

FINAL REPORT NUMBER: OMDB-TRC-16-001

**MOVING BARRIER TO VEHICLE CRASH TEST IN SUPPORT OF NHTSA'S
FRONTAL OBLIQUE OFFSET PROGRAM
OBLIQUE MOVING DEFORMABLE BARRIER INTO LEFT FRONT OF A**

2016 Mazda CX-5

90.1KPH, 15 DEGREE ANGLE, 35% OVERLAP

NHTSA NUMBER: R20165407

**PREPARED BY:
Transportation Research Center Inc.
10820 State Route 347
P. O. Box B-67
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FINAL REPORT SUBMITTED

August 4, 2016

PREPARED FOR:

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Vehicle safety Research
1200 New Jersey Ave, SE
Room W46-446
Washington, DC 20590**

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Report Prepared By: ILO Project Operations Group Date: _____

Report Approved By:  Date: _____
Jeffery W. Sankey, Manager, Project Operations

FINAL REPORT ACCEPTANCE BY VEHICLE SAFETY RESEARCH, OFFICE OF
STRUCTURAL AND RESTRAINTS RESEARCH DIVISION:

Date: _____

TOM, Vehicle Crash Testing
NHTSA, Office of Structures and Restraints Research
Date: _____

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16. Abstract A test was conducted in accordance with Contract DTNH22-14-D-00361. The test consisted of an Oblique Moving Deformable Barrier (OMDB) traveling at a target speed of 90.1 kph into a stationary 2016 Mazda CX-5 MPV. The struck vehicle was positioned 15 degrees relative to the moving barrier and impacted 35% of the left side of the vehicle. The test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and foot well intrusion performance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on June 21, 2016. The OMDB impact velocity was 90.27 kph and the ambient temperature at the test vehicle at the time of impact was 28.7°C. The target vehicle post-test maximum crush was 749 mm. The test vehicle's performance was as follows: <table border="1" data-bbox="271 1176 1396 1568"> <thead> <tr> <th>Measurement Description</th> <th>Unit s</th> <th>Driver THOR</th> <th>Passenger THOR</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td> <td>N/A</td> <td>158.28</td> <td>111.75</td> </tr> <tr> <td>Brain Injury Criteria (BrIC)</td> <td>N/A</td> <td>0.71</td> <td>0.94</td> </tr> <tr> <td>Peak Neck Tension</td> <td>N</td> <td>1,690.57</td> <td>949.90</td> </tr> <tr> <td>Peak Resultant Chest Deflection</td> <td>mm</td> <td>52.29</td> <td>38.26</td> </tr> <tr> <td>Peak Abdomen Deflection</td> <td>mm</td> <td>-56.09</td> <td>-62.08</td> </tr> <tr> <td>Peak Resultant Acetabulum Force</td> <td>N</td> <td>1,862.02</td> <td>3,508.06</td> </tr> <tr> <td>Peak Femur Force</td> <td>N</td> <td>-1,237.26</td> <td>-3,306.78</td> </tr> <tr> <td>Left Tibia Index</td> <td>N</td> <td>0.471</td> <td>1.35</td> </tr> <tr> <td>Right Tibia Index</td> <td>N</td> <td>0.434</td> <td>0.482</td> </tr> </tbody> </table>				Measurement Description	Unit s	Driver THOR	Passenger THOR	Head Injury Criteria (HIC ₁₅)	N/A	158.28	111.75	Brain Injury Criteria (BrIC)	N/A	0.71	0.94	Peak Neck Tension	N	1,690.57	949.90	Peak Resultant Chest Deflection	mm	52.29	38.26	Peak Abdomen Deflection	mm	-56.09	-62.08	Peak Resultant Acetabulum Force	N	1,862.02	3,508.06	Peak Femur Force	N	-1,237.26	-3,306.78	Left Tibia Index	N	0.471	1.35	Right Tibia Index	N	0.434	0.482
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SECTION 1
PURPOSE OF TEST

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

This 90.1 kph (56 mph) Moving Barrier into a test vehicle is part of the Frontal Offset Test outlined in Contract No. DTNH22-14-D-00361. The purpose of this test is to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

This test was conducted in accordance with the instructions set forth for a 15° angle, 35% offset moving barrier to vehicle impact, outlined in Contract No. DTNH22-14-D-00361. Data was obtained indicant of Federal Motor Vehicle Safety Standard FMVSS 208 - Occupant Crash Protection, FMVSS 212 – Windshield Mounting, FMVSS 219 (partial) – Windshield Zone Intrusion, and FMVSS 301 – Fuel System Integrity, in addition to the requirements of Contract No. DTNH22-14-D-00361.

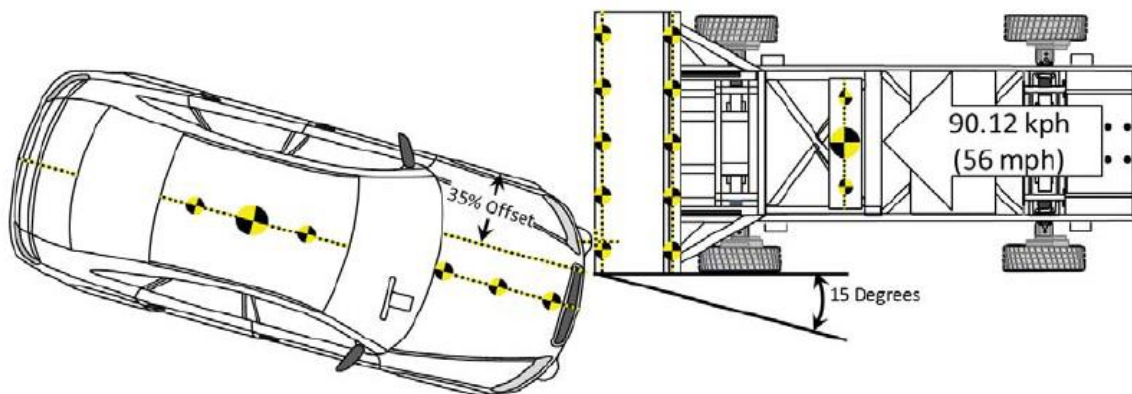
SECTION 2

SUMMARY OF TEST RESULTS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

A 2016 Mazda CX-5 MPV was impacted on the left front corner by an Oblique Moving Deformable Barrier (OMDB). This test vehicle was stationary and positioned at a target angle of 15° and at a target offset of 35% to the forward line of motion of the OMDB. The OMDB was towed down the test track in a full forward direction, without any crabbing, and at the targeted impact velocity of 90.1 kph (56.0 mph) into the test vehicle. The test vehicle's mass was 1,789.8 kg (3,945.8 lbs), and the OMDB's mass was 2,499.2 kg (5,509.8 lbs). The test was conducted by Transpiration Research Center, Inc. on June 21, 2016.



The test was documented by two (2) real time and fifteen (15) high-speed video cameras. Camera locations and other pertinent data are located in Data Sheet No. 6 of this report. Pre and post – test photographs of the test vehicle, OMDB, and test setup were taken using a digital still camera. Photographic documentation of the test is presented in Appendix A of this report.

One 50% adult male THOR-NT anthropomorphic test device (ATD) (Serial No. DO9798) was seated in the left, front (P1 -Driver's) seating position and one 50% adult male THOR-NT adult male ATD (Serial No. DL9207) was seated in the right front passenger seating position (P2). The driver and passenger were positioned according to instructions specified in the THOR seating procedures.

The driver was restrained with a 3 – point seat belt, frontal, curtain and torso airbag. The passenger was restrained with a 3 – point seat belt and frontal airbag.

SECTION 2 (CONTINUED)

SUMMARY OF TEST RESULTS

Test Vehicle:	<u>2016 Mazda CX-5 MPV</u>	NHTSA No.:	<u>R20165407</u>
Test Program:	<u>R&D 90.1 kph 15° / 35% Left Oblique Offset</u>	Test Date:	<u>6/21/2016</u>

Two hundred and fifty eight (258) channels of data from the two ATD's, test vehicle and OMDB were collected using KT data acquisition systems. Appendix B contains dummy data plots, as well as vehicle and OMDB response data plots.

There was 96.4% total windshield retention, with 92.9% and 100% retention on the left and right sides, respectively. There appeared to be intrusion into the windshield below the protected zone. The maximum static crush of the vehicle was 749 mm at C1 to the left of the vehicle's centerline. The maximum crush of the structural bumper beam was 456 mm at B1, to the left of the vehicle's centerline. Full vehicle measurements are presented in Section 3 of this report.

All four vehicle doors remained closed and latched during the test. All doors remained operational after the impact event.

Structure observations include the following:

- Windshield had cracks throughout with minor separation along the driver side
- Hood bent inwards and exposed part of the engine compartment

The driver ATD's visible contact points were:

- Head contacted the frontal and curtain airbags, door panel and head restraint
- Left Knee contacted the knee bolster
- Right Knee contacted the knee bolster

The right front passenger ATD's visible contact points were:

- Head contacted the frontal airbag and head restraint
- Left Knee contacted the glove box
- Right Knee contacted the glove box

SECTION 2 (CONTINUED)
CRASH VEHICLE SUMMARY

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

Primary Impact Data

Measurement Parameter	Units	Value
OMDB Velocity at Impact	kph	90.27
OMDB Test Weight	kg	2499.2
OMDB Maximum Static Crush	mm	302
Vehicle Test Weight	kg	1789.8
Actual Vehicle Angle	degrees	15
Vehicle Maximum Static Crush	mm	749
Vertical Offset from Target Point (+ down / - up)*	mm	-23
Lateral Offset from Target Point (+ left / - right)*	mm	-5
Number of Data Channels		258
Number of Real-Time Cameras		2
Number of High-Speed Cameras		15

*Offsets are in relation to the vehicle coordinate system.

Dummy Contacts

	Driver	Picture Ref	Passenger	Picture Ref
Dummy Type	THOR, S/N: DO9798		THOR, S/N: DL9207	
Head Contact	Front & Curtain Airbags, Door Panel & Head Restraint	A-96, 97, 98, 99 & 100	Front Airbag	A-146
Upper Torso Contact	None	N/A	None	N/A
Lower Torso Contact	None	N/A	None	N/A
Side Torso Contact	None	N/A	None	N/A
Left Knee Contact	Knee Bolster	A-101	Glove Box	A-147
Right Knee Contact	Knee Bolster	A-101	Glove Box	A-147

SECTION 2 (CONTINUED)
SUMMARY OF TEST RESULTS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

Data Anomalies

CHANNEL DESCRIPTION	EXPLANATION
Driver Foot Right X Acceleration; Questionable data after approximately 45.0 milliseconds.	Root cause broken wires; sensor will be replaced.
Passenger T1 X Acceleration; Questionable data after approximately 50.0 milliseconds.	Root cause undetermined; the sensor will be replaced.
Passenger T1 Z Acceleration; Questionable data after approximately 45.0 milliseconds.	Root cause undetermined; the sensor will be replaced.
Passenger Lower Tibia Z Force; No valid data after approximately 70.0 milliseconds.	Root cause intermittent at the wiring break-out of the FZ channel; load cell will be replaced.
Passenger Right Foot X Acceleration; No valid data after approximately 45.0 milliseconds.	Root cause undetermined; the sensor will be replaced.
Passenger Curtain Airbag Monitor; No valid data throughout the event.	Could not reproduce post-test; sensor quarantined.

SECTION 2 (CONTINUED)
PRELIMINARY INJURY SUMMARY: Driver

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

Driver: THOR Serial No. DO9798 Injury Summary

Location	Description	Unit	Source	Max	Min
Head	HIC 15 ms		Compute	158.28	
	Brain Injury Criteria (BrIC)		Compute	0.71	
	Head Rotational Velocity X	Deg/s	60	624.72	-856.04
	Head Rotational Velocity Y	Deg/s	60	628.71	-1513.59
	Head Rotational Velocity Z	Deg/s	60	1,175.64	-953.82
Neck	Upper Neck Z-axis Force	N	1000	1,690.57	-62.65
	Upper Neck Y-axis Moment	Nm	Thortest	33.39	-20.06
Chest	Upper Left Resultant Chest Deflection	mm	Thortest	18.67	
	Upper Right Resultant Chest Deflection	mm	Thortest	52.29	
	Lower Left Resultant Chest Deflection	mm	Thortest	31.16	
	Lower Right Resultant Chest Deflection	mm	Thortest	48.48	
Abdomen	Lower Left X-axis Deflection	mm	Thortest	0.13	-56.09
	Lower Right X-axis Deflection	mm	Thortest	0.11	-52.88
Acetabulum	Left Acetabulum Resultant Force	N	Compute	1,268.65	0.09
	Right Acetabulum Resultant Force	N	Compute	1,862.02	0.07
Femur	Left Femur Force, FZ	N	600	324.99	-2,373.26
	Right Femur Force, FZ	N	600	378.35	-1,950.24
Tibia	Left Upper Tibia, FZ	N	600	133.60	-1,189.43
	Left Upper Tibia Index		Compute	0.435	
	Right Upper Tibia, FZ	N	600	321.23	-1,241.98
	Right Upper Tibia Index		Compute	0.415	
	Left Lower Tibia, FZ	N	600	284.44	-2,149.36
	Left Lower Tibia Index		Compute	0.471	
	Right Lower Tibia, FZ	N	600	187.03	-2,265.49
	Right Lower Tibia Index		Compute	0.434	
Ankle	Left Ankle Rotation, RX	Deg	180	3.36	-25.89
	Left Ankle Rotation, RY	Deg	180	30.76	-26.05
	Left Ankle Dorsiflexion Moment, MX	Nm	Compute	10.07	-14.17
	Left Ankle Dorsiflexion Moment, MY	Nm	Compute	48.19	-13.11
	Right Ankle Rotation, RX	Deg	180	12.75	-37.94
	Right Ankle Rotation, RY	Deg	180	9.47	-25.46
	Right Ankle Dorsiflexion Moment, MX	Nm	Compute	52.70	-63.39
	Right Ankle Dorsiflexion Moment, MY	Nm	Compute	21.53	-43.71
Anomalies: None					

SECTION 2 (CONTINUED)
PRELIMINARY INJURY SUMMARY: Right Front Passenger

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

Right Front Passenger: THOR Serial No. DL9207 Injury Summary

Location	Description	Unit	Source	Max	Min
Head	HIC 15 ms		Compute	111.75	
	Brain Injury Criteria (BrIC)		Compute	0.94	
	Head Rotational Velocity X	Deg/s	60	736.69	-1,503.15
	Head Rotational Velocity Y	Deg/s	60	604.82	-856.53
	Head Rotational Velocity Z	Deg/s	60	1988.65	-1222.11
Neck	Upper Neck Z-axis Force	N	1000	949.90	-160.99
	Upper Neck Y-axis Moment	Nm	Thortest	359.30	-107.14
Chest	Upper Left Resultant Chest Deflection	mm	Thortest	38.26	
	Upper Right Resultant Chest Deflection	mm	Thortest	21.16	
	Lower Left Resultant Chest Deflection	mm	Thortest	28.05	
	Lower Right Resultant Chest Deflection	mm	Thortest	15.89	
Abdomen	Lower Left X-axis Deflection	mm	Thortest	0.13	-62.08
	Lower Right X-axis Deflection	mm	Thortest	0.14	-54.85
Acetabulum	Left Acetabulum Resultant Force	N	Compute	1848.21	0.13
	Right Acetabulum Resultant Force	N	Compute	3508.06	0.04
Femur	Left Femur Force, FZ	N	600	311.19	-3306.78
	Right Femur Force, FZ	N	600	1230.39	-1158.22
Tibia	Left Upper Tibia, FZ	N	600	156.38	-2571.15
	Left Upper Tibia Index		Compute	0.573	
	Right Upper Tibia, FZ	N	600	1512.28	-1991.72
	Right Upper Tibia Index		Compute	0.569	
	Left Lower Tibia, FZ ¹	N	600	11,359.36	-2478.04
	Left Lower Tibia Index		Compute	1.35	
	Right Lower Tibia, FZ	N	600	186.68	-2465.30
	Right Lower Tibia Index		Compute	0.482	
Ankle	Left Ankle Rotation, RX	Deg	180	61.78	30.57
	Left Ankle Rotation, RY	Deg	180	8.02	-25.91
	Left Ankle Dorsiflexion Moment, MX	Nm	Compute	19.36	-34.73
	Left Ankle Dorsiflexion Moment, MY	Nm	Compute	14.10	-81.98
	Right Ankle Rotation, RX	Deg	180	27.81	-27.06
	Right Ankle Rotation, RY	Deg	180	-4.43	-22.41
	Right Ankle Dorsiflexion Moment, MX	Nm	Compute	46.87	-41.15
	Right Ankle Dorsiflexion Moment, MY	Nm	Compute	27.60	-23.27
Anomalies: (1) Passenger Lower Tibia Z Force: No valid data after approximately 70.0 milliseconds.					

**SECTION 3
DATA SHEETS**

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

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DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	R20165407
Model Year	2016
Make	Mazda
Model	CX-5
Body Style	MPV
VIN	JM3KE4BY3G0672477
Body Color	Titanium Flash Mica
Odometer Reading (km/mi)	67 mi
Engine Displacement (L)	2.5
Type/No. Cylinders	Straight/4
Engine Placement	Front Transverse
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	AWD
Roof Rack	No
Sunroof/T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes
All-Wheel Drive (AWD)	Yes
Traction Control System (TCS)	Yes

Auto-Leveling System	No
Automatic Door Locks (ADL)	Yes
Power Window Auto-Reverse	Yes
Other Optional Feature	N/A
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Pass. Front Airbag	Yes
Pass. Curtain Airbag	Yes
Pass. Head/Torso Airbag	No
Pass. Torso Airbag	No
Pass. Torso/Pelvis Airbag	Yes
Pass. Pelvis Airbag	No
Pass. Knee Airbag	No
Driver Seat Belt Pretensioner	Yes
Pass. Seat Belt Pretensioner	Yes
Driver Load Limiter	Yes
Passenger Load Limiter	Yes
Other Safety Restraint	No

Does owner's manual provide instructions to turn off automatic door locks?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Mazda Motor Corporation
Date of Manufacture	05/15

GVWR (kg)	2071
GAWR Front (kg)	1056
GAWR Rear (kg)	1018

VEHICLE SEATING AND WEIGHT CAPACITY

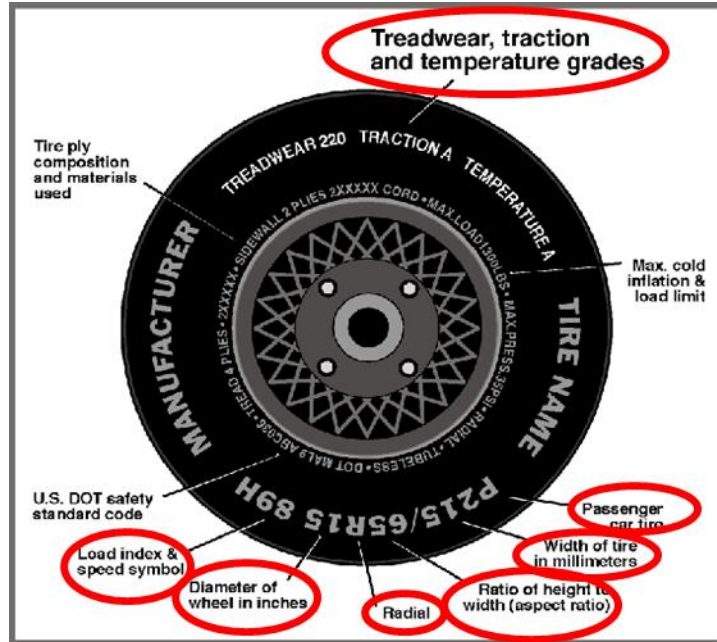
Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	N/A	
Number of Occupants	2	3	N/A	5
Capacity Wt. (VCW) (kg)				385.0
Cargo Wt. (RCLW) (kg)				44.8

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

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
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Collect items circled in red, tire manufacturer, and tire name.



Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	230	230
Recommended Tire Size	P225/65R17	P225/65R17
Tire Size on Vehicle	P225/65R17	P225/65R17
Tire Manufacturer	Yokohama	Yokohama
Tire Model	Geolander G91	Geolander G91
Treadwear	280	280
Traction	B	B
Temperature Grades	A	A
Tire Plies Sidewall	2	2
Tire Plies Body	5	5
Load Index/Speed Symbol	100H	100H
Tire Material	Polyester/Steel/Nylon	Polyester/Steel/Nylon
DOT Safety Code Left	FDF5 PC52115	FDF5 PC52115
DOT Safety Code Right	FDF5 PC52115	FDF5 PC52115

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

Test Vehicle: 2016 Mazda CX-5 MPV
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TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	449.6	334.2		497.4	411.2	
Right	kg	438.8	320.0		478.8	402.4	
Ratio	%	57.6	42.4		54.5	45.5	
Totals	kg	888.4	654.2	1542.6	976.2	813.6	1789.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total As Delivered Weight (UVW)	kg	1542.6
Actual Weight of 2 THOR ATDS	kg	184
Rated Cargo/Luggage Weight (RCLW)	kg	44.8
Calculated Vehicle Target Weight (TVTW)	kg	1771.4

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	807	808	822	826	1143
As Tested	mm	--- ¹	--- ¹	--- ¹	--- ¹	1225
Post Test	mm	--- ¹	--- ¹	--- ¹	--- ¹	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	2695
Total Vehicle Length at Left Side	mm	--- ¹
Total Vehicle Length at Centerline	mm	4540
Total Vehicle Length at Right Side	mm	--- ¹
Weight of Ballast in Cargo Area	kg	0.0
Weight of Vehicle Components Removed	kg	79.4
Amount of Stoddard Solvent in Fuel Tank	L	53.8

COMPONENTS REMOVED TO MEET TEST WEIGHT:

Lift gate assembly, left and right OSRV mirrors, left and right rear door trim panels,
window glass and regulators, door seals, rear fascia and reinforcement beam and muffler

¹Measurements not recorded

DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

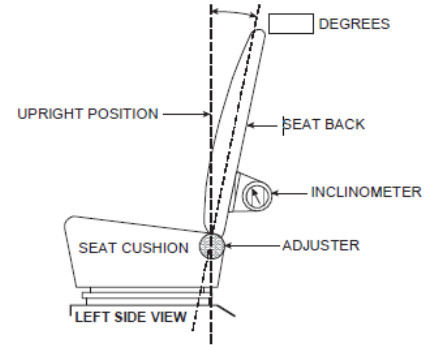
NHTSA No.: R20165407
 Test Date: 6/21/2016

NORMAL DESIGN RIDING POSITION

For adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.

Driver seat: The driver seat back was positioned according to the Nominal Design Riding position listed in FORM 1. Was moved rearward per THOR procedure to level the head.

Passenger Seat: The passenger seat back was positioned according to the Nominal Design Riding position listed in FORM 1. Was moved rearward per THOR procedure to level the head.



FRONT SEAT ASSEMBLY

	Unit	FORM 1 Position	After ATD Positioning
Driver Seat Back Angle	deg	6.7	7.3
Passenger Seat Back Angle	deg	6.7	5.6

SEAT FORE/AFT POSITIONS

Describe the method used of determining seat fore/aft positions.

The driver's seat was positioned at its mid angle position and at the mid-point of fore/aft travel. The passenger's seat was positioned at the mid-point of fore/aft travel. Passenger was moved rearward for clearance per THOR seating procedure.

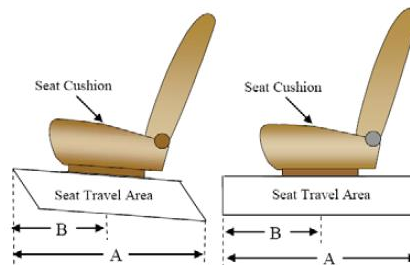
	Total Fore/Aft Travel	Placed in Position #
Driver Seat	260mm (27 detents)	Mid (14 of 27 detents)
Passenger Seat	260mm (27 detents)	20mm Rearward of Mid (16 of 27 detents)

SEAT BELT UPPER ANCHORAGES

Describe the method of positioning seat belt upper anchorages.

Belt anchorages were moved along the full range of motion, and marked on the B-Pillar to their respective possible positions. Photographic evidence can be found in Appendix A of this report. Zero is defined as the upper-most position.

	Total # of Positions	Placed in Position #
Driver Seat	4	4 of 4 (Uppermost)
Passenger Seat	4	4 of 4 (Uppermost)



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

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

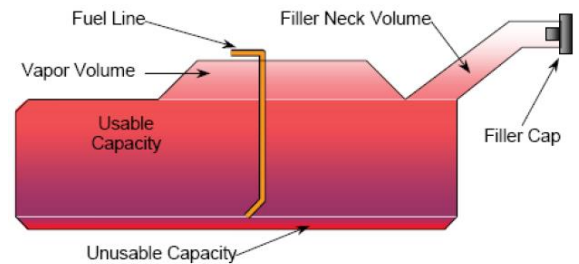
FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	58.0
Usable Capacity of "Optional Tank"	
93% of Usable Capacity	53.9
Actual Amount of Solvent Used	53.8
1/3 of Usable Capacity	19.0

FUEL PUMP

Describe the fuel system - what type of fuel pump, details about how it operates, etc.

Fuel evacuated according to the specifications provided by the manufacturer in Form 1. Electric fuel pump operates when the ignition is in the 'on' position and the engine is running. The fuel filler neck is located above the left rear wheel.

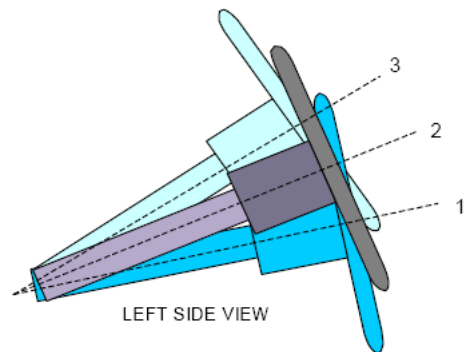


VEHICLE FUEL TANK ASSEMBLY

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. Describe how this measurement was taken.

The steering wheel was adjusted to the midpoint of tilt angle range and the midpoint of the telescoping travel



STEERING COLUMN ASSEMBLY

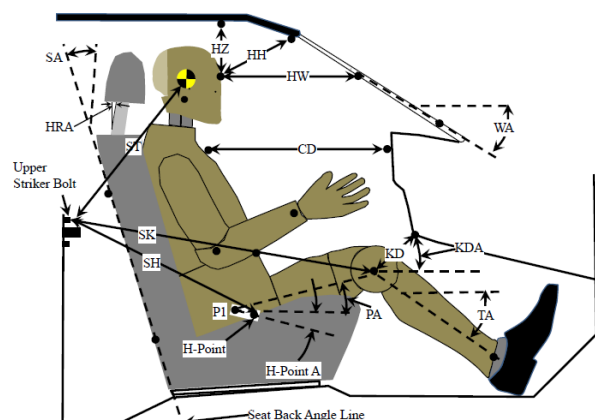
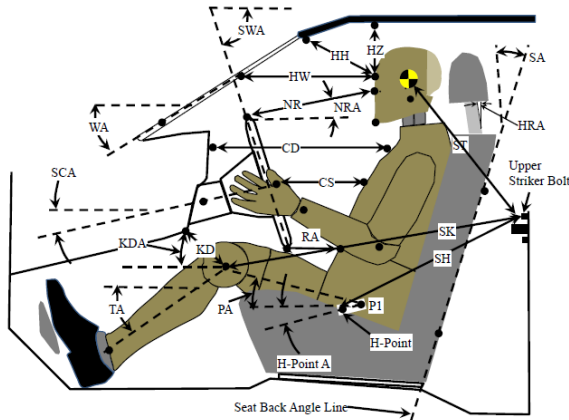
STEERING COLUMN POSITIONS

	Tilt (degrees)	Fore/Aft Position (mm)
Lowermost position No. 1	23.6	
Geometric center position No. 2	26.0	
Uppermost position No. 3	28.4	
Telescoping Steering Wheel Travel	30.0	60/30
Test Position	26.0	

DATA SHEET NO. 3 DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016



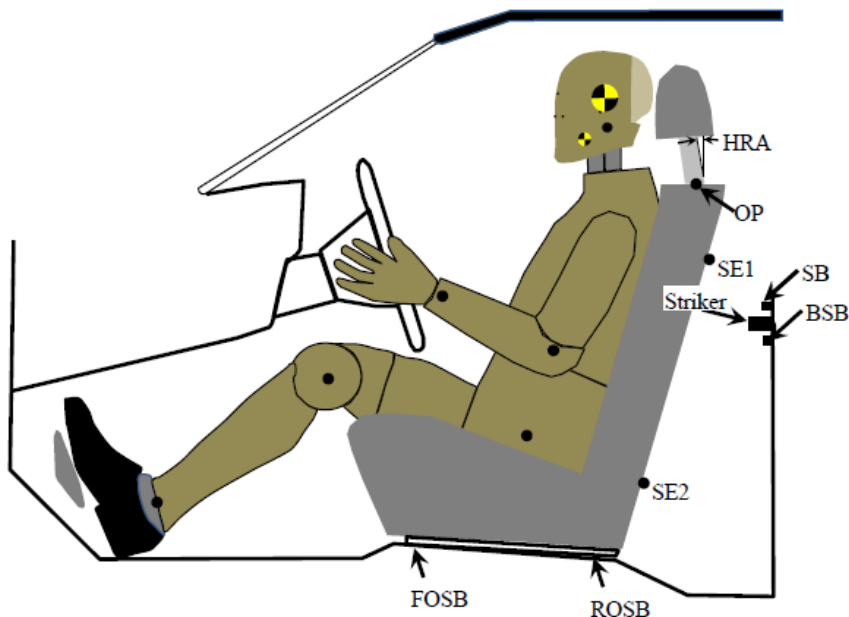
Description	Units	Driver DO9798	Passenger DL9207
WA – Angle of windshield measured between the WS1 and WS2	deg	31.6	
SWA – Steering wheel Angle measured from TS and BS	deg	63.6	
SCA – Steering Column Angle measured from SC1 and CS	deg	27.7	
HRA – Head Rest Post Angle (door sill 0.0 deg)	deg	7.3	5.6
HZ – Naison (NS) to Roof(R)	mm	223	218
HH – Naison (NS) to header(H)	mm	440	419
HW – Naison (NS) to WS1	mm	699	670
NR – TN to TS	mm	492	
CD – Dash Point 1(D1) to Chest Point 1 (C1)	mm	585	538
CS – CS to Chest Point 2 (C2)	mm	580	
RA – BS and Chest Point 3 (C3)	mm	173	
KDO – OK to D2	mm	108	119
KDI – IK to D3-	mm	N/A ¹	91
SK – Striker to OK	mm	676	707
SHX – Striker to H-point X direction	mm	240	229
SHY – Striker to H-point Y direction	mm	188	-187
SHZ – Striker to H-point Z direction	mm	142	121
SH – Striker to HPoint	mm	336	319
ST – Striker to LHCG	mm	25	39
PA – Pelvic Angle (inclinometer)	deg	N/A	N/A
TA – Tibia Angle (OK to OA)	deg	53.8	42.9
HAX – (tilt sensor) Head Angle	deg	0.2	-0.1
HAY – (tilt sensor) Head Angle	deg	-4.4	-6.8
T1X – (tilt sensor) T1 Angle	deg	1.6	-1.0
T1Y – (tilt sensor) T1 Angle	deg	7.5	-1.6
T6X – (tilt sensor) T6 Angle	deg	1.2	-0.9
T6Y – (tilt sensor) T6 Angle	deg	31.2	19.7
T12X – (tilt sensor) T12 Angle	deg	1.2	-0.8
T12Y – (tilt sensor) T12 Angle	deg	19.8	31.3
PAX – (tilt sensor) Pelvis Angle	deg	-0.5	-0.1
PAY – (tilt sensor) Pelvis Angle	deg	31.2	33.1

¹ Point D3 not measured.

DATA SHEET NO. 3 (CONTINUED)
DUMMY CMM MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



NAME	DESCRIPTION	DRIVER			PASSENGER		
		X	Y	Z	X	Y	Z
Striker	Striker	0	0	0	0	0	0
SB	Center upper striker bolt	-31.72	-5.29	-17.42	-29.99	-11.76	-16.54
BSB	Center bottom striker bolt	-29.92	-5.97	18.65	-28.96	-8.94	18.99
FOSB	Front outboard seat bolt	472.54	194.70	402.64	470.59	-196.03	400.89
ROSB	Rear outboard seat bolt	29.41	195.36	424.58	27.94	-193.18	421.85
OP	Outer head post	-165.32	353.09	-386.96	-178.65	-349.52	-395.13

Reference point:

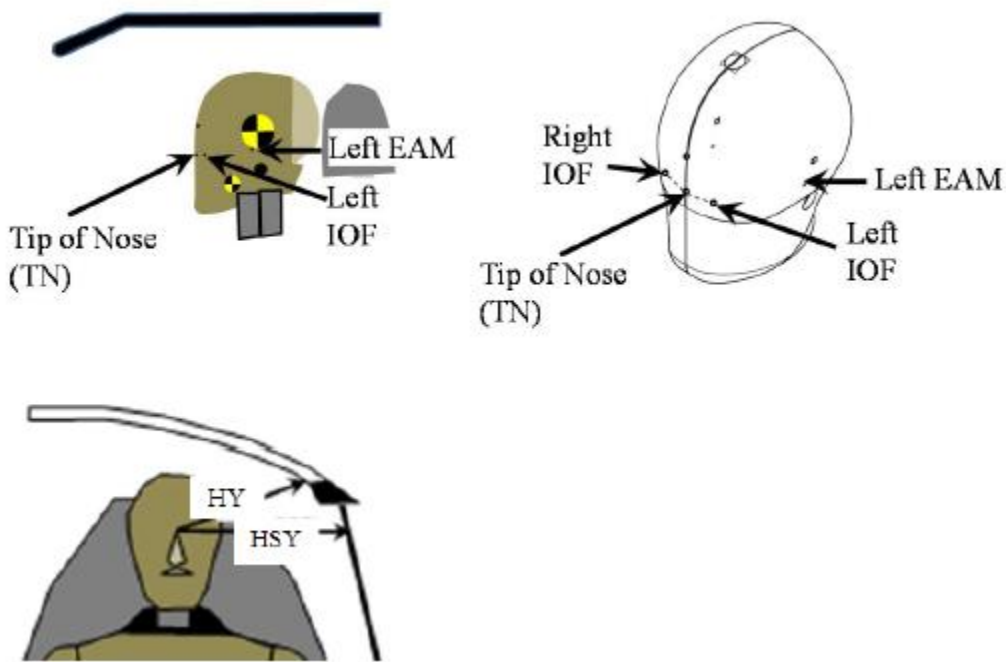
- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO. 3 (CONTINUED)

DUMMY CMM MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



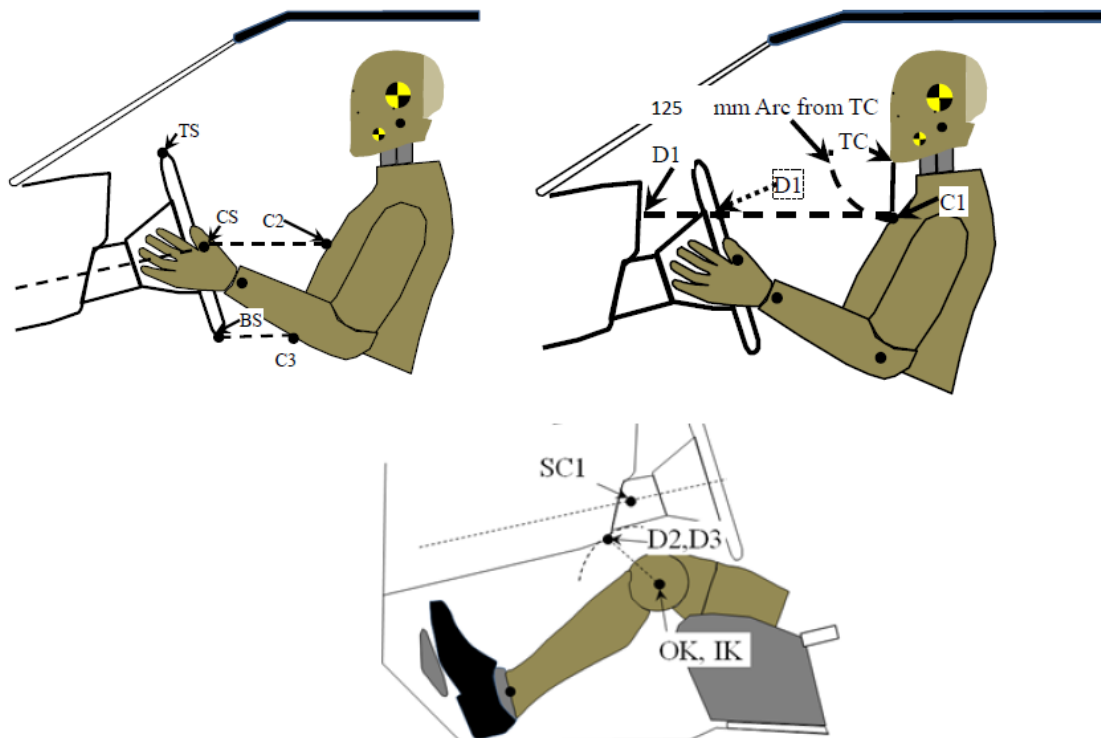
NAME	DESCRIPTION	DRIVER			PASSENGER		
		X	Y	Z	X	Y	Z
LCG	Left Head CG	24.51	367.78	-521.51	38.84	-524.26	-529.38
RCG	Right Head CG	19.82	524.39	-520.35	37.29	-367.66	-529.43
NS	Nasion	114.55	450.86	-525.62	130.84	-446.84	-531.81
Left EAM	Left EAM	30.66	375.25	-494.97			
Right EAM	Right EAM				43.34	-372.21	-502.52
Left IOF	Left IOF	112.26	418.54	-488.97	124.34	-479.16	-494.23
Right IOF	Right IOF	109.31	482.45	-488.39	124.55	-414.01	-494.29
TN	Tip of Nose	111.72	448.64	-457.96	125.96	-445.68	-463.69
H	Header	529.10	451.50	-672.85	523.83	-446.53	-678.47
R	Roof	114.67	450.33	-748.21	131.57	-531.66	-750.22
W1	Windshield Point 1	813.65	450.09	-526.54	800.57	-446.83	-531.90
W2	Windshield Point 2	1059.48	451.29	-375.09	1066.78	-446.95	-367.32
HY (HR)	Side Header	113.88	236.55	-651.84	132.59	-234.63	-650.52
HSY (HS)	Side glass	116.90	91.54	-525.89	131.62	-93.79	-531.75

DATA SHEET NO. 3 (CONTINUED)

DUMMY CMM MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

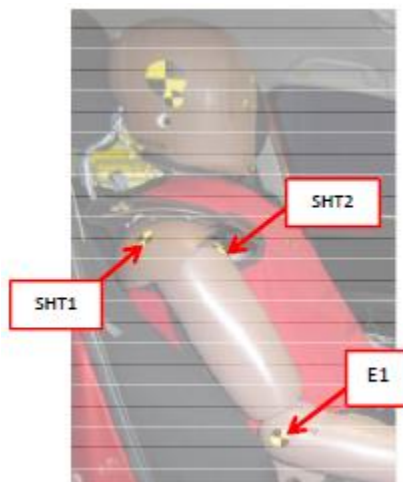


NAME	DESCRIPTION	DRIVER			PASSENGER		
		X	Y	Z	X	Y	Z
TC	Tip of chin	106.10	447.29	-390.51	113.20	-446.16	-392.24
C1	Chest point 1	163.01	436.68	-274.11	153.23	-444.96	-270.07
D1	Dash	743.20	436.57	-347.59	675.53	-447.41	-139.15
CS (S0)	Center of steering wheel	517.65	437.12	-218.58			
TS	Top of steering wheel	603.84	446.74	-367.21			
BS	Bottom of steering wheel	450.74	429.70	-58.19			
SC1	Steering Column Point 1	720.87	316.02	-111.95			
C2	Chest point 2	187.60	436.00	-219.23			
C3	Chest point 3	277.89	430.49	-58.43			

DATA SHEET NO. 3 (CONTINUED)
DUMMY CMM MEASUREMENTS

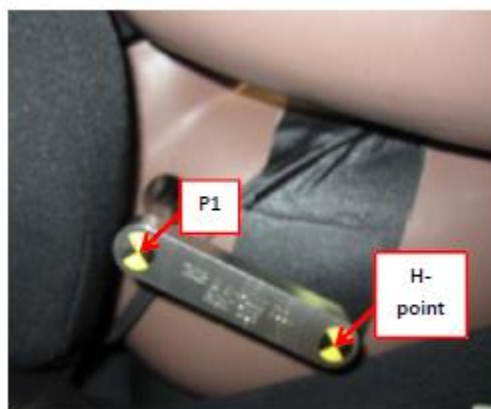
Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



NAME	DESCRIPTION	DRIVER			PASSENGER		
		X	Y	Z	X	Y	Z
SHT1	Shoulder bolt	15.64	233.16	-307.39	10.97	-231.49	-308.53
SHT2	Shoulder bolt	89.50	263.90	-302.95	92.04	-251.26	-282.77
E1	Elbow	248.35	186.69	-68.01	165.52	-172.51	-17.36
EY	Elbow on door	--- ¹	--- ¹	--- ¹	--- ¹	--- ¹	--- ¹

¹ Measurement not recorded



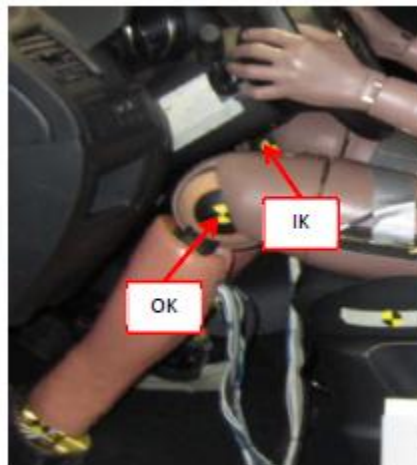
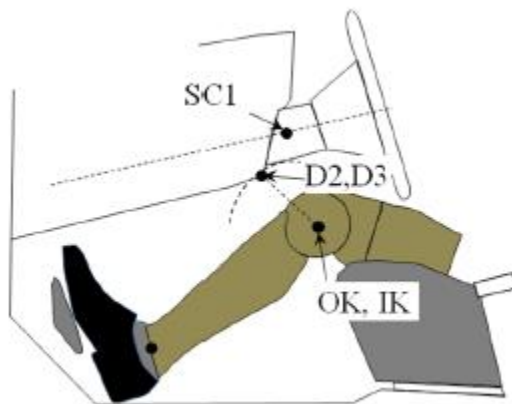
NAME	DESCRIPTION	DRIVER			PASSENGER		
		X	Y	Z	X	Y	Z
P1	Center of H-point tool	165.95	183.51	109.81	154.05	-183.01	92.33
H-point	H-point	240.07	187.97	142.33	229.34	-186.57	120.99
HPY	H-point on door	--- ¹	--- ¹	--- ¹	--- ¹	--- ¹	--- ¹

¹ Measurement not recorded

DATA SHEET NO. 3 (CONTINUED) DUMMY CMM MEASUREMENTS

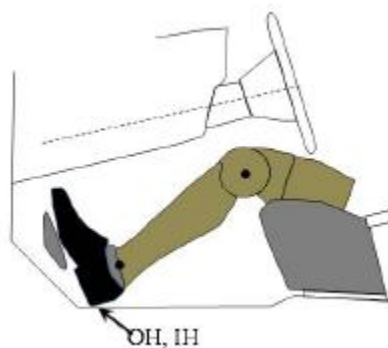
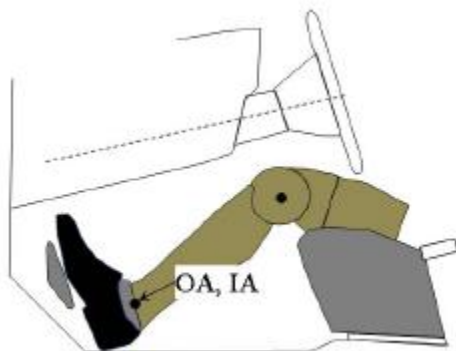
Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016



NAME	DESCRIPTION	DRIVER			PASSENGER		
		X	Y	Z	X	Y	Z
OK	Outboard Knee	634.49	230.57	32.49	648.40	-272.24	75.12
IK	Inboard Knee	641.92	507.76	30.31	643.59	-504.45	69.26
D2	Dash Point 2	734.97	231.87	-7.69	758.41	-275.96	29.03
D3	Dash Point 3	--- ¹	--- ¹	--- ¹	727.42	-517.20	35.14

¹ Measurement not recorded



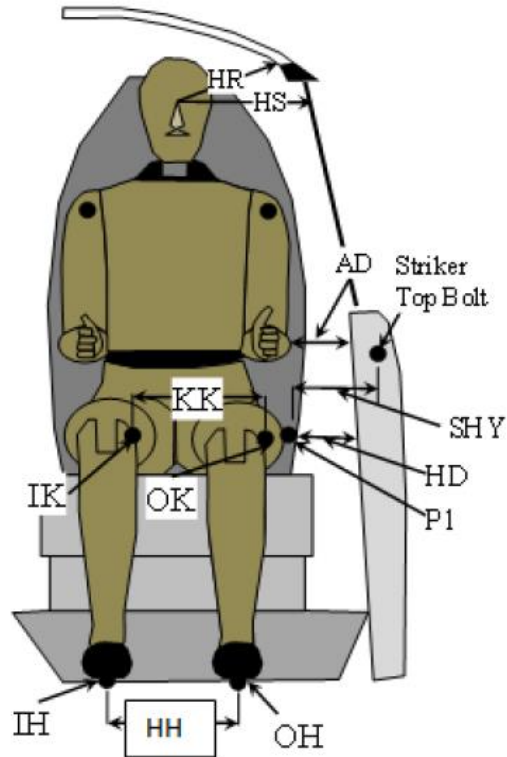
NAME	DESCRIPTION	DRIVER			PASSENGER		
		X	Y	Z	X	Y	Z
OA	Outboard ankle	882.67	225.35	371.50	951.50	-289.58	356.67
IA	Inboard ankle	877.62	566.07	371.52	948.95	-510.74	356.48
OH	Outboard heel	887.93	247.24	504.64	912.48	-329.30	496.16
IH	Inboard heel	844.53	601.70	506.56	916.51	-547.93	490.85

See EXCEL sheet in Appendix more details: Seating Tables and Worksheets.xlsx
Export all CMM data into excel using the VCS coordinate system, the driver striker position, and the passenger striker position.

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

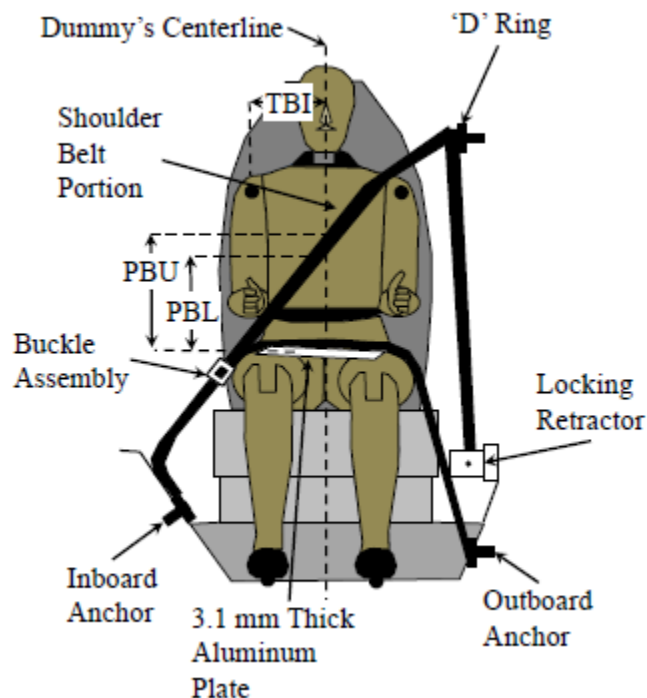


Description	Units	Driver	Passenger
HS – NS to Side Window	mm	359	353
AD – Elbow to Door	mm	146	61
HD – H-point to Door	mm	148	141
HR – Head to Side Header	mm	249	243
HH – Inboard to outboard Heel	mm	357	218
KK – Knee to Knee measured from OK to IK	mm	277	232

DATA SHEET NO. 5 SEAT BELT POSITIONING DATA

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
PBU – Top surface of reference to belt upper edge	mm	--- ¹	--- ¹
PBL – Top surface of reference to belt lower edge	mm	--- ¹	--- ¹

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
SBL – Shoulder belt length as measured on ATD	mm	--- ¹	--- ¹
LBL – Lap Belt Length as measured on ATD	mm	--- ¹	--- ¹
RR – Remainder of belt on reel	mm	--- ¹	--- ¹
TBL – Total belt length for continuous webbing systems	mm	--- ¹	--- ¹

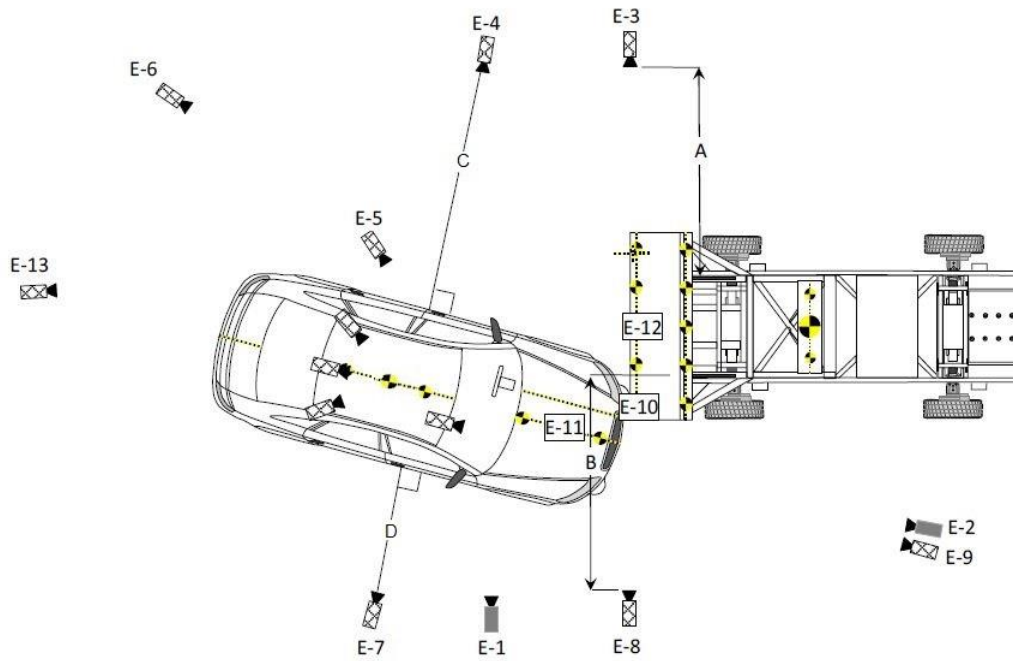
¹ Measurements not recorded.

DATA SHEET NO. 6 **HIGH-SPEED CAMERA LOCATIONS AND DATA**

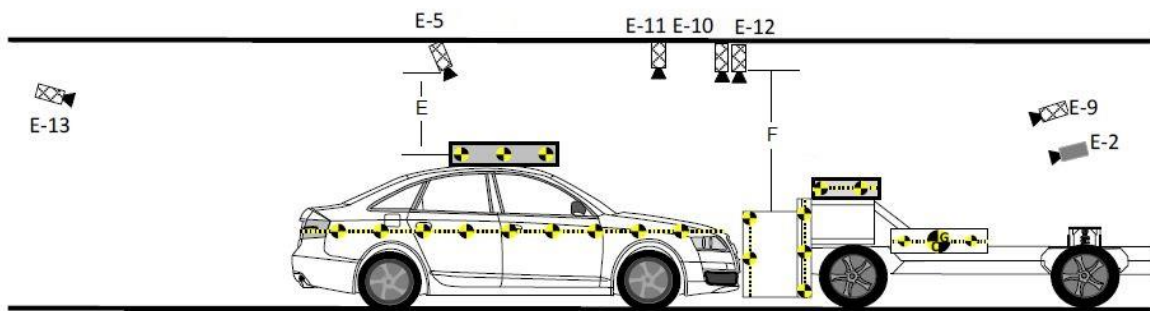
Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

HORIZONTAL LOCATION



VERTICAL LOCATION



A	mm	7407
B	mm	8778
C	mm	7711
D	mm	6767
E	mm	1951
F	mm	7662

DATA SHEET NO. 6 (CONTINUED)
HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

CAMERA LOCATIONS

No.	Description	Driver			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Camera H-1_Real-Time Impact View	457	-10790	-1585	Zoom	30
2	Camera H-2_Real-Time Vehicle Movement View	-6218	-4938	-1433	Zoom	30
3	Camera H-3_Right Side of OMDB View	0	8016	-1097	25	1000
4	Camera H-4_Left Side of Test Vehicle	610	8077	-1219	28	1000
5	Camera H-5_Oblique Overhead Driver Motion View	3840	1006	-3688	25	1000
6	Camera H-6_Rear Oblique View of Test Vehicle	14234	10439	-2469	50	1000
7	Camera H-7_Right Side of Test Vehicle	5060	-8016	-2134	20	1000
8	Camera H-8_Left Side of OMDB View	0	-9449	-1189	20	1000
9	Camera H-9_Front of Test Vehicle and OMDB	-4694	-2652	-1112	Zoom	1000
10	Camera H-10_Impact Point View	-305	-914	-8717	50	1000
11	Camera H-11_Overhead View of Test Vehicle	0	-1219	-8717	20	1000
12	Camera H-12_Overhead of OMDB View	-1067	-1219	-8717	20	1000
13	Camera H-13_Final Impact of the Vehicle	37887	0	-2413	20	1000
14	Camera E-1_Onboard Driver Over Shoulder	2083	406	-1342	8.5	1000
15	Camera E-2_Onboard Center Driver Passenger	2083	0	-1342	8.5	1000
16	Camera E-3_Onboard Passenger Over Shoulder	2083	-356	-1342	8.5	1000
17	Camera E-4_Onboard Lower Leg	-1680	-390	-371	6	1000

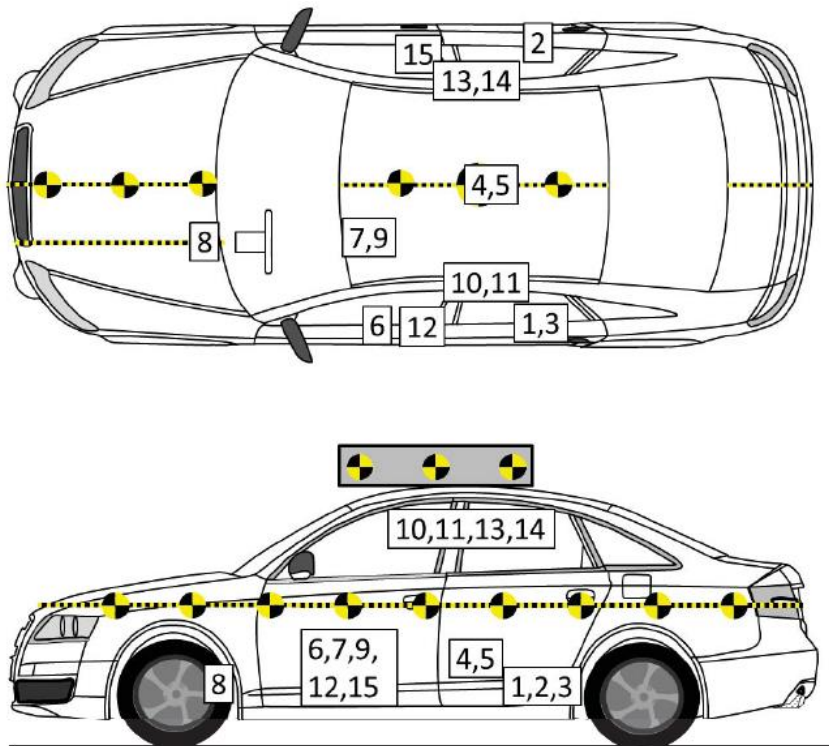
Reference Point:

- +X – From back of OMDB to front of OMDB
- +Y – Right of monorail center
- +Z – Up from ground

DATA SHEET NO. 7 **VEHICLE INSTRUMENTATION DATA**

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



No.	Accelerometer Location	Axes	Units	Measurements (mm)		
				X	Y	Z
1	Left Rear Sill	X, Y	g	1775.01	-693.79	177.88
2	Right Rear Sill	X, Y	g	1775.44	697.18	177.26
3	Left Rear Sill Redundant	X, Y	g	1719.21	-694.05	177.14
4	Vehicle CG	X, Y, Z	g	1870.53	-1.26	78.17
5	Vehicle CG Angular Rate	X	°/s	1821.27	-0.84	90.41
		Y	°/s	1840.81	-21.42	89.09
		Z	°/s	1841.68	-0.01	75.21
6	Left Side Seat Track	X, Y, Z	g	2292.20	-593.98	201.63
8	Left Side Toe Pan	X, Y, Z	g	3280.96	-411.52	-102.01
7	Left Side String Pot	N/A	mm	--- ¹	--- ¹	--- ¹

Reference point:

- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

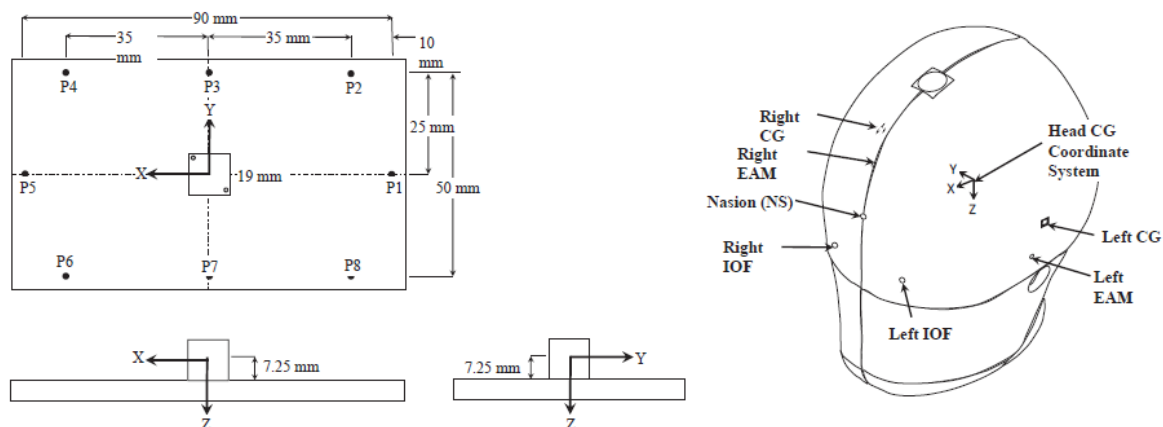
¹ Measurement not recorded

DATA SHEET NO. 7 (CONTINUED)
VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

ANGULAR RATE SENSOR MOUNTING PLATE & THOR HEAT POINT DEFINITIONS



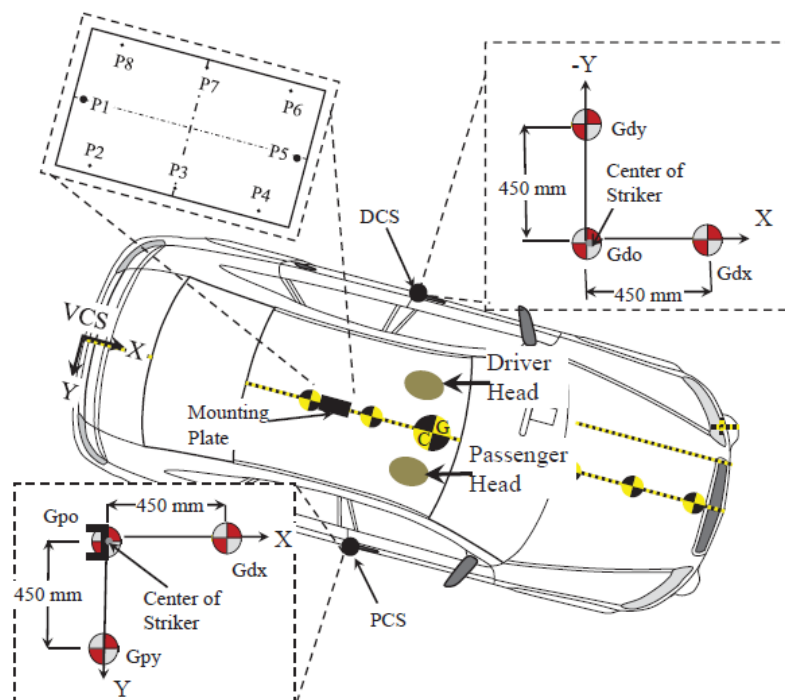
ARS Mounting Plate - Vehicle Coordinate System					
No.	Description	Units	Measurements (mm)		
			X	Y	Z
P1	Plate Point 1	mm	1810.09	-3.96	95.07
P2	Plate Point 2	mm	1819.28	21.45	95.30
P3	Plate Point 3	mm	1854.26	22.62	96.06
P4	Plate Point 4	mm	1889.17	23.92	96.70
P5	Plate Point 5	mm	1900.05	-0.72	96.79
P6	Plate Point 6	mm	1891.04	-26.11	96.41
P7	Plate Point 7	mm	1855.98	-27.32	95.69
P8	Plate Point 8	mm	1821.01	-28.53	94.99

Head Points In Relation to Head CG Coordinate System							
Description	Units	Driver			Passenger		
		X	Y	Z	X	Y	Z
Left CG	mm	67	-41	46	66	-42	46
Left EAM	mm	74	-34	72	74	-38	73
Left IOF	mm	157	3	69	136	3	73
Right IOF	mm	156	67	70	156	65	74
Nasion	mm	157	37	33	158	36	35
Right EAM	mm	74	109	73	73	107	74
Right CG	mm	66	111	46	64	112	47

DATA SHEET NO. 7 (CONTINUED)
VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



ARS MOUNTING PLATE & ATD'S HEAD POINTS RELATIVE TO GLOBAL COORDINATE SYSTEMS

Name	Description	Driver DCS			Passenger PCS		
		X	Y	Z	X	Y	Z
NS	Nasion	-5.07	459.85	-528.88	244.05	-395.51	-524.92
LCG	Left Head CG	-73.77	356.38	-522.98			
RCG	Right Head CG				131.88	-343.83	-523.46
TN	Tip of Nose	-8.00	457.95	-460.38	237.85	-397.86	-457.31
Left IOF	Left IOF	-0.58	427.26	-492.29	245.59	-428.17	-487.64
Right IOF	Right IOF	-18.31	488.69	-491.08	228.82	-366.36	-487.94
Left EAM	Left EAM	-69.53	364.16	-496.93			
Right EAM	Right EAM				138.72	-347.54	-496.31
Striker	Striker	0.09	-0.02	0.10	0.00	0.00	0.00
SB	Center upper striker bolt	-31.72	-5.29	-17.42	-29.99	-11.76	-16.54
BSB	Center bottom striker bolt	-29.92	-5.97	18.65	-28.96	-8.94	18.99
P1	Mounting plate Point 1	-463.66	707.42	324.39	-48.45	-844.06	334.48
P2	Mounting plate Point 2	-461.23	734.22	324.44	-46.02	-817.26	334.53
P3	Mounting plate Point 3	-427.85	744.46	325.00	-12.64	-807.02	335.09
P4	Mounting plate Point 4	-394.43	754.76	325.63	20.78	-796.72	335.72
P5	Mounting plate Point 5	-377.57	733.79	325.81	37.64	-817.69	335.90
P6	Mounting plate Point 6	-379.71	706.98	325.67	35.50	-844.50	335.76
P7	Mounting plate Point 7	-413.21	696.72	325.07	2.00	-854.76	335.16
P8	Mounting plate Point 8	-446.66	686.47	324.52	-31.45	-865.01	334.61

DATA SHEET NO. 7 (CONTINUED)
VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

No.	Accelerometer Location	Axes	Units	Positive Direction		Negative Direction	
				Max	Time (ms)	Max	Time (ms)
1	Left Rear Sill	X	g	1.99	156.16	-33.87	41.20
		Y	g	20.72	38.48	-2.70	10.80
2	Left Rear Sill Redundant	X	g	2.02	156.24	-35.00	41.20
		Y	g	19.29	38.80	-2.15	70.64
3	Right Rear Sill	X	g	3.17	102.40	-46.28	45.76
		Y	g	74.09	15.60	-3.31	9.84
4	Vehicle CG	X	g	2.12	118.08	-39.30	59.44
		Y	g	31.69	38.80	-2.38	9.84
		Z	g	12.49	42.08	-21.07	50.48
5	Vehicle CG Angular Rate	X	Deg/s	434.14	45.12	-148.96	55.52
		Y	Deg/s	211.63	40.48	-322.33	55.12
		Z	Deg/s	130.31	55.36	-21.54	11.92
6	Driver Seat Track	X	g	1.85	155.76	-48.06	89.84
		Y	g	68.12	89.52	-4.38	10.64
		X	g	39.53	56.64	-18.88	71.84
7	Driver Seat Thigh Bar	X	g	7.92	22.88	-49.68	59.92
		Z	g	27.64	57.12	-20.95	71.36
8	Driver Floor Pan	X	g	106.15	51.04	-138.11	43.44
		Y	g	40.39	48.08	-10.76	8.72
		Z	g	10.51	36.64	-24.21	57.20
9	Driver Floor Pan Displacement	X	mm	43.11	85.92	-5.33	218.16
10	Driver Lap Belt		N	5054.09	60.80	-11.60	11.76
11	Driver Shoulder Belt		N	4942.96	67.44	-34.84	8.64
12	Driver Shoulder Belt Displacement	X	mm	89.30	19.92	-50.04	95.12
13	Passenger Lap Belt		N	7205.31	60.96	-18.92	11.92
14	Passenger Shoulder Belt		N	4372.15	47.36	-36.51	8.40
15	Passenger Shoulder Belt Displacement		N	71.42	19.44	-236.09	102.40

Note: See Appendix B for all vehicle data plots.

DATA SHEET NO. 7 (CONTINUED)
VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 MPV NHTSA No.: R20165407
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset Test Date: 6/21/2016

TIME TO FIRE RESTRAINT TIMING

No.	Description	Units	Time of Fire (ms)
1	Driver Air Bag Squib 1	V	7.7
2	Driver Air Bag Squib 2	V	13.7
3	Driver Curtain Airbag	V	41.1
4	Driver Torso Airbag	V	41.1
5	Driver Retractor	V	8.6
6	Driver Anchor	V	15.7
7	Passenger Air Bag Squib 1	V	--- ¹
8	Passenger Air Bag Squib 2	V	28.6
9	Passenger Curtain Airbag	V	Did Not Fire
10	Passenger Torso Airbag	V	Did Not Fire
11	Passenger Retractor	V	8.6
12	Passenger Anchor	V	15.7

* The measurement indicates the time the voltage changed state.

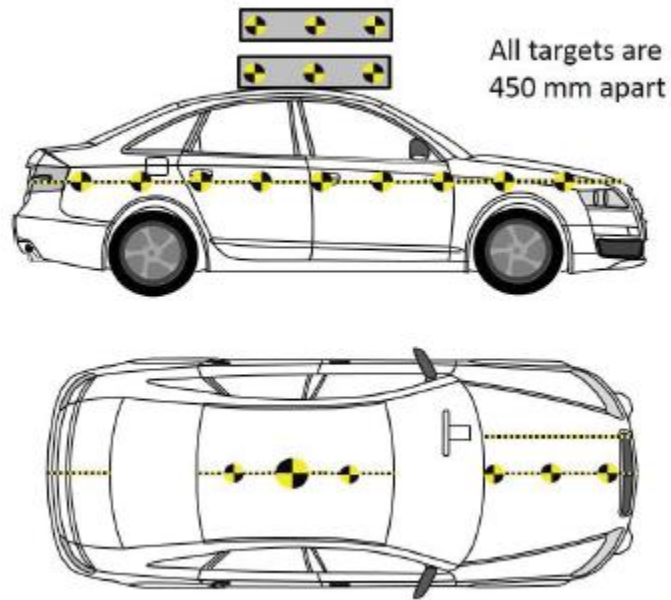
¹ See data acquisition explanation

DATA SHEET NO. 8 **PHOTOGRAPHIC REFERENCE TARGET LOCATIONS**

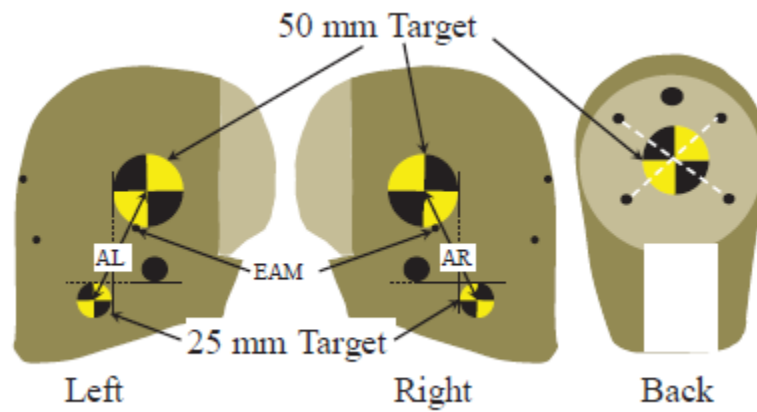
Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE TARGETS



ATD HEAD TARGETS



Target	Measurement	
	Driver	Passenger
AL	91 mm	91 mm
AR	91 mm	89 mm

DATA SHEET NO. 8 (CONTINUED)
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

OVERHEAD TARGET BARS



1 2 3

Vertical Target
Plane 1
(Driver's Side)



4 5 6

Vertical Target
Plane 2
(Passenger Side)

Target	Units	X	Y	Z
1	mm	2520.24	-375.22	-1126.22
2	mm	2070.21	-380.11	-1127.13
3	mm	1615.33	-378.93	-1129.02
4	mm	2517.97	358.16	-1131.18
5	mm	2065.92	363.13	-1130.33
6	mm	1618.93	353.34	-1130.34

Reference point:

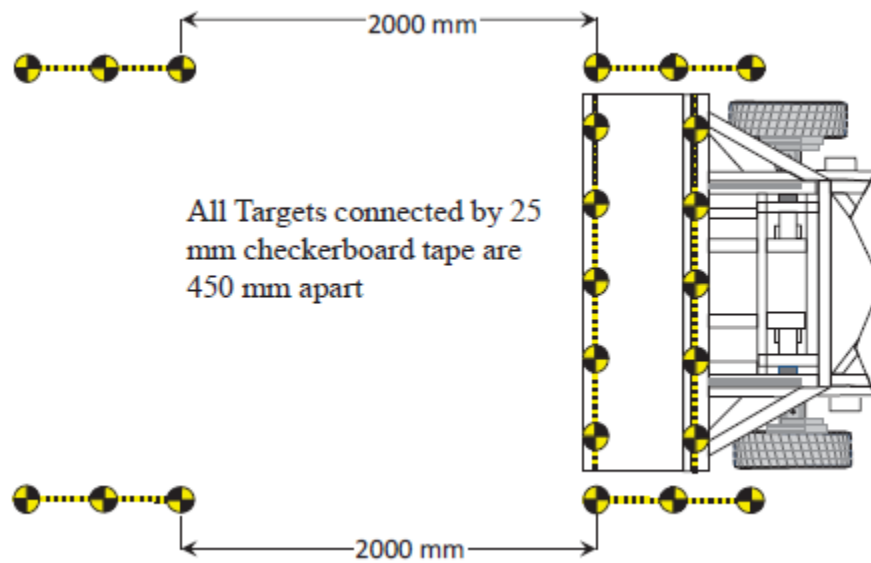
- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO. 8 (CONTINUED)
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

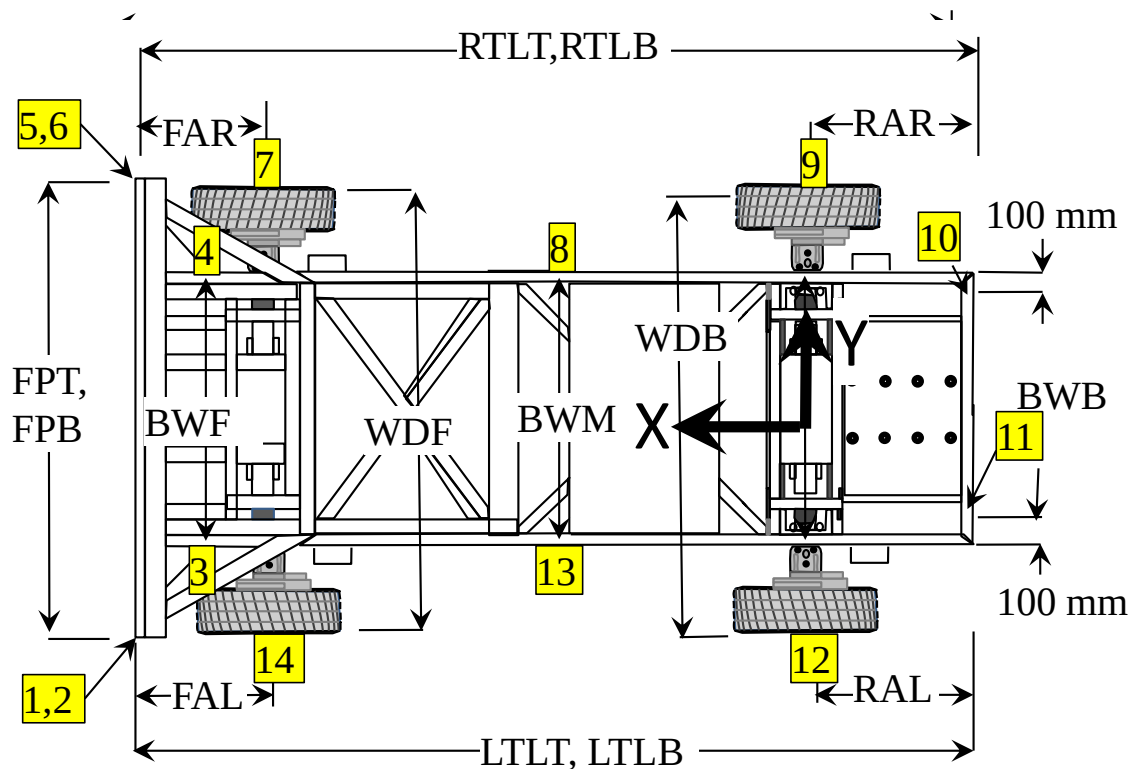
GROUND TARGETS LOCATED IN REFERENCE TO OMDB



DATA SHEET NO. 8 (CONTINUED)
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



POINT	X	Y	Z
1	3189.21	-1099.84	-861.15
2	3188.54	-1098.26	237.66
3	3044.17	-625.42	-315.99
4	3046.98	626.17	-316.95
5	3192.95	1098.80	-865.47
6	3191.00	1101.09	234.86
7	2589.44	938.61	0.61
8	1197.04	624.50	-315.84
9	1.30	938.73	-0.61
10	-772.55	552.99	-306.69
11	-774.67	-551.12	-308.91
12	-1.30	-938.73	0.61
13	1195.56	-622.77	-317.31
14	2584.84	-937.18	-0.61

DATA SHEET NO. 8 (CONTINUED)
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

Name	Calculation	Value
FPT – Face Plate Top Y	5Y-1Y	2198.64
FPB – Face Plate Bottom Y	6Y-2Y	2199.35
BWF – Body Width Front Y	4Y-3Y	1251.59
WDF – Wheel Distance Front Y	7Y-14Y	1875.79
BWM – Body Width Middle Y	8Y-13Y	1247.27
WDB – Wheel Distance Back Y	9Y-12Y	1877.46
BWB- Body Width Back Y	10Y-11Y	1104.11
TFAL – Front Axle Left to Face Plate Top X	1X-14X	604.37
TFAR – Front Axle Right to Face Plate Top X	5X-7X	603.52
LTLT – Left Total Length Top X	1X-11X	3963.88
LTLB – Left Total Length Bottom X	2X-11X	3963.21
RTLTL – Right Total Length Top X	5X-10X	3965.50
RTLBL – Right Total Length Bottom X	6X-10X	3963.55
BFAL – Front Axle Left to Face Plate X	2X-14X	603.70
BFAR – Front Axle Right to Face Plate X	6X-7X	601.57
RAR – Right Rear Axle to Rear of OMDB X	9X-10X	773.85
RAL – Left Rear Axle to Rear of OMDB X	12X-11X	773.37
LFMF – Left Frame Front to Middle Frame Z	3Z-13Z	1.32
MFLRF – Left Frame Middle to Rear Frame Z	13Z-11Z	-8.40
RFMF – Right Frame Front to Middle Frame Z	4Z-8Z	-1.11
MFRRF – Right Frame Middle to Rear Frame Z	8Z-10Z	-9.15
FPZ – Face Plate Z	1Z-5Z	4.33
RZ – Rear Z	11Z-10Z	-2.22

	Units	Front Axle	Rear Axle	Total
Left	kg	797.4	453.0	1250.4
Right	kg	757.4	491.4	1248.8
Ratio	%	62%	38%	
Total	kg	1554.8	944.4	2499.2
CG Aft of Front Axle	mm			977
Tire Pressure	PSI	60	60	

Note: All targets on the OMDB honeycomb are 450mm apart

DATA SHEET NO. 9
TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

INSTRUMENTATION

Instrumentation	Number of Channels Collected
Driver Dummy Channels	105
Passenger Dummy Channels	105
Vehicle Structure Accelerometers	27
SRS Inductive Pickups	12
OMDB Cart Channels	9
Total	258

CAMERA COVERAGE

Type of Camera	Number Used in this Test
High-Speed Vehicle Onboard	4
High-Speed Off-board	11
Real-Time Panning	2
Total	17

DATA SHEET NO. 10
POST TEST OBSERVATIONS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016

TEST DUMMY INFORMATION AND CONTACT LOCATIONS

Description	Driver	Right Front Passenger
Dummy Type/Serial No.	THOR # DO9798	THOR # DO9207
Lower Leg Type	LX	LX
Lower Leg Serial No.	LX655/LX654	LX0045/ LX0046
Head Contact	Front Airbag, Side Curtain Airbag, head restraint and Door Panel	Front Airbag
Upper Torso Contact	None	None
Lower Torso Contact	None	None
Left Knee Contact	Steering Column, Knee Bolster	Glove Box
Right Knee Contact	Steering Column, Knee Bolster	Glove Box

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Right Front Passenger
Locked/Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Closed and latched	Closed and latched
Rear Door Opening	Closed and latched	Closed and latched
Seat Track Shift (mm)	None	None
Seat Back Failure	None	None
Glazing Damage	None	None

PILLAR AND WINDOW DAMAGE

Critical Areas of Performance	Observations and Conclusions	Photo Taken (Y/N)
Pillar Performance	No visible damage	Y
Windshield Damage	Broken	Y
Window Damage	None	Y
Other Notable Effects	None	---

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Description	Driver (Occupant 1)		Right Front Passenger (Occupant 2)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	Yes	Yes	Yes
Curtain Airbag	Yes	Yes	Yes	No
Torso Airbag	Yes	Yes	Yes	No
Knee Airbag	No	N/A	No	N/A
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Other				

DATA SHEET NO. 11
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

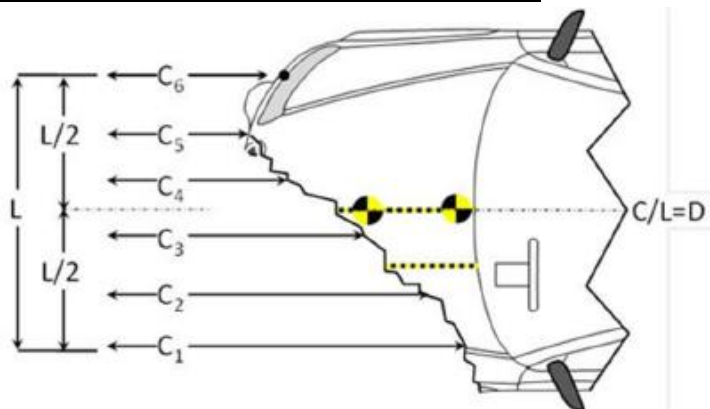
NHTSA No.: R20165407
Test Date: 6/21/2016

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	mm	4540	4261	-279
2	Rear Surface of Vehicle (RSOV) to Front of Engine	mm	4085	3870	-215
3	RSOV to Firewall	mm	3573	3458	-115
4	RSOV to Upper Leading Edge of Right Door	mm	3040	3040	0
5	RSOV to Upper Leading Edge of Left Door	mm	3040	3033	-7
6	RSOV to Lower Leading Edge of Right Door	mm	3050	3047	-3
7	RSOV to Lower Leading Edge of Left Door	mm	3050	3058	8
8	RSOV to Upper Trailing Edge of Right Door	mm	2000	1999	-1
9	RSOV to Upper Trailing Edge of Left Door	mm	1998	1990	-8
10	RSOV to Lower Trailing Edge of Right Door	mm	2046	2044	-2
11	RSOV to Lower Trailing Edge of Left Door	mm	2046	2056	10
12	RSOV to Bottom of "A" Post of Right Side	mm	3035	3042	7
13	RSOV to Bottom of "A" Post of Left Side	mm	3040	3044	4
14	RSOV to Firewall, Right Side	mm	3535	3528	-7
15	RSOV to Firewall, Left Side	mm	3530	3237	-293
16	RSOV to Steering Column	mm	2588	2628	40
17	Center of Steering Column to "A" Post	mm	341	298	-43
18	Center of Steering Column to Headliner	mm	457	454	-3
19	RSOV to Right Side of Front Bumper	mm	4330	4463	133
20	RSOV to Left Side of Front Bumper	mm	4328	3579	-749
21	Length of Engine Block	mm	540	500	-40
RD	RSOV to Right Side of Dash Panel	mm	2885	2906	21
CD	RSOV to Center of Dash Panel	mm	2853	2852	-1
LD	RSOV to Left Side of Dash Panel	mm	2882	2866	-16

DATA SHEET NO. 12
ACCIDENT INVESTIGATION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



CRUSH PROFILE

Collision Deformation Classification: 11FYEW4
 Midpoint of Damage: C2
 Damage Region Length (mm): 1270
 Impact Mode: Frontal 15° Angle, 35% Left Offset

Crush Measurements: On Bumper Fascia

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	4328	3579	-749
C2	Crush zone 2 at left side	mm	4465	3914	-551
C3	Crush zone 3 at left side	mm	4525	4144	-381
C4	Crush zone 4 at right side	mm	4525	4334	-191
C5	Crush zone 5 at right side	mm	4464	4464	0
C6	Crush zone 6 at right side	mm	4330	4463	133
L	C1 to C6	mm	1524	1554	30

Crush Measurements: On Bumper Beam

Point	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
B1	4348.24	-506.78	76.40	3902.27	-314.83	-106.95	-445.97	191.95	-183.35
B2	4393.22	-310.71	76.77	4024.29	-159.79	-81.80	-368.93	150.92	-158.57
B3	4417.71	-97.55	76.19	4149.68	11.99	-53.09	-268.03	109.54	-129.28
B4	4417.08	97.76	77.31	4239.04	181.09	-18.36	-178.04	83.33	-95.67
B5	4394.99	302.18	76.80	4313.95	369.31	17.36	-81.04	67.13	-59.44
B6	4351.36	499.13	77.75	4365.53	561.06	55.63	14.17	61.93	-22.12

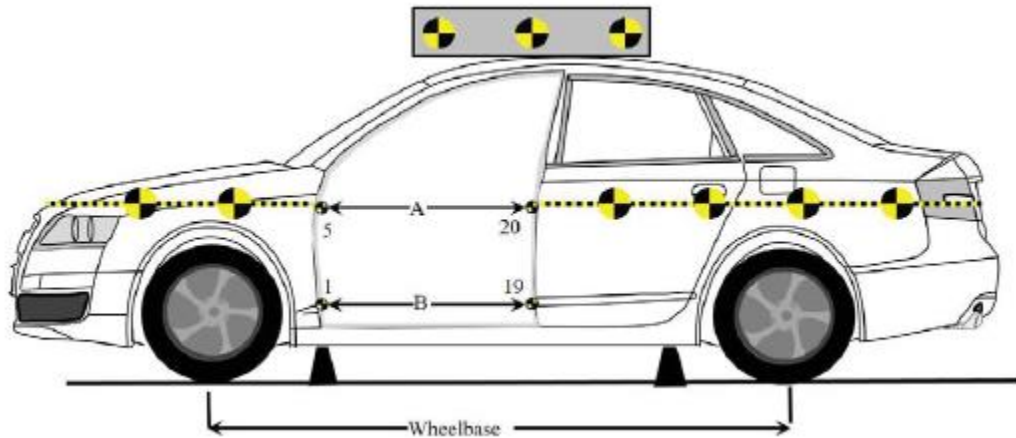
Reference point:

- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO. 13
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016



DOOR OPENING AND WHEELBASE

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	868	863	-5
B	Left Side Lower	mm	717	717	0
A	Right Side Upper	mm	871	870	-1
B	Right Side Lower	mm	716	715	-1
	Left Side Wheelbase	mm	2695 ¹	2456	-239
	Right Side Wheelbase	mm	2692 ¹	2737	45

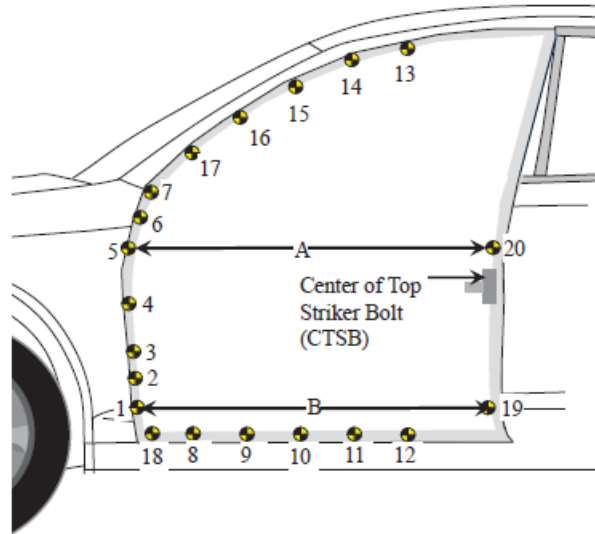
¹ Measurements calculated from the pre-test vehicle CMM

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

DRIVER SIDE DOOR SILL INTRUSIONS



+X – From the rear of the vehicle to the front of the vehicle
 +Y – From the left side of the vehicle to the right side of the vehicle
 +Z – From the top of the vehicle to the bottom of the vehicle

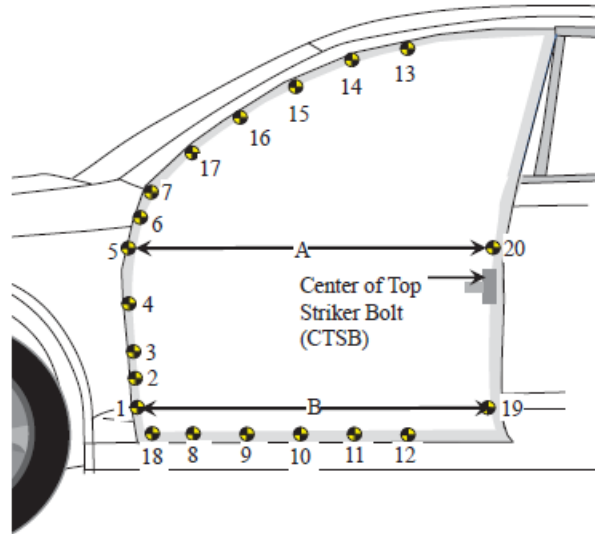
Point	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2953	-762	107	2953	-764	103	0	-2	-4
2	2966	-756	33	2963	-760	27	-3	-4	-6
3	2961	-753	-40	2957	-764	-47	-4	-11	-7
4	2950	-748	-190	2944	-768	-197	-6	-20	-7
5	2941	-750	-341	2934	-775	-348	-7	-25	-7
6	2935	-754	-419	2928	-781	-425	-7	-27	-6
7	2929	-756	-492	2922	-784	-499	-7	-28	-7
8	2803	-763	180	2803	-764	175	0	-1	-5
9	2652	-763	178	2650	-764	174	-2	-1	-4
10	2501	-763	179	2500	-764	176	-1	-1	-3
11	2351	-763	167	2349	-764	165	-2	-1	-2
12	2201	-760	63	2200	-762	62	-1	-2	-1
13	2353	-629	-862	2351	-642	-869	-2	-13	-7
14	2470	-649	-821	2468	-664	-829	-2	-15	-8
15	2585	-673	-767	2583	-692	-775	-2	-19	-8
16	2702	-700	-699	2698	-722	-708	-4	-22	-9
17	2816	-726	-623	2811	-751	-632	-5	-25	-9
18	2878	-763	173	2876	-764	166	-2	-1	-7
19	2235	-762	107	2236	-763	107	1	-1	0
20	2073	-748	-344	2071	-753	-344	-2	-5	0

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

PASSENGER SIDE DOOR SILL INTRUSIONS



- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

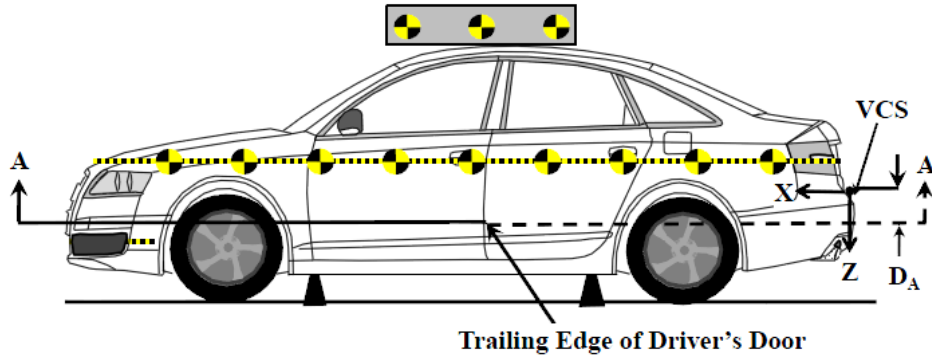
Point	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2956	755	108	2955	767	107	-1	12	-1
2	2967	749	32	2967	762	34	0	13	2
3	2965	746	-40	2964	758	-39	-1	12	1
4	2953	742	-189	2952	753	-189	-1	11	0
5	2944	745	-338	2942	754	-338	-2	9	0
6	2938	748	-414	2935	756	-413	-3	8	1
7	2930	750	-493	2927	758	-491	-3	8	2
8	2807	757	180	2806	767	181	-1	10	1
9	2659	757	179	2659	766	179	0	9	0
10	2508	757	179	2507	765	179	-1	8	0
11	2353	758	167	2352	764	167	-1	6	0
12	2207	756	66	2206	759	67	-1	3	1
13	2357	625	-860	2357	614	-858	0	-11	2
14	2473	644	-819	2473	636	-817	0	-8	2
15	2586	668	-766	2585	662	-765	-1	-6	1
16	2701	695	-699	2700	692	-699	-1	-3	0
17	2819	722	-618	2818	724	-618	-1	2	0
18	2903	757	166	2903	767	166	0	10	0
19	2240	758	107	2239	762	107	-1	4	0
20	2073	742	-346	2073	740	-344	0	-2	2

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE
SECTION A-A



Reference point:

- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

Point	Pre-Test			Point	Post-Test		
	X	Y	Z		X	Y	Z
1	2018	-914	75	1	2015	-913	77
2	2070	-916	75	2	2065	-917	77
3	2121	-918	75	3	2123	-920	76
4	2171	-920	76	4	2179	-921	75
5	2222	-920	74	5	2235	-921	75
6	2273	-919	75	6	2295	-920	74
7	2323	-919	77	7	2355	-920	75
8	2375	-918	77	8	2425	-920	75
9	2425	-917	77	9	2489	-919	75
10	2477	-917	77	10	2524	-919	74
11	2528	-916	78	11	2577	-919	74
12	2578	-916	78	12	2630	-918	74
13	2628	-915	78	13	2672	-918	74
14	2680	-914	78	14	2719	-917	73
15	2731	-914	79	15	2777	-916	72
16	2782	-913	79	16	2814	-916	72
17	2832	-913	79	17	2853	-915	72
18	2883	-912	80	18	2900	-914	71
19	2934	-911	80	19	2947	-912	71
20	2985	-910	80	20	2973	-911	71
21	3036	-910	80	21	3020	-915	72
22	3086	-912	80	22	3073	-930	71
23	3137	-916	80	23	3145	-937	76
24	3187	-919	80	24	3155	-875	77
25	4010	-917	82	25	3151	-921	74
26	4052	-908	82	26	3588	-783	77

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE
SECTION A-A (CONTINUED)

Point	Pre-Test			Point	Post-Test		
	X	Y	Z		X	Y	Z
27	4102	-896	82	27	3595	-717	79
28	4149	-879	82	28	3581	-616	77
29	4196	-858	81	29	3557	-495	76
30	4218	-813	84	30	3661	-457	76
31	4246	-770	83	31	3724	-461	76
32	4269	-725	83	32	3828	-442	78
33	4297	-682	83	33	4022	-343	77
34	4330	-645	84	34	4053	-244	70
35	4371	-611	84	35	4140	-208	78
36	4407	-572	85	36	4202	-130	77
37	4430	-526	83	37	4252	-61	76
38	4447	-479	84	38	4304	20	78
39	4461	-429	84	39	4346	90	78
40	4474	-380	85	40	4381	152	78
41	4485	-330	86	41	4422	236	78
42	4495	-280	87	42	4443	296	77
43	4503	-231	86	43	4460	383	76
44	4511	-180	87	44	4467	448	76
45	4518	-130	88	45	4468	525	76
46	4524	-80	88	46	4461	656	75
47	4530	-29	88	47	4397	843	73
48	4530	22	87	48	4314	936	77
49	4524	74	85	49	4223	971	76
50	4518	124	85	50	4017	914	76
51	4511	174	85	51	3192	931	77
52	4503	226	86	52	3145	926	77
53	4495	275	86	53	3099	920	77
54	4485	325	87	54	3044	919	76
55	4473	377	85	55	2995	916	75
56	4462	426	87	56	2924	915	76
57	4447	475	87	57	2841	915	76
58	4429	522	88	58	2746	914	76
59	4403	565	88	59	2643	914	76
60	4369	604	86	60	2521	913	76
61	4329	638	85	61	2425	914	75
62	4297	674	85	62	2299	914	75
63	4267	723	85	63	2169	914	75
64	4244	766	82	64	2090	914	75

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE
SECTION A-A (CONTINUED)

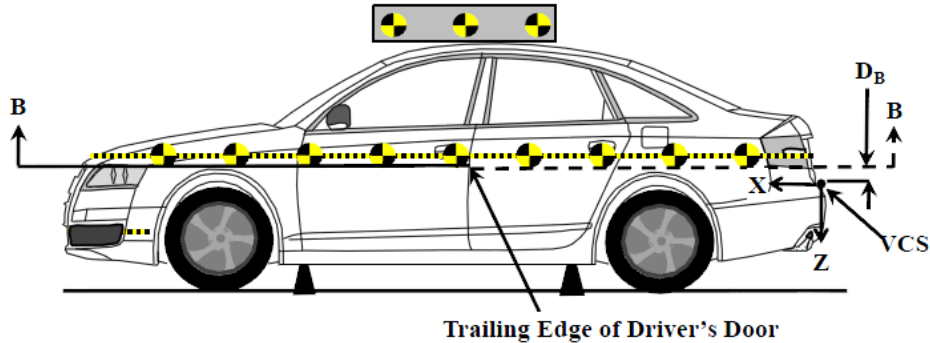
Point	Pre-Test			Point	Post-Test		
	X	Y	Z		X	Y	Z
65	4228	814	85	65	2017	911	76
66	4192	850	85				
67	4145	871	85				
68	4097	886	86				
69	4048	897	86				
70	4014	903	86				
71	3188	910	81				
72	3137	905	80				
73	3087	903	80				
74	3037	901	81				
75	2985	901	82				
76	2935	902	81				
77	2858	904	82				
78	2807	905	83				
79	2756	906	83				
80	2706	906	83				
81	2655	907	83				
82	2604	908	84				
83	2553	908	82				
84	2503	909	82				
85	2451	910	82				
86	2401	910	82				
87	2350	911	82				
88	2299	912	82				
89	2248	913	82				
90	2198	913	82				
91	2147	911	82				
92	2096	909	84				
93	2048	908	83				
94	2020	907	83				

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE
SECTION B-B



Reference point:

- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

Point	Pre-Test			Point	Post-Test		
	X	Y	Z		X	Y	Z
1	2008	-913	-237	1	2004	-919	-236
2	2023	-914	-237	2	2053	-921	-238
3	2074	-914	-238	3	2104	-922	-238
4	2125	-914	-238	4	2157	-923	-239
5	2175	-914	-239	5	2207	-924	-239
6	2227	-914	-239	6	2246	-925	-239
7	2277	-914	-239	7	2278	-925	-239
8	2328	-913	-239	8	2309	-926	-240
9	2379	-913	-239	9	2354	-926	-239
10	2430	-913	-239	10	2389	-927	-239
11	2481	-913	-238	11	2434	-928	-239
12	2532	-913	-238	12	2481	-928	-238
13	2583	-912	-238	13	2526	-929	-238
14	2634	-912	-237	14	2588	-930	-238
15	2684	-912	-237	15	2661	-931	-238
16	2734	-911	-237	16	2718	-931	-238
17	2786	-911	-236	17	2775	-932	-238
18	2836	-911	-236	18	2831	-933	-237
19	2889	-911	-237	19	2875	-934	-237
20	2940	-911	-236	20	2924	-934	-237
21	2990	-911	-235	21	2967	-934	-236
22	3042	-912	-234	22	3007	-934	-236
23	3090	-912	-235	23	3035	-936	-235
24	3142	-915	-235	24	3080	-942	-235
25	3194	-916	-234	25	3082	-915	-232

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE
SECTION B-B (CONTINUED)

Point	Pre-Test			Point	Post-Test		
	X	Y	Z		X	Y	Z
26	3244	-919	-234	26	3105	-901	-230
27	3295	-921	-234	27	3123	-913	-227
28	3346	-922	-234	28	3149	-929	-228
29	3396	-922	-234	29	3174	-925	-228
30	3448	-921	-233	30	3186	-909	-227
31	3498	-924	-234	31	3199	-889	-226
32	3548	-924	-233	32	3220	-892	-224
33	3600	-923	-234	33	3227	-859	-223
34	3651	-919	-232	34	3387	-811	-233
35	3701	-918	-232	35	3444	-791	-233
36	3752	-916	-233	36	3439	-793	-232
37	3804	-914	-233	37	3473	-721	-233
38	3854	-911	-233	38	3490	-658	-233
39	3904	-904	-232	39	3536	-592	-233
40	3953	-893	-232	40	3590	-565	-235
41	4002	-881	-232	41	3663	-519	-229
42	4053	-871	-233	42	3845	-453	-233
43	4102	-859	-233	43	3796	-191	-233
44	4149	-837	-229	44	3845	-100	-233
45	4190	-812	-231	45	3946	-73	-232
46	4224	-774	-232	46	4006	-28	-234
47	4254	-733	-232	47	4062	31	-233
48	4281	-690	-230	48	4095	124	-233
49	4306	-646	-230	49	4149	195	-236
50	4328	-601	-230	50	4215	271	-233
51	4347	-555	-230	51	4250	309	-234
52	4370	-508	-230	52	4300	297	-234
53	4398	-467	-230	53	4355	324	-234
54	4431	-426	-226	54	4319	384	-234
55	4455	-373	-226	55	4221	615	-233
56	4467	-323	-225	56	4208	678	-234
57	4476	-273	-226	57	4199	799	-234
58	4483	-222	-227	58	4128	864	-234
59	4489	-172	-228	59	4054	892	-234
60	4494	-120	-228	60	3951	900	-233
61	4497	-71	-226	61	3872	915	-234
62	4499	-19	-227	62	3803	927	-233
63	4498	33	-225	63	3745	932	-234
64	4495	84	-224	64	3695	932	-235

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE
SECTION B-B (CONTINUED)

Point	Pre-Test			Point	Post-Test		
	X	Y	Z		X	Y	Z
65	4491	133	-225	65	3636	933	-234
66	4486	184	-224	66	3578	934	-233
67	4479	234	-224	67	3499	934	-233
68	4472	285	-224	68	3431	933	-234
69	4462	336	-223	69	3368	933	-233
70	4448	383	-222	70	3311	930	-237
71	4424	427	-223	71	3271	926	-238
72	4392	469	-223	72	3232	923	-238
73	4368	511	-223	73	3180	919	-238
74	4341	550	-233	74	3130	915	-237
75	4322	596	-233	75	3104	914	-235
76	4300	642	-231	76	3086	918	-239
77	4275	687	-232	77	3034	917	-238
78	4249	730	-231	78	2988	916	-237
79	4218	768	-231	79	2932	916	-237
80	4183	806	-231	80	2888	915	-237
81	4139	829	-232	81	2835	914	-237
82	4092	850	-232	82	2756	914	-235
83	4042	860	-232	83	2678	913	-236
84	3992	871	-232	84	2591	913	-234
85	3943	883	-232	85	2521	912	-234
86	3892	894	-234	86	2448	912	-234
87	3842	900	-233	87	2363	911	-233
88	3791	903	-231	88	2278	911	-232
89	3740	905	-230	89	2203	910	-232
90	3690	904	-229	90	2127	909	-232
91	3639	910	-232	91	2075	908	-233
92	3588	913	-233	92	2042	907	-232
93	3537	914	-233	93	2008	906	-232
94	3486	913	-235				
95	3436	909	-232				
96	3385	912	-234				
97	3334	912	-234				
98	3283	911	-234				
99	3232	908	-233				
100	3181	906	-233				
101	3130	905	-233				
102	3080	904	-233				
103	3029	904	-234				

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE
SECTION B-B (CONTINUED)

Point	Pre-Test			Point	Post-Test		
	X	Y	Z		X	Y	Z
104	2977	904	-234				
105	2927	903	-235				
106	2876	904	-235				
107	2825	904	-235				
108	2775	904	-235				
109	2724	904	-235				
110	2673	905	-235				
111	2622	905	-235				
112	2571	905	-235				
113	2521	906	-235				
114	2470	906	-235				
115	2418	906	-235				
116	2367	907	-235				
117	2317	907	-235				
118	2266	907	-235				
119	2215	907	-235				
120	2165	907	-236				
121	2113	907	-236				
122	2063	907	-237				
123	2012	907	-237				

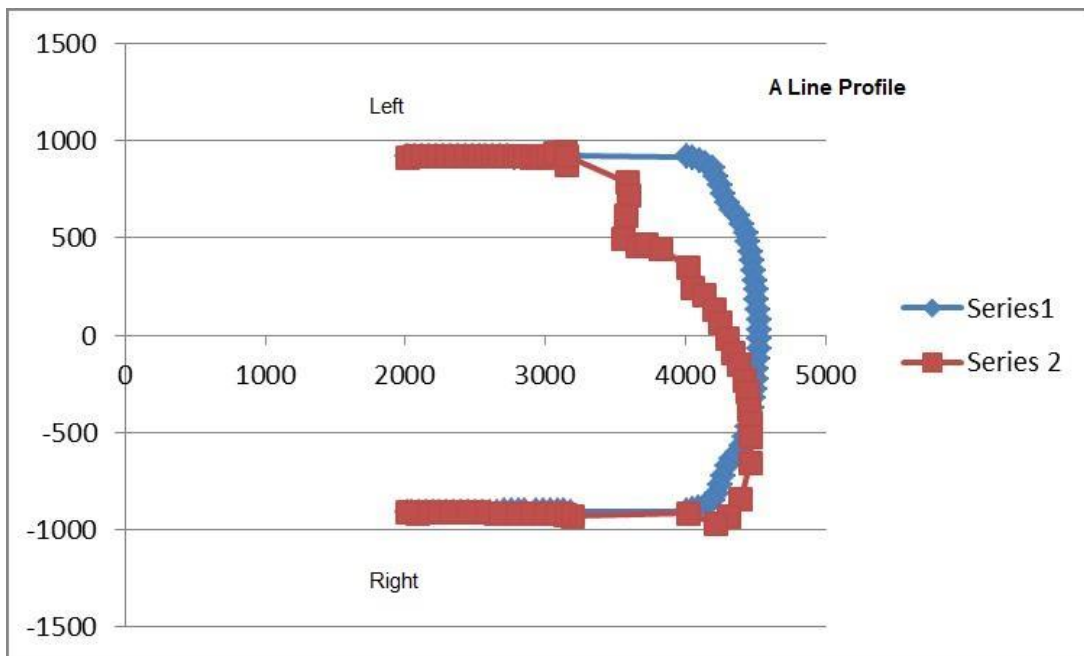
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VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

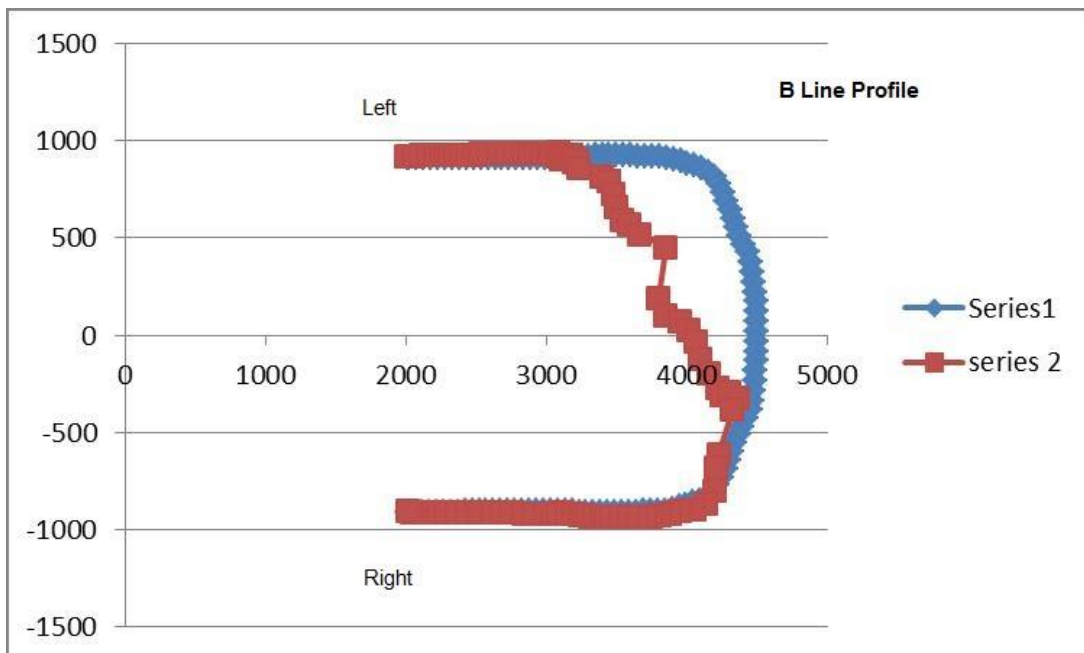
NHTSA No.: R20165407
Test Date: 6/21/2016

VEHICLE EXTERIOR CRUSH PROFILE

SECTION A-A



SECTION B-B

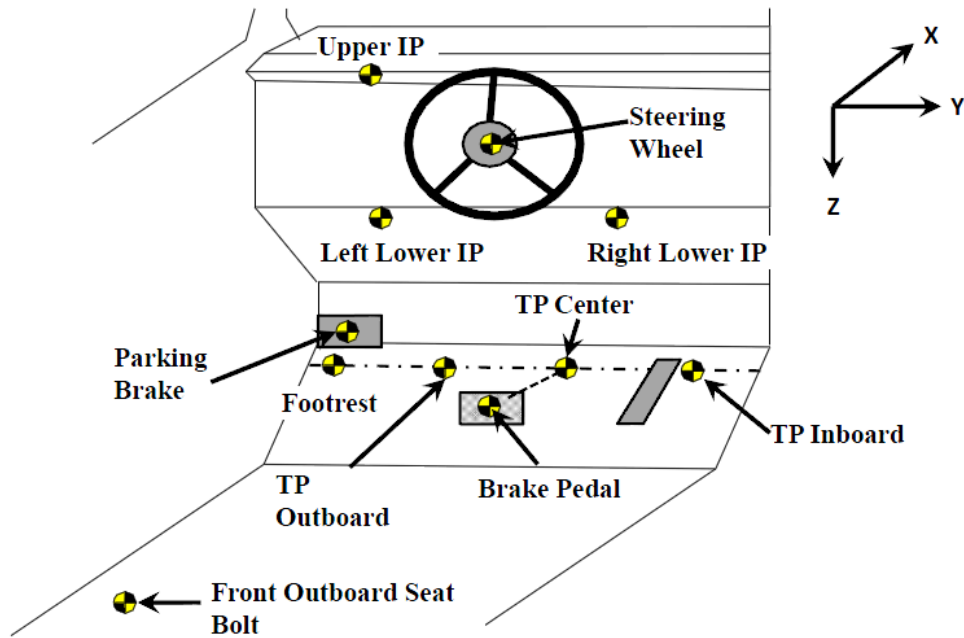


DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

DRIVER FLOOR PAN MEASUREMENTS



Intrusion Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
Steering Wheel	2591	-367	-438	2606	-436	-494	15	-69	-56
Left Lower IP	2840	-516	-183	2830	-535	-201	-10	-19	-18
Right Lower IP	2836	-217	-182	2811	-233	-183	-25	-16	-1
Upper IP	2786	-517	-304	2776	-537	-319	-10	-20	-15
Parking Brake Pedal Point	3073	-331	107	3054	-311	164	-19	20	57
TP Footrest	3216	-582	108	3193	-568	92	-23	14	-16
TP Outboard	3309	-482	108	3255	-453	81	-54	29	-27
TP Center	3359	-331	108	3286	-321	79	-73	10	-29
TP Inboard	3350	-180	108	3319	-184	86	-31	-4	-22

Reference point:

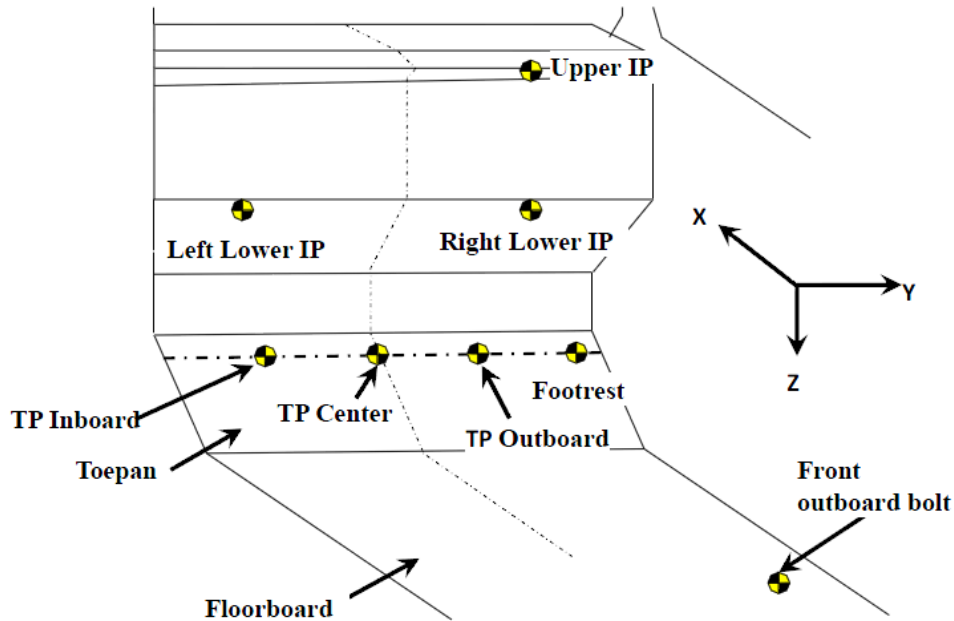
- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO. 13 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

PASSENGER FLOOR PAN MEASUREMENTS



Intrusion Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
Left Lower IP	2807	216	-183	2847	195	-193	40	-21	-10
Right Lower IP	2848	514	-184	2865	495	-185	17	-19	-1
Upper IP	2781	517	-369	2794	498	-376	13	-19	-7
TP Footrest	3215	582	107	3219	597	105	4	15	-2
TP Outboard	3301	482	106	3306	499	108	5	17	2
TP Center	3361	332	107	3359	346	100	-2	14	-7
TP Inboard	3269	182	107	3228	220	78	-41	38	-29

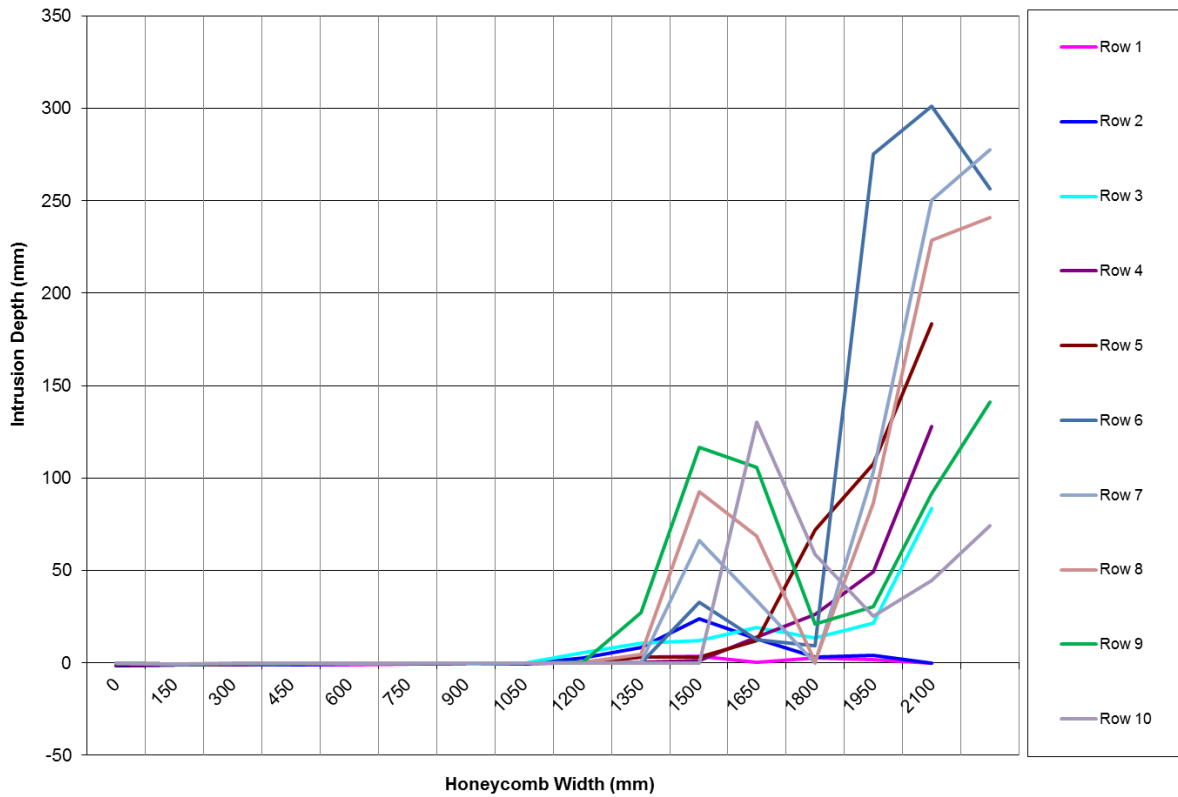
Reference point:

- +X – From the rear of the vehicle to the front of the vehicle
- +Y – From the left side of the vehicle to the right side of the vehicle
- +Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO. 14
OMDB CRUSH MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016



DATA SHEET NO. 15
SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle: 2016 Mazda CX-5 MPV NHTSA No.: R20165407
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset Test Date: 6/21/2016

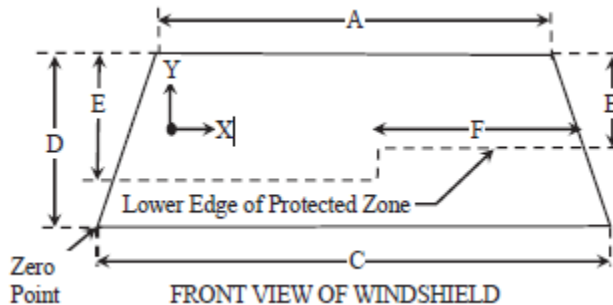
Please provide windshield mounting details. Adhesive around perimeter; 7 mm molding trim top and sides.

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: 26.4°C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2242	2082	92.9
Right Side	2242	2242	100
Total	4485	4325	96.4



Item	Units	Value
A	mm	1245
B	mm	537
C	mm	1510
D	mm	865
E	mm	540
F	mm	490

AREAS OF PROTECTED ZONE FAILURES

A. Provide coordinates of the area that the protected zone was penetrated more than .25 inches by a vehicle component other than one that is normally in contact with the windshield.

- No Penetration

X	Y

B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrate

- Penetration in lower left below zero point.

