

REPORT NUMBER: R&D-KAR-16-002

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

**MAZDA MOTOR CORPORATION
2016 MAZDA CX-5**

NHTSA No: R20165412

**PREPARED BY:
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MAY 27, 2016

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
VEHICLE SAFETY RESEARCH
1200 NEW JERSEY AVE, SE, ROOM W46-446
WASHINGTON, D.C. 20590**

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Approval Date: May 27, 2016

FINAL REPORT ACCEPTANCE BY OCWS:


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

Date: _____


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

Date: _____

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16. Abstract A test was conducted in accordance with Contract DTNH22-14-D-00360, Task Order #0001. The test consisted of an Oblique Moving Deformable Barrier (OMDB) traveling at a target speed of 90.1 km/h into a stationary 2016 Mazda CX-5. The struck vehicle was positioned 15 degrees relative to the moving barrier which 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. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on April 22, 2016. The OMDB impact velocity was 89.75 km/h and the ambient temperature at the test vehicle at the time of impact was 23°C. The target vehicle post-test maximum crush was 639 mm. The test vehicle's performance was as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;">Measurement Description</th> <th style="text-align: center;">Units</th> <th style="text-align: center;">Driver THOR</th> <th style="text-align: center;">Passenger THOR</th> </tr> <tr> <th></th> <th></th> <th style="text-align: center;">Result</th> <th style="text-align: center;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td> <td></td> <td style="text-align: center;">233.35</td> <td style="text-align: center;">170.52</td> </tr> <tr> <td>Brain Injury Criteria (BrIC)</td> <td></td> <td style="text-align: center;">0.66</td> <td style="text-align: center;">0.75</td> </tr> <tr> <td>Peak Neck Tension</td> <td style="text-align: center;">N</td> <td style="text-align: center;">2122.74</td> <td style="text-align: center;">867.28</td> </tr> <tr> <td>Peak Chest Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">43.18</td> <td style="text-align: center;">39.85</td> </tr> <tr> <td>Peak Abdomen Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">-73.15</td> <td style="text-align: center;">-64.35</td> </tr> <tr> <td>Peak Resultant Acetabulum Force</td> <td style="text-align: center;">N</td> <td style="text-align: center;">1543.25</td> <td style="text-align: center;">2424.97</td> </tr> <tr> <td>Peak Femur Force</td> <td style="text-align: center;">N</td> <td style="text-align: center;">-2748.31</td> <td style="text-align: center;">-3365.01</td> </tr> <tr> <td>Peak Tibia Index</td> <td></td> <td style="text-align: center;">0.71</td> <td style="text-align: center;">0.91</td> </tr> </tbody> </table>				Measurement Description	Units	Driver THOR	Passenger THOR			Result	Result	Head Injury Criteria (HIC ₁₅)		233.35	170.52	Brain Injury Criteria (BrIC)		0.66	0.75	Peak Neck Tension	N	2122.74	867.28	Peak Chest Deflection	mm	43.18	39.85	Peak Abdomen Deflection	mm	-73.15	-64.35	Peak Resultant Acetabulum Force	N	1543.25	2424.97	Peak Femur Force	N	-2748.31	-3365.01	Peak Tibia Index		0.71	0.91
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SECTION 1

TEST PURPOSE AND PROCEDURE

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

This 90.1 km/h (56 mph) Moving Barrier into a test vehicle is part of the Frontal Oblique Offset Impact Test outlined in Contract No. DTNH22-14-D-00360, Task Order #0001. The purpose of this test is to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

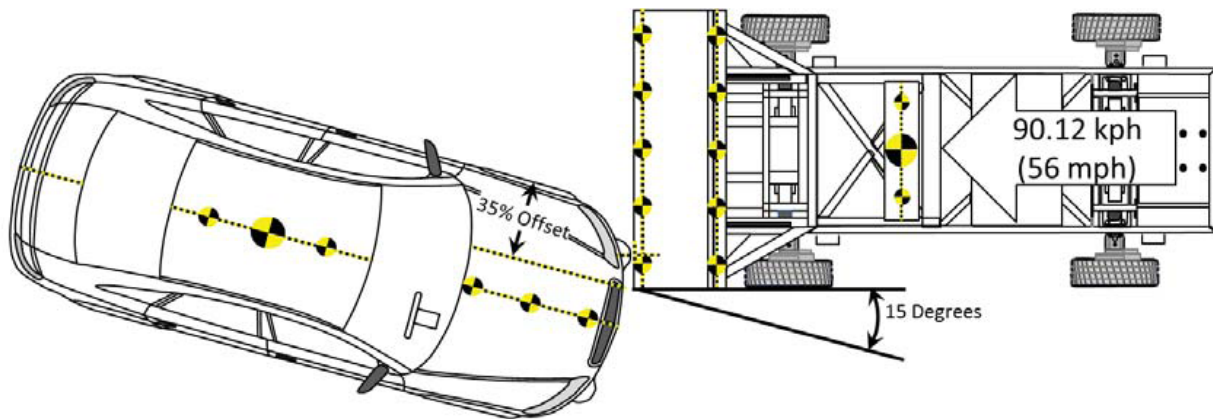
This test was conducted in accordance with the instructions set forth for a 15° angle, 35% offset moving barrier to vehicle impact, outlined in Contract No. DTNH22-14-D-00360, Task Order #0001. Data was obtained indicant of Federal Motor Vehicle Safety Standard FMVSS 208 - Occupant Crash Protection, 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-00360, Task Order #0001. The frontal oblique offset impact test was conducted in accordance with the NHTSA Office of Vehicle Safety Research Laboratory Test Procedure dated July 22, 2015.

SECTION 2

SUMMARY OF TEST RESULTS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

A 2016 Mazda CX-5 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 km/h (56.0 mph) into the test vehicle. The test vehicle's mass was 1,791.0 kg (3,948.4 lbs), and the OMDB's mass was 2,496.5 kg (5,503.7 lbs). The test was performed at KARCO Engineering, LLC. on April 22, 2016.



The test was documented by three (3) real time and fifteen (15) high-speed video cameras. Camera locations and other pertinent data are located in Data Sheet No. 7 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-50M anthropomorphic test device (ATD) (Serial No. DO9798) was seated in the left, front (P1 -Driver's) seating position and one 50% adult male THOR-50M 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: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

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

There was 100% total windshield retention. There appeared to be no intrusion into the protected zone of the windshield during any portion of the impact event. The maximum static crush of the vehicle was 639 mm at C1 to the left of the vehicle's centerline. The maximum crush of the structural bumper beam was 334 mm at B1, to the left of the vehicle's centerline.

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.
- The left front wheel was pushed into the A-Pillar.
- Hood bent inwards and the left front corner of the vehicle was damaged exposing part of the engine compartment.

The driver ATD's visible contact points were:

- Head contacted the frontal and curtain airbags, headrest, and the passenger ATD head.
- Torso contacted the frontal and torso/pelvis airbag and seatback
- Left arm contacted the door panel.
- Right arm contacted the dashboard.
- Left knee contacted the knee bolster and the steering column.

Right knee contacted the knee bolster and the steering column.

SECTION 2 ... (CONTINUED)
SUMMARY OF TEST RESULTS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

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

- Head contacted frontal airbag and the driver ATD head.
- Torso contacted the frontal airbag and seatback.
- Left arm contacted the center instrument panel.
- Right arm contacted the door panel and headrest.
- Left knee contacted the glove box.
- Right knee contacted the glove box.

Primary Impact Data

Measured Parameter	Units	Value
OMDB Velocity at Impact	kph	89.75
OMDB Test Weight	kg	2496.5
OMDB Maximum Static Crush	mm	426.4
Vehicle Test Weight	kg	1791.0
Actual Vehicle Angle	Degrees	14.2
Vehicle Maximum Static Crush	mm	639
Vertical Offset from Target Point (+ down / -up)*	mm	-10
Lateral Offset from Target Point (+ left / -right)*	mm	-26
Number of Data Channels		258
Number of Real-Time Cameras		3
Number of High-Speed Cameras		15

*Offsets are in relation to the vehicle coordinate system.

SECTION 2 ... (CONTINUED)
SUMMARY OF TEST RESULTS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

Dummy Contacts

Description	Driver	Picture Ref.	Passenger	Picture Ref.
Dummy Type	THOR, S/N: DO9798		THOR, S/N: DL9207	
Head Contact	Frontal and Curtain Airbags, Headrest, Passenger ATD Head	A-44, A-45	Frontal Airbag, Driver ATD Head	A-65, A-66
Upper Torso Contact	Frontal and Torso/Pelvis Airbag, Seatback, Door Panel, Dashboard	A-45, A-46	Frontal Airbag, Seatback, Center Instrument Panel, Door Panel, Headrest	A-66
Lower Torso Contact	Torso/Pelvis Airbag, Seatback	A-46	None	N/A
Left Knee Contact	Knee Bolster, Steering Column	A-46	Glove Box	A-67
Right Knee Contact	Knee Bolster, Steering Column	A-46	Glove Box	A-67

Data Anomalies

Channel Description	Explanation
Driver Abdomen Left DGIR Displacement, Questionable spikes throughout	Could not reproduce. Suspected poor internal grounding.
Driver Abdomen Right DGIR Displacement, Questionable spikes throughout	Could not reproduce. Suspected poor internal grounding.
Driver Femur Left Y Moment, Channel failed, no data	Could not reproduce. Suspected poor internal grounding.
Driver Foot Left Z Acceleration, Channel was not installed	Sensor was not received in working condition. Sensor was not used in the test.
Driver Shoulder Belt Upper Force, Channel failed at 16.2 ms	The sensor wire was cut during the test.
Passenger Femur Right X Force, Questionable spikes between 17.9 to 63.0 ms	Could not reproduce. Suspected poor internal grounding.
Passenger Femur Right Y Force, Channel failed, no data	Could not reproduce. Suspected poor internal grounding.
Passenger Femur Right Y Moment, Channel failed between 73.6 and 95.9 ms	Could not reproduce. Suspected poor internal grounding.
Passenger Lower Tibia Left Y Moment, Channel failed at 103.8 ms	Pins came loose in Amphenol connector.
Passenger Foot Right X Acceleration, Channel failed at 57.2 ms	Pins came loose in Amphenol connector.

SECTION 2 ... (CONTINUED)
SUMMARY OF TEST RESULTS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

PRELIMINARY INJURY SUMMARY : DRIVER
Driver: Thor Serial No. DO9798 Injury Summary

Location	Description	Units	Source	Max	Min
Head	HIC 15ms		Compute	233.35	
	Brain Injury Criteria (BrIC)		Compute	0.66	
	Head Rotational Velocity X	deg/s	60	632.75	-1044.08
	Head Rotational Velocity Y	deg/s	60	940.18	-1533.34
	Head Rotational Velocity Z	deg/s	60	903.68	-752.28
Neck	Upper Neck Z-axis Force	N	1000	2122.74	-74.56
	Upper Neck Y-axis Moment	Nm	600	6.14	-8.19
Chest	Upper Left IR-TRACC - X Deflection	mm	Diadem	23.95	
	Upper Right IR-TRACC - X Deflection	mm	Diadem	43.18	
	Lower Left IR-TRACC X - Deflection	mm	Diadem	16.07	
	Lower Right IR-TRACC X - Deflection	mm	Diadem	35.10	
Abdomen	Lower Left IR-TRACC X - Deflection	mm	Diadem	160.00	-47.52
	Lower Right IR-TRACC X - Deflection	mm	Diadem	169.53	-73.15
Acetabulum	Left Acetabulum Resultant Force	N	Compute	1301.97	
	Right Acetabulum Resultant Force	N	Compute	1543.25	
Femur	Left Femur Force, FZ	N	600	346.24	-2748.31
	Right Femur Force, FZ	N	600	373.14	-2489.97
Tibia	Left Upper Tibia, FZ	N	600	79.28	-1399.85
	Left Upper Tibia, Index		Compute	0.46	
	Right Upper Tibia, FZ	N	600	280.13	-1648.91
	Right Upper Tibia, Index		Compute	0.62	
	Left Lower Tibia, FZ	N	600	246.52	-2760.26
	Left Lower Tibia, Index		Compute	0.42	
	Right Lower Tibia, FZ	N	600	81.08	-2697.57
	Right Lower Tibia, Index		Compute	0.71	
Ankle	Left Ankle Rotation, RX	deg	180	21.72	-0.38
	Left Ankle Rotation, RY	deg	180	33.63	-17.74
	Left Ankle Dorsiflexion, MY	Nm	Compute	30.85	
	Left Ankle In/Eversion Moment, MX	Nm	Compute	16.30	
	Right Ankle Rotation, RX	deg	180	11.66	-29.09
	Right Ankle Rotation, RY	deg	180	10.33	-16.42
	Right Ankle Dorsiflexion, MY	Nm	Compute	70.05	
	Right Ankle In/Eversion Moment, MX	Nm	Compute	-123.44	
Anomalies: 1) Questionable spikes throughout. 2) Questionable spikes throughout.					

*DIAdem-THOR Processing Software v2.6.

SECTION 2 ... (CONTINUED)
SUMMARY OF TEST RESULTS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

PRELIMINARY INJURY SUMMARY : PASSENGER
Passenger: Thor Serial No. DL9702 Injury Summary

Location	Description	Units	Source	Max	Min
Head	HIC 15ms		Compute	170.52	
	Brain Injury Criteria (BrIC)		Compute	0.75	
	Head Rotational Velocity X	deg/s	60	656.99	-1349.42
	Head Rotational Velocity Y	deg/s	60	682.84	-1041.45
	Head Rotational Velocity Z	deg/s	60	1410.77	-803.11
Neck	Upper Neck Z-axis Force	N	1000	867.28	-263.74
	Upper Neck Y-axis Moment	Nm	600	7.23	-14.83
Chest	Upper Left IR-TRACC - X Deflection	mm	Diadem	39.85	
	Upper Right IR-TRACC - X Deflection	mm	Diadem	28.31	
	Lower Left IR-TRACC X - Deflection	mm	Diadem	25.71	
	Lower Right IR-TRACC X - Deflection	mm	Diadem	13.72	
Abdomen	Lower Left IR-TRACC X - Deflection	mm	Diadem	0.48	-64.35
	Lower Right IR-TRACC X - Deflection	mm	Diadem	0.86	-52.98
Acetabulum	Left Acetabulum Resultant Force	N	Compute	1692.68	
	Right Acetabulum Resultant Force	N	Compute	2424.97	
Femur	Left Femur Force, FZ	N	600	287.79	-3365.01
	Right Femur Force, FZ	N	600	635.63	-845.91
Tibia	Left Upper Tibia, FZ	N	600	411.76	-738.30
	Left Upper Tibia, Index		Compute	0.44	
	Right Upper Tibia, FZ	N	600	72.14	-2509.86
	Right Upper Tibia, Index		Compute	0.91	
	Left Lower Tibia, FZ	N	600	93.68	-3462.42
	Left Lower Tibia, Index		Compute	0.72	
	Right Lower Tibia, FZ	N	600	128.96	-3117.56
	Right Lower Tibia, Index		Compute	0.91	
Ankle	Left Ankle Rotation, RX	deg	180	20.10	-33.51
	Left Ankle Rotation, RY	deg	180	4.35	-24.46
	Left Ankle Dorsiflexion, MY	Nm	Compute	32.41	
	Left Ankle In/Eversion Moment, MX	Nm	Compute	-85.45	
	Right Ankle Rotation, RX	deg	180	24.51	-35.63
	Right Ankle Rotation, RY	deg	180	0.00	-20.52
	Right Ankle Dorsiflexion, MY	Nm	Compute	40.26	
	Right Ankle In/Eversion Moment, MX	Nm	Compute	-132.75	
Anomalies:					

*DIAdem-THOR Processing Software v2.6.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

CONVERSION FACTORS

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

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

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	R20165412
Model Year	2016
Make	Mazda
Model	CX-5
Body Style	SUV
VIN	JM3KE4BY2G0664418
Body Color	Crystal White Pearl
Odometer Reading (km / mi)	200 / 124
Engine Displacement (L)	2.5
Type / No. of Cylinders	Inline 4
Engine Placement	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
Automatic Door Locks (ADLs)	Yes

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

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

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Mazda Motor Corporation
Date of Manufacture	May-15

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

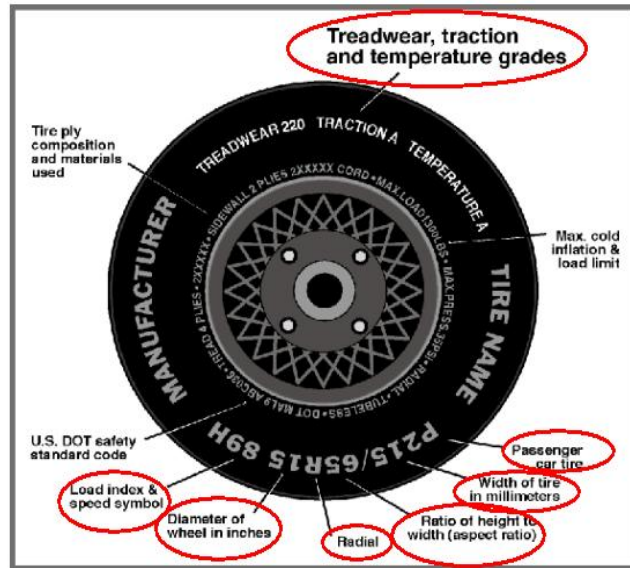
VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Designated Seating Capacity	2	3		5
Capacity Weight (VCW) (kg)				385.0
DSC x 68.04 (kg)				340.2
Cargo Weight (RCLW) (kg)				44.8

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



Measured Parameter	Front	Rear
Max. 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
Treadware	280	280
Traction Grade	B	B
Temperature Grade	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel, 1 Nylon	2 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	100H	100H
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Left	FDF5 PC5 1615	FDF5 PC5 1615
DOT Safety Code Right	FDF5 PC5 1615	FDF5 PC5 1615

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

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	461.5	338.5		479.0	420.0	
Right	kg	437.0	313.5		476.5	415.5	
Ratio	%	57.9%	42.1%	100.0%	53.4%	46.6%	100.0%
Total	kg	898.5	652.0	1550.5	955.5	835.5	1791.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1550.5
Weight of 2 THOR ATDs	kg	194.2
Rated Cargo/Luggage Weight (RCLW)	kg	44.8
Calculated Vehicle Target Weight (TVTW)	kg	1789.5

TEST VEHICLE ATTITUDES

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	875	880	893	897	1129
As Tested	mm	859	859	860	860	1252
Post-Test	mm	N/A	826	817	946	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	2684
Total Vehicle Length at Left Side	mm	3930
Total Vehicle Length at Centerline	mm	4530
Total Vehicle Length at Right Side	mm	3933
Weight of Ballast/Equipment in Cargo Area	kg	147.0
Weight of Vehicle Components Removed	kg	116.5
Amount of Stoddard Solvent in Fuel Tank	L	53.86

VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

Rear Fascia (3.5 kg), Rear Trim (8.0 kg), Rear Hatch (26.0 kg), Spare Tire and Tools (21.0 kg),
 Rear Seats (26.0 kg), Rear Door Trim and Windows (10.5 kg), Rear Bumper Beam (9.5 kg),
 Muffler (12.0 kg)

DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL

Test Vehicle: 2016 Mazda CX-5

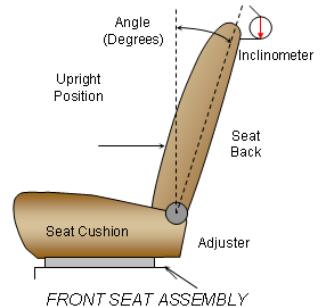
NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

Test Date: 04/22/16

NOMINAL DESIGN RIDING POSITION

The driver seat back was set to the manufacturer's designated angle listed in FORM 1 but was moved rearward per THOR seating procedure to level the head. The passenger seat back was set to the manufacturer's designated angle listed in FORM 1 but was moved rearward per THOR seating procedure to level the head.

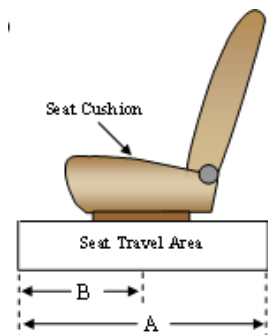


SEAT BACK ANGLE

Seating Position	Unit	OSCAR Position	After ATD Positioning
Driver Seat Back Angle	Degrees	6.7	8.7
Passenger Seat Back Angle	Degrees	5.5	7.5

SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most position to the rear most position at its mid angle position. Both the driver and passenger seats were initially positioned to the closest detent forward of 25 mm, rearward of mid position. The seat was then moved as far forward as possible where the ATD did not contact any interior panels, up to mid position.



SEAT FORE/AFT POSITIONS

Seating Position	Total Fore/Aft Travel	Placed in Position #
Driver Seat	27 (0-26)	13
Passenger Seat	27 (0-26)	15

SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer's design position for a 50th percentile adult male ATD for the driver and passenger. Position "H" is the uppermost position, followed by position "M1" and "M2." Position "L" is the lowermost position.

SEAT BELT UPPER ANCHORAGES

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	4	H
Passenger Seat	4	H

DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL

Test Vehicle: 2016 Mazda CX-5

NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

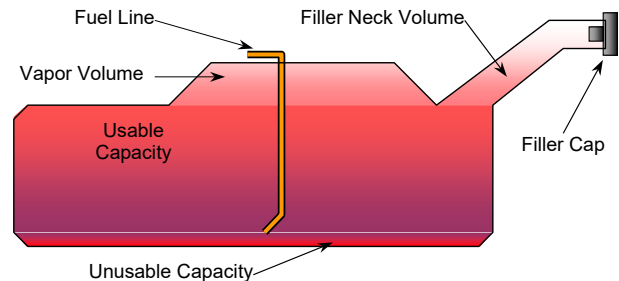
Test Date: 04/22/16

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	57.91
Usable Capacity of "Optional Tank"	
93% of Usable Capacity	53.86
Actual Amount of Stoddard Solvent Used	53.86
1/3 of Usable Capacity	19.30

FUEL PUMP

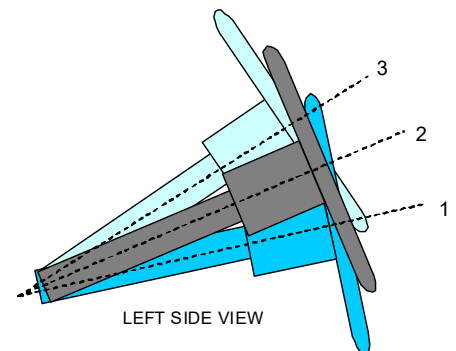
Fuel was evacuated according to the specifications provided by the manufacturer in Form 1. Electric fuel pump operates when the ignition is in the 'On' position and the engine is running.



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. A digital inclinometer is used to measure a plate which is placed across the rim of the steering wheel for angular measurements. A tape measure is used to measure telescoping steering wheel travel.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONING

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	23.4	94
Geometric Center Position, No. 2	25.6	118
Uppermost Position, No. 3	27.8	142
Telescoping Steering Wheel Travel		48
Test Position	25.6	118

DATA SHEET NO. 3

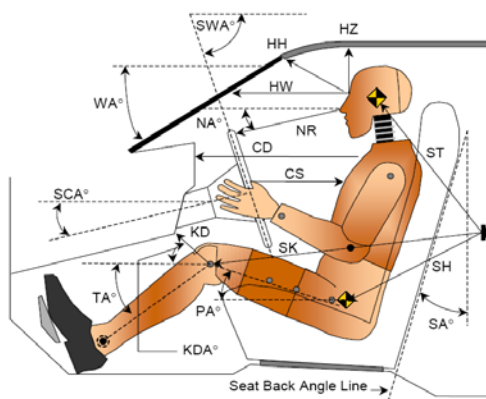
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Mazda CX-5

NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

Test Date: 04/22/16



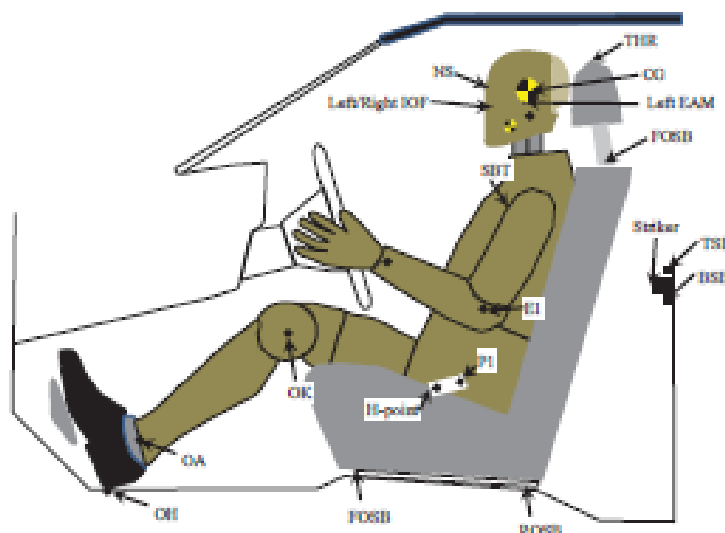
LEFT SIDE VIEW

Code	Measurement Description	Driver S/N# DO9798		Passenger S/N# DL9207	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		32.1		31.7
SWA°	Steering Wheel Angle		64.4		
SCA°	Steering Column Angle		25.6		
SA°	Seat Back Angle (On Headrest Post)		8.7		7.5
HZ	Head to Roof	236	89.9	222	90.0
HH	Head to Header	427	23.5	437	20.3
HW	Head to Windshield	711	0.1	696	0.0
NR	Nose to Rim	490	12.8		
CD	Chest to Dash	583	8.0	556	12.3
CS	Chest to Steering Hub	333	0.1		
RA	Rim to Abdomen	193	0.1		
KDL	Left Knee to Dash	103	11.1	87	30.2
KDR	Right Knee to Dash			114	29.8
PA°	Pelvic Angle		35.3		34.5
TA°	Tibia Angle		52.8		46.2
SK	Striker to Knee	676	2.6	692	5.5
ST	Striker to Head	619	86.1	627	88.4
SH	Striker to H-Point	338	29.2	313	28.5
HAX°	Head Angle (X)		0.1		-0.3
HAY°	Head Angle (Y)		-10.2		-6.9
TAX°	T6 Angle (X)		-0.8		-1.1
TAY°	T6 Angle (Y)		23.2		23.8
TAX°	T1 Angle (X)		-1.0		-1.0
TAY°	T1 Angle (Y)		1.5		2.2
TAX°	T12 Angle (X)		-1.0		-1.3
TAY°	T12 Angle (Y)		33.0		32.7
PAX°	Pelvis Angle (X)		-0.1		-0.3
PAY°	Pelvis Angle (Y)		35.3		34.5

DATA SHEET NO. 4

DUMMY CMM MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

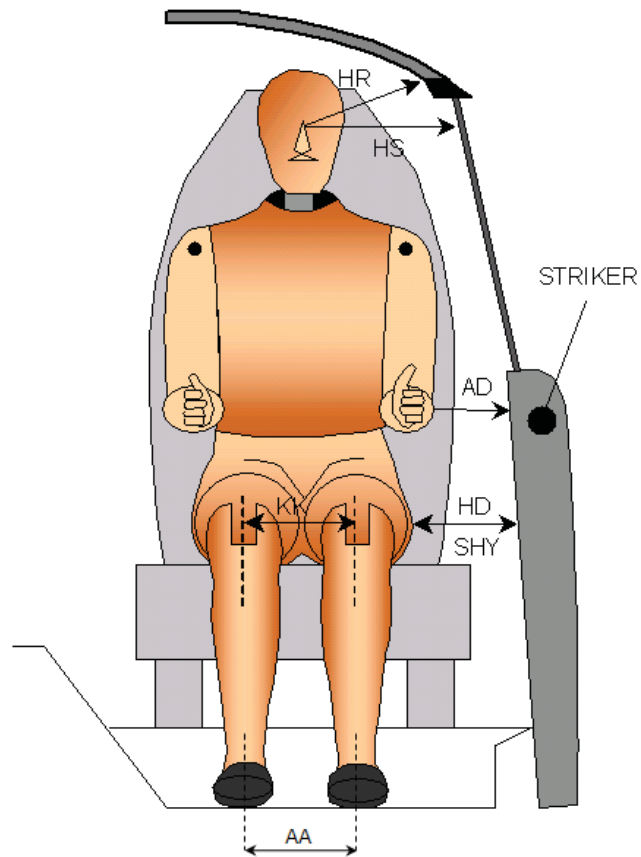


Description	Units	Driver S/N# DO9798			Passenger S/N# DL9207		
		X	Y	Z	X	Y	Z
Head CG	mm	2112	-452	-745	2092	447	-752
Nasion	mm	2203	-382	-739	2187	364	-754
Tip of Nose	mm	2200	-386	-710	2183	366	-717
Tip of Chin	mm	2179	-382	-603	2169	366	-616
Left EAM	mm	2111	-457	-714			
Right EAM	mm				2099	443	-726
Left IOF	mm	2195	-414	-701	2179	332	-717
Right IOF	mm	2195	-349	-701	2181	397	-717
Outboard Elbow	mm	2316	-642	-274	2238	653	-240
H-Point	mm	2324	-616	-97	2307	630	-110
H-Point Tool	mm	2248	-622	-125	2232	634	-138
Outboard Knee Bolt	mm	2715	-582	-206	2719	551	-172
Inboard Knee Bolt	mm	2726	-276	-206	2717	312	-169
Outboard Ankle Bolt	mm	2969	-567	128	3009	521	130
Inboard Ankle Bolt	mm	2988	-273	120	3017	301	123
Outer Heel Point	mm	2996	-548	264	2988	480	264
Inboard Heel Point	mm	2977	-245	265	2986	267	260
Striker Top Bolt	mm	2047	-800	-251	2047	800	-250
Striker Bottom Bolt	mm	2049	-802	-215	2049	802	-214
Center Tip of Striker	mm	2077	-802	-235	2077	802	-234
Front Outboard Seat Anchor Bolt	mm	2546	-609	168	2549	610	168
Rear Outboard Seat Anchor Bolt	mm	2104	-608	189	2103	609	193
Outboard Head Restraint Post	mm	1886	-450	-614	1876	455	-620
Center of Steering Wheel	mm	2584	-369	-436			

DATA SHEET NO. 5

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

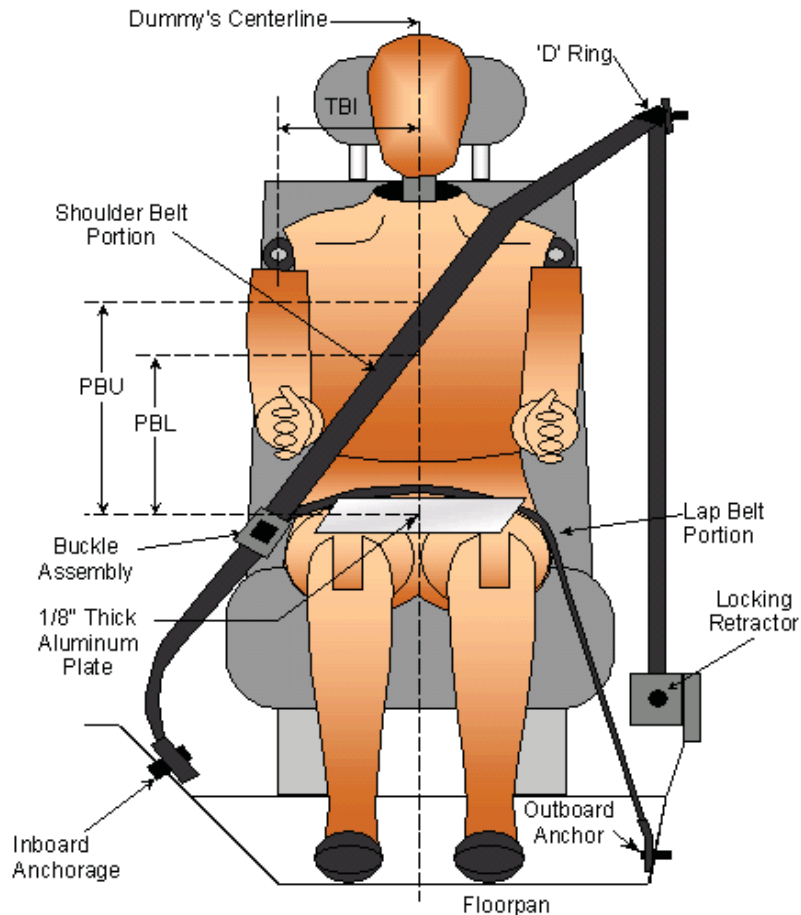


DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
AD	Arm to Door	mm	116	35
HD	H-Point to Door	mm	148	125
HR	Head to Side Header	mm	249	253
HS	Head to Side Window	mm	348	354
KK	Knee to Knee	mm	306	239
SHY	Striker to H-Point (Y Direction)	mm	185	172
AA	Ankle to Ankle	mm	294	220

DATA SHEET NO. 6
SEAT BELT POSITIONING DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



FRONT VIEW OF DUMMY

SEAT BELT POSITIONING MEASUREMENTS

Code	Measurement Description	Units	Driver	Passenger
PBU	Top Surface of Aluminum Plate to Belt Upper Edge	mm	380	318
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	305	255

BELT LENGTH DATA

Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	921	877
Lap Belt Length as Measured on ATD	mm	1001	1026
Remainder of Belt on Reel	mm	876	890
Total Belt Length for Continuous Webbing Systems	mm	2798	2793

HIGH SPEED CAMERA LOCATIONS AND DATA

NHTSA No. R20165412

Test Date: 04/22/16

[illegible]

Code	Units	Measurement
A	mm	3531
B	mm	4409
C	mm	15795
D	mm	12739
E	mm	15385

DATA SHEET NO. 7 ... (CONTINUED)**HIGH SPEED CAMERA LOCATIONS AND DATA**Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16**CAMERA LOCATIONS AND DATA**

No.	View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1a	Real-Time Vehicle Movement	1435	16149	545	Zoom	30
1b	Real-Time Impact View	-11241	-6898	666	Zoom	30
2	Onboard Passenger Over Shoulder	7522	-282	1415	12	1000
3	Onboard Driver Lower Leg	6484	-493	474	8	1000
4	Onboard Driver Over Shoulder	7420	-917	1470	14	1000
5	Onboard Center Driver Passenger	7861	-497	1416	6.5	1000
6	Right Side of OMDB View	4692	16040	695	50	1000
7	Left Side of Test Vehicle	3835	15634	613	50	1000
8	Oblique Overhead Driver Motion View	16437	21994	1043	85	1000
9	Oblique Rear View of Test Vehicle	7459	10104	5670	50	1000
10	Final Impact of the Vehicle	51395	-10894	4159	20	1000
11	Right Side of Test Vehicle	20734	-18865	725	50	1000
12	Left Side of OMDB View	4389	-13400	1131	35	1000
13	Front of Test Vehicle and OMDB	-10896	-6134	855	85	1000
14	Impact Point View	4589	-946	5551	35	1000
15	Overhead of OMDB View	4613	-548	5598	14	1000
16	Overhead View of Test Vehicle	7331	-740	5178	20	1000

Reference:

+X = From Back of OMDB to front of OMDB

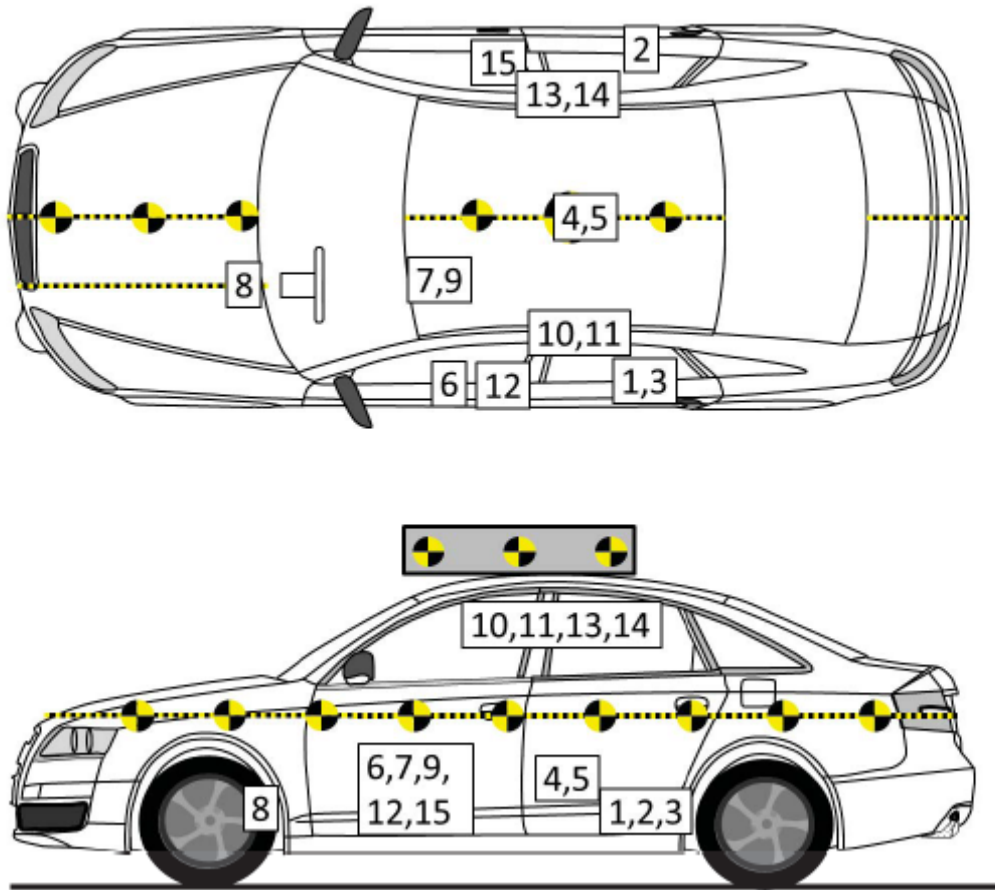
+Y = Right of monorail center

+Z = Up from ground

*All measurements accurate to ± 6 mm

DATA SHEET NO. 8
VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS RELATIVE TO VCS

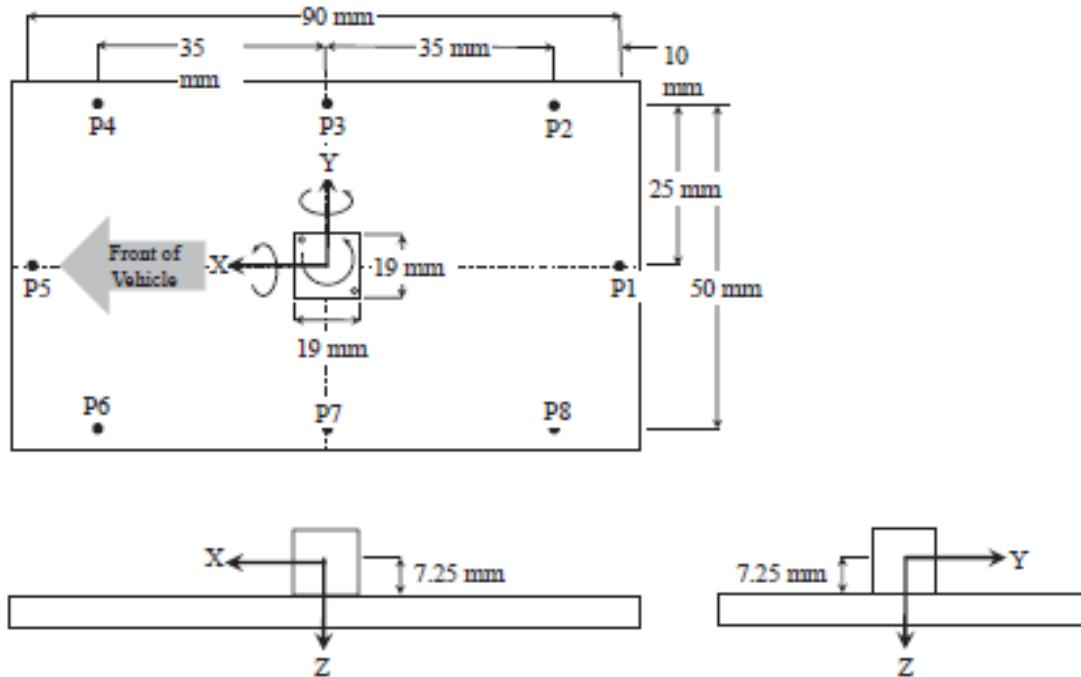
Loc. No.	Sensor Description	Axes	Coordinates (mm)		
			X	Y	Z
1	Left Rear Sill	X,Y	1777	-695	183
2	Right Rear Sill	X,Y	1772	694	183
3	Left Rear Sill Redundant	X,Y	1755	-695	183
4, 5	Vehicle CG	X, Y, Z	1825	0	96
6	Left Side Seat Track	X,Y,Z	2277	-600	212
7	Left Side String Pot	N/A	2616	-302	193
8	Left Side Toe Pan	X,Y,Z	3354	-374	79
9	Left Side Thigh Bar	X,Z	2468	-348	29

DATA SHEET NO. 8 ... (CONTINUED)

VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

ANGULAR RATE SENSOR MOUNTING PLATE RELATIVE TO VCS



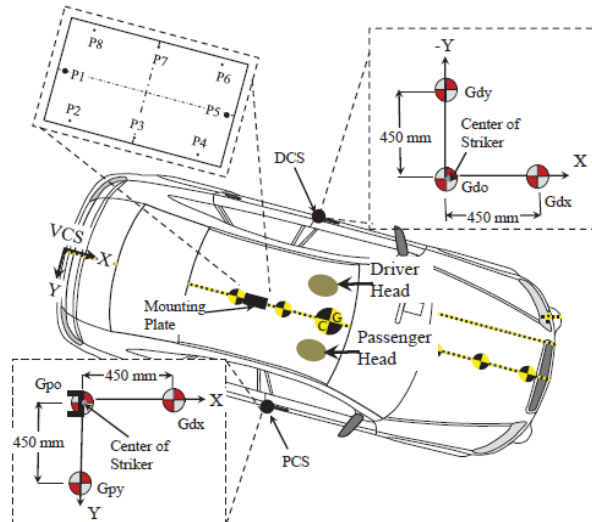
ARS MOUNTING PLATE - VEHICLE COORDINATE SYSTEM

No.	Description	Units	X	Y	Z
P1	Plate Point 1	mm	1780	0	112
P2	Plate Point 2	mm	1790	25	112
P3	Plate Point 3	mm	1825	25	112
P4	Plate Point 4	mm	1860	25	112
P5	Plate Point 5	mm	1870	0	112
P6	Plate Point 6	mm	1860	-25	112
P7	Plate Point 7	mm	1825	-25	112
P8	Plate Point 8	mm	1790	-25	112

DATA SHEET NO. 8 ... (CONTINUED)

VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



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

Description	DRIVER DCS			PASSENGER PCS		
	X (mm)	Y (mm)	Z (mm)	X (mm)	Y (mm)	Z (mm)
G ₀	0	0	0	0	0	0
G _x	450	0	10	450	1	3
G _y	0	-450	6	-1	451	4
P1	-494	698	-483	-80	-851	-492
P2	-491	724	-484	-77	-824	-492
P3	-457	734	-484	-43	-815	-492
P4	-424	743	-484	-9	-806	-493
P5	-407	721	-484	7	-828	-493
P6	-410	694	-484	4	-854	-493
P7	-444	685	-484	-30	-863	-492
P8	-478	676	-484	-64	-873	-492
Left CG	-57	347	-1341	146	-493	-1358
Right CG	-101	495	-1337	105	-339	-1356
Left EAM	-56	342	-1309			
Right EAM				113	-341	-1330
Left IOF	14	405	-1297	220	-427	-1321
Right IOF	-3	467	-1297	205	-364	-1321
Nasion	14	438	-1334	219	-394	-1359

DATA SHEET NO. 8 ... (CONTINUED)

VEHICLE INSTRUMENTATION DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

No.	Description	Axes	Units	Positive Direction		Negative Direction	
				Max	Time (ms)	Min	Time (ms)
1	Left Rear Sill Acceleration	X	g's	3.1	134.0	-37.2	40.4
		Y	g's	21.3	43.4	-6.1	69.0
2	Right Rear Sill Acceleration	X	g's	3.0	127.0	-38.1	44.4
		Y	g's	19.8	42.7	-4.5	70.4
3	Left Rear Sill Redundant Acceleration	X	g's	3.3	134.8	-35.9	40.4
		Y	g's	21.6	43.4	-5.2	69.1
4	Vehicle CG Acceleration	X	g's	3.0	126.9	-36.4	64.0
		Y	g's	32.8	41.4	-4.7	69.8
		Z	g's	31.9	46.9	-26.8	43.0
5	Driver Seat Track Acceleration	X	g's	2.4	135.9	-39.5	40.6
		Y	g's	26.4	42.3	-4.7	11.3
		Z	g's	13.5	55.4	-18.0	10.9
6	Driver Seat Thigh Bar Acceleration	X	g's	3.0	149.7	-37.8	64.6
		Z	g's	29.5	50.6	-27.0	82.3
7	Driver Floor Pan Acceleration	X	g's	17.8	63.1	-135.5	40.3
		Y	g's	27.2	29.0	-29.5	41.8
		Z	g's	22.5	35.4	-38.1	40.7
8	Vehicle CG Angular Rate	X	deg/s	571.2	43.8	-121.5	55.3
		Y	deg/s	83.1	8.7	-213.0	56.2
		Z	deg/s	117.8	45.0	-28.9	11.8
9	Driver Shoulder Belt Displacement		mm	105.6	22.9	-25.1	101.0
10	Driver Shoulder Belt Upper Force		N	457.1	15.2	-20.9	9.2
11	Driver Lap Belt Force		N	3794.4	59.2	-23.6	12.7
12	Passenger Shoulder Belt Displacement		mm	79.6	22.4	-213.2	105.9
13	Passenger Shoulder Belt Upper Force		N	4168.5	47.6	-164.9	180.1
14	Passenger Lap Belt Force		N	6554.5	60.9	-28.9	13.1
15	Driver Floor Pan Deflection	X	mm	7.6	92.5	-12.3	299.9

Note: See Appendix B for all vehicle data plots

*Channel failed during test

TIME TO FIRE RESTRAINT TIMING

No.	Description	Units	Time to Fire (ms)
1	Driver Front Airbag Stage 1 Monitor	A	9.7
2	Driver Front Airbag Stage 2 Monitor	A	14.7
3	Driver Curtain Airbag Monitor	A	Did Not Register Firing Time
4	Driver Seat Airbag Monitor	A	41.7
5	Driver Retractor Pretensioner Monitor	A	9.7
6	Driver Anchor Pretensioner Monitor	A	16.7
7	Passenger Front Airbag Stage 1 Monitor	A	9.7
8	Passenger Front Airbag Stage 2 Monitor	A	29.7
9	Passenger Curtain Airbag Monitor	A	Did Not Fire
10	Passenger Seat Airbag Monitor	A	Did Not Fire
11	Passenger Retractor Pretensioner Monitor	A	9.7
12	Passenger Anchor Pretensioner Monitor	A	16.9

*The measurement indicates the time the voltage changed.

DATA SHEET NO. 9

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

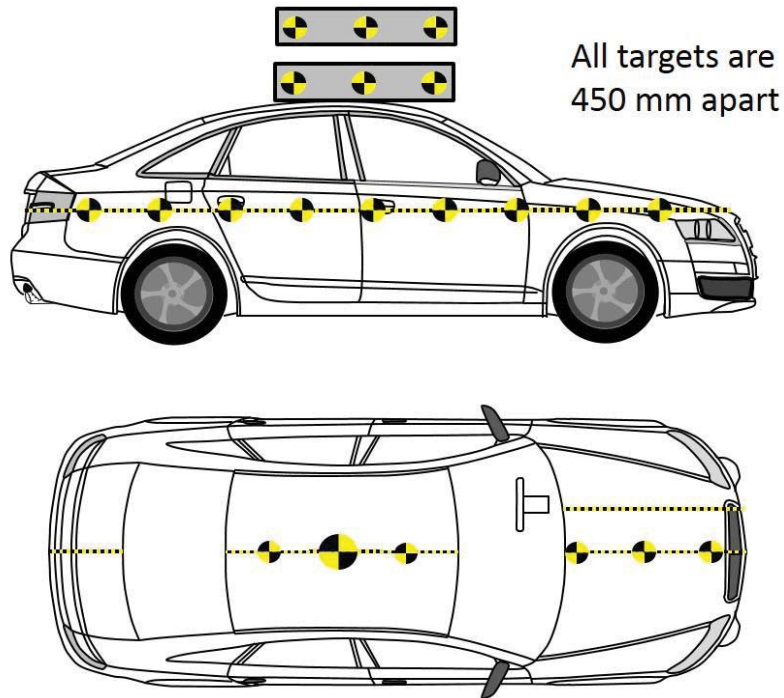
Test Vehicle: 2016 Mazda CX-5

NHTSA No. R20165412

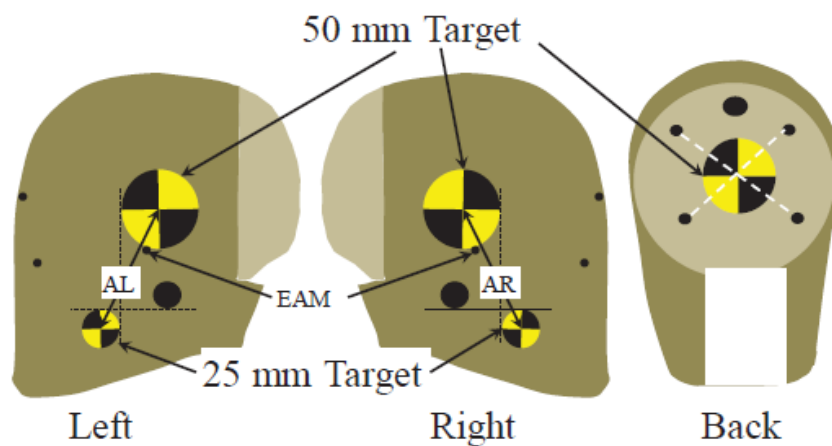
Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

Test Date: 04/22/16

VEHICLE TARGETS



ATD HEAD TARGETS



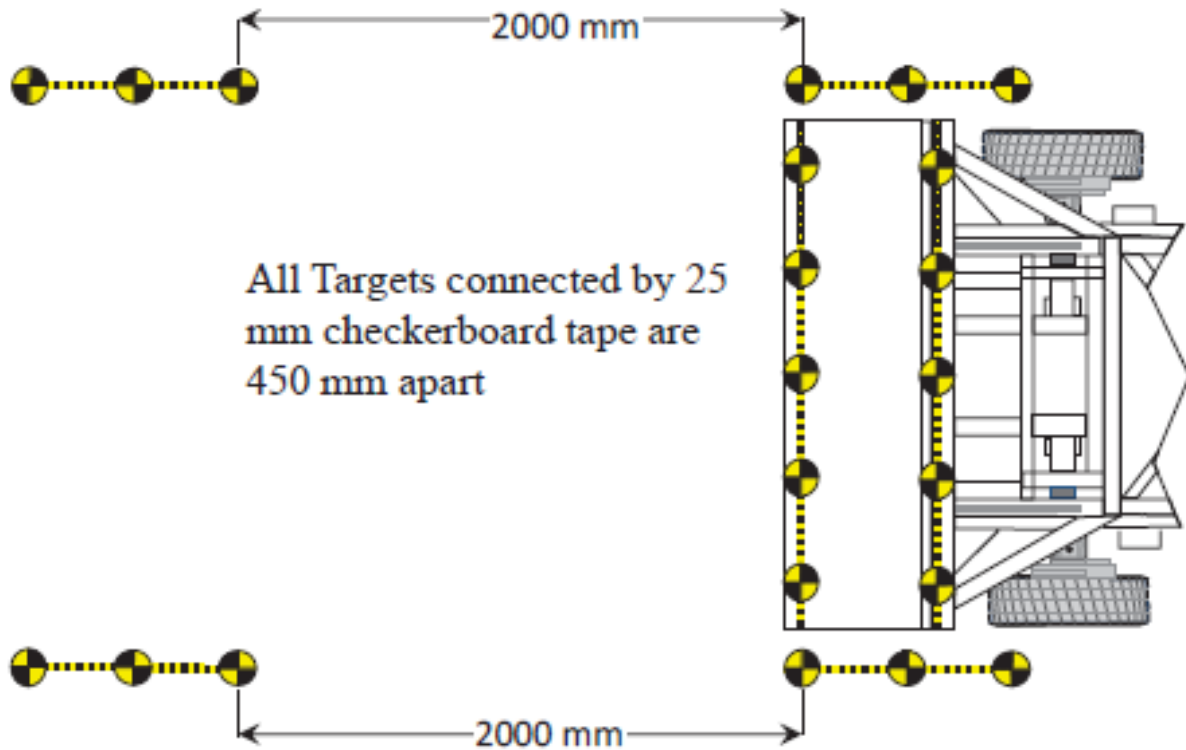
Target	Units	Measurement
AL	mm	91
AR	mm	91

DATA SHEET NO. 9 ... (CONTINUED)

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

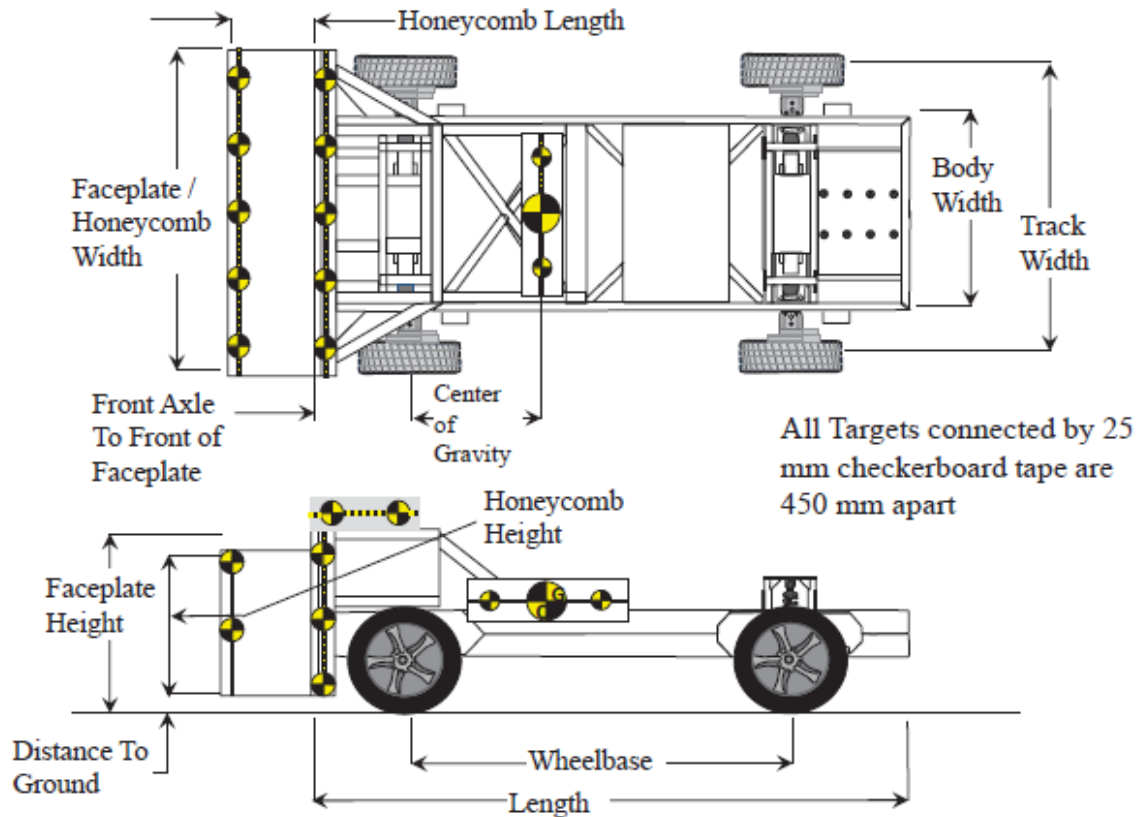
GROUND TARGETS LOCATED IN REFERENCE TO OMDB



DATA SHEET NO. 9 ... (CONTINUED)

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



Item	Units	Value	Item	Units	Value
Honeycomb Width	mm	2207	Faceplate Height	mm	1185
Honeycomb Length	mm	609	Faceplate to Ground	mm	85
Honeycomb Height	mm	955	Wheelbase	mm	2593
Left Front Axle to Front Faceplate	mm	601	Cart Length	mm	3987
Right Front Axle to Front Faceplate	mm	601	Body Width	mm	1302
Front Axle to CG	mm	988	Track Width	mm	1914

OMDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	769.0	474.5	1243.5
Right	kg	776.5	476.5	1253.0
Ratio	%	61.9%	38.1%	100.0%
Totals	kg	1545.5	951.0	2496.5

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

DATA SHEET NO. 10**TEST VEHICLE SUMMARY OF RESULTS**

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

INSTRUMENTATION

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

CAMERA COVERAGE

Type of Camera	Number of Channels Collected
High-Speed Vehicle Onboard	4
High-Speed Off-Board	11
Real-Time Panning	3
Total	18

DATA SHEET NO. 11
POST TEST OBSERVATIONS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

TEST DUMMY INFORMATION AND CONTACT

Description	Driver	Passenger
Dummy Type/Serial No.	THOR DO9798	THOR DL9207
Lower Leg Type	LX	LX
Lower Leg Serial No.	LX655 / LX654	LX0045 / LX0046
Head Contact	Frontal & Curtain Airbag, Headrest, Passenger Head	Frontal Airbag, Driver Head
Upper Torso Contact	Front & Torso / Pelvis Airbag, Door Panel, Seatback, Dashboard	Frontal Airbag, Center Instrument Panel, Seatback, Door Panel, Headrest
Lower Torso Contact	Torso / Pelvis Airbag, Seatback	None
Left Knee Contact	Knee Bolster, Steering Column	Glovebox
Right Knee Contact	Knee Bolster, Steering Column	Glovebox

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Locked / Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Rear Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Seat Track Shift (mm)	3	0
Seat Back Failure	None	None
Glazing Damage	None	None

POST TEST STRUCTURAL OBSERVATIONS

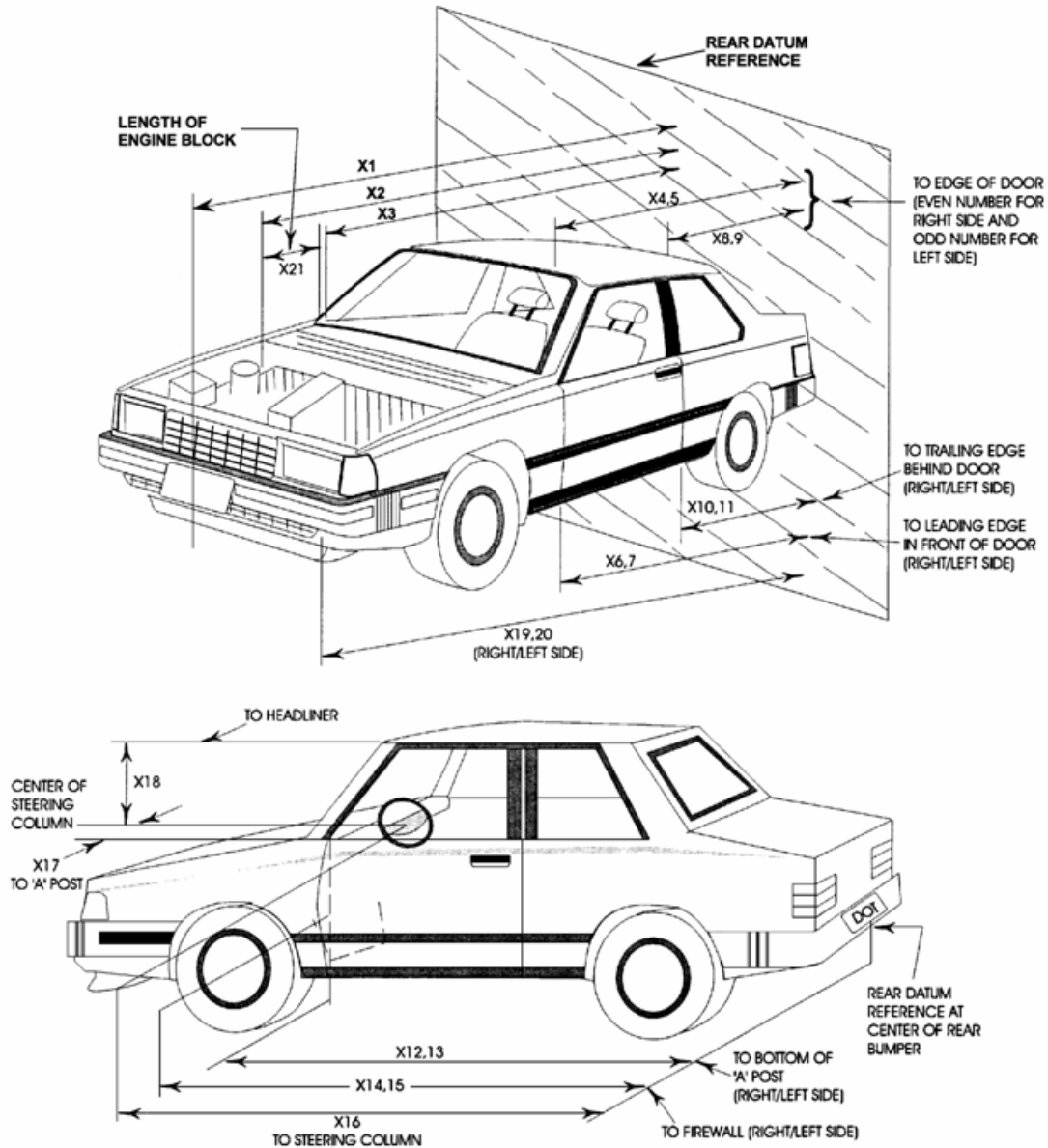
Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Good
Windshield Damage	Broken
Window Damage	None
Other Notable Effects	Left front wheel was pushed into the A-Pillar. Glazing cracked across windshield but did not separate.

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

DATA SHEET NO. 12
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



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

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	4530	4441	-89
2	Rear Surface of Vehicle to Front of Engine	4050	3945	-105
3	RSOV to Firewall	3325	3320	-5
4	RSOV to Upper Leading Edge of Right Door	3088	3085	-3
5	RSOV to Upper Leading Edge of Left Door	3085	3083	-2
6	RSOV to Lower Leading Edge of Right Door	3080	3077	-3
7	RSOV to Lower Leading Edge of Left Door	3078	3074	-4
8	RSOV to Upper Trailing Edge of Right Door	1972	1967	-5
9	RSOV to Upper Trailing Edge of Left Door	1970	1962	-8
10	RSOV to Lower Trailing Edge of Right Door	2021	2016	-5
11	RSOV to Lower Trailing Edge of Left Door	2019	2014	-5
12	RSOV to Bottom of A-Pillar, Right Side	3054	3003	-51
13	RSOV to Bottom of A-Pillar, Left Side	3046	3004	-42
14	RSOV to Firewall, Right Side	3305	3327	22
15	RSOV to Firewall, Left Side	3305	3230	-75
16	RSOV to Steering Column	2565	2570	5
17	Center of Steering Column to A-Pillar	393	425	32
18	Center of Steering Column to Headliner	455	415	-40
19	RSOV to Right Side of Front Bumper	3933	3923	-10
20	RSOV to Left Side of Front Bumper	3930	3355	-575
21	Length of Engine Block	570	570	0
RD	RSOV to Right Side of Dash Panel	2831	2811	-20
CD	RSOV to Center of Dash Panel	2721	2701	-20
LD	RSOV to Left Side of Dash Panel	2825	2795	-30

All measurements in millimeters.

DATA SHEET NO. 13

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

VEHICLE INFORMATION

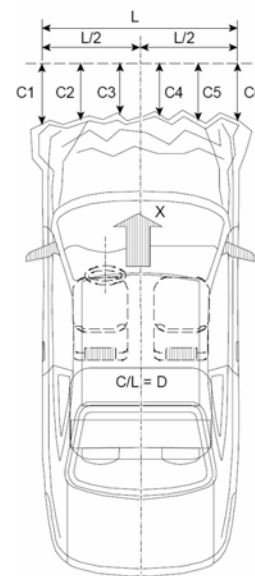
VIN: JM3KE4BY2G0664418 Wheelbase (mm): 2684
 Vehicle Size Category: SUV Test Weight (kg): 1791.0

ACCELEROMETER DATA

Accelerometer Locations: Vehicle CG
 Cal. Procedure/Interval: Drop Test / 6 months
 Integration Algorithm: NHTSA Standard
 Linearity: Good
 Impact Velocity (km/h): 89.75
 Velocity Change (km/h): 53.04

CRUSH PROFILE

Collision Deformation Classification: 12FYEW3
 Midpoint of Damage: C1
 Damage Region Length (mm): 1602
 Impact Mode: Frontal 15° Angle, 35% Left



Crush Measurements: Bumper Cover

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	298	937	639
C2	Crush Zone 2 at Left Side	mm	104	695	591
C3	Crush Zone 3 at Left Side	mm	30	505	475
C4	Crush Zone 4 at Right Side	mm	30	213	183
C5	Crush Zone 5 at Right Side	mm	104	23	-81
C6	Crush Zone 6 at Right Side	mm	298	136	-162
L	C1 to C6	mm	1602		

Crush Measurements: Bumper Beam

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
B1	Bumper Beam 1 at Left Side	mm	4348	4014	-334
B2	Bumper Beam 2 at Left Side	mm	4375	4119	-256
B3	Bumper Beam 3 at Left Side	mm	4403	4221	-183
B4	Bumper Beam 4 at Left Side	mm	4416	4328	-87
B5	Bumper Beam 5 at Right Side	mm	4420	4425	6
B6	Bumper Beam 6 at Right Side	mm	4417	4518	101
B7	Bumper Beam 7 at Right Side	mm	4403	4601	198
B8	Bumper Beam 8 at Right Side	mm	4376	4676	301
B9	Bumper Beam 9 at Right Side	mm	4349	4744	395
L	B1 to B9	mm	1010	700	-310

Note: Bumper Beam Measurements are taken relative to VCS.

DATA SHEET NO. 14

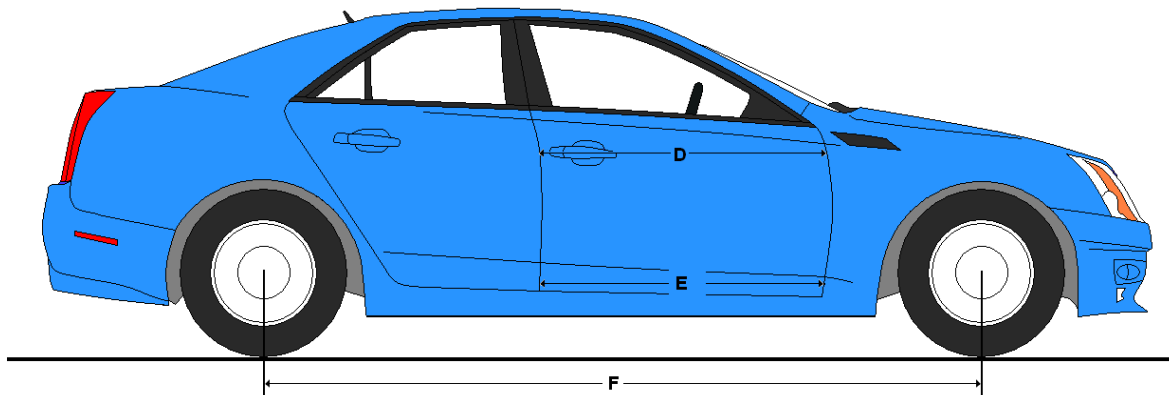
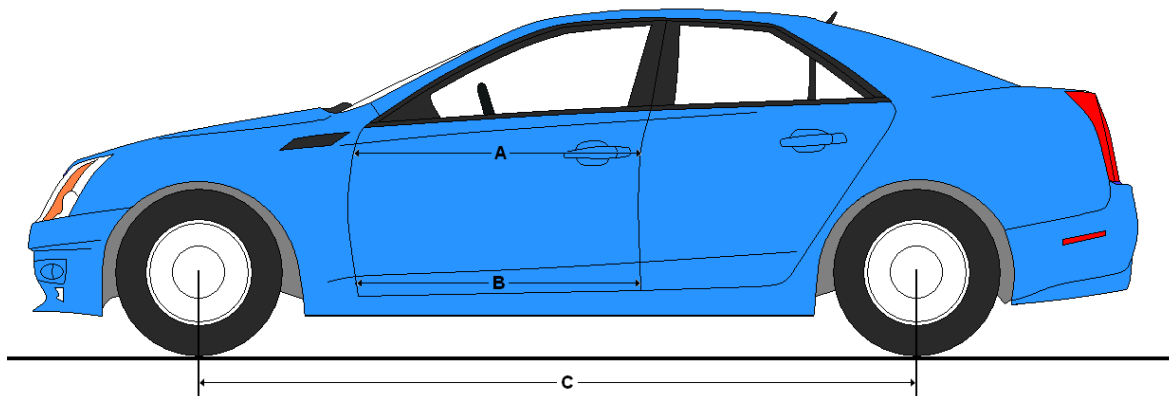
VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Driver Side Upper	mm	869	857	-11
B	Driver Side Lower	mm	718	719	1
D	Passenger Side Upper	mm	869	866	-3
E	Passenger Side Lower	mm	712	712	1

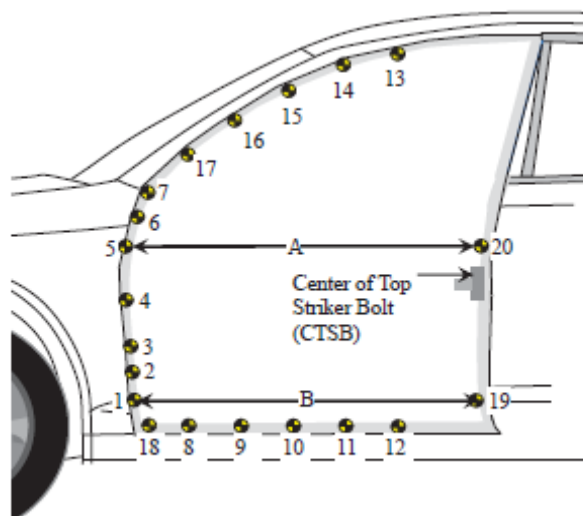


DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

DRIVER SIDE DOOR SILL INTRUSIONS



Point	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2954	-758	104	2954	-757	92	0	1	-11
2	2964	-753	29	2958	-753	17	-6	0	-12
3	2957	-750	-46	2950	-755	-52	-7	-5	-7
4	2946	-745	-196	2939	-759	-204	-7	-14	-8
5	2937	-749	-346	2928	-768	-354	-9	-19	-8
6	2933	-752	-421	2924	-773	-428	-9	-21	-7
7	2924	-754	-496	2918	-776	-505	-5	-22	-9
8	2791	-761	173	2794	-760	164	3	1	-9
9	2644	-761	174	2645	-760	168	1	1	-5
10	2494	-761	179	2496	-761	172	2	1	-8
11	2343	-761	166	2346	-761	159	3	0	-7
12	2193	-759	57	2195	-759	47	1	0	-10
13	2359	-628	-863	2359	-640	-872	1	-12	-9
14	2502	-652	-814	2500	-667	-822	-2	-15	-8
15	2614	-679	-752	2612	-695	-763	-3	-16	-11
16	2728	-705	-683	2725	-723	-694	-3	-18	-12
17	2841	-730	-609	2837	-751	-616	-4	-21	-7
18	2876	-760	170	2877	-759	165	1	1	-5
19	2236	-760	102	2235	-760	101	-1	0	-2
20	2068	-748	-346	2070	-751	-345	2	-4	1

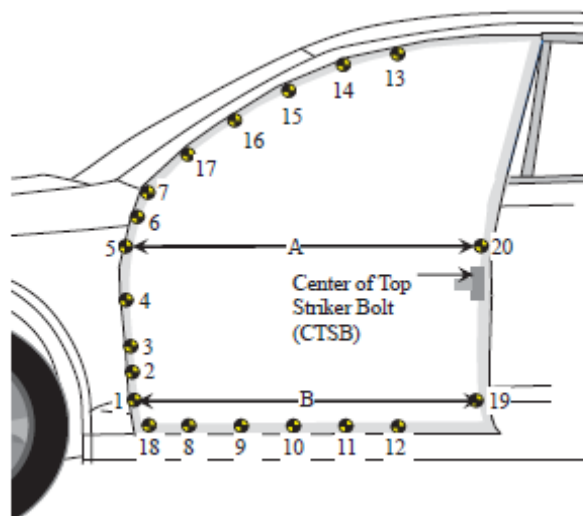
All measurements in millimeters.

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

PASSENGER SIDE DOOR SILL INTRUSIONS



Point	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2952	759	105	2952	771	108	0	13	3
2	2961	754	29	2963	766	34	2	13	5
3	2959	750	-46	2959	762	-45	0	12	1
4	2951	746	-196	2950	756	-192	-1	10	5
5	2939	749	-346	2937	758	-343	-2	8	3
6	2930	752	-421	2930	759	-417	-1	7	4
7	2927	753	-496	2923	760	-492	-3	7	4
8	2804	761	173	2800	772	173	-3	11	0
9	2654	761	172	2653	771	175	-1	10	3
10	2504	761	173	2504	769	173	0	9	0
11	2353	761	162	2354	769	165	1	7	3
12	2203	759	62	2202	764	63	-2	5	1
13	2351	628	-863	2350	620	-859	-2	-7	4
14	2466	647	-822	2468	642	-817	1	-5	6
15	2581	671	-768	2580	667	-766	-1	-5	2
16	2696	698	-703	2696	697	-699	-1	-1	4
17	2811	724	-626	2813	726	-622	2	3	4
18	2877	760	170	2878	772	173	1	12	3
19	2240	761	105	2240	767	108	-1	6	3
20	2071	746	-345	2072	746	-342	1	0	3

All measurements in millimeters.

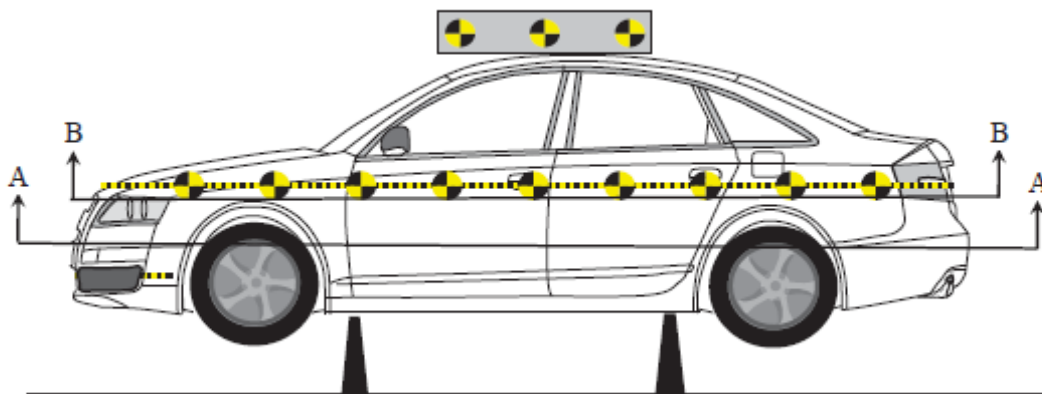
DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

VEHICLE EXTERIOR CRUSH PROFILE

SECTION A-A



Point	Pre-Test (mm)		
	X	Y	Z
1	1506	-904	79
2	1908	-909	79
3	2315	-916	78
4	2705	-911	78
5	3111	-909	79
6	4120	-885	78
7	4206	-847	79
8	4333	-639	78
9	4440	-492	79
10	4478	-360	79
11	4507	-202	79
12	4521	-102	78
13	4532	-1	78
14	4524	84	79
15	4507	202	78
16	4490	296	79
17	4460	434	79
18	4434	516	78
19	4275	710	76
20	4201	848	79

Point	Post-Test (mm)		
	X	Y	Z
1	1509	-903	78
2	1908	-908	79
3	2042	-912	76
4	2106	-915	76
5	2148	-916	75
6	2207	-916	76
7	2254	-916	76
8	2296	-916	77
9	2314	-917	79
10	2331	-916	78
11	2385	-915	76
12	2430	-915	77
13	2457	-915	77
14	2502	-914	76
15	2543	-914	75
16	2581	-914	76
17	2614	-914	77
18	2666	-913	76
19	2703	-915	79
20	2705	-913	75

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

VEHICLE EXTERIOR CRUSH PROFILE

SECTION A-A ... (CONTINUED)

Point	Pre-Test (mm)		
	X	Y	Z
21	4028	906	78
22	3119	908	79
23	2718	910	79
24	2316	916	79
25	1912	909	79
26	1514	904	79

Point	Post-Test (mm)		
	X	Y	Z
21	2749	-913	76
22	2801	-913	77
23	2867	-912	75
24	2908	-911	76
25	2968	-910	75
26	3002	-911	75
27	3051	-913	77
28	3056	-915	79
29	3071	-916	77
30	3250	-874	77
31	3268	-829	78
32	3340	-826	76
33	3369	-814	75
34	3434	-787	76
35	3466	-774	76
36	3520	-747	77
37	3543	-735	75
38	3587	-733	76
39	3652	-700	75
40	4057	-575	76
41	4028	-560	77
42	4002	-534	76
43	4078	-533	75
44	3979	-515	75
45	3944	-493	73
46	3925	-491	76

Point	Post-Test (mm)		
	X	Y	Z
47	3929	-487	76
48	4033	-461	80
49	4009	-436	76
50	3771	-438	76
51	3735	-438	77
52	3659	-422	77
53	3891	-331	77
54	3898	-324	77
55	3908	-273	77
56	3929	-231	79
57	3986	-226	76
58	4019	-199	77
59	4023	-195	75
60	4030	-192	80
61	4057	-161	76
62	4113	-122	76
63	4115	-120	76
64	4136	-104	80
65	4120	-101	76
66	4143	-75	75
67	4158	-56	74
68	4170	-54	77
69	4171	-36	74
70	4185	-15	76
71	4205	35	76
72	4203	39	77
73	4214	72	78
74	4213	75	75
75	4220	77	81
76	4223	85	77
77	4433	115	76
78	4234	182	76
79	4434	197	76
80	4237	200	76
81	4443	209	76

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

VEHICLE EXTERIOR CRUSH PROFILE

SECTION A-A ... (CONTINUED)

Point	Post-Test (mm)		
	X	Y	Z
82	4433	226	76
83	4444	249	80
84	4436	255	76
85	4429	268	75
86	4428	326	75
87	4433	336	77
88	4425	395	75
89	4424	423	76
90	4416	445	76
91	4398	481	75
92	4384	509	77
93	4366	542	78
94	4353	553	76
95	4347	565	76
96	4340	568	75
97	4324	596	75
98	4272	744	74
99	4271	767	74
100	4258	779	77
101	4244	791	75
102	4210	813	76
103	4194	823	77
104	4192	824	77
105	4169	836	76
106	4166	838	76
107	4135	836	75
108	4114	840	76
109	4031	913	75
110	3178	932	75
111	3146	930	75
112	3112	921	76
113	3101	920	77
114	3055	920	77
115	2991	918	76
116	2936	918	76

Point	Post-Test (mm)		
	X	Y	Z
117	2900	918	75
118	2831	919	74
119	2771	919	75
120	2715	919	76
121	2708	919	75
122	2637	919	75
123	2582	919	76
124	2515	919	76
125	2451	920	76
126	2408	920	76
127	2368	920	75
128	2324	920	75
129	2276	920	75
130	2271	921	76
131	2206	921	76
132	2109	919	75
133	2023	915	75
134	1914	912	76
135	1508	908	76

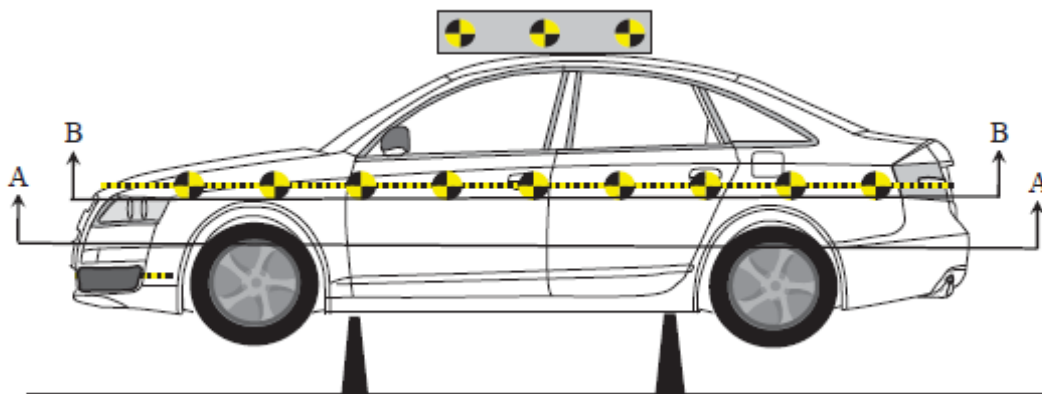
DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

VEHICLE EXTERIOR CRUSH PROFILE

SECTION B-B



Point	Pre-Test (mm)		
	X	Y	Z
1	603	-912	-239
2	1208	-920	-240
3	1538	-906	-240
4	1941	-911	-240
5	2338	-912	-241
6	2742	-910	-240
7	3138	-912	-242
8	3717	-917	-240
9	3794	-910	-239
10	3974	-893	-240
11	4051	-873	-238
12	4124	-850	-240
13	4231	-771	-241
14	4276	-708	-241
15	4317	-638	-239
16	4368	-541	-240
17	4395	-491	-237
18	4461	-365	-241
19	4493	-241	-239
20	4508	-123	-239

Point	Post-Test (mm)		
	X	Y	Z
1	1205	-920	-240
2	1539	-906	-240
3	1951	-913	-240
4	2032	-927	-240
5	2116	-928	-240
6	2218	-929	-239
7	2305	-931	-240
8	2325	-930	-240
9	2380	-930	-240
10	2443	-930	-241
11	2514	-931	-240
12	2561	-931	-242
13	2673	-931	-240
14	2706	-931	-239
15	2731	-933	-240
16	2797	-932	-238
17	2849	-932	-240
18	2938	-933	-241
19	3013	-933	-241
20	3075	-935	-239

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

VEHICLE EXTERIOR CRUSH PROFILE

SECTION B-B ... (CONTINUED)

Point	Pre-Test (mm)		
	X	Y	Z
21	4527	-38	-239
22	4525	-1	-240
23	4507	104	-242
24	4503	181	-240
25	4485	282	-239
26	4459	375	-240
27	4372	537	-240
28	4321	633	-239
29	4195	807	-239
30	3974	892	-239
31	3738	916	-240
32	3523	922	-240
33	3147	912	-240
34	2741	910	-240
35	2343	912	-240
36	1938	911	-239
37	1544	906	-240
38	1157	920	-241
39	299	805	-240

Point	Post-Test (mm)		
	X	Y	Z
21	3090	-898	-240
22	3104	-888	-237
23	3149	-905	-241
24	3194	-932	-239
25	3199	-894	-239
26	3213	-899	-239
27	3399	-712	-240
28	3414	-678	-242
29	3415	-587	-240
30	3426	-580	-239
31	3389	-514	-240
32	3519	-474	-240
33	3439	-473	-239
34	3482	-460	-239
35	3515	-444	-239
36	3528	-438	-240
37	3590	-378	-240
38	3612	-331	-240
39	3612	-328	-240
40	3612	-327	-240
41	3668	-310	-239
42	3679	-227	-240
43	3729	-205	-241
44	3789	-187	-240
45	3845	-187	-240
46	3903	-115	-240
47	3840	-88	-240
48	3953	-67	-240
49	4018	-30	-237
50	4067	-26	-239
51	4106	-5	-240
52	4154	35	-240
53	4213	72	-240
54	4236	99	-239
55	3963	114	-239

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

VEHICLE EXTERIOR CRUSH PROFILE

SECTION B-B ... (CONTINUED)

Point	Post-Test (mm)		
	X	Y	Z
56	3999	215	-239
57	3999	216	-239
58	4266	244	-240
59	4233	274	-240
60	4225	304	-240
61	4122	380	-239
62	4130	534	-239
63	4130	536	-240
64	4131	540	-240
65	4137	549	-239
66	4177	751	-239
67	4122	785	-240
68	4063	822	-241
69	4024	833	-240
70	3951	896	-239
71	3884	910	-240
72	3803	922	-240
73	3784	923	-239
74	3713	925	-239
75	3415	928	-240
76	3356	927	-240
77	3271	924	-241
78	3167	918	-241
79	3141	917	-240
80	3119	916	-240
81	3050	920	-241
82	2969	919	-239
83	2869	918	-240
84	2798	918	-239
85	2747	917	-239
86	2737	917	-242
87	2681	917	-240
88	2653	917	-240
89	2603	917	-239
90	2553	917	-240

Point	Post-Test (mm)		
	X	Y	Z
91	2494	917	-240
92	2425	917	-241
93	2373	916	-240
94	2312	916	-240
95	2306	916	-240
96	2235	915	-240
97	2168	914	-241
98	2124	914	-240
99	2040	913	-242
100	1937	912	-240
101	1541	906	-240
102	1158	922	-240

DATA SHEET NO. 14 ... (CONTINUED)

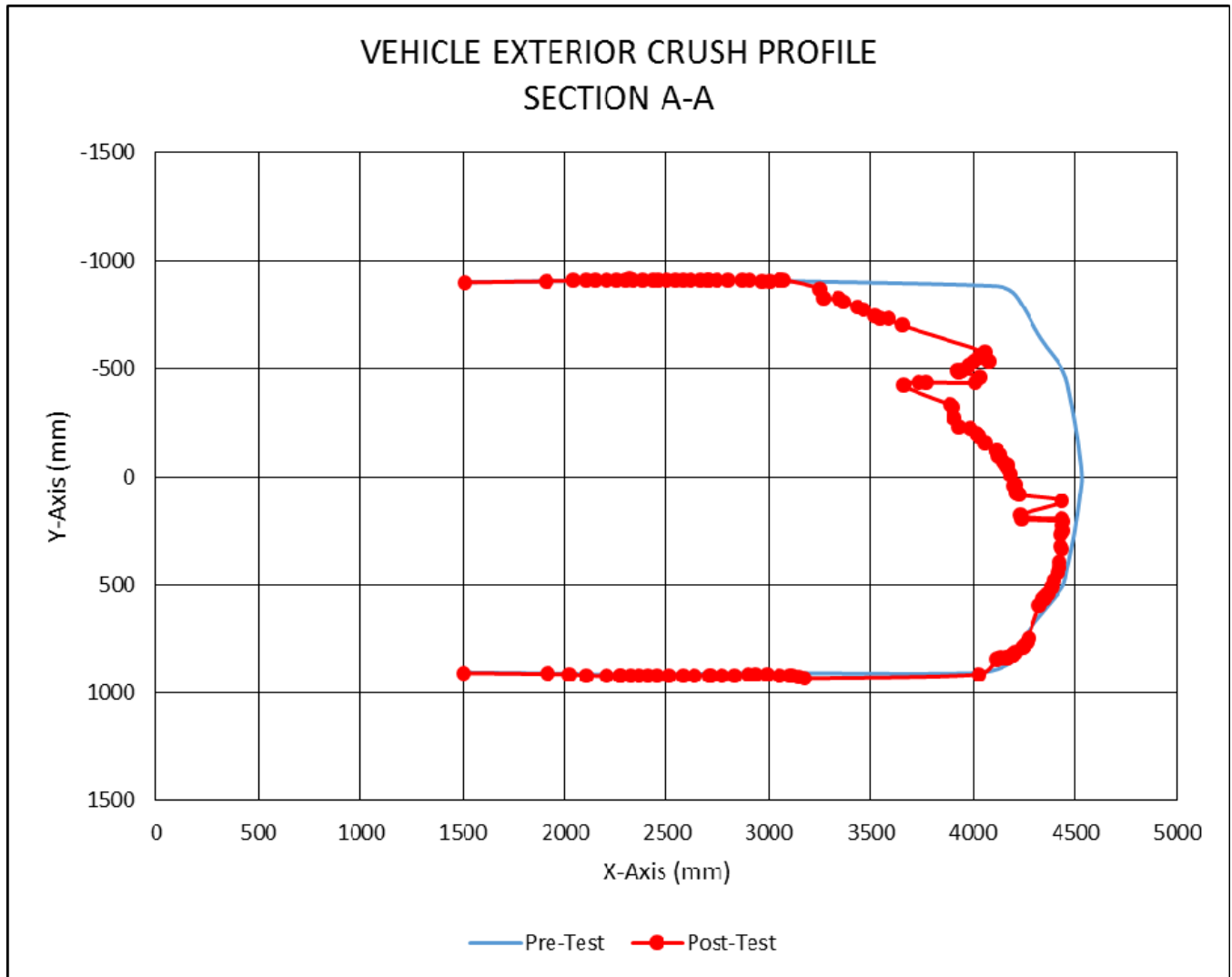
VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5

NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

Test Date: 04/22/16



DATA SHEET NO. 14 ... (CONTINUED)

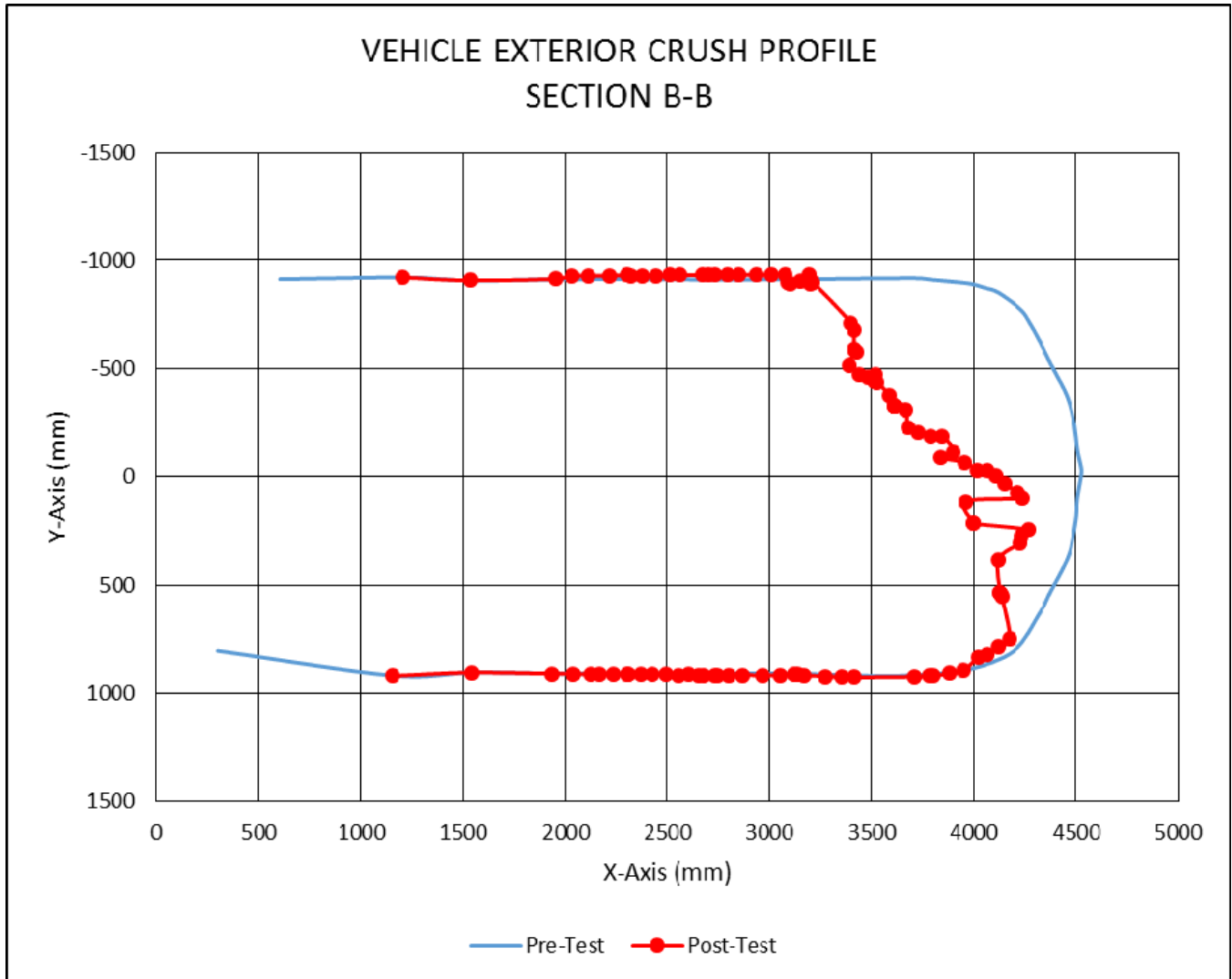
VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5

NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

Test Date: 04/22/16



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

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

STRUCTURAL BUMPER BEAM POINTS

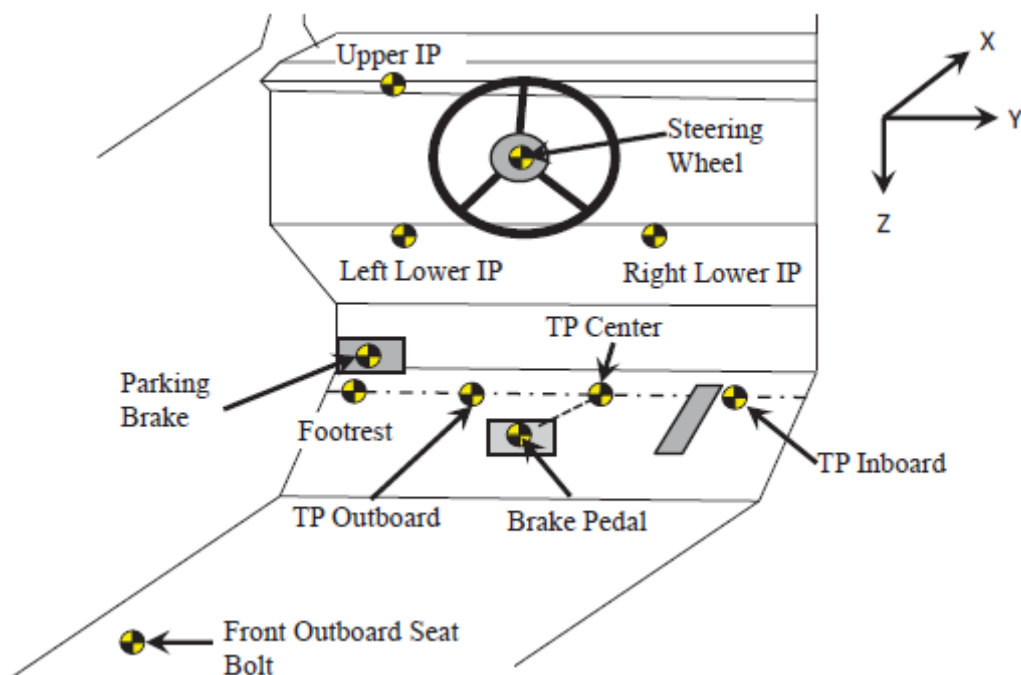
Point	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
B1	4348	-506	79	4014	-409	-137	-334	97	-216
B2	4375	-380	80	4119	-332	-139	-256	48	-218
B3	4403	-254	76	4221	-258	-144	-183	-4	-220
B4	4416	-124	77	4328	-185	-147	-87	-61	-224
B5	4420	5	76	4425	-101	-153	6	-106	-229
B6	4417	133	76	4518	-11	-156	101	-144	-233
B7	4403	260	76	4601	83	-163	198	-177	-239
B8	4376	387	76	4676	190	-163	301	-197	-239
B9	4349	503	75	4744	290	-168	395	-213	-243

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

DRIVER FLOOR PAN MEASUREMENTS



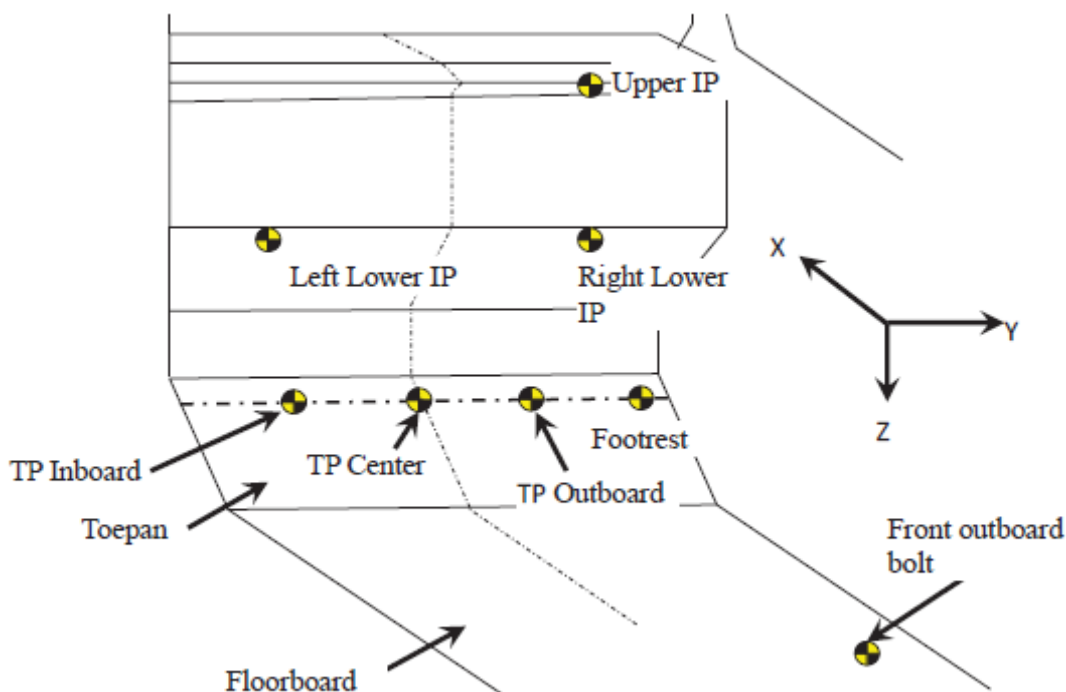
Intrusion Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
TP Inboard	3350	-174	103	3313	-169	94	-37	5	-9
TP Center	3358	-325	104	3257	-358	74	-100	-33	-30
TP Outboard	3309	-475	104	3240	-441	83	-68	34	-21
TP Footrest	3216	-575	105	3181	-558	89	-35	18	-16
Brake Pedal	3074	-325	104	3137	-340	106	62	-15	2
Left Lower IP	2822	-519	-203	2817	-534	-216	-5	-15	-12
Right Lower IP	2821	-219	-203	2811	-233	-206	-10	-14	-3
Upper IP	2784	-520	-306	2773	-535	-319	-11	-15	-13
Steering Wheel	2584	-369	-436	2573	-397	-466	-11	-28	-31
Front Outboard Bolt	2546	-610	168	2545	-607	164	-1	2	-4
Emergency Brake									

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS RELATIVE TO VCS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

PASSENGER FLOOR PAN MEASUREMENTS



Intrusion Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
TP Inboard	3334	219	106	3274	267	68	-60	48	-38
TP Center	3357	369	106	3358	388	106	0	18	0
TP Outboard	3249	520	106	3254	530	113	5	9	7
TP Footrest	3196	620	106	3199	639	97	3	19	-9
Left Lower IP	2801	220	-186	2831	207	-179	30	-13	7
Right Lower IP	2841	520	-187	2857	508	-182	15	-11	4
Upper IP	2776	520	-372	2782	507	-369	6	-13	3
Front Outboard Bolt	2548	609	167	2549	617	169	1	8	2

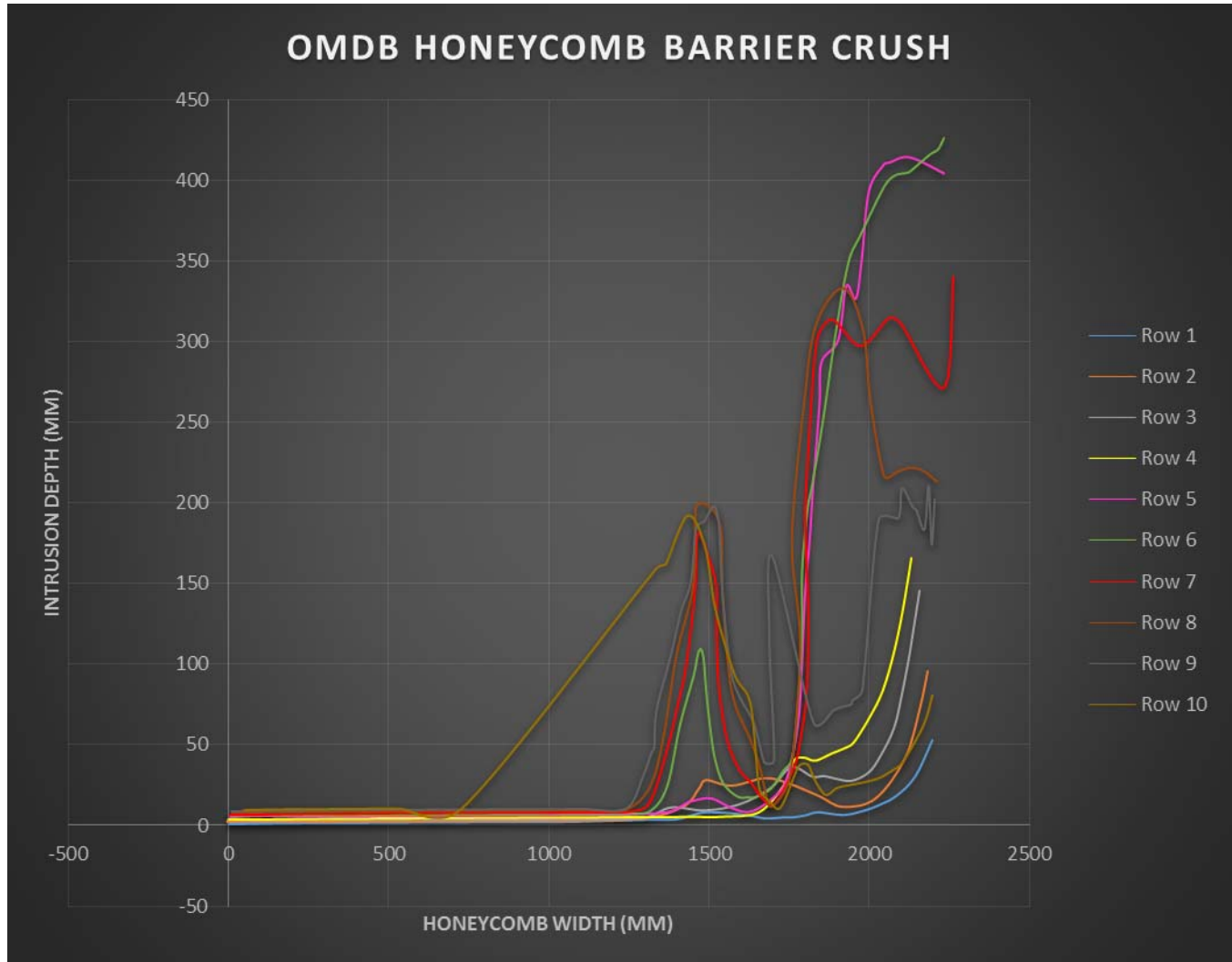
DATA SHEET NO. 15
OMDB CRUSH MEASUREMENTS

Test Vehicle: 2016 Mazda CX-5

NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

Test Date: 04/22/16



DATA SHEET NO. 16

SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

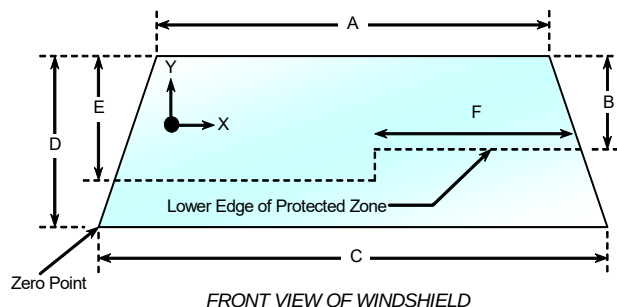
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with plastic molding and rubber cement.

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: 20.9° C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2244	2244	100.0%
Right Side	2244	2244	100.0%
Total	4488	4488	100.0%



Item	Units	Value
A	mm	1251
B	mm	400
C	mm	1514
D	mm	862
E	mm	510
F	mm	483

AREAS OF PROTECTED ZONE FAILURES

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

X	Y

X	Y

DATA SHEET NO. 16 ... (CONTINUED)

SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 23.0° C Test Time: 11:45 AM

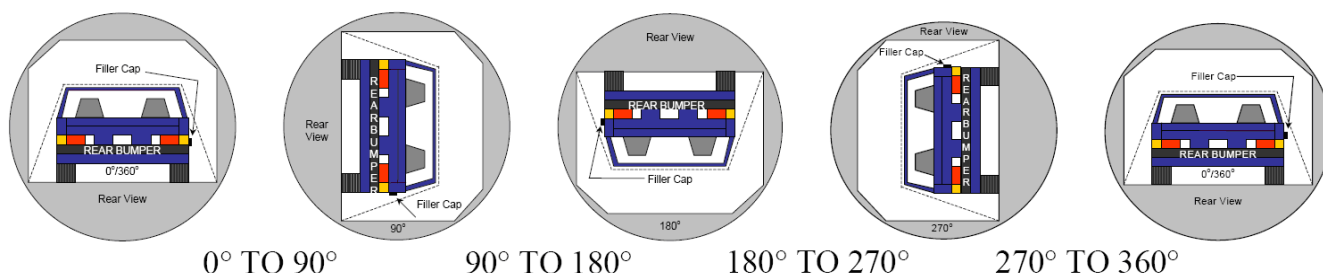
Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: 0 oz.
(Maximum allowable = 5 oz.)
- C. For the following 25 minutes: 0 oz.
(Maximum allowable = 1 oz./minute)
- D. Spillage: There was no Stoddard solvent spillage.

DATA SHEET NO. 17

FMVSS 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



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: There was no Stoddard solvent spillage.

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	83	300	383
90° To 180°	83	300	383
180° To 270°	78	300	378
270° To 360°	82	300	382

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

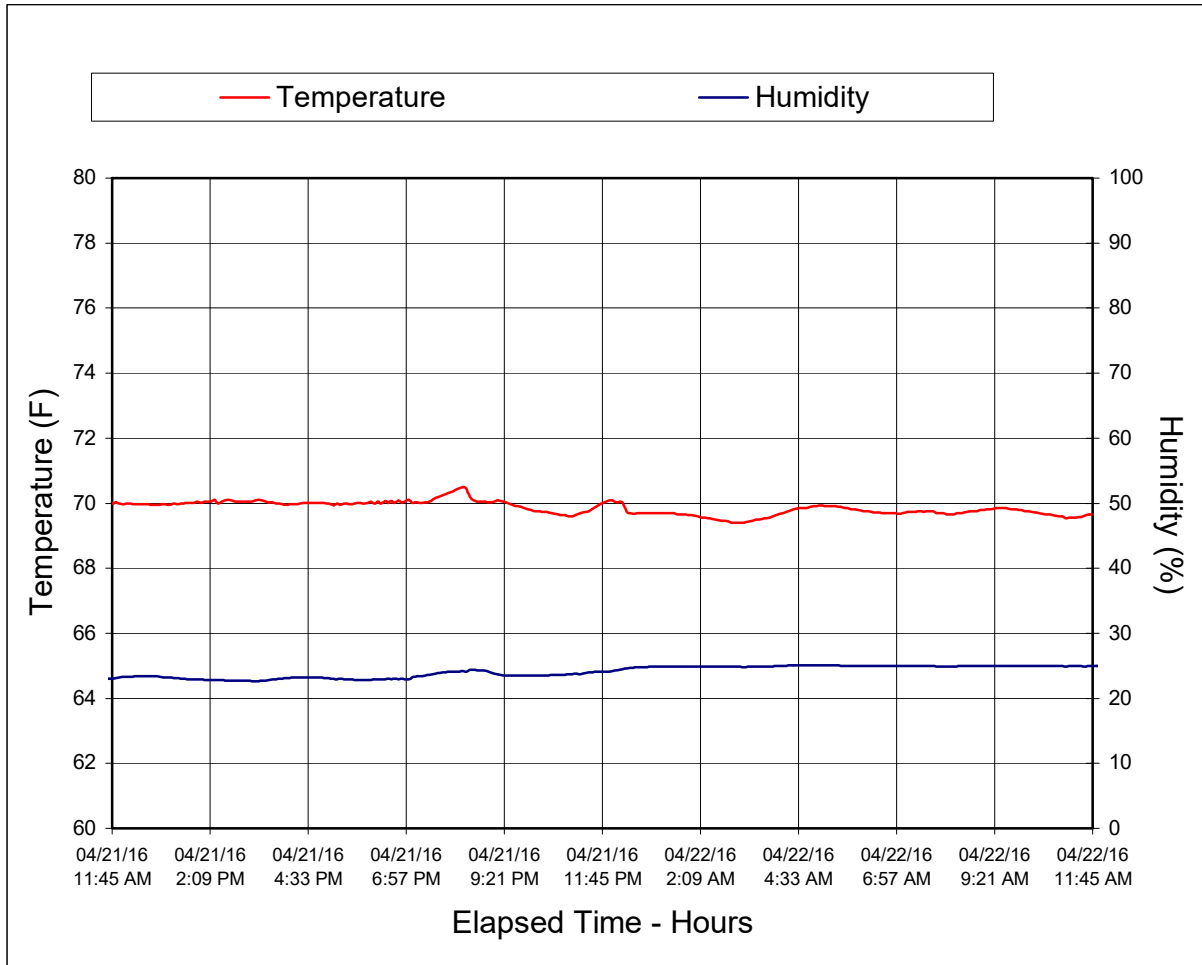
Test Phase	Spillage Location
0° To 90°	
90° To 180°	
180° To 270°	
270° To 360°	

DATA SHEET NO. 18

DUMMY / VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2016 Mazda CX-5 NHTSA No. R20165412

Test Program: NHTSA R&D Left Oblique Offset 15deg/35% Test Date: 04/22/16



APPENDIX A
PHOTOGRAPHS

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FIGURE 1. As Delivered Right Front 3-4 View of Test Vehicle



FIGURE 2. As Delivered Left Rear 3-4 View of Test Vehicle



FIGURE 3. Test Vehicle Certification Label



FIGURE 4. Test Vehicle Tire Placard



FIGURE 5. Pre-Test Front View of Test Vehicle

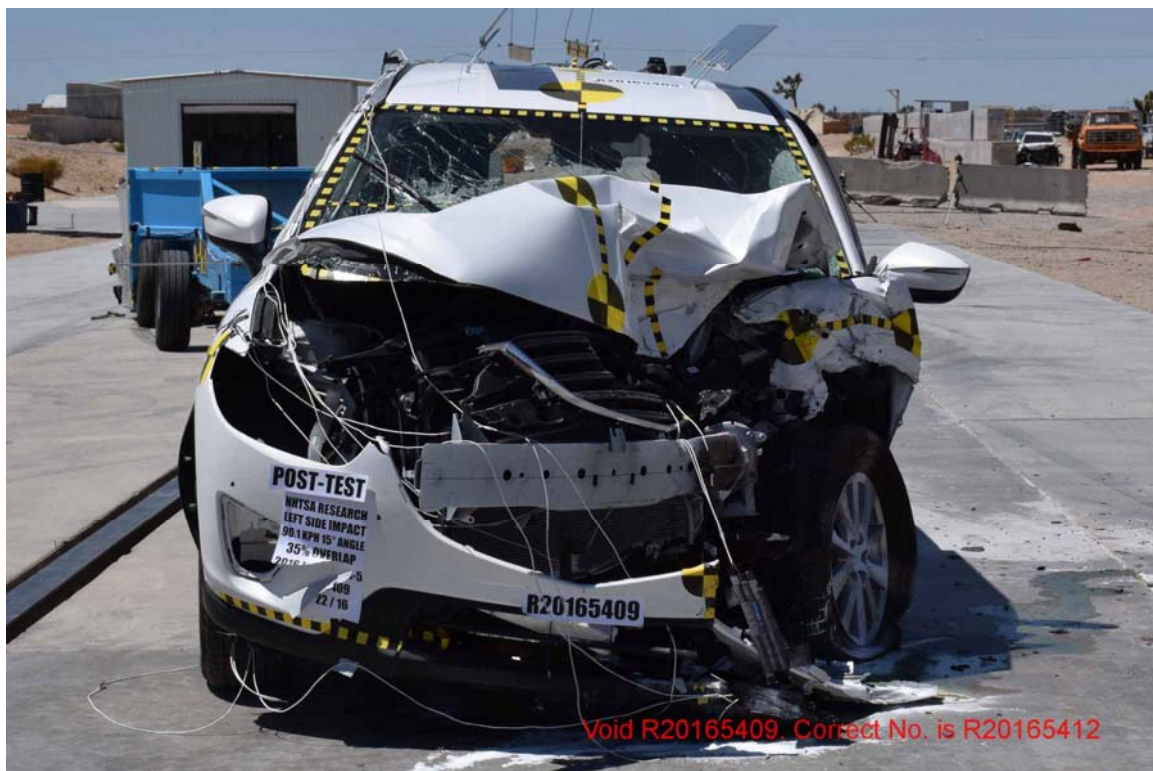


FIGURE 6. Post-Test Front View of Test Vehicle



FIGURE 7. Pre-Test Left Front 3-4 View of Test Vehicle



FIGURE 8. Post-Test Left Front 3-4 View of Test Vehicle



FIGURE 9. Pre-Test Left Side View of Test Vehicle

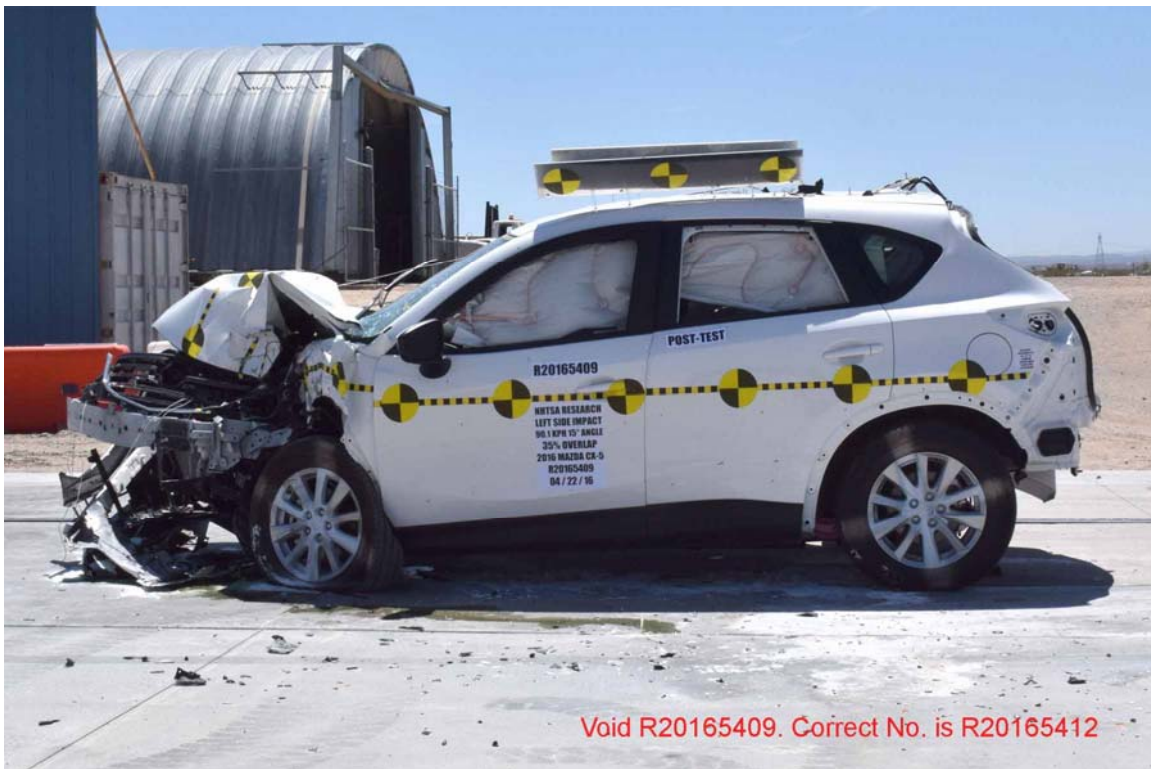
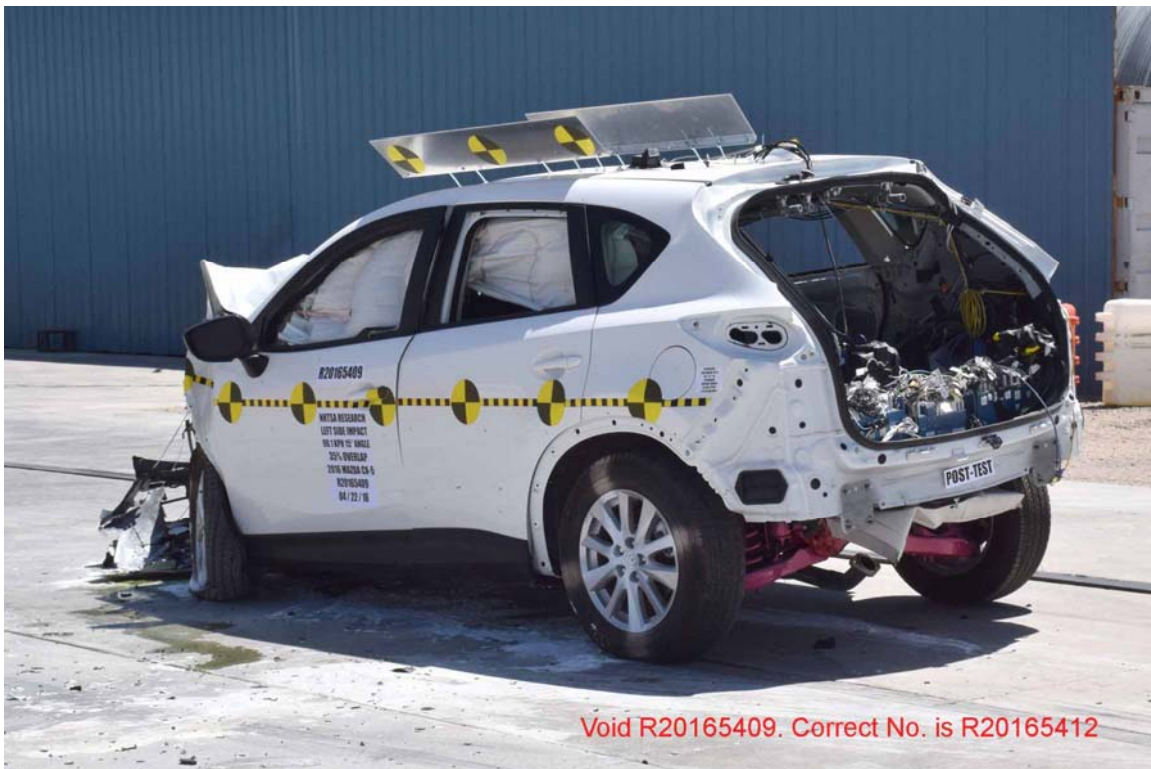


FIGURE 10. Post-Test Left Side View of Test Vehicle



Void R20165409. Correct No. is R20165412

FIGURE 11. Pre-Test Left Rear 3-4 View of Test Vehicle



Void R20165409. Correct No. is R20165412

FIGURE 12. Post-Test Left Rear 3-4 View of Test Vehicle



FIGURE 13. Pre-Test Rear View of Test Vehicle

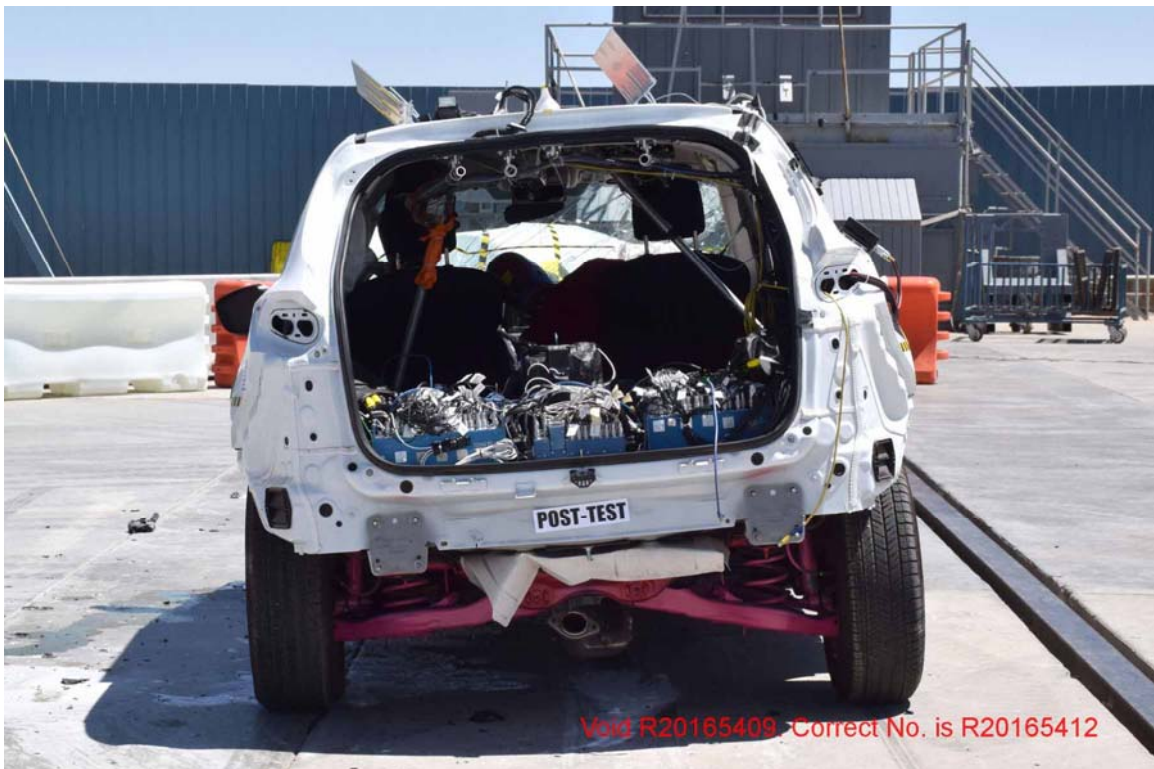


FIGURE 14. Post-Test Rear View of Test Vehicle



FIGURE 15. Pre-Test Right Rear 3-4 View of Test Vehicle



FIGURE 16. Post-Test Right Rear 3-4 View of Test Vehicle



FIGURE 17. Pre-Test Right Side View of Test Vehicle



FIGURE 18. Post-Test Right Side View of Test Vehicle



FIGURE 19. Pre-Test Right Front 3-4 View of Test Vehicle



FIGURE 20. Post-Test Right Front 3-4 View of Test Vehicle

mazda

SKYACTIV TECHNOLOGY

Scan for Vehicle Info and offers

2016 CX-5
 Model: 2016 CX-5 SPORT ALL WHEEL DRIVE
 Exterior Color: CRYSTAL WHITE PEARL
 Interior Color: BLACK

Fuel Economy and Environment
 Fuel Economy: 26 MPG (combined city/highway), 24 city, 30 highway
 3.8 gallons per 100 miles
 Annual fuel cost: \$1,750
 You save \$250 in fuel costs over 5 years compared to the average new vehicle.

