deployed | Mounted                            | Deployed |
|                          |                       |          |                                    |          |
| Frontal Airbag           | Yes                   | No       |                                    |          |
| Knee Airbag              | Yes                   | No       |                                    |          |
| Side Curtain Airbag      | Yes                   | Yes      | Yes                                | Yes      |
| Side Torso/Pelvis Airbag | Yes                   | Yes      | Yes                                | Yes      |
| Side Airbag (Other)      |                       |          |                                    |          |
| Seat Belt Pretensioner   | Yes                   | Yes      | Yes                                | Yes      |
| Seat Belt Load Limiter   | Yes                   |          | Yes                                |          |
| Other:                   |                       |          |                                    |          |

**IMPACT POINT LOCATION DATA**

| Measured Parameter                                                            | Units | Tolerance                       | Value |
|-------------------------------------------------------------------------------|-------|---------------------------------|-------|
| Vehicle Wheelbase                                                             | mm    |                                 | 2657  |
| Vertical Impact Reference Line (Aft of Front Axle)<br>(Intended Impact Point) | mm    |                                 | 388   |
| Actual Impact Point (Aft of Front Axle)                                       | mm    |                                 | 398   |
| Horizontal Offset (+forward / -rearward)                                      | mm    | +/- 50 of intended impact point | -10   |
| Vertical Offset (+down / -up)                                                 | mm    | +/- 20 of intended impact point | 0     |

**DATA SHEET NO. 9**  
**MDB SUMMARY OF RESULTS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
Test Date: 12/3/2024

**MDB SPECIFICATIONS**

| Measurement Description                 | Length (mm) |
|-----------------------------------------|-------------|
| Overall Width of Framework Carriage     | 1250        |
| Overall Length Including Honeycomb Face | 4119        |
| Wheelbase of Framework Carriage         | 2588        |
| CG Location aft of Front Axle           | 1125        |

**MDB WEIGHTS**

|        | Units | Front Axle | Rear Axle | Total  |
|--------|-------|------------|-----------|--------|
| Left   | kg    | 393.4      | 297.1     |        |
| Right  | kg    | 378.0      | 295.8     |        |
| Ratio  | %     | 56.5       | 43.5      |        |
| Totals | kg    | 771.4      | 592.9     | 1364.4 |

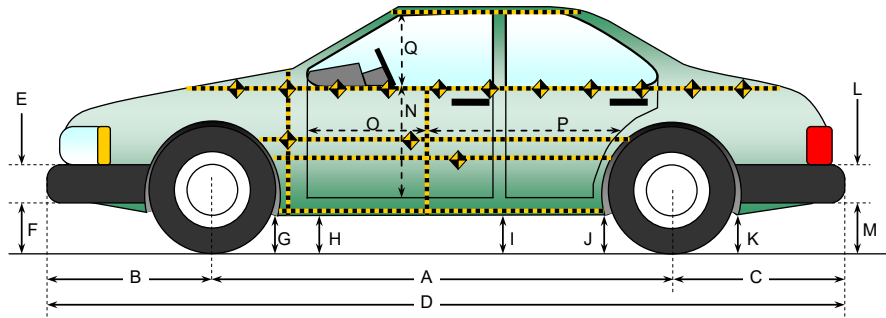
**SPEED AND ANGLE AT IMPACT DATA**

| Measured Parameter                              | Units   | Requirement  | Value |
|-------------------------------------------------|---------|--------------|-------|
| Trap No. 1 Velocity (Primary)                   | km/h    | 61.1 to 62.7 | 62.11 |
| Trap No. 2 Velocity (Redundant)                 | km/h    | 61.1 to 62.7 | 62.22 |
| MDB CL to Target Vehicle CL                     | degrees | 88.5 to 91.5 | 90.0  |
| MDB Forward Line of Motion to Target Vehicle CL | degrees | 62.5 to 63.5 | 63.0  |
| MDB Crabbed Angle to MDB Forward Line of Motion | degrees | 26 to 28     | 26.4  |

**DATA SHEET NO. 10**  
**TEST VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
Test Date: 12/3/2024



All measurements in (mm) with tolerance of  $\pm 3$  mm

**LEFT SIDE VIEW**

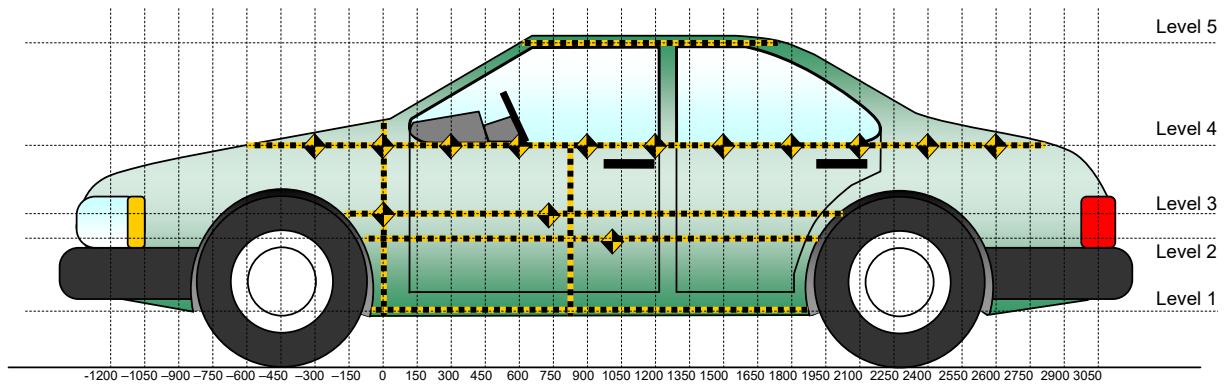
**VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION**

| Code | Measurement Description                | Pre-Test | Post-Test | Change |
|------|----------------------------------------|----------|-----------|--------|
| A    | Wheelbase                              | 2657     | 2638      | -19    |
| B    | Front Axle to FSOV                     | 896      | 948       | 52     |
| C    | Rear Axle to RSOV                      | 753      | 754       | 1      |
| D    | Total Length at Centerline             | 4306     | 4340      | 34     |
| E    | Front Bumper Thickness                 | 141      | 138       | -3     |
| F    | Front Bumper Bottom to Ground          | 500      | 488       | -12    |
| G    | Sill Height at Front Wheel Well        | 260      | 255       | -5     |
| H    | Sill Height at Front Door Leading Edge | 261      | 254       | -7     |
| I    | Sill Height at B Pillar                | 264      | 264       | 0      |
| J1   | Sill Height at Rear Wheel Well         | 266      | 268       | 2      |
| J2   | Pinch Weld Height at Rear Wheel Well   | 265      | 264       | -1     |
| K    | Sill Height Aft of Rear Wheel Well     | 310      | 310       | 0      |
| L    | Rear Bumper Thickness                  | 95       | 92        | -3     |
| M    | Rear Bumper Bottom to Ground           | 442      | 445       | 3      |
| N    | Sill Height to Window Bottom Sill      | 575      | 551       | -24    |
| O    | Front Door Leading Edge to Impact CL   | 837      | 736       | -101   |
| P    | Rear Door Trailing Edge to Impact CL   | 1056     | 1038      | -18    |
| Q    | Front Window Opening                   | 400      | 408       | 8      |
| R    | Right Side Length                      | 3761     | 3764      | 3      |
| S    | Left Side Length                       | 3765     | 3774      | 9      |
| T    | Vehicle Width at B Post                | 1757     | 1659      | -98    |
| U    | Front Wheel Track Width                | 1552     |           |        |
| V    | Rear Wheel Track Width                 | 1533     |           |        |

# **DATA SHEET NO. 11** **TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024



All Measurements Shown in mm

## **LEFT SIDE VIEW**

### **MAXIMUM EXTERIOR CRUSH MEAUREMENTS**

| Level | Measurement Description | Height Above Ground | Maximum Exterior Static Crush | Distance from Impact |
|-------|-------------------------|---------------------|-------------------------------|----------------------|
| 1     | Sill Top                | 549                 | 114                           | 300                  |
| 2     | Occupant H-Point        | 684                 | 157                           | 450                  |
| 3     | Mid Door                | 710                 | 159                           | 450                  |
| 4     | Window Sill             | 1083                | 5                             | 2250                 |
| 5     | Window Top              | 1536                | 1                             | 2100                 |

Note: The measurements are taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

**DATA SHEET NO. 11 (CONTINUED)**  
**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024

|       | Pre-Test |     |     |     |     | Post-Test |     |     |     |     | Exterior Crush |     |     |     |     |
|-------|----------|-----|-----|-----|-----|-----------|-----|-----|-----|-----|----------------|-----|-----|-----|-----|
|       | 1        | 2   | 3   | 4   | 5   | 1         | 2   | 3   | 4   | 5   | 1              | 2   | 3   | 4   | 5   |
| -2100 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -1950 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -1800 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -1650 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -1500 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -1350 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -1200 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -1050 |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -900  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -750  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -600  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| -450  |          |     |     | 796 |     |           |     |     | 798 |     |                |     |     | -2  |     |
| -300  |          |     |     | 807 |     |           |     |     | 811 |     |                |     |     | -4  |     |
| -150  |          |     |     | 802 |     |           |     |     | 805 |     |                |     |     | -3  |     |
| 0     | 895      | 893 | 895 | 789 |     | 900       | 895 | 895 | 791 |     | -5             | -2  | 0   | -2  |     |
| 150   | 886      | 891 | 891 | 782 |     | 785       | 788 | 787 | 801 |     | 101            | 103 | 104 | -19 |     |
| 300   | 880      | 883 | 883 | 781 |     | 766       | 728 | 728 | 799 |     | 114            | 155 | 155 | -18 |     |
| 450   | 878      | 882 | 882 | 786 |     | 773       | 725 | 723 | 813 |     | 105            | 157 | 159 | -27 |     |
| 600   | 876      | 881 | 881 | 797 |     | 777       | 726 | 724 | 829 |     | 99             | 155 | 157 | -32 |     |
| 750   | 874      | 880 | 880 | 803 | 596 | 774       | 732 | 732 | 843 | 618 | 100            | 148 | 148 | -40 | -22 |
| 900   | 872      | 879 | 879 | 811 | 615 | 773       | 744 | 744 | 852 | 639 | 99             | 135 | 135 | -41 | -24 |
| 1050  | 871      | 878 | 878 | 812 | 620 | 806       | 784 | 781 | 855 | 646 | 65             | 94  | 97  | -43 | -26 |
| 1200  | 872      | 878 | 878 | 815 | 621 | 798       | 809 | 809 | 833 | 649 | 74             | 69  | 69  | -18 | -28 |
| 1350  | 870      | 877 | 877 | 815 | 618 | 776       | 762 | 755 | 842 | 649 | 94             | 115 | 122 | -27 | -31 |
| 1500  | 869      | 878 | 877 | 815 | 615 | 782       | 757 | 764 | 853 | 649 | 87             | 121 | 113 | -38 | -34 |
| 1650  | 878      | 881 | 881 | 814 | 609 | 776       | 781 | 791 | 863 | 646 | 102            | 100 | 90  | -49 | -37 |
| 1800  | 886      | 894 | 894 | 818 | 596 | 802       | 825 | 837 | 874 | 637 | 84             | 69  | 57  | -56 | -41 |
| 1950  |          | 896 | 895 | 836 | 578 |           | 913 | 909 | 889 | 622 |                | -17 | -14 | -53 | -44 |
| 2100  |          |     |     | 853 | 548 |           |     |     | 864 | 547 |                |     |     | -11 | 1   |
| 2250  |          |     |     | 857 |     |           |     |     | 852 |     |                |     |     | 5   |     |
| 2400  |          |     |     | 847 |     |           |     |     | 844 |     |                |     |     | 3   |     |
| 2550  |          |     |     | 828 |     |           |     |     | 826 |     |                |     |     | 2   |     |
| 2700  |          |     |     | 805 |     |           |     |     | 803 |     |                |     |     | 2   |     |
| 2850  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| 3000  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| 3150  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| 3300  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| 3450  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| 3600  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| 3750  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |
| 3900  |          |     |     |     |     |           |     |     |     |     |                |     |     |     |     |

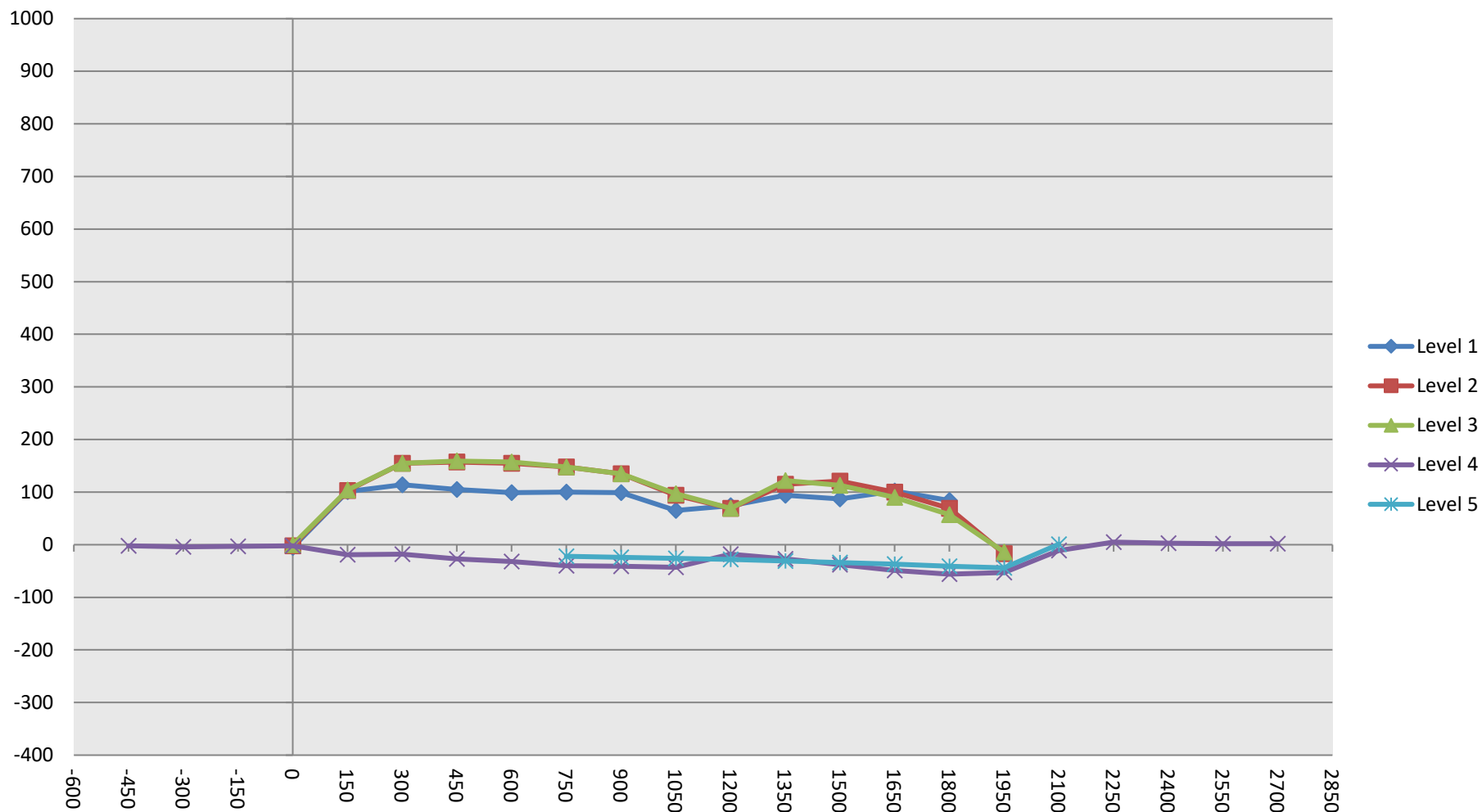
NOTE: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point.



**DATA SHEET NO. 11 (CONTINUED)**  
**TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

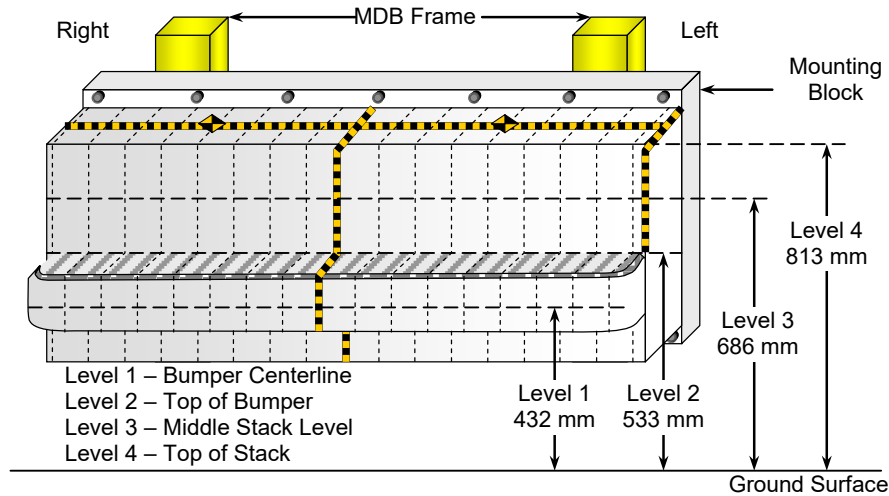
NHTSA No.: M20255202  
 Test Date: 12/3/2024



**DATA SHEET NO. 12**  
**MDB EXTERIOR STATIC CRUSH MEASUREMENTS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024



**FRONT VIEW**

**MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE**

| Vertical Location |                  |             | From Centerline |           | Maximum Crush (mm) |
|-------------------|------------------|-------------|-----------------|-----------|--------------------|
| Row               | Description      | Height (mm) | Distance (mm)   | Direction |                    |
| A                 | Center of Bumper | 432         | 800             | Left      | 209                |
| B                 | Top of Bumper    | 533         | 800             | Left      | 137                |
| C                 | Mid-Level        | 686         | 200             | Right     | 112                |
| D                 | Top of Stack     | 813         | 800             | Right     | 141                |

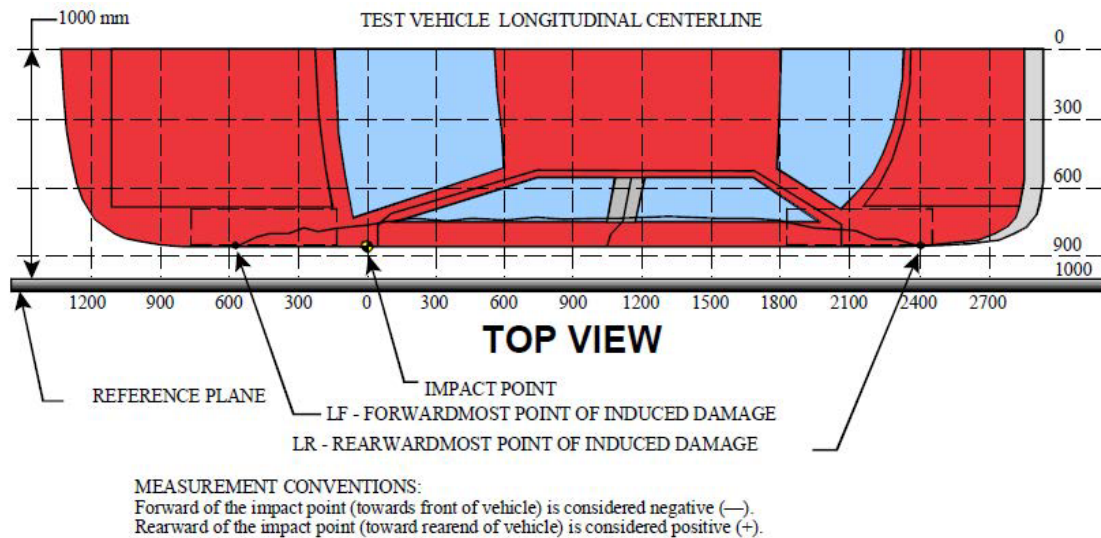
**DEFORMABLE BARRIER STATIC CRUSH**

| Stack Level | Distance Right of Center (mm) |     |     |     |     |     |     |     | C <sub>L</sub> | Distance Left of Center (mm) |     |     |     |     |     |     |     |
|-------------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|----------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|
|             | 800                           | 700 | 600 | 500 | 400 | 300 | 200 | 100 |                | 100                          | 200 | 300 | 400 | 500 | 600 | 700 | 800 |
| 4           | 141                           | 110 | 90  | 77  | 65  | 78  | 103 | 106 | 86             | 62                           | 71  | 77  | 80  | 78  | 75  | 92  | 120 |
| 3           | 71                            | 42  | 31  | 32  | 46  | 71  | 112 | 99  | 67             | 39                           | 33  | 35  | 39  | 46  | 52  | 61  | 109 |
| 2           | 120                           | 123 | 122 | 117 | 104 | 108 | 118 | 113 | 108            | 122                          | 132 | 130 | 131 | 134 | 133 | 136 | 137 |
| 1           | 191                           | 192 | 191 | 192 | 195 | 197 | 198 | 201 | 202            | 202                          | 202 | 202 | 203 | 203 | 205 | 207 | 209 |

**DATA SHEET NO. 13**  
**VEHICLE AND MDB DAMAGE PROFILE DISTANCES**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024



**VEHICLE DAMAGE PROFILE DISTANCES**

| DPD | Distance from Impact Point (mm) | Level | Post-Test (mm) | Pre-Test (mm) | Max. Static Crush (mm) |
|-----|---------------------------------|-------|----------------|---------------|------------------------|
| 1   | 1950                            | 3     | 91             | 105           | -14                    |
| 2   | 1422                            | 3     | 246            | 123           | 123                    |
| 3   | 1040                            | 3     | 212            | 122           | 90                     |
| 4   | 672                             | 3     | 273            | 119           | 154                    |
| 5   | 277                             | 3     | 270            | 116           | 154                    |
| 6   | 0                               | 3     | 105            | 105           | 0                      |

**MDB DAMAGE PROFILE DISTANCES**

| DPD | Distance from Impact Point (mm) | Level | Post-Test (mm) | Pre-Test (mm) | Max. Static Crush (mm) |
|-----|---------------------------------|-------|----------------|---------------|------------------------|
| 1   | 800 mm right of center          | 1     | 667            | 476           | 191                    |
| 2   | 480 mm right of center          | 1     | 659            | 463           | 196                    |
| 3   | 160 mm right of center          | 1     | 660            | 463           | 197                    |
| 4   | 160 mm left of center           | 1     | 663            | 463           | 200                    |
| 5   | 480 mm left of center           | 1     | 669            | 463           | 206                    |
| 6   | 800 mm left of center           | 1     | 685            | 476           | 209                    |

**DATA SHEET NO. 14**  
**FMVSS NO. 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

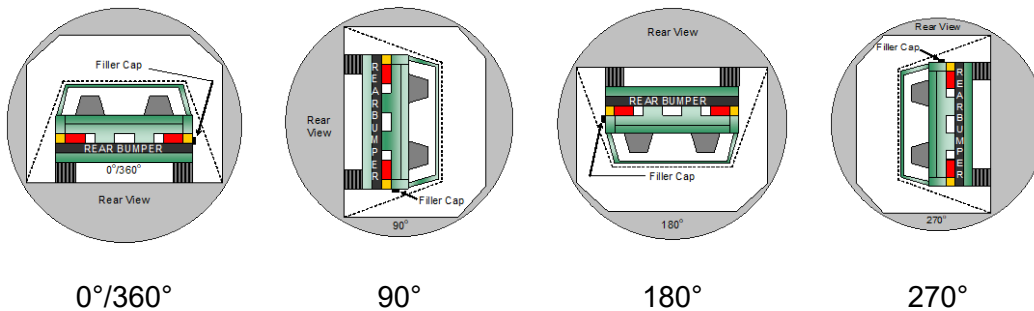
NHTSA No.: M20255202  
 Test Date: 12/3/2024

Test Time: **11:46 am**

Temperature: 21.8°C

- A. From impact until vehicle motion ceases: (Maximum Allowable = 1 ounce) 0.0 oz.  
 B. For the 5 minute period after motion ceases: (Maximum Allowable = 5 ounces) 0.0 oz.  
 C. For the following 25 minutes: (Maximum Allowable = 1 ounce / minute) None  
 D. Spillage Details: None

**FMVSS 301 STATIC ROLLOVER DATA**



**ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS**

| Test Phase   | Rotation Time | Hold Time | Total Time |
|--------------|---------------|-----------|------------|
| 0° to 90°    | 111           | 300       | 411        |
| 90° to 180°  | 110           | 300       | 410        |
| 180° to 270° | 107           | 300       | 407        |
| 270° to 360° | 112           | 300       | 412        |

**FMVSS 301 ROLLOVER SPILLAGE TABLE (UNITS IN OUNCES)**

| Test Phase   | First 5 Minutes | Sixth Minute | Seventh Minute | Eighth Minute |
|--------------|-----------------|--------------|----------------|---------------|
| 0° to 90°    | 0.0             | 0.0          | 0.0            |               |
| 90° to 180°  | 0.0             | 0.0          | 0.0            |               |
| 180° to 270° | 0.0             | 0.0          | 0.0            |               |
| 270° to 360° | 0.0             | 0.0          | 0.0            |               |

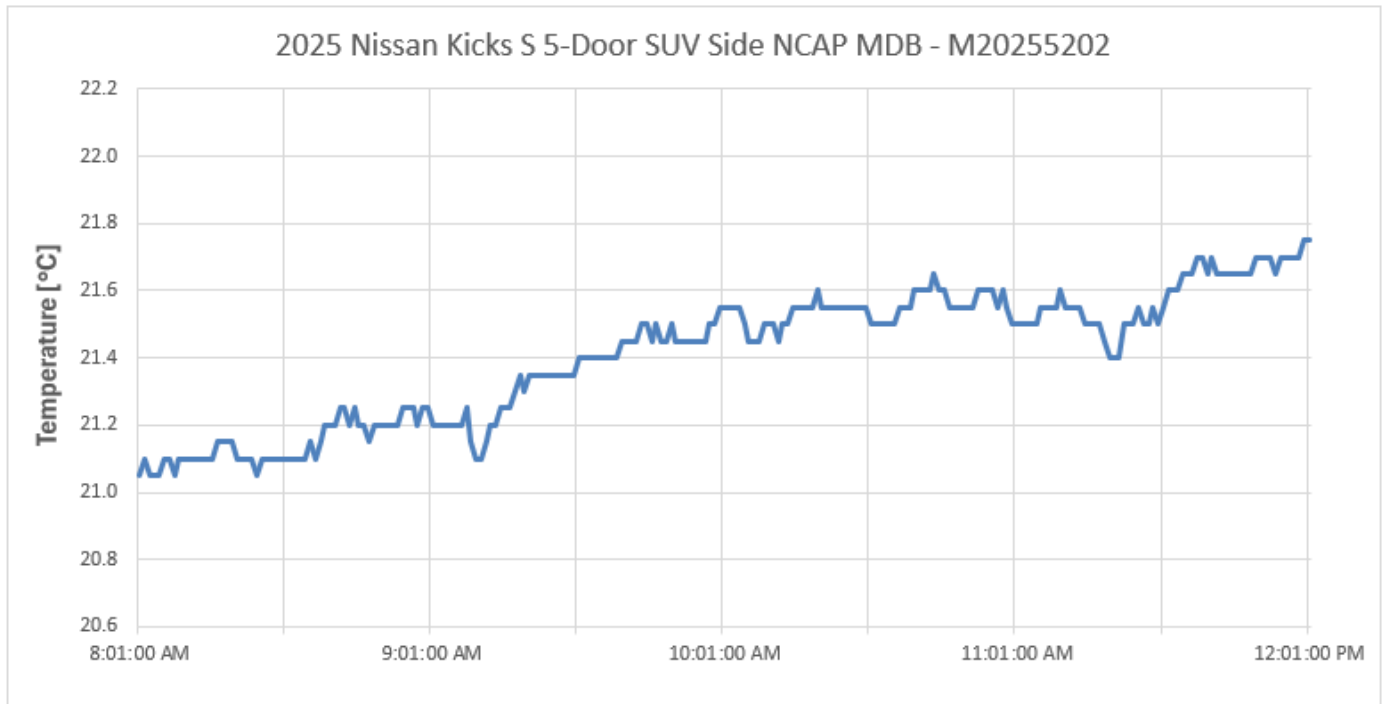
**ROLLOVER SOLVENT SPILLAGE LOCATION TABLE**

| Test Phase   | Spillage Location |
|--------------|-------------------|
| 0° to 90°    |                   |
| 90° to 180°  |                   |
| 180° to 270° |                   |
| 270° to 360° |                   |

**DATA SHEET NO. 15**  
**DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA**

Test Vehicle: 2025 Nissan Kicks S 5-Door SUV  
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20255202  
 Test Date: 12/3/2024



| Serial # | Description                  | Maximum | Average | Minimum | Units |
|----------|------------------------------|---------|---------|---------|-------|
| W2425691 | VSC North Hall - Temp (3016) | 21.75   | 21.41   | 21.05   | °C    |

**APPENDIX A**  
**PHOTOGRAPHS**

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Photo No. 001 - As Delivered Right Front Three-Quarter View of Test Vehicle



Photo No. 002 - As Delivered Left Rear Three-Quarter View of Test Vehicle





Photo No. 003 - Pre-Test Frontal View of Test Vehicle

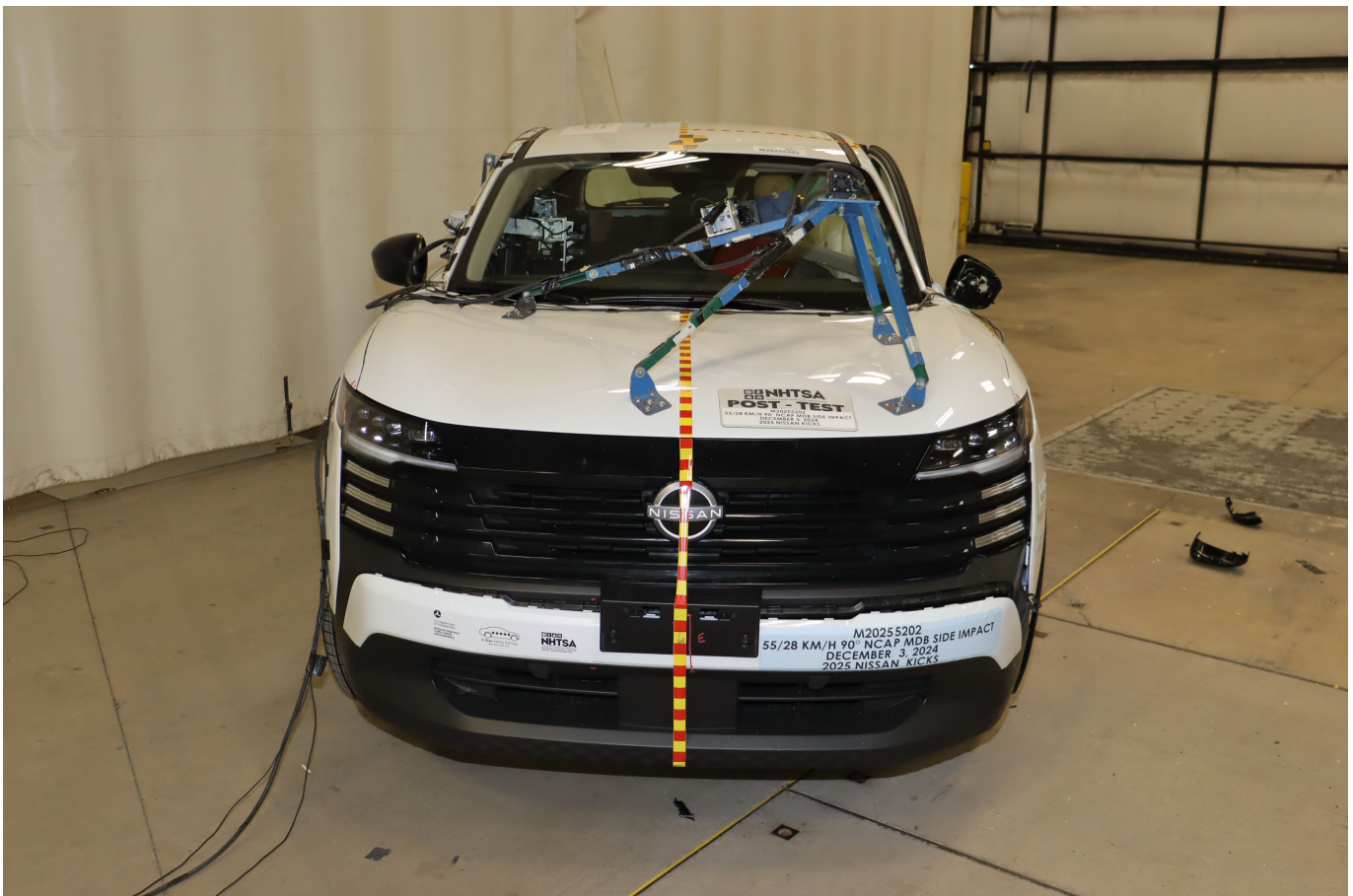


Photo No. 004 - Post-Test Frontal View of Test Vehicle





Photo No. 005 - Pre-Test Left Front Three-Quarter View of Test Vehicle



Photo No. 006 - Post-Test Left Front Three-Quarter View of Test Vehicle





Photo No. 007 - Pre-Test Left Side View of Test Vehicle



Photo No. 008 - Post-Test Left Side View of Test Vehicle





Photo No. 009 - Pre-Test Left Three-Quarter Rear View of Test Vehicle



Photo No. 010 - Post-Test Left Three-Quarter Rear View of Test Vehicle



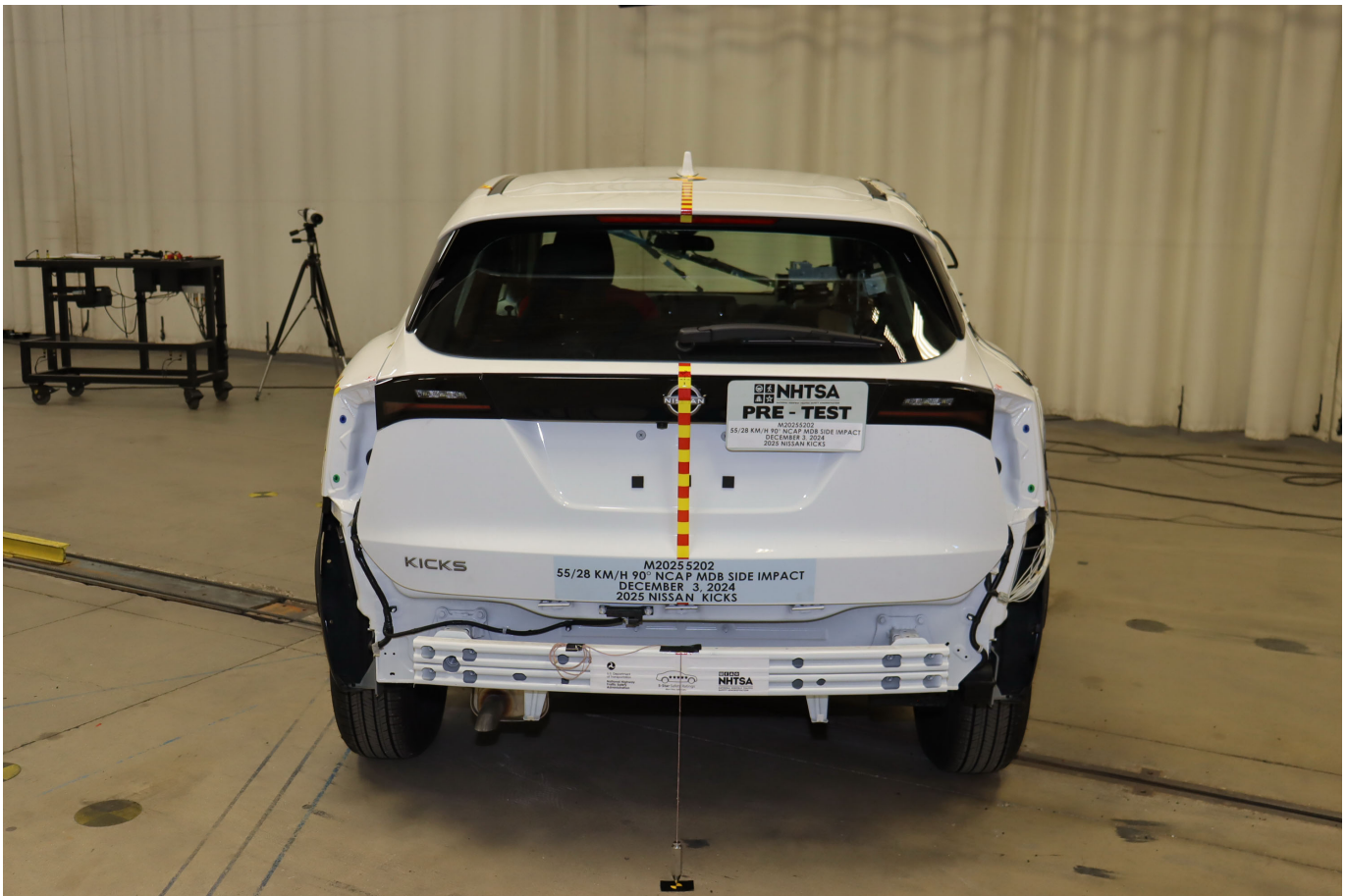


Photo No. 011 - Pre-Test Rear View of Test Vehicle



Photo No. 012 - Post-Test Rear View of Test Vehicle





Photo No. 013 - Pre-Test Right Side View of Test Vehicle



Photo No. 014 - Post-Test Right Side View of Test Vehicle





Photo No. 015 - Pre-Test Overhead View of Test Area

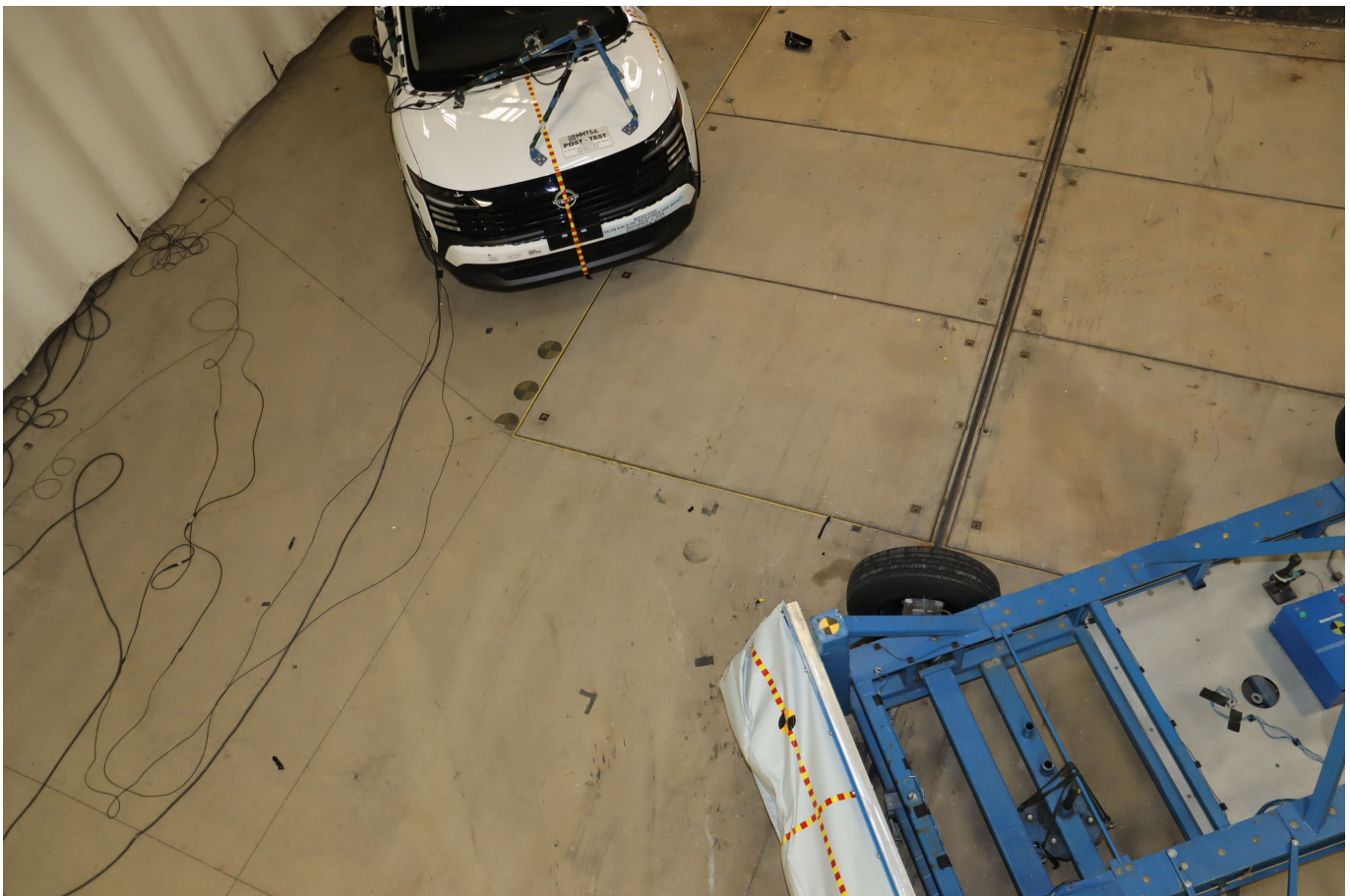


Photo No. 016 - Post-Test Overhead View of Test Area





Photo No. 017 - Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle



Photo No. 018 - Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle





Photo No. 019 - Pre-Test Close-Up View of Impact Point Target



Photo No. 020 - Post-Test Close-Up View of Impact Point Target



Photo No. 021 - Pre-Test Left Front Door Latch Close-Up



Photo No. 022 - Post-Test Left Front Door Latch Close-Up





Photo No. 023 - Pre-Test Left Rear Door Latch Close-Up



Photo No. 024 - Post-Test Left Rear Door Latch Close-Up





Photo No. 025 - Pre-Test Front Close-Up View of Driver Dummy



Photo No. 026 - Post-Test Front Close-Up View of Driver Dummy





Photo No. 027 - Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking



Photo No. 028 - Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View





Photo No. 029 - Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



Photo No. 030 - Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning





Photo No. 031 - Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



Photo No. 032 - Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning





Photo No. 033 - Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



Photo No. 034 - Pre-Test Placement of Driver Dummy's Feet





Photo No. 035 - Pre-Test View of Belt Anchorage for Driver Dummy



Photo No. 036 - Pre-Test Left Side View of Steering Wheel



Photo No. 037 - Pre-Test View of Disengaged Parking Brake



Photo No. 038 - Pre-Test View of Parking Brake





Photo No. 039 - Pre-Test Close-Up Left Side View of Driver Seat Track



Photo No. 040 - Pre-Test Close-Up Left Side View of Driver Seat Back





Photo No. 041 - Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Photo No. 042 - Pre-Test Driver Dummy and Door Clearance View





Photo No. 043 - Post-Test Driver Dummy and Door Clearance View



Photo No. 044 - Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment





Photo No. 045 - Post-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



Photo No. 046 - Pre-Test Driver Inner Door Panel View





Photo No. 047 - Post-Test Driver Inner Door Panel View



Photo No. 048 - Post-Test Driver Dummy Close-Up Head Contact with Vehicle Interior View





Photo No. 049 - Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View



Photo No. 050 - Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View



Photo No. 051 - Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View

**PHOTOGRAPH NOT APPLICABLE**

Photo No. 052 - Post-Test Driver Dummy Close-Up Pelvis Contact with Vehicle Interior View





Photo No. 053 - Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View



Photo No. 054 - Post-Test Driver Dummy Close-Up Knee Contact View





Photo No. 055 - Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking



Photo No. 056 - Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View





Photo No. 057 - Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



Photo No. 058 - Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning





Photo No. 059 - Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint



Photo No. 060 - Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



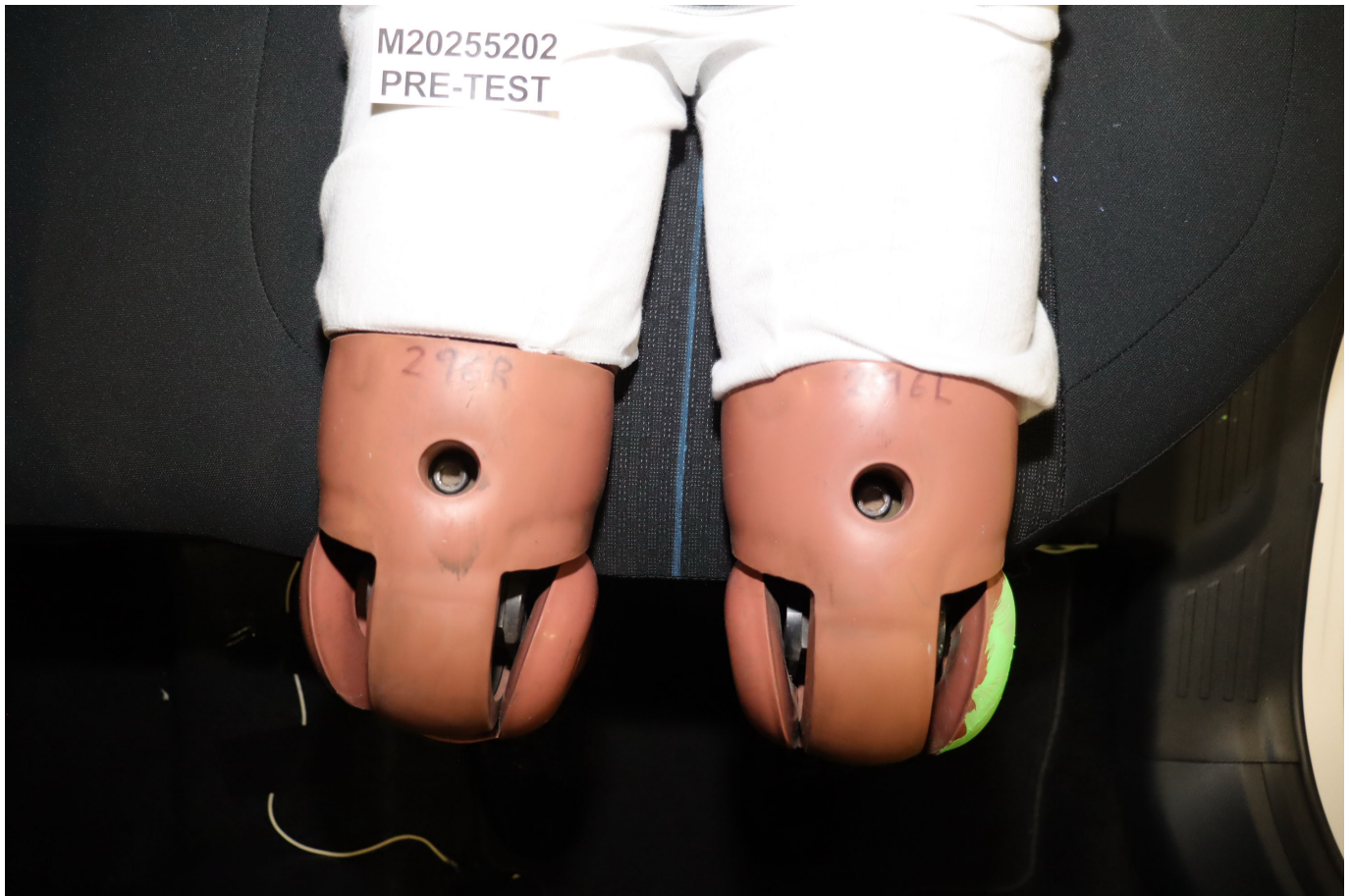


Photo No. 061 - Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



Photo No. 062 - Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket





Photo No. 063 - Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level



Photo No. 064 - Pre-Test Placement of Rear Passenger Dummy's Feet



**PHOTOGRAPH NOT AVAILABLE**

Photo No. 065 - Pre-Test View of Belt Anchorage for Rear Passenger Dummy



Photo No. 066 - Pre-Test Close-Up Left Side View of Rear Passenger Seat Track

**PHOTOGRAPH NOT AVAILABLE**

Photo No. 067 - Pre-Test Close-Up Left Side View of Rear Passenger Seat Back

**PHOTOGRAPH NOT APPLICABLE**

Photo No. 068 - Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint



Photo No. 069 - Pre-Test Rear Passenger Dummy and Door Clearance View



Photo No. 070 - Post-Test Rear Passenger Dummy and Door Clearance View





Photo No. 071 - Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



Photo No. 072 - Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment





Photo No. 073 - Pre-Test Rear Passenger Inner Door Panel View



Photo No. 074 - Post-Test Rear Passenger Inner Door Panel View





Photo No. 075 - Post-Test Rear Passenger Dummy Close-Up Head Contact with Vehicle Interior View



Photo No. 076 - Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Airbag View





Photo No. 077 - Post-Test Rear Passenger Dummy Close-Up Torso Contact with Vehicle Interior View



Photo No. 078 - Post-Test Rear Passenger Dummy Close-Up Torso Contact with Side Airbag View



# PHOTOGRAPH NOT APPLICABLE

Photo No. 079 - Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Vehicle Interior View



Photo No. 080 - Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Side Airbag View



Photo No. 081 - Post-Test Rear Passenger Dummy Close-Up Knee Contact View



Photo No. 082 - Pre-Test View of Fuel Filler Cap or Fuel Filler Neck





Photo No. 083 - Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Photo No. 084 - Pre-Test Front View of MDB Impactor Face





Photo No. 085 - Post-Test Front View of MDB Impactor Face

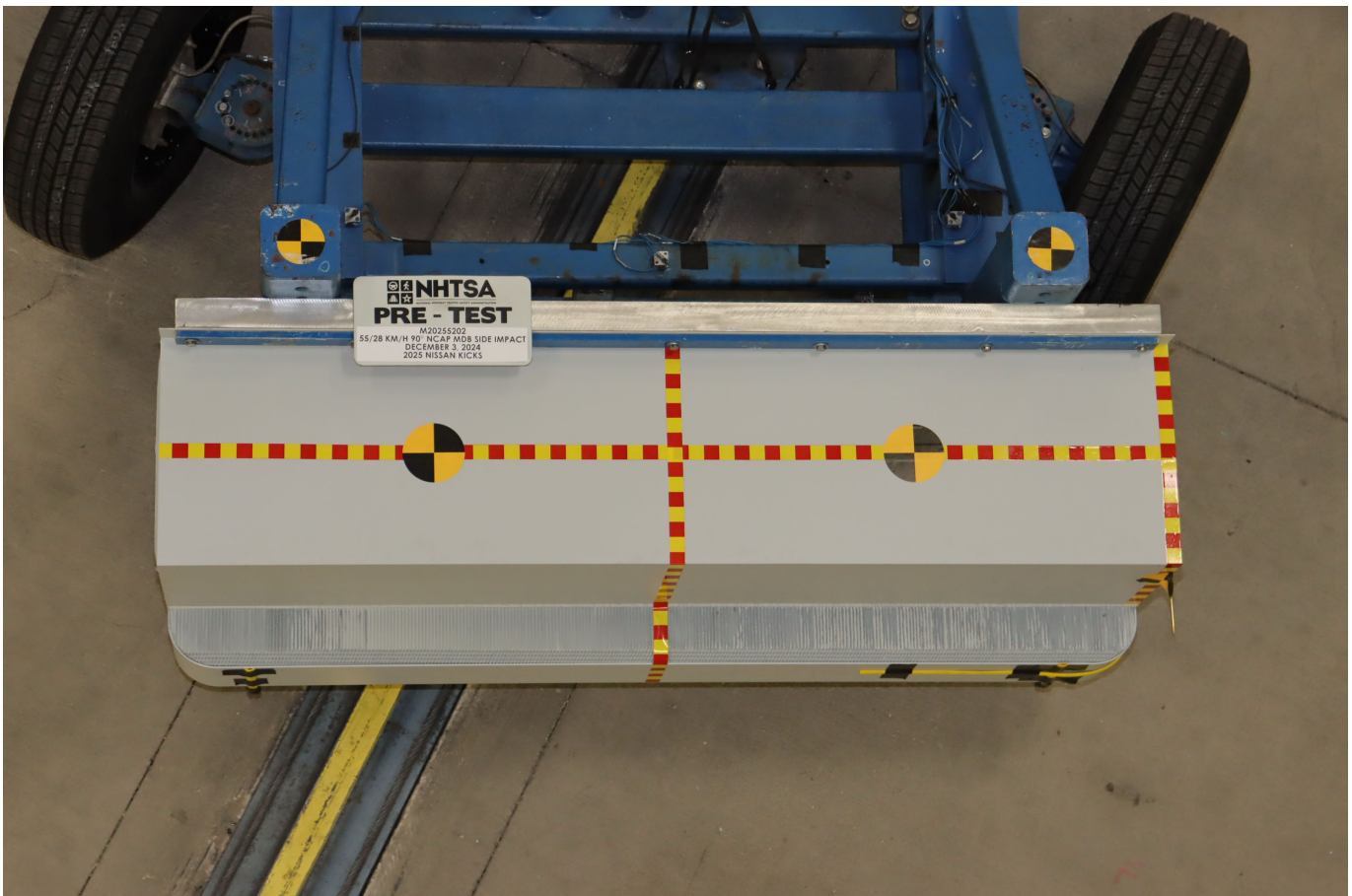


Photo No. 086 - Pre-Test Top View of MDB Impactor Face





Photo No. 087 - Post-Test Top View of MDB Impactor Face



Photo No. 088 - Pre-Test Left Side View of MDB Impactor Face





Photo No. 089 - Post-Test Left Side View of MDB Impactor Face



Photo No. 090 - Pre-Test Right Side View of MDB Impactor Face





Photo No. 091 - Post-Test Right Side View of MDB Impactor Face



Photo No. 092 - Close-Up View of Vehicle's Certification Label





Photo No. 093 - Close-Up View of Vehicle's Tire Information Placard or Label

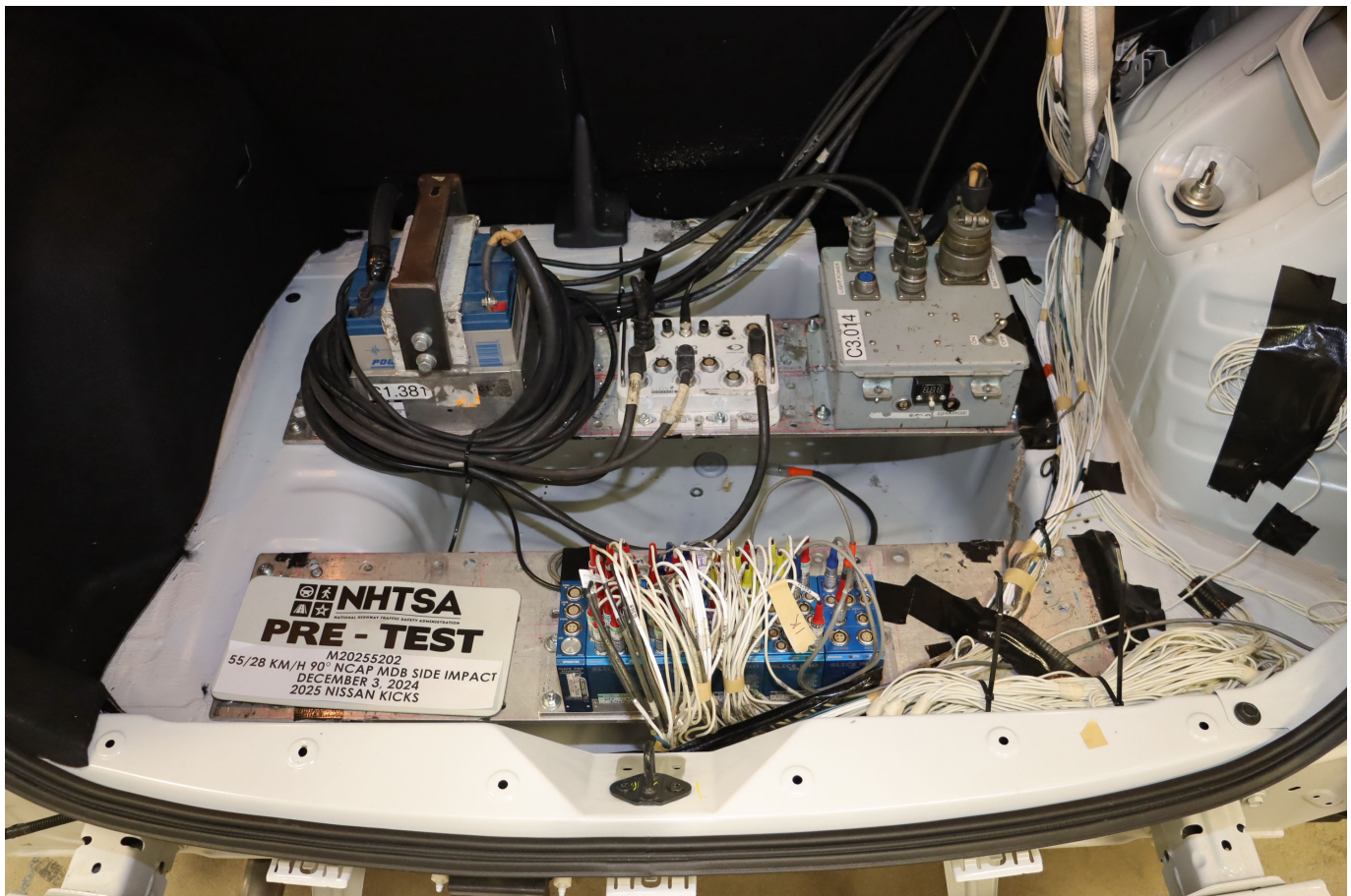


Photo No. 094 - Pre-Test Ballast View





Photo No. 095 - Post-Test Primary and Redundant Speed Trap Read-Out



Photo No. 096 - FMVSS Photo No. 301 Static Rollover 0 Degrees



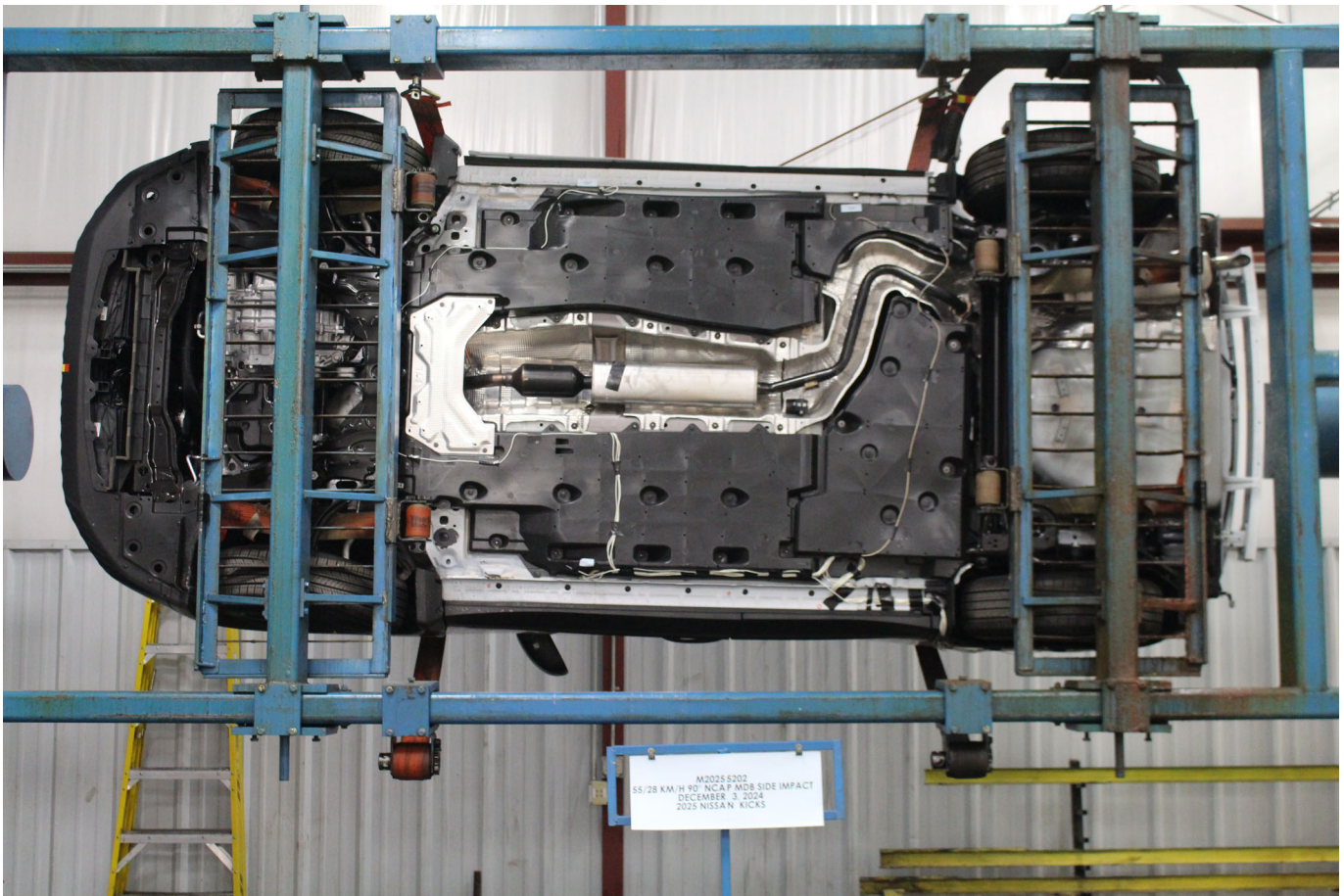


Photo No. 097 - FMVSS Photo No. 301 Static Rollover 90 Degrees



Photo No. 098 - FMVSS Photo No. 301 Static Rollover 180 Degrees





Photo No. 099 - FMVSS Photo No. 301 Static Rollover 270 Degrees



Photo No. 100 - FMVSS Photo No. 301 Static Rollover 360 Degrees





Photo No. 101 - Impact Event



Nissan  
Maintenance  
Care

## 2025 NISSAN KICKS S FWD CVT



Scan QR code for general  
model information & options

### Compact Meets Confidence

Standard Equipment Included at No Extra Charge

**NISSAN MAINTENANCE CARE**  
3 Scheduled Oil Changes incl. within  
2 yrs/24,000 miles (whichever occurs first)\*

**MECHANICAL & PERFORMANCE**  
2.0L DOHC 4-cylinder engine  
141 hp, 140 lb-ft torque  
Xtronic CVT (Continuously  
Variable Transmission)  
Drive Mode Selector  
(Normal - Eco - Sport)  
Hill Start Assist  
Electric Parking Brake w/ Auto Hold

**SAFETY & SECURITY**  
Nissan Advanced Air Bag System  
Automatic Emergency Braking  
w/ Pedestrian Detection  
Rear Automatic Braking  
Blind Spot Warning  
Rear Cross Traffic Alert  
Lane Departure Warning  
High Beam Assist

**COMFORT & CONVENIENCE**  
Front and Rear Cloth Seats  
60/40 Split Rear Seats  
7" Digital Color Meter  
Easy Fill Tire Alert  
12 volt Socket  
USB A Port (1x Front Charge and Data)

**AUDIO & INFOTAINMENT**  
7" Color Touchscreen Display Audio System

**EXTERIOR**  
Body Color Manual Folding  
Power Outside Mirrors  
Front and Rear Bumper  
w/ Black Fascia Accent  
Low Profile LED Low and High  
Beam Headlights  
LED Daytime Running Lights and  
Turn Signals  
16" Steel Wheels w/ Full Wheel Covers

\*See your Dealer for terms,  
conditions and limitations  
  
\*\*Optional equipment replaces  
standard equipment where applicable  
  
\*\*State laws may apply. Review before using

|                                                |             |
|------------------------------------------------|-------------|
| Manufacturer's Suggested<br>Retail Base Price: | \$21,830.00 |
| Options Included by Manufacturer               |             |
| Splash Guards                                  | 250.00      |
| Carpeted Floor Mats & Cargo Mat                | 255.00      |
| DESTINATION CHARGES                            | 1,390.00    |
| Total*                                         | \$23,725.00 |

### Fuel Economy and Environment

Gasoline Vehicle

**Fuel Economy**

Small SUVs range from 14 to 118 MPG.  
The best vehicle rates 140 MPGe.

**You save \$1,000**  
in fuel costs  
over 5 years  
compared to the  
average new vehicle.

**Annual fuel cost \$1,700**

**Fuel Economy & Greenhouse Gas Rating** (tailpipe only) **Smog Rating** (tailpipe only)

6

1 10 1 10

This vehicle emits 287 grams CO<sub>2</sub> per mile. The best emits 0 grams CO<sub>2</sub> per mile (tailpipe only). Producing and distributing fuel also create emissions. Learn more at [fuelconomy.gov](https://fuelconomy.gov).

**Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 28 MPG and costs \$9,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. MPGe is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.**

**fuelconomy.gov**  
Calculate personalized estimates and compare vehicles

### GOVERNMENT 5-STAR SAFETY RATINGS

**Overall Vehicle Score** Not Rated  
Based on the combined ratings of frontal, side and rollover.  
Should ONLY be compared to other vehicles of similar size and weight.

|                                                                                                                                                   |                                      |                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------|
| <b>Frontal Crash</b><br>Based on the risk of injury in a frontal impact.<br>Should ONLY be compared to other vehicles of similar size and weight. | <b>Driver Passenger</b><br>Not Rated | <b>Not Rated</b> |
| <b>Side Crash</b><br>Based on the risk of injury in a side impact.                                                                                | <b>Front seat</b><br>Not Rated       | <b>Not Rated</b> |
| <b>Rollover</b><br>Based on the risk of rollover in a single-vehicle crash.                                                                       | <b>Rear seat</b><br>Not Rated        | <b>Not Rated</b> |

Star ratings range from 1 to 5 stars (\*\*\*\*\*), with 5 being the highest.  
Source: National Highway Traffic Safety Administration (NHTSA)  
[www.safercar.gov](https://www.safercar.gov) or 1-888-327-4236

### DELIVERY

**VEHICLE COLORS:**  
EXT: FRESH POWDER  
INT: CHARCOAL

**FINAL ASSEMBLY POINT:**  
AGUAS (ABV) MEX

**TRANSPORT METHOD:**  
TRUCK

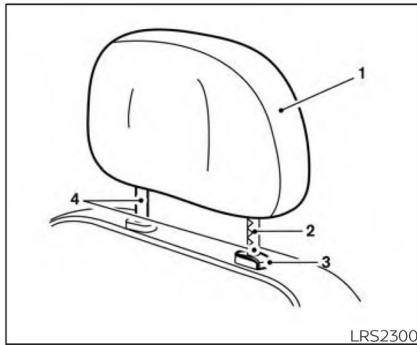
**DEALER:**  
EMPIRE NISSAN  
1377 KETTERING LOOP  
ONTARIO CA  
91761

VIN: 3N8AP6BA4SL315340  
EMS: 50 STATE EMISSIONS  
MDL: 21115-315340 QM1-G  
OPT: B-C03B92L92

20240830231617AS102C

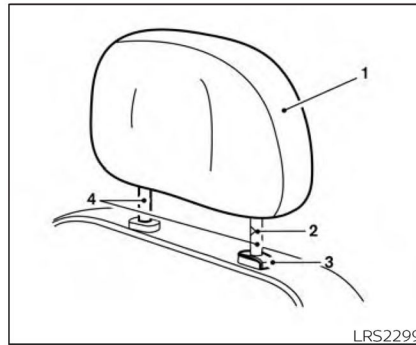
\*Does not include dealer installed options and accessories, local taxes or license fees. This label has been applied pursuant to federal law. Do not remove prior to delivery to the ultimate purchaser.

Photo No. 102 - Monroney Label



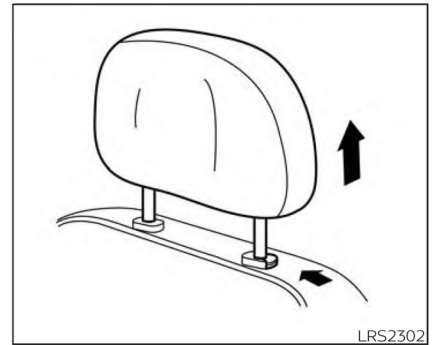
#### ADJUSTABLE HEAD RESTRAINT/ HEADREST COMPONENTS

1. Removable head restraint/headrest
2. Multiple notches
3. Lock knob
4. Stalks



#### NON-ADJUSTABLE HEAD RESTRAINT/HEADREST COMPONENTS

1. Removable head restraint/headrest
2. Single notch
3. Lock knob
4. Stalks



#### REMOVE

#### CAUTION

**Do not remove head restraint/headrest from vehicles equipped with a Bose head restraint/headrest speaker system. Removal will damage the system wiring.**

Use the following procedure to remove the head restraint/headrest:

1. Pull the head restraint/headrest up to the highest position.
2. Push and hold the lock knob.

**Safety-Seats, seat belts and supplemental restraint system 19**

Photo No. 103 - Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

**PHOTOGRAPH NOT APPLICABLE**

Photo No. 104 - Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual



**APPENDIX B**  
**DUMMY RESPONSE DATA PLOTS**

**TABLE OF DATA PLOTS**  
**Driver Dummy Instrumentation Plots**

| <b><u>No.</u></b> | <b><u>Description</u></b>                                 | <b><u>Page No.</u></b> |
|-------------------|-----------------------------------------------------------|------------------------|
| Figure No. 1.     | Driver Head Acceleration (X) Primary vs. Time             | B-1                    |
| Figure No. 2.     | Driver Head Acceleration (Y) Primary vs. Time             | B-1                    |
| Figure No. 3.     | Driver Head Acceleration (Z) Primary vs. Time             | B-1                    |
| Figure No. 4.     | Driver Head Resultant Acceleration Primary vs. Time       | B-1                    |
| Figure No. 5.     | Driver Upper Thorax Rib Deflection (Y) vs. Time           | B-2                    |
| Figure No. 6.     | Driver Middle Thorax Rib Deflection (Y) vs. Time          | B-2                    |
| Figure No. 7.     | Driver Lower Thorax Rib Deflection (Y) vs. Time           | B-2                    |
| Figure No. 8.     | Driver Thorax Rib Deflection Maximum vs. Time             | B-2                    |
| Figure No. 9.     | Driver Anterior Abdomen Force (Y) vs. Time                | B-3                    |
| Figure No. 10.    | Driver Middle Abdomen Force (Y) vs. Time                  | B-3                    |
| Figure No. 11.    | Driver Posterior Abdomen Force (Y) vs. Time               | B-3                    |
| Figure No. 12.    | Driver Total Abdominal Force (Y) vs. Time                 | B-3                    |
| Figure No. 13.    | Driver Pubic Symphysis Force (Y) vs. Time                 | B-4                    |
| Figure No. 14.    | Passenger Head Acceleration (X) Primary vs. Time          | B-5                    |
| Figure No. 15.    | Passenger Head Acceleration (Y) Primary vs. Time          | B-5                    |
| Figure No. 16.    | Passenger Head Acceleration (Z) Primary vs. Time          | B-5                    |
| Figure No. 17.    | Passenger Head Resultant Acceleration Primary vs. Time    | B-5                    |
| Figure No. 18.    | Passenger Lower Spine T12 Acceleration (X) vs. Time       | B-6                    |
| Figure No. 19.    | Passenger Lower Spine T12 Acceleration (Y) vs. Time       | B-6                    |
| Figure No. 20.    | Passenger Lower Spine T12 Acceleration (Z) vs. Time       | B-6                    |
| Figure No. 21.    | Passenger Lower Spine T12 Resultant Acceleration vs. Time | B-6                    |
| Figure No. 22.    | Passenger Iliac Force on Impact Side (Y) vs. Time         | B-7                    |
| Figure No. 23.    | Passenger Acetabulum Force on Impact Side (Y) vs. Time    | B-7                    |
| Figure No. 24.    | Passenger Total Pelvic Force on Impact Side (Y) vs. Time  | B-7                    |



The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at [www.nhtsa.gov](http://www.nhtsa.gov)

**Additional Driver & Passenger Dummy Instrumentation Data**

Passenger Head Angular Velocity (X)  
Passenger Head Angular Velocity (Y)  
Passenger Head Angular Velocity (Z)  
Driver Lower Spine T12 Acceleration (X)  
Driver Lower Spine T12 Acceleration (Y)  
Driver Lower Spine T12 Acceleration (Z)  
Passenger Upper Thorax Rib Deflection (Y)  
Passenger Middle Thorax Rib Deflection (Y)  
Passenger Lower Thorax Rib Deflection (Y)  
Passenger Upper Abdomen Rib Deflection (Y)  
Passenger Lower Abdomen Rib Deflection (Y)  
Driver Head Acceleration Redundant (X)  
Driver Head Acceleration Redundant (Y)  
Driver Head Acceleration Redundant (Z)  
Passenger Head Acceleration Redundant (X)  
Passenger Head Acceleration Redundant (Y)  
Passenger Head Acceleration Redundant (Z)

### **Vehicle Instrumentation Data**

Vehicle Center of Gravity Acceleration (X)  
Vehicle Center of Gravity Acceleration (Y)  
Vehicle Center of Gravity Acceleration (Z)  
Right Side Sill at Front Seat Acceleration (X)  
Right Side Sill at Front Seat Acceleration (Y)  
Right Side Sill at Front Seat Acceleration (Z)  
Right Side Sill at Rear Seat Acceleration (X)  
Right Side Sill at Rear Seat Acceleration (Y)  
Right Side Sill at Rear Seat Acceleration (Z)  
Left Side Sill at Front Seat Acceleration (Y)  
Left Side Sill at Rear Seat Acceleration (Y)  
Lower A-Post Acceleration (Y)  
Middle A-Post Acceleration (Y)  
Lower B-Post Acceleration (Y)  
Middle B-Post Acceleration (Y)  
Front Seat Track Acceleration (Y)  
Rear Seat Track Acceleration (Y)  
Right Rear Occupant Compartment Acceleration (Y)  
Engine Block (X)  
Engine Block (Y)  
Rear Floorpan Above Axle Acceleration (X)  
Rear Floorpan Above Axle Acceleration (Y)  
Rear Floorpan Above Axle Acceleration (Z)



### **MDB Instrumentation Data**

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

MDB Center of Gravity Acceleration (Z)

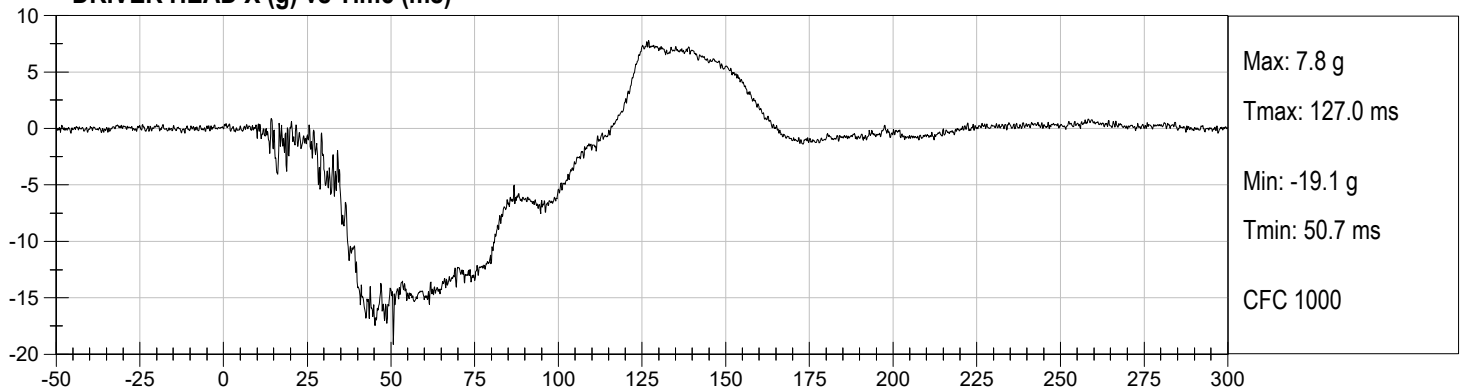
MDB Rear Acceleration (X)

MDB Rear Acceleration (Y)

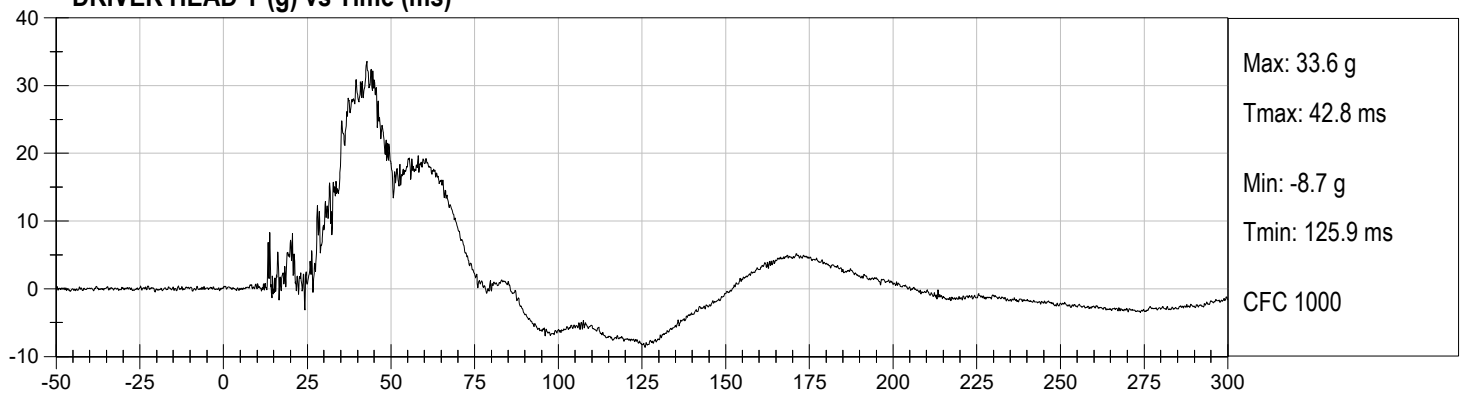
Left MDB Contact Switch

Right MDB Contact Switch

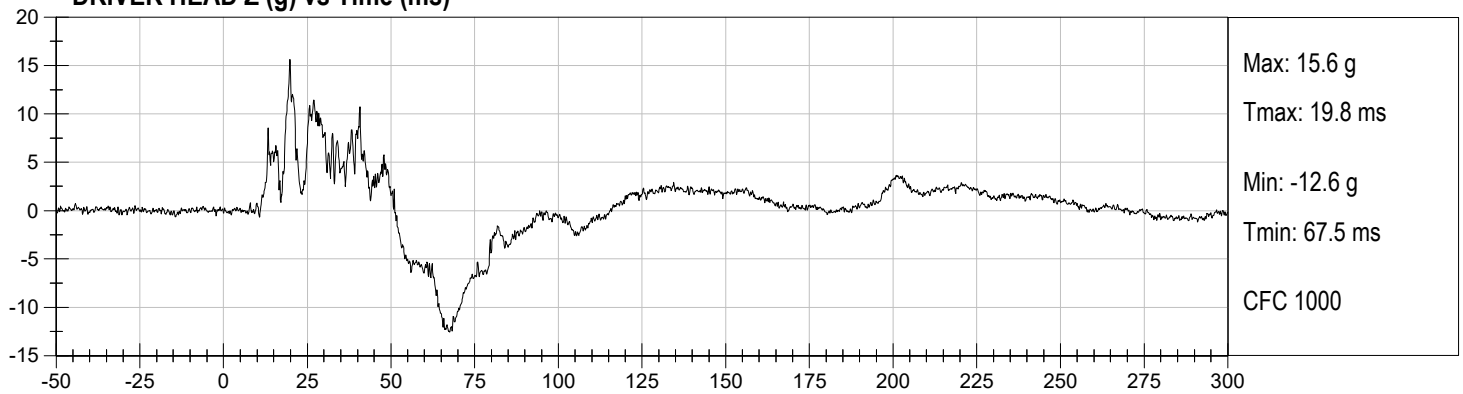
DRIVER HEAD X (g) vs Time (ms)



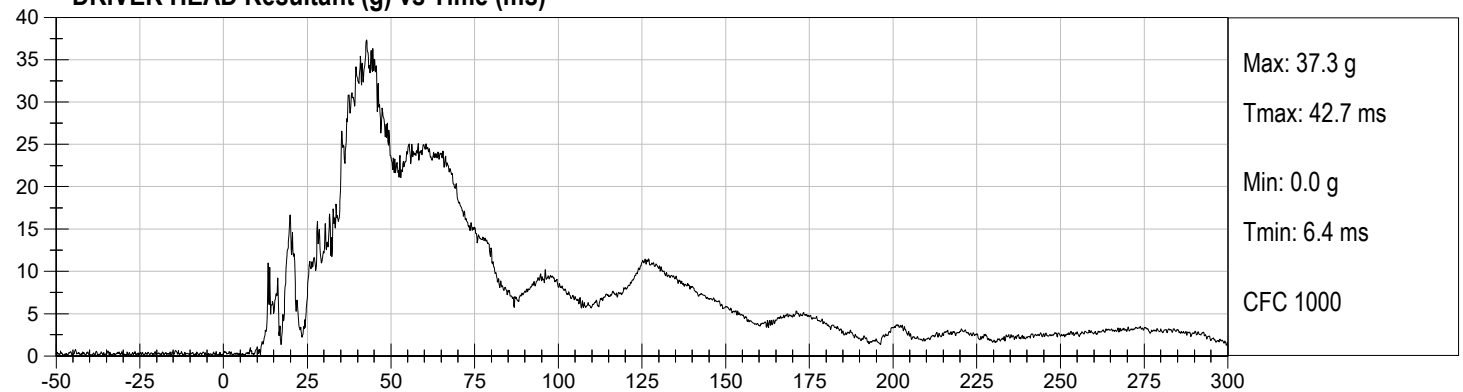
DRIVER HEAD Y (g) vs Time (ms)



DRIVER HEAD Z (g) vs Time (ms)

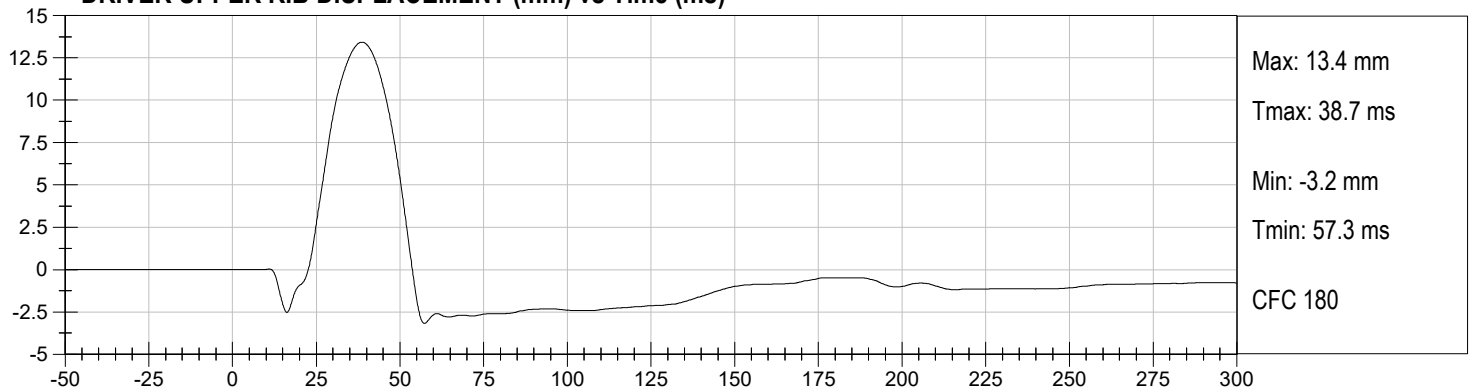


DRIVER HEAD Resultant (g) vs Time (ms)