X	Y
1028	-110

DATA SHEET NO. 15 (CONTINUED)
SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle: 2016 Mazda CX-5 MPV NHTSA No.: R20165407
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset Test Date: 6/21/2016

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Ambient Temperature at Test Vehicle Time of Impact: 28.7° C

Test Time: 18:59

Stoddard Solvent Spillage Measurements

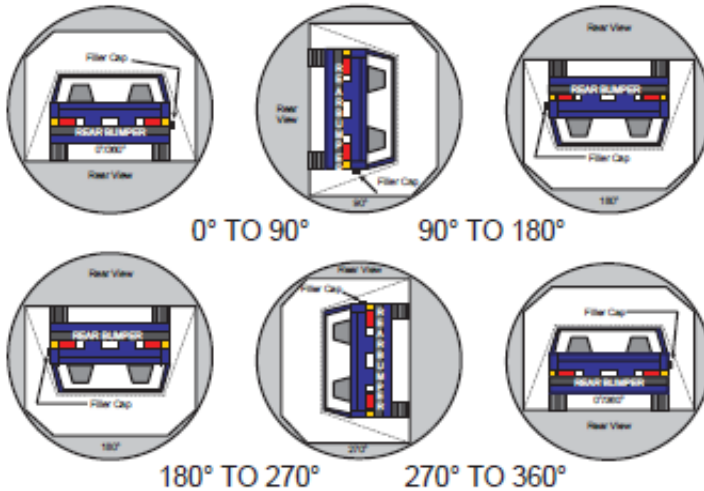
- A. From impact until vehicle motion ceases:
(Maximum allowable = 1 oz.) 0 oz
- B. For the 5-minute period after motion ceases:
(Maximum allowable = 5 oz.) 0 oz
- C. For the following 25 minutes:
(Maximum allowable = 1 oz./minute) 0 oz
- D. Spillage 0 oz

DATA SHEET NO. 16
FMVSS 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2016 Mazda CX-5 MPV
 Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
 Test Date: 6/21/2016

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA



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: None

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	120	300	372
90° to 180°	120	300	363
180° to 270°	120	300	361
270° to 360°	120	300	368

FMVSS 301 SPILLAGE TABLE

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

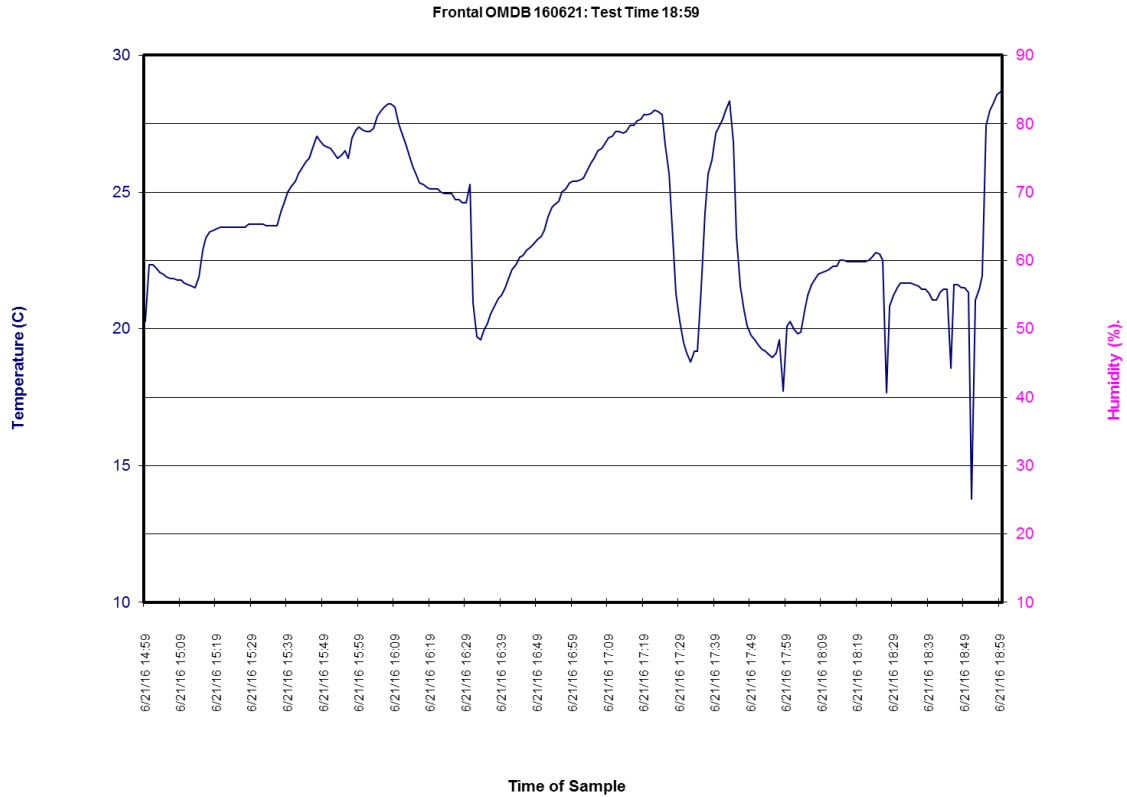
SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

DATA SHEET NO. 17
DUMMY/VEHICLE TEMPERATURE STABILIZATION¹

Test Vehicle: 2016 Mazda CX-5 MPV
Test Program: R&D 90.1 kph 15° / 35% Left Oblique Offset

NHTSA No.: R20165407
Test Date: 6/21/2016



Temperature Stabilization Chart/Data

¹ Humidity not recorded

APPENDIX A
PHOTOGRAPHS

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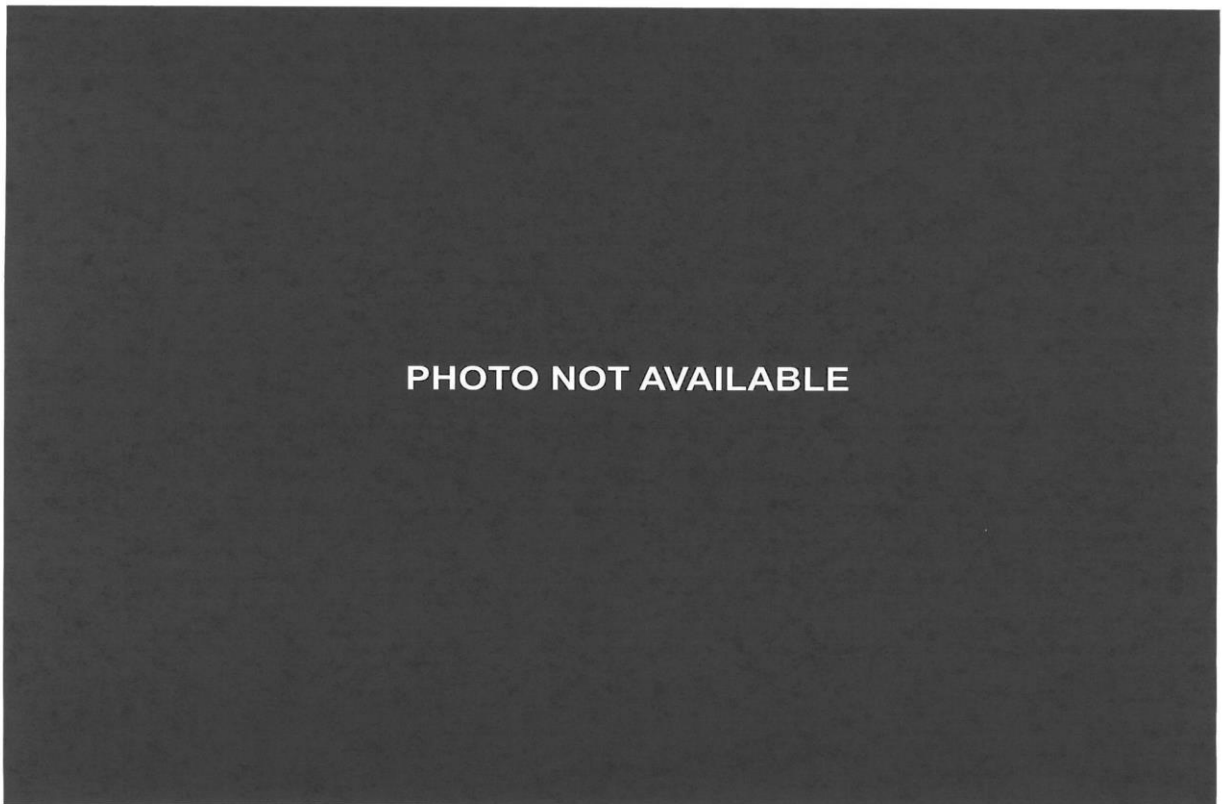
No. 1 As Delivered Front Left Side Oblique



No. 2 As Delivered Front View of Vehicle



No. 3 As Delivered Front Right Side Oblique



No. 4 As Delivered Right Side



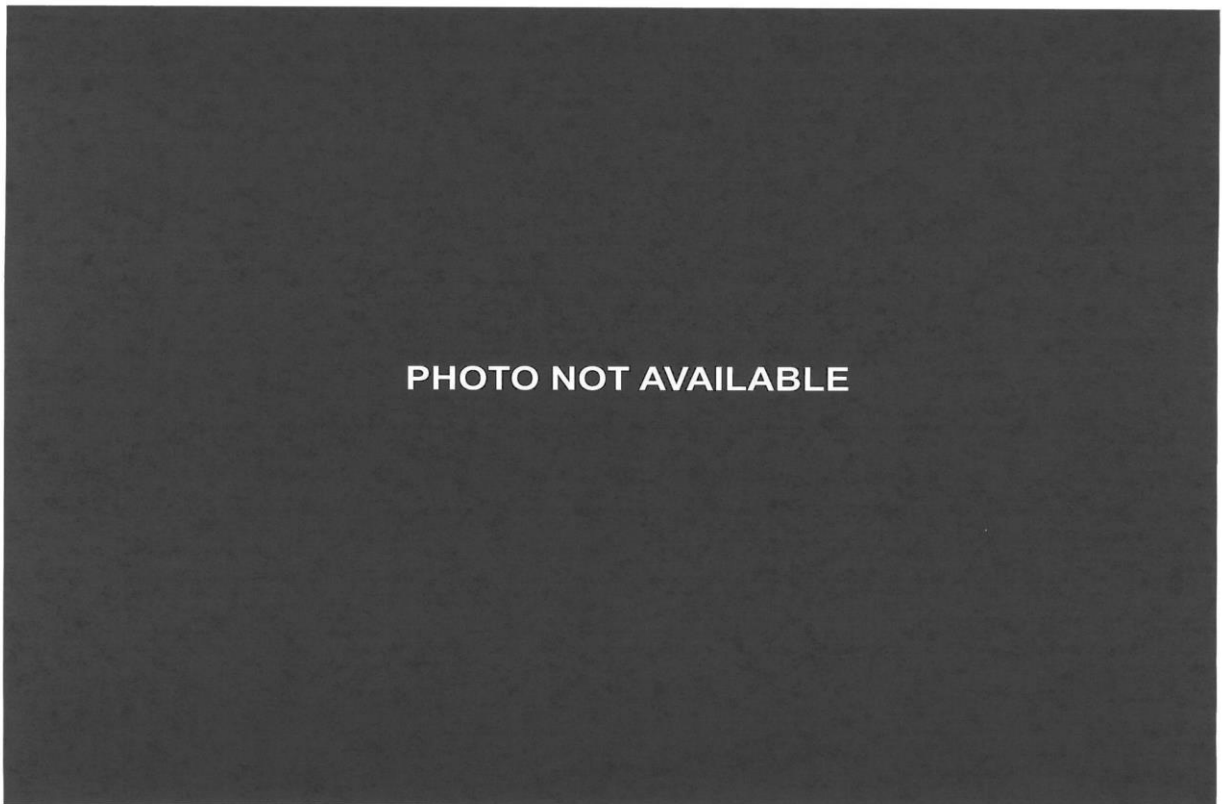
No. 5 As Delivered Rear Right Side Oblique



No. 6 As Delivered Rear of Vehicle



No. 7 As Delivered Rear Left Side Oblique



No. 8 As Delivered Left Side

mazda

SKYACTIV
TECHNOLOGY

Scan for vehicle info and offers

2016 CX-5
 Model: 2016 CX-5 SPORT ALL WHEEL DRIVE
 Exterior Color: TITANIUM FLASH MICA
 Interior Color: SAND

EPA DOT Fuel Economy and Environment

Fuel Economy

 26 MPG combined city/hwy
 24 city
 30 highway
 3.8 gallons per 100 miles

You save \$250
 in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$1,750

Fuel Economy & Greenhouse Gas Rating (tailpipe only)

 6

Smog Rating (tailpipe only)

 5

Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. This average new vehicle gets 26 MPG and costs \$3,500 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.00 per gallon. MSRP is miles per gasoline gallon equivalent. Vehicle emissions are a significant cause of climate change and smog.

fueleconomy.gov
 Calculate personalized estimates and compare vehicles

GOVERNMENT 5-STAR SAFETY RATINGS

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

Crash	Driver Passenger	Not Rated
Frontal	Not Rated	Not Rated
Side	Front seat	★★★★★
Crash	Rear seat	★★★★★
Rollover		★★★★★

Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236

SAFETY AND SECURITY FEATURES

- 60/40/20 KICK-UP POWERTRAIN & 3800V 36K MI BUMPER-TO-BUMPER WARRANTY
- 24-HOUR ROADSIDE ASSISTANCE
- 5-PASSENGER 3-POINT SAFETY BELTS
- LATCH CHILD SAFETY SEAT ANCHORS
- ANTI-THEFT ENGINE IMMOBILIZER
- TIRE PRESSURE MONITORING SYSTEM
- SKYACTIV BODY - RING STRUCTURE

STANDARD EQUIPMENT

- ENGINE/MECHANICAL FEATURES
 - SKYACTIV-G 2.5L ENGINE
 - SKYACTIV-DRIVE GPD SPORT MODE AT 184 HORSEPOWER, 185 LB-FT TORQUE
 - ALL-WHEEL DRIVE
- EXTERIOR FEATURES
 - 17-INCH ALLOY WHEELS
 - P225/50 R17 ALL-SEASON TIRES
 - VARIABLE INTERMITTENT WIPERS
 - FIXED INTERMITTENT REAR WIPER
 - POWER MIRRORS WITH TURN LAMPS
- INTERIOR FEATURES
 - 5-PASSENGER SEATING
 - TYL & TELESCOPIC STEERING COLUMN
 - STEERING WHEEL W/ AUDIO/CRUISE CONTROLS
 - POWER AUTOMATIC DOOR LOCKS
 - POWER WINDOWS W/ DRIVER ONE-TOUCH
 - CLOTH TRIMMED SPORT SEATS
 - 6-WAY MANUAL DRIVER'S SEAT
 - 8-WAY W/ TRIP COMPUTER
 - ELECTRONIC PARKING BRAKE
- SAFETY AND SECURITY FEATURES
 - 60/40/20 KICK-UP POWERTRAIN & 3800V 36K MI BUMPER-TO-BUMPER WARRANTY
 - 24-HOUR ROADSIDE ASSISTANCE
 - 5-PASSENGER 3-POINT SAFETY BELTS
 - LATCH CHILD SAFETY SEAT ANCHORS
 - ANTI-THEFT ENGINE IMMOBILIZER
 - TIRE PRESSURE MONITORING SYSTEM
 - SKYACTIV BODY - RING STRUCTURE
- 4-WHEEL DISC BRAKES
- ELECTRIC POWER ASSISTED STEERING
- INDEPENDENT FRONT/REAR SUSPENSION
- FRONT & REAR STABILIZER BARS
- HALOGEN HEADLIGHTS
- DAYTIME RUNNING LIGHTS
- BRIGHT FINISH EXHAUST OUTLETS
- REAR ROOF SPOILER
- ROOF MOUNTED SHARK FIN ANTENNA
- REMOTE KEYLESS ENTRY
- PUSH BUTTON ENGINE START
- AIR CONDITIONING W/ POLLEN FILTER
- AM/FM/CD/MP3 4-SPEAKER AUDIO
- AUXILIARY JACK & USB AUDIO INPUT
- BLUETOOTH HANDS FREE PHONE AUDIO
- DUAL VANITY MIRRORS
- CENTER ARMREST W/ COVERED STORAGE
- 60/40 SPLIT FOLD-DOWN REAR SEAT
- CARPETED FLOOR MATS
- ANTI-LOCK BRAKE SYSTEM (ABS) WITH EBD & BRAKE ASSIST
- DYNAMIC STABILITY CONTROL (DSC)
- TRACTION CONTROL SYSTEM (TCS)
- HILL LAUNCH ASSIST
- ADVANCED DUAL FRONT AIRBAGS
- FRONT SIDE IMPACT AIR BAGS
- FRONT & REAR SIDE AIR CURTAINS

OPTIONAL EQUIPMENT

MSRP	\$24,445
CGN CARGO NET	\$50
RCC RETRACTABLE CARGO COVER	\$200
WLK WHEEL LOCKS	\$55
Total Vehicle and Options	\$24,750
Delivery, Processing and Handling Fee	\$850
Total MSRP	\$25,630

SOLD TO: 61449
 FRANK BOUCHER MAZDA RACINE
 9601 WASHINGTON AVENUE
 RACINE, WI 53406

SHIP TO: 61449 DY
 FRANK BOUCHER MAZDA RACINE
 9601 WASHINGTON AVENUE
 RACINE, WI 53406

JM3KE4BY3G0672477

 CEB-SP-XA-KA0PNAD-7A-TA-0110030

mazdausa.com

No. 9 Monroney Label Photograph

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No. 10 Test Vehicle Certification Label



No. 11 Test Vehicle Tire Placard



No. 12 Pre-Test Front View of Test Vehicle



No. 13 Post-Test Front View of Test Vehicle



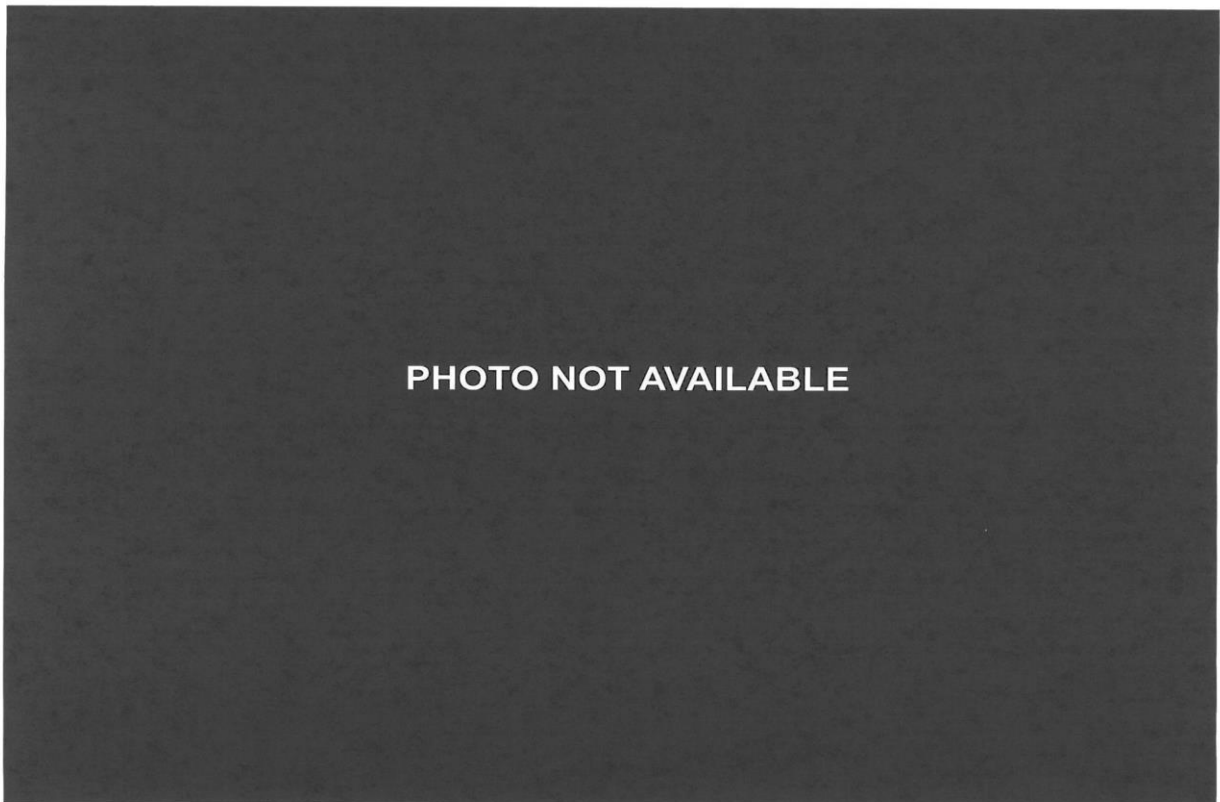
No. 14 Pre-Test Front Left Oblique View of Test Vehicle



No. 15 Post- Test Front Left Oblique View of Test Vehicle



No. 16 Pre-Test Left Side View of Test Vehicle



No. 17 Post-Test Left Side View of Test Vehicle



No. 18 Pre-Test Rear Left Oblique View of Test Vehicle



No. 19 Post-Test Rear Left Oblique View of Test Vehicle



No. 20 Pre-Test Rear View of Test Vehicle



No. 21 Post-Test Rear View of Test Vehicle



No. 22 Pre-Test Rear Right Oblique View of Test Vehicle



No. 23 Post-Test Rear Right Oblique View of Test Vehicle



No. 24 Pre-Test Right Side View of Test Vehicle



No. 25 Post-Test Right Side View of Test Vehicle



No. 26 Pre-Test Front Right Oblique View of Test Vehicle



No. 27 Post-Test Front Right Oblique View of Test Vehicle



No. 28 Pre-test Left Side of O MDB against Target Vehicle at Ideal Impact Point



No. 29 Pre-test Right Side of O MDB against Target Vehicle at Ideal Impact Point



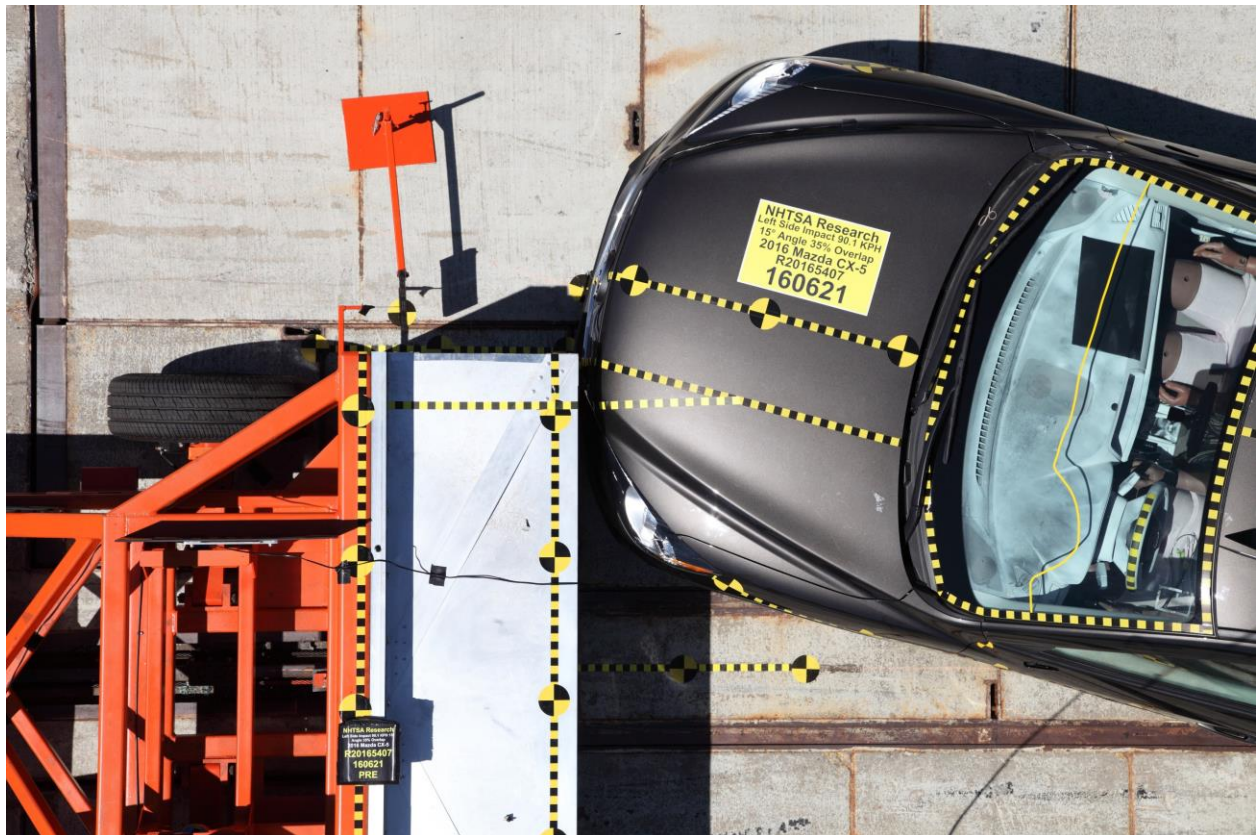
No. 30 Pre-Test OMDB & Vehicle Alignment



No. 31 Pre-Test Close-up View of Impact Point



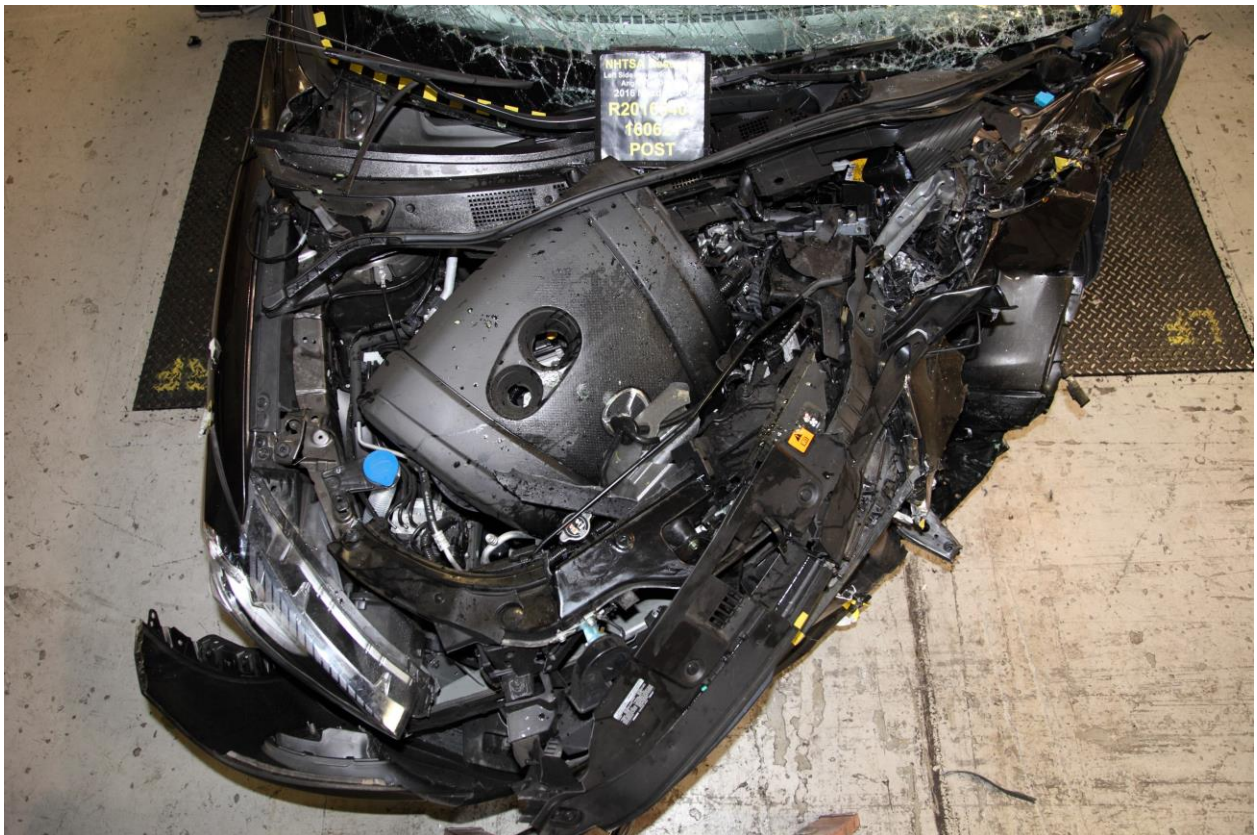
No. 32 Post-Test Close-up View of Impact Point



No. 33 Pre-Test Overhead View of OMDB against test Vehicle at Ideal Impact Point



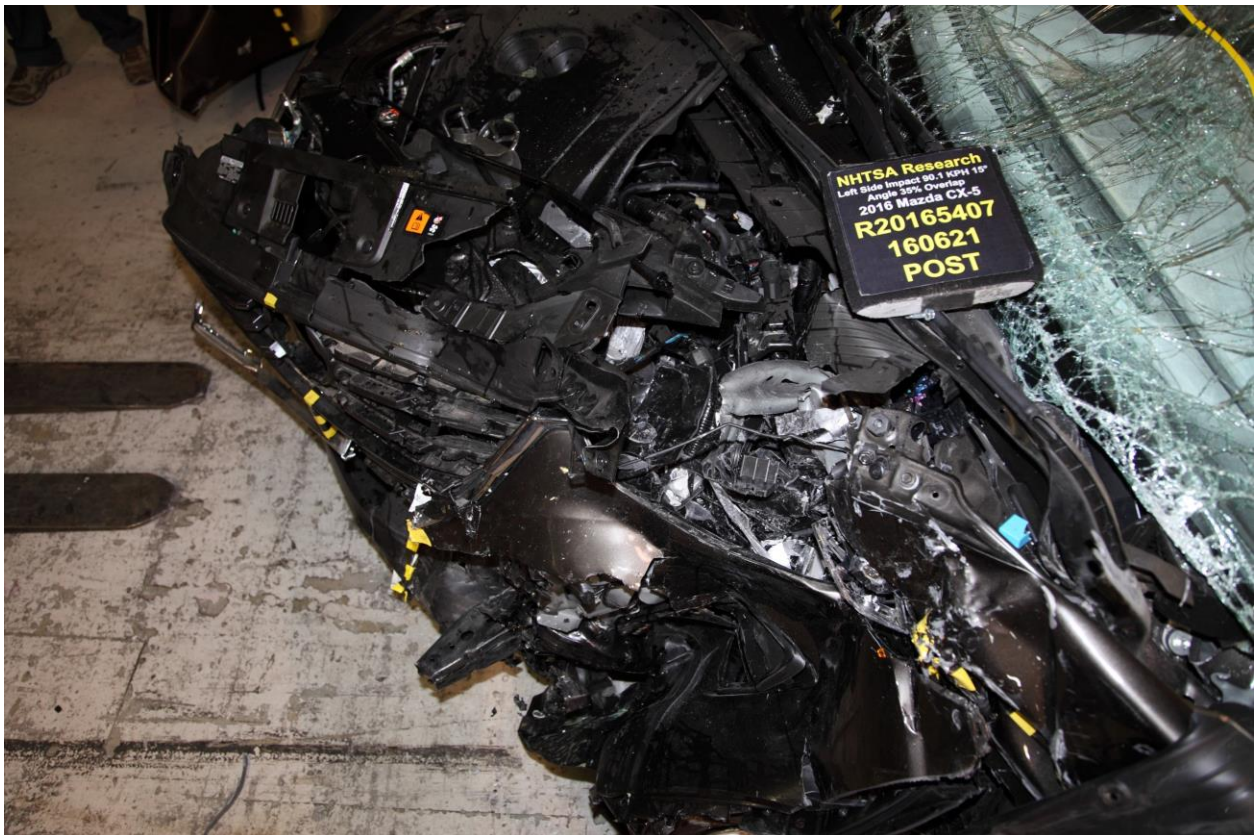
No. 34 Pre-Test Engine Compartment View



No. 35 Post-Test Engine Compartment View



No. 36 Pre-Test Overall Perpendicular View of Engine Compartment with Parts Removed



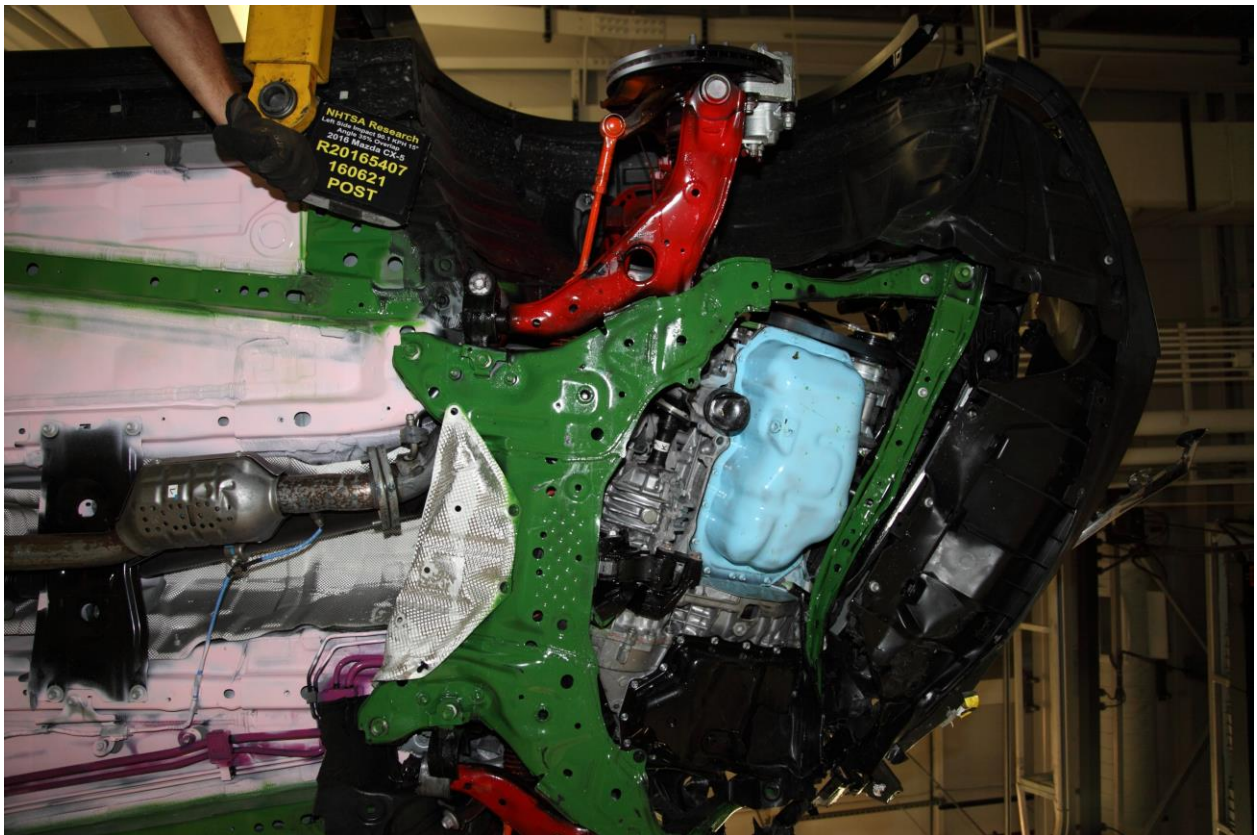
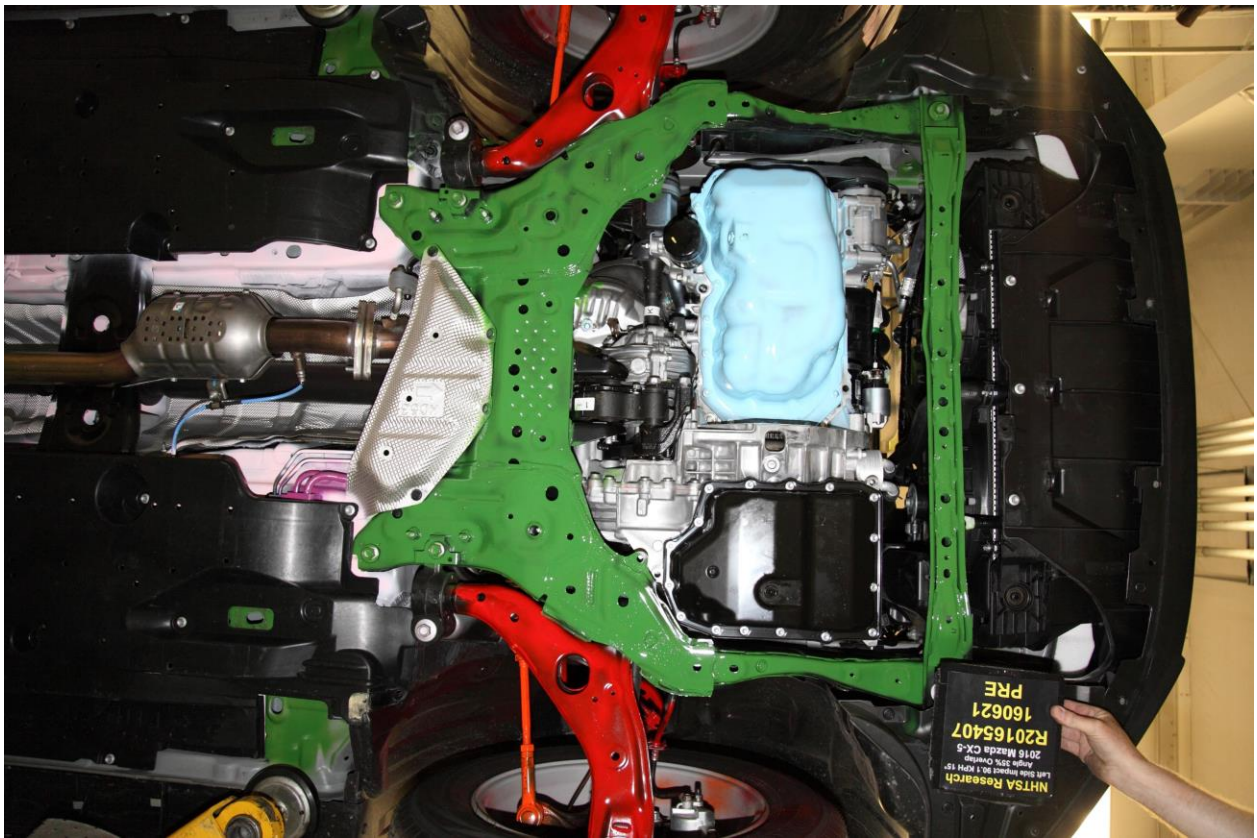
No. 37 Post-Test Overall Perpendicular View of Engine Compartment with Parts Removed

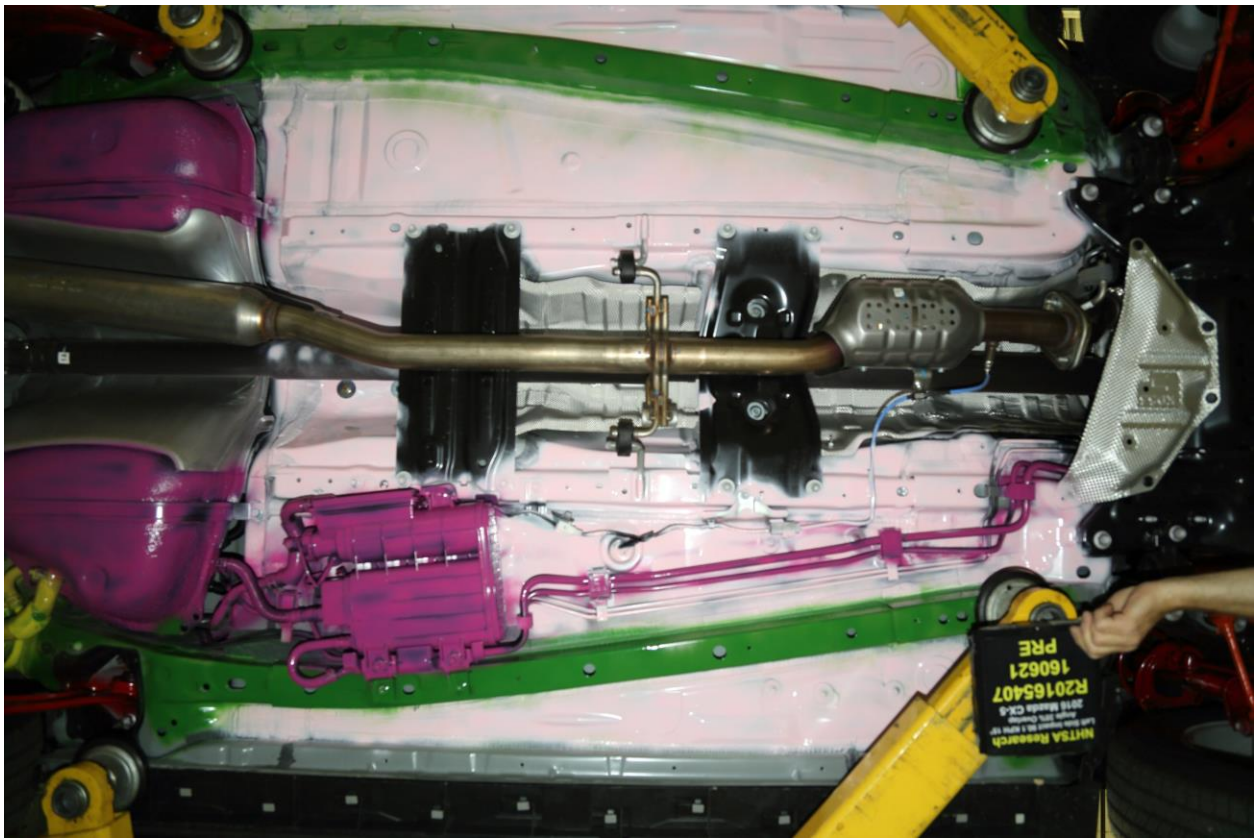


No. 38 Pre-Test View of Fuel Filler Cap



No. 39 Post-Test View of Fuel Filler Cap

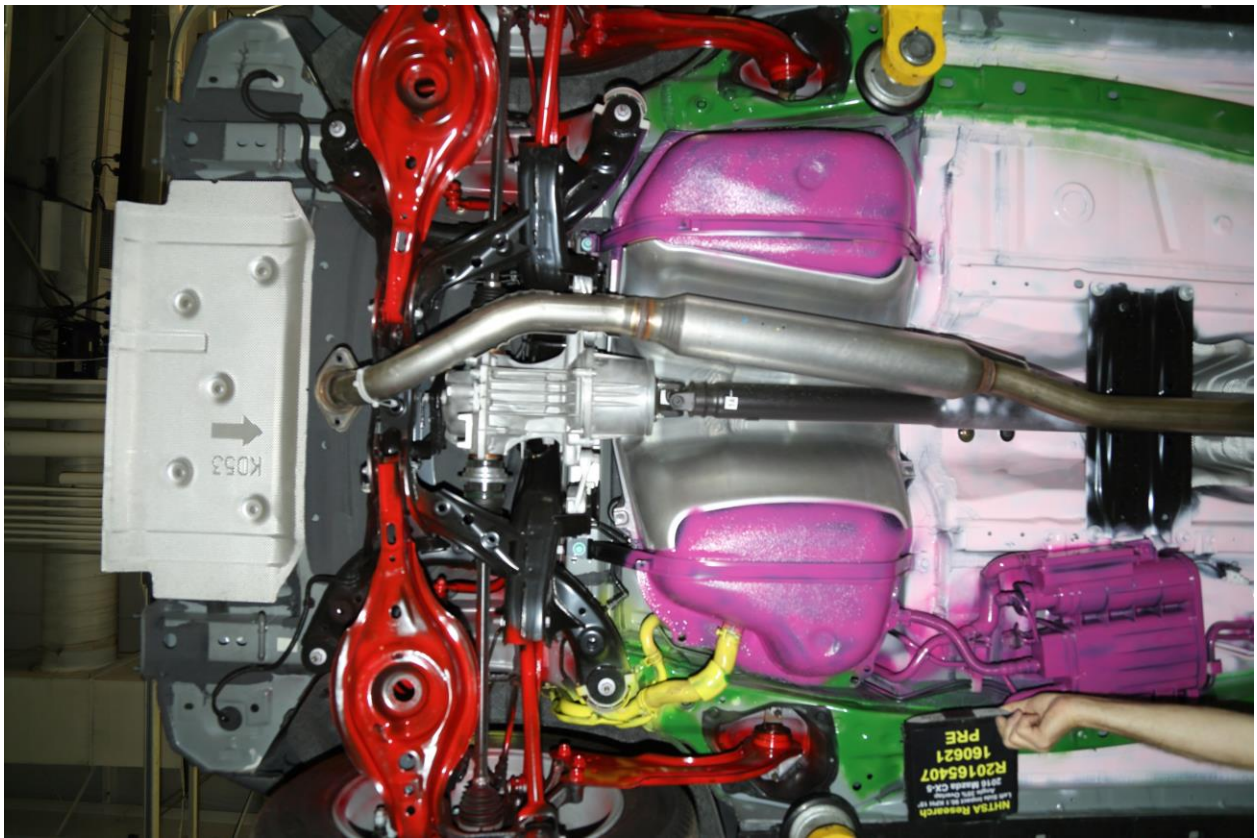




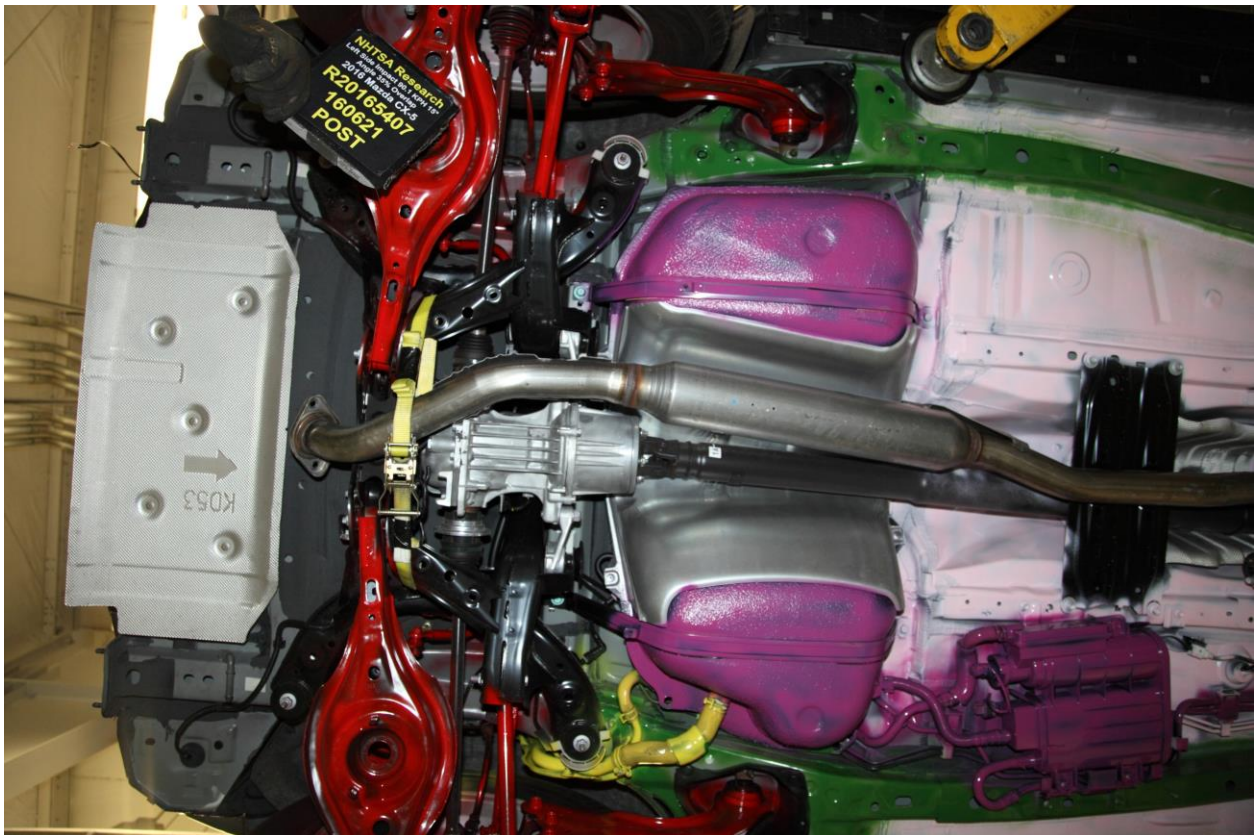
No. 42 Pre-Test View of Mid Underbody (Perpendicular to Vehicle) With Parts Removed



No. 43 Post-Test View of Mid Underbody (Perpendicular to Vehicle)



No. 44 Pre-Test View of Rear Underbody (Perpendicular to Vehicle) With Parts Removed



No. 45 Post-Test View of Rear Underbody (Perpendicular to Vehicle)



No. 46 Pre-Test Windshield View



No. 47 Post-Test Windshield View



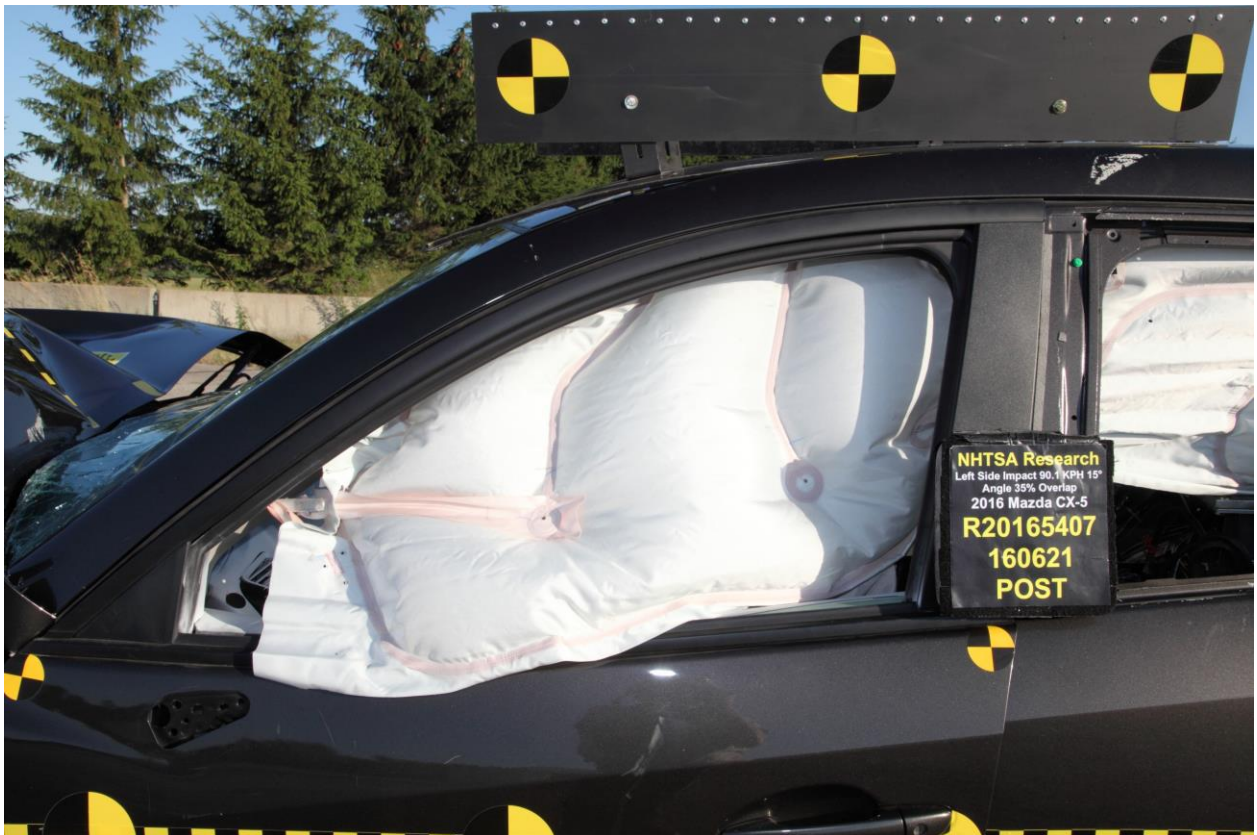
No. 48 Pre-Test Driver Front Windshield View



No. 49 Post-Test Driver Front Windshield View



No. 50 Pre-Test Left Side Driver Window View



No. 51 Post-Test Left Side Driver Window View



No. 52 Pre-Test View of Driver Door Clearance



No. 53 Post-Test View of Driver Door Clearance



No. 54 Pre-Test Close-Up View of Driver's Door Latch



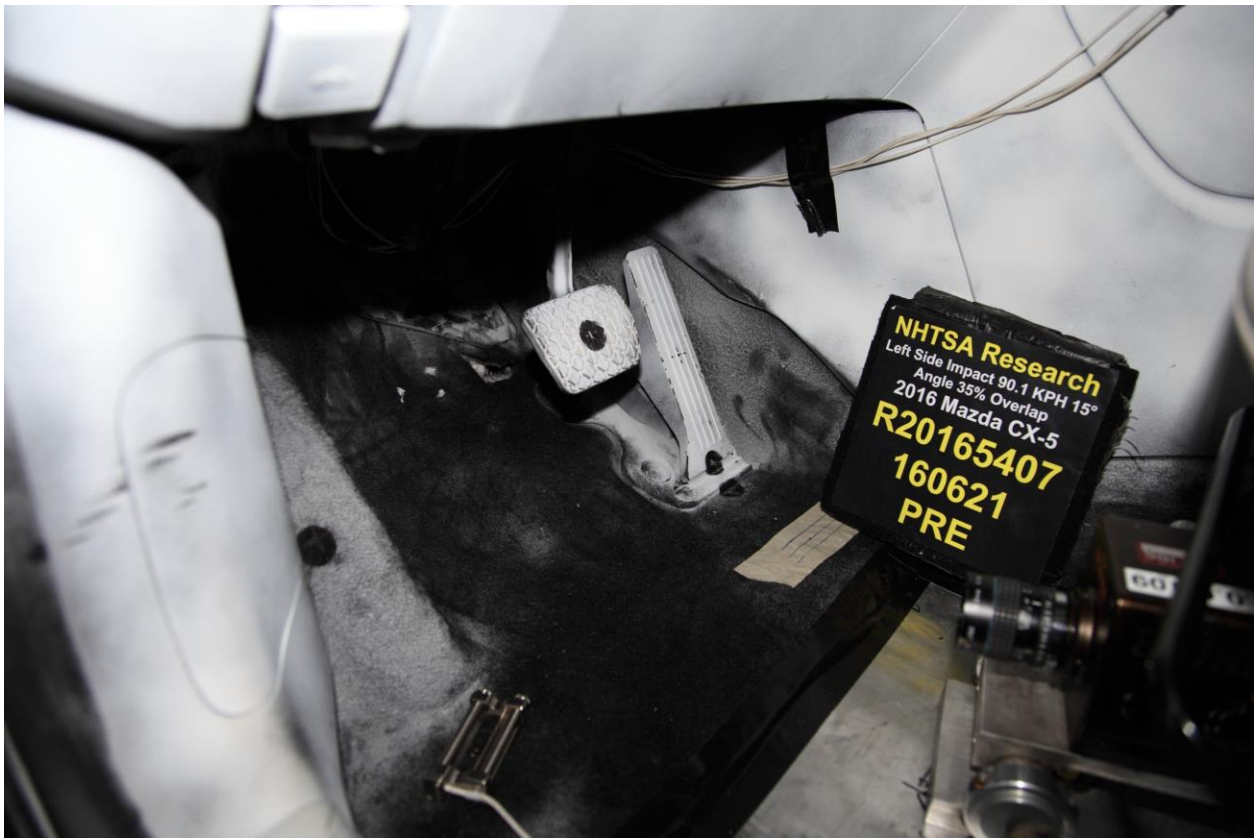
No. 55 Post-Test Close-Up View of Driver's Door Latch



No. 56 Pre-Test Driver Inner Door Panel



No. 57 Post-Test Driver Inner Door Panel



No. 58 Pre-Test View of Driver Floor Pan at Left Sill Level



No. 59 Post-Test View of Driver Floor Pan at Left Sill Level



No. 60 Pre-Test View of Driver Floor Pan at Mid Seat Level



No. 61 Post-Test View of Driver Floor Pan at Mid Seat Level



No. 62 Pre-Test View of Driver Floor Pan from Center Of Vehicle



No. 63 Post-Test View of Driver Floor Pan from Center Of Vehicle



No. 64 Pre-Test Left Side View of Driver and Interior (Perpendicular View)



No. 65 Post-Test Left Side View of Driver and Interior (Perpendicular View)



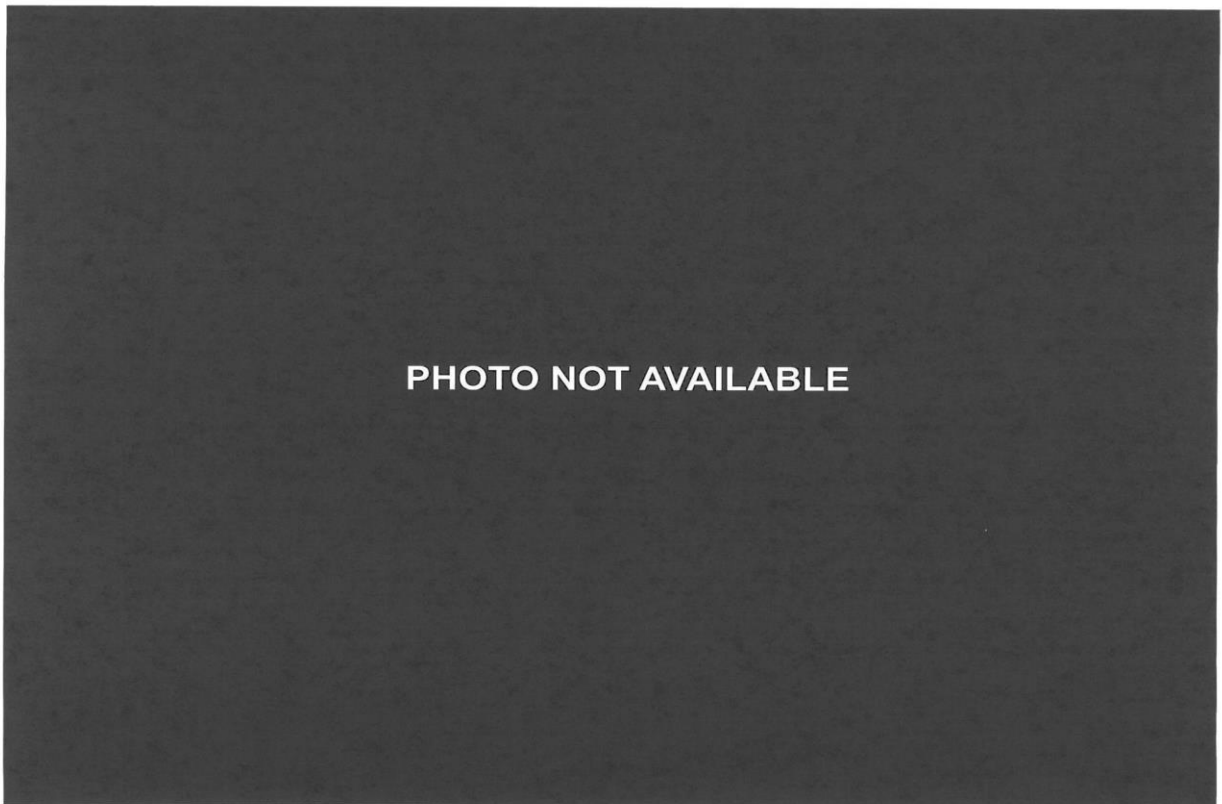
No. 66 Pre-Test Driver Seat For-Aft Markings



No. 67 Post-Test Driver Seat For-Aft Markings



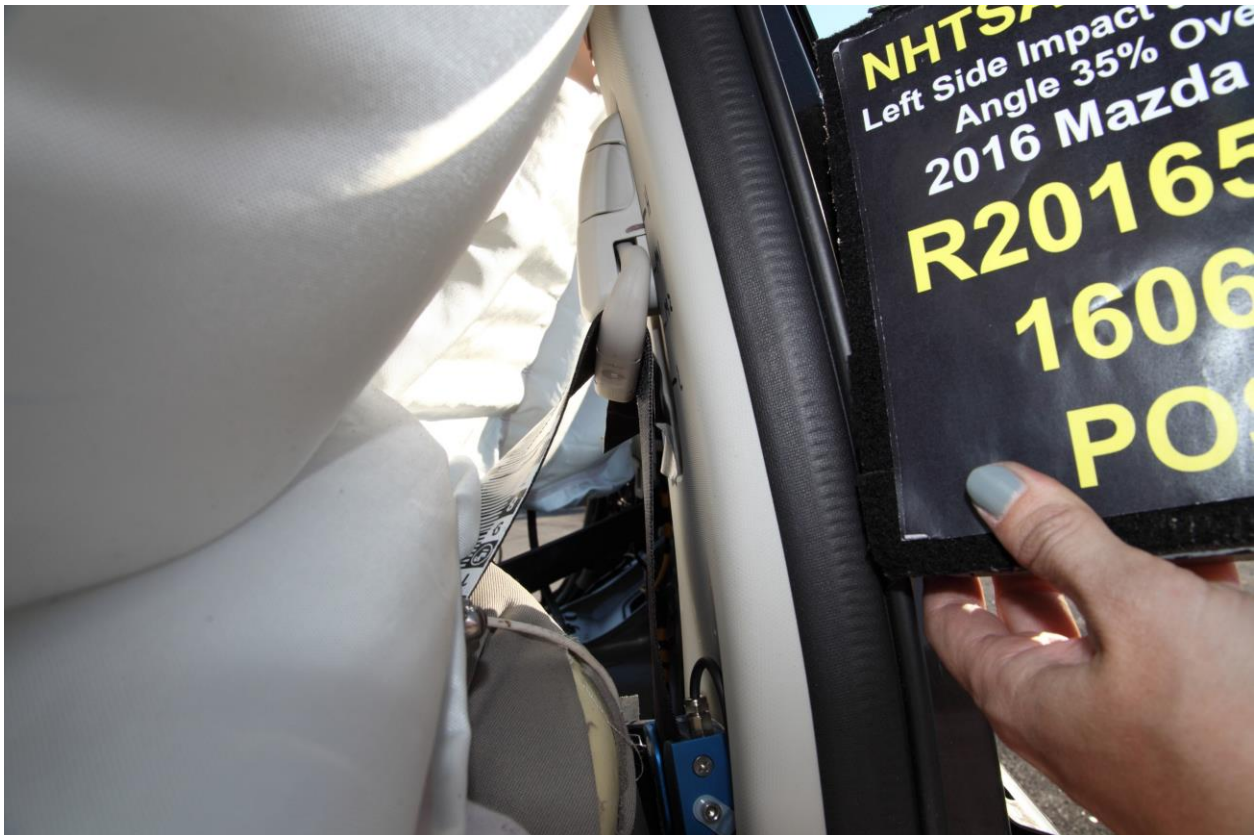
No. 68 Pre-Test Driver Seat Back Markings



No. 69 Post-Test Driver Seat Back Markings



No. 70 Pre-Test Driver's Adjustable D-Ring



No. 71 Post-Test Driver's Adjustable D-Ring



No. 72 Pre-Test Left Side View of Driver Knee Bolster



No. 73 Post-Test Left Side View of Driver Knee Bolster



No. 74 Pre-Test Overall View of Driver Knee Bolsters



No. 75 Post-Test Overall View of Driver Knee Bolsters



No. 76 Pre-Test Right Side View of Driver Knee Bolster



No. 77 Post-Test Right Side View of Driver Knee Bolster



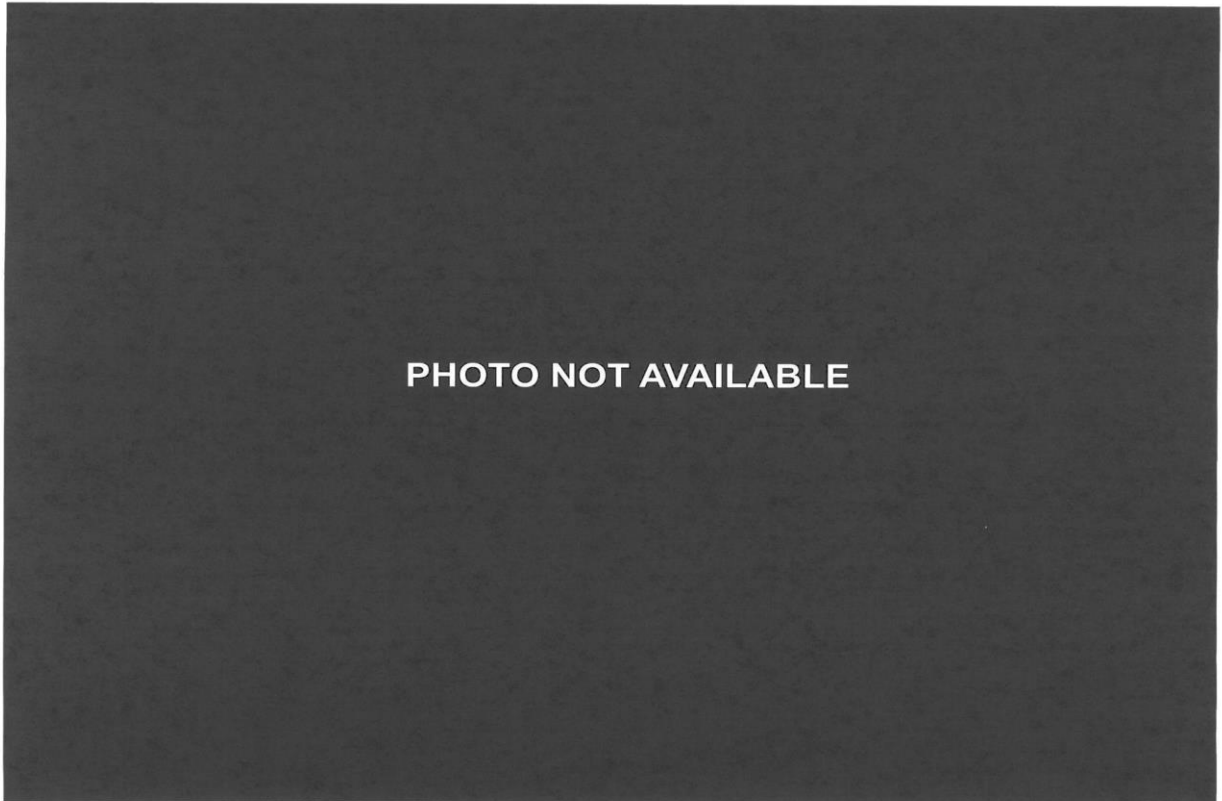
No. 78 Pre-Test Right Side View of Driver and Interior



No. 79 Post-Test Right Side View of Driver and Interior



No. 80 Pre-Test View of Parking Brake



No. 81 Post-Test View of Parking Brake



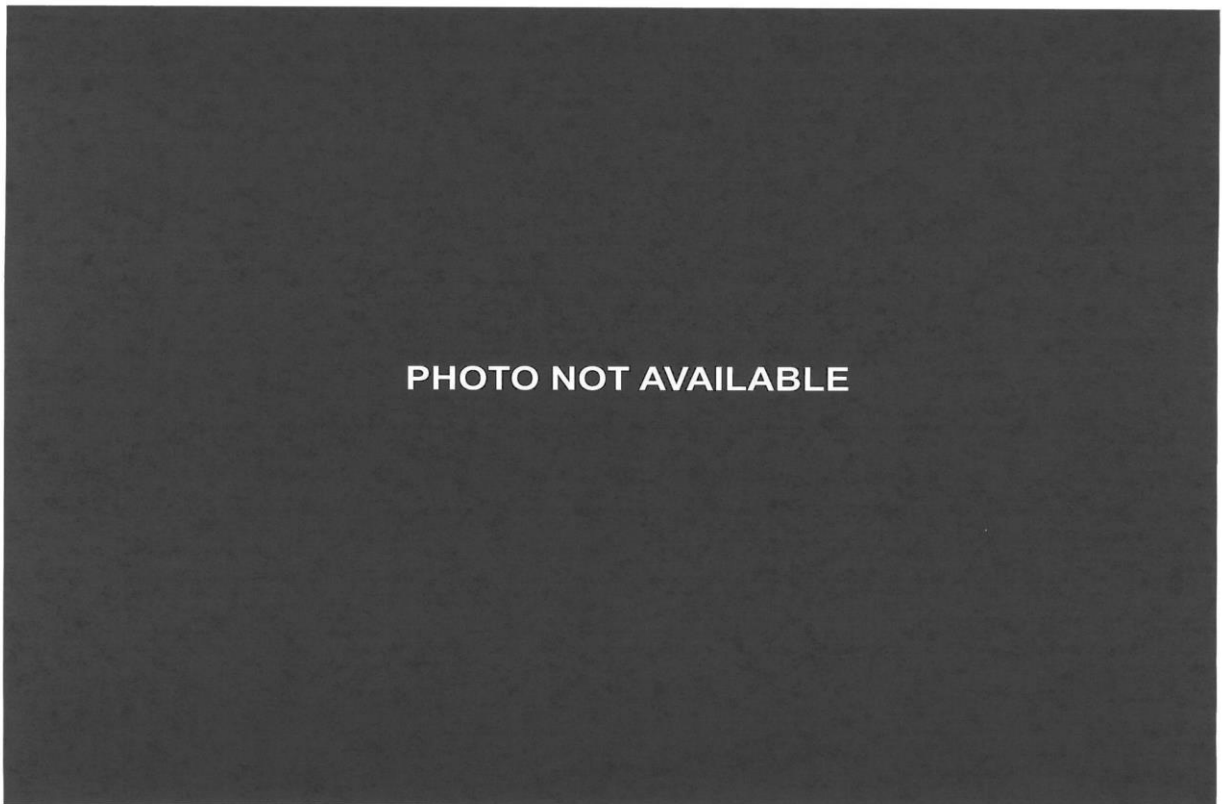
No. 82 Pre-Test Left Side View of Steering Wheel Set Position



No. 83 Post-Test Left Side View of Steering Wheel Set Position



No. 84 Pre-Test Overhead View of Driver Thighs on Seat



No. 85 Post-Test Overhead View of Driver Thighs on Seat



No. 86 Pre-Test View of Driver Abdomen



No. 87 Post-Test View of Driver Abdomen



No. 88 Pre-Test View of Driver Left Knee and Bolster



No. 89 Post-Test View of Driver Left Knee and Bolster



No. 90 Pre-Test View of the Driver Left Leg



No. 91 Post-Test View of the Driver Left Leg



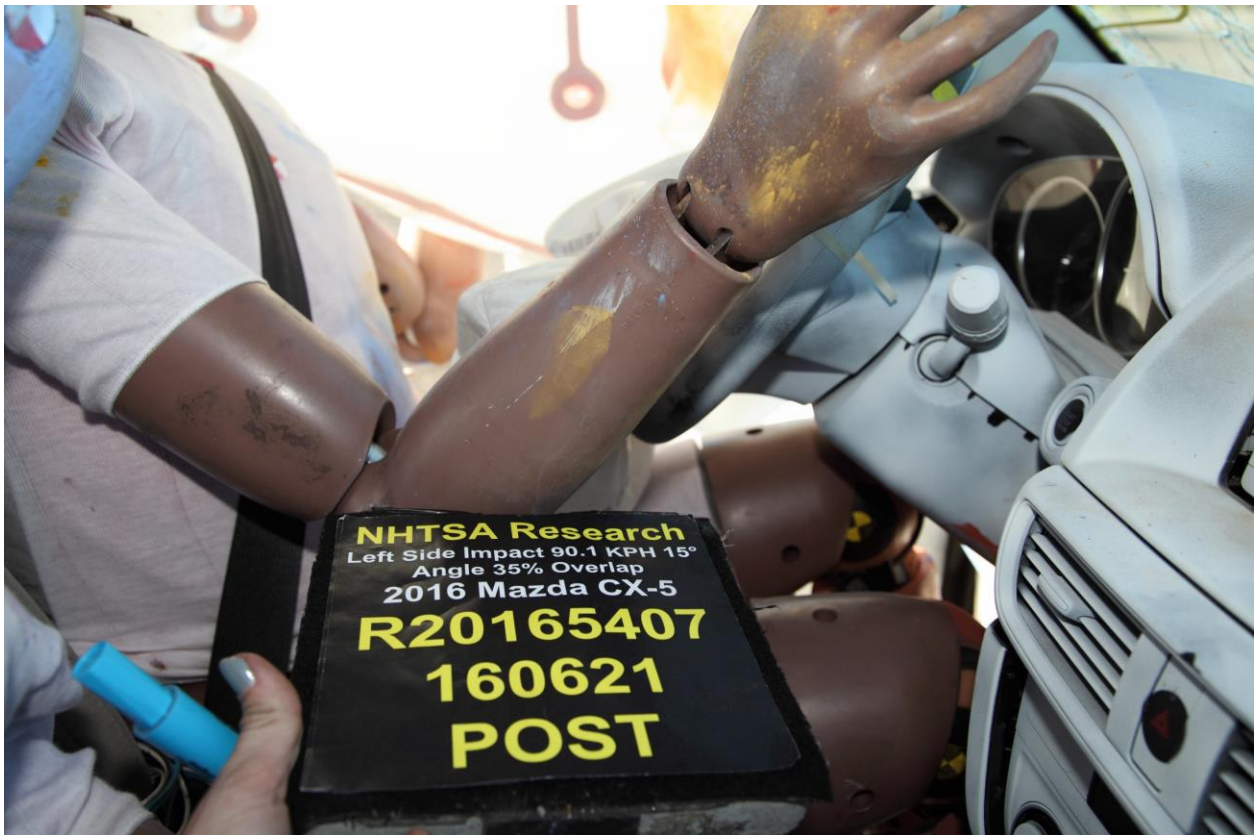
No. 92 Pre-Test View of the Driver's Feet



No. 93 Post-Test View of the Driver's Feet



No. 94 Pre-Test View of Driver Right Knee and Bolster



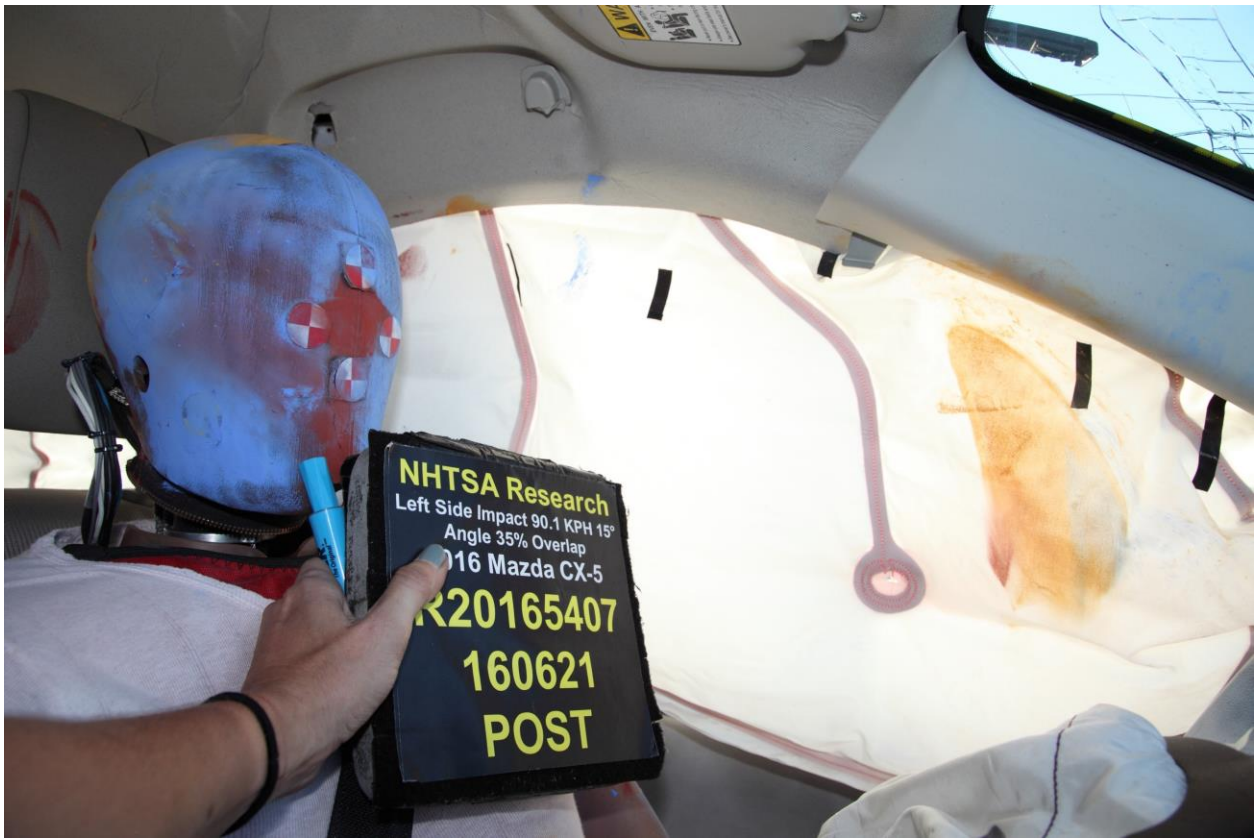
No. 95 Post-Test View of Driver Right Knee and Bolster



No. 96 Post-Test View of Driver Head Contact with Front Airbag



No. 97 Post-Test View of Driver Head Contact with Curtain Airbag



No. 98 Post-Test View of Driver Head Contact with Head Liner



No. 99 Post-Test View of Driver Head Contact with Door Liner



No. 100 Post-Test View of Driver Head Contact with Head Restraint



No. 101 Post-Test View of Driver Knee Contact with Knee Bolster



No. 102 Pre-Test Passenger Front Close-Up View, Windshield



No. 103 Post-Test Passenger Front Close-Up View, Windshield



No. 104 Pre-Test Right Side Passenger Window View



No. 105 Post-Test Right Side Passenger Window View



No. 106 Pre-Test View of Passenger Door Clearance



No. 107 Post-Test View of Passenger Door Clearance



No. 108 Pre-Test Close-Up View of Passenger's Door Latch



No. 109 Post-Test Close-Up View of Passenger's Door Latch



No. 110 Pre-Test Passenger Inner Door Panel



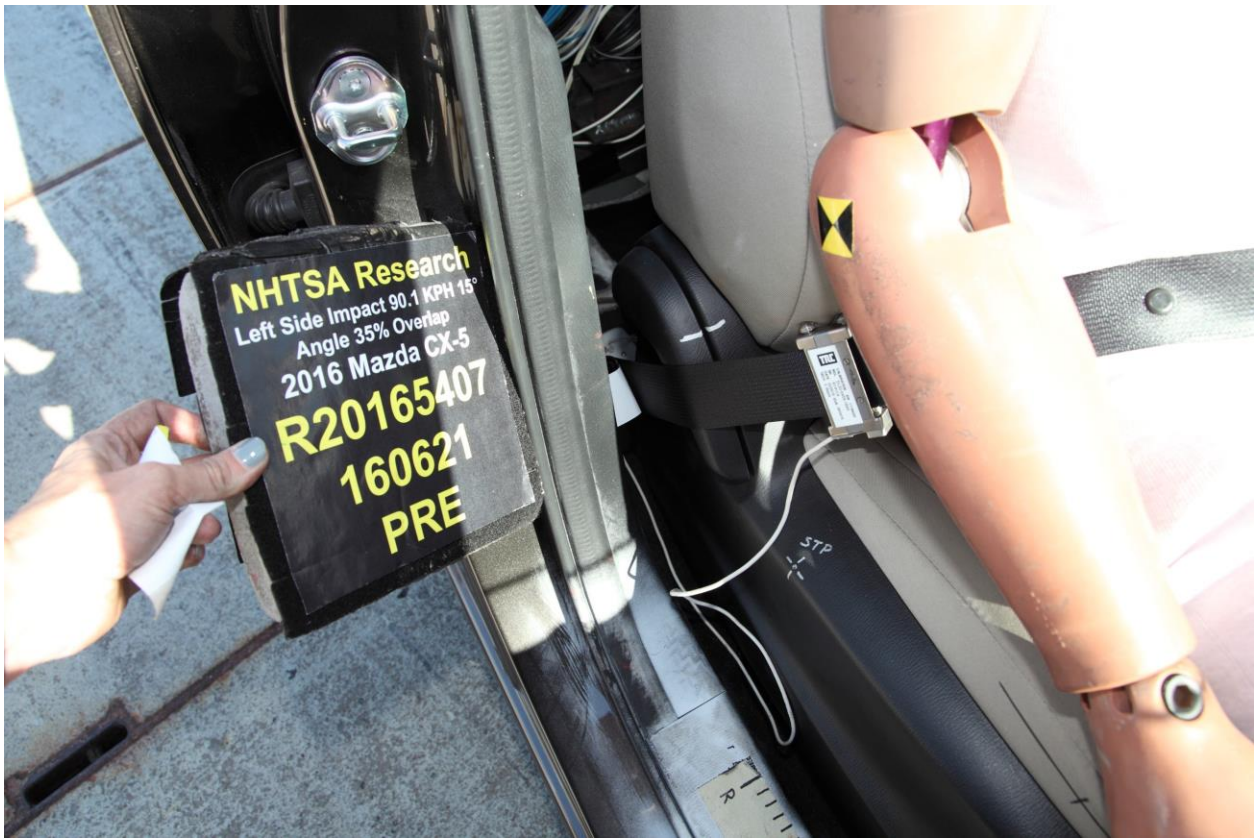
No. 111 Post-Test Passenger Inner Door Panel



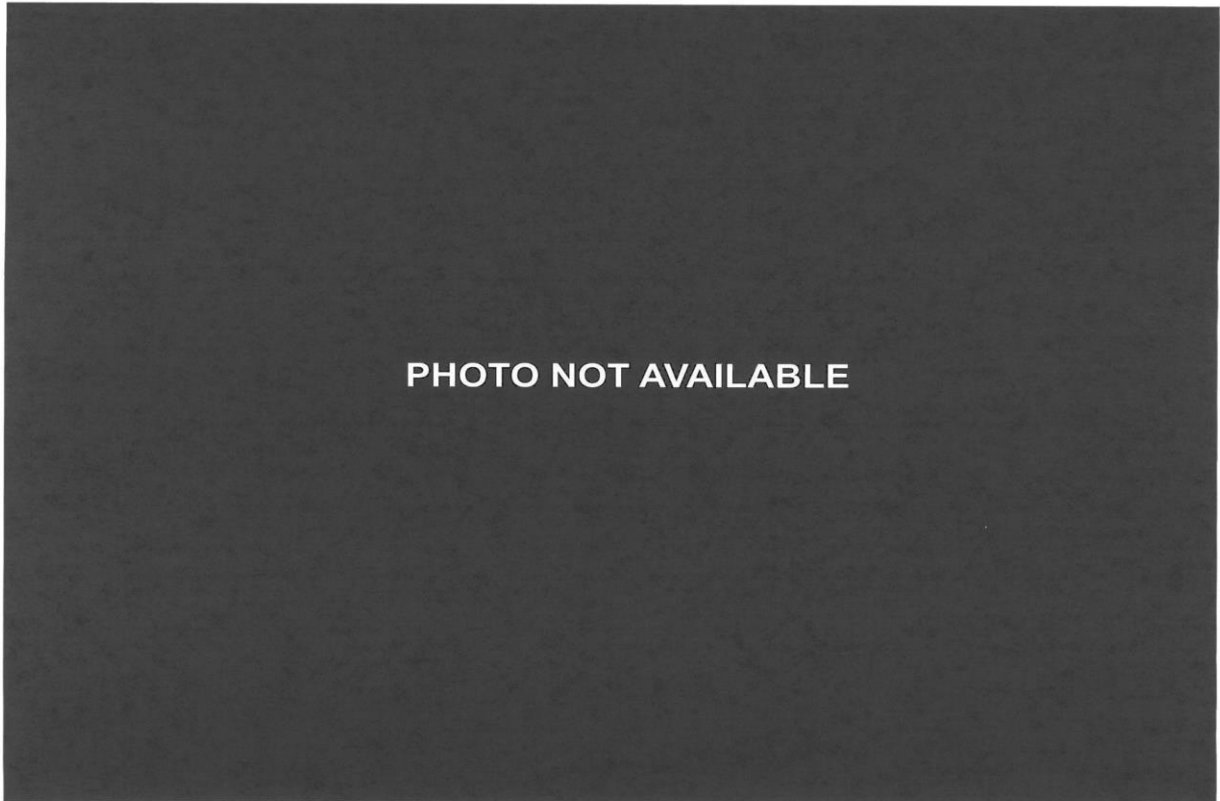
No. 112 Pre-Test Right Front Passenger's Seat For-Aft Markings



No. 113 Post-Test Right Front Passenger's Seat For-Aft Markings



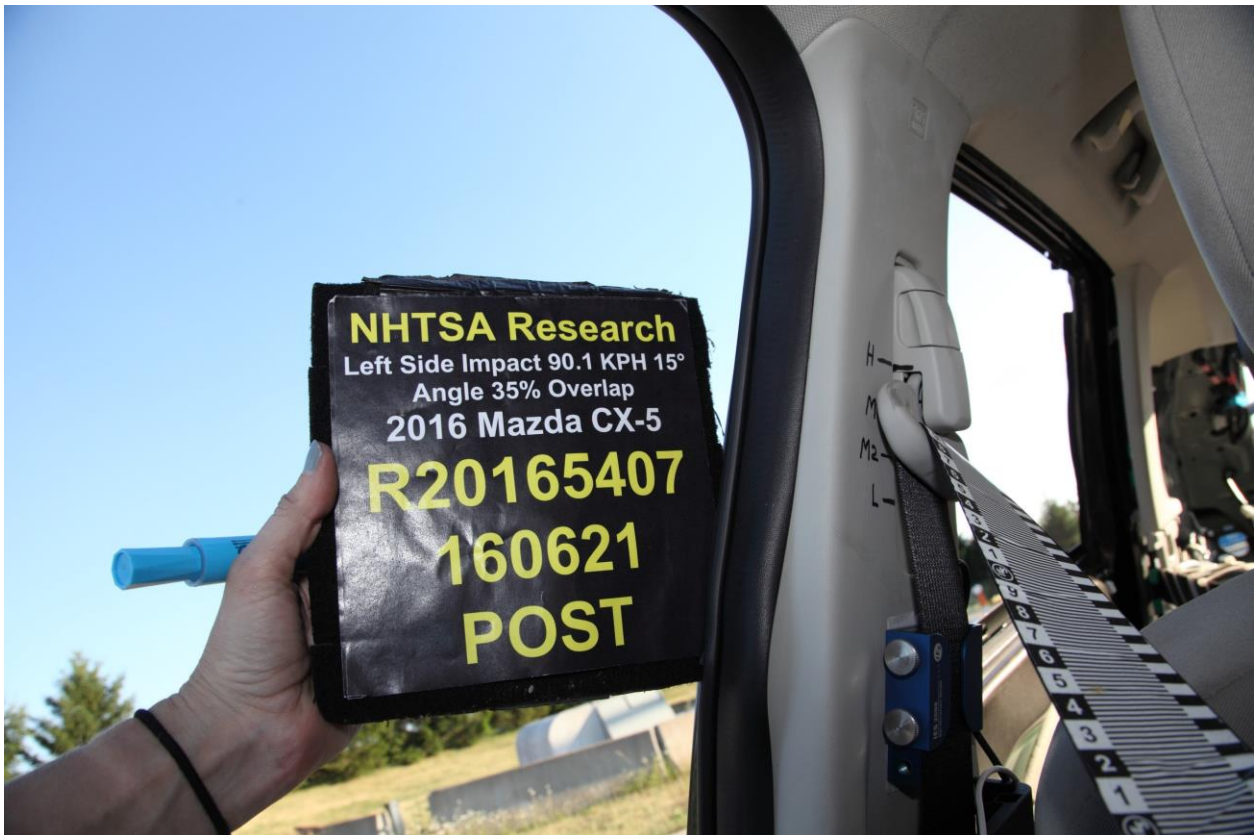
No. 114 Pre-Test Passenger's Seat Back Markings



No. 115 Post-Test Passenger's Seat Back Markings



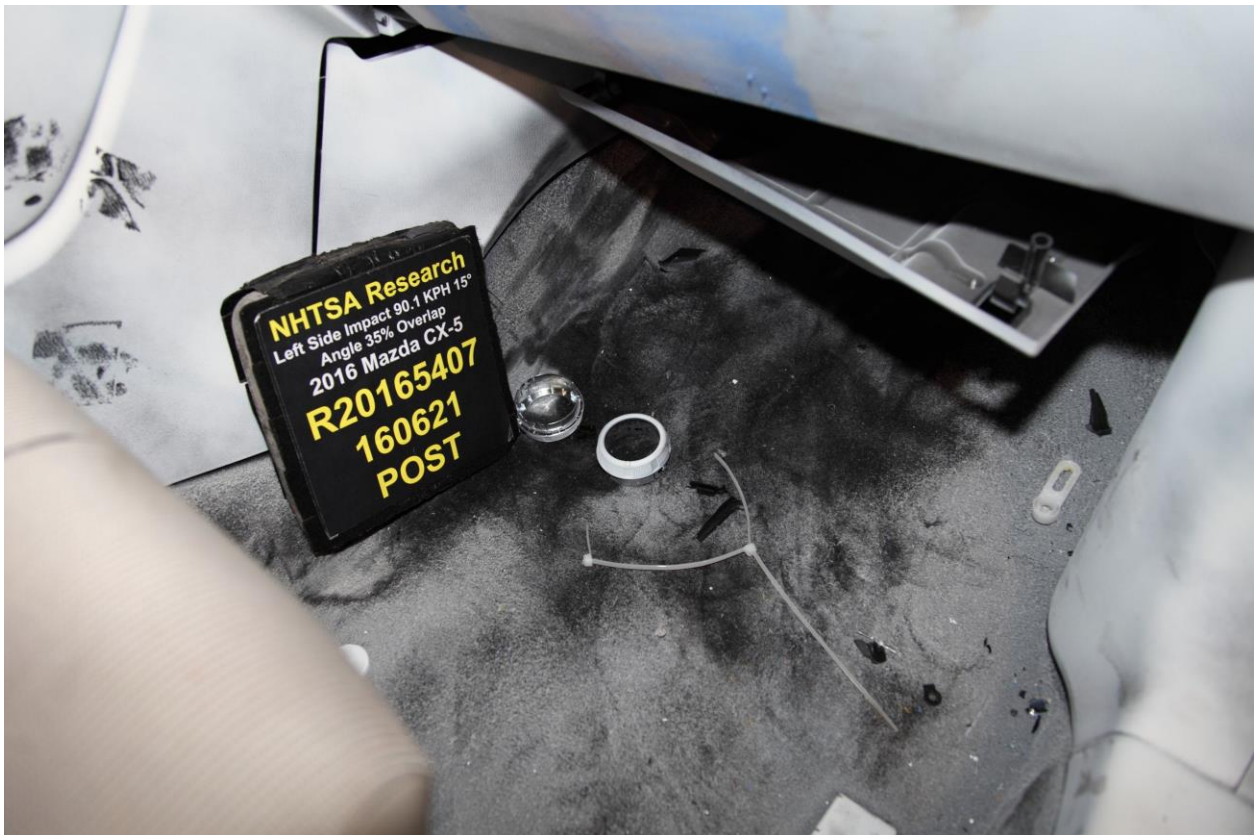
No. 116 Pre-Test Passenger's Adjustable D-Ring



No. 117 Post-Test Passenger's Adjustable D-Ring



No. 118 Pre-Test View of Passenger Floor Pan at Right Sill Level



No. 119 Post-Test View of Passenger Floor Pan at Right Sill Level



No. 120 Pre-Test View of Passenger Floor Pan at Mid Seat Level



No. 121 Post-Test View of Passenger Floor Pan at Mid Seat Level



No. 122 Pre-Test View of Passenger Floor Pan from Center Of Vehicle



No. 123 Post-Test View of Passenger Floor Pan from Center Of Vehicle



No. 124 Pre-Test Left Side View of Passenger Knee Bolster



No. 125 Post-Test Left Side View of Passenger Knee Bolster



No. 126 Pre-Test Overall View of Passenger Knee Bolsters



No. 127 Post-Test Overall View of Passenger Knee Bolsters



No. 128 Pre-Test Right Side View of Passenger Knee Bolster



No. 129 Post-Test Right Side View of Passenger Knee Bolster



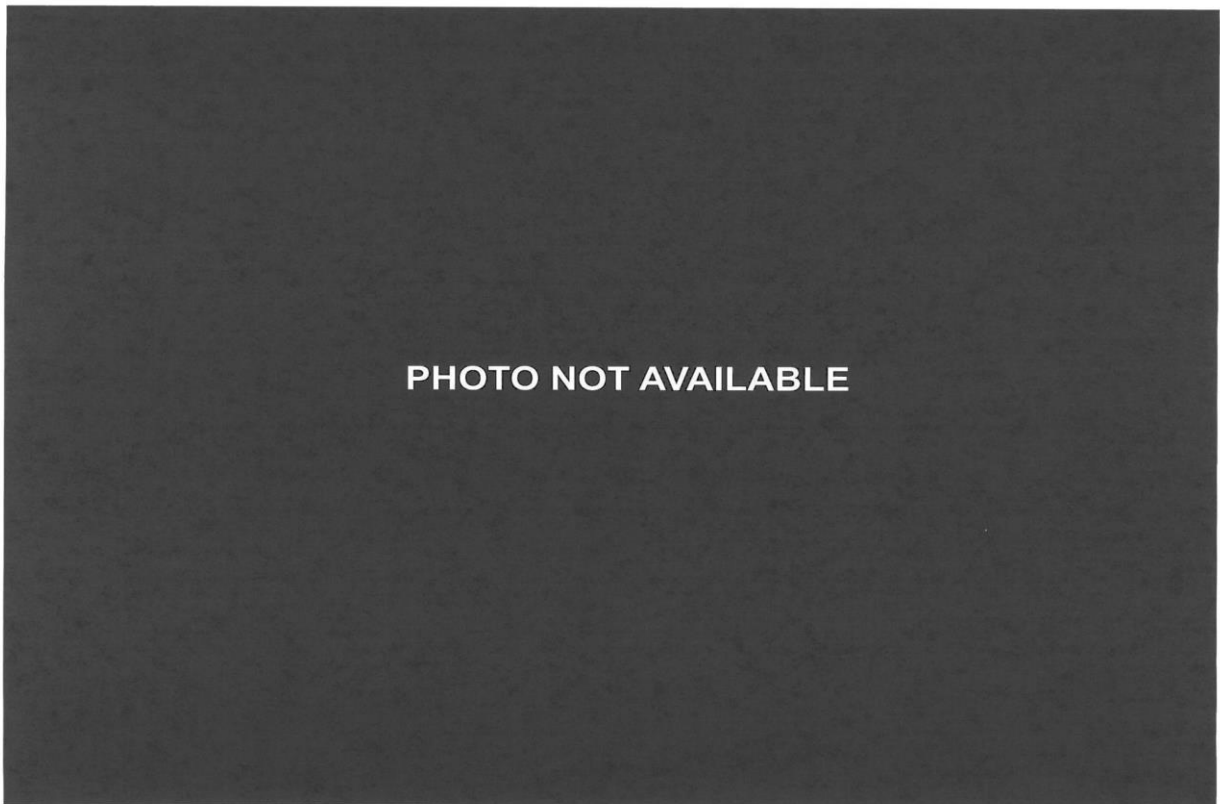
No. 130 Pre-Test Right Side Passenger and Interior View



No. 131 Post-Test Right Side Passenger and Interior View



No. 132 Pre-Test Overhead View of Passenger Thighs on Seat



No. 133 Post-Test Overhead View of Passenger Thighs on Seat



No. 134 Pre-Test Left Side View of Passenger and Interior (Perpendicular View)



No. 135 Post-Test Left Side View of Passenger and Interior (Perpendicular View)



No. 136 Pre-Test View of Passenger Abdomen



No. 137 Post-Test View of Passenger Abdomen



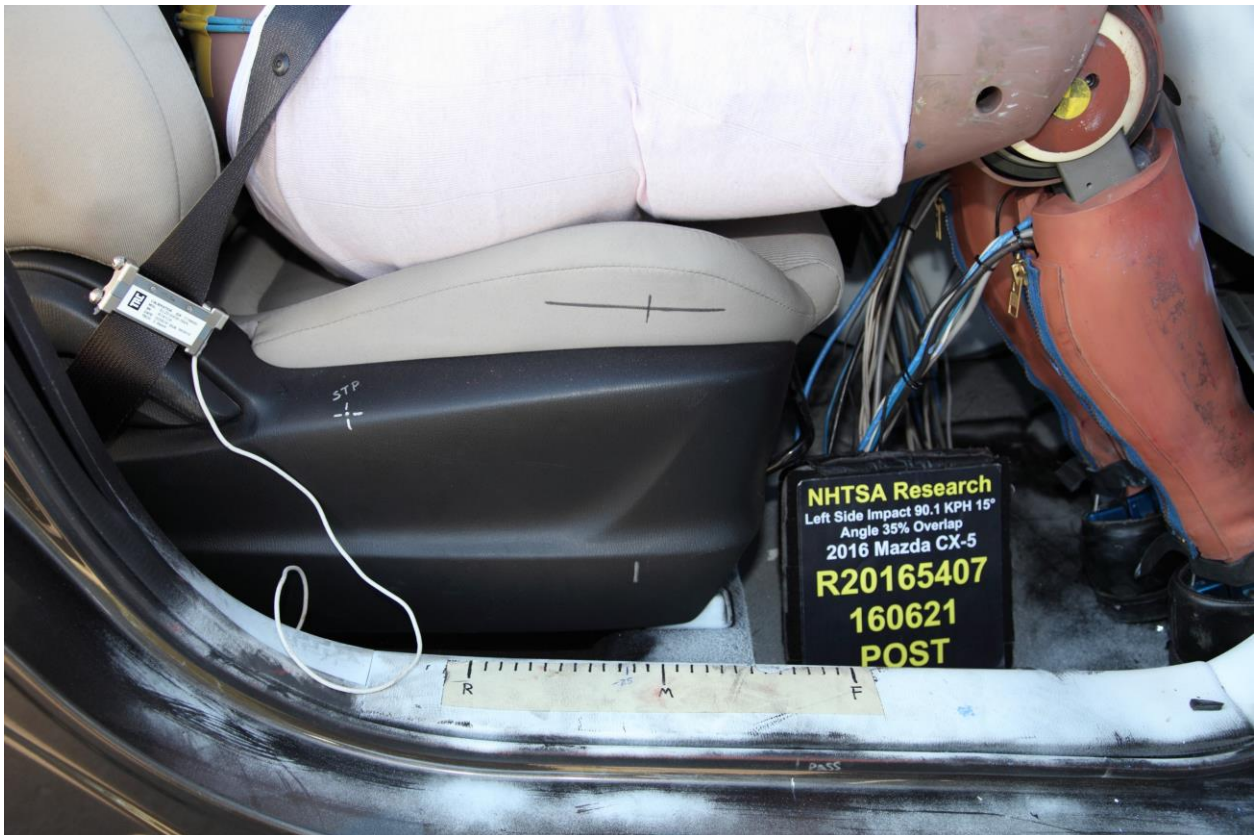
No. 138 Pre-Test View of Passenger's Right Knee and Bolster



No. 139 Post-Test View of Passenger's Right Knee and Bolster



No. 140 Pre-Test View of The Passenger's Right Leg



No. 141 Post-Test View of The Passenger's Right Leg



No. 142 Pre-Test View of The Passenger's Feet



No. 143 Post-Test View of The Passenger's Feet



No. 144 Pre-Test View of Passenger's Left Knee and Bolster



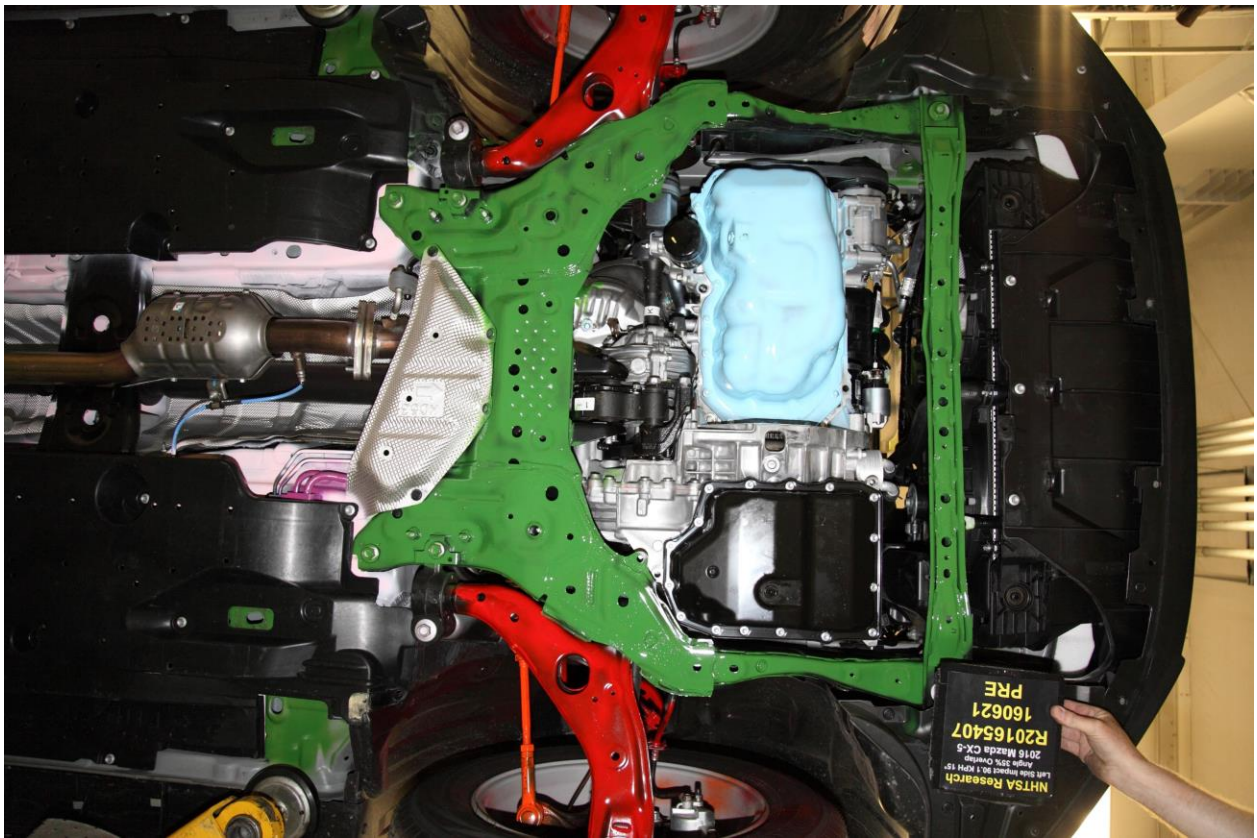
No. 145 Post-Test View of Passenger's Left Knee and Bolster



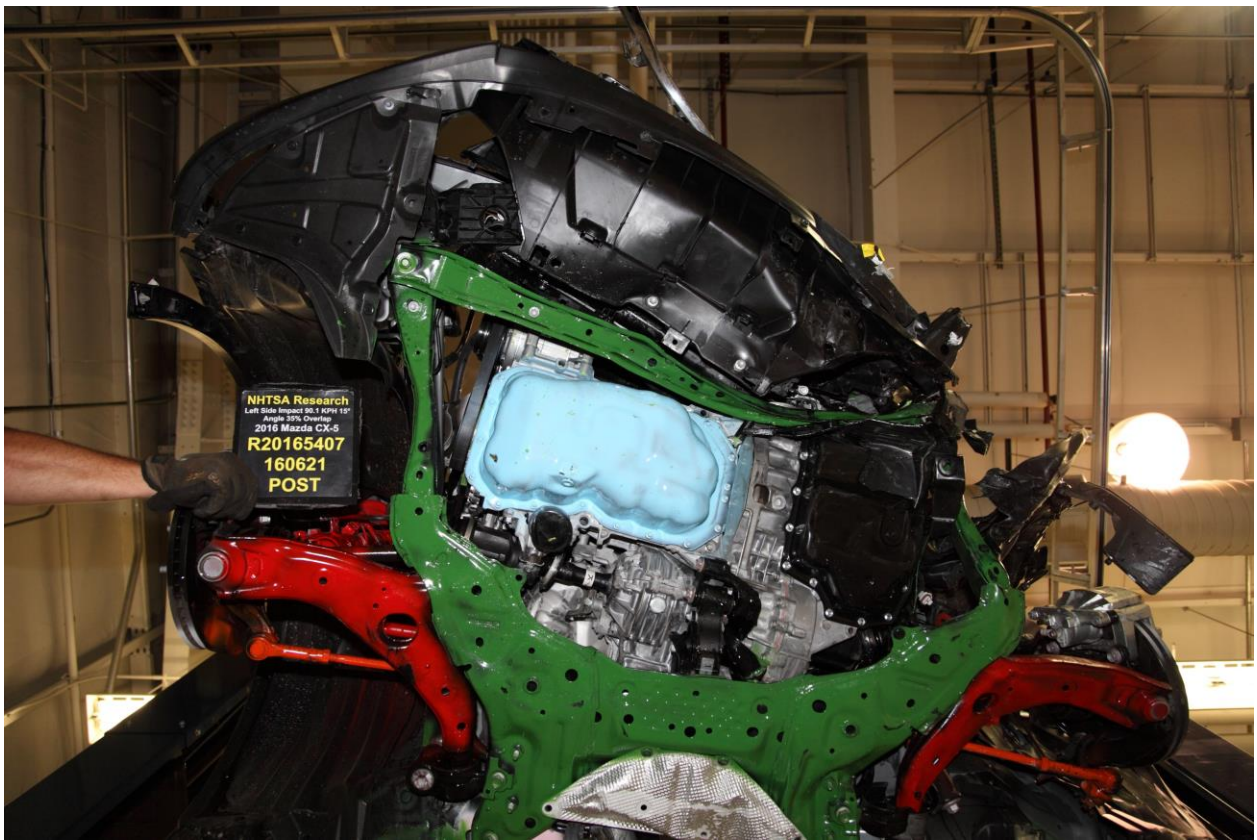
No. 146 Post-Test View of Passenger Head Contact with Front Airbag



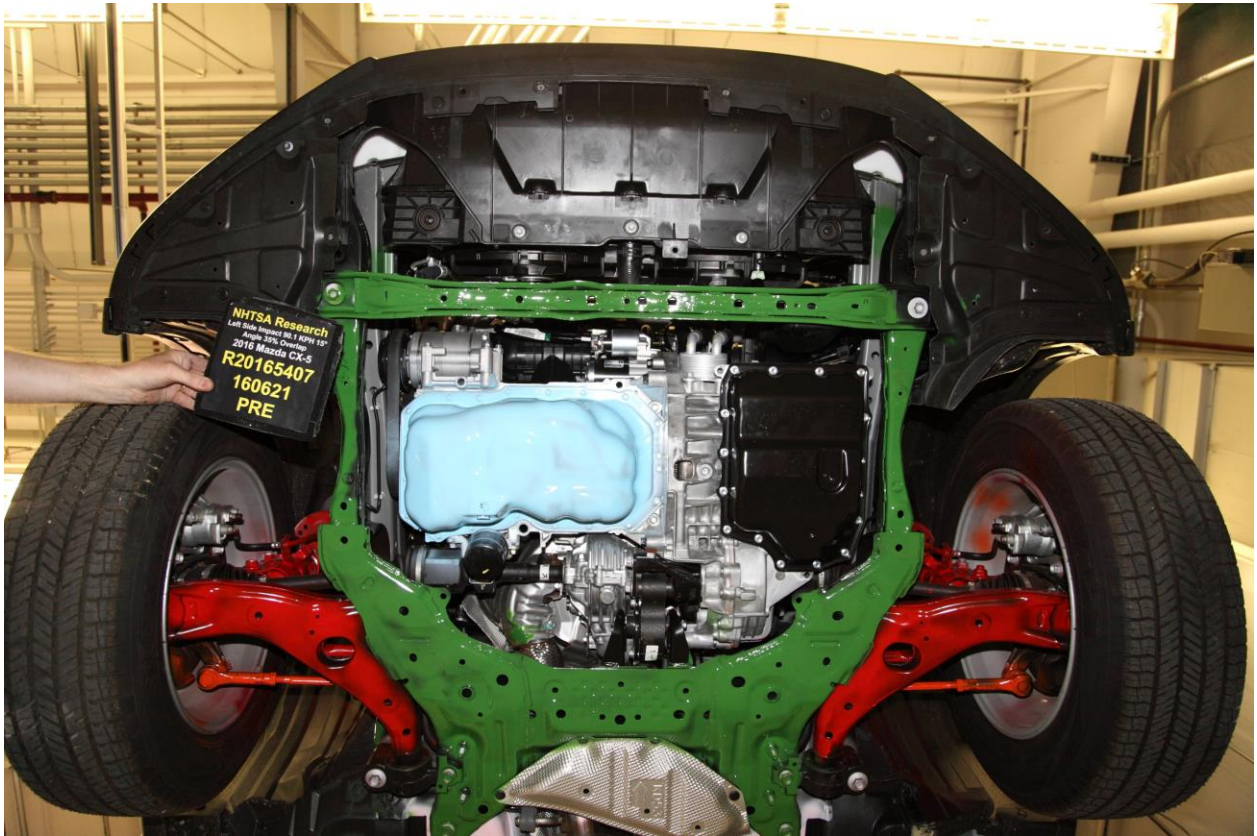
No. 147 Post-Test View of Passenger Knee Contact with Glove Box



No. 148 Pre-Test Driver's Bumper to Rail Attachments and Crush Initiators with Parts Removed



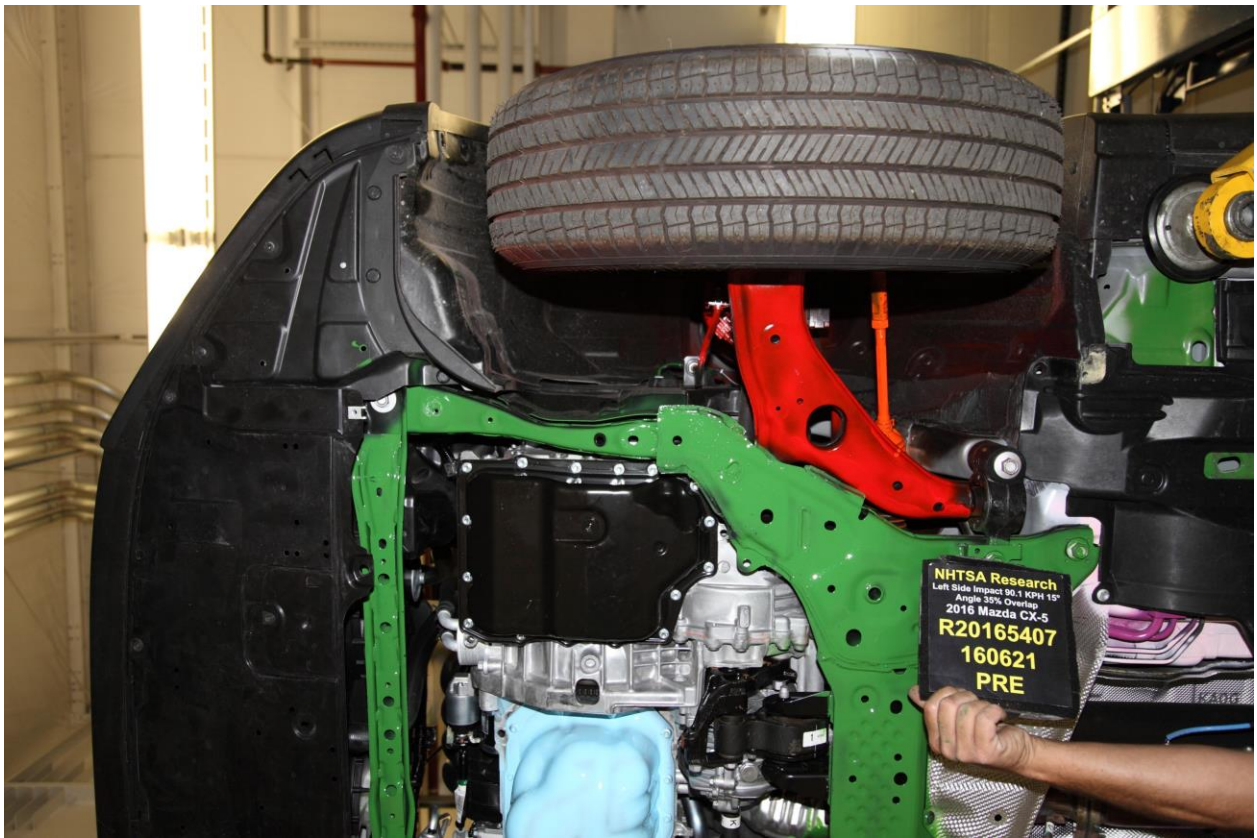
No. 149 Post-Test Driver's Bumper to Rail Attachments and Crush Initiators with Parts Removed



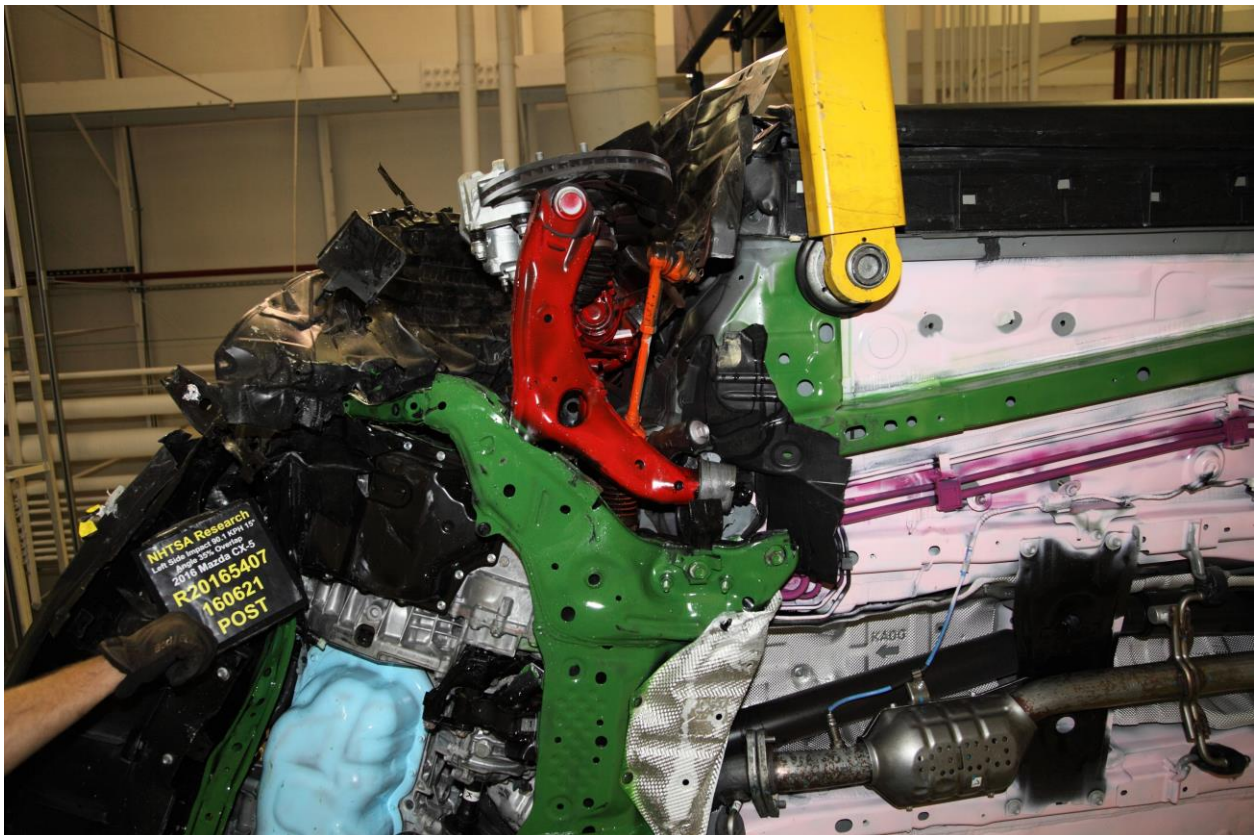
No. 150 Pre-Test Passenger's Bumper to Rail Attachments and Crush Initiators with



**Parts Removed
No. 151 Post-Test Passenger's Bumper to Rail Attachments and Crush Initiators with
Parts Removed**



No. 152 Pre-Test Driver's Rocker with Parts Removed



No. 153 Post-Test Driver's Rocker with Parts Removed

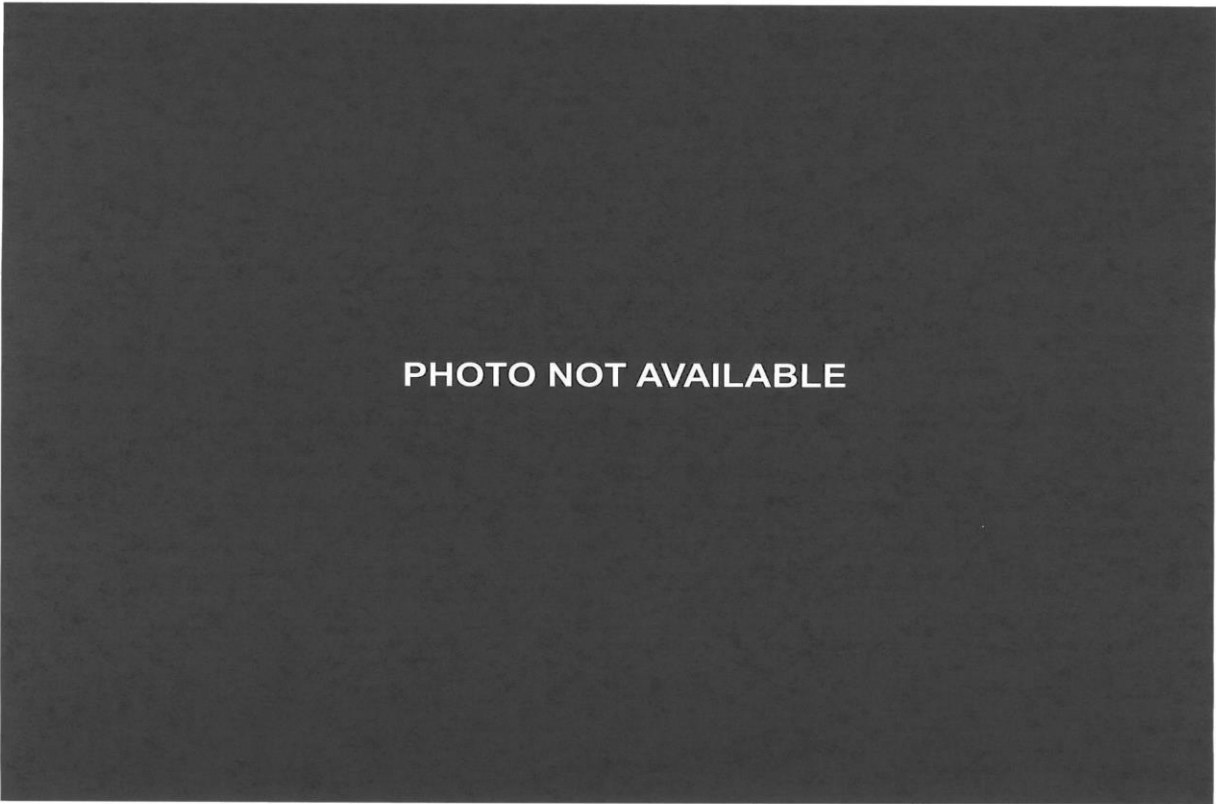


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No. 154 Pre-Test Passenger's Rocker with Parts Removed

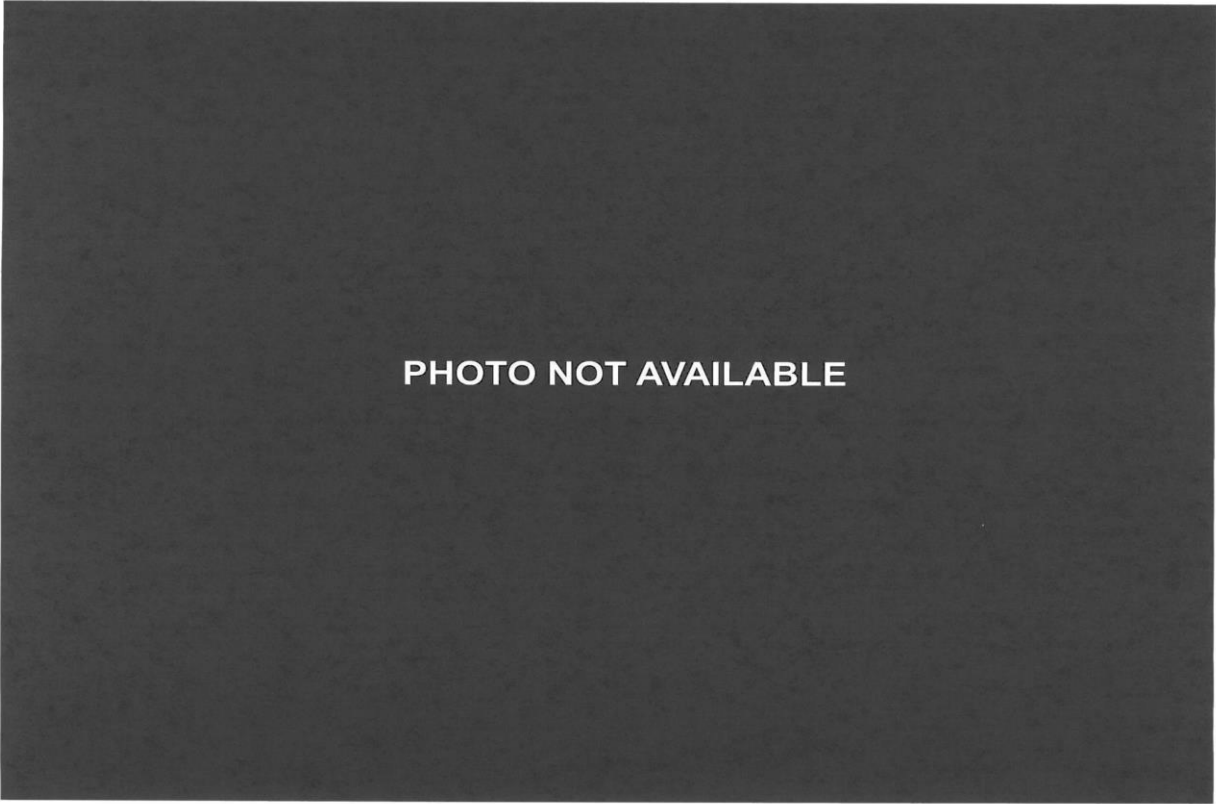


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No. 155 Post-Test Passenger's Rocker with Parts Removed



No. 156 Pre-Test Oblique Left Side View of Rear of Wheel Well with Parts Removed



No. 157 Post-Test Oblique Left Side View of Rear of Wheel Well with Parts Removed



No. 158 Pre-Test Perpendicular Left Side View of Wheel Well with Parts Removed



No. 159 Post-Test Perpendicular Left Side View of Wheel Well with Parts Removed



No. 160 Pre-Test Oblique Left Side View of Right Side Front of Wheel Well with Parts Removed



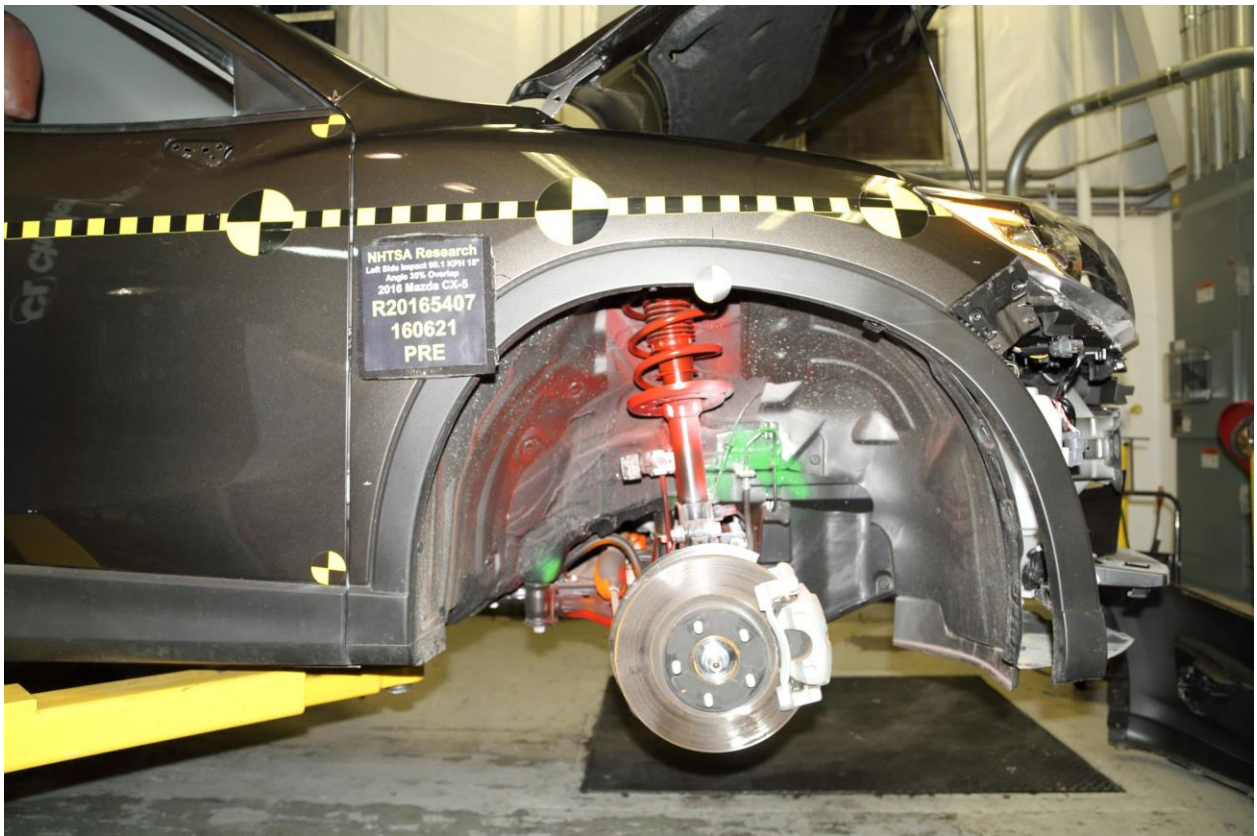
No. 161 Post-Test Oblique Left Side View of Right Side Front of Wheel Well with Parts Removed



No. 162 Pre-Test Oblique Right Side View of Rear of Wheel Well with Parts Removed



No. 163 Post-Test Oblique Right Side View of Rear of Wheel Well with Parts Removed



No. 164 Pre-Test Perpendicular Right Side View of Wheel Well with Parts Removed



No. 165 Post-Test Perpendicular Right Side View of Wheel Well with Parts Removed

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No. 166 Pre-Test Oblique Right Side View of Front of Wheel Well with Parts Removed



No. 167 Post-Test Oblique Right Side View of Front of Wheel Well with Parts Removed



No. 168 Pre-Test Left Side Energy Absorber with Parts Removed



No. 169 Post-Test Left Side Energy Absorber with Parts Removed



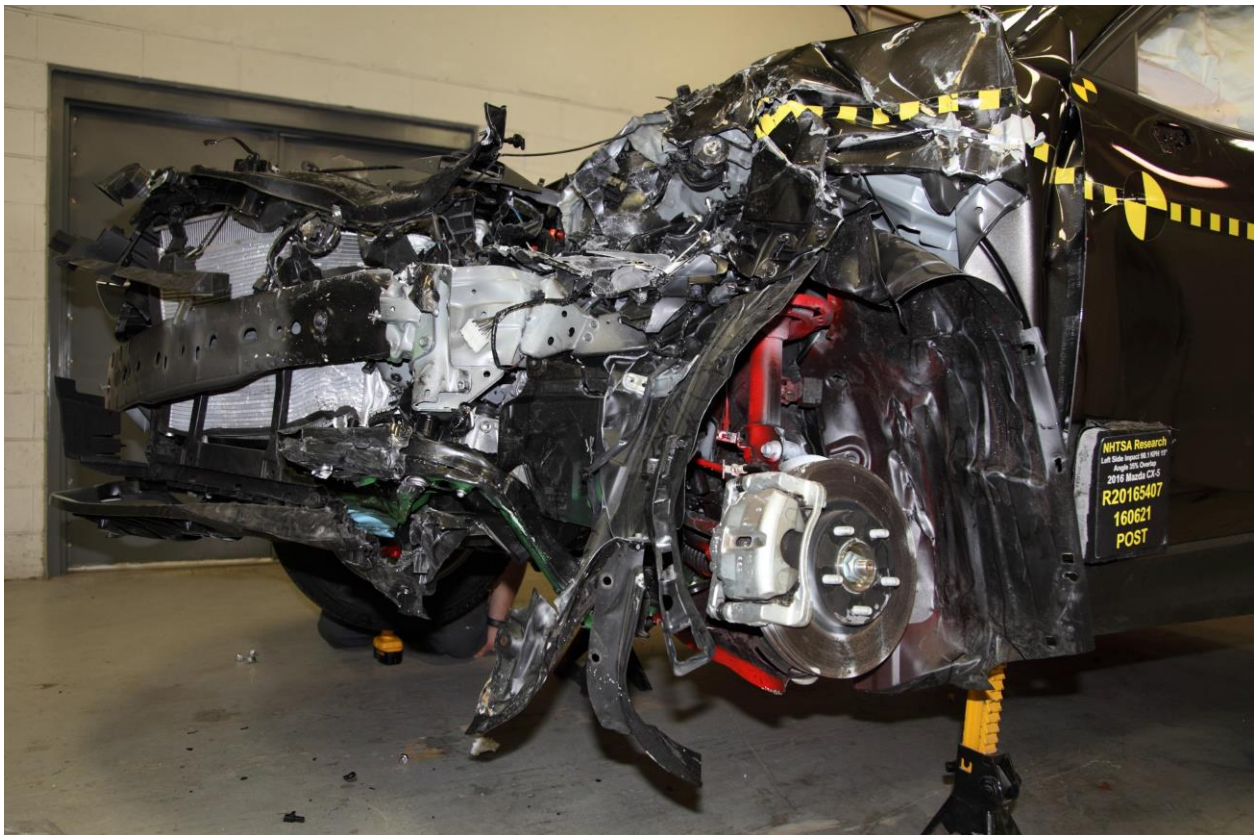
No. 170 Pre-Test Right Side Energy Absorber with Parts Removed



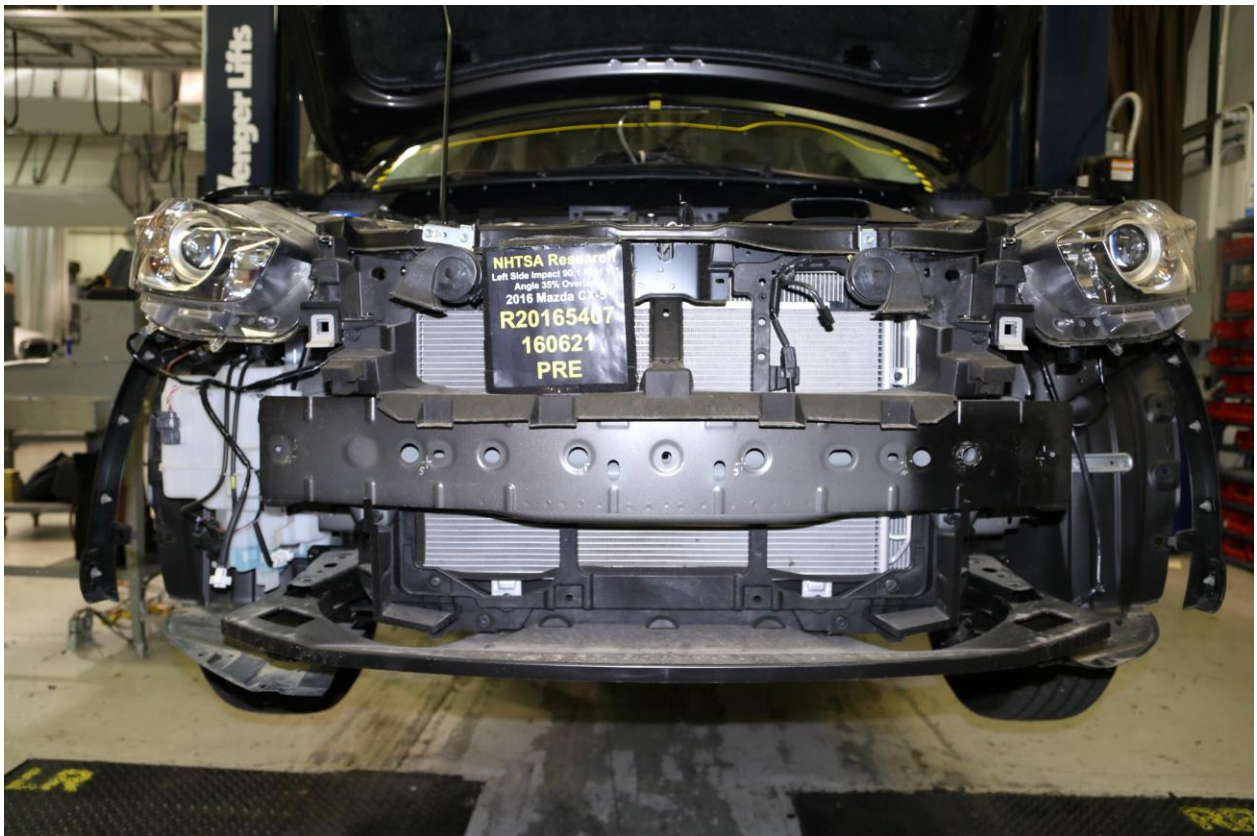
No. 171 Post-Test Right Side Energy Absorber with Parts Removed



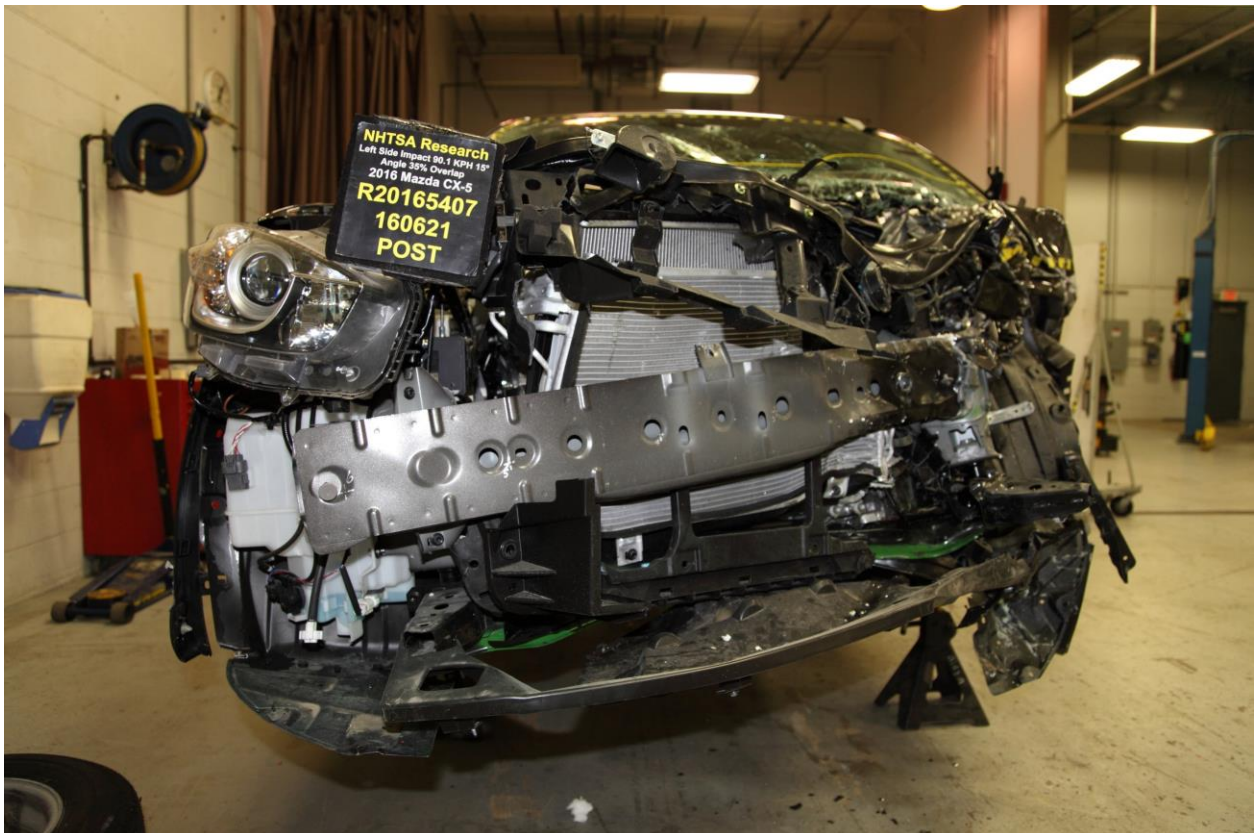
No. 172 Pre-Test Oblique View of Left Front of the Vehicle with Parts Removed



No. 173 Post-Test Oblique View of Left Front of the Vehicle with Parts Removed



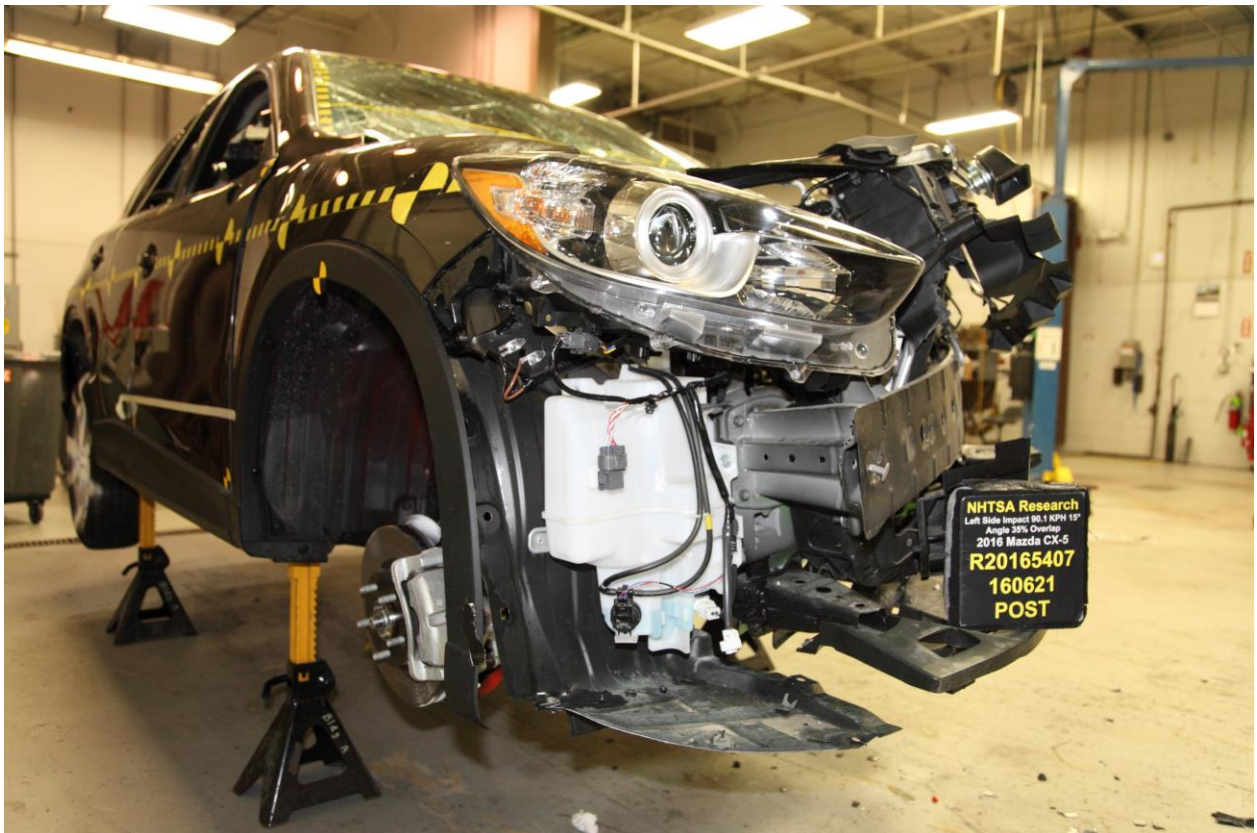
No. 174 Pre-Test Front of the Vehicle with Parts Removed



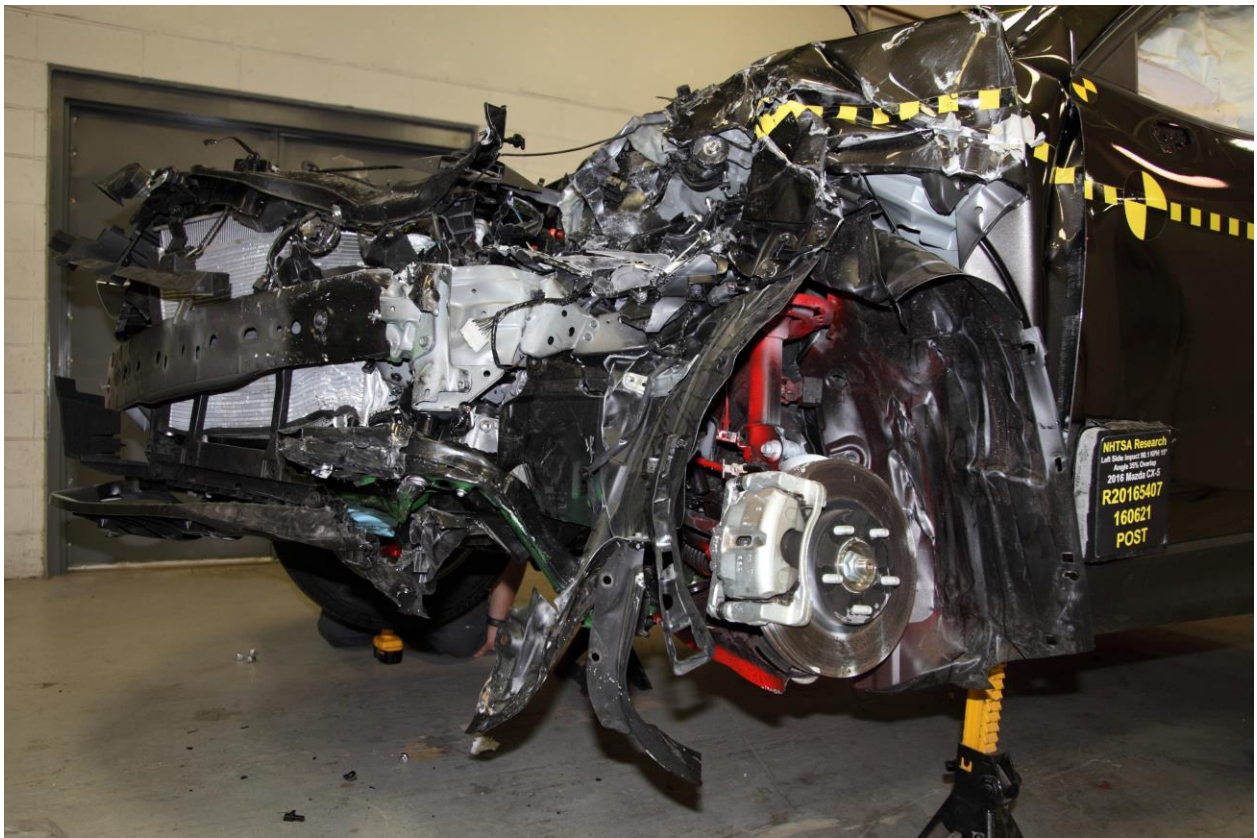
No. 175 Post-Test Front of the Vehicle with Parts Removed



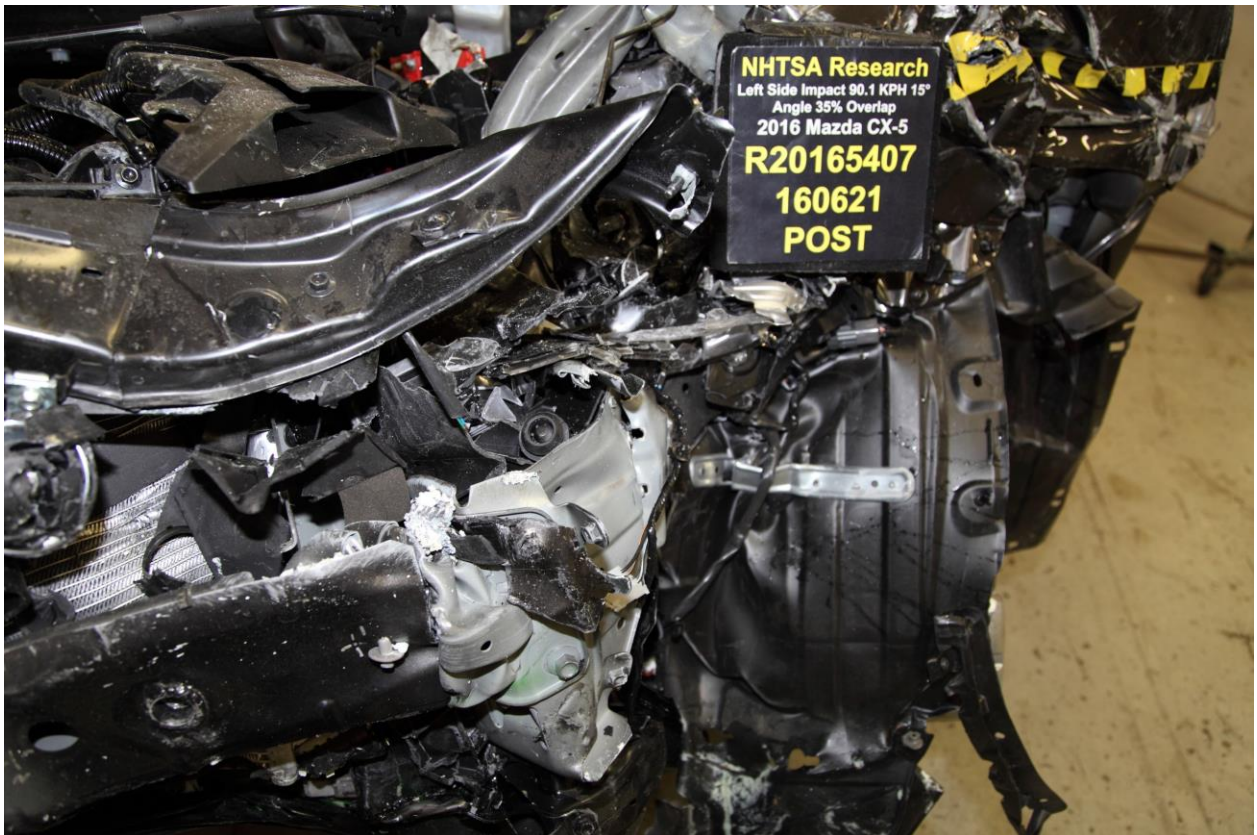
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No. 177 Post-Test Oblique View of Right Front of the Vehicle with Parts Removed



No. 178 Post-Test Oblique View of Left Front Fender with Parts Removed



No. 179 Post-Test Oblique View of Left Front Fender from Above With Parts Removed



No. 180 Post-Test Oblique View of Left Front of the Vehicle with Parts Removed



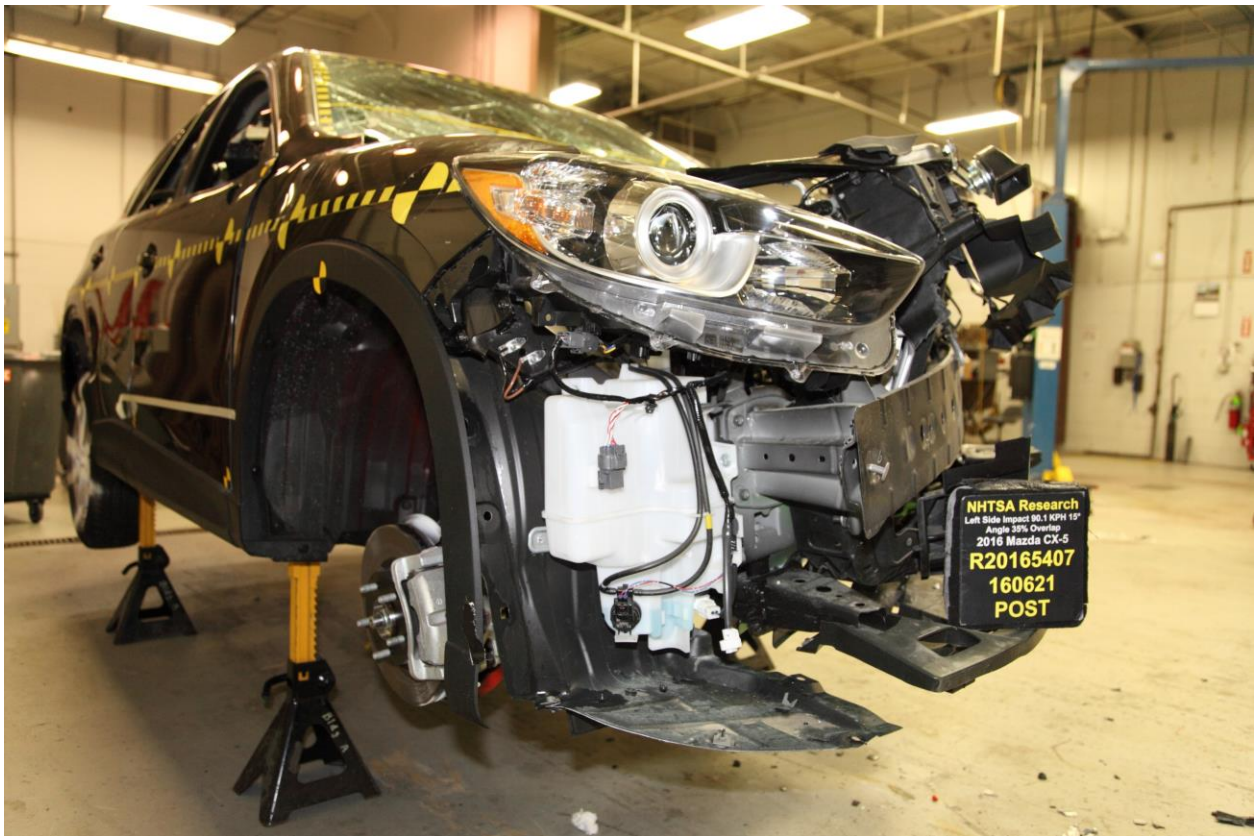
No. 181 Post-Test Oblique View of Left Front of the Vehicle from Angle with Parts Removed



No. 182 Post-Test Left Shotgun View 1 with Parts Removed



No. 183 Post-Test Left Shotgun View 2 with Parts Removed



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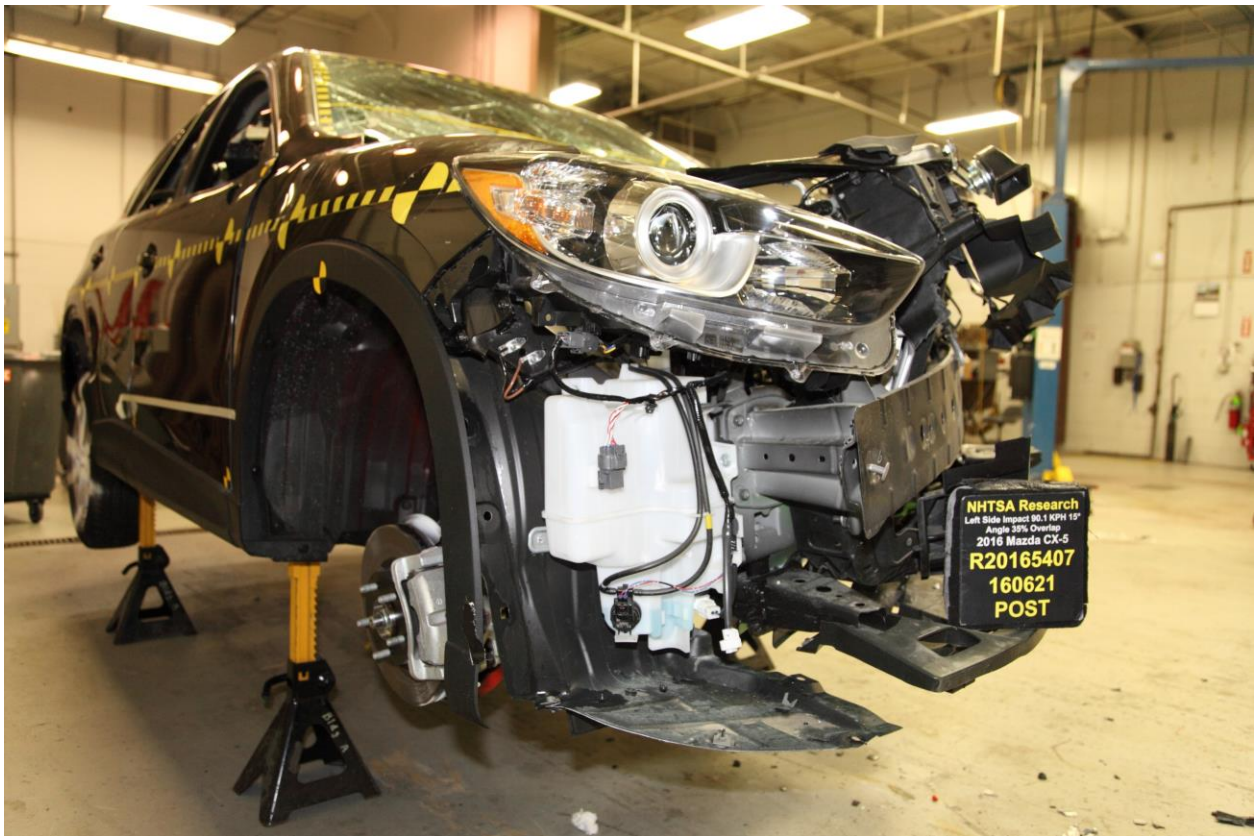
No. 185 Post-Test Front View of Vehicle from an Angle



No. 186 Post-Test Right Shotgun View 1 with Parts Removed



No. 187 Post-Test Right Shotgun View 2 with Parts Removed



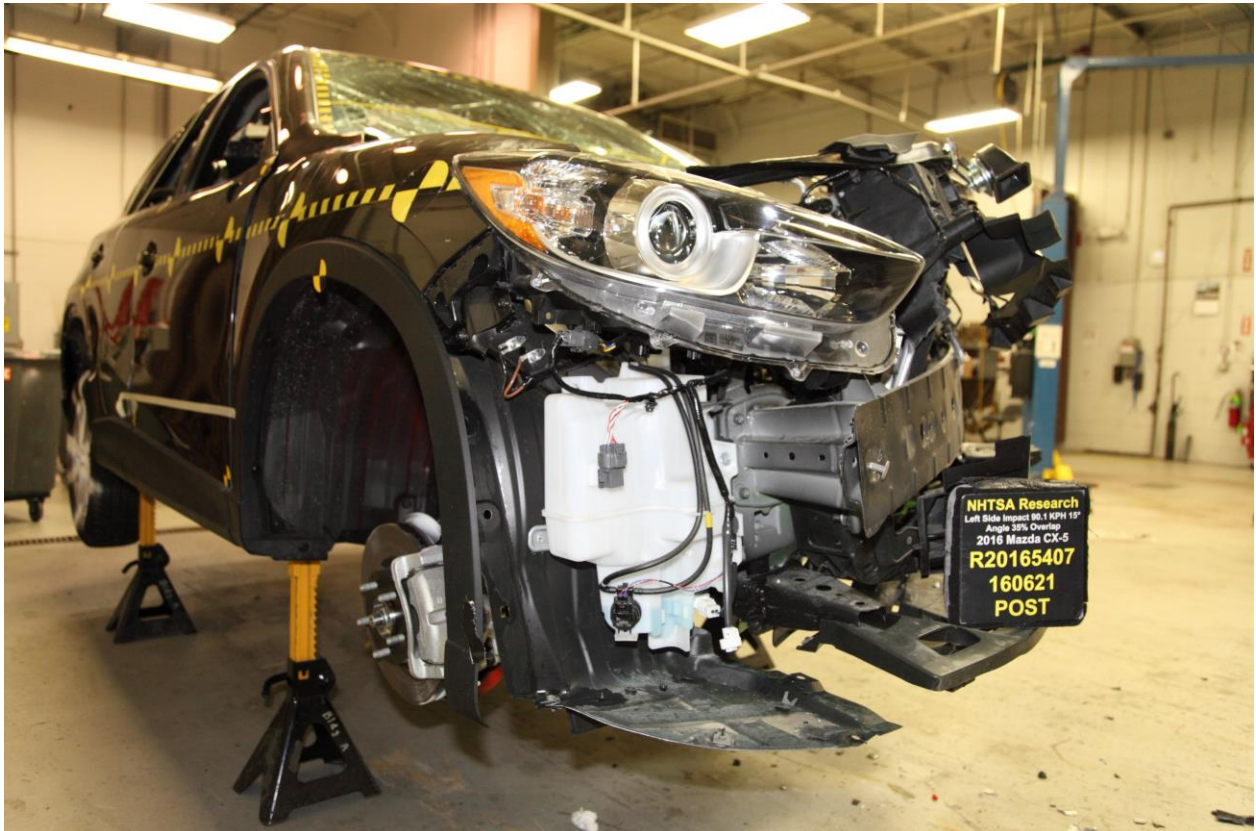
No. 188 Post-Test Oblique View of Right Front Fender with Parts Removed