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score	Not Rated
Frontal Crash	Not Rated
Side Crash	★★★★★
Rollover	★★★★

STANDARD EQUIPMENT
 ENGINE/MECHANICAL FEATURES:
 • SKYACTIV 2.5L ENGINE
 • SKYACTIV DRIVE SPORT MODE AT 184 HORSEPOWER, 185 LB-FT TORQUE
 • ALL-WHEEL DRIVE
 EXTERIOR FEATURES:
 • 17-1/2" ALLOY WHEELS
 • P225/65 R17 ALL-SEASON TIRES
 • VARIABLE INTERMITTENT WIPERS
 • FIXED-INTERMITTENT REAR WIPER
 • POWER MIRRORS WITH TURN LAMPS
 INTERIOR FEATURES:
 • 5-PASSENGER SEATING
 • 1LT & 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
 • MID W/ TRIP COMPUTER
 • ELECTRONIC PARKING BRAKE
 SAFETY AND SECURITY FEATURES:
 • 60/30/10 MI POWERTRAIN & 36MO/50K MI BUMPER-TO-BUMPER WARRANTY
 • 24-HOUR ROADSIDE ASSISTANCE
 • 5-PASSENGER 3-POINT SAFETY BELTS
 • LATCH CHILD SAFETY SEAT ANCHORS
 • ANTI-THIEF 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
 JCP CRYSTAL WHITE PEARL PAINT CHARGE \$200
 Total Vehicle and Options \$24,845
 Delivery, Processing and Handling Fee \$380
Total MSRP \$25,525

SALES INFORMATION
 SOLD TO: 61571 FRED MUELLER MAZDA 320 GRAND AVENUE SCHOFIELD, WI 54476
 SHIP TO: 61571 FRED MUELLER MAZDA 320 GRAND AVENUE SCHOFIELD, WI 54476
 DY JM3KE4BY2G0664418
 C3X-SP-XA-KASPRAD-TA-1A-20130000

FIGURE 21. Monroney Label Photograph

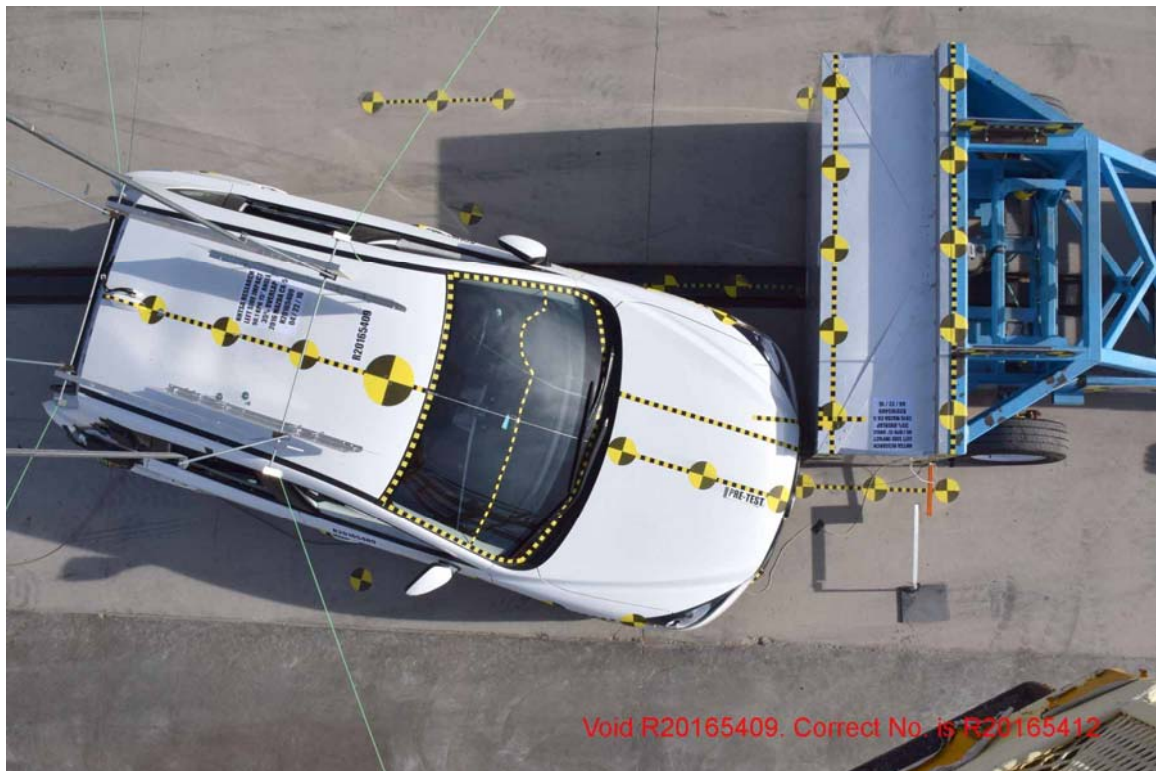


FIGURE 22. Pre-Test Overhead View of OMDB Against Target Vehicle at Ideal Impact Point



FIGURE 23. Pre-Test Left Side View of OMDB Against Target Vehicle at Ideal Impact Point



FIGURE 24. Pre-Test Right Side View of OMDB Against Target Vehicle at Ideal Impact Point



FIGURE 25. Pre-Test Close-up View of Impact Point



FIGURE 26. Post-Test Close-up View of Impact Point



FIGURE 27. Post-Test Vehicle Overhead View

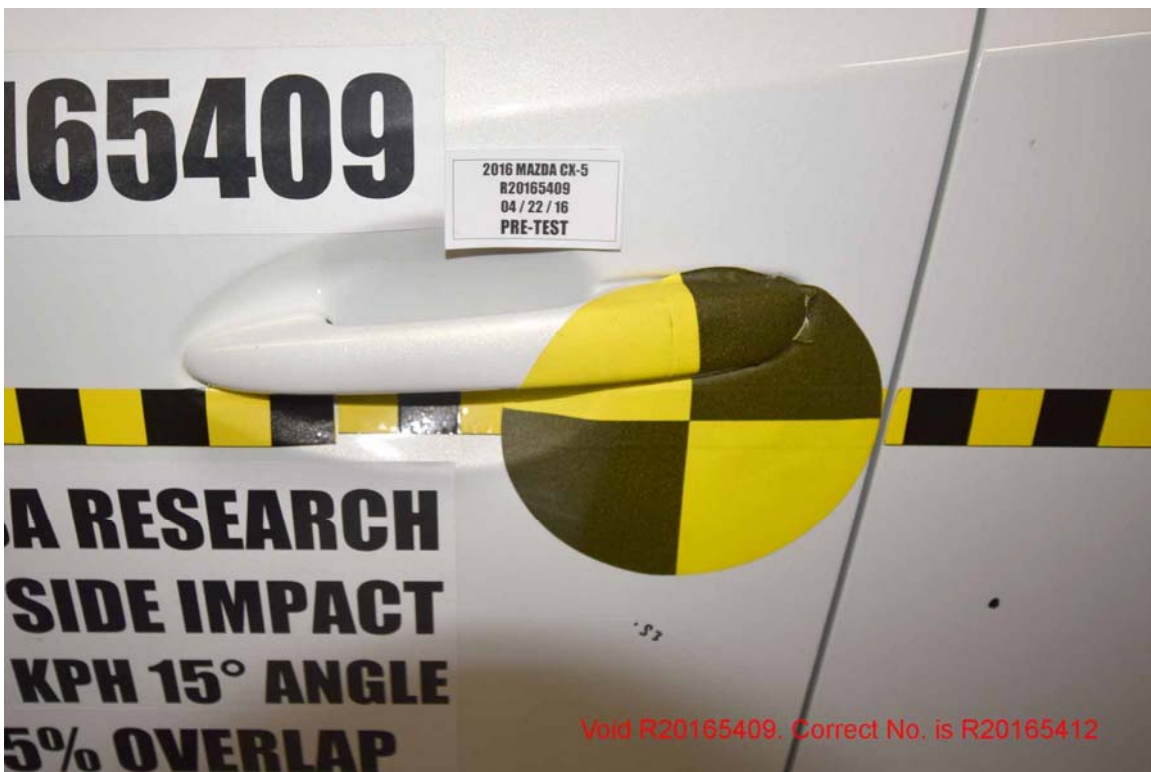


FIGURE 28. Pre-Test Close-up View of Driver Door Latch



FIGURE 29. Post-Test Close-up View of Driver Door Latch



FIGURE 30. Pre-Test Close-up View of Passenger Door Latch



FIGURE 31. Post-Test Close-up View of Passenger Door Latch



FIGURE 32. Pre-Test Windshield View



FIGURE 33. Post-Test Windshield View



FIGURE 34. Pre-Test View of Driver Inner Door Panel



FIGURE 35. Post-Test View of Driver Inner Door Panel



FIGURE 36. Pre-Test View of Passenger Inner Door Panel



FIGURE 37. Post-Test View of Passenger Inner Door Panel



FIGURE 38. Pre-Test Overall View of Driver Knee Bolster



FIGURE 39. Post-Test Overall View of Driver Knee Bolster



FIGURE 40. Pre-Test Left Side View of Driver Knee Bolster



FIGURE 41. Post-Test Left Side View of Driver Knee Bolster



FIGURE 42. Pre-Test Right Side View of Driver Knee Bolster



FIGURE 43. Post-Test Right Side View of Driver Knee Bolster



FIGURE 44. Pre-Test View of Driver Floor Pan at Left Sill Level



FIGURE 45. Post-Test View of Driver Floor Pan at Left Sill Level



FIGURE 46. Pre-Test View of Driver Floor Pan at Mid Seat Level



FIGURE 47. Post-Test view of Driver Floor Pan at Mid Seat Level



FIGURE 48. Pre-Test View of Driver Floor Pan at Right Side



FIGURE 49. Post-Test View of Driver Floor Pan at Right Side



FIGURE 50. Pre-Test Driver Front Windshield View



FIGURE 51. Post-Test Driver Front Windshield View



FIGURE 52. Pre-Test Left Side View of Driver and Interior



FIGURE 53. Post-Test Left Side View of Driver and Interior



FIGURE 54. Pre-Test Left Side Driver Window View



FIGURE 55. Post-Test Left Side Driver Window View



FIGURE 56. Pre-Test Right Side View of Driver and Interior



FIGURE 57. Post-Test Right Side View of Driver and Interior

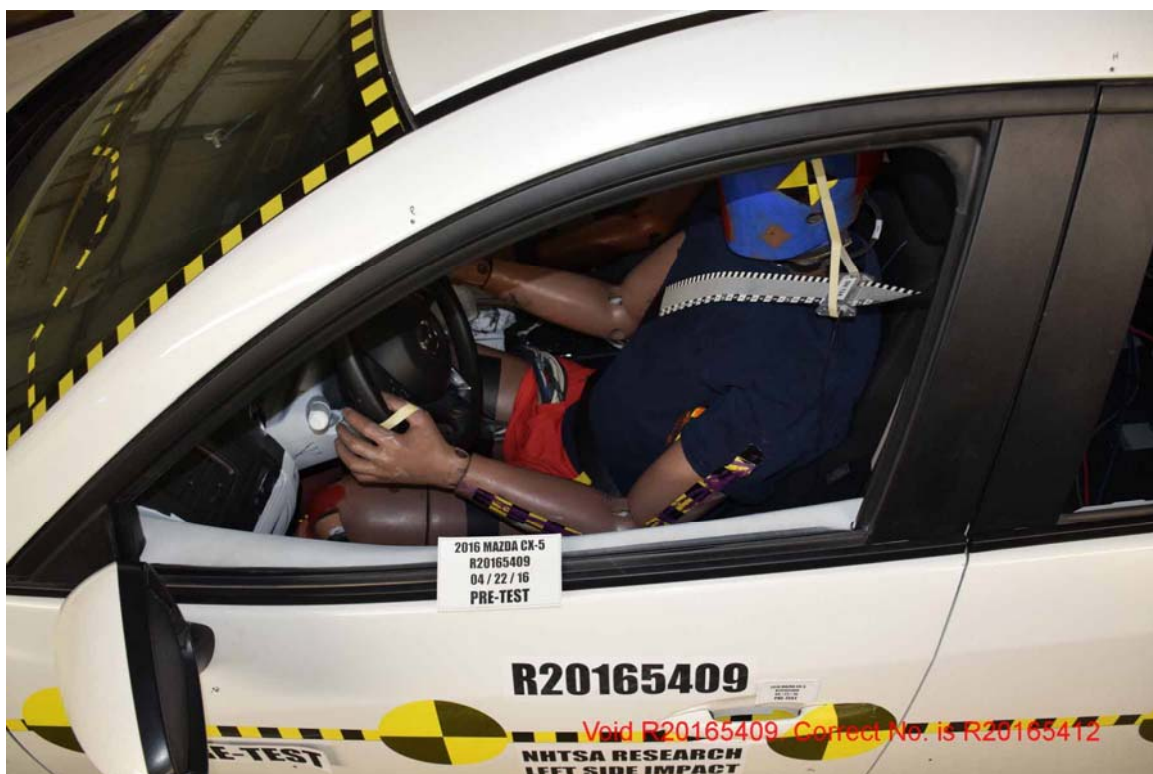


FIGURE 58. Pre-Test View of Driver Door Clearance



FIGURE 59. Post-Test View of Driver Door Clearance



FIGURE 60. Pre-Test View of Parking Brake



FIGURE 61. Pre-Test Driver Seat Fore Aft Markings



FIGURE 62. Post-Test Driver Seat Fore Aft Markings



FIGURE 63. Pre-Test Driver Seat Back Markings



FIGURE 64. Pre-Test Overhead View of Driver Thighs on Seat



FIGURE 65. Pre-Test Driver Adjustable D-Ring



FIGURE 66. Post-Test Driver Adjustable D-Ring



FIGURE 67. Pre-Test Driver Feet



FIGURE 68. Post-Test Driver Feet



FIGURE 69. Pre-Test View of Driver Right Knee and Bolster



FIGURE 70. Post-Test View of Driver Right Knee and Bolster

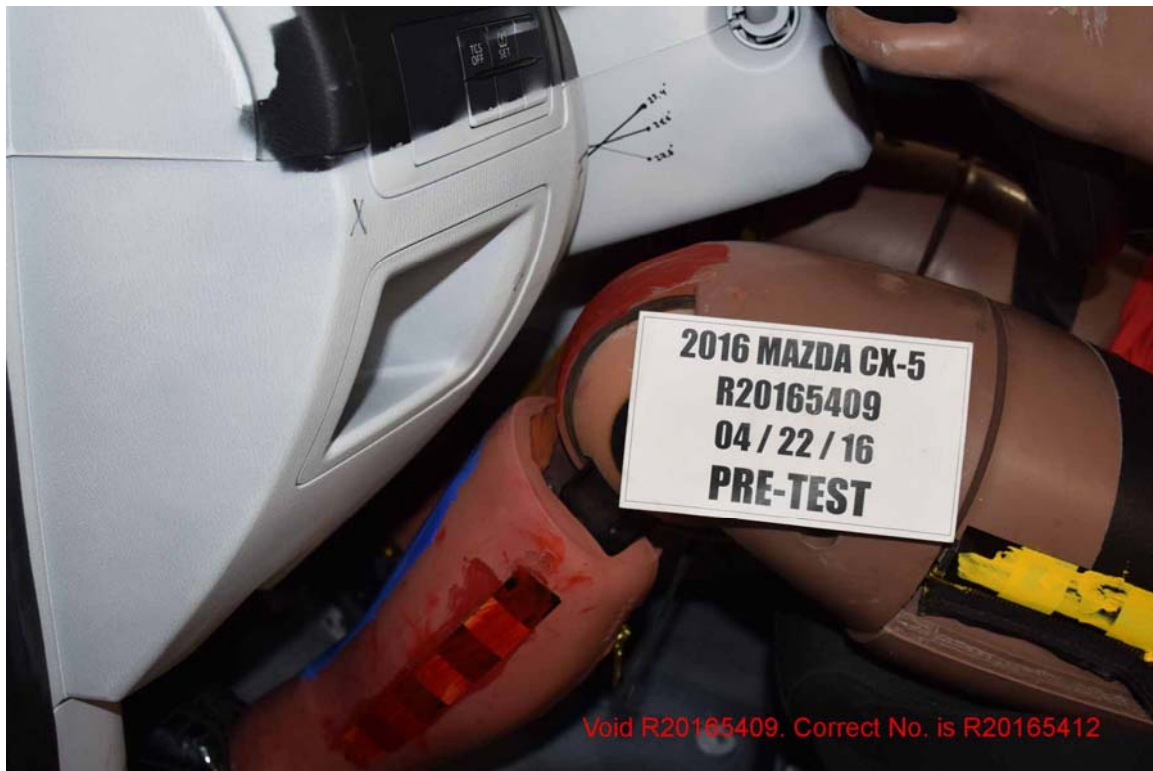


FIGURE 71. Pre-Test View of Driver Left Knee and Bolster



FIGURE 72. Post-Test View of Driver Left Knee and Bolster



FIGURE 73. Pre-Test View of Driver Abdomen



FIGURE 74. Post-Test View of Driver Abdomen



FIGURE 75. Pre-Test Left Side View of Steering Wheel



FIGURE 76. Post-Test Left Side View of Steering Wheel



FIGURE 77. Post-Test View of Driver Head Contact with Front Airbag



FIGURE 78. Post-Test View of Driver Head Contact with Curtain Airbag



FIGURE 79. Post-Test View of Driver Head Contact with Vehicle Interior



FIGURE 80. Post-Test View of Driver Body Contact with Vehicle Interior - A

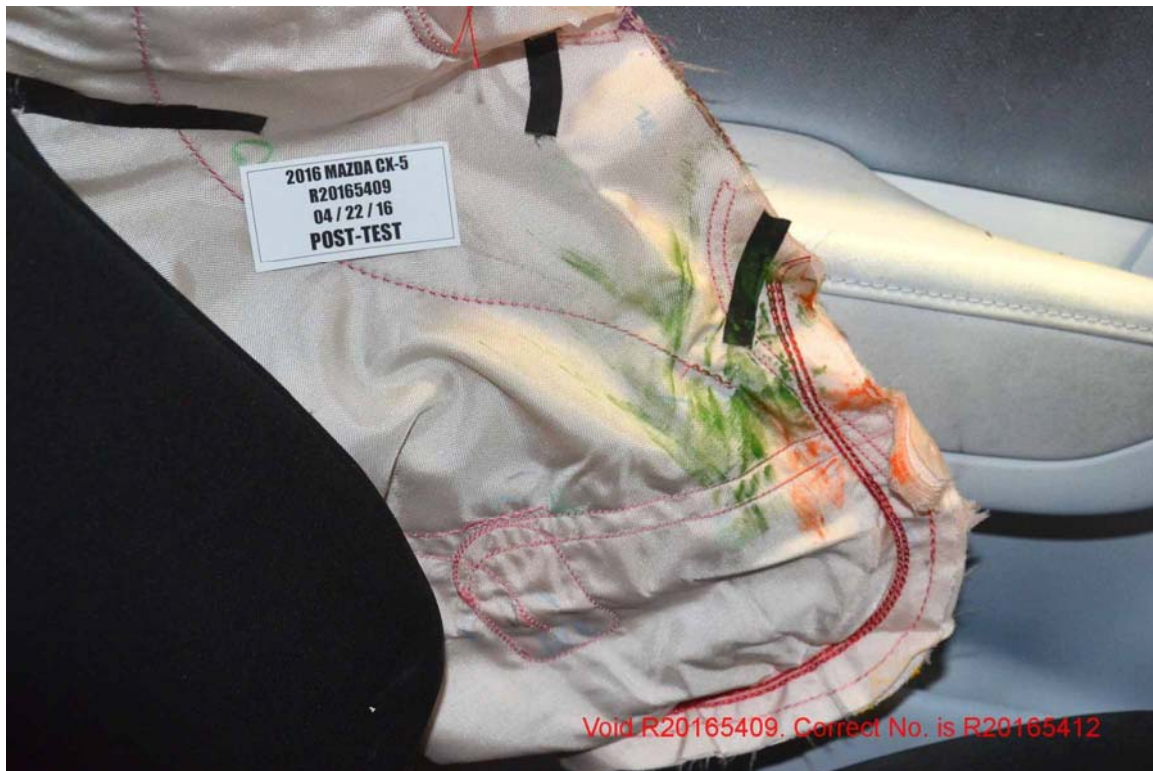


FIGURE 81. Post-Test View of Driver Body Contact with Vehicle Interior - B



FIGURE 82. Post-Test View of Driver Leg Contact with Vehicle Interior



FIGURE 83. Pre-Test Overall View of Passenger Knee Bolster



FIGURE 84. Post-Test Overall View of Passenger Knee Bolster



FIGURE 85. Pre-Test Left Side View of Passenger Knee Bolster



FIGURE 86. Post-Test Left Side View of Passenger Knee Bolster



FIGURE 87. Pre-Test Right Side View of Passenger Knee Bolster



FIGURE 88. Post-Test Right Side View of Passenger Knee Bolster



FIGURE 89. Pre-Test View of Passenger Floor Pan at Right Sill Level



FIGURE 90. Post-Test View of Passenger Floor Pan at Right Sill Level



FIGURE 91. Pre-Test View of Passenger Floor Pan at Mid seat Level



FIGURE 92. Post-Test view of Passenger Floor Pan at Mid Seat Level



FIGURE 93. Pre-Test View of Passenger Floor Pan at Left view



FIGURE 94. Post-Test View of Passenger Floor Pan at Left View



FIGURE 95. Pre-Test Passenger Front Windshield View



FIGURE 96. Post-Test Passenger Front Windshield View



FIGURE 97. Pre-Test Left Side Passenger and Interior View



FIGURE 98. Post-Test Left Side Passenger and Interior View



FIGURE 99. Pre-Test Right Side Passenger Window View



FIGURE 100. Post-Test Right Side Passenger Window View



FIGURE 101. Pre-Test Right Side Passenger and Interior View



FIGURE 102. Post-Test Right Side Passenger and Interior View



FIGURE 103. Pre-Test View of Passenger Door Clearance



FIGURE 104. Post-Test View of Passenger Door Clearance



FIGURE 105. Pre-Test Passenger Seat Fore-Aft Markings



FIGURE 106. Post-Test Passenger Seat Fore-Aft Markings



FIGURE 107. Pre-Test Passenger Seat Back Markings



FIGURE 108. Pre-Test Overhead View of Passenger Thighs on Seat



FIGURE 109. Pre-Test Passenger Adjustable D-Ring



FIGURE 110. Post-Test Passenger Adjustable D-Ring



FIGURE 111. Pre-Test View of Passenger Feet



FIGURE 112. Post-Test View of Passenger Feet



FIGURE 113. Pre-Test View of Passenger Right Knee and Bolster

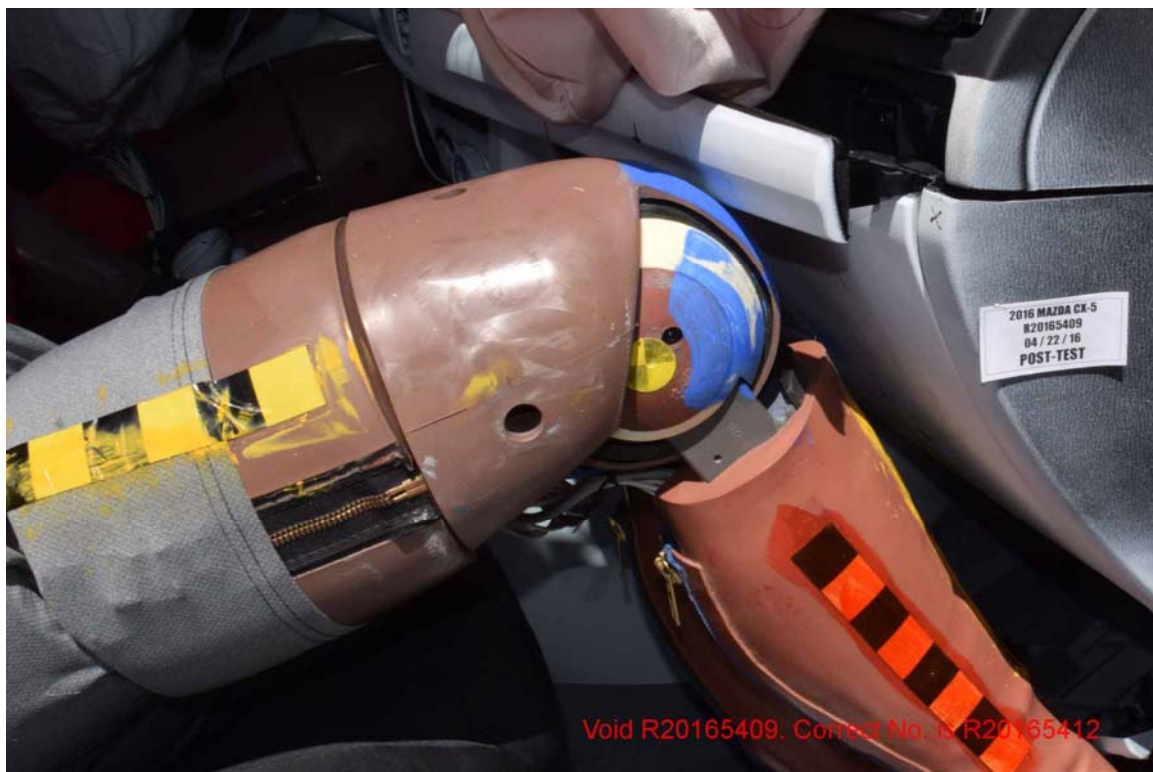


FIGURE 114. Post-Test View of Passenger Right Knee and Bolster



FIGURE 115. Pre-Test View of Passenger Left Knee and Bolster



FIGURE 116. Post-Test View of Passenger Left Knee and Bolster



FIGURE 117. Pre-Test View of Passenger Abdomen



FIGURE 118. Post-Test View of Passenger Abdomen



FIGURE 119. Post-Test View of Passenger Head Contact with Front Airbag

Photograph Not Available

Void R20165409. Correct No. is R20165412

FIGURE 120. Post-Test View of Passenger Head Contact with Curtain Airbag



FIGURE 121. Post-Test View of Passenger Head Contact with Interior



FIGURE 122. Post-Test View of Passenger Body Contact with Interior - A

Photograph Not Available

Void R20165409. Correct No. is R20165412

FIGURE 123. Post-Test View of Passenger Body Contact with Interior - B



FIGURE 124. Post-Test View of Passenger Leg Contact with Vehicle Interior



FIGURE 125. Pre-Test Ballast Locations



FIGURE 126. Post-Test Speed Trap Readout



FIGURE 127. Pre-Test View of Fuel Filler Cap



FIGURE 128. Post-Test View of Fuel Filler Cap



FIGURE 129. Pre-Test Engine Compartment View



FIGURE 130. Post-Test Engine Compartment View



FIGURE 131. Pre-Test View of Front Underbody (Perpendicular to Vehicle)



FIGURE 132. Post-Test View of Front Underbody (Perpendicular to Vehicle)



FIGURE 133. Pre-Test View of Mid Underbody (Perpendicular to Vehicle)



FIGURE 134. Post-Test View of Mid Underbody (Perpendicular to Vehicle)



FIGURE 135. Pre-Test View of Rear Underbody (Perpendicular to Vehicle)



FIGURE 136. Post-Test View of Rear Underbody (perpendicular to vehicle)



FIGURE 137. Pre-Test View of Front Axle



FIGURE 138. Post-Test View of Front Axle

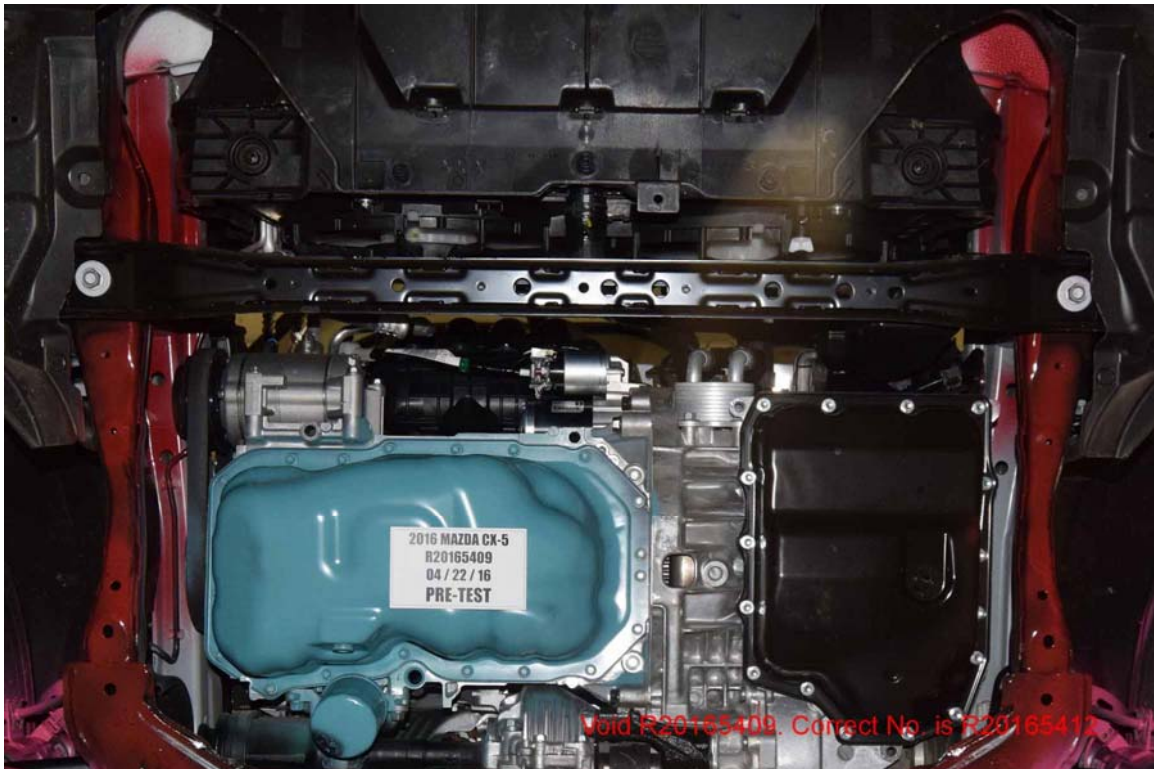


FIGURE 139. Pre-Test Bumper to Rail Attachments and Crush Initiators

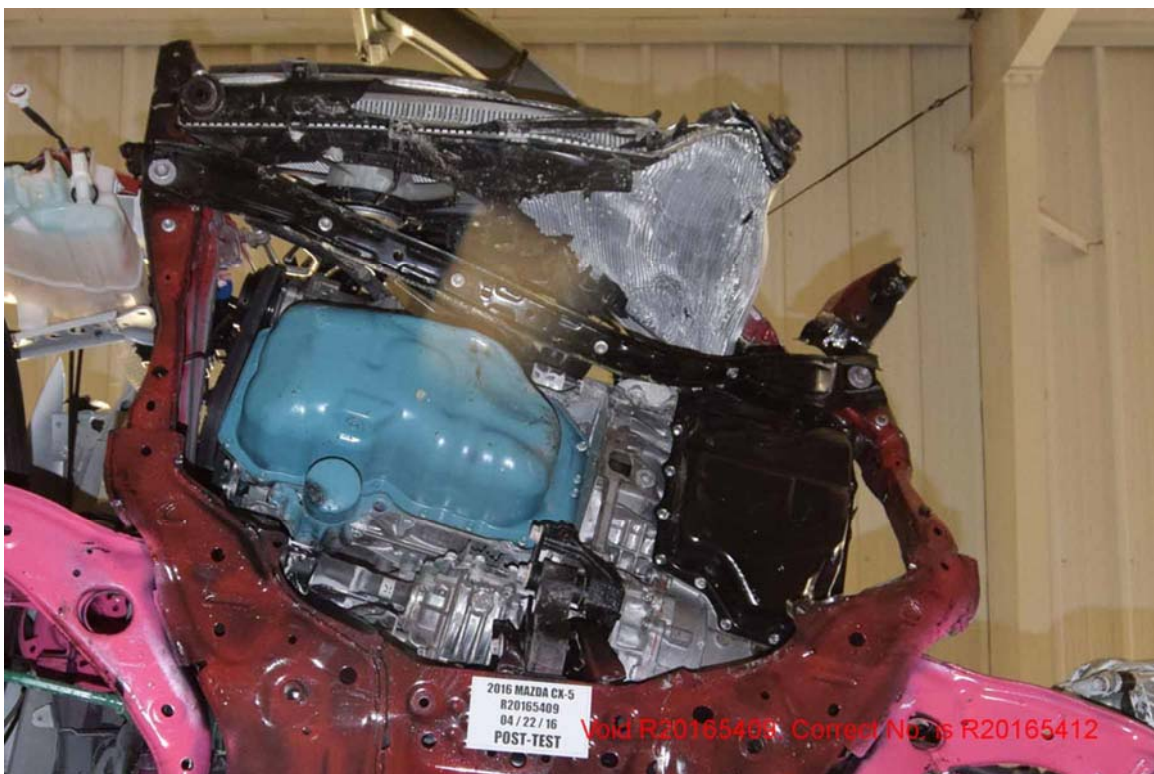


FIGURE 140. Post-Test Bumper to Rail Attachments and Crush Initiators



FIGURE 141. Pre-Test Left Side Impact Rail



FIGURE 142. Post-Test Left Side Impact Rail



FIGURE 143. Pre-Test Left Front $\frac{3}{4}$ View of Driver Wheel Well



FIGURE 144. Post-Test Left Front $\frac{3}{4}$ View of Driver Wheel Well



FIGURE 145. Pre-Test Left Side View of Driver Wheel Well



FIGURE 146. Post-Test Left Side View of Driver Wheel Well



FIGURE 147. Pre-Test Left Rear $\frac{3}{4}$ View of the Driver Wheel Well

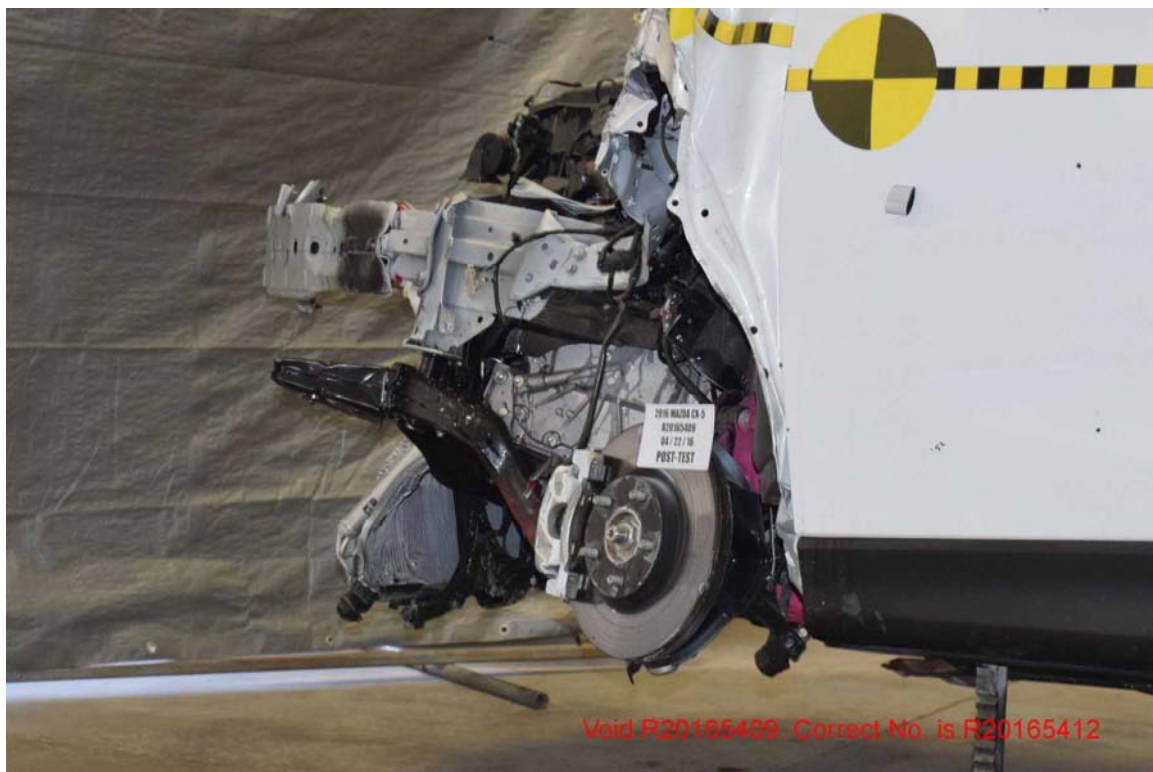


FIGURE 148. Post-Test Left Rear $\frac{3}{4}$ View of the Driver Wheel Well

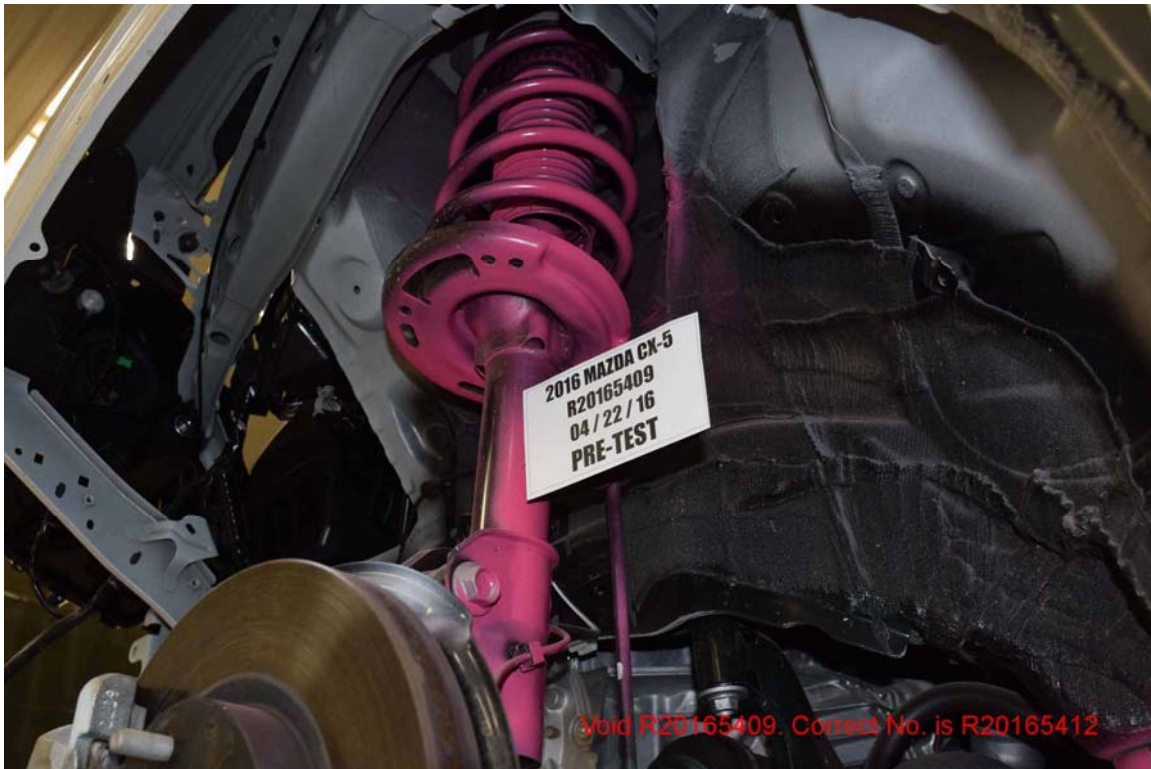


FIGURE 149. Pre-Test Driver Close-up View of Suspension



FIGURE 150. Post-Test Driver Close-up View of Suspension



FIGURE 151. Pre-Test Left Side Tie Rod and Sway Bar Attachment Points



FIGURE 152. Post-Test Left Side Tie Rod and Sway Bar Attachment Points

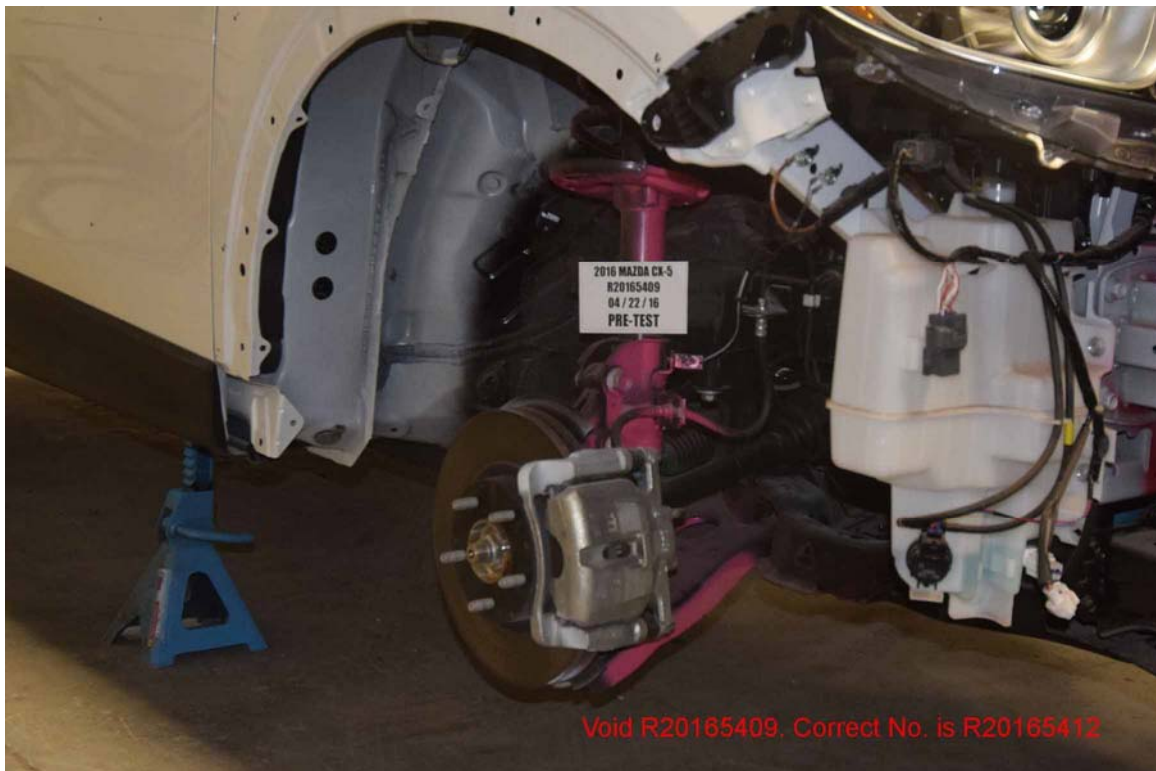


FIGURE 153. Pre-Test Right Front $\frac{3}{4}$ View of Passenger Wheel Well



FIGURE 154. Post-Test Right Front $\frac{3}{4}$ View of Passenger Wheel Well



FIGURE 155. Pre-Test Right Side View of Passenger Wheel Well



FIGURE 156. Post-Test Right Side View of Passenger Wheel Well



FIGURE 157. Pre-Test Right Rear $\frac{3}{4}$ View of the Passenger Wheel Well



FIGURE 158. Post-Test Right Rear $\frac{3}{4}$ View of the Passenger Wheel Well



FIGURE 159. Pre-Test Passenger Close-up View of Suspension



FIGURE 160. Post-Test Passenger Close-up View of Suspension



FIGURE 161. Pre-Test Right Side Tie Rod and Sway Bar Attachment Points



FIGURE 162. Post-Test Right Side Tie Rod and Sway Bar Attachment Points



FIGURE 163. Pre-Test Left Side View of OMDB Impactor Face



FIGURE 164. Post-Test Left Side View of OMDB Impactor Face



FIGURE 165. Pre-Test Right Side View of OMDB Impactor Face



FIGURE 166. Post-Test Right Side View of OMDB Impactor Face



FIGURE 167. Pre-Test Top View of OMDB Impactor Face



FIGURE 168. Post-Test Top View of OMDB Impactor Face



FIGURE 169. Pre-Test Front View of OMDB Impactor Face



FIGURE 170. Post-Test Front View of OMDB Impactor Face



FIGURE 171. Pre-Test Right Side View of OMDB

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FIGURE 172. Post-Test Right Side View of OMDB



FIGURE 173. Pre-Test Left Side View of OMDB

Photograph Not Available

Void R20165409. Correct No. is R20165412

FIGURE 174. Post-Test Left Side View of OMDB



FIGURE 175. Pre-Test OMDB & Vehicle, Right Side



FIGURE 176. Post-Test OMDB & Vehicle, Right Side



FIGURE 177. Pre-Test OMDB & Vehicle, Left Side

Photograph Not Available

Void R20165409. Correct No. is R20165412

FIGURE 178. Post-Test OMDB & Vehicle, Left Side

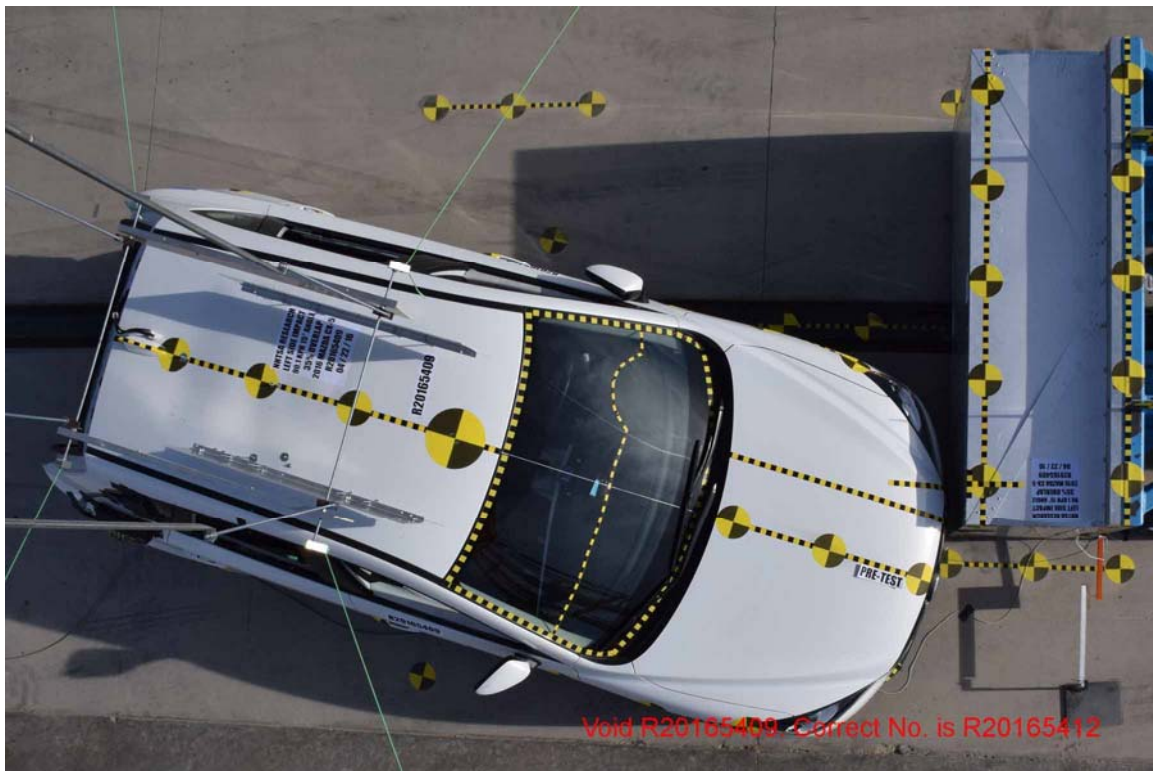


FIGURE 179. Pre-Test OMDB & Vehicle, Top View

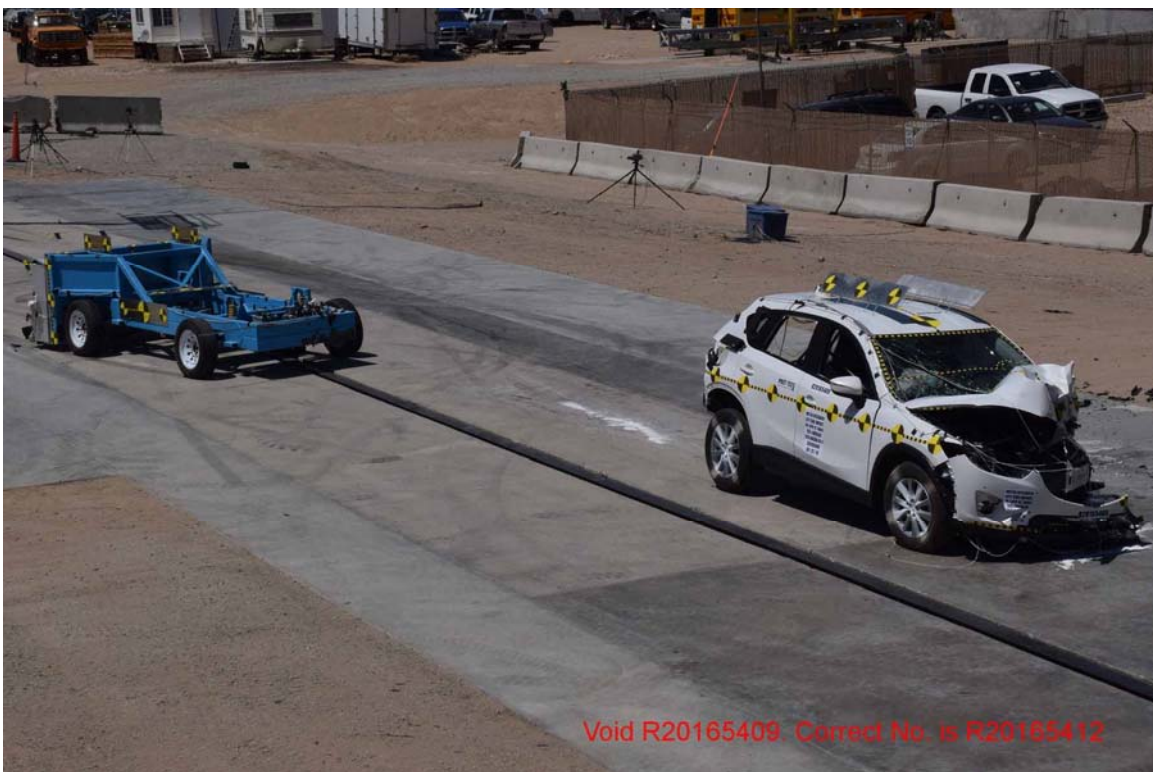


FIGURE 180. Post-Test OMDB & Vehicle, Top View



FIGURE 181. Pre-Test OMD & Vehicle Alignment

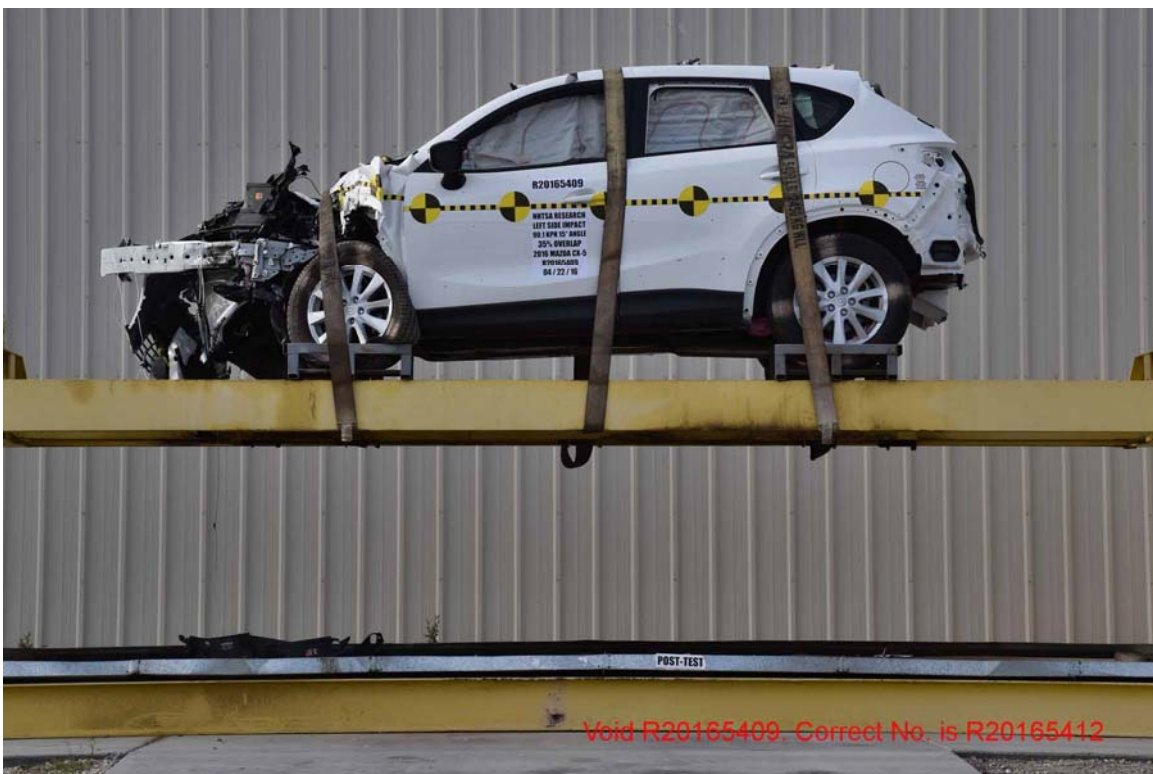


FIGURE 182. FMVSS No. 301 Static Rollover 0 Degrees



FIGURE 183. FMVSS No. 301 Static Rollover 90 Degrees



FIGURE 184. FMVSS No. 301 Static Rollover 180 Degrees



FIGURE 185. FMVSS No. 301 Static Rollover 270 Degrees

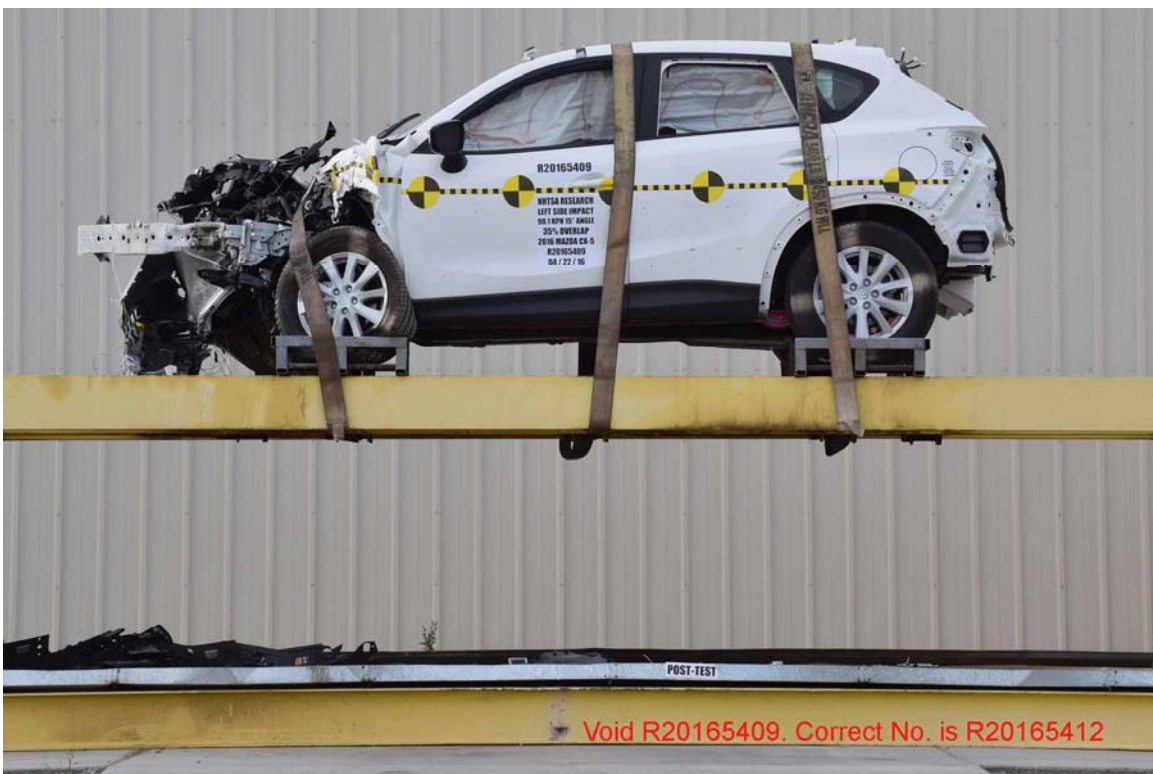


FIGURE 186. FMVSS No. 301 Static Rollover 360 Degrees



FIGURE 187. Impact Event

APPENDIX B
VEHICLE & DUMMY RESPONSE DATA TRACES

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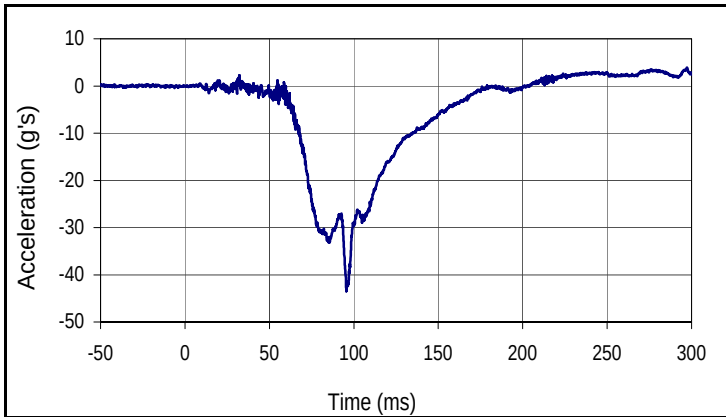
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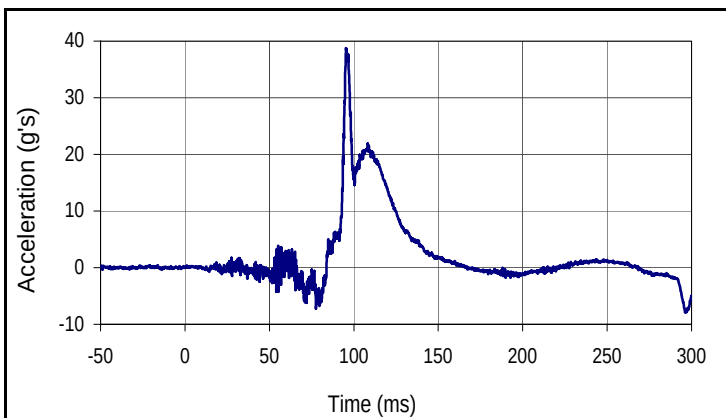
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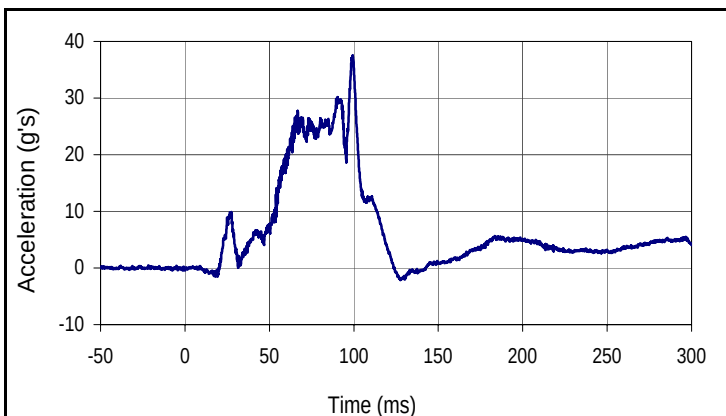
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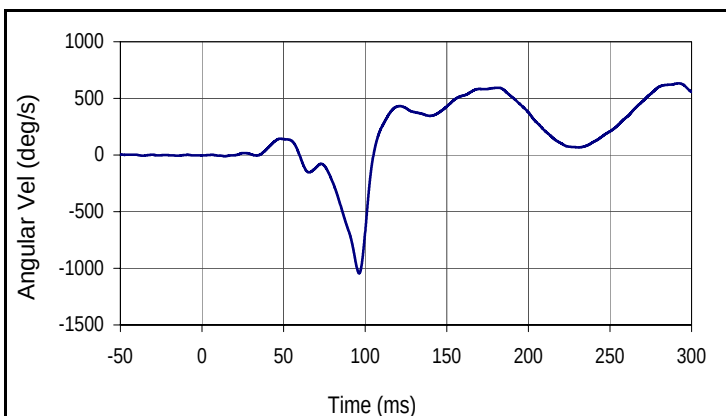
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Plot No.		SAE Class	Units
001		1000	g's
Max	Time	Min	Time
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Curve Description			
V2P1 Head CG Y Acceleration			
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002		1000	g's
Max	Time	Min	Time
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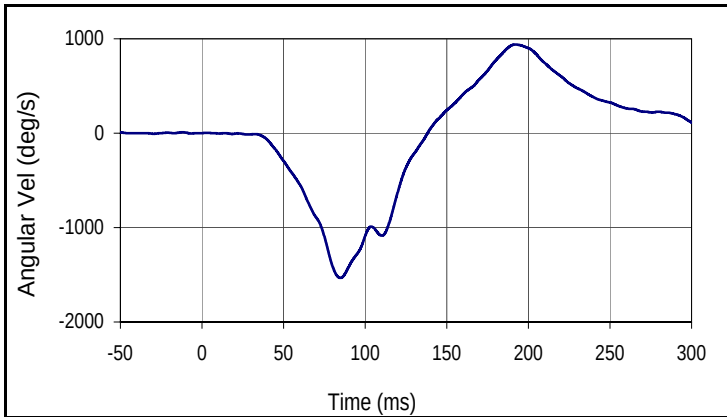
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Max	Time	Min	Time
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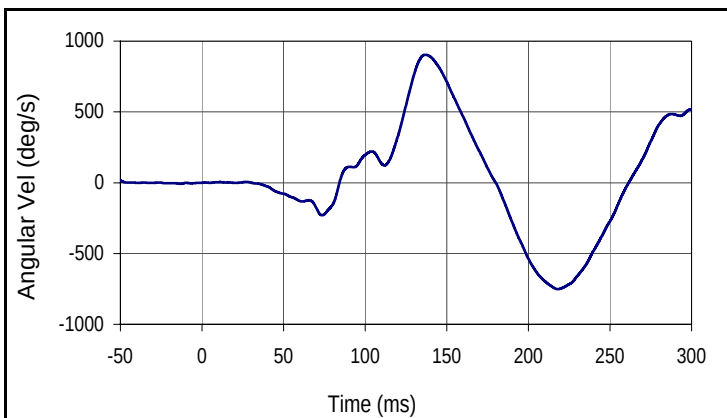
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V2P1 Head CG Angular Velocity About X			
Plot No.		SAE Class	Units
004		60	deg/s
Max	Time	Min	Time
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Test Vehicle: 2016 Mazda CX-5
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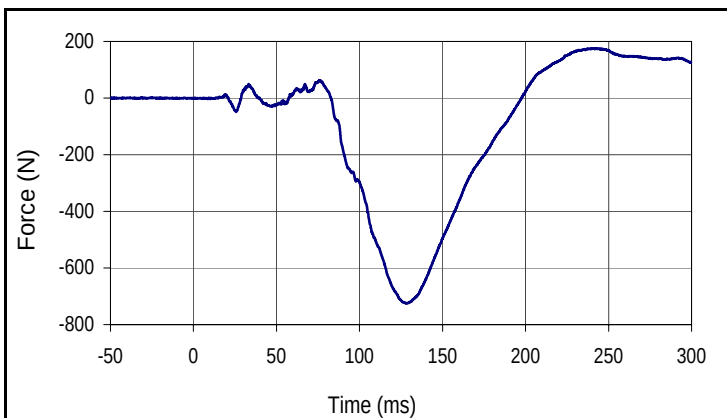
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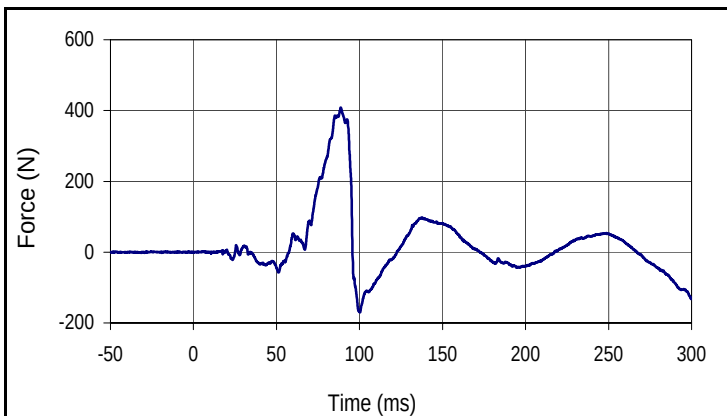
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Plot No.		SAE Class	Units
005		60	deg/s
Max	Time	Min	Time
940.2	192.0	-1533.3	84.8



Curve Description			
V2P1 Head CG Angular Velocity About Z			
Plot No.		SAE Class	Units
006		60	deg/s
Max	Time	Min	Time
903.7	136.8	-752.3	218.2



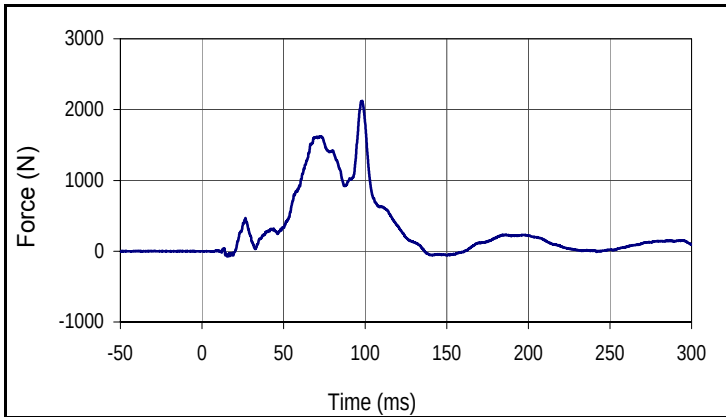
Curve Description			
V2P1 Upper Neck X Force			
Plot No.		SAE Class	Units
007		1000	N
Max	Time	Min	Time
175.4	242.9	-724.9	128.1



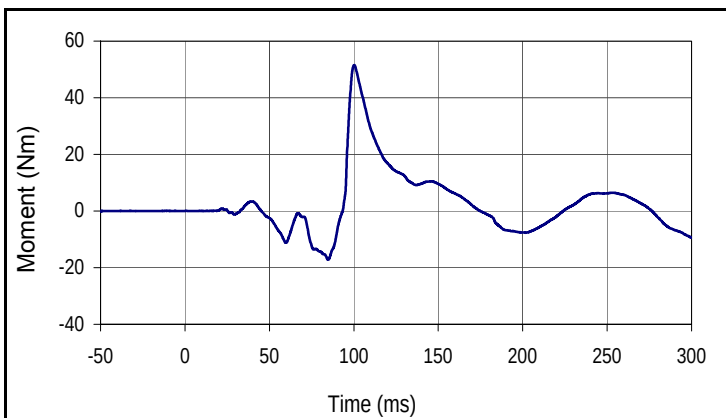
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V2P1 Upper Neck Y Force			
Plot No.		SAE Class	Units
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Max	Time	Min	Time
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Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

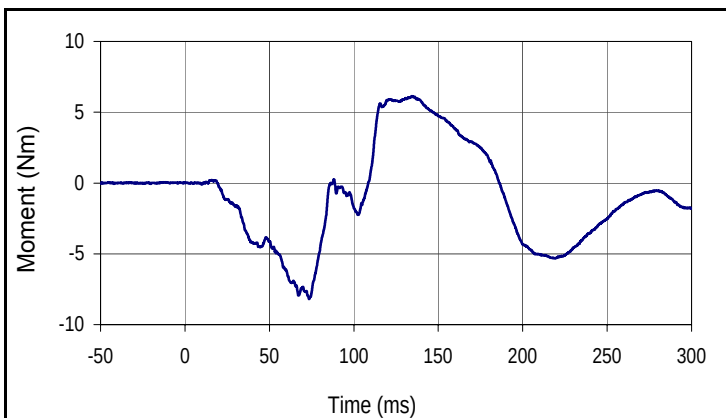
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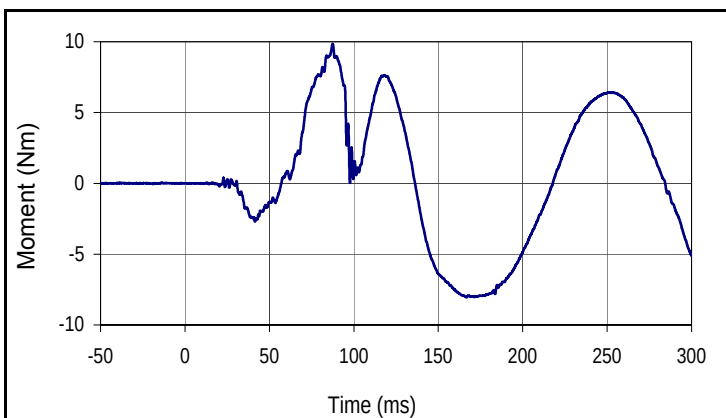
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V2P1 Upper Neck Z Force			
Plot No.		SAE Class	Units
009		1000	N
Max	Time	Min	Time
2122.7	98.2	-74.6	15.6



Curve Description			
V2P1 Upper Neck X Moment			
Plot No.		SAE Class	Units
010		600	Nm
Max	Time	Min	Time
51.5	100.2	-17.2	84.8



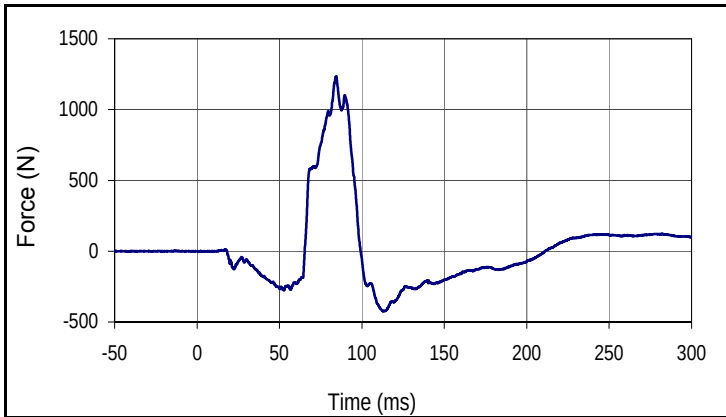
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V2P1 Upper Neck Y Moment			
Plot No.		SAE Class	Units
011		600	Nm
Max	Time	Min	Time
6.1	134.3	-8.2	73.6



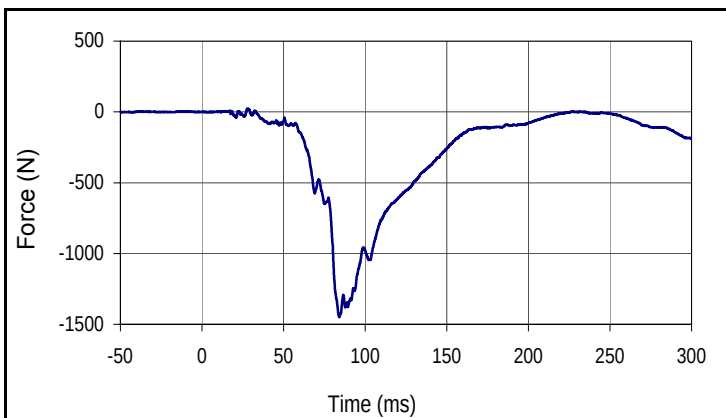
Curve Description			
V2P1 Upper Neck Z Moment			
Plot No.		SAE Class	Units
012		600	Nm
Max	Time	Min	Time
9.9	87.4	-8.1	166.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

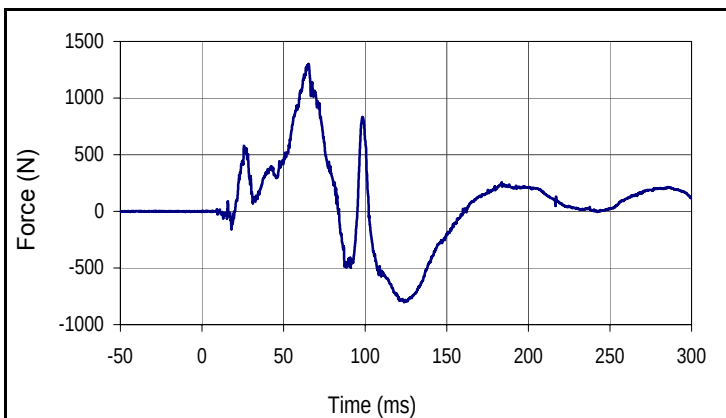
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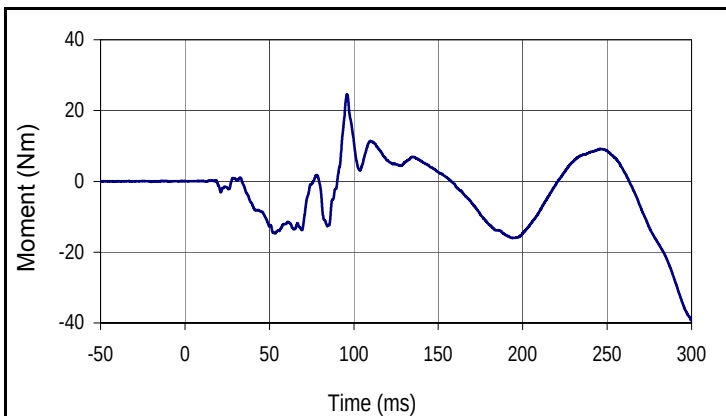
Curve Description			
V2P1 Lower Neck X Force			
Plot No.		SAE Class	Units
013		1000	N
Max	Time	Min	Time
1235.0	84.5	-424.5	113.0



Curve Description			
V2P1 Lower Neck Y Force			
Plot No.		SAE Class	Units
014		1000	N
Max	Time	Min	Time
23.3	28.1	-1450.1	84.1



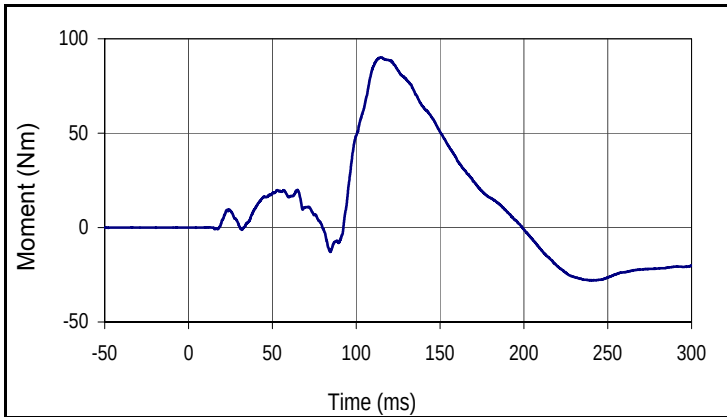
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V2P1 Lower Neck Z Force			
Plot No.		SAE Class	Units
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Max	Time	Min	Time
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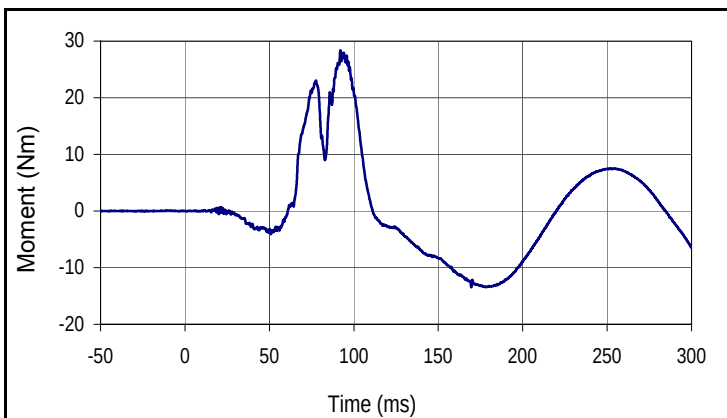
Curve Description			
V2P1 Lower Neck X Moment			
Plot No.		SAE Class	Units
016		600	Nm
Max	Time	Min	Time
24.6	96.0	-39.2	299.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

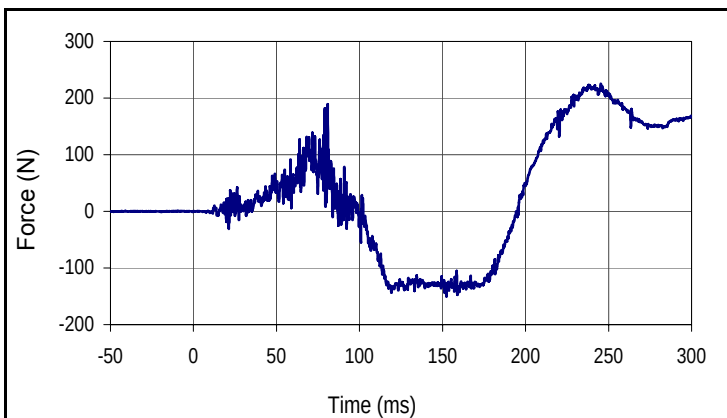
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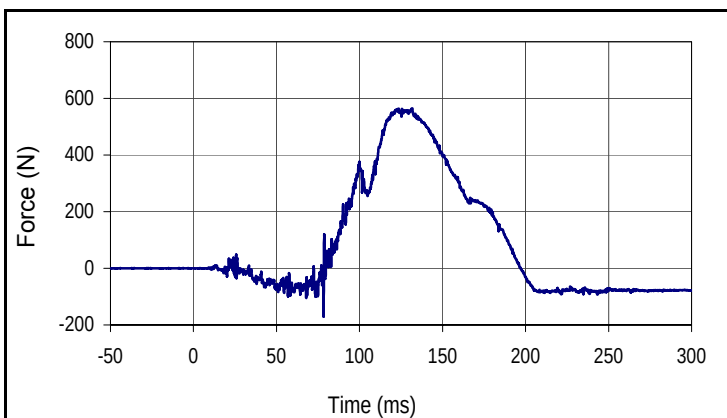
Curve Description			
V2P1 Lower Neck Y Moment			
Plot No.		SAE Class	Units
017		600	Nm
Max	Time	Min	Time
90.1	115.0	-27.9	242.8



Curve Description			
V2P1 Lower Neck Z Moment			
Plot No.		SAE Class	Units
018		600	Nm
Max	Time	Min	Time
28.4	92.0	-13.5	169.5



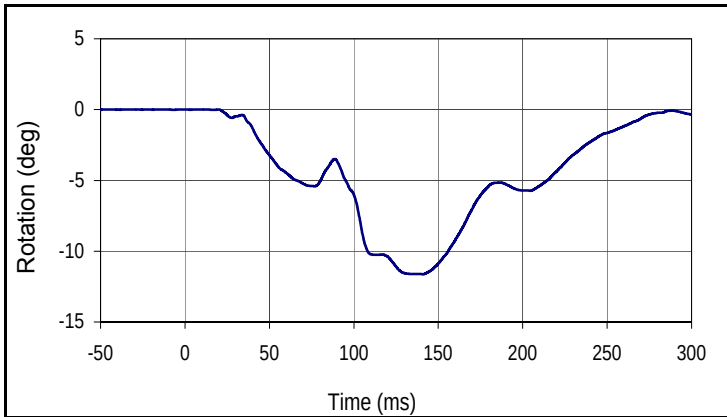
Curve Description			
V2P1 Front Neck Spring Tower Z Force			
Plot No.		SAE Class	Units
019		1000	N
Max	Time	Min	Time
225.7	245.3	-150.1	152.3



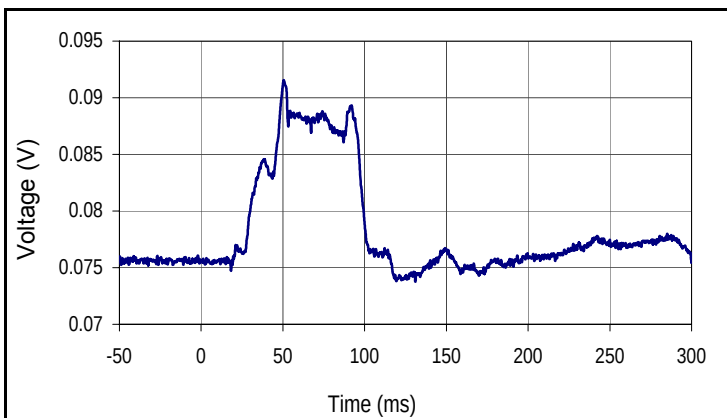
Curve Description			
V2P1 Rear Neck Spring Tower Z Force			
Plot No.		SAE Class	Units
020		1000	N
Max	Time	Min	Time
565.1	131.6	-171.0	78.3

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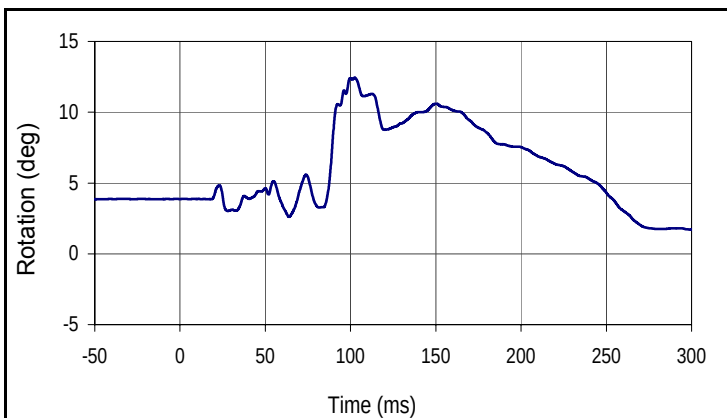
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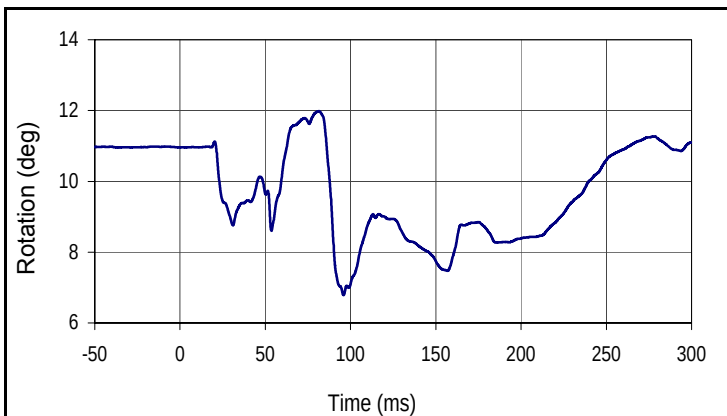
Curve Description			
V2P1 Occipital Condyle Rotational Potentiometer			
Plot No.		SAE Class	Units
021		180	deg
Max	Time	Min	Time
0.0	11.0	-11.6	140.9



Curve Description			
V2P1 Upper Left DGIR X Displacement			
Plot No.		SAE Class	Units
022		600	V
Max	Time	Min	Time
0.09	50.6	0.07	131.0



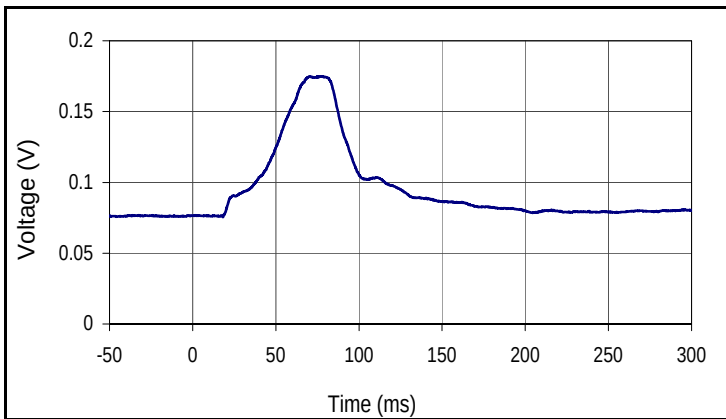
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V2P1 Upper Left DGIR Y Rotation			
Plot No.		SAE Class	Units
023		180	deg
Max	Time	Min	Time
12.4	102.5	1.7	299.8



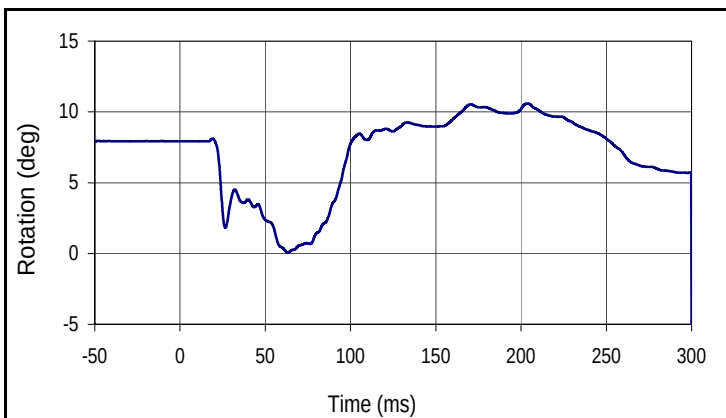
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V2P1 Upper Left DGIR Z Rotation			
Plot No.		SAE Class	Units
024		180	deg
Max	Time	Min	Time
12.0	81.6	6.8	95.9

Test Vehicle: 2016 Mazda CX-5
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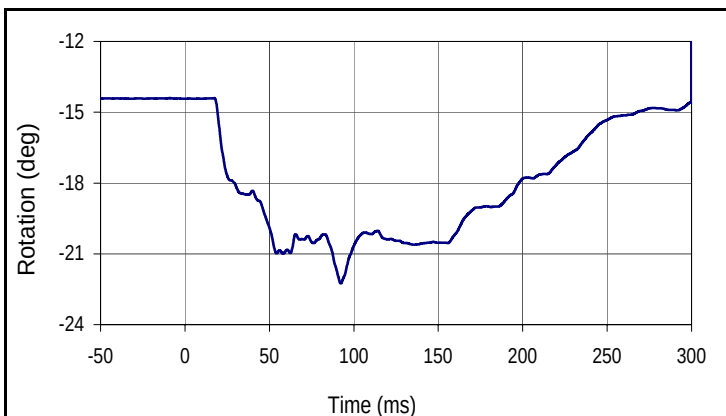
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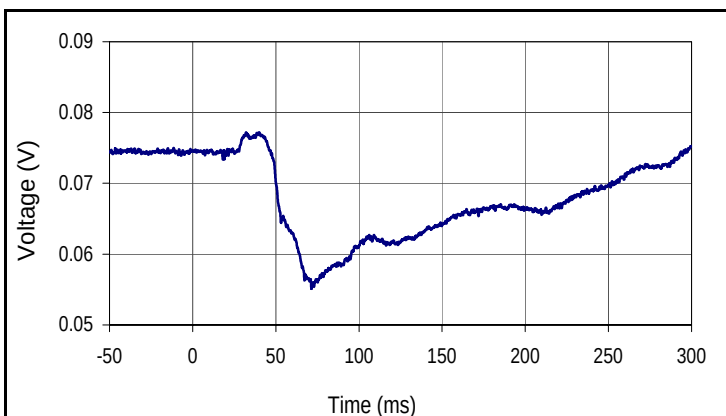
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V2P1 Upper Right DGIR X Displacement			
Plot No.		SAE Class	Units
025		600	V
Max	Time	Min	Time
0.2	76.7	0.1	18.3



Curve Description			
V2P1 Upper Right DGIR Y Rotation			
Plot No.		SAE Class	Units
026		180	deg
Max	Time	Min	Time
10.6	203.9	0.1	63.3



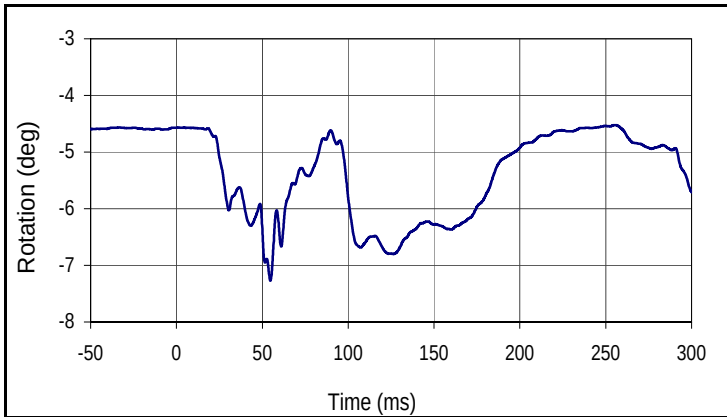
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V2P1 Upper Right DGIR Z Rotation			
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027		180	deg
Max	Time	Min	Time
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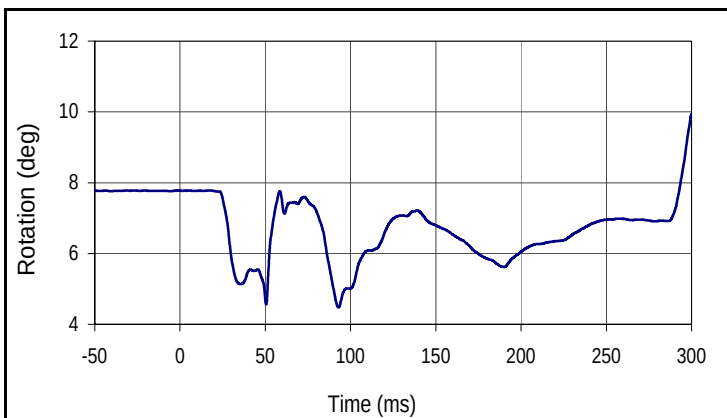
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V2P1 Lower Left DGIR X Displacement			
Plot No.		SAE Class	Units
028		600	V
Max	Time	Min	Time
0.1	40.0	0.1	71.5

Test Vehicle: 2016 Mazda CX-5
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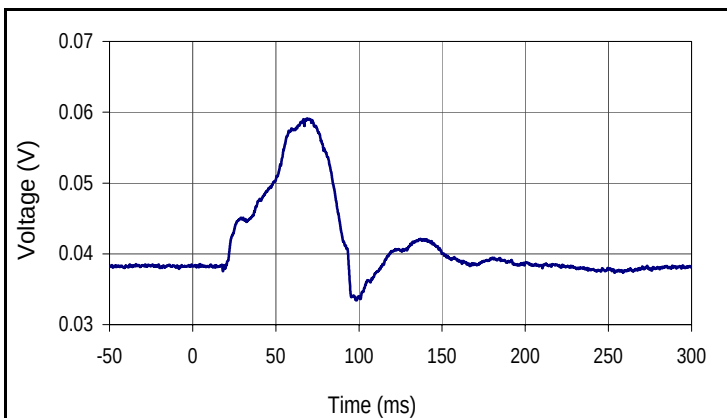
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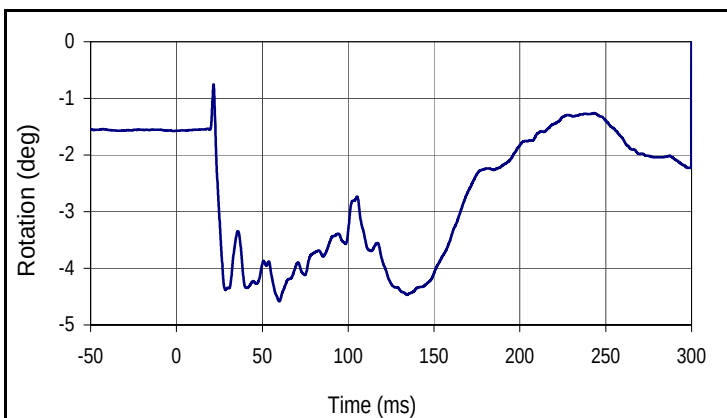
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Plot No.		SAE Class	Units
029		180	deg
Max	Time	Min	Time
-4.5	256.0	-7.3	54.7



Curve Description			
V2P1 Lower Left DGIR Z Rotation			
Plot No.		SAE Class	Units
030		180	deg
Max	Time	Min	Time
9.9	299.9	4.5	93.0



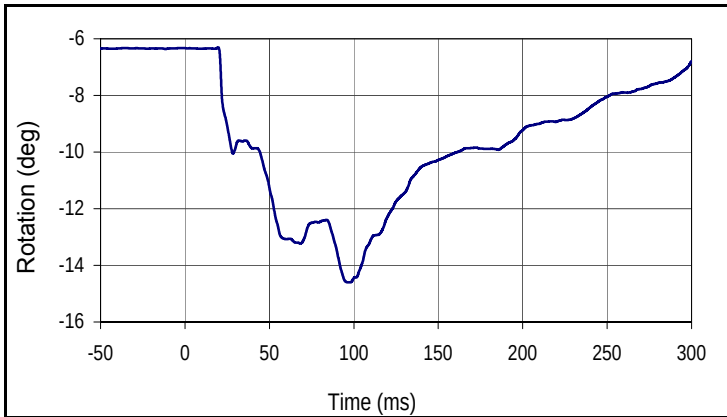
Curve Description			
V2P1 Lower Right DGIR X Displacement			
Plot No.		SAE Class	Units
031		600	V
Max	Time	Min	Time
0.1	68.7	0.0	98.7



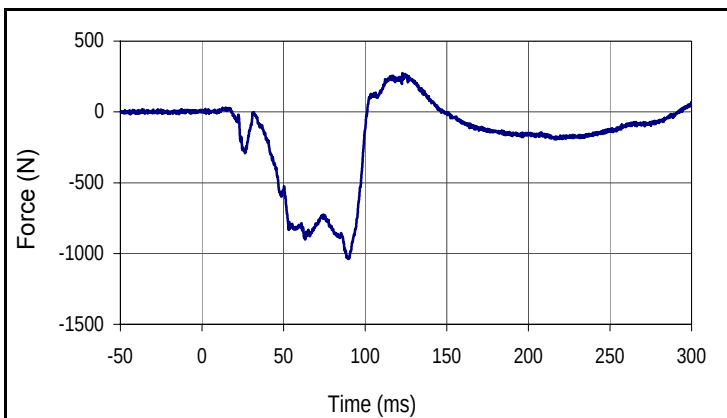
Curve Description			
V2P1 Lower Right DGIR Y Rotation			
Plot No.		SAE Class	Units
032		180	deg
Max	Time	Min	Time
-0.8	21.6	-4.6	59.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

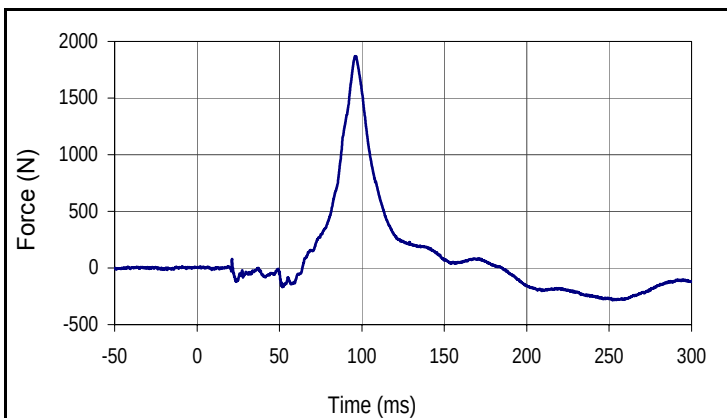
NHTSA No.: R20165412
 Test Date: 4/22/16



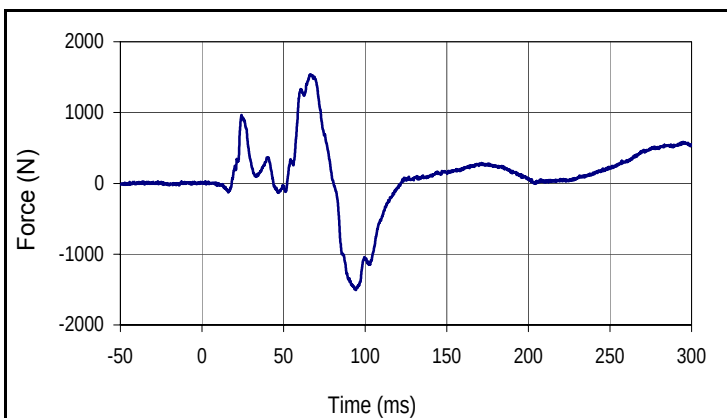
Curve Description			
V2P1 Lower Right DGIR Z Rotation			
Plot No.		SAE Class	Units
033		180	deg
Max	Time	Min	Time
-6.3	19.7	-14.6	96.9



Curve Description			
V2P1 Spine Force X			
Plot No.		SAE Class	Units
034		1000	N
Max	Time	Min	Time
274.9	122.8	-1039.3	89.6



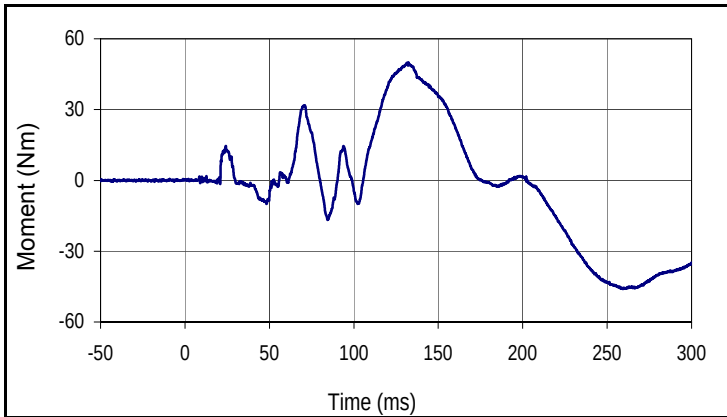
Curve Description			
V2P1 Spine Force Y			
Plot No.		SAE Class	Units
035		1000	N
Max	Time	Min	Time
1870.9	95.9	-284.0	252.2



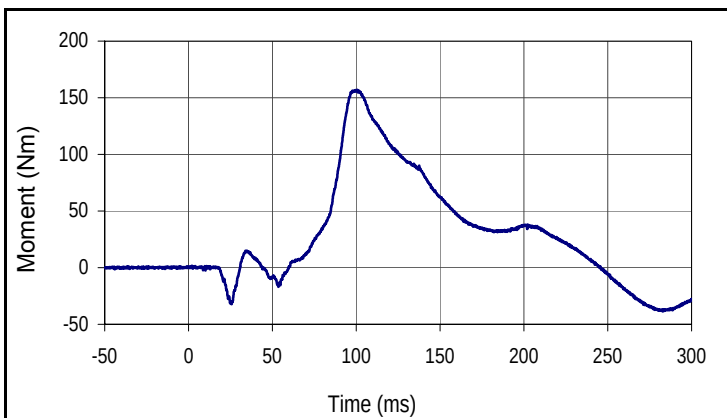
Curve Description			
V2P1 Spine Force Z			
Plot No.		SAE Class	Units
036		1000	N
Max	Time	Min	Time
1539.9	66.7	-1505.3	94.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

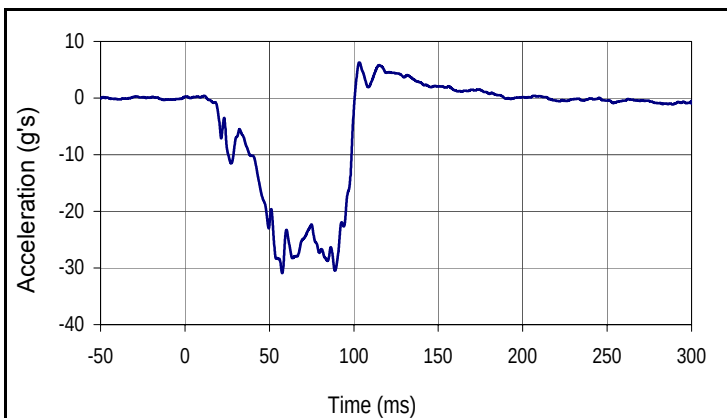
NHTSA No.: R20165412
 Test Date: 4/22/16



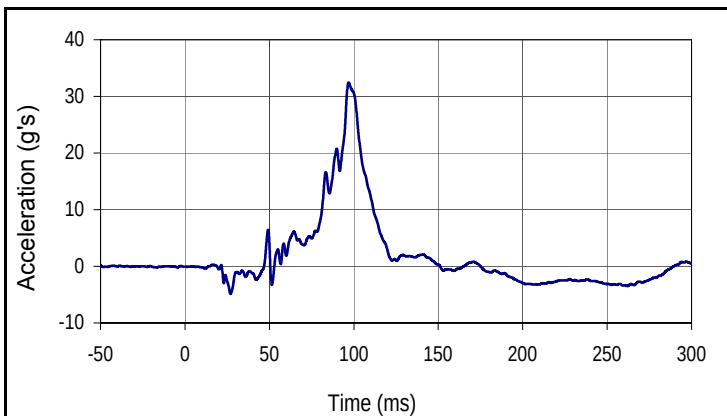
Curve Description			
V2P1 Spine Moment X			
Plot No.		SAE Class	Units
037		1000	Nm
Max	Time	Min	Time
50.0	131.8	-46.0	259.4



Curve Description			
V2P1 Spine Moment Y			
Plot No.		SAE Class	Units
038		1000	Nm
Max	Time	Min	Time
157.1	100.6	-38.6	282.9



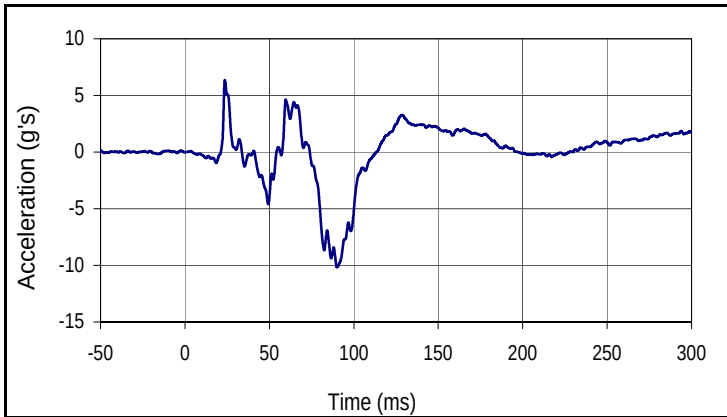
Curve Description			
V2P1 T6 X Acceleration			
Plot No.		SAE Class	Units
039		180	g's
Max	Time	Min	Time
6.3	103.3	-30.9	57.6



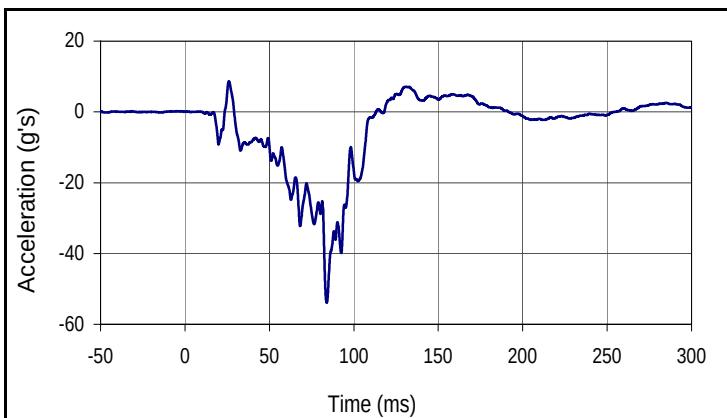
Curve Description			
V2P1 T6 Y Acceleration			
Plot No.		SAE Class	Units
040		180	g's
Max	Time	Min	Time
32.5	96.9	-4.9	27.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

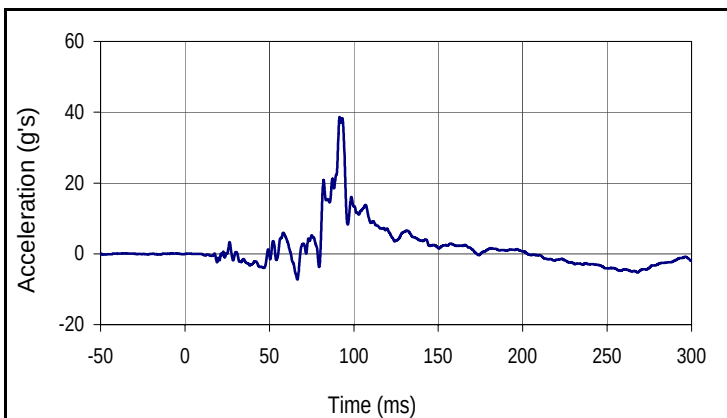
NHTSA No.: R20165412
 Test Date: 4/22/16



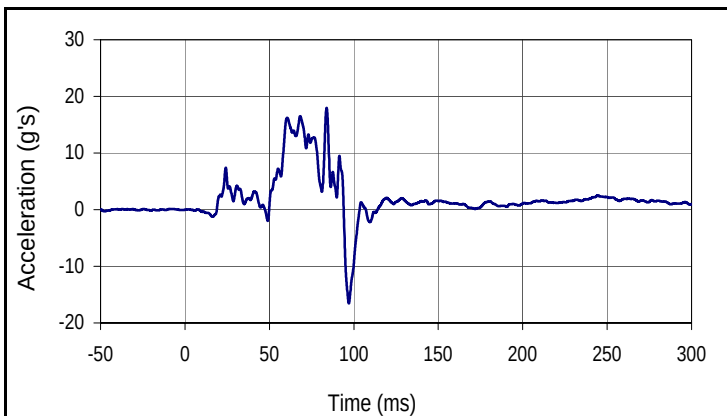
Curve Description			
V2P1 T6 Z Acceleration			
Plot No.		SAE Class	Units
041		180	g's
Max	Time	Min	Time
6.4	23.7	-10.2	90.0



Curve Description			
V2P1 T1 X Acceleration			
Plot No.		SAE Class	Units
042		180	g's
Max	Time	Min	Time
8.7	26.0	-53.9	83.9



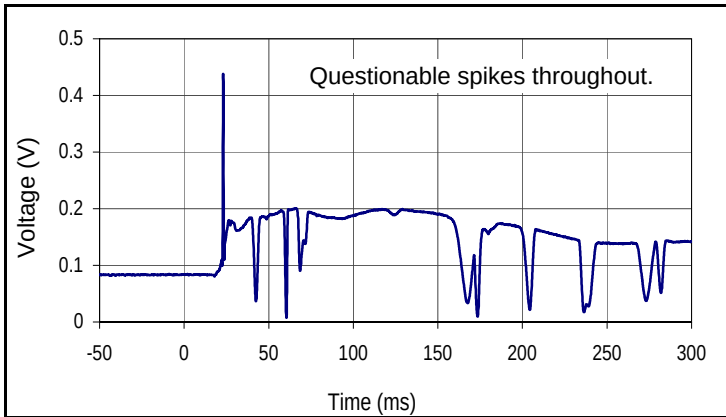
Curve Description			
V2P1 T1 Y Acceleration			
Plot No.		SAE Class	Units
043		180	g's
Max	Time	Min	Time
38.7	91.6	-7.3	66.6



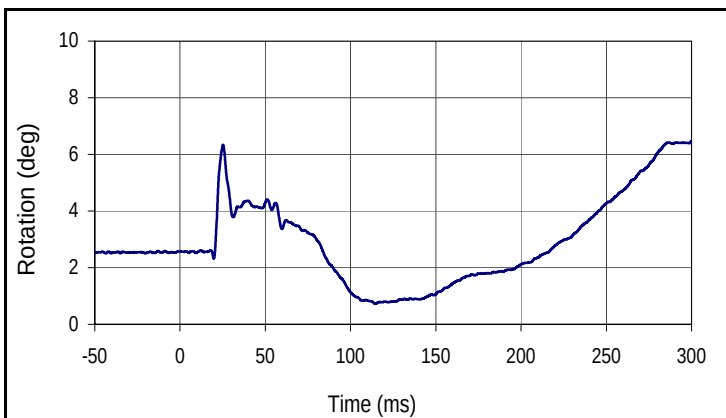
Curve Description			
V2P1 T1 Z Acceleration			
Plot No.		SAE Class	Units
044		180	g's
Max	Time	Min	Time
18.0	83.9	-16.5	97.1

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

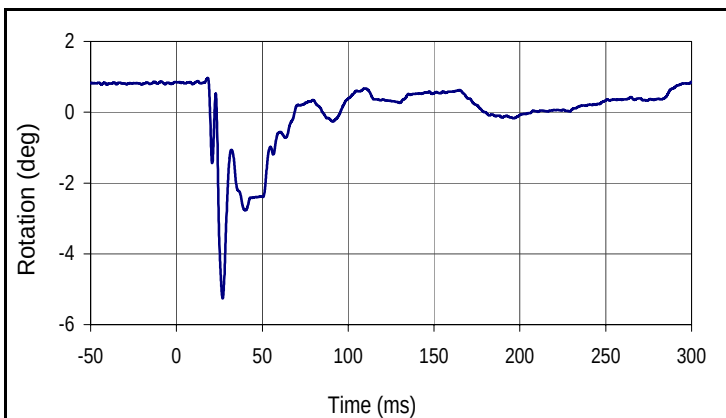
NHTSA No.: R20165412
 Test Date: 4/22/16



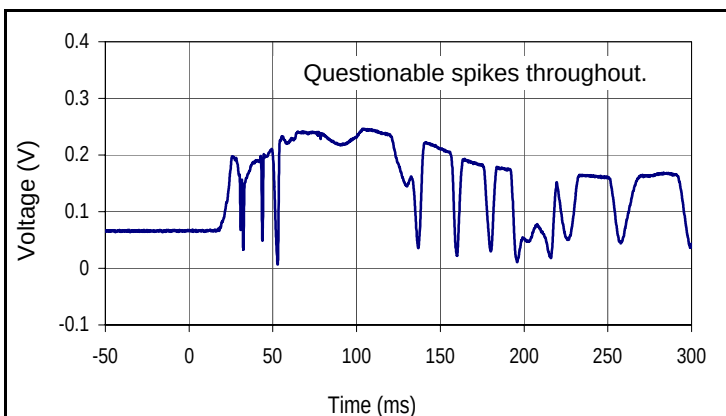
Curve Description			
V2P1 Abdomen Left DGIR X Displacement			
Plot No.		SAE Class	Units
045		600	V
Max	Time	Min	Time
0.4	23.1	0.0	60.5



Curve Description			
V2P1 Abdomen Left DGIR Y Rotation			
Plot No.		SAE Class	Units
046		180	deg
Max	Time	Min	Time
6.5	299.9	0.7	114.6



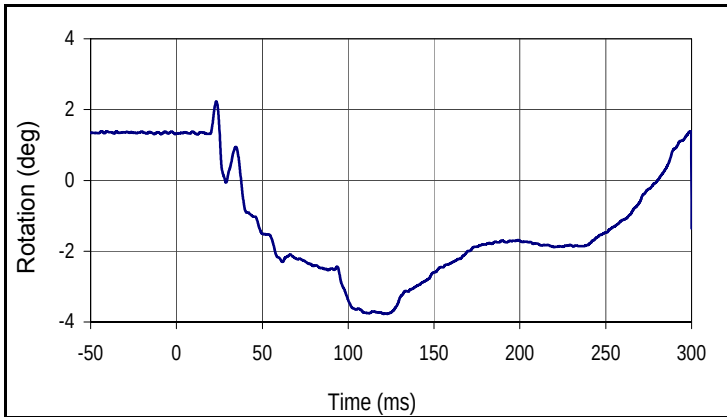
Curve Description			
V2P1 Abdomen Left DGIR Z Rotation			
Plot No.		SAE Class	Units
047		180	deg
Max	Time	Min	Time
1.0	18.2	-5.3	26.9



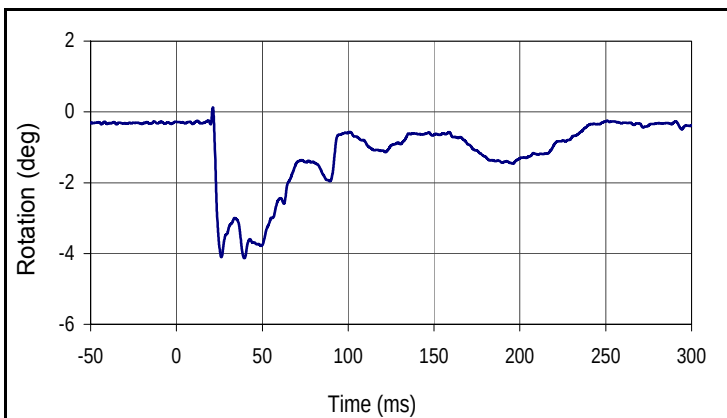
Curve Description			
V2P1 Abdomen Right DGIR X Displacement			
Plot No.		SAE Class	Units
048		600	V
Max	Time	Min	Time
0.2	104.5	0.0	52.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

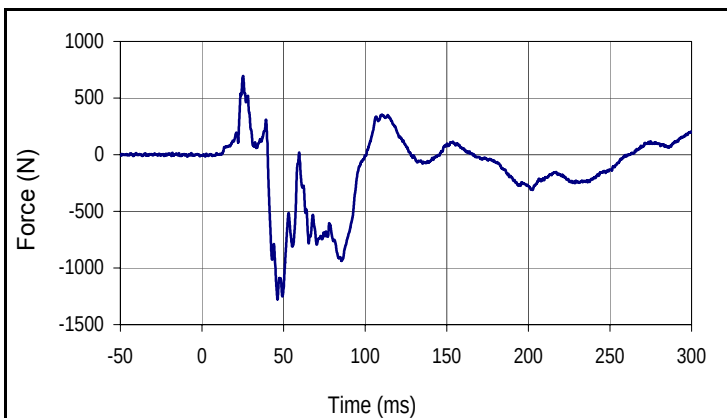
NHTSA No.: R20165412
 Test Date: 4/22/16



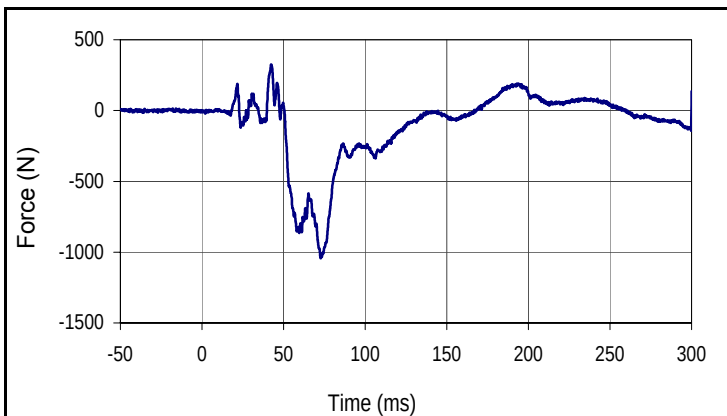
Curve Description			
V2P1 Abdomen Right DGIR Y Rotation			
Plot No.		SAE Class	Units
049		180	deg
Max	Time	Min	Time
2.2	23.2	-3.8	122.7



Curve Description			
V2P1 Abdomen Right DGIR Z Rotation			
Plot No.		SAE Class	Units
050		180	deg
Max	Time	Min	Time
0.1	21.2	-4.1	39.6



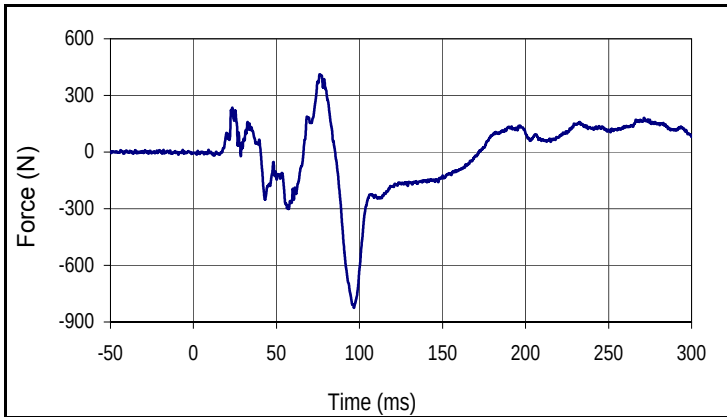
Curve Description			
V2P1 Acetabulum Left X Force			
Plot No.		SAE Class	Units
051		600	N
Max	Time	Min	Time
696.3	25.1	-1277.0	46.3



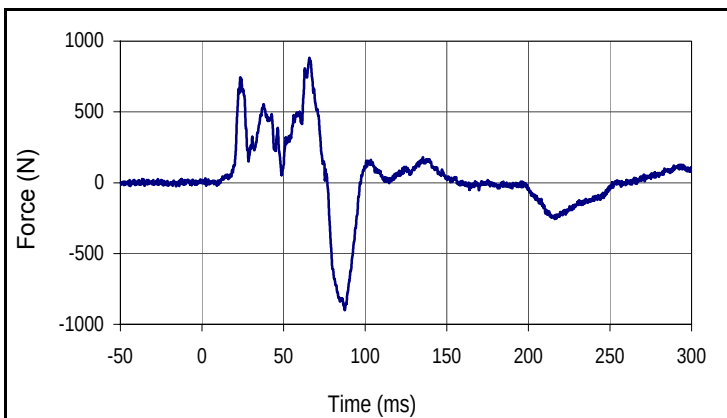
Curve Description			
V2P1 Acetabulum Left Y Force			
Plot No.		SAE Class	Units
052		600	N
Max	Time	Min	Time
325.7	42.4	-1043.8	72.7

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

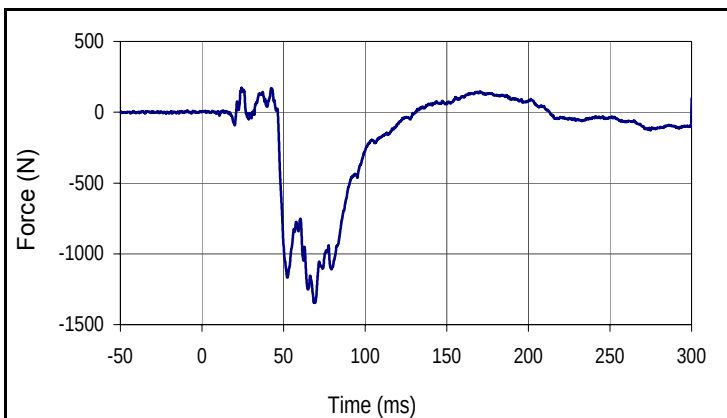
NHTSA No.: R20165412
 Test Date: 4/22/16



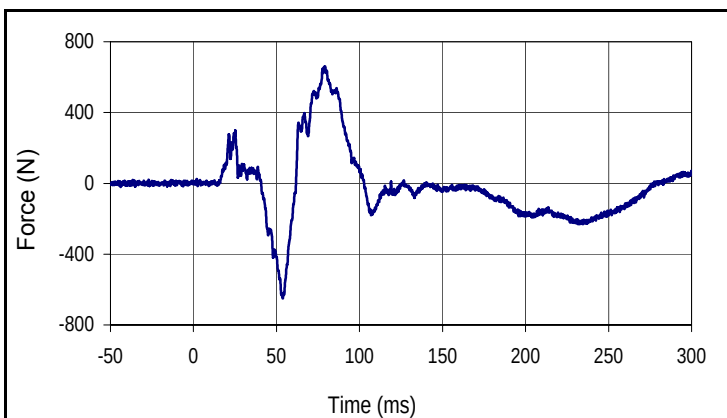
Curve Description			
V2P1 Acetabulum Left Z Force			
Plot No.		SAE Class	Units
053		600	N
Max	Time	Min	Time
412.2	76.1	-825.7	96.7



Curve Description			
V2P1 Acetabulum Right X Force			
Plot No.		SAE Class	Units
054		600	N
Max	Time	Min	Time
881.6	65.8	-899.7	87.5



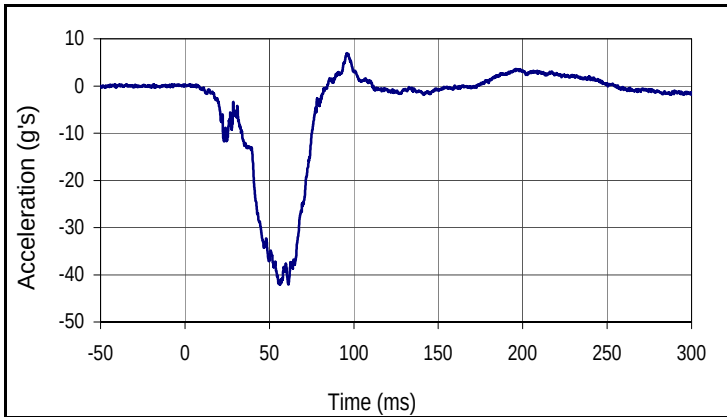
Curve Description			
V2P1 Acetabulum Right Y Force			
Plot No.		SAE Class	Units
055		600	N
Max	Time	Min	Time
172.2	24.4	-1345.5	69.2



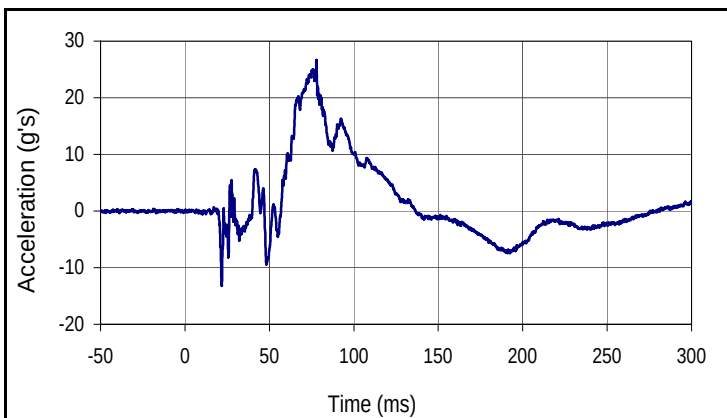
Curve Description			
V2P1 Acetabulum Right Z Force			
Plot No.		SAE Class	Units
056		600	N
Max	Time	Min	Time
660.2	79.3	-650.2	53.8

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

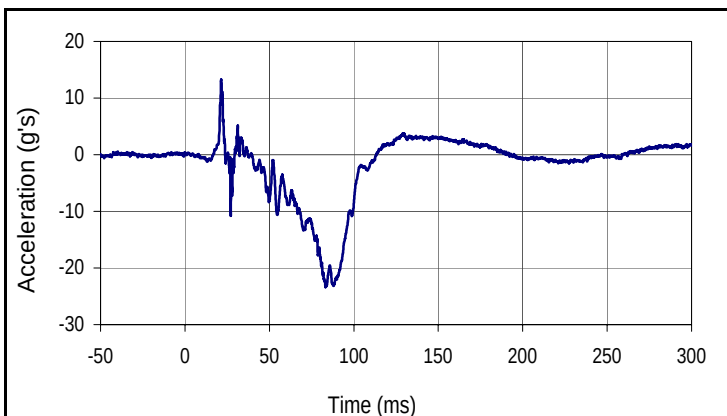
NHTSA No.: R20165412
 Test Date: 4/22/16



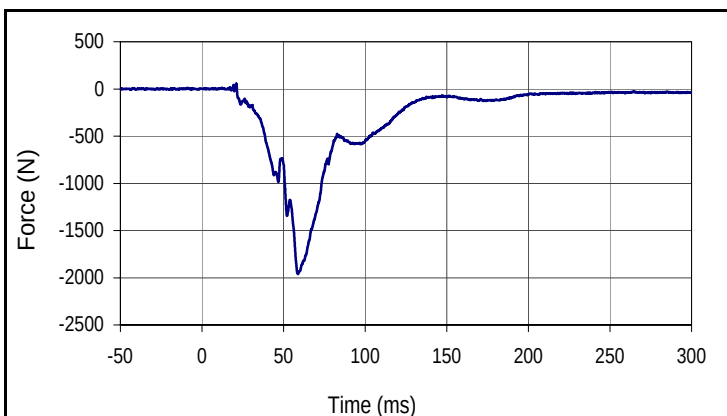
Curve Description			
V2P1 Pelvis X Acceleration			
Plot No.		SAE Class	Units
057		1000	g's
Max	Time	Min	Time
7.0	95.8	-42.1	61.3



Curve Description			
V2P1 Pelvis Y Acceleration			
Plot No.		SAE Class	Units
058		1000	g's
Max	Time	Min	Time
26.7	77.9	-13.2	21.8



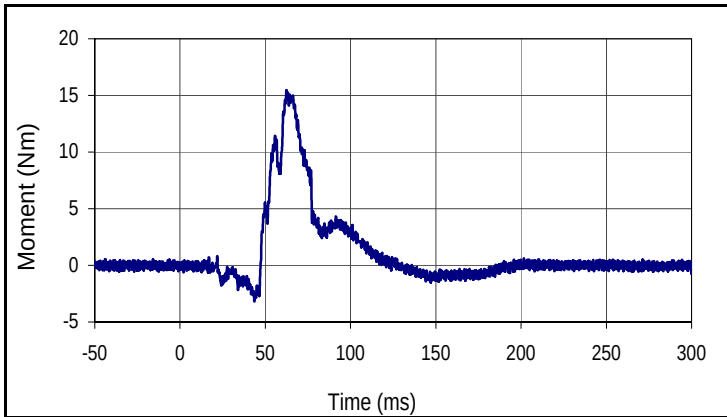
Curve Description			
V2P1 Pelvis Z Acceleration			
Plot No.		SAE Class	Units
059		1000	g's
Max	Time	Min	Time
13.3	21.4	-23.4	83.3



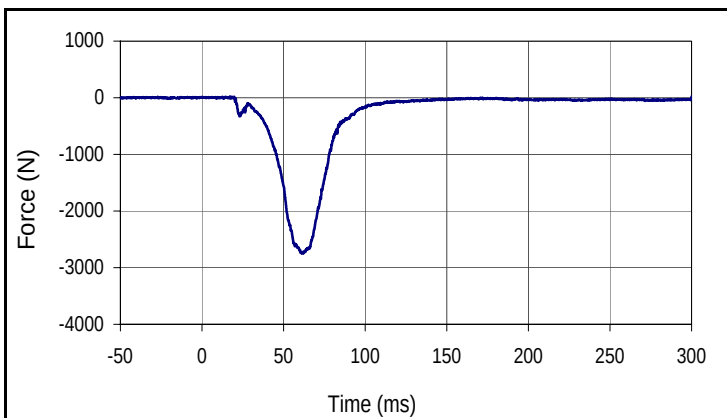
Curve Description			
V2P1 ASIS Left X Force			
Plot No.		SAE Class	Units
060		600	N
Max	Time	Min	Time
55.0	21.0	-1961.0	58.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

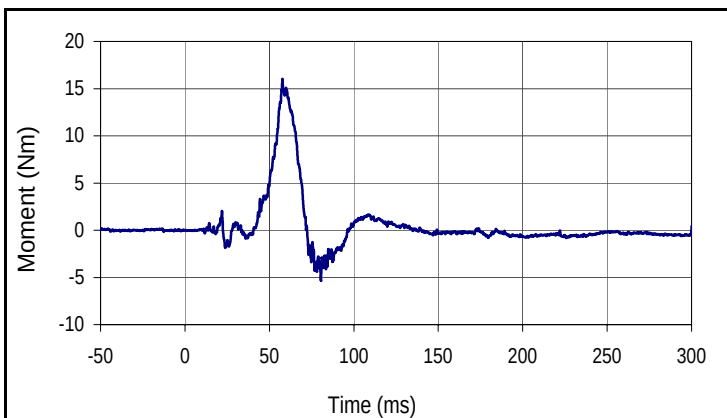
NHTSA No.: R20165412
 Test Date: 4/22/16



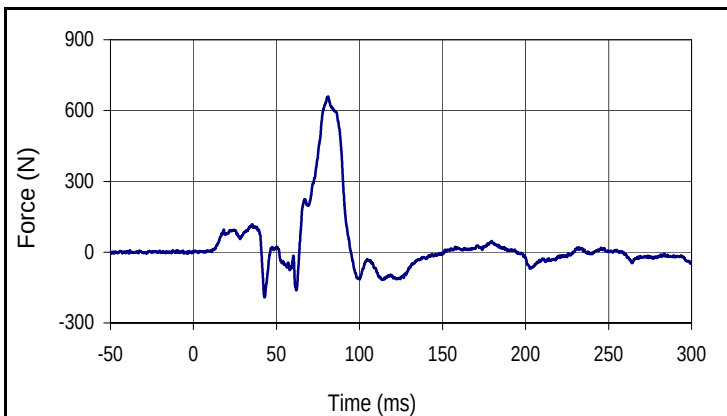
Curve Description			
V2P1 ASIS Left Y Moment			
Plot No.		SAE Class	Units
061		600	Nm
Max	Time	Min	Time
15.5	62.5	-3.2	43.6



Curve Description			
V2P1 ASIS Right X Force			
Plot No.		SAE Class	Units
062		1000	N
Max	Time	Min	Time
23.7	17.2	-2743.8	62.2



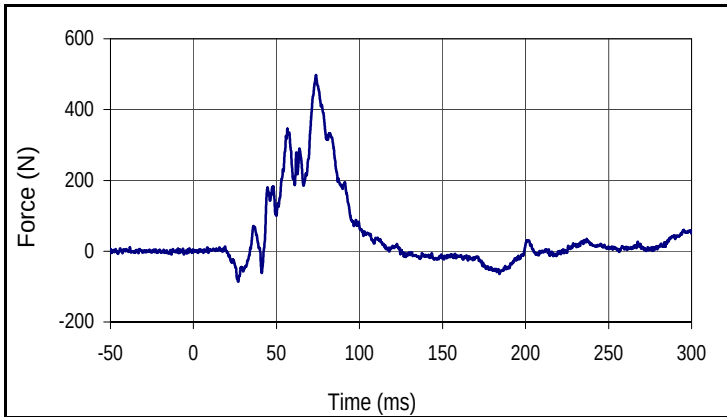
Curve Description			
V2P1 ASIS Right Y Moment			
Plot No.		SAE Class	Units
063		600	Nm
Max	Time	Min	Time
16.0	57.8	-5.3	80.5



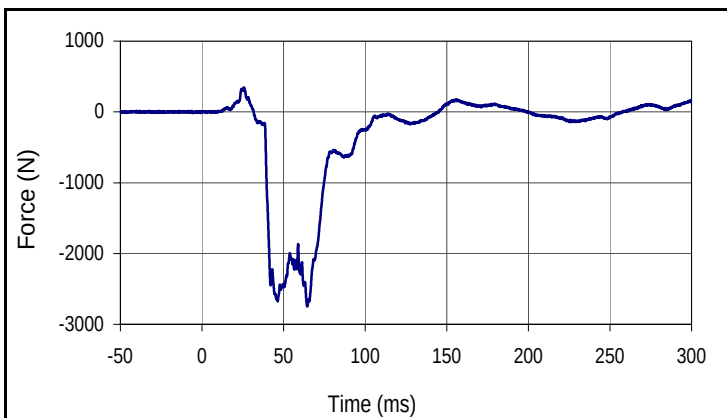
Curve Description			
V2P1 Femur Left X Force			
Plot No.		SAE Class	Units
064		600	N
Max	Time	Min	Time
658.1	81.1	-192.0	42.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

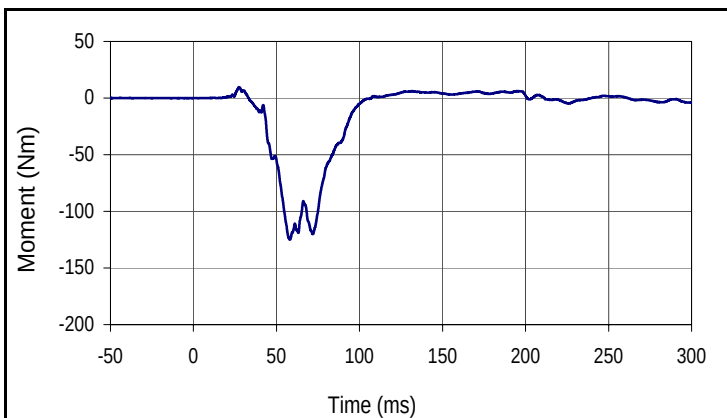
NHTSA No.: R20165412
 Test Date: 4/22/16



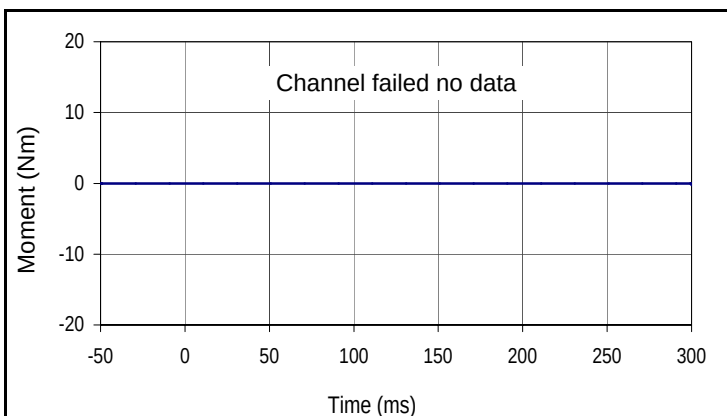
Curve Description			
V2P1 Femur Left Y Force			
Plot No.		SAE Class	Units
065		600	N
Max	Time	Min	Time
498.0	73.8	-85.8	26.9



Curve Description			
V2P1 Femur Left Z Force			
Plot No.		SAE Class	Units
066		600	N
Max	Time	Min	Time
346.2	25.7	-2748.3	64.5



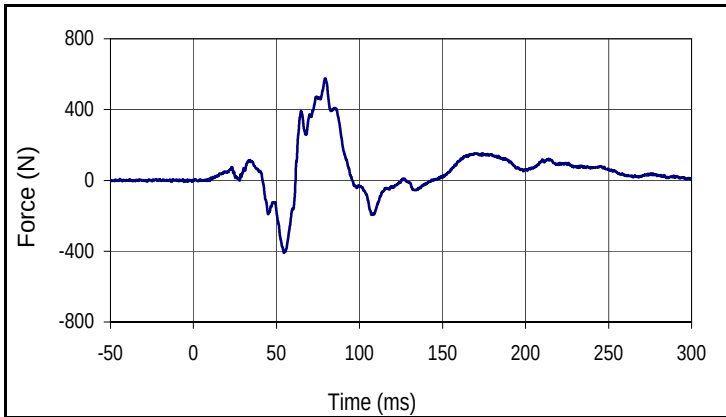
Curve Description			
V2P1 Femur Left X Moment			
Plot No.		SAE Class	Units
067		600	Nm
Max	Time	Min	Time
9.7	27.5	-124.9	58.2



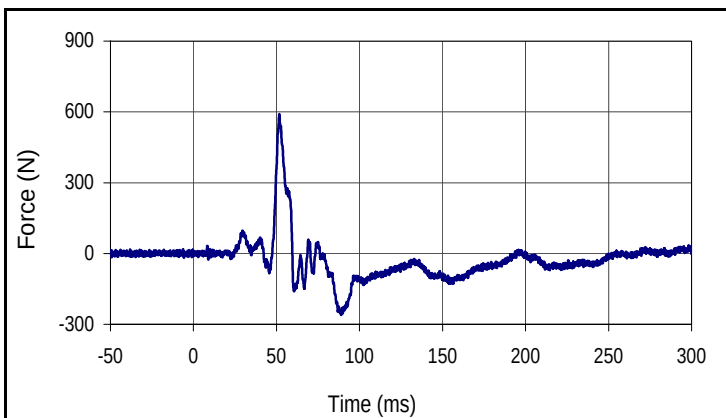
Curve Description			
V2P1 Femur Left Y Moment			
Plot No.		SAE Class	Units
068		600	Nm
Max	Time	Min	Time
0.0	-20.0	0.0	-20.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

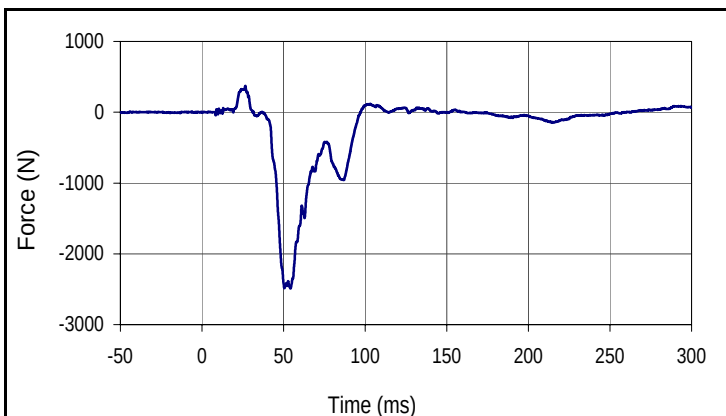
NHTSA No.: R20165412
 Test Date: 4/22/16



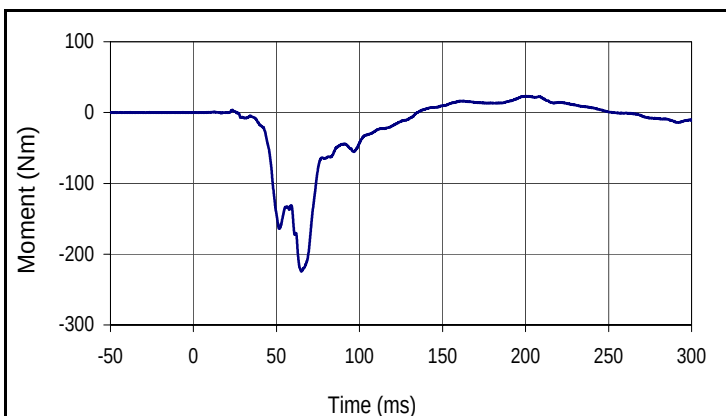
Curve Description			
V2P1 Femur Right X Force			
Plot No.		SAE Class	Units
069		600	N
Max	Time	Min	Time
576.5	79.4	-409.7	54.5



Curve Description			
V2P1 Femur Right Y Force			
Plot No.		SAE Class	Units
070		600	N
Max	Time	Min	Time
591.4	51.7	-261.1	88.9



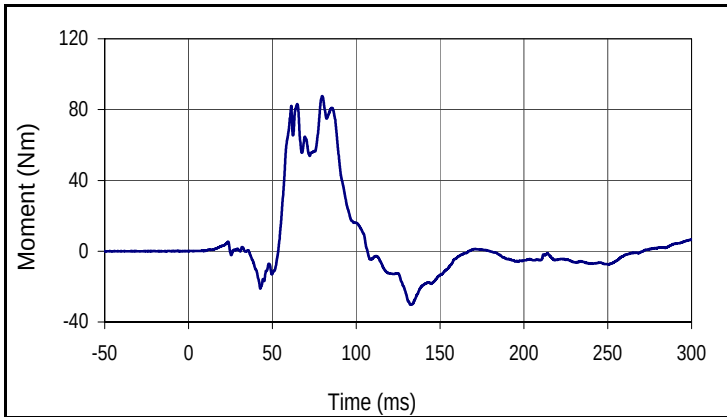
Curve Description			
V2P1 Femur Right Z Force			
Plot No.		SAE Class	Units
071		600	N
Max	Time	Min	Time
373.1	26.5	-2490.0	54.3



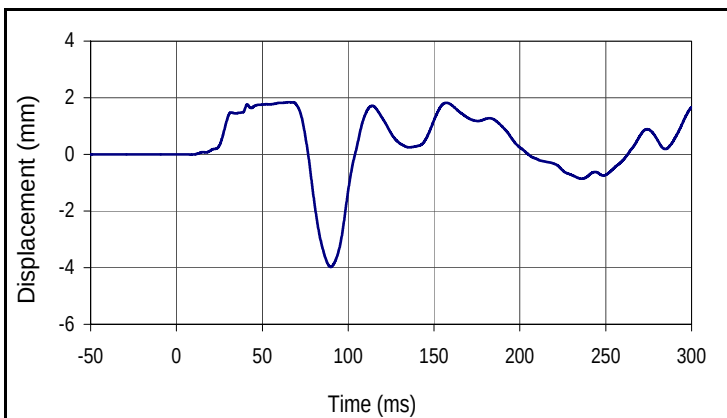
Curve Description			
V2P1 Femur Right X Moment			
Plot No.		SAE Class	Units
072		600	Nm
Max	Time	Min	Time
23.3	200.6	-224.4	64.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

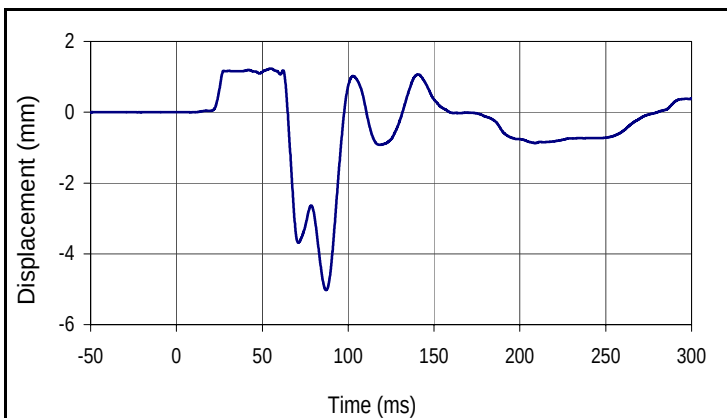
NHTSA No.: R20165412
 Test Date: 4/22/16



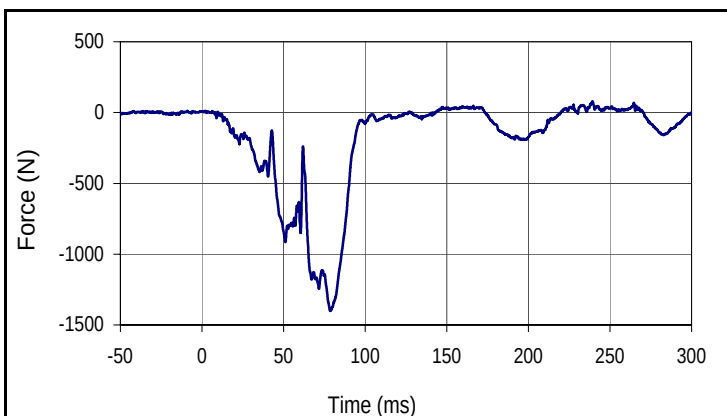
Curve Description			
V2P1 Femur Right Y Moment			
Plot No.		SAE Class	Units
073		600	Nm
Max	Time	Min	Time
87.7	79.7	-30.2	132.4



Curve Description			
V2P1 Knee Left X Displacement			
Plot No.		SAE Class	Units
074		180	mm
Max	Time	Min	Time
1.8	65.4	-4.0	89.8



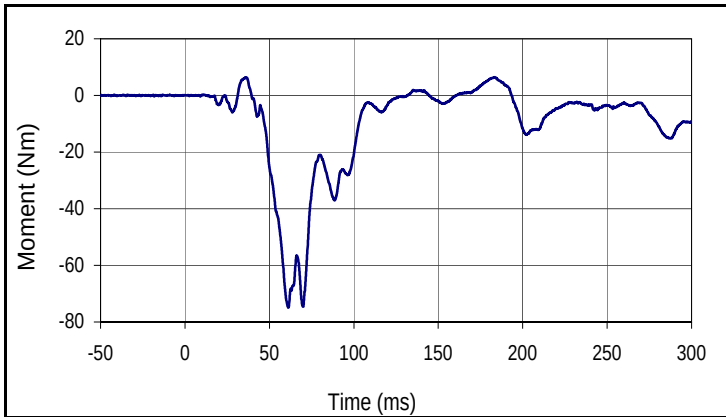
Curve Description			
VSP1 Knee Right X Displacement			
Plot No.		SAE Class	Units
075		180	mm
Max	Time	Min	Time
1.2	55.0	-5.0	87.2



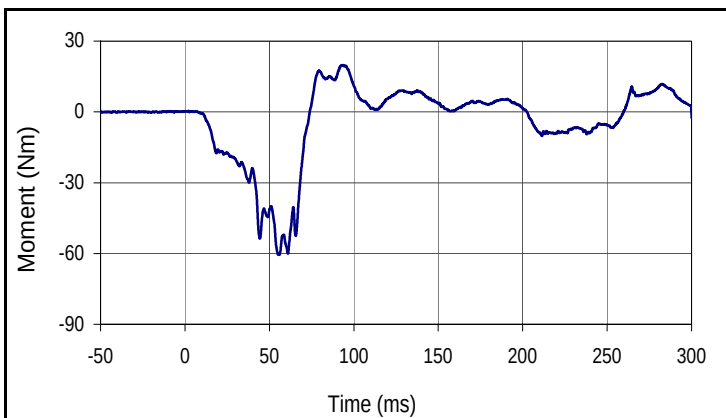
Curve Description			
V2P1 Upper Tibia Left Z Force			
Plot No.		SAE Class	Units
076		600	N
Max	Time	Min	Time
79.3	239.3	-1399.9	78.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

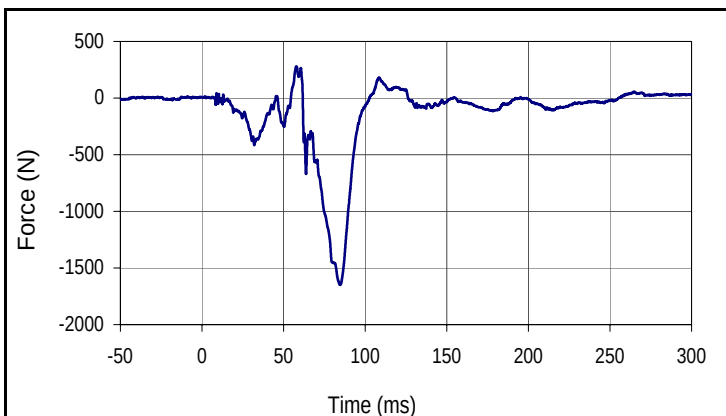
NHTSA No.: R20165412
 Test Date: 4/22/16



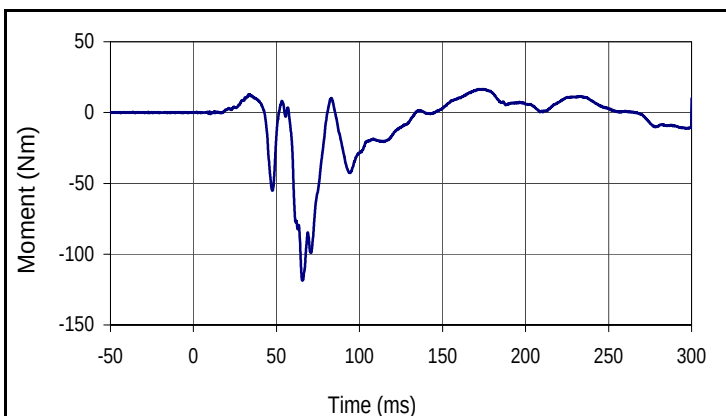
Curve Description			
V2P1 Upper Tibia Left X Moment			
Plot No.		SAE Class	Units
077		600	Nm
Max	Time	Min	Time
6.4	183.4	-74.9	61.3



Curve Description			
V2P1 Upper Tibia Left Y Moment			
Plot No.		SAE Class	Units
078		600	Nm
Max	Time	Min	Time
19.8	93.1	-60.5	55.9



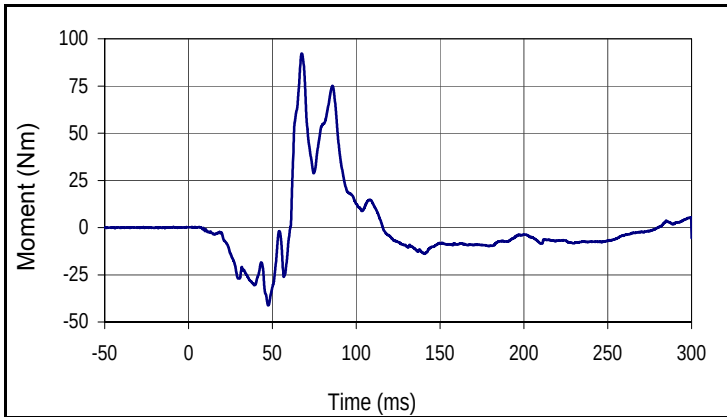
Curve Description			
V2P1 Upper Tibia Right Z Force			
Plot No.		SAE Class	Units
079		600	N
Max	Time	Min	Time
280.1	57.7	-1648.9	84.8



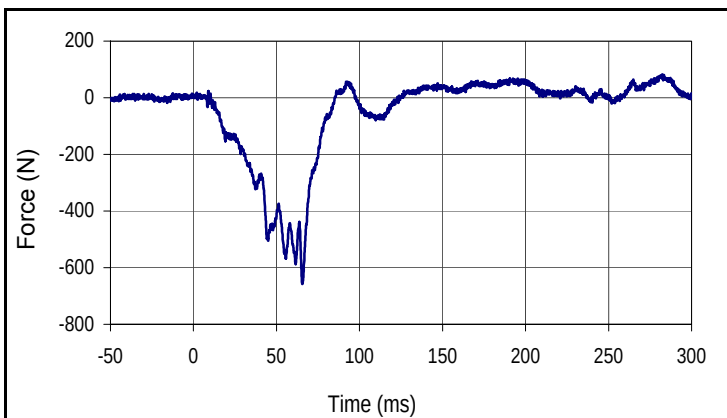
Curve Description			
V2P1 Upper Tibia Right X Moment			
Plot No.		SAE Class	Units
080		600	Nm
Max	Time	Min	Time
16.6	174.1	-118.5	65.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

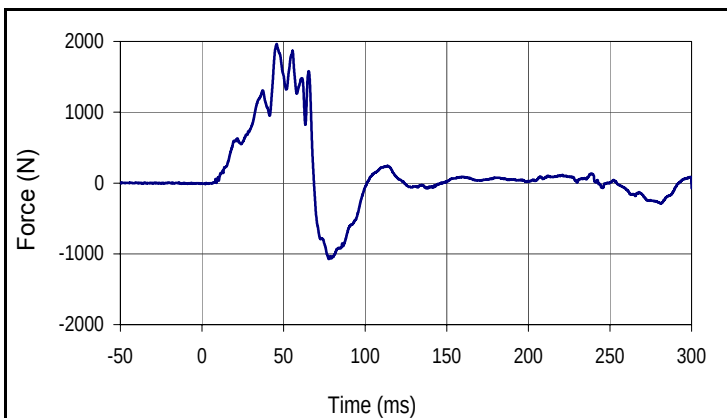
NHTSA No.: R20165412
 Test Date: 4/22/16



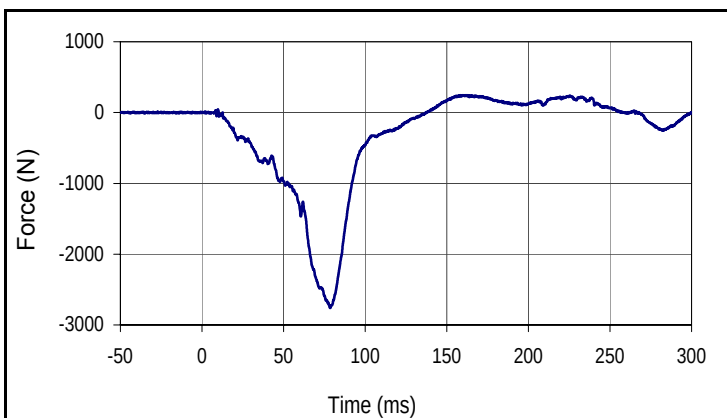
Curve Description			
V2P1 Upper Tibia Right Y Moment			
Plot No.		SAE Class	Units
081		600	Nm
Max	Time	Min	Time
92.2	67.6	-41.2	47.6



Curve Description			
V2P1 Lower Tibia Left X Force			
Plot No.		SAE Class	Units
082		600	N
Max	Time	Min	Time
82.5	282.4	-657.7	65.6