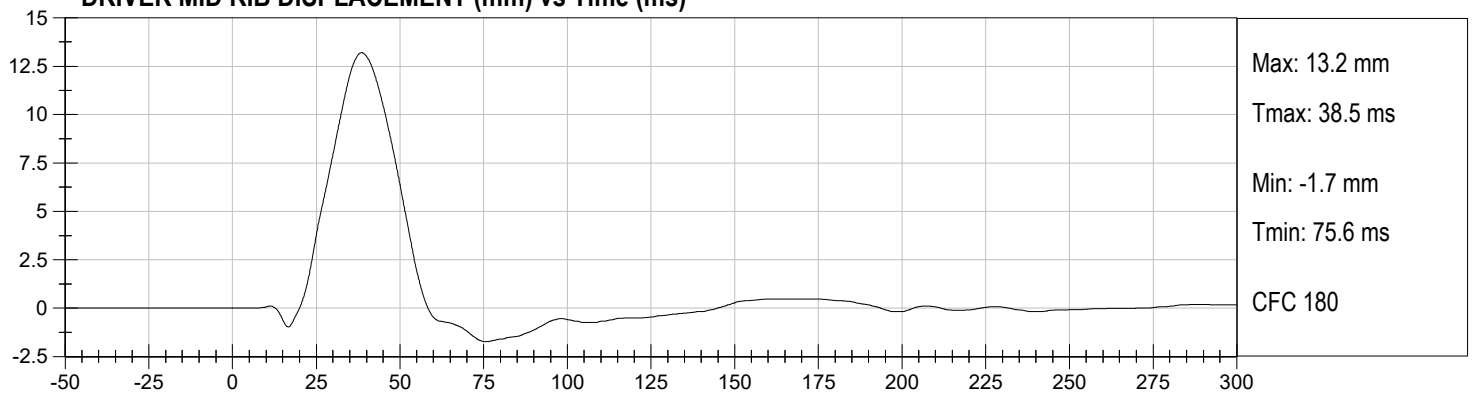




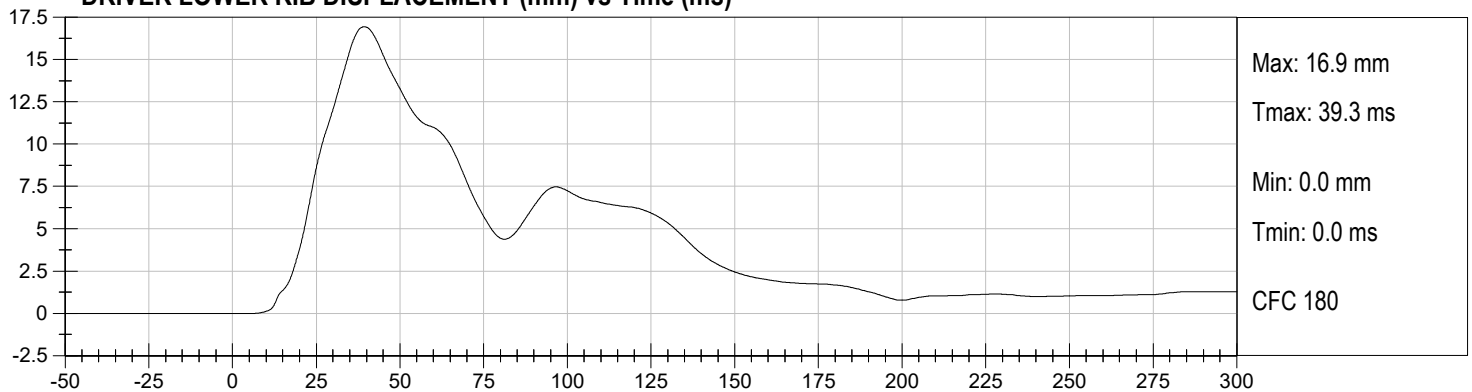
DRIVER UPPER RIB DISPLACEMENT (mm) vs Time (ms)



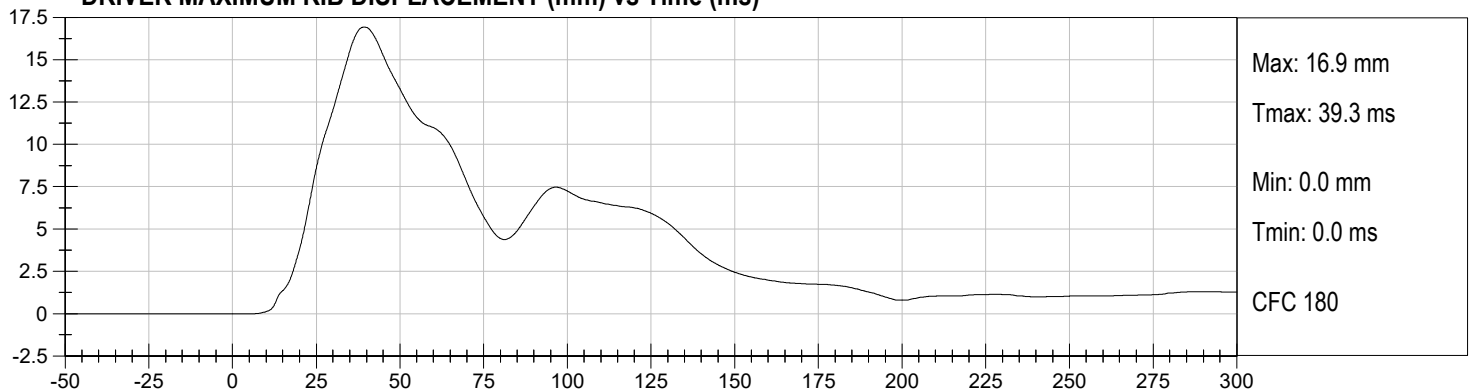
DRIVER MID RIB DISPLACEMENT (mm) vs Time (ms)



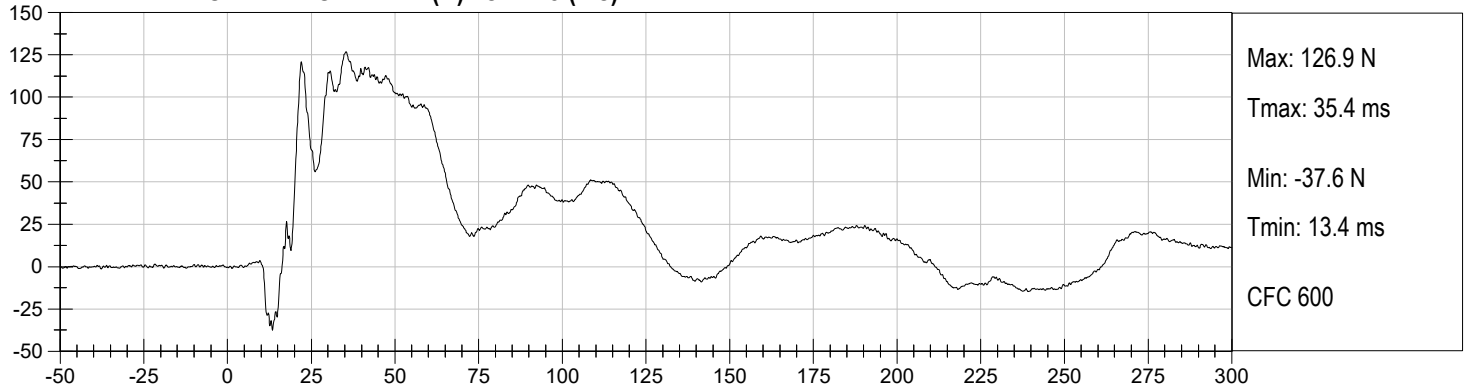
DRIVER LOWER RIB DISPLACEMENT (mm) vs Time (ms)



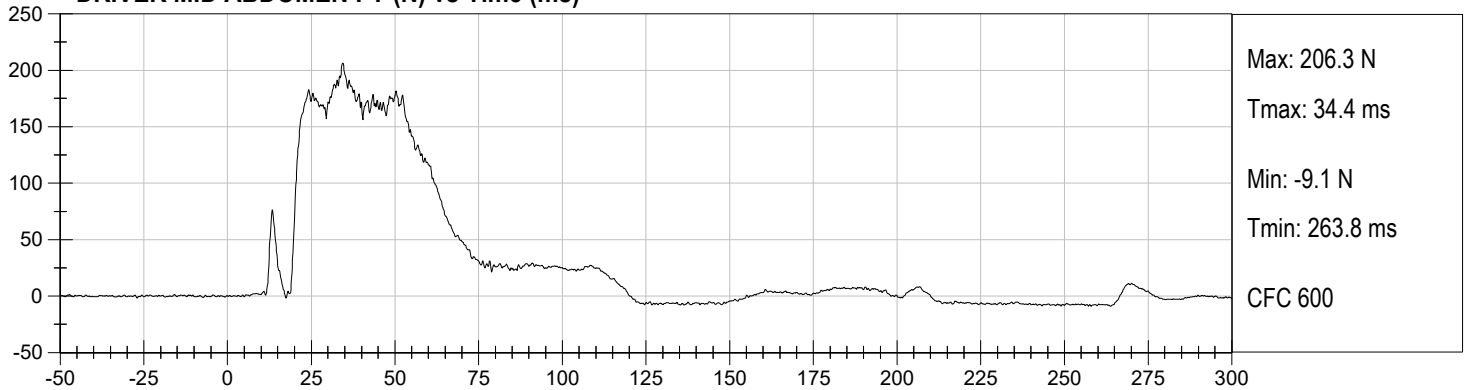
DRIVER MAXIMUM RIB DISPLACEMENT (mm) vs Time (ms)



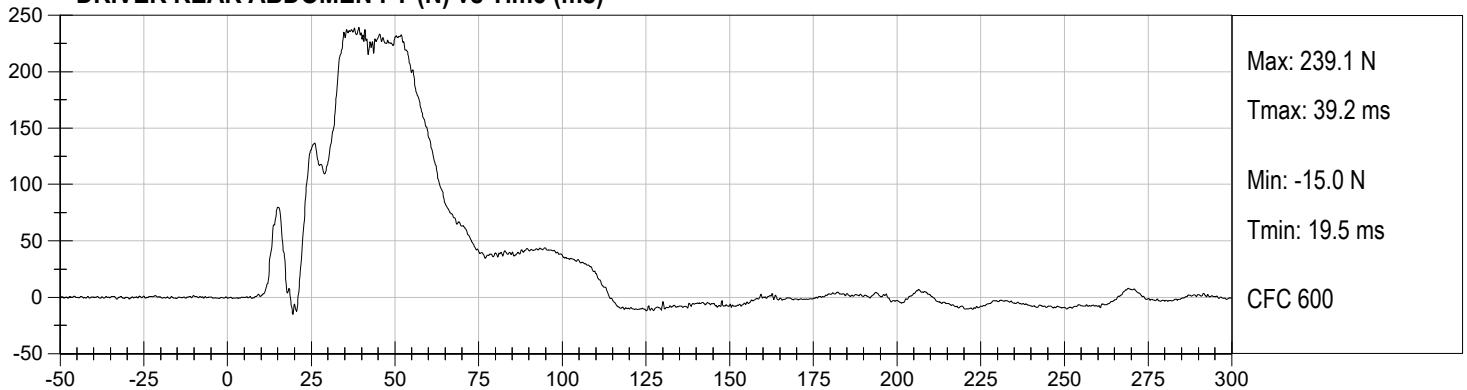
DRIVER FRONT ABDOMEN FY (N) vs Time (ms)



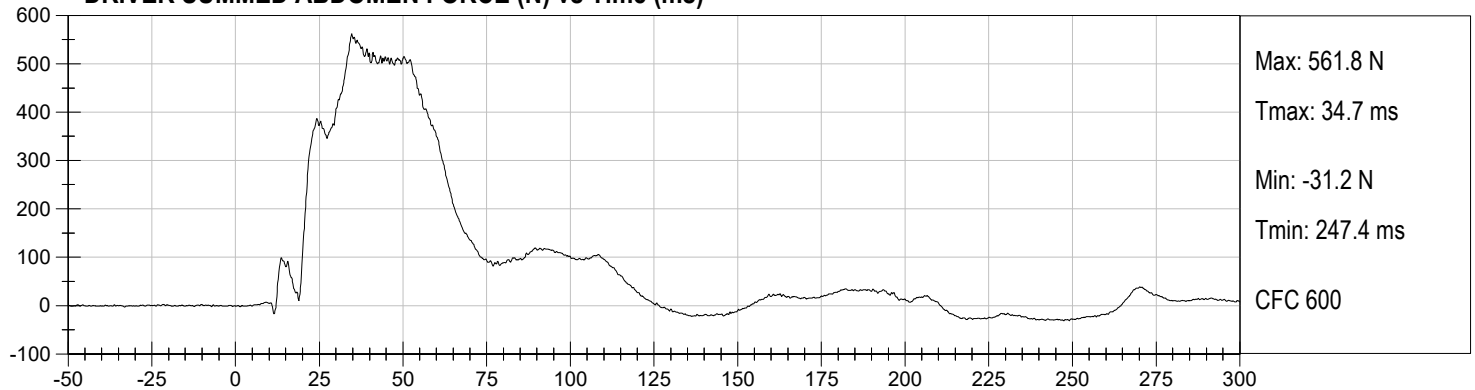
DRIVER MID ABDOMEN FY (N) vs Time (ms)



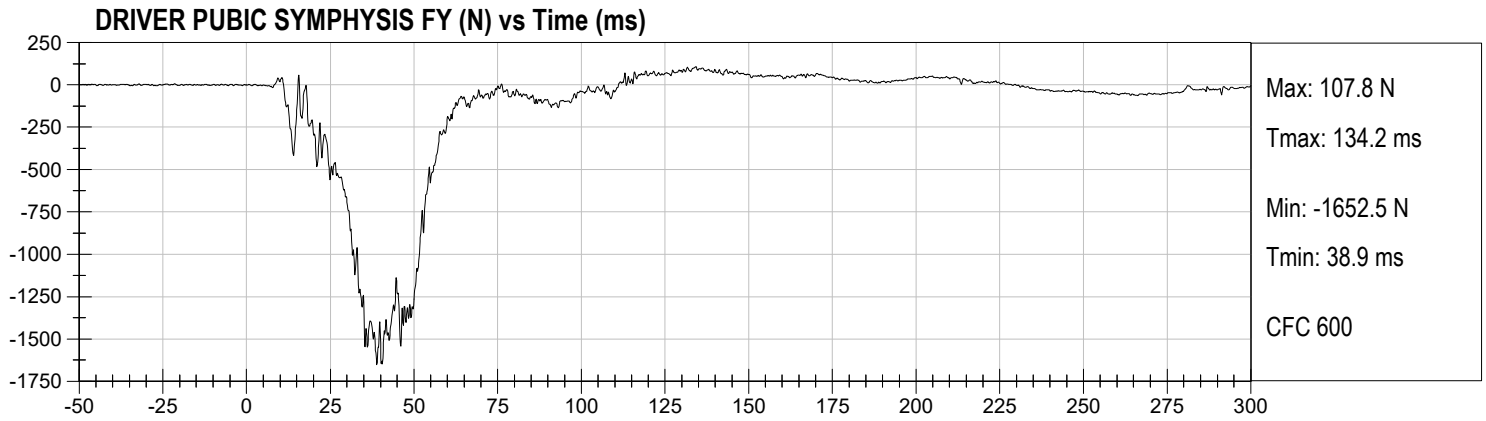
DRIVER REAR ABDOMEN FY (N) vs Time (ms)



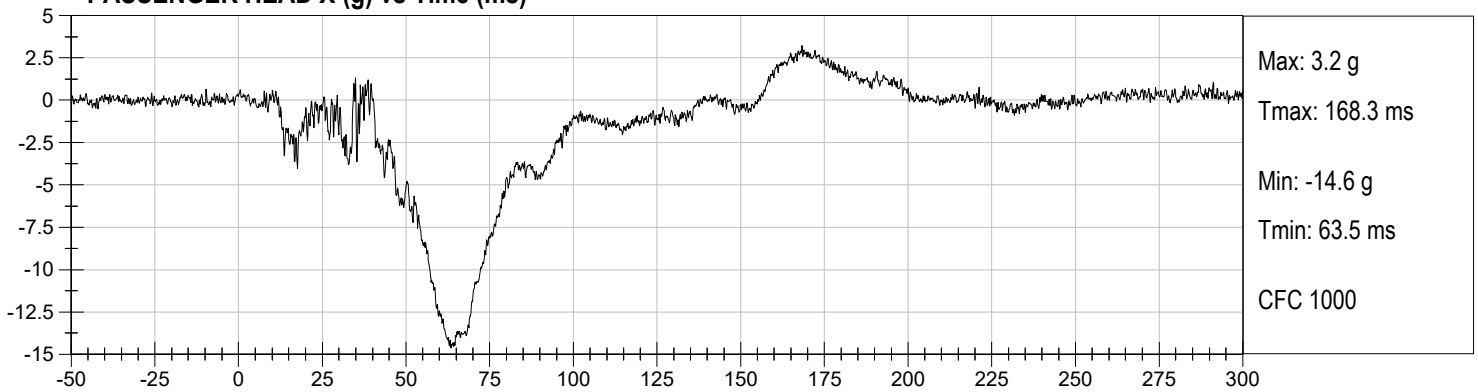
DRIVER SUMMED ABDOMEN FORCE (N) vs Time (ms)



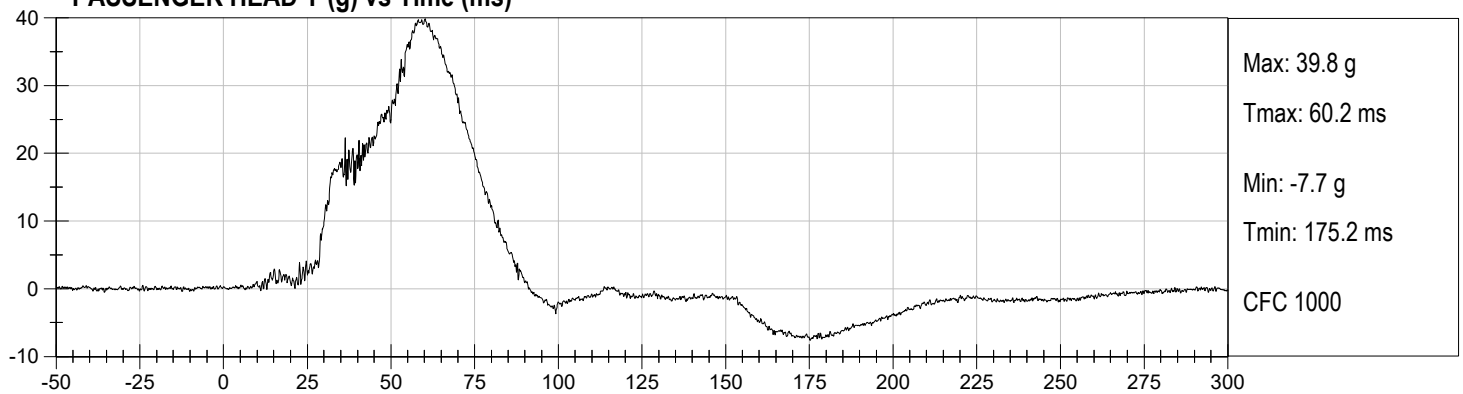




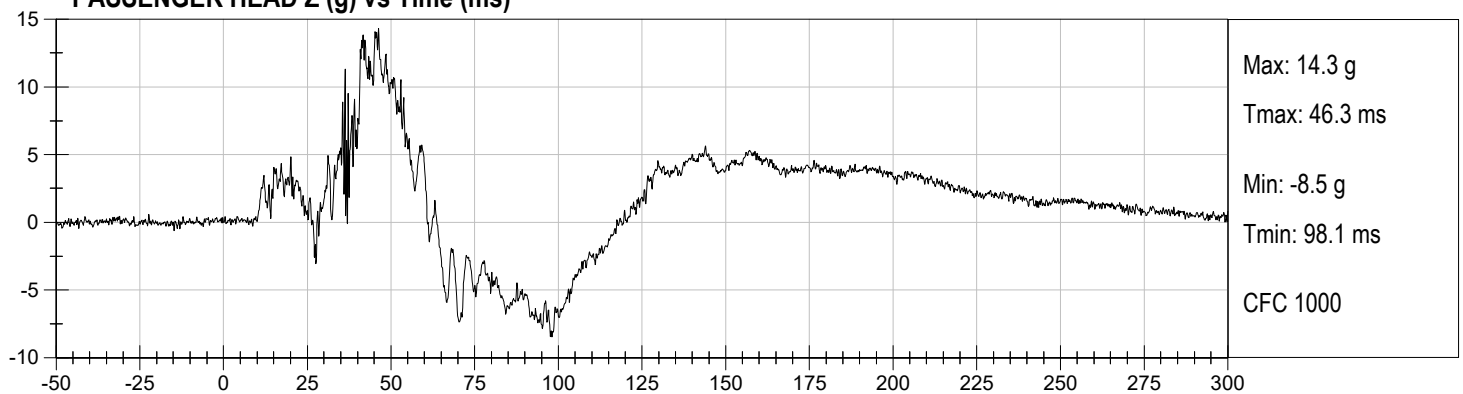
PASSENGER HEAD X (g) vs Time (ms)



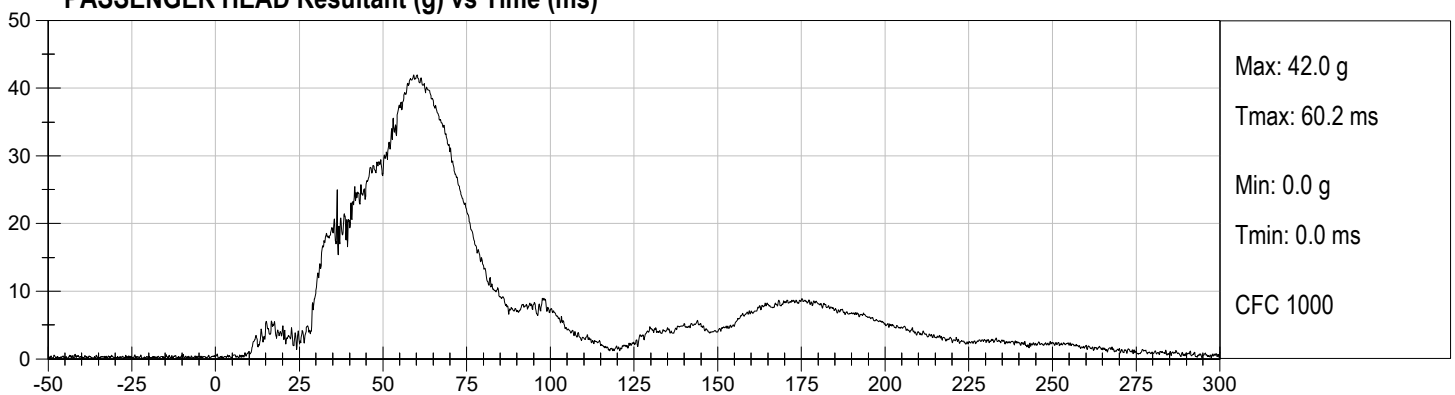
PASSENGER HEAD Y (g) vs Time (ms)



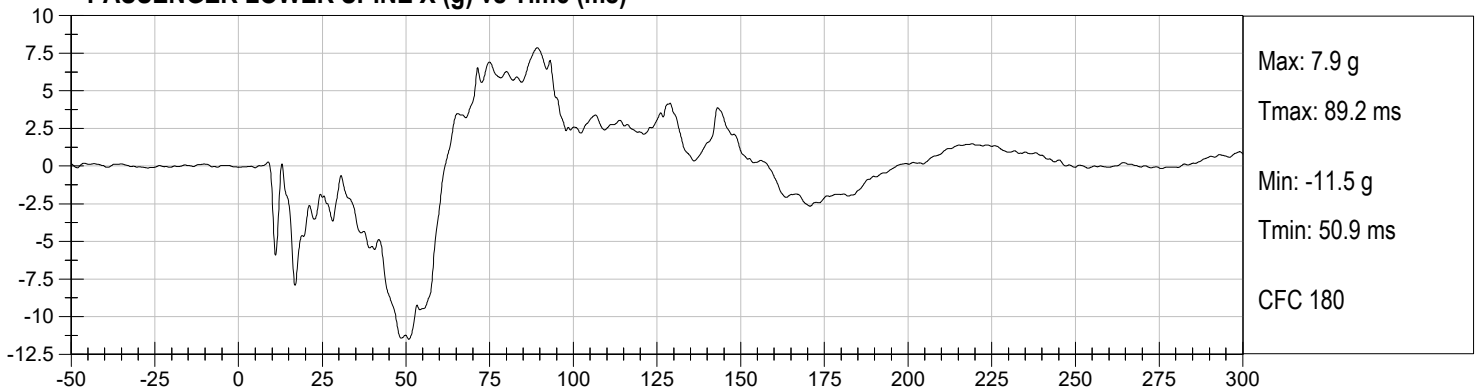
PASSENGER HEAD Z (g) vs Time (ms)



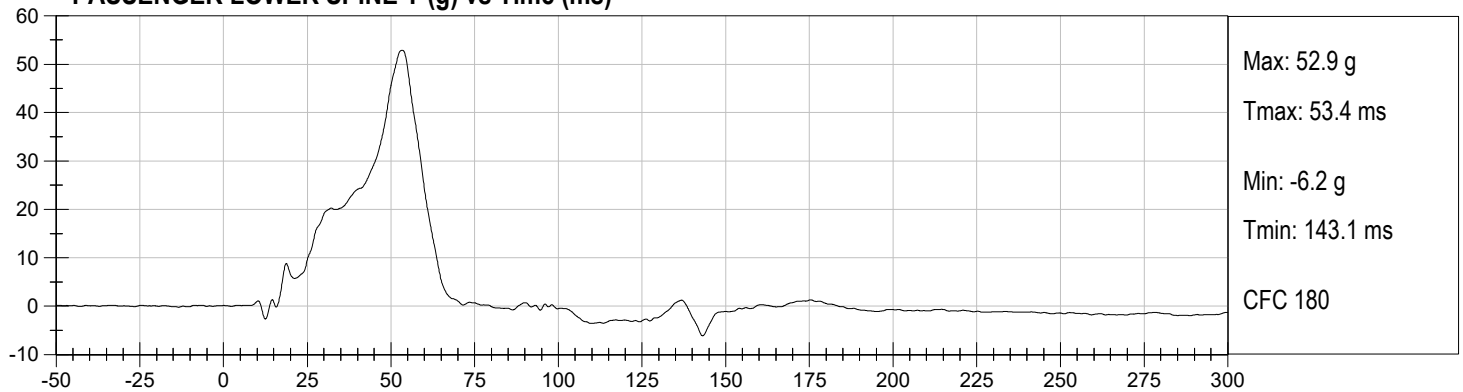
PASSENGER HEAD Resultant (g) vs Time (ms)



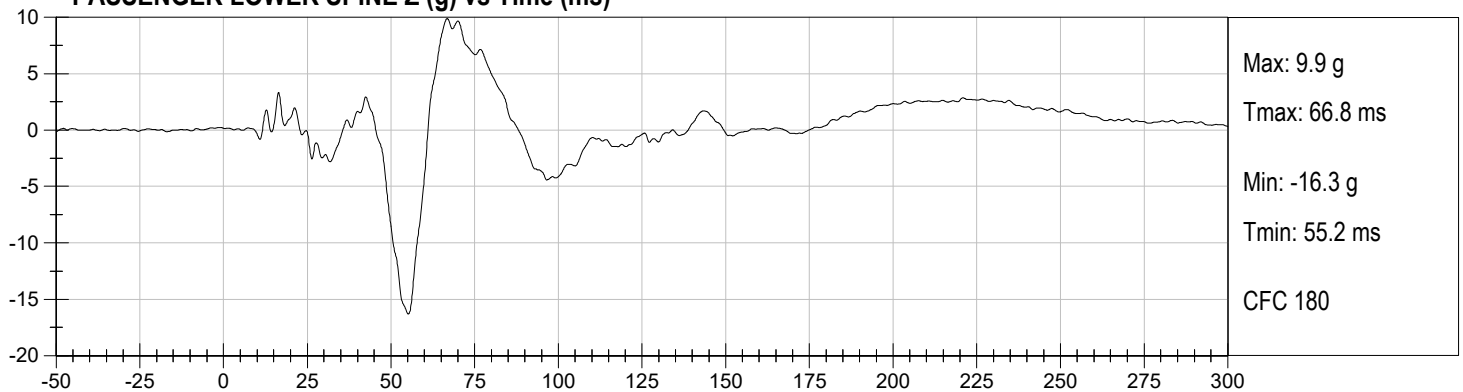
PASSENGER LOWER SPINE X (g) vs Time (ms)



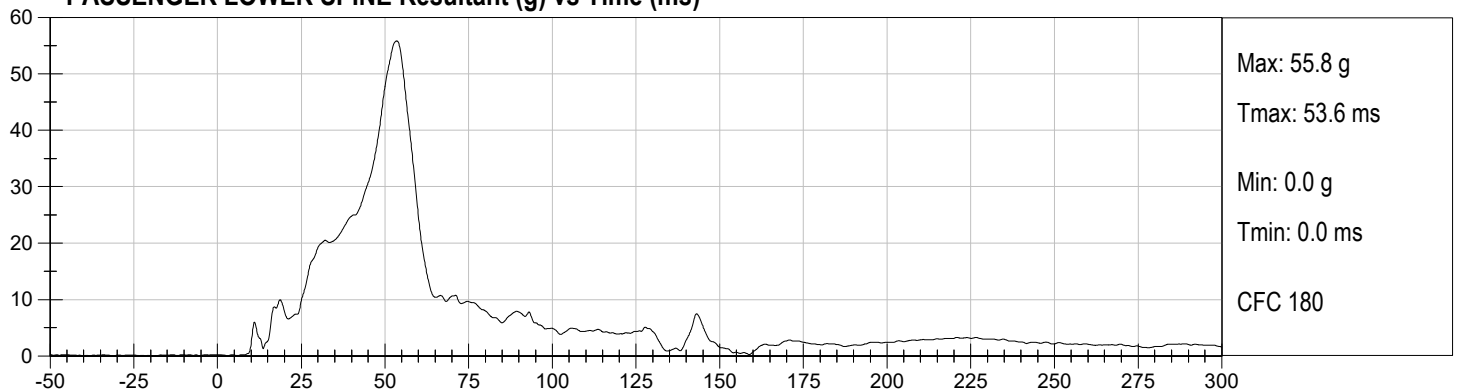
PASSENGER LOWER SPINE Y (g) vs Time (ms)



PASSENGER LOWER SPINE Z (g) vs Time (ms)

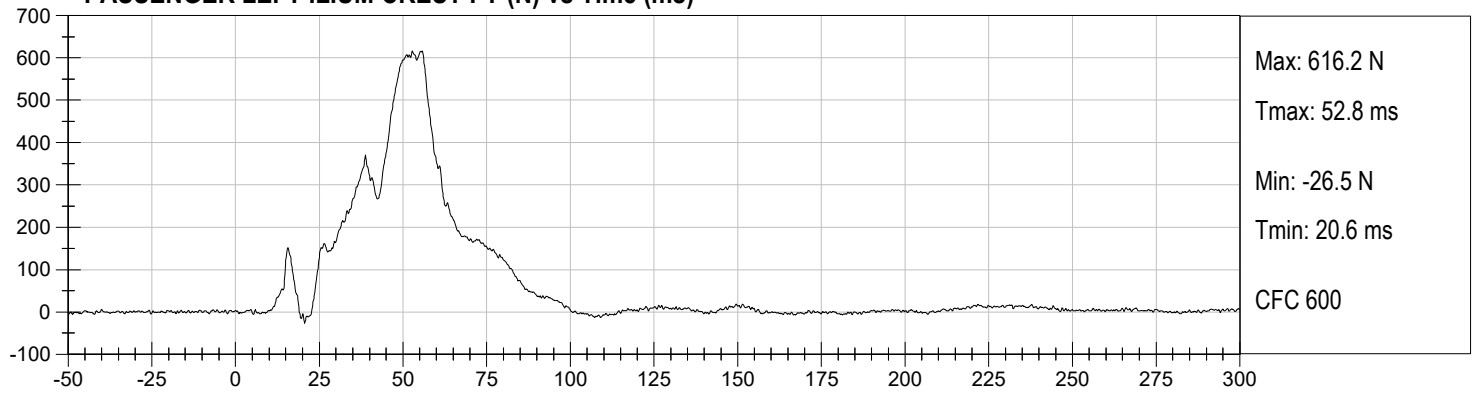


PASSENGER LOWER SPINE Resultant (g) vs Time (ms)

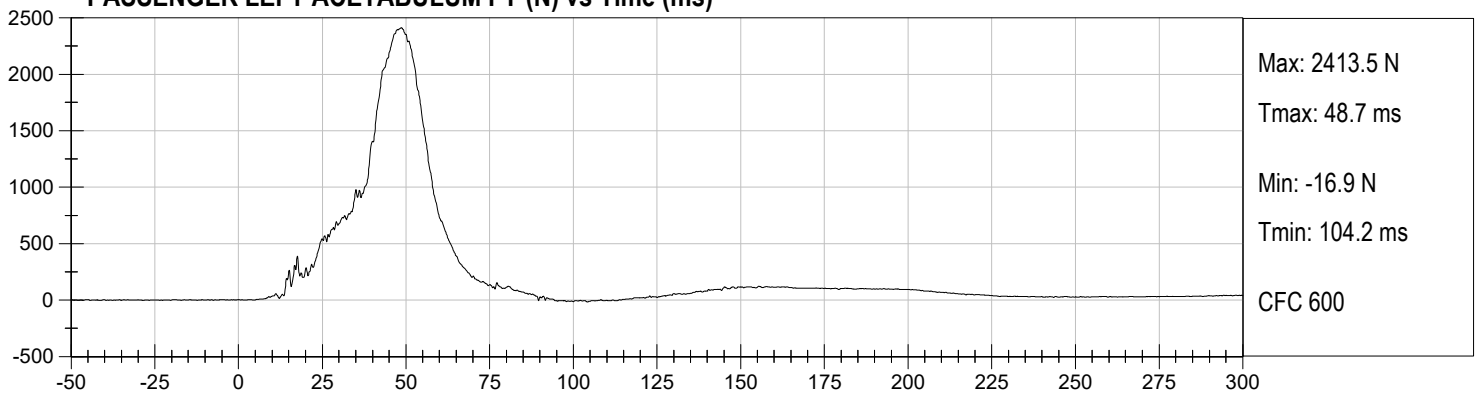




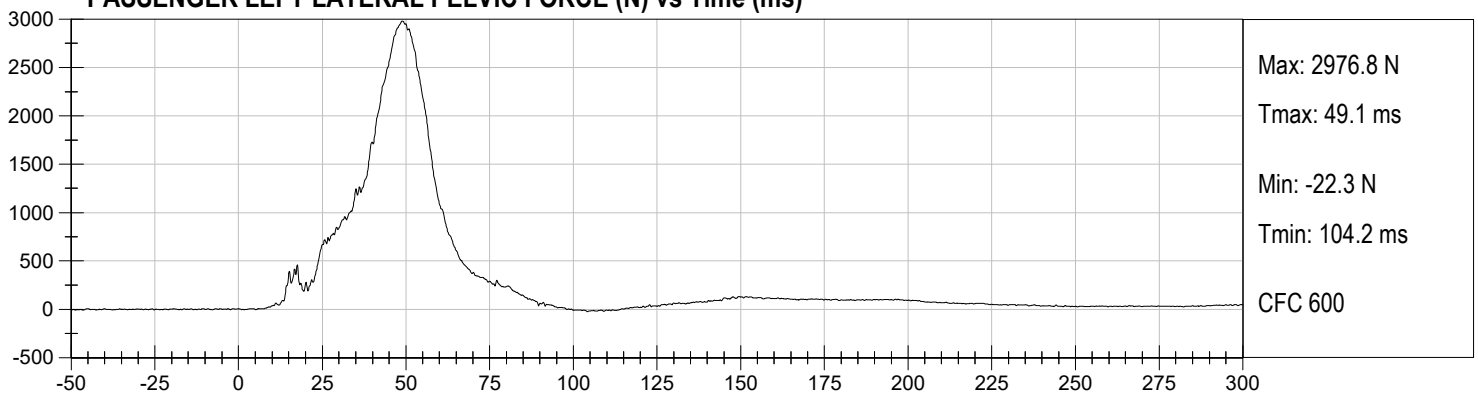
PASSENGER LEFT ILIUM CREST FY (N) vs Time (ms)



PASSENGER LEFT ACETABULUM FY (N) vs Time (ms)



PASSENGER LEFT LATERAL PELVIC FORCE (N) vs Time (ms)



**APPENDIX C**  
**DUMMY QUALIFICATION AND PERFORMANCE VERIFICATION**

## **QUALIFICATION TEST RESULTS**

### **PRE-TEST**

**EUROSID 2 (ES-2RE) MALE – DRIVER ATD**



**ES-2re External Measurements**  
**SN: F032**

| No. | Name                                           | Spec. (mm) | Result | Pass/Fail |
|-----|------------------------------------------------|------------|--------|-----------|
| 1   | Sitting Height                                 | 900 - 918  | 915    | Pass      |
| 2   | Seat to Shoulder Joint                         | 558 - 572  | 568    | Pass      |
| 3   | Seat to Lower Face of Thoracic Spine Box       | 346 - 356  | 355    | Pass      |
| 4   | Seat to Hip Joint (center of bolt)             | 97 - 103   | 98     | Pass      |
| 5   | Sole to Seat, Sitting                          | 333 - 451  | 440    | Pass      |
| 6   | Head Width                                     | 152 - 158  | 157    | Pass      |
| 7   | Shoulder/Arm Width                             | 461 - 479  | 464    | Pass      |
| 8   | Thorax Width                                   | 322 - 332  | 323    | Pass      |
| 9   | Abdomen Width                                  | 273 - 287  | 281    | Pass      |
| 10  | Pelvis Lap Width                               | 359 - 373  | 370    | Pass      |
| 11  | Head Depth                                     | 196 - 206  | 203    | Pass      |
| 12  | Thorax Depth                                   | 262 - 272  | 264    | Pass      |
| 13  | Abdomen Depth                                  | 194 - 204  | 196    | Pass      |
| 14  | Pelvis Depth                                   | 235 - 245  | 236    | Pass      |
| 15  | Back of Buttocks to Hip Joint (center of bolt) | 150 - 160  | 151    | Pass      |
| 16  | Back of Buttocks to Front Knee                 | 597 - 615  | 607    | Pass      |

## MGA RESEARCH CORPORATION

## HEAD DROP TEST

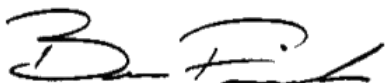
## ES-2re DUMMY

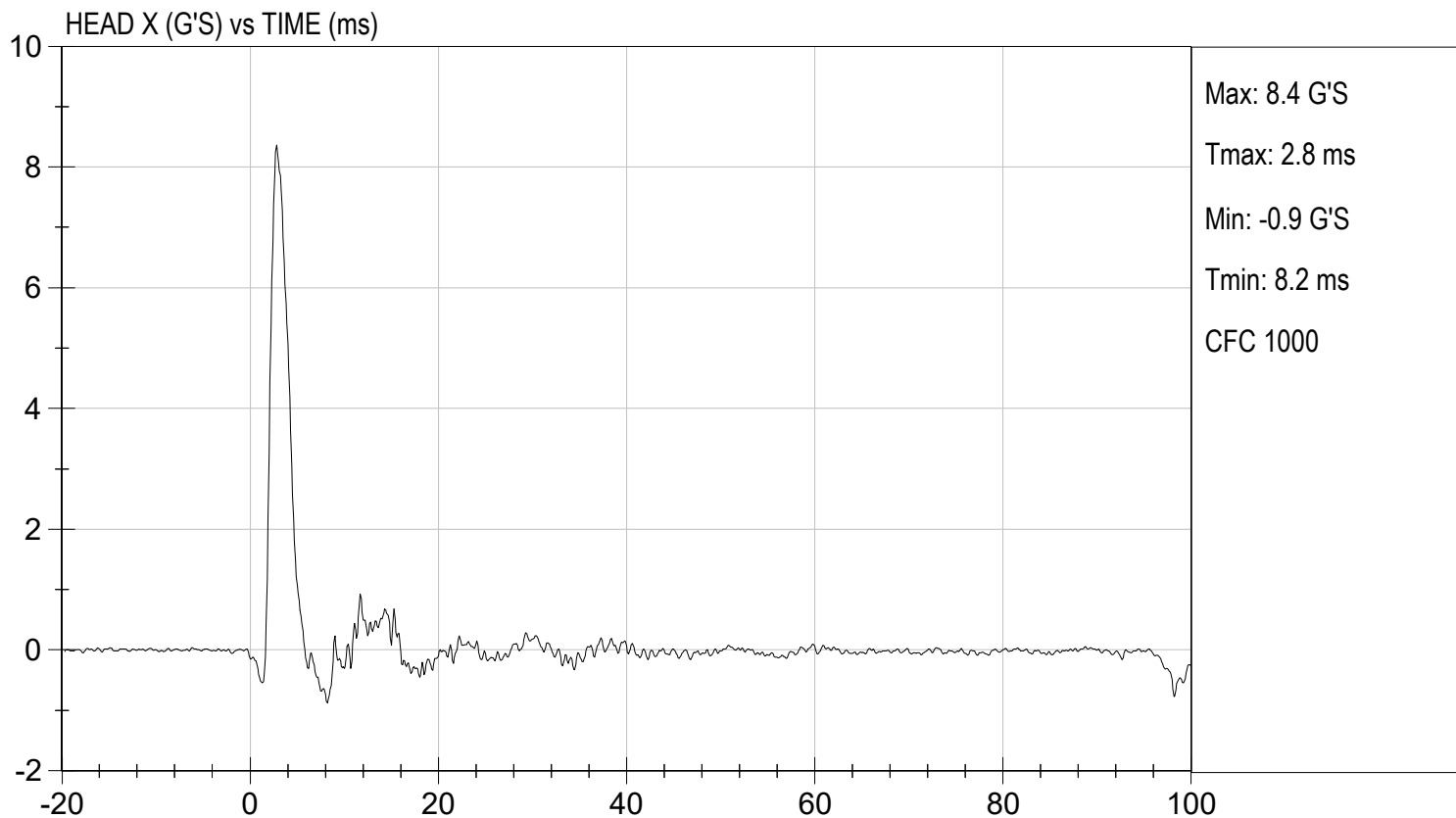
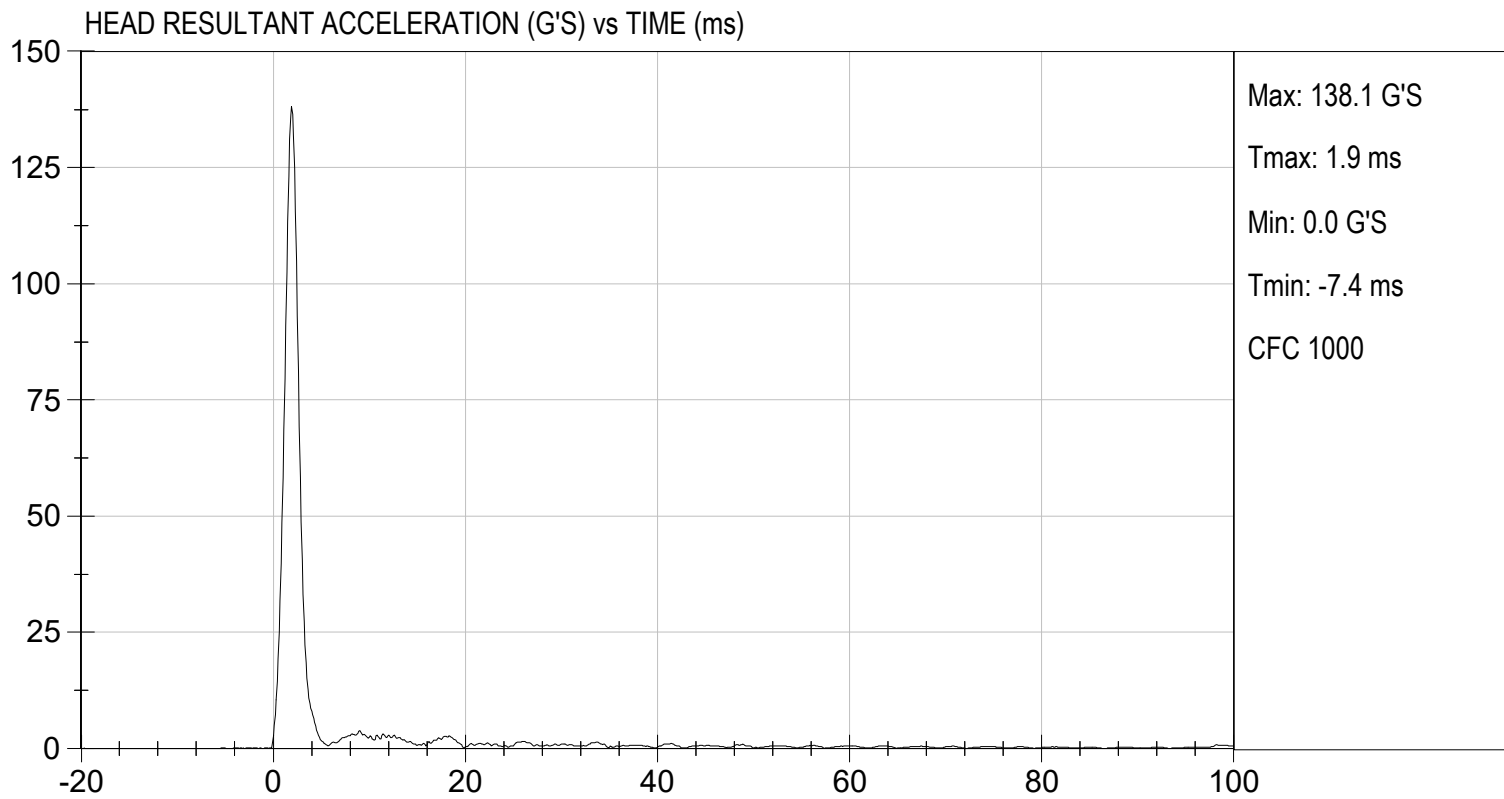
ATD Serial No: F032Test ID: D242891

| Tested Parameter               | Units | Specification      | Result | Pass/Fail |
|--------------------------------|-------|--------------------|--------|-----------|
| Laboratory Temperature         | deg C | 18.9 to 25.6       | 21.2   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70           | 39     | Pass      |
| Peak Resultant Acceleration    | G's   | 125 to 155         | 138    | Pass      |
| Peak Longitudinal Acceleration | G's   | <= +/- 15.0        | 8.4    | Pass      |
| Unimodal                       | N/A   | Yes                | Yes    | Pass      |
| Oscillations                   | N/A   | within 15% of peak | Yes    | Pass      |
| Overall Test Results           |       |                    |        | Pass      |

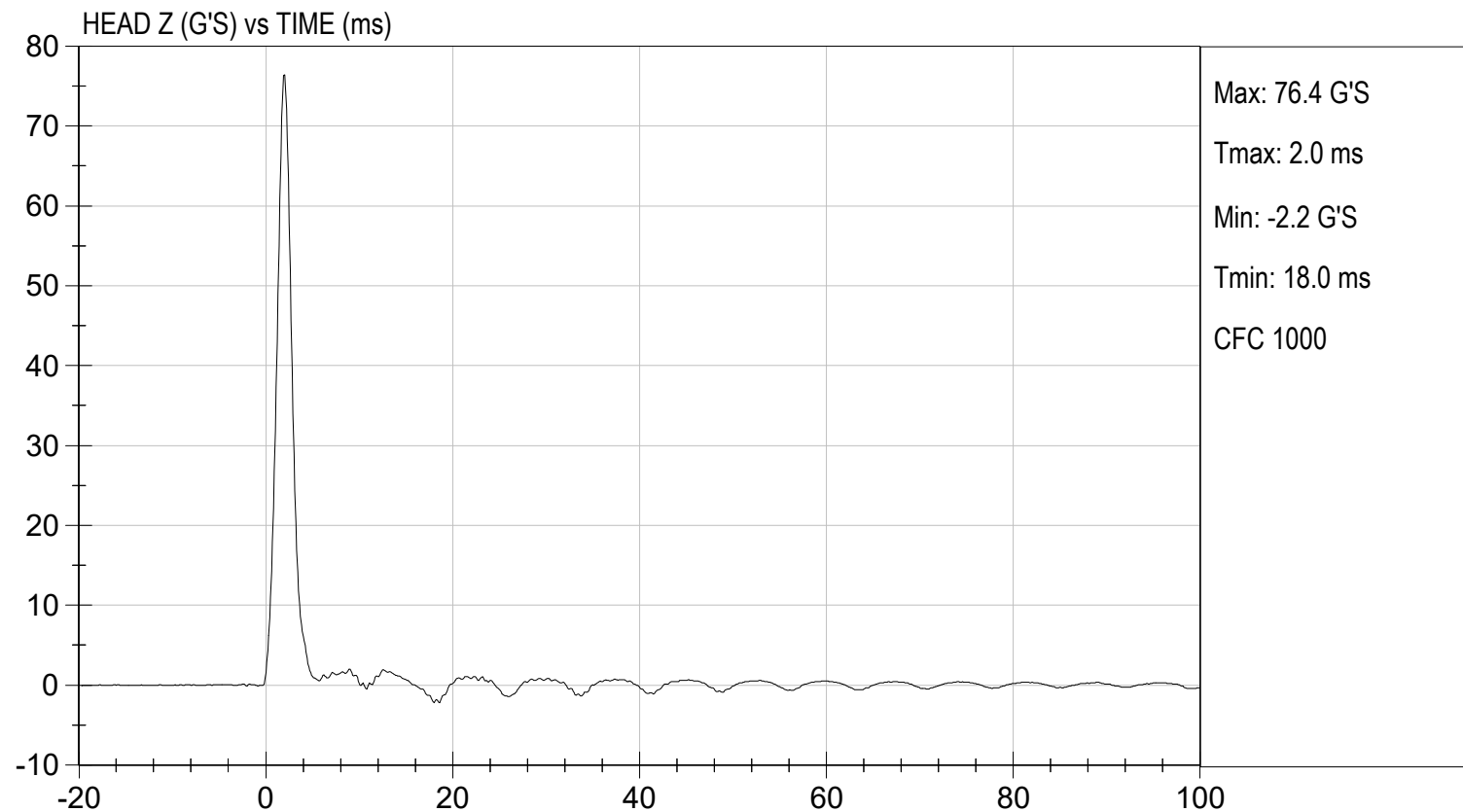
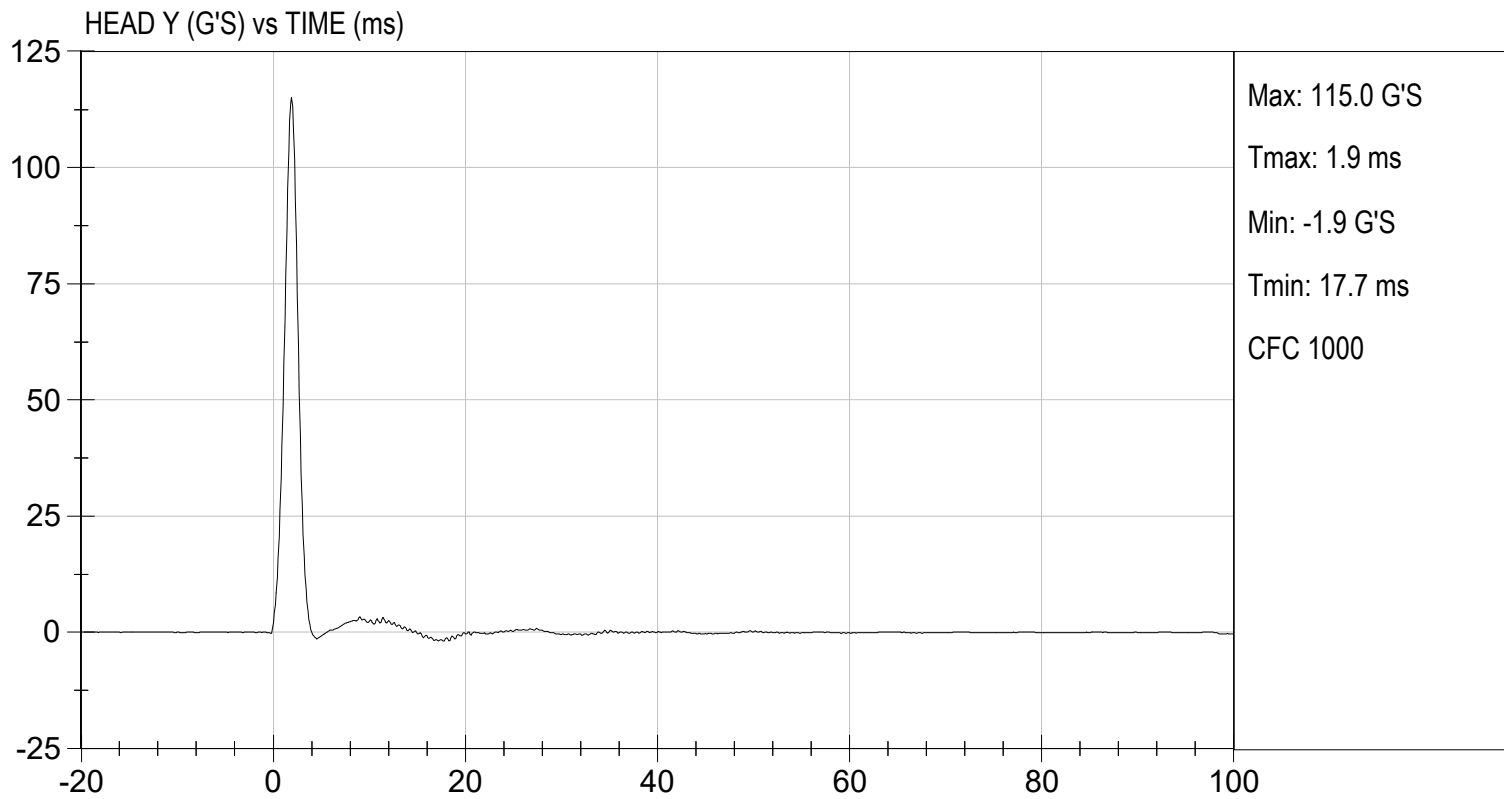
  
Laboratory Technician

11/07/2024  
Test Date

  
Approved By







**MGA RESEARCH CORPORATION**  
**NECK PENDULUM TEST**  
**ES-2re DUMMY**

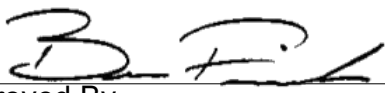
**ATD Serial No:** F032

**Test I.D:** D242892

| Tested Parameter                     |       | Units | Specification   | Result | Pass/Fail |
|--------------------------------------|-------|-------|-----------------|--------|-----------|
| Laboratory Temperature               |       | deg C | 20.6 to 22.2    | 21.4   | Pass      |
| Laboratory Relative Humidity         |       | %     | 10 to 70        | 40     | Pass      |
| Pendulum Speed                       |       | m/s   | 3.30 to 3.50    | 3.43   | Pass      |
| Pendulum Velocity                    | 1 ms  | m/s   | -0.05 to 0.00   | -0.02  | Pass      |
|                                      | 3 ms  | m/s   | -0.25 to -0.375 | -0.34  | Pass      |
|                                      | 14 ms | m/s   | -3.20 to -3.70  | -3.54  | Pass      |
|                                      | 17 ms | m/s   | >= -3.70        | -3.64  | Pass      |
| Maximum Flexion Angle                |       | deg   | 49.0 to 59.0    | 51.6   | Pass      |
| Time of Maximum Flexion Angle        |       | ms    | 54.0 to 66.0    | 60.3   | Pass      |
| Head Rotation Decay Time to 0 Degree |       | ms    | 53.0 to 88.0    | 59.6   | Pass      |
| Overall Results                      |       |       |                 | Pass   |           |

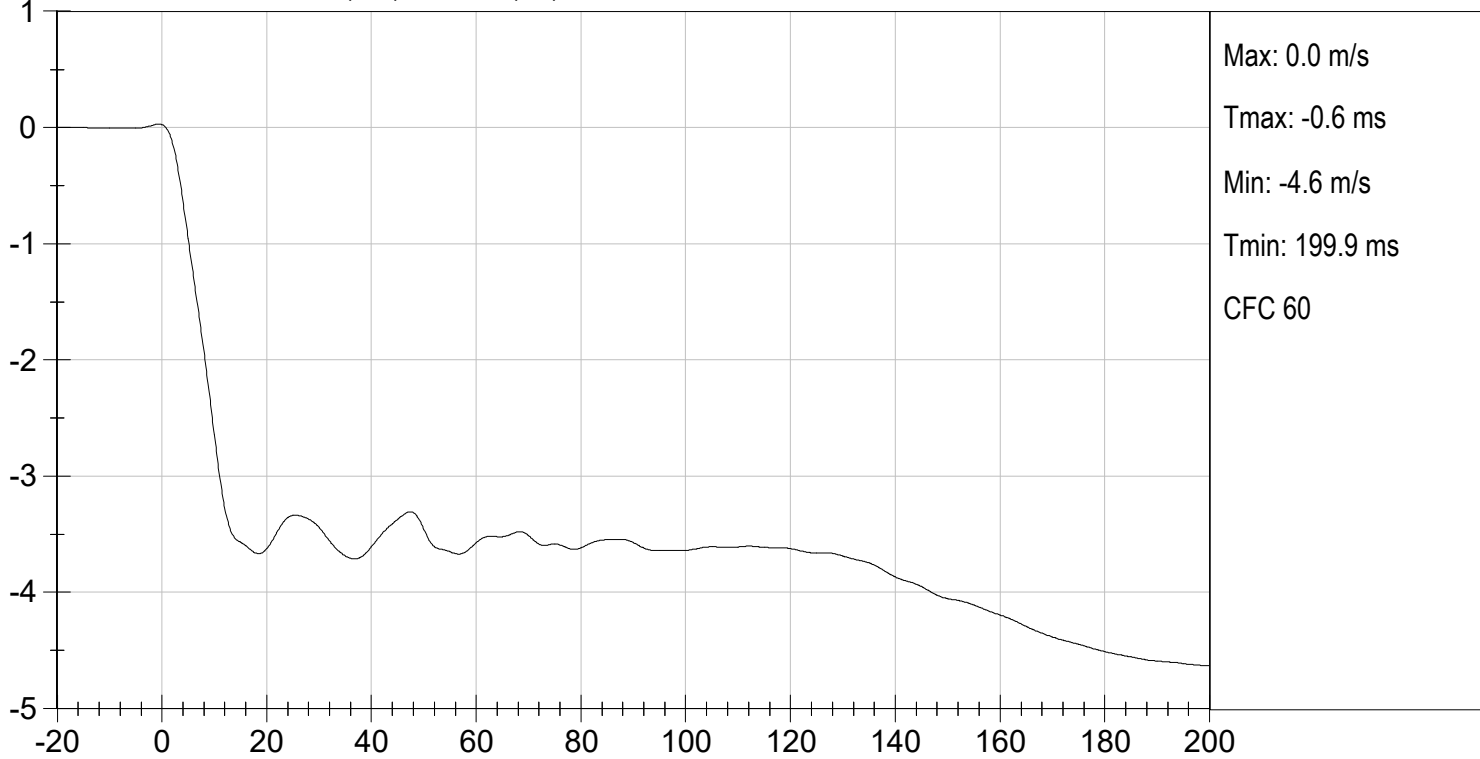
  
 Laboratory Technician

11/07/2024  
 Test Date

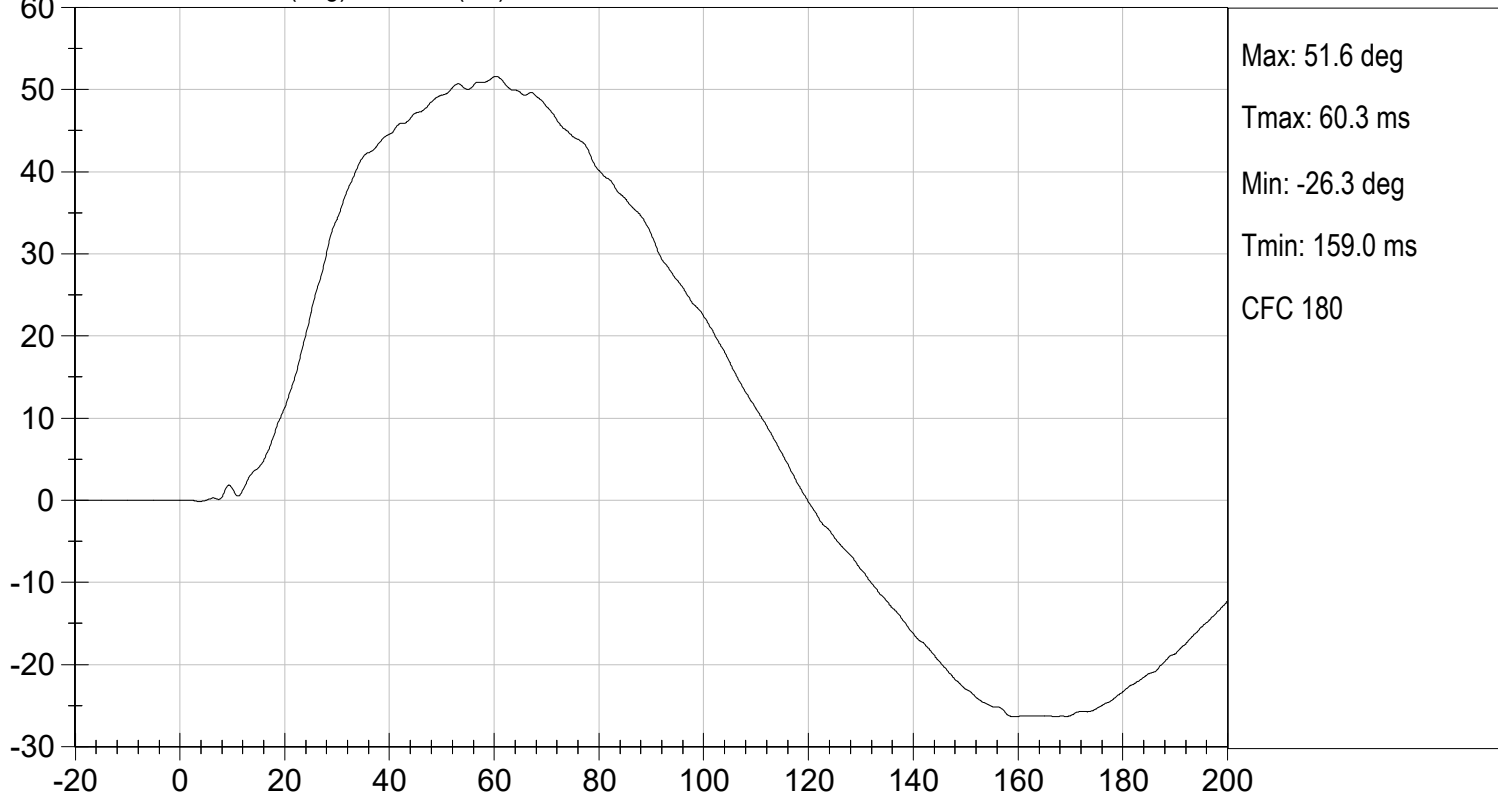
  
 Approved By



PENDULUM VELOCITY (m/s) vs TIME (ms)



FLEXION ANGLE (deg) vs TIME (ms)

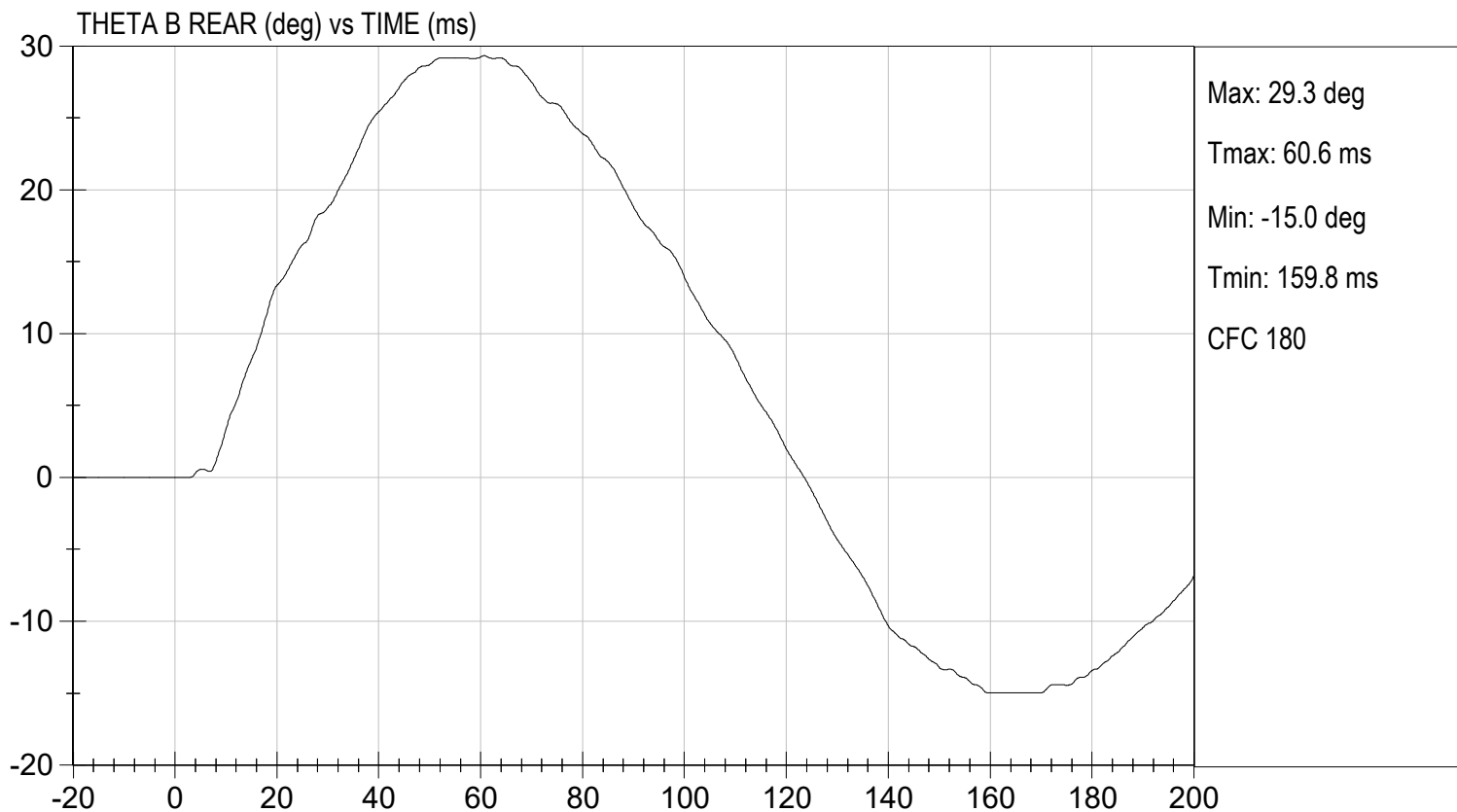
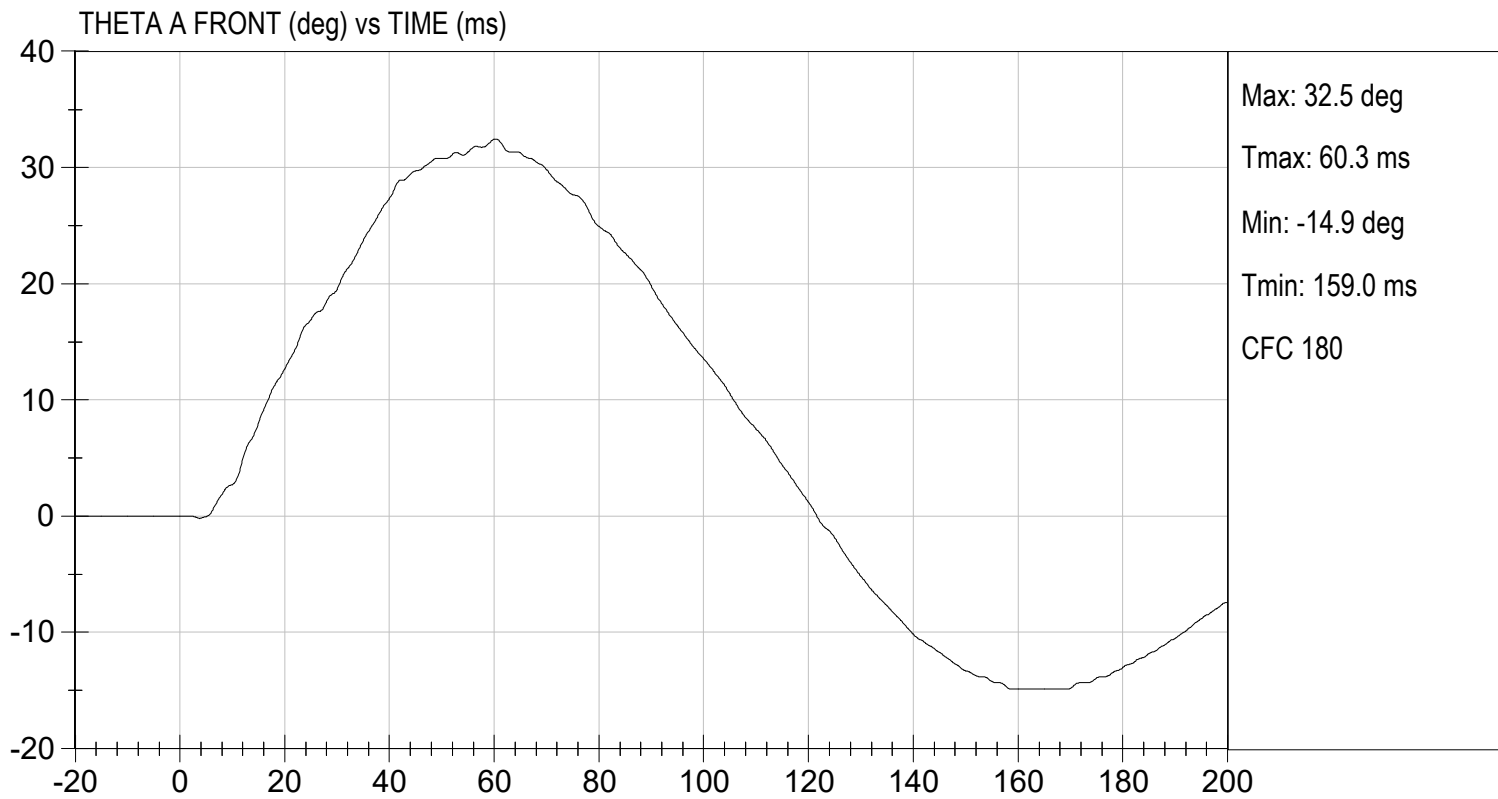






TEST DESC: NECK BENDING  
VELOCITY: 11.26 ft/s, 3.43 m/s

TEST DATE: 11/07/2024  
TEST #: D242892





TEST DESC: NECK BENDING  
VELOCITY: 11.26 ft/s, 3.43 m/s

TEST DATE: 11/07/2024  
TEST #: D242892



**MGA RESEARCH CORPORATION**

**SHOULDER IMPACT TEST**

**ES-2re DUMMY**

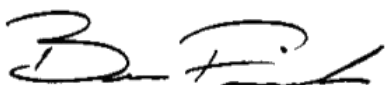
**ATD Serial No:** F032

**Test I.D:** D242893

| Tested Parameter             | Units | Specification | Result | Pass/Fail |
|------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.2   | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 40     | Pass      |
| Pendulum Speed               | m/s   | 4.20 to 4.40  | 4.2    | Pass      |
| Peak Impactor Acceleration   | G's   | 7.5 to 10.5   | 8.7    | Pass      |
| Overall Test Results         |       |               |        | Pass      |

  
Laboratory Technician

11/07/2024  
Test Date

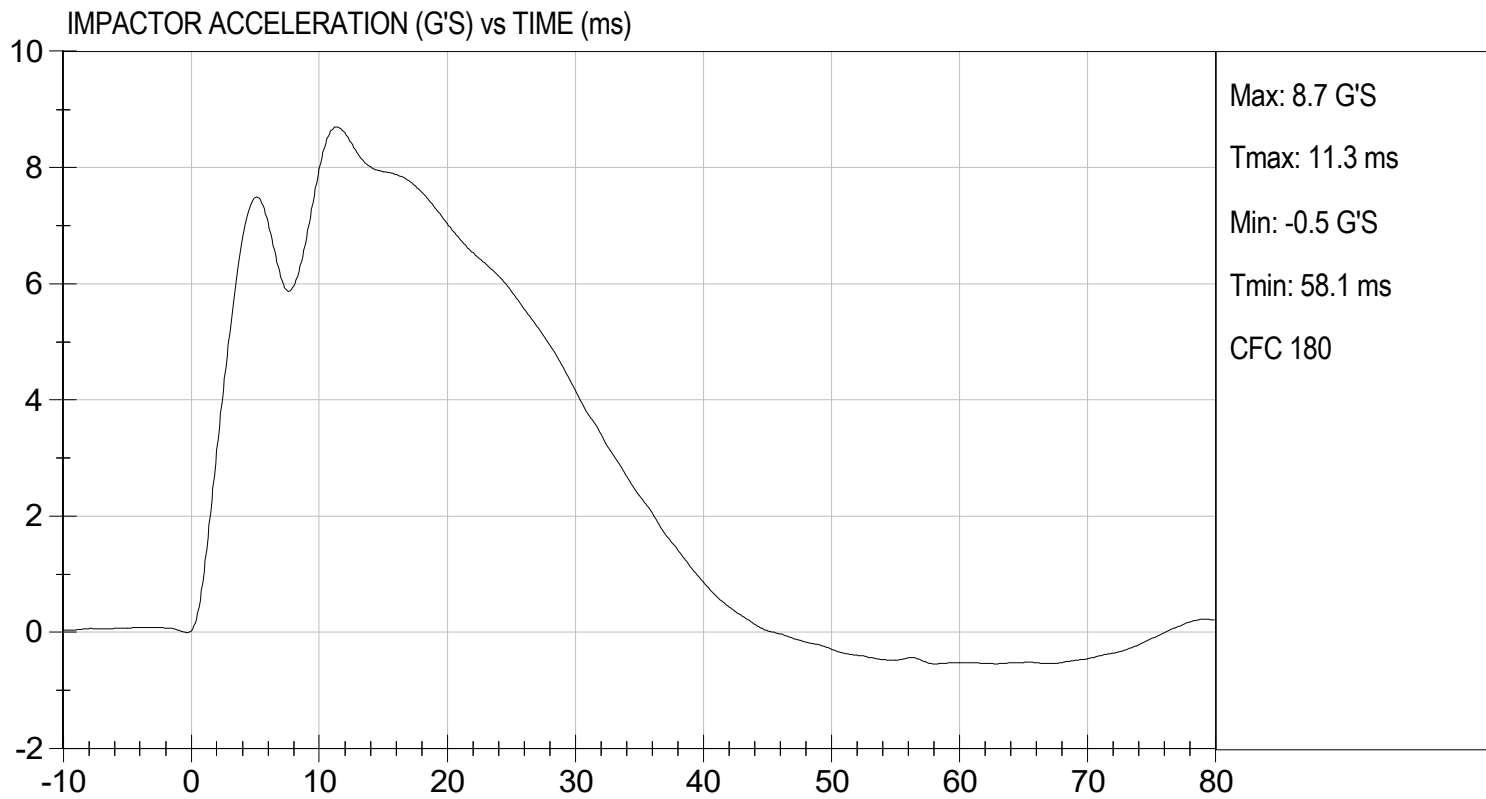
  
Approved By





TEST DESC: SHOULDER IMPACT  
VELOCITY: 13.77 ft/s, 4.2 m/s

TEST DATE: 11/07/2024  
TEST #: D242893



**MGA RESEARCH CORPORATION**

**UPPER RIB TEST**

**ES-2re DUMMY**

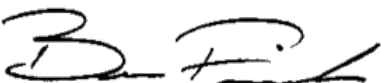
**ATD Serial No:** F032

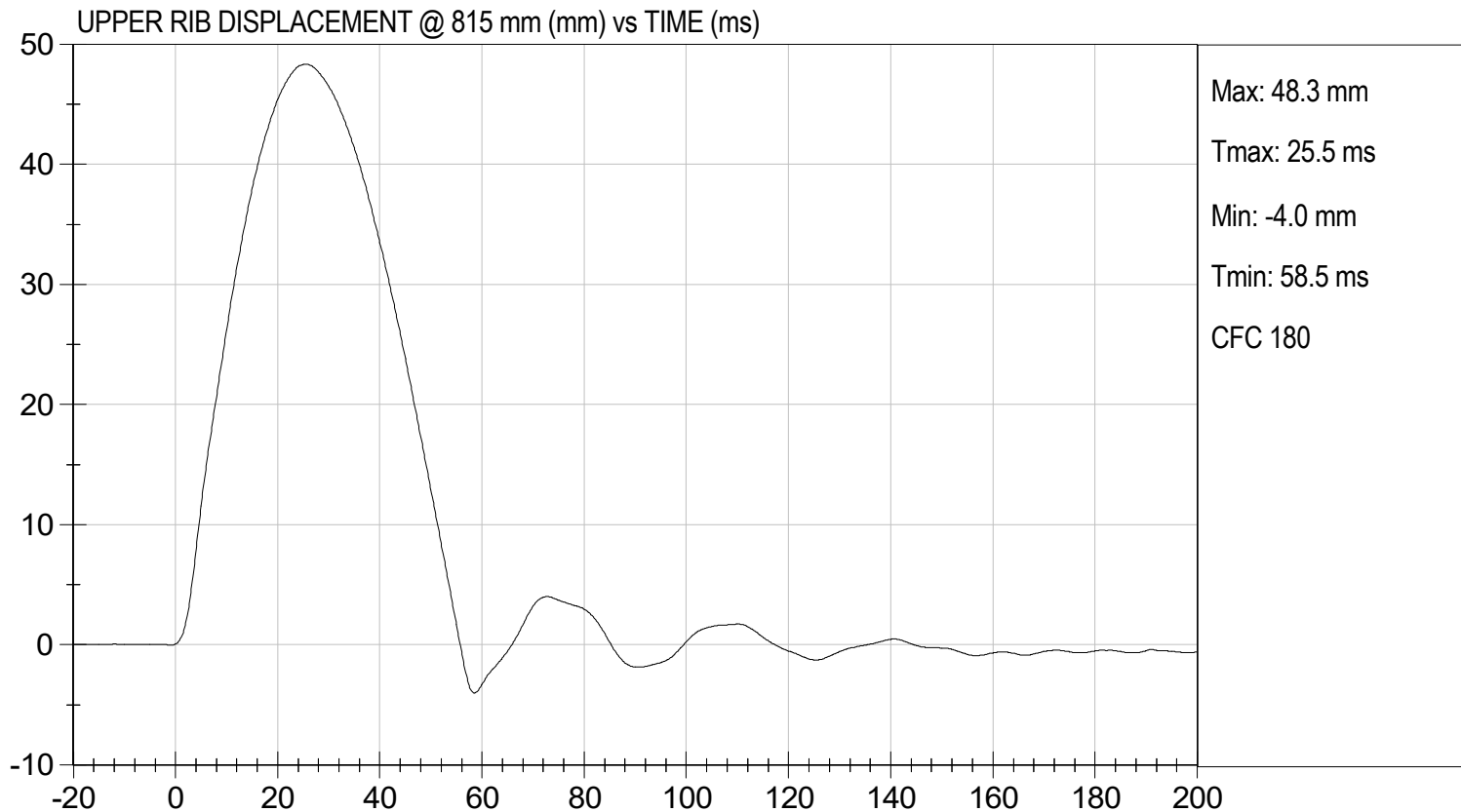
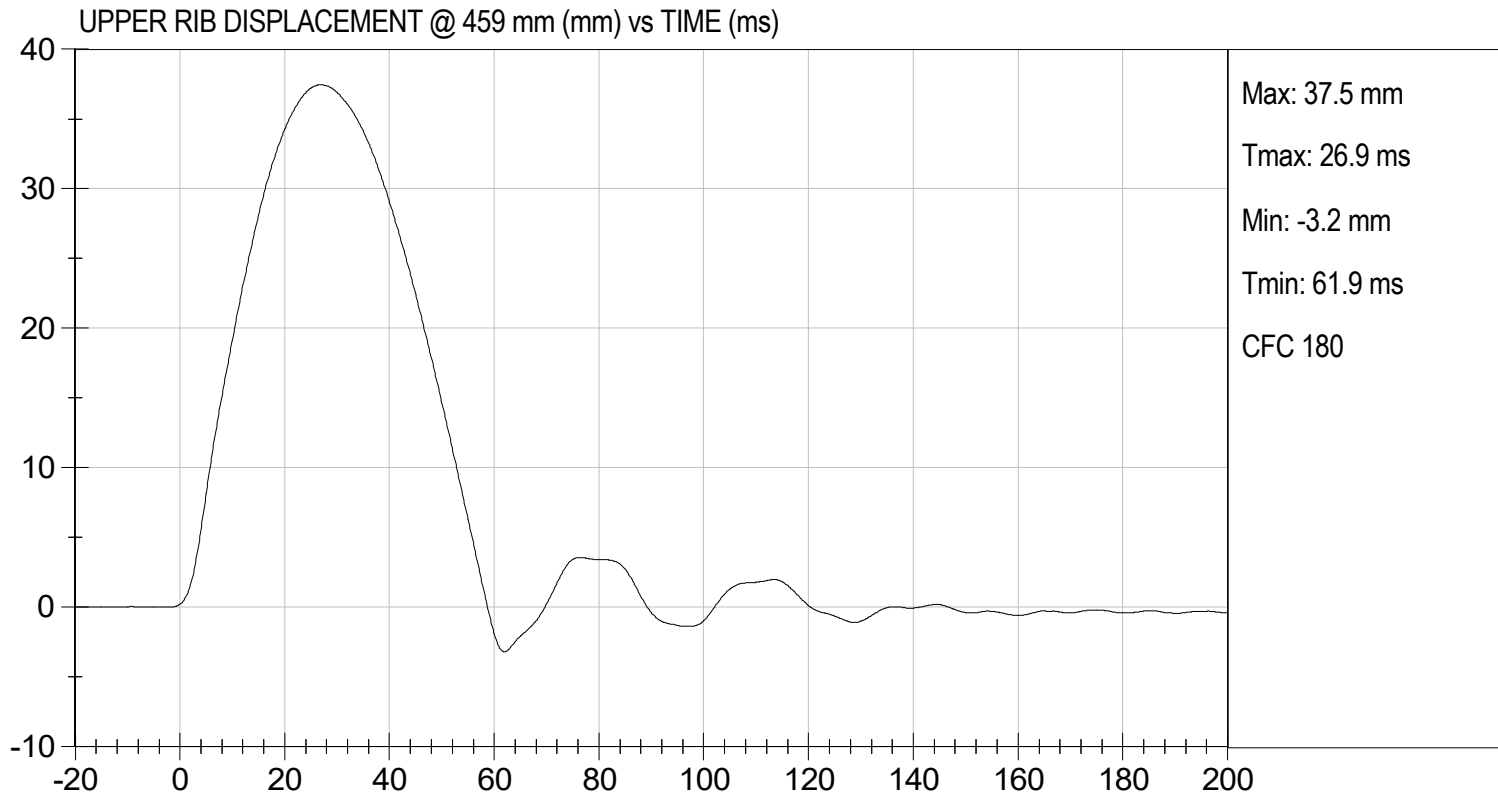
**Test I.D:** D242894

| Tested Parameter             | Units | Specification | Result | Pass/Fail |
|------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.3   | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 40     | Pass      |
| Displacement at 459 mm       | mm    | 36.0 to 40.0  | 37.5   | Pass      |
| Displacement at 815 mm       | mm    | 46.0 to 51.0  | 48.3   | Pass      |
| Overall Test Results         |       |               |        | Pass      |