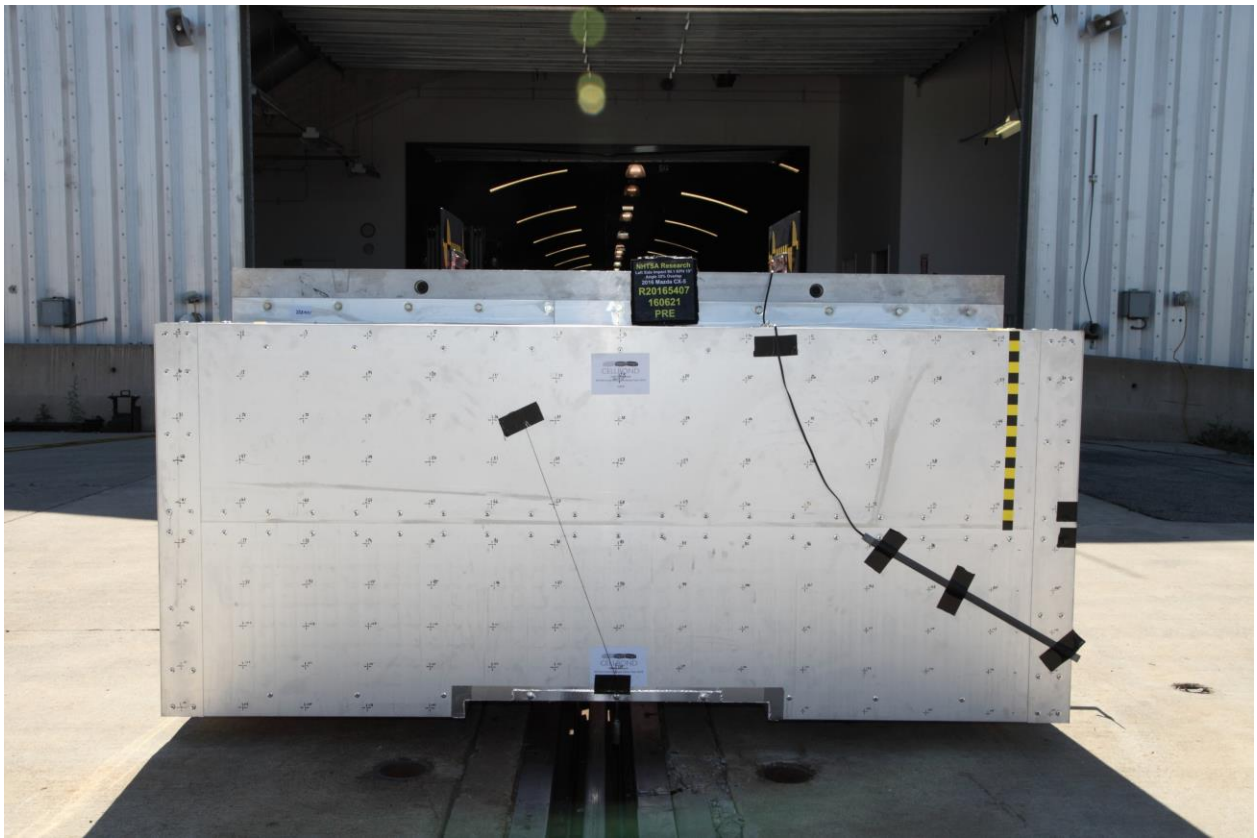
No. 189 Post-Test Oblique View of Right Front Fender from Above with Parts Removed

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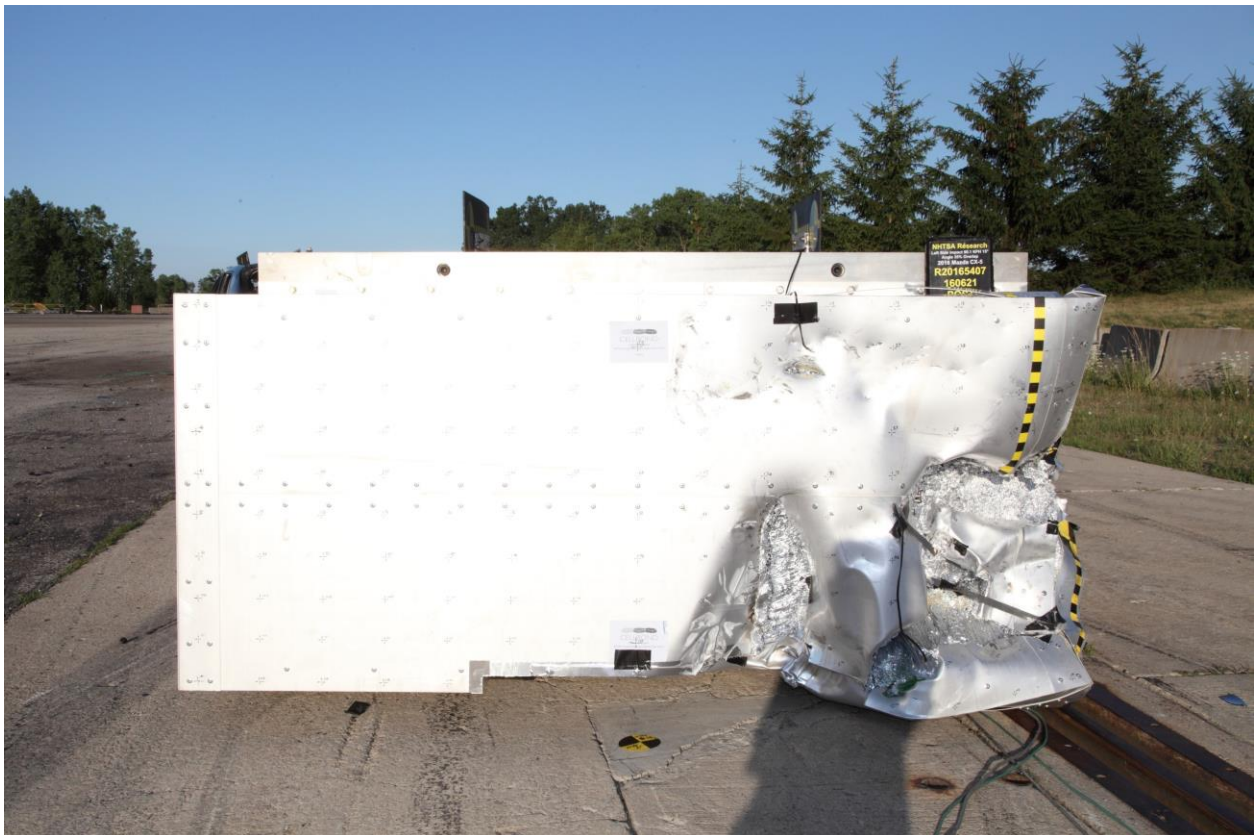
No. 190 Post-Test Oblique View of Right Front of the Vehicle with Parts Removed



No. 191 Post-Test Oblique View of Right Front of the Vehicle from Angle with Parts Removed



No. 192 Pre-Test Front View of OMDB



No. 193 Post-Test Front View of OMDB



No. 194 Pre-Test Left Oblique View of OMDB



No. 195 Post-Test Left Oblique View of OMDB

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No. 196 Pre-Test Oblique Left Front View of OMDB

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No. 197 Post-Test Oblique Left Front View of OMDB



No. 198 Pre-Test Left Side Honeycomb



No. 199 Post-Test Left Side Honeycomb



No. 200 Pre-Test Right Oblique View of OMDB



No. 201 Post-Test Right Oblique View of OMDB

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No. 202 Pre-Test Oblique Right Front View of OMDB

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No. 203 Post-Test Oblique Right Front View of OMDB



No. 204 Pre-Test Right Side Honeycomb



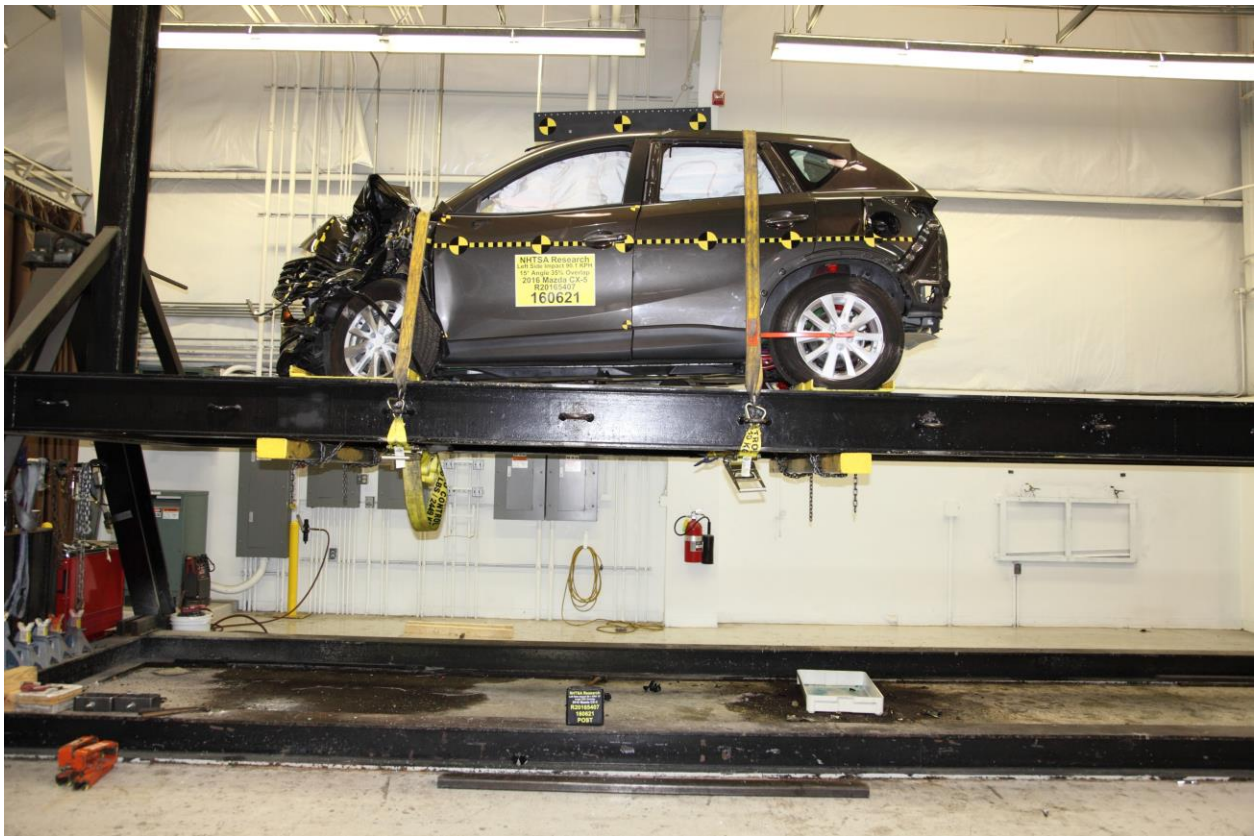
No. 205 Post-Test Right Side Honeycomb



No. 206 Pre-Test Overhead View of the Honeycomb



No. 207 Post-Test Overhead View of the Honeycomb



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No. 209 Static Rollover 90 Degrees



No. 210 Static Rollover 180 Degrees



No. 211 Static Rollover 270 Degrees



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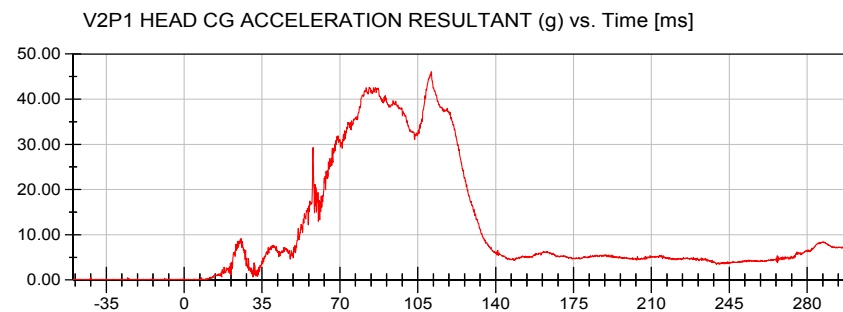
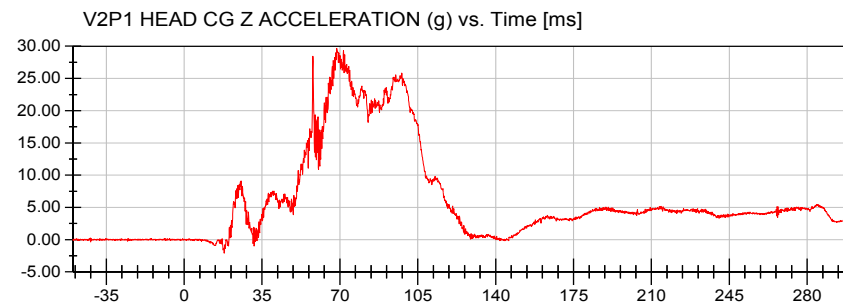
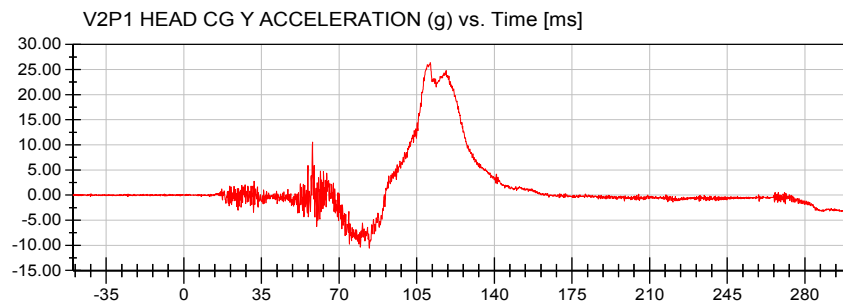
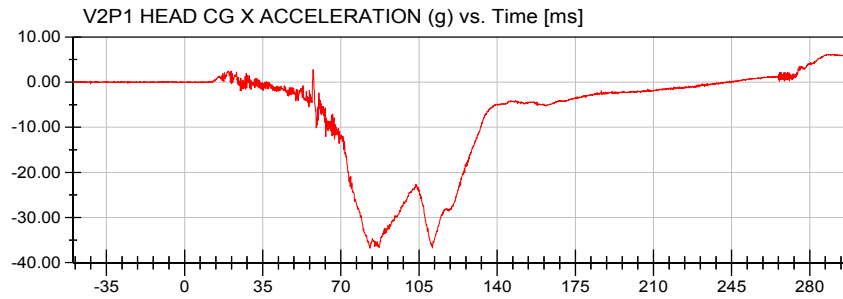
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327	V2P2 Chest Right Lower DY	B-92
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335	V2P2 Abdomen Right Lower DY	B-94
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NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

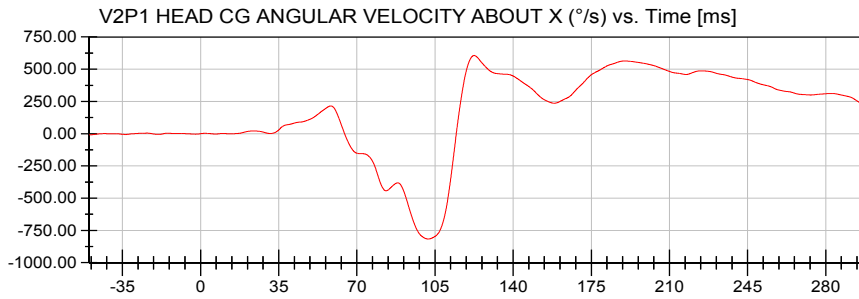


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Test Lab: CTF

Test Number: 160621 (R20165407)

Test Date: 06/21/2016



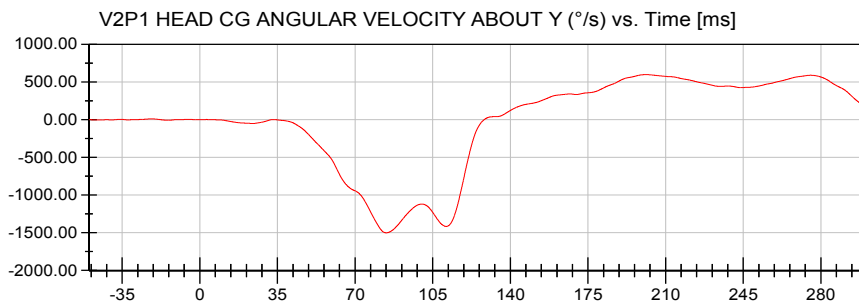
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606.09 °/s at 122.56 ms

<Min>

-816.75 °/s at 101.92 ms

CFC_60



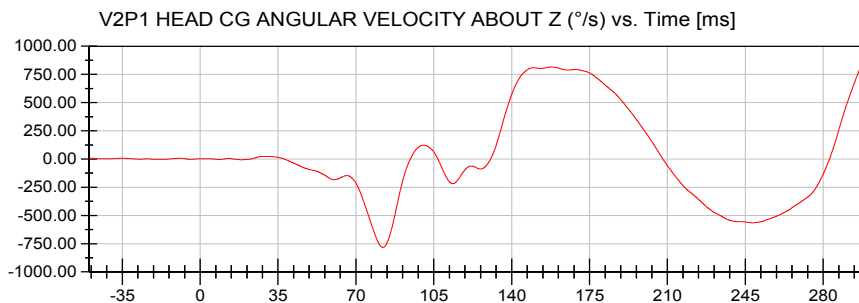
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-1,500.58 °/s at 84.08 ms

CFC_60



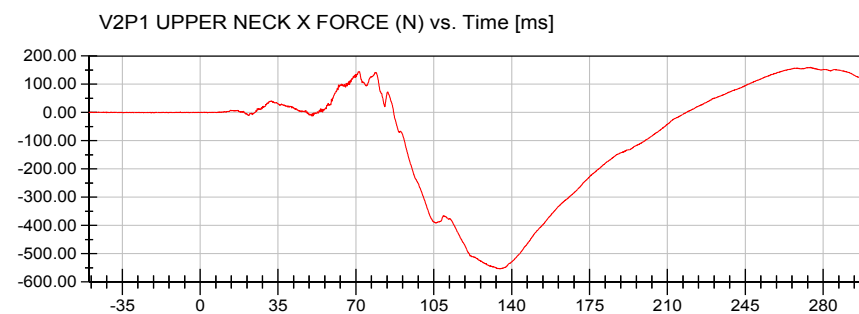
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940.40 °/s at 300.00 ms

<Min>

-783.25 °/s at 82.16 ms

CFC_60



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<Min>

-553.69 N at 134.56 ms

CFC_1000



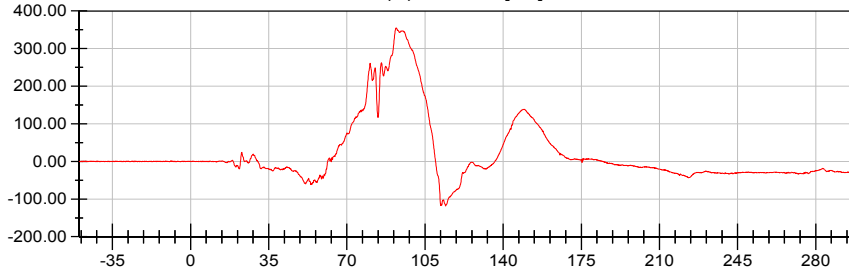
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 UPPER NECK Y FORCE (N) vs. Time [ms]



<Max>

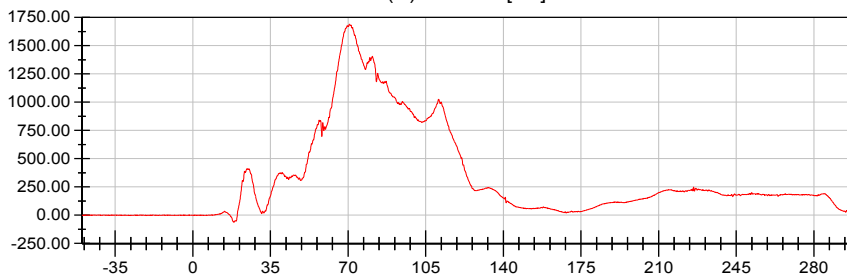
354.84 N at 92.08 ms

<Min>

-118.24 N at 114.24 ms

CFC_1000

V2P1 UPPER NECK Z FORCE (N) vs. Time [ms]



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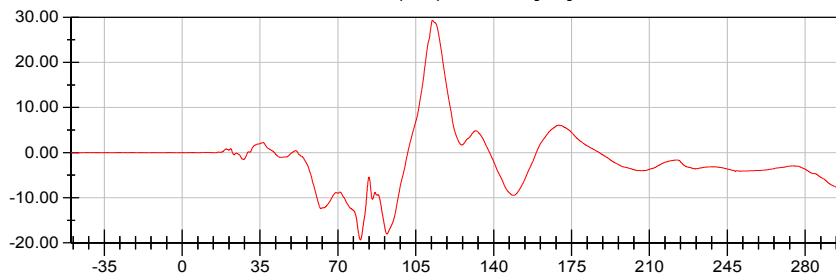
1,690.25 N at 70.56 ms

<Min>

-62.97 N at 18.56 ms

CFC_1000

V2P1 UPPER NECK X MOMENT (Nm) vs. Time [ms]



<Max>

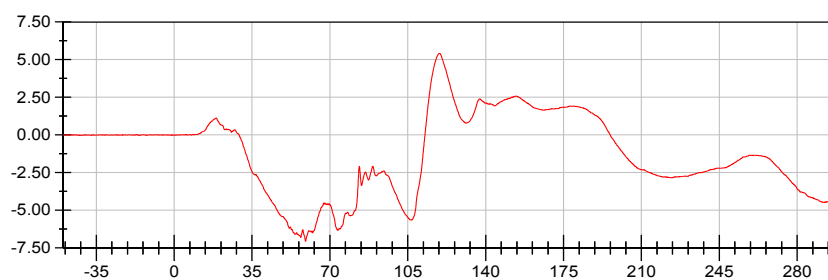
29.29 Nm at 112.48 ms

<Min>

-19.35 Nm at 80.08 ms

CFC_600

V2P1 UPPER NECK Y MOMENT (Nm) vs. Time [ms]



<Max>

5.41 Nm at 119.20 ms

<Min>

-7.06 Nm at 59.04 ms

CFC_600



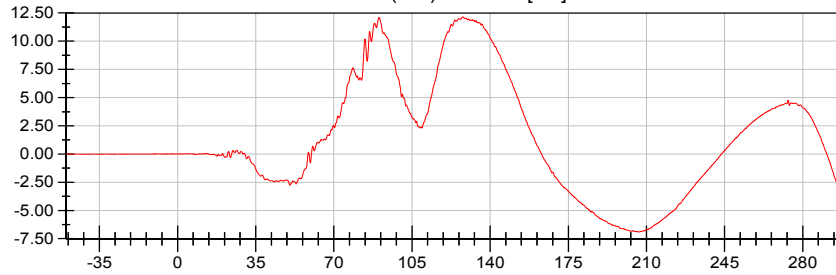
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 UPPER NECK Z MOMENT (Nm) vs. Time [ms]



<Max>

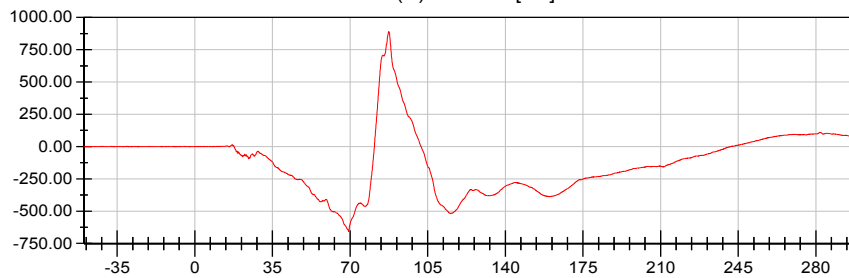
12.15 Nm at 127.76 ms

<Min>

-6.91 Nm at 206.32 ms

CFC_600

V2P1 LOWER NECK X FORCE (N) vs. Time [ms]



<Max>

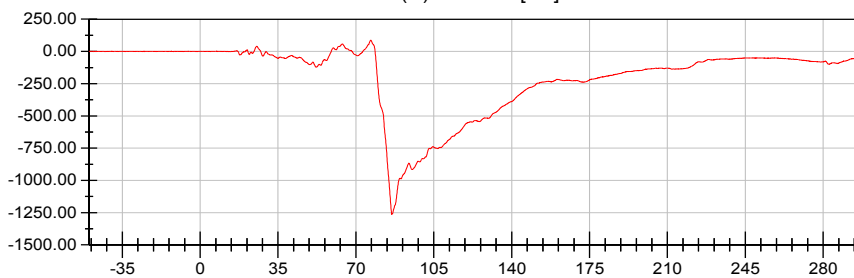
890.32 N at 87.44 ms

<Min>

-657.50 N at 69.36 ms

CFC_1000

V2P1 LOWER NECK Y FORCE (N) vs. Time [ms]



<Max>

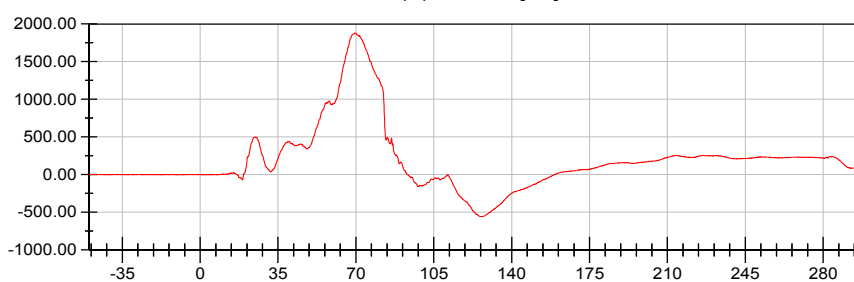
87.33 N at 76.72 ms

<Min>

-1,264.85 N at 86.08 ms

CFC_1000

V2P1 LOWER NECK Z FORCE (N) vs. Time [ms]



<Max>

1,880.98 N at 69.44 ms

<Min>

-557.27 N at 125.92 ms

CFC_1000

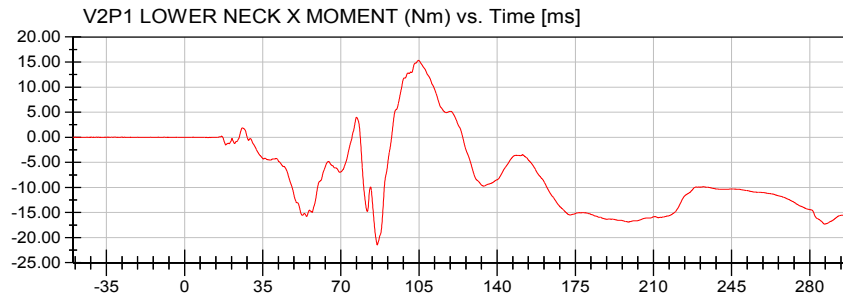


NHTSA

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Test Lab: CTF

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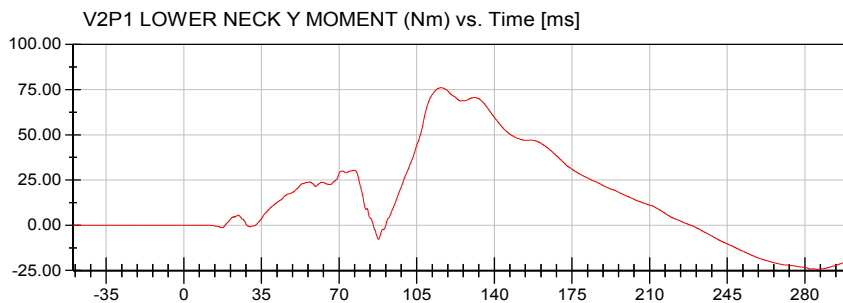
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15.34 Nm at 104.72 ms

<Min>

-21.48 Nm at 86.32 ms

CFC_600



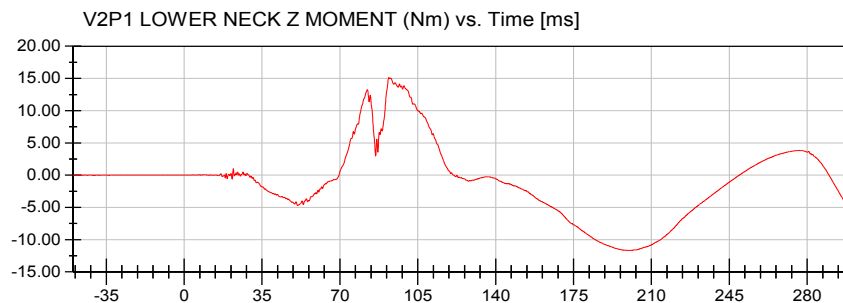
<Max>

76.09 Nm at 115.84 ms

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-24.37 Nm at 285.36 ms

CFC_600



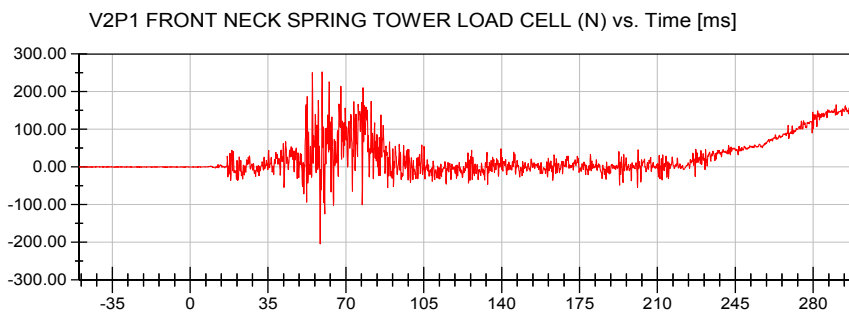
<Max>

15.14 Nm at 91.92 ms

<Min>

-11.68 Nm at 200.32 ms

CFC_600



<Max>

252.41 N at 59.28 ms

<Min>

-204.22 N at 58.40 ms

CFC_1000



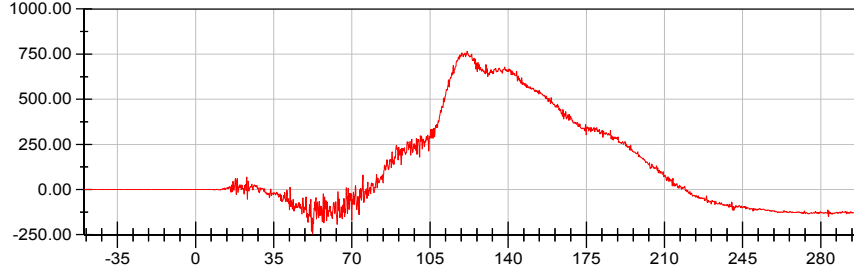
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 REAR NECK SPRING TOWER LOAD CELL (N) vs. Time [ms]



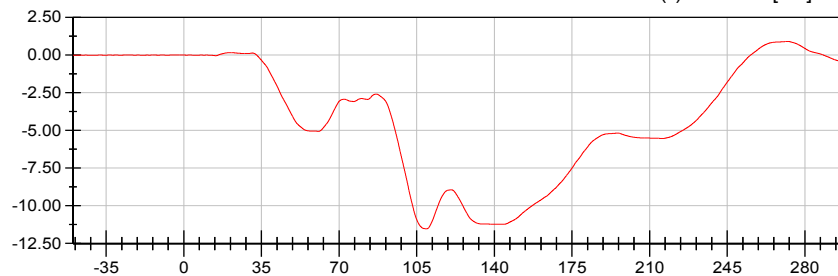
<Max>

765.59 N at 121.60 ms

<Min>

-246.81 N at 52.40 ms

V2P1 OCCIPITAL CONDYLE ROTATION POTENTIOMETER (°) vs. Time [ms]



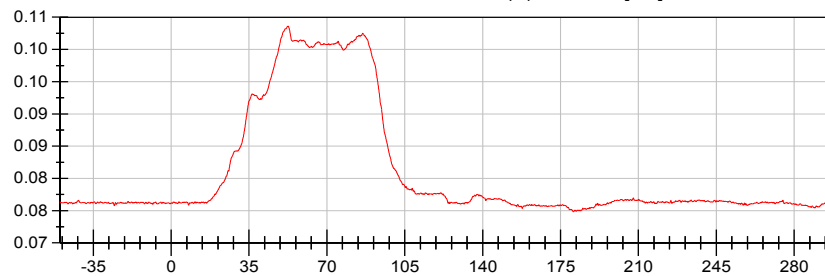
<Max>

0.91 ° at 272.24 ms

<Min>

-11.53 ° at 109.36 ms

V2P1 UPPER LEFT DGIR X DISPLACEMENT (V) vs. Time [ms]



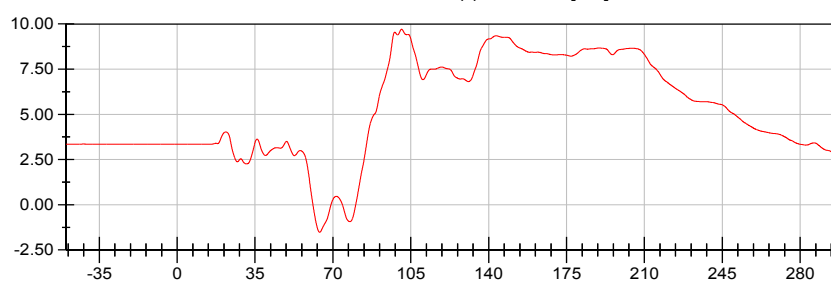
<Max>

0.10 V at 52.56 ms

<Min>

0.07 V at 180.72 ms

V2P1 UPPER LEFT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

9.71 ° at 100.88 ms

<Min>

-1.52 ° at 64.00 ms



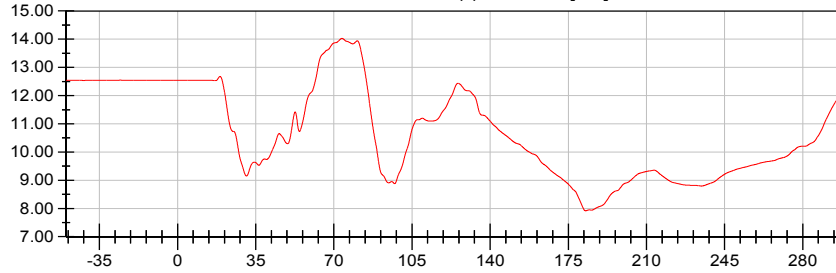
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 UPPER LEFT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

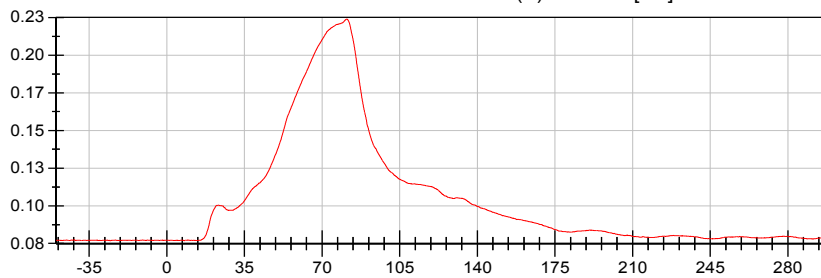
14.03 ° at 73.68 ms

<Min>

7.92 ° at 182.80 ms

CFC_180

V2P1 UPPER RIGHT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

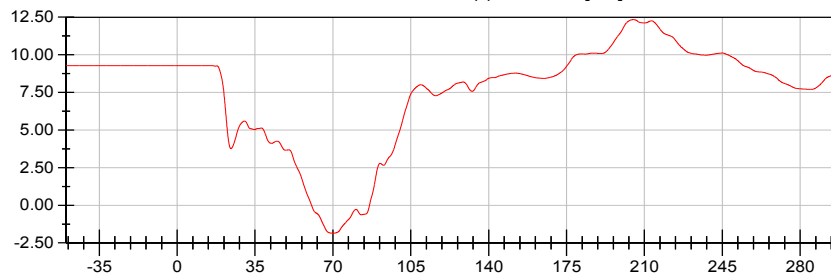
0.22 V at 81.12 ms

<Min>

0.08 V at -25.52 ms

CFC_600

V2P1 UPPER RIGHT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

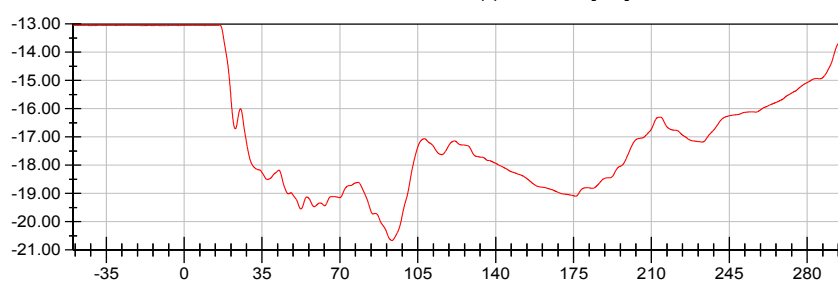
12.33 ° at 205.12 ms

<Min>

-1.86 ° at 70.16 ms

CFC_180

V2P1 UPPER RIGHT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

-13.04 ° at 15.84 ms

<Min>

-20.66 ° at 93.36 ms

CFC_180



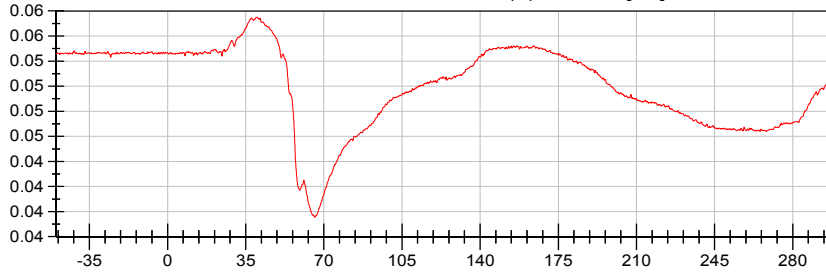
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 LOWER LEFT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

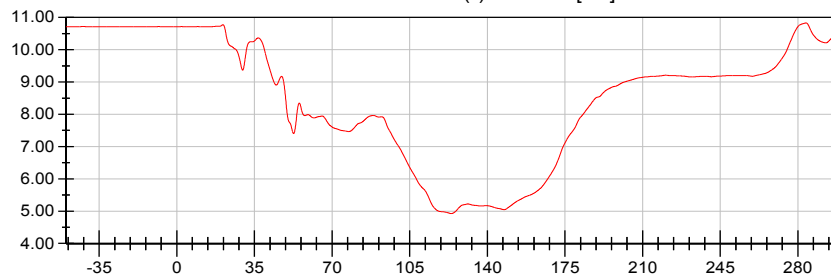
0.06 V at 40.00 ms

<Min>

0.04 V at 65.92 ms

CFC_600

V2P1 LOWER LEFT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

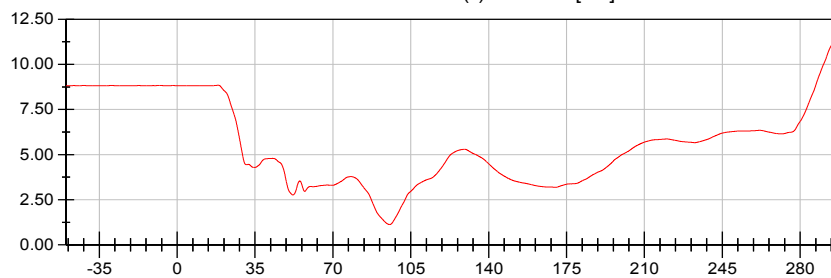
10.83 ° at 283.68 ms

<Min>

4.92 ° at 123.76 ms

CFC_180

V2P1 LOWER LEFT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

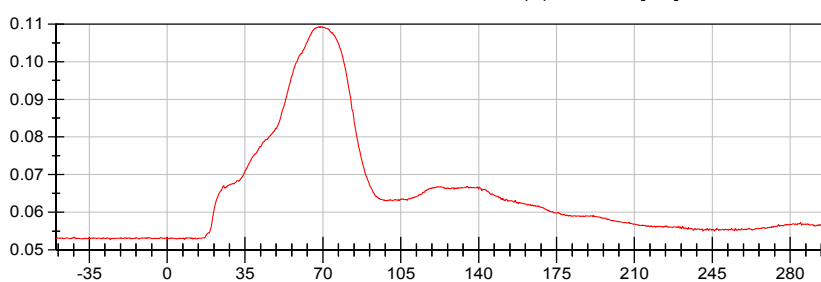
11.43 ° at 300.00 ms

<Min>

1.13 ° at 95.52 ms

CFC_180

V2P1 LOWER RIGHT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

0.11 V at 68.88 ms

<Min>

0.05 V at -25.52 ms

CFC_600



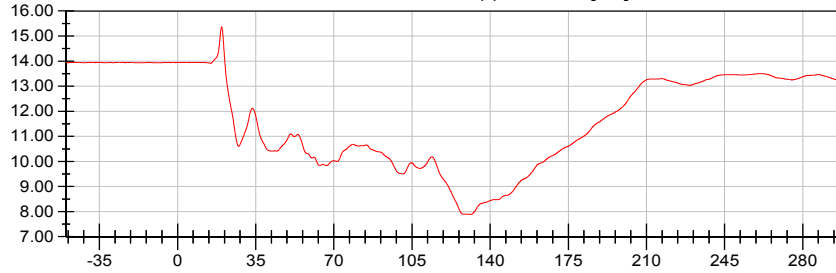
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 LOWER RIGHT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

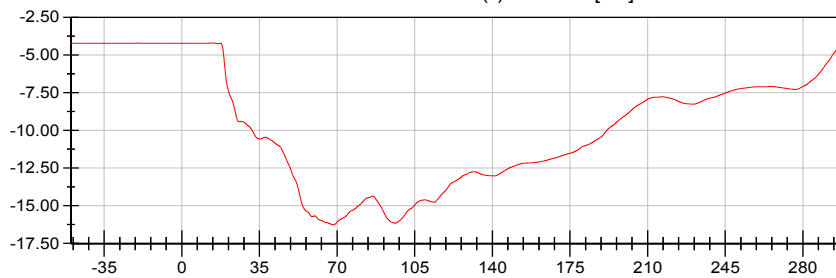
15.37 ° at 19.76 ms

<Min>

7.89 ° at 131.20 ms

CFC_180

V2P1 LOWER RIGHT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

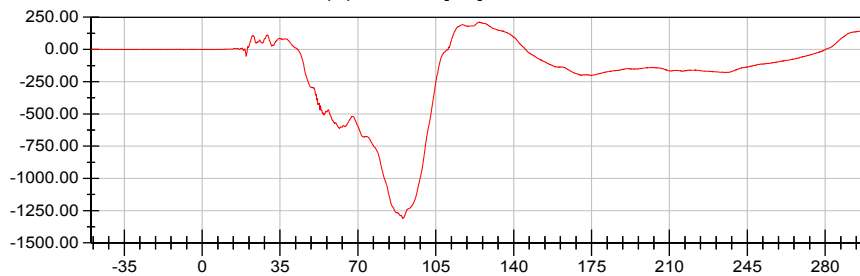
-3.99 ° at 300.00 ms

<Min>

-16.26 ° at 68.32 ms

CFC_180

V2P1 SPINE FORCE X (N) vs. Time [ms]



<Max>

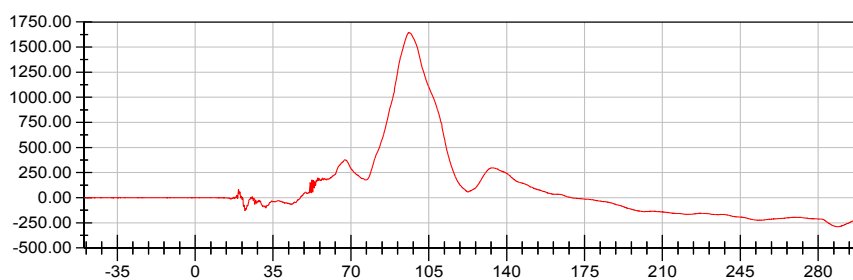
211.49 N at 124.56 ms

<Min>

-1,309.04 N at 90.08 ms

CFC_1000

V2P1 SPINE FORCE Y (N) vs. Time [ms]



<Max>

1,644.38 N at 96.00 ms

<Min>

-289.22 N at 288.40 ms

CFC_1000

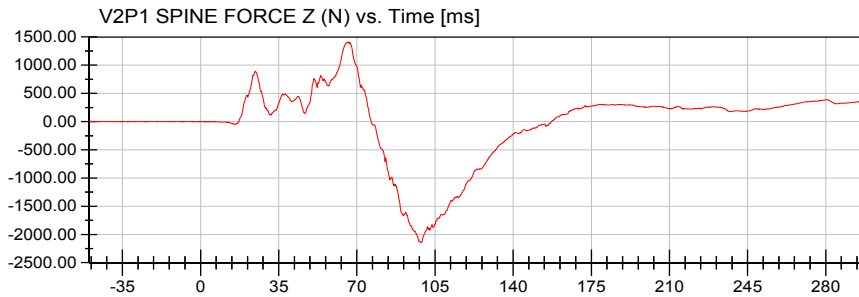


NHTSA

Test Lab: CTF

Test Number: 160621 (R20165407)

Test Date: 06/21/2016



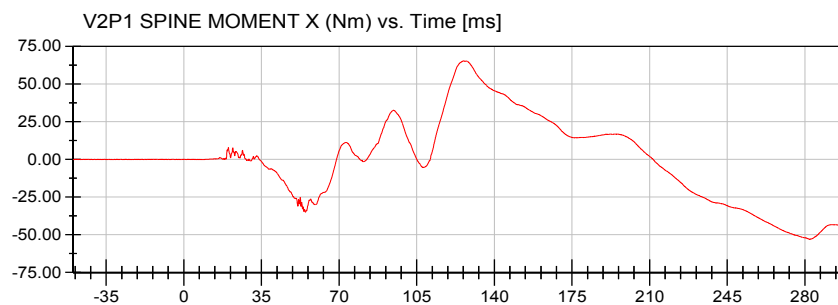
<Max>

1,412.61 N at 65.92 ms

<Min>

-2,141.21 N at 98.80 ms

CFC_1000



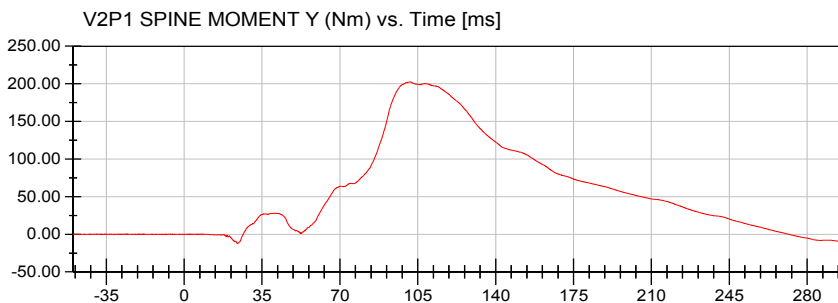
<Max>

65.40 Nm at 126.08 ms

<Min>

-53.05 Nm at 282.16 ms

CFC_1000



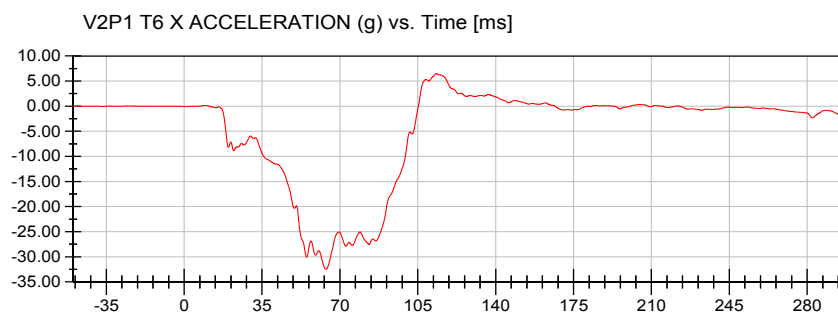
<Max>

202.76 Nm at 101.60 ms

<Min>

-12.27 Nm at 23.84 ms

CFC_1000



<Max>

6.50 g at 113.20 ms

<Min>

-32.50 g at 63.76 ms

CFC_180



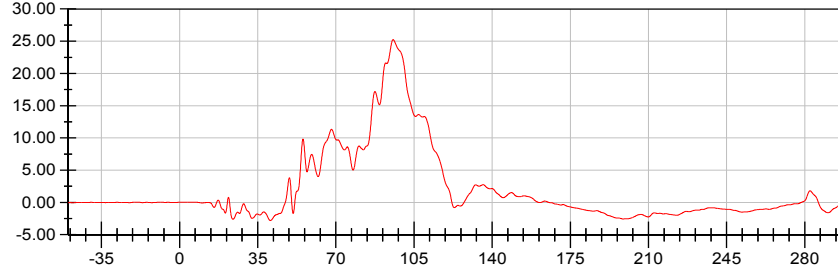
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

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V2P1 T6 Y ACCELERATION (g) vs. Time [ms]



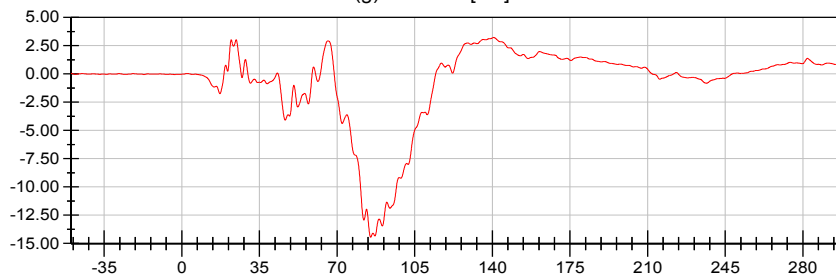
<Max>

25.26 g at 95.60 ms

<Min>

-2.80 g at 40.64 ms

V2P1 T6 Z ACCELERATION (g) vs. Time [ms]



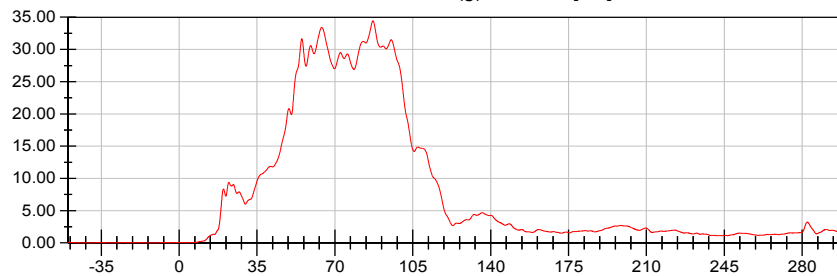
<Max>

3.22 g at 140.64 ms

<Min>

-14.45 g at 85.12 ms

V2P1 T6 ACCELERATION RESULTANT (g) vs. Time [ms]



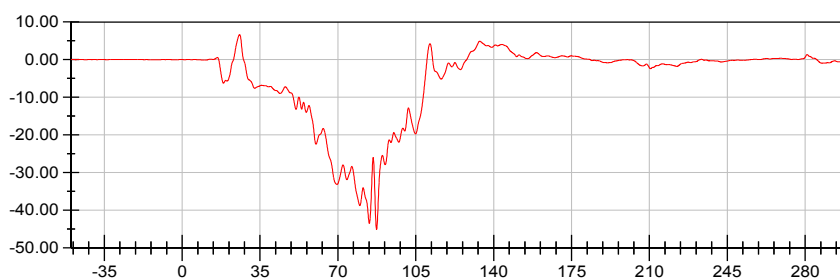
<Max>

34.44 g at 87.12 ms

<Min>

0.00 g at -27.04 ms

V2P1 T1 X ACCELERATION (g) vs. Time [ms]



<Max>

6.65 g at 25.76 ms

<Min>

-45.09 g at 87.36 ms

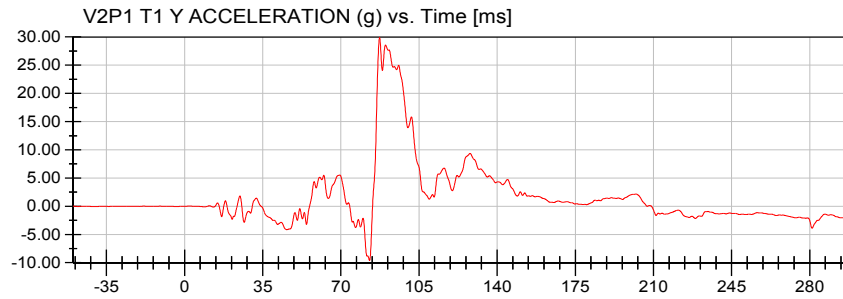


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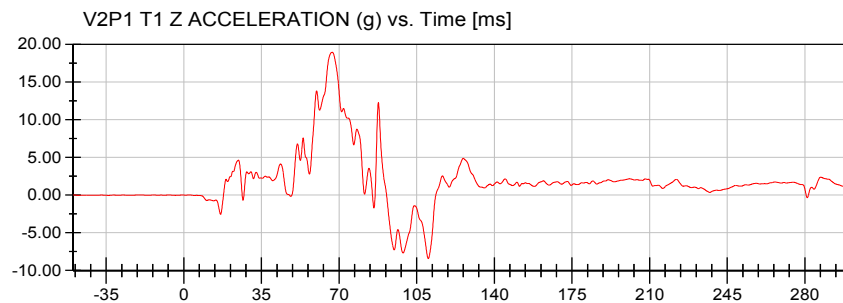
<Max>

29.88 g at 87.36 ms

<Min>

-9.62 g at 82.88 ms

CFC_180



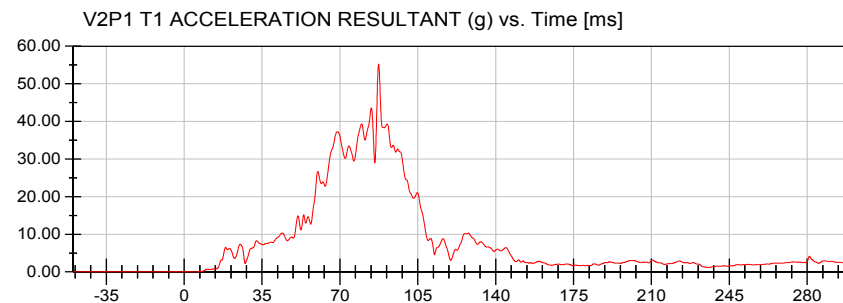
<Max>

18.95 g at 66.88 ms

<Min>

-8.44 g at 110.24 ms

CFC_180



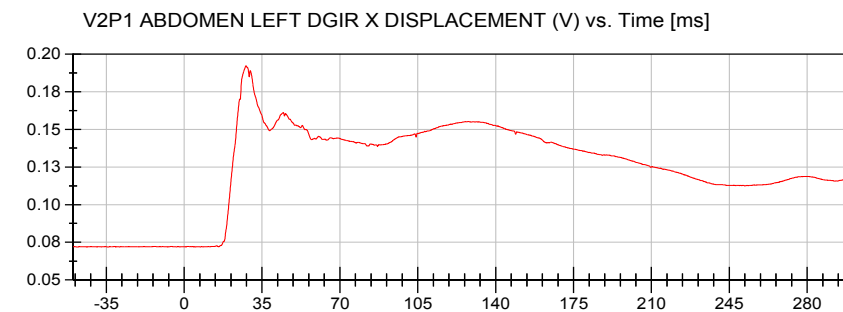
<Max>

55.22 g at 87.44 ms

<Min>

0.00 g at -7.76 ms

CFC_180



<Max>

0.19 V at 27.76 ms

<Min>

0.07 V at -48.16 ms

CFC_600



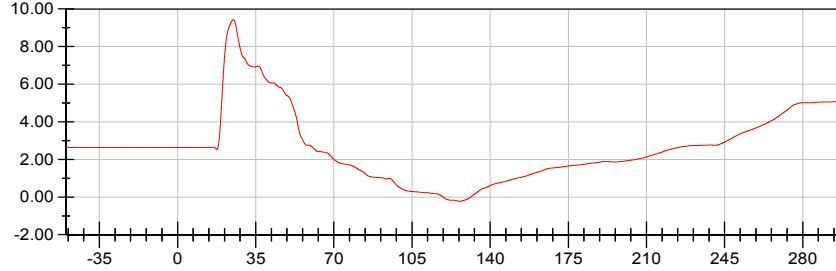
NHTSA

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Test Lab: CTF

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V2P1 ABDOMEN LEFT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

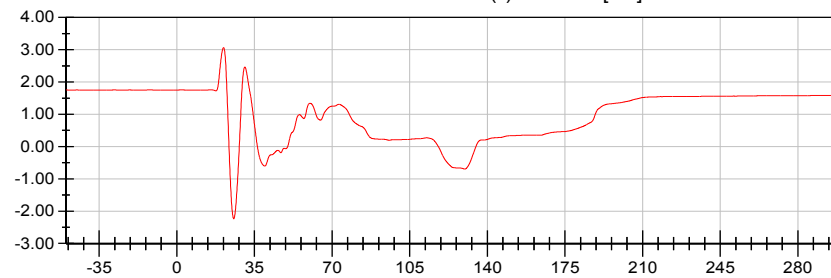
9.43 ° at 24.96 ms

<Min>

-0.23 ° at 126.16 ms

CFC_180

V2P1 ABDOMEN LEFT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

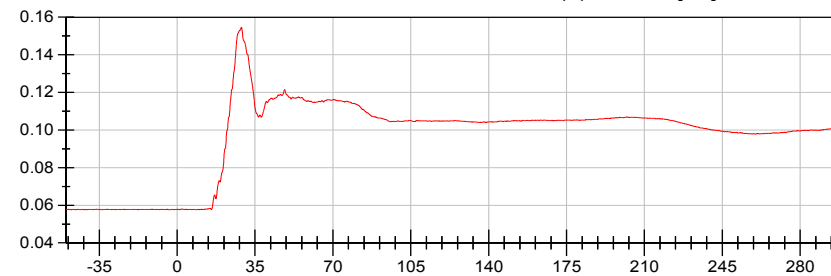
3.06 ° at 21.04 ms

<Min>

-2.24 ° at 25.68 ms

CFC_180

V2P1 ABDOMEN RIGHT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

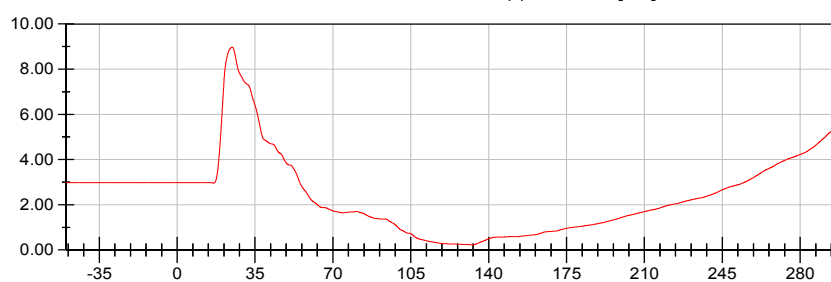
0.15 V at 28.88 ms

<Min>

0.06 V at -47.60 ms

CFC_600

V2P1 ABDOMEN RIGHT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

8.98 ° at 24.72 ms

<Min>

0.22 ° at 132.88 ms

CFC_180



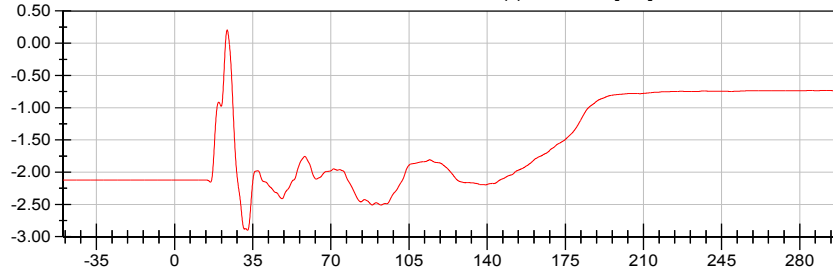
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

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V2P1 ABDOMEN RIGHT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

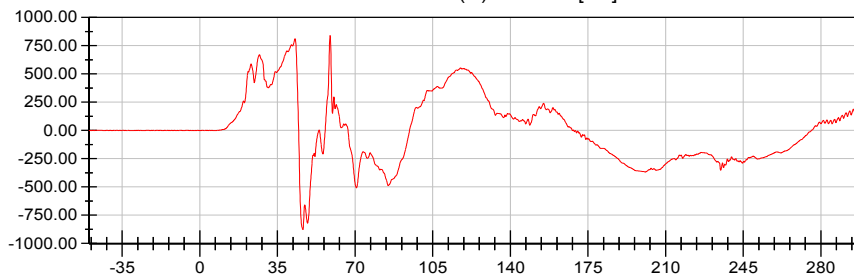
0.21 ° at 23.52 ms

<Min>

-2.90 ° at 32.72 ms

CFC_180

V2P1 ACETABULUM LEFT X FORCE (N) vs. Time [ms]



<Max>

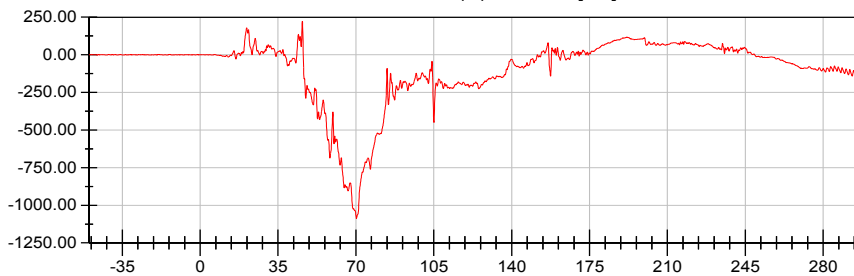
840.13 N at 58.80 ms

<Min>

-878.96 N at 46.48 ms

CFC_600

V2P1 ACETABULUM LEFT Y FORCE (N) vs. Time [ms]



<Max>

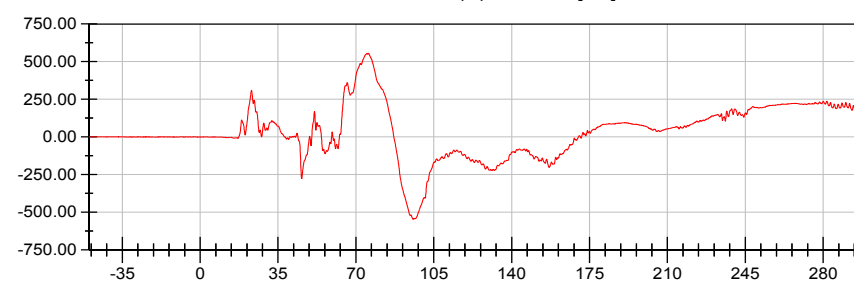
222.76 N at 45.92 ms

<Min>

-1,088.09 N at 70.24 ms

CFC_600

V2P1 ACETABULUM LEFT Z FORCE (N) vs. Time [ms]



<Max>

555.03 N at 75.68 ms

<Min>

-545.77 N at 95.76 ms

CFC_600



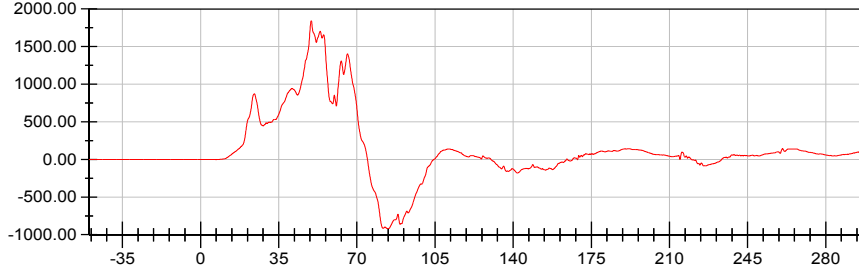
NHTSA

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Test Lab: CTF

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V2P1 ACETABULUM RIGHT X FORCE (N) vs. Time [ms]



<Max>

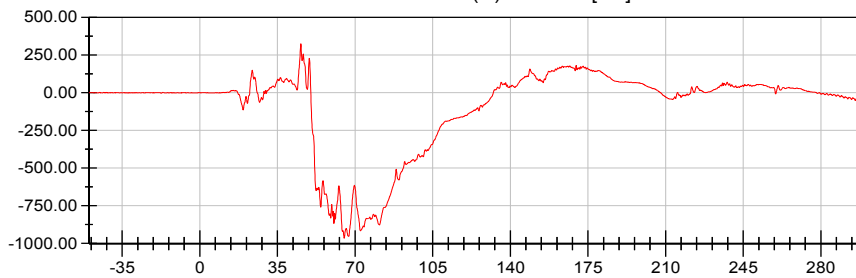
1,843.87 N at 49.60 ms

<Min>

-918.63 N at 83.60 ms

CFC_600

V2P1 ACETABULUM RIGHT Y FORCE (N) vs. Time [ms]



<Max>

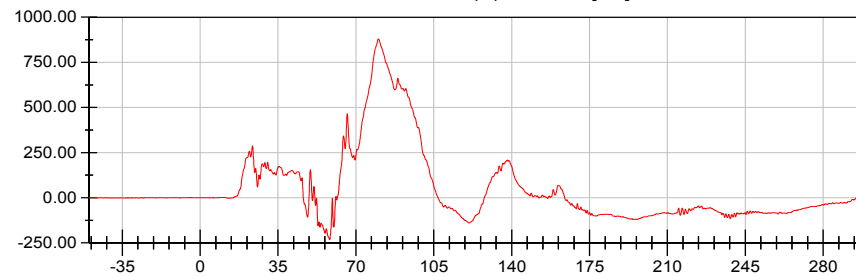
325.78 N at 45.52 ms

<Min>

-964.75 N at 65.12 ms

CFC_600

V2P1 ACETABULUM RIGHT Z FORCE (N) vs. Time [ms]



<Max>

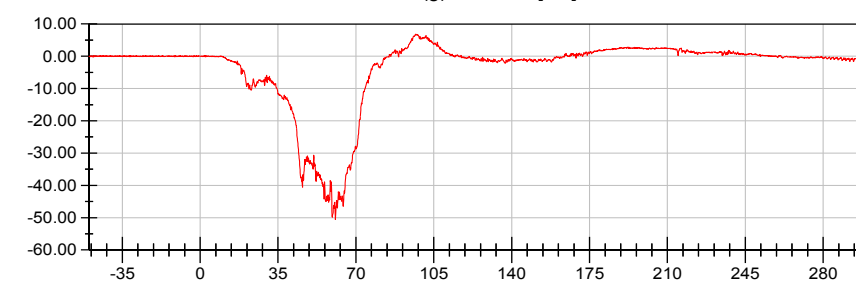
879.32 N at 80.00 ms

<Min>

-232.47 N at 58.16 ms

CFC_600

V2P1 PELVIS X ACCELERATION (g) vs. Time [ms]



<Max>

6.77 g at 96.72 ms

<Min>

-50.57 g at 60.80 ms

CFC_1000

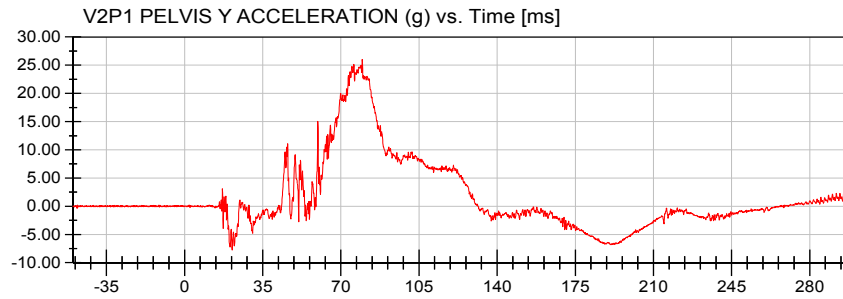


NHTSA

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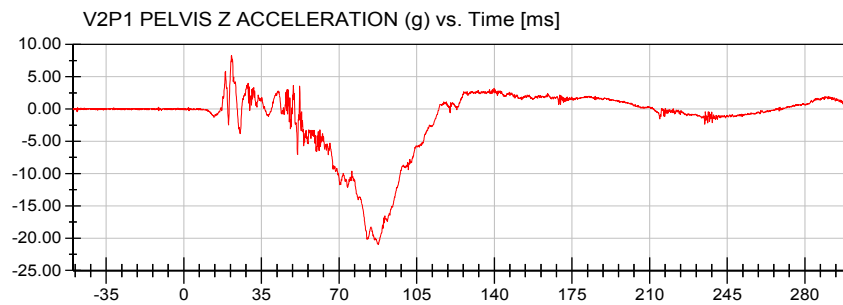
<Max>

26.01 g at 79.60 ms

<Min>

-7.77 g at 21.28 ms

CFC_1000



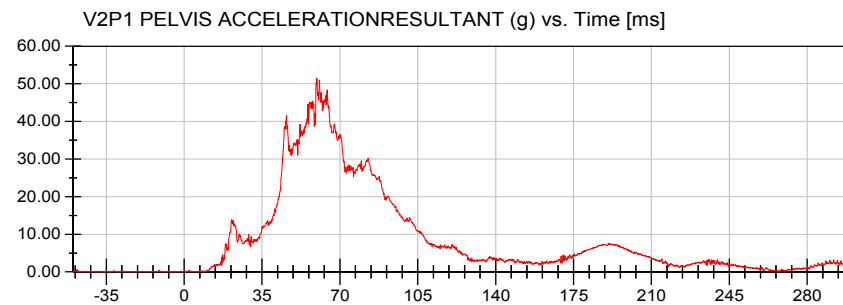
<Max>

8.28 g at 21.52 ms

<Min>

-21.00 g at 87.68 ms

CFC_1000



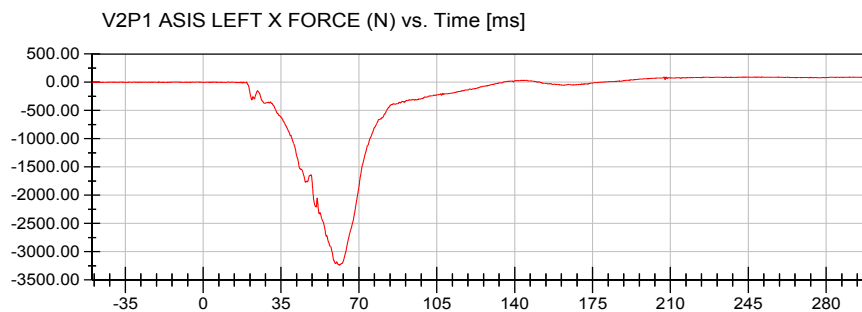
<Max>

51.47 g at 59.68 ms

<Min>

0.04 g at -47.52 ms

CFC_1000



<Max>

97.27 N at 299.68 ms

<Min>

-3,240.65 N at 61.20 ms

CFC_600

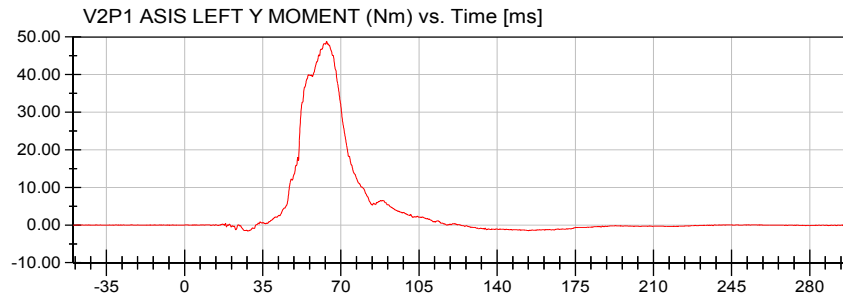


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



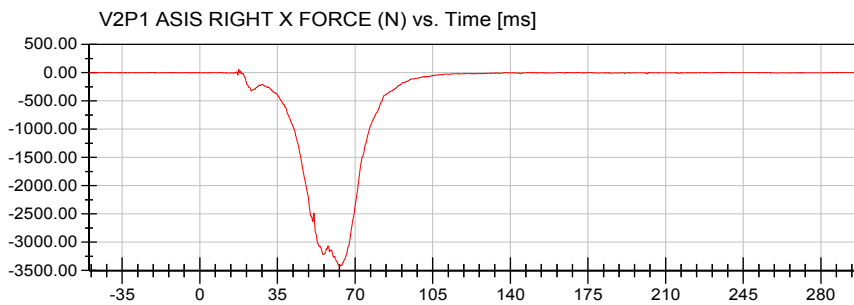
<Max>

48.82 Nm at 63.60 ms

<Min>

-1.57 Nm at 28.32 ms

CFC_600



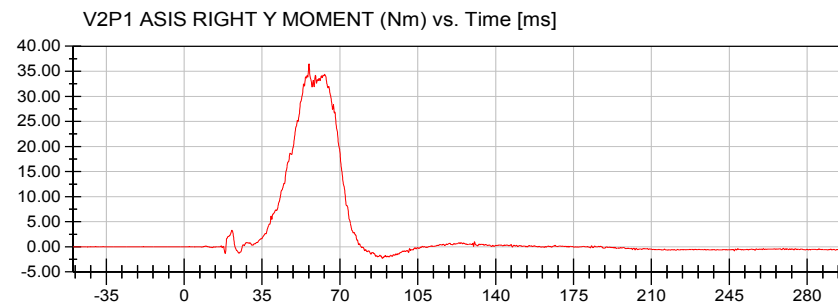
<Max>

62.44 N at 17.52 ms

<Min>

-3,423.59 N at 63.12 ms

CFC_600



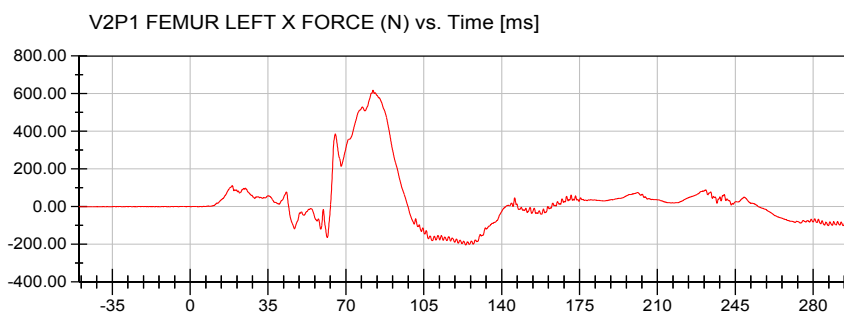
<Max>

36.48 Nm at 56.08 ms

<Min>

-2.28 Nm at 89.12 ms

CFC_600



<Max>

618.15 N at 82.16 ms

<Min>

-203.56 N at 123.84 ms

CFC_600



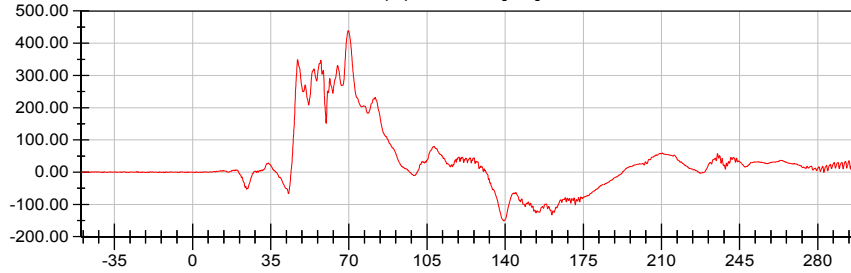
NHTSA

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Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 FEMUR LEFT Y FORCE (N) vs. Time [ms]



<Max>

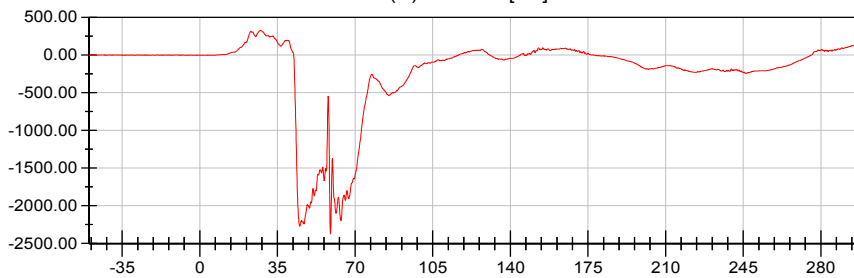
439.17 N at 69.76 ms

<Min>

-150.77 N at 139.36 ms

CFC_600

V2P1 FEMUR LEFT Z FORCE (N) vs. Time [ms]



<Max>

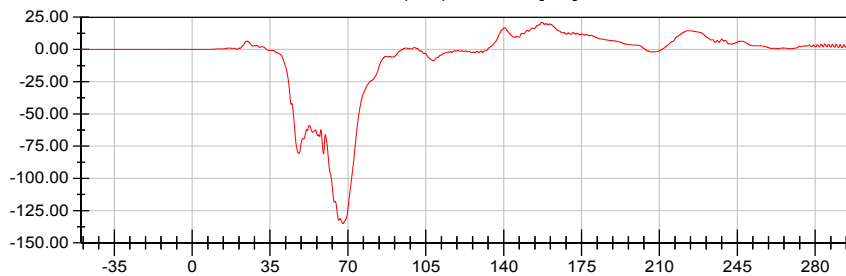
324.99 N at 27.28 ms

<Min>

-2,373.26 N at 58.88 ms

CFC_600

V2P1 FEMUR LEFT X MOMENT (Nm) vs. Time [ms]



<Max>

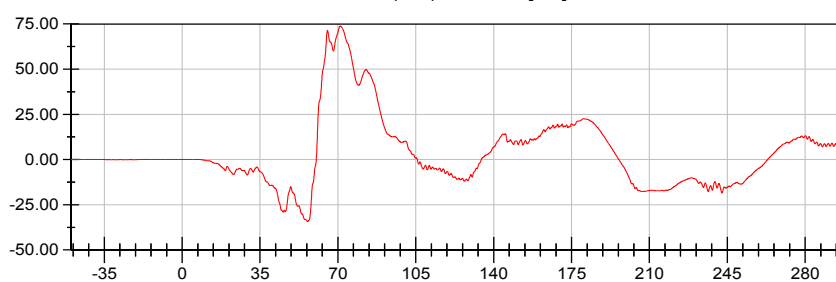
21.03 Nm at 157.12 ms

<Min>

-135.04 Nm at 67.76 ms

CFC_600

V2P1 FEMUR LEFT Y MOMENT (Nm) vs. Time [ms]



<Max>

73.82 Nm at 71.12 ms

<Min>

-34.23 Nm at 56.40 ms

CFC_600

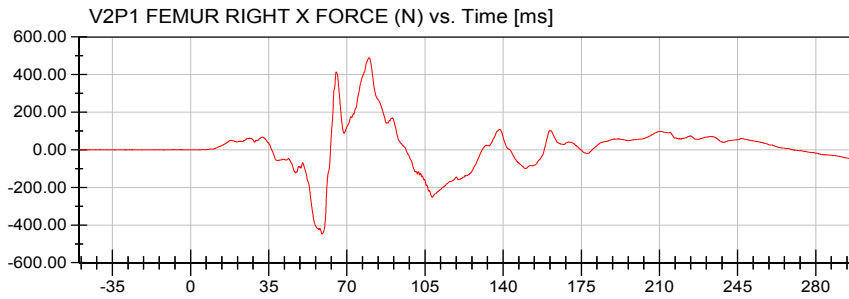


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



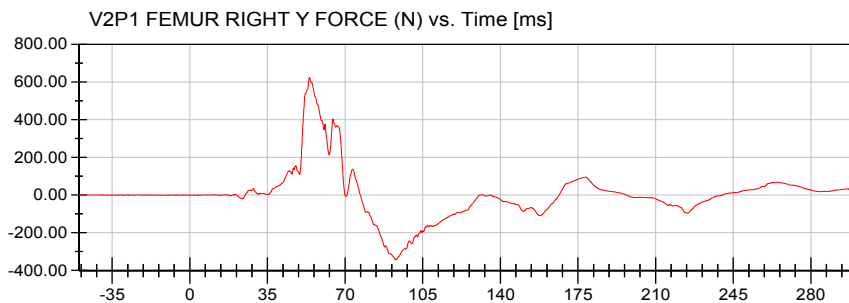
<Max>

489.80 N at 80.08 ms

<Min>

-448.11 N at 58.88 ms

CFC_600



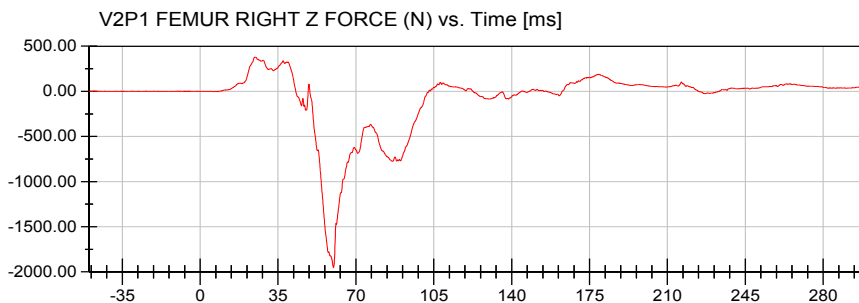
<Max>

625.66 N at 54.00 ms

<Min>

-343.55 N at 92.96 ms

CFC_600



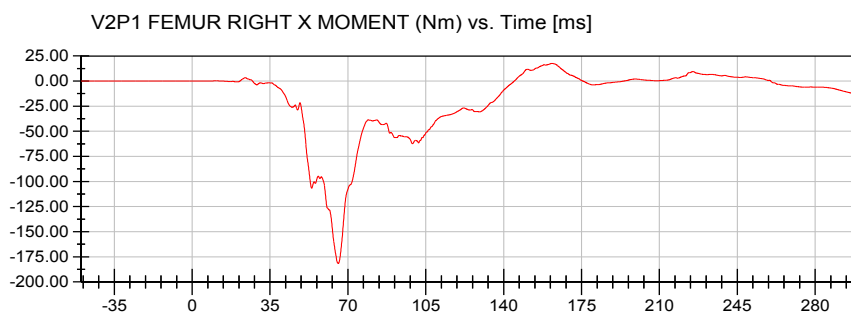
<Max>

378.35 N at 24.56 ms

<Min>

-1,950.24 N at 59.92 ms

CFC_600



<Max>

17.61 Nm at 161.76 ms

<Min>

-181.60 Nm at 65.68 ms

CFC_600

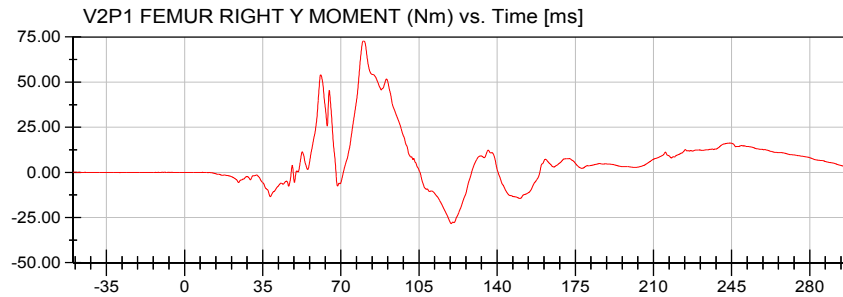


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



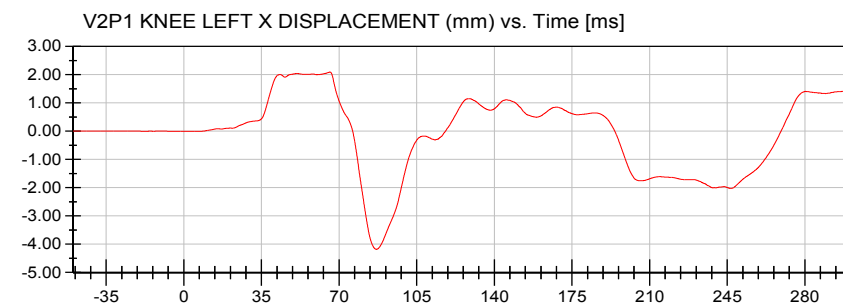
<Max>

72.72 Nm at 80.00 ms

<Min>

-28.36 Nm at 119.44 ms

CFC_600



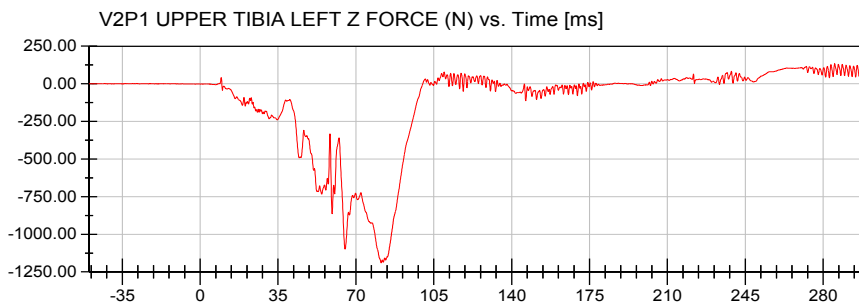
<Max>

2.09 mm at 65.92 ms

<Min>

-4.18 mm at 86.80 ms

CFC_180



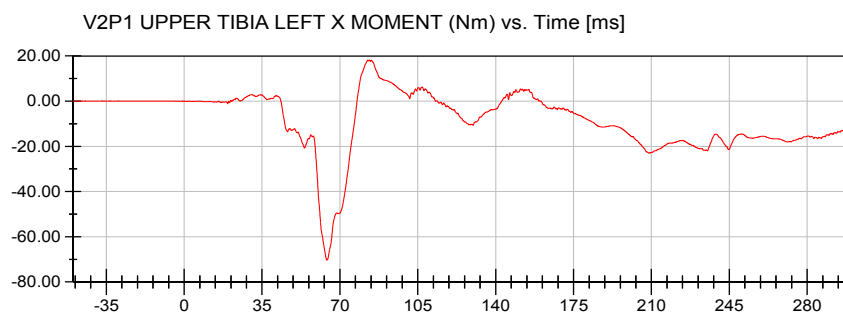
<Max>

133.60 N at 285.12 ms

<Min>

-1,189.43 N at 81.36 ms

CFC_600



<Max>

18.21 Nm at 83.20 ms

<Min>

-70.32 Nm at 64.16 ms

CFC_600

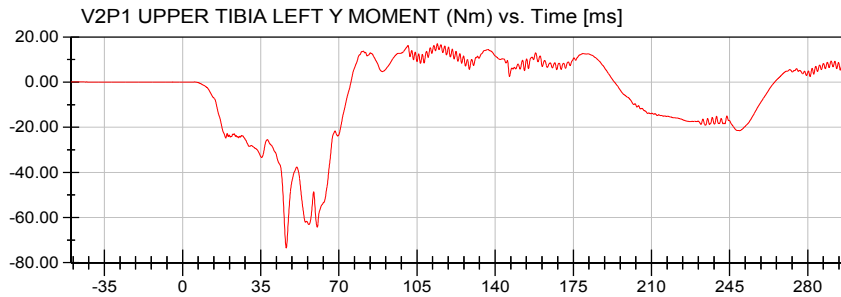


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



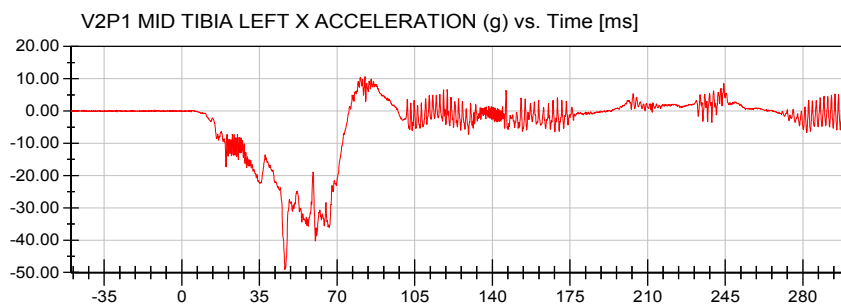
<Max>

16.98 Nm at 114.08 ms

<Min>

-73.47 Nm at 46.48 ms

CFC_600



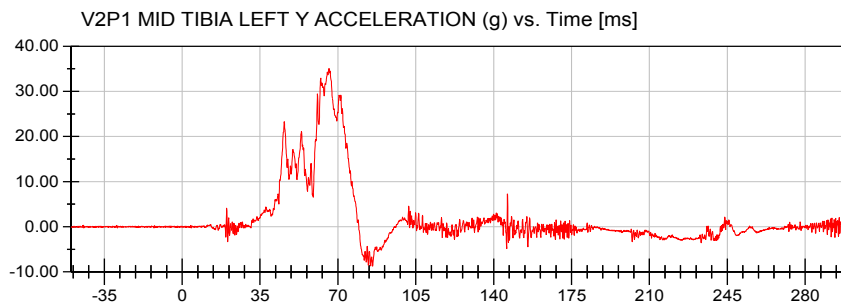
<Max>

10.65 g at 82.56 ms

<Min>

-49.08 g at 46.48 ms

CFC_1000



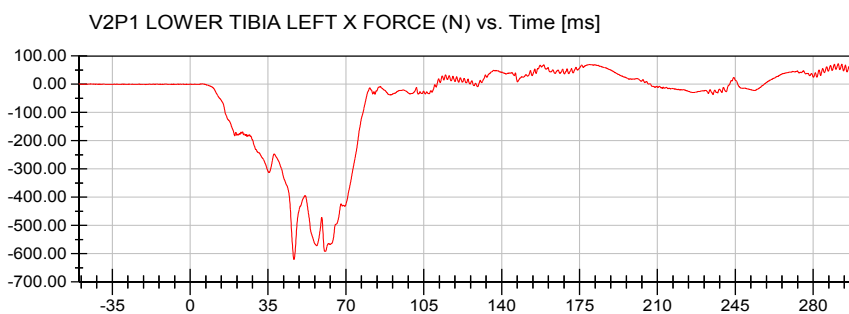
<Max>

35.09 g at 66.00 ms

<Min>

-8.74 g at 85.60 ms

CFC_1000



<Max>

72.25 N at 291.20 ms

<Min>

-620.67 N at 46.64 ms

CFC_600



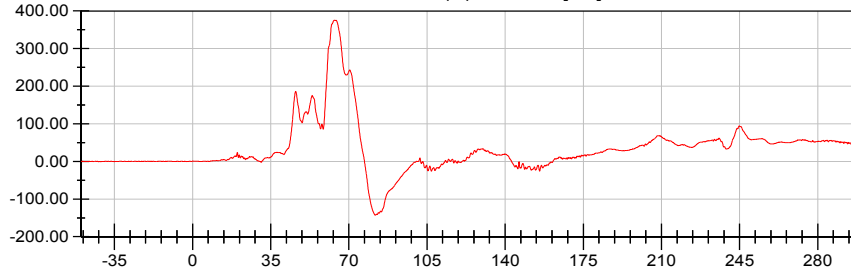
NHTSA

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Test Lab: CTF

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V2P1 LOWER TIBIA LEFT Y FORCE (N) vs. Time [ms]



<Max>

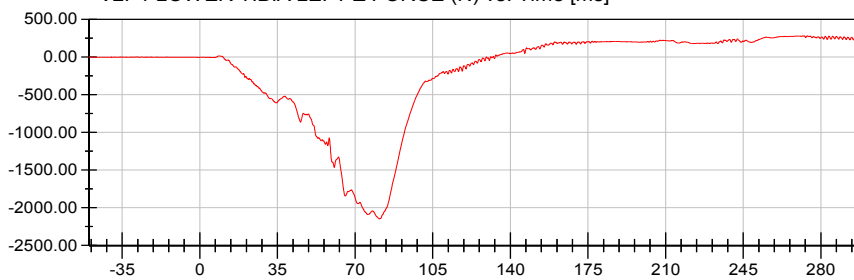
375.50 N at 63.52 ms

<Min>

-143.09 N at 81.84 ms

CFC_600

V2P1 LOWER TIBIA LEFT Z FORCE (N) vs. Time [ms]



<Max>

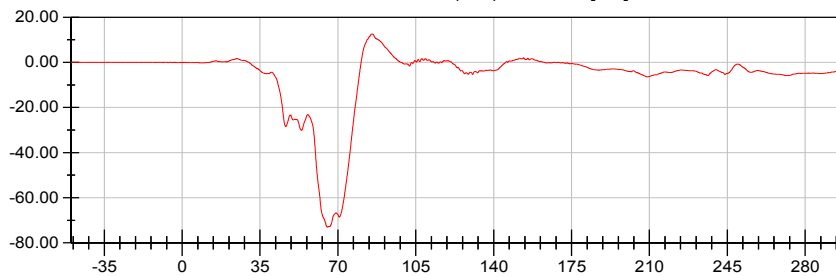
282.45 N at 273.84 ms

<Min>

-2,148.32 N at 80.80 ms

CFC_600

V2P1 LOWER TIBIA LEFT X MOMENT (Nm) vs. Time [ms]



<Max>

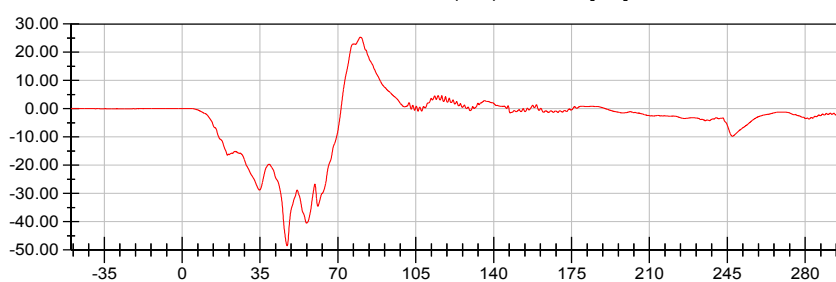
12.55 Nm at 85.12 ms

<Min>

-73.00 Nm at 65.36 ms

CFC_600

V2P1 LOWER TIBIA LEFT Y MOMENT (Nm) vs. Time [ms]



<Max>

25.32 Nm at 80.00 ms

<Min>

-48.51 Nm at 47.20 ms

CFC_600

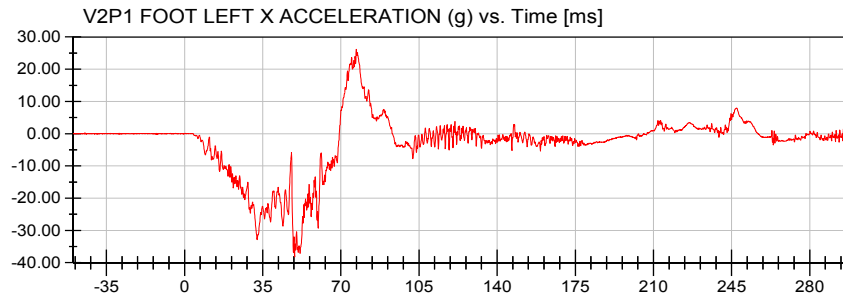


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



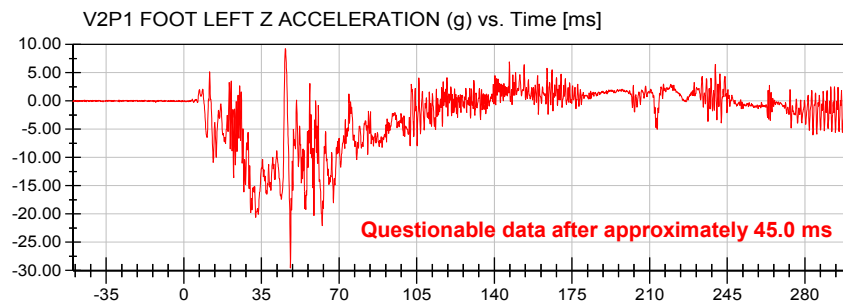
<Max>

26.18 g at 76.88 ms

<Min>

-38.21 g at 49.28 ms

CFC_1000



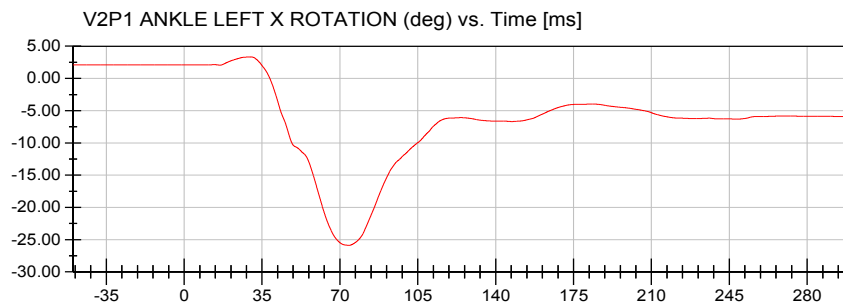
<Max>

9.25 g at 45.76 ms

<Min>

-29.58 g at 48.08 ms

CFC_1000



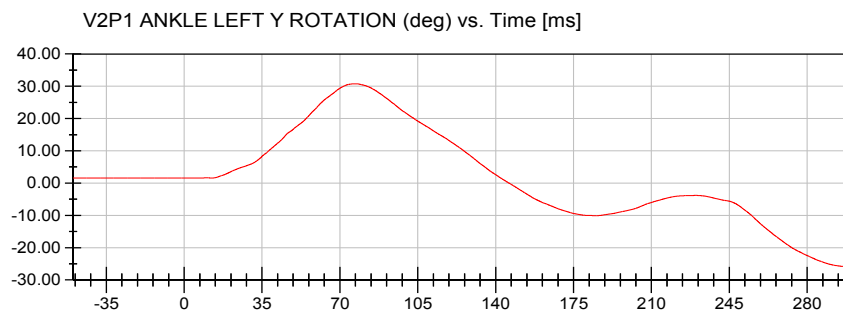
<Max>

3.34 deg at 30.00 ms

<Min>

-25.88 deg at 74.08 ms

CFC_180



<Max>

30.75 deg at 77.28 ms

<Min>

-25.98 deg at 300.00 ms

CFC_180



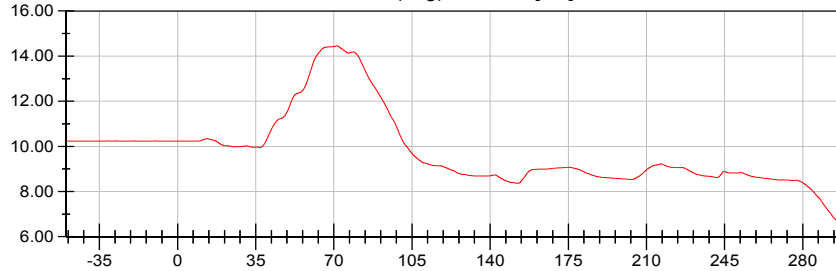
NHTSA

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V2P1 ANKLE LEFT Z ROTATION (deg) vs. Time [ms]



<Max>

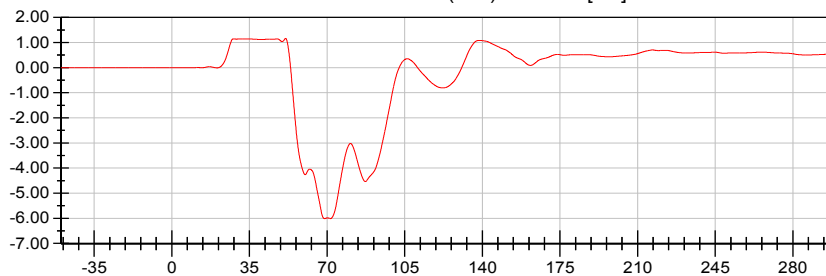
14.45 deg at 71.44 ms

<Min>

6.30 deg at 300.00 ms

CFC_180

V2P1 KNEE RIGHT X DISPLACEMENT (mm) vs. Time [ms]



<Max>

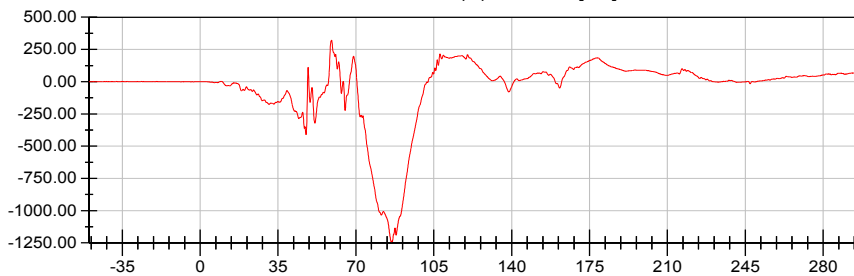
1.16 mm at 51.36 ms

<Min>

-6.01 mm at 68.88 ms

CFC_180

V2P1 UPPER TIBIA RIGHT Z FORCE (N) vs. Time [ms]



<Max>

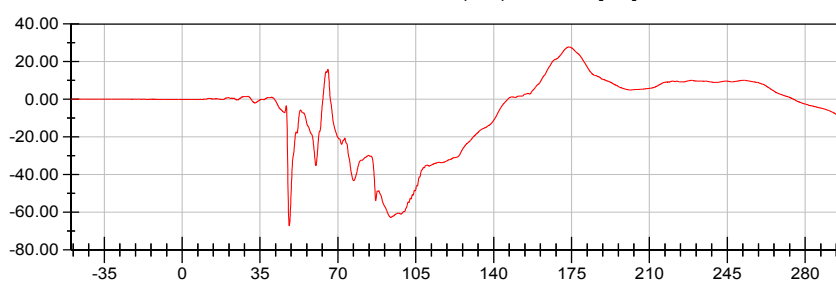
321.23 N at 59.04 ms

<Min>

-1,241.98 N at 85.84 ms

CFC_600

V2P1 UPPER TIBIA RIGHT X MOMENT (Nm) vs. Time [ms]



<Max>

27.73 Nm at 174.16 ms

<Min>

-67.14 Nm at 48.08 ms

CFC_600

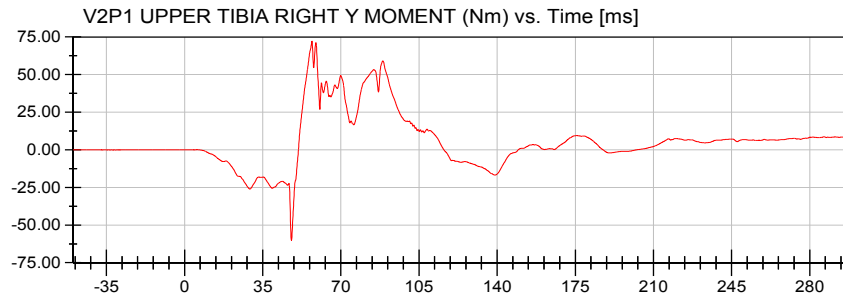


NHTSA

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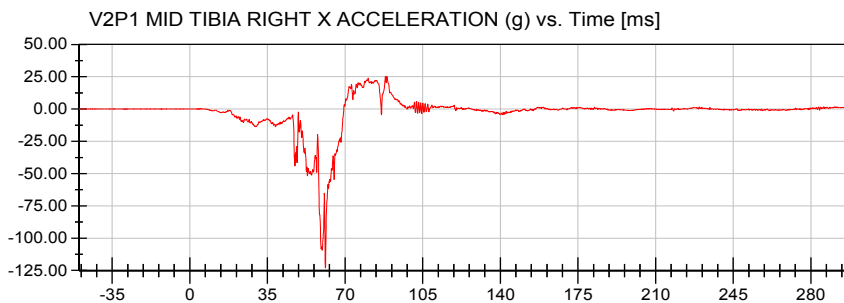
<Max>

72.23 Nm at 57.04 ms

<Min>

-60.26 Nm at 47.84 ms

CFC_600



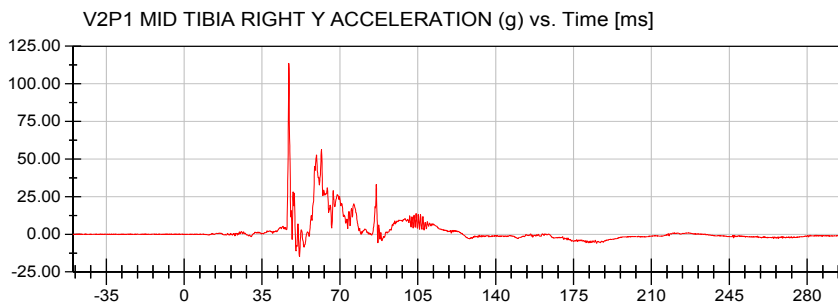
<Max>

25.36 g at 88.88 ms

<Min>

-123.15 g at 61.12 ms

CFC_1000



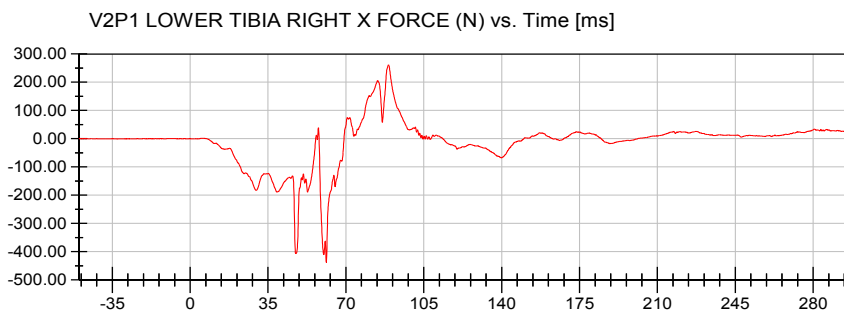
<Max>

113.60 g at 47.04 ms

<Min>

-14.82 g at 51.84 ms

CFC_1000



<Max>

261.31 N at 89.12 ms

<Min>

-438.49 N at 61.20 ms

CFC_600



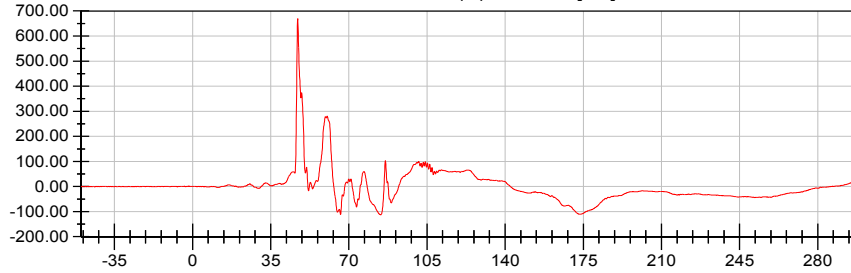
NHTSA

Test Lab: CTF

Test Number: 160621 (R20165407)

Test Date: 06/21/2016

V2P1 LOWER TIBIA RIGHT Y FORCE (N) vs. Time [ms]



<Max>

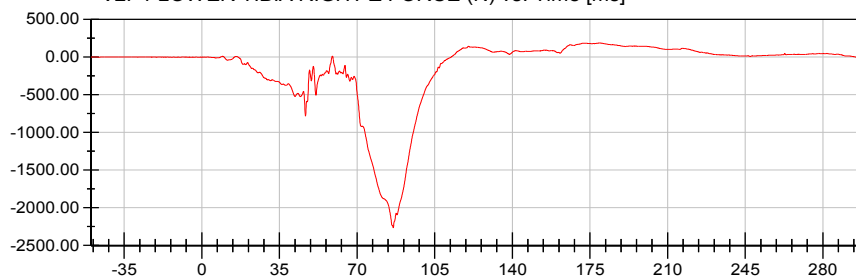
669.11 N at 47.12 ms

<Min>

-112.87 N at 84.32 ms

CFC_600

V2P1 LOWER TIBIA RIGHT Z FORCE (N) vs. Time [ms]



<Max>

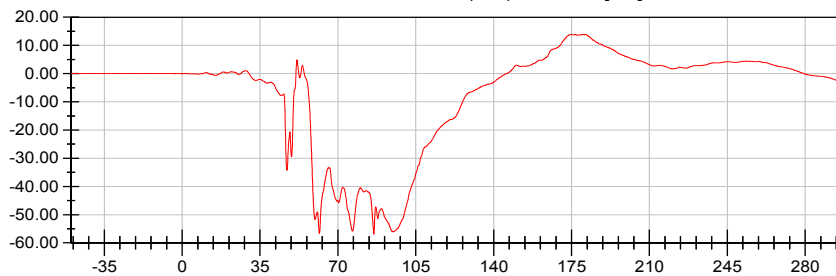
187.03 N at 179.20 ms

<Min>

-2,265.49 N at 86.32 ms

CFC_600

V2P1 LOWER TIBIA RIGHT X MOMENT (Nm) vs. Time [ms]



<Max>

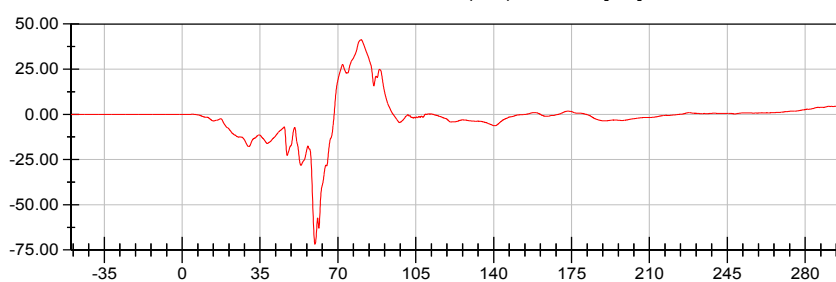
13.91 Nm at 180.40 ms

<Min>

-56.87 Nm at 86.16 ms

CFC_600

V2P1 LOWER TIBIA RIGHT Y MOMENT (Nm) vs. Time [ms]



<Max>

41.33 Nm at 80.40 ms

<Min>

-71.89 Nm at 59.68 ms

CFC_600

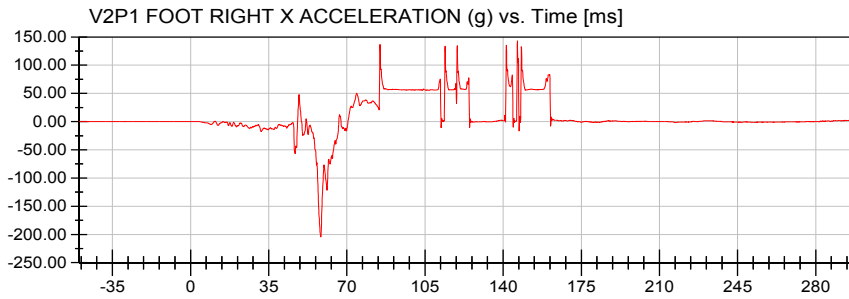


NHTSA

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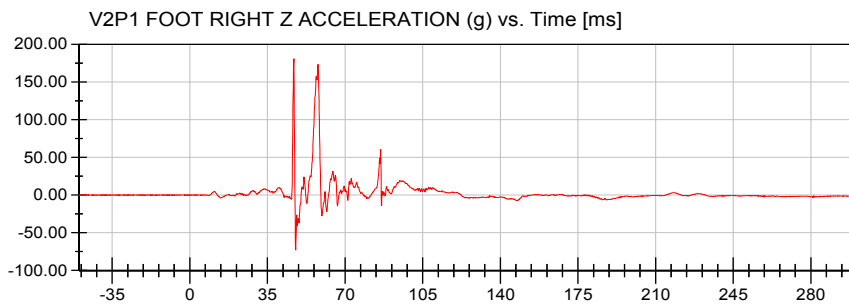
<Max>

142.99 g at 146.40 ms

<Min>

-204.44 g at 58.32 ms

CFC_1000



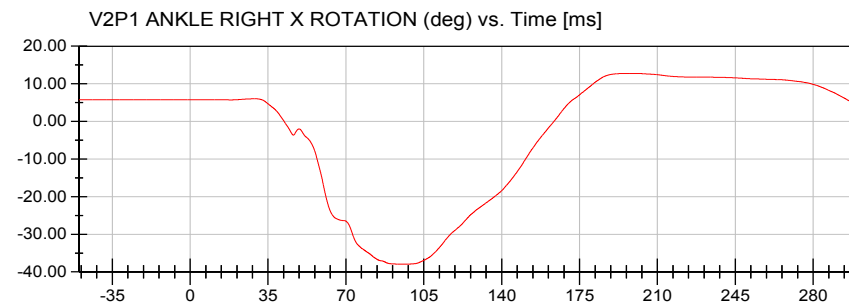
<Max>

181.04 g at 46.88 ms

<Min>

-72.94 g at 47.76 ms

CFC_1000



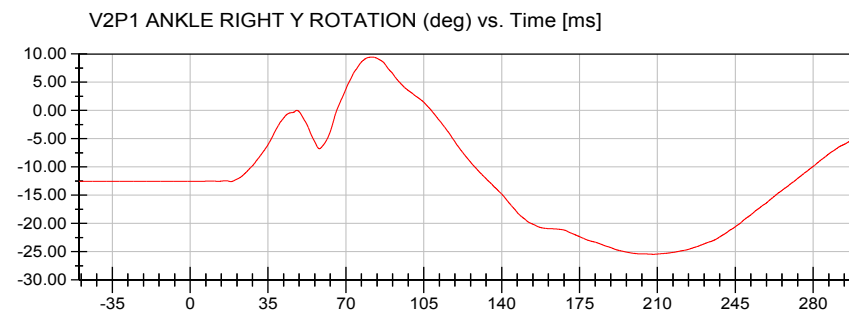
<Max>

12.75 deg at 200.32 ms

<Min>

-37.93 deg at 97.84 ms

CFC_180



<Max>

9.45 deg at 81.76 ms

<Min>

-25.46 deg at 208.16 ms

CFC_180



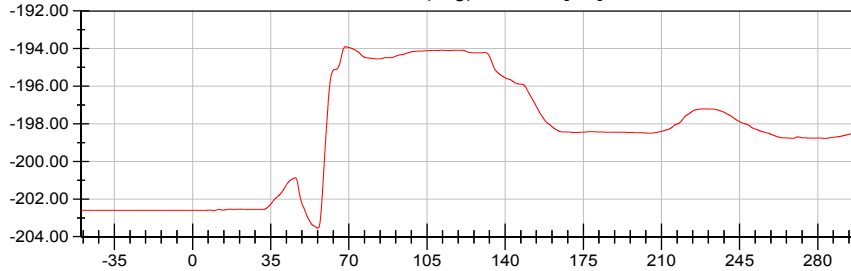
NHTSA

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Test Lab: CTF

Test Number: 160621 (R20165407)

V2P1 ANKLE RIGHT Z ROTATION (deg) vs. Time [ms]



<Max>

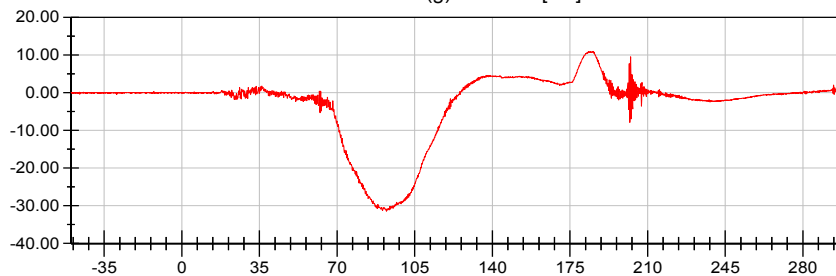
-193.90 deg at 68.48 ms

<Min>

-203.55 deg at 56.08 ms

CFC_180

V2P2 HEAD CG X ACCELERATION (g) vs. Time [ms]



<Max>

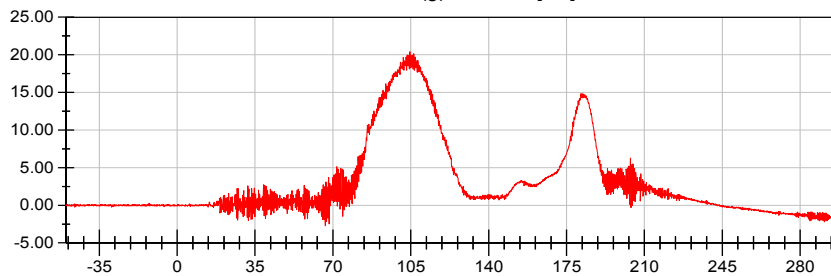
11.01 g at 185.52 ms

<Min>

-31.46 g at 92.32 ms

CFC_1000

V2P2 HEAD CG Y ACCELERATION (g) vs. Time [ms]



<Max>

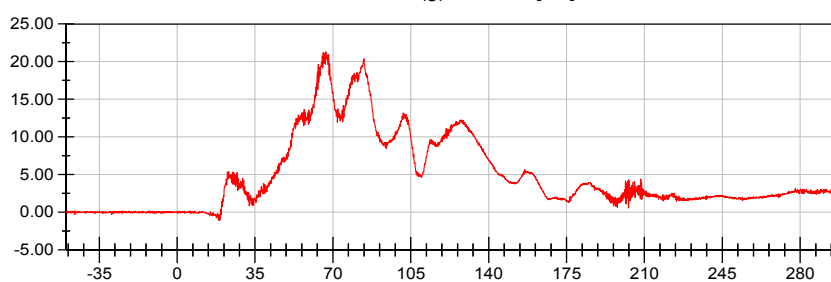
20.41 g at 104.56 ms

<Min>

-2.73 g at 66.56 ms

CFC_1000

V2P2 HEAD CG Z ACCELERATION (g) vs. Time [ms]



<Max>

21.31 g at 66.80 ms

<Min>

-1.11 g at 18.88 ms

CFC_1000



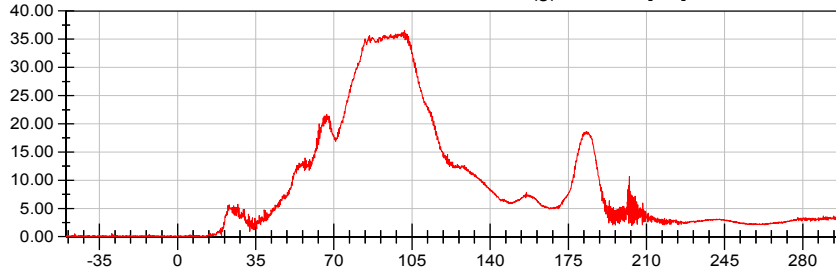
NHTSA

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Test Lab: CTF

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V2P2 HEAD CG ACCELERATION RESULTANT (g) vs. Time [ms]



<Max>

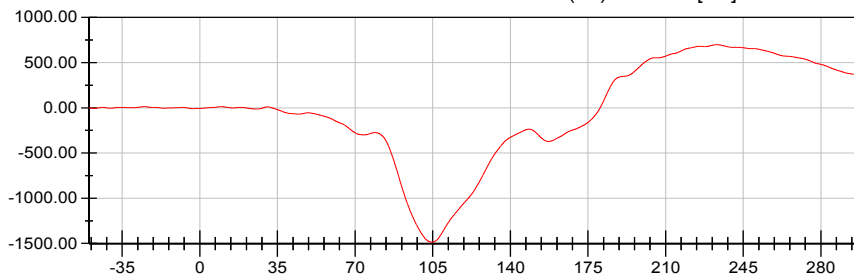
36.55 g at 101.68 ms

<Min>

0.03 g at -49.12 ms

CFC_1000

V2P2 HEAD CG ANGULAR VELOCITY ABOUT X (°/s) vs. Time [ms]



<Max>

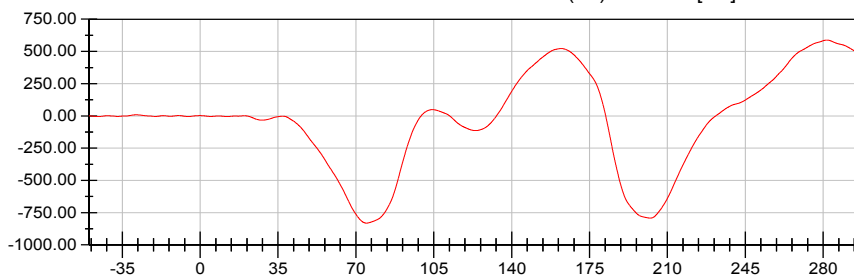
698.84 °/s at 233.04 ms

<Min>

-1,484.97 °/s at 104.56 ms

CFC_60

V2P2 HEAD CG ANGULAR VELOCITY ABOUT Y (°/s) vs. Time [ms]



<Max>

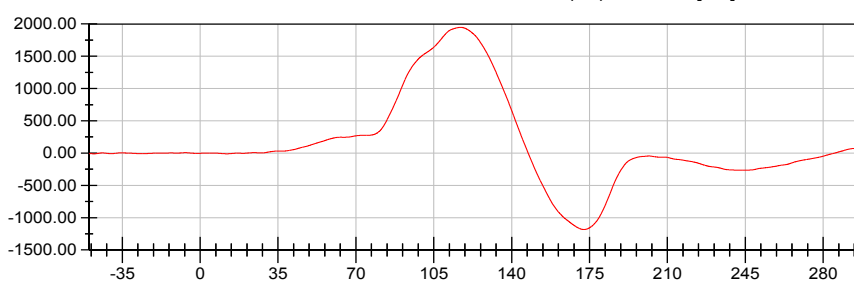
588.07 °/s at 281.60 ms

<Min>

-830.94 °/s at 74.80 ms

CFC_60

V2P2 HEAD CG ANGULAR VELOCITY ABOUT Z (°/s) vs. Time [ms]



<Max>

1,947.09 °/s at 117.04 ms

<Min>

-1,183.24 °/s at 172.48 ms

CFC_60

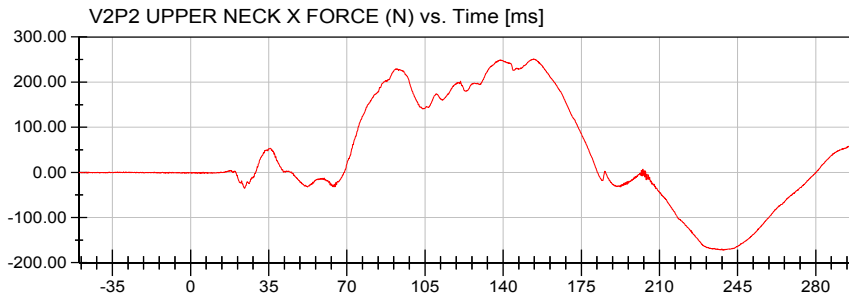


NHTSA

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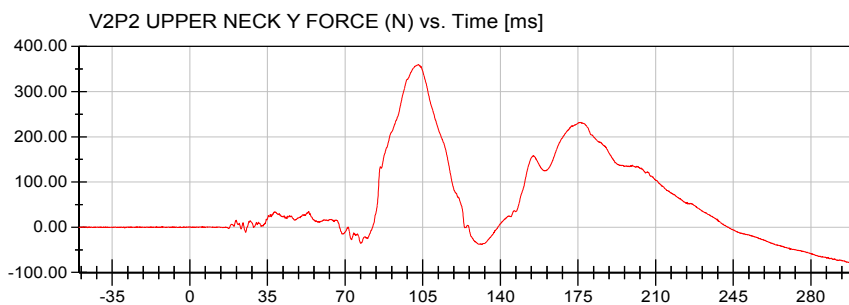
<Max>

251.03 N at 153.76 ms

<Min>

-172.02 N at 238.48 ms

CFC_1000



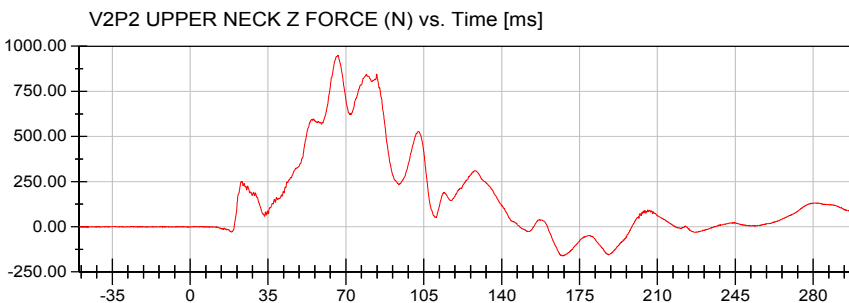
<Max>

359.76 N at 102.88 ms

<Min>

-79.82 N at 300.00 ms

CFC_1000



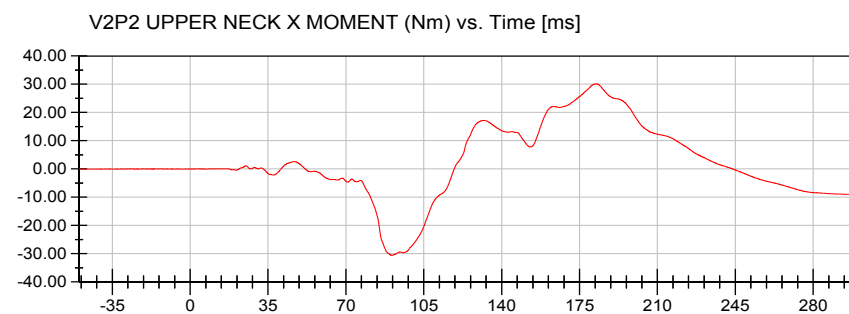
<Max>

949.45 N at 66.40 ms

<Min>

-161.45 N at 167.68 ms

CFC_1000



<Max>

30.15 Nm at 182.48 ms

<Min>

-30.59 Nm at 90.64 ms

CFC_600

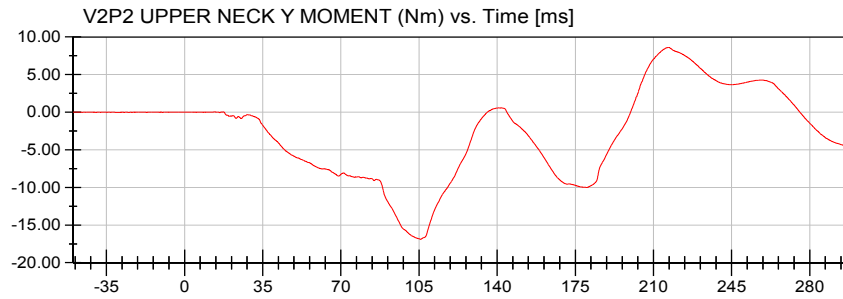


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



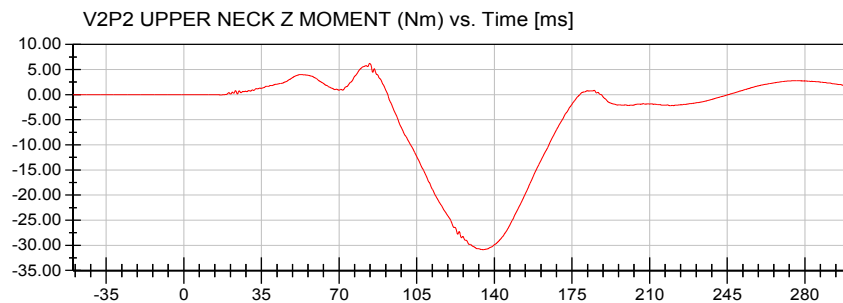
<Max>

8.60 Nm at 216.96 ms

<Min>

-16.89 Nm at 105.68 ms

CFC_600



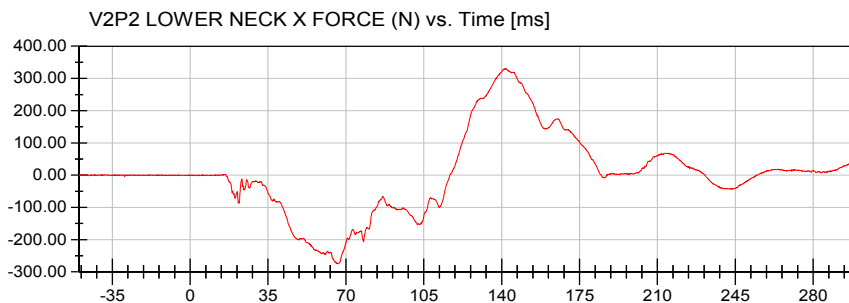
<Max>

6.22 Nm at 83.84 ms

<Min>

-30.86 Nm at 134.96 ms

CFC_600



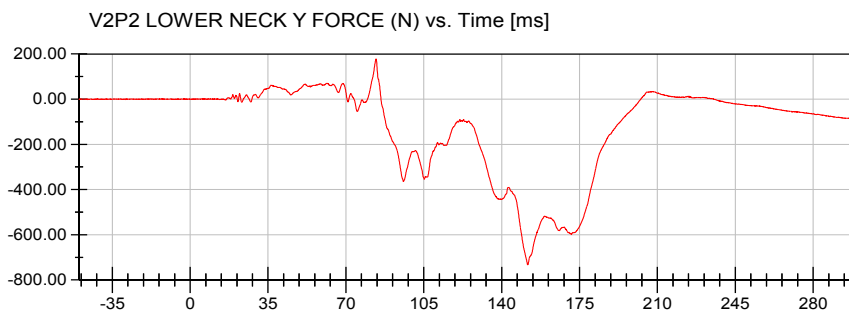
<Max>

330.32 N at 141.36 ms

<Min>

-275.23 N at 66.48 ms

CFC_1000



<Max>

177.76 N at 83.52 ms

<Min>

-732.79 N at 151.68 ms

CFC_1000



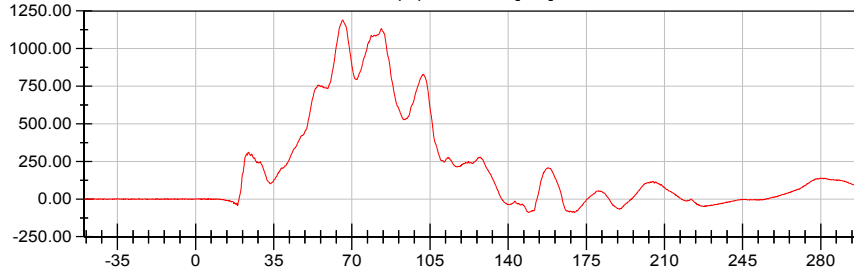
NHTSA

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Test Lab: CTF

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V2P2 LOWER NECK Z FORCE (N) vs. Time [ms]



<Max>

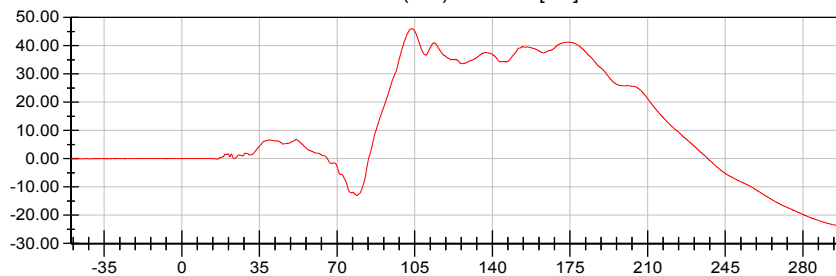
1,190.46 N at 65.92 ms

<Min>

-88.94 N at 149.12 ms

CFC_1000

V2P2 LOWER NECK X MOMENT (Nm) vs. Time [ms]



<Max>

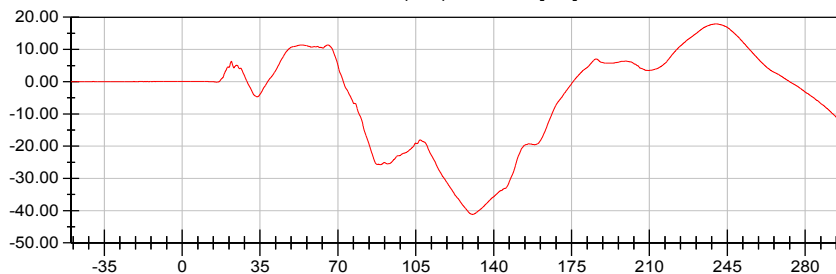
46.03 Nm at 103.68 ms

<Min>

-24.24 Nm at 300.00 ms

CFC_600

V2P2 LOWER NECK Y MOMENT (Nm) vs. Time [ms]



<Max>

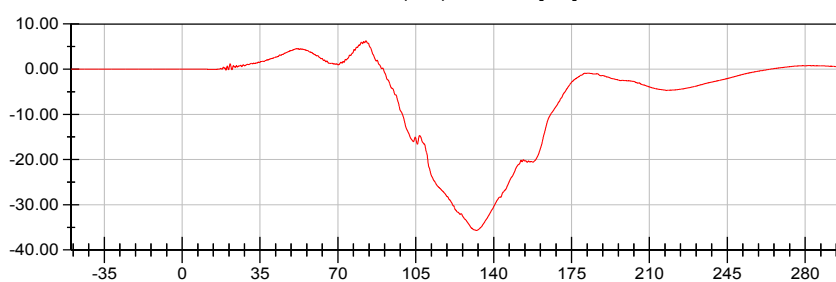
17.90 Nm at 240.16 ms

<Min>

-41.17 Nm at 130.40 ms

CFC_600

V2P2 LOWER NECK Z MOMENT (Nm) vs. Time [ms]



<Max>

6.26 Nm at 82.64 ms

<Min>

-35.70 Nm at 132.24 ms

CFC_600



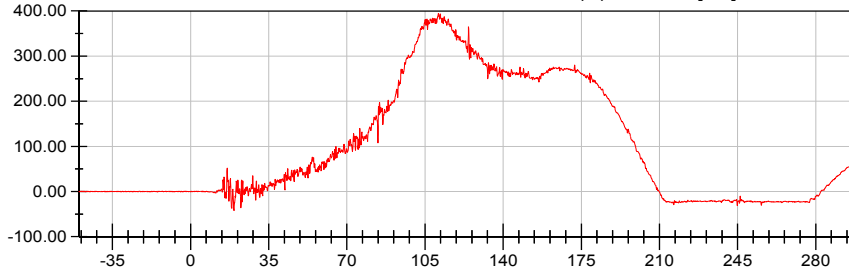
NHTSA

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V2P2 FRONT NECK SPRING TOWER LOAD CELL (N) vs. Time [ms]



<Max>

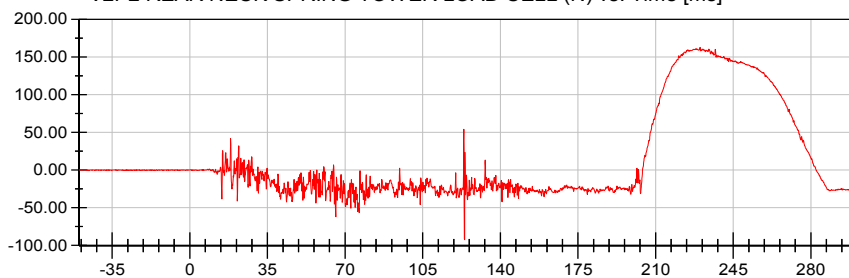
394.76 N at 111.04 ms

<Min>

-42.43 N at 19.44 ms

CFC_1000

V2P2 REAR NECK SPRING TOWER LOAD CELL (N) vs. Time [ms]



<Max>

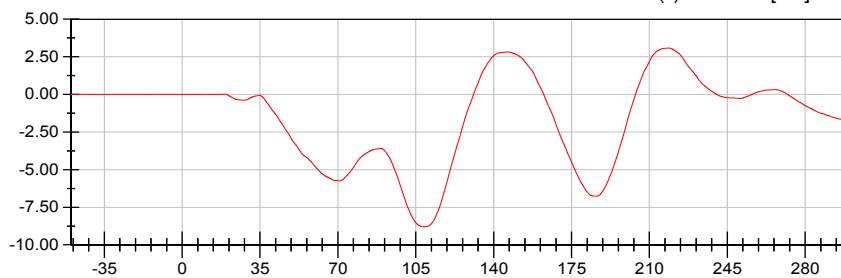
163.00 N at 230.00 ms

<Min>

-92.35 N at 123.84 ms

CFC_1000

V2P2 OCCIPITAL CONDYLE ROTATION POTENTIOMETER (°) vs. Time [ms]



<Max>

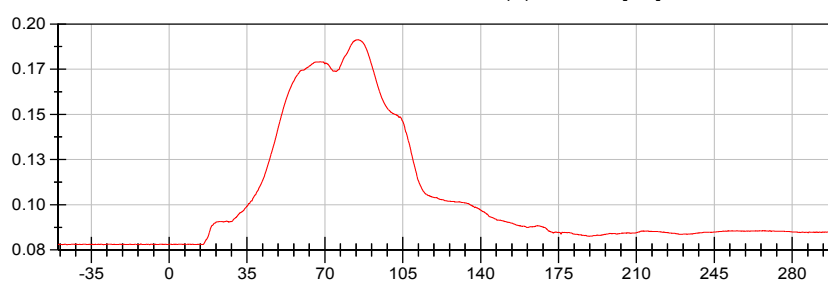
3.09 ° at 218.64 ms

<Min>

-8.79 ° at 109.60 ms

CFC_180

V2P2 UPPER LEFT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

0.19 V at 84.96 ms

<Min>

0.08 V at -45.92 ms

CFC_600



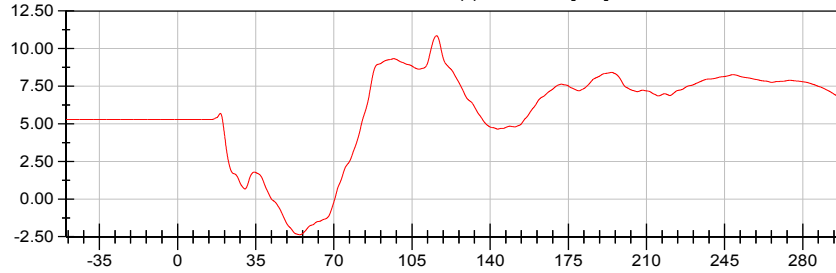
NHTSA

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Test Lab: CTF

Test Number: 160621 (R20165407)