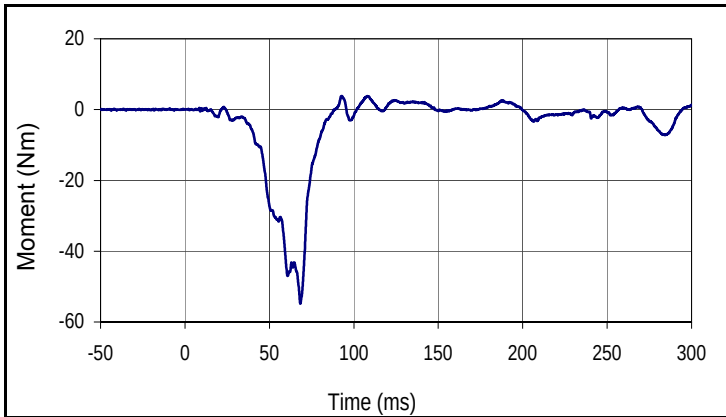
Curve Description			
V2P1 Lower Tibia Left Y Force			
Plot No.		SAE Class	Units
083		600	N
Max	Time	Min	Time
1965.2	45.7	-1073.5	77.8



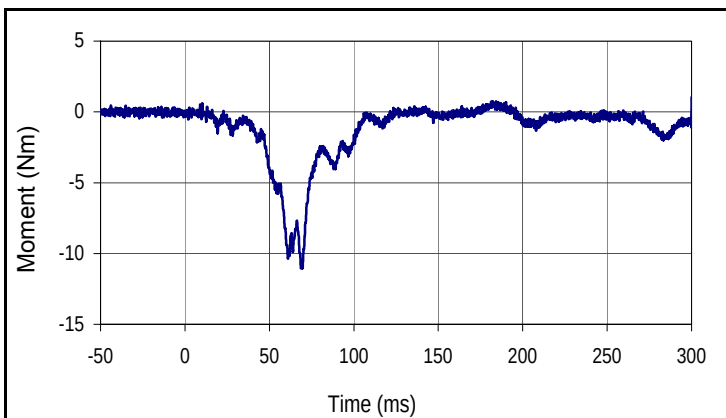
Curve Description			
V2P1 Lower Tibia Left Z Force			
Plot No.		SAE Class	Units
084		600	N
Max	Time	Min	Time
246.5	159.6	-2760.3	78.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

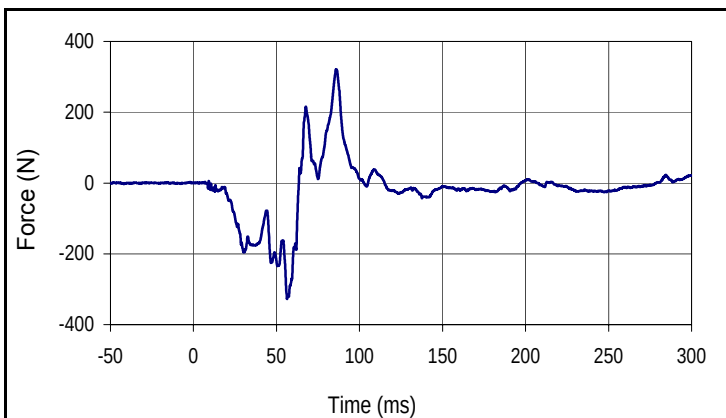
NHTSA No.: R20165412
 Test Date: 4/22/16



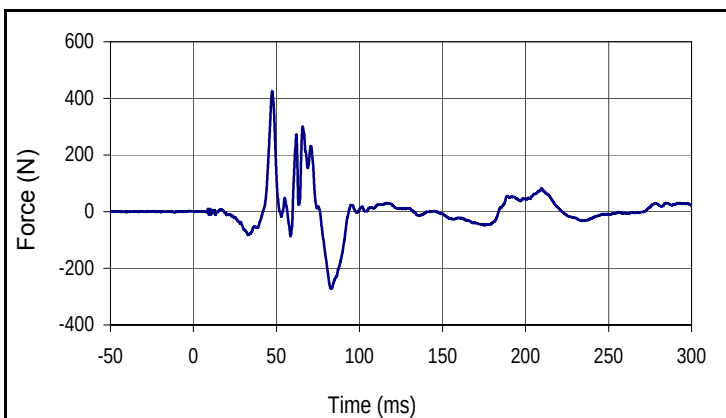
Curve Description			
V2P1 Lower Tibia Left X Moment			
Plot No.		SAE Class	Units
085		600	Nm
Max	Time	Min	Time
3.9	92.7	-54.8	68.3



Curve Description			
V2P1 Lower Tibia Left Y Moment			
Plot No.		SAE Class	Units
086		600	Nm
Max	Time	Min	Time
0.8	182.3	-11.0	68.8



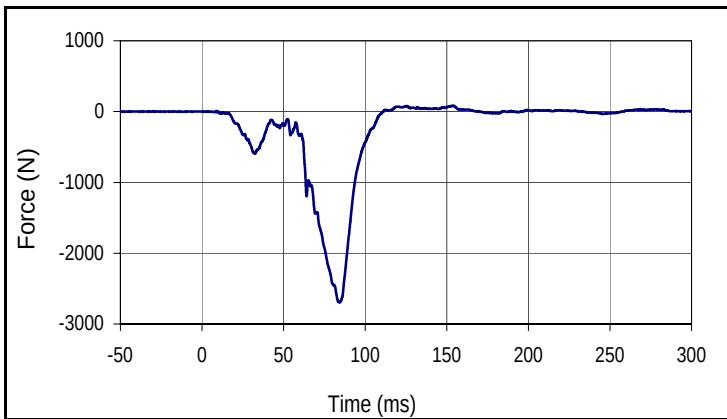
Curve Description			
V2P1 Lower Tibia Right X Force			
Plot No.		SAE Class	Units
087		600	N
Max	Time	Min	Time
321.5	86.0	-327.6	56.3



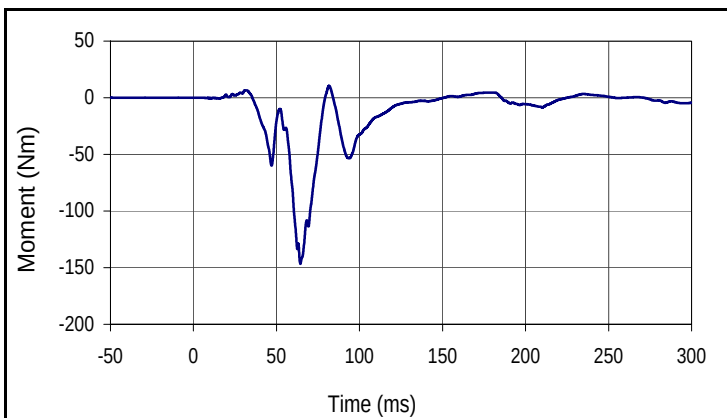
Curve Description			
V2P1 Lower Tibia Right Y Force			
Plot No.		SAE Class	Units
088		600	N
Max	Time	Min	Time
425.7	47.4	-271.9	82.8

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

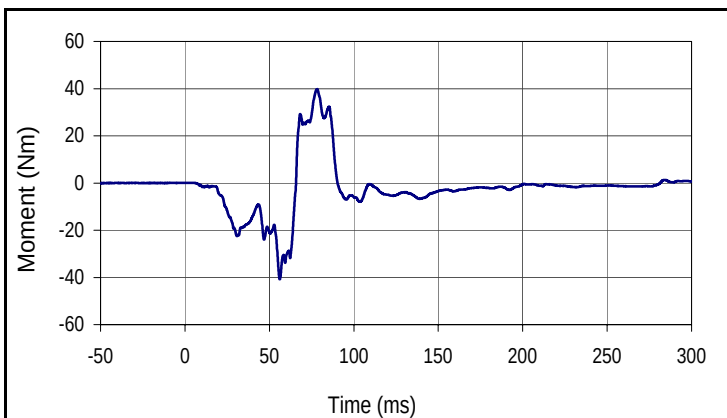
NHTSA No.: R20165412
 Test Date: 4/22/16



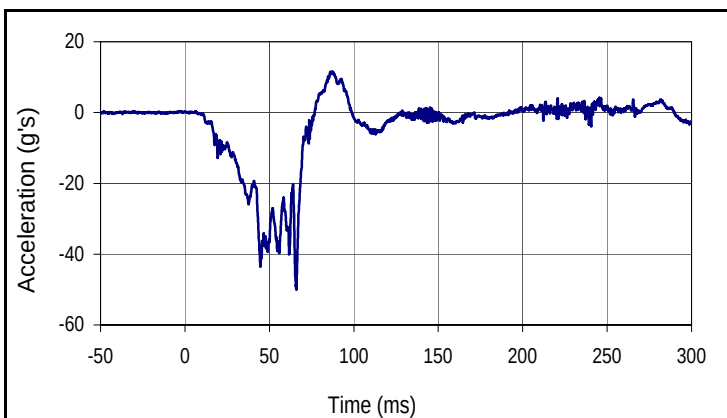
Curve Description			
V2P1 Lower Tibia Right Z Force			
Plot No.		SAE Class	Units
089		600	N
Max	Time	Min	Time
81.1	153.4	-2697.6	84.4



Curve Description			
V2P1 Lower Tibia Right X Moment			
Plot No.		SAE Class	Units
090		600	Nm
Max	Time	Min	Time
10.6	81.7	-146.5	64.3



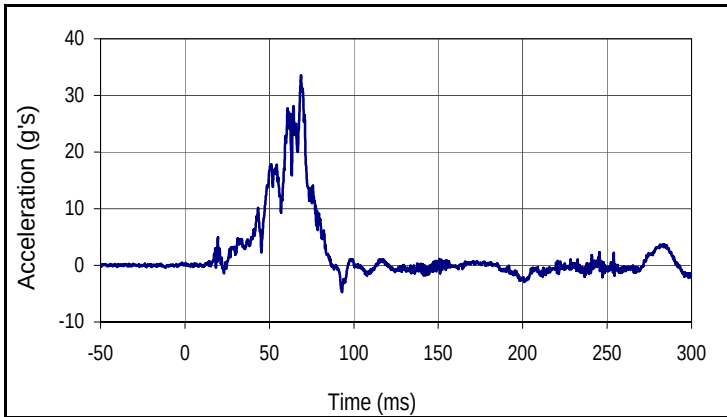
Curve Description			
V2P1 Lower Tibia Right Y Moment			
Plot No.		SAE Class	Units
091		600	Nm
Max	Time	Min	Time
39.8	78.3	-40.8	56.2



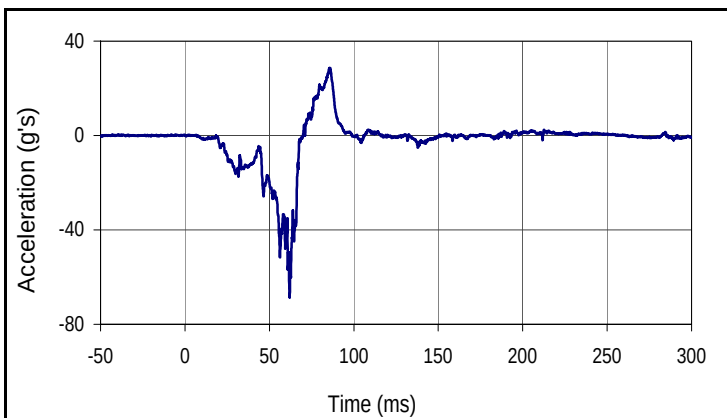
Curve Description			
V2P1 Leg Left X Acceleration			
Plot No.		SAE Class	Units
092		1000	g's
Max	Time	Min	Time
11.6	87.0	-50.0	65.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

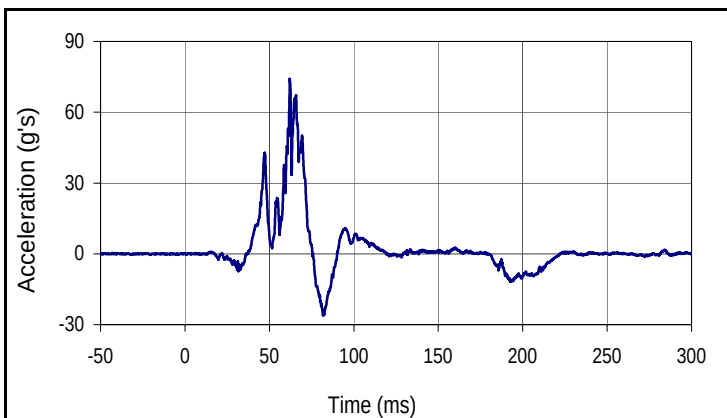
NHTSA No.: R20165412
 Test Date: 4/22/16



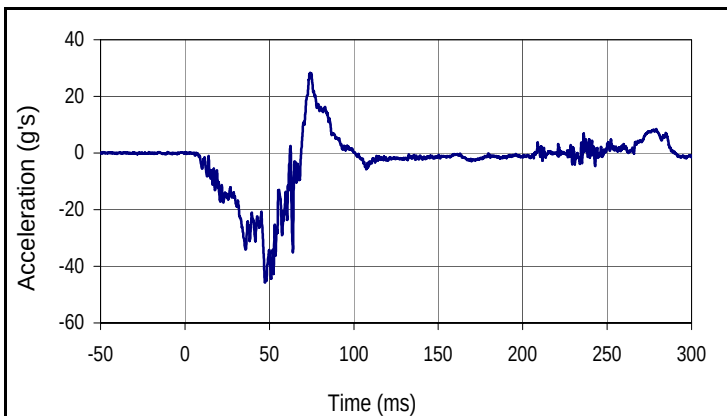
Curve Description			
V2P1 Leg Left Y Acceleration			
Plot No.		SAE Class	Units
093		1000	g's
Max	Time	Min	Time
33.6	68.8	-4.8	93.0



Curve Description			
V2P1 Right Leg X Acceleration			
Plot No.		SAE Class	Units
094		1000	g's
Max	Time	Min	Time
28.6	85.5	-68.6	62.0



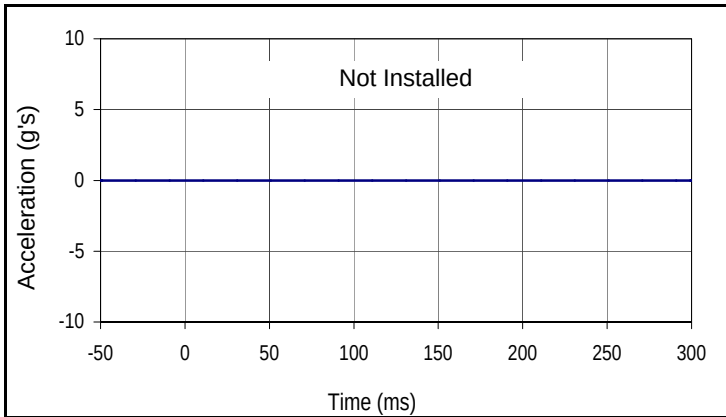
Curve Description			
V2P1 Right Leg Y Acceleration			
Plot No.		SAE Class	Units
095		1000	g's
Max	Time	Min	Time
74.1	62.0	-26.3	81.8



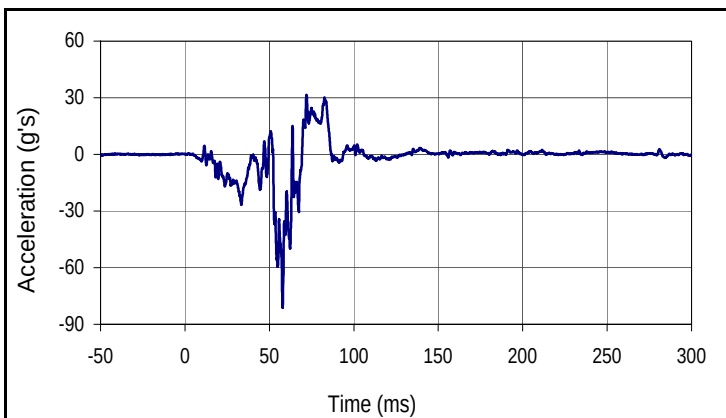
Curve Description			
V2P1 Foot Left X Acceleration			
Plot No.		SAE Class	Units
096		1000	g's
Max	Time	Min	Time
28.4	74.2	-45.7	47.4

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

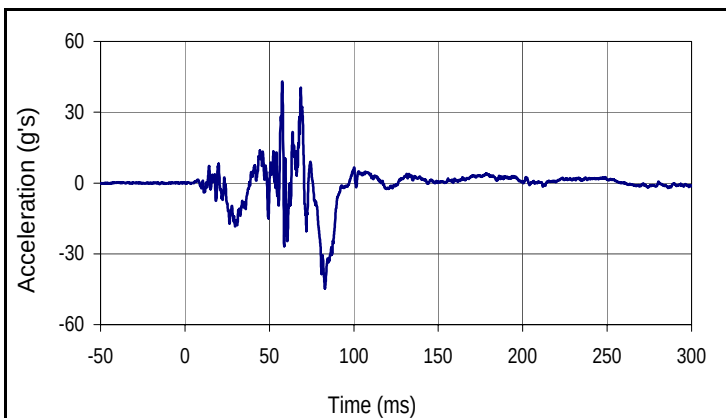
NHTSA No.: R20165412
 Test Date: 4/22/16



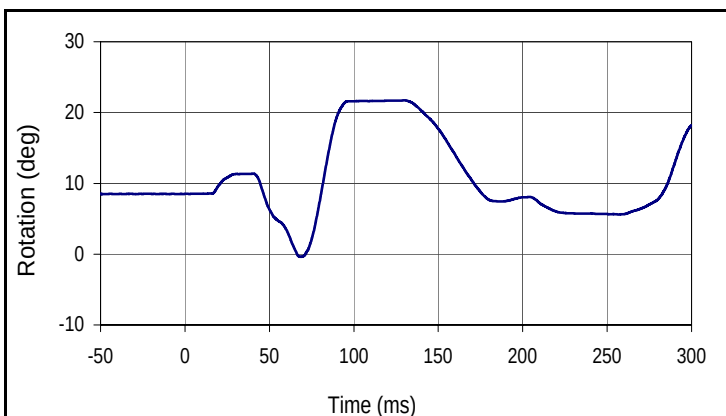
Curve Description			
V2P1 Foot Left Z Acceleration			
Plot No.		SAE Class	Units
097		1000	g's
Max	Time	Min	Time
0.0	-20.0	0.0	-20.0



Curve Description			
V2P1 Foot Right X Acceleration			
Plot No.		SAE Class	Units
098		1000	g's
Max	Time	Min	Time
31.5	72.0	-81.2	57.8



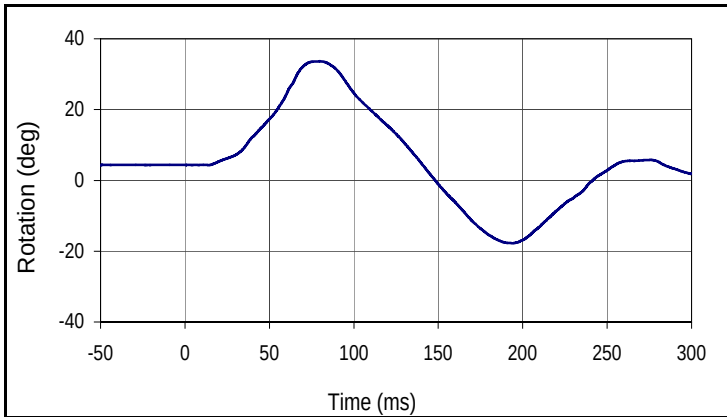
Curve Description			
V2P1 Foot Right Z Acceleration			
Plot No.		SAE Class	Units
099		1000	g's
Max	Time	Min	Time
43.0	57.6	-44.7	82.9



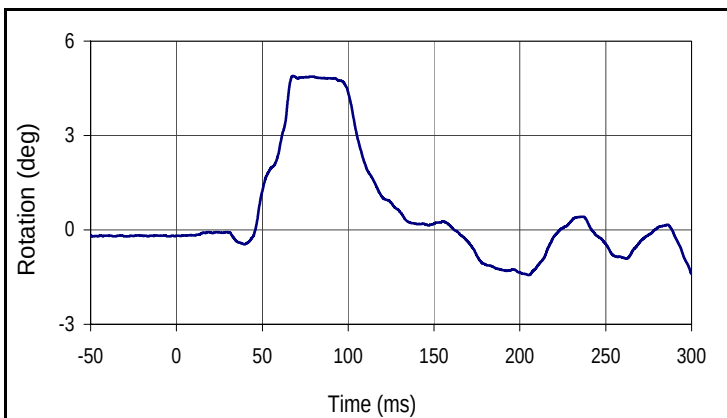
Curve Description			
V2P1 Ankle Left X Rotation			
Plot No.		SAE Class	Units
100		180	deg
Max	Time	Min	Time
21.7	129.9	-0.4	68.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

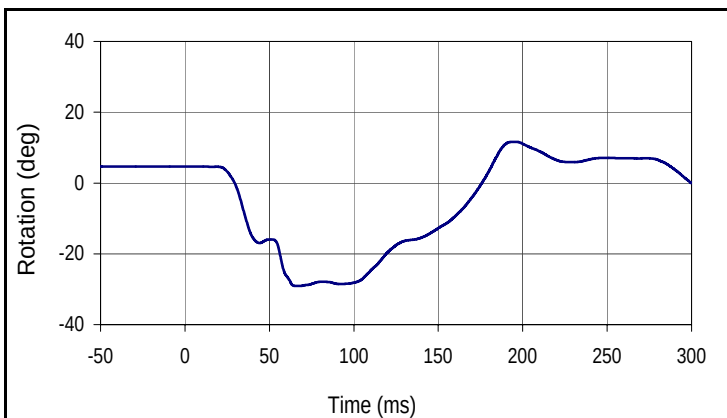
NHTSA No.: R20165412
 Test Date: 4/22/16



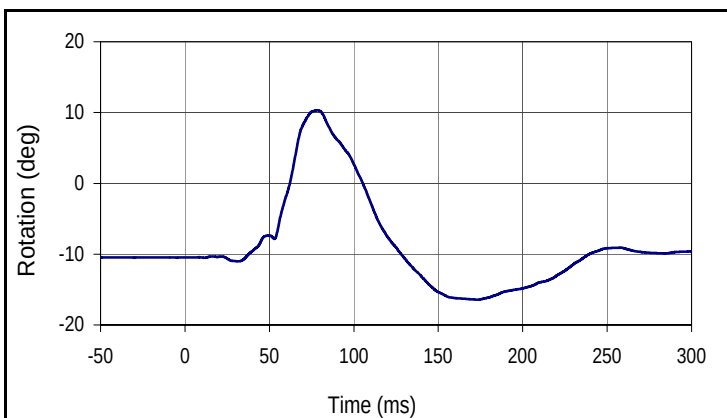
Curve Description			
V2P1 Ankle Left Y Rotation			
Plot No.		SAE Class	Units
101		180	deg
Max	Time	Min	Time
33.6	79.9	-17.7	193.9



Curve Description			
V2P1 Ankle Left Z Rotation			
Plot No.		SAE Class	Units
102		180	deg
Max	Time	Min	Time
4.9	67.9	-1.4	205.1



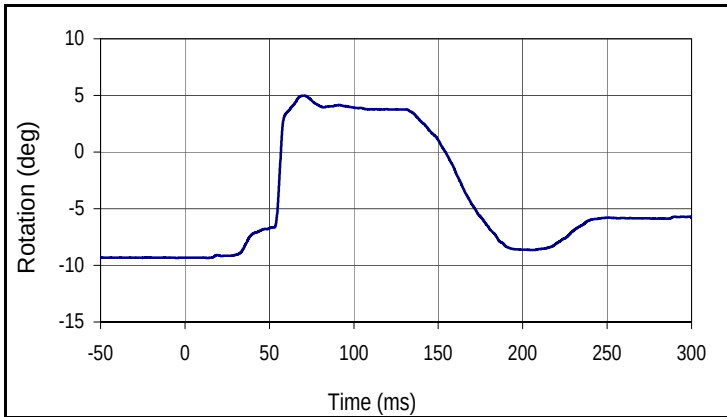
Curve Description			
V2P1 Ankle Right X Rotation			
Plot No.		SAE Class	Units
103		180	deg
Max	Time	Min	Time
11.7	195.6	-29.1	68.3



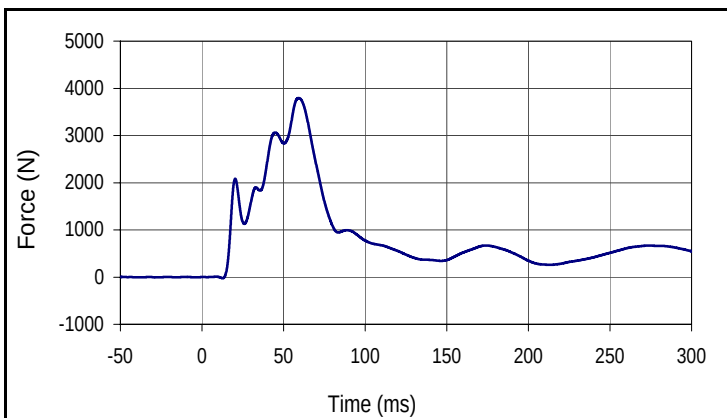
Curve Description			
V2P1 Ankle Right Y Rotation			
Plot No.		SAE Class	Units
104		180	deg
Max	Time	Min	Time
10.3	78.2	-16.4	173.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

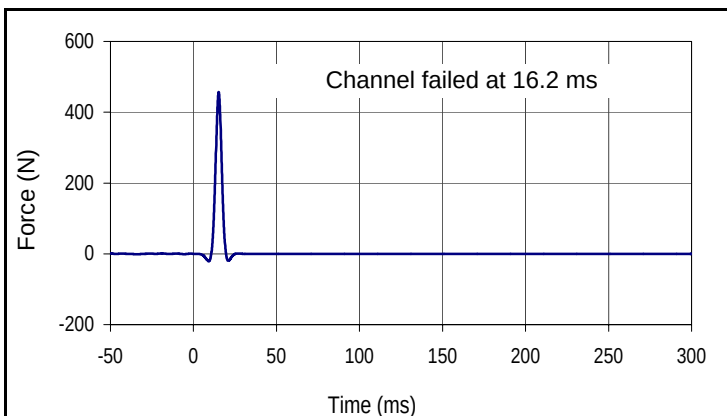
NHTSA No.: R20165412
 Test Date: 4/22/16



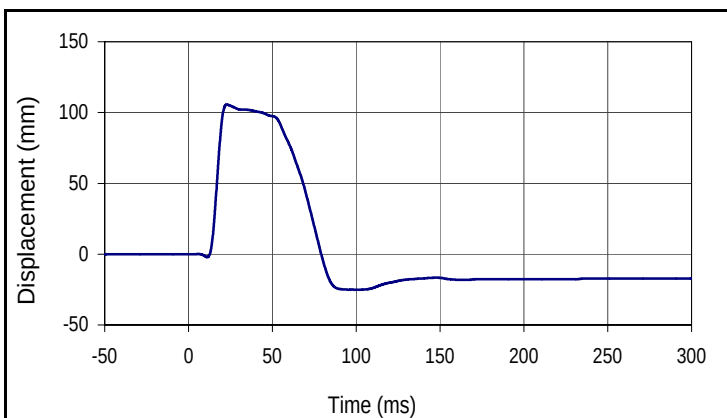
Curve Description			
V2P1 Right Ankle Z Rotation			
Plot No.		SAE Class	Units
105		180	deg
Max	Time	Min	Time
5.0	70.2	-9.4	13.4



Curve Description			
V2 Driver Lap Belt Force			
Plot No.		SAE Class	Units
106		60	N
Max	Time	Min	Time
3794.4	59.2	-23.6	12.7



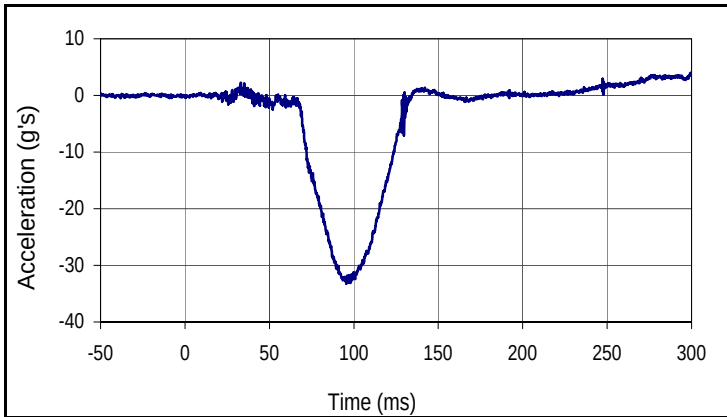
Curve Description			
V2 Driver Shoulder Belt Upper Force			
Plot No.		SAE Class	Units
107		60	N
Max	Time	Min	Time
457.1	15.2	-20.9	9.2



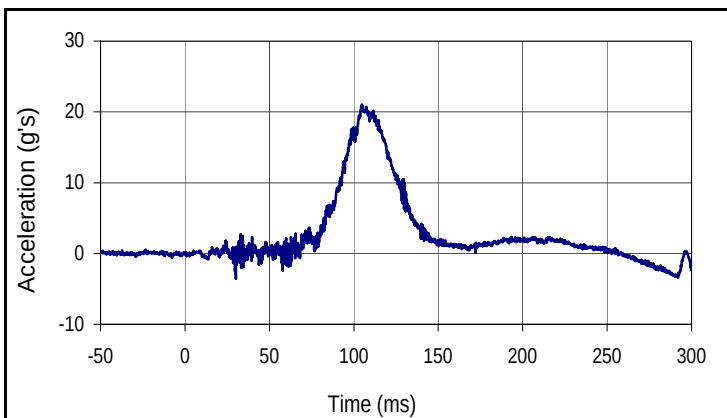
Curve Description			
V2 Driver Shoulder Belt Displacement			
Plot No.		SAE Class	Units
108		60	mm
Max	Time	Min	Time
105.6	22.9	-25.1	101.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

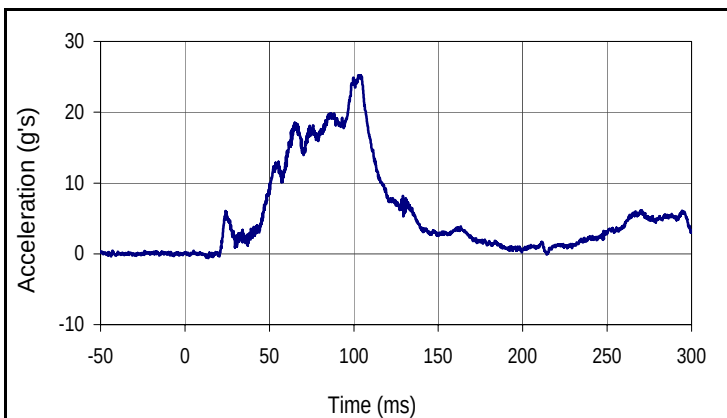
NHTSA No.: R20165412
 Test Date: 4/22/16



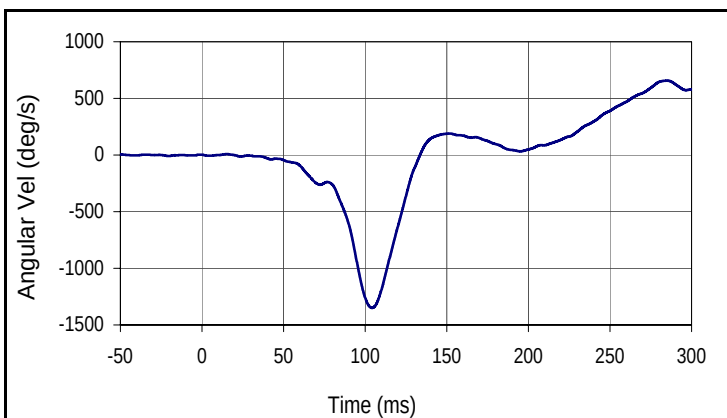
Curve Description			
V2P2 Head CG X Acceleration			
Plot No.		SAE Class	Units
109		1000	g's
Max	Time	Min	Time
4.0	299.9	-33.2	95.6



Curve Description			
V2P2 Head CG Y Acceleration			
Plot No.		SAE Class	Units
110		1000	g's
Max	Time	Min	Time
21.1	104.8	-3.5	30.1



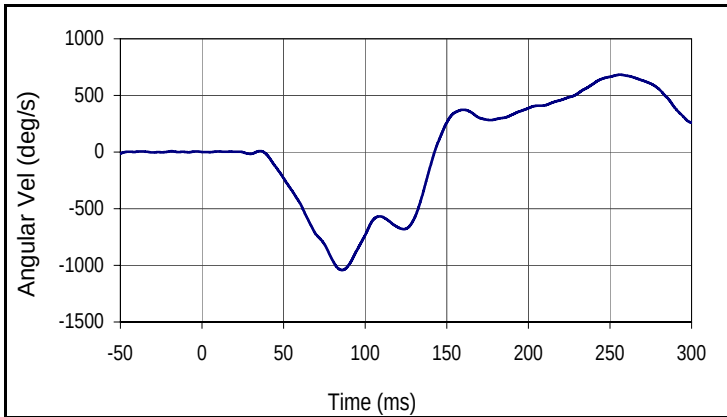
Curve Description			
V2P2 Head CG Z Acceleration			
Plot No.		SAE Class	Units
111		1000	g's
Max	Time	Min	Time
25.2	104.0	-0.6	13.8



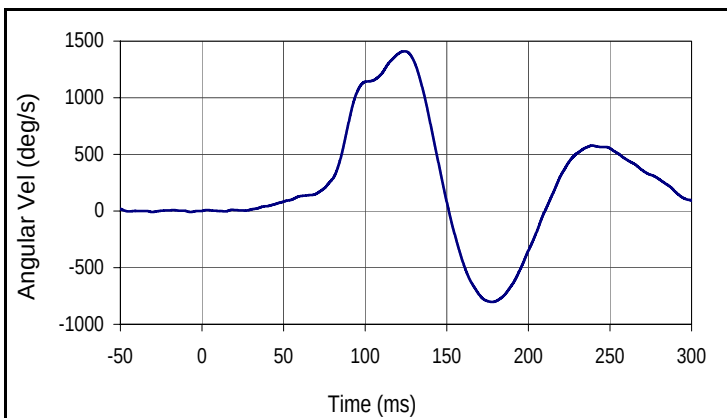
Curve Description			
V2P2 Head CG Angular Velocity About X			
Plot No.		SAE Class	Units
112		60	deg/s
Max	Time	Min	Time
657.0	284.8	-1349.4	104.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

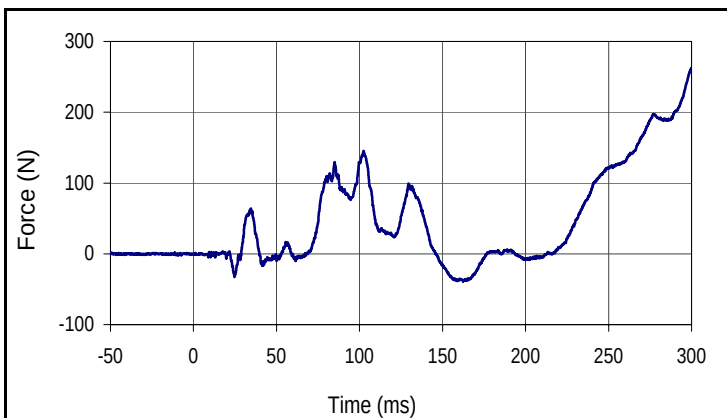
NHTSA No.: R20165412
 Test Date: 4/22/16



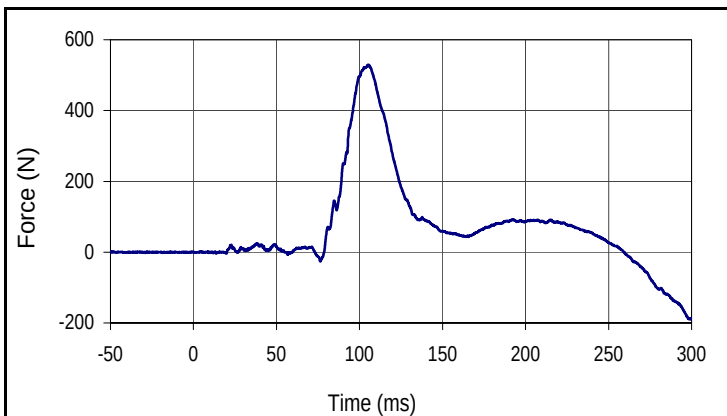
Curve Description			
V2P2 Head CG Angular Velocity About Y			
Plot No.		SAE Class	Units
113		60	deg/s
Max	Time	Min	Time
682.8	256.2	-1041.5	85.9



Curve Description			
V2P2 Head CG Angular Velocity About Z			
Plot No.		SAE Class	Units
114		60	deg/s
Max	Time	Min	Time
1410.8	124.0	-803.1	178.0



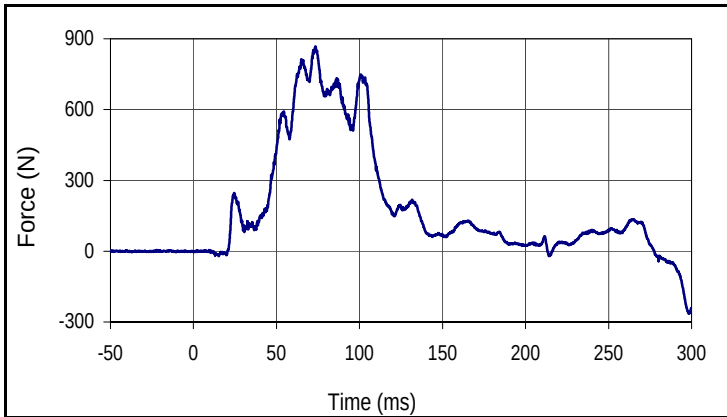
Curve Description			
V2P2 Upper Neck X Force			
Plot No.		SAE Class	Units
115		1000	N
Max	Time	Min	Time
262.3	299.9	-38.8	162.4



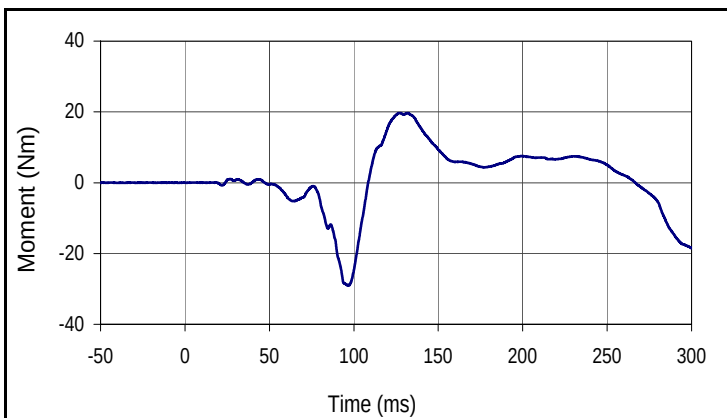
Curve Description			
V2P2 Upper Neck Y Force			
Plot No.		SAE Class	Units
116		1000	N
Max	Time	Min	Time
529.5	105.3	-189.4	299.5

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

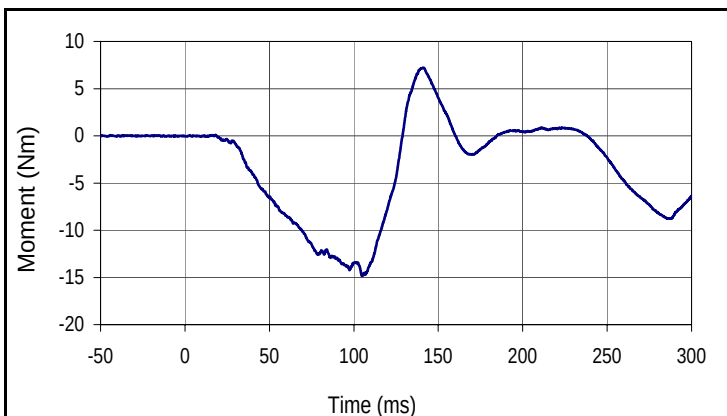
NHTSA No.: R20165412
 Test Date: 4/22/16



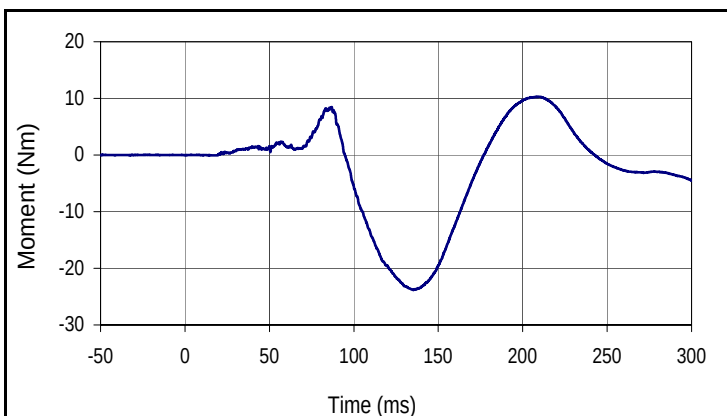
Curve Description			
V2P2 Upper Neck Z Force			
Plot No.		SAE Class	Units
117		1000	N
Max	Time	Min	Time
867.3	73.5	-263.7	298.5



Curve Description			
V2P2 Upper Neck X Moment			
Plot No.		SAE Class	Units
118		600	Nm
Max	Time	Min	Time
19.7	127.6	-29.1	96.4



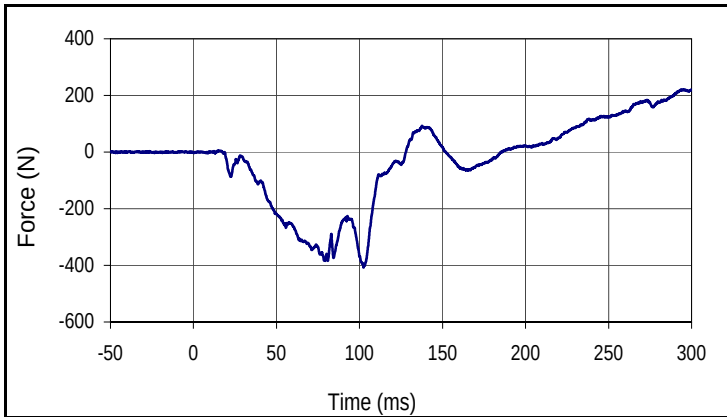
Curve Description			
V2P2 Upper Neck Y Moment			
Plot No.		SAE Class	Units
119		600	Nm
Max	Time	Min	Time
7.2	141.2	-14.8	104.9



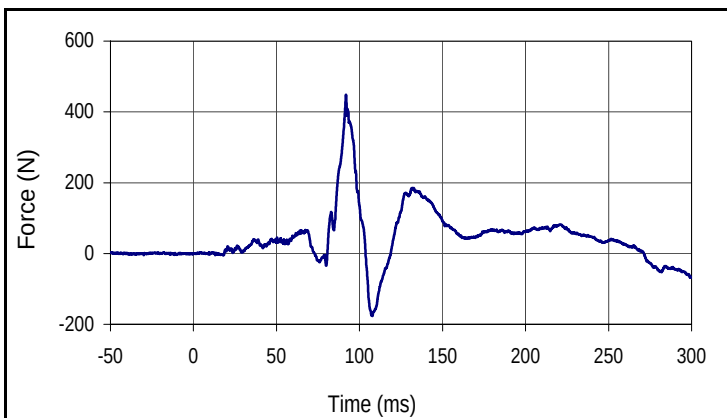
Curve Description			
V2P2 Upper Neck Z Moment			
Plot No.		SAE Class	Units
120		600	Nm
Max	Time	Min	Time
10.3	208.7	-23.8	135.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

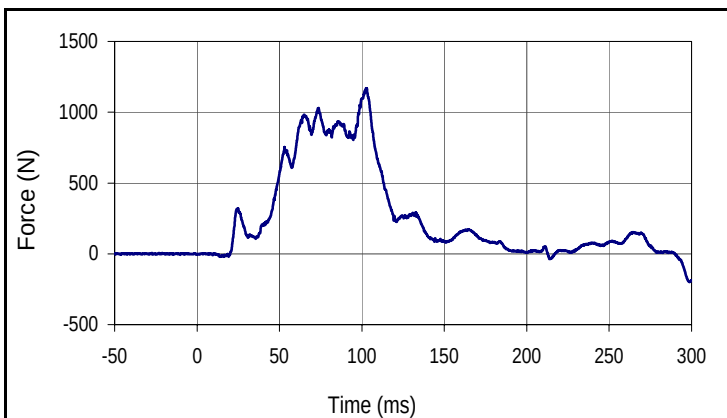
NHTSA No.: R20165412
 Test Date: 4/22/16



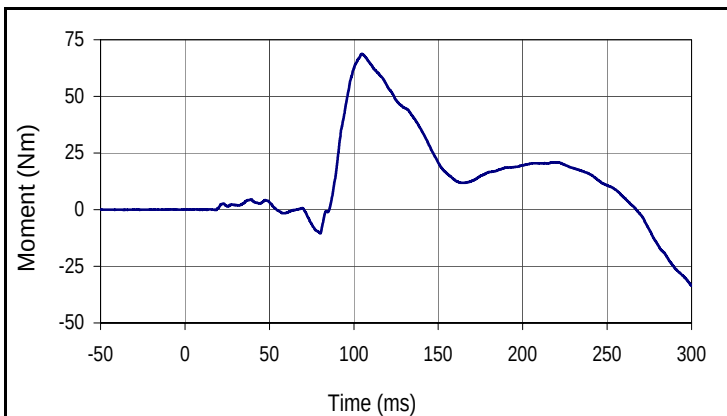
Curve Description			
V2P2 Lower Neck X Force			
Plot No.		SAE Class	Units
121		1000	N
Max	Time	Min	Time
221.9	295.5	-408.0	102.4



Curve Description			
V2P2 Lower Neck Y Force			
Plot No.		SAE Class	Units
122		1000	N
Max	Time	Min	Time
448.0	91.9	-176.5	107.7



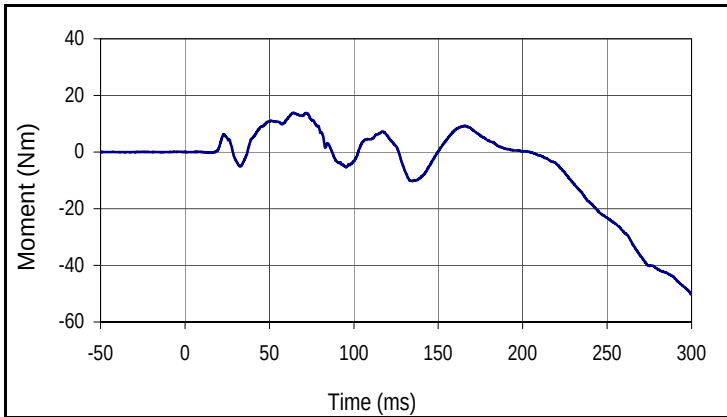
Curve Description			
V2P2 Lower Neck Z Force			
Plot No.		SAE Class	Units
123		1000	N
Max	Time	Min	Time
1170.0	102.5	-198.8	298.8



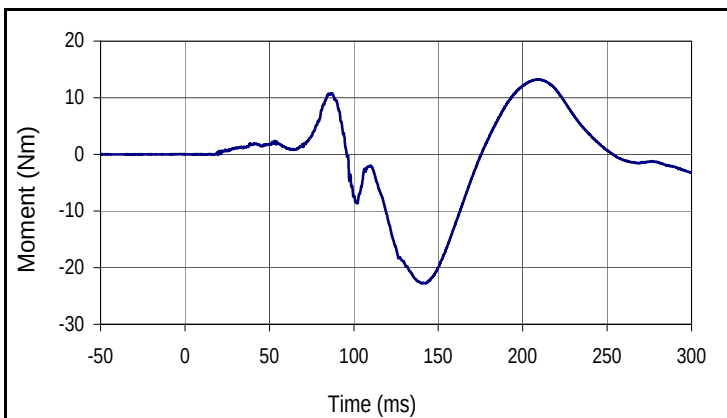
Curve Description			
V2P2 Lower Neck X Moment			
Plot No.		SAE Class	Units
124		600	Nm
Max	Time	Min	Time
68.7	104.8	-33.5	299.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

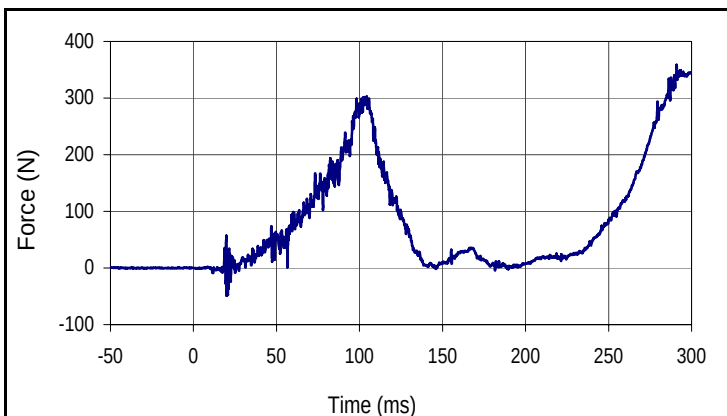
NHTSA No.: R20165412
 Test Date: 4/22/16



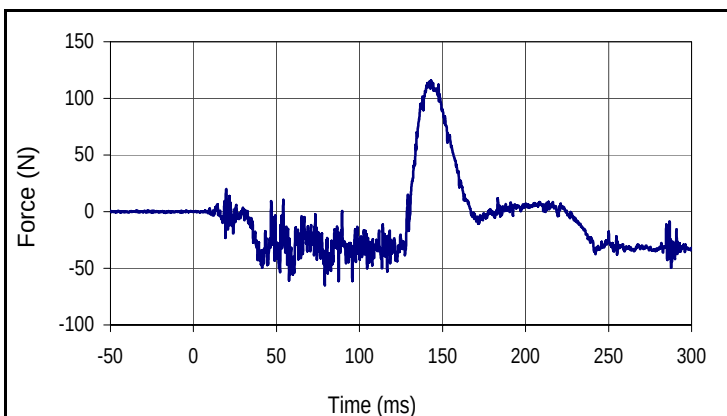
Curve Description			
V2P2 Lower Neck Y Moment			
Plot No.		SAE Class	Units
125		600	Nm
Max	Time	Min	Time
13.9	64.3	-50.2	299.9



Curve Description			
V2P2 Lower Neck Z Moment			
Plot No.		SAE Class	Units
126		600	Nm
Max	Time	Min	Time
13.3	208.5	-22.8	140.3



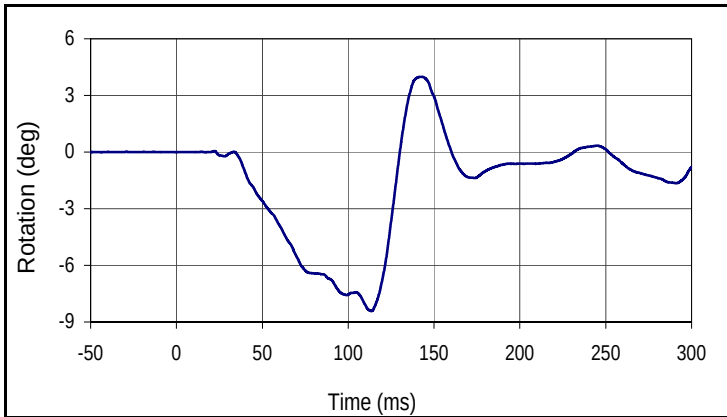
Curve Description			
V2P2 Front Neck Spring Tower Load Cell			
Plot No.		SAE Class	Units
127		1000	N
Max	Time	Min	Time
358.6	291.0	-49.0	20.0



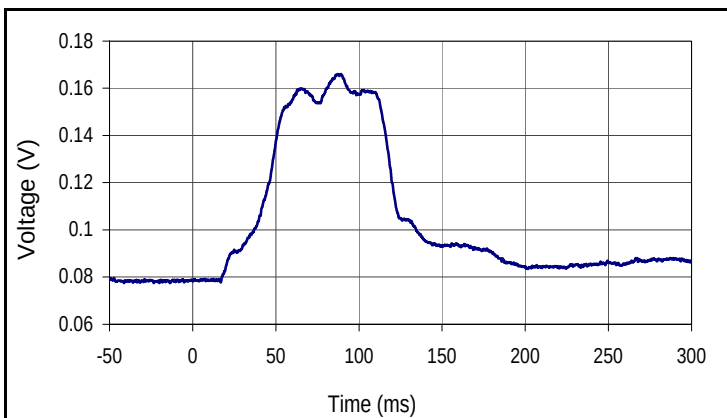
Curve Description			
V2P2 Rear Neck Spring Tower Load Cell			
Plot No.		SAE Class	Units
128		1000	N
Max	Time	Min	Time
115.8	143.2	-64.8	79.1

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

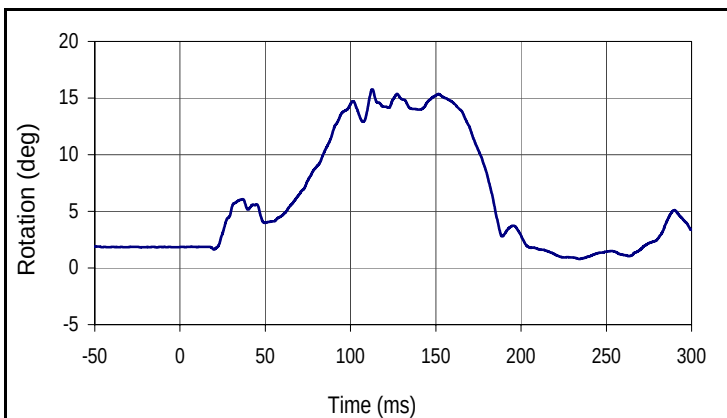
NHTSA No.: R20165412
 Test Date: 4/22/16



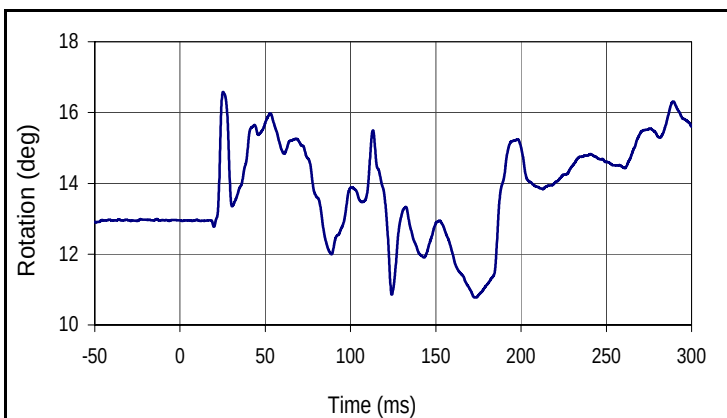
Curve Description			
V2P2 Occipital Condyle Rotation Potentiometer			
Plot No.		SAE Class	Units
129		180	deg
Max	Time	Min	Time
4.0	142.9	-8.4	113.6



Curve Description			
V2P2 Upper Left DGIR X Displacement			
Plot No.		SAE Class	Units
130		600	V
Max	Time	Min	Time
0.17	89.2	0.08	-13.6



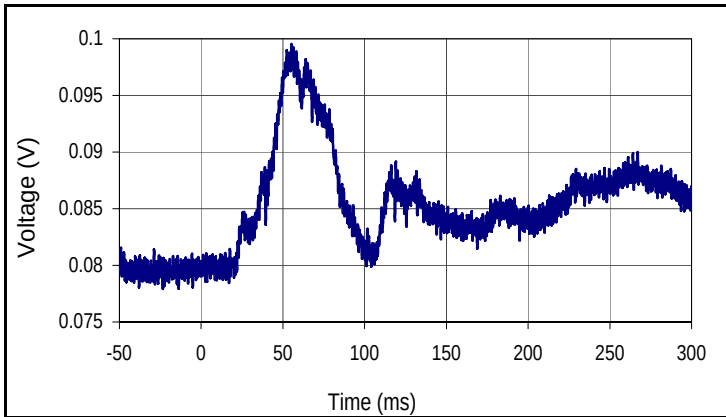
Curve Description			
V2P2 Upper Left DGIR Y Rotation			
Plot No.		SAE Class	Units
131		180	deg
Max	Time	Min	Time
15.8	112.7	0.79	234.4



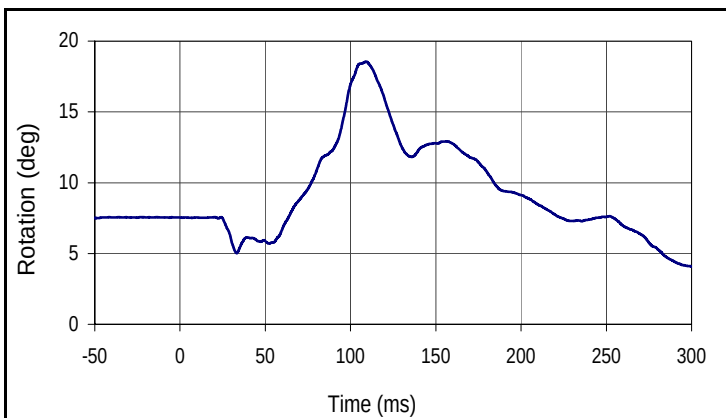
Curve Description			
V2P2 Upper Left DGIR Z Rotation			
Plot No.		SAE Class	Units
132		180	deg
Max	Time	Min	Time
16.6	25.2	10.8	173.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

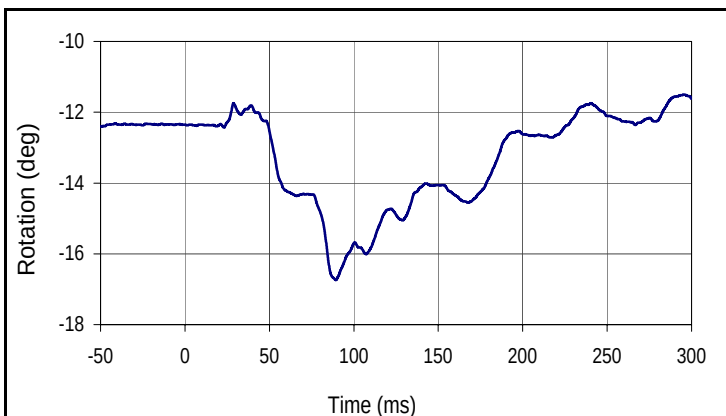
NHTSA No.: R20165412
 Test Date: 4/22/16



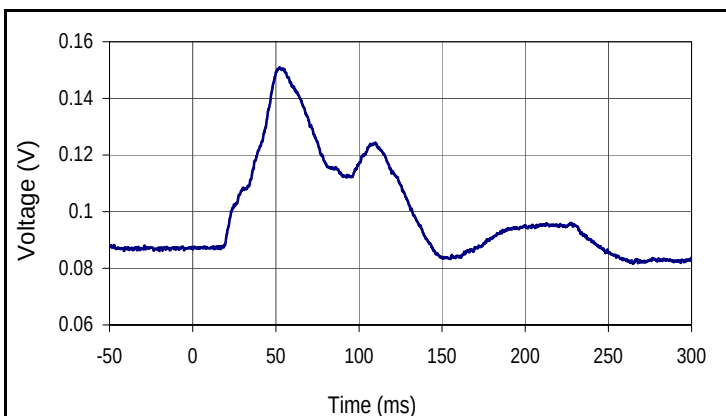
Curve Description			
V2P2 Upper Right DGIR X Displacement			
Plot No.		SAE Class	Units
133		600	V
Max	Time	Min	Time
0.10	55.3	0.08	-23.4



Curve Description			
V2P2 Upper Right DGIR Y Rotation			
Plot No.		SAE Class	Units
134		180	deg
Max	Time	Min	Time
18.5	109.2	4.1	299.9



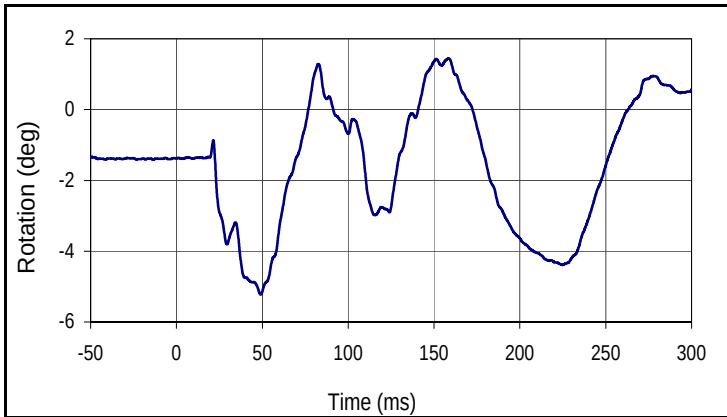
Curve Description			
V2P2 Upper Right DGIR Z Rotation			
Plot No.		SAE Class	Units
135		180	deg
Max	Time	Min	Time
-11.5	295.5	-16.7	89.3



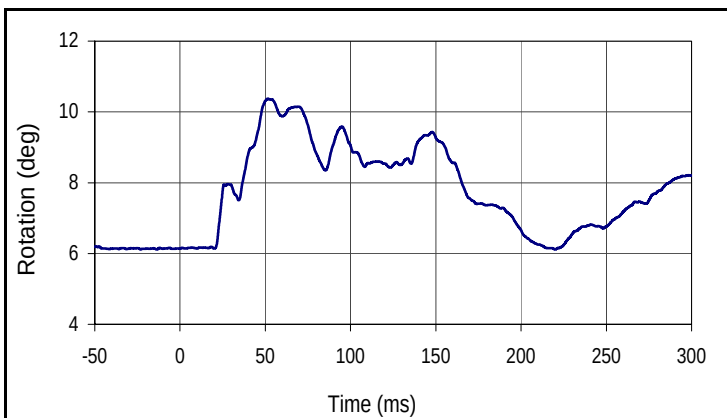
Curve Description			
V2P2 Lower Left DGIR X Displacement			
Plot No.		SAE Class	Units
136		600	V
Max	Time	Min	Time
0.15	52.3	0.08	264.7

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

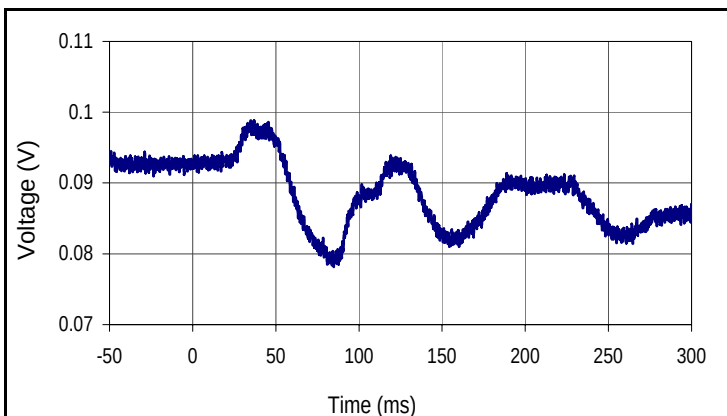
NHTSA No.: R20165412
 Test Date: 4/22/16



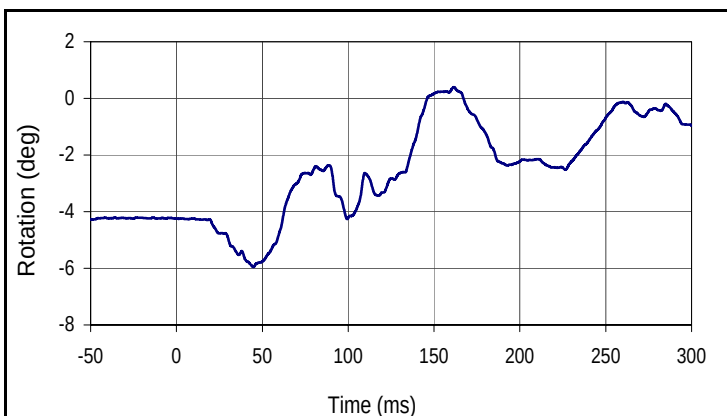
Curve Description			
V2P2 Lower Left DGIR Y Rotation			
Plot No.		SAE Class	Units
137		180	deg
Max	Time	Min	Time
1.4	158.6	-5.2	49.1



Curve Description			
V2P2 Lower Left DGIR Z Rotation			
Plot No.		SAE Class	Units
138		180	deg
Max	Time	Min	Time
10.4	51.5	6.1	220.1



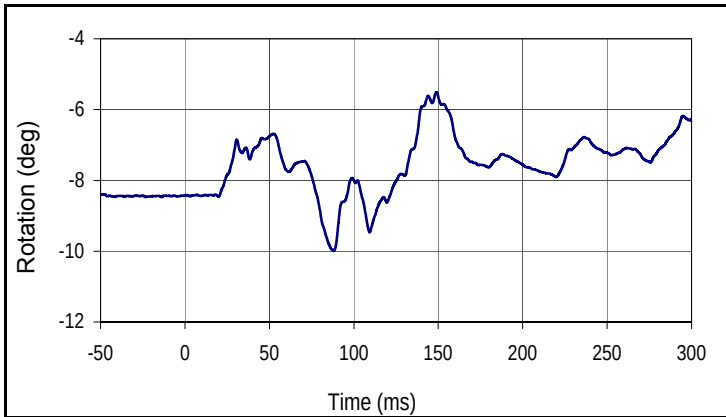
Curve Description			
V2P2 Lower Right DGIR X Displacement			
Plot No.		SAE Class	Units
139		600	V
Max	Time	Min	Time
0.10	35.0	0.08	84.8



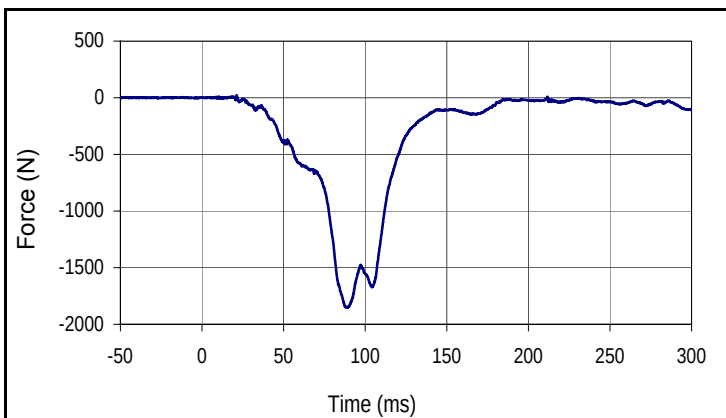
Curve Description			
V2P2 Lower Right DGIR Y Rotation			
Plot No.		SAE Class	Units
140		180	deg
Max	Time	Min	Time
0.4	161.5	-6.0	44.8

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

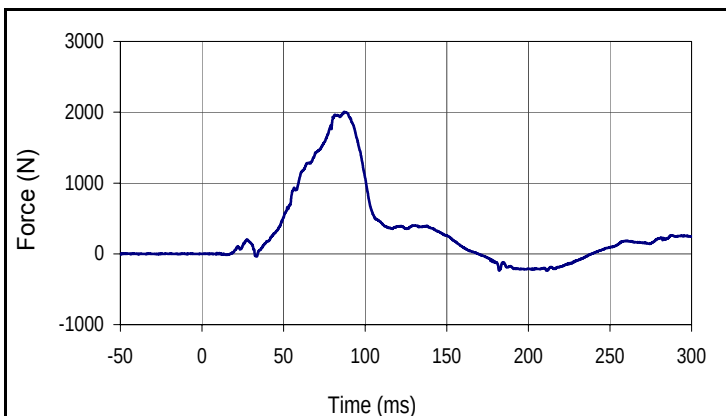
NHTSA No.: R20165412
 Test Date: 4/22/16



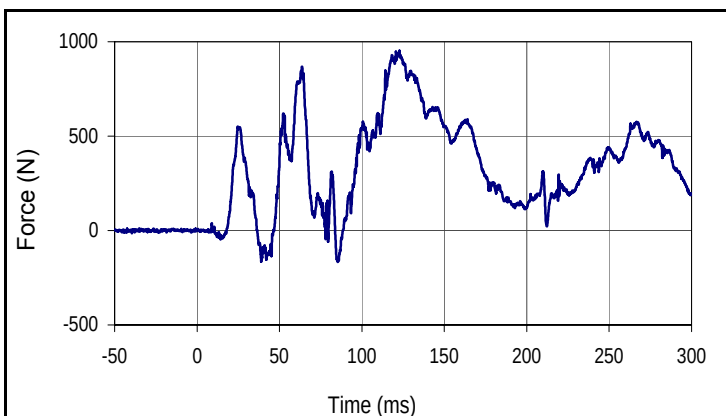
Curve Description			
V2P2 Lower Right DGIR Z Rotation			
Plot No.		SAE Class	Units
141		180	deg
Max	Time	Min	Time
-5.5	149.0	-10.0	88.1



Curve Description			
V2P2 T12 Force X			
Plot No.		SAE Class	Units
142		1000	N
Max	Time	Min	Time
23.4	21.2	-1854.6	89.2



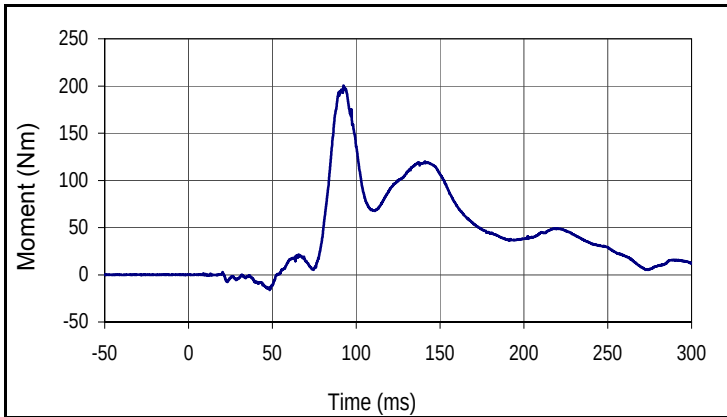
Curve Description			
V2P2 T12 Force Y			
Plot No.		SAE Class	Units
143		1000	N
Max	Time	Min	Time
2005.2	87.2	-236.6	211.3



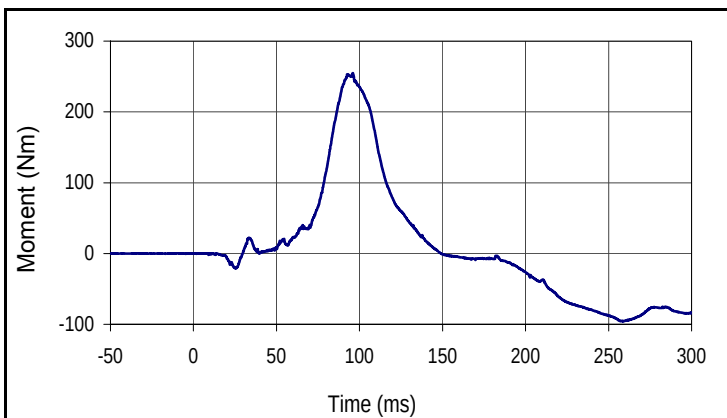
Curve Description			
V2P2 T12 Force Z			
Plot No.		SAE Class	Units
144		1000	N
Max	Time	Min	Time
952.4	122.7	-166.2	85.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

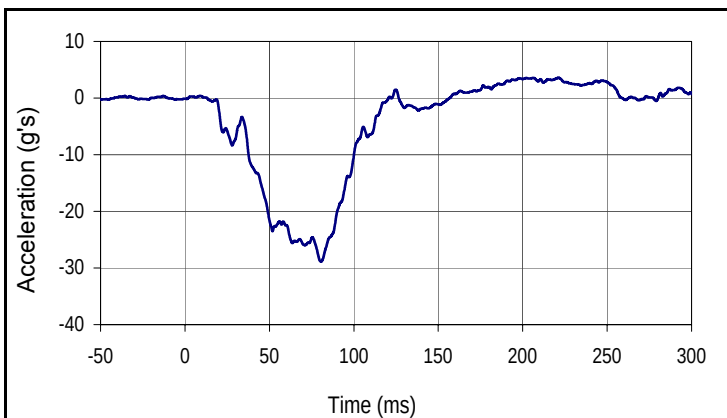
NHTSA No.: R20165412
 Test Date: 4/22/16



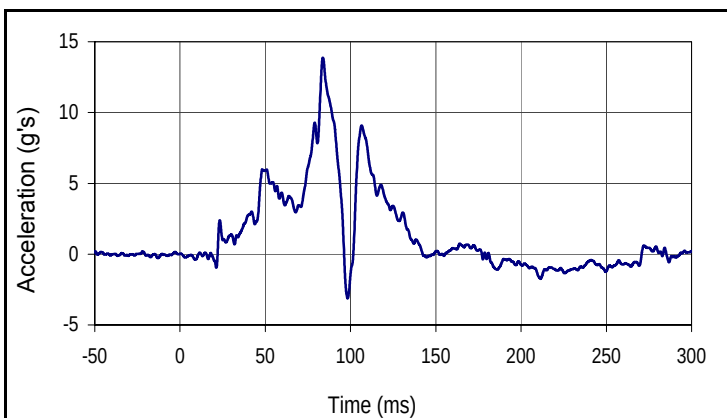
Curve Description			
V2P2 T12 Moment X			
Plot No.		SAE Class	Units
145		1000	Nm
Max	Time	Min	Time
200.4	92.4	-16.0	48.3



Curve Description			
V2P2 T12 Moment Y			
Plot No.		SAE Class	Units
146		1000	Nm
Max	Time	Min	Time
254.7	96.0	-95.8	258.6



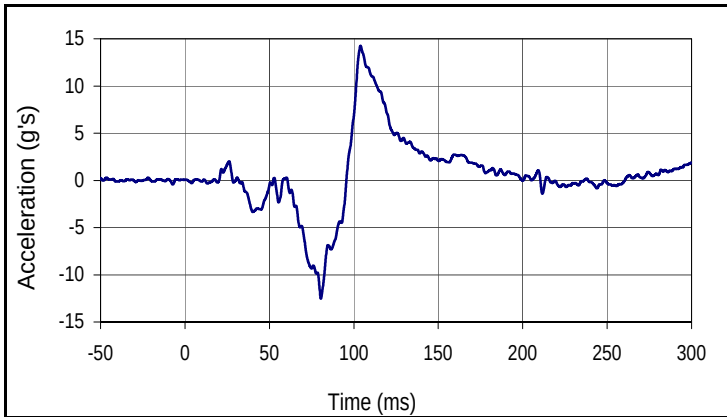
Curve Description			
V2P2 T6 X Acceleration			
Plot No.		SAE Class	Units
147		180	g's
Max	Time	Min	Time
3.6	221.2	-28.9	80.6



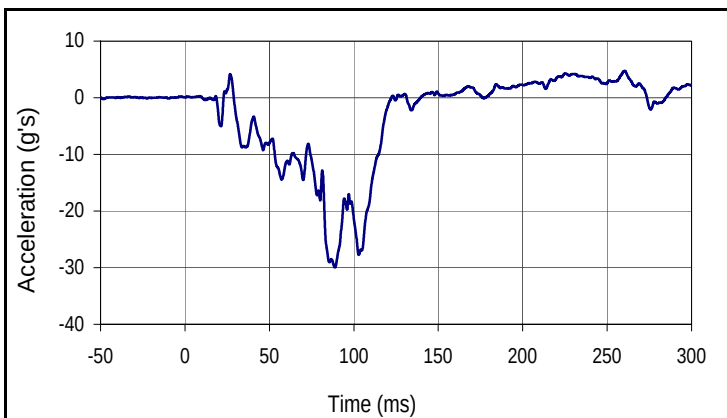
Curve Description			
V2P2 T6 Y Acceleration			
Plot No.		SAE Class	Units
148		180	g's
Max	Time	Min	Time
13.9	83.8	-3.1	98.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

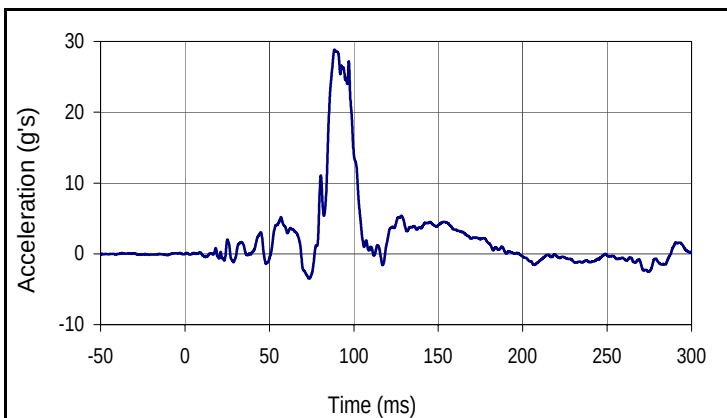
NHTSA No.: R20165412
 Test Date: 4/22/16



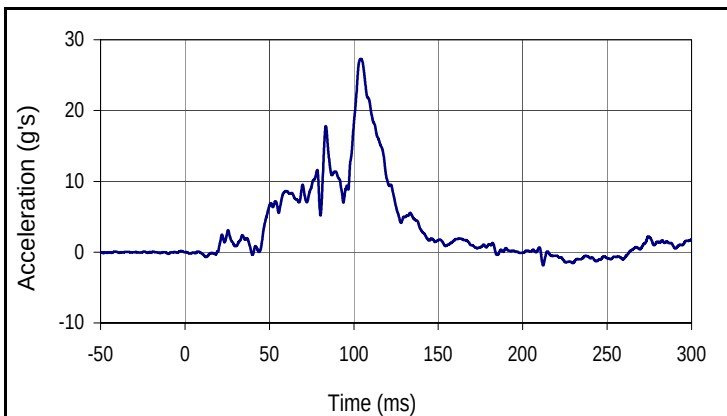
Curve Description			
V2P2 T6 Z Acceleration			
Plot No.		SAE Class	Units
149		180	g's
Max	Time	Min	Time
14.3	104.0	-12.5	80.5



Curve Description			
V2P2 T1 X Acceleration			
Plot No.		SAE Class	Units
150		180	g's
Max	Time	Min	Time
4.7	260.4	-30.0	88.9



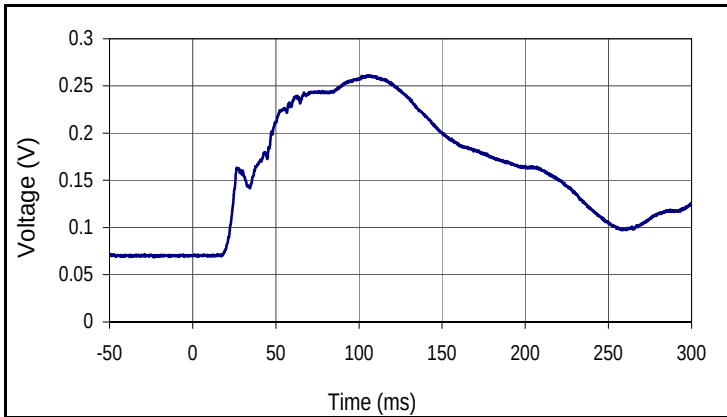
Curve Description			
V2P2 T1 Y Acceleration			
Plot No.		SAE Class	Units
151		180	g's
Max	Time	Min	Time
28.8	88.6	-3.5	73.5



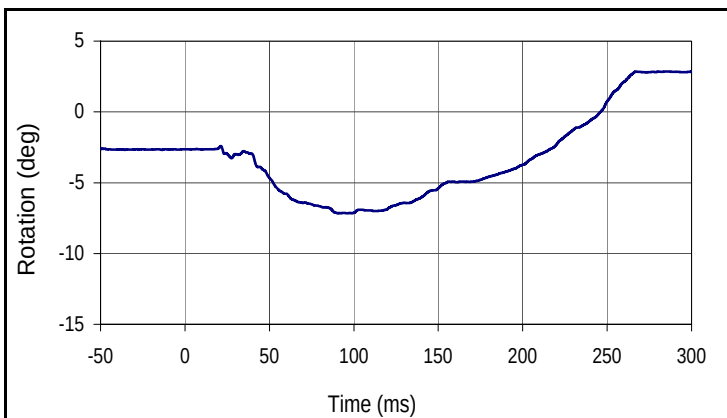
Curve Description			
V2P2 T1 Z Acceleration			
Plot No.		SAE Class	Units
152		180	g's
Max	Time	Min	Time
27.3	104.0	-1.9	212.1

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

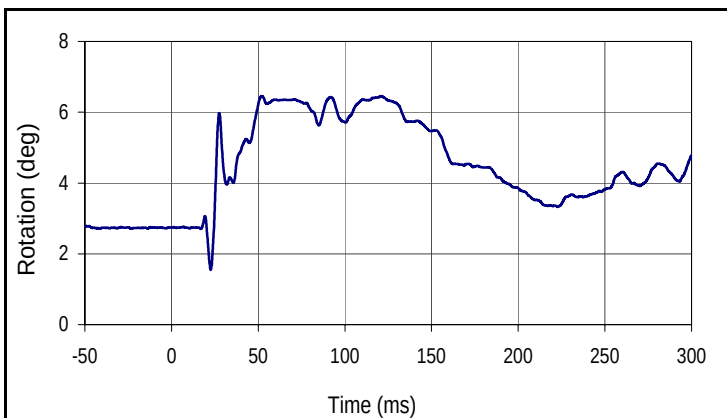
NHTSA No.: R20165412
 Test Date: 4/22/16



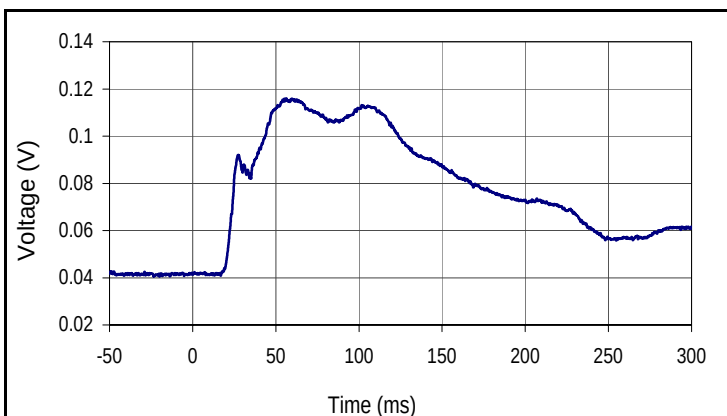
Curve Description			
V2P2 Abdomen Left DGIR X Displacement			
Plot No.		SAE Class	Units
153		600	V
Max	Time	Min	Time
0.26	105.6	0.07	-13.7



Curve Description			
V2P2 Abdomen Left DGIR Y Rotation			
Plot No.		SAE Class	Units
154		180	deg
Max	Time	Min	Time
2.9	267.0	-7.2	96.2



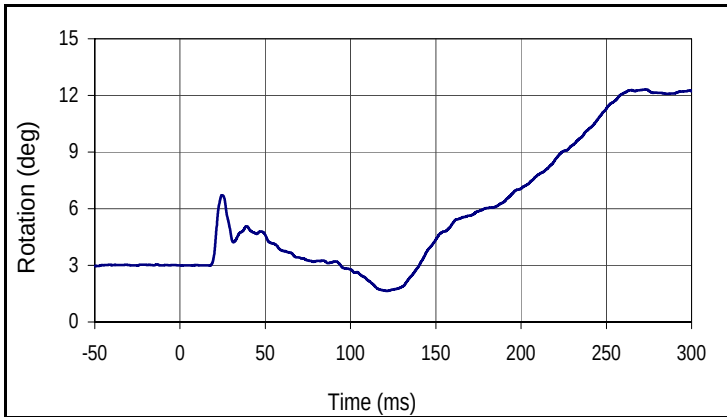
Curve Description			
V2P2 Abdomen Left DGIR Z Rotation			
Plot No.		SAE Class	Units
155		180	deg
Max	Time	Min	Time
6.5	120.7	1.5	22.6



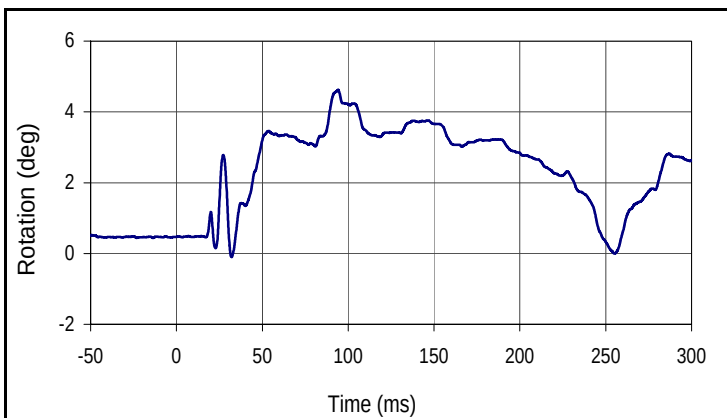
Curve Description			
V2P2 Abdomen Right DGIR X Displacement			
Plot No.		SAE Class	Units
156		600	V
Max	Time	Min	Time
0.12	56.4	0.04	-19.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

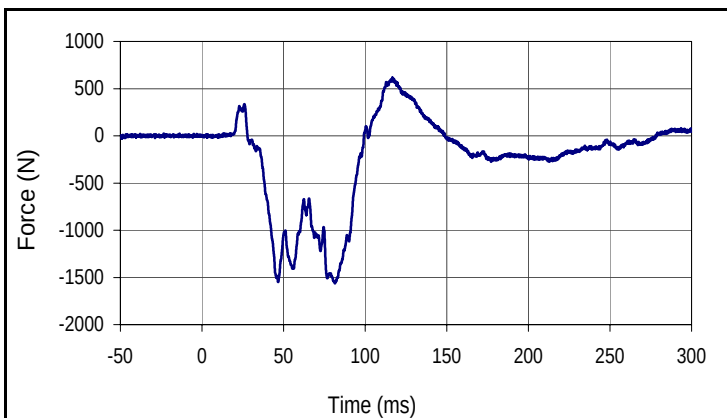
NHTSA No.: R20165412
 Test Date: 4/22/16



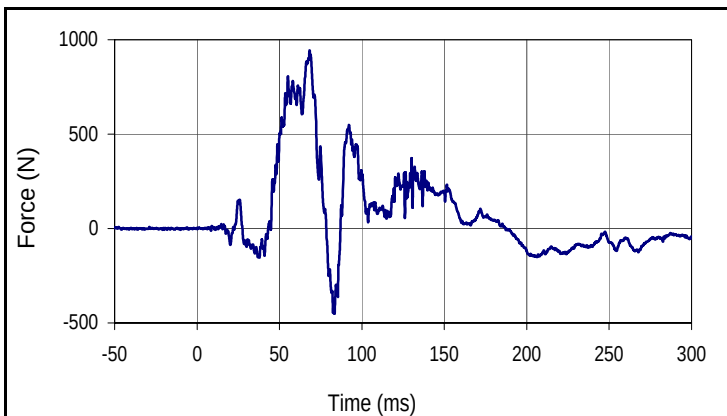
Curve Description			
V2P2 Abdomen Right DGIR Y Rotation			
Plot No.		SAE Class	Units
157		180	deg
Max	Time	Min	Time
12.3	273.4	1.6	121.0



Curve Description			
V2P2 Abdomen Right DGIR Z Rotation			
Plot No.		SAE Class	Units
158		180	deg
Max	Time	Min	Time
4.6	94.1	-0.1	32.1



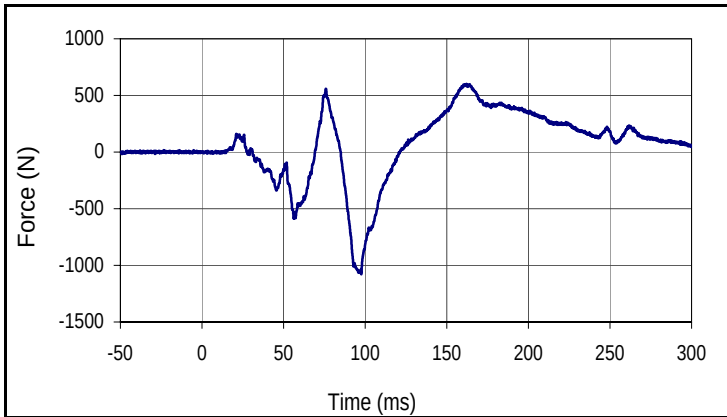
Curve Description			
V2P2 Acetabulum Left X Force			
Plot No.		SAE Class	Units
159		600	N
Max	Time	Min	Time
616.0	116.7	-1562.0	81.4



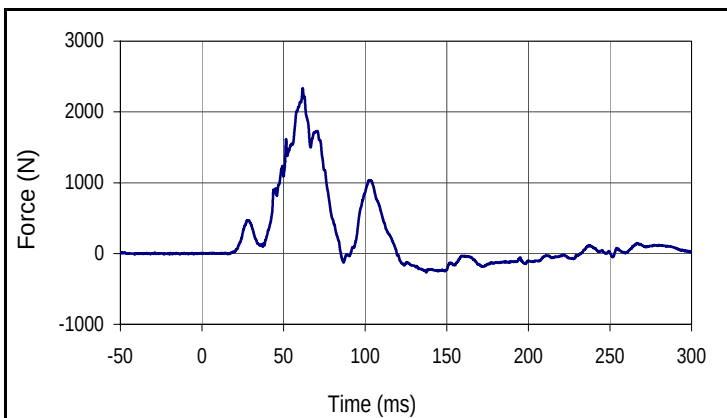
Curve Description			
V2P2 Acetabulum Left Y Force			
Plot No.		SAE Class	Units
160		600	N
Max	Time	Min	Time
944.2	68.3	-451.2	83.4

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

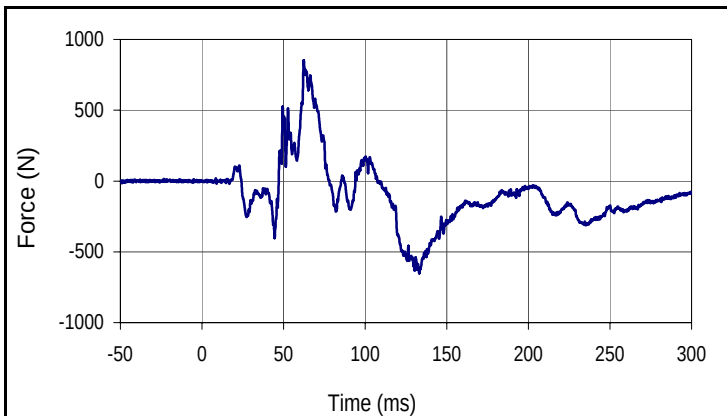
NHTSA No.: R20165412
 Test Date: 4/22/16



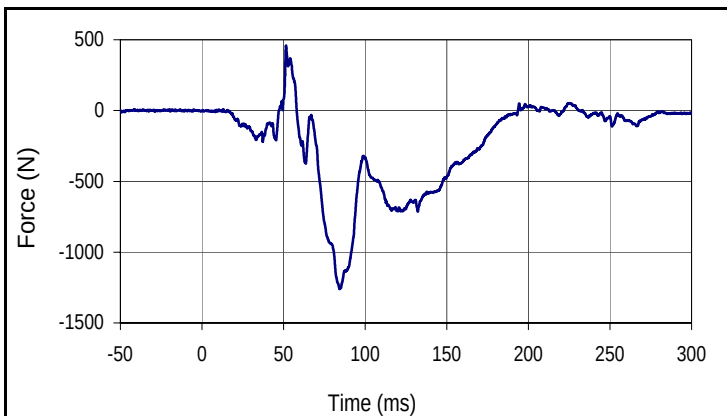
Curve Description			
V2P2 Acetabulum Left Z Force			
Plot No.		SAE Class	Units
161		600	N
Max	Time	Min	Time
602.3	162.2	-1078.9	97.6



Curve Description			
V2P2 Acetabulum Right X Force			
Plot No.		SAE Class	Units
162		600	N
Max	Time	Min	Time
2335.8	61.8	-269.7	137.4



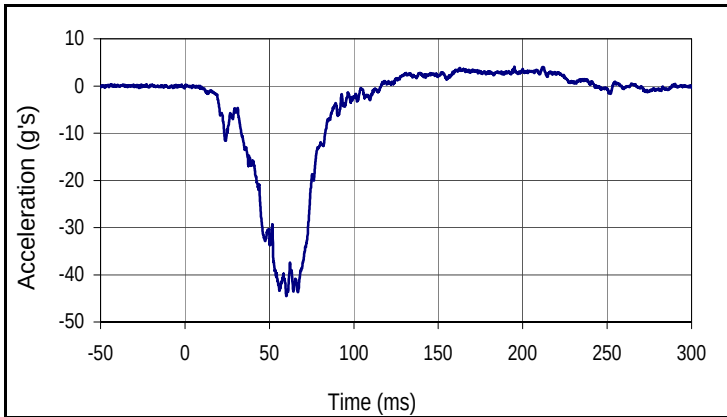
Curve Description			
V2P2 Acetabulum Right Y Force			
Plot No.		SAE Class	Units
163		600	N
Max	Time	Min	Time
852.7	62.4	-652.0	133.2



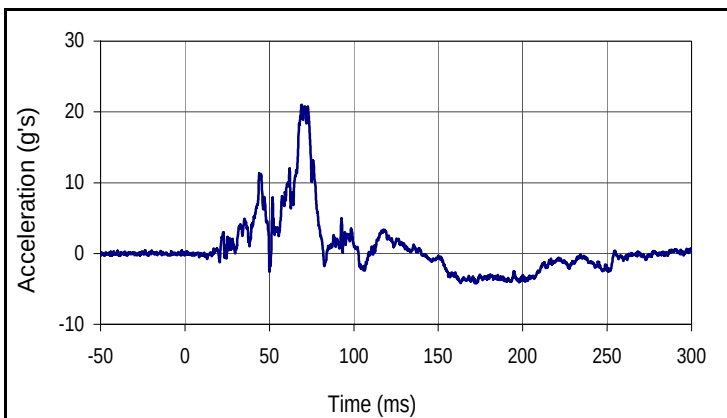
Curve Description			
V2P2 Acetabulum Right Z Force			
Plot No.		SAE Class	Units
164		600	N
Max	Time	Min	Time
458.9	51.5	-1261.0	84.4

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

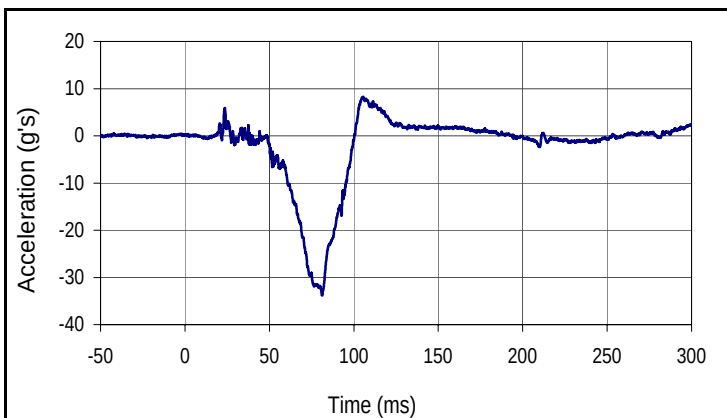
NHTSA No.: R20165412
 Test Date: 4/22/16



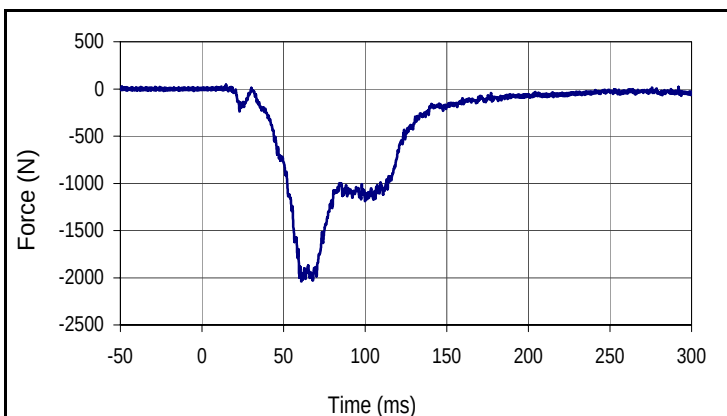
Curve Description			
V2P2 Pelvis X Acceleration			
Plot No.		SAE Class	Units
165		1000	g's
Max	Time	Min	Time
4.1	195.1	-44.5	60.1



Curve Description			
V2P2 Pelvis Y Acceleration			
Plot No.		SAE Class	Units
166		1000	g's
Max	Time	Min	Time
21.0	69.0	-4.2	172.2



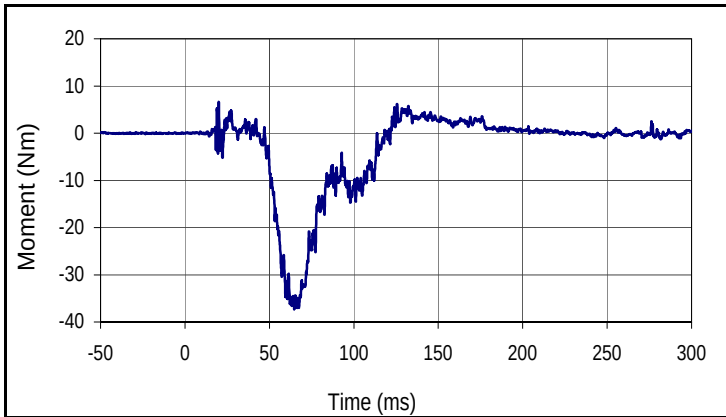
Curve Description			
V2P2 Pelvis Z Acceleration			
Plot No.		SAE Class	Units
167		1000	g's
Max	Time	Min	Time
8.3	105.5	-33.8	81.4



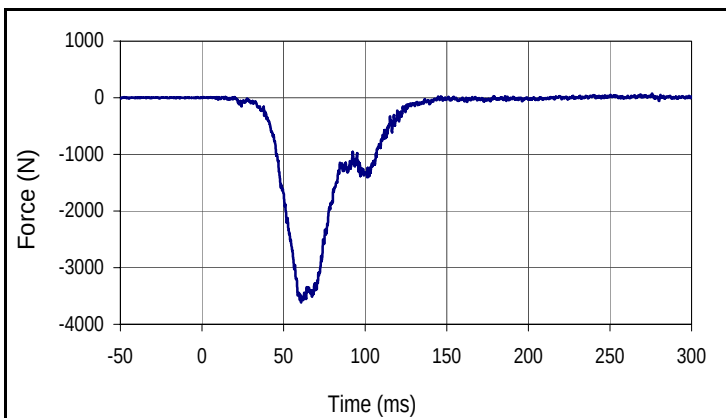
Curve Description			
V2P2 ASIS Left X Force			
Plot No.		SAE Class	Units
168		600	N
Max	Time	Min	Time
45.2	14.8	-2037.4	60.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

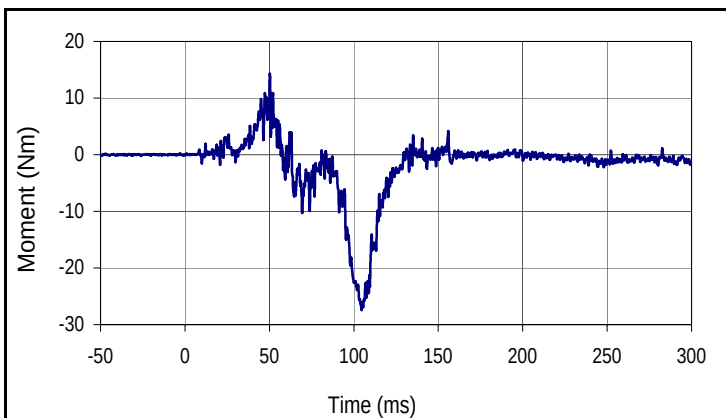
NHTSA No.: R20165412
 Test Date: 4/22/16



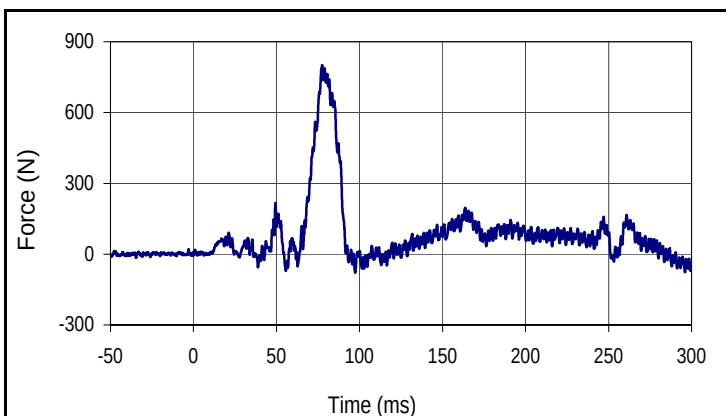
Curve Description			
V2P2 ASIS Left Y Moment			
Plot No.		SAE Class	Units
169		600	Nm
Max	Time	Min	Time
6.6	20.0	-37.3	64.7



Curve Description			
V2P2 ASIS Right X Force			
Plot No.		SAE Class	Units
170		1000	N
Max	Time	Min	Time
71.9	275.8	-3616.2	60.7



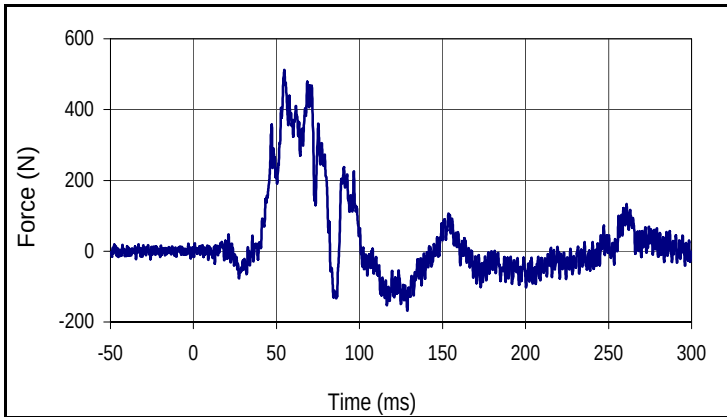
Curve Description			
V2P2 ASIS Right Y Moment			
Plot No.		SAE Class	Units
171		600	Nm
Max	Time	Min	Time
14.3	50.3	-27.4	104.6



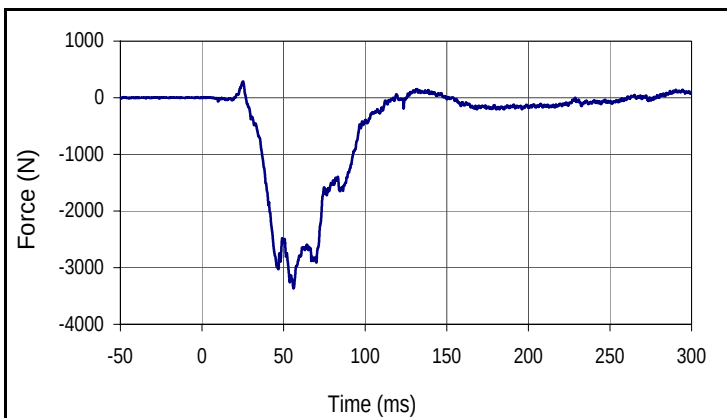
Curve Description			
V2P2 Femur Left X Force			
Plot No.		SAE Class	Units
172		600	N
Max	Time	Min	Time
801.5	77.5	-78.6	97.5

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

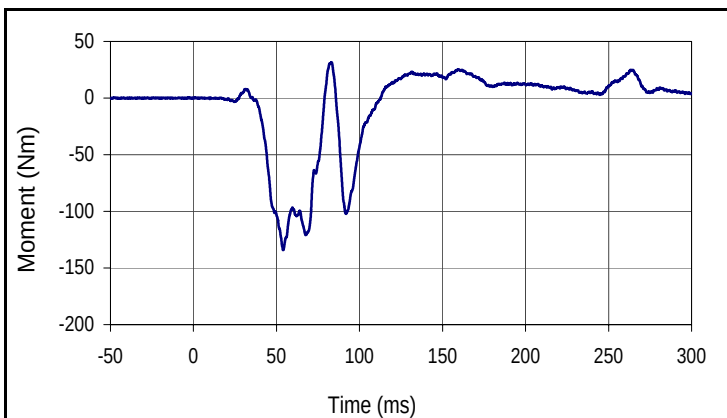
NHTSA No.: R20165412
 Test Date: 4/22/16



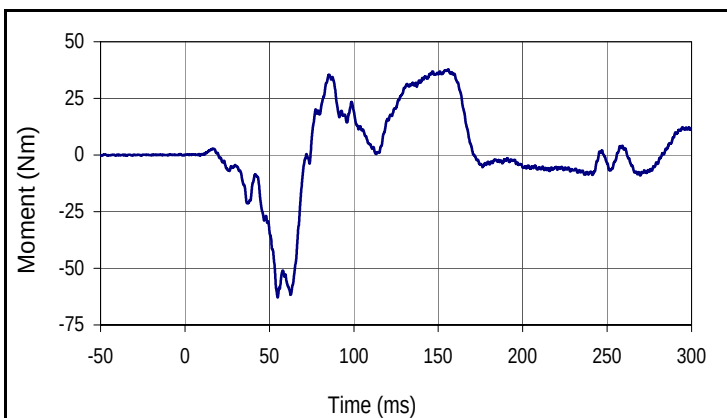
Curve Description			
V2P2 Femur Left Y Force			
Plot No.		SAE Class	Units
173		600	N
Max	Time	Min	Time
512.5	54.7	-168.2	128.8



Curve Description			
V2P2 Femur Left Z Force			
Plot No.		SAE Class	Units
174		600	N
Max	Time	Min	Time
287.8	25.1	-3365.0	56.0



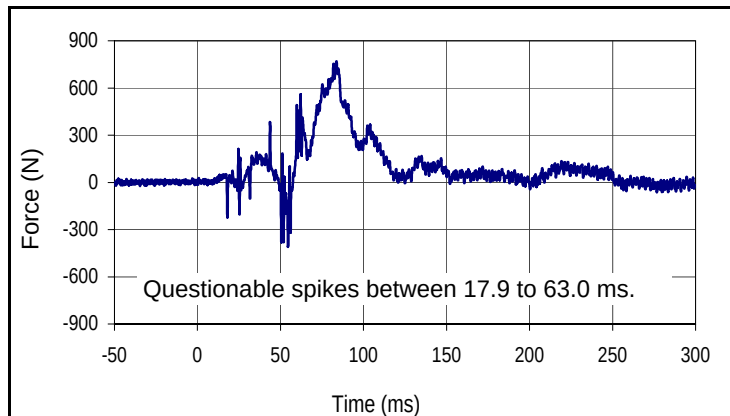
Curve Description			
V2P2 Femur Left X Moment			
Plot No.		SAE Class	Units
175		600	Nm
Max	Time	Min	Time
31.6	83.1	-134.2	54.0



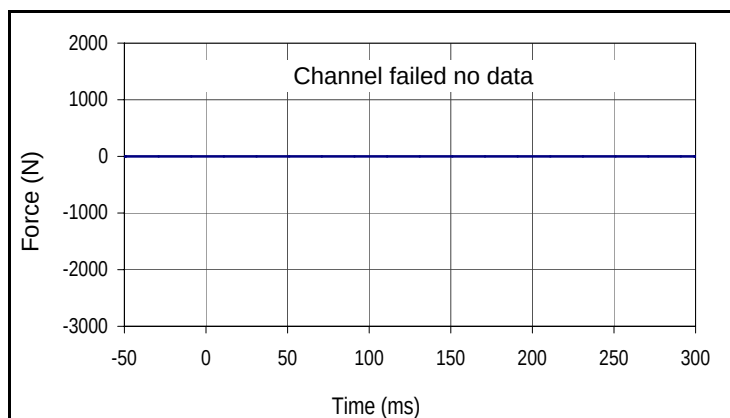
Curve Description			
V2P2 Femur Left Y Moment			
Plot No.		SAE Class	Units
176		600	Nm
Max	Time	Min	Time
37.9	155.8	-62.8	54.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

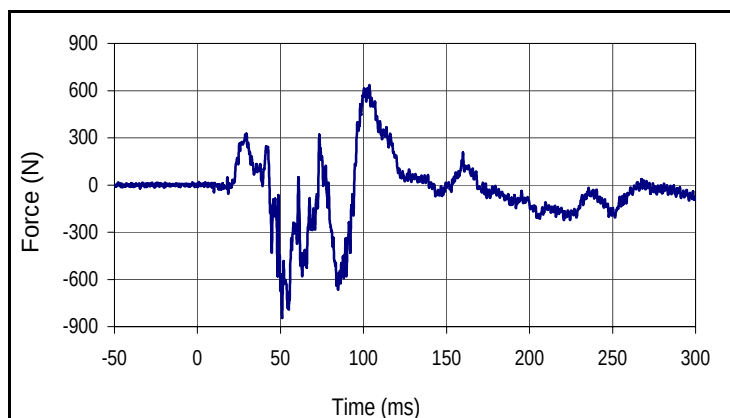
NHTSA No.: R20165412
 Test Date: 4/22/16



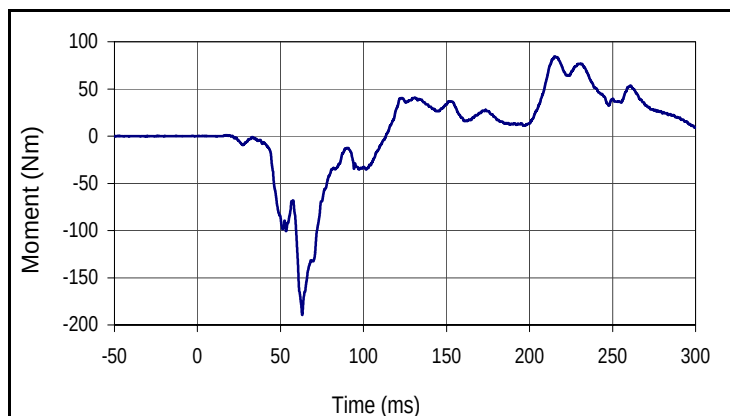
Curve Description			
V2P2 Femur Right X Force			
Plot No.		SAE Class	Units
177		600	N
Max	Time	Min	Time
769.8	83.7	-409.1	54.5



Curve Description			
V2P2 Femur Right Y Force			
Plot No.		SAE Class	Units
178		600	N
Max	Time	Min	Time
0.0	-20.0	0.0	-20.0



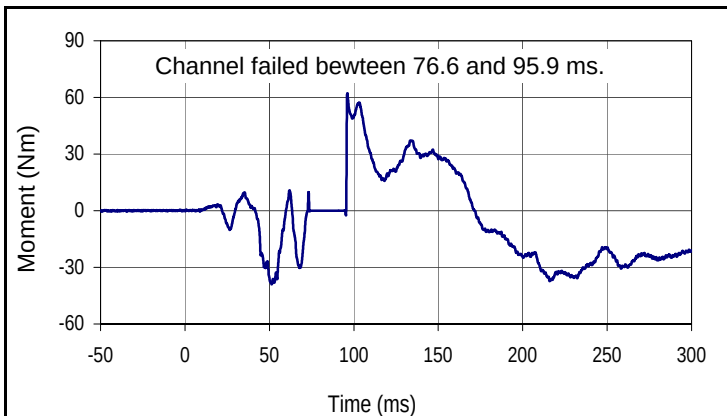
Curve Description			
V2P2 Femur Right Z Force			
Plot No.		SAE Class	Units
179		600	N
Max	Time	Min	Time
635.6	103.6	-845.9	50.9



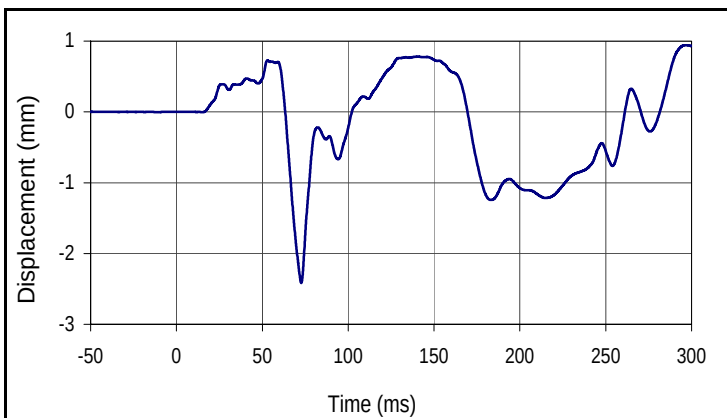
Curve Description			
V2P2 Femur Right X Moment			
Plot No.		SAE Class	Units
180		600	Nm
Max	Time	Min	Time
84.5	215.3	-189.6	63.1

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

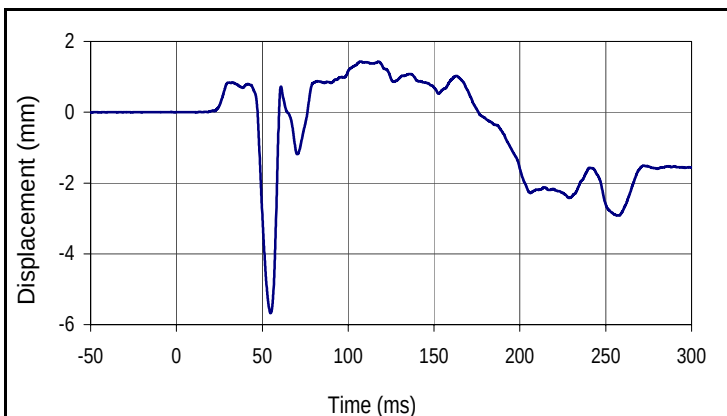
NHTSA No.: R20165412
 Test Date: 4/22/16



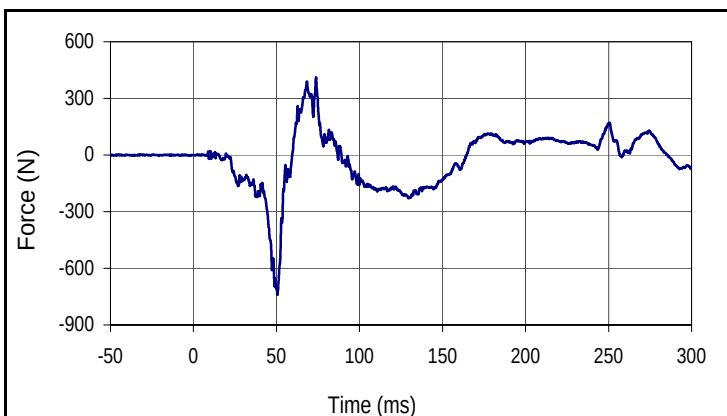
Curve Description			
V2P2 Femur Right Y Moment			
Plot No.		SAE Class	Units
181		600	Nm
Max	Time	Min	Time
62.2	96.1	-39.0	51.4



Curve Description			
V2P2 Knee Left X Displacement			
Plot No.		SAE Class	Units
182		180	mm
Max	Time	Min	Time
0.9	296.4	-2.4	72.7



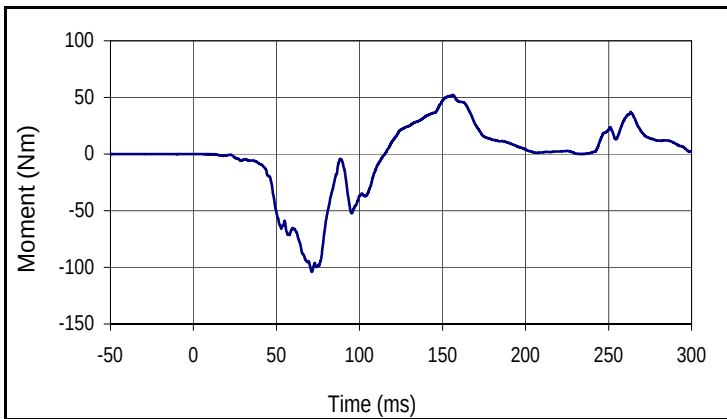
Curve Description			
V2P2 Knee Right X Displacement			
Plot No.		SAE Class	Units
183		180	mm
Max	Time	Min	Time
1.4	107.3	-5.7	54.9



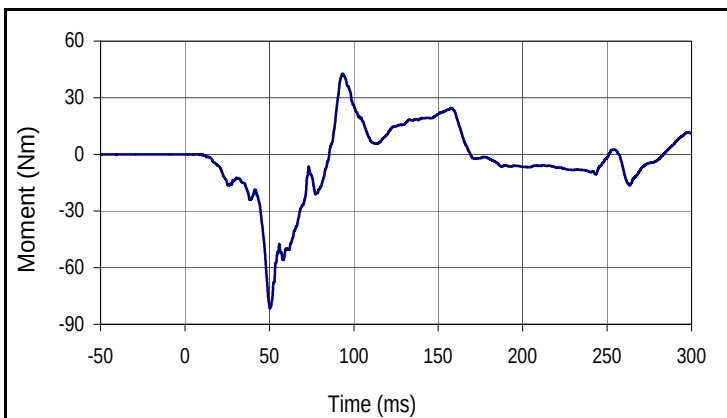
Curve Description			
V2P2 Upper Tibia Left Z Force			
Plot No.		SAE Class	Units
184		600	N
Max	Time	Min	Time
411.8	73.8	-738.3	50.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

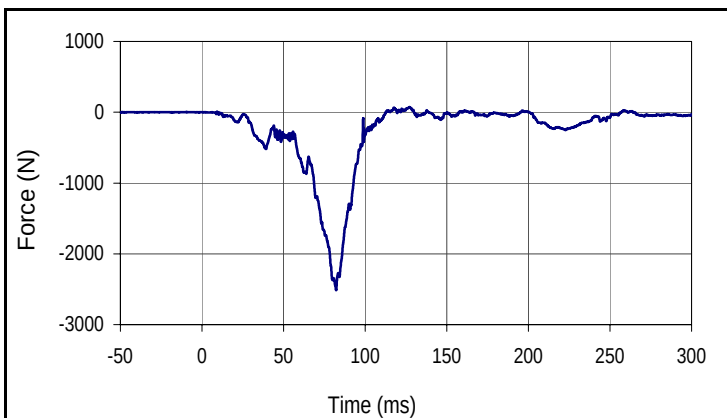
NHTSA No.: R20165412
 Test Date: 4/22/16



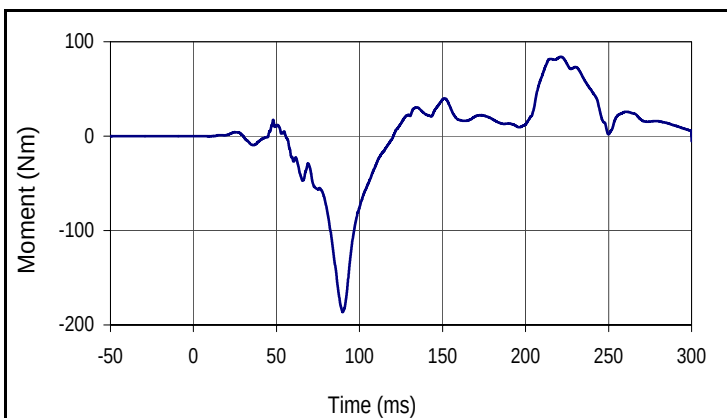
Curve Description			
V2P2 Upper Tibia Left X Moment			
Plot No.		SAE Class	Units
185		600	Nm
Max	Time	Min	Time
52.2	156.1	-104.0	71.4



Curve Description			
V2P2 Upper Tibia Left Y Moment			
Plot No.		SAE Class	Units
186		600	Nm
Max	Time	Min	Time
42.7	93.5	-81.7	50.3



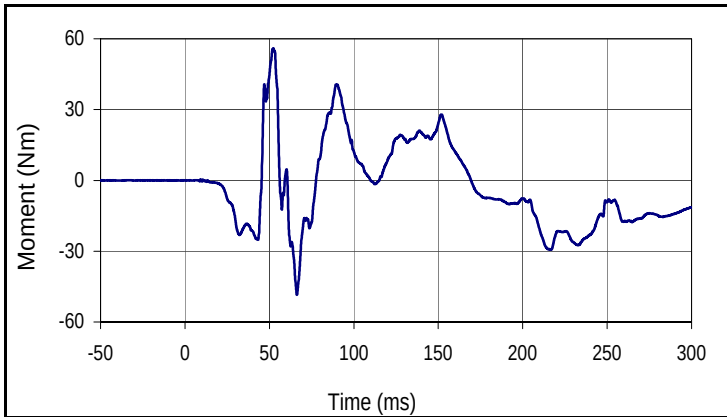
Curve Description			
V2P2 Upper Tibia Right Z Force			
Plot No.		SAE Class	Units
187		600	N
Max	Time	Min	Time
72.1	127.1	-2509.9	82.2



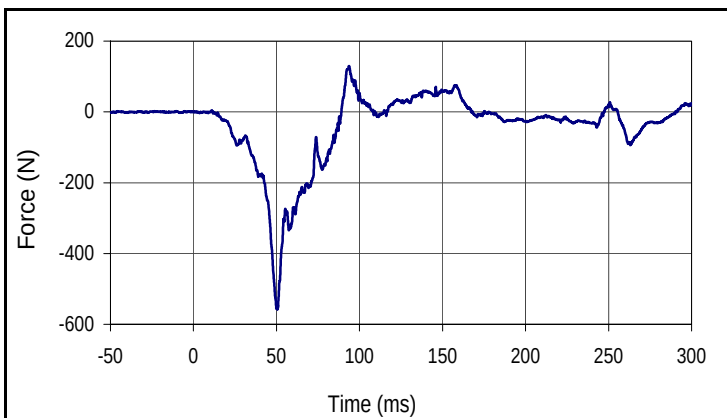
Curve Description			
V2P2 Upper Tibia Right X Moment			
Plot No.		SAE Class	Units
188		600	Nm
Max	Time	Min	Time
84.0	221.6	-186.3	90.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

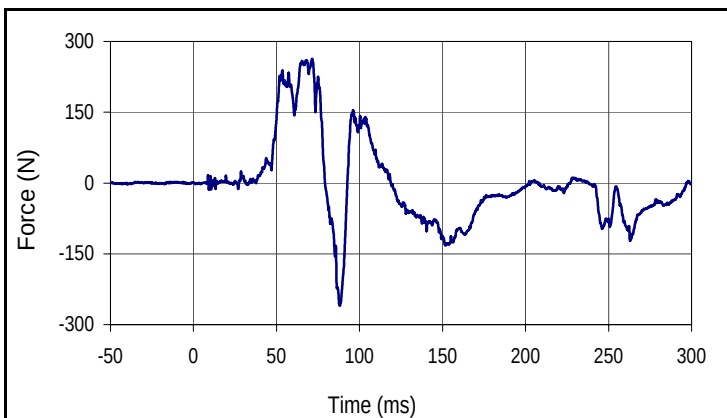
NHTSA No.: R20165412
 Test Date: 4/22/16



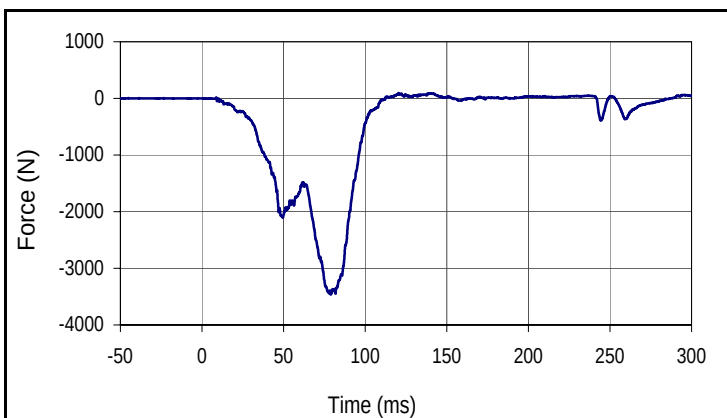
Curve Description			
V2P2 Upper Tibia Right Y Moment			
Plot No.		SAE Class	Units
189		600	Nm
Max	Time	Min	Time
55.9	52.3	-48.5	66.3



Curve Description			
V2P2 Lower Tibia Left X Force			
Plot No.		SAE Class	Units
190		600	N
Max	Time	Min	Time
129.7	93.7	-557.1	50.7



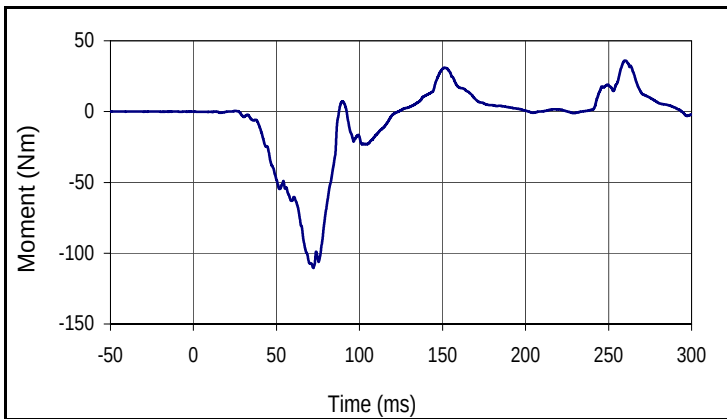
Curve Description			
V2P2 Lower Tibia Left Y Force			
Plot No.		SAE Class	Units
191		600	N
Max	Time	Min	Time
263.4	71.5	-260.3	88.1



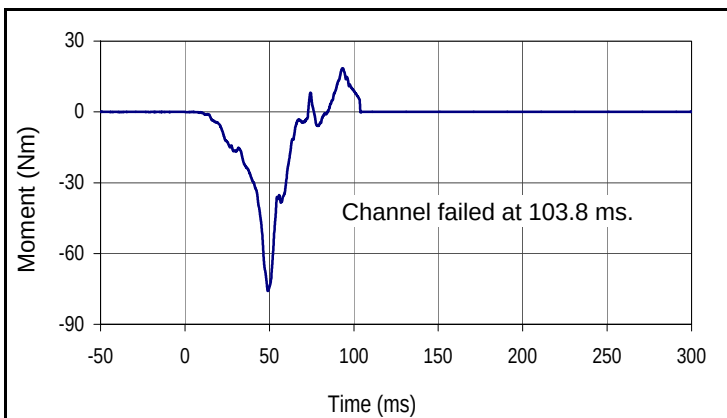
Curve Description			
V2P2 Lower Tibia Left Z Force			
Plot No.		SAE Class	Units
192		600	N
Max	Time	Min	Time
93.7	120.4	-3462.4	79.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

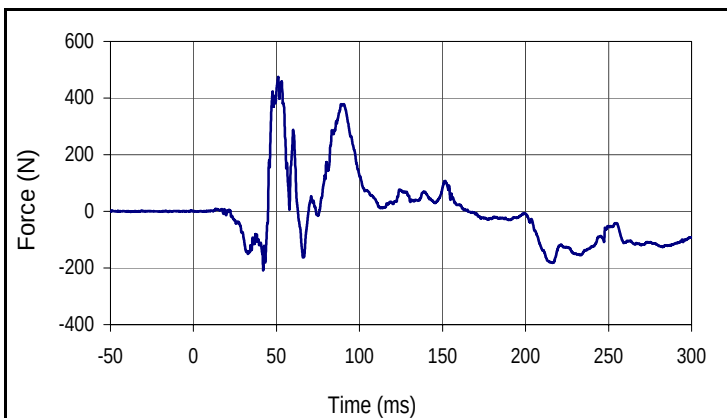
NHTSA No.: R20165412
 Test Date: 4/22/16



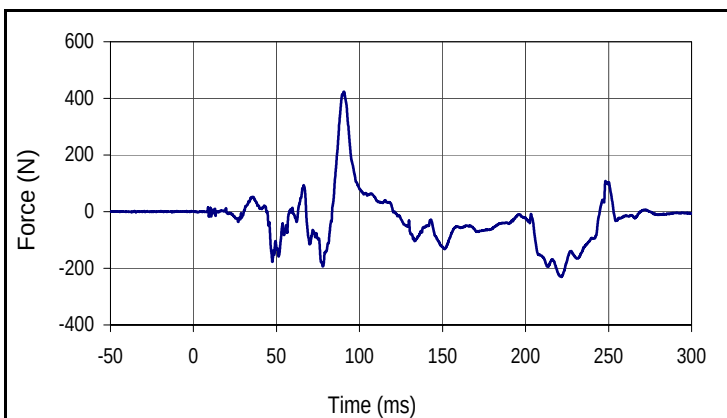
Curve Description			
V2P2 Lower Tibia Left X Moment			
Plot No.		SAE Class	Units
193		600	Nm
Max	Time	Min	Time
36.0	260.2	-110.6	72.2



Curve Description			
V2P2 Lower Tibia Left Y Moment			
Plot No.		SAE Class	Units
194		600	Nm
Max	Time	Min	Time
18.5	93.4	-75.8	49.2



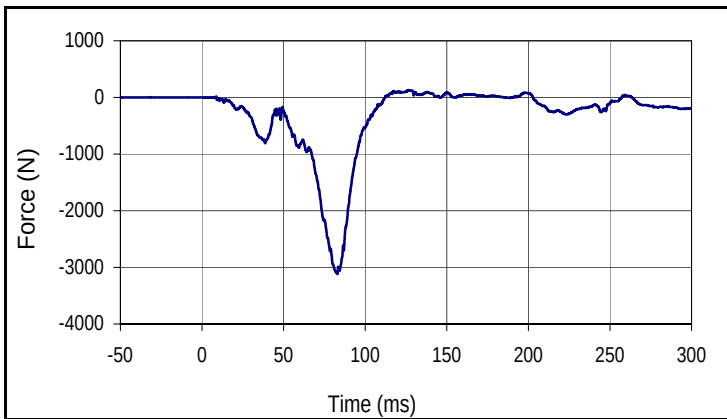
Curve Description			
V2P2 Lower Tibia Right X Force			
Plot No.		SAE Class	Units
195		600	N
Max	Time	Min	Time
474.4	51.0	-208.1	42.0



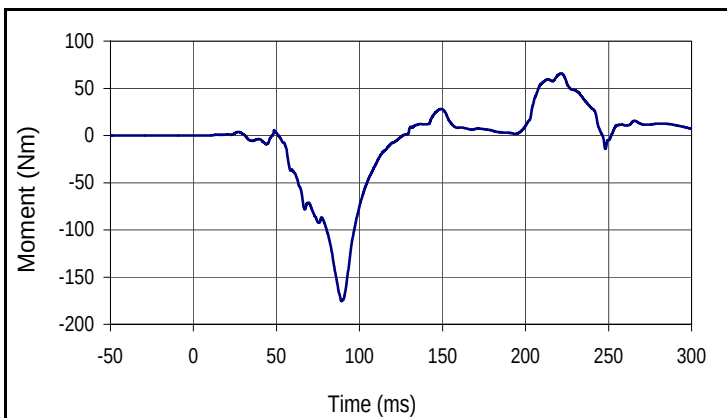
Curve Description			
V2P2 Lower Tibia Right Y Force			
Plot No.		SAE Class	Units
196		600	N
Max	Time	Min	Time
423.5	90.5	-230.6	221.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

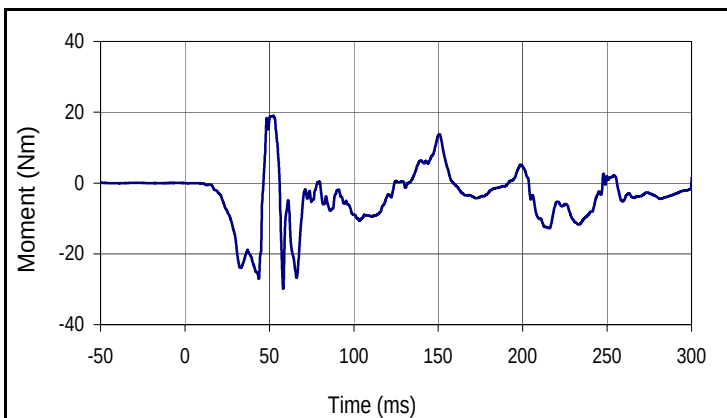
NHTSA No.: R20165412
 Test Date: 4/22/16



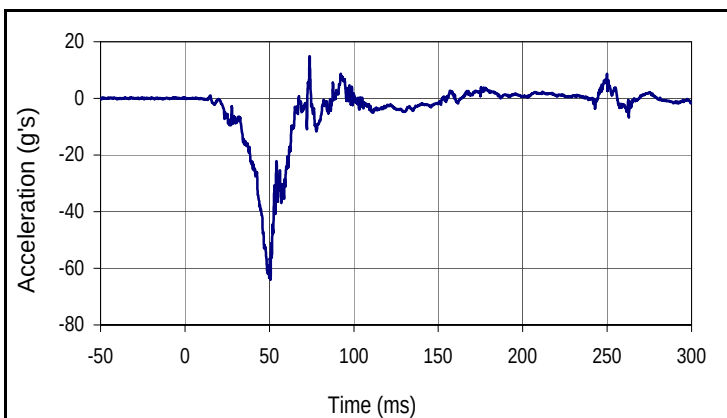
Curve Description			
V2P2 Lower Tibia Right Z Force			
Plot No.		SAE Class	Units
197		600	N
Max	Time	Min	Time
129.0	126.4	-3117.6	83.0



Curve Description			
V2P2 Lower Tibia Right X Moment			
Plot No.		SAE Class	Units
198		600	Nm
Max	Time	Min	Time
65.7	221.4	-175.5	89.1



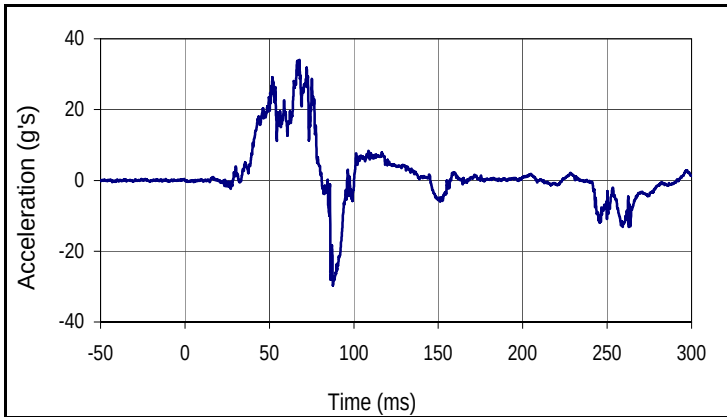
Curve Description			
V2P2 Lower Tibia Right Y Moment			
Plot No.		SAE Class	Units
199		600	Nm
Max	Time	Min	Time
19.1	52.4	-29.9	58.2



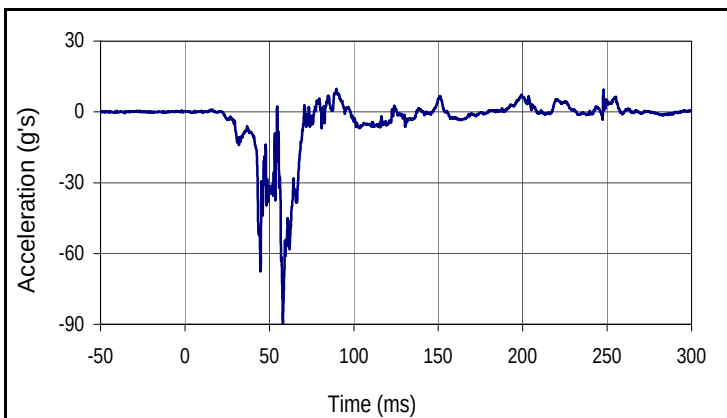
Curve Description			
V2P2 Mid Tibia Left X Acceleration			
Plot No.		SAE Class	Units
200		1000	g's
Max	Time	Min	Time
14.9	73.8	-64.0	50.7

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

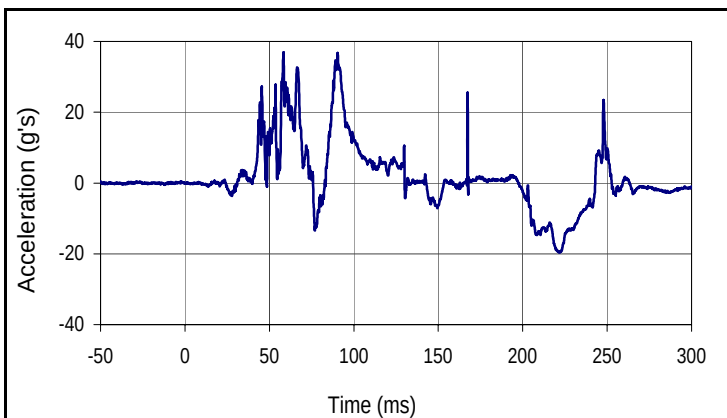
NHTSA No.: R20165412
 Test Date: 4/22/16



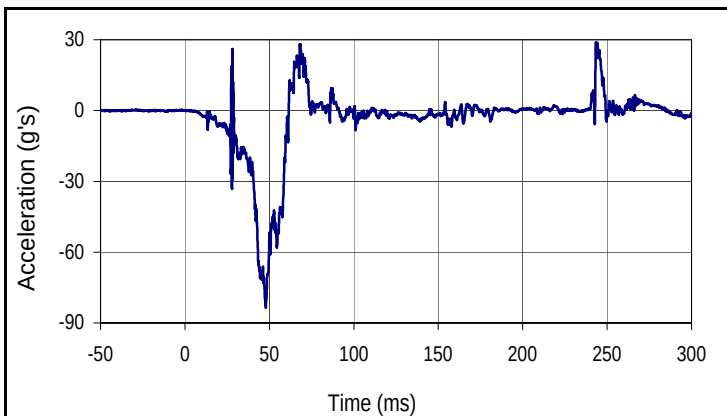
Curve Description			
V2P2 Mid Tibia Left Y Acceleration			
Plot No.		SAE Class	Units
201		1000	g's
Max	Time	Min	Time
34.0	67.8	-29.7	87.6



