

**REPORT NUMBER: NCAP-KAR-24-003**

**NEW CAR ASSESSMENT PROGRAM (NCAP)  
FRONTAL BARRIER IMPACT TEST**

**VINFAST TRADING AND PRODUCTION JSC.  
2024 VINFAST VF8 ECO 5-DOOR SUV**

**NHTSA NUMBER: M20244700**

**PREPARED BY:  
APPLUS+ IDIADA KARCO ENGINEERING, LLC.  
9270 HOLLY ROAD  
ADELANTO, CA 92301**

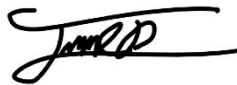


**JULY 25, 2024**

**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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Approval Date: \_\_\_\_\_ July 25, 2024 \_\_\_\_\_

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\_\_\_\_\_  
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NHTSA, Office of Crashworthiness Standards

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

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

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



## TECHNICAL REPORT DOCUMENTATION PAGE

| <b>1. Report No.</b><br>NCAP-KAR-24-003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <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>Frontal Impact Testing of a 2024 VinFast VF8 ECO 5-Door SUV<br>NHTSA No. M20244700                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                 | <b>5. Report Date</b><br>July 25, 2024                                                                                                                                            |                  |                         |           |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
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| <b>7. Authors</b><br>Mr. Jose Castañeda, Passive Safety Engineer, Applus+ IDIADA KARCO<br>Mr. Alex Beltran, Engineering Manager, Applus+ IDIADA KARCO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                 | <b>8. Performing Organization Report No.</b><br>TR-P44194-01-NC                                                                                                                   |                  |                         |           |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| <b>9. Performing Organization Name and Address</b><br>Applus+ IDIADA KARCO Engineering, LLC.<br>9270 Holly Rd.<br>Adelanto, CA 92301                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                 | <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, July 10 - July 25, 2024                                                                                        |                  |                         |           |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
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| <b>15. Supplementary Notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                 |                                                                                                                                                                                   |                  |                         |           |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| <b>16. Abstract</b><br><p>A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2024 VinFast VF8 ECO 5-Door SUV in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. The test was conducted at the Applus+ IDIADA KARCO Engineering, LLC. facility in Adelanto, California on July 10, 2024.</p> <p>The impact velocity of the vehicle was 56.06 km/h and the ambient temperature at the barrier face at the time of impact was 38.3°C. The target vehicle's post-test maximum crush was 379 mm at DPD4 to the right of the vehicle's centerline. The test vehicle's performance is as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">Measurement Description</th><th rowspan="2">Units</th><th colspan="2">Driver ATD</th><th colspan="2">Passenger ATD</th></tr> <tr> <th>Threshold</th><th>Result</th><th>Threshold</th><th>Result</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC<sub>15</sub>)</td><td>N/A</td><td>700</td><td>132.928</td><td>700</td><td>822.840</td></tr> <tr> <td>Maximum Chest Compression</td><td>mm</td><td>63</td><td>-32.055</td><td>52</td><td>-20.313</td></tr> <tr> <td>Nij</td><td>N/A</td><td>1</td><td>0.336</td><td>1</td><td>0.983</td></tr> <tr> <td>Neck Tension</td><td>N</td><td>4170</td><td>1631.478</td><td>2620</td><td>876.278</td></tr> <tr> <td>Neck Compression</td><td>N</td><td>4000</td><td>-248.075</td><td>2520</td><td>-899.942</td></tr> <tr> <td>Left Femur Force</td><td>N</td><td>10000</td><td>-2011.257</td><td>6800</td><td>-1576.530</td></tr> <tr> <td>Right Femur Force</td><td>N</td><td>10000</td><td>-1776.981</td><td>6800</td><td>-1298.093</td></tr> </tbody> </table> |                                                                 |                                                                                                                                                                                   |                  | Measurement Description | Units     | Driver ATD    |  | Passenger ATD |  | Threshold | Result | Threshold | Result | Head Injury Criteria (HIC <sub>15</sub> ) | N/A | 700 | 132.928 | 700 | 822.840 | Maximum Chest Compression | mm | 63 | -32.055 | 52 | -20.313 | Nij | N/A | 1 | 0.336 | 1 | 0.983 | Neck Tension | N | 4170 | 1631.478 | 2620 | 876.278 | Neck Compression | N | 4000 | -248.075 | 2520 | -899.942 | Left Femur Force | N | 10000 | -2011.257 | 6800 | -1576.530 | Right Femur Force | N | 10000 | -1776.981 | 6800 | -1298.093 |
| Measurement Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Units                                                           | Driver ATD                                                                                                                                                                        |                  |                         |           | Passenger ATD |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                 | Threshold                                                                                                                                                                         | Result           | Threshold               | Result    |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| Head Injury Criteria (HIC <sub>15</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | N/A                                                             | 700                                                                                                                                                                               | 132.928          | 700                     | 822.840   |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| Maximum Chest Compression                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | mm                                                              | 63                                                                                                                                                                                | -32.055          | 52                      | -20.313   |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| Nij                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                             | 1                                                                                                                                                                                 | 0.336            | 1                       | 0.983     |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| Neck Tension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | N                                                               | 4170                                                                                                                                                                              | 1631.478         | 2620                    | 876.278   |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| Neck Compression                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N                                                               | 4000                                                                                                                                                                              | -248.075         | 2520                    | -899.942  |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| Left Femur Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | N                                                               | 10000                                                                                                                                                                             | -2011.257        | 6800                    | -1576.530 |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| Right Femur Force                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | N                                                               | 10000                                                                                                                                                                             | -1776.981        | 6800                    | -1298.093 |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |
| <b>17. Key Words</b><br>56.3 km/h (35 mph) Full Frontal Rigid Barrier Impact Test<br>New Car Assessment Program (NCAP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                 | <b>18. Distribution Statement</b><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 this report</b><br>UNCLASSIFIED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>20. Security Classification of this page</b><br>UNCLASSIFIED | <b>21. No. of Pages</b><br>175                                                                                                                                                    | <b>22. Price</b> |                         |           |               |  |               |  |           |        |           |        |                                           |     |     |         |     |         |                           |    |    |         |    |         |     |     |   |       |   |       |              |   |      |          |      |         |                  |   |      |          |      |          |                  |   |       |           |      |           |                   |   |       |           |      |           |

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## **SECTION 1**

### **PURPOSE AND SUMMARY OF TEST**

#### **PURPOSE**

This 56.3 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program, sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract number 693JJ919D000004. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

The 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Procedure dated May 2018 for NCAP Full Frontal Rigid Barrier Impact Testing.

#### **SUMMARY**

A load cell barrier consisting of 176 load cells was impacted by a 2024 VinFast VF8 ECO 5-door SUV at a velocity of 56.06 km/h. The test was performed at Applus+ IDIADA KARCO Engineering, LLC. on July 10, 2024. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

One (1) real-time camera and sixteen (16) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet 6 of this report.

One Part 572E HIII 50<sup>th</sup> percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O HIII 5<sup>th</sup> percentile female ATD was placed in the right-front passenger seating position according to dummy placement instructions specified in the Laboratory Procedure for NCAP Full Frontal Rigid Barrier Impact Testing.

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck force transducers, right / left femur load cells, and lower leg instrumentation.

The driver (position 1) ATD (Serial No. 360) and the right-front passenger (position 2) ATD (Serial No. DH1644) were qualified prior to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 106 channels of dummy and vehicle response data were recorded on an on-board data acquisition system. Appendix B contains the dummy response data traces. Appendix D contains a complete list of instrumentation used for dummies and the vehicle.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event.

The maximum static crush of the test vehicle was 379 mm at DPD4 to the right of the vehicle's centerline. Both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: the driver ATD's head contacted the frontal air bag, and headrest. The upper and lower torso contacted the frontal air bag. Both left and right knees contacted the knee air bag, and the right knee also contacted the knee bolster.

The passenger's visible contact points were as follows: the passenger ATD's head contacted the frontal air bag and headrest. The upper and lower torso contacted the frontal air bag. Both left and right knees contacted the knee air bag.

The occupant data is summarized below:

| ATD Position           | HIC <sub>15</sub> | Nij   | Neck Tension (N) | Neck Comp. (N) | 3ms Chest Clip (g) | Chest Disp. (mm) | Left Femur (N) | Right Femur (N) |
|------------------------|-------------------|-------|------------------|----------------|--------------------|------------------|----------------|-----------------|
| Driver (50th Male)     | 132.928           | 0.336 | 1631.478         | -248.075       | 47.825             | -32.055          | -2011.257      | -1776.981       |
| Passenger (5th Female) | 822.840           | 0.983 | 876.278          | -899.942       | 44.718             | -20.313          | -1576.530      | -1298.093       |

#### **GENERAL COMMENTS:**

None

## SECTION 2

### OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

### CONVERSION FACTORS

| Quantity           | Typical Application | Std Units           | Metric Unit | Multiply By       |
|--------------------|---------------------|---------------------|-------------|-------------------|
| Mass               | Vehicle Weight      | lb                  | kg          | 0.4536            |
| Linear Velocity    | Impact Velocity     | miles/hr            | km/hr       | 1.609344          |
| Length or Distance | Measurements        | in                  | mm          | 25.4              |
| Volume             | Fuel Systems        | gal                 | liter       | 3.785             |
| Volume             | Small Fluids        | oz                  | mL          | 29.574            |
| Pressure           | Tire Pressures      | lbf/in <sup>2</sup> | kPa         | 6.895             |
| Temperature        | General Use         | °F                  | °C          | $=(T_f - 32)/1.8$ |
| Force              | Dynamic Forces      | lbf                 | N           | 4.448             |
| Moment             | Torque              | lbf-ft              | N•m         | 1.355             |

## DATA SHEET NO. 1

### GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

### TEST VEHICLE INFORMATION AND OPTIONS

|                             |                   |
|-----------------------------|-------------------|
| NHTSA Number                | M20244700         |
| Model Year                  | 2024              |
| Make                        | VinFast           |
| Model                       | VF8 ECO           |
| Body Style                  | 5-Door SUV        |
| VIN                         | RLLV1AEB8RH004532 |
| Body Color                  | Silver            |
| Odometer Reading (km / mi)  | 0                 |
| Engine Displacement (L)     | NA                |
| Type / No. of Cylinders     | NA                |
| Engine Placement            | Dual Motor        |
| Transmission Type           | Automatic         |
| Transmission Speeds         | 1                 |
| Overdrive                   | N/A               |
| Final Drive                 | AWD               |
| Roof Rack                   | No                |
| Sunroof / T-Top             | No                |
| Running Boards              | No                |
| Tilt Steering Wheel         | Yes               |
| Power Seats                 | Yes               |
| Anti-Lock Brakes (ABS)      | Yes               |
| Automatic Door Locks (ADLs) | Yes               |

|                                    |                       |
|------------------------------------|-----------------------|
| Traction Control System            | Yes                   |
| Power Steering                     | Yes                   |
| Power Window Auto-Reverse          | Yes                   |
| Driver Frontal Air Bag             | Yes                   |
| Driver Curtain Air Bag             | Yes                   |
| Driver Head/Torso Air Bag          | No                    |
| Driver Torso Air Bag               | No                    |
| Driver Torso/Pelvis Air Bag        | Yes                   |
| Driver Pelvis Air Bag              | No                    |
| Driver Knee Air Bag                | Yes                   |
| Front Pass. Frontal Air Bag        | Yes                   |
| Front Pass. Curtain Air Bag        | Yes                   |
| Front Pass. Head/Torso Air Bag     | No                    |
| Front Pass. Torso Air Bag          | No                    |
| Front Pass. Torso/Pelvis Air Bag   | Yes                   |
| Front Pass. Pelvis Air Bag         | No                    |
| Front Pass. Knee Air Bag           | Yes                   |
| Driver Seat Belt Pretensioner      | Yes                   |
| Driver Load Limiter                | Yes                   |
| Front Pass. Seat Belt Pretensioner | Yes                   |
| Front Pass. Load Limiter           | Yes                   |
| Other Safety Restraint             | Driver Center Air Bag |

Does Owner's Manual provide instructions to turn off automatic door locks?

No

### DATA FROM CERTIFICATION LABEL

|                     |                                                          |
|---------------------|----------------------------------------------------------|
| Manufactured By     | VinFast Trading and<br>Production Joint Stock<br>Company |
| Date of Manufacture | Mar-23                                                   |

|                 |      |
|-----------------|------|
| GVWR (kg)       | 2905 |
| GAWR Front (kg) | 1425 |
| GAWR Rear (kg)  | 1590 |

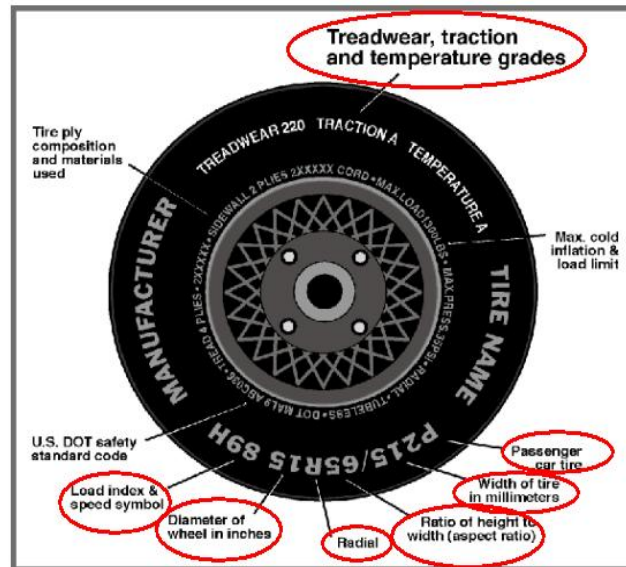
### VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

| Measured Parameter          | Front  | Rear        | Third | Total |     |
|-----------------------------|--------|-------------|-------|-------|-----|
| Type of Seats               | Bucket | Split Bench |       |       |     |
| Designated Seating Capacity | 2      | 3           |       | 5     |     |
| Capacity Weight (VCW) (kg)  |        |             |       | 450.0 | A   |
| DSC x 68.0 (kg)             |        |             |       | 340.0 | B   |
| Cargo Weight (RCLW) (kg)    |        |             |       | 110.0 | A-B |

## DATA SHEET NO. 1 ... (CONTINUED)

### GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024



### VEHICLE TIRE INFORMATION

| Measured Parameter        | Front                             | Rear                              |
|---------------------------|-----------------------------------|-----------------------------------|
| Max. Tire Pressure (kPa)  | 340                               | 340                               |
| Cold Pressure (kPa)       | 260                               | 280                               |
| Recommended Tire Size     | 225/55R19                         | 225/55R19                         |
| Tire Size on Vehicle      | 225/55R19                         | 225/55R19                         |
| Tire Manufacturer         | Goodyear                          | Goodyear                          |
| Tire Model                | Eagle Touring                     | Eagle Touring                     |
| Treadwear                 | 480                               | 480                               |
| Traction                  | A                                 | A                                 |
| Temperature Grades        | A                                 | A                                 |
| Tire Plies Sidewall       | 2 Polyester                       | 2 Polyester                       |
| Tire Plies Body           | 2 Polyester, 2 Steel, 1 Polyamide | 2 Polyester, 2 Steel, 1 Polyamide |
| Load Index / Speed Symbol | 103H                              | 103H                              |
| Tire Material             | Rubber                            | Rubber                            |
| DOT Safety Code Left      | TCEF/3022                         | TCEF/3022                         |
| DOT Safety Code Right     | TCEF/3022                         | TCEF/3022                         |

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

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

**TEST VEHICLE WEIGHTS**

|       | Units | As Delivered Weights (UWV) |           |        | As Tested Weights (ATW) |           |        |
|-------|-------|----------------------------|-----------|--------|-------------------------|-----------|--------|
|       |       | Front Axle                 | Rear Axle | Total  | Front Axle              | Rear Axle | Total  |
| Left  | kg    | 657.0                      | 568.0     |        | 697.0                   | 640.5     |        |
| Right | kg    | 588.0                      | 647.0     |        | 636.0                   | 731.5     |        |
| Ratio | %     | 50.6%                      | 49.4%     | 100.0% | 49.3%                   | 50.7%     | 100.0% |
| Total | kg    | 1245.0                     | 1215.0    | 2460.0 | 1333.0                  | 1372.0    | 2705.0 |

**TARGET TEST WEIGHT CALCULATION**

| Measured Parameter                      | Units | Value  |       |
|-----------------------------------------|-------|--------|-------|
| Total Delivered Weight (UWV)            | kg    | 2460.0 | A     |
| Weight of 1 P572E ATD & 1 P572O ATD     | kg    | 141.0  | B     |
| Rated Cargo/Luggage Weight (RCLW)       | kg    | 110.0  | C     |
| Calculated Vehicle Target Weight (TVTW) | kg    | 2711.0 | A+B+C |

**TEST VEHICLE ATTITUDES**

| Condition    | Units | LF  | RF  | LR  | RR  | CG Aft of Front Axle |
|--------------|-------|-----|-----|-----|-----|----------------------|
| As Delivered | mm    | 800 | 807 | 801 | 805 | 1455                 |
| As Tested    | mm    | 785 | 788 | 783 | 789 | 1494                 |
| Post-Test    | mm    | 748 | 828 | 755 | 810 |                      |

**GENERAL TEST VEHICLE DATA**

| Measurement Description                 | Units | Value |
|-----------------------------------------|-------|-------|
| Total Vehicle Wheelbase                 | mm    | 2946  |
| Total Vehicle Length at Left Side       | mm    | 4198  |
| Total Vehicle Length at Centerline      | mm    | 4745  |
| Total Vehicle Length at Right Side      | mm    | 4198  |
| Weight of Ballast in Cargo Area         | kg    | 68.6  |
| Weight of Vehicle Components Removed    | kg    | 2.5   |
| Amount of Stoddard Solvent in Fuel Tank | L     | N/A   |

**VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:**

Trunk Trim (2.5 kg)

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

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

**TARGET VEHICLE STRUCTURAL MEASUREMENTS**

| No. | Description                           | Pre-Test |
|-----|---------------------------------------|----------|
| 1   | Total Length                          | 4745     |
| 2   | Total Width                           | 1910     |
| 3   | Bumper Top Height                     | 595      |
| 4   | Bumper Bottom Height                  | 480      |
| 5   | Longitudinal Member Top Height        | 628      |
| 6   | Distance Between Longitudinal Members | 942      |
| 7   | Longitudinal Member Width             | 70       |
| 8   | Engine Top Height                     | 729      |
| 9   | Engine Bottom Height                  | 218      |
| 10  | Engine and Gearbox Width              | 489      |
| 11  | Front Bumper to Engine Distance       | 579      |
| 12  | Front Shock Absorber Fixing Height    | 896      |
| 13  | Bonnet Leading Edge Height            | 1057     |
| 14  | Front Shock Absorber Fixing Width     | 1099     |
| 15  | Front Bumper to Front Axle Distance   | 857      |
| 16  | Front Axle to A-Pillar Distance       | 675      |
| 17  | A-Pillar to B-Pillar Distance         | 966      |
| 18  | B-Pillar to Rear Axle Distance        | 1305     |
| 19  | B-Pillar to C-Pillar Distance         | 1165     |
| 20  | Roof Sill Bottom Height               | 1554     |
| 21  | Roof Sill Top Height                  | 1626     |
| 22  | Floor Sill Bottom Height              | 358      |
| 23  | Floor Sill Top Height                 | 401      |

All measurements in millimeters.

## DATA SHEET NO. 2

### SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV

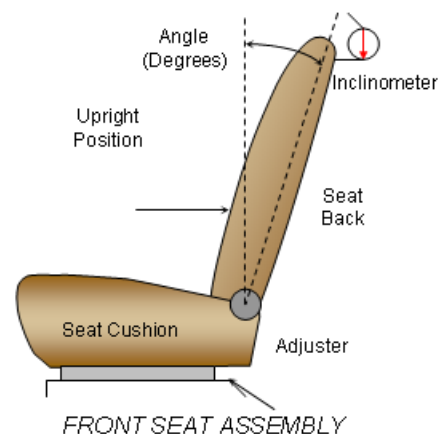
NHTSA No.: M20244700

Test Program: 56.3 km/h Frontal Impact NCAP Test

Test Date: 07/10/2024

#### NOMINAL DESIGN RIDING POSITION

The procedure for the driver is as follows: the seat back is set to the manufacturer's designated angle. The procedure for the passenger is as follows: the seat back is set to position the transverse instrumentation platform of the dummy's head at  $0^\circ \pm 0.5^\circ$ . Seat back angle is measured at the headrest post.

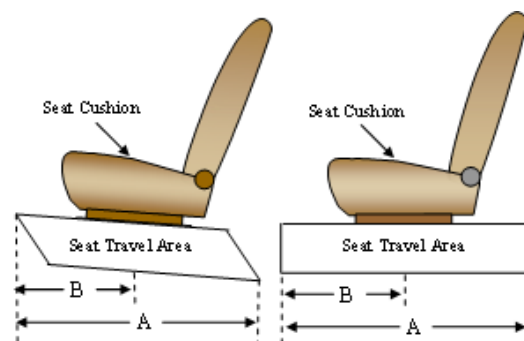


#### SEAT BACK ANGLE

| Seating Position          | Degrees |
|---------------------------|---------|
| Driver Seat Back Angle    | 6.7     |
| Passenger Seat Back Angle | 10.8    |

#### SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rear most possible position. The driver's seat is set to the middle of the fore-aft travel. The passenger's seat is set to the forward most position where the ATD will not contact any interior panels.



#### SEAT FORE/AFT POSITIONS

| Seating Position | Total Fore-Aft Travel | Placed in Position |
|------------------|-----------------------|--------------------|
| Driver Seat      | 240                   | 120                |
| Passenger Seat   | 240                   | 0                  |

#### SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer's design position for a 50<sup>th</sup> percentile adult male ATD for the driver, and a 5<sup>th</sup> percentile adult female ATD for the passenger. Position "L" is the lowermost position, followed by position "M1". Position "H" is the uppermost position.

#### SEAT BELT UPPER ANCHORAGES

| Seating Position | Total No. of Positions | Placed in Position |
|------------------|------------------------|--------------------|
| Driver Seat      | Fixed                  | Fixed              |
| Passenger Seat   | Fixed                  | Fixed              |

## DATA SHEET NO. 2 ... (CONTINUED)

### SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV

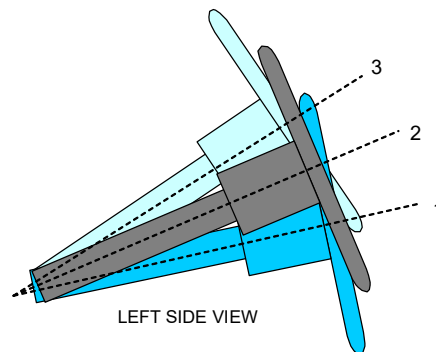
NHTSA No.: M20244700

Test Program: 56.3 km/h Frontal Impact NCAP Test

Test Date: 07/10/2024

#### STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. A digital inclinometer is used to measure a plate which is placed across the rim of the steering wheel for angular measurements.



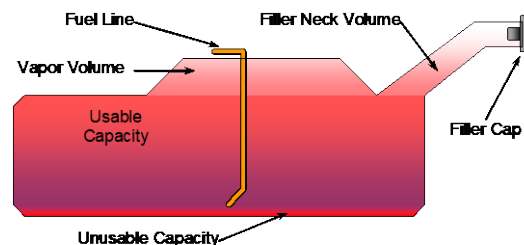
LEFT SIDE VIEW  
STEERING COLUMN ASSEMBLY

#### STEERING COLUMN POSITIONING

|                                   | Degrees | Fore-Aft Position (mm) |
|-----------------------------------|---------|------------------------|
| Lowermost Position, No. 1         | 23.2    | 244                    |
| Geometric Center Position, No. 2  | 25.1    | 216                    |
| Uppermost Position, No. 3         | 27.0    | 187                    |
| Telescoping Steering Wheel Travel |         | 57                     |
| Test Position                     | 25.1    | 216                    |

#### FUEL PUMP

The vehicle is an electric vehicle, does not have a fuel pump.



VEHICLE FUEL TANK ASSEMBLY

#### FUEL TANK CAPACITY

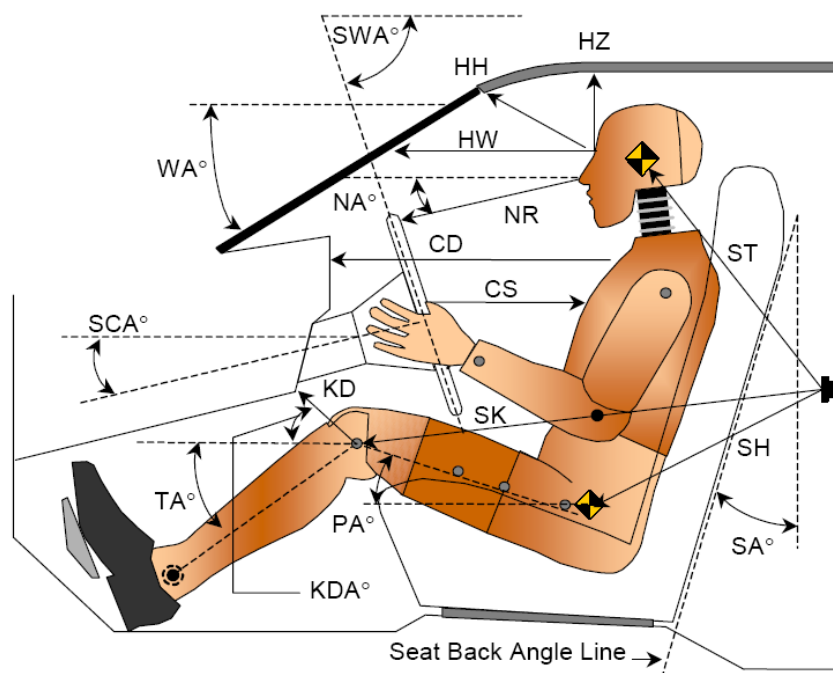
| Description                                             | Liters |
|---------------------------------------------------------|--------|
| Usable Capacity of "Standard Tank" (see Form No. 1)     |        |
| Usable Capacity of "Optional Tank" (see Form No. 1)     |        |
| Usable Capacity of "Standard Tank" (see Owner's Manual) |        |
| Usable Capacity of "Optional Tank" (see Owner's Manual) |        |
| 93% of Usable Capacity                                  |        |
| Actual Amount of Solvent Used in Test                   |        |
| 1/3 of Usable Capacity                                  |        |

Is the Actual Amount of Solvent Used in the test equal to 93%  $\pm$  1% of the Usable Capacity stated in the Form No. 1? ☐ Yes ☐ No

### DATA SHEET NO. 3

#### DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024



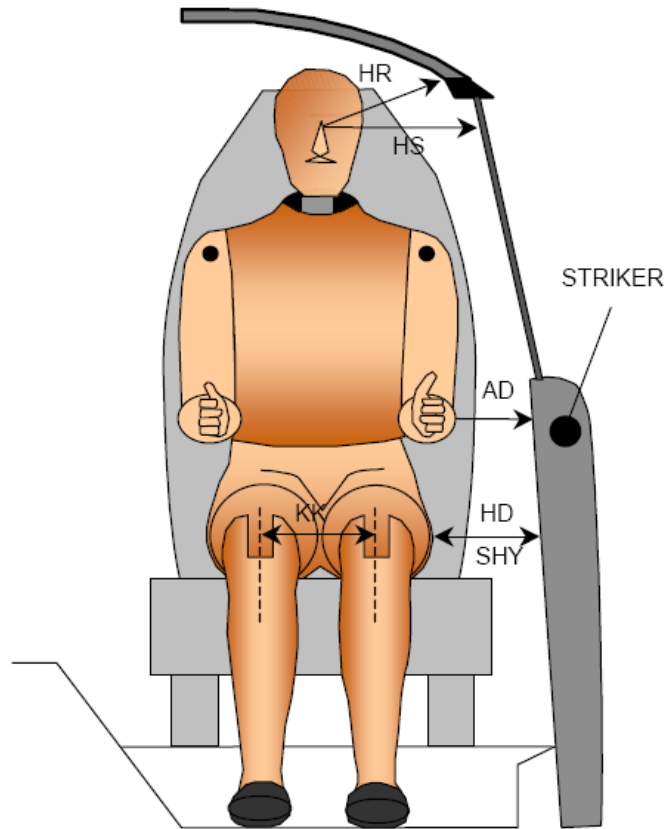
LEFT SIDE VIEW

| Code | Measurement Description            | Driver      |           | Passenger   |           |
|------|------------------------------------|-------------|-----------|-------------|-----------|
|      |                                    | Length (mm) | Angle (°) | Length (mm) | Angle (°) |
| WA°  | Windshield Angle                   |             | 30.9      |             |           |
| SWA° | Steering Wheel Angle               |             | 64.9      |             |           |
| SCA° | Steering Column Angle              |             | 25.1      |             |           |
| SA°  | Seat Back Angle (On Seatback Post) |             | 6.7       |             | 10.8      |
| HZ   | Head to Roof                       | 274         | 90.0      | 250         | 90.0      |
| HH   | Head to Header                     | 442         | 24.3      | 361         | 40.4      |
| HW   | Head to Windshield                 | 775         | 0.0       | 671         | 0.0       |
| NR   | Nose to Rim                        | 407         | 8.5       | 440         | 20.6      |
| CD   | Chest to Dash                      | 632         | 0.0       | 435         | 0.0       |
| CS   | Chest to Steering Hub              | 299         | 0.0       |             |           |
| RA   | Rim to Abdomen                     | 225         | 0.0       |             |           |
| KDL  | Left Knee to Dash                  | 204         | 26.8      | 135         | 26.4      |
| KDR  | Right Knee to Dash                 | 182         | 21.7      | 158         | 30.9      |
| PA°  | Pelvic Angle                       |             | 24.0      |             | 18.9      |
| TA°  | Tibia Angle                        |             | 53.7      |             | 56.8      |
| SK   | Striker to Knee                    | 535         | -3.5      | 618         | -4.2      |
| ST   | Striker to Head                    | 510         | 85.5      | 480         | 69.3      |
| SH   | Striker to H-Point                 | 210         | -42.5     | 308         | -22.7     |

## DATA SHEET NO. 4

### DUMMY LATERAL CLEARANCE DIMENSIONS

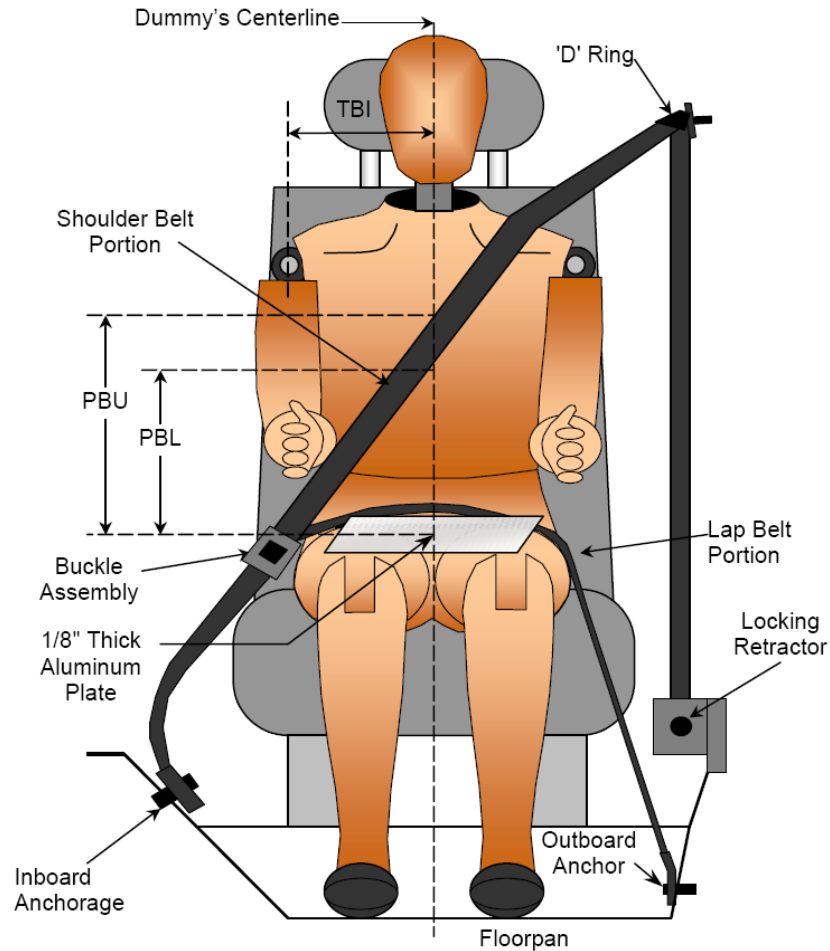
Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024



| Code | Description         | Driver (mm) | Passenger (mm) |
|------|---------------------|-------------|----------------|
| AD   | Arm to Door         | 50          | 62             |
| HD   | H-Point to Door     | 170         | 283            |
| HR   | Head to Side Header | 272         | 336            |
| HS   | Head to Side Window | 395         | 404            |
| KK   | Knee to Knee        | 310         | 170            |
| AA   | Ankle to Ankle      | 310         | 170            |

**DATA SHEET NO. 5**  
**SEAT BELT POSITIONING DATA**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024



**FRONT VIEW OF DUMMY**

**SEAT BELT POSITIONING MEASUREMENTS**

| Code | Measurement Description                          | Units | Driver | Passenger |
|------|--------------------------------------------------|-------|--------|-----------|
| PBU  | Top Surface of Aluminum Plate to Belt Upper Edge | mm    | 305    | 250       |
| PBL  | Top Surface of Aluminum Plate to Belt Lower Edge | mm    | 235    | 175       |

**BELT LENGTH DATA**

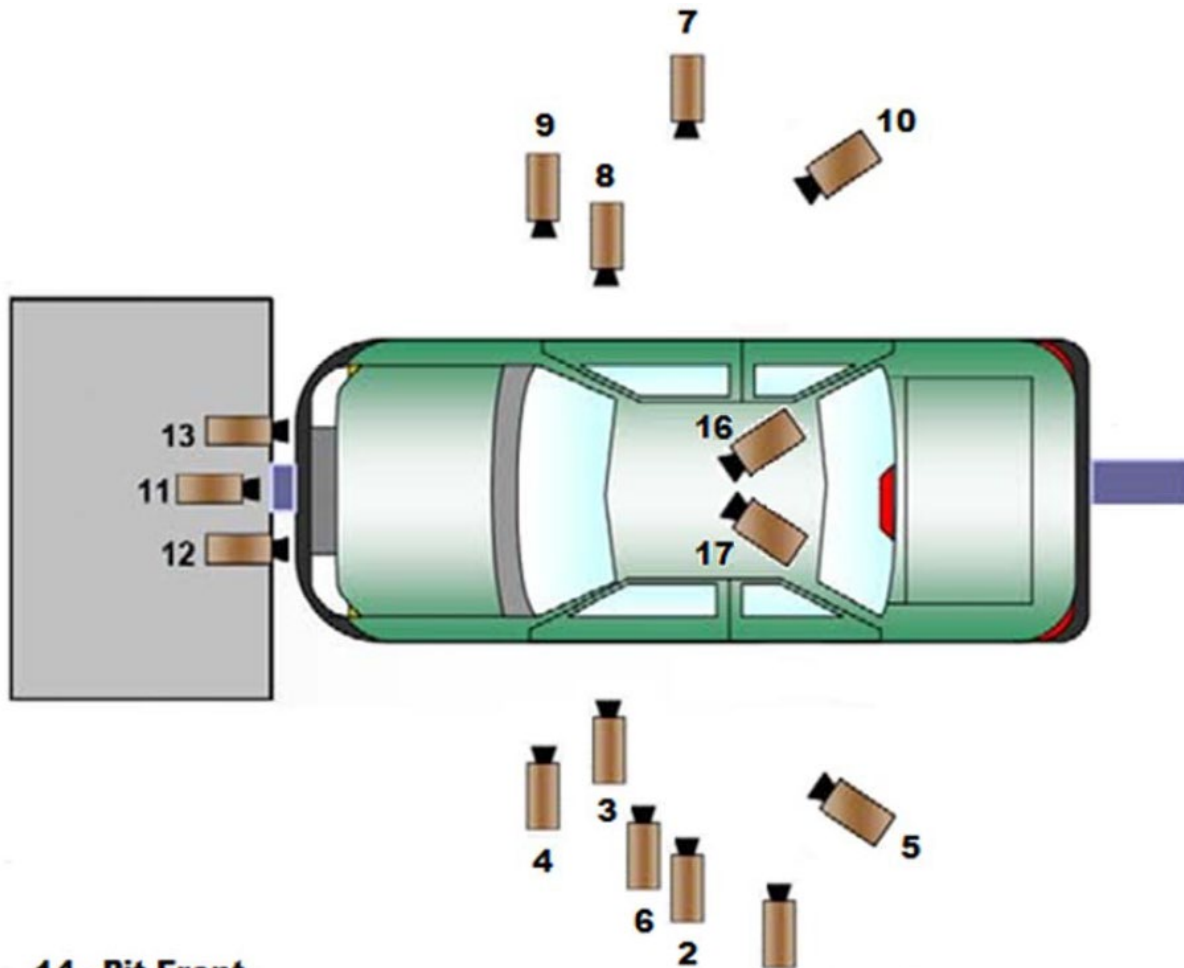
| Measurement Description                          | Units | Driver | Passenger |
|--------------------------------------------------|-------|--------|-----------|
| Shoulder Belt Length as Measured on ATD          | mm    | 850    | 900       |
| Lap Belt Length as Measured on ATD               | mm    | 585    | 516       |
| Remainder of Belt on Reel                        | mm    | 977    | 957       |
| Total Belt Length for Continuous Webbing Systems | mm    | 2412   | 2373      |

## DATA SHEET NO. 6

### HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

#### CAMERA POSITIONS FOR FRONTAL IMPACTS



14 - Pit Front

15 - Pit Rear

16 & 17 - Driver and Passenger Onboard

1- Real Time Camera

*\*\*Camera locations are approximate and not to scale*

## DATA SHEET NO. 6 ... (CONTINUED)

### HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

### CAMERA LOCATIONS

| No. | Description            | Location (mm) |        |       | Lens (mm) | Speed (fps) |
|-----|------------------------|---------------|--------|-------|-----------|-------------|
|     |                        | X             | Y      | Z     |           |             |
| 1   | Real-Time Left Overall | -11412        | -8150  | -1484 |           | 30          |
| 2   | Left Overall           | -2456         | -7975  | -1025 | 20        | 1000        |
| 3   | Driver Close-Up        | -2590         | -7950  | -1371 | 50        | 1000        |
| 4   | Left Front Half        | -1701         | -6197  | -1701 | 35        | 1000        |
| 5   | Left Angle             | -6696         | -10308 | -3211 | 105       | 1000        |
| 6   | Steering Column        | -1966         | -10412 | -3688 | 35        | 1000        |
| 7   | Right Overall          | -2336         | 7569   | -1012 | 20        | 1000        |
| 8   | Passenger Close-Up     | -1733         | 7581   | -1408 | 50        | 1000        |
| 9   | Right Front Half       | -1600         | 8214   | -1811 | 35        | 1000        |
| 10  | Right Angle            | -6217         | 9516   | -4830 | 85        | 1000        |
| 11  | Windshield             | -354          | 0      | -5749 | 28        | 1000        |
| 12  | Driver Windshield      | 297           | -366   | -2460 | 24        | 1000        |
| 13  | Passenger Windshield   | 297           | 366    | -2460 | 24        | 1000        |
| 14  | Pit Front              | -756          | 0      | 1495  | 21        | 1000        |
| 15  | Pit Rear               | -3398         | 0      | 1495  | 15        | 1000        |
| 16  | Driver Onboard         | -1250         | -275   | -1510 | 8         | 1000        |
| 17  | Passenger Onboard      | -1250         | 275    | -1510 | 8         | 1000        |

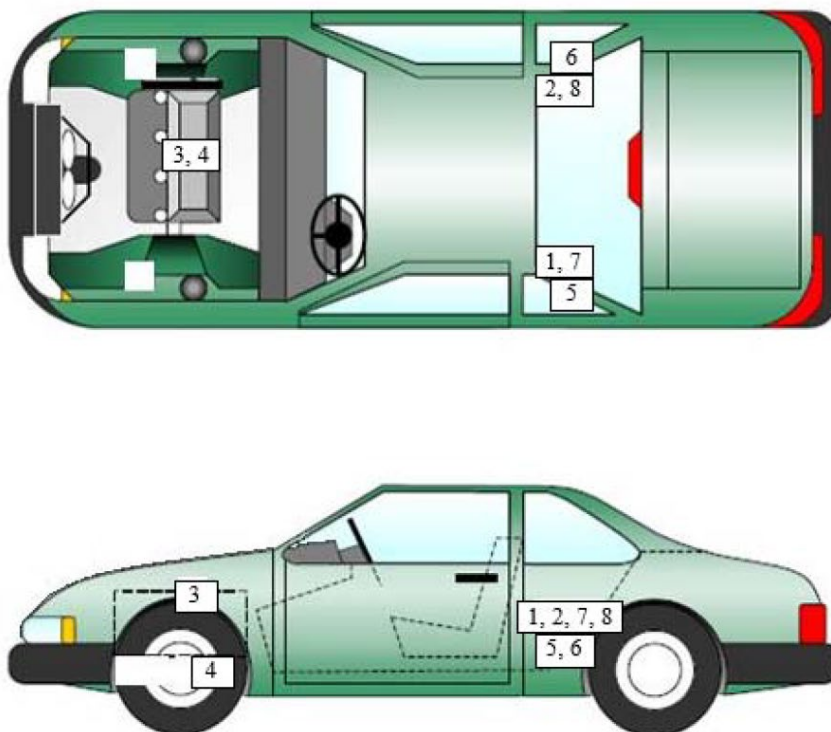
Coordinates:    +X = forward impact plane  
                       +Y = right of monorail center  
                       +Z = into ground



## DATA SHEET NO. 7

### VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024



### VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

| No. | Description                                    | Location |      |      |
|-----|------------------------------------------------|----------|------|------|
|     |                                                | X        | Y    | Z    |
| 1   | Left Rear Accelerometer X-Direction            | 1410     | -580 | -474 |
| 2   | Right Rear Accelerometer X-Direction           | 1410     | 580  | -474 |
| 3   | Engine Top X                                   | 4070     | 0    | -626 |
| 4   | Engine Bottom X                                | 4010     | -180 | -235 |
| 5   | Left Rear Accelerometer Z-Direction            | 1410     | -580 | -474 |
| 6   | Right Rear Accelerometer Z-Direction           | 1410     | 580  | -474 |
| 7   | Left Rear Accelerometer X-Direction Redundant  | 1410     | -580 | -474 |
| 8   | Right Rear Accelerometer X-Direction Redundant | 1410     | 580  | -474 |

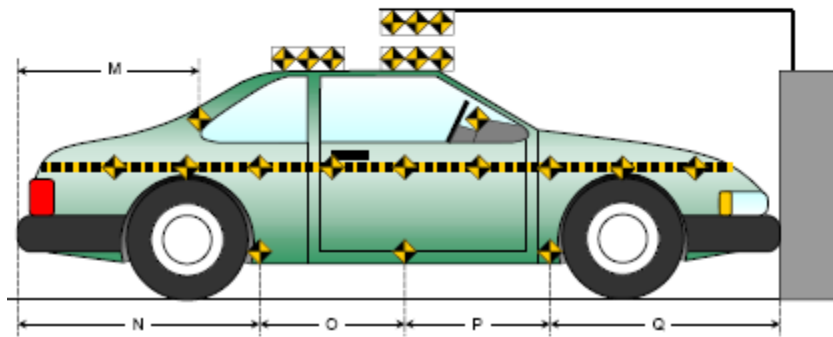
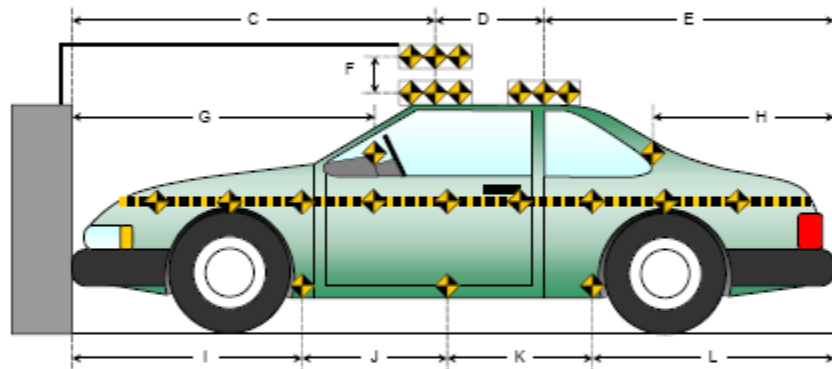
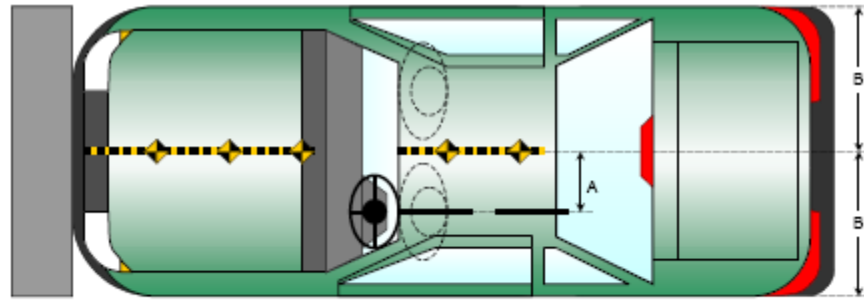
Reference Points: X – Rear Surface of Vehicle (+ forward)  
 Y – Vehicle Centerline (+ to right)  
 Z – Ground Plane (+ down)

## DATA SHEET NO. 8

### PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

| Item | Value |
|------|-------|
| A    | 427   |
| B    | 955   |
| C    | 2171  |
| D    | 610   |
| E    | 1964  |
| F    | 299   |
| G    | 1889  |
| H    | 690   |
| I    | 1351  |
| J    | 974   |
| K    | 980   |
| L    | 1440  |
| M    | 723   |
| N    | 1439  |
| O    | 976   |
| P    | 975   |
| Q    | 1355  |

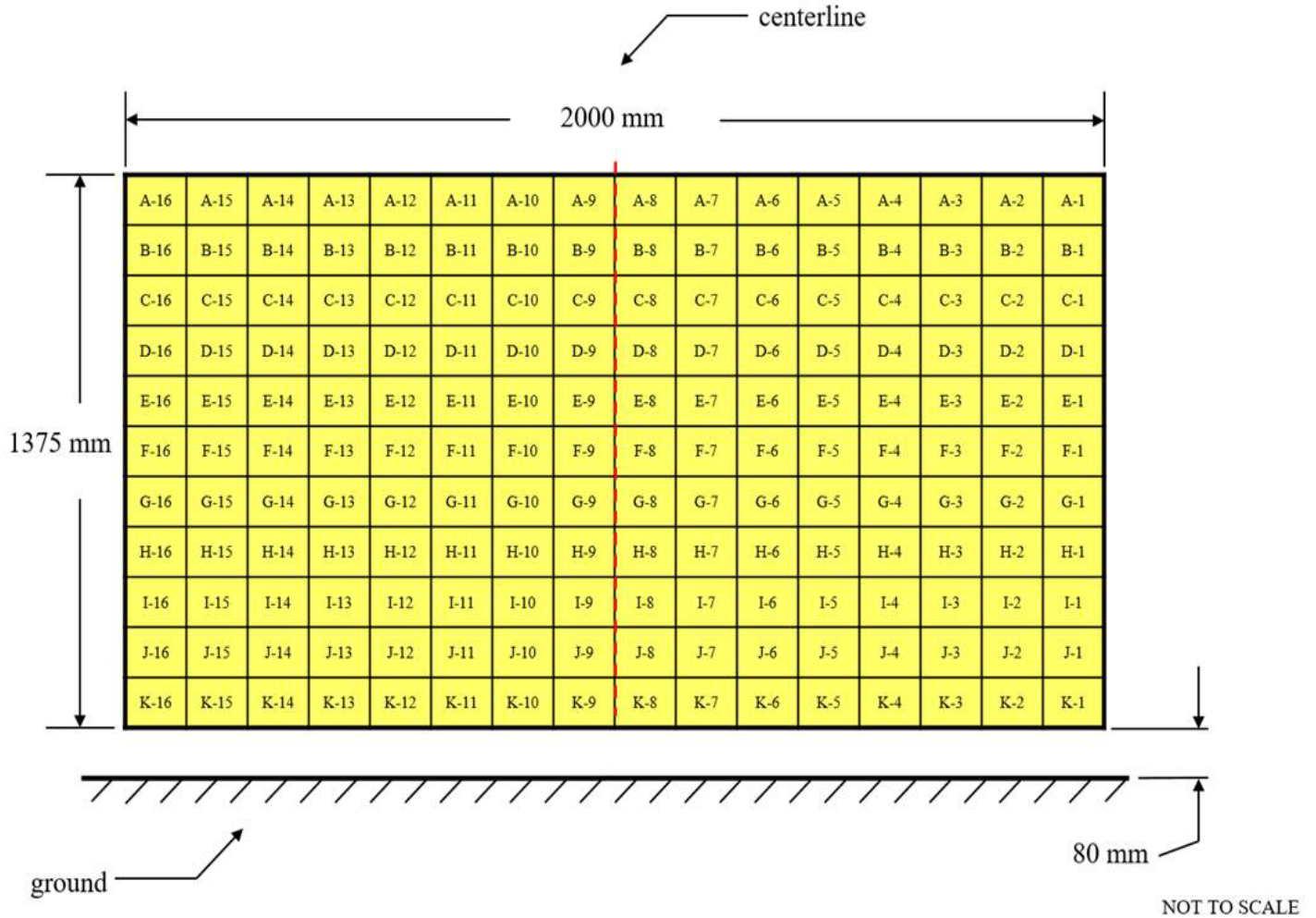


All measurements in millimeters.

## DATA SHEET NO. 9

### LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024



## DATA SHEET NO. 10

### TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

### INSTRUMENTATION

|                                  |     |
|----------------------------------|-----|
| Driver Dummy Sensors             | 47  |
| Passenger Dummy Sensors          | 47  |
| Vehicle Structure Accelerometers | 8   |
| Seat Belt Load Cells             | 4   |
| Load Cell Barrier                | 176 |
| Total                            | 282 |

### CAMERA COVERAGE

|                             |    |
|-----------------------------|----|
| High-Speed Vehicle On Board | 2  |
| High-Speed Off Board        | 14 |
| Real Time                   | 1  |
| Total                       | 17 |

**DATA SHEET NO. 11**  
**POST-TEST OBSERVATIONS**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

**TEST DUMMY INFORMATION AND CONTACT LOCATIONS**

| Description           | Driver                              | Passenger                               |
|-----------------------|-------------------------------------|-----------------------------------------|
| Dummy Type/Serial No. | HIII 50th Percentile Male ATD / 360 | HIII 5th Percentile Female ATD / DH1644 |
| Head Contact          | Frontal Air Bag, Headrest           | Frontal Air Bag, Headrest               |
| Upper Torso Contact   | Frontal Air Bag                     | Frontal Air Bag                         |
| Lower Torso Contact   | Frontal Air Bag                     | Frontal Air Bag                         |
| Left Knee Contact     | Knee Air Bag                        | Knee Air Bag                            |
| Right Knee Contact    | Knee Air Bag, Knee Bolster          | Knee Air Bag                            |

**DOOR OPENING, TRUNK OPENING, AND SEAT TRACK INFORMATION**

| Description                              | Driver                                    | Passenger                                 |
|------------------------------------------|-------------------------------------------|-------------------------------------------|
| Locked / Unlocked Doors                  | Unlocked                                  | Unlocked                                  |
| Front Door Opening                       | Remained closed, latched, and operational | Remained closed, latched, and operational |
| Rear Door Opening                        | Remained closed, latched, and operational | Remained closed, latched, and operational |
| Trunk/Hatch/Tailgate Opening             | Remained closed, latched, and operational | Remained closed, latched, and operational |
| Seat Track Shift (mm)                    | N/A                                       | N/A                                       |
| Seat Back Movement from Initial Position | None                                      | None                                      |

**OTHER VEHICLE POST-TEST OBSERVATIONS**

| Critical Areas of Performance | Observations and Conclusions |
|-------------------------------|------------------------------|
| Windshield Damage             | None                         |
| Window Damage                 | None                         |
| Other Notable Effects         | None                         |

**VEHICLE REBOUND FROM BARRIER**

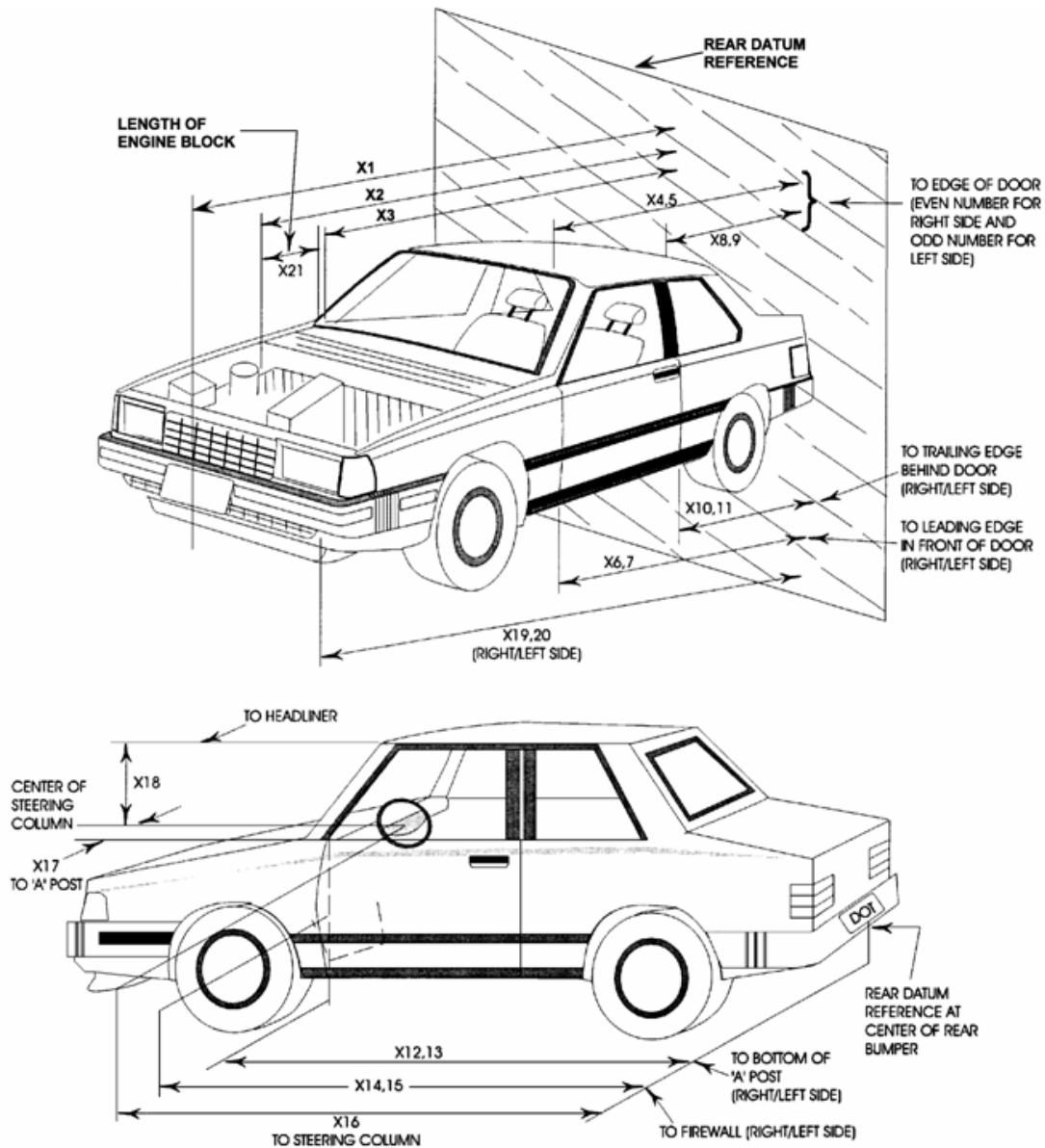
| Measured Parameter | Units | Value |
|--------------------|-------|-------|
| Left Side          | mm    | 2420  |
| Center             | mm    | 2322  |
| Right Side         | mm    | 2545  |
| Average            | mm    | 2429  |

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

| Restraint Type                | Driver    |          | Passenger |          |
|-------------------------------|-----------|----------|-----------|----------|
|                               | Installed | Operated | Installed | Operated |
| Front Air Bag                 | Yes       | Yes      | Yes       | Yes      |
| Side Air Bag 1 (Curtain)      | Yes       | No       | Yes       | No       |
| Side Air Bag 2 (Torso/Pelvis) | Yes       | No       | Yes       | No       |
| Knee Air Bag                  | Yes       | Yes      | Yes       | Yes      |
| Seat Belt Pretensioner        | Yes       | Yes      | Yes       | Yes      |
| Seat Belt Load Limiter        | Yes       | Yes      | Yes       | Yes      |

**DATA SHEET NO. 12**  
**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

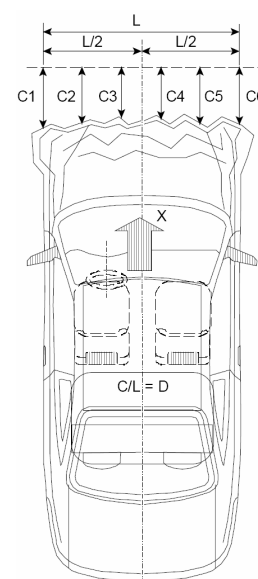


**DATA SHEET NO. 12 ... (CONTINUED)****VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

| No. | Description                                | Pre-Test | Post-Test | Change |
|-----|--------------------------------------------|----------|-----------|--------|
| 1   | Total Length of Vehicle at Centerline      | 4745     | 4393      | -352   |
| 2   | Rear Surface of Vehicle to Front of Engine | 4166     | 3938      | -228   |
| 3   | RSOV to Firewall                           | 3576     | 3571      | -5     |
| 4   | RSOV to Upper Leading Edge of Right Door   | 3286     | 3282      | -4     |
| 5   | RSOV to Upper Leading Edge of Left Door    | 3279     | 3281      | 2      |
| 6   | RSOV to Lower Leading Edge of Right Door   | 3318     | 3321      | 3      |
| 7   | RSOV to Lower Leading Edge of Left Door    | 3312     | 3315      | 3      |
| 8   | RSOV to Upper Trailing Edge of Right Door  | 2171     | 2166      | -5     |
| 9   | RSOV to Upper Trailing Edge of Left Door   | 2165     | 2168      | 3      |
| 10  | RSOV to Lower Trailing Edge of Right Door  | 2240     | 2240      | 0      |
| 11  | RSOV to Lower Trailing Edge of Left Door   | 2231     | 2234      | 3      |
| 12  | RSOV to Bottom of A-Pillar, Right Side     | 3213     | 3209      | -4     |
| 13  | RSOV to Bottom of A-Pillar, Left Side      | 3209     | 3211      | 2      |
| 14  | RSOV to Firewall, Right Side               | 3576     | 3581      | 5      |
| 15  | RSOV to Firewall, Left Side                | 3592     | 3571      | -21    |
| 16  | RSOV to Steering Column                    | 2764     | 2818      | 54     |
| 17  | Center of Steering Column to A-Pillar      | 445      | 393       | -52    |
| 18  | Center of Steering Column to Headliner     | 563      | 569       | 6      |
| 19  | RSOV to Right Side of Front Bumper         | 4584     | 4324      | -260   |
| 20  | RSOV to Left Side of Front Bumper          | 4583     | 4341      | -242   |
| 21  | Length of Engine Block                     | 253      | 222       | -31    |
| RD  | RSOV to Right Side of Dash Panel           | 2982     | 2981      | -1     |
| CD  | RSOV to Center of Dash Panel               | 2931     | 2932      | 1      |
| LD  | RSOV to Left Side of Dash Panel            | 2983     | 2989      | 6      |

All measurements in millimeters.