V2P2 UPPER LEFT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

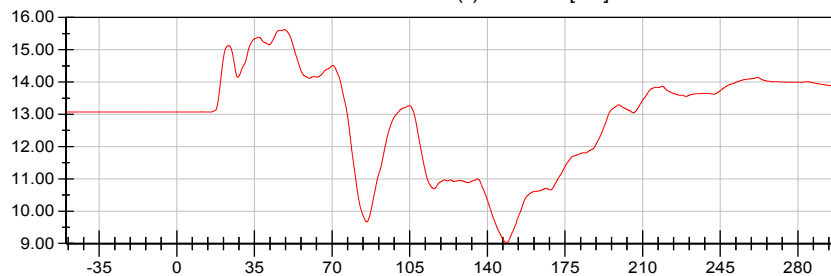
10.85 ° at 116.00 ms

<Min>

-2.38 ° at 54.80 ms

CFC_180

V2P2 UPPER LEFT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

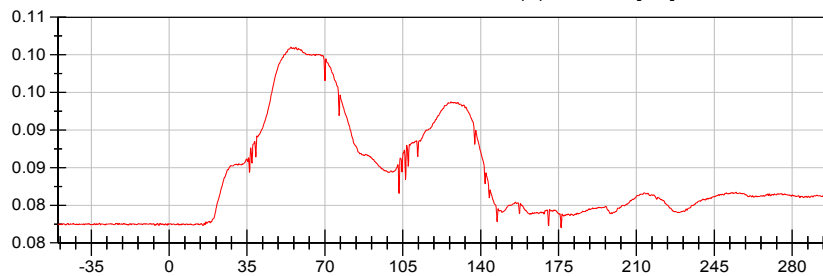
15.62 ° at 48.64 ms

<Min>

9.02 ° at 148.80 ms

CFC_180

V2P2 UPPER RIGHT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

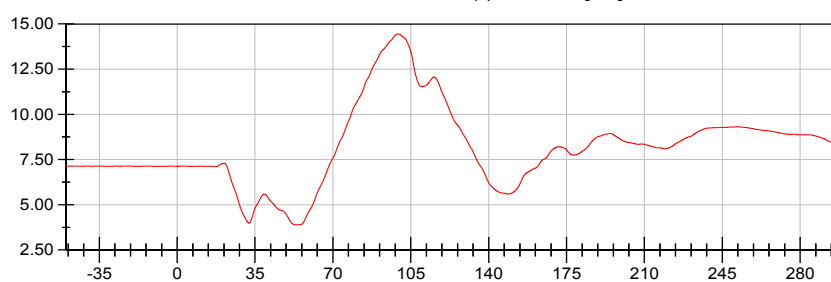
0.10 V at 54.72 ms

<Min>

0.08 V at 176.16 ms

CFC_600

V2P2 UPPER RIGHT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

14.45 ° at 99.52 ms

<Min>

3.88 ° at 53.52 ms

CFC_180

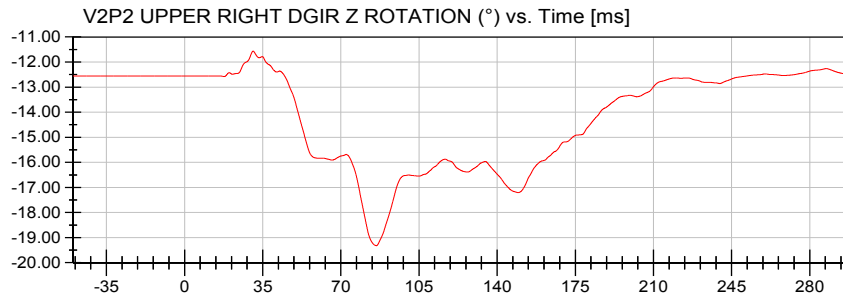


NHTSA

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Test Lab: CTF

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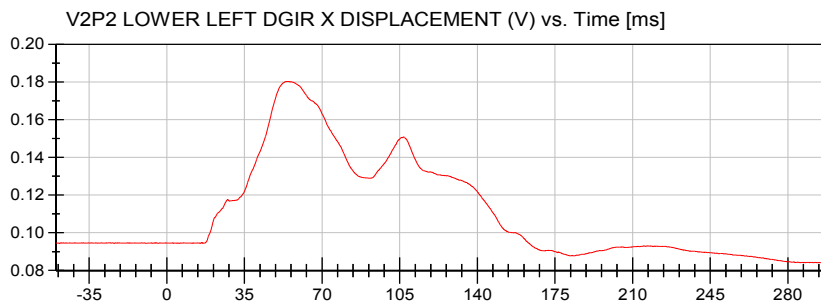
<Max>

-11.57 ° at 30.72 ms

<Min>

-19.32 ° at 85.84 ms

CFC_180



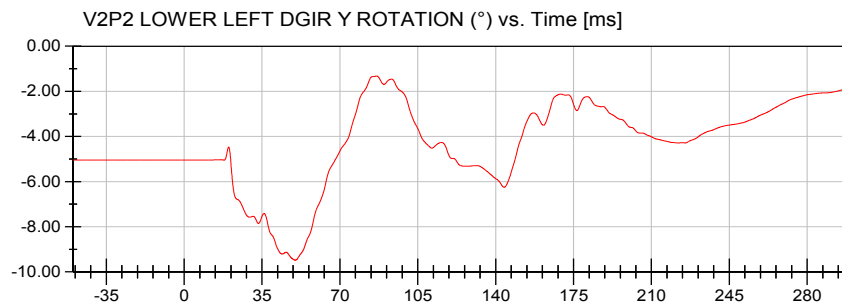
<Max>

0.18 V at 54.72 ms

<Min>

0.08 V at 297.36 ms

CFC_600



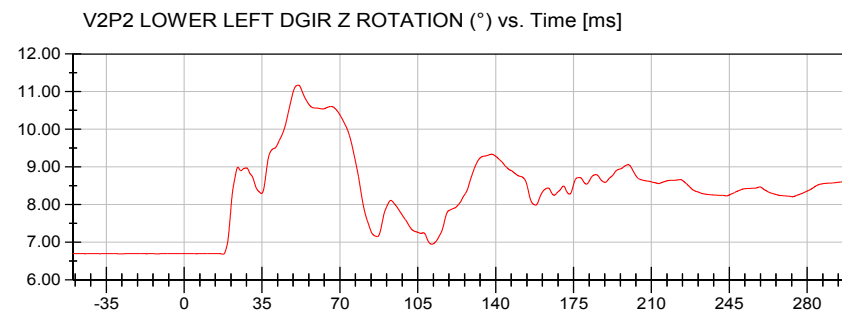
<Max>

-1.32 ° at 86.48 ms

<Min>

-9.48 ° at 50.00 ms

CFC_180



<Max>

11.17 ° at 51.28 ms

<Min>

6.68 ° at 17.44 ms

CFC_180



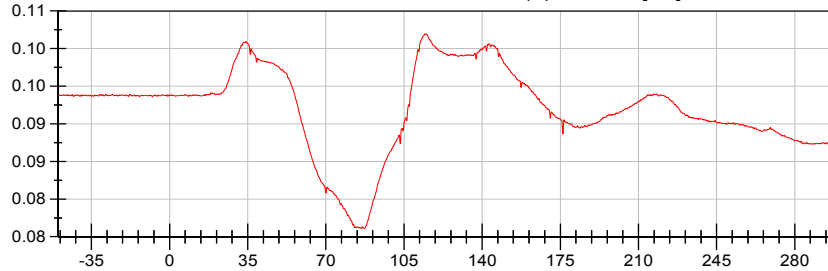
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P2 LOWER RIGHT DGIR X DISPLACEMENT (V) vs. Time [ms]

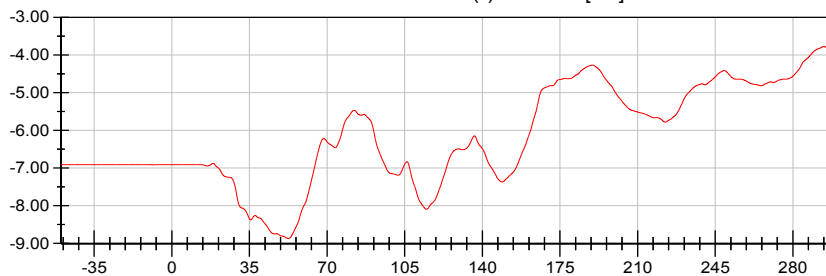


<Max>
0.10 V at 114.88 ms

<Min>
0.08 V at 85.84 ms

CFC_600

V2P2 LOWER RIGHT DGIR Y ROTATION (°) vs. Time [ms]

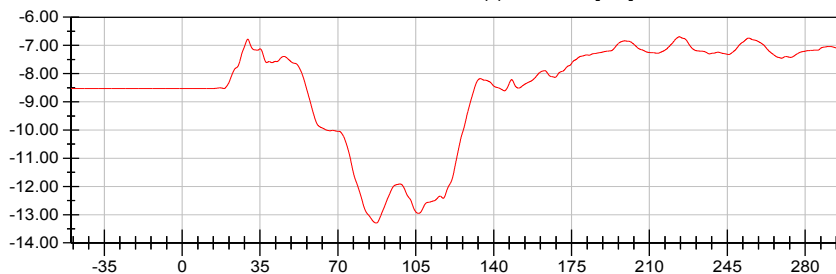


<Max>
-3.77 ° at 293.92 ms

<Min>
-8.87 ° at 52.56 ms

CFC_180

V2P2 LOWER RIGHT DGIR Z ROTATION (°) vs. Time [ms]

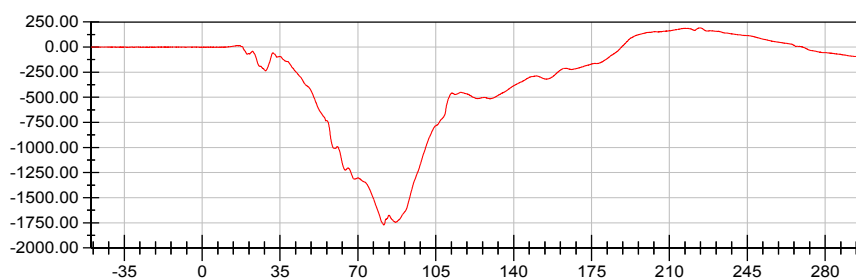


<Max>
-6.69 ° at 223.44 ms

<Min>
-13.30 ° at 87.28 ms

CFC_180

V2P2 SPINE FORCE X (N) vs. Time [ms]



<Max>
191.41 N at 223.60 ms

<Min>
-1,771.25 N at 81.60 ms

CFC_1000

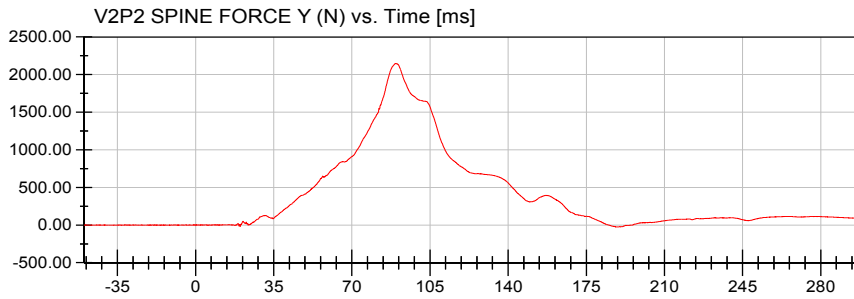


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



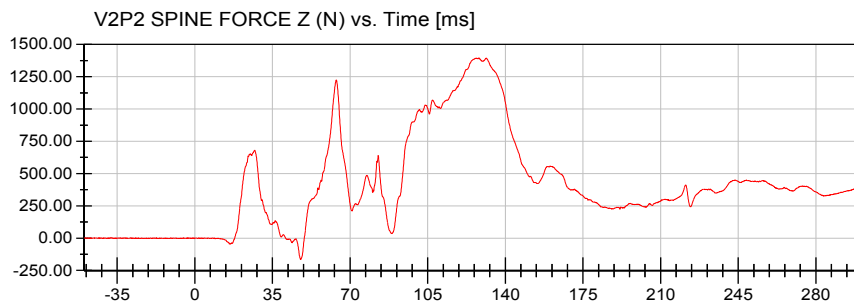
<Max>

2,147.20 N at 89.60 ms

<Min>

-26.23 N at 188.96 ms

CFC_1000



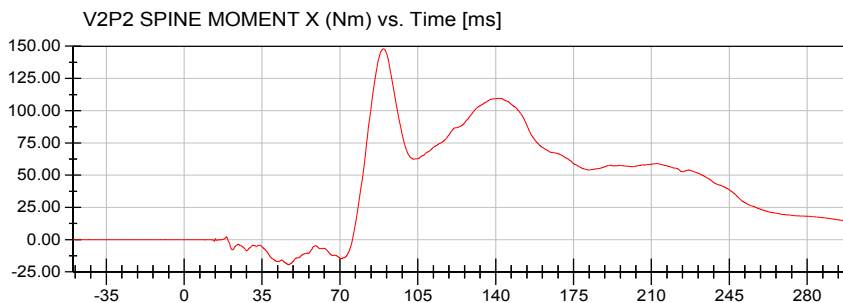
<Max>

1,396.03 N at 128.08 ms

<Min>

-165.63 N at 47.76 ms

CFC_1000



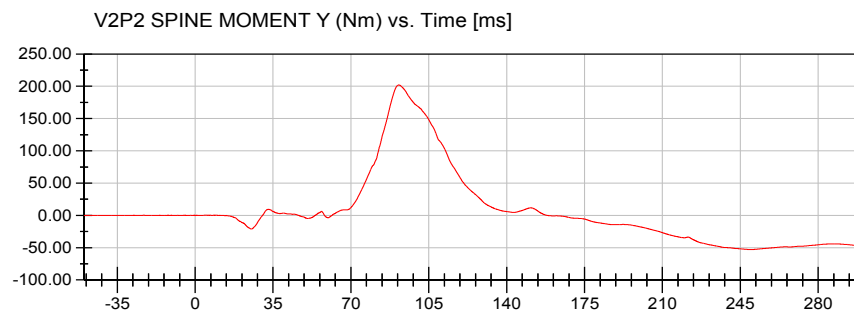
<Max>

147.99 Nm at 89.60 ms

<Min>

-19.39 Nm at 46.96 ms

CFC_600



<Max>

201.94 Nm at 91.52 ms

<Min>

-52.95 Nm at 249.60 ms

CFC_600

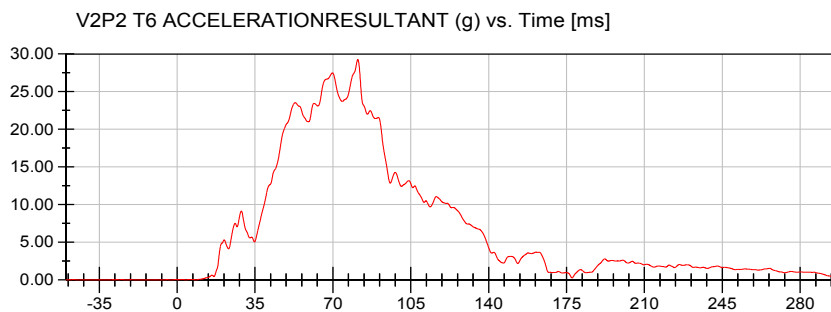
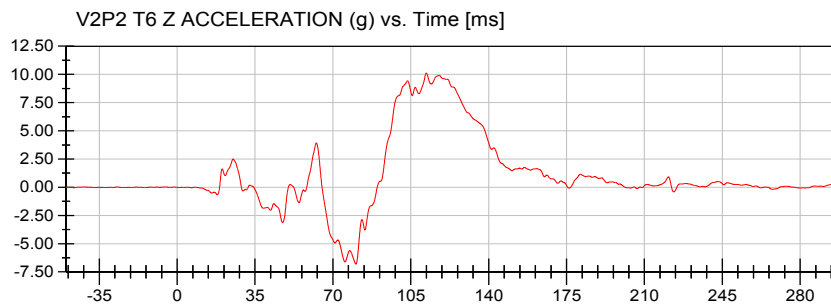
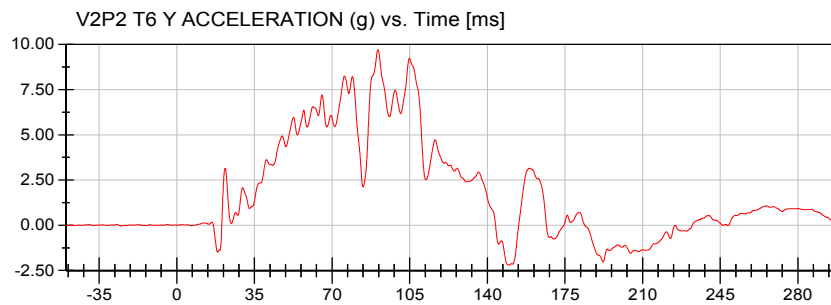
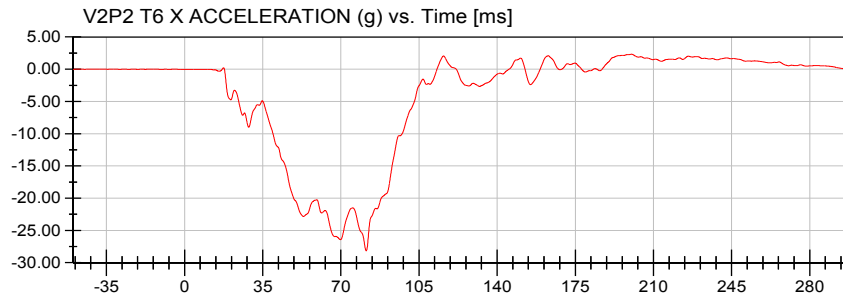


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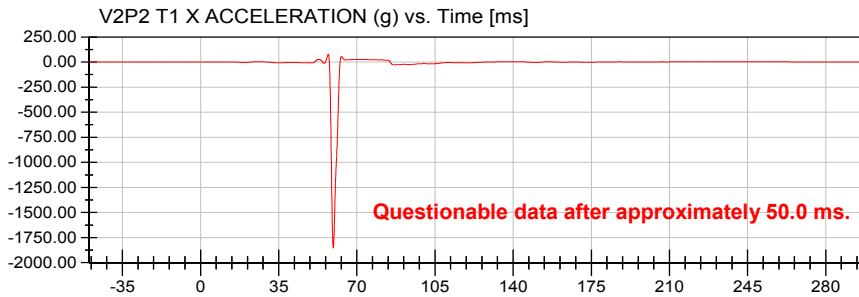


NHTSA

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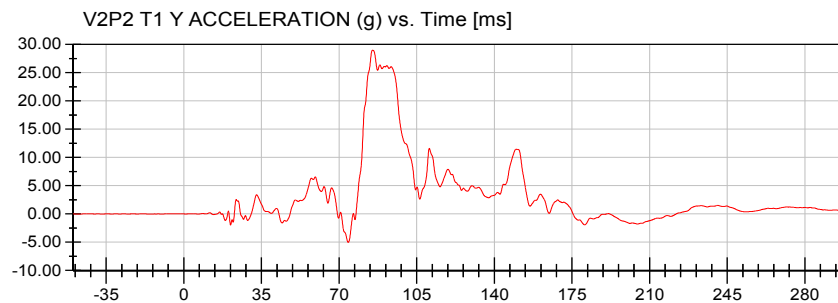
<Max>

78.70 g at 57.20 ms

<Min>

-1,855.22 g at 59.44 ms

CFC_180



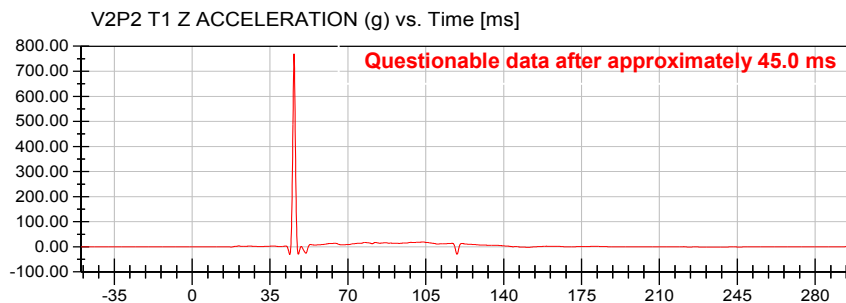
<Max>

28.97 g at 85.12 ms

<Min>

-5.01 g at 74.16 ms

CFC_180



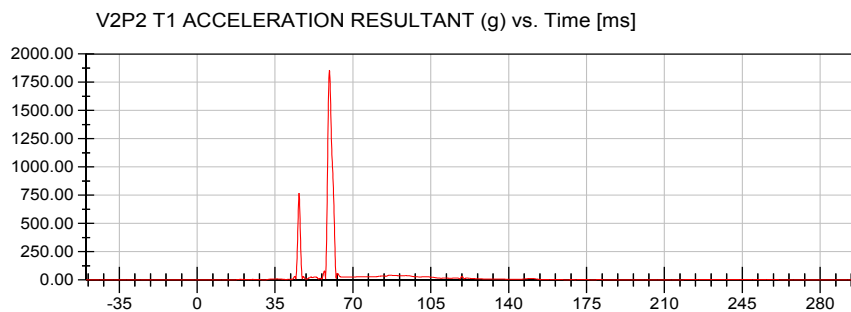
<Max>

769.43 g at 45.76 ms

<Min>

-30.08 g at 43.84 ms

CFC_180



<Max>

1,855.26 g at 59.44 ms

<Min>

0.00 g at -11.04 ms

CFC_180



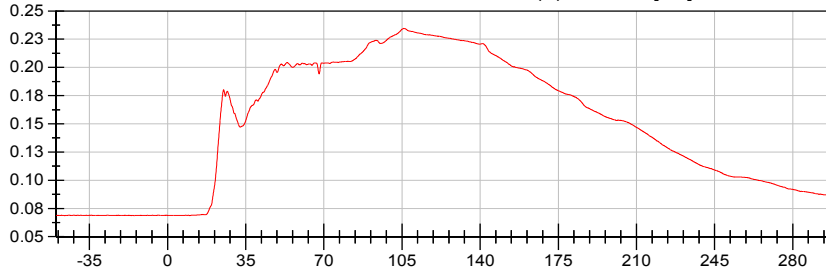
NHTSA

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Test Lab: CTF

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V2P2 ABDOMEN LEFT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

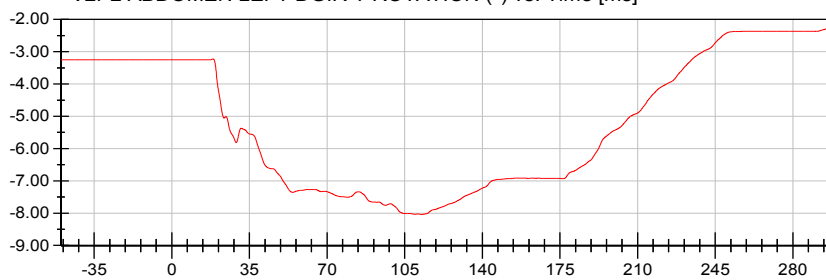
0.23 V at 105.84 ms

<Min>

0.07 V at -14.96 ms

CFC_600

V2P2 ABDOMEN LEFT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

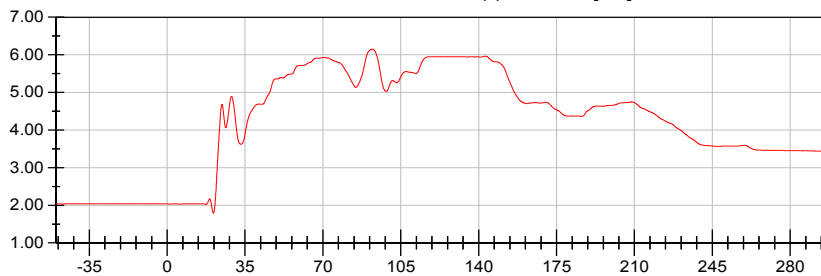
-2.20 ° at 300.00 ms

<Min>

-8.04 ° at 112.64 ms

CFC_180

V2P2 ABDOMEN LEFT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

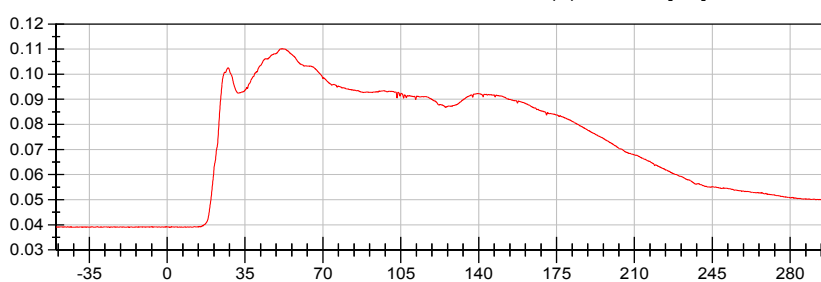
6.15 ° at 92.40 ms

<Min>

1.79 ° at 20.80 ms

CFC_180

V2P2 ABDOMEN RIGHT DGIR X DISPLACEMENT (V) vs. Time [ms]



<Max>

0.11 V at 50.96 ms

<Min>

0.04 V at -17.04 ms

CFC_600



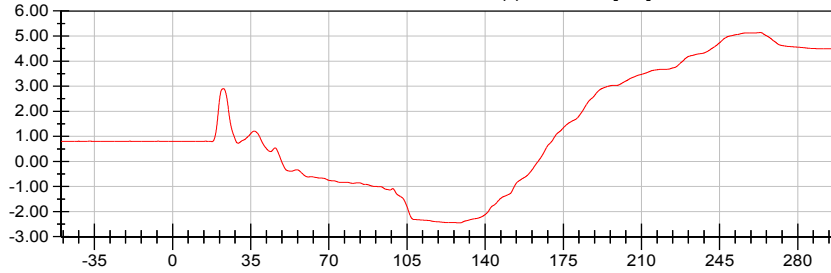
NHTSA

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Test Lab: CTF

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V2P2 ABDOMEN RIGHT DGIR Y ROTATION (°) vs. Time [ms]



<Max>

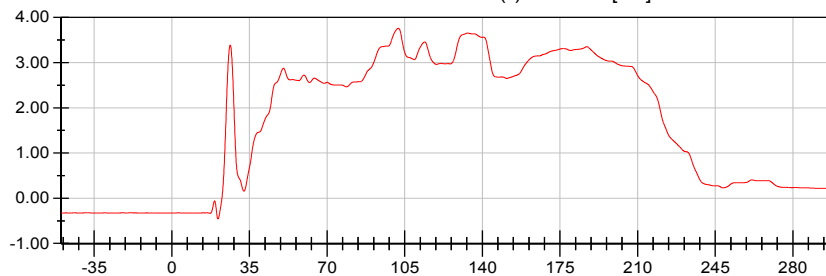
5.14 ° at 263.20 ms

<Min>

-2.45 ° at 128.72 ms

CFC_180

V2P2 ABDOMEN RIGHT DGIR Z ROTATION (°) vs. Time [ms]



<Max>

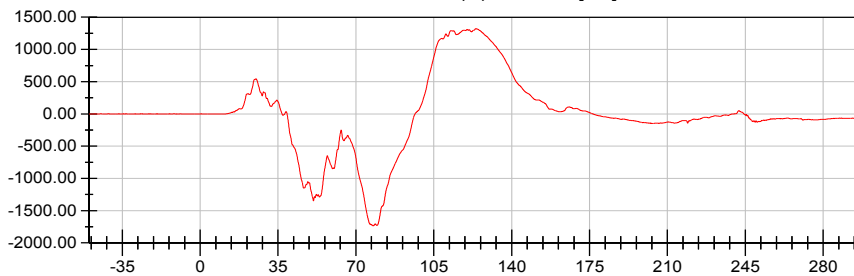
3.76 ° at 102.16 ms

<Min>

-0.46 ° at 20.80 ms

CFC_180

V2P2 ACETABULUM LEFT X FORCE (N) vs. Time [ms]



<Max>

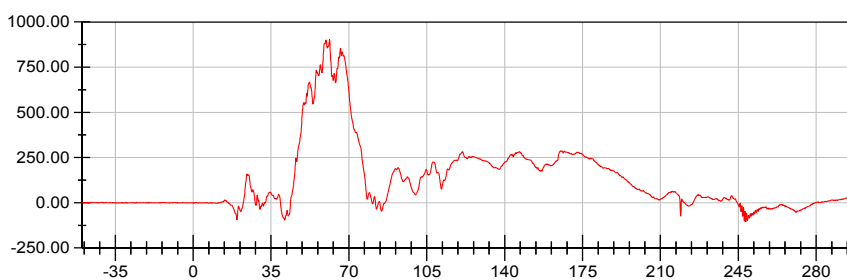
1,320.57 N at 123.92 ms

<Min>

-1,735.57 N at 77.68 ms

CFC_600

V2P2 ACETABULUM LEFT Y FORCE (N) vs. Time [ms]



<Max>

903.01 N at 61.28 ms

<Min>

-104.59 N at 248.40 ms

CFC_600



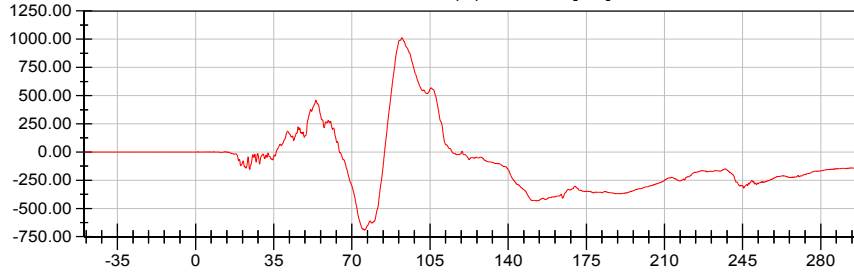
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P2 ACETABULUM LEFT Z FORCE (N) vs. Time [ms]



<Max>

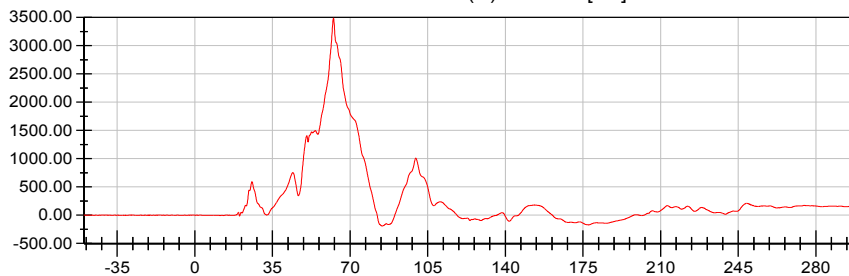
1,012.20 N at 92.40 ms

<Min>

-691.61 N at 75.60 ms

CFC_600

V2P2 ACETABULUM RIGHT X FORCE (N) vs. Time [ms]



<Max>

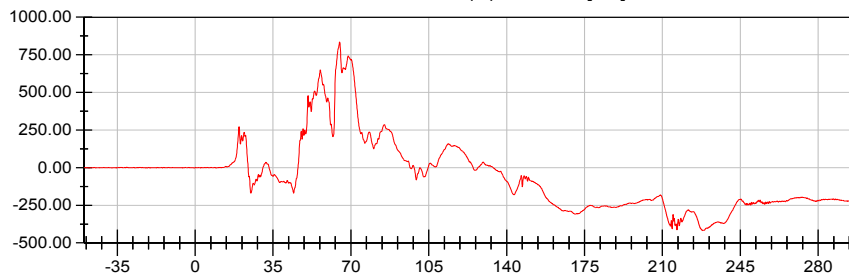
3,488.03 N at 62.48 ms

<Min>

-190.19 N at 84.56 ms

CFC_600

V2P2 ACETABULUM RIGHT Y FORCE (N) vs. Time [ms]



<Max>

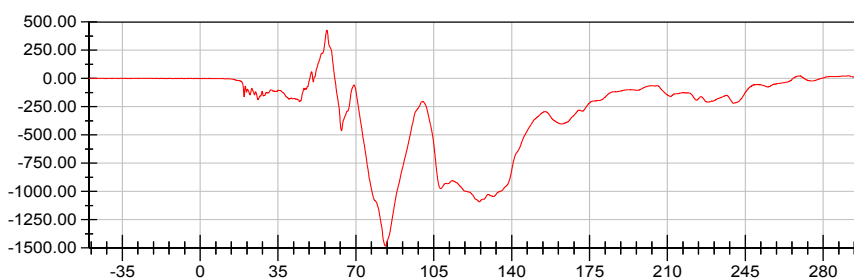
835.65 N at 64.96 ms

<Min>

-417.86 N at 228.16 ms

CFC_600

V2P2 ACETABULUM RIGHT Z FORCE (N) vs. Time [ms]



<Max>

427.92 N at 56.96 ms

<Min>

-1,483.36 N at 83.20 ms

CFC_600

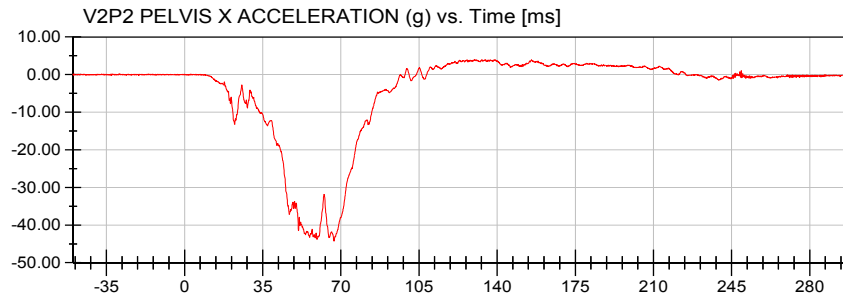


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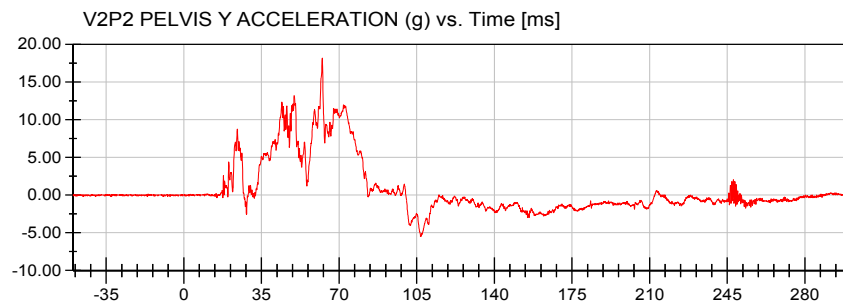
<Max>

3.92 g at 126.48 ms

<Min>

-44.26 g at 66.88 ms

CFC_1000



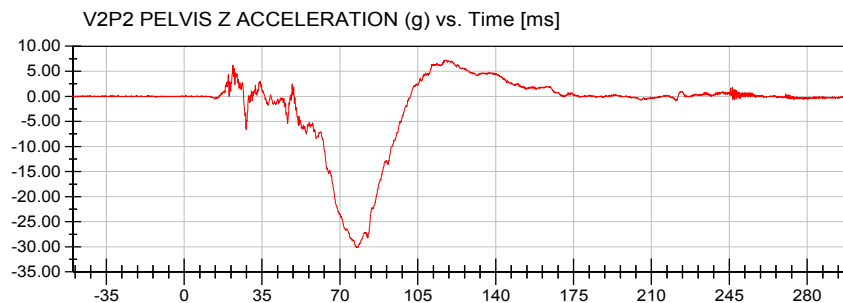
<Max>

18.20 g at 62.40 ms

<Min>

-5.49 g at 106.72 ms

CFC_1000



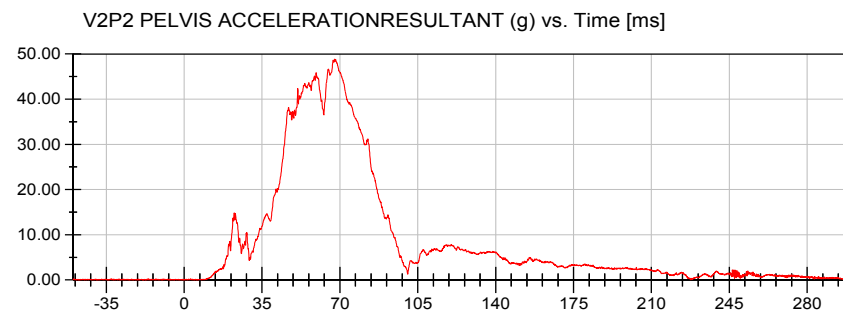
<Max>

7.23 g at 117.36 ms

<Min>

-30.18 g at 77.92 ms

CFC_1000



<Max>

48.87 g at 67.60 ms

<Min>

0.04 g at -48.64 ms

CFC_1000

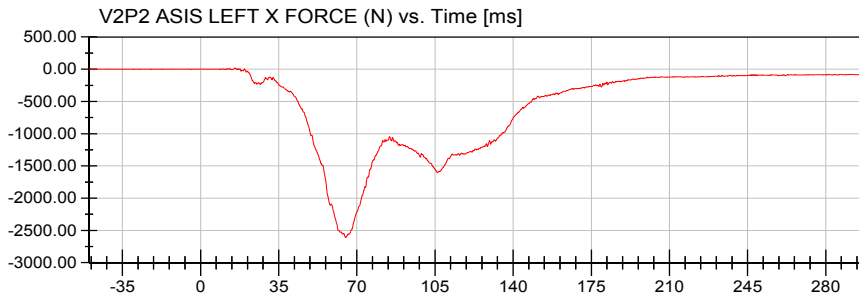


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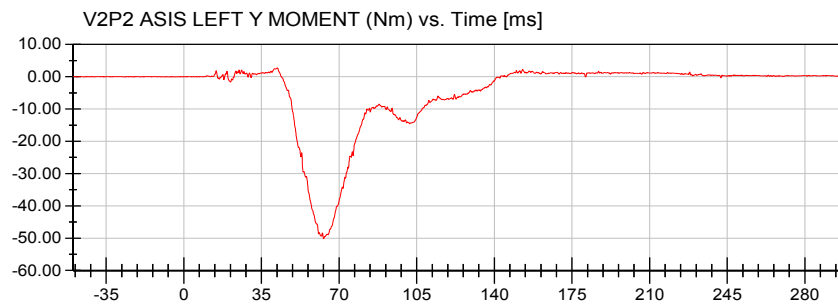
<Max>

19.35 N at 15.52 ms

<Min>

-2,610.15 N at 65.04 ms

CFC_600



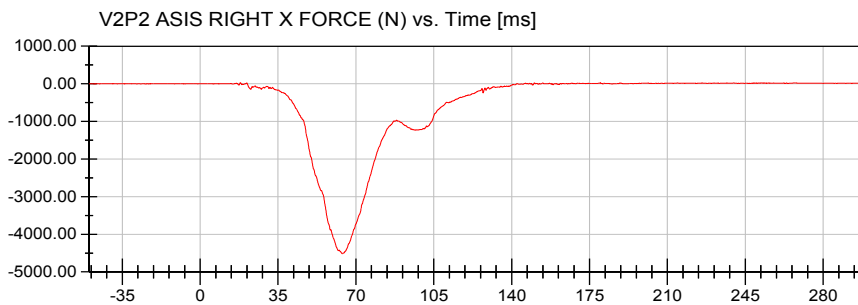
<Max>

2.72 Nm at 42.16 ms

<Min>

-50.22 Nm at 63.04 ms

CFC_600



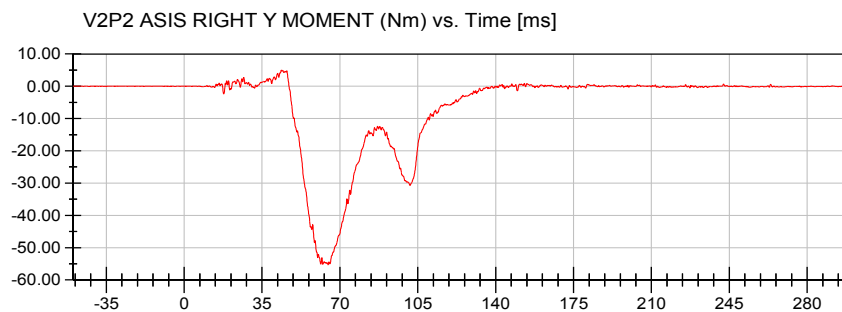
<Max>

27.78 N at 179.84 ms

<Min>

-4,518.92 N at 63.84 ms

CFC_600



<Max>

4.99 Nm at 43.68 ms

<Min>

-55.30 Nm at 64.64 ms

CFC_600



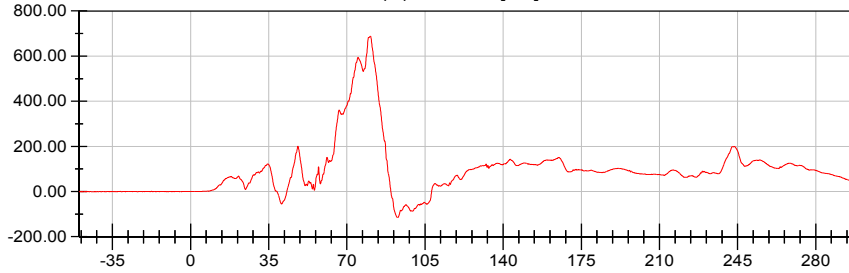
NHTSA

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V2P2 FEMUR LEFT X FORCE (N) vs. Time [ms]



<Max>

688.34 N at 80.48 ms

<Min>

-115.19 N at 92.88 ms

CFC_600

V2P2 FEMUR LEFT Y FORCE (N) vs. Time [ms]



<Max>

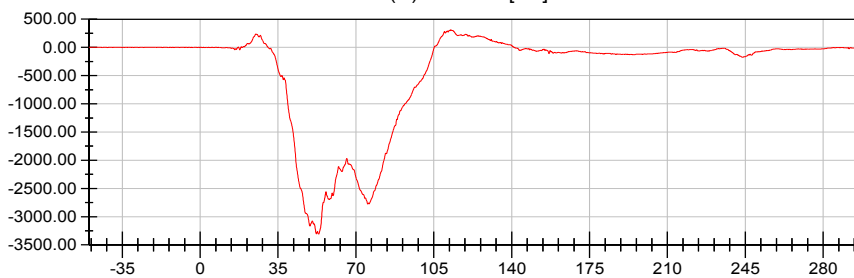
466.06 N at 50.96 ms

<Min>

-254.17 N at 124.32 ms

CFC_600

V2P2 FEMUR LEFT Z FORCE (N) vs. Time [ms]



<Max>

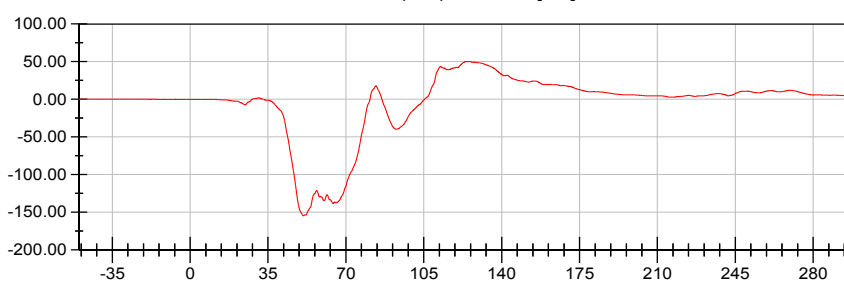
311.19 N at 112.64 ms

<Min>

-3,306.78 N at 53.20 ms

CFC_600

V2P2 FEMUR LEFT X MOMENT (Nm) vs. Time [ms]



<Max>

50.21 Nm at 124.08 ms

<Min>

-154.54 Nm at 50.88 ms

CFC_600

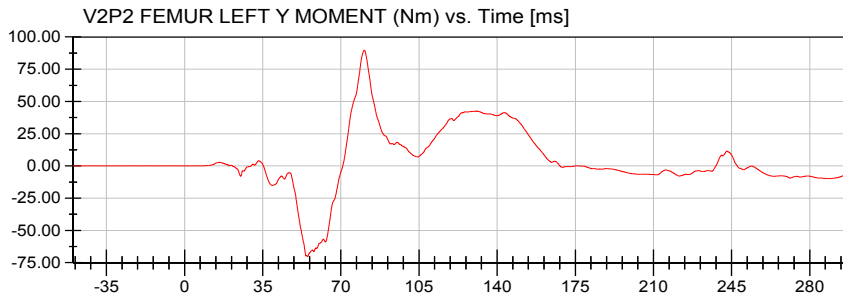


NHTSA

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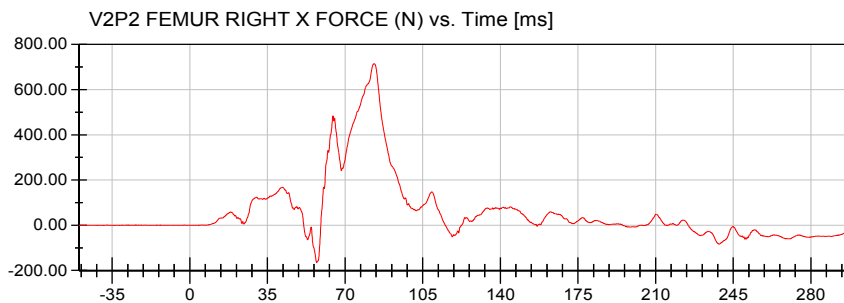
<Max>

89.71 Nm at 80.56 ms

<Min>

-70.35 Nm at 55.12 ms

CFC_600



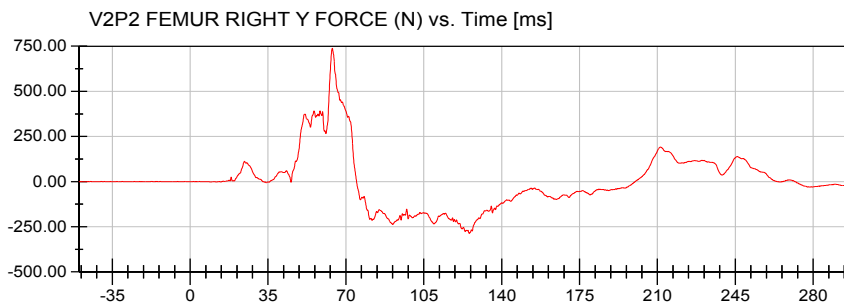
<Max>

714.68 N at 83.12 ms

<Min>

-165.40 N at 57.20 ms

CFC_600



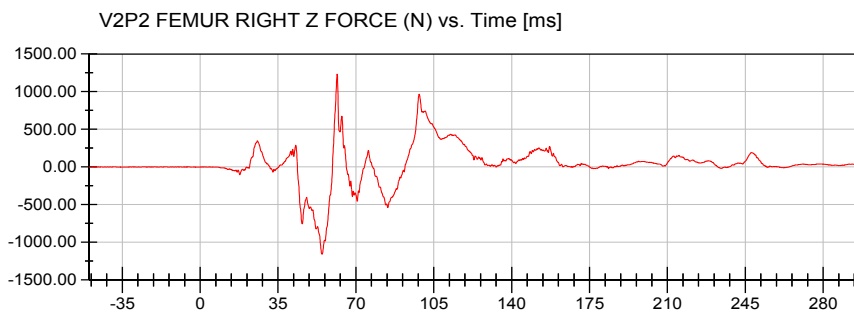
<Max>

738.44 N at 63.84 ms

<Min>

-286.57 N at 125.44 ms

CFC_600



<Max>

1,230.39 N at 61.52 ms

<Min>

-1,158.22 N at 54.80 ms

CFC_600

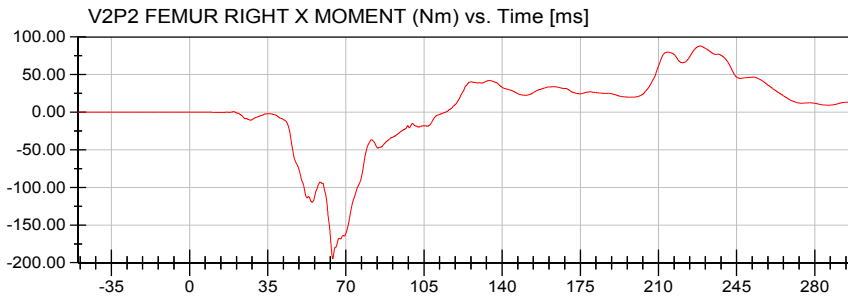


NHTSA

Test Date: 06/21/2016

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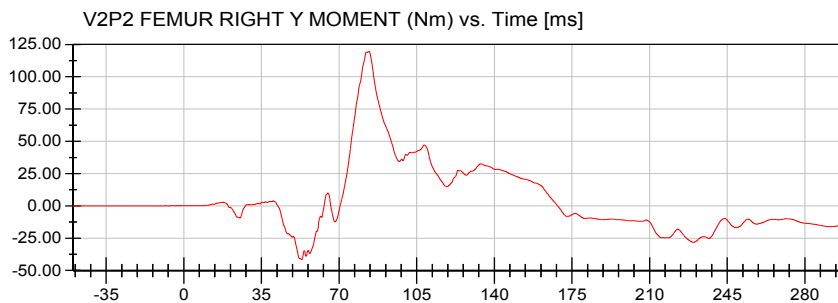
<Max>

87.99 Nm at 228.80 ms

<Min>

-194.73 Nm at 64.16 ms

CFC_600



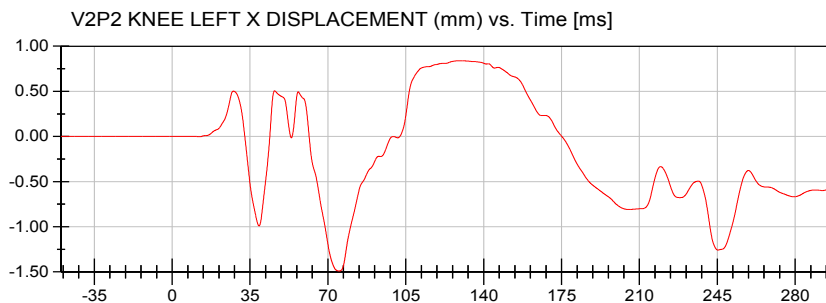
<Max>

119.70 Nm at 83.44 ms

<Min>

-41.58 Nm at 53.20 ms

CFC_600



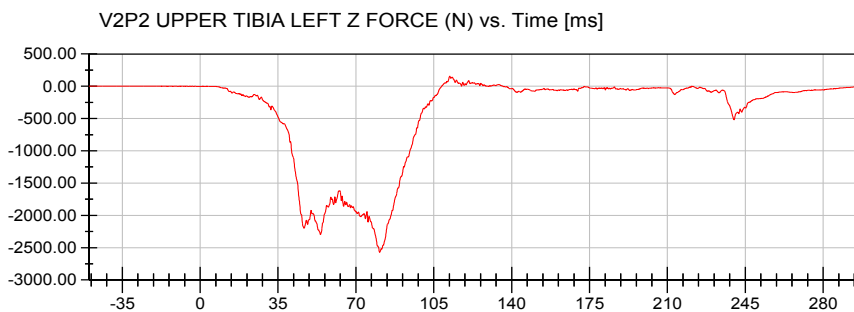
<Max>

0.84 mm at 129.52 ms

<Min>

-1.49 mm at 75.20 ms

CFC_180



<Max>

156.38 N at 112.24 ms

<Min>

-2,571.15 N at 80.64 ms

CFC_600



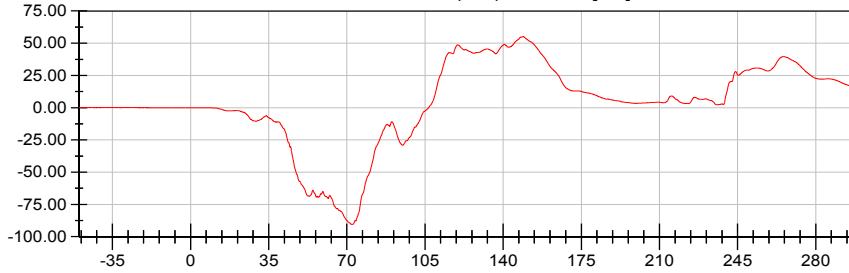
NHTSA

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V2P2 UPPER TIBIA LEFT X MOMENT (Nm) vs. Time [ms]



<Max>

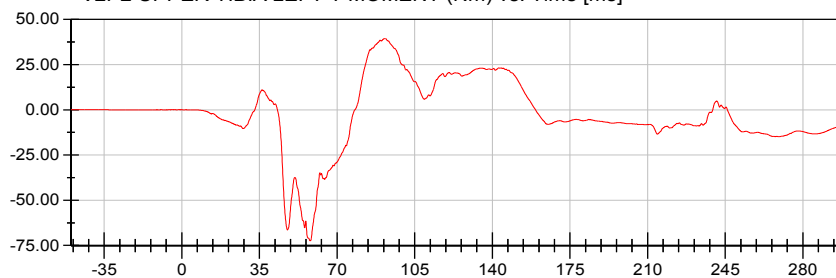
55.12 Nm at 148.96 ms

<Min>

-90.48 Nm at 72.64 ms

CFC_600

V2P2 UPPER TIBIA LEFT Y MOMENT (Nm) vs. Time [ms]



<Max>

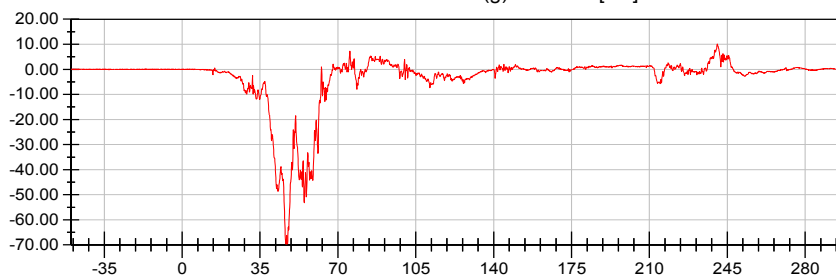
39.42 Nm at 91.76 ms

<Min>

-72.45 Nm at 57.84 ms

CFC_600

V2P2 MID TIBIA LEFT X ACCELERATION (g) vs. Time [ms]



<Max>

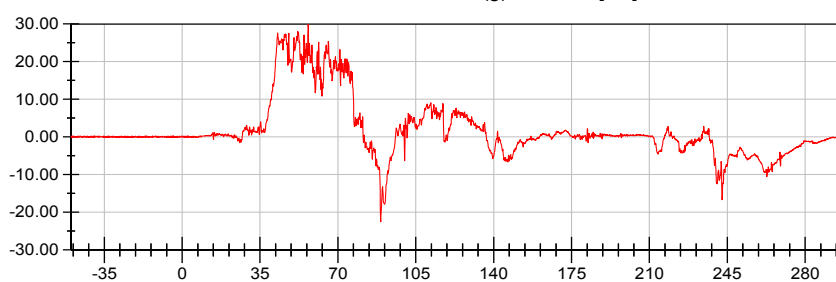
10.12 g at 240.48 ms

<Min>

-69.78 g at 46.72 ms

CFC_1000

V2P2 MID TIBIA LEFT Y ACCELERATION (g) vs. Time [ms]



<Max>

29.91 g at 56.64 ms

<Min>

-22.50 g at 89.20 ms

CFC_1000

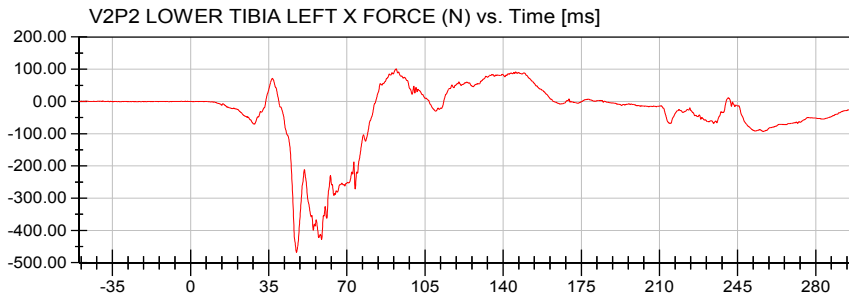


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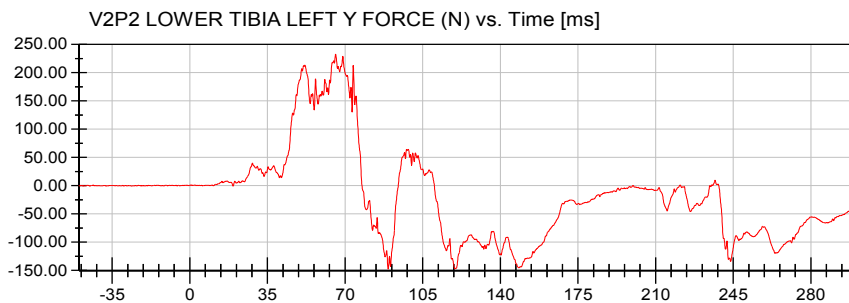
<Max>

101.34 N at 92.08 ms

<Min>

-467.73 N at 47.44 ms

CFC_600



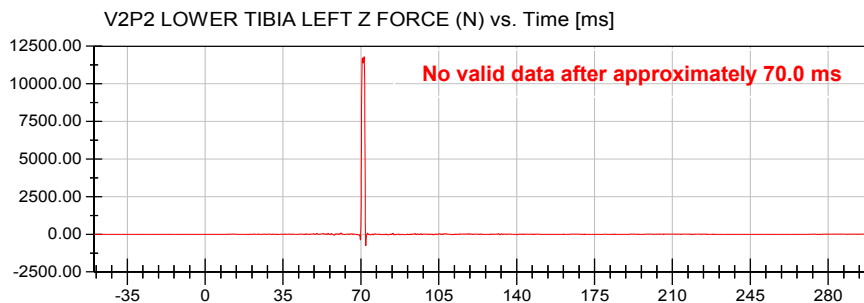
<Max>

232.47 N at 65.76 ms

<Min>

-147.67 N at 89.44 ms

CFC_600



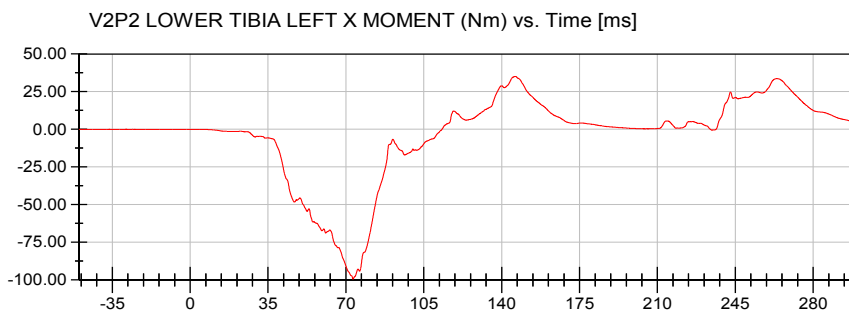
<Max>

11,796.09 N at 71.44 ms

<Min>

-742.13 N at 72.16 ms

CFC_600



<Max>

35.04 Nm at 146.24 ms

<Min>

-99.48 Nm at 73.20 ms

CFC_600

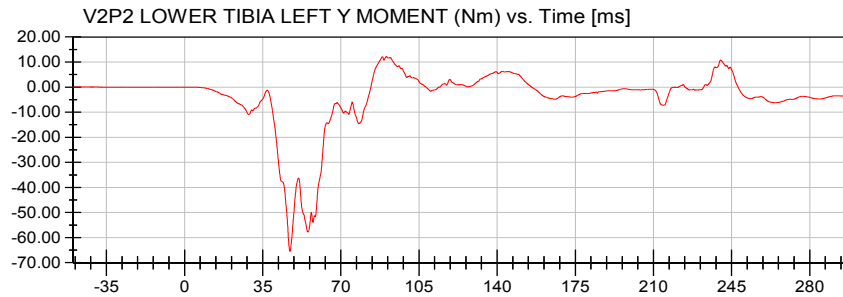


NHTSA

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Test Number: 160621 (R20165407)



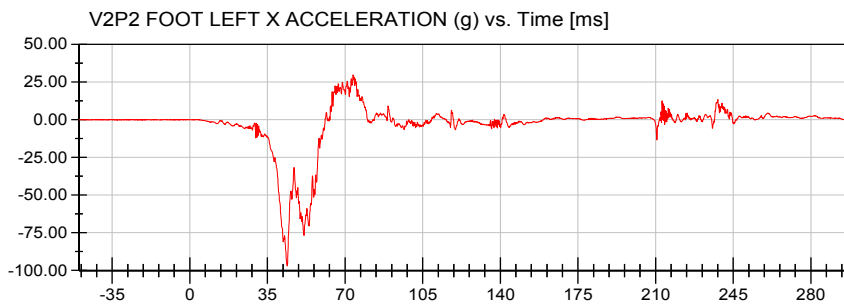
<Max>

12.24 Nm at 90.40 ms

<Min>

-65.49 Nm at 47.20 ms

CFC_600



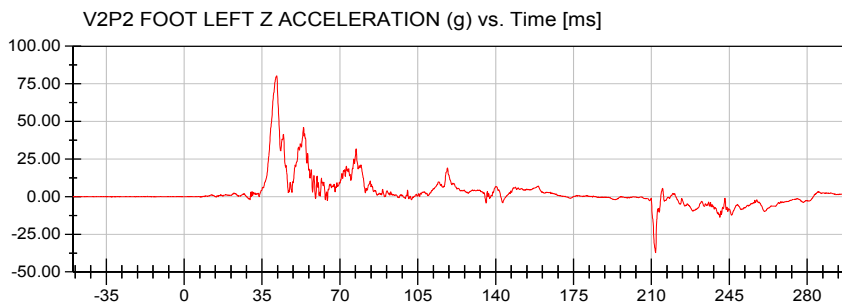
<Max>

29.83 g at 73.60 ms

<Min>

-97.01 g at 43.92 ms

CFC_1000



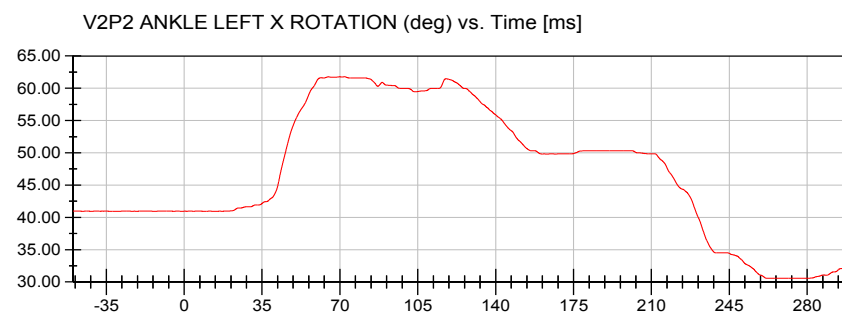
<Max>

80.22 g at 41.60 ms

<Min>

-37.22 g at 211.84 ms

CFC_1000



<Max>

61.78 deg at 72.00 ms

<Min>

30.57 deg at 262.08 ms

CFC_180

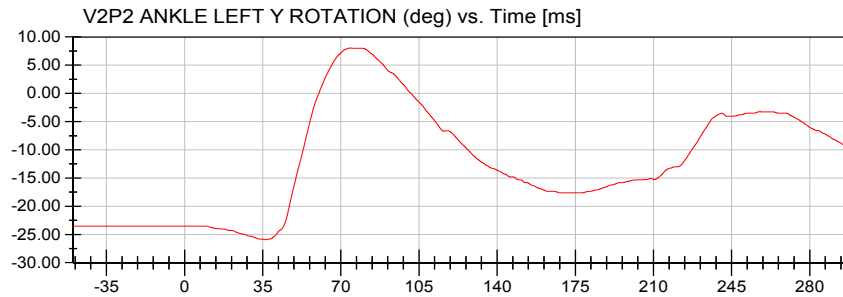


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



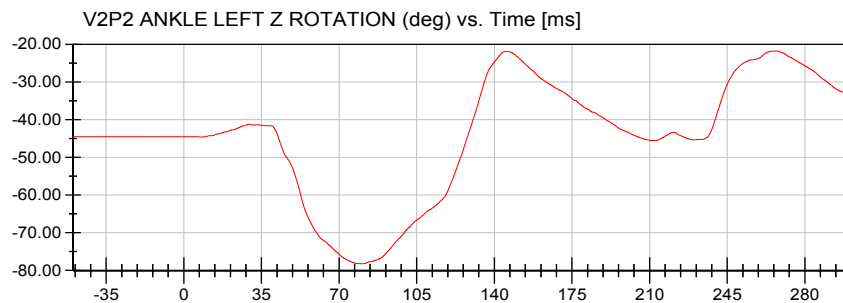
<Max>

8.02 deg at 74.16 ms

<Min>

-25.91 deg at 36.24 ms

CFC_180



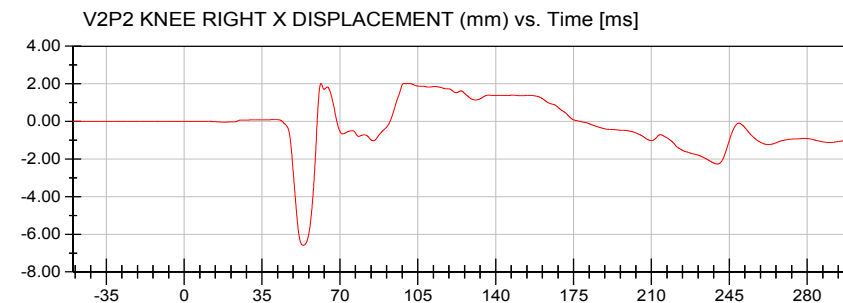
<Max>

-21.75 deg at 267.12 ms

<Min>

-78.20 deg at 80.64 ms

CFC_180



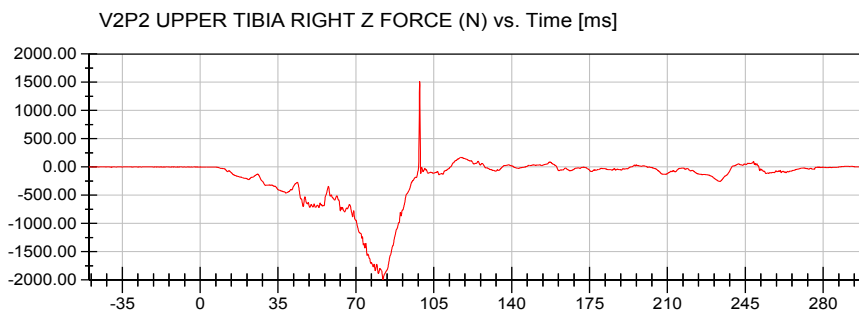
<Max>

2.02 mm at 61.44 ms

<Min>

-6.59 mm at 53.44 ms

CFC_180



<Max>

1,512.28 N at 98.64 ms

<Min>

-1,991.72 N at 82.16 ms

CFC_600

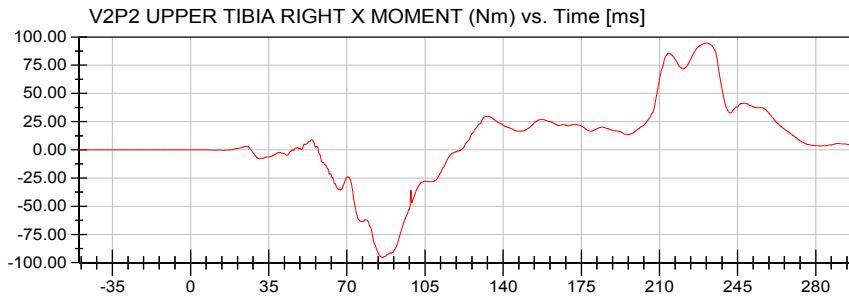


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



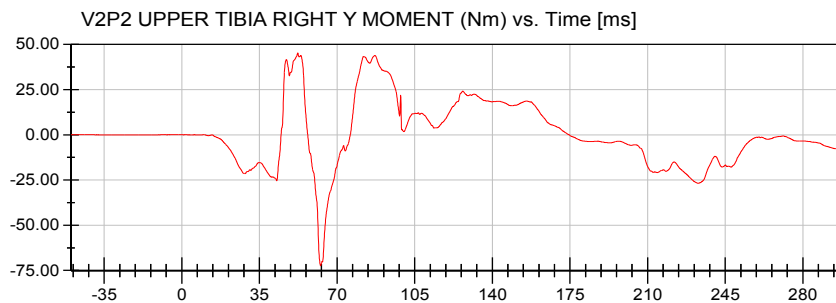
<Max>

94.70 Nm at 231.12 ms

<Min>

-95.44 Nm at 85.84 ms

CFC_600



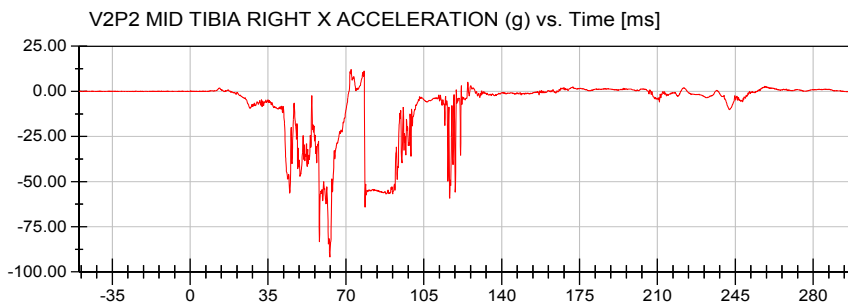
<Max>

45.25 Nm at 52.24 ms

<Min>

-72.43 Nm at 62.56 ms

CFC_600



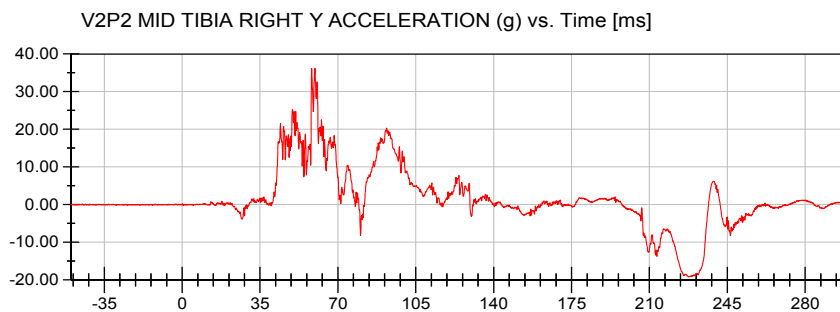
<Max>

12.06 g at 72.32 ms

<Min>

-91.78 g at 62.80 ms

CFC_1000



<Max>

36.20 g at 58.16 ms

<Min>

-19.23 g at 227.52 ms

CFC_1000

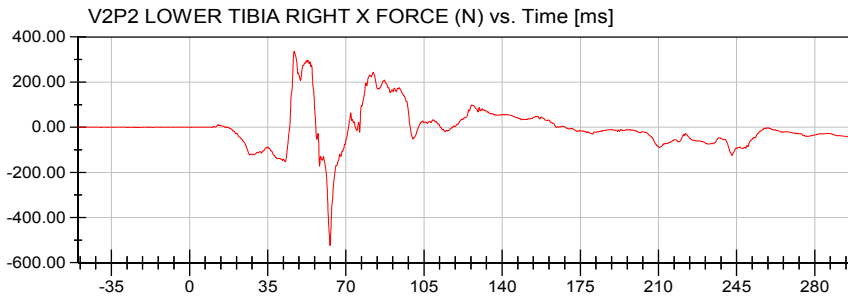


NHTSA

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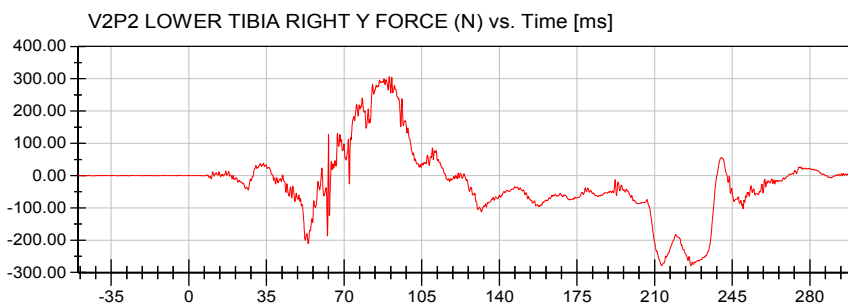
<Max>

336.14 N at 46.88 ms

<Min>

-523.97 N at 62.96 ms

CFC_600



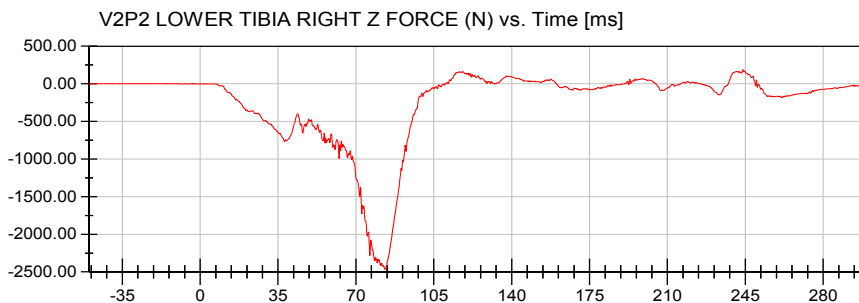
<Max>

306.75 N at 90.40 ms

<Min>

-279.17 N at 226.48 ms

CFC_600



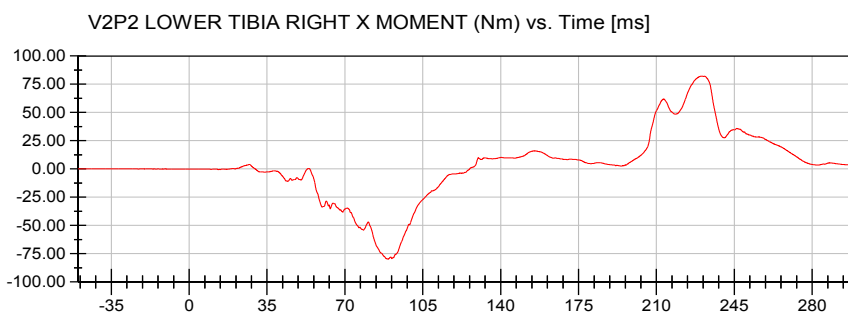
<Max>

186.68 N at 243.84 ms

<Min>

-2,465.30 N at 83.04 ms

CFC_600



<Max>

82.14 Nm at 230.24 ms

<Min>

-79.75 Nm at 89.44 ms

CFC_600

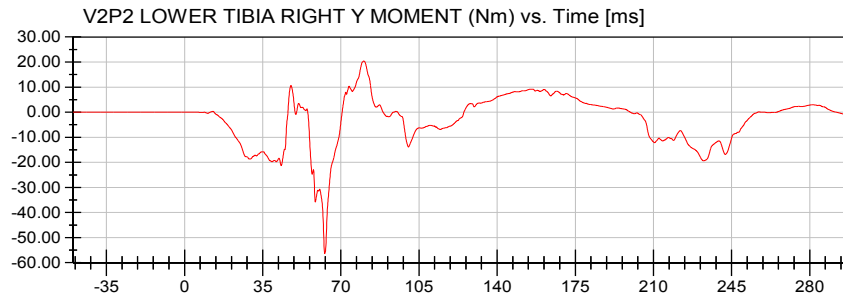


NHTSA

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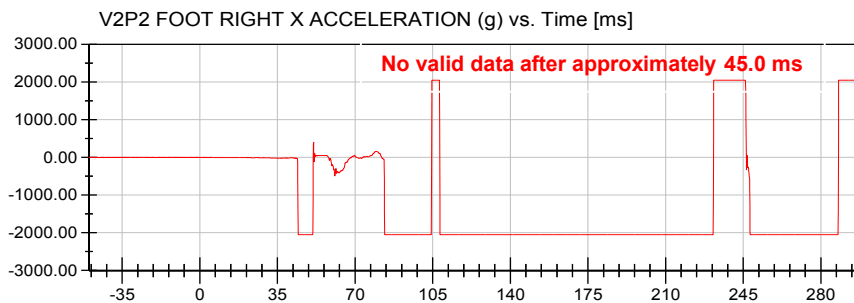
<Max>

20.39 Nm at 80.24 ms

<Min>

-56.37 Nm at 62.80 ms

CFC_600



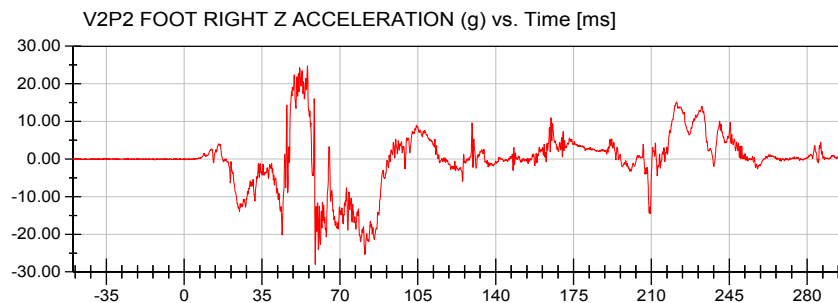
<Max>

2,050.93 g at 104.64 ms

<Min>

-2,049.11 g at 44.32 ms

CFC_1000



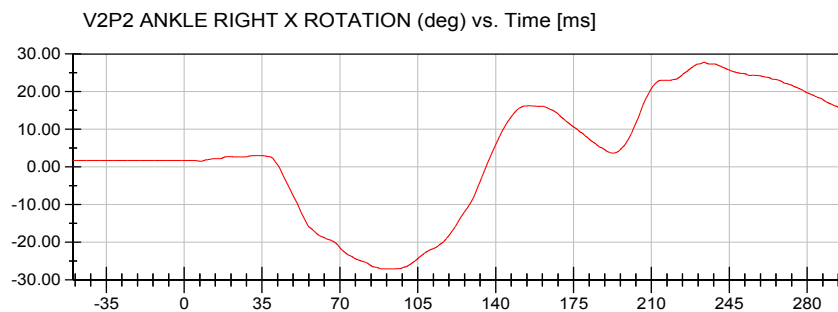
<Max>

24.74 g at 55.44 ms

<Min>

-27.99 g at 58.88 ms

CFC_1000



<Max>

27.78 deg at 233.68 ms

<Min>

-27.05 deg at 88.96 ms

CFC_180

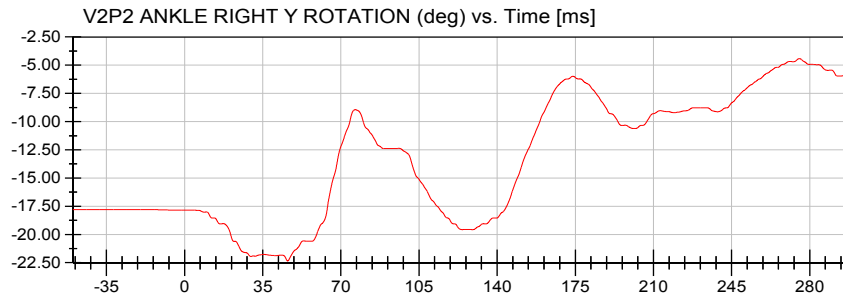


NHTSA

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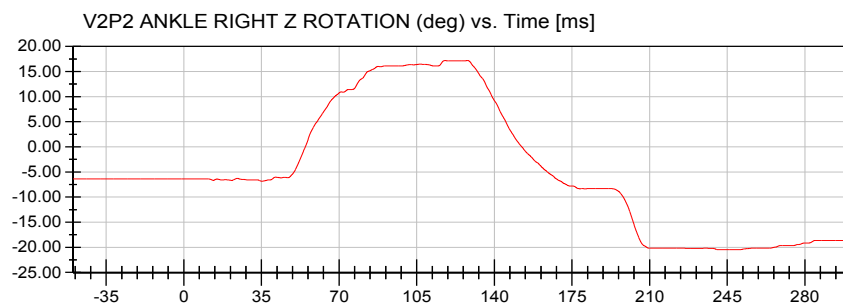
<Max>

-4.42 deg at 275.36 ms

<Min>

-22.35 deg at 46.16 ms

CFC_180



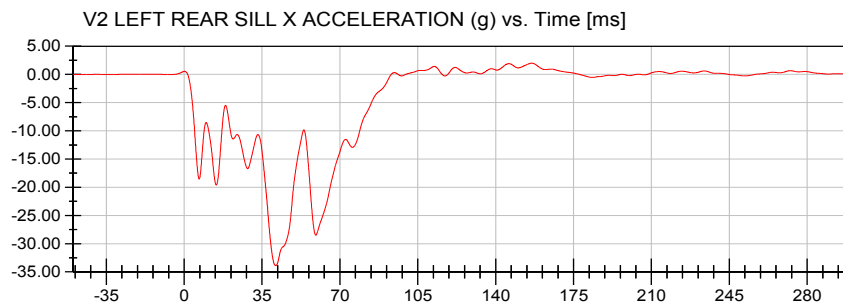
<Max>

17.17 deg at 127.92 ms

<Min>

-20.48 deg at 241.20 ms

CFC_180



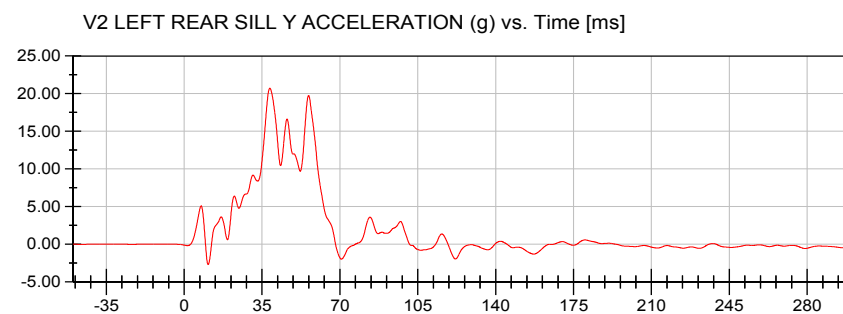
<Max>

1.99 g at 156.16 ms

<Min>

-33.87 g at 41.20 ms

CFC_60



<Max>

20.72 g at 38.48 ms

<Min>

-2.70 g at 10.80 ms

CFC_60

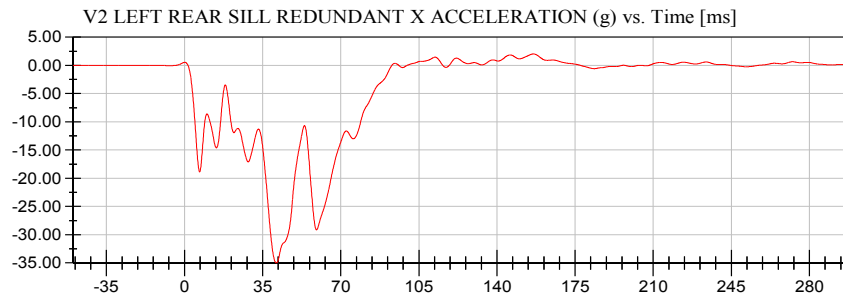


NHTSA

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Test Lab: CTF

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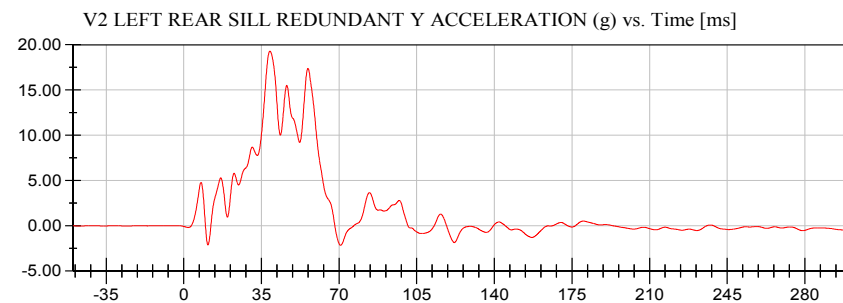
<Max>

2.02 g at 156.24 ms

<Min>

-34.99 g at 41.20 ms

CFC_60



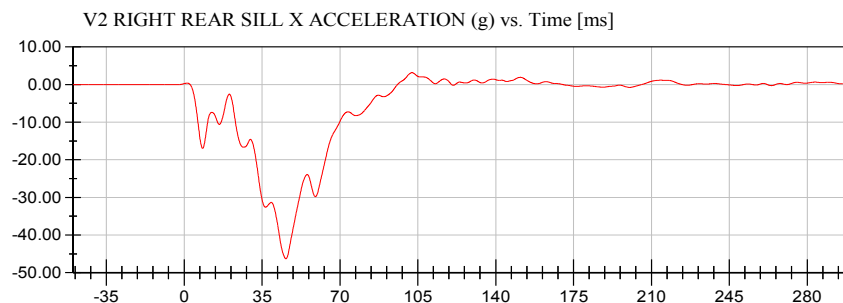
<Max>

19.29 g at 38.80 ms

<Min>

-2.15 g at 70.64 ms

CFC_60



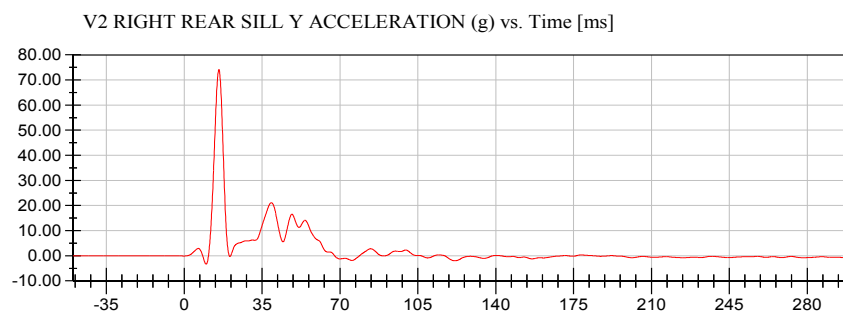
<Max>

3.17 g at 102.40 ms

<Min>

-46.28 g at 45.76 ms

CFC_60



<Max>

74.09 g at 15.60 ms

<Min>

-3.31 g at 9.84 ms

CFC_60

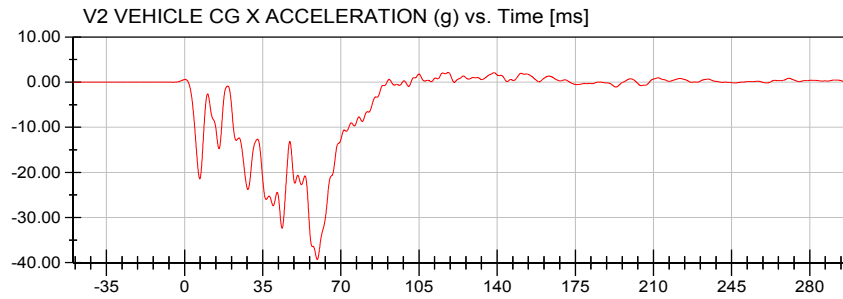


NHTSA

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Test Lab: CTF

Test Number: 160621 (R20165407)



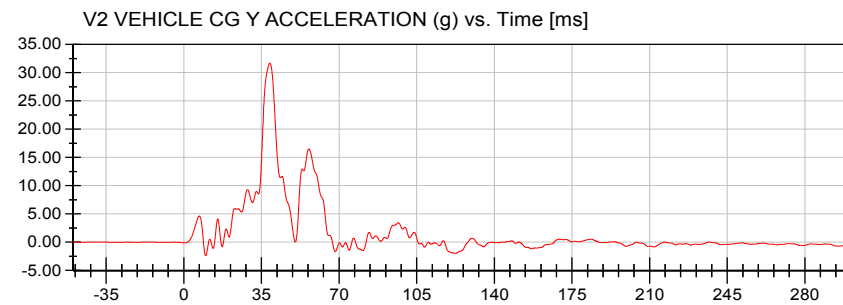
<Max>

2.12 g at 118.08 ms

<Min>

-39.30 g at 59.44 ms

CFC_60



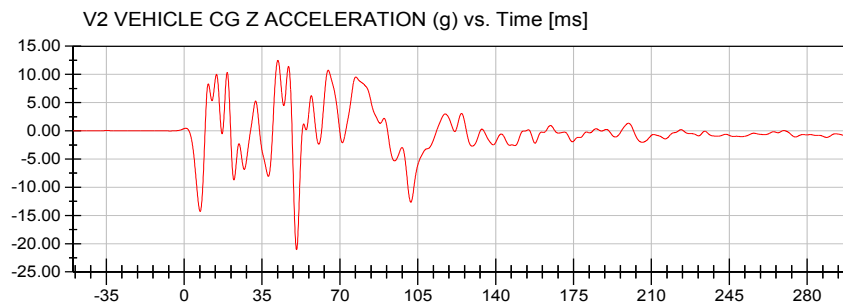
<Max>

31.69 g at 38.80 ms

<Min>

-2.38 g at 9.84 ms

CFC_60



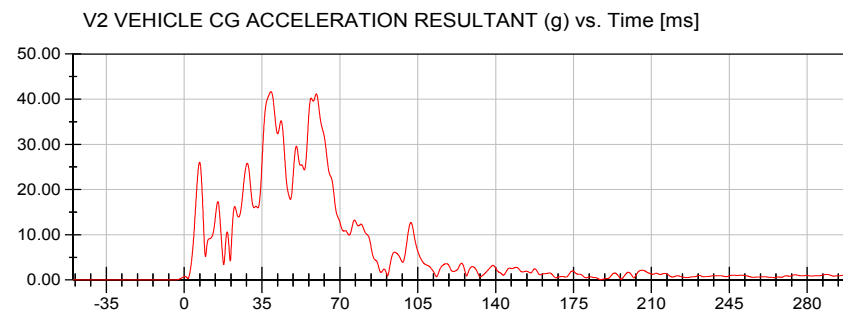
<Max>

12.49 g at 42.08 ms

<Min>

-21.07 g at 50.48 ms

CFC_60



<Max>

41.65 g at 38.96 ms

<Min>

0.00 g at -49.04 ms

CFC_60

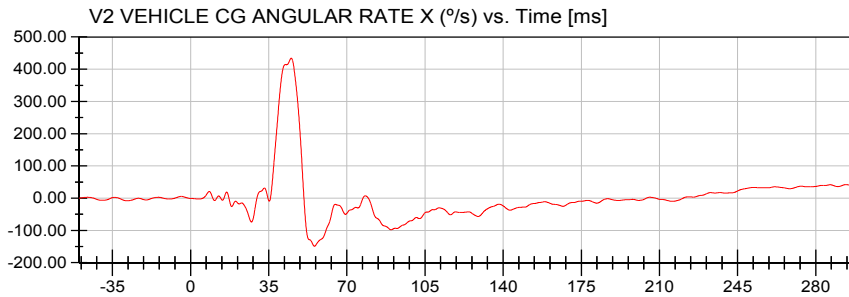


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



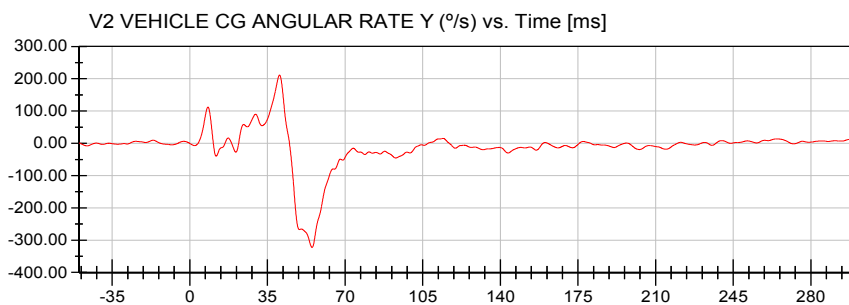
<Max>

434.14 °/s at 45.12 ms

<Min>

-148.96 °/s at 55.52 ms

CFC_60



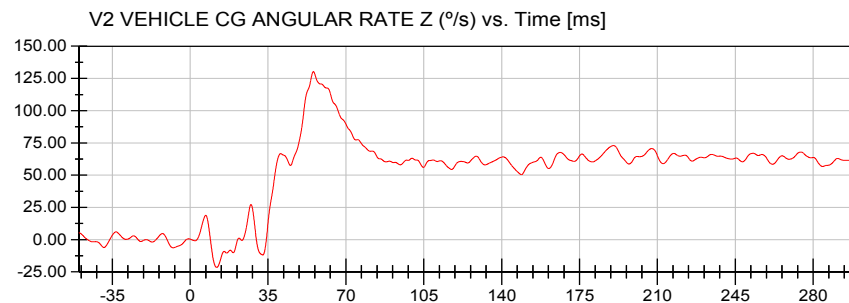
<Max>

211.63 °/s at 40.48 ms

<Min>

-322.33 °/s at 55.12 ms

CFC_60



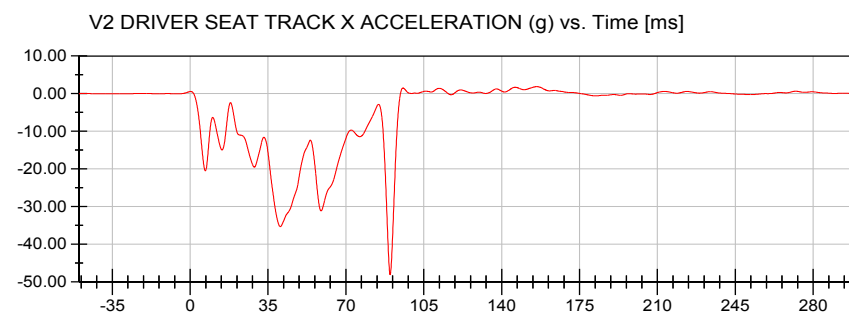
<Max>

130.31 °/s at 55.36 ms

<Min>

-21.54 °/s at 11.92 ms

CFC_60



<Max>

1.84 g at 155.76 ms

<Min>

-48.06 g at 89.84 ms

CFC_60

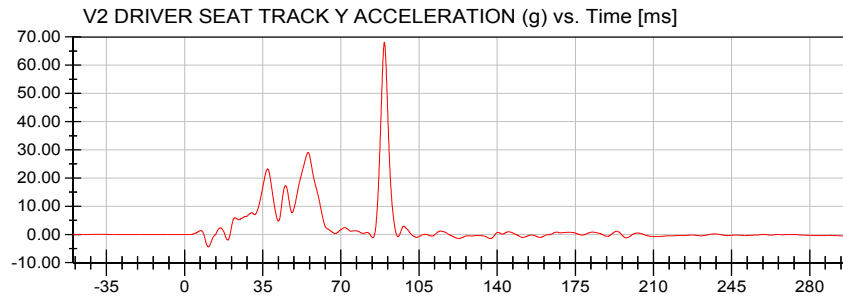


NHTSA

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Test Lab: CTF

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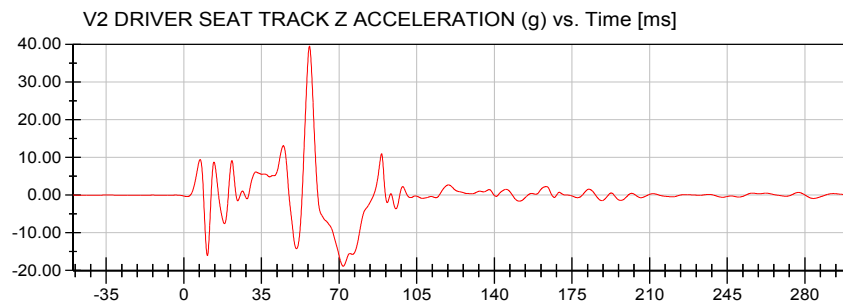
<Max>

68.12 g at 89.52 ms

<Min>

-4.37 g at 10.64 ms

CFC_60



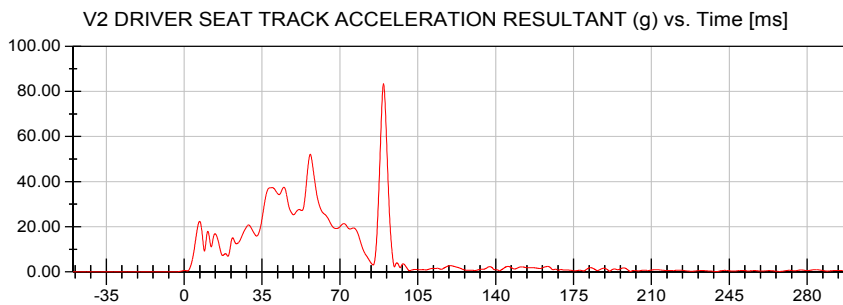
<Max>

39.53 g at 56.64 ms

<Min>

-18.88 g at 71.84 ms

CFC_60



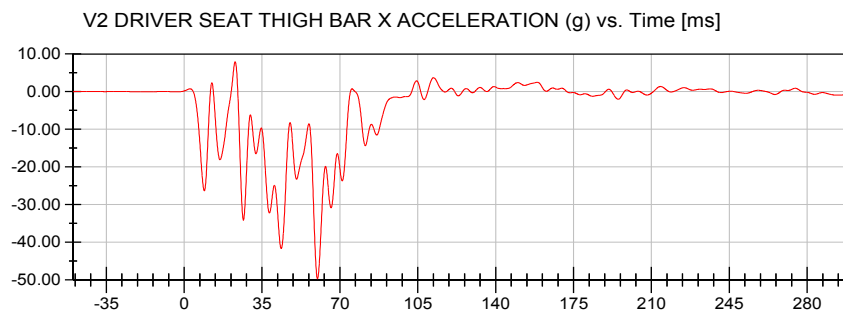
<Max>

83.34 g at 89.60 ms

<Min>

0.00 g at -3.76 ms

CFC_60



<Max>

7.92 g at 22.88 ms

<Min>

-49.68 g at 59.92 ms

CFC_60

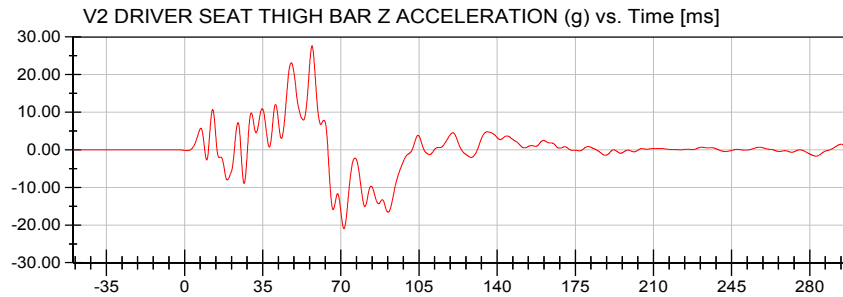


NHTSA

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Test Lab: CTF

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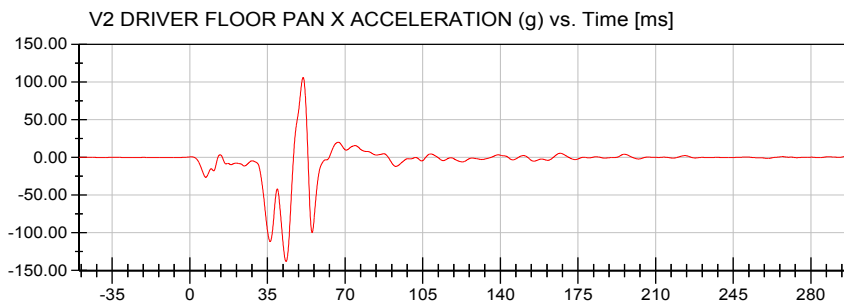
<Max>

27.64 g at 57.12 ms

<Min>

-20.95 g at 71.36 ms

CFC_60



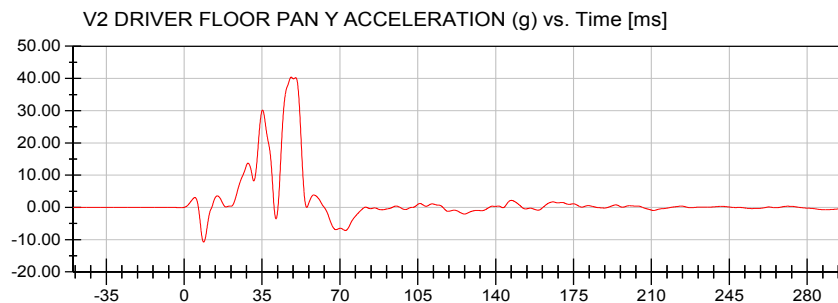
<Max>

106.14 g at 51.04 ms

<Min>

-138.11 g at 43.44 ms

CFC_60



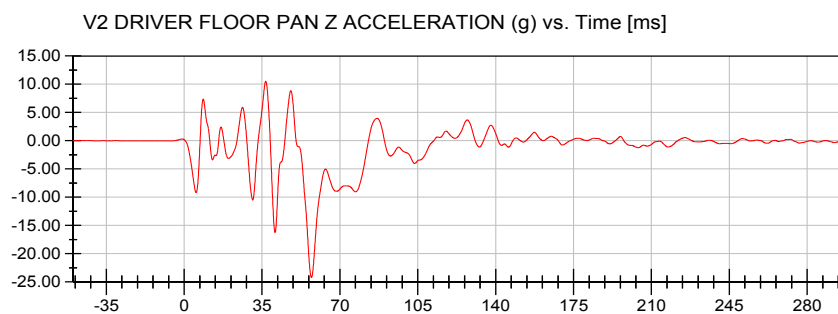
<Max>

40.39 g at 48.08 ms

<Min>

-10.76 g at 8.72 ms

CFC_60



<Max>

10.51 g at 36.64 ms

<Min>

-24.21 g at 57.20 ms

CFC_60



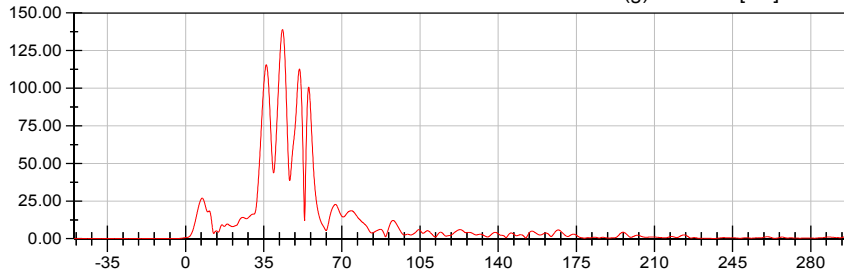
NHTSA

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V2 DRIVER FLOOR PAN ACCELERATION RESULTANT (g) vs. Time [ms]



<Max>

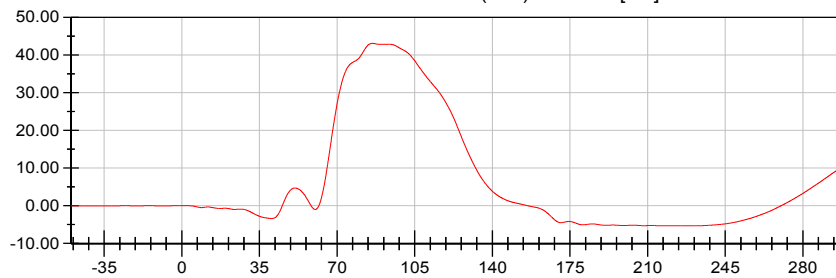
139.00 g at 43.44 ms

<Min>

0.00 g at -36.96 ms

CFC_60

V2 DRIVER FLOOR PAN X DEFLECTION (mm) vs. Time [ms]



<Max>

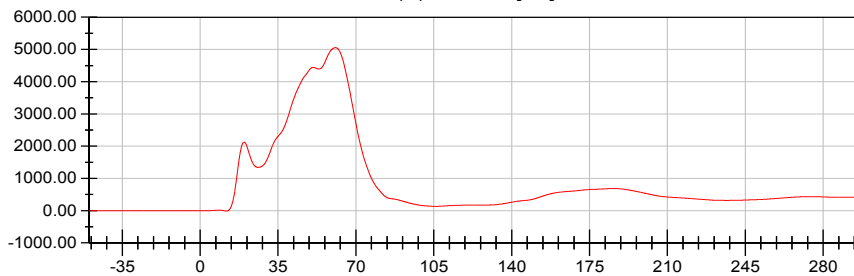
43.11 mm at 85.92 ms

<Min>

-5.33 mm at 218.16 ms

CFC_60

V2 DRIVER LAP BELT FORCE (N) vs. Time [ms]



<Max>

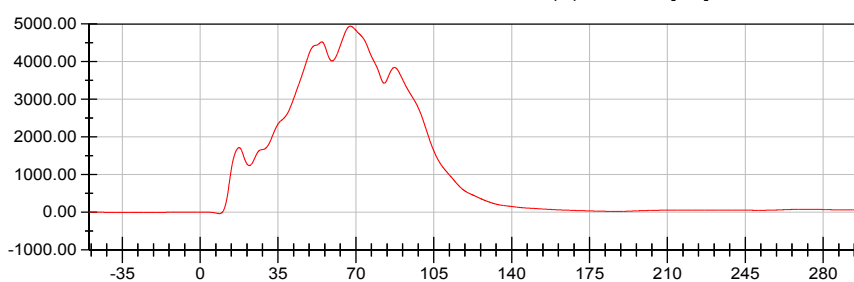
5,054.09 N at 60.80 ms

<Min>

-11.60 N at 11.76 ms

CFC_60

V2 DRIVER SHOULDER BELT UPPER FORCE (N) vs. Time [ms]



<Max>

4,942.96 N at 67.44 ms

<Min>

-34.84 N at 8.64 ms

CFC_60



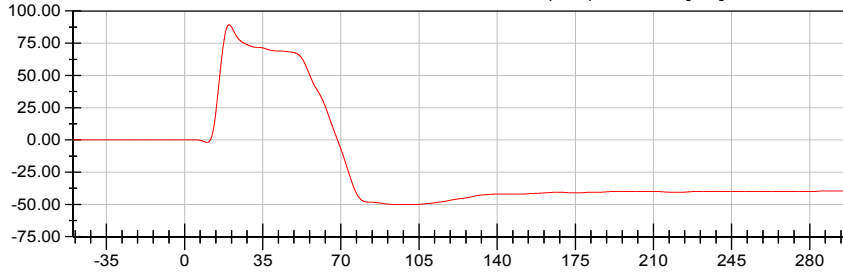
NHTSA

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V2 DRIVER SHOULDER BELT DISPLACEMENT (mm) vs. Time [ms]



<Max>

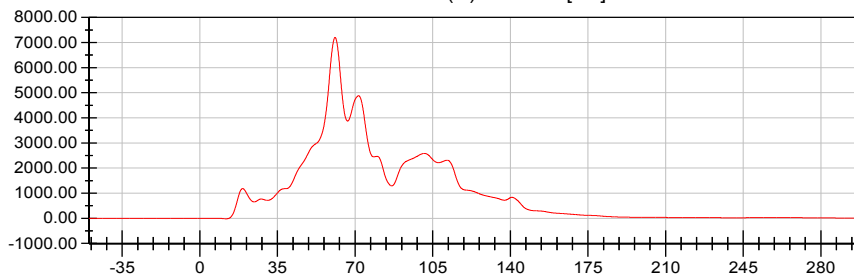
89.30 mm at 19.92 ms

<Min>

-50.04 mm at 95.12 ms

CFC_60

V2 PASSENGER LAP BELT FORCE (N) vs. Time [ms]



<Max>

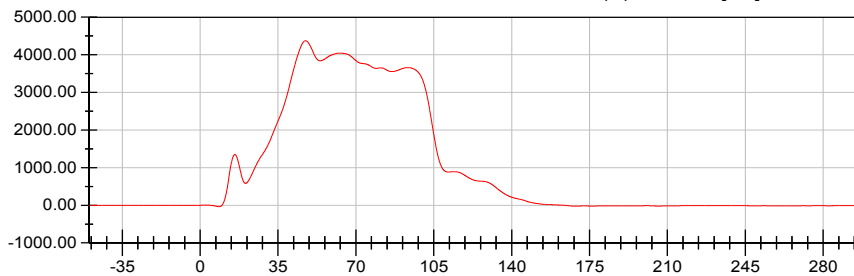
7,205.31 N at 60.96 ms

<Min>

-18.92 N at 11.92 ms

CFC_60

V2 PASSENGER SHOULDER BELT UPPER FORCE (N) vs. Time [ms]



<Max>

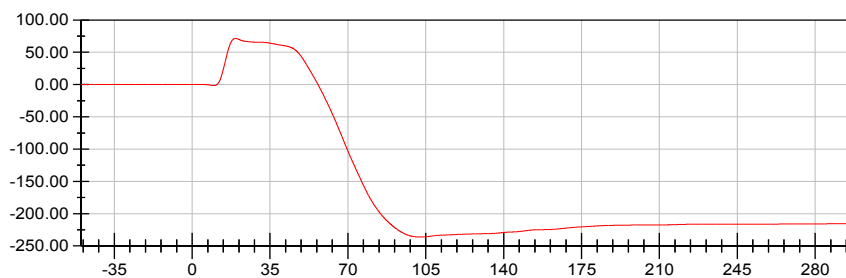
4,372.15 N at 47.36 ms

<Min>

-36.51 N at 8.40 ms

CFC_60

V2 PASSENGER SHOULDER BELT DISPLACEMENT (mm) vs. Time [ms]



<Max>

71.42 mm at 19.44 ms

<Min>

-236.09 mm at 102.40 ms

CFC_60



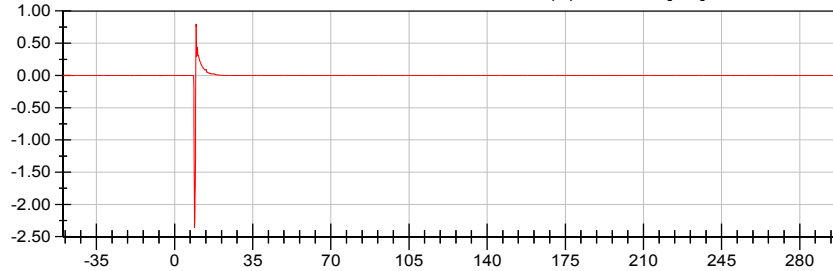
NHTSA

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V2 DRIVER FRONT AIRBAG STAGE 1 MONITOR (V) vs. Time [ms]



<Max>

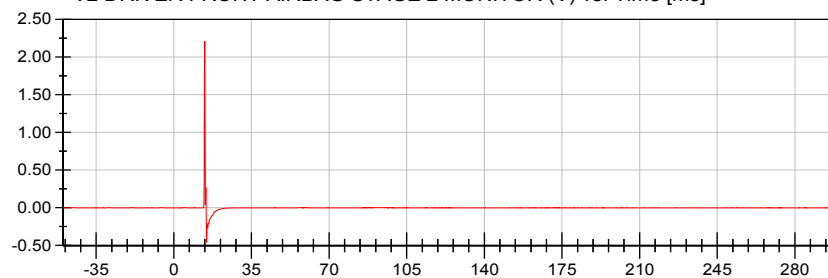
0.80 V at 9.68 ms

<Min>

-2.36 V at 8.96 ms

Unfiltered

V2 DRIVER FRONT AIRBAG STAGE 2 MONITOR (V) vs. Time [ms]



<Max>

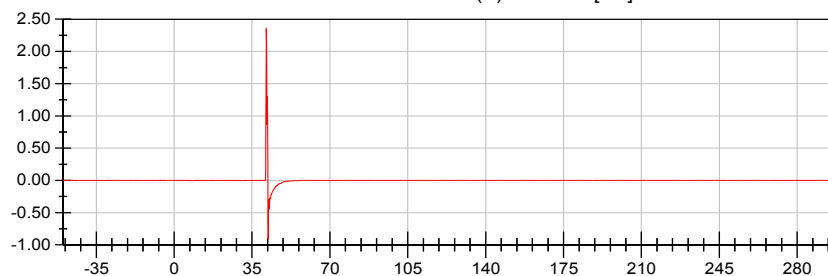
2.21 V at 13.92 ms

<Min>

-0.46 V at 14.72 ms

Unfiltered

V2 DRIVER CURTAIN AIRBAG MONITOR (V) vs. Time [ms]



<Max>

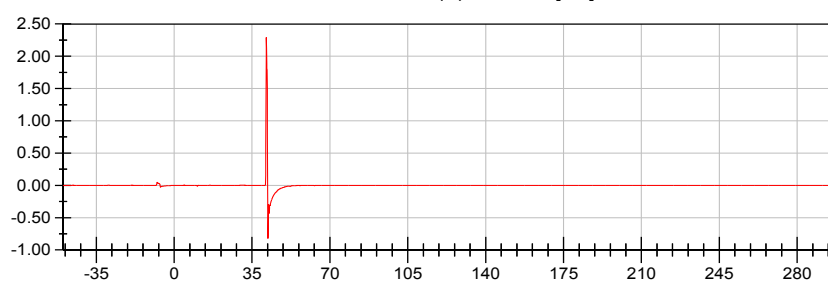
2.35 V at 41.44 ms

<Min>

-0.91 V at 42.24 ms

Unfiltered

V2 DRIVER SEAT AIRBAG MONITOR (V) vs. Time [ms]



<Max>

2.29 V at 41.44 ms

<Min>

-0.82 V at 42.16 ms

Unfiltered



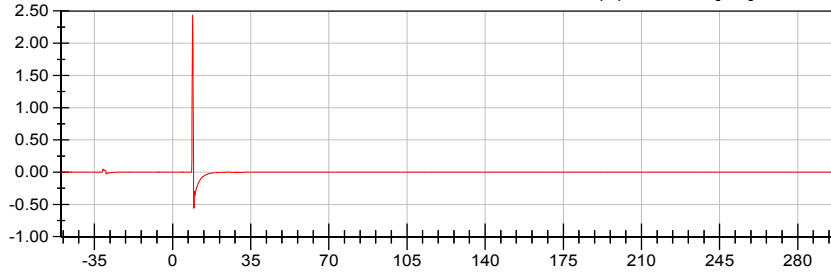
NHTSA

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V2 DRIVER RETRACTOR PRETENSIONER MONITOR (V) vs. Time [ms]



<Max>

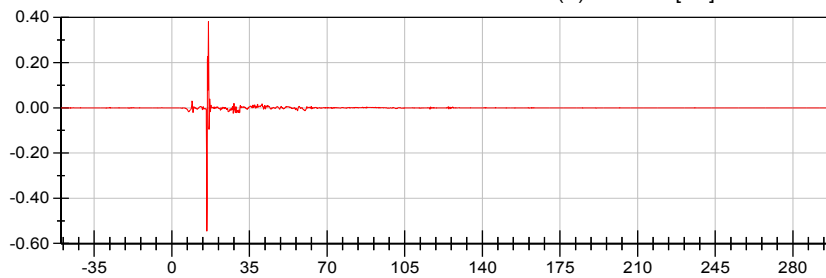
2.43 V at 8.96 ms

<Min>

-0.56 V at 9.52 ms

Unfiltered

V2 DRIVER ANCHOR PRETENSIONER MONITOR (V) vs. Time [ms]



<Max>

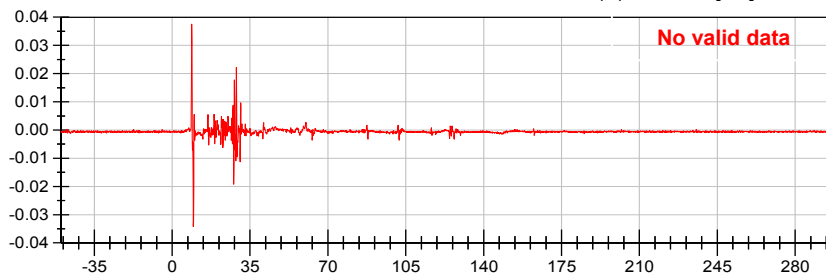
0.38 V at 16.48 ms

<Min>

-0.55 V at 15.84 ms

Unfiltered

V2 PASSENGER FRONT AIRBAG STAGE 1 MONITOR (V) vs. Time [ms]



<Max>

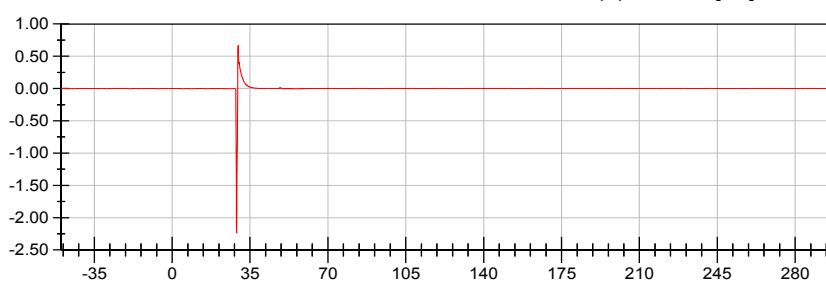
0.04 V at 8.80 ms

<Min>

-0.03 V at 9.52 ms

Unfiltered

V2 PASSENGER FRONT AIRBAG STAGE 2 MONITOR (V) vs. Time [ms]



<Max>

0.67 V at 29.68 ms

<Min>

-2.23 V at 28.96 ms

Unfiltered

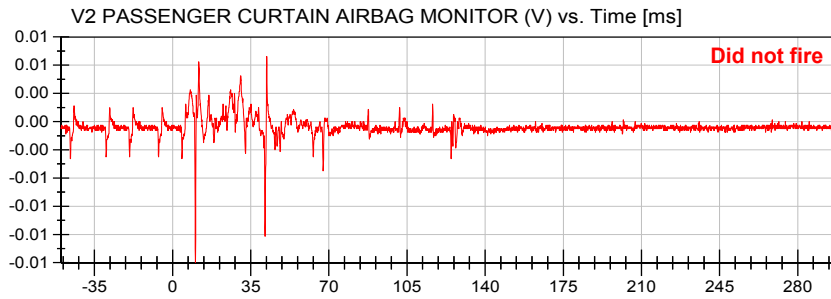


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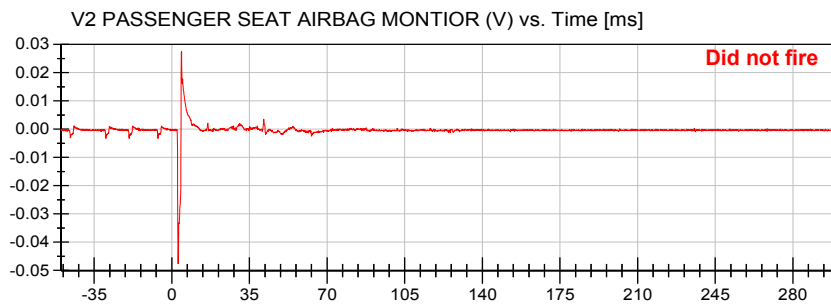
<Max>

0.01 V at 42.16 ms

<Min>

-0.01 V at 10.24 ms

Unfiltered



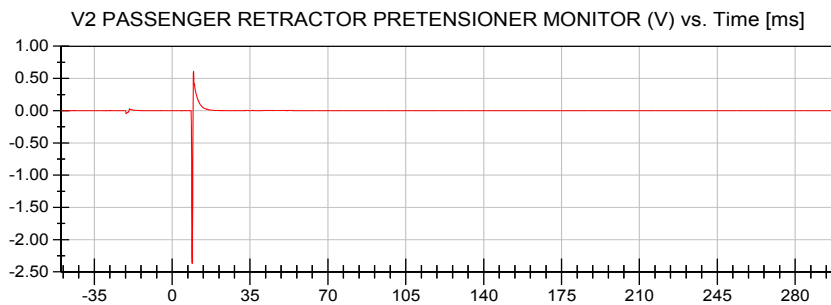
<Max>

0.03 V at 4.40 ms

<Min>

-0.05 V at 2.88 ms

Unfiltered



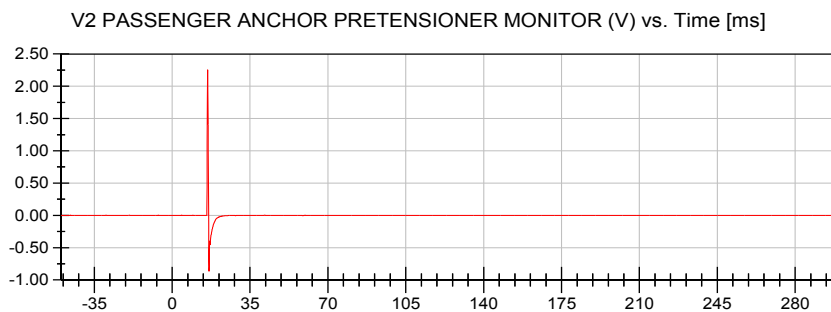
<Max>

0.61 V at 9.60 ms

<Min>

-2.37 V at 8.96 ms

Unfiltered



<Max>

2.25 V at 15.92 ms

<Min>

-0.86 V at 16.56 ms

Unfiltered

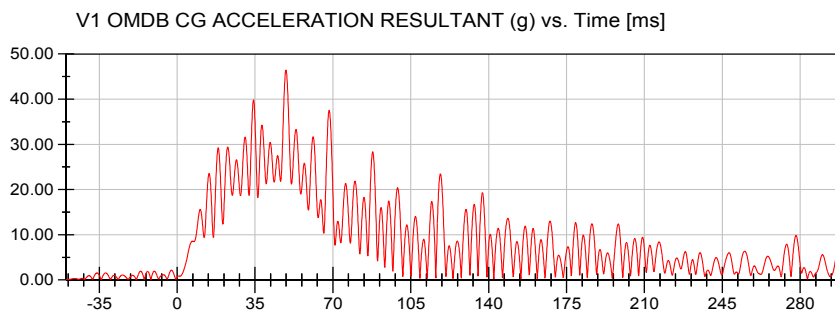
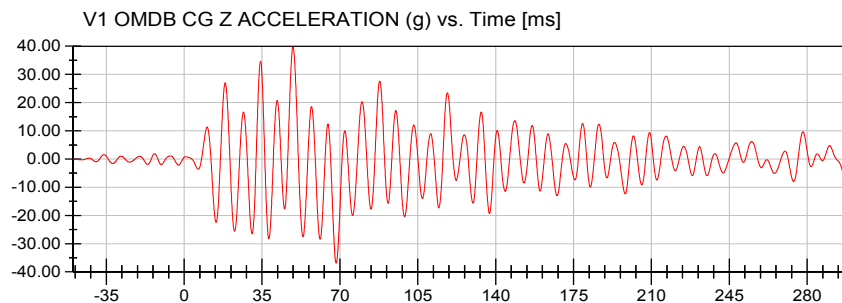
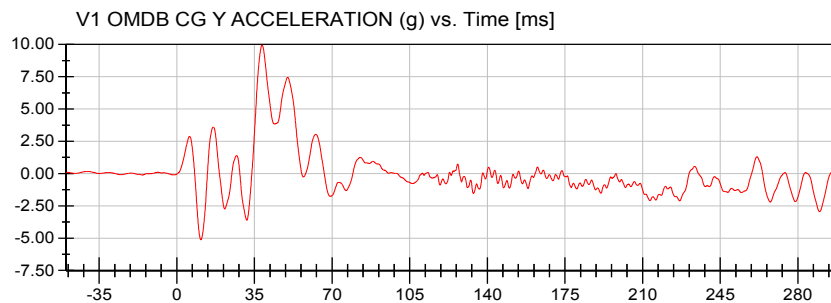
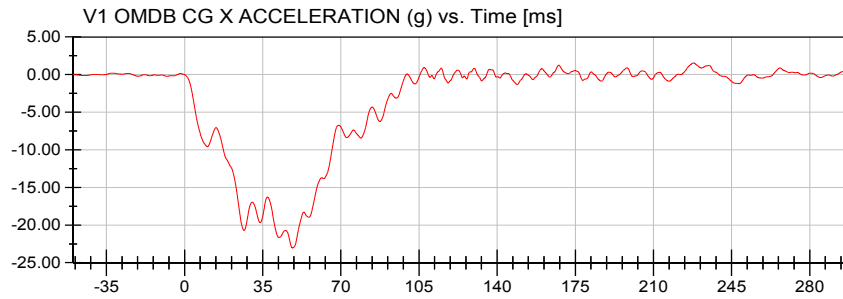


NHTSA

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Test Lab: CTF

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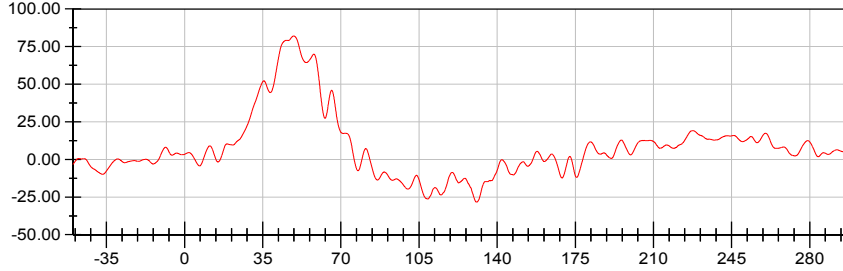
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

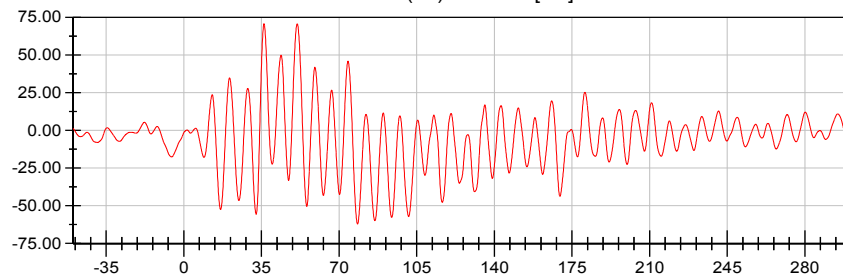
Test Number: 160621 (R20165407)

V1 OMDB CG ANGULAR RATE X (°/s) vs. Time [ms]



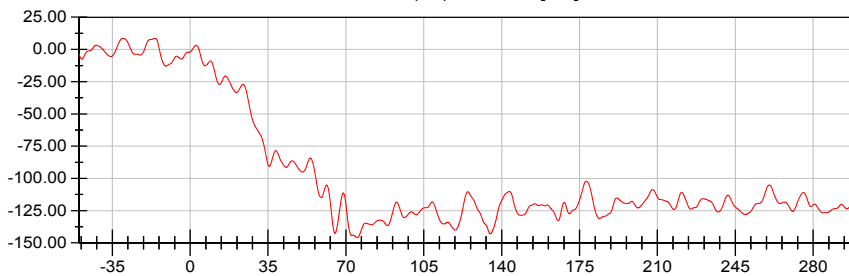
<Max>
82.03 °/s at 48.88 ms
<Min>
-28.27 °/s at 130.96 ms
CFC_60

V1 OMDB CG ANGULAR RATE Y (°/s) vs. Time [ms]



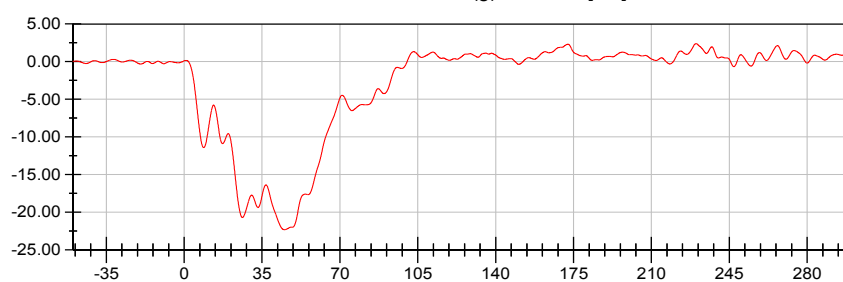
<Max>
70.85 °/s at 36.16 ms
<Min>
-62.13 °/s at 78.32 ms
CFC_60

V1 OMDB CG ANGULAR RATE Z (°/s) vs. Time [ms]



<Max>
8.62 °/s at -30.16 ms
<Min>
-145.86 °/s at 75.04 ms
CFC_60

V1 OMDB REAR C/L X ACCELERATION (g) vs. Time [ms]



<Max>
2.39 g at 230.00 ms
<Min>
-22.31 g at 45.04 ms
CFC_60

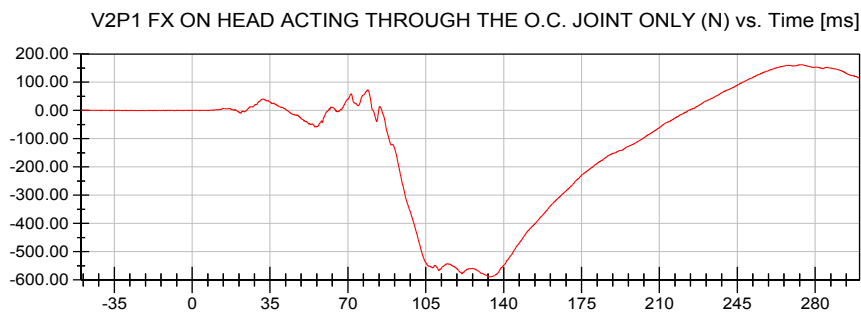
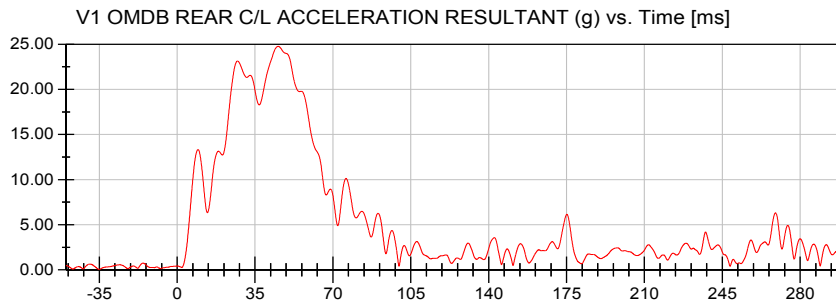
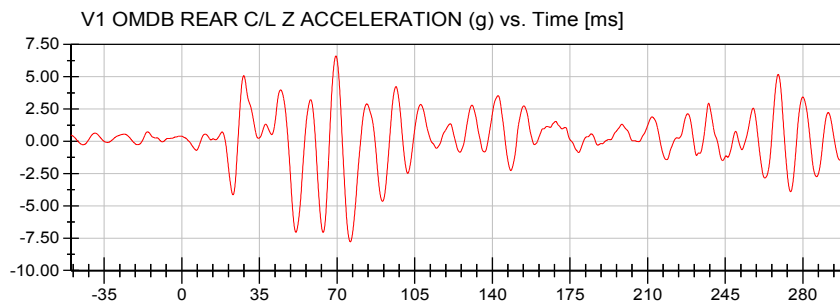
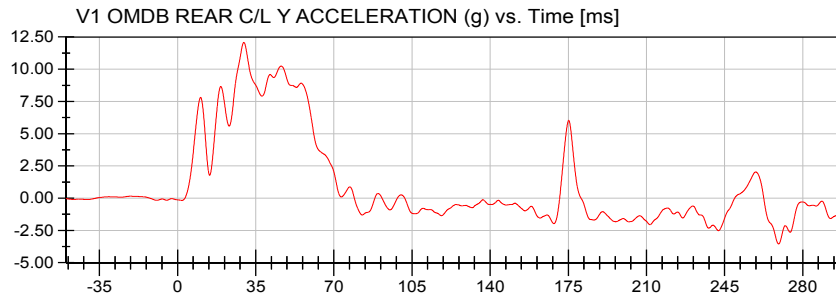


NHTSA

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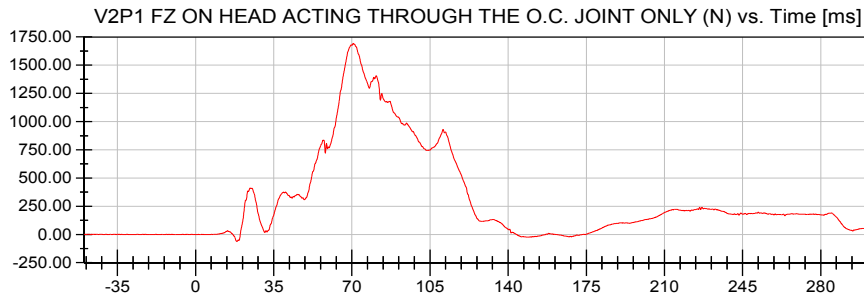


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

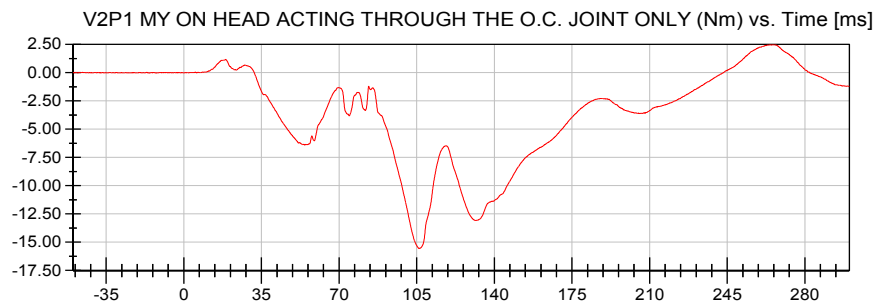


<Max>

1,691.82 N at 70.64 ms

<Min>

-61.82 N at 18.48 ms

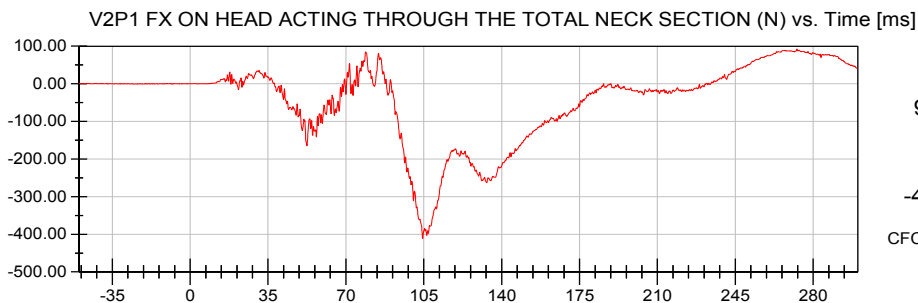


<Max>

2.47 Nm at 265.84 ms

<Min>

-15.55 Nm at 106.08 ms

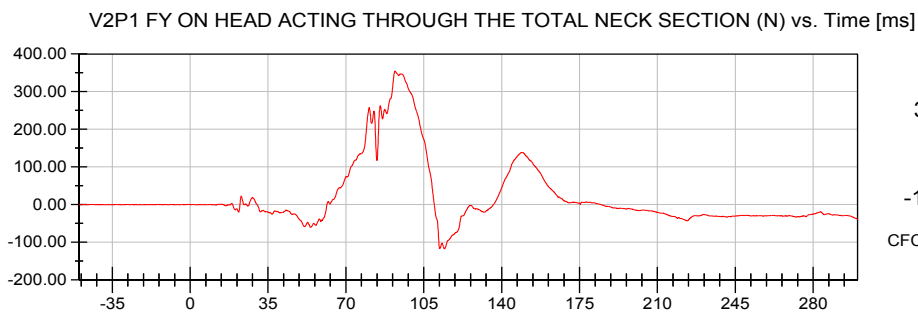


<Max>

92.15 N at 272.72 ms

<Min>

-411.06 N at 104.48 ms



<Max>

354.60 N at 92.08 ms

<Min>

-117.35 N at 114.32 ms



NHTSA

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V2P1 FZ ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (N) vs. Time [ms]



<Max>

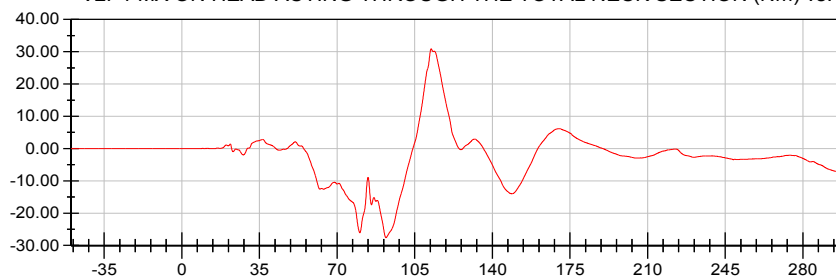
1,771.84 N at 71.44 ms

<Min>

-80.26 N at 18.24 ms

CFC_1000

V2P1 MX ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (Nm) vs. Time [ms]



<Max>

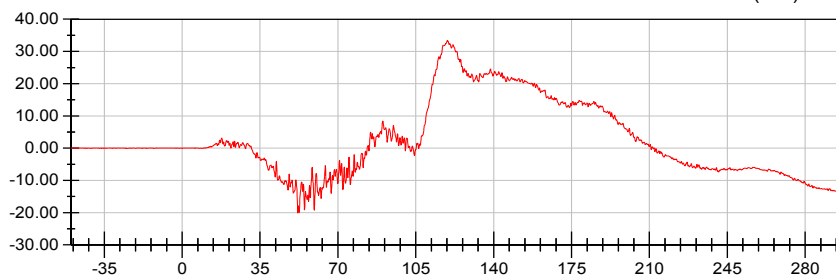
30.89 Nm at 112.40 ms

<Min>

-27.60 Nm at 92.08 ms

CFC_600

V2P1 MY ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (Nm) vs. Time [ms]



<Max>

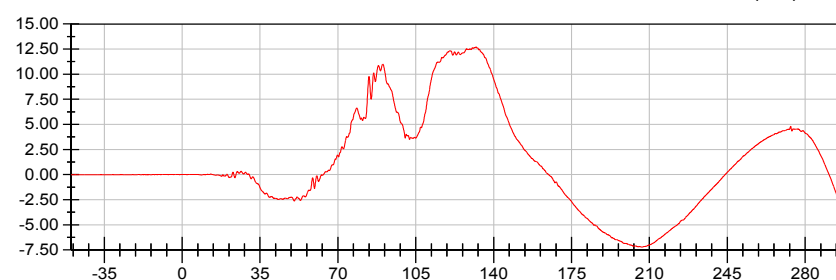
33.39 Nm at 119.20 ms

<Min>

-20.06 Nm at 52.00 ms

CFC_600

V2P1 MZ ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (Nm) vs. Time [ms]