Curve Description			
V2P2 Mid Tibia Right X Acceleration			
Plot No.		SAE Class	Units
202		1000	g's
Max	Time	Min	Time
9.8	89.6	-89.7	58.0



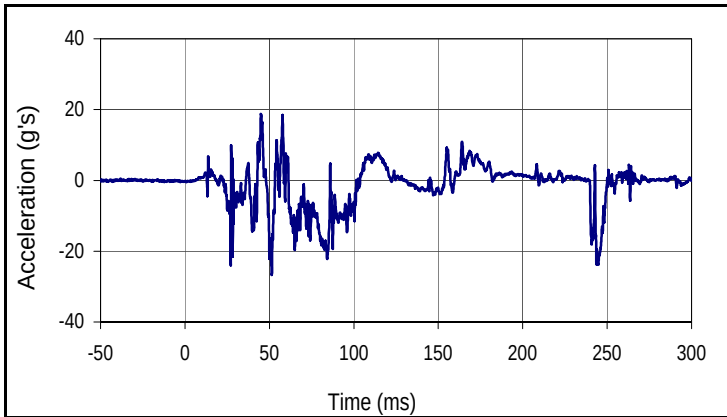
Curve Description			
V2P2 Mid Tibia Right Y Acceleration			
Plot No.		SAE Class	Units
203		1000	g's
Max	Time	Min	Time
36.9	58.3	-19.7	221.8



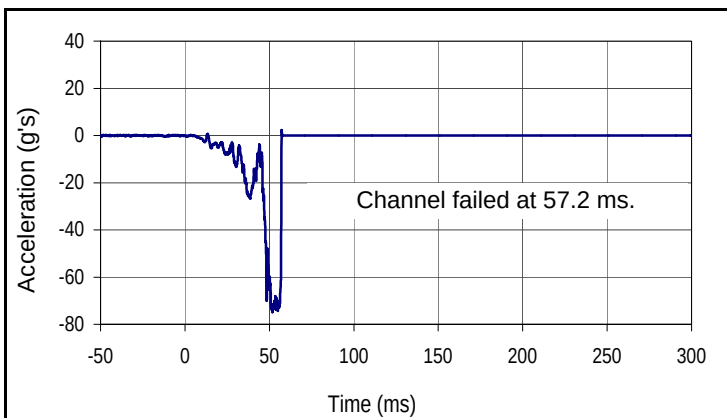
Curve Description			
V2P2 Foot Left X Acceleration			
Plot No.		SAE Class	Units
204		1000	g's
Max	Time	Min	Time
28.8	243.4	-83.7	47.8

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

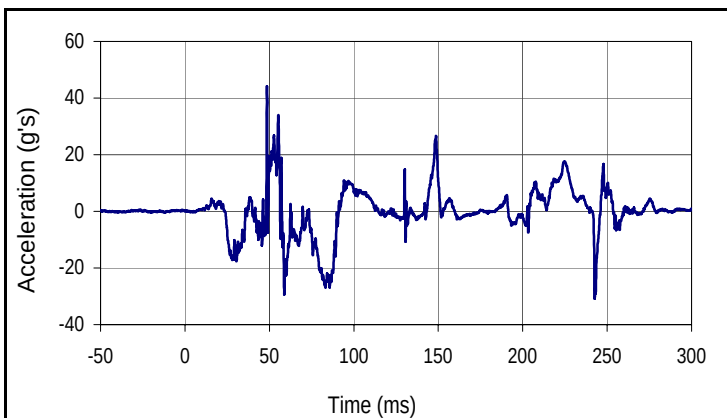
NHTSA No.: R20165412
 Test Date: 4/22/16



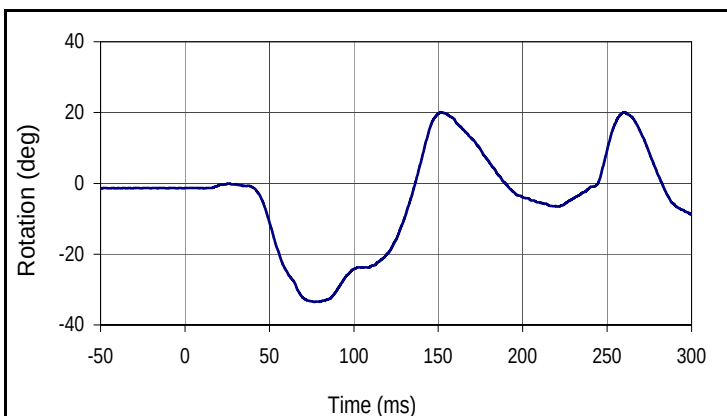
Curve Description			
V2P2 Foot Left Z Acceleration			
Plot No.		SAE Class	Units
205		1000	g's
Max	Time	Min	Time
18.7	45.0	-26.7	51.4



Curve Description			
V2P2 Foot Right X Acceleration			
Plot No.		SAE Class	Units
206		1000	g's
Max	Time	Min	Time
2.3	57.3	-74.8	51.8



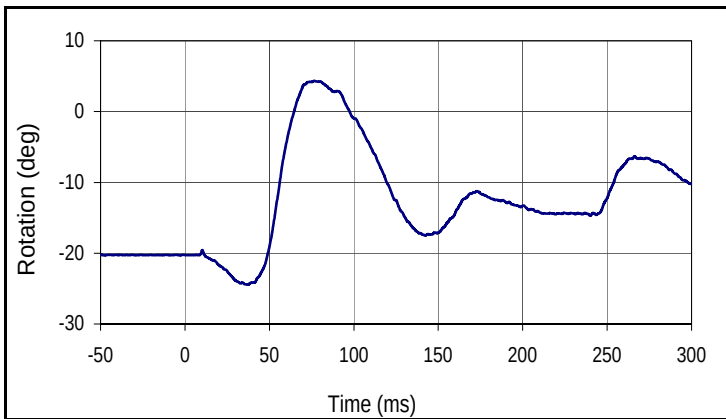
Curve Description			
V2P2 Foot Right Z Acceleration			
Plot No.		SAE Class	Units
207		1000	g's
Max	Time	Min	Time
44.1	48.6	-30.9	242.6



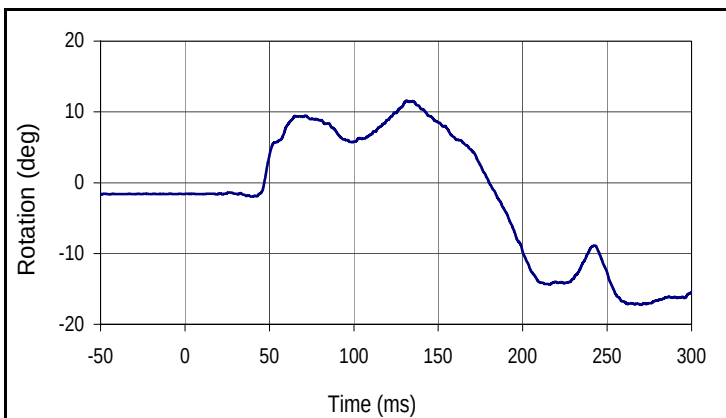
Curve Description			
V2P2 Ankle Left X Rotation			
Plot No.		SAE Class	Units
208		180	deg
Max	Time	Min	Time
20.1	260.3	-33.5	76.5

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

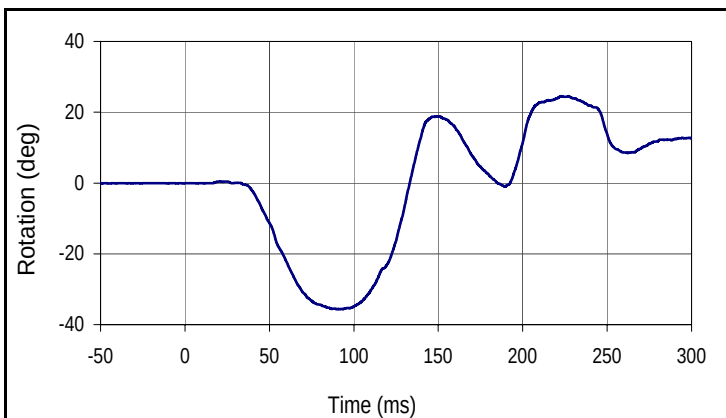
NHTSA No.: R20165412
 Test Date: 4/22/16



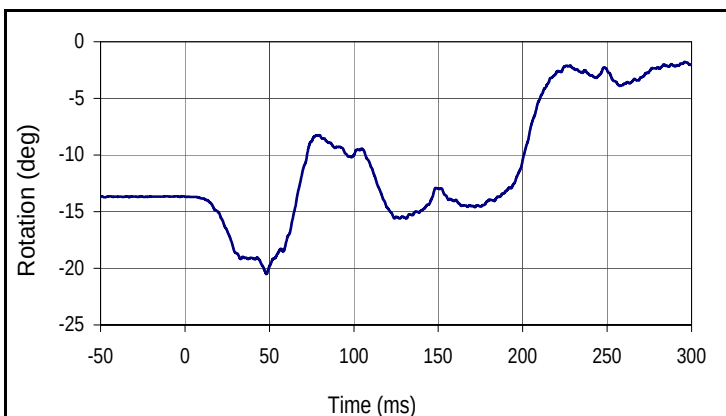
Curve Description			
V2P2 Ankle Left Y Rotation			
Plot No.		SAE Class	Units
209		180	deg
Max	Time	Min	Time
4.3	76.5	-24.5	37.3



Curve Description			
V2P2 Ankle Left Z Rotation			
Plot No.		SAE Class	Units
210		180	deg
Max	Time	Min	Time
11.6	131.4	-17.3	269.8



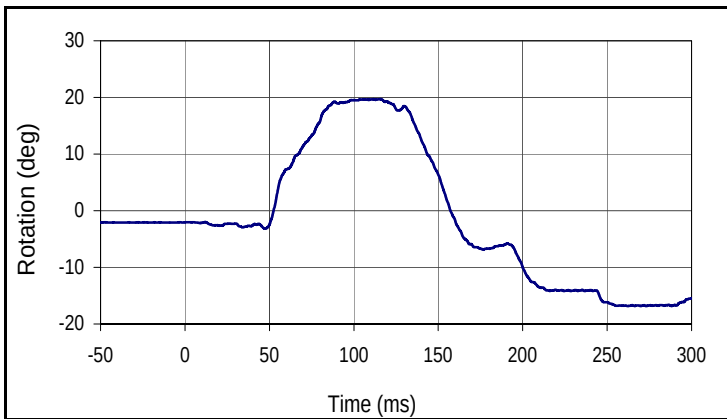
Curve Description			
V2P2 Ankle Right X Rotation			
Plot No.		SAE Class	Units
211		180	deg
Max	Time	Min	Time
24.5	223.1	-35.6	91.6



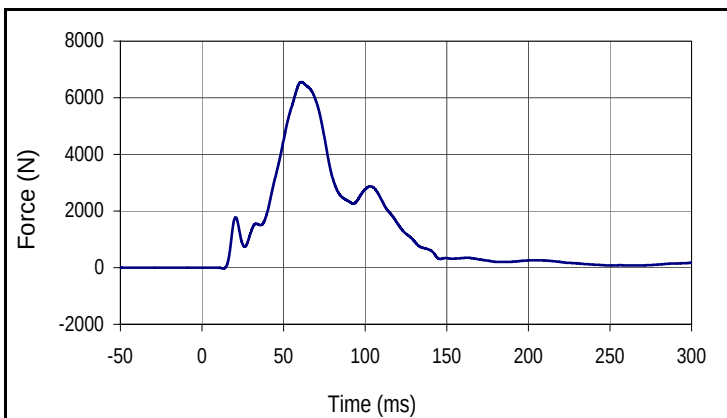
Curve Description			
V2P2 Ankle Right Y Rotation			
Plot No.		SAE Class	Units
212		180	deg
Max	Time	Min	Time
-1.8	296.0	-20.5	48.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

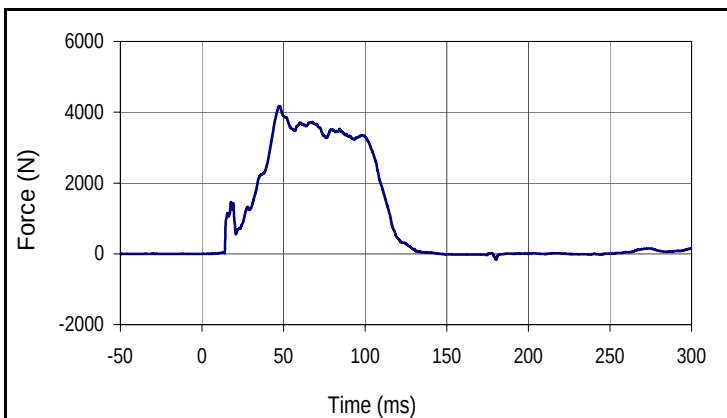
NHTSA No.: R20165412
 Test Date: 4/22/16



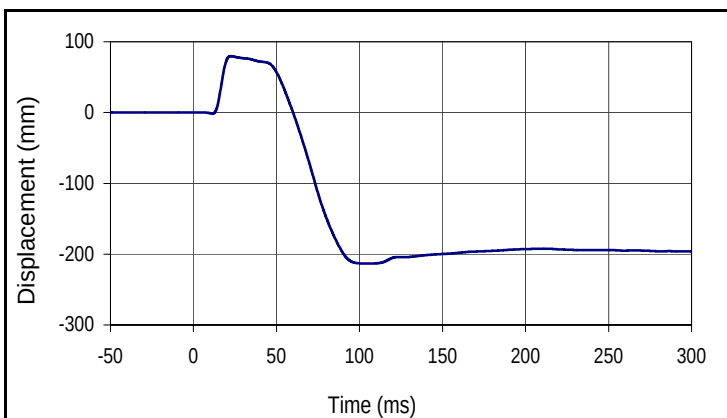
Curve Description			
V2P2 Ankle Right Z Rotation			
Plot No.		SAE Class	Units
213		180	deg
Max	Time	Min	Time
19.7	115.8	-16.8	262.2



Curve Description			
V2 Passenger Lap Belt Force			
Plot No.		SAE Class	Units
214		60	N
Max	Time	Min	Time
6554.5	60.9	-28.9	13.1



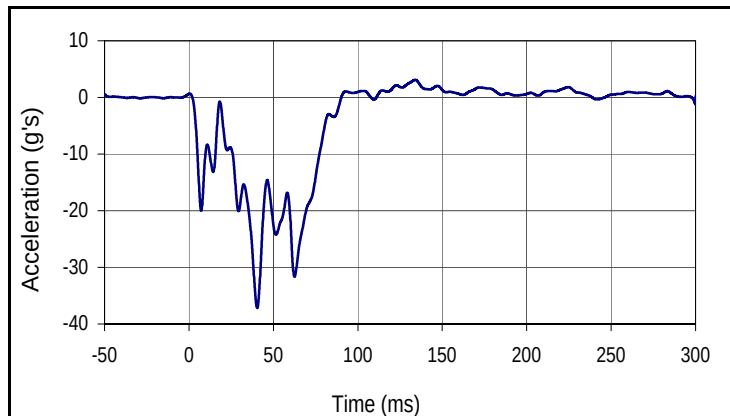
Curve Description			
V2 Passenger Shoulder Belt Upper Force			
Plot No.		SAE Class	Units
215		600	N
Max	Time	Min	Time
4168.5	47.6	-164.9	180.1



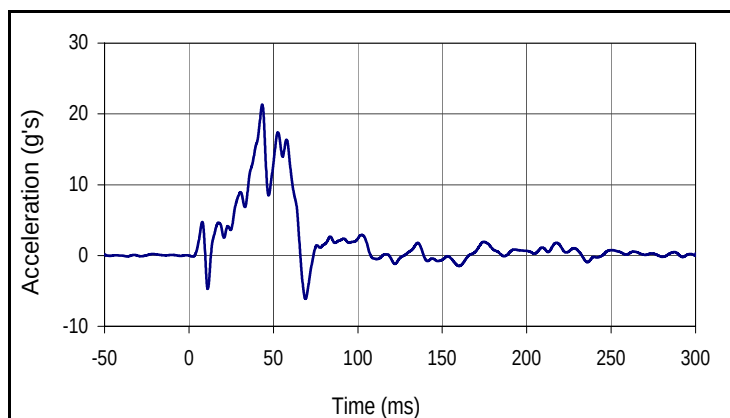
Curve Description			
V2 Passenger Shoulder Belt Displacement			
Plot No.		SAE Class	Units
216		60	mm
Max	Time	Min	Time
79.6	22.4	-213.2	105.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

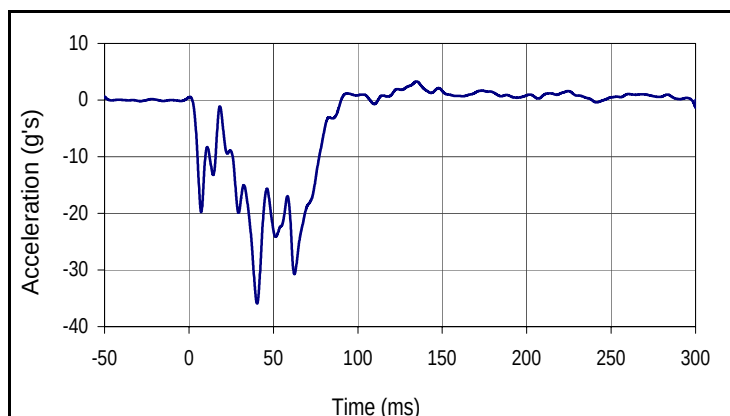
NHTSA No.: R20165412
 Test Date: 4/22/16



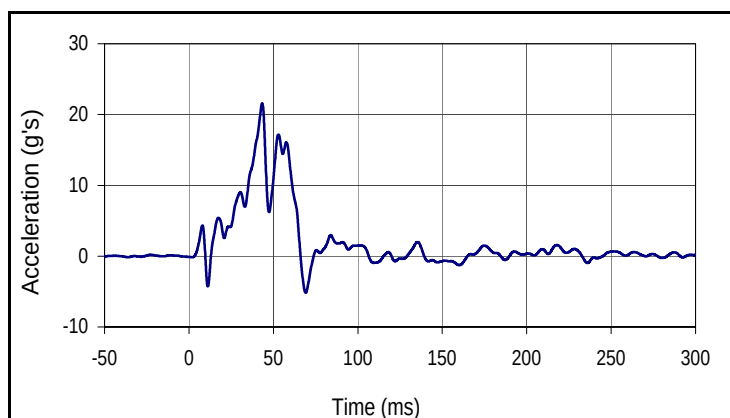
Curve Description			
V2 Left Rear Sill X Acceleration			
Plot No.		SAE Class	Units
217		60	g's
Max	Time	Min	Time
3.1	134.0	-37.2	40.4



Curve Description			
V2 Left Rear Sill Y Acceleration			
Plot No.		SAE Class	Units
218		60	g's
Max	Time	Min	Time
21.3	43.4	-6.1	69.0



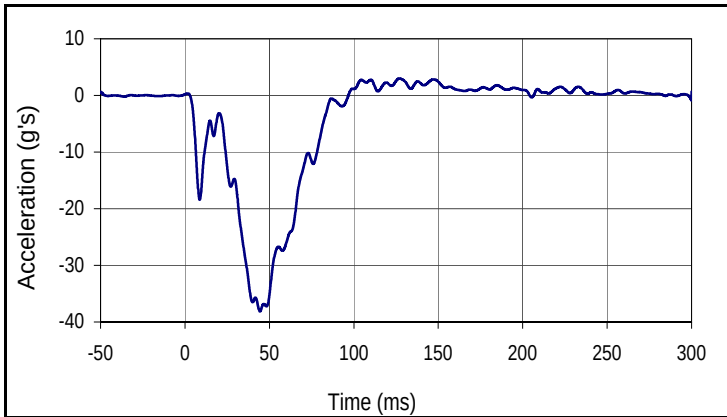
Curve Description			
V2 Left Rear Sill Redundant X Acceleration			
Plot No.		SAE Class	Units
219		60	g's
Max	Time	Min	Time
3.3	134.8	-35.9	40.4



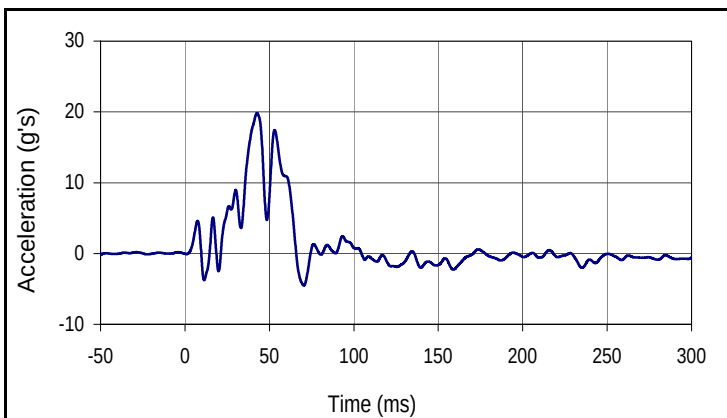
Curve Description			
V2 Left Rear Sill Redundant Y Acceleration			
Plot No.		SAE Class	Units
220		60	g's
Max	Time	Min	Time
21.6	43.4	-5.2	69.1

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

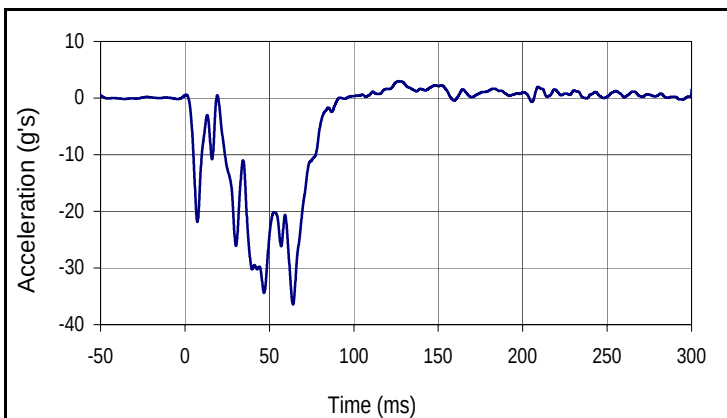
NHTSA No.: R20165412
 Test Date: 4/22/16



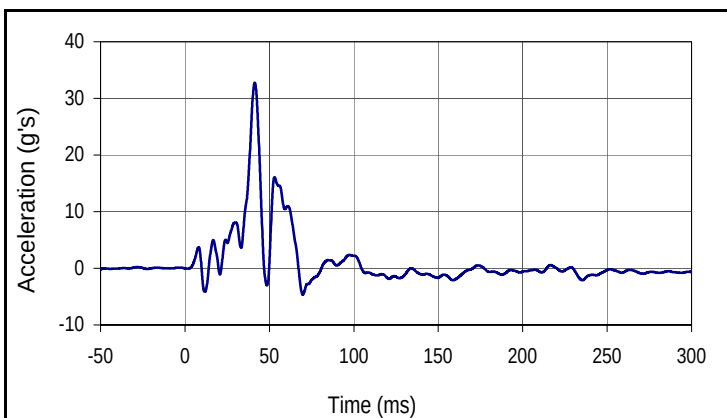
Curve Description			
V2 Right Rear Sill X Acceleration			
Plot No.		SAE Class	Units
221		60	g's
Max	Time	Min	Time
3.0	127.0	-38.1	44.4



Curve Description			
V2 Right Rear Sill Y Acceleration			
Plot No.		SAE Class	Units
222		60	g's
Max	Time	Min	Time
19.8	42.7	-4.5	70.4



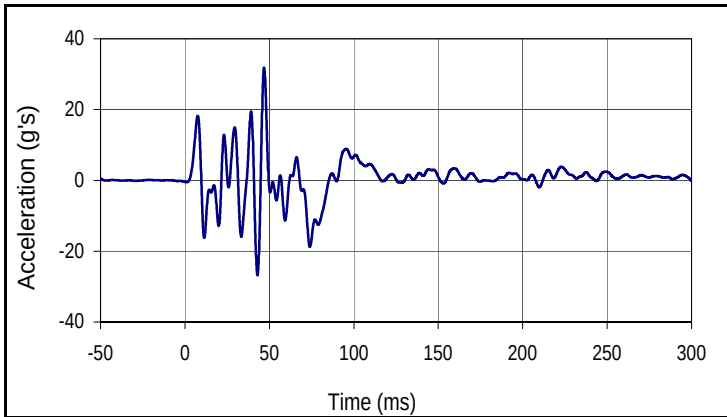
Curve Description			
V2 Vehicle CG X Acceleration			
Plot No.		SAE Class	Units
223		60	g's
Max	Time	Min	Time
3.0	126.9	-36.4	64.0



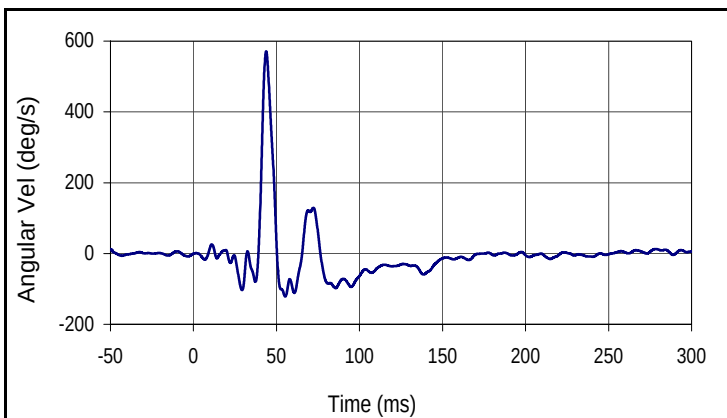
Curve Description			
V2 Vehicle CG Y Acceleration			
Plot No.		SAE Class	Units
224		60	g's
Max	Time	Min	Time
32.8	41.4	-4.7	69.8

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

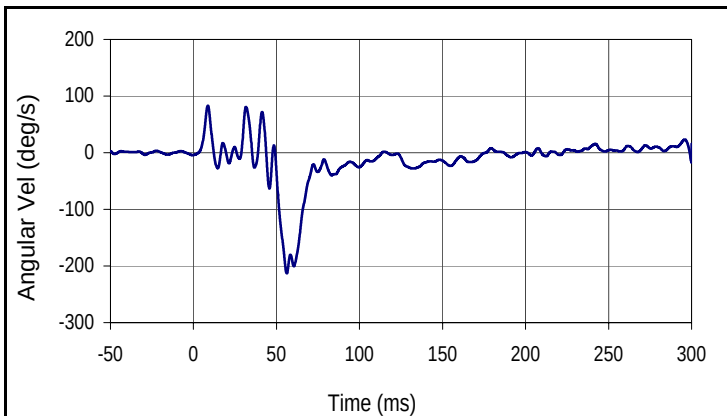
NHTSA No.: R20165412
 Test Date: 4/22/16



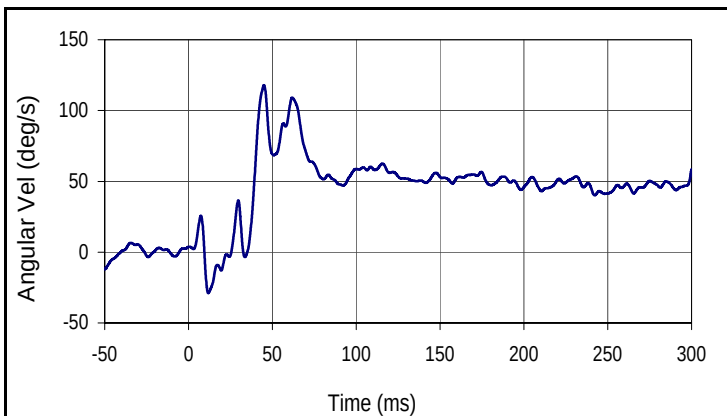
Curve Description			
V2 Vehicle CG Z Acceleration			
Plot No.		SAE Class	Units
225		60	g's
Max	Time	Min	Time
31.9	46.9	-26.8	43.0



Curve Description			
V2 Vehicle CG Angular Rate X			
Plot No.		SAE Class	Units
226		60	deg/s
Max	Time	Min	Time
571.2	43.8	-121.5	55.3



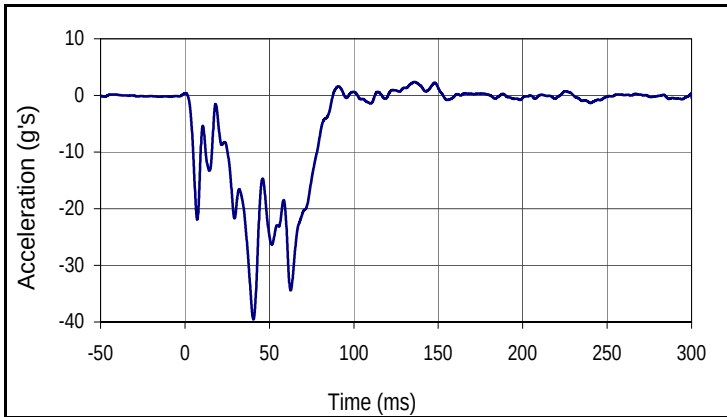
Curve Description			
V2 Vehicle CG Angular Rate Y			
Plot No.		SAE Class	Units
227		60	deg/s
Max	Time	Min	Time
83.1	8.7	-213.0	56.2



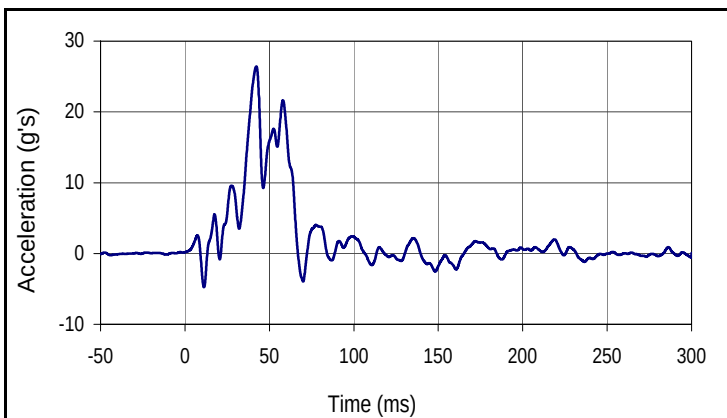
Curve Description			
V2 Vehicle CG Angular Rate Z			
Plot No.		SAE Class	Units
228		60	deg/s
Max	Time	Min	Time
117.8	45.0	-28.9	11.8

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

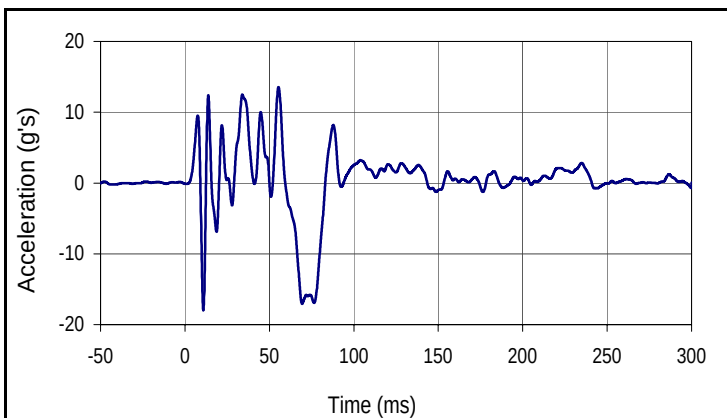
NHTSA No.: R20165412
 Test Date: 4/22/16



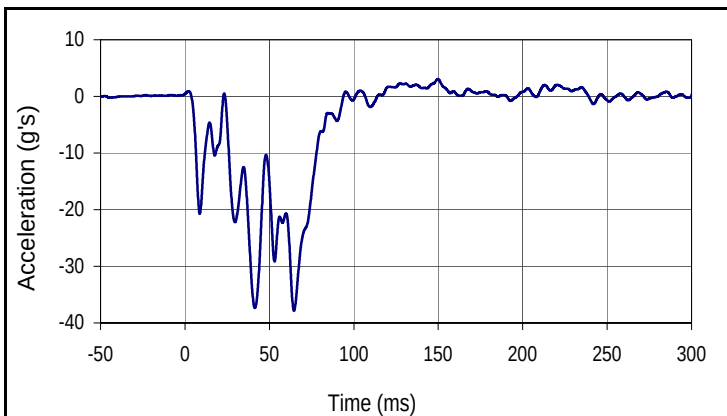
Curve Description			
V2 Driver Seat Track X Acceleration			
Plot No.		SAE Class	Units
229		60	g's
Max	Time	Min	Time
2.4	135.9	-39.5	40.6



Curve Description			
V2 Driver Seat Track Y Acceleration			
Plot No.		SAE Class	Units
230		60	g's
Max	Time	Min	Time
26.4	42.3	-4.7	11.3



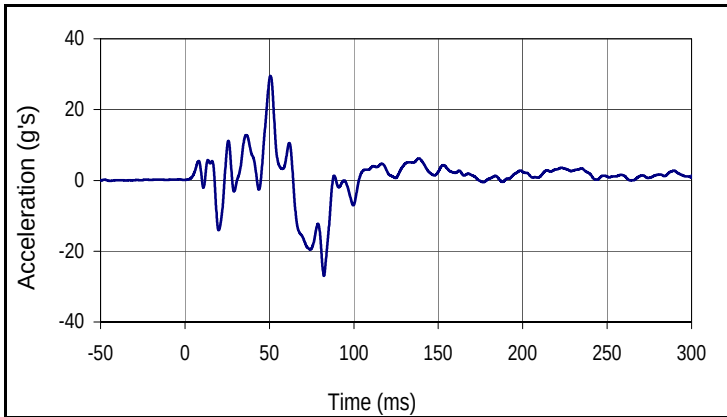
Curve Description			
V2 Driver Seat Track Z Acceleration			
Plot No.		SAE Class	Units
231		60	g's
Max	Time	Min	Time
13.5	55.4	-18.0	10.9



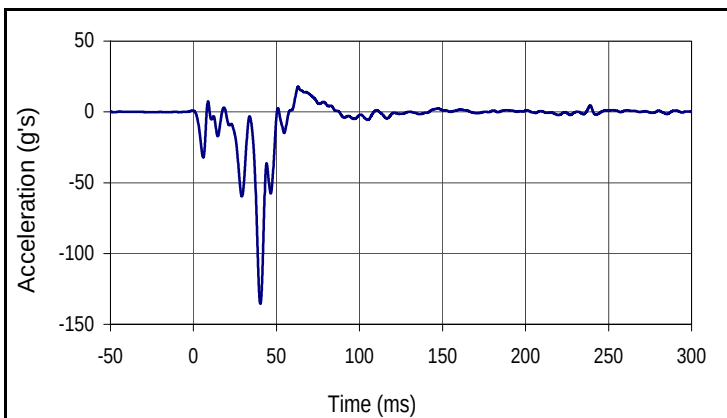
Curve Description			
V2 Driver Seat Thigh Bar X Acceleration			
Plot No.		SAE Class	Units
232		60	g's
Max	Time	Min	Time
3.0	149.7	-37.8	64.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

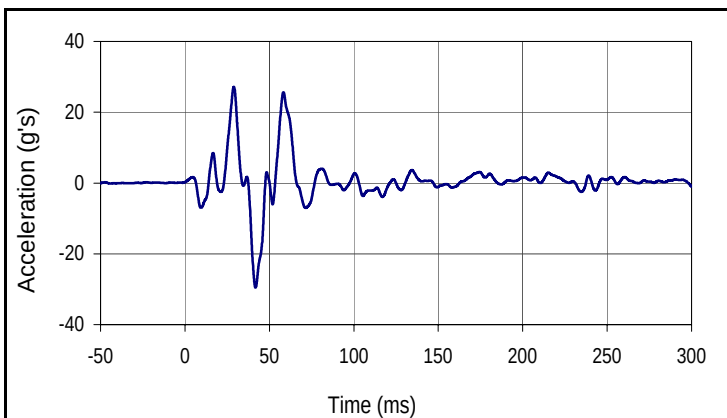
NHTSA No.: R20165412
 Test Date: 4/22/16



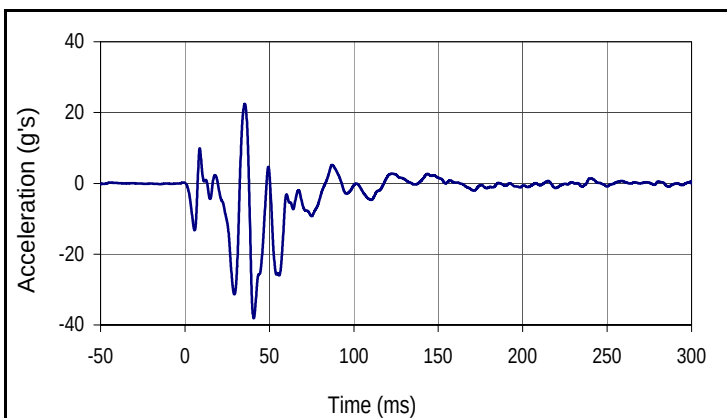
Curve Description			
V2 Driver Seat Thigh Bar Z Acceleration			
Plot No.		SAE Class	Units
233		60	g's
Max	Time	Min	Time
29.5	50.6	-27.0	82.3



Curve Description			
V2 Driver Floor Pan X Acceleration			
Plot No.		SAE Class	Units
234		60	g's
Max	Time	Min	Time
17.8	63.1	-135.5	40.3



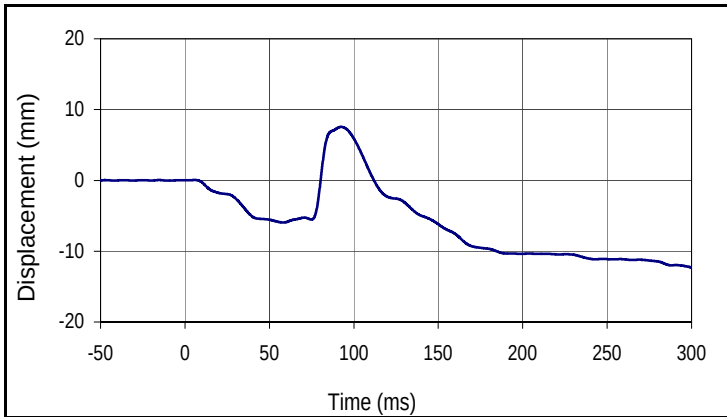
Curve Description			
V2 Driver Floor Pan Y Acceleration			
Plot No.		SAE Class	Units
235		60	g's
Max	Time	Min	Time
27.2	29.0	-29.5	41.8



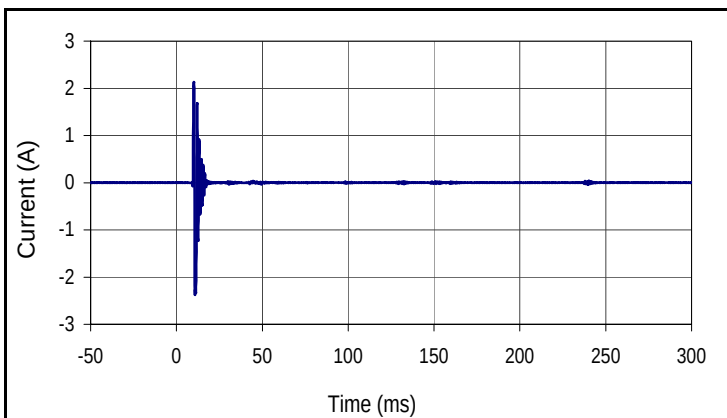
Curve Description			
V2 Driver Floor Pan Z Acceleration			
Plot No.		SAE Class	Units
236		60	(g's)
Max	Time	Min	Time
22.5	35.4	-38.1	40.7

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

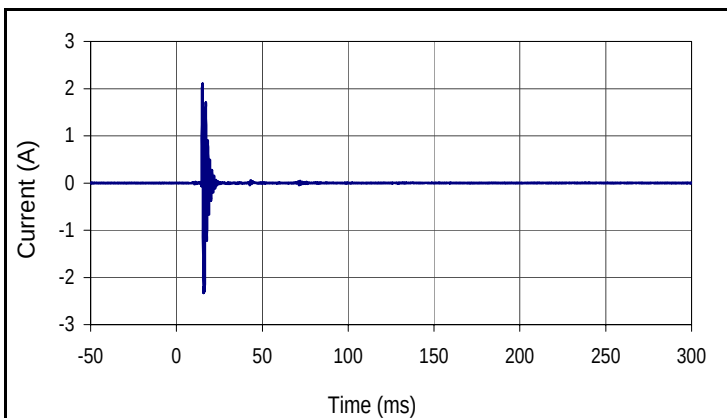
NHTSA No.: R20165412
 Test Date: 4/22/16



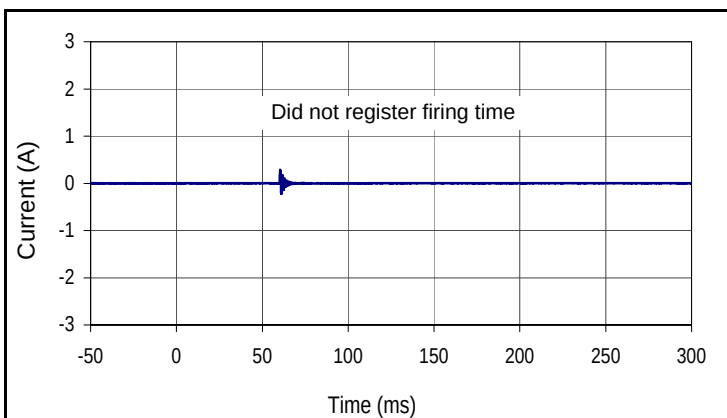
Curve Description			
V2 Driver Floor Pan X Deflection			
Plot No.		SAE Class	Units
237		60	mm
Max	Time	Min	Time
7.6	92.5	-12.3	299.9



Curve Description			
V2 Driver Front Airbag Stage 1 Monitor - Time to fire: 9.7 ms.			
Plot No.		SAE Class	Units
238		1000	A
Max	Time	Min	Time
2.1	10.2	-2.4	10.7



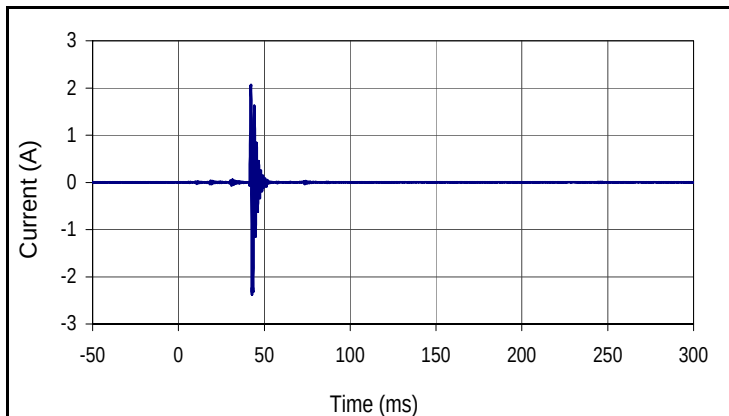
Curve Description			
V2 Driver Front Airbag Stage 2 Monitor - Time to fire: 14.7 ms.			
Plot No.		SAE Class	Units
239		1000	A
Max	Time	Min	Time
2.1	15.2	-2.3	15.7



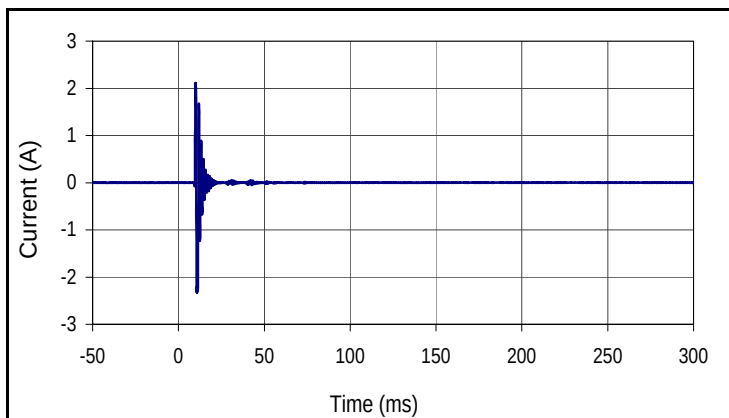
Curve Description			
V2 Driver Curtain Airbag Monitor - Time to fire:			
Plot No.		SAE Class	Units
240		1000	A
Max	Time	Min	Time
0.3	60.4	-0.2	61.1

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

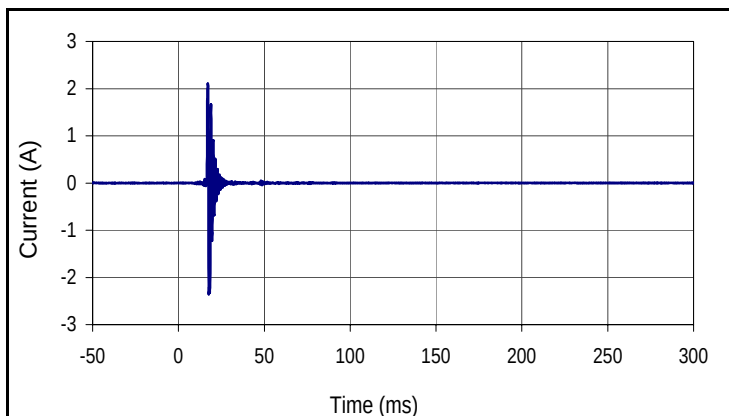
NHTSA No.: R20165412
 Test Date: 4/22/16



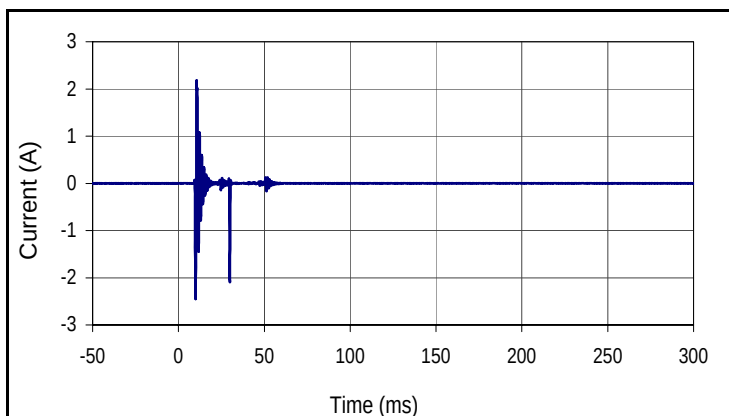
Curve Description			
V2 Driver Seat Airbag Monitor - Time to fire: 41.7 ms			
Plot No.		SAE Class	Units
241		1000	A
Max	Time	Min	Time
2.1	42.3	-2.4	42.8



Curve Description			
V2 Driver Retractor Pretensioner Monitor - Time to fire: 9.7 ms			
Plot No.		SAE Class	Units
242		1000	A
Max	Time	Min	Time
2.1	10.1	-2.3	10.7



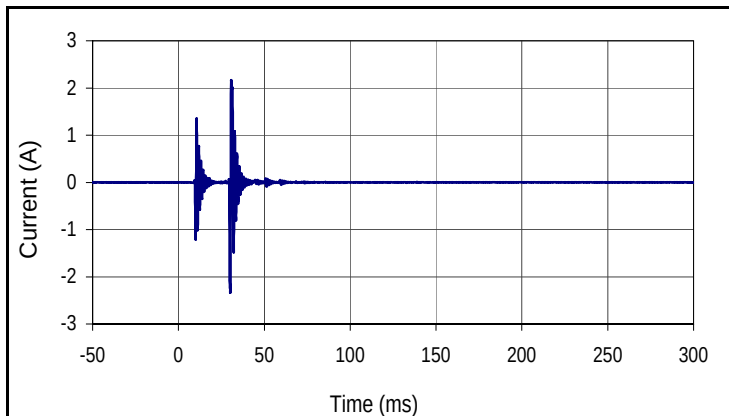
Curve Description			
V2 Driver Anchor Pretensioner Monitor - Time to fire: 16.7 ms			
Plot No.		SAE Class	Units
243		1000	A
Max	Time	Min	Time
2.1	17.1	-2.4	17.7



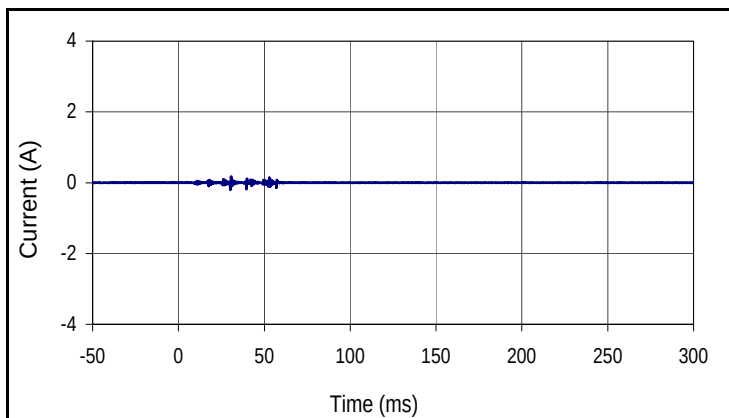
Curve Description			
V2 Passenger Front Airbag Stage 1 Monitor - Time to fire: 9.7 ms			
Plot No.		SAE Class	Units
244		1000	A
Max	Time	Min	Time
2.2	10.5	-2.5	10.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

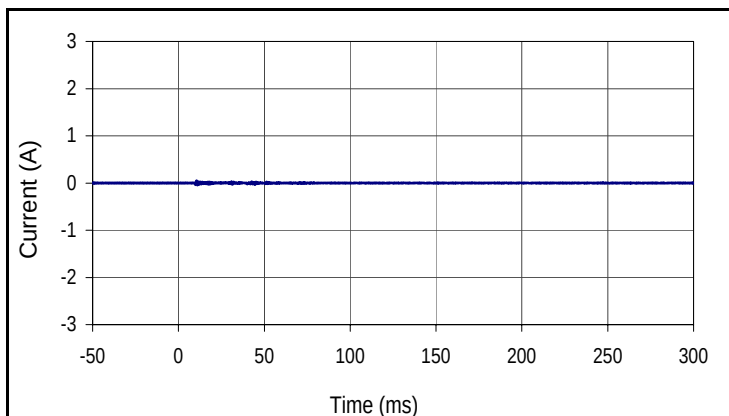
NHTSA No.: R20165412
 Test Date: 4/22/16



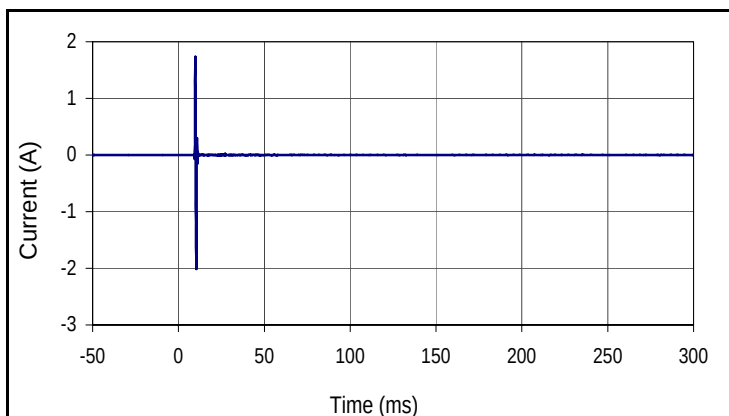
Curve Description			
V2 Passenger Front Airbag Stage 2 Monitor - Time to fire: 9.7 ms			
Plot No.		SAE Class	Units
245		1000	A
Max	Time	Min	Time
2.2	30.7	-2.3	30.2



Curve Description			
V2 Passenger Curtain Airbag Monitor - Time to fire: Did not fire			
Plot No.		SAE Class	Units
246		1000	A
Max	Time	Min	Time
0.2	30.7	-0.2	30.2



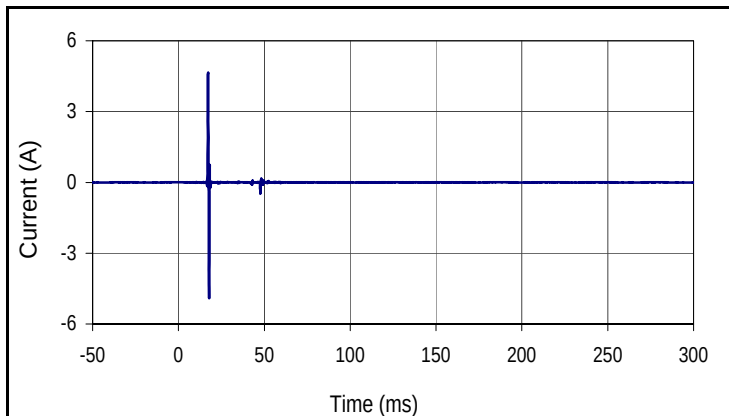
Curve Description			
V2 Passenger Seat Airbag Monitor - Time to fire: Did not fire			
Plot No.		SAE Class	Units
247		1000	A
Max	Time	Min	Time
0.1	10.5	0.0	11.1



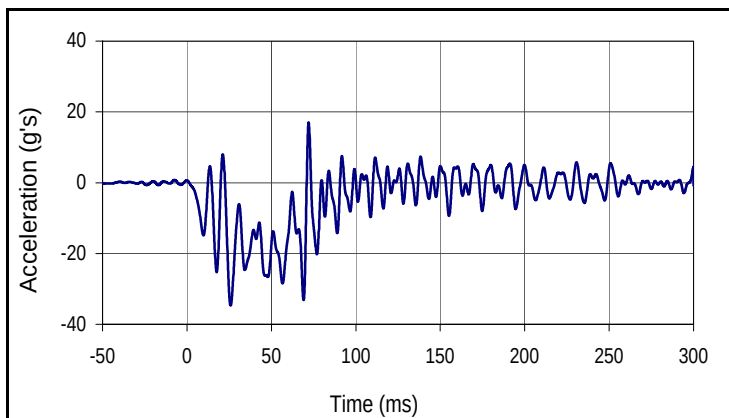
Curve Description			
V2 Passenger Retractor Pretensioner Monitor - Time to fire: 9.7 ms			
Plot No.		SAE Class	Units
248		1000	A
Max	Time	Min	Time
1.7	9.8	-2.0	10.4

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

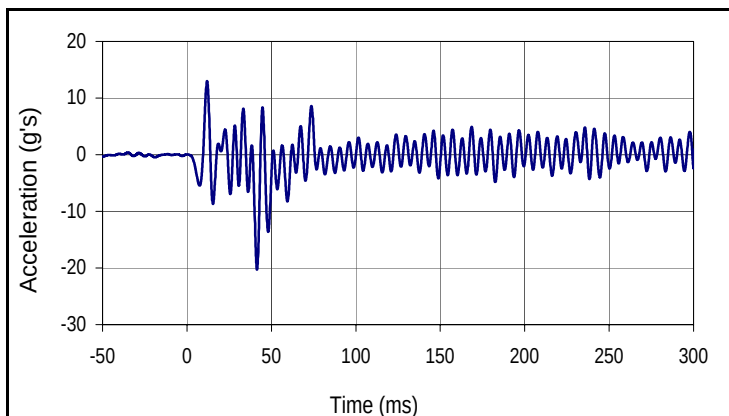
NHTSA No.: R20165412
 Test Date: 4/22/16



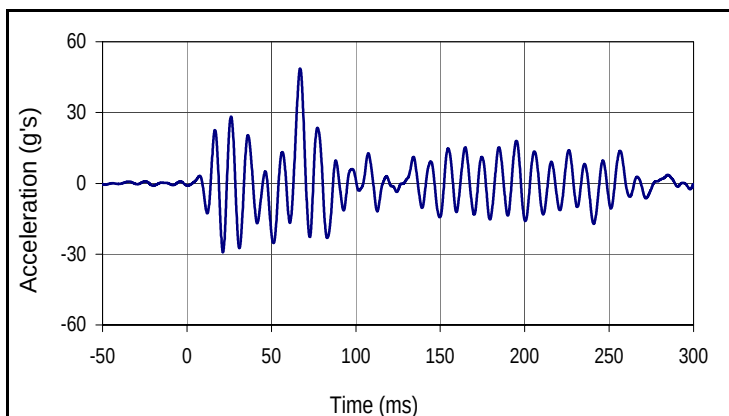
Curve Description			
V2 Passenger Anchor Pretensioner Monitor - Time to fire:16.9 ms.			
Plot No.		SAE Class	Units
249		1000	A
Max	Time	Min	Time
4.6	17.2	-4.9	17.8



Curve Description			
V1 OMDB CG X Acceleration			
Plot No.		SAE Class	Units
250		60	g's
Max	Time	Min	Time
17.1	72.1	-34.7	25.9



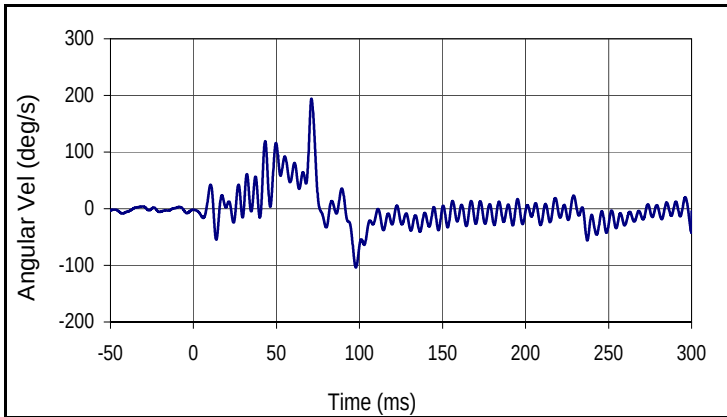
Curve Description			
V1 OMDB CG Y Acceleration			
Plot No.		SAE Class	Units
251		60	g's
Max	Time	Min	Time
13.0	11.9	-20.3	41.5



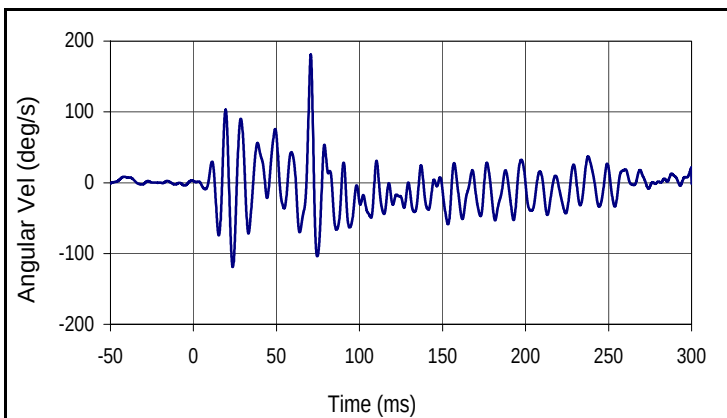
Curve Description			
V1 OMDB CG Z Acceleration			
Plot No.		SAE Class	Units
252		60	g's
Max	Time	Min	Time
48.6	67.0	-29.2	21.3

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

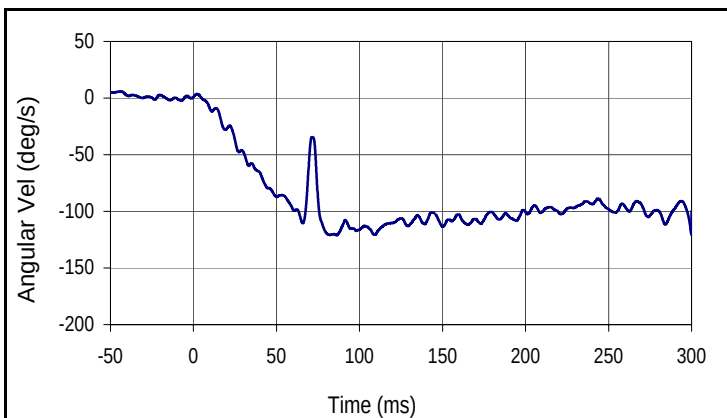
NHTSA No.: R20165412
 Test Date: 4/22/16



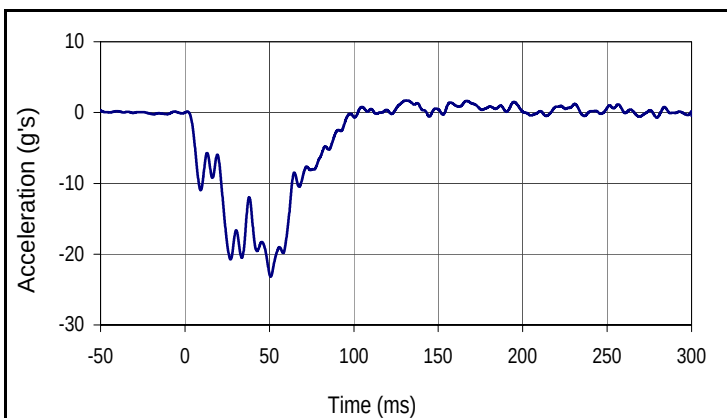
Curve Description			
V1 OMDB Angular Rate X			
Plot No.		SAE Class	Units
253		60	deg/s
Max	Time	Min	Time
194.5	71.1	-103.9	97.8



Curve Description			
V1 OMDB Angular Rate Y			
Plot No.		SAE Class	Units
254		60	deg/s
Max	Time	Min	Time
181.0	70.7	-119.0	23.7



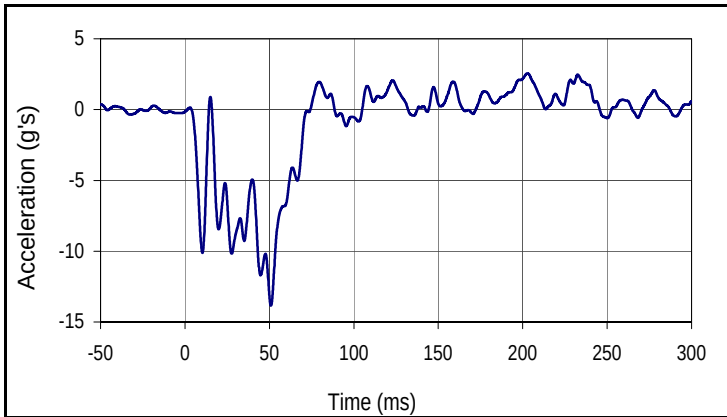
Curve Description			
V1 OMDB Angular Rate Z			
Plot No.		SAE Class	Units
255		60	deg/s
Max	Time	Min	Time
3.6	2.2	-121.1	86.2



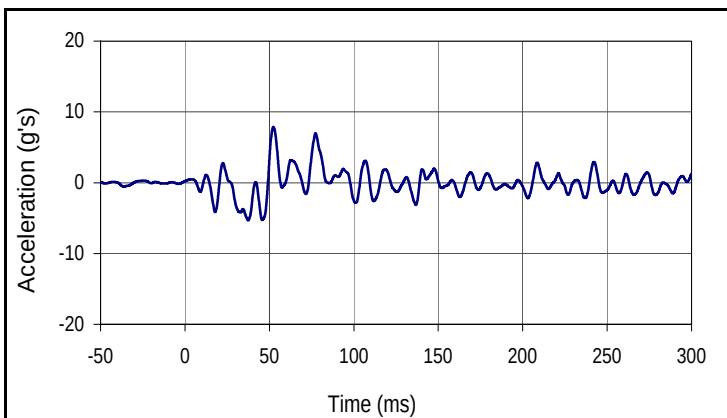
Curve Description			
V1 OMDB Rear C/L X Acceleration			
Plot No.		SAE Class	Units
256		60	g's
Max	Time	Min	Time
1.7	130.8	-23.2	50.8

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

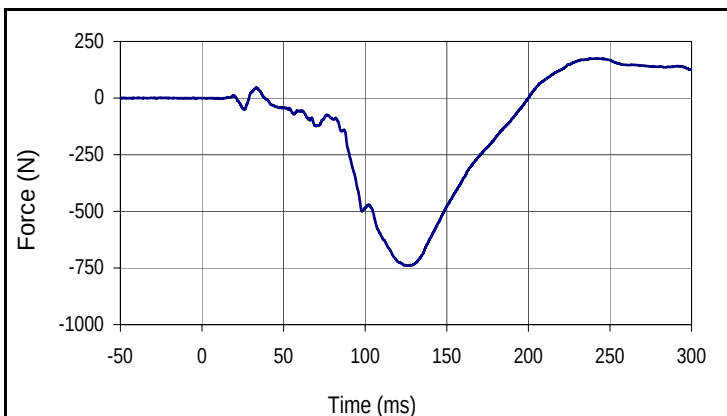
NHTSA No.: R20165412
 Test Date: 4/22/16



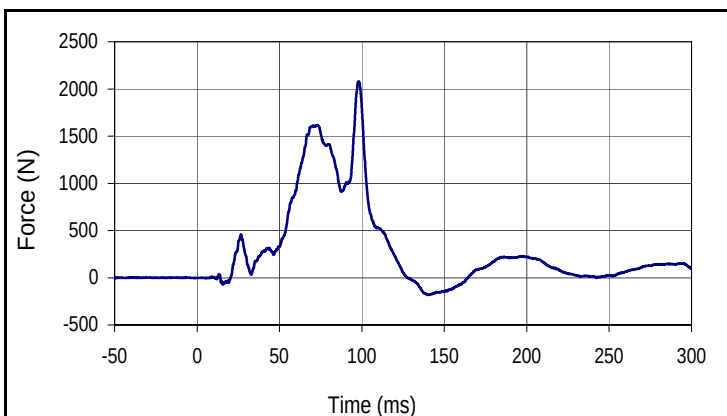
Curve Description			
V1 OMDB Rear C/L Y Acceleration			
Plot No.		SAE Class	Units
257		60	g's
Max	Time	Min	Time
2.6	202.9	-13.8	50.9



Curve Description			
V1 OMDB Rear C/L Z Acceleration			
Plot No.		SAE Class	Units
258		60	g's
Max	Time	Min	Time
7.9	52.4	-5.3	37.4



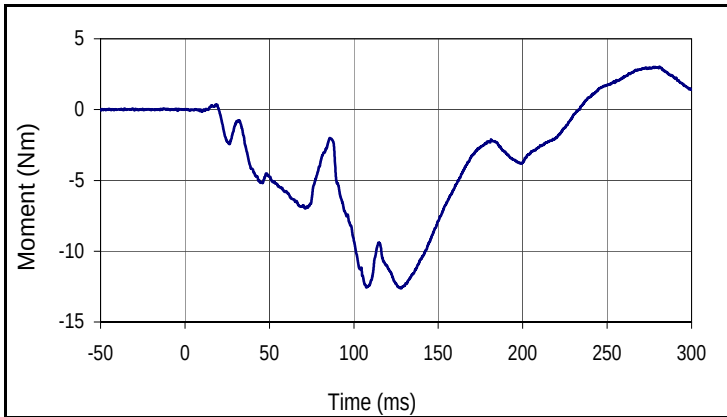
Curve Description			
V2P1 Fx on head acting through O.C joint only			
Plot No.		SAE Class	Units
259		1000	N
Max	Time	Min	Time
174.7	243.0	-740.0	126.2



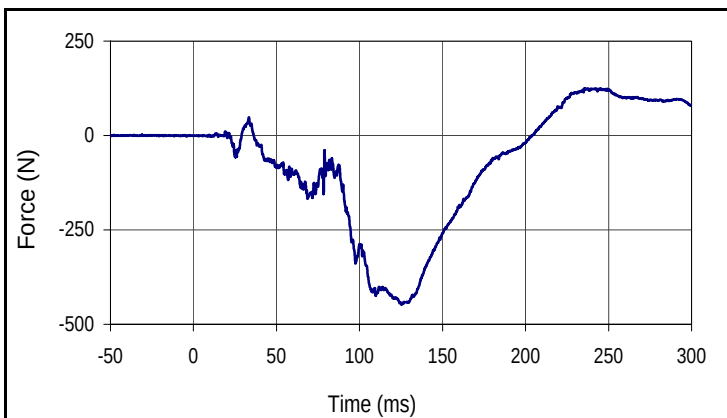
Curve Description			
V2P1 Fz on head acting through O.C joint only			
Plot No.		SAE Class	Units
260		1000	N
Max	Time	Min	Time
2081.2	98.2	-183.0	139.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

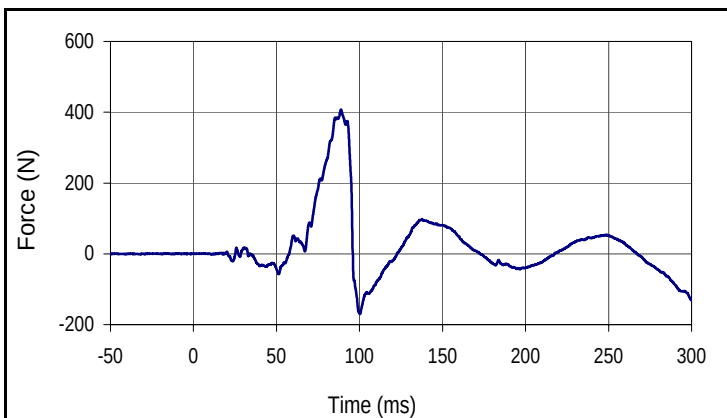
NHTSA No.: R20165412
 Test Date: 4/22/16



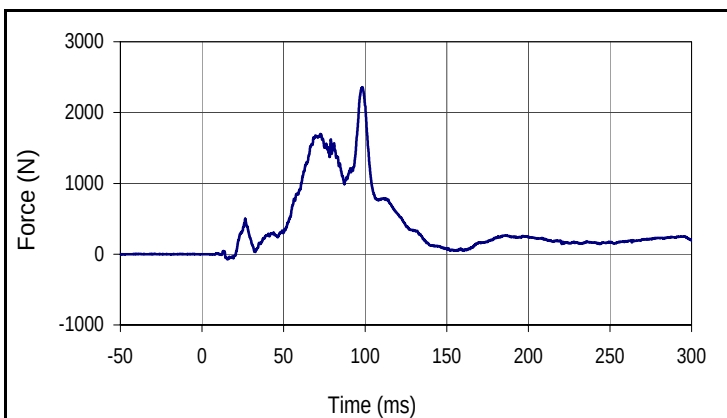
Curve Description			
V2P1 My on head acting through O.C joint only			
Plot No.		SAE Class	Units
261		600	Nm
Max	Time	Min	Time
3.0	281.0	-12.6	128.2



Curve Description			
V2P1 Fx on Head acting through total neck section			
Plot No.		SAE Class	Units
262		1000	N
Max	Time	Min	Time
125.2	235.8	-448.7	125.3



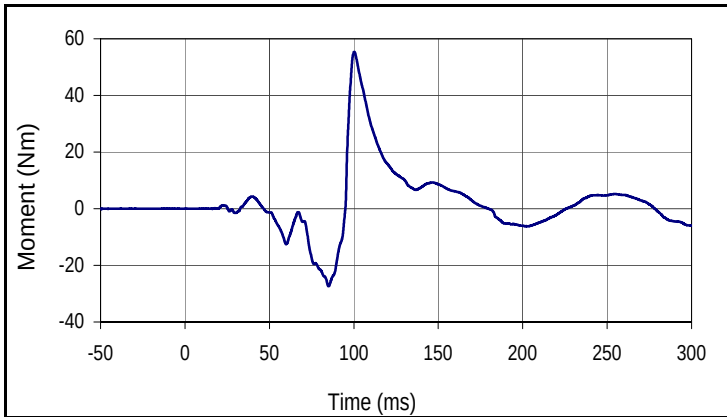
Curve Description			
V2P1 Fy on Head acting through total neck section			
Plot No.		SAE Class	Units
263		1000	N
Max	Time	Min	Time
407.4	88.8	-170.3	100.4



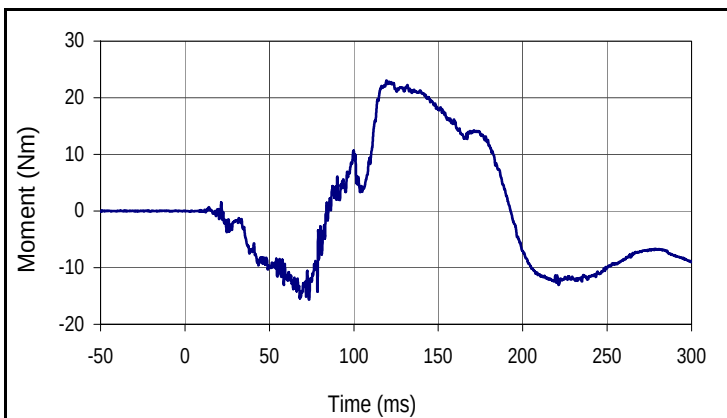
Curve Description			
V2P1 Fz on Head acting through total neck section			
Plot No.		SAE Class	Units
264		1000	N
Max	Time	Min	Time
2357.4	98.4	-74.4	15.7

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

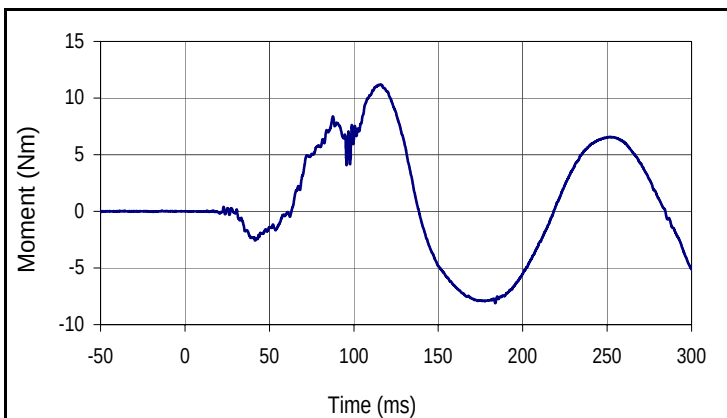
NHTSA No.: R20165412
 Test Date: 4/22/16



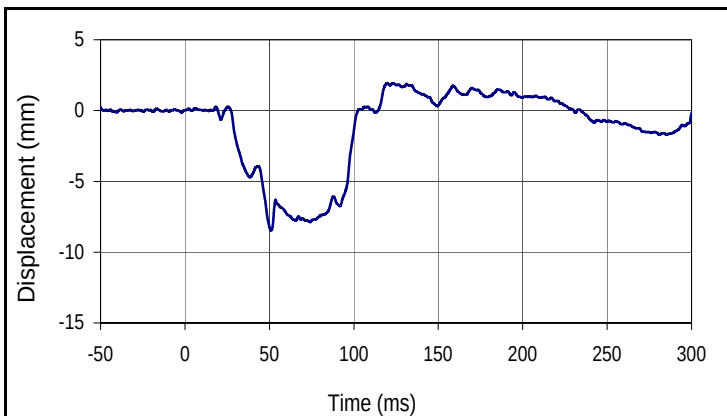
Curve Description			
V2P1 Mx on Head acting through total neck section			
Plot No.		SAE Class	Units
265		600	Nm
Max	Time	Min	Time
55.4	100.3	-27.4	85.1



Curve Description			
V2P1 My on Head acting through total neck section			
Plot No.		SAE Class	Units
266		600	Nm
Max	Time	Min	Time
23.1	119.4	-15.7	73.4



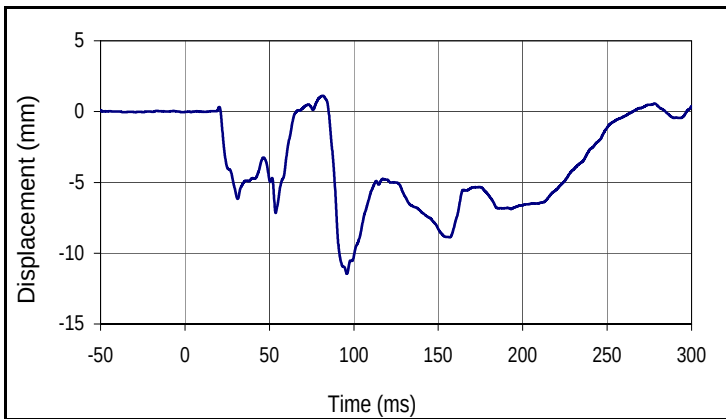
Curve Description			
V2P1 Mz on Head acting through total neck section			
Plot No.		SAE Class	Units
267		600	Nm
Max	Time	Min	Time
11.2	115.4	-8.1	183.8



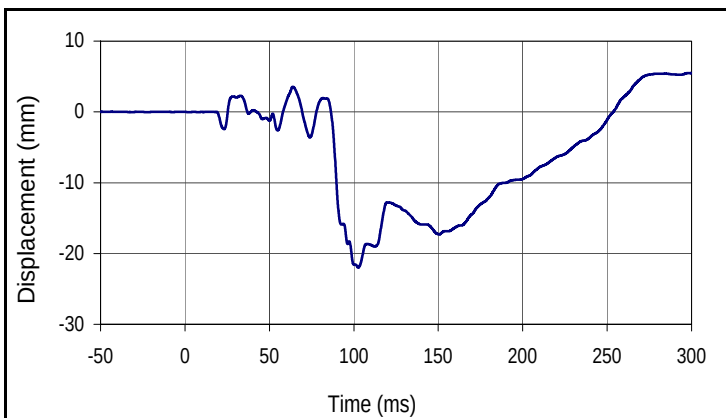
Curve Description			
V2P1 Chest Left Upper Dx			
Plot No.		SAE Class	Units
268		180	mm
Max	Time	Min	Time
1.9	119.7	-8.5	51.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

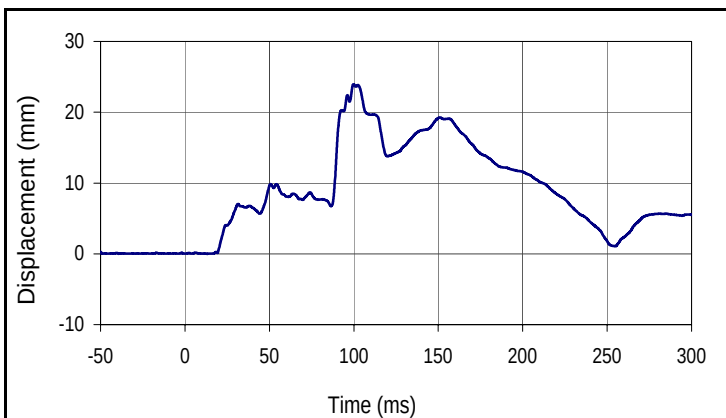
NHTSA No.: R20165412
 Test Date: 4/22/16



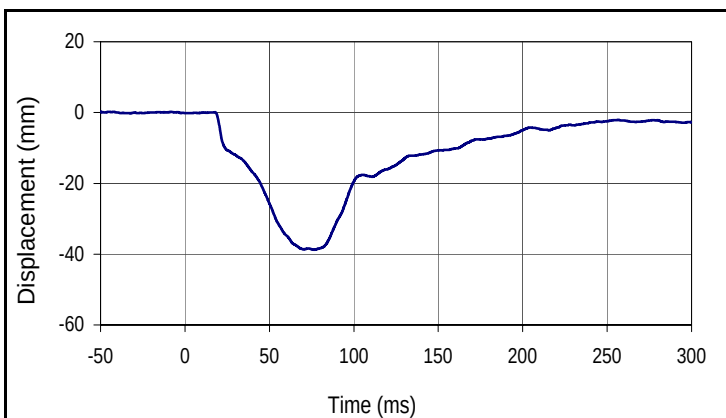
Curve Description			
V2P1 Chest Left Upper Dy			
Plot No.		SAE Class	Units
269		180	mm
Max	Time	Min	Time
1.1	81.7	-11.4	95.9



Curve Description			
V2P1 Chest Left Upper Dz			
Plot No.		SAE Class	Units
270		180	mm
Max	Time	Min	Time
5.5	299.4	-22.0	102.7



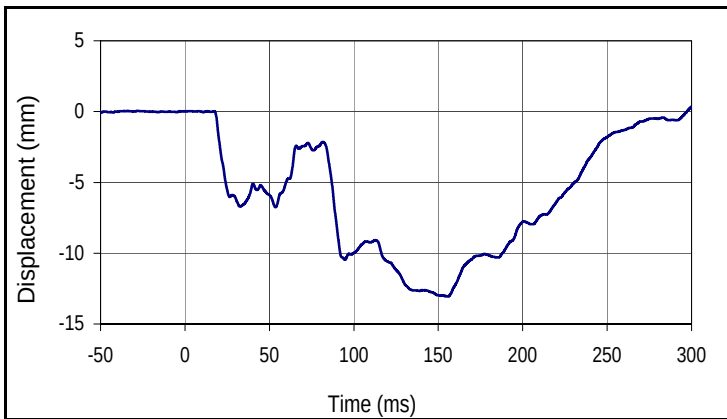
Curve Description			
V2P1 Chest Left Upper Resultant			
Plot No.		SAE Class	Units
271		180	mm
Max	Time	Min	Time
23.9	99.8	0.0	13.3



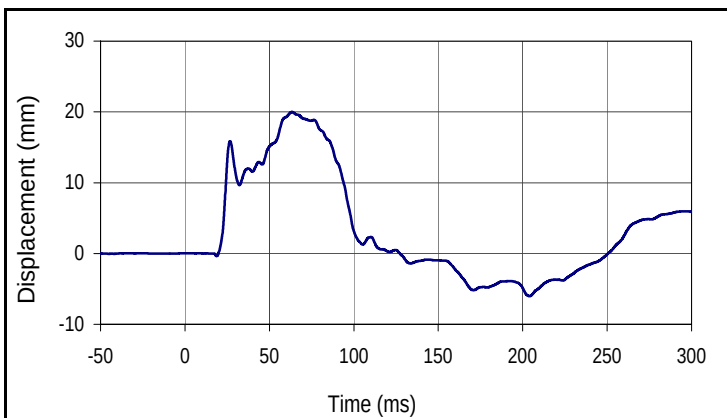
Curve Description			
V2P1 Chest Right Upper Dx			
Plot No.		SAE Class	Units
272		180	mm
Max	Time	Min	Time
0.2	-8.2	-38.7	76.6

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

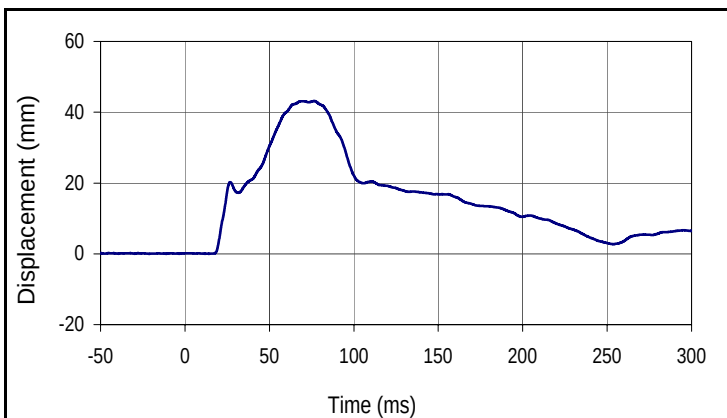
NHTSA No.: R20165412
 Test Date: 4/22/16



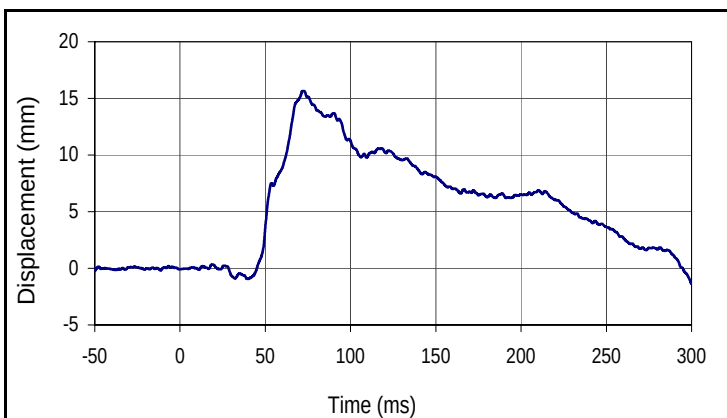
Curve Description			
V2P1 Chest Right Upper Dy			
Plot No.		SAE Class	Units
273		180	mm
Max	Time	Min	Time
0.3	299.9	-13.1	155.8



Curve Description			
V2P1 Chest Right Upper Dz			
Plot No.		SAE Class	Units
274		180	mm
Max	Time	Min	Time
20.0	63.4	-6.0	204.1



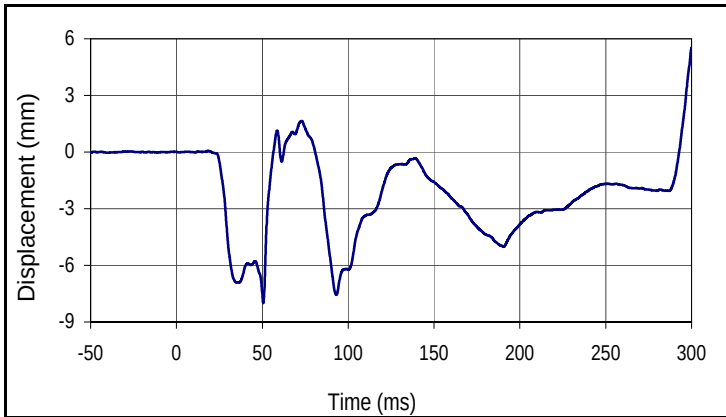
Curve Description			
V2P1 Chest Right Upper Resultant			
Plot No.		SAE Class	Units
275		180	mm
Max	Time	Min	Time
43.2	76.5	0.0	14.2



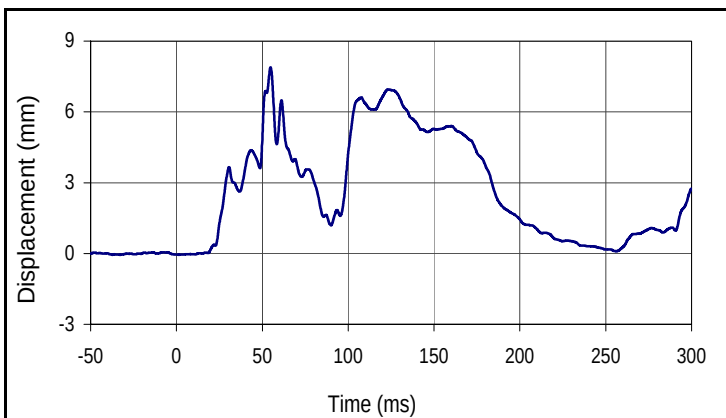
Curve Description			
V2P1 Chest Left Lower Dx			
Plot No.		SAE Class	Units
276		180	mm
Max	Time	Min	Time
15.7	72.8	-1.4	299.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

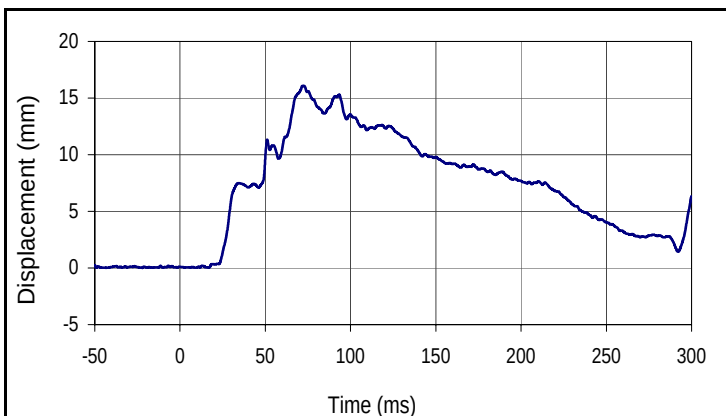
NHTSA No.: R20165412
 Test Date: 4/22/16



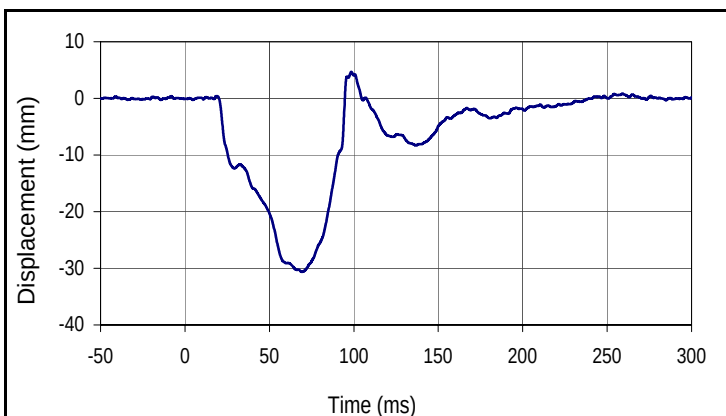
Curve Description			
V2P1 Chest Left Lower Dy			
Plot No.		SAE Class	Units
277		180	mm
Max	Time	Min	Time
5.5	299.9	-8.0	50.6



Curve Description			
V2P1 Chest Left Lower Dz			
Plot No.		SAE Class	Units
278		180	mm
Max	Time	Min	Time
7.9	54.8	-0.1	1.5



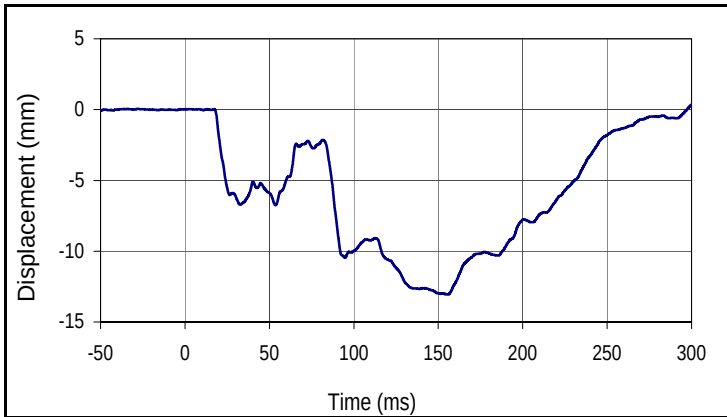
Curve Description			
V2P1 Chest Left Lower Resultant			
Plot No.		SAE Class	Units
279		180	mm
Max	Time	Min	Time
16.1	71.8	0.0	-10.3



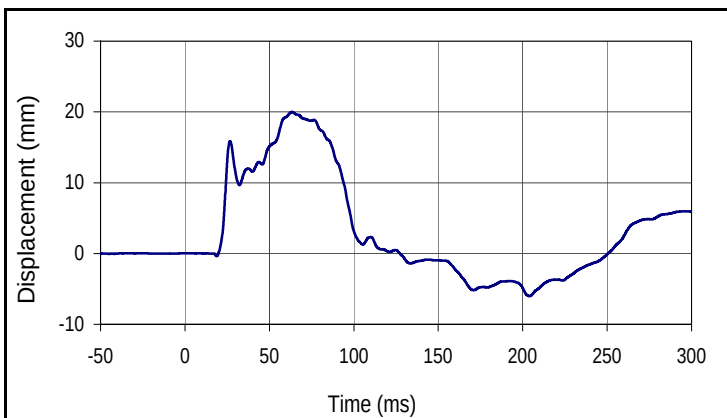
Curve Description			
V2P1 Chest Right Lower Dx			
Plot No.		SAE Class	Units
280		180	mm
Max	Time	Min	Time
4.7	98.5	-30.6	69.2

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

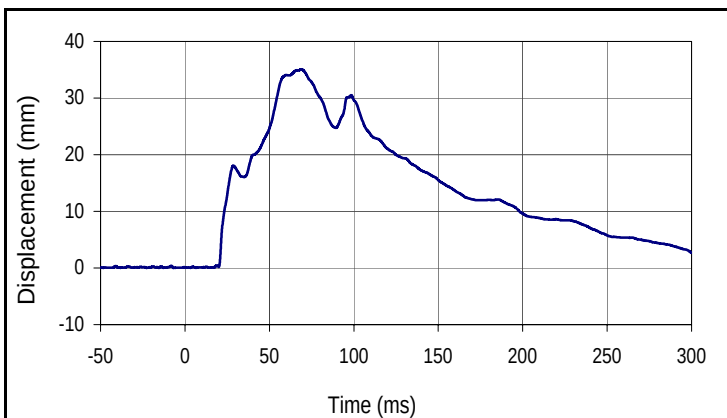
NHTSA No.: R20165412
 Test Date: 4/22/16



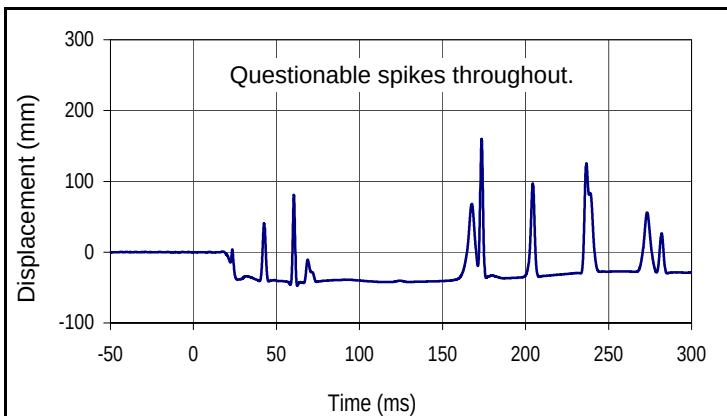
Curve Description			
V2P1 Chest Right Lower Dy			
Plot No.		SAE Class	Units
281		180	mm
Max	Time	Min	Time
0.3	299.9	-13.1	155.8



Curve Description			
V2P1 Chest Right Lower Dz			
Plot No.		SAE Class	Units
282		180	mm
Max	Time	Min	Time
20.0	63.4	-6.0	204.1



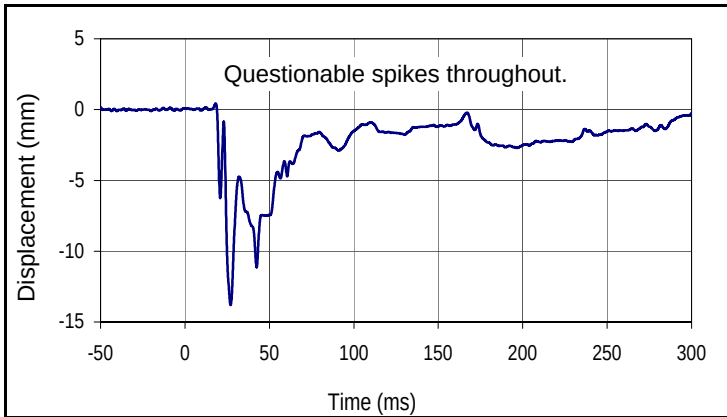
Curve Description			
V2P1 Chest Right Lower Resultant			
Plot No.		SAE Class	Units
283		180	mm
Max	Time	Min	Time
35.1	68.9	0.0	-15.5



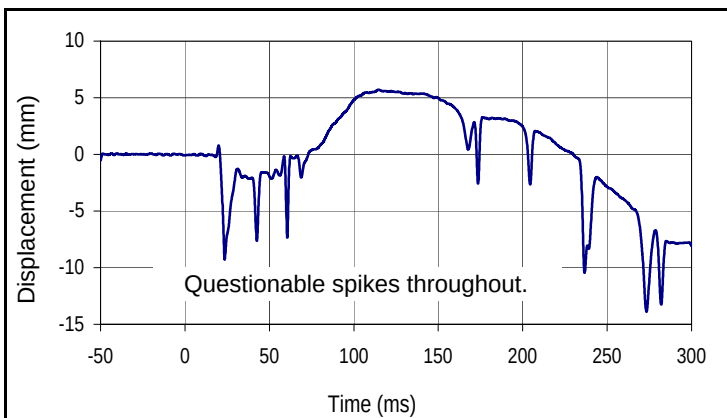
Curve Description			
V2P1 Abdomen Left Lower DX			
Plot No.		SAE Class	Units
284		180	mm
Max	Time	Min	Time
160.0	173.6	-47.5	62.5

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

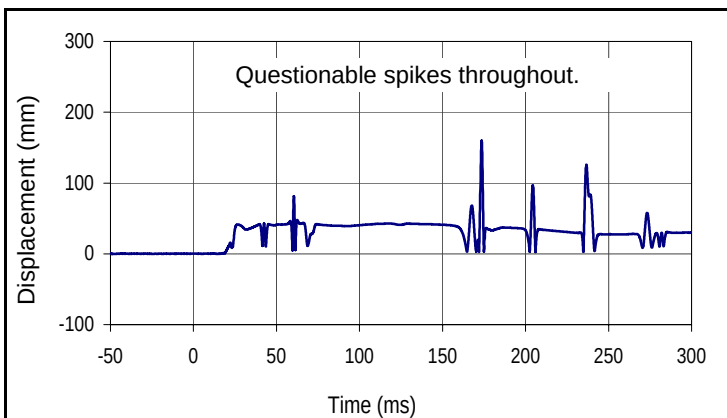
NHTSA No.: R20165412
 Test Date: 4/22/16



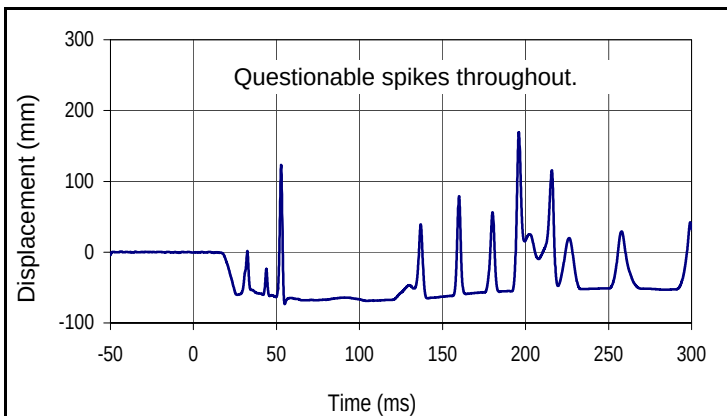
Curve Description			
V2P1 Adbomen Left Lower Dy			
Plot No.		SAE Class	Units
285		180	mm
Max	Time	Min	Time
0.4	18.3	-13.8	27.0



Curve Description			
V2P1 Abdomen Left Lower Dz			
Plot No.		SAE Class	Units
286		180	mm
Max	Time	Min	Time
5.7	114.7	-13.9	273.3



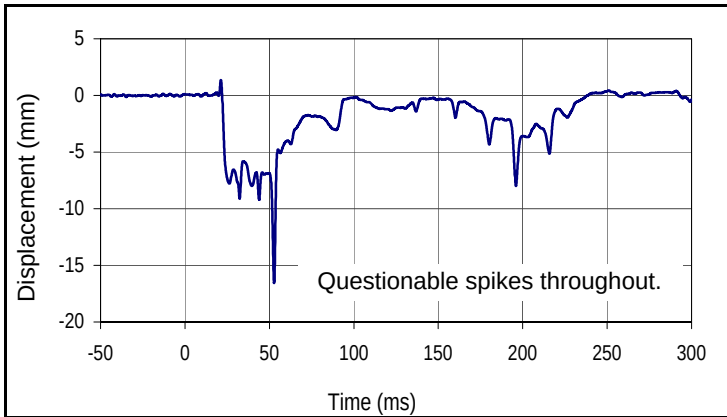
Curve Description			
V2P1 Abdomen Left Lower Resultant			
Plot No.		SAE Class	Units
287		180	mm
Max	Time	Min	Time
160.0	173.6	0.0	10.4



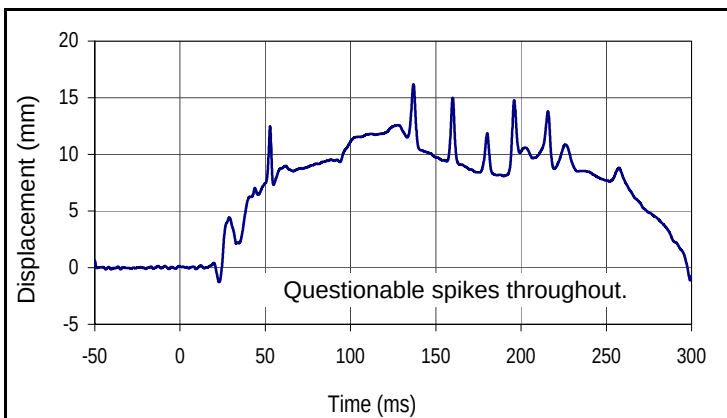
Curve Description			
V2P1 Abdomen Right Lower Dx			
Plot No.		SAE Class	Units
288		180	mm
Max	Time	Min	Time
169.5	196.0	-73.1	55.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

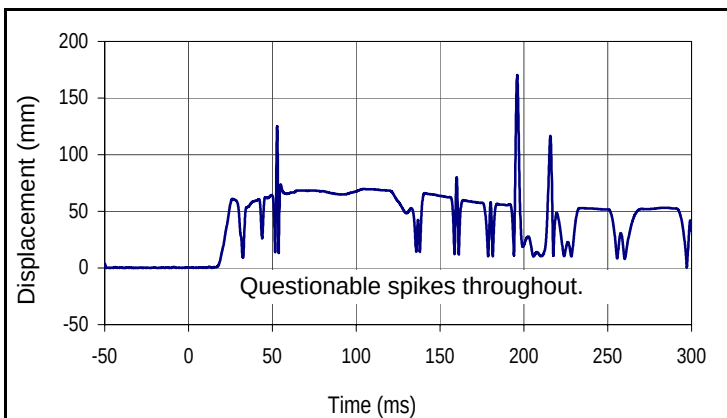
NHTSA No.: R20165412
 Test Date: 4/22/16



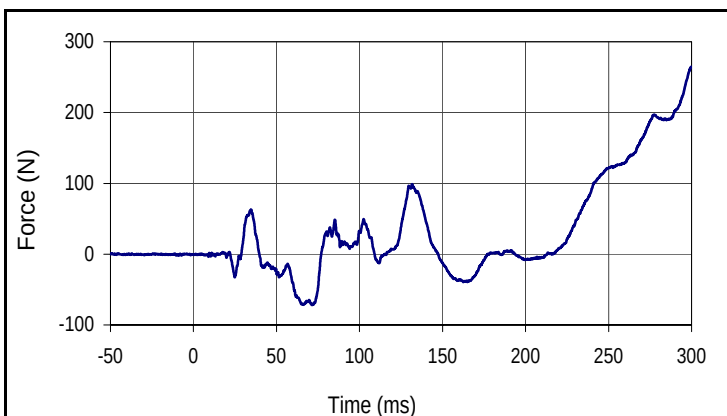
Curve Description			
V2P1 Abdomen Right Lower Dy			
Plot No.		SAE Class	Units
289		180	mm
Max	Time	Min	Time
1.4	21.3	-16.5	52.8



Curve Description			
V2P1 Abdomen Right Lower Dz			
Plot No.		SAE Class	Units
290		180	mm
Max	Time	Min	Time
16.2	136.9	-1.3	23.0



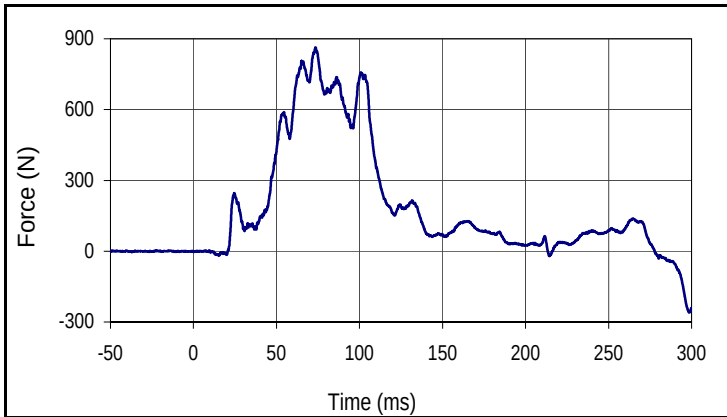
Curve Description			
V2P1 Abdomen Right Lower Resultant			
Plot No.		SAE Class	Units
291		180	mm
Max	Time	Min	Time
170.4	196.0	0.0	-11.5



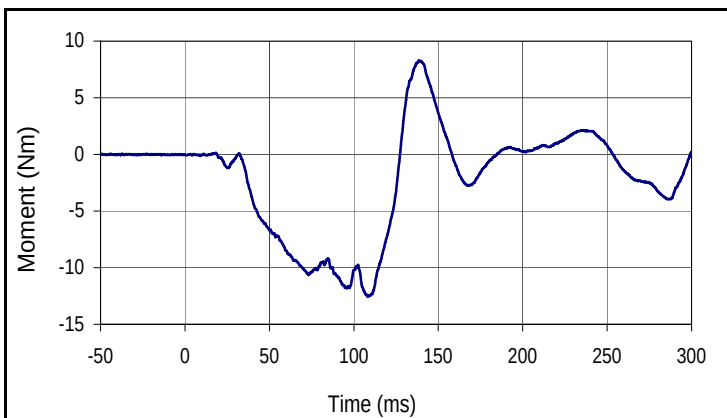
Curve Description			
V2P2 Fx on head acting through O.C joint only			
Plot No.		SAE Class	Units
292		1000	N
Max	Time	Min	Time
264.8	299.9	-71.8	71.4

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

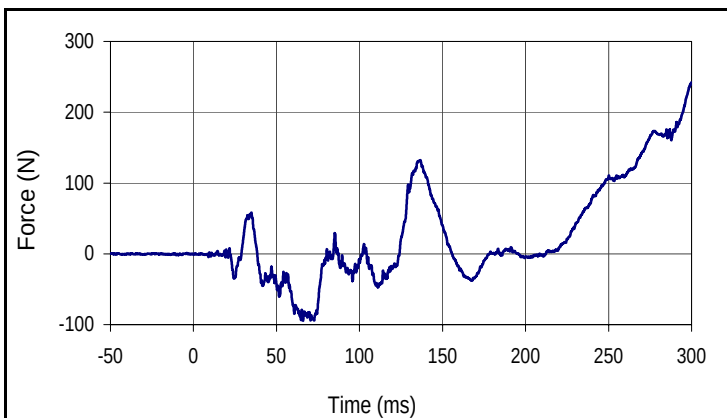
NHTSA No.: R20165412
 Test Date: 4/22/16



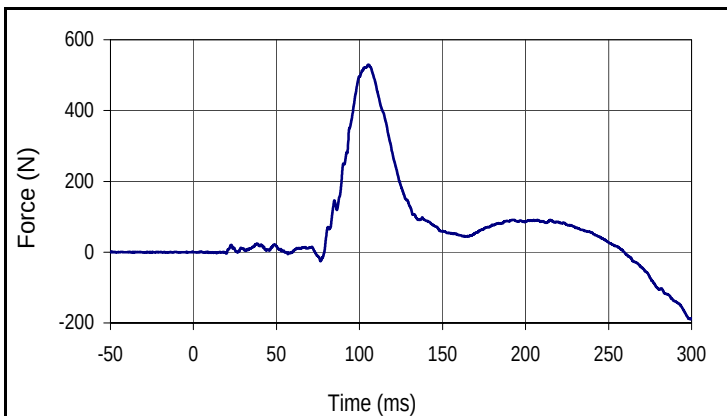
Curve Description			
V2P2 Fz on head acting through O.C joint only			
Plot No.		SAE Class	Units
293		1000	N
Max	Time	Min	Time
863.7	73.6	-258.9	298.6



Curve Description			
V2P2 My on head acting through O.C joint only			
Plot No.		SAE Class	Units
294		600	Nm
Max	Time	Min	Time
8.3	138.6	-12.6	108.1



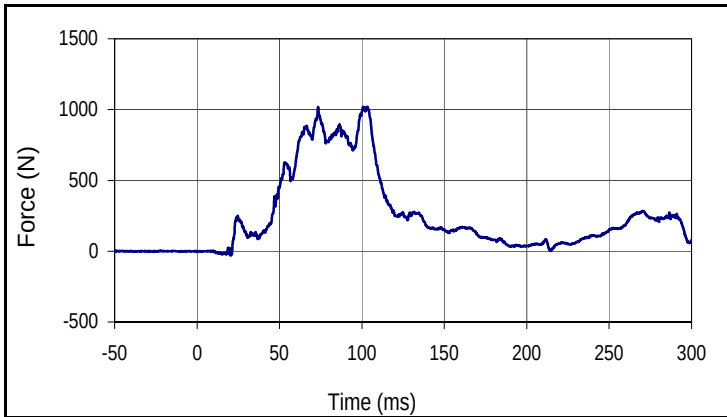
Curve Description			
V2P2 Fx on Head acting through total neck section			
Plot No.		SAE Class	Units
295		1000	N
Max	Time	Min	Time
242.0	299.9	-94.5	66.0



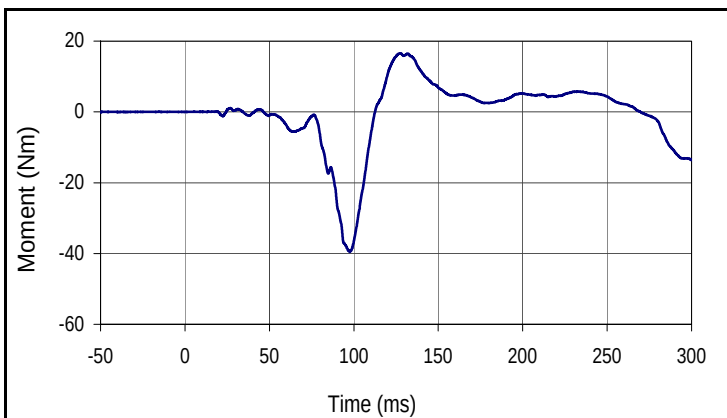
Curve Description			
V2P2 Fy on Head acting through total neck section			
Plot No.		SAE Class	Units
296		1000	N
Max	Time	Min	Time
529.3	105.4	-188.8	298.9

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

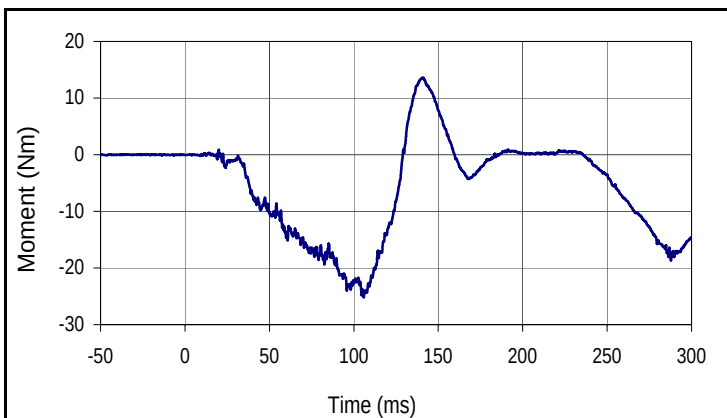
NHTSA No.: R20165412
 Test Date: 4/22/16



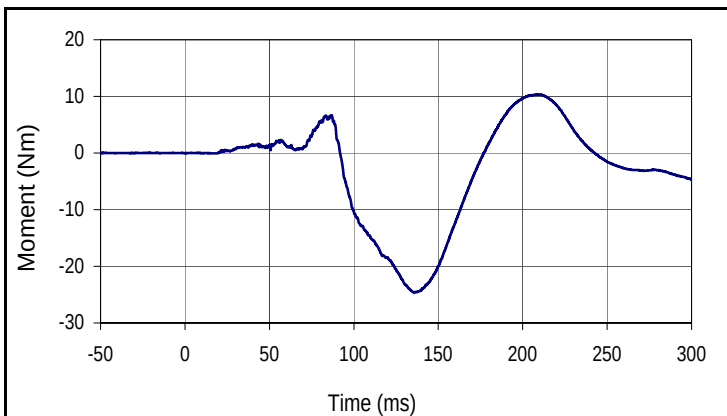
Curve Description			
V2P2 Fz on Head acting through total neck section			
Plot No.		SAE Class	Units
297		1000	N
Max	Time	Min	Time
1018.9	73.5	-29.0	20.2



Curve Description			
V2P2 Mx on Head acting through total neck section			
Plot No.		SAE Class	Units
298		600	Nm
Max	Time	Min	Time
16.6	127.7	-39.6	97.6



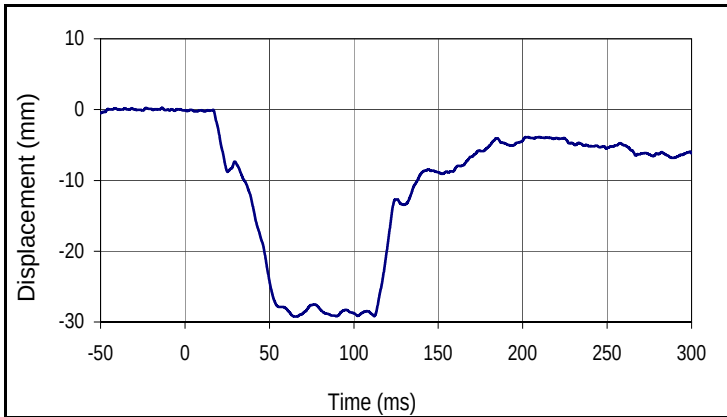
Curve Description			
V2P2 Mz on Head acting through total neck section			
Plot No.		SAE Class	Units
299		600	Nm
Max	Time	Min	Time
13.6	140.9	-25.2	105.8



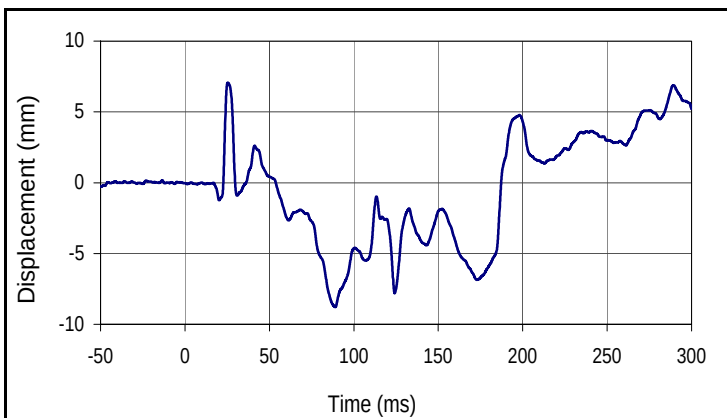
Curve Description			
V2P2 My on Head acting through total neck section			
Plot No.		SAE Class	Units
300		600	Nm
Max	Time	Min	Time
10.3	208.8	-24.6	135.4

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

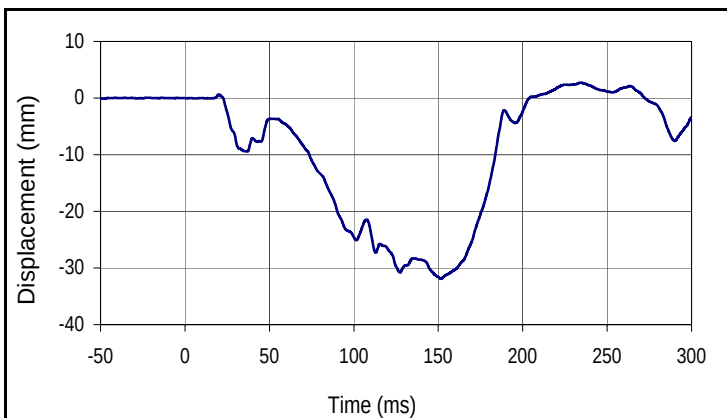
NHTSA No.: R20165412
 Test Date: 4/22/16



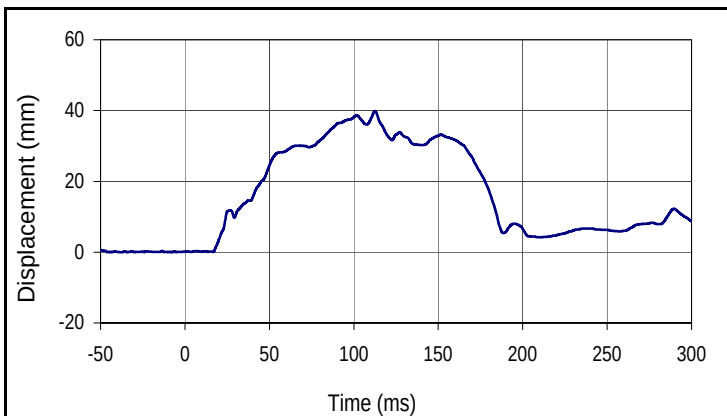
Curve Description			
V2P2 Chest Left Upper Dx			
Plot No.		SAE Class	Units
301		180	mm
Max	Time	Min	Time
0.3	-13.5	-29.2	65.3



Curve Description			
V2P2 Chest Left Upper Dy			
Plot No.		SAE Class	Units
302		180	mm
Max	Time	Min	Time
7.1	25.4	-8.8	89.0



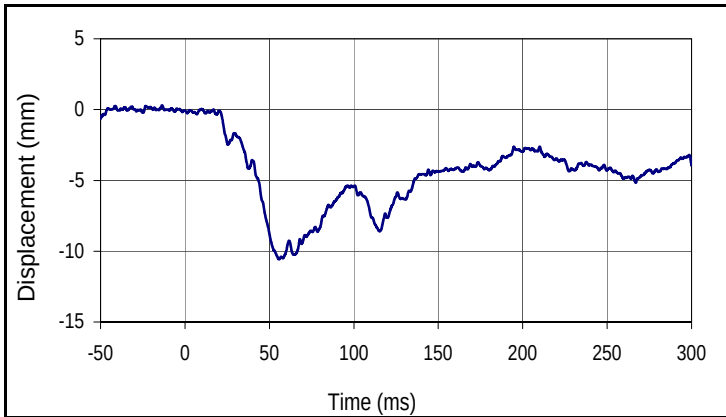
Curve Description			
V2P2 Chest Left Upper Dz			
Plot No.		SAE Class	Units
303		180	mm
Max	Time	Min	Time
2.7	234.5	-31.9	151.6



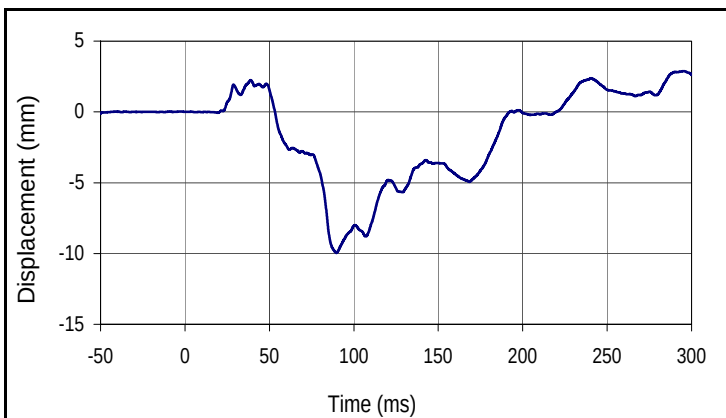
Curve Description			
V2P2 Chest Left Upper Resultant			
Plot No.		SAE Class	Units
304		180	mm
Max	Time	Min	Time
39.9	112.6	0.0	-12.4

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

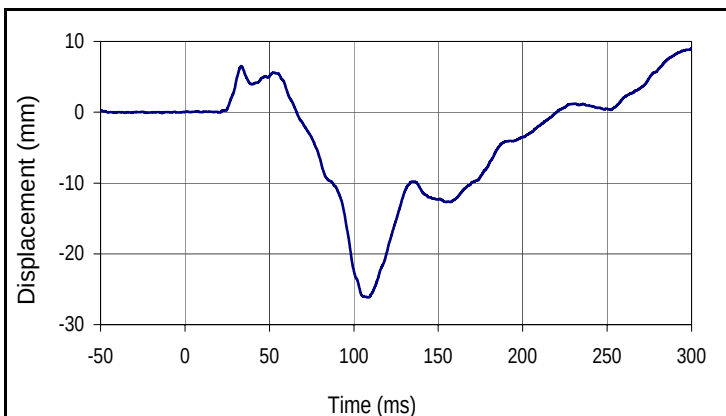
NHTSA No.: R20165412
 Test Date: 4/22/16



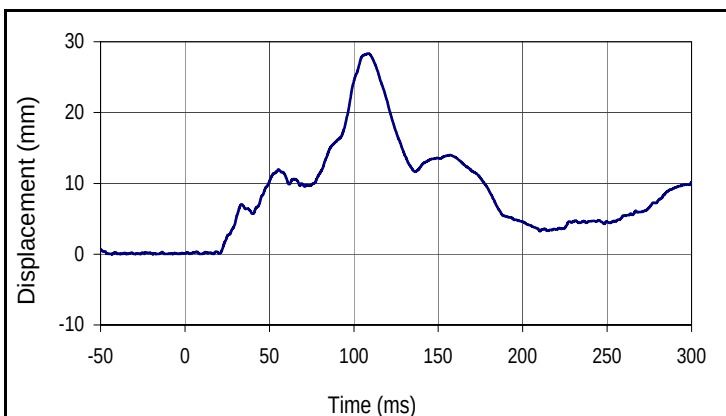
Curve Description			
V2P2 Chest Right Upper Dx			
Plot No.		SAE Class	Units
305		180	mm
Max	Time	Min	Time
0.3	-13.6	-10.6	55.5



Curve Description			
V2P2 Chest Right Upper Dy			
Plot No.		SAE Class	Units
306		180	mm
Max	Time	Min	Time
2.9	295.5	-10.0	89.6



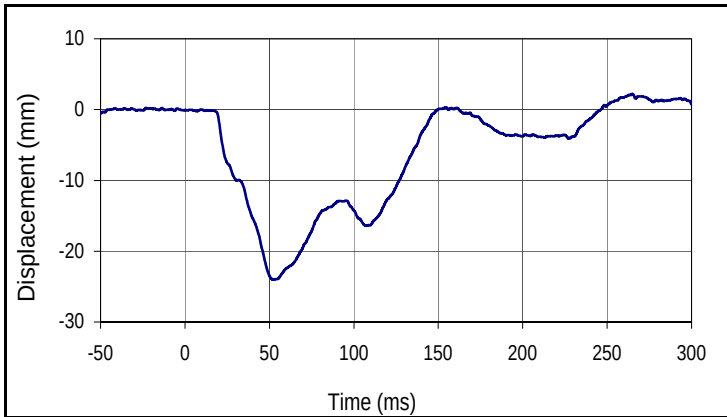
Curve Description			
V2P2 Chest Right Upper Dz			
Plot No.		SAE Class	Units
307		180	mm
Max	Time	Min	Time
9.1	299.9	-26.2	108.3



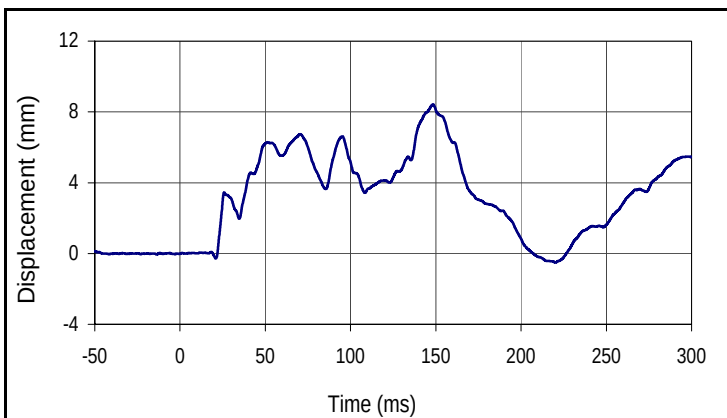
Curve Description			
V2P2 Chest Right Upper Resultant			
Plot No.		SAE Class	Units
308		180	mm
Max	Time	Min	Time
28.3	108.6	0.0	-7.2

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

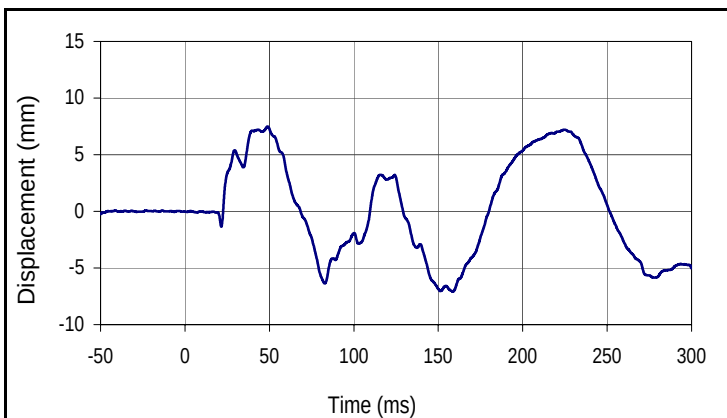
NHTSA No.: R20165412
 Test Date: 4/22/16



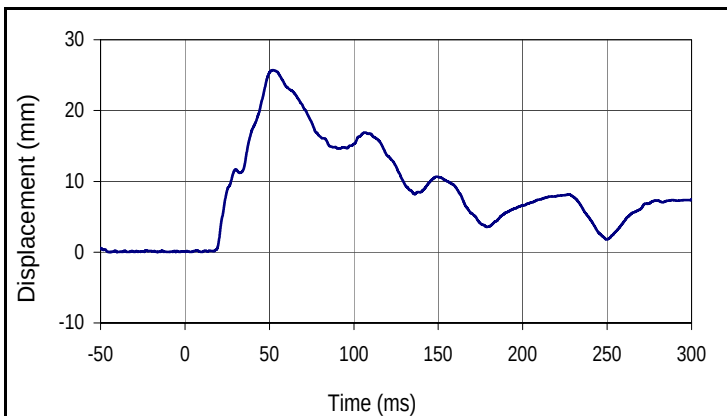
Curve Description			
V2P2 Chest Left Lower Dx			
Plot No.		SAE Class	Units
309		180	mm
Max	Time	Min	Time
2.2	265.0	-24.0	52.3



Curve Description			
V2P2 Chest Left Lower Dy			
Plot No.		SAE Class	Units
310		180	mm
Max	Time	Min	Time
8.4	148.3	-0.5	220.2



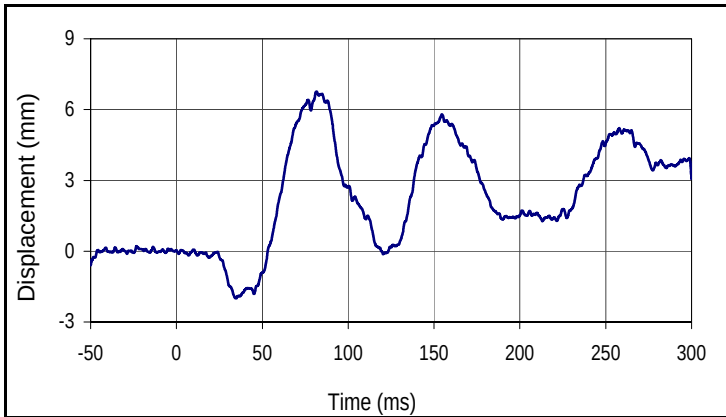
Curve Description			
V2P2 Chest Left Lower Dz			
Plot No.		SAE Class	Units
311		180	mm
Max	Time	Min	Time
7.5	49.0	-7.1	158.7



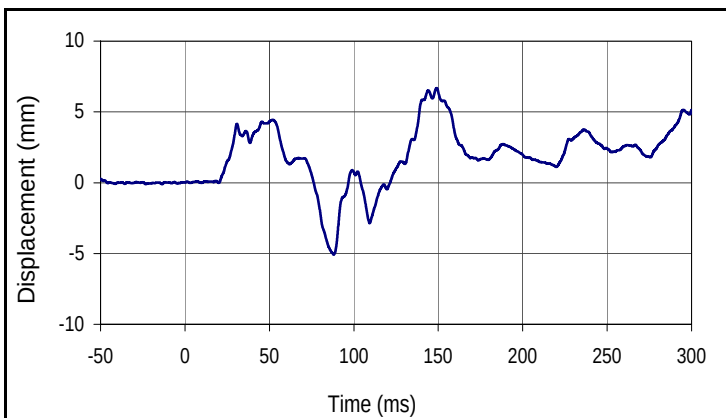
Curve Description			
V2P2 Chest Left Lower Resultant			
Plot No.		SAE Class	Units
312		180	mm
Max	Time	Min	Time
25.7	52.1	0.0	-16.1

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

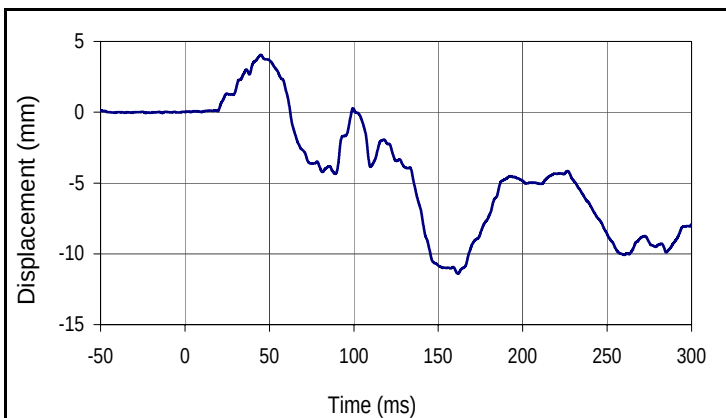
NHTSA No.: R20165412
 Test Date: 4/22/16



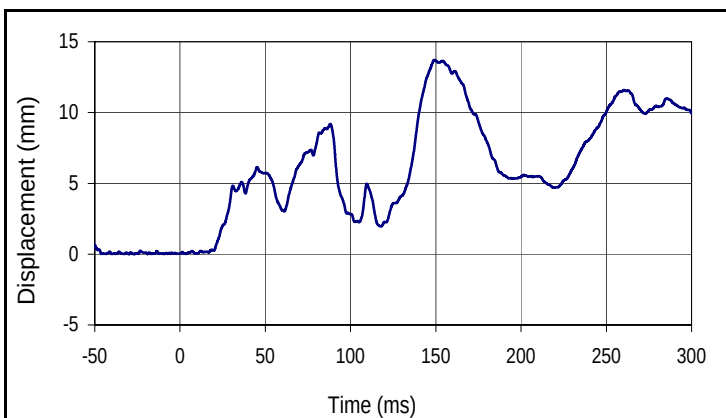
Curve Description			
V2P2 Chest Right Lower Dx			
Plot No.		SAE Class	Units
313		180	mm
Max	Time	Min	Time
6.8	81.5	-2.0	34.8



Curve Description			
V2P2 Chest Right Lower Dy			
Plot No.		SAE Class	Units
314		180	mm
Max	Time	Min	Time
6.7	149.1	-5.1	88.1



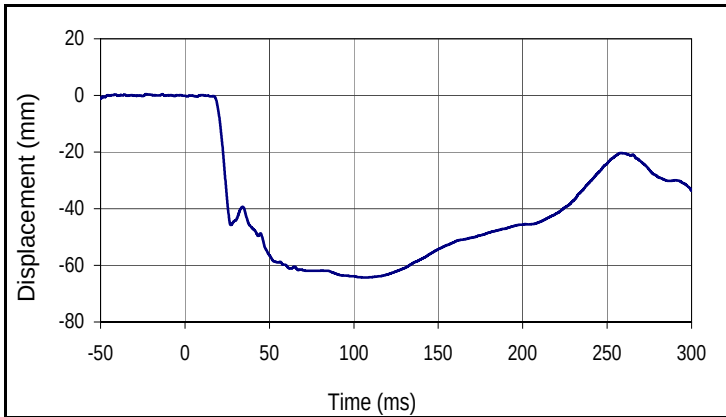
Curve Description			
V2P2 Chest Right Lower Dz			
Plot No.		SAE Class	Units
315		180	mm
Max	Time	Min	Time
4.1	44.9	-11.4	161.6



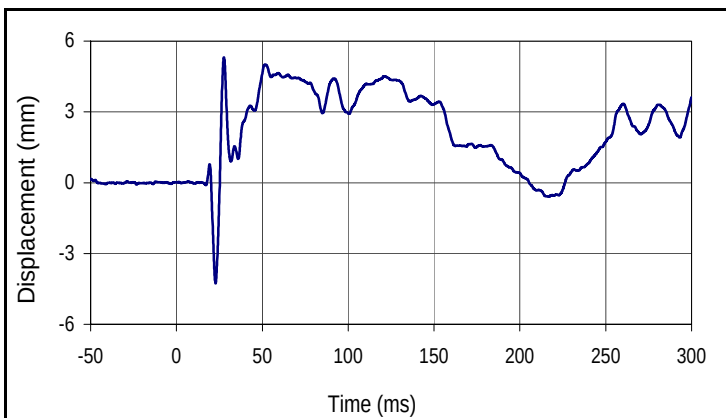
Curve Description			
V2P2 Chest Right Lower Resultant			
Plot No.		SAE Class	Units
316		180	mm
Max	Time	Min	Time
13.7	149.3	0.0	-19.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

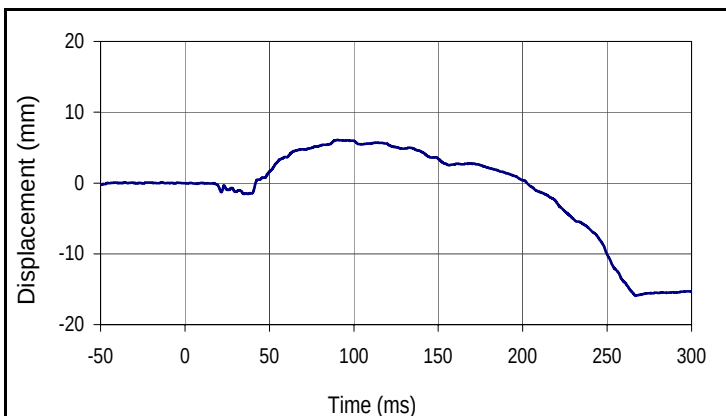
NHTSA No.: R20165412
 Test Date: 4/22/16



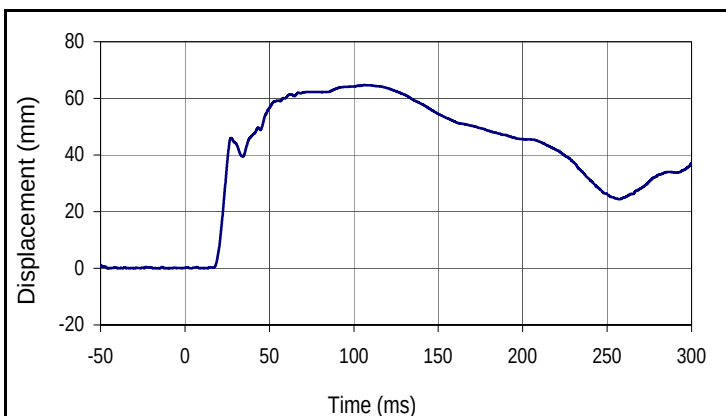
Curve Description			
V2P2 Abdomen Left Lower Dx			
Plot No.		SAE Class	Units
317		180	mm
Max	Time	Min	Time
0.4	-13.5	-64.3	105.8



Curve Description			
V2P2 Abdomen Left Lower Dy			
Plot No.		SAE Class	Units
318		180	mm
Max	Time	Min	Time
5.3	27.6	-4.3	22.8



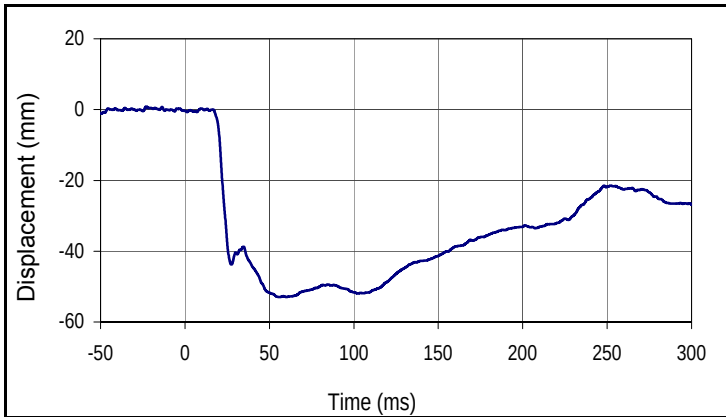
Curve Description			
V2P2 Abdomen Left Lower Dz			
Plot No.		SAE Class	Units
319		180	mm
Max	Time	Min	Time
6.1	90.5	-15.9	267.0



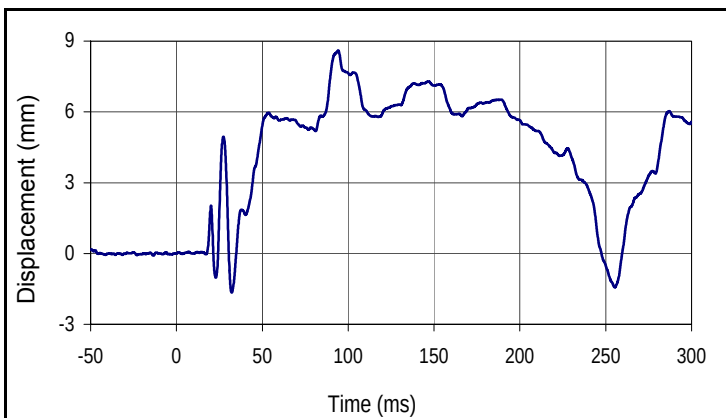
Curve Description			
V2P2 Abdomen Left Lower Resultant			
Plot No.		SAE Class	Units
320		180	mm
Max	Time	Min	Time
64.7	106.6	0.0	4.0

Test Vehicle: 2016 Mazda CX-5
 Test Program: NHTSA R&D Left Oblique Offset 15deg/35%

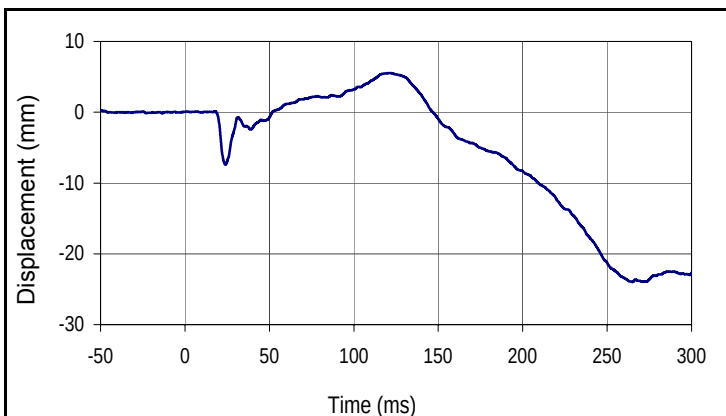
NHTSA No.: R20165412
 Test Date: 4/22/16