  
Laboratory Technician

11/07/2024  
Test Date

  
Approved By





**MGA RESEARCH CORPORATION**

**MID RIB TEST**

**ES-2re DUMMY**

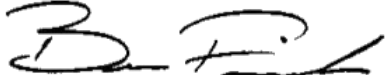
**ATD Serial No:** F032

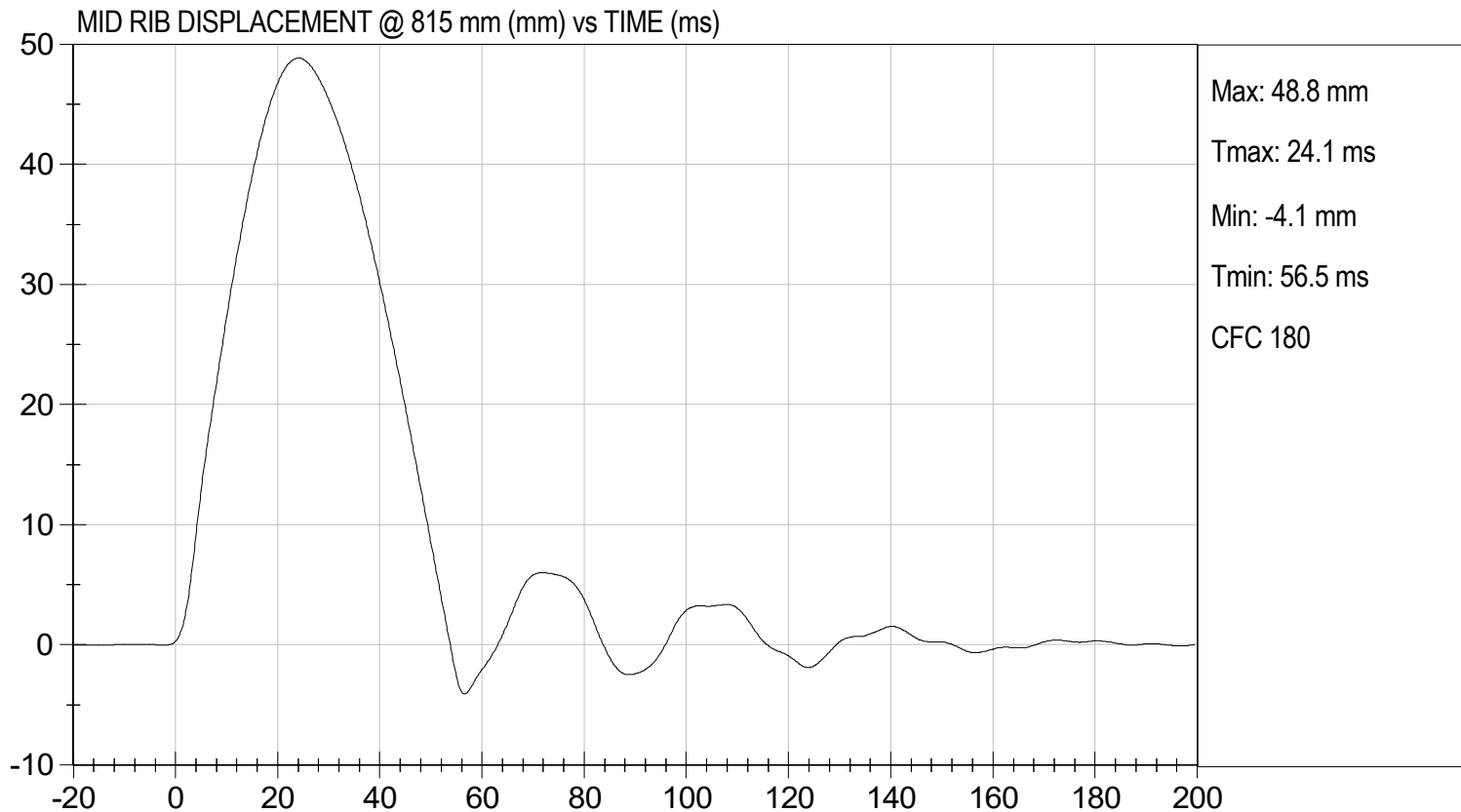
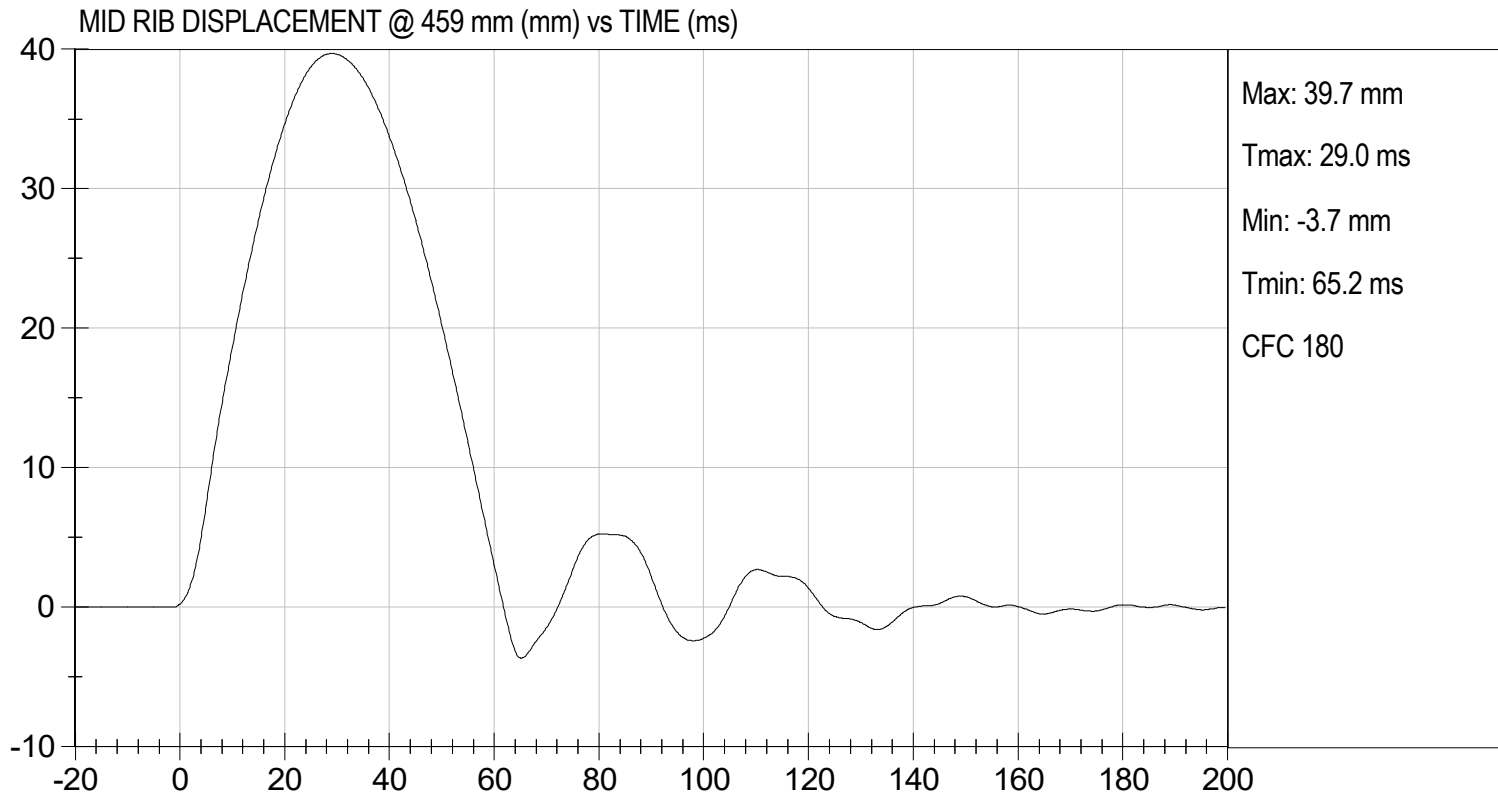
**Test I.D:** D242895

| Tested Parameter             | Units | Specification | Result               | Pass/Fail |
|------------------------------|-------|---------------|----------------------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.3                 | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 40                   | Pass      |
| Displacement at 459 mm       | mm    | 36.0 to 40.0  | 39.7                 | Pass      |
| Displacement at 815 mm       | mm    | 46.0 to 51.0  | 48.8                 | Pass      |
|                              |       |               | Overall Test Results | Pass      |

  
Laboratory Technician

11/07/2024  
Test Date

  
Approved By



**MGA RESEARCH CORPORATION**

**LOWER RIB TEST**

**ES-2re DUMMY**

**ATD Serial No:** F032

**Test I.D:** D242896

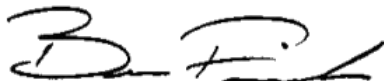
| Tested Parameter             | Units | Specification | Result | Pass/Fail |
|------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.3   | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 40     | Pass      |
| Displacement at 459 mm       | mm    | 36.0 to 40.0  | 38.8   | Pass      |
| Displacement at 815 mm       | mm    | 46.0 to 51.0  | 49.6   | Pass      |
| Overall Test Results         |       |               | Pass   |           |



Laboratory Technician

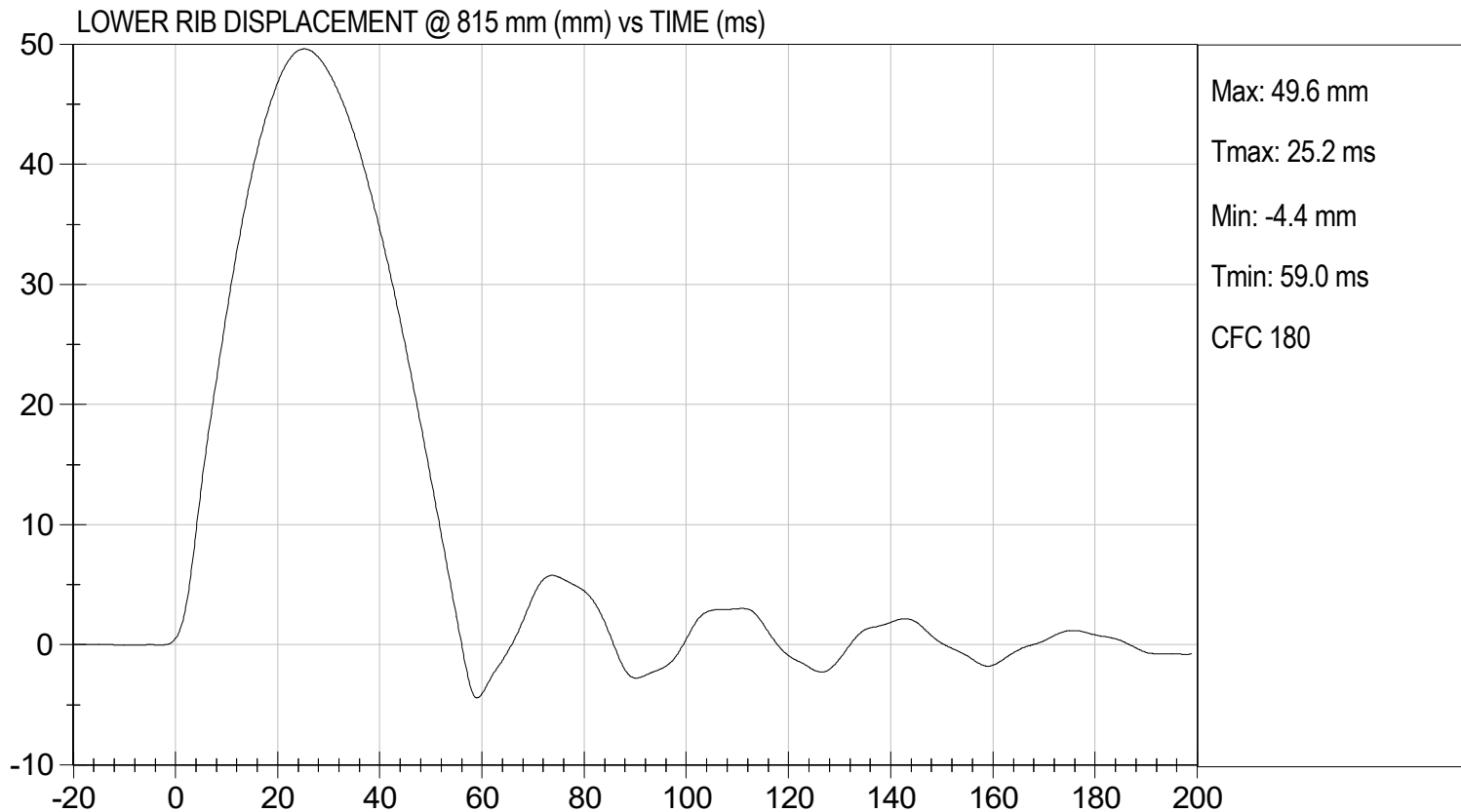
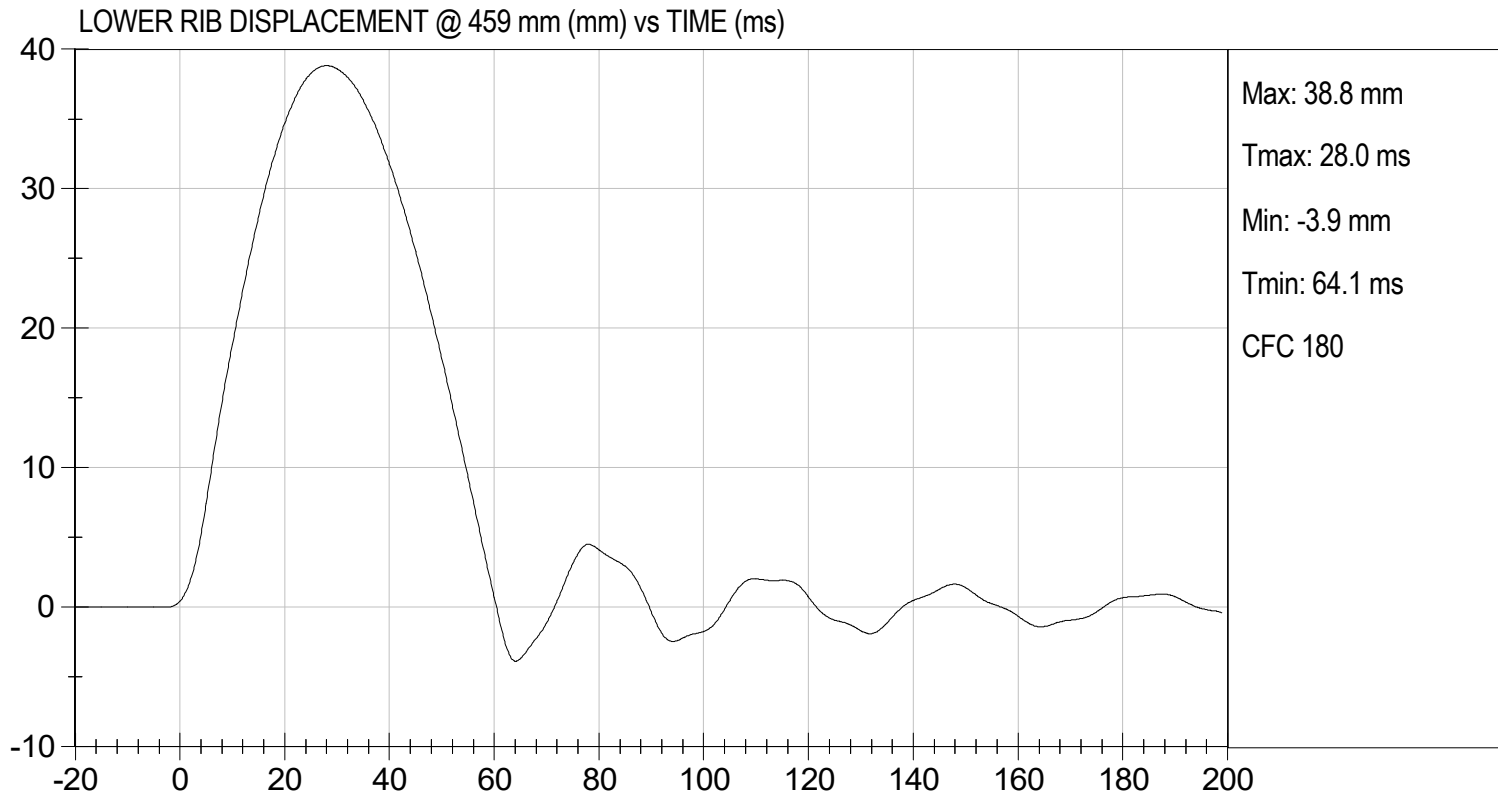
11/07/2024

Test Date



Approved By





**MGA RESEARCH CORPORATION**

**ABDOMEN TEST**

**ES-2re DUMMY**

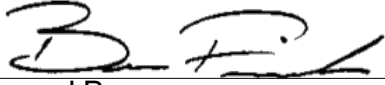
**ATD Serial No:** F032

**Test I.D:** D242897

| Tested Parameter               | Units | Specification | Result | Pass/Fail |
|--------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.3   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 39     | Pass      |
| Probe Speed                    | m/s   | 3.90 to 4.10  | 4.10   | Pass      |
| Maximum Impactor Force         | N     | 4000 to 4800  | 4155   | Pass      |
| Time of Maximum Impactor Force | ms    | 10.6 to 13.0  | 11.5   | Pass      |
| Maximum Total Abdomen Force    | N     | 2200 to 2700  | 2343   | Pass      |
| Time of Maximum Abdomen Force  | ms    | 10.0 to 12.3  | 11.4   | Pass      |
| Overall Test Results           |       |               |        | Pass      |

  
 Laboratory Technician

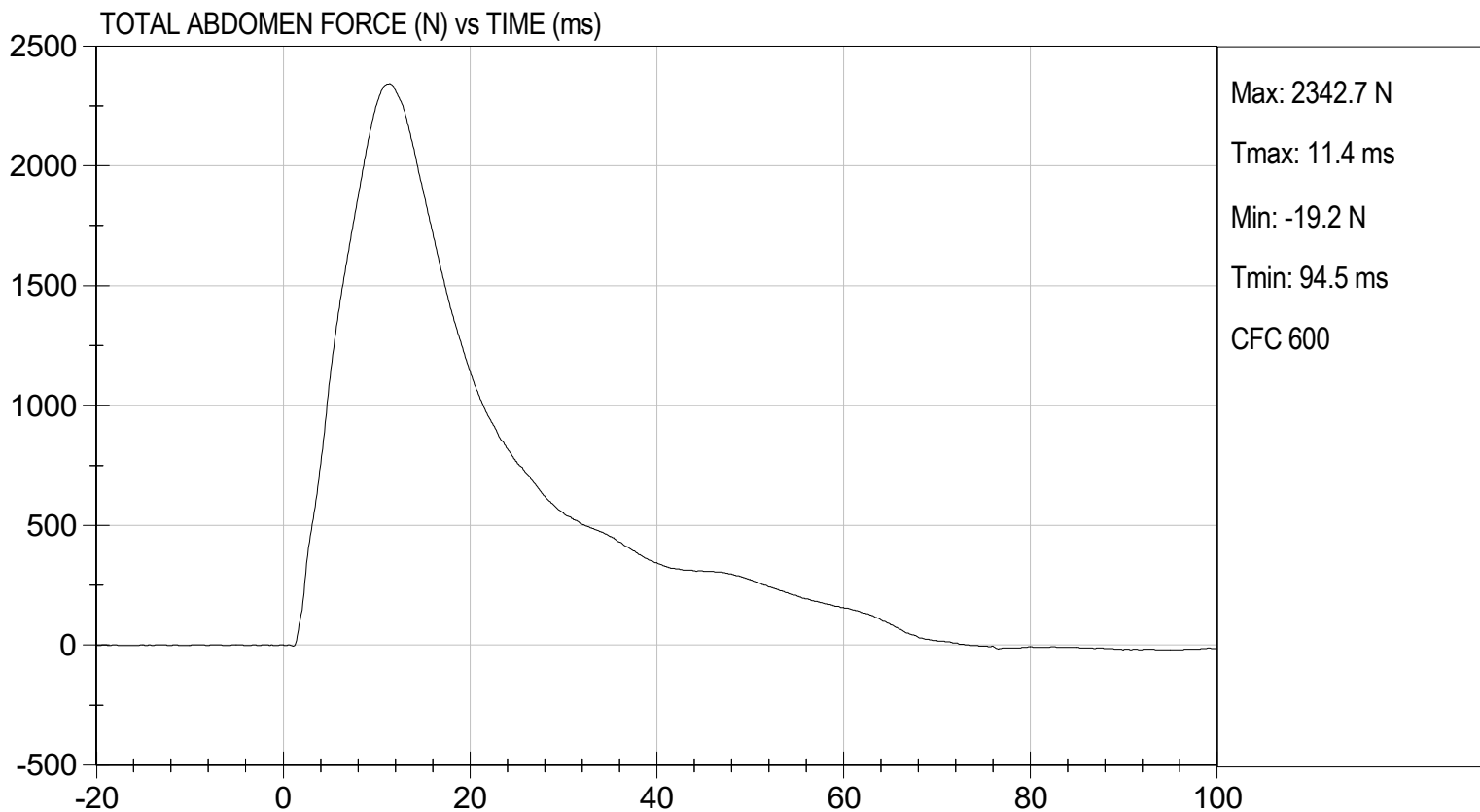
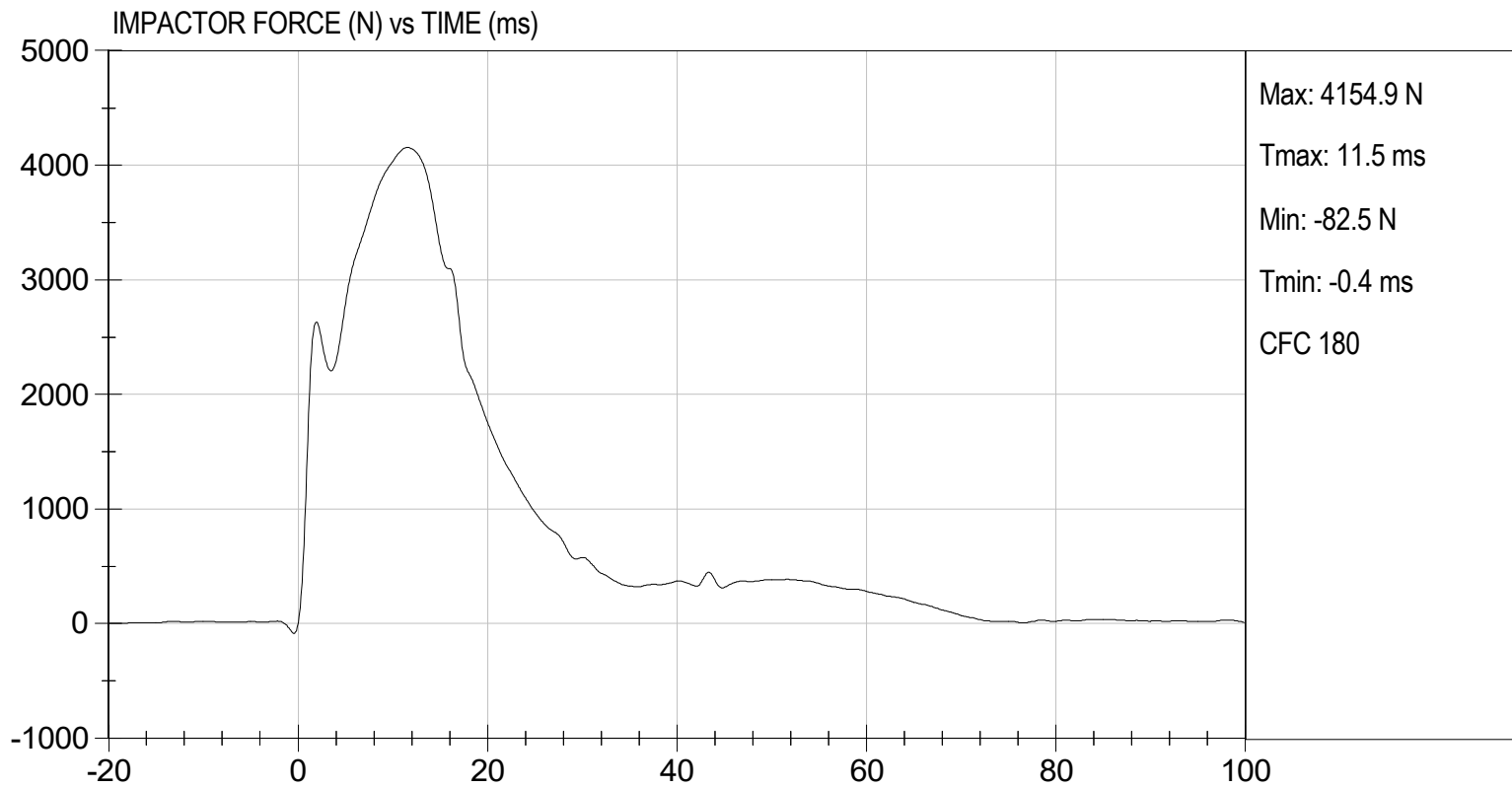
11/07/2024  
 Test Date

  
 Approved By



TEST DESC: ABDOMEN IMPACT  
VELOCITY: 13.44 ft/s, 4.10 m/s

TEST DATE: 11/07/2024  
TEST #: D242897

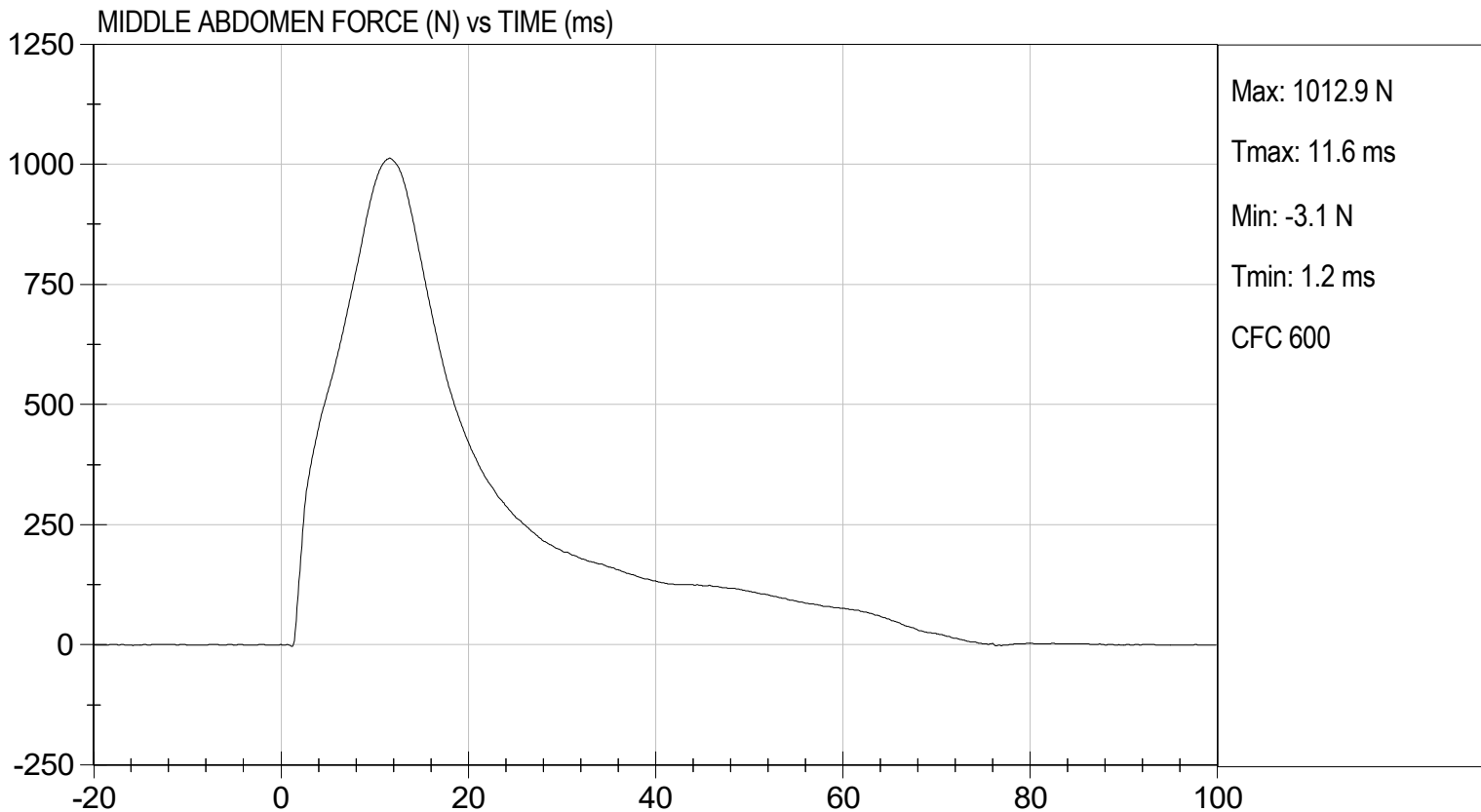
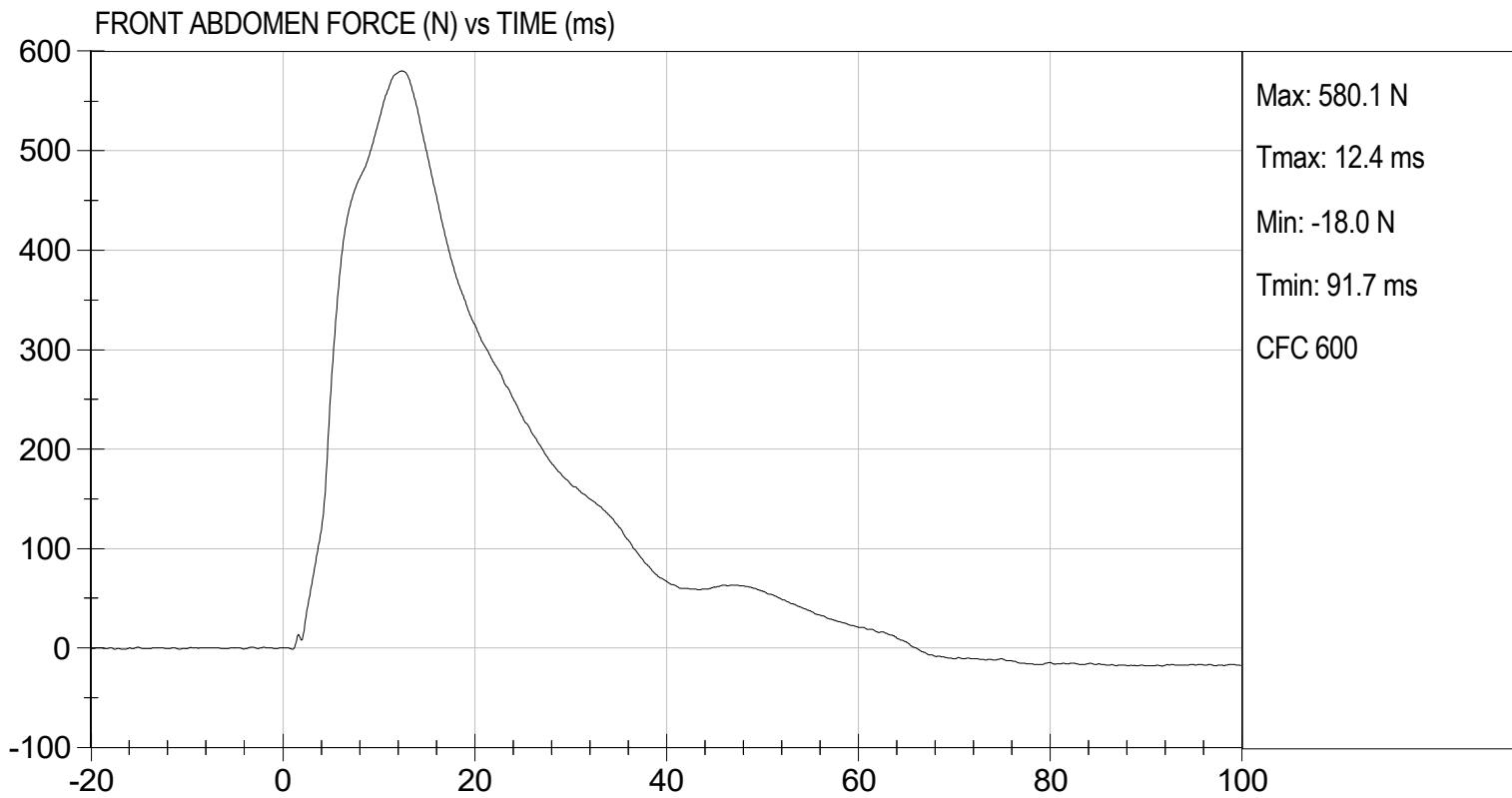






TEST DESC: ABDOMEN IMPACT  
VELOCITY: 13.44 ft/s, 4.10 m/s

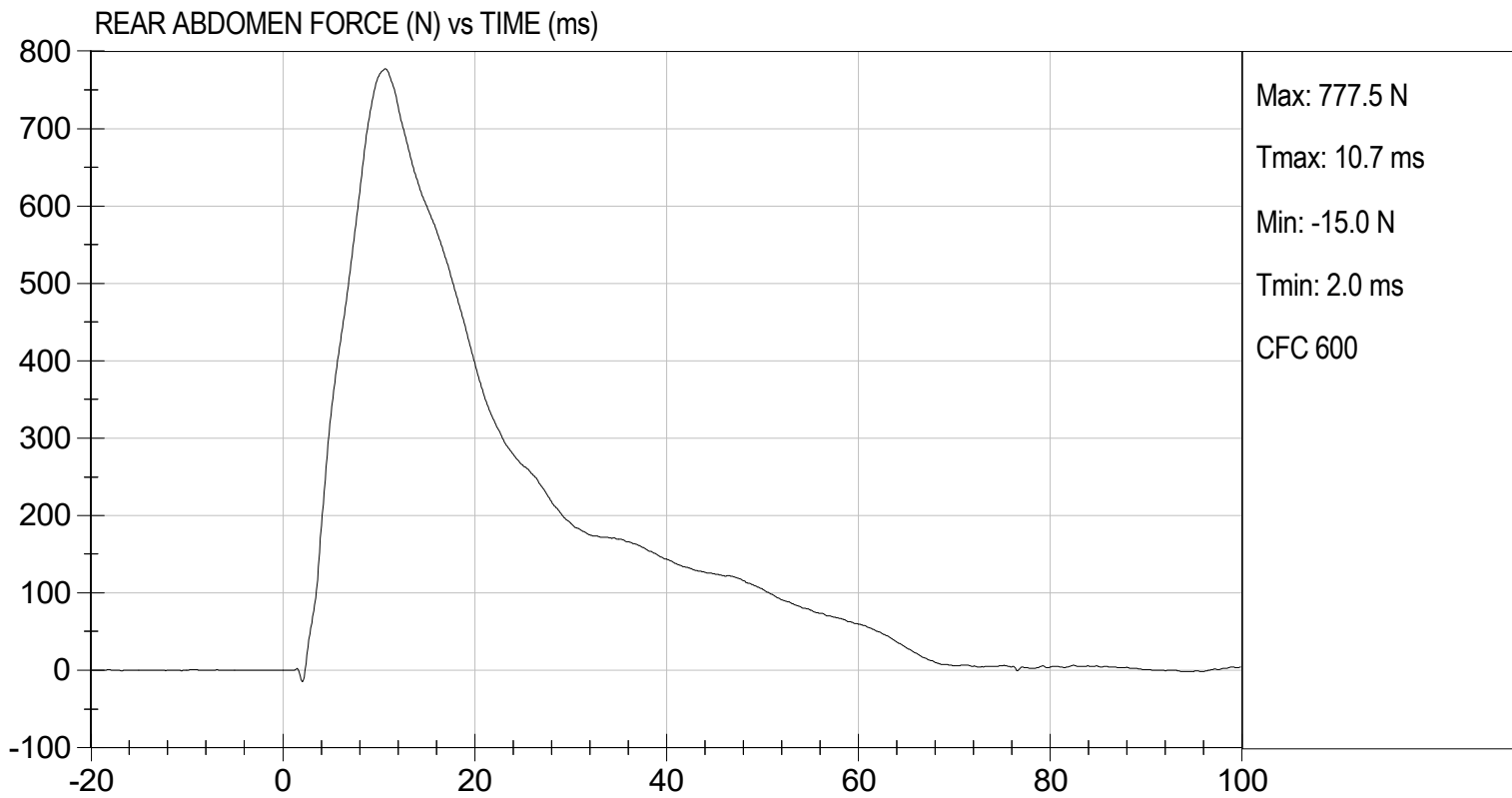
TEST DATE: 11/07/2024  
TEST #: D242897





TEST DESC: ABDOMEN IMPACT  
VELOCITY: 13.44 ft/s, 4.10 m/s

TEST DATE: 11/07/2024  
TEST #: D242897



## MGA RESEARCH CORPORATION

## LUMBAR SPINE TEST

## ES-2re DUMMY

ATD Serial No: F032

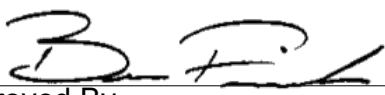
Test I.D: D242898

| Tested Parameter                            |        | Units | Specification   | Result | Pass/Fail |
|---------------------------------------------|--------|-------|-----------------|--------|-----------|
| Laboratory Temperature                      |        | deg C | 20.6 to 22.2    | 21.4   | Pass      |
| Laboratory Relative Humidity                |        | %     | 10 to 70        | 40     | Pass      |
| Pendulum Speed                              |        | m/s   | 5.95 to 6.15    | 6.05   | Pass      |
| Pendulum Velocity                           | 1 ms   | m/s   | -0.05 to 0.00   | -0.01  | Pass      |
|                                             | 3.7 ms | m/s   | -0.425 to -0.24 | -0.397 | Pass      |
|                                             | 27 ms  | m/s   | -6.50 to -5.80  | -5.91  | Pass      |
|                                             | 30 ms  | m/s   | >= -6.50        | -6.27  | Pass      |
| Maximum Flexion Angle                       |        | deg   | 45.0 to 55.0    | 50.4   | Pass      |
| Time of Maximum Flexion Angle               |        | ms    | 39.0 to 53.0    | 51.7   | Pass      |
| Headform Rotation Decay to Initial Position |        | ms    | 37 to 57        | 38     | Pass      |
| Overall Results                             |        |       |                 | Pass   |           |

  
 Laboratory Technician

11/07/2024

Test Date

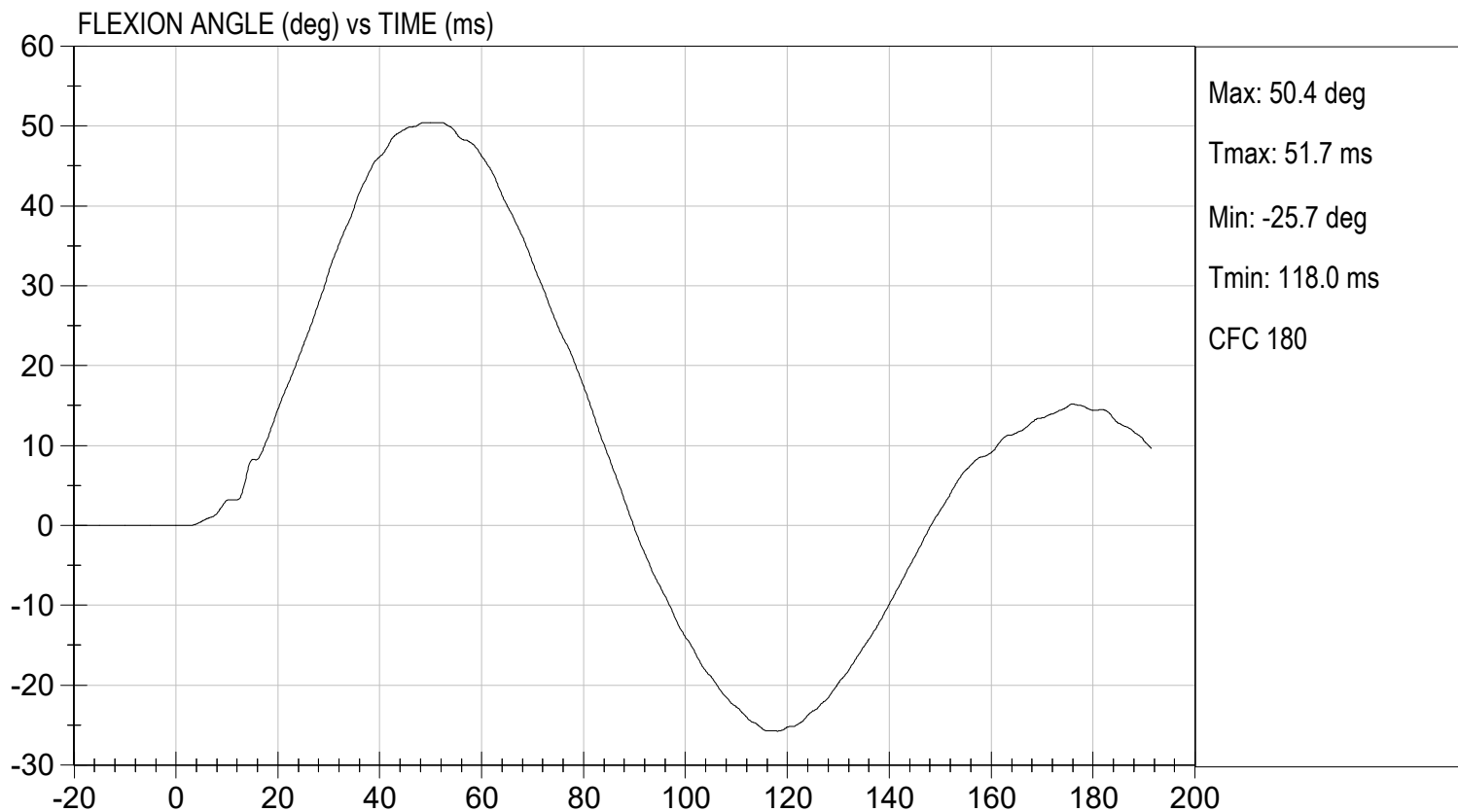
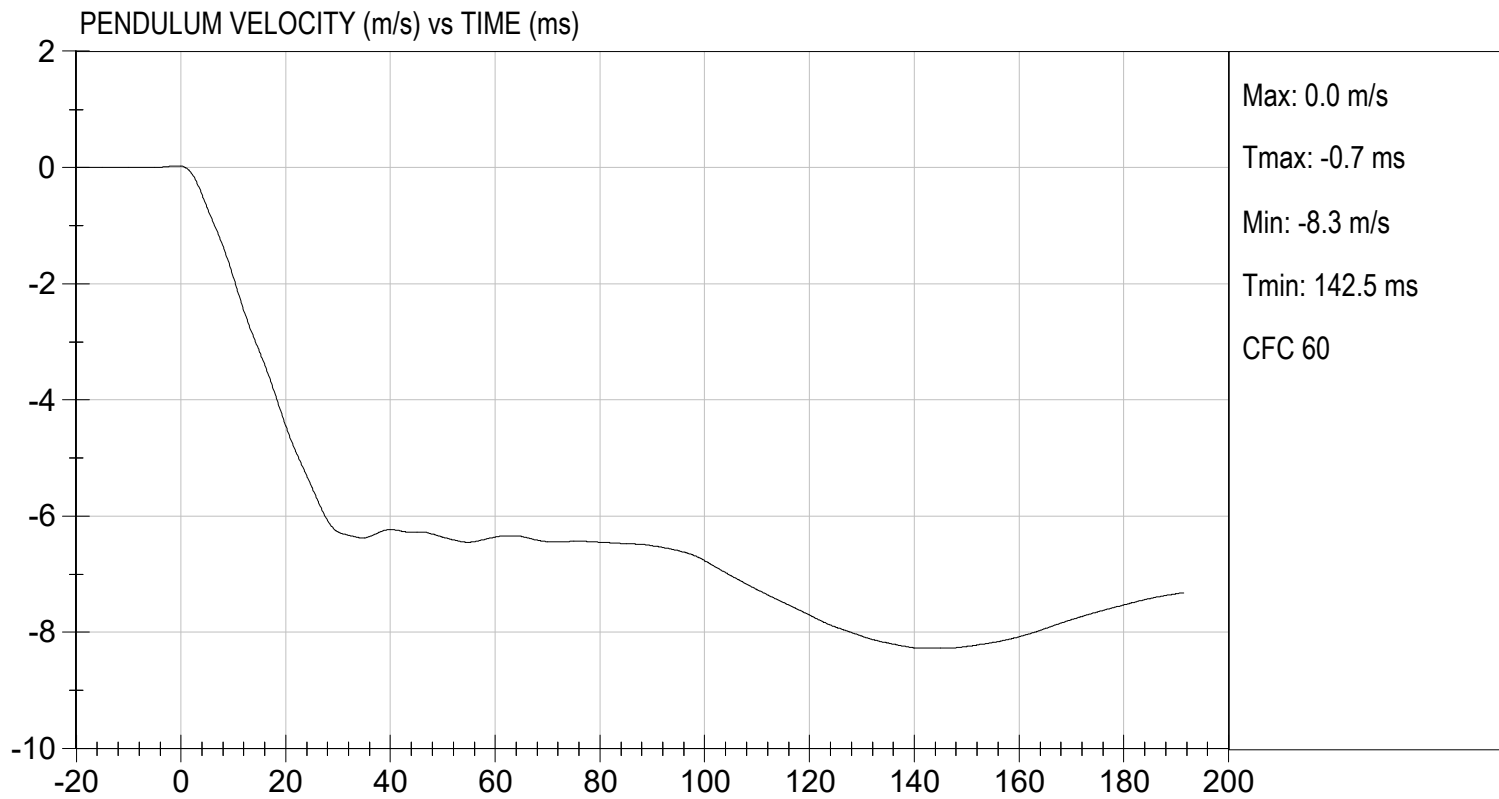
  
 Approved By





TEST DESC: LUMBAR BENDING  
VELOCITY: 19.84 ft/s, 6.05 m/s

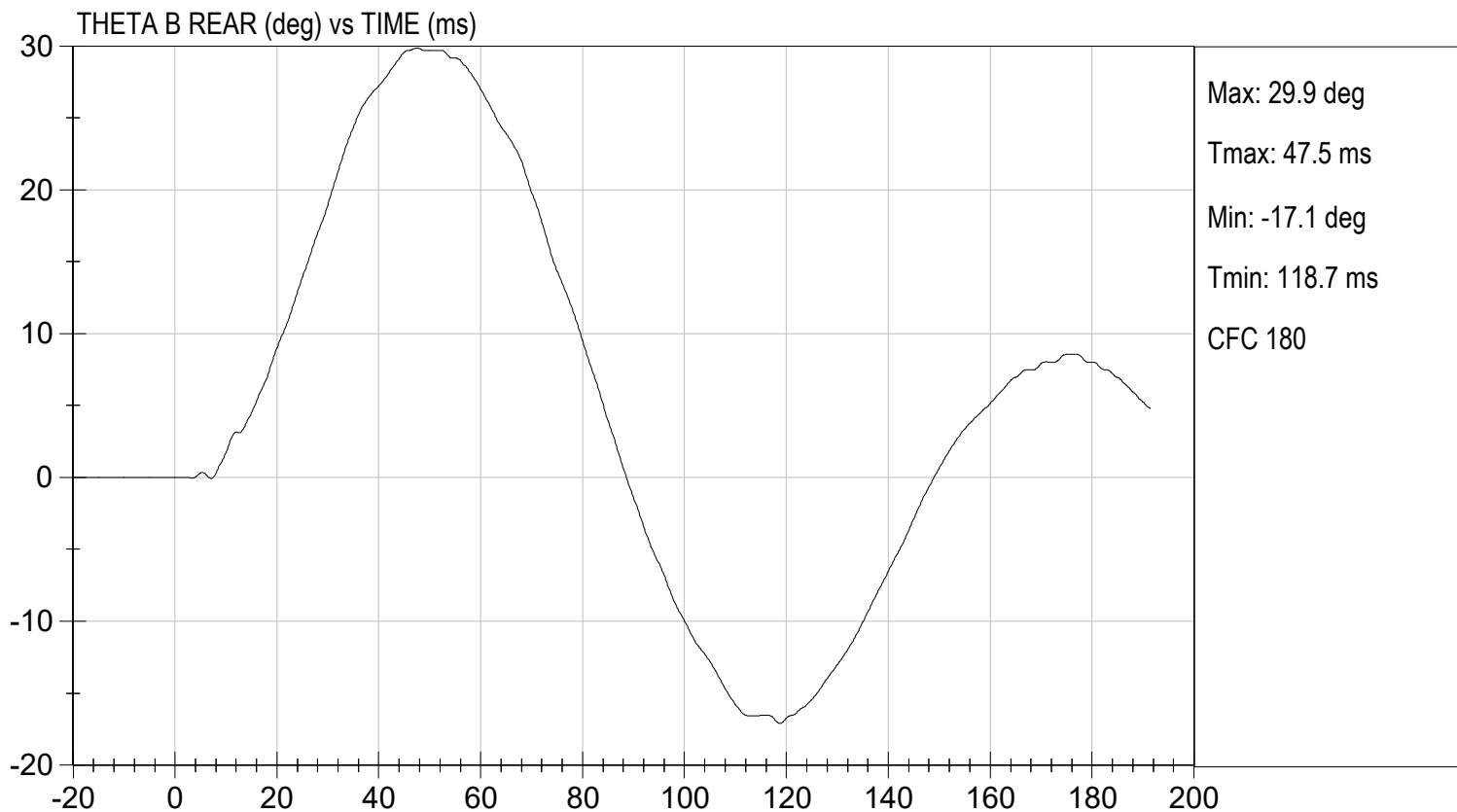
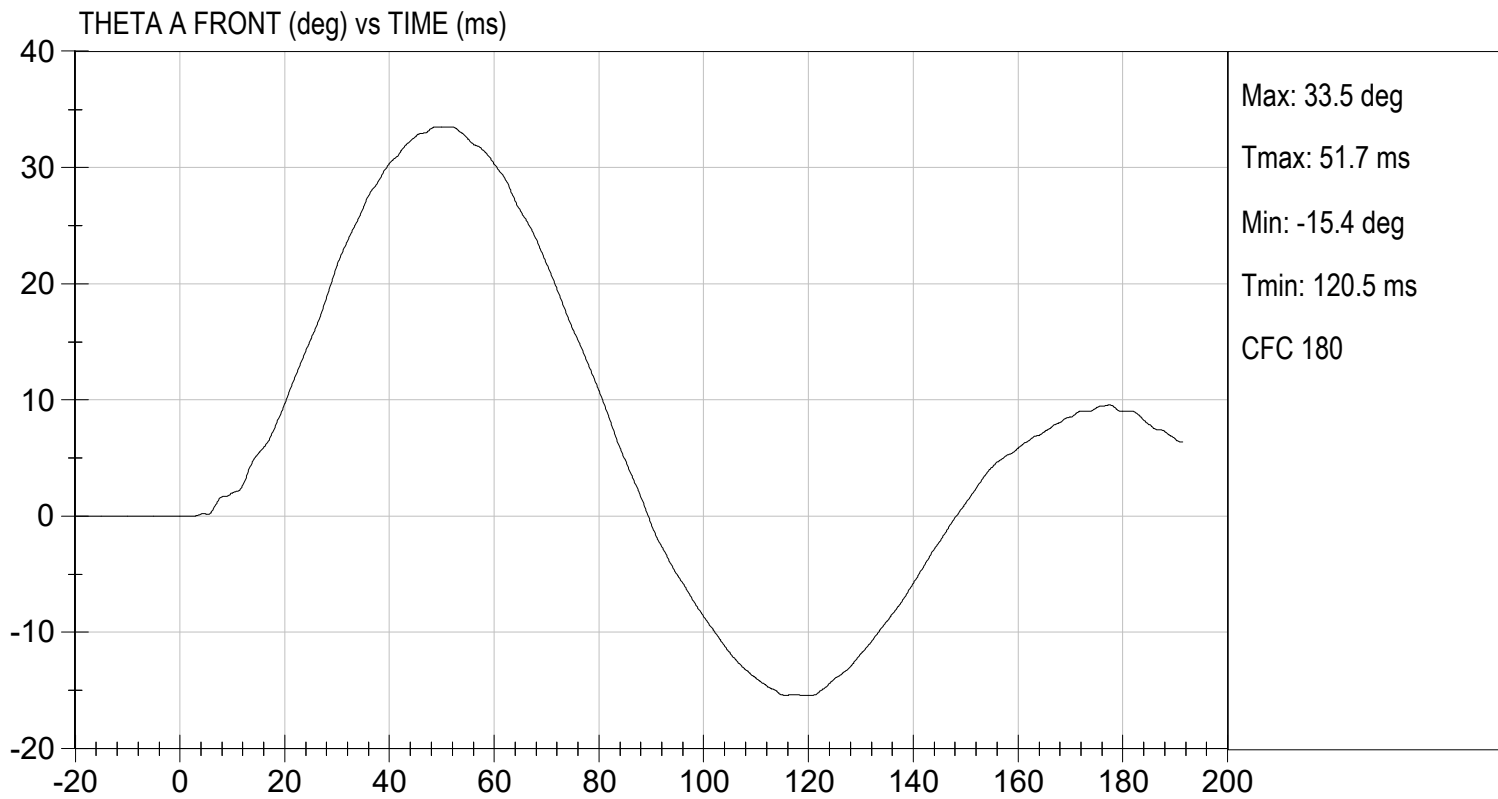
TEST DATE: 11/07/2024  
TEST #: D242898





TEST DESC: LUMBAR BENDING  
VELOCITY: 19.84 ft/s, 6.05 m/s

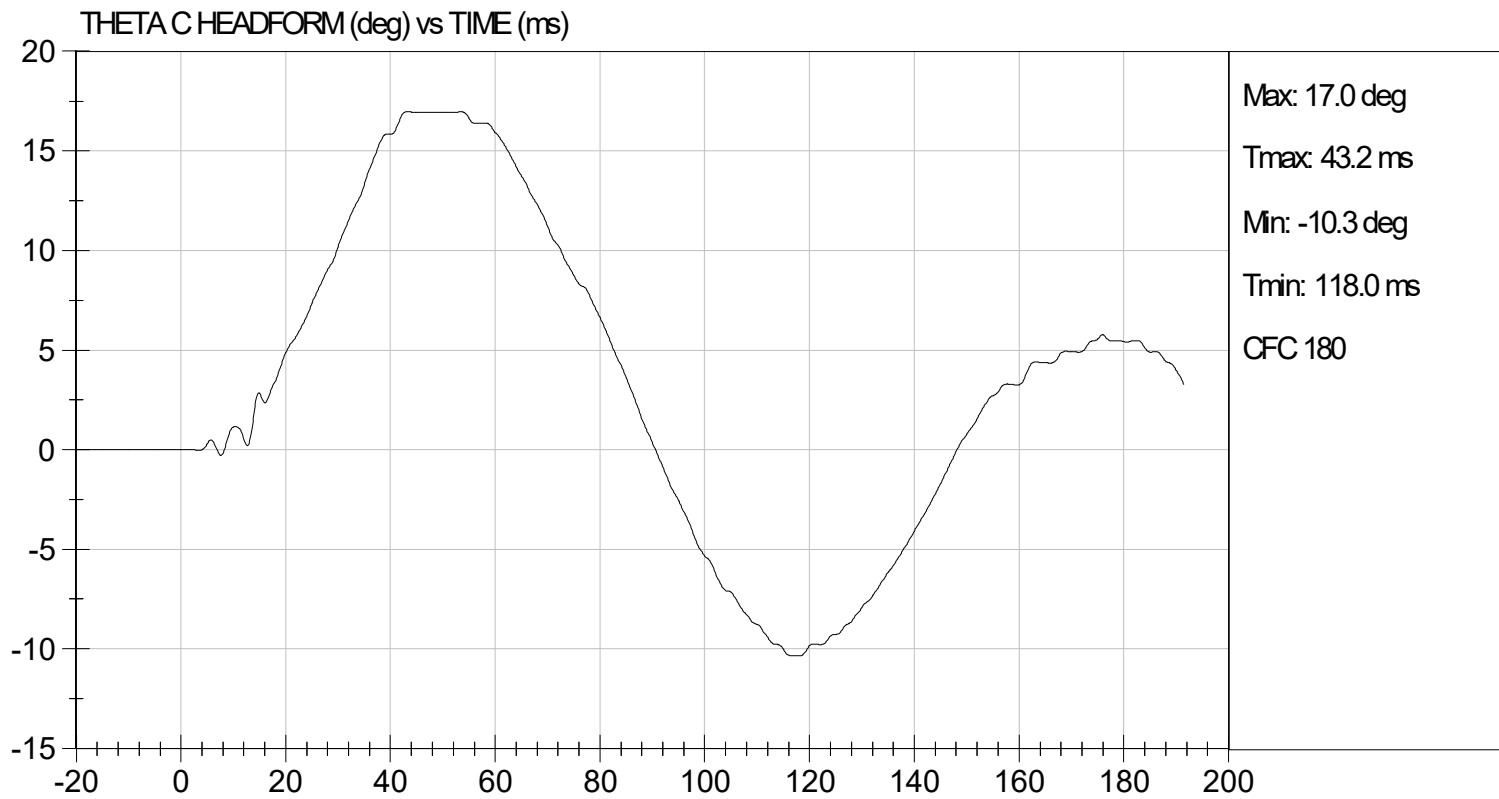
TEST DATE: 11/07/2024  
TEST #: D242898





TEST DESC: LUMBAR BENDING  
VELOCITY: 19.84 ft/s, 6.05 m/s

TEST DATE: 11/07/2024  
TEST #: D242898





**MGA RESEARCH CORPORATION**

**PELVIS TEST**

**ES-2re DUMMY**

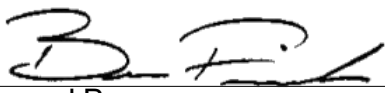
**ATD Serial No:** F032

**Test I.D:** D242899

| Tested Parameter               | Units | Specification | Result | Pass/Fail |
|--------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.2   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 40     | Pass      |
| Probe Speed                    | m/s   | 4.20 to 4.40  | 4.34   | Pass      |
| Maximum Impactor Force         | N     | 4700 to 5400  | 4877   | Pass      |
| Time of Maximum Impactor Force | ms    | 11.8 to 16.1  | 13.8   | Pass      |
| Maximum Pubic Force            | N     | 1230 to 1590  | 1257   | Pass      |
| Time of Maximum Pubic Force    | ms    | 12.2 to 17.0  | 14.8   | Pass      |
| Overall Test Results           |       |               |        | Pass      |

  
 Laboratory Technician

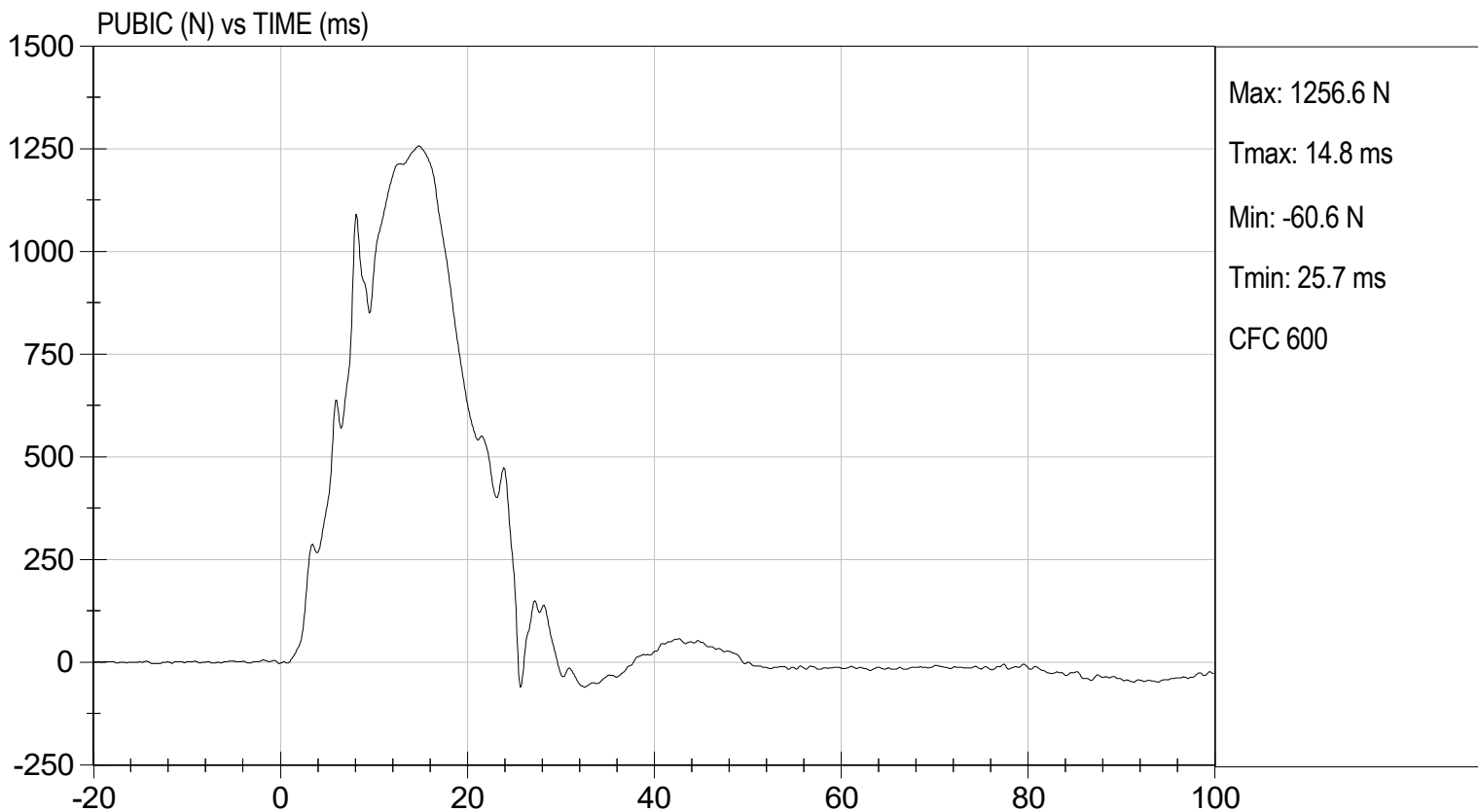
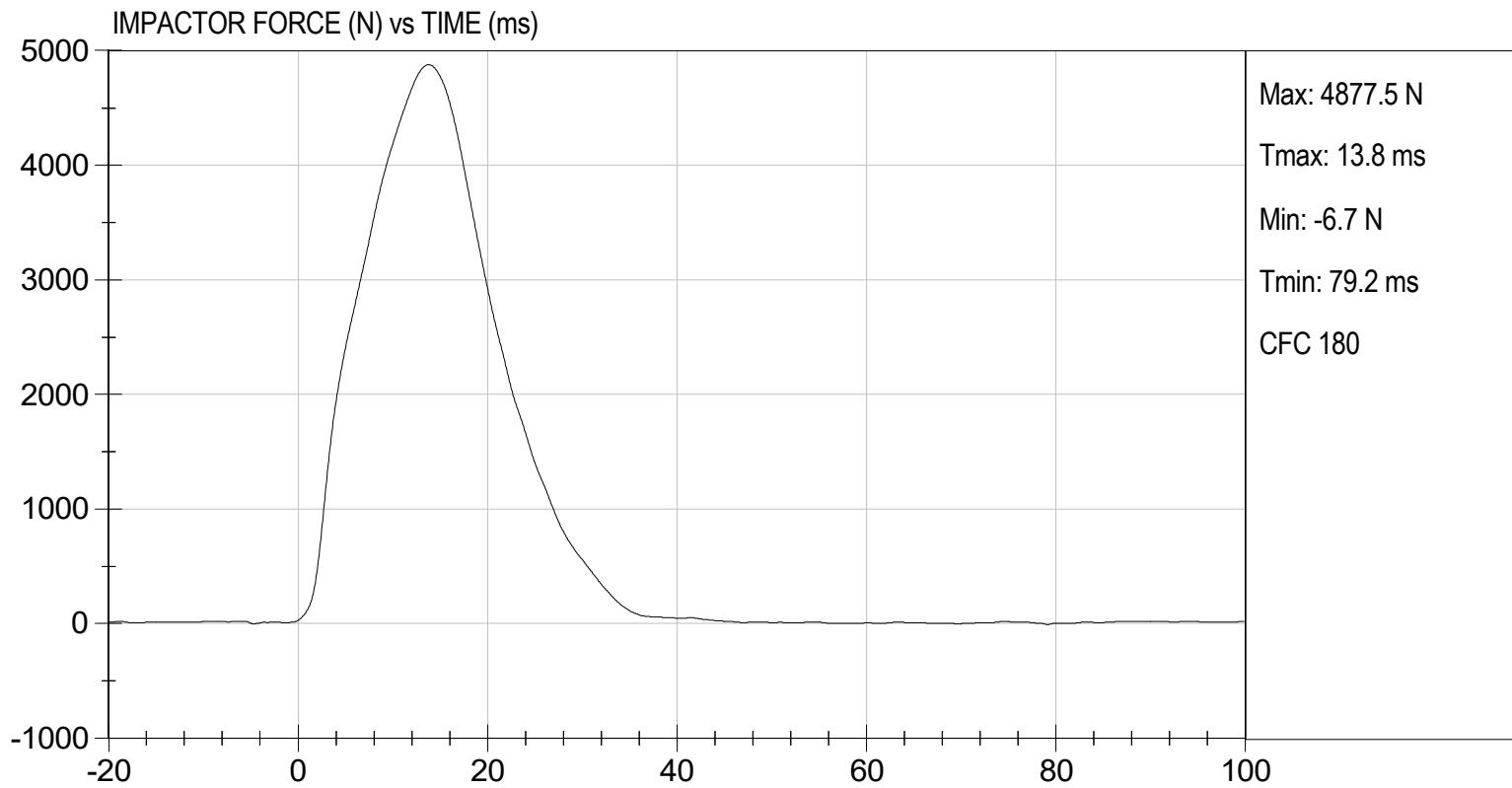
11/07/2024  
 Test Date

  
 Approved By



TEST DESC: PELVIS IMPACT  
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/07/2024  
TEST #: D242899



## MGA RESEARCH CORPORATION

## THORAX IMPACT TEST

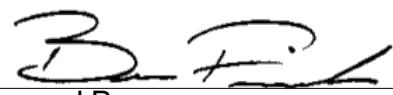
## ES-2re DUMMY

ATD Serial No: F032Test I.D: D242890

| Tested Parameter                    | Units | Specification | Result | Pass/Fail |
|-------------------------------------|-------|---------------|--------|-----------|
| Temperature                         | deg C | 20.6 to 22.2  | 21.3   | Pass      |
| Humidity                            | %     | 10 to 70      | 39     | Pass      |
| Probe Speed                         | m/s   | 5.40 to 5.60  | 5.40   | Pass      |
| Maximum Impactor Force (after 6 ms) | N     | 5100 to 6200  | 5909   | Pass      |
| Upper Rib Displacement              | mm    | 34.0 to 41.0  | 36.9   | Pass      |
| Middle Rib Displacement             | mm    | 37.0 to 45.0  | 39.6   | Pass      |
| Lower Rib Displacement              | mm    | 37.0 to 44.0  | 38.7   | Pass      |
| Overall Test Results                |       |               | Pass   |           |

  
Laboratory Technician

11/07/2024  
Test Date

  
Approved By

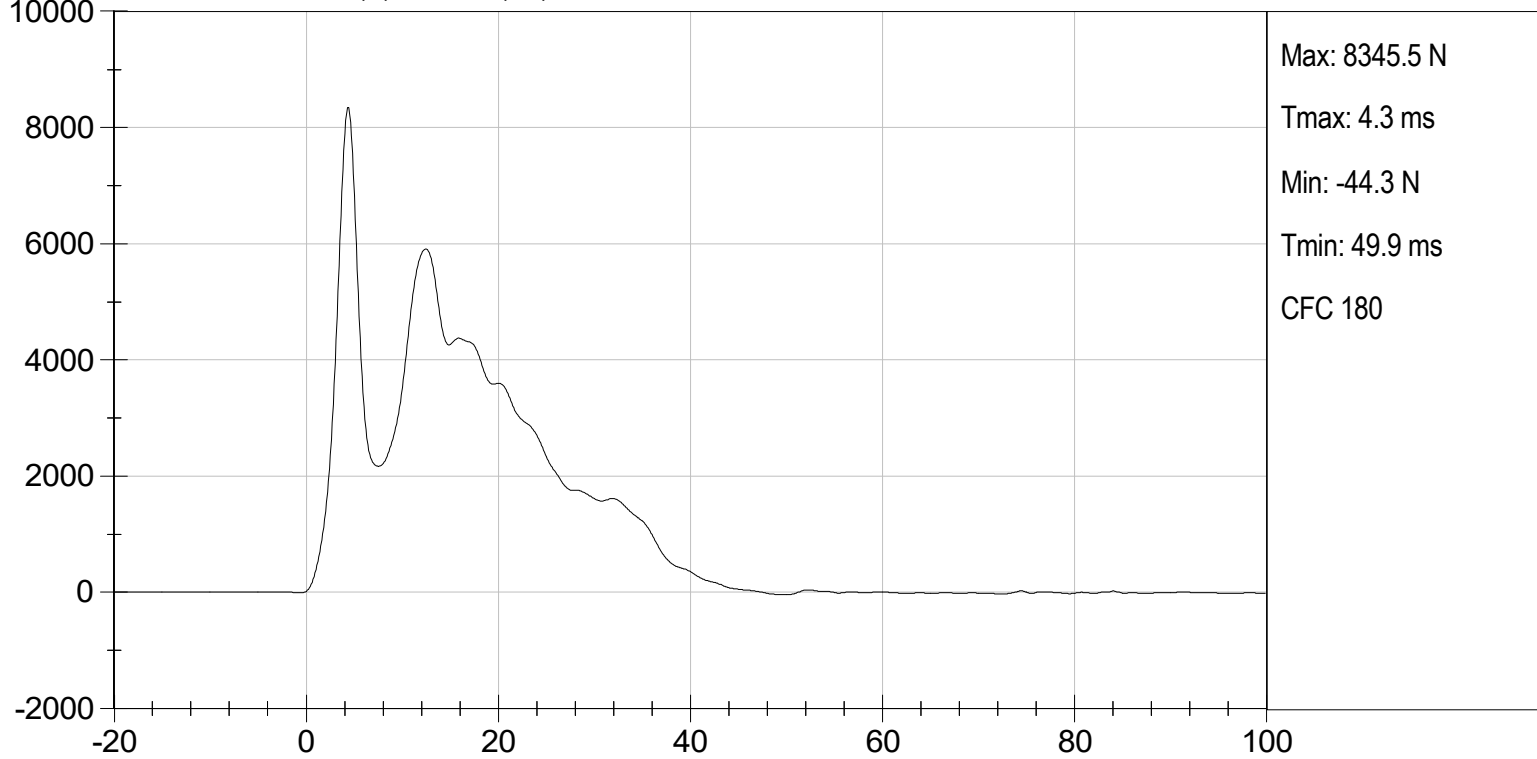




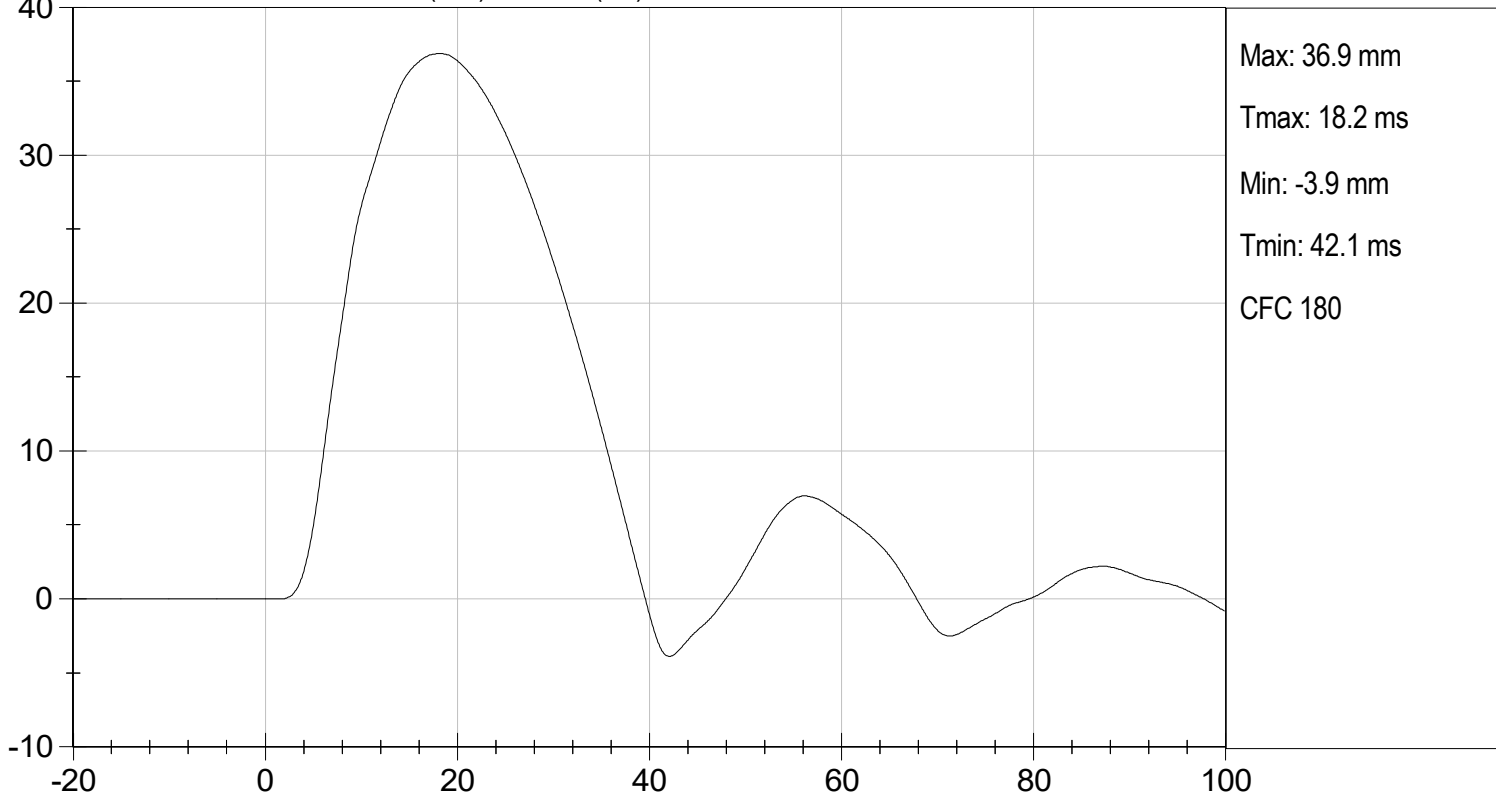
TEST DESC: THORAX IMPACT  
VELOCITY: 17.73 ft/s, 5.40 m/s

TEST DATE: 11/07/2024  
TEST #: D242890

IMPACTOR FORCE (N) vs TIME (ms)



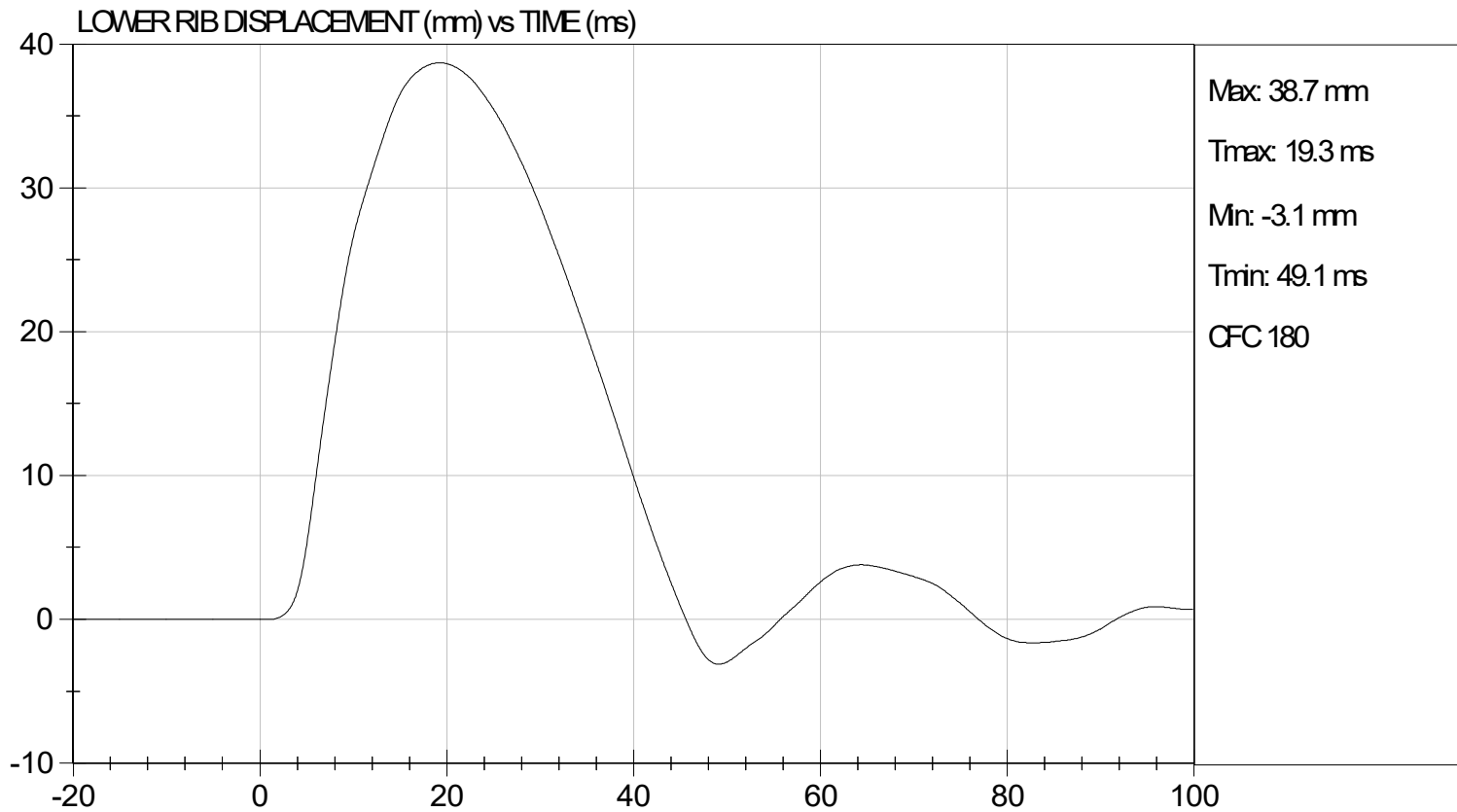
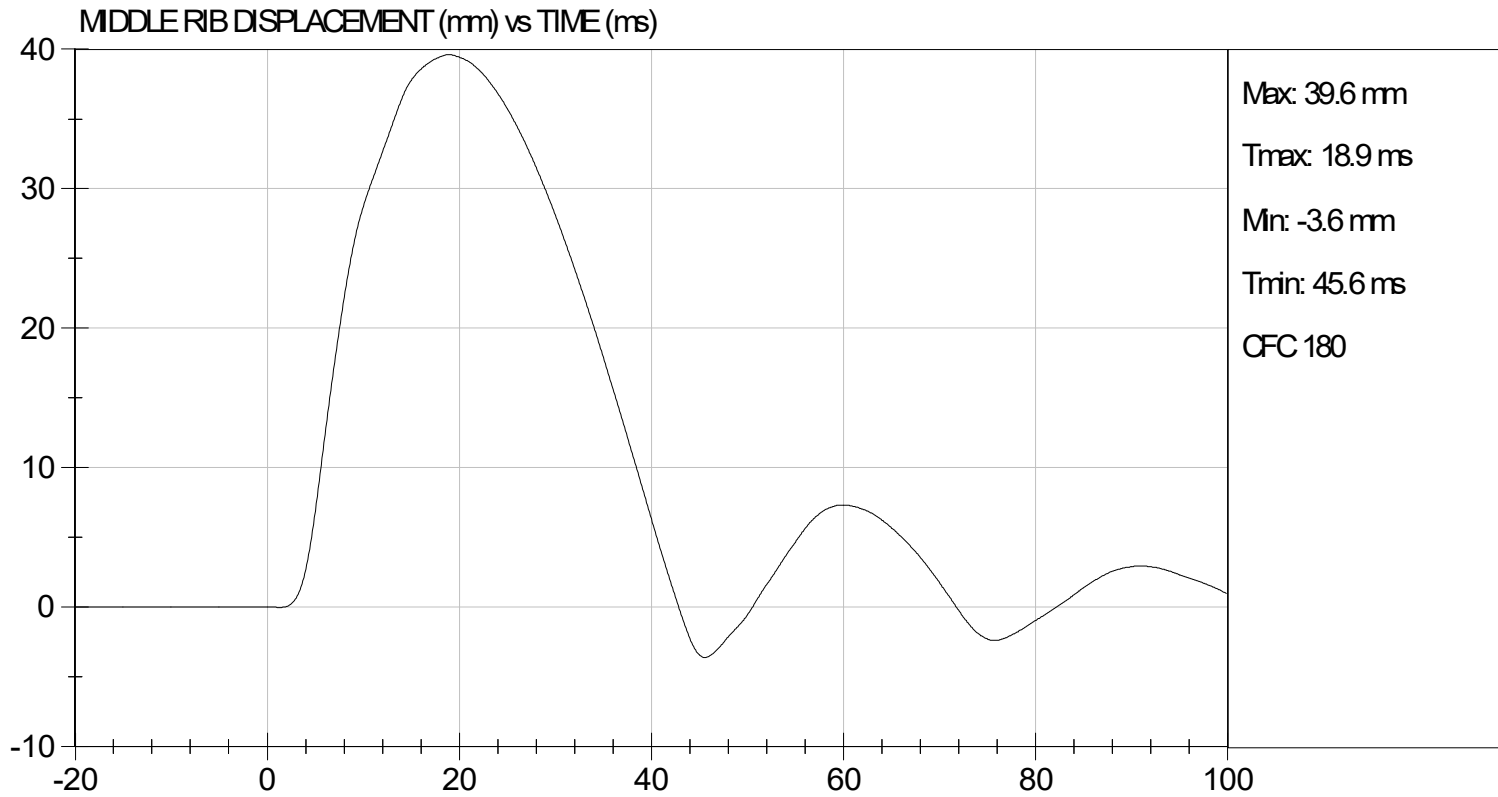
UPPER RIB DISPLACEMENT (mm) vs TIME (ms)





TEST DESC: THORAX IMPACT  
VELOCITY: 17.73 ft/s, 5.40 m/s

TEST DATE: 11/07/2024  
TEST #: D242890



## **QUALIFICATION TEST RESULTS**

### **POST-TEST**

**EUROSID 2 (ES-2RE) MALE – DRIVER ATD**



**ES-2re External Measurements**  
**SN: F032**

| No. | Name                                           | Spec. (mm) | Result | Pass/Fail |
|-----|------------------------------------------------|------------|--------|-----------|
| 1   | Sitting Height                                 | 900 - 918  | 915    | Pass      |
| 2   | Seat to Shoulder Joint                         | 558 - 572  | 568    | Pass      |
| 3   | Seat to Lower Face of Thoracic Spine Box       | 346 - 356  | 355    | Pass      |
| 4   | Seat to Hip Joint (center of bolt)             | 97 - 103   | 98     | Pass      |
| 5   | Sole to Seat, Sitting                          | 333 - 451  | 440    | Pass      |
| 6   | Head Width                                     | 152 - 158  | 157    | Pass      |
| 7   | Shoulder/Arm Width                             | 461 - 479  | 464    | Pass      |
| 8   | Thorax Width                                   | 322 - 332  | 323    | Pass      |
| 9   | Abdomen Width                                  | 273 - 287  | 281    | Pass      |
| 10  | Pelvis Lap Width                               | 359 - 373  | 370    | Pass      |
| 11  | Head Depth                                     | 196 - 206  | 203    | Pass      |
| 12  | Thorax Depth                                   | 262 - 272  | 264    | Pass      |
| 13  | Abdomen Depth                                  | 194 - 204  | 196    | Pass      |
| 14  | Pelvis Depth                                   | 235 - 245  | 236    | Pass      |
| 15  | Back of Buttocks to Hip Joint (center of bolt) | 150 - 160  | 151    | Pass      |
| 16  | Back of Buttocks to Front Knee                 | 597 - 615  | 607    | Pass      |