<Max>

12.70 Nm at 132.08 ms

<Min>

-7.22 Nm at 206.32 ms

CFC_600

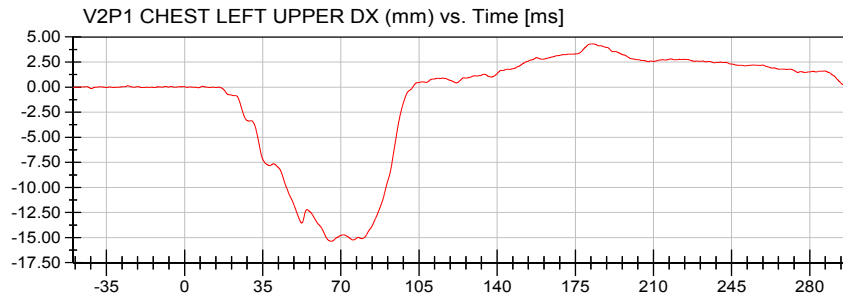


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



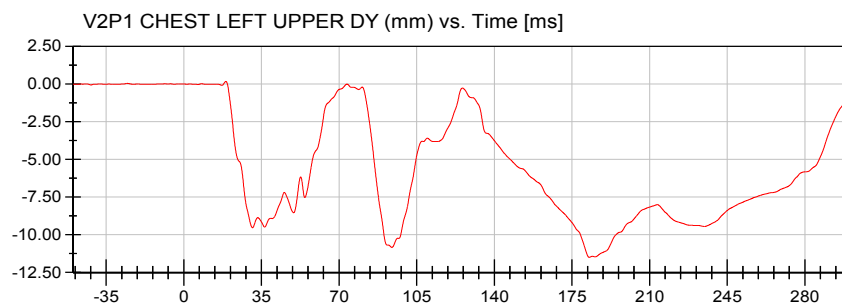
<Max>

4.31 mm at 182.24 ms

<Min>

-15.36 mm at 65.84 ms

CFC_180



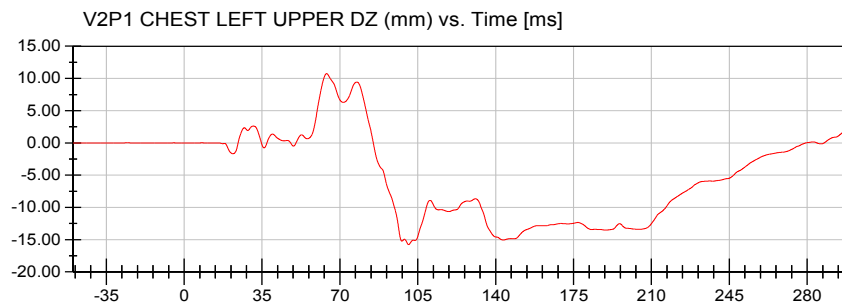
<Max>

0.18 mm at 18.96 ms

<Min>

-11.50 mm at 182.80 ms

CFC_180



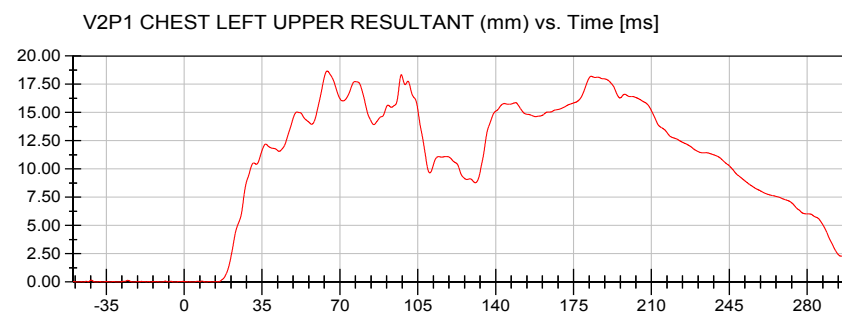
<Max>

10.74 mm at 64.00 ms

<Min>

-15.77 mm at 100.88 ms

CFC_180



<Max>

18.67 mm at 64.24 ms

<Min>

0.00 mm at -3.60 ms

CFC_180

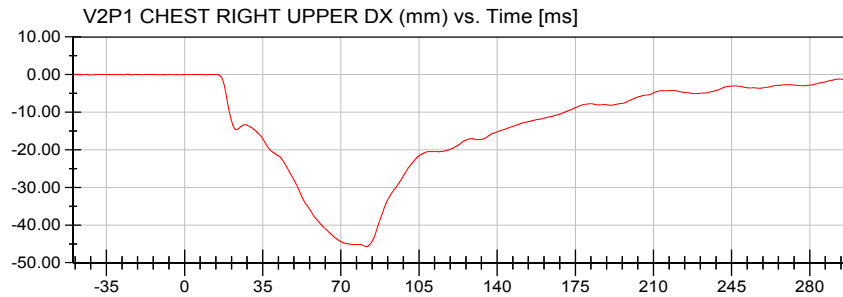


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



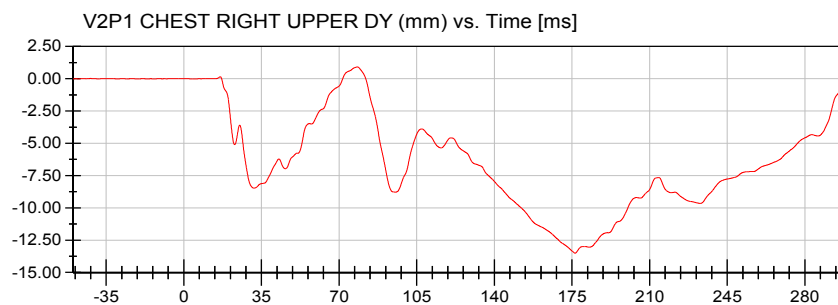
<Max>

0.09 mm at -25.52 ms

<Min>

-45.73 mm at 81.52 ms

CFC_180



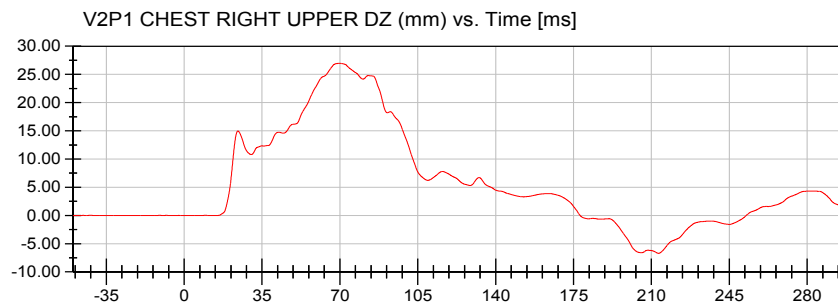
<Max>

0.91 mm at 78.24 ms

<Min>

-13.51 mm at 176.48 ms

CFC_180



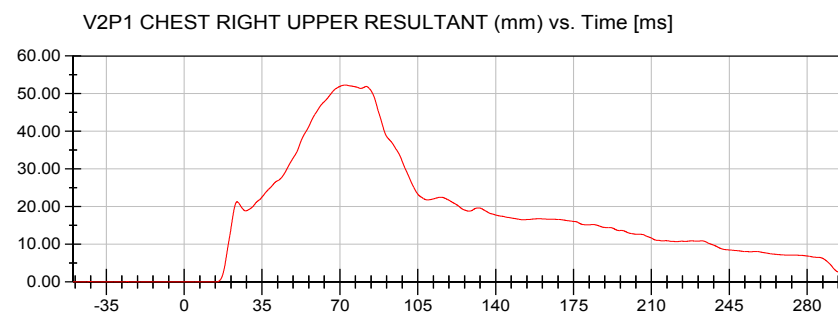
<Max>

26.95 mm at 69.84 ms

<Min>

-6.71 mm at 213.20 ms

CFC_180



<Max>

52.29 mm at 72.48 ms

<Min>

0.00 mm at -26.56 ms

CFC_180

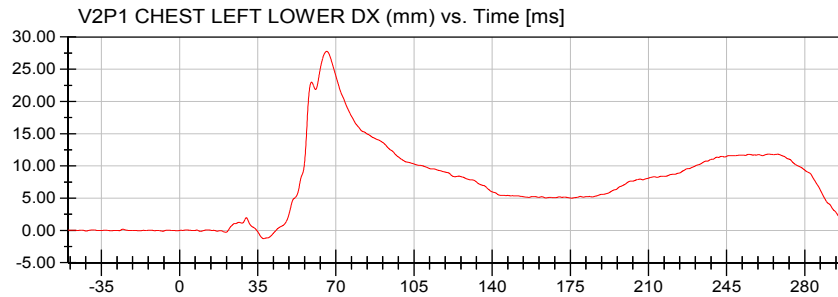


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



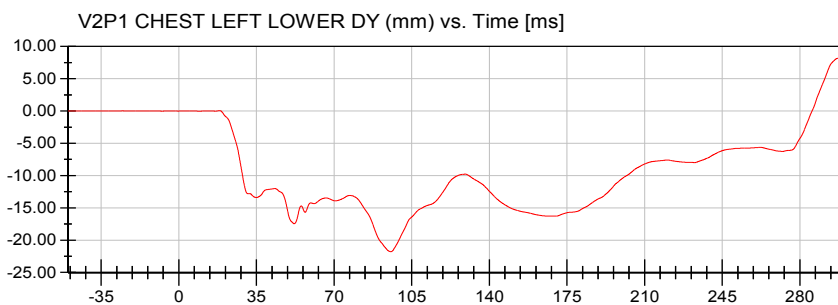
<Max>

27.77 mm at 65.92 ms

<Min>

-1.27 mm at 37.60 ms

CFC_180



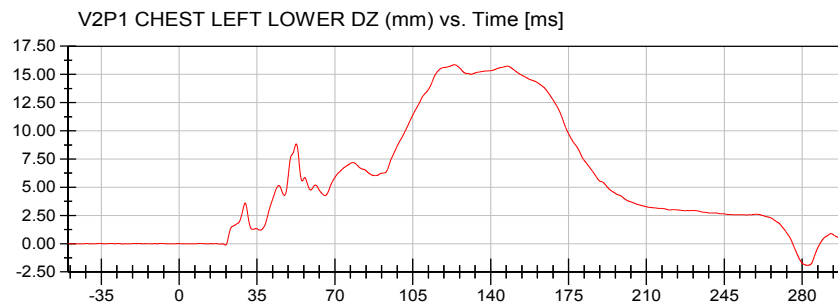
<Max>

8.24 mm at 300.00 ms

<Min>

-21.79 mm at 95.60 ms

CFC_180



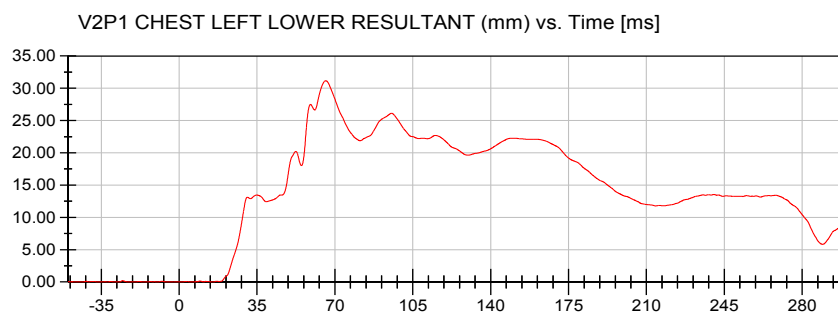
<Max>

15.86 mm at 123.68 ms

<Min>

-1.92 mm at 282.48 ms

CFC_180



<Max>

31.16 mm at 65.92 ms

<Min>

0.00 mm at -11.84 ms

CFC_1000

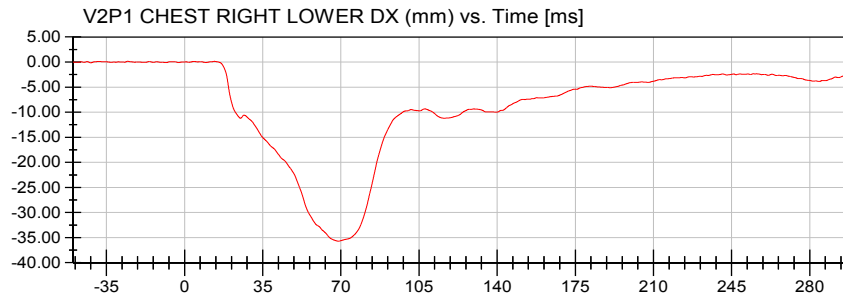


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



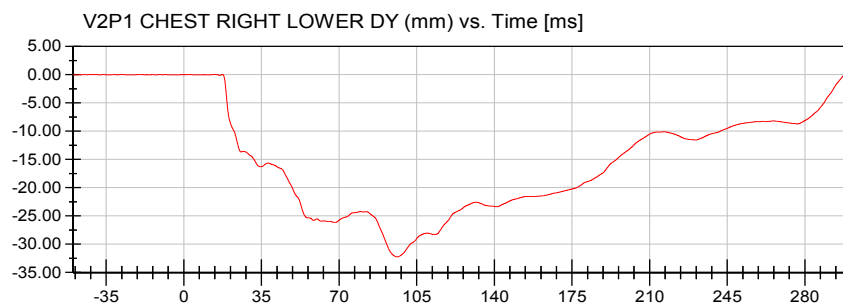
<Max>

0.15 mm at -25.44 ms

<Min>

-35.71 mm at 68.88 ms

CFC_180



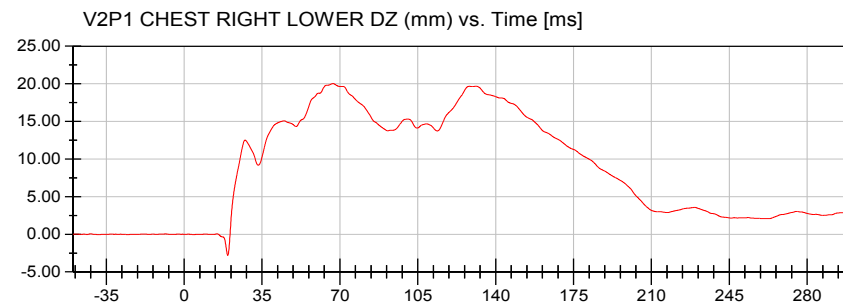
<Max>

0.73 mm at 300.00 ms

<Min>

-32.25 mm at 96.32 ms

CFC_180



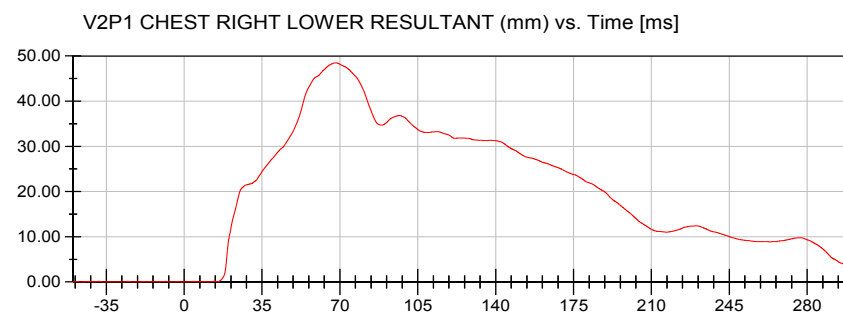
<Max>

20.03 mm at 66.88 ms

<Min>

-2.80 mm at 19.60 ms

CFC_180



<Max>

48.48 mm at 68.16 ms

<Min>

0.00 mm at -45.68 ms

CFC_1000

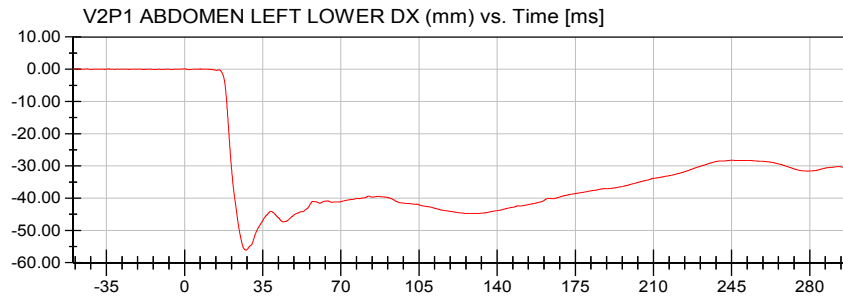


NHTSA

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Test Lab: CTF

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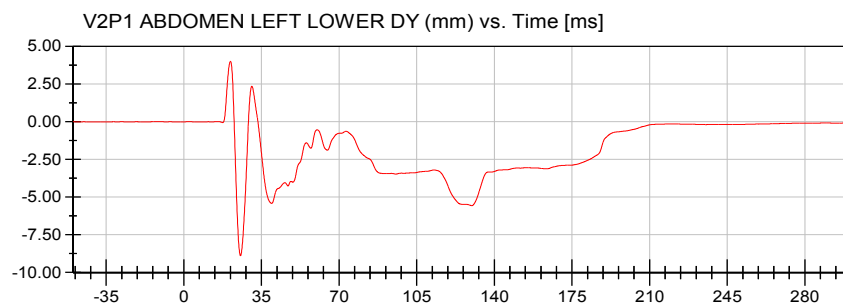
<Max>

0.13 mm at -48.08 ms

<Min>

-56.09 mm at 27.52 ms

CFC_180



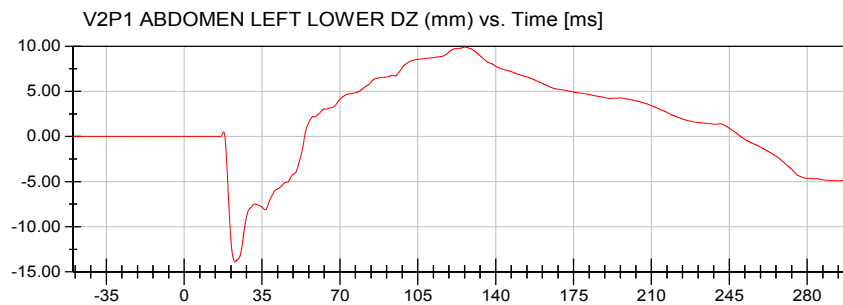
<Max>

4.01 mm at 21.04 ms

<Min>

-8.89 mm at 25.52 ms

CFC_180



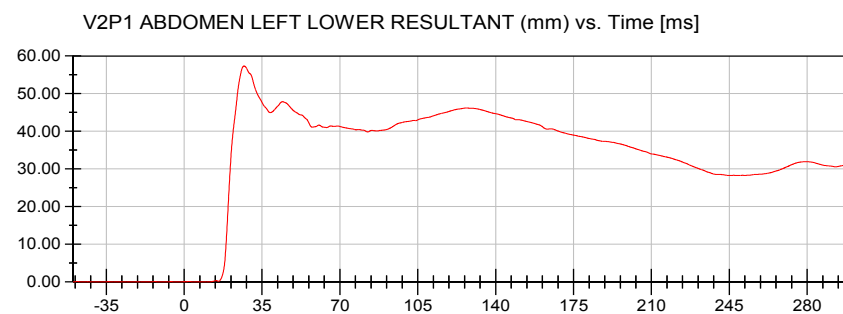
<Max>

9.90 mm at 126.16 ms

<Min>

-13.87 mm at 22.80 ms

CFC_180



<Max>

57.33 mm at 26.88 ms

<Min>

0.00 mm at -6.96 ms

CFC_1000

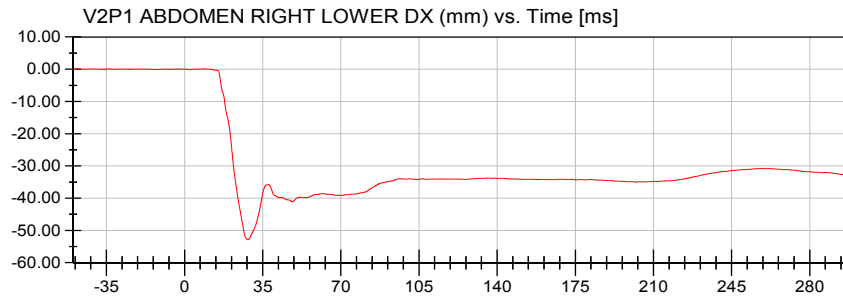


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



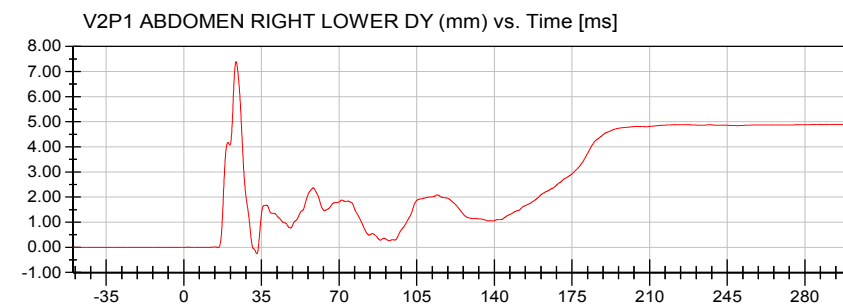
<Max>

0.10 mm at -33.92 ms

<Min>

-52.88 mm at 28.40 ms

CFC_180



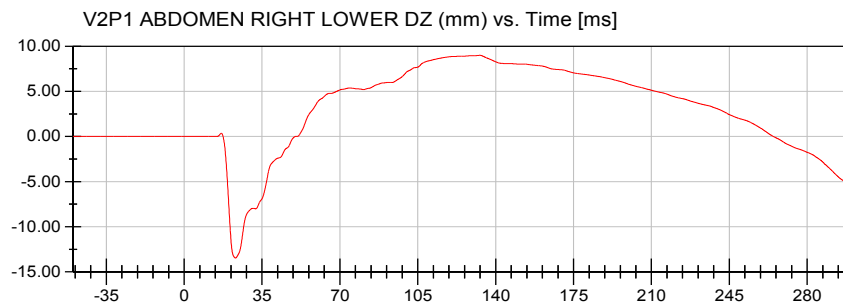
<Max>

7.39 mm at 23.52 ms

<Min>

-0.26 mm at 32.88 ms

CFC_180



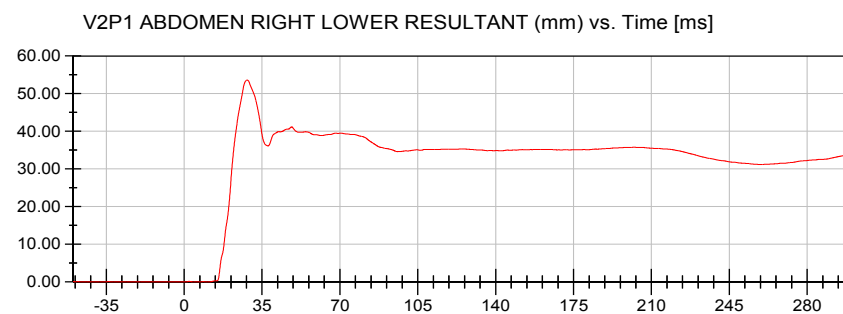
<Max>

8.99 mm at 132.88 ms

<Min>

-13.46 mm at 23.04 ms

CFC_180



<Max>

53.59 mm at 28.32 ms

<Min>

0.00 mm at -4.08 ms

CFC_1000

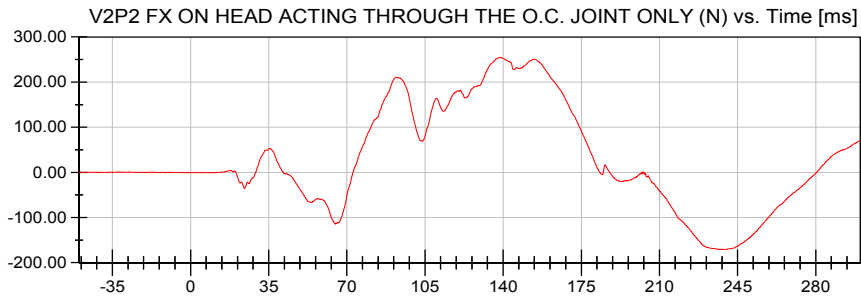


NHTSA

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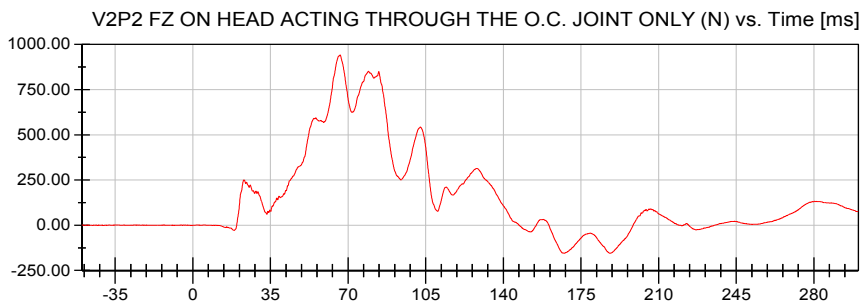
<Max>

254.65 N at 138.48 ms

<Min>

-171.03 N at 238.80 ms

CFC_1000



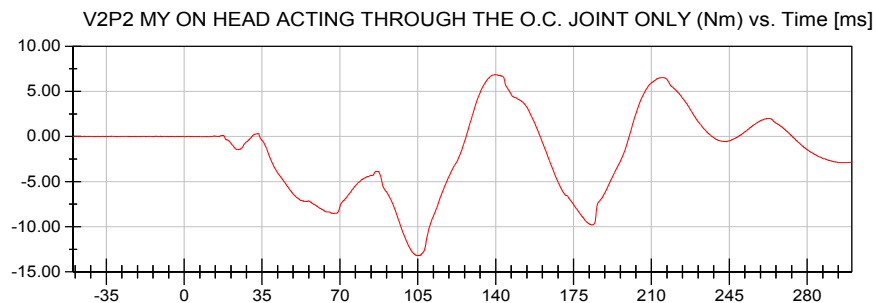
<Max>

941.94 N at 66.40 ms

<Min>

-155.21 N at 188.16 ms

CFC_1000



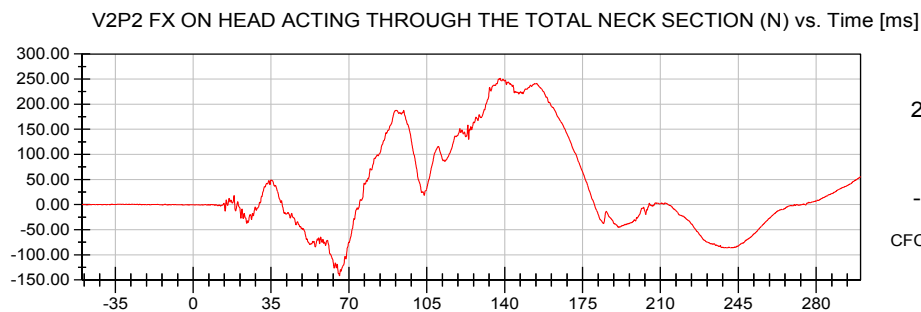
<Max>

6.85 Nm at 139.68 ms

<Min>

-13.19 Nm at 104.72 ms

CFC_600



<Max>

251.57 N at 137.92 ms

<Min>

-141.69 N at 65.76 ms

CFC_1000



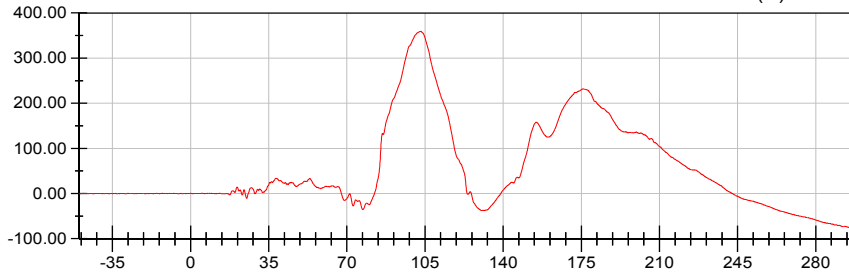
NHTSA

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V2P2 FY ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (N) vs. Time [ms]



<Max>

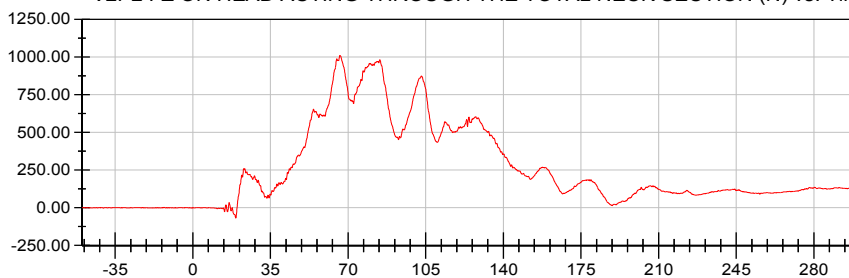
359.30 N at 103.04 ms

<Min>

-79.76 N at 300.00 ms

CFC_1000

V2P2 FZ ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (N) vs. Time [ms]



<Max>

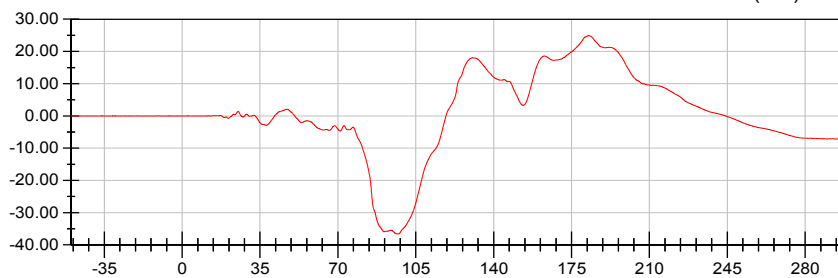
1,011.79 N at 66.32 ms

<Min>

-68.69 N at 19.36 ms

CFC_1000

V2P2 MX ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (Nm) vs. Time [ms]



<Max>

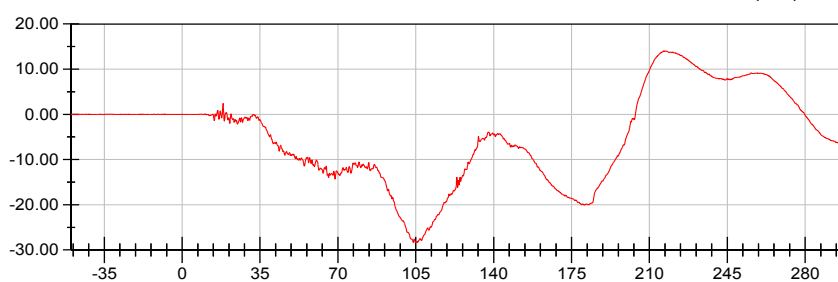
24.89 Nm at 182.64 ms

<Min>

-36.58 Nm at 96.72 ms

CFC_600

V2P2 MY ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (Nm) vs. Time [ms]



<Max>

14.03 Nm at 216.40 ms

<Min>

-28.35 Nm at 103.84 ms

CFC_600



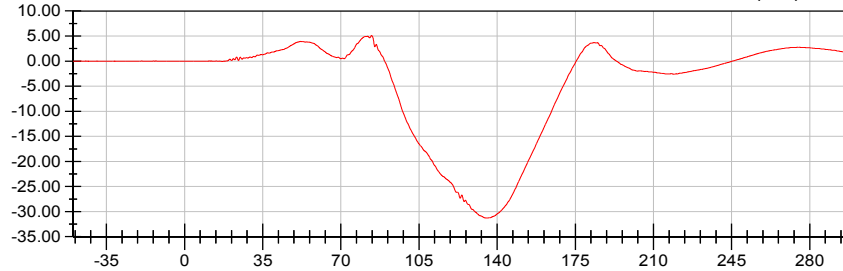
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P2 MZ ON HEAD ACTING THROUGH THE TOTAL NECK SECTION (Nm) vs. Time [ms]



<Max>

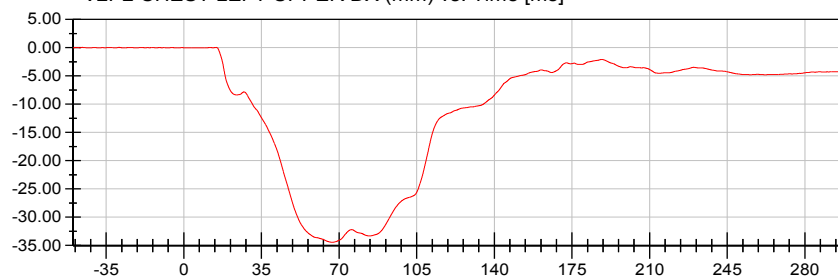
5.10 Nm at 83.76 ms

<Min>

-31.30 Nm at 135.20 ms

CFC_600

V2P2 CHEST LEFT UPPER DX (mm) vs. Time [ms]



<Max>

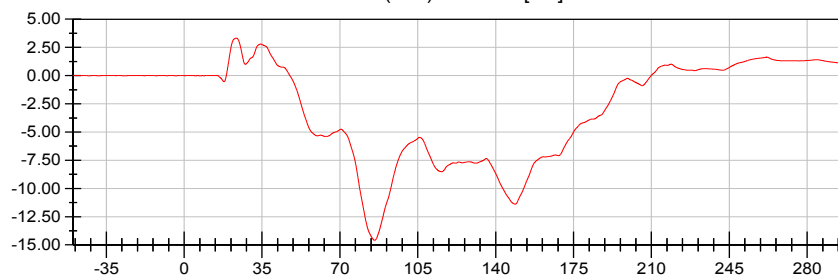
0.05 mm at -45.76 ms

<Min>

-34.43 mm at 66.88 ms

CFC_180

V2P2 CHEST LEFT UPPER DY (mm) vs. Time [ms]



<Max>

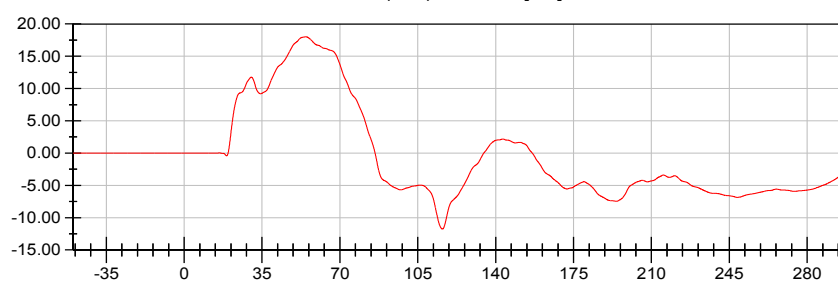
3.32 mm at 23.44 ms

<Min>

-14.59 mm at 85.60 ms

CFC_180

V2P2 CHEST LEFT UPPER DZ (mm) vs. Time [ms]



<Max>

18.02 mm at 54.72 ms

<Min>

-11.76 mm at 116.08 ms

CFC_180

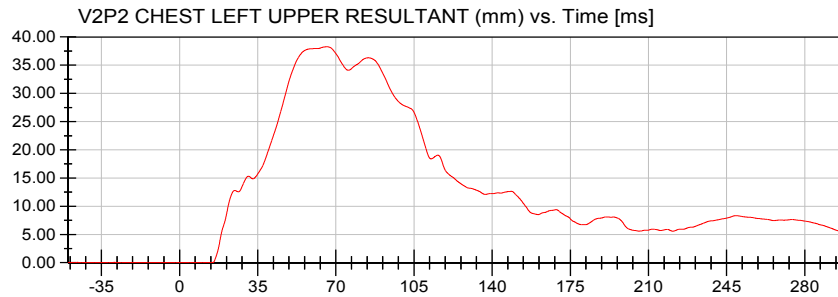


NHTSA

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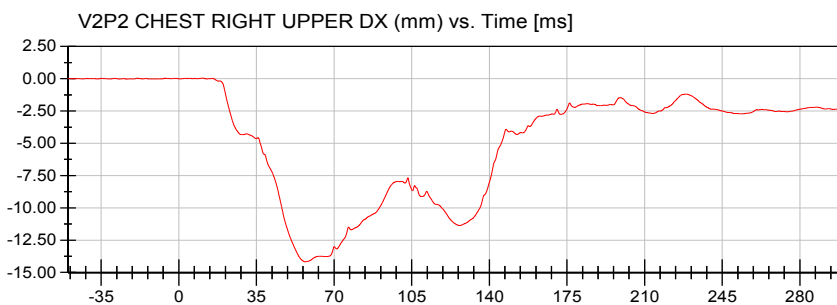
<Max>

38.26 mm at 66.00 ms

<Min>

0.00 mm at -10.40 ms

CFC_1000



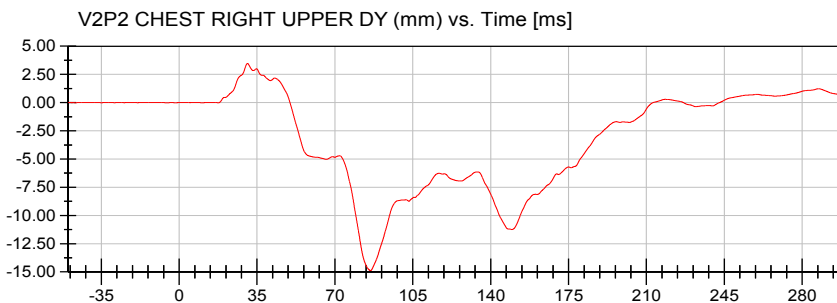
<Max>

0.05 mm at 10.80 ms

<Min>

-14.17 mm at 56.96 ms

CFC_180



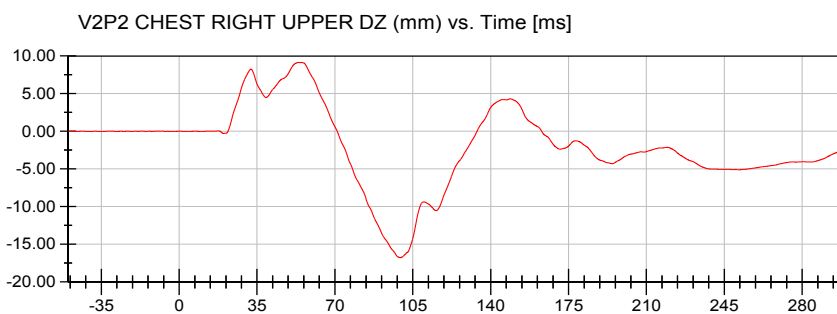
<Max>

3.47 mm at 30.72 ms

<Min>

-14.88 mm at 86.00 ms

CFC_180



<Max>

9.14 mm at 53.68 ms

<Min>

-16.76 mm at 99.44 ms

CFC_180

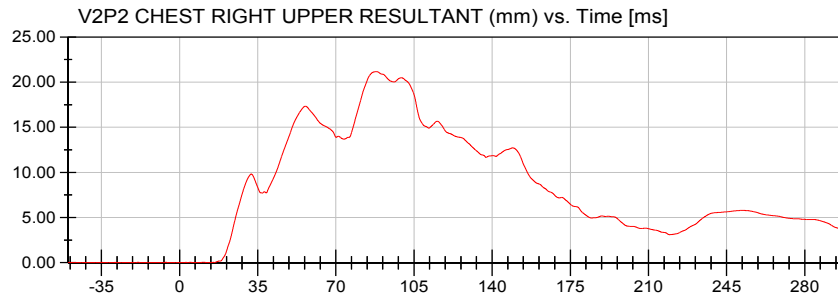


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



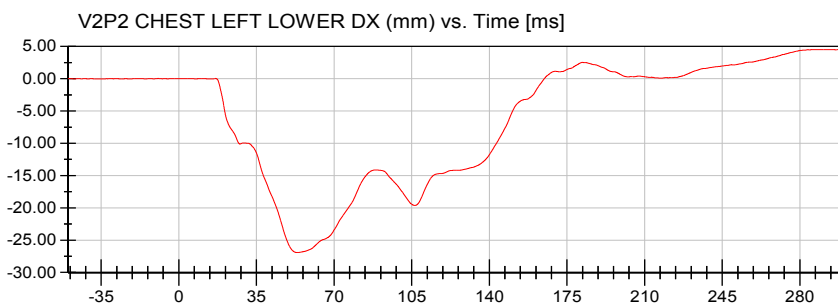
<Max>

21.16 mm at 88.16 ms

<Min>

0.00 mm at -32.72 ms

CFC_1000



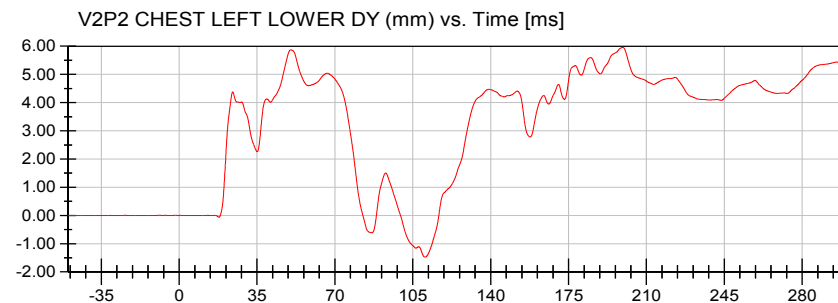
<Max>

4.53 mm at 297.60 ms

<Min>

-26.92 mm at 53.52 ms

CFC_180



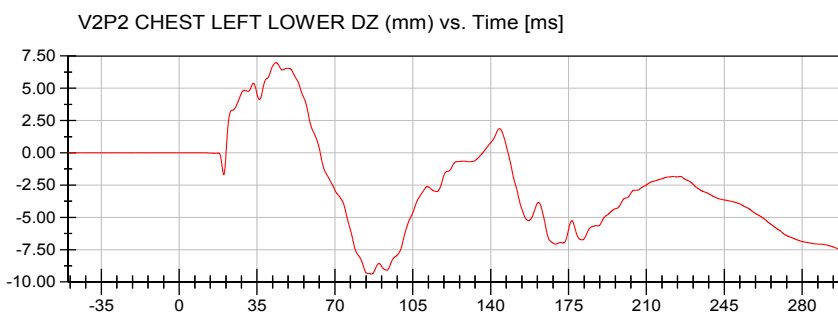
<Max>

5.96 mm at 199.44 ms

<Min>

-1.48 mm at 110.48 ms

CFC_180



<Max>

6.97 mm at 43.52 ms

<Min>

-9.39 mm at 86.48 ms

CFC_180



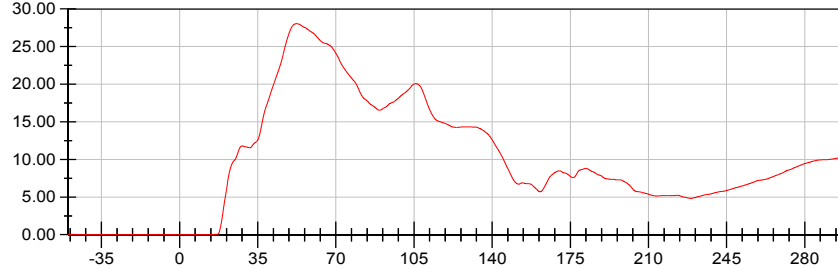
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P2 CHEST LEFT LOWER RESULTANT (mm) vs. Time [ms]



<Max>

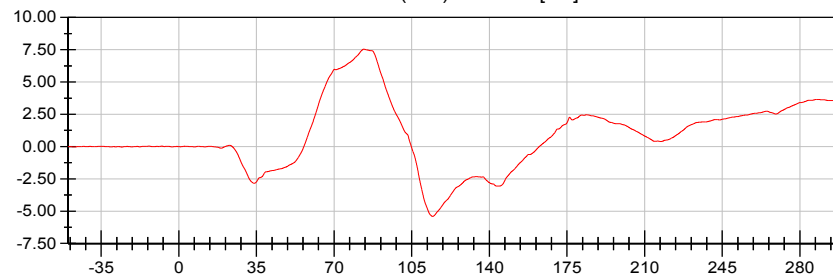
28.05 mm at 52.40 ms

<Min>

0.00 mm at -47.92 ms

CFC_1000

V2P2 CHEST RIGHT LOWER DX (mm) vs. Time [ms]



<Max>

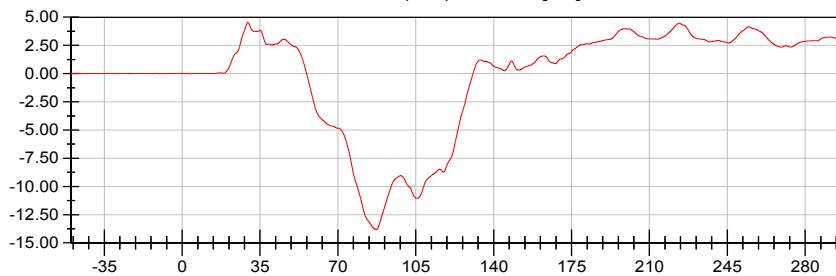
7.54 mm at 83.36 ms

<Min>

-5.40 mm at 114.48 ms

CFC_180

V2P2 CHEST RIGHT LOWER DY (mm) vs. Time [ms]



<Max>

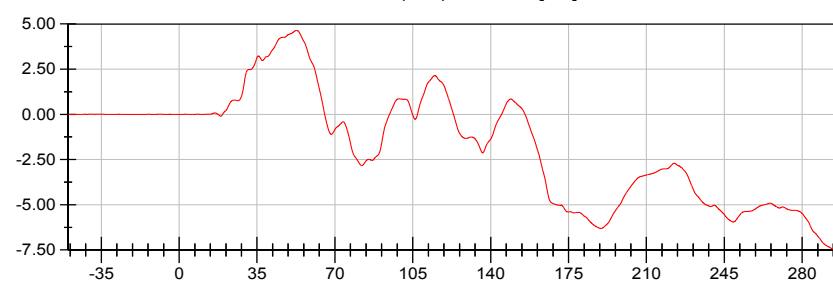
4.55 mm at 29.52 ms

<Min>

-13.82 mm at 87.20 ms

CFC_180

V2P2 CHEST RIGHT LOWER DZ (mm) vs. Time [ms]



<Max>

4.65 mm at 52.72 ms

<Min>

-7.45 mm at 293.92 ms

CFC_180



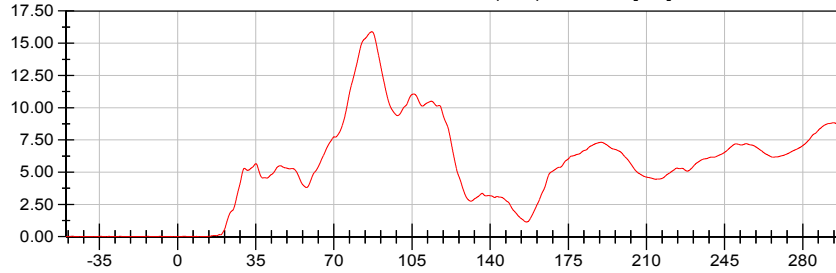
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P2 CHEST RIGHT LOWER RESULTANT (mm) vs. Time [ms]



<Max>

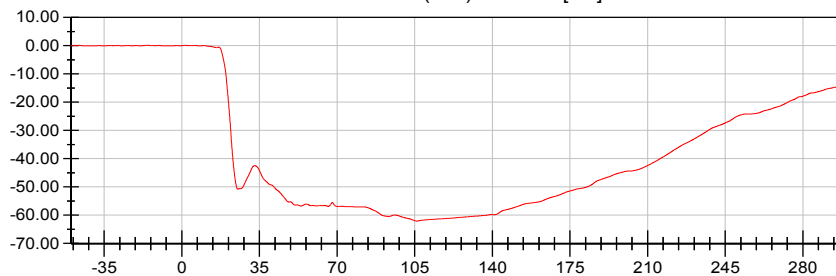
15.89 mm at 87.12 ms

<Min>

0.00 mm at 5.92 ms

CFC_180

V2P2 ABDOMEN LEFT LOWER DX (mm) vs. Time [ms]



<Max>

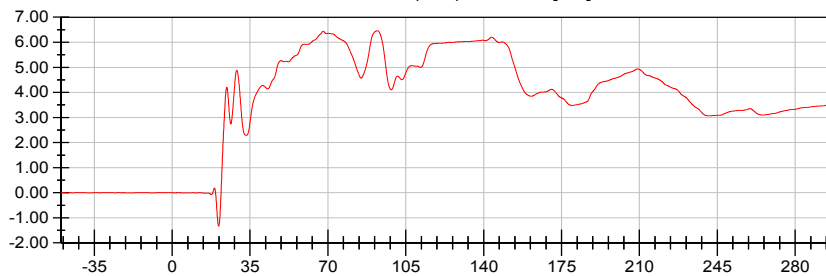
0.13 mm at -15.28 ms

<Min>

-62.08 mm at 106.00 ms

CFC_180

V2P2 ABDOMEN LEFT LOWER DY (mm) vs. Time [ms]



<Max>

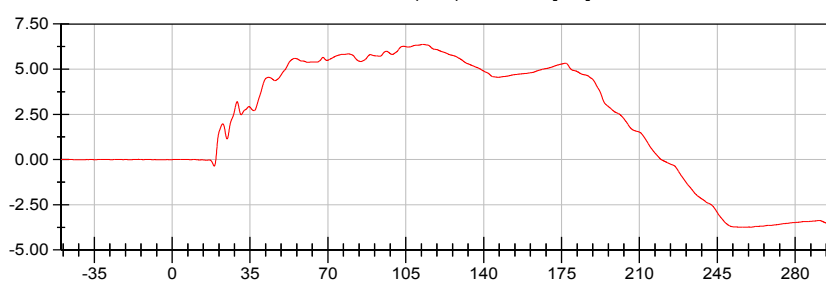
6.46 mm at 92.32 ms

<Min>

-1.34 mm at 20.88 ms

CFC_180

V2P2 ABDOMEN LEFT LOWER DZ (mm) vs. Time [ms]



<Max>

6.37 mm at 112.72 ms

<Min>

-3.80 mm at 300.00 ms

CFC_180



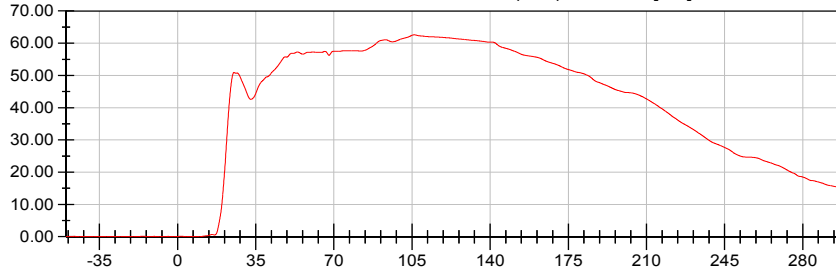
NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)

V2P2 ABDOMEN LEFT LOWER RESULTANT (mm) vs. Time [ms]



<Max>

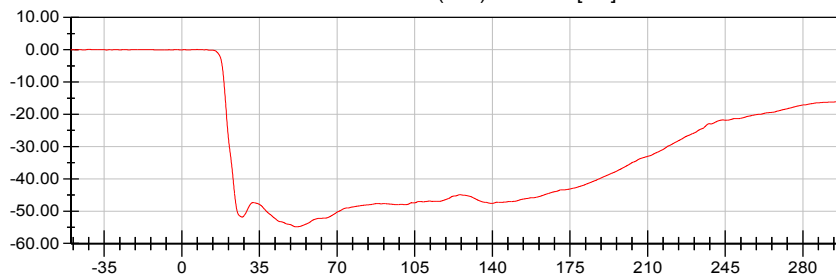
62.59 mm at 106.00 ms

<Min>

0.00 mm at -11.76 ms

CFC_1000

V2P2 ABDOMEN RIGHT LOWER DX (mm) vs. Time [ms]



<Max>

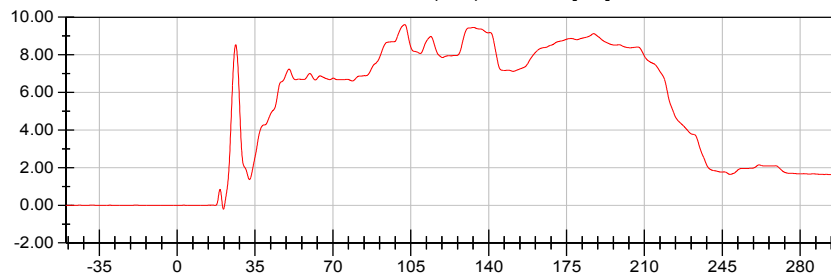
0.11 mm at -41.76 ms

<Min>

-54.85 mm at 51.60 ms

CFC_180

V2P2 ABDOMEN RIGHT LOWER DY (mm) vs. Time [ms]



<Max>

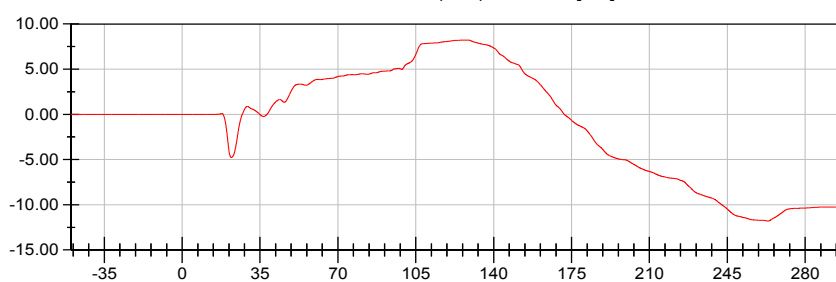
9.61 mm at 102.24 ms

<Min>

-0.21 mm at 20.80 ms

CFC_180

V2P2 ABDOMEN RIGHT LOWER DZ (mm) vs. Time [ms]



<Max>

8.21 mm at 128.64 ms

<Min>

-11.80 mm at 263.28 ms

CFC_180

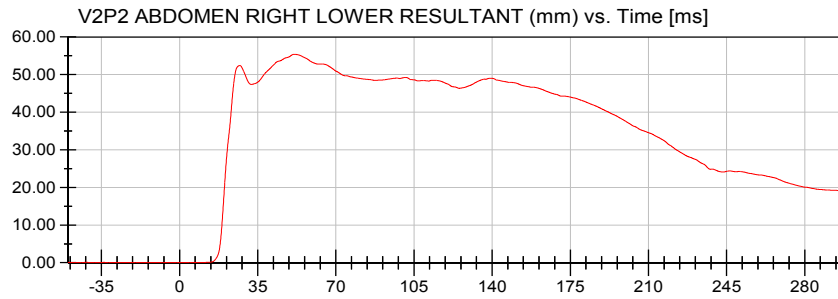


NHTSA

Test Date: 06/21/2016

Test Lab: CTF

Test Number: 160621 (R20165407)



<Max>

55.39 mm at 51.36 ms

<Min>

0.00 mm at -14.00 ms

CFC_1000



APPENDIX C

Part 572 E/O Dummy Calibration and Performance Verification Data Sheets

DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA SHEETS

Table C-1: Dummy Information

TYPE	SERIAL NUMBER
THOR-M 50TH Male	DO9798
THOR-M 50TH Male	DL9207

Table C- 2: THOR Dummy Initial Set-Up Information

THOR – M S/N: DO9798					
Sensor	Manufacturer	Serial Number	Range	Sensitivity	Sensitivity Units
Head CG X Acceleration	ENDEVCO	P52001	2000	0.0196556	mV/V/g
Head CG Y Acceleration	ENDEVCO	P51697	2000	0.0221326	mV/V/g
Head CG Z Acceleration	ENDEVCO	P75155	2000	0.0179399	mV/V/g
Head CG Angular Velocity About X	DTS	ARS6733	18000	0.0943	mV/V/°/s
Head CG Angular Velocity About Y	DTS	ARS4071	18000	0.09309	mV/V/°/s
Head CG Angular Velocity About Z	DTS	ARS4719	18000	0.09304	mV/V/°/s
Upper Neck X Force	Denton	DS9758-FX	8896.44	0.0002329	mV/V/N
Upper Neck Y Force	Denton	DS9758-FY	8896.44	0.0002304	mV/V/N
Upper Neck Z Force	Denton	DS9758-FZ	13344.7	0.000087	mV/V/N
Upper Neck X Moment	Denton	DS9758-MX	282.5	0.0058903	mV/V/Nm
Upper Neck Y Moment	Denton	DS9758-MY	282.5	0.0059634	mV/V/Nm
Upper Neck Z Moment	Denton	DS9758-MZ	282.5	0.0094792	mV/V/Nm
Lower Neck X Force	Denton	DK3607-FX	13344.7	0.0001685	mV/V/N
Lower Neck Y Force	Denton	DK3607-FY	13344.7	0.0001687	mV/V/N
Lower Neck Z Force	Denton	DK3607-FZ	13344.7	0.0000688	mV/V/N
Lower Neck X Moment	Denton	DK3607-MX	451.9	0.0040125	mV/V/Nm
Lower Neck Y Moment	Denton	DK3607-MY	451.9	0.0040721	mV/V/Nm
Lower Neck Z Moment	Denton	DK3607-MZ	226	0.0067238	mV/V/Nm
Front Neck Spring Tower Load Cell	Denton	93-FZ	4448.2	0.0005242	mV/V/N
Rear Neck Spring Tower Load Cell	Denton	132-FZ	4448.2	0.0004843	mV/V/N
Occipital Condyle Rotation Potentiometer	Contelec	DK5913	150	3.04516	mV/V/°
Upper Left DGIR X Displacement	Humanetics	DQ2255	5	200	mV/V/V
Upper Left DGIR Y Rotation	Contelec	DM4779	150	3.0397	mV/V/°
Upper Left DGIR Z Rotation	Contelec	DM4778	150	3.047	mV/V/°
Upper Right DGIR X Displacement	Humanetics	DQ2254	5	200	mV/V/V
Upper Right DGIR Y Rotation	Contelec	DM4774	150	3.0412	mV/V/°
Upper Right DGIR Z Rotation	Contelec	DM4775	150	3.0626	mV/V/°
Lower Left DGIR X Displacement	Humanetics	DK3866	5	200	mV/V/V
Lower Left DGIR Y Rotation	Contelec	DJ5455	150	3.047	mV/V/°
Lower Left DGIR Z Rotation	Contelec	DJ5454	150	3.0513	mV/V/°
Lower Right DGIR X Displacement	Humanetics	DK3865	5	200	mV/V/V
Lower Right DGIR Y Rotation	Contelec	DJ5453	150	3.0593	mV/V/°
Lower Right DGIR Z Rotation	Contelec	DJ5452	150	3.0506	mV/V/°

THOR – M S/N: DO9798					
Sensor	Manufacturer	Serial Number	Range	Sensitivity	Sensitivity Units
Spine Force X	FTSS	DQ5600-FX	13344.6	0.0001461	mV/V/N
Spine Force Y	FTSS	DQ5600-FY	13344.6	0.0001457	mV/V/N
Spine Force Z	FTSS	DQ5600-FZ	17792.9	0.0000607	mV/V/N
Spine Moment X	FTSS	DQ5600-MX	677.9	0.002202	mV/V/Nm
Spine Moment Y	FTSS	DQ5600-MY	903.9	0.0019096	mV/V/Nm
T6 X Acceleration	ENDEVCO	P75156	2000	0.0182	mV/V/g
T6 Y Acceleration	ENDEVCO	P84363	2000	0.01981	mV/V/g
T6 Z Acceleration	ENDEVCO	P51715	2000	0.01792	mV/V/g
T1 X Acceleration	ENDEVCO	P63843	2000	0.0235641	mV/V/g
T1 Y Acceleration	ENDEVCO	P52008	2000	0.0189378	mV/V/g
T1 Z Acceleration	ENDEVCO	P51636	2000	0.02172	mV/V/g
Abdomen Left DGIR X Displacement	Contelec	DP1395	5	200	mV/V/V
Abdomen Left DGIR Y Rotation	Contelec	DJ5443	60	3.0295	mV/V/°
Abdomen Left DGIR Z Rotation	Contelec	DJ5444	30	2.9909	mV/V/°
Abdomen Right DGIR X Displacement	Humanetics	DP1396	5	200	mV/V/V
Abdomen Right DGIR Y Rotation	Contelec	DJ5445	60	3.0596	mV/V/°
Abdomen Right DGIR Z Rotation	Contelec	DJ5446	30	3.0721	mV/V/°
Pelvis Acetabulum Left X Force	Denton	DM1945-FX	22241.1	0.0001195	mV/V/N
Pelvis Acetabulum Left Y Force	Denton	DM1945-FY	13344.7	0.0000605	mV/V/N
Pelvis Acetabulum Left Z Force	Denton	DM1945-FZ	13344.7	0.0001638	mV/V/N
Pelvis Acetabulum Right X Force	Denton	DL9552-FX	22241.1	0.0001183	mV/V/N
Pelvis Acetabulum Right Y Force	Denton	DL9552-FY	13344.7	0.00006	mV/V/N
Pelvis Acetabulum Right Z Force	Denton	DL9552-FZ	13344.7	0.0001608	mV/V/N
Pelvis X Acceleration	ENDEVCO	P58747	2000	0.01851	mV/V/g
Pelvis Y Acceleration	ENDEVCO	P52004	2000	0.021006	mV/V/g
Pelvis Z Acceleration	ENDEVCO	P71875	2000	0.0206755	mV/V/g
ASIS Left X Force	Denton	77-FX	13000	0.0000685	mV/V/N
Left ASIS Y Moment	Denton	77-MY	325	0.0038166	mV/V/Nm
ASIS Right X Force	Denton	DJ5524-FX	13000	0.0000712	mV/V/N
Right ASIS Y Moment	Denton	DJ5524-MY	325	0.0037907	mV/V/Nm
Femur Left X Force	Denton	DK0842-FX	15000	0.0001435	mV/V/N
Femur Left Y Force	Denton	DK0842-FY	15000	0.0001435	mV/V/N
Femur Left Z Force	Denton	DK0842-FZ	15000	7.255E-05	mV/V/N
Femur Left X Moment	Denton	DK0842-MX	350	0.0063996	mV/V/Nm
Femur Left Y Moment	Denton	DK0842-MY	350	0.0064974	mV/V/Nm
Femur Right X Force	Denton	DK3608-FX	15000	0.0001441	mV/V/N
Femur Right Y Force	Denton	DK3608-FY	15000	0.0001441	mV/V/N
Femur Right Z Force	Denton	DK3608-FZ	15000	7.291E-05	mV/V/N
Femur Right X Moment	Denton	DK3608-MX	350	0.0064568	mV/V/Nm
Femur Right Y Moment	Denton	DK3608-MY	350	0.0064191	mV/V/Nm
Knee Left X Displacement	Space Age Controls	13073811	21	23.2313	mV/V/mm
Upper Tibia Left Z Force	Denton	DQ5598-FZ	11100	0.0000953	mV/V/N
Upper Tibia Left X Moment	Denton	DQ5598-MX	395.4	0.0074668	mV/V/Nm
Upper Tibia Left Y Moment	Denton	DQ5598-MY	395.4	0.0074712	mV/V/Nm
Left Mid Tibia X Acceleration	ENDEVCO	P81386	2000	0.01775	mV/V/g
Left Mid Tibia Y Acceleration	ENDEVCO	P52069	2000	0.01906	mV/V/g

THOR – M S/N: DO9798					
Sensor	Manufacturer	Serial Number	Range	Sensitivity	Sensitivity Units
Lower Tibia Left X Force	Denton	DQ9685-FX	11120.5	0.000173109	mV/V/N
Lower Tibia Left Y Force	Denton	DQ9685-FY	11120.5	0.000170433	mV/V/N
Lower Tibia Left Z Force	Denton	DQ9685-FZ	11120.5	9.61791E-05	mV/V/N
Lower Tibia Left X Moment	Denton	DQ9685-MX	395.4	0.00753555	mV/V/Nm
Lower Tibia Left Y Moment	Denton	DQ9685-MY	395.4	0.0075951	mV/V/Nm
Foot Left X Acceleration	ENDEVCO	P64131	2000	0.01921	mV/V/g
Foot Left Z Acceleration	ENDEVCO	P51725	2000	0.0214	mV/V/g
Ankle Left X Rotation	Denton	004	150	3.058	mV/V/°
Ankle Left Y Rotation	Denton	005	150	3.04	mV/V/°
Ankle Left Z Rotation	Denton	006	150	3.0362	mV/V/°
Knee Right X Displacement	Space Age Controls	13073814	21	23.3226	mV/V/mm
Upper Tibia Right Z Force	Denton	DQ5734-FZ	11100	0.0000954	mV/V/N
Upper Tibia Right X Moment	Denton	DQ5734-MX	395.4	0.0074627	mV/V/Nm
Upper Tibia Right Y Moment	Denton	DQ5734-MY	395.4	0.0075024	mV/V/Nm
Right Mid Tibia X Acceleration	ENDEVCO	P79626	2000	0.02106	mV/V/g
Right Mid Tibia Y Acceleration	ENDEVCO	P74953	2000	0.01785	mV/V/g
Lower Tibia Right X Force	Denton	DQ9684-FX	11120.5	0.000177283	mV/V/N
Lower Tibia Right Y Force	Denton	DQ9684-FY	11120.5	0.000174926	mV/V/N
Lower Tibia Right Z Force	Denton	DQ9684-FZ	11120.5	9.75763E-05	mV/V/N
Lower Tibia Right X Moment	Denton	DQ9684-MX	395.4	0.00769804	mV/V/Nm
Lower Tibia Right Y Moment	Denton	DQ9684-MY	395.4	0.00765465	mV/V/Nm
Foot Right X Acceleration	ENDEVCO	P49441	2000	0.01789	mV/V/g
Foot Right Z Acceleration	ENDEVCO	P63969	2000	0.020409	mV/V/g
Ankle Right X Rotation	Denton	001	150	3.0401	mV/V/°
Ankle Right Y Rotation	Denton	002	150	3.0362	mV/V/°
Ankle Right Z Rotation	Denton	003	150	3.0449	mV/V/°

THOR – M S/N: DL9207					
Sensor	Manufacturer	Serial Number	Range	Sensitivity	Sensitivity Units
Head CG X Acceleration	ENDEVCO	P82183	2000	0.0176882	mV/V/g
Head CG Y Acceleration	ENDEVCO	P81384	2000	0.0176045	mV/V/g
Head CG Z Acceleration	ENDEVCO	P81797	2000	0.0193527	mV/V/g
Head CG Angular Velocity About X	DTS	ARS4740	18000	0.09143	mV/V/°/s
Head CG Angular Velocity About Y	DTS	ARS4737	18000	0.09564	mV/V/°/s
Head CG Angular Velocity About Z	DTS	ARS4073	18000	0.09376	mV/V/°/s
Upper Neck X Force	Denton	DP3956-FX	8896.4	0.0002242	mV/V/N
Upper Neck Y Force	Denton	DP3956-FY	8896.4	0.0002278	mV/V/N
Upper Neck Z Force	Denton	DP3956-FZ	13344.7	0.0000853	mV/V/N
Upper Neck X Moment	Denton	DP3956-MX	282.5	0.0058203	mV/V/Nm
Upper Neck Y Moment	Denton	DP3956-MY	282.5	0.0059838	mV/V/Nm
Upper Neck Z Moment	Denton	DP3956-MZ	282.5	0.0094265	mV/V/Nm
Lower Neck X Force	Denton	DP4780-FX	13344.7	0.0001737	mV/V/N
Lower Neck Y Force	Denton	DP4780-FY	13344.7	0.0001745	mV/V/N
Lower Neck Z Force	Denton	DP4780-FZ	13344.7	0.0000706	mV/V/N
Lower Neck X Moment	Denton	DP4780-MX	451.9	0.0041079	mV/V/Nm
Lower Neck Y Moment	Denton	DP4780-MY	451.9	0.0041464	mV/V/Nm
Lower Neck Z Moment	Denton	DP4780-MZ	226	0.0067413	mV/V/Nm
Front Neck Spring Tower Load Cell	Denton	DO9740	4448.2	0.0005128	mV/V/N
Rear Neck Spring Tower Load Cell	Denton	DO9741	4448.2	0.0005082	mV/V/N
Occipital Condyle Rotation Potentiometer	Contelec	DK5911	150	3.021	mV/V/°
Upper Left DGIR X Displacement	Humanetics	DS6355	5	200	mV/V/V
Upper Left DGIR Y Rotation	Contelec	DI2382	150	2.9788	mV/V/°
Upper Left DGIR Z Rotation	Contelec	DI2383	150	3.0073	mV/V/°
Upper Right DGIR X Displacement	Humanetics	DJ2613	5	200	mV/V/V
Upper Right DGIR Y Rotation	Contelec	DI7753	150	3.0359	mV/V/°
Upper Right DGIR Z Rotation	Contelec	DI7752	150	3.0524	mV/V/°
Lower Left DGIR X Displacement	Humanetics	DS6353	5	200	mV/V/V
Lower Left DGIR Y Rotation	Contelec	DM4781	150	3.0014	mV/V/°
Lower Left DGIR Z Rotation	Contelec	DS4092	150	3.0725	mV/V/°
Lower Right DGIR X Displacement	Humanetics	DS6354	5	200	mV/V/V
Lower Right DGIR Y Rotation	Contelec	DM4776	150	3.0049	mV/V/°
Lower Right DGIR Z Rotation	Contelec	DM4777	150	2.9947	mV/V/°
Spine Force X	FTSS	DP2984-FX	13344.7	0.0001464	mV/V/N
Spine Force Y	FTSS	DP2984-FY	13344.7	0.0001471	mV/V/N
Spine Force Z	FTSS	DP2984-FZ	17792.9	0.0000602	mV/V/N
Spine Moment X	FTSS	DP2984-MX	677.909	0.0021461	mV/V/Nm
Spine Moment Y	FTSS	DP2984-MY	903.878	0.0019144	mV/V/Nm
T6 X Acceleration	ENDEVCO	P49229	2000	0.0180148	mV/V/g
T6 Y Acceleration	ENDEVCO	P49215	2000	0.0169516	mV/V/g
T6 Z Acceleration	ENDEVCO	P52122	2000	0.0170485	mV/V/g
T1 X Acceleration	ENDEVCO	P79630	2000	0.0208734	mV/V/g
T1 Y Acceleration	ENDEVCO	P78880	2000	0.01982	mV/V/g
T1 Z Acceleration	ENDEVCO	P82758	2000	0.0186056	mV/V/g
Abdomen Left DGIR X Displacement	Contelec	DQ2303	5	200	mV/V/V
Abdomen Left DGIR Y Rotation	Contelec	DS8363	150	3.0241	mV/V/°
Abdomen Left DGIR Z Rotation	Contelec	DS8361	150	3.0474	mV/V/°

THOR – M S/N: DL9207					
Sensor	Manufacturer	Serial Number	Range	Sensitivity	Sensitivity Units
Abdomen Right DGIR X Displacement	Humanetics	DM2641	5	200	mV/V/V
Abdomen Right DGIR Y Rotation	Contelec	DS4094	150	3.0123	mV/V/°
Abdomen Right DGIR Z Rotation	Contelec	DS4121	150	3.0218	mV/V/°
Pelvis Acetabulum Left X Force	Denton	DP4639-FX	22241.1	0.0001213	mV/V/N
Pelvis Acetabulum Left Y Force	Denton	DP4639-FY	13344.7	0.0000594	mV/V/N
Pelvis Acetabulum Left Z Force	Denton	DP4639-FZ	13344.7	0.0001659	mV/V/N
Pelvis Acetabulum Right X Force	Denton	DP3835-FX	22241.1	0.0001185	mV/V/N
Pelvis Acetabulum Right Y Force	Denton	DP3835-FY	13344.7	0.0000593	mV/V/N
Pelvis Acetabulum Right Z Force	Denton	DP3835-FZ	13344.7	0.0001612	mV/V/N
Pelvis X Acceleration	ENDEVCO	P83434	2000	0.0175369	mV/V/g
Pelvis Y Acceleration	ENDEVCO	P82752	2000	0.0183146	mV/V/g
Pelvis Z Acceleration	ENDEVCO	P80296	2000	0.0194052	mV/V/g
ASIS Left X Force	Denton	DP5092-FX	13000	0.0000673	mV/V/N
Left ASIS Y Moment	Denton	DP5092-MY	325	0.0036889	mV/V/Nm
ASIS Right X Force	Denton	DP5091-FX	13000	0.0000652	mV/V/N
Right ASIS Y Moment	Denton	DP5091-MY	325	0.0036975	mV/V/Nm
Femur Left X Force	Denton	DM4975-FX	15000	0.000143716	mV/V/N
Femur Left Y Force	Denton	DM4975-FY	15000	0.000143603	mV/V/N
Femur Left Z Force	Denton	DM4975-FZ	15000	7.26542E-05	mV/V/N
Femur Left X Force	Denton	DM4975-MX	350	0.00660143	mV/V/Nm
Femur Left Y Moment	Denton	DM4975-MY	350	0.00664204	mV/V/Nm
Femur Right X Force	Denton	DM4976-FX	15000	0.000142619	mV/V/N
Femur Right Y Force	Denton	DM4976-FY	15000	0.000142942	mV/V/N
Femur Right Z Force	Denton	DM4976-FZ	15000	7.22082E-05	mV/V/N
Femur Right X Moment	Denton	DM4976-MX	350	0.00650572	mV/V/Nm
Femur Right Y Moment	Denton	DM4976-MY	350	0.00648894	mV/V/Nm
Knee Left X Displacement	Space Age Controls	C2102639B	21	24.0941	mV/V/mm
Upper Tibia Left Z Force	Denton	4353J-97-FZ	11120.5	9.32914E-05	mV/V/N
Upper Tibia Left X Moment	Denton	4353J-97-MX	395.4	0.00733324	mV/V/Nm
Upper Tibia Left Y Moment	Denton	4353J-97-MY	395.4	0.00739802	mV/V/Nm
Left Mid Tibia X Acceleration	ENDEVCO	P77996	2000	0.0180323	mV/V/g
Left Mid Tibia Y Acceleration	ENDEVCO	P64094	2000	0.0221424	mV/V/g
Lower Tibia Left X Force	Denton	121-FX	11100	0.000175142	mV/V/N
Lower Tibia Left Y Force	Denton	121-FY	11100	0.000171801	mV/V/N
Lower Tibia Left Z Force	Denton	121-FZ	11100	9.57907E-05	mV/V/N
Lower Tibia Left X Moment	Denton	121-MX	395.4	0.00739648	mV/V/Nm
Lower Tibia Left Y Moment	Denton	121-MY	395.4	0.00744718	mV/V/Nm
Foot Left X Acceleration	ENDEVCO	P80271	2000	0.0210034	mV/V/g
Foot Left Z Acceleration	ENDEVCO	P74950	2000	0.0178188	mV/V/g
Ankle Left X Rotation	Denton	0523	180	3.1786	mV/V/°
Ankle Left Y Rotation	Denton	0524	180	3.1906	mV/V/°
Ankle Left Z Rotation	Denton	0525	180	3.1879	mV/V/°
Knee Right X Displacement	Space Age Controls	021033	21	23.2508	mV/V/mm
Upper Tibia Right Z Force	Denton	75-FZ	11120.5	0.0000952	mV/V/N

THOR – M S/N: DL9207					
Sensor	Manufacturer	Serial Number	Range	Sensitivity	Sensitivity Units
Upper Tibia Right X Moment	Denton	75-MX	395.4	0.00749	mV/V/Nm
Upper Tibia Right Y Moment	Denton	75-MY	395.4	0.0074758	mV/V/Nm
Right Mid Tibia X Acceleration	ENDEVCO	P82744	2000	0.018271	mV/V/g
Right Mid Tibia Y Acceleration	ENDEVCO	P82322	2000	0.0172565	mV/V/g
Lower Tibia Right X Force	Denton	76-FX	11100	0.000172364	mV/V/N
Lower Tibia Right Y Force	Denton	76-FY	11100	0.000169804	mV/V/N
Lower Tibia Right Z Force	Denton	76-FZ	11100	9.56251E-05	mV/V/N
Lower Tibia Right X Moment	Denton	76-MX	395.4	0.00747841	mV/V/Nm
Lower Tibia Right Y Moment	Denton	76-MY	395.4	0.00742669	mV/V/Nm
Foot Right X Acceleration	ENDEVCO	P74976	2000	0.0178393	mV/V/g
Foot Right Z Acceleration	ENDEVCO	P83339	2000	0.0199016	mV/V/g
Ankle Right X Rotation	Denton	0528	180	3.2022	mV/V/°
Ankle Right Y Rotation	Denton	0526	180	3.1553	mV/V/°
Ankle Right Z Rotation	Denton	0527-1	180	3.1606	mV/V/°

Table 4 – THOR IR-TRACC Polarity

In order to reduce the risk of damage to instrumentation, it is recommended that the 3D IR-TRACC units are not disconnected from the rib cage to conduct the polarity test. An alternate procedure for checking the IRTRACC polarity is described below.

1. Using the data acquisition system control software, open a live view of each channel. If possible, view the DX, RY, and RZ components of a given quadrant simultaneously.
2. Record the initial reading of each channel
3. Perform the following motions on each of the four rib attachment locations and two abdomen attachment locations (specified by the hexagonal bolt attaching the blue ribs).
 - a. DX: Push inward (front-to-back). The IR-TRACC tube voltage should increase.
 - b. RY: Push downward (head-to-pelvis). The Y-axis potentiometer reading should decrease.
 - c. RZ: Push rightward (left-to-right). The Z-axis potentiometer should increase.
4. Record the final reading of each channel
5. If the “Measured” value (increase or decrease) does not match the “Expected” value, the polarity of the channel must be inverted.

THOR 50th Male DO9798

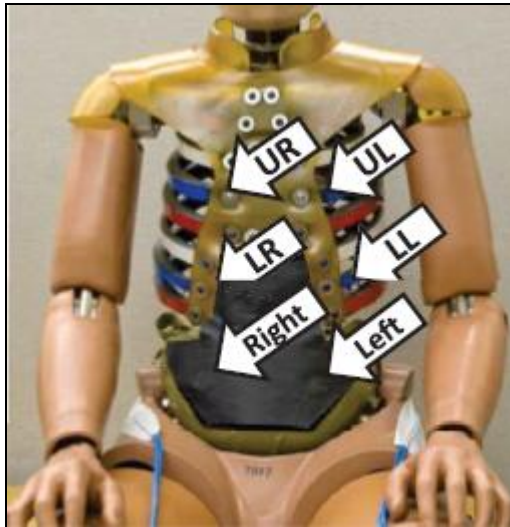


Figure 1. Manipulation to determine thoracic and abdominal IR-TRACC polarity.

Channel	Motion
DX	Push inward
RY	Push upward
RZ	Push rightward

Upper Right Thorax				Upper Left Thorax			
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity
DX (V)	--- ¹	+	+	DX (V)	--- ¹	+	+
RY (Deg)	--- ¹	+	-	RY (Deg)	--- ¹	+	+
RZ (Deg)	--- ¹	+	-	RZ (Deg)	--- ¹	+	+
Lower Right Thorax				Lower Left Thorax			
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity
DX (V)	--- ¹	+	+	DX (V)	--- ¹	+	+
RY (Deg)	--- ¹	+	-	RY (Deg)	--- ¹	+	+
RZ (Deg)	--- ¹	+	-	RZ (Deg)	--- ¹	+	+
Abdomen Right				Abdomen Left			
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity
DX (V)	--- ¹	+	+	DX (V)	--- ¹	+	+
RY (Deg)	--- ¹	+	-	RY (Deg)	--- ¹	+	+
RZ (Deg)	--- ¹	+	+	RZ (Deg)	--- ¹	+	+

¹ Values not recorded

THOR 50th Male DL9207

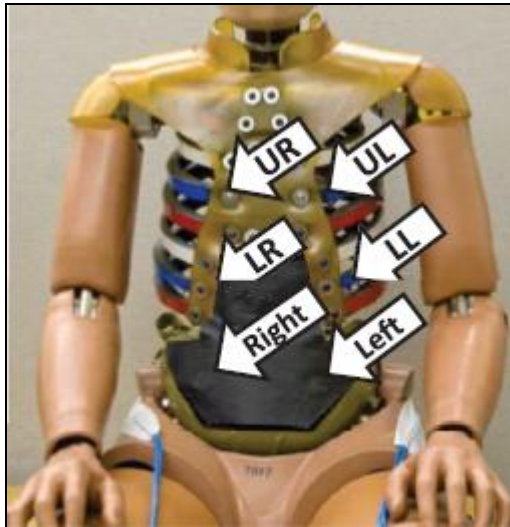


Figure 1. Manipulation to determine thoracic and abdominal IR-TRACC polarity.

Channel	Motion
DX	Push inward
RY	Push upward
RZ	Push rightward

Upper Right Thorax				Upper Left Thorax			
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity
DX (V)	--- ¹	+	+	DX (V)	--- ¹	+	+
RY (Deg)	--- ¹	+	-	RY (Deg)	--- ¹	+	+
RZ (Deg)	--- ¹	+	-	RZ (Deg)	--- ¹	+	+
Lower Right Thorax				Lower Left Thorax			
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity
DX (V)	--- ¹	+	+	DX (V)	--- ¹	+	+
RY (Deg)	--- ¹	+	-	RY (Deg)	--- ¹	+	+
RZ (Deg)	--- ¹	+	-	RZ (Deg)	--- ¹	+	+
Abdomen Right				Abdomen Left			
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity
DX (V)	--- ¹	+	+	DX (V)	--- ¹	+	+
RY (Deg)	--- ¹	+	-	RY (Deg)	--- ¹	+	+
RZ (Deg)	--- ¹	+	+	RZ (Deg)	--- ¹	+	+

¹ Values not recorded

K.3 – FORM 3 – THOR INSPECTION

FORM 3 – THOR INSPECTION

NHTSA No.: _____ Test Date: 5-16-16
 Test Technician(s): Austin Kelly Serial Number: D09798

Complete ATD inspection check lists and send to COR

Dummy S/N:	<u>D09798</u>
Dummy Description:	<u>THOR-M D09798</u>
Date of last Certification:	<u>NECK CERTIFICATION 10/2015</u>
Tests conducted since last full certification or inspection	<u>NONE</u>
Known errors in data channels (no data, clipping, unexpected drops)	
<u>Y-AXIS T2 ACCEL POTENTIALLY BAD DUE TO WIRE DAMAGE AS A RESULT OF BEING PINCHED</u>	
Physical evidence of damage	
<u>FOREARMS AND HANDS HAVE MINOR CUTS/SCRATCHES & WEAR</u> <u>Y-AXIS T2 ACCEL WIRE APPEARS TO BE PINCHED</u> <u>ZIP-TIE SLACK BETWEEN SPINE BOX & RIGHT ABDOMINAL IR-IRAC MOUNT</u> <u>SMALL CUTS ON RIGHT SIDE OF PEEVIS</u> <u>REMOVED</u> ↓	
Anecdotal evidence of damage	
<u>NONE</u>	
Equipment delivered to Borrower	
<u>DUMMY STORE TOOL AND RT-PRINT TOOL</u> <u>HP LAPTOP AND CHARGING CABLE</u>	

HEAD – Check Y or N. If N, explain reason and/or attach picture	
☐ Y ☐ N	Rear head cap mounts securely to head:
	<u>N/A</u>

FORM 3 – THOR INSPECTION

NHTSA No.: _____
 Test Technician(s): Austin Kelly

Test Date: 5-16-16
 Serial Number: 208788

☐ Y ☐ N	Head skin fits securely over skull: <u>n/a</u>
☐ Y ☐ N	Head skin shows no sign of tears or damage <u>n/a</u>
☐ Y ☐ N	Interior components of skull cavity (ballast, accelerometer mount, accelerometers) securely attached: <u>n/a</u>
☐ Y ☐ N	Head securely mounted to OC joint: <u>n/a</u>
	Other:
NECK – Circle Y or N. If N, explain reason and/or attach picture.	
☐ Y ☐ N	Neck cables slide freely through holes in neck plates: <u>n/a</u>
☐ Y ☐ N	Head can rotate about occipital condyle joint freely until the bump stops are engaged: <u>n/a</u>
☐ Y ☐ N	Neck cables show no sign of fraying, broken strands, or kinking <u>n/a</u>
☐ Y ☐ N	No evidence of de-bonding between neck pucks and plates If N – indicate which interface (i.e.: where plate/puck 1 attach to upper neck load cell): <u>n/a</u>

FORM 3 – THOR INSPECTION

NHTSA No.: _____ Test Date: 5-16-16
 Test Technician(s): Austin Kelly Serial Number: DO P778

☐ Y ☐ N	No evidence of de-bonding or permanent compression in neck soft stop assemblies: <u>n/a</u>
☐ Y ☐ N	Neck securely attached to upper neck load cell: <u>n/a</u>
	Other:
SPINE – Circle Y or N. If N, explain reason and/or attach picture	
☐ Y ☒ N	No evidence of de-bonding between thoracic spine flex joint and metal plates: <u>MINOR EVIDENCE OF DEBONDING ON BACK SIDE</u>
☒ Y ☐ N	No evidence of de-bonding between lumbar spine flex joint and metal plates:
☒ Y ☐ N	Lumbar spine pitch change joint mechanism mating teeth are engaged:
☒ Y ☐ N	Neck pitch change joint mechanism mating teeth are engaged:
	Other:
LEFT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:

FORM 3 – THOR INPECTION

NHTSA No.: _____ Test Date: 5-16-16
 Test Technician(s): Austin Kelly Serial Number: 008998

☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops
	Other:
RIGHT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:
☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops:
	Other:
THORAX – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	No evidence of contact at top, bottom, or interior faces of rib damping material:
☒ Y ☐ N	No evidence of debonding between rib damping material and ribs:

FORM 3 – THOR INJECTION

NHTSA No.: _____
 Test Technician(s): Austin Kelly

Test Date: 5-16-16
 Serial Number: DO2778

☒ Y ☐ N	IR-TRACC tubes securely attached to anterior ribs
☒ Y ☐ N	IR-TRACC tubes securely attached to double gimbals, spine:
☒ Y ☐ N	Urethane bib is securely attached to ribs with no sign of tearing or washer penetration:
☒ Y ☐ N	Ribs securely attached to posterior spine:
☒ Y ☐ N	Rib stiffeners show no evidence of bending (no gaps between ribs and stiffeners):
	Other:
ABDOMEN – Circle Y or N. If N, explain reason and/or attach picture	
☐ Y ☒ N	No evidence of tearing, cuts, or broken stitches in upper abdomen bag and zipper: <u>SMALL TEARS ON UPPER REAR CORNERS</u>
☒ Y ☐ N	Upper abdomen insert securely attached to spine:
☒ Y ☐ N	Upper abdomen insert shows no evidence of permanent set:

FORM 3 – THOR INPECTION

NHTSA No.: _____ Test Date: 5-16-16
 Test Technician(s): Austin Kelly Serial Number: DO8796

☒ Y ☐ N	No evidence of tearing, cuts, or broken stitches in lower abdomen bag and zipper:
☒ Y ☐ N	Lower abdomen insert securely attached to spine:
☒ Y ☐ N	Lower abdomen insert shows no evidence of permanent set:
	Other:
PELVIS – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Pelvis flesh fits securely over pelvis bones:
☒ Y ☐ N	H-point tool fits securely into hole on both sides of pelvis:
☒ Y ☐ N	ASIS load cells are firmly attached to the iliac bones, and the iliac bones are firmly attached to the pelvis. The iliac bones are free from cracks or fractures, and if welds are present in the iliac bones, the welds are continuous and devoid of cracks:
	Other:
LEFT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:

FORM 3 – THOR INSPECTION

NHTSA No.: _____ Test Date: 5-16-16
 Test Technician(s): Austin Kelly Serial Number: 202788

☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop:
☒ Y ☒ N <i>OK</i>	No cuts, tears, or scuffing of knee flesh:
	Other: <u>ZIPPER HAS BECOME DETACHED FROM FEMUR SKIN</u>
RIGHT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:
☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop: <u>SEE PHOTO</u>
☐ Y ☒ N	No cuts, tears, or scuffing of knee flesh: <u>SEE PHOTO</u>
	Other:

FORM 3 – THOR INSPECTION

NHTSA No.: _____
 Test Technician(s): Austin Key

Test Date: 5-16-16
 Serial Number: 009798

LEFT LOWER EXTREMITY (LX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached:
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops:
	Other:
RIGHT LOWER EXTREMITY (LX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached:
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops:
	Other:
JACKET – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rib stiffeners show no sign of permanent deformation:

FORM 3 – THOR INPECTION

NHTSA No.: _____ Test Date: 5-16-16
 Test Technician(s): Austin Kelly Serial Number: 009798

☒ Y ☐ N	
	No evidence of tears or holes in jacket fabric, velcro, or zippers:
	Other:



Pinched Y-Axis T1 Accel Wire View 1



Pinched Y-Axis T1 Accel Wire View 2



Right Forearm View



Right Hand View



Left Arm View



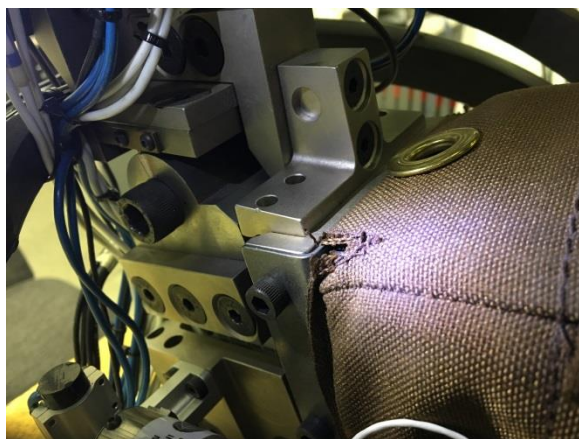
Left Hand View



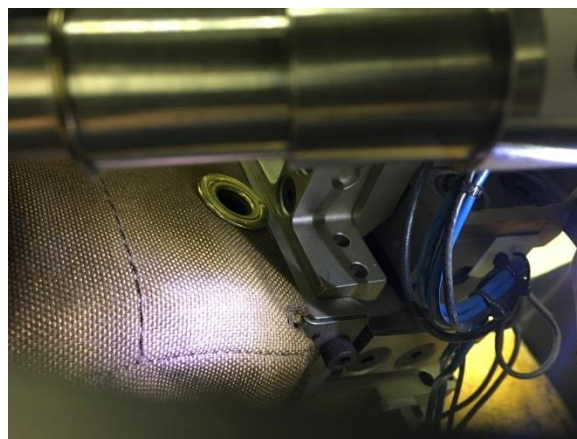
Cuts on Right Side of Pelvis View Plate



De-bonding of Thoracic Spine & Metal



Tear 1 on Abdomen Bag View



Tear 2 on Abdomen Bag View



Scuff on Right Knee Flesh View



Detached Zipper on Left Femur View

K.3 – FORM 3 – THOR INSPECTION

FORM 3 – THOR INSPECTION

NHTSA No.:

Test Date: 6/21/16

Test Technician(s):

JOSH HENDRICKS

Serial Number:

~~DL9207~~ DL9207

Complete ATD inspection check lists and send to COR

Dummy S/N:	DL9207 WITH LX045 & LX046
Dummy Description:	50 th MALE THOR
Date of last Certification:	6/15/16
Tests conducted since last full certification or inspection	
Known errors in data channels (no data, clipping, unexpected drops)	
NONE	
Physical evidence of damage	
Anecdotal evidence of damage	
NONE	
Equipment delivered to Borrower	
• DUMMY	
• LAPTOP & CHARGER	

HEAD – Check Y or N. If N, explain reason and/or attach picture

☒ Y ☐ N

Rear head cap mounts securely to head:

FORM 3 – THOR INSPECTION

NHTSA No.:
Test Technician(s): JOSH HENDRICKS

Test Date: 6/21/16
Serial Number: DL9267

☒ Y ☐ N	Head skin fits securely over skull:
☒ Y ☐ N	Head skin shows no sign of tears or damage
☒ Y ☐ N	Interior components of skull cavity (ballast, accelerometer mount, accelerometers) securely attached:
☒ Y ☐ N	Head securely mounted to OC joint:
	Other:
NECK – Circle Y or N. If N, explain reason and/or attach picture.	
☒ Y ☐ N	Neck cables slide freely through holes in neck plates:
☒ Y ☐ N	Head can rotate about occipital condyle joint freely until the bump stops are engaged:
☒ Y ☐ N	Neck cables show no sign of fraying, broken strands, or kinking
☒ Y ☐ N	No evidence of de-bonding between neck pucks and plates If N – indicate which interface (i.e.: where plate/puck 1 attach to upper neck load cell):

FORM 3 – THOR INSPECTION

NHTSA No.:
Test Technician(s):

Test Date: 6/21/16
Serial Number: DL9267

☐ Y ☒ N	No evidence of de-bonding or permanent compression in neck soft stop assemblies:
	SOFT STOP MISSING FROM FRONT OF NECK
☒ Y ☐ N	Neck securely attached to upper neck load cell:
	Other:
SPINE – Circle Y or N. If N, explain reason and/or attach picture	
☐ Y ☒ N	No evidence of de-bonding between thoracic spine flex joint and metal plates:
	RUBBER HAS SEPARATED ON THE BACK ~ 2 mm
☒ Y ☐ N	No evidence of de-bonding between lumbar spine flex joint and metal plates:
☒ Y ☐ N	Lumbar spine pitch change joint mechanism mating teeth are engaged:
☒ Y ☐ N	Neck pitch change joint mechanism mating teeth are engaged:
	Other:
LEFT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:

FORM 3 – THOR INPECTION

NHTSA No.:

Test Date: 6/21/16

Test Technician(s): JOSH MENDRICKS

Serial Number: 069267

☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops
	Other:
RIGHT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:
☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops:
	Other:
THORAX – Circle Y or N. If N, explain reason and/or attach picture	
☐ Y ☒ N	No evidence of contact at top, bottom, or interior faces of rib damping material: RIB 1 - DAMAGE TO BOTH SIDES RIB 3 - LIGHT DAMAGE TO TOP ON RIGHT REAR RIB 7 - LIGHT DAMAGE TO BOTTOM ON RIGHT REAR
☐ Y ☒ N	No evidence of debonding between rib damping material and ribs:

FORM 3 – THOR INSPECTION

NHTSA No.:
Test Technician(s):

Test Date: 6/21/16
Serial Number: DL9207

☒ Y ☐ N	IR-TRACC tubes securely attached to anterior ribs
☒ Y ☐ N	IR-TRACC tubes securely attached to double gimbals, spine:
☐ Y ☒ N	Urethane bib is securely attached to ribs with no sign of tearing or washer penetration: CENTER BELT ON STERNUM BRACKET STARTING TO PULL THROUGH
☒ Y ☐ N	Ribs securely attached to posterior spine:
☒ Y ☐ N	Rib stiffeners show no evidence of bending (no gaps between ribs and stiffeners):
	Other:
ABDOMEN – Circle Y or N. If N, explain reason and/or attach picture	
☐ Y ☒ N	No evidence of tearing, cuts, or broken stitches in upper abdomen bag and zipper: TEARS ON BOTTOM LEFT + RIGHT CORNERS TAPE AROUND ALL 4 SIDES
☒ Y ☐ N	Upper abdomen insert securely attached to spine:
☒ Y ☐ N	Upper abdomen insert shows no evidence of permanent set:

FORM 3 – THOR INSPECTION

NHTSA No.: _____
 Test Technician(s): JOSH HENDRICKS

Test Date: 6/21/16
 Serial Number: DL9767

☐ Y ☒ N	No evidence of tearing, cuts, or broken stitches in lower abdomen bag and zipper: <u>TEARS ON BOTTOM LEFT & RIGHT CORNERS</u>
☒ Y ☐ N	Lower abdomen insert securely attached to spine:
☒ Y ☐ N	Lower abdomen insert shows no evidence of permanent set:
	Other:
PELVIS – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Pelvis flesh fits securely over pelvis bones:
☐ Y ☐ N	H-point tool fits securely into hole on both sides of pelvis: <u>N/A</u> <u>NO H-POINT TOOL AVAILABLE CURRENTLY</u>
☒ Y ☐ N	ASIS load cells are firmly attached to the iliac bones, and the iliac bones are firmly attached to the pelvis. The iliac bones are free from cracks or fractures, and if welds are present in the iliac bones, the welds are continuous and devoid of cracks: <u>(OF WHAT CAN BE SEEN WITHOUT TEARDOWN)</u>
	Other:
LEFT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:

FORM 3 – THOR INSPECTION

NHTSA No.: _____
 Test Technician(s): JOSE HENDRICKS

Test Date: 6/21/16
 Serial Number: DLA207

☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop:
☐ Y ☒ N	No cuts, tears, or scuffing of knee flesh: <u>TEAR + SCUFF ON BOTH KNEES</u>
	Other:
RIGHT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:
☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop:
☐ Y ☒ N	No cuts, tears, or scuffing of knee flesh: <u>TEAR ON BOTH KNEES</u>
	Other:

FORM 3 – THOR INSPECTION	
NHTSA No.: _____	Test Date: <u>6/21/16</u>
Test Technician(s): <u>JOSH HENDRICKS</u>	Serial Number: <u>DL9267</u>
LEFT LOWER EXTREMITY (LX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached: _____ _____ _____
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion: _____ _____ _____
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops: _____ _____ _____
	Other: _____ _____ _____
RIGHT LOWER EXTREMITY (RX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached: _____ _____ _____
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion: _____ _____ _____
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops: _____ _____ _____
	Other: _____ _____ _____
JACKET – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rib stiffeners show no sign of permanent deformation: <u>INNER LEFT STIFFENER HAS SLIGHT BEND</u>

FORM 3 – THOR INSPECTION	
NHTSA No.:	Test Date: 6/24/16
Test Technician(s): JOSH HENDRICKS	Serial Number: 019267
☐ Y ☒ N	No evidence of tears or holes in jacket fabric, velcro, or zippers:
	TWO VERTICAL LACS MADE THROUGH BACK OF JACKET
	Other:

K.3 – FORM 3 – THOR INSPECTION

FORM 3 – THOR INSPECTION

NHTSA No.:

Test Date: 6-22-16

Test Technician(s): AUSTIN KELLY

Serial Number: D09798

Complete ATD inspection check lists and send to COR * INSPECTION TO NOTE ANY INCREASED OR NEW DAMAGE SINCE LAST INSPECTION.

Dummy S/N:	<u>D09798</u>
Dummy Description:	<u>THOR-M D09798</u>
Date of last Certification:	<u>JUNE, 2016</u>
Tests conducted since last full certification or inspection	<u>1, 6/21/2016</u>
Known errors in data channels (no data, clipping, unexpected drops)	
<u>FOOT RIGHT X ACCELERATION</u>	
Physical evidence of damage	
<u>NONE</u>	
Anecdotal evidence of damage	
<u>NONE</u>	
Equipment delivered to Borrower	
<u>STORAGE AND H-POINT TOOL</u>	
<u>CAPTOR AND CHARGING CABLE</u>	

HEAD – Check Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rear head cap mounts securely to head:

FORM 3 – THOR INSPECTION

NHTSA No.: _____
 Test Technician(s): AUSTIN KELLY

Test Date: 6-22-16
 Serial Number: 008798

☒ Y ☐ N	Head skin fits securely over skull:
☐ Y ☒ N	Head skin shows no sign of tears or damage <u>26 mm CUT ON FOREHEAD* (HAPPENED PRIOR TO TEST)</u>
☒ Y ☐ N	Interior components of skull cavity (ballast, accelerometer mount, accelerometers) securely attached:
☒ Y ☐ N	Head securely mounted to OC joint:
	Other: _____
NECK – Circle Y or N. If N, explain reason and/or attach picture.	
☒ Y ☐ N	Neck cables slide freely through holes in neck plates:
☒ Y ☐ N	Head can rotate about occipital condyle joint freely until the bump stops are engaged:
☒ Y ☐ N	Neck cables show no sign of fraying, broken strands, or kinking
☒ Y ☐ N	No evidence of de-bonding between neck pucks and plates If N – indicate which interface (i.e.: where plate/puck 1 attach to upper neck load cell):

FORM 3 – THOR INPECTION

NHTSA No.: _____
 Test Technician(s): AUSTIN KELLY

Test Date: 6-22-16
 Serial Number: 009798

☒ Y ☐ N	No evidence of de-bonding or permanent compression in neck soft stop assemblies:
☒ Y ☐ N	Neck securely attached to upper neck load cell:
	Other: <u>—</u>
SPINE – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	No evidence of de-bonding between thoracic spine flex joint and metal plates:
☒ Y ☐ N	No evidence of de-bonding between lumbar spine flex joint and metal plates:
☒ Y ☐ N	Lumbar spine pitch change joint mechanism mating teeth are engaged:
☒ Y ☐ N	Neck pitch change joint mechanism mating teeth are engaged:
	Other: <u>—</u>
LEFT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:

FORM 3 – THOR INPECTION

NHTSA No.: _____ Test Date: 6-22-16
 Test Technician(s): Austin Kelly Serial Number: 209798

☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops
	Other: <u>—</u>
RIGHT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:
☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops:
	Other: <u>—</u>
THORAX – Circle Y or N. If N, explain reason and/or attach picture	
☐ Y ☒ N	No evidence of contact at top, bottom, or interior faces of rib damping material: <u>POTENTIAL CONTACT OF UPPER RIB TO RIGHT CLAVICLE.</u> <u>POSSIBLE EARLY EVIDENCE OF DEBONDING</u>
☐ Y ☒ N	No evidence of debonding between rib damping material and ribs: <u>FRACTION OF POTENTIAL DEBONDING ON LEFT & RIGHT SIDES.</u>

FORM 3 – THOR INSPECTION

NHTSA No.:
Test Technician(s): Austin Kelly

Test Date: 6-22-16
Serial Number: 008788

☒ Y ☐ N	IR-TRACC tubes securely attached to anterior ribs
☒ Y ☐ N	IR-TRACC tubes securely attached to double gimbals, spine:
☒ Y ☐ N	Urethane bib is securely attached to ribs with no sign of tearing or washer penetration:
☒ Y ☐ N	Ribs securely attached to posterior spine:
☒ Y ☐ N	Rib stiffeners show no evidence of bending (no gaps between ribs and stiffeners):
	Other: <u>—</u>
ABDOMEN – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	No evidence of tearing, cuts, or broken stitches in upper abdomen bag and zipper:
☒ Y ☐ N	Upper abdomen insert securely attached to spine:
☒ Y ☐ N	Upper abdomen insert shows no evidence of permanent set:

FORM 3 – THOR INPECTION

NHTSA No.:

Test Date: 6-22-16

Test Technician(s): Dustin Kelly

Serial Number: D09778

☒ Y ☐ N	No evidence of tearing, cuts, or broken stitches in lower abdomen bag and zipper:
☒ Y ☐ N	Lower abdomen insert securely attached to spine:
☒ Y ☐ N	Lower abdomen insert shows no evidence of permanent set:
	Other: ✓
PELVIS – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Pelvis flesh fits securely over pelvis bones:
☒ Y ☐ N	H-point tool fits securely into hole on both sides of pelvis:
☒ Y ☐ N	ASIS load cells are firmly attached to the iliac bones, and the iliac bones are firmly attached to the pelvis. The iliac bones are free from cracks or fractures, and if welds are present in the iliac bones, the welds are continuous and devoid of cracks:
	Other: ✓
LEFT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:

FORM 3 – THOR INPECTION

NHTSA No.:
 Test Technician(s): *Austin Newy*

Test Date: *6-22-16*
 Serial Number: *007778*

☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop:
☐ Y ☒ N	No cuts, tears, or scuffing of knee flesh: <i>MINOR SCUFF ON RIGHT KNEE</i>
	Other:
RIGHT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:
☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop:
☒ Y ☐ N	No cuts, tears, or scuffing of knee flesh:
	Other:

FORM 3 – THOR INSPECTION

NHTSA No.: _____ Test Date: 6-22-16
 Test Technician(s): Austin Kelly Serial Number: 008798

LEFT LOWER EXTREMITY (LX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached:
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops:
	Other: <u> </u>
RIGHT LOWER EXTREMITY (LX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached:
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops:
	Other: <u> </u>
JACKET – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rib stiffeners show no sign of permanent deformation:

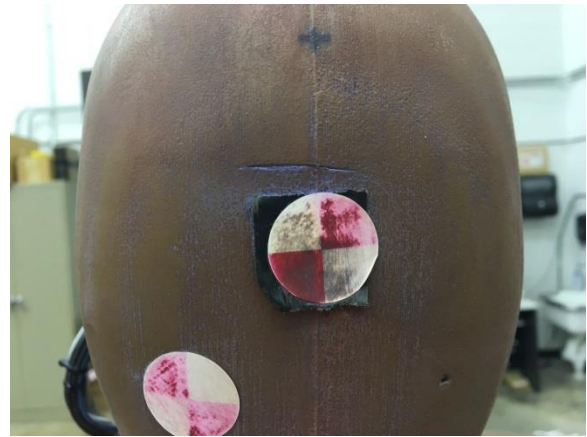
FORM 3 – THOR INSPECTION

NHTSA No.: _____ Test Date: 6-22-16
 Test Technician(s): AUSTIN KELLY Serial Number: 009788

☒ Y ☐ N	
	No evidence of tears or holes in jacket fabric, velcro, or zippers:
	Other: <u>✓</u>



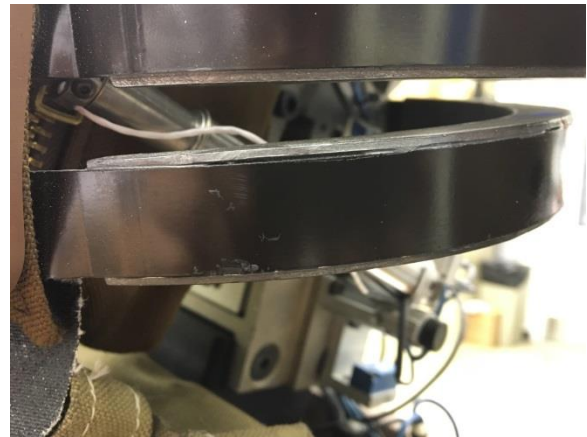
26 mm Cut on Brow Line View 1



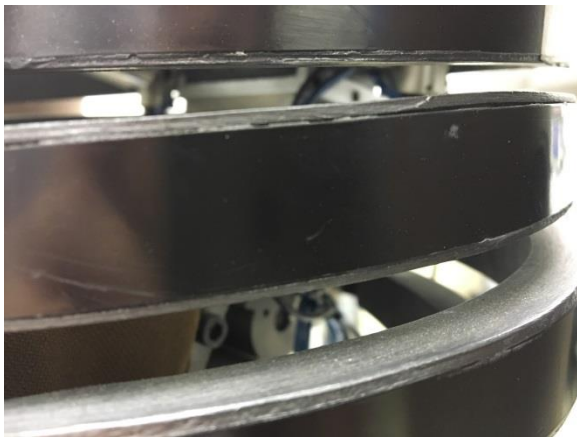
26 mm Cut on Brow Line View 2



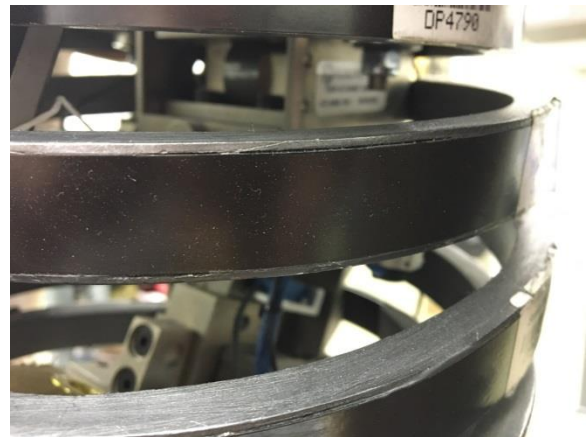
Right Upper Rib Contact View



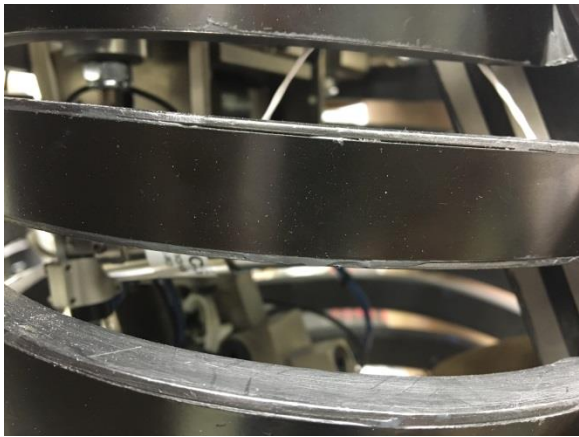
Potential Debonding View 1



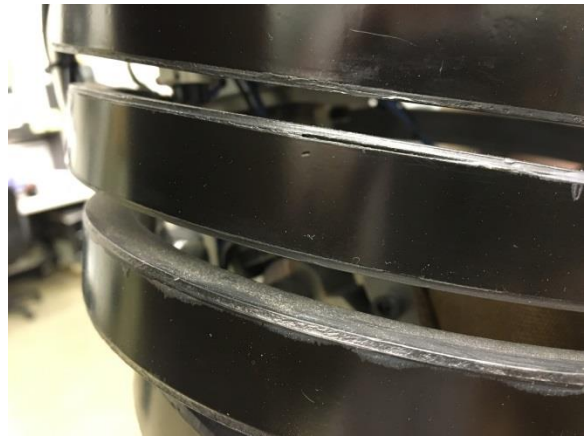
Potential Debonding View 2



Potential Debonding View 3



Potential Debonding View 4



Potential Debonding View 5



Scuff on Right Knee Flesh View

K.3 – FORM 3 – THOR INSPECTION

FORM 3 – THOR INSPECTION

NHTSA No.: _____ Test Date: 9/24/16
 Test Technician(s): Jessie HEADRICKS Serial Number: DL9207

Complete ATD inspection check lists and send to COR

Dummy S/N:	<u>DL9207/LX045/LX046</u>
Dummy Description:	<u>THOR M 50th</u>
Date of last Certification:	<u>6/15/2016</u>
Tests conducted since last full certification or inspection	
Known errors in data channels (no data, clipping, unexpected drops)	
<u>1. ACCEL X & Z - QUESTIONABLE DATA AFTER ~45ms</u> <u>LOWER RIGHT TIBIA FZ - NO DATA AFTER 70ms</u> <u>RIGHT FOOT X ACCEL - NO DATA AFTER 70ms</u>	
Physical evidence of damage	
<u>CUT FOUND IN FOOT ACCEL WIRE</u>	
Anecdotal evidence of damage	
<u>NONE</u>	
Equipment delivered to Borrower	
<u>LAPTOP, CHARGER & H-PRINT Tool</u>	

HEAD – Check Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rear head cap mounts securely to head:

FORM 3 – THOR INSPECTION

NHTSA No.:

Test Date: 6/24/16

Test Technician(s): JOSH HENDRICKS

Serial Number: 069207

☒ Y ☐ N	Head skin fits securely over skull:
☒ Y ☐ N	Head skin shows no sign of tears or damage
☒ Y ☐ N	Interior components of skull cavity (ballast, accelerometer mount, accelerometers) securely attached:
☒ Y ☐ N	Head securely mounted to OC joint:
	Other:
NECK – Circle Y or N. If N, explain reason and/or attach picture.	
☒ Y ☐ N	Neck cables slide freely through holes in neck plates:
☒ Y ☐ N	Head can rotate about occipital condyle joint freely until the bump stops are engaged:
☒ Y ☐ N	Neck cables show no sign of fraying, broken strands, or kinking
☒ Y ☐ N	No evidence of de-bonding between neck pucks and plates If N – indicate which interface (i.e.: where plate/puck 1 attach to upper neck load cell):

FORM 3 – THOR INPECTION

NHTSA No.:

Test Date: 6/24/16

Test Technician(s): JOSH HENDRICKS

Serial Number: DL9207

☒ Y ☐ N	No evidence of de-bonding or permanent compression in neck soft stop assemblies:
	FRONT SOFT STOP STILL MISSING
☒ Y ☐ N	Neck securely attached to upper neck load cell:
	Other:
SPINE – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	No evidence of de-bonding between thoracic spine flex joint and metal plates:
	GAP STILL PRESENT AT WAT FLEX JOINT
☒ Y ☐ N	No evidence of de-bonding between lumbar spine flex joint and metal plates:
☒ Y ☐ N	Lumbar spine pitch change joint mechanism mating teeth are engaged:
	SLOUCH
☒ Y ☐ N	Neck pitch change joint mechanism mating teeth are engaged:
	NEUTRAL
	Other:
LEFT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:

FORM 3 – THOR INSPECTION

NHTSA No.:

Test Date: 6/24/16

Test Technician(s): JOSH HENNRICKS

Serial Number: 010207

☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops
	Other:
RIGHT SHOULDER/ARM – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Urethane shoulder pads show no evidence of contact:
☒ Y ☐ N	Clavicle securely attached to sternum and shoulder:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of posterior soft stops:
	Other:
THORAX – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	No evidence of contact at top, bottom, or interior faces of rib damping material: RIB # 1 STILL HAS DAMAGE
☒ Y ☐ N	No evidence of debonding between rib damping material and ribs:

FORM 3 – THOR INPECTION

NHTSA No.:
Test Technician(s): JOCK HENDRICKS

Test Date: 6/24/16
Serial Number: 019207

☒ Y ☐ N	IR-TRACC tubes securely attached to anterior ribs
☒ Y ☐ N	IR-TRACC tubes securely attached to double gimbals, spine:
☒ Y ☐ N	Urethane bib is securely attached to ribs with no sign of tearing or washer penetration:
☒ Y ☐ N	Ribs securely attached to posterior spine:
☒ Y ☐ N	Rib stiffeners show no evidence of bending (no gaps between ribs and stiffeners):
	Other:
ABDOMEN – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	No evidence of tearing, cuts, or broken stitches in upper abdomen bag and zipper:
☒ Y ☐ N	Upper abdomen insert securely attached to spine:
☒ Y ☐ N	Upper abdomen insert shows no evidence of permanent set:

FORM 3 – THOR INPECTION

NHTSA No.:
 Test Technician(s): JOCH HENDRICKS

Test Date: 6/24/16
 Serial Number: DL9207

☒ Y ☐ N	No evidence of tearing, cuts, or broken stitches in lower abdomen bag and zipper:
☒ Y ☐ N	Lower abdomen insert securely attached to spine:
☒ Y ☐ N	Lower abdomen insert shows no evidence of permanent set:
	Other:
PELVIS – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Pelvis flesh fits securely over pelvis bones:
☒ Y ☐ N	H-point tool fits securely into hole on both sides of pelvis:
☒ Y ☐ N	ASIS load cells are firmly attached to the iliac bones, and the iliac bones are firmly attached to the pelvis. The iliac bones are free from cracks or fractures, and if welds are present in the iliac bones, the welds are continuous and devoid of cracks:
	Other:
LEFT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:

FORM 3 – THOR INPECTION

NHTSA No.:
 Test Technician(s): JUST HENDRICKS

Test Date: 6/24/16
 Serial Number: DL9207

☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop:
☒ Y ☐ N	No cuts, tears, or scuffing of knee flesh:
	<u>NO CHANGE</u>
	Other:
RIGHT FEMUR – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Acetabular load cells firmly attached:
☒ Y ☐ N	Femur load cells firmly attached:
☒ Y ☐ N	No evidence of deformation of knee slider bump stop:
☒ Y ☐ N	No cuts, tears, or scuffing of knee flesh:
	<u>NO CHANGE</u>
	Other:

FORM 3 – THOR INPECTION

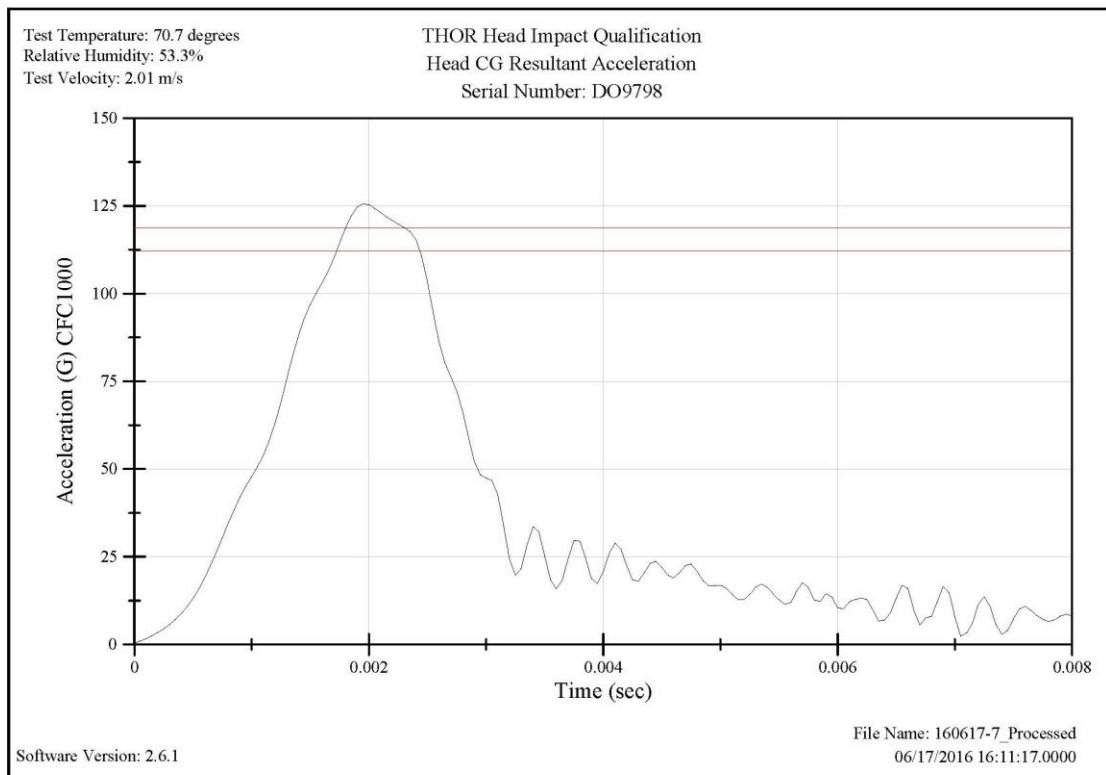
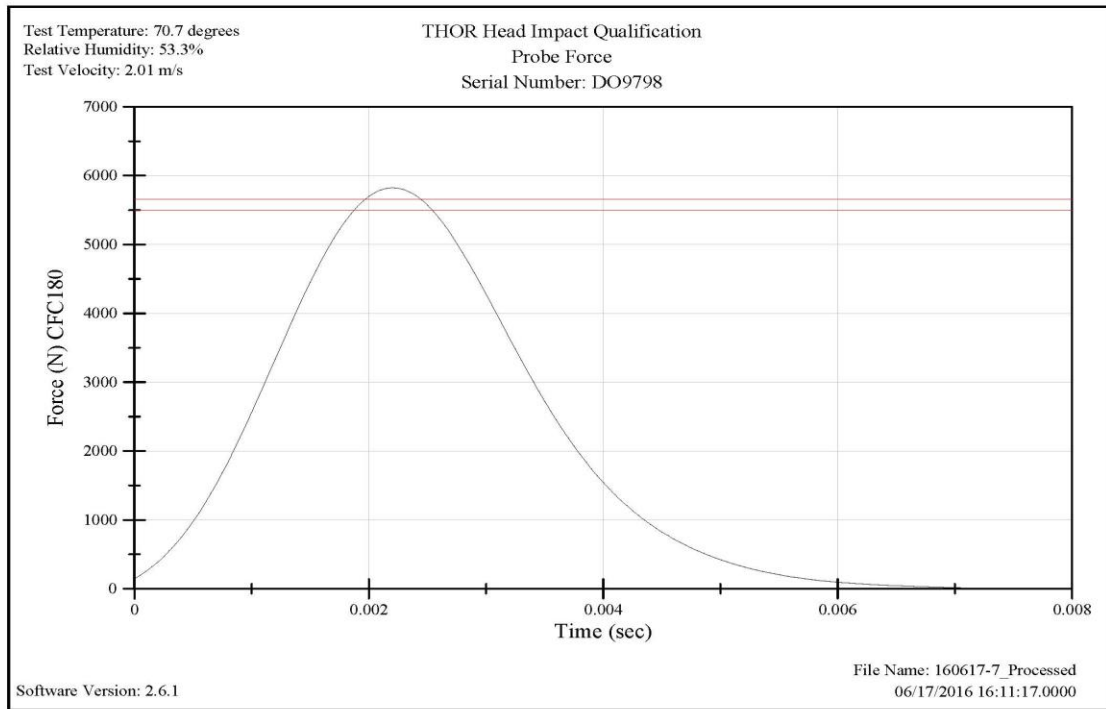
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 Test Technician(s): JOSH HENDRICKS

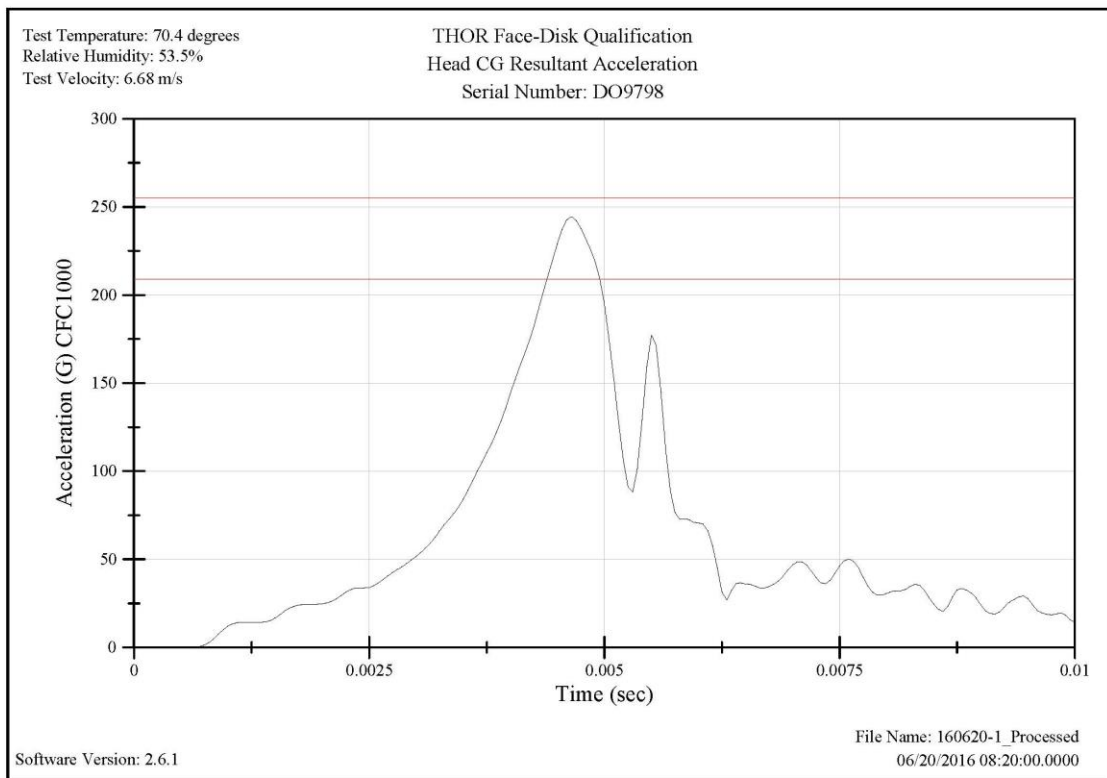
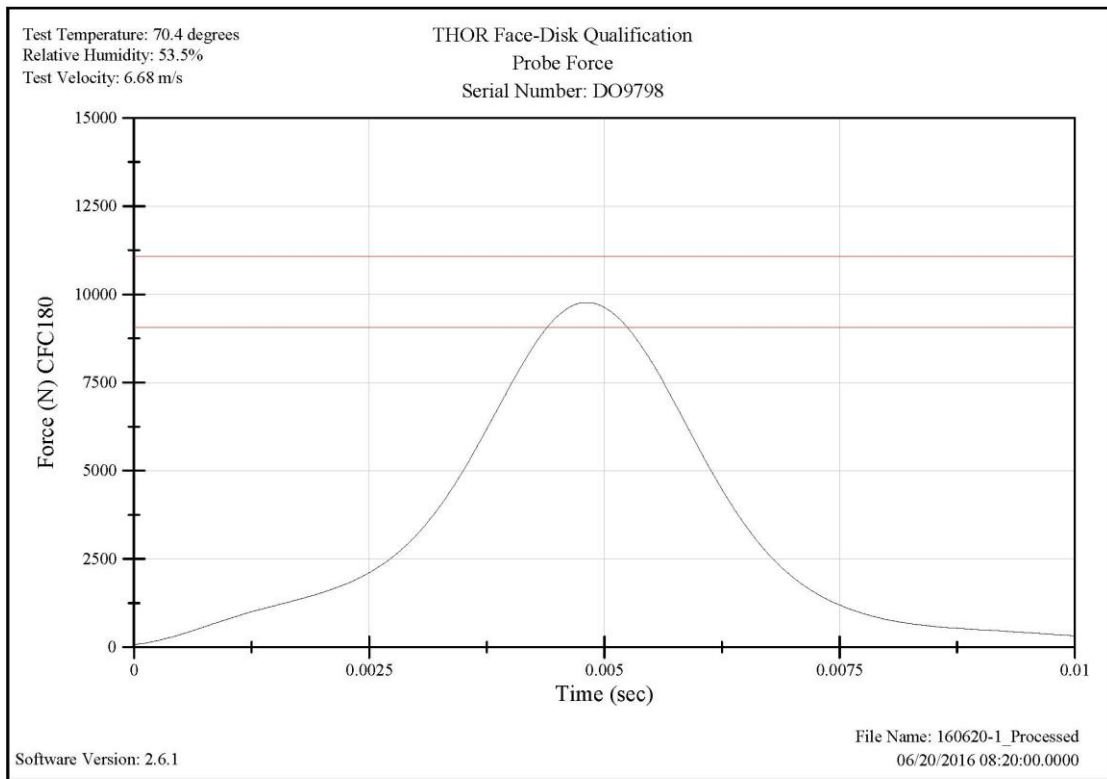
Test Date: 6/24/16
 Serial Number: D19207

LEFT LOWER EXTREMITY (LX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached:
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops:
	Other:
RIGHT LOWER EXTREMITY (LX) – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rotational potentiometers in ankle securely attached:
☒ Y ☐ N	Achilles tendon provides resistance to dorsiflexion:
☒ Y ☐ N	No evidence of debonding, tearing, or permanent compression of ankle soft stops:
	Other:
JACKET – Circle Y or N. If N, explain reason and/or attach picture	
☒ Y ☐ N	Rib stiffeners show no sign of permanent deformation:

FORM 3 – THOR INPECTION	
NHTSA No.:	Test Date: <u>6/24/16</u>
Test Technician(s): <u>JOSH HENDRICKS</u>	Serial Number: <u>019707</u>
☒ Y ☐ N	No evidence of tears or holes in jacket fabric, velcro, or zippers:
	Other:

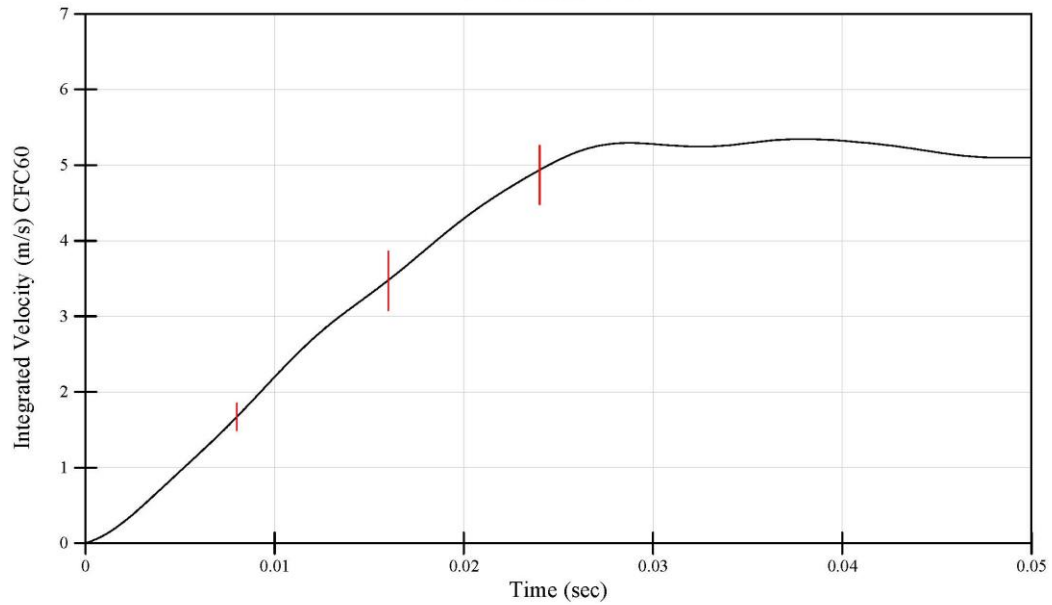
Calibration Sheets
Driver S/N DO9798





Test Temperature: 67.9 degrees
Relative Humidity: 53.6%
Test Velocity: 5.00 m/s

THOR Neck Flexion Certification
Probe Acceleration
Serial Number: DO9798

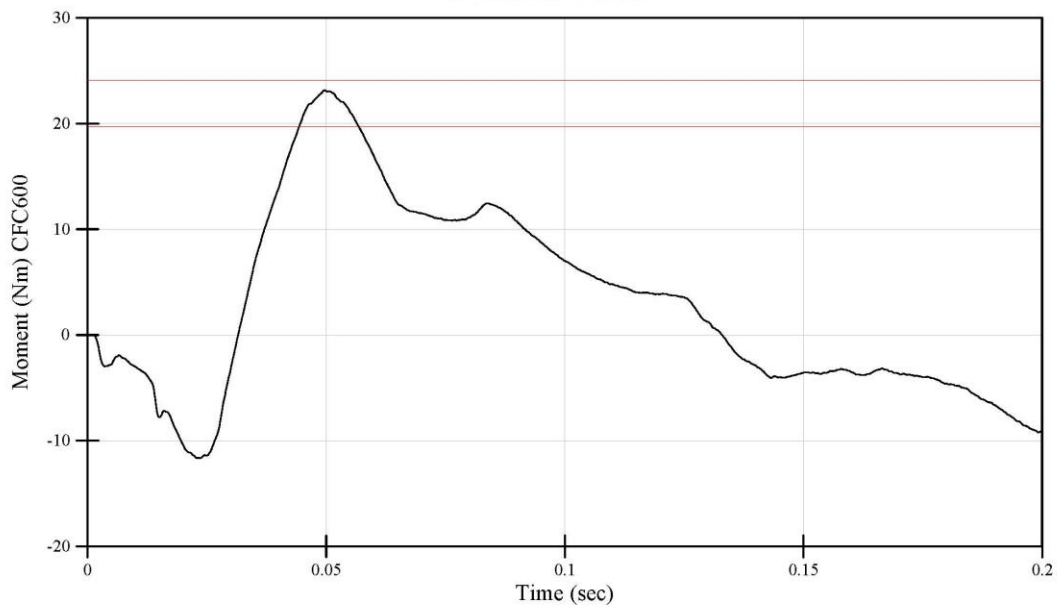


Software Version: 2.6.1

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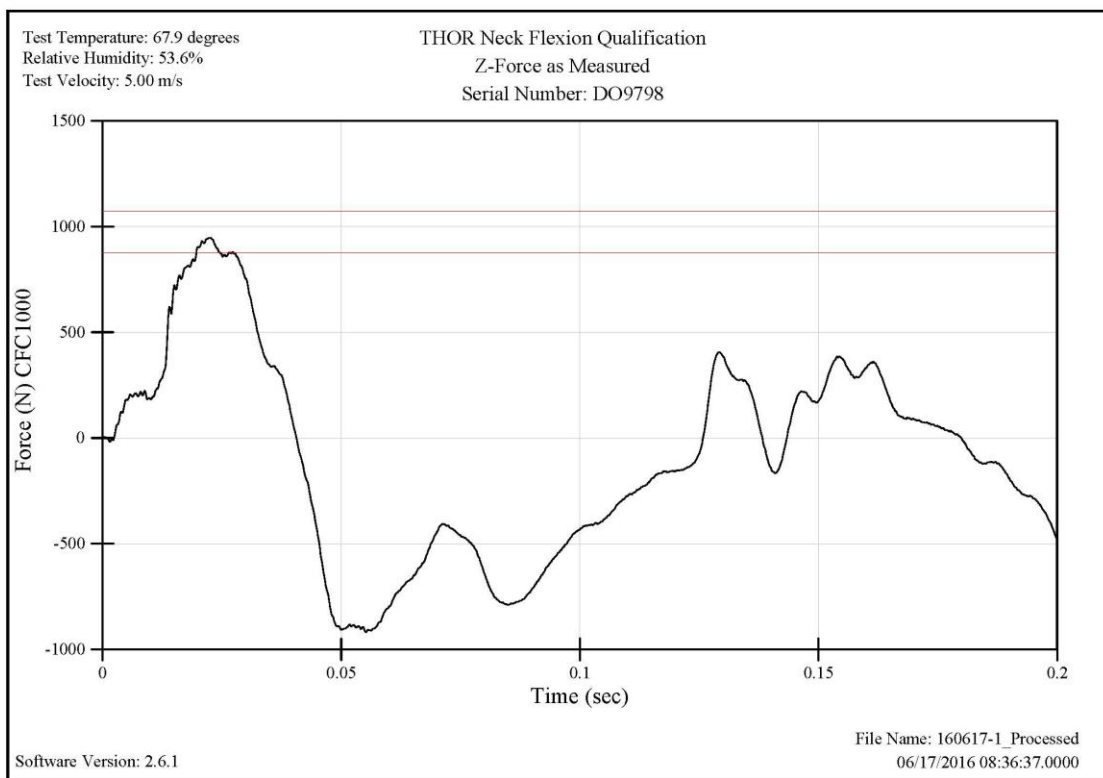
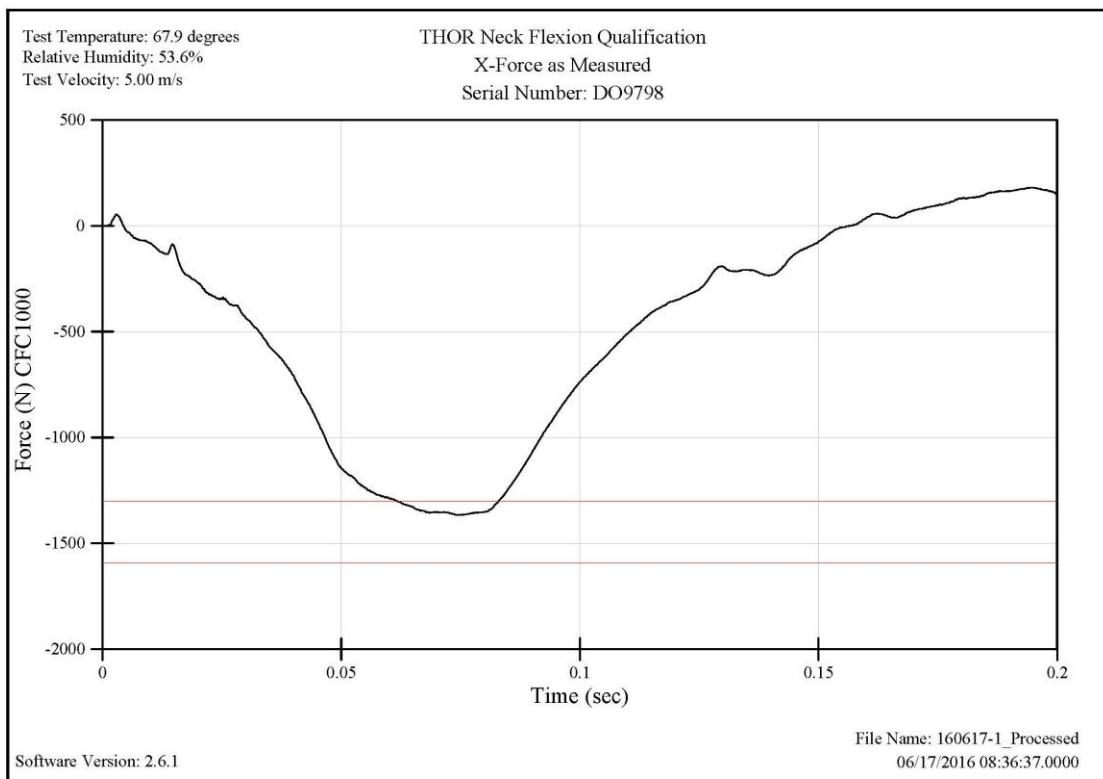
Test Temperature: 67.9 degrees
Relative Humidity: 53.6%
Test Velocity: 5.00 m/s