**DATA SHEET NO. 13****ACCIDENT INVESTIGATION DIVISION DATA**Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUVNHTSA No.: M20244700Test Program: 56.3 km/h Frontal Impact NCAP TestTest Date: 07/10/2024**VEHICLE INFORMATION**VIN: RLLV1AEB8RH004532Vehicle Size Category: SUVWheelbase (mm): 2946Test Weight (kg): 2705.0**ACCELEROMETER DATA**Accelerometer Locations: Left Rear CrossmemberCal. Procedure/Interval: Vibration Test / 6 monthsIntegration Algorithm: NHTSA StandardImpact Velocity (km/h): 56.06Velocity Change (km/h): 67.2Time of Separation (msec): 66.7Linearity: Good**CRUSH PROFILE**Collision Deformation Classification: 12FDEW2Midpoint of Damage: Vehicle CenterlineDamage Region Length (mm): 1422Impact Mode: Full Frontal

| No. | Measurement Description    | Units | Pre-Test | Post-Test | Crush |
|-----|----------------------------|-------|----------|-----------|-------|
| C1  | Crush Zone 1 at Left Side  | mm    | 4560     | 4339      | 221   |
| C2  | Crush Zone 2 at Left Side  | mm    | 4707     | 4382      | 325   |
| C3  | Crush Zone 3 at Left Side  | mm    | 4728     | 4363      | 365   |
| C4  | Crush Zone 4 at Right Side | mm    | 4728     | 4349      | 379   |
| C5  | Crush Zone 5 at Right Side | mm    | 4704     | 4350      | 354   |
| C6  | Crush Zone 6 at Right Side | mm    | 4586     | 4322      | 264   |
| L   | C1 to C6                   | mm    | 1422     |           |       |

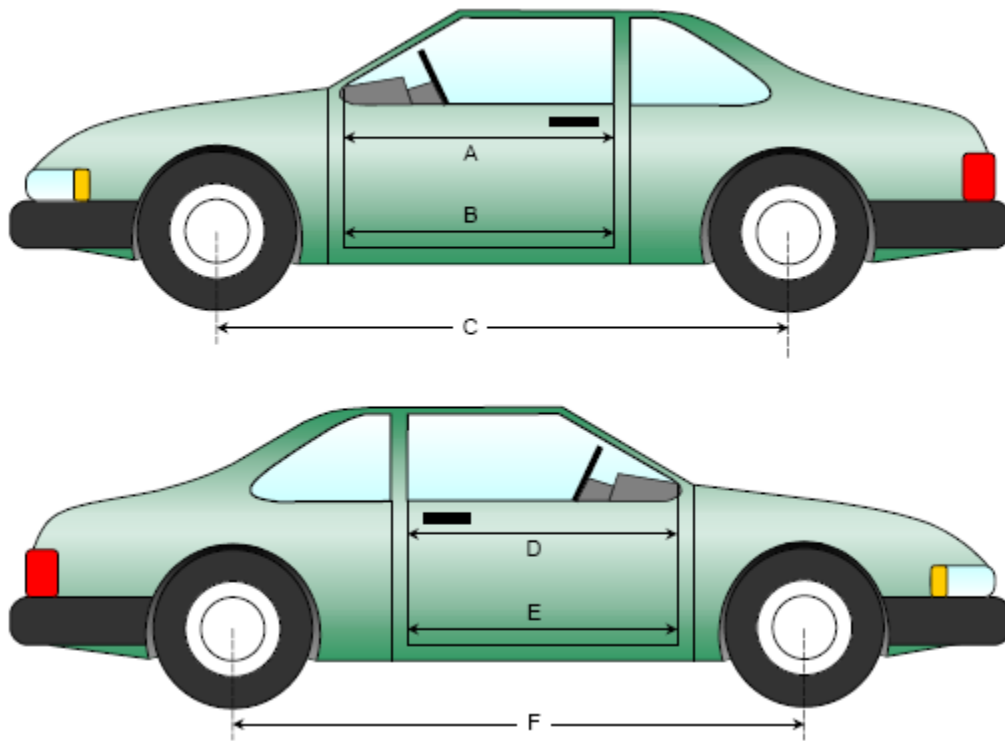


**DATA SHEET NO. 14****VEHICLE INTRUSION MEASUREMENTS**Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUVNHTSA No.: M20244700Test Program: 56.3 km/h Frontal Impact NCAP TestTest Date: 07/10/2024**DOOR OPENING WIDTH**

| Item | Description      | Units | Pre-Test | Post-Test | Change |
|------|------------------|-------|----------|-----------|--------|
| A    | Left Side Upper  | mm    | 1114     | 1114      | 0      |
| B    | Left Side Lower  | mm    | 1081     | 1082      | 1      |
| D    | Right Side Upper | mm    | 1115     | 1116      | 1      |
| E    | Right Side Lower | mm    | 1078     | 1081      | 3      |

**WHEELBASE MEASUREMENTS**

| Item | Description          | Units | Pre-Test | Post-Test | Change |
|------|----------------------|-------|----------|-----------|--------|
| C    | Left Side Wheelbase  | mm    | 2946     | 2894      | -52    |
| F    | Right Side Wheelbase | mm    | 2950     | 2893      | -57    |



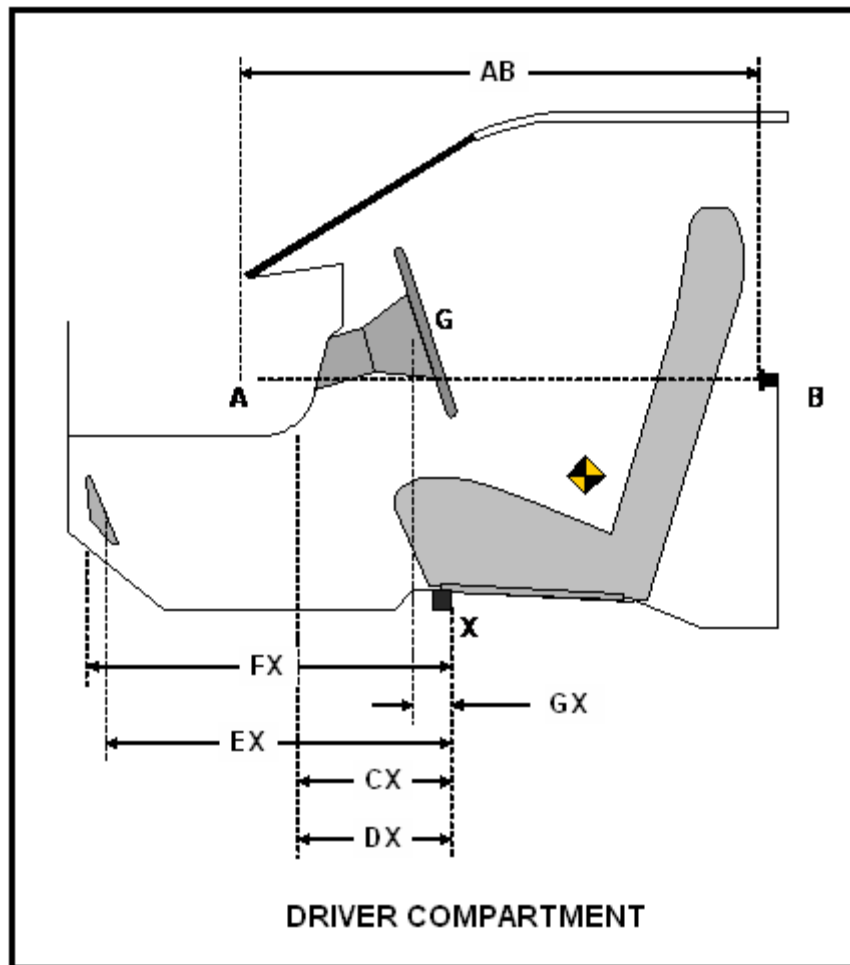
**DATA SHEET NO. 14 ... (CONTINUED)**  
**VEHICLE INTRUSION MEASUREMENTS**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

**DRIVER COMPARTMENT INTRUSION**

| Item | Description                       | Units | Pre-Test | Post-Test | Change |
|------|-----------------------------------|-------|----------|-----------|--------|
| AB   | Door Opening (Inside Window Jam)  | mm    | 965      | 964       | -1     |
| CX   | Left Knee Bolster to X            | mm    | 228      | 236       | 8      |
| DX   | Right Knee Bolster to X           | mm    | 235      | 234       | -1     |
| EX   | Brake Pedal to X                  | mm    | 506      | 572       | 66     |
| FX   | Foot Rest to X                    | mm    | 506      | 497       | -9     |
| GX   | Center of Steering Wheel Hub to X | mm    | -18      | 30        | 48     |

X = Front of Seat Track (Stationary)



## DATA SHEET NO. 15

### SUMMARY OF INDICANT FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

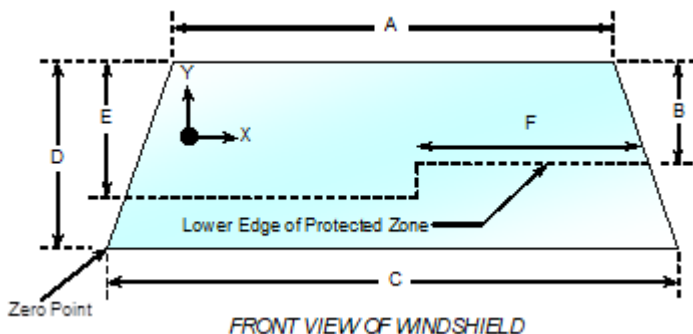
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with an adhesive and rubber molding.

The standard requires that the post-test retention measurement be a minimum of 75% of the pre-test total periphery measurement for vehicles not equipped with occupant passive restraints and 50% for each side of the windshield for vehicles which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 38.3°C

#### WINDSHIELD PERIPHERY MEASUREMENTS

| Measurement | Pre-Test (mm) | Post-Test (mm) | % Retention |
|-------------|---------------|----------------|-------------|
| Left Side   | 2303          | 2303           | 100.0%      |
| Right Side  | 2303          | 2303           | 100.0%      |
| Total       | 4606          | 4606           | 100.0%      |



| Item | Units | Value |
|------|-------|-------|
| A    | mm    | 1377  |
| B    | mm    | 518   |
| C    | mm    | 1601  |
| D    | mm    | 814   |
| E    | mm    | 510   |
| F    | mm    | 575   |

#### AREAS OF PROTECTED ZONE FAILURES

- A.** Provide Coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one that is normally in contact with the windshield.

| X | Y |
|---|---|
|   |   |
|   |   |
|   |   |

- B.** Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

| X | Y |
|---|---|
|   |   |
|   |   |
|   |   |

## DATA SHEET NO. 16

### FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER RESULTS

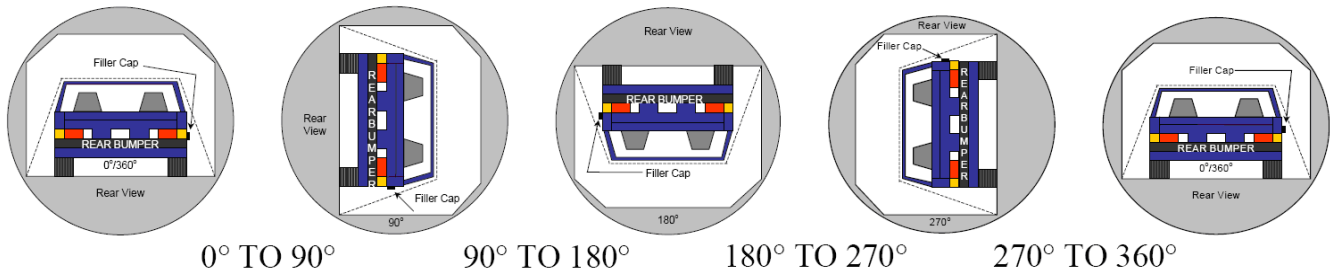
Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

### FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 38.3°C Test Time: 4:14 PM

#### Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: N/A oz.  
(Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: N/A oz.  
(Maximum allowable = 5 oz.)
- C. For the following 25 minutes: N/A oz.  
(Maximum allowable = 1 oz./minute)
- D. Spillage: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard solvent spillage: N/A

#### SOLVENT COLLECTION TIME TABLE IN SECONDS

| Test Phase   | Rotation Time | Hold Time | Total Time |
|--------------|---------------|-----------|------------|
| 0° To 90°    |               |           |            |
| 90° To 180°  |               |           |            |
| 180° To 270° |               |           |            |
| 270° To 360° |               |           |            |

**DATA SHEET NO. 16 ... (CONTINUED)**

**FMVSS 301 BARRIER IMPACT AND STATIC ROLLOVER RESULTS**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700

Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

**FMVSS 301 SPILLAGE TABLE**

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

**SOLVENT SPILLAGE LOCATION TABLE**

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

## DATA SHEET NO. 17

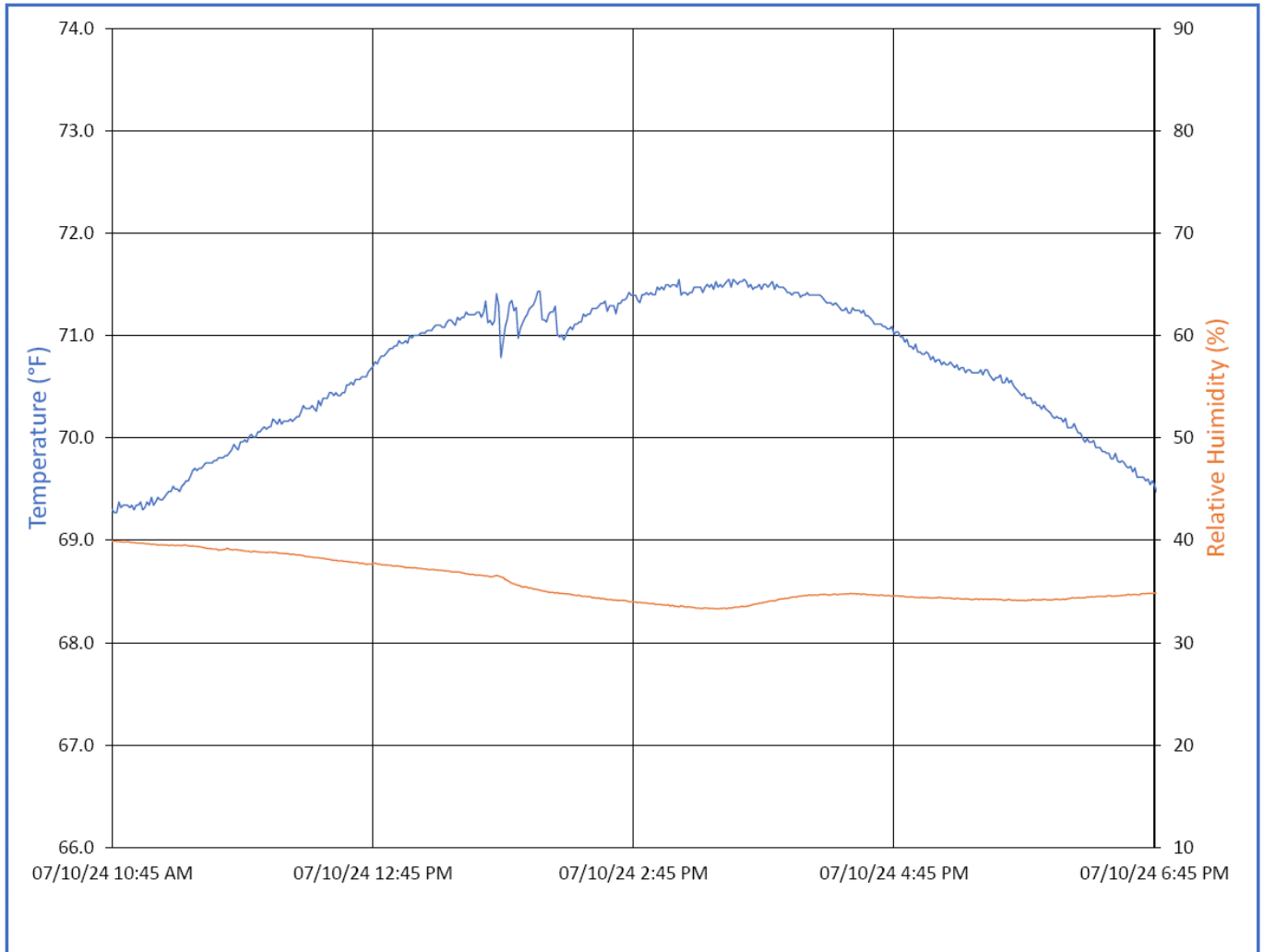
### DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV

NHTSA No.: M20244700

Test Program: 56.3 km/h Frontal Impact NCAP Test

Test Date: 07/10/2024



**DATA SHEET NO. 305-1****GENERAL TEST AND VEHICLE PARAMETER DATA FOR INDICANT FMVSS NO. 305****TESTING**Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024**TEST VEHICLE INFORMATION**

|                            |            |
|----------------------------|------------|
| NHTSA Number               | M20244700  |
| Model Year                 | 2024       |
| Make                       | VinFast    |
| Model                      | VF8 ECO    |
| Body Style                 | 5-Door SUV |
| Body Color                 | Silver     |
| Odometer Reading (km / mi) | 0          |

**DATA FROM VEHICLE'S CERTIFICATION LABEL**

|                     |                                                    |
|---------------------|----------------------------------------------------|
| Manufactured By     | VinFast Trading and Production Joint Stock Company |
| Date of Manufacture | Mar-23                                             |
| VIN                 | RLLV1AEB8RH004532                                  |
| GVWR (kg)           | 2905                                               |

**ELECTRIC VEHICLE PROPULSION SYSTEM**

|                                                              |                                     |
|--------------------------------------------------------------|-------------------------------------|
| Type of Electrical Vehicle                                   | Electric                            |
| Propulsion Battery Type                                      | Lithium-Ion                         |
| Nominal Voltage (V)                                          | 400                                 |
| Automatic Propulsion Battery Disconnect                      | Yes                                 |
| Physical Location of Automatic Propulsion Battery Disconnect | Pyrofuse Internal of BMS/HV Battery |
| Auxiliary Battery Type                                       | 12 V Lead-Acid                      |

**PROPULSION BATTERY SYSTEM DATA**

|                                                            |                           |
|------------------------------------------------------------|---------------------------|
| Electrolyte Fluid Type                                     | E345                      |
| Electrolyte Fluid Specific Gravity (g/cc)                  | 16%                       |
| Electrolyte Fluid Kinematic Viscosity (mm <sup>2</sup> /s) | 4.00                      |
| Electrolyte Fluid Color                                    | Colorless and transparent |
| Propulsion Battery Coolant Type                            | 50% Glycol 50% water      |
| Propulsion Battery Coolant Color                           | Light Green               |
| Propulsion Battery Coolant Specific Gravity                |                           |

**LOCATION OF BATTERY MODULES**

|          |                               |
|----------|-------------------------------|
| Location | Outside Passenger Compartment |
|----------|-------------------------------|

**DATA SHEET NO. 305-1...(CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA FOR INDICANT FMVSS NO. 305**

**TESTING**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700

Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

*For all battery types:*

| Description                                 | Volts |
|---------------------------------------------|-------|
| Minimum Operating Voltage                   | 270.0 |
| Maximum Operating Voltage                   | 469.8 |
| 95% of Maximum Operating Voltage            | 446.3 |
|                                             |       |
| Test Voltage (no less than 95% of Maximum)* | 446.3 |

*For batteries that are rechargeable ONLY by an energy source on the vehicle:*

| Description                                                                      | Volts |
|----------------------------------------------------------------------------------|-------|
| Minimum Operating Voltage                                                        |       |
| Maximum Operating Voltage                                                        |       |
|                                                                                  |       |
| Test Voltage (Maximum practicable state of charge within normal operating range) |       |



**DATA SHEET NO. 305-2**

**PRE-IMPACT DATA FOR INDICANT FMVSS NO. 305 TESTING**

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

**VEHICLE CHASSIS GROUND POINT(S) LOCATION(S)**

DETAILS OF VEHICLE CHASSIS GROUND POINT(S) AND LOCATION(S):

The FMVSS 305 chassis ground point is located at the negative battery terminal.

---

**PROPULSION BATTERY SYSTEM**

DETAILS OF PROPULSION BATTERY COMPONENTS:

The physical location of automatic propulsion battery disconnect is the contactor in the BDU, which is inside the battery pack.

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**DATA SHEET NO. 305-3****PRE-IMPACT ELECTRICAL ISOLATION MEASUREMENTS AND CALCULATIONS FOR  
INDICANT FMVSS NO. 305 TESTING**Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024**VOLTMETER INFORMATION**

|                          |               |
|--------------------------|---------------|
| Make                     | Fluke         |
| Model                    | 87V MAX       |
| Serial No.               | 50790043      |
| Internal Impedance Value | 50 M $\Omega$ |
| Resolution               | 0.001         |

**HV BATTERY ELECTRICAL ISOLATION DATA**

| Code      | Units      | Threshold | Pre-Test  |
|-----------|------------|-----------|-----------|
| $V_b$     | V          |           | 452.40    |
| $V_1$     | V          |           | 308.70    |
| $V_2$     | V          |           | 308.80    |
| $R_o$     | $\Omega$   |           | 194,000   |
| $V_1'$    | V          |           | 12.50     |
| $V_2'$    | V          |           | 59.80     |
| $R_{i1}$  | $\Omega$   |           | 9,195,537 |
| $R_{i2}$  | $\Omega$   |           | 1,615,324 |
| $R_i$     | $\Omega$   |           | 1,615,324 |
| $R_i/V_b$ | $\Omega/V$ | 500       | 3,571     |

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| Is the Measured Electrical Isolation Value $\geq$ 500 $\Omega/V$ ? | Yes |
|--------------------------------------------------------------------|-----|

**DATA SHEET NO. 305-4****POST-IMPACT DATA FOR INDICANT FMVSS NO. 305 TESTING**Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024**VOLTMETER INFORMATION**

|                          |          |
|--------------------------|----------|
| Make                     | Fluke    |
| Model                    | 87V MAX  |
| Serial No.               | 50790043 |
| Internal Impedance Value | 50 MΩ    |
| Resolution               | 0.001    |

**HV BATTERY ELECTRICAL ISOLATION DATA**

| Code      | Units | Threshold | Post-Test |
|-----------|-------|-----------|-----------|
| $V_b$     | V     |           | 5.140     |
| $V_1$     | V     |           | 10.640    |
| $V_2$     | V     |           | 0.052     |
| $R_o$     | Ω     |           | 194,000   |
| $V_1'$    | V     |           | 10.500    |
| $V_2'$    | V     |           | 0.051     |
| $R_{i1}$  | Ω     |           | 2,599     |
| $R_{i2}$  | Ω     |           | 782,145   |
| $R_i$     | Ω     |           | 2,599     |
| $R_i/V_b$ | Ω/V   | 500       | 506       |

|                                                                  |     |
|------------------------------------------------------------------|-----|
| Is the Measured Electrical Isolation Value $\geq 500 \Omega/V$ ? | Yes |
| Is $V_1$ , $V_2$ , and $V_b \leq 60$ VDC?                        | Yes |

**PROPULSION BATTERY SYSTEM COMPONENTS**

Has the propulsion battery module moved within the passenger compartment?

NoDescribe any movement: There was no movement of the propulsion battery within the passenger compartment.

Has an outside propulsion battery component intruded into the passenger compartment?

NoDescribe any intrusion: There was no intrusion of the outside propulsion battery into the passenger compartment.

Is there propulsion battery electrolyte spillage visible in the passenger compartment?

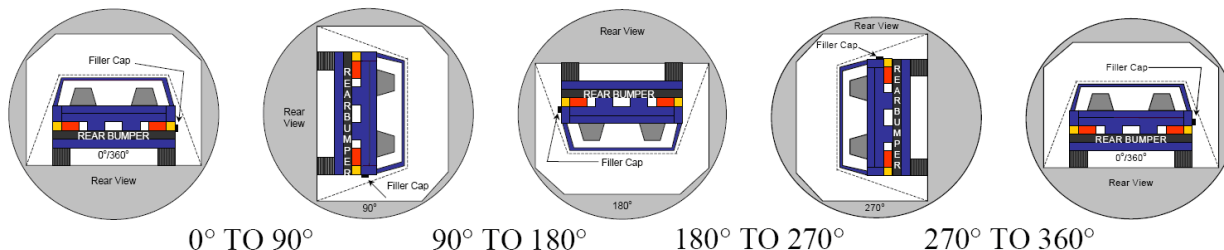
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## DATA SHEET NO. 305-5

### STATIC ROLLOVER TEST DATA FOR INDICANT FMVSS NO. 305 TESTING

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700

Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024



### PROPULSION BATTERY ELECTROLYTE COLLECTION TIME PERIOD

| Test Phase   | Rotation Time | Hold Time | Total Time |
|--------------|---------------|-----------|------------|
| 0° To 90°    | 80            | 300       | 380        |
| 90° To 180°  | 81            | 300       | 381        |
| 180° To 270° | 80            | 300       | 380        |
| 270° To 360° | 82            | 300       | 382        |

### TEST VEHICLE PROPULSION BATTERY ELECTROLYTE SPILLAGE

**NOTE:** The maximum allowable Propulsion Battery Electrolyte Spillage is 5.0 Liters.

| Test Phase   | Propulsion Battery Electrolyte Spillage (L) | Spillage Location |
|--------------|---------------------------------------------|-------------------|
| 0° To 90°    | 0.0                                         | N/A               |
| 90° To 180°  | 0.0                                         | N/A               |
| 180° To 270° | 0.0                                         | N/A               |
| 270° To 360° | 0.0                                         | N/A               |

|                                                                                      |                      |
|--------------------------------------------------------------------------------------|----------------------|
| Is the Total Propulsion Battery Electrolyte Spillage Greater Than 5.0 Liters?        | No spillage occurred |
| Is the Propulsion Battery Electrolyte Spillage Visible in the Passenger Compartment? | N/A                  |

# DATA SHEET NO. 305-5 (CONTINUED...)

## STATIC ROLLOVER TEST DATA FOR INDICANT FMVSS NO. 305 TESTING

Test Vehicle: 2024 VinFast VF8 ECO 5-Door SUV NHTSA No.: M20244700  
 Test Program: 56.3 km/h Frontal Impact NCAP Test Test Date: 07/10/2024

### VOLTMETER INFORMATION

|                                         |          |
|-----------------------------------------|----------|
| Make                                    | Fluke    |
| Model                                   | 87V MAX  |
| Serial No.                              | 50790043 |
| Internal Impedence Value                | 50 MΩ    |
| Nominal Propulsion Battery Voltage (Vb) | 0.001    |

### HV BATTERY ELECTRICAL ISOLATION MEASUREMENTS AND CALCULATIONS

| Code                           | Units | Threshold | 0°          | 90°         | 180°    | 270°        | 360°        |
|--------------------------------|-------|-----------|-------------|-------------|---------|-------------|-------------|
| V <sub>b</sub>                 | V     |           | 22.150      | 8.250       | 3.140   | 0.096       | 0.495       |
| V <sub>1</sub>                 | V     |           | 0.010       | 0.011       | 0.127   | 0.017       | 0.005       |
| V <sub>2</sub>                 | V     |           | 0.013       | 0.010       | 0.043   | 0.024       | 0.013       |
| R <sub>o</sub>                 | Ω     |           | 194,000     | 194,000     | 194,000 | 194,000     | 194,000     |
| V <sub>1</sub> '               | V     |           | 0.000       | 0.000       | 0.028   | 0.000       | 0.000       |
| V <sub>2</sub> '               | V     |           | 0.000       | 0.000       | 0.028   | 0.000       | 0.000       |
| R <sub>i1</sub>                | Ω     |           | *Zero Volts | *Zero Volts | 918,172 | *Zero Volts | *Zero Volts |
| R <sub>i2</sub>                | Ω     |           | *Zero Volts | *Zero Volts | 410,880 | *Zero Volts | *Zero Volts |
| R <sub>i</sub>                 | Ω     |           | *Zero Volts | *Zero Volts | 410,880 | *Zero Volts | *Zero Volts |
| R <sub>i</sub> /V <sub>b</sub> | Ω/V   | 500       | *Zero Volts | *Zero Volts | 130,854 | *Zero Volts | *Zero Volts |

\* "Zero Volts" is considered as being compliant.

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| Is the Measured Electrical Isolation Value ≥ 500 Ω/V?             | Yes |
| Is V <sub>1</sub> , V <sub>2</sub> , and V <sub>b</sub> ≤ 60 VDC? | Yes |

**APPENDIX A**  
**PHOTOGRAPHIC DOCUMENTATION**

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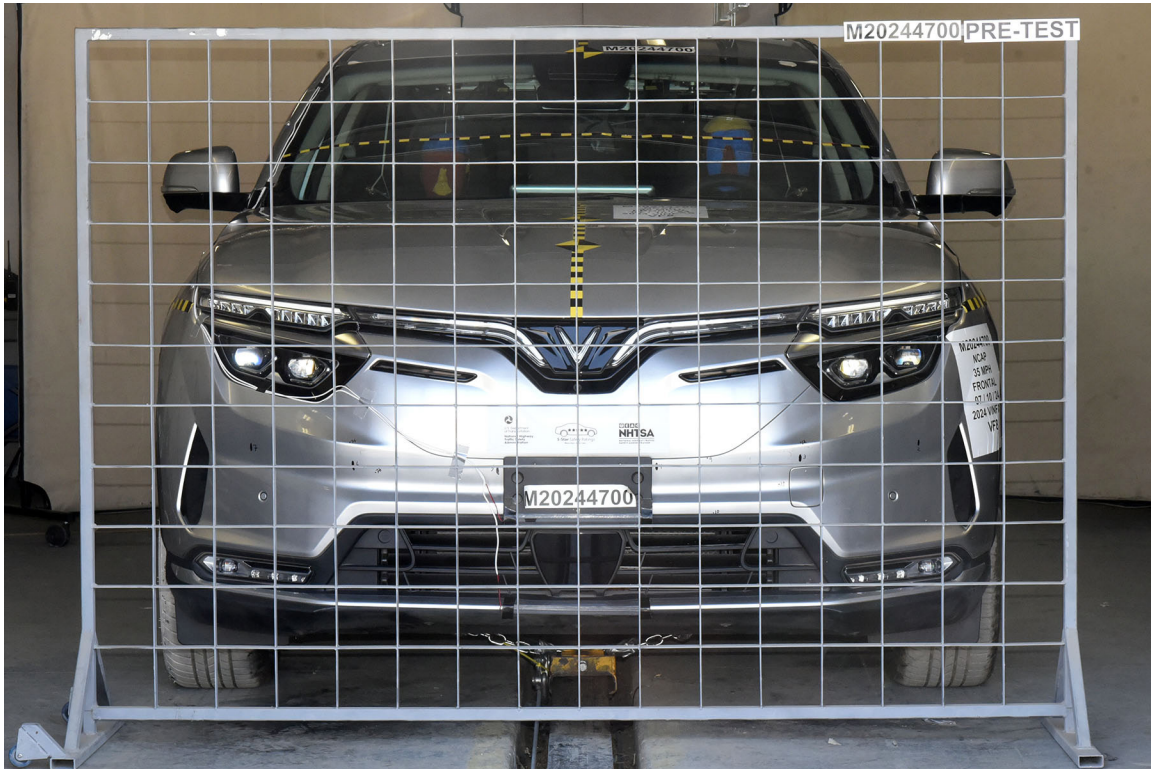


FIGURE 1. Load Cell Location

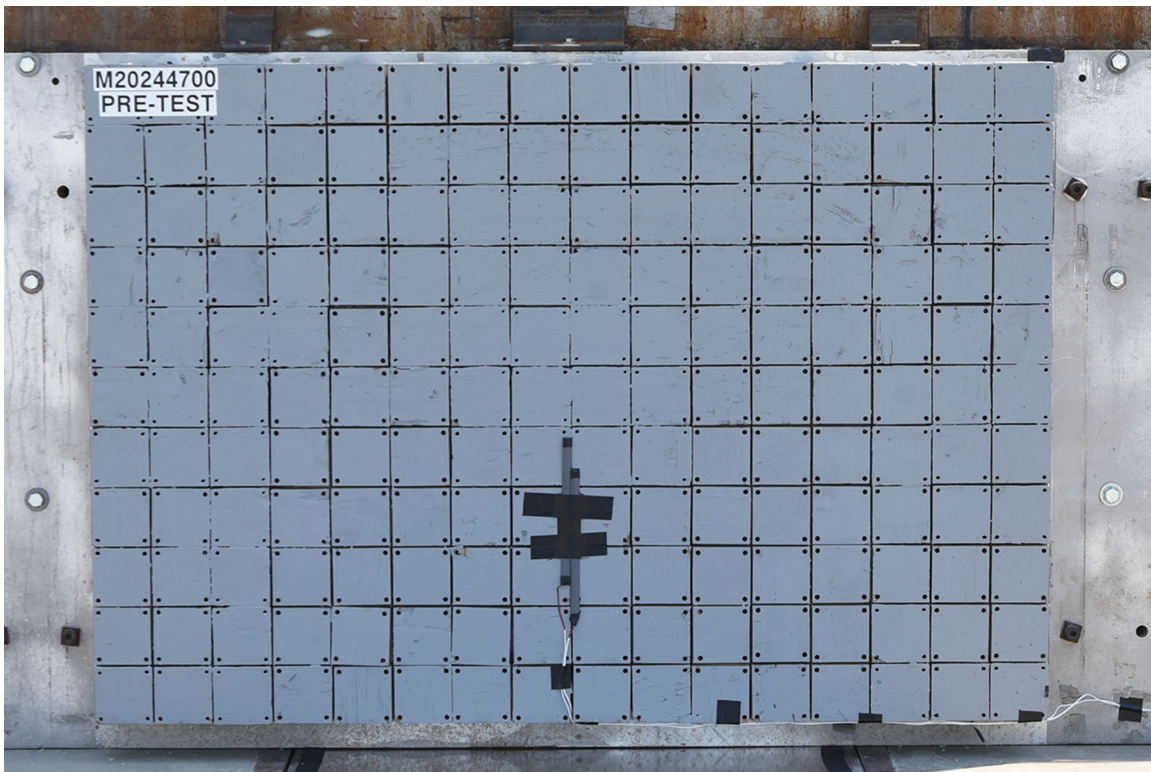


FIGURE 2. Pre-Test Load Cell Wall



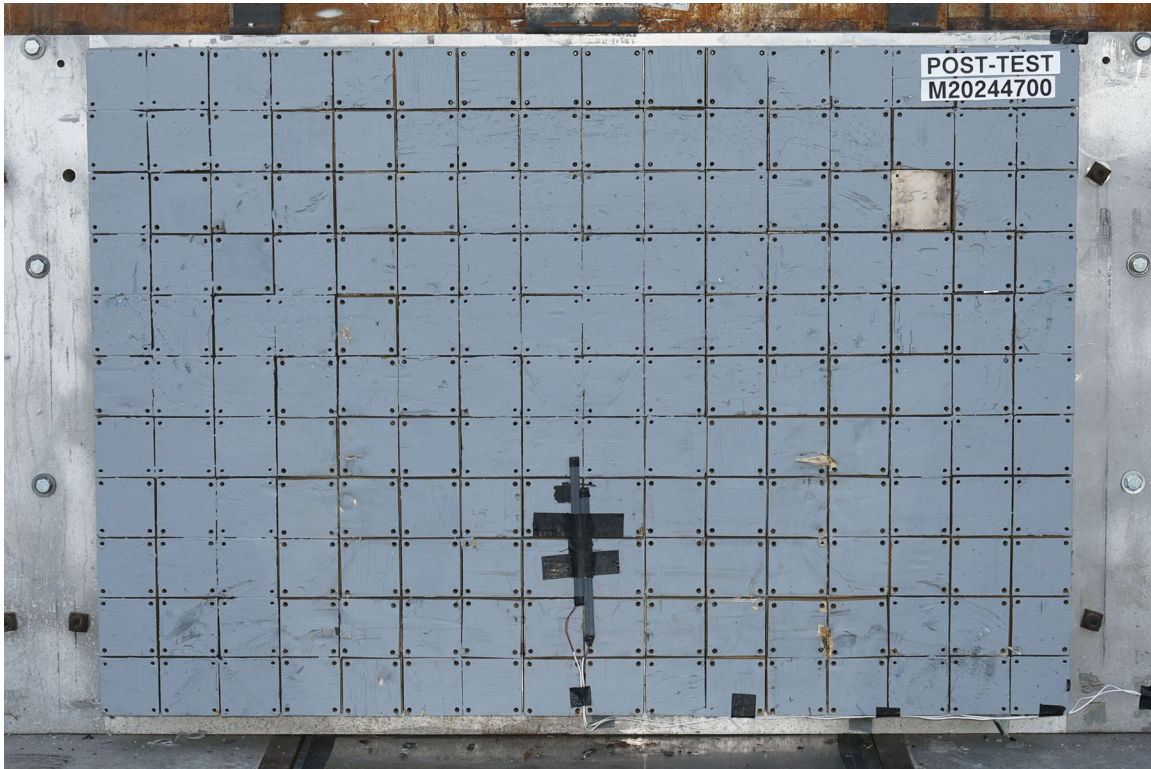


FIGURE 3. Post-Test Load Cell Wall



FIGURE 4. Manufacturer's Label



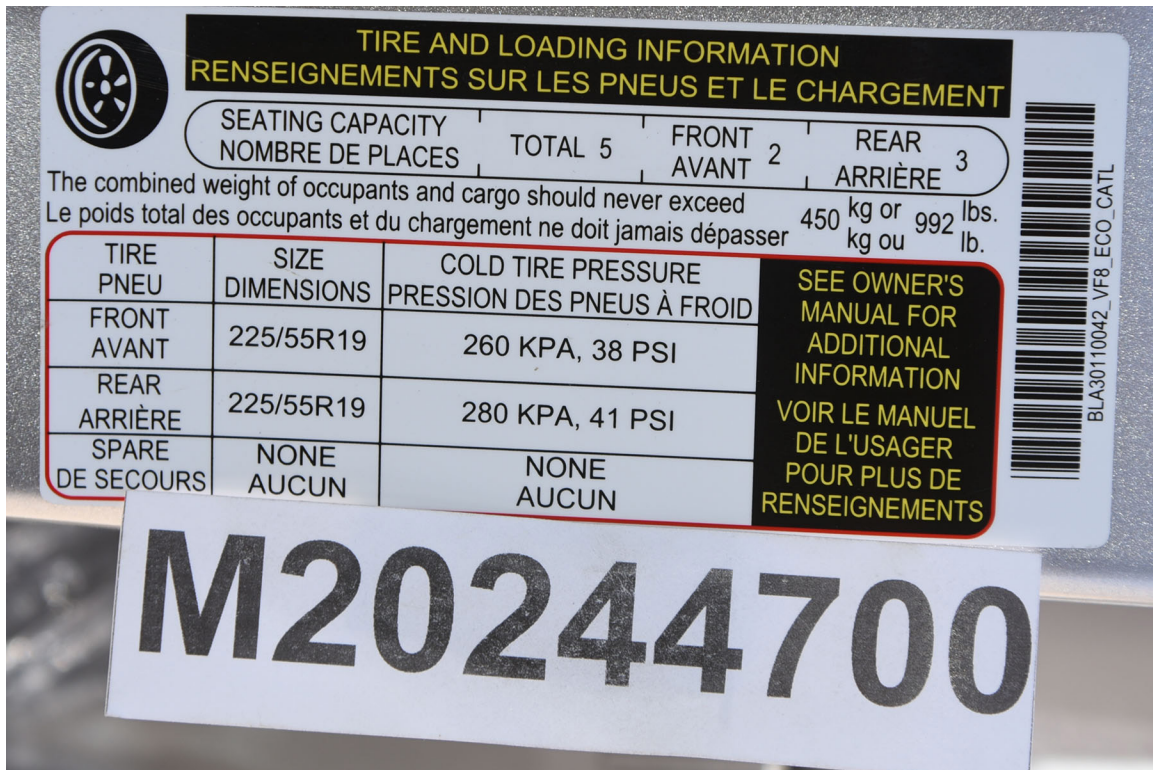


FIGURE 5. Tire Placard



FIGURE 6. 2024 Vinfast VF8 ECO Frontal As Delivered



FIGURE 7. Left Rear 3/4 View, As Received



FIGURE 8. Pre-Test Front View of Test Vehicle





FIGURE 9. Post-Test Front View of Test Vehicle



FIGURE 10. Pre-Test Left View of Test Vehicle



FIGURE 11. Post-Test Left View of Test Vehicle



FIGURE 12. Pre-Test Right View of Test Vehicle





FIGURE 13. Post-Test Right View of Test Vehicle



FIGURE 14. Pre-Test Right Front 3/4 View



FIGURE 15. Post-Test Right Front 3/4 View



FIGURE 16. Pre-Test Left Rear 3/4 View





FIGURE 17. Post-Test Left Rear 3/4 View



FIGURE 18. Pre-Test Windshield View





FIGURE 19. Post-Test Windshield View

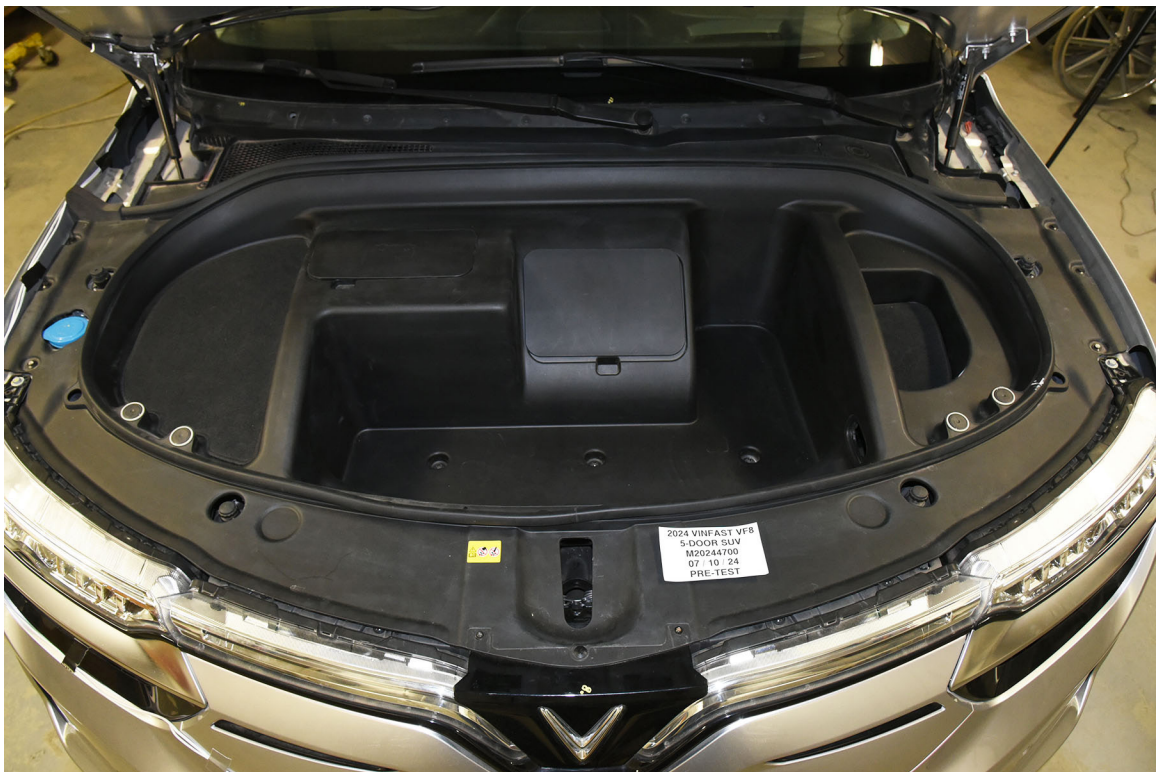


FIGURE 20. Pre-Test Engine Compartment View





FIGURE 21. Post-Test Engine Compartment View



FIGURE 22. Pre-Test Fuel Filler Cap View



FIGURE 23. Post-Test Fuel Filler Cap View

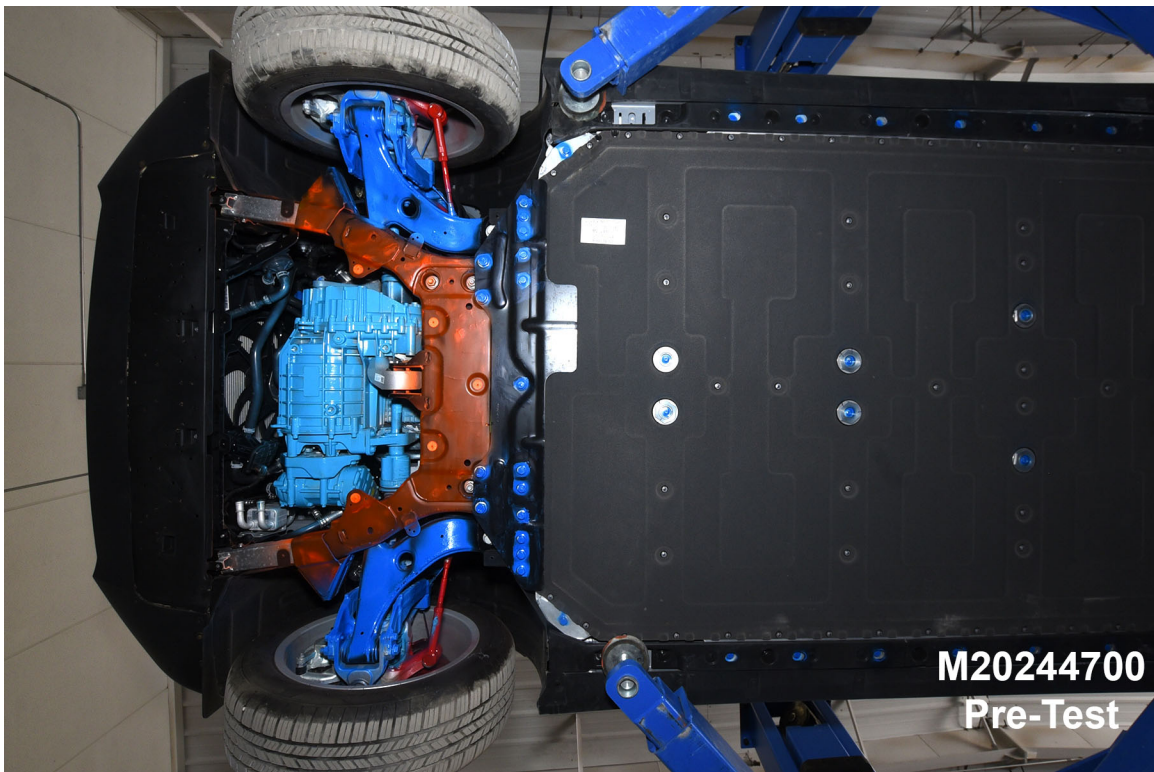


FIGURE 24. Pre-Test Front Underbody View



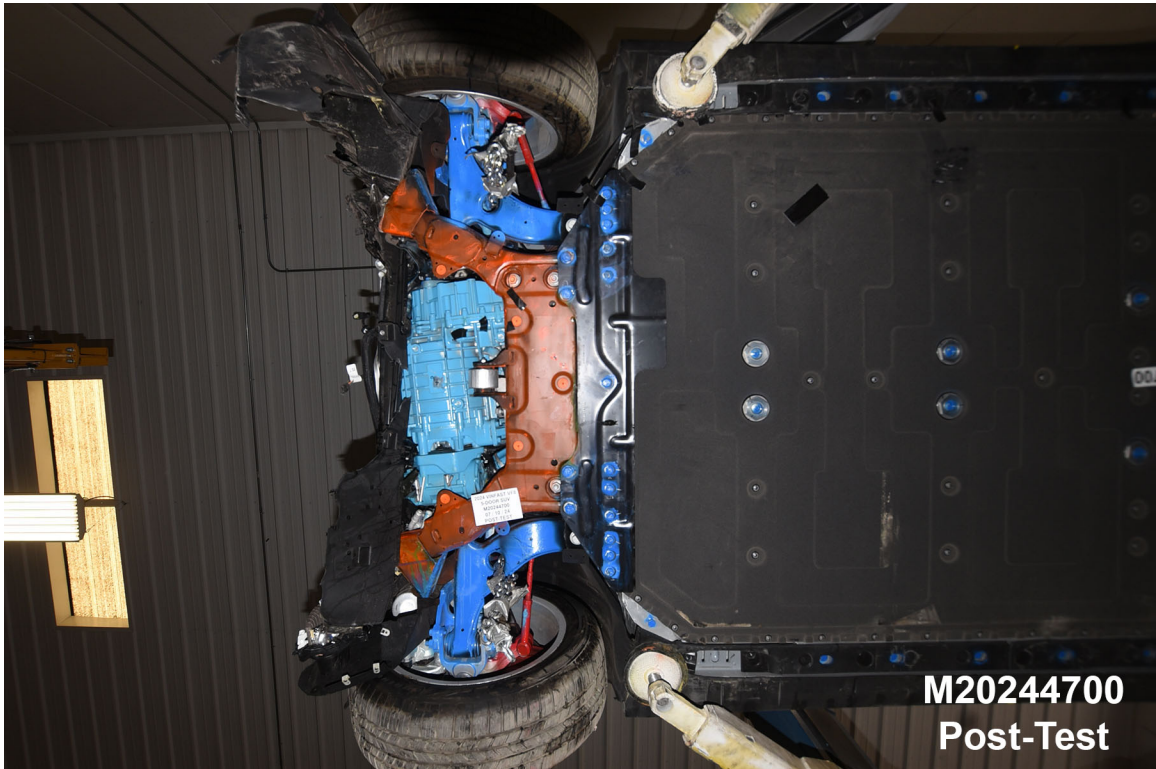


FIGURE 25. Post-Test Front Underbody View

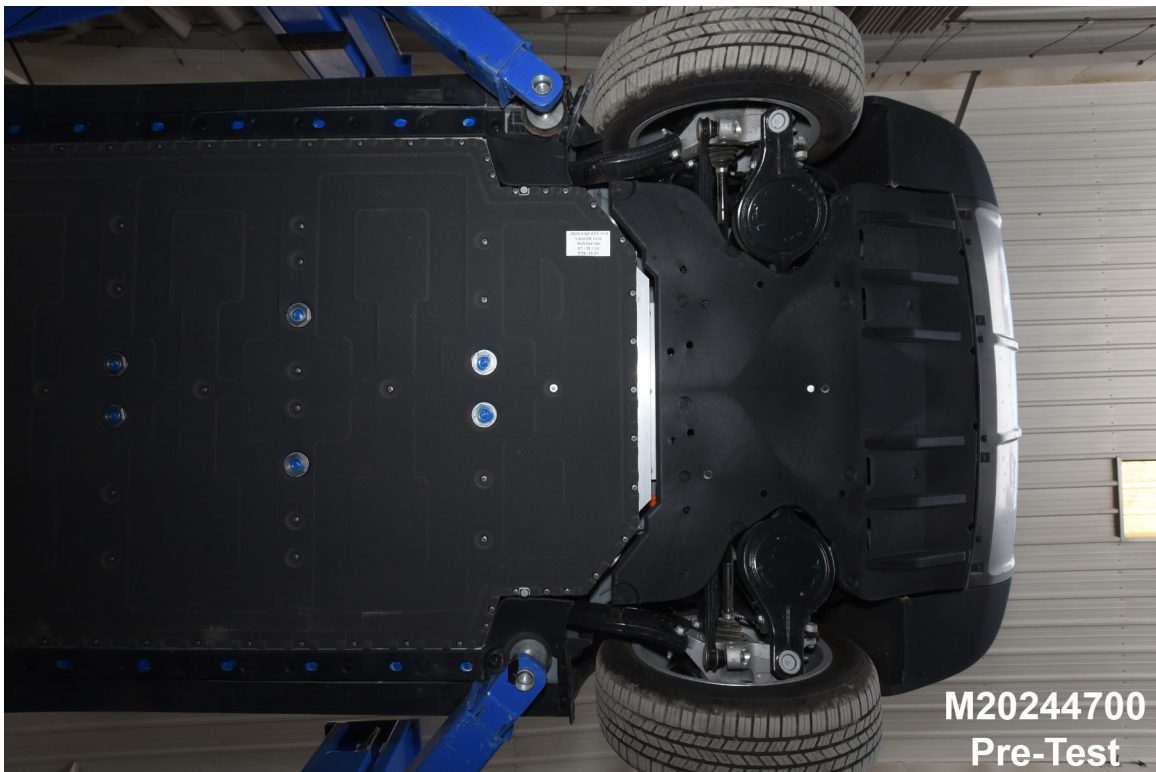


FIGURE 26. Pre-Test Rear Underbody View



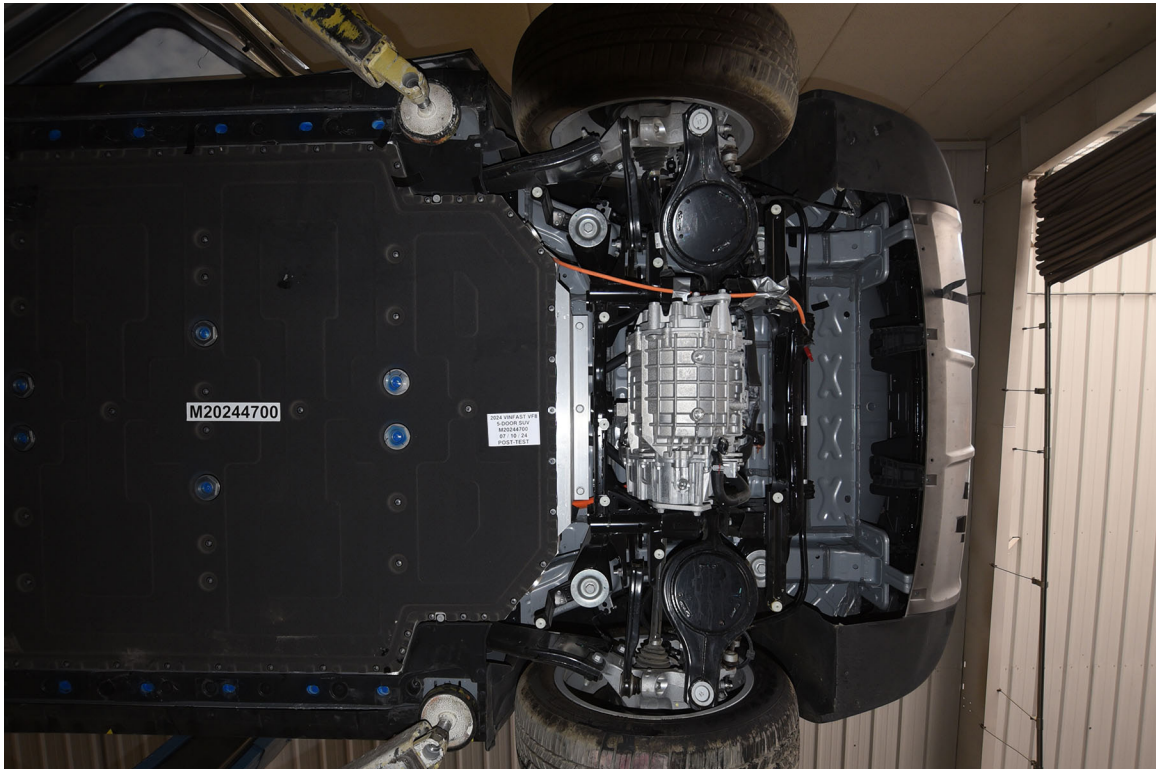


FIGURE 27. Post-Test Rear Underbody View



FIGURE 28. Pre-Test Dummy Cable Routing



FIGURE 29. Post-Test Dummy Cable Routing



FIGURE 30. Pre-Test Driver Dummy Front View





FIGURE 31. Post-Test Driver Dummy Front View



FIGURE 32. Pre-Test Driver Dummy Window View



FIGURE 33. Post-Test Driver Dummy Window View



FIGURE 34. Pre-Test Driver Dummy and Vehicle Interior View





FIGURE 35. Post-Test Driver Dummy and Vehicle Interior View



FIGURE 36. Pre-Test Driver's Seat Fore-Aft Markings





FIGURE 37. Post-Test Driver's Seat Fore-Aft Markings



FIGURE 38. Pre-Test View of Belt Anchorage for Driver Dummy



FIGURE 39. Post-Test View of Belt Anchorage for Driver Dummy



FIGURE 40. Pre-Test View of Belt Buckle and Latch Plate for Driver Dummy





FIGURE 41. Post-Test View of Belt Buckle and Latch Plate for Driver Dummy

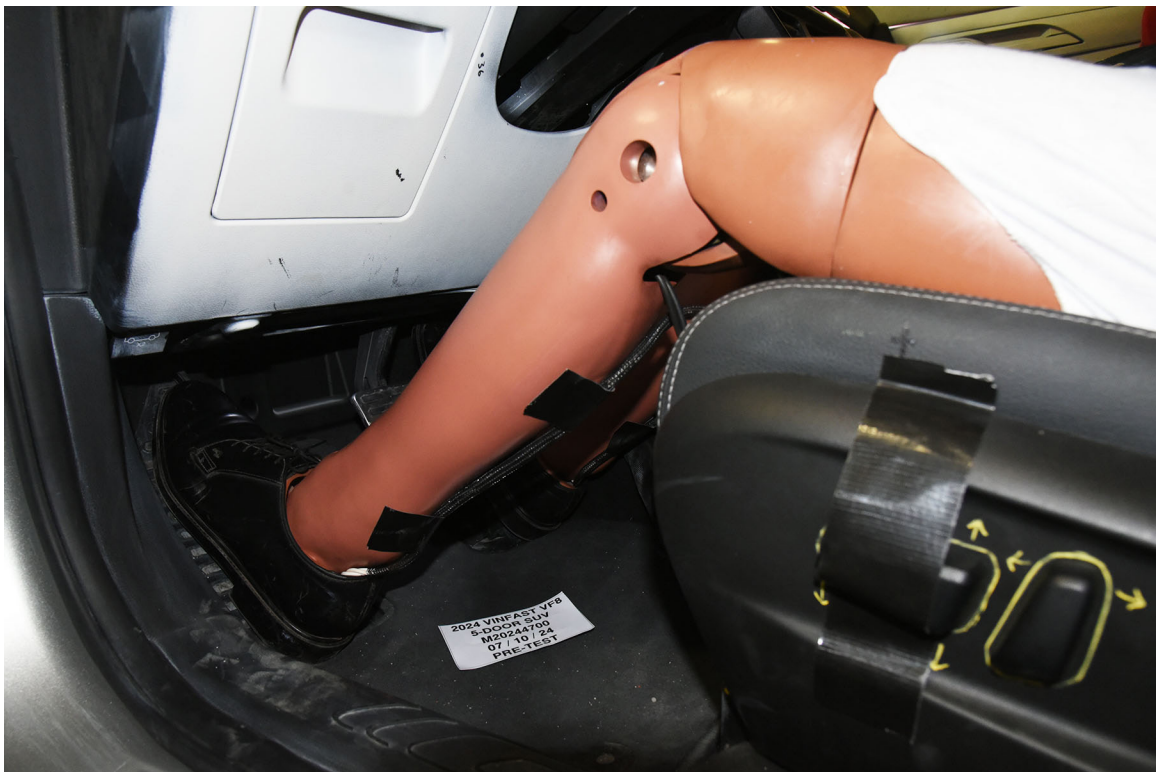


FIGURE 42. Pre-Test Driver Dummy Feet



FIGURE 43. Post-Test Driver Dummy Feet



FIGURE 44. Pre-Test Driver's Side Knee Bolster





FIGURE 45. Post-Test Driver's Side Knee Bolster



FIGURE 46. Pre-Test Driver's Side Floorpan





FIGURE 47. Post-Test Driver's Side Floorpan



FIGURE 48. Post-Test Driver Dummy Face

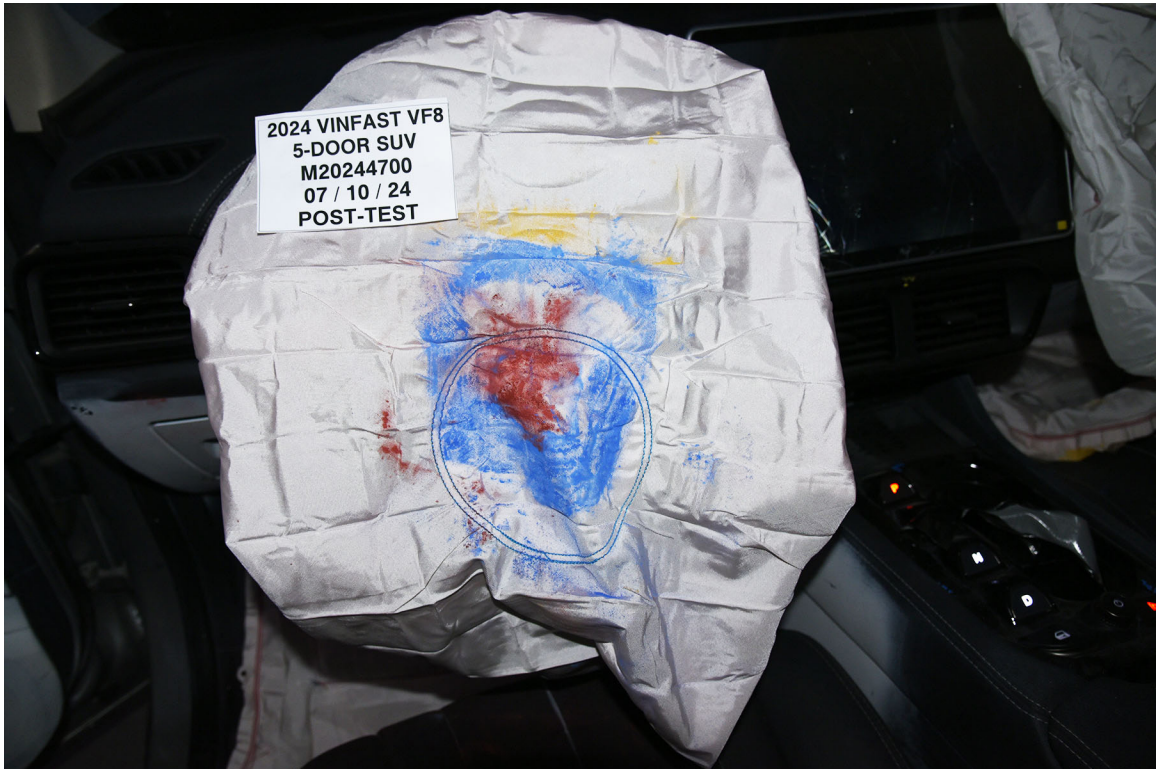


FIGURE 49. Post-Test Driver Dummy Contact with Air Bag



FIGURE 50. Post-Test Driver Dummy Contact with Headrest





FIGURE 50a. Post-Test Driver Dummy Contact with Knee Air Bag



FIGURE 51. Pre-Test View of the Steering Wheel



FIGURE 52. Post-Test View of the Steering Wheel



FIGURE 53. Pre-Test Passenger Dummy Front View





FIGURE 54. Post-Test Passenger Dummy Front View



FIGURE 55. Pre-Test Passenger Dummy Window View



FIGURE 56. Post-Test Passenger Dummy Window View



FIGURE 57. Pre-Test Passenger Dummy and Vehicle Interior View





FIGURE 58. Post-Test Passenger Dummy and Vehicle Interior View



FIGURE 59. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 60. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 61. Pre-Test View of Belt Anchorage for Passenger Dummy