## MGA RESEARCH CORPORATION

## HEAD DROP TEST

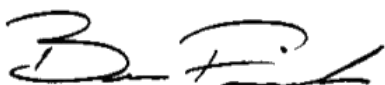
## ES-2re DUMMY

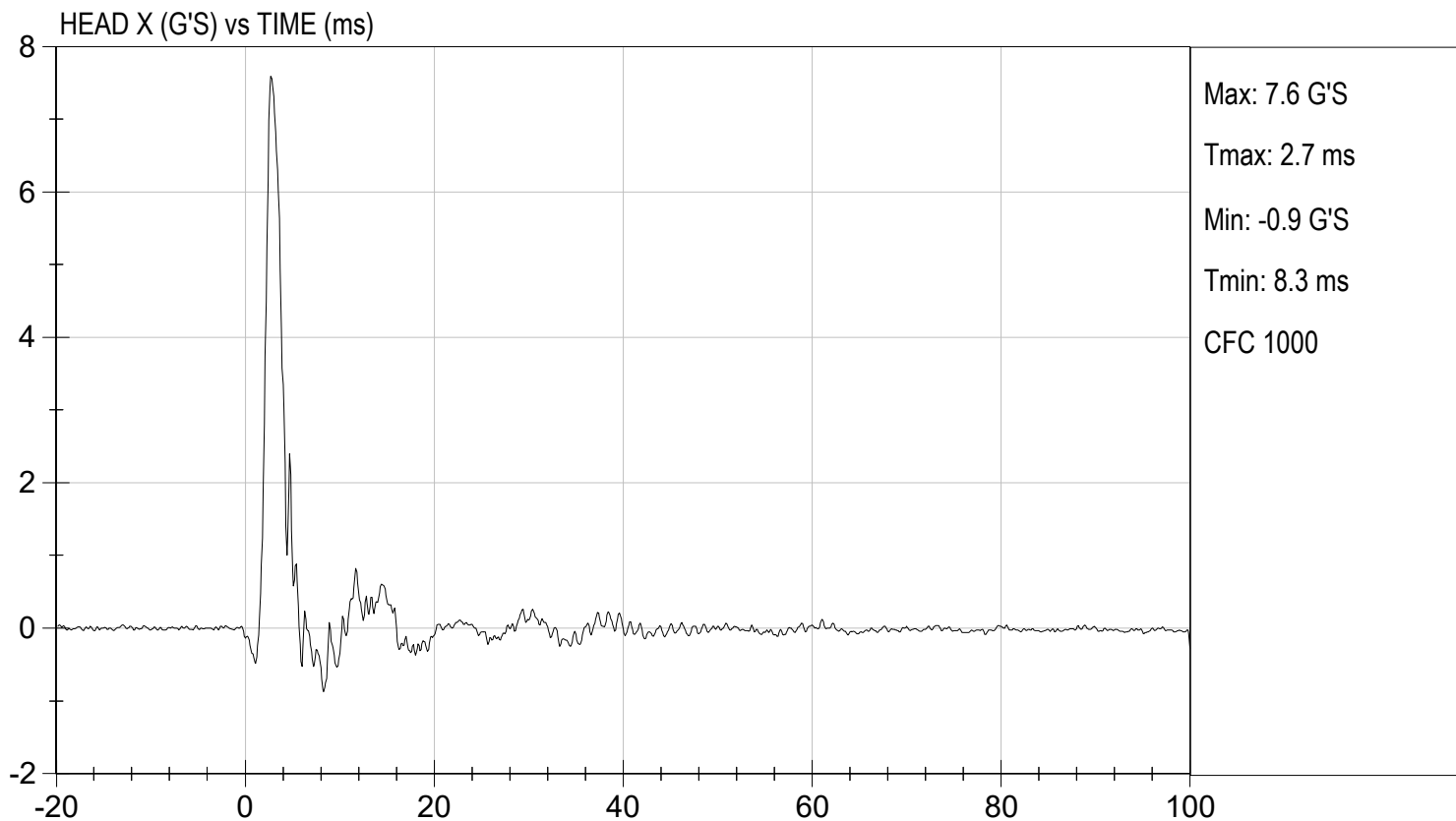
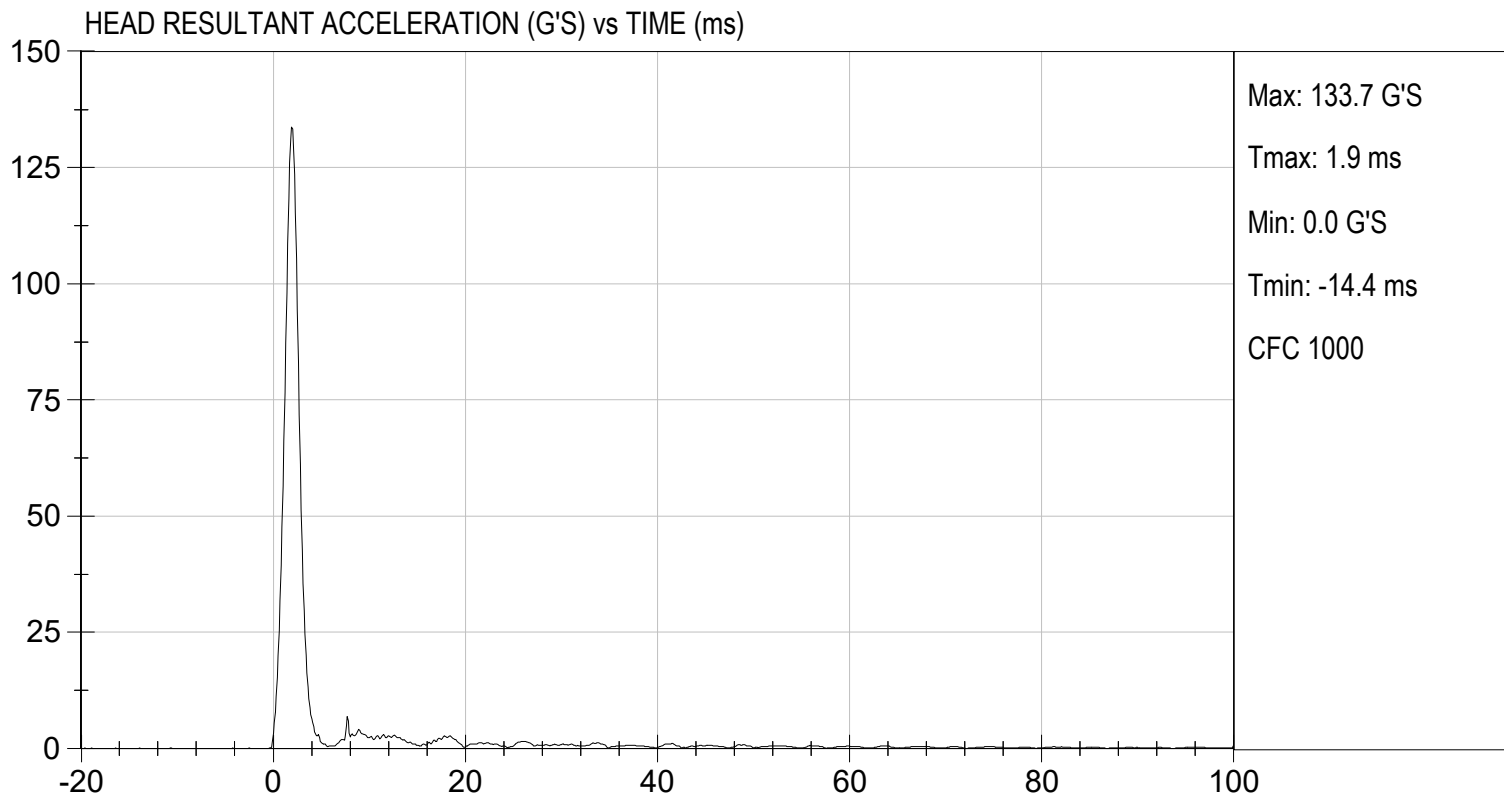
ATD Serial No: F032Test ID: D243101

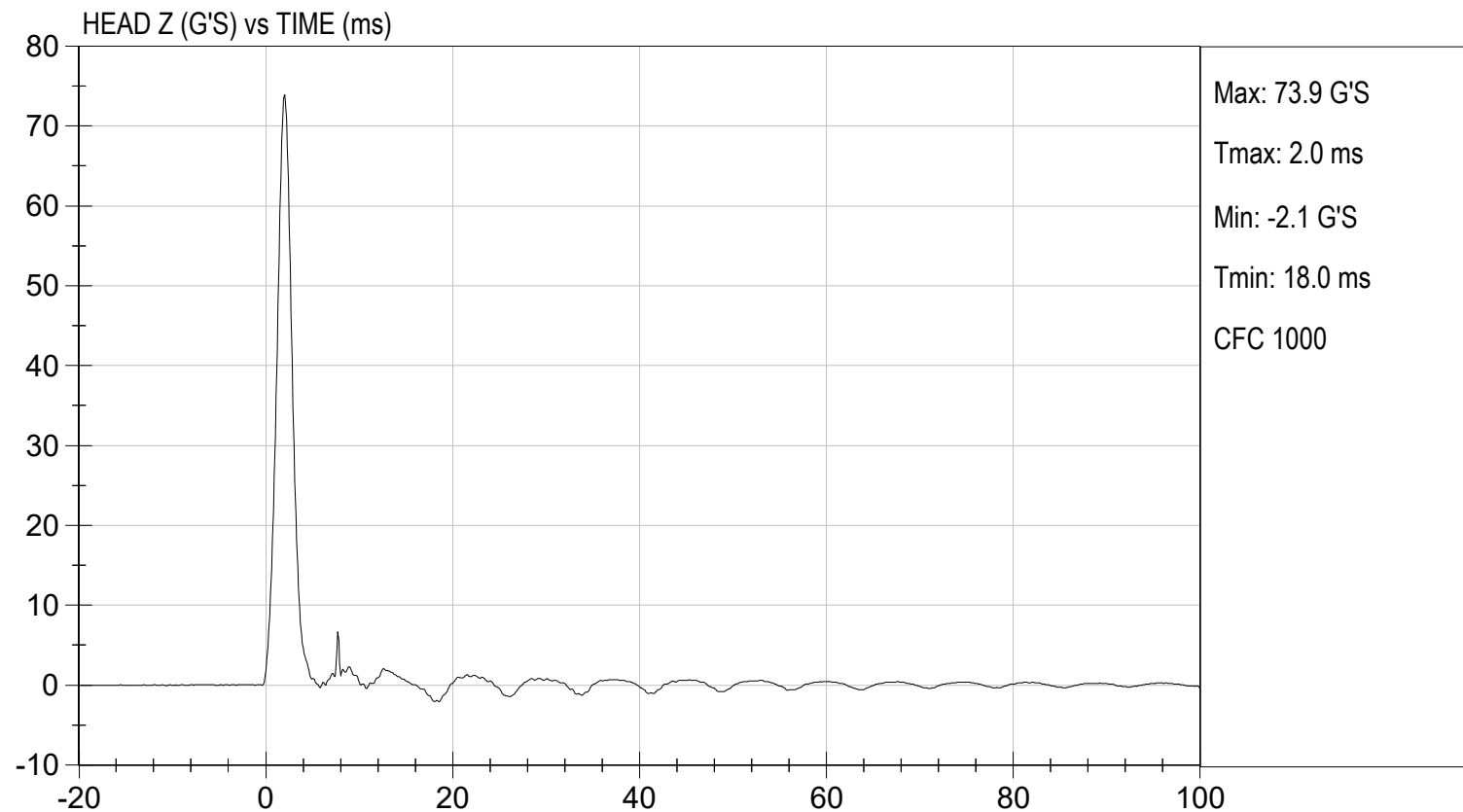
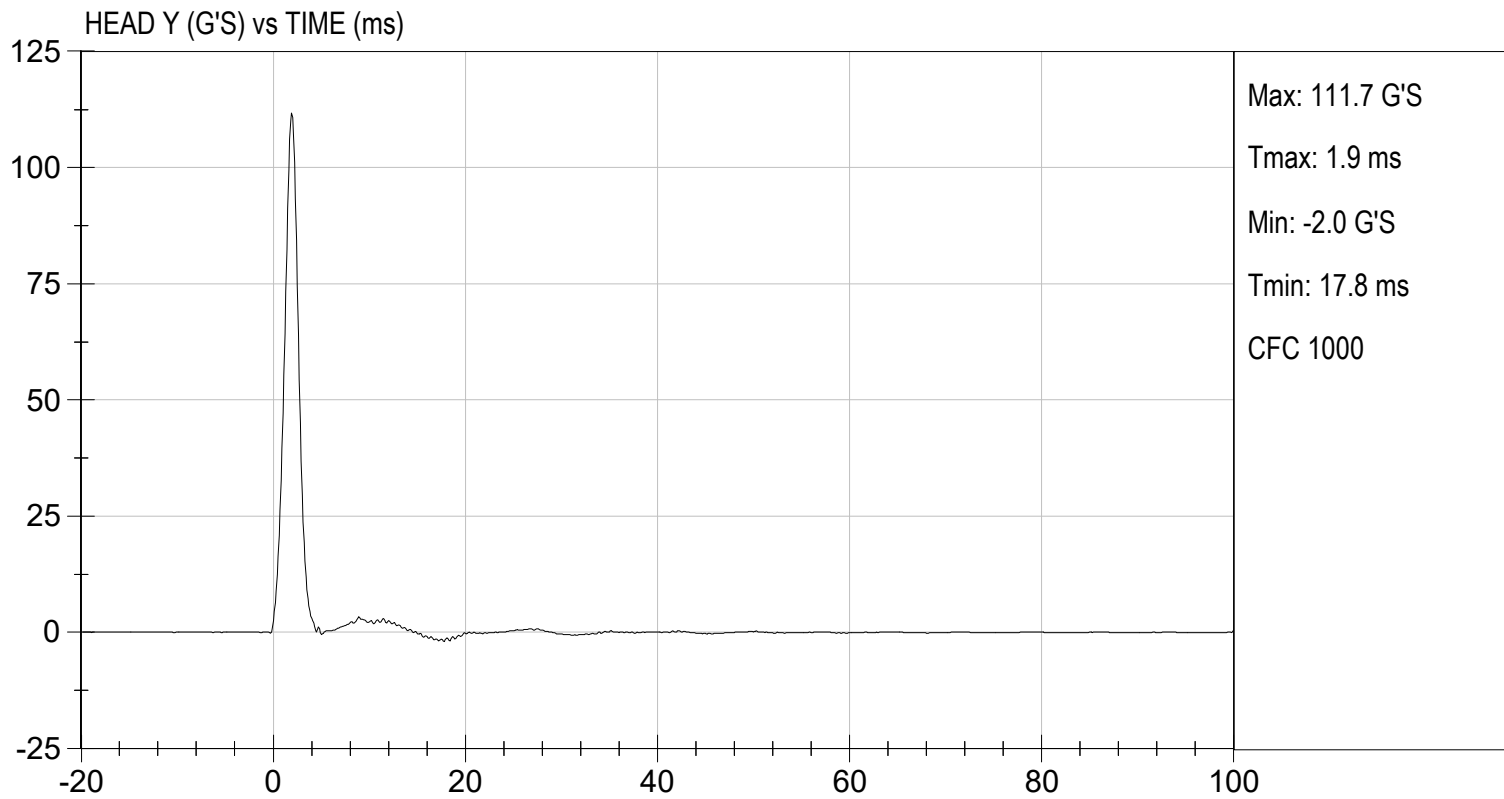
| Tested Parameter               | Units | Specification      | Result | Pass/Fail |
|--------------------------------|-------|--------------------|--------|-----------|
| Laboratory Temperature         | deg C | 18.9 to 25.6       | 21.6   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70           | 25     | Pass      |
| Peak Resultant Acceleration    | G's   | 125 to 155         | 134    | Pass      |
| Peak Longitudinal Acceleration | G's   | <= +/- 15.0        | 7.6    | Pass      |
| Unimodal                       | N/A   | Yes                | Yes    | Pass      |
| Oscillations                   | N/A   | within 15% of peak | Yes    | Pass      |
| Overall Test Results           |       |                    |        | Pass      |

  
Laboratory Technician

12/04/2024  
Test Date

  
Approved By





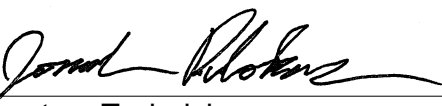


**MGA RESEARCH CORPORATION**  
**NECK PENDULUM TEST**  
**ES-2re DUMMY**

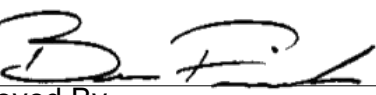
**ATD Serial No:** F032

**Test I.D:** D243102

| Tested Parameter                     |       | Units | Specification   | Result | Pass/Fail |
|--------------------------------------|-------|-------|-----------------|--------|-----------|
| Laboratory Temperature               |       | deg C | 20.6 to 22.2    | 21.6   | Pass      |
| Laboratory Relative Humidity         |       | %     | 10 to 70        | 25     | Pass      |
| Pendulum Speed                       |       | m/s   | 3.30 to 3.50    | 3.43   | Pass      |
| Pendulum Velocity                    | 1 ms  | m/s   | -0.05 to 0.00   | -0.01  | Pass      |
|                                      | 3 ms  | m/s   | -0.25 to -0.375 | -0.33  | Pass      |
|                                      | 14 ms | m/s   | -3.20 to -3.70  | -3.50  | Pass      |
|                                      | 17 ms | m/s   | >= -3.70        | -3.61  | Pass      |
| Maximum Flexion Angle                |       | deg   | 49.0 to 59.0    | 53.3   | Pass      |
| Time of Maximum Flexion Angle        |       | ms    | 54.0 to 66.0    | 60.4   | Pass      |
| Head Rotation Decay Time to 0 Degree |       | ms    | 53.0 to 88.0    | 63.0   | Pass      |
| Overall Results                      |       |       |                 | Pass   |           |

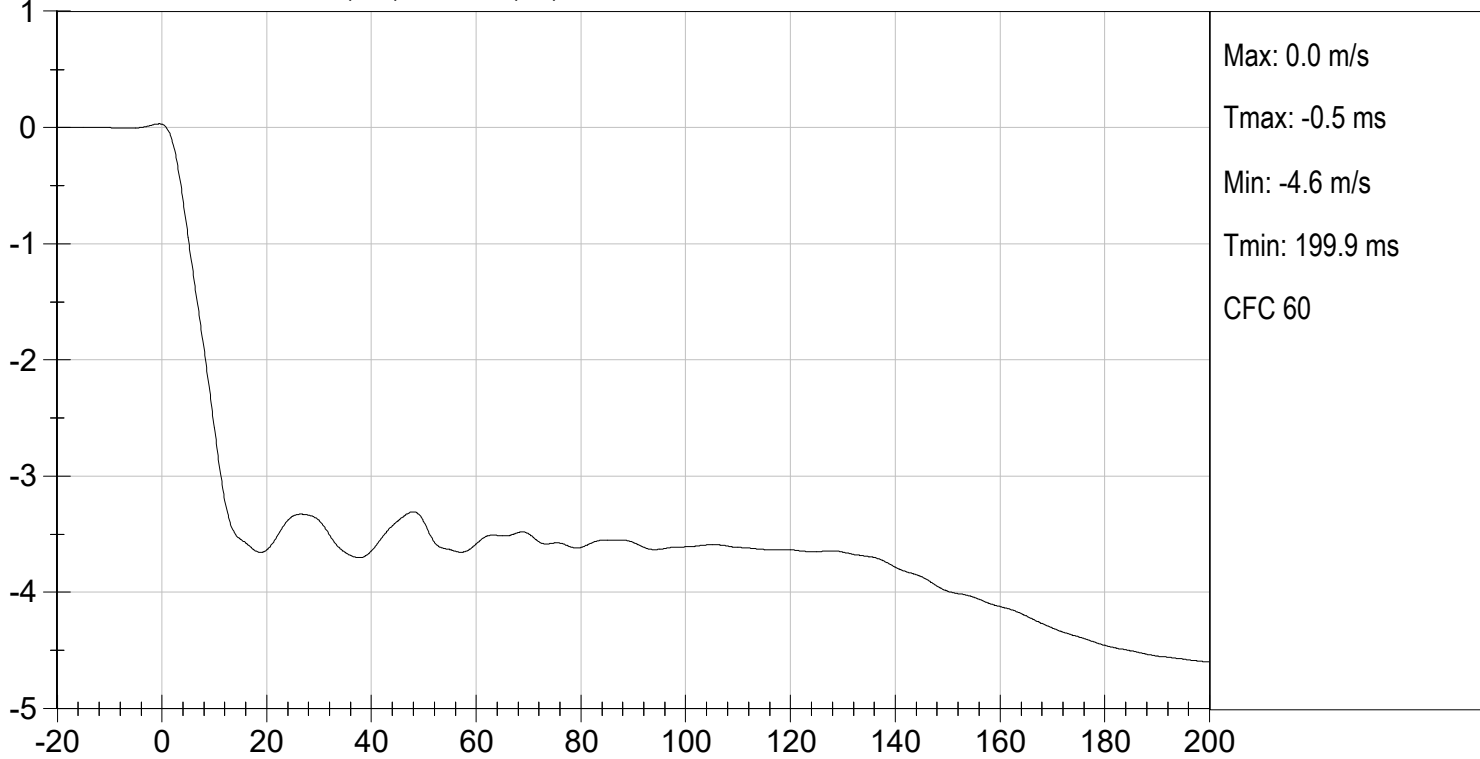
  
 Laboratory Technician

12/04/2024  
 Test Date

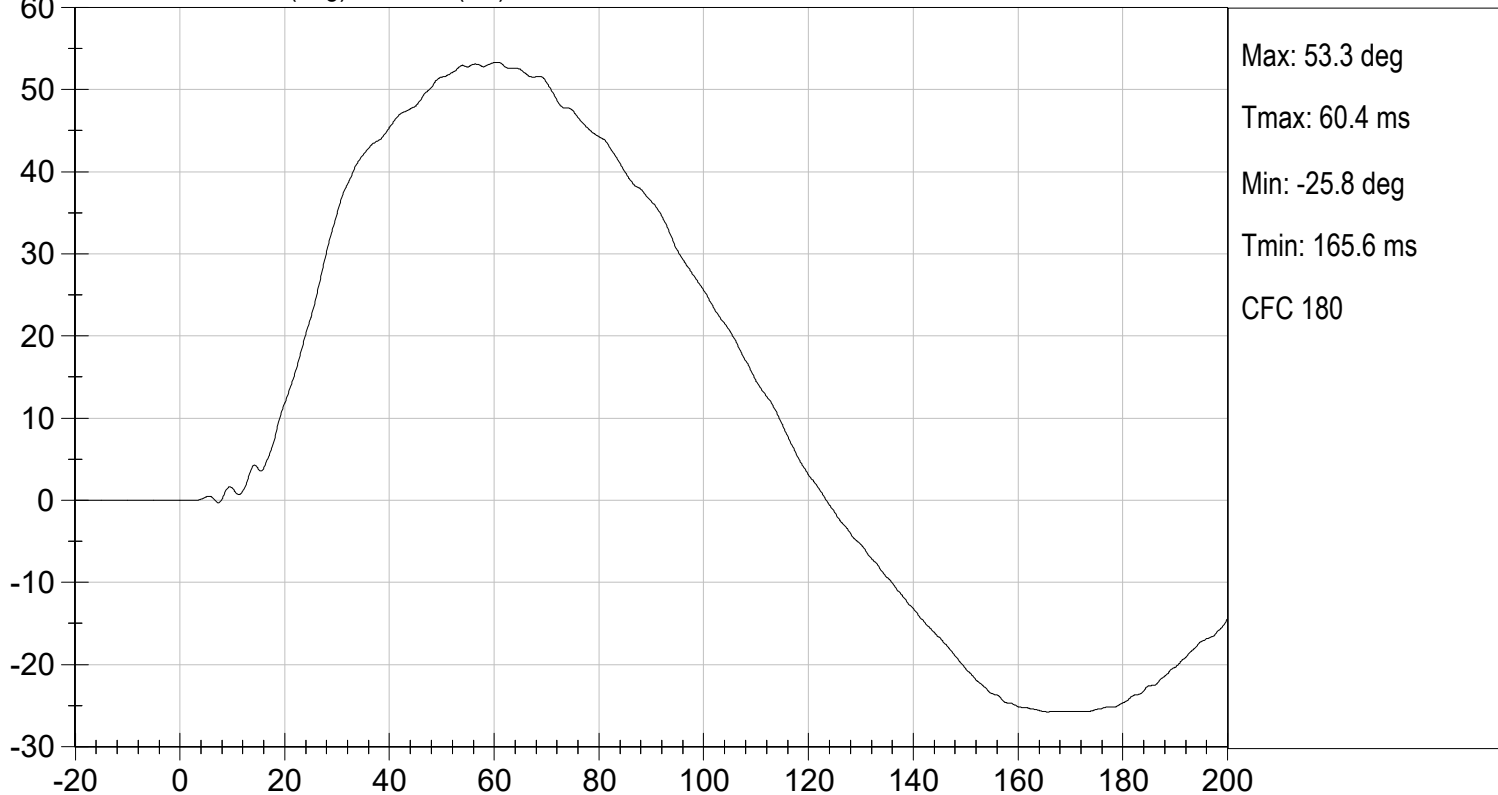
  
 Approved By



PENDULUM VELOCITY (m/s) vs TIME (ms)



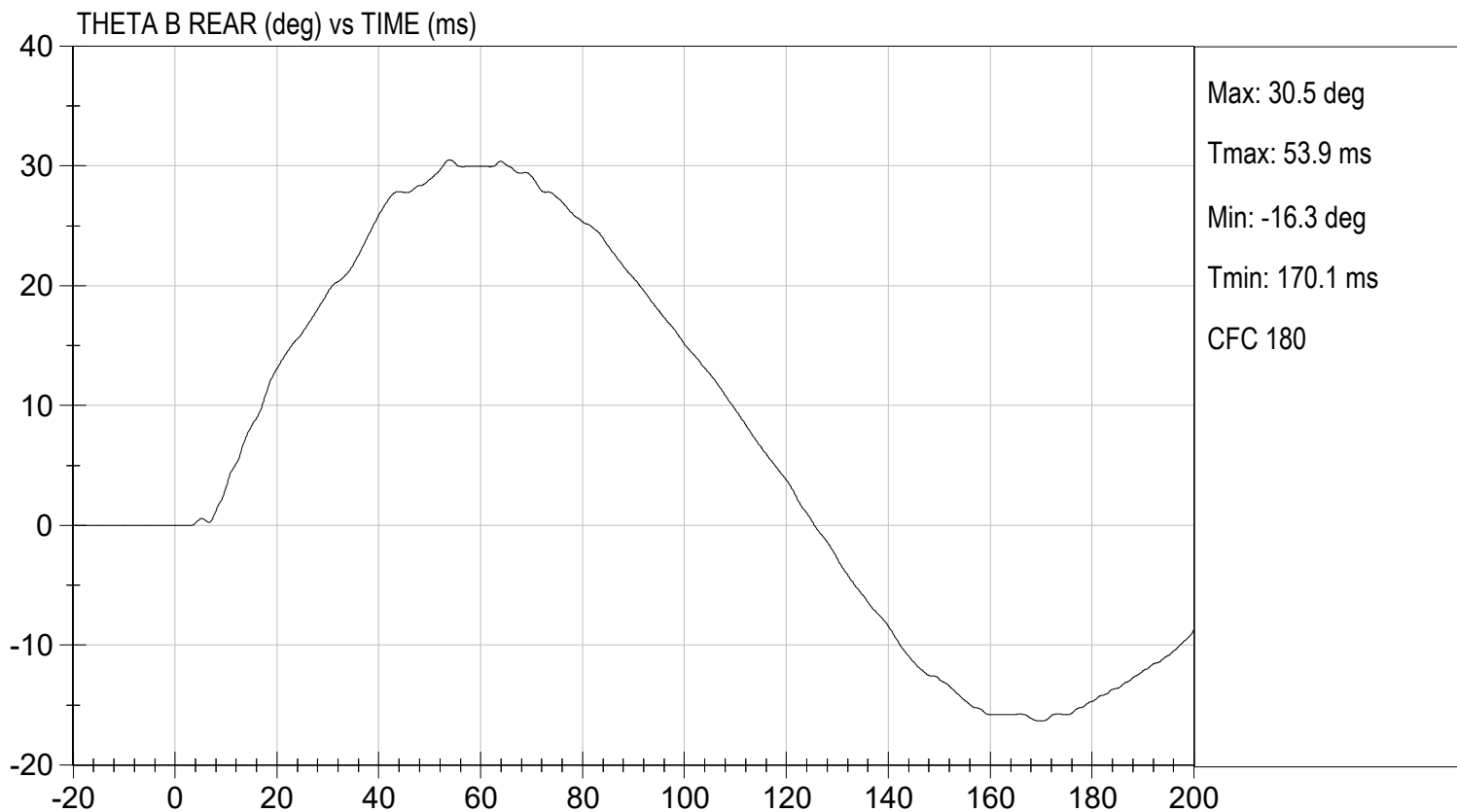
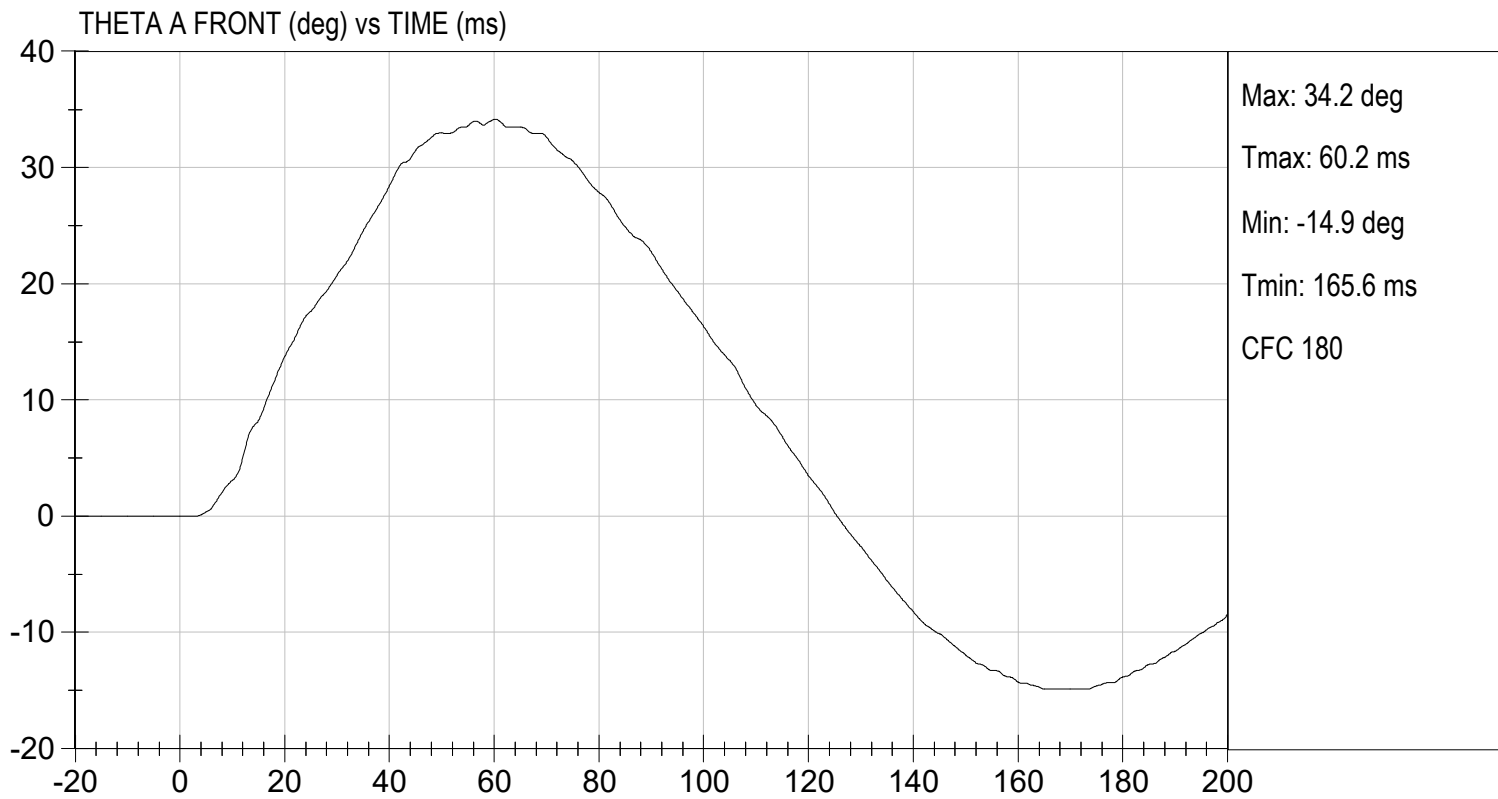
FLEXION ANGLE (deg) vs TIME (ms)





TEST DESC: NECK BENDING  
VELOCITY: 11.26 ft/s, 3.43 m/s

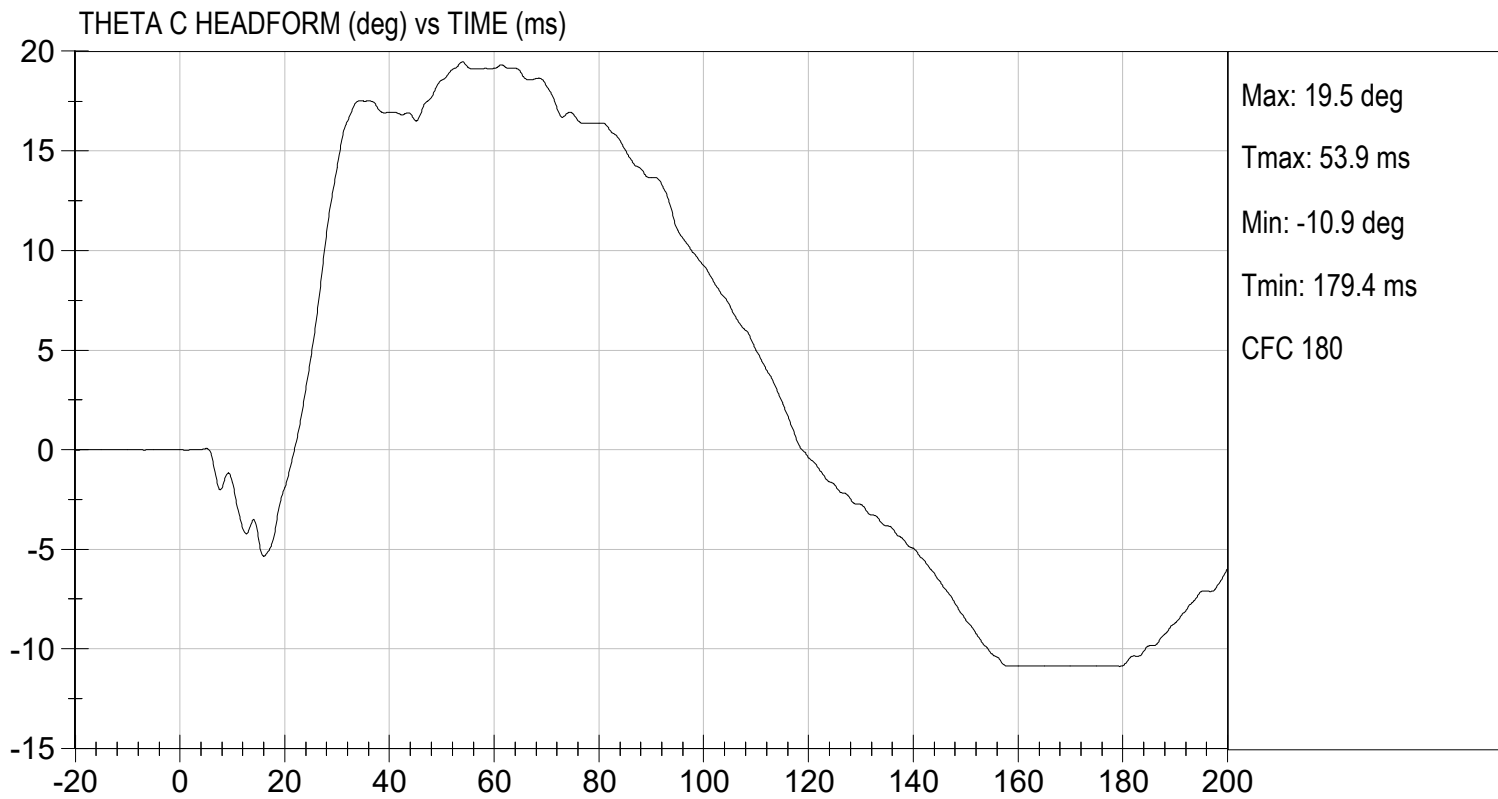
TEST DATE: 12/04/2024  
TEST #: D243102





TEST DESC: NECK BENDING  
VELOCITY: 11.26 ft/s, 3.43 m/s

TEST DATE: 12/04/2024  
TEST #: D243102





**MGA RESEARCH CORPORATION**

**SHOULDER IMPACT TEST**

**ES-2re DUMMY**

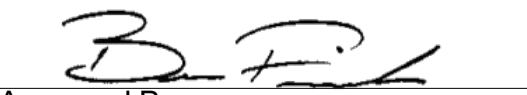
**ATD Serial No:** F032

**Test I.D:** D243103

| Tested Parameter             | Units | Specification | Result | Pass/Fail |
|------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.5   | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 25     | Pass      |
| Pendulum Speed               | m/s   | 4.20 to 4.40  | 4.2    | Pass      |
| Peak Impactor Acceleration   | G's   | 7.5 to 10.5   | 9.1    | Pass      |
| Overall Test Results         |       |               | Pass   |           |

  
Laboratory Technician

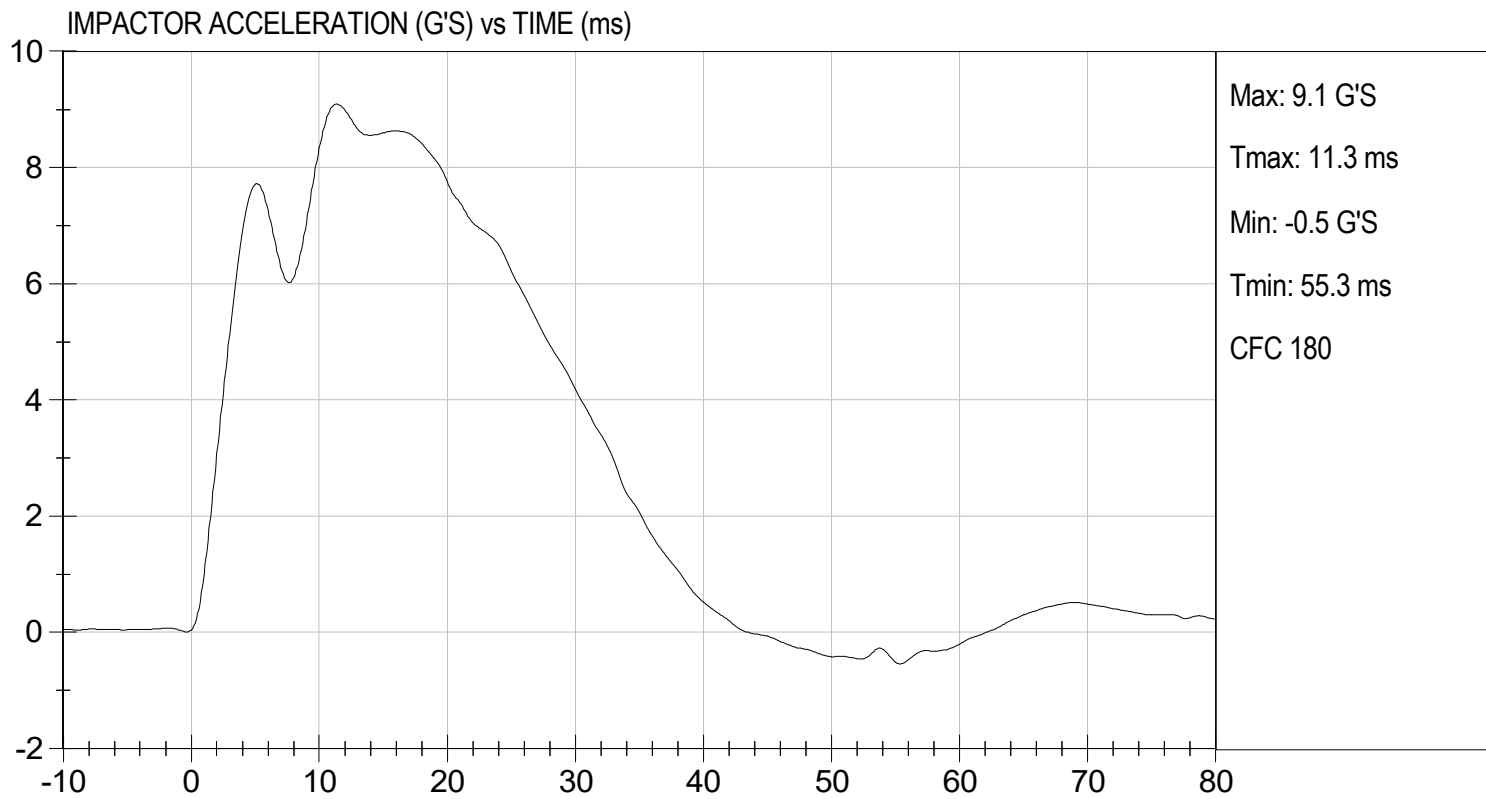
12/04/2024  
Test Date

  
Approved By



TEST DESC: SHOULDER IMPACT  
VELOCITY: 13.77 ft/s, 4.2 m/s

TEST DATE: 12/04/2024  
TEST #: D243103



**MGA RESEARCH CORPORATION**

**UPPER RIB TEST**

**ES-2re DUMMY**

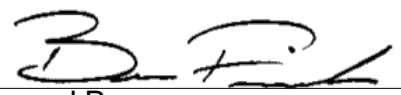
**ATD Serial No:** F032

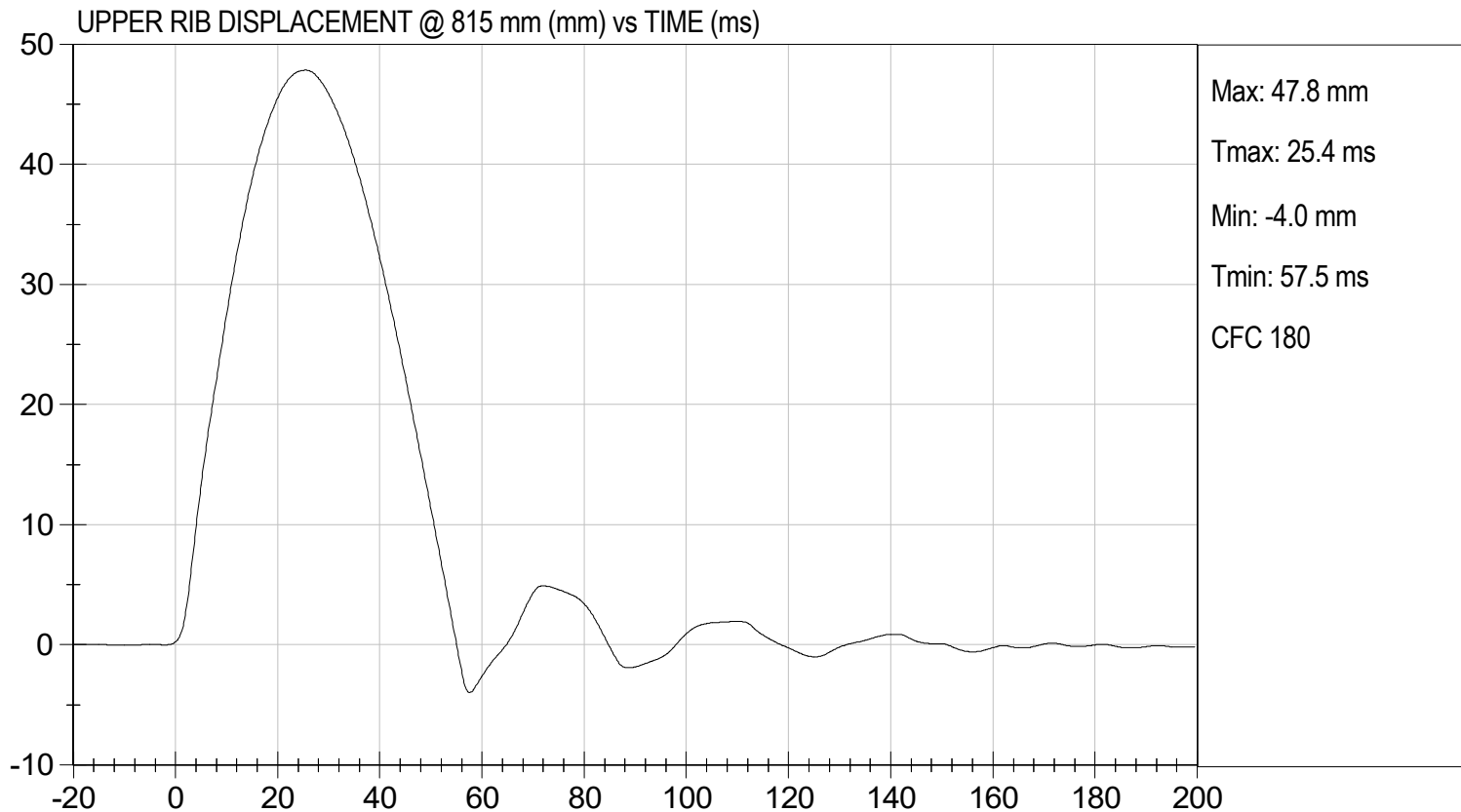
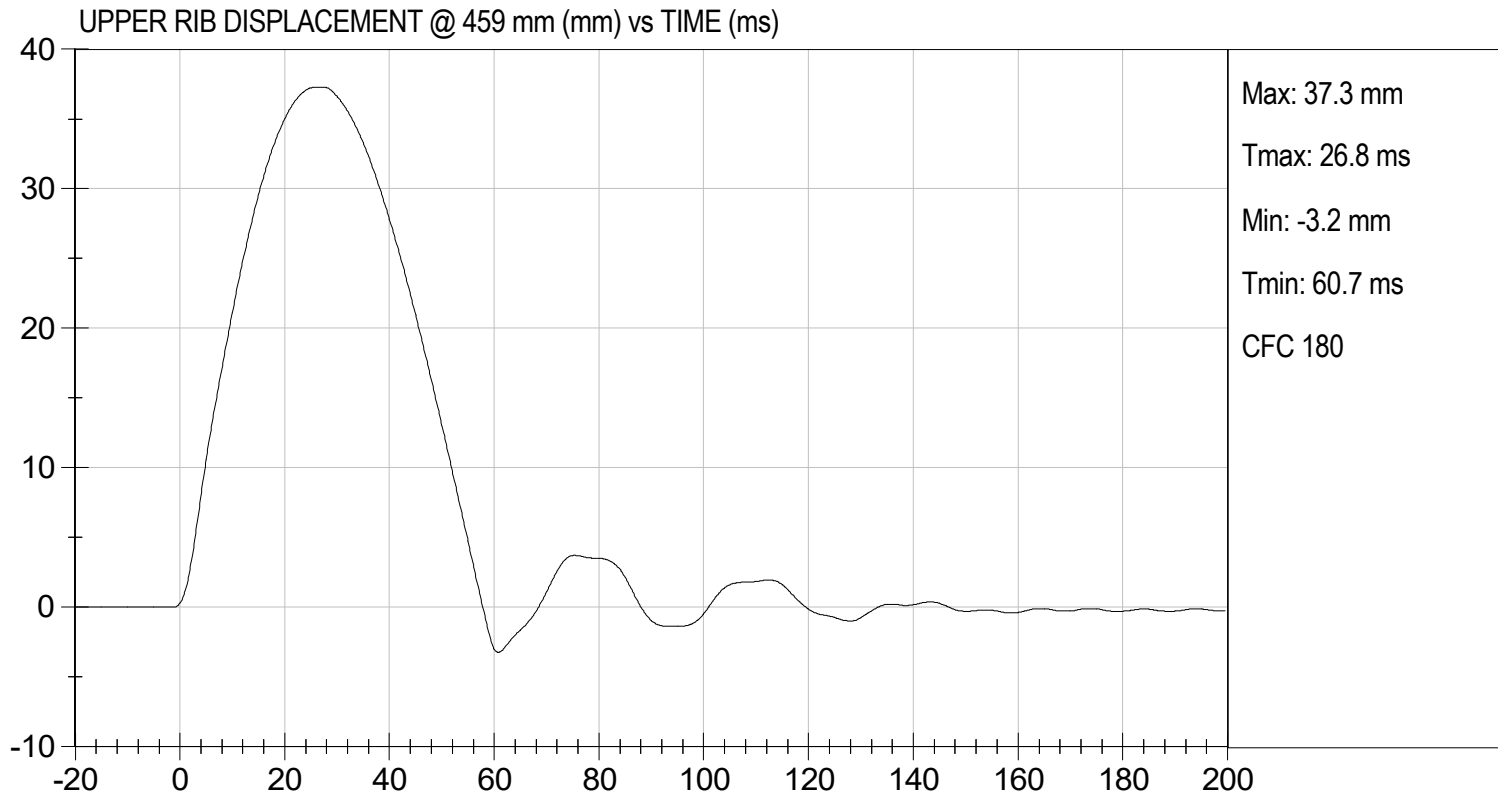
**Test I.D:** D243104

| Tested Parameter             | Units | Specification | Result | Pass/Fail |
|------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.6   | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 25     | Pass      |
| Displacement at 459 mm       | mm    | 36.0 to 40.0  | 37.3   | Pass      |
| Displacement at 815 mm       | mm    | 46.0 to 51.0  | 47.8   | Pass      |
| Overall Test Results         |       |               | Pass   |           |

  
Laboratory Technician

12/04/2024  
Test Date

  
Approved By





**MGA RESEARCH CORPORATION**

**MID RIB TEST**

**ES-2re DUMMY**

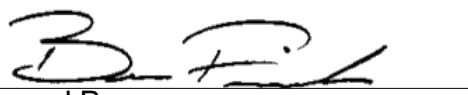
**ATD Serial No:** F032

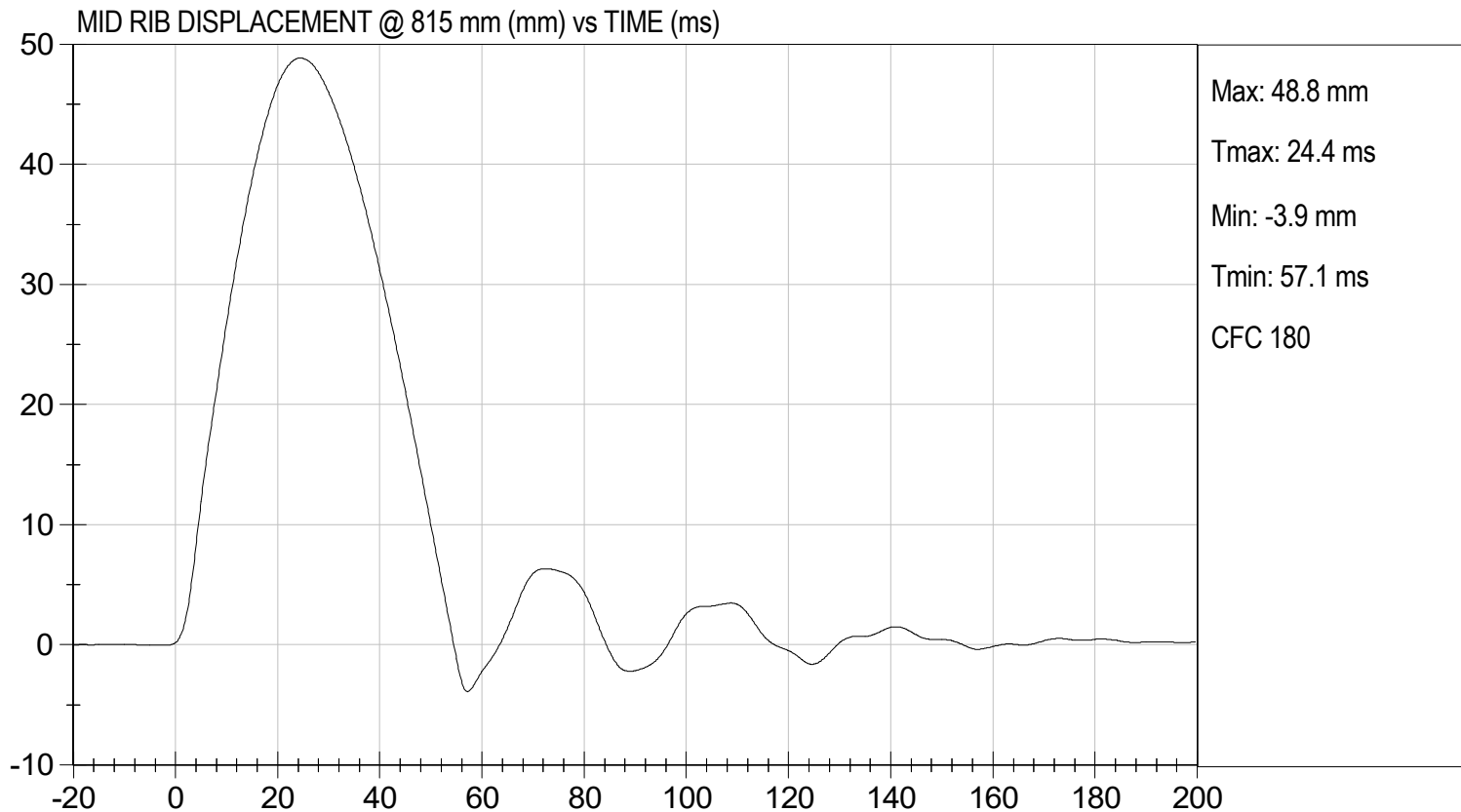
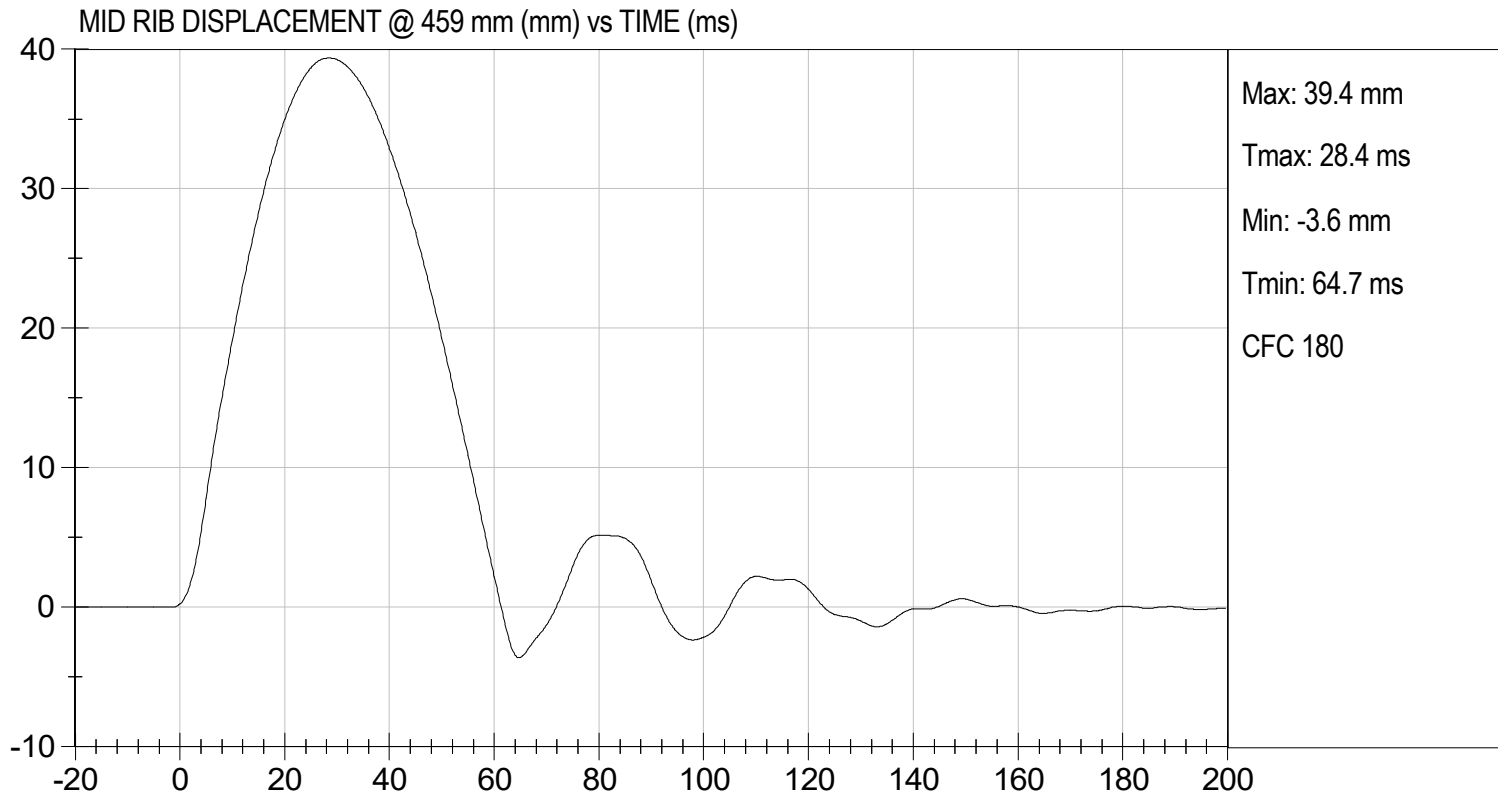
**Test I.D:** D243105

| Tested Parameter             | Units | Specification | Result | Pass/Fail |
|------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.6   | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 25     | Pass      |
| Displacement at 459 mm       | mm    | 36.0 to 40.0  | 39.4   | Pass      |
| Displacement at 815 mm       | mm    | 46.0 to 51.0  | 48.9   | Pass      |
| Overall Test Results         |       |               | Pass   |           |

  
Laboratory Technician

12/04/2024  
Test Date

  
Approved By



**MGA RESEARCH CORPORATION**

**LOWER RIB TEST**

**ES-2re DUMMY**

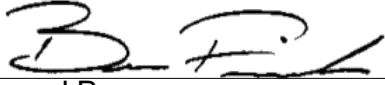
**ATD Serial No:** F032

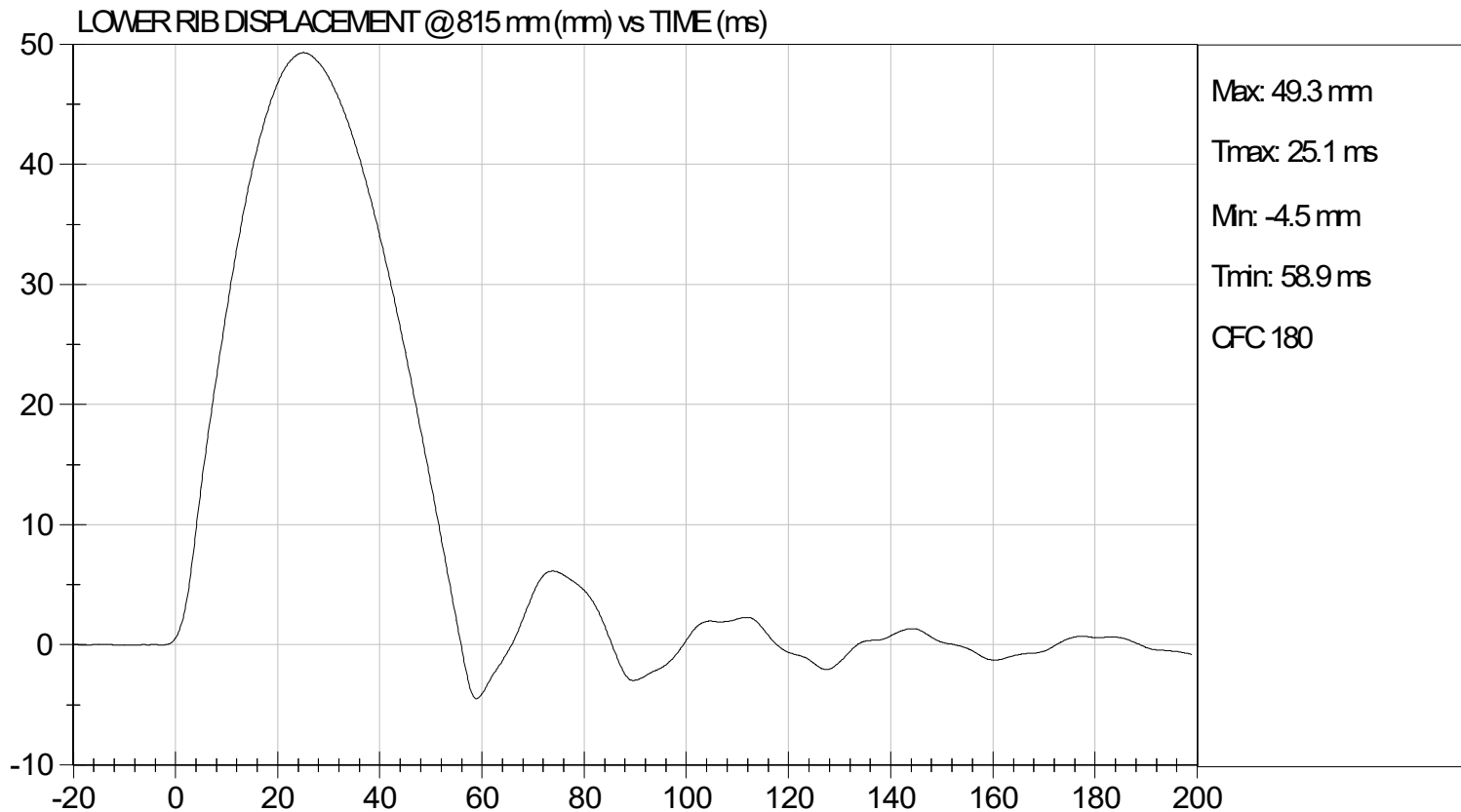
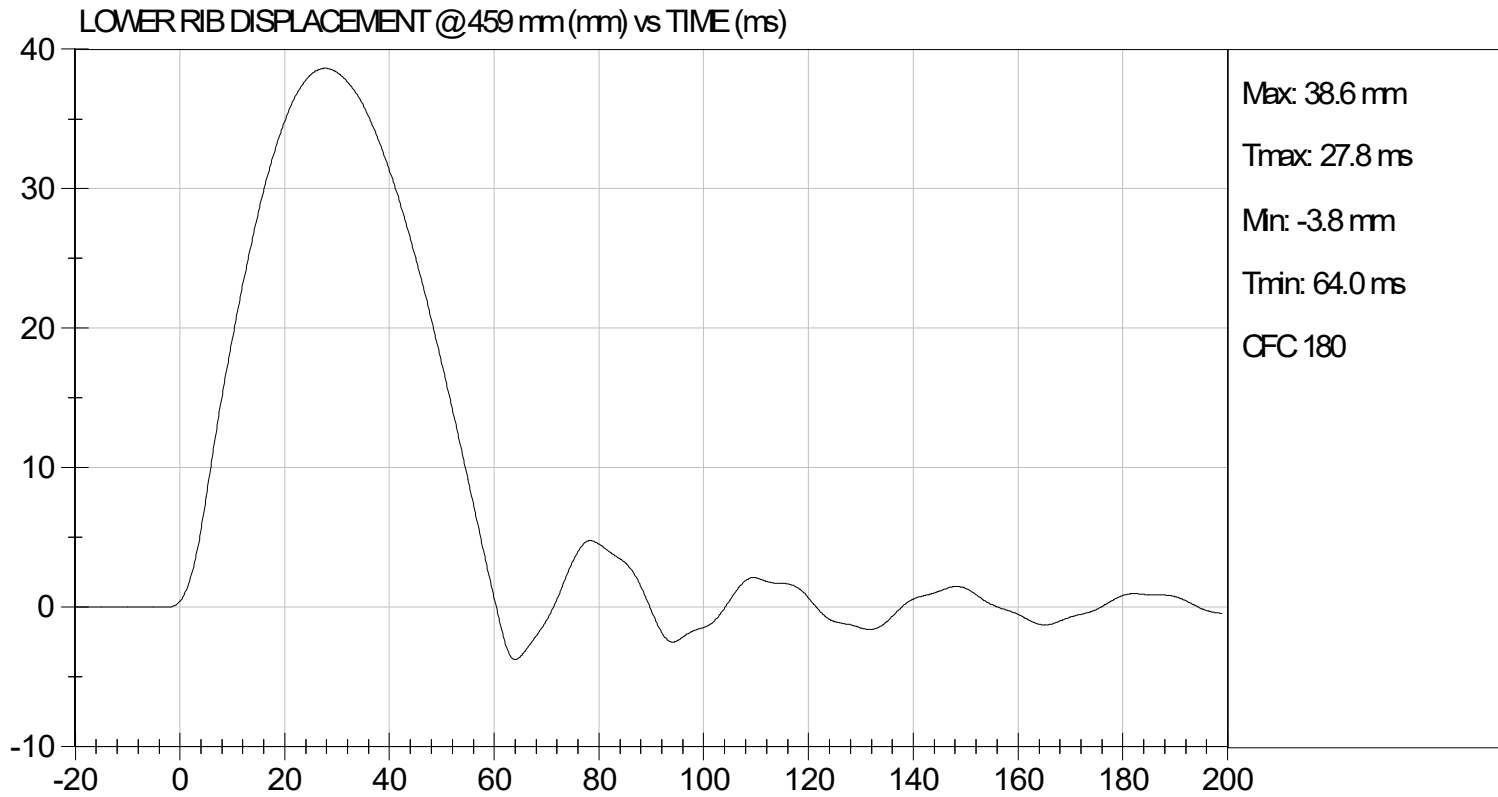
**Test I.D:** D243106

| Tested Parameter             | Units | Specification | Result | Pass/Fail |
|------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature       | deg C | 20.6 to 22.2  | 21.6   | Pass      |
| Laboratory Relative Humidity | %     | 10 to 70      | 25     | Pass      |
| Displacement at 459 mm       | mm    | 36.0 to 40.0  | 38.6   | Pass      |
| Displacement at 815 mm       | mm    | 46.0 to 51.0  | 49.3   | Pass      |
| Overall Test Results         |       |               | Pass   |           |

  
Laboratory Technician

12/04/2024  
Test Date

  
Approved By





## MGA RESEARCH CORPORATION

## ABDOMEN TEST

## ES-2re DUMMY

ATD Serial No: F032

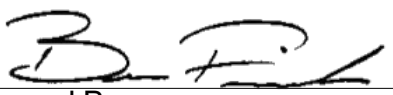
Test I.D: D243107

| Tested Parameter               | Units | Specification | Result | Pass/Fail |
|--------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.5   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 24     | Pass      |
| Probe Speed                    | m/s   | 3.90 to 4.10  | 4.01   | Pass      |
| Maximum Impactor Force         | N     | 4000 to 4800  | 4403   | Pass      |
| Time of Maximum Impactor Force | ms    | 10.6 to 13.0  | 11.1   | Pass      |
| Maximum Total Abdomen Force    | N     | 2200 to 2700  | 2308   | Pass      |
| Time of Maximum Abdomen Force  | ms    | 10.0 to 12.3  | 10.1   | Pass      |
| Overall Test Results           |       |               |        | Pass      |

  
Laboratory Technician

12/04/2024

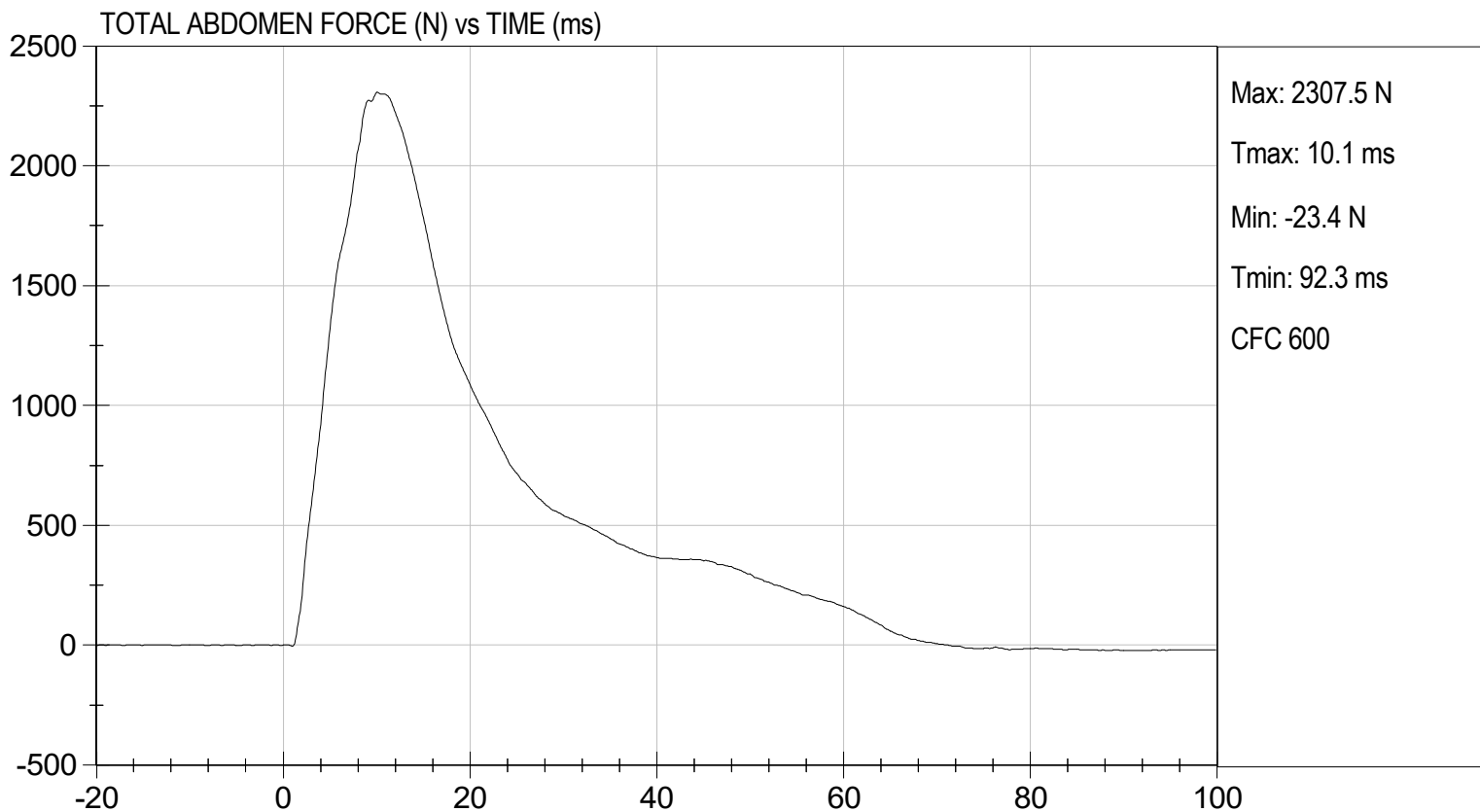
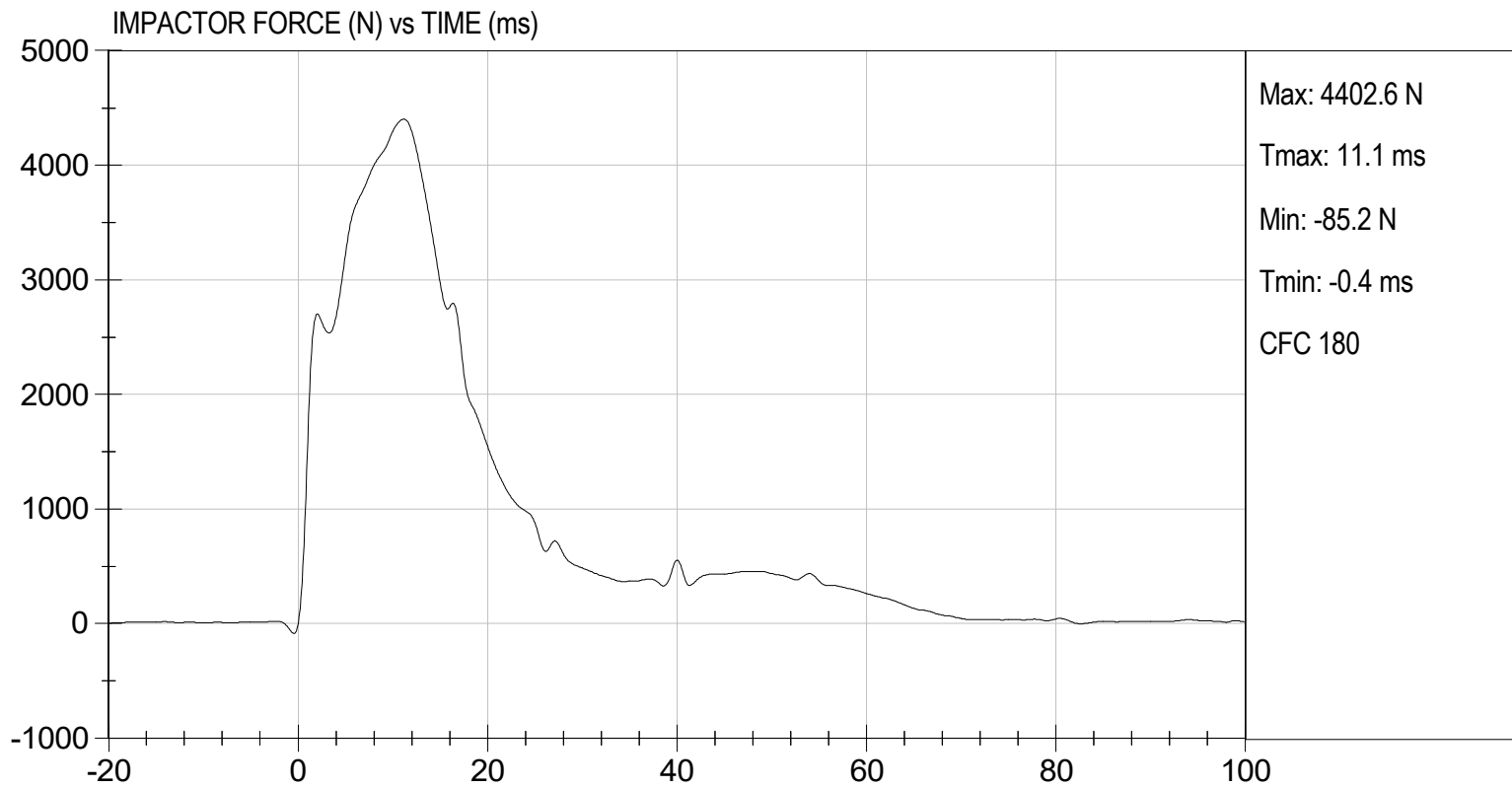
Test Date

  
Approved By



TEST DESC: ABDOMEN IMPACT  
VELOCITY: 13.15 ft/s, 4.01 m/s

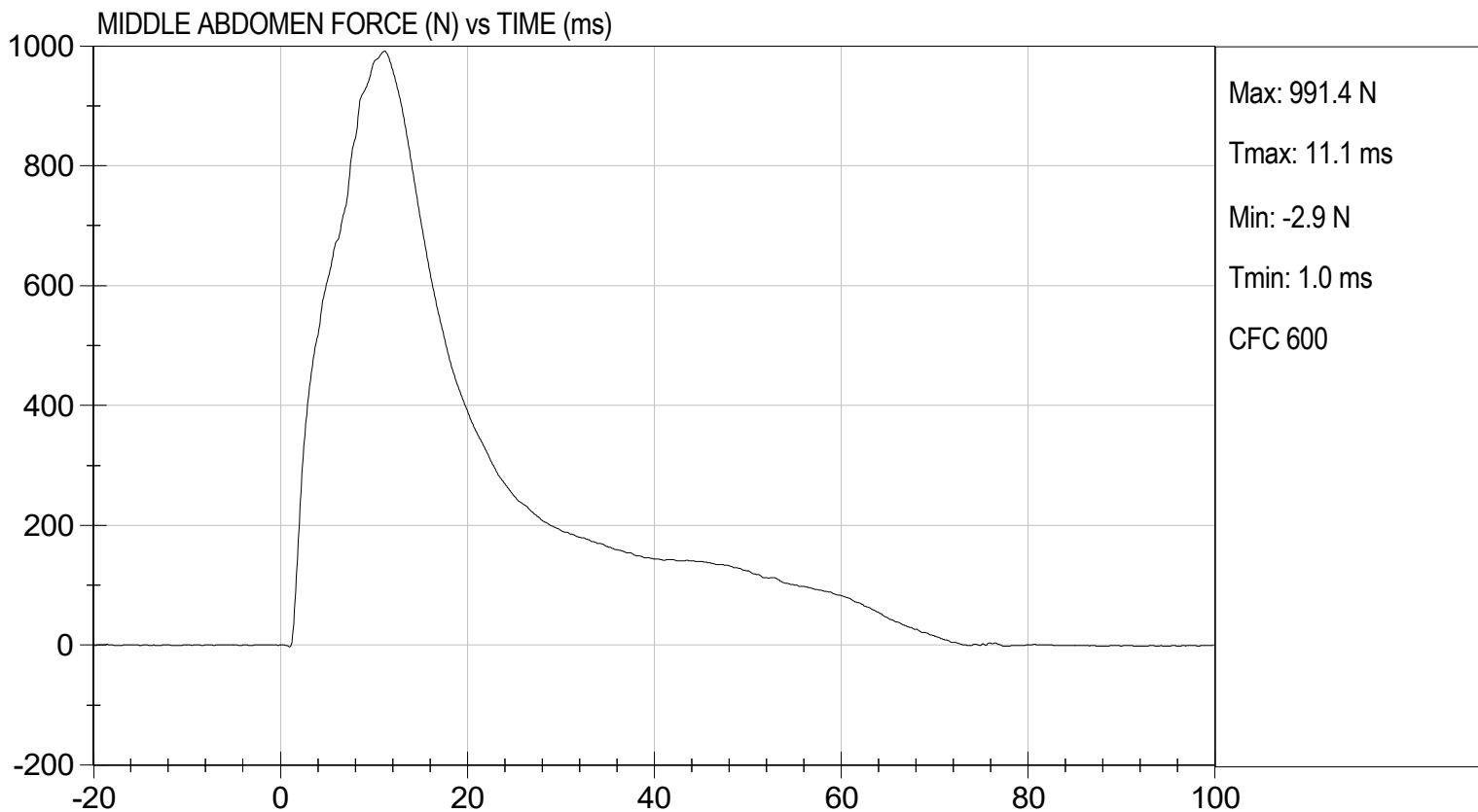
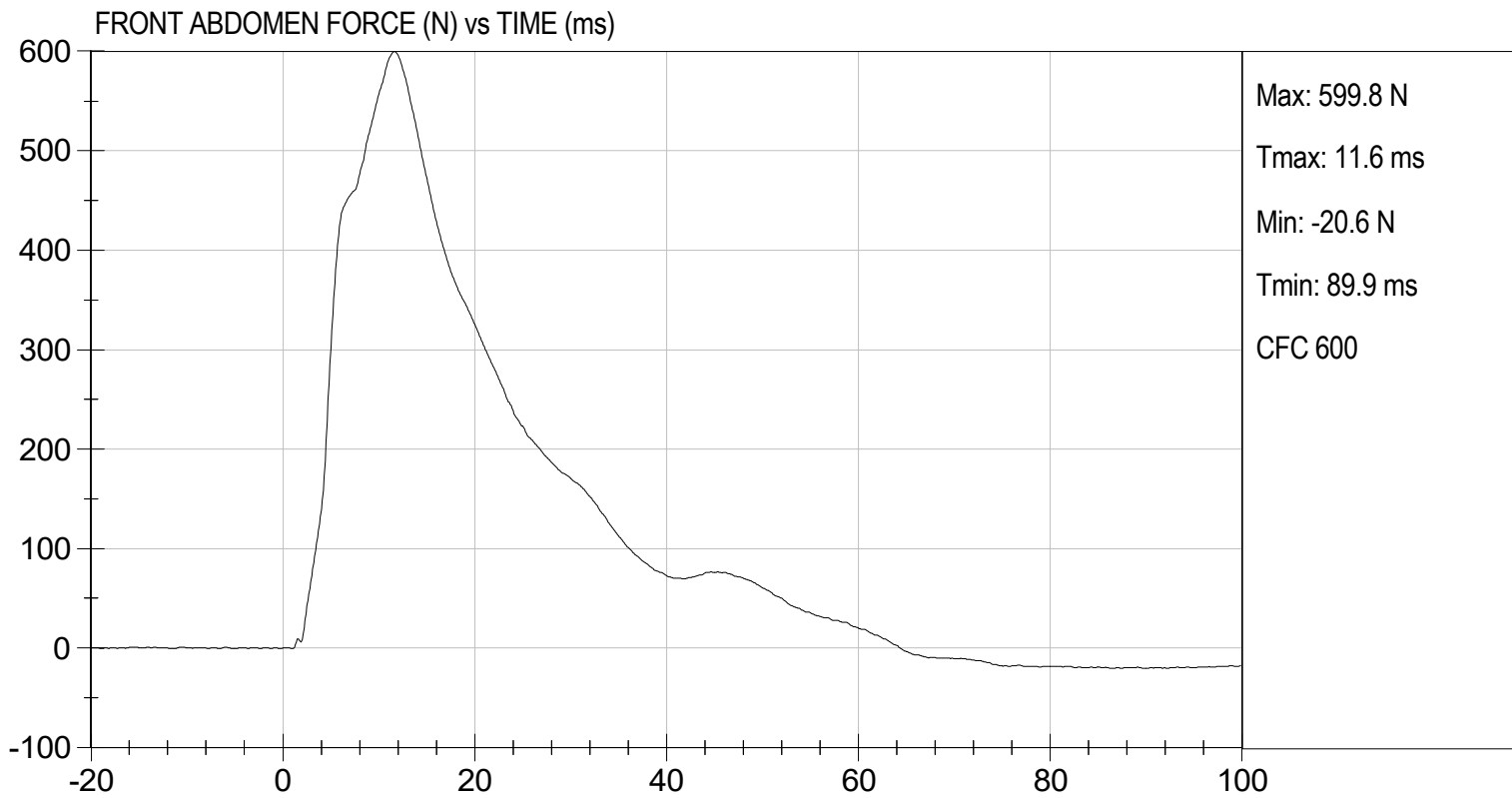
TEST DATE: 12/04/2024  
TEST #: D243107