THOR Neck Flexion Qualification
Y-Moment as Measured
Serial Number: DO9798



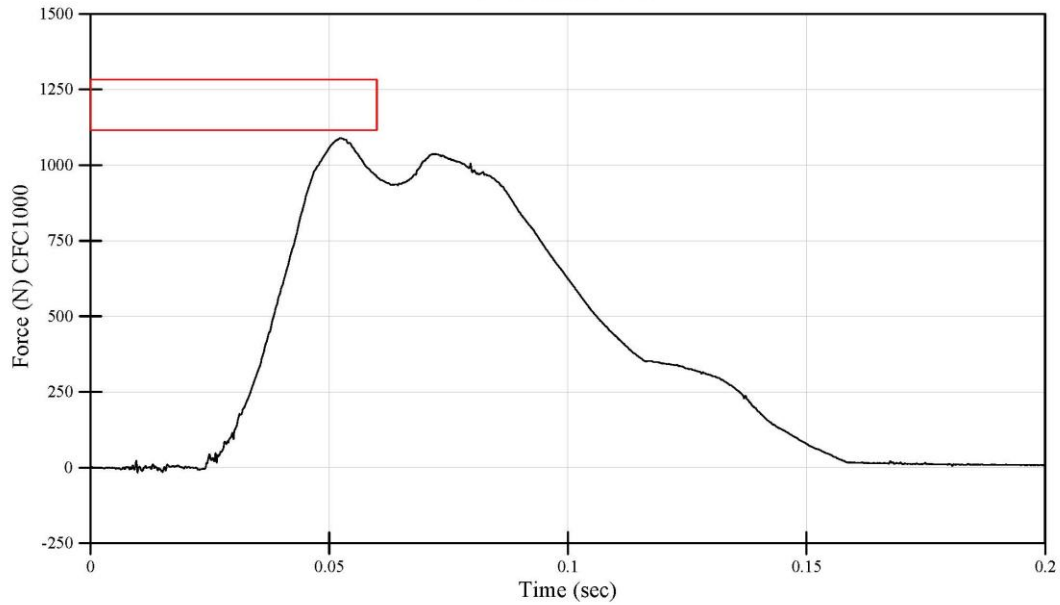
Software Version: 2.6.1

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Test Temperature: 67.9 degrees
Relative Humidity: 53.6%
Test Velocity: 5.00 m/s

THOR Neck Flexion Qualification
Rear Cable Z-Force as Measured
Serial Number: DO9798

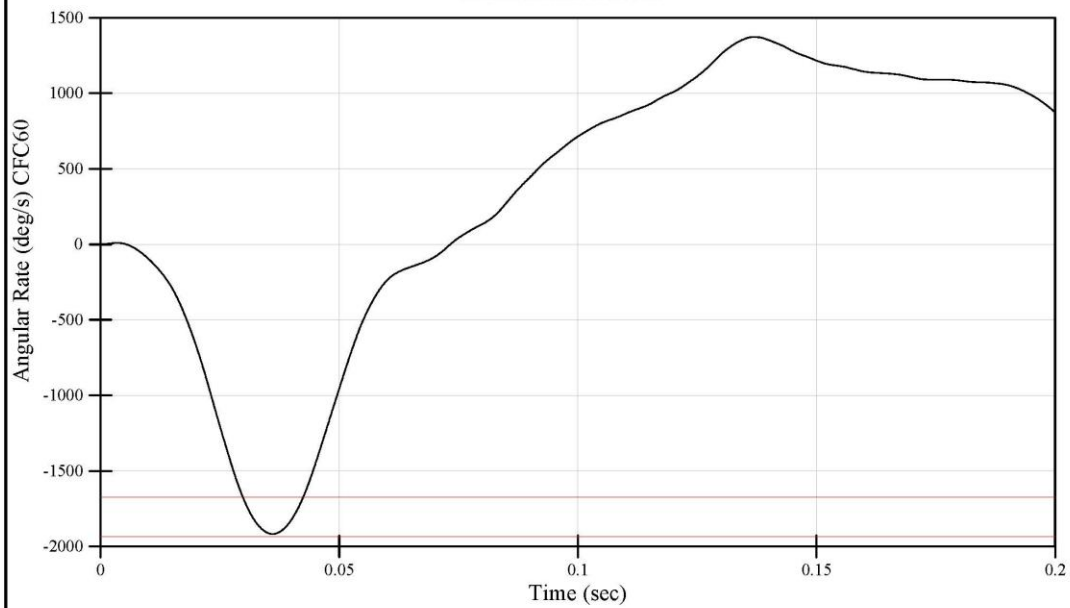


Software Version: 2.6.1

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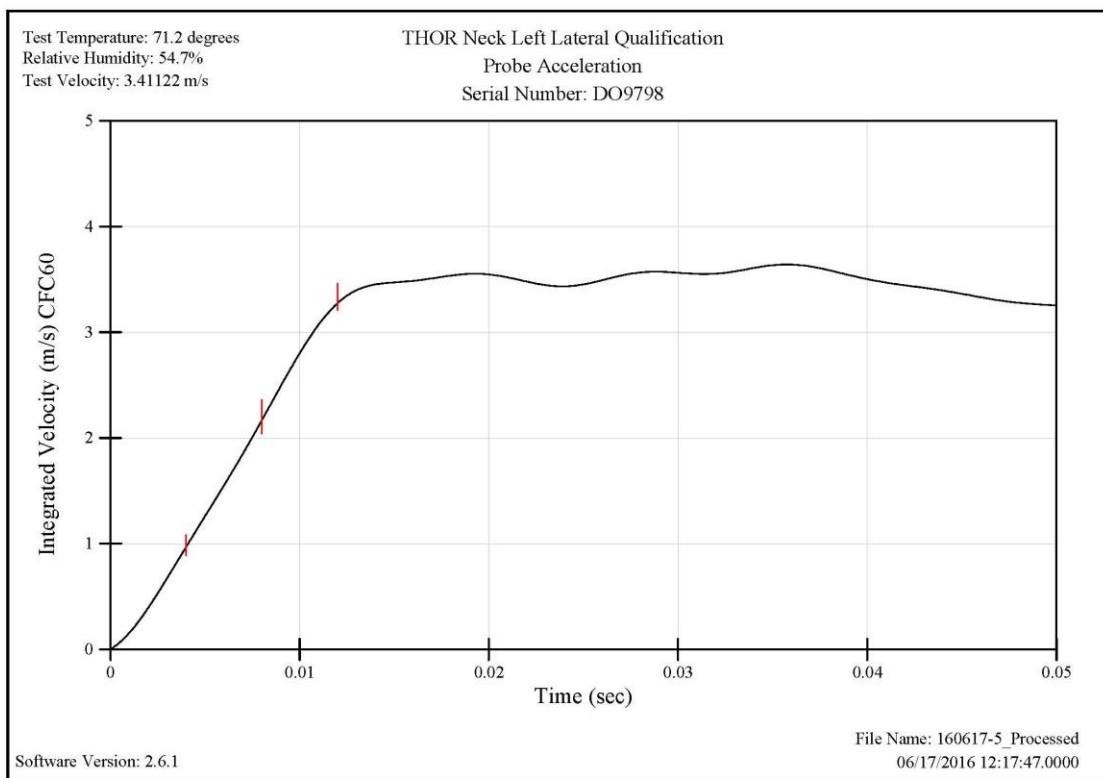
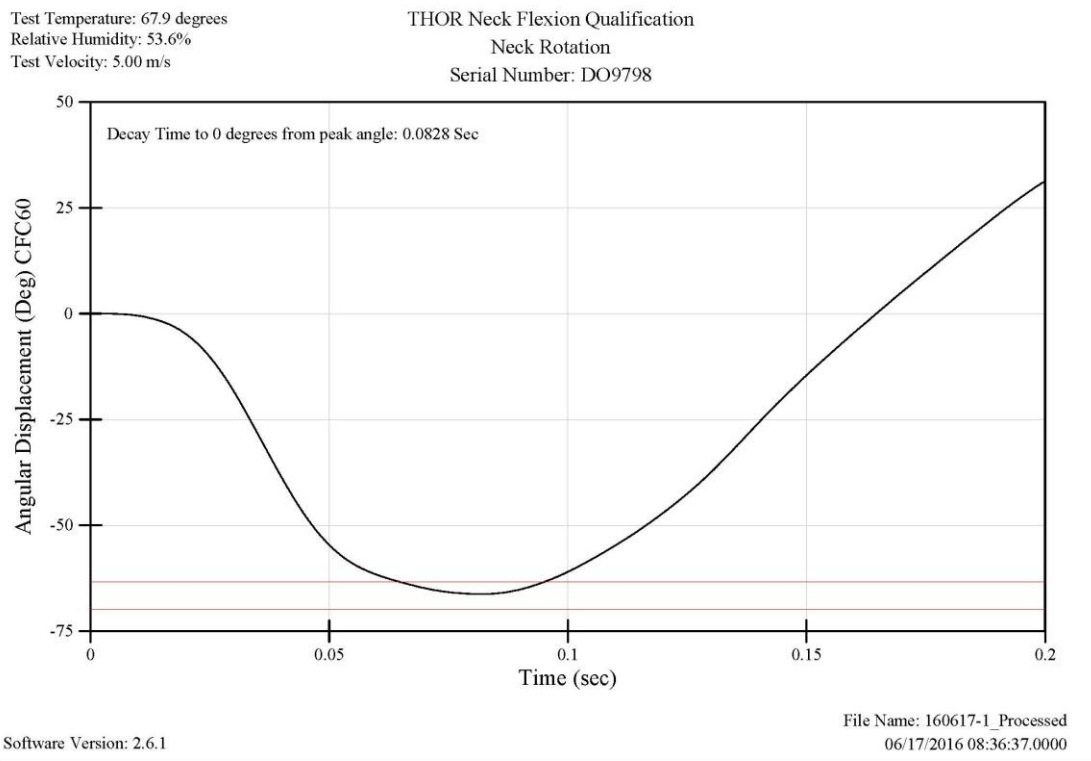
Test Temperature: 67.9 degrees
Relative Humidity: 53.6%
Test Velocity: 5.00 m/s

THOR Neck Flexion Qualification
Peak Angular Rate
Serial Number: DO9798



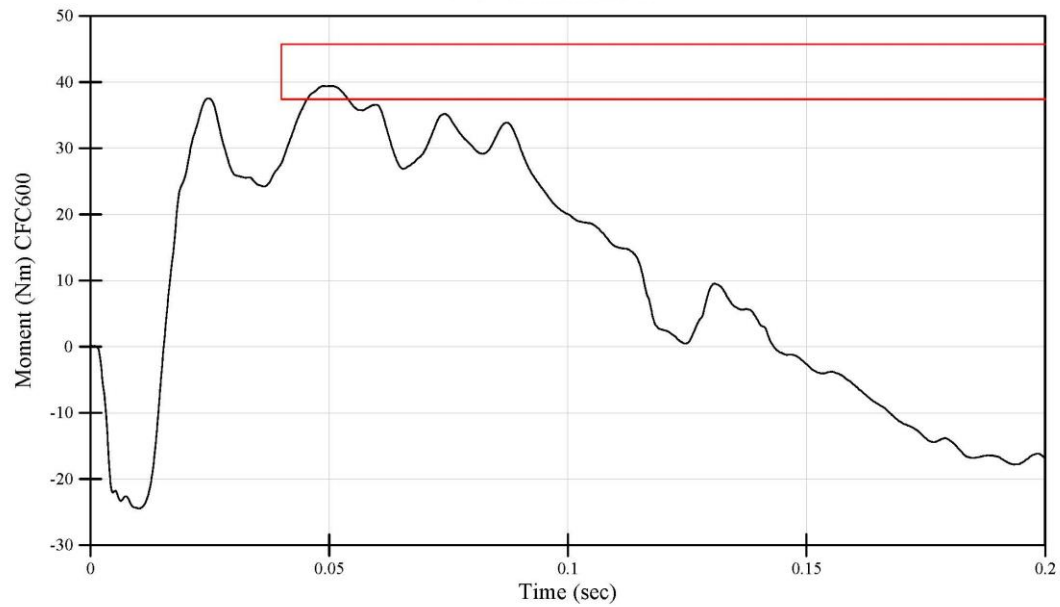
Software Version: 2.6.1

File Name: 160617-1_Processed
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Test Temperature: 71.2 degrees
Relative Humidity: 54.7%
Test Velocity: 3.41122 m/s

THOR Neck Left Lateral Qualification
X-Moment as Measured
Serial Number: DO9798

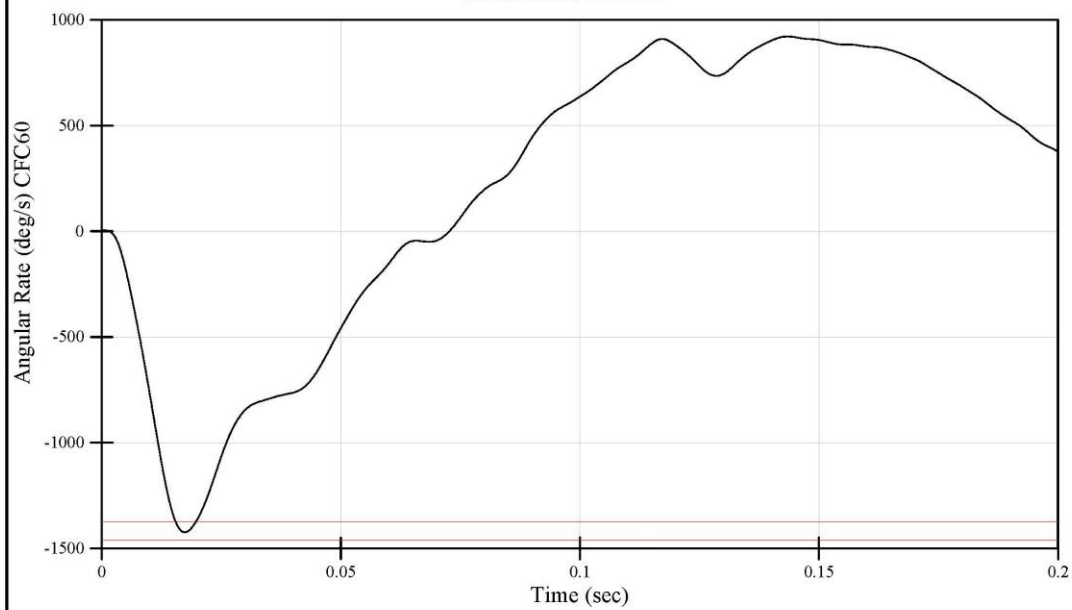


Software Version: 2.6.1

File Name: 160617-5_Processed
06/17/2016 12:17:47.0000

Test Temperature: 71.2 degrees
Relative Humidity: 54.7%
Test Velocity: 3.41122 m/s

THOR Neck Left Lateral Qualification
Peak Angular Rate
Serial Number: DO9798

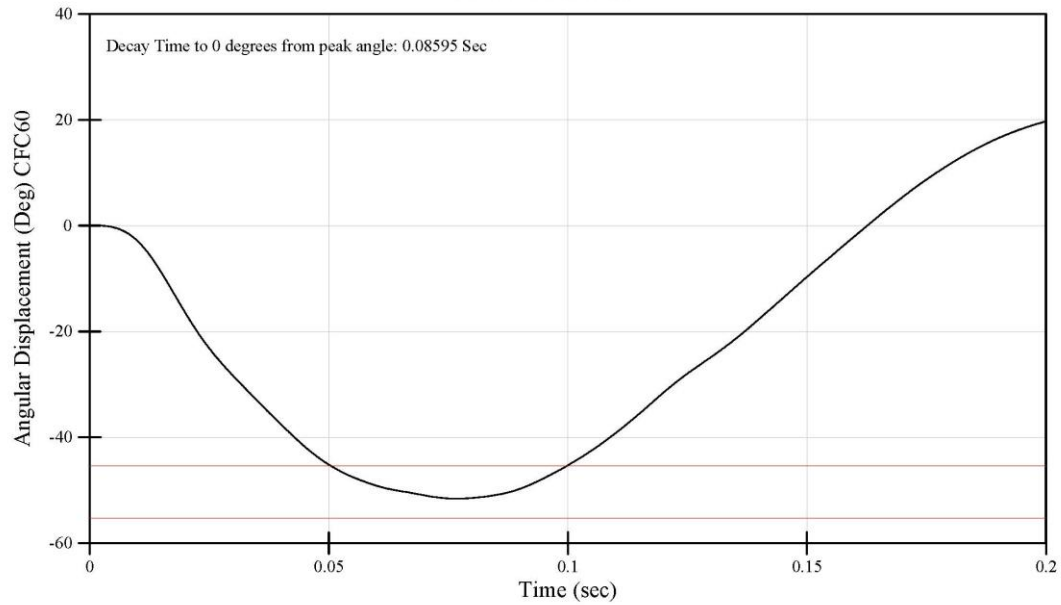


Software Version: 2.6.1

File Name: 160617-5_Processed
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Test Temperature: 71.2 degrees
Relative Humidity: 54.7%
Test Velocity: 3.41122 m/s

THOR Neck Left Lateral Qualification
Neck Rotation
Serial Number: DO9798

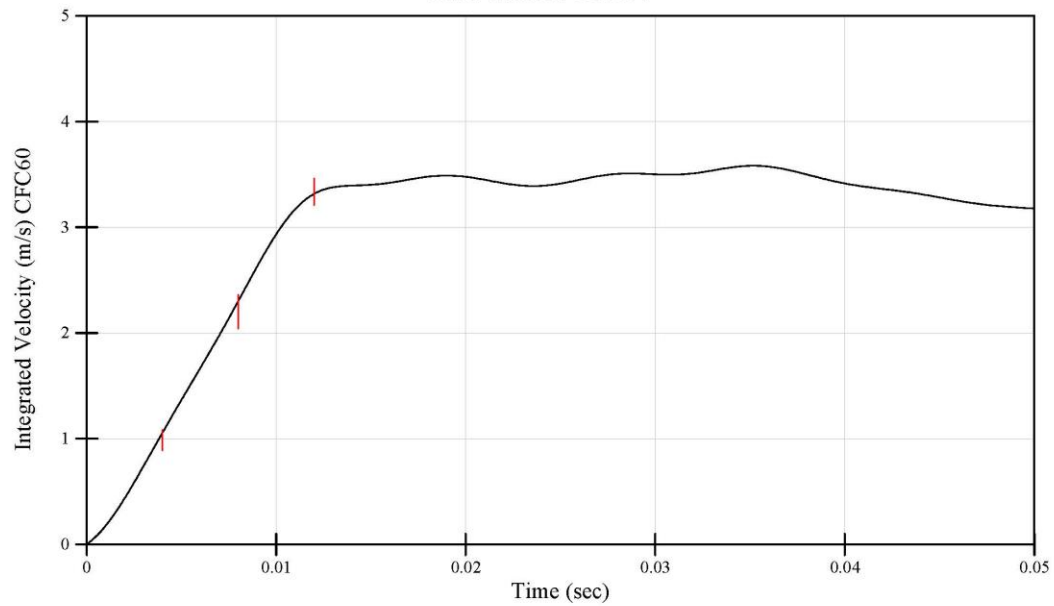


Software Version: 2.6.1

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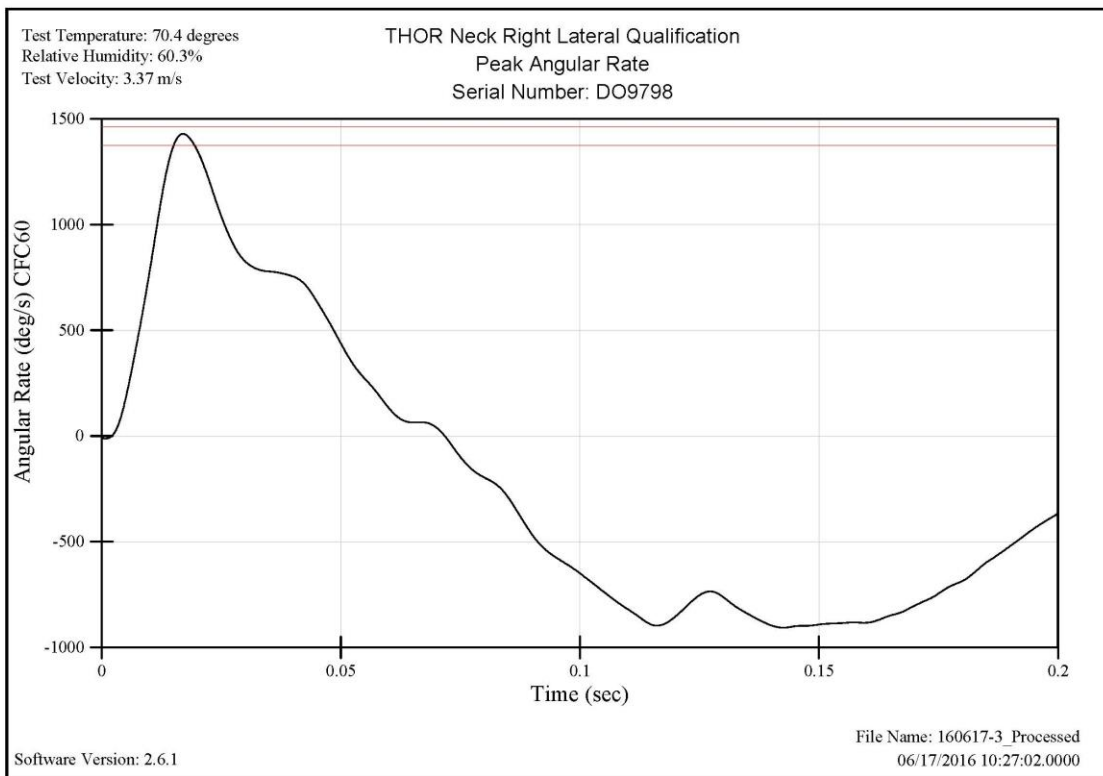
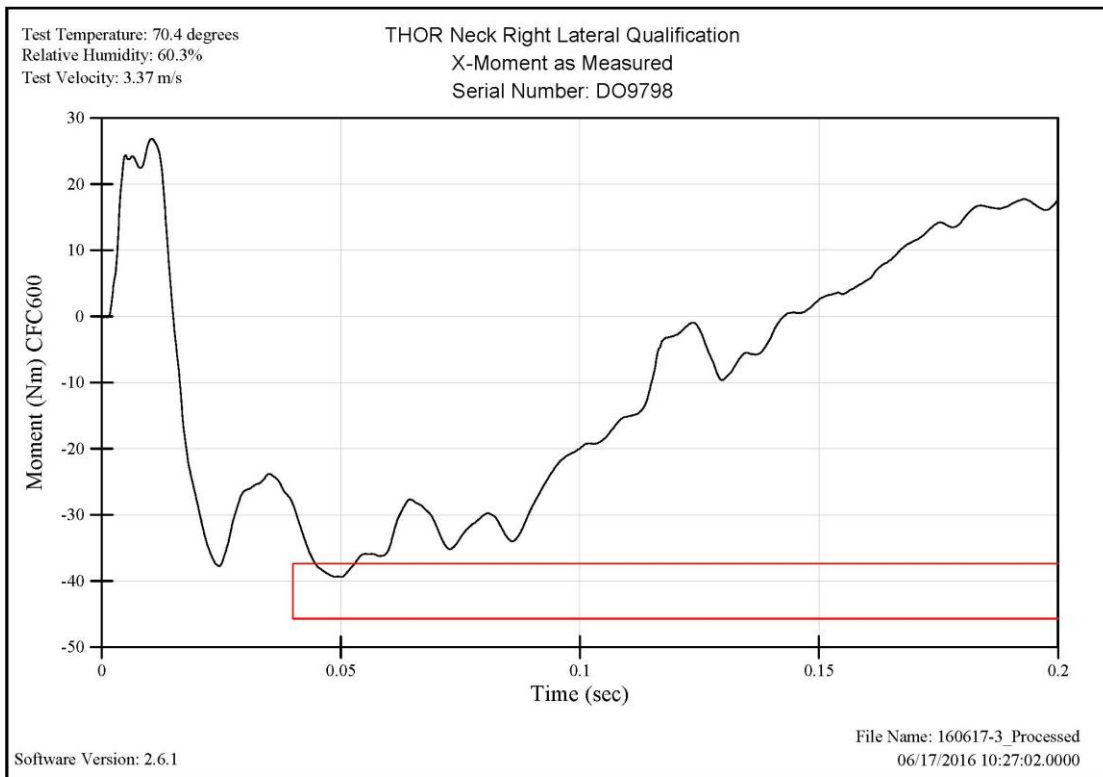
Test Temperature: 70.4 degrees
Relative Humidity: 60.3%
Test Velocity: 3.37 m/s

THOR Neck Right Lateral Qualification
Probe Acceleration
Serial Number: DO9798



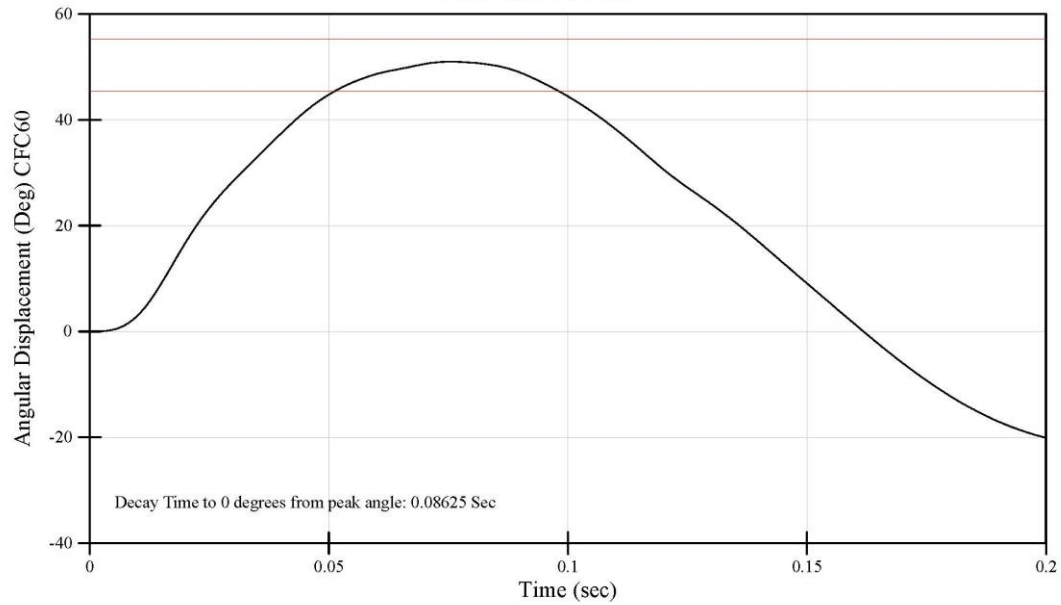
Software Version: 2.6.1

File Name: 160617-3_Processed
06/17/2016 10:27:02.0000



Test Temperature: 70.4 degrees
Relative Humidity: 60.3%
Test Velocity: 3.37 m/s

THOR Neck Right Lateral Qualification
Neck Rotation
Serial Number: DO9798

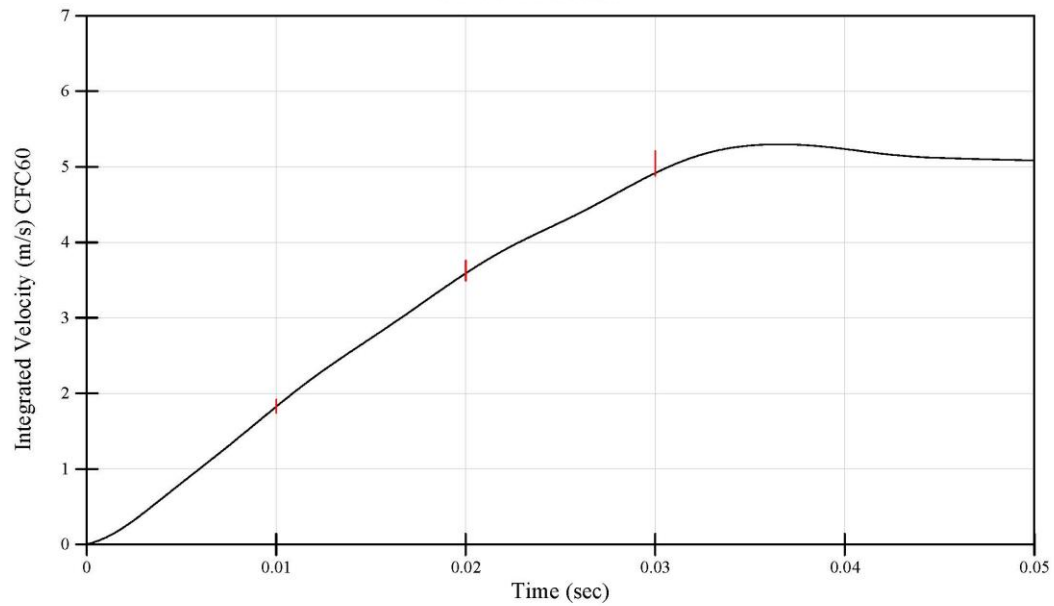


Software Version: 2.6.1

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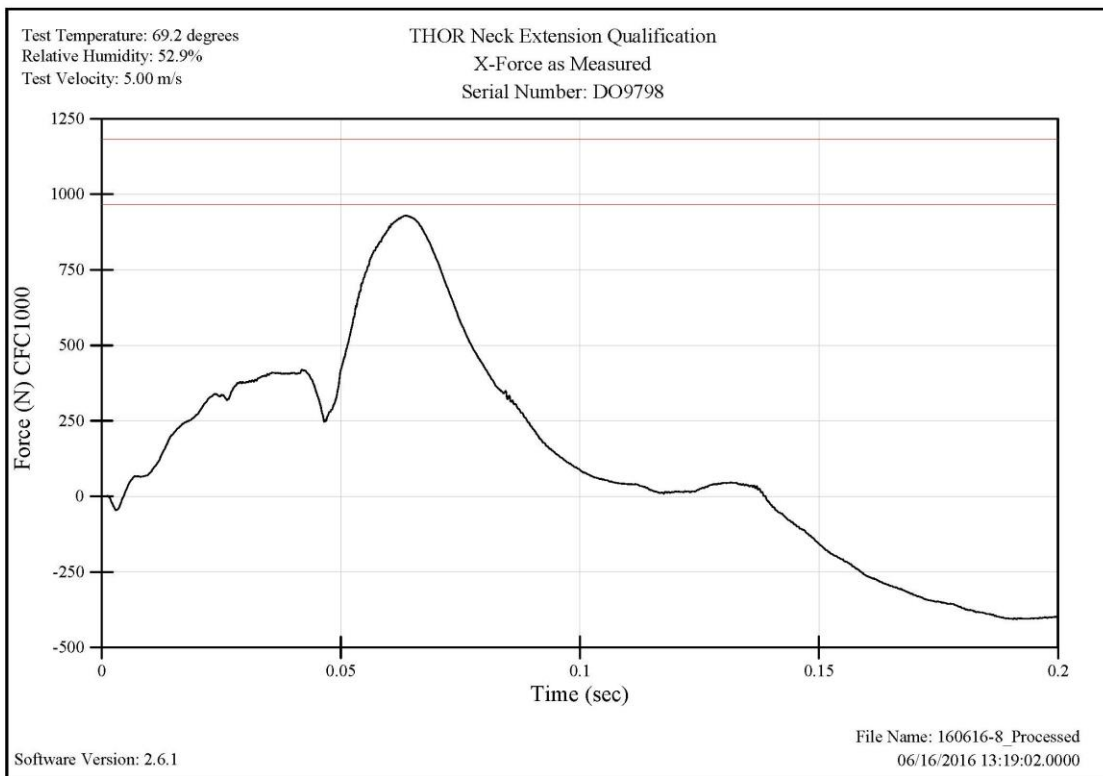
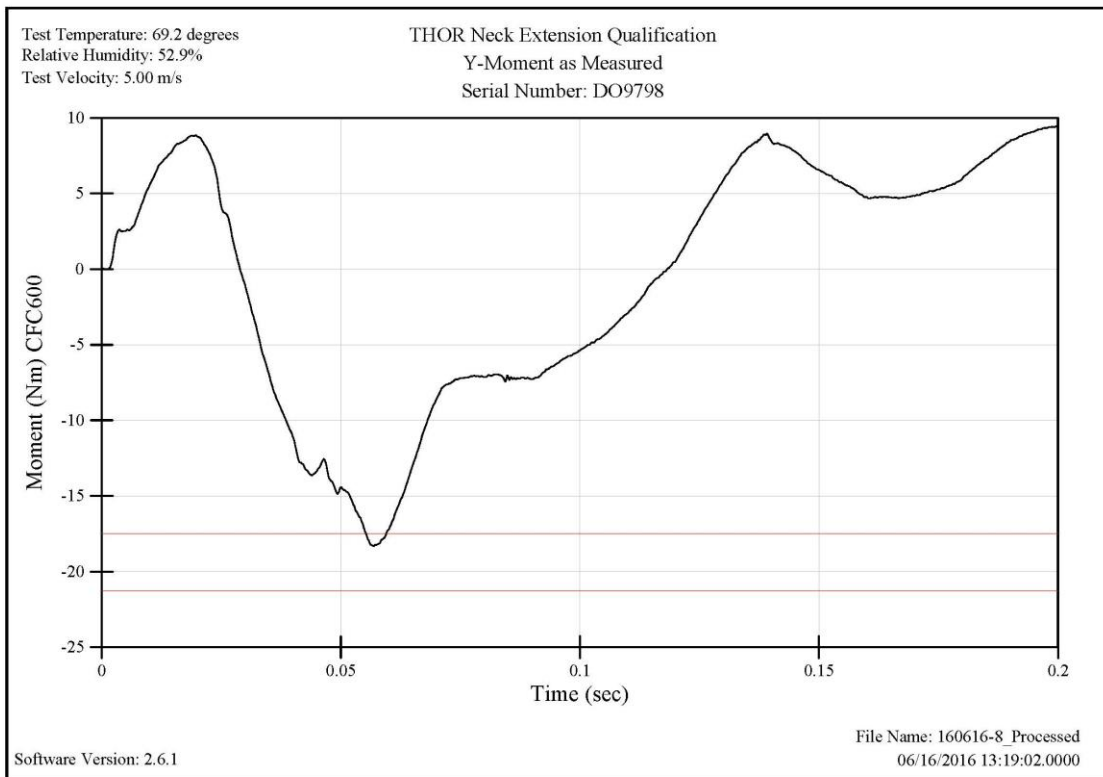
Test Temperature: 69.2 degrees
Relative Humidity: 52.9%
Test Velocity: 5.00 m/s

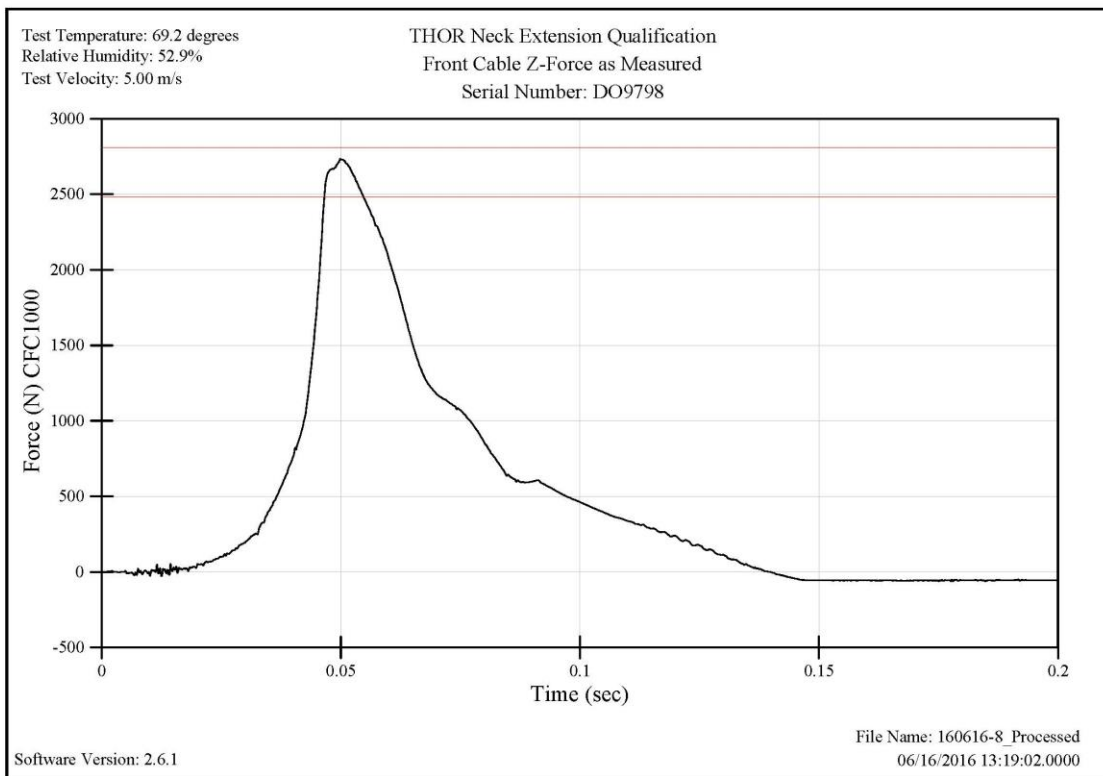
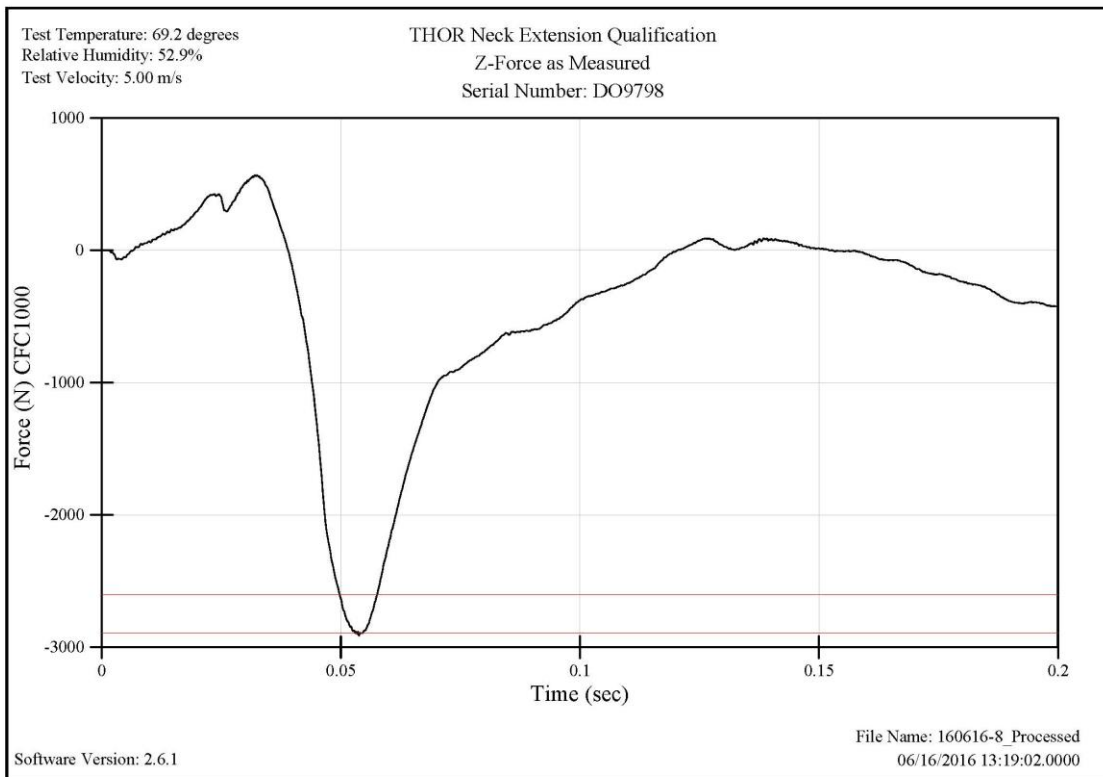
THOR Neck Extension Certification
Probe Acceleration
Serial Number: DO9798

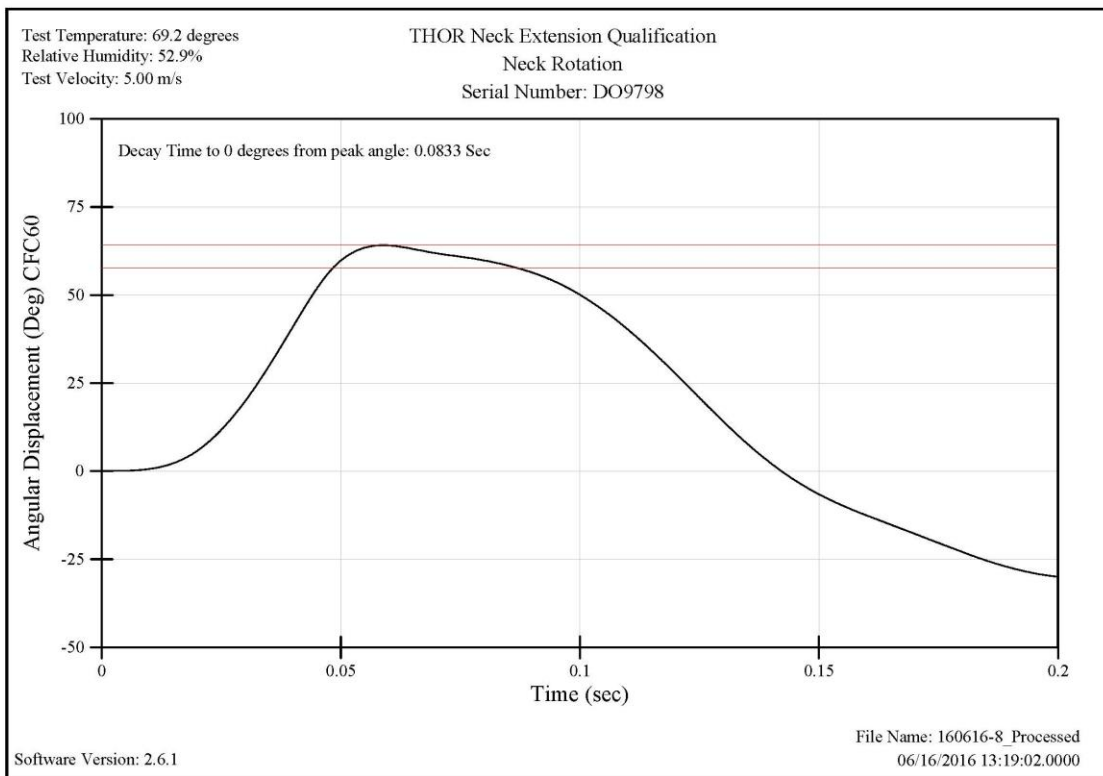
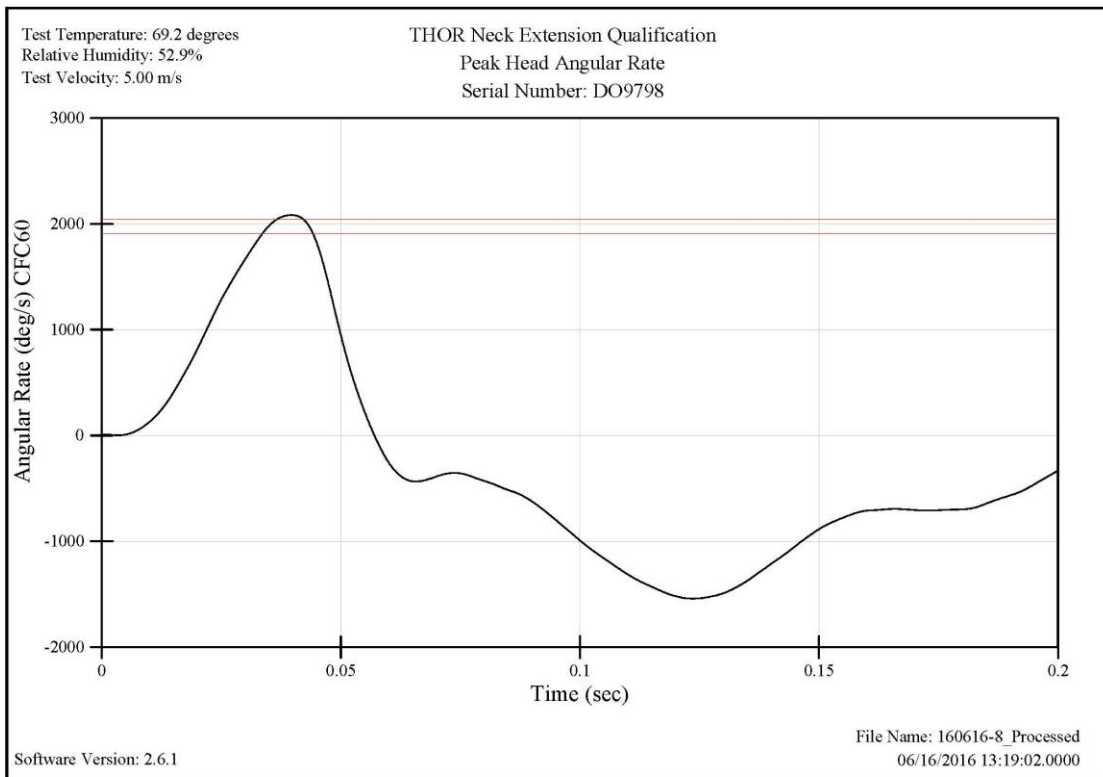


Software Version: 2.6.1

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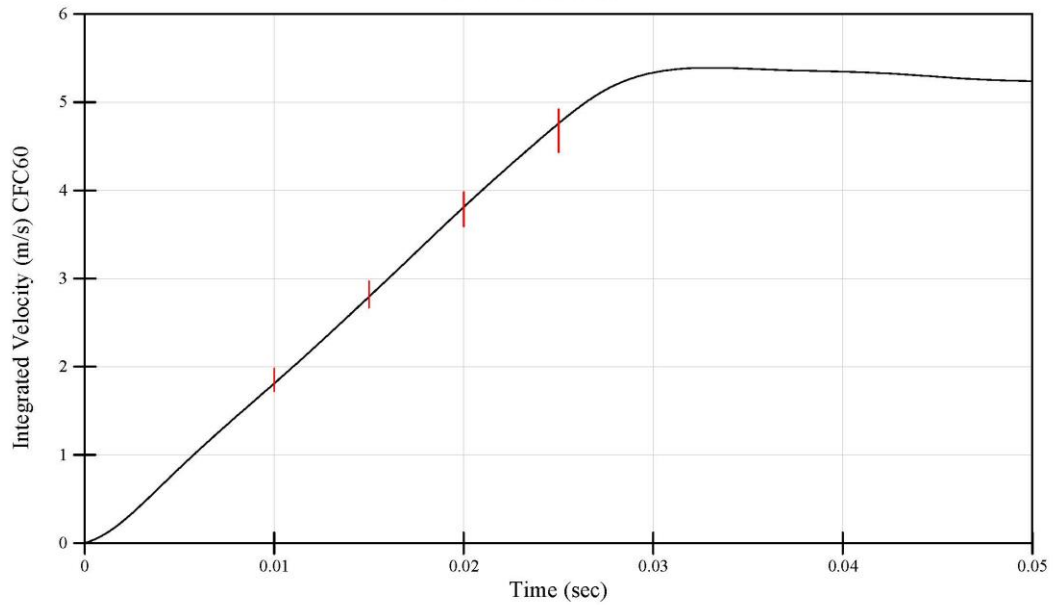






Test Temperature: 69.3 degrees
Relative Humidity: 63.2%
Test Velocity: 5.00 m/s

THOR Neck Left Torsion Qualification
Probe Acceleration
Serial Number: DO9798

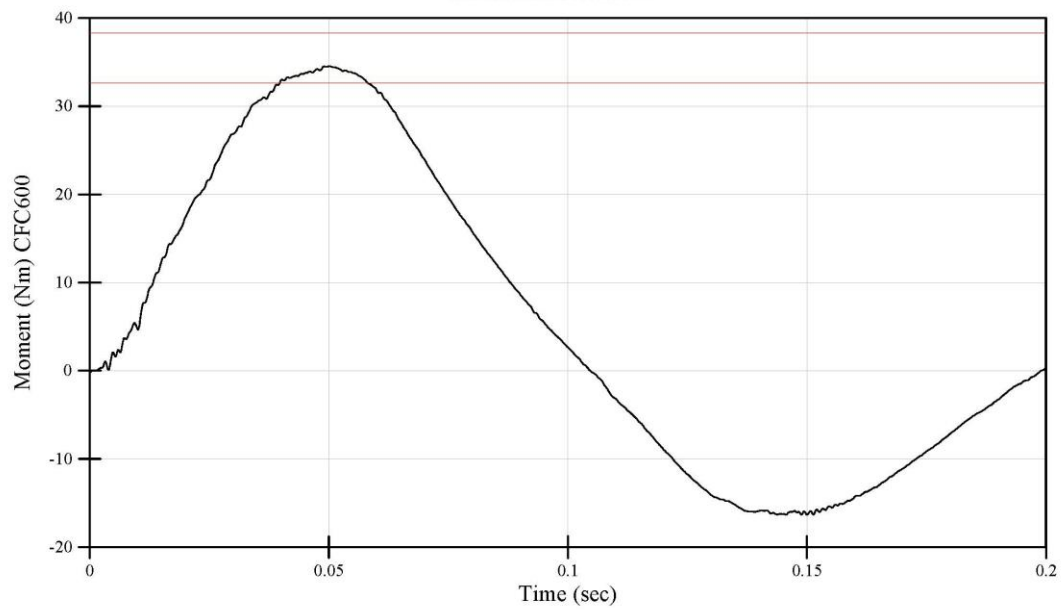


Software Version: 2.6.1

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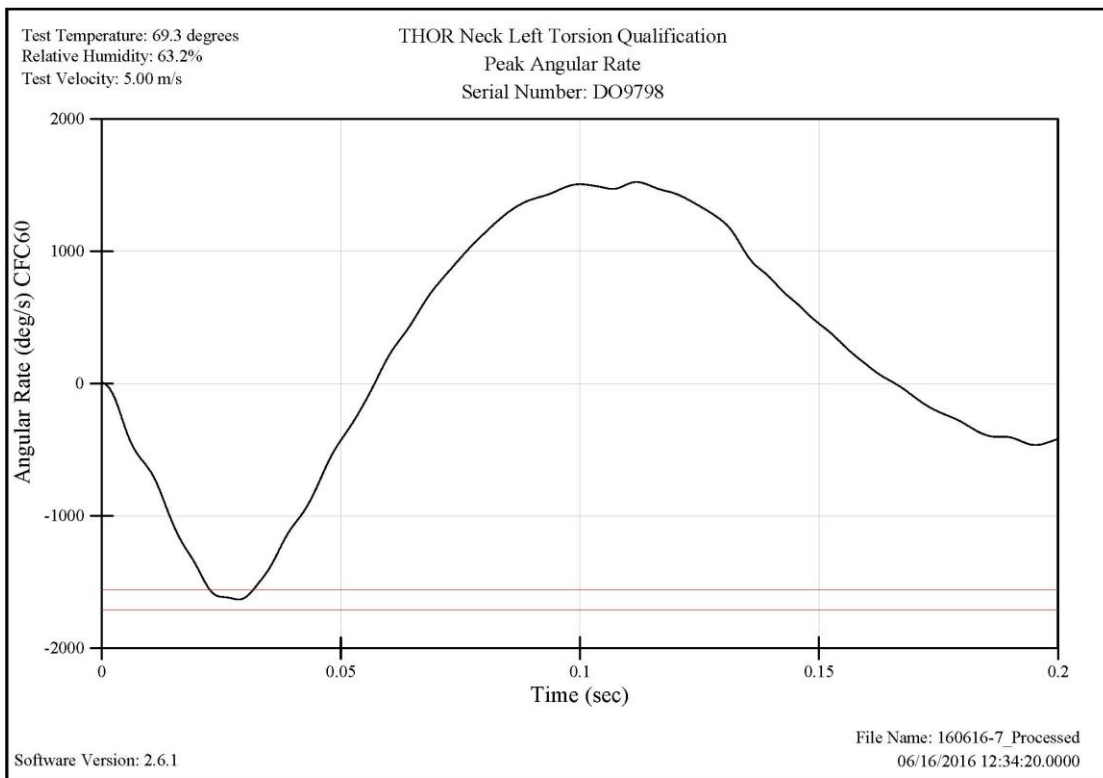
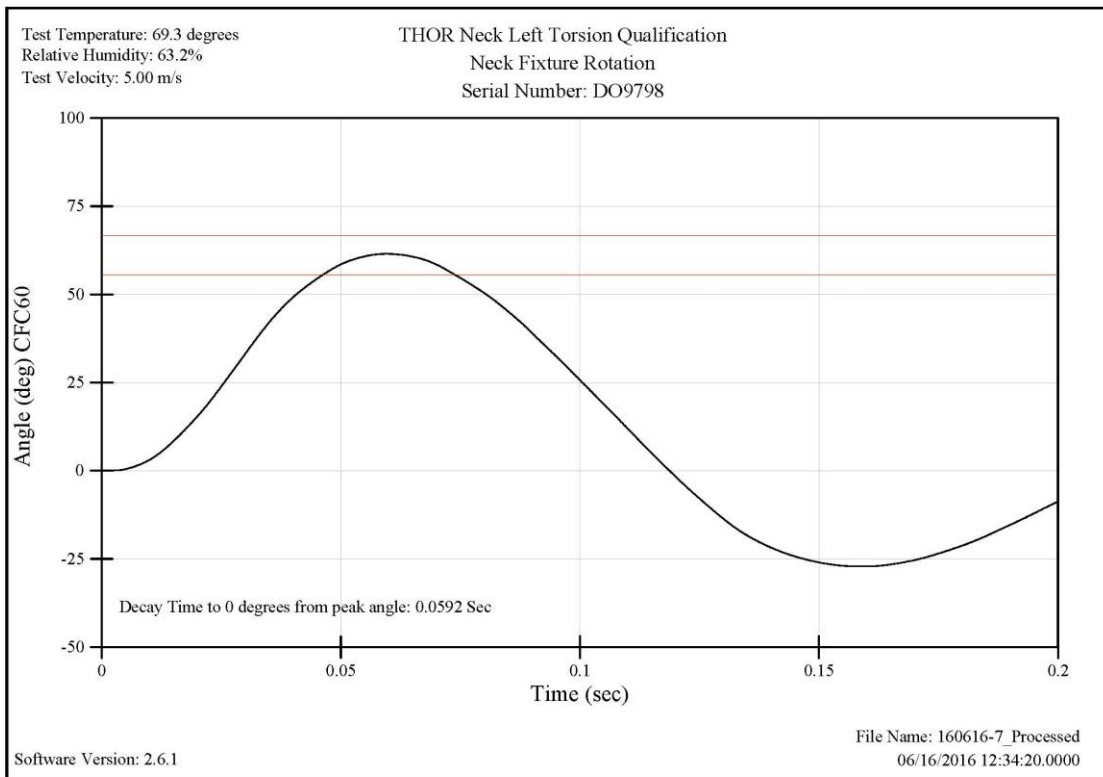
Test Temperature: 69.3 degrees
Relative Humidity: 63.2%
Test Velocity: 5.00 m/s

THOR Neck Left Torsion Qualification
Z-Moment as Measured
Serial Number: DO9798



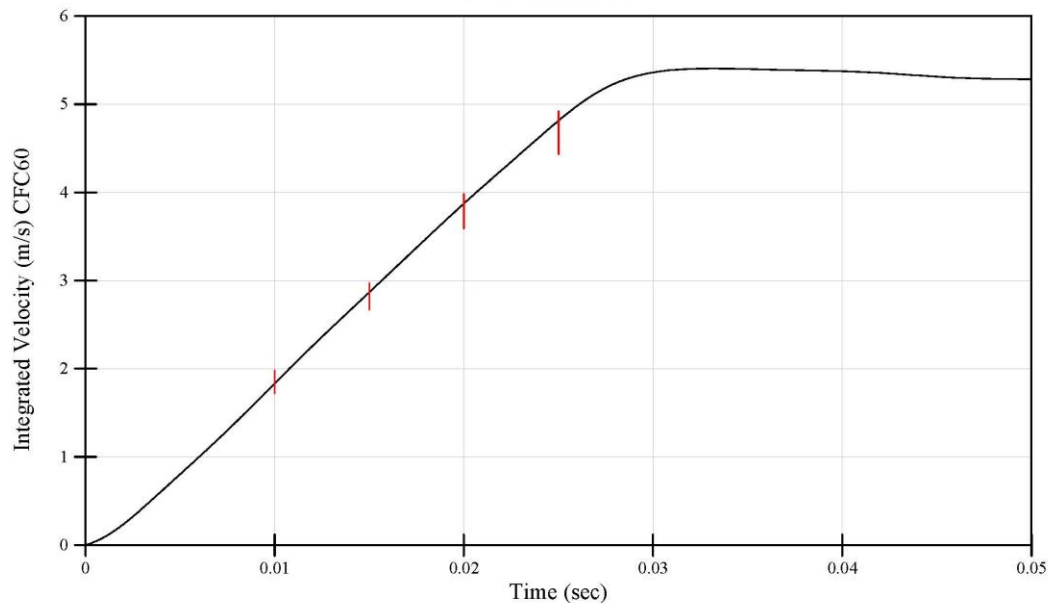
Software Version: 2.6.1

File Name: 160616-7_Processed
06/16/2016 12:34:20.0000



Test Temperature: 69.5 degrees
Relative Humidity: 62.8%
Test Velocity: 5.00 m/s

THOR Neck Right Torsion Qualification
Probe Acceleration
Serial Number: DO9798

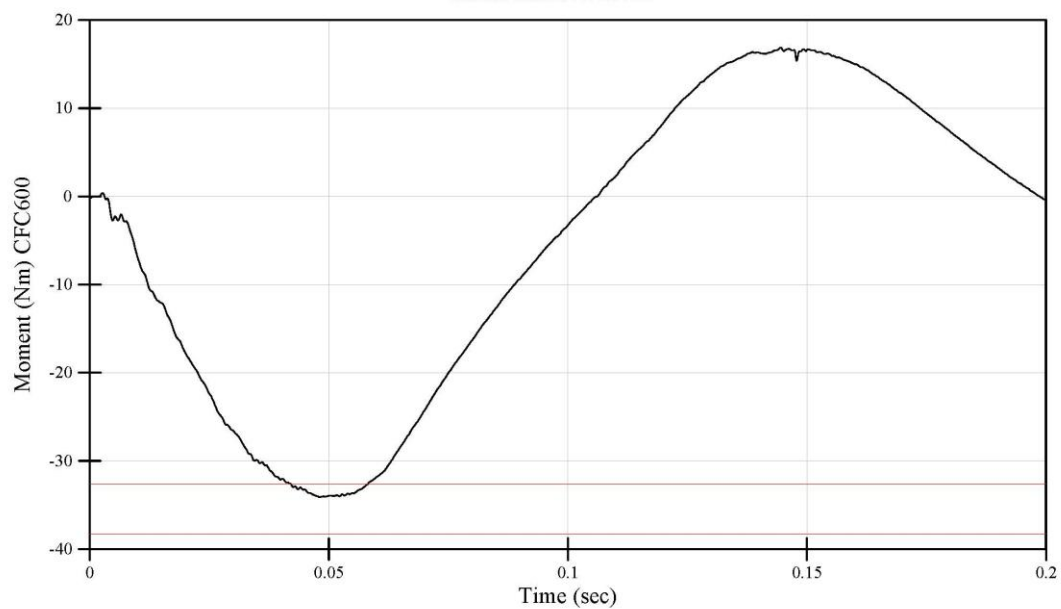


Software Version: 2.6.1

File Name: 160616-5_Processed
06/16/2016 11:29:59.0000

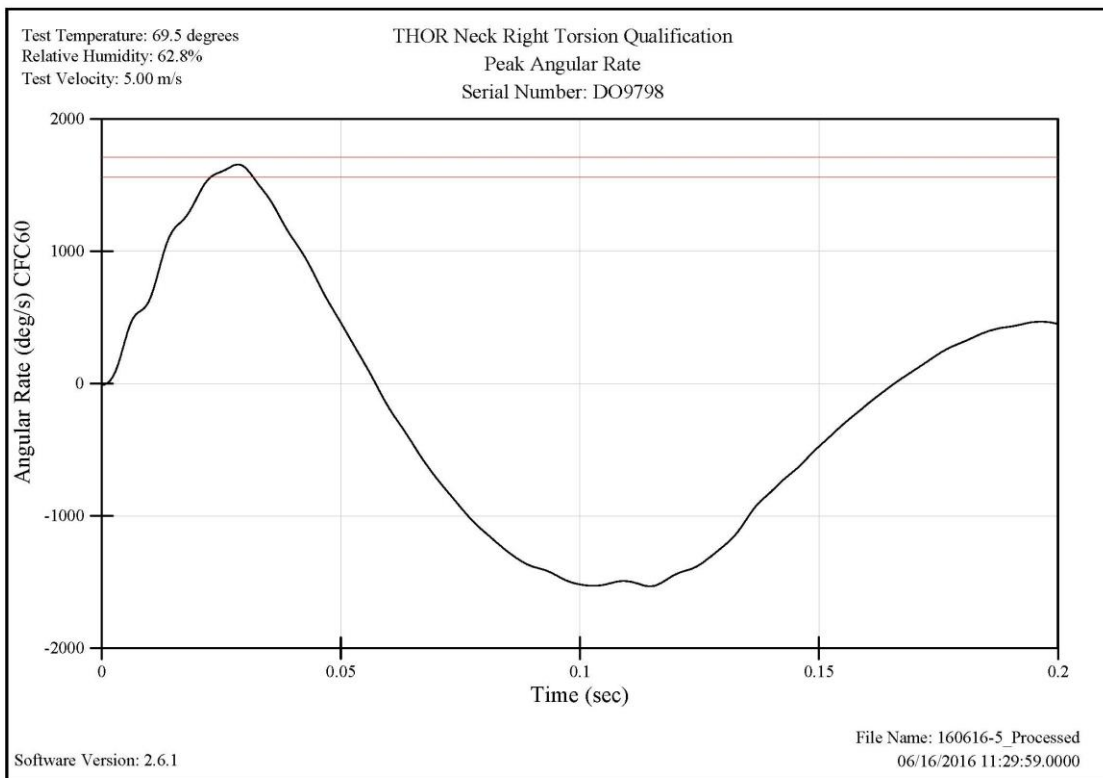
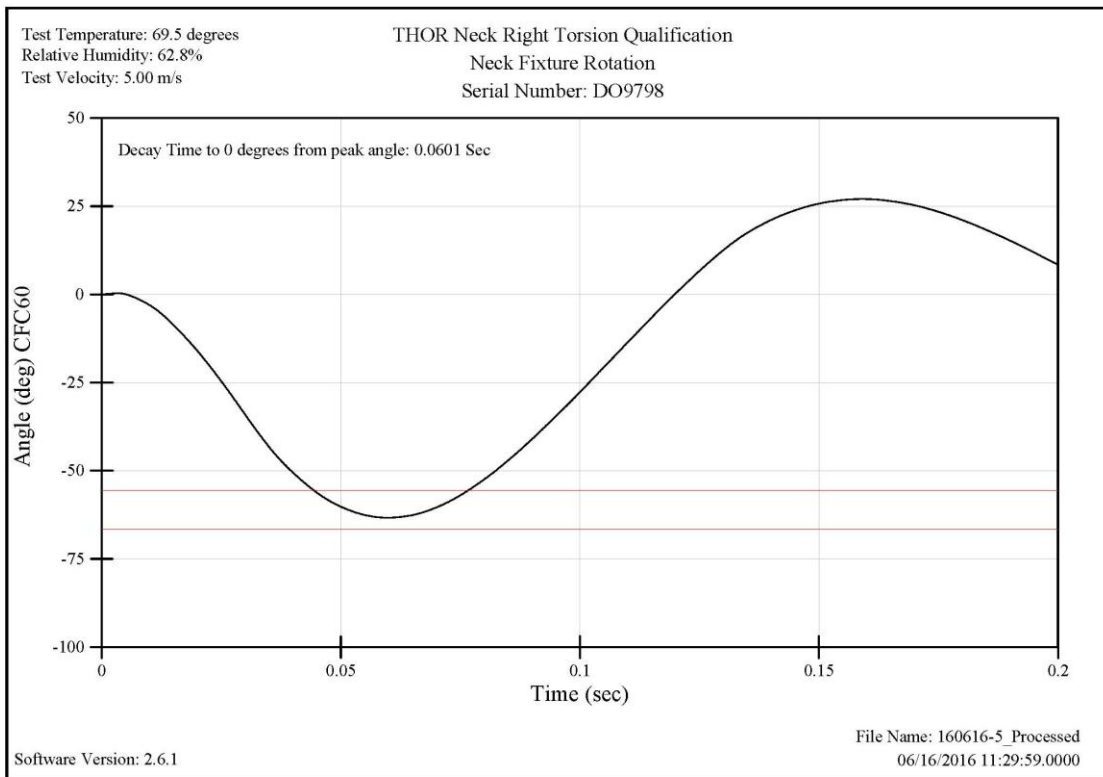
Test Temperature: 69.5 degrees
Relative Humidity: 62.8%
Test Velocity: 5.00 m/s

THOR Neck Right Torsion Qualification
Z-Moment as Measured
Serial Number: DO9798



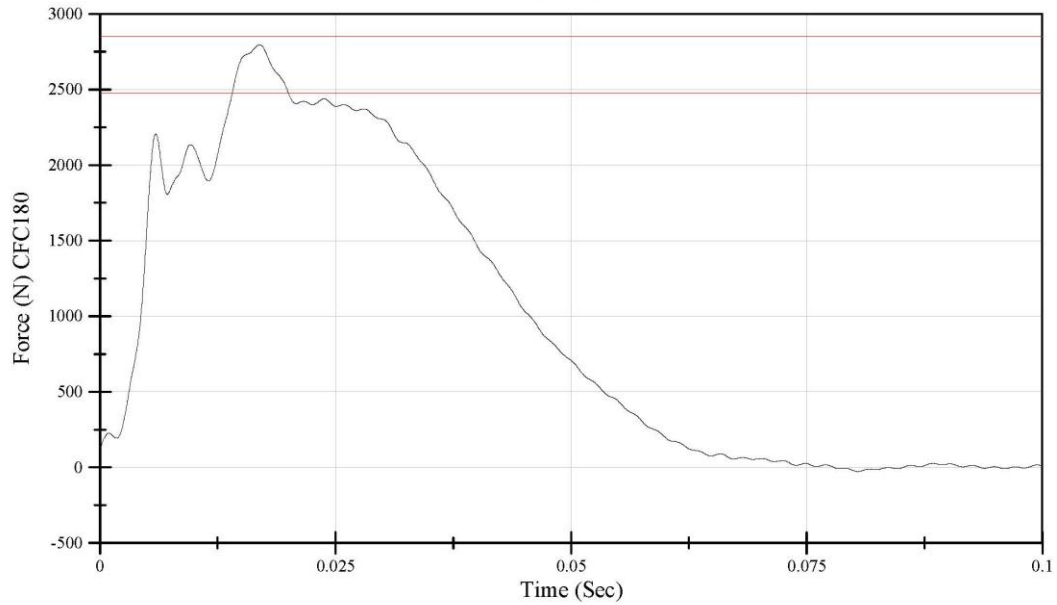
Software Version: 2.6.1

File Name: 160616-5_Processed
06/16/2016 11:29:59.0000



Test Temperature: 70.8 degrees
Relative Humidity: 48%
Test Velocity: 4.33 m/s

THOR Upper Thorax Qualification
Probe Force
Serial Number: DO9798

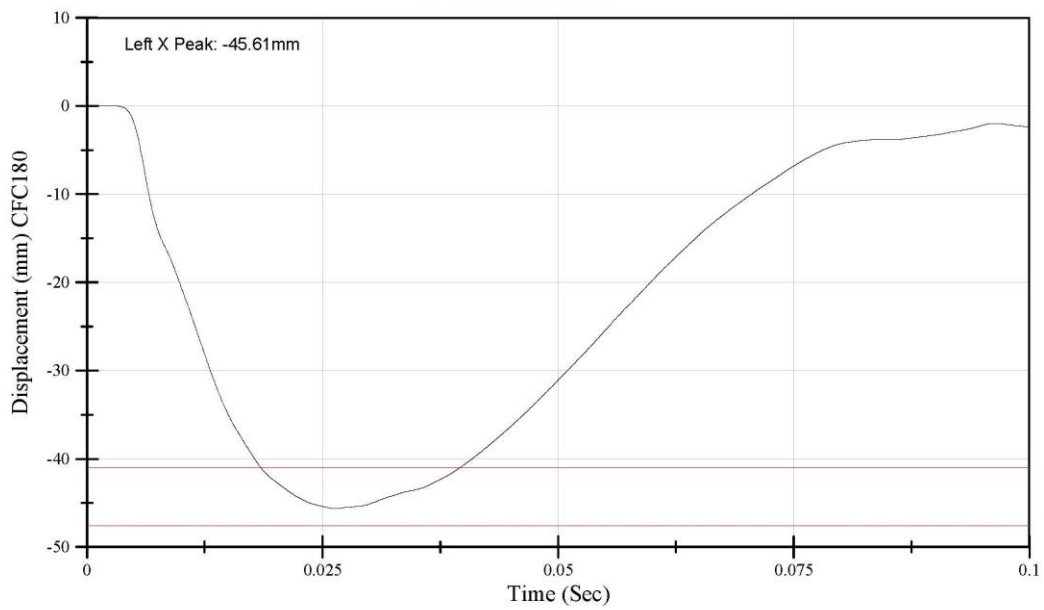


Software Version: 2.6.1

File Name: DO9798ThoraxUpper160607-04_Processed
06/08/2016 12:10:16.0000

Test Temperature: 70.8 degrees
Relative Humidity: 48%
Test Velocity: 4.33 m/s

THOR Upper Thorax Qualification
Left Displacement X
Serial Number: DO9798

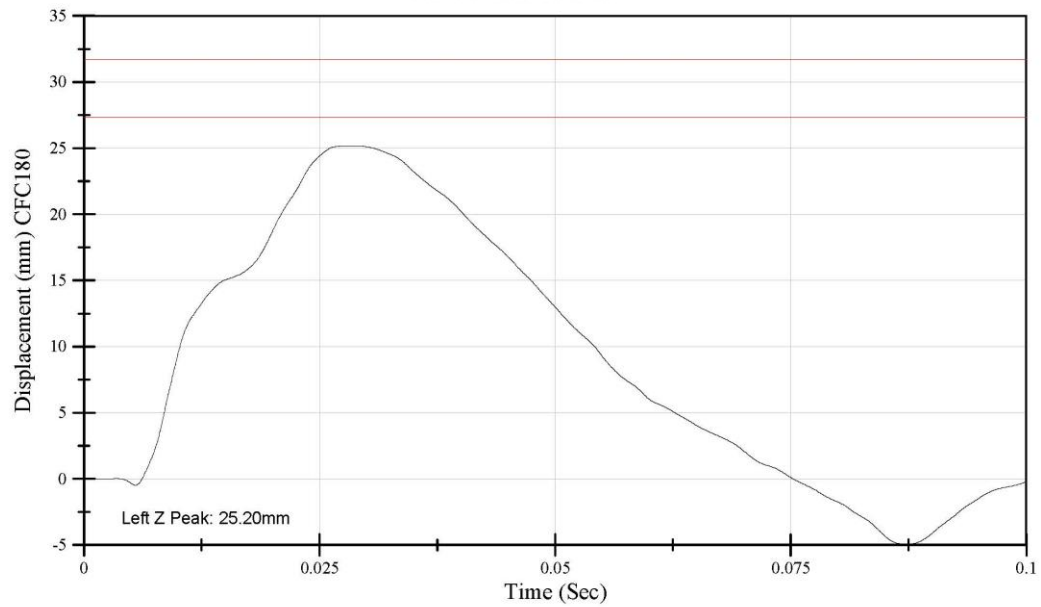


Software Version: 2.6.1

File Name: DO9798ThoraxUpper160607-04_Processed
06/08/2016 12:10:16.0000

Test Temperature: 70.8 degrees
Relative Humidity: 48%
Test Velocity: 4.33 m/s

THOR Upper Thorax Qualification
Left Displacement Z
Serial Number: DO9798

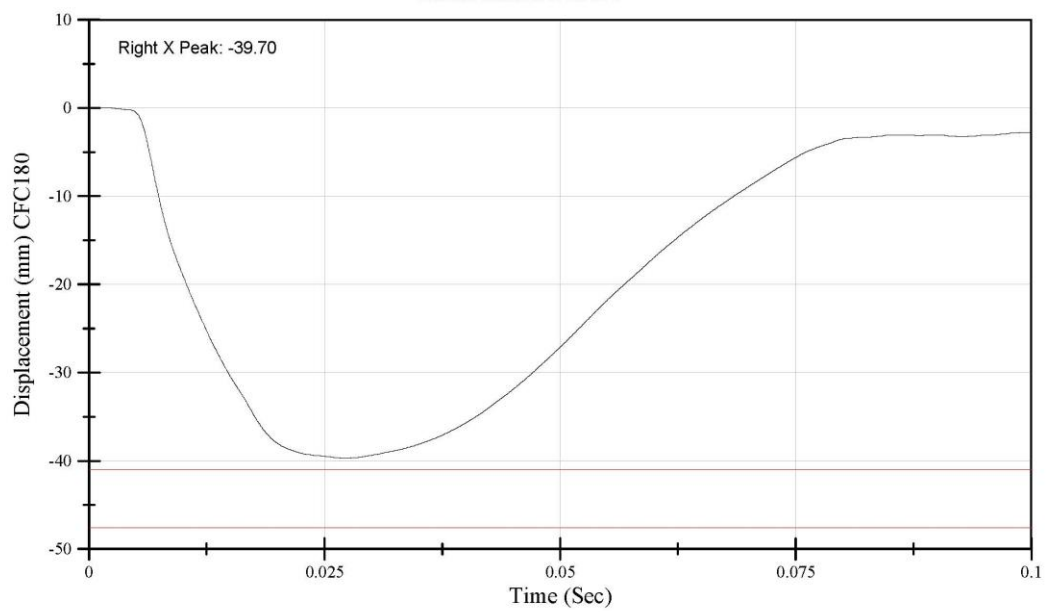


Software Version: 2.6.1

File Name: DO9798ThoraxUpper160607-04_Processed
06/08/2016 12:10:16.0000

Test Temperature: 70.8 degrees
Relative Humidity: 48%
Test Velocity: 4.33 m/s

THOR Upper Thorax Qualification
Right Displacement X
Serial Number: DO9798

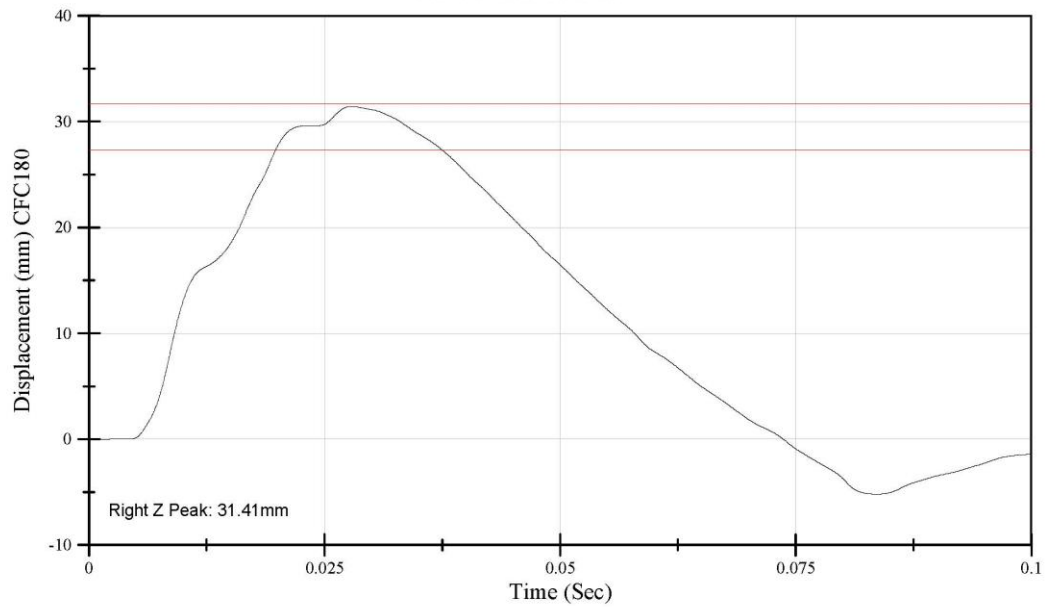


Software Version: 2.6.1

File Name: DO9798ThoraxUpper160607-04_Processed
06/08/2016 12:10:16.0000

Test Temperature: 70.8 degrees
Relative Humidity: 48%
Test Velocity: 4.33 m/s

THOR Upper Thorax Qualification
Right Displacement Z
Serial Number: DO9798

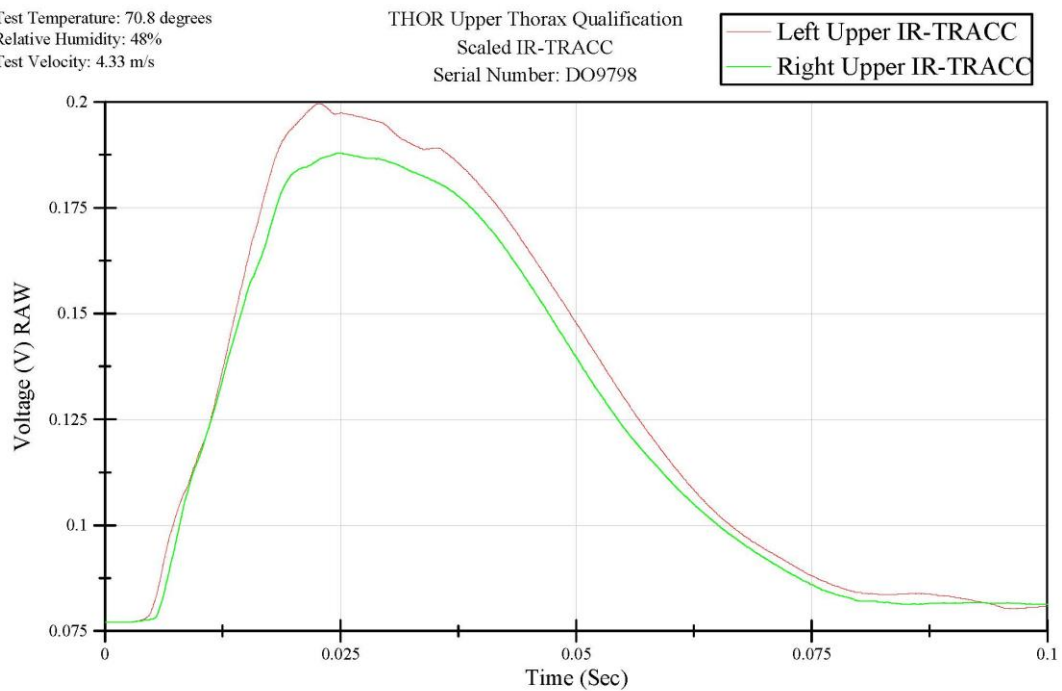


Software Version: 2.6.1

File Name: DO9798ThoraxUpper160607-04_Processed
06/08/2016 12:10:16.0000

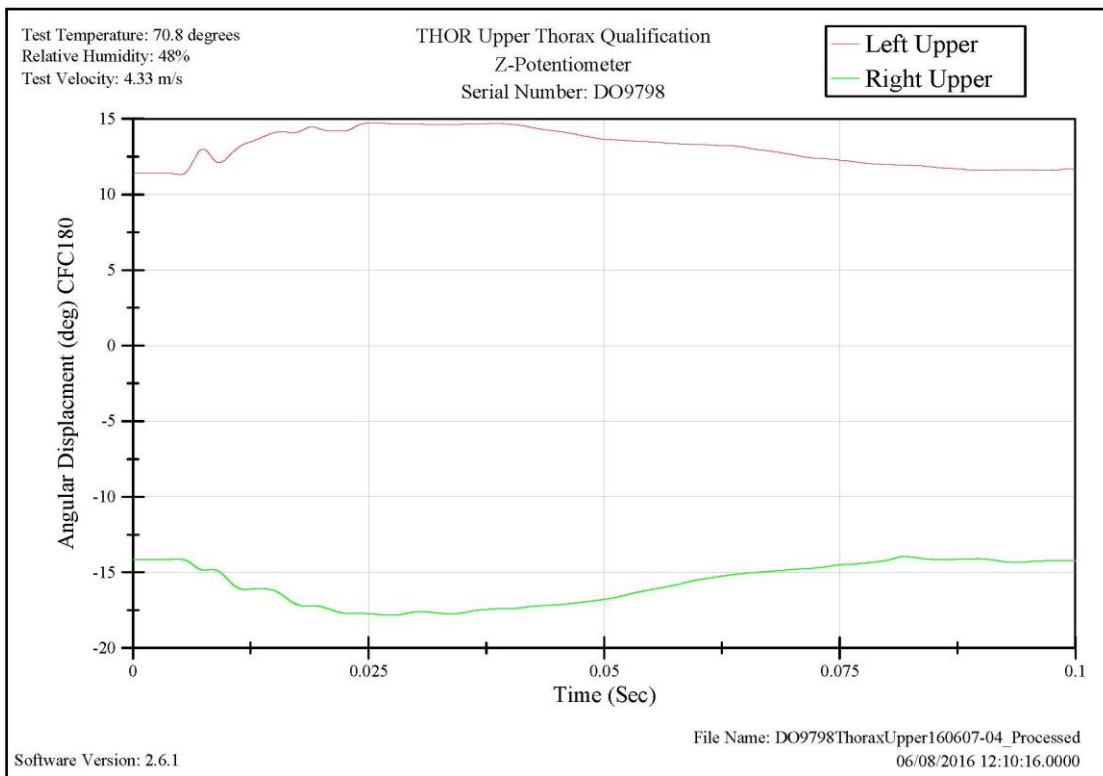
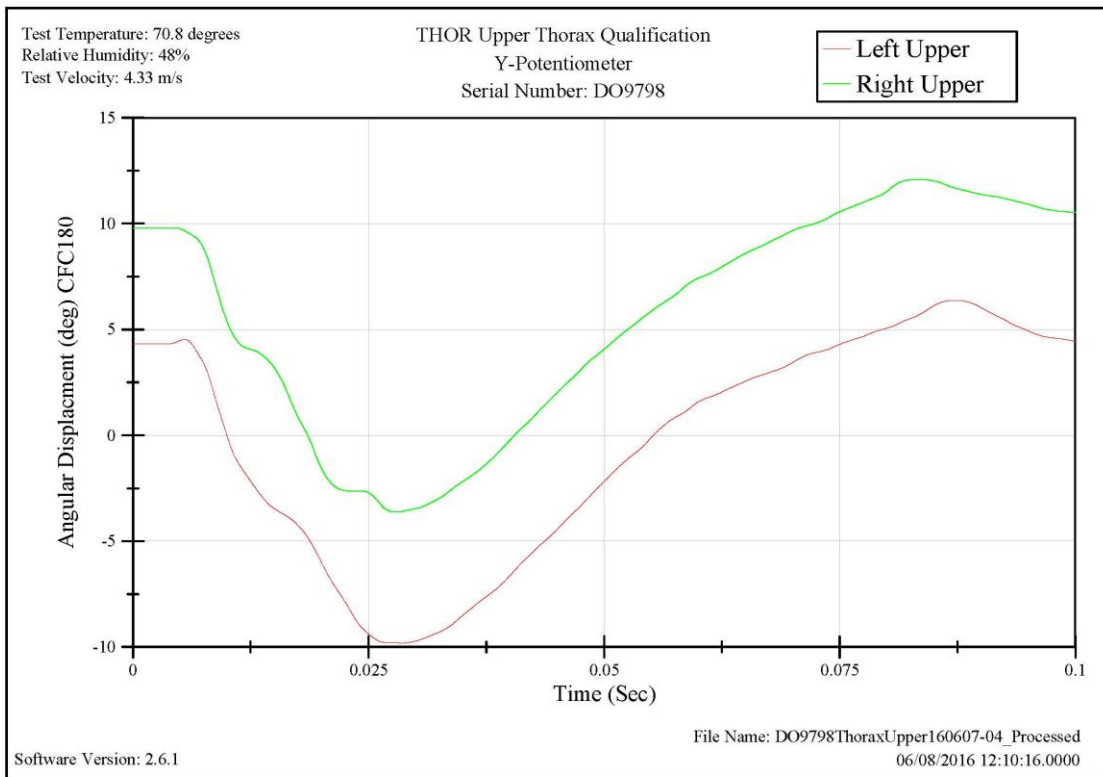
Test Temperature: 70.8 degrees
Relative Humidity: 48%
Test Velocity: 4.33 m/s

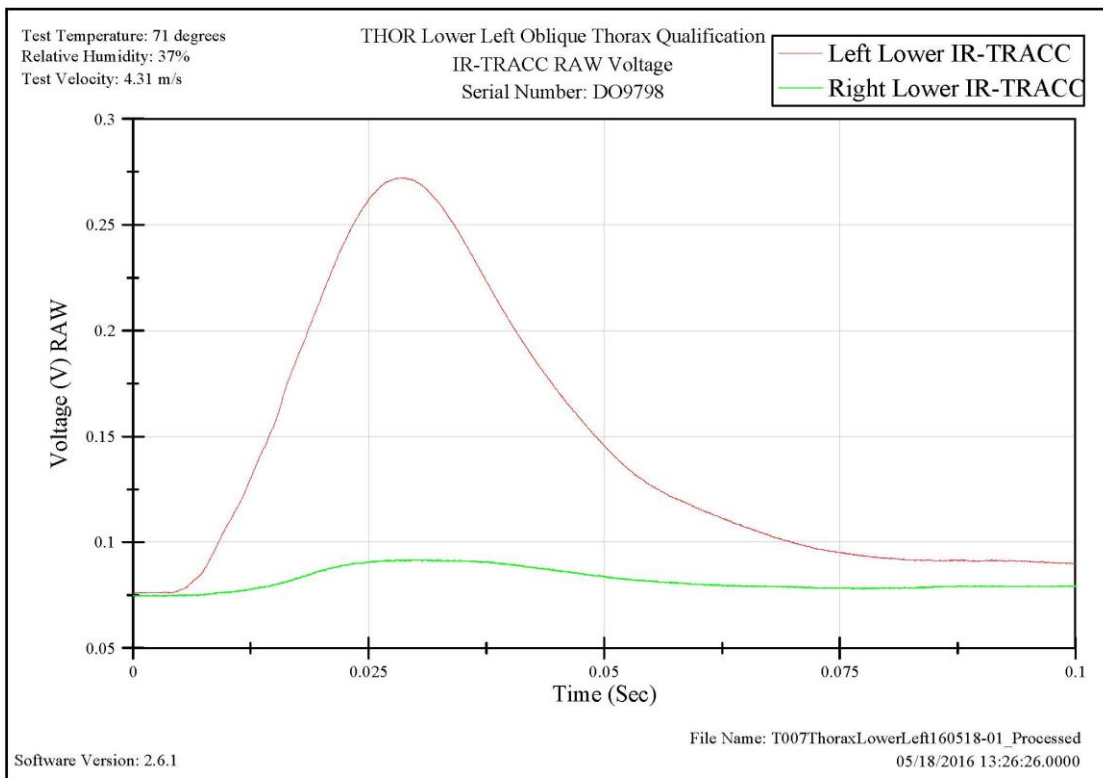
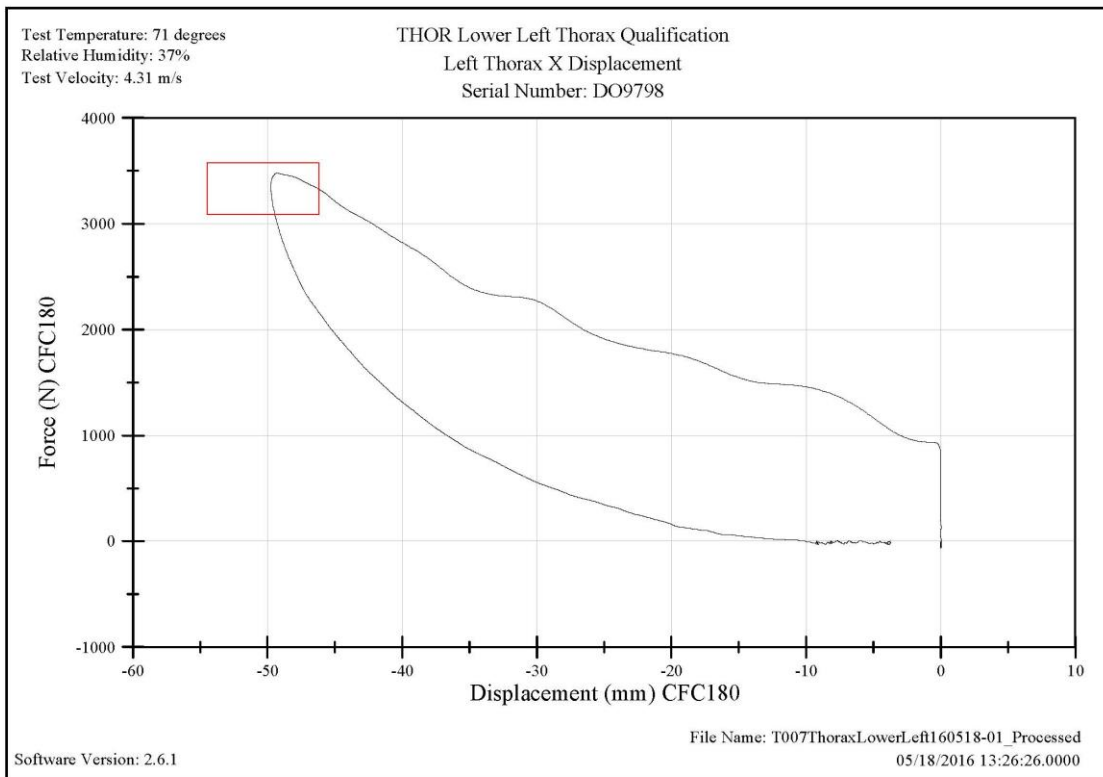
THOR Upper Thorax Qualification
Scaled IR-TRACC
Serial Number: DO9798

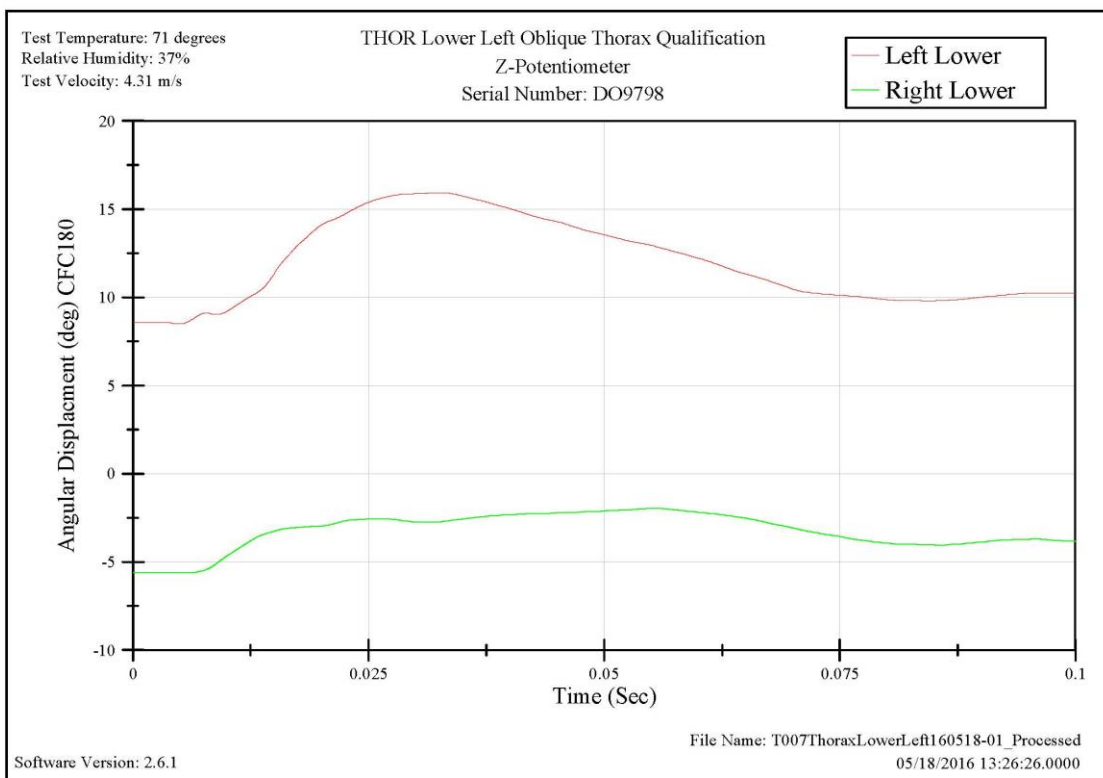
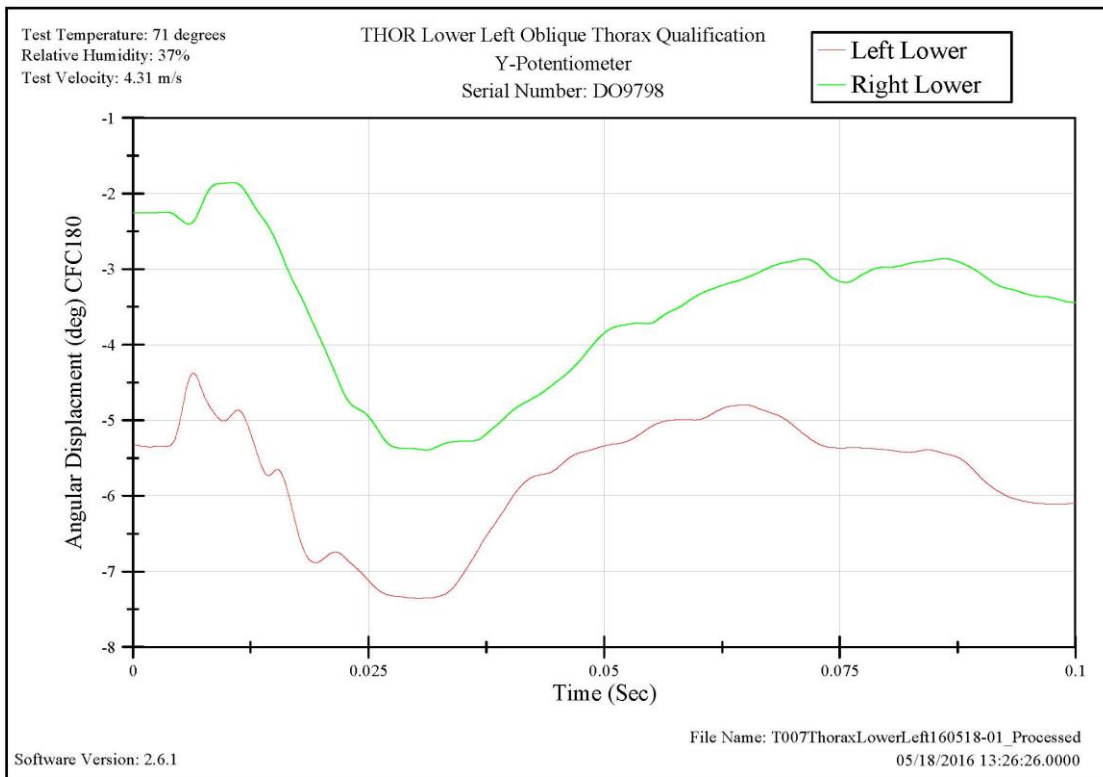


Software Version: 2.6.1

File Name: DO9798ThoraxUpper160607-04_Processed
06/08/2016 12:10:16.0000

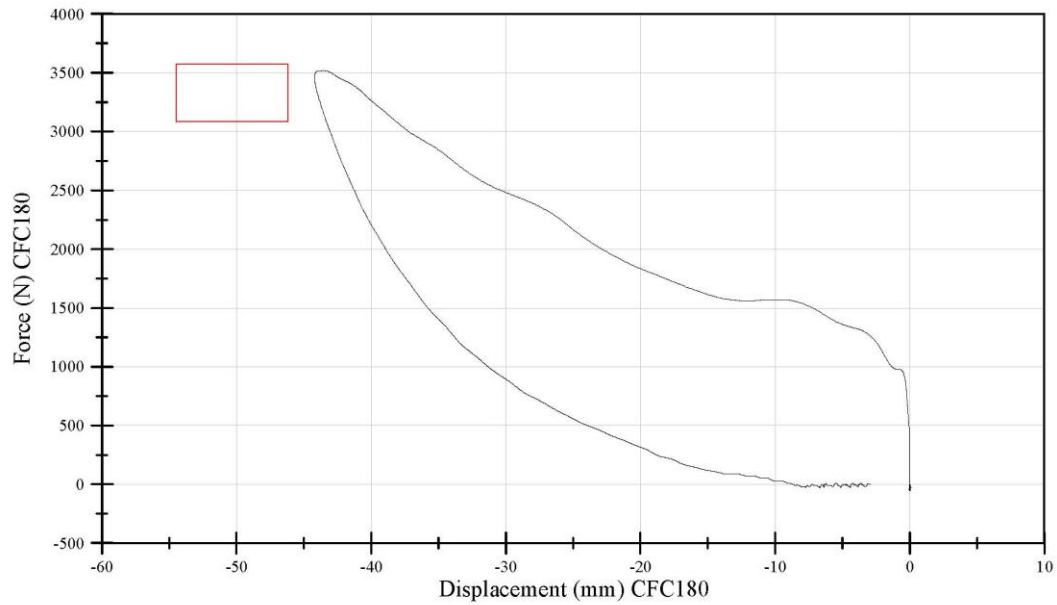






Test Temperature: 71.3 degrees
Relative Humidity: 39%
Test Velocity: 4.3 m/s

THOR Lower Right Thorax Qualification
Right Thorax X Displacement
Serial Number: DO9798

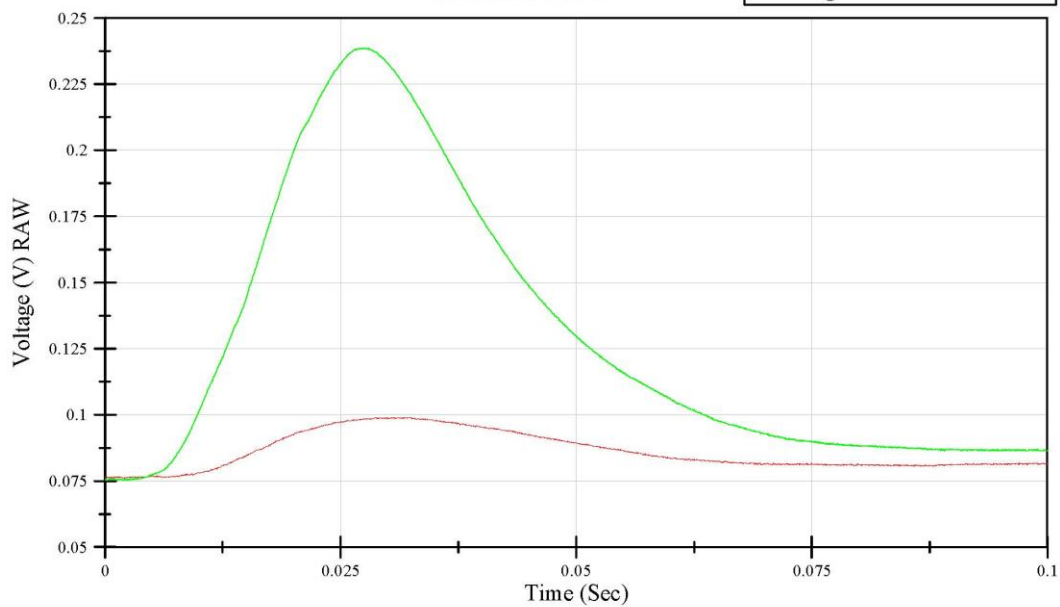


Software Version: 2.6.1

File Name: T007ThoraxLowerRight160518-01_Processed
05/18/2016 13:32:19.0000

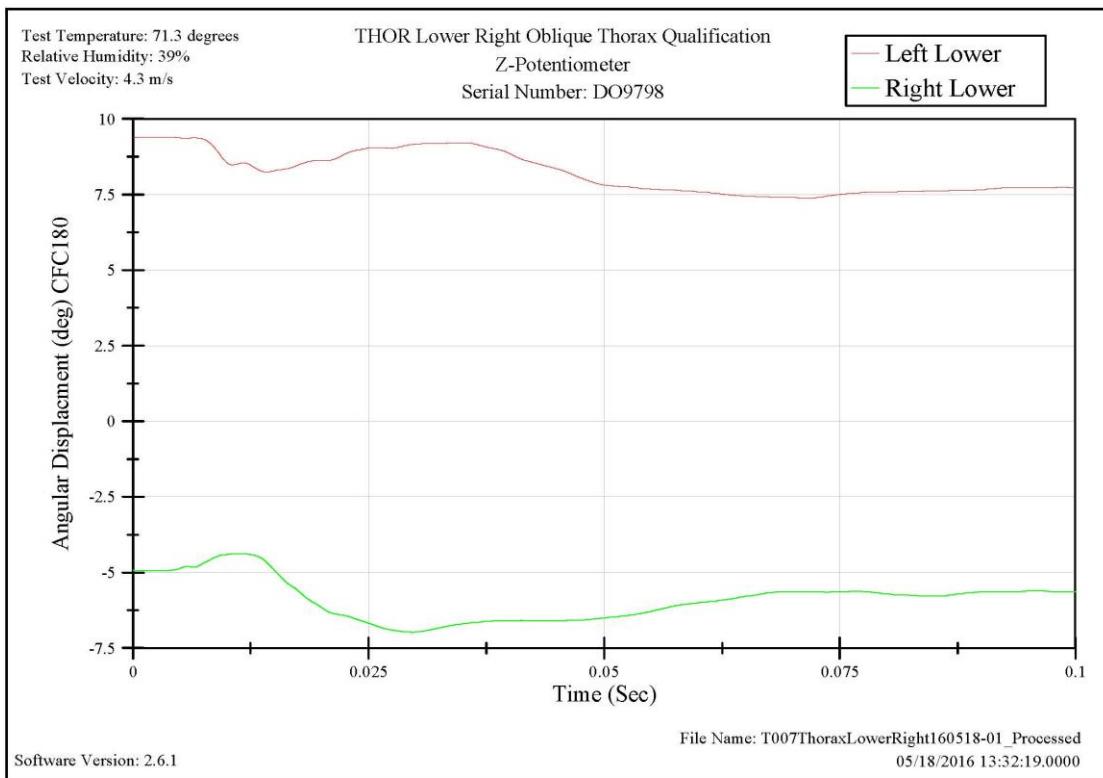
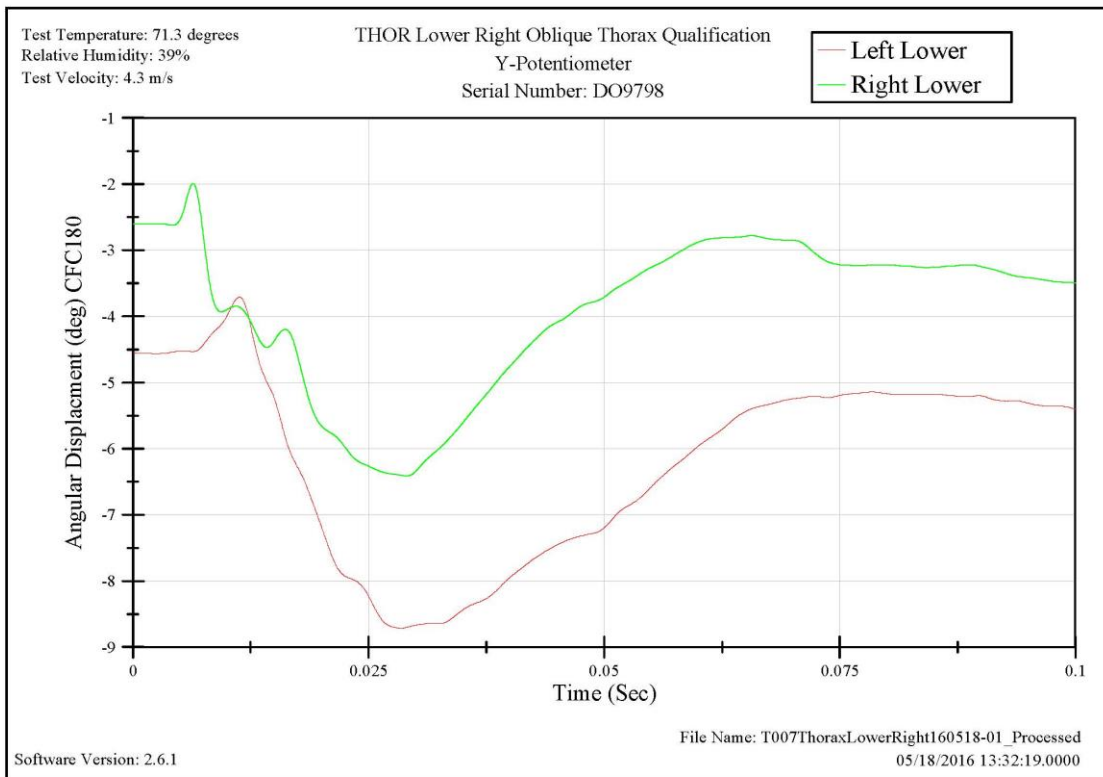
Test Temperature: 71.3 degrees
Relative Humidity: 39%
Test Velocity: 4.3 m/s

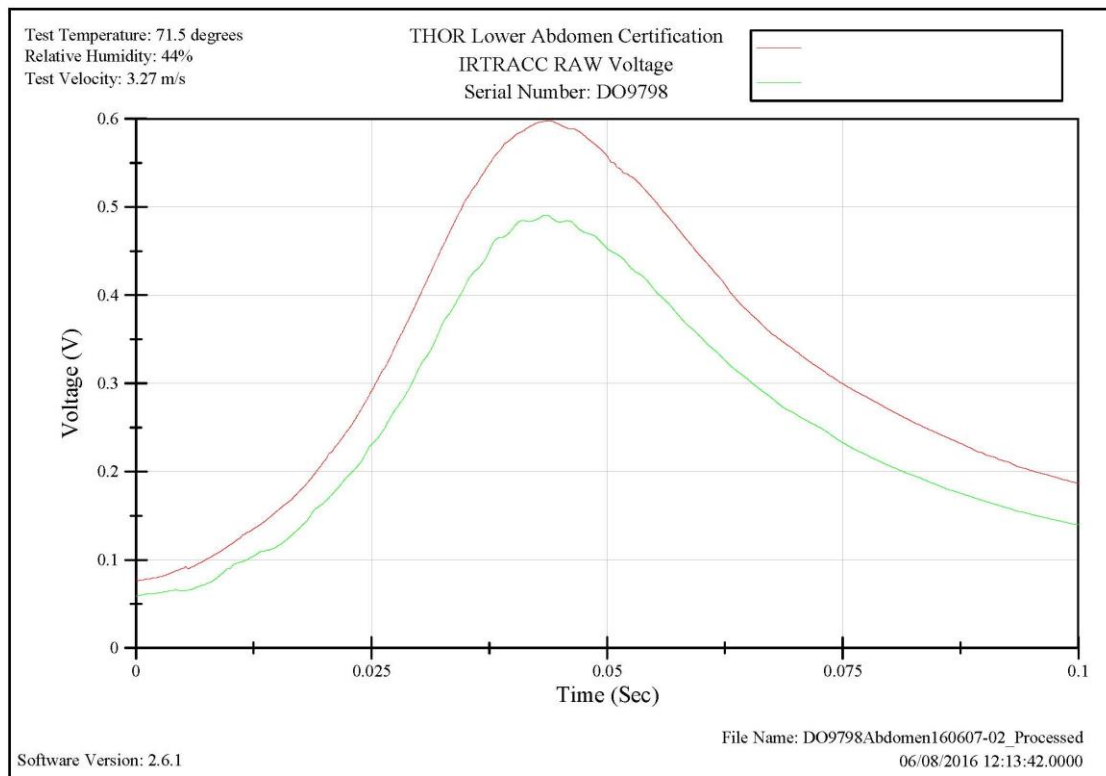
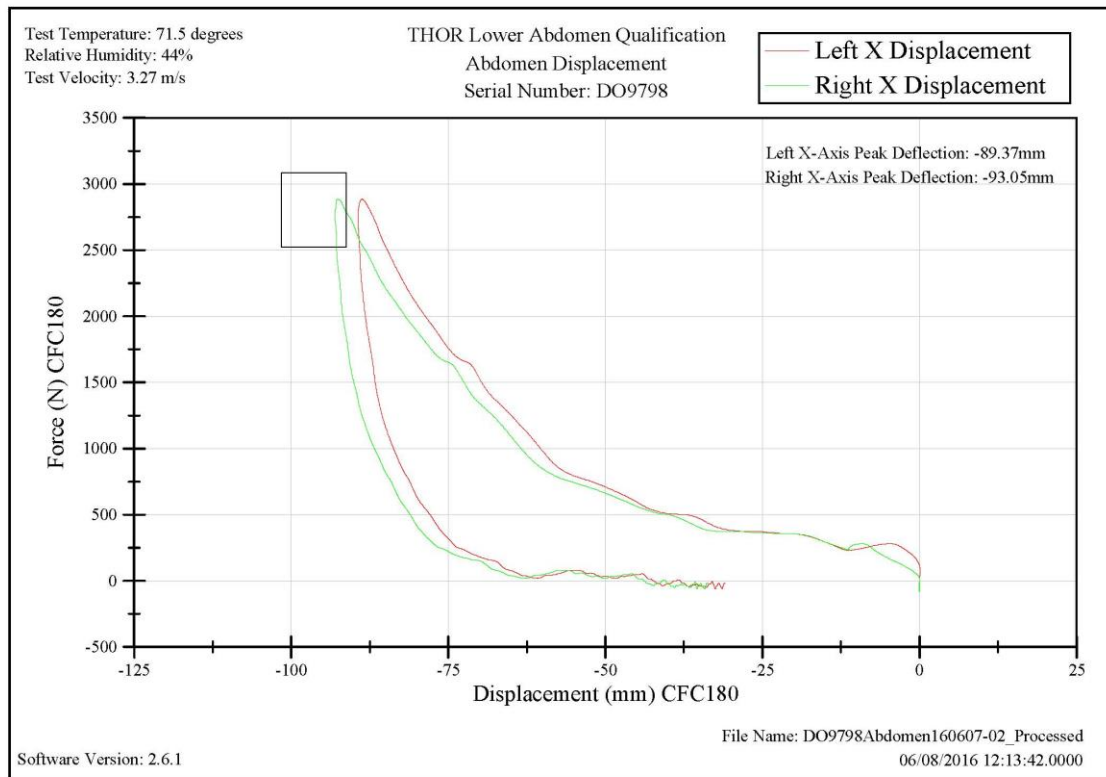
THOR Lower Right Oblique Thorax Qualification
IR-TRACC RAW Voltage
Serial Number: DO9798

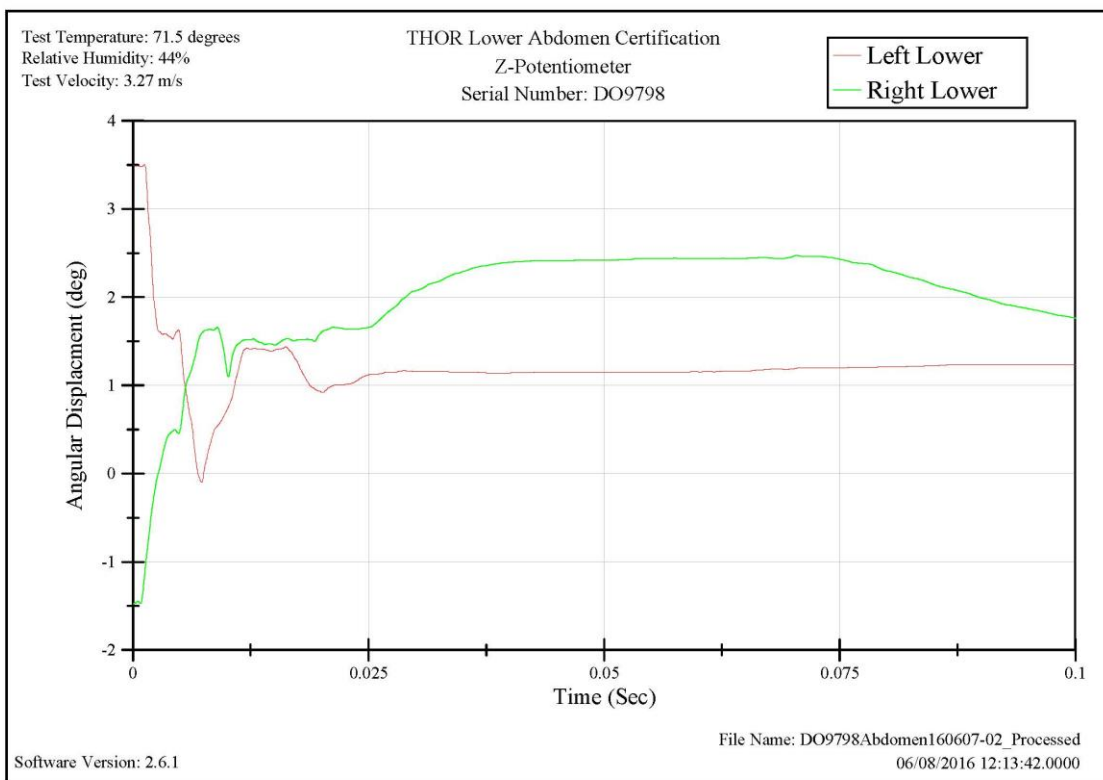
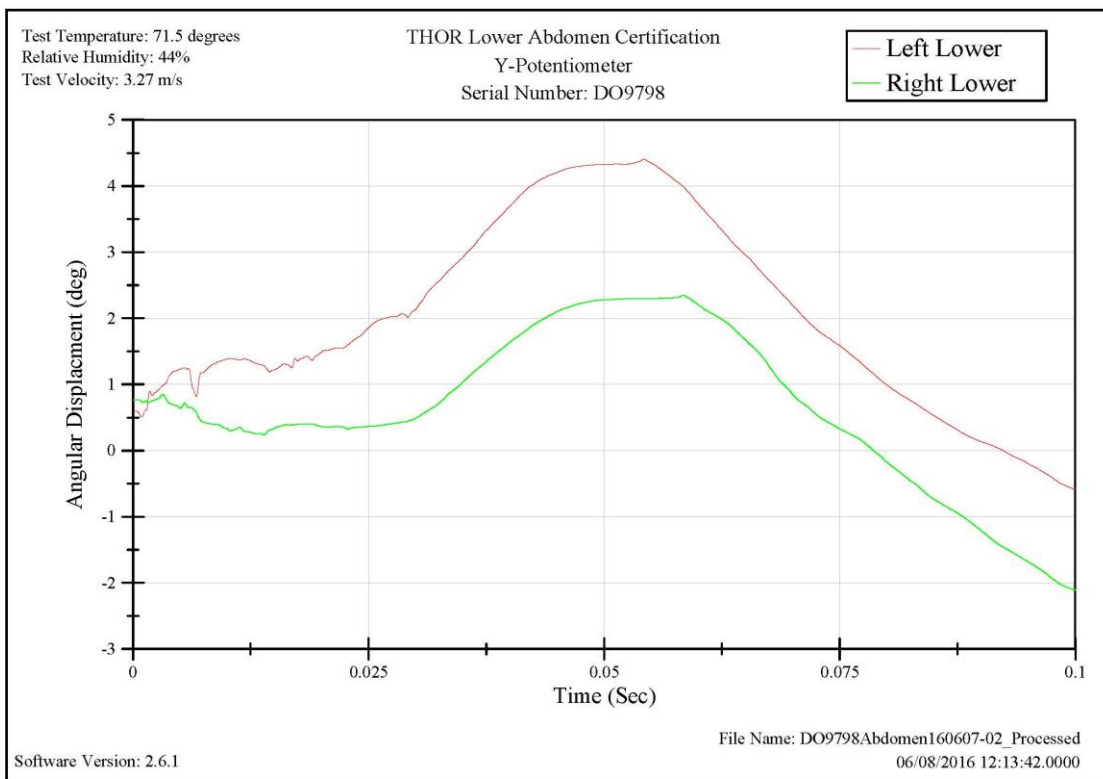


Software Version: 2.6.1

File Name: T007ThoraxLowerRight160518-01_Processed
05/18/2016 13:32:19.0000

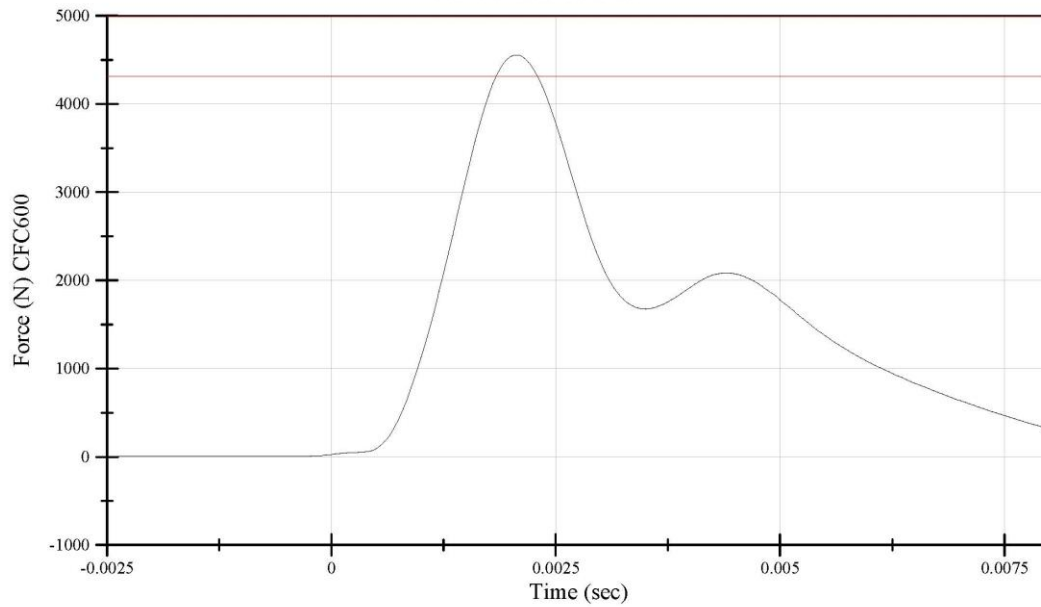






Test Temperature: 70.1 degrees
Relative Humidity: 52%
Test Velocity: 2.61 m/s

THOR Left Upper Leg Qualification
Probe Force
Serial Number: DO9798

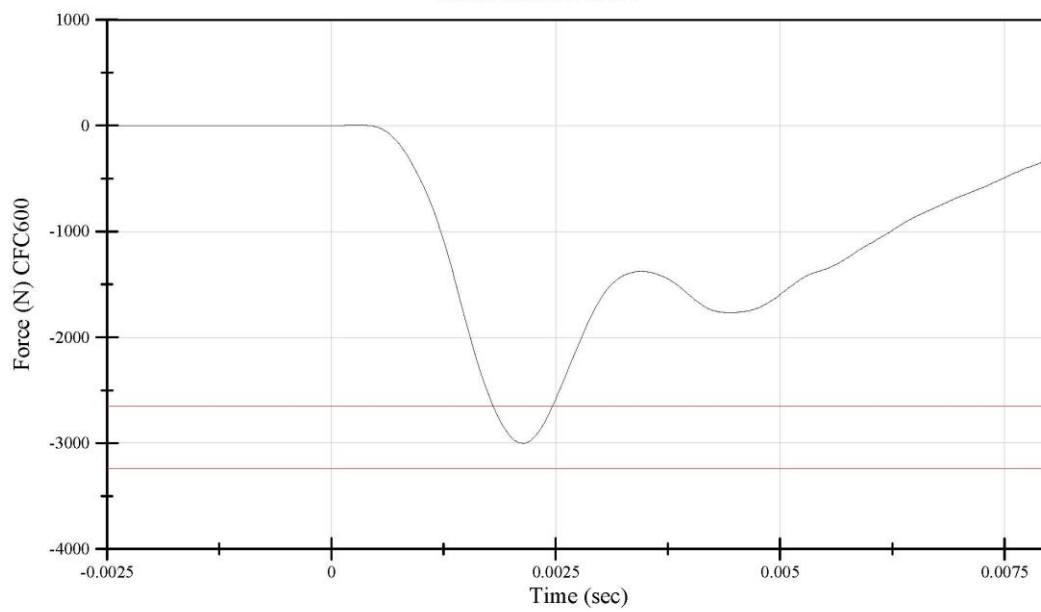


Software Version: 2.6.1

File Name: DO9798FemurLeft160610-01_Processed.dat
07/06/2016 11:47:11.0000

Test Temperature: 70.1 degrees
Relative Humidity: 52%
Test Velocity: 2.61 m/s

THOR Left Upper Leg Qualification
Femur Z-Force
Serial Number: DO9798

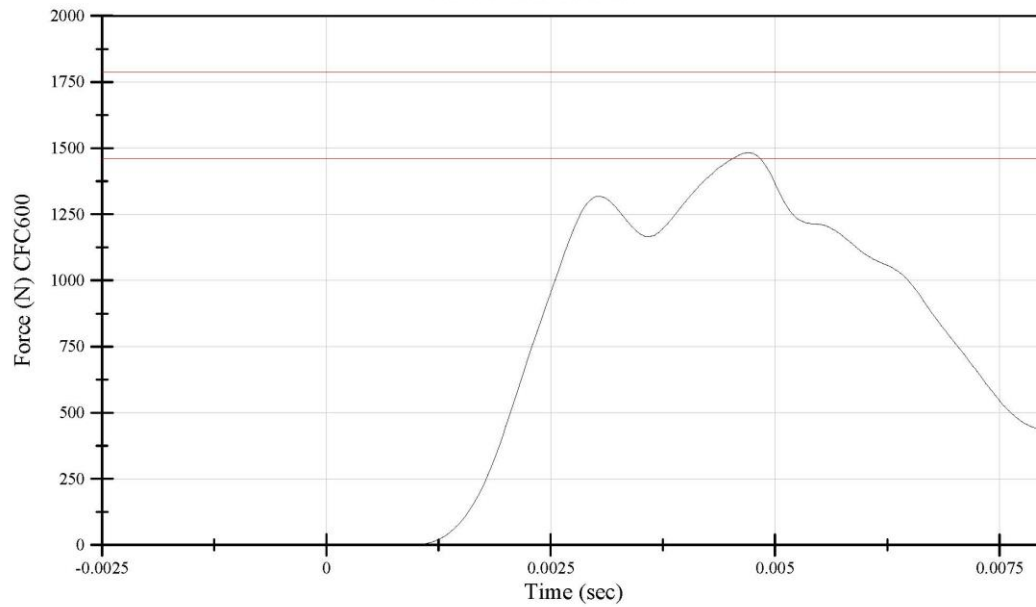


Software Version: 2.6.1

File Name: DO9798FemurLeft160610-01_Processed.dat
07/06/2016 11:47:11.0000

Test Temperature: 70.1 degrees
Relative Humidity: 52%
Test Velocity: 2.61 m/s

THOR Left Upper Leg Qualification
Peak Acetabulum Resultant Force
Serial Number: DO9798

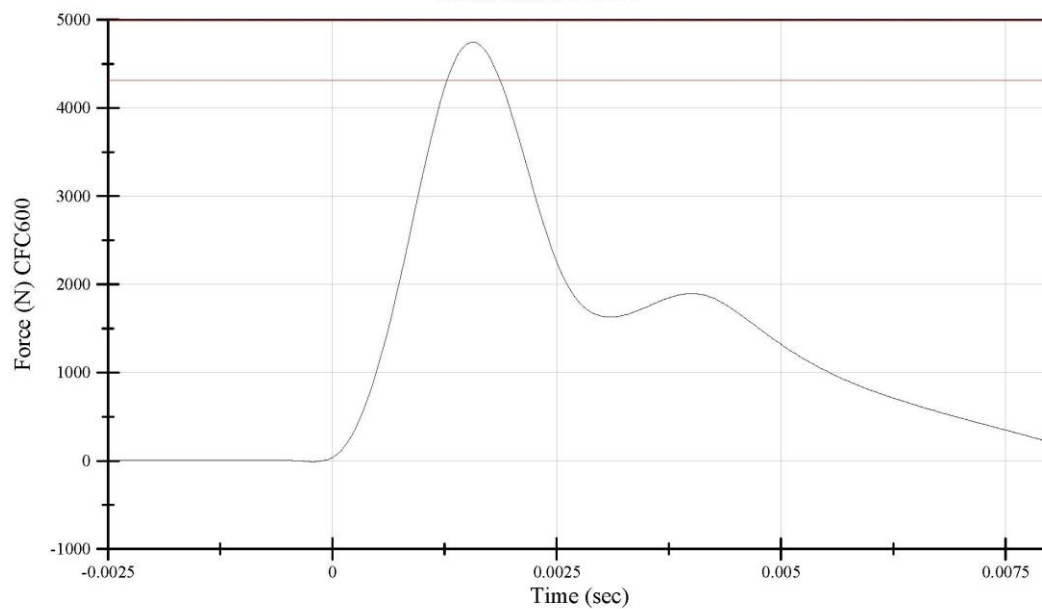


Software Version: 2.6.1

File Name: DO9798FemurLeft160610-01_Processed.dat
07/06/2016 11:47:11.0000

Test Temperature: 70.2 degrees
Relative Humidity: 53%
Test Velocity: 2.61 m/s

THOR Right Upper Leg Qualification
Probe Force
Serial Number: DO9798

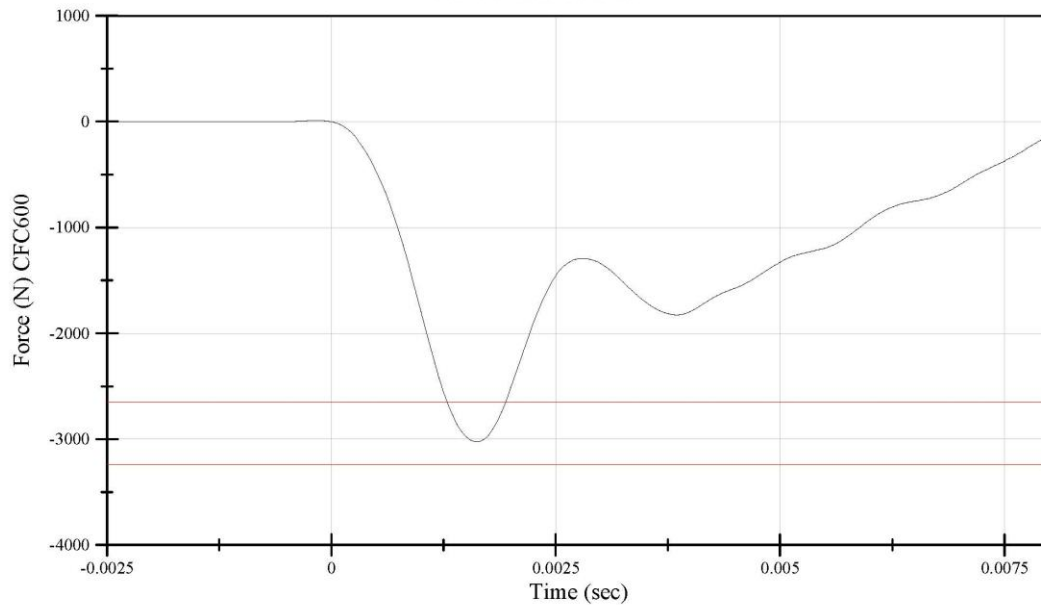


Software Version: 2.6.1

File Name: DO9798FemurRight160610-01_Processed.dat
07/06/2016 11:52:13.0000

Test Temperature: 70.2 degrees
Relative Humidity: 53%
Test Velocity: 2.61 m/s

THOR Right Upper Leg Qualification
Femur Z-Force
Serial Number: DO9798

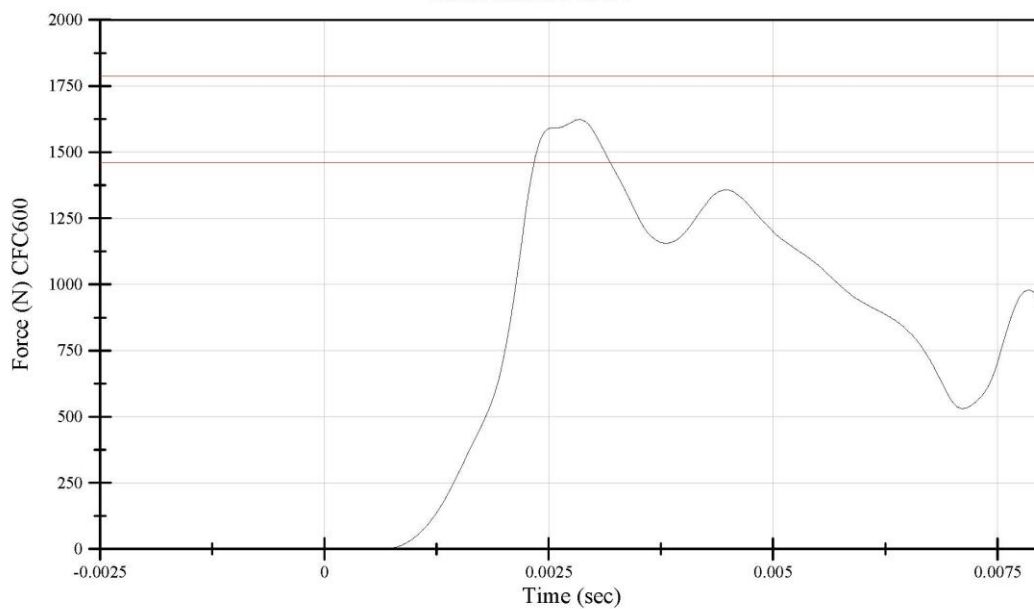


Software Version: 2.6.1

File Name: DO9798FemurRight160610-01_Processed.dat
07/06/2016 11:52:13.0000

Test Temperature: 70.2 degrees
Relative Humidity: 53%
Test Velocity: 2.61 m/s

THOR Right Upper Leg Qualification
Peak Acetabulum Resultant Force
Serial Number: DO9798

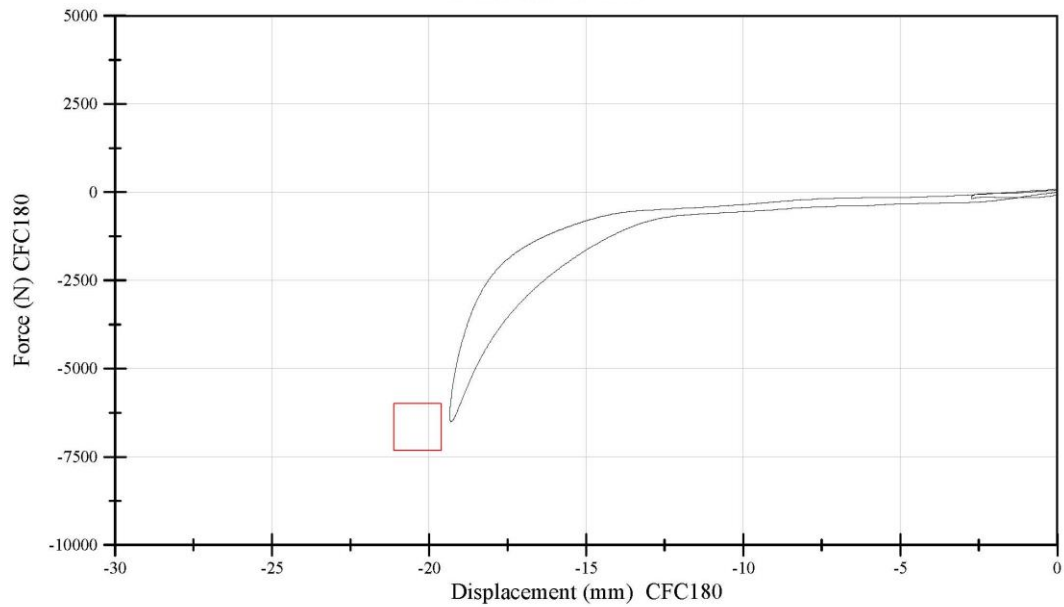


Software Version: 2.6.1

File Name: DO9798FemurRight160610-01_Processed.dat
07/06/2016 11:52:13.0000

Test Temperature: 71.8 degrees
Relative Humidity: 45%
Test Velocity: 2.25 m/s

THOR Right Knee Qualification
Femur Force vs. Knee Displacement
Serial Number: LX654