FIGURE 62. Post-Test View of Belt Anchorage for Passenger Dummy



FIGURE 63. Pre-Test View of Belt Buckle and Latch Plate for Passenger Dummy



FIGURE 64. Post-Test View of Belt Buckle and Latch Plate for Passenger Dummy



FIGURE 65. Pre-Test Passenger Dummy Feet





FIGURE 66. Post-Test Passenger Dummy Feet



FIGURE 67. Pre-Test Passenger's Side Knee Bolster



FIGURE 68. Post-Test Passenger's Side Knee Bolster



FIGURE 69. Pre-Test Passenger's Side Floorpan





FIGURE 70. Post-Test Passenger's Side Floorpan



FIGURE 71. Post-Test Passenger Dummy Face



FIGURE 72. Post-Test Passenger Dummy Contact with Air Bag

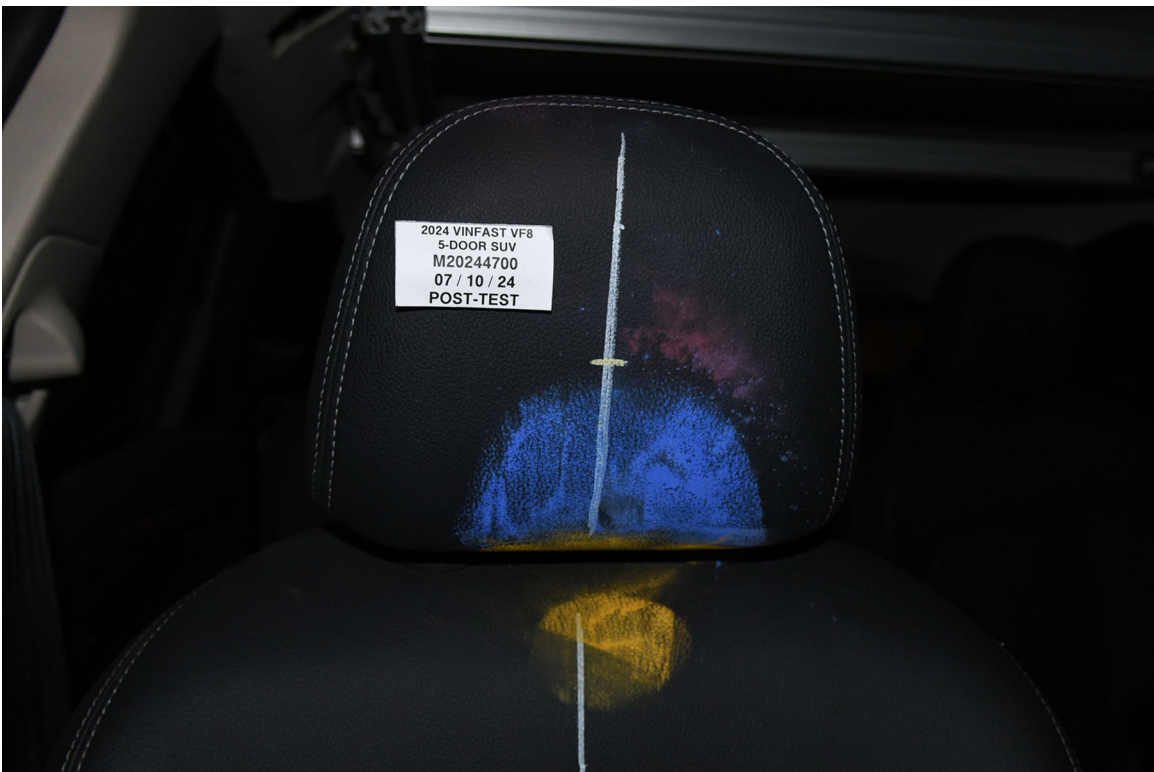


FIGURE 73. Post-Test Passenger Dummy Contact with Headrest





FIGURE 73a. Post-Test Passenger Dummy Contact with Knee Air Bag

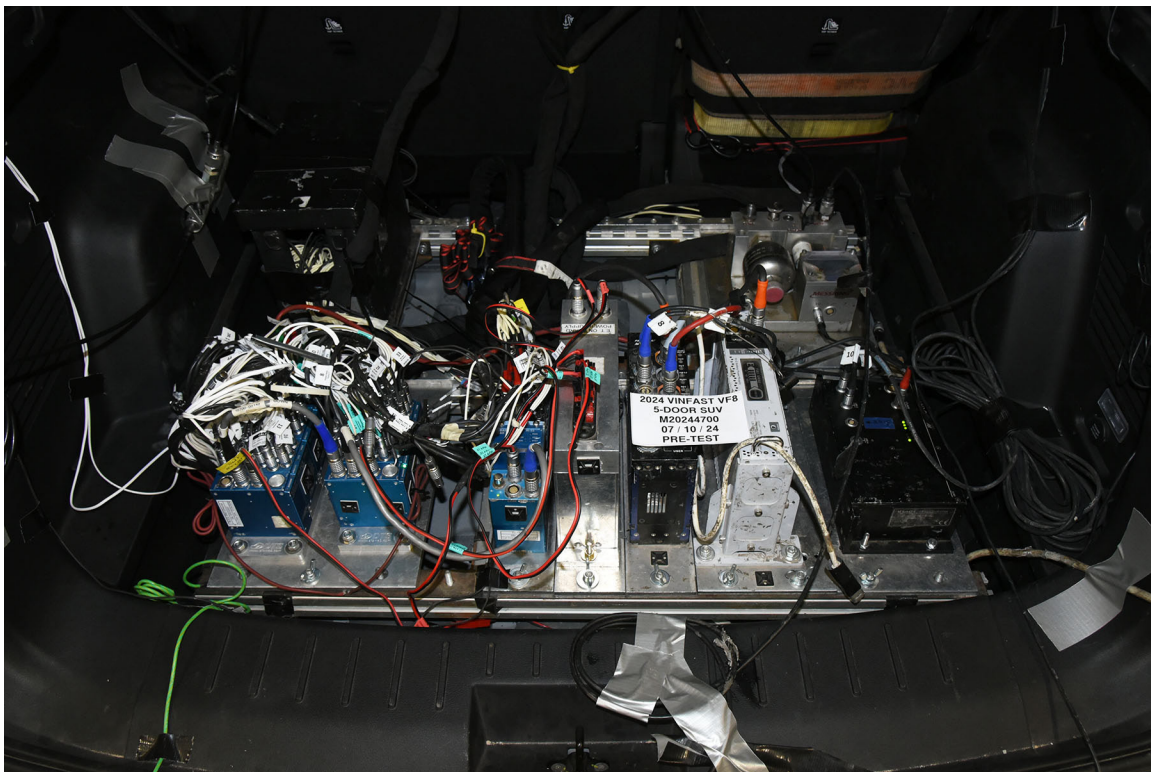


FIGURE 74. Photograph of Ballast Installed in Vehicle



# NO STODDARD SOLVENT SPILLAGE

FIGURE 75. Post-Test Stoddard Solvent Spillage Location View

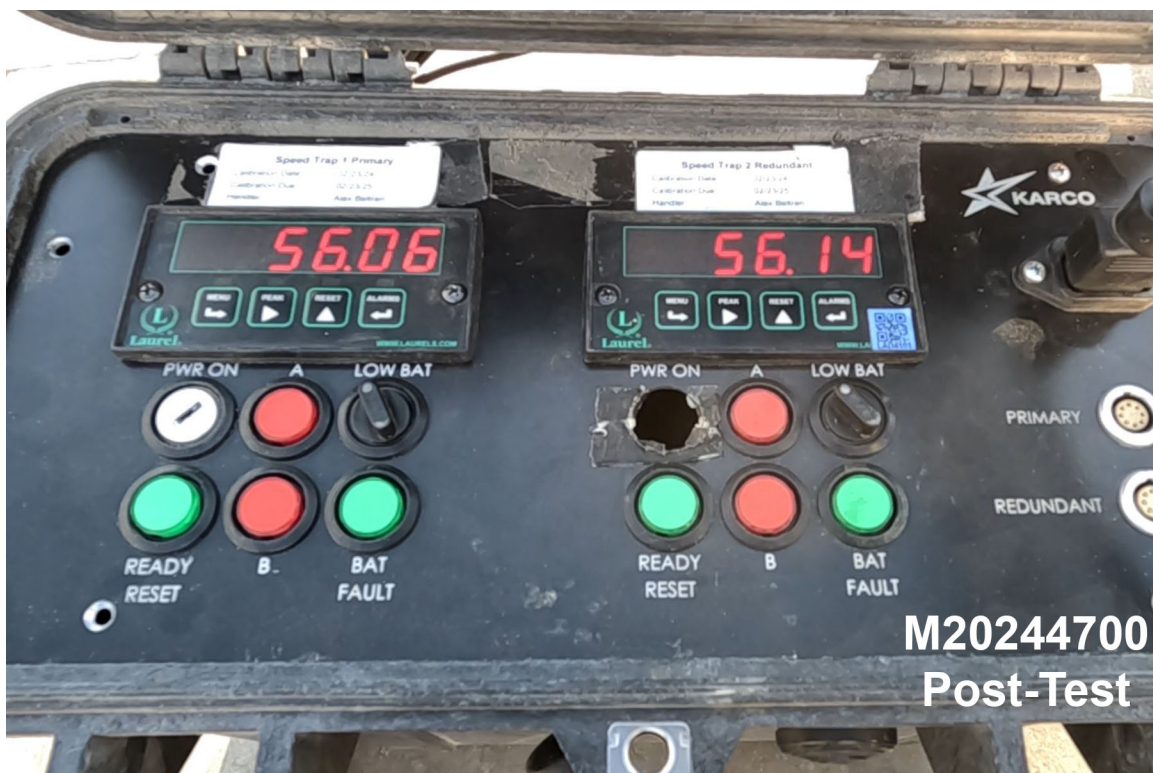


FIGURE 76. Post-Test Speed Trap Read-Out



FIGURE 77. Vehicle at 0° on Static Rollover Device



FIGURE 78. Vehicle at 90° on Static Rollover Device





FIGURE 79. Vehicle at 180° on Static Rollover Device

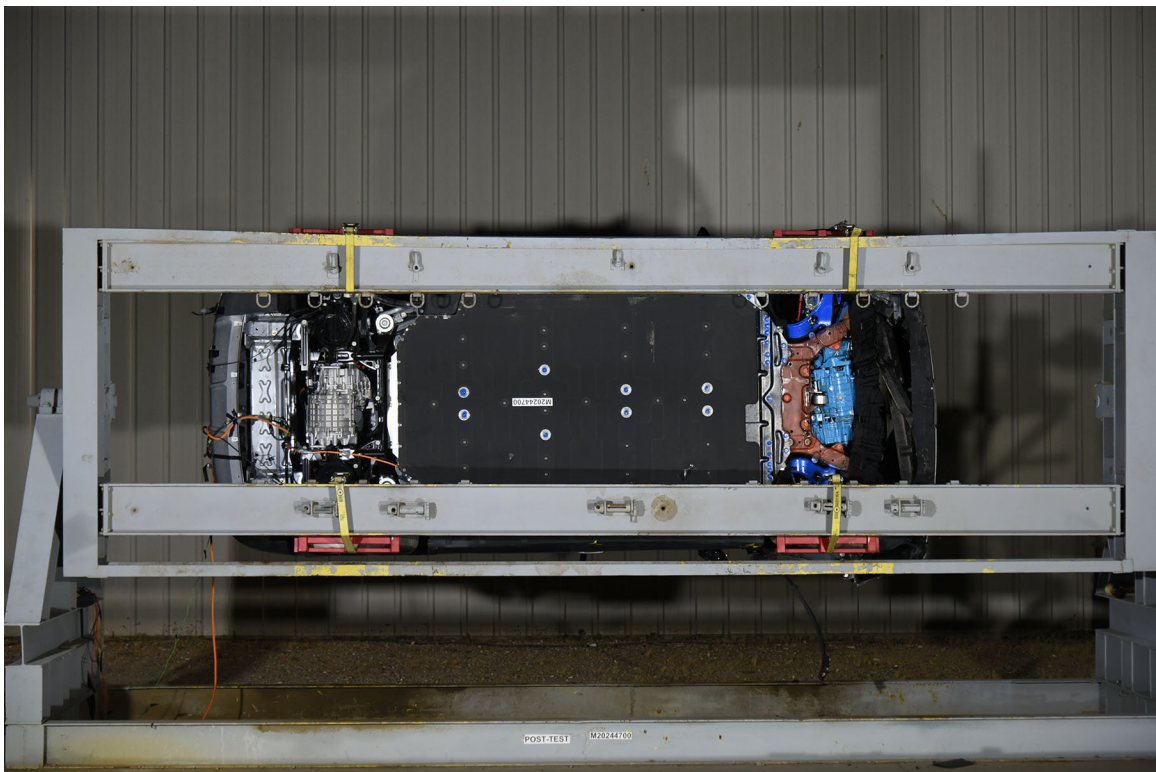


FIGURE 80. Vehicle at 270° on Static Rollover Device





FIGURE 81. Vehicle at 360° on Static Rollover Device



FIGURE 82. 2024 Vinfast VF8 ECO Frontal Impact Event

# VF 8 Eco

Vehicle Identification Number: RLLV1AEB8RH04532

2024

87.7kWh Battery

Exterior: De Silver  
Interior: Granite Black

## STANDARD EQUIPMENT

### TECHNICAL

- Dual Motor with AWD
- 240 HP
- 240 ft-lb torque
- New vehicle limited warranty: 10 years / 125,000 miles (whichever occurs first)
- High-voltage battery limited warranty: 10 years / unlimited miles (whichever occurs first)
- Limited warranty against corrosion perforation: 12 years / unlimited miles (whichever occurs first)
- \* See owners manual or VinFast Auto US for important information and limitations

### SAFETY

- Airbag protection system with 11 airbags
- Anti-lock braking system
- Electronic brakeforce distribution
- Brake Assist
- Electronic stability control
- Traction control system
- Hillstart assist control
- Rear parking sensors
- Rear cross-traffic alert
- Autobrake (forward collision warning)
- Keyless entry/exit
- The pressure monitoring system

### FACTORY-INSTALLED OPTIONS

- 800 MSRP: \$44,000.00
- De Silver: \$750.00
- Granite Black: \$0.00
- 19 inches: \$0.00
- ADAS Advanced: \$125.00
- Carpet floor mat: \$125.00
- Portable Charger: INCLUDED

## INTERIOR

- 15.6 inch infotainment touchscreen
- Head-up display
- 8 speakers
- 3-in-1 wireless charging
- 6-way power adjustable driver's seat
- 6-way power adjustable front passenger seat
- 40/40 split folding rear seat
- 2-zone HVAC with ionization
- NCMA LATCH
- USB charging ports

## EXTERIOR

- LED headlights
- LED taillights
- VinFast signature lights, front and rear
- Daytime running lights
- Headlight auto high beam
- Power folding memory / heating exterior mirrors
- 19 inch alloy wheels
- Rear spoiler

Destination Fee: \$1,200.00

**Total MSRP: \$48,025.00**

SOLD TO: LBBB Inc. 2024 Auto Park Blvd. City, MO 63111-1001 US

SHIP TO (if other than sold to): Dealer Number

FINAL ASSEMBLY PLANT: Haiphong

Item Number: 202404700

Date of Manufacture: 07/10/24

Transportation Method: Truck

This label is issued pursuant to the Federal Automobile Information Disclosure Act. Gasoline, License, and Title Fees, State and Local taxes are not included. Dealer installed options or accessories are not included unless filled above.

RLLV1AEB8RH04532

FIGURE 83. Monroney Label Photograph

# BOUNDLESS TOGETHER

## Fuel Economy and Environment

**MPGe** 79 71 45  
combined city highway  
Driving Range: 264 miles  
Charge Time: 12 hours

**You save \$3250** in fuel costs over 5 years compared to the average new vehicle.

## Annual fuel Cost \$950

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

This vehicle emits 0 grams CO<sub>2</sub> per mile. The best emits 0 grams per mile (tailpipe only). Does not include emissions from generating electricity. See more at [fuel-economy.gov](https://fuel-economy.gov).

## Parts Content Information

FOR VEHICLES IN THIS COUNTRY:  
U.S./CANADIAN PARTS CONTENT: 0%  
MAJOR SOURCES OF FOREIGN PARTS CONTENT:  
Vietnam: 61%  
South Korea: 20%  
FOR THIS VEHICLE:  
FINAL ASSEMBLY POINT: Hai Phong City, Vietnam  
COUNTRY OF ORIGIN: Vietnam  
ENGINE PARTS: Vietnam  
TRANSMISSION PARTS: Vietnam  
Note: Parts contents does not include final assembly, distribution, or other non-parts costs.

## Government 5-Star Safety Ratings

This vehicle has not been rated by the government for overall vehicle score, frontal crash or rollover risk.

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)

[fuel-economy.gov](https://fuel-economy.gov)

[www.safercar.gov](https://www.safercar.gov)

[vinfastauto.us](https://vinfastauto.us)

FOLLOW US



FIGURE 305-01 Auxiliary Power Module Warning Label





FIGURE 305-02 Power Inverter Warning Label



FIGURE 305-03 First Responder Warning Label



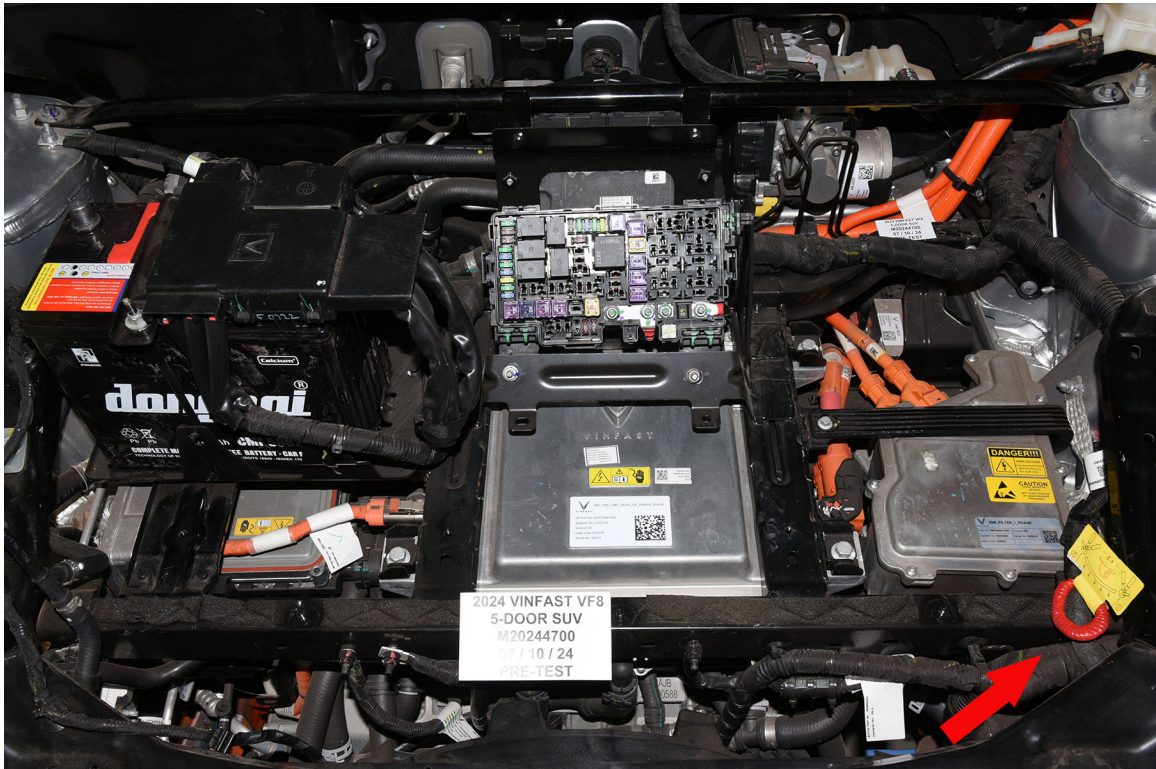


FIGURE 305-04 First Responder Warning Location



FIGURE 305-05 Other Vehicle Label(s) Related to Electrical Propulsion System



FIGURE 305-06 Manual High Voltage Service Disconnect in Place



FIGURE 305-07 Manual High Voltage Service Disconnect Removed



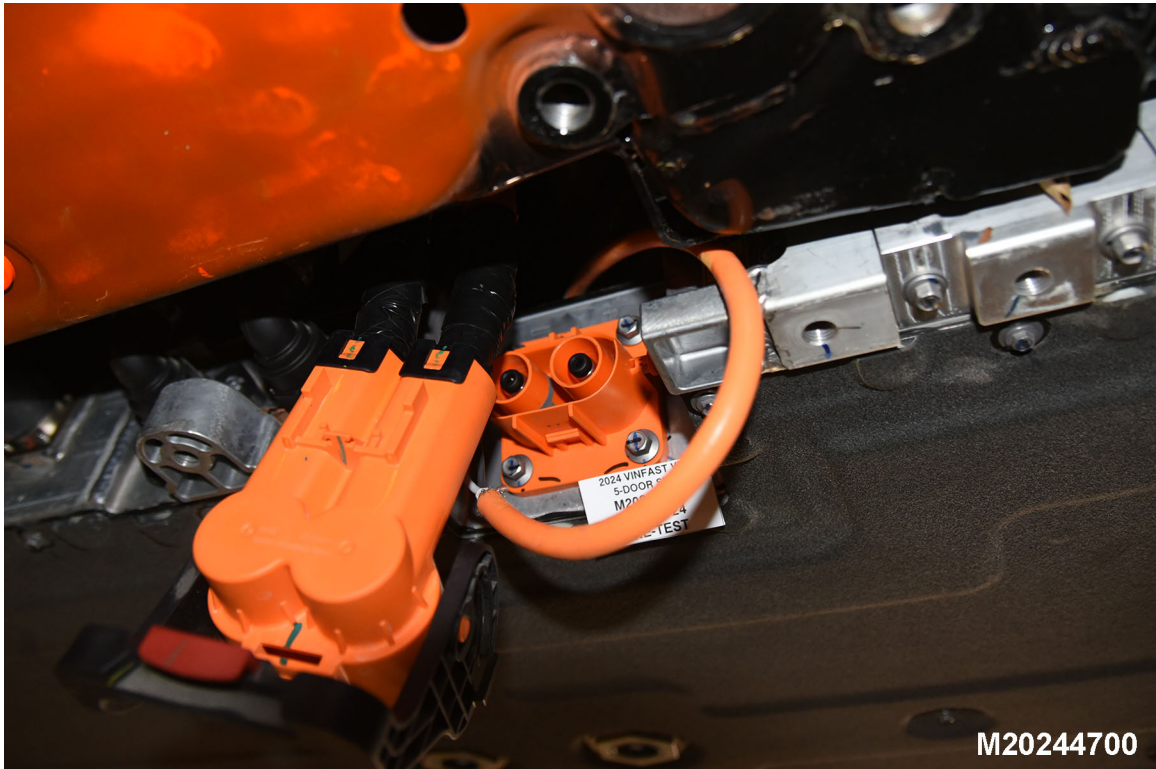


FIGURE 305-08 Manual High Voltage Service Disconnect Removed



FIGURE 305-09 Pre-Impact View of Propulsion Battery



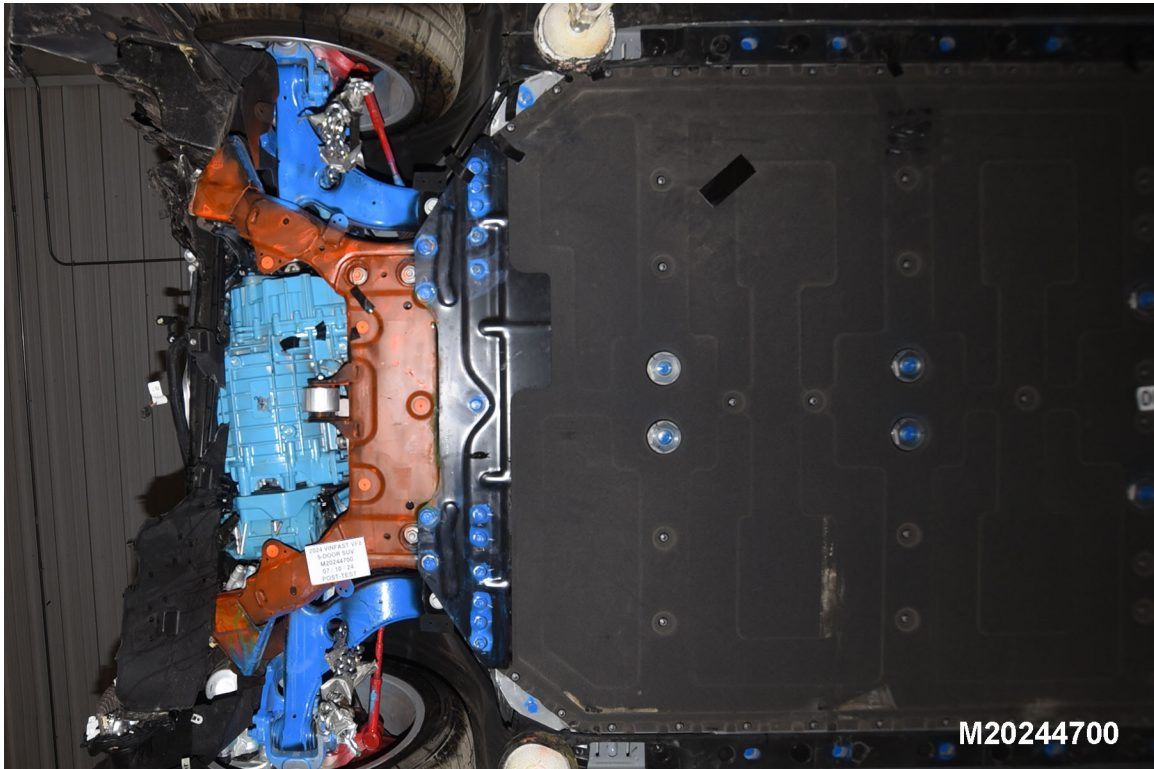


FIGURE 305-010 Post-Impact Front View of Propulsion Battery

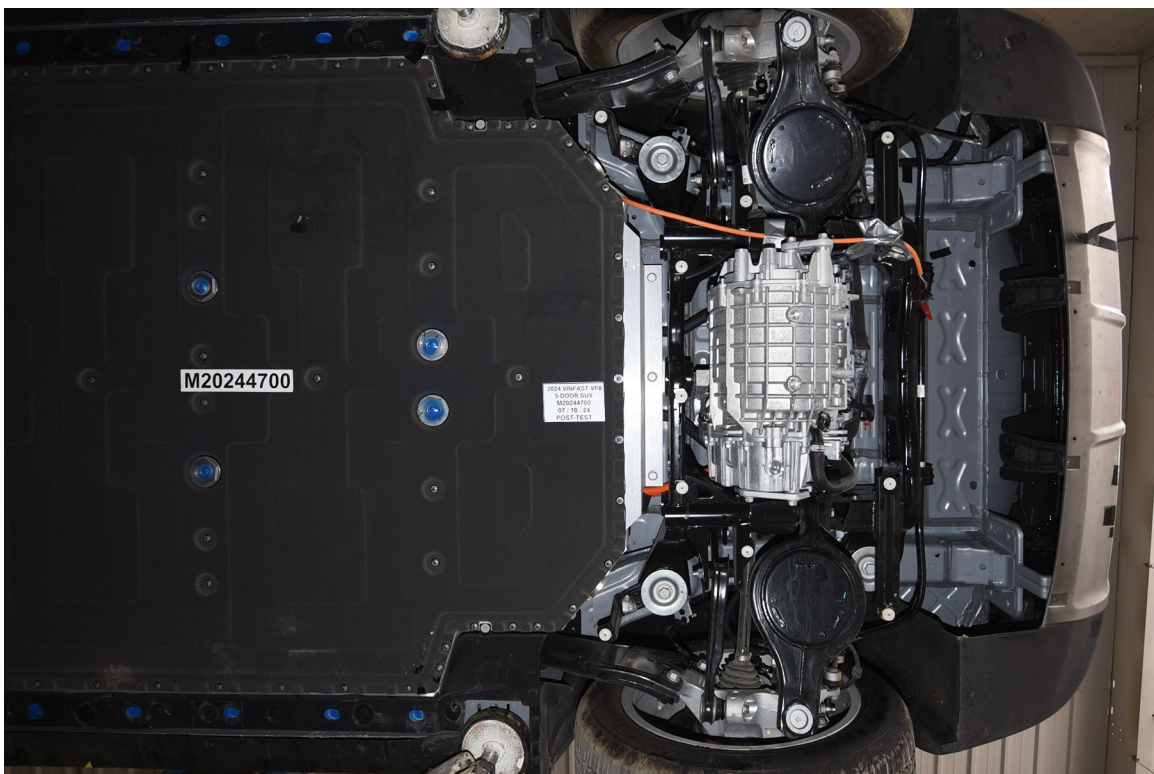


FIGURE 305-011 Post-Impact Rear View of Propulsion Battery

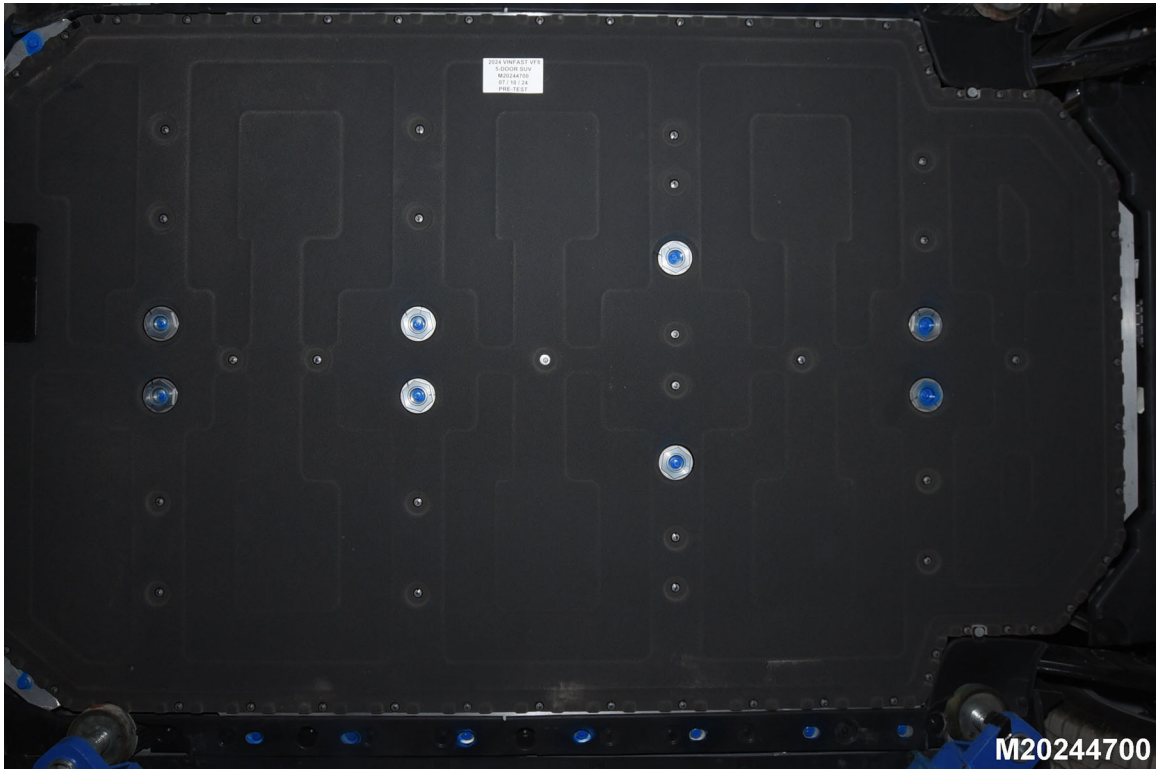


FIGURE 305-012 Pre-Impact View of Battery Box(s) or Container(s) Which Holds Individual Battery Modules

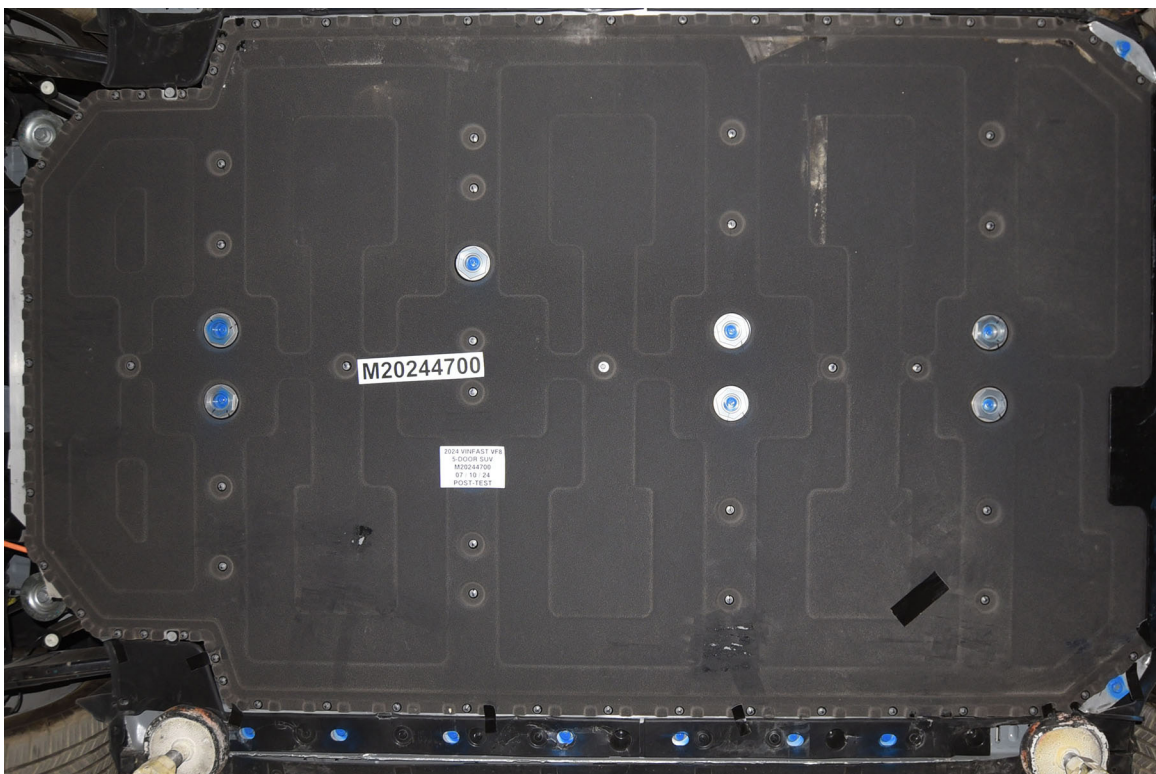


FIGURE 305-013 Post-Impact View of Battery Box(s) or Container(s) Which Holds Individual Battery Modules

Photograph Not Applicable

Battery Not Removed  
From Vehicle

FIGURE 305-014 Pre-Impact View of Propulsion Battery Module(s)

Photograph Not Applicable

Battery Not Removed  
From Vehicle

FIGURE 305-015 Post-Impact View of Propulsion Battery Module(s)



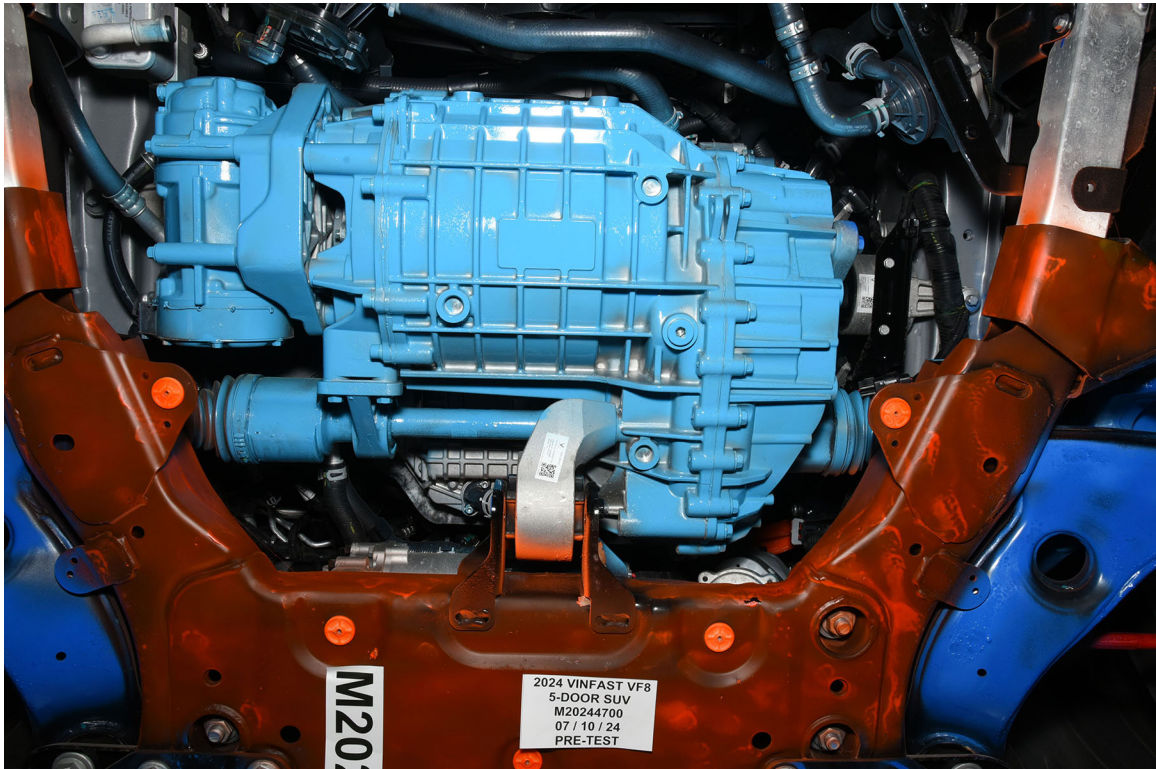


FIGURE 305-016 Pre-Impact View of Electric Propulsion Drive

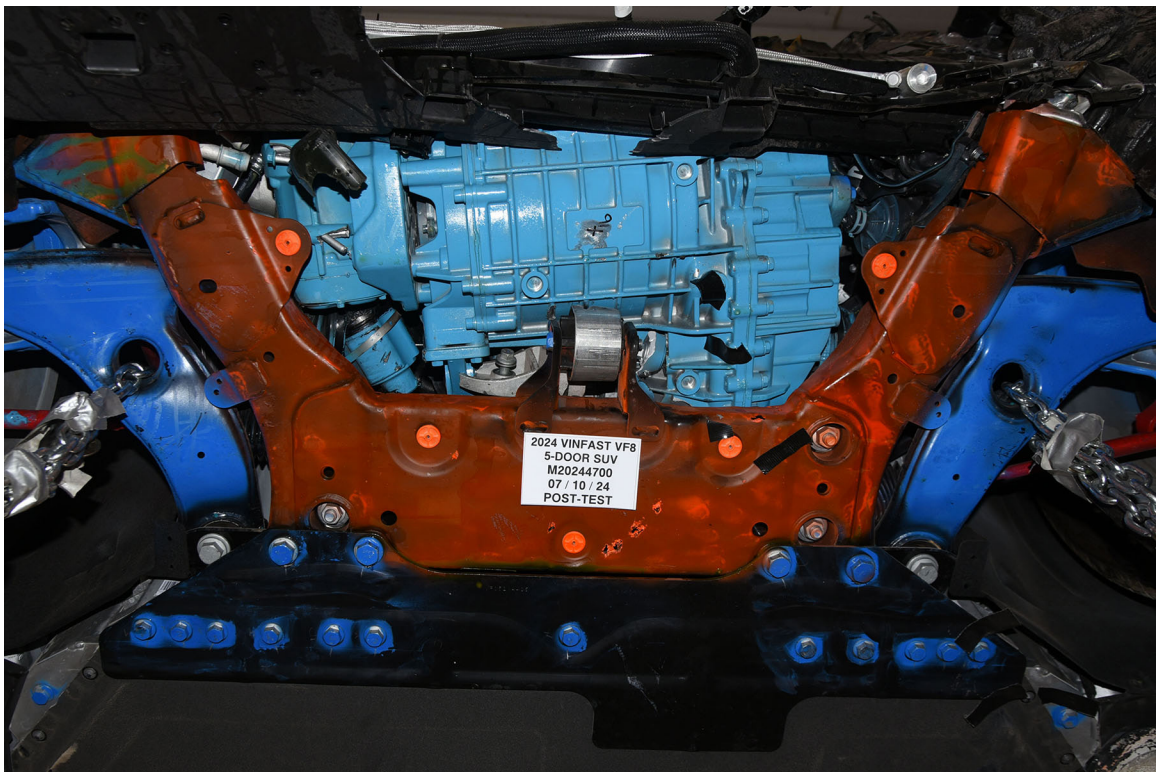


FIGURE 305-017 Post-Impact View of Electric Propulsion Drive



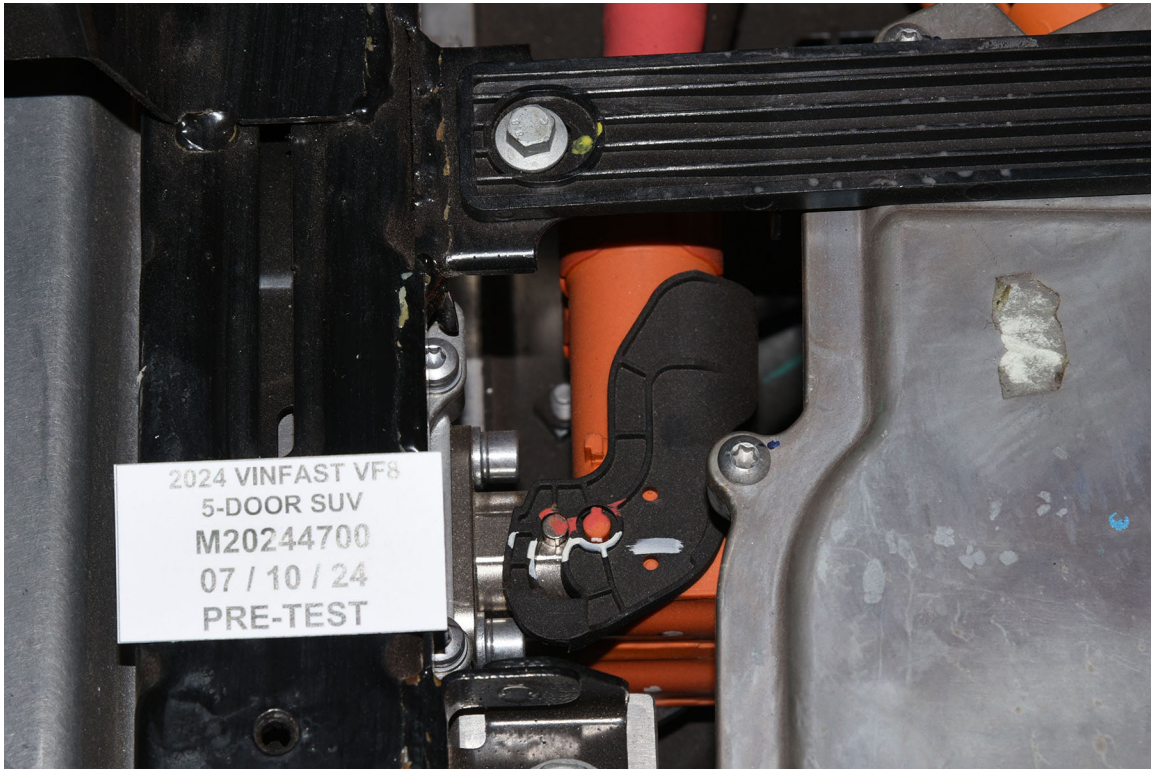


FIGURE 305-018 Pre-Impact View of High Voltage Interconnect(s)



FIGURE 305-019 Pre-Impact View Propulsion Battery Venting System(s)