TEST DESC: ABDOMEN IMPACT  
VELOCITY: 13.15 ft/s, 4.01 m/s

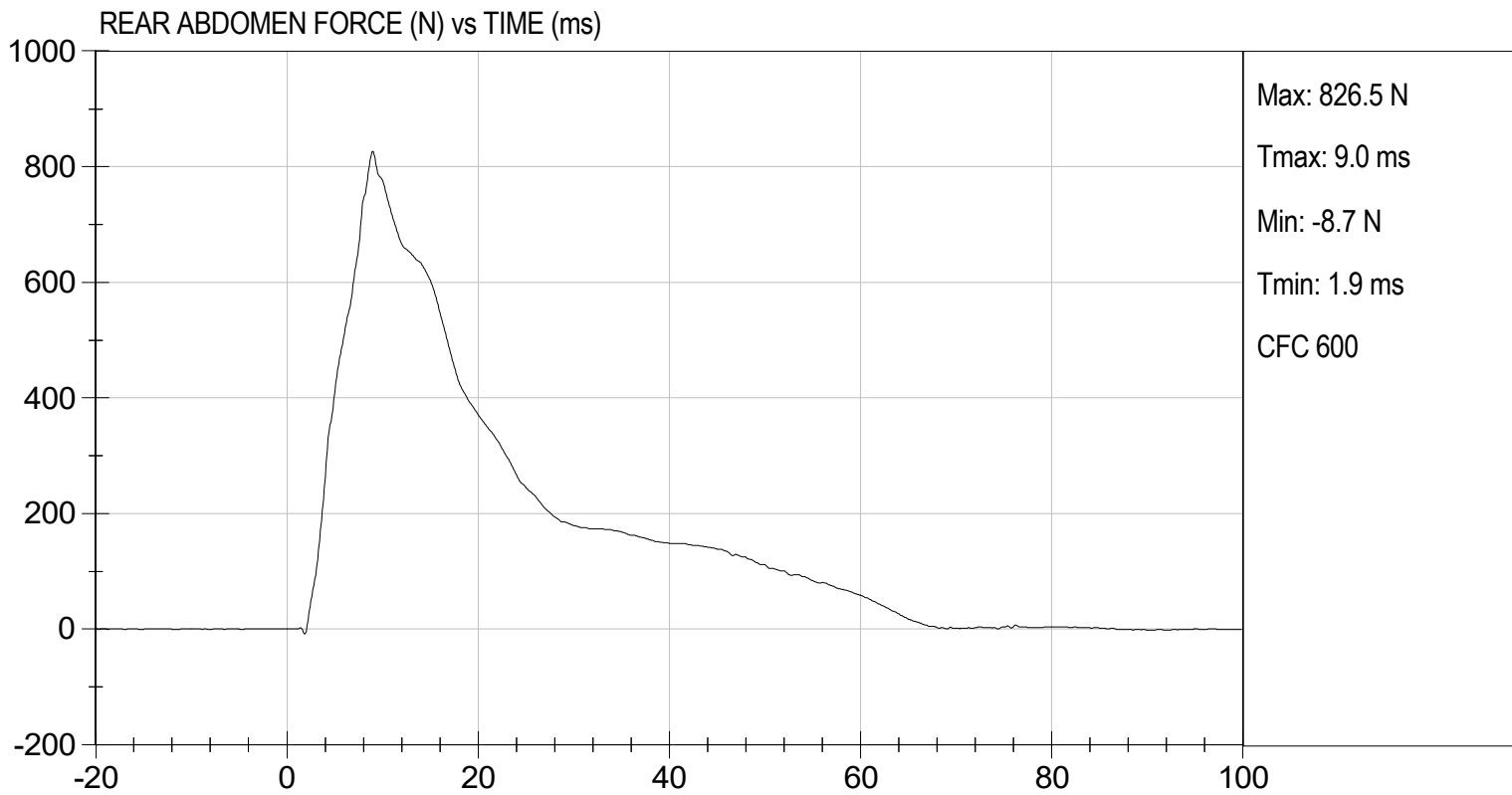
TEST DATE: 12/04/2024  
TEST #: D243107





TEST DESC: ABDOMEN IMPACT  
VELOCITY: 13.15 ft/s, 4.01 m/s

TEST DATE: 12/04/2024  
TEST #: D243107





## MGA RESEARCH CORPORATION

## LUMBAR SPINE TEST

## ES-2re DUMMY

ATD Serial No: F032

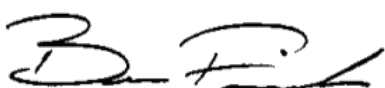
Test I.D: D243108

| Tested Parameter                            |        | Units | Specification   | Result | Pass/Fail |
|---------------------------------------------|--------|-------|-----------------|--------|-----------|
| Laboratory Temperature                      |        | deg C | 20.6 to 22.2    | 21.6   | Pass      |
| Laboratory Relative Humidity                |        | %     | 10 to 70        | 25     | Pass      |
| Pendulum Speed                              |        | m/s   | 5.95 to 6.15    | 6.05   | Pass      |
| Pendulum Velocity                           | 1 ms   | m/s   | -0.05 to 0.00   | -0.03  | Pass      |
|                                             | 3.7 ms | m/s   | -0.425 to -0.24 | -0.407 | Pass      |
|                                             | 27 ms  | m/s   | -6.50 to -5.80  | -5.95  | Pass      |
|                                             | 30 ms  | m/s   | >= -6.50        | -6.28  | Pass      |
| Maximum Flexion Angle                       |        | deg   | 45.0 to 55.0    | 48.3   | Pass      |
| Time of Maximum Flexion Angle               |        | ms    | 39.0 to 53.0    | 47.0   | Pass      |
| Headform Rotation Decay to Initial Position |        | ms    | 37 to 57        | 40     | Pass      |
| Overall Results                             |        |       |                 | Pass   |           |

  
 Laboratory Technician

12/04/2024

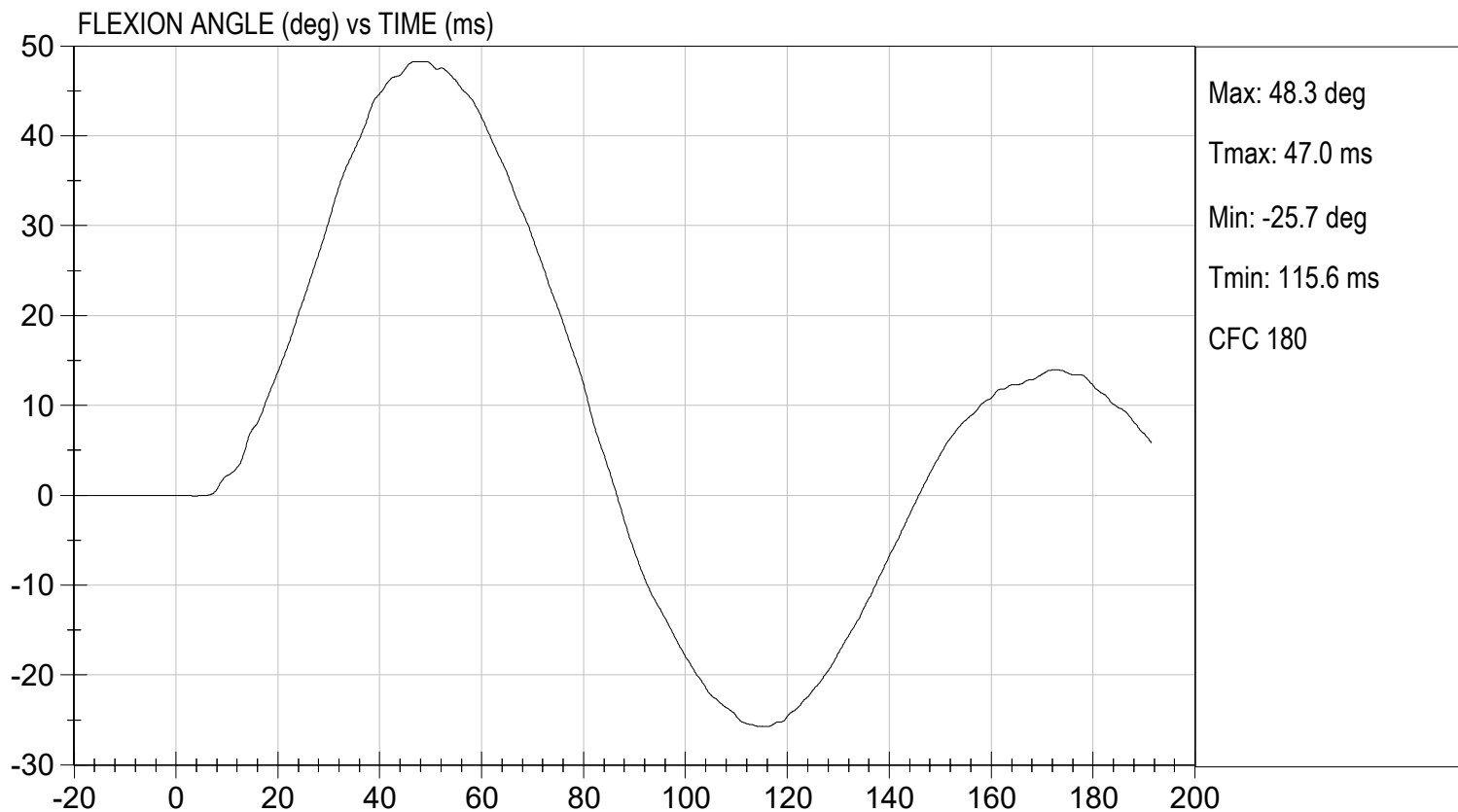
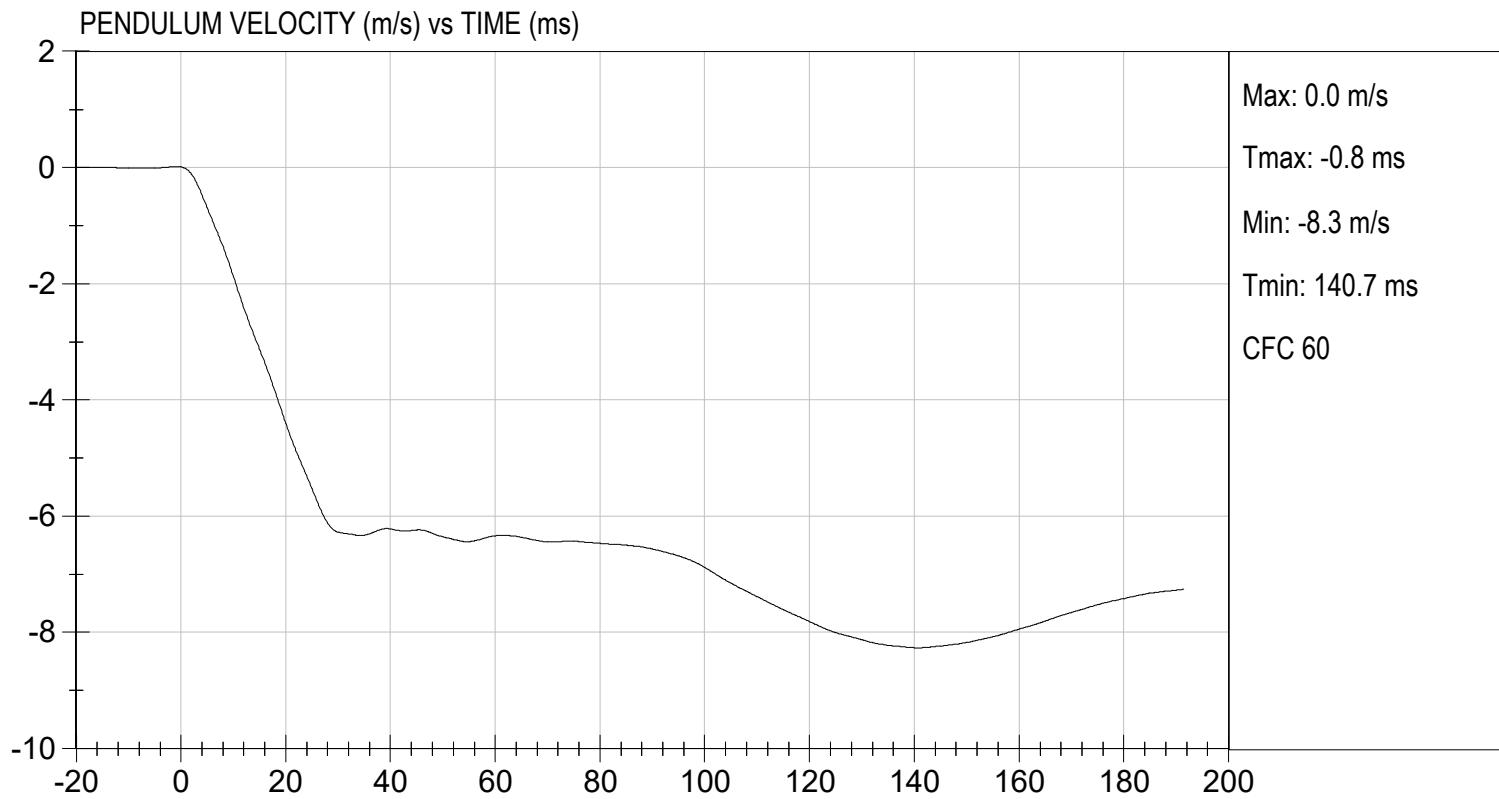
Test Date

  
 Approved By



TEST DESC: LUMBAR BENDING  
VELOCITY: 19.84 ft/s, 6.05 m/s

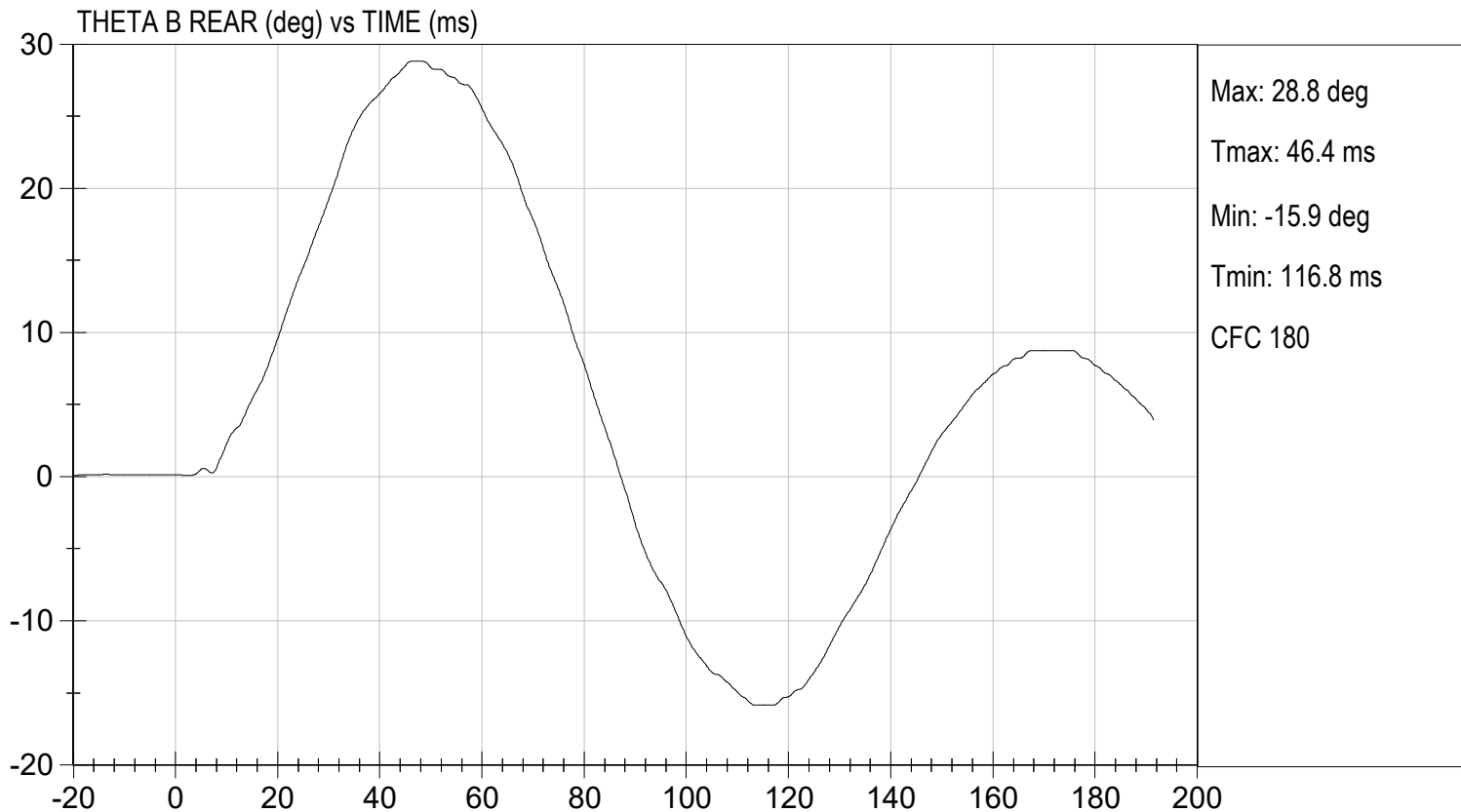
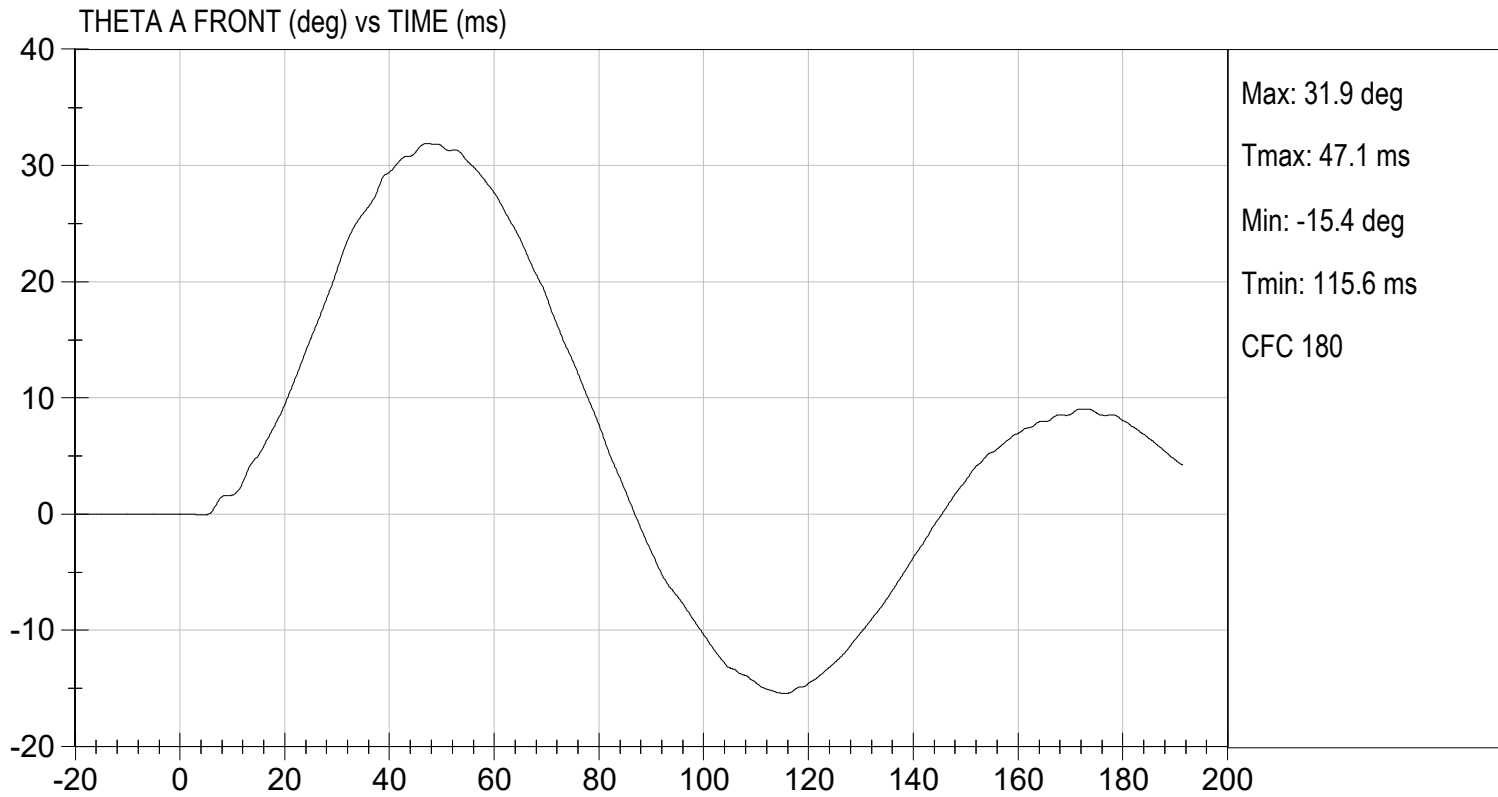
TEST DATE: 12/04/2024  
TEST #: D243108





TEST DESC: LUMBAR BENDING  
VELOCITY: 19.84 ft/s, 6.05 m/s

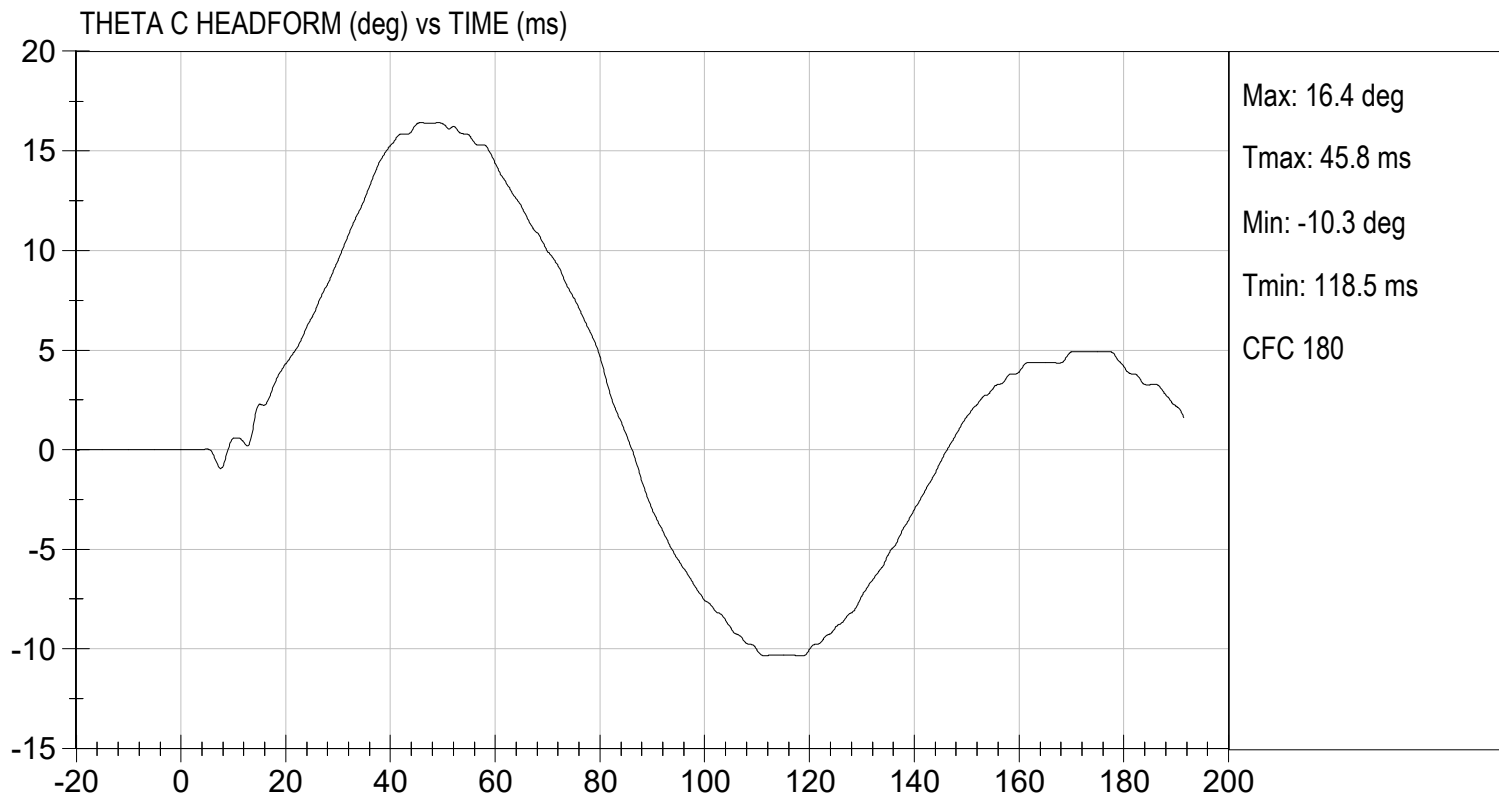
TEST DATE: 12/04/2024  
TEST #: D243108





TEST DESC: LUMBAR BENDING  
VELOCITY: 19.84 ft/s, 6.05 m/s

TEST DATE: 12/04/2024  
TEST #: D243108



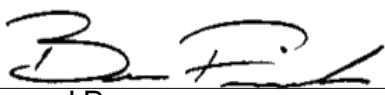


**MGA RESEARCH CORPORATION****PELVIS TEST****ES-2re DUMMY****ATD Serial No:** F032**Test I.D:** D243109

| Tested Parameter               | Units | Specification | Result | Pass/Fail |
|--------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.5   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 24     | Pass      |
| Probe Speed                    | m/s   | 4.20 to 4.40  | 4.34   | Pass      |
| Maximum Impactor Force         | N     | 4700 to 5400  | 5015   | Pass      |
| Time of Maximum Impactor Force | ms    | 11.8 to 16.1  | 12.5   | Pass      |
| Maximum Pubic Force            | N     | 1230 to 1590  | 1278   | Pass      |
| Time of Maximum Pubic Force    | ms    | 12.2 to 17.0  | 13.5   | Pass      |
| Overall Test Results           |       |               |        | Pass      |

  
Laboratory Technician12/04/2024

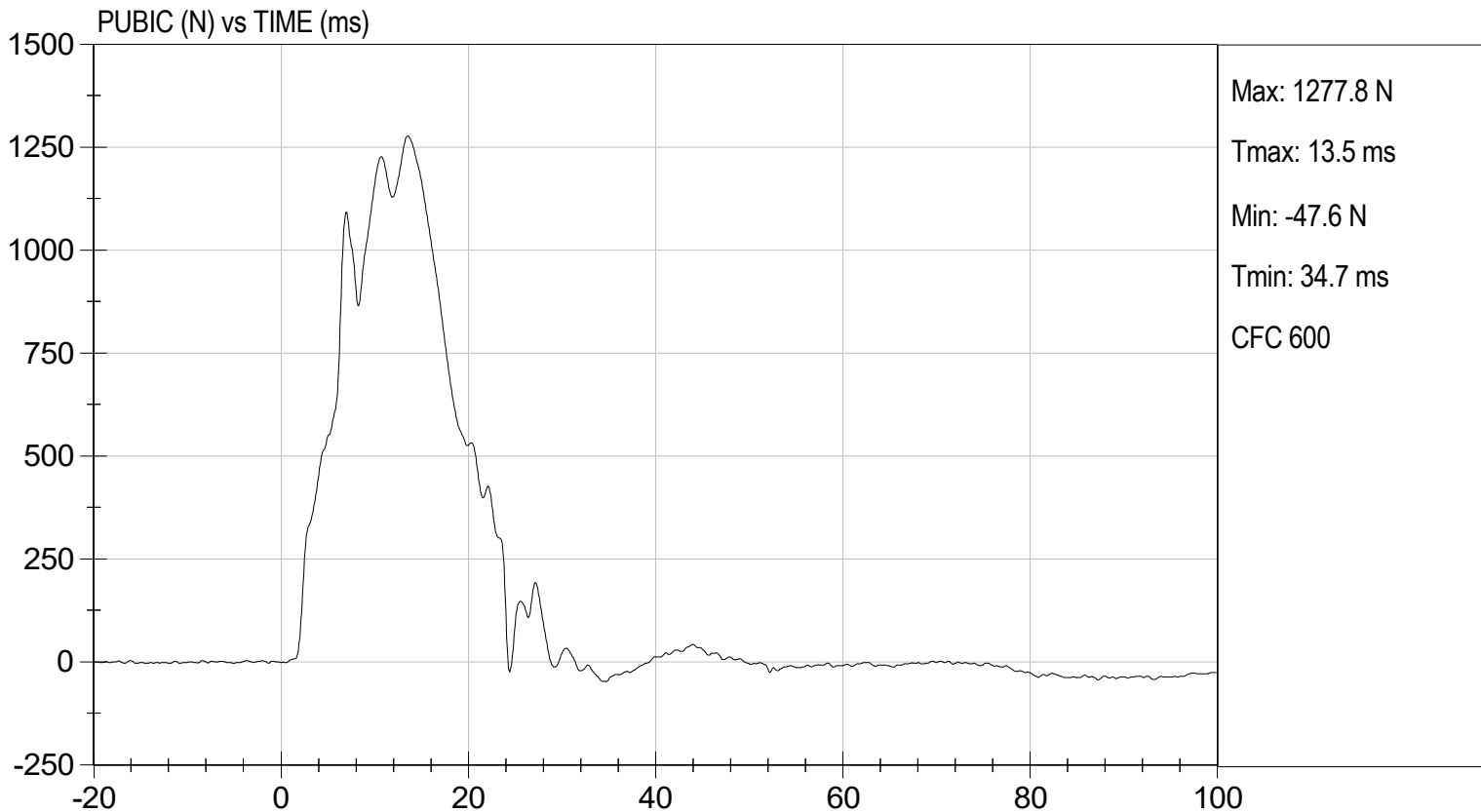
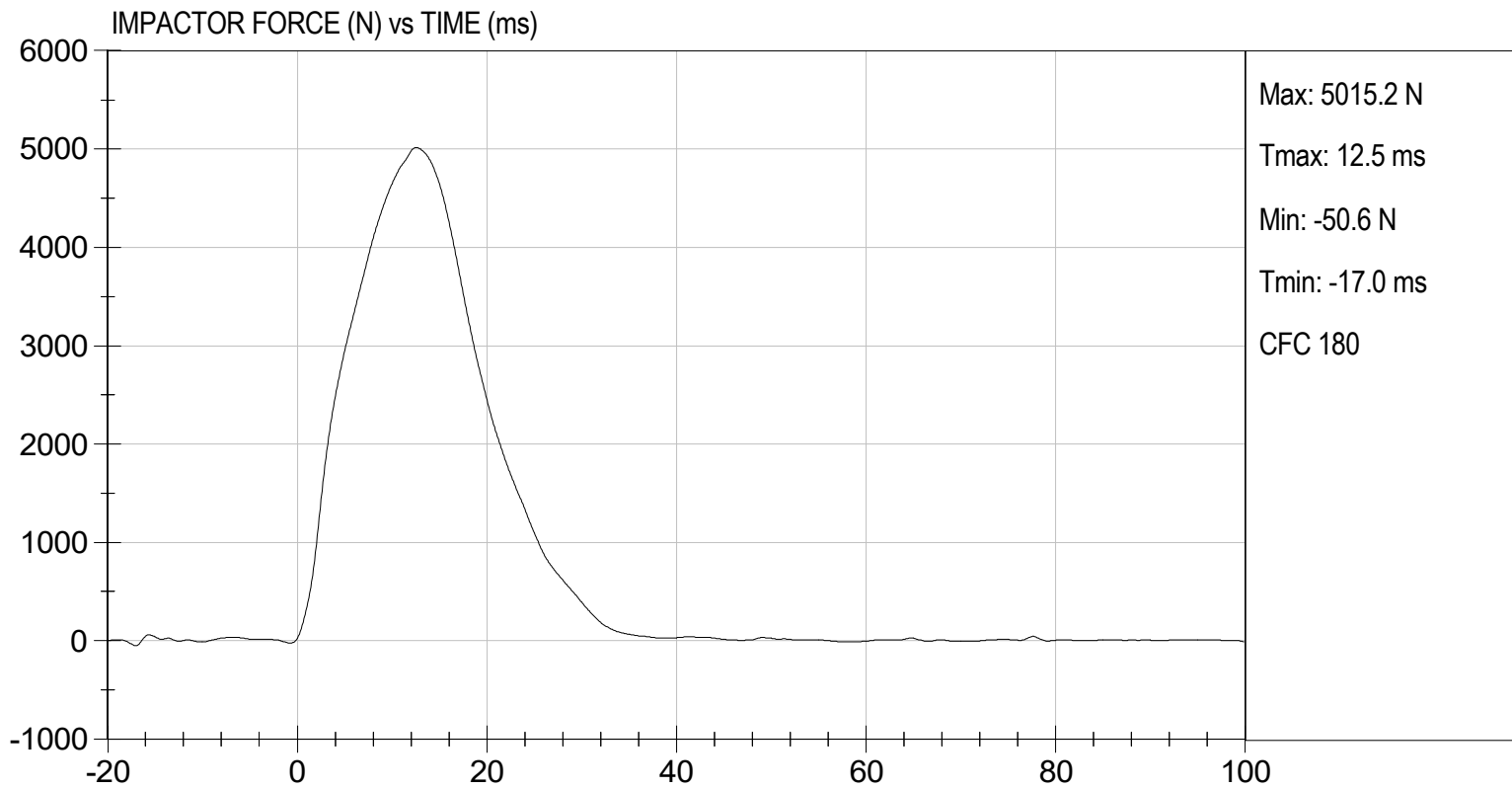
Test Date

  
Approved By



TEST DESC: PELVIS IMPACT  
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 12/04/2024  
TEST #: D243109



## MGA RESEARCH CORPORATION

## THORAX IMPACT TEST

## ES-2re DUMMY

ATD Serial No: F032

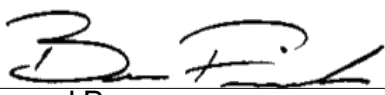
Test I.D: D243100

| Tested Parameter                    | Units | Specification | Result | Pass/Fail |
|-------------------------------------|-------|---------------|--------|-----------|
| Temperature                         | deg C | 20.6 to 22.2  | 21.7   | Pass      |
| Humidity                            | %     | 10 to 70      | 24     | Pass      |
| Probe Speed                         | m/s   | 5.40 to 5.60  | 5.40   | Pass      |
| Maximum Impactor Force (after 6 ms) | N     | 5100 to 6200  | 5834   | Pass      |
| Upper Rib Displacement              | mm    | 34.0 to 41.0  | 36.6   | Pass      |
| Middle Rib Displacement             | mm    | 37.0 to 45.0  | 39.2   | Pass      |
| Lower Rib Displacement              | mm    | 37.0 to 44.0  | 37.8   | Pass      |
| Overall Test Results                |       |               | Pass   |           |

  
Laboratory Technician

12/04/2024

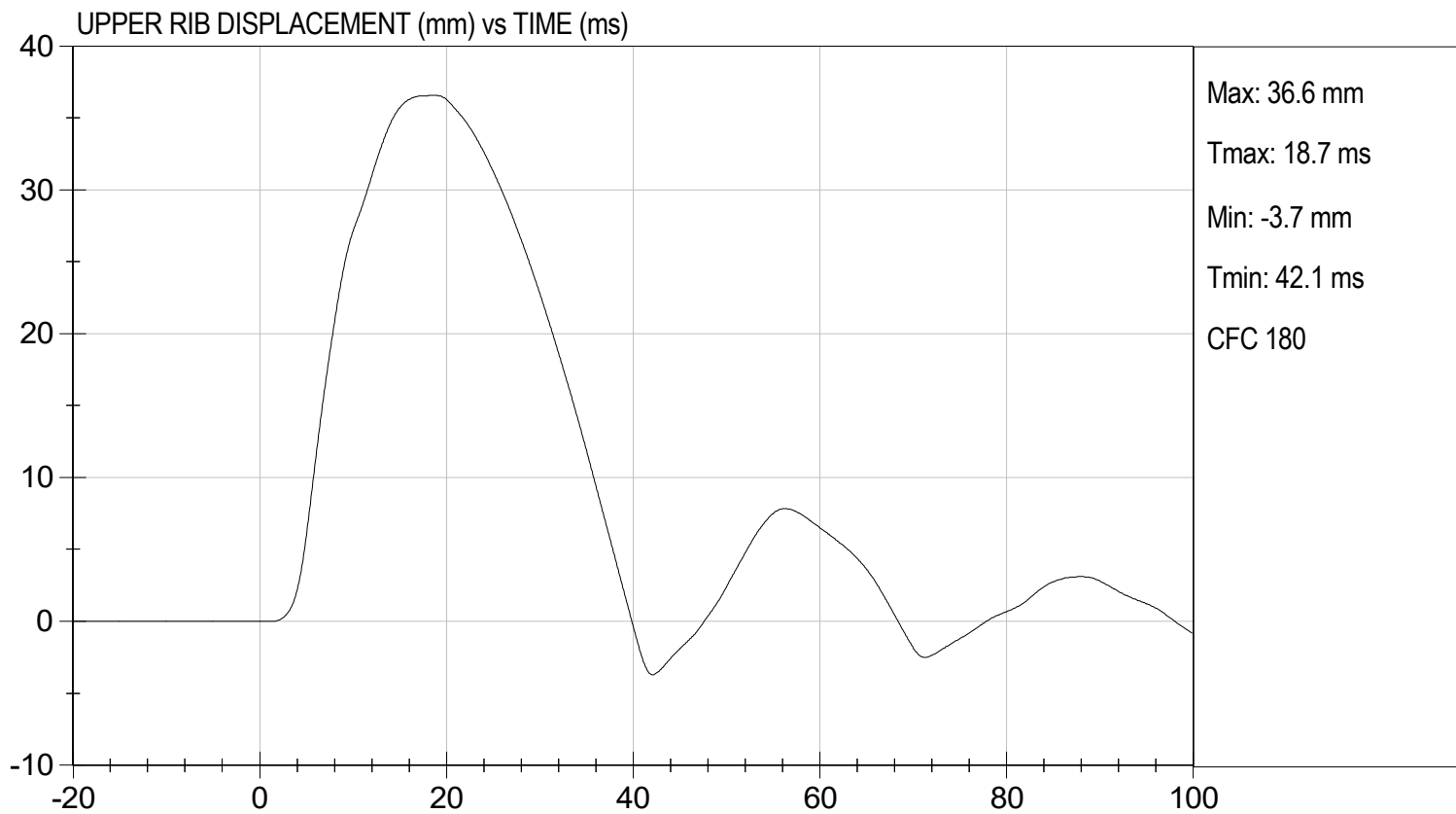
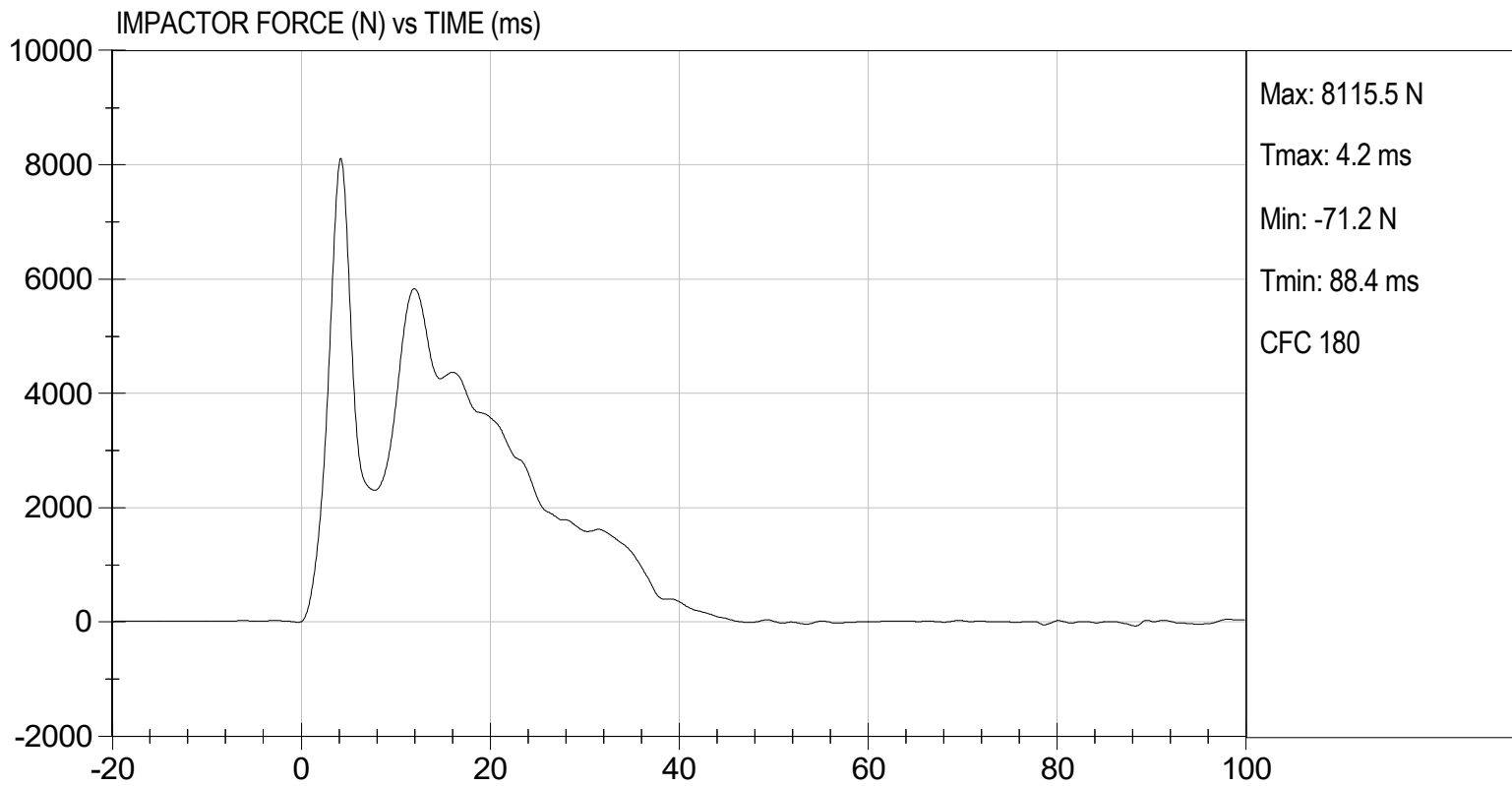
Test Date

  
Approved By



TEST DESC: THORAX IMPACT  
VELOCITY: 17.73 ft/s, 5.40 m/s

TEST DATE: 12/04/2024  
TEST #: D243100

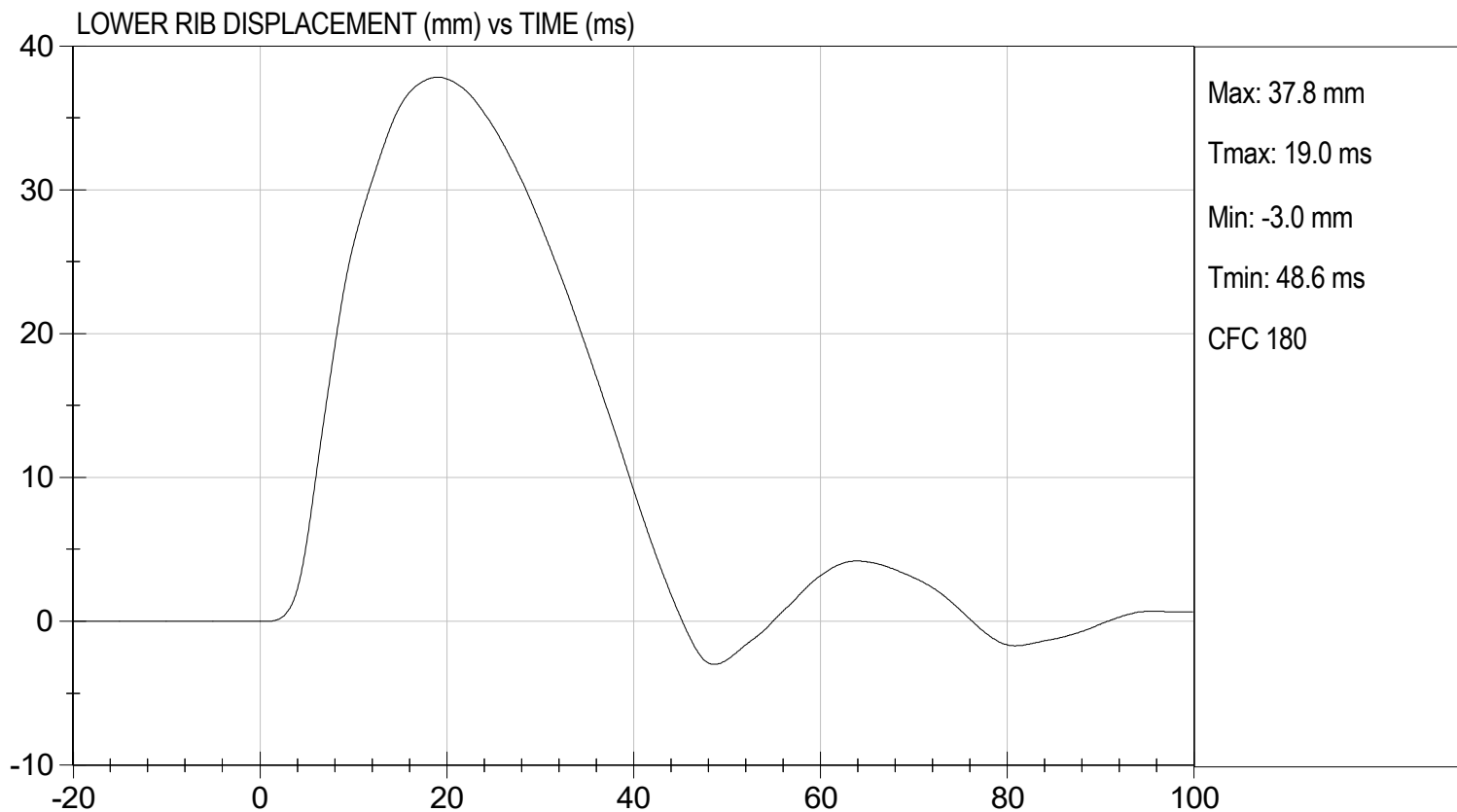
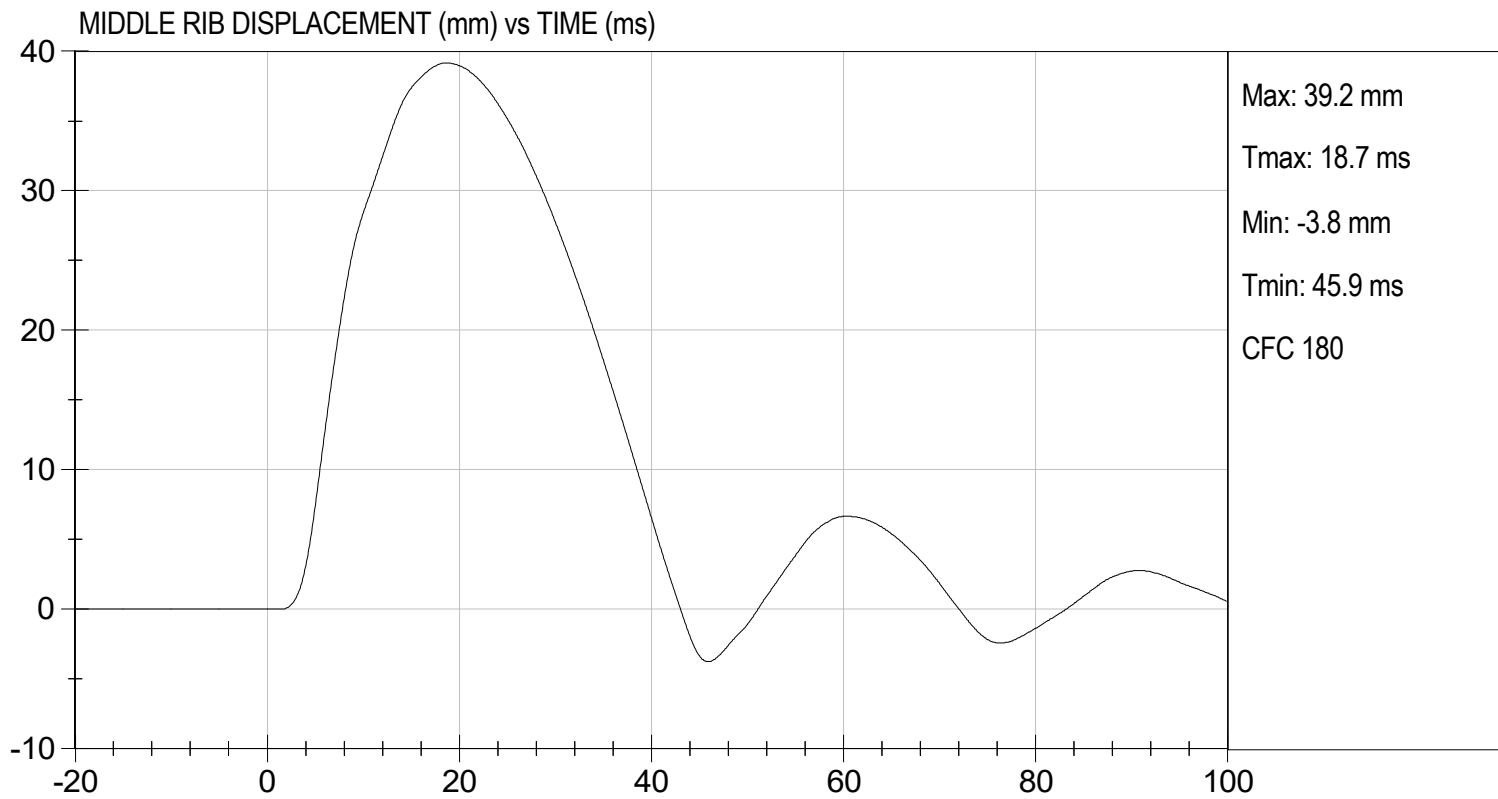






TEST DESC: THORAX IMPACT  
VELOCITY: 17.73 ft/s, 5.40 m/s

TEST DATE: 12/04/2024  
TEST #: D243100



## **QUALIFICATION TEST RESULTS**

### **PRE-TEST**

**SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD**

**SID-IIsD External Measurements**  
**SN: 296**

| <b>No.</b> | <b>Name</b>                   | <b>Spec. (mm)</b> | <b>Result</b> | <b>Pass/Fail</b> |
|------------|-------------------------------|-------------------|---------------|------------------|
| <b>A</b>   | Sitting Height                | 772 - 788         | 784           | Pass             |
| <b>B</b>   | Shoulder Pivot Height         | 437 - 453         | 442           | Pass             |
| <b>C</b>   | H-point Height                | 79 - 89           | 83            | Pass             |
| <b>D</b>   | H-point from Seatback         | 141 - 151         | 145           | Pass             |
| <b>E</b>   | Shoulder Pivot from Backline  | 97 - 107          | 99            | Pass             |
| <b>F</b>   | Thigh Clearance               | 119 -135          | 121           | Pass             |
| <b>G</b>   | Head Breadth                  | 140 - 148         | 142           | Pass             |
| <b>H</b>   | Head Back from Backline       | 40 - 46           | 45            | Pass             |
| <b>I</b>   | Head Depth                    | 178 - 188         | 180           | Pass             |
| <b>J</b>   | Head Circumference            | 541 - 551         | 548           | Pass             |
| <b>K</b>   | Buttock to Knee Length        | 514 - 540         | 535           | Pass             |
| <b>L</b>   | Popliteal Height              | 343 - 369         | 358           | Pass             |
| <b>M</b>   | Knee Pivot to Floor Height    | 392 - 409         | 404           | Pass             |
| <b>N</b>   | Buttock Popliteal Length      | 416 - 442         | 435           | Pass             |
| <b>O</b>   | Chest Depth w/o Jacket        | 195 - 211         | 206           | Pass             |
| <b>P</b>   | Foot Length                   | 216 - 232         | 219           | Pass             |
| <b>Q</b>   | Hip Breadth (w/ pelvic plugs) | 313 - 323         | 316           | Pass             |
| <b>R</b>   | Arm Length                    | 249 - 259         | 250           | Pass             |
| <b>S</b>   | Knee Joint to Seatback        | 477 - 493         | 481           | Pass             |
| <b>V</b>   | Shoulder Width                | 341 - 357         | 346           | Pass             |
| <b>W</b>   | Foot Width                    | 78 - 94           | 85            | Pass             |
| <b>Y</b>   | Chest Circumference w/ jacket | 851 - 881         | 870           | Pass             |
| <b>Z</b>   | Waist Circumference           | 761 - 791         | 772           | Pass             |

**MGA RESEARCH CORPORATION**  
**HEAD DROP TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

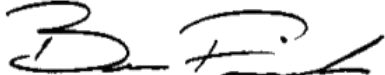
**ATD Serial No:** 296

**Test ID:** D242901

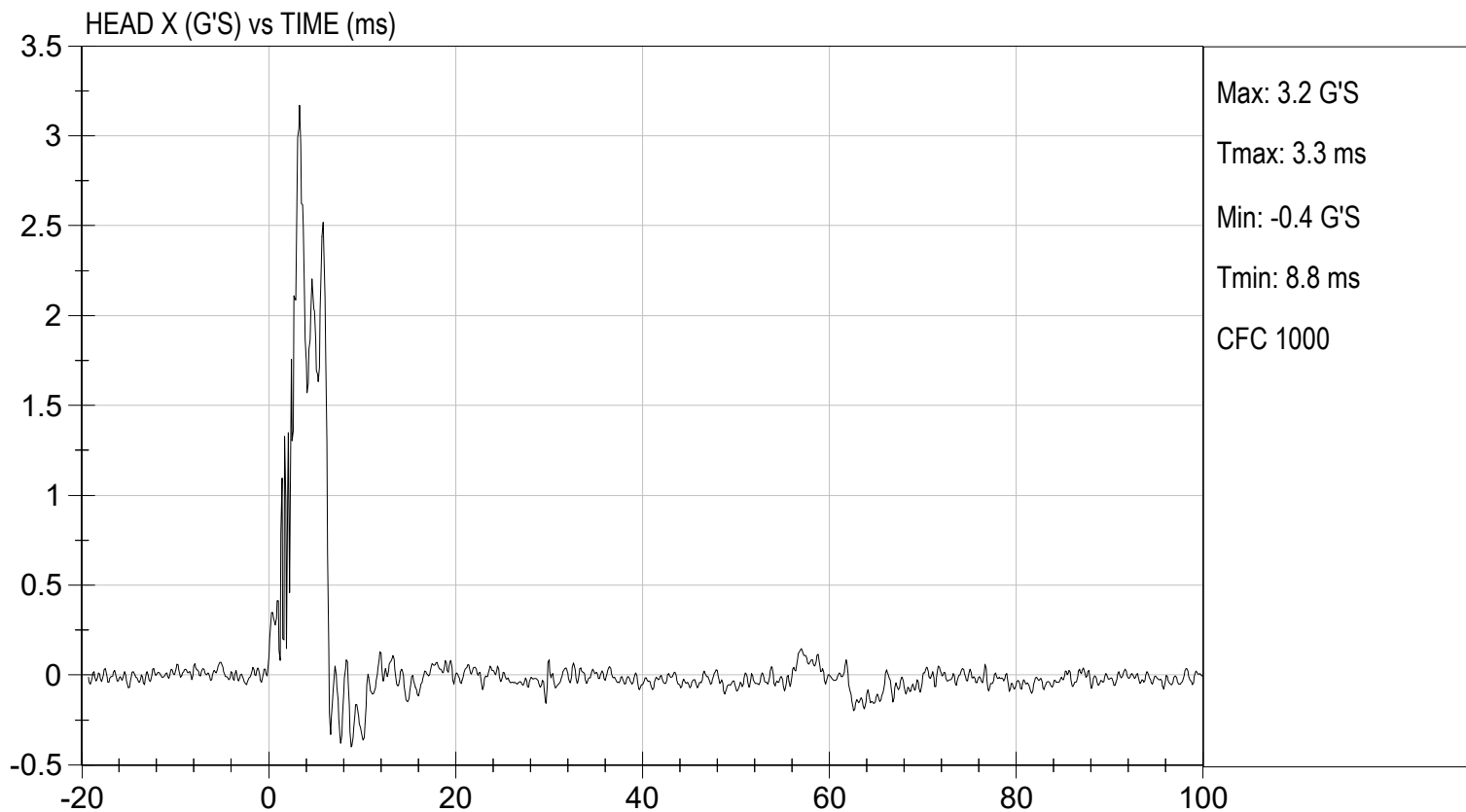
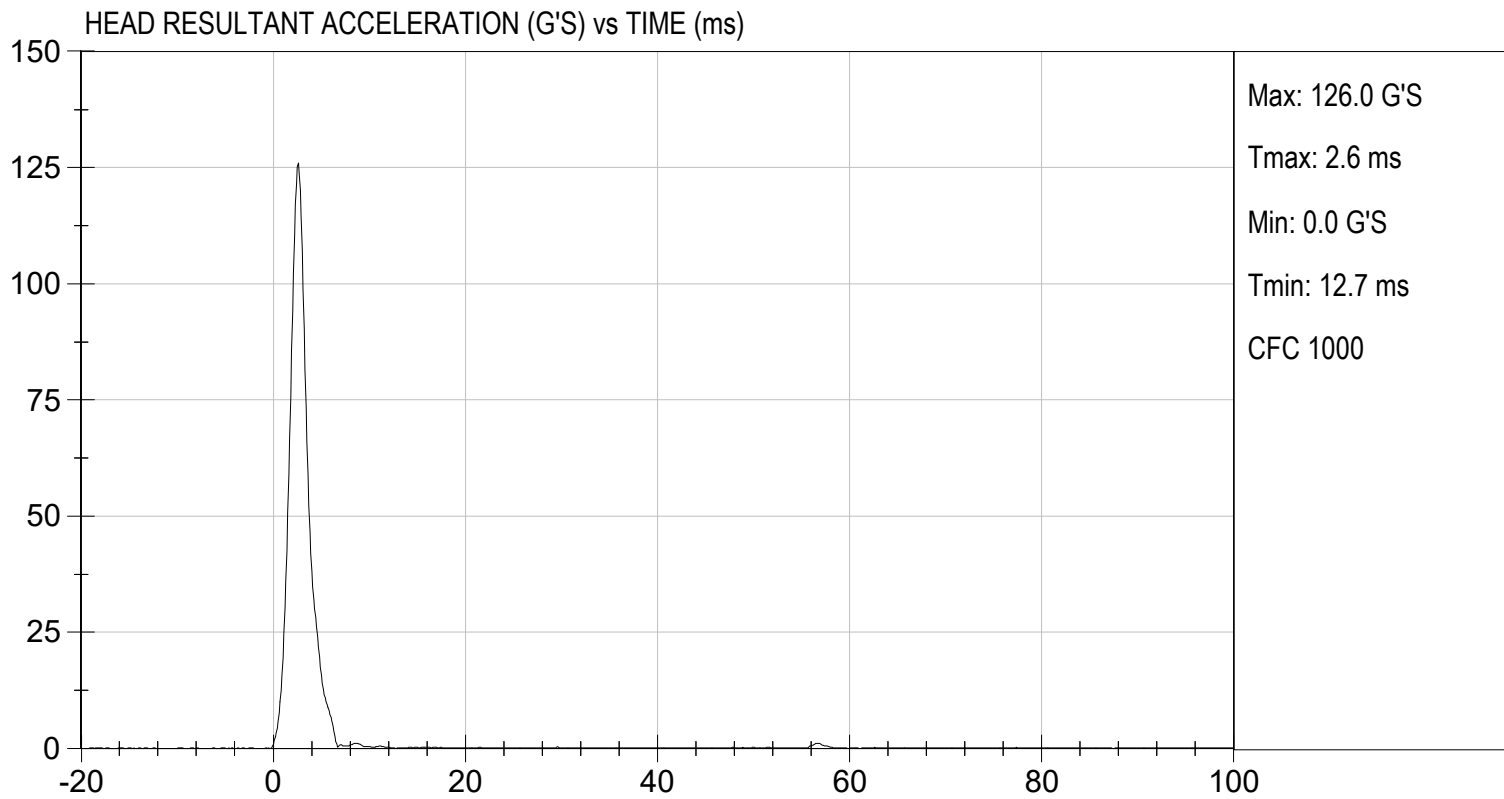
| Tested Parameter               | Units | Specification | Result | Pass/Fail |
|--------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.3   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 40     | Pass      |
| Peak Resultant Acceleration    | G's   | 115 to 137    | 126    | Pass      |
| Peak Longitudinal Acceleration | G's   | +/- 15        | 3.2    | Pass      |
| Unimodal                       | N/A   | Yes           | Yes    | Pass      |
| Oscillations                   | N/A   | <15%          | Yes    | Pass      |
| Overall Test Results           |       |               |        | Pass      |

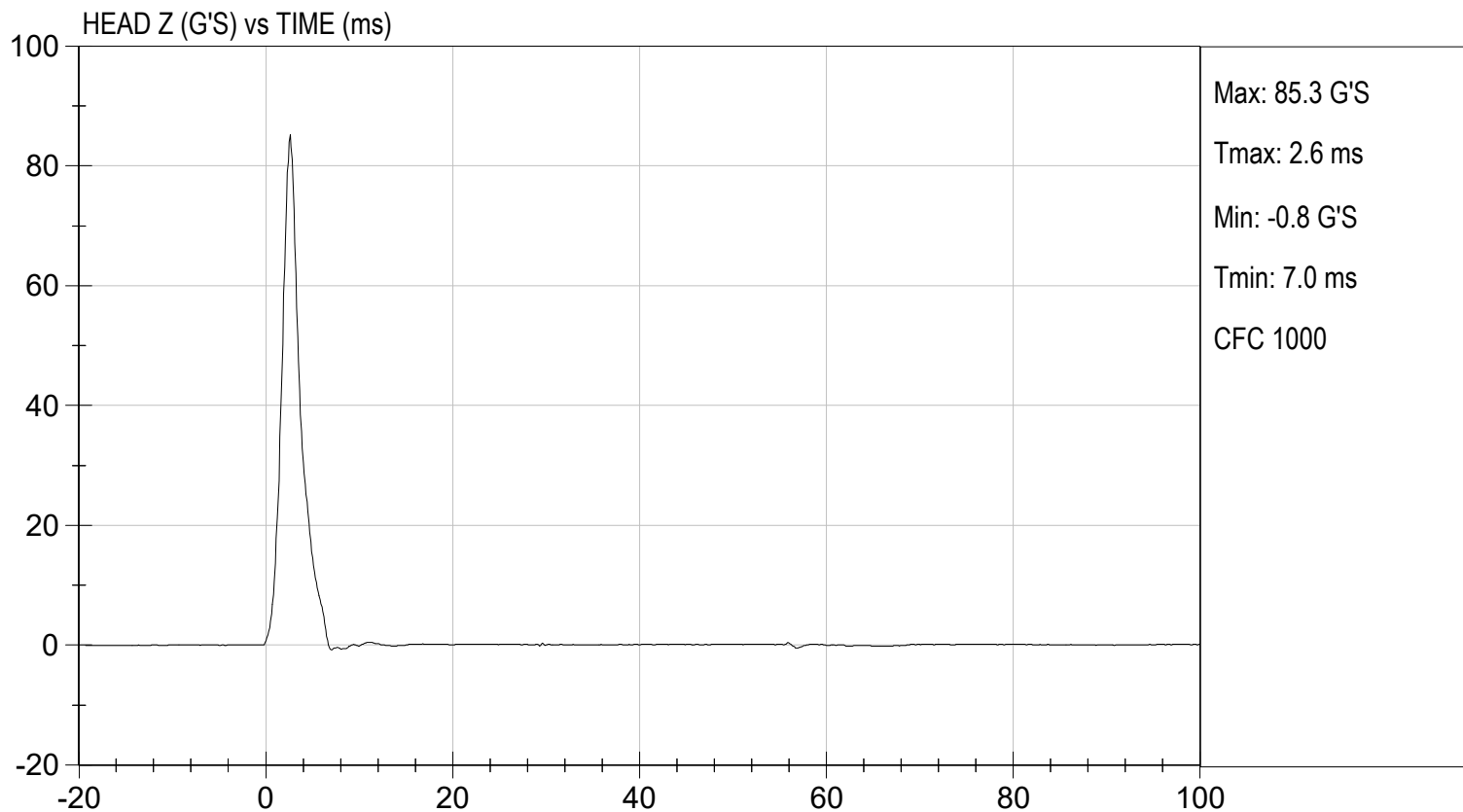
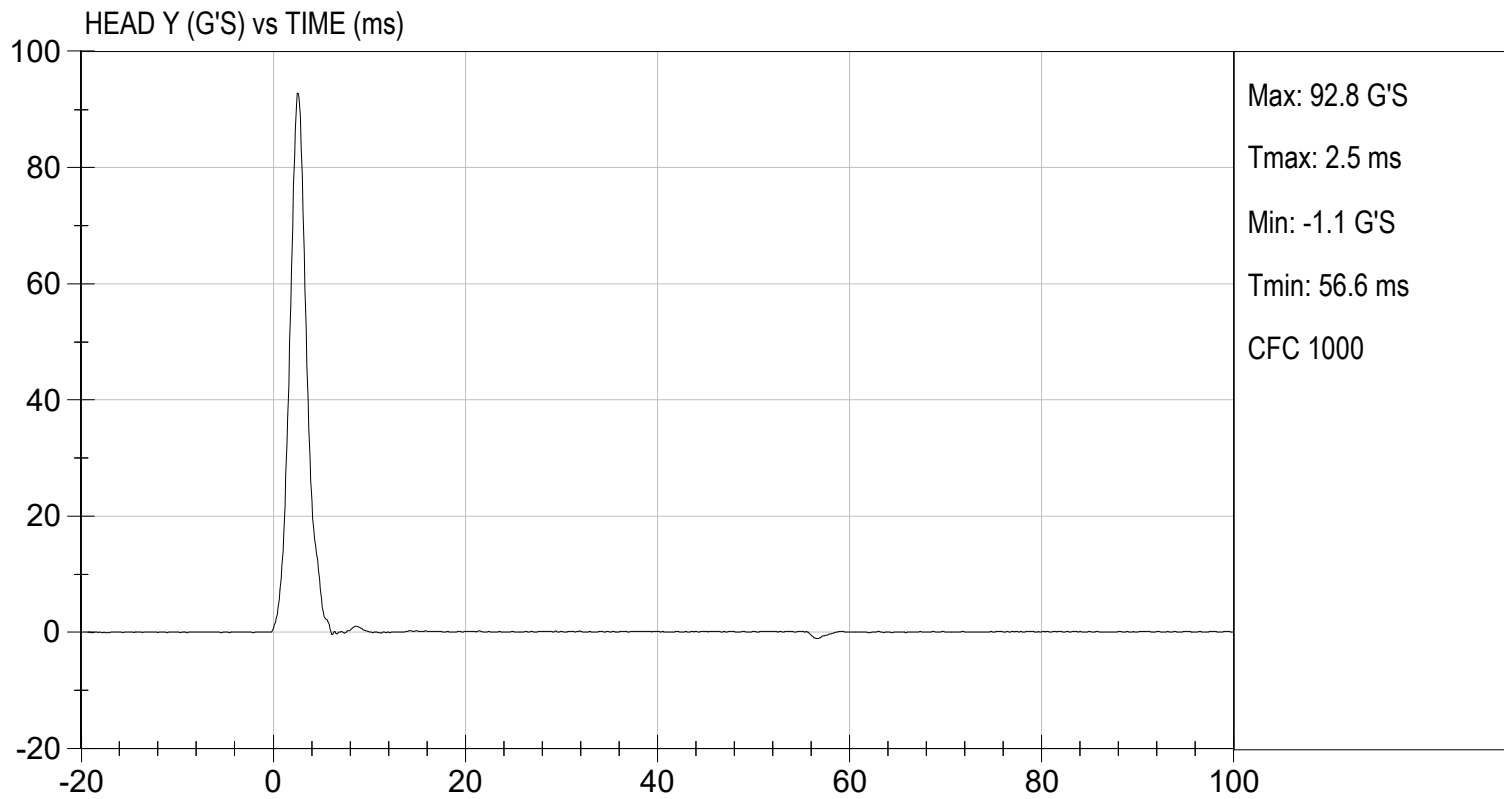
  
Laboratory Technician

11/07/2024  
Test Date

  
Approved By







**MGA RESEARCH CORPORATION**  
**LATERAL NECK PENDULUM TEST**  
**SID-Its BUILD LEVEL D DUMMY**

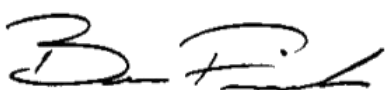
**ATD Serial No:** 296

**Test I.D:** D242902

| Tested Parameter                 |           | Units | Specification | Result | Pass/Fail |
|----------------------------------|-----------|-------|---------------|--------|-----------|
| Temperature                      |           | deg C | 20.6 to 22.2  | 21.2   | Pass      |
| Humidity                         |           | %     | 10 to 70      | 39     | Pass      |
| Impact Velocity                  |           | m/s   | 5.51 to 5.63  | 5.53   | Pass      |
| Pendulum Velocity                | 10 ms     | m/s   | 2.20 to 2.80  | 2.28   | Pass      |
|                                  | 15 ms     | m/s   | 3.30 to 4.10  | 3.41   | Pass      |
|                                  | 20 ms     | m/s   | 4.40 to 5.40  | 4.81   | Pass      |
|                                  | 25 ms     | m/s   | 5.40 to 6.10  | 5.67   | Pass      |
|                                  | 25-100 ms | m/s   | 5.50 to 6.20  | 5.67   | Pass      |
| Maximum D-Plane Rotation         |           | deg   | 71 to 81      | 73     | Pass      |
| Time of Maximum D-Plane Rotation |           | ms    | 50 to 70      | 65     | Pass      |
| Maximum Occipital Condyle Moment |           | Nm    | -44 to -36    | -40    | Pass      |
| Time of Moment Decay to 0 Nm     |           | ms    | 102 to 126    | 119    | Pass      |
| Overall Test Results             |           |       |               |        | Pass      |

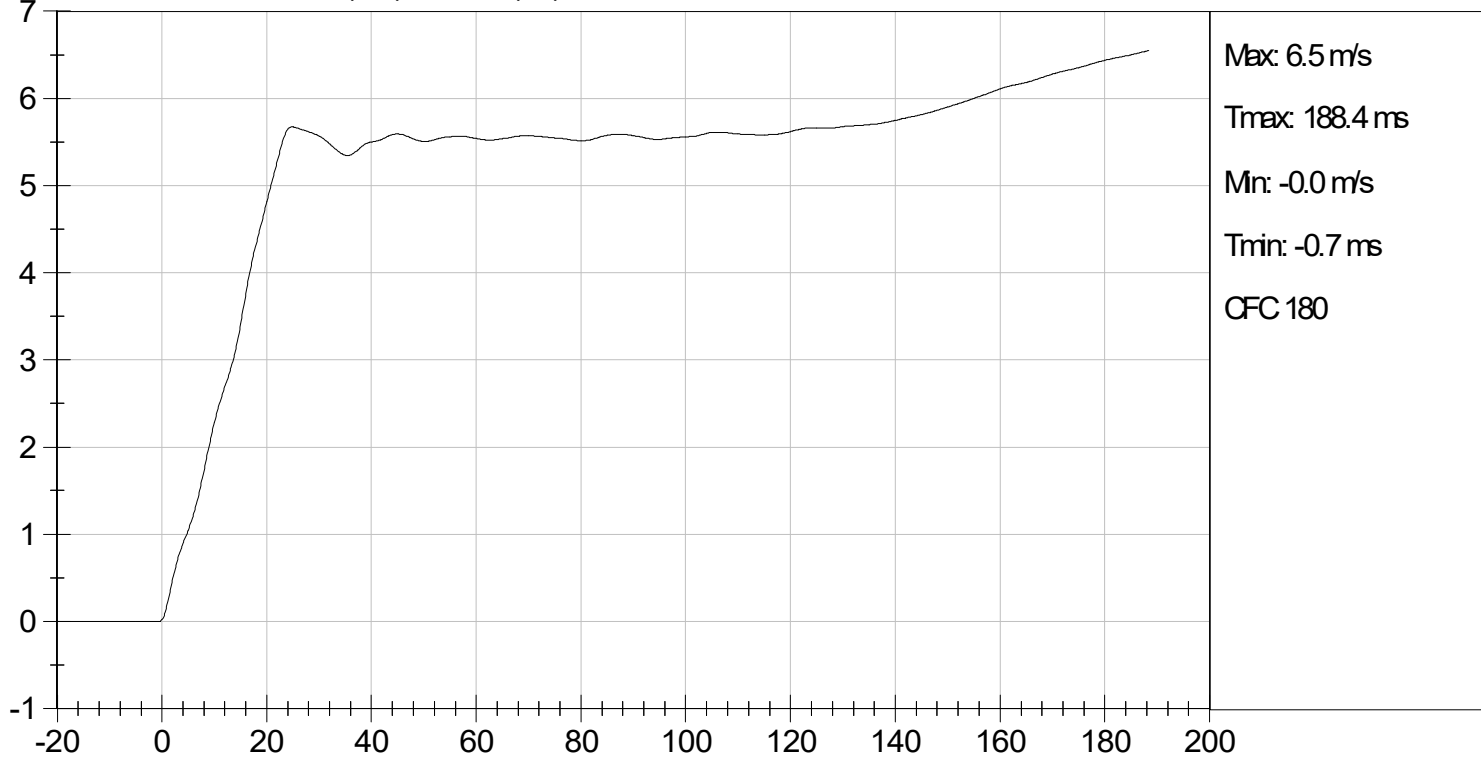
  
 Laboratory Technician

11/07/2024  
 Test Date

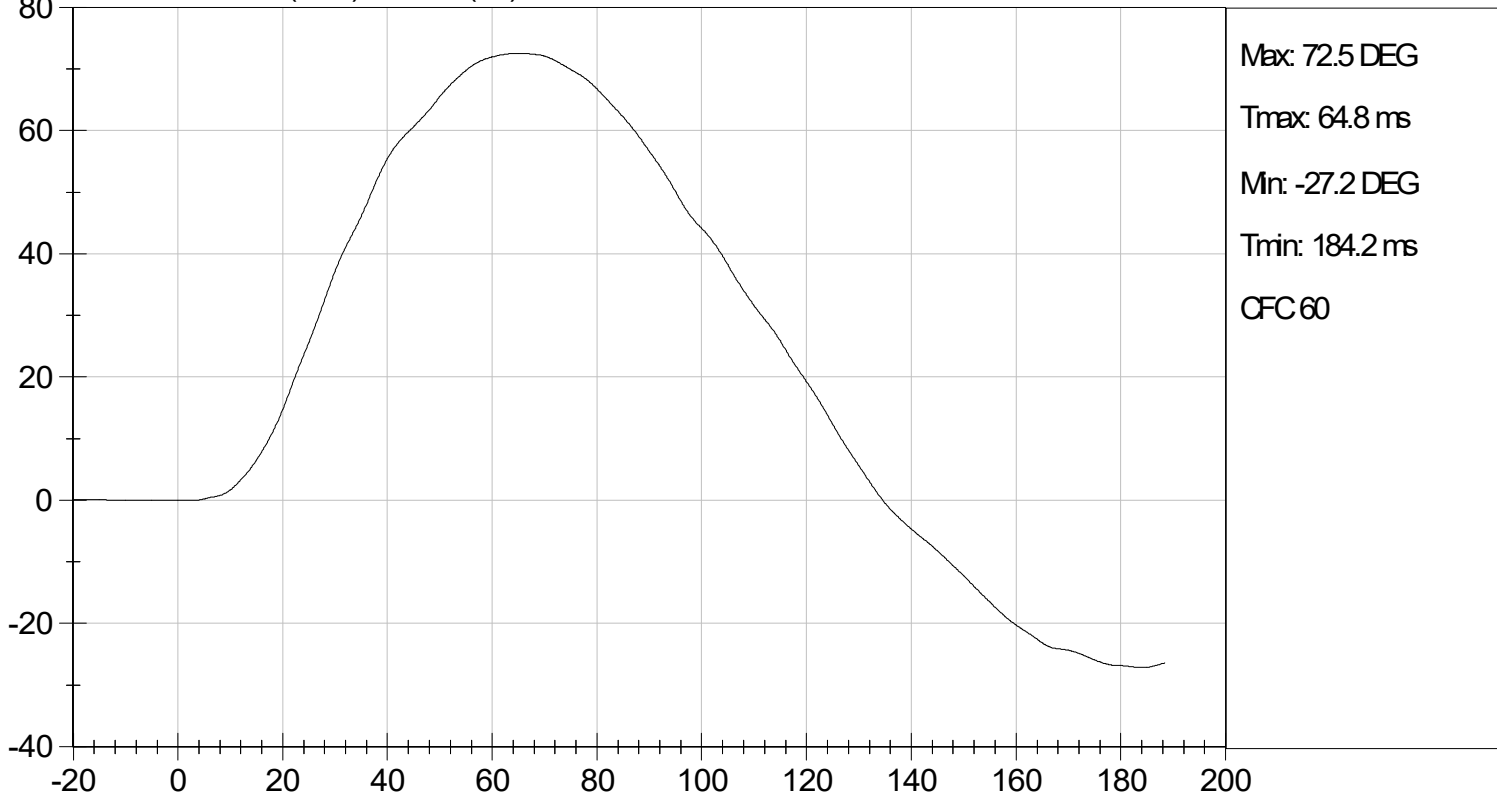
  
 Approved By



PENDULUM VELOCITY (m/s) vs TIME (ms)



FLEXION ANGLE (DEG) vs TIME (ms)

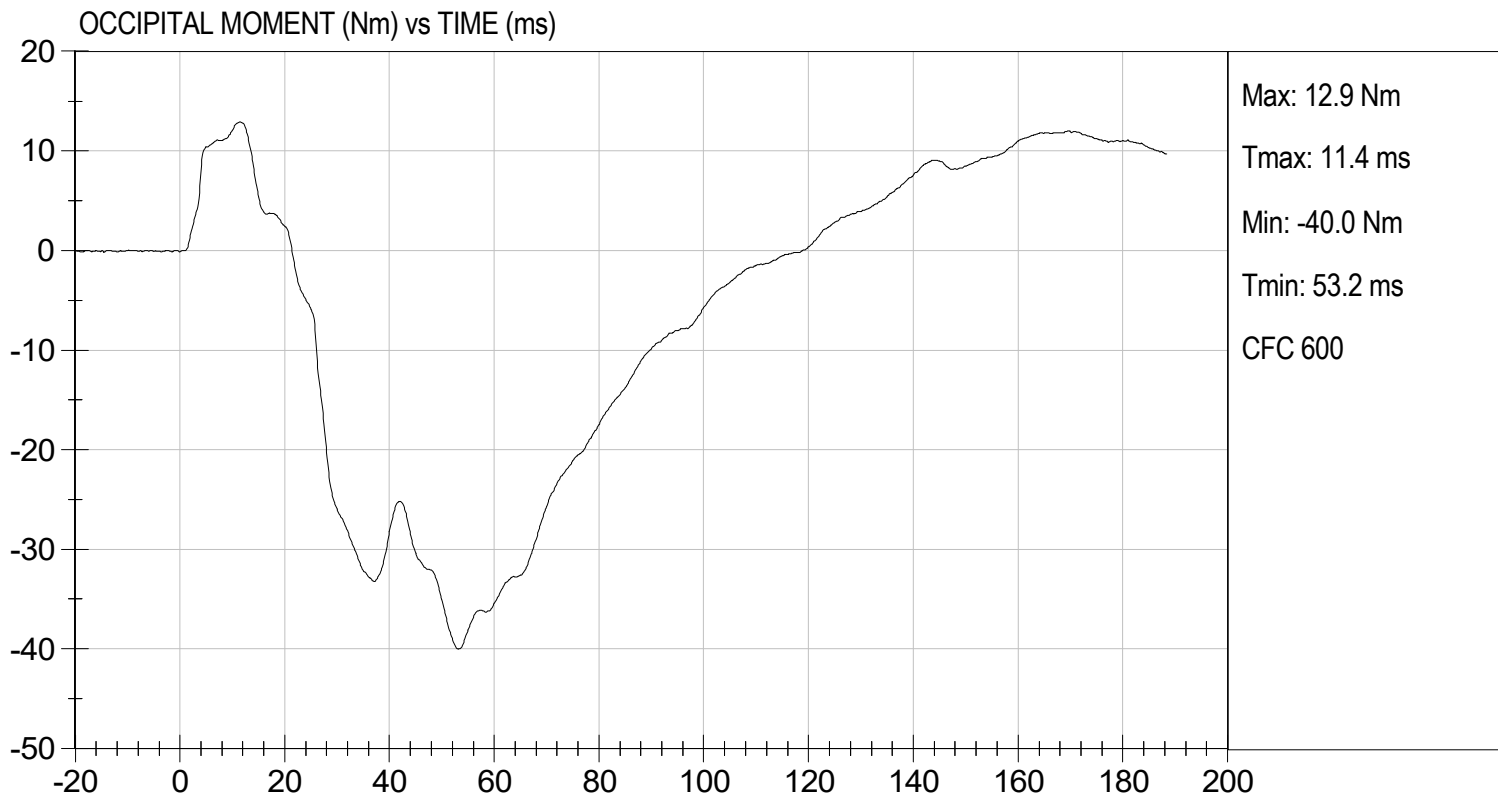






TEST DESC: NECK BENDING  
VELOCITY: 18.15 ft/s, 5.53 m/s

TEST DATE: 11/07/2024  
TEST #: D242902



**MGA RESEARCH CORPORATION**  
**SHOULDER IMPACT TEST**  
**SID-Its BUILD LEVEL D DUMMY**

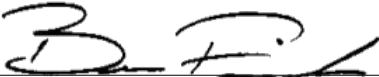
**ATD Serial No:** 296

**Test ID:** D242903

| Tested Parameter                | Units | Specification | Result | Pass/Fail |
|---------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature          | deg C | 20.6 to 22.2  | 21.1   | Pass      |
| Laboratory Relative Humidity    | %     | 10 to 70      | 39     | Pass      |
| Impact Velocity                 | m/s   | 4.20 to 4.40  | 4.27   | Pass      |
| Maximum Probe Acceleration      | G's   | 13 to 18      | 15     | Pass      |
| Shoulder Displacement           | mm    | 28 to 37      | 29     | Pass      |
| Upper Spine (T1) Y Acceleration | G's   | 17 to 22      | 19     | Pass      |
| Overall Test Results            |       |               |        | Pass      |