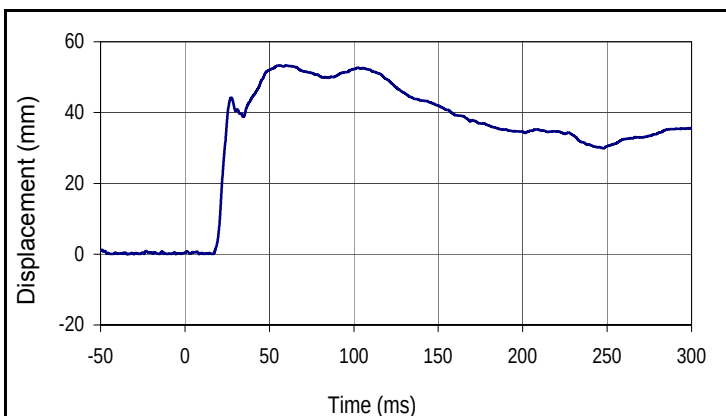
Curve Description			
V2P2 Abdomen Right Lower Dx			
Plot No.		SAE Class	Units
321		180	mm
Max	Time	Min	Time
0.8	-13.6	-53.0	56.4



Curve Description			
V2P2 Abdomen Right Lower Dy			
Plot No.		SAE Class	Units
322		180	mm
Max	Time	Min	Time
8.6	94.2	-1.7	32.2



Curve Description			
V2P2 Abdomen Right Lower Dz			
Plot No.		SAE Class	Units
323		180	mm
Max	Time	Min	Time
5.5	120.9	-24.0	264.9



Curve Description			
V2P2 Abdomen Right Lower Resultant			
Plot No.		SAE Class	Units
324		180	mm
Max	Time	Min	Time
53.3	56.4	0.0	-5.3

APPENDIX C
DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA SHEETS

APPENDIX C

Dummy Calibration Data

Table C-1 : Dummy Information

Type	Serial Number
Thor 50th Male	DO9798
Thor 50th Male	DL9207

Table C-2: THOR Ankle Zero Offset Information

Thor 50th Male S/N DO9798					
LFTX	LFTY	LFTZ	RFTX	RFTY	RFTZ
Left Ankle X	Left Ankle Y	Left Ankle Z	Right Ankle X	Right Ankle Y	Right Ankle Z
2.400	-13.500	24.700	3.500	-13.800	-39.120

Thor 50th Male S/N DL9207					
LFTX	LFTY	LFTZ	RFTX	RFTY	RFTZ
Left Ankle X	Left Ankle Y	Left Ankle Z	Right Ankle X	Right Ankle Y	Right Ankle Z
-0.490	-12.260	-44.000	1.580	-13.300	-41.900

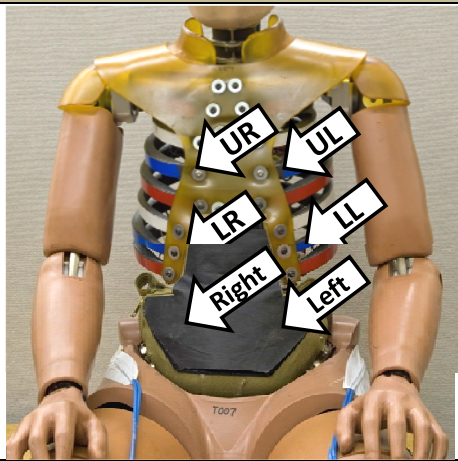
Sensor Location	Axis	Measurement	Manufacturer	Model Number	Serial Number	Rated Full Scale	Sensitivity	Sensitivity Units
Head CG	X	Linear Acceleration	Endevco	7264	P52001	2000	0.019660000	mV/V/g
Head CG	Y	Linear Acceleration	Endevco	7264	P51697	2000	0.022130000	mV/V/g
Head CG	Z	Linear Acceleration	Endevco	7264	P75155	2000	0.017940000	mV/V/g
Head	X	Rotational Acceleration	DTS	ARS 18k	ARS6733	18k	0.094300000	mV/deg/sec
Head	Y	Rotational Acceleration	DTS	ARS 18k	ARS4071	18k	0.093090000	mV/deg/sec
Head	Z	Rotational Acceleration	DTS	ARS 18k	ARS4719	18k	0.093040000	mV/deg/sec
Occipital Condyle	Y	Rotational Displacement	Sternice	9945	DK5913	180	3.045160000	mV/V/deg
Neck Spring Front	Z	Force	Humanetics	6005JFL	93	4448.22	0.000524209	mV/V/N
Neck Spring Rear	Z	Force	Humanetics	6005JFL	132	4448.20	0.000484300	mV/V/N
Upper Neck	X	Force	Humanetics	10380J14	DS9758	8896.4	0.000232948	mV/V/N
Upper Neck	Y	Force	Humanetics	10380J14	DS9758	8896.4	0.000230385	mV/V/N
Upper Neck	Z	Force	Humanetics	10380J14	DS9758	13344.7	0.000087038	mV/V/N
Upper Neck	X	Moment	Humanetics	10380J14	DS9758	282.5	0.005889558	mV/V/Nm
Upper Neck	Y	Moment	Humanetics	10380J14	DS9758	282.5	0.005962478	mV/V/Nm
Upper Neck	Z	Moment	Humanetics	10380J14	DS9758	282.5	0.009477876	mV/V/Nm
Lower Neck	X	Force	Humanetics	10381J14	DK3607	13344.7	0.000168500	mV/V/N
Lower Neck	Y	Force	Humanetics	10381J14	DK3607	13344.7	0.000168700	mV/V/N
Lower Neck	Z	Force	Humanetics	10381J14	DK3607	13344.7	0.000068800	mV/V/N
Lower Neck	X	Moment	Humanetics	10381J14	DK3607	451.9	0.004012500	mV/V/Nm
Lower Neck	Y	Moment	Humanetics	10381J14	DK3607	451.9	0.004072100	mV/V/Nm
Lower Neck	Z	Moment	Humanetics	10381J14	DK3607	226.0	0.006723800	mV/V/Nm
T1	X	Linear Acceleration	Endevco	7264	P63843	2000	0.023560000	mV/V/g
T1	Y	Linear Acceleration	Endevco	7264	P52008	2000	0.018940000	mV/V/g
T1	Z	Linear Acceleration	Endevco	7264	P51636	2000	0.021720000	mV/V/g
T6	X	Linear Acceleration	Endevco	7264	P75156	2000	0.018200000	mV/V/g
T6	Y	Linear Acceleration	Endevco	7264	P84363	2000	0.019810000	mV/V/g
T6	Z	Linear Acceleration	Endevco	7264	P51715	2000	0.017920000	mV/V/g
Thorax UL	X	Displacement	Humanetics	IF-364-C-R3	DQ2255	87	31.685400000	mm/V
Thorax UL	Y	Rotational Displacement	Sternice	9945	DM4779	150	3.039700000	mV/V/deg
Thorax UL	Z	Rotational Displacement	Sternice	9945	DM4778	150	3.047000000	mV/V/deg
Thorax UR	X	Displacement	Humanetics	IF-364-C-R3	DQ2254	87	30.649300000	mm/V
Thorax UR	Y	Rotational Displacement	Sternice	9945	DM4774	150	3.041200000	mV/V/deg
Thorax UR	Z	Rotational Displacement	Sternice	9945	DM4775	150	3.062600000	mV/V/deg
Thorax LL	X	Displacement	Humanetics	IF-364-C-R3	DK3866	87	30.525600000	mm/V
Thorax LL	Y	Rotational Displacement	Sternice	9945	DJ5455	150	3.047000000	mV/V/deg
Thorax LL	Z	Rotational Displacement	Sternice	9945	DJ5454	150	3.051300000	mV/V/deg
Thorax LR	X	Displacement	Humanetics	IF-364-C-R3	DK3865	87	28.983900000	mm/V
Thorax LR	Y	Rotational Displacement	Sternice	9945	DJ5453	150	3.059300000	mV/V/deg
Thorax LR	Z	Rotational Displacement	Sternice	9945	DJ5452	150	3.050600000	mV/V/deg
Abdomen Right	X	Displacement	Humanetics	9910	DI4779	117	36.574900000	mm/V
Abdomen Right	Y	Rotational Displacement	Sternice	9945	DJ5445	60	3.059600000	mV/V/deg
Abdomen Right	Z	Rotational Displacement	Sternice	9945	DJ5446	30	3.072100000	mV/V/deg
Abdomen Left	X	Displacement	Humanetics	9910	183	117	35.438500000	mm/V
Abdomen Left	Y	Rotational Displacement	Sternice	9945	DJ5443	60	3.029500000	mV/V/deg
Abdomen Left	Z	Rotational Displacement	Sternice	9945	DJ5444	30	2.990900000	mV/V/deg
T12	X	Force	Humanetics	10415J14	DQ5600	13344.7	0.000146140	mV/V/N
T12	Y	Force	Humanetics	10415J14	DQ5600	13344.7	0.000145676	mV/V/N
T12	Z	Force	Humanetics	10415J14	DQ5600	17792.9	0.000060665	mV/V/N
T12	X	Moment	Humanetics	10415J14	DQ5600	677.9	0.002202095	mV/V/Nm
T12	Y	Moment	Humanetics	10415J14	DQ5600	903.9	0.001909614	mV/V/Nm
Acetabulum RT	X	Force	Humanetics	10670J14	DL9552	22241.1	0.000118254	mV/V/N
Acetabulum RT	Y	Force	Humanetics	10670J14	DL9552	13344.7	0.000060024	mV/V/N
Acetabulum RT	Z	Force	Humanetics	10670J14	DL9552	13344.7	0.000160828	mV/V/N
Acetabulum LT	X	Force	Humanetics	10530J14	DM1945	22241.2	0.000119449	mV/V/N
Acetabulum LT	Y	Force	Humanetics	10530J14	DM1945	13344.7	0.000060451	mV/V/N
Acetabulum LT	Z	Force	Humanetics	10530J14	DM1945	13344.7	0.000163750	mV/V/N
Left Femur	X	Force	Humanetics	W50-71010	DK0842	15000	0.000143527	mV/V/N
Left Femur	Y	Force	Humanetics	W50-71010	DK0842	15000	0.000143547	mV/V/N
Left Femur	Z	Force	Humanetics	W50-71010	DK0842	15000	0.000072553	mV/V/N
Left Femur	X	Moment	Humanetics	W50-71010	DK0842	350	0.006399714	mV/V/Nm
Left Femur	Y	Moment	Humanetics	W50-71010	DK0842	350	0.006497429	mV/V/Nm
Left Femur	Z	Moment	Humanetics	W50-71010	DK0842	300	0.009042333	mV/V/Nm
Right Femur	X	Force	Humanetics	W50-71010	DK3608	15000	0.000144093	mV/V/N
Right Femur	Y	Force	Humanetics	W50-71010	DK3608	15000	0.000144113	mV/V/N
Right Femur	Z	Force	Humanetics	W50-71010	DK3608	15000	0.000072907	mV/V/N
Right Femur	X	Moment	Humanetics	W50-71010	DK3608	350	0.006456857	mV/V/Nm
Right Femur	Y	Moment	Humanetics	W50-71010	DK3608	350	0.006419143	mV/V/Nm

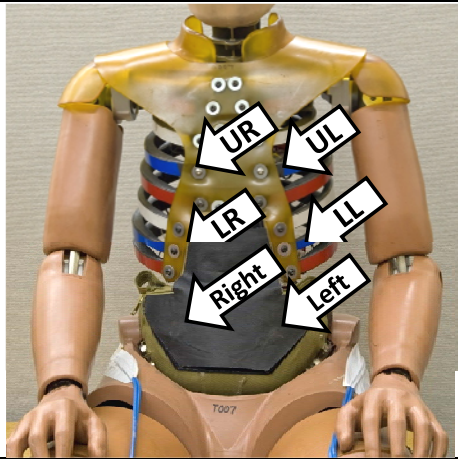
Sensor Location	Axis	Measurement	Manufacturer	Model Number	Serial Number	Rated Full Scale	Sensitivity	Sensitivity Units
Right Femur	Z	Moment	Humanetics	W50-71010	DK3608	300	0.009165667	mV/V/Nm
ASIS Left	X	Force	Humanetics	9490JFL	77	13000	0.000068500	mV/V/N
ASIS Left	Y	Moment	Humanetics	9490JFL	77	325	0.003816615	mV/V/Nm
ASIS Right	X	Force	Humanetics	9490JFL	DJ5524	13000	0.000071238	mV/V/N
ASIS Right	Y	Moment	Humanetics	9490JFL	DJ5524	325	0.003790769	mV/V/Nm
Pelvis	X	Linear Acceleration	Endevco	7264	P58747	2000	0.018510000	mV/V/g
Pelvis	Y	Linear Acceleration	Endevco	7264	P52004	2000	0.021010000	mV/V/g
Pelvis	Z	Linear Acceleration	Endevco	7264	P71875	2000	0.020680000	mV/V/g
Upper Tibia	Z	Force	Denton	10390J14	DQ5734	11100.0	0.0000954	mv/v/N
Upper Tibia	X	Moment	Denton	10390J14	DQ5734	395.4	0.0074627	mv/v/Nm
Upper Tibia	Y	Moment	Denton	10390J14	DQ5734	395.4	0.0075024	mv/v/Nm
Lower Tibia	X	Force	Denton	9329J	DQ9684	11120.5	0.0001773	mv/v/N
Lower Tibia	Y	Force	Denton	9329J	DQ9684	11120.5	0.0001749	mv/v/N
Lower Tibia	Z	Force	Denton	9329J	DQ9684	11120.5	0.0000976	mv/v/N
Lower Tibia	X	Moment	Denton	9329J	DQ9684	395.4	0.0076980	mv/v/Nm
Lower Tibia	Y	Moment	Denton	9329J	DQ9684	395.4	0.0076547	mv/v/Nm
Ankle	X	Rotational Displacement	SFERNICE	ECO50ESC10	001	180	3.04010	mv/v/deg
Ankle	Y	Rotational Displacement	SFERNICE	ECO50ESC10	002	180	3.03620	mv/v/deg
Ankle	Z	Rotational Displacement	SFERNICE	ECO50ESC10	003	180	3.04490	mv/v/deg
Knee	X	Displacement	Space Age	150-0121V	13073814	30	23.32260	mv/v/mm
Leg	X	Linear Acceleration	Endevco	7264C	P79626	2000	0.02106	mv/v/g
Leg	Y	Linear Acceleration	Endevco	7264C	P74953	2000	0.01785	mv/v/g
Foot	X	Linear Acceleration	Endevco	7264C	P49441	2000	0.01789	mv/v/g
Foot	Z	Linear Acceleration	Endevco	7264C	P80272	2000	0.01955	mv/v/g
Upper Tibia	Z	Force	Denton	10390J14	DQ5598	11100	0.0000953	mv/v/N
Upper Tibia	X	Moment	Denton	10390J14	DQ5598	395.4	0.0074668	mv/v/Nm
Upper Tibia	Y	Moment	Denton	10390J14	DQ5598	395.4	0.0074712	mv/v/Nm
Lower Tibia	X	Force	Denton	9329J	DQ9685	11120.5	0.0001731	mv/v/N
Lower Tibia	Y	Force	Denton	9329J	DQ9685	11120.5	0.0001704	mv/v/N
Lower Tibia	Z	Force	Denton	9329J	DQ9685	11120.5	0.0000962	mv/v/N
Lower Tibia	X	Moment	Denton	9329J	DQ9685	395.4	0.0075356	mv/v/Nm
Lower Tibia	Y	Moment	Denton	9329J	DQ9685	395.4	0.0075951	mv/v/Nm
Ankle	X	Rotational Displacement	SFERNICE	ECO50ESC10	004	300	3.05800	mv/v/deg
Ankle	Y	Rotational Displacement	SFERNICE	ECO50ESC10	005	300	3.04000	mv/v/deg
Ankle	Z	Rotational Displacement	SFERNICE	ECO50ESC10	006	300	3.03620	mv/v/deg
Knee	X	Displacement	Space Age	150-0121V	13073811	30	23.23130	mv/v/mm
Leg	X	Linear Acceleration	Endevco	7264C	P81386	2000	0.01775	mv/v/g
Leg	Y	Linear Acceleration	Endevco	7264C	P52069	2000	0.01906	mv/v/g
Foot	X	Linear Acceleration	Endevco	7264C	P64131	2000	0.01921	mv/v/g
Foot	Z	Linear Acceleration	Endevco	7264C	P51725	2000	0.02140	mv/v/g

Sensor Location	Axis	Measurement	Manufacturer	Model Number	Serial Number	Rated Full Scale	Sensitivity	Sensitivity Units
Head CG	X	Linear Acceleration	Endevco	7264	P82183	2000	0.017690000	mV/V/g
Head CG	Y	Linear Acceleration	Endevco	7264	P81384	2000	0.017600000	mV/V/g
Head CG	Z	Linear Acceleration	Endevco	7264	P81797	2000	0.019350000	mV/V/g
Head	X	Rotational Acceleration	DTS	18K ARS	ARS4740	18000	0.091430000	mV/deg/sec
Head	Y	Rotational Acceleration	DTS	18K ARS	ARS4737	18000	0.095640000	mV/deg/sec
Head	Z	Rotational Acceleration	DTS	18K ARS	ARS4073	18000	0.093760000	mV/deg/sec
Skull Spring Front	Y	Force	Humanetics	10386J14	DO9740	4448.2	0.000512814	mV/V/N
Skull Spring Rear	Z	Force	Humanetics	10386J14	DO9741	4448.2	0.000508183	mV/V/N
Condyle Pot	Z	Rotation	Humanetics	9945	DK5911	180	3.021000000	mV/V/deg
Upper Neck	X	Force	Humanetics	10380J14	DP3956	8896.4	0.000224158	mV/V/N
Upper Neck	Y	Force	Humanetics	10380J14	DP3956	8896.4	0.000227755	mV/V/N
Upper Neck	Z	Force	Humanetics	10380J14	DP3956	13344.7	0.00085255	mV/V/N
Upper Neck	X	Moment	Humanetics	10380J14	DP3956	282.5	0.005819469	mV/V/Nm
Upper Neck	Y	Moment	Humanetics	10380J14	DP3956	282.5	0.005983009	mV/V/Nm
Upper Neck	Z	Moment	Humanetics	10380J14	DP3956	282.5	0.009425133	mV/V/Nm
Lower Neck	X	Force	Humanetics	10381J14	DP4780	13344.7	0.000173709	mV/V/N
Lower Neck	Y	Force	Humanetics	10381J14	DP4780	13344.7	0.000174489	mV/V/N
Lower Neck	Z	Force	Humanetics	10381J14	DP4780	13344.7	0.000070575	mV/V/N
Lower Neck	X	Moment	Humanetics	10381J14	DP4780	451.9	0.004108210	mV/V/Nm
Lower Neck	Y	Moment	Humanetics	10381J14	DP4780	451.9	0.004146714	mV/V/Nm
Lower Neck	Z	Moment	Humanetics	10381J14	DP4780	226	0.006740265	mV/V/Nm
T1	X	Linear Acceleration	Endevco	7264	P79630	2000	0.020870000	mV/V/g
T1	Y	Linear Acceleration	Endevco	7264	P78880	2000	0.019820000	mV/V/g
T1	Z	Linear Acceleration	Endevco	7264	P82758	2000	0.018610000	mV/V/g
Upper Left Thorax	X	Voltage	Humanetics	IF-364-C-R3	DS6355			
Upper Left Thorax	Y	Rotation	Humanetics	9945	DI2382	180	2.978800000	mV/V/deg
Upper Left Thorax	Z	Rotation	Humanetics	9945	DI2383	180	3.007300000	mV/V/deg
Upper Right Thorax	X	Voltage	Humanetics	IF-364-C-R3	DI2613			
Upper Right Thorax	Y	Rotation	Humanetics	9945	DI7753	180	3.035900000	mV/V/deg
Upper Right Thorax	Z	Rotation	Humanetics	9945	DI7752	180	3.052400000	mV/V/deg
Lower Left Thorax	X	Voltage	Humanetics	IF-364-C-R3	DS6353			
Lower Left Thorax	Y	Rotation	Humanetics	9945	DM4781	180	3.001400000	mV/V/deg
Lower Left Thorax	Z	Rotation	Humanetics	9945	DS4092	180	3.072500000	mV/V/deg
Lower Right Thorax	X	Voltage	Humanetics	IF-364-C-R3	DS6354			
Lower Right Thorax	Y	Rotation	Humanetics	9945	DM4776	180	3.004900000	mV/V/deg
Lower Right Thorax	Z	Rotation	Humanetics	9945	DM4777	180	2.994700000	mV/V/deg
T6	X	Linear Acceleration	Endevco	7264	P49229	2000	0.018010000	mV/V/g
T6	Y	Linear Acceleration	Endevco	7264	P49215	2000	0.016950000	mV/V/g
T6	Z	Linear Acceleration	Endevco	7264	P52122	2000	0.017050000	mV/V/g
Thoracic Spine	X	Force	Humanetics	10415J14	DP2984	13344.7	0.000146365	mV/V/N
Thoracic Spine	Y	Force	Humanetics	10415J14	DP2984	13344.7	0.000147107	mV/V/N
Thoracic Spine	Z	Force	Humanetics	10415J14	DP2984	17792.9	0.000060193	mV/V/N
Thoracic Spine	X	Moment	Humanetics	10415J14	DP2984	677.9	0.002146039	mV/V/Nm
Thoracic Spine	Y	Moment	Humanetics	10415J14	DP2984	903.9	0.001914371	mV/V/Nm
Abdomen Left	Z	Voltage	Humanetics	9910	DQ2303			
Abdomen Left	X	Rotation	Humanetics	9945	DS8363	150	3.024100000	mV/V/deg
Abdomen Left	Y	Rotation	Humanetics	9945	DS8361	150	3.047400000	mV/V/deg
Abdomen Right	Z	Voltage	Humanetics	9910	DM2641			
Abdomen Right	X	Rotation	Humanetics	9945	DS4094	150	3.012300000	mV/V/deg
Abdomen Right	Y	Rotation	Humanetics	9945	DS4121	150	3.021800000	mV/V/deg
Acetabulum Right	X	Force	Humanetics	10670J14	DP3835	22241.1	0.000118506	mV/V/N
Acetabulum Right	Y	Force	Humanetics	10670J14	DP3835	13344.7	0.000059342	mV/V/N
Acetabulum Right	Z	Force	Humanetics	10670J14	DP3835	13344.7	0.000161173	mV/V/N
Acetabulum Left	X	Force	Humanetics	10530J14	DP4639	22241.1	0.000121280	mV/V/N
Acetabulum Left	Y	Force	Humanetics	10530J14	DP4639	13344.7	0.000059432	mV/V/N
Acetabulum Left	Z	Force	Humanetics	10530J14	DP4639	13344.7	0.000165871	mV/V/N
Pelvis	X	Linear Acceleration	Endevco	7264	P83434	2000	0.017540000	mV/V/g
Pelvis	Y	Linear Acceleration	Endevco	7264	P82752	2000	0.018310000	mV/V/g
Pelvis	Z	Linear Acceleration	Endevco	7264	P80296	2000	0.019410000	mV/V/g
ASIS Right	X	Force	Humanetics	10387J14	DP5091	13000	0.000065215	mV/V/N
ASIS Right	Y	Moment	Humanetics	10387J14	DP5091	325	0.003697538	mV/V/Nm
ASIS Left	Z	Force	Humanetics	10387J14	DP5092	13000	0.000067323	mV/V/N
ASIS Left	X	Moment	Humanetics	10387J14	DP5092	325	0.003688923	mV/V/Nm
Femur Left	Y	Force	Denton	W50-7101051	DM4975	15000	0.000143700	mV/V/N
Femur Left	Z	Force	Denton	W50-7101051	DM4975	15000	0.000143600	mV/V/N
Femur Left	X	Force	Denton	W50-7101051	DM4975	15000	0.000072700	mV/V/N
Femur Left	Y	Moment	Denton	W50-7101051	DM4975	350	0.006601400	mV/V/Nm
Femur Left	Z	Moment	Denton	W50-7101051	DM4975	350	0.006642000	mV/V/Nm
Femur Left	X	Moment	Denton	W50-7101051	DM4975	300	0.008961300	mV/V/Nm
Femur Right	Y	Force	Denton	W50-7101051	DM4976	15000	0.000142600	mV/V/N

Sensor Location	Axis	Measurement	Manufacturer	Model Number	Serial Number	Rated Full Scale	Sensitivity	Sensitivity Units
Femur Right	X	Force	Denton	W50-7101051	DM4976	15000	0.000142900	mV/V/N
Femur Right	Y	Force	Denton	W50-7101051	DM4976	15000	0.000072200	mV/V/N
Femur Right	X	Moment	Denton	W50-7101051	DM4976	350	0.006505700	mV/V/Nm
Femur Right	Y	Moment	Denton	W50-7101051	DM4976	350	0.006488900	mV/V/Nm
Femur Right	Z	Moment	Denton	W50-7101051	DM4976	300	0.008811600	mV/V/Nm
Upper Tibia	Z	Moment	Denton	4353J	75	395	0.00749000	mv/v/Nm
Upper Tibia	X	Moment	Denton	4353J	75	395	0.00747580	mv/v/Nm
Lower Tibia	Y	Force	Denton	4929J	166	11100	0.00017560	mv/v/N
Lower Tibia	X	Force	Denton	4929J	166	11100	0.00017130	mv/v/N
Lower Tibia	Y	Force	Denton	4929J	166	11100	0.00009950	mv/v/N
Lower Tibia	Z	Moment	Denton	4929J	166	395	0.00742480	mv/v/Nm
Lower Tibia	X	Moment	Denton	4929J	166	395	0.00737260	mv/v/Nm
Ankle	Y	Rotational Displacement	Contelec	PD210-4B	0528	180	3.20220	mv/v/deg
Ankle	X	Rotational Displacement	Contelec	PD210-4B	0526	180	3.15530	mv/v/deg
Ankle	Y	Rotational Displacement	Contelec	PD210-4B	0527-1	180	3.16060	mv/v/deg
Knee	Z	Displacement	Space Age	150-0121VL	021033	30	23.25080	mv/v/mm
Leg	X	Linear Acceleration	Endevco	7264C	P82744	2000	0.01827	mv/v/g
Leg	X	Linear Acceleration	Endevco	7264C	P82322	2000	0.01726	mv/v/g
Foot	X	Linear Acceleration	Endevco	7264C	P83340	2000	0.02038	mv/v/g
Foot	Z	Linear Acceleration	Endevco	7264C	P83339	2000	0.01990	mv/v/g
Upper Tibia	Z	Moment	Denton	4353J	97	395	0.00733320	mv/v/Nm
Upper Tibia	X	Moment	Denton	4353J	97	395	0.00739800	mv/v/Nm
Lower Tibia	Y	Force	Denton	4929J	121	11100	0.00017510	mv/v/N
Lower Tibia	X	Force	Denton	4929J	121	11100	0.00017180	mv/v/N
Lower Tibia	Y	Force	Denton	4929J	121	11100	0.00009580	mv/v/N
Lower Tibia	Z	Moment	Denton	4929J	121	395	0.00739650	mv/v/Nm
Lower Tibia	X	Moment	Denton	4929J	121	395	0.00744720	mv/v/Nm
Ankle	Y	Rotational Displacement	Contelec	PD210-4B	0523	180	3.17860	mv/v/deg
Ankle	X	Rotational Displacement	Contelec	PD210-4B	0524	180	3.19060	mv/v/deg
Ankle	Y	Rotational Displacement	Contelec	PD210-4B	0525	180	3.18790	mv/v/deg
Knee	Z	Displacement	Space Age	150-0121V	C2102639B	33	24.09410	mv/v/mm
Leg	X	Linear Acceleration	Endevco	7264C	P77996	2000	0.01803	mv/v/g
Leg	X	Linear Acceleration	Endevco	7264C	P64094	2000	0.02214	mv/v/g
Foot	X	Linear Acceleration	Endevco	7264C	P74950	2000	0.01782	mv/v/g
Foot	Z	Linear Acceleration	Endevco	7264C	P51684	2000	0.01953	mv/v/g

Thor 50th Male DO9798

Thoracic and Abdominal IR-TRACC															
				<table><tr><th>Channel</th><th>Motion</th></tr><tr><td>DX</td><td>Push inward</td></tr><tr><td>RY</td><td>Push upward</td></tr><tr><td>RZ</td><td>Push rightward</td></tr></table>				Channel	Motion	DX	Push inward	RY	Push upward	RZ	Push rightward
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)	.0.0765	+	+	DX (V)	.0.0758	+	+								
RY (Deg)	7.9382	+	+	RY (Deg)	3.8660	+	+								
RZ (Deg)	-14.4196	+	+	RZ (Deg)	10.9745	+	+								
Lower Right Thorax				Lower Left Thorax											
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity								
DX (V)	0.0383	+	+	DX (V)	.0.0743	+	+								
RY (Deg)	-1.5641	+	+	RY (Deg)	-4.5983	+	+								
RZ (Deg)	-6.3418	+	+	RZ (Deg)	7.7711	+	+								
Abdomen Right				Abdomen Left											
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity								
DX (V)	0.0672	+	+	DX (V)	0.0824	+	+								
RY (Deg)	1.3229	+	+	RY (Deg)	2.5334	+	+								
RZ (Deg)	-0.3269	+	+	RZ (Deg)	0.8137	+	+								

Thoracic and Abdominal IR-TRACC															
				<table><tr><th>Channel</th><th>Motion</th></tr><tr><td>DX</td><td>Push inward</td></tr><tr><td>RY</td><td>Push upward</td></tr><tr><td>RZ</td><td>Push rightward</td></tr></table>				Channel	Motion	DX	Push inward	RY	Push upward	RZ	Push rightward
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)	.0796	+	+	DX (V)	.0784	+	+								
RY (Deg)	-7.880	+	-	RY (Deg)	2.010	+	+								
RZ (Deg)	12.701	+	-	RZ (Deg)	-12.550	+	-								
Lower Right Thorax				Lower Left Thorax											
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity								
DX (V)	.0940	+	+	DX (V)	.0940	+	+								
RY (Deg)	4.693	+	-	RY (Deg)	-2.315	+	+								
RZ (Deg)	-8.572	+	+	RZ (Deg)	6.3395	+	+								
Abdomen Right				Abdomen Left											
Channel	Initial Value	Expected Polarity	Recorded Polarity	Channel	Initial Value	Expected Polarity	Recorded Polarity								
DX (V)	0.0415	+	+	DX (V)	0.0671	+	+								
RY (Deg)	-3.003	+	-	RY (Deg)	-2.447	+	+								
RZ (Deg)	1.099	+	+	RZ (Deg)	3.705	+	+								

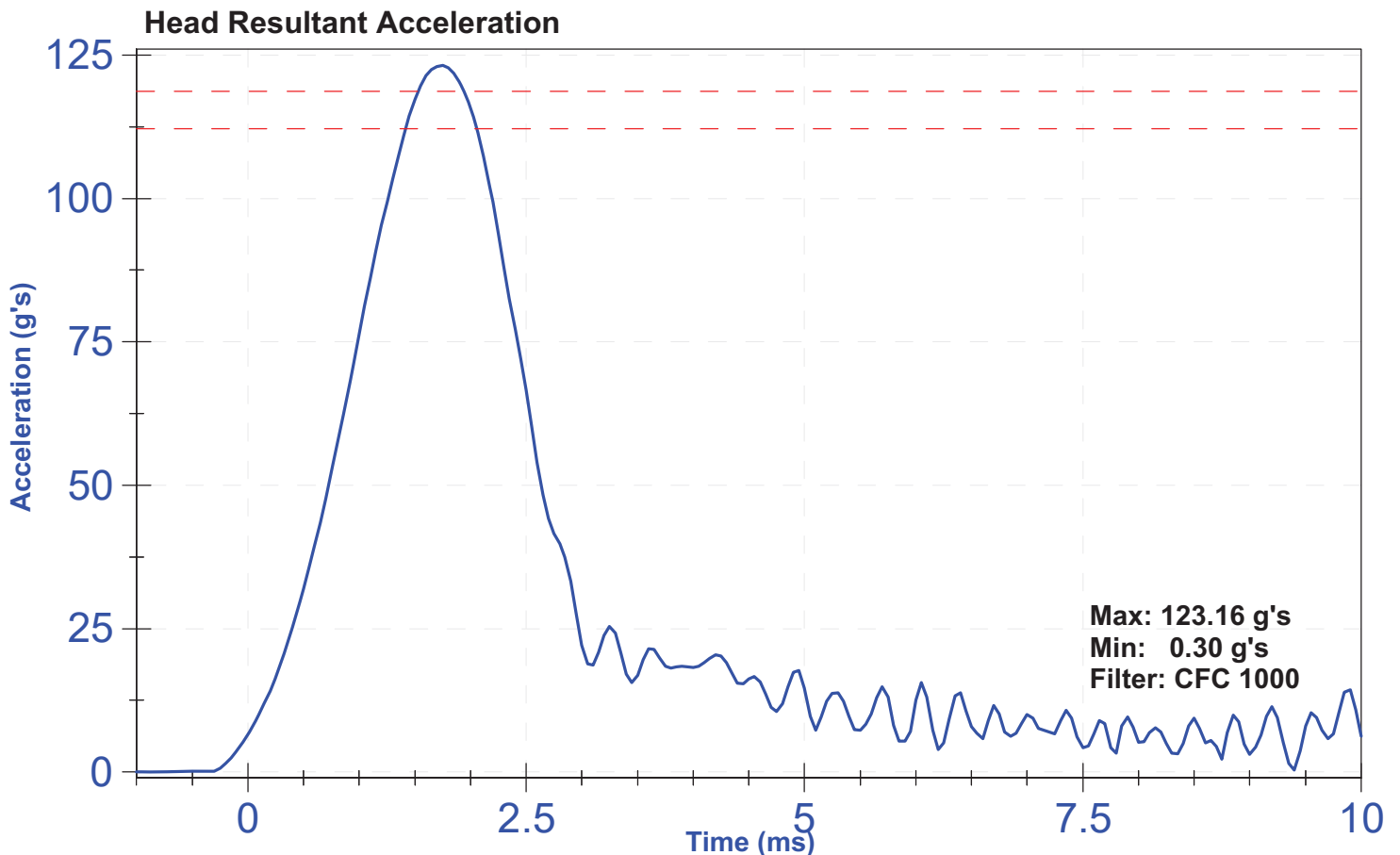
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

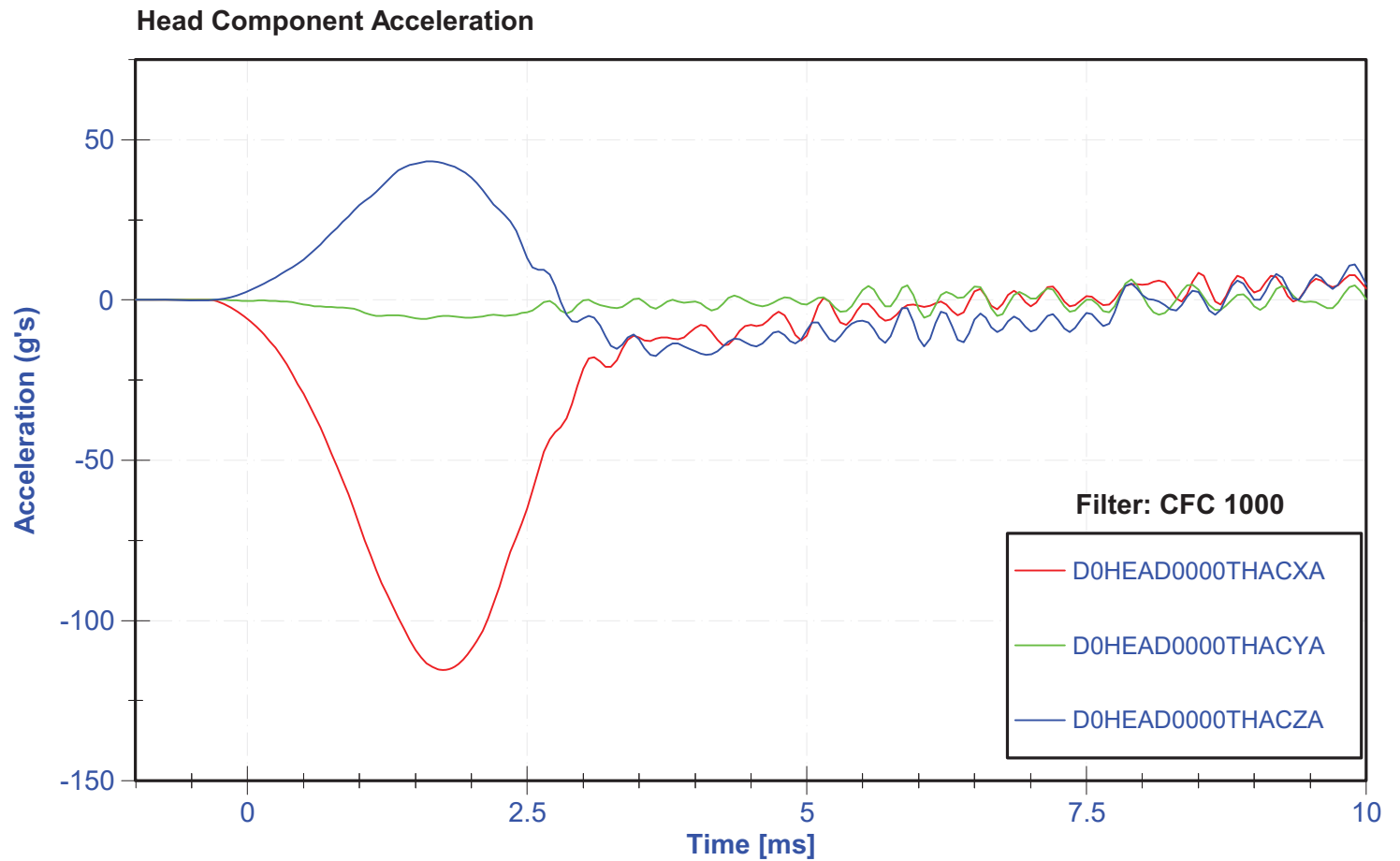
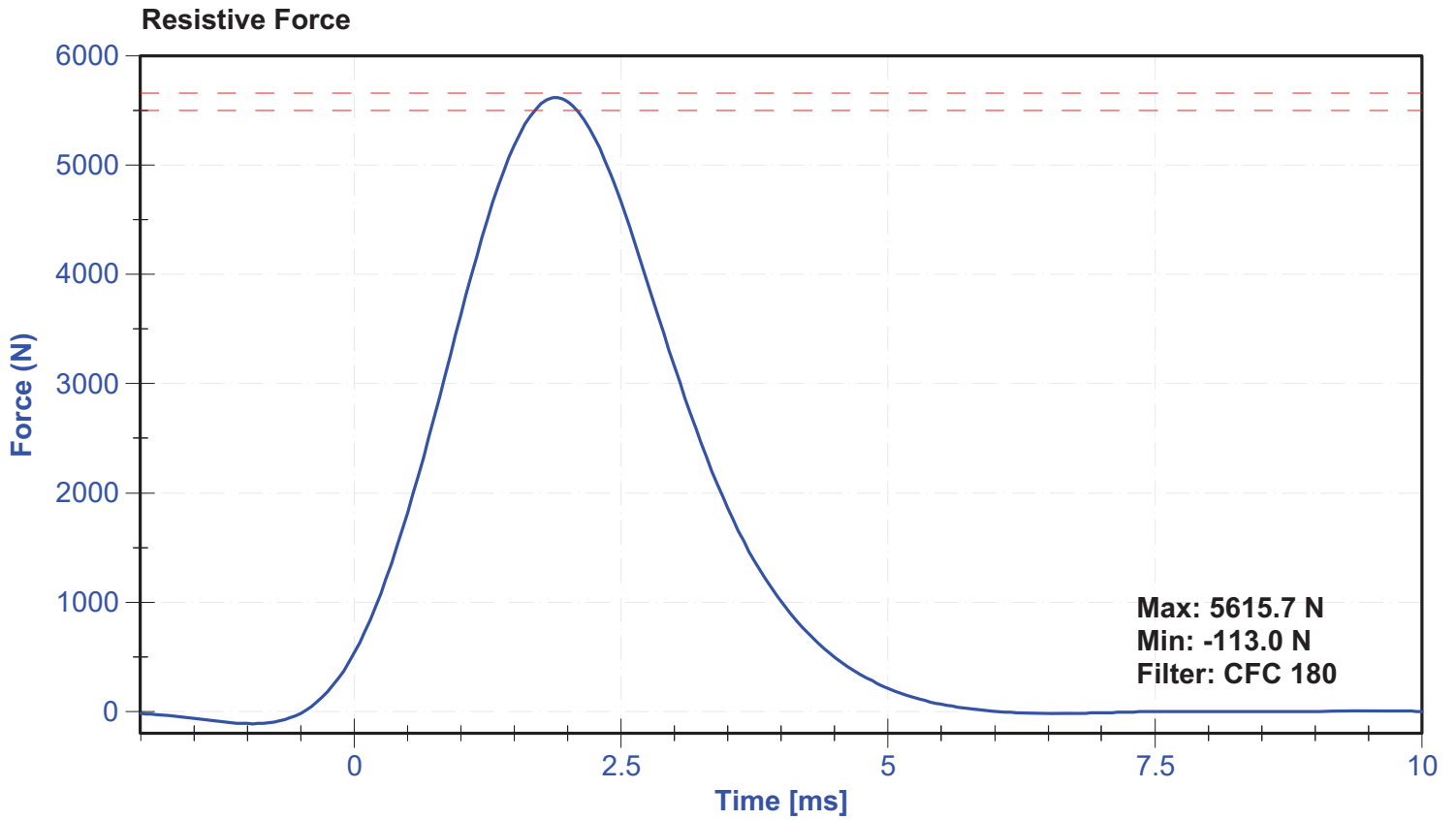
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	33.1	Pass
Impact Velocity	1.95	2.05	m/s	1.958	Pass
Probe Force	5498	5660	N	5615.7	Pass
Resultant Acceleration	112.2	118.7	g's	123.16	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Head X Accel	Endevco 7264	AC-P52001	9/24/2015	3/24/2016
Head Y Accel	Endevco 7264	AC-P51697	9/28/2015	3/28/2016
Head Z Accel	Endevco 7264	AC-P75155	9/24/2015	3/24/2016
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016





ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DP9798	Laboratory Supervisor	M. Goehle

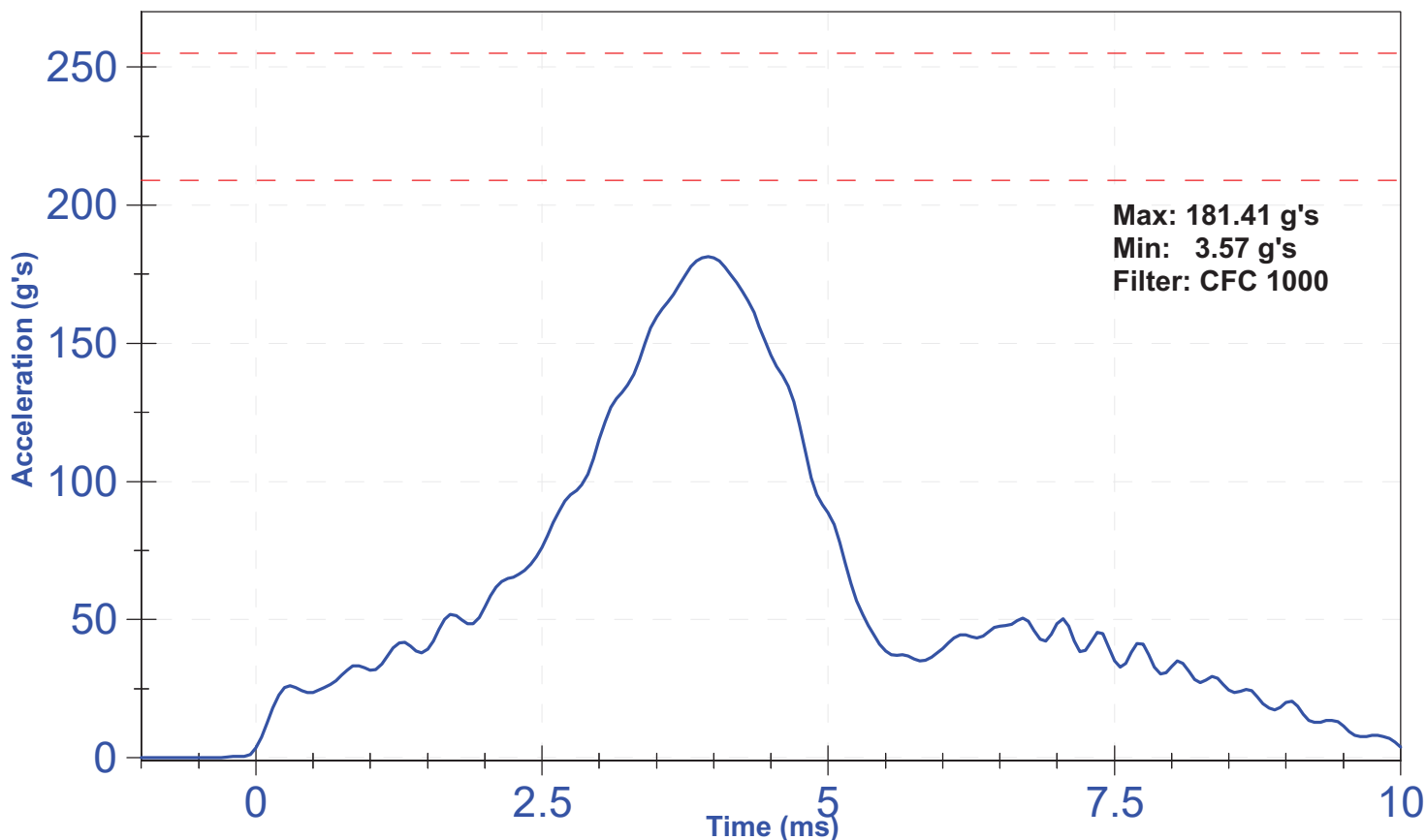
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	34.9	Pass
Impact Velocity	6.68	6.78	m/s	6.728	Pass
Probe Force	9067	11082	N	8860.2	Fail
Resultant Acceleration	209	255	g's	181.4	Fail

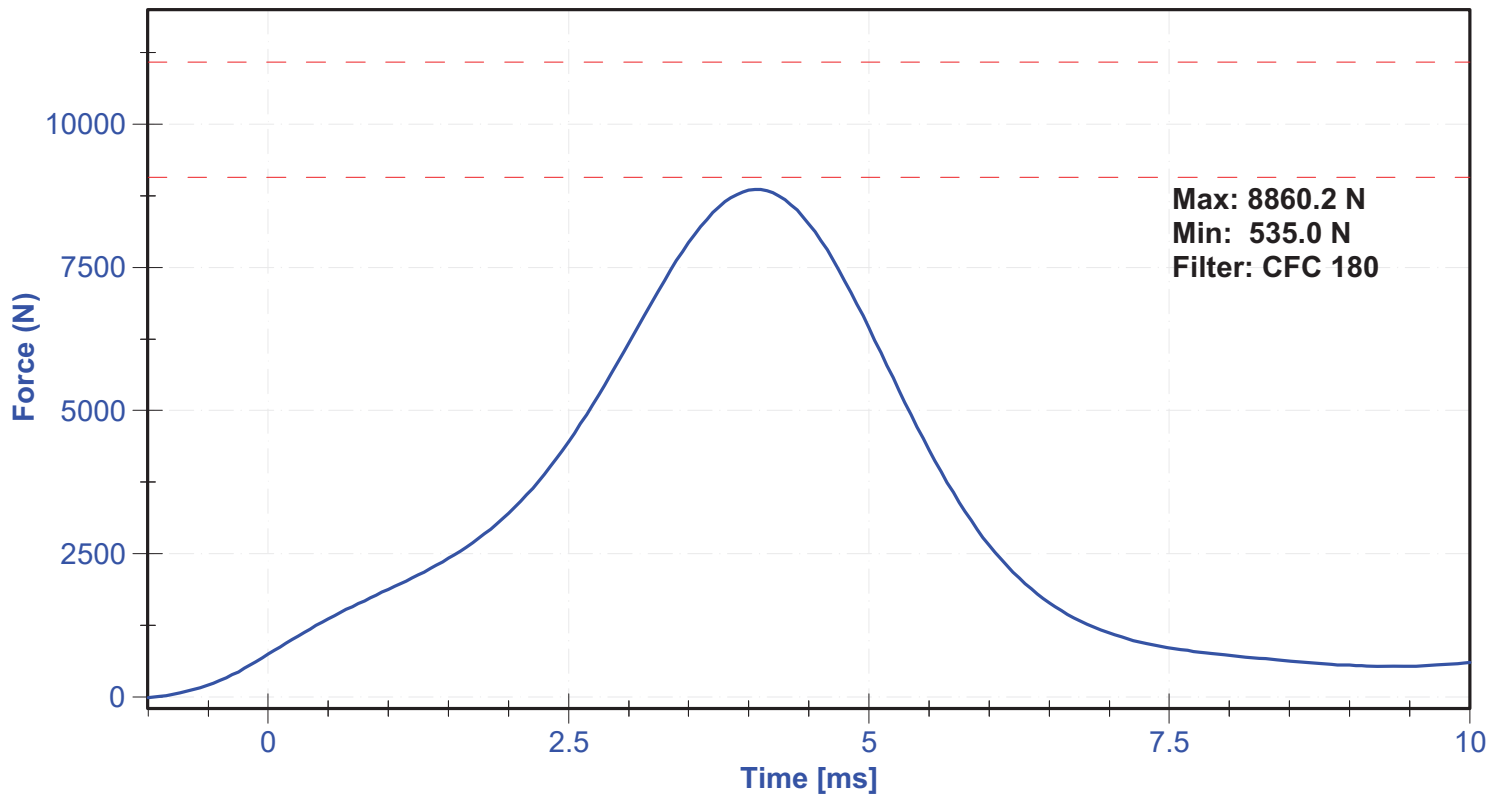
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Head X Accel	Endevco 7264	AC-P52001	9/24/2015	3/24/2016
Head Y Accel	Endevco 7264	AC-P51697	9/28/2015	3/28/2016
Head Z Accel	Endevco 7264	AC-P75155	9/24/2015	3/24/2016
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016

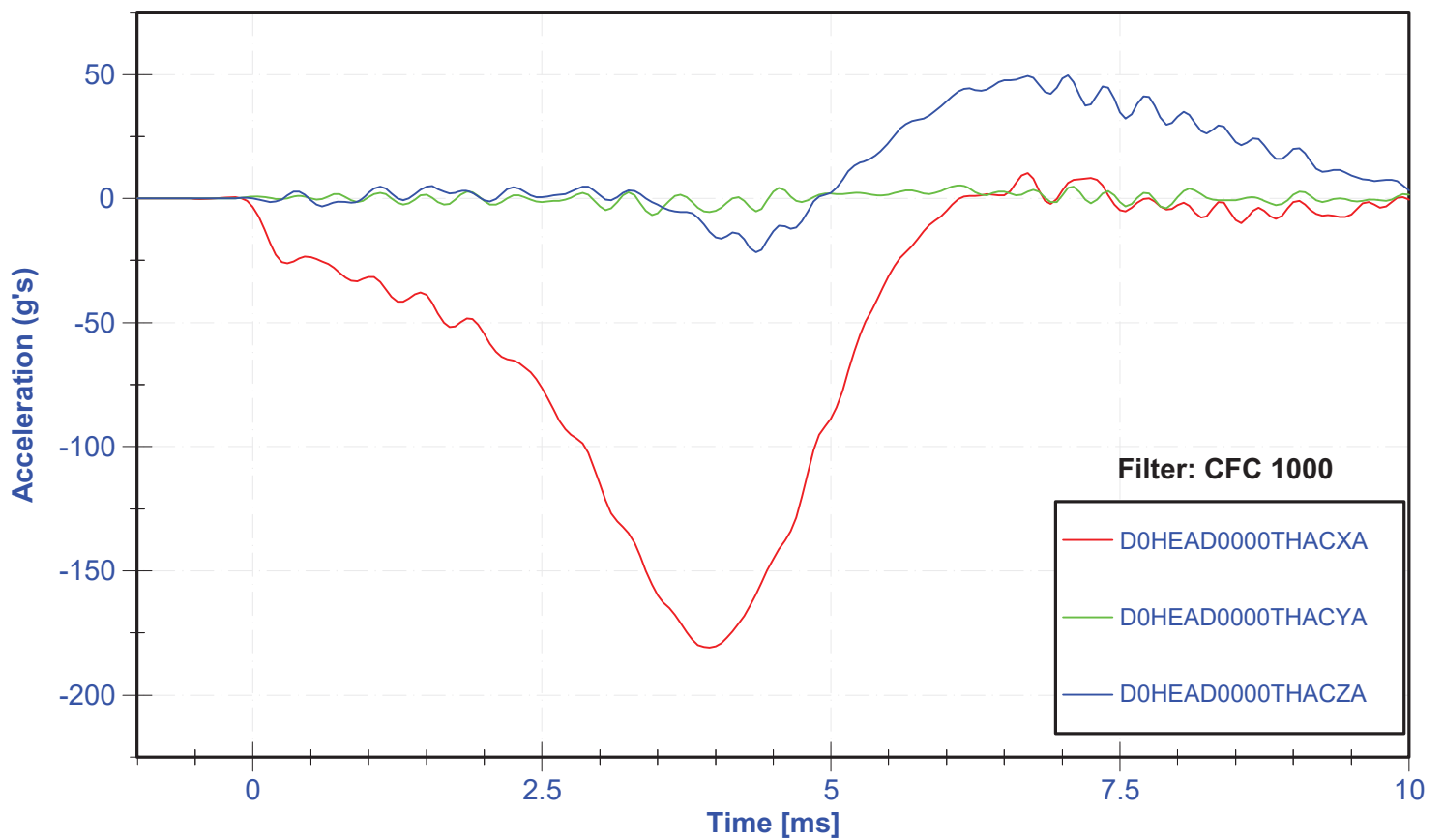
Head Resultant Acceleration



Resistive Force



Head Component Acceleration



ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

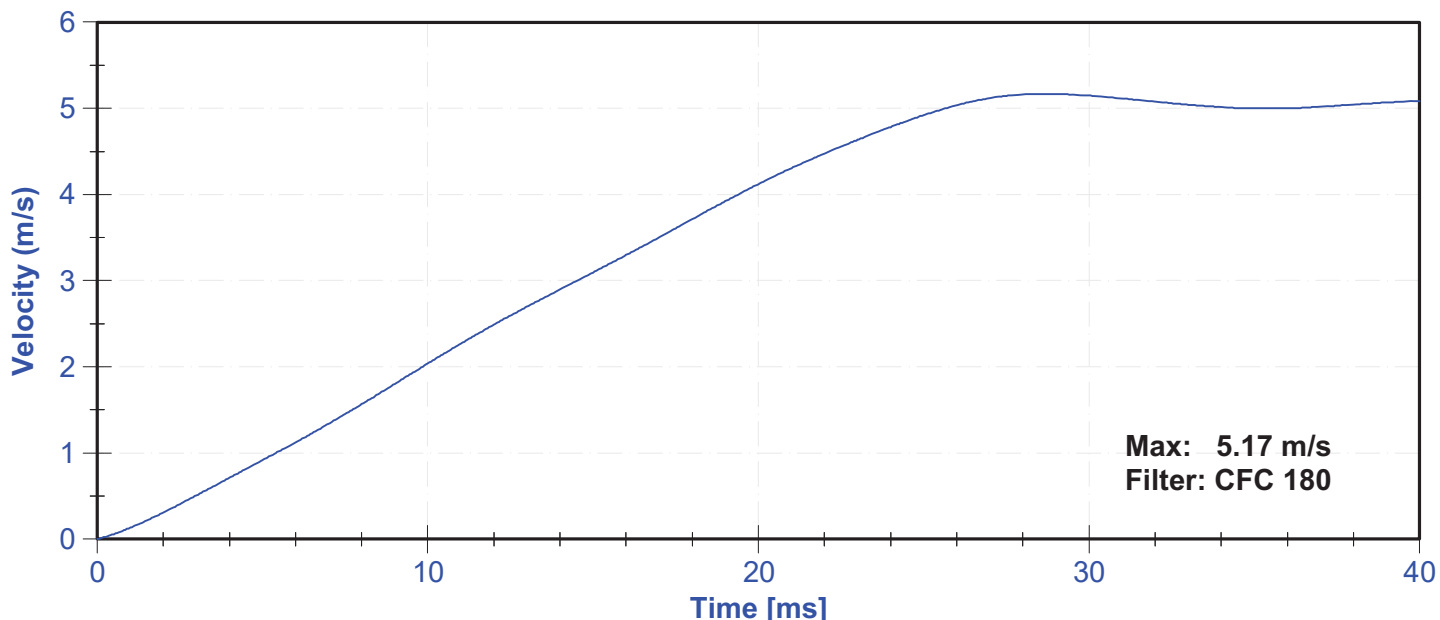
Results

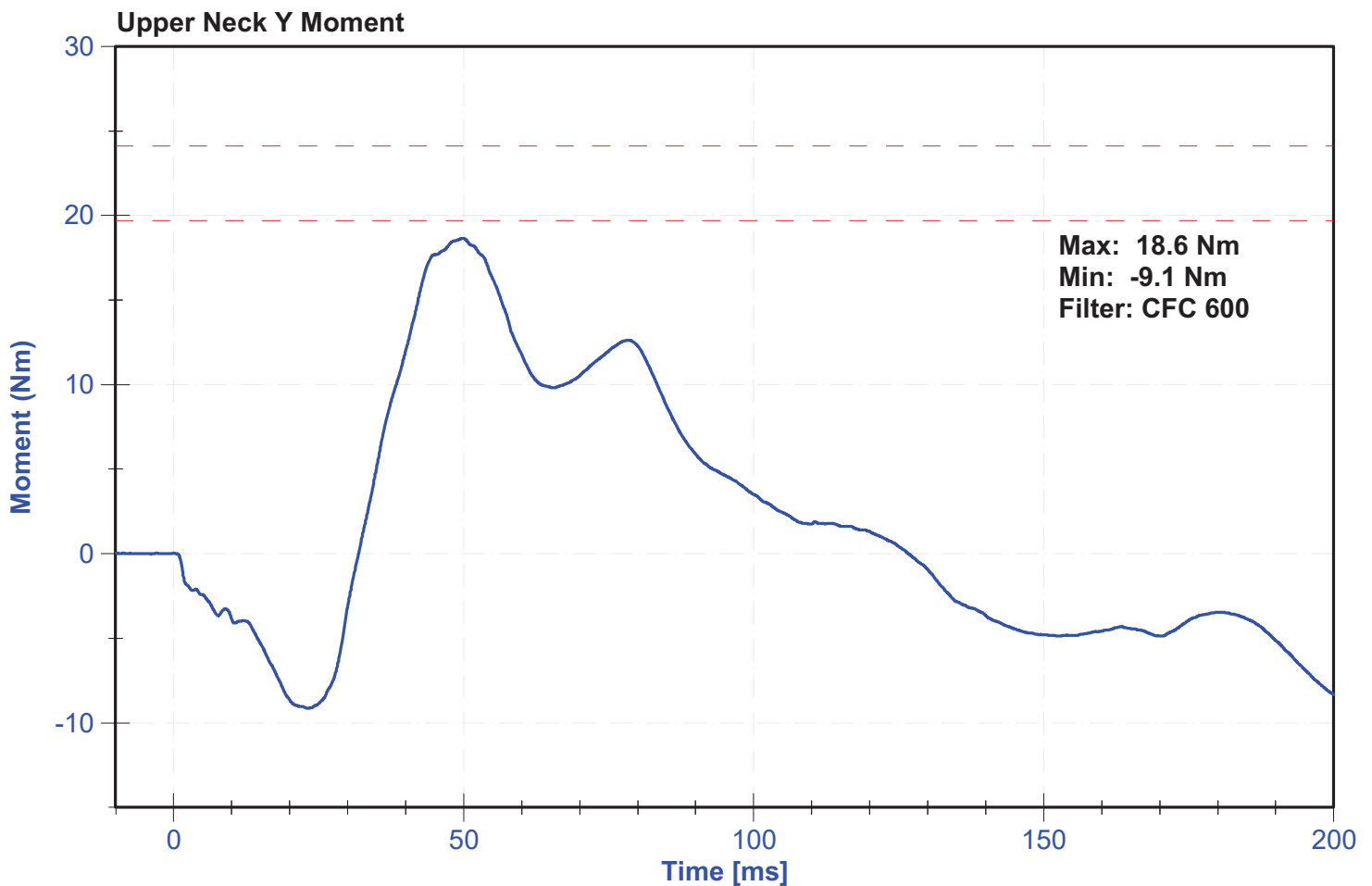
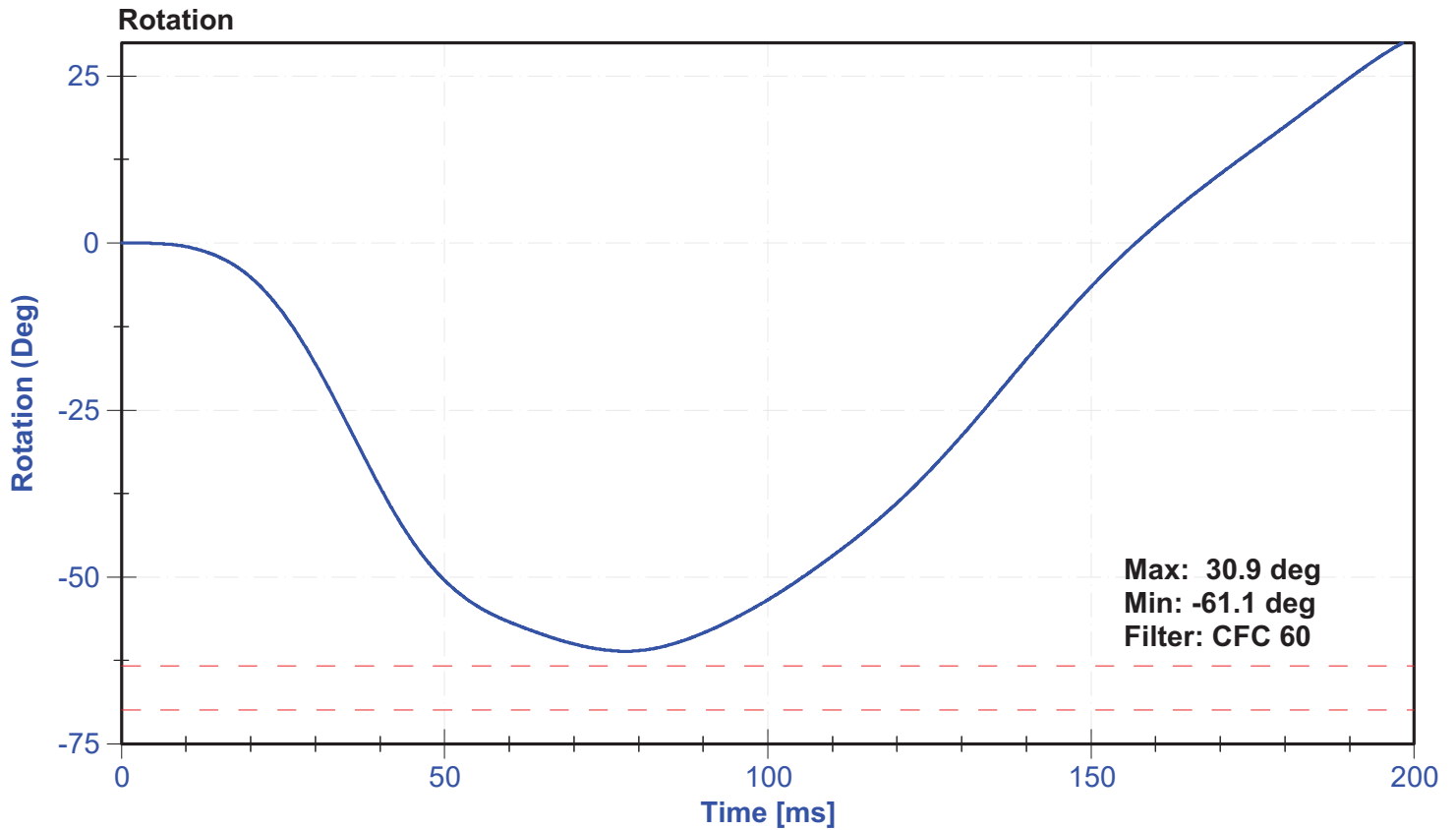
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	26.4	Pass
Velocity	4.95	5.05	m/s	5.015	Pass
Pendulum Impulse at 8ms	1.49	1.85	m/s	1.567	Pass
Pendulum Impulse at 16ms	3.08	3.86	m/s	3.297	Pass
Pendulum Impulse at 24ms	4.48	5.26	m/s	4.784	Pass
Peak Upper Neck Y Moment	19.7	24.1	Nm	18.64	Fail
Peak Upper Neck X Force	-1592	-1302	N	-1495.5	Pass
Maximum Upper Neck Z Force	877	1072	N	998.4	Pass
First Peak Rear Neck Cable Force	1115	1282	N	1183.8	Pass
Peak Head Y Angular Rate	-1935	-1675	deg/s	-1724.0	Pass
Peak Head Y Rotation	-69.9	-63.3	deg	-61.11	Fail
Rotation Decay Time to Zero	83.0	86.2	ms	79.00	Fail

Transducer Calibrations

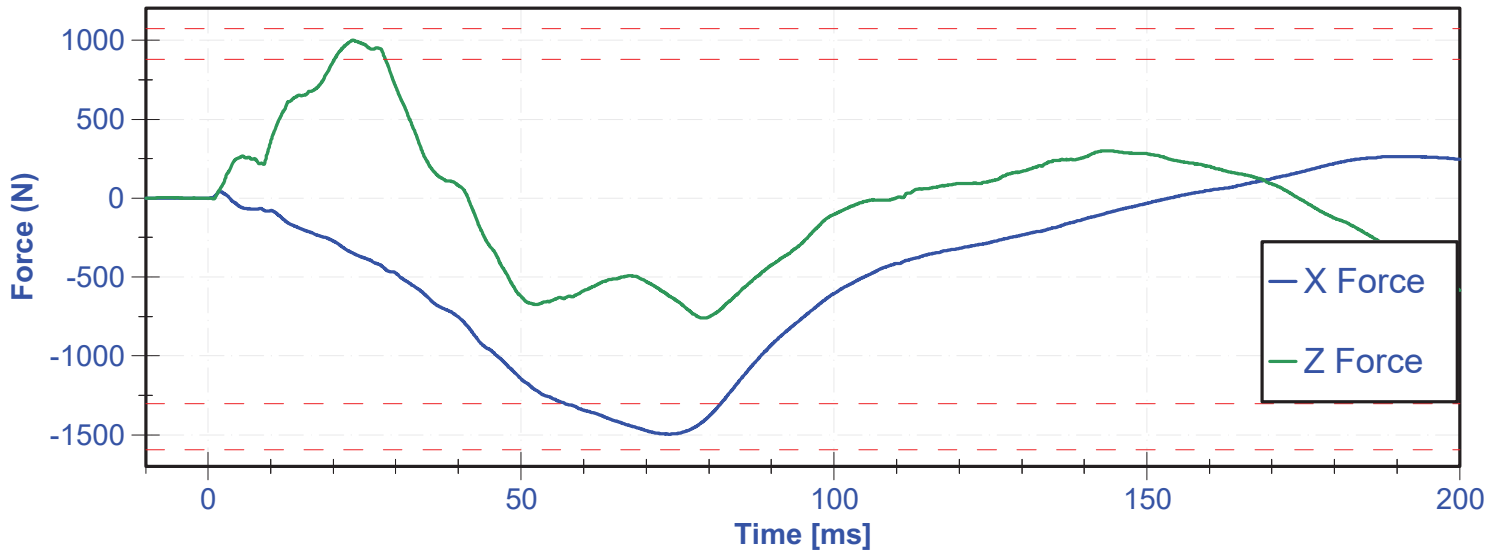
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380JI4	LC-DS9758 Fx	12/3/2015	12/2/2016
Rear Neck Cable Load Cell	Humanetics 6005JFL	LC-132	9/17/2015	9/16/2016
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head Y ARS	DTS ARS 18k	ARS-4071	3/31/2015	3/30/2016

Pendulum Pulse

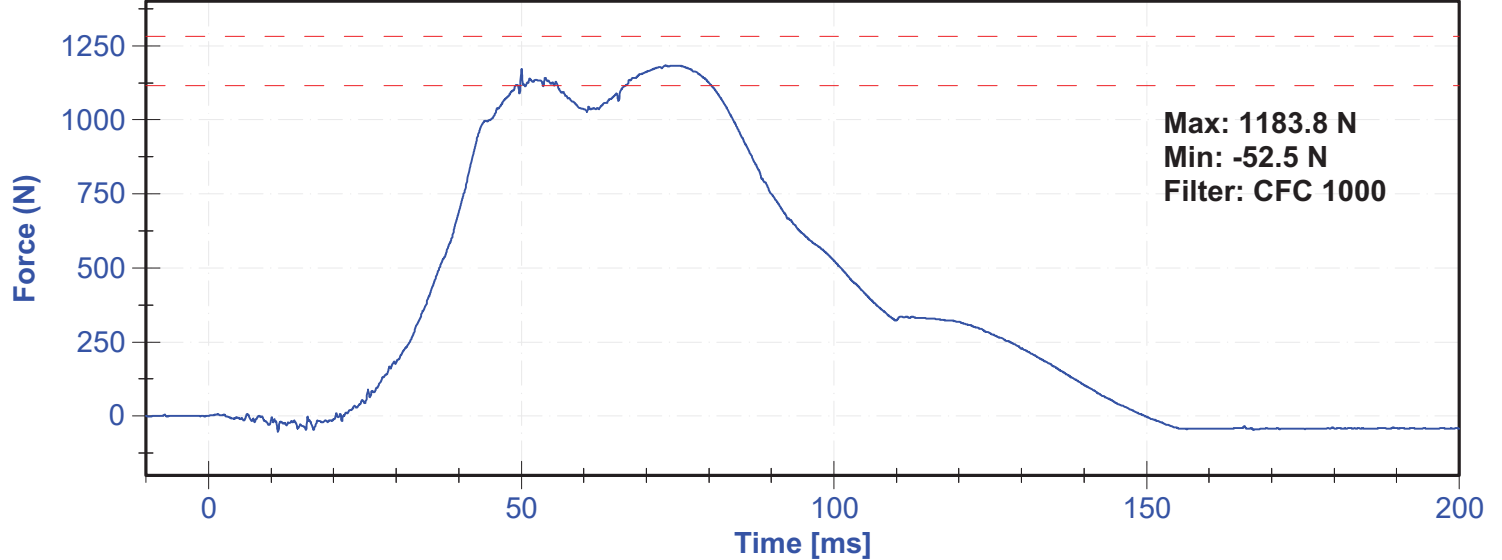




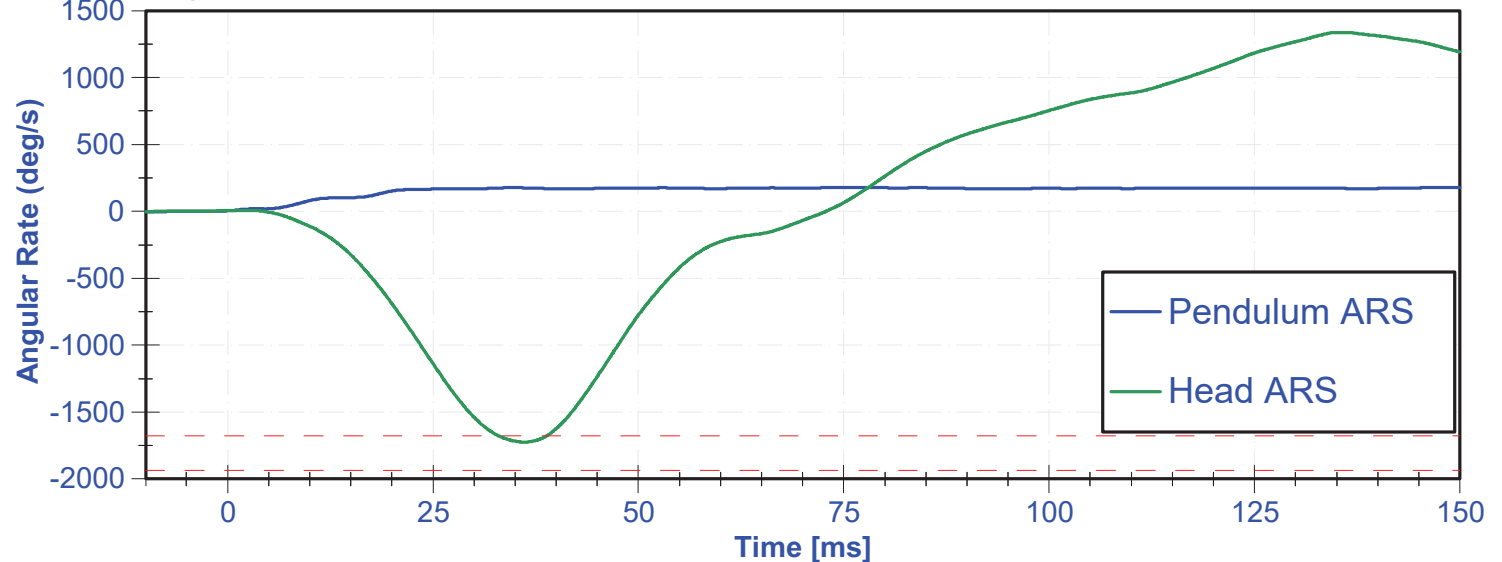
Upper Neck Force



Rear Neck Cable Z Force



Angular Rate Sensors



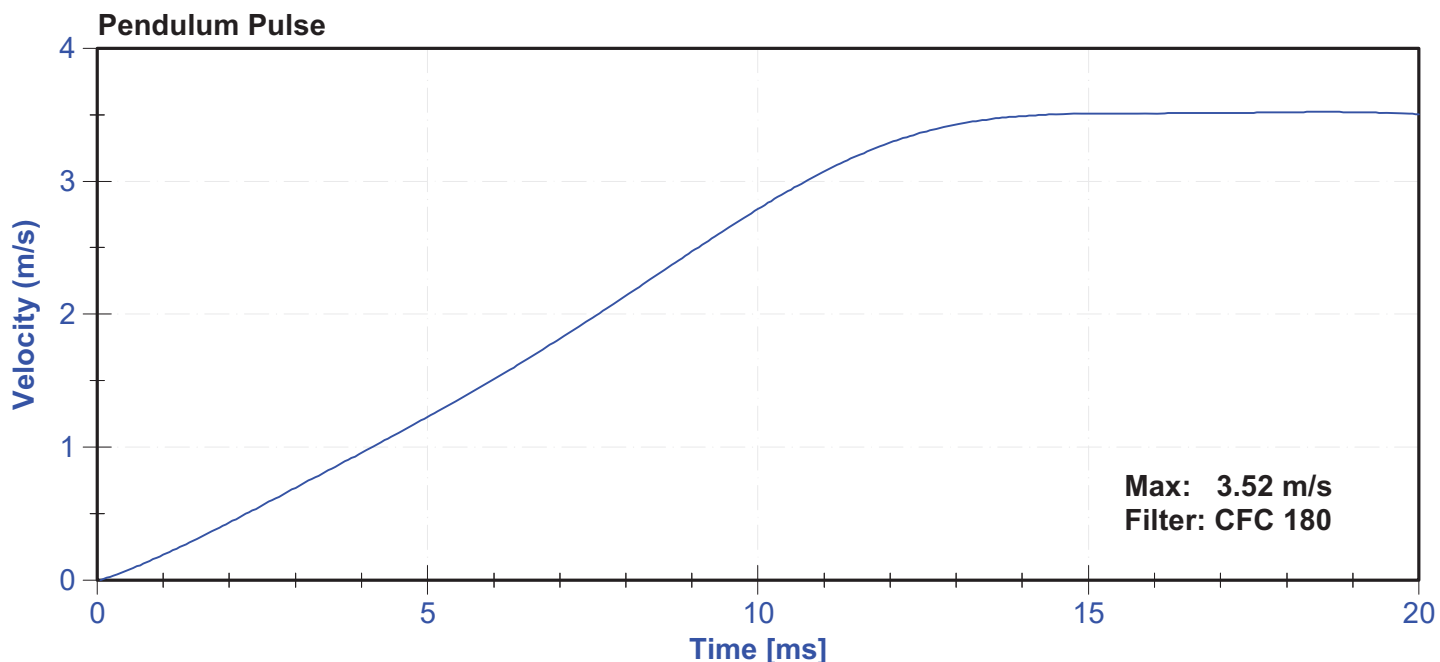
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

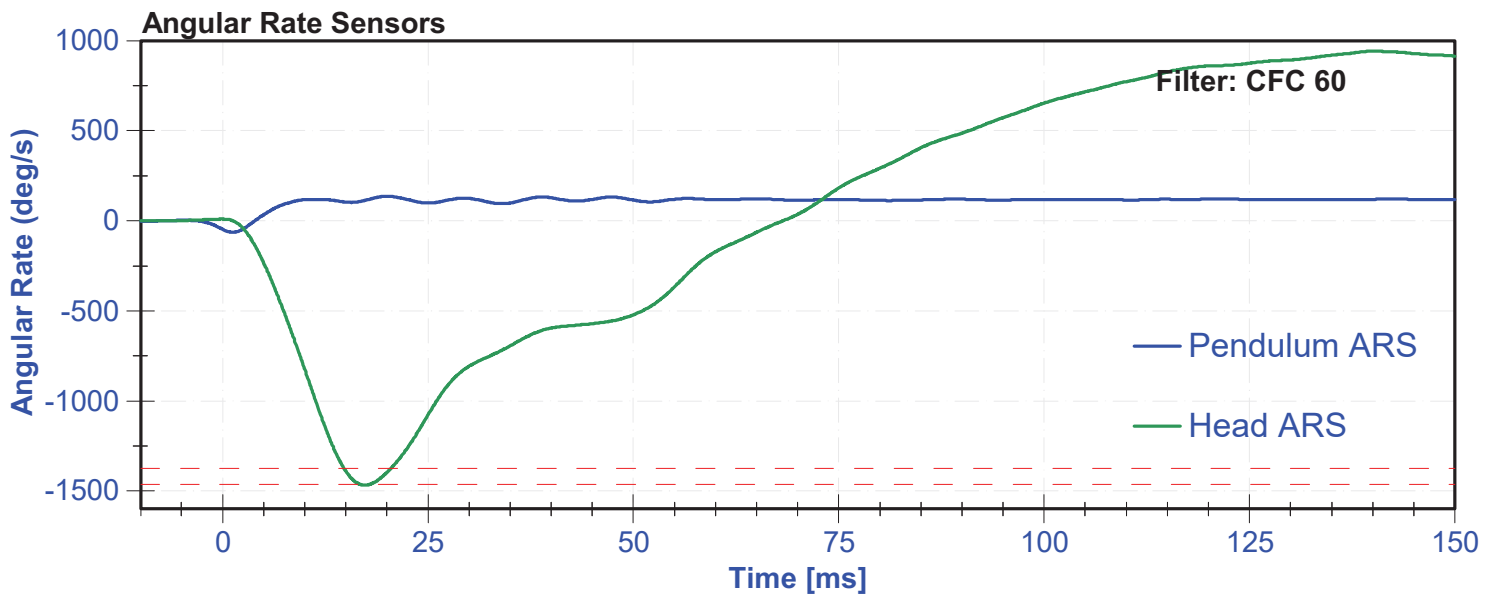
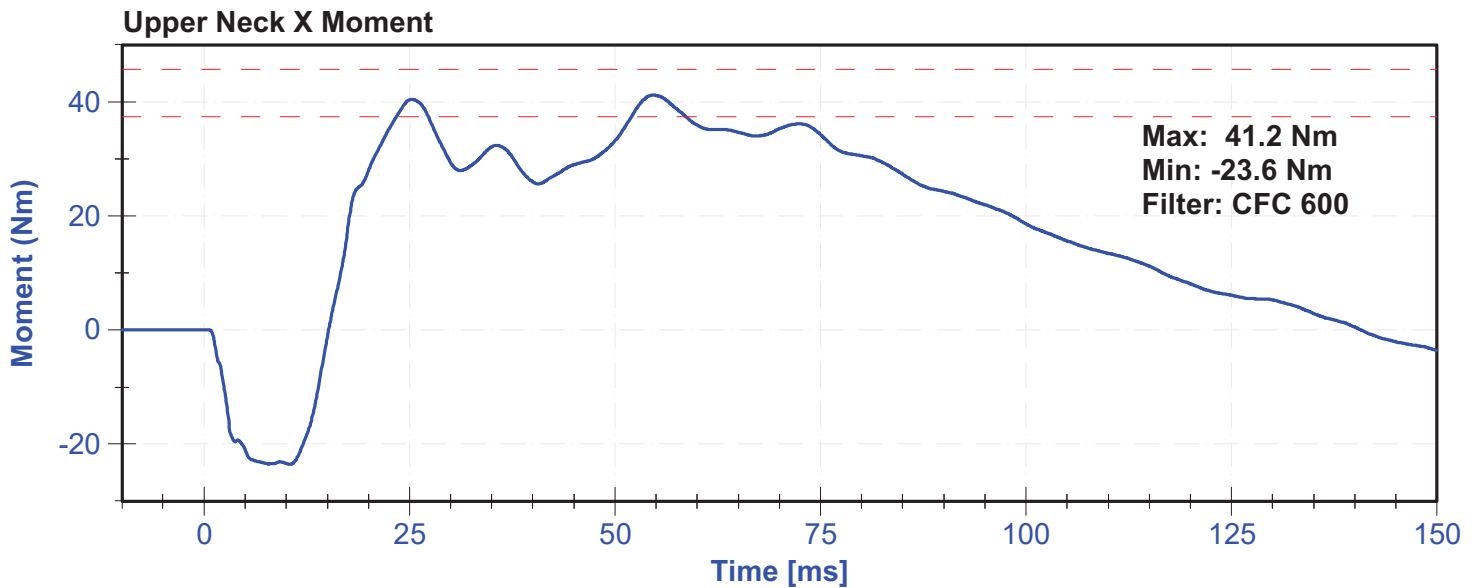
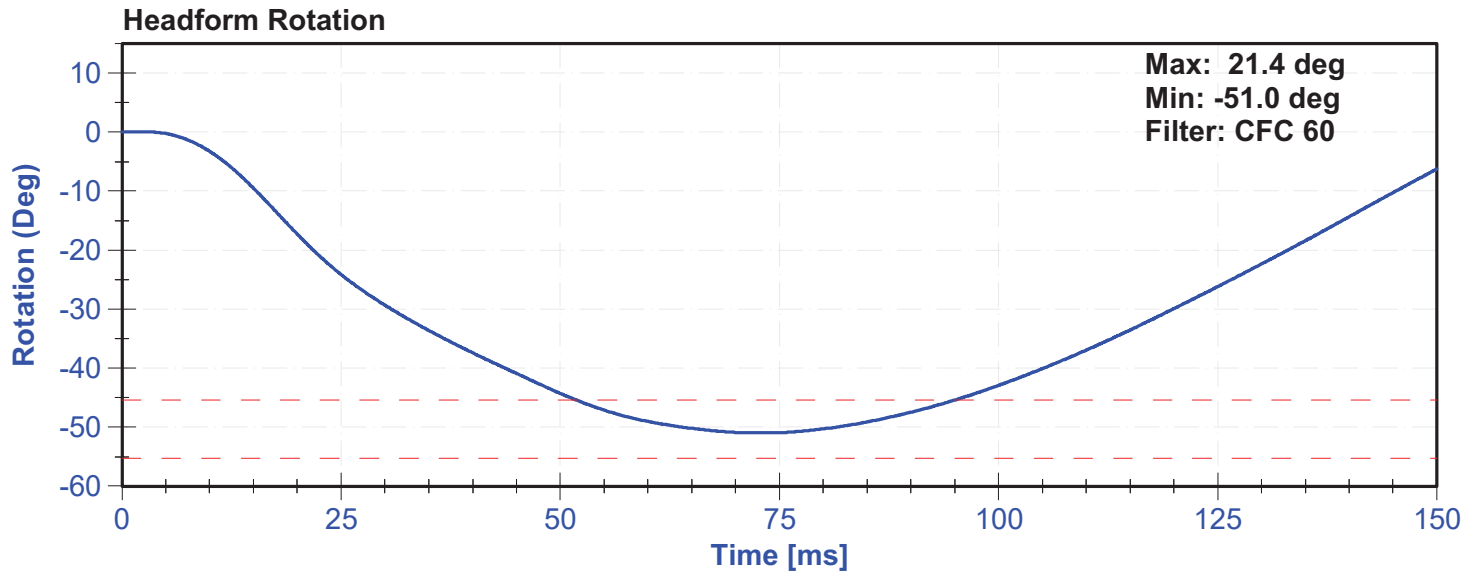
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	25.7	Pass
Velocity	3.35	3.45	m/s	3.418	Pass
Pendulum Impulse at 4ms	0.89	1.08	m/s	0.958	Pass
Pendulum Impulse at 8ms	2.04	2.36	m/s	2.139	Pass
Pendulum Impulse at 12ms	3.21	3.46	m/s	3.289	Pass
Peak Upper Neck X Moment after 40ms	37.4	45.7	Nm	41.19	Pass
Peak Head X Angular Rate	-1462	-1375	deg/s	-1468.1	Fail
Peak Head X Rotation	-55.3	-45.4	deg	-50.98	Pass
Rotational Decay Time to Zero	83.7	90.9	ms	85.10	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380JI4	LC-DS9758 Mx	12/3/2015	12/2/2016
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head X ARS	DTS ARS 18k	ARS-6733	4/27/2015	4/26/2016





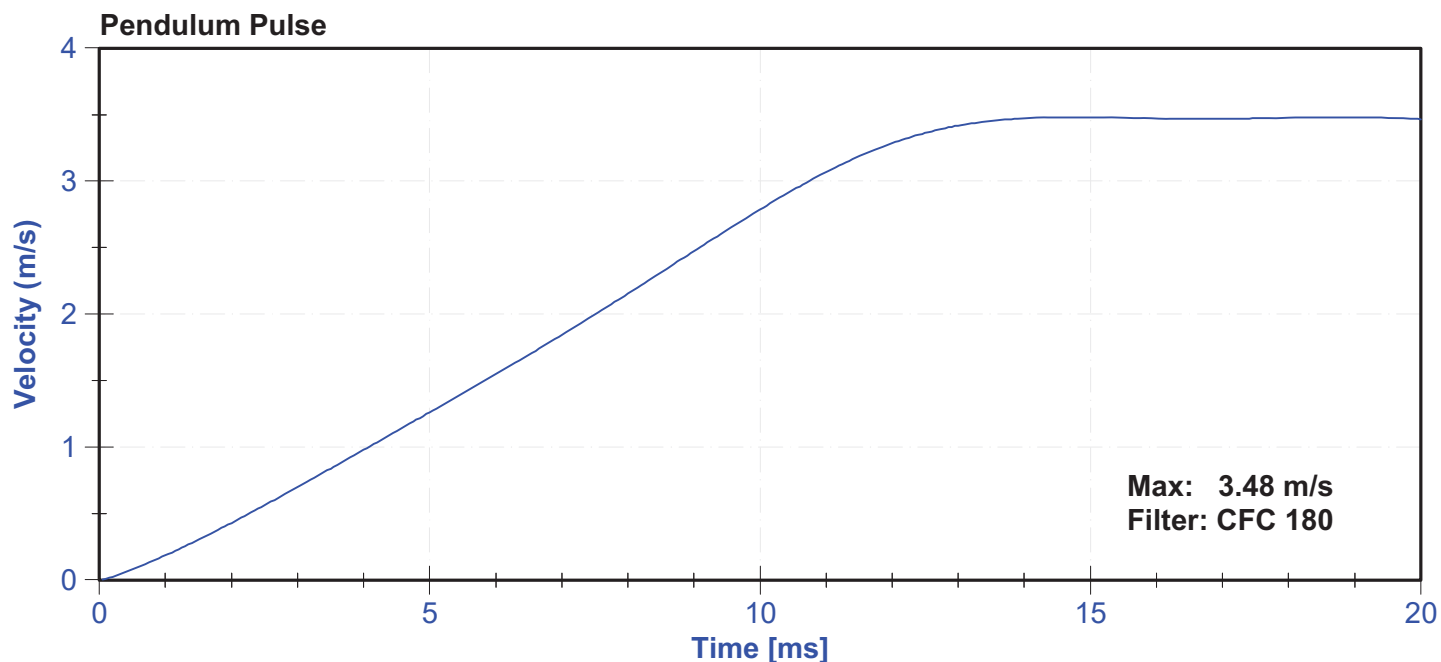
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

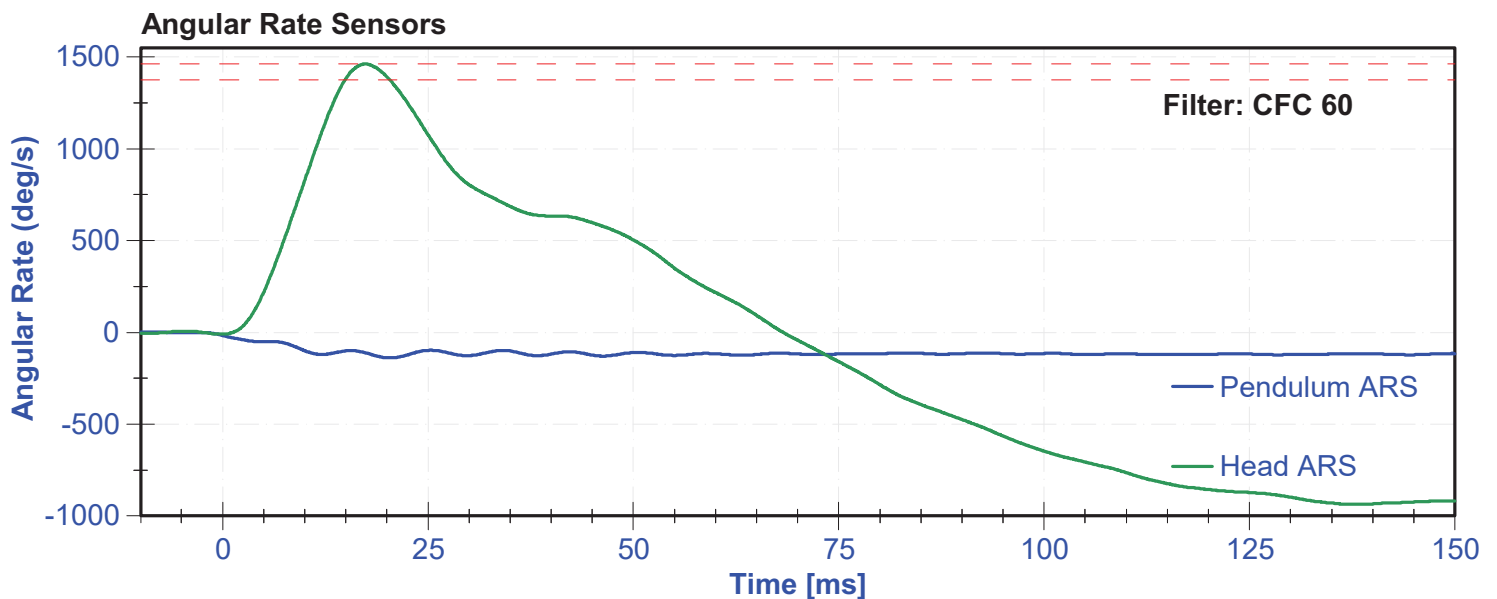
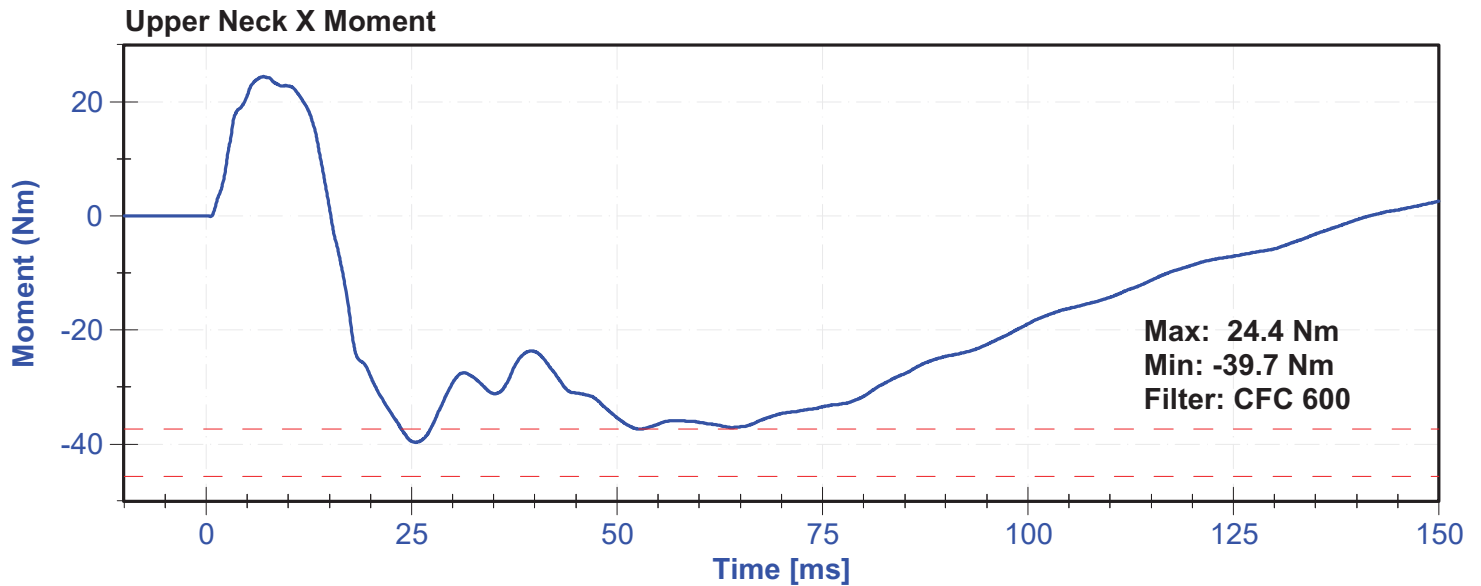
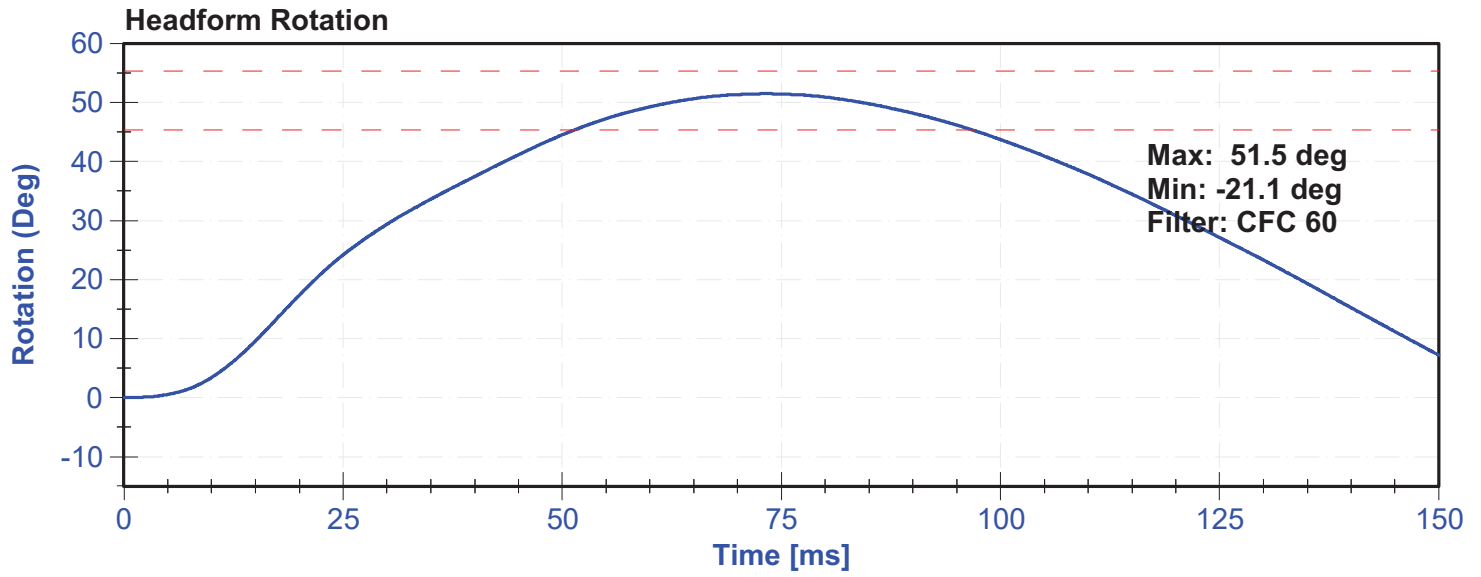
Results

Test Parameter	Minimum Specificatio	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	25.7	Pass
Velocity	3.35	3.45	m/s	3.40	Pass
Pendulum Impulse at 4ms	0.89	1.08	m/s	0.978	Pass
Pendulum Impulse at 8ms	2.04	2.36	m/s	2.153	Pass
Pendulum Impulse at 12ms	3.21	3.46	m/s	3.285	Pass
Peak Upper Neck X Moment after 40ms	-45.7	-37.4	Nm	-37.38	Fail
Peak Head X Angular Rate	1375	1462	deg/s	1460.6	Pass
Peak Head X Rotation	45.4	55.3	deg	51.48	Pass
Rotation Decay Time to Zero	83.7	90.9	ms	85.80	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380J14	LC-DS9758 Mx	12/3/2015	12/2/2016
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head X ARS	DTS ARS 18k	ARS-6733	4/27/2015	4/26/2016





ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

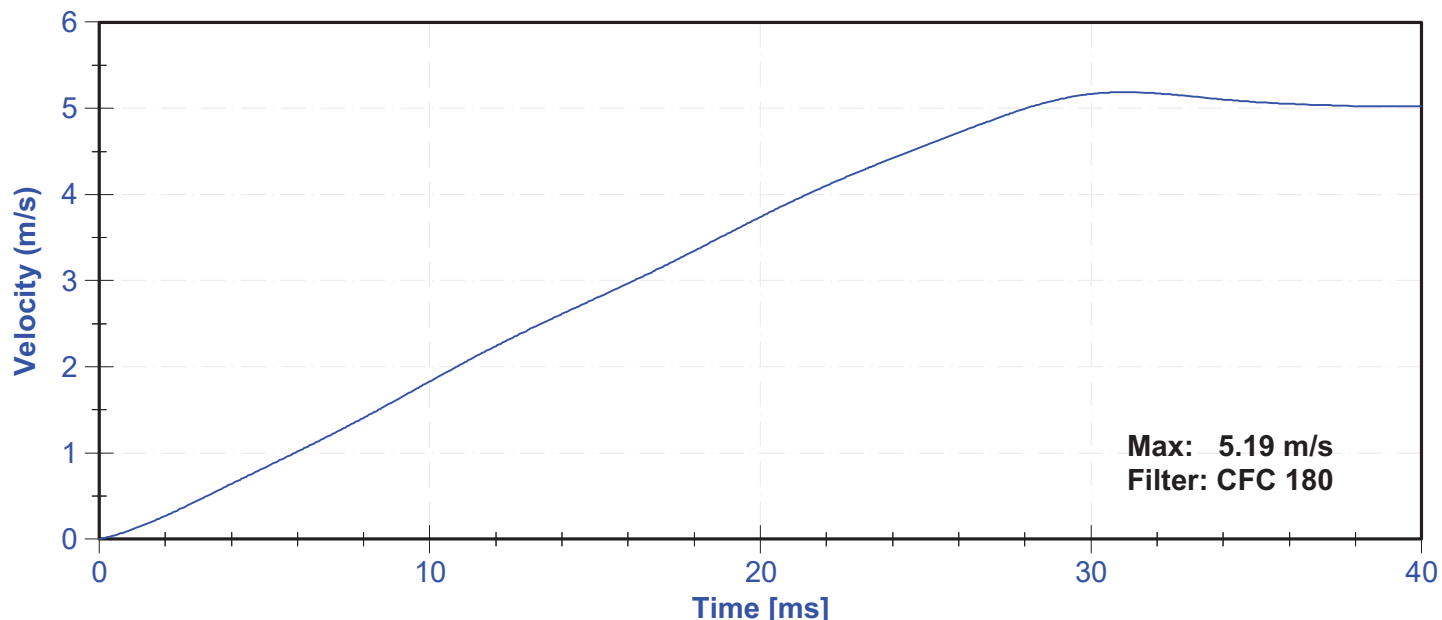
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	26.6	Pass
Velocity	4.95	5.05	m/s	5.015	Pass
Pendulum Impulse at 10ms	1.76	1.91	m/s	1.831	Pass
Pendulum Impulse at 20ms	3.50	3.75	m/s	3.740	Pass
Pendulum Impulse at 30ms	4.88	5.20	m/s	5.167	Pass
Peak Upper Neck Y Moment	-21.3	-17.5	Nm	-17.85	Pass
Peak Upper Neck X Force	967	1182	N	1229.0	Fail
Peak Upper Neck Z Force	-2893	-2603	N	-2538.6	Fail
Peak Front Neck Cable Force	2482	2809	N	2735.0	Pass
Peak Head Y Angular Rate	1907	2043	deg/s	2009.6	Pass
Peak Head Y Rotation	57.6	64.2	deg	40.90	Fail
Rotational Decay Time to Zero	79.3	82.5	ms	54.75	Fail

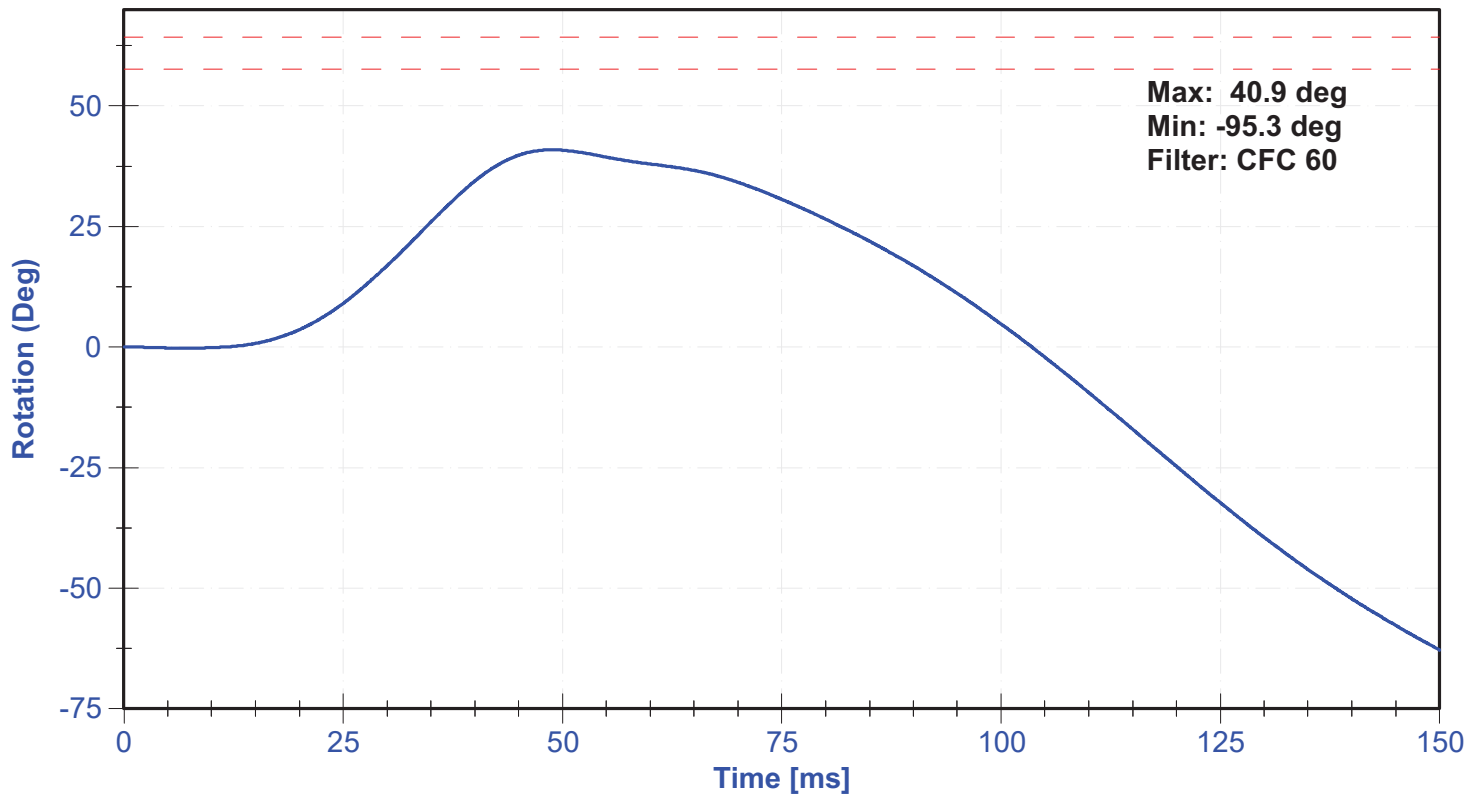
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380J14	LC-DS9758 Fx	12/3/2015	12/2/2016
Fr Neck Cable Load	Humanetics 6005JFL	LC-93	9/3/2015	9/2/2016
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head ARS Y-Axis	DTS ARS 18k	ARS-4071	3/31/2015	3/30/2016

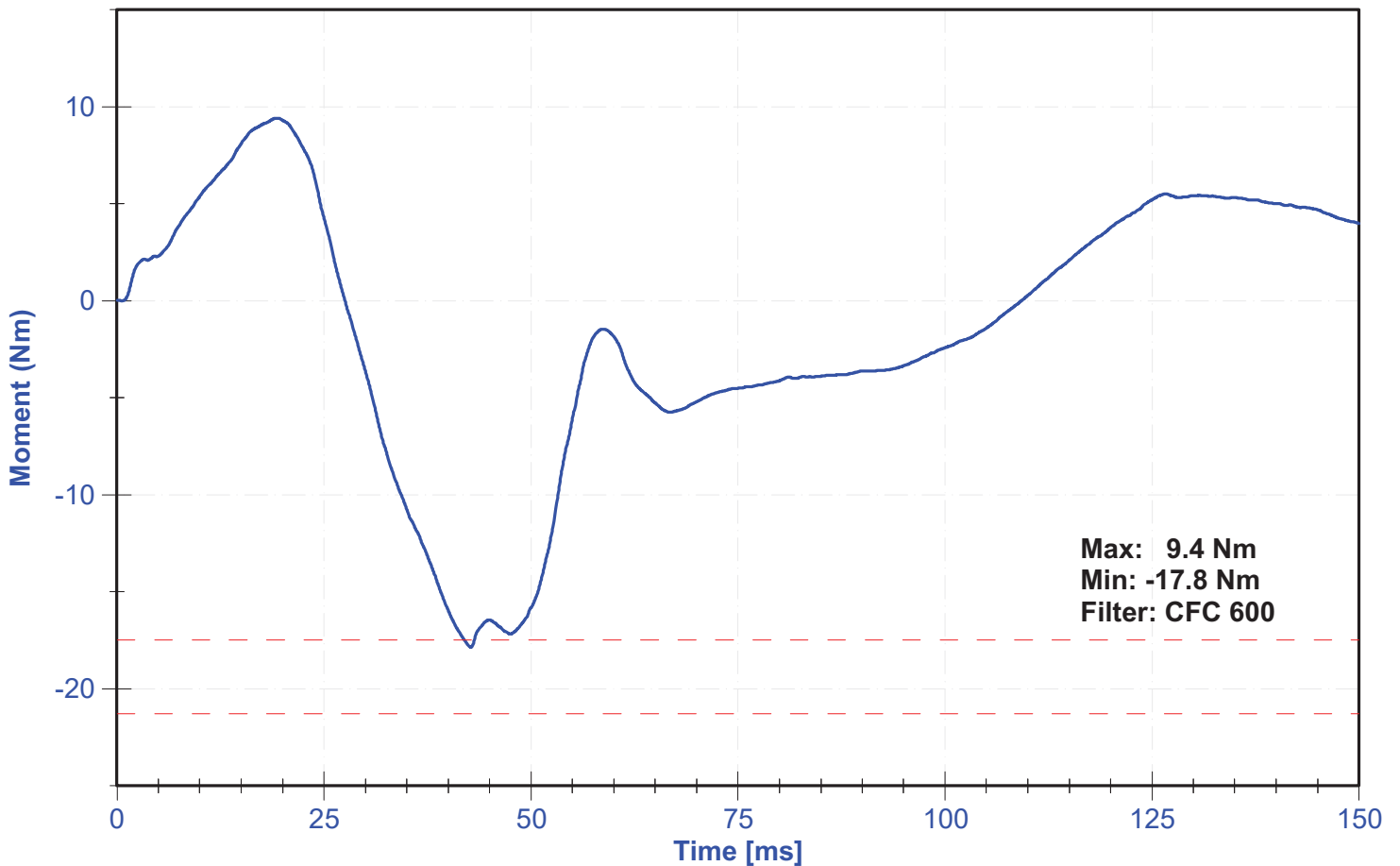
Pendulum Pulse



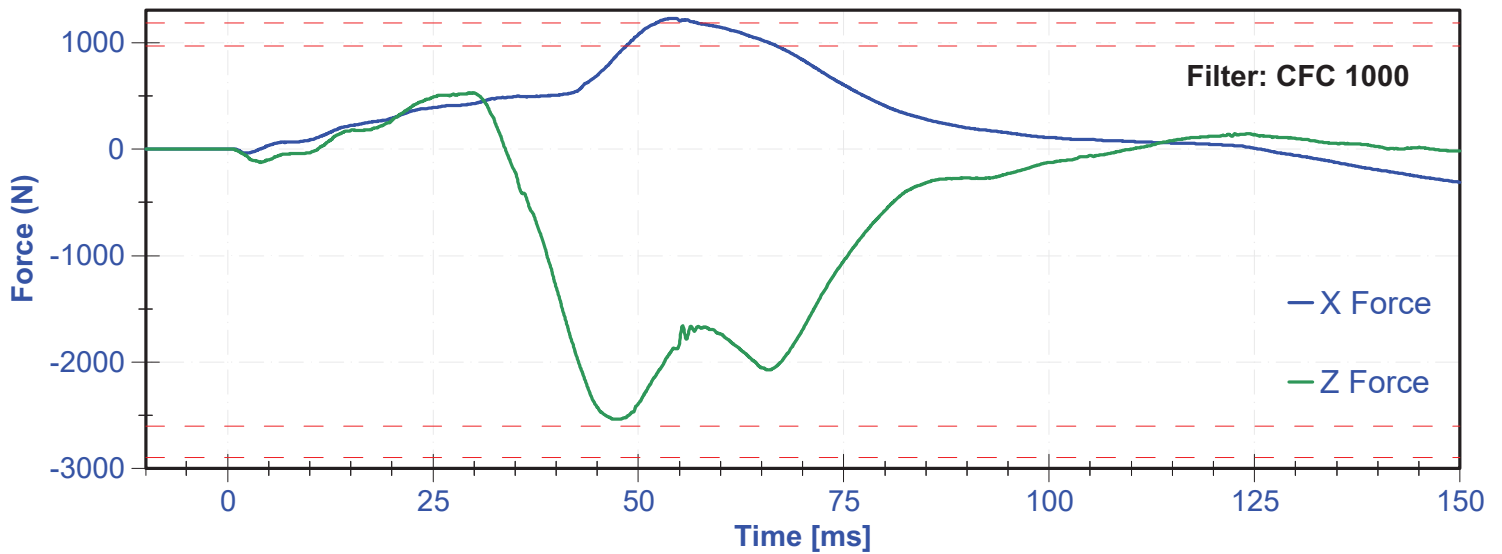
Headform Rotation



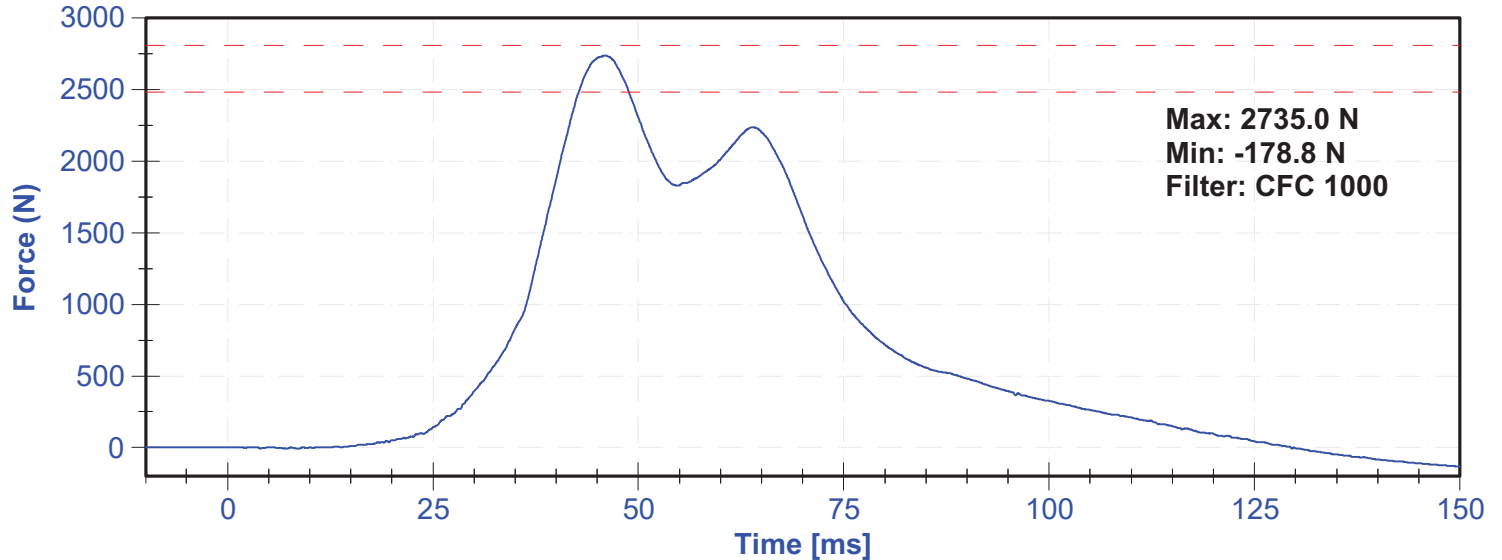
Upper Neck Y Moment



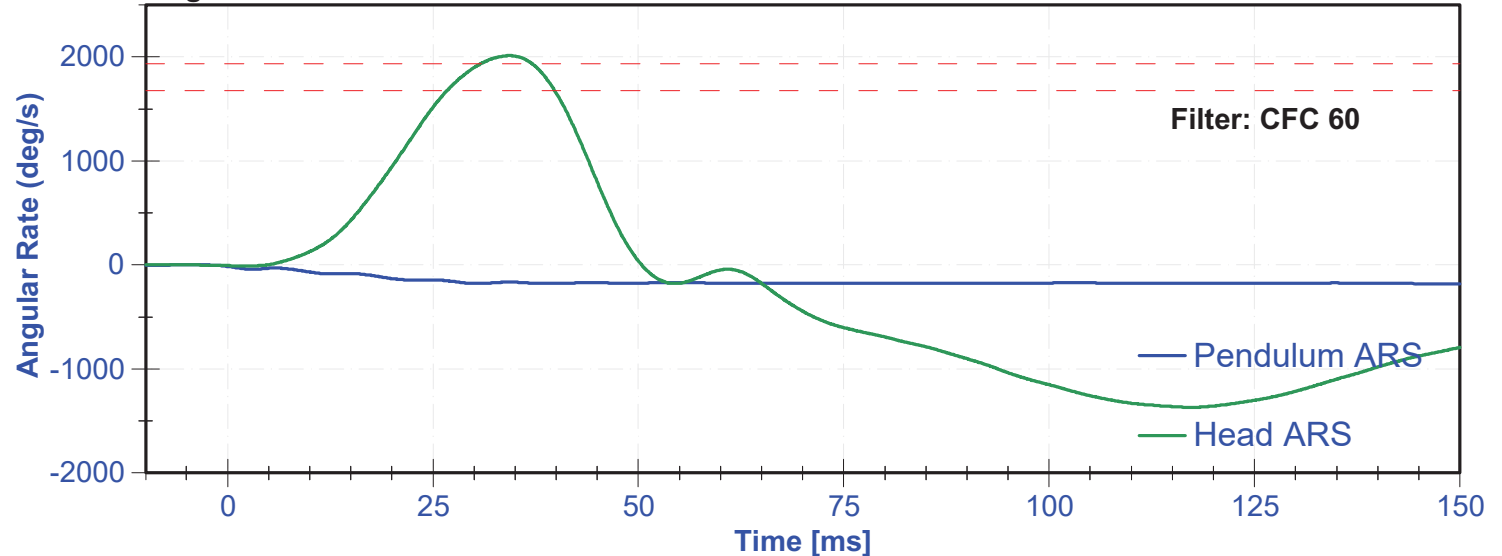
Upper Neck Force



Rear Neck Cable Z Force



Angular Rate Sensors



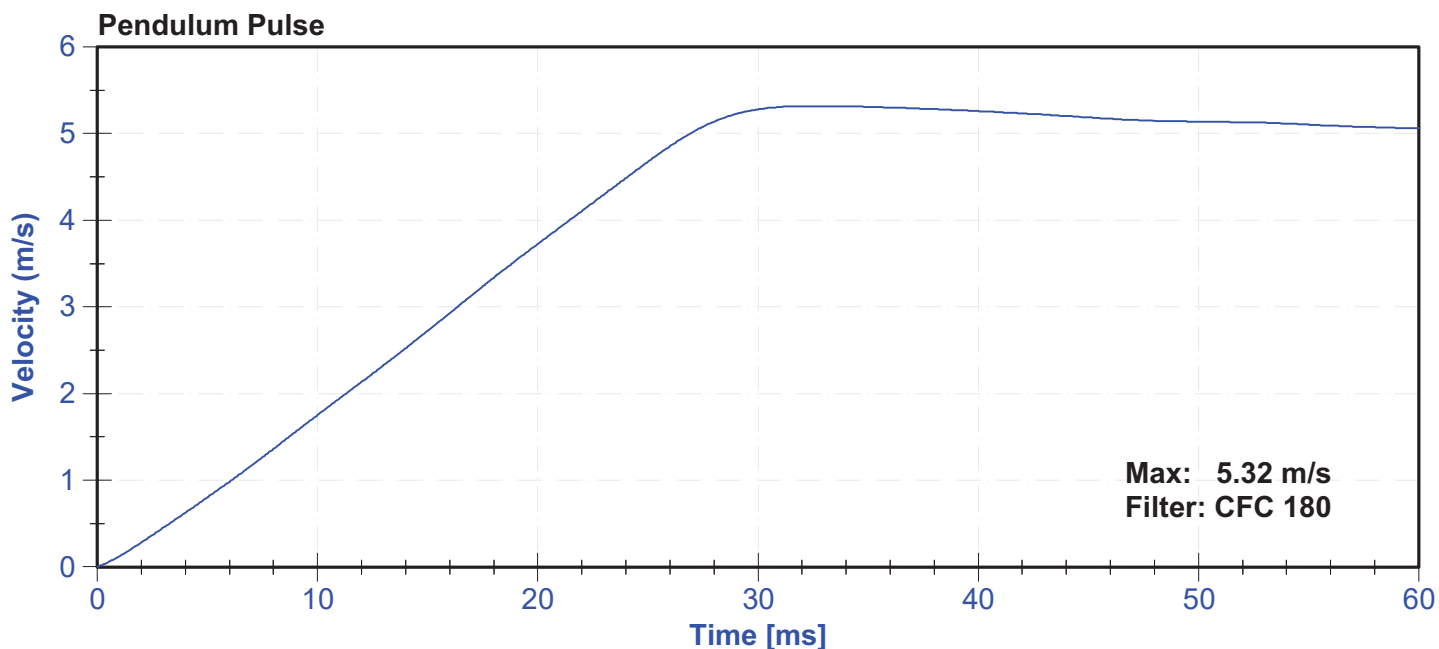
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

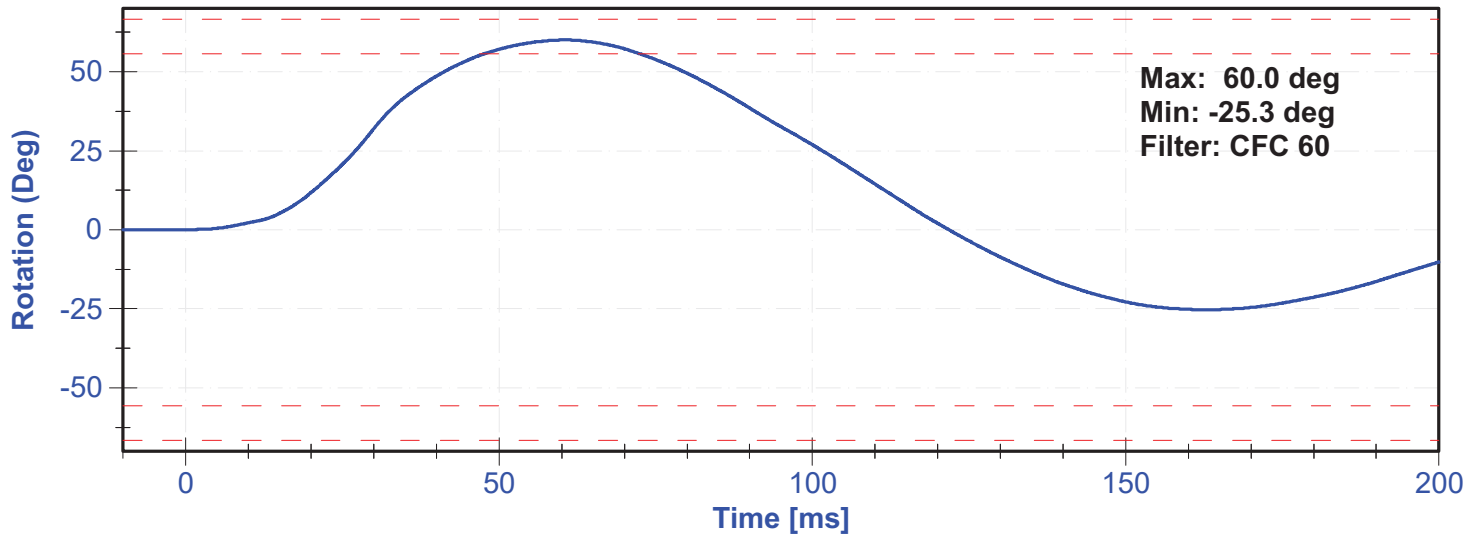
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	22.1	Pass
Humidity	10	70	%	13.9	Pass
Velocity	4.95	5.05	m/s	5.045	Pass
Pendulum Impulse at 10ms	1.72	1.98	m/s	1.753	Pass
Pendulum Impulse at 15ms	2.67	2.97	m/s	2.723	Pass
Pendulum Impulse at 20ms	3.59	3.98	m/s	3.727	Pass
Pendulum Impulse at 25ms	4.43	4.92	m/s	4.673	Pass
Peak Upper Neck Z Moment	32.6	38.3	Nm	35.71	Pass
Peak Neck Axial Rotation	55.6	66.6	deg	60.01	Pass
Rotation Decay Time to Zero	58.0	61.6	ms	61.25	Pass
Peak Upper Neck Angular Velocity	1559	1709	deg/s	1643.1	Pass

Transducer Calibrations

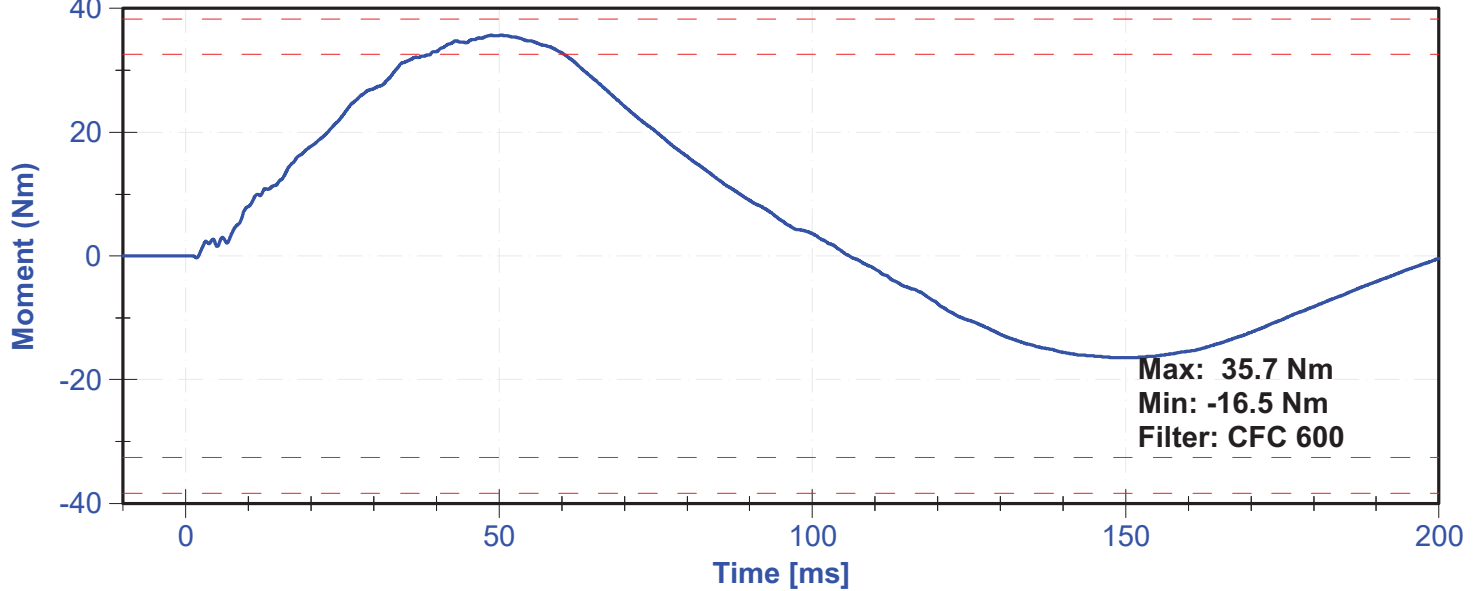
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Neck Fixture Potentiometer	Servo 14CB1-3615	DS-0001	10/21/2015	10/20/2016
Upper Neck Load Cell	Humanetics 10380JI4	LC-DS9758 Mz	12/3/2015	12/2/2016
Upper Neck ARS	DTS ARS PRO-18K	ARS-9097	9/30/2015	9/29/2016



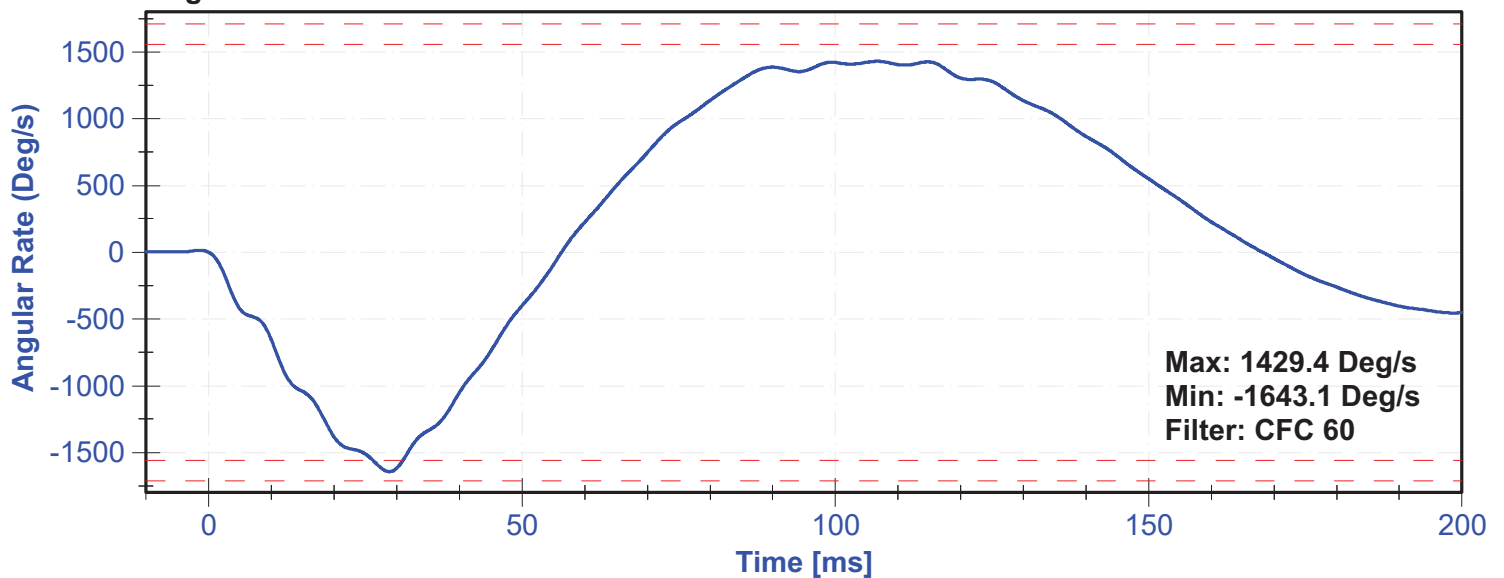
Axial Rotation



Moment



Angular Rate



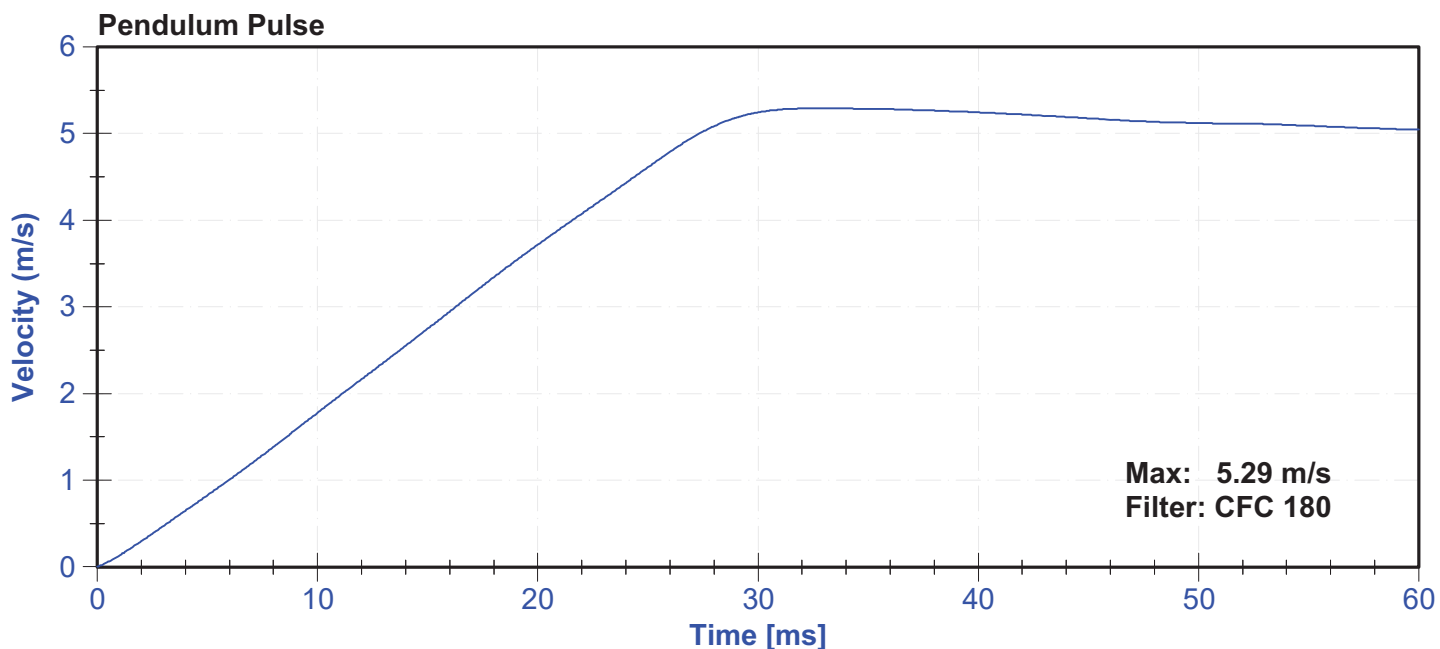
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

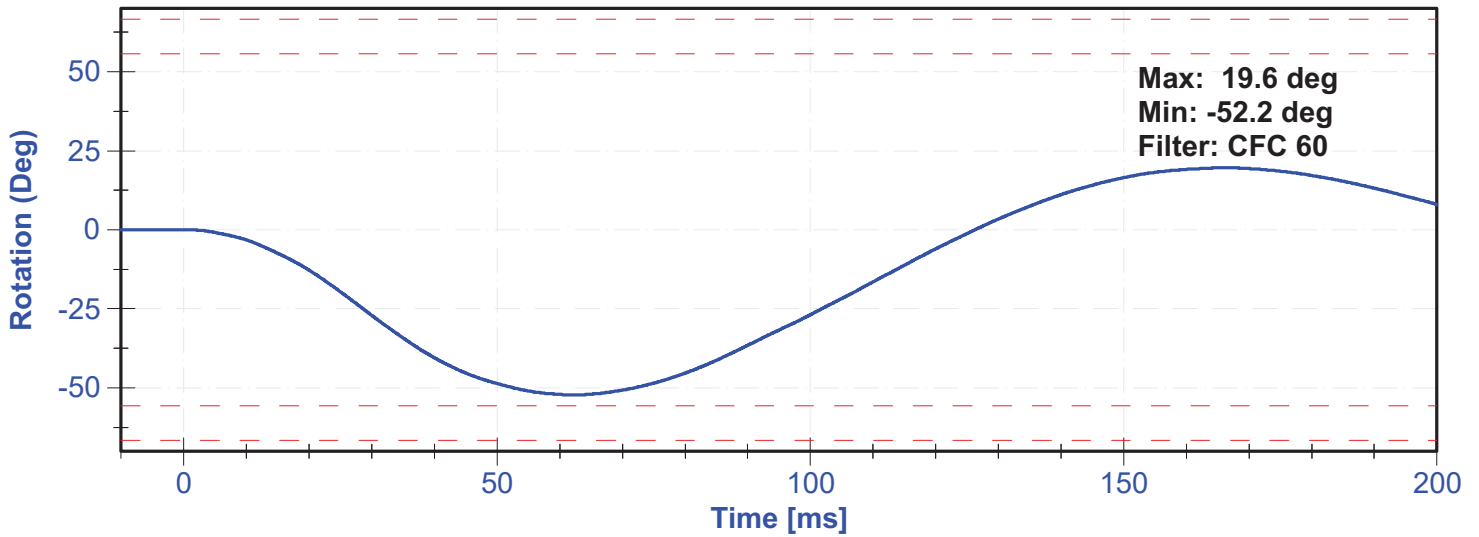
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	23.7	Pass
Velocity	4.95	5.05	m/s	5.045	Pass
Pendulum Impulse at 10ms	1.72	1.98	m/s	1.779	Pass
Pendulum Impulse at 15ms	2.67	2.97	m/s	2.748	Pass
Pendulum Impulse at 20ms	3.59	3.98	m/s	3.719	Pass
Pendulum Impulse at 25ms	4.43	4.92	m/s	4.610	Pass
Peak Upper Neck Z Moment	32.6	38.3	Nm	34.85	Pass
Peak Neck Axial Rotation	55.6	66.6	deg	52.19	Fail
Rotation Decay Time to Zero	58.0	61.6	ms	48.70	Fail
Peak Upper Neck Angular Velocity	1559	1709	deg/s	1634.1	Pass