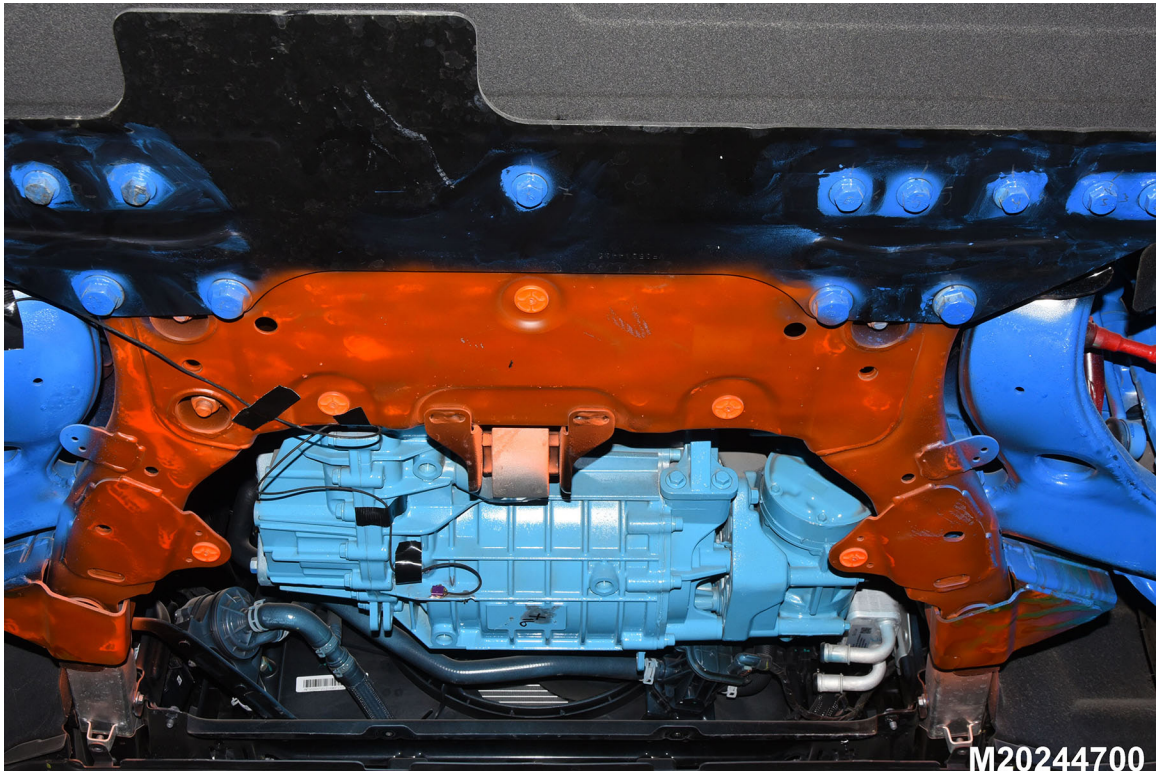


FIGURE 305-020 Pre-Impact View of Other Visible Electric Propulsion Components

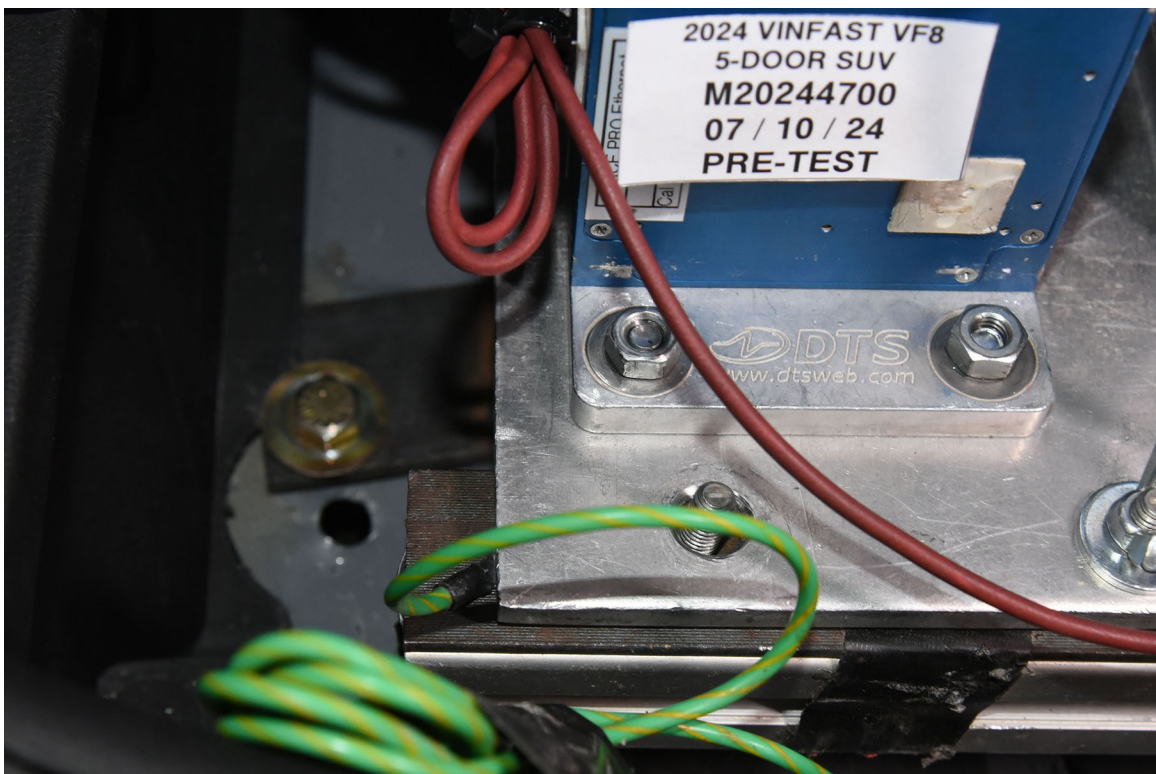


FIGURE 305-021 Pre-Impact View of Ground Lead Attached





FIGURE 305-022 Pre-Impact View of High Voltage Leads Attached

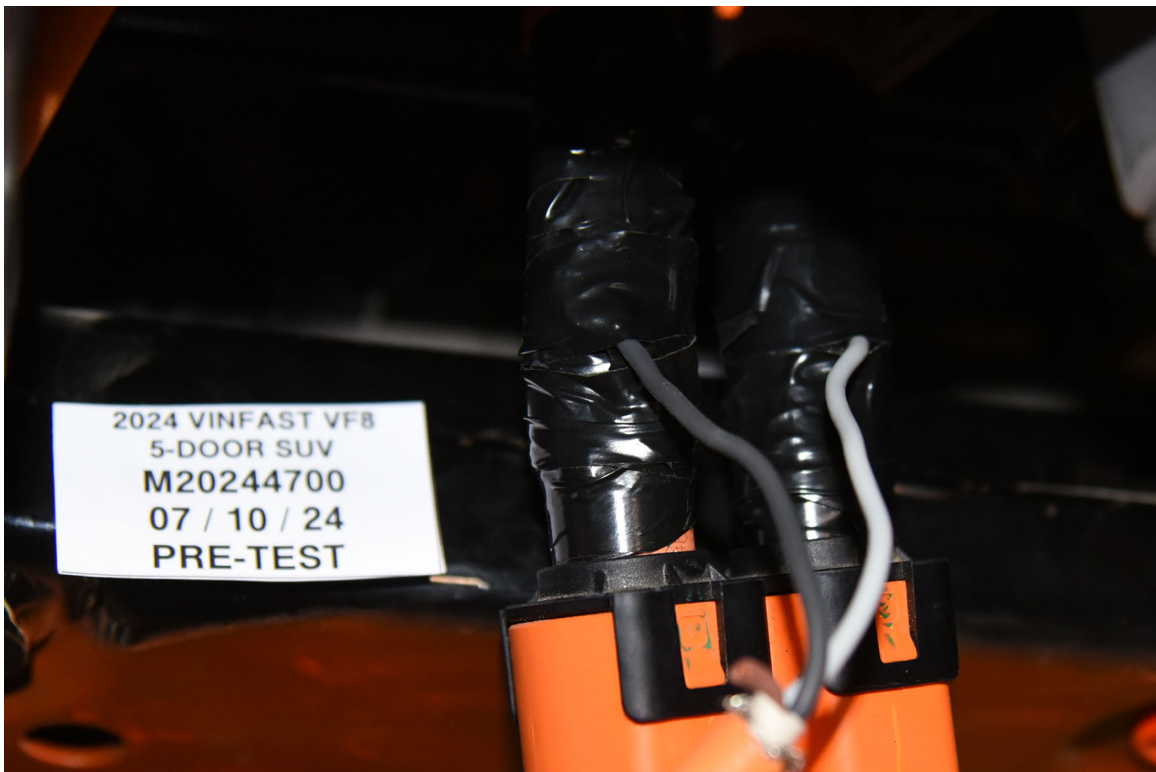


FIGURE 305-023 Pre-Impact Close-Up View of High Voltage Leads Attached



FIGURE 305-024 Pre-Impact View of Installed Test Interface Port

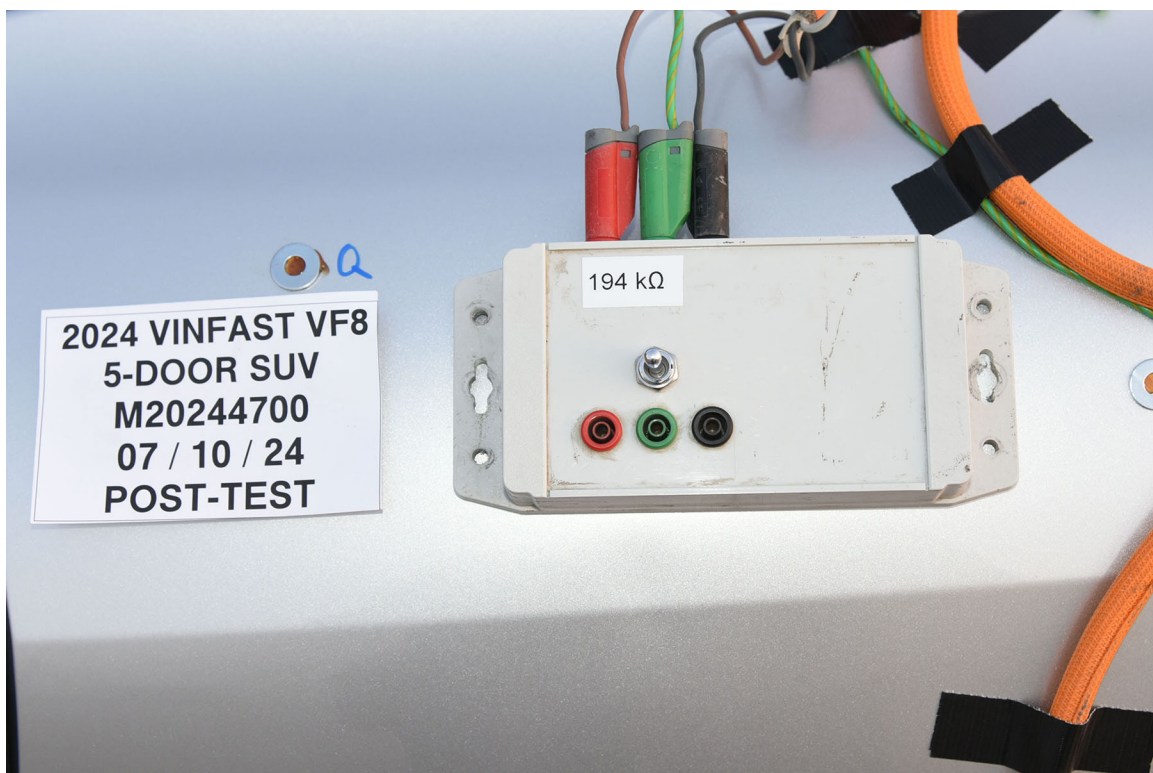


FIGURE 305-025 Post-Impact View of Installed Test Interface Port



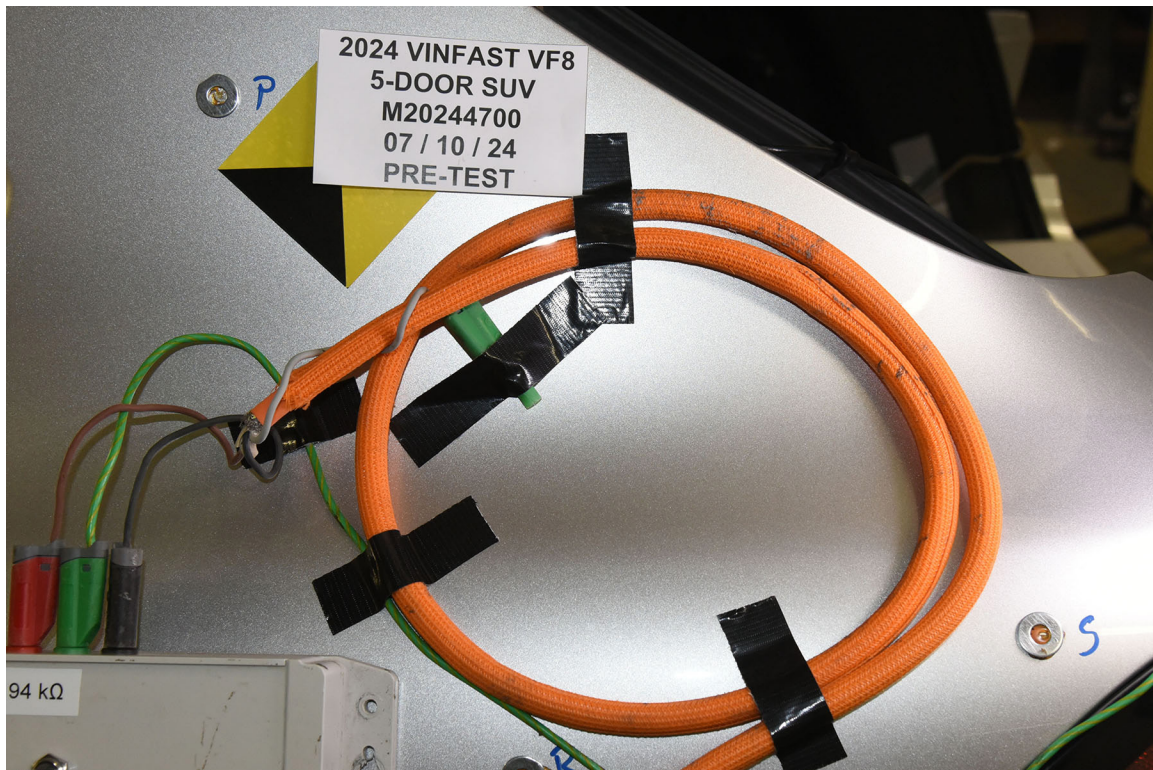


FIGURE 305-026 Pre-Impact View of Other Test Devices

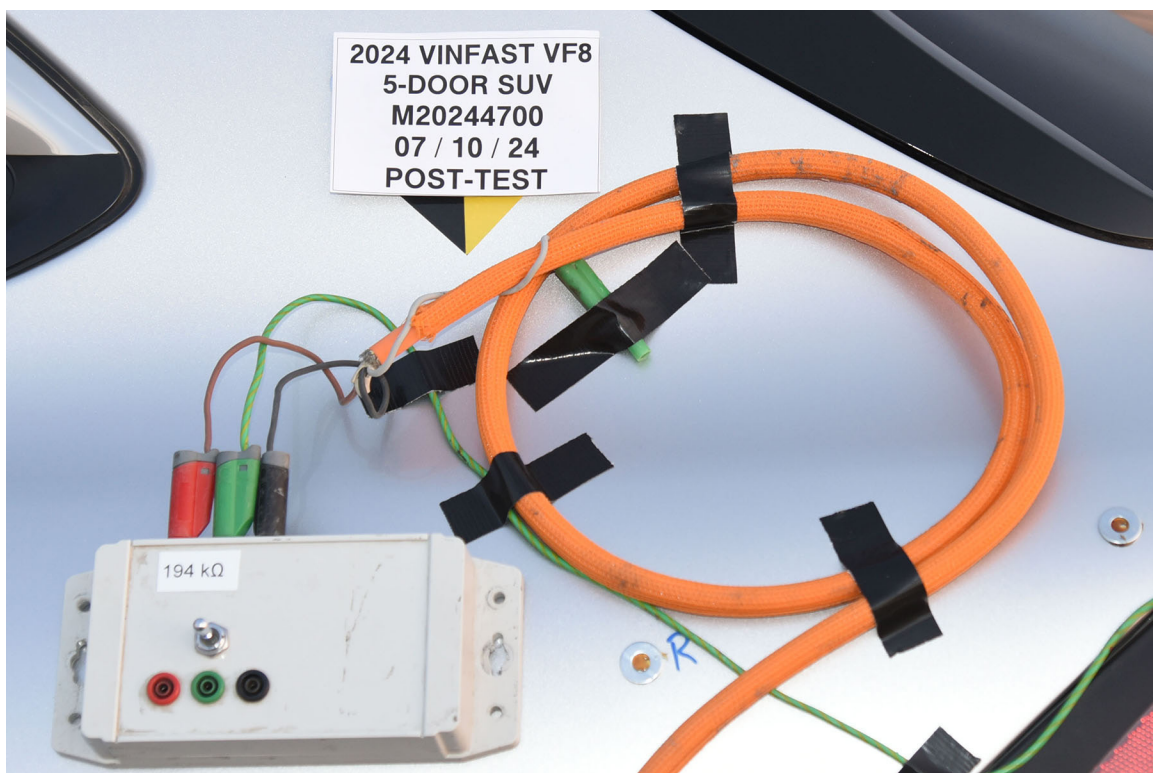


FIGURE 305-027 Post-Impact View of Other Test Devices





FIGURE 305-028 FMVSS No. 305 Static Rollover at 90°

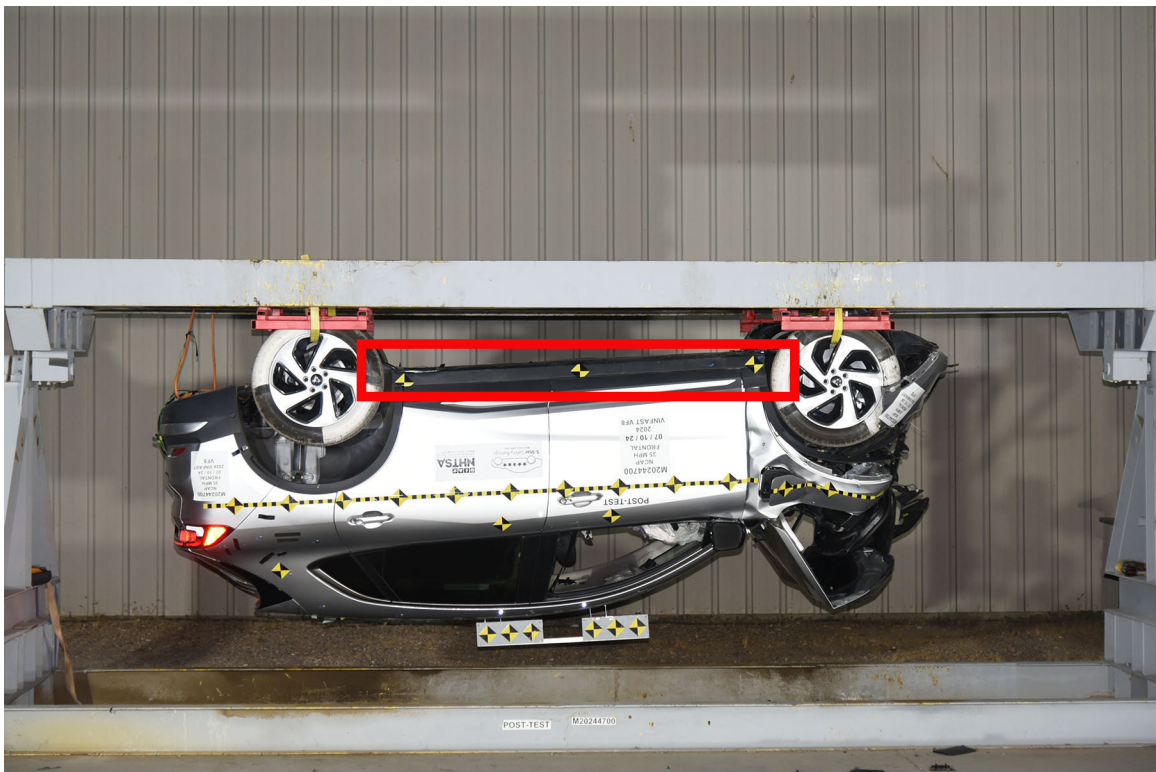


FIGURE 305-029 FMVSS No. 305 Static Rollover at 180°

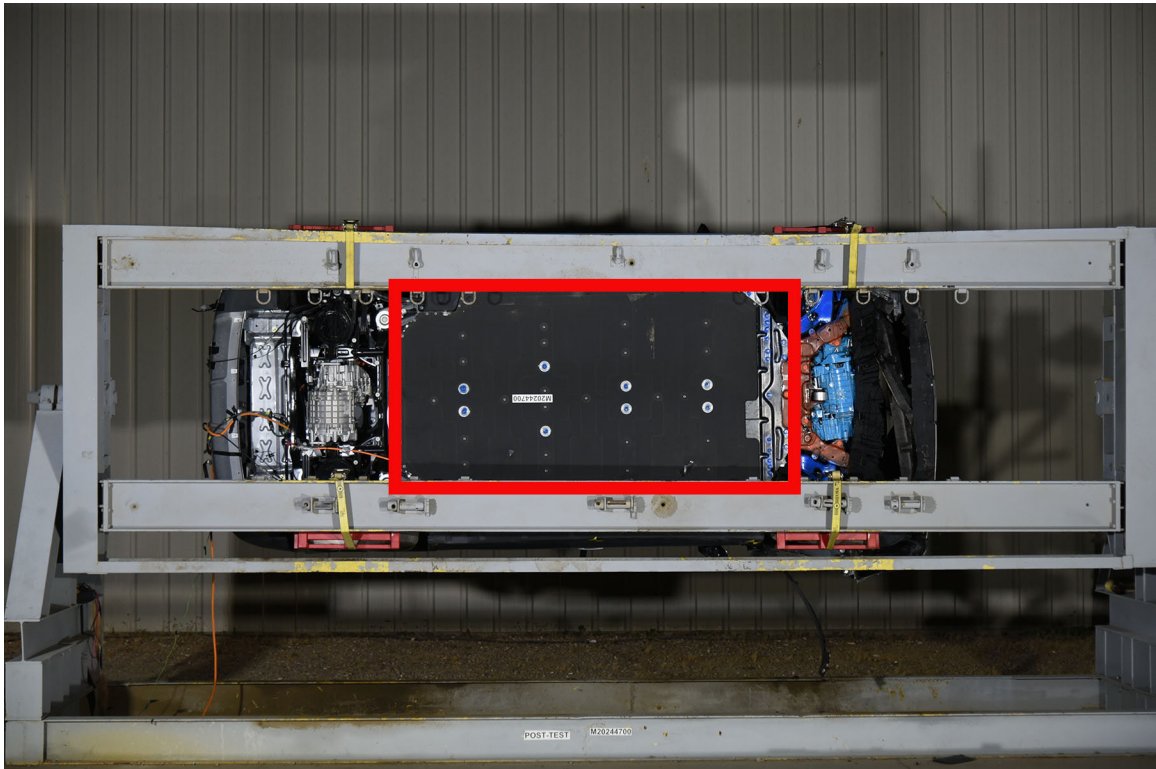


FIGURE 305-030 FMVSS No. 305 Static Rollover at 270°

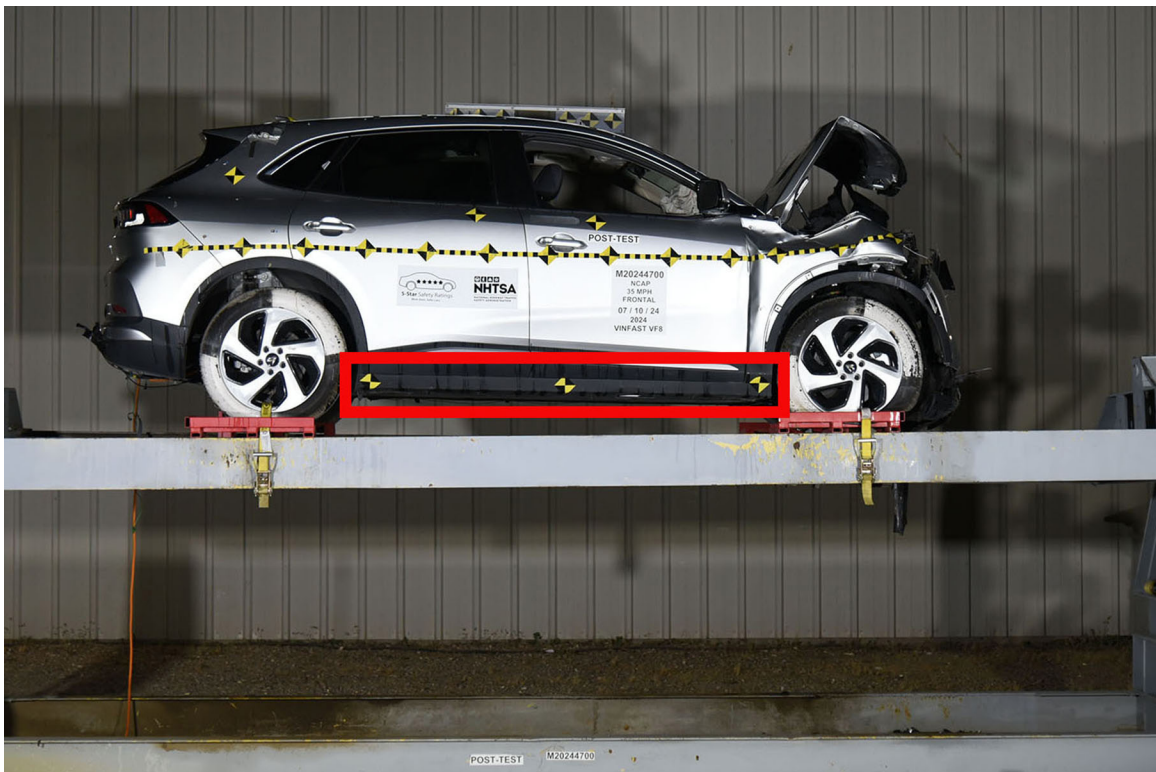


FIGURE 305-031 FMVSS No. 305 Static Rollover at 360°





FIGURE 305-032 Pre-Impact View of the Vehicle Passenger Compartment Adjacent to Propulsion Battery



FIGURE 305-033 Post-Impact View of the Vehicle Passenger Compartment Adjacent to Propulsion Battery



Photograph Not Applicable

No Propulsion Battery  
Mounting and/or  
Intrusion Failure

FIGURE 305-034 Post-Impact Propulsion Battery System Mounting and or Intrusion Failure(s)

Photograph Not Applicable

No Battery Component  
Intrusion

FIGURE 305-035 Post-Impact View of Battery Component Intrusion

Photograph Not Applicable

No Propulsion  
Battery Movement or  
Retention loss

FIGURE 305-036 Post-Impact View of Battery Module Movement or Retention Loss

Photograph Not Applicable

No Propulsion Battery  
Electrolyte Spillage

FIGURE 305-037 Post-Impact View of Propulsion Battery Electrolyte Spillage Location

Photograph Not Applicable

No Propulsion Battery  
Electrolyte Spillage

FIGURE 305-038 Post-Test View of Propulsion Battery Electrolyte Spillage Location



**APPENDIX B**  
**DUMMY RESPONSE DATA TRACES**

## TABLE OF DATA PLOTS

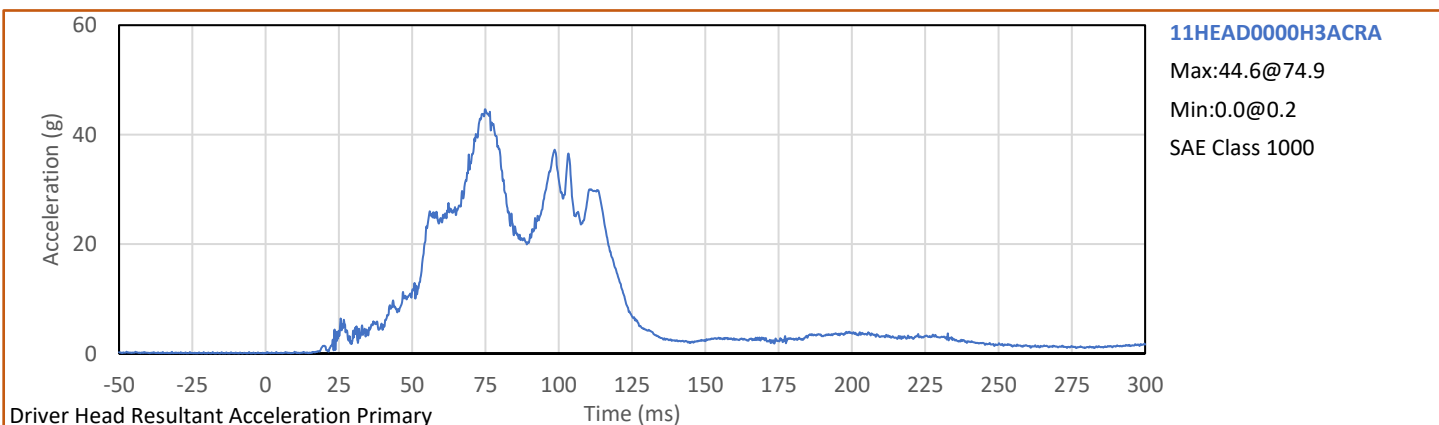
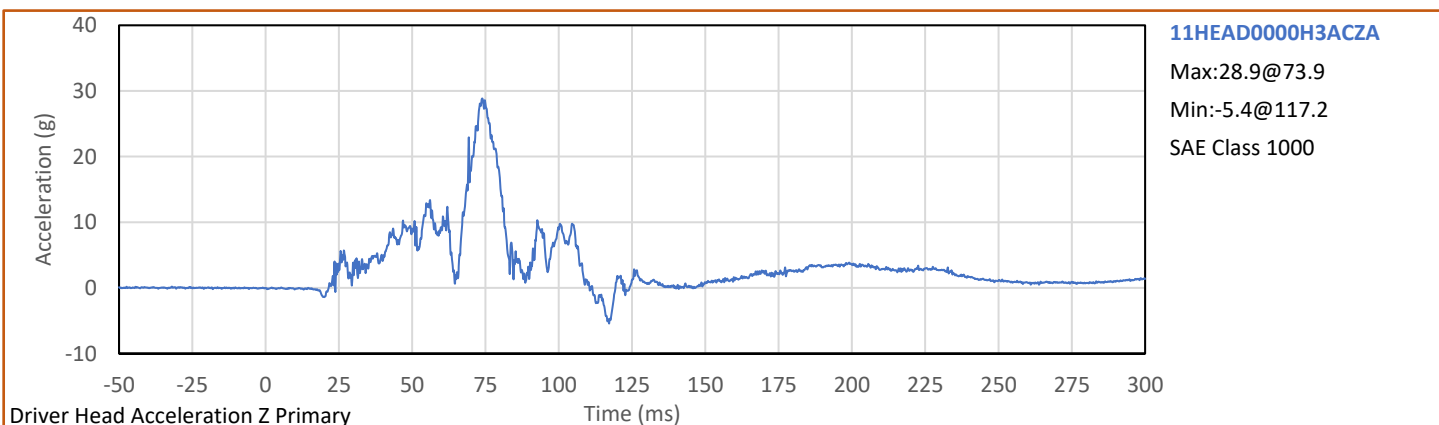
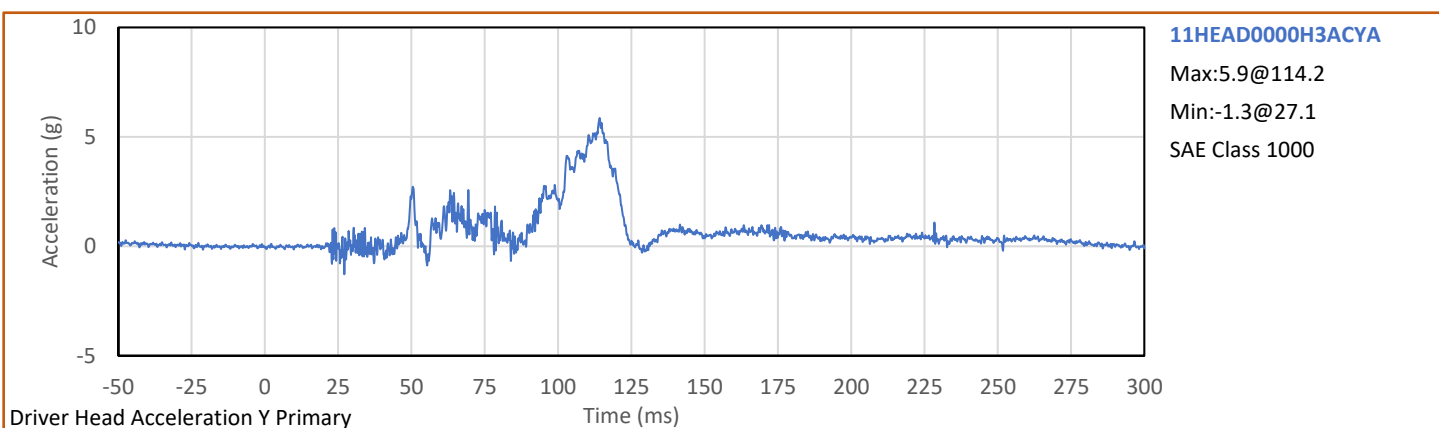
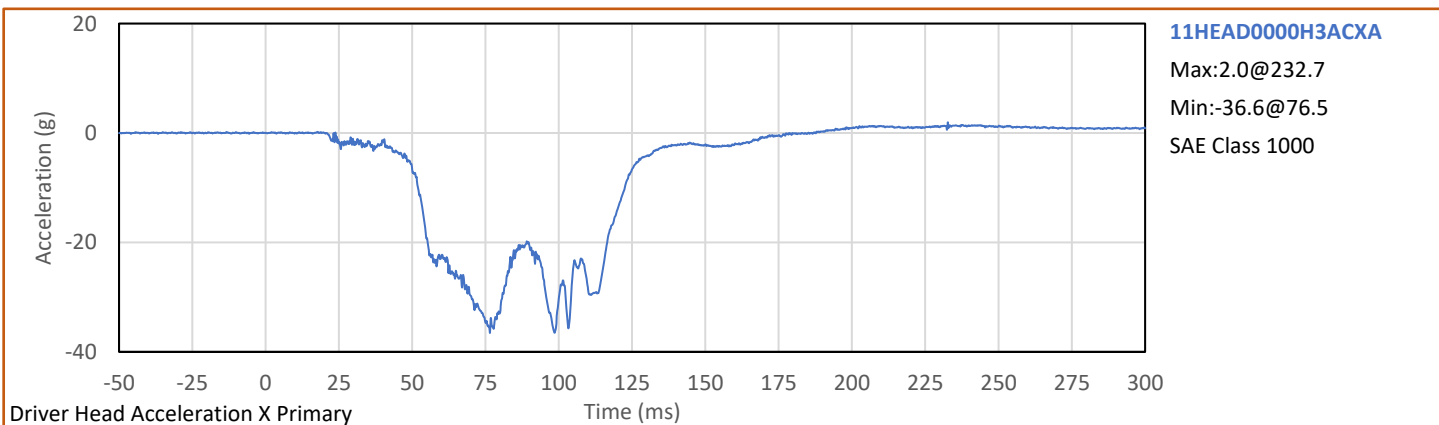
| Plot |                                                | Page |
|------|------------------------------------------------|------|
| 1    | Driver Head Acceleration X Primary             | B-1  |
| 2    | Driver Head Acceleration Y Primary             | B-1  |
| 3    | Driver Head Acceleration Z Primary             | B-1  |
| 4    | Driver Head Resultant Acceleration Primary     | B-1  |
| 5    | Driver Chest X Deflection                      | B-2  |
| 6    | Driver Upper Neck Force X                      | B-3  |
| 7    | Driver Upper Neck Force Z                      | B-3  |
| 8    | Driver Upper Neck Moment Y                     | B-3  |
| 9    | Driver Nij                                     | B-3  |
| 10   | Driver Chest Acceleration X Primary            | B-4  |
| 11   | Driver Chest Acceleration Y Primary            | B-4  |
| 12   | Driver Chest Acceleration Z Primary            | B-4  |
| 13   | Driver Chest Resultant Acceleration Primary    | B-4  |
| 14   | Driver Left Femur Force Z                      | B-5  |
| 15   | Driver Right Femur Force Z                     | B-5  |
| 16   | Passenger Head Acceleration X Primary          | B-6  |
| 17   | Passenger Head Acceleration Y Primary          | B-6  |
| 18   | Passenger Head Acceleration Z Primary          | B-6  |
| 19   | Passenger Head Resultant Acceleration Primary  | B-6  |
| 20   | Passenger Chest X Deflection                   | B-7  |
| 21   | Passenger Upper Neck Force X                   | B-8  |
| 22   | Passenger Upper Neck Force Z                   | B-8  |
| 23   | Passenger Upper Neck Moment Y                  | B-8  |
| 24   | Passenger Nij                                  | B-8  |
| 25   | Passenger Chest Acceleration X Primary         | B-9  |
| 26   | Passenger Chest Acceleration Y Primary         | B-9  |
| 27   | Passenger Chest Acceleration Z Primary         | B-9  |
| 28   | Passenger Chest Resultant Acceleration Primary | B-9  |
| 29   | Passenger Left Femur Force Z                   | B-10 |
| 30   | Passenger Right Femur Force Z                  | B-10 |

The following additional dummy and vehicle response data can be found in the R&D section of the NHTSA website at [www.nhtsa.gov](http://www.nhtsa.gov)

Driver Head X Acceleration Redundant  
Driver Head Y Acceleration Redundant  
Driver Head Z Acceleration Redundant  
Driver Upper Neck Force Y  
Driver Upper Neck Moment X  
Driver Upper Neck Moment Z  
Driver Chest X Acceleration Redundant  
Driver Chest Y Acceleration Redundant  
Driver Chest Z Acceleration Redundant  
Driver Pelvis X  
Driver Pelvis Y  
Driver Pelvis Z  
Driver Left Femur Force Z Redundant  
Driver Right Femur Force Z Redundant  
Driver Left Upper Tibia Moment X  
Driver Left Upper Tibia Moment Y  
Driver Left Upper Tibia Force Z  
Driver Left Lower Tibia Moment X  
Driver Left Lower Tibia Moment Y  
Driver Left Lower Tibia Force Z  
Driver Right Upper Tibia Moment X  
Driver Right Upper Tibia Moment Y  
Driver Right Upper Tibia Force Z  
Driver Right Lower Tibia Moment X  
Driver Right Lower Tibia Moment Y  
Driver Right Lower Tibia Force Z  
Driver Left Foot Fore Z  
Driver Left Foot Aft X  
Driver Left Foot Aft Z  
Driver Right Foot Fore Z  
Driver Right Foot Aft X  
Driver Right Foot Aft Z  
Driver Shoulder Belt Force  
Driver Lap Belt Force  
Driver Head Angular Velocity X  
Driver Head Angular Velocity Y  
Driver Head Angular Velocity Z  
Passenger Head X Acceleration Redundant  
Passenger Head Y Acceleration Redundant  
Passenger Head Z Acceleration Redundant  
Passenger Upper Neck Force X  
Passenger Upper Neck Force Z  
Passenger Upper Neck Moment Y

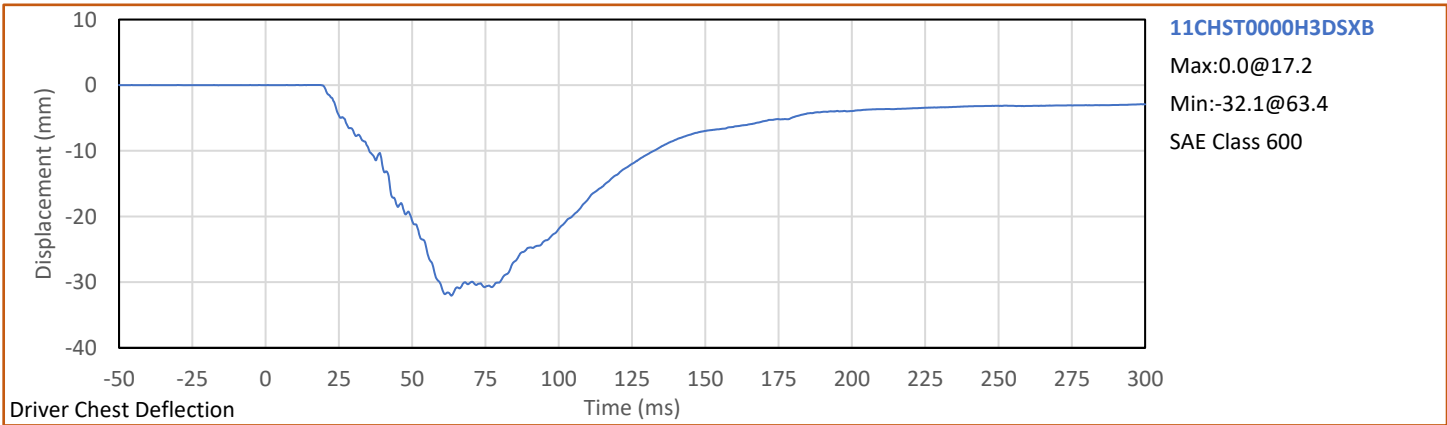


Passenger Chest X Acceleration Redundant  
Passenger Chest Y Acceleration Redundant  
Passenger Chest Z Acceleration Redundant  
Passenger Pelvis X  
Passenger Pelvis Y  
Passenger Pelvis Z  
Passenger Left Femur Force Redundant  
Passenger Right Femur Force Redundant  
Passenger Left Upper Tibia Moment X  
Passenger Left Upper Tibia Moment Y  
Passenger Left Upper Tibia Force Z  
Passenger Left Lower Tibia Moment X  
Passenger Left Lower Tibia Moment Y  
Passenger Left Lower Tibia Force Z  
Passenger Right Upper Tibia Moment X  
Passenger Right Upper Tibia Moment Y  
Passenger Right Upper Tibia Force Z  
Passenger Right Lower Tibia Moment X  
Passenger Right Lower Tibia Moment Y  
Passenger Right Lower Tibia Force Z  
Passenger Left Foot Fore Z  
Passenger Left Foot Aft X  
Passenger Left Foot Aft Z  
Passenger Right Foot Fore Z  
Passenger Right Foot Aft X  
Passenger Right Foot Aft Z  
Passenger Shoulder Belt Force  
Passenger Lap Belt Force  
Passenger Head Angular Velocity X  
Passenger Head Angular Velocity Y  
Passenger Head Angular Velocity Z  
Left Rear Seat Crossmember X  
Left Rear Seat Crossmember Z  
Right Rear Seat Crossmember X  
Right Rear Seat Crossmember Z  
Left Rear Seat Crossmember X Redundant  
Right Rear Seat Crossmember X Redundant  
Vehicle Engine Top X  
Vehicle Engine Bottom X  
Load Cell Barrier Forces

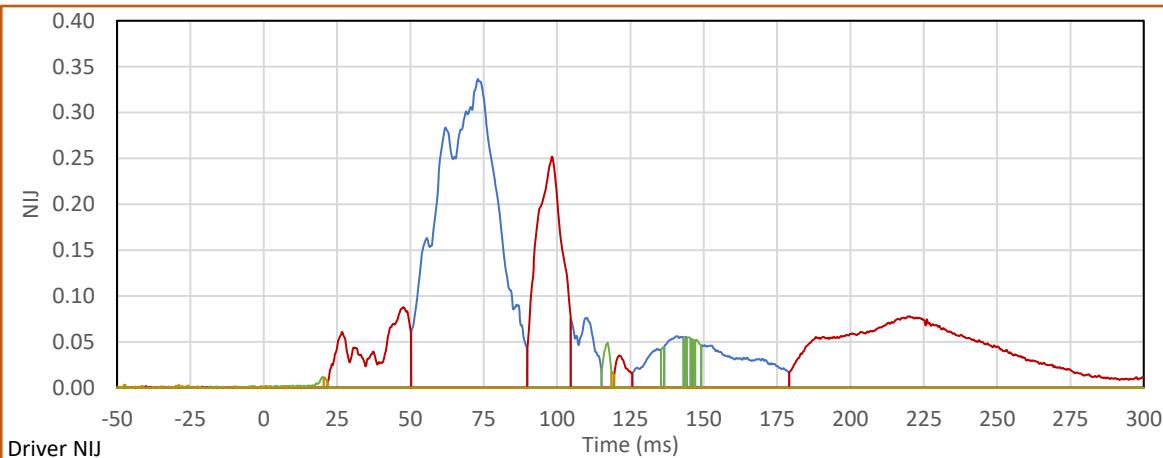
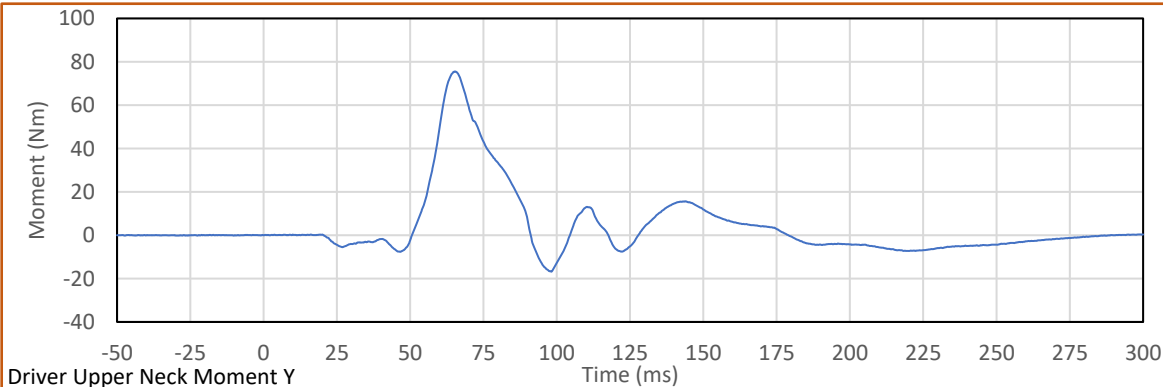
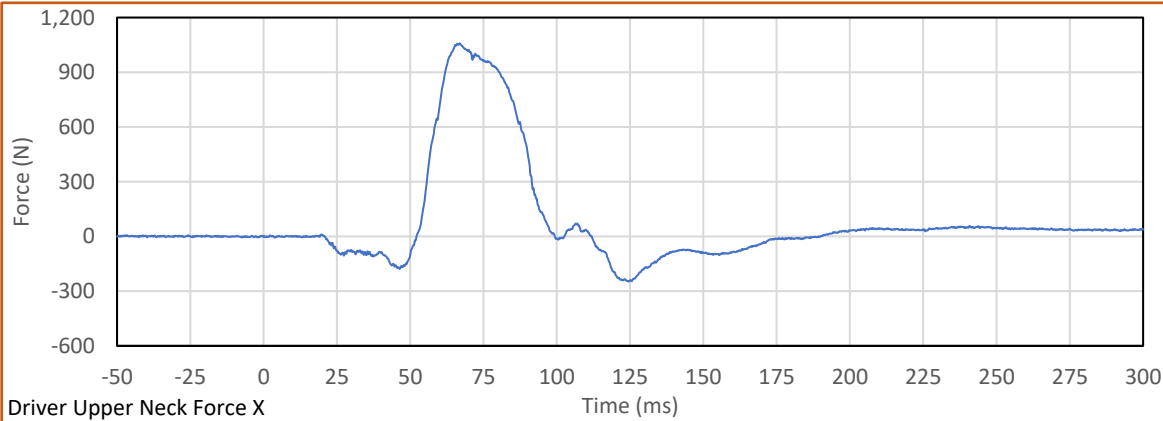


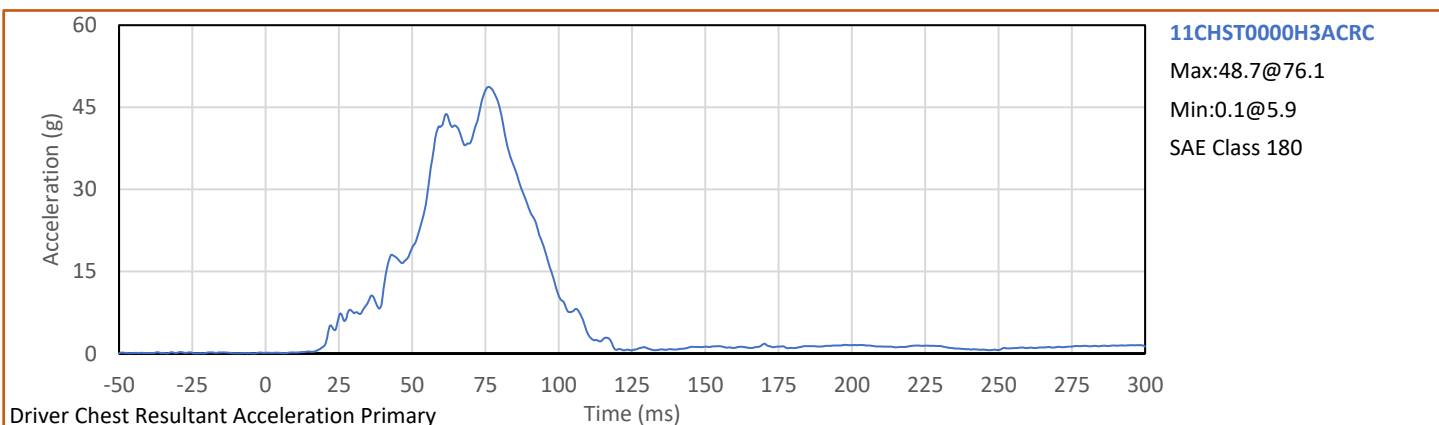
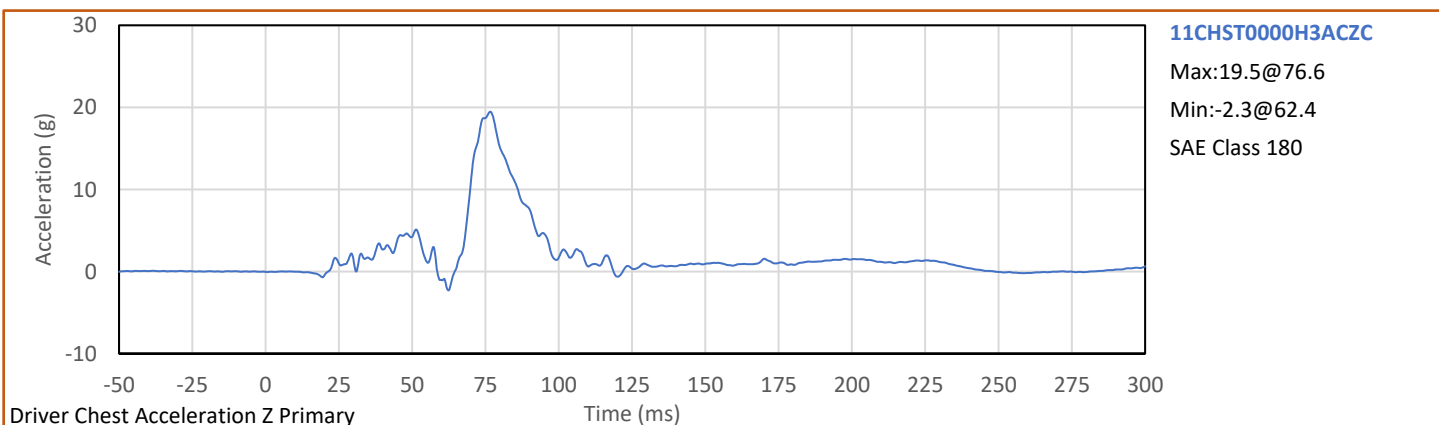
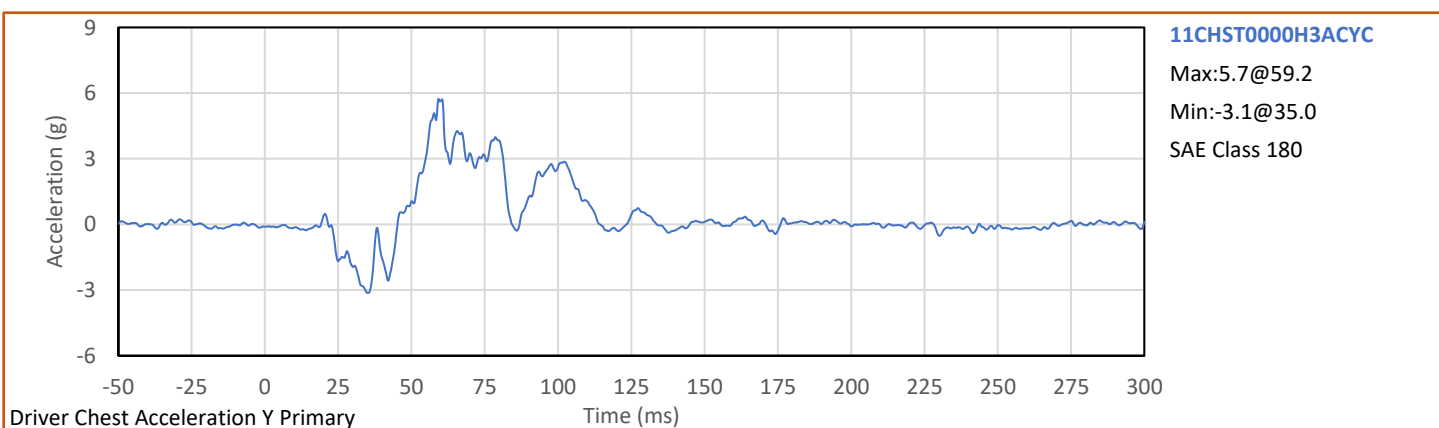
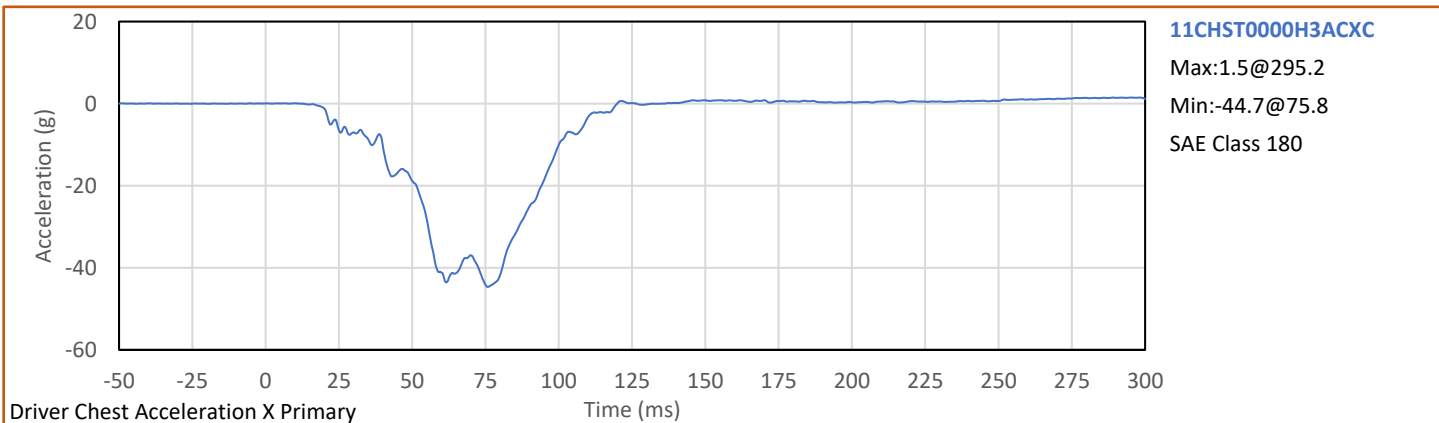
Test Vehicle: 2024 VinFast VF8 5-Door SUV  
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: M20244700  
Test Date: 7/10/2024



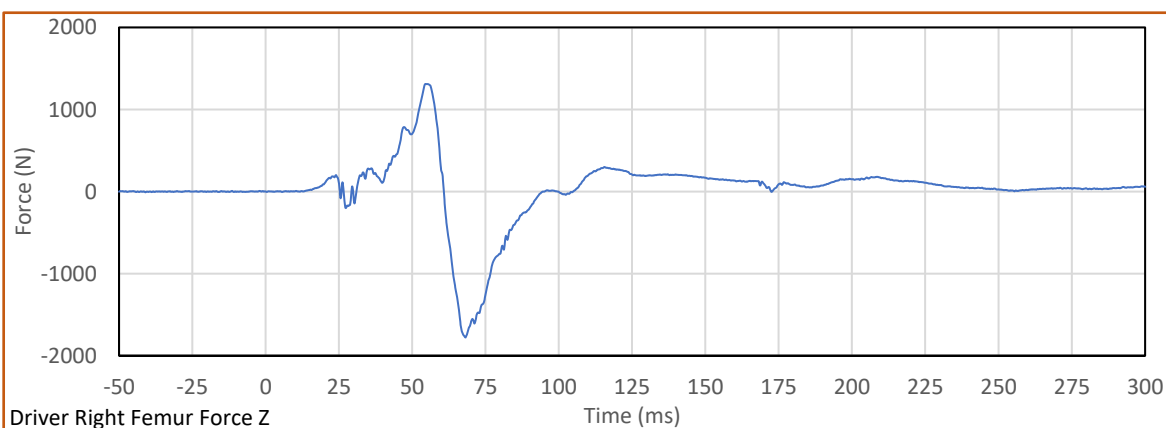
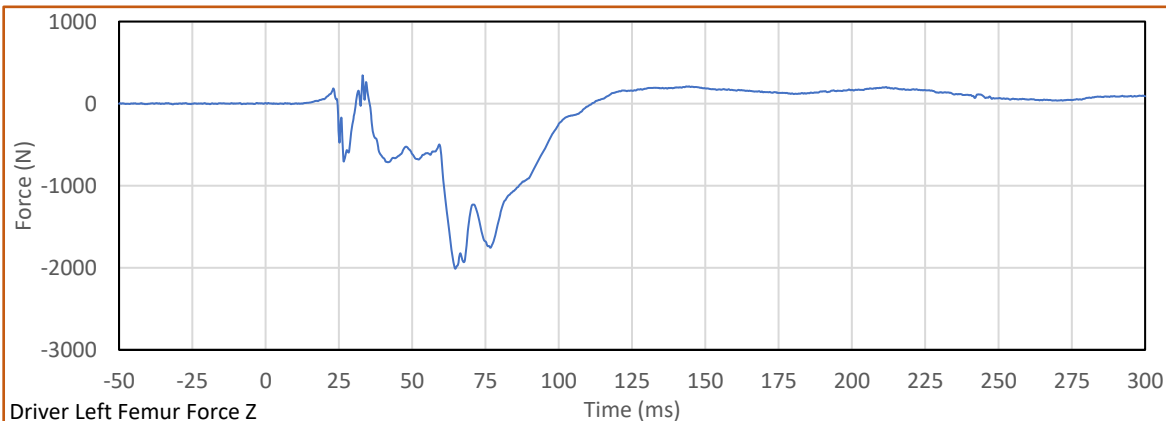




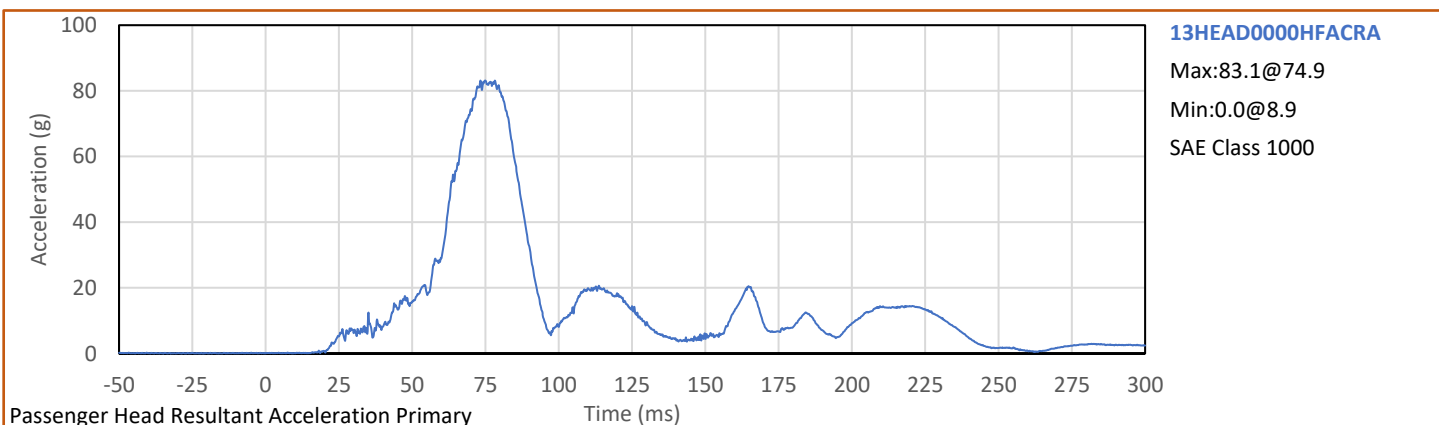
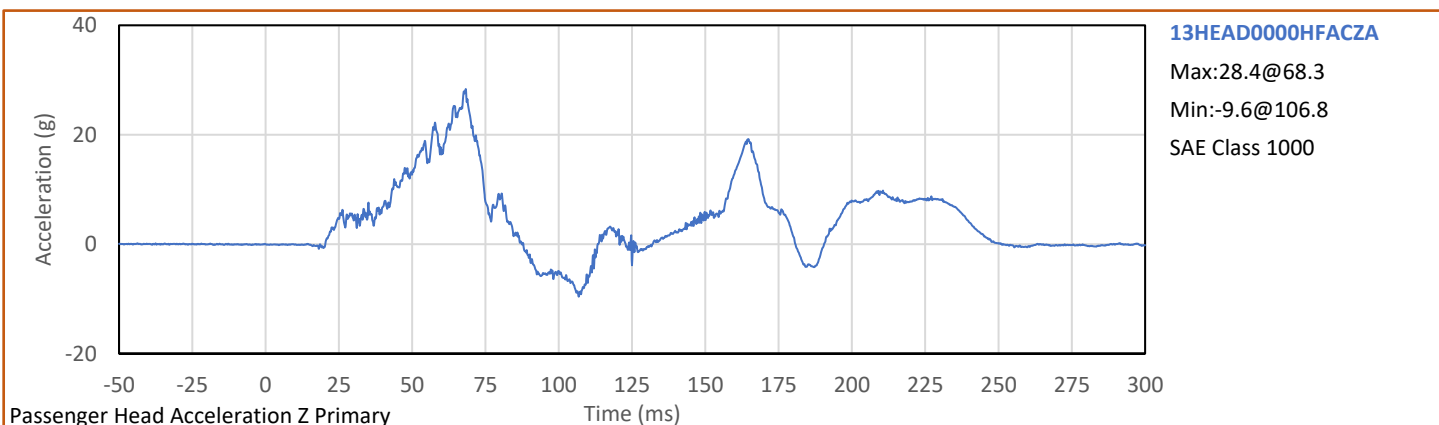
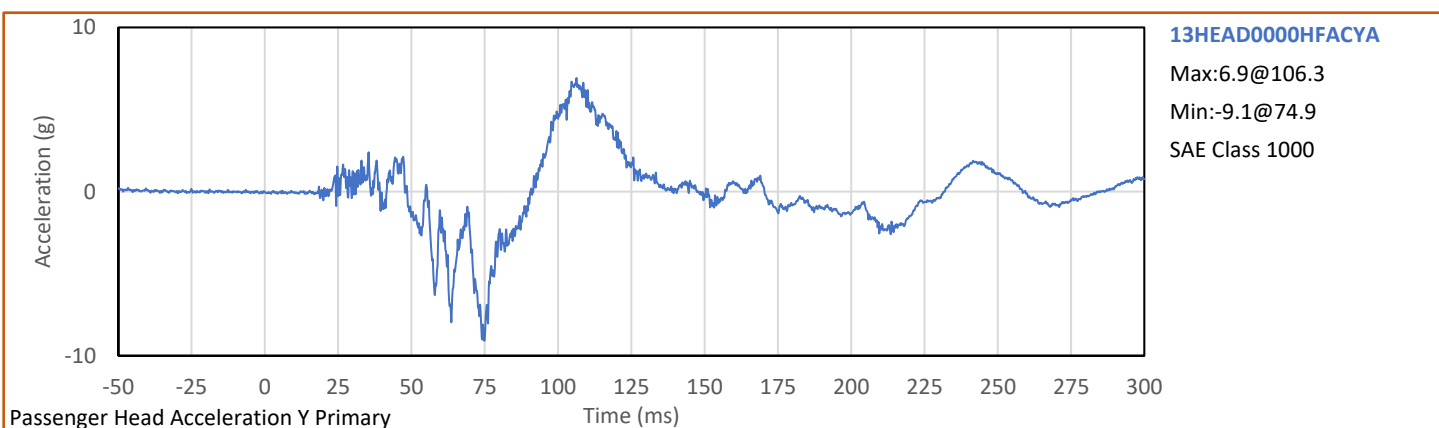
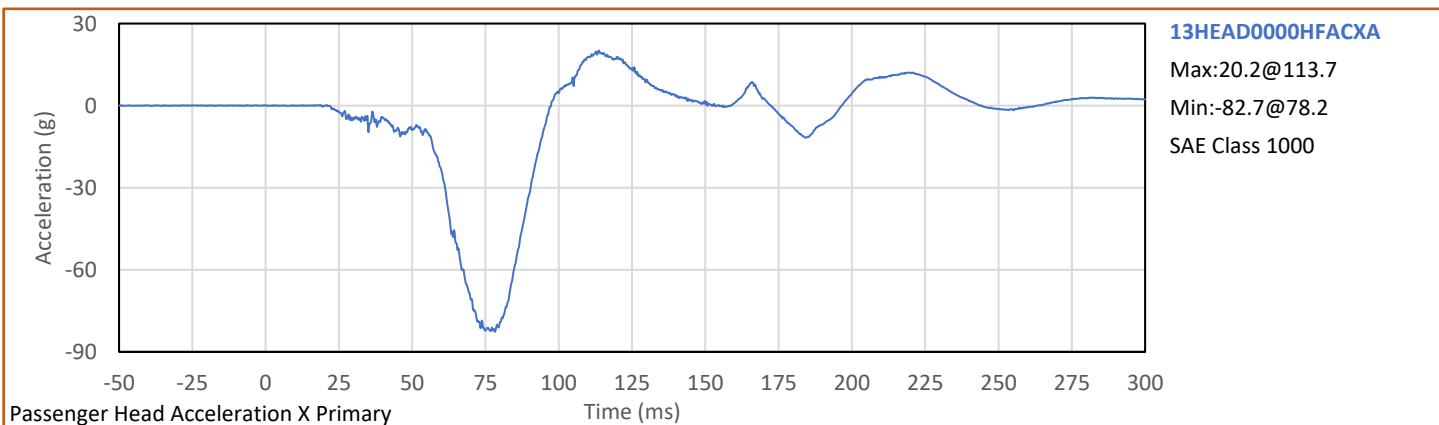