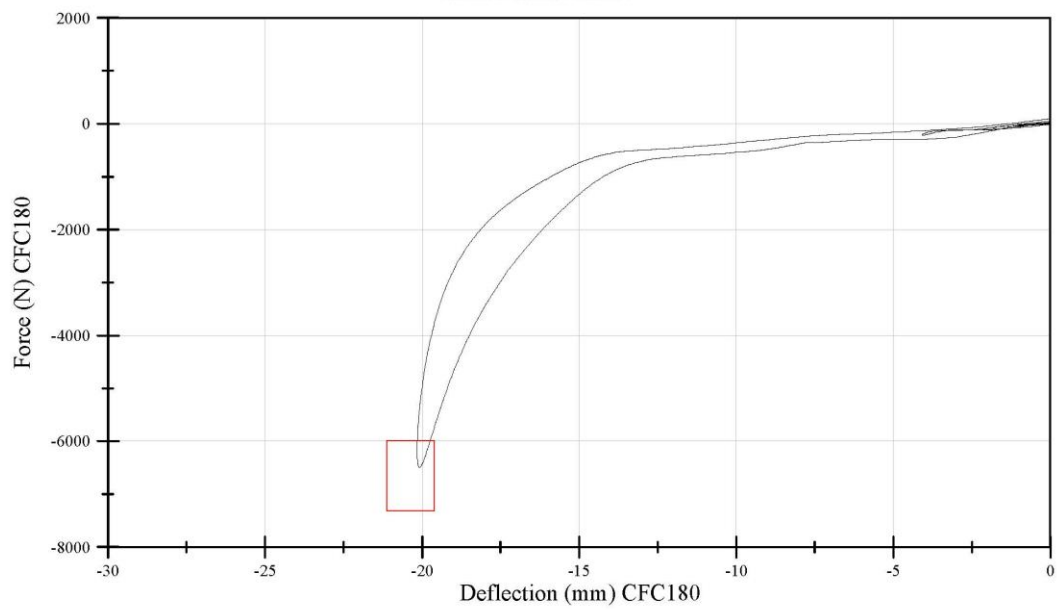


Software Version: 2.6.1

File Name: LX654KneeSlider160524-04
01/01/0000 00:00:00.0000

Test Temperature: 71.1 degrees
Relative Humidity: 43%
Test Velocity: 2.25 m/s

THOR Left Knee Qualification
Peak Deflection at Peak Force
Serial Number: LX654



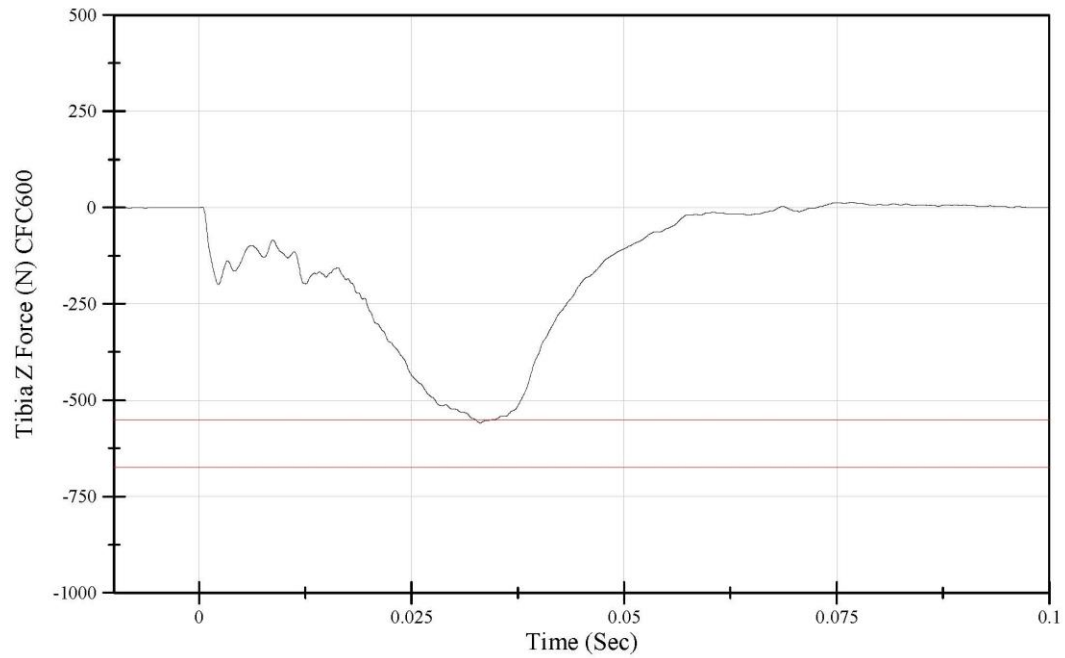
Software Version: 2.6.1

File Name: LX655KneeSlider160524-01_Processed
05/24/2016 13:30:50.0000

Test Temperature: 71.4 degrees
Relative Humidity: 38%
Test Velocity: 2.06 m/s

THOR Left Foot Inversion Qualification

Tibia Load
Serial Number: LX655



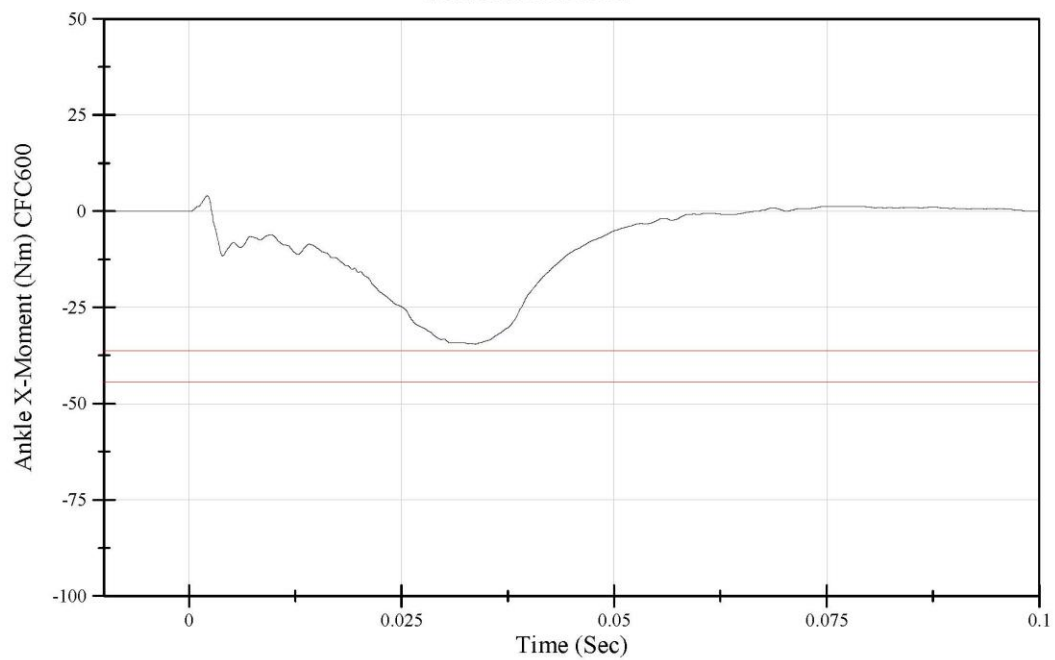
Software Version: 2.6.1

File Name: LX655Inversion160523-01
05/23/2016 17:49:49.0000

Test Temperature: 71.4 degrees
Relative Humidity: 38%
Test Velocity: 2.06 m/s

THOR Left Foot Inversion Certification

Ankle Moment
Serial Number: LX655

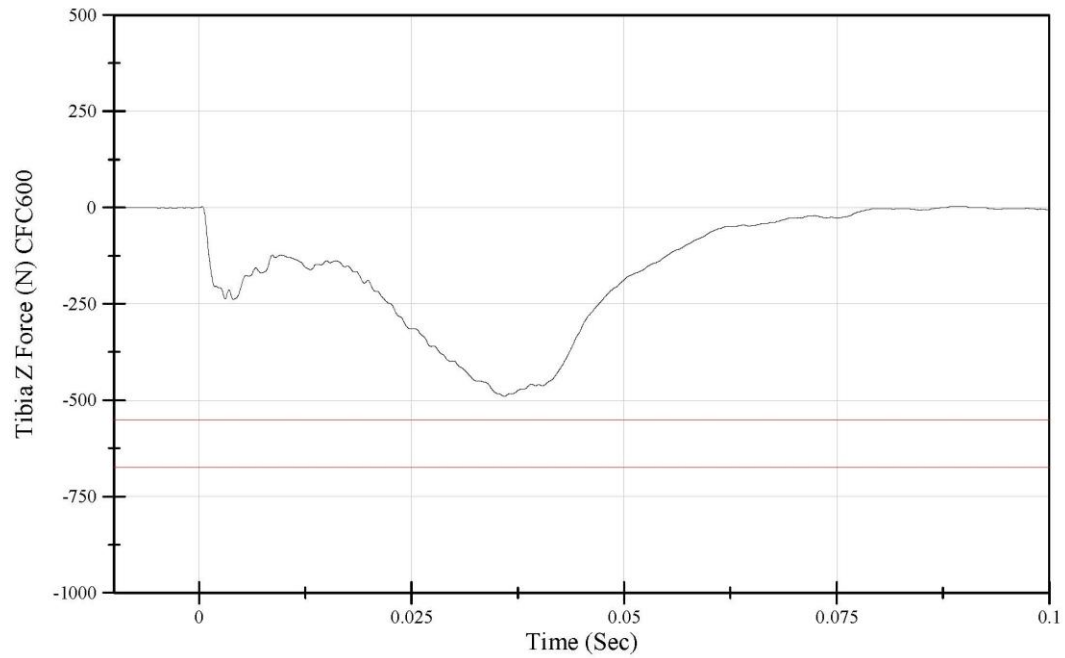


Software Version: 2.6.1

File Name: LX655Inversion160523-01_Processed
05/23/2016 17:49:49.0000

Test Temperature: 70.7 degrees
Relative Humidity: 40%
Test Velocity: 2.07 m/s

THOR Left Foot Eversion Qualification
Tibia Load
Serial Number: LX655

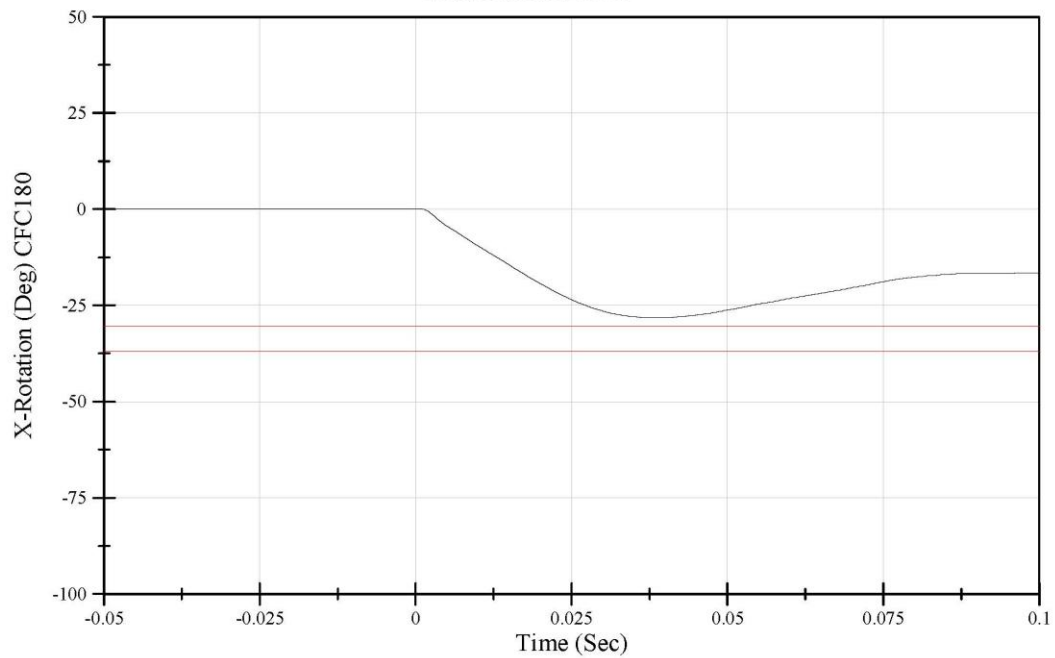


Software Version: 2.6.1

File Name: LX655Eversion160523-01_Processed
05/23/2016 16:51:44.0000

Test Temperature: 71.4 degrees
Relative Humidity: 38%
Test Velocity: 2.06 m/s

THOR Left Foot Inversion Certification
Ankle X-Rotation
Serial Number: LX655

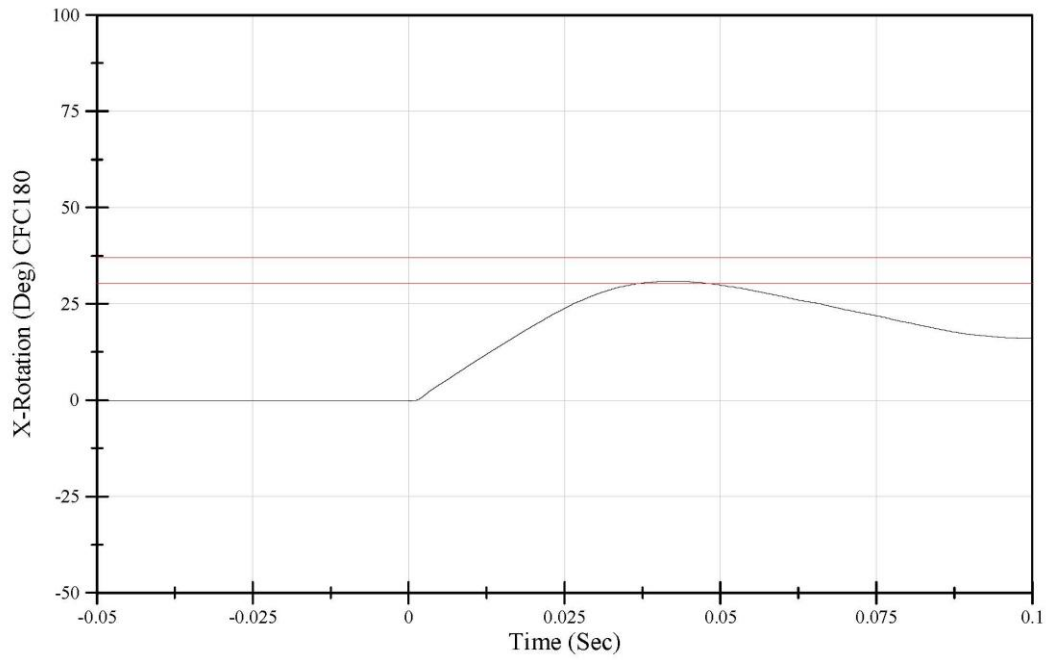


Software Version: 2.6.1

File Name: LX655Inversion160523-01_Processed
05/23/2016 17:49:49.0000

Test Temperature: 70.7 degrees
Relative Humidity: 40%
Test Velocity: 2.07 m/s

THOR Left Foot Eversion Certification
Ankle X-Rotation
Serial Number: LX655

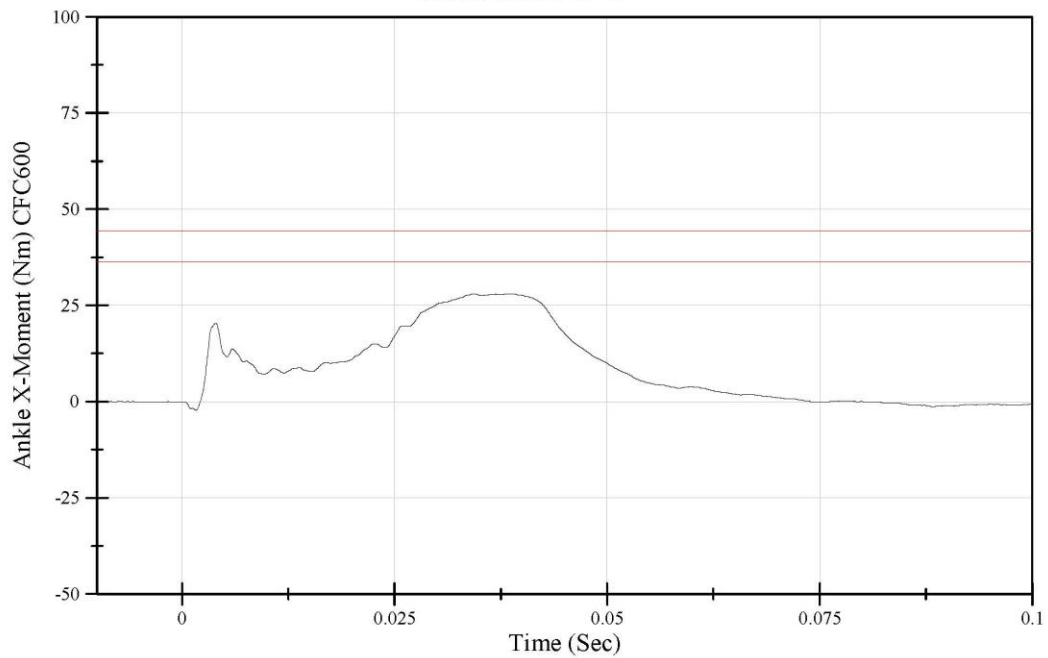


Software Version: 2.6.1

File Name: LX655Eversion 160523-01_Processed
05/23/2016 16:51:44.0000

Test Temperature: 70.7 degrees
Relative Humidity: 40%
Test Velocity: 2.07 m/s

THOR Left Foot Eversion Certification
Ankle Moment
Serial Number: LX655

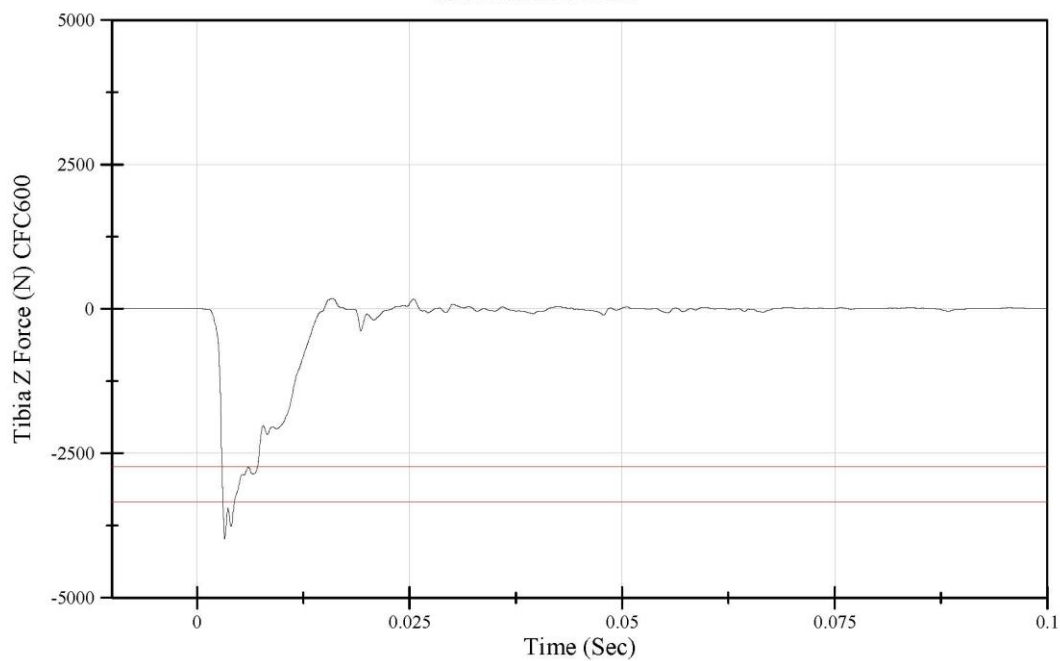


Software Version: 2.6.1

File Name: LX655Eversion 160523-01_Processed
05/23/2016 16:51:44.0000

Test Temperature: 71.2 degrees
Relative Humidity: 40%
Test Velocity: 3.93 m/s

THOR Left Foot Heel Qualification
Tibia Load
Serial Number: LX655

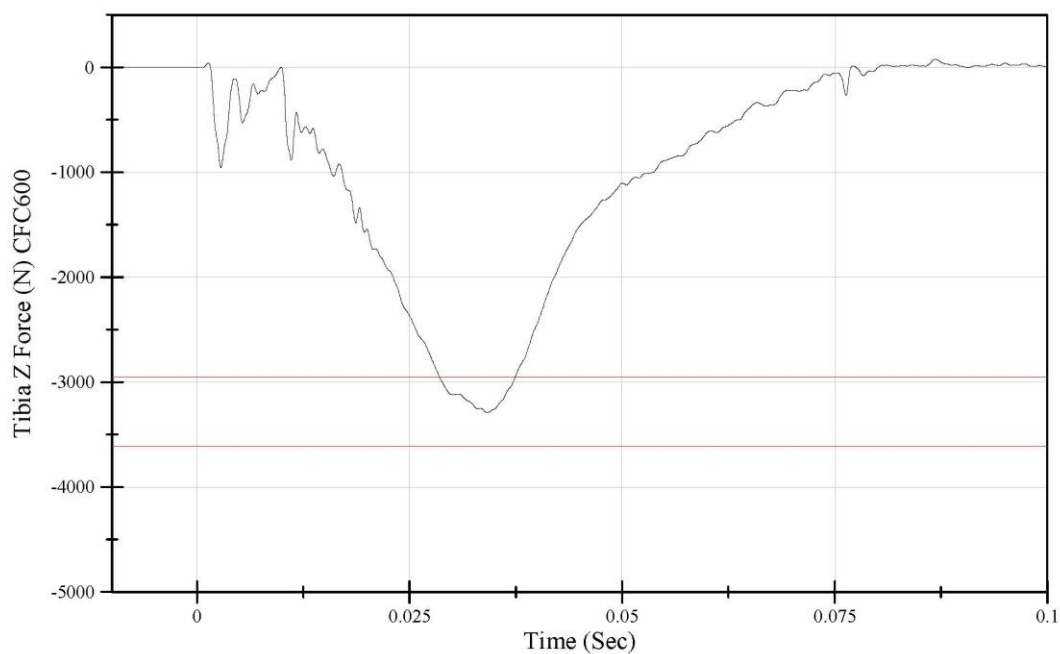


Software Version: 2.6.1

File Name: LX655Heel160523-01_Processed
05/23/2016 18:29:50.0000

Test Temperature: 72 degrees
Relative Humidity: 39%
Test Velocity: 5.02 m/s

THOR Left Foot Dorsiflexion Qualification
Tibia Load
Serial Number: LX655



Software Version: 2.6.1

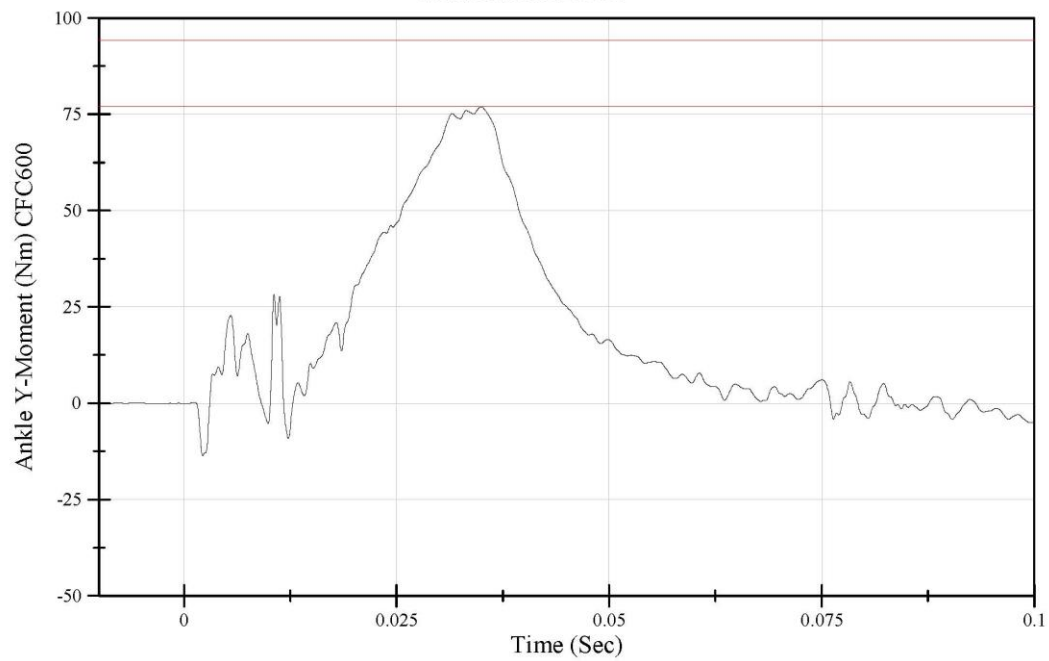
File Name: LX655Ball160523-01_Processed
05/23/2016 16:20:46.0000

Test Temperature: 72 degrees
Relative Humidity: 39%
Test Velocity: 5.02 m/s

THOR Left Foot Dorsiflexion Certification

Ankle Y-Moment

Serial Number: LX655



Software Version: 2.6.1

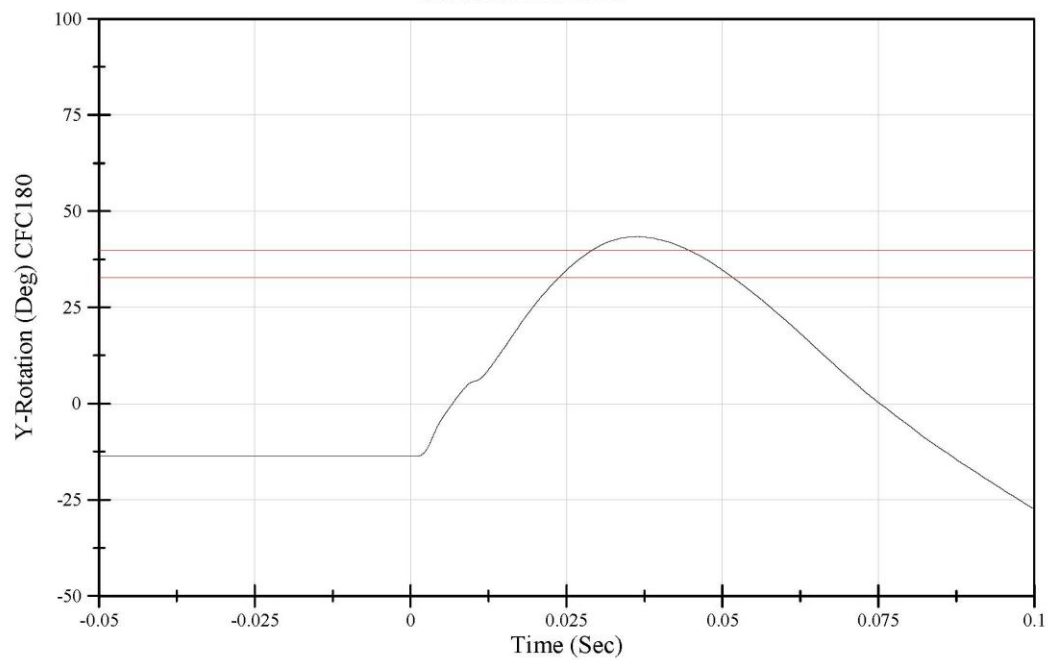
File Name: LX655Ball160523-01_Processed
05/23/2016 16:20:46.0000

Test Temperature: 72 degrees
Relative Humidity: 39%
Test Velocity: 5.02 m/s

THOR Left Foot Dorsiflexion Certification

Ankle Y-Rotation

Serial Number: LX655



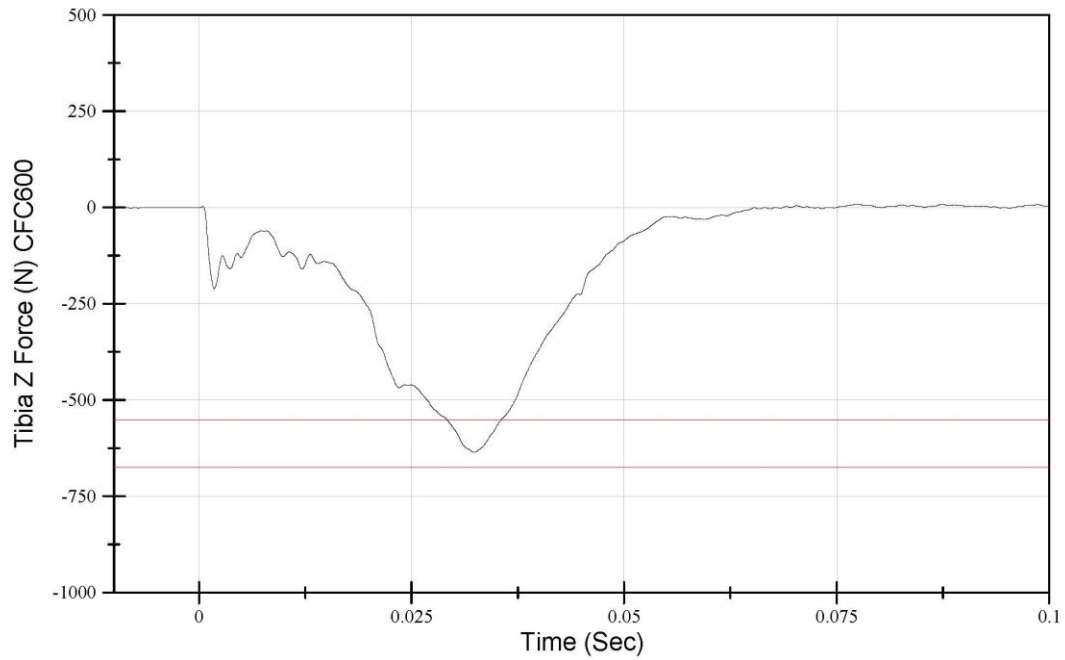
Software Version: 2.6.1

File Name: LX655Ball160523-01_Processed
05/23/2016 16:20:46.0000

Test Temperature: 70.7 degrees
Relative Humidity: 37%
Test Velocity: 2.04 m/s

THOR Right Foot Inversion Qualification

Tibia Load
Serial Number: LX654



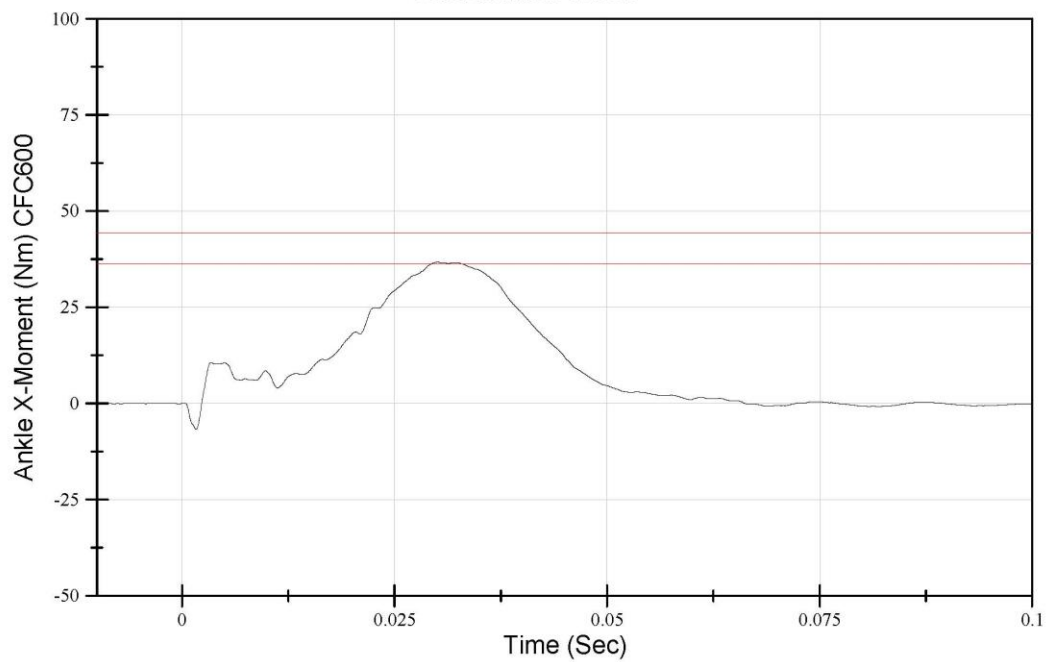
Software Version: 2.6.1

File Name: LX654Inversion160520-01_ReProcessed
05/23/2016 14:56:20.0000

Test Temperature: 70.7 degrees
Relative Humidity: 37%
Test Velocity: 2.04 m/s

THOR Right Foot Inversion Certification

Ankle Moment
Serial Number: LX654

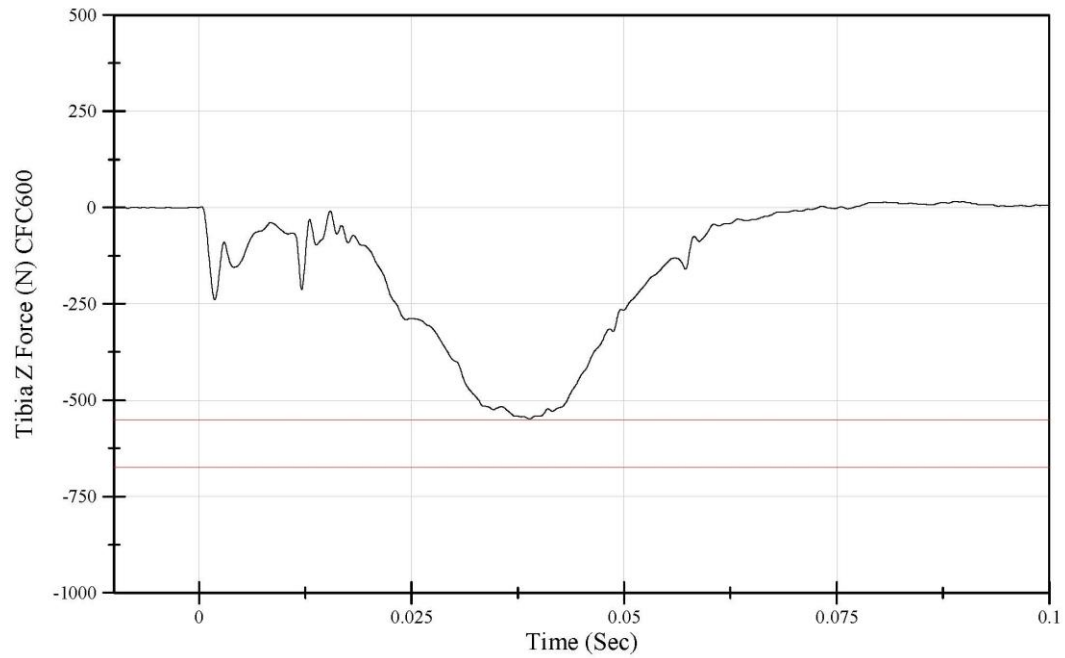


Software Version: 2.6.1

File Name: LX654Inversion160520-01_ReProcessed
05/23/2016 14:56:20.0000

Test Temperature: 71.2 degrees
Relative Humidity: 32%
Test Velocity: 2.04 m/s

THOR Right Foot Eversion Qualification
Tibia Load
Serial Number: LX654

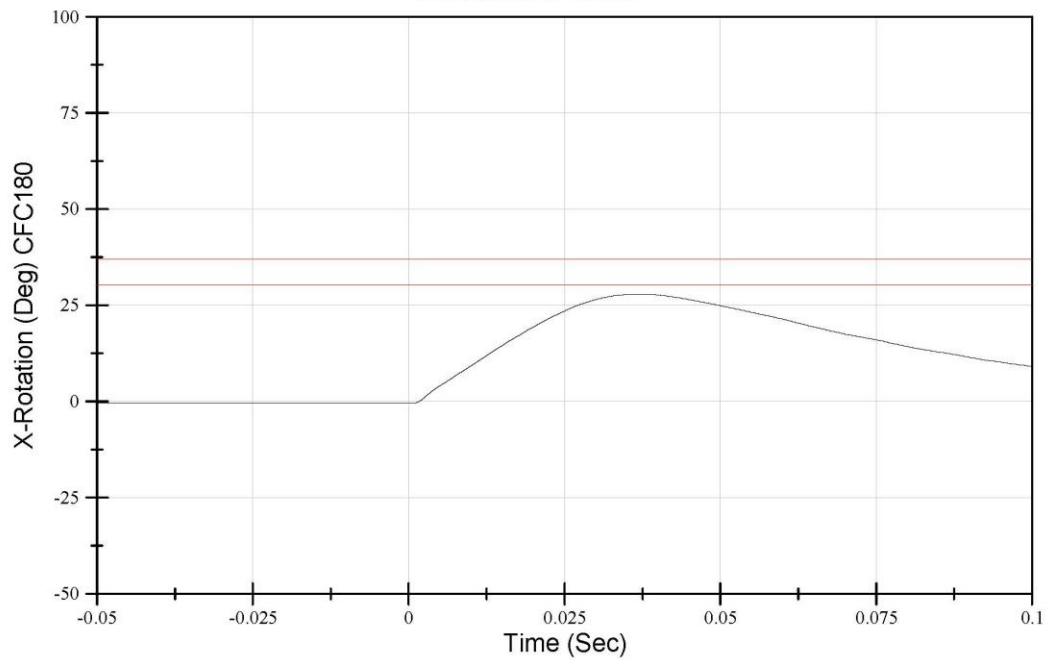


Software Version: 2.6.1

File Name: LX654Eversion160520-01_Processed
05/23/2016 12:07:55.0000

Test Temperature: 70.7 degrees
Relative Humidity: 37%
Test Velocity: 2.04 m/s

THOR Right Foot Inversion Certification
Ankle X-Rotation
Serial Number: LX654

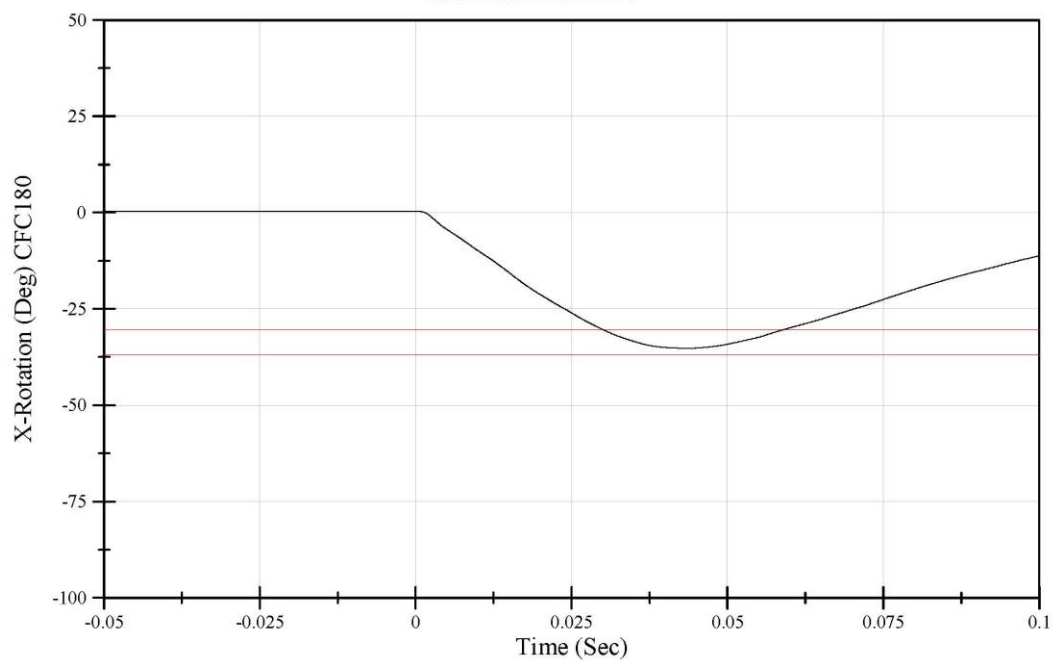


Software Version: 2.6.1

File Name: LX654Inversion160520-01_ReProcessed
05/23/2016 14:56:20.0000

Test Temperature: 71.2 degrees
Relative Humidity: 32%
Test Velocity: 2.04 m/s

THOR Right Foot Eversion Certification
Ankle X-Rotation
Serial Number: LX654

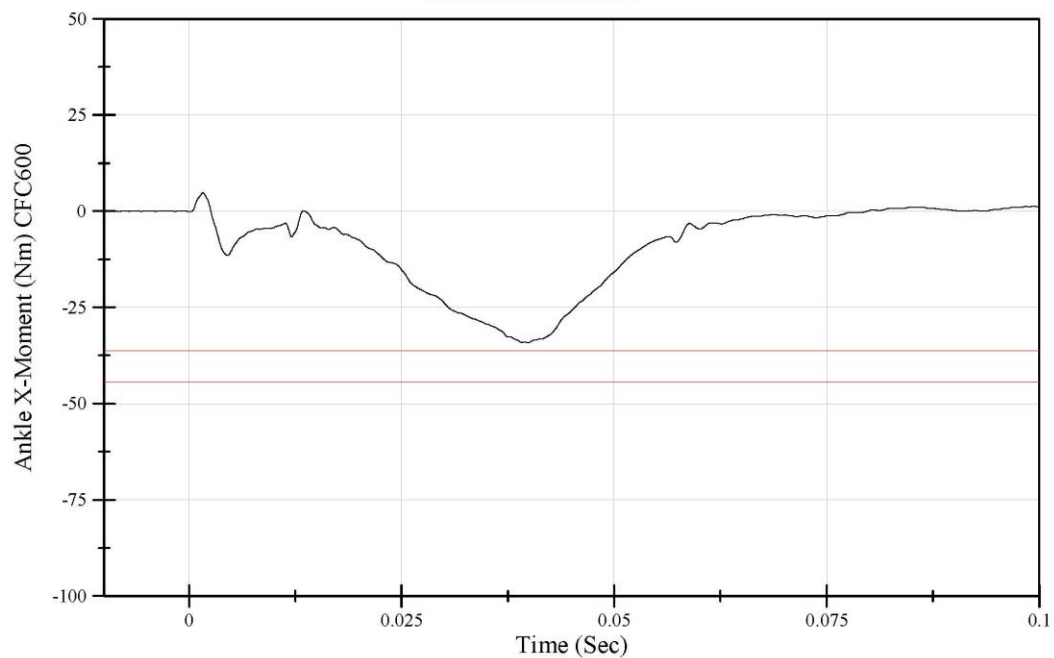


Software Version: 2.6.1

File Name: LX654Eversion 160520-01_Processed
05/23/2016 12:07:55.0000

Test Temperature: 71.2 degrees
Relative Humidity: 32%
Test Velocity: 2.04 m/s

THOR Right Foot Eversion Certification
Ankle Moment
Serial Number: LX654



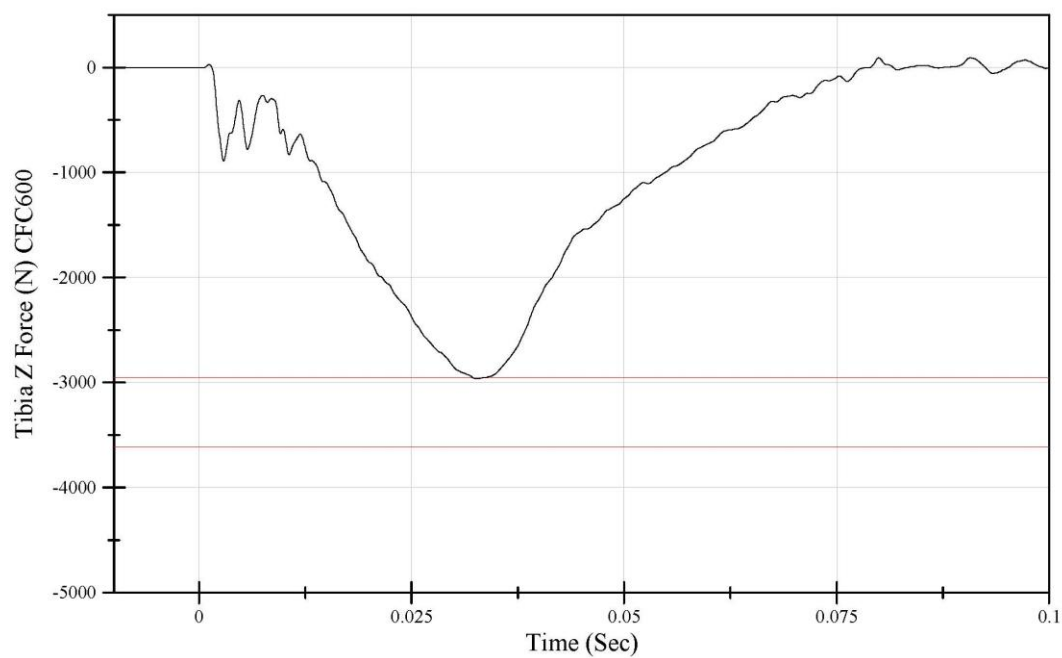
Software Version: 2.6.1

File Name: LX654Eversion 160520-01_Processed
05/23/2016 12:07:55.0000

Test Temperature: 71.8 degrees
Relative Humidity: 39%
Test Velocity: 5.01 m/s

THOR Right Foot Dorsiflexion Qualification

Tibia Load
Serial Number: LX654



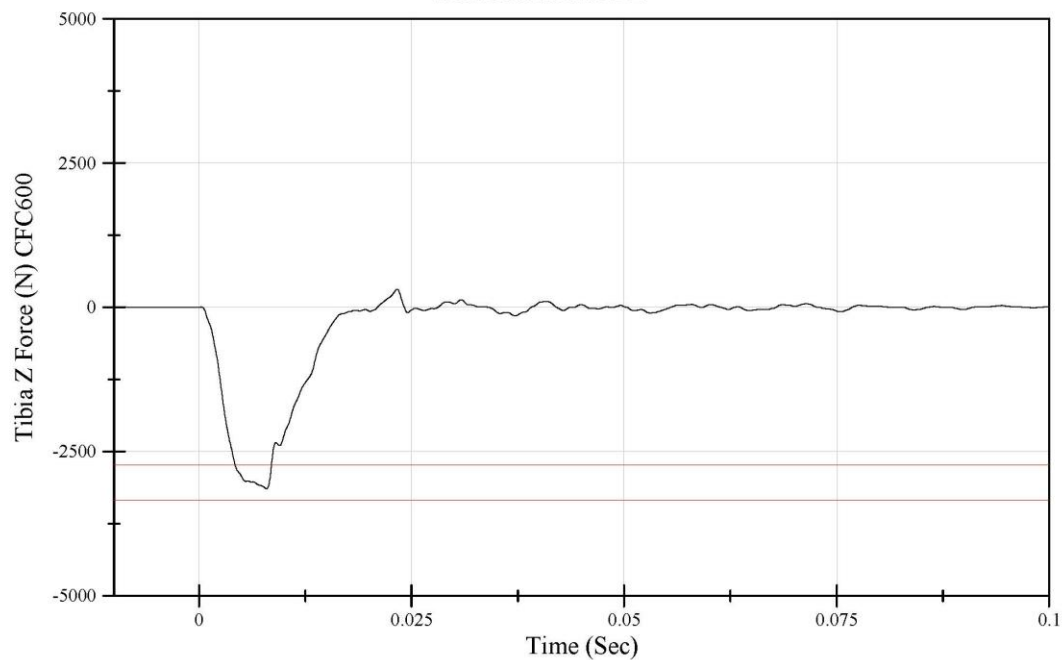
Software Version: 2.6.1

File Name: LX654Ball160520-01_ReProcessed.dat
05/23/2016 14:53:45.0000

Test Temperature: 71.4 degrees
Relative Humidity: 39%
Test Velocity: 3.92 m/s

THOR Right Foot Heel Qualification

Tibia Load
Serial Number: LX654

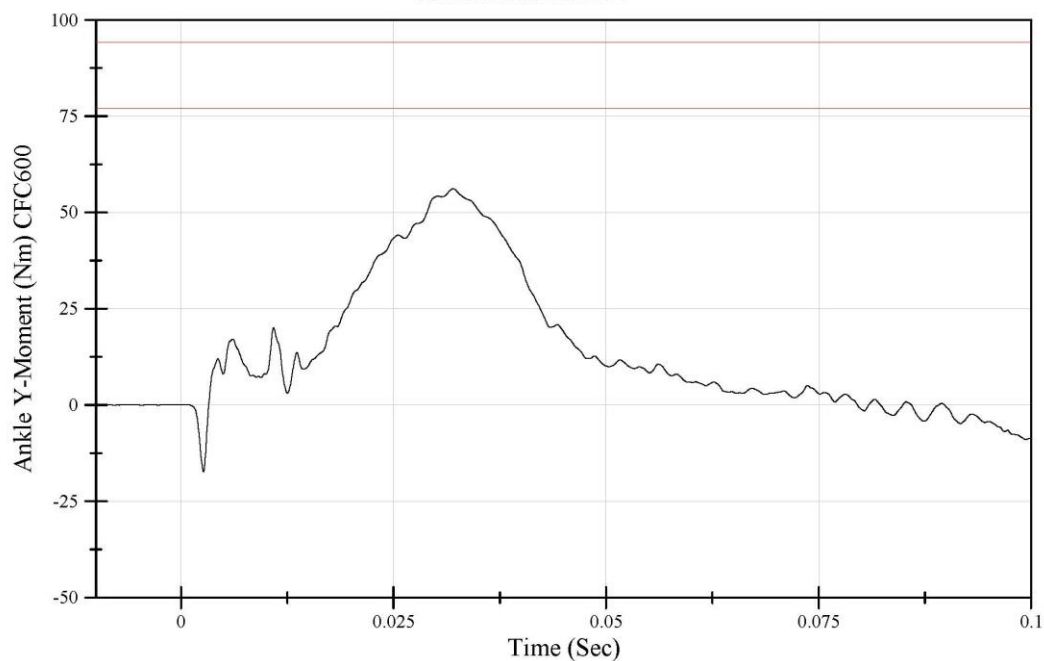


Software Version: 2.6.1

File Name: LX654Heel160523-01_Processed.dat
05/23/2016 13:50:46.0000

Test Temperature: 71.8 degrees
Relative Humidity: 39%
Test Velocity: 5.01 m/s

THOR Right Foot Dorsiflexion Certification
Ankle Y-Moment
Serial Number: LX654

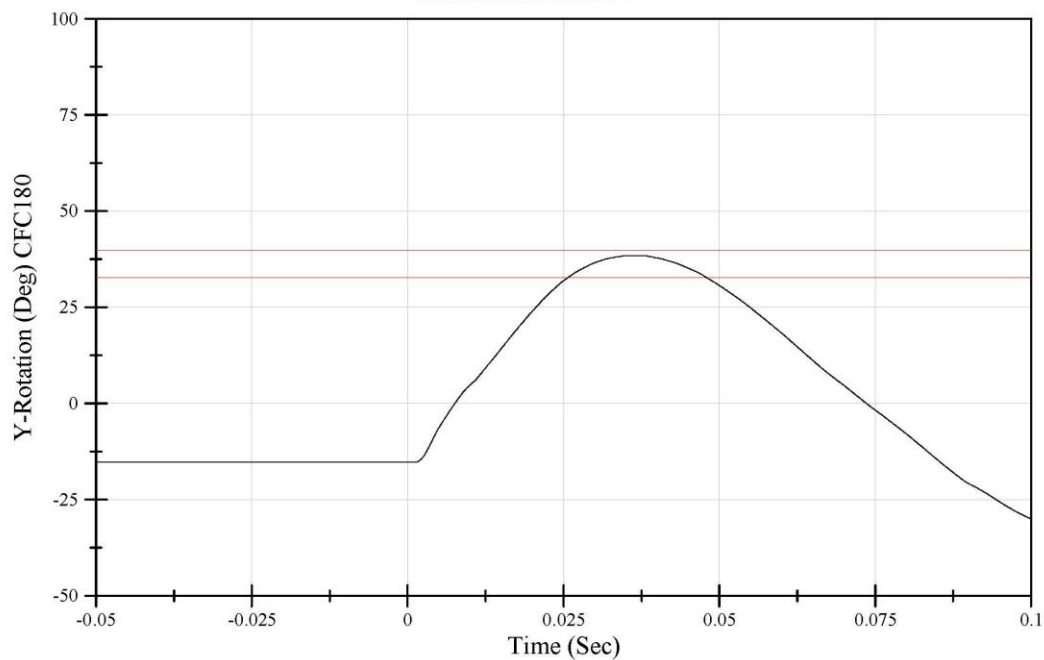


Software Version: 2.6.1

File Name: LX654Ball160520-01_ReProcessed.dat
05/23/2016 14:53:45.0000

Test Temperature: 71.8 degrees
Relative Humidity: 39%
Test Velocity: 5.01 m/s

THOR Right Foot Dorsiflexion Certification
Ankle Y-Rotation
Serial Number: LX654



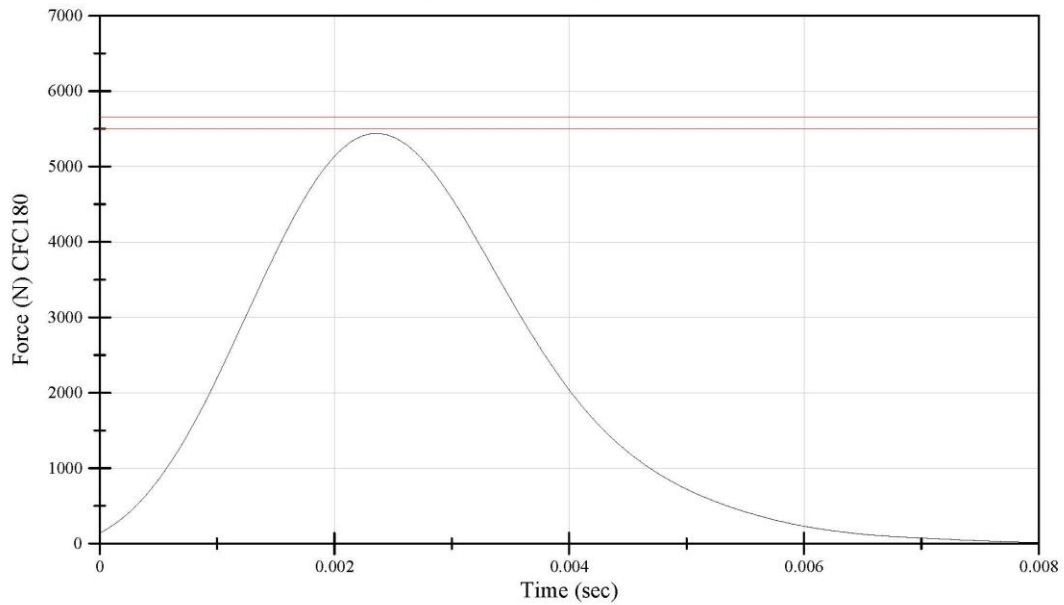
Software Version: 2.6.1

File Name: LX654Ball160520-01_ReProcessed.dat
05/23/2016 14:53:45.0000

Calibration Sheets
Passenger S/N DL9207

Test Temperature: 70.2 degrees
Relative Humidity: 52%
Test Velocity: 1.99 m/s

THOR Head Impact Qualification
Probe Force
Serial Number: DL9207

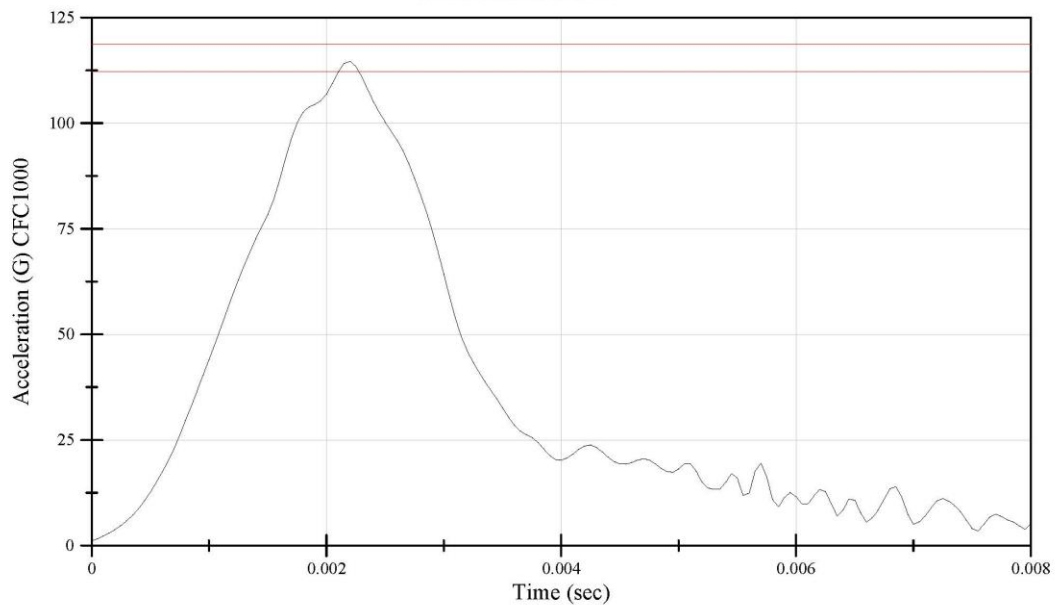


Software Version: 2.6.1

File Name: DL9207Head160618-01_Processed
06/18/2016 12:10:57.0000

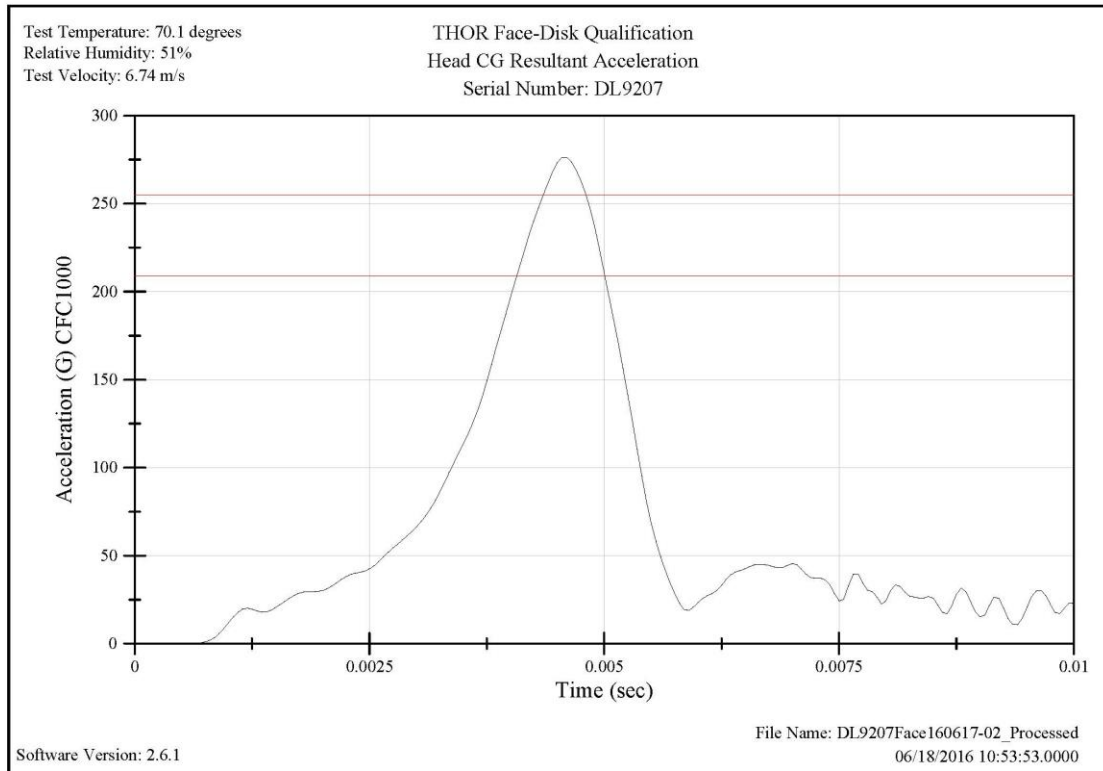
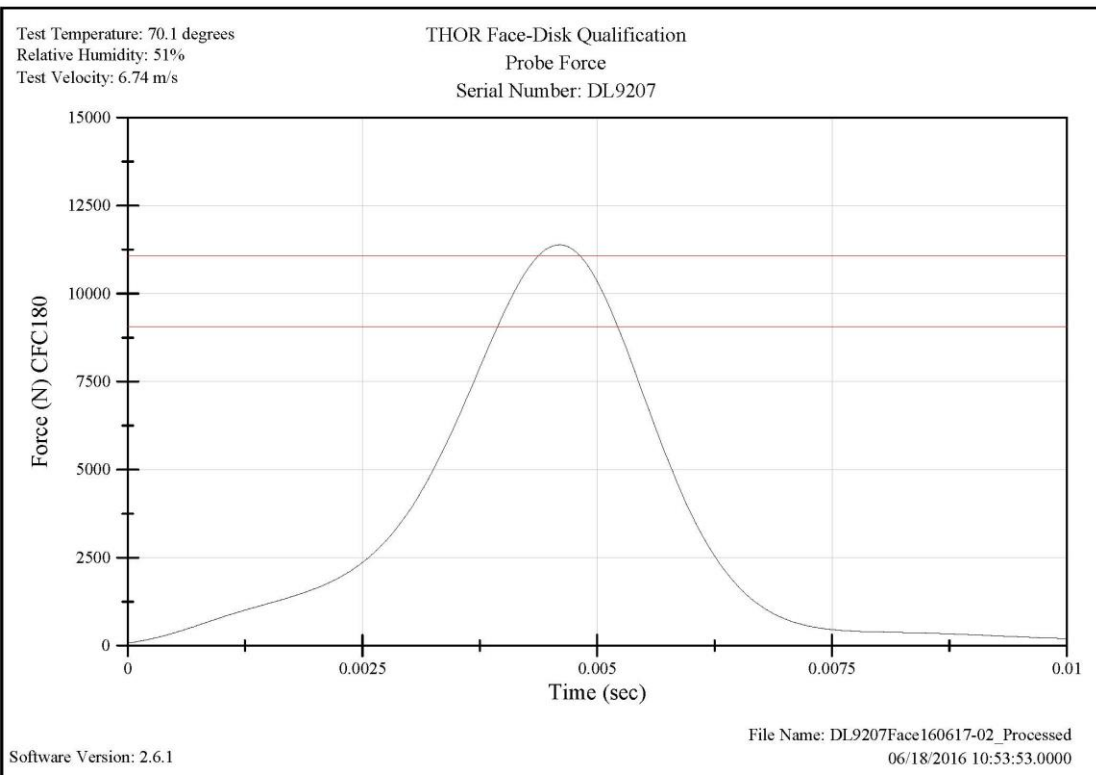
Test Temperature: 70.2 degrees
Relative Humidity: 52%
Test Velocity: 1.99 m/s

THOR Head Impact Qualification
Head CG Resultant Acceleration
Serial Number: DL9207



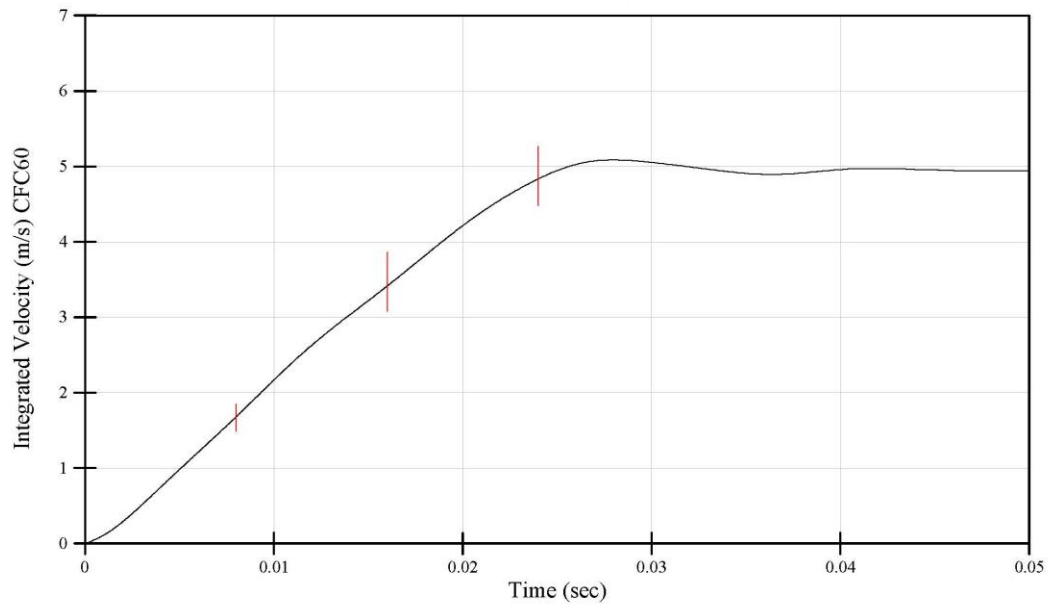
Software Version: 2.6.1

File Name: DL9207Head160618-01_Processed
06/18/2016 12:10:57.0000



Test Temperature: 69.7 degrees
Relative Humidity: 53%
Test Velocity: 5.02 m/s

THOR Neck Flexion Certification
Probe Acceleration
Serial Number: DL9207

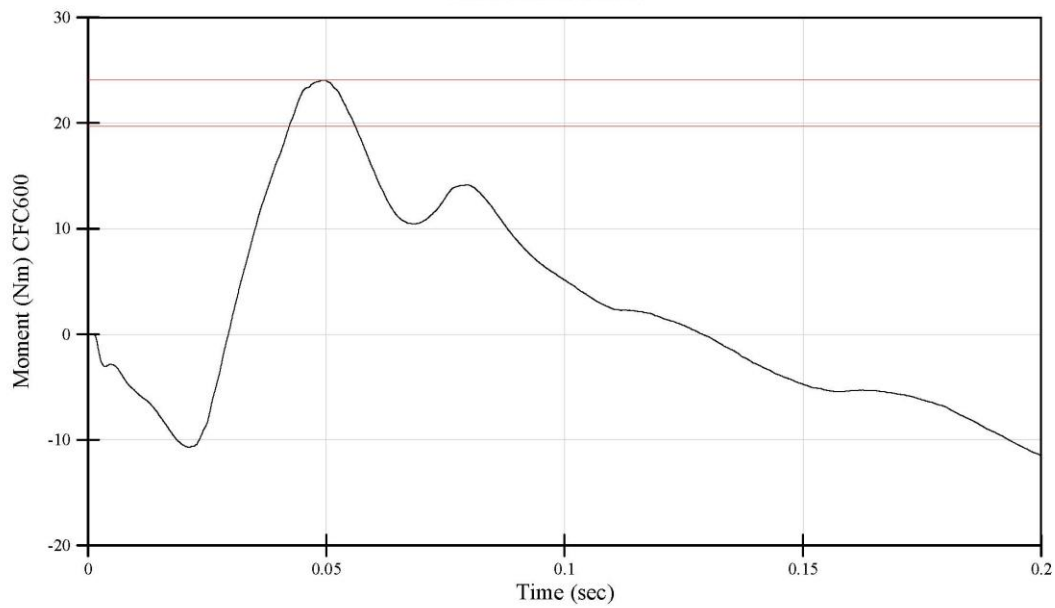


Software Version: 2.6.1

File Name: DL9207NeckFlexion160617-02_Processed
06/17/2016 17:46:16.0000

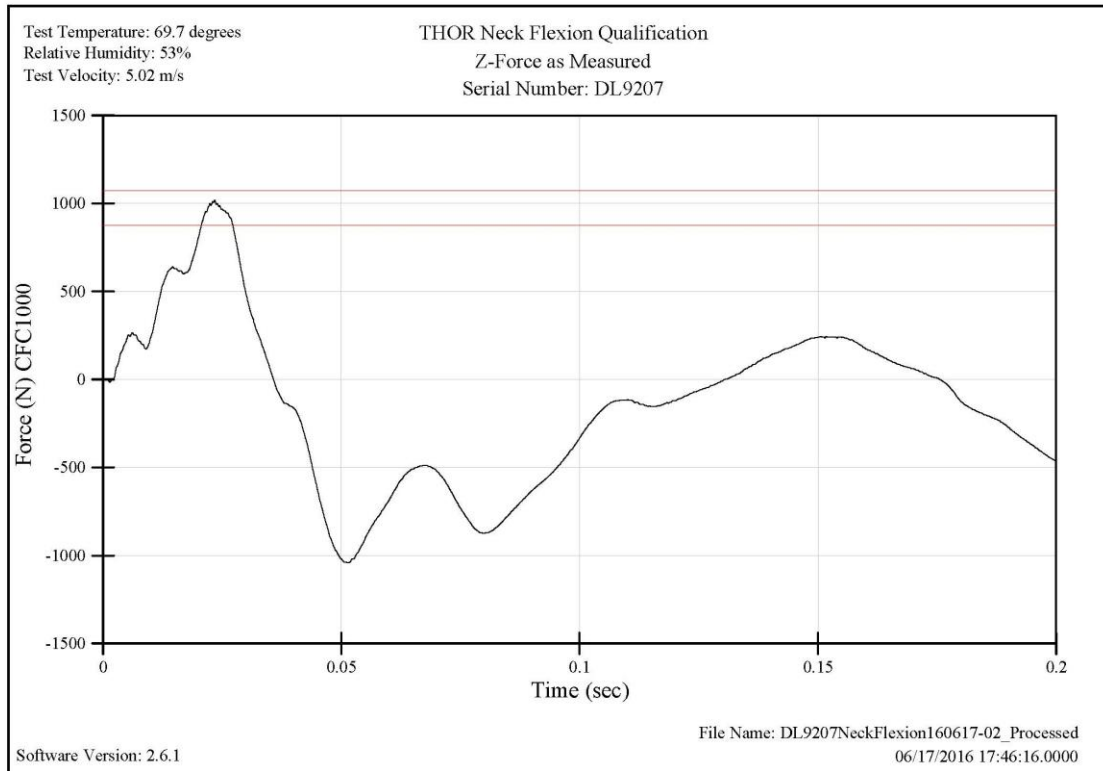
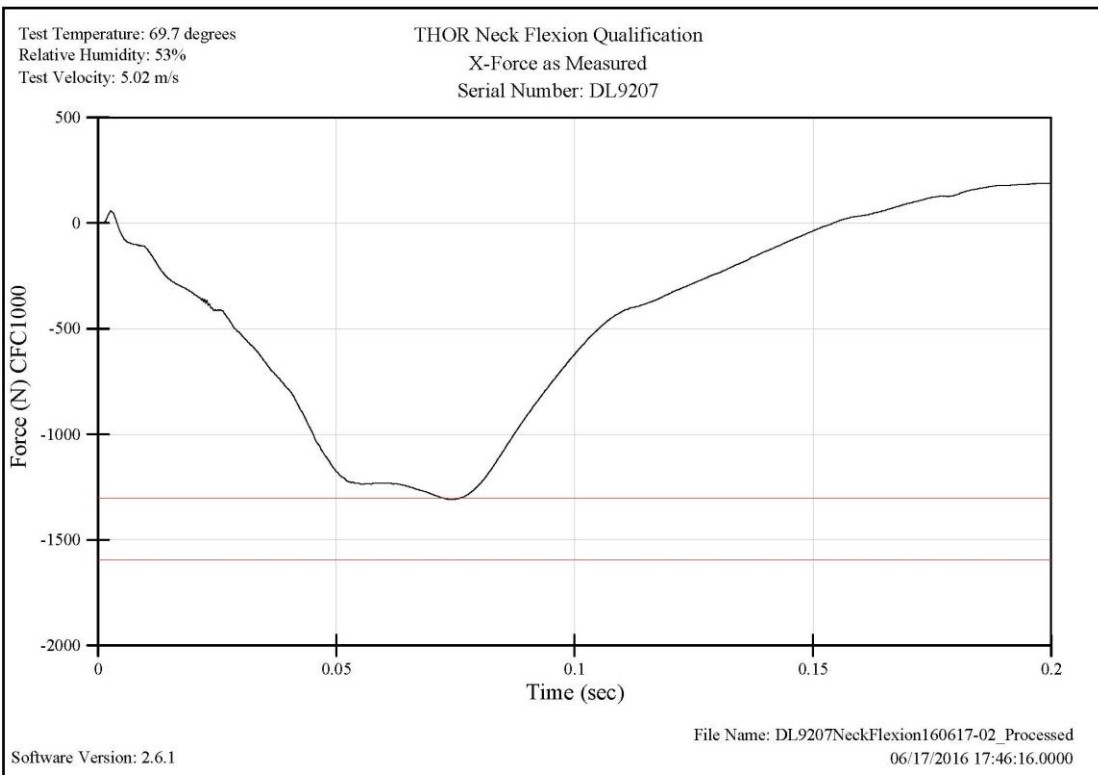
Test Temperature: 69.7 degrees
Relative Humidity: 53%
Test Velocity: 5.02 m/s

THOR Neck Flexion Qualification
Y-Moment as Measured
Serial Number: DL9207



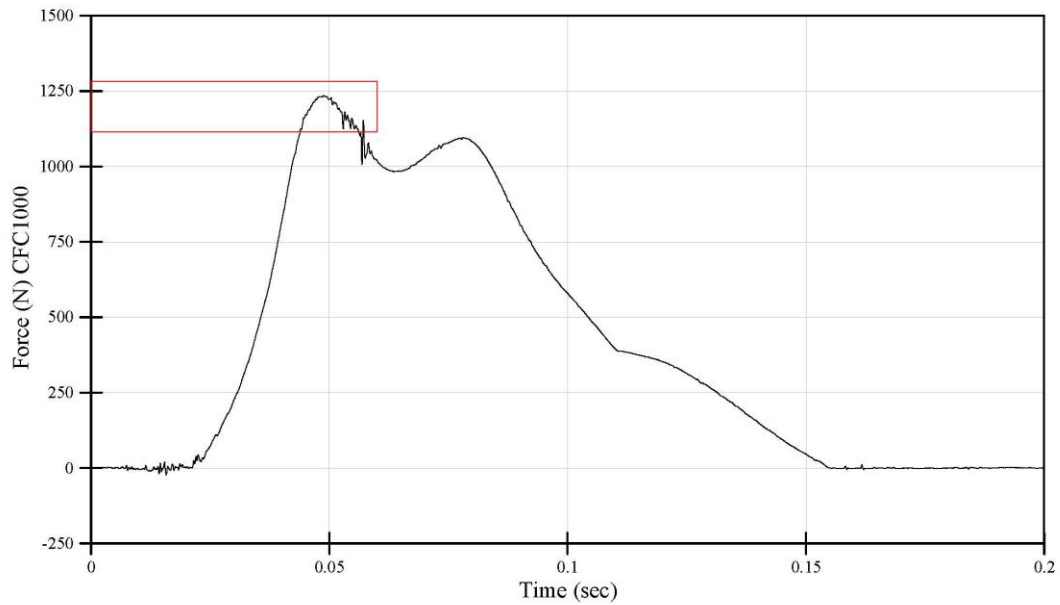
Software Version: 2.6.1

File Name: DL9207NeckFlexion160617-02_Processed
06/17/2016 17:46:16.0000



Test Temperature: 69.7 degrees
Relative Humidity: 53%
Test Velocity: 5.02 m/s

THOR Neck Flexion Qualification
Rear Cable Z-Force as Measured
Serial Number: DL9207

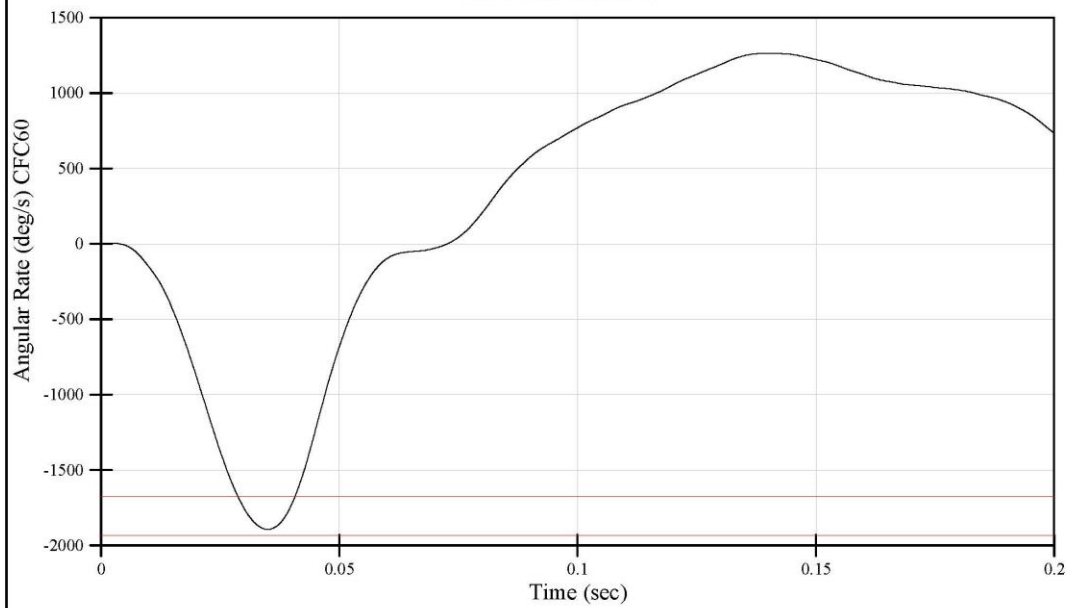


Software Version: 2.6.1

File Name: DL9207NeckFlexion160617-02_Processed
06/17/2016 17:46:16.0000

Test Temperature: 69.7 degrees
Relative Humidity: 53%
Test Velocity: 5.02 m/s

THOR Neck Flexion Qualification
Peak Angular Rate
Serial Number: DL9207

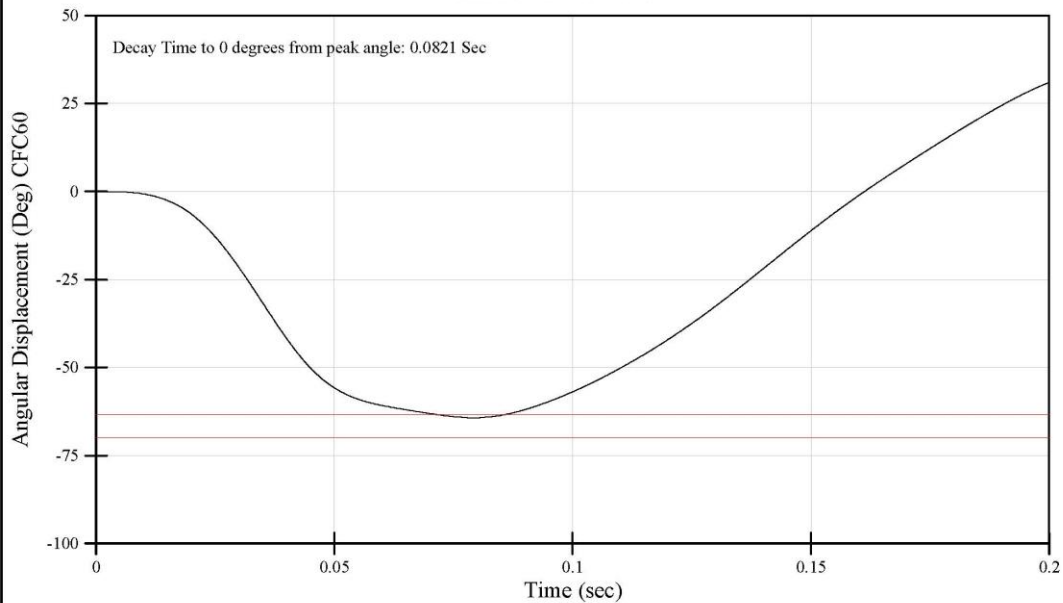


Software Version: 2.6.1

File Name: DL9207NeckFlexion160617-02_Processed
06/17/2016 17:46:16.0000

Test Temperature: 69.7 degrees
Relative Humidity: 53%
Test Velocity: 5.02 m/s

THOR Neck Flexion Qualification
Neck Rotation
Serial Number: DL9207

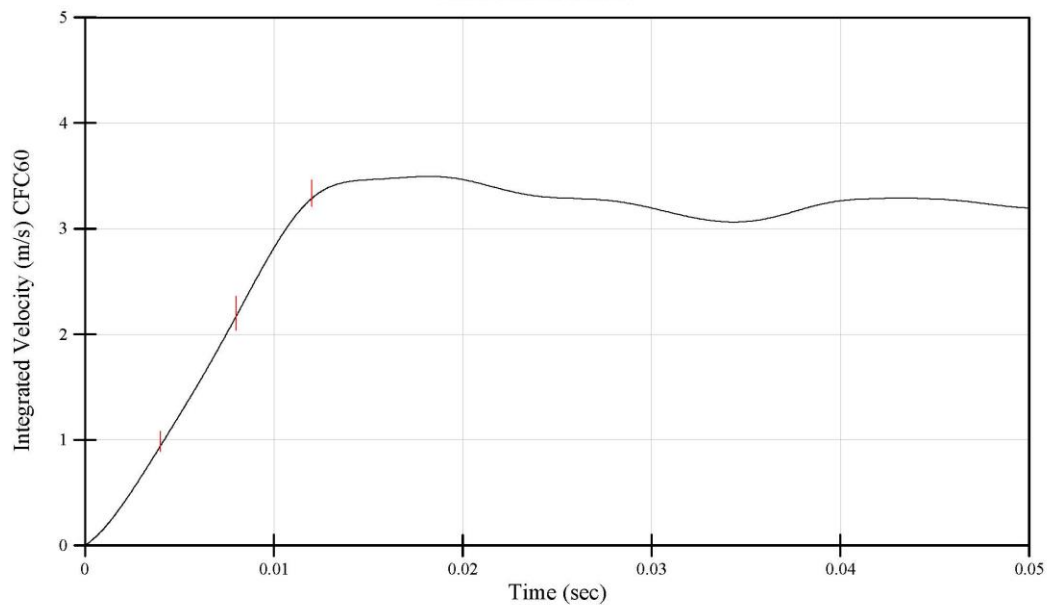


Software Version: 2.6.1

File Name: DL9207NeckFlexion160617-02_Processed
06/17/2016 17:46:16.0000

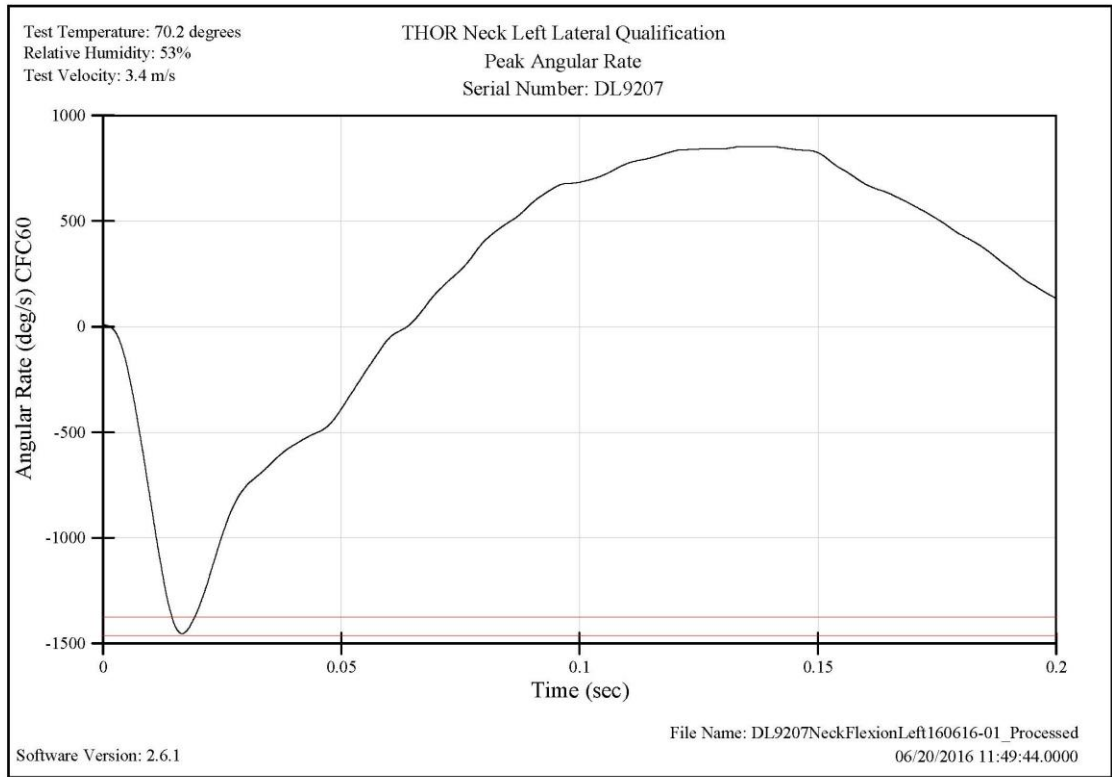
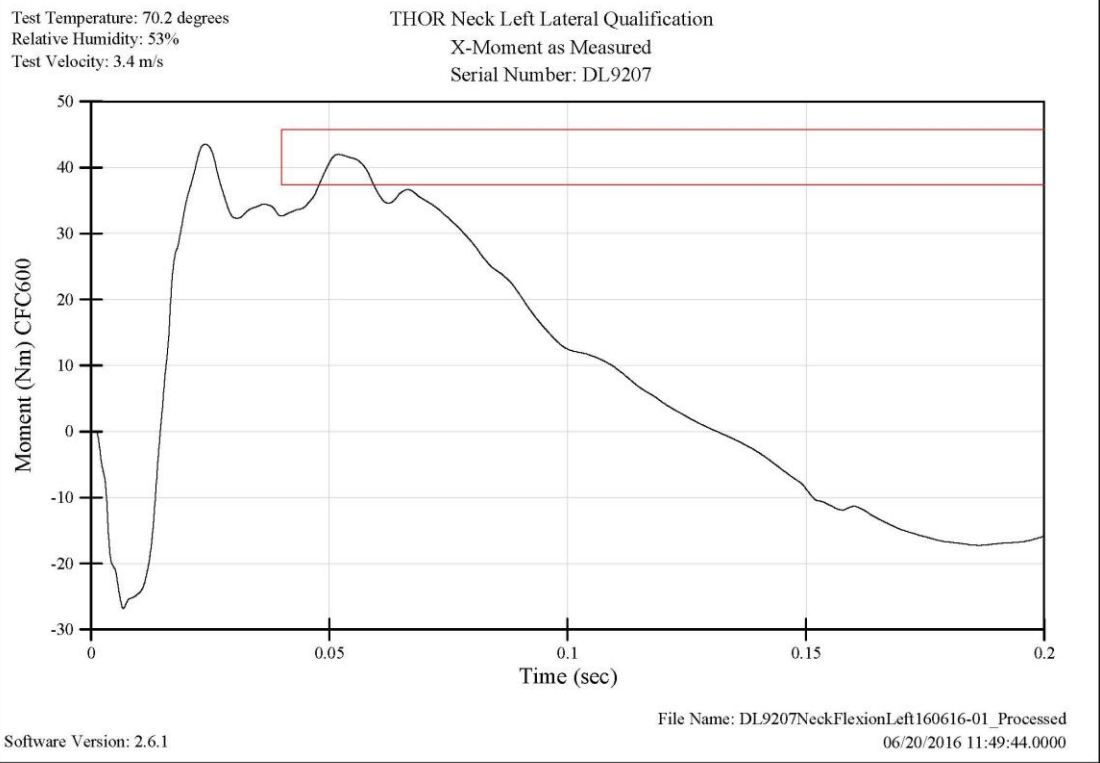
Test Temperature: 70.2 degrees
Relative Humidity: 53%
Test Velocity: 3.4 m/s

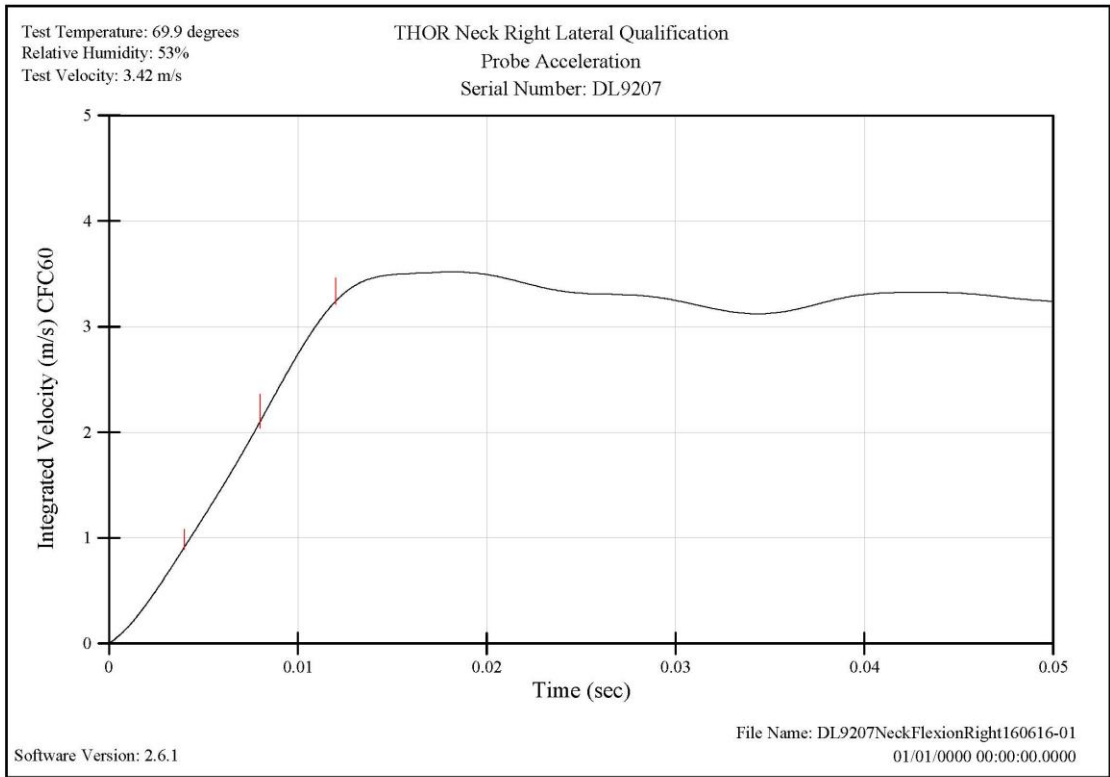
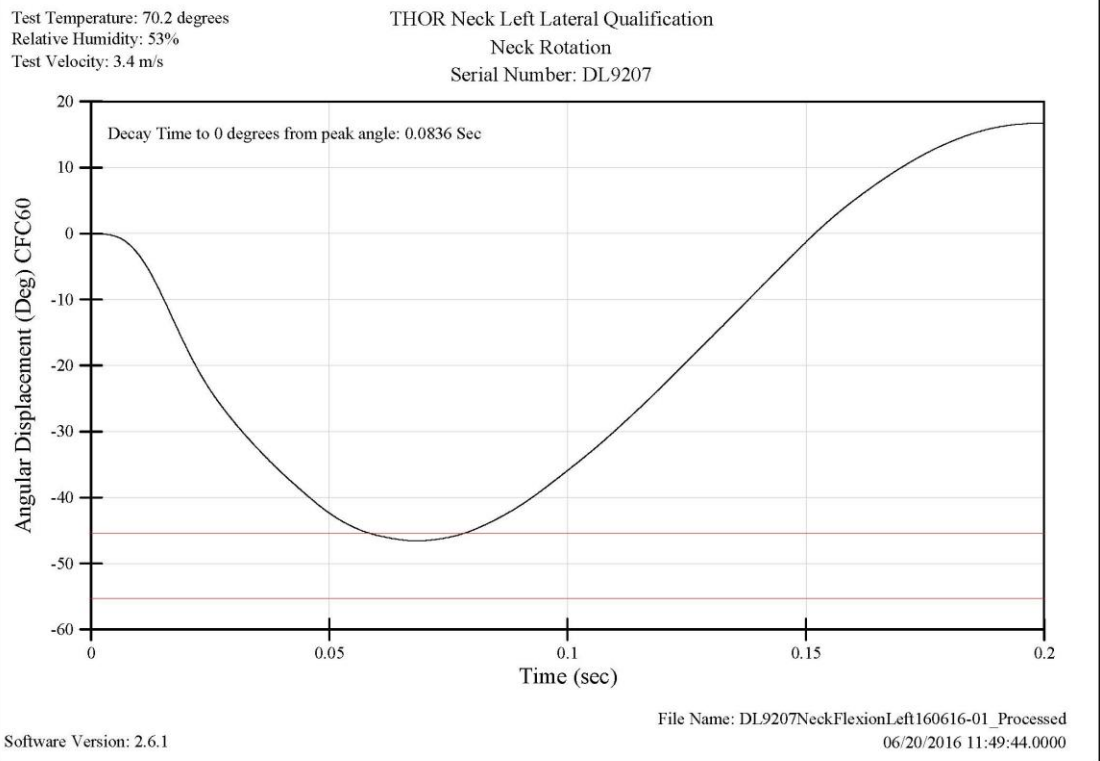
THOR Neck Left Lateral Qualification
Probe Acceleration
Serial Number: DL9207



Software Version: 2.6.1

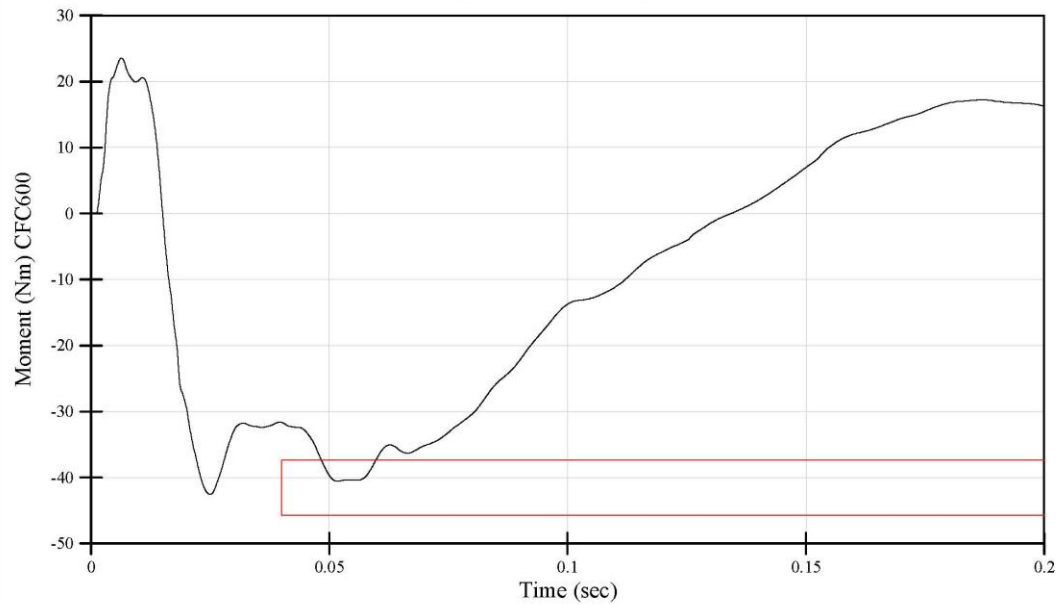
File Name: DL9207NeckFlexionLeft160616-01_Processed
06/20/2016 11:49:44.0000





Test Temperature: 69.9 degrees
Relative Humidity: 53%
Test Velocity: 3.42 m/s

THOR Neck Right Lateral Qualification
X-Moment as Measured
Serial Number: DL9207

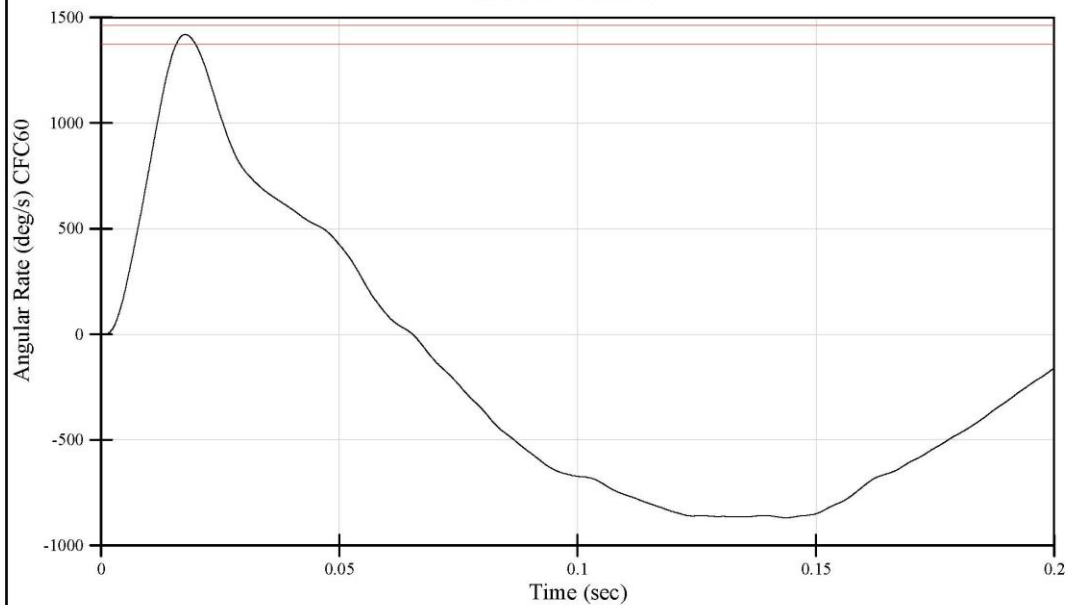


Software Version: 2.6.1

File Name: DL9207NeckFlexionRight160616-01
01/01/0000 00:00:00.0000

Test Temperature: 69.9 degrees
Relative Humidity: 53%
Test Velocity: 3.42 m/s

THOR Neck Right Lateral Qualification
Peak Angular Rate
Serial Number: DL9207

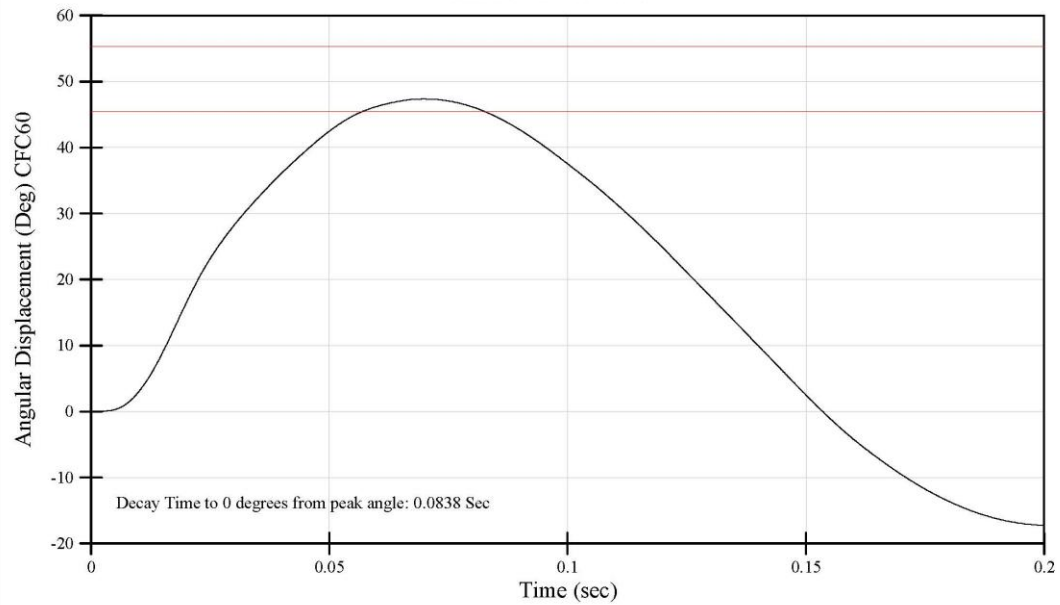


Software Version: 2.6.1

File Name: DL9207NeckFlexionRight160616-01
01/01/0000 00:00:00.0000

Test Temperature: 69.9 degrees
Relative Humidity: 53%
Test Velocity: 3.42 m/s

THOR Neck Right Lateral Qualification
Neck Rotation
Serial Number: DL9207

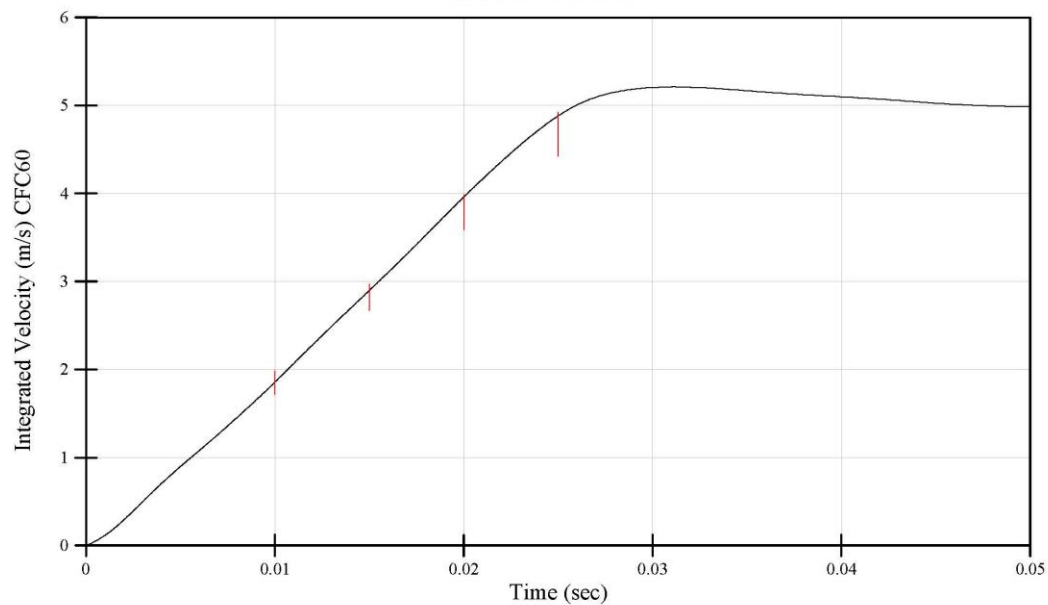


Software Version: 2.6.1

File Name: DL9207NeckFlexionRight160616-01
01/01/0000 00:00:00.0000

Test Temperature: 70.2 degrees
Relative Humidity: 54%
Test Velocity: 5.05 m/s

THOR Neck Left Torsion Qualification
Probe Acceleration
Serial Number: DL9207

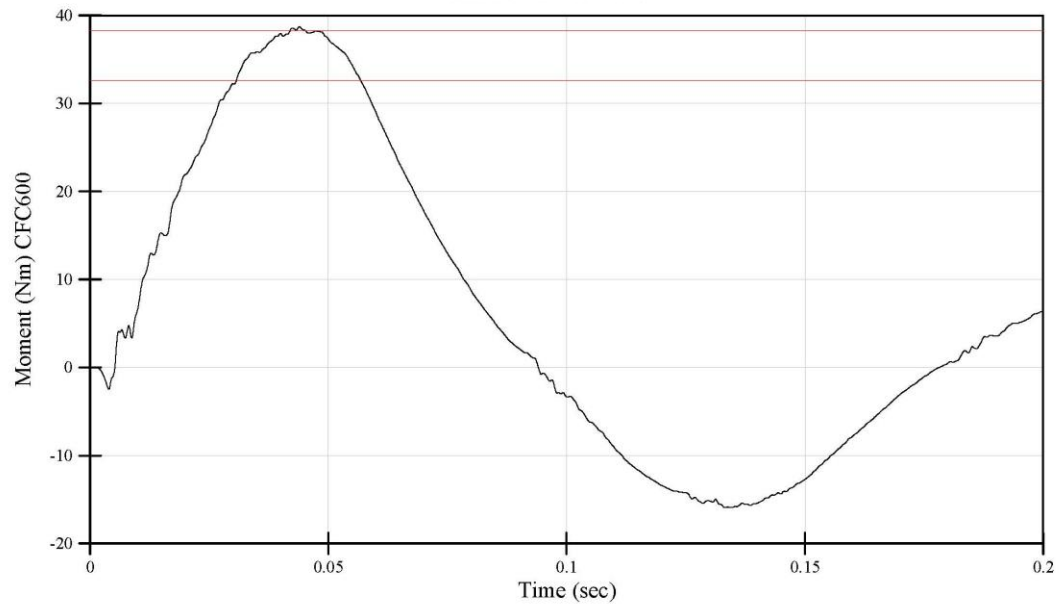


Software Version: 2.6.1

File Name: DL9207NeckTorsionLeft160616-02_Processed_bias removed
06/17/2016 15:35:57.0000

Test Temperature: 70.2 degrees
Relative Humidity: 54%
Test Velocity: 5.05 m/s

THOR Neck Left Torsion Qualification
Z-Moment as Measured
Serial Number: DL9207

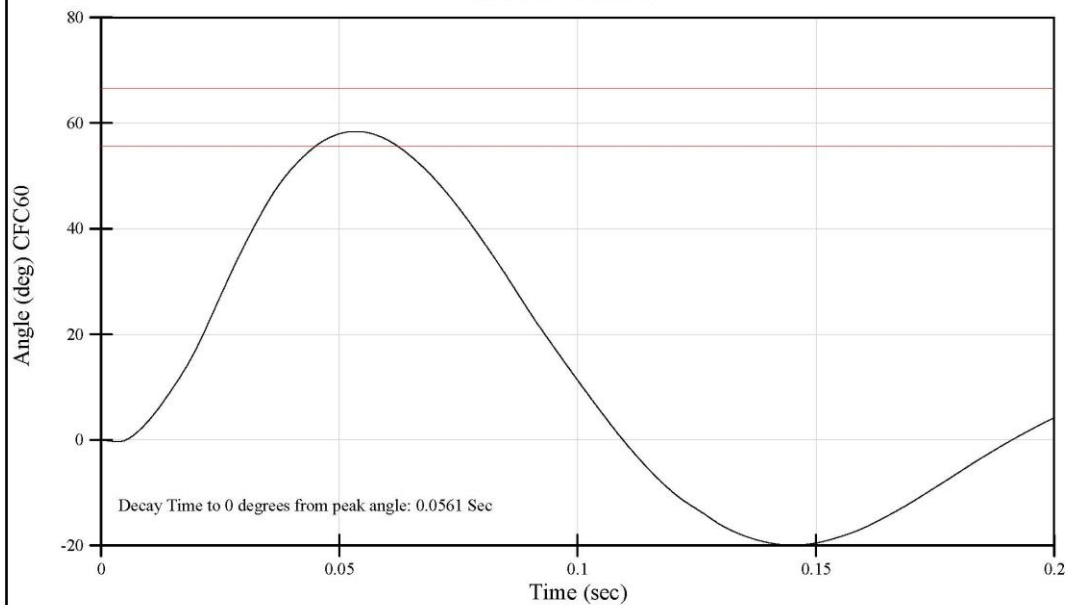


Software Version: 2.6.1

File Name: DL9207NeckTorsionLeft160616-02_Processed_bias removed
06/17/2016 15:35:57.0000

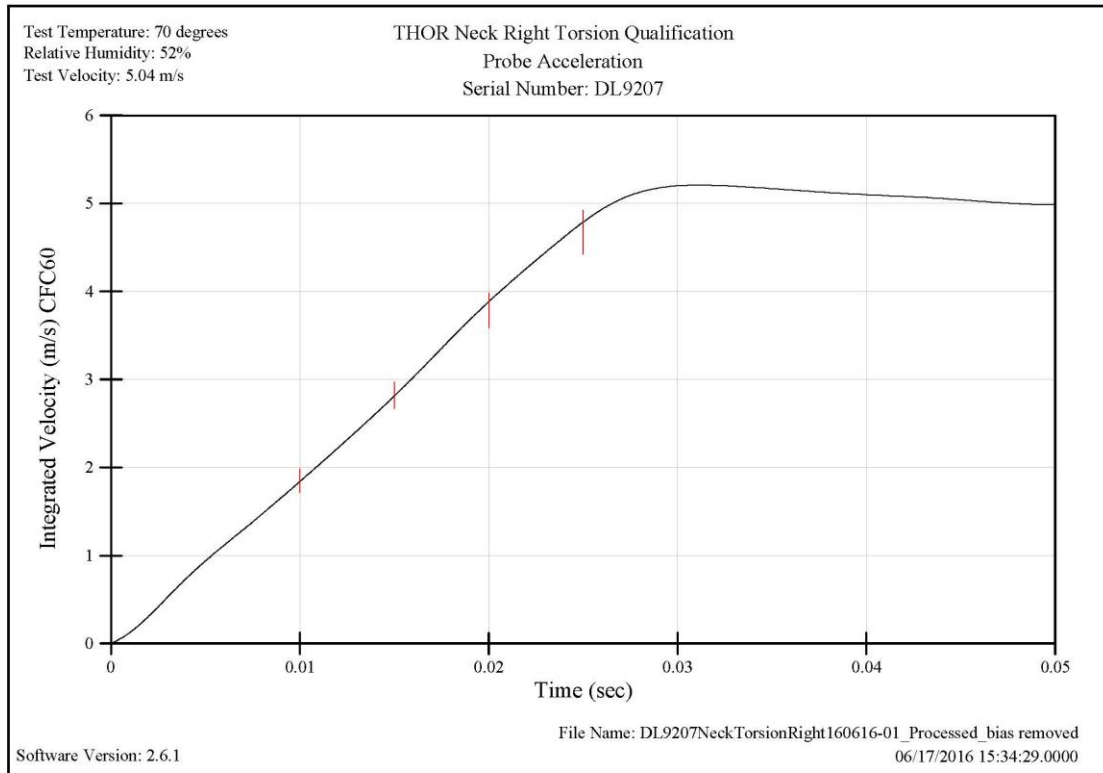
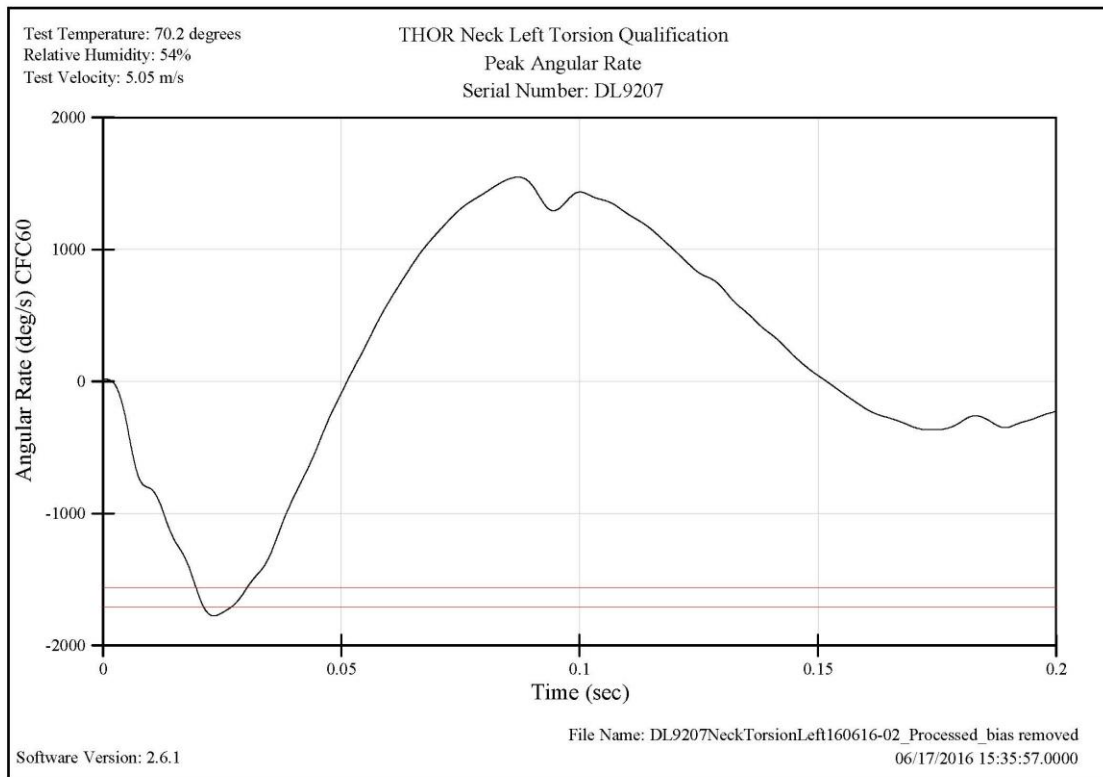
Test Temperature: 70.2 degrees
Relative Humidity: 54%
Test Velocity: 5.05 m/s

THOR Neck Left Torsion Qualification
Neck Fixture Rotation
Serial Number: DL9207



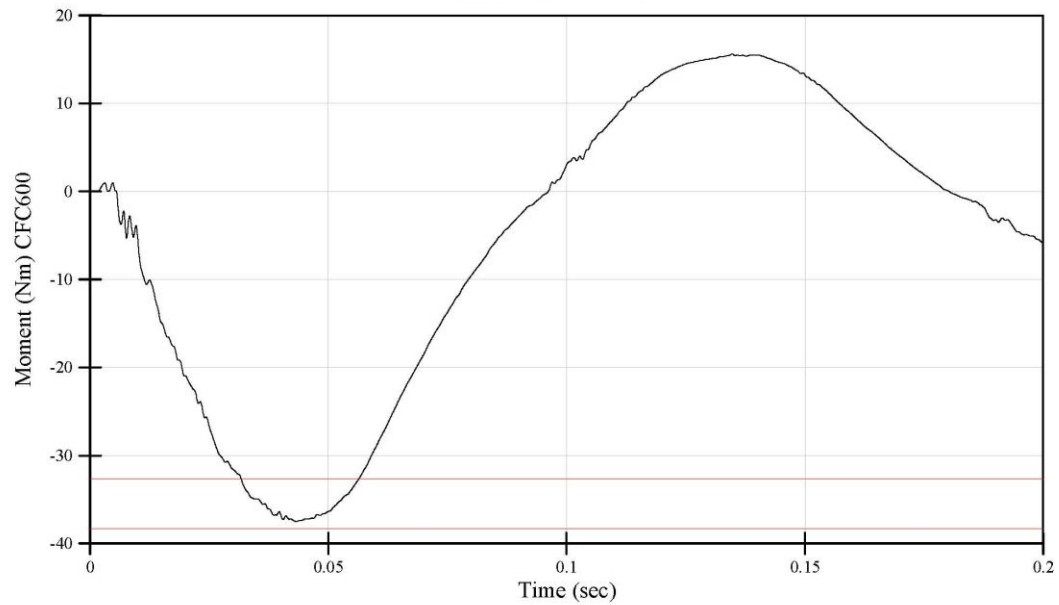
Software Version: 2.6.1

File Name: DL9207NeckTorsionLeft160616-02_Processed_bias removed
06/17/2016 15:35:57.0000



Test Temperature: 70 degrees
Relative Humidity: 52%
Test Velocity: 5.04 m/s

THOR Neck Right Torsion Qualification
Z-Moment as Measured
Serial Number: DL9207

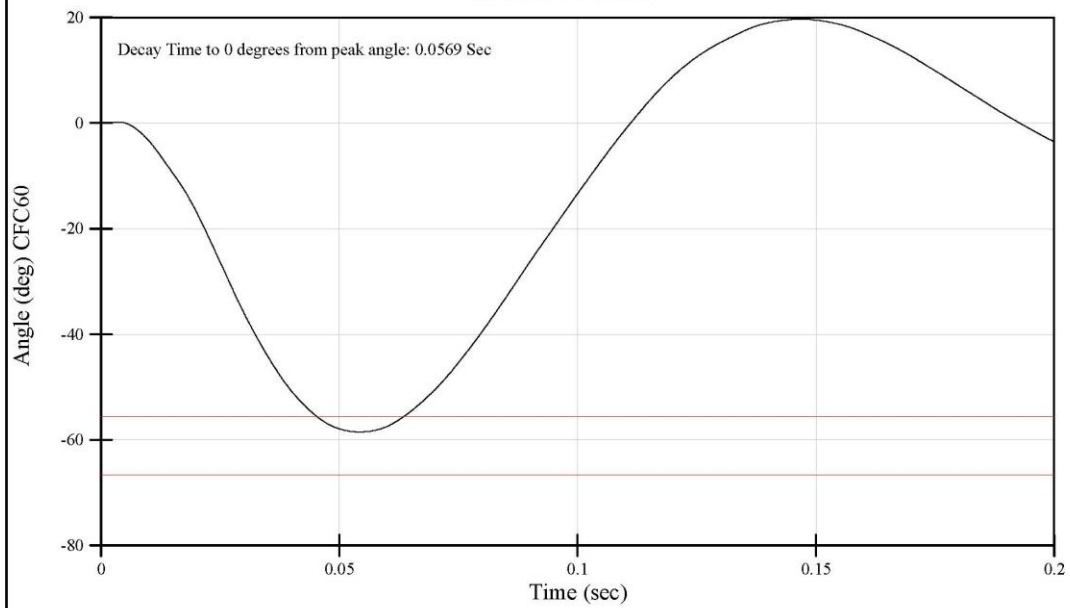


Software Version: 2.6.1

File Name: DL9207NeckTorsionRight160616-01_Processed_bias removed
06/17/2016 15:34:29.0000

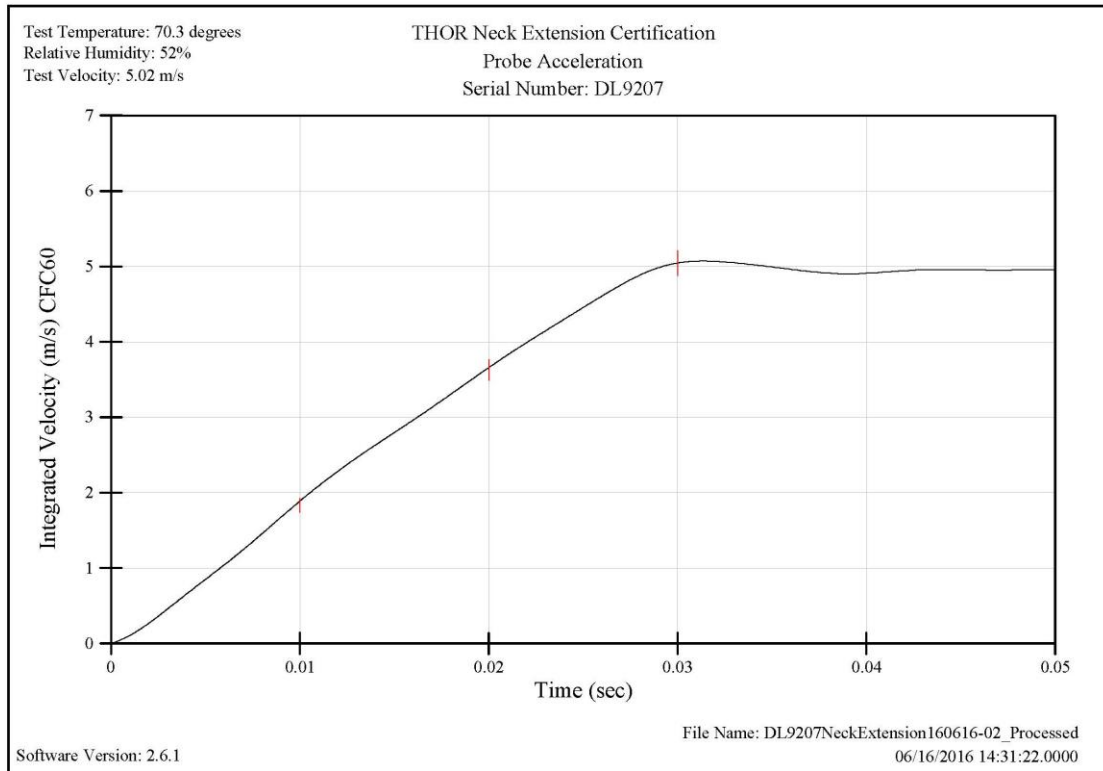
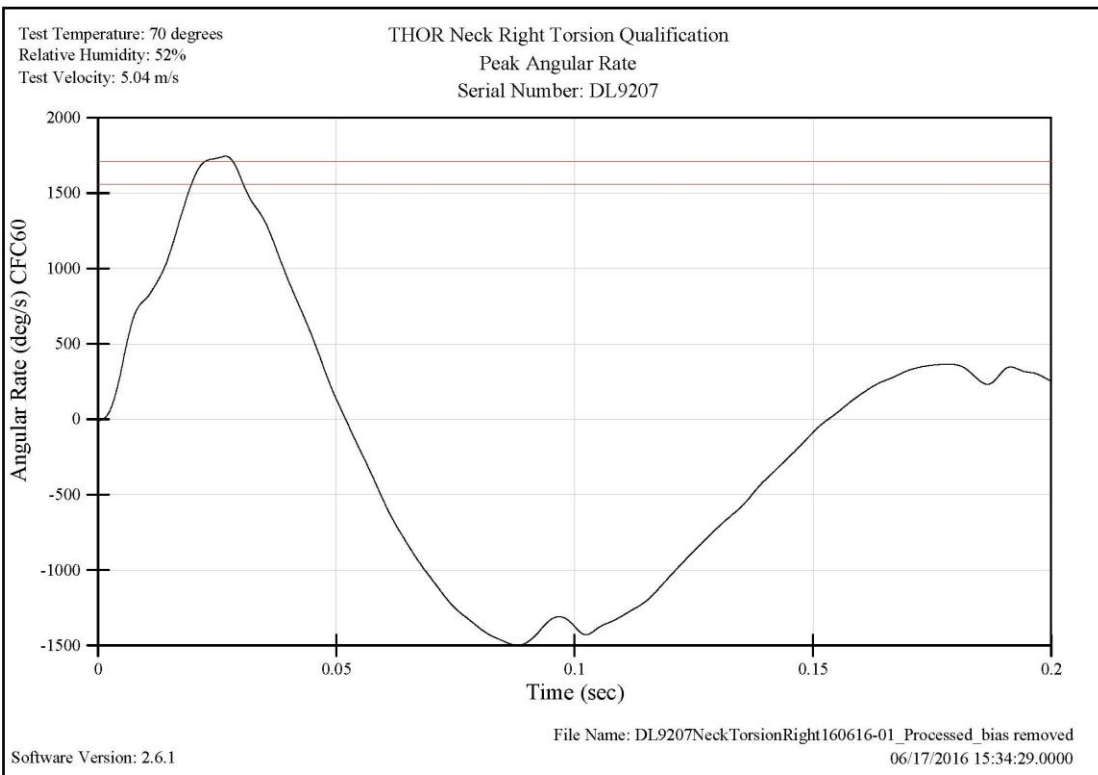
Test Temperature: 70 degrees
Relative Humidity: 52%
Test Velocity: 5.04 m/s

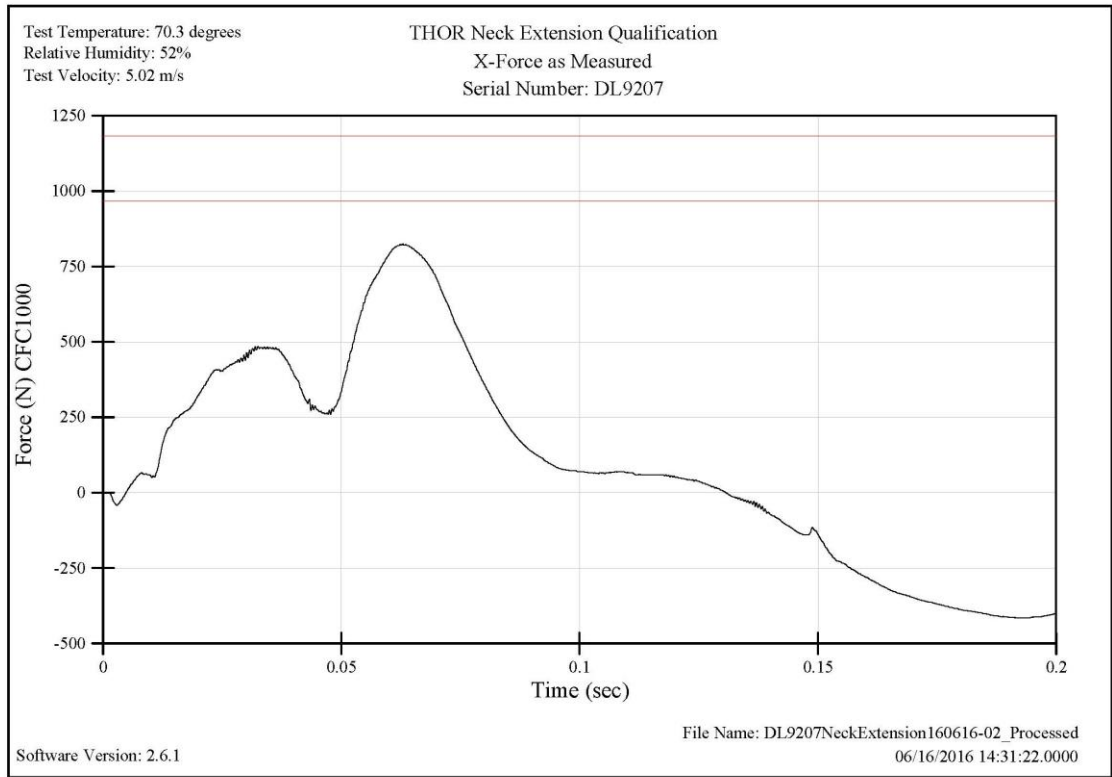
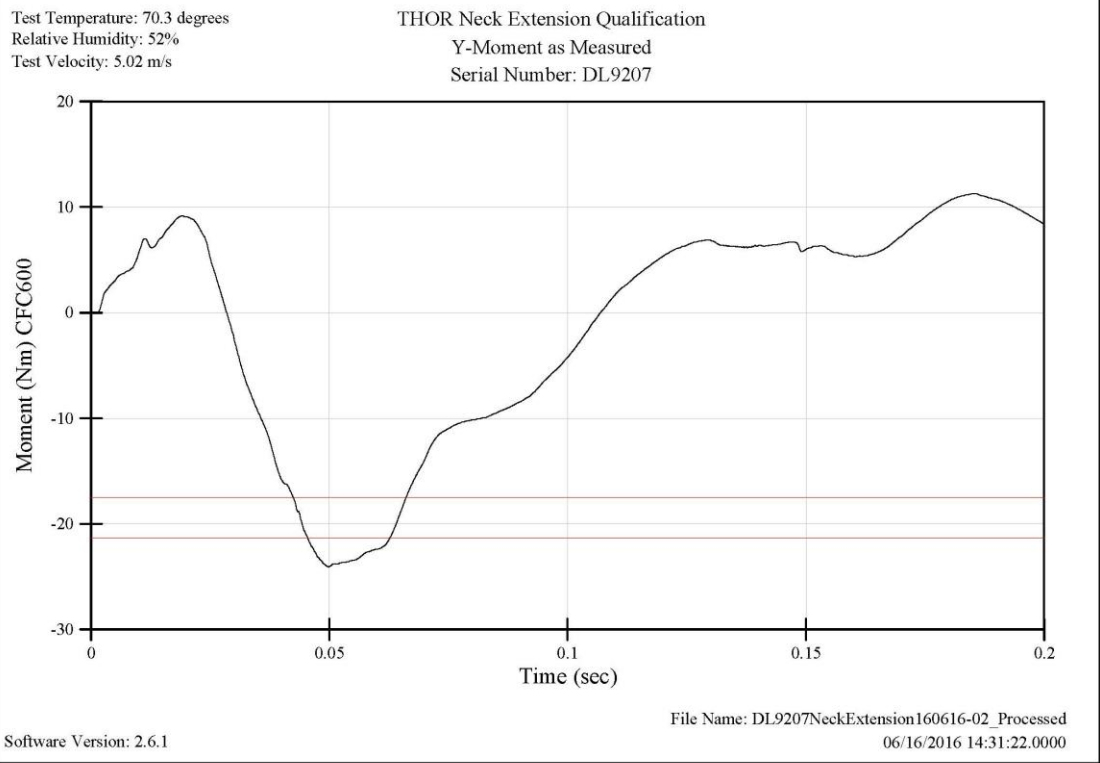
THOR Neck Right Torsion Qualification
Neck Fixture Rotation
Serial Number: DL9207

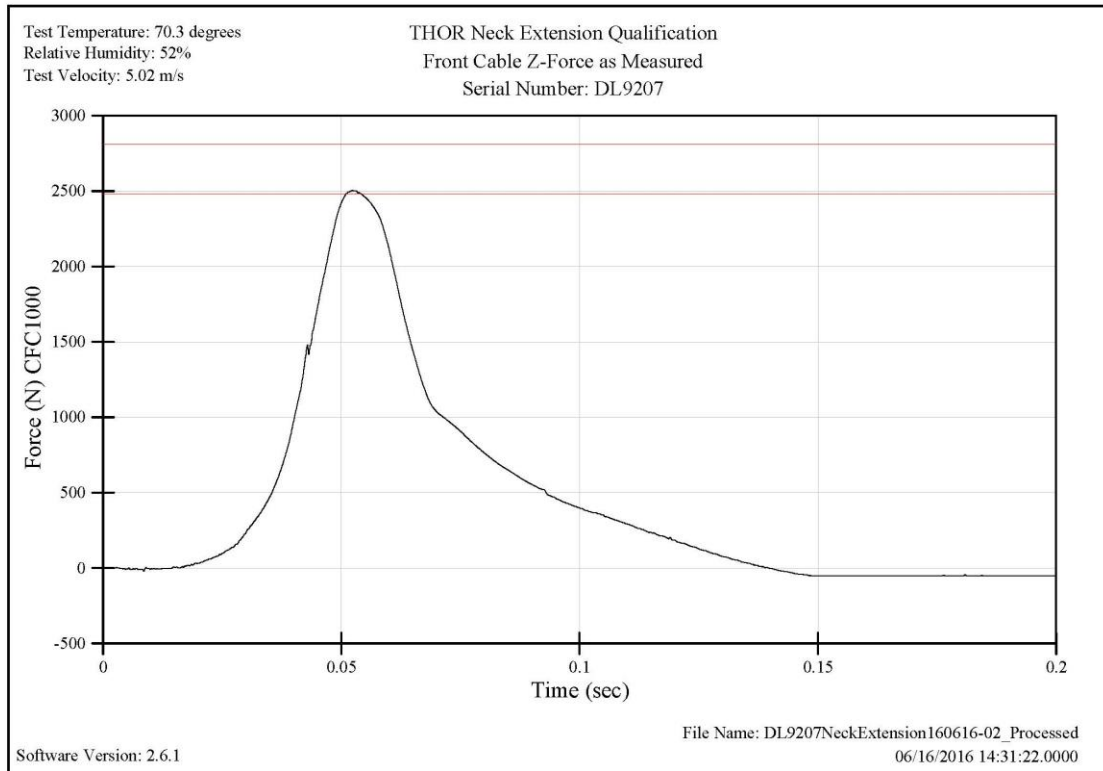
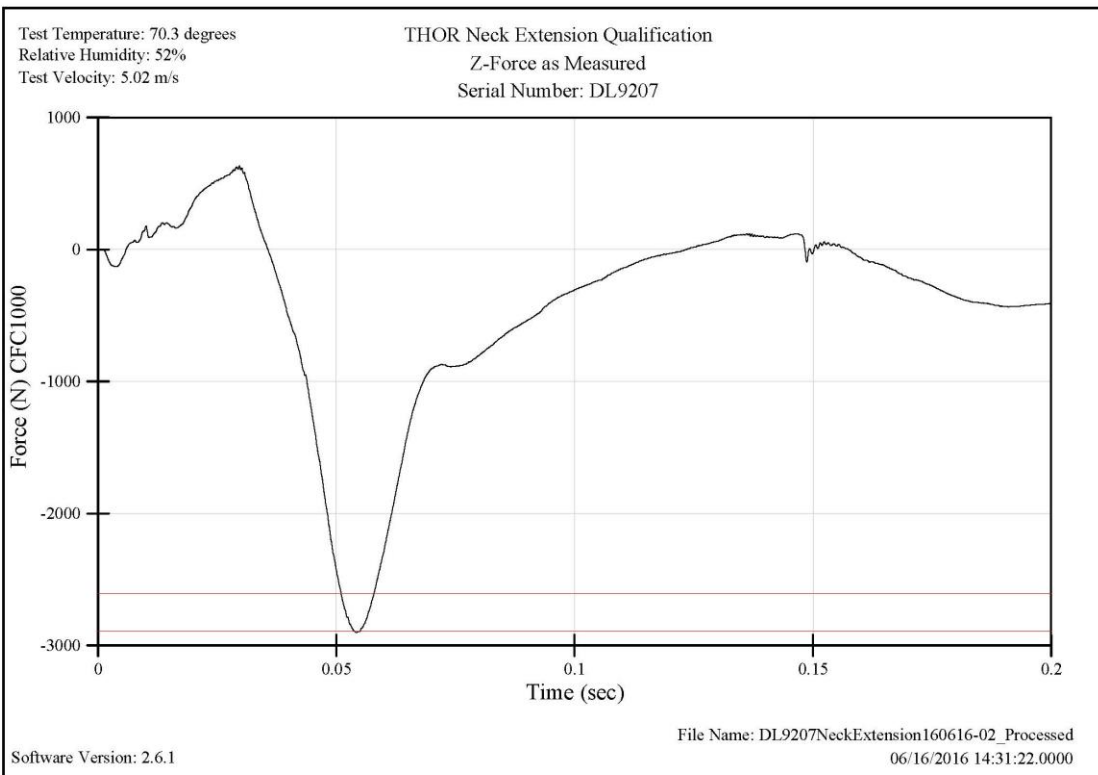


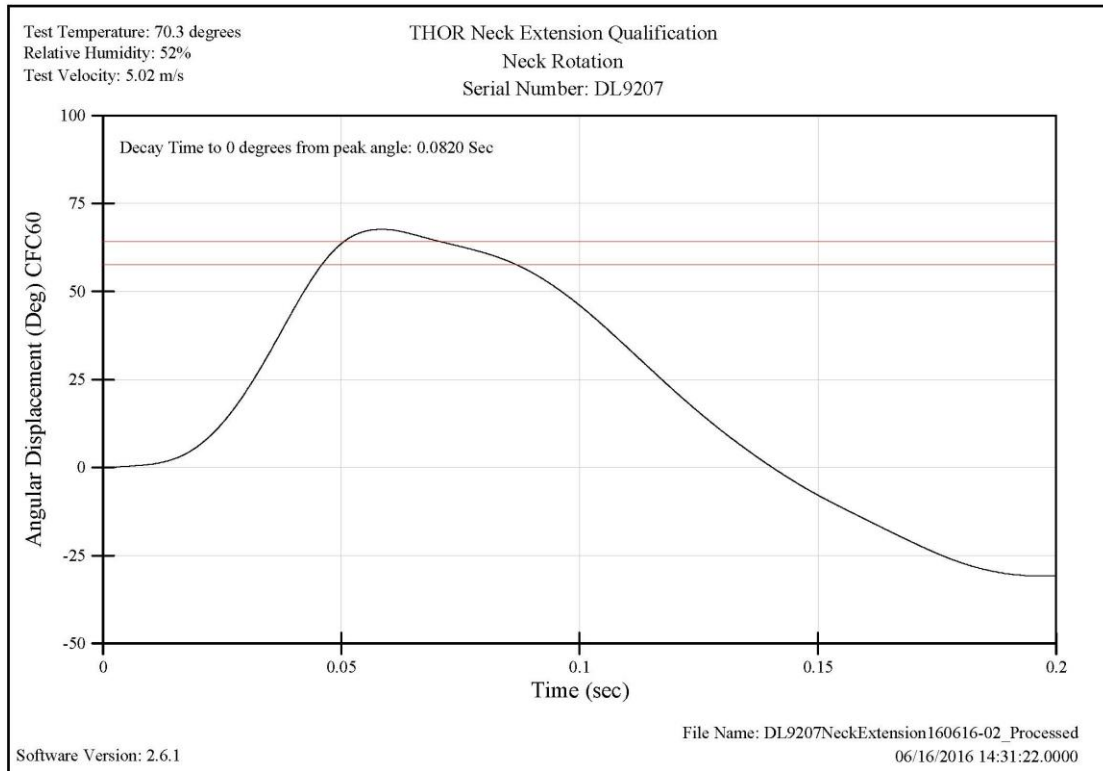
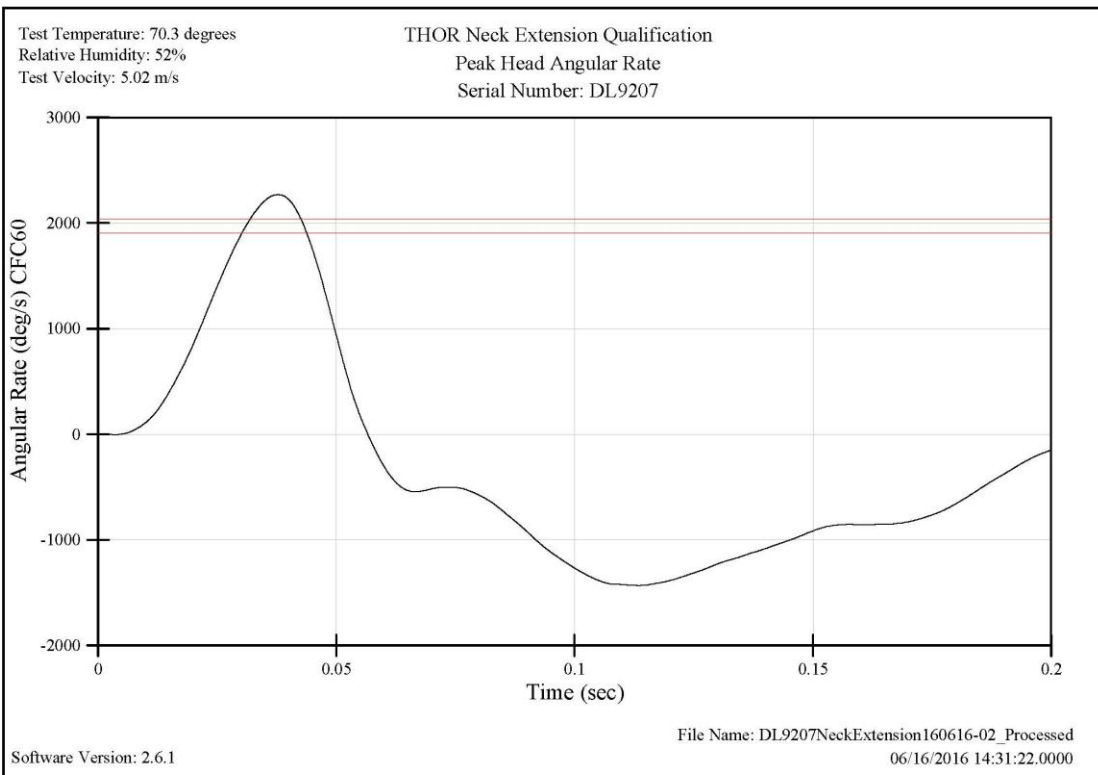
Software Version: 2.6.1

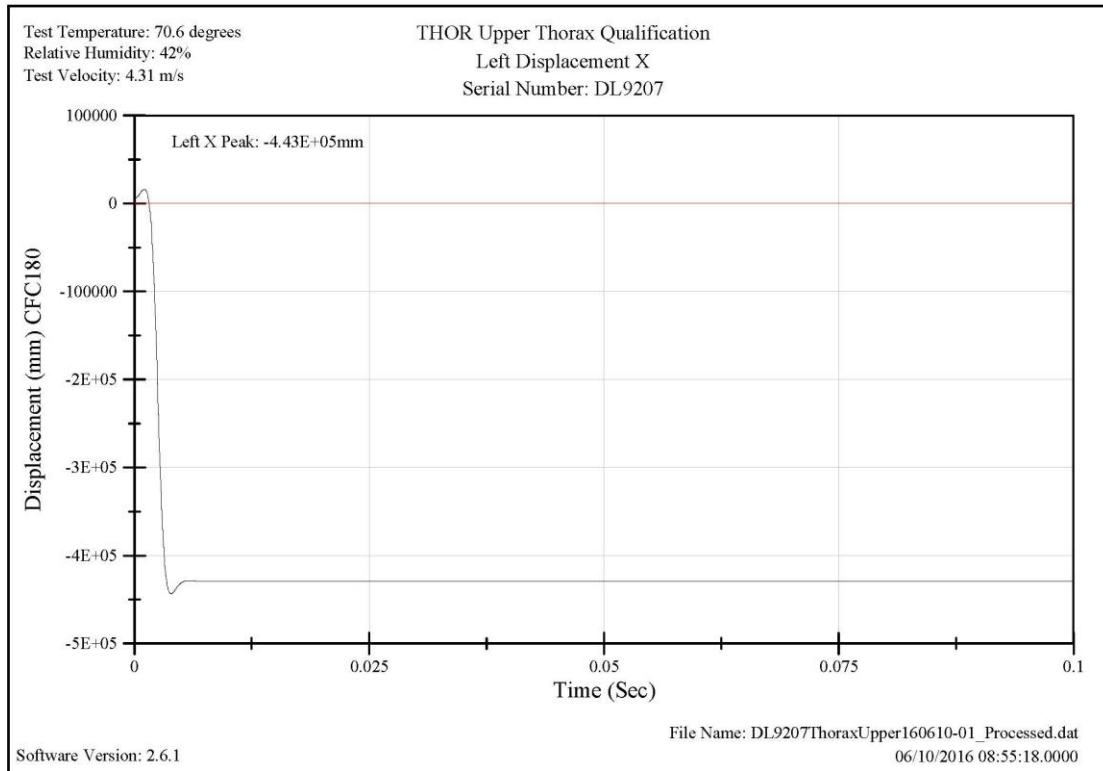
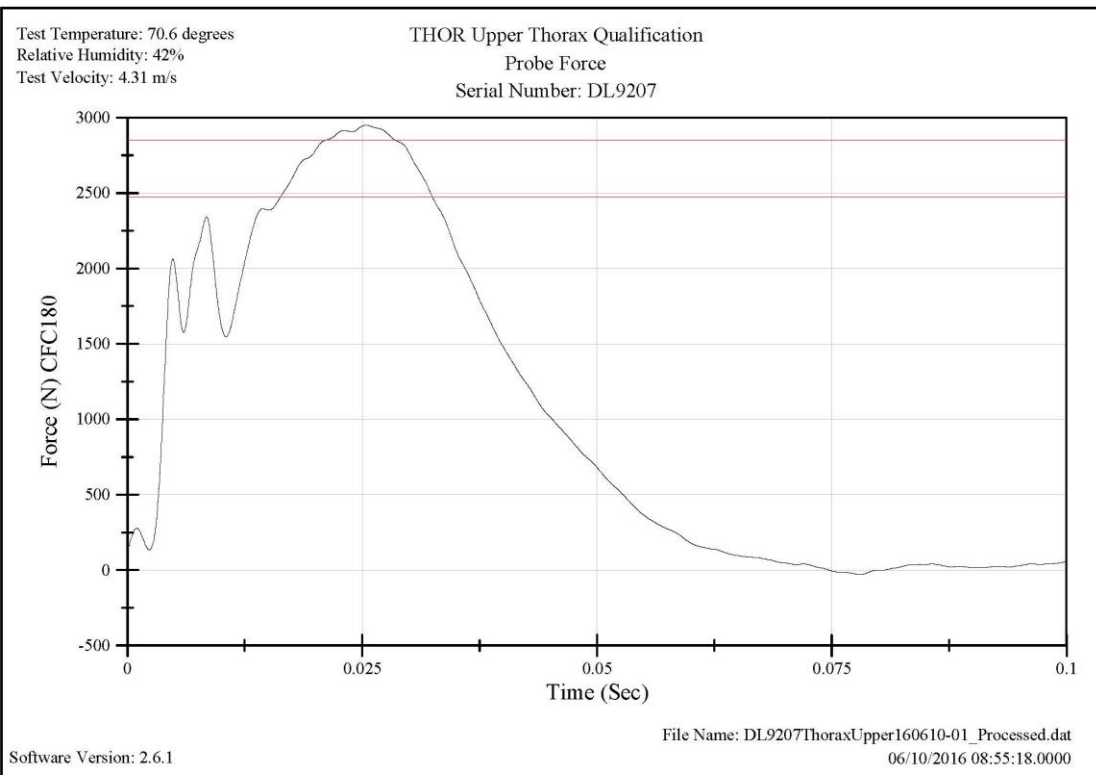
File Name: DL9207NeckTorsionRight160616-01_Processed_bias removed
06/17/2016 15:34:29.0000