Transducer Calibrations

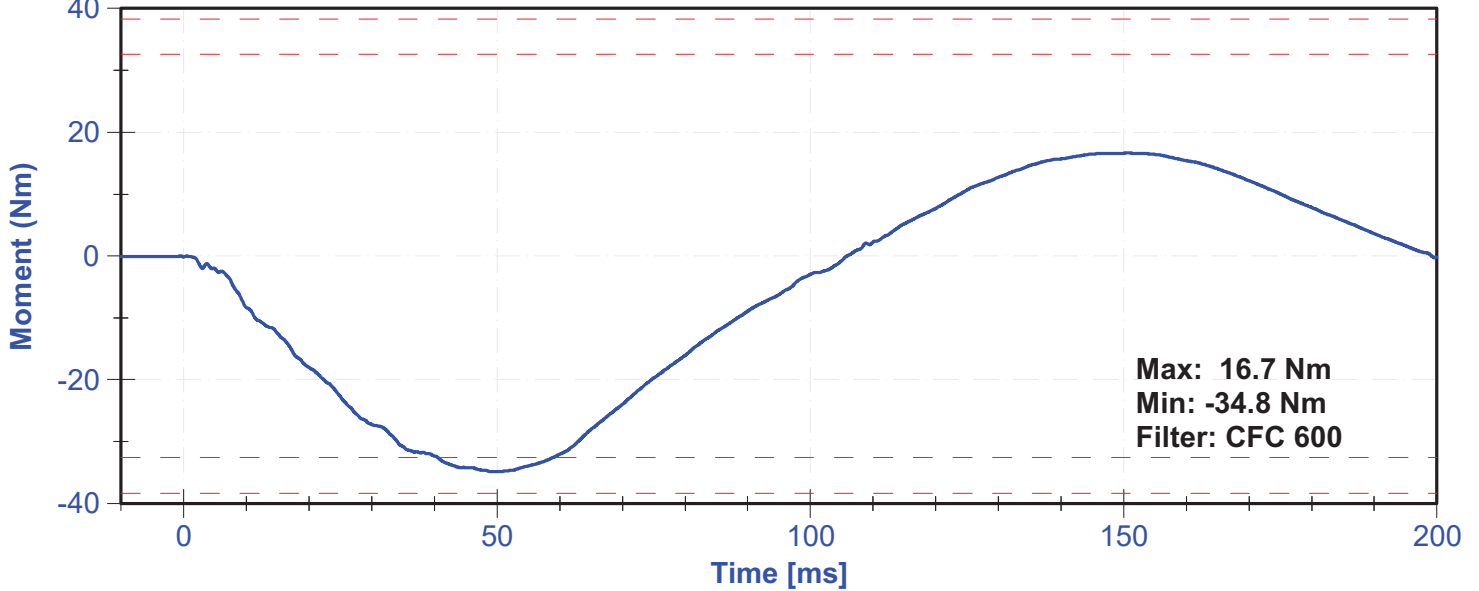
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Neck Fixture Potentiometer	Servo 14CB1-3615	DS-0001	10/21/2015	10/20/2016
Upper Neck Load Cell	Humanetics 10380JI4	LC-DS9758 Mz	12/3/2015	12/2/2016
Upper Neck ARS	DTS ARS-PRO-8K	ARS-6424	1/19/2016	1/18/2017



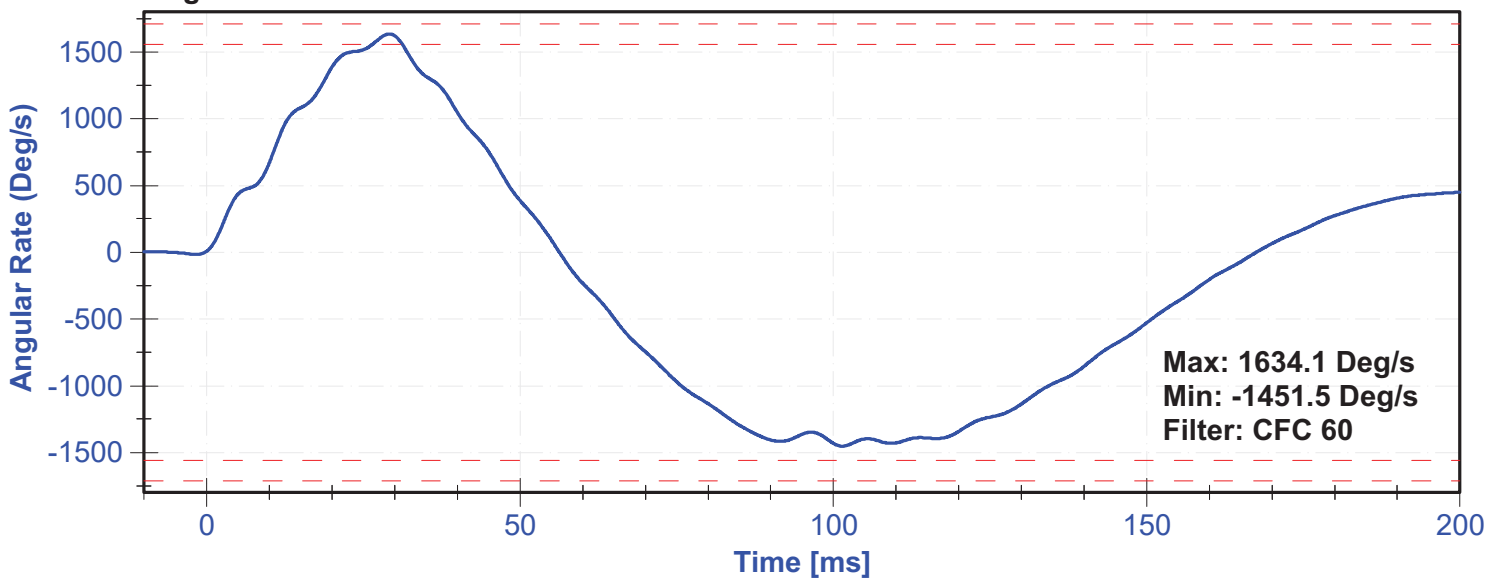
Axial Rotation



Moment



Angular Rate



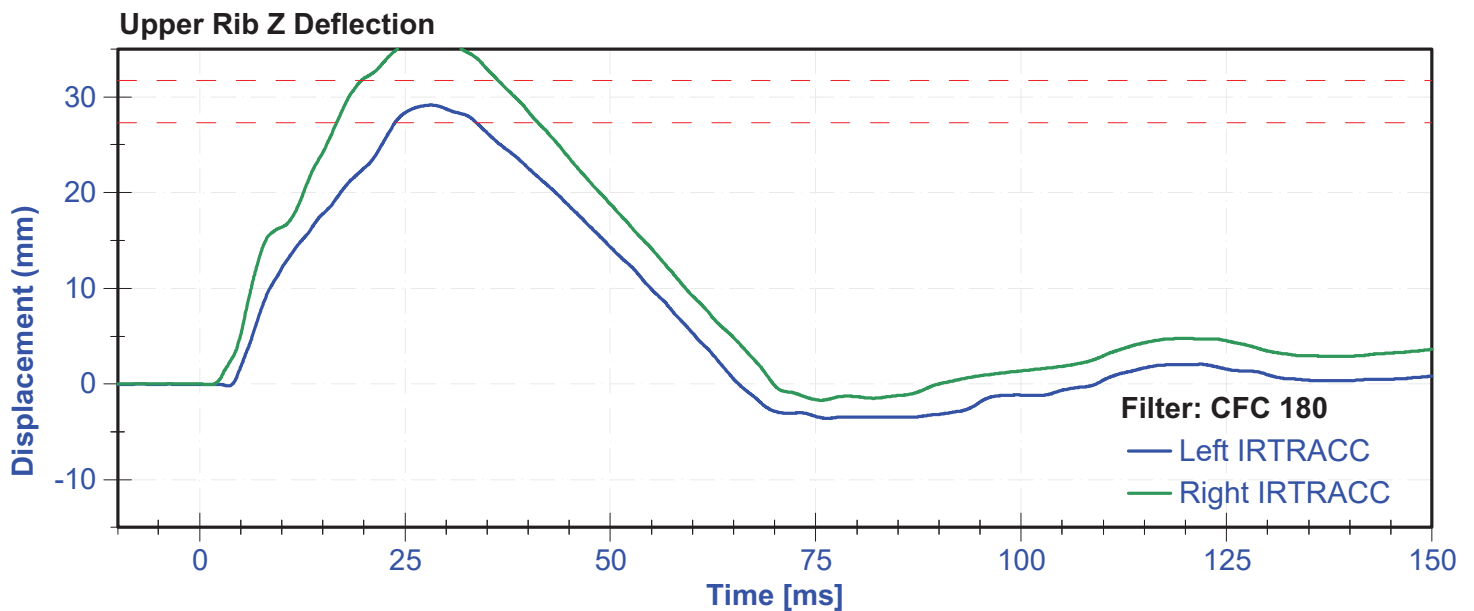
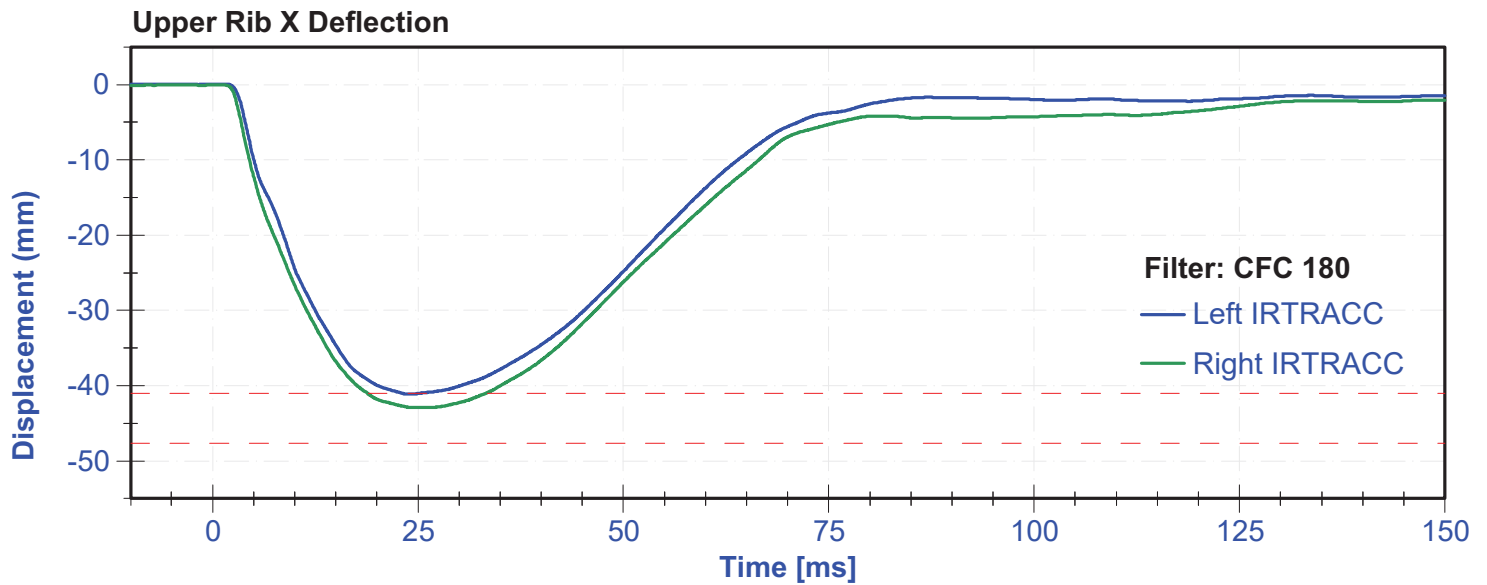
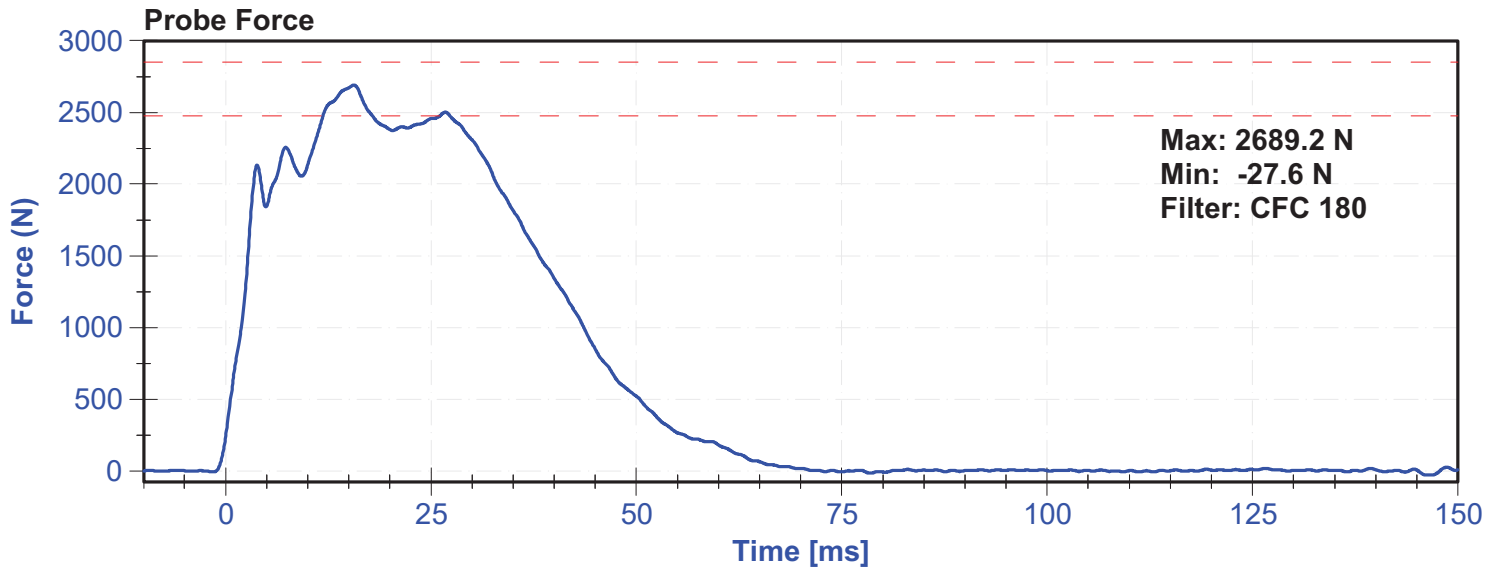
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

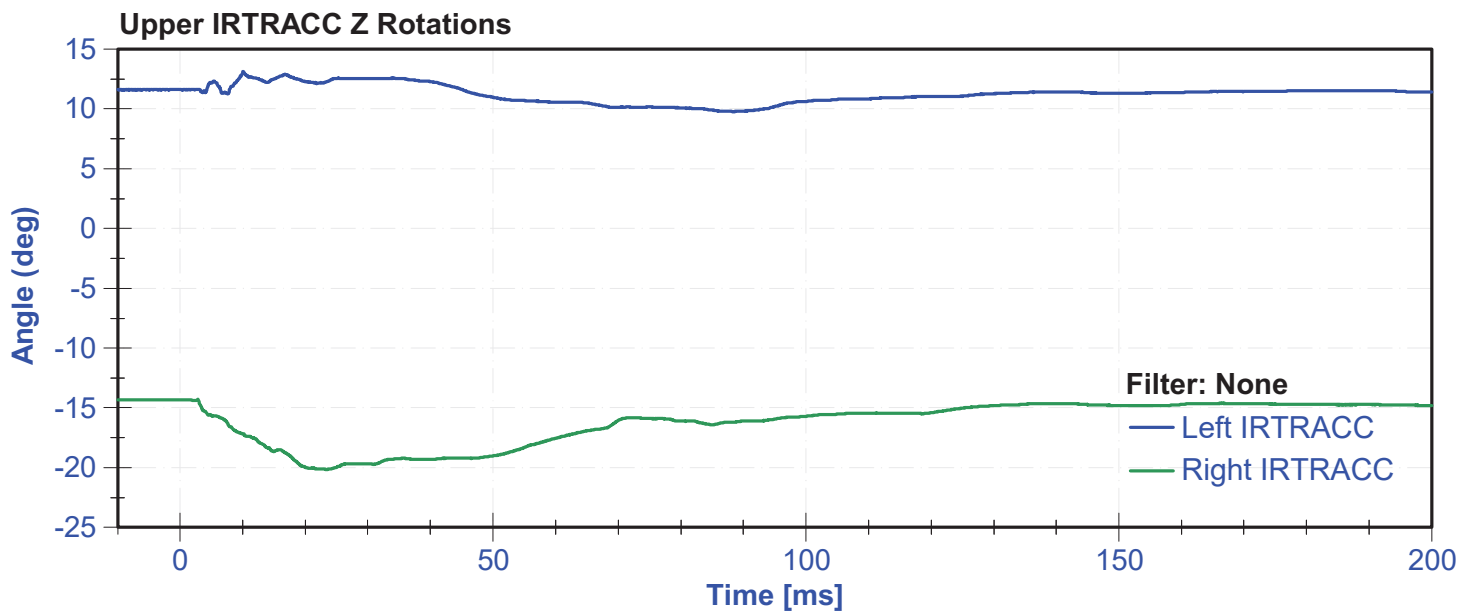
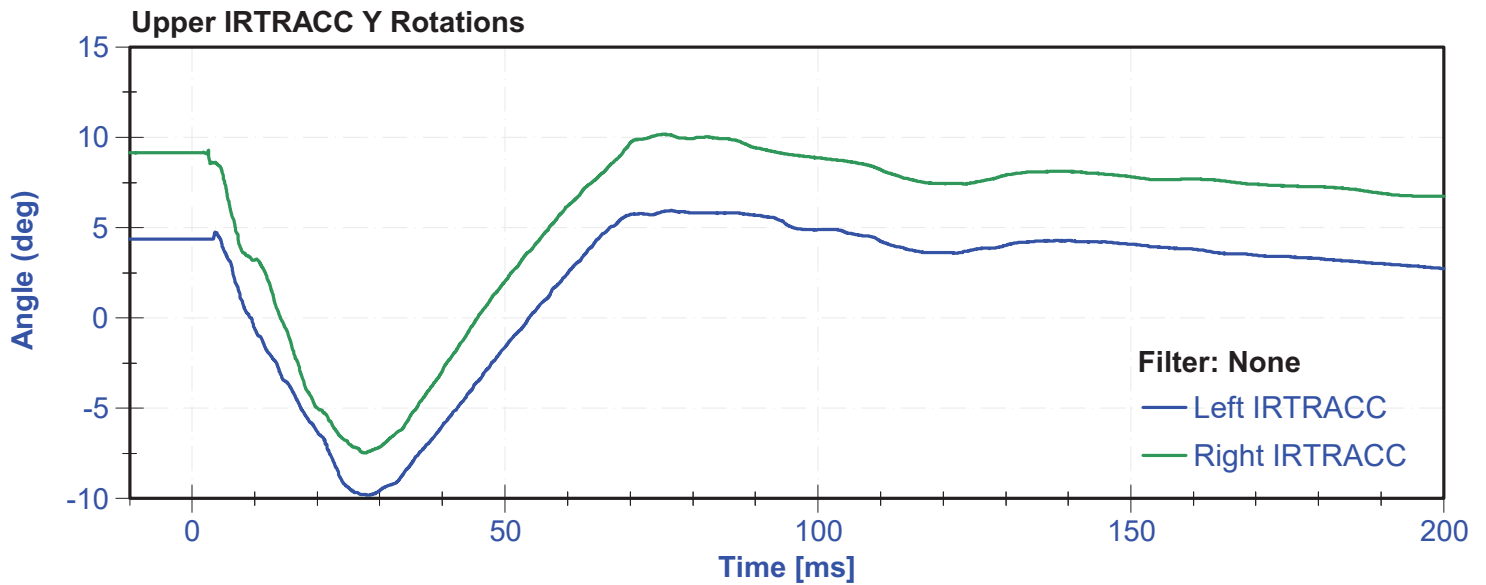
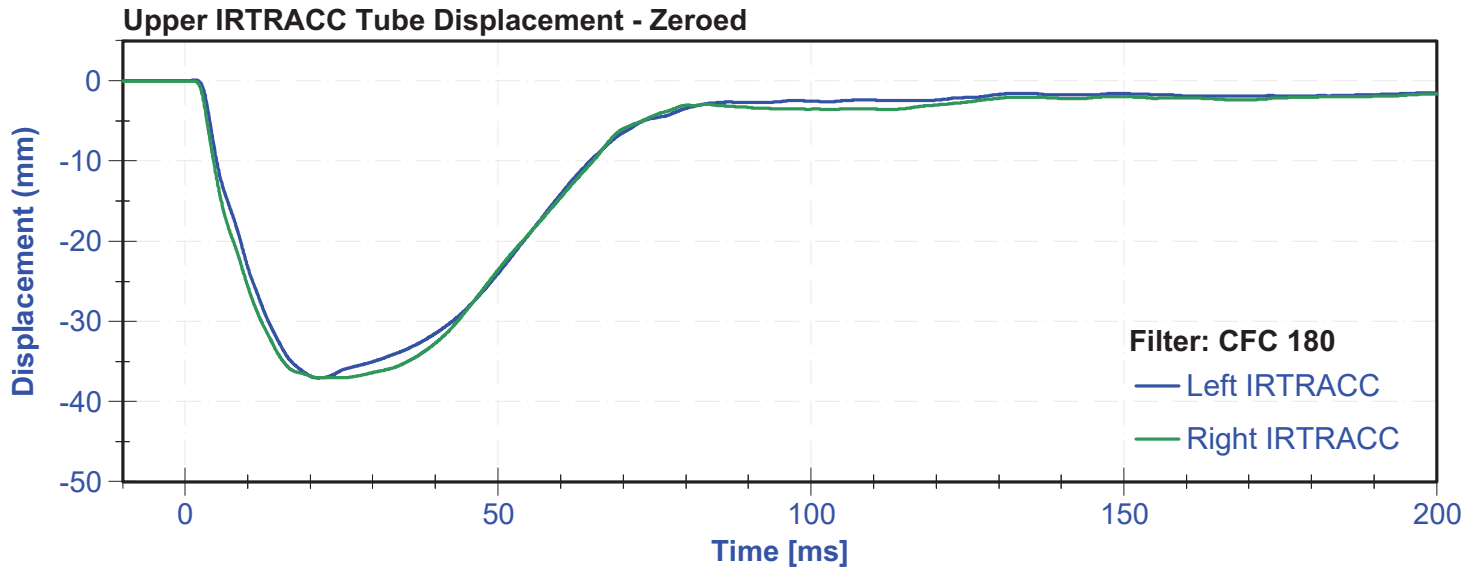
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	18.9	25.6	°C	20.7	Pass
Humidity	10	70	%	36.8	Pass
Impact Velocity	4.25	4.35	m/s	4.342	Pass
Probe Force	2474	2850	N	2689.2	Pass
Upper Left X Rib Deflection	-47.6	-41.0	mm	-41.14	Pass
Upper Right X Rib Deflection	-47.6	-41.0	mm	-42.90	Pass
Left/Right X Rib Deviation	-7.00	7.00	mm	1.760	Pass
Upper Left Z Rib Deflection	27.3	31.7	mm	29.15	Pass
Upper Right Z Rib Deflection	27.3	31.7	mm	36.40	Fail
Left/Right Z Rib Deviation	-7.00	7.00	mm	-7.254	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Upper Left IRTRACC	Humanetics IF-364-C-R3	DS-DQ2255	4/8/2015	4/7/2016
Upper Left Y Potentiometer	Sfernice 9945	DS-DM4779	4/8/2015	4/7/2016
Upper Left Z Potentiometer	Sfernice 9945	DS-DM4778	4/8/2015	4/7/2016
Upper Right IRTRACC	Humanetics IF-364-C-R3	DS-DQ2254	4/8/2015	4/7/2016
Upper Right Y Potentiometer	Sfernice 9945	DS-DM4774	4/8/2015	4/7/2016
Upper Right Z Potentiometer	Sfernice 9945	DS-DM4775	4/8/2015	4/7/2016





ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

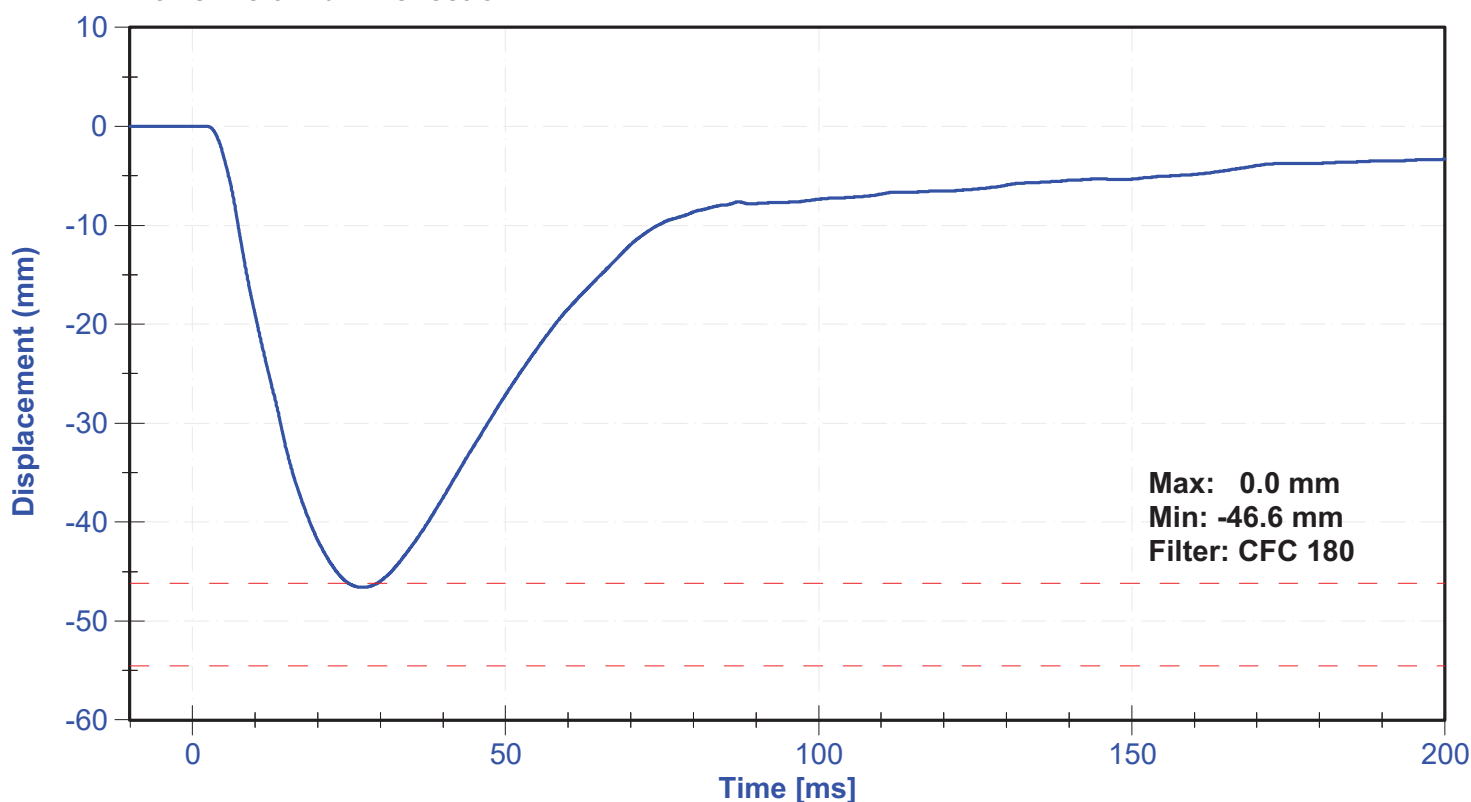
Results

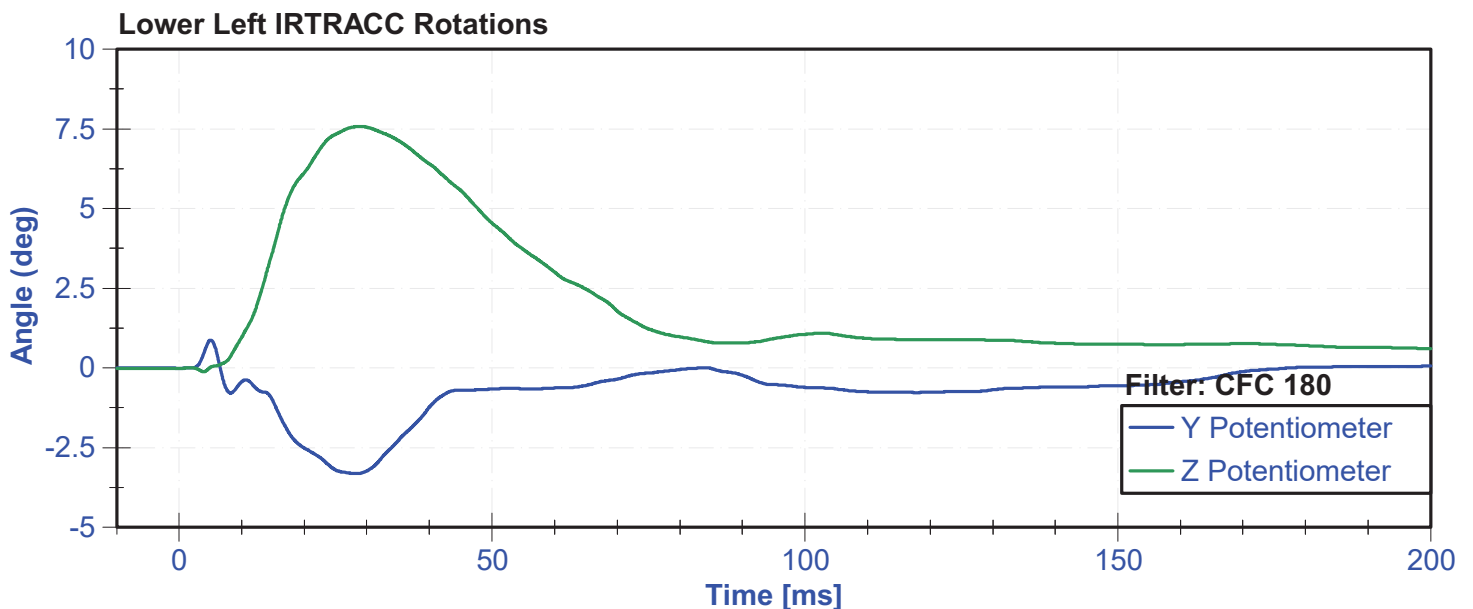
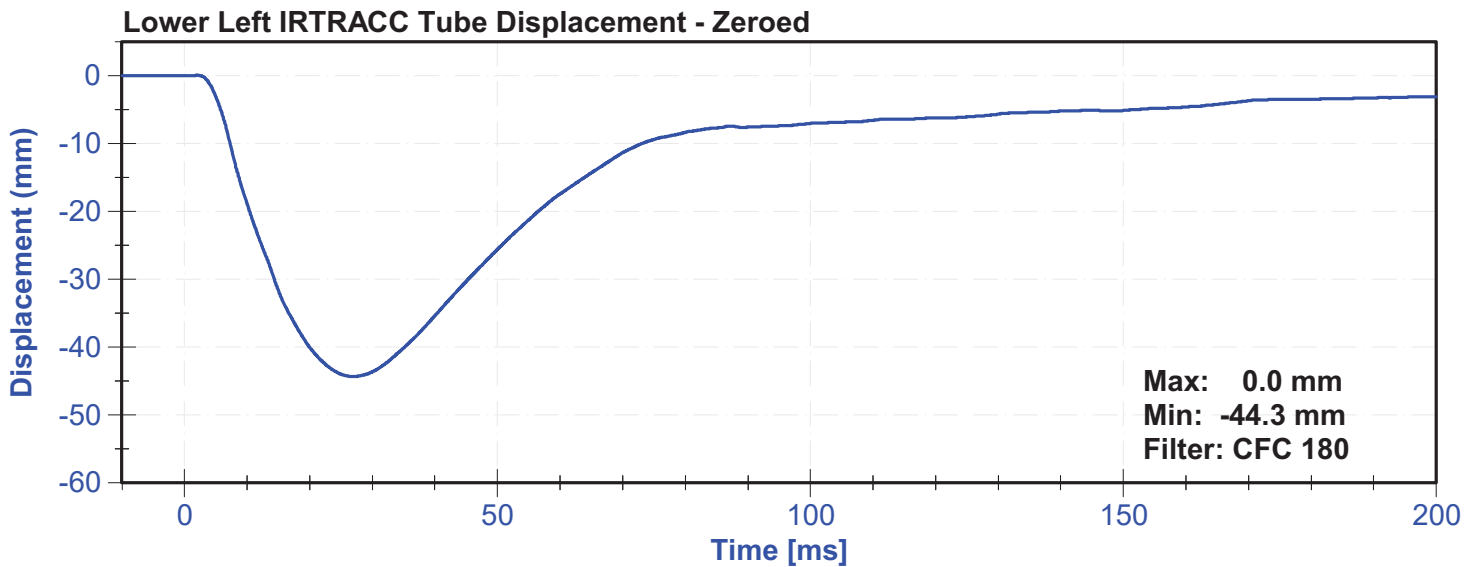
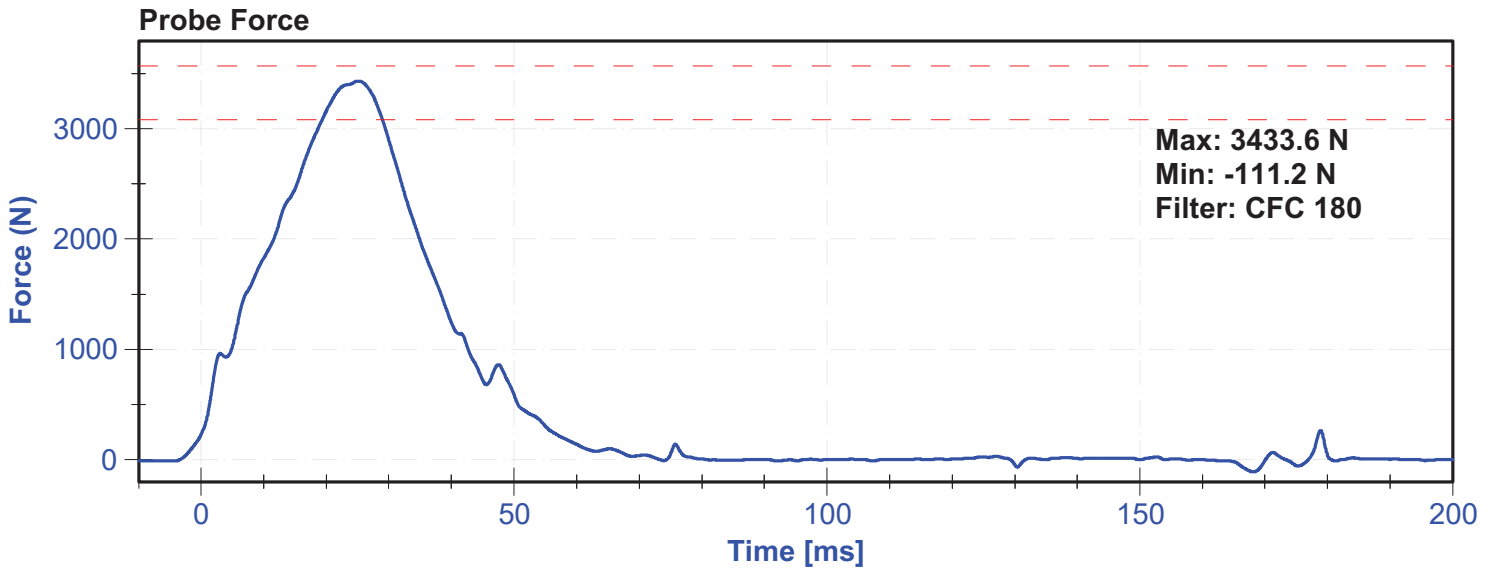
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Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	40.4	Pass
Impact Velocity	4.25	4.35	m/s	4.311	Pass
Peak Left X Rib Deflection	-54.5	-46.2	mm	-46.61	Pass
Probe Force during Peak Deflection	3083	3571	N	3433.6	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Lower Left IRTRACC	Humanetics IF-364-C-R3	DS-DK3866	4/8/2015	4/7/2016
Lower Left Y Potentiometer	Sfernice 9945	DS-DJ5455	4/8/2015	4/7/2016
Lower Left Z Potentiometer	Sfernice 9945	DS-DJ5454	4/8/2015	4/7/2016

Lower Left Rib X Deflection





ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

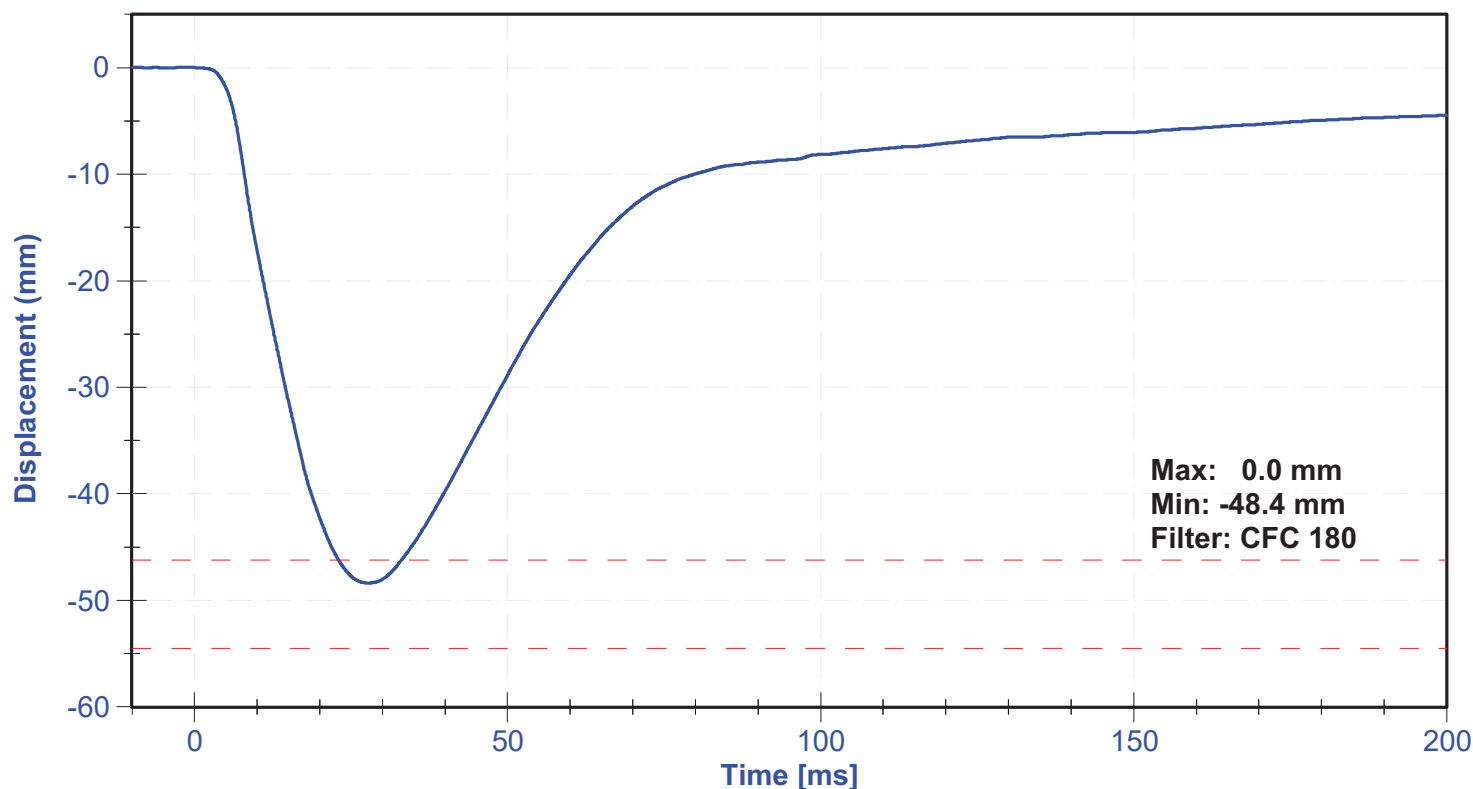
Results

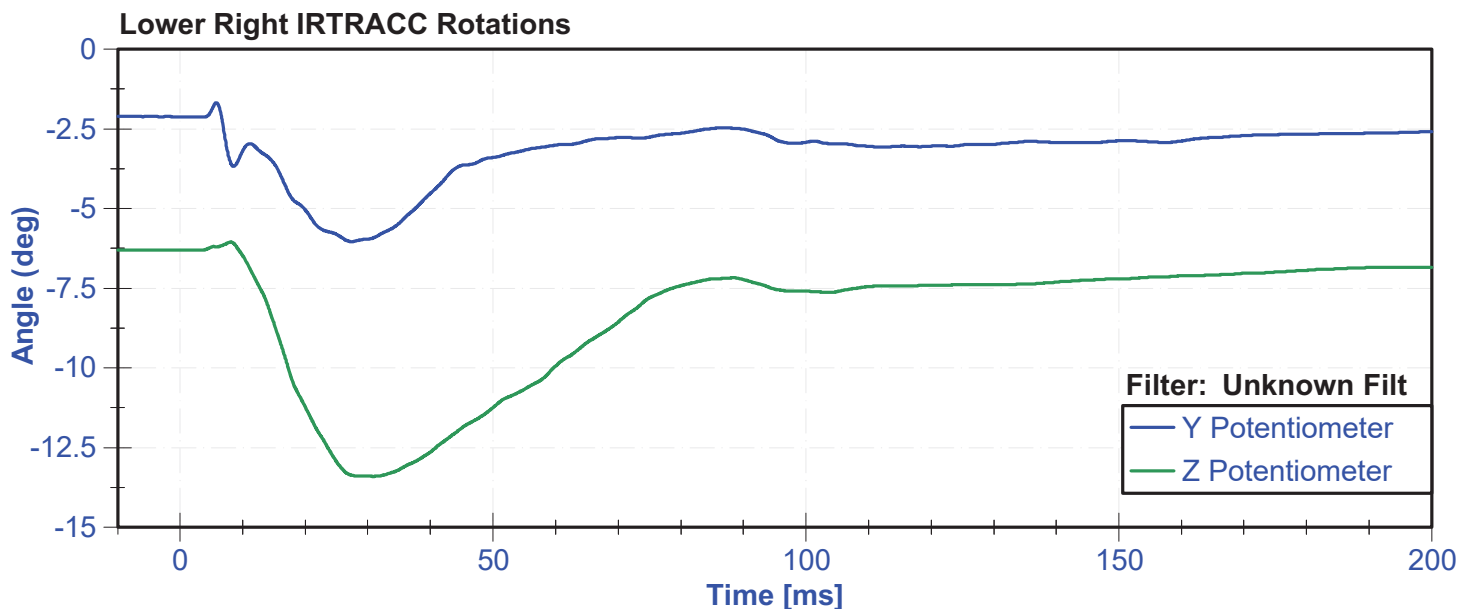
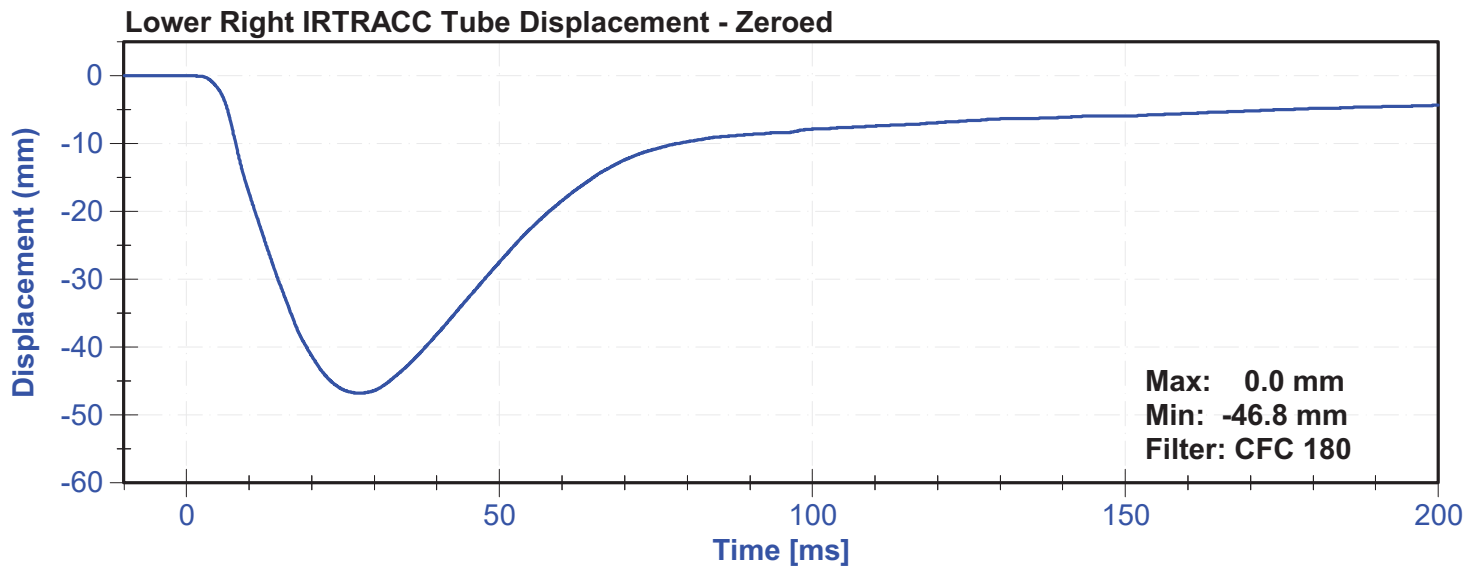
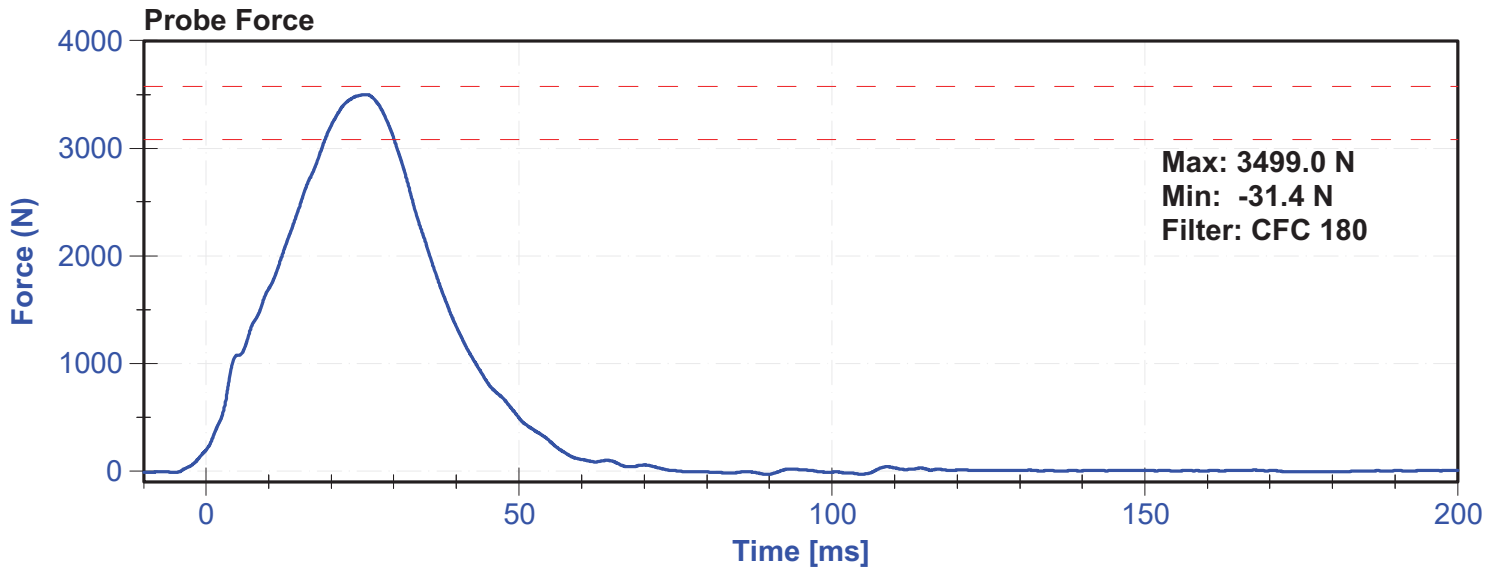
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Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	37.7	Pass
Impact Velocity	4.25	4.35	m/s	4.323	Pass
Peak Right X Rib Deflection	-54.5	-46.2	mm	-48.37	Pass
Probe Force during Peak Deflection	3083	3571	N	3499.0	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Lower Right IRTRACC	Humanetics IF-364-C-R3	DS-DK3865	4/8/2015	4/7/2016
Lower Right Y Potentiometer	Sfernice 9945	DS-DJ5453	4/8/2015	4/7/2016
Lower Right Z Potentiometer	Sfernice 9945	DS-DJ5452	4/8/2015	4/7/2016

Lower Right Rib X Deflection





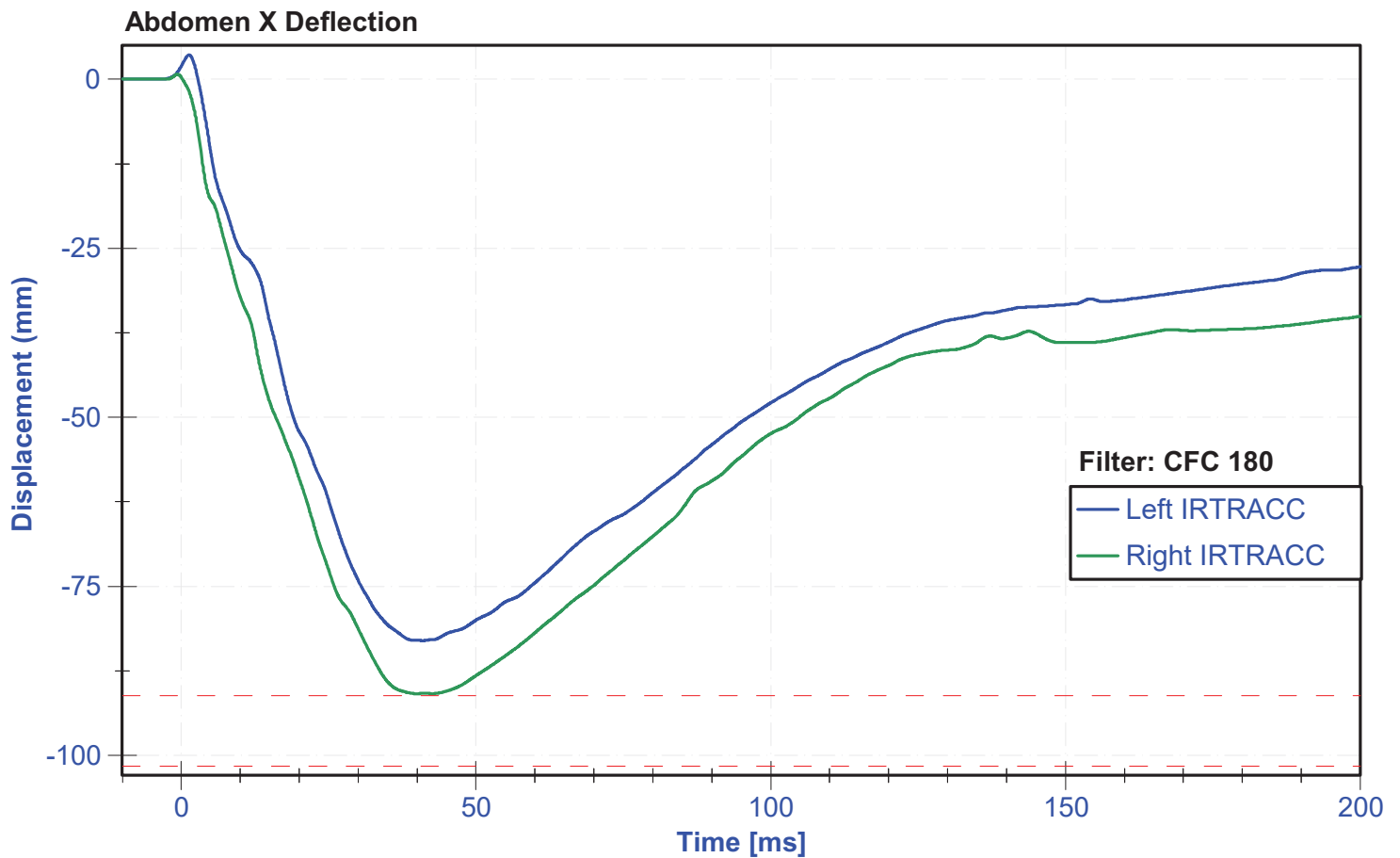
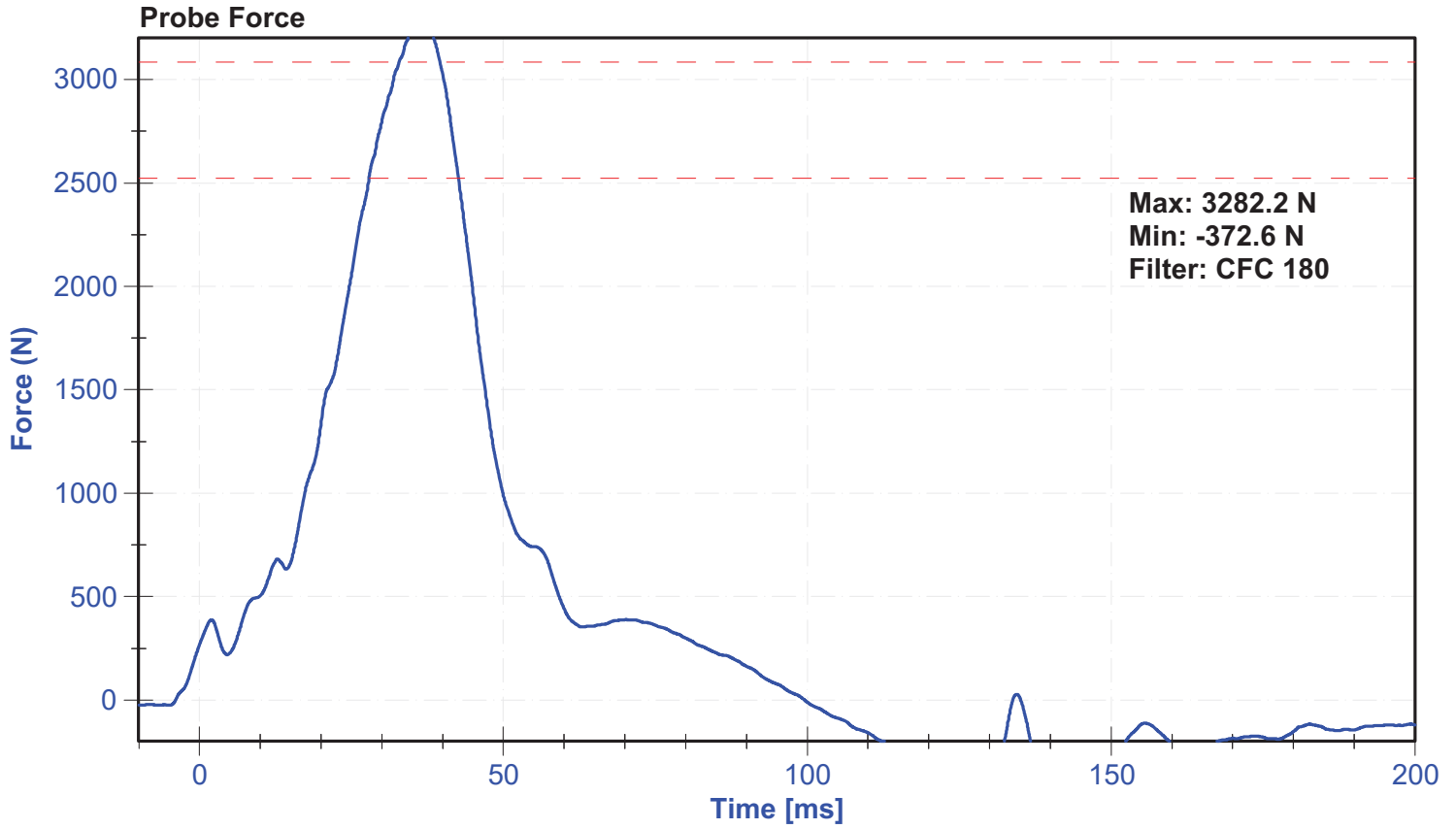
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

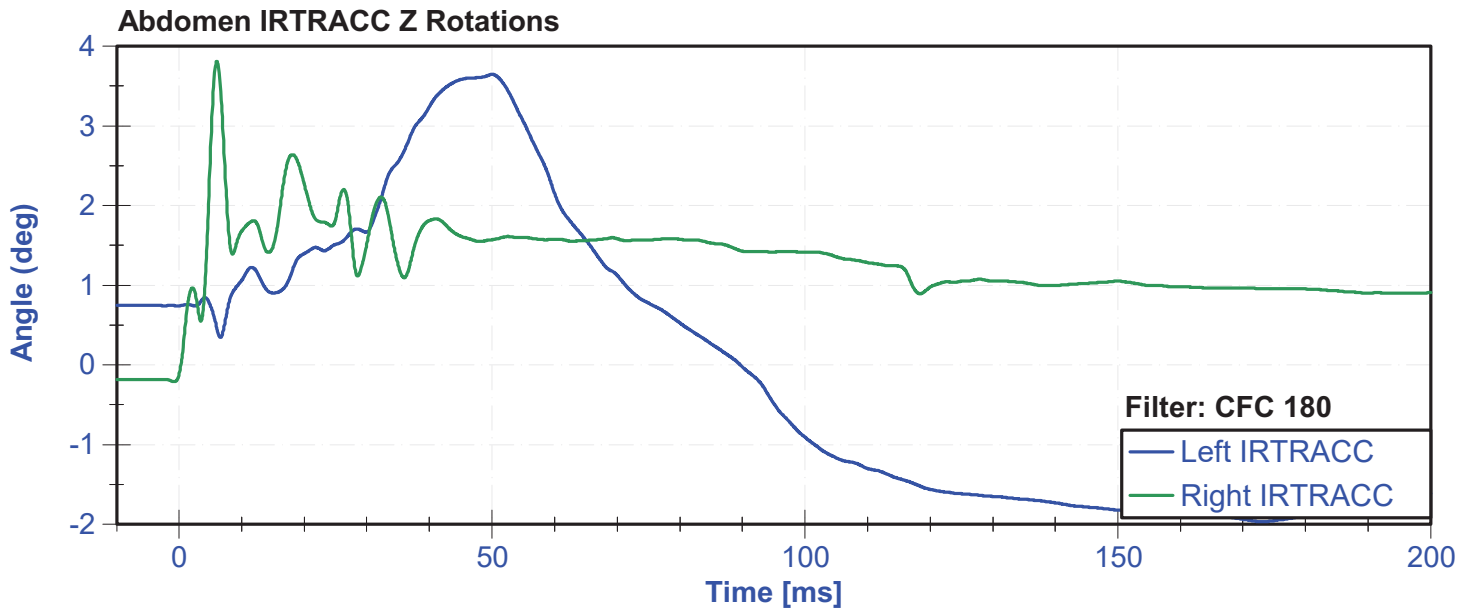
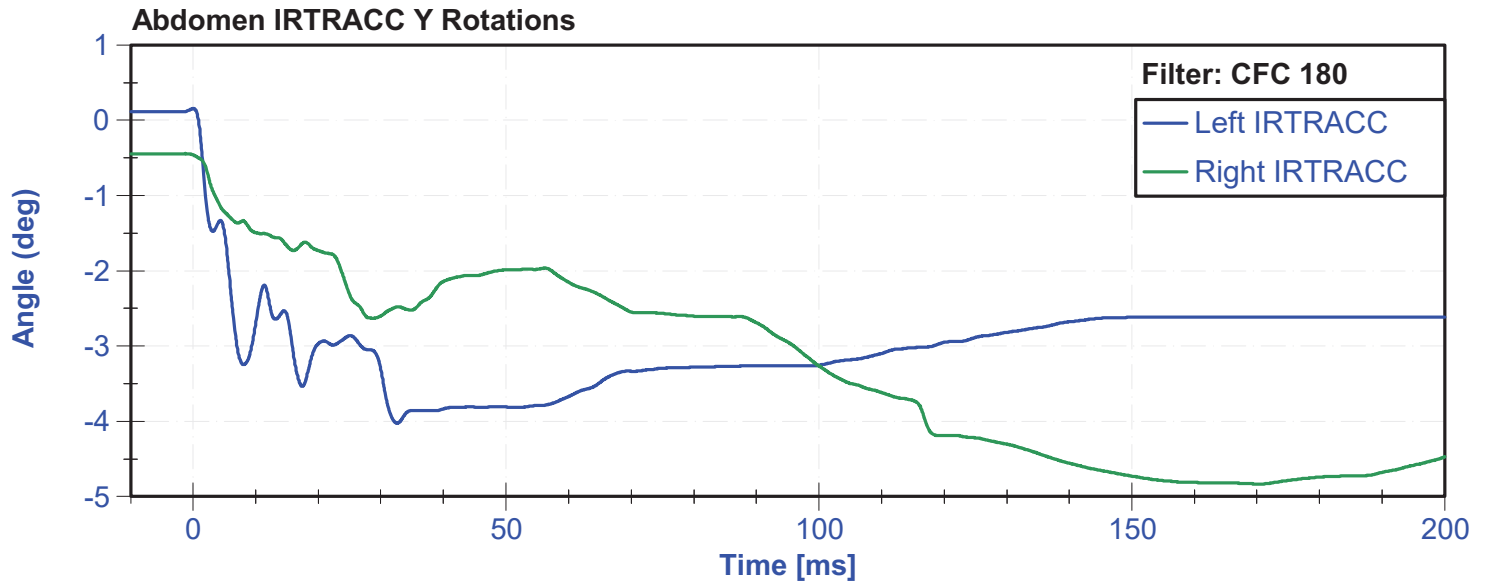
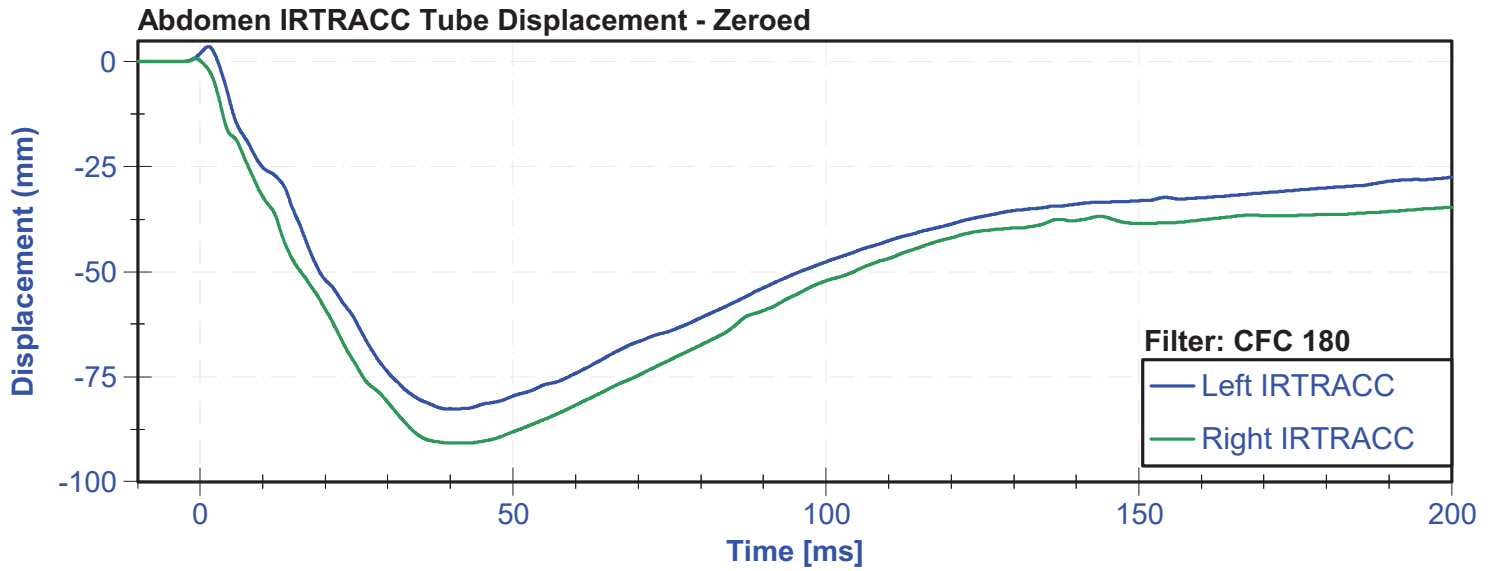
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.2	Pass
Humidity	10	70	%	15.3	Pass
Impact Velocity	3.25	3.35	m/s	3.309	Pass
Probe Force	2523	3083	N	3282.2	Fail
Left Abdomen X Deflection	-101.6	-91.2	mm	-83.02	Fail
Right Abdomen X Deflection	-101.6	-91.2	mm	-90.87	Fail
Left/Right X Deviation	-7.00	7.00	mm	7.843	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7231CT	AC-C15018	7/15/2015	7/14/2016
Abdomen Left IRTRACC	Humanetics 9910	DS-183	3/9/2015	3/8/2016
Abdomen Left Y Potentiometer	Sfernice 9945	DS-DJ5443	5/18/2015	5/17/2016
Abdomen Left Z Potentiometer	Sfernice 9945	DS-DJ5444	5/18/2015	5/17/2016





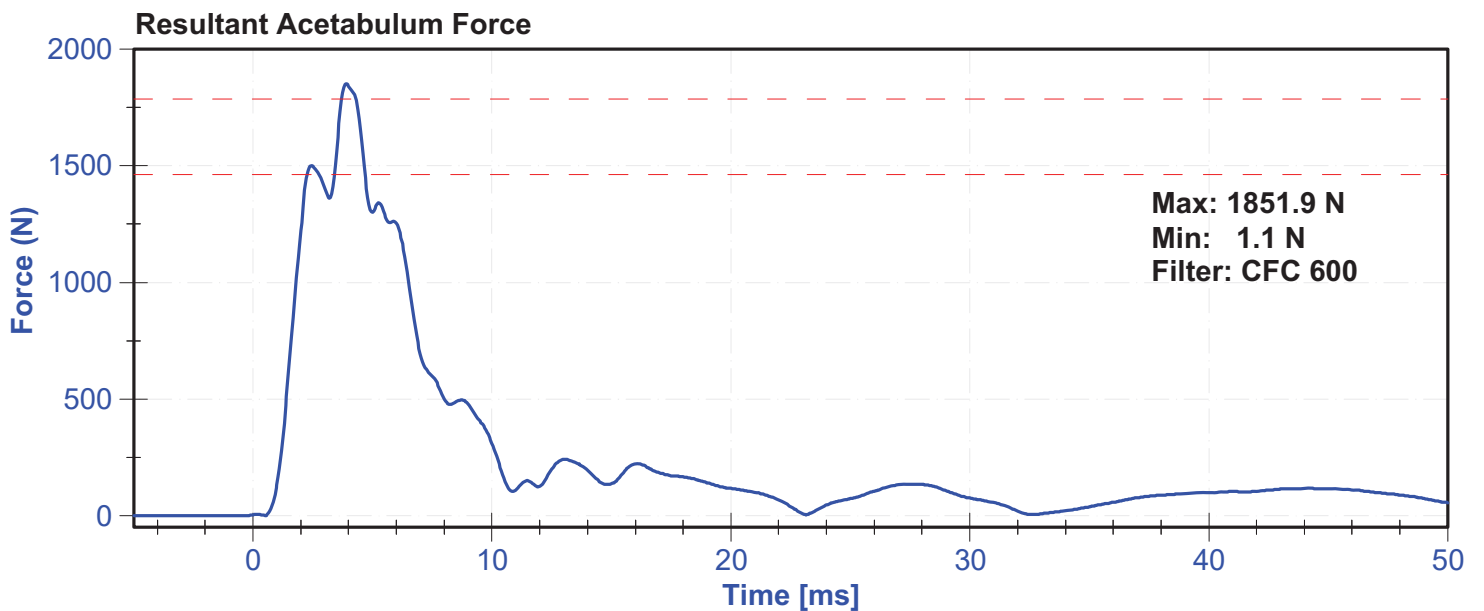
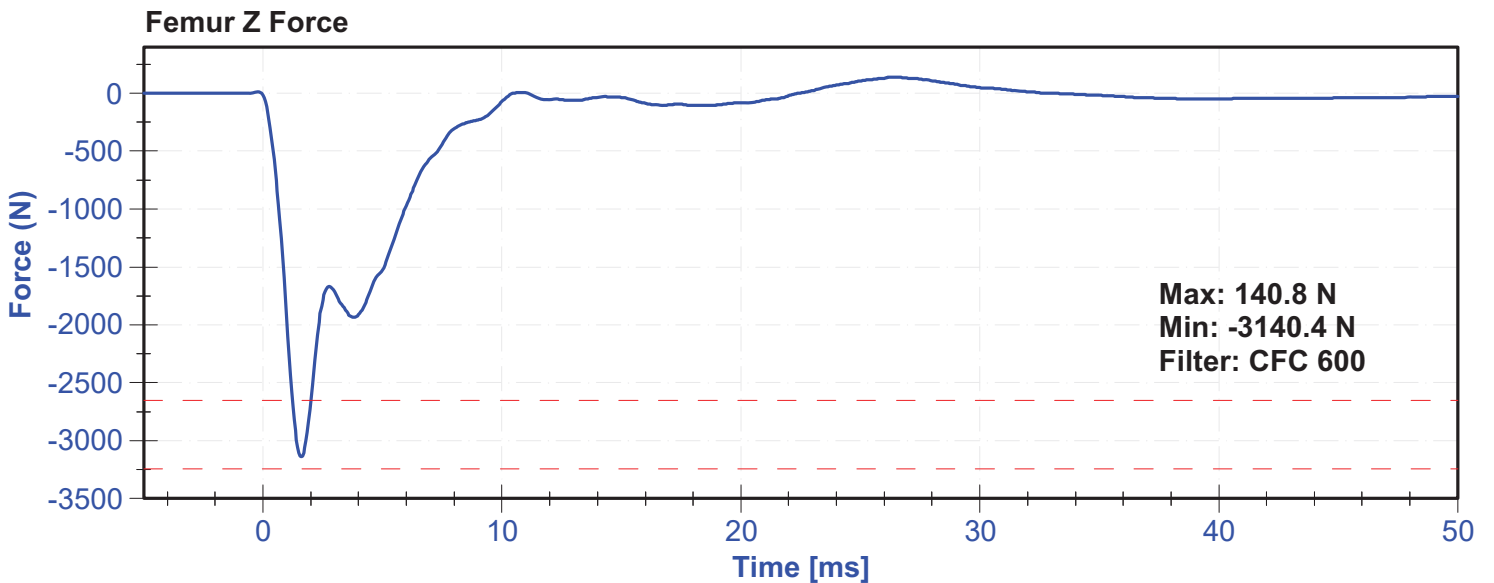
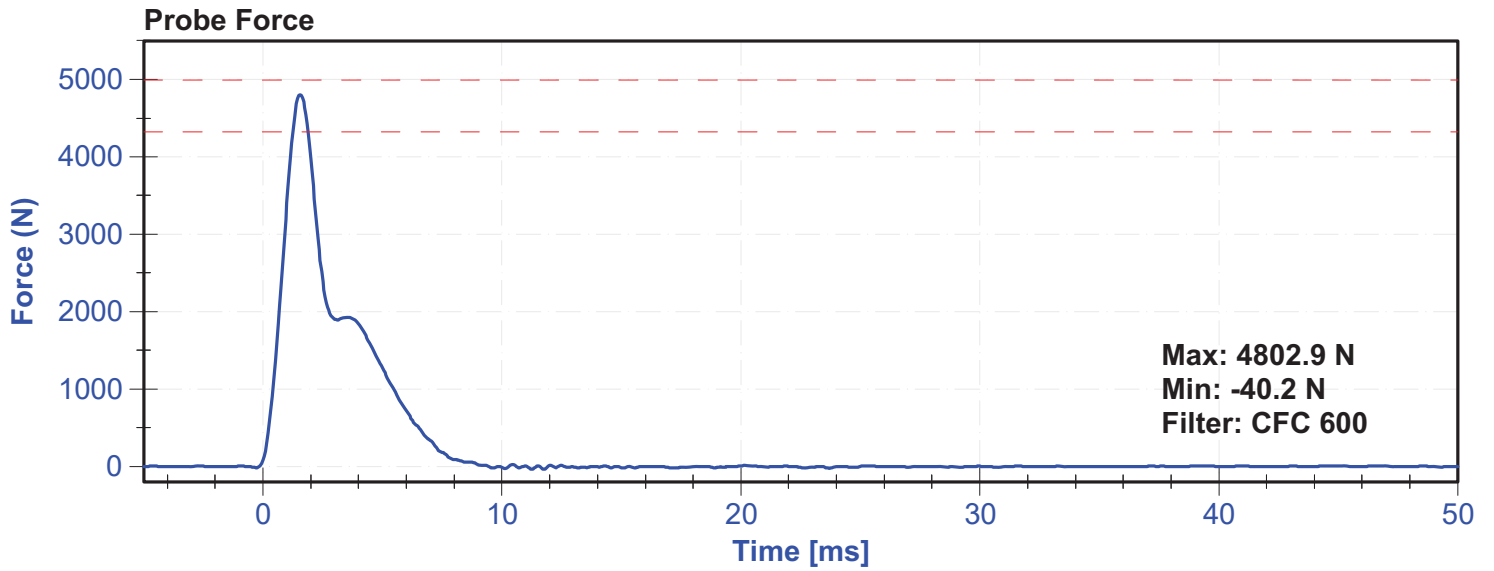
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	39.5	Pass
Impact Velocity	2.55	2.65	m/s	2.566	Pass
Probe Force	4318	4989	N	4802.9	Pass
Peak Femur Z Force	-3241	-2652	N	-3140.45	Pass
Peak Resultant Acetabulum Force	1462	1787	N	1851.86	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Left Femur Load Cell	Humanetics W50-71010	LC-DK0842 Fz	2/11/2016	2/10/2017
Left Acetabulum Load Cell	Humanetics 10530JI4	LC-DM1945 Fx	3/7/2016	3/7/2017



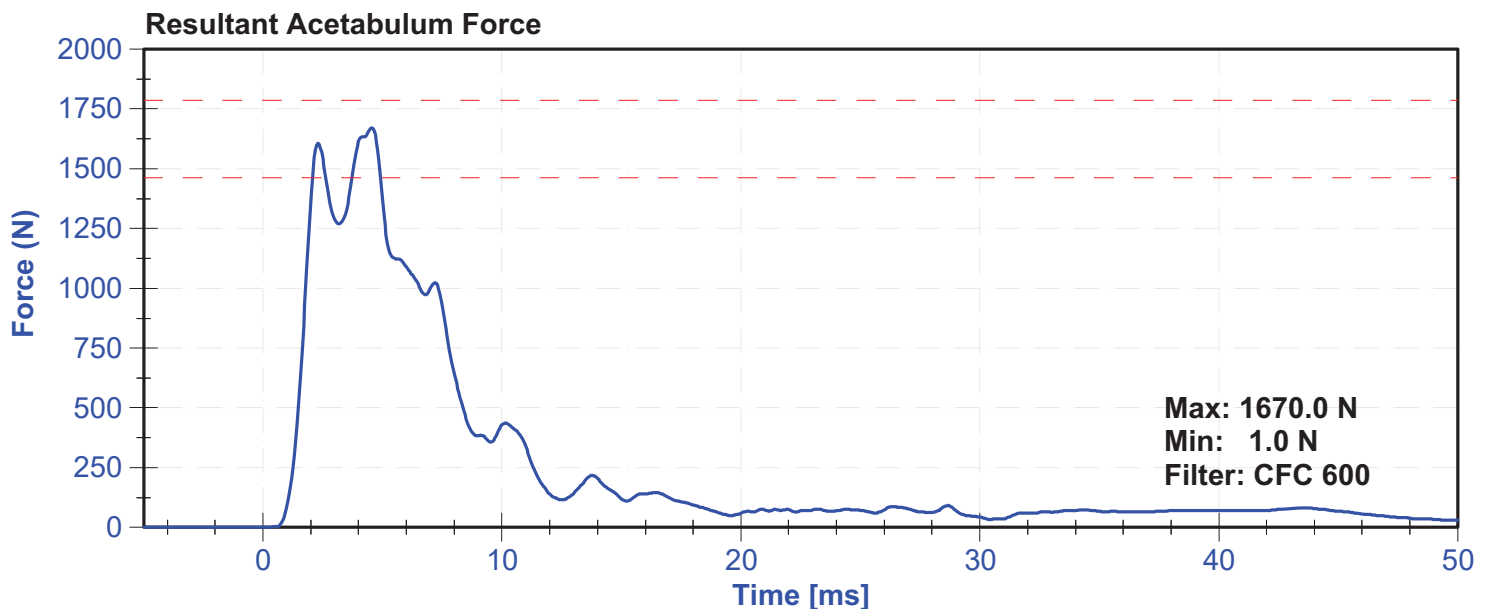
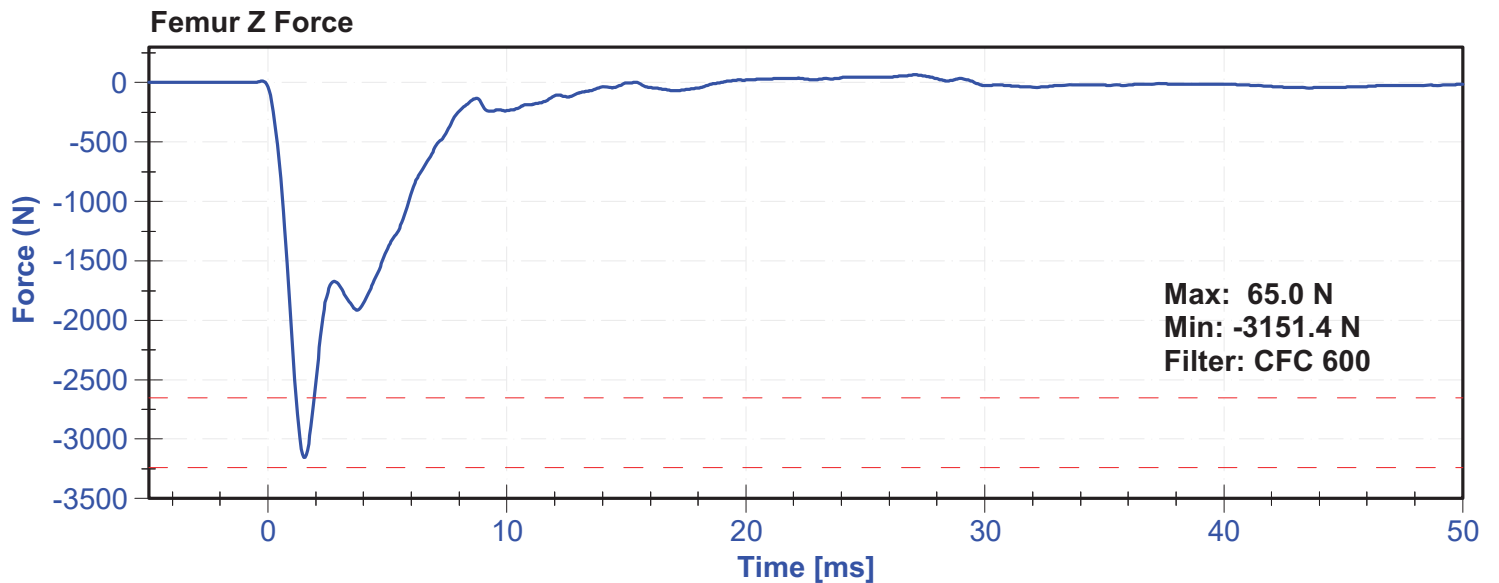
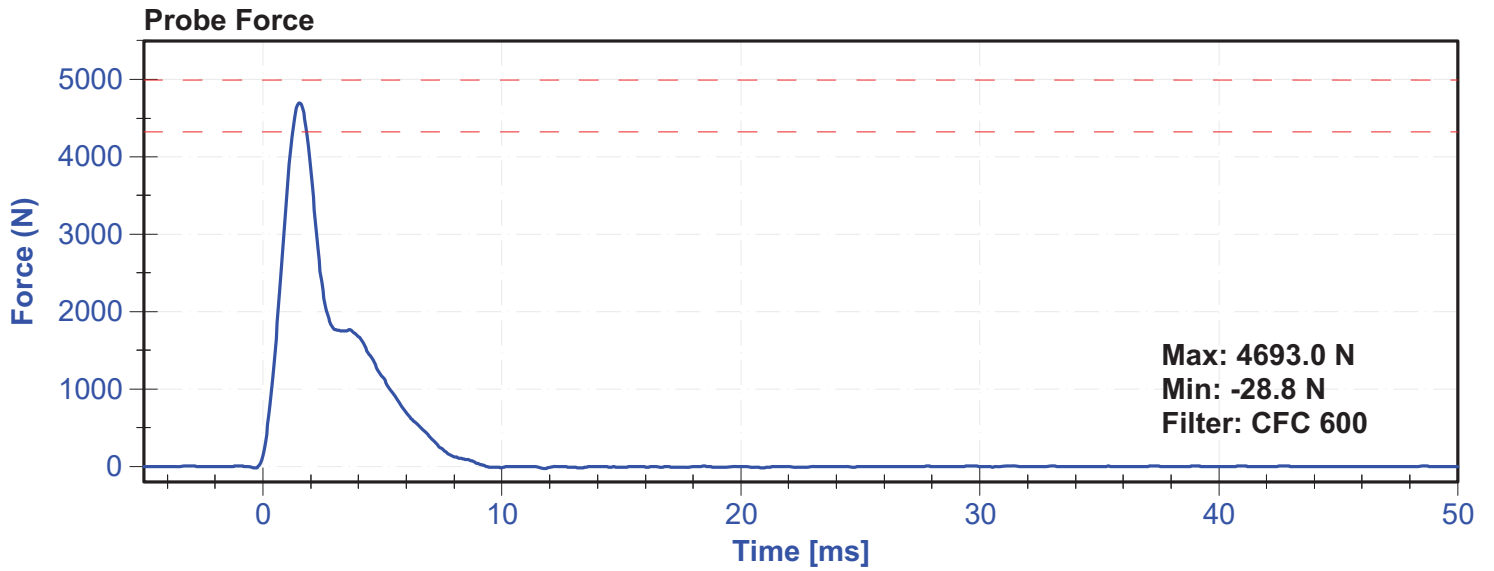
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.1	Pass
Humidity	10	70	%	40.0	Pass
Impact Velocity	2.55	2.65	m/s	2.569	Pass
Probe Force	4318	4989	N	4693.0	Pass
Peak Femur Z Force	-3241	-2652	N	-3151.43	Pass
Peak Resultant Acetabulum Force	1462	1787	N	1670.05	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Left Femur Load Cell	Humanetics W50-71010	LC-DK3608 Fz	3/3/2016	3/3/2017
Left Acetabulum Load Cell	Humanetics 10670JI4	LC-DL9552 Fx	3/7/2016	3/7/2017



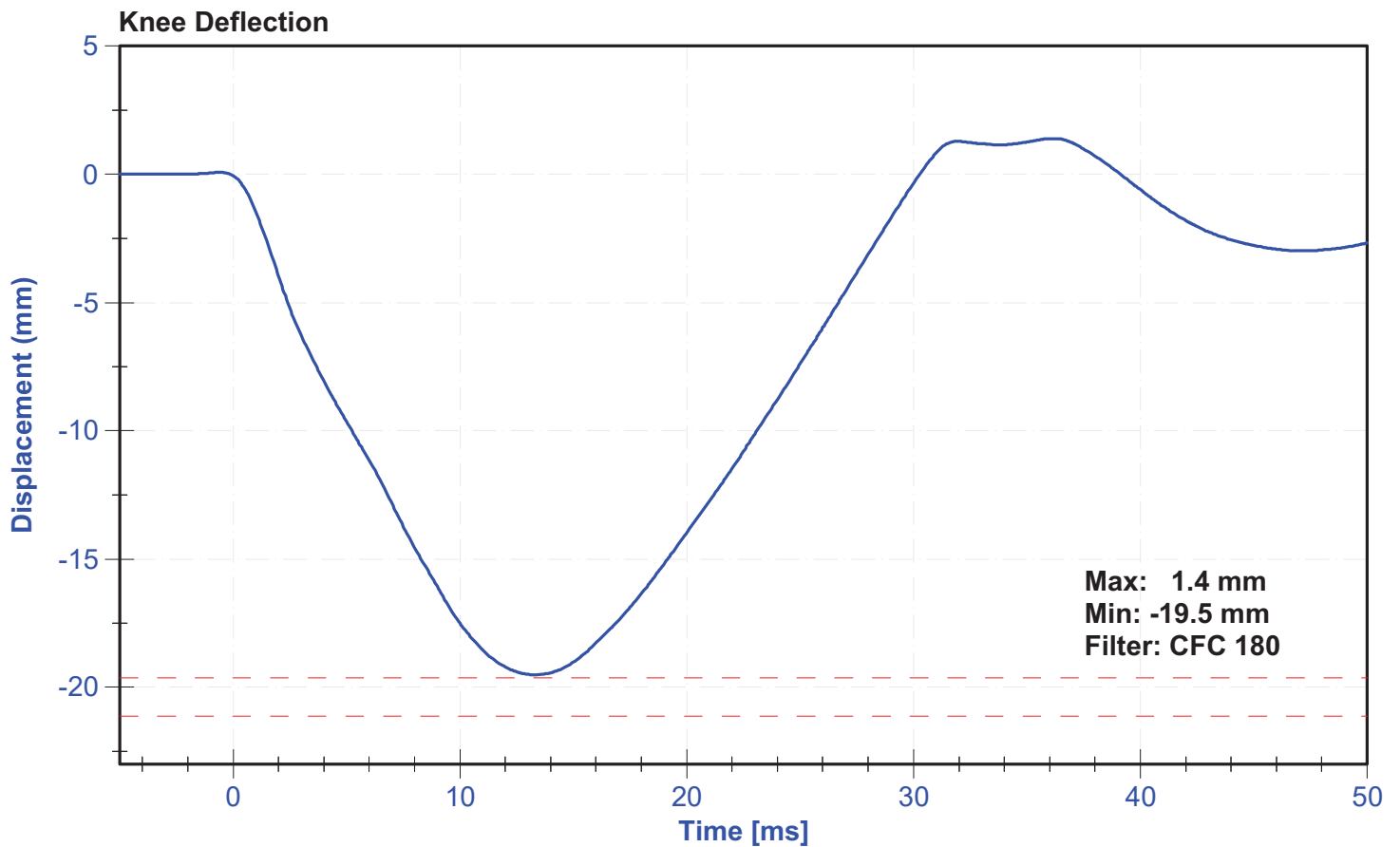
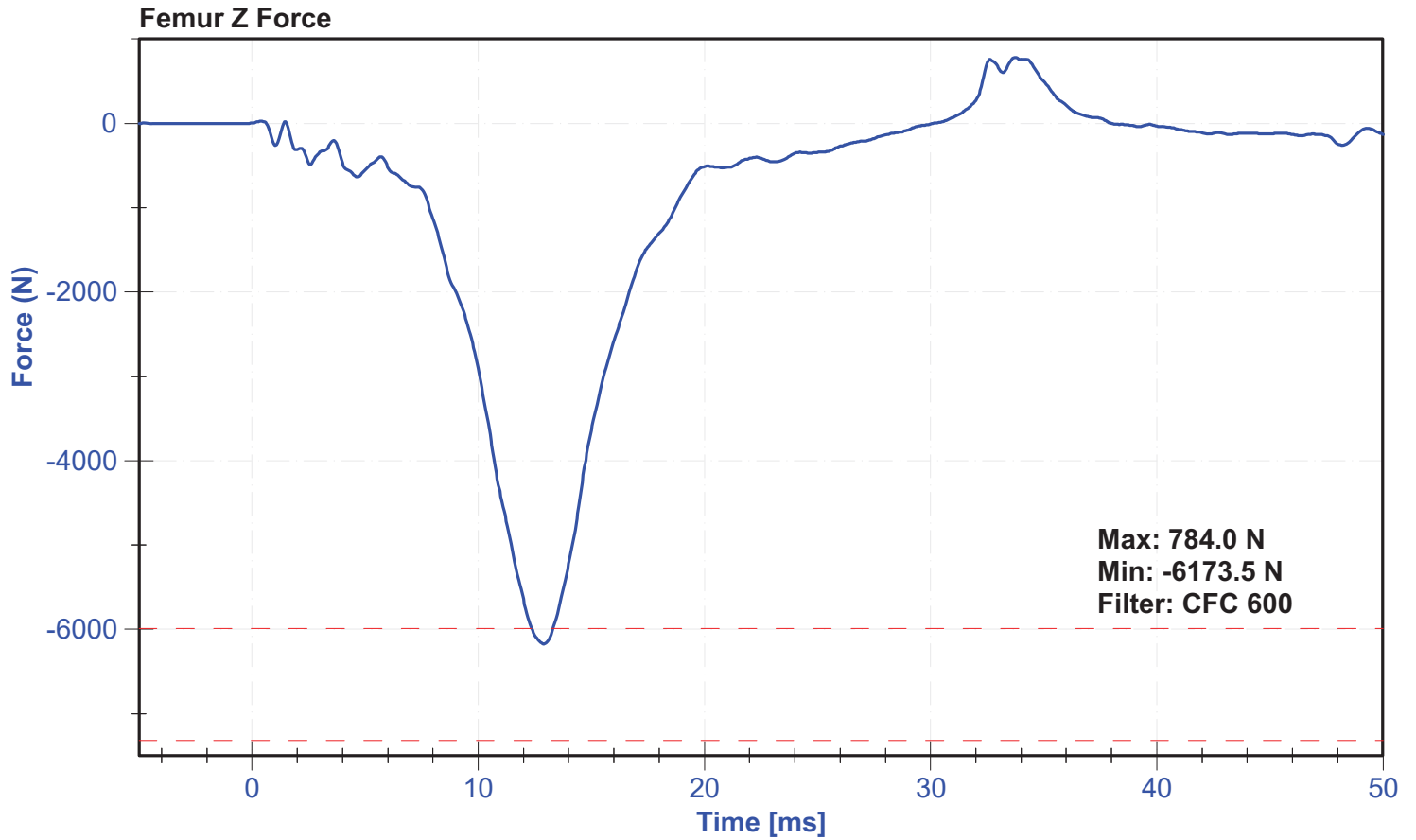
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	42.9	Pass
Impact Velocity	2.15	2.25	m/s	2.238	Pass
Peak Femur Z Force	-7317	-5987	N	-6173.5	Pass
Knee Deflection at Peak Force	-21.12	-19.62	mm	-19.51	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Femur Load Cell	Humanetics W50-71010	LC-DK0842 Fz	2/11/2016	2/10/2017
Knee Potentiometer	Space Age 150-0121V	DS-13073811	6/24/2015	6/23/2016



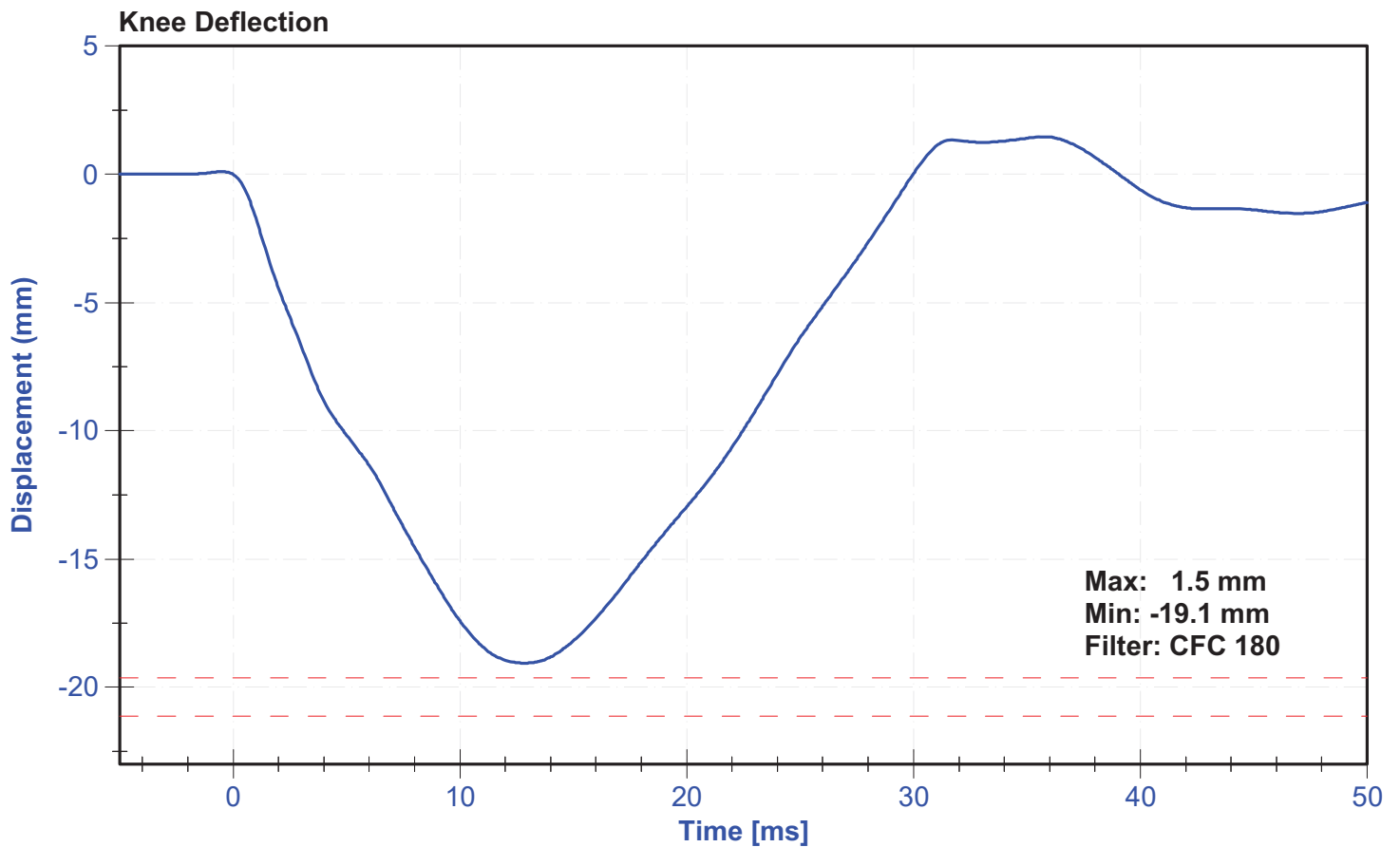
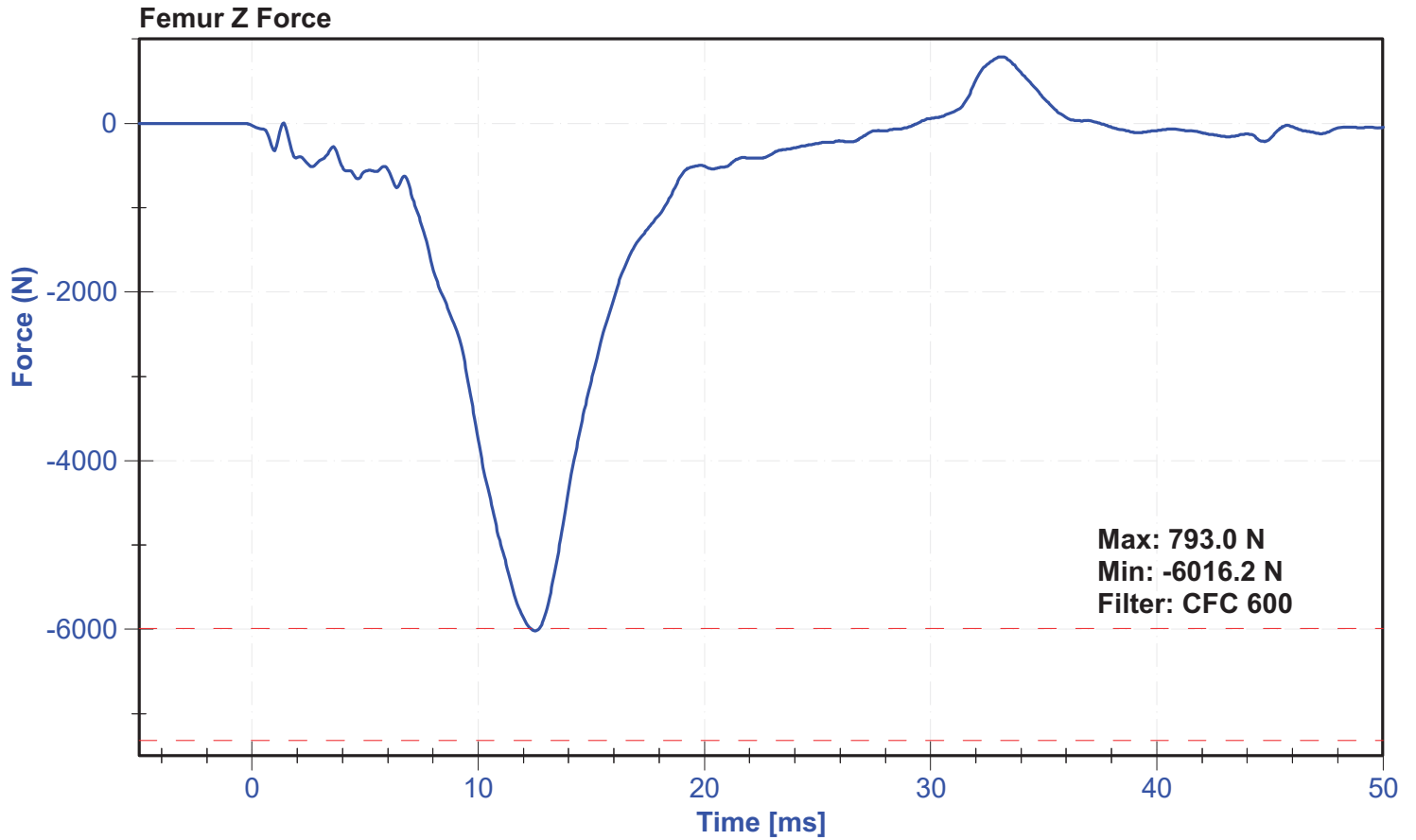
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	40.9	Pass
Impact Velocity	2.15	2.25	m/s	2.243	Pass
Peak Femur Z Force	-7317	-5987	N	-6016.2	Pass
Knee Deflection at Peak Force	-21.12	-19.62	mm	-19.06	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Femur Load Cell	Humanetics W50-71010	LC-DK3608 Fz	3/3/2016	3/3/2017
Knee Potentiometer	Space Age 150-0121V	DS-13073814	6/24/2015	6/23/2016



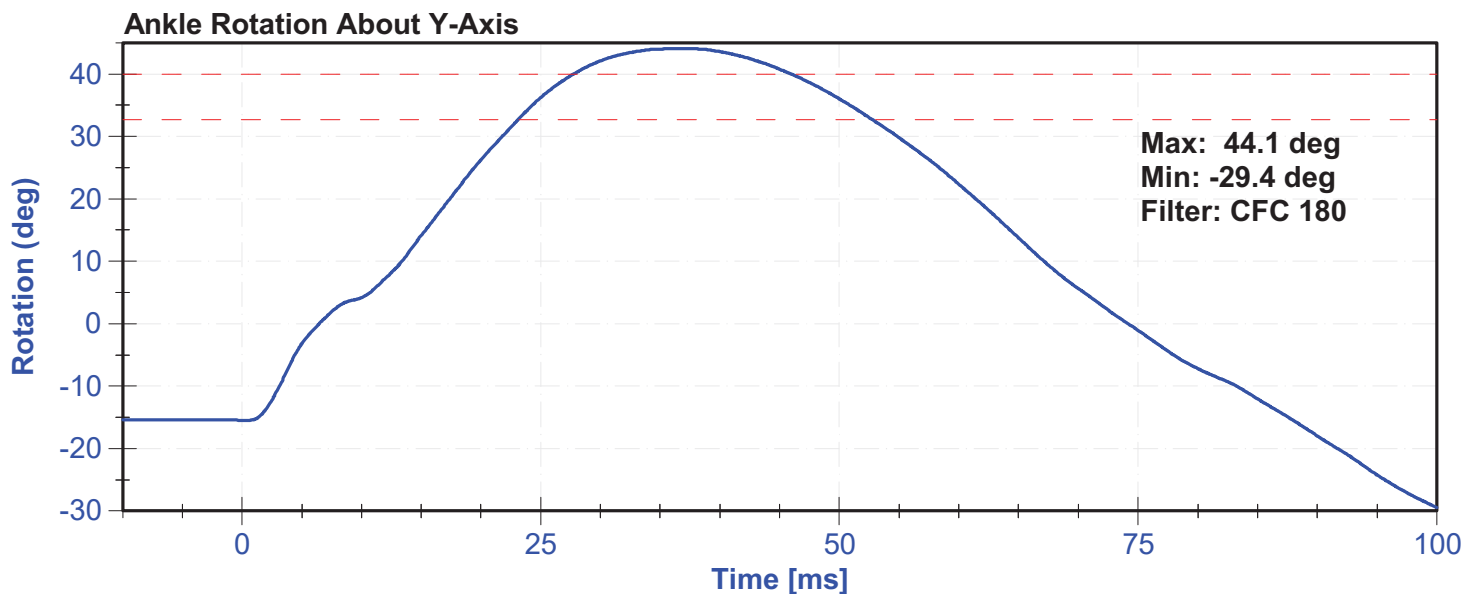
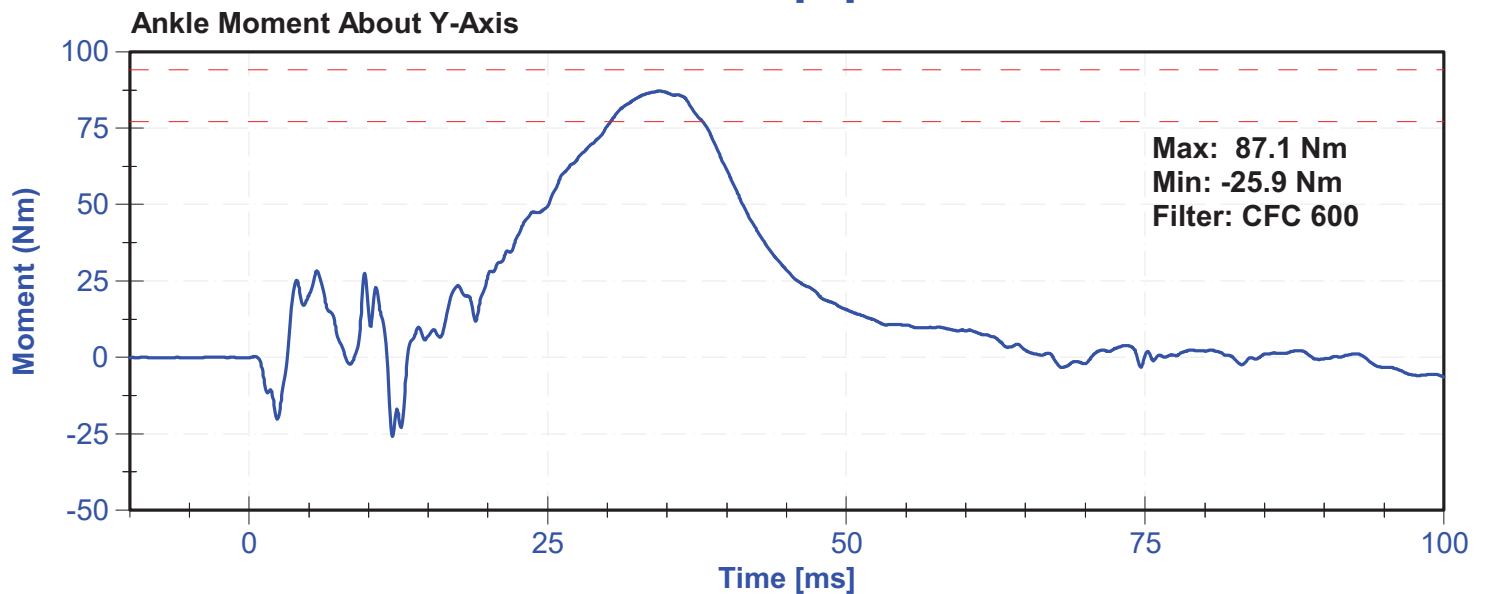
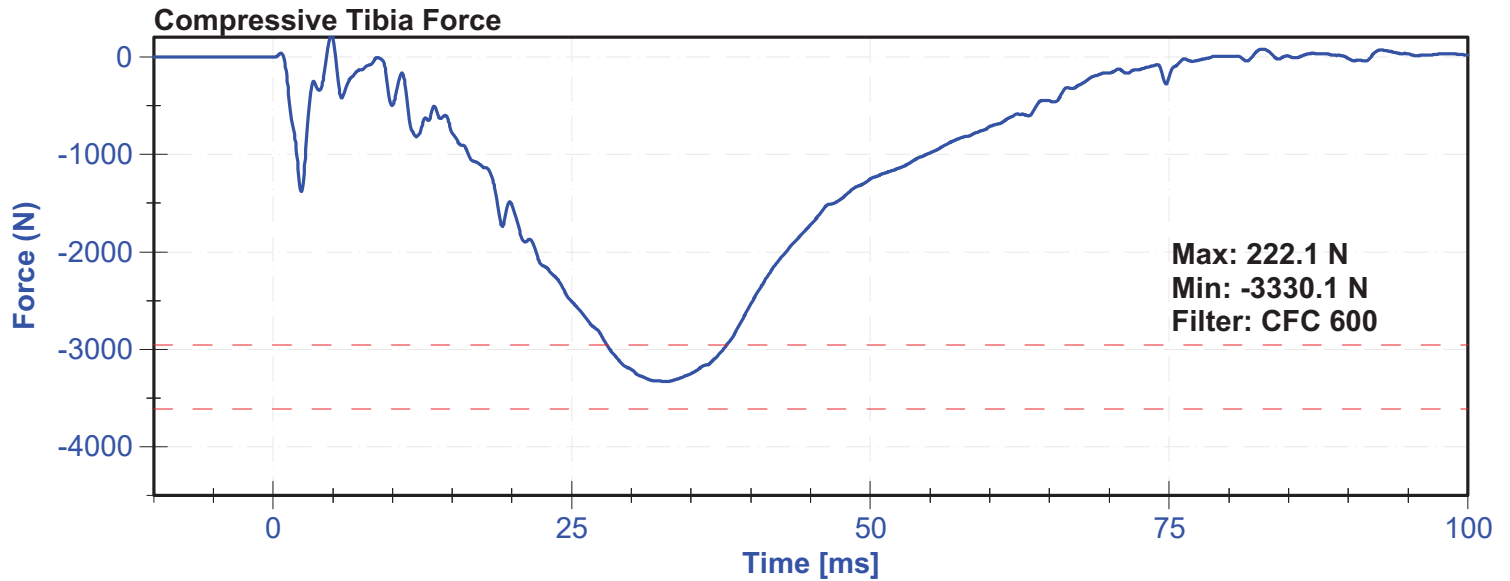
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	28.1	Pass
Velocity	4.9	5.1	m/s	4.961	Pass
Lower Tibia Compressive Force	-3613	-2956	N	-3330.1	Pass
Peak Moment about Y-Axis	77.1	94.2	Nm	87.13	Pass
Peak Rotation about Y-Axis	32.7	39.9	deg	44.05	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9685 Fz	5/5/2015	5/4/2016
Ankle Y Potentiometer	SFERNICE ECO50ESC10	DS-ANKL005	5/27/2015	5/26/2016



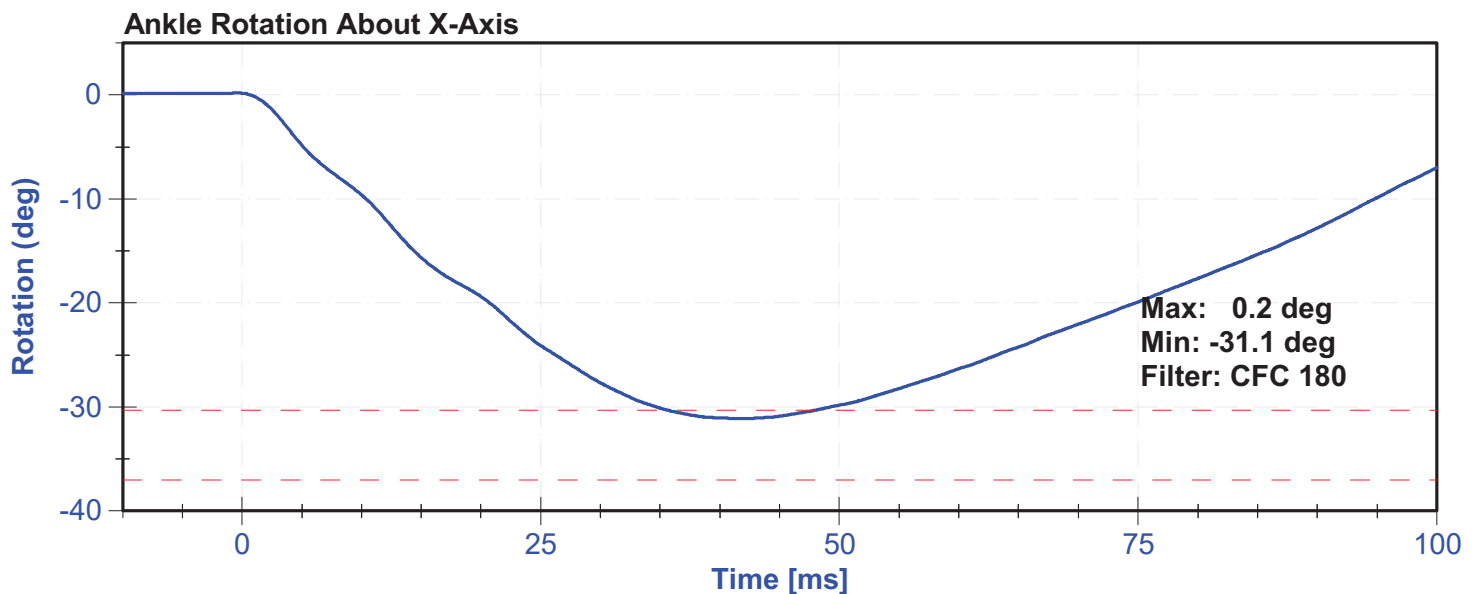
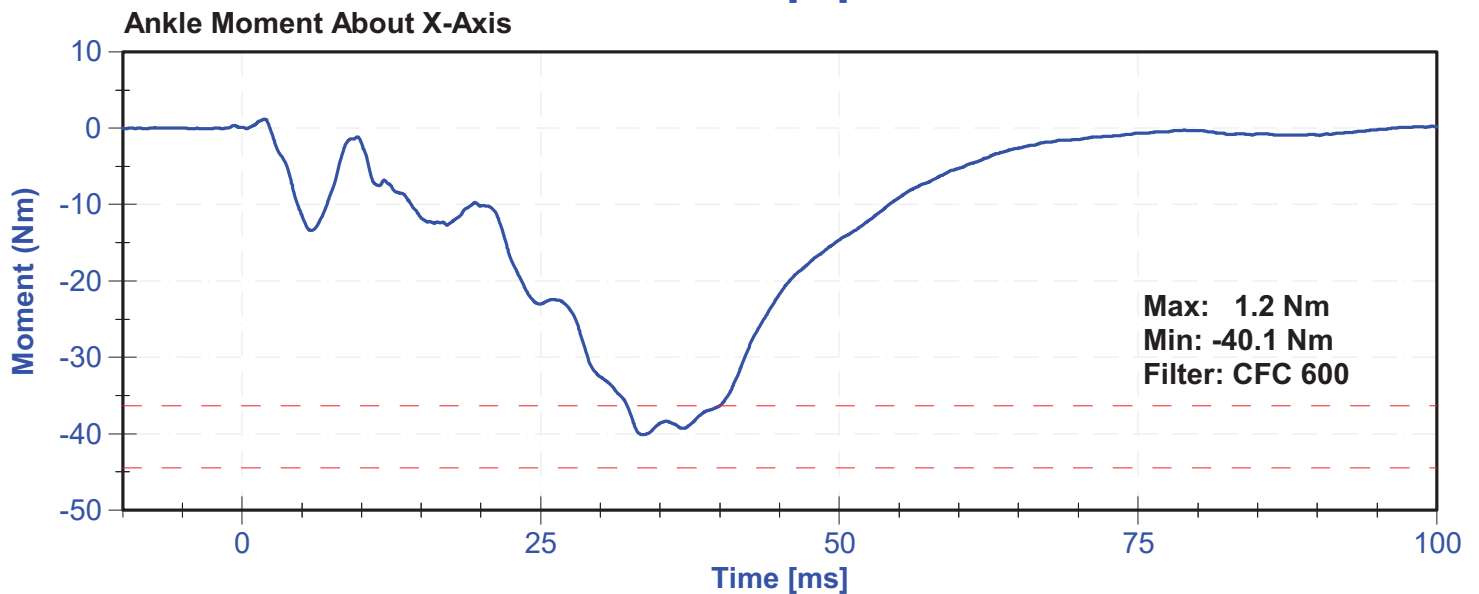
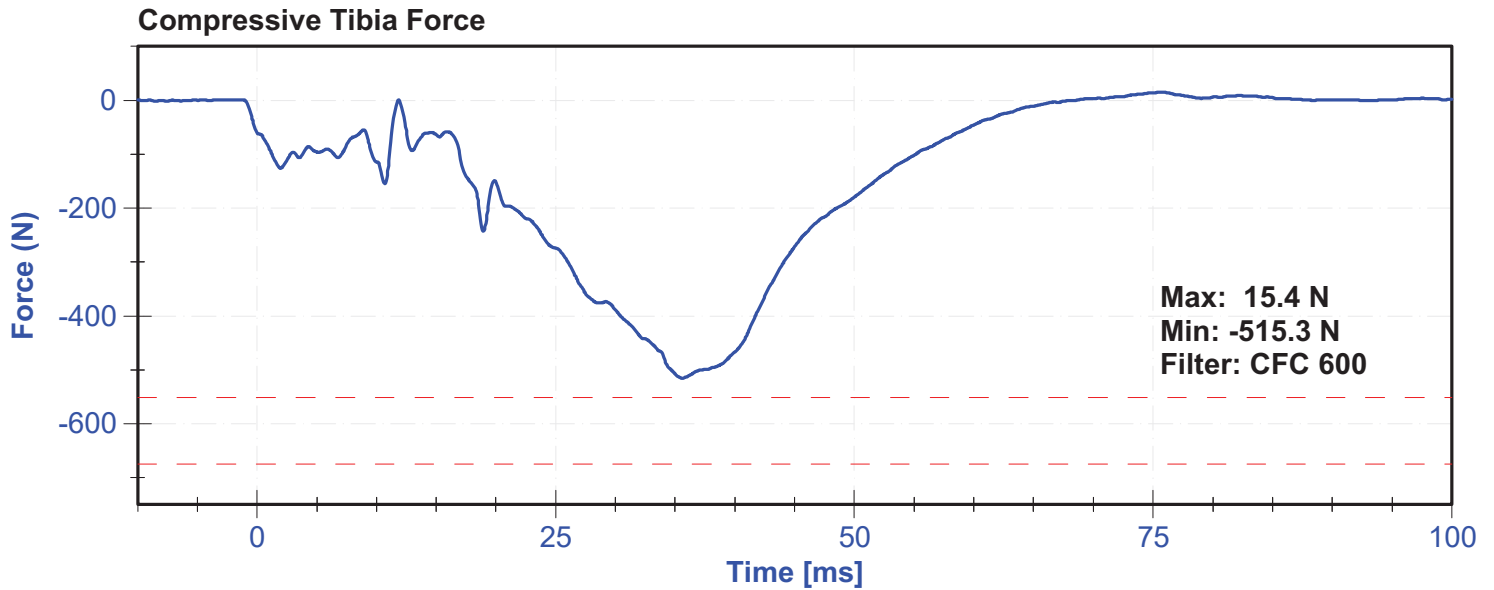
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	27.0	Pass
Velocity	1.9	2.1	m/s	2.003	Pass
Lower Tibia Compressive Force	-675	-552	N	-515.3	Fail
Peak Moment about X-Axis	-44.4	-36.3	Nm	-40.12	Pass
Peak Rotation about X-Axis	-37.0	-30.3	deg	-31.10	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9685 Fz	5/5/2015	5/4/2016
Ankle Y Potentiometer	SFERNICE ECO50ESC10	DS-ANKL004	5/27/2015	5/26/2016



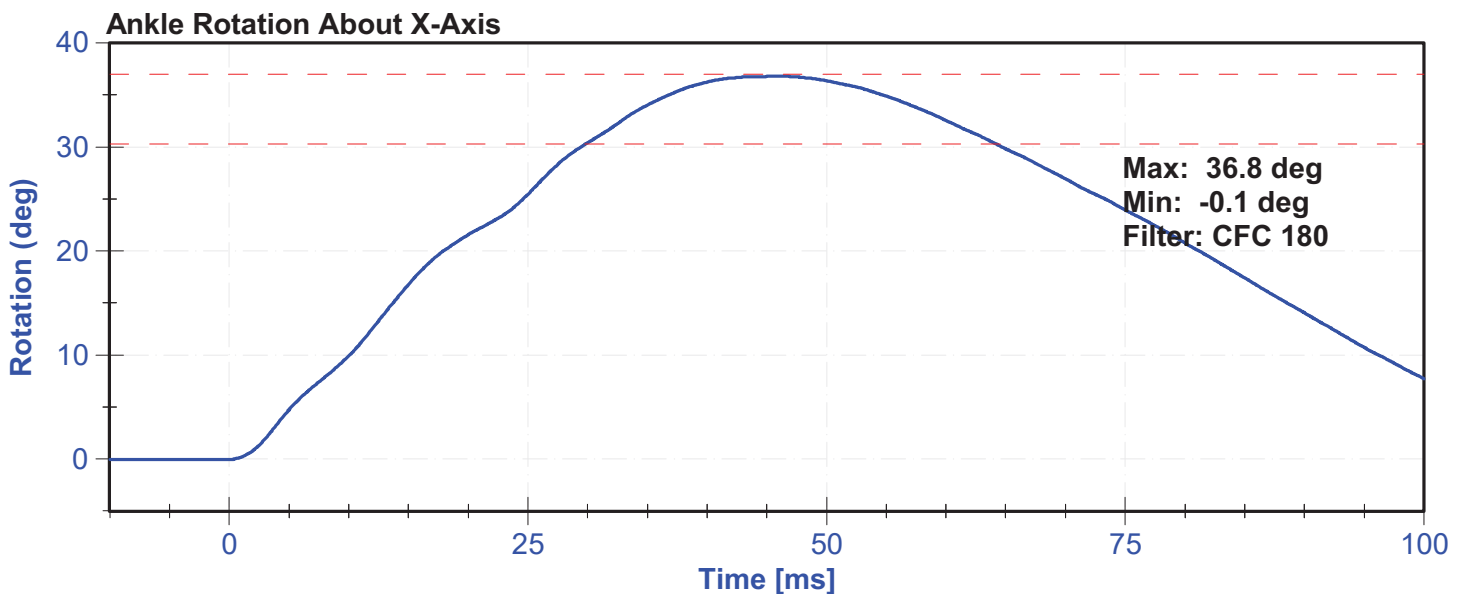
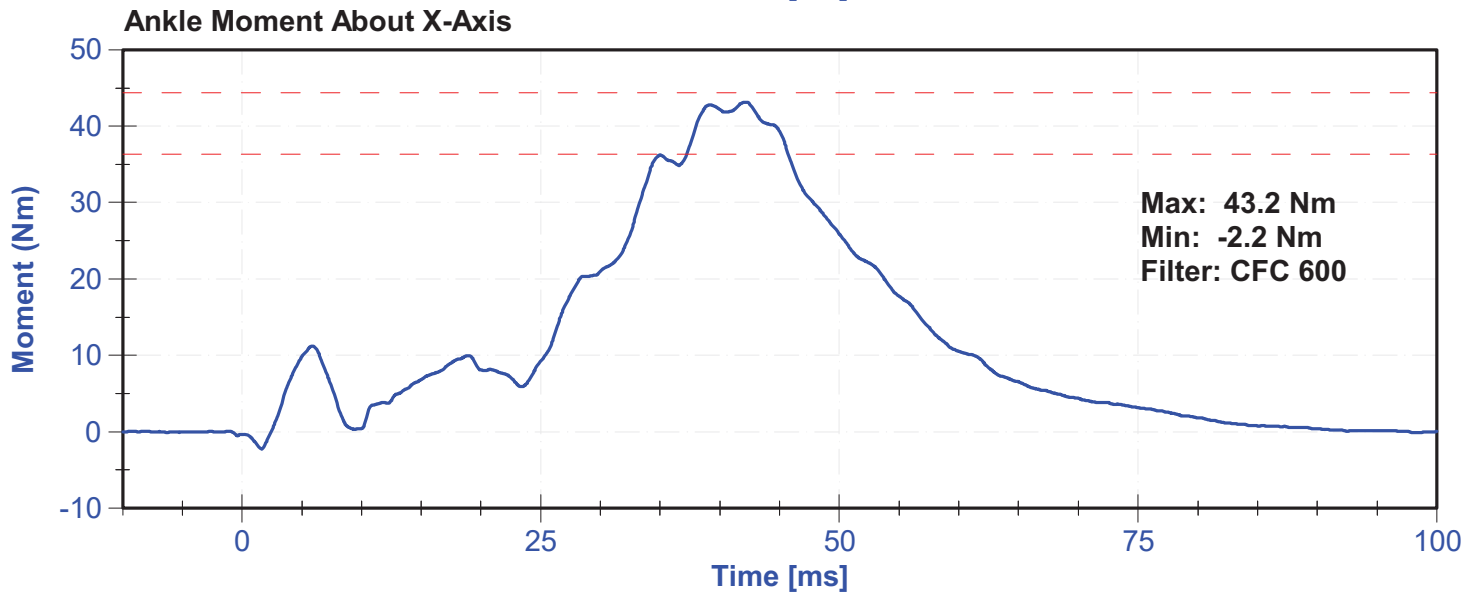
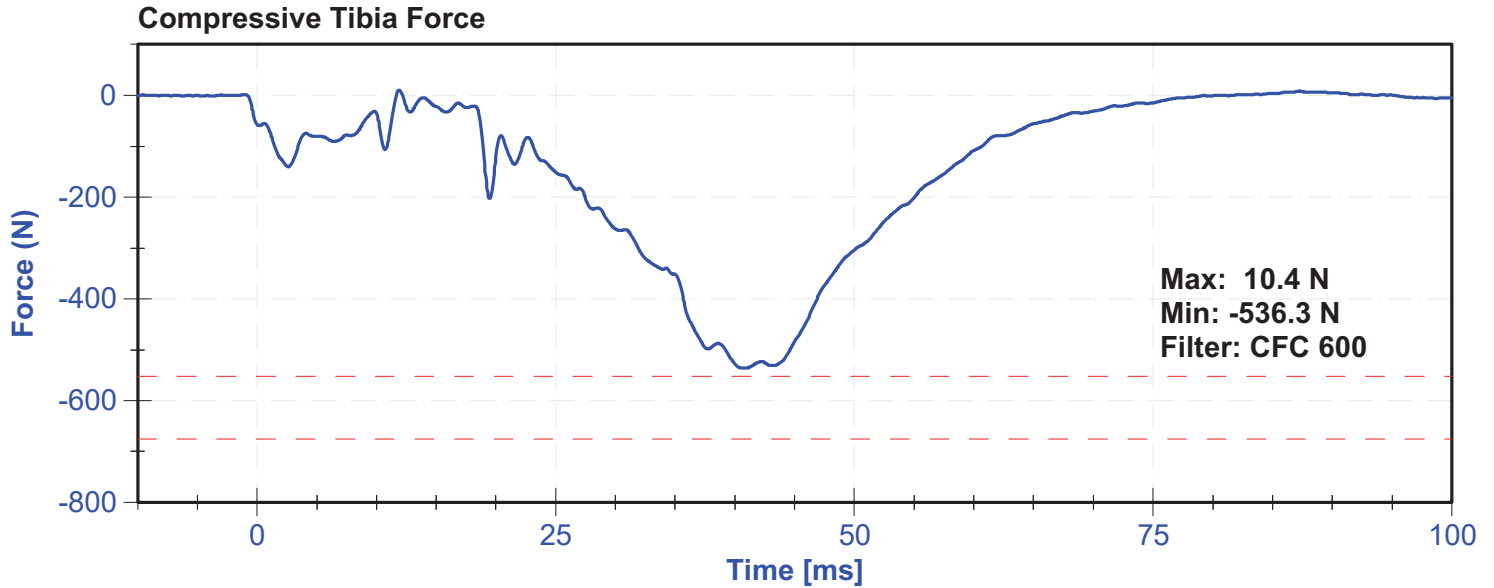
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	27.0	Pass
Velocity	1.9	2.1	m/s	1.984	Pass
Lower Tibia Compressive Force	-675	-552	N	-536.3	Fail
Peak Moment about X-Axis	36.3	44.4	Nm	43.16	Pass
Peak Rotation about X-Axis	30.3	37.0	deg	36.79	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9685 Fz	5/5/2015	5/4/2016
Ankle Y Potentiometer	SFERNICE ECO50ESC10	DS-ANKL004	5/27/2015	5/26/2016



ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

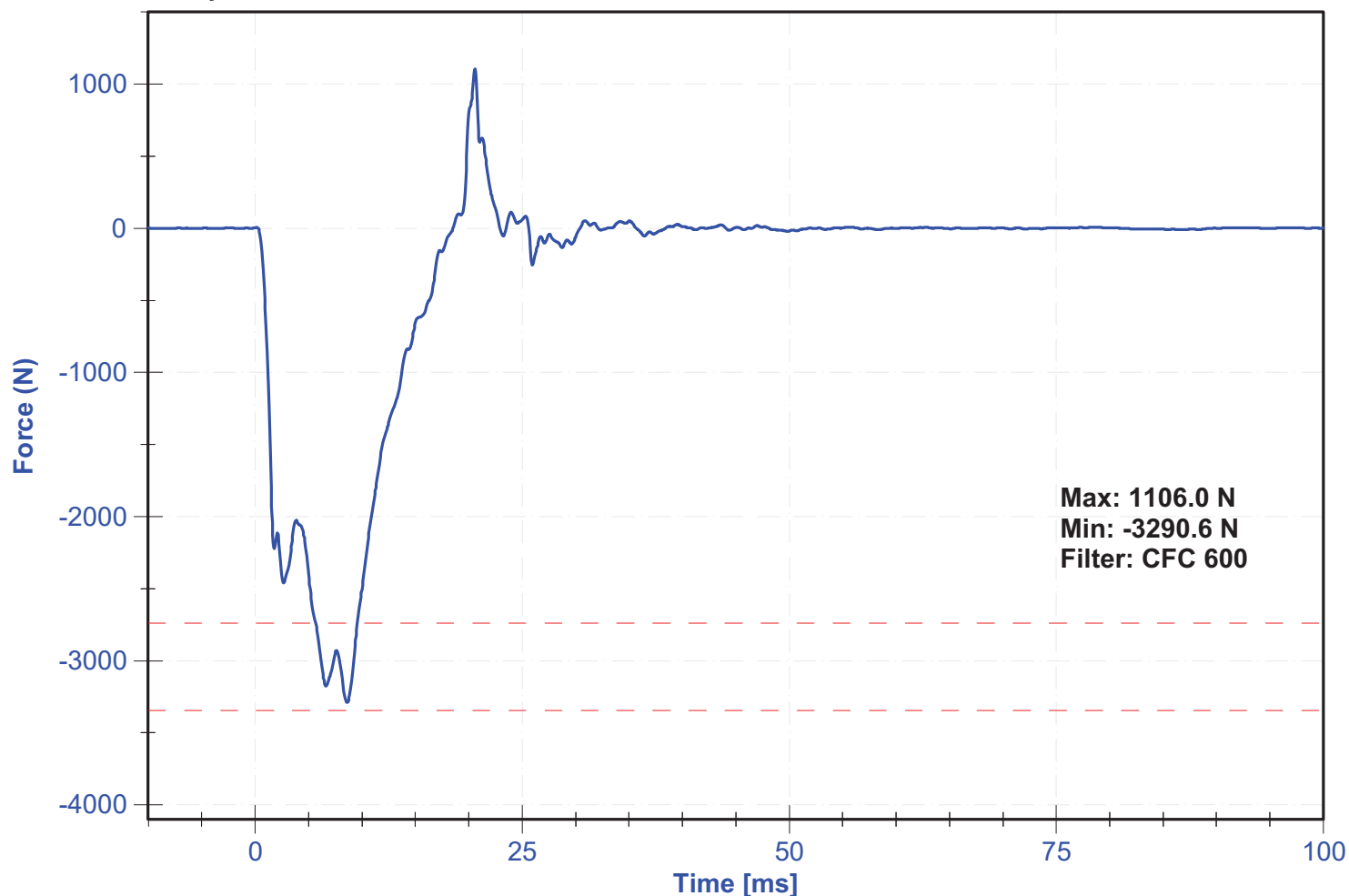
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	27.8	Pass
Velocity	3.9	4.1	m/s	4.019	Pass
Lower Tibia Compressive Force	-3346	-2738	N	-3290.6	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9685 Fz	5/5/2015	5/4/2016

Compressive Tibia Force



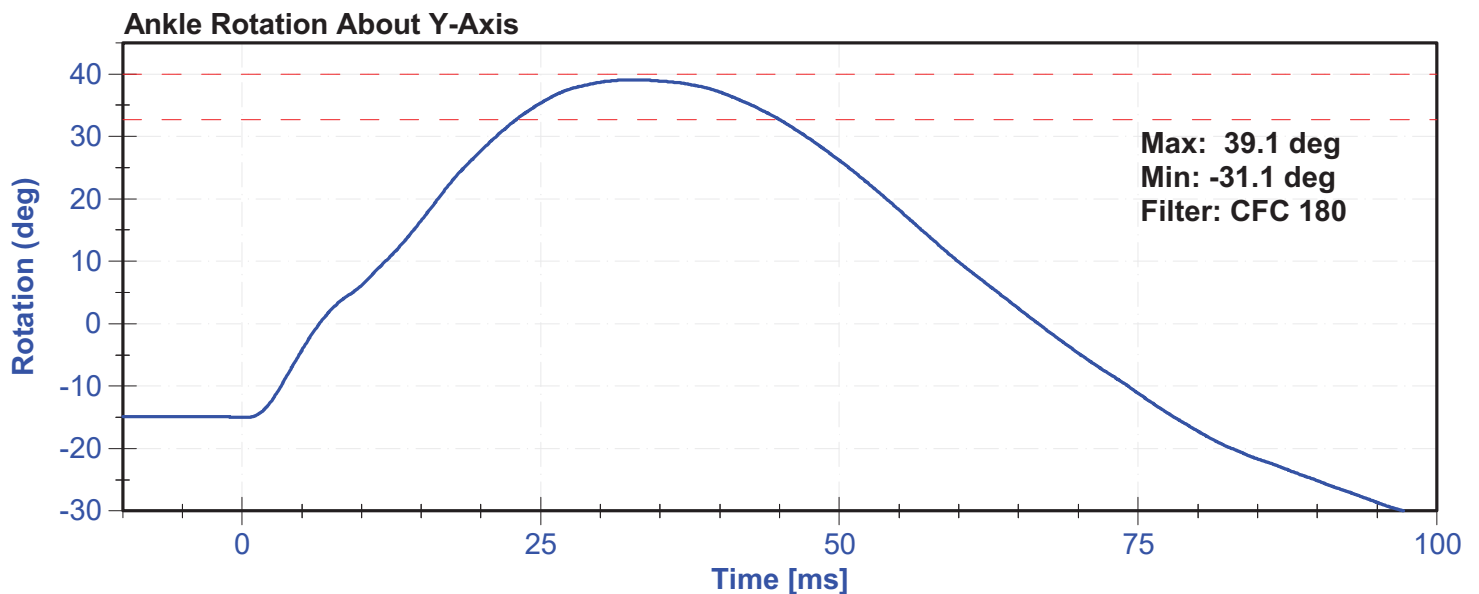
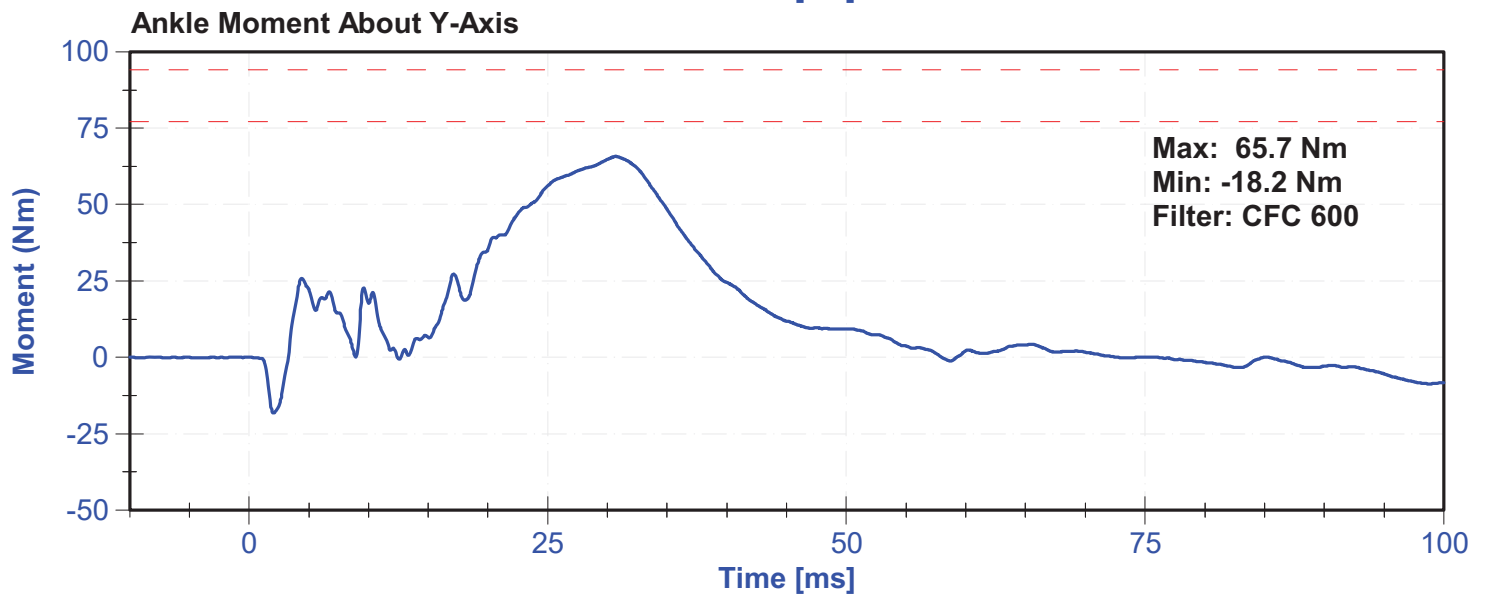
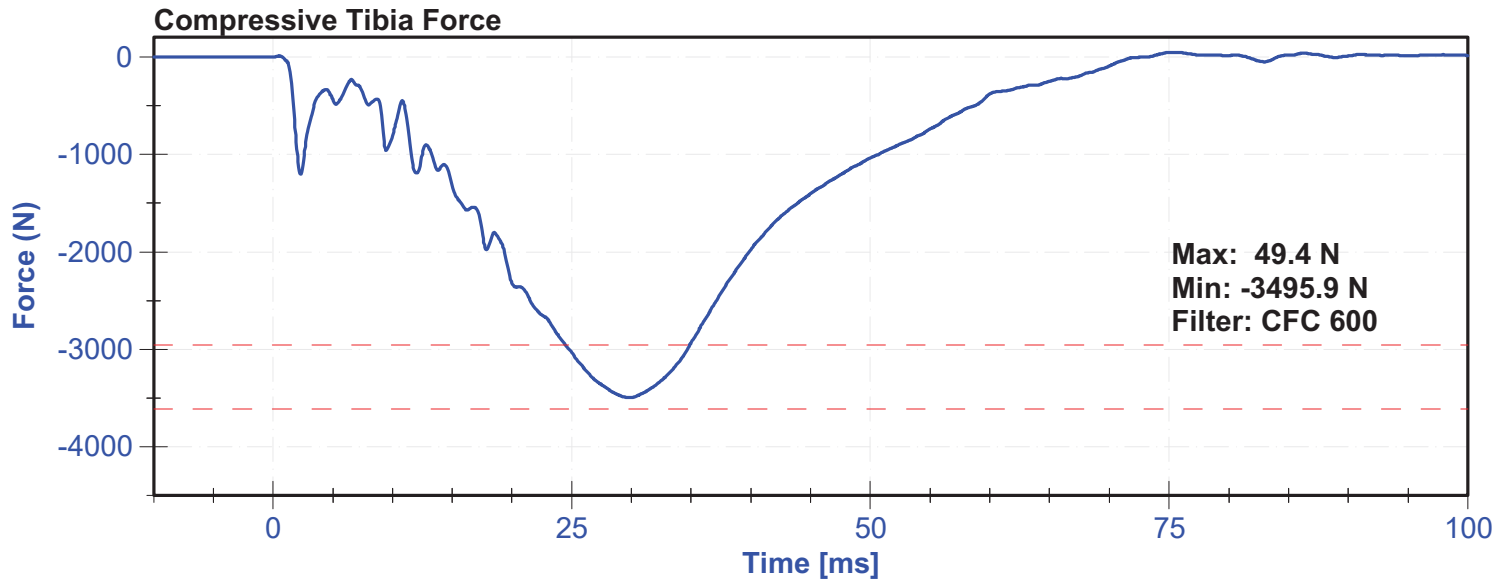
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	25.7	Pass
Velocity	4.9	5.1	m/s	5.040	Pass
Lower Tibia Compressive Force	-3613	-2956	N	-3495.9	Pass
Peak Moment about Y-Axis	77.1	94.2	Nm	65.72	Fail
Peak Rotation about Y-Axis	32.7	39.9	deg	39.05	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9684 Fz	4/13/2015	4/12/2016
Ankle Y Potentiometer	SFERNICE ECO50ESC10	DS-ANKL002	4/2/2015	4/1/2016