Test Vehicle: 2024 VinFast VF8 5-Door SUV  
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: M20244700  
Test Date: 7/10/2024

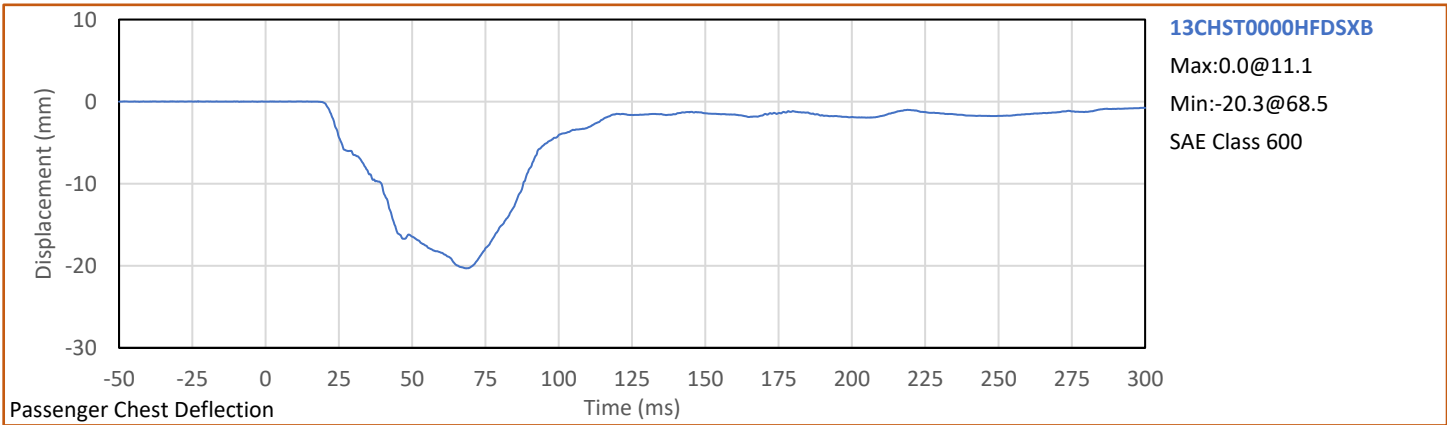


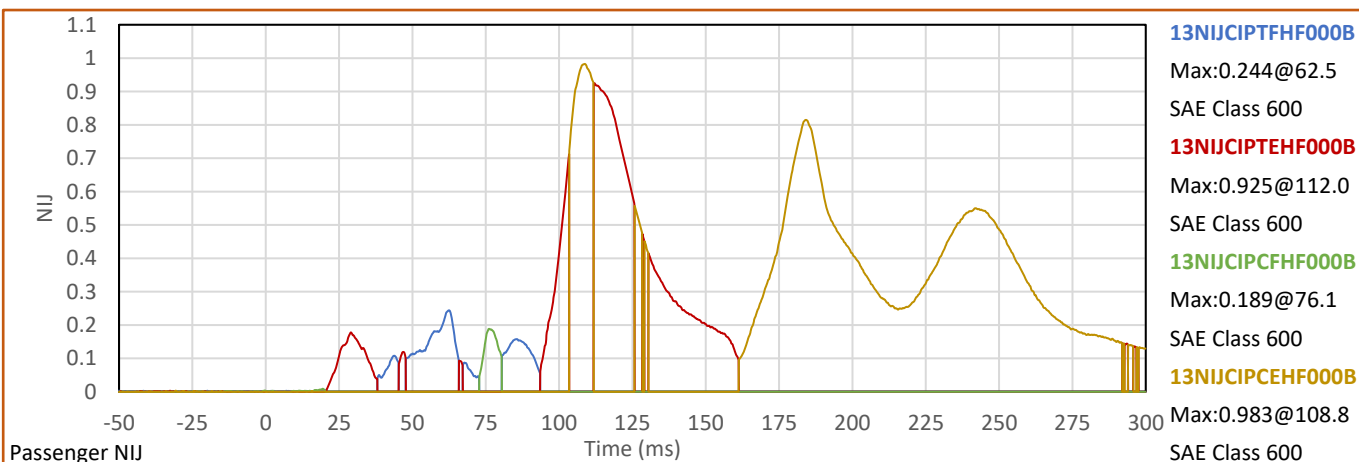
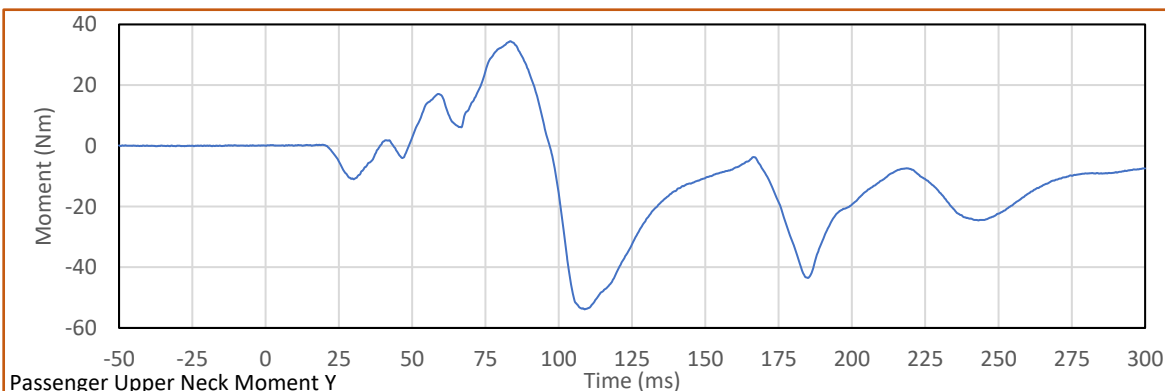
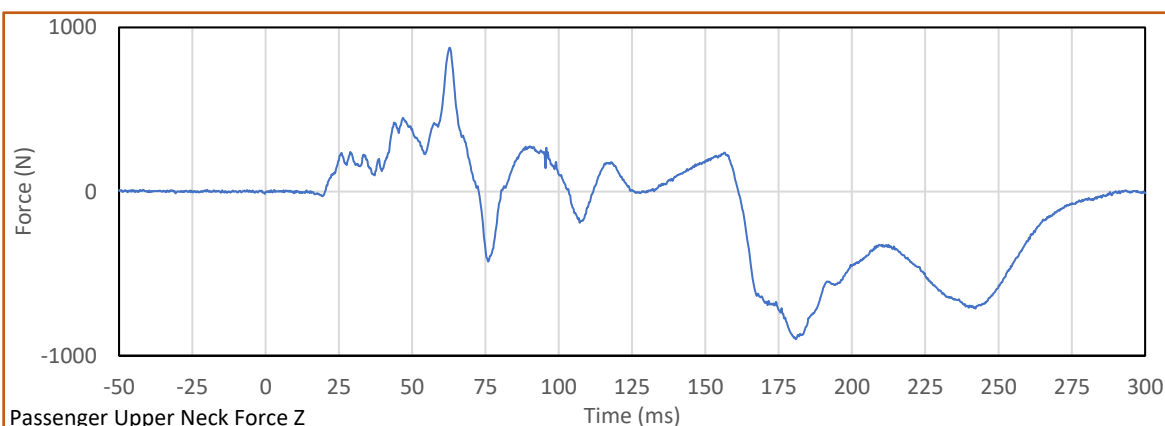
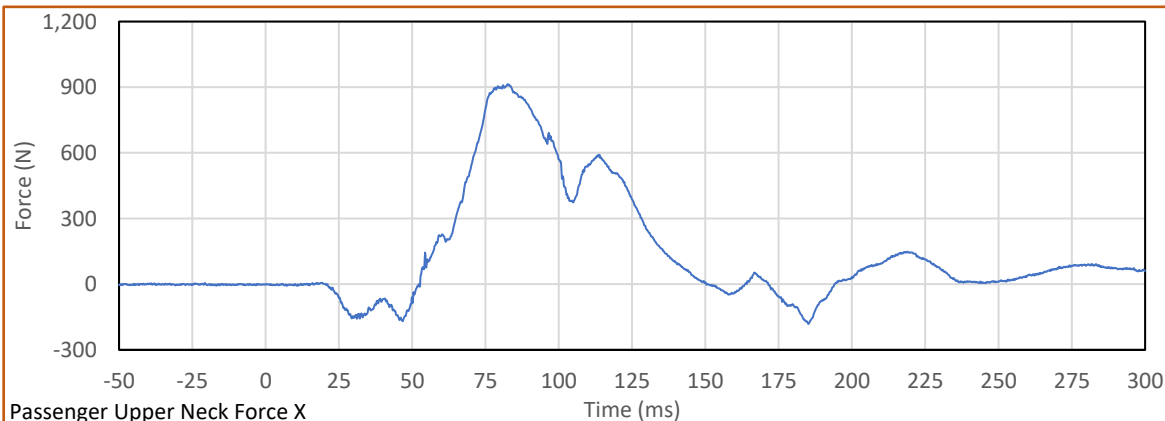




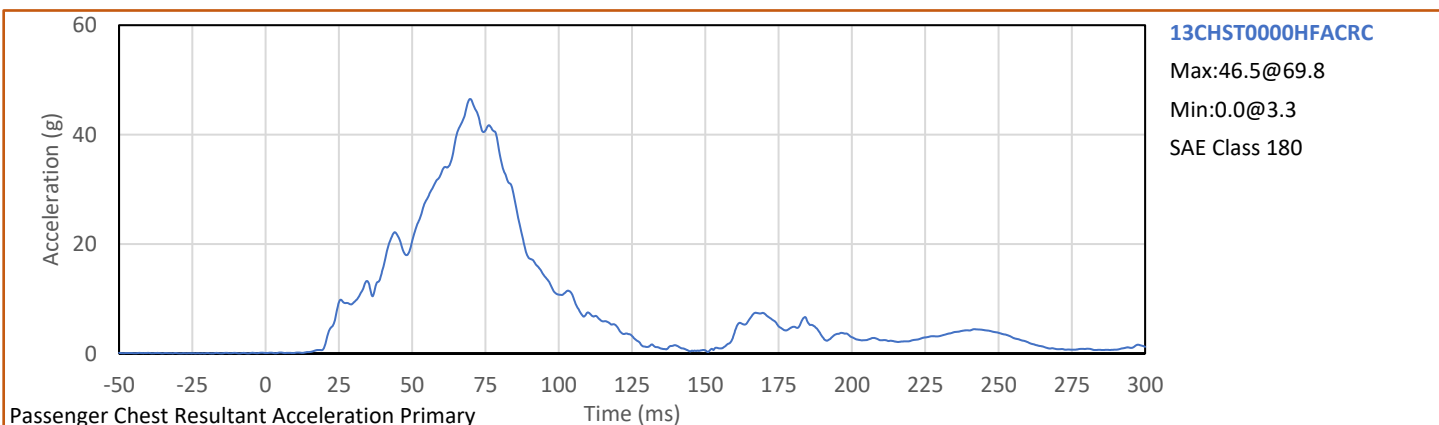
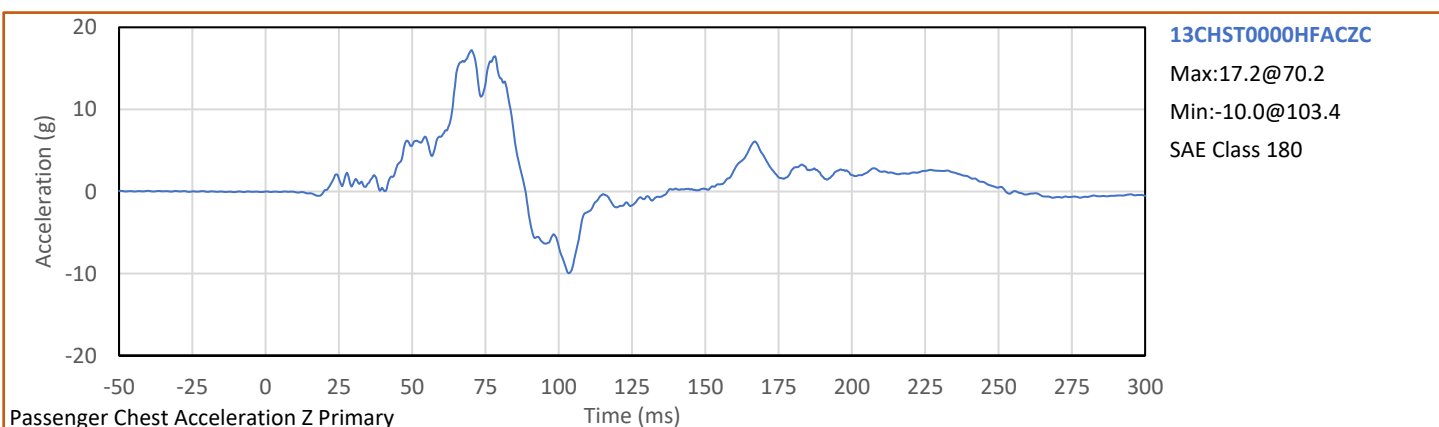
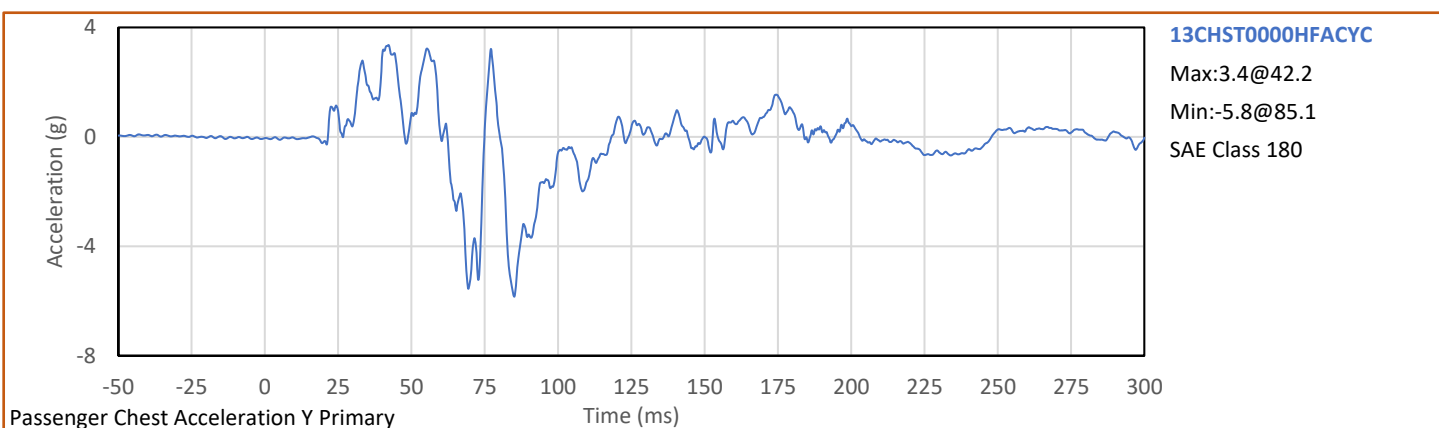
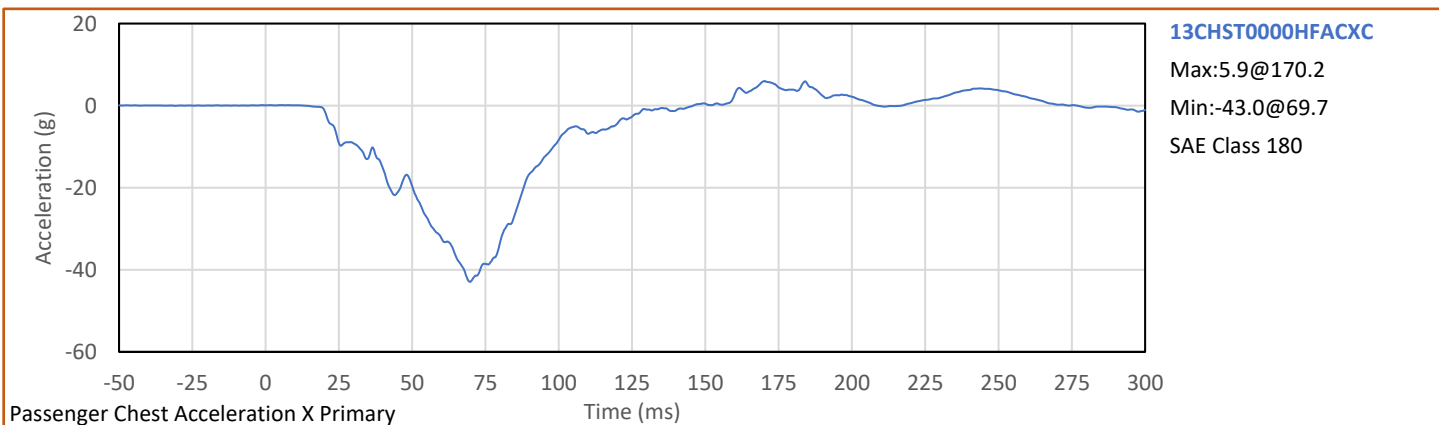
Test Vehicle: 2024 VinFast VF8 5-Door SUV  
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: M20244700  
Test Date: 7/10/2024



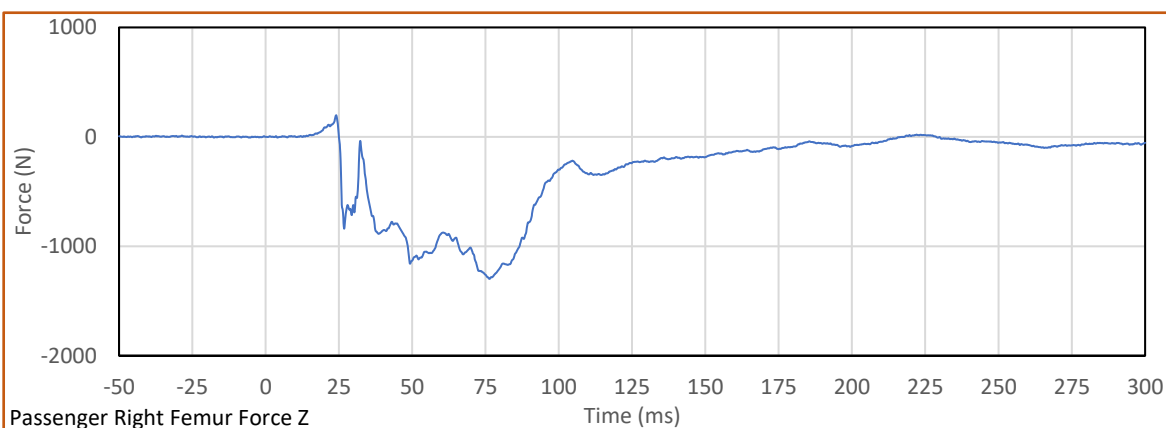
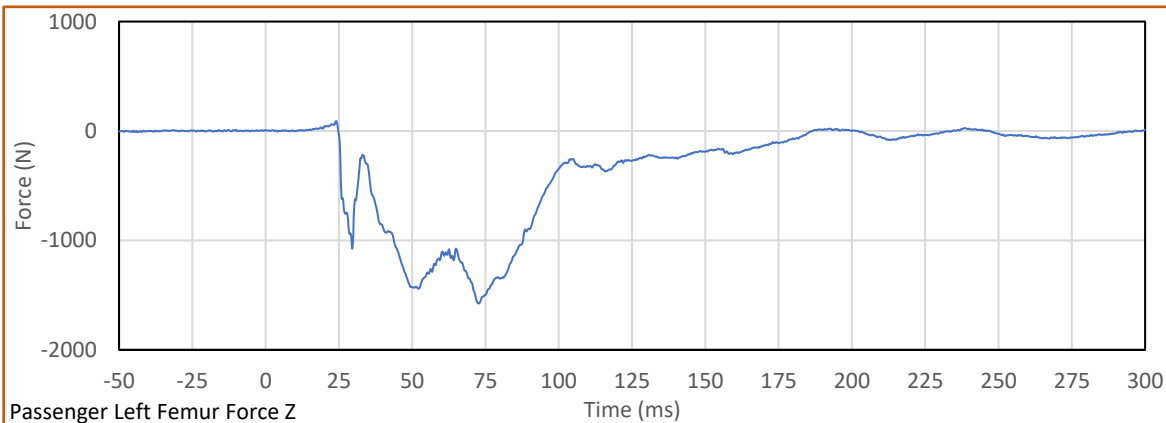






Test Vehicle: 2024 VinFast VF8 5-Door SUV  
Test Program: 56.3 km/h Frontal Impact NCAP Test

NHTSA No.: M20244700  
Test Date: 7/10/2024



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



**APPENDIX C**  
**Pre-Test ATD Qualification and Performance Verification**  
**Hybrid III 50th Percentile Male ATD**  
**S/N: 360**

ATD Serial No.: 360

Test Date: 2024-06-07

| Dummy Item             | Inspect for                                 | Comments | Damage | OK |
|------------------------|---------------------------------------------|----------|--------|----|
| Entire ATD             | Perform general cleaning                    |          |        | ✓  |
| Outer Skin             | Gashes, rips, cracks                        |          |        | ✓  |
| Head                   | Ballast secure                              |          |        | ✓  |
|                        | General appearance                          |          |        | ✓  |
| Neck bracket           | Upper neck firmly attached to lower bracket |          |        | ✓  |
| Neck                   | Broken or cracked rubber                    |          |        | ✓  |
|                        | Looseness at the condyle joint              |          |        | ✓  |
| Nodding block          | Cracked or out of position                  |          |        | ✓  |
| Lumbar Spine           | Broken or cracked rubber                    |          |        | ✓  |
| Ribs                   | Broken or bent ribs                         |          |        | ✓  |
|                        | Broken or bent rib supports                 |          |        | ✓  |
|                        | Damping material separated or cracked       |          |        | ✓  |
|                        | Rubber bumpers in place                     |          |        | ✓  |
| Chest Displ. Assembly  | Bent shaft                                  |          |        | ✓  |
|                        | Slider arm riding in track                  |          |        | ✓  |
| Sensors                | Check cables for cuts, tears                |          |        | ✓  |
|                        | Check for damaged insulation                |          |        | ✓  |
| Accelerometer Mounting | Head mounting secure                        |          |        | ✓  |
|                        | Chest mounting secure                       |          |        | ✓  |
| Knees                  | Skin condition                              |          |        | ✓  |
|                        | Insert (do not remove)                      |          |        | ✓  |
|                        | Casting                                     |          |        | ✓  |
| Limbs                  | Normal movement and adjustment              |          |        | ✓  |
| Knee Sliders           | Wires intact                                |          |        | ✓  |
|                        | Rubber returned to "resting" position       |          |        | ✓  |
| Pelvis                 | Broken                                      |          |        | ✓  |
| Other                  | Describe below as needed                    |          |        | ✓  |

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician:   
G. Fuentes

Approved By:   
J. Hernandez

ATD Serial No.: 360

Test Date: 2024-06-07

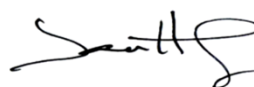
| Tested Parameter                     | Units | Spec. Low | Spec. High           | Result | Pass/Fail |
|--------------------------------------|-------|-----------|----------------------|--------|-----------|
| Laboratory Temperature               | °C    | 20.6      | 22.2                 | 21.3   | Pass      |
| Laboratory Relative Humidity         | %     | 10        | 70                   | 35     | Pass      |
| A - Total sitting height             | mm    | 879       | 889                  | 885    | Pass      |
| B - Shoulder pivot height            | mm    | 505       | 521                  | 517    | Pass      |
| C - 'H' point height                 | mm    | 84        | 89                   | 87     | Pass      |
| D - 'H' point location from backline | mm    | 135       | 140                  | 137    | Pass      |
| E - Shoulder pivot from backline     | mm    | 84        | 94                   | 92     | Pass      |
| F - Thigh clearance                  | mm    | 140       | 155                  | 151    | Pass      |
| G - Back of elbow to wrist pivot     | mm    | 290       | 305                  | 296    | Pass      |
| H - Head back to backline            | mm    | 41        | 46                   | 44     | Pass      |
| I - Shoulder to elbow length         | mm    | 330       | 345                  | 334    | Pass      |
| J - Elbow rest height                | mm    | 190       | 211                  | 194    | Pass      |
| K - Buttock to knee length           | mm    | 579       | 604                  | 587    | Pass      |
| L - Popliteal length                 | mm    | 429       | 455                  | 447    | Pass      |
| M - Knee pivot height                | mm    | 485       | 500                  | 494    | Pass      |
| N - Buttock popliteal length         | mm    | 452       | 477                  | 461    | Pass      |
| O - Chest depth without jacket       | mm    | 213       | 229                  | 223    | Pass      |
| P - Foot length                      | mm    | 251       | 267                  | 256    | Pass      |
| V - Shoulder breadth                 | mm    | 422       | 437                  | 430    | Pass      |
| W - Foot breadth                     | mm    | 91        | 107                  | 95     | Pass      |
| Y - Chest circum. (w/chest jacket)   | mm    | 970       | 1001                 | 984    | Pass      |
| Z - Waist circum.                    | mm    | 836       | 866                  | 848    | Pass      |
| AA - Location for chest circum.      | mm    | 429       | 434                  | 433    | Pass      |
| BB - Location for waist circum.      | mm    | 226       | 231                  | 228    | Pass      |
|                                      |       |           | Overall Test Results |        | Pass      |

Technician: \_\_\_\_\_



G. Fuentes

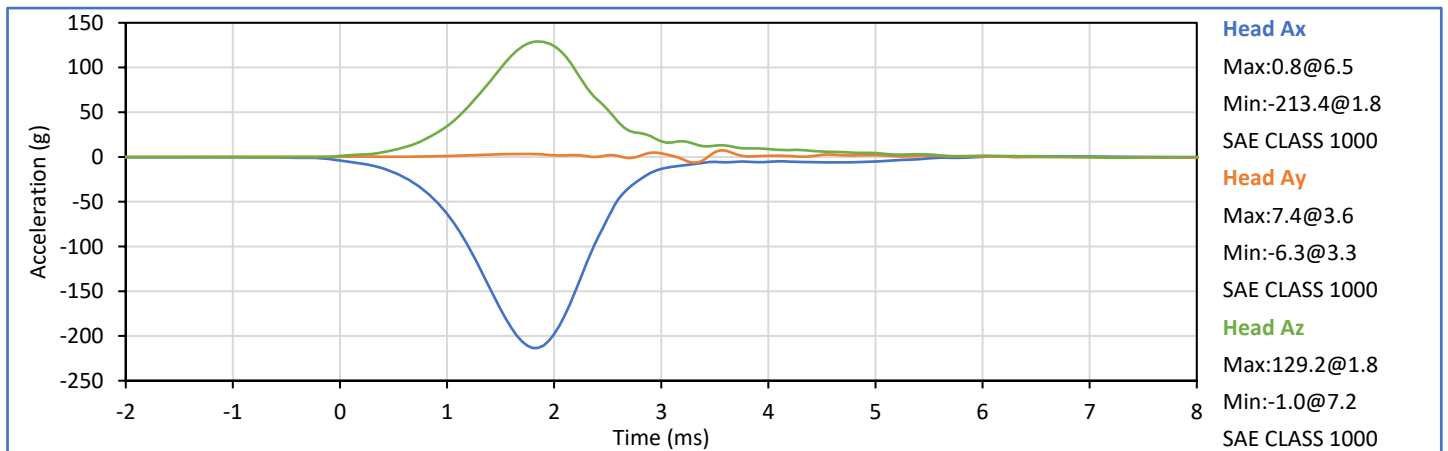
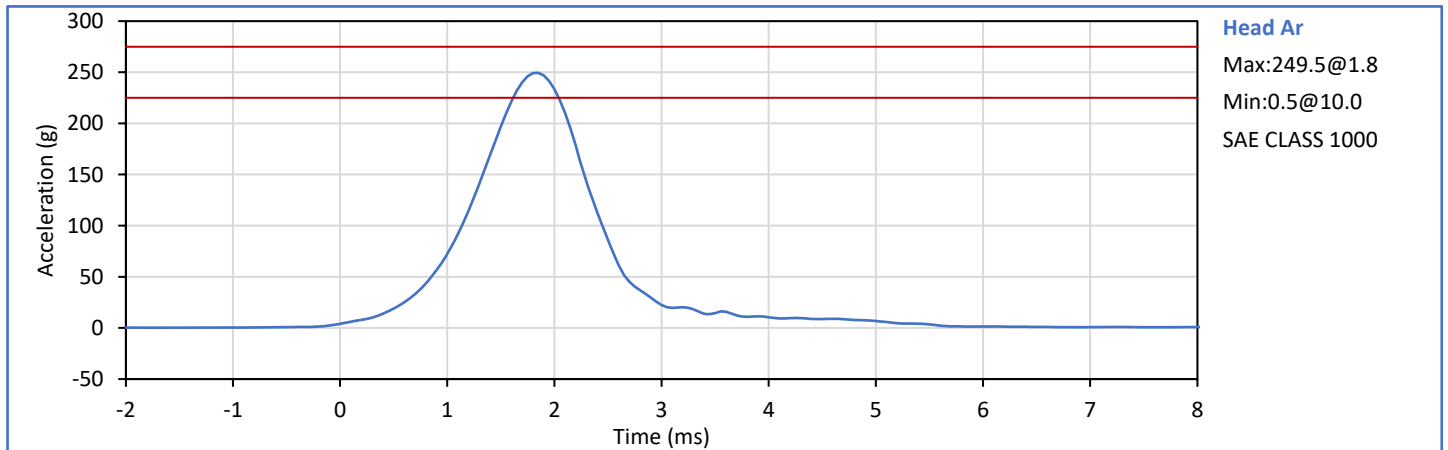
Approved By: \_\_\_\_\_



J. Hernandez



| Tested Parameter              | Units  | Spec. Low | Spec. High           | Result | Pass/Fail |
|-------------------------------|--------|-----------|----------------------|--------|-----------|
| Laboratory Temperature        | °C     | 18.9      | 25.6                 | 21.4   | Pass      |
| Laboratory Relative Humidity  | %      | 10        | 70                   | 40     | Pass      |
| Peak Resultant Acceleration   | g      | 225.0     | 275.0                | 249.5  | Pass      |
| Peak Lateral Acceleration     | g      | -15.0     | 15.0                 | 7.4    | Pass      |
| Oscillations After Main Pulse | %      | 0.0       | 10.0                 | 0.0    | Pass      |
| Is Acceleration Unimodal?     | Yes/No | Yes       |                      | Yes    | Pass      |
|                               |        |           | Overall Test Results | Pass   |           |



Technician:

*G. Fuentes*

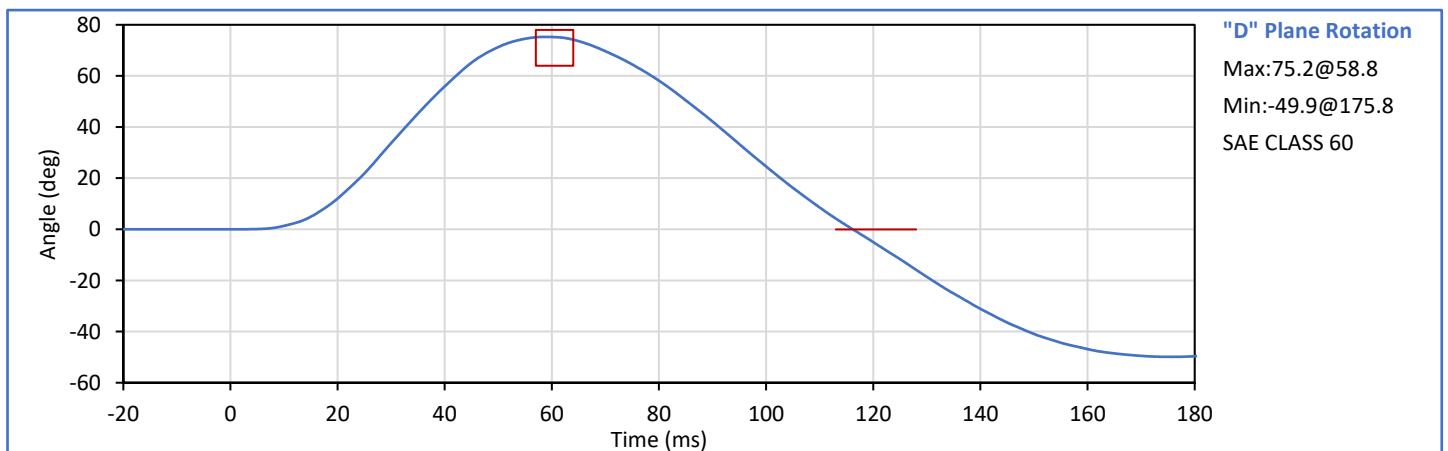
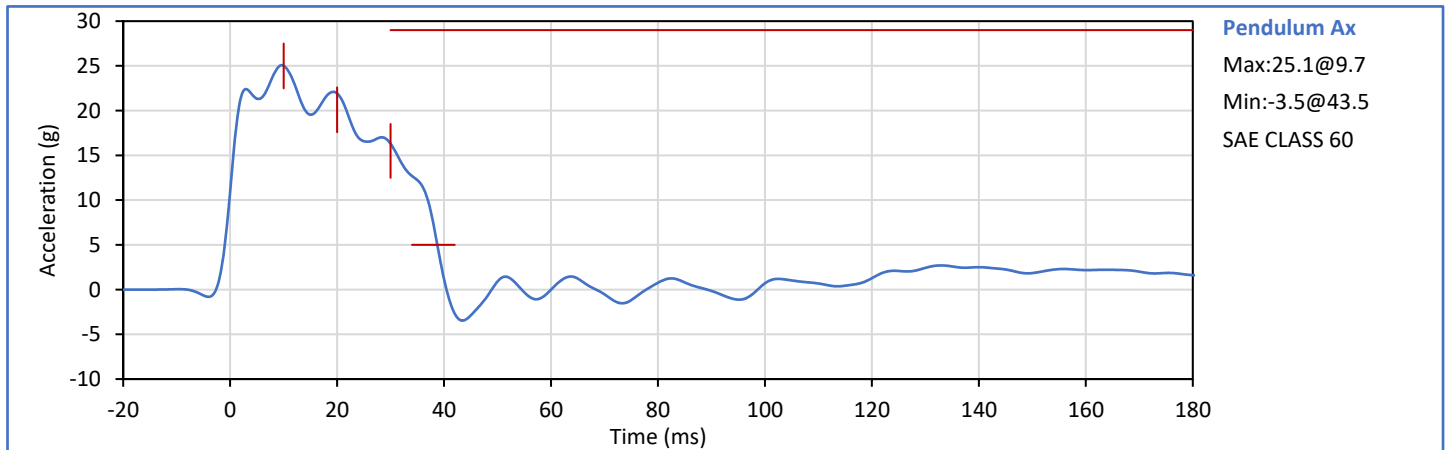
G. Fuentes

Approved By:

*J. Hernandez*

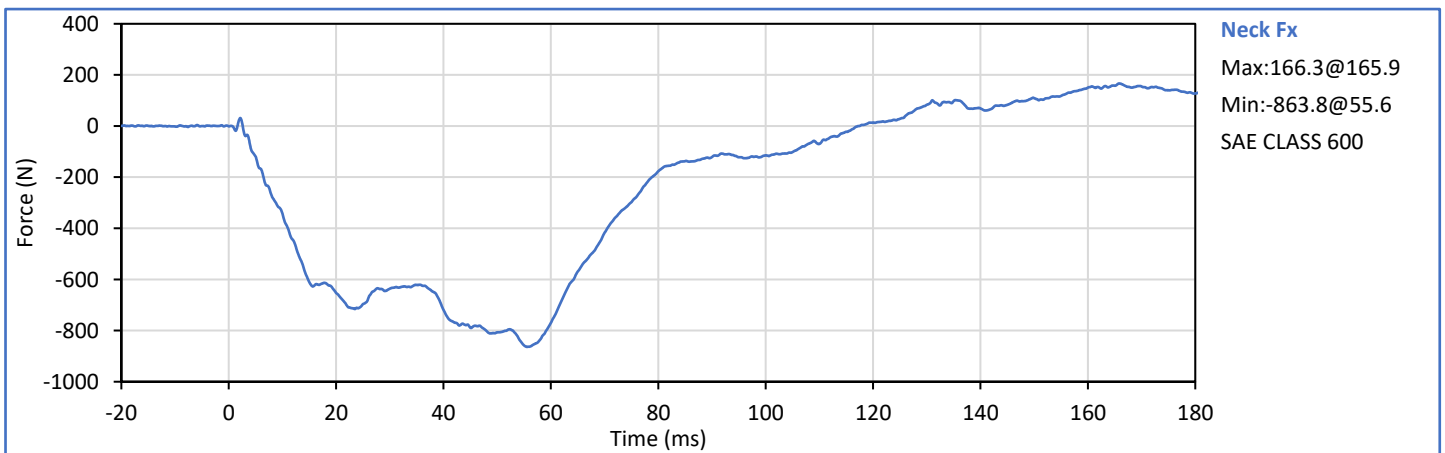
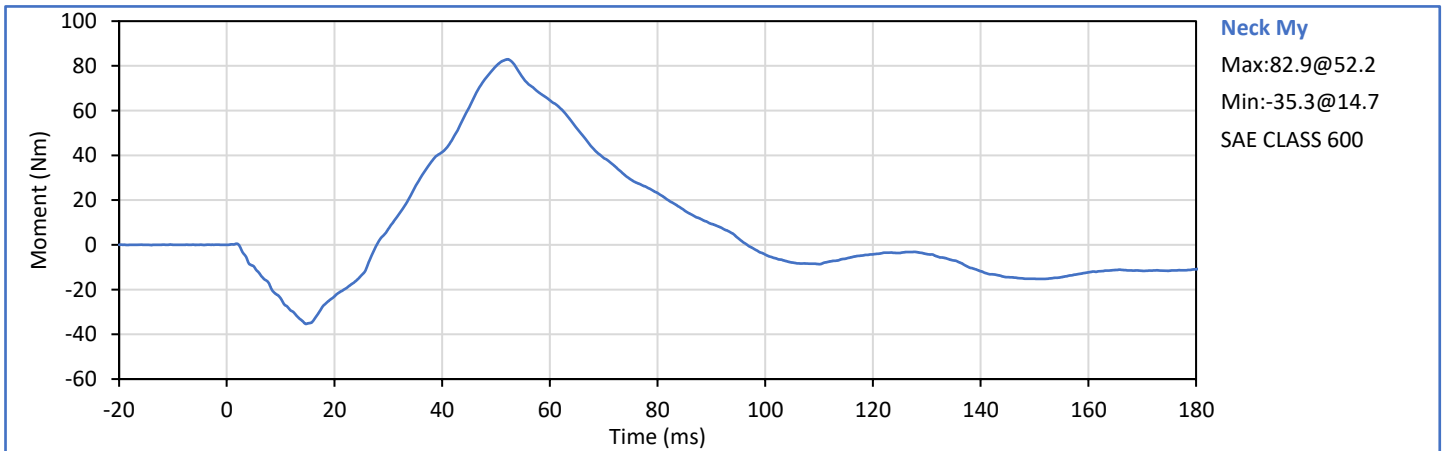
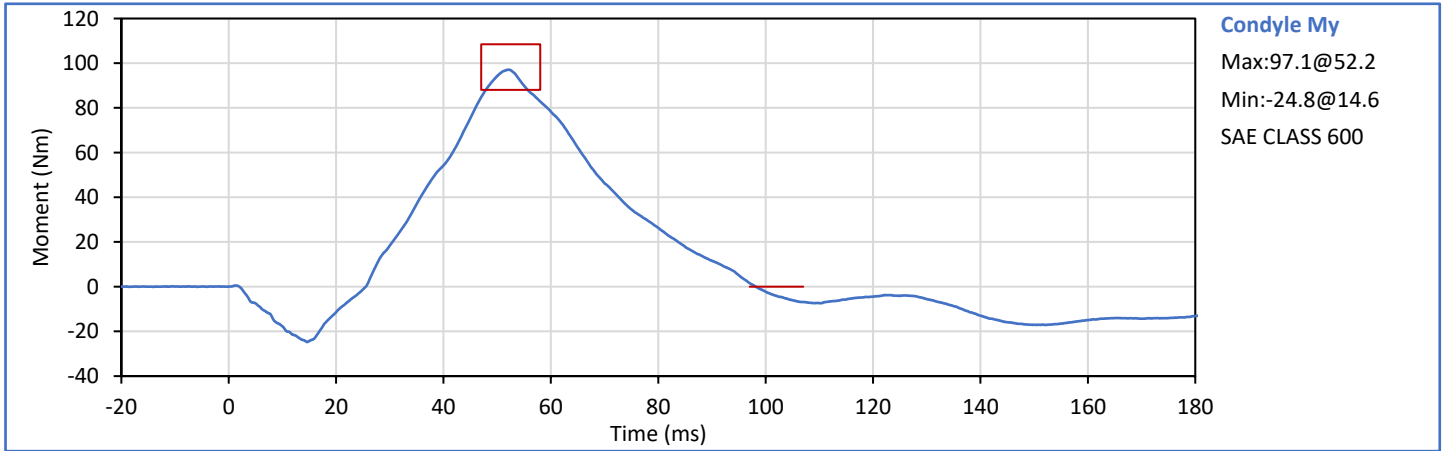
J. Hernandez

| Tested Parameter                 | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature           | °C    | 20.6      | 22.2       | 21.0   | Pass      |
| Laboratory Relative Humidity     | %     | 10        | 70         | 42     | Pass      |
| Pendulum Velocity                | m/s   | 6.89      | 7.13       | 7.10   | Pass      |
| Pendulum Deceleration at 10 ms   | g     | 22.5      | 27.5       | 25.0   | Pass      |
| Pendulum Deceleration at 20 ms   | g     | 17.6      | 22.6       | 21.9   | Pass      |
| Pendulum Deceleration at 30 ms   | g     | 12.5      | 18.5       | 16.3   | Pass      |
| Peak Pendulum Decel After 30 ms  | g     | 0.0       | 29.0       | 16.3   | Pass      |
| Deceleration Decay to Cross 5g   | ms    | 34.0      | 42.0       | 38.7   | Pass      |
| "D" Plane Rotation peak          | deg   | 64.0      | 78.0       | 75.2   | Pass      |
|                                  | ms    | 57.0      | 64.0       | 58.8   | Pass      |
| "D" Plane Rotation Decay to Zero | ms    | 113.0     | 128.0      | 116.2  | Pass      |
| Moment About Occipital Condyle   | Nm    | 88.1      | 108.5      | 97.1   | Pass      |
|                                  | ms    | 47.0      | 58.0       | 52.2   | Pass      |
| Moment Decay, Peak to Zero       | ms    | 97.0      | 107.0      | 98.2   | Pass      |
| Overall Test Results             |       |           |            | Pass   |           |



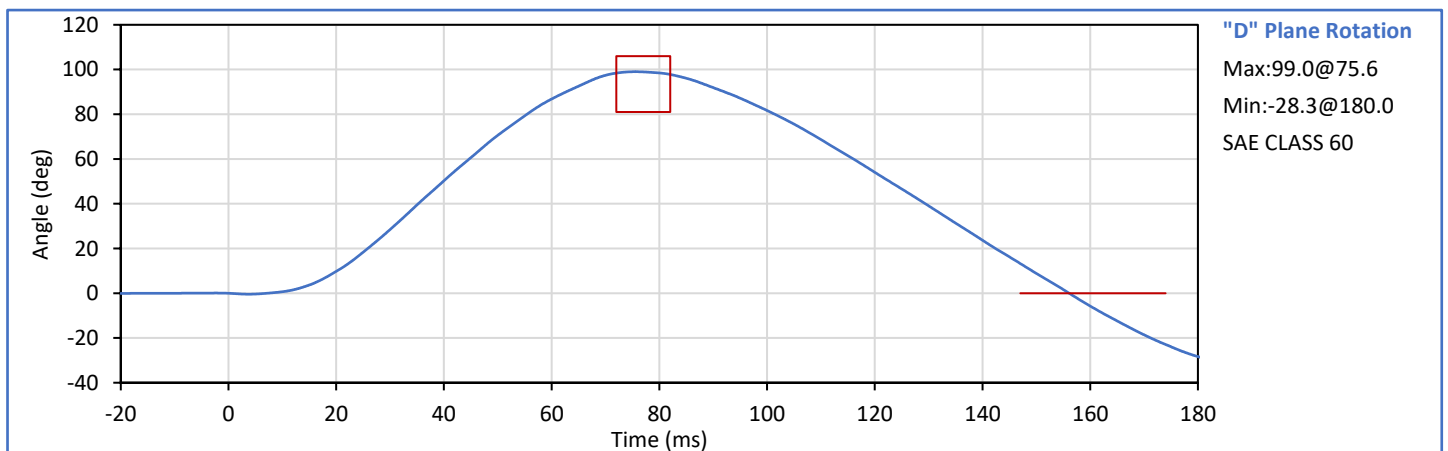
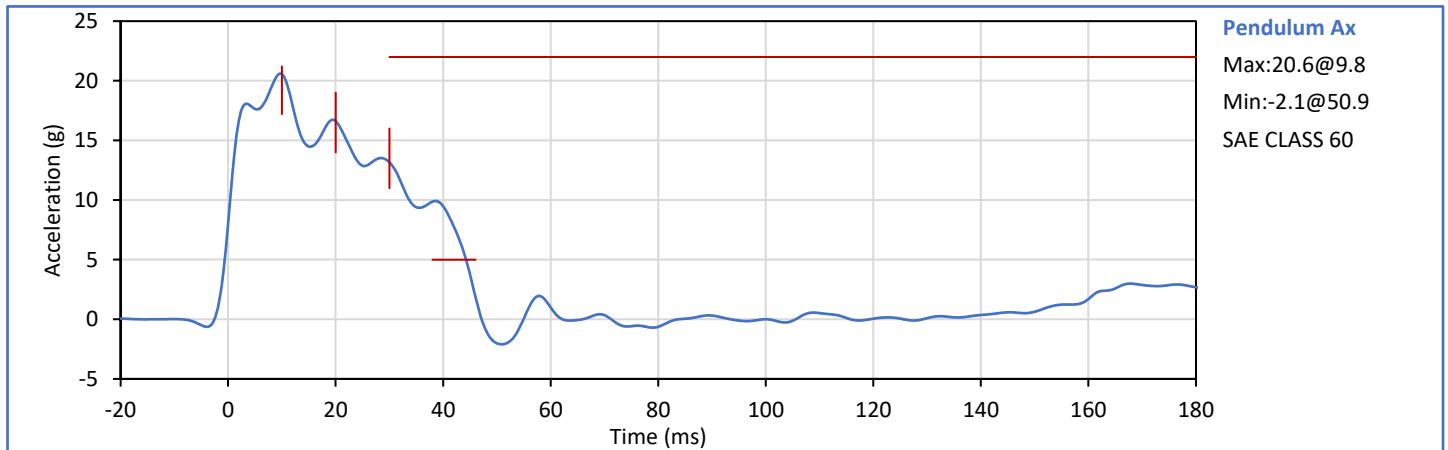
Technician: Mill LIG III  
G.Fuentes

Approved By: Santh  
J. Hernandez



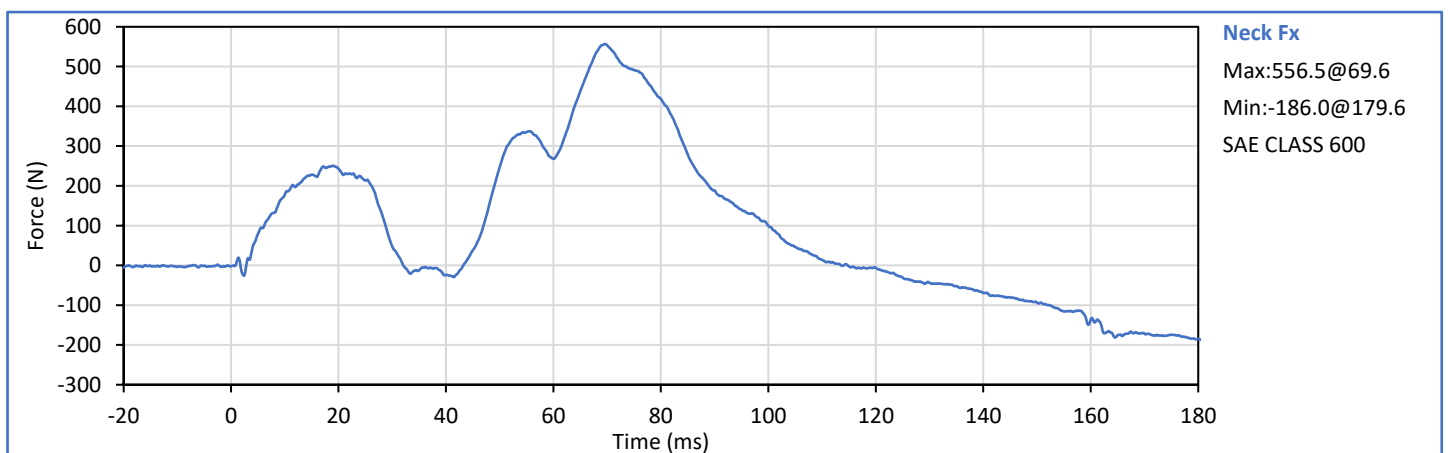
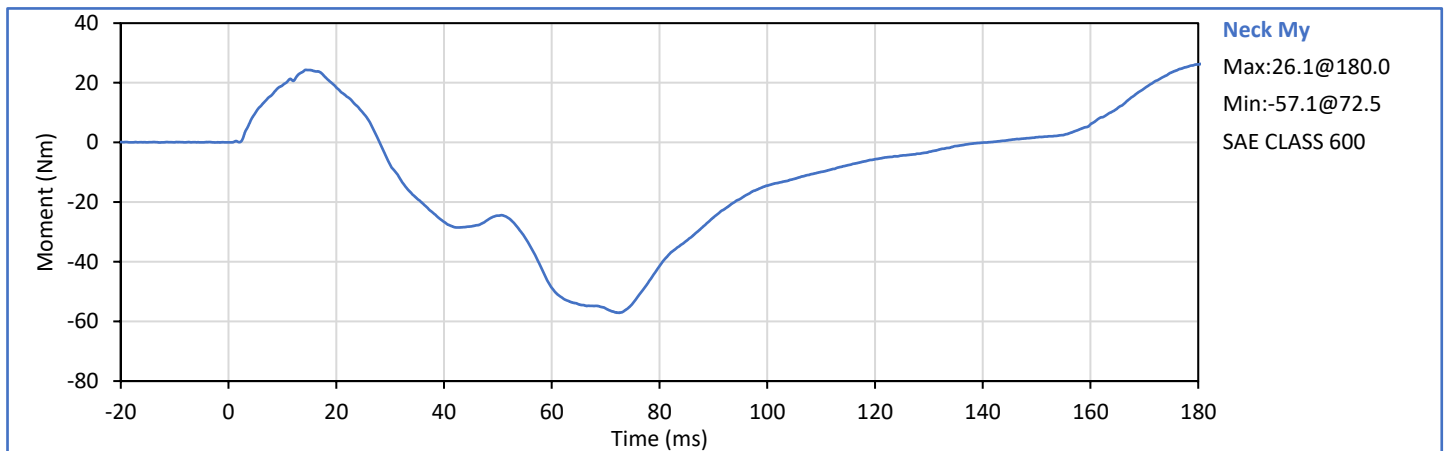
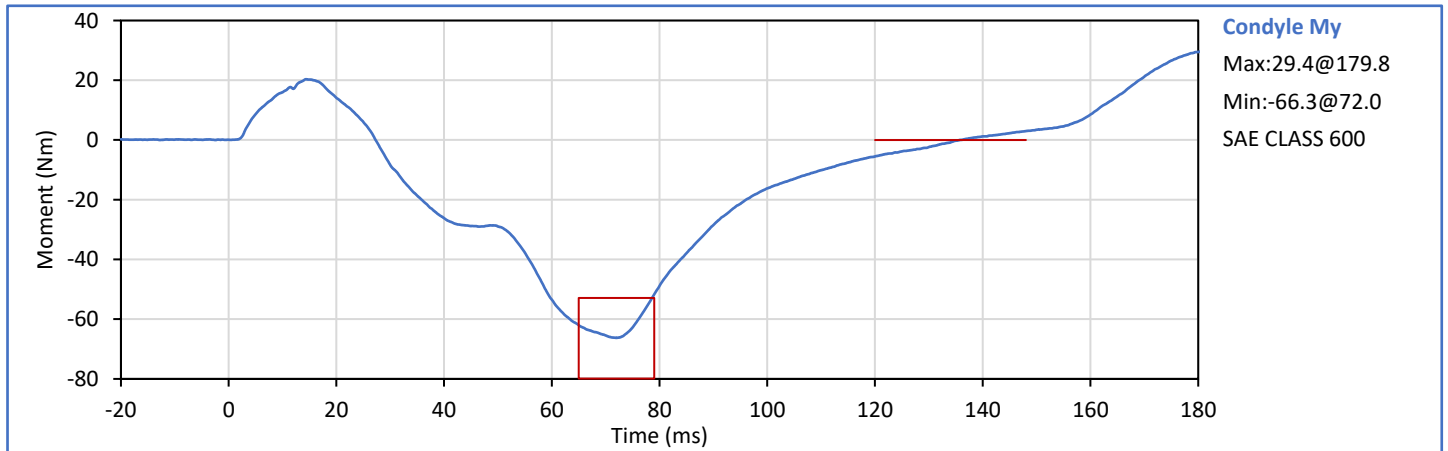


| Tested Parameter                 | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature           | °C    | 20.6      | 22.2       | 21.4   | Pass      |
| Laboratory Relative Humidity     | %     | 10        | 70         | 41     | Pass      |
| Pendulum Velocity                | m/s   | 5.94      | 6.19       | 6.03   | Pass      |
| Pendulum Deceleration at 10 ms   | g     | 17.2      | 21.2       | 20.6   | Pass      |
| Pendulum Deceleration at 20 ms   | g     | 14.0      | 19.0       | 16.6   | Pass      |
| Pendulum Deceleration at 30 ms   | g     | 11.0      | 16.0       | 13.2   | Pass      |
| Peak Pendulum Decel After 30 ms  | g     | 0.0       | 22.0       | 13.2   | Pass      |
| Deceleration Decay to Cross 5g   | ms    | 38.0      | 46.0       | 44.3   | Pass      |
| "D" Plane Rotation peak          | deg   | 81.0      | 106.0      | 99.0   | Pass      |
|                                  | ms    | 72.0      | 82.0       | 75.6   | Pass      |
| "D" Plane Rotation Decay to Zero | ms    | 147.0     | 174.0      | 156.1  | Pass      |
| Moment About Occipital Condyle   | Nm    | -79.9     | -52.9      | -66.3  | Pass      |
|                                  | ms    | 65.0      | 79.0       | 72.0   | Pass      |
| Moment Decay, Peak to Zero       | ms    | 120.0     | 148.0      | 136.0  | Pass      |
| Overall Test Results             |       |           |            | Pass   |           |