  
Laboratory Technician

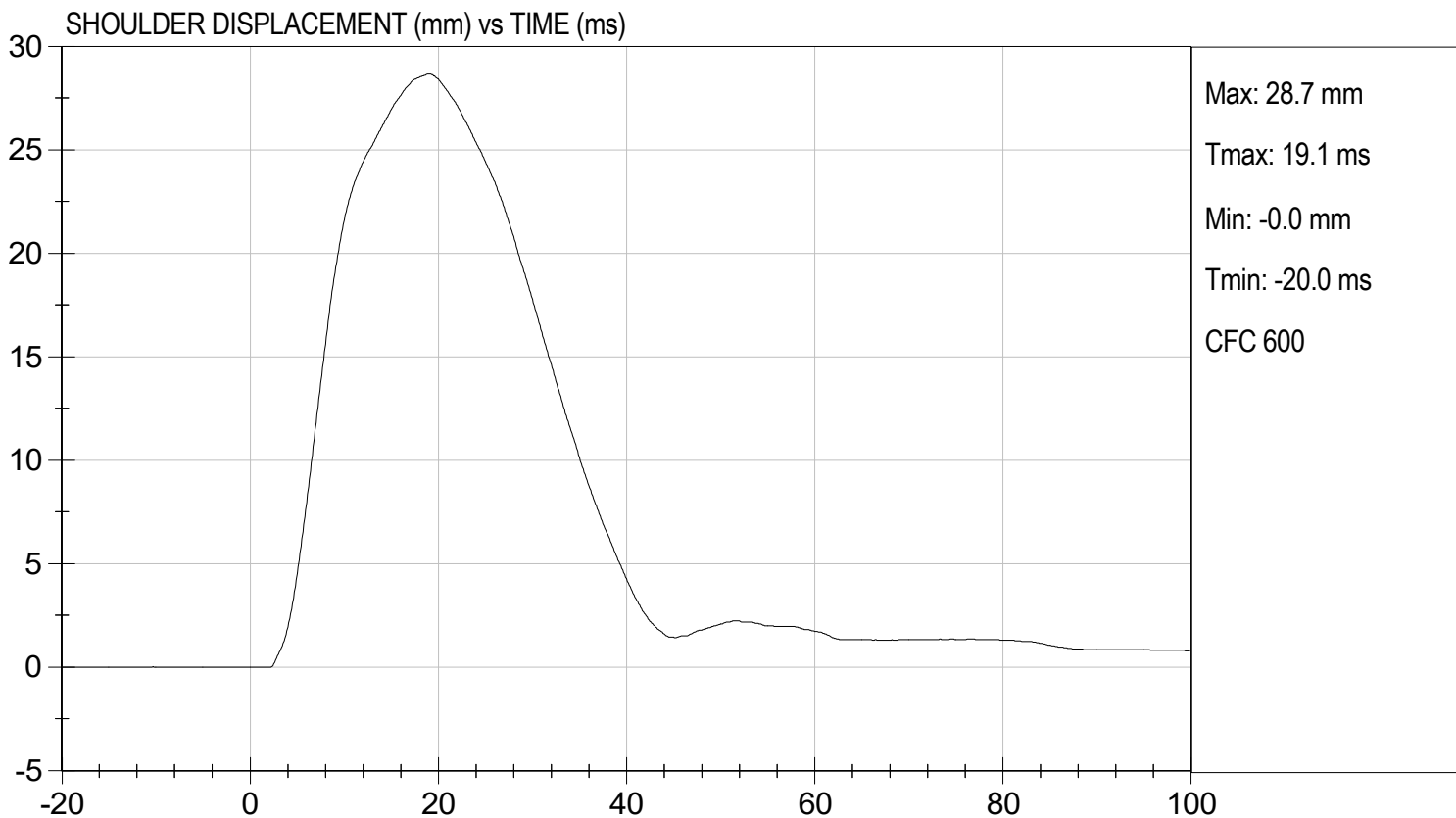
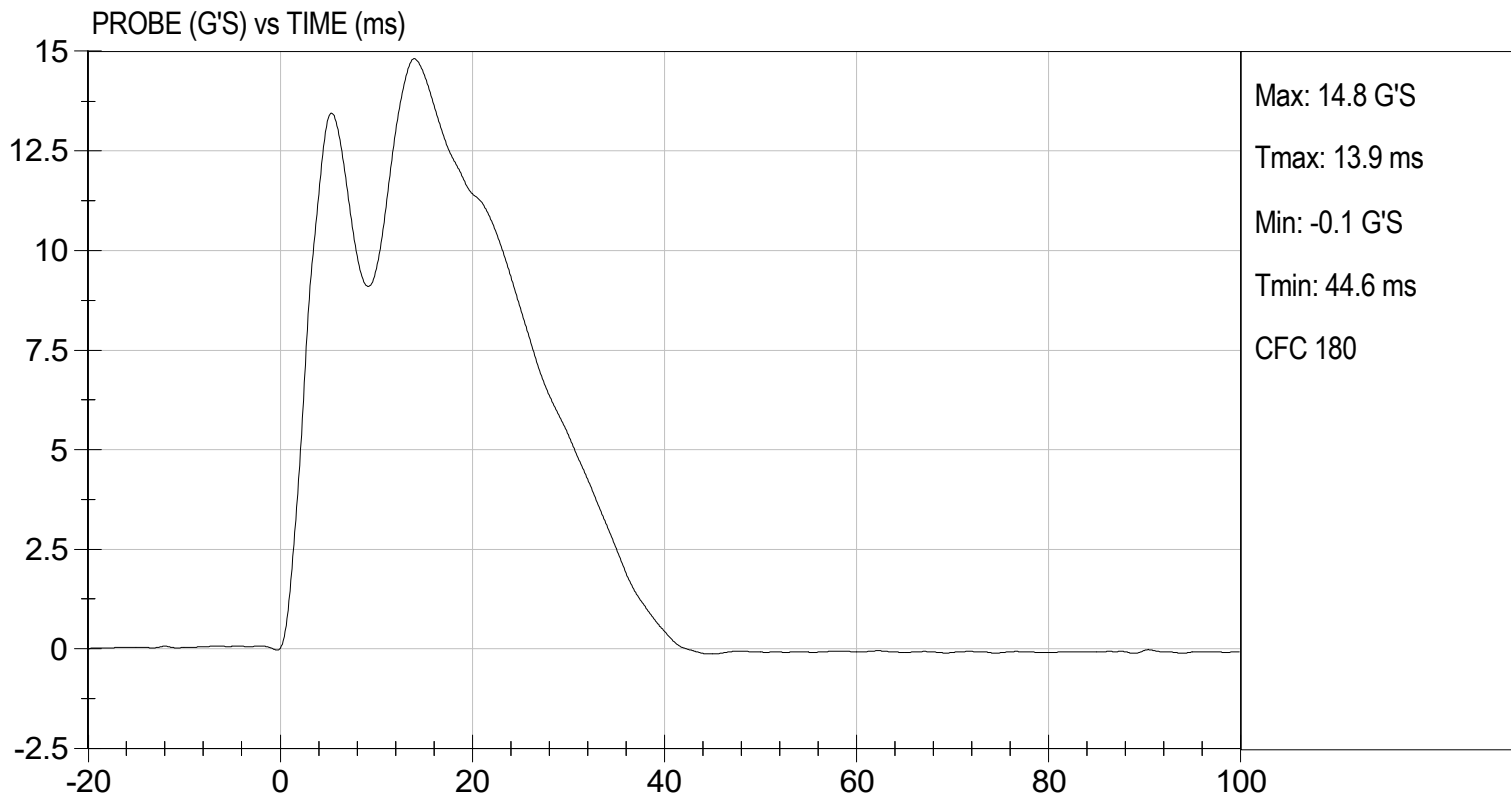
11/07/2024  
Test Date

  
Approved By



TEST DESC: SHOULDER IMPACT  
VELOCITY: 14.01 ft/s, 4.27 m/s

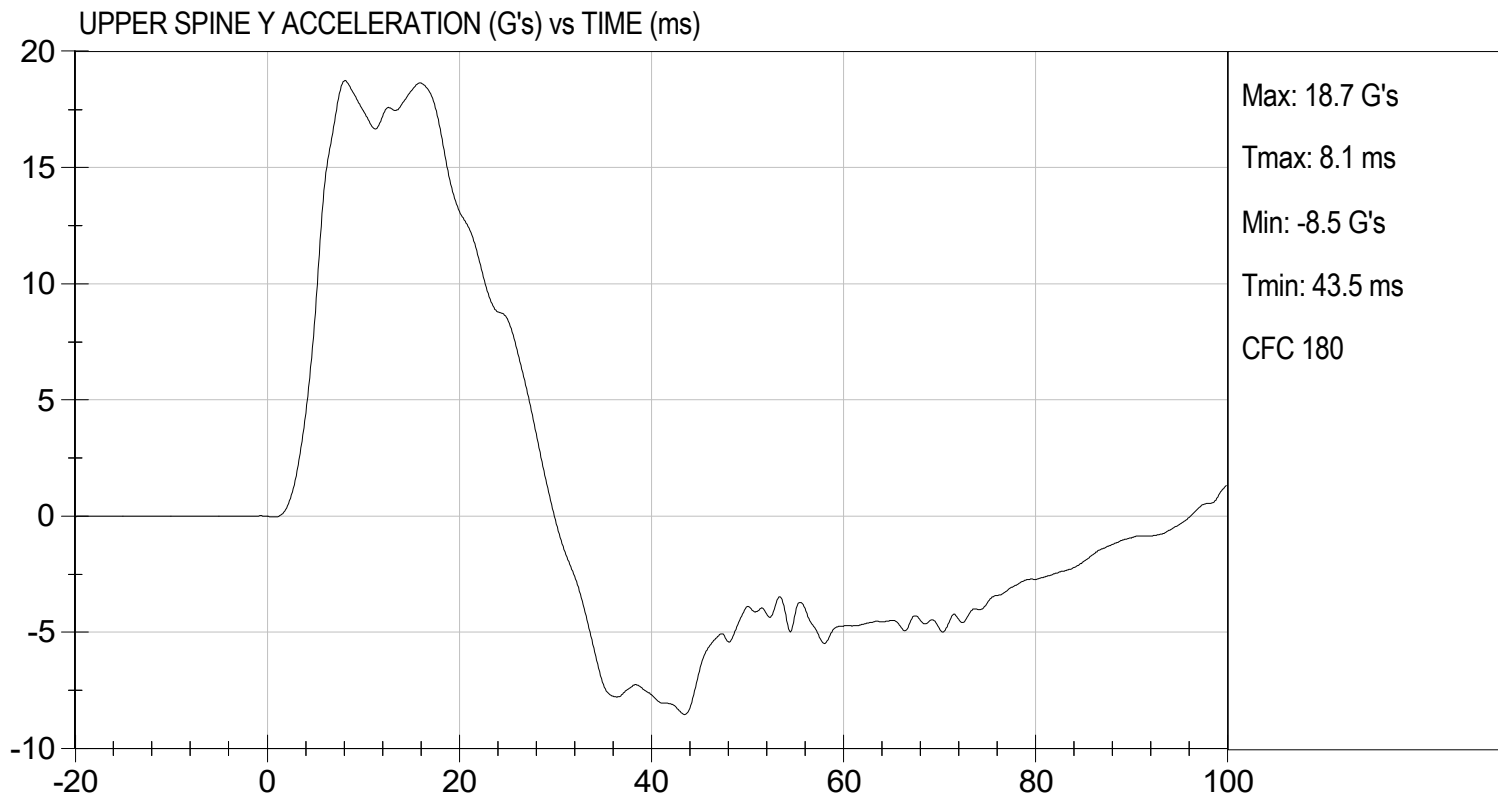
TEST DATE: 11/07/2024  
TEST #: D242903





TEST DESC: SHOULDER IMPACT  
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 11/07/2024  
TEST #: D242903





**MGA RESEARCH CORPORATION**  
**THORAX (WITH ARM) IMPACT TEST**  
**SID-Its BUILD LEVEL D DUMMY**

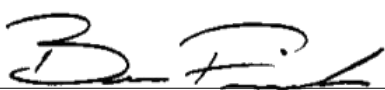
**ATD Serial No:** 296

**Test I.D:** D242904

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.3   | Pass      |
| Humidity                         | %     | 10 to 70      | 40     | Pass      |
| Impact Velocity                  | m/s   | 6.60 to 6.80  | 6.77   | Pass      |
| Maximum Probe Acceleration       | G's   | 30 to 36      | 34     | Pass      |
| Shoulder Displacement            | mm    | 31 to 40      | 36     | Pass      |
| Upper Rib Displacement           | mm    | 25 to 32      | 28     | Pass      |
| Middle Rib Displacement          | mm    | 30 to 36      | 31     | Pass      |
| Lower Rib Displacement           | mm    | 32 to 38      | 33     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 34 to 43      | 39     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 29 to 37      | 35     | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
Laboratory Technician

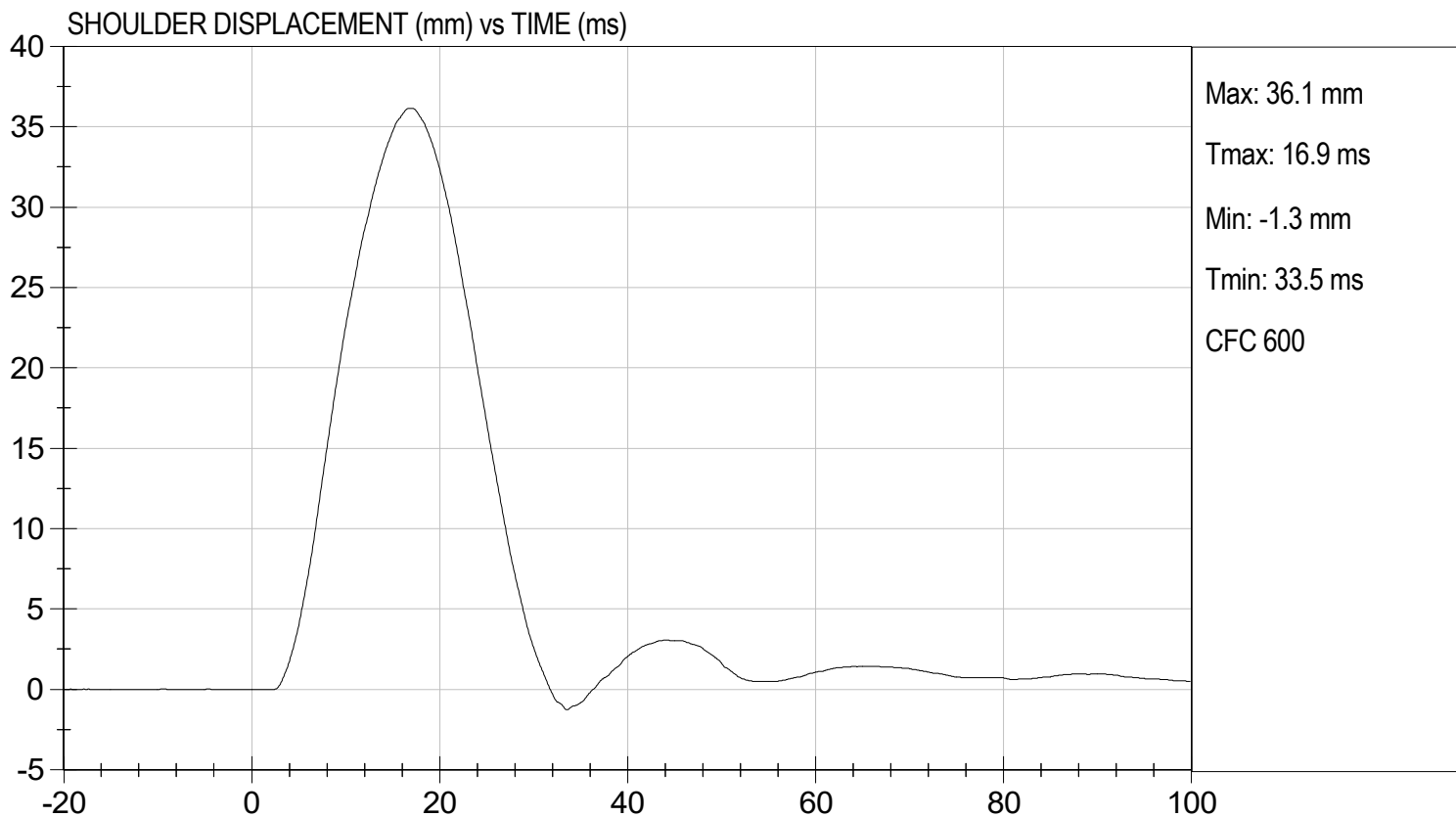
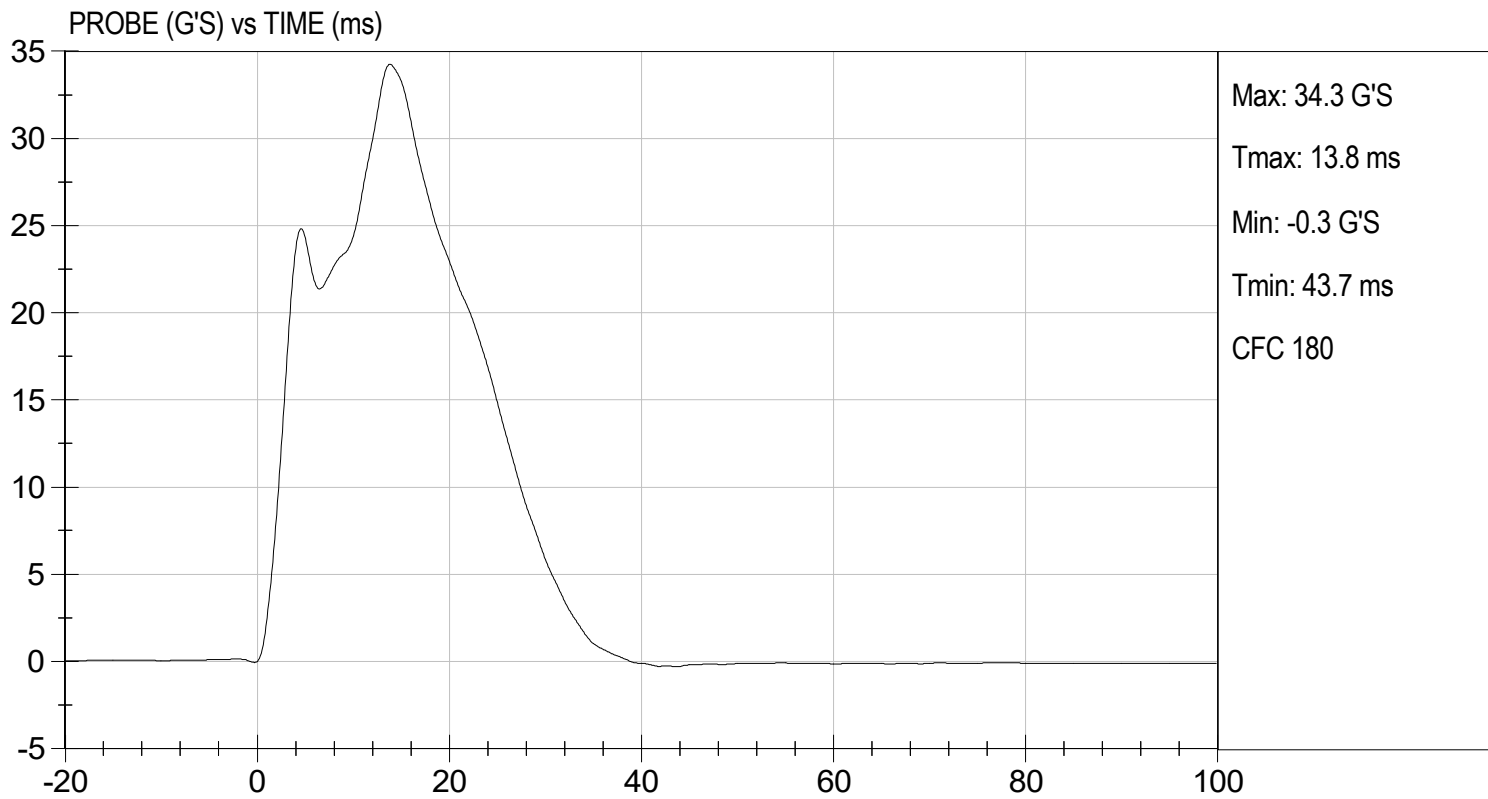
11/07/2024  
Test Date

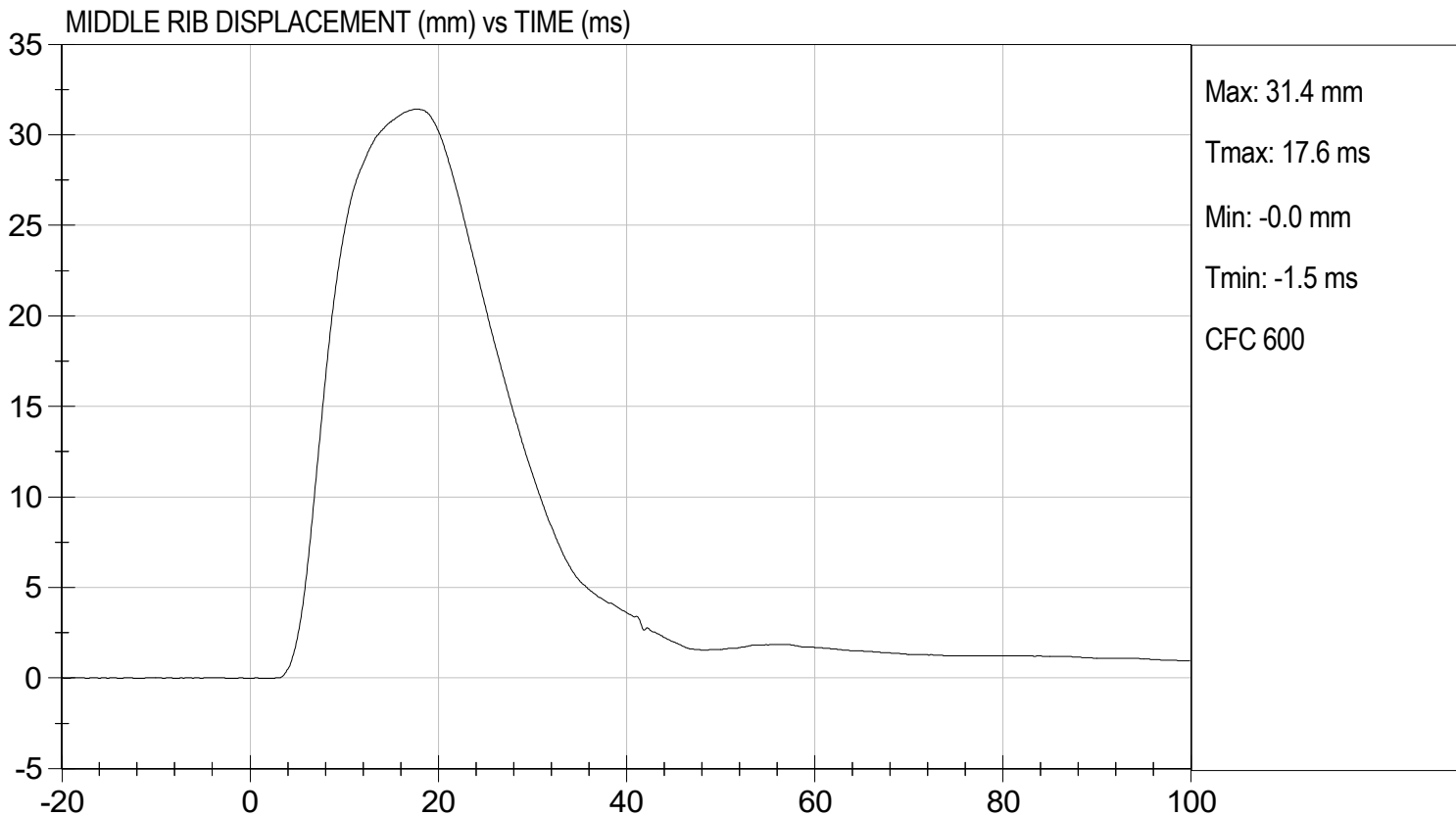
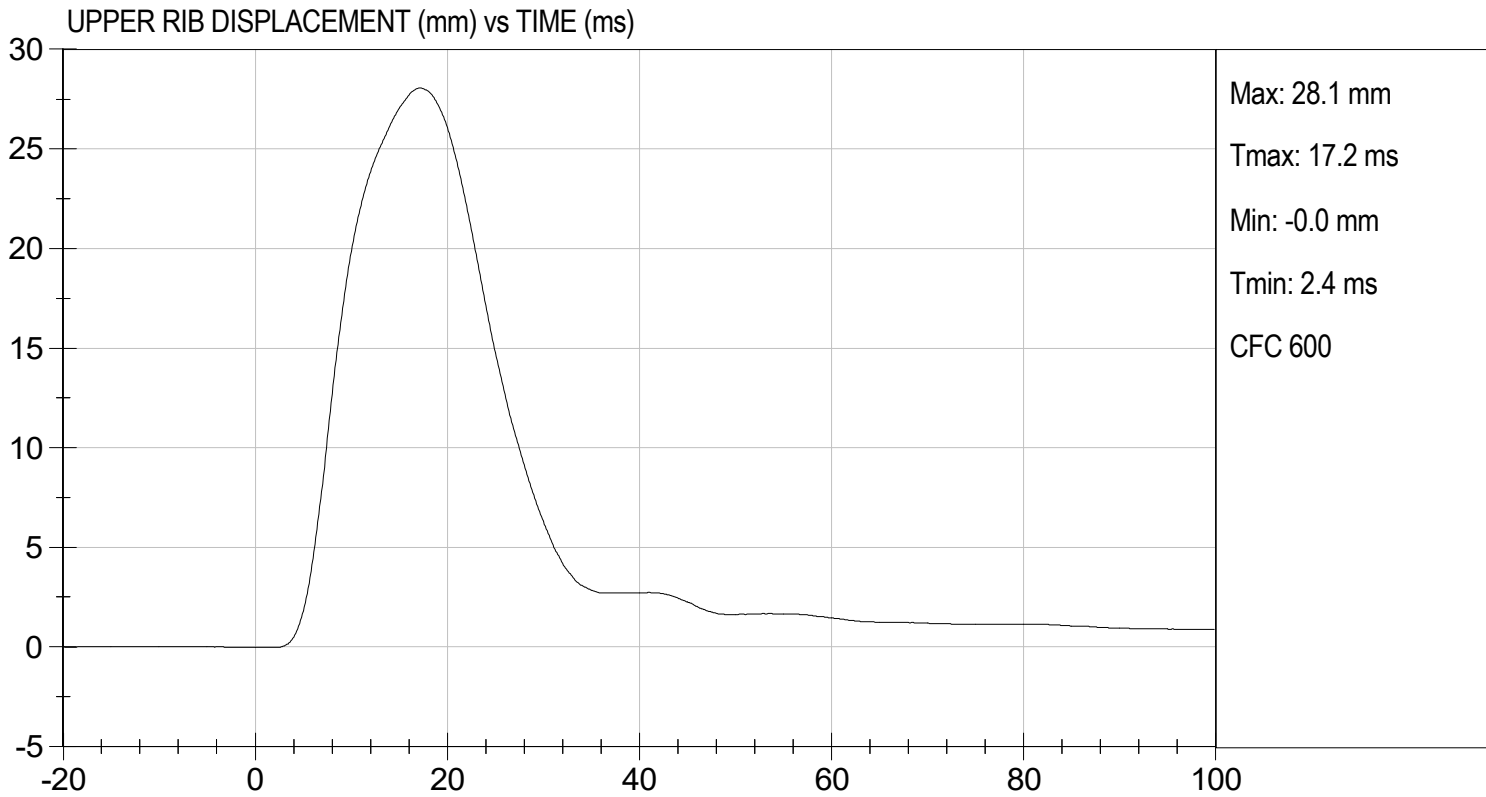
  
Approved By



TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/07/2024  
TEST #: D242904



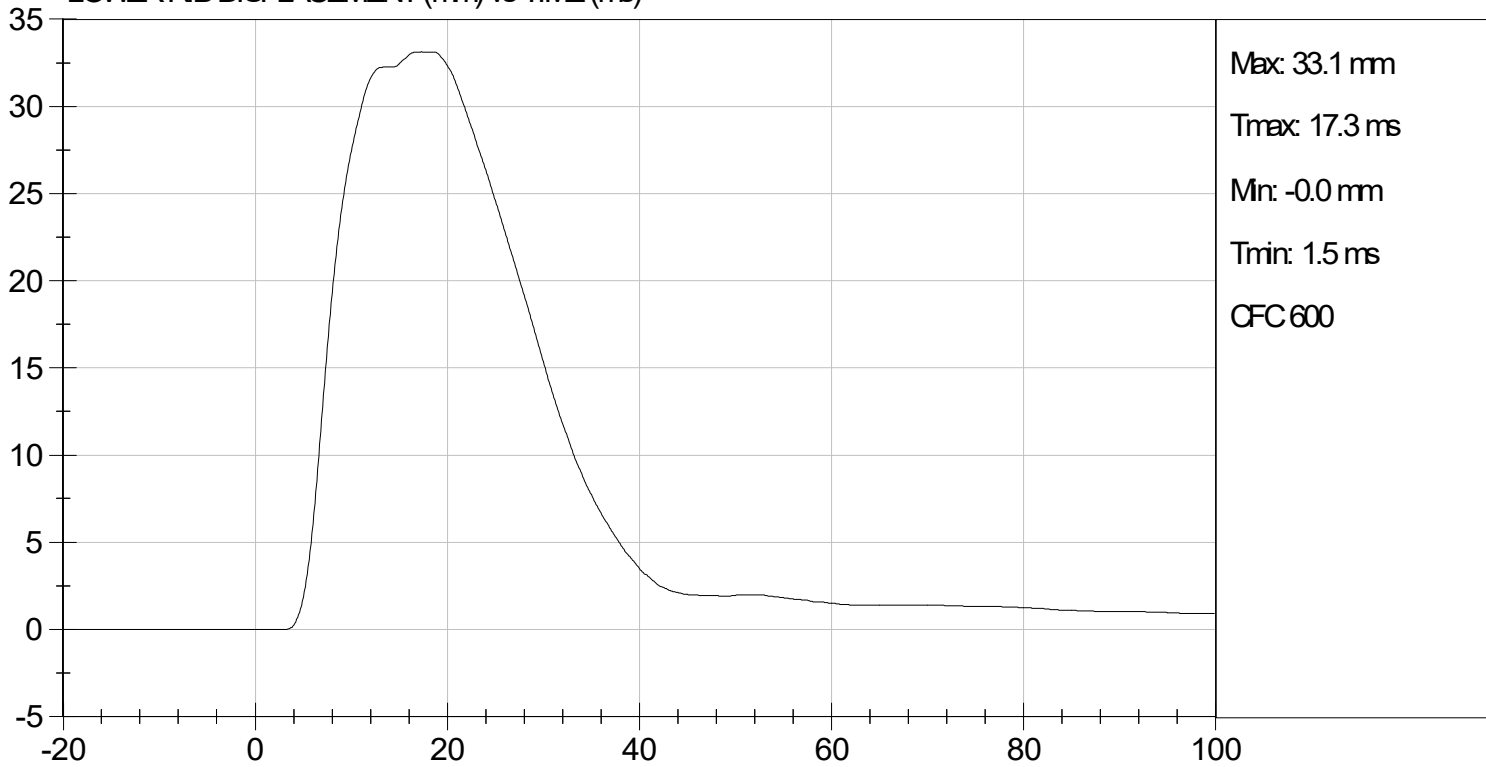




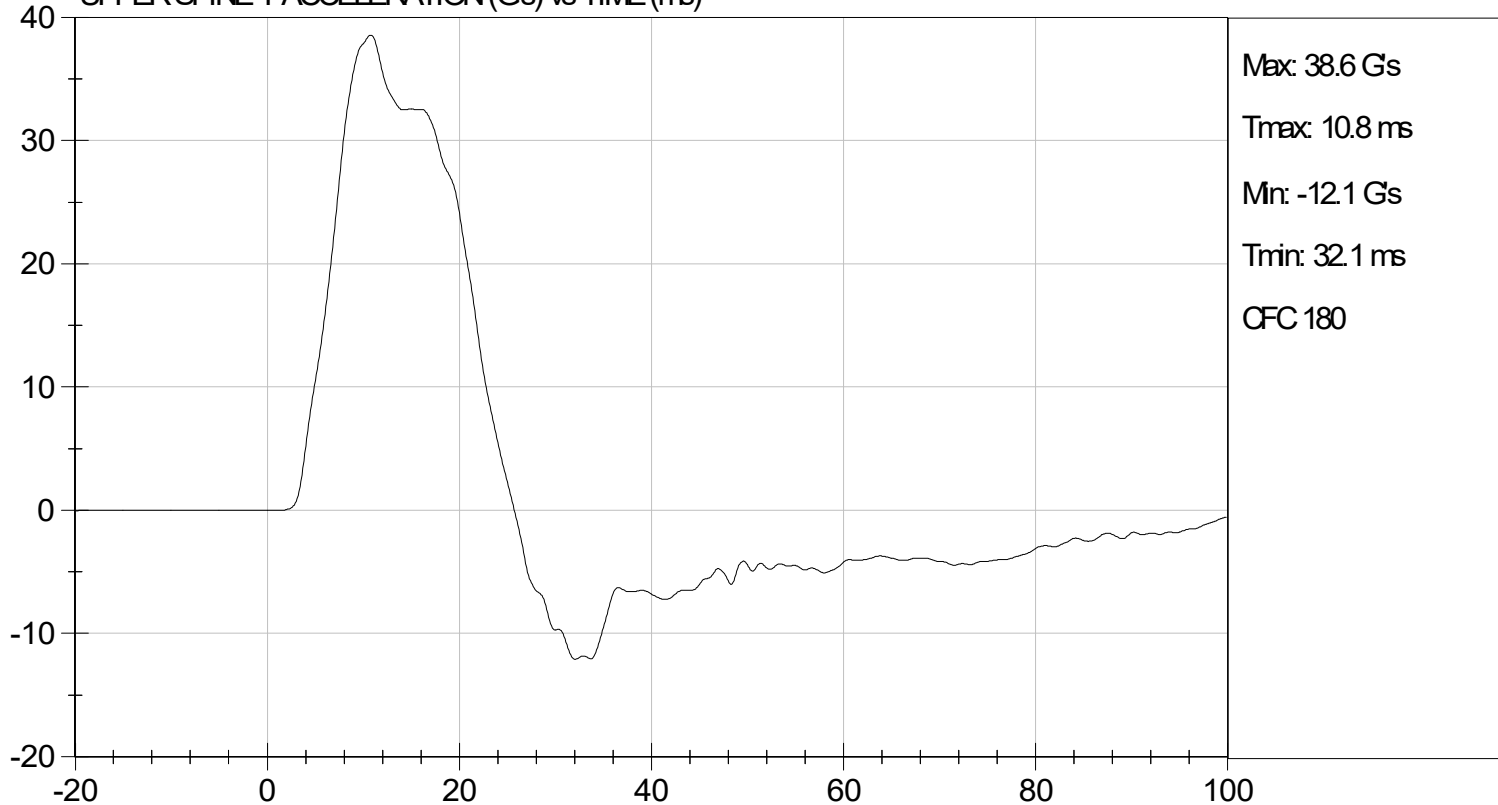
TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/07/2024  
TEST #: D242904

LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



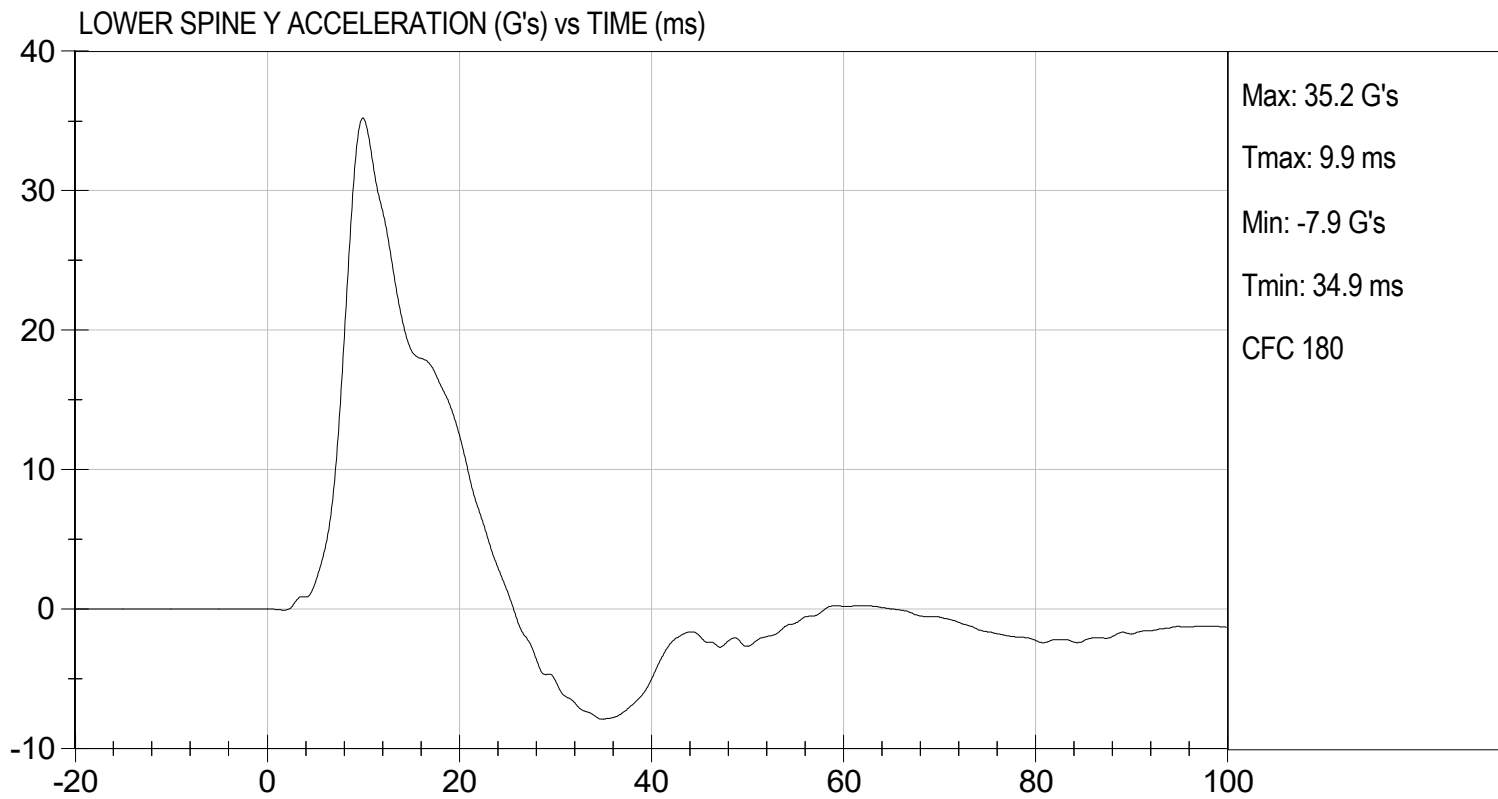
UPPER SPINE Y ACCELERATION (Gs) vs TIME (ms)





TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/07/2024  
TEST #: D242904





**MGA RESEARCH CORPORATION**  
**THORAX (WITHOUT ARM) IMPACT TEST**  
**SID-Its BUILD LEVEL D DUMMY**

**ATD Serial No:** 296

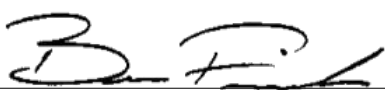
**Test I.D:** D242905

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.1   | Pass      |
| Humidity                         | %     | 10 to 70      | 39     | Pass      |
| Impact Velocity                  | m/s   | 4.20 to 4.40  | 4.30   | Pass      |
| Maximum Probe Acceleration       | G's   | 14 to 18      | 16     | Pass      |
| Upper Rib Displacement           | mm    | 32 to 40      | 36     | Pass      |
| Middle Rib Displacement          | mm    | 39 to 45      | 42     | Pass      |
| Lower Rib Displacement           | mm    | 35 to 43      | 40     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 13 to 17      | 15     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 7 to 11       | 9      | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
Laboratory Technician

11/07/2024

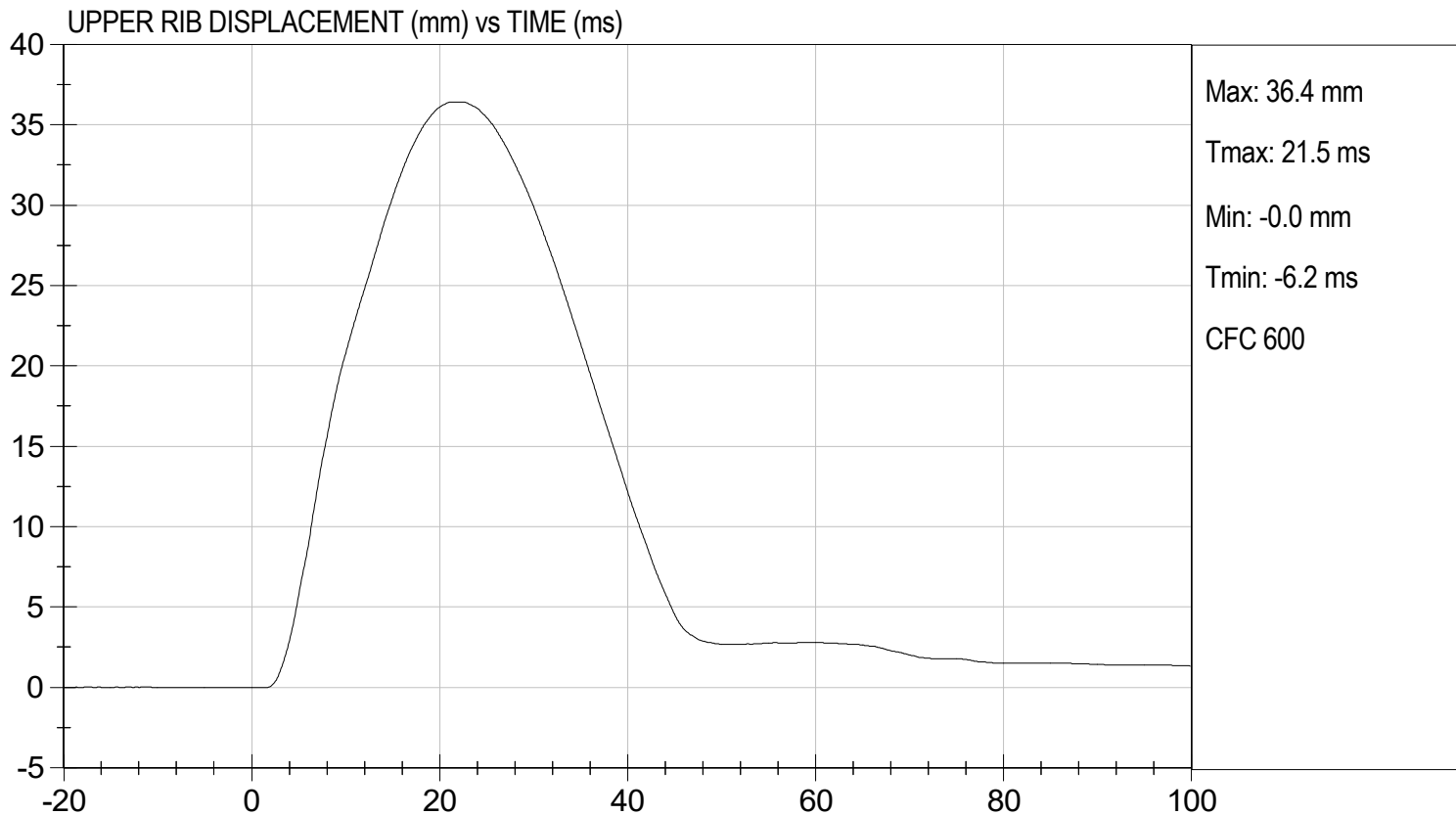
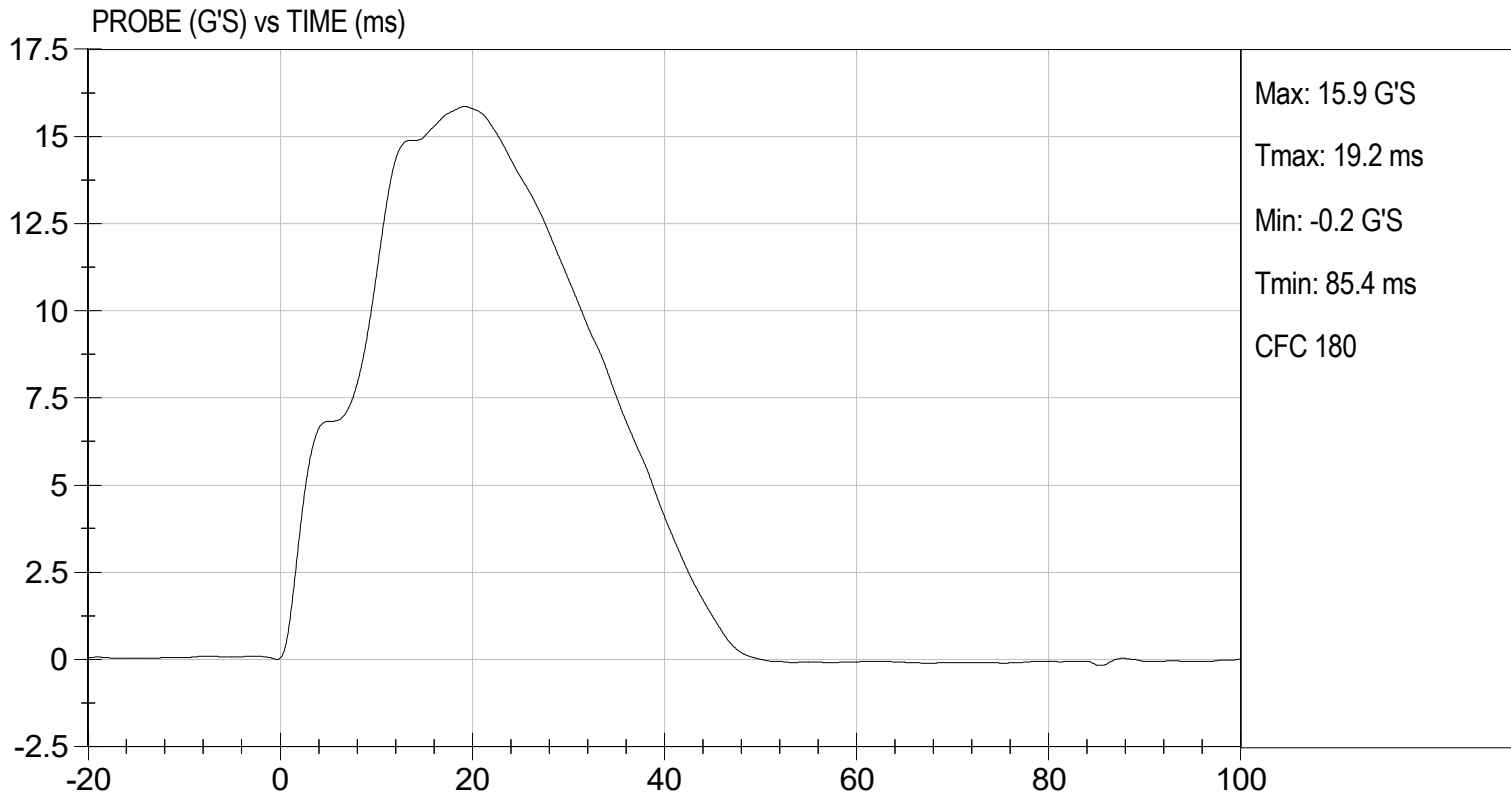
Test Date

  
Approved By



TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 14.12 ft/s, 4.30 m/s

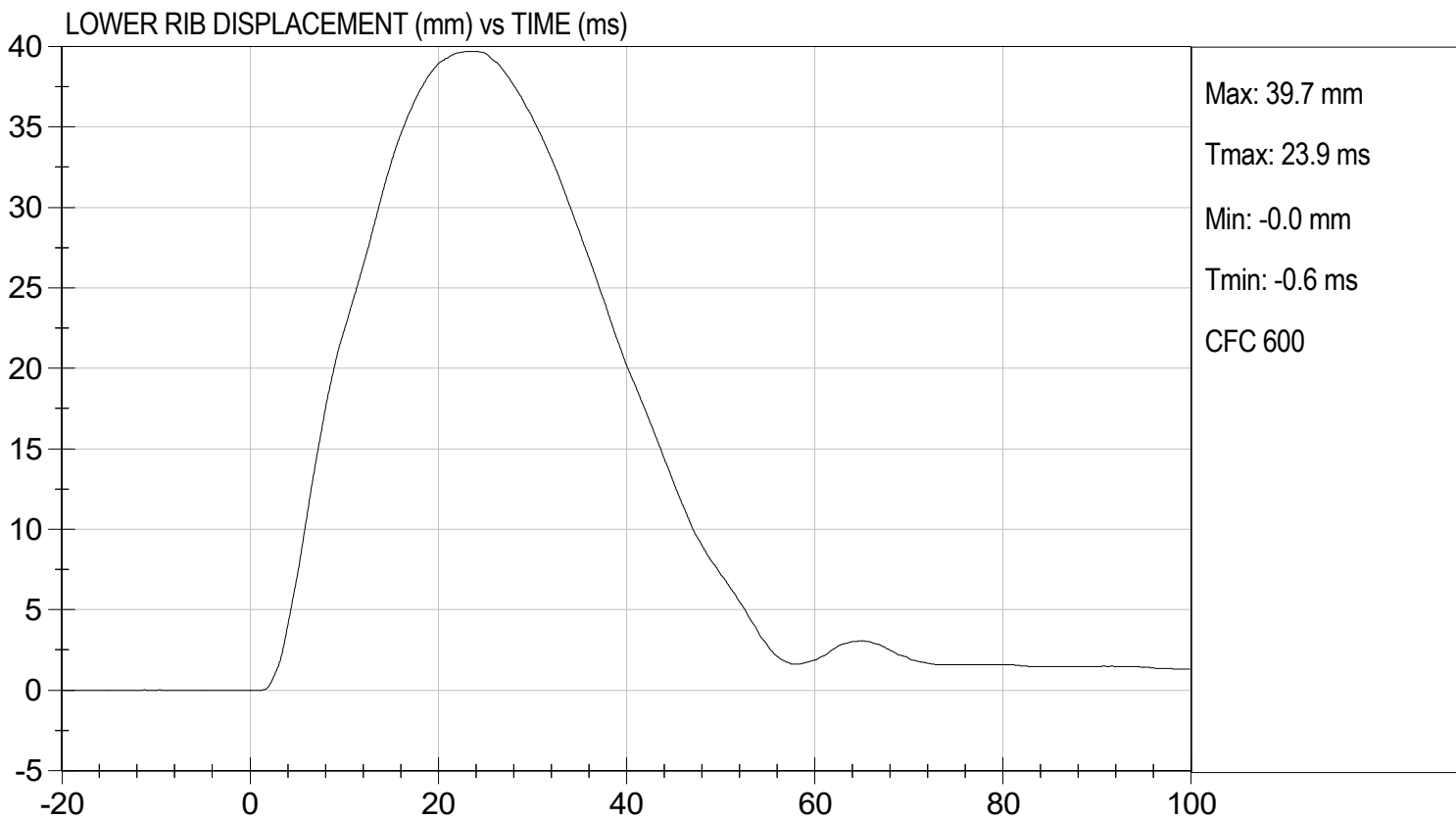
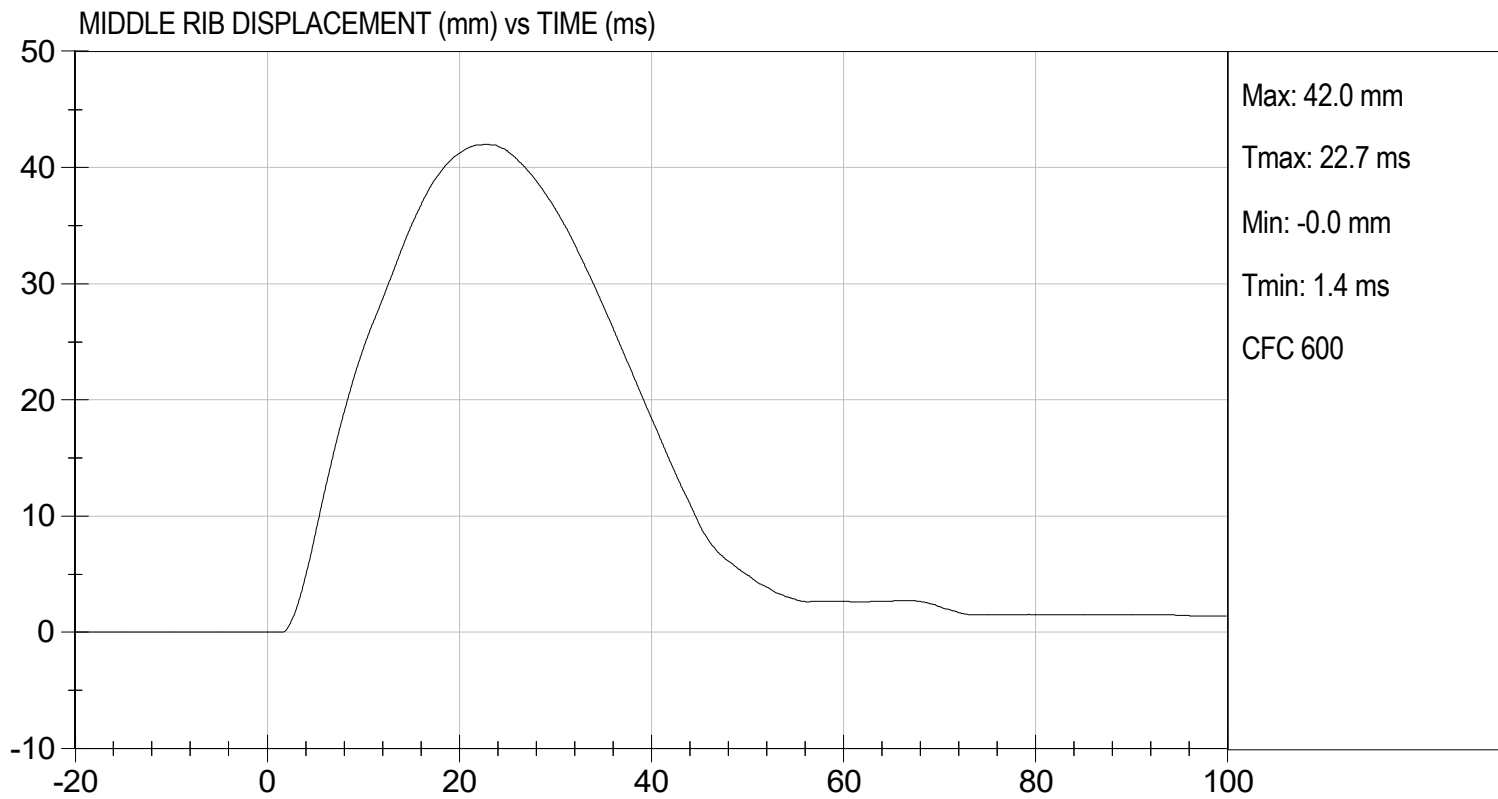
TEST DATE: 11/07/2024  
TEST #: D242905





TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 14.12 ft/s, 4.30 m/s

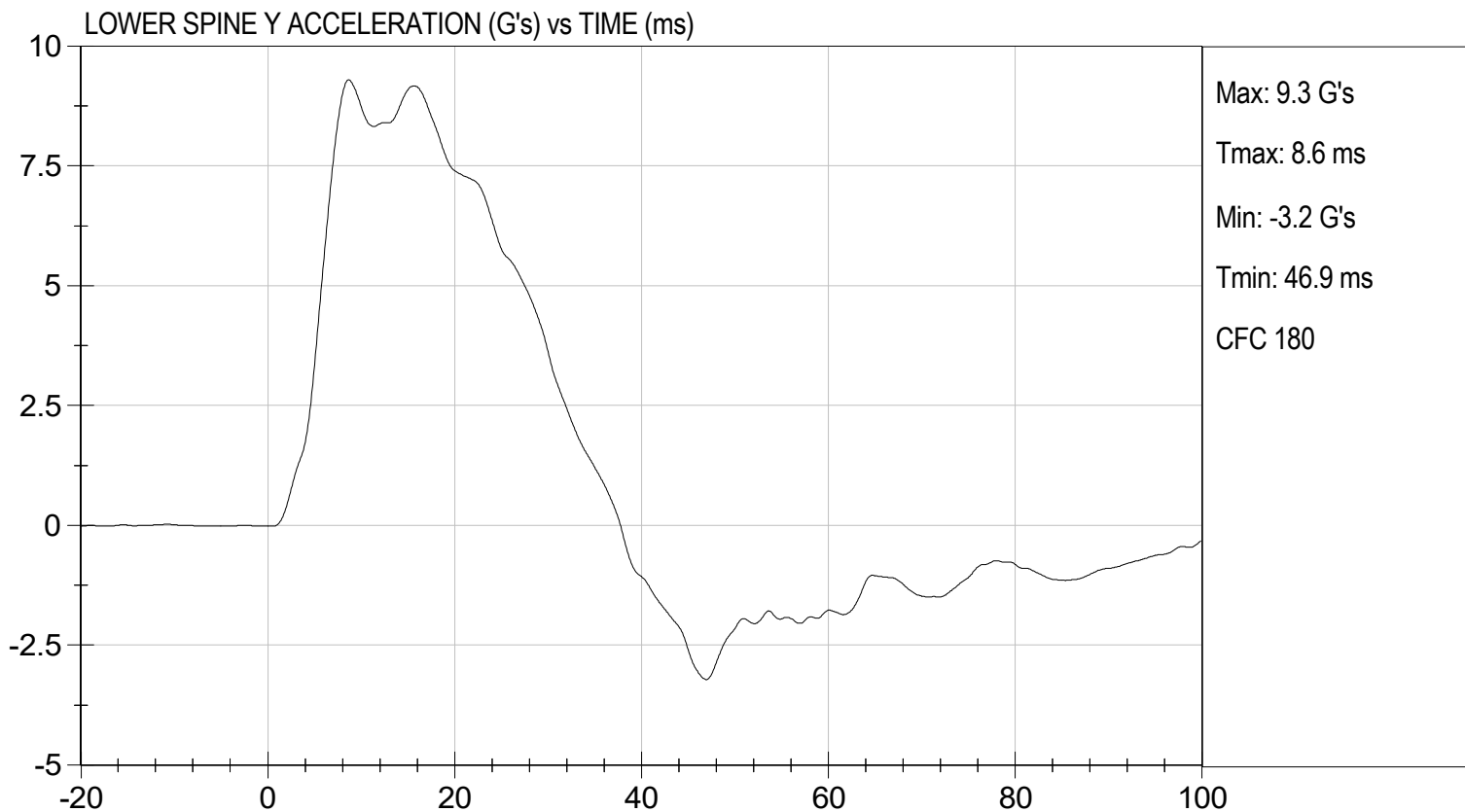
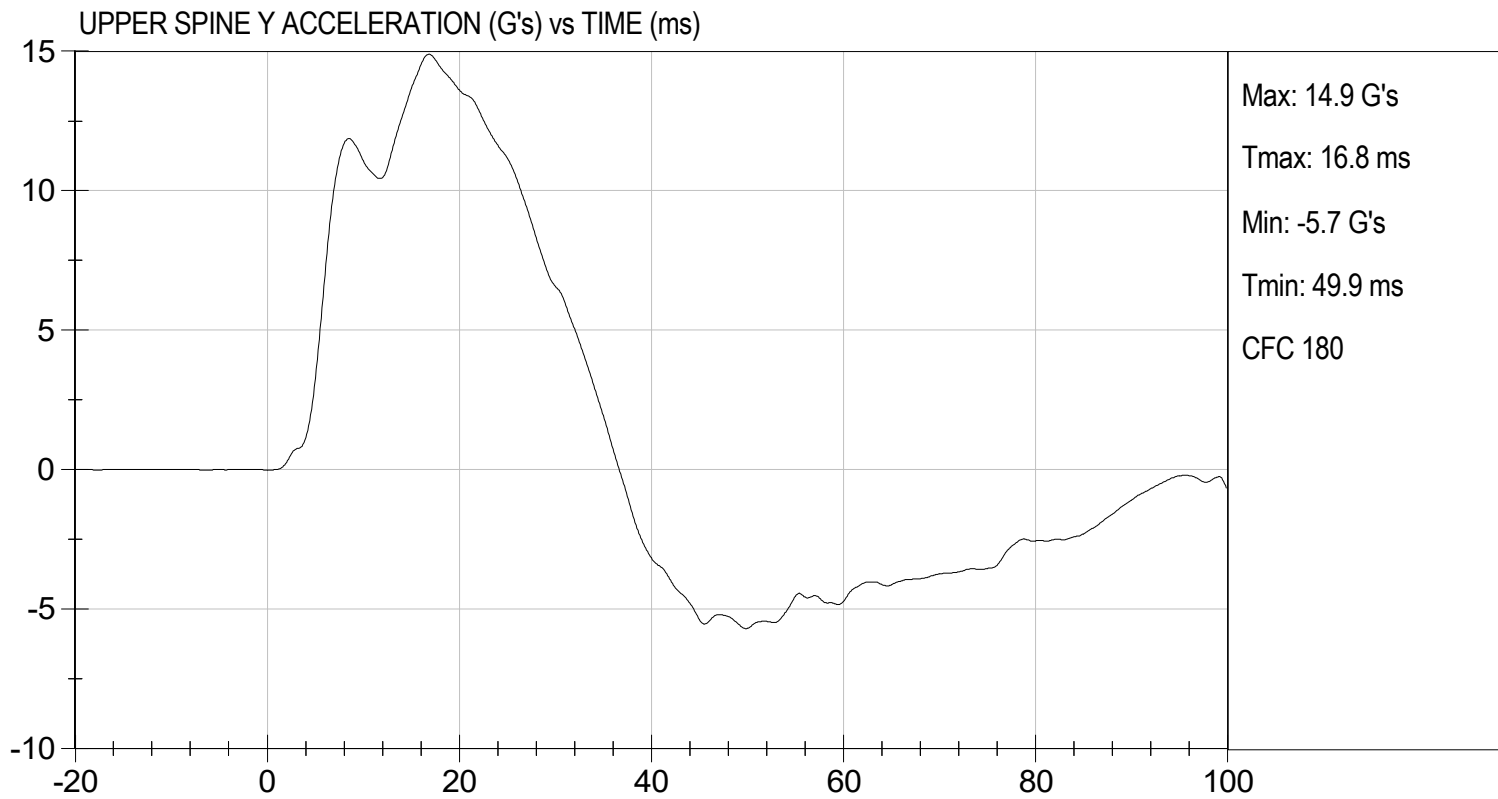
TEST DATE: 11/07/2024  
TEST #: D242905





TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 11/07/2024  
TEST #: D242905



**MGA RESEARCH CORPORATION**

**ABDOMINAL IMPACT TEST**

**SID-IIs BUILD LEVEL D DUMMY**

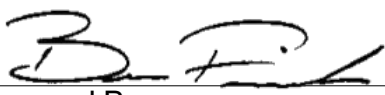
**ATD Serial No:** 296

**Test I.D:** D242906

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.3   | Pass      |
| Humidity                         | %     | 10 to 70      | 40     | Pass      |
| Impact Velocity                  | m/s   | 4.20 to 4.40  | 4.34   | Pass      |
| Maximum Probe Acceleration       | G's   | 12 to 16      | 14     | Pass      |
| Upper Abdomen Rib Displacement   | mm    | 36 to 47      | 40     | Pass      |
| Lower Abdomen Rib Displacement   | mm    | 33 to 44      | 35     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 9 to 14       | 11     | Pass      |
| Overall Test Results             |       |               | Pass   |           |

  
Laboratory Technician

11/07/2024  
Test Date

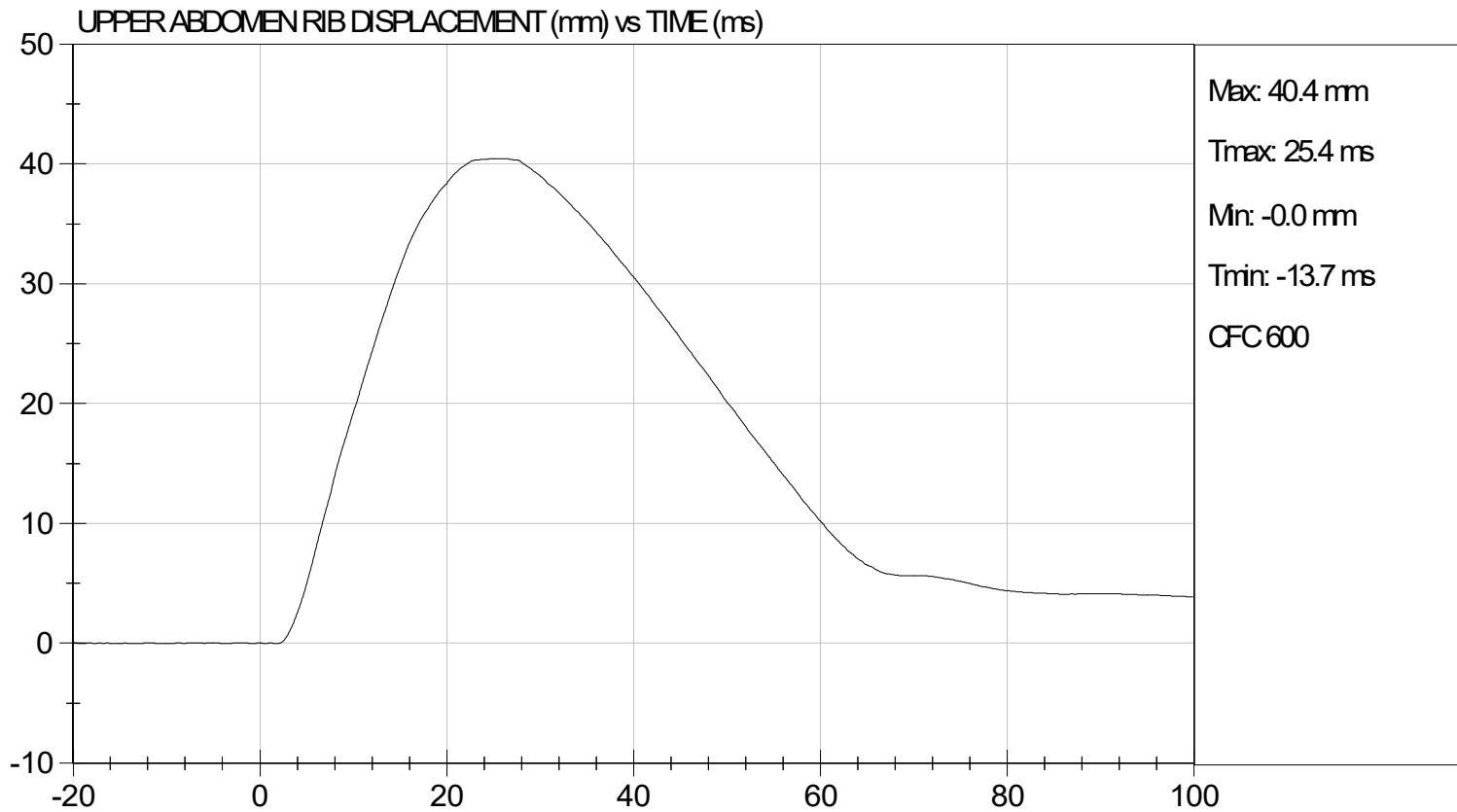
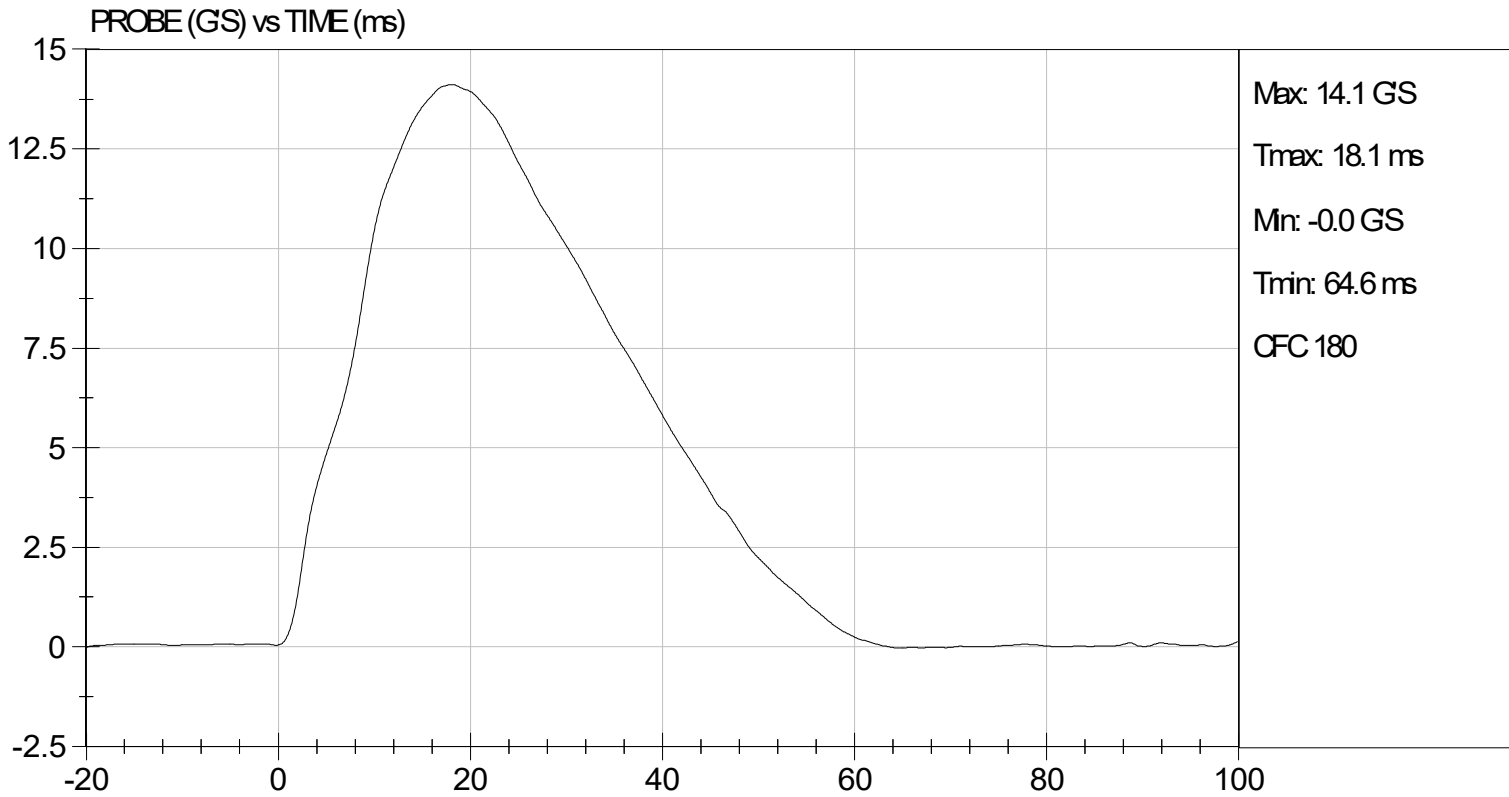
  
Approved By





TEST DESC: ABDOMEN IMPACT  
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/07/2024  
TEST #: D242906

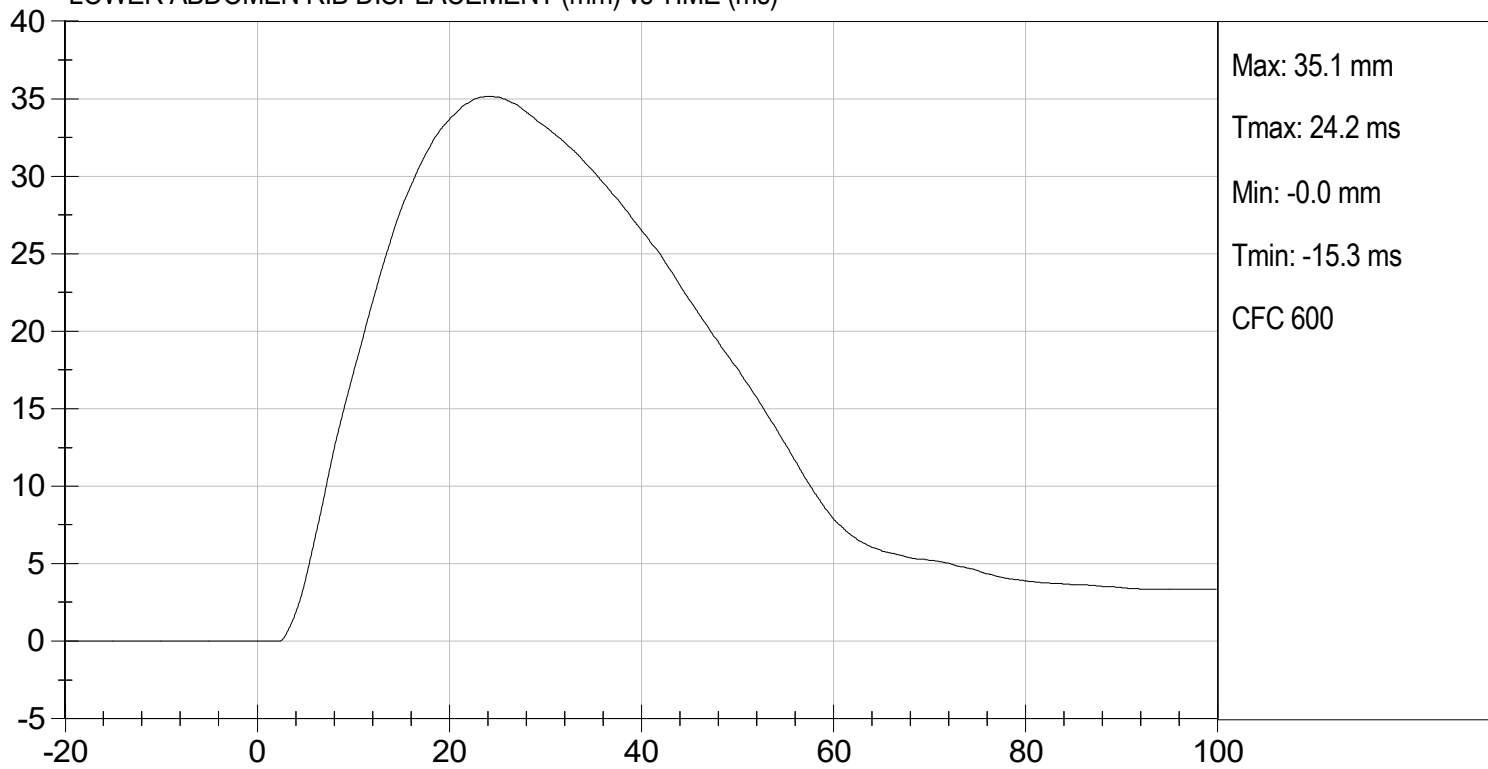




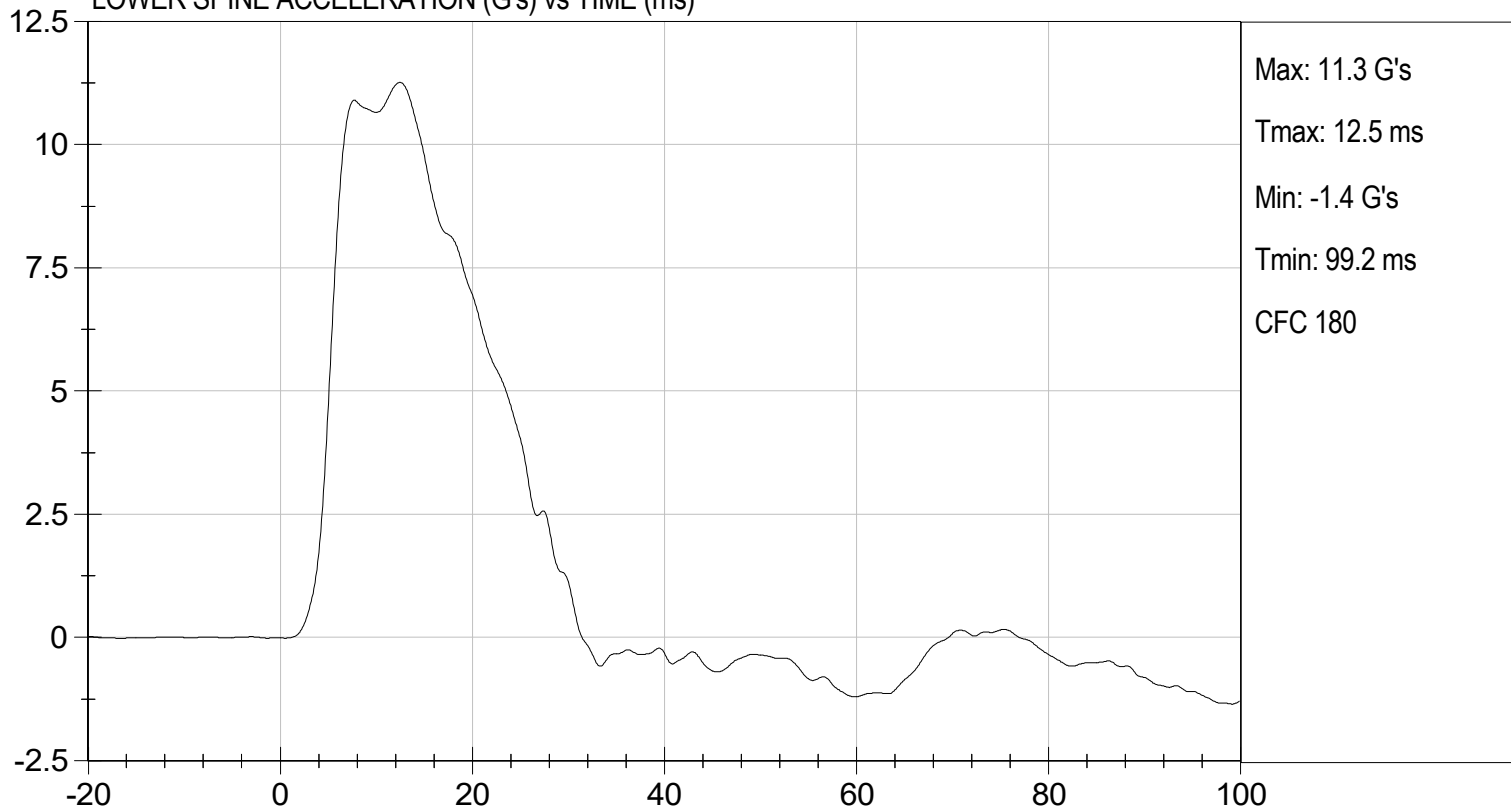
TEST DESC: ABDOMEN IMPACT  
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/07/2024  
TEST #: D242906

LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER SPINE ACCELERATION (G's) vs TIME (ms)

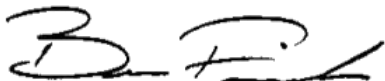


**MGA RESEARCH CORPORATION****PELVIS IMPACT TEST****SID-Its BUILD LEVEL D DUMMY**ATD Serial No: 296Test I.D: D242907

| Tested Parameter                 | Units | Specification | Result               | Pass/Fail |
|----------------------------------|-------|---------------|----------------------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.1                 | Pass      |
| Humidity                         | %     | 10 to 70      | 38                   | Pass      |
| Impact Velocity                  | m/s   | 6.60 to 6.80  | 6.77                 | Pass      |
| Maximum Probe Acceleration       | G's   | 38 to 47      | 42                   | Pass      |
| Pelvis Y Acceleration After 6 ms | G's   | 34 to 42      | 39.0                 | Pass      |
| Peak Acetabulum Force            | N     | 3600 to 4300  | 4,077                | Pass      |
|                                  |       |               | Overall Test Results | Pass      |

  
Laboratory Technician

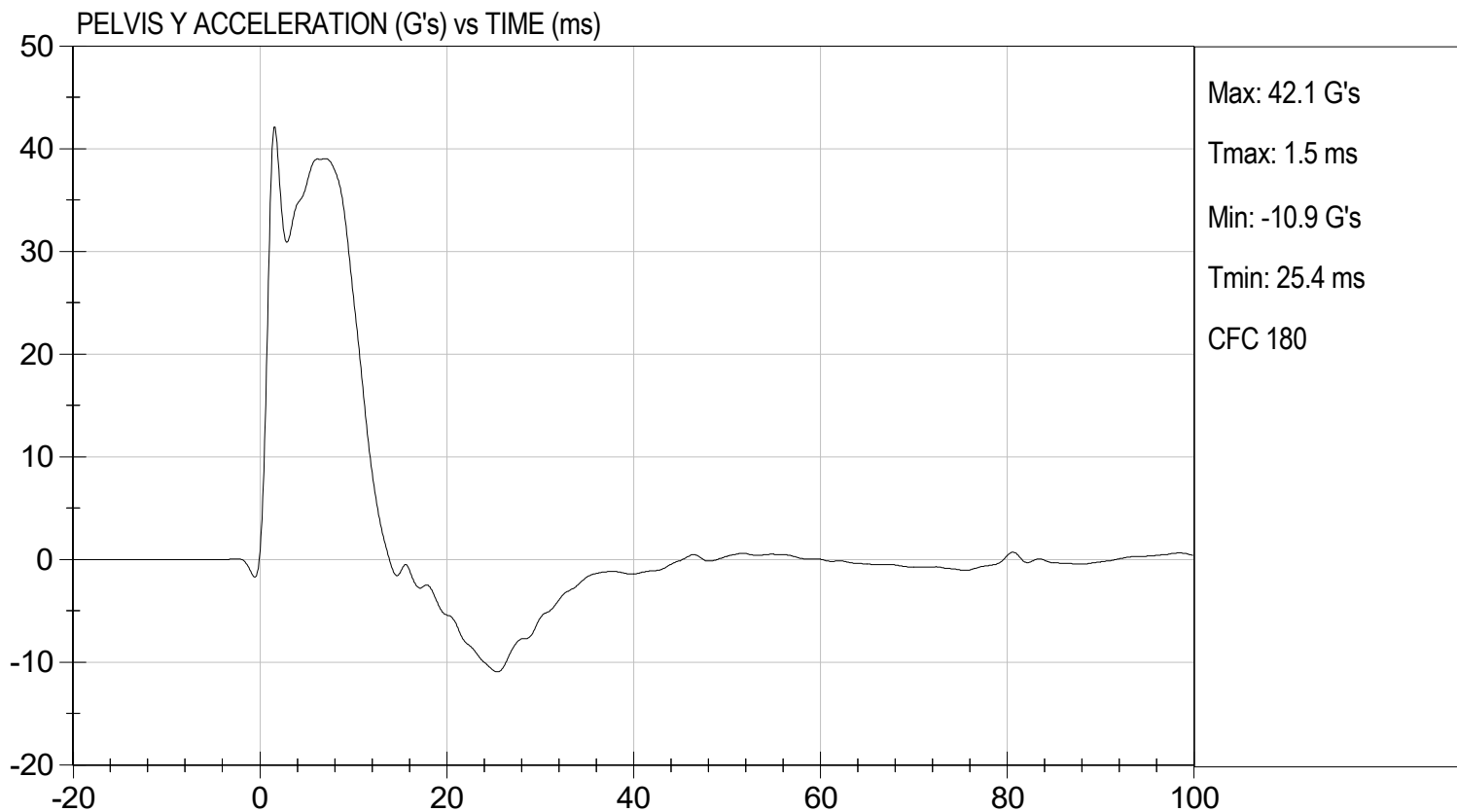
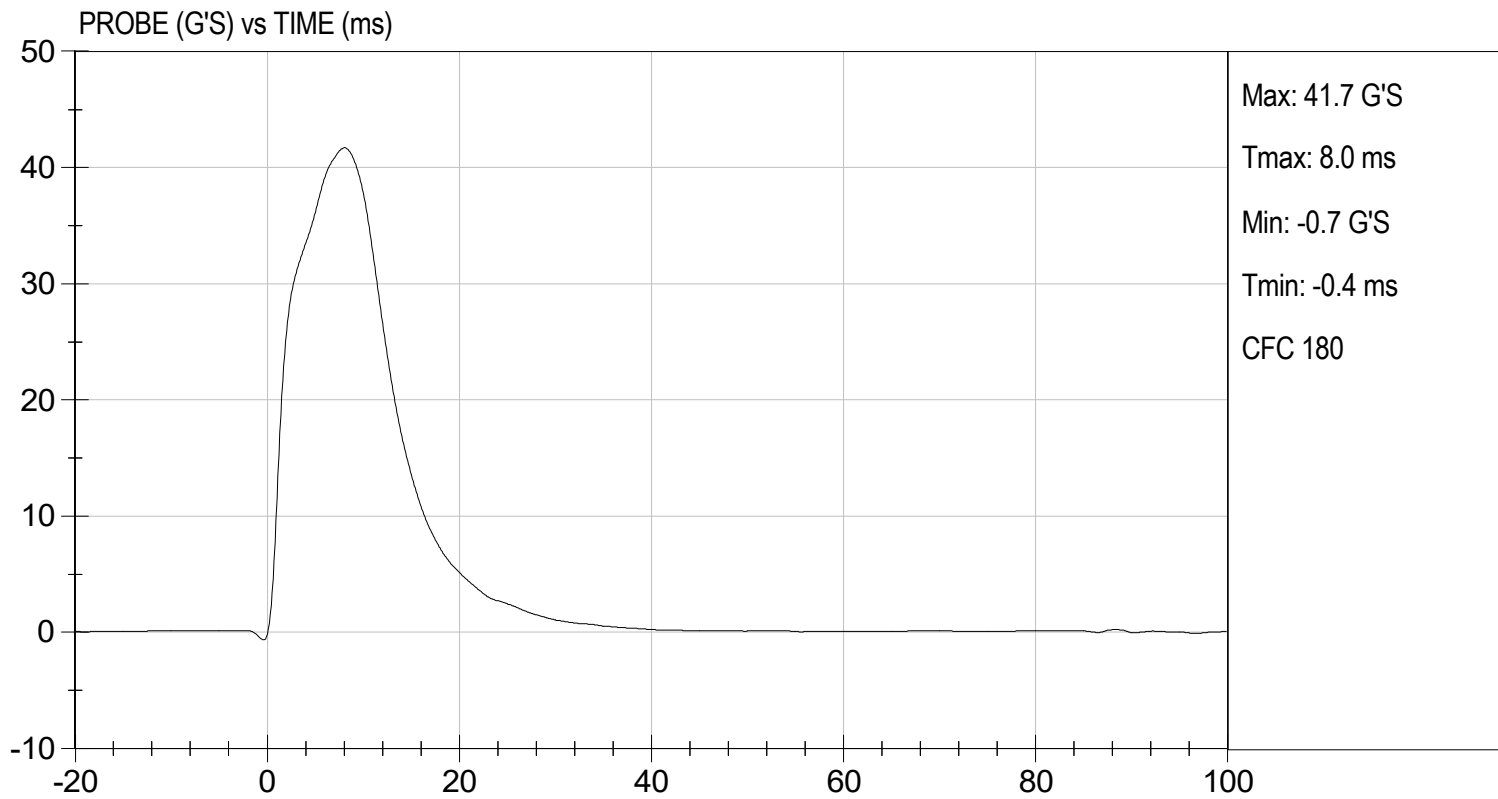
11/07/2024  
Test Date