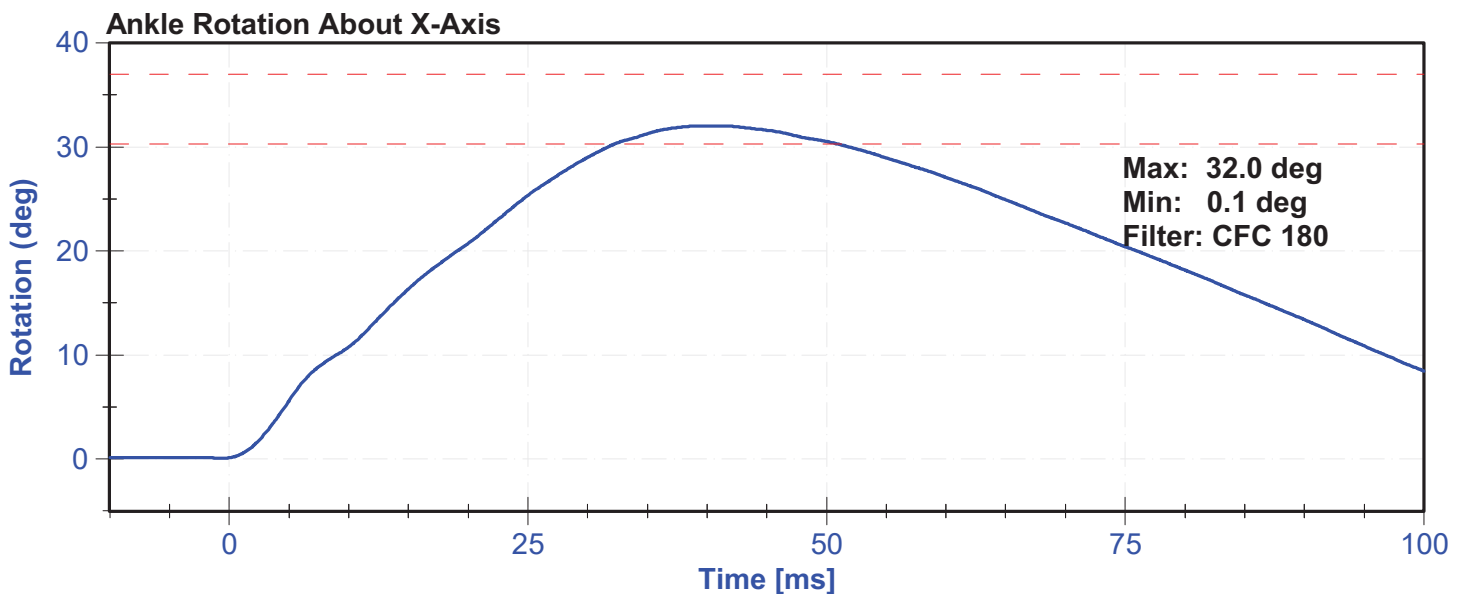
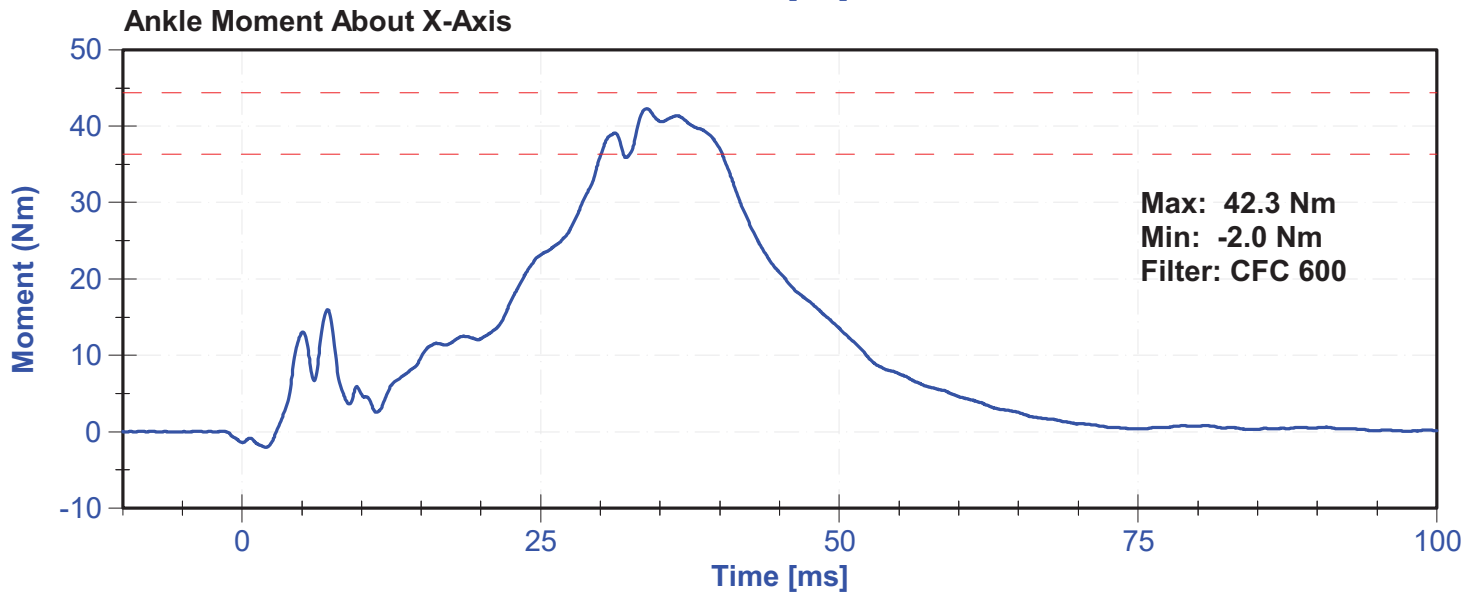
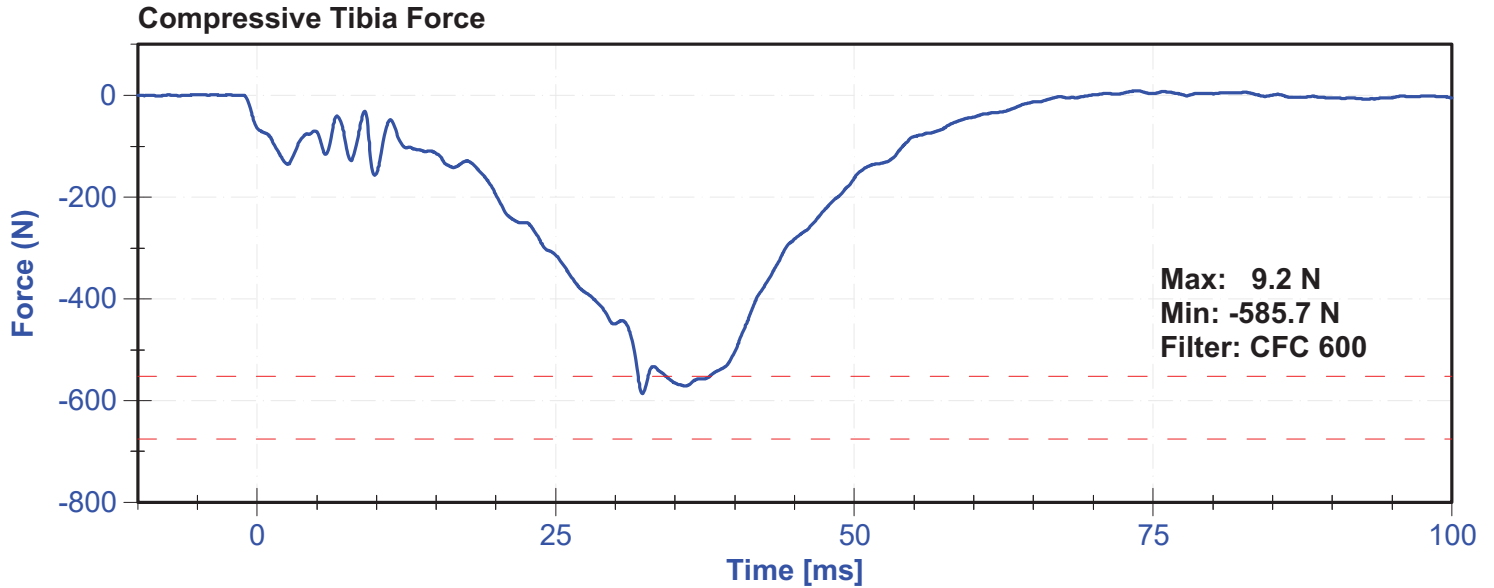
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	27.2	Pass
Velocity	1.9	2.1	m/s	2.035	Pass
Lower Tibia Compressive Force	-675	-552	N	-585.7	Pass
Peak Moment about X-Axis	36.3	44.4	Nm	42.28	Pass
Peak Rotation about X-Axis	30.3	37.0	deg	31.98	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9684 Fz	4/13/2015	4/12/2016
Ankle Y Potentiometer	SFERNICE ECO50ESC10	DS-ANKL001	4/2/2015	4/1/2016



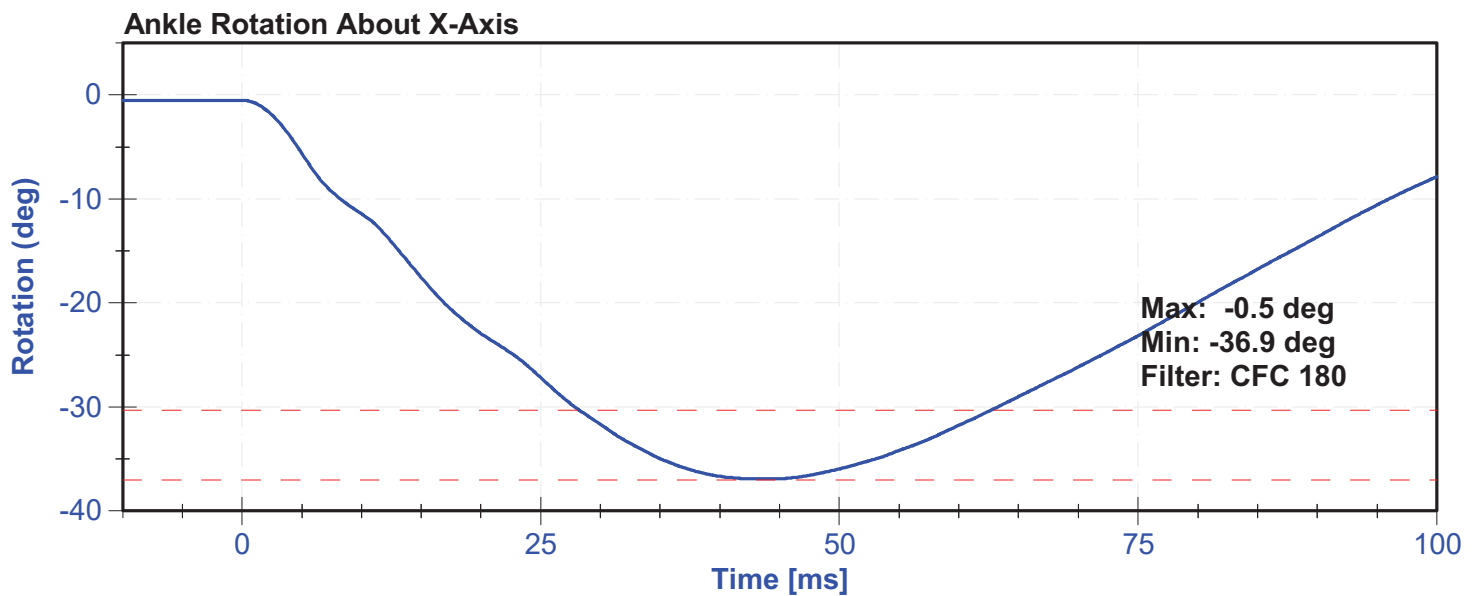
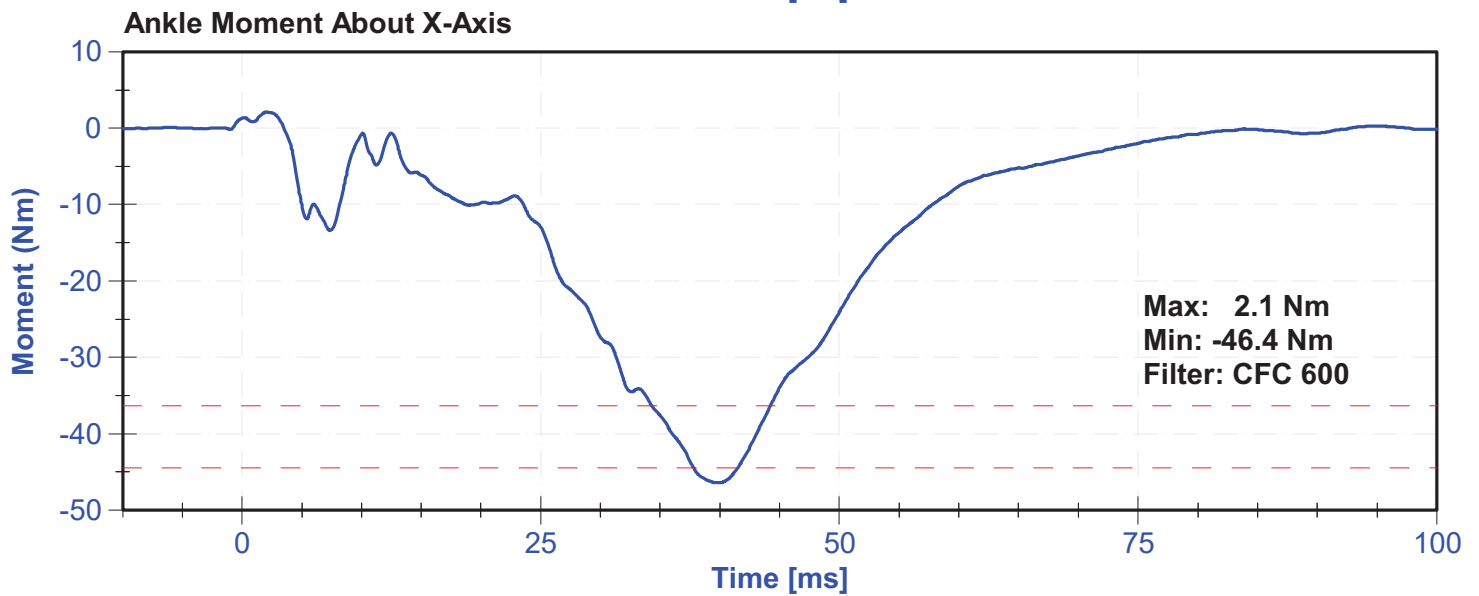
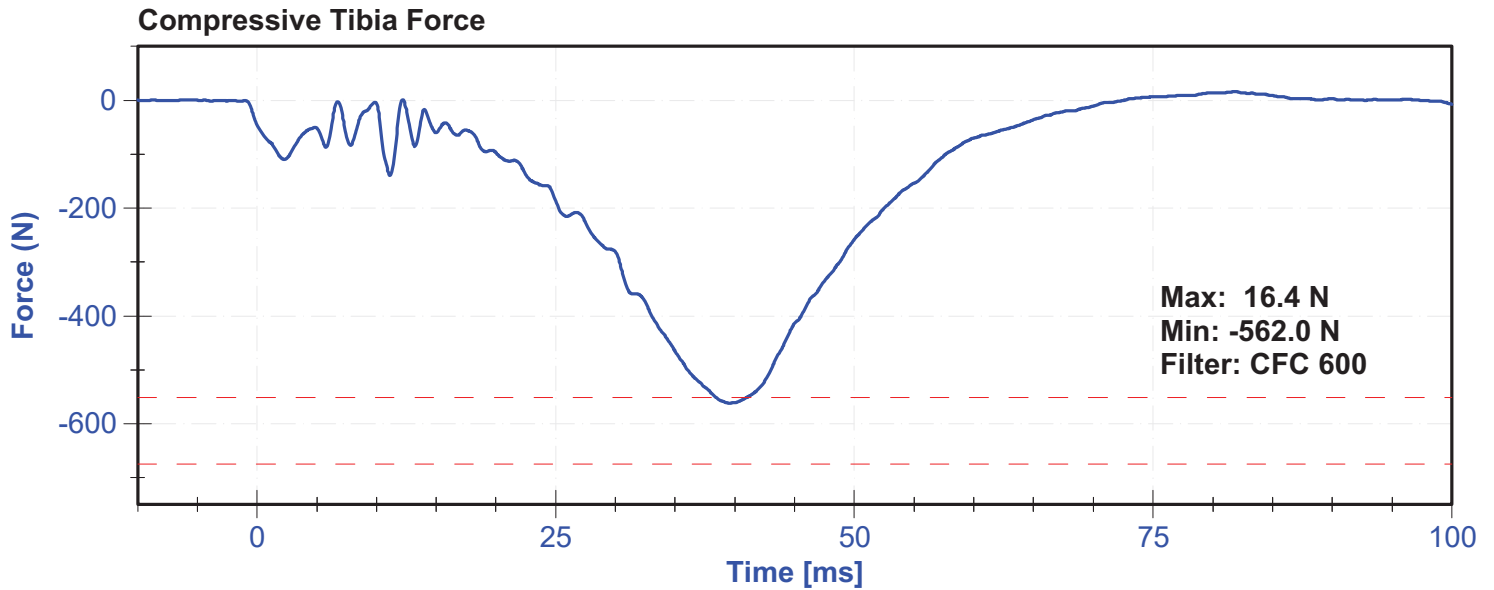
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.3	Pass
Humidity	10	70	%	26.5	Pass
Velocity	1.9	2.1	m/s	2.016	Pass
Lower Tibia Compressive Force	-675	-552	N	-562.0	Pass
Peak Moment about X-Axis	-44.4	-36.3	Nm	-46.42	Fail
Peak Rotation about X-Axis	-37.0	-30.3	deg	-36.90	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9684 Fz	4/13/2015	4/12/2016
Ankle Y Potentiometer	SFERNICE ECO50ESC10	DS-ANKL001	4/2/2015	4/1/2016



ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DO9798	Laboratory Supervisor	M. Goehle

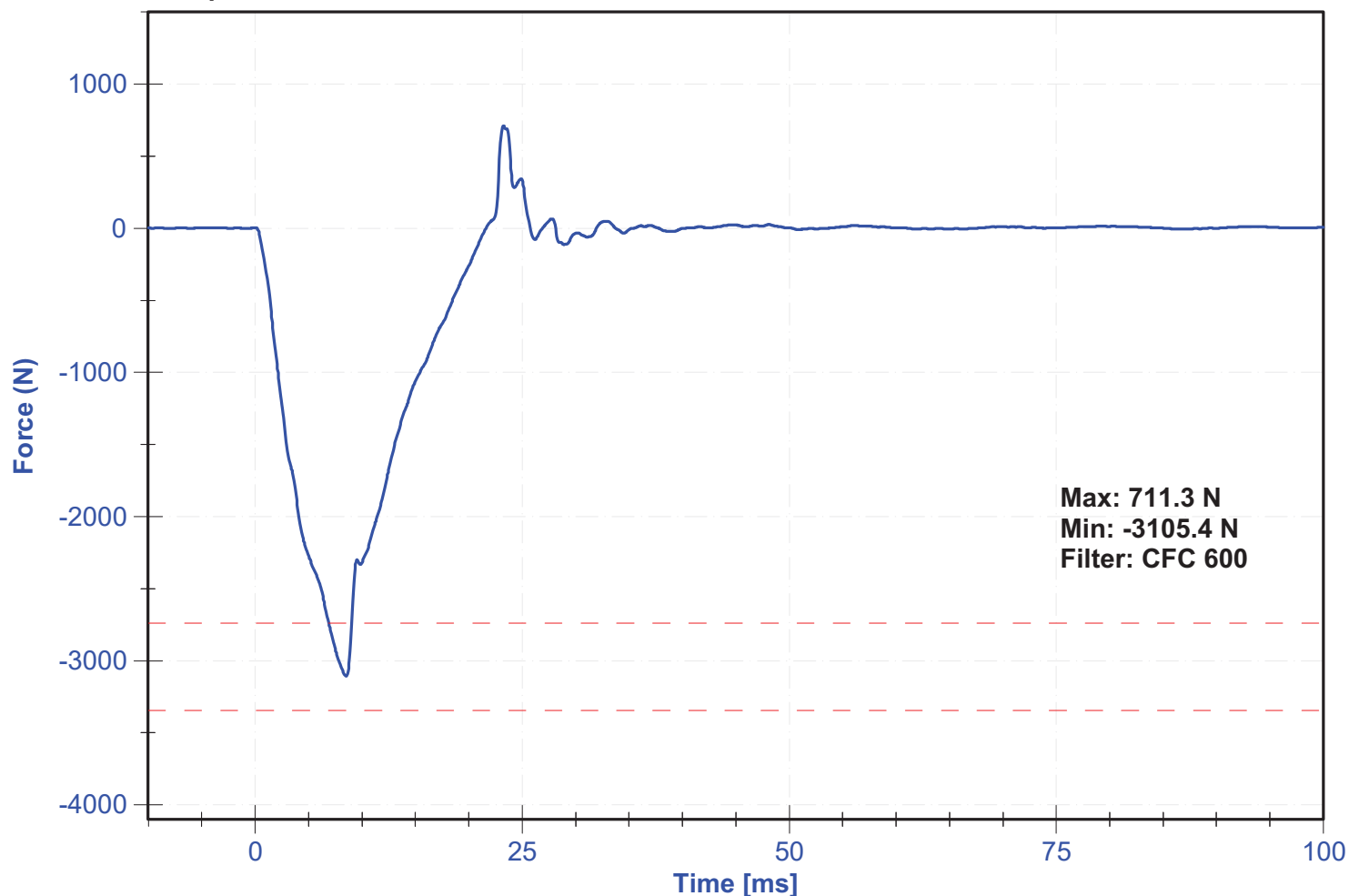
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	24.2	Pass
Velocity	3.9	4.1	m/s	4.071	Pass
Lower Tibia Compressive Force	-3346	-2738	N	-3105.4	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 9329J	LC-DQ9684 Fz	4/13/2015	4/12/2016

Compressive Tibia Force



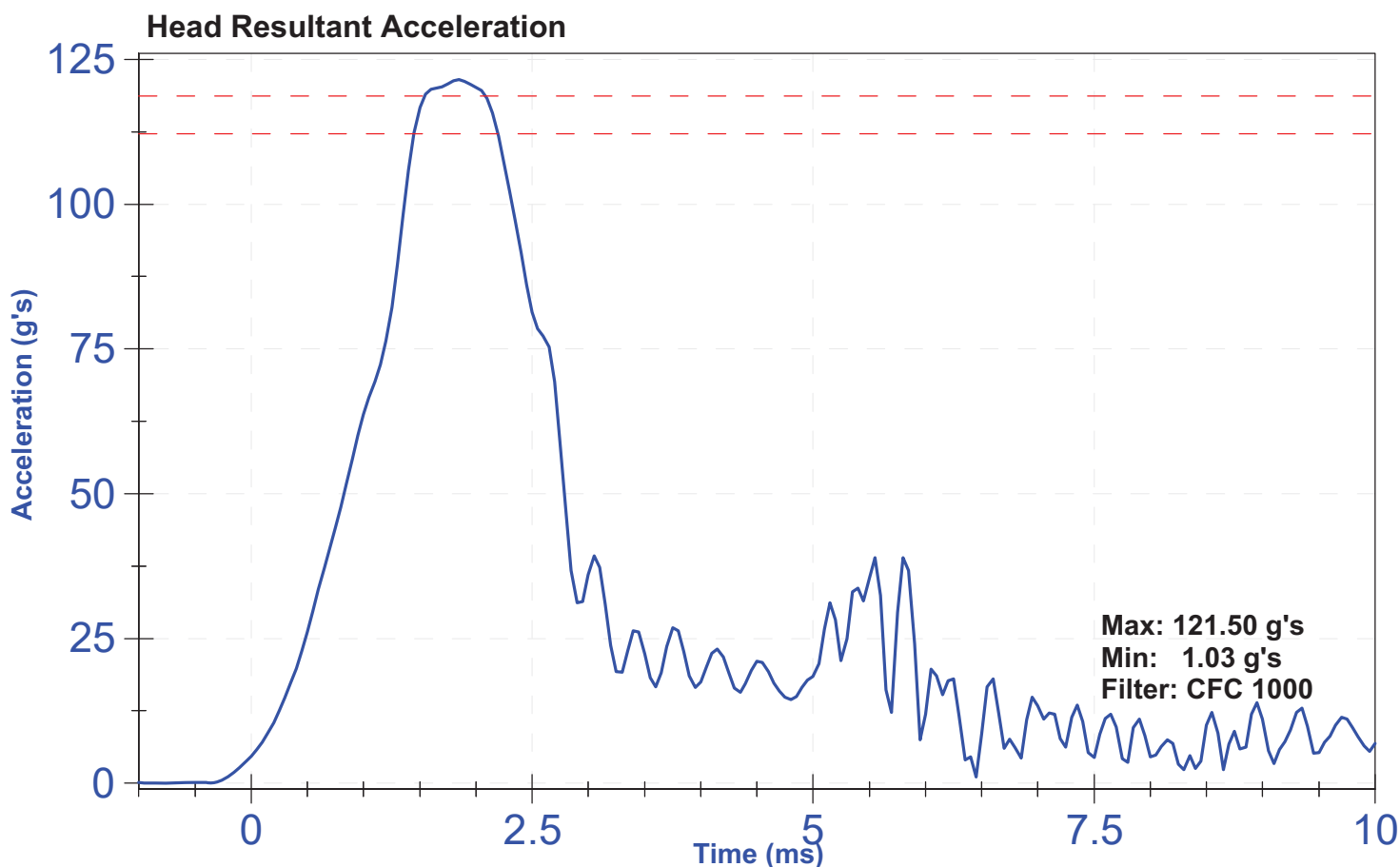
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

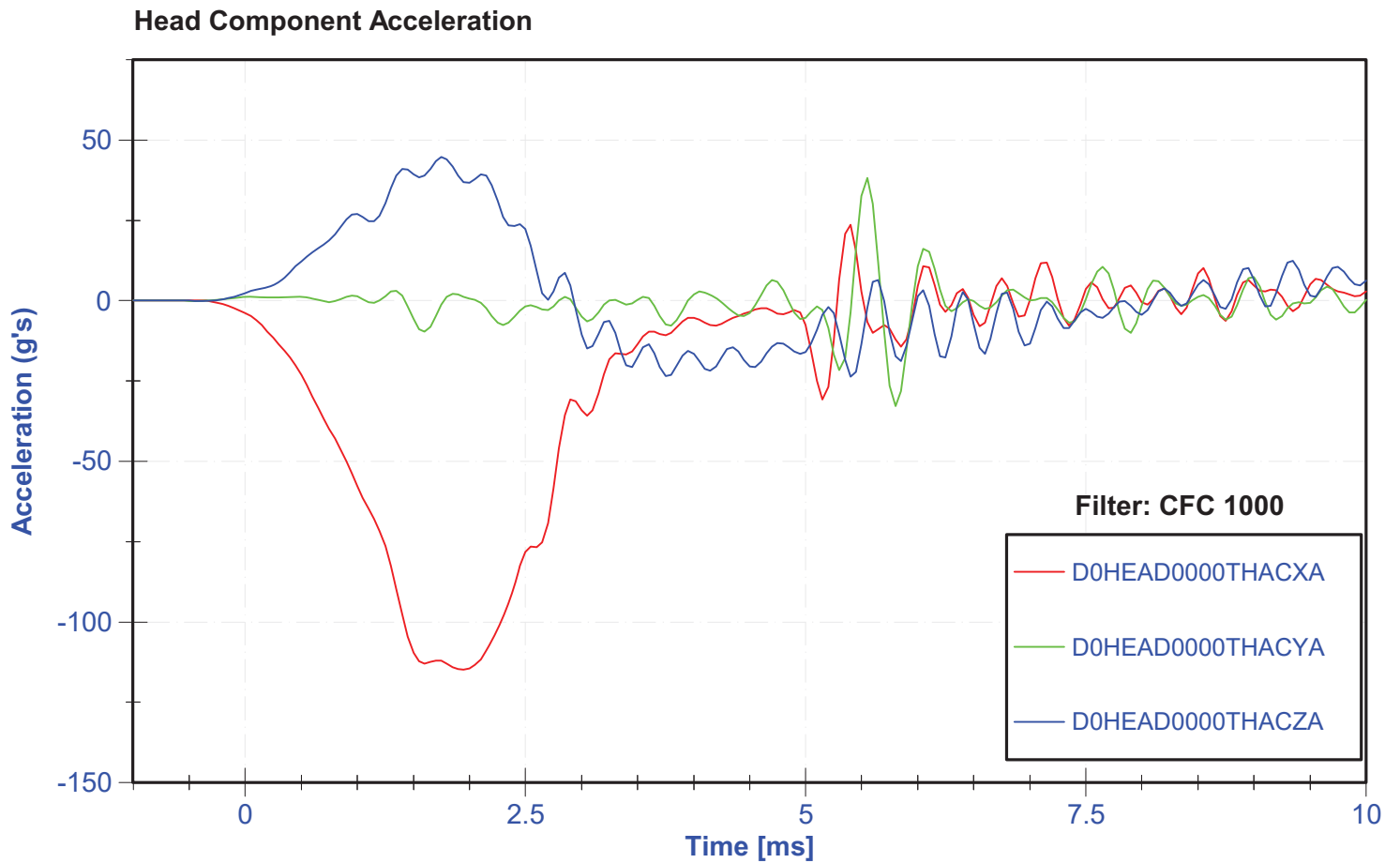
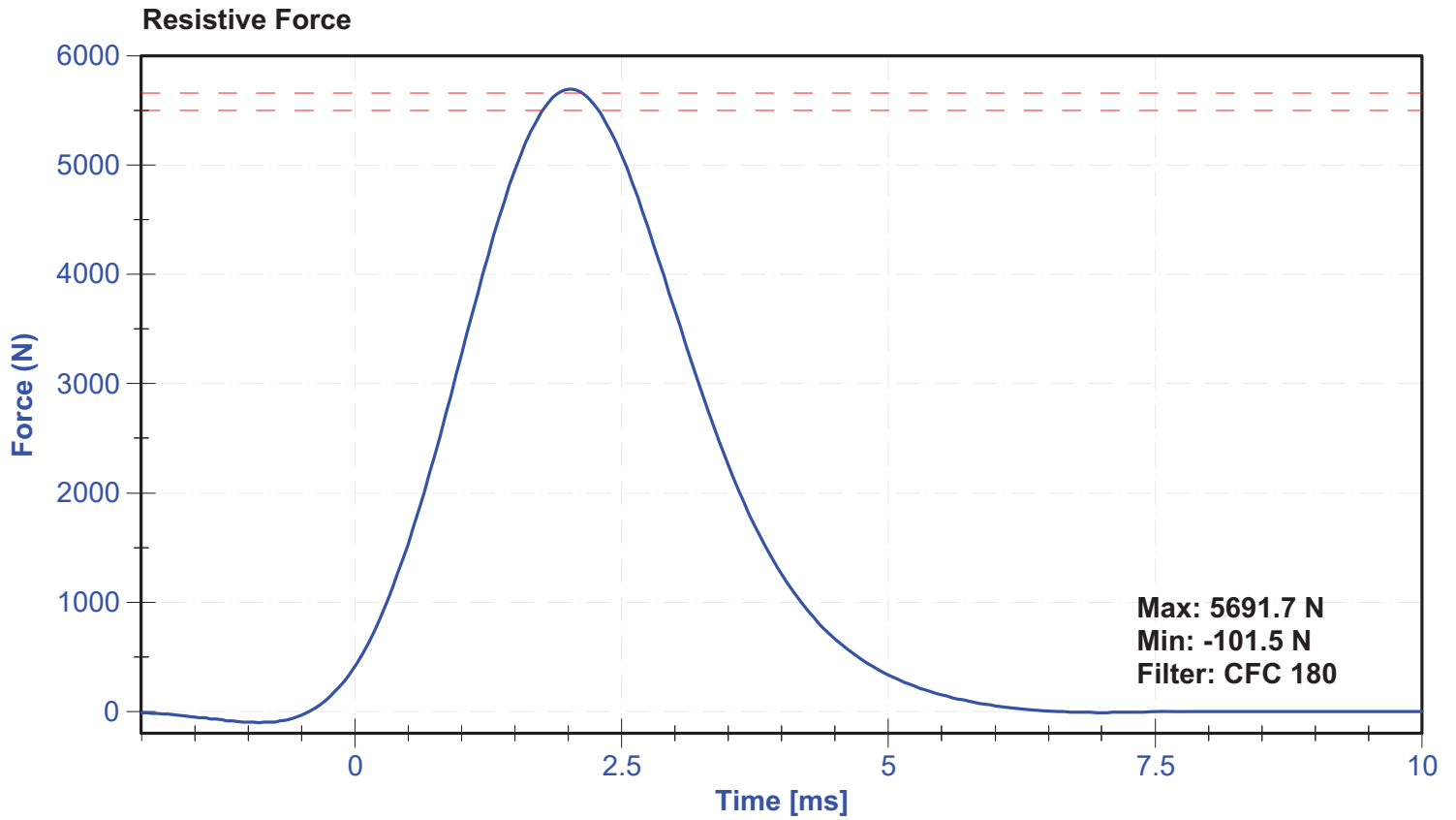
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	47.7	Pass
Impact Velocity	1.95	2.05	m/s	1.969	Pass
Probe Force	5498	5660	N	5691.7	Fail
Resultant Acceleration	112.2	118.7	g's	121.50	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Head X Accel	Endevco 7264	AC-P82183	4/3/2015	4/2/2016
Head Y Accel	Endevco 7264	AC-P81384	4/3/2015	4/2/2016
Head Z Accel	Endevco 7264	AC-P81797	4/3/2015	4/2/2016
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016





ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

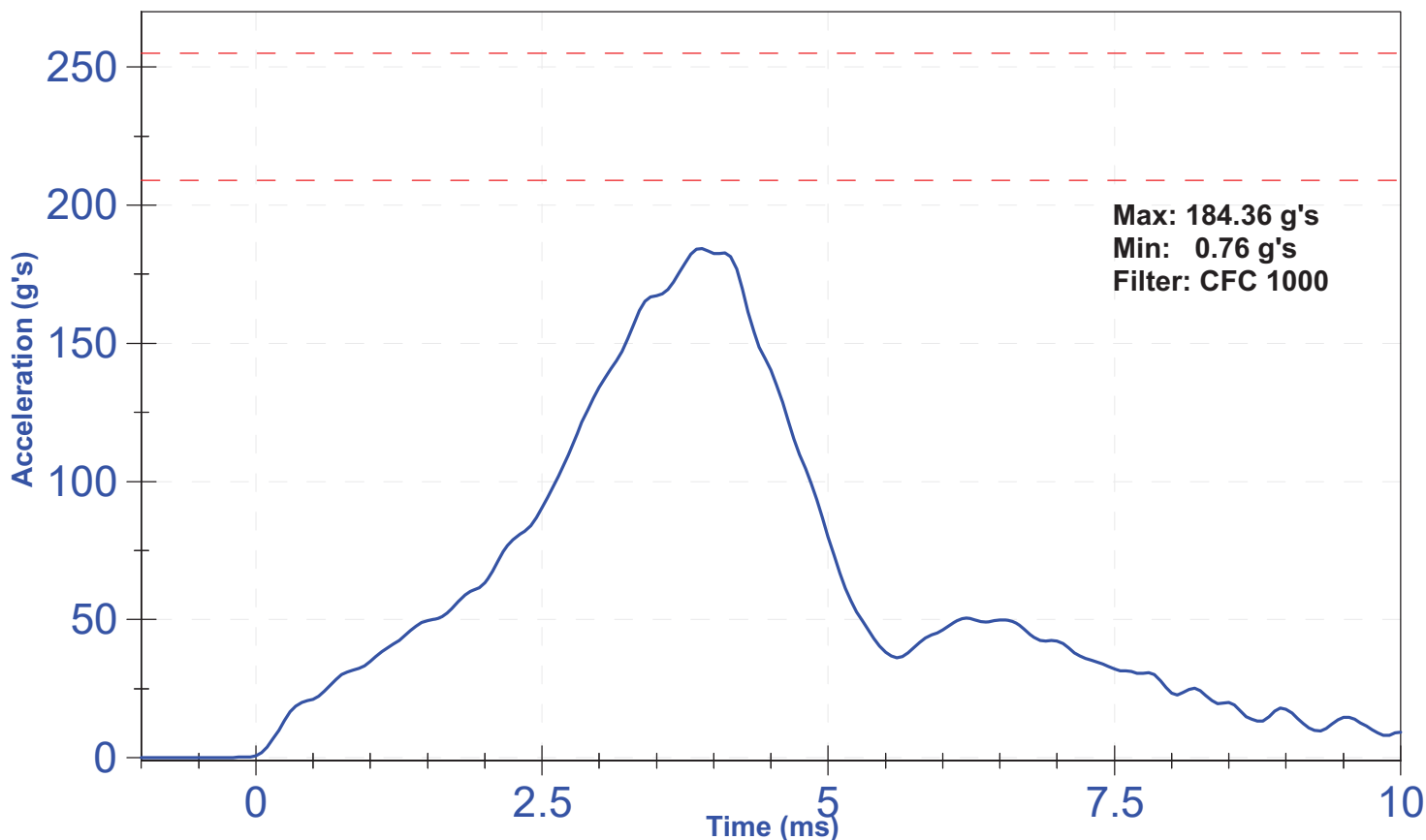
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.5	Pass
Humidity	10	70	%	39.7	Pass
Impact Velocity	6.68	6.78	m/s	6.728	Pass
Probe Force	9067	11082	N	9152.8	Pass
Resultant Acceleration	209	255	g's	184.4	Fail

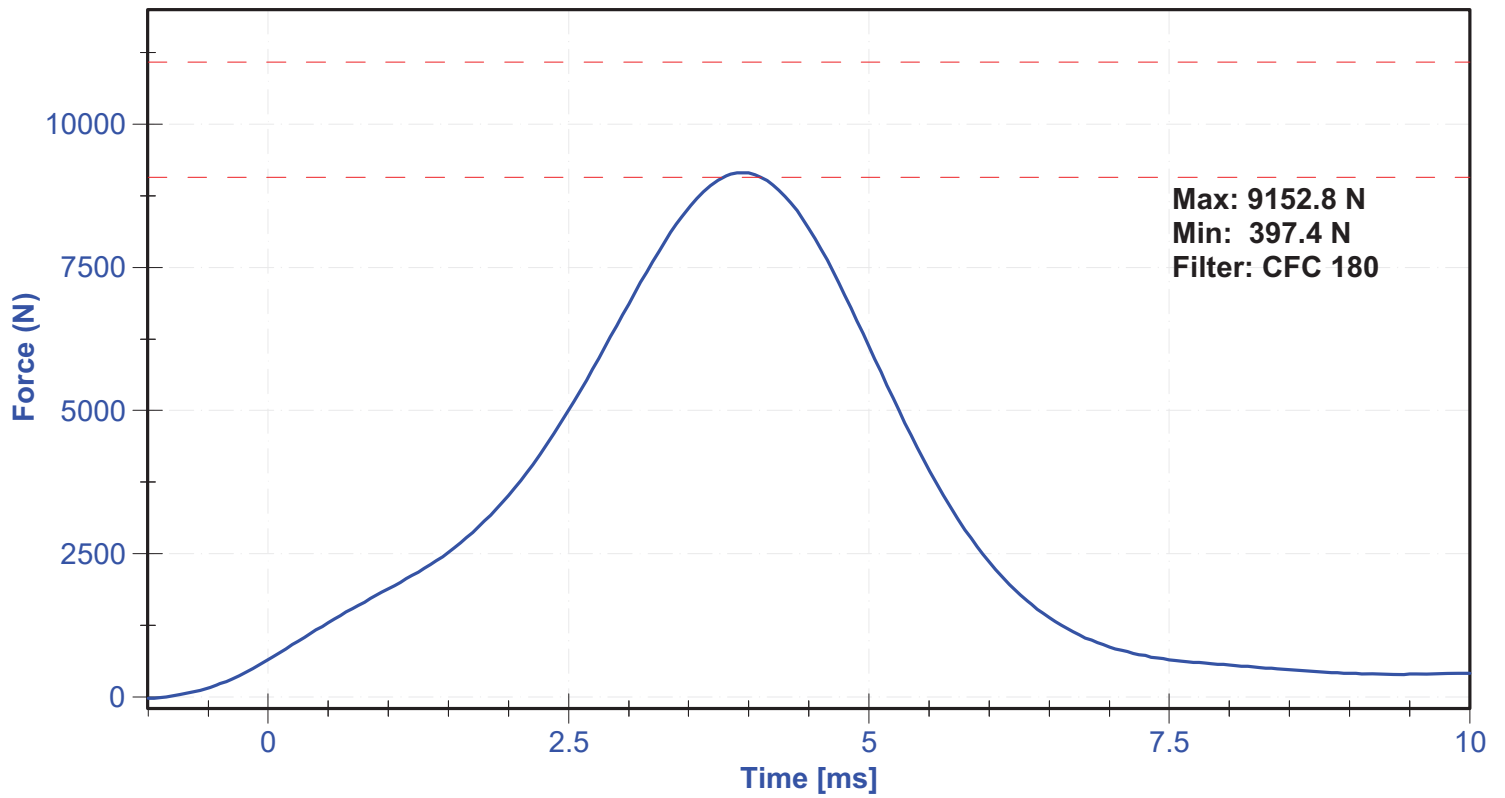
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Head X Accel	Endevco 7264	AC-P82183	4/3/2015	4/2/2016
Head Y Accel	Endevco 7264	AC-P81384	4/3/2015	4/2/2016
Head Z Accel	Endevco 7264	AC-P81797	4/3/2015	4/2/2016
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016

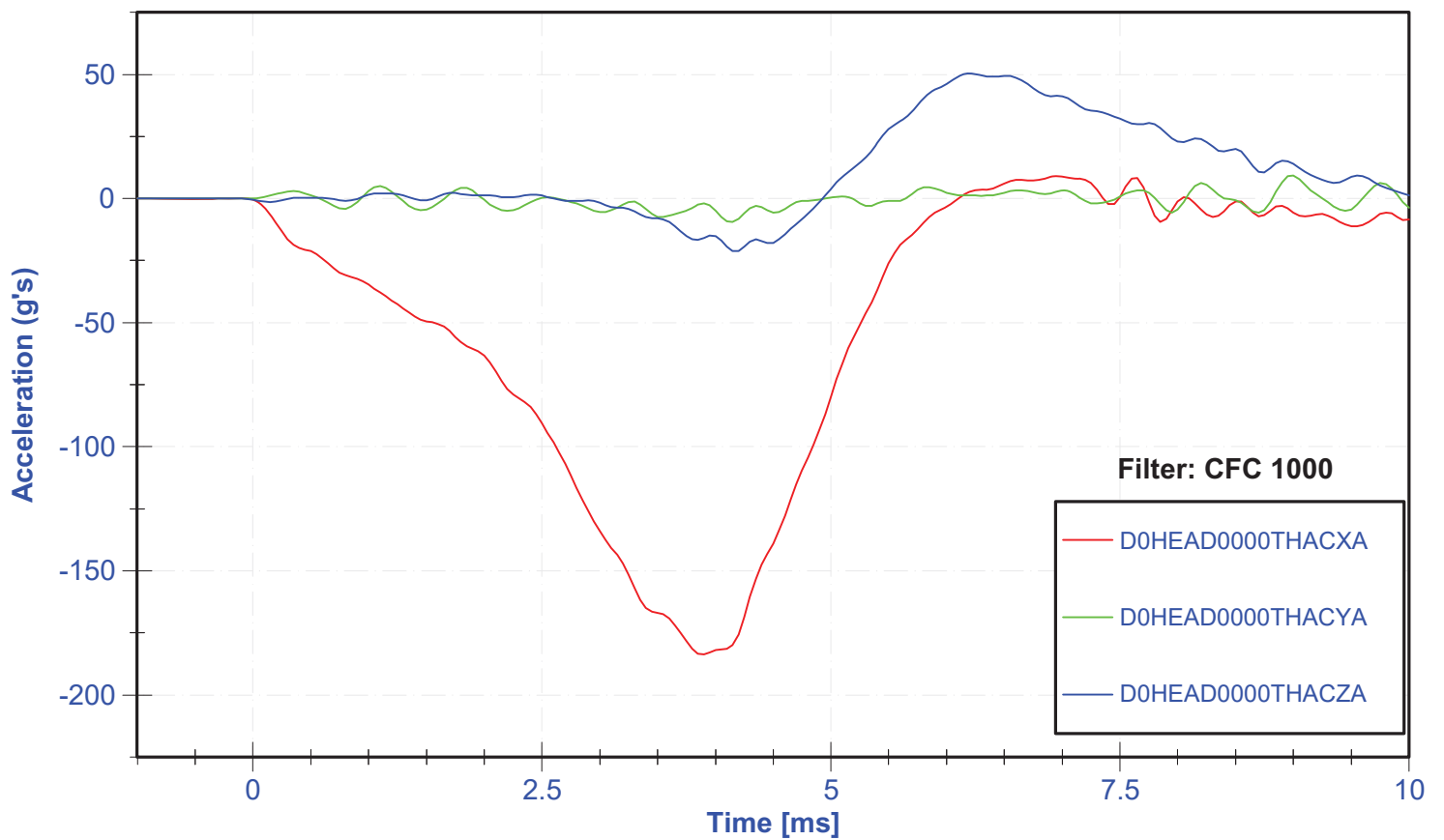
Head Resultant Acceleration



Resistive Force



Head Component Acceleration



ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

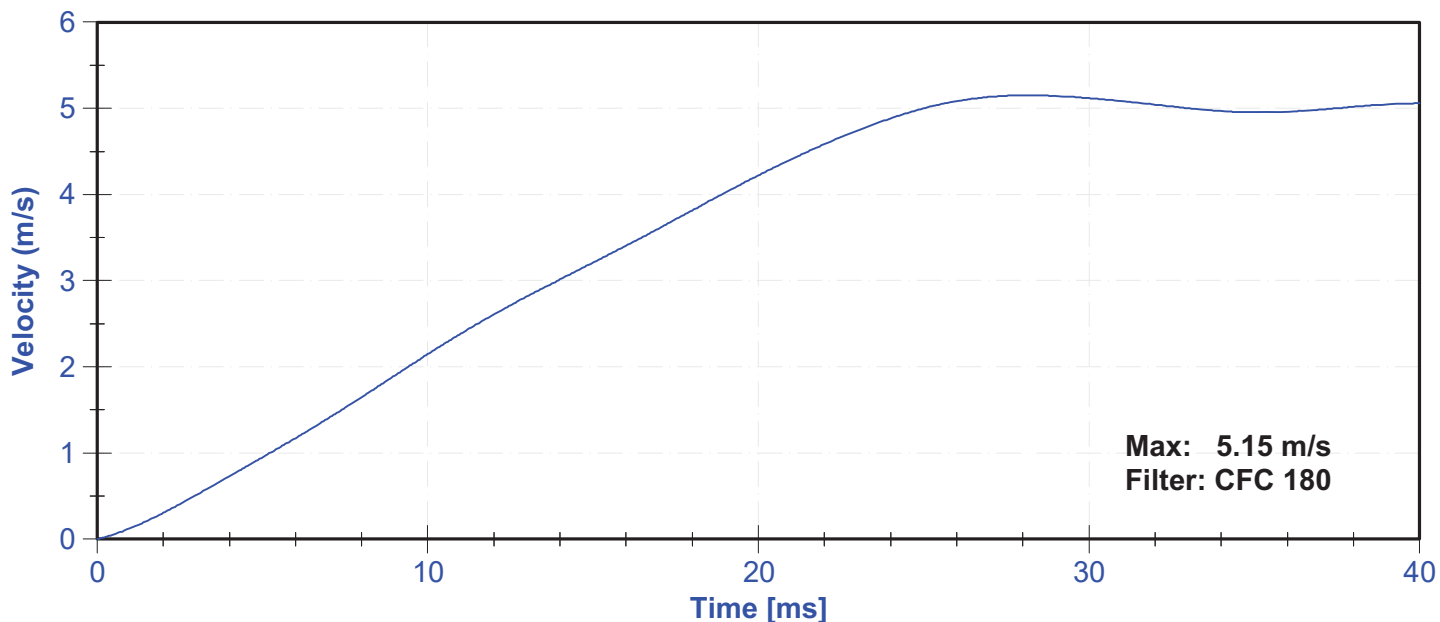
Results

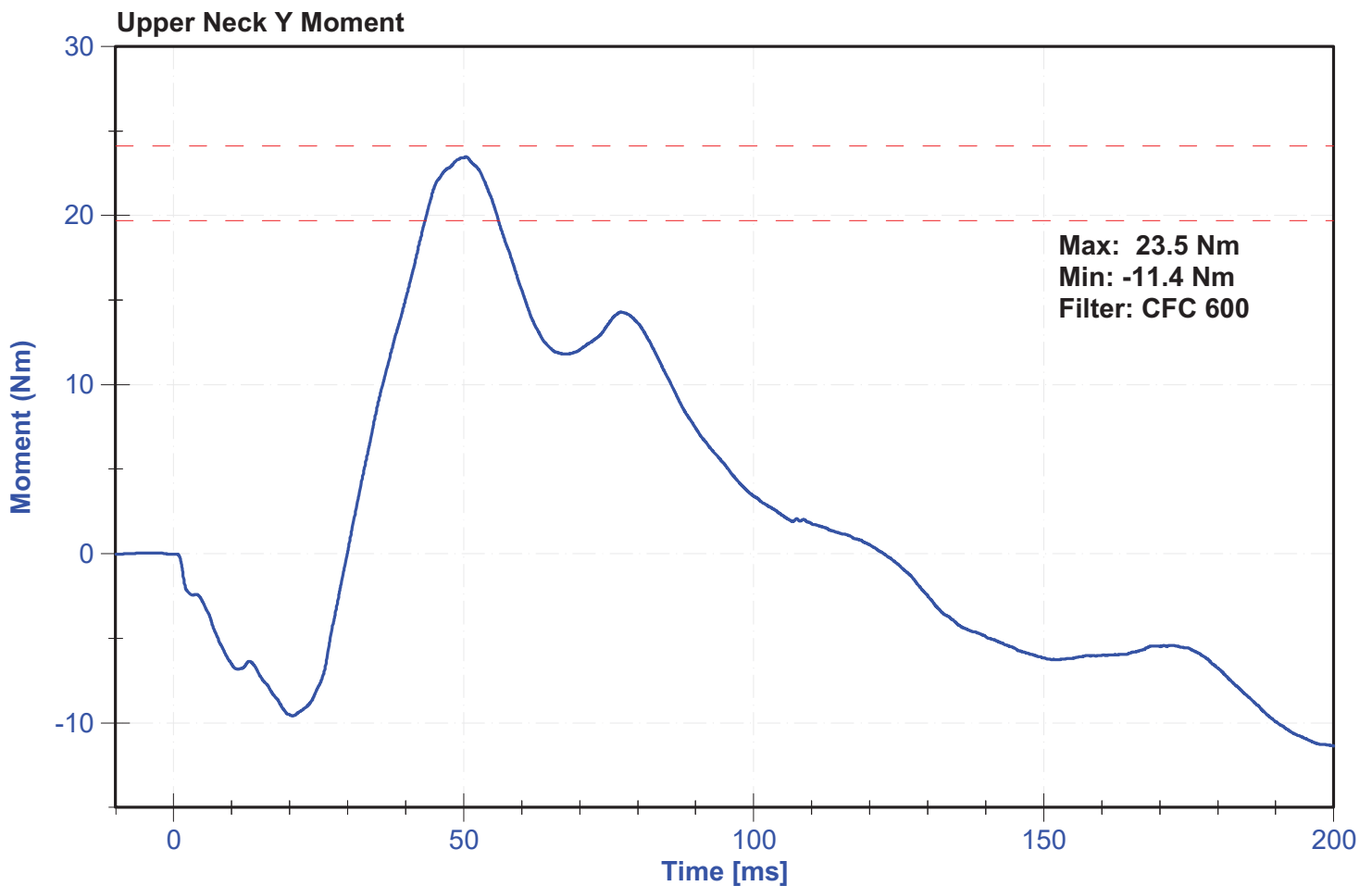
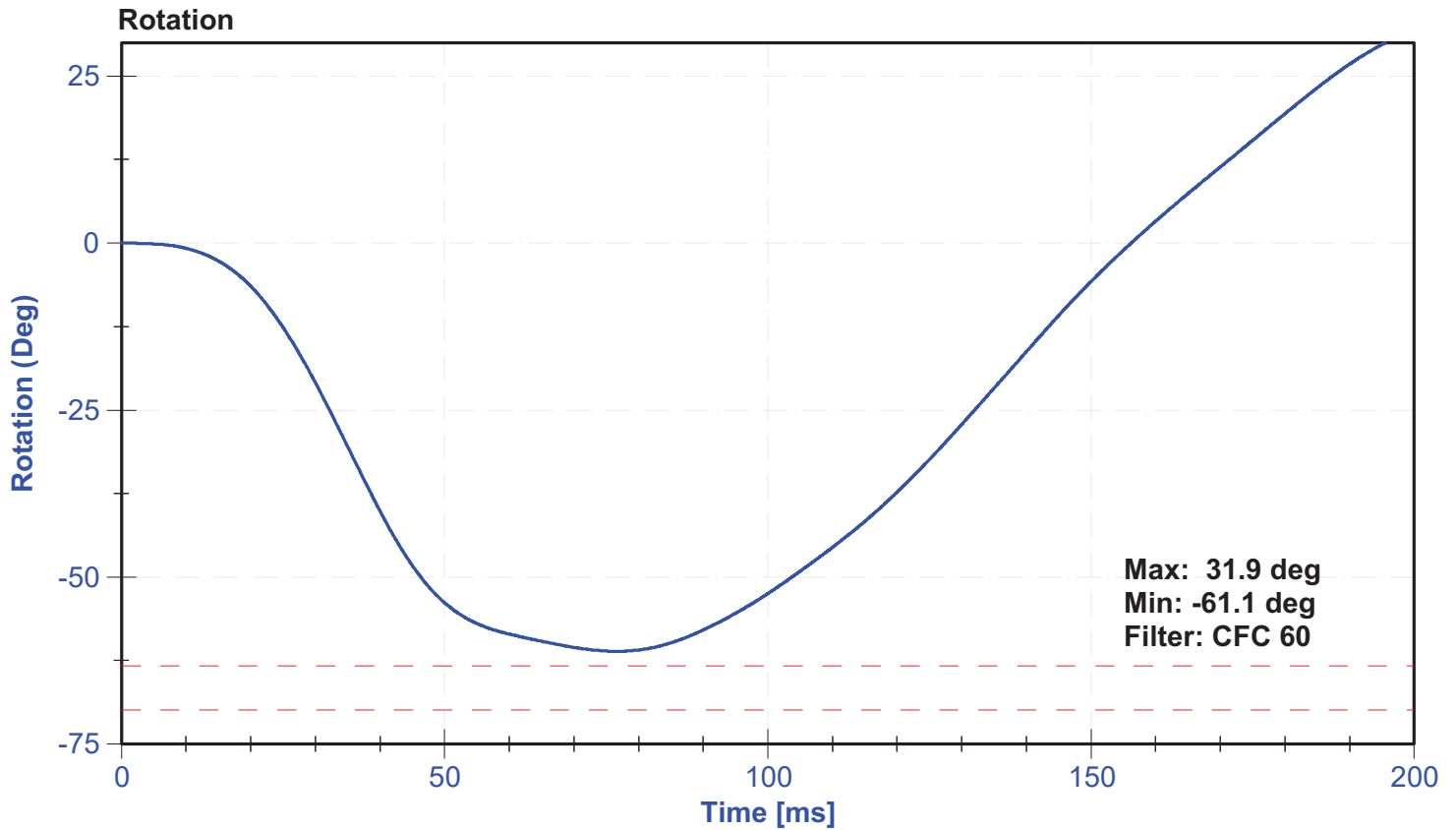
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.6	Pass
Humidity	10	70	%	37.6	Pass
Velocity	4.95	5.05	m/s	4.985	Pass
Pendulum Impulse at 8ms	1.49	1.85	m/s	1.649	Pass
Pendulum Impulse at 16ms	3.08	3.86	m/s	3.407	Pass
Pendulum Impulse at 24ms	4.48	5.26	m/s	4.883	Pass
Peak Upper Neck Y Moment	19.7	24.1	Nm	23.46	Pass
Peak Upper Neck X Force	-1592	-1302	N	-1327.3	Pass
Maximum Upper Neck Z Force	877	1072	N	1004.5	Pass
First Peak Rear Neck Cable Force	1115	1282	N	1230.9	Pass
Peak Head Y Angular Rate	-1935	-1675	deg/s	-1794.0	Pass
Peak Head Y Rotation	-69.9	-63.3	deg	-61.12	Fail
Rotation Decay Time to Zero	83.0	86.2	ms	79.60	Fail

Transducer Calibrations

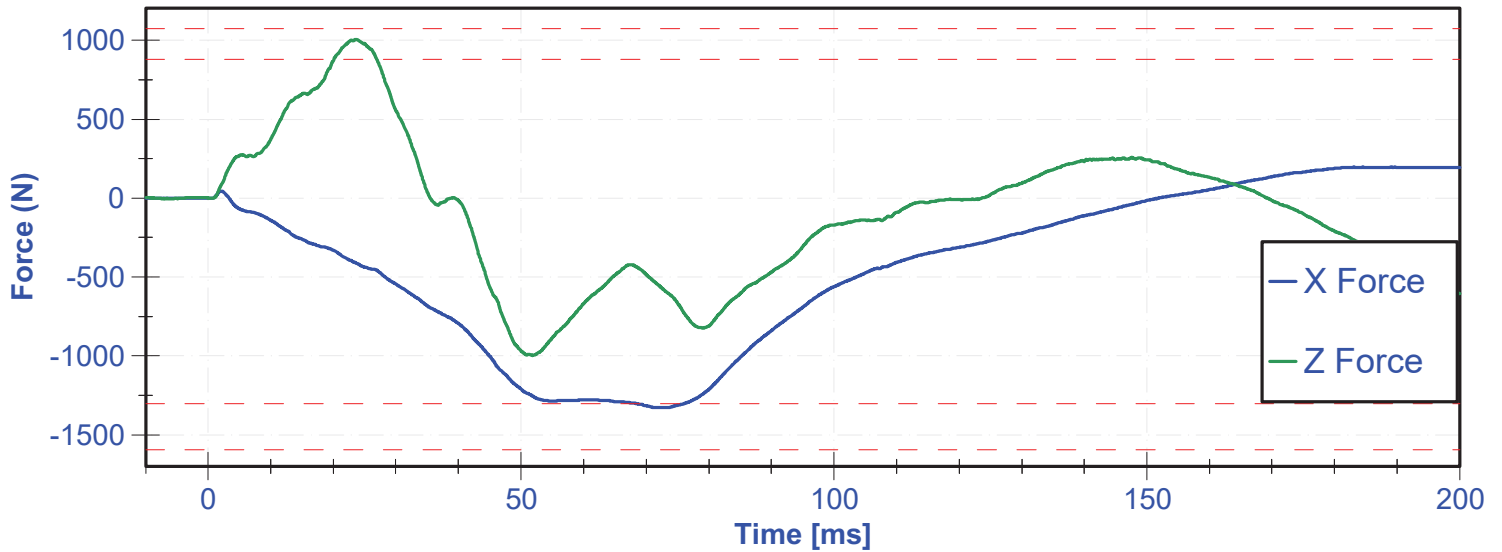
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380JI4	LC-DP3956 Fx	3/5/2016	3/5/2017
Rear Neck Cable Load Cell	Humanetics 10386JI4	LC-DO9741	3/6/2016	3/6/2017
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head Y ARS	DTS ARS-18K	ARS-4737	3/30/2015	3/29/2016

Pendulum Pulse

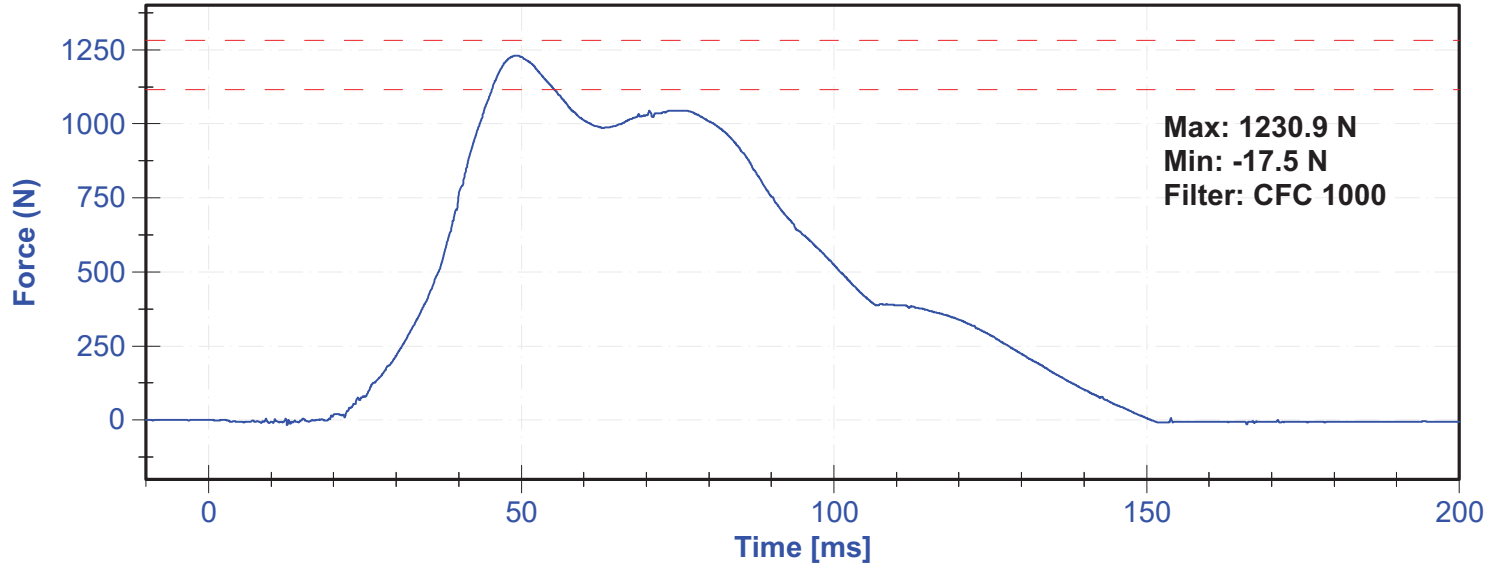




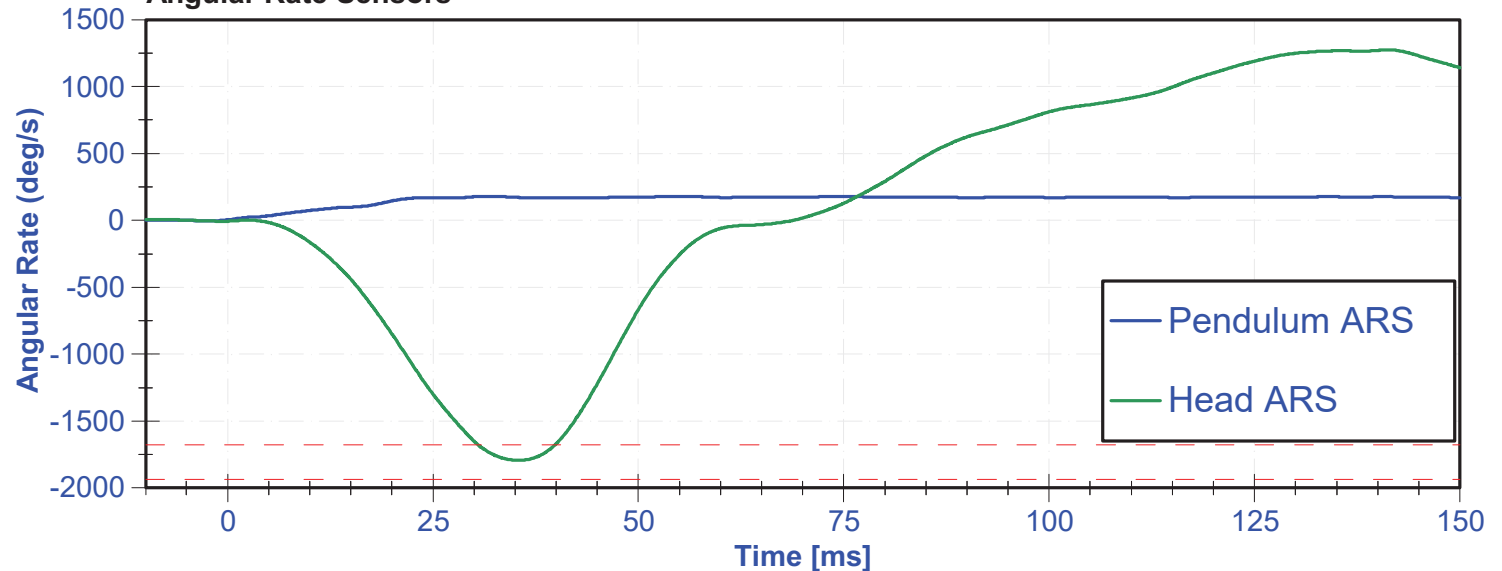
Upper Neck Force



Rear Neck Cable Z Force



Angular Rate Sensors



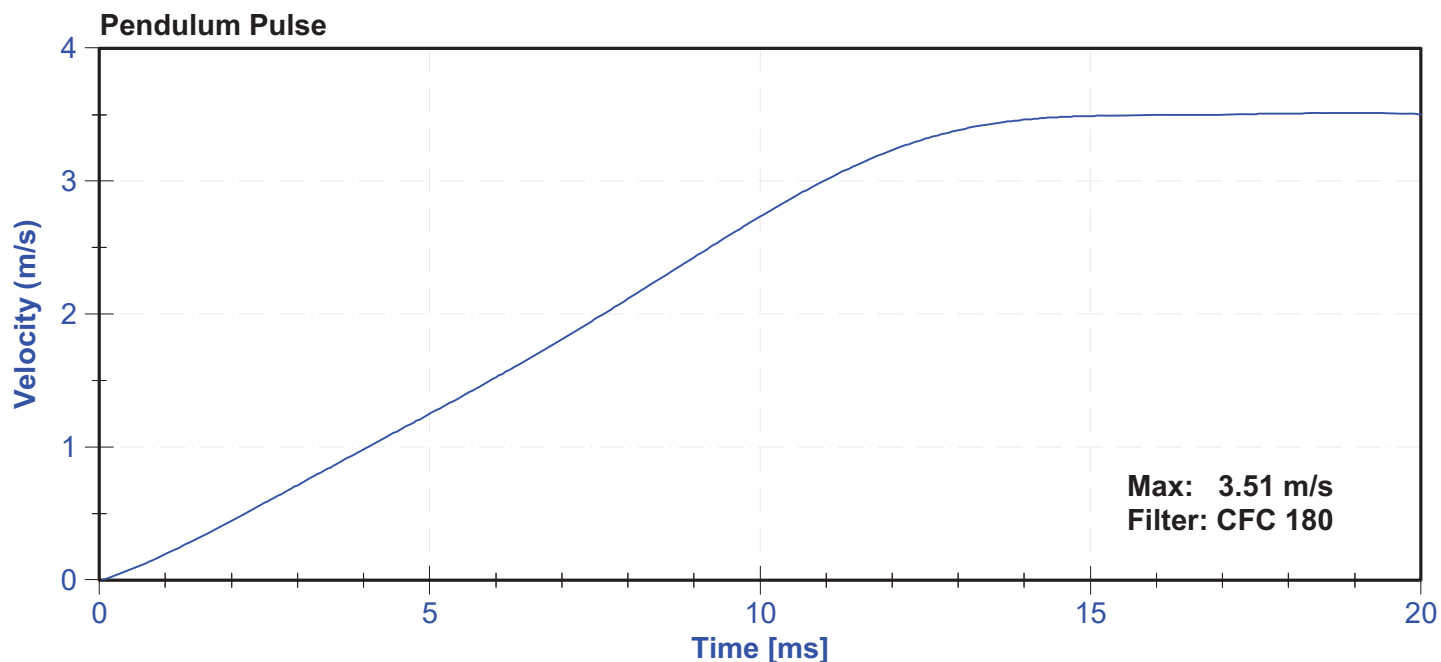
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

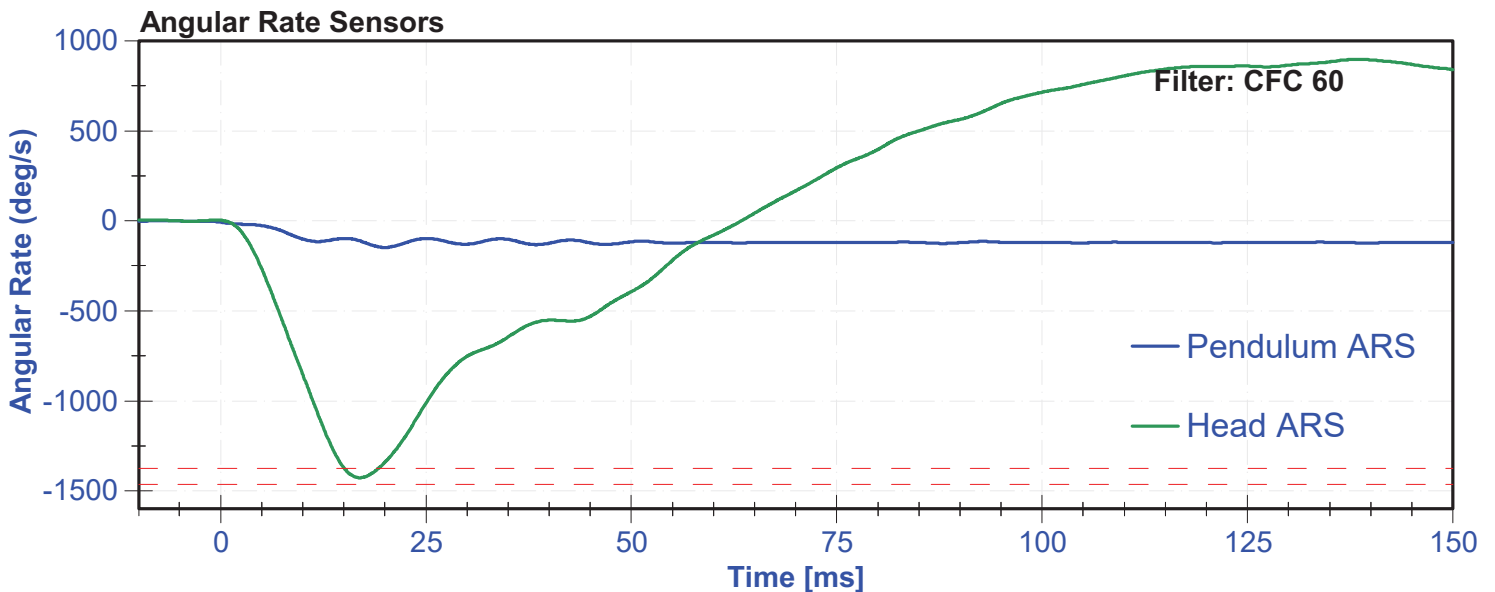
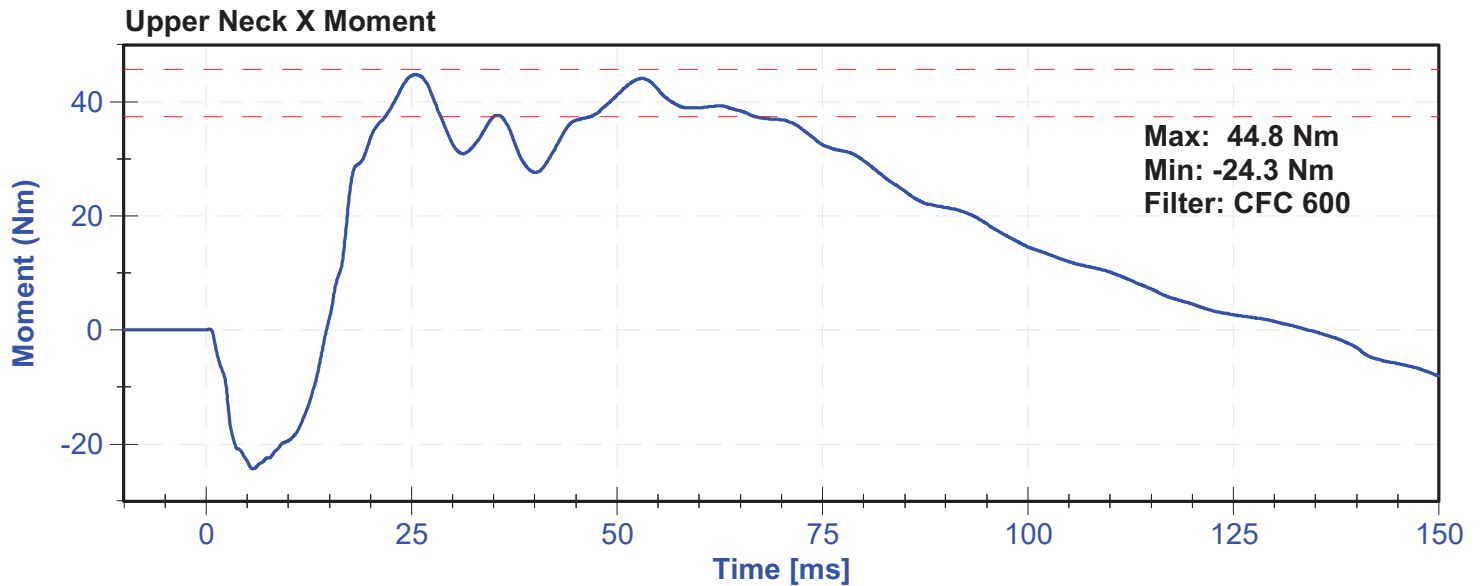
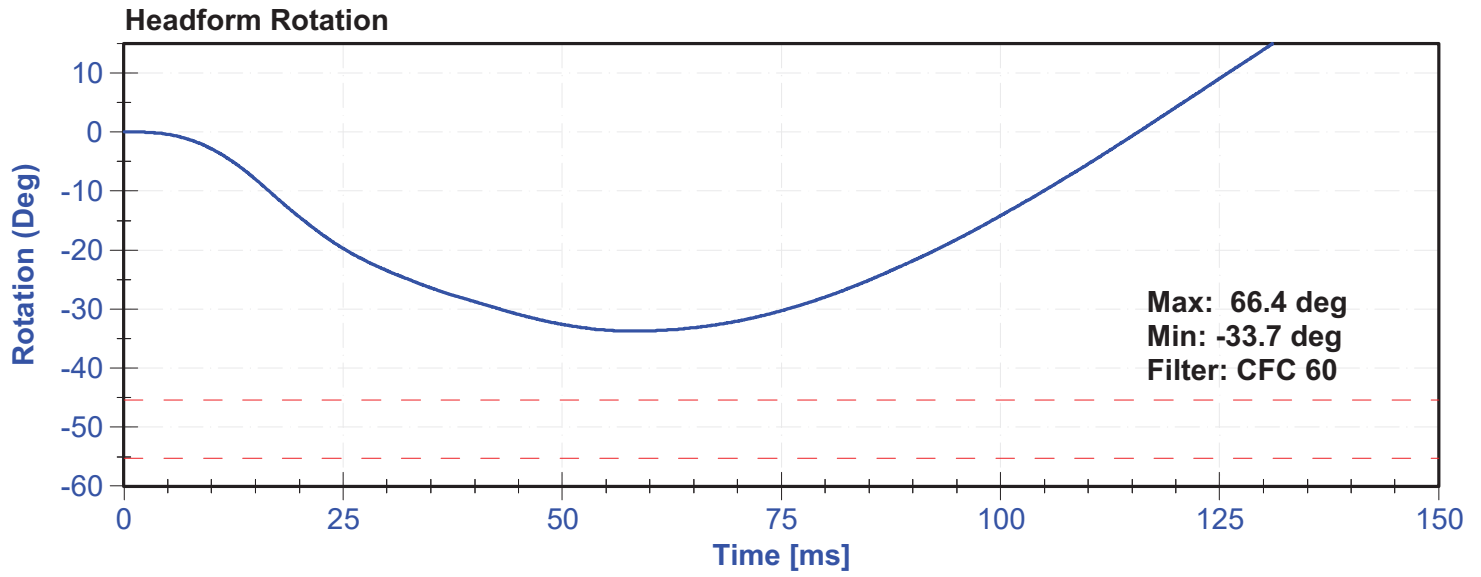
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.7	Pass
Humidity	10	70	%	38.5	Pass
Velocity	3.35	3.45	m/s	3.432	Pass
Pendulum Impulse at 4ms	0.89	1.08	m/s	0.983	Pass
Pendulum Impulse at 8ms	2.04	2.36	m/s	2.114	Pass
Pendulum Impulse at 12ms	3.21	3.46	m/s	3.233	Pass
Peak Upper Neck X Moment after 40ms	37.4	45.7	Nm	44.09	Pass
Peak Head X Angular Rate	-1462	-1375	deg/s	-1426.3	Pass
Peak Head X Rotation	-55.3	-45.4	deg	-33.70	Fail
Rotational Decay Time to Zero	83.7	90.9	ms	57.50	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380J14	LC-DP3956 Mx	3/5/2016	3/5/2017
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head X ARS	DTS ARS-18K	ARS-4740	3/30/2015	3/29/2016





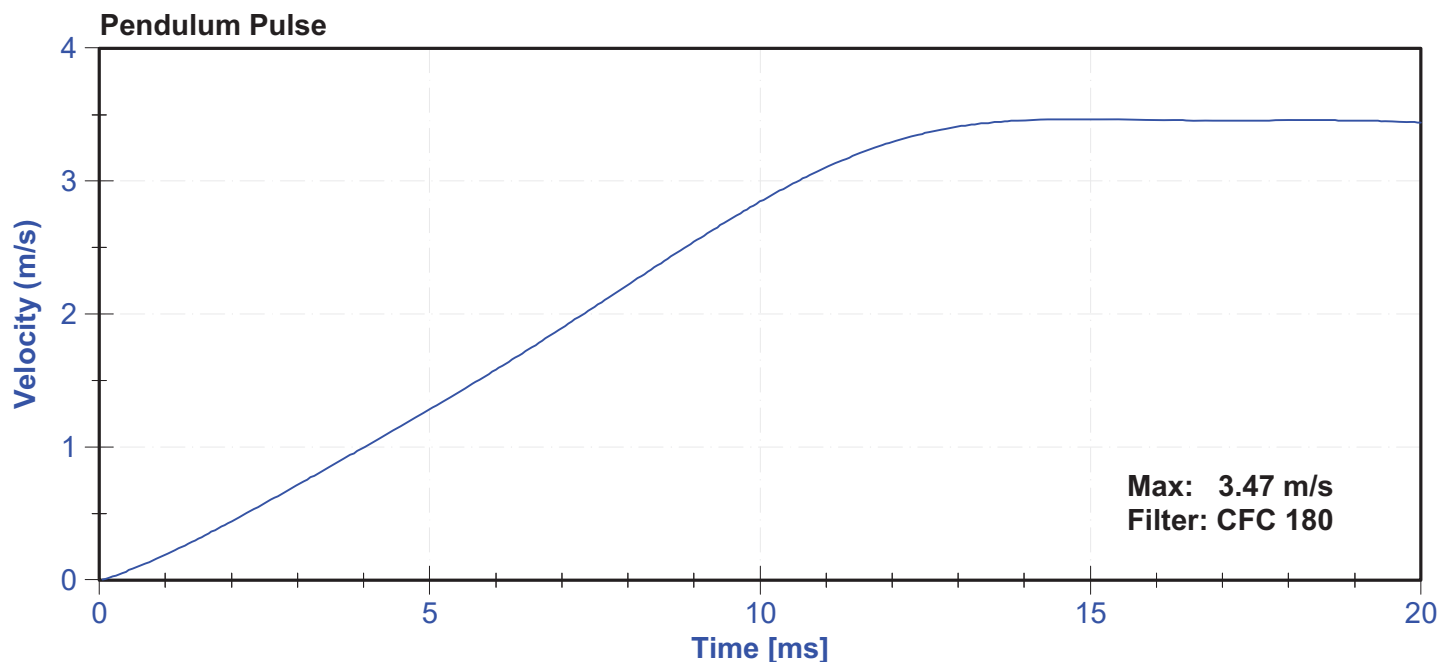
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

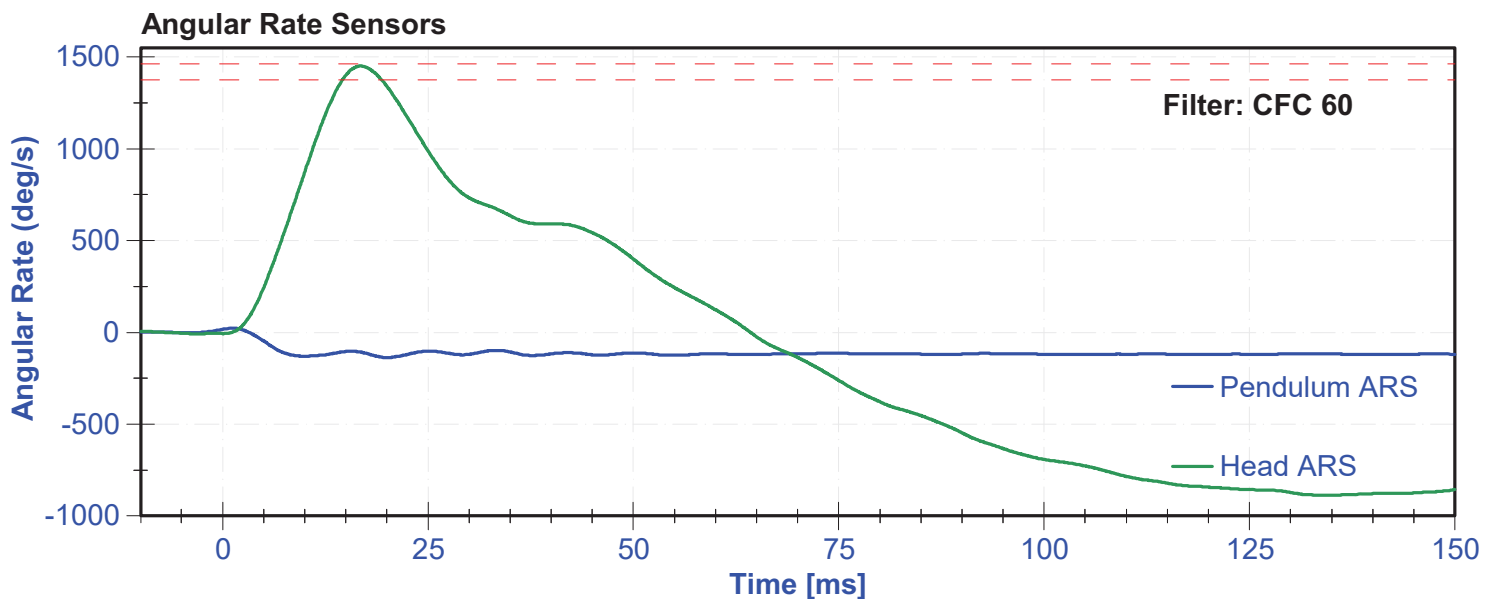
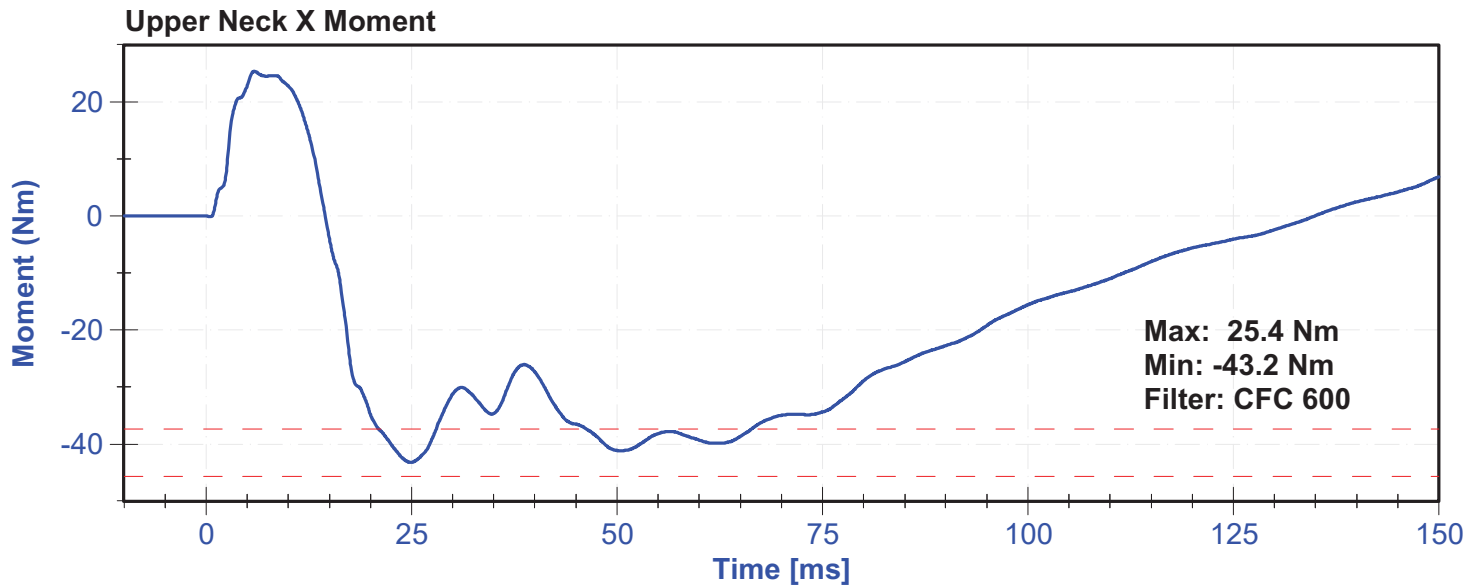
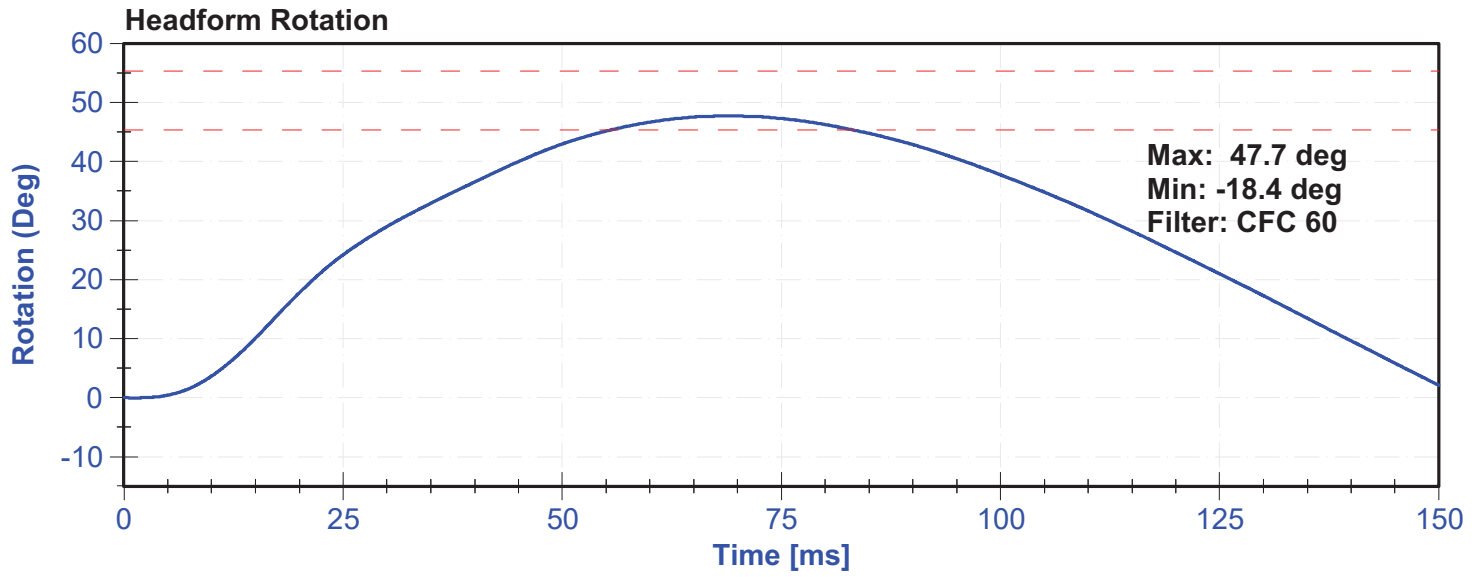
Results

Test Parameter	Minimum Specificatio	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.7	Pass
Humidity	10	70	%	39.0	Pass
Velocity	3.35	3.45	m/s	3.40	Pass
Pendulum Impulse at 4ms	0.89	1.08	m/s	0.997	Pass
Pendulum Impulse at 8ms	2.04	2.36	m/s	2.220	Pass
Pendulum Impulse at 12ms	3.21	3.46	m/s	3.294	Pass
Peak Upper Neck X Moment after 40ms	-45.7	-37.4	Nm	-41.21	Pass
Peak Head X Angular Rate	1375	1462	deg/s	1450.2	Pass
Peak Head X Rotation	45.4	55.3	deg	47.72	Pass
Rotation Decay Time to Zero	83.7	90.9	ms	83.95	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380J14	LC-DP3956 Mx	3/5/2016	3/5/2017
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head X ARS	DTS ARS-18K	ARS-4740	3/30/2015	3/29/2016





ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

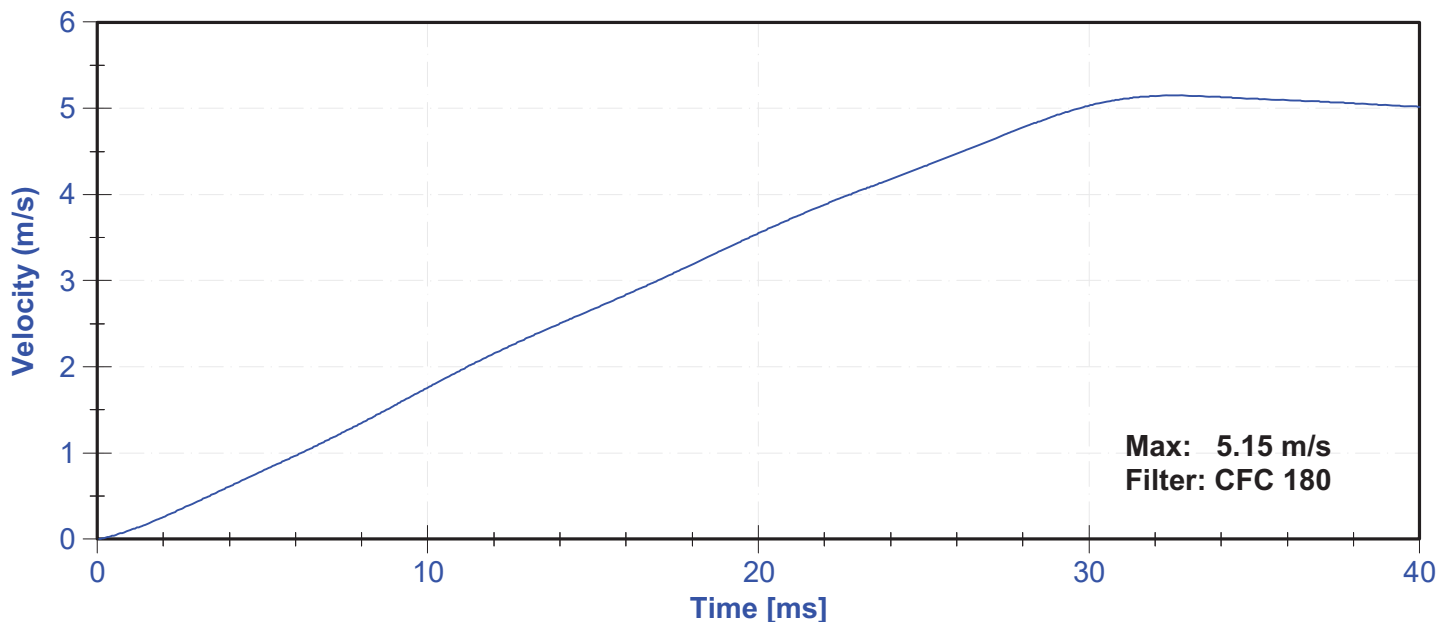
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.7	Pass
Humidity	10	70	%	38.1	Pass
Velocity	4.95	5.05	m/s	5.015	Pass
Pendulum Impulse at 10ms	1.76	1.91	m/s	1.761	Pass
Pendulum Impulse at 20ms	3.50	3.75	m/s	3.550	Pass
Pendulum Impulse at 30ms	4.88	5.20	m/s	5.030	Pass
Peak Upper Neck Y Moment	-21.3	-17.5	Nm	-23.06	Fail
Peak Upper Neck X Force	967	1182	N	1016.4	Pass
Peak Upper Neck Z Force	-2893	-2603	N	-2560.1	Fail
Peak Front Neck Cable Force	2482	2809	N	2388.4	Fail
Peak Head Y Angular Rate	1907	2043	deg/s	2024.9	Pass
Peak Head Y Rotation	57.6	64.2	deg	46.38	Fail
Rotational Decay Time to Zero	79.3	82.5	ms	54.75	Fail

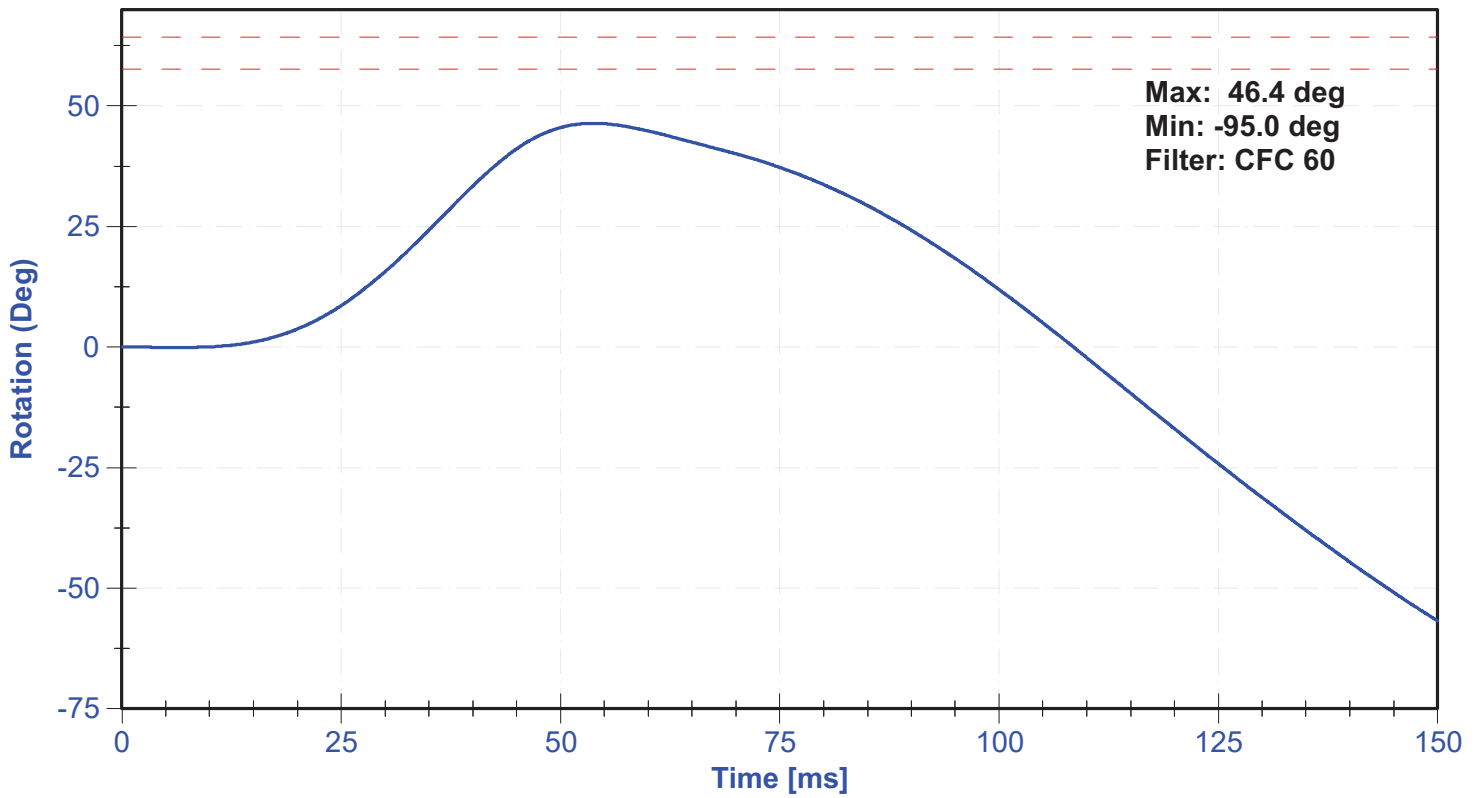
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Upper Neck Load Cell	Humanetics 10380J14	LC-DP3956 Fx	3/5/2016	3/5/2017
Fr Neck Cable Load	Humanetics 10386J14	LC-DO9740	3/6/2016	3/6/2017
Pendulum ARS	DTS ARS-PRO-8K	ARS-6419	1/19/2016	1/18/2017
Head ARS Y-Axis	DTS ARS-18K	ARS-4737	3/30/2015	3/29/2016

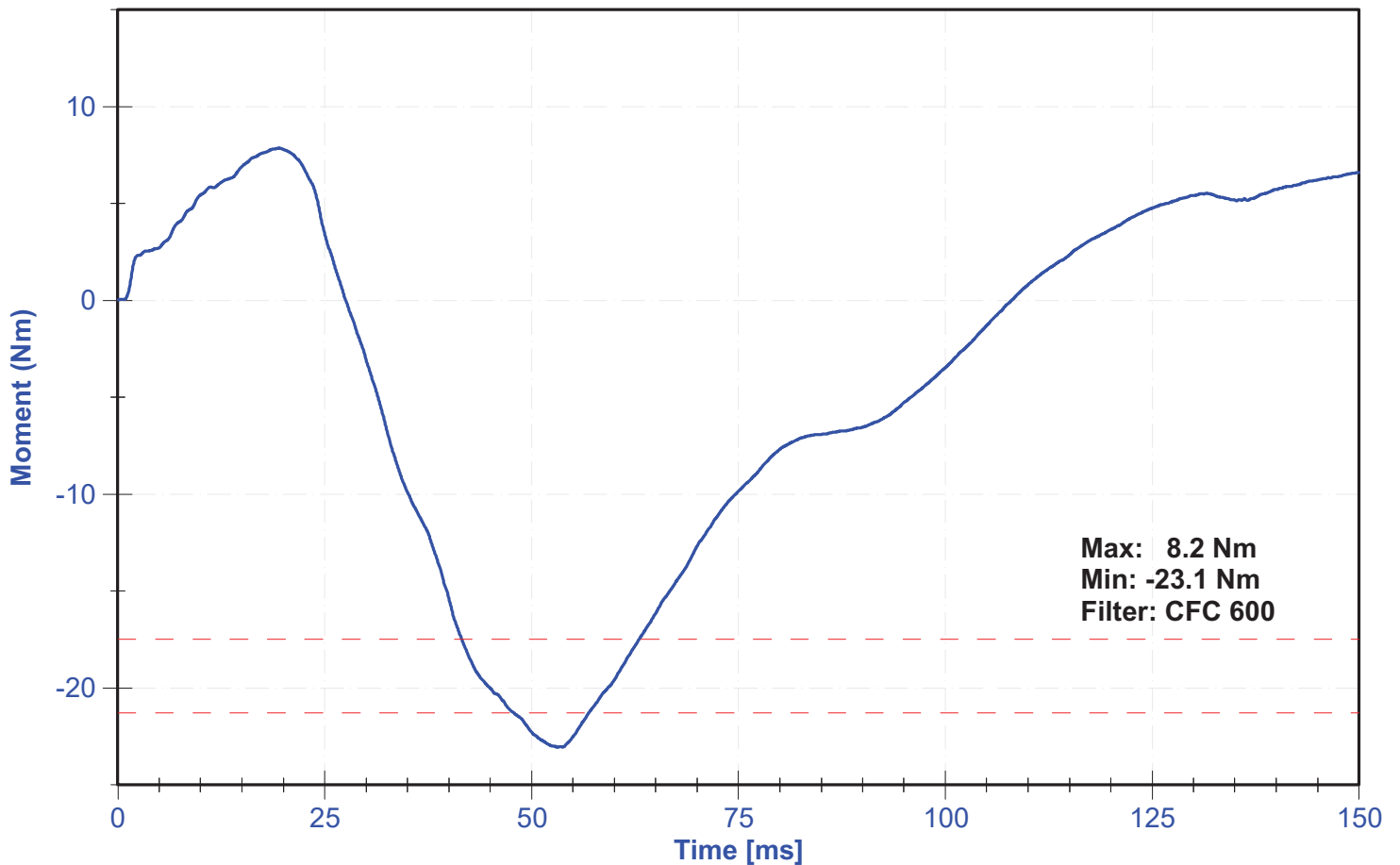
Pendulum Pulse



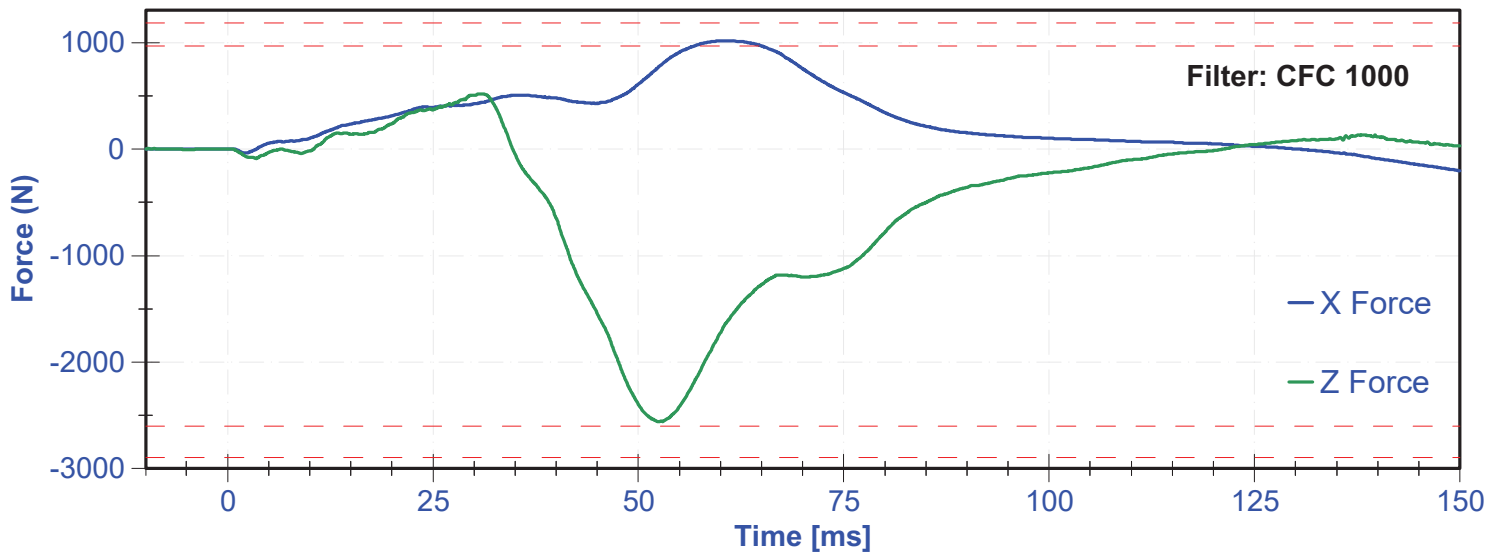
Headform Rotation



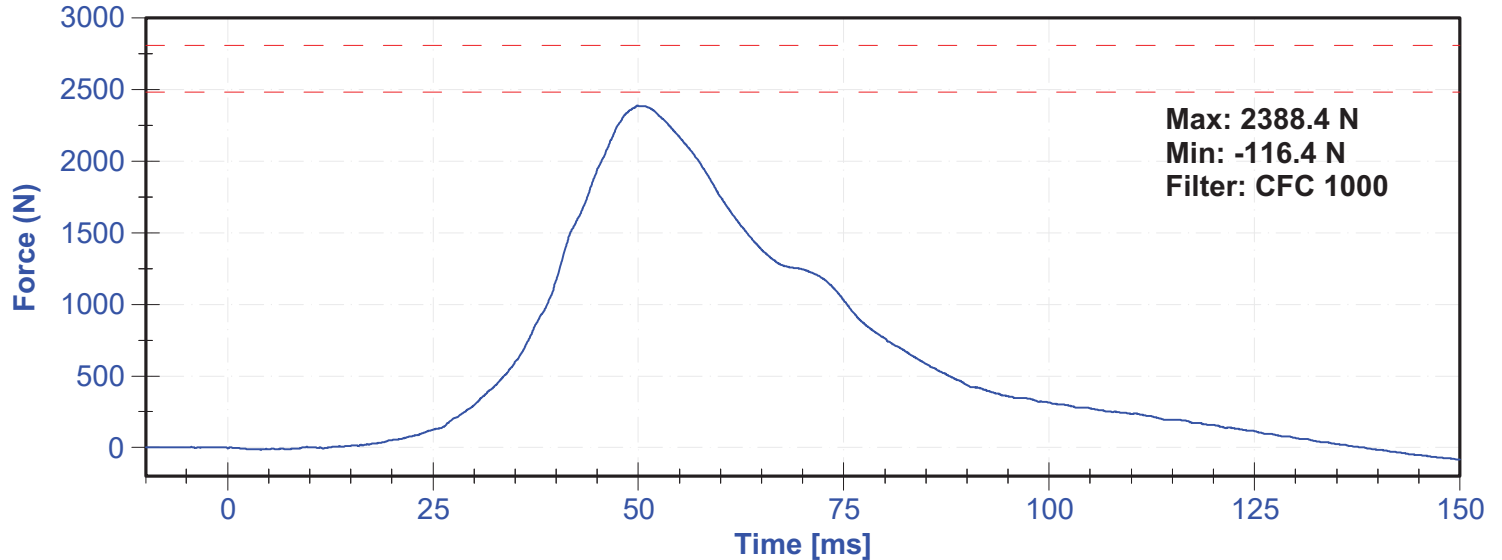
Upper Neck Y Moment



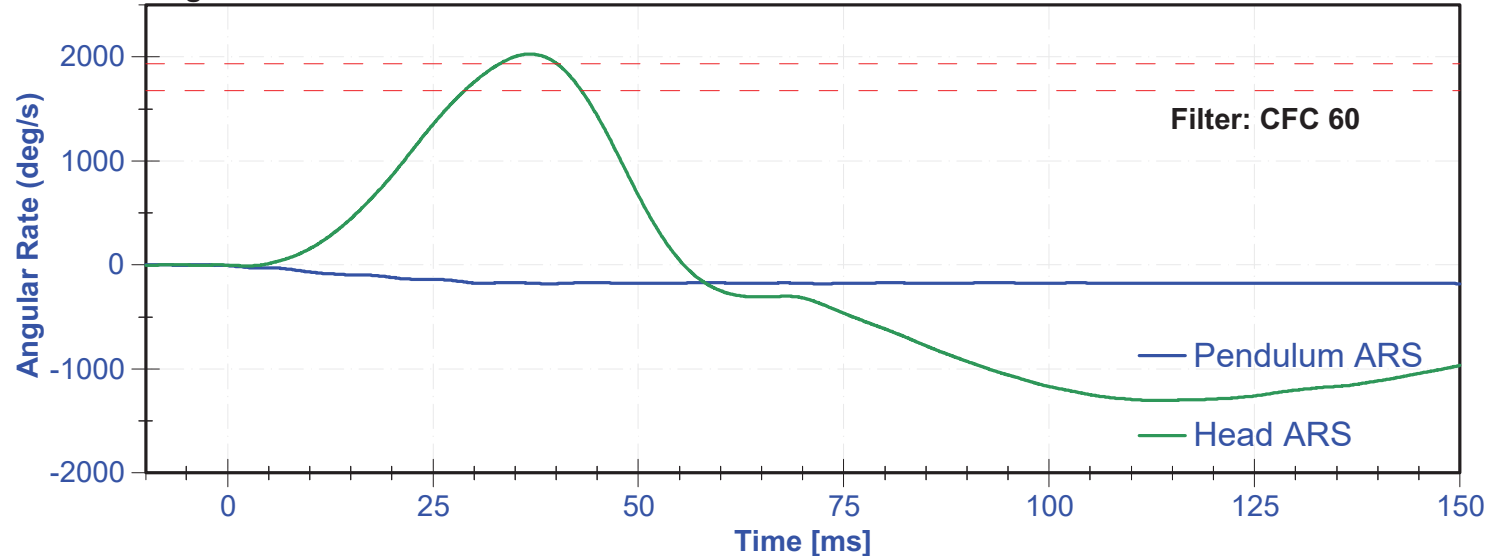
Upper Neck Force



Rear Neck Cable Z Force



Angular Rate Sensors



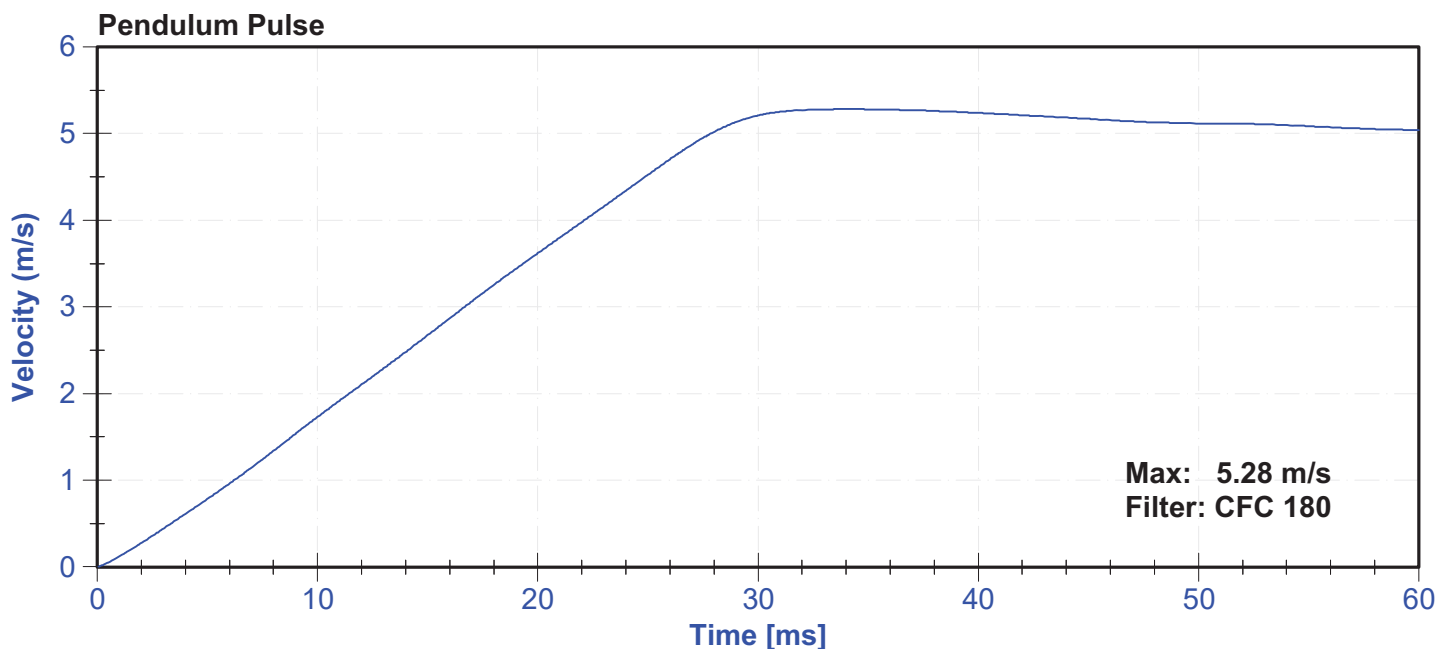
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

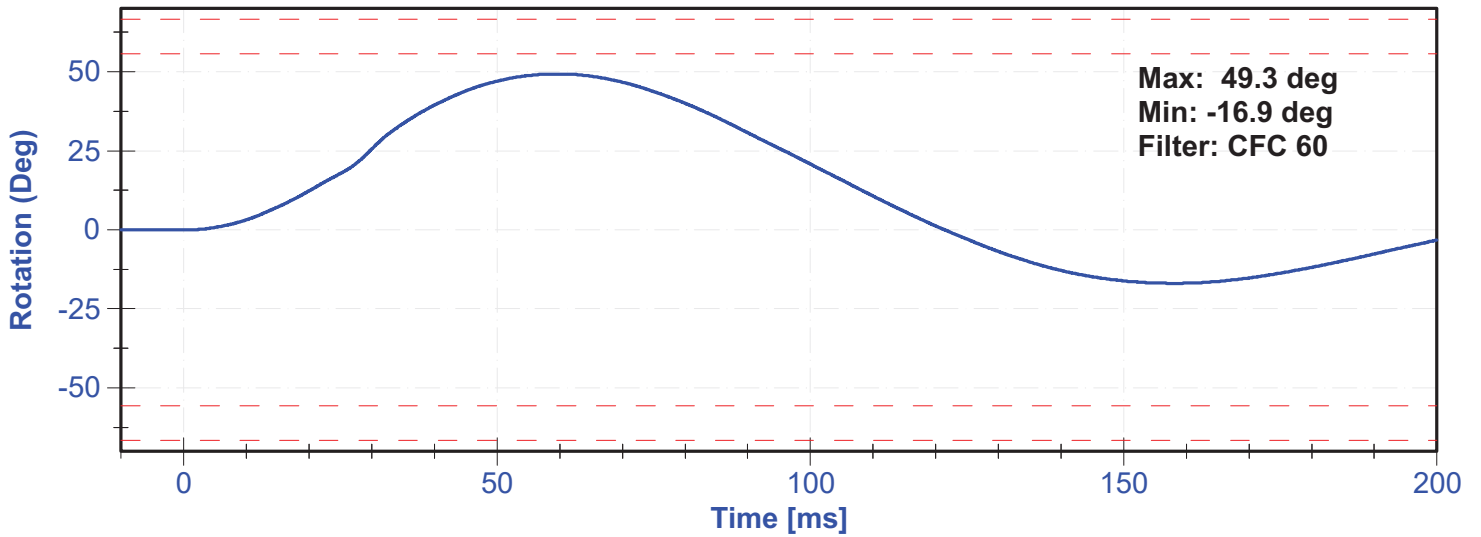
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.8	Pass
Humidity	10	70	%	39.0	Pass
Velocity	4.95	5.05	m/s	5.045	Pass
Pendulum Impulse at 10ms	1.72	1.98	m/s	1.730	Pass
Pendulum Impulse at 15ms	2.67	2.97	m/s	2.673	Pass
Pendulum Impulse at 20ms	3.59	3.98	m/s	3.619	Pass
Pendulum Impulse at 25ms	4.43	4.92	m/s	4.523	Pass
Peak Upper Neck Z Moment	32.6	38.3	Nm	36.82	Pass
Peak Neck Axial Rotation	55.6	66.6	deg	49.31	Fail
Rotation Decay Time to Zero	58.0	61.6	ms	61.65	Fail
Peak Upper Neck Angular Velocity	1559	1709	deg/s	1559.9	Pass

Transducer Calibrations

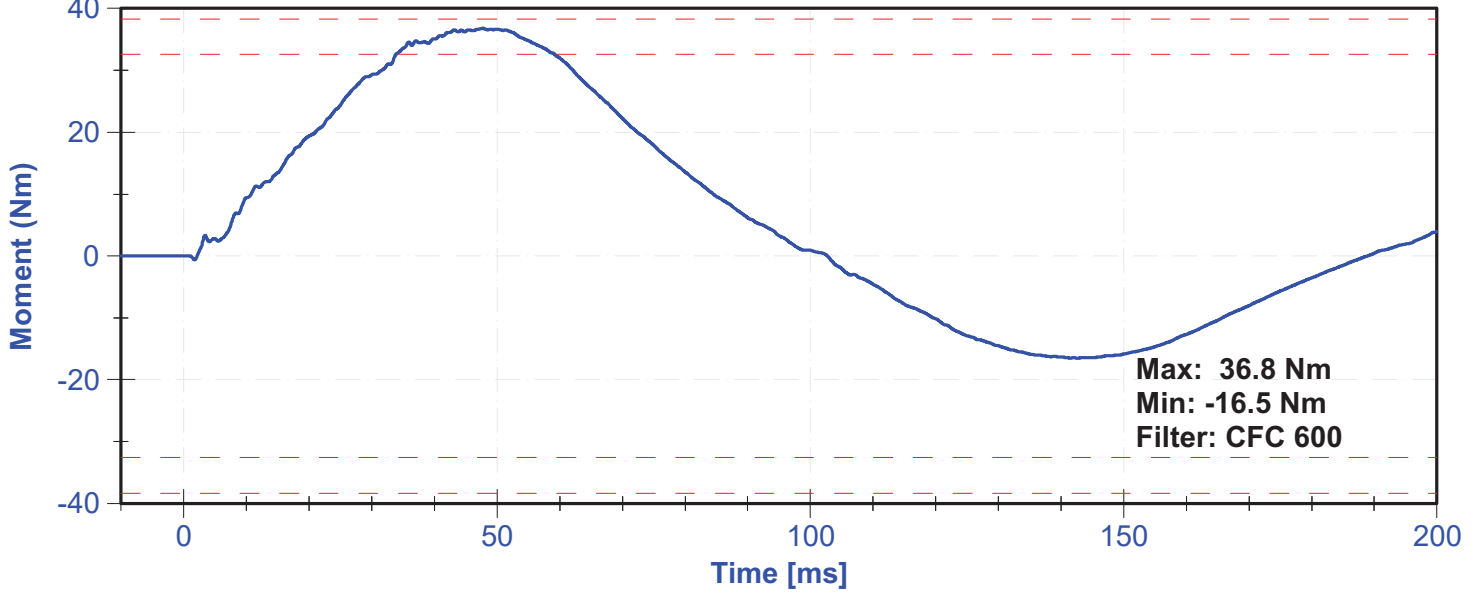
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Neck Fixture Potentiometer	Servo 14CB1-3615	DS-0001	10/21/2015	10/20/2016
Upper Neck Load Cell	Humanetics 10380J14	LC-DP3956 Mz	3/5/2016	3/5/2017
Upper Neck ARS	DTS ARS-PRO-8K	ARS-6424	1/19/2016	1/18/2017



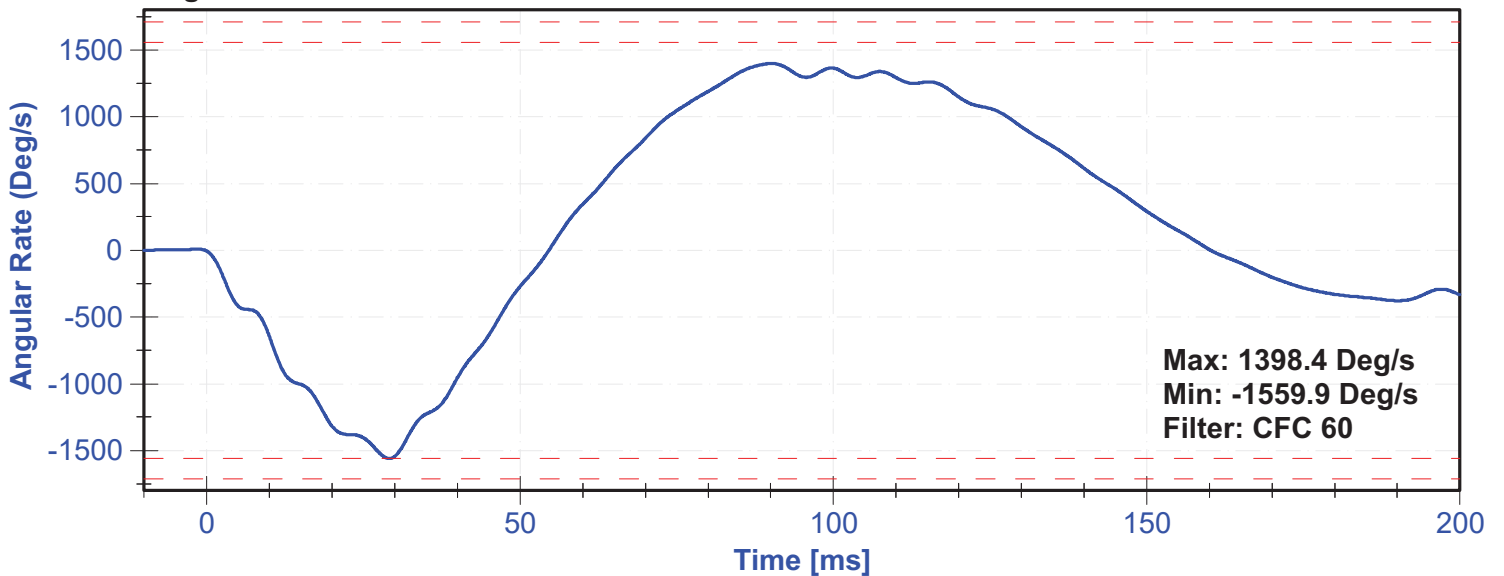
Axial Rotation



Moment



Angular Rate



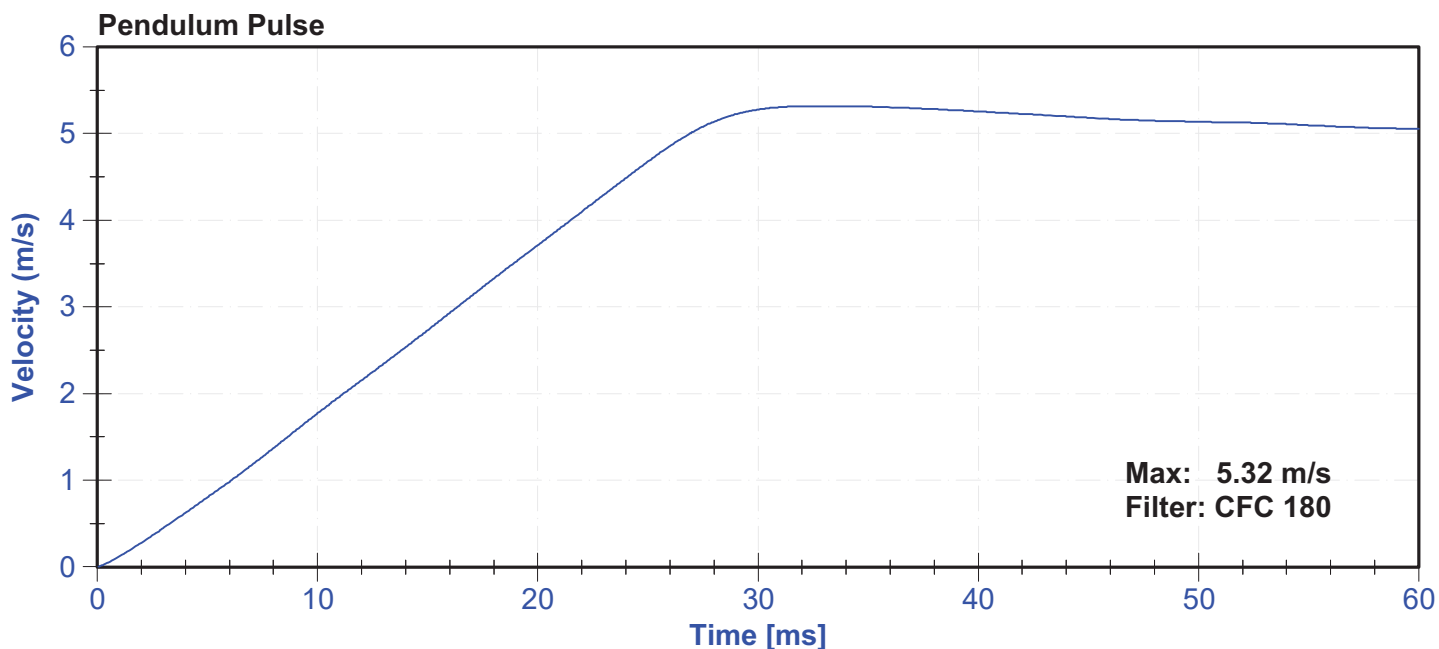
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

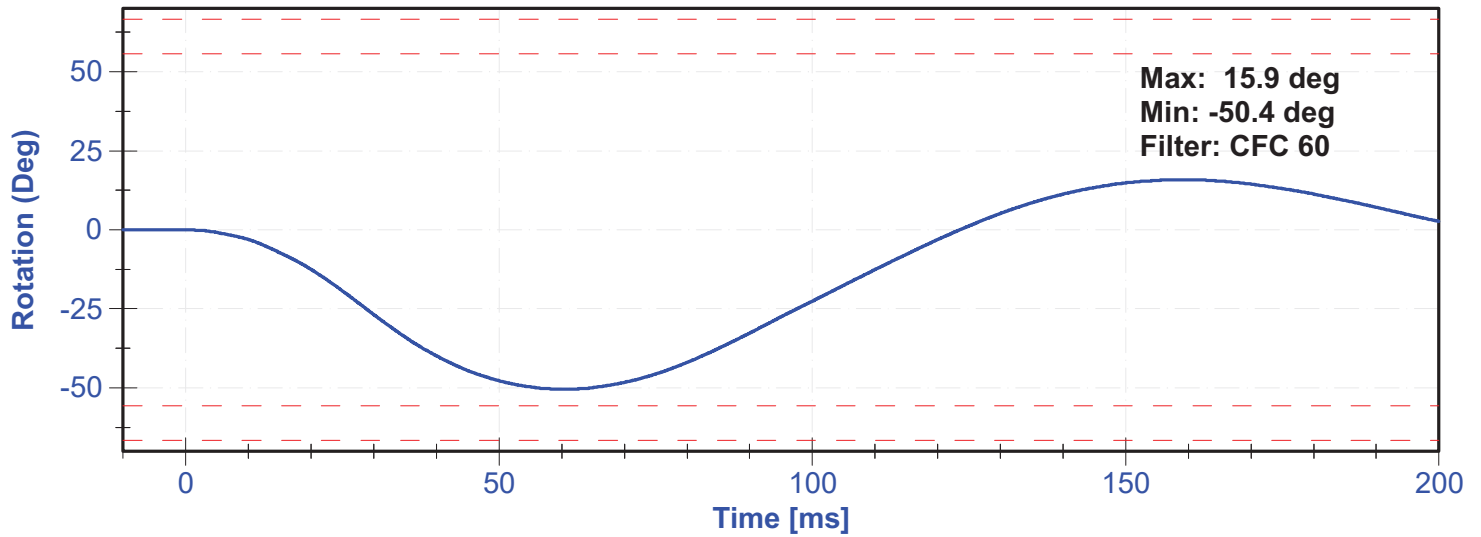
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.8	Pass
Humidity	10	70	%	39.2	Pass
Velocity	4.95	5.05	m/s	5.045	Pass
Pendulum Impulse at 10ms	1.72	1.98	m/s	1.772	Pass
Pendulum Impulse at 15ms	2.67	2.97	m/s	2.730	Pass
Pendulum Impulse at 20ms	3.59	3.98	m/s	3.712	Pass
Pendulum Impulse at 25ms	4.43	4.92	m/s	4.675	Pass
Peak Upper Neck Z Moment	32.6	38.3	Nm	36.84	Pass
Peak Neck Axial Rotation	55.6	66.6	deg	50.43	Fail
Rotation Decay Time to Zero	58.0	61.6	ms	47.15	Fail
Peak Upper Neck Angular Velocity	1559	1709	deg/s	1585.0	Pass

Transducer Calibrations

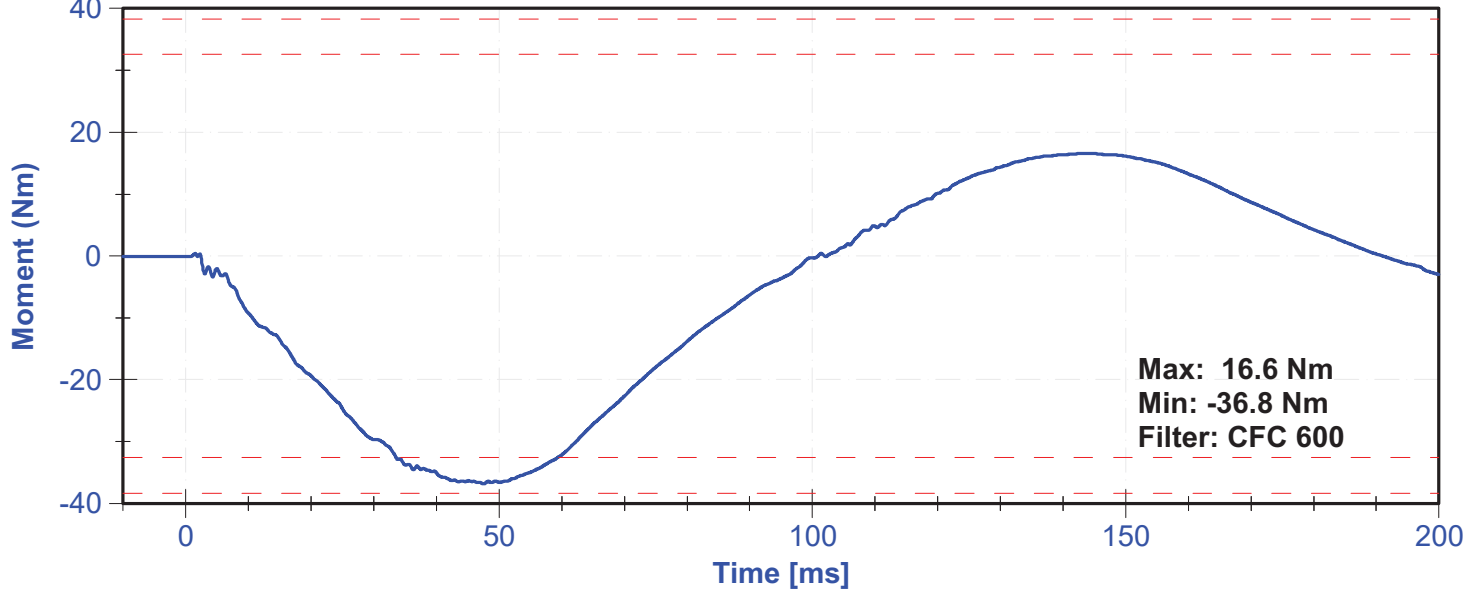
Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7231CT	AC-AH5F3	5/7/2015	5/6/2016
Neck Fixture Potentiometer	Servo 14CB1-3615	DS-0001	10/21/2015	10/20/2016
Upper Neck Load Cell	Humanetics 10380JI4	LC-DP3956 Mz	3/5/2016	3/5/2017
Upper Neck ARS	DTS ARS-PRO-8K	ARS-6424	1/19/2016	1/18/2017



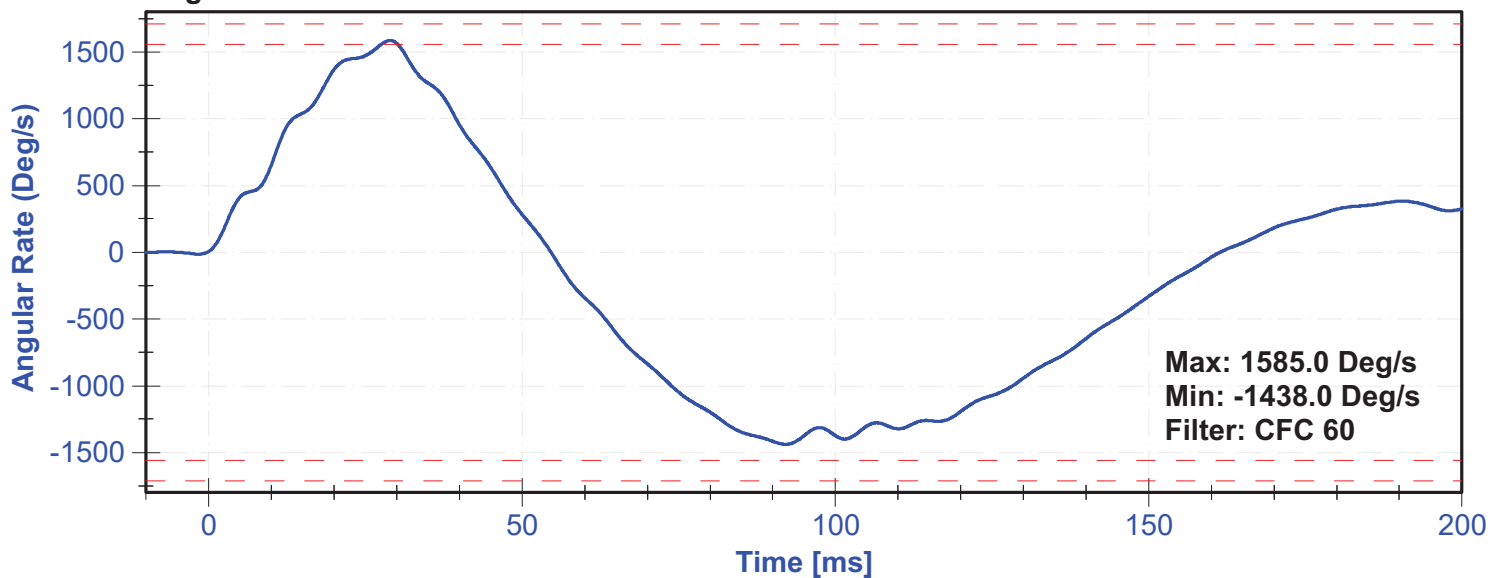
Axial Rotation



Moment



Angular Rate



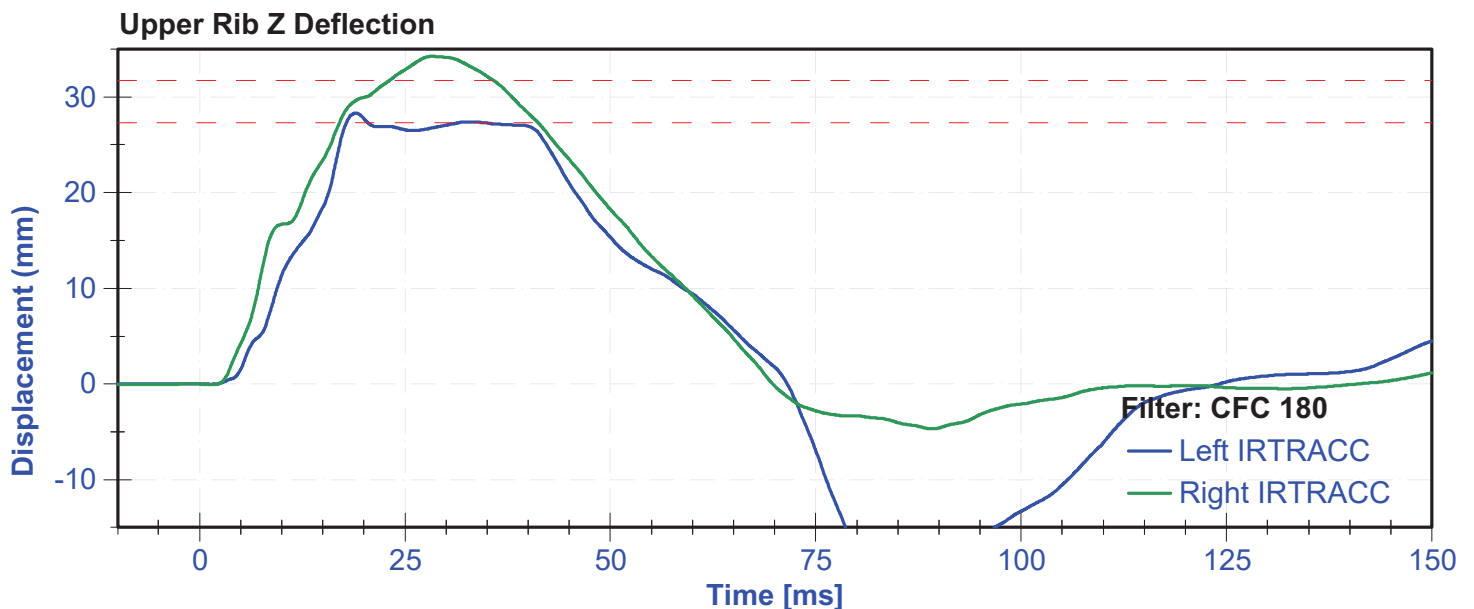
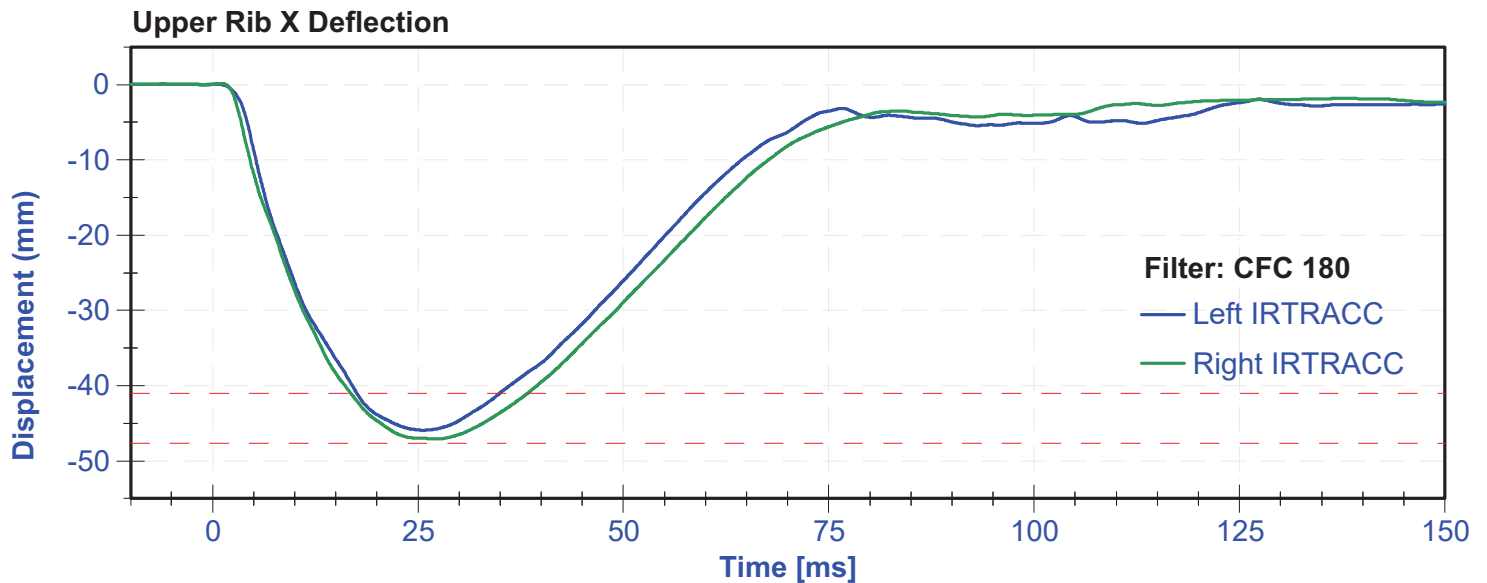
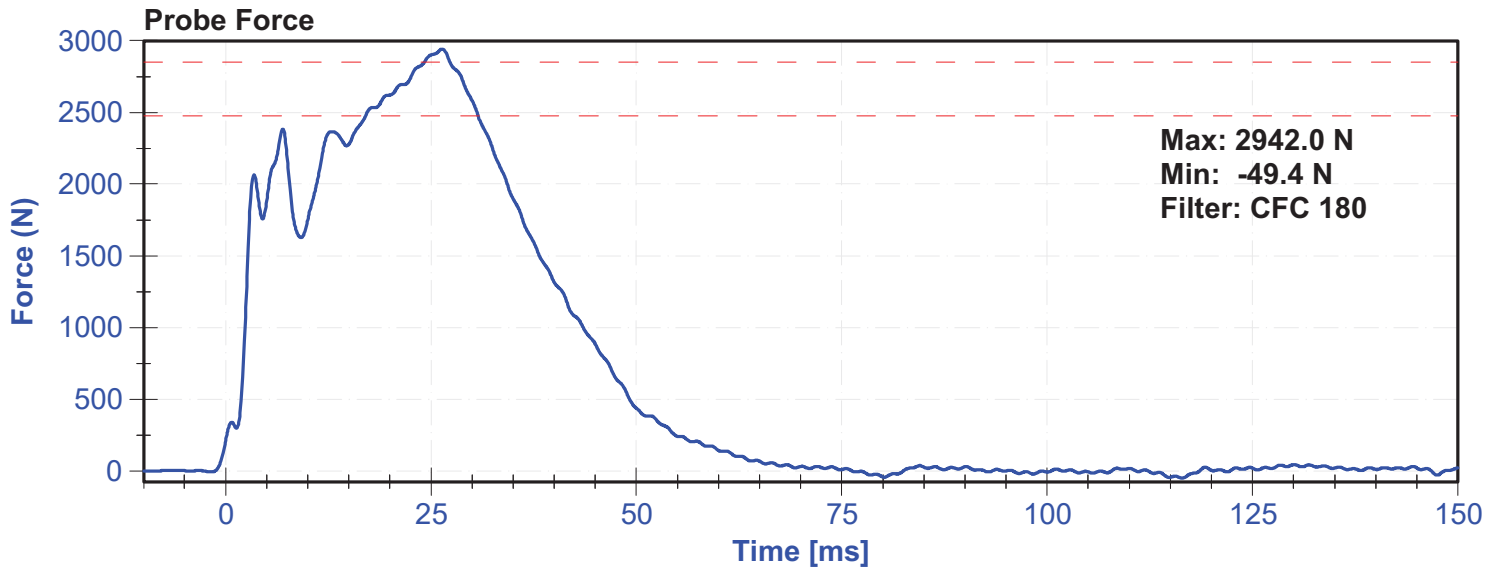
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