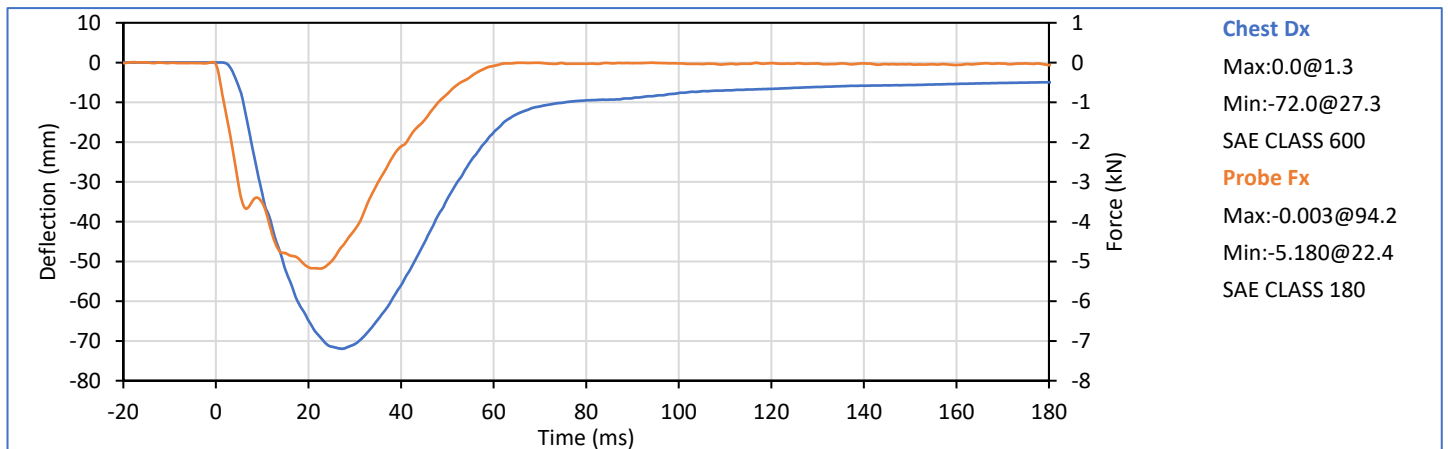
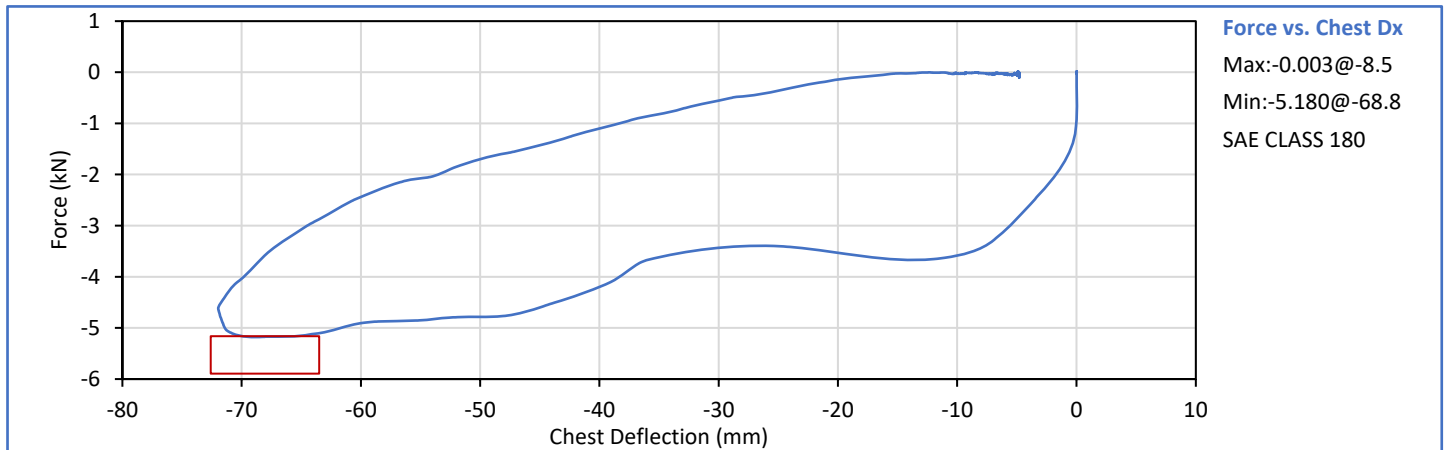


Technician: G. Fuentes

Approved By: J. Hernandez



| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 20.6      | 22.2       | 21.7   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 51     | Pass      |
| Probe Velocity               | m/s   | 6.58      | 6.82       | 6.77   | Pass      |
| Peak Chest Deflection        | mm    | -72.6     | -63.5      | -72.0  | Pass      |
| Peak Probe Force             | kN    | -5.893    | -5.159     | -5.180 | Pass      |
| Internal Hysteresis          | %     | 69.0      | 85.0       | 70.1   | Pass      |
| Overall Test Results         |       |           |            | Pass   | Pass      |



Technician:

*G. Fuentes*

G. Fuentes

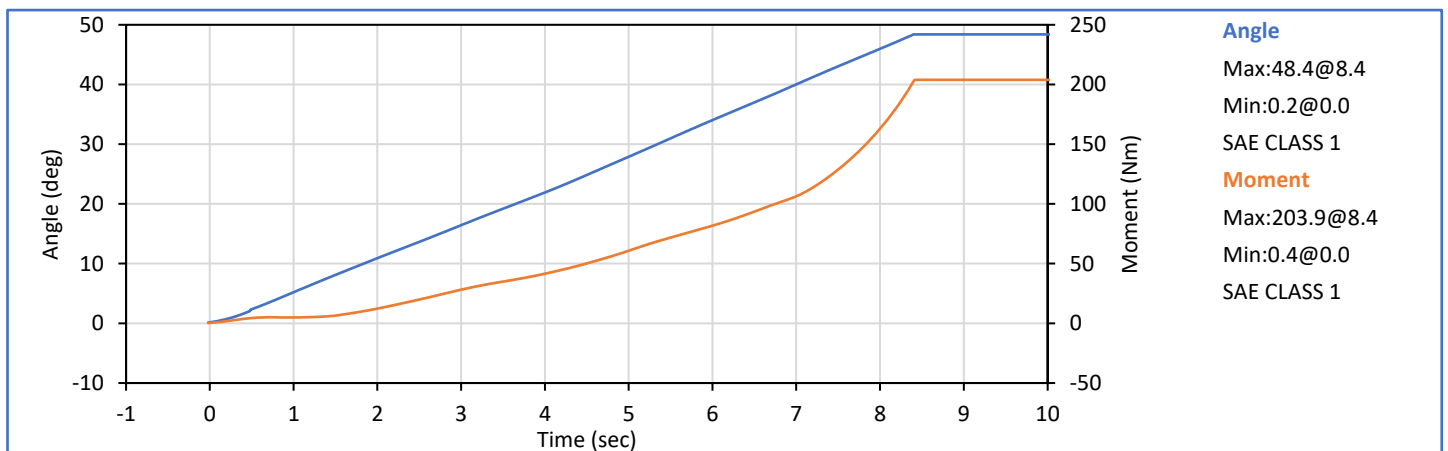
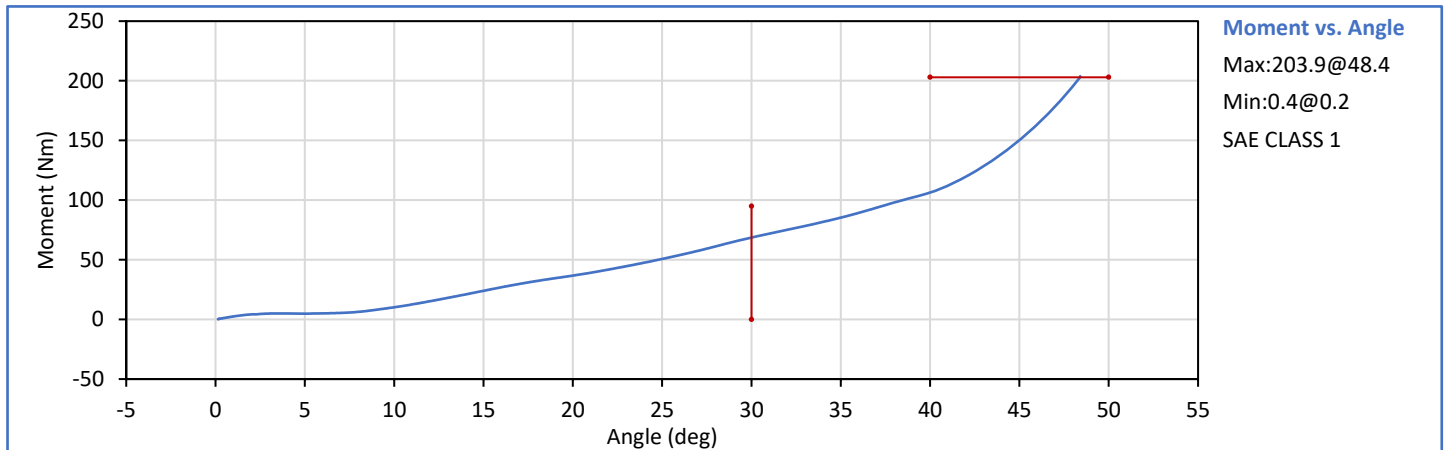
Approved By:

*J. Hernandez*

J. Hernandez



| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Left Hip Rotation Rate       | deg/s | 5.0       | 10.0       | 5.8    | Pass      |
| Left Femur Torque at 30°     | Nm    | 0.0       | 95.0       | 68.6   | Pass      |
| Left Hip Rotation at 203 Nm  | deg   | 40.0      | 50.0       | 48.4   | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

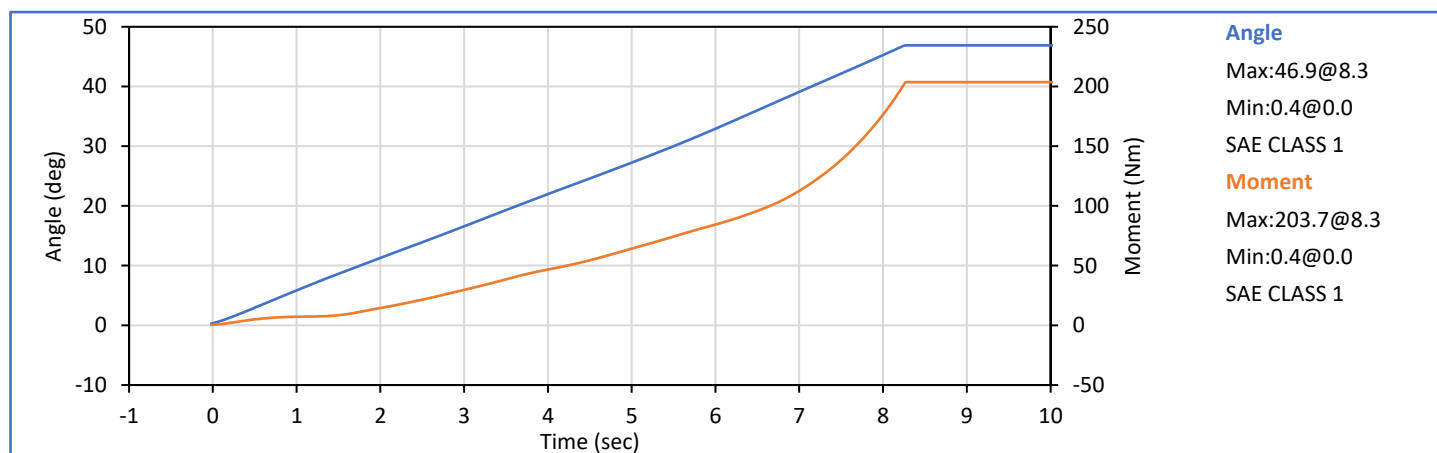
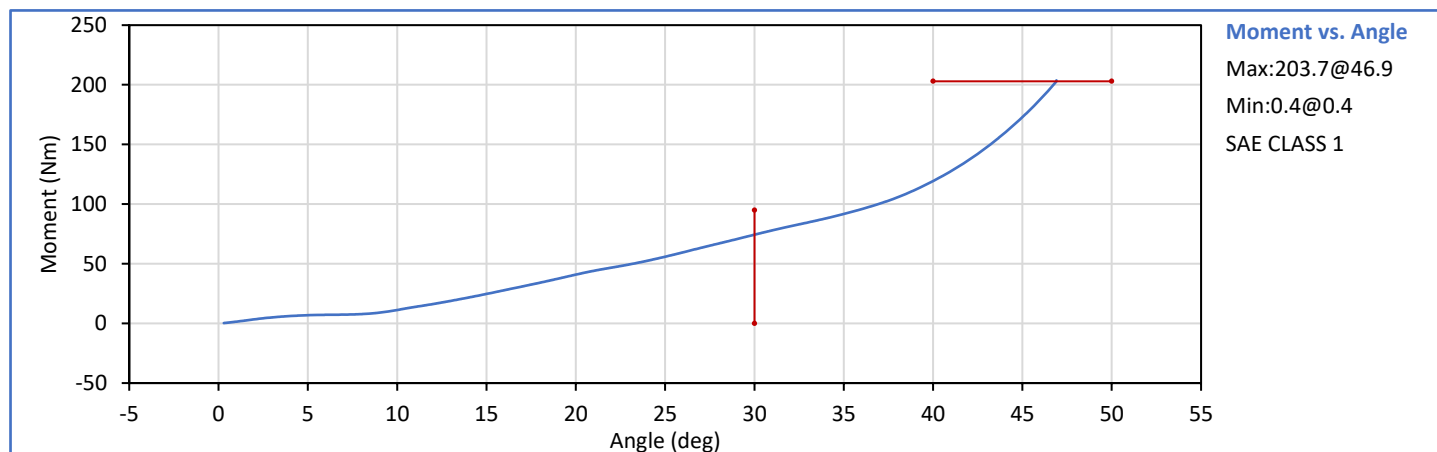
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Right Hip Rotation Rate      | deg/s | 5.0       | 10.0       | 5.6    | Pass      |
| Right Femur Torque at 30°    | Nm    | 0.0       | 95.0       | 74.3   | Pass      |
| Right Hip Rotation at 203 Nm | deg   | 40.0      | 50.0       | 46.9   | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

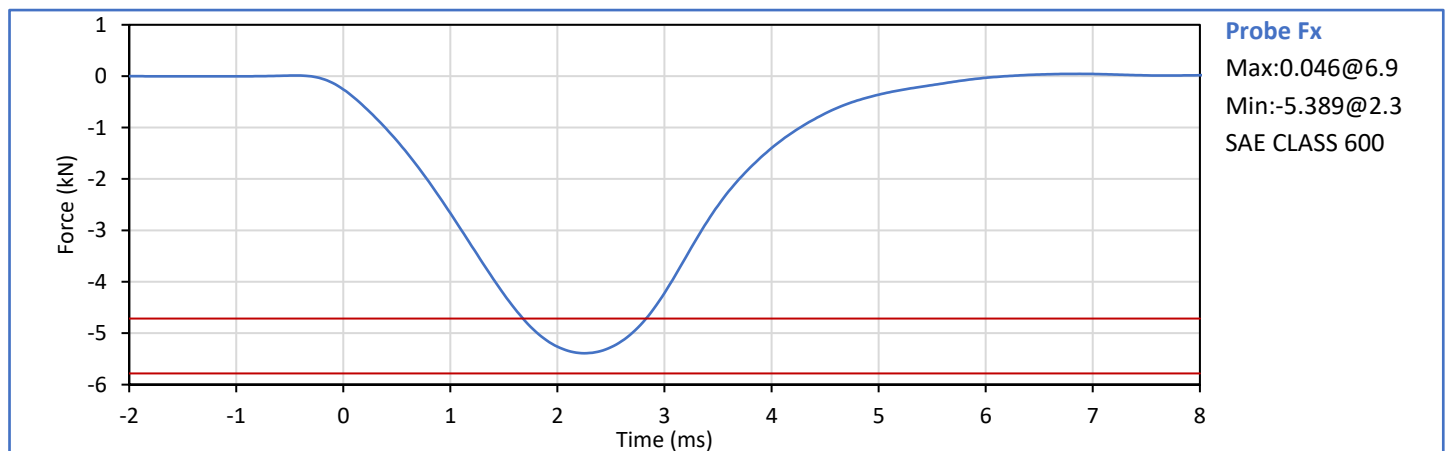
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

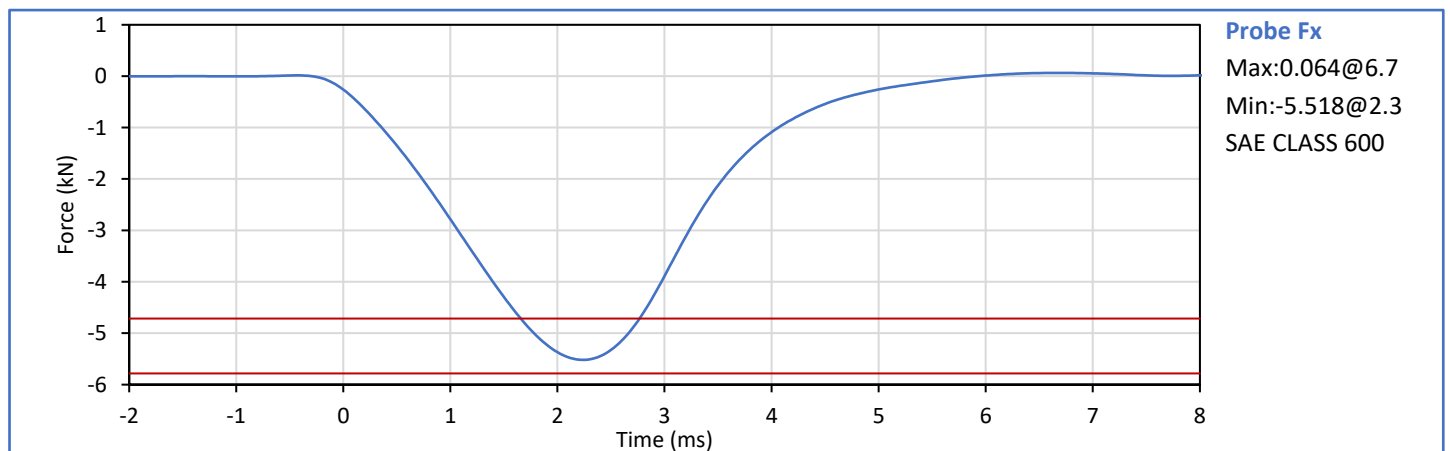
| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.095  | Pass      |
| Peak Resistive Force         | kN    | -5.782    | -4.715     | -5.389 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician: G. Fuentes

Approved By: J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.092  | Pass      |
| Peak Resistive Force         | kN    | -5.782    | -4.715     | -5.518 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician: G. Fuentes

Approved By: J. Hernandez



**APPENDIX C**  
**Pre-Test ATD Qualification and Performance Verification**  
**Hybrid III 5th Percentile Female ATD**  
**S/N: DH1644**

ATD Serial No.: DH1644

Test Date: 2024-06-07

| Dummy Item    | Inspect for                                 | Comments | Damage | Okay |
|---------------|---------------------------------------------|----------|--------|------|
| Entire ATD    | Perform general cleaning                    |          |        | ✓    |
| Outer Skin    | Gashes, rips, cracks                        |          |        | ✓    |
| Head          | Ballast secure                              |          |        | ✓    |
|               | General appearance                          |          |        | ✓    |
| Neck bracket  | Upper neck firmly attached to lower bracket |          |        | ✓    |
| Neck          | Broken or cracked rubber                    |          |        | ✓    |
|               | Looseness at the condyle joint              |          |        | ✓    |
| Nodding block | Cracked or out of position                  |          |        | ✓    |
| Lumbar Spine  | Broken or cracked rubber                    |          |        | ✓    |
| Ribs          | Broken or bent ribs                         |          |        | ✓    |
|               | Broken or bent rib supports                 |          |        | ✓    |
|               | Damping material separated or cracked       |          |        | ✓    |
|               | Rubber bumpers in place                     |          |        | ✓    |
| Chest Displ.  | Bent shaft                                  |          |        | ✓    |
| Assembly      | Slider arm riding in track                  |          |        | ✓    |
| Sensors       | Check cables for cuts, tears                |          |        | ✓    |
|               | Check for damaged insulation                |          |        | ✓    |
| Accelerometer | Head mounting secure                        |          |        | ✓    |
| Mounting      | Chest mounting secure                       |          |        | ✓    |
| Knees         | Skin condition                              |          |        | ✓    |
|               | Insert (do not remove)                      |          |        | ✓    |
|               | Casting                                     |          |        | ✓    |
| Limbs         | Normal movement and adjustment              |          |        | ✓    |
| Knee Sliders  | Wires intact                                |          |        | ✓    |
|               | Rubber returned to "resting" position       |          |        | ✓    |
| Pelvis        | Broken                                      |          |        | ✓    |
| Other         | Describe below as needed                    |          |        | ✓    |

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician:

*Bill LGS III*

G. Fuentes

Approved By:

*Seath*

J. Hernandez

ATD Serial No.: DH1644

Test Date: 2024-06-07

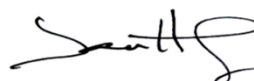
| Tested Parameter                     | Units | Spec. Low | Spec. High           | Result | Pass/Fail |
|--------------------------------------|-------|-----------|----------------------|--------|-----------|
| Laboratory Temperature               | °C    | 20.6      | 22.2                 | 21.6   | Pass      |
| Laboratory Relative Humidity         | %     | 10        | 70                   | 37     | Pass      |
| A - Total sitting height             | mm    | 775       | 800                  | 787    | Pass      |
| B - Shoulder pivot height            | mm    | 432       | 457                  | 453    | Pass      |
| C - 'H' point height                 | mm    | 81        | 86                   | 86     | Pass      |
| D - 'H' point location from backline | mm    | 145       | 150                  | 147    | Pass      |
| E - Shoulder pivot from backline     | mm    | 69        | 84                   | 73     | Pass      |
| F - Thigh clearance                  | mm    | 119       | 135                  | 129    | Pass      |
| G - Back of elbow to wrist pivot     | mm    | 244       | 259                  | 252    | Pass      |
| H - Head back to backline            | mm    | 41        | 46                   | 44     | Pass      |
| I - Shoulder to elbow length         | mm    | 277       | 297                  | 288    | Pass      |
| J - Elbow rest height                | mm    | 183       | 203                  | 197    | Pass      |
| K - Buttock to knee length           | mm    | 521       | 546                  | 532    | Pass      |
| L - Popliteal length                 | mm    | 356       | 376                  | 363    | Pass      |
| M - Knee pivot height                | mm    | 394       | 419                  | 405    | Pass      |
| N - Buttock popliteal length         | mm    | 414       | 439                  | 431    | Pass      |
| O - Chest depth without jacket       | mm    | 175       | 191                  | 179    | Pass      |
| P - Foot length                      | mm    | 219       | 234                  | 227    | Pass      |
| R - Buttock to Knee Pivot Length     | mm    | 457       | 483                  | 469    | Pass      |
| S - Head Breadth                     | mm    | 137       | 147                  | 144    | Pass      |
| T - Head Depth                       | mm    | 178       | 188                  | 185    | Pass      |
| U - Hip Breadth                      | mm    | 300       | 315                  | 304    | Pass      |
| V - Shoulder breadth                 | mm    | 351       | 366                  | 360    | Pass      |
| W - Foot breadth                     | mm    | 79        | 94                   | 87     | Pass      |
| X - Head circum.                     | mm    | 528       | 549                  | 542    | Pass      |
| Y - Chest circum. (w/chest jacket)   | mm    | 851       | 881                  | 868    | Pass      |
| Z - Waist circum.                    | mm    | 760       | 790                  | 775    | Pass      |
| AA - Location for chest circum.      | mm    | 333       | 358                  | 339    | Pass      |
| BB - Location for waist circum.      | mm    | 160       | 170                  | 165    | Pass      |
|                                      |       |           | Overall Test Results |        | Pass      |

Technician:



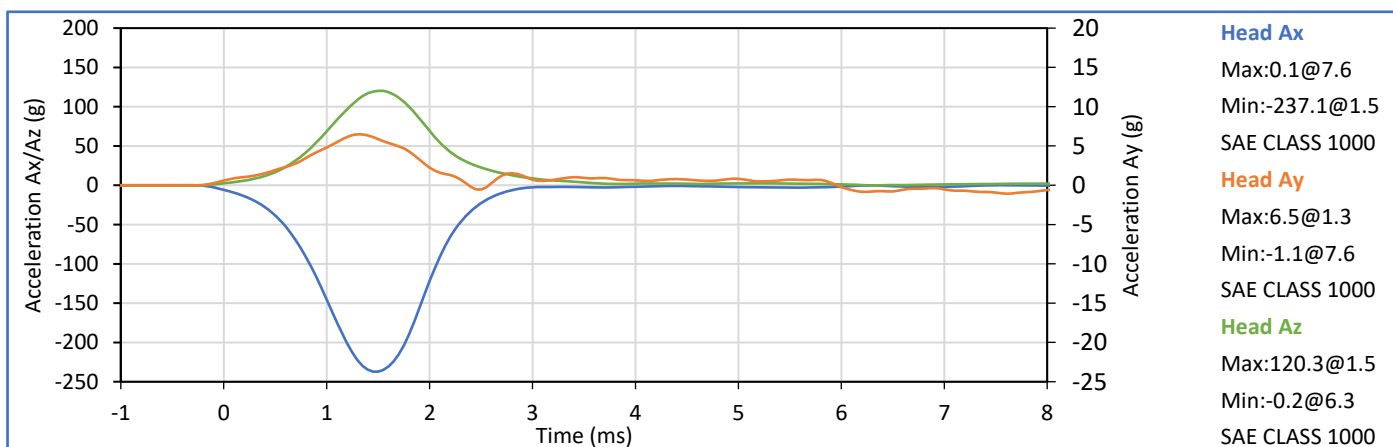
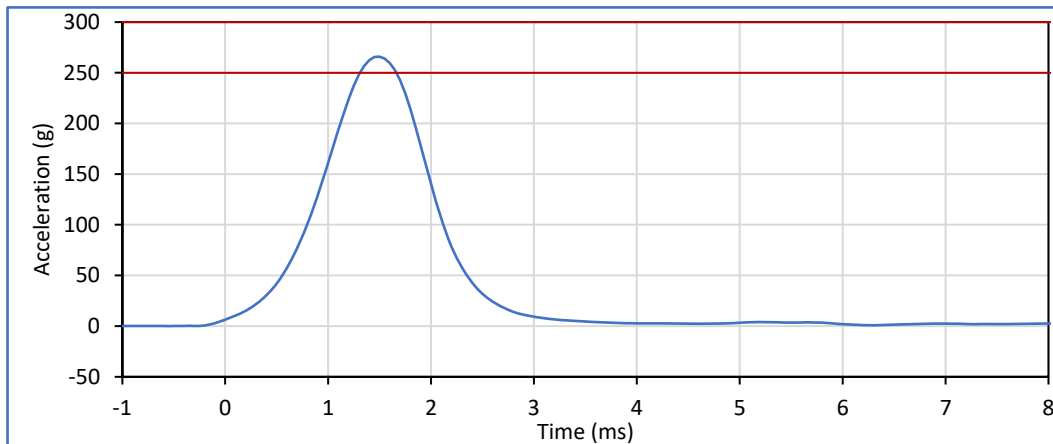
G. Fuentes

Approved By:



J. Hernandez

| Tested Parameter              | Units  | Spec. Low | Spec. High           | Result | Pass/Fail |
|-------------------------------|--------|-----------|----------------------|--------|-----------|
| Laboratory Temperature        | °C     | 18.9      | 25.6                 | 20.6   | Pass      |
| Laboratory Humidity           | %      | 10        | 70                   | 47     | Pass      |
| Peak Resultant Acceleration   | g      | 250.0     | 300.0                | 265.9  | Pass      |
| Peak Lateral Acceleration     | g      | -15.0     | 15.0                 | 6.5    | Pass      |
| Oscillations After Main Pulse | %      | 0.0       | 10.0                 | 1.4    | Pass      |
| Is Acceleration Unimodal?     | Yes/No | Yes       |                      | Yes    | Pass      |
|                               |        |           | Overall Test Results | Pass   |           |



Technician:

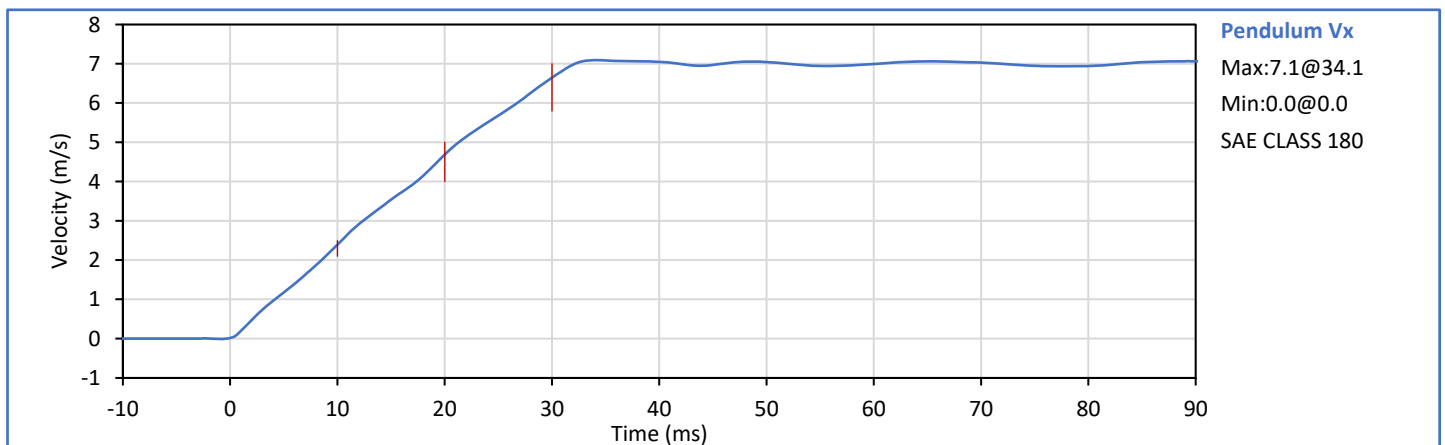
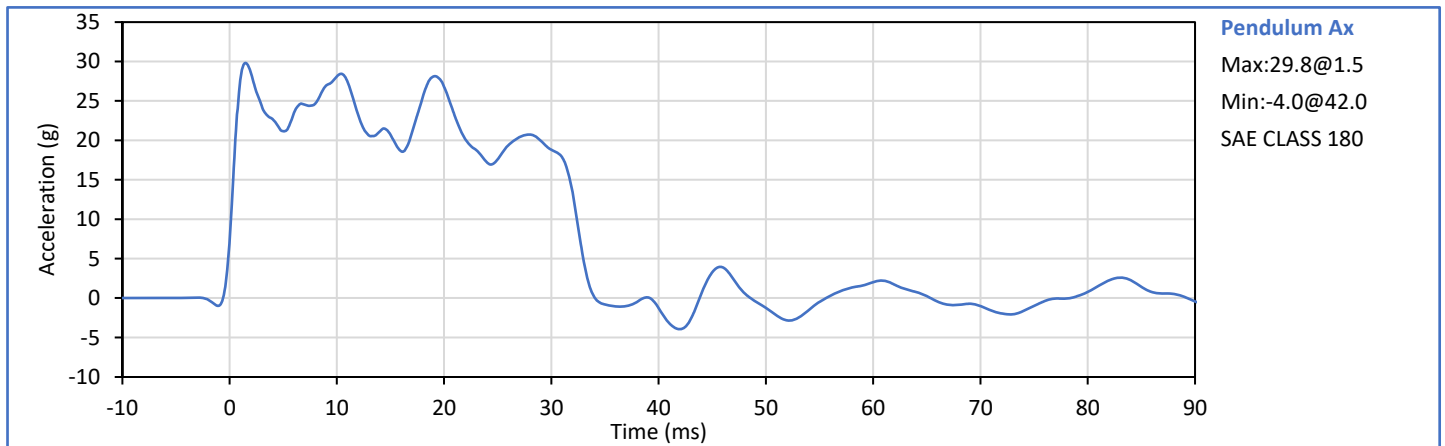
G. Fuentes

Approved By:

J. Hernandez



| Tested Parameter               | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature         | °C    | 20.6      | 22.2       | 21.1   | Pass      |
| Laboratory Humidity            | %     | 10        | 70         | 36     | Pass      |
| Pendulum Velocity              | m/s   | 6.89      | 7.13       | 6.96   | Pass      |
| Pendulum Velocity at 10 ms     | m/s   | 2.10      | 2.50       | 2.39   | Pass      |
| Pendulum Velocity at 20 ms     | m/s   | 4.00      | 5.00       | 4.69   | Pass      |
| Pendulum Velocity at 30 ms     | m/s   | 5.80      | 7.00       | 6.64   | Pass      |
| Peak "D" Plane Rotation        | deg   | 77.0      | 91.0       | 83.2   | Pass      |
| Peak Moment in Rotation        | Nm    | 69.0      | 83.0       | 81.0   | Pass      |
| Positive Moment Decay to 10 Nm | ms    | 80.0      | 100.0      | 81.5   | Pass      |
| Overall Test Results           |       |           |            |        | Pass      |



Technician:

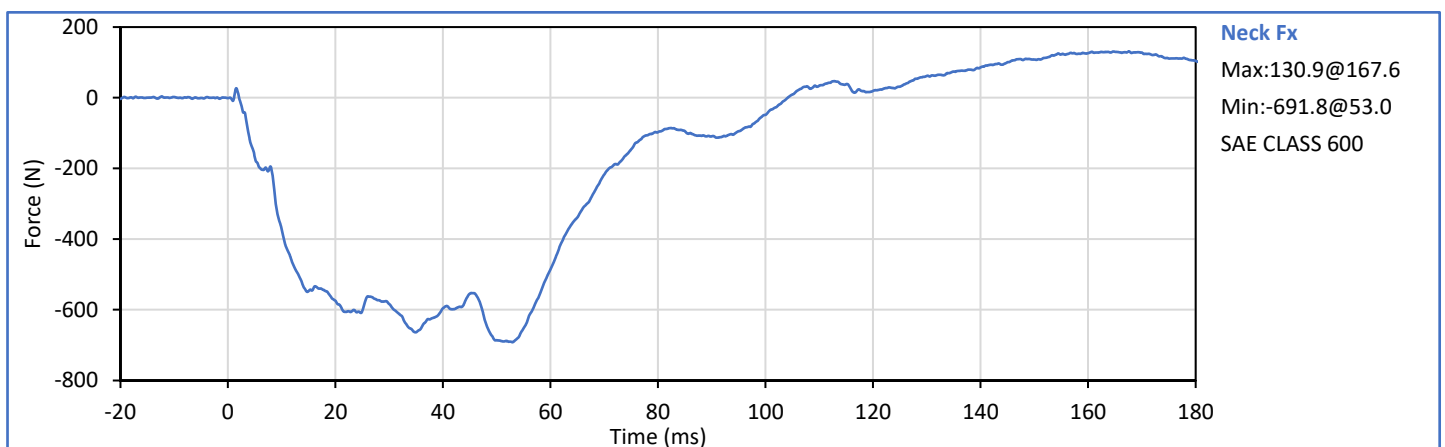
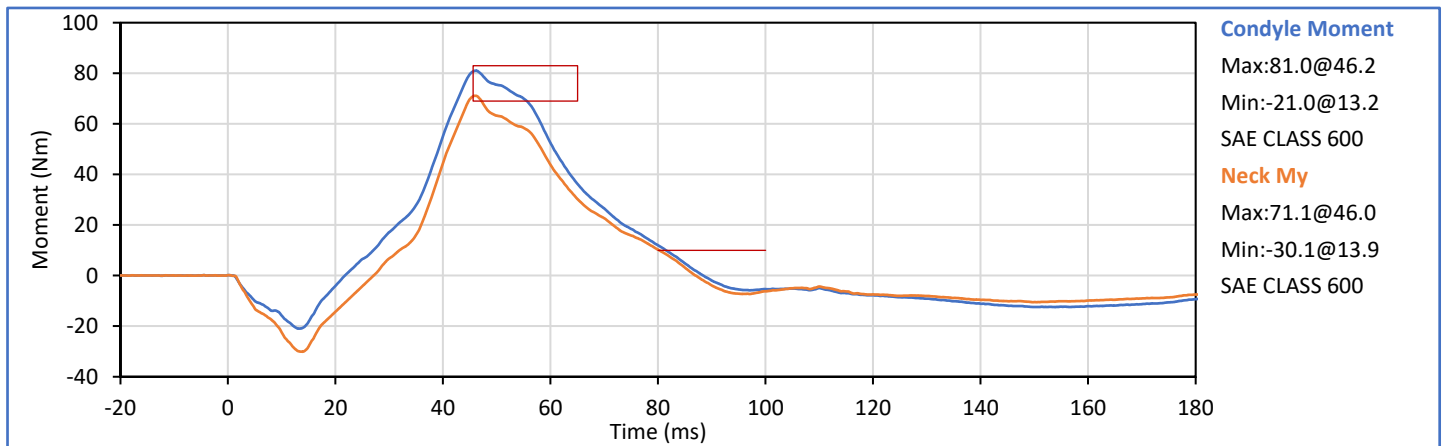
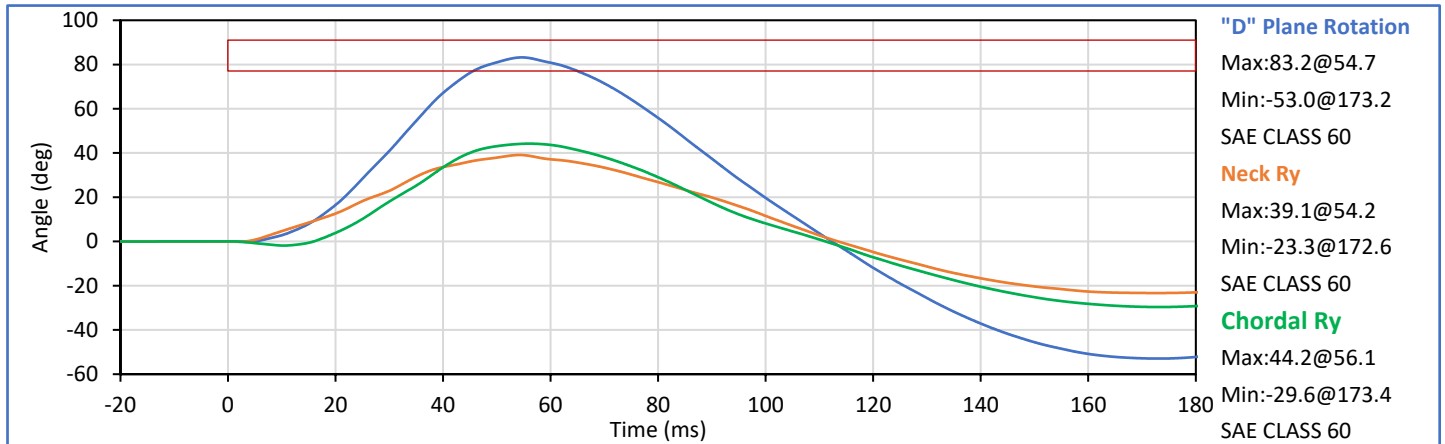
*G. Fuentes*

G. Fuentes

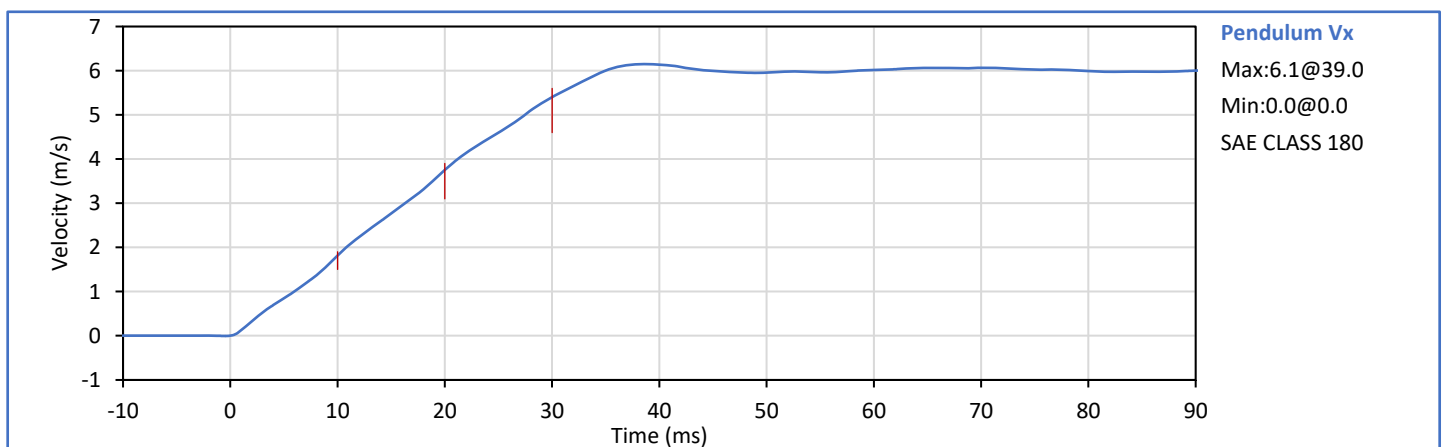
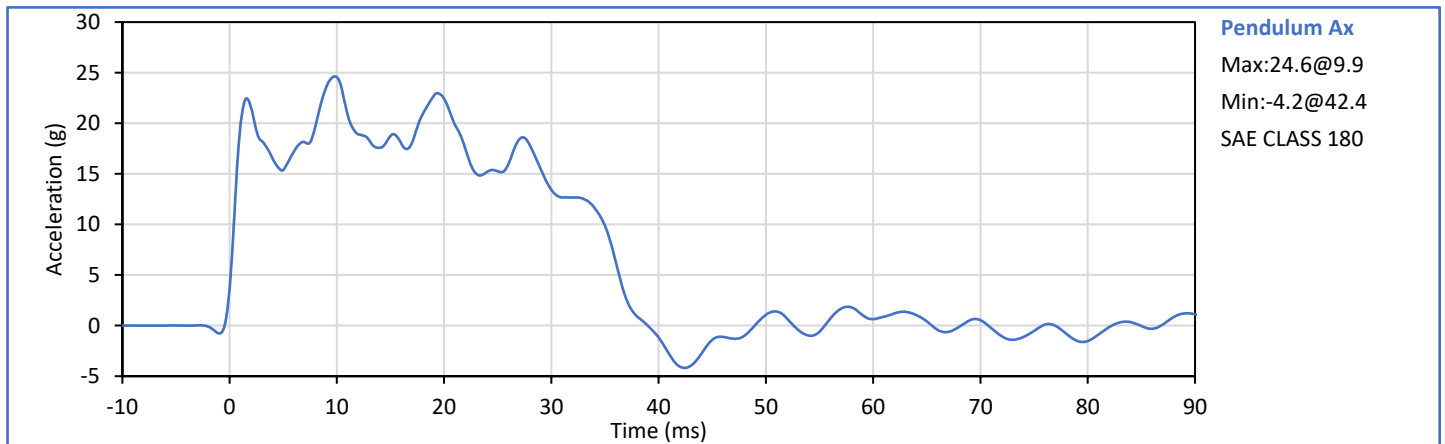
Approved By:

*J. Hernandez*

J. Hernandez



| Tested Parameter                | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|---------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature          | °C    | 20.6      | 22.2       | 21.1   | Pass      |
| Laboratory Relative Humidity    | %     | 10        | 70         | 40     | Pass      |
| Pendulum Velocity               | m/s   | 5.95      | 6.19       | 6.06   | Pass      |
| Pendulum Velocity at 10 ms      | m/s   | 1.50      | 1.90       | 1.81   | Pass      |
| Pendulum Velocity at 20 ms      | m/s   | 3.10      | 3.90       | 3.75   | Pass      |
| Pendulum Velocity at 30 ms      | m/s   | 4.60      | 5.60       | 5.40   | Pass      |
| Peak "D" Plane Rotation         | deg   | 99.0      | 114.0      | 106.6  | Pass      |
| Peak Moment in Rotation         | Nm    | -65.0     | -53.0      | -60.2  | Pass      |
| Negative Moment Decay to -10 Nm | ms    | 94.0      | 114.0      | 96.0   | Pass      |
| Overall Test Results            |       |           |            |        | Pass      |



Technician:

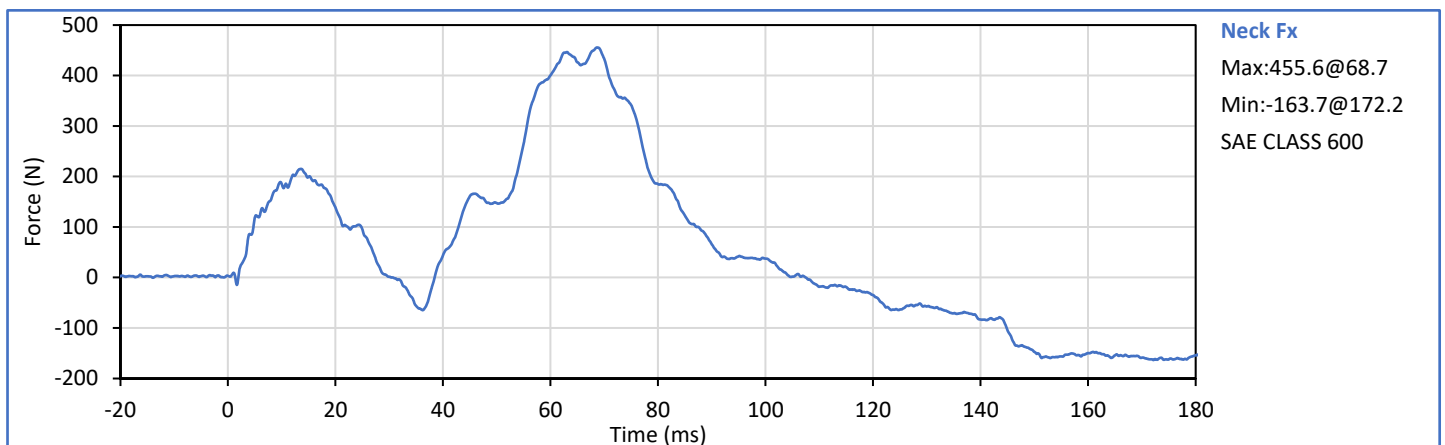
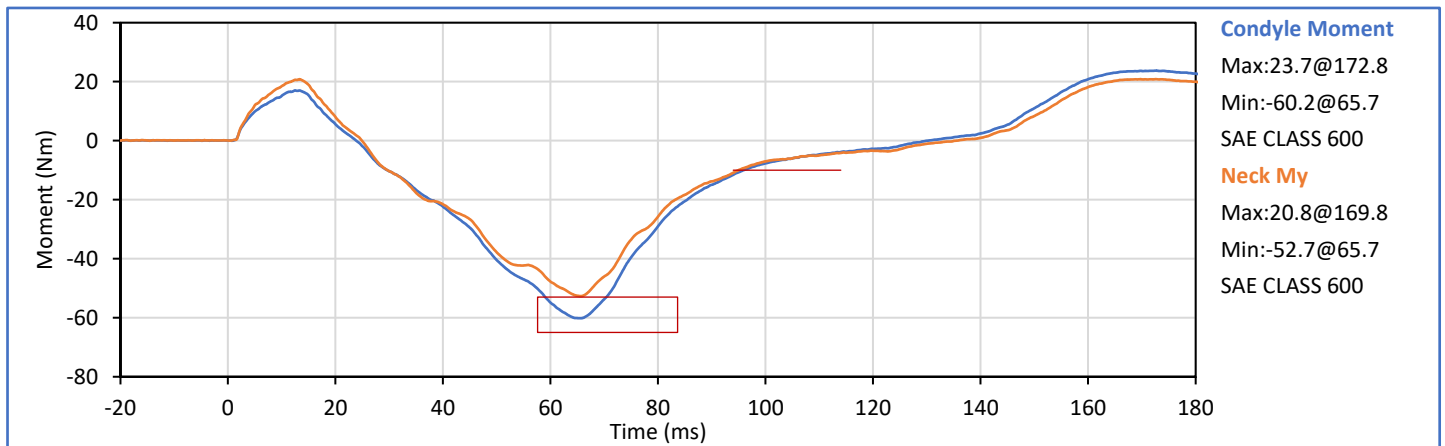
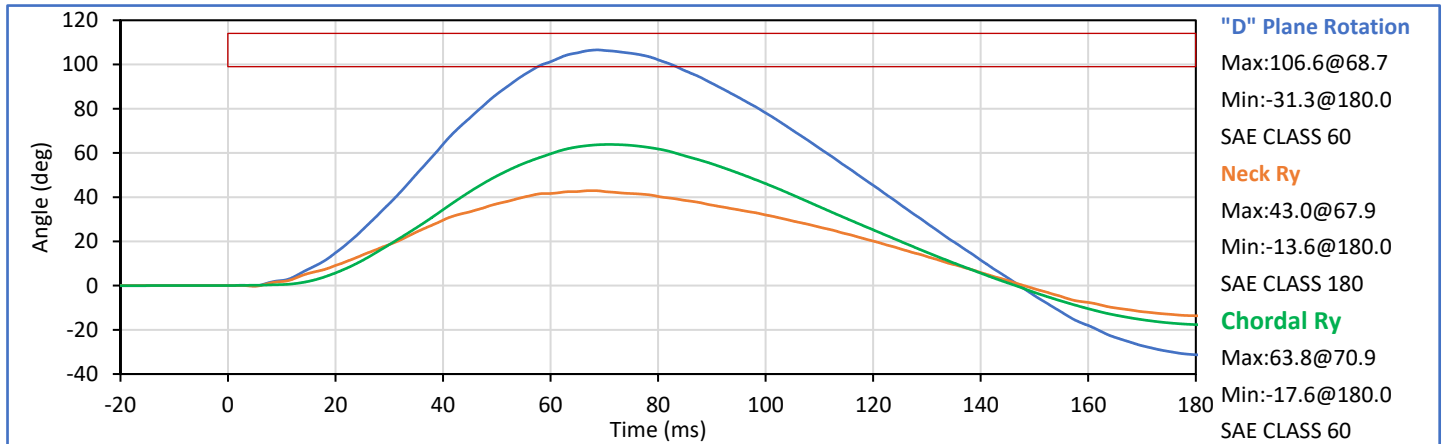
*G. Fuentes*

G. Fuentes

Approved By:

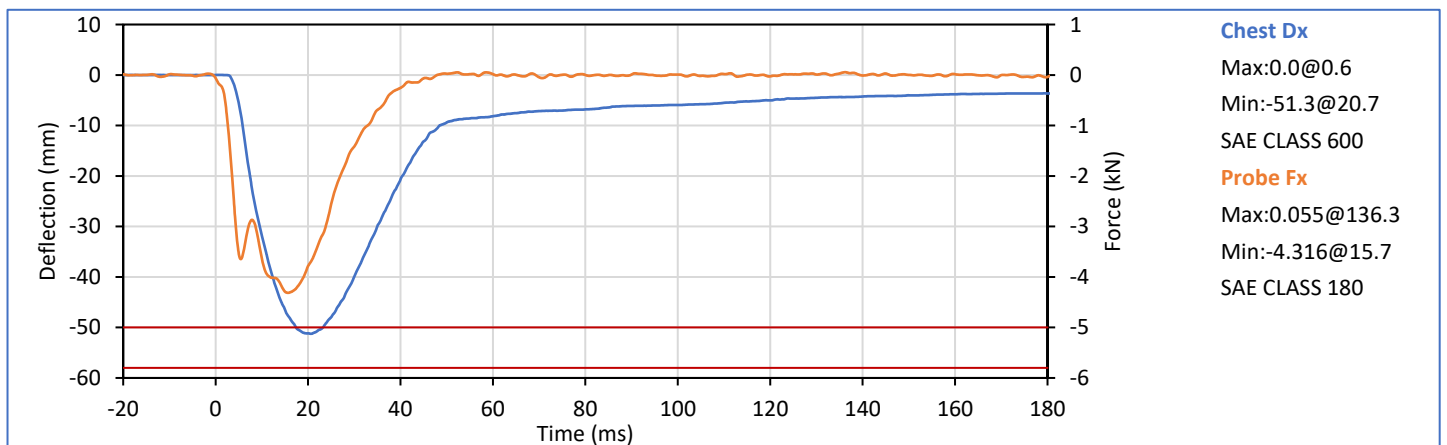
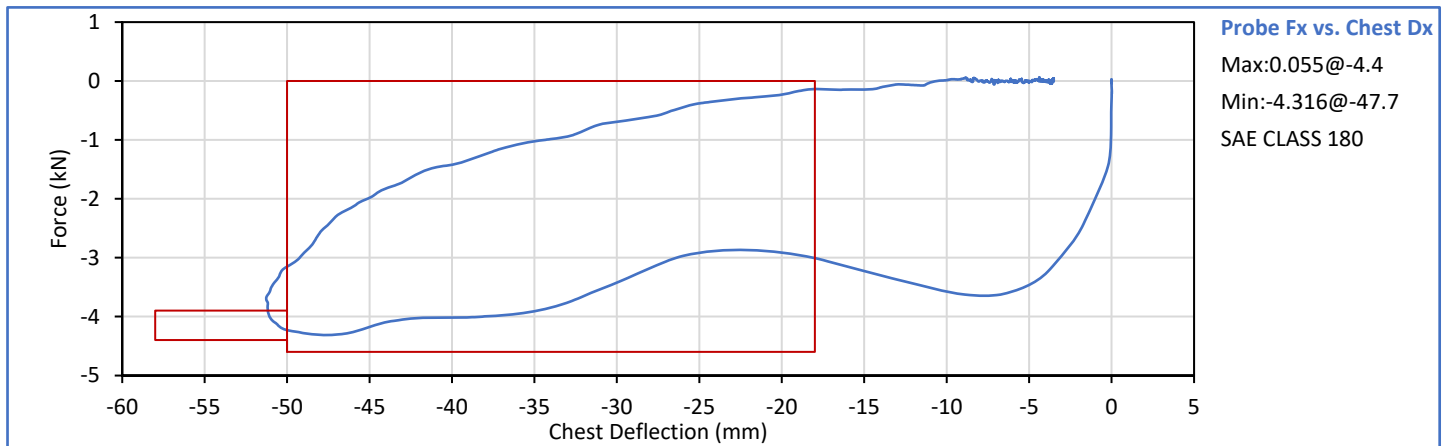
*J. Hernandez*

J. Hernandez





| Tested Parameter               | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature         | °C    | 20.6      | 22.2       | 21.1   | Pass      |
| Laboratory RelativeHumidity    | %     | 10        | 70         | 40     | Pass      |
| Probe Velocity                 | m/s   | 6.59      | 6.83       | 6.80   | Pass      |
| Peak Chest Deflection          | mm    | -58.0     | -50.0      | -51.3  | Pass      |
| Peak Probe Force, 50 and 58 mm | kN    | -4.400    | -3.900     | -4.230 | Pass      |
| Peak Probe Force, 18 and 50 mm | kN    | -4.600    | 0.000      | -4.316 | Pass      |
| Internal Hysteresis            | %     | 69.0      | 85.0       | 77.1   | Pass      |
| Overall Test Results           |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

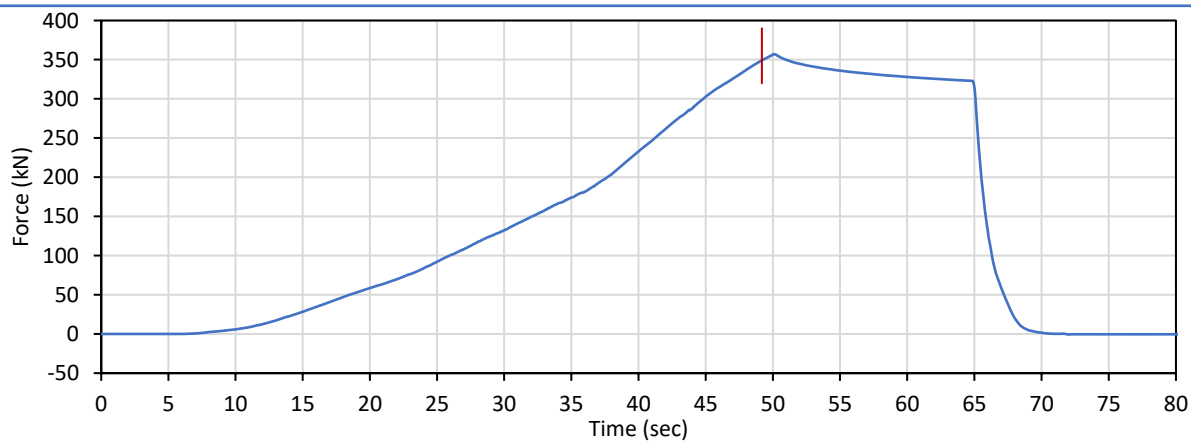
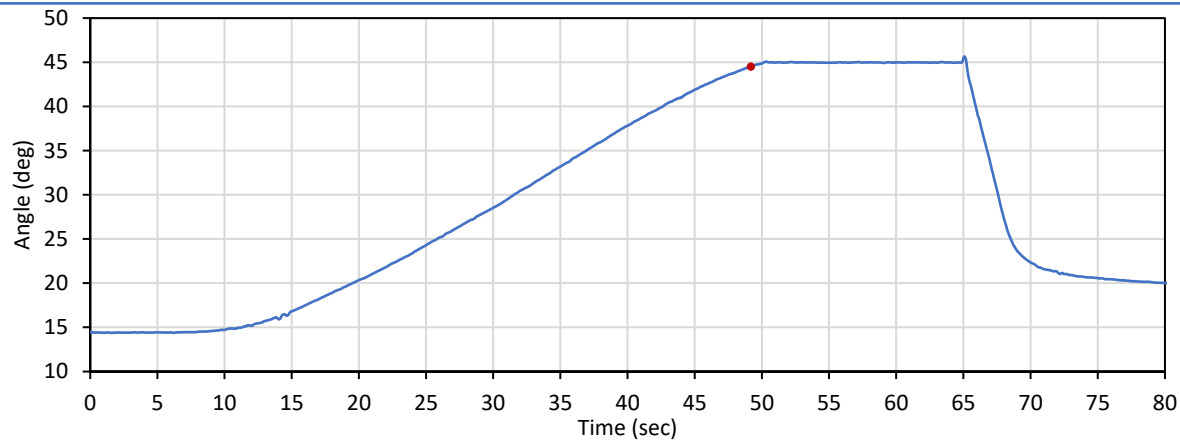
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter            | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-----------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature      | °C    | 18.9      | 25.6       | 21.0   | Pass      |
| Laboratory Humidity         | %     | 10        | 70         | 42     | Pass      |
| Orientation Angle           | deg   | 0.0       | 20.0       | 14.1   | Pass      |
| Test Initial Angle          | deg   | 11.0      | 19.0       | 14.4   | Pass      |
| Peak Force at 45° (+/-0.5°) | N     | 320.0     | 390.0      | 349.0  | Pass      |
| Torso Flexion Rate          | deg/s | 0.50      | 1.50       | 0.80   | Pass      |
| Final Reference Plane Angle | deg   | -8.0      | 8.0        | 4.0    | Pass      |
| Overall Test Results        |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