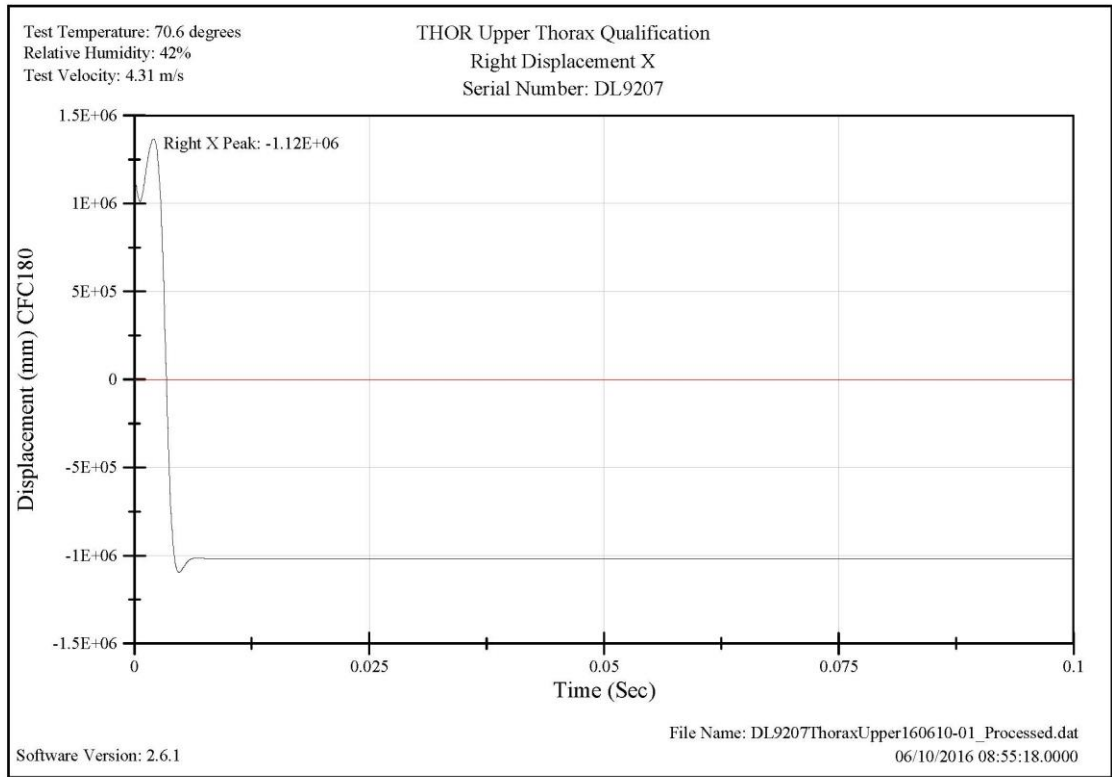
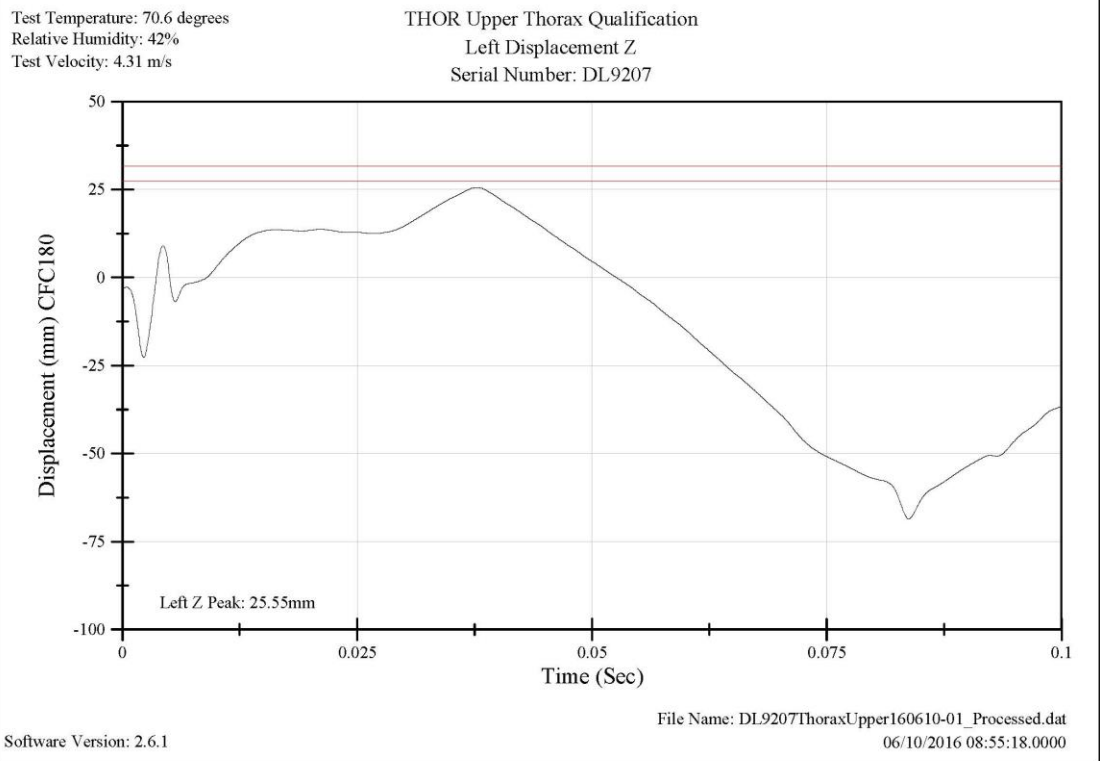


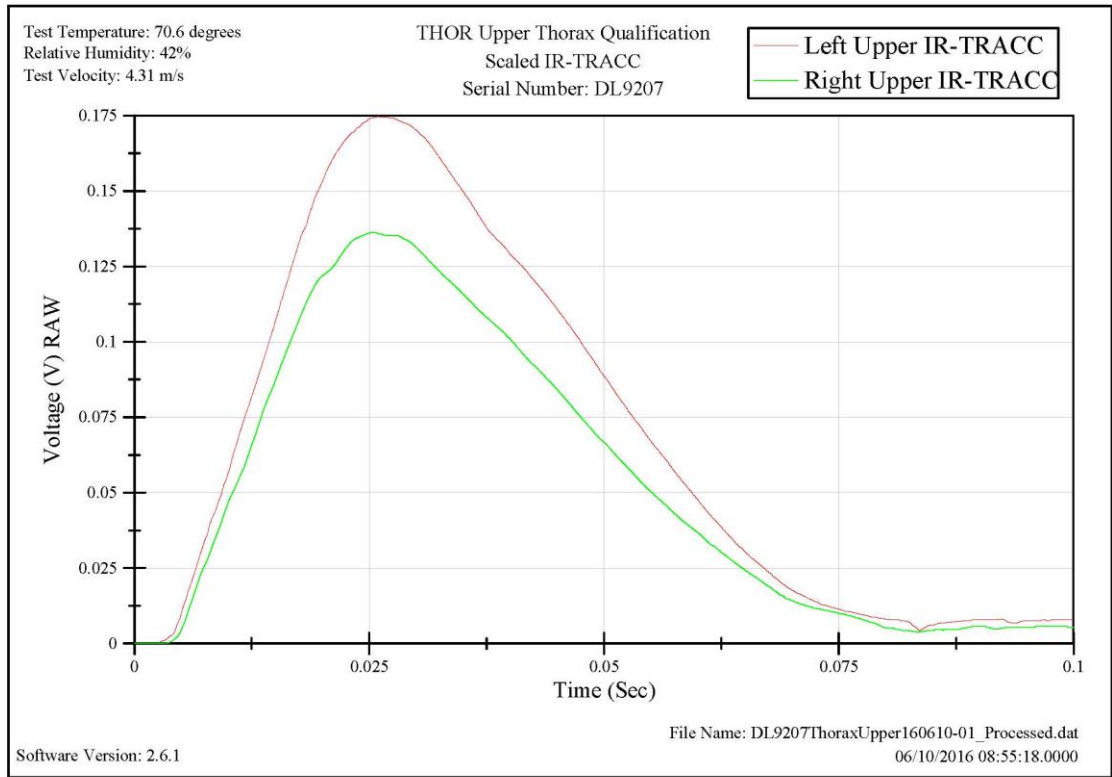
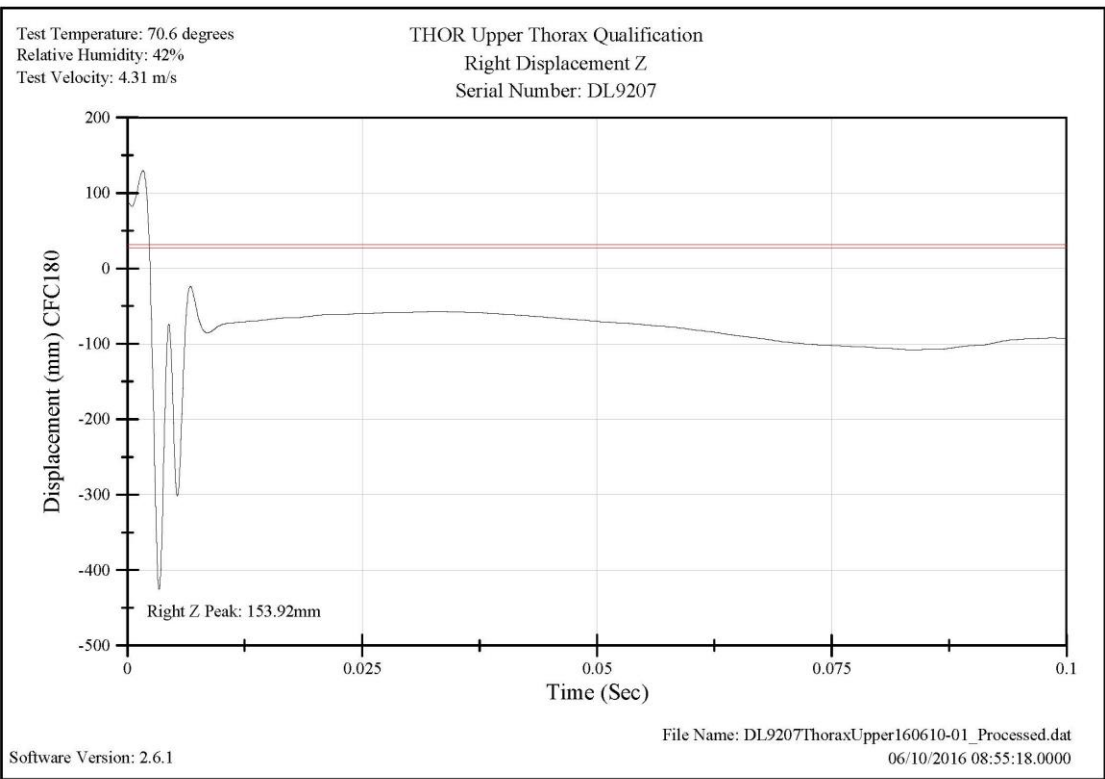


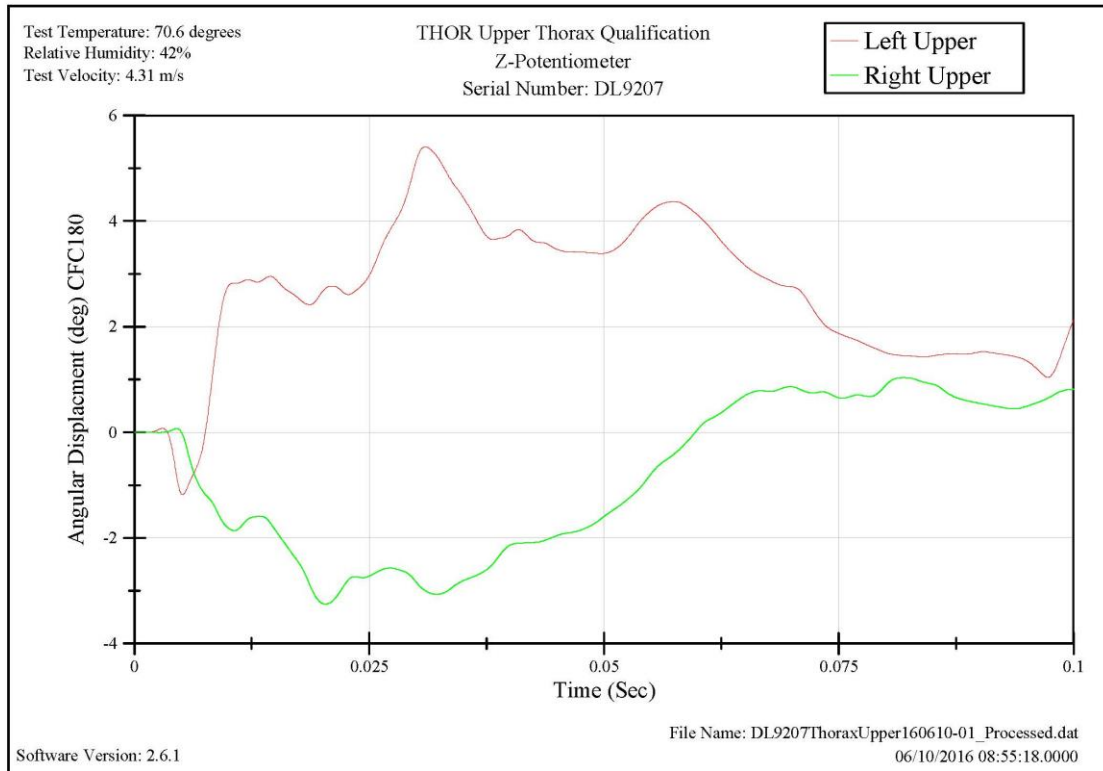
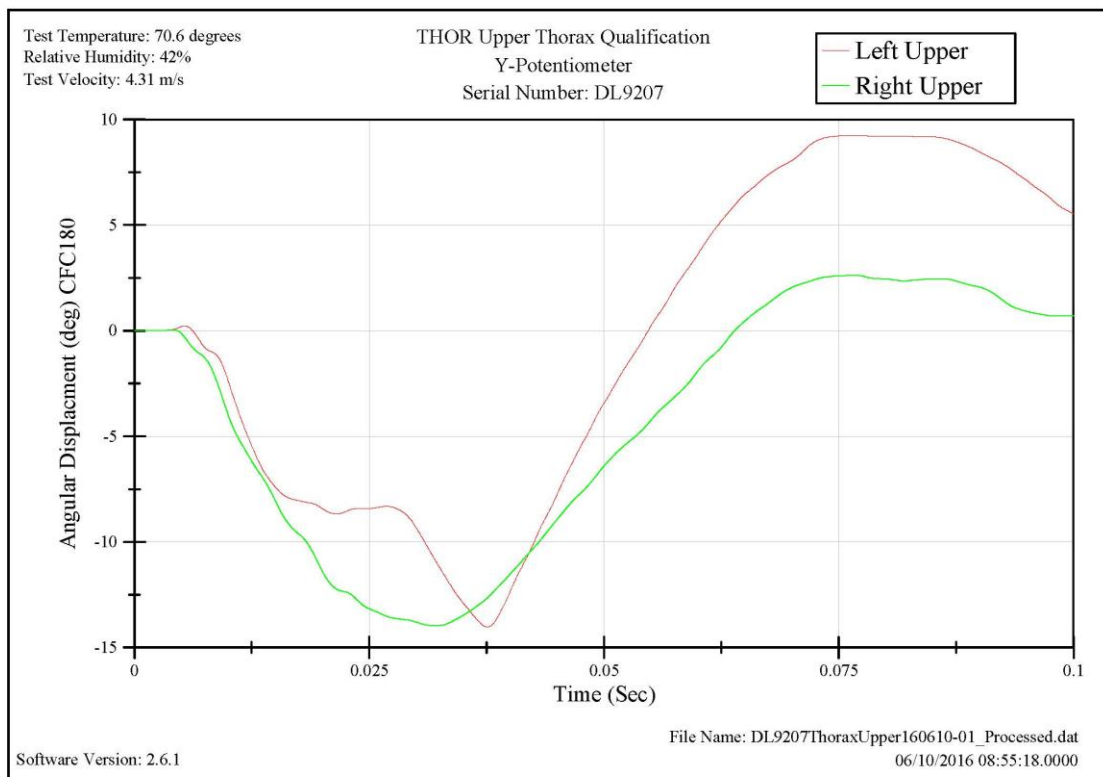






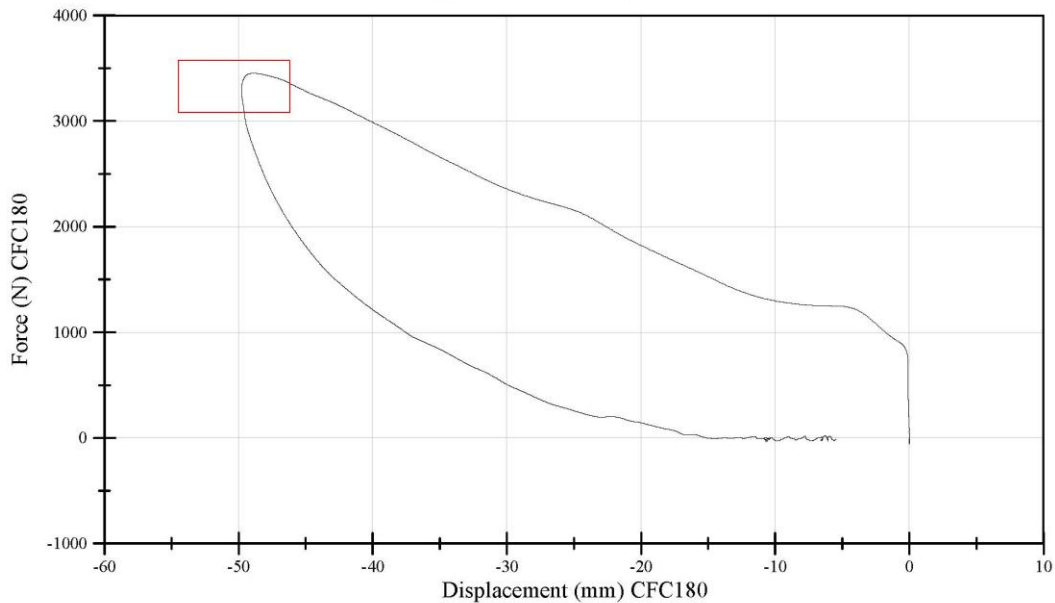






Test Temperature: 70.7 degrees
Relative Humidity: 48%
Test Velocity: 4.29 m/s

THOR Lower Left Thorax Qualification
Left Thorax X Displacement
Serial Number: DL9207

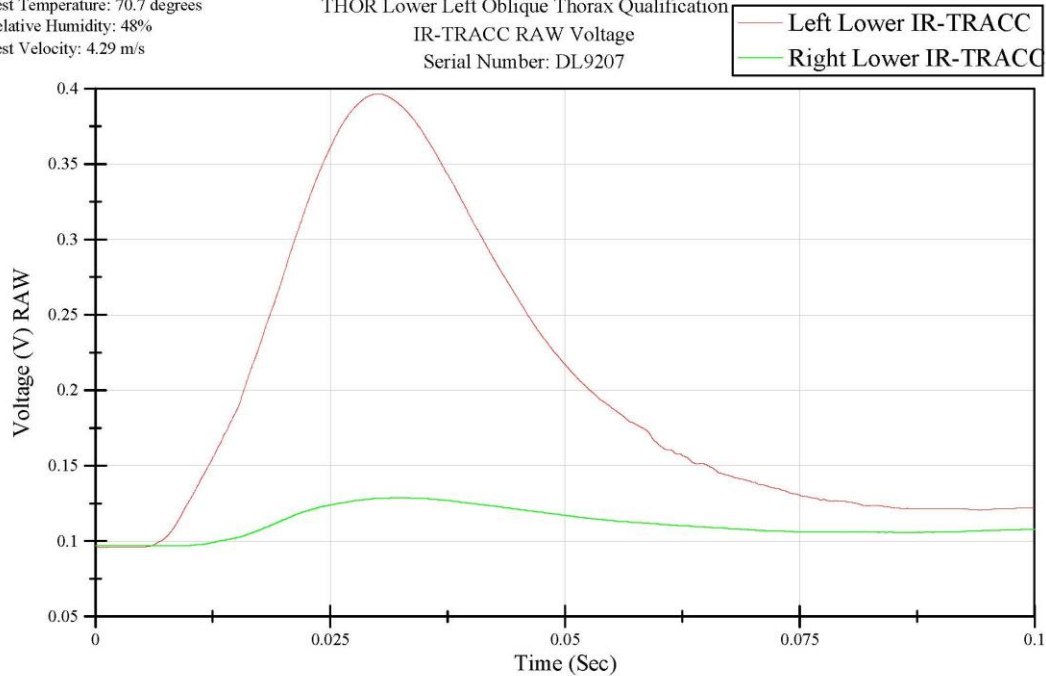


Software Version: 2.6.1

File Name: DL9207ThoraxLowerLeft160610-01
01/01/0000 00:00:00.0000

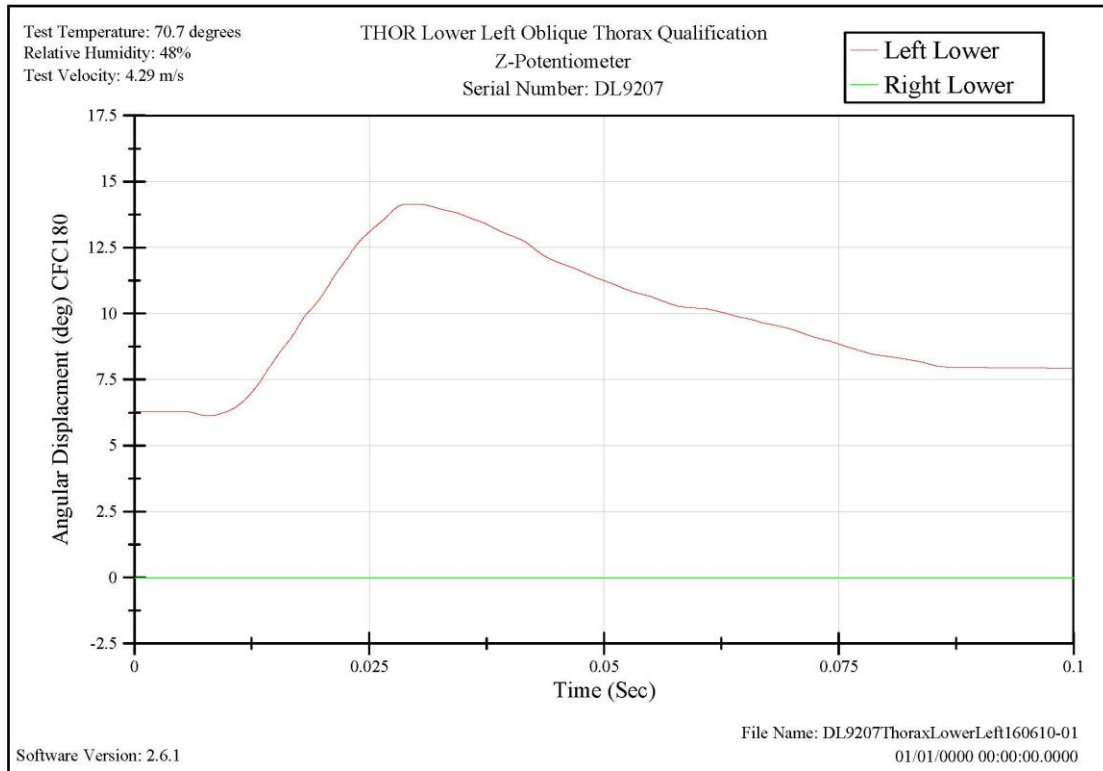
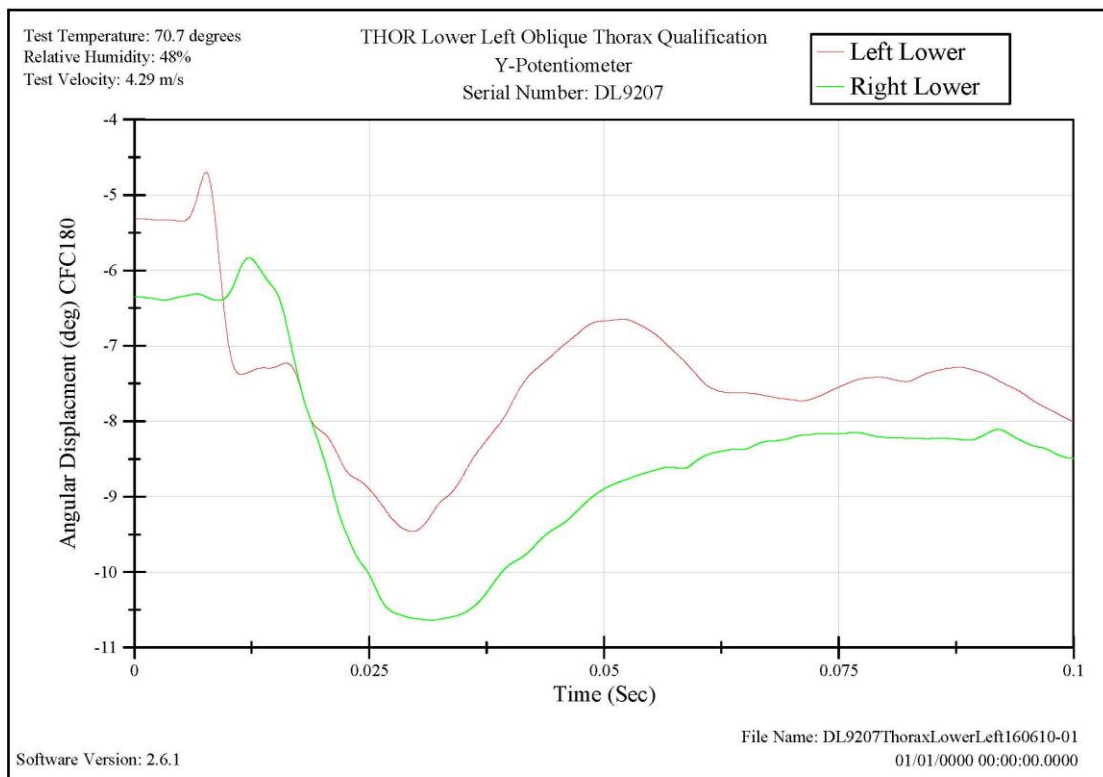
Test Temperature: 70.7 degrees
Relative Humidity: 48%
Test Velocity: 4.29 m/s

THOR Lower Left Oblique Thorax Qualification
IR-TRACC RAW Voltage
Serial Number: DL9207



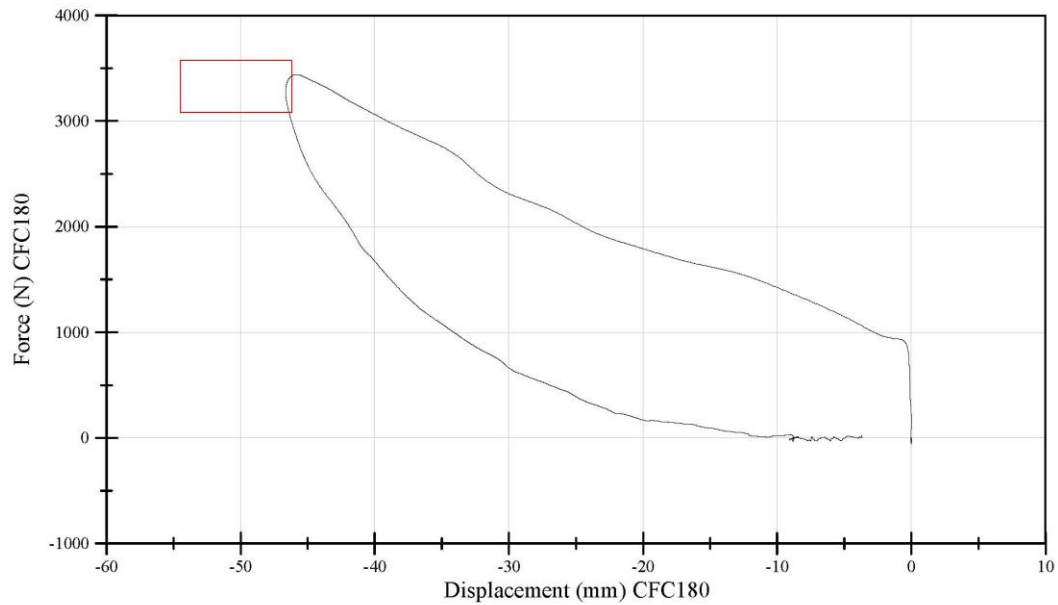
Software Version: 2.6.1

File Name: DL9207ThoraxLowerLeft160610-01
01/01/0000 00:00:00.0000



Test Temperature: 70.1 degrees
Relative Humidity: 41%
Test Velocity: 4.29 m/s

THOR Lower Right Thorax Qualification
Right Thorax X Displacement
Serial Number: DL9207

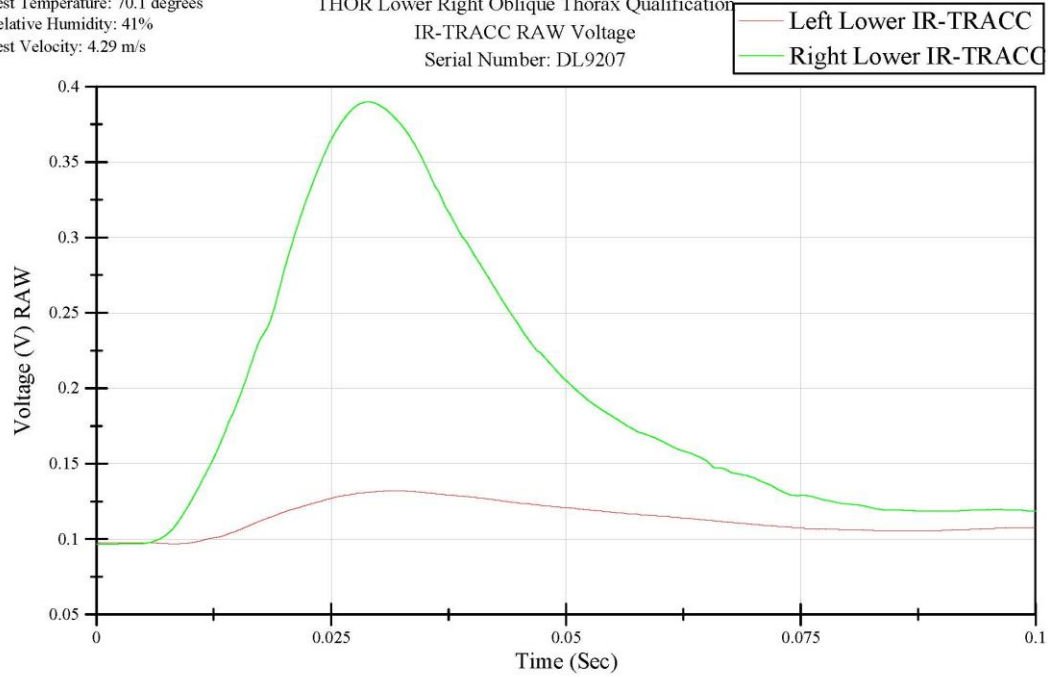


Software Version: 2.6.1

File Name: DL9207ThoraxLowerRight160610-01_Processed
06/10/2016 10:42:46.0000

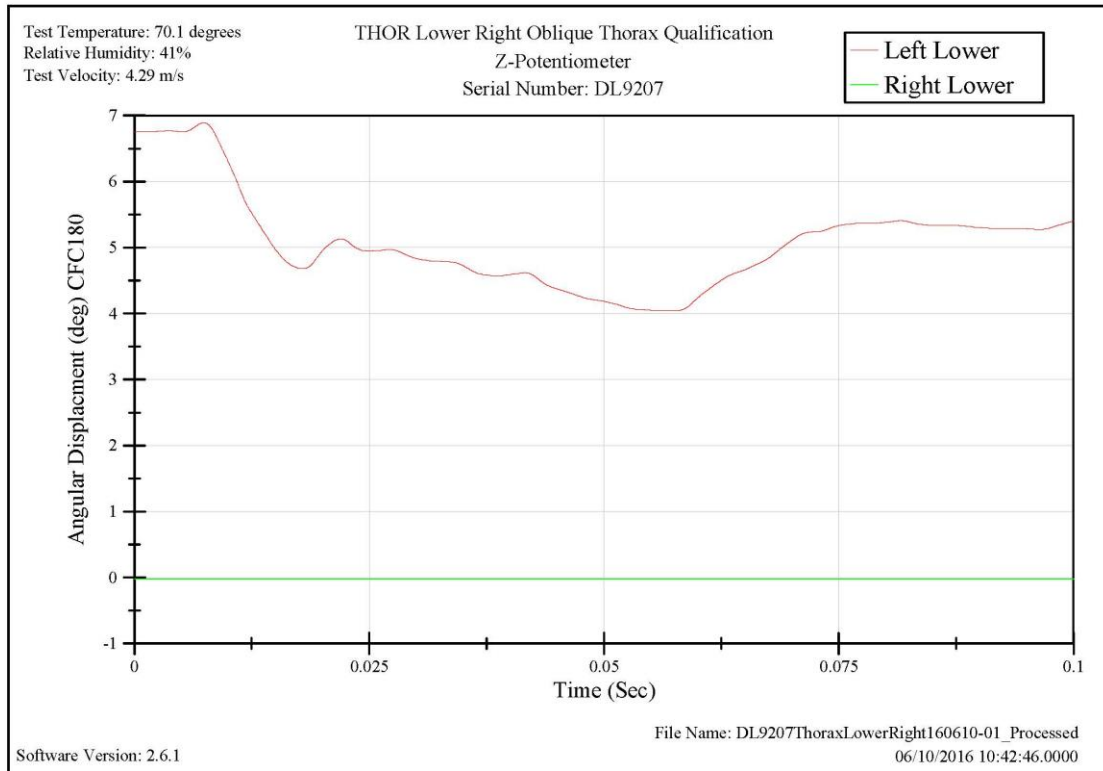
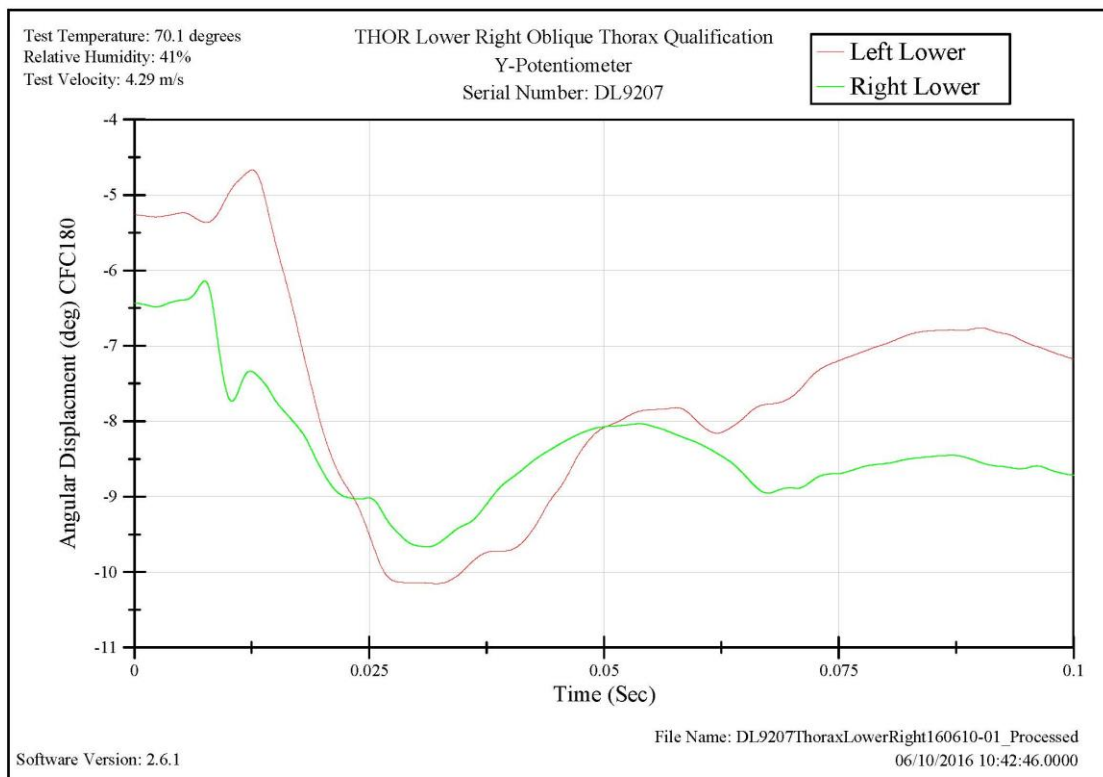
Test Temperature: 70.1 degrees
Relative Humidity: 41%
Test Velocity: 4.29 m/s

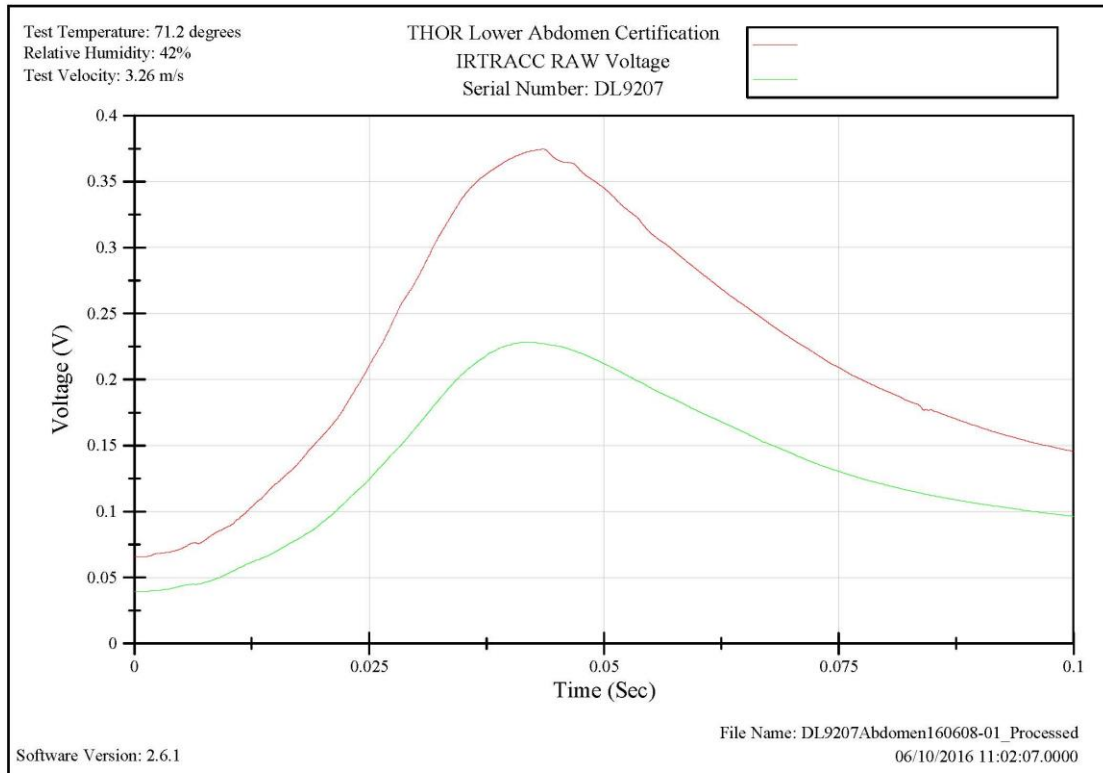
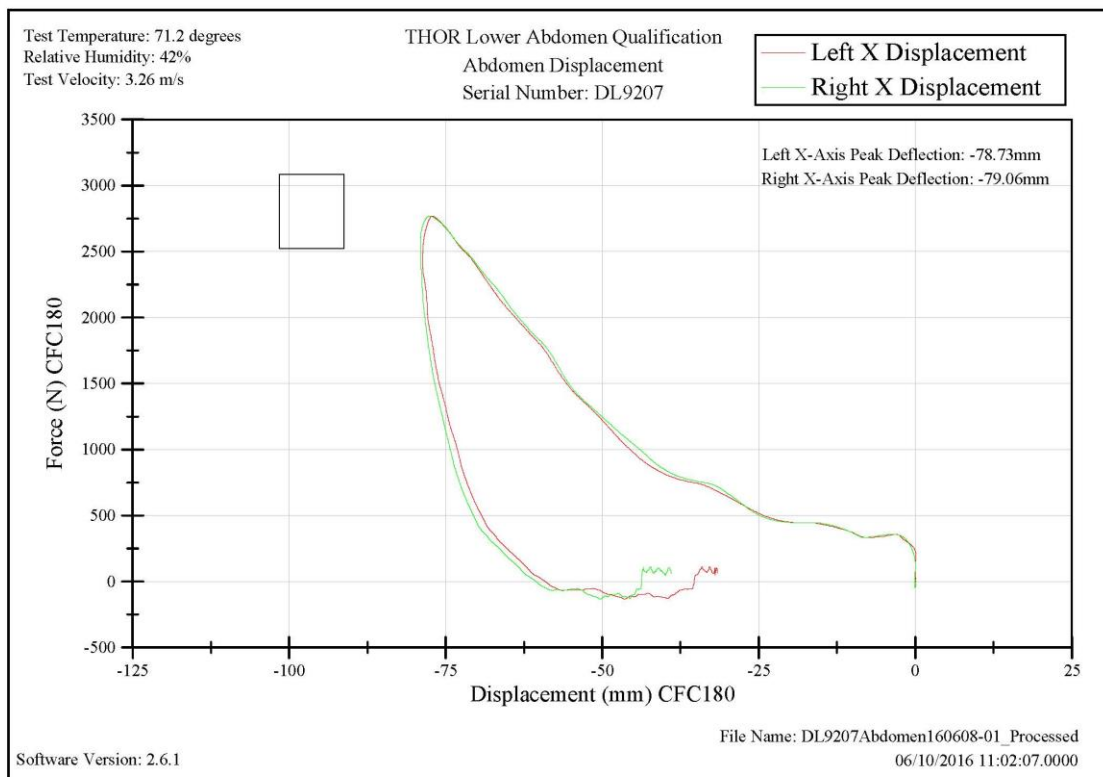
THOR Lower Right Oblique Thorax Qualification
IR-TRACC RAW Voltage
Serial Number: DL9207

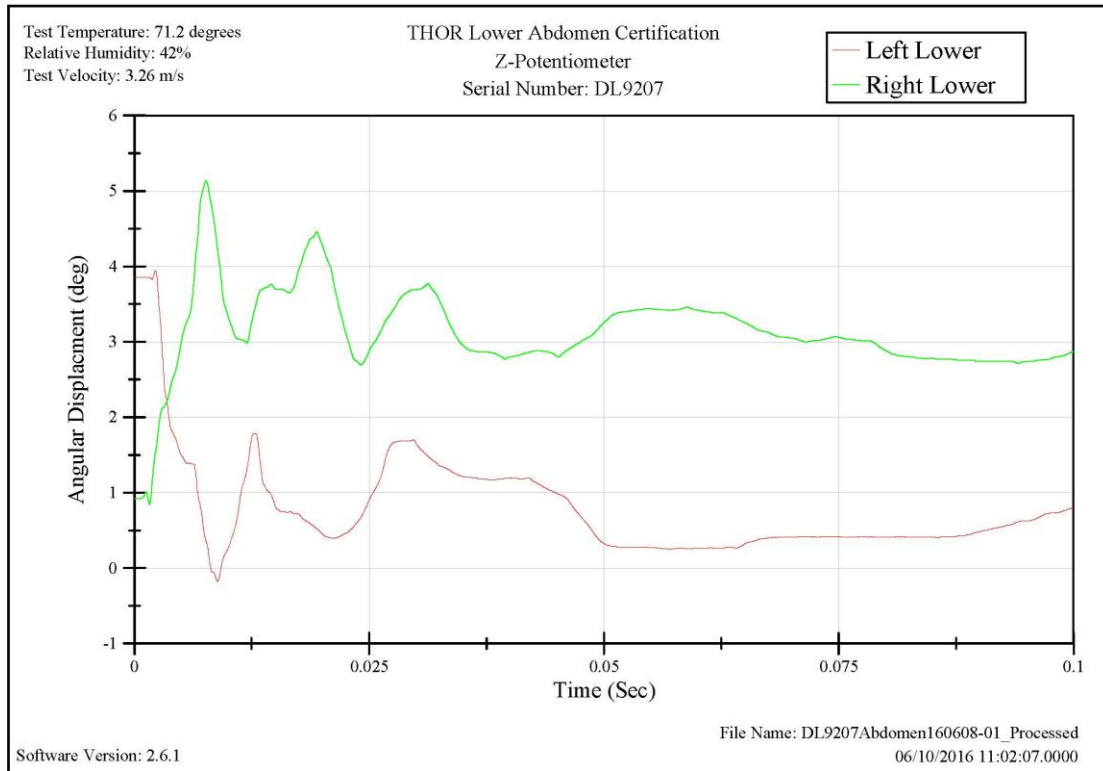
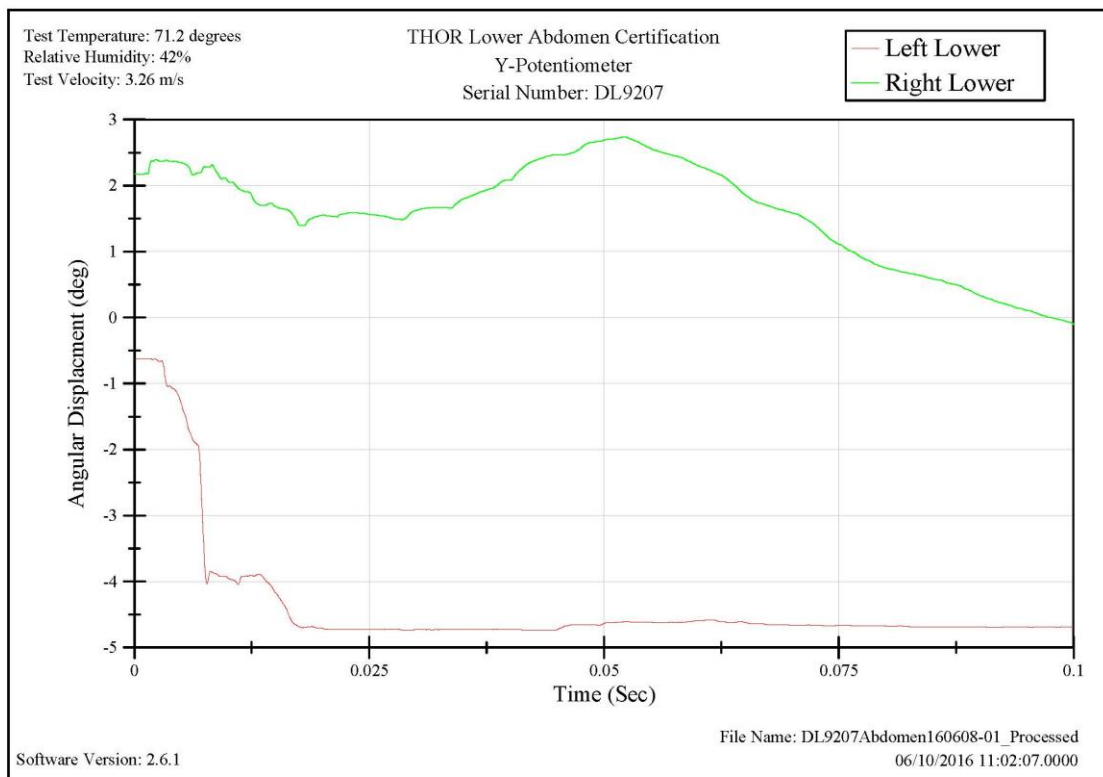


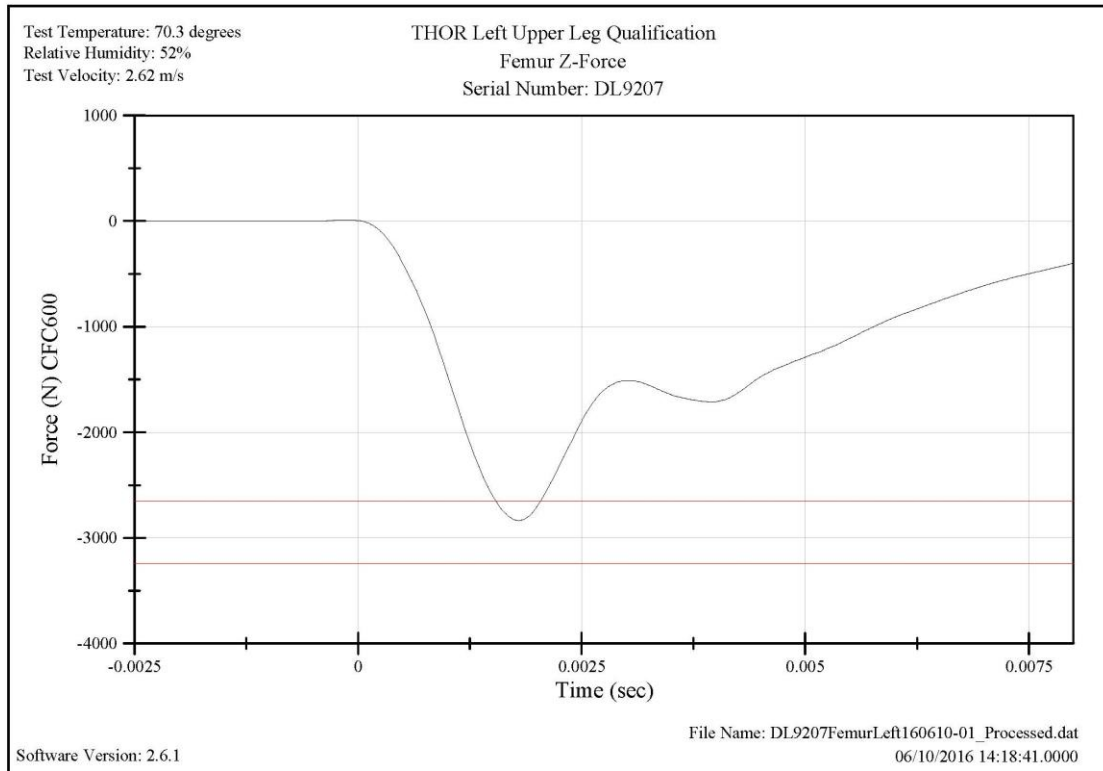
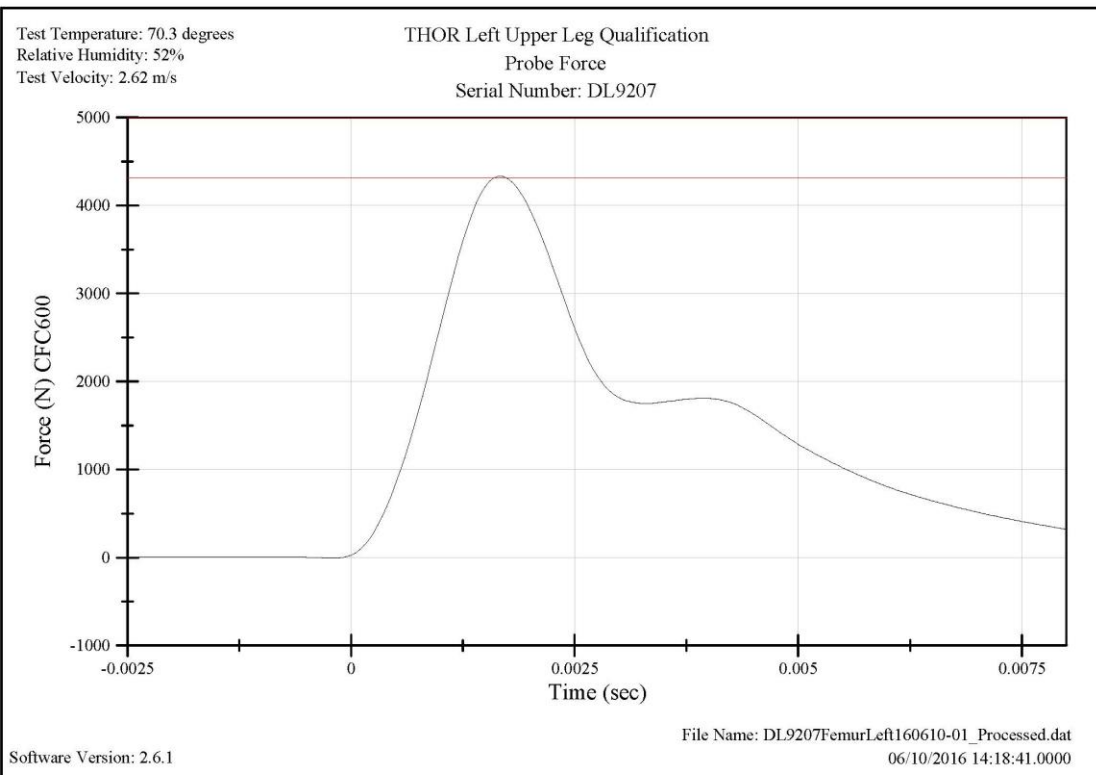
Software Version: 2.6.1

File Name: DL9207ThoraxLowerRight160610-01_Processed
06/10/2016 10:42:46.0000



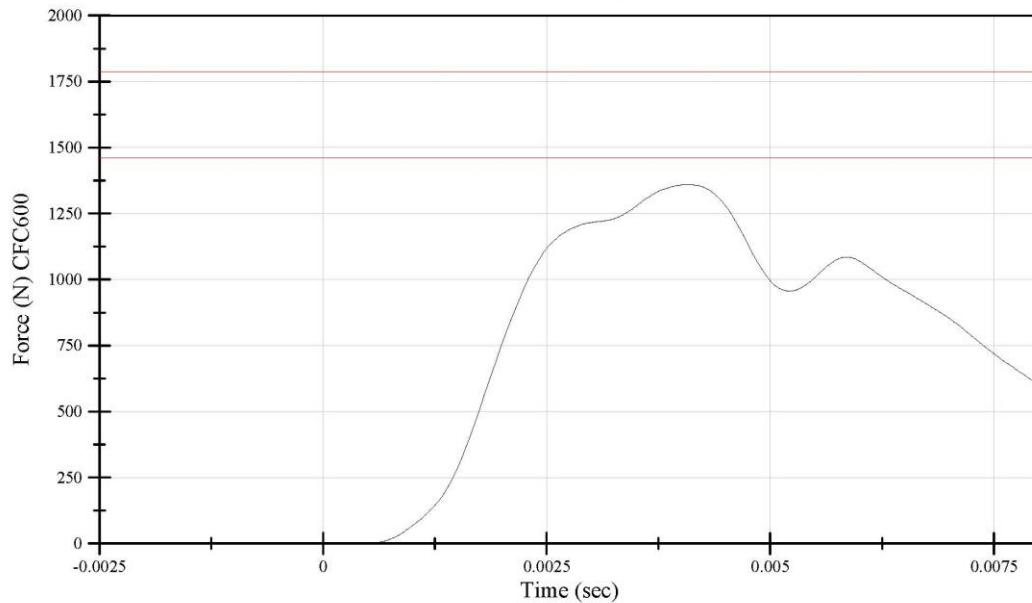






Test Temperature: 70.3 degrees
Relative Humidity: 52%
Test Velocity: 2.62 m/s

THOR Left Upper Leg Qualification
Peak Acetabulum Resultant Force
Serial Number: DL9207

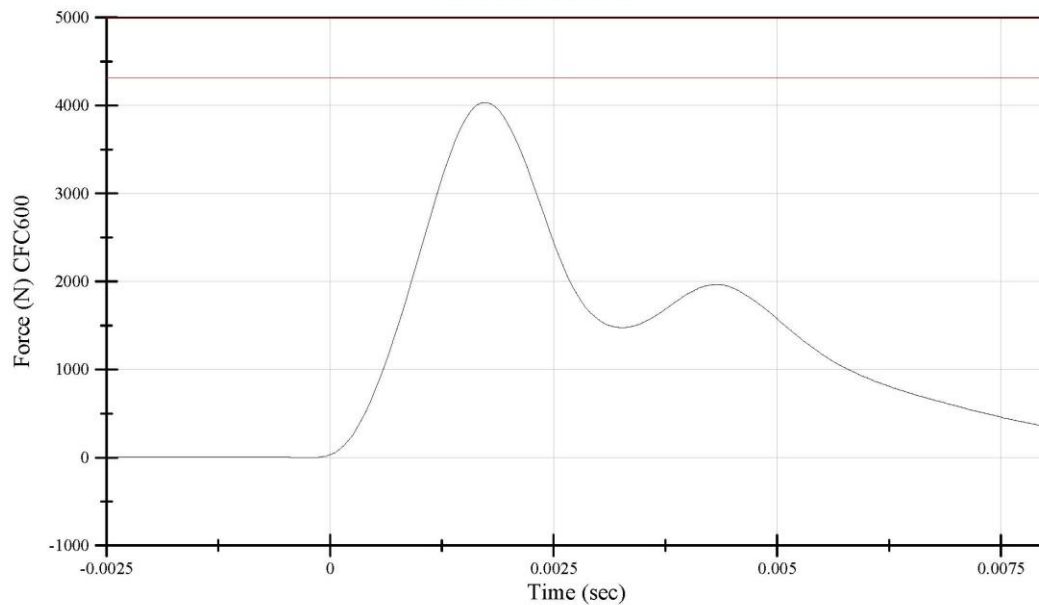


Software Version: 2.6.1

File Name: DL9207FemurLeft160610-01_Processed.dat
06/10/2016 14:18:41.0000

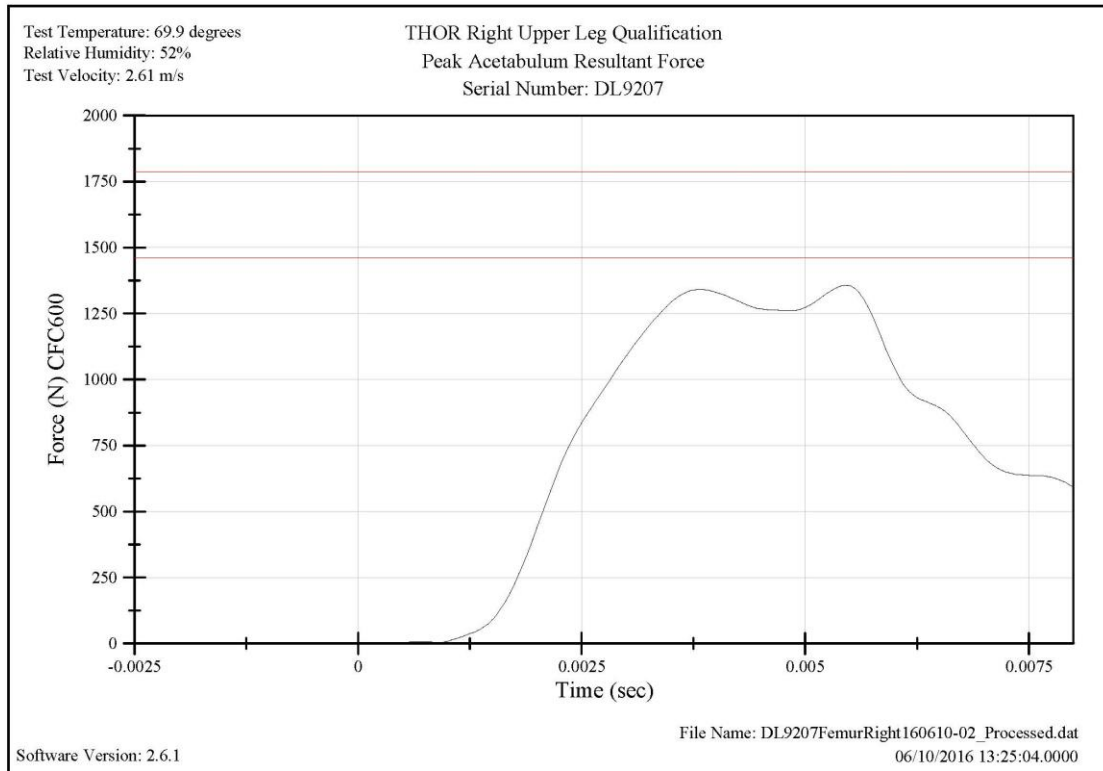
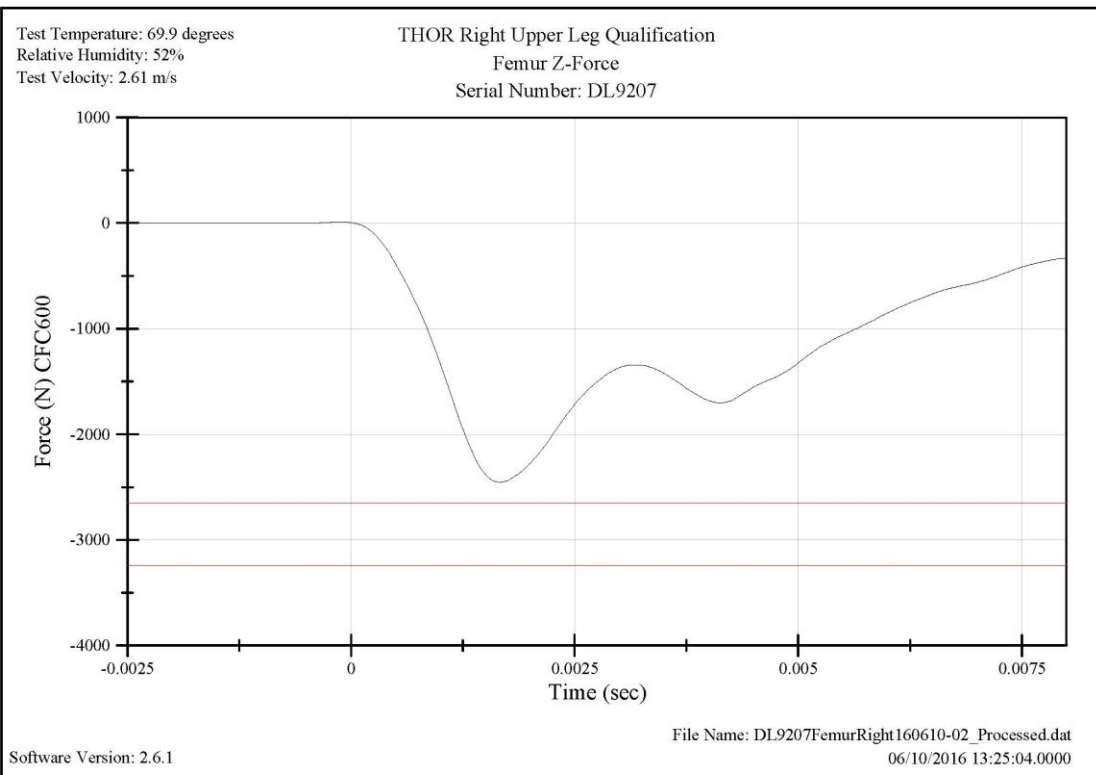
Test Temperature: 69.9 degrees
Relative Humidity: 52%
Test Velocity: 2.61 m/s

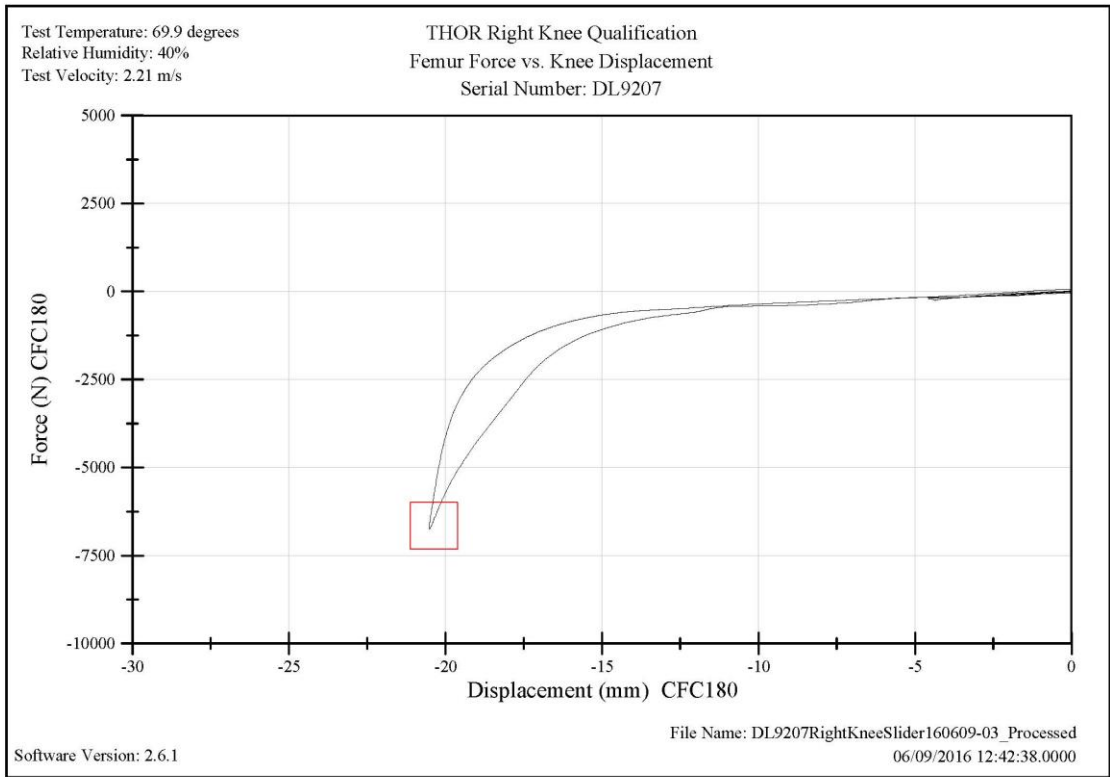
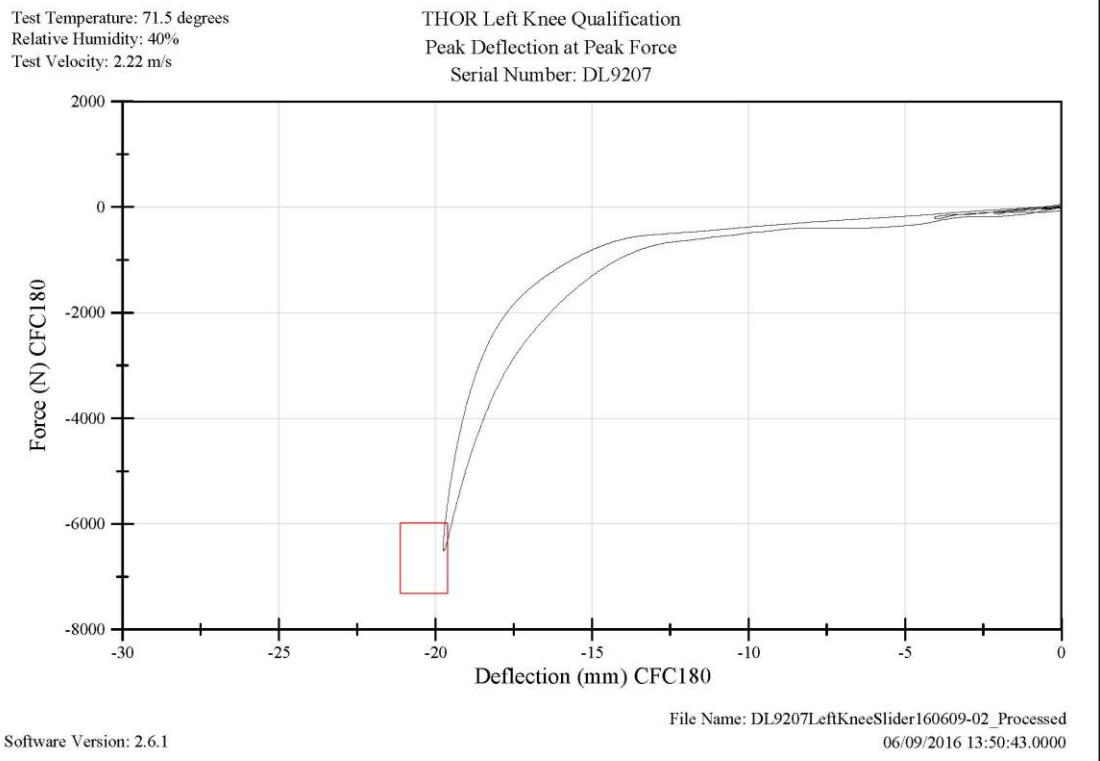
THOR Right Upper Leg Qualification
Probe Force
Serial Number: DL9207

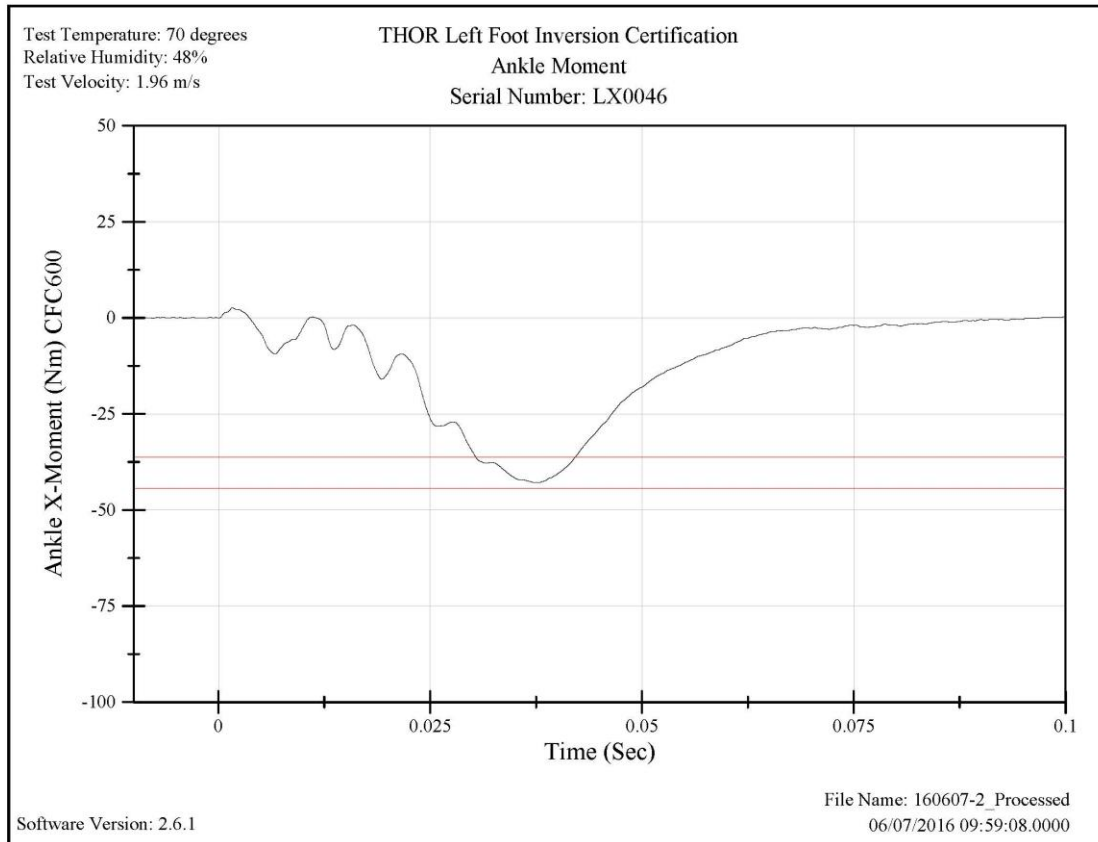
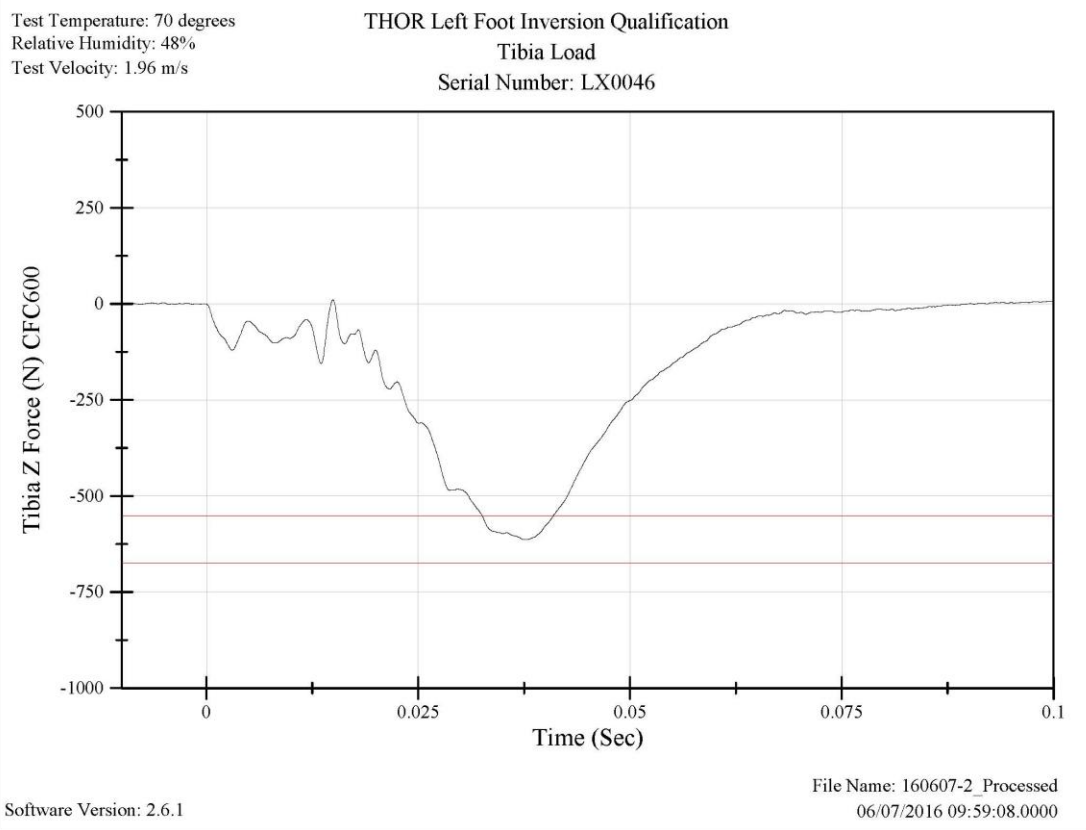


Software Version: 2.6.1

File Name: DL9207FemurRight160610-02_Processed.dat
06/10/2016 13:25:04.0000

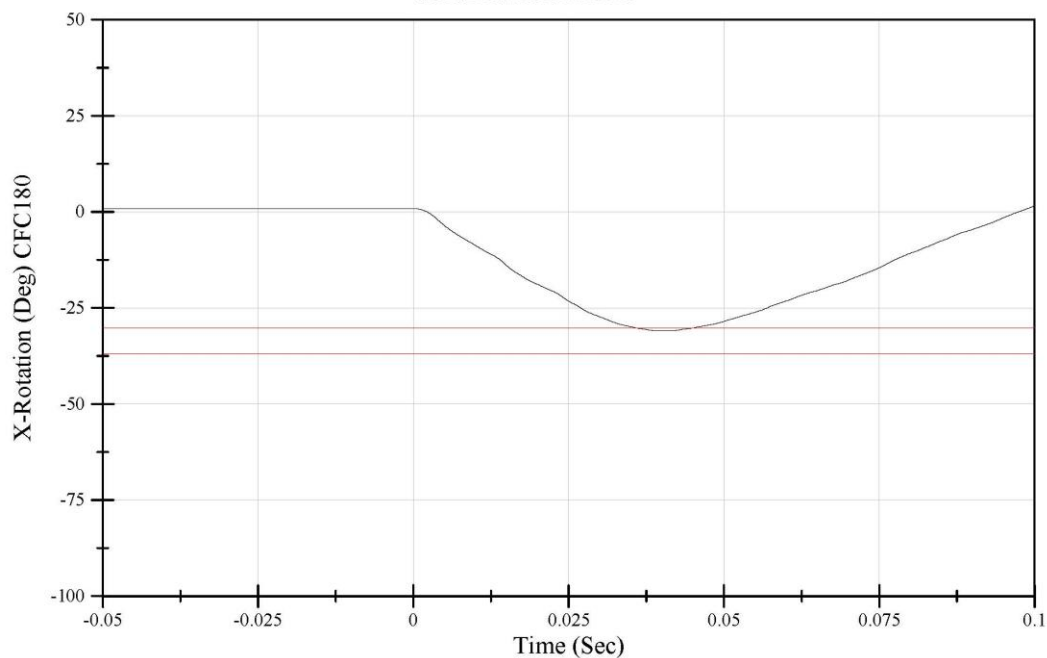






Test Temperature: 70 degrees
Relative Humidity: 48%
Test Velocity: 1.96 m/s

THOR Left Foot Inversion Certification
Ankle X-Rotation
Serial Number: LX0046

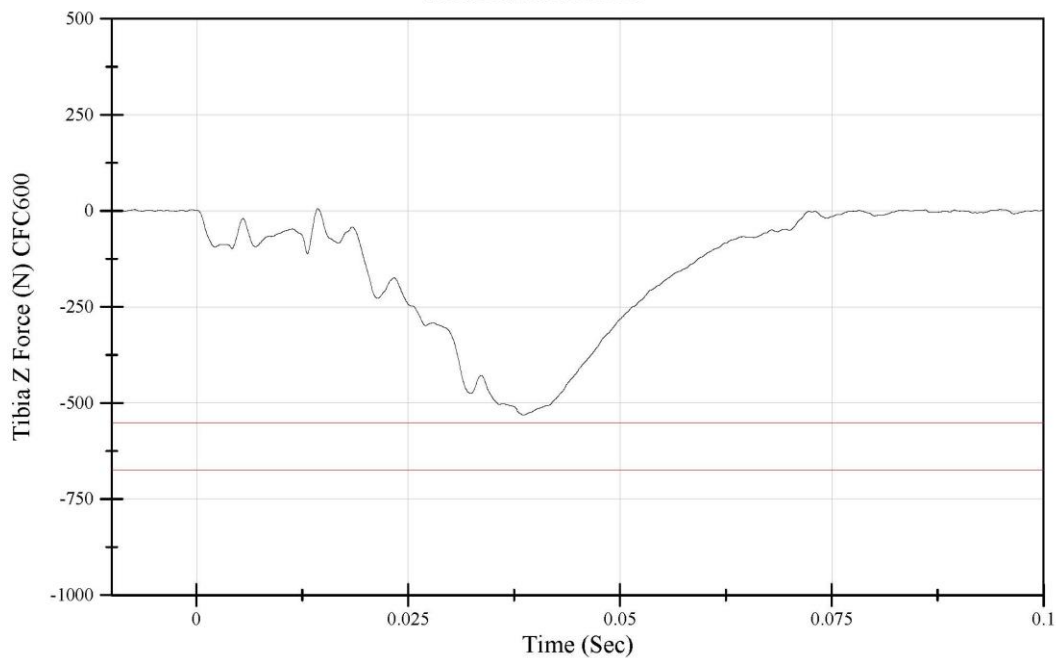


Software Version: 2.6.1

File Name: 160607-2_Processed
06/07/2016 09:59:08.0000

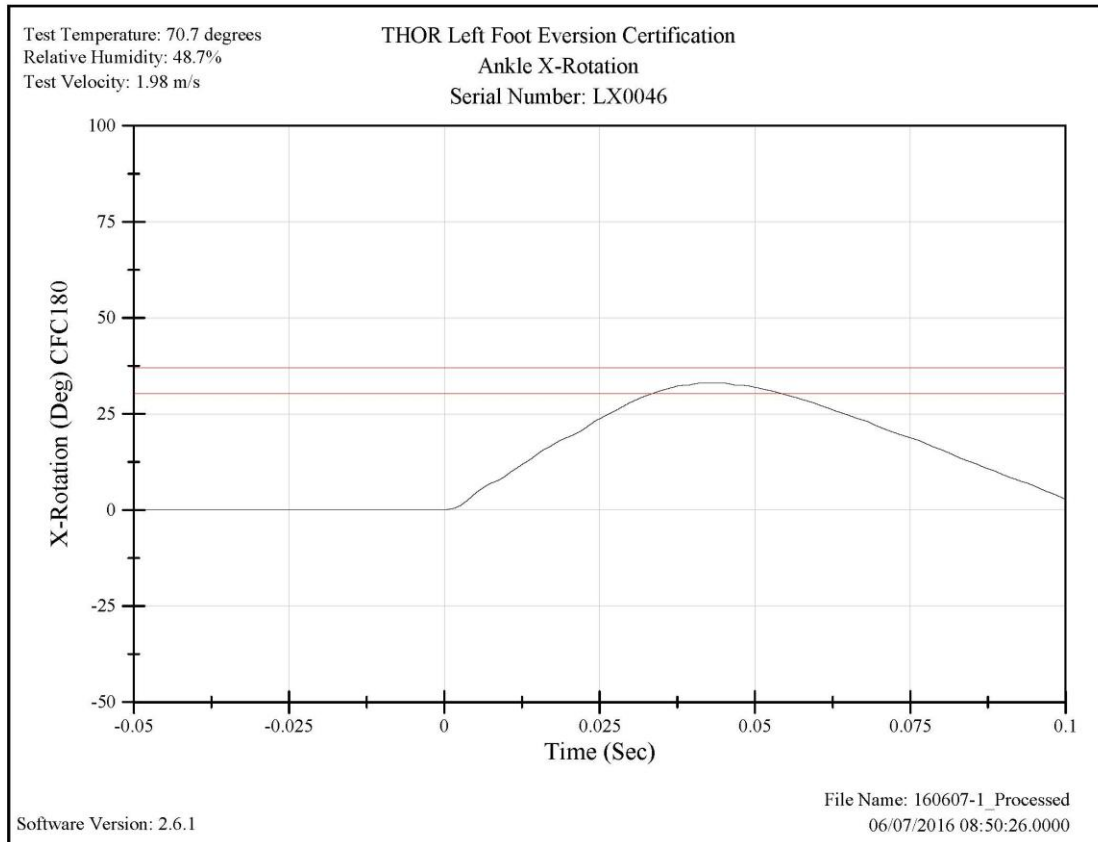
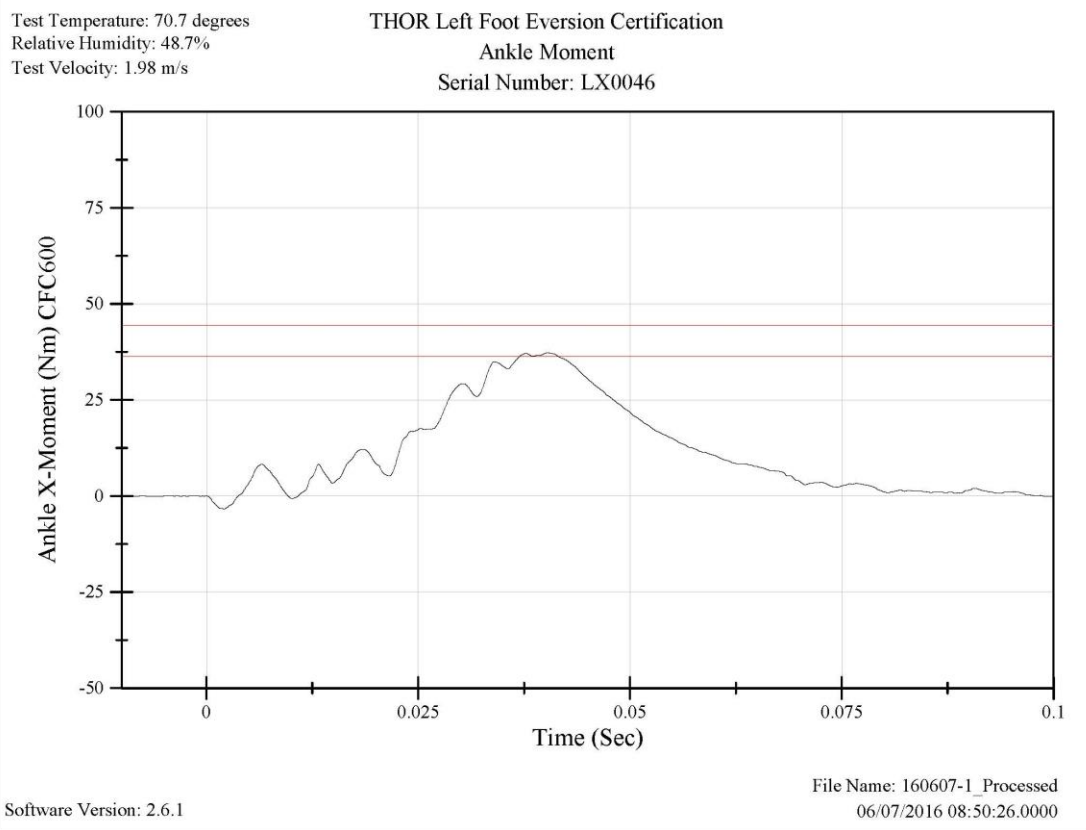
Test Temperature: 70.7 degrees
Relative Humidity: 48.7%
Test Velocity: 1.98 m/s

THOR Left Foot Eversion Qualification
Tibia Load
Serial Number: LX0046



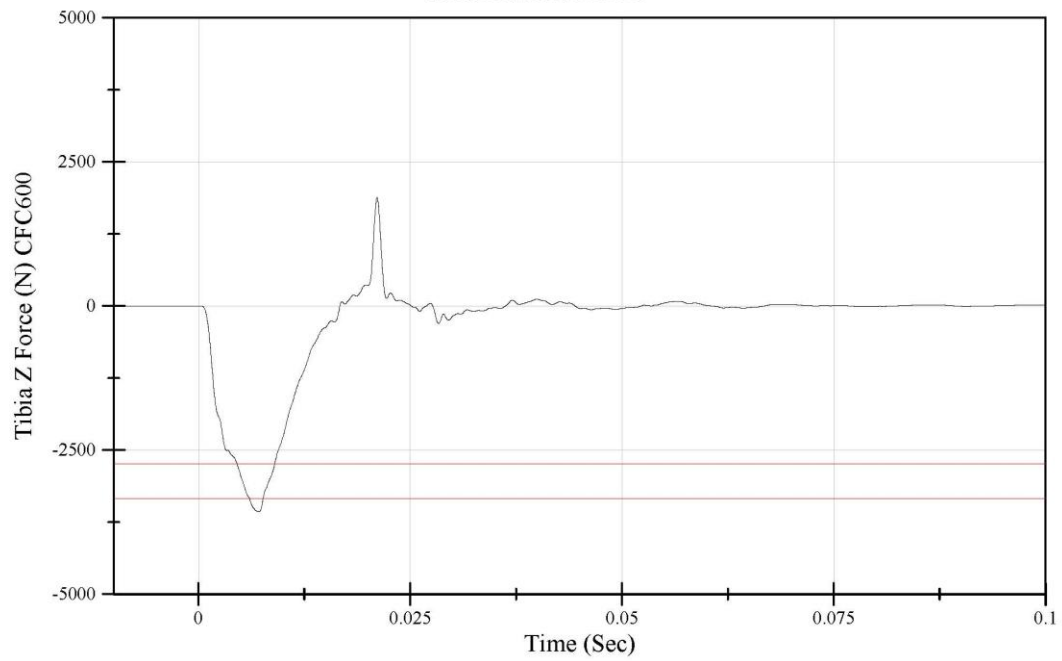
Software Version: 2.6.1

File Name: 160607-1_Processed
06/07/2016 08:50:26.0000



Test Temperature: 70.3 degrees
Relative Humidity: 49.2%
Test Velocity: 3.91 m/s

THOR Left Foot Heel Qualification
Tibia Load
Serial Number: LX0046

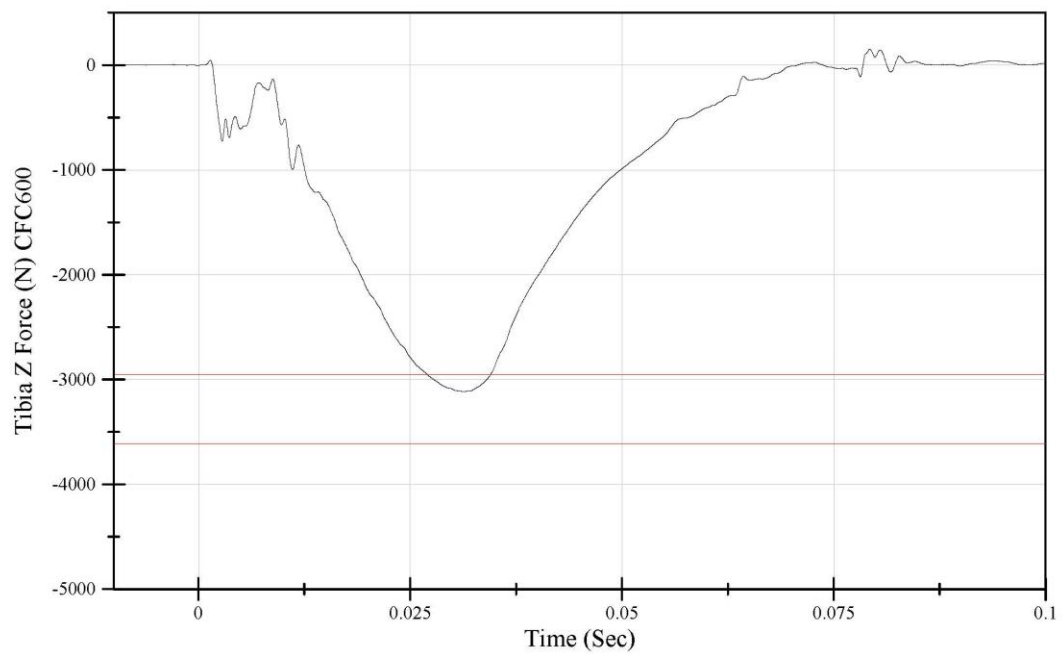


Software Version: 2.6.1

File Name: 160607-3_Processed
06/07/2016 11:02:25.0000

Test Temperature: 70.7 degrees
Relative Humidity: 60%
Test Velocity: 5.03 m/s

THOR Left Foot Dorsiflexion Qualification
Tibia Load
Serial Number: LX0046

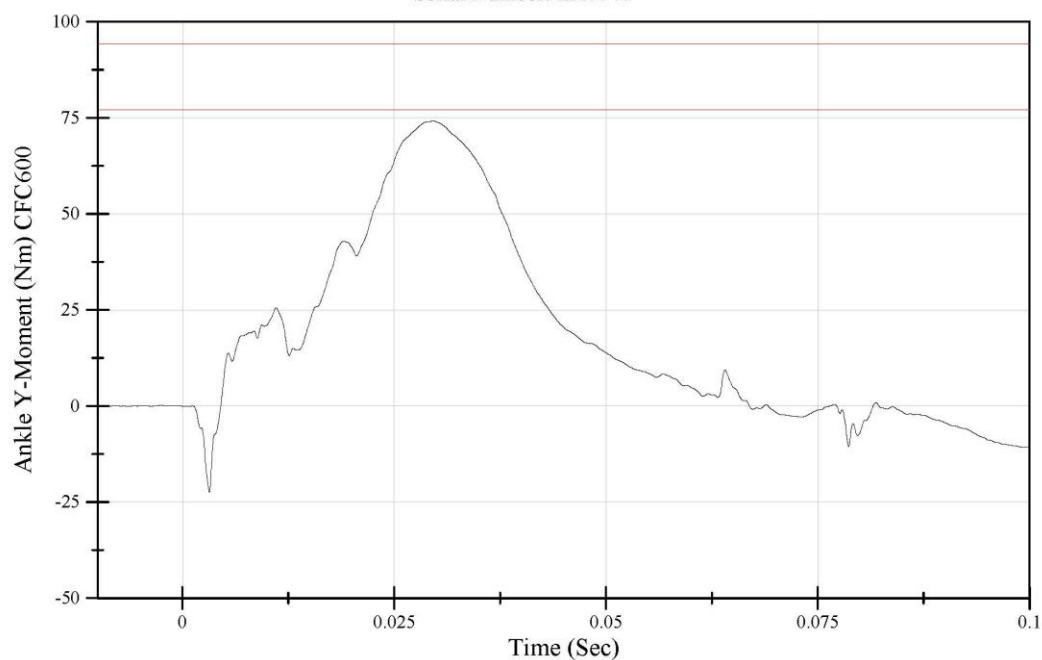


Software Version: 2.6.1

File Name: 160606-2_Processed
06/06/2016 14:25:59.0000

Test Temperature: 70.7 degrees
Relative Humidity: 60%
Test Velocity: 5.03 m/s

THOR Left Foot Dorsiflexion Certification
Ankle Y-Moment
Serial Number: LX0046

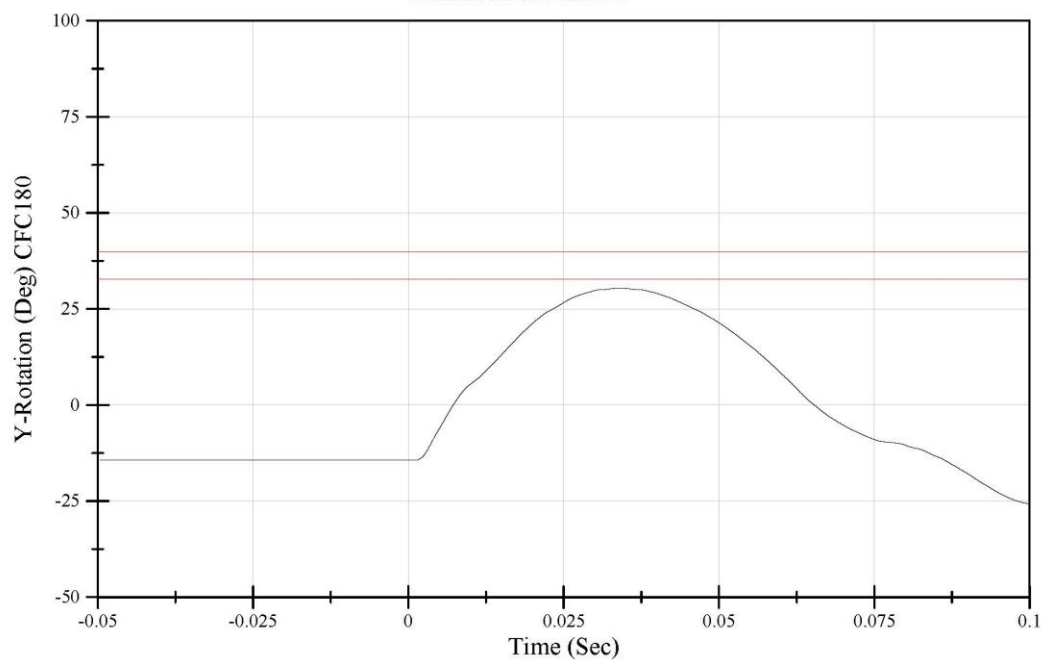


Software Version: 2.6.1

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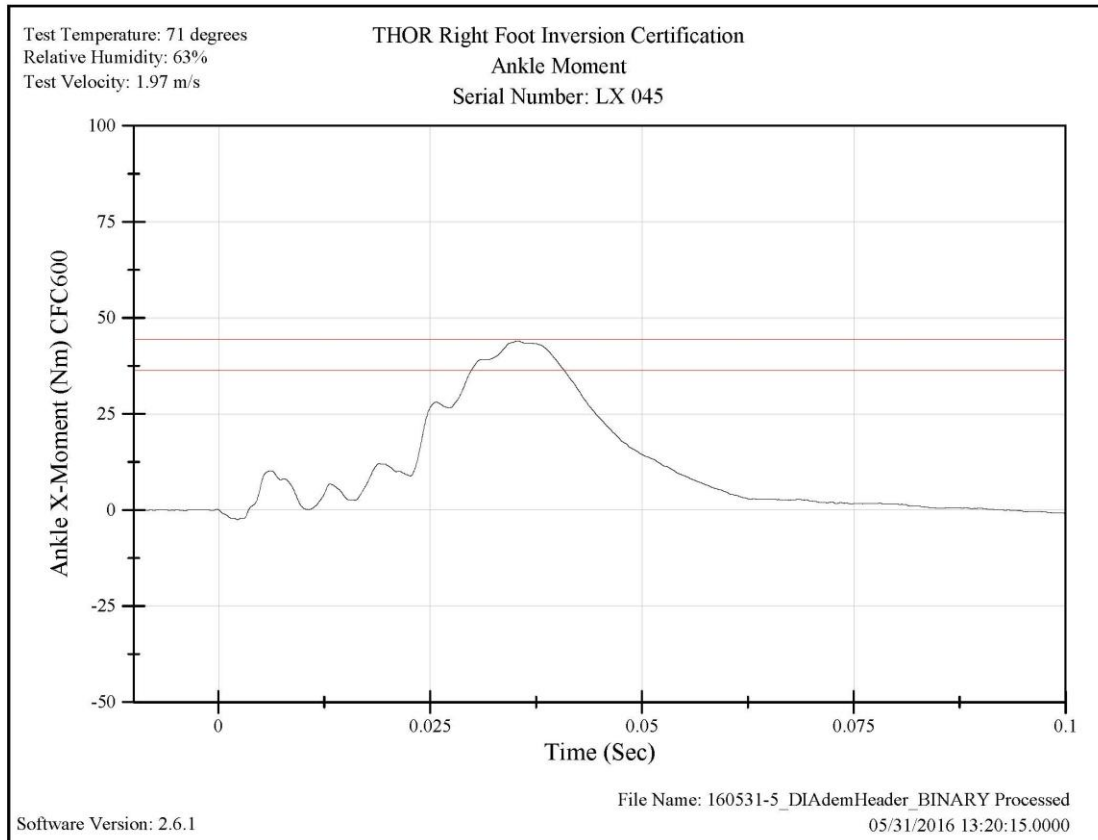
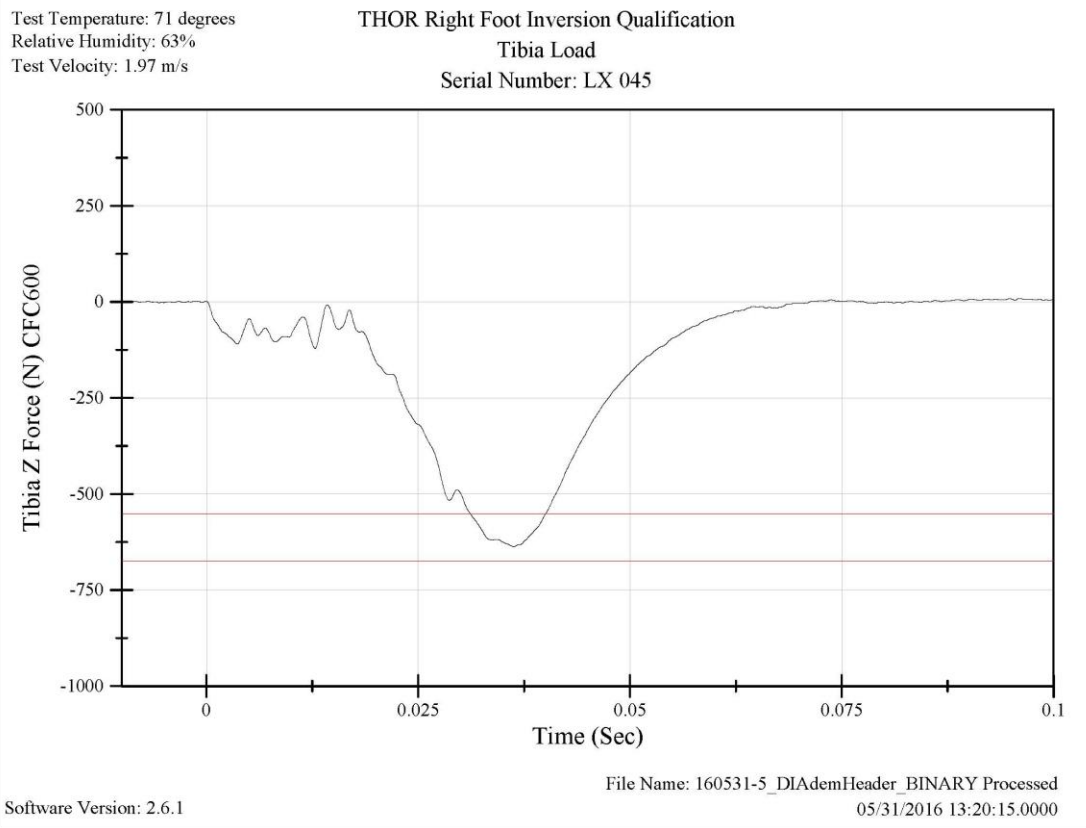
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Relative Humidity: 60%
Test Velocity: 5.03 m/s

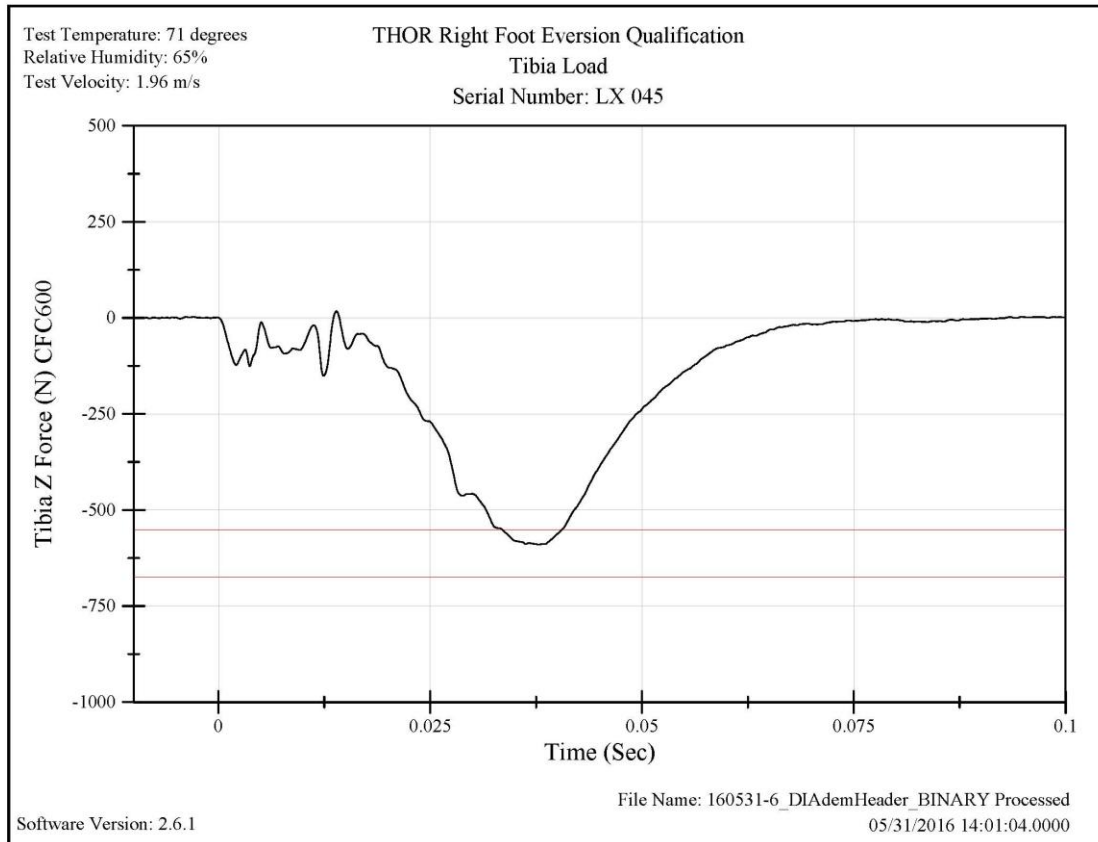
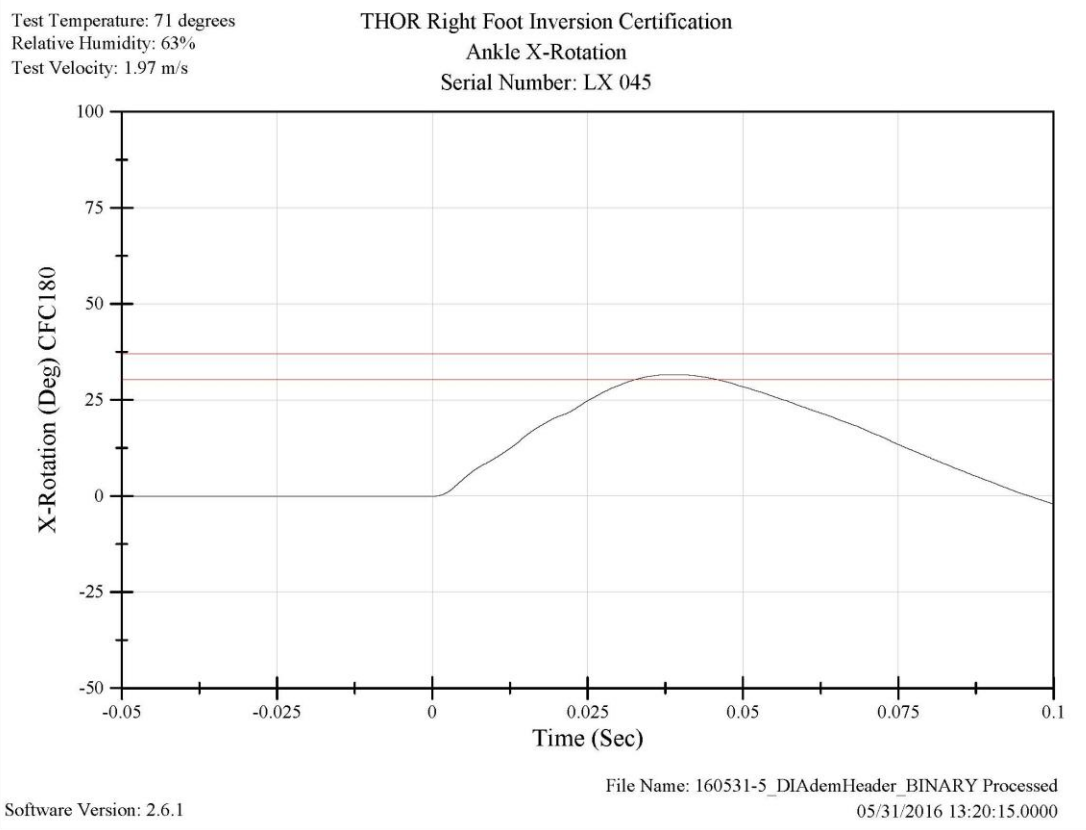
THOR Left Foot Dorsiflexion Certification
Ankle Y-Rotation
Serial Number: LX0046

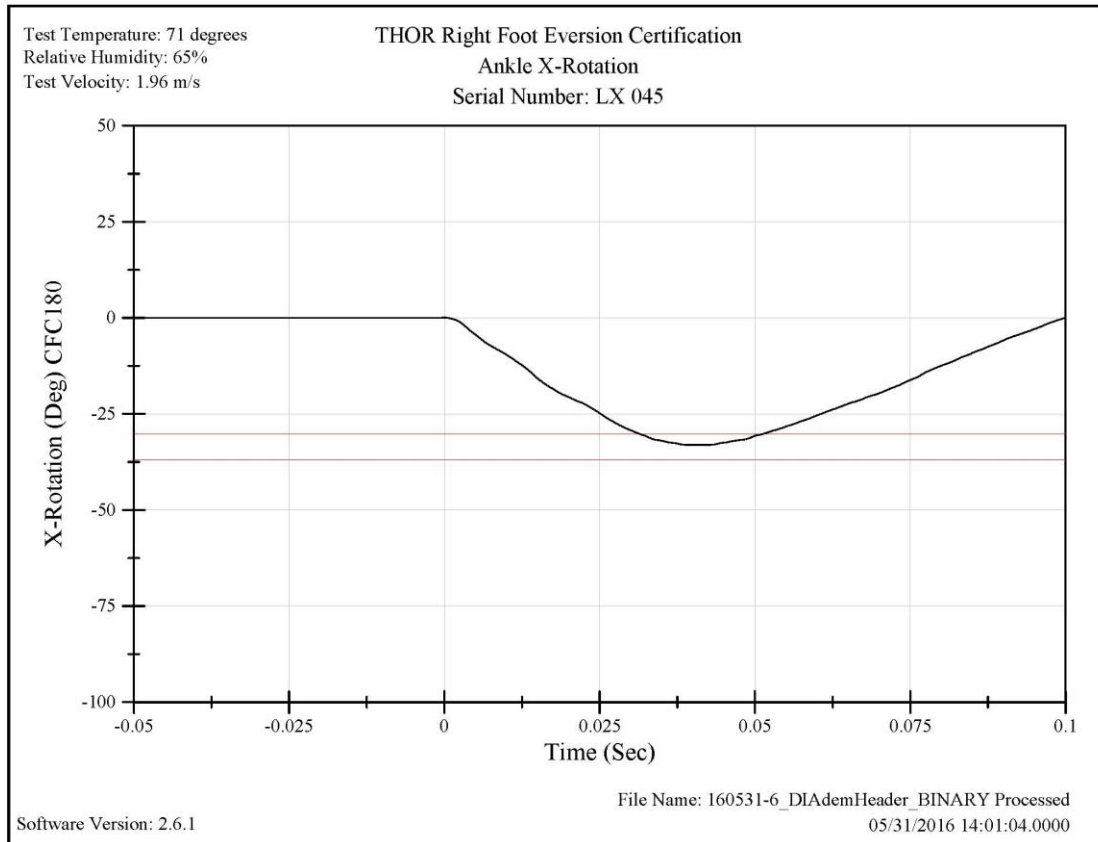
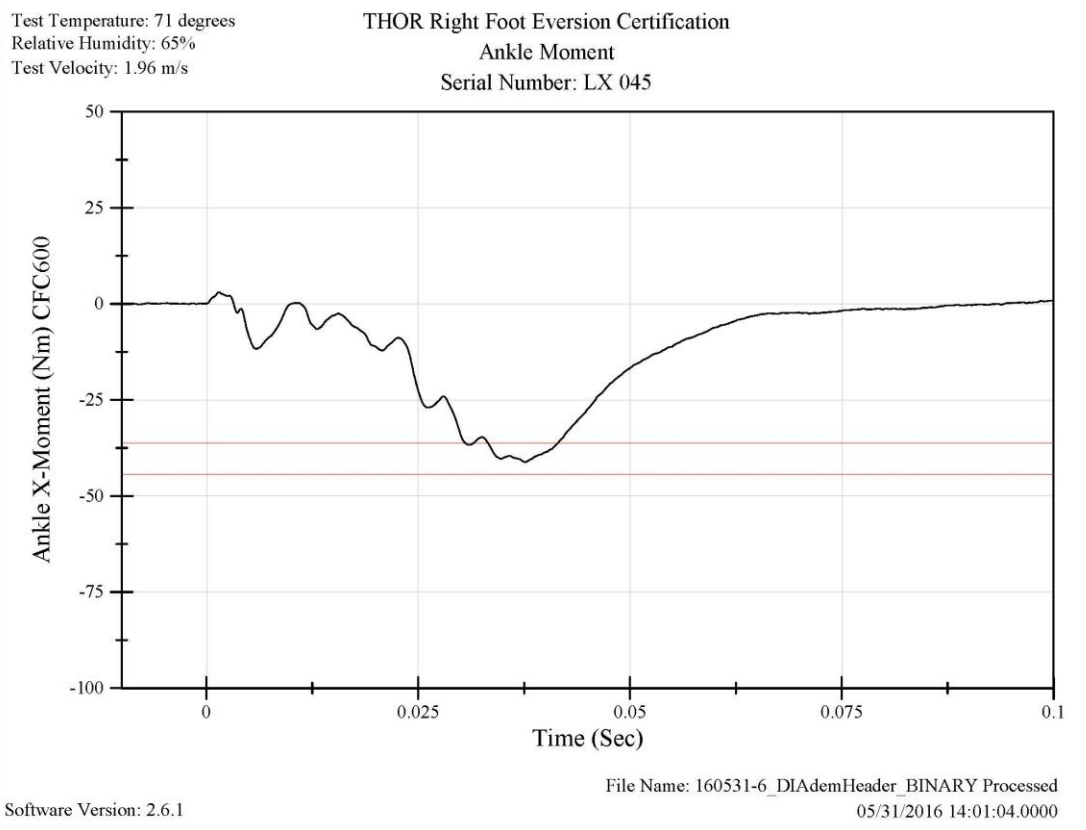


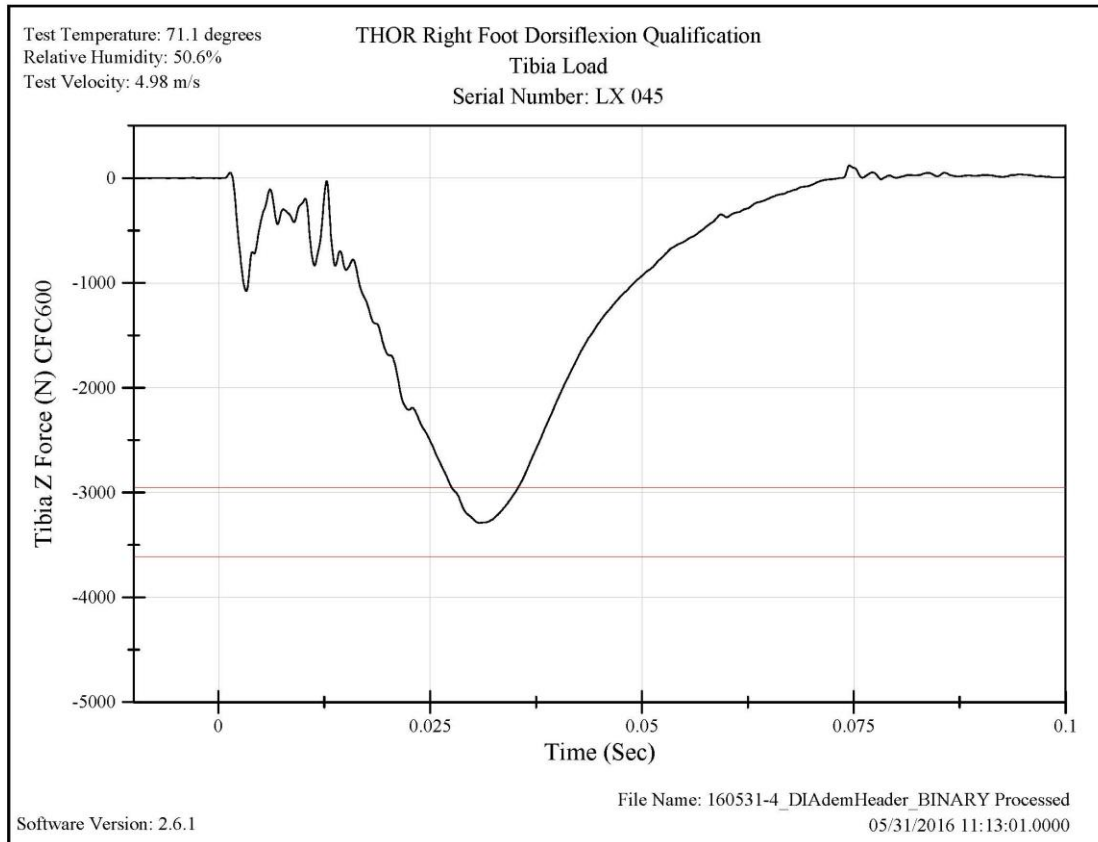
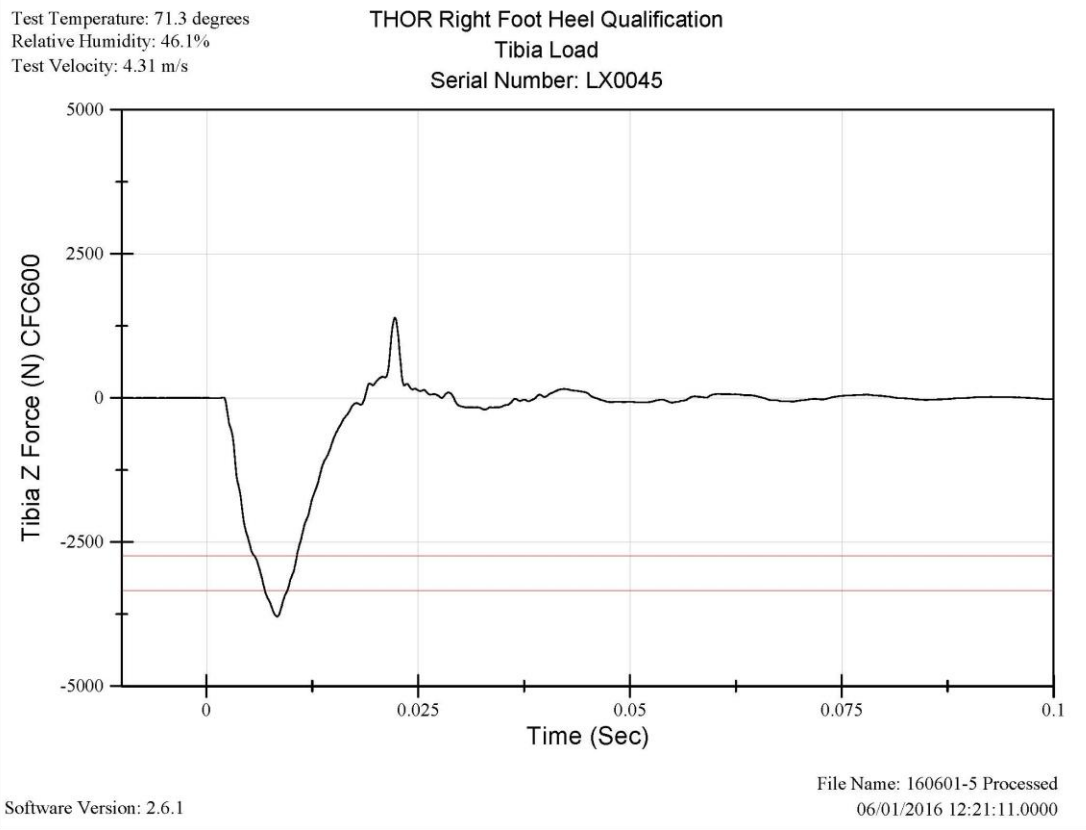
Software Version: 2.6.1

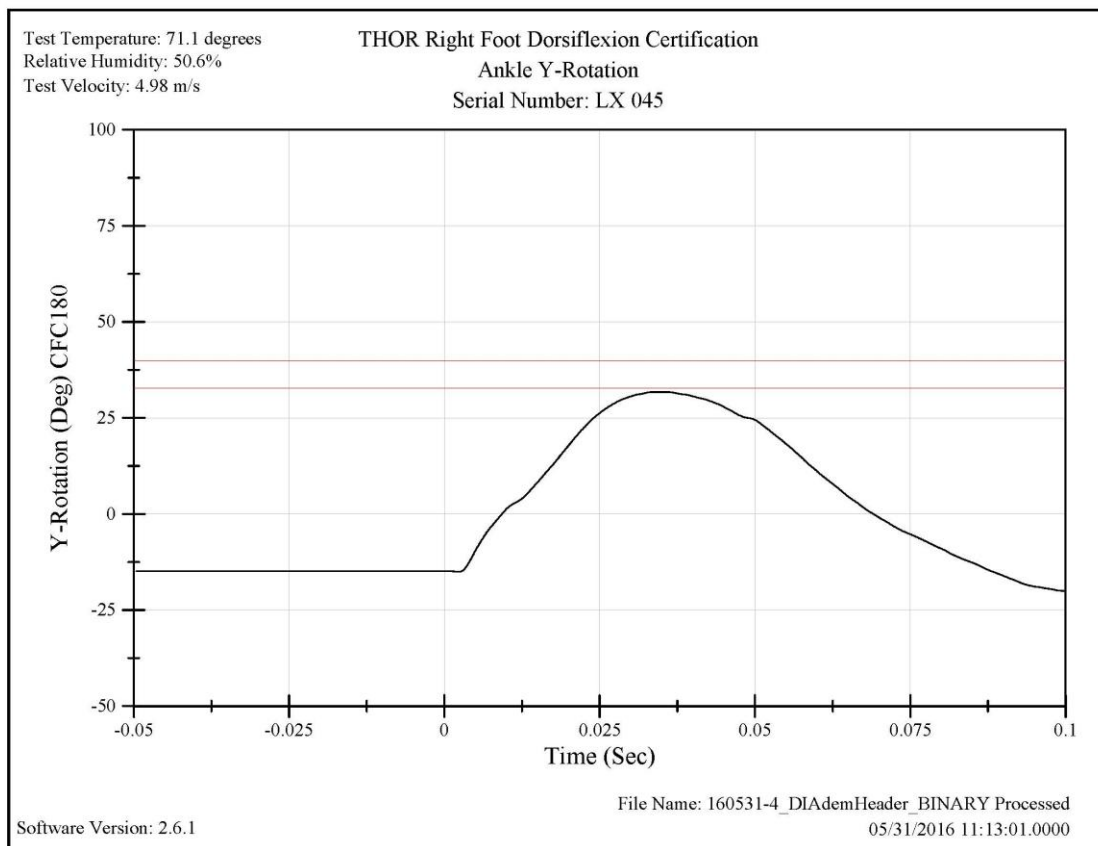
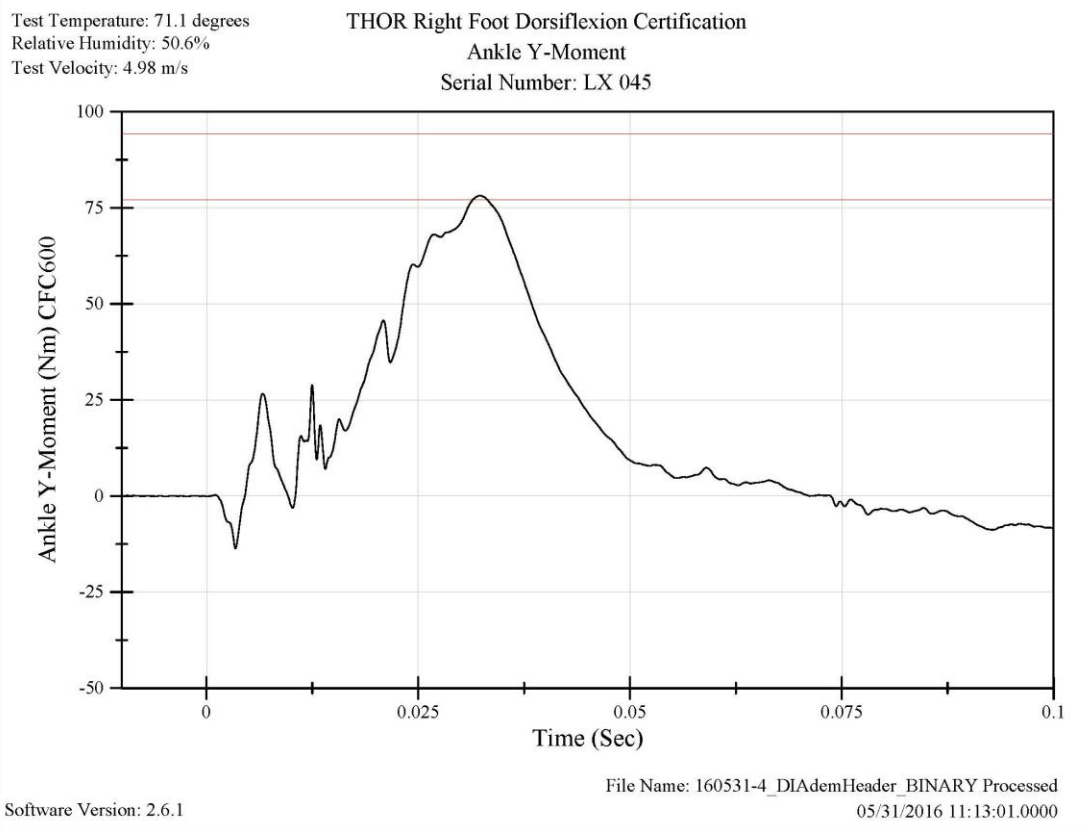
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APPENDIX D
CMM Measurement Procedures

14.26		14.27		15.1		17.6	
Oscar H-point location		Seat Tracking Point (STP) location at mid-position		THOR Target H-point at Mid-position		Seat Tracking Point location	
Torso Angle	23 °	X (Positive (+) forward of striker)	238 mm	Oscar H-point (14.26) +/-	20mm	X (Positive (+) forward of striker)	218 mm
X (Positive (+) forward of striker)	218 mm	Z (Positive (+) below striker)	234 mm	218	20	Z (Positive (+) below striker)	236 mm
Z (Positive (+) below striker)	155 mm			155	20	Seat Tracking Point location Trial 2 (if applicable)	
						X (Positive (+) forward of striker)	238 mm
						Z (Positive (+) below striker)	235 mm
						Seat Tracking Point location Trial 3 (if applicable)	
						X (Positive (+) forward of striker)	mm
						Z (Positive (+) below striker)	mm
Fill in cells to calculate H-point Location		17.6.1		17.6.1			
THOR H-Point Target at Mid-Position		Trial 1		Results from (17.6) - Results from (14.27) =		STPD	
		X (Positive (+) forward of striker)	218	218	238	-20 mm	
		Z (Positive (+) below striker)	236	234	234	2 mm	
THOR H-point Target		Trial 2		Results from (17.6) - Results from (14.27) =		STPD	
		X (Positive (+) forward of striker)	238	238	238	0 mm	
		Z (Positive (+) below striker)	235	234	234	1 mm	
		Trial 2		Results from (17.6) - Results from (14.27) =		STPD	
		X (Positive (+) forward of striker)	0	238	238	-238 mm	
		Z (Positive (+) below striker)	0	234	234	-234 mm	
		17.6.2		17.6.2			
		Trial 1		Results from (15.1) + Results from (17.6.1) =		Current H-point Target	
		X (Positive (+) forward of striker)	238	238	-20	218 mm	
		Z (Positive (+) below striker)	135	2	2	137 mm	
		Trial 2		Results from (15.1) + Results from (17.6.1) =		Current H-point Target	
		X (Positive (+) forward of striker)	238	0	0	238 mm	
		Z (Positive (+) below striker)	135	1	1	136 mm	
		Trial 3		Results from (15.1) + Results from (17.6.1) =		Current H-point Target	
		X (Positive (+) forward of striker)	238	238	-238	0 mm	
		Z (Positive (+) below striker)	135	-234	-234	-99 mm	

Driver THOR Seating Worksheet							
Vehicle	2016 Mazda CX-5			Technician	Mike Postle/Mike Tonneman		
VIN #	JM3KE4BY3G0672477			Position	Driver		
ATD	THOR # 9798			Date	6/16 thru 6/21/2016		
SEATING #							
SCRL Angle	Max	13.1	THOR Tilt Sensors			X	Y
	Min -	8.2		Head	0°±2	0.2	-4.4
	Difference	4.9		T1	0°±2	1.6	7.5
	/2	2.45		T6	0°±2	1.2	31.2
	Min +	2.45		T12	0°±2	1.2	19.8
	Mid Angle	10.65	Pelvis	0°±2	-0.5	31.2	
Seat Back Angle Set @	22.1	HEAD REST POST			FINAL HEAD REST		
Seat Pan Angle Set @	10.2	ANGLE @ OSCAR	5.4		POST ANGLE	7.3	
		Seat Fore/Aft Mid Postiion	Mid Track		Seat Fore/Aft Set Postiion	Mid Track	
						0	
Pelvis Angle	THOR 33° +/-2.5°	Manual Inclinometer		Tilt Sensor			
	Measurements From Passenger Striker						
Name	Meas X	Meas Y	Meas Z	3D Distance	Deg		
SBU	-32.012	3.3105	-17.5396				
SBL	-30.5251	2.0375	18.4278				
STRIKER	0	0	0				
FOSB	472.5366	194.6964	402.6447				
ROSB	29.4113	195.3566	424.583				
DRIVER OSCAR H-POINT	217.719	243.133	154.586				
DRIVER RIGHT HEAD CG	19.824	524.393	-520.345				
DRIVER LEFT HEAD CG	24.513	367.781	-521.507				
DRIVER LEFT EAM	30.658	375.254	-494.974				
DRIVER NS	114.546	450.865	-525.616				
DRIVER RIGHT IOF	109.306	482.454	-488.389				
DRIVER LEFT IOF	112.255	418.540	-488.973				
DRIVER TN	111.721	448.643	-457.961				
DRIVER TC	106.100	447.285	-390.508				
DRIVER C1	163.006	436.684	-274.114				
DRIVER SHT 1	15.642	233.164	-307.386				
DRIVER SHT 2	89.500	263.904	-302.950				
DRIVER E1	248.353	186.694	-68.010				
DRIVER P1	165.947	183.511	109.807				
DRIVER H-POINT	240.066	187.972	142.329				
DRIVER OK	634.489	230.574	32.494				
DRIVER IK	641.922	507.762	30.315				
DRIVER OA	882.671	225.352	371.496				
DRIVER IA	877.622	566.066	371.517				
DRIVER OH	887.929	247.244	504.640				
DRIVER IH	844.526	601.700	506.559				
DRIVER OP	-165.323	353.0868	-386.959				
DRIVER R	114.6731	450.3332	-748.205				
DRIVER H	529.1015	451.495	-672.85				
DRIVER W1	813.648	450.0942	-526.538				
DRIVER W2	1059.478	451.2917	-375.09				
DRIVER WS ANGLE							
DRIVER D1	743.204	436.5721	-347.594				
DRIVER D2	734.9651	231.8672	-7.69487				
DRIVER D3							
DRIVER H-POINT TOOL ANGLE							

DRIVER HZ				0.127	0.531	222.589	222.590
DRIVER HH				414.555	0.630	147.234	439.925
DRIVER HW				699.102	0.770	0.922	699.103
DRIVER CD				580.198	0.112	73.480	584.833
DRIVER KDO				100.477	1.293	40.189	108.224
DRIVER KDI				Missing D3	Missing D3	Missing D3	
DRIVER SK				634.489	230.574	32.494	675.867
DRIVER SH				240.066	187.972	142.329	336.486
DRIVER ST(INBOARD)				24.513	367.781	521.507	638.618
DRIVER ST (OUTBOARD)				19.824	524.393	520.345	739.013
DRIVER HR	113.88	236.5496	-651.835	0.666	214.315	126.219	248.722
DRIVER HS	116.9037	91.5383	-525.894	2.358	359.326	0.278	359.334
DRIVER AD	248.5087	41.117	-67.7905	0.156	145.577	0.219	145.578
DRIVER HD	240.2013	39.51457	142.2313	0.136	148.458	0.097	148.458
DRIVER HLHL				43.403	354.456	1.919	357.109
DRIVER KK				7.434	277.188	2.179	277.296
DRIVER TORSO ANGLE					17.9890474	degrees	
DRIVER HRA						degrees	
TIBIA ANGLE					53.7922831	degrees	
DRIVER C2	187.6023	436.0034	-219.228				
DRIVER C3	277.8879	430.4872	-58.4272				
DRIVER TS	603.8375	446.737	-367.209				

Passenger THOR Seating Worksheet							
Vehicle	2016 Mazda CX-5			Technician	Mike Postle/Mike Tonneman		
VIN #	JM3KE4BY3G0672477			Position	Passenger		
ATD	THOR #9207			Date	6/16 thru 6/21/2016		
SEATING #							
SCRL Angle	Max	10.6	THOR Tilt Sensors		X	Y	
	Min -	10.6		Head	0°±2	-0.1	-6.8
	Difference	0		T1	0°±2	-1.0	-1.6
	/2	0		T6	0°±2	-0.9	19.7
	Min +	0		T12	0°±2	-0.8	31.3
	Mid Angle	10.6		Pelvis	0°±2	-0.1	331
Seat Back Angle Set @	20.3	HEAD REST POST		FINAL HEAD REST			
Seat Pan Angle Set @	10.6	ANGLE @ OSCAR	3.7	POST ANGLE	5.6		
		Seat Fore/Aft Mid Positiion	MT-20	Seat Fore/Aft Set Positiion	MT-20 -20		
Pelvis Angle	THOR 33° +/-2.5°	Manual Inclinometer					
	Measurements From Passenger Striker						
Name	Meas X	Meas Y	Meas Z	dX	dY	dZ	d3D
SBU	-32.0655	-3.5314	-16.9498				
SBL	-30.4018	-1.4543	18.8482				
STRIKER	0	0	0				
FOSB	470.5924	-196.033	400.8889				
ROSB	27.9415	-193.179	421.8541				
PASSENGER OSCAR H-POINT	229.354	-186.601	120.851				
PASSENGER RIGHT HEAD CG	37.294	-367.662	-529.430				
PASSENGER LEFT HEAD CG	38.845	-524.263	-529.378				
PASSENGER RIGHT EAM	43.339	-372.210	-502.521				
PASSENGER NS	130.837	-446.840	-531.814				
PASSENGER RIGHT IOF	124.547	-414.013	-494.292				
PASSENGER LEFT IOF	124.343	-479.157	-494.230				
PASSENGER TN	125.959	-445.675	-463.692				
PASSENGER TC	113.198	-446.160	-392.238				
PASSENGER C1	153.225	-444.958	-270.071				
PASSENGER SHT 1	10.970	-231.491	-308.526				
PASSENGER SHT 2	92.044	-251.259	-282.771				
PASSENGER EI	165.519	-172.507	-17.356				
PASSENGER P1	154.054	-183.008	92.331				
PASSENGER H-POINT	229.343	-186.572	120.987				
PASSENGER OK	648.404	-272.239	75.120				
PASSENGER IK	643.592	-504.449	69.260				
PASSENGER OA	951.502	-289.575	356.673				
PASSENGER IA	948.946	-510.740	356.480				
PASSENGER OH	912.480	-329.304	496.161				
PASSENGER IH	916.515	-547.928	490.854				
PASSENGER OP	-178.649	-349.515	-395.126				
PASSENGER R	131.5655	-531.66	-750.221				
PASSENGER H	523.8291	-446.525	-678.466				
PASSENGER W1	800.5666	-446.825	-531.901				
PASSENGER W2	1066.778	-446.947	-367.318				
PASSENGER WINDSHIELD ANGLE				31.726087	degrees		
PASSENGER D1	675.5307	-447.408	-139.154				
PASSENGER D2	758.4117	-275.964	29.03269				
PASSENGER D3	727.4235	-517.195	35.14448				

PASSENGER H-POINT TOOL ANGLE				20.8373294	degrees	
PASSENGER HZ					218.407	
PASSENGER HH						419.463
PASSENGER HW			669.730			
PASSENGER CD						538.468
PASSENGER KDO						119.330
PASSENGER KDI						91.400
PASSENGER SK						707.237
PASSENGER SH			229.343	186.572	120.987	319.445
PASSENGER ST(INBOARD)						746.057
PASSENGER ST (OUTBOARD)						645.649
PASSENGER HR	132.5878	-234.633	-650.516			243.156
PASSENGER HS	131.6232	-93.7871	-531.748	353.053		
PASSENGER AD	165.5484	-111.989	-11.3688	60.518		
PASSENGER HD	228.003	-45.749	121.2937	140.823		
PASSENGER HLHL	4.034	-218.624	-5.307	218.624		
PASSENGER KK	-4.812	-232.210	-5.860	232.210		
PASSENGER TORSO ANGLE				16.3258058	degrees	
PASSENGER HRA					degrees	
TIBIA ANGLE				42.8895504	degrees	