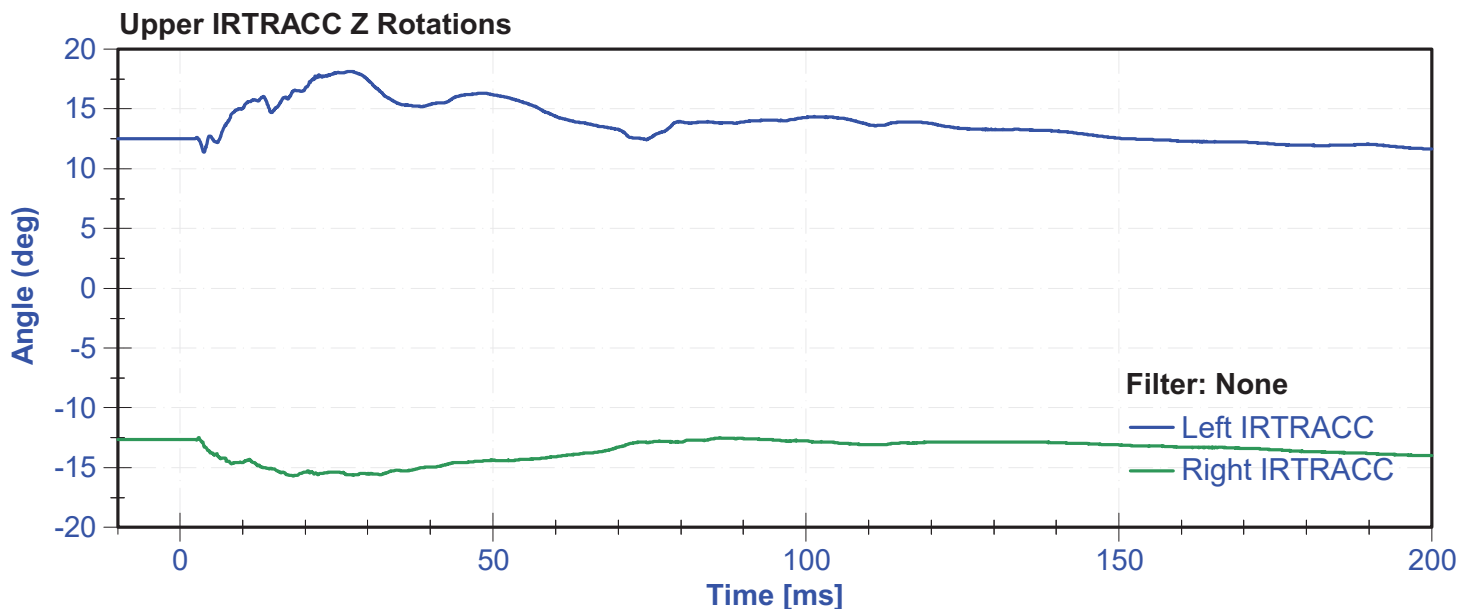
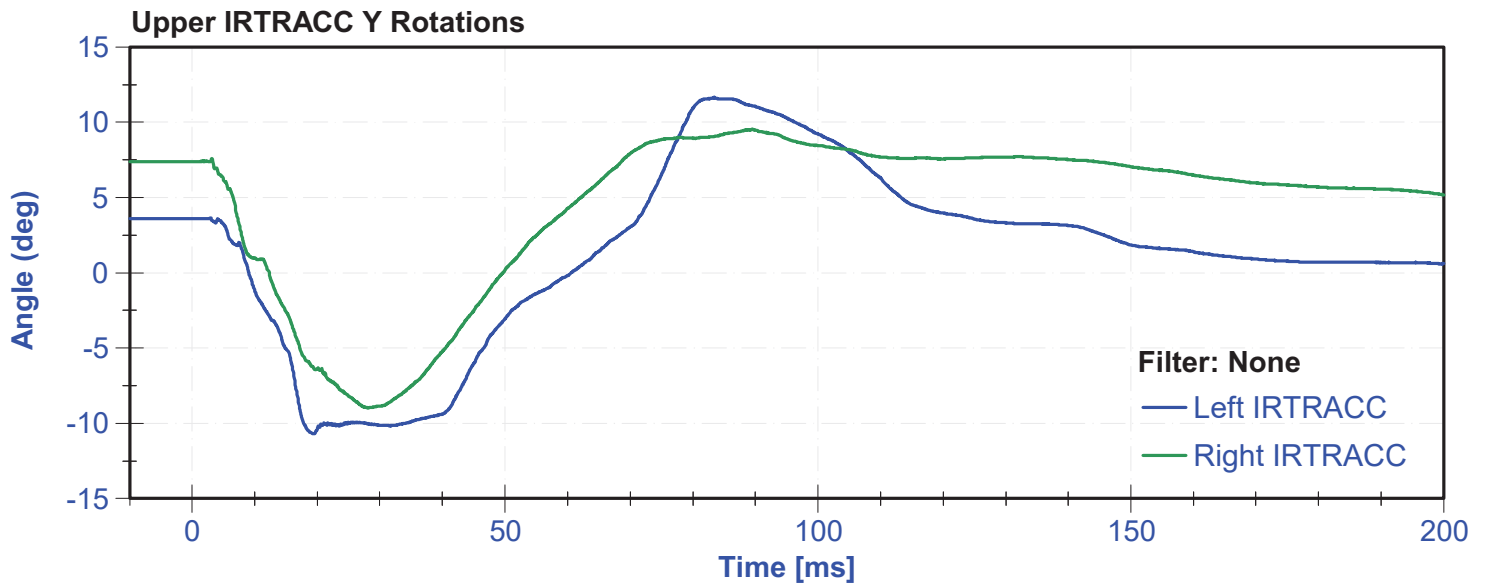
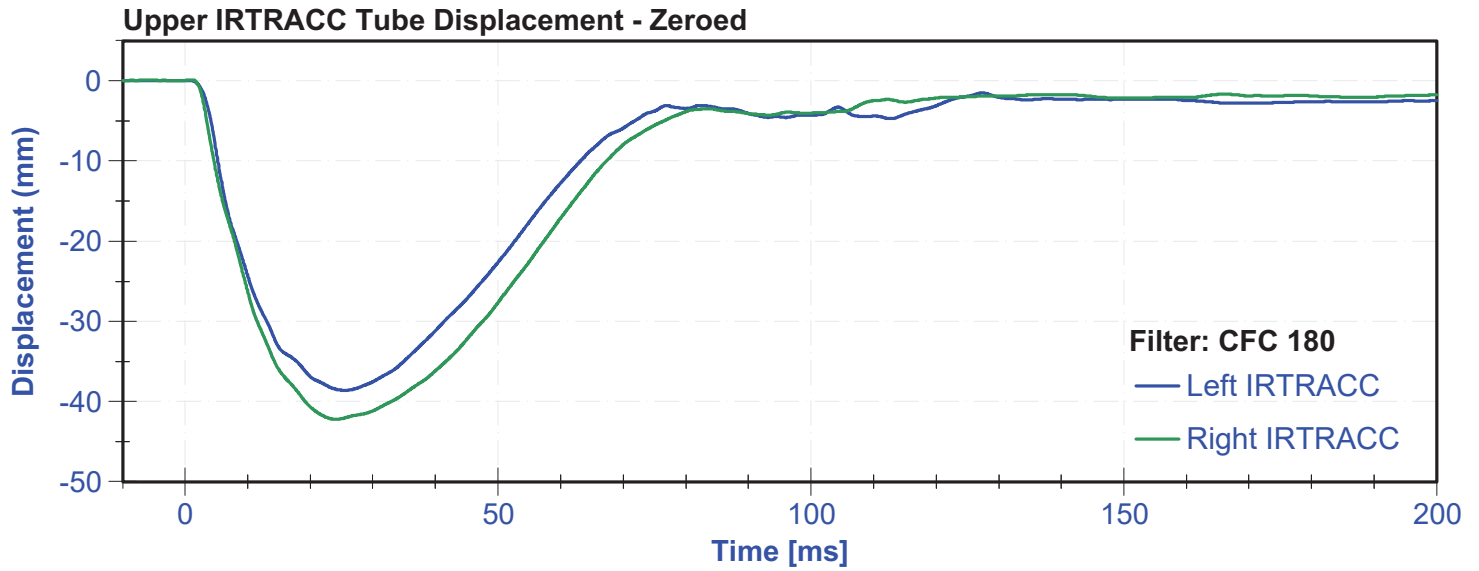
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	18.9	25.6	°C	21.1	Pass
Humidity	10	70	%	45.6	Pass
Impact Velocity	4.25	4.35	m/s	4.336	Pass
Probe Force	2474	2850	N	2942.0	Fail
Upper Left X Rib Deflection	-47.6	-41.0	mm	-45.91	Pass
Upper Right X Rib Deflection	-47.6	-41.0	mm	-47.06	Pass
Left/Right X Rib Deviation	-7.00	7.00	mm	1.152	Pass
Upper Left Z Rib Deflection	27.3	31.7	mm	28.31	Pass
Upper Right Z Rib Deflection	27.3	31.7	mm	34.25	Fail
Left/Right Z Rib Deviation	-7.00	7.00	mm	-5.941	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accelerometer	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Upper Left IRTRACC	Humanetics IF-364-C-R3	DS-DS6355	11/10/2015	11/9/2016
Upper Left Y Potentiometer	Humanetics 9945	DS-DI2382	4/8/2015	4/7/2016
Upper Left Z Potentiometer	Humanetics 9945	DS-DI2383	4/8/2015	4/7/2016
Upper Right IRTRACC	Humanetics IF-364-C-R3	DS-DJ2613	4/8/2015	4/7/2016
Upper Right Y Potentiometer	Humanetics 9945	DS-DI7753	4/9/2015	4/8/2016
Upper Right Z Potentiometer	Humanetics 9945	DS-DI7752	4/9/2015	4/8/2016





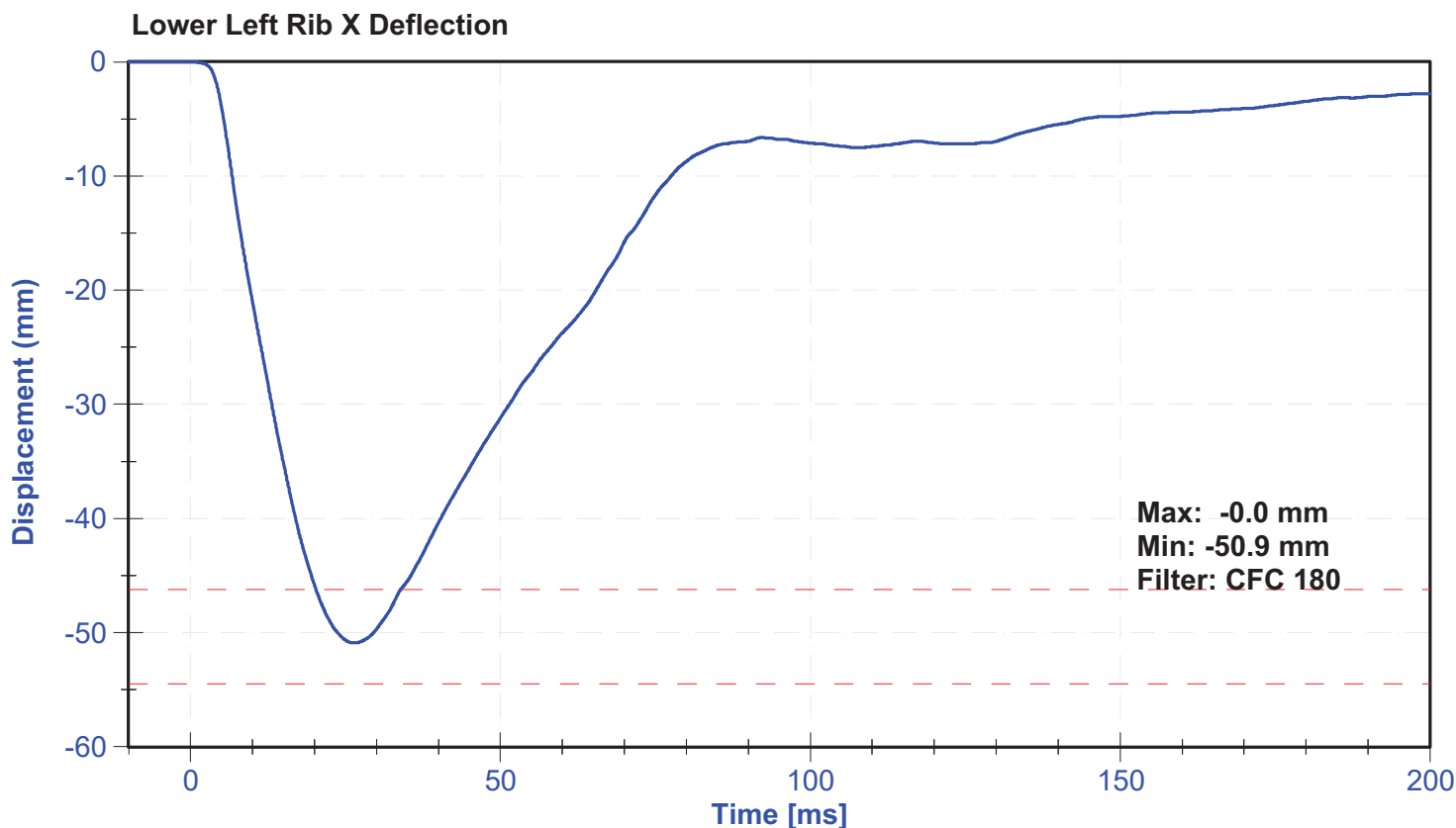
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

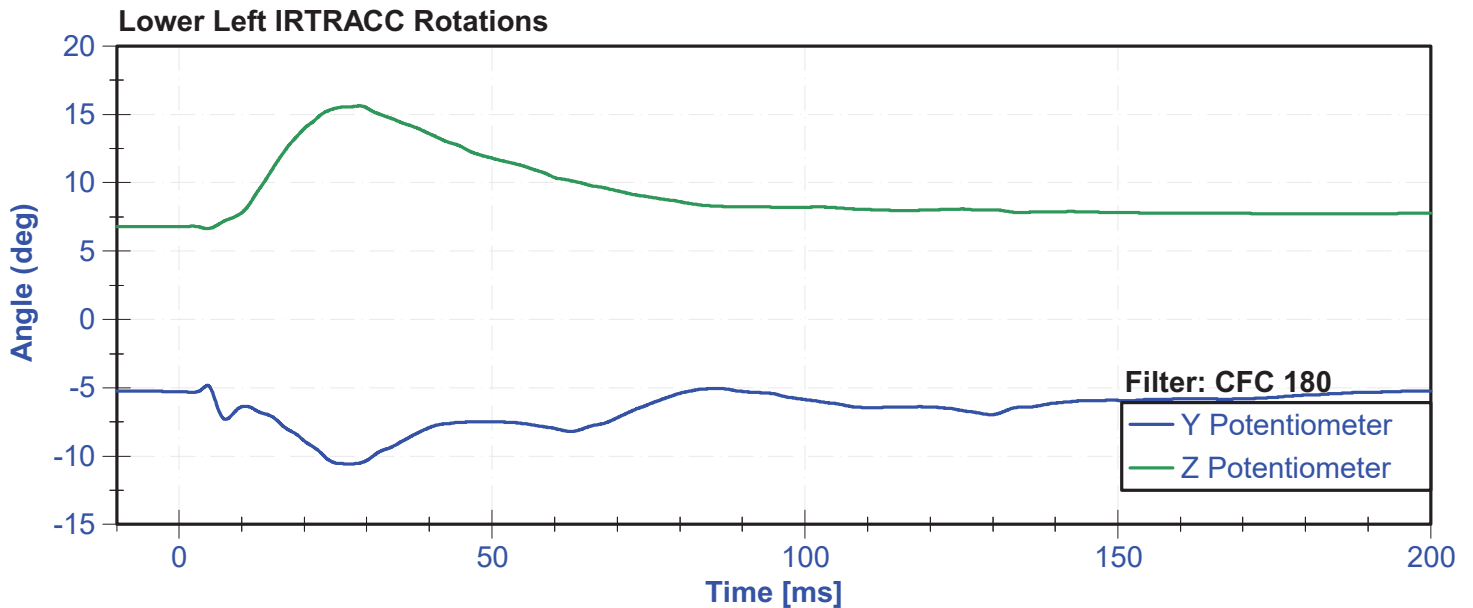
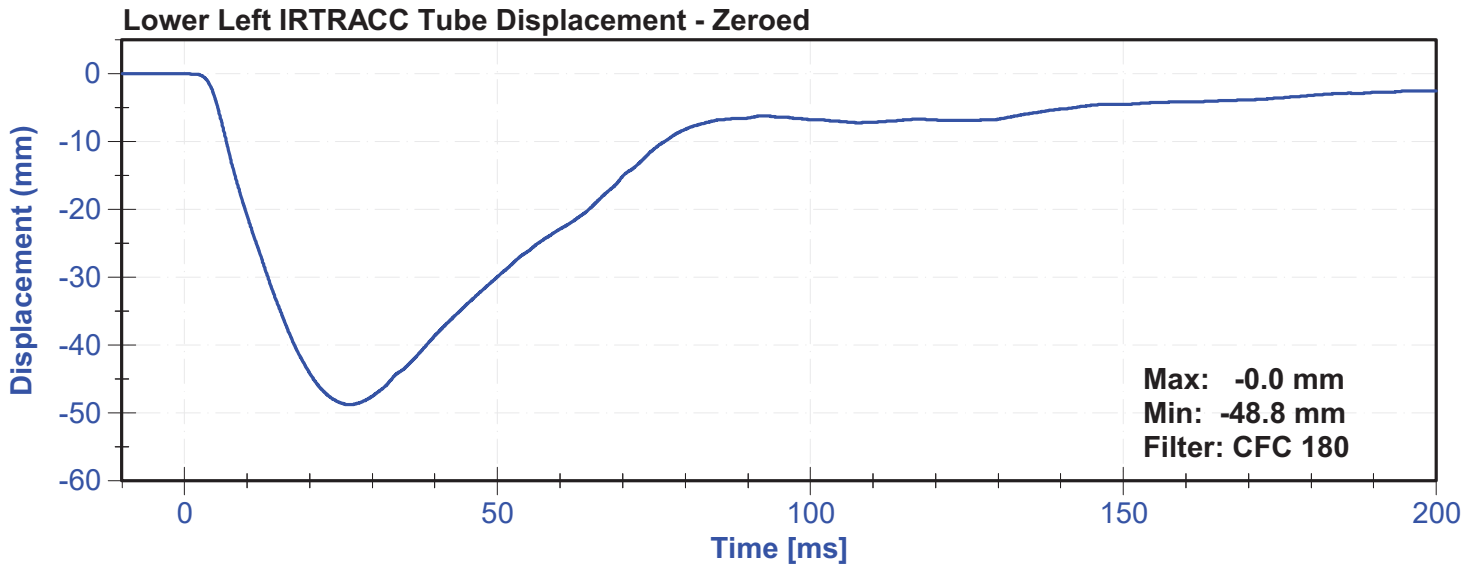
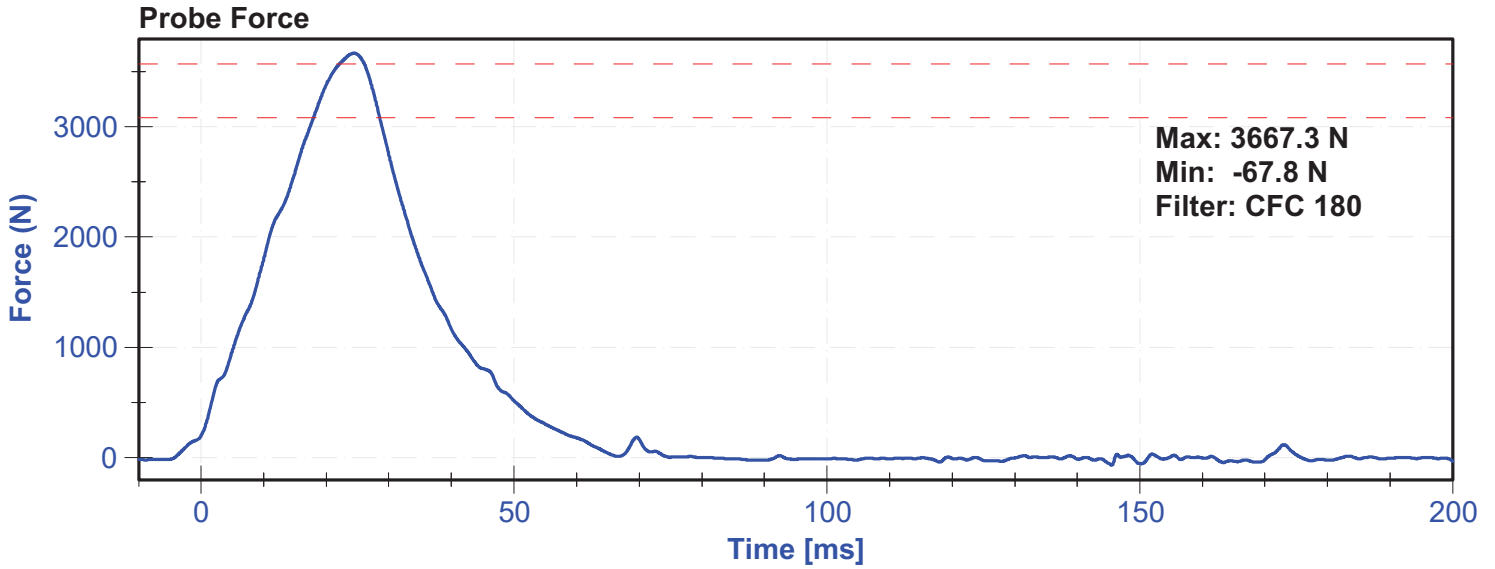
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	49.0	Pass
Impact Velocity	4.25	4.35	m/s	4.342	Pass
Peak Left X Rib Deflection	-54.5	-46.2	mm	-50.92	Pass
Probe Force during Peak Deflection	3083	3571	N	3667.3	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Lower Left IRTRACC	Humanetics IF-364-C-R3	DS-DS6353	11/10/2015	11/9/2016
Lower Left Y Potentiometer	Humanetics 9945	DS-DM4781	4/7/2015	4/6/2016
Lower Left Z Potentiometer	Humanetics 9945	DS-DS4092	4/7/2015	4/6/2016





ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

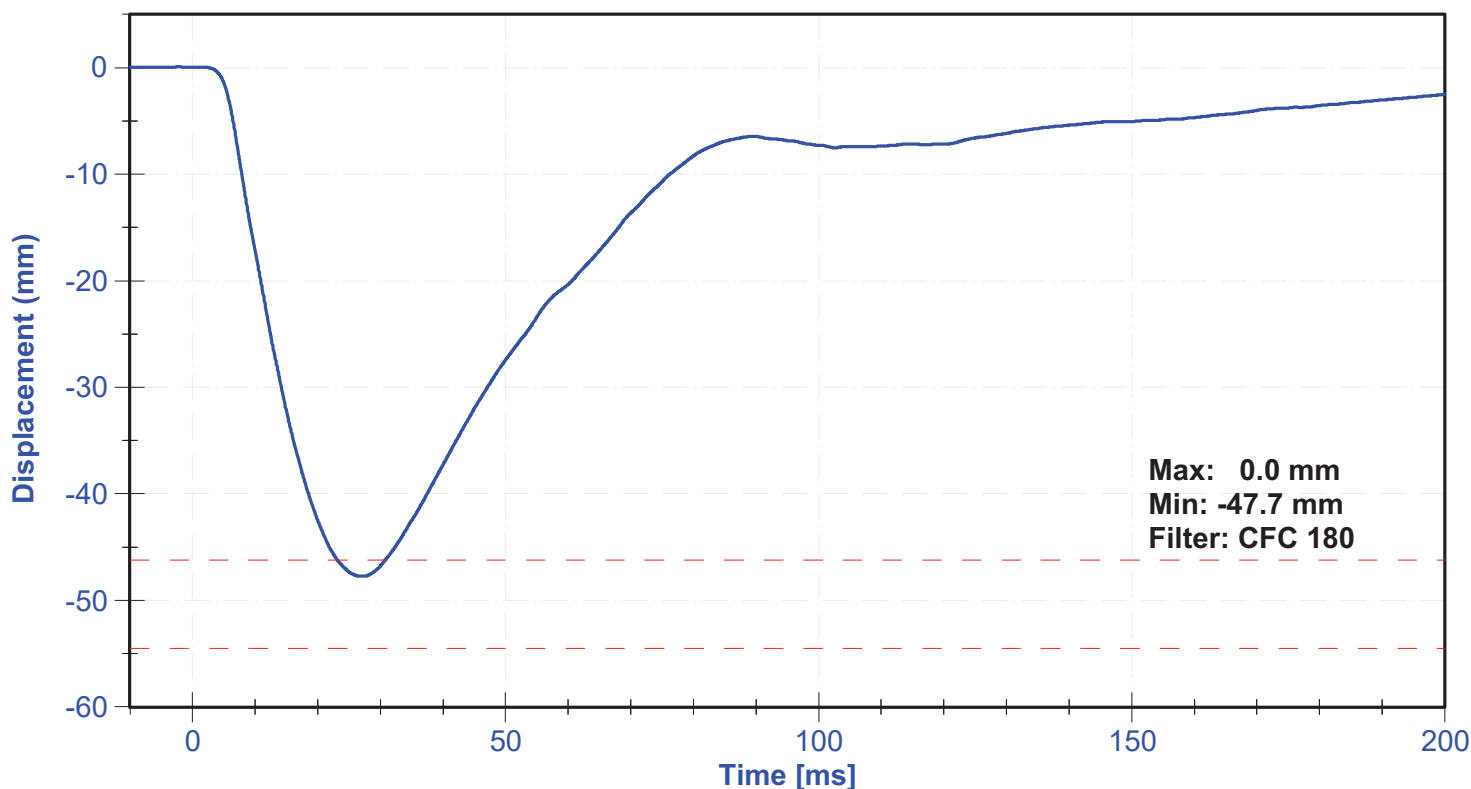
Results

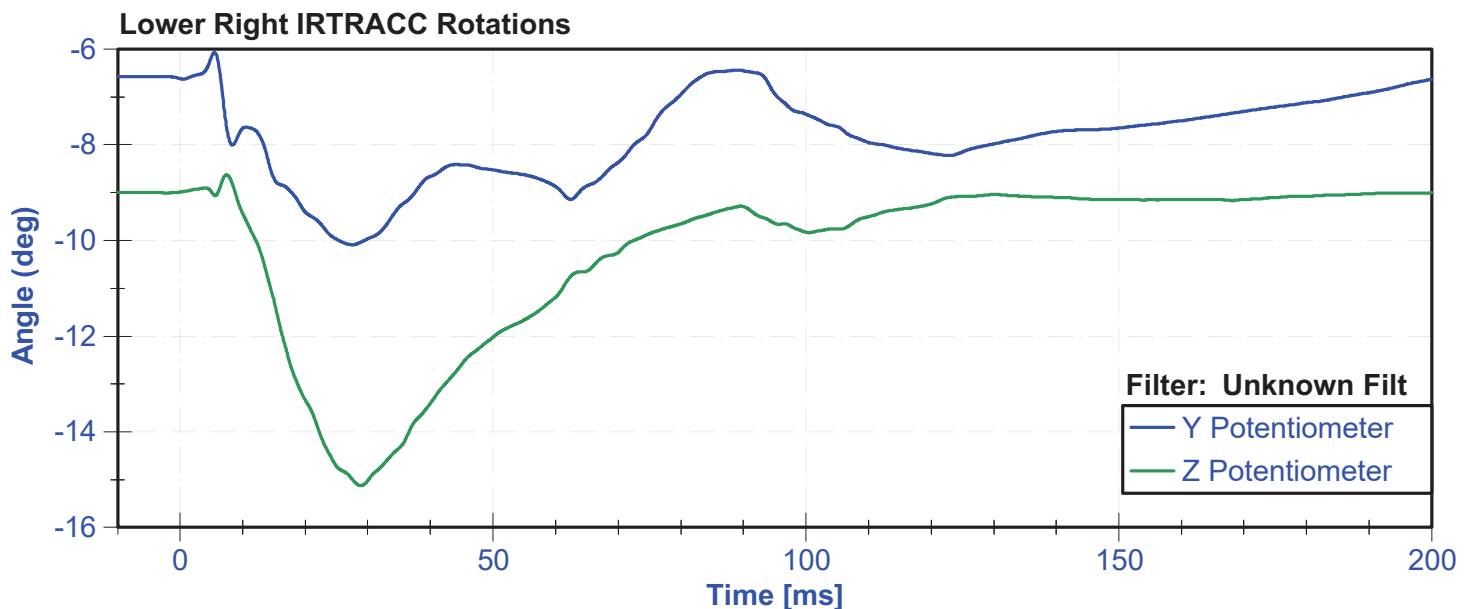
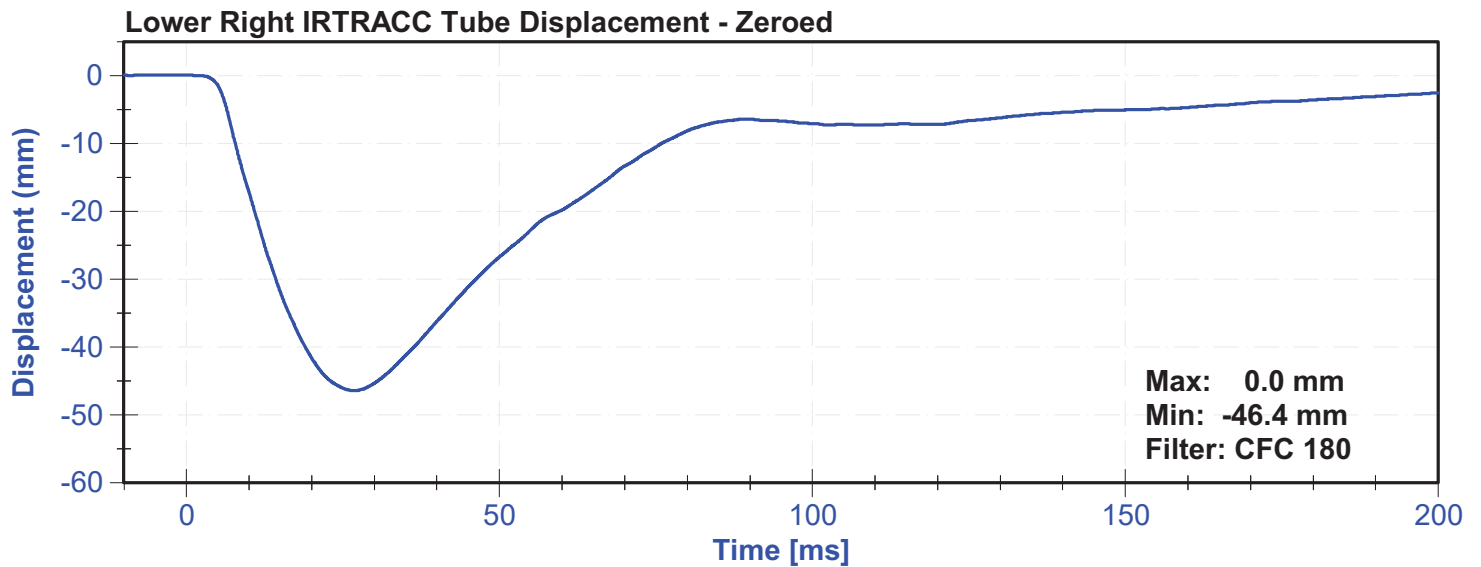
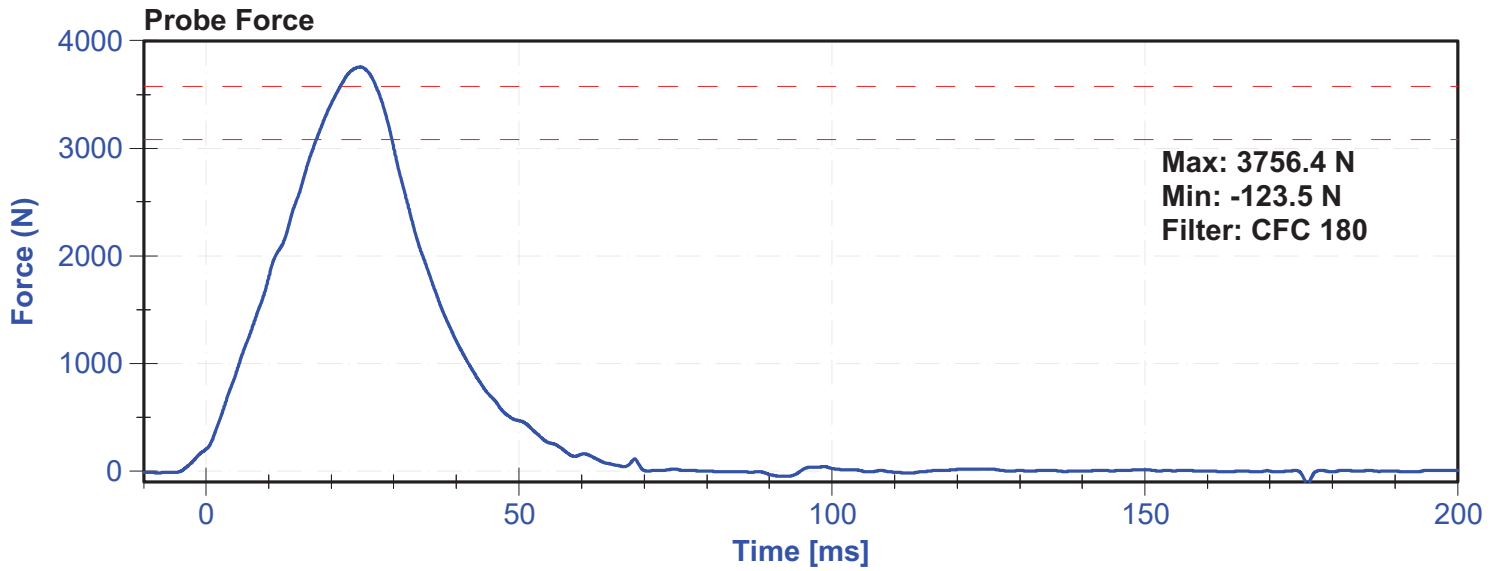
Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	49.2	Pass
Impact Velocity	4.25	4.35	m/s	4.330	Pass
Peak Right X Rib Deflection	-54.5	-46.2	mm	-47.74	Pass
Probe Force during Peak Deflection	3083	3571	N	3756.4	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Lower Right IRTACC	Humanetics IF-364-C-R3	DS-DS6354	11/10/2015	11/9/2016
Lower Right Y Potentiometer	Humanetics 9945	DS-DM4776	4/7/2015	4/6/2016
Lower Right Z Potentiometer	Humanetics 9945	DS-DM4777	4/7/2015	4/6/2016

Lower Right Rib X Deflection





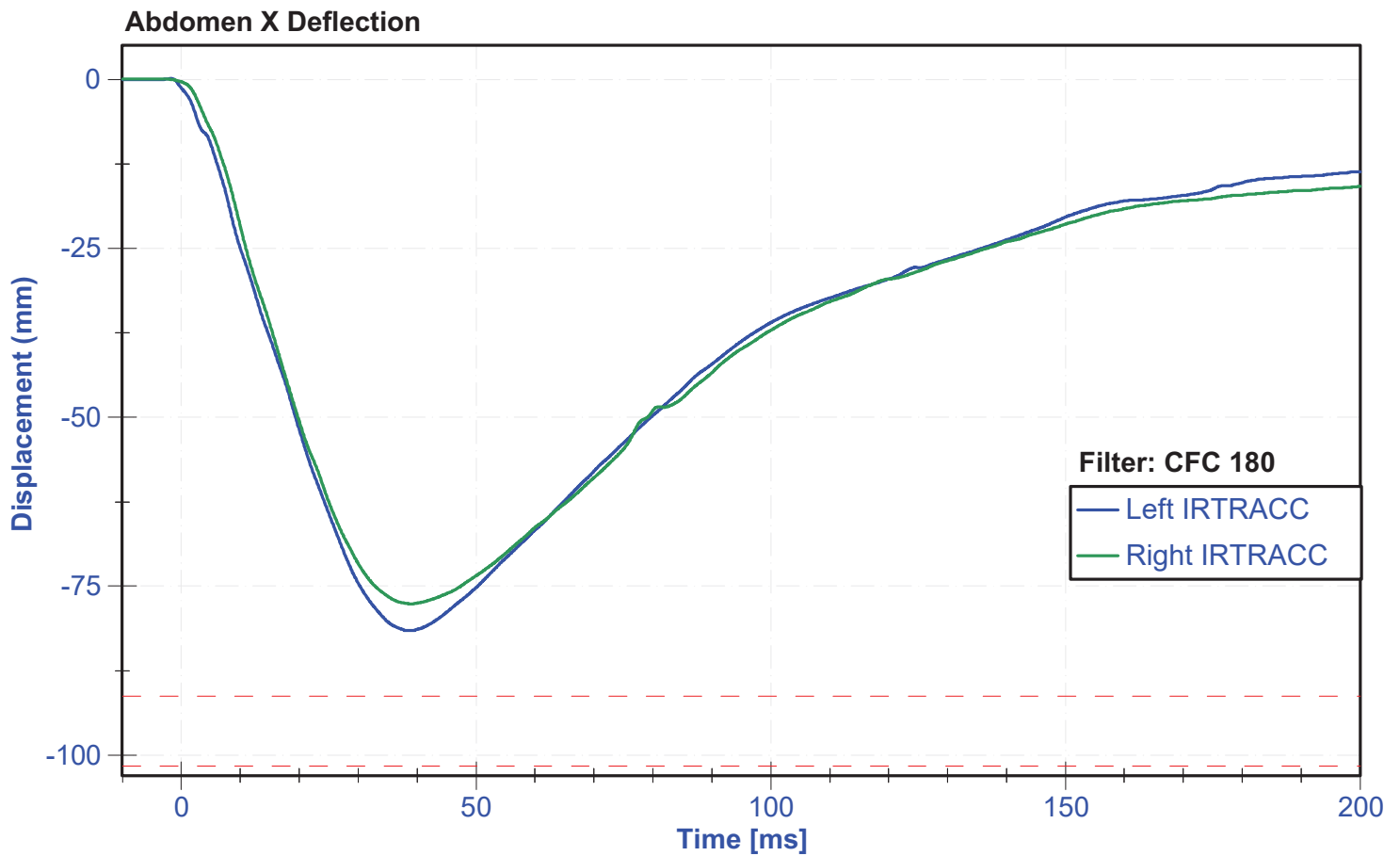
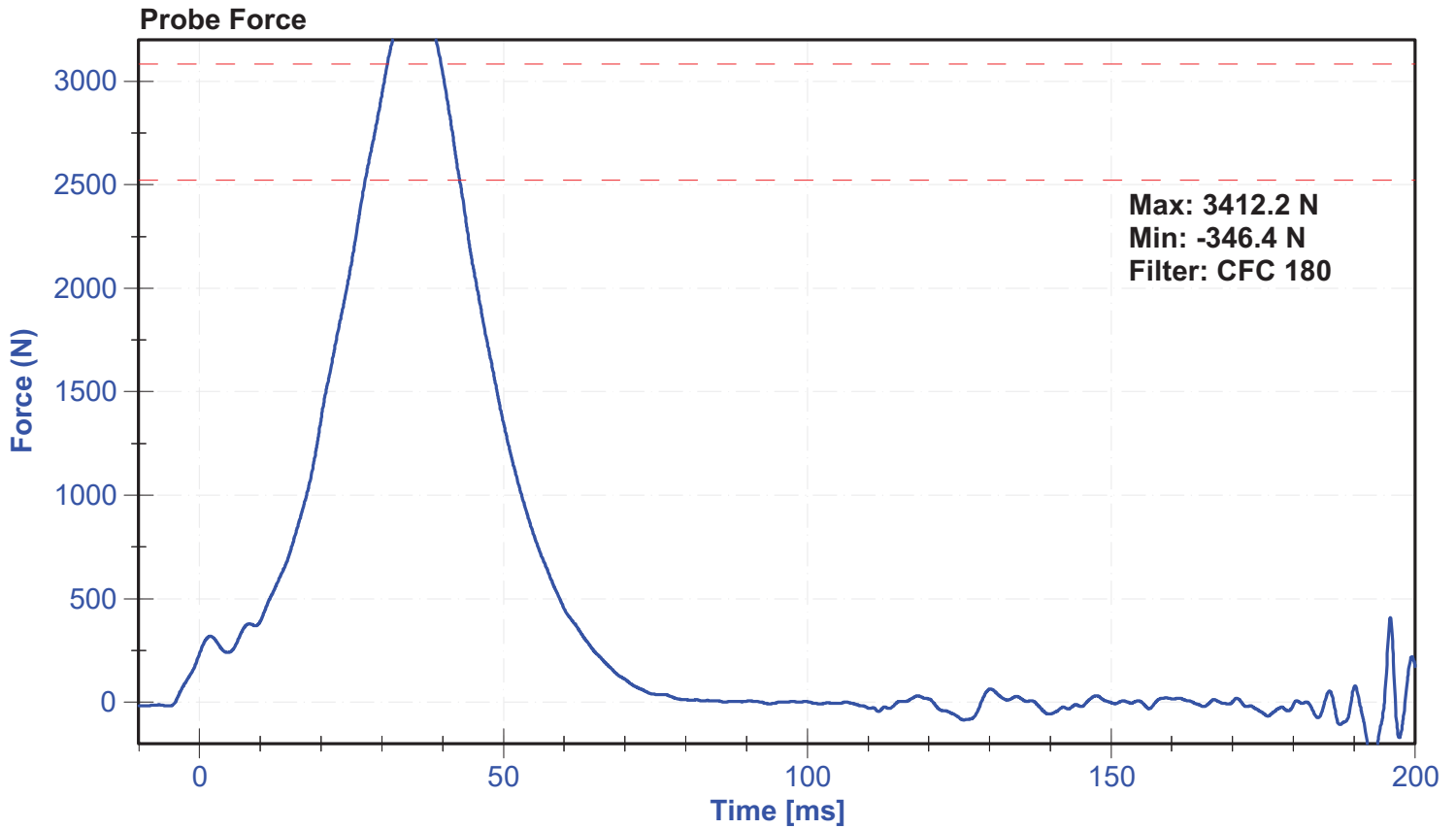
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

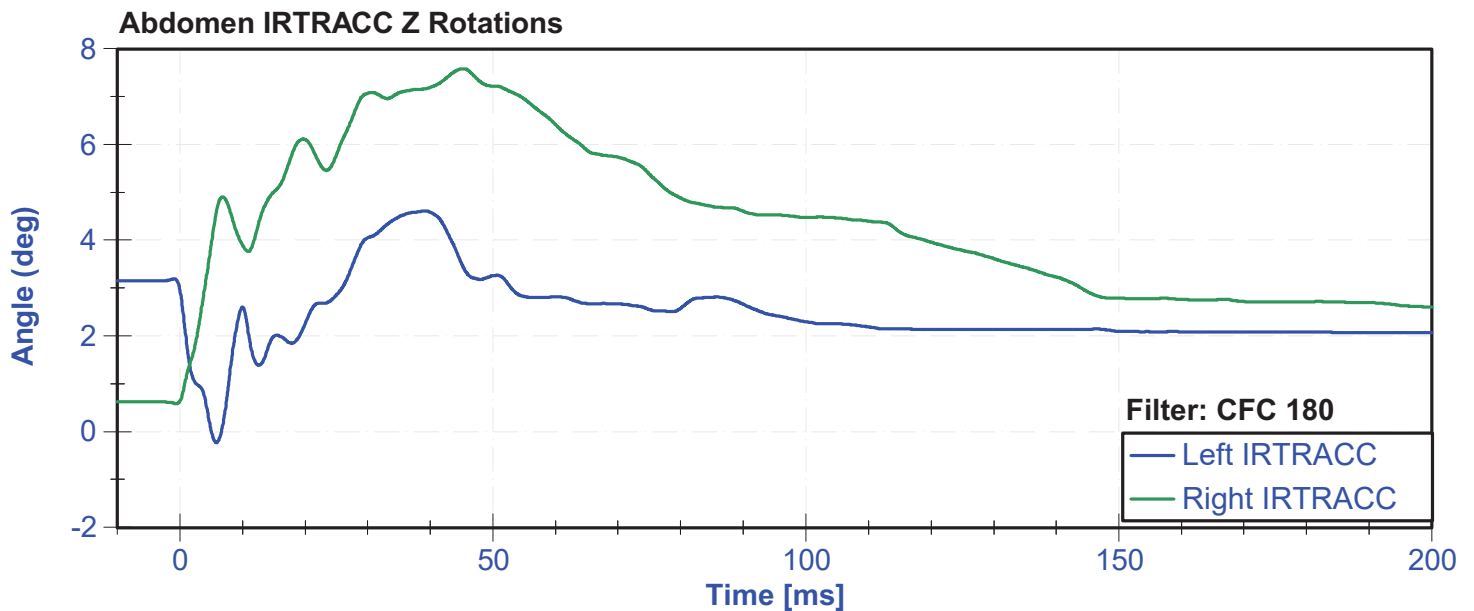
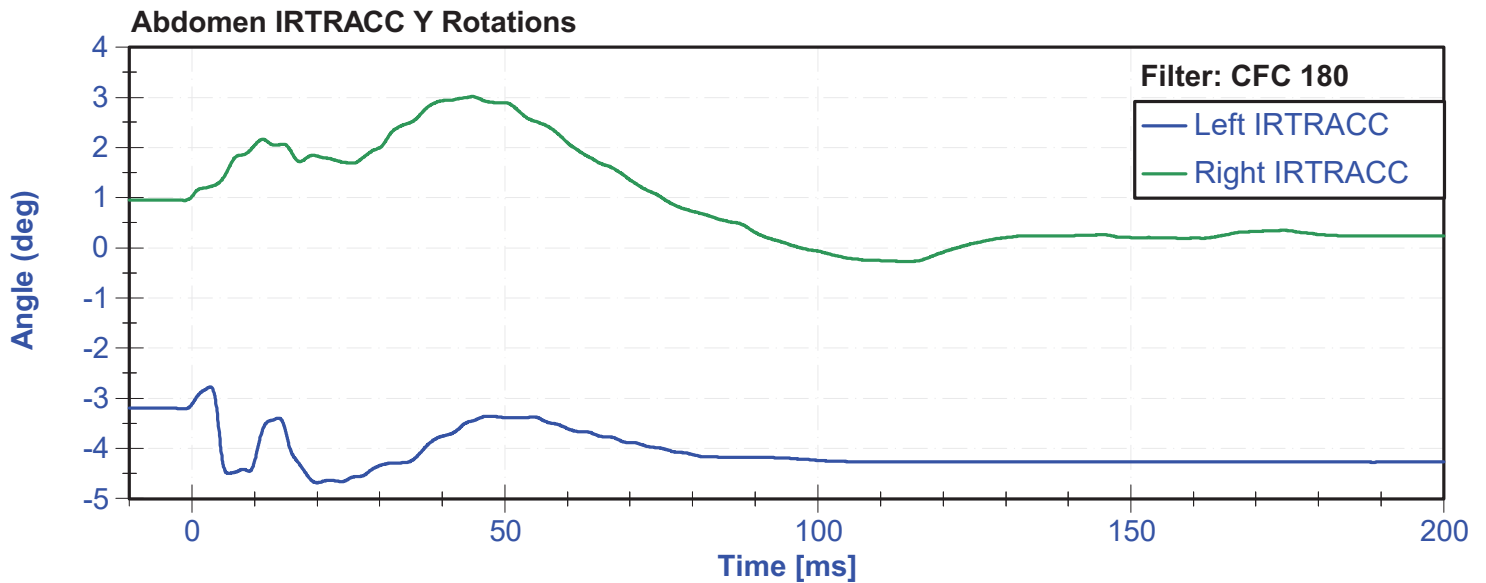
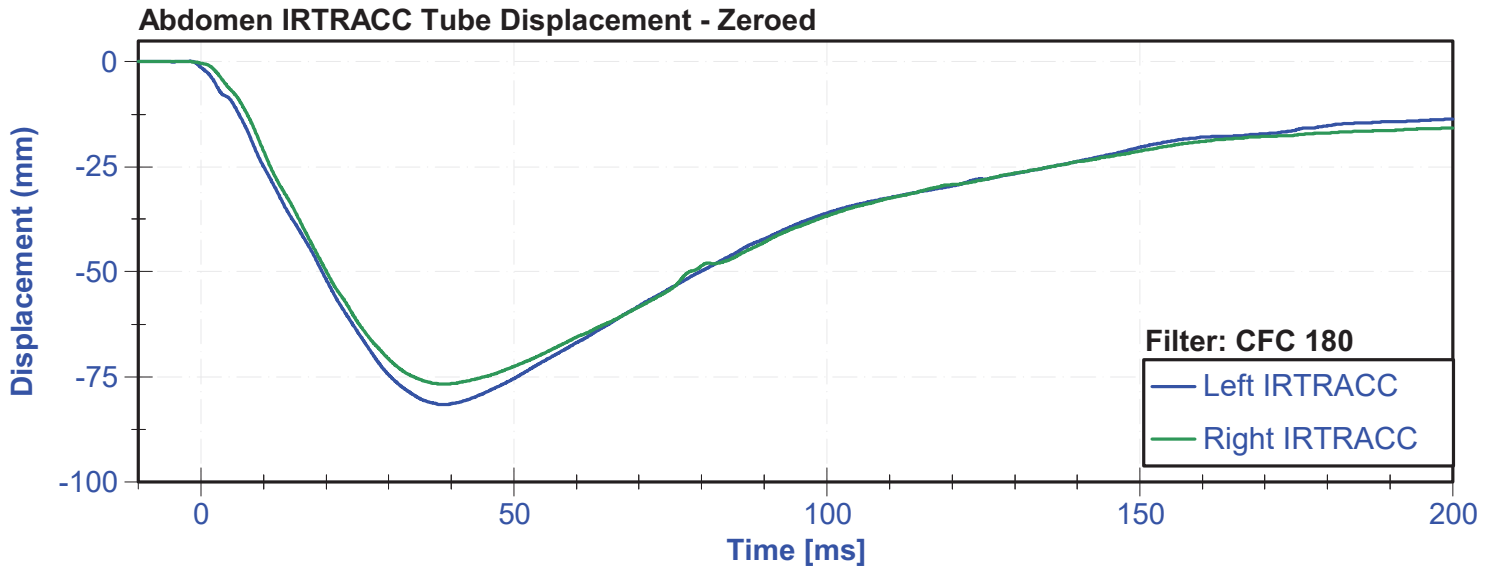
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	49.3	Pass
Impact Velocity	3.25	3.35	m/s	3.337	Pass
Probe Force	2523	3083	N	3412.2	Fail
Left Abdomen X Deflection	-101.6	-91.2	mm	-81.56	Fail
Right Abdomen X Deflection	-101.6	-91.2	mm	-77.57	Fail
Left/Right X Deviation	-7.00	7.00	mm	-3.991	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Abdomen Left IRTRACC	Humanetics 9910	DS-DQ2303	4/13/2015	4/12/2016
Abdomen Left Y Potentiometer	Humanetics 9945	DS-DS8363	12/16/2015	12/15/2016
Abdomen Left Z Potentiometer	Humanetics 9945	DS-DS8361	12/16/2015	12/15/2016





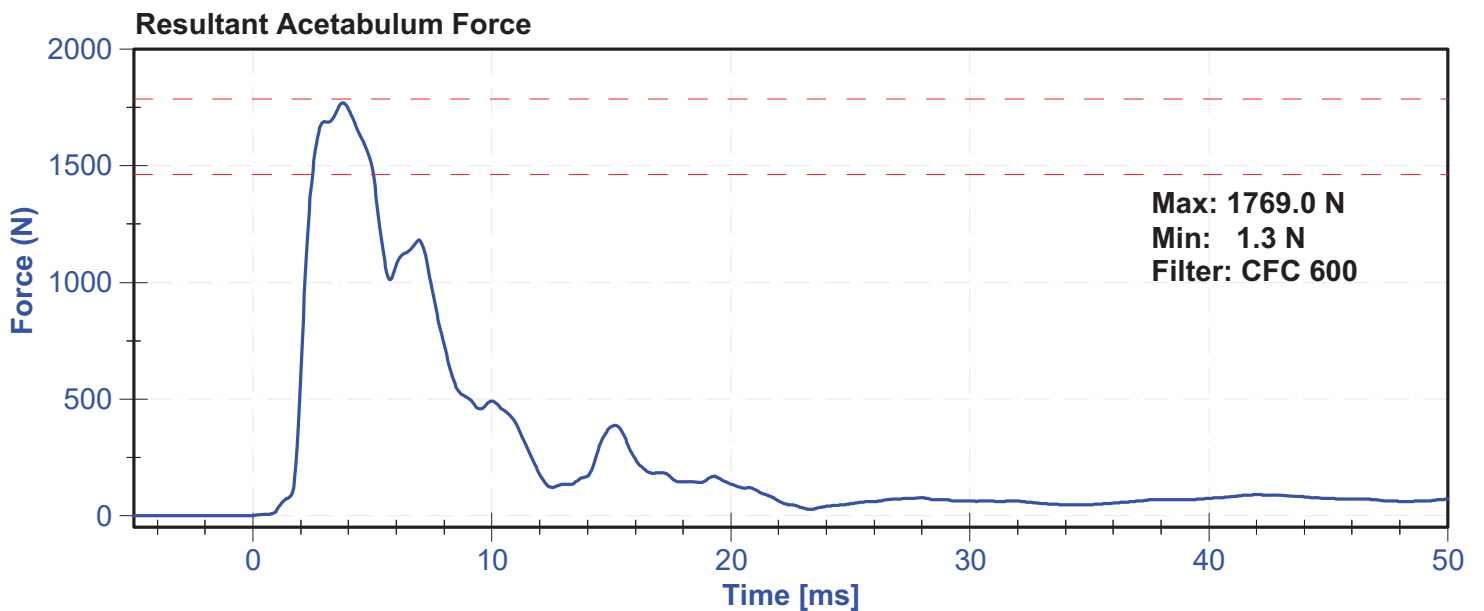
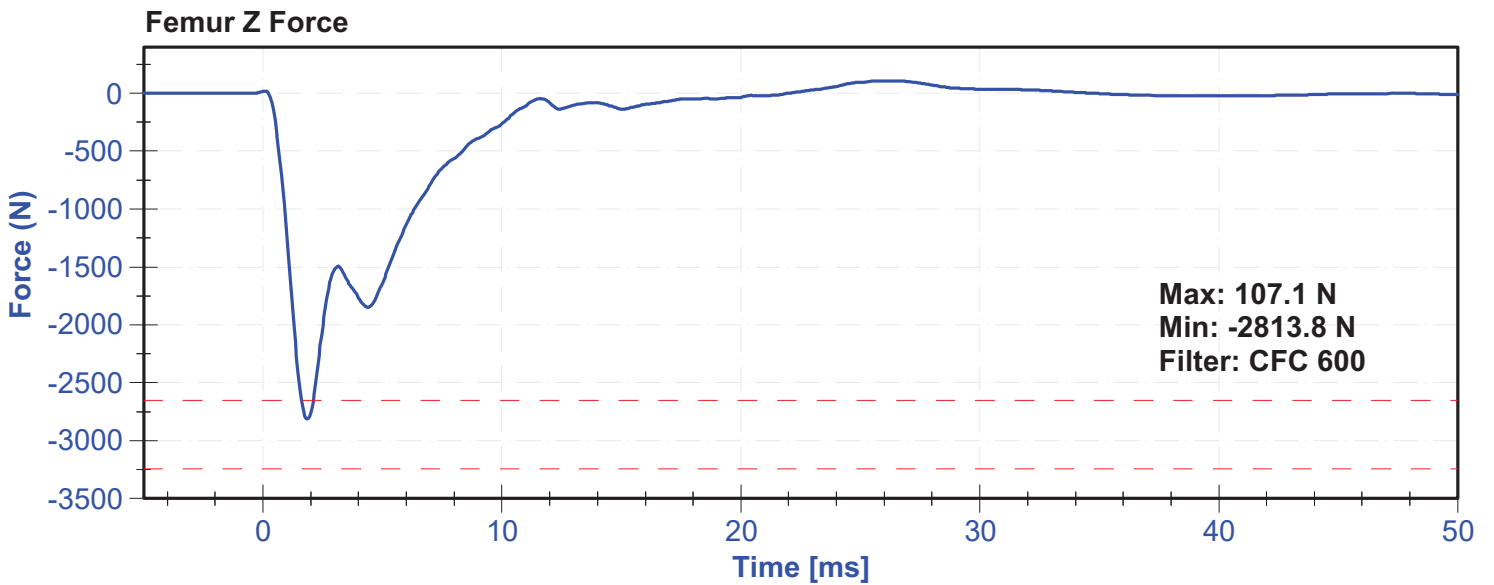
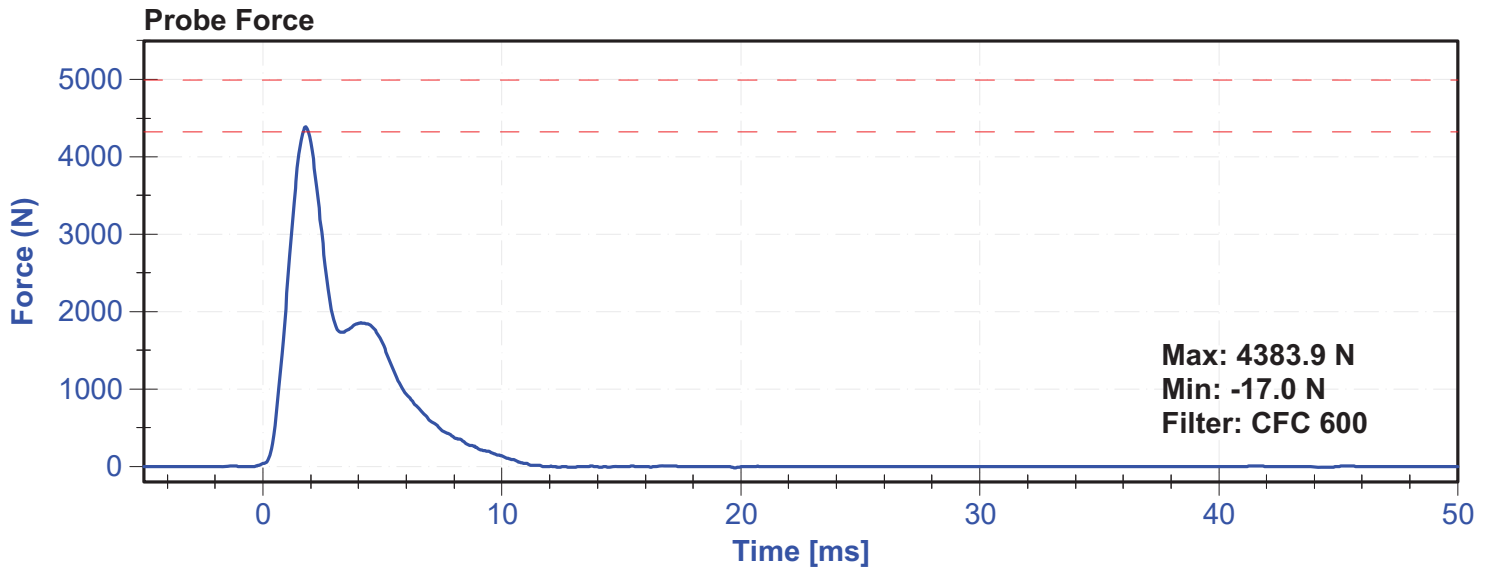
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.0	Pass
Humidity	10	70	%	41.3	Pass
Impact Velocity	2.55	2.65	m/s	2.612	Pass
Probe Force	4318	4989	N	4383.9	Pass
Peak Femur Z Force	-3241	-2652	N	-2813.80	Pass
Peak Resultant Acetabulum Force	1462	1787	N	1769.03	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Left Femur Load Cell	Denton W50-7101051	LC-DM4975 Fz	2/20/2016	2/19/2017
Left Acetabulum Load Cell	Humanetics 10530JI4	LC-DP4639 Fx	3/6/2016	3/6/2017



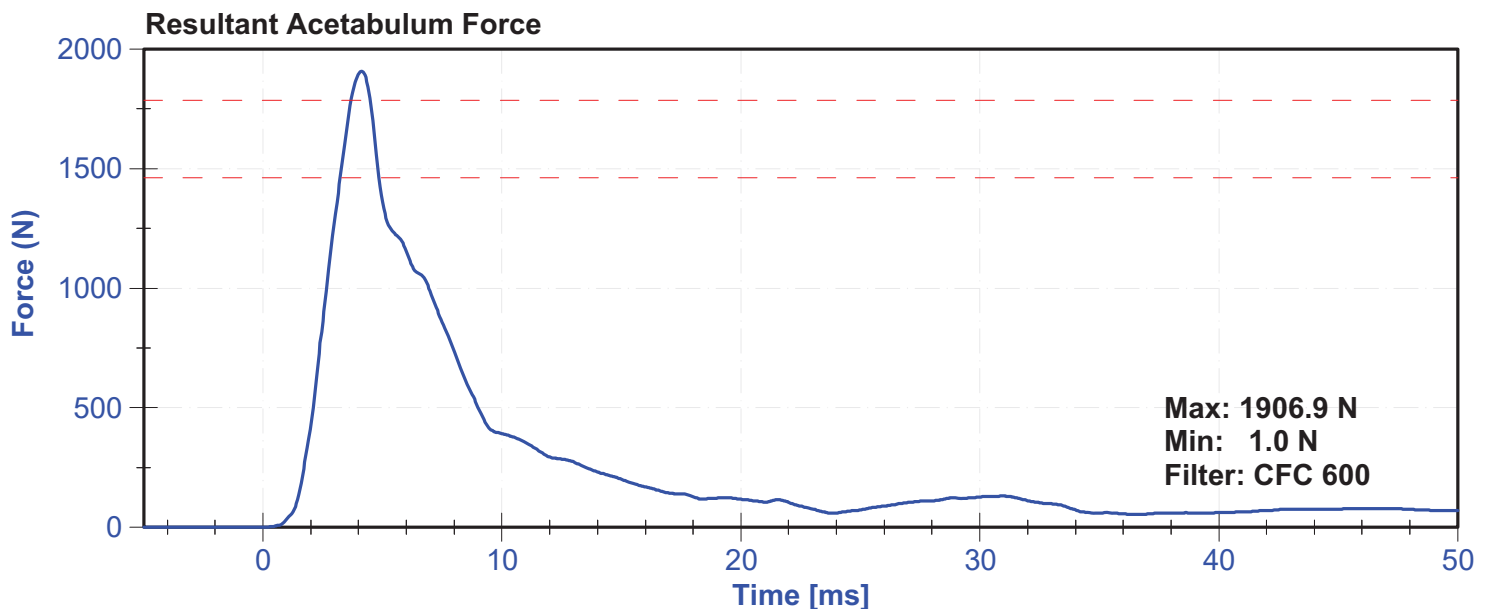
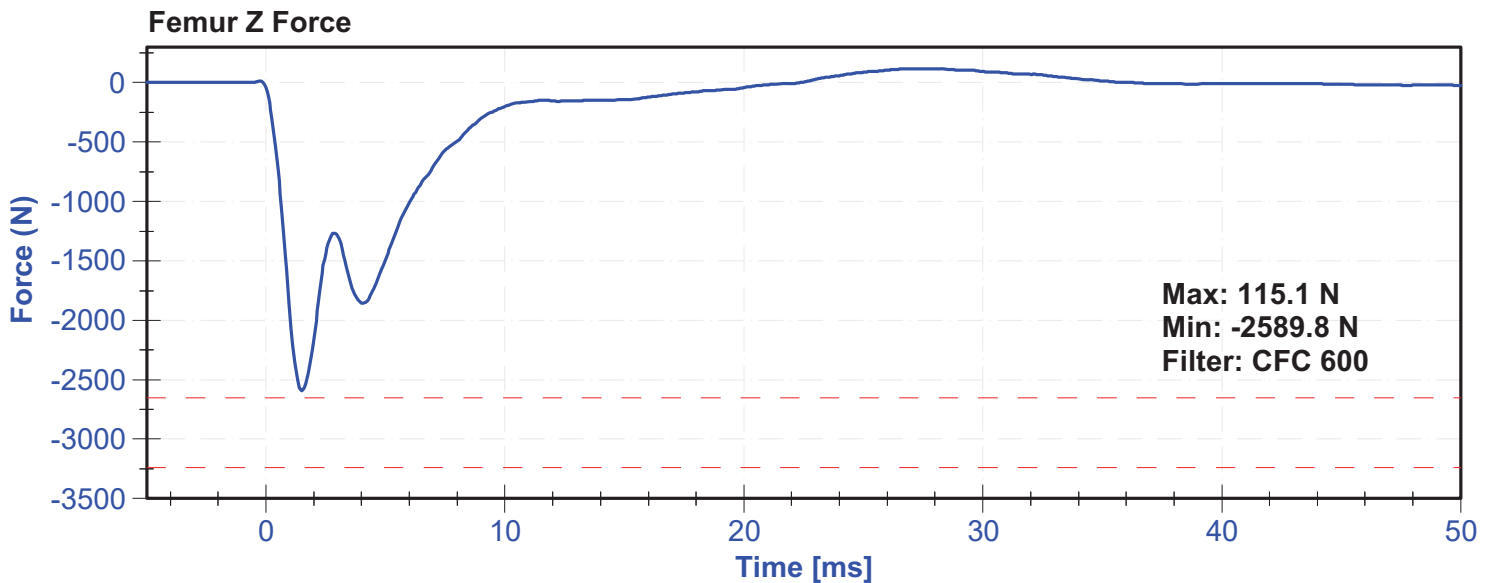
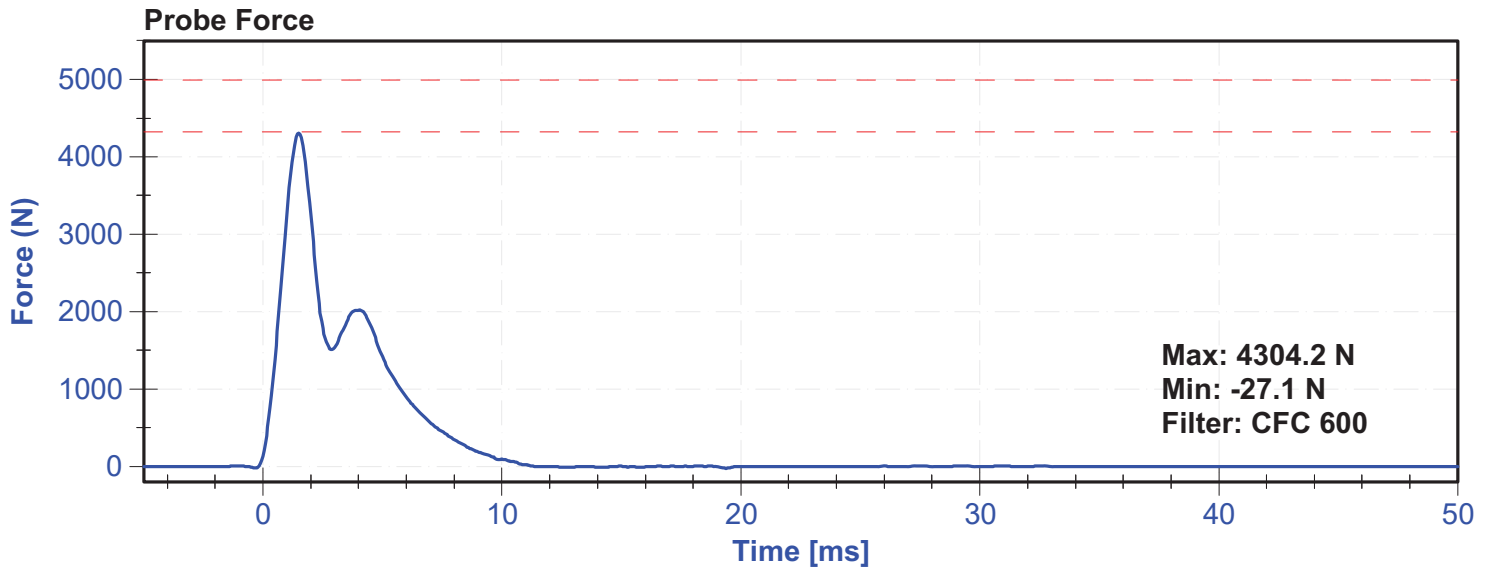
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.7	Pass
Humidity	10	70	%	40.0	Pass
Impact Velocity	2.55	2.65	m/s	2.598	Pass
Probe Force	4318	4989	N	4304.2	Fail
Peak Femur Z Force	-3241	-2652	N	-2589.84	Fail
Peak Resultant Acetabulum Force	1462	1787	N	1906.90	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Left Femur Load Cell	Denton W50-7101051	LC-DM4976 Fz	2/23/2016	2/22/2017
Left Acetabulum Load Cell	Humanetics 10670JI4	LC-DP3835 Fx	3/7/2016	3/7/2017



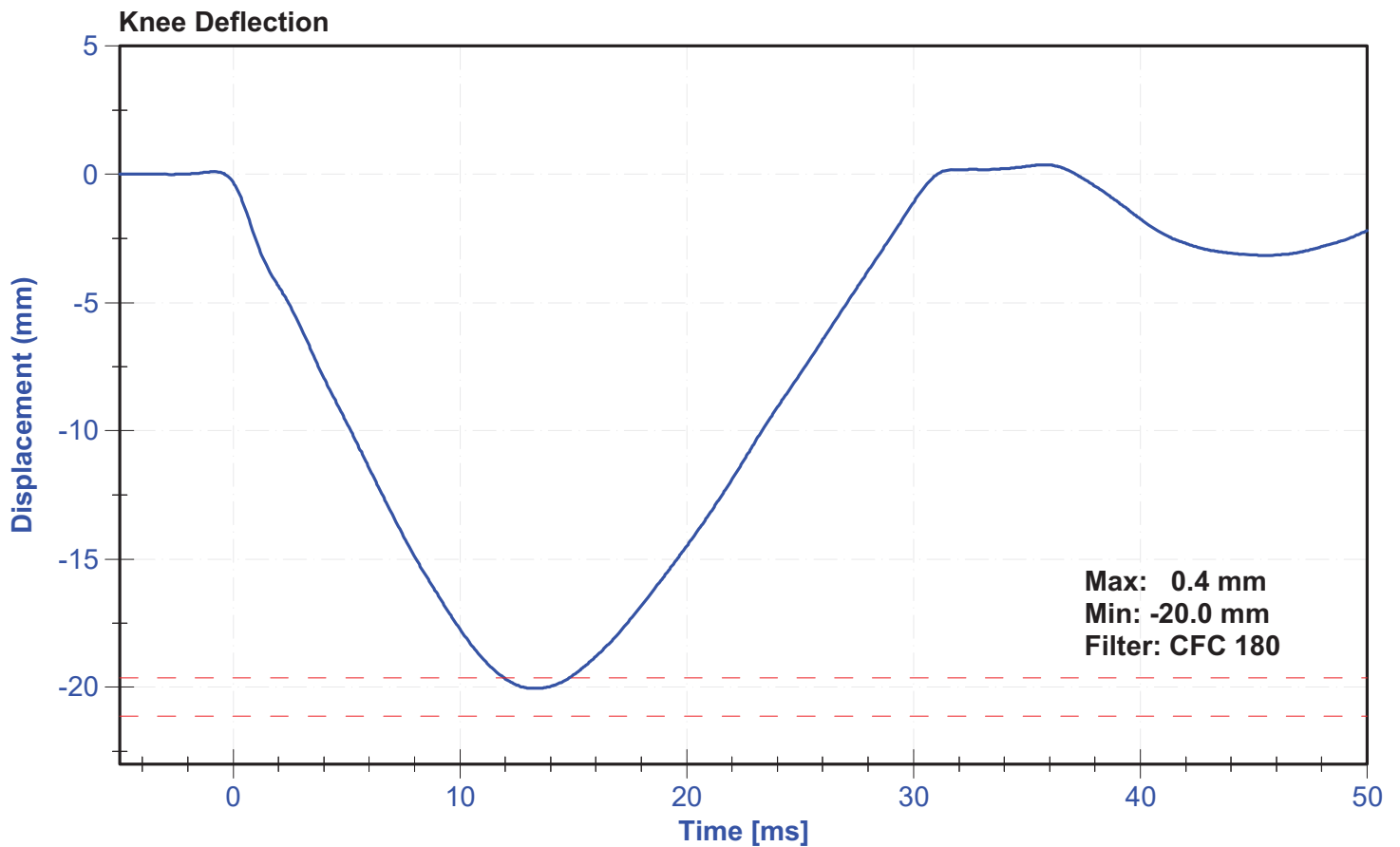
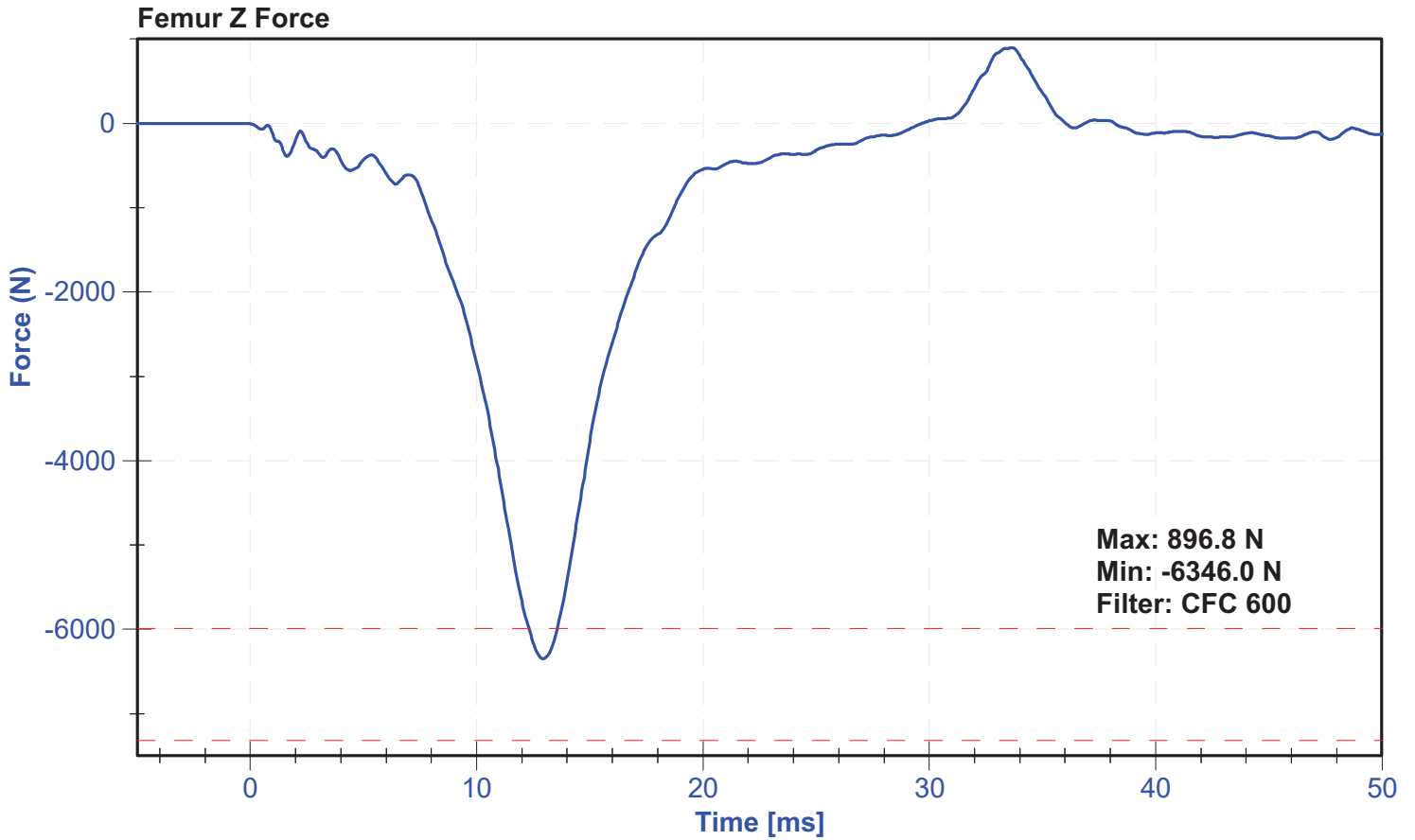
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	37.4	Pass
Impact Velocity	2.15	2.25	m/s	2.248	Pass
Peak Femur Z Force	-7317	-5987	N	-6346.0	Pass
Knee Deflection at Peak Force	-21.12	-19.62	mm	-20.05	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Femur Load Cell	Denton W50-7101051	LC-DM4975 Fz	2/20/2016	2/19/2017
Knee Potentiometer	Space Age 150-0121V	DS-C2102639B	2/17/2016	2/16/2017



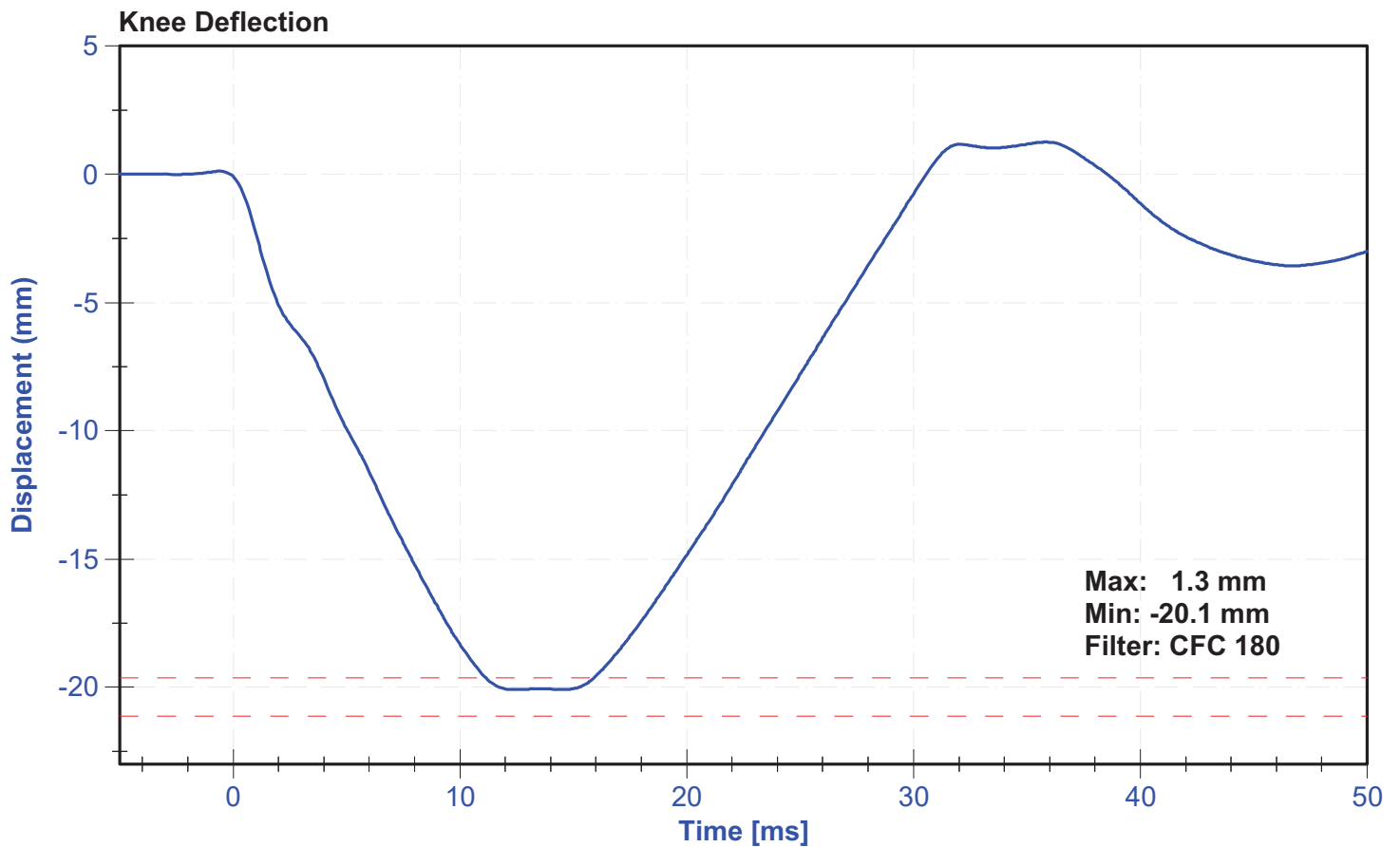
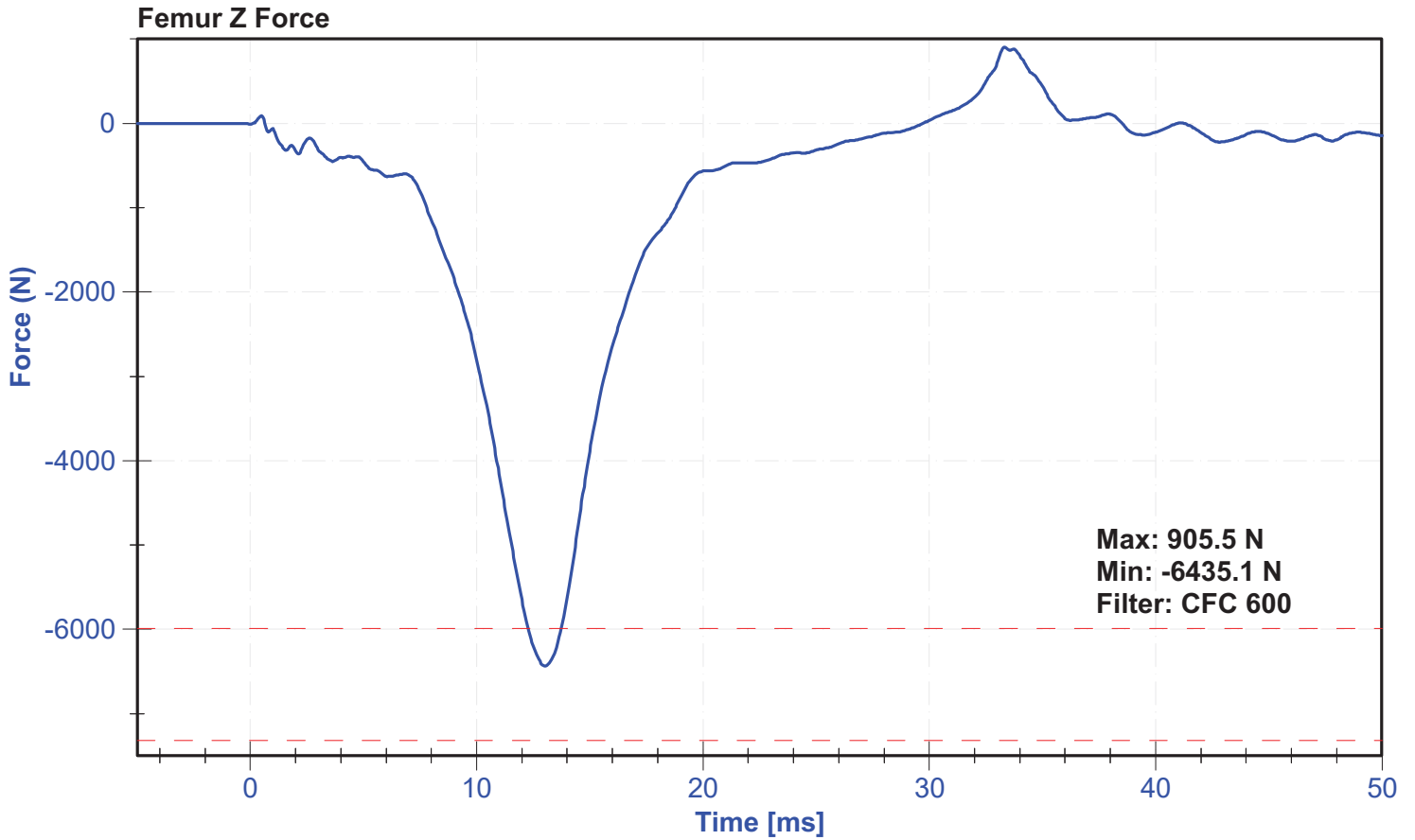
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.3	Pass
Humidity	10	70	%	41.5	Pass
Impact Velocity	2.15	2.25	m/s	2.243	Pass
Peak Femur Z Force	-7317	-5987	N	-6435.1	Pass
Knee Deflection at Peak Force	-21.12	-19.62	mm	-20.09	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Probe Accel	ENDEVCO 7264CT	AC-P23155	1/13/2016	7/14/2016
Femur Load Cell	Denton W50-7101051	LC-DM4976 Fz	2/23/2016	2/22/2017
Knee Potentiometer	Space Age 150-0121VL	DS-021033	3/18/2015	3/17/2016



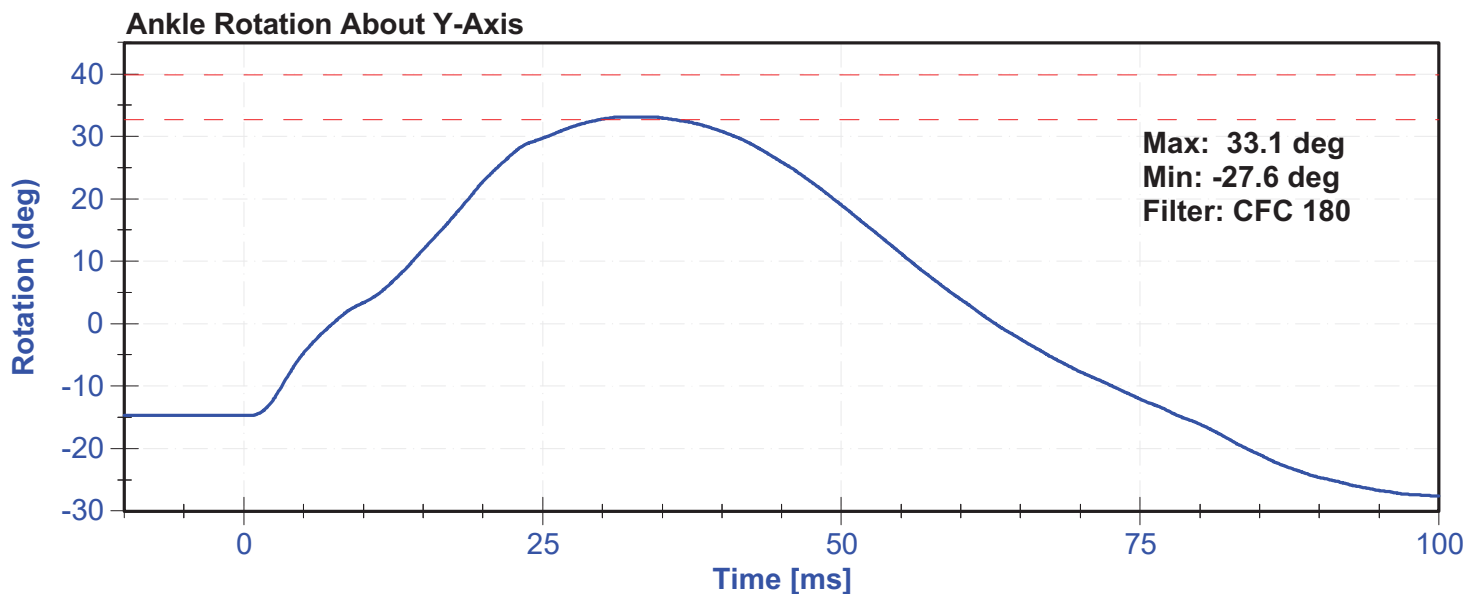
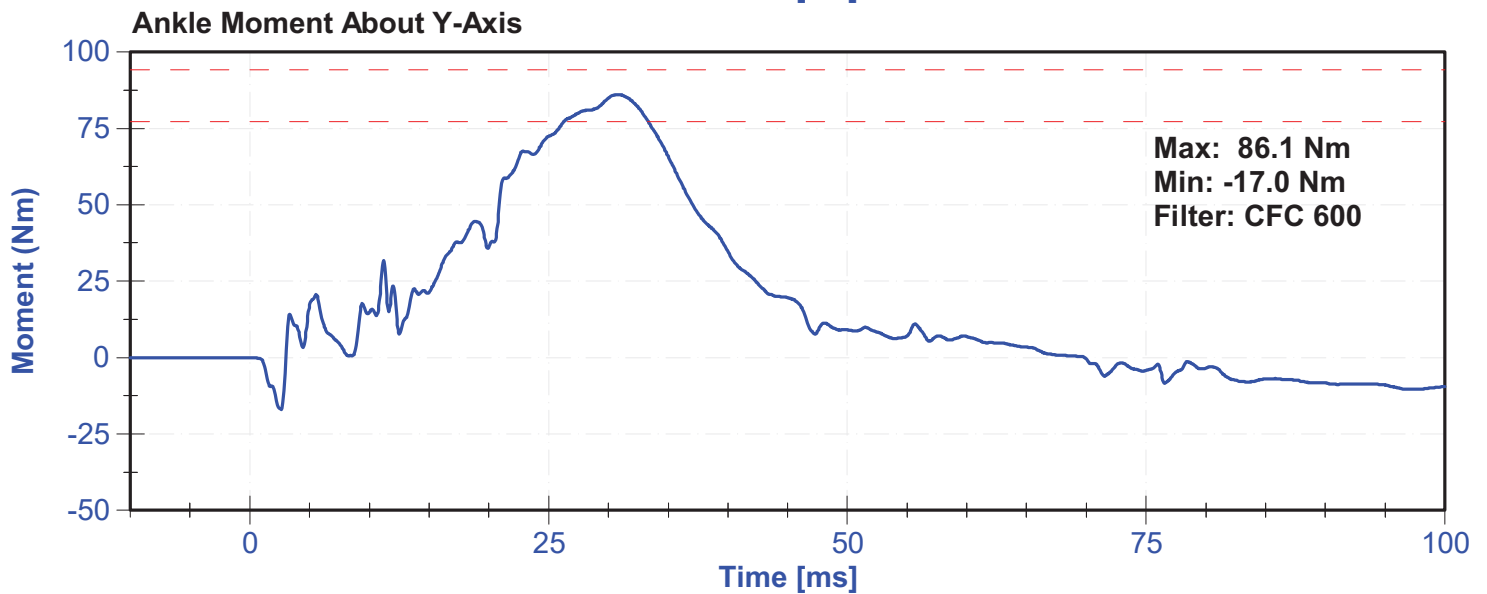
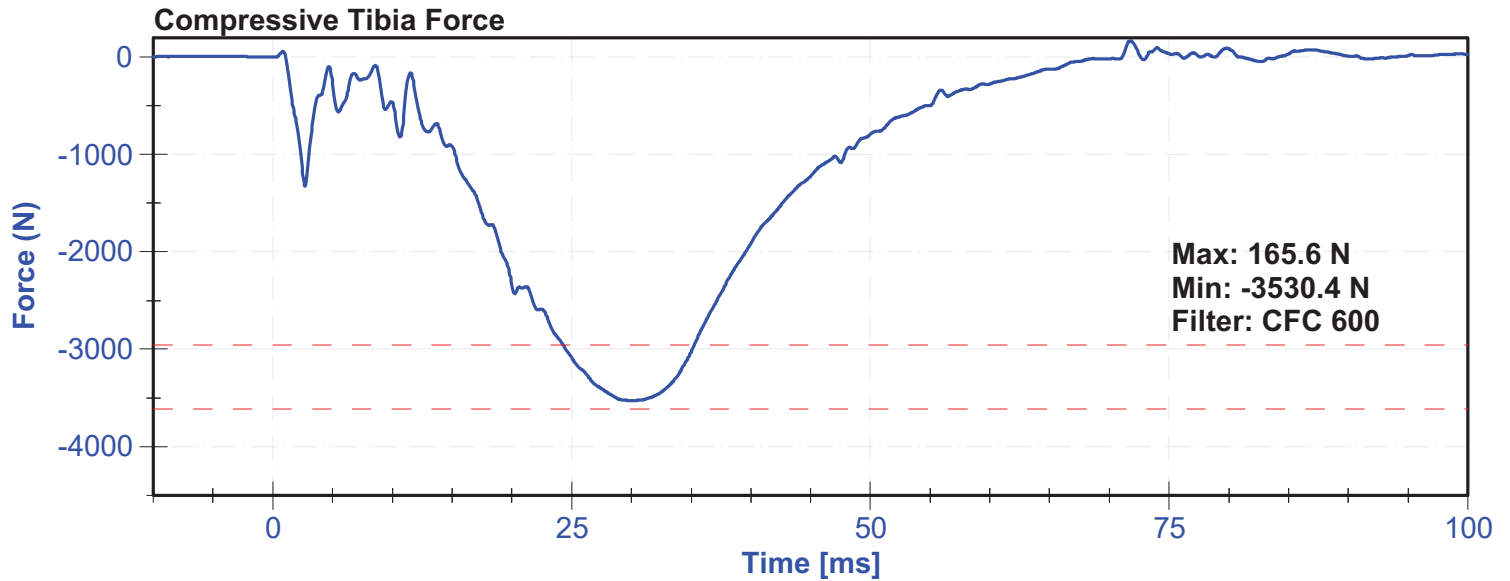
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	38.7	Pass
Velocity	4.9	5.1	m/s	4.961	Pass
Lower Tibia Compressive Force	-3613	-2956	N	-3530.4	Pass
Peak Moment about Y-Axis	77.1	94.2	Nm	86.10	Pass
Peak Rotation about Y-Axis	32.7	39.9	deg	33.05	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-121 Fz	2/10/2016	2/9/2017
Ankle Y Potentiometer	Contelec PD210-4B	DS-0524	2/18/2016	2/17/2017



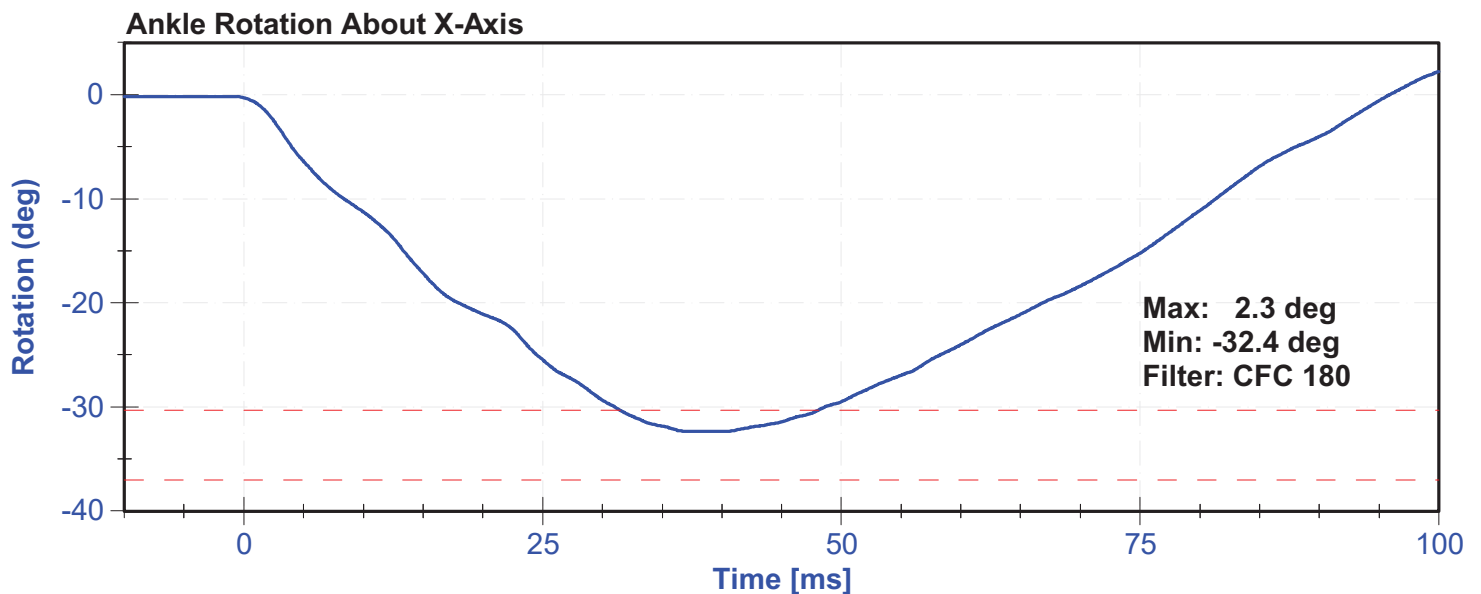
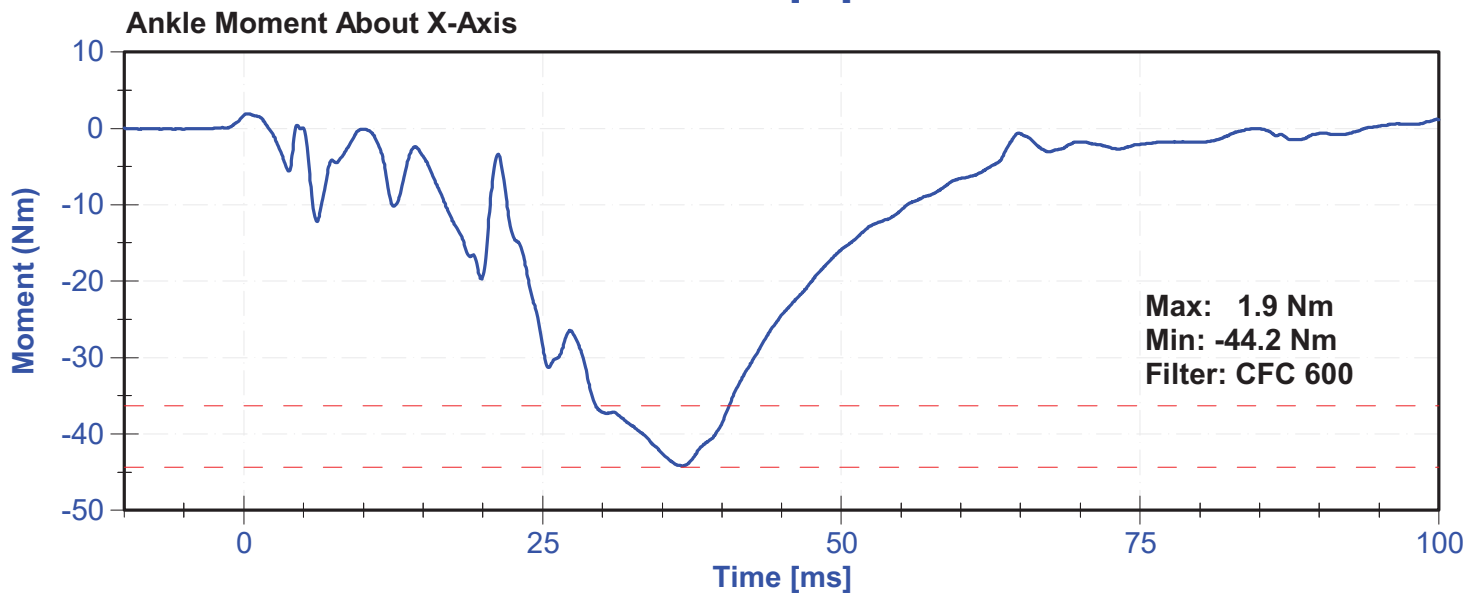
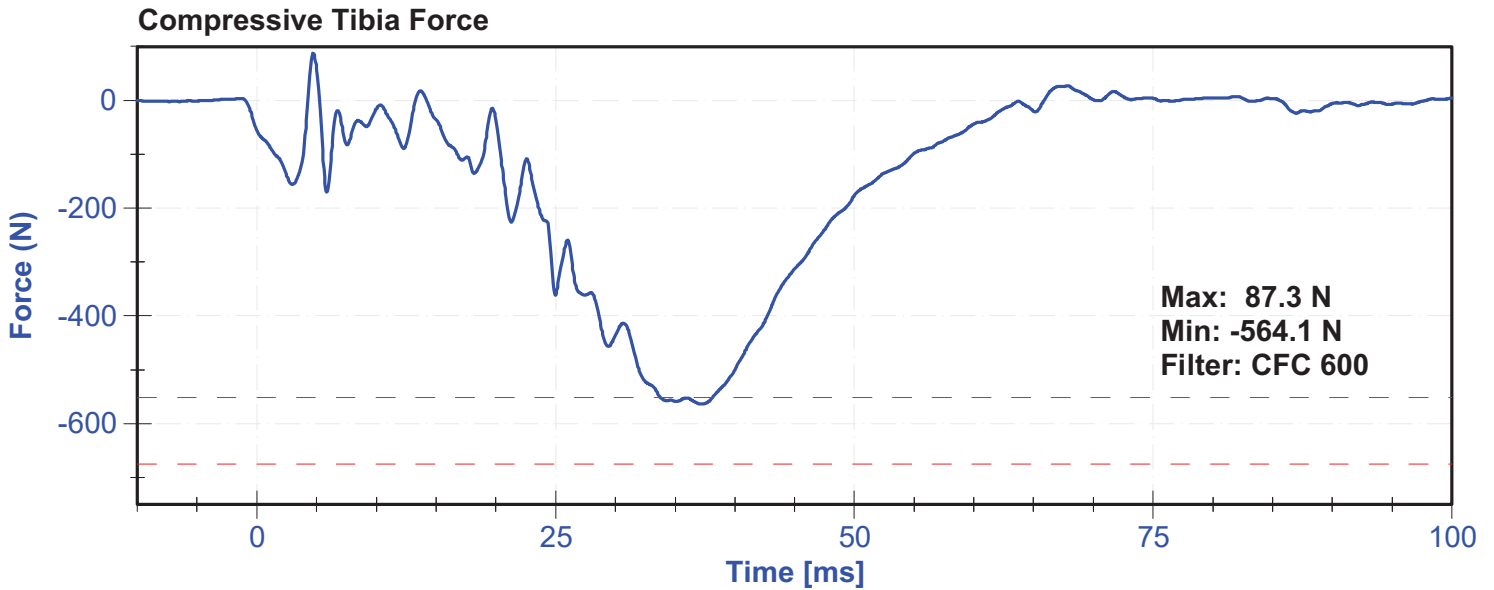
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	38.9	Pass
Velocity	1.9	2.1	m/s	1.924	Pass
Lower Tibia Compressive Force	-675	-552	N	-564.1	Pass
Peak Moment about X-Axis	-44.4	-36.3	Nm	-44.18	Pass
Peak Rotation about X-Axis	-37.0	-30.3	deg	-32.37	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-121 Fz	2/10/2016	2/9/2017
Ankle Y Potentiometer	Contelec PD210-4B	DS-0525	2/18/2016	2/17/2017



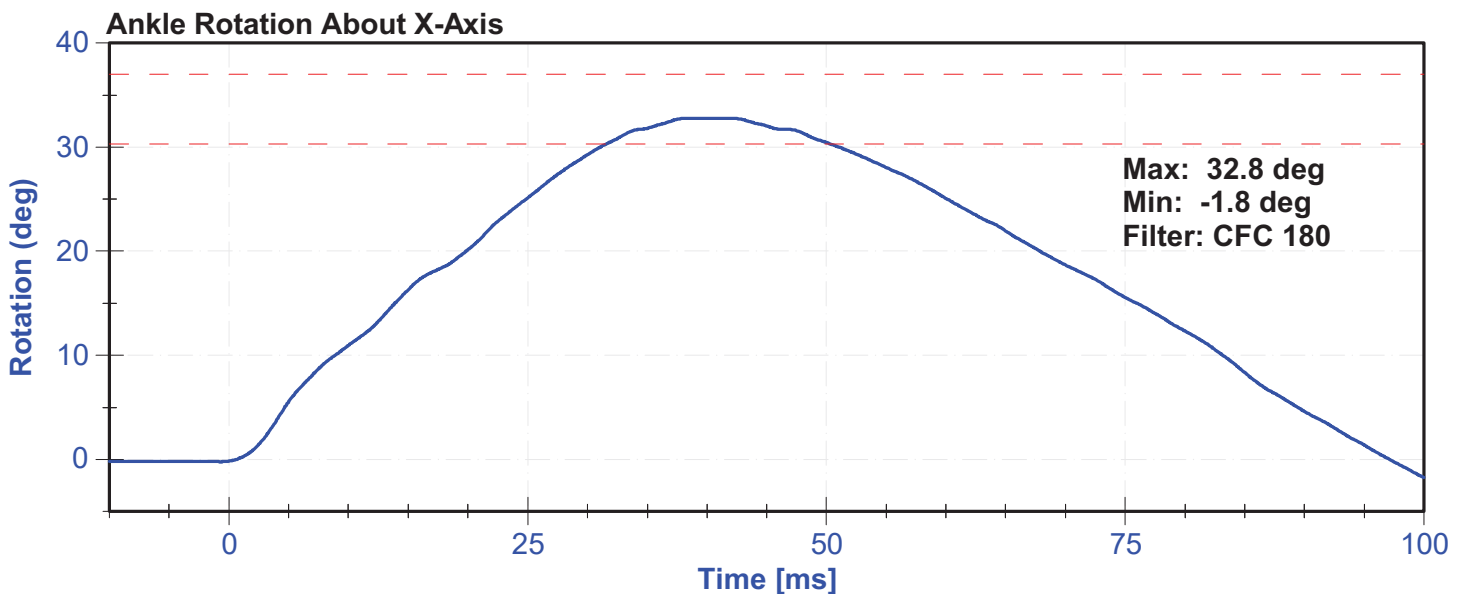
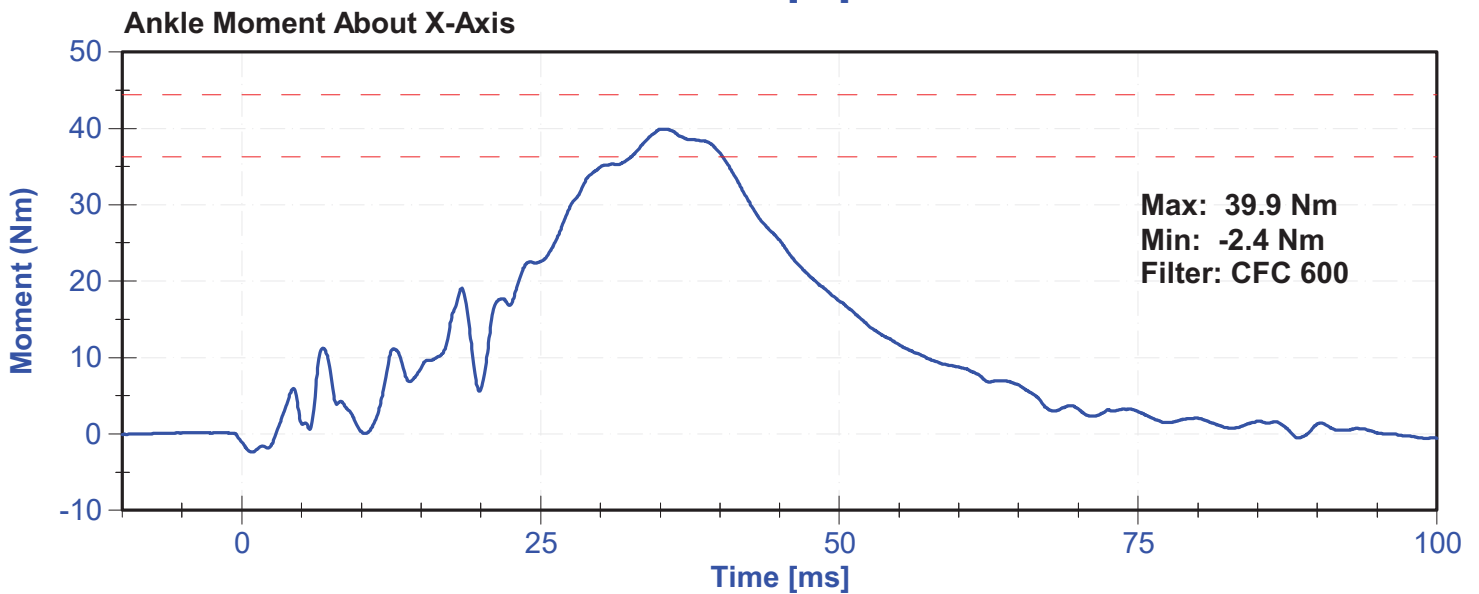
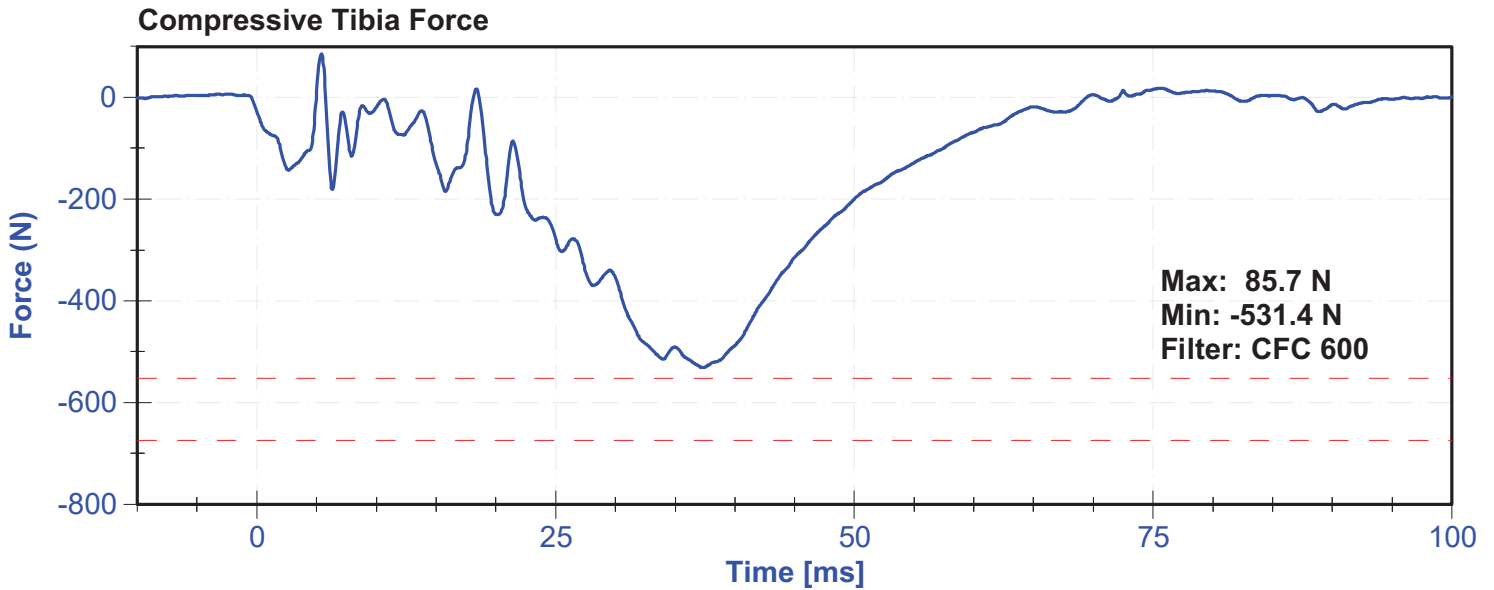
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	38.6	Pass
Velocity	1.9	2.1	m/s	1.991	Pass
Lower Tibia Compressive Force	-675	-552	N	-531.4	Fail
Peak Moment about X-Axis	36.3	44.4	Nm	39.90	Pass
Peak Rotation about X-Axis	30.3	37.0	deg	32.77	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-121 Fz	2/10/2016	2/9/2017
Ankle Y Potentiometer	Contelec PD210-4B	DS-0525	2/18/2016	2/17/2017



ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

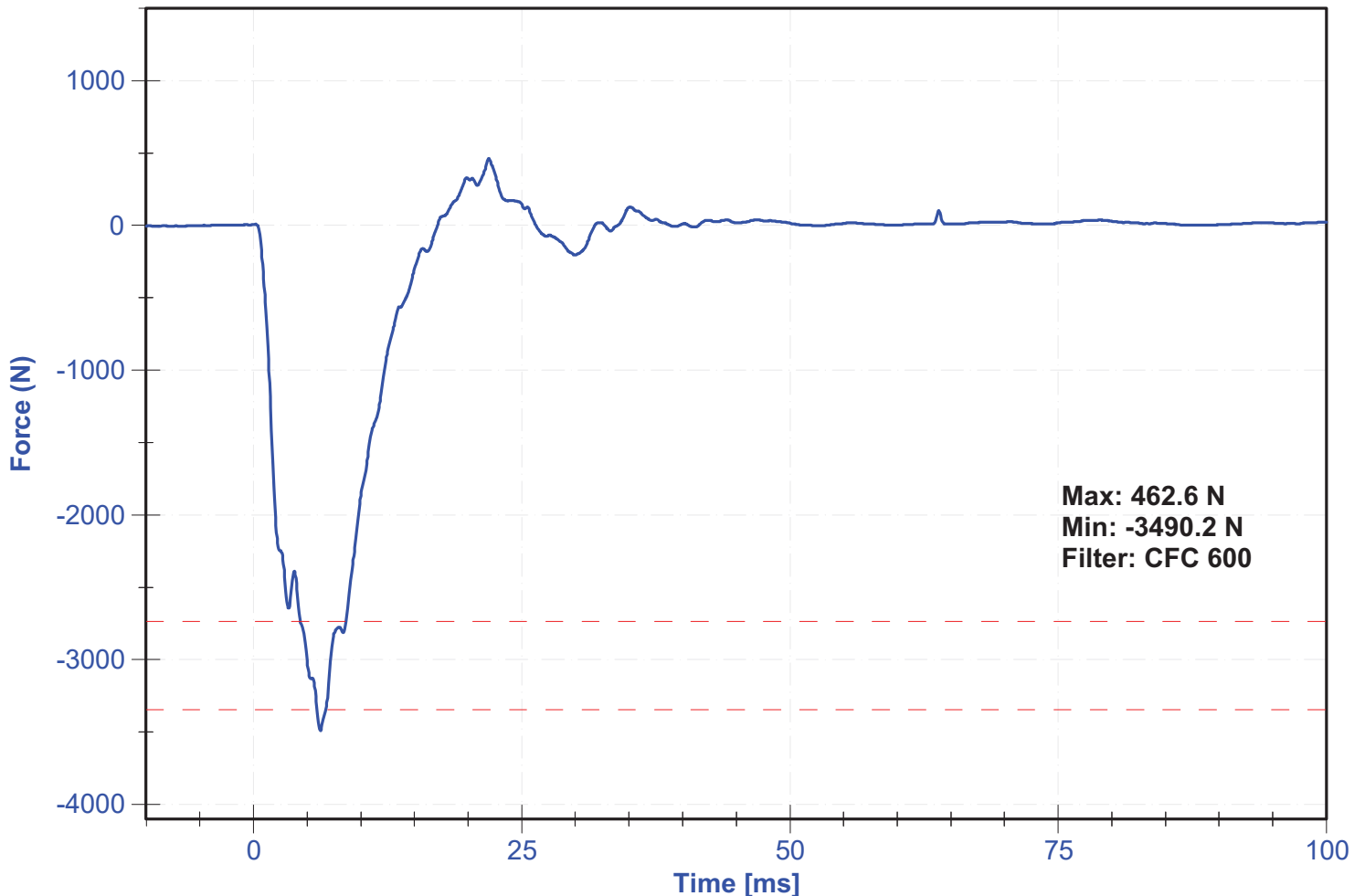
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.2	Pass
Humidity	10	70	%	38.5	Pass
Velocity	3.9	4.1	m/s	3.920	Pass
Lower Tibia Compressive Force	-3346	-2738	N	-3490.2	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-121 Fz	2/10/2016	2/9/2017

Compressive Tibia Force



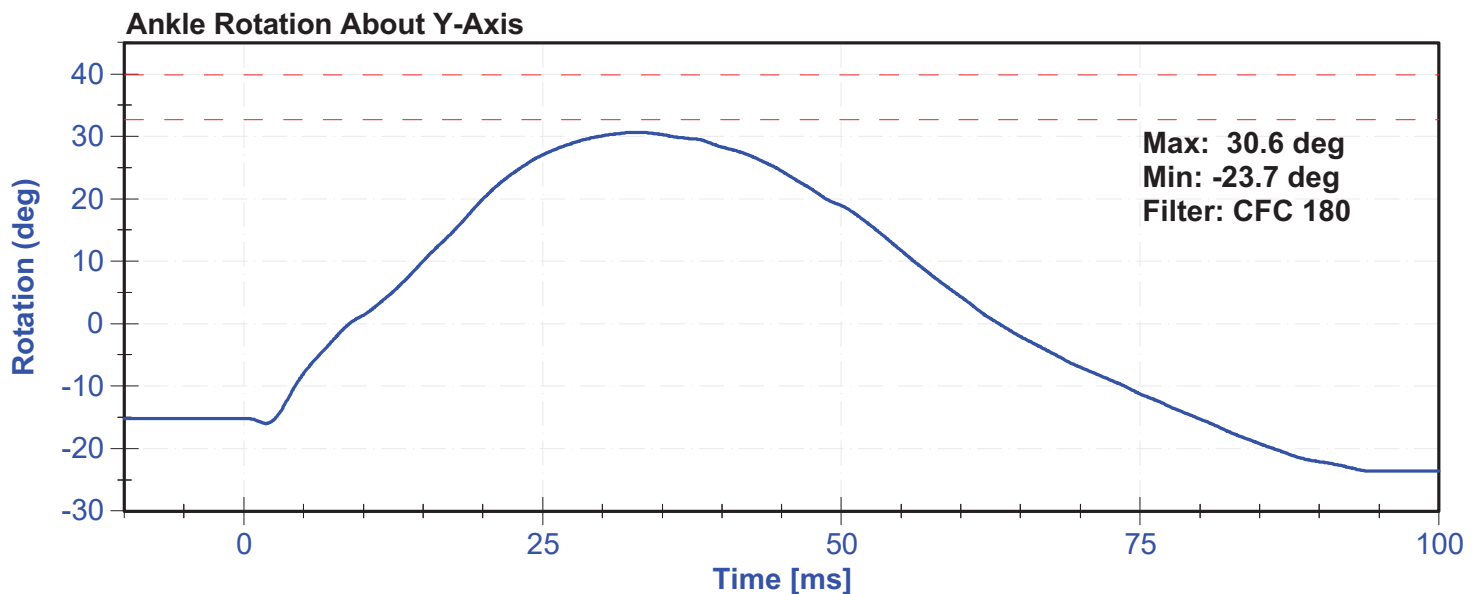
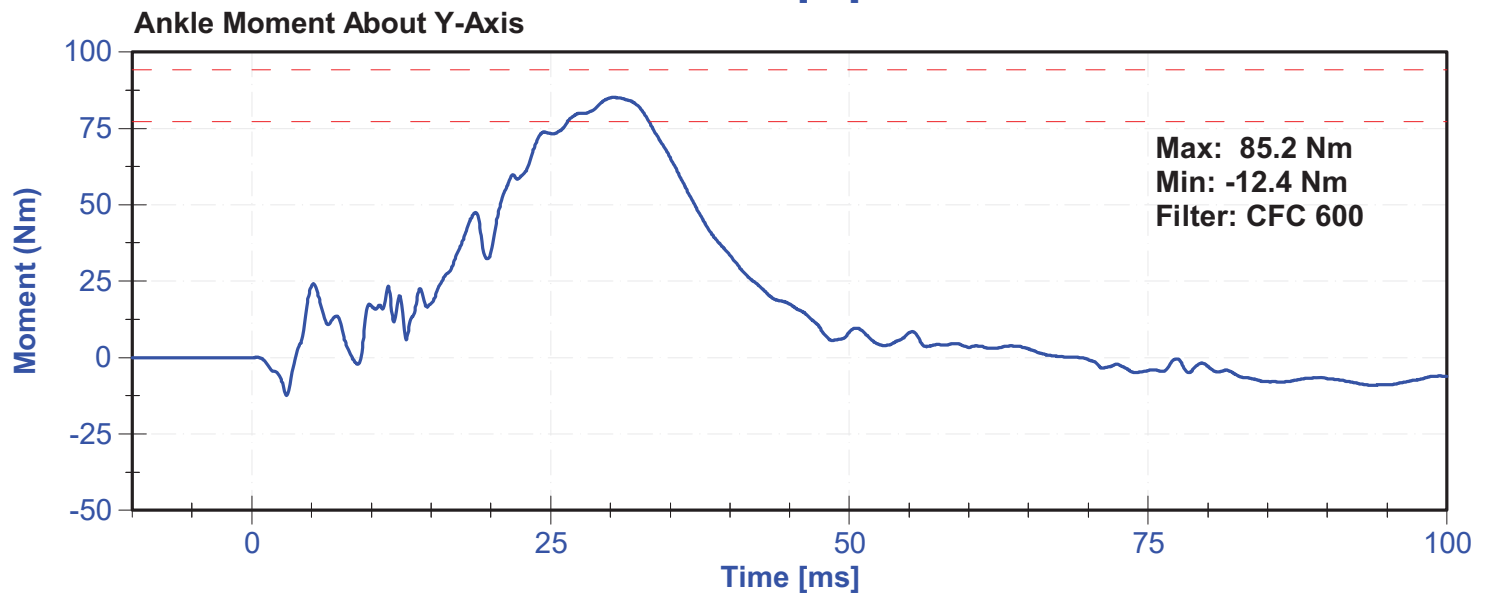
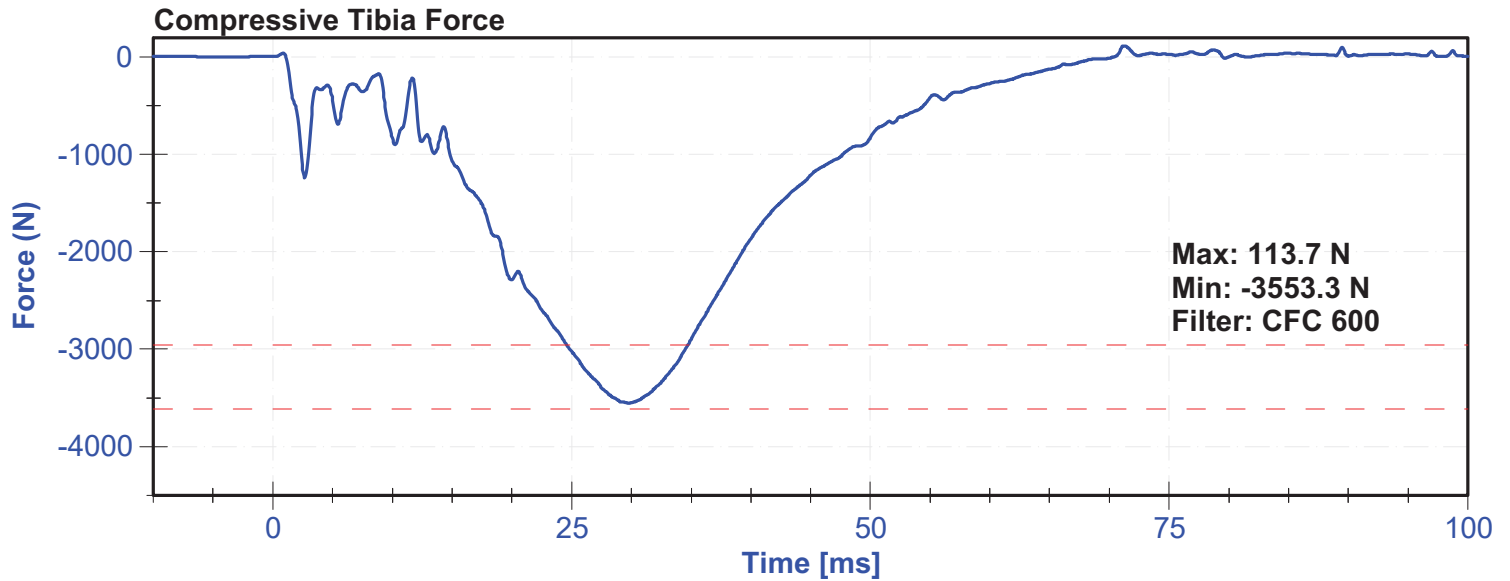
ATD Manufacturer	Humanertics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	40.5	Pass
Velocity	4.9	5.1	m/s	4.961	Pass
Lower Tibia Compressive Force	-3613	-2956	N	-3553.3	Pass
Peak Moment about Y-Axis	77.1	94.2	Nm	85.20	Pass
Peak Rotation about Y-Axis	32.7	39.9	deg	30.58	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-166 Fz	2/9/2016	2/8/2017
Ankle Y Potentiometer	Contelec PD210-4B	DS-0526	2/19/2016	2/18/2017



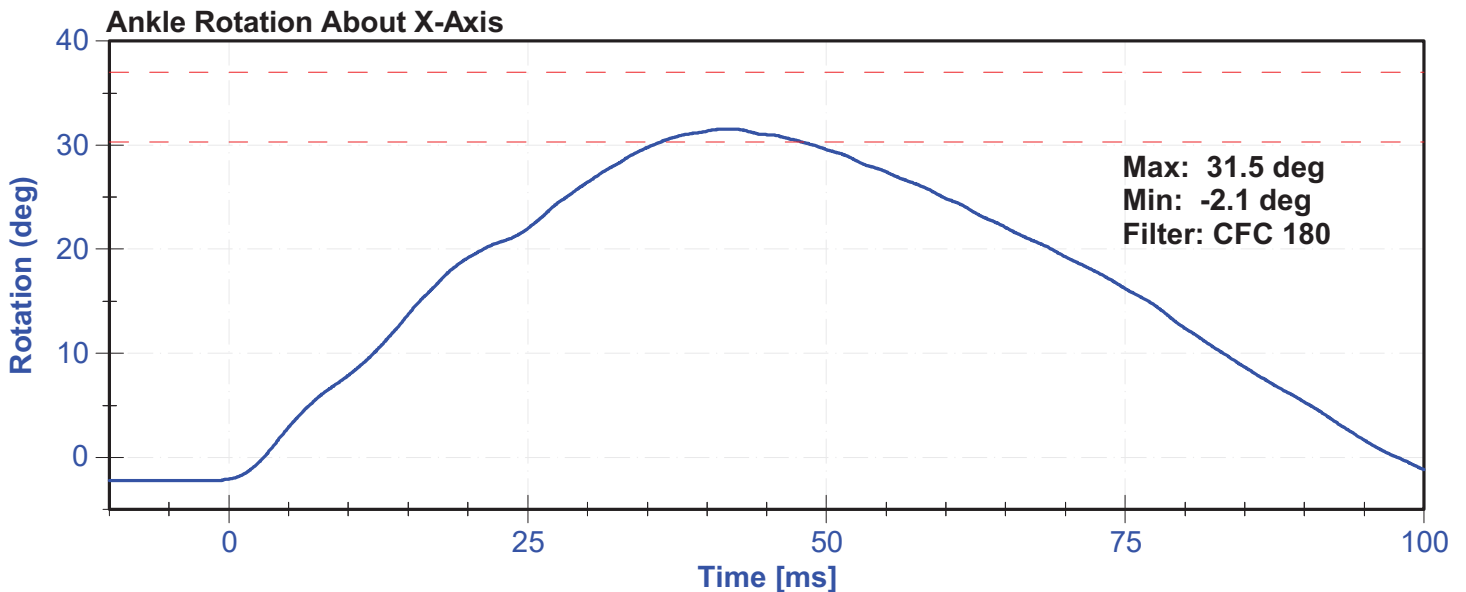
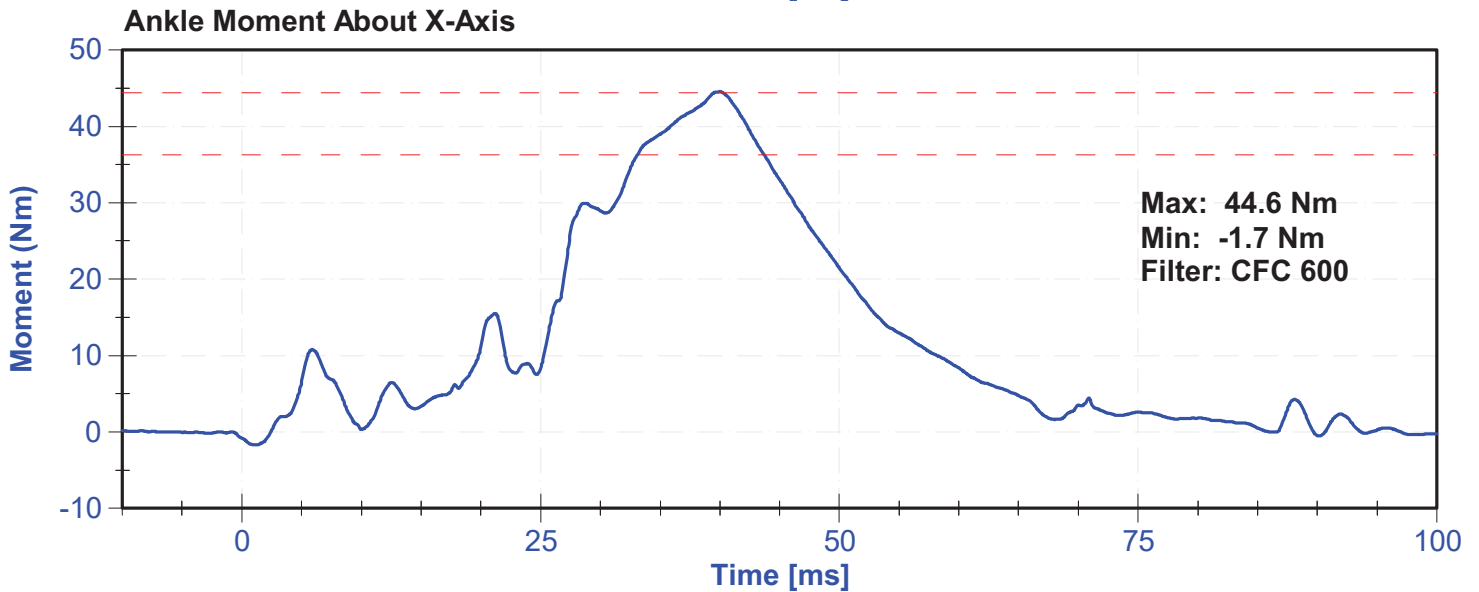
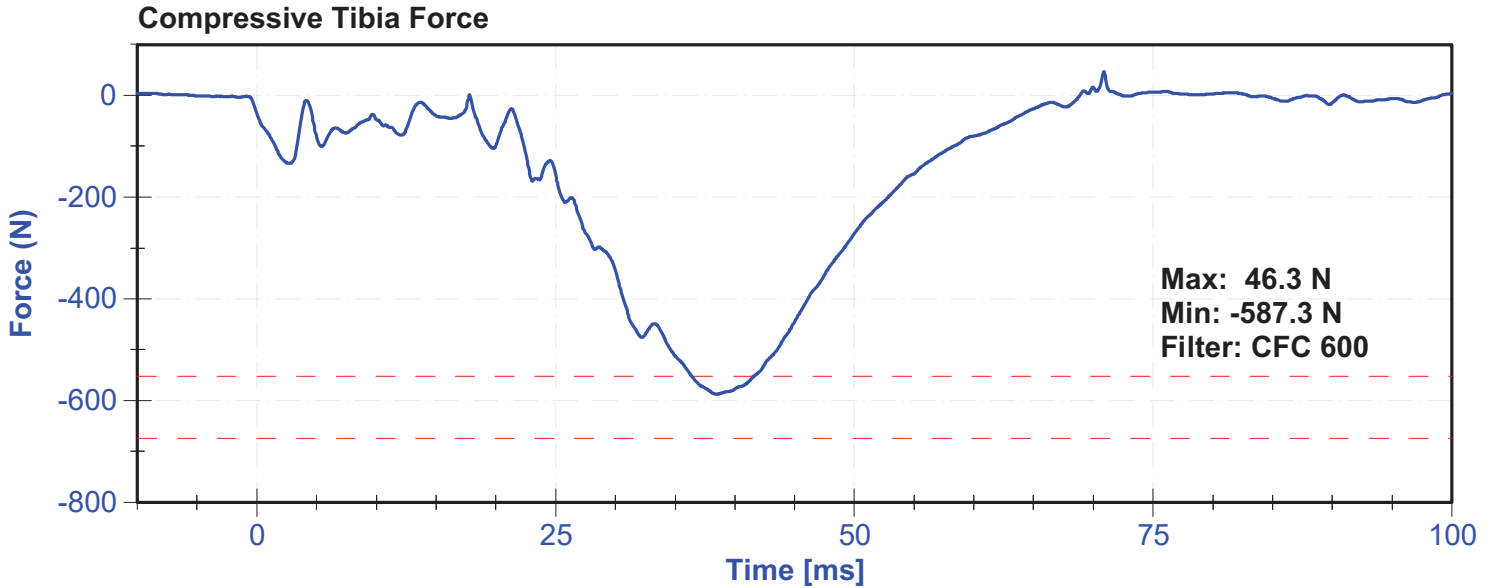
ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.6	Pass
Humidity	10	70	%	39.7	Pass
Velocity	1.9	2.1	m/s	1.924	Pass
Lower Tibia Compressive Force	-675	-552	N	-587.3	Pass
Peak Moment about X-Axis	36.3	44.4	Nm	44.56	Fail