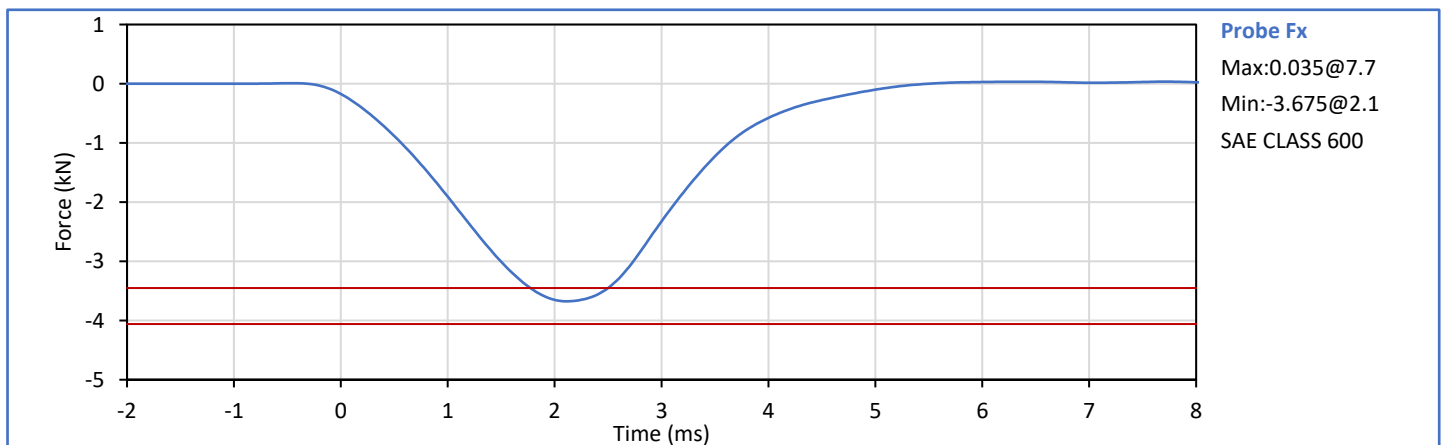
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.2   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.099  | Pass      |
| Peak Resistive Force         | kN    | -4.060    | -3.450     | -3.675 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

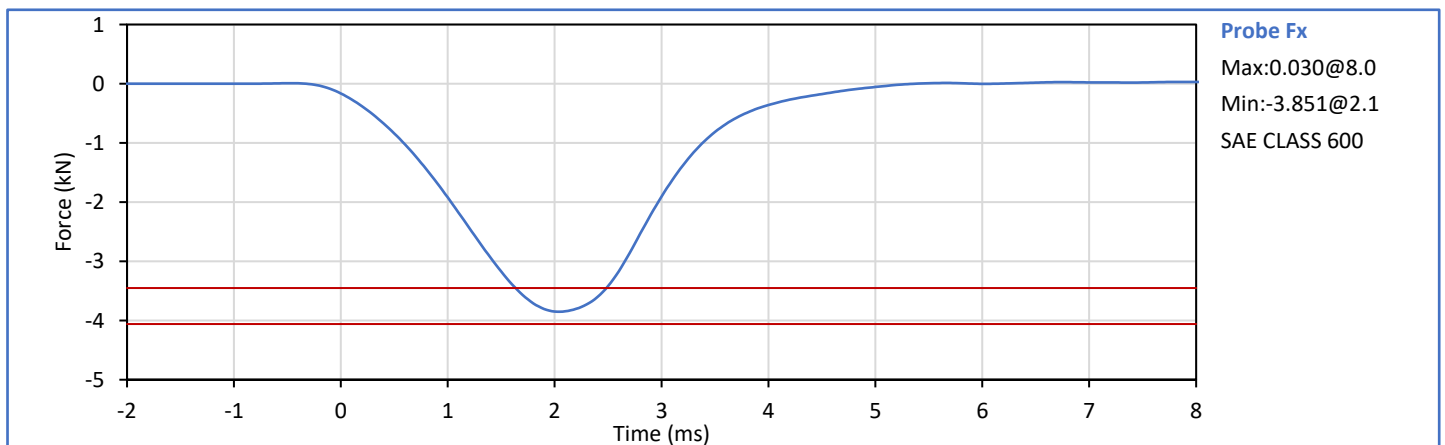
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.2   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.100  | Pass      |
| Peak Resistive Force         | kN    | -4.060    | -3.450     | -3.851 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez



**APPENDIX C**  
**Post-Test ATD Qualification and Performance Verification**  
**Hybrid III 50th Percentile Male ATD**  
**S/N: 360**

ATD Serial No.: 360

Test Date: 2024-07-12

| Dummy Item             | Inspect for                                 | Comments | Damage | OK |
|------------------------|---------------------------------------------|----------|--------|----|
| Entire ATD             | Perform general cleaning                    |          |        | ✓  |
| Outer Skin             | Gashes, rips, cracks                        |          |        | ✓  |
| Head                   | Ballast secure                              |          |        | ✓  |
|                        | General appearance                          |          |        | ✓  |
| Neck bracket           | Upper neck firmly attached to lower bracket |          |        | ✓  |
| Neck                   | Broken or cracked rubber                    |          |        | ✓  |
|                        | Looseness at the condyle joint              |          |        | ✓  |
| Nodding block          | Cracked or out of position                  |          |        | ✓  |
| Lumbar Spine           | Broken or cracked rubber                    |          |        | ✓  |
| Ribs                   | Broken or bent ribs                         |          |        | ✓  |
|                        | Broken or bent rib supports                 |          |        | ✓  |
|                        | Damping material separated or cracked       |          |        | ✓  |
|                        | Rubber bumpers in place                     |          |        | ✓  |
| Chest Displ. Assembly  | Bent shaft                                  |          |        | ✓  |
|                        | Slider arm riding in track                  |          |        | ✓  |
| Sensors                | Check cables for cuts, tears                |          |        | ✓  |
|                        | Check for damaged insulation                |          |        | ✓  |
| Accelerometer Mounting | Head mounting secure                        |          |        | ✓  |
|                        | Chest mounting secure                       |          |        | ✓  |
| Knees                  | Skin condition                              |          |        | ✓  |
|                        | Insert (do not remove)                      |          |        | ✓  |
|                        | Casting                                     |          |        | ✓  |
| Limbs                  | Normal movement and adjustment              |          |        | ✓  |
| Knee Sliders           | Wires intact                                |          |        | ✓  |
|                        | Rubber returned to "resting" position       |          |        | ✓  |
| Pelvis                 | Broken                                      |          |        | ✓  |
| Other                  | Describe below as needed                    |          |        | ✓  |

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician: G. Fuentes

Approved By: J. Hernandez

ATD Serial No.: 360

Test Date: 2024-07-12

| Tested Parameter                     | Units | Spec. Low | Spec. High           | Result | Pass/Fail |
|--------------------------------------|-------|-----------|----------------------|--------|-----------|
| Laboratory Temperature               | °C    | 20.6      | 22.2                 | 21.3   | Pass      |
| Laboratory Relative Humidity         | %     | 10        | 70                   | 35     | Pass      |
| A - Total sitting height             | mm    | 879       | 889                  | 886    | Pass      |
| B - Shoulder pivot height            | mm    | 505       | 521                  | 517    | Pass      |
| C - 'H' point height                 | mm    | 84        | 89                   | 86     | Pass      |
| D - 'H' point location from backline | mm    | 135       | 140                  | 139    | Pass      |
| E - Shoulder pivot from backline     | mm    | 84        | 94                   | 87     | Pass      |
| F - Thigh clearance                  | mm    | 140       | 155                  | 147    | Pass      |
| G - Back of elbow to wrist pivot     | mm    | 290       | 305                  | 299    | Pass      |
| H - Head back to backline            | mm    | 41        | 46                   | 44     | Pass      |
| I - Shoulder to elbow length         | mm    | 330       | 345                  | 338    | Pass      |
| J - Elbow rest height                | mm    | 190       | 211                  | 194    | Pass      |
| K - Buttock to knee length           | mm    | 579       | 604                  | 593    | Pass      |
| L - Popliteal length                 | mm    | 429       | 455                  | 447    | Pass      |
| M - Knee pivot height                | mm    | 485       | 500                  | 494    | Pass      |
| N - Buttock popliteal length         | mm    | 452       | 477                  | 462    | Pass      |
| O - Chest depth without jacket       | mm    | 213       | 229                  | 220    | Pass      |
| P - Foot length                      | mm    | 251       | 267                  | 261    | Pass      |
| V - Shoulder breadth                 | mm    | 422       | 437                  | 433    | Pass      |
| W - Foot breadth                     | mm    | 91        | 107                  | 100    | Pass      |
| Y - Chest circum. (w/chest jacket)   | mm    | 970       | 1001                 | 985    | Pass      |
| Z - Waist circum.                    | mm    | 836       | 866                  | 847    | Pass      |
| AA - Location for chest circum.      | mm    | 429       | 434                  | 433    | Pass      |
| BB - Location for waist circum.      | mm    | 226       | 231                  | 227    | Pass      |
|                                      |       |           | Overall Test Results |        | Pass      |

Technician:



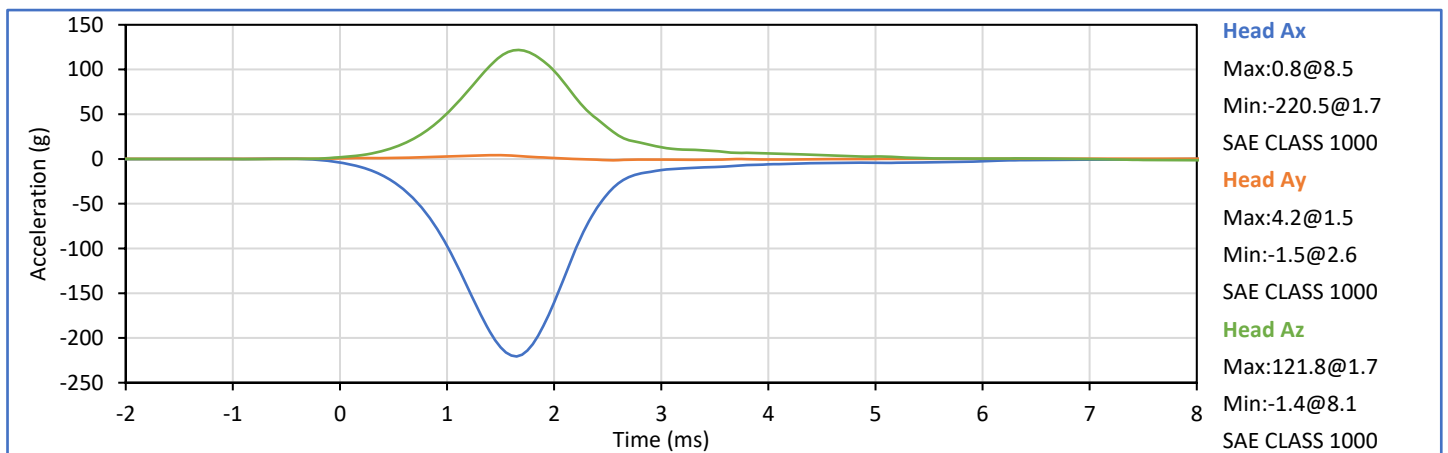
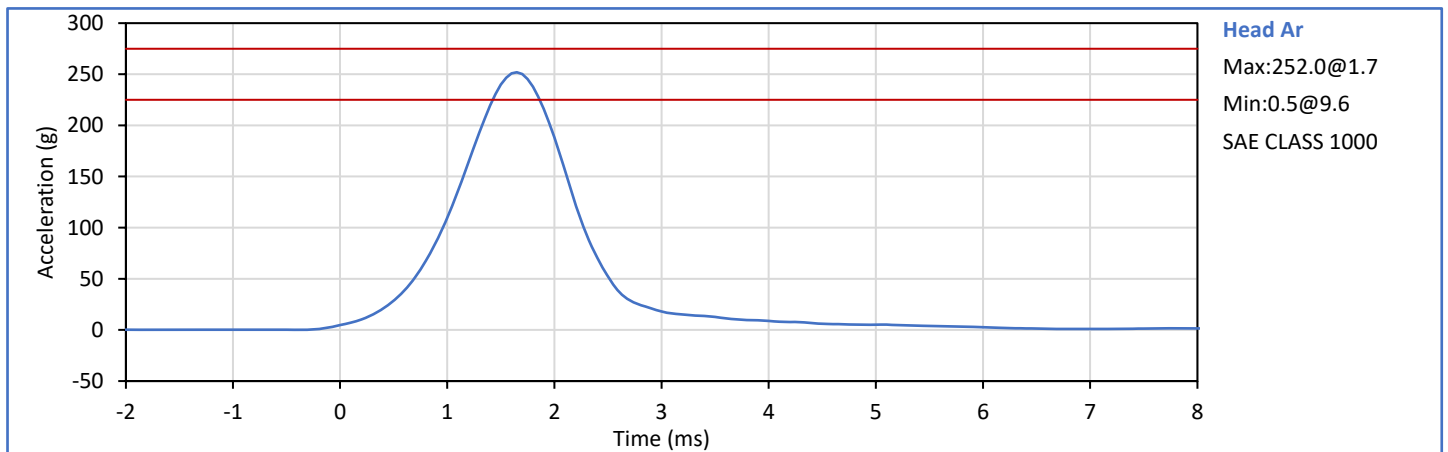
G. Fuentes

Approved By:



J. Hernandez

| Tested Parameter              | Units  | Spec. Low | Spec. High           | Result | Pass/Fail |
|-------------------------------|--------|-----------|----------------------|--------|-----------|
| Laboratory Temperature        | °C     | 18.9      | 25.6                 | 22.5   | Pass      |
| Laboratory Relative Humidity  | %      | 10        | 70                   | 36     | Pass      |
| Peak Resultant Acceleration   | g      | 225.0     | 275.0                | 252.0  | Pass      |
| Peak Lateral Acceleration     | g      | -15.0     | 15.0                 | 4.2    | Pass      |
| Oscillations After Main Pulse | %      | 0.0       | 10.0                 | 0.0    | Pass      |
| Is Acceleration Unimodal?     | Yes/No | Yes       |                      | Yes    | Pass      |
|                               |        |           | Overall Test Results | Pass   |           |

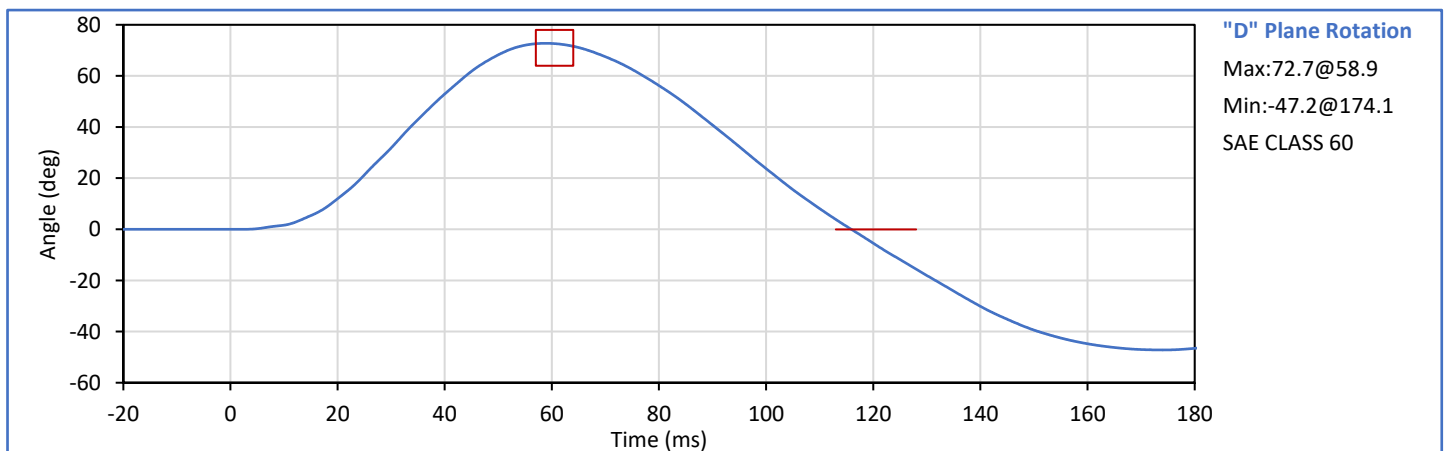
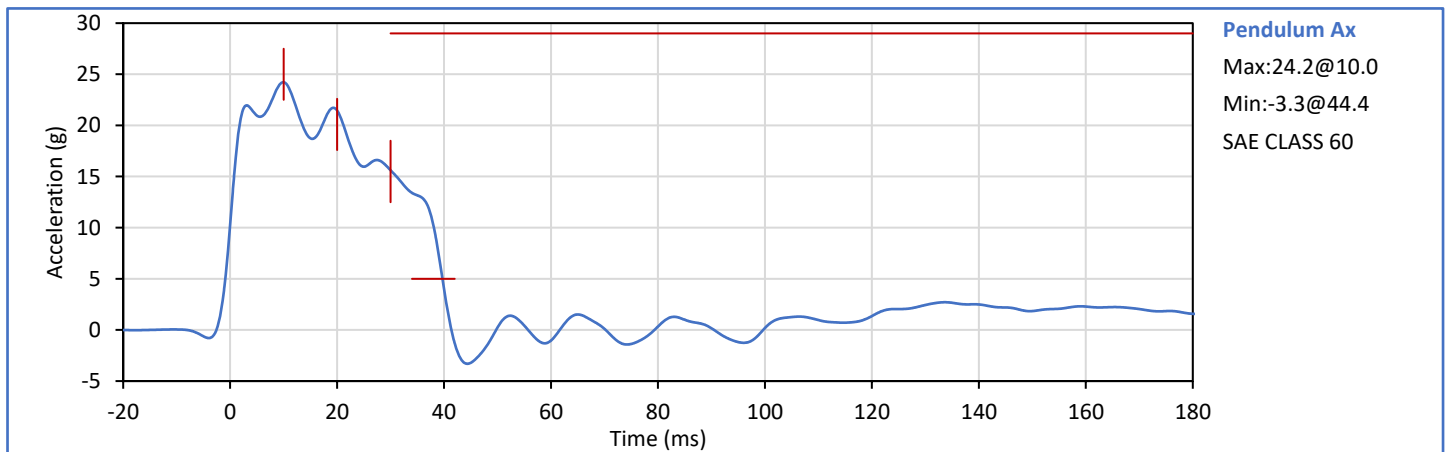


Technician: G. Fuentes

Approved By: J. Hernandez

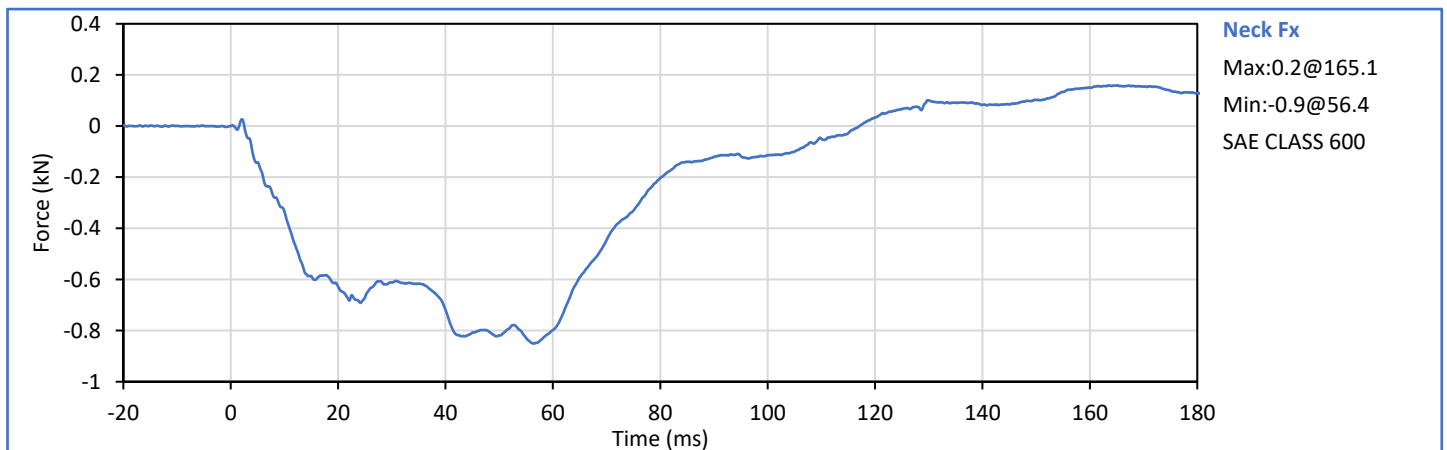
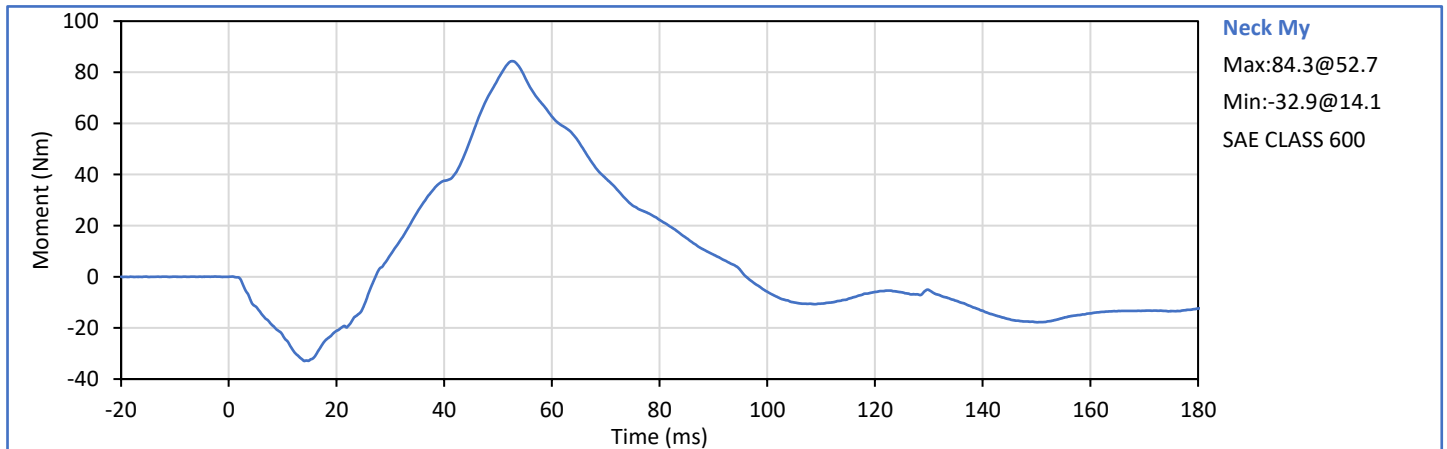
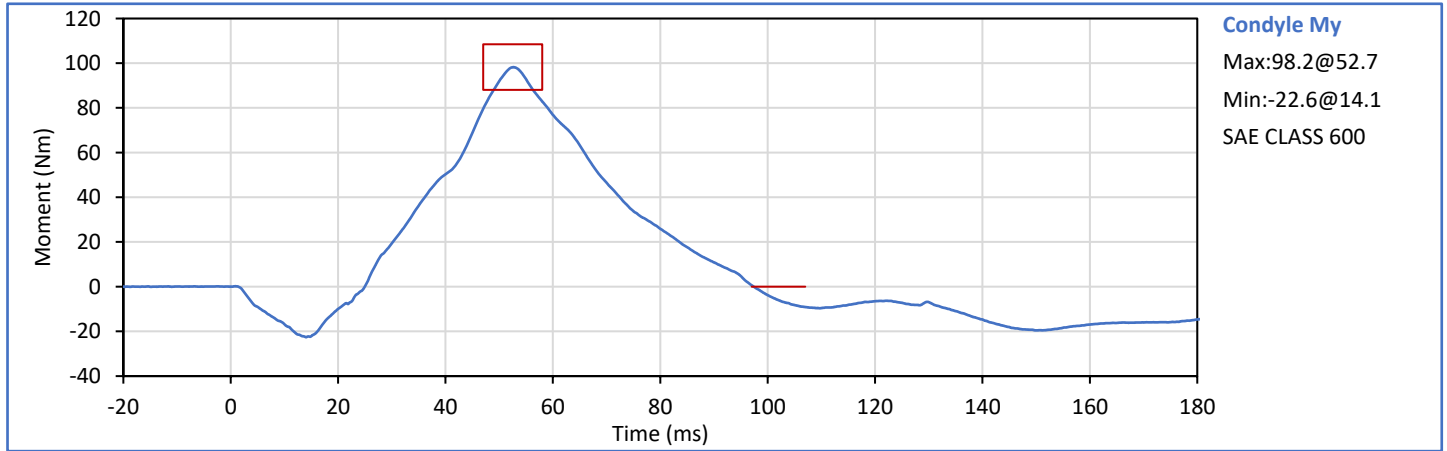


| Tested Parameter                 | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature           | °C    | 20.6      | 22.2       | 20.8   | Pass      |
| Laboratory Relative Humidity     | %     | 10        | 70         | 54     | Pass      |
| Pendulum Velocity                | m/s   | 6.89      | 7.13       | 6.95   | Pass      |
| Pendulum Deceleration at 10 ms   | g     | 22.5      | 27.5       | 24.2   | Pass      |
| Pendulum Deceleration at 20 ms   | g     | 17.6      | 22.6       | 21.5   | Pass      |
| Pendulum Deceleration at 30 ms   | g     | 12.5      | 18.5       | 15.6   | Pass      |
| Peak Pendulum Decel After 30 ms  | g     | 0.0       | 29.0       | 15.6   | Pass      |
| Deceleration Decay to Cross 5g   | ms    | 34.0      | 42.0       | 39.7   | Pass      |
| "D" Plane Rotation peak          | deg   | 64.0      | 78.0       | 72.7   | Pass      |
|                                  | ms    | 57.0      | 64.0       | 58.9   | Pass      |
| "D" Plane Rotation Decay to Zero | ms    | 113.0     | 128.0      | 116.0  | Pass      |
| Moment About Occipital Condyle   | Nm    | 88.1      | 108.5      | 98.2   | Pass      |
|                                  | ms    | 47.0      | 58.0       | 52.7   | Pass      |
| Moment Decay, Peak to Zero       | ms    | 97.0      | 107.0      | 97.4   | Pass      |
| Overall Test Results             |       |           |            | Pass   |           |

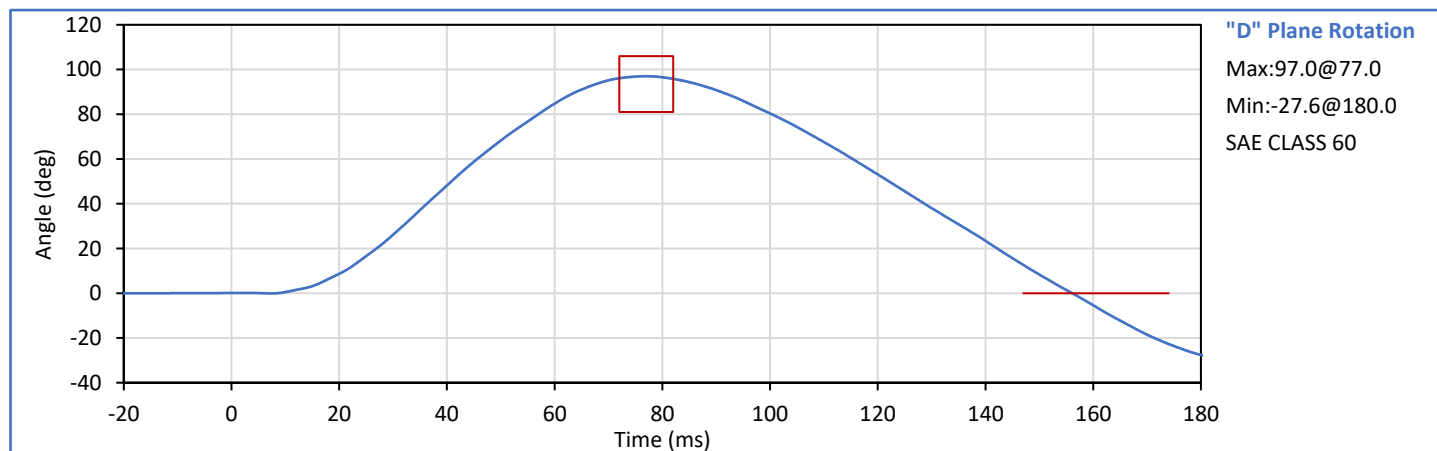
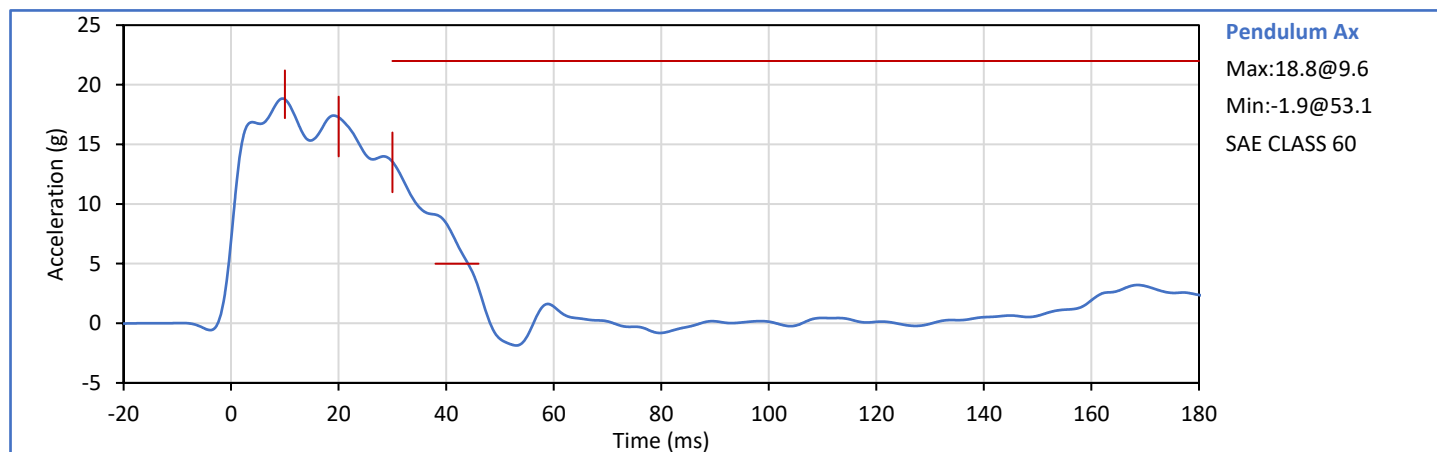


Technician: G. Fuentes

Approved By: J. Hernandez

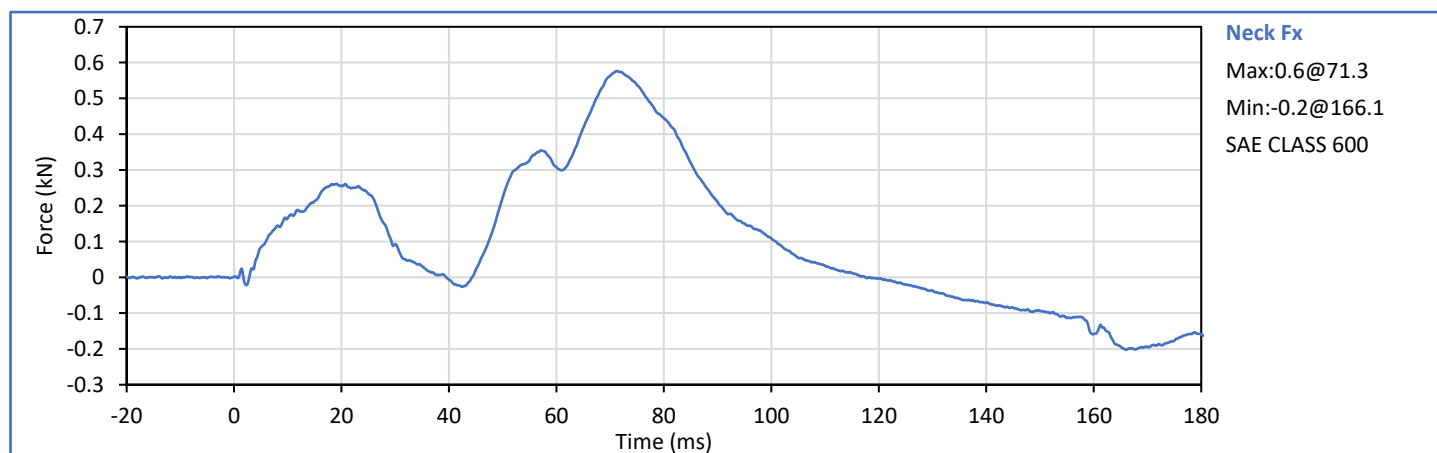
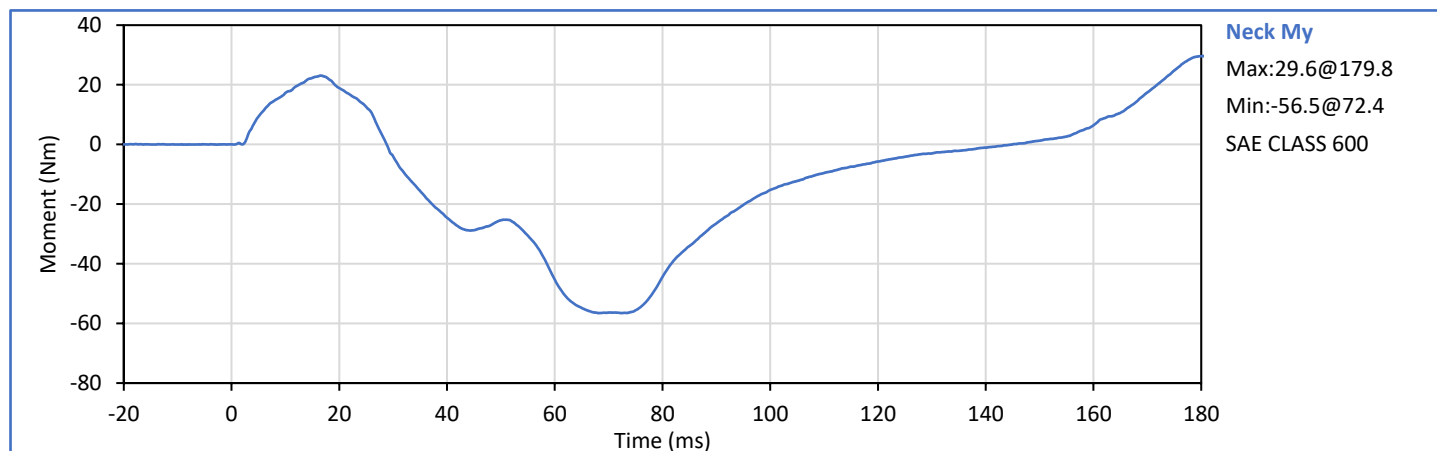
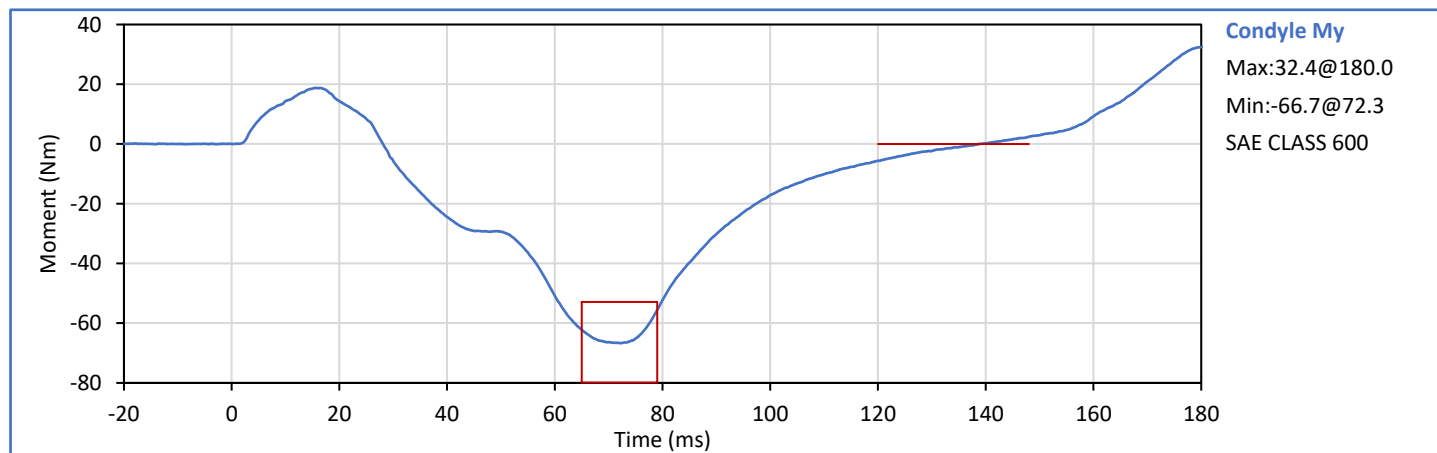


| Tested Parameter                 | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|----------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature           | °C    | 20.6      | 22.2       | 21.9   | Pass      |
| Laboratory Relative Humidity     | %     | 10        | 70         | 50     | Pass      |
| Pendulum Velocity                | m/s   | 5.94      | 6.19       | 6.03   | Pass      |
| Pendulum Deceleration at 10 ms   | g     | 17.2      | 21.2       | 18.8   | Pass      |
| Pendulum Deceleration at 20 ms   | g     | 14.0      | 19.0       | 17.3   | Pass      |
| Pendulum Deceleration at 30 ms   | g     | 11.0      | 16.0       | 13.6   | Pass      |
| Peak Pendulum Decel After 30 ms  | g     | 0.0       | 22.0       | 13.6   | Pass      |
| Deceleration Decay to Cross 5g   | ms    | 38.0      | 46.0       | 44.1   | Pass      |
| "D" Plane Rotation peak          | deg   | 81.0      | 106.0      | 97.0   | Pass      |
|                                  | ms    | 72.0      | 82.0       | 77.0   | Pass      |
| "D" Plane Rotation Decay to Zero | ms    | 147.0     | 174.0      | 156.2  | Pass      |
| Moment About Occipital Condyle   | Nm    | -79.9     | -52.9      | -66.7  | Pass      |
|                                  | ms    | 65.0      | 79.0       | 72.3   | Pass      |
| Moment Decay, Peak to Zero       | ms    | 120.0     | 148.0      | 138.9  | Pass      |
| Overall Test Results             |       |           |            | Pass   |           |



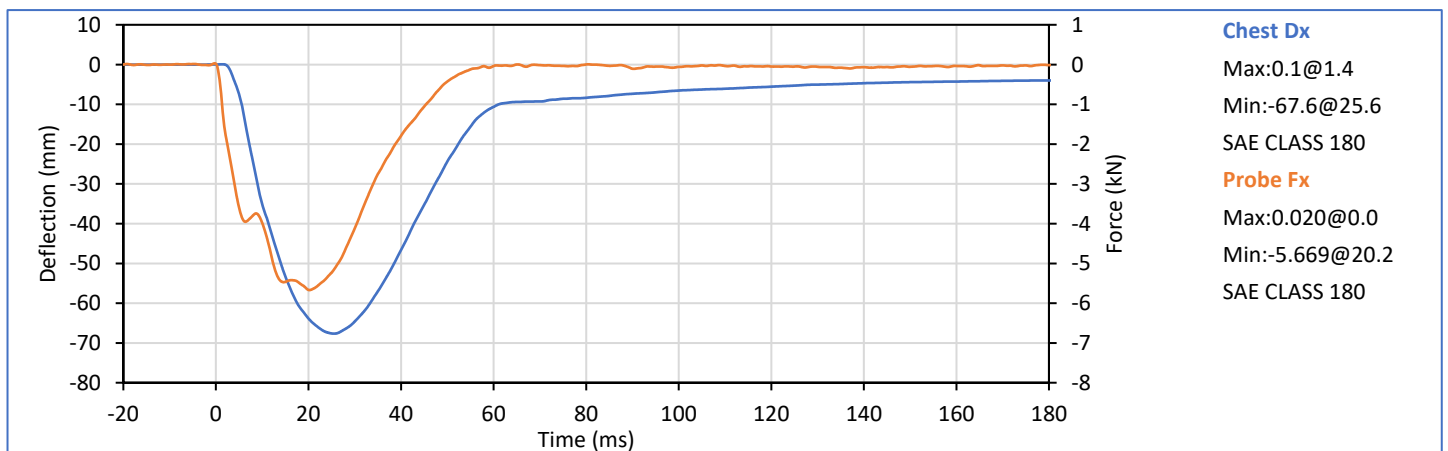
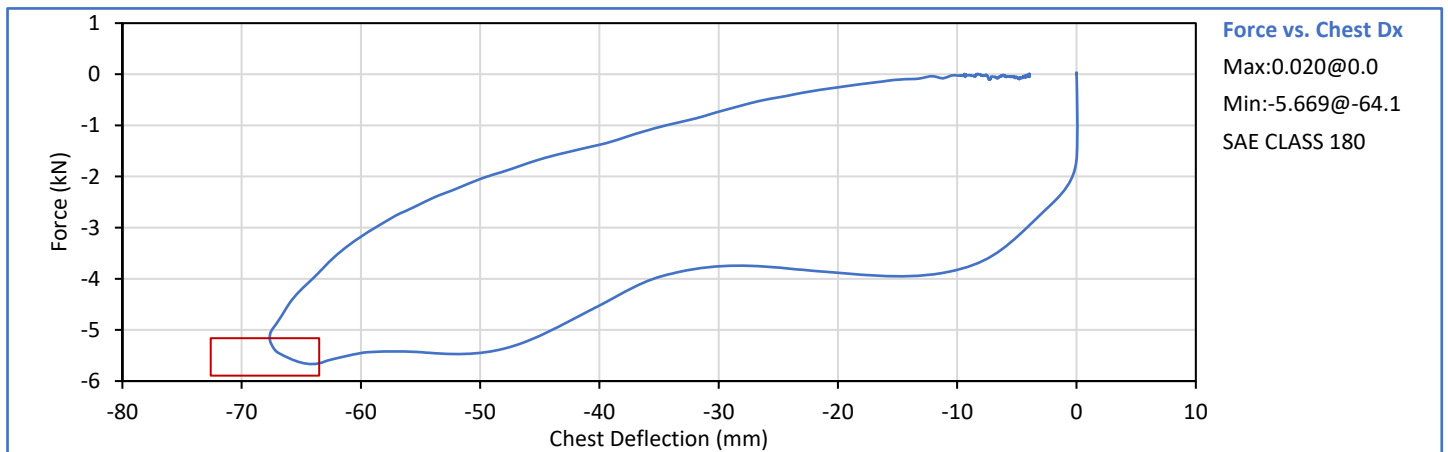
Technician: G. Fuentes

Approved By: J. Hernandez





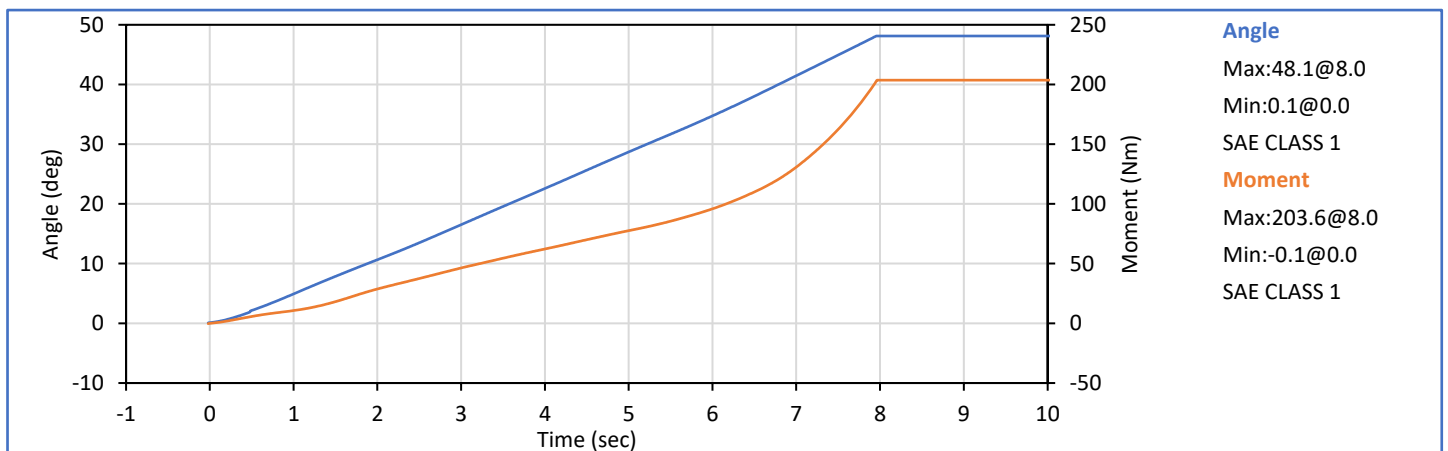
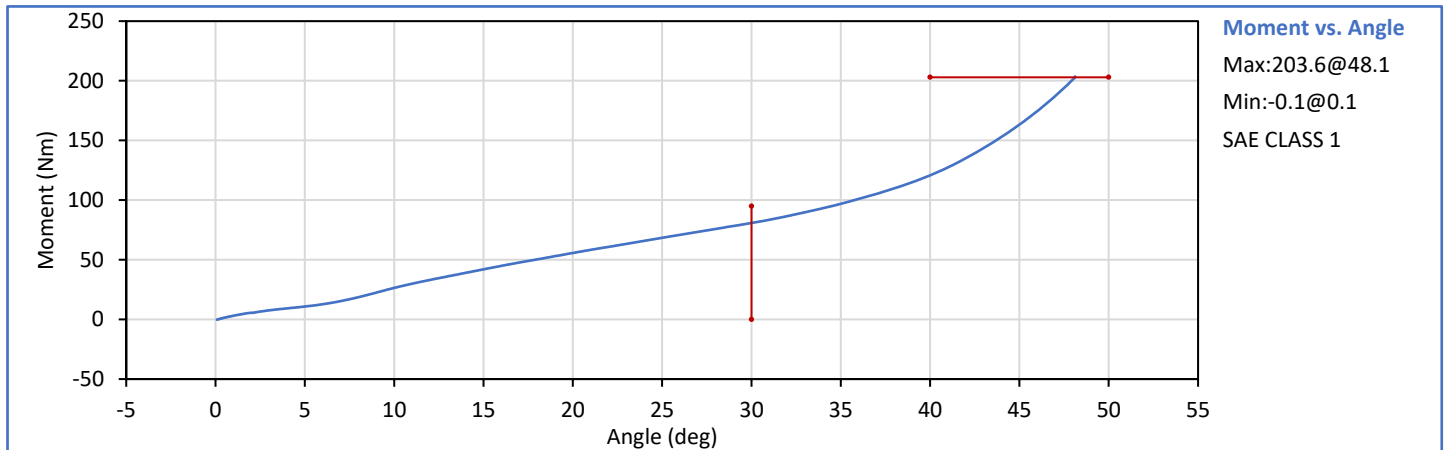
| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 20.6      | 22.2       | 21.1   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 34     | Pass      |
| Probe Velocity               | m/s   | 6.58      | 6.82       | 6.79   | Pass      |
| Peak Chest Deflection        | mm    | -72.6     | -63.5      | -67.6  | Pass      |
| Peak Probe Force             | kN    | -5.893    | -5.159     | -5.669 | Pass      |
| Internal Hysteresis          | %     | 69.0      | 85.0       | 69.7   | Pass      |
| Overall Test Results         |       |           |            | Pass   | Pass      |



Technician: G. Fuentes

Approved By: J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Left Hip Rotation Rate       | deg/s | 5.0       | 10.0       | 6.0    | Pass      |
| Left Femur Torque at 30°     | Nm    | 0.0       | 95.0       | 80.7   | Pass      |
| Left Hip Rotation at 203 Nm  | deg   | 40.0      | 50.0       | 48.1   | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

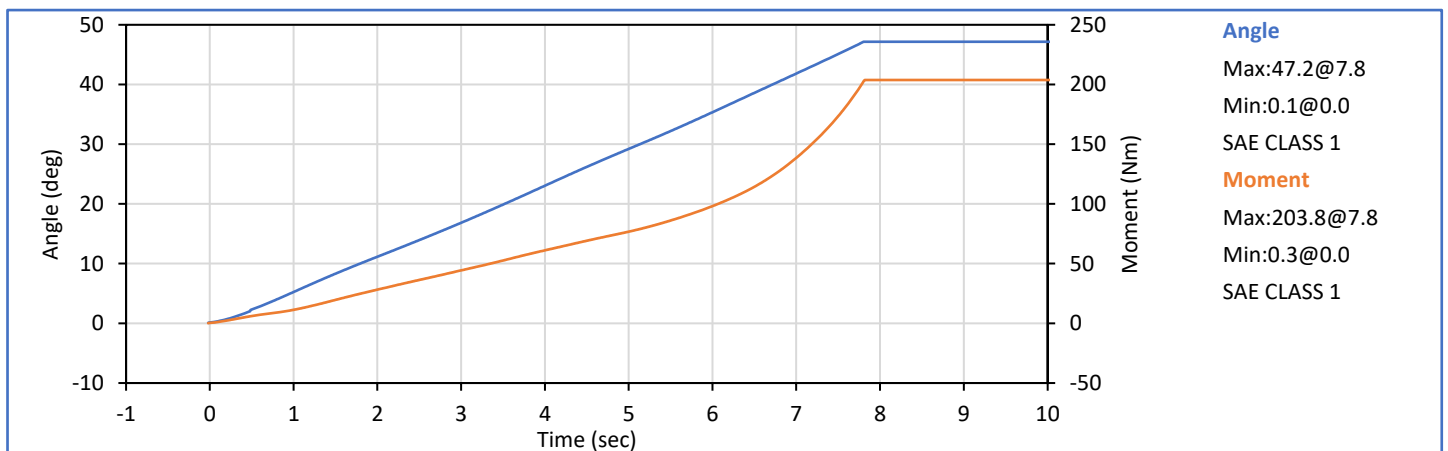
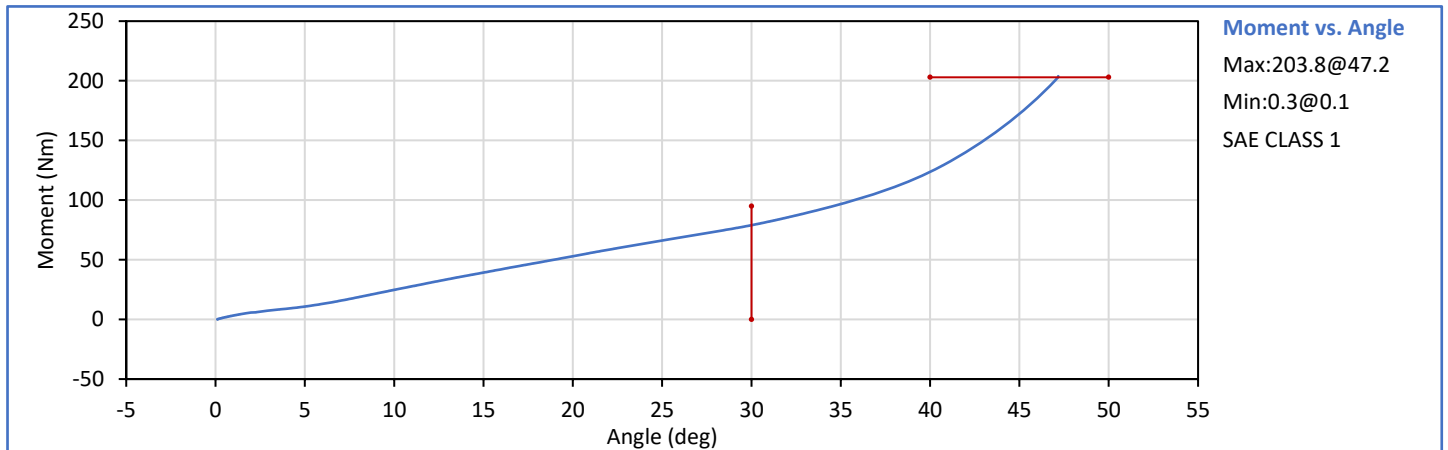
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Right Hip Rotation Rate      | deg/s | 5.0       | 10.0       | 6.1    | Pass      |
| Right Femur Torque at 30°    | Nm    | 0.0       | 95.0       | 78.9   | Pass      |
| Right Hip Rotation at 203 Nm | deg   | 40.0      | 50.0       | 47.2   | Pass      |
| Overall Test Results         |       |           |            | Pass   | Pass      |



Technician:

*G. Fuentes*

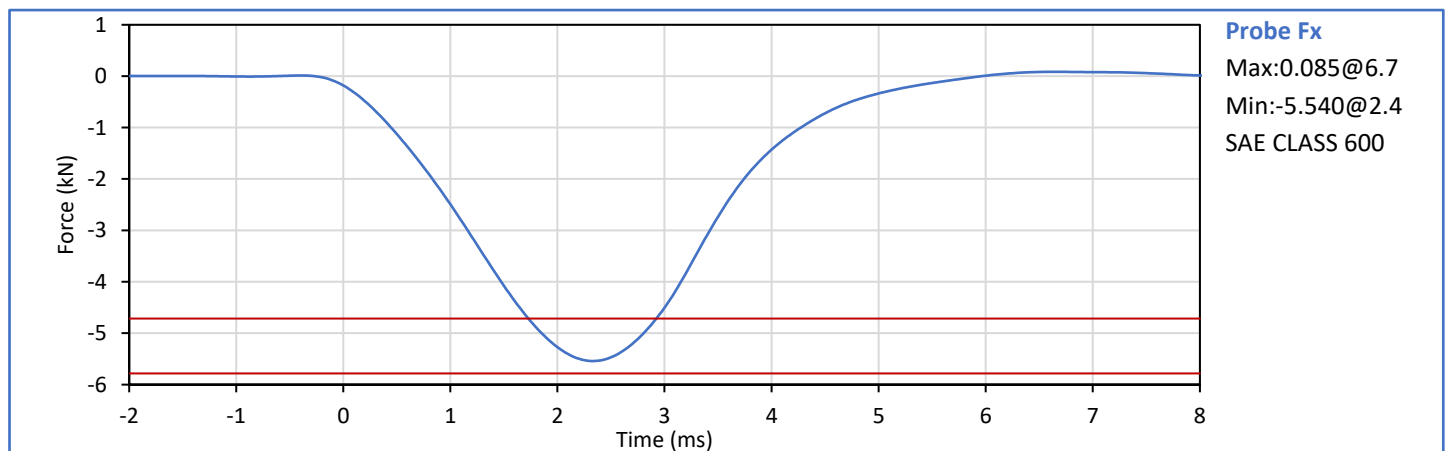
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.101  | Pass      |
| Peak Resistive Force         | kN    | -5.782    | -4.715     | -5.540 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |

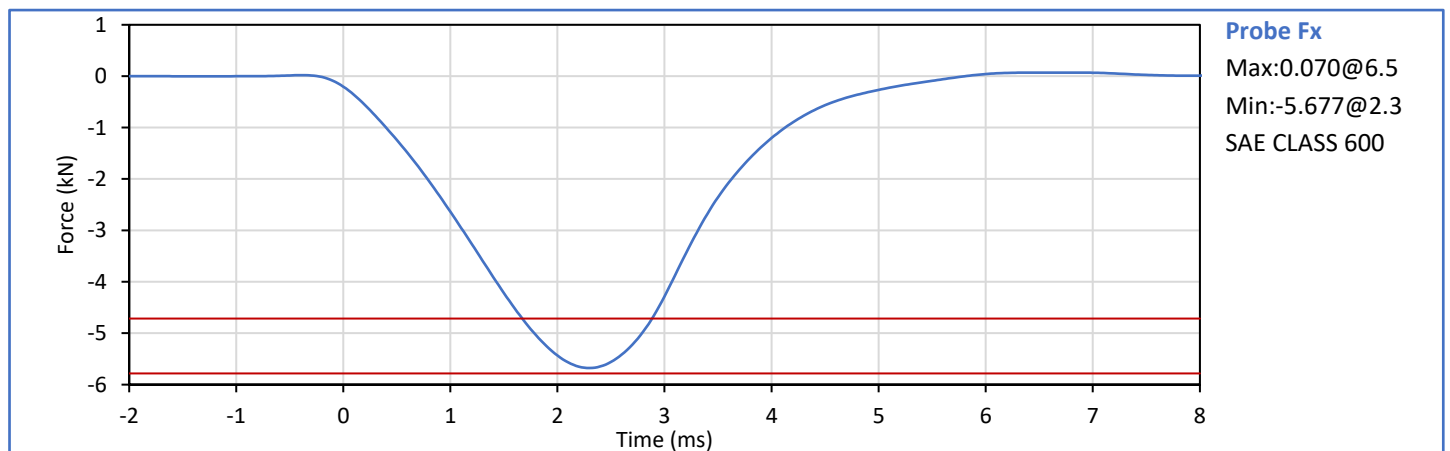


Technician: G. Fuentes

Approved By: J. Hernandez



| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 40     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.093  | Pass      |
| Peak Resistive Force         | kN    | -5.782    | -4.715     | -5.677 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician: G. Fuentes

Approved By: J. Hernandez

**APPENDIX C**  
**Post-Test ATD Qualification and Performance Verification**  
**Hybrid III 5th Percentile Female ATD**  
**S/N: DH1644**