  
Approved By



TEST DESC: PELVIS IMPACT  
VELOCITY: 22.22 ft/s, 6.77 m/s

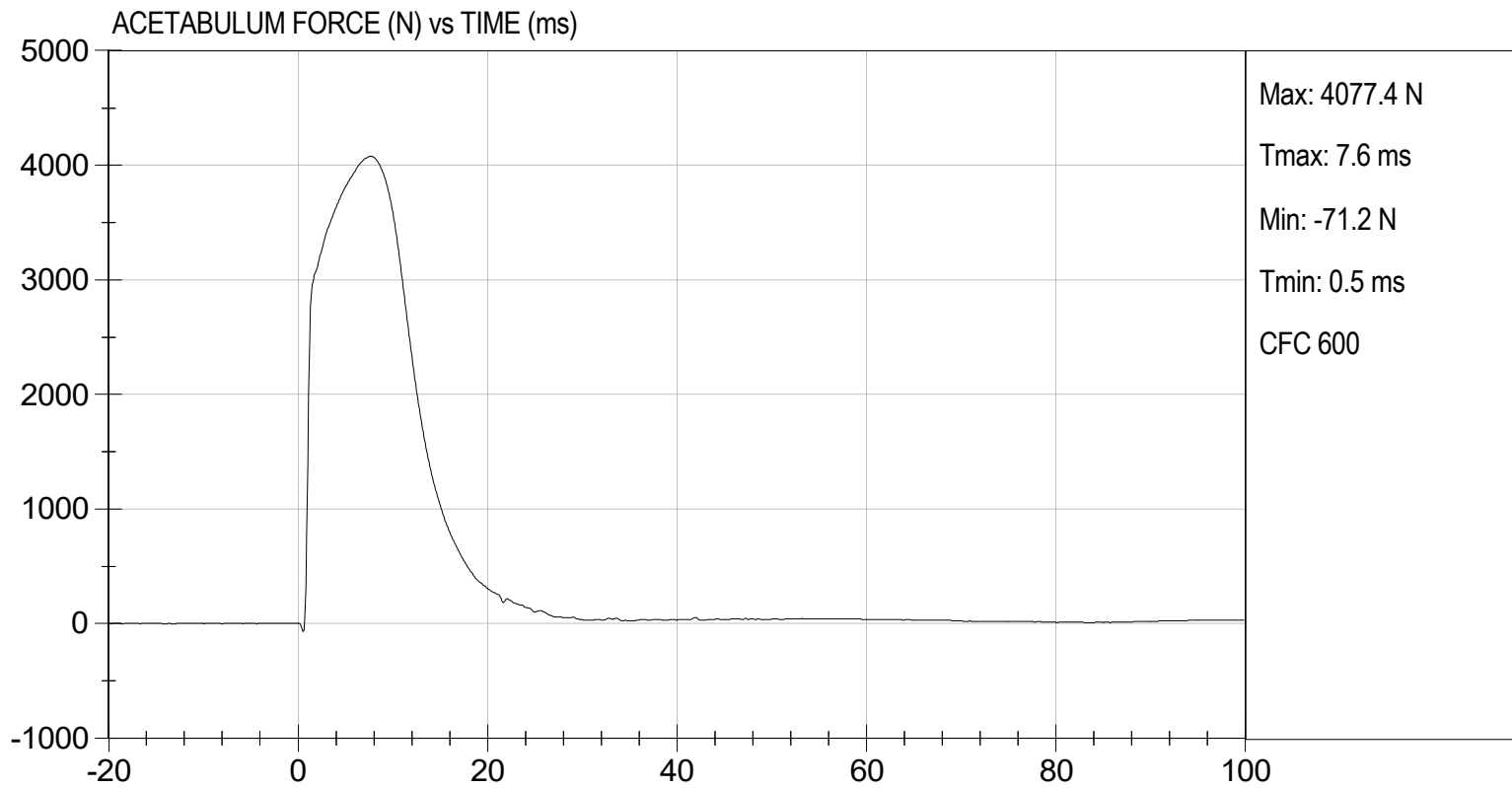
TEST DATE: 11/07/2024  
TEST #: D242907





TEST DESC: PELVIS IMPACT  
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 11/07/2024  
TEST #: D242907





**MGA RESEARCH CORPORATION**

**ILIAC IMPACT TEST**

**SID-Its BUILD LEVEL D DUMMY**

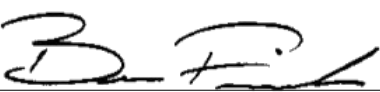
**ATD Serial No:** 296

**Test I.D:** D242908

| Tested Parameter           | Units | Specification | Result               | Pass/Fail |
|----------------------------|-------|---------------|----------------------|-----------|
| Temperature                | deg C | 20.6 to 22.2  | 21.2                 | Pass      |
| Humidity                   | %     | 10 to 70      | 40                   | Pass      |
| Impact Velocity            | m/s   | 4.20 to 4.40  | 4.34                 | Pass      |
| Maximum Probe Acceleration | G's   | 36 to 45      | 40                   | Pass      |
| Pelvis Y Acceleration      | G's   | 28 to 39      | 31                   | Pass      |
| Peak Pelvis Iliac Force    | N     | 4100 to 5100  | 4,663                | Pass      |
|                            |       |               | Overall Test Results | Pass      |

  
Laboratory Technician

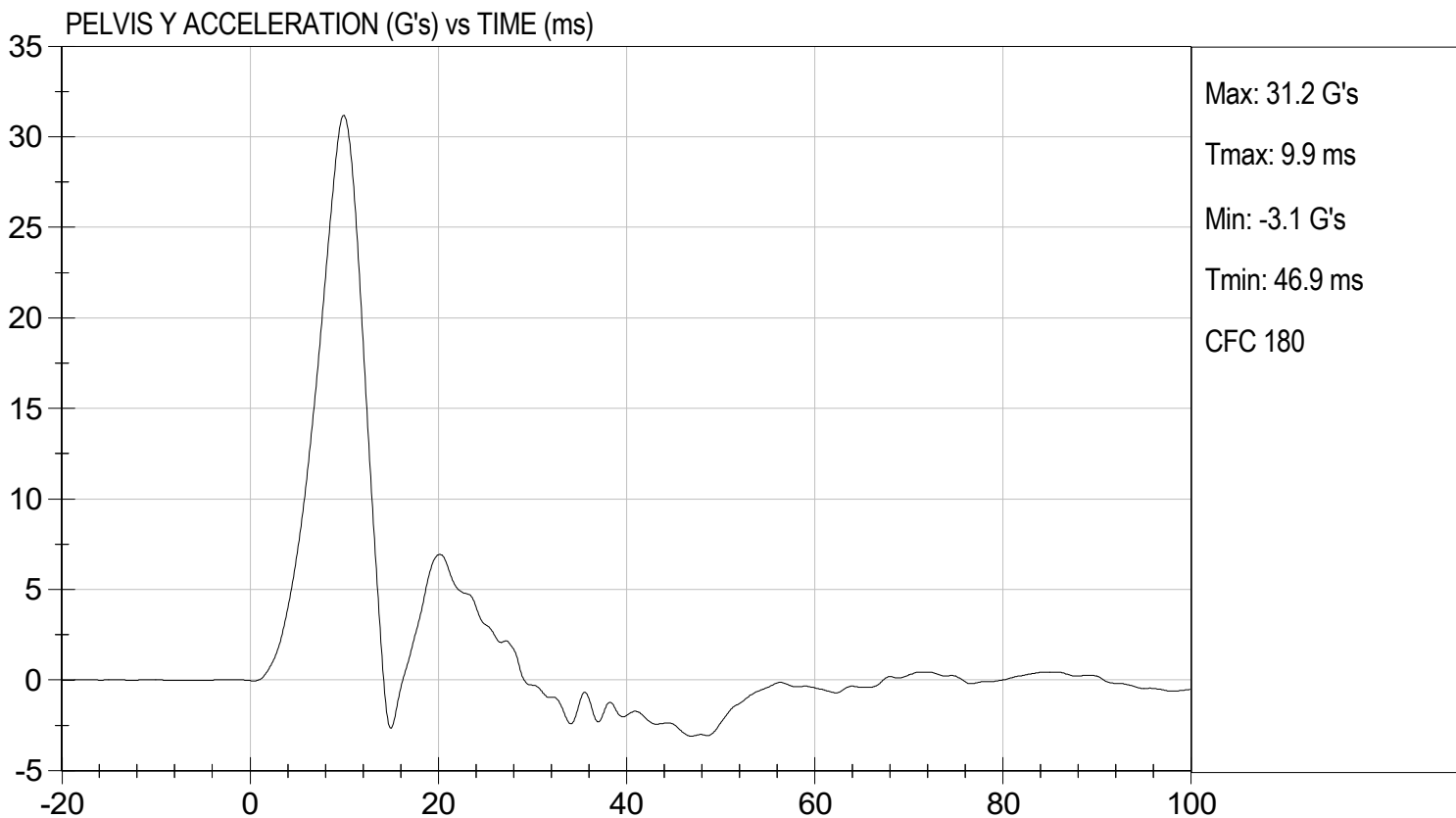
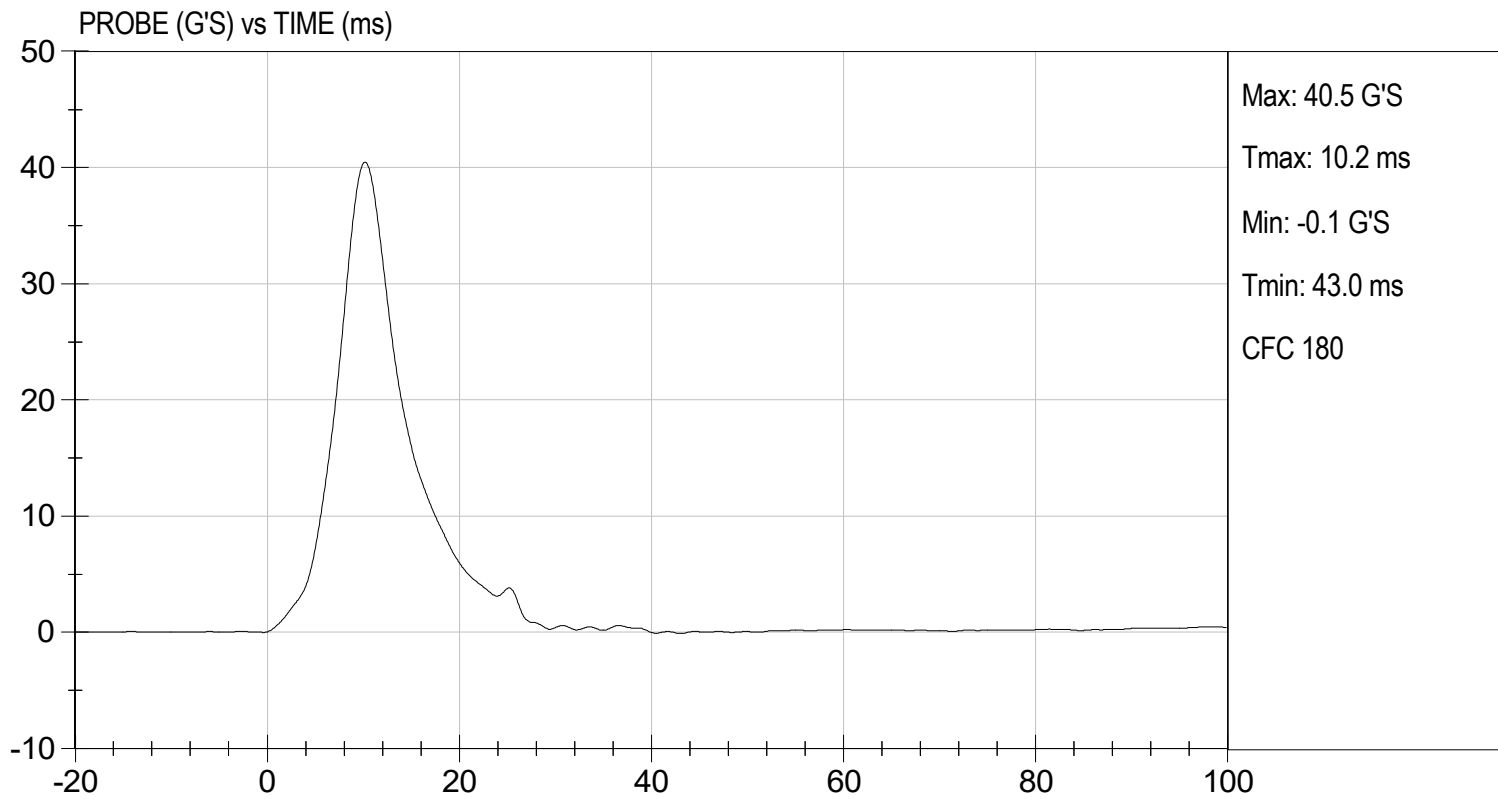
11/07/2024  
Test Date

  
Approved By



TEST DESC: ILLIAC  
VELOCITY: 14.25 ft/s, 4.34 m/s

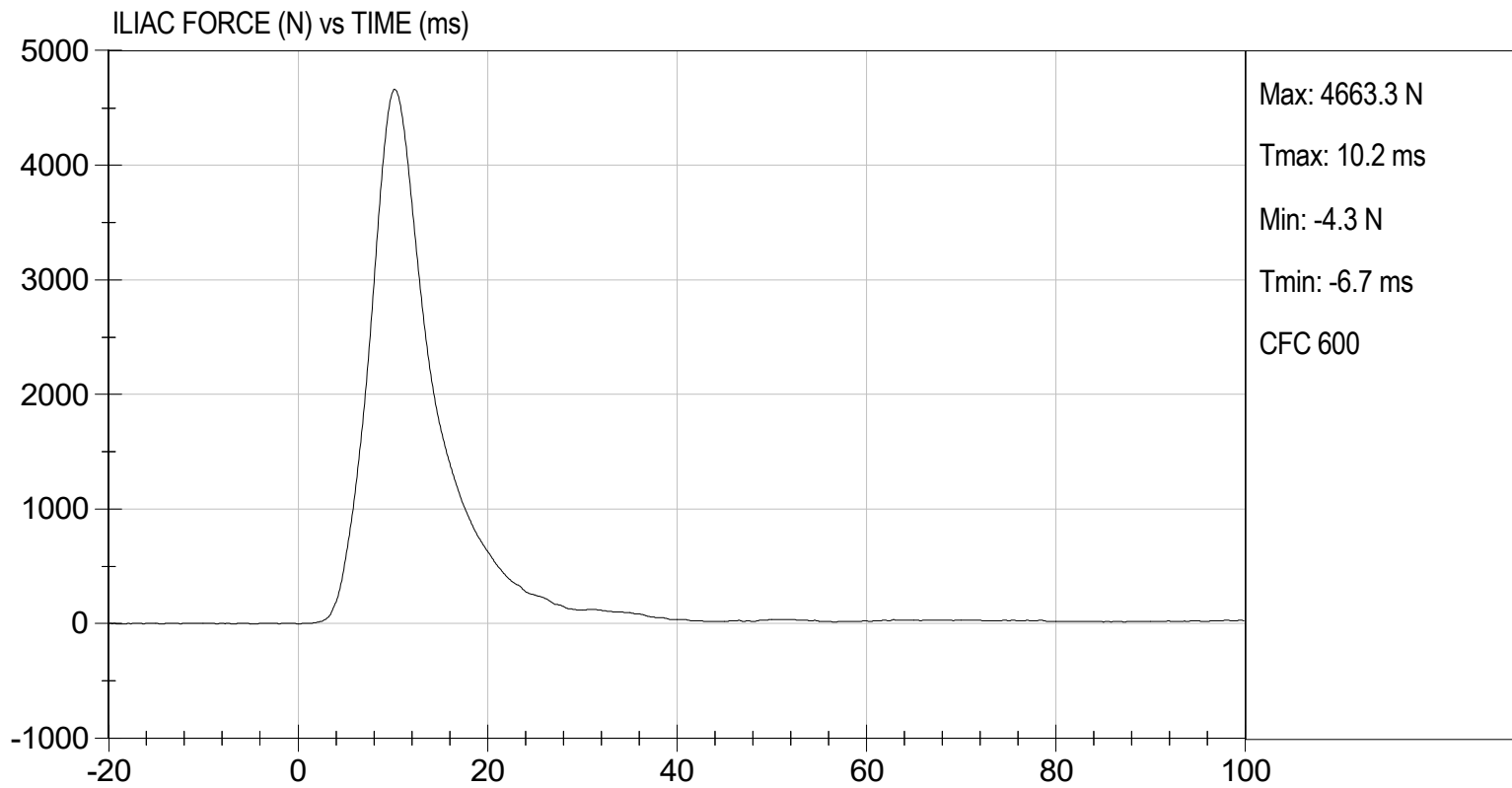
TEST DATE: 11/07/2024  
TEST #: D242908





TEST DESC: ILLIAC  
VELOCITY: 14.25 ft/s, 4.34 m/s

TEST DATE: 11/07/2024  
TEST #: D242908



## **QUALIFICATION TEST RESULTS**

### **POST-TEST**

**SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD**

**SID-IIsD External Measurements**  
**SN: 296**

| <b>No.</b> | <b>Name</b>                   | <b>Spec. (mm)</b> | <b>Result</b> | <b>Pass/Fail</b> |
|------------|-------------------------------|-------------------|---------------|------------------|
| <b>A</b>   | Sitting Height                | 772 - 788         | 784           | Pass             |
| <b>B</b>   | Shoulder Pivot Height         | 437 - 453         | 442           | Pass             |
| <b>C</b>   | H-point Height                | 79 - 89           | 83            | Pass             |
| <b>D</b>   | H-point from Seatback         | 141 - 151         | 145           | Pass             |
| <b>E</b>   | Shoulder Pivot from Backline  | 97 - 107          | 99            | Pass             |
| <b>F</b>   | Thigh Clearance               | 119 -135          | 121           | Pass             |
| <b>G</b>   | Head Breadth                  | 140 - 148         | 142           | Pass             |
| <b>H</b>   | Head Back from Backline       | 40 - 46           | 45            | Pass             |
| <b>I</b>   | Head Depth                    | 178 - 188         | 180           | Pass             |
| <b>J</b>   | Head Circumference            | 541 - 551         | 548           | Pass             |
| <b>K</b>   | Buttock to Knee Length        | 514 - 540         | 535           | Pass             |
| <b>L</b>   | Popliteal Height              | 343 - 369         | 358           | Pass             |
| <b>M</b>   | Knee Pivot to Floor Height    | 392 - 409         | 404           | Pass             |
| <b>N</b>   | Buttock Popliteal Length      | 416 - 442         | 435           | Pass             |
| <b>O</b>   | Chest Depth w/o Jacket        | 195 - 211         | 206           | Pass             |
| <b>P</b>   | Foot Length                   | 216 - 232         | 219           | Pass             |
| <b>Q</b>   | Hip Breadth (w/ pelvic plugs) | 313 - 323         | 316           | Pass             |
| <b>R</b>   | Arm Length                    | 249 - 259         | 250           | Pass             |
| <b>S</b>   | Knee Joint to Seatback        | 477 - 493         | 481           | Pass             |
| <b>V</b>   | Shoulder Width                | 341 - 357         | 346           | Pass             |
| <b>W</b>   | Foot Width                    | 78 - 94           | 85            | Pass             |
| <b>Y</b>   | Chest Circumference w/ jacket | 851 - 881         | 870           | Pass             |
| <b>Z</b>   | Waist Circumference           | 761 - 791         | 772           | Pass             |



**MGA RESEARCH CORPORATION**  
**HEAD DROP TEST**  
**SID-IIs BUILD LEVEL D DUMMY**

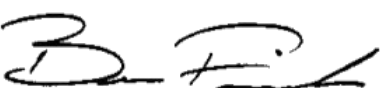
**ATD Serial No:** 296

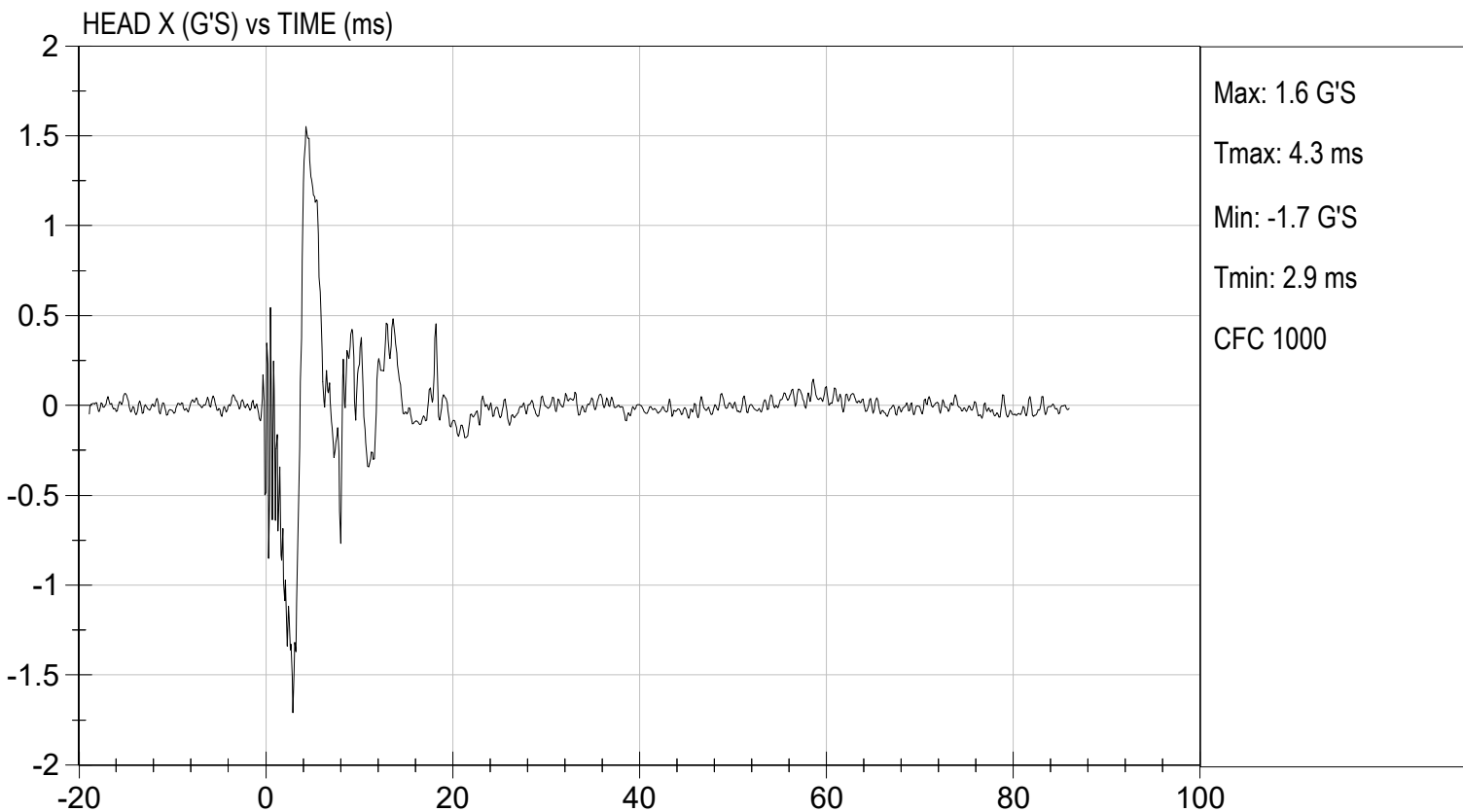
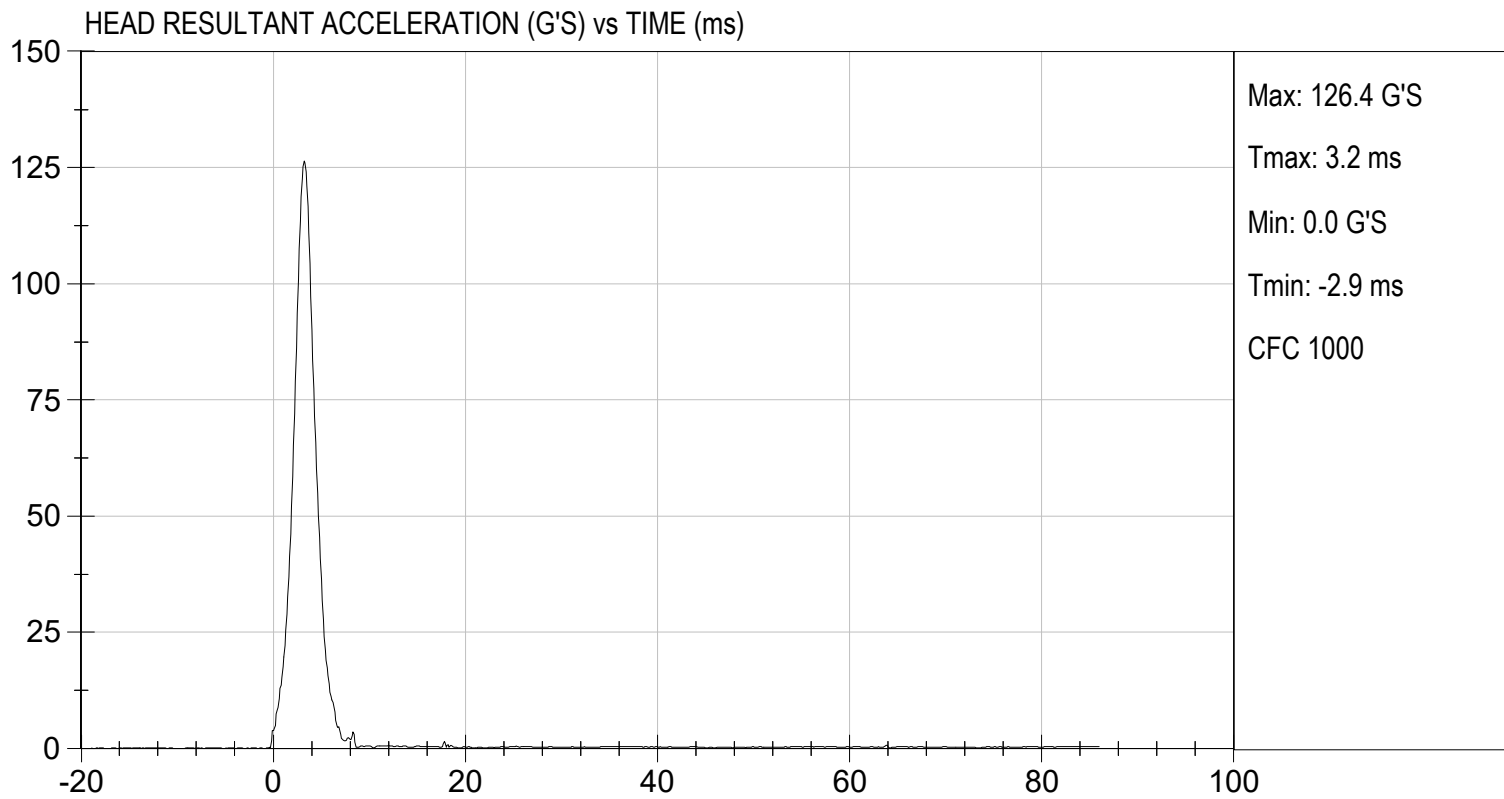
**Test ID:** D243091

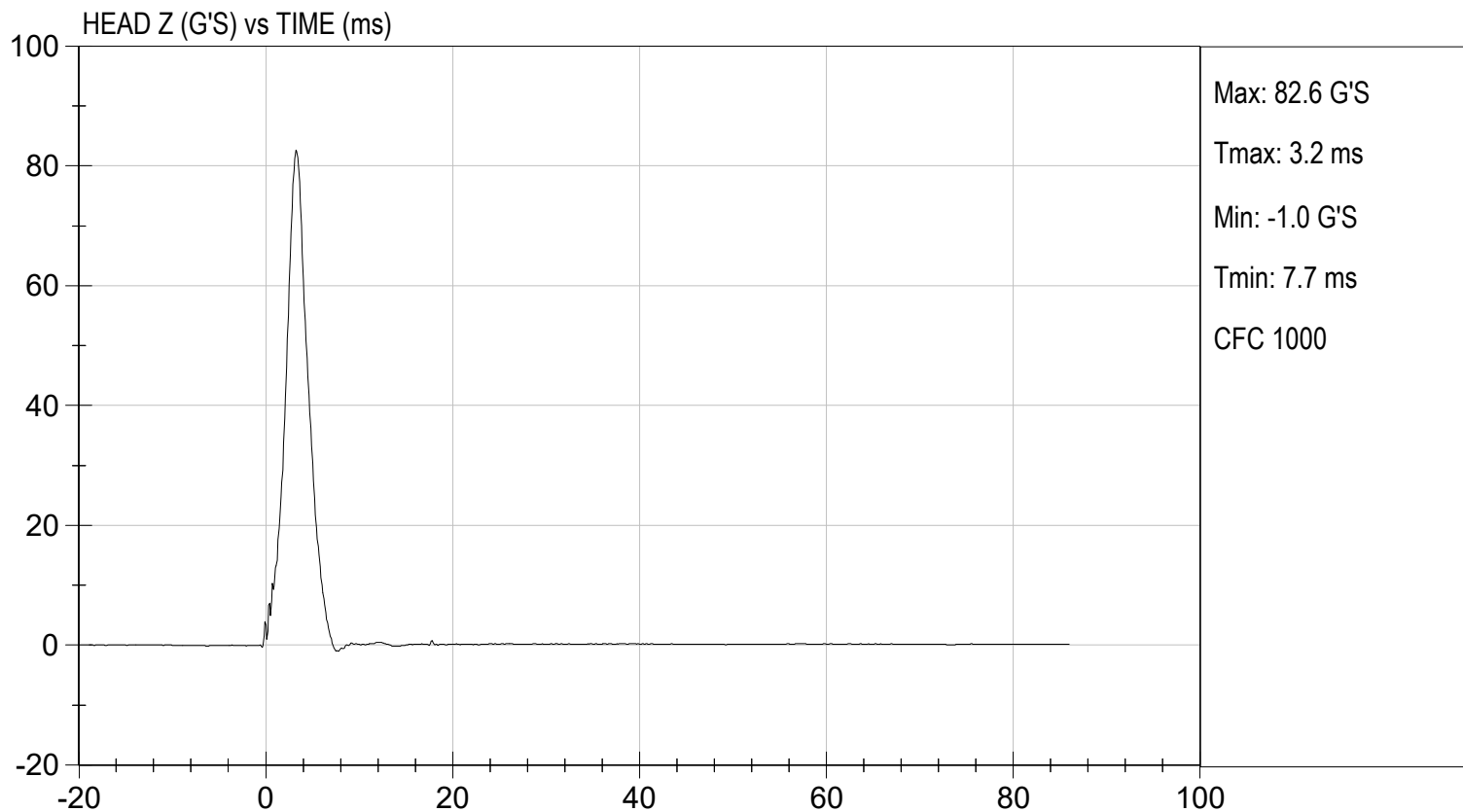
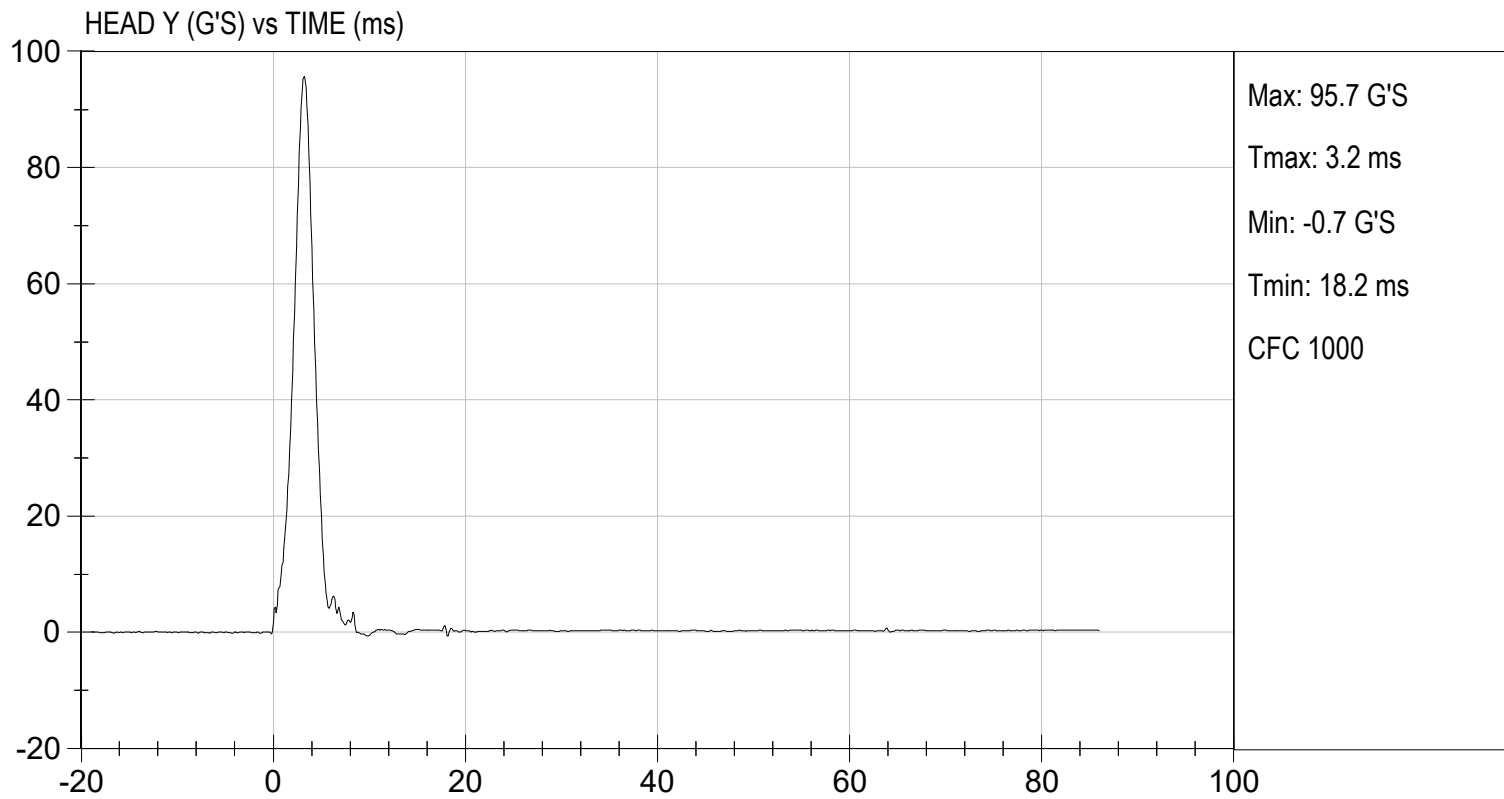
| Tested Parameter               | Units | Specification | Result | Pass/Fail |
|--------------------------------|-------|---------------|--------|-----------|
| Laboratory Temperature         | deg C | 20.6 to 22.2  | 21.6   | Pass      |
| Laboratory Relative Humidity   | %     | 10 to 70      | 25     | Pass      |
| Peak Resultant Acceleration    | G's   | 115 to 137    | 126    | Pass      |
| Peak Longitudinal Acceleration | G's   | +/- 15        | -1.7   | Pass      |
| Unimodal                       | N/A   | Yes           | Yes    | Pass      |
| Oscillations                   | N/A   | <15%          | Yes    | Pass      |
| Overall Test Results           |       |               |        | Pass      |

  
Laboratory Technician

12/04/2024  
Test Date

  
Approved By





**MGA RESEARCH CORPORATION**  
**LATERAL NECK PENDULUM TEST**  
**SID-Its BUILD LEVEL D DUMMY**

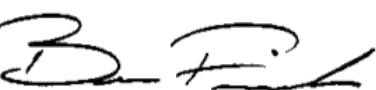
**ATD Serial No:** 296

**Test I.D:** D243092

| Tested Parameter                 |           | Units | Specification | Result | Pass/Fail |
|----------------------------------|-----------|-------|---------------|--------|-----------|
| Temperature                      |           | deg C | 20.6 to 22.2  | 21.6   | Pass      |
| Humidity                         |           | %     | 10 to 70      | 25     | Pass      |
| Impact Velocity                  |           | m/s   | 5.51 to 5.63  | 5.53   | Pass      |
| Pendulum Velocity                | 10 ms     | m/s   | 2.20 to 2.80  | 2.41   | Pass      |
|                                  | 15 ms     | m/s   | 3.30 to 4.10  | 3.69   | Pass      |
|                                  | 20 ms     | m/s   | 4.40 to 5.40  | 5.20   | Pass      |
|                                  | 25 ms     | m/s   | 5.40 to 6.10  | 5.79   | Pass      |
|                                  | 25-100 ms | m/s   | 5.50 to 6.20  | 5.85   | Pass      |
| Maximum D-Plane Rotation         |           | deg   | 71 to 81      | 71     | Pass      |
| Time of Maximum D-Plane Rotation |           | ms    | 50 to 70      | 67     | Pass      |
| Maximum Occipital Condyle Moment |           | Nm    | -44 to -36    | -37    | Pass      |
| Time of Moment Decay to 0 Nm     |           | ms    | 102 to 126    | 118    | Pass      |
| Overall Test Results             |           |       |               |        | Pass      |

  
 Laboratory Technician

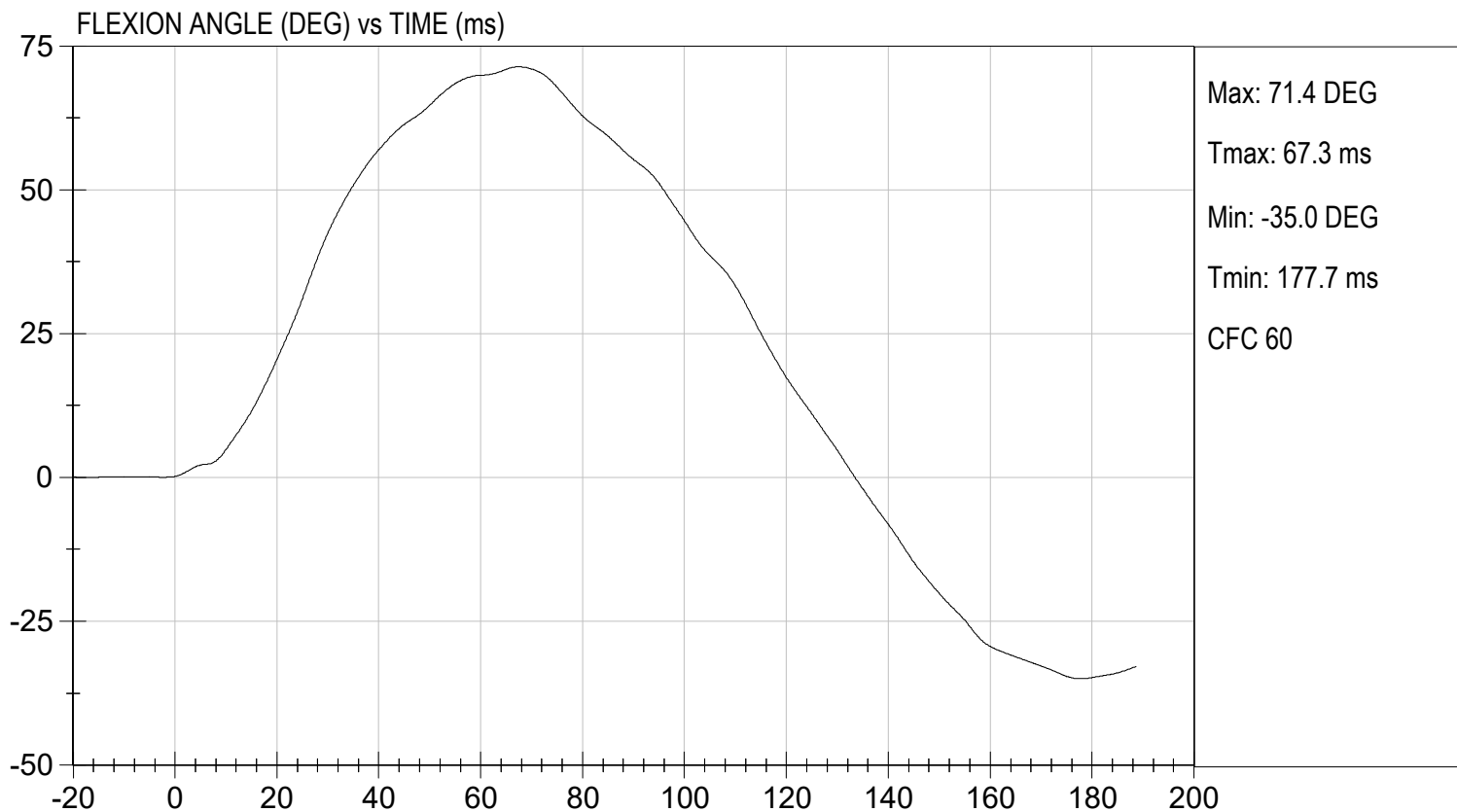
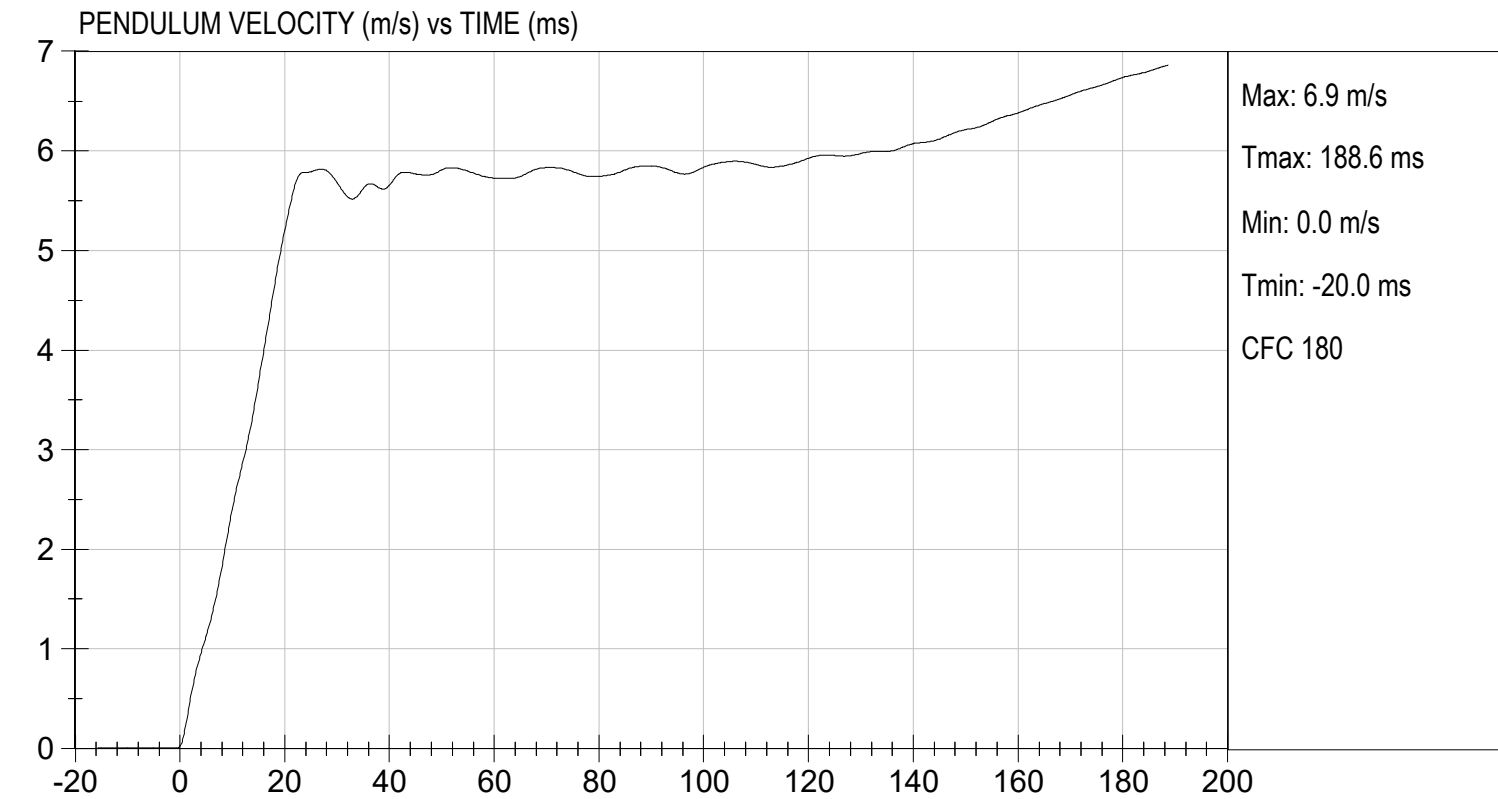
12/04/2024  
 Test Date

  
 Approved By



TEST DESC: NECK BENDING  
VELOCITY: 18.15 ft/s, 5.53 m/s

TEST DATE: 12/04/2024  
TEST #: D243092

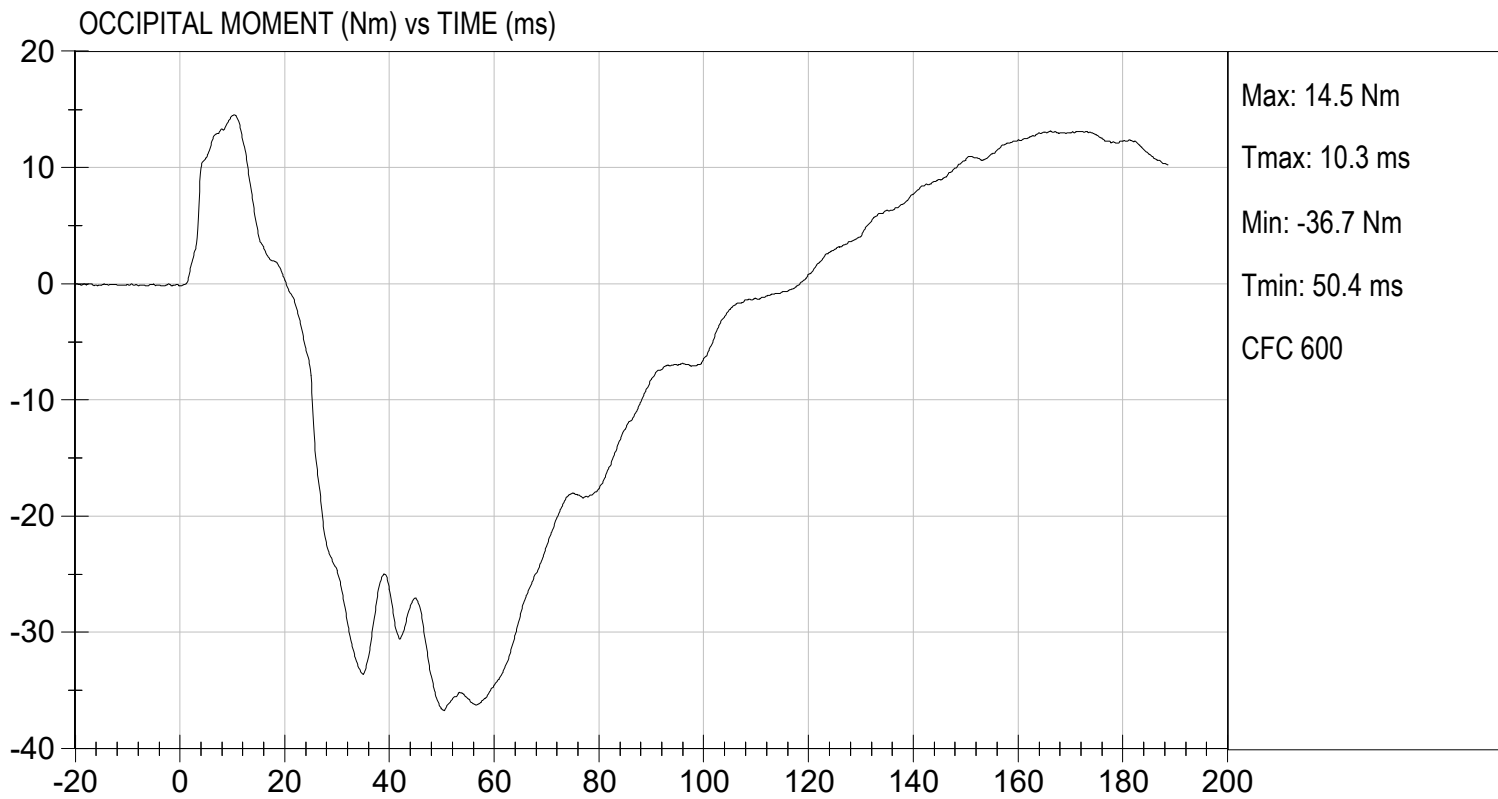






TEST DESC: NECK BENDING  
VELOCITY: 18.15 ft/s, 5.53 m/s

TEST DATE: 12/04/2024  
TEST #: D243092



**MGA RESEARCH CORPORATION**  
**SHOULDER IMPACT TEST**  
**SID-Its BUILD LEVEL D DUMMY**

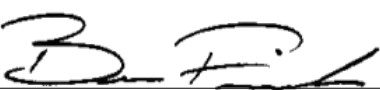
**ATD Serial No:** 296

**Test ID:** D243093

| Tested Parameter                | Units | Specification | Result               | Pass/Fail |
|---------------------------------|-------|---------------|----------------------|-----------|
| Laboratory Temperature          | deg C | 20.6 to 22.2  | 21.8                 | Pass      |
| Laboratory Relative Humidity    | %     | 10 to 70      | 26                   | Pass      |
| Impact Velocity                 | m/s   | 4.20 to 4.40  | 4.30                 | Pass      |
| Maximum Probe Acceleration      | G's   | 13 to 18      | 15                   | Pass      |
| Shoulder Displacement           | mm    | 28 to 37      | 30                   | Pass      |
| Upper Spine (T1) Y Acceleration | G's   | 17 to 22      | 19                   | Pass      |
|                                 |       |               | Overall Test Results | Pass      |

  
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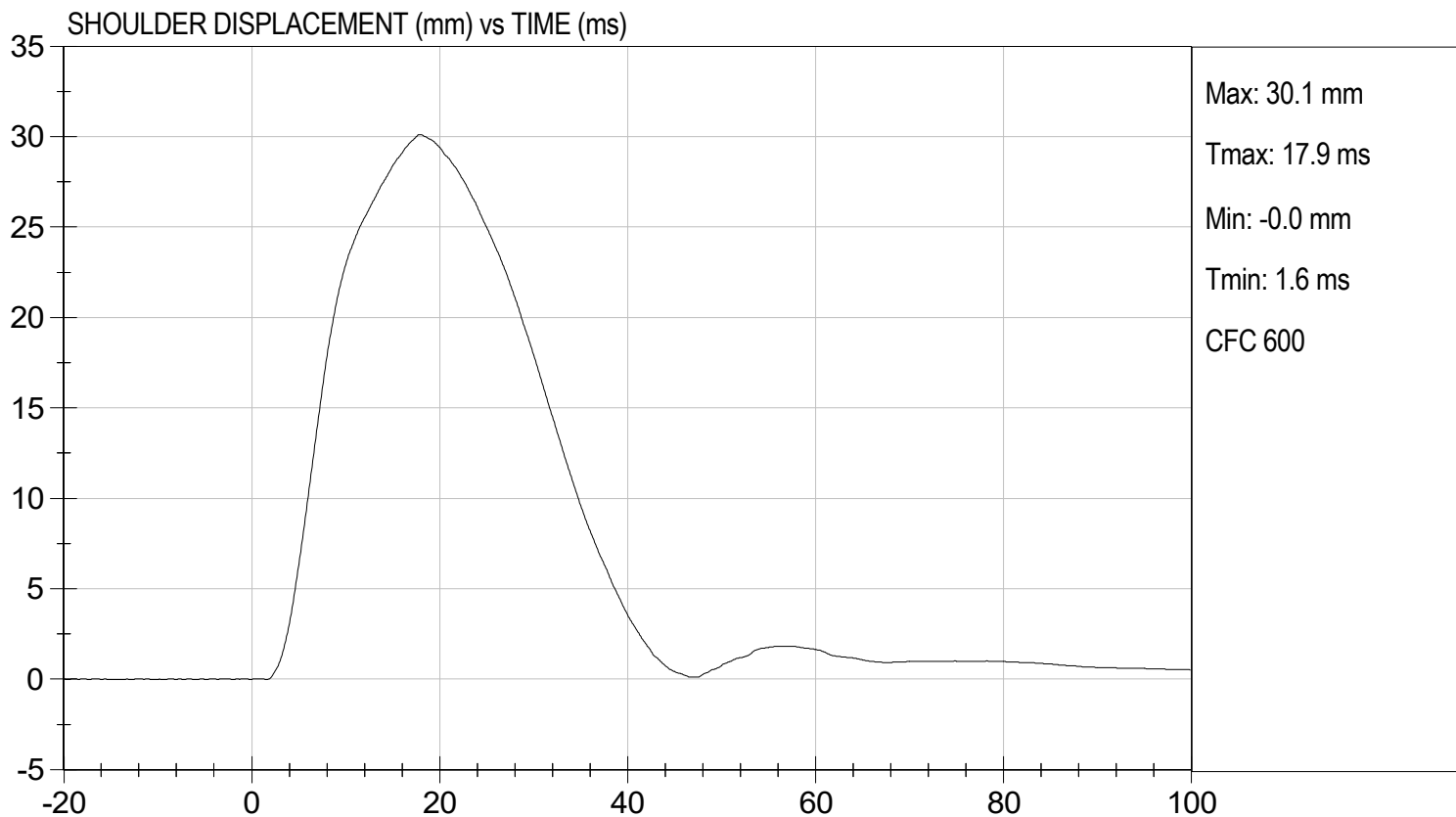
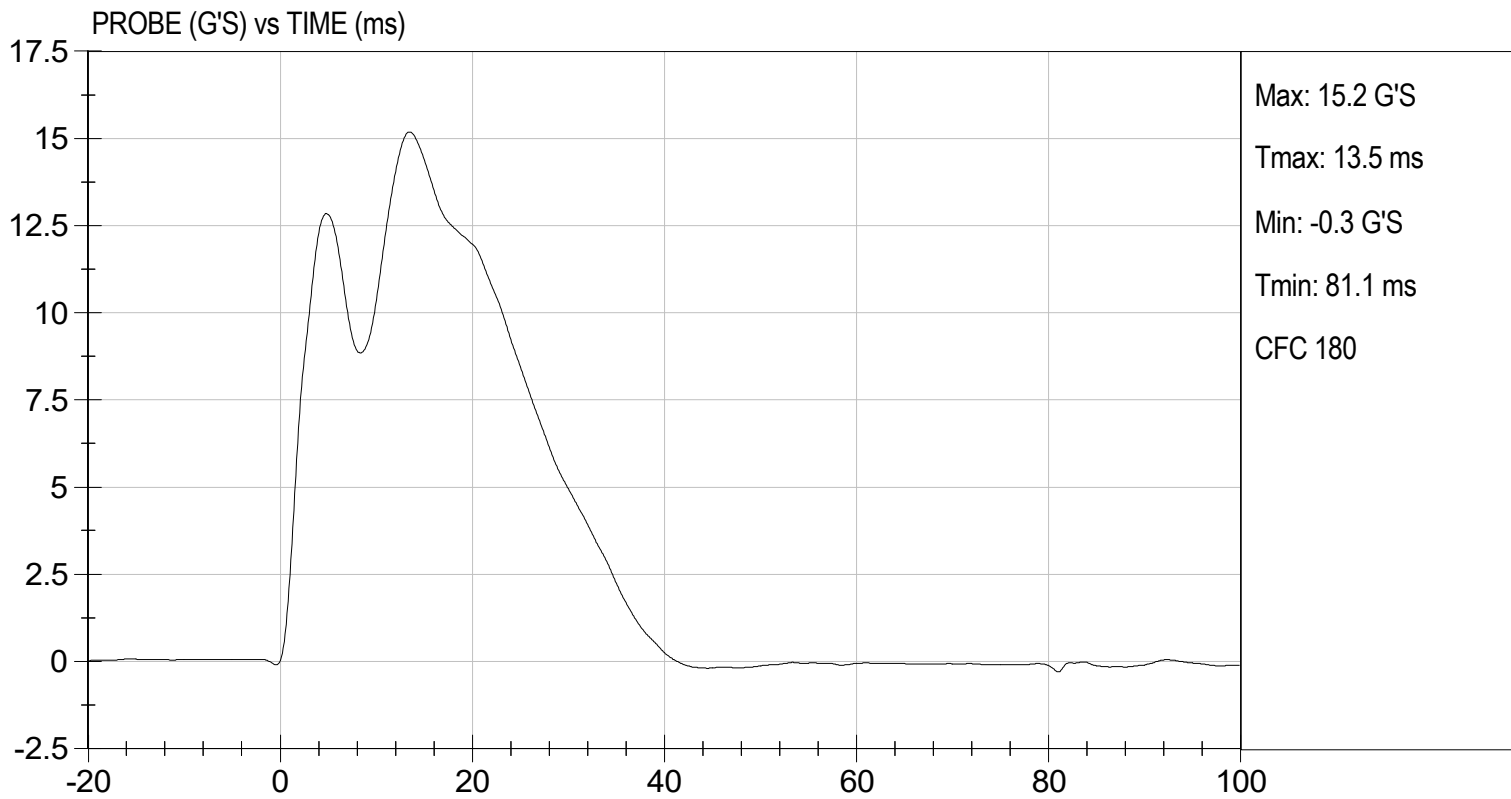
12/04/2024  
Test Date

  
Approved By



TEST DESC: SHOULDER IMPACT  
VELOCITY: 14.12 ft/s, 4.30 m/s

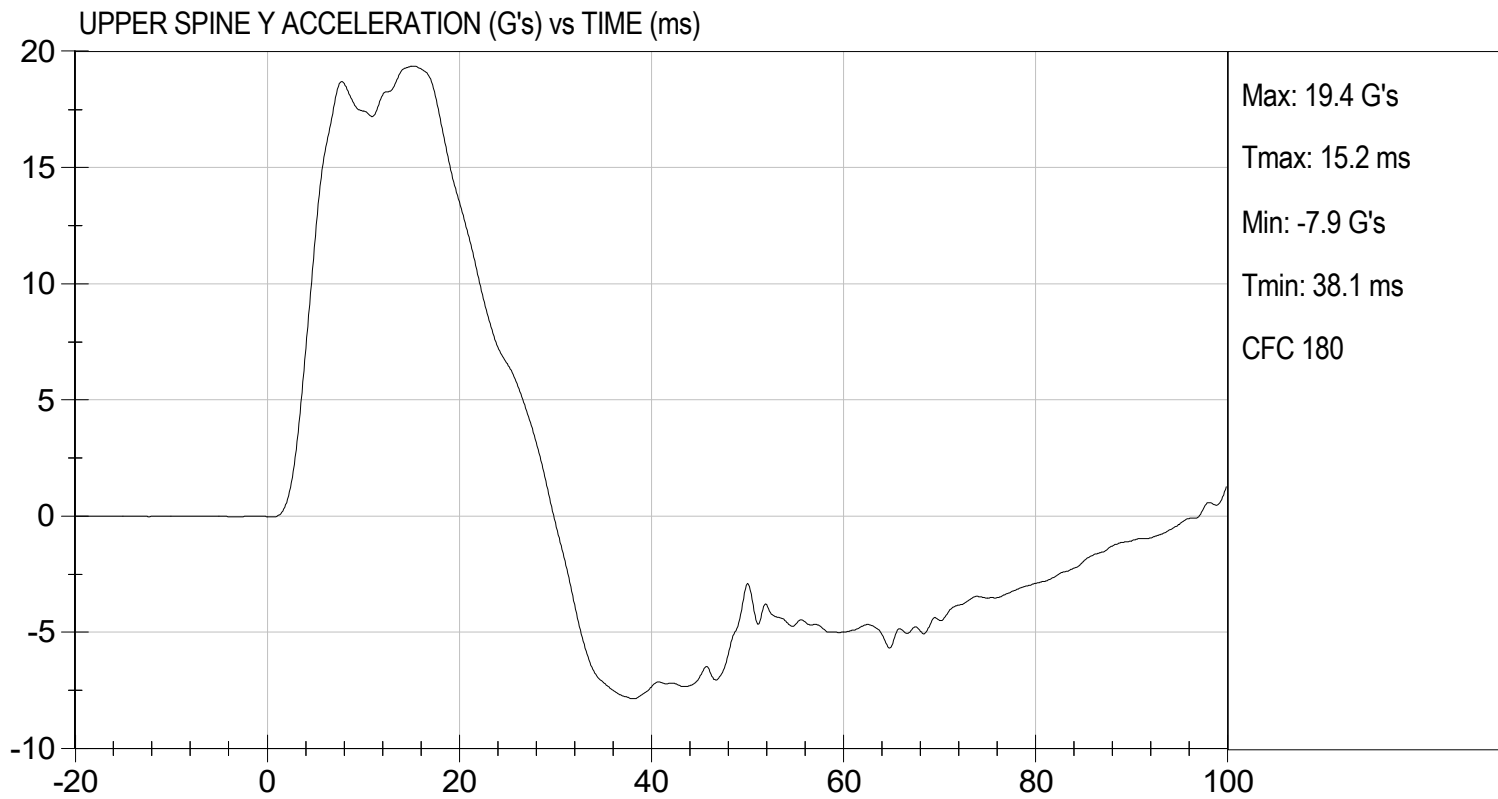
TEST DATE: 12/04/2024  
TEST #: D243093





TEST DESC: SHOULDER IMPACT  
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 12/04/2024  
TEST #: D243093



**MGA RESEARCH CORPORATION**  
**THORAX (WITH ARM) IMPACT TEST**  
**SID-Its BUILD LEVEL D DUMMY**

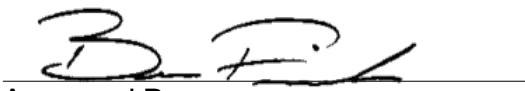
**ATD Serial No:** 296

**Test I.D:** D243094

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.7   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 6.60 to 6.80  | 6.77   | Pass      |
| Maximum Probe Acceleration       | G's   | 30 to 36      | 34     | Pass      |
| Shoulder Displacement            | mm    | 31 to 40      | 35     | Pass      |
| Upper Rib Displacement           | mm    | 25 to 32      | 28     | Pass      |
| Middle Rib Displacement          | mm    | 30 to 36      | 32     | Pass      |
| Lower Rib Displacement           | mm    | 32 to 38      | 34     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 34 to 43      | 39     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 29 to 37      | 32     | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
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12/04/2024  
Test Date

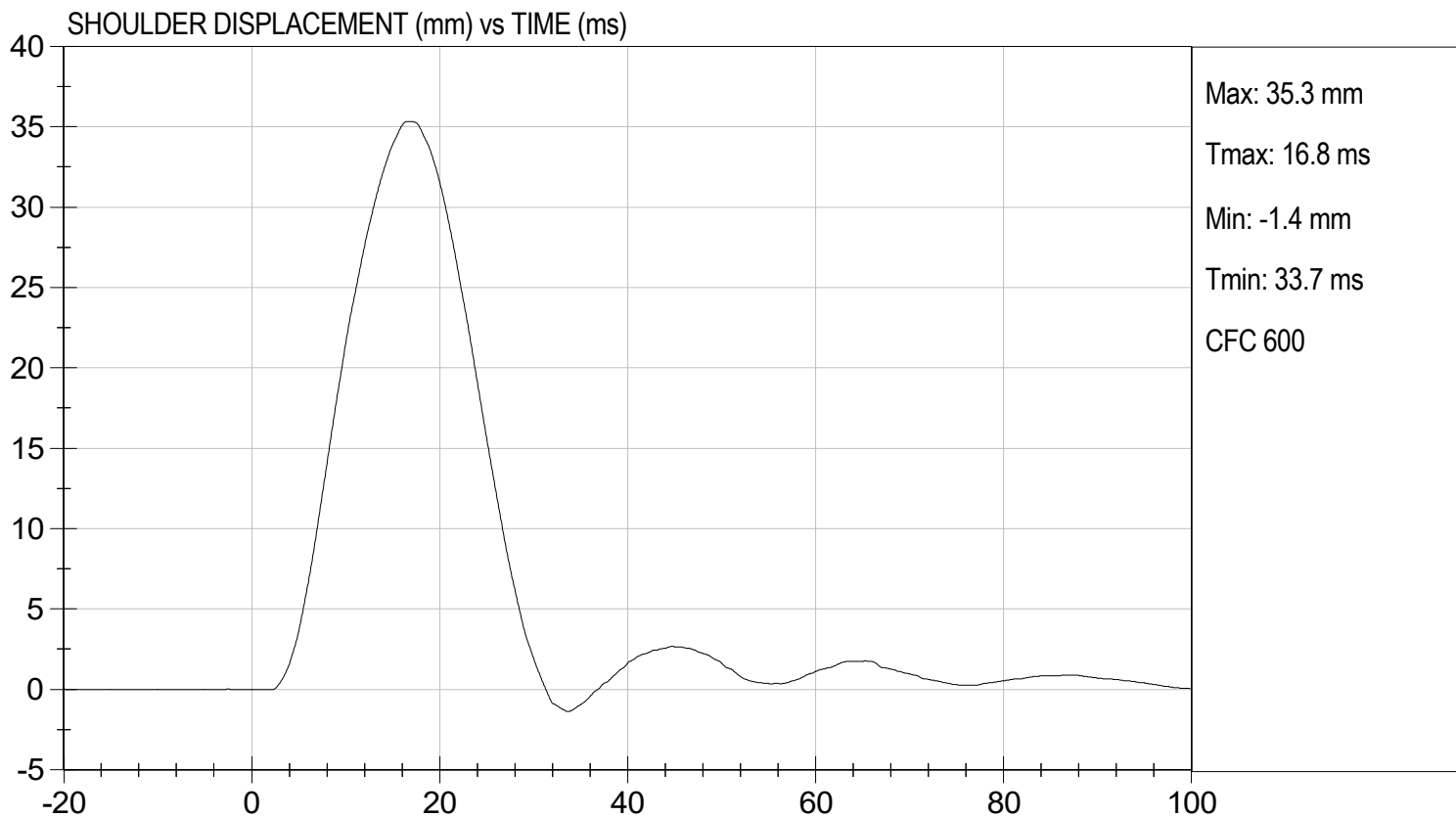
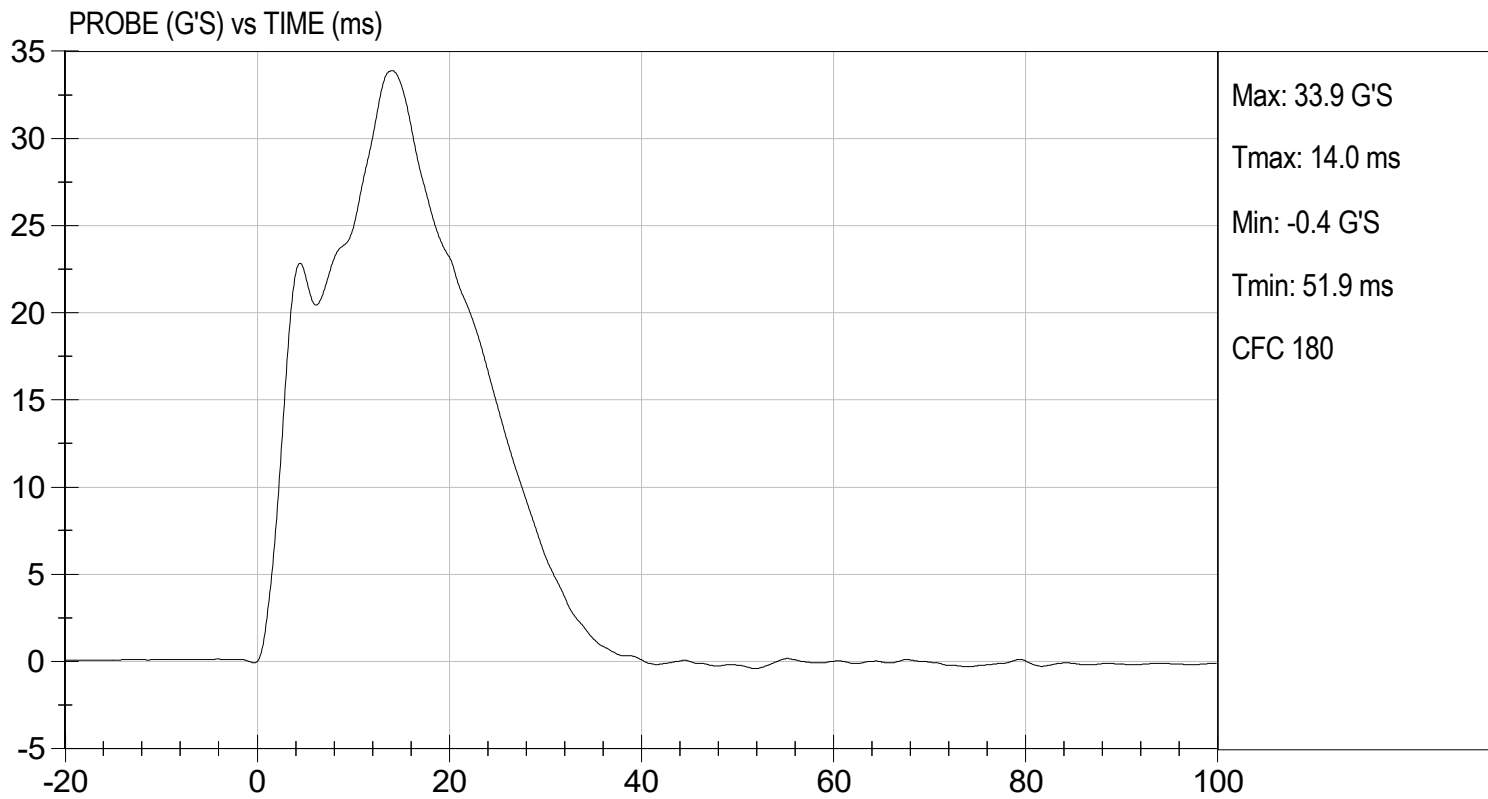
  
Approved By

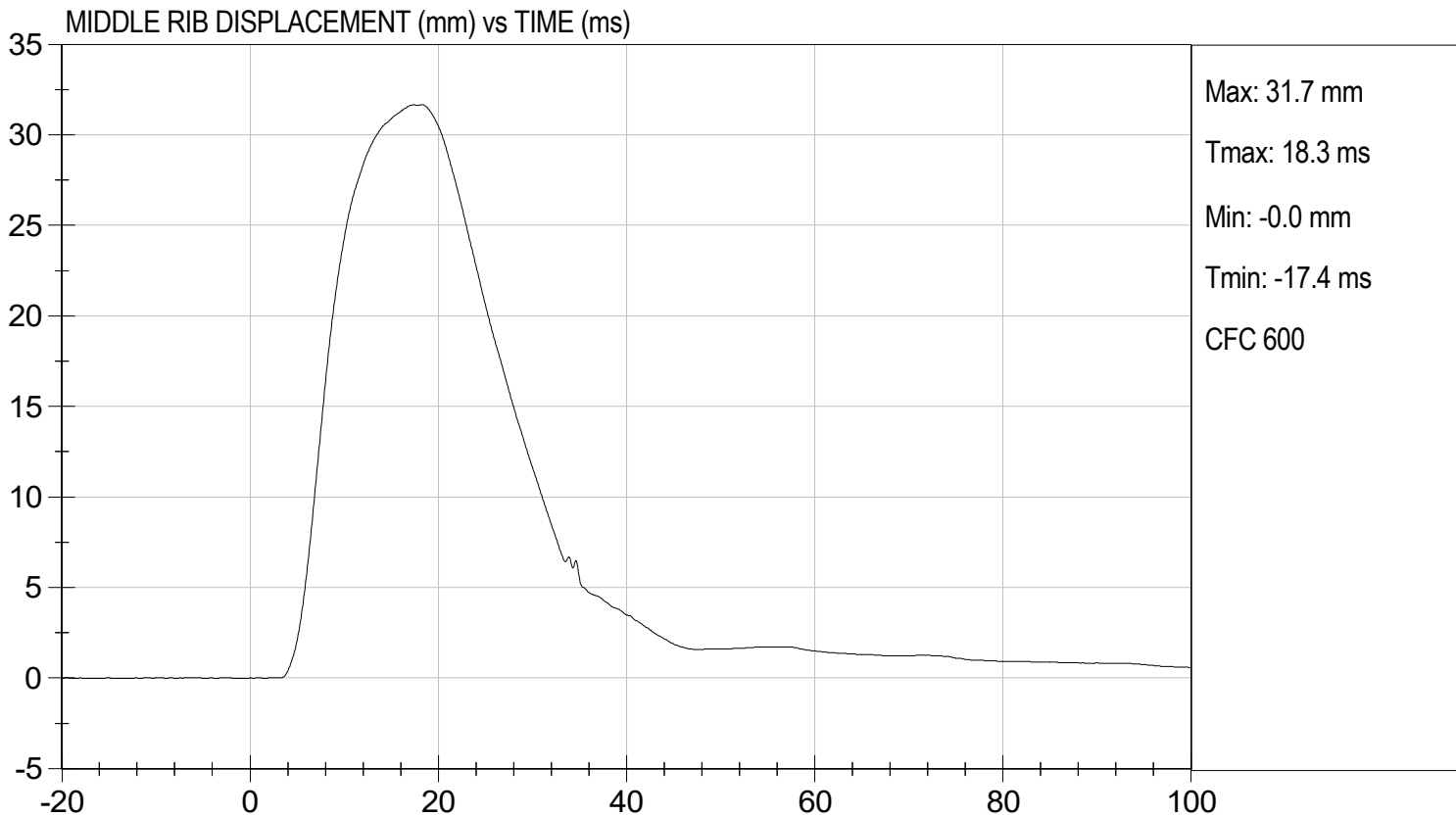
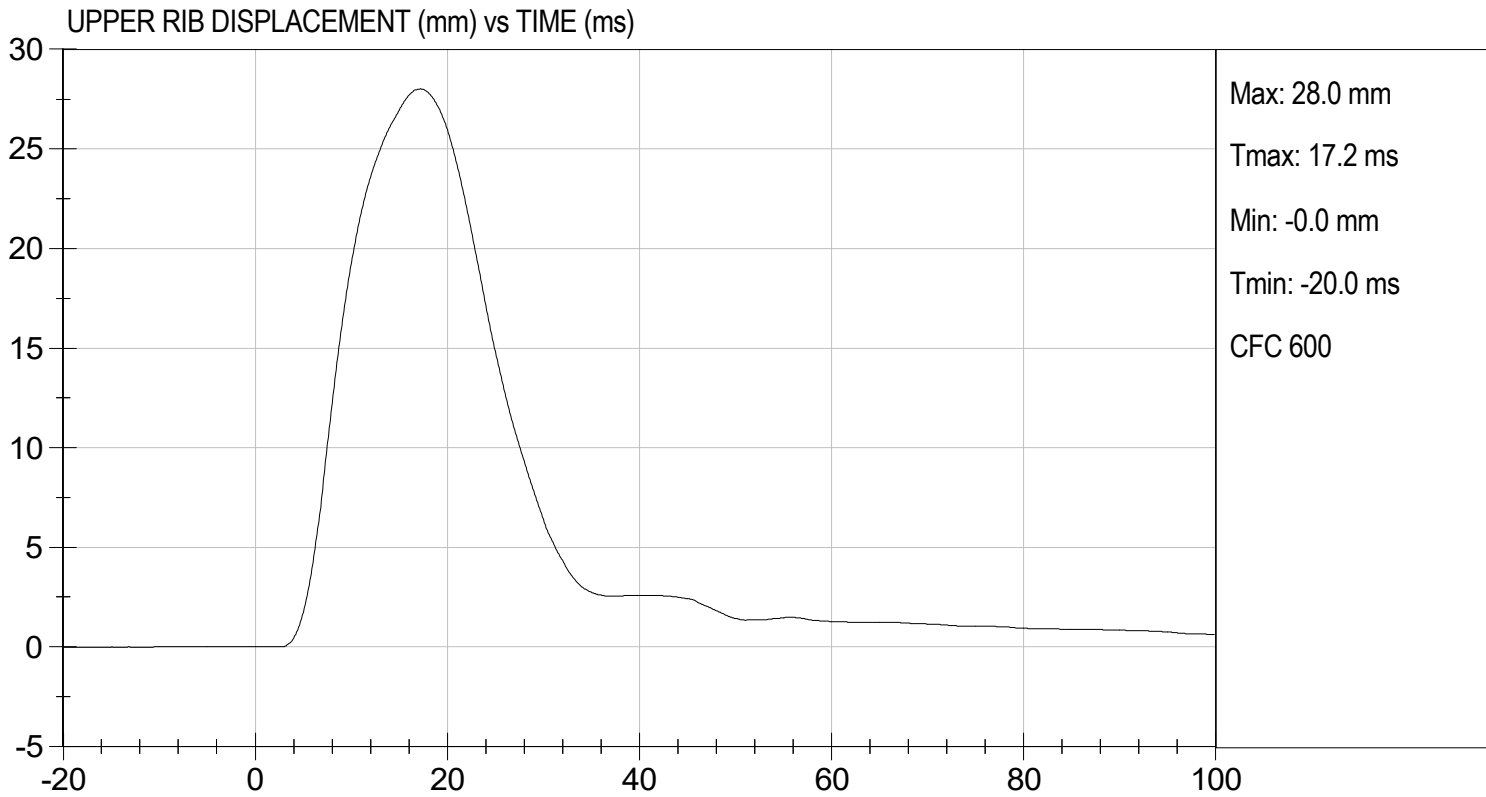




TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 12/04/2024  
TEST #: D243094

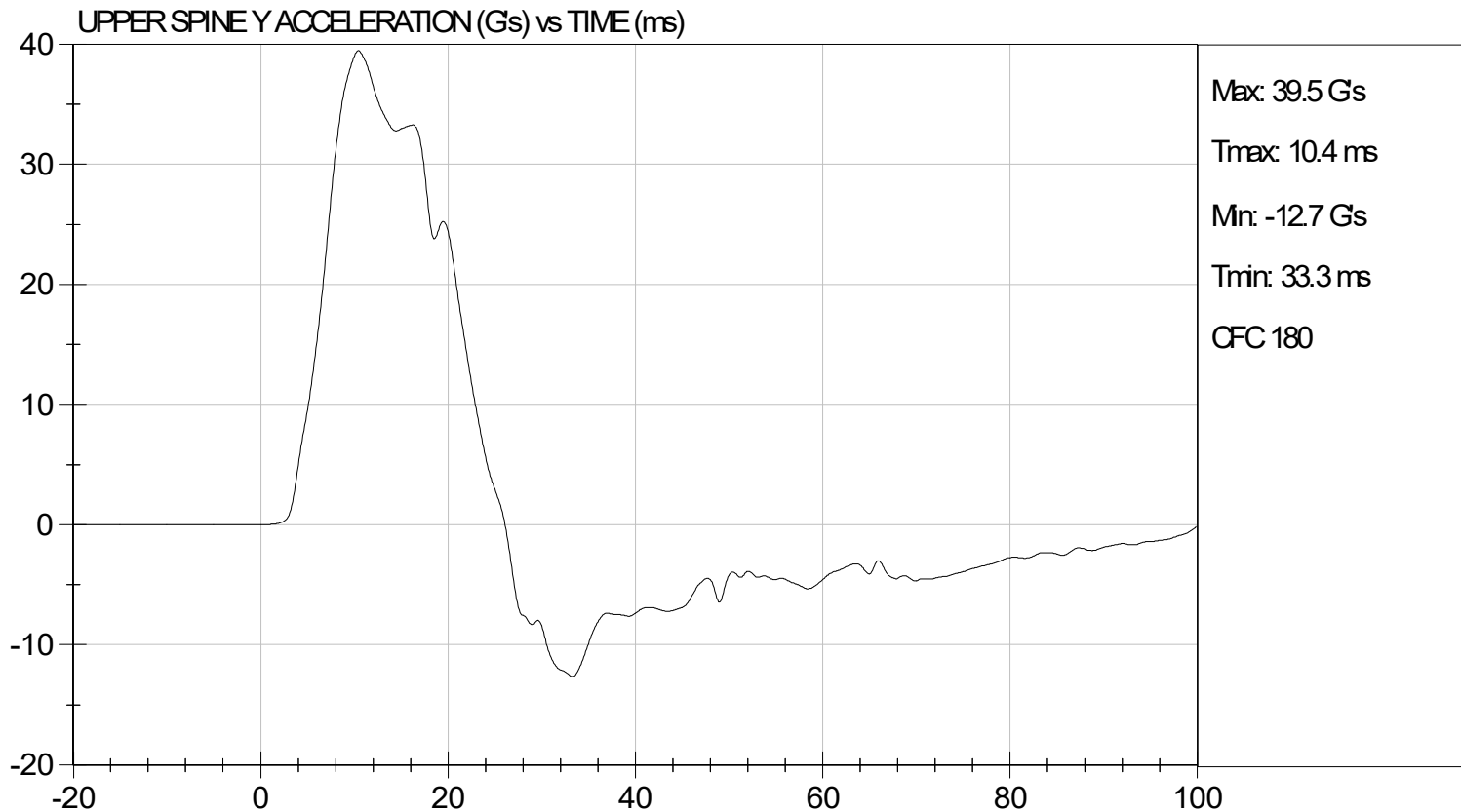
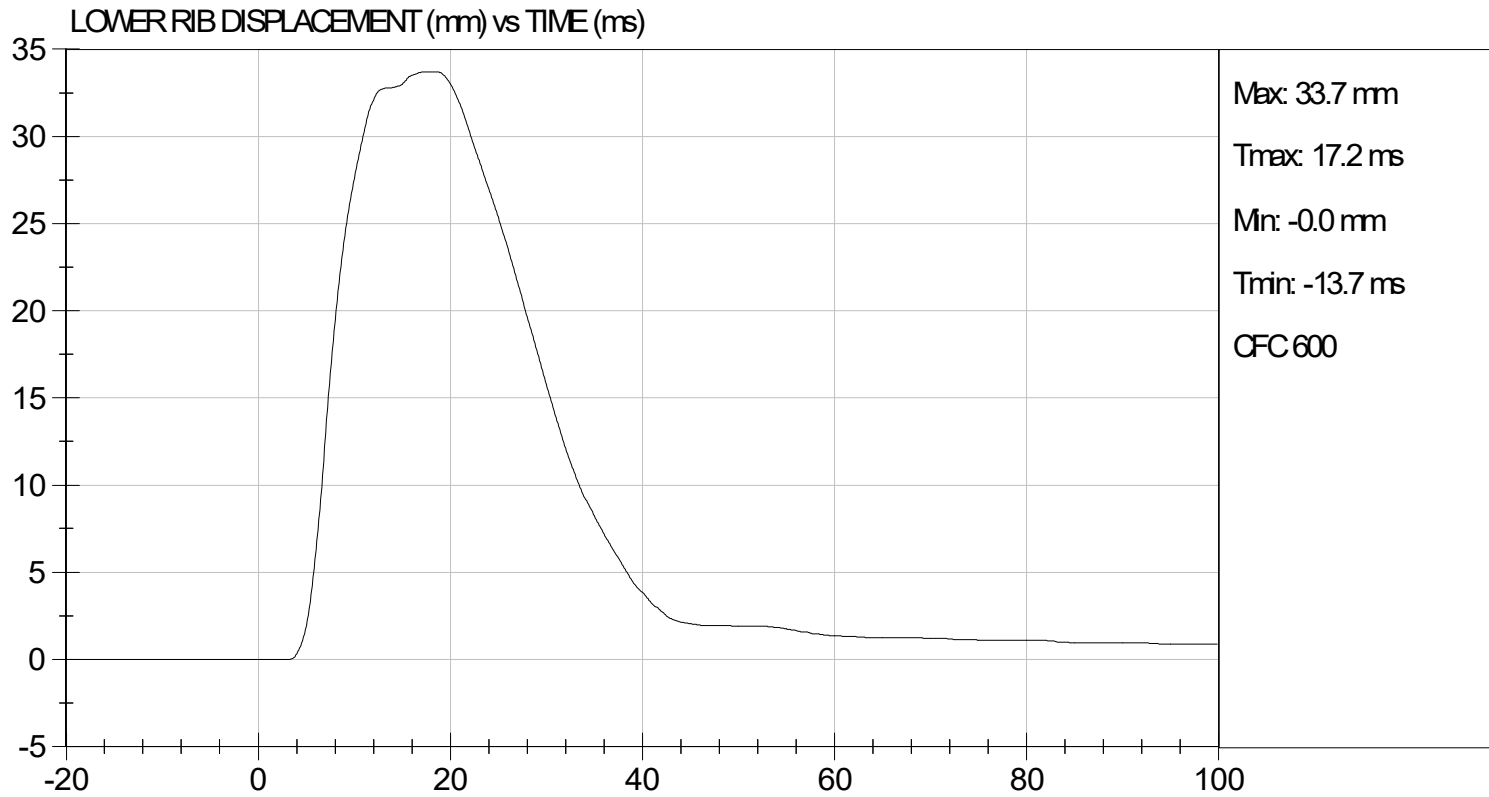






TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 22.22 ft/s, 6.77 m/s

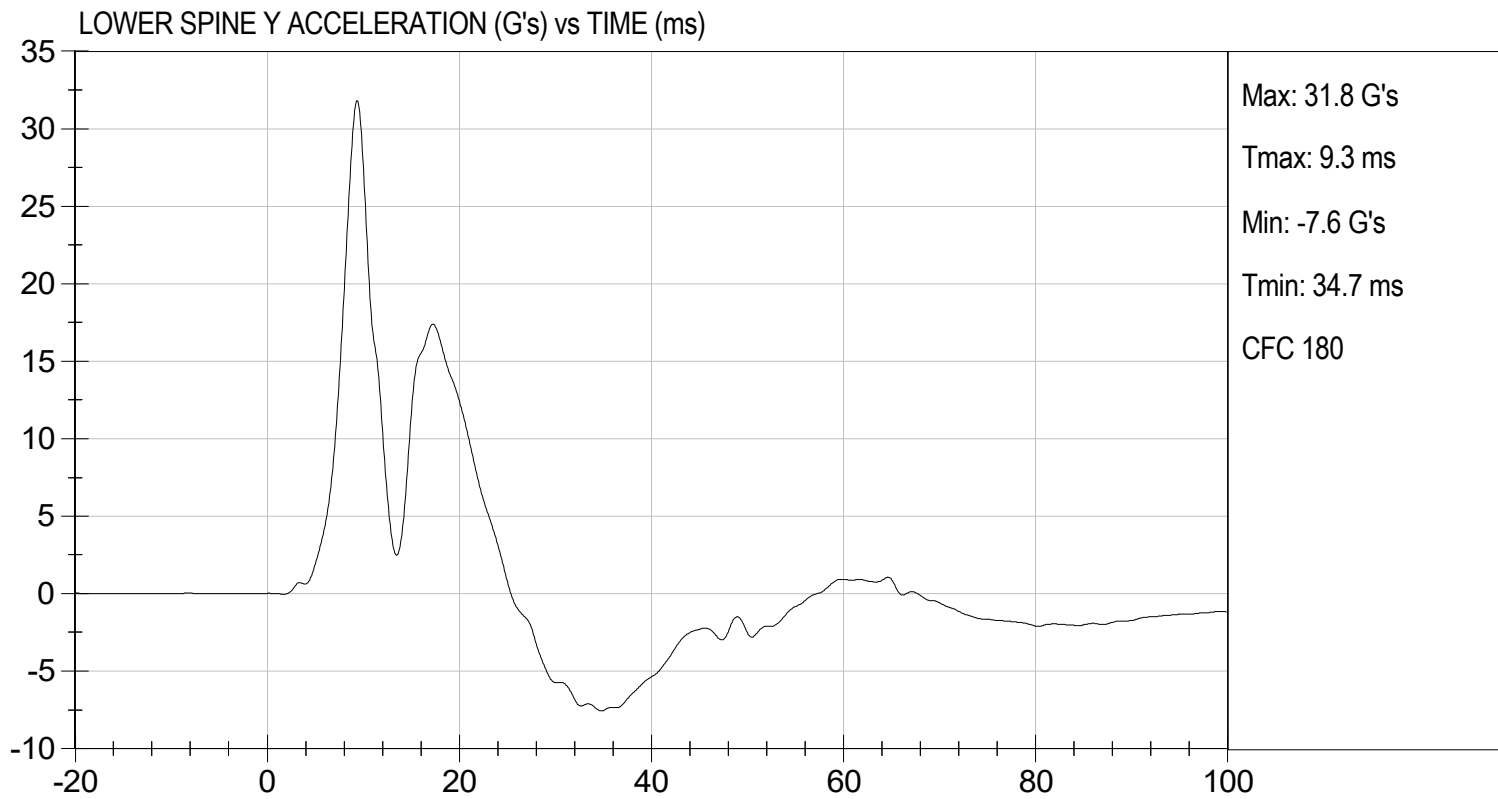
TEST DATE: 12/04/2024  
TEST #: D243094





TEST DESC: THORAX IMPACT WITH ARM  
VELOCITY: 22.22 ft/s, 6.77 m/s

TEST DATE: 12/04/2024  
TEST #: D243094

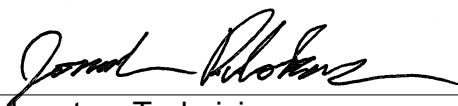


**MGA RESEARCH CORPORATION**  
**THORAX (WITHOUT ARM) IMPACT TEST**  
**SID-Its BUILD LEVEL D DUMMY**

**ATD Serial No:** 296

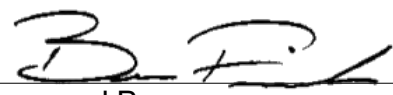
**Test I.D:** D243095

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.8   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 4.20 to 4.40  | 4.30   | Pass      |
| Maximum Probe Acceleration       | G's   | 14 to 18      | 16     | Pass      |
| Upper Rib Displacement           | mm    | 32 to 40      | 36     | Pass      |
| Middle Rib Displacement          | mm    | 39 to 45      | 42     | Pass      |
| Lower Rib Displacement           | mm    | 35 to 43      | 40     | Pass      |
| Upper Spine (T1) Y Acceleration  | G's   | 13 to 17      | 15     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 7 to 11       | 9      | Pass      |
| Overall Test Results             |       |               |        | Pass      |

  
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12/04/2024

Test Date

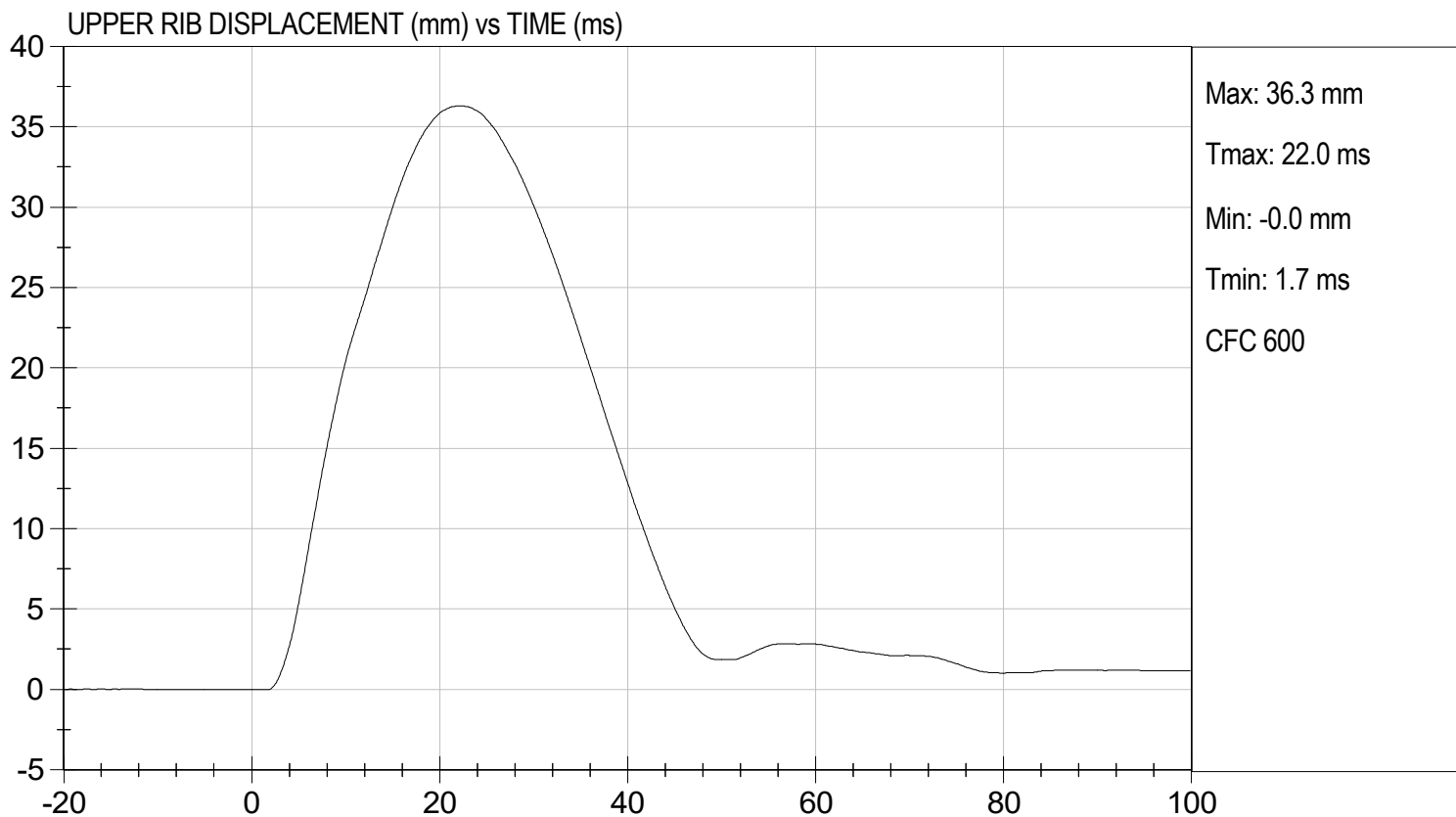
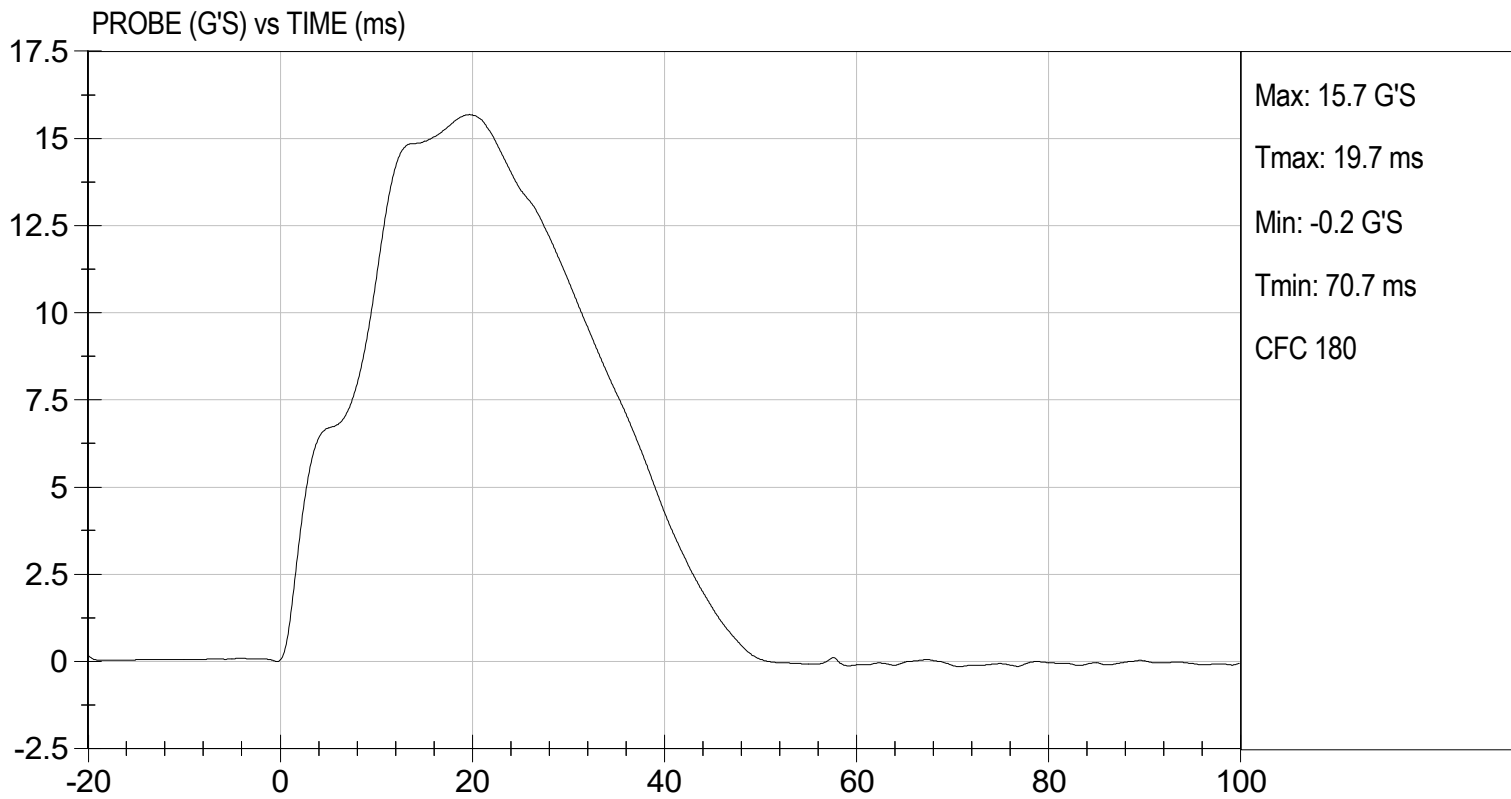
  
Approved By

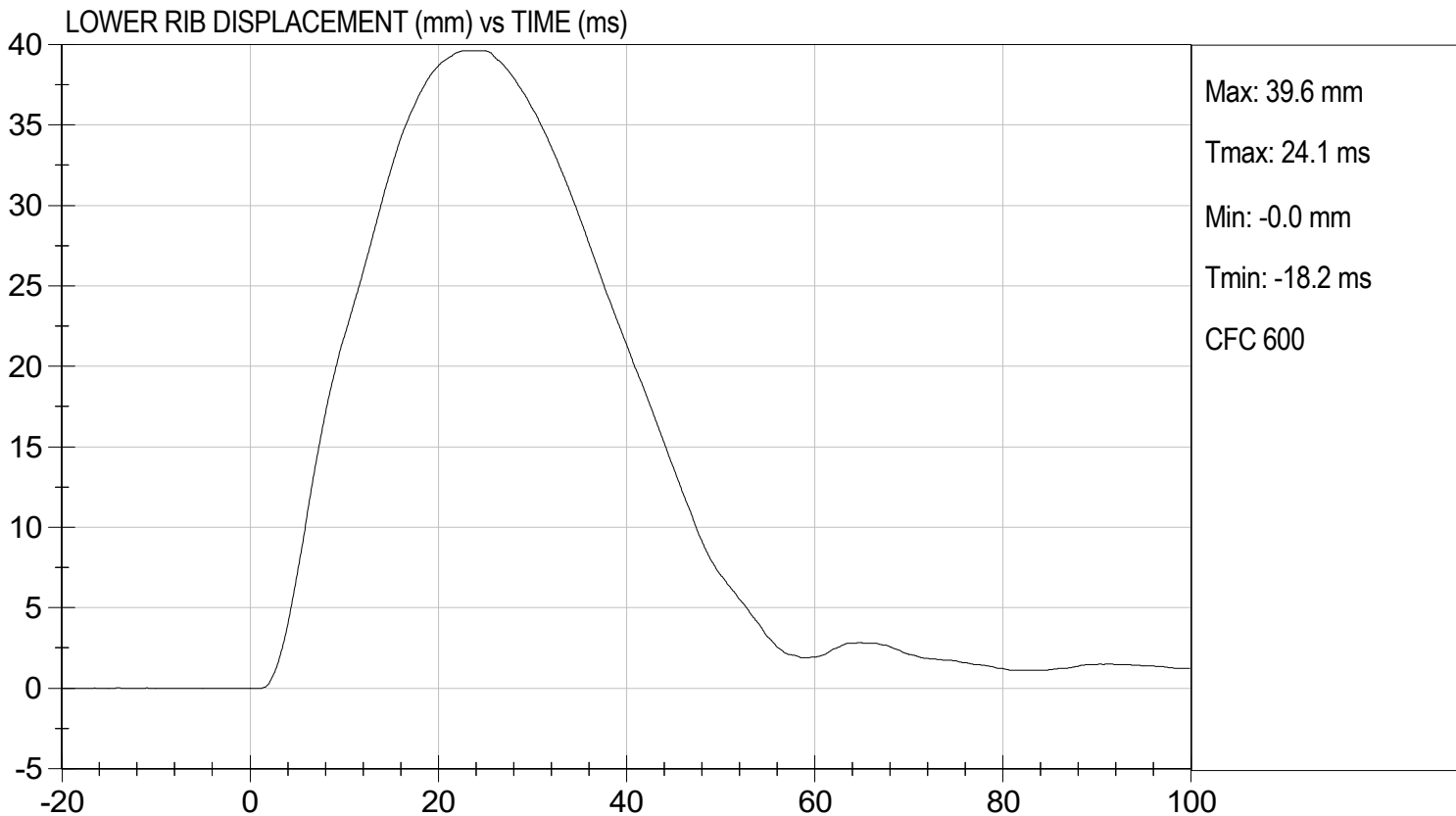
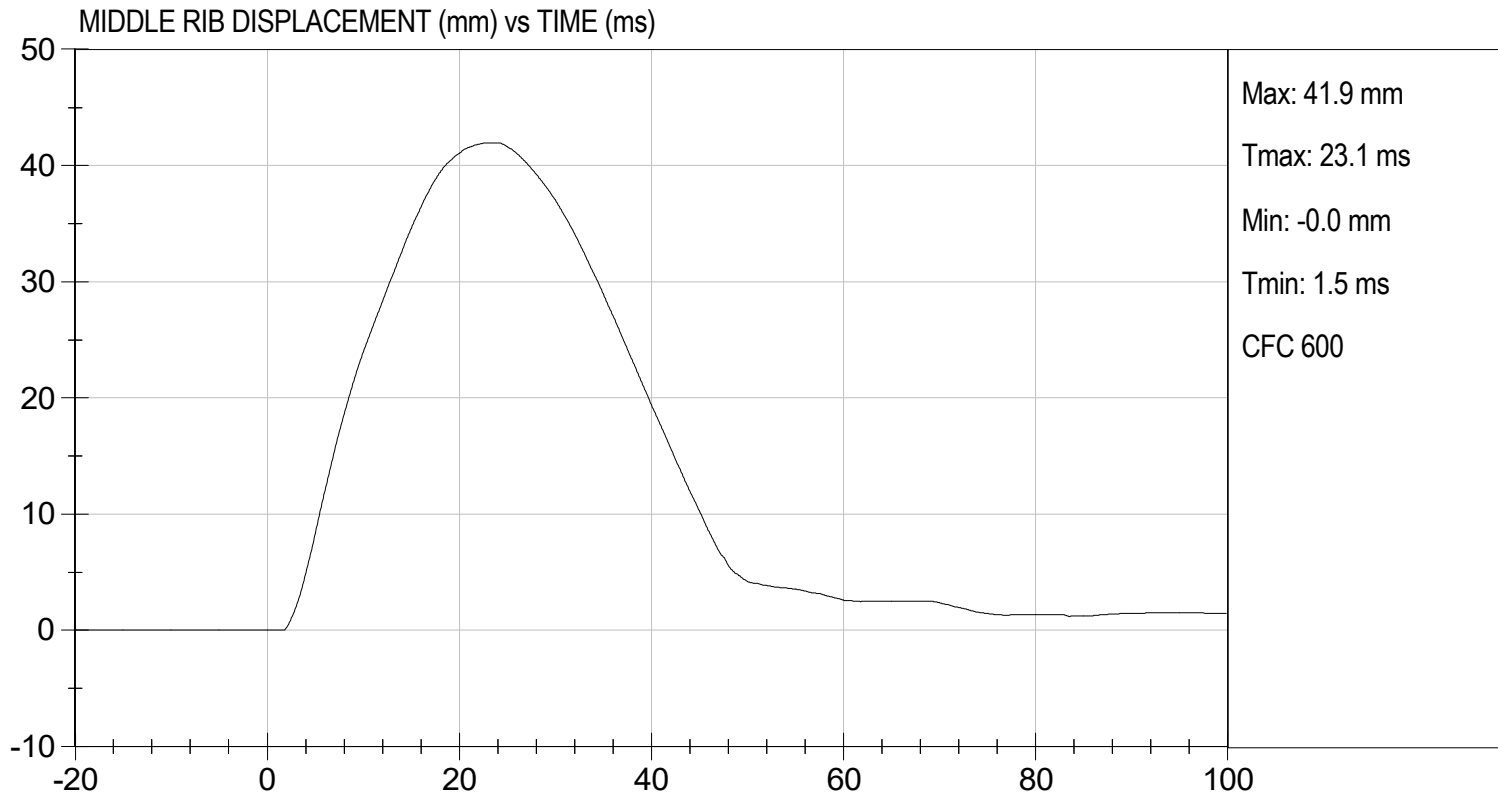




TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 12/04/2024  
TEST #: D243095

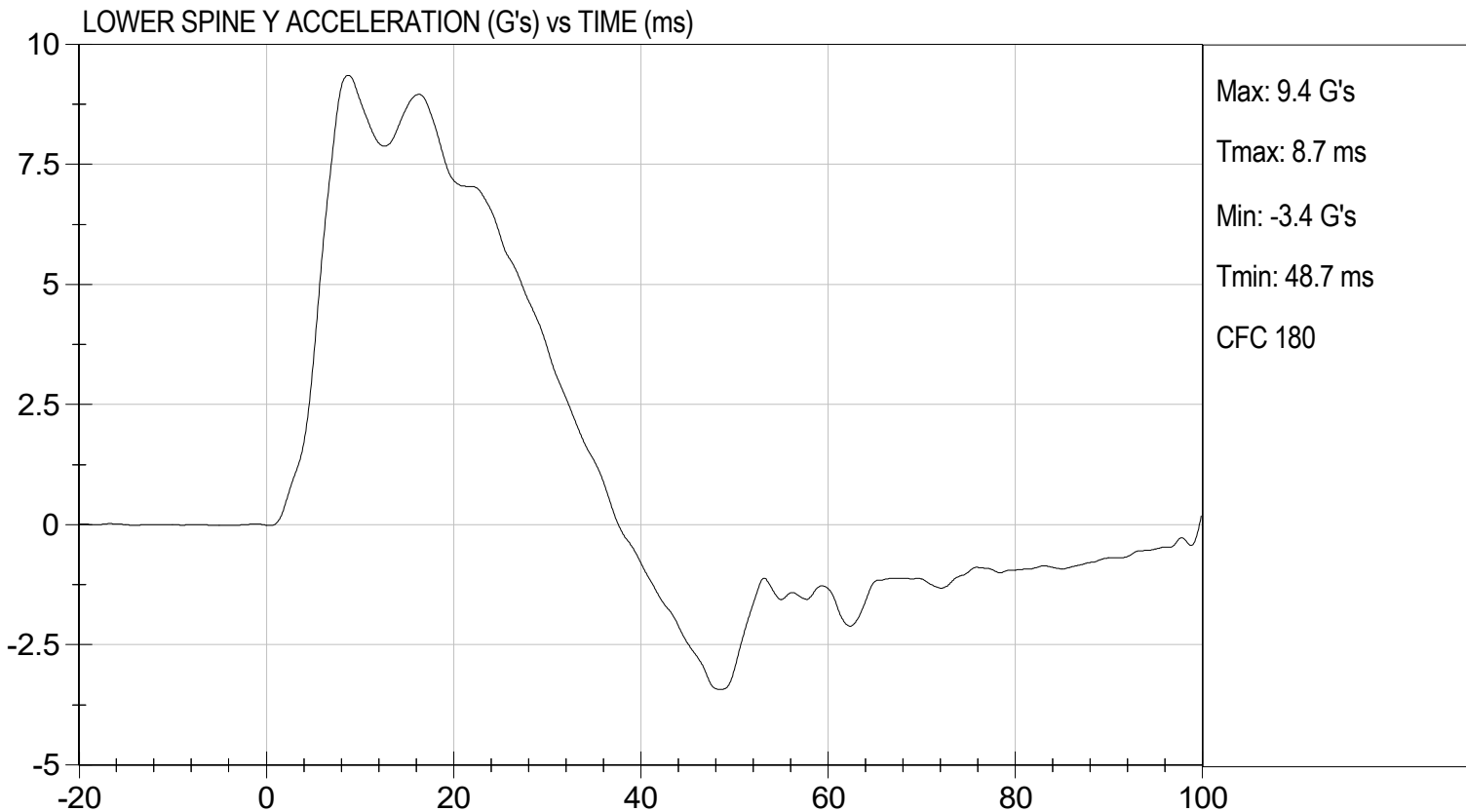
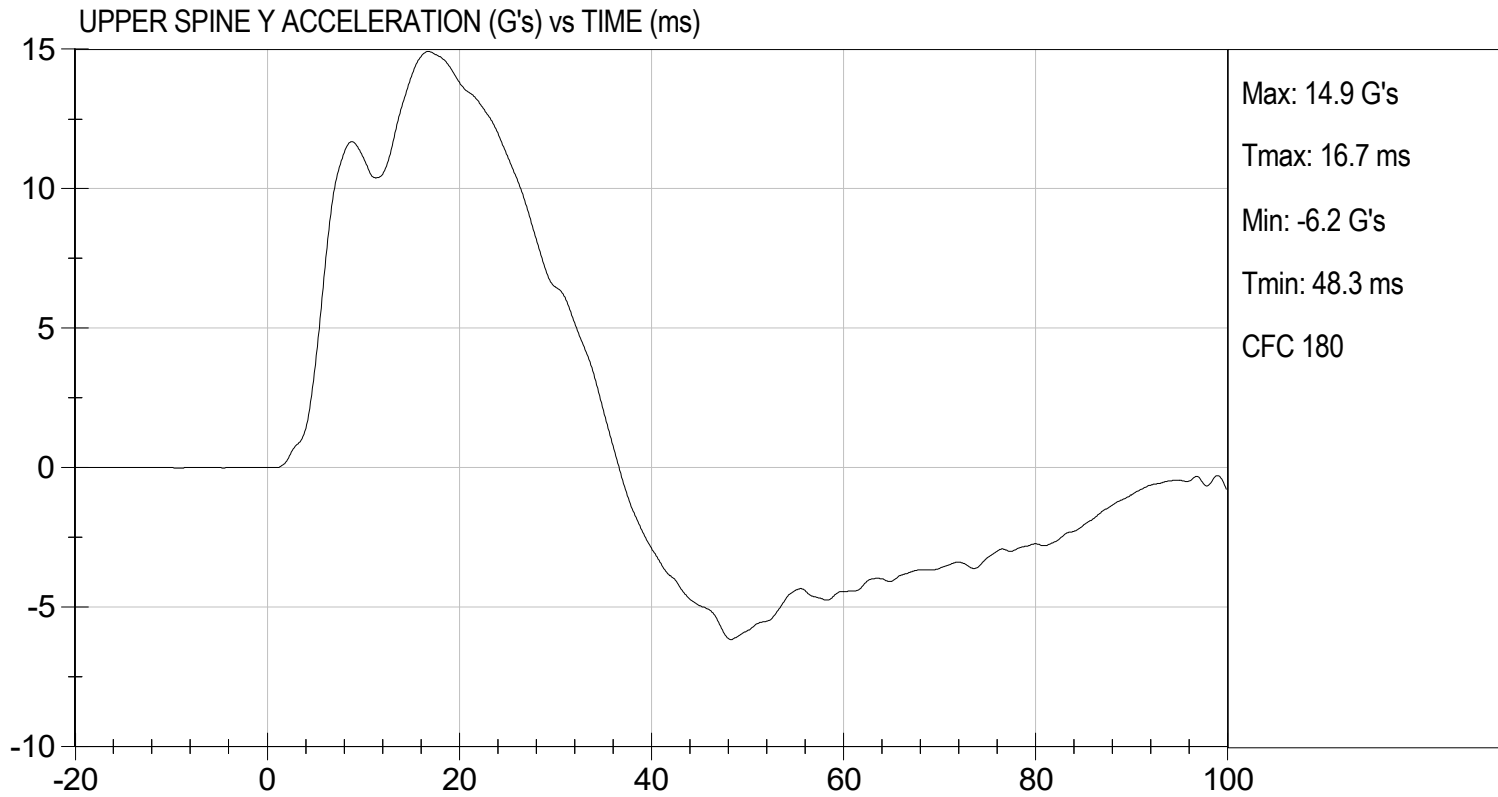






TEST DESC: THORAX IMPACT WITHOUT ARM  
VELOCITY: 14.12 ft/s, 4.30 m/s

TEST DATE: 12/04/2024  
TEST #: D243095

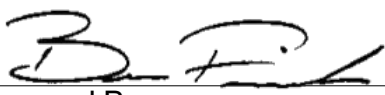


**MGA RESEARCH CORPORATION****ABDOMINAL IMPACT TEST****SID-IIs BUILD LEVEL D DUMMY****ATD Serial No:** 296**Test I.D:** D243096

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.7   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 4.20 to 4.40  | 4.27   | Pass      |
| Maximum Probe Acceleration       | G's   | 12 to 16      | 14     | Pass      |
| Upper Abdomen Rib Displacement   | mm    | 36 to 47      | 41     | Pass      |
| Lower Abdomen Rib Displacement   | mm    | 33 to 44      | 39     | Pass      |
| Lower Spine (T12) Y Acceleration | G's   | 9 to 14       | 12     | Pass      |
| Overall Test Results             |       |               | Pass   |           |

  
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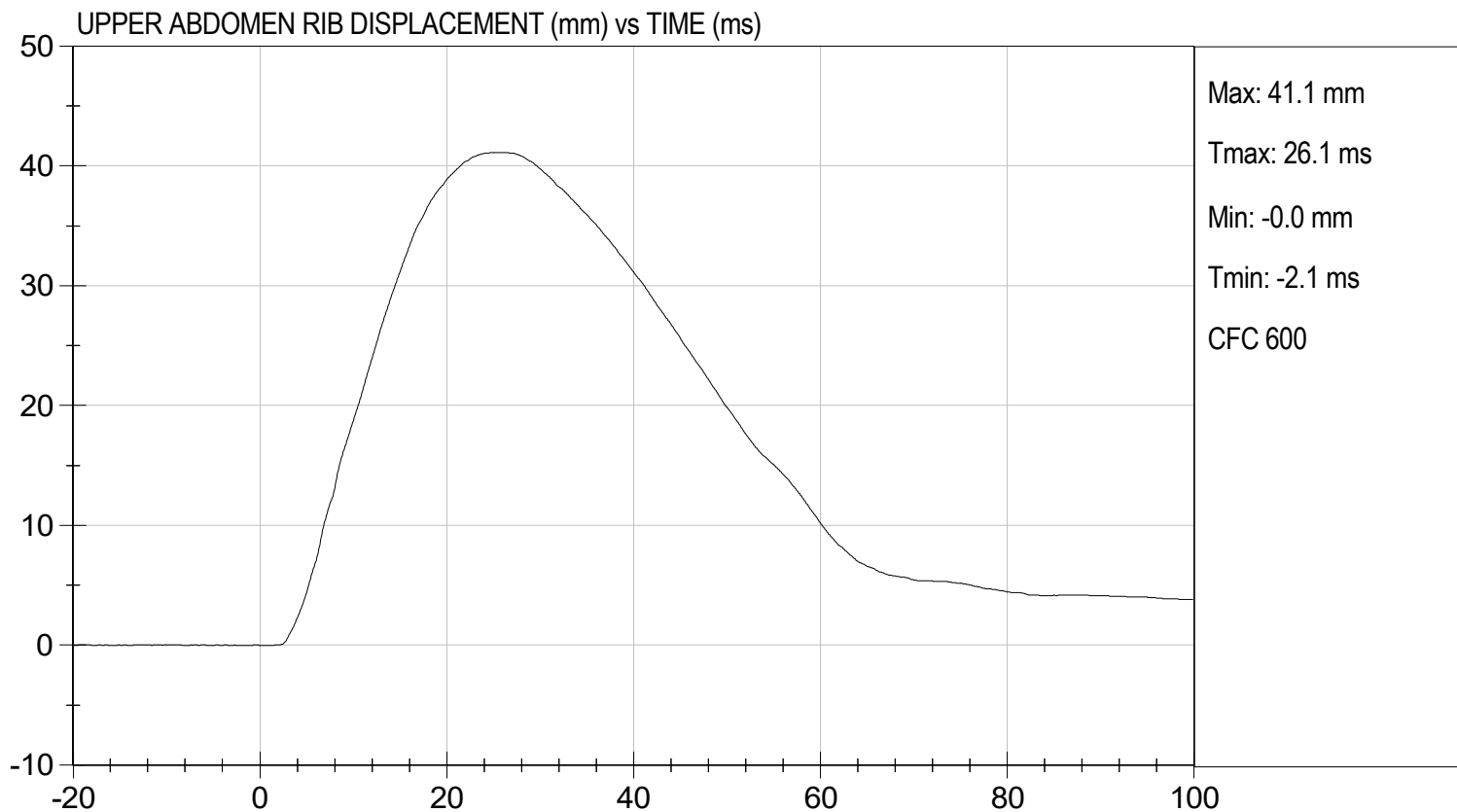
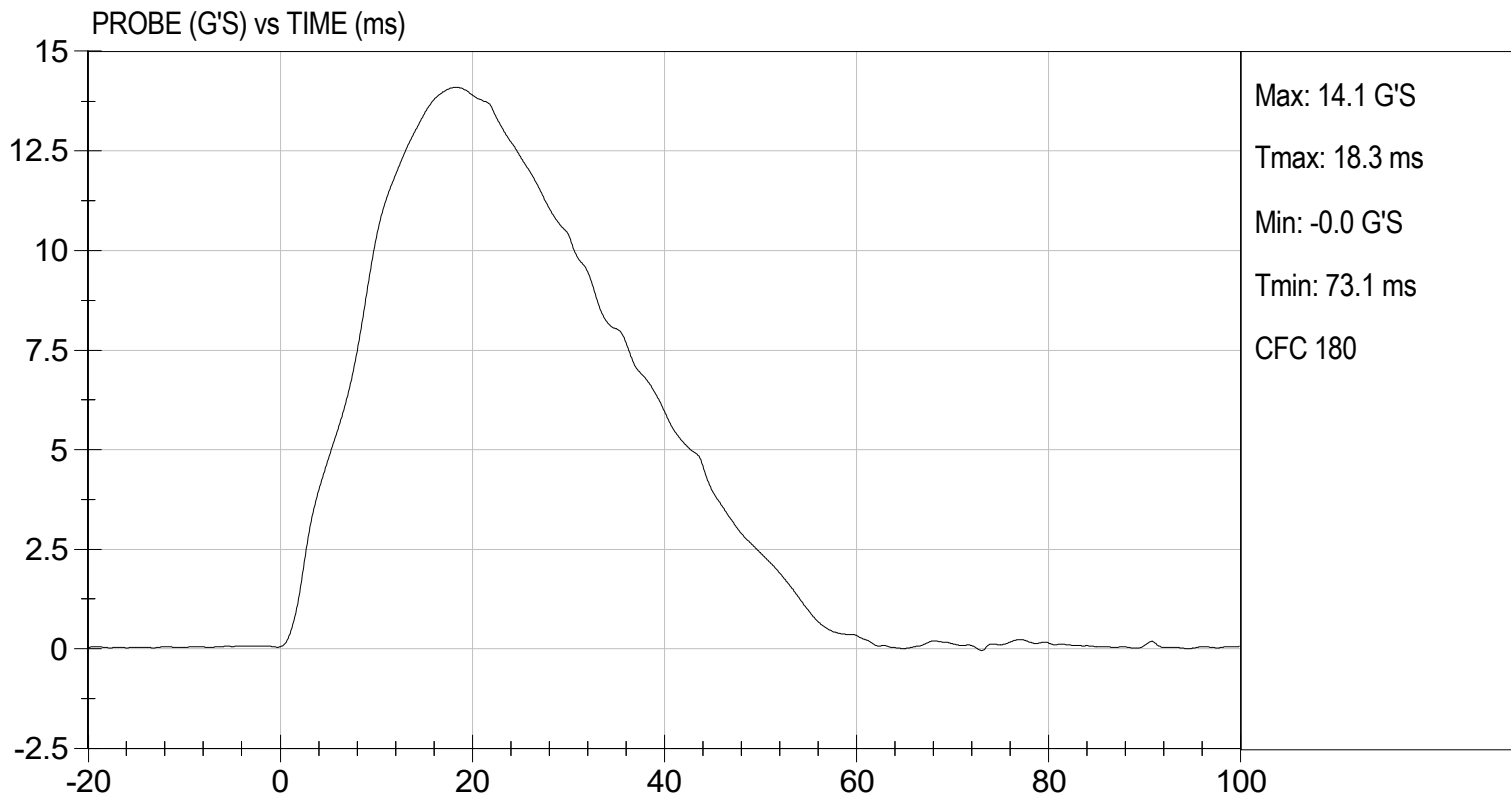
12/04/2024  
Test Date

  
Approved By



TEST DESC: ABDOMEN IMPACT  
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 12/04/2024  
TEST #: D243096



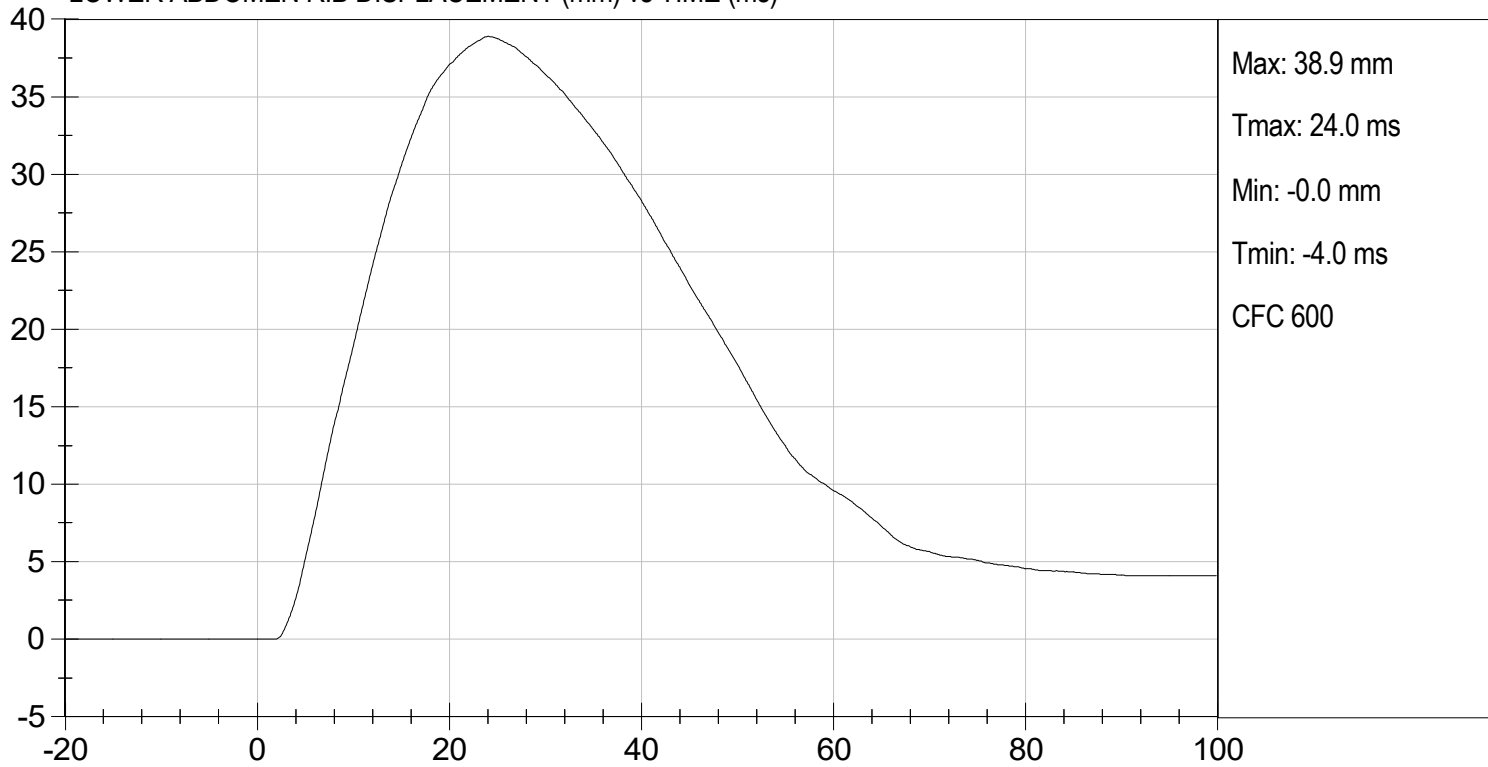




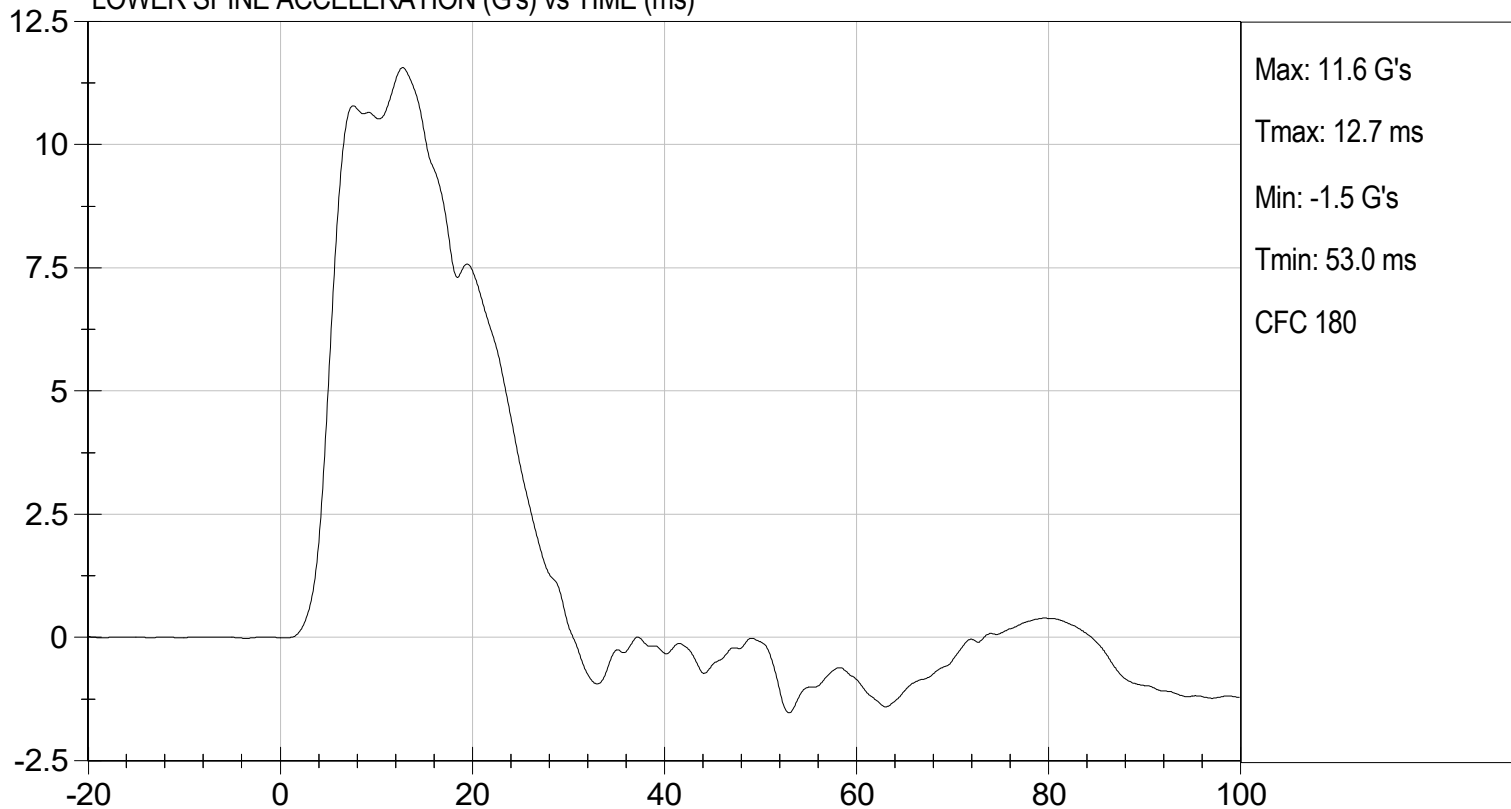
TEST DESC: ABDOMEN IMPACT  
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 12/04/2024  
TEST #: D243096

LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER SPINE ACCELERATION (G's) vs TIME (ms)



**MGA RESEARCH CORPORATION**

**PELVIS IMPACT TEST**

**SID-Its BUILD LEVEL D DUMMY**

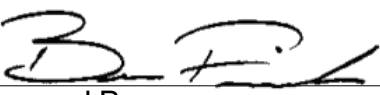
**ATD Serial No:** 296

**Test I.D:** D243097

| Tested Parameter                 | Units | Specification | Result | Pass/Fail |
|----------------------------------|-------|---------------|--------|-----------|
| Temperature                      | deg C | 20.6 to 22.2  | 21.6   | Pass      |
| Humidity                         | %     | 10 to 70      | 26     | Pass      |
| Impact Velocity                  | m/s   | 6.60 to 6.80  | 6.68   | Pass      |
| Maximum Probe Acceleration       | G's   | 38 to 47      | 42     | Pass      |
| Pelvis Y Acceleration After 6 ms | G's   | 34 to 42      | 40.9   | Pass      |
| Peak Acetabulum Force            | N     | 3600 to 4300  | 3,991  | Pass      |
| Overall Test Results             |       |               | Pass   |           |

  
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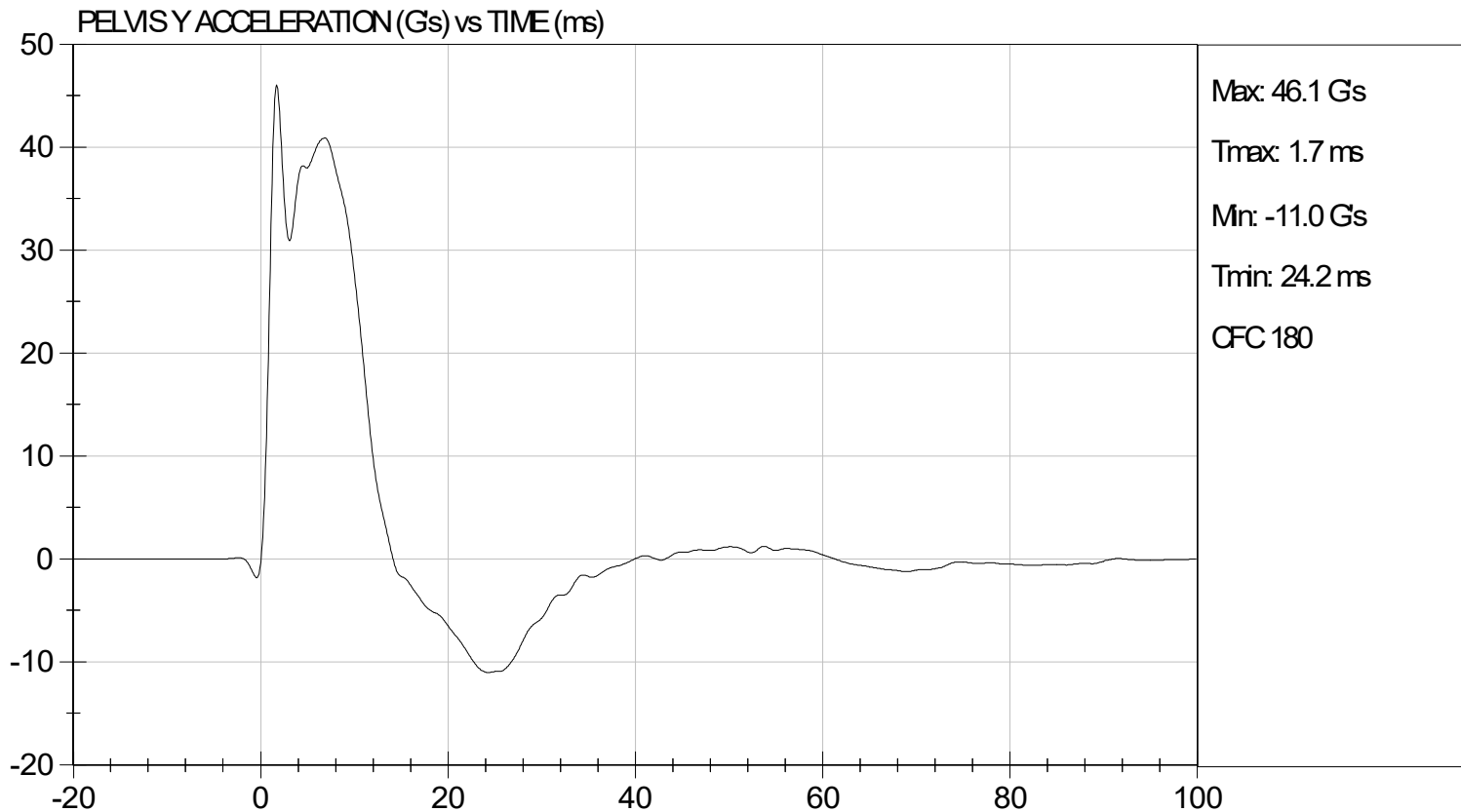
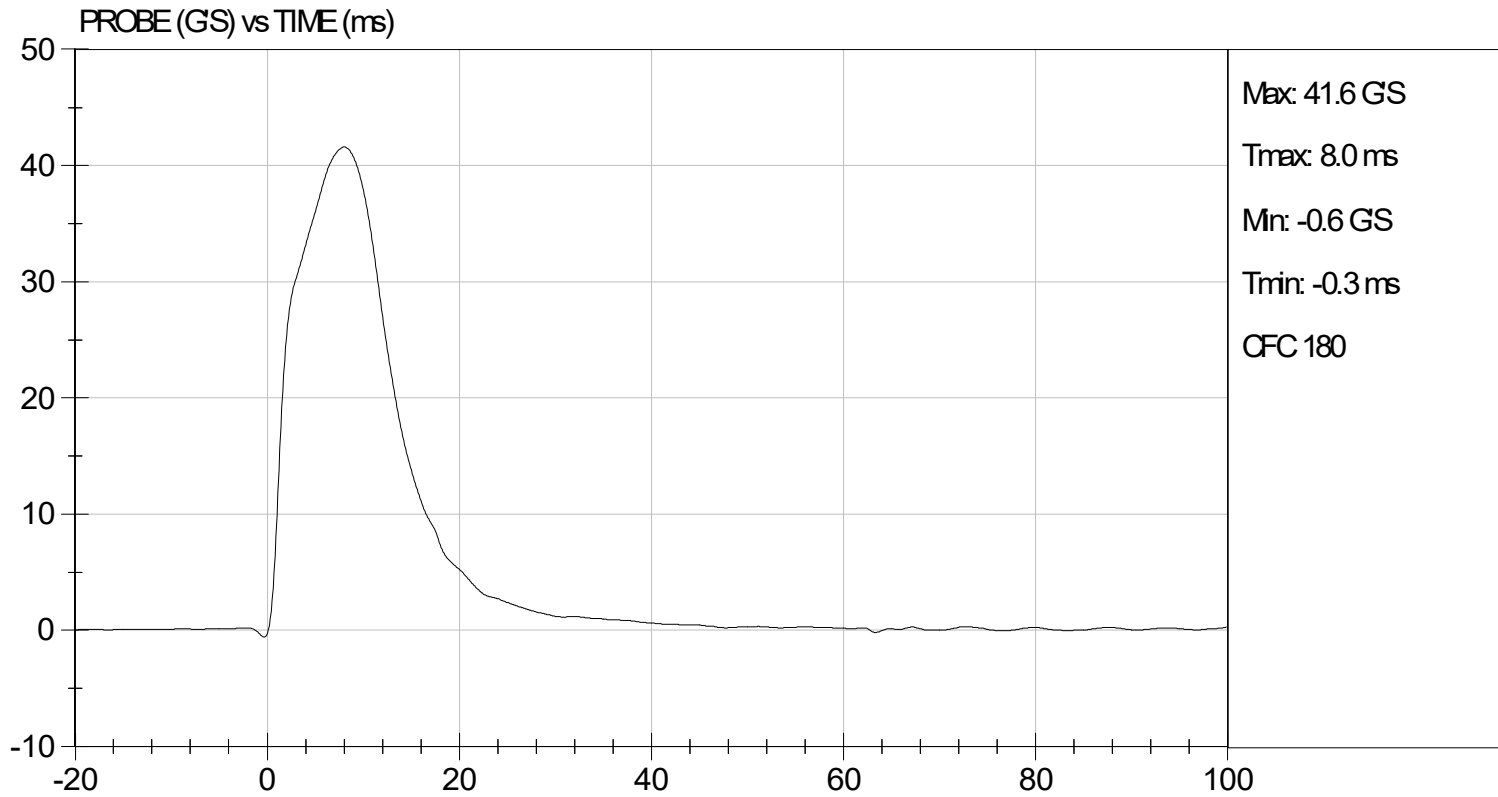
12/04/2024  
Test Date

  
Approved By



TEST DESC: PELVIS IMPACT  
VELOCITY: 21.93 ft/s, 6.68 m/s

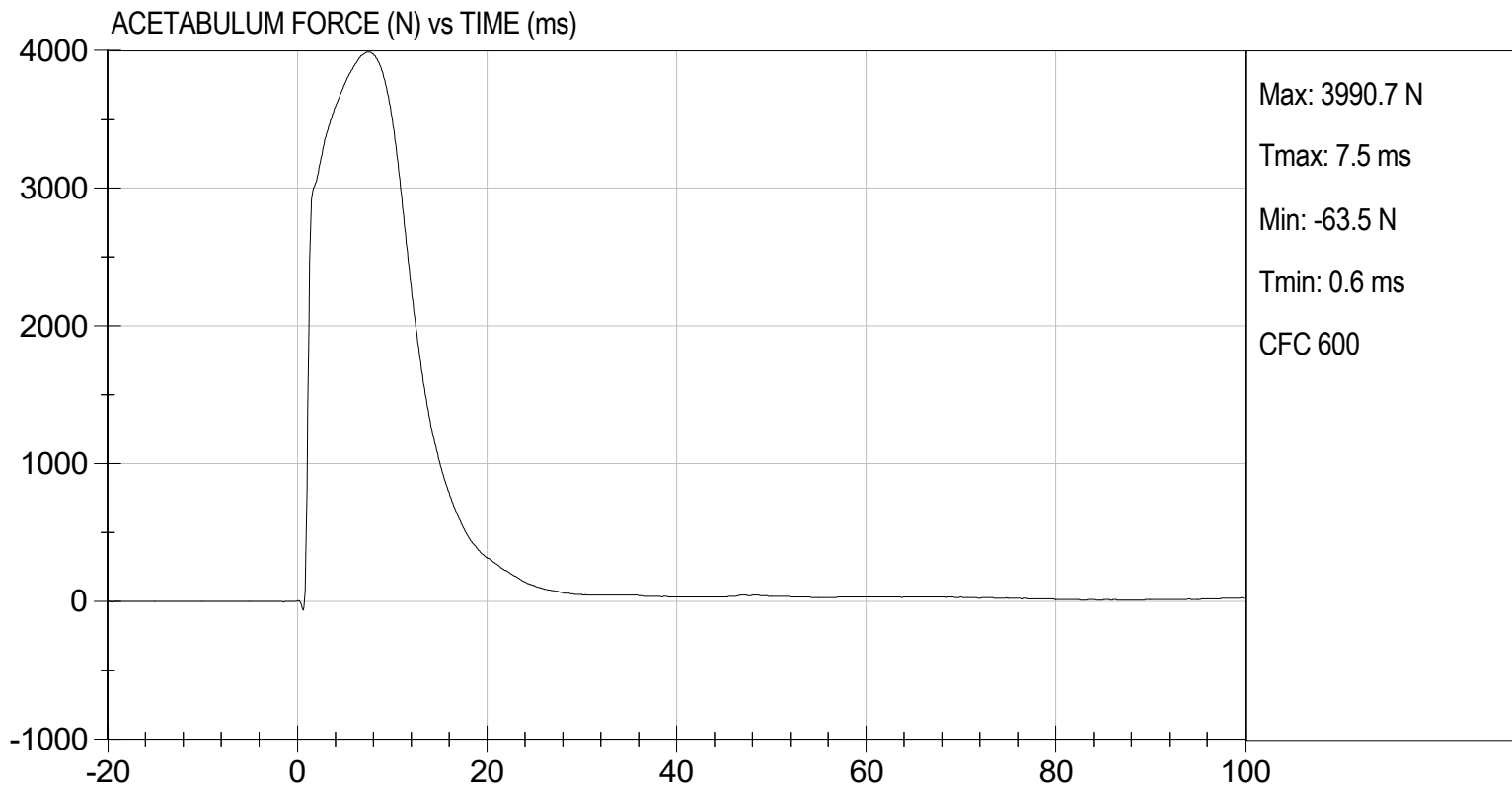
TEST DATE: 12/04/2024  
TEST #: D243097





TEST DESC: PELVIS IMPACT  
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 12/04/2024  
TEST #: D243097



**MGA RESEARCH CORPORATION**

**ILIAC IMPACT TEST**

**SID-Is BUILD LEVEL D DUMMY**

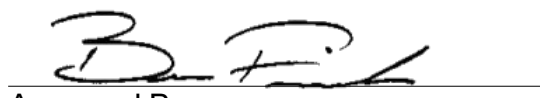
**ATD Serial No:** 296

**Test I.D:** D243098

| Tested Parameter           | Units | Specification | Result               | Pass/Fail |
|----------------------------|-------|---------------|----------------------|-----------|
| Temperature                | deg C | 20.6 to 22.2  | 21.6                 | Pass      |
| Humidity                   | %     | 10 to 70      | 25                   | Pass      |
| Impact Velocity            | m/s   | 4.20 to 4.40  | 4.38                 | Pass      |
| Maximum Probe Acceleration | G's   | 36 to 45      | 42                   | Pass      |
| Pelvis Y Acceleration      | G's   | 28 to 39      | 32                   | Pass      |
| Peak Pelvis Iliac Force    | N     | 4100 to 5100  | 4,808                | Pass      |
|                            |       |               | Overall Test Results | Pass      |

  
Laboratory Technician

12/04/2024  
Test Date

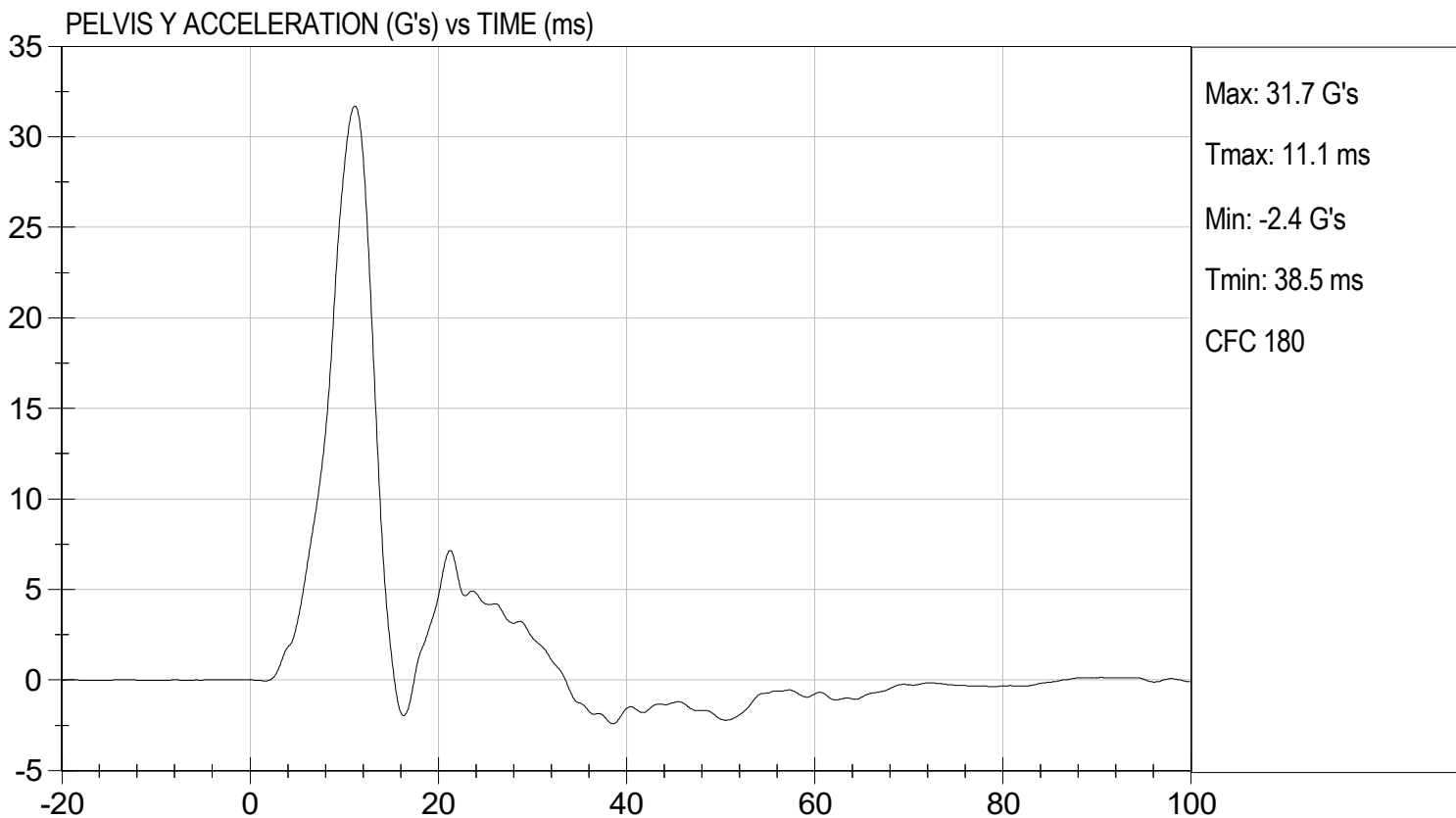
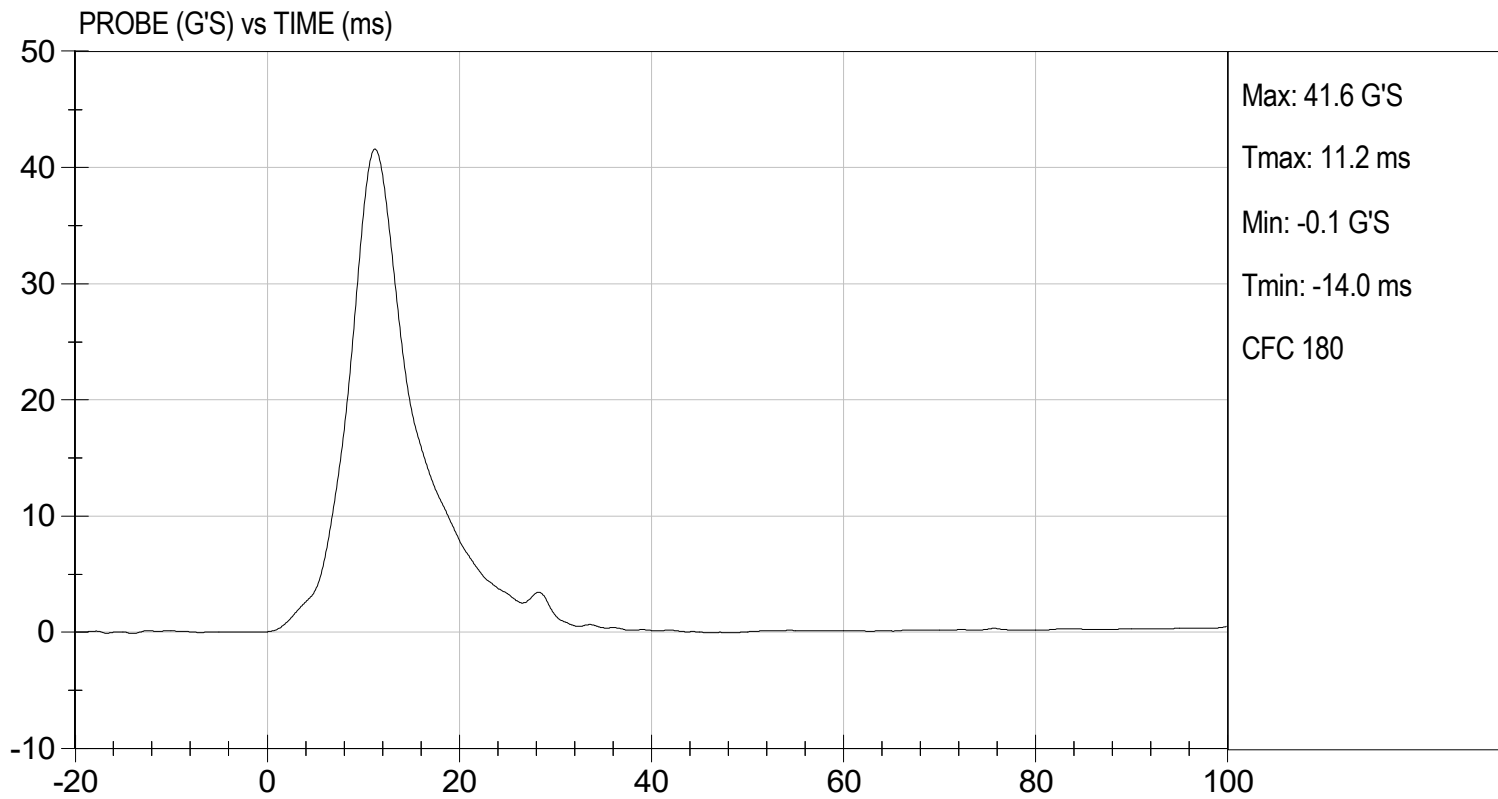
  
Approved By





TEST DESC: ILLIAC  
VELOCITY: 14.37 ft/s, 4.38 m/s

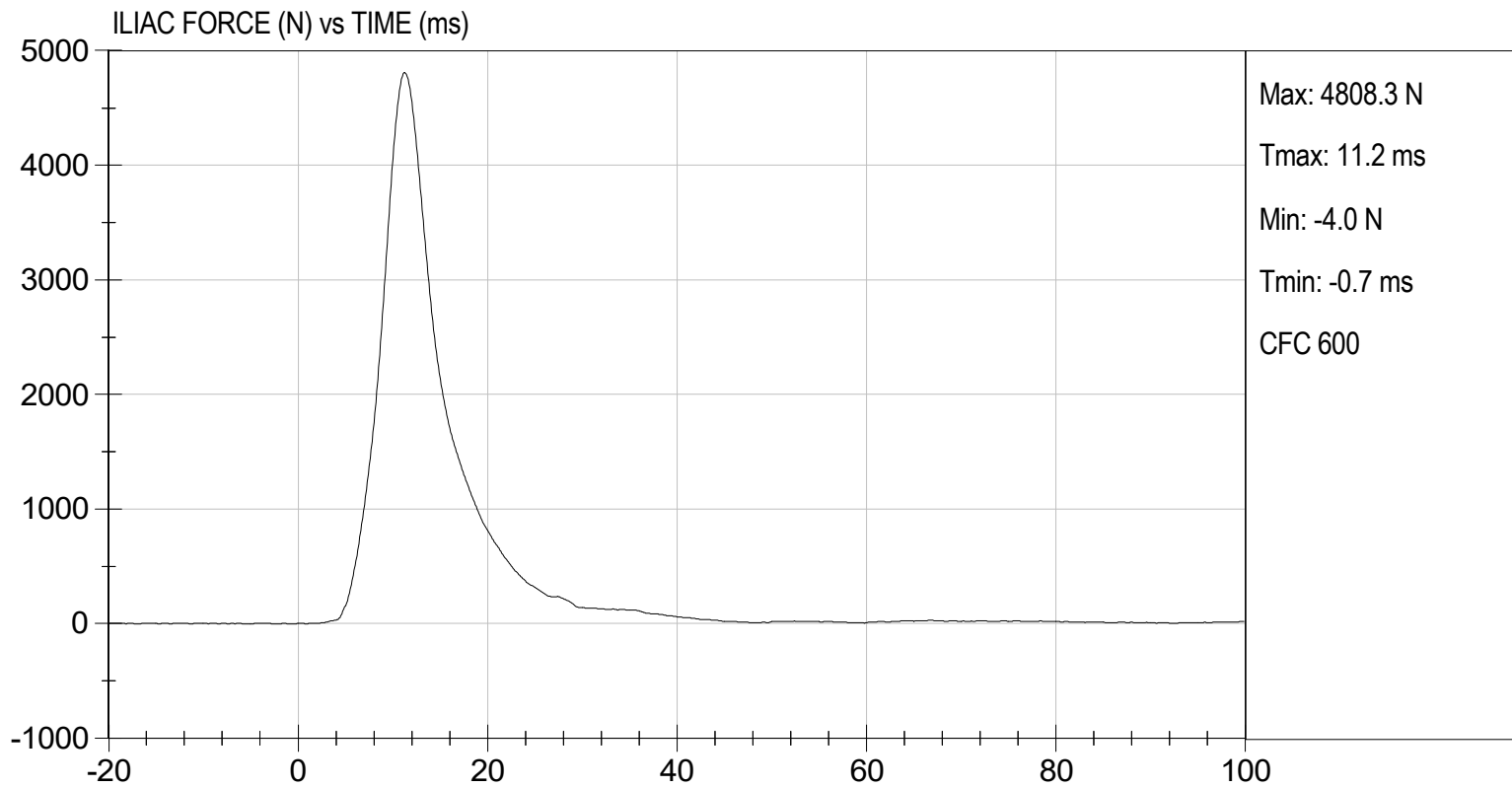
TEST DATE: 12/04/2024  
TEST #: D243098





TEST DESC: ILLIAC  
VELOCITY: 14.37 ft/s, 4.38 m/s

TEST DATE: 12/04/2024  
TEST #: D243098





## SID-IIs Pelvis Plug Certification Test

Plug S/N 16408

Test Number 22977

Report Number 23035

Test Date 5/23/2022 9:54:03 AM

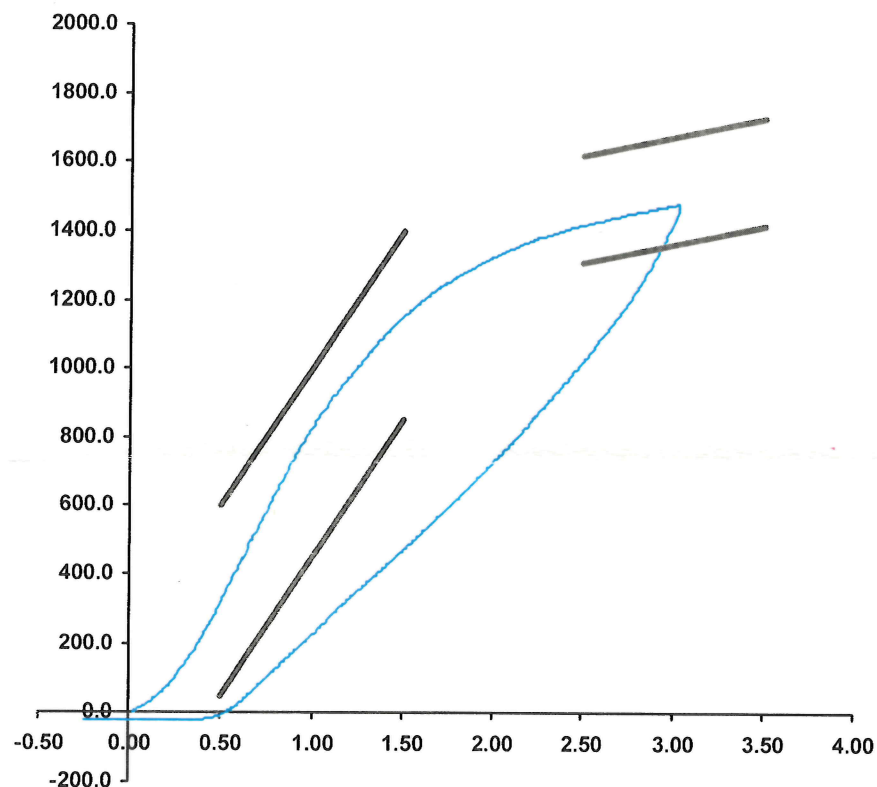
|                    | Test Results | Spec Min | Spec Max |
|--------------------|--------------|----------|----------|
| Force @ 0.5 mm (N) | 323          | 50       | 600      |
| Force @ 1.5 mm (N) | 1,153        | 850      | 1,400    |
| Force @ 2.5 mm (N) | 1,418        | 1,306    | 1,618    |
| Force @ 3.0 mm (N) | 1,477        | 1,361    | 1,673    |

Testing Machine STM-20 5965542  
Load Cell S/N (FI360947), Units (LBS ) 1000

Crosshead Speed ( mm / min ) or Rate 12.7  
Extension or Position Measured by XHD\_100 ( XHD100 )

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107

23-May-22

SACO Research

By :

DC

Date :

5/23/2022

SACO Research 41735 Elm St, #401 Murrieta, CA 92562

Tel 310-694-2082 FAX

A-119



## SID-IIs Pelvis Plug Certification Test

Plug S/N 16405

Test Number 22974

Report Number 23032

Test Date 5/23/2022 9:45:32 AM

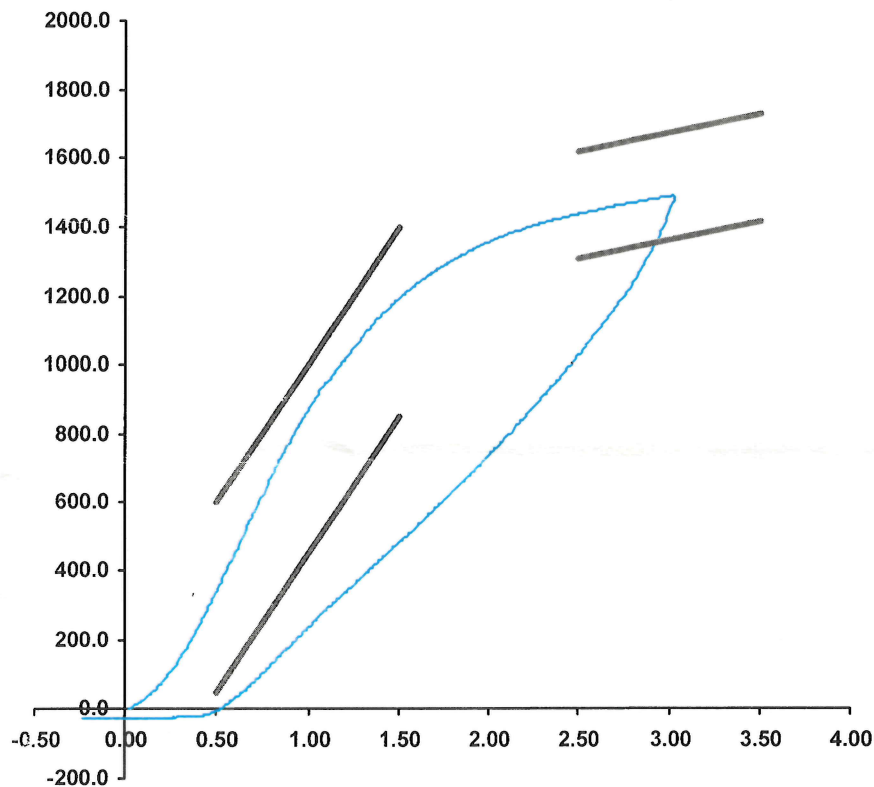
|                    | Test Results | Spec Min | Spec Max |
|--------------------|--------------|----------|----------|
| Force @ 0.5 mm (N) | 343          | 50       | 600      |
| Force @ 1.5 mm (N) | 1,195        | 850      | 1,400    |
| Force @ 2.5 mm (N) | 1,438        | 1,306    | 1,618    |
| Force @ 3.0 mm (N) | 1,488        | 1,361    | 1,673    |

Testing Machine STM-20 5965542  
Load Cell S/N (FI360947), Units (LBS ) 1000

Crosshead Speed ( mm / min ) or Rate 12.7  
Extension or Position Measured by XHD\_100 ( XHD100 )

Notes:

Force (-N) vs Extension (-mm)



Operator

Part Number 180-4450

Template No 107

23-May-22

SACO Research

By :

DC

Date :

5/23/2022

**APPENDIX D**  
**TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION**

**Table 1 – Dummy Instrumentation (ES-2re)**

|                                        |         |    | ES-2re S/N F032 |              |                  |
|----------------------------------------|---------|----|-----------------|--------------|------------------|
|                                        |         |    | Serial Number   | Manufacturer | Calibration Date |
| Head CG Accelerometers                 |         | X  | P79568          | Endevco      | 11/21/2024       |
|                                        |         | Y  | P79569          | Endevco      | 11/21/2024       |
|                                        |         | Z  | T30941          | Endevco      | 11/21/2024       |
|                                        |         | Xr | P86797          | Endevco      | 11/21/2024       |
|                                        |         | Yr | P94957          | Endevco      | 11/21/2024       |
|                                        |         | Zr | P97381          | Endevco      | 11/21/2024       |
| Thorax Rib Displacement Potentiometers | Upper   | Y  | G236            | Honeywell    | 11/21/2024       |
|                                        | Middle  | Y  | G368            | Honeywell    | 11/21/2024       |
|                                        | Lower   | Y  | G164            | Honeywell    | 11/21/2024       |
| Abdomen Load Cells                     | Forward | Y  | ABG1513         | Denton       | 02/22/2024       |
|                                        | Middle  | Y  | ABG1531         | Denton       | 02/22/2024       |
|                                        | Rear    | Y  | ABG1536         | Denton       | 02/22/2024       |
| Lower Spine Accelerometers (T12)       |         | X  | P79574          | Endevco      | 11/21/2024       |
|                                        |         | Y  | T14094          | Endevco      | 11/21/2024       |
|                                        |         | Z  | P82603          | Endevco      | 11/21/2024       |
| Public Symphysis Load Cell             |         | Y  | PG462           | Denton       | 02/22/2024       |



**Table 2 – Dummy Instrumentation (SID-IIs)**

|                                  |               |        | SID-IIs S/N 296 |              |                  |            |
|----------------------------------|---------------|--------|-----------------|--------------|------------------|------------|
|                                  |               |        | Serial Number   | Manufacturer | Calibration Date |            |
| Head CG Accelerometers           |               |        | X               | P82109       | Endevco          | 06/11/2024 |
|                                  |               |        | Y               | P94783       | Endevco          | 06/11/2024 |
|                                  |               |        | Z               | P94786       | Endevco          | 06/11/2024 |
|                                  |               |        | Xr              | P94938       | Endevco          | 06/11/2024 |
|                                  |               |        | Yr              | P96854       | Endevco          | 06/11/2024 |
|                                  |               |        | Zr              | P97386       | Endevco          | 06/11/2024 |
| Head Angular Rate Sensors        |               |        | X               | ARS15213     | DTS              | 07/31/2024 |
|                                  |               |        | Y               | ARS15229     | DTS              | 07/31/2024 |
|                                  |               |        | Z               | ARS15231     | DTS              | 07/31/2024 |
| Displacement Potentiometers      | Thoracic Rib  | Upper  | Y               | G012         | Servo            | 06/10/2024 |
|                                  |               | Middle | Y               | G1163        | FTSS             | 06/10/2024 |
|                                  |               | Lower  | Y               | G1158        | FTSS             | 06/10/2024 |
|                                  | Abdominal Rib | Upper  | Y               | G1146        | FTSS             | 06/10/2024 |
|                                  |               | Lower  | Y               | G1126        | FTSS             | 06/10/2024 |
| Lower Spine Accelerometers (T12) |               |        | X               | P79614       | Endevco          | 06/11/2024 |
|                                  |               |        | Y               | P79439       | Endevco          | 06/11/2024 |
|                                  |               |        | Z               | P79418       | Endevco          | 06/11/2024 |
| Acetabulum Load Cell             |               |        | Y               | ACG111FY     | FTSS             | 02/22/2024 |
| Iliac Wing Load Cell             |               |        | Y               | IWG226FY     | FTSS             | 02/22/2024 |
| Pelvis Plug (struck side)        |               |        |                 | 16408        | SACO             | 05/23/2022 |
| Pelvis Plug (non-struck side)    |               |        |                 | 16405        | SACO             | 05/23/2022 |

**Table 3 – Vehicle Instrumentation**

|    |                              |   | Serial Number | Manufacturer | Calibration Date |
|----|------------------------------|---|---------------|--------------|------------------|
| 1  | Vehicle Center of Gravity    | X | T20406        | Endevco      | 11/15/2024       |
|    | Vehicle Center of Gravity    | Y | T25669        | Endevco      | 11/15/2024       |
|    | Vehicle Center of Gravity    | Z | T44150        | Endevco      | 11/12/2024       |
| 2  | Right Sill at Front Seat     | X | T44141        | Endevco      | 10/25/2024       |
|    | Right Sill at Front Seat     | Y | T44129        | Endevco      | 10/25/2024       |
|    | Right Sill at Front Seat     | Z | T44159        | Endevco      | 10/31/2024       |
| 3  | Right Sill at Rear Seat      | X | T33443        | Endevco      | 11/01/2024       |
|    | Right Sill at Rear Seat      | Y | T30590        | Endevco      | 11/01/2024       |
|    | Right Sill at Rear Seat      | Z | T39064        | Endevco      | 06/24/2024       |
| 4  | Left Sill at Front Door      | Y | T44165        | Endevco      | 10/31/2024       |
| 5  | Left Sill at Rear Door       | Y | A382560       | MSI          | 07/25/2024       |
| 6  | Left A-Post Lower            | Y | T37928        | Endevco      | 11/06/2024       |
| 7  | Left A-Post Middle           | Y | T33480        | Endevco      | 11/06/2024       |
| 8  | Left B-Post Lower            | Y | T44127        | Endevco      | 10/25/2024       |
| 9  | Left B-Post Middle           | Y | T44137        | Endevco      | 10/25/2024       |
| 10 | Front Seat Track             | Y | P68289        | Endevco      | 11/11/2024       |
| 11 | Rear Seat Track or Structure | Y | T44152        | Endevco      | 10/31/2024       |
| 12 | Right Rear Occ. Compartment  | Y | P49659        | Endevco      | 11/15/2024       |
| 13 | Engine Block                 | X | T34144        | Endevco      | 09/10/2024       |
|    | Engine Block                 | Y | T42838        | Endevco      | 08/13/2024       |
| 14 | Rear Floorpan Above Axle     | X | T44169        | Endevco      | 10/31/2024       |
|    | Rear Floorpan Above Axle     | Y | T44145        | Endevco      | 10/25/2024       |
|    | Rear Floorpan Above Axle     | Z | T33138        | Endevco      | 08/13/2024       |

**Table 4 – MDB Instrumentation**

|                                    |   | Serial Number | Manufacturer | Calibration Date |
|------------------------------------|---|---------------|--------------|------------------|
| MDB Center of Gravity              | X | PCB1183D      | PCB          | 03/15/2024       |
| MDB Center of Gravity              | Y | PCB1822D      | PCB          | 03/15/2024       |
| MDB Center of Gravity              | Z | PCB1753D      | PCB          | 03/15/2024       |
| Left Frame at Rear Axle Centerline | X | PCB1438D      | PCB          | 03/15/2024       |
| Left Frame at Rear Axle Centerline | Y | PCB1653D      | PCB          | 03/15/2024       |