ATD Serial No.: DH1644

Test Date: 2024-07-11

| Dummy Item    | Inspect for                                 | Comments | Damage | Okay |
|---------------|---------------------------------------------|----------|--------|------|
| Entire ATD    | Perform general cleaning                    |          |        | ✓    |
| Outer Skin    | Gashes, rips, cracks                        |          |        | ✓    |
| Head          | Ballast secure                              |          |        | ✓    |
|               | General appearance                          |          |        | ✓    |
| Neck bracket  | Upper neck firmly attached to lower bracket |          |        | ✓    |
| Neck          | Broken or cracked rubber                    |          |        | ✓    |
|               | Looseness at the condyle joint              |          |        | ✓    |
| Nodding block | Cracked or out of position                  |          |        | ✓    |
| Lumbar Spine  | Broken or cracked rubber                    |          |        | ✓    |
| Ribs          | Broken or bent ribs                         |          |        | ✓    |
|               | Broken or bent rib supports                 |          |        | ✓    |
|               | Damping material separated or cracked       |          |        | ✓    |
|               | Rubber bumpers in place                     |          |        | ✓    |
| Chest Displ.  | Bent shaft                                  |          |        | ✓    |
| Assembly      | Slider arm riding in track                  |          |        | ✓    |
| Sensors       | Check cables for cuts, tears                |          |        | ✓    |
|               | Check for damaged insulation                |          |        | ✓    |
| Accelerometer | Head mounting secure                        |          |        | ✓    |
| Mounting      | Chest mounting secure                       |          |        | ✓    |
| Knees         | Skin condition                              |          |        | ✓    |
|               | Insert (do not remove)                      |          |        | ✓    |
|               | Casting                                     |          |        | ✓    |
| Limbs         | Normal movement and adjustment              |          |        | ✓    |
| Knee Sliders  | Wires intact                                |          |        | ✓    |
|               | Rubber returned to "resting" position       |          |        | ✓    |
| Pelvis        | Broken                                      |          |        | ✓    |
| Other         | Describe below as needed                    |          |        | ✓    |

Describe any repairs or replacement of parts or other findings:

No Problems Found

Technician: \_\_\_\_\_

G. Fuentes

Approved By: \_\_\_\_\_

J. Hernandez

| Tested Parameter                     | Units | Spec. Low | Spec. High           | Result | Pass/Fail |
|--------------------------------------|-------|-----------|----------------------|--------|-----------|
| Laboratory Temperature               | °C    | 20.6      | 22.2                 | 21.2   | Pass      |
| Laboratory Relative Humidity         | %     | 10        | 70                   | 39     | Pass      |
| A - Total sitting height             | mm    | 775       | 800                  | 789    | Pass      |
| B - Shoulder pivot height            | mm    | 432       | 457                  | 448    | Pass      |
| C - 'H' point height                 | mm    | 81        | 86                   | 86     | Pass      |
| D - 'H' point location from backline | mm    | 145       | 150                  | 147    | Pass      |
| E - Shoulder pivot from backline     | mm    | 69        | 84                   | 78     | Pass      |
| F - Thigh clearance                  | mm    | 119       | 135                  | 128    | Pass      |
| G - Back of elbow to wrist pivot     | mm    | 244       | 259                  | 252    | Pass      |
| H - Head back to backline            | mm    | 41        | 46                   | 45     | Pass      |
| I - Shoulder to elbow length         | mm    | 277       | 297                  | 290    | Pass      |
| J - Elbow rest height                | mm    | 183       | 203                  | 198    | Pass      |
| K - Buttock to knee length           | mm    | 521       | 546                  | 530    | Pass      |
| L - Popliteal length                 | mm    | 356       | 376                  | 369    | Pass      |
| M - Knee pivot height                | mm    | 394       | 419                  | 409    | Pass      |
| N - Buttock popliteal length         | mm    | 414       | 439                  | 435    | Pass      |
| O - Chest depth without jacket       | mm    | 175       | 191                  | 180    | Pass      |
| P - Foot length                      | mm    | 219       | 234                  | 230    | Pass      |
| R - Buttock to Knee Pivot Length     | mm    | 457       | 483                  | 464    | Pass      |
| S - Head Breadth                     | mm    | 137       | 147                  | 144    | Pass      |
| T - Head Depth                       | mm    | 178       | 188                  | 187    | Pass      |
| U - Hip Breadth                      | mm    | 300       | 315                  | 306    | Pass      |
| V - Shoulder breadth                 | mm    | 351       | 366                  | 360    | Pass      |
| W - Foot breadth                     | mm    | 79        | 94                   | 84     | Pass      |
| X - Head circum.                     | mm    | 528       | 549                  | 540    | Pass      |
| Y - Chest circum. (w/chest jacket)   | mm    | 851       | 881                  | 865    | Pass      |
| Z - Waist circum.                    | mm    | 760       | 790                  | 773    | Pass      |
| AA - Location for chest circum.      | mm    | 333       | 358                  | 338    | Pass      |
| BB - Location for waist circum.      | mm    | 160       | 170                  | 164    | Pass      |
|                                      |       |           | Overall Test Results |        | Pass      |

Technician:



G. Fuentes

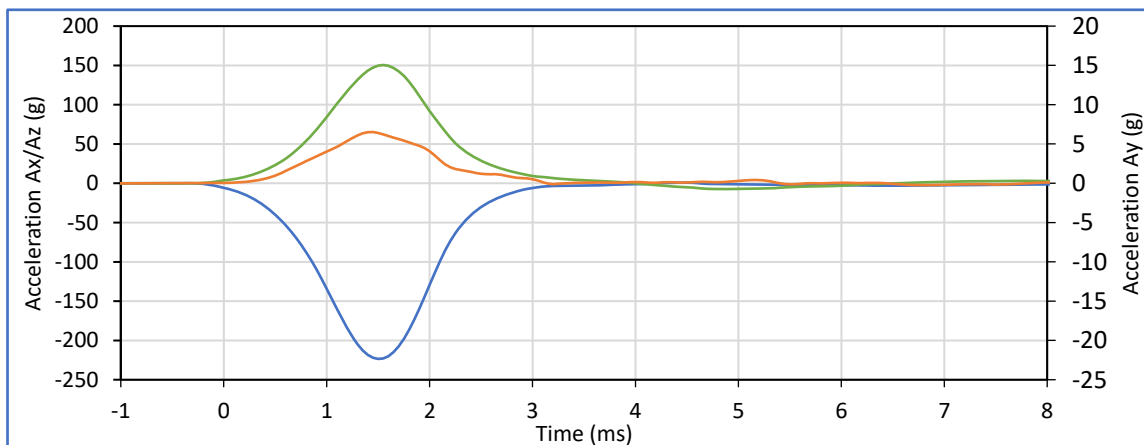
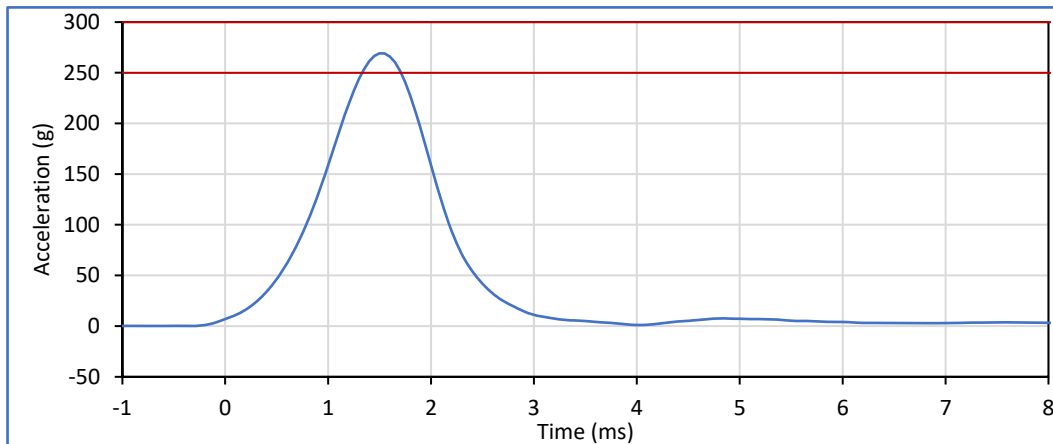
Approved By:



J. Hernandez



| Tested Parameter              | Units  | Spec. Low | Spec. High           | Result | Pass/Fail |
|-------------------------------|--------|-----------|----------------------|--------|-----------|
| Laboratory Temperature        | °C     | 18.9      | 25.6                 | 21.4   | Pass      |
| Laboratory Humidity           | %      | 10        | 70                   | 40     | Pass      |
| Peak Resultant Acceleration   | g      | 250.0     | 300.0                | 269.1  | Pass      |
| Peak Lateral Acceleration     | g      | -15.0     | 15.0                 | 6.5    | Pass      |
| Oscillations After Main Pulse | %      | 0.0       | 10.0                 | 2.0    | Pass      |
| Is Acceleration Unimodal?     | Yes/No | Yes       |                      | Yes    | Pass      |
|                               |        |           | Overall Test Results | Pass   |           |



Technician:

*G. Fuentes*

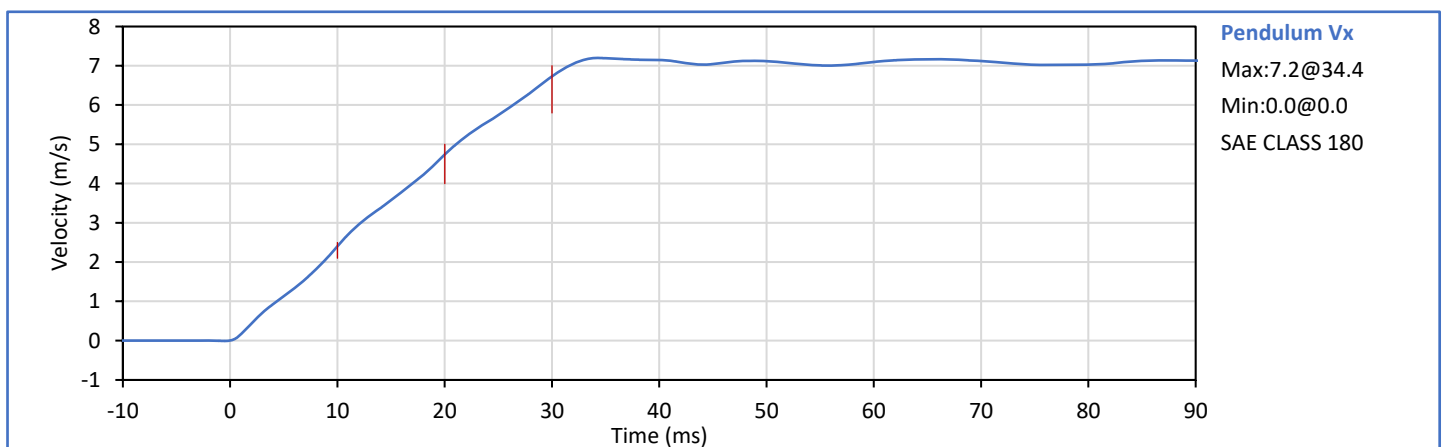
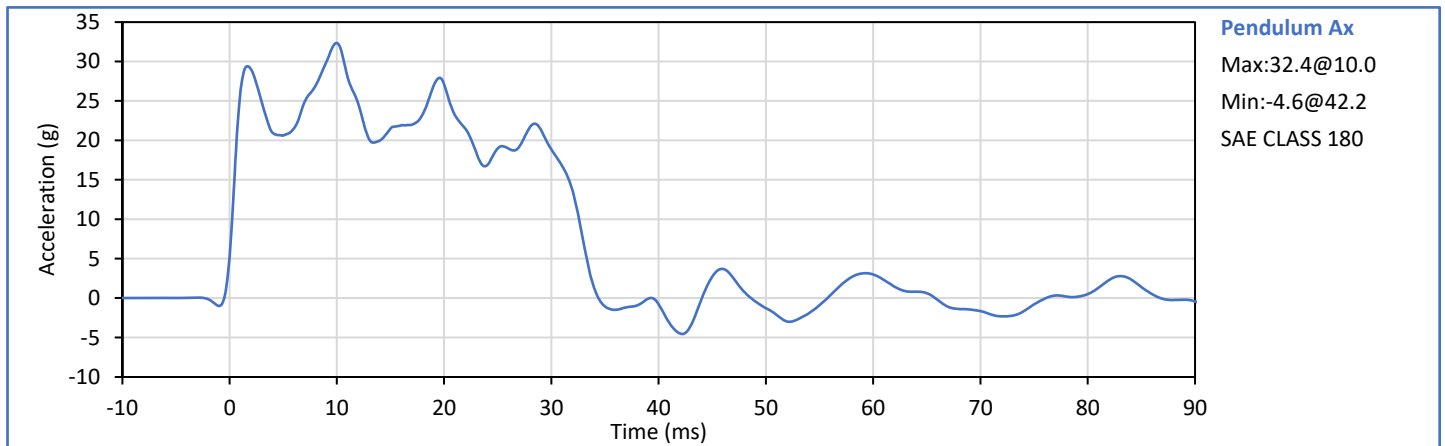
G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter               | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature         | °C    | 20.6      | 22.2       | 21.3   | Pass      |
| Laboratory Humidity            | %     | 10        | 70         | 39     | Pass      |
| Pendulum Velocity              | m/s   | 6.89      | 7.13       | 7.07   | Pass      |
| Pendulum Velocity at 10 ms     | m/s   | 2.10      | 2.50       | 2.40   | Pass      |
| Pendulum Velocity at 20 ms     | m/s   | 4.00      | 5.00       | 4.74   | Pass      |
| Pendulum Velocity at 30 ms     | m/s   | 5.80      | 7.00       | 6.73   | Pass      |
| Peak "D" Plane Rotation        | deg   | 77.0      | 91.0       | 84.5   | Pass      |
| Peak Moment in Rotation        | Nm    | 69.0      | 83.0       | 76.5   | Pass      |
| Positive Moment Decay to 10 Nm | ms    | 80.0      | 100.0      | 82.7   | Pass      |
| Overall Test Results           |       |           |            |        | Pass      |



Technician:

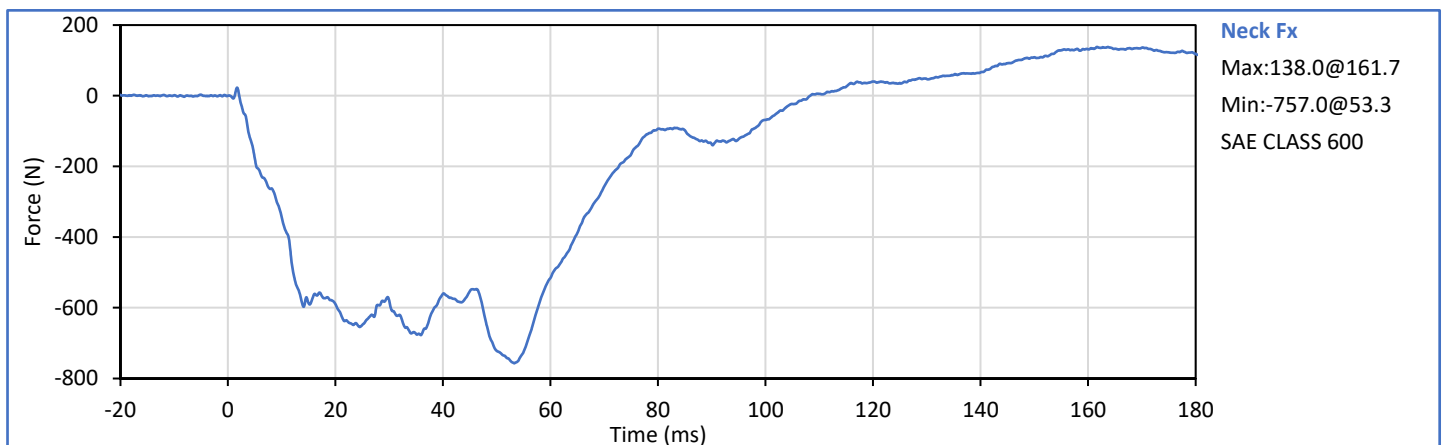
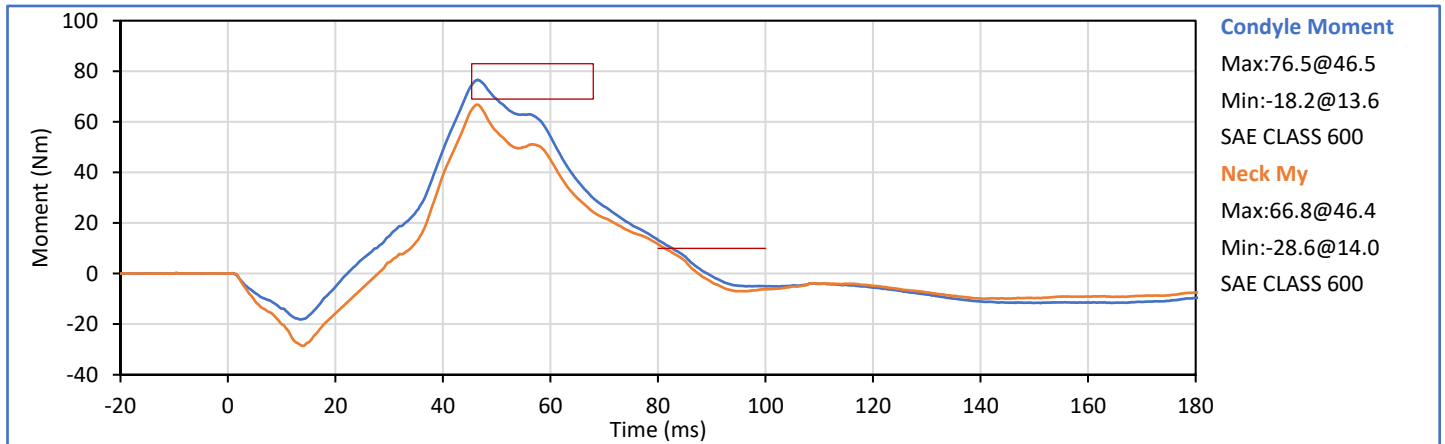
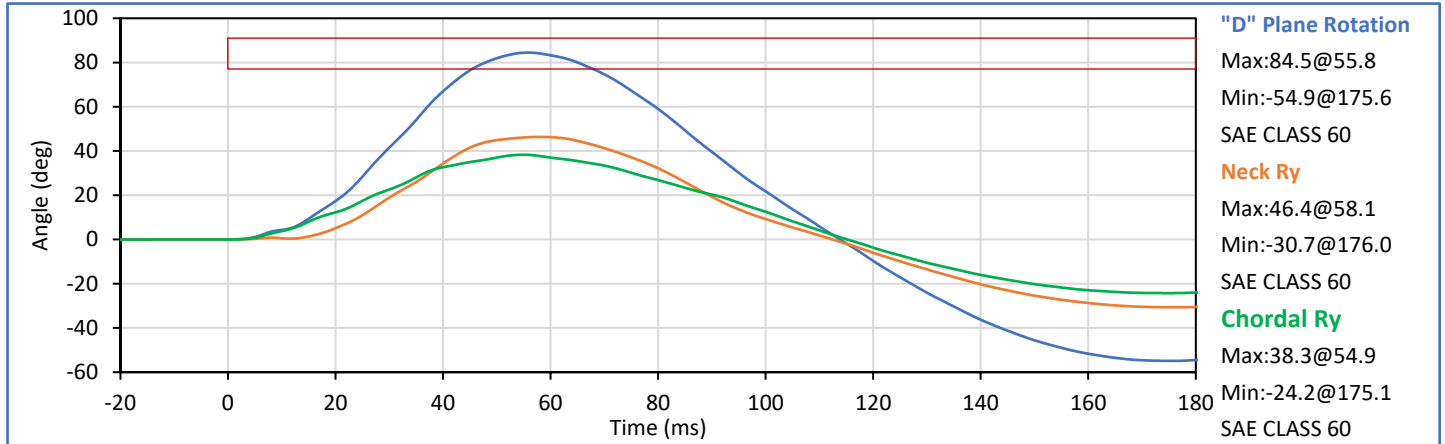
*G. Fuentes*

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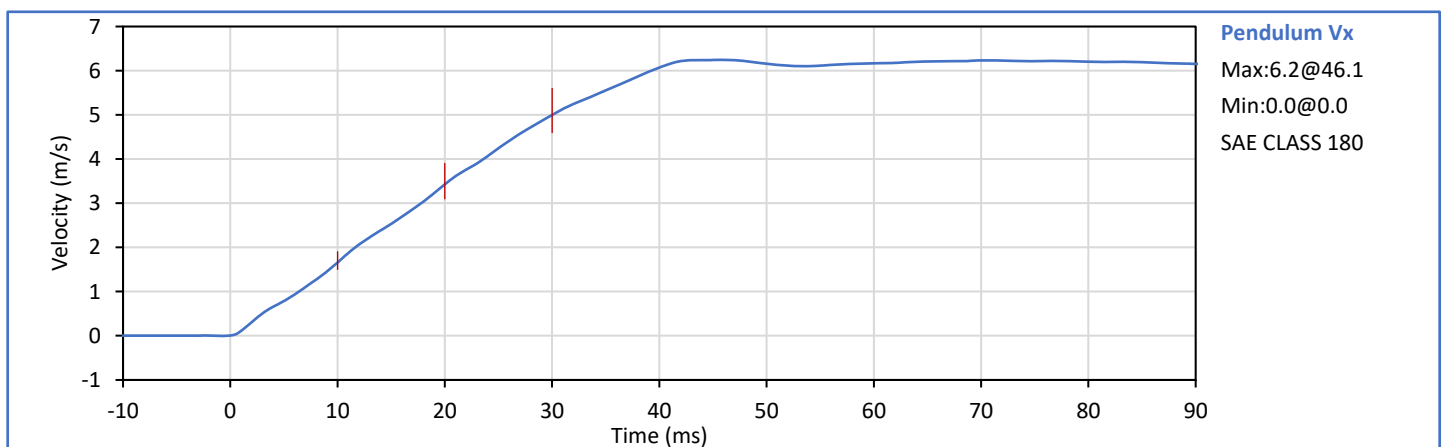
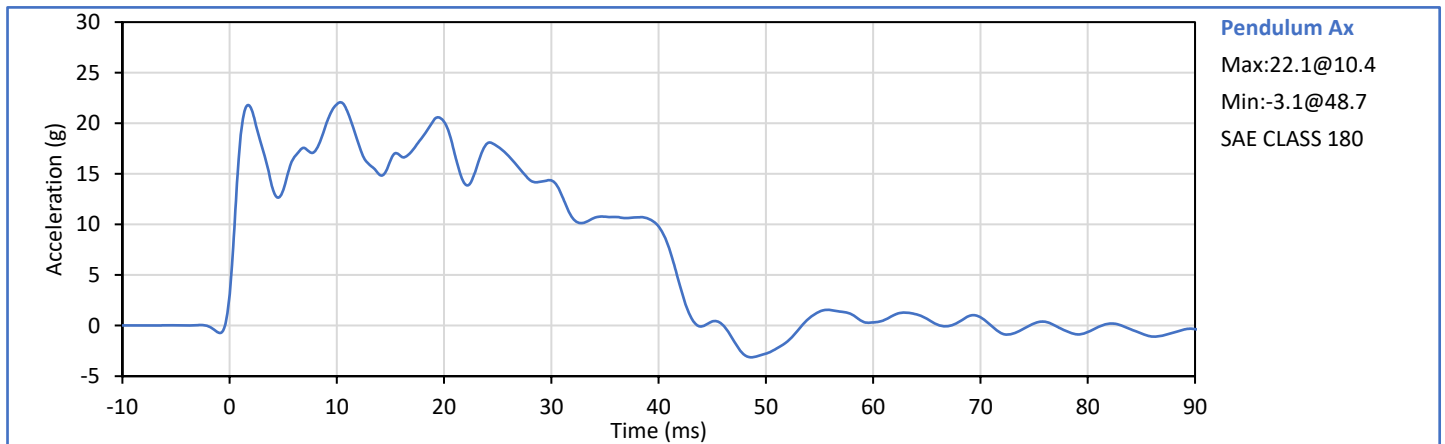
Approved By:

*J. Hernandez*

J. Hernandez



| Tested Parameter                | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|---------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature          | °C    | 20.6      | 22.2       | 21.3   | Pass      |
| Laboratory Relative Humidity    | %     | 10        | 70         | 39     | Pass      |
| Pendulum Velocity               | m/s   | 5.95      | 6.19       | 6.13   | Pass      |
| Pendulum Velocity at 10 ms      | m/s   | 1.50      | 1.90       | 1.66   | Pass      |
| Pendulum Velocity at 20 ms      | m/s   | 3.10      | 3.90       | 3.43   | Pass      |
| Pendulum Velocity at 30 ms      | m/s   | 4.60      | 5.60       | 5.00   | Pass      |
| Peak "D" Plane Rotation         | deg   | 99.0      | 114.0      | 107.6  | Pass      |
| Peak Moment in Rotation         | Nm    | -65.0     | -53.0      | -58.2  | Pass      |
| Negative Moment Decay to -10 Nm | ms    | 94.0      | 114.0      | 104.7  | Pass      |
| Overall Test Results            |       |           |            |        | Pass      |



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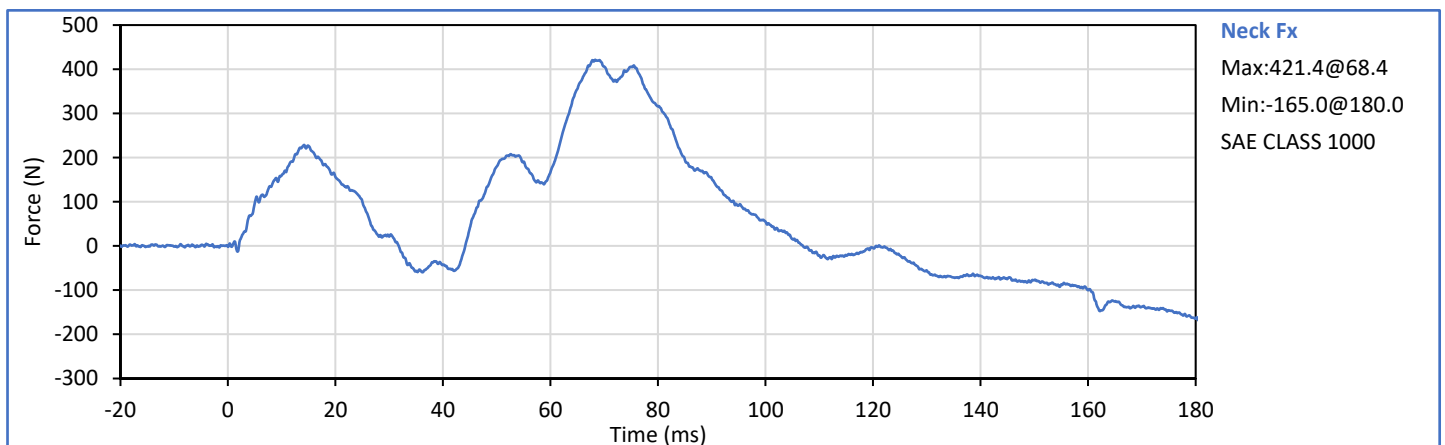
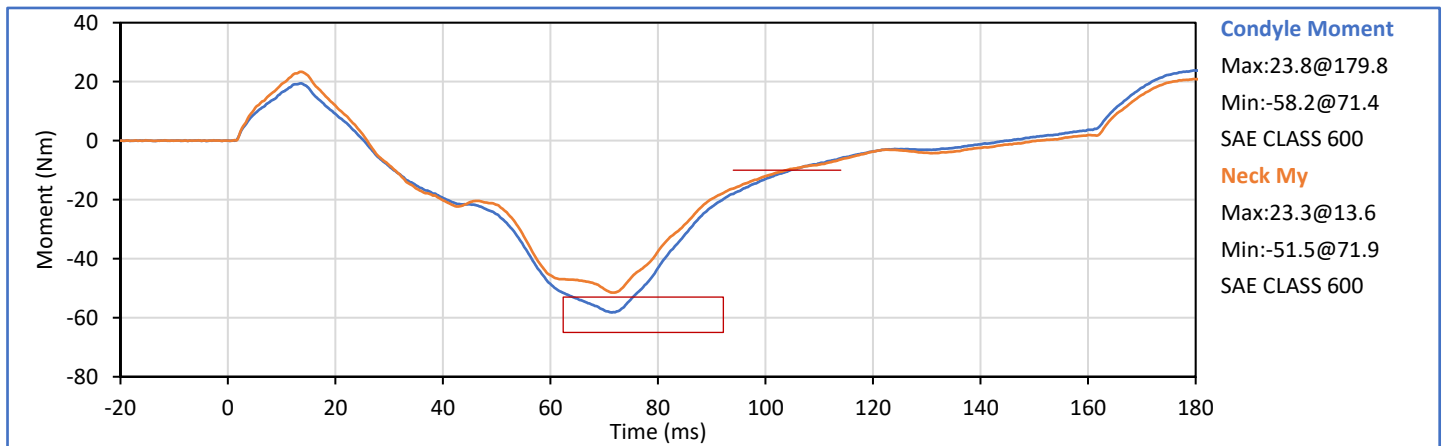
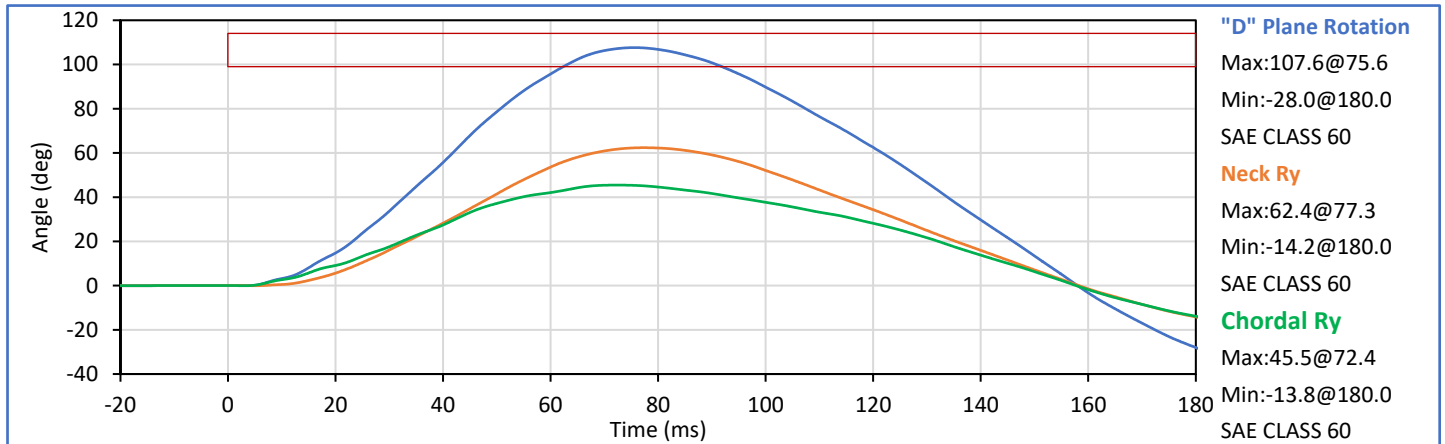
G. Fuentes

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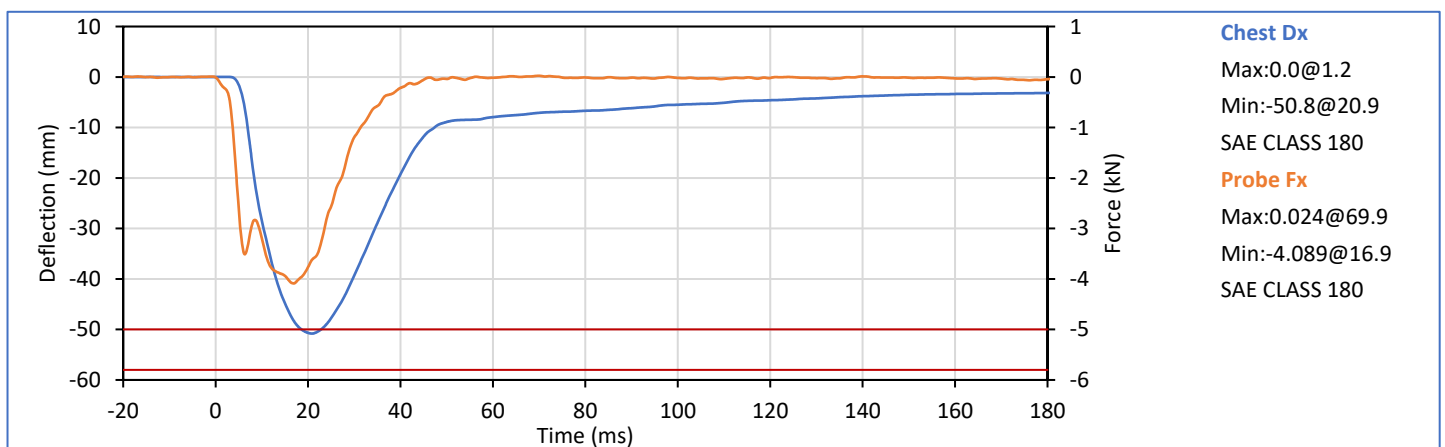
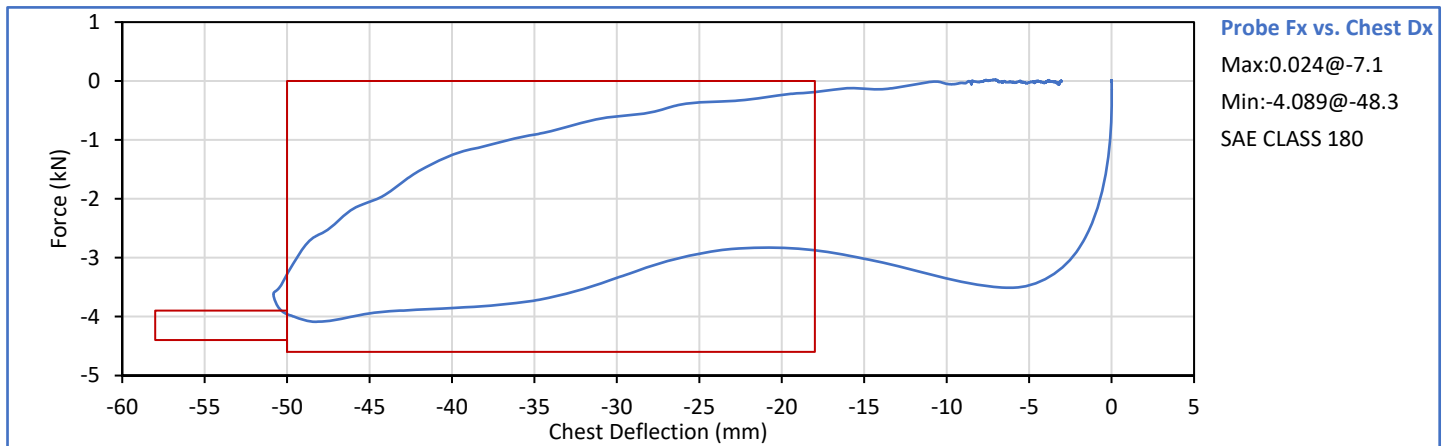
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| Tested Parameter               | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|--------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature         | °C    | 20.6      | 22.2       | 21.3   | Pass      |
| Laboratory RelativeHumidity    | %     | 10        | 70         | 39     | Pass      |
| Probe Velocity                 | m/s   | 6.59      | 6.83       | 6.76   | Pass      |
| Peak Chest Deflection          | mm    | -58.0     | -50.0      | -50.8  | Pass      |
| Peak Probe Force, 50 and 58 mm | kN    | -4.400    | -3.900     | -3.959 | Pass      |
| Peak Probe Force, 18 and 50 mm | kN    | -4.600    | 0.000      | -4.089 | Pass      |
| Internal Hysteresis            | %     | 69.0      | 85.0       | 77.7   | Pass      |
| Overall Test Results           |       |           |            |        | Pass      |



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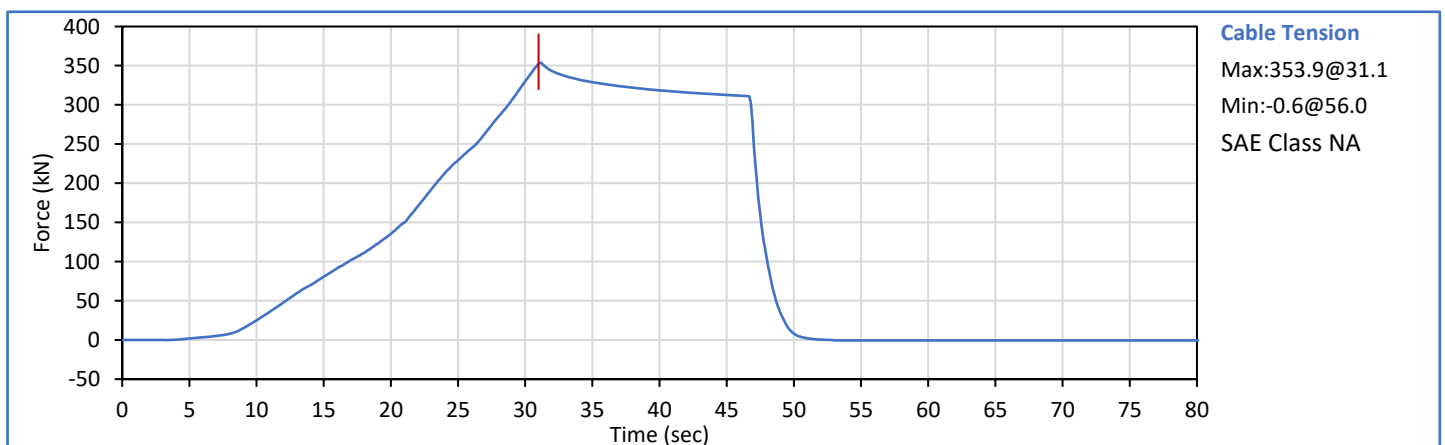
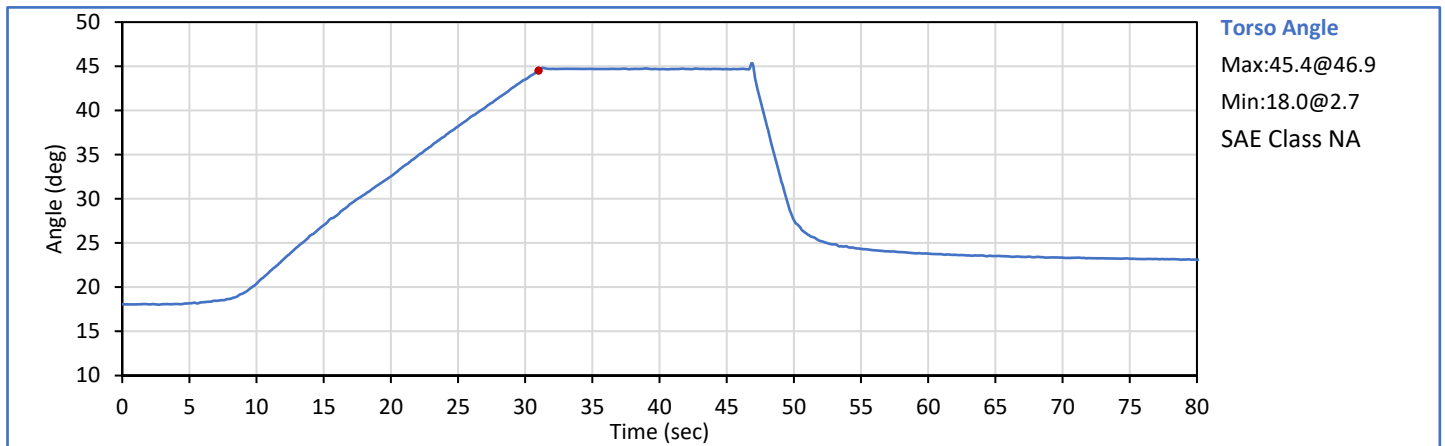
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Approved By:

*J. Hernandez*

J. Hernandez

| Tested Parameter            | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|-----------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature      | °C    | 18.9      | 25.6       | 21.3   | Pass      |
| Laboratory Humidity         | %     | 10        | 70         | 39     | Pass      |
| Orientation Angle           | deg   | 0.0       | 20.0       | 14.1   | Pass      |
| Test Initial Angle          | deg   | 11.0      | 19.0       | 18.0   | Pass      |
| Peak Force at 45° (+/-0.5°) | N     | 320.0     | 390.0      | 352.4  | Pass      |
| Torso Flexion Rate          | deg/s | 0.50      | 1.50       | 1.14   | Pass      |
| Final Reference Plane Angle | deg   | -8.0      | 8.0        | 4.6    | Pass      |
| Overall Test Results        |       |           |            |        | Pass      |



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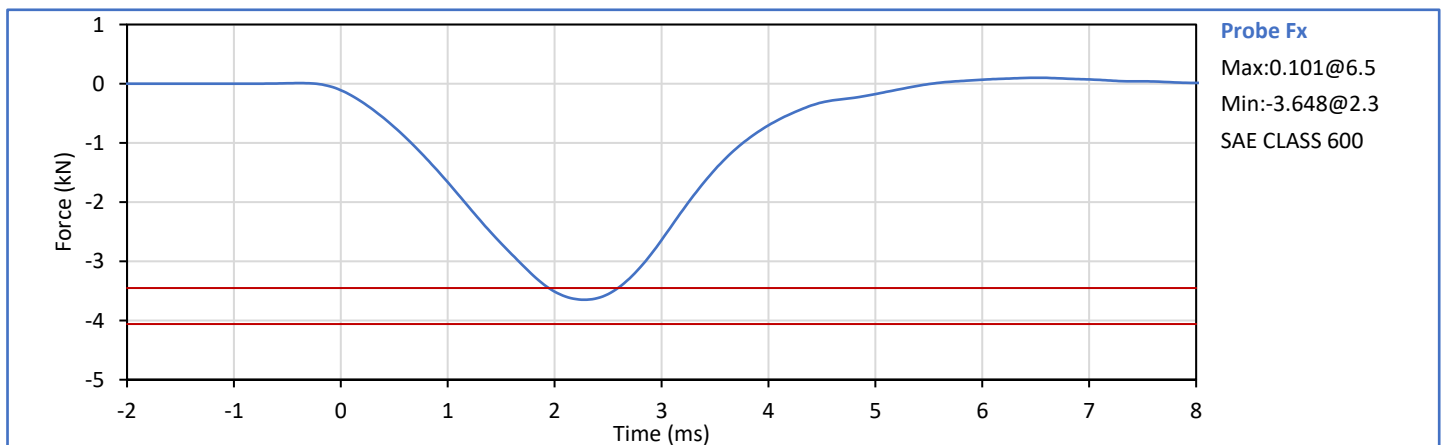
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*J. Hernandez*

J. Hernandez

| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.2   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 39     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.091  | Pass      |
| Peak Resistive Force         | kN    | -4.060    | -3.450     | -3.648 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



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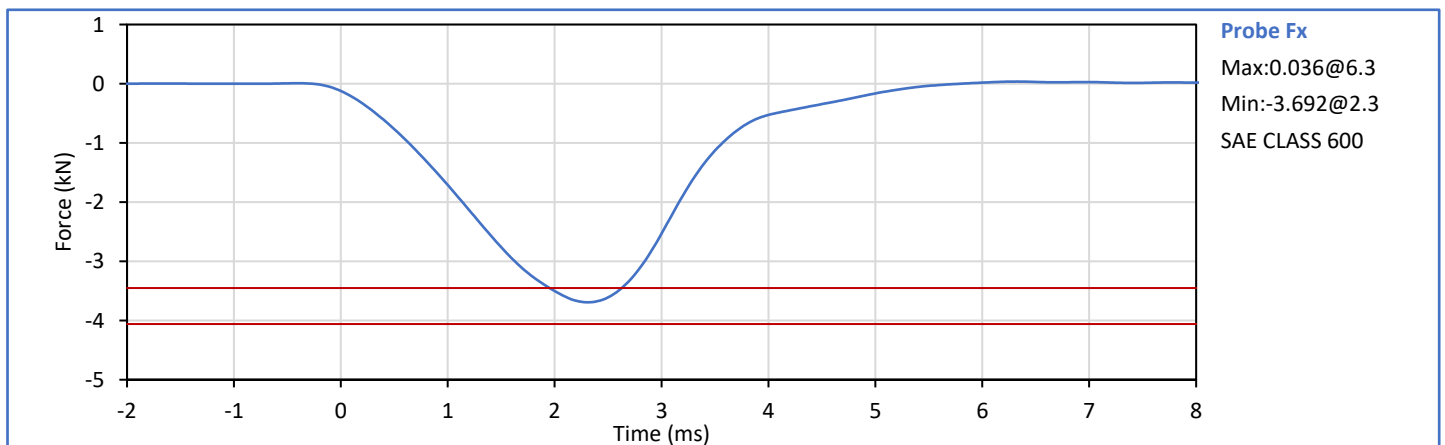
Approved By:

*J. Hernandez*

J. Hernandez



| Tested Parameter             | Units | Spec. Low | Spec. High | Result | Pass/Fail |
|------------------------------|-------|-----------|------------|--------|-----------|
| Laboratory Temperature       | °C    | 18.9      | 25.6       | 21.4   | Pass      |
| Laboratory Relative Humidity | %     | 10        | 70         | 39     | Pass      |
| Probe Velocity               | m/s   | 2.070     | 2.130      | 2.091  | Pass      |
| Peak Resistive Force         | kN    | -4.060    | -3.450     | -3.692 | Pass      |
| Overall Test Results         |       |           |            |        | Pass      |



Technician:

*G. Fuentes*

G. Fuentes

Approved By:

*J. Hernandez*

J. Hernandez

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

**Table 1 - Driver ATD Instrumentation**

| Sensor Location                | Sensor S\N   | Mfr         | Model              | Cal Date   |
|--------------------------------|--------------|-------------|--------------------|------------|
| Head Acceleration X Primary    | P49209       | Endevco     | 7264C-2k           | 2024-05-13 |
| Head Acceleration Y Primary    | P49228       | Endevco     | 7264C-2k           | 2024-05-13 |
| Head Acceleration Z Primary    | P50101       | Endevco     | 7264C-2k           | 2024-05-13 |
| Head Acceleration X Redundant  | P50103       | Endevco     | 7264C-2k           | 2024-05-13 |
| Head Acceleration Y Redundant  | P49210       | Endevco     | 7264C-2k           | 2024-05-13 |
| Head Acceleration Z Redundant  | P58713       | Endevco     | 7264C-2k           | 2024-05-13 |
| Head Rotation Rate X           | ARS11393     | DTS         | ARS PRO-18k (2kHz) | 2023-11-15 |
| Head Rotation Rate Y           | ARS13119     | DTS         | ARS PRO-18k (2kHz) | 2023-11-25 |
| Head Rotation Rate Z           | ARS14944     | DTS         | ARS PRO-18k (2kHz) | 2023-11-15 |
| Upper Neck Force X             | 1626 Fx      | R.A. Denton | 1716ATF            | 2024-01-05 |
| Upper Neck Force Y             | 1626 Fy      | R.A. Denton | 1716ATF            | 2024-01-05 |
| Upper Neck Force Z             | 1626 Fz      | R.A. Denton | 1716ATF            | 2024-01-05 |
| Upper Neck Moment X            | 1626 Mx      | R.A. Denton | 1716ATF            | 2024-01-05 |
| Upper Neck Moment Y            | 1626 My      | R.A. Denton | 1716ATF            | 2024-01-05 |
| Upper Neck Moment Z            | 1626 Mz      | R.A. Denton | 1716A              | 2024-01-05 |
| Chest Acceleration X Primary   | P52072       | Endevco     | 7264C-2k           | 2024-05-14 |
| Chest Acceleration Y Primary   | P49208       | Endevco     | 7264C-2k           | 2024-05-14 |
| Chest Acceleration Z Primary   | P51264       | Endevco     | 7264C-2k           | 2024-05-14 |
| Chest Acceleration X Redundant | P49461       | Endevco     | 7264C-2k           | 2024-05-14 |
| Chest Acceleration Y Redundant | P58774       | Endevco     | 7264C-2k           | 2024-05-14 |
| Chest Acceleration Z Redundant | P49168       | Endevco     | 7264C-2k           | 2024-05-14 |
| Chest Deflection               | 0606 (H3)    | Servo       | 14CBI-3615         | 2024-05-16 |
| Pelvis Acceleration X          | P49238       | Endevco     | 7264C-2k           | 2024-05-14 |
| Pelvis Acceleration Y          | P51278       | Endevco     | 7264C-2KTZ         | 2024-05-14 |
| Pelvis Acceleration Z          | P50087       | Endevco     | 7264C-2k           | 2024-05-14 |
| Left Femur Force Z             | DS4138 (pri) | Humanetics  | 3821JLN2           | 2024-01-08 |
| Right Femur Force Z            | DS4136 (pri) | Humanetics  | 3821JLN2           | 2024-01-08 |
| Left Femur Force Z Redundant   | DS4138 (red) | Humanetics  | 3821JLN2           | 2024-01-08 |
| Right Femur Force Z Redundant  | DS4136 (red) | Humanetics  | 3821JLN2           | 2024-01-08 |
| Left Upper Tibia Moment X      | DH3309 Mx    | FTSS        | IF-857             | 2024-01-09 |
| Left Upper Tibia Moment Y      | DH3309 My    | FTSS        | IF-857             | 2024-01-09 |
| Left Upper Tibia Force Z       | DH3309 Fz    | FTSS        | IF-857             | 2024-01-09 |
| Left Lower Tibia Moment X      | DI4186 Mx    | FTSS        | IF-853             | 2024-01-08 |
| Left Lower Tibia Moment Y      | DI4186 My    | FTSS        | IF-853             | 2024-01-08 |
| Left Lower Tibia Force Z       | DI4186 Fz    | FTSS        | IF-853             | 2024-01-08 |
| Right Upper Tibia Moment X     | 481 Mx       | R.A. Denton | 3643               | 2024-01-09 |
| Right Upper Tibia Moment Y     | 481 My       | R.A. Denton | 3643               | 2024-01-09 |
| Right Upper Tibia Force Z      | 481 Fz       | R.A. Denton | 3643               | 2024-01-09 |
| Right Lower Tibia Moment X     | DI4188 Mx    | FTSS        | IF-853             | 2024-01-08 |
| Right Lower Tibia Moment Y     | DI4188 My    | FTSS        | IF-853             | 2024-01-08 |
| Right Lower Tibia Force Z      | DI4188 Fz    | FTSS        | IF-853             | 2024-01-08 |
| Left Ankle Acceleration X      | 03E20-N09    | Entran      | EGEB6Q-2k          | 2024-05-16 |
| Left Ankle Acceleration Z      | P68074       | Endevco     | 7264C-2k           | 2024-05-16 |
| Left Toe Acceleration Z        | 03H07-Z10    | Entran      | EGEB6Q-2k          | 2024-05-16 |
| Right Ankle Acceleration X     | 06E20-R08    | Entran      | EGEB6Q-2k          | 2024-05-15 |
| Right Ankle Acceleration Z     | 06A07-R08    | Entran      | EGEB6Q-2k          | 2024-05-15 |
| Right Toe Acceleration Z       | 02I10-N27    | Entran      | EGEB6Q-2k          | 2024-05-14 |
| Seat Belt Outside Lap Force    | 263          | FTSS        | IF-964             | 2024-03-27 |
| Seat Belt Upper Diagonal Force | 315          | FTSS        | IF-964             | 2024-03-26 |

**Table 2 - Right Front Passenger ATD Instrumentation**

| Sensor Location                | Sensor S\N | Mfr         | Model              | Cal Date   |
|--------------------------------|------------|-------------|--------------------|------------|
| Head Acceleration X Primary    | P51889     | Endevco     | 7264C-2k           | 2024-05-17 |
| Head Acceleration Y Primary    | P51861     | Endevco     | 7264C-2k           | 2024-05-17 |
| Head Acceleration Z Primary    | P52077     | Endevco     | 7264C-2k           | 2024-05-17 |
| Head Acceleration X Redundant  | P58835     | Endevco     | 7264C-2k           | 2024-05-17 |
| Head Acceleration Y Redundant  | P51703     | Endevco     | 7264C-2k           | 2024-05-17 |
| Head Acceleration Z Redundant  | P52096     | Endevco     | 7264C-2k           | 2024-05-17 |
| Head Rotation Rate X           | ARS14943   | DTS         | ARS PRO-18k (2kHz) | 2023-11-15 |
| Head Rotation Rate Y           | ARS14954   | DTS         | ARS PRO-18k (2kHz) | 2023-11-15 |
| Head Rotation Rate Z           | ARS13586   | DTS         | ARS PRO-18k (2kHz) | 2023-11-15 |
| Upper Neck Force X             | 287 Fx     | FTSS        | IF-205             | 2024-01-05 |
| Upper Neck Force Y             | 287 Fy     | FTSS        | IF-205             | 2024-01-05 |
| Upper Neck Force Z             | 287 Fz     | FTSS        | IF-205             | 2024-01-05 |
| Upper Neck Moment X            | 287 Mx     | FTSS        | IF-205             | 2024-01-05 |
| Upper Neck Moment Y            | 287 My     | FTSS        | IF-205             | 2024-01-05 |
| Upper Neck Moment Z            | 287 Mz     | FTSS        | IF-205             | 2024-01-05 |
| Chest Acceleration X Primary   | P58860     | Endevco     | 7264C-2k           | 2024-05-17 |
| Chest Acceleration Y Primary   | P51724     | Endevco     | 7264C-2k           | 2024-05-18 |
| Chest Acceleration Z Primary   | P58711     | Endevco     | 7264C-2k           | 2024-05-17 |
| Chest Acceleration X Redundant | P52049     | Endevco     | 7264C-2k           | 2024-05-17 |
| Chest Acceleration Y Redundant | P51862     | Endevco     | 7264C-2k           | 2024-05-17 |
| Chest Acceleration Z Redundant | P52048     | Endevco     | 7264C-2k           | 2024-05-17 |
| Chest Deflection               | 0724 (HF)  | Servo       | 14CBI-3615         | 2024-05-20 |
| Pelvis Acceleration X          | P52090     | Endevco     | 7264C-2k           | 2024-05-17 |
| Pelvis Acceleration Y          | P58849     | Endevco     | 7264C-2k           | 2024-05-17 |
| Pelvis Acceleration Z          | P58756     | Endevco     | 7264C-2k           | 2024-05-17 |
| Left Femur Force Z             | 112 (pri)  | R.A. Denton | 3821JTF            | 2024-06-05 |
| Right Femur Force Z            | 132 (pri)  | R.A. Denton | 3821JTF            | 2024-06-05 |
| Left Femur Force Z Redundant   | 112 (red)  | R.A. Denton | 3821JTF            | 2024-06-05 |
| Right Femur Force Z Redundant  | 132 (red)  | R.A. Denton | 3821JTF            | 2024-06-05 |
| Left Upper Tibia Moment X      | 468 Mx     | R.A. Denton | 3643               | 2024-05-10 |
| Left Upper Tibia Moment Y      | 468 My     | R.A. Denton | 3643               | 2024-05-10 |
| Left Upper Tibia Force Z       | 468 Fz     | R.A. Denton | 3643               | 2024-05-10 |
| Left Lower Tibia Moment X      | 499 Mx     | R.A. Denton | 3644               | 2024-05-10 |
| Left Lower Tibia Moment Y      | 499 My     | R.A. Denton | 3644               | 2024-05-10 |
| Left Lower Tibia Force Z       | 499 Fz     | R.A. Denton | 3644               | 2024-05-10 |
| Right Upper Tibia Moment X     | DH3302 Mx  | FTSS        | IF-857             | 2024-05-10 |
| Right Upper Tibia Moment Y     | DH3302 My  | FTSS        | IF-857             | 2024-05-10 |
| Right Upper Tibia Force Z      | DH3302 Fz  | FTSS        | IF-857             | 2024-05-10 |
| Right Lower Tibia Moment X     | 399 Mx     | R.A. Denton | 3644               | 2024-05-10 |
| Right Lower Tibia Moment Y     | 399 My     | R.A. Denton | 3644               | 2024-05-10 |
| Right Lower Tibia Force Z      | 399 Fz     | R.A. Denton | 3644               | 2024-05-10 |
| Left Ankle Acceleration X      | P58897     | Endevco     | 7264C-2k           | 2024-05-18 |
| Left Ankle Acceleration Z      | P52057     | Endevco     | 7264C-2k           | 2024-05-18 |
| Left Toe Acceleration Z        | P49224     | Endevco     | 7264C-2k           | 2024-05-18 |
| Right Ankle Acceleration X     | P52019     | Endevco     | 7264C-2k           | 2024-05-18 |
| Right Ankle Acceleration Z     | P58755     | Endevco     | 7264C-2k           | 2024-05-18 |
| Right Toe Acceleration Z       | P52076     | Endevco     | 7264C-2k           | 2024-05-18 |
| Seat Belt Outside Lap Force    | 313        | FTSS        | IF-964             | 2024-03-27 |
| Seat Belt Upper Diagonal Force | 251        | FTSS        | IF-964             | 2024-03-27 |



**Table 3 - Vehicle Instrumentation**

| Sensor Location         | Sensor S\N | Mfr     | Model   | Cal Date   |
|-------------------------|------------|---------|---------|------------|
| Left Rear Primary Ax    | M13968     | Endevco | 758H-2k | 2024-05-29 |
| Right Rear Primary Ax   | M13950     | Endevco | 758H-2k | 2024-05-29 |
| Engine Top Ax           | 220342     | BST     | 11CF-2k | 2024-05-23 |
| Engine Bottom Ax        | 220337     | BST     | 11CF-2k | 2024-05-23 |
| Left Rear Az            | M13948     | Endevco | 758H-2k | 2024-05-29 |
| Right Rear Az           | M13947     | Endevco | 758H-2k | 2024-05-29 |
| Left Rear Redundant Ax  | M13961     | Endevco | 758H-2k | 2024-05-29 |
| Right Rear Redundant Ax | M13946     | Endevco | 758H-2k | 2024-05-29 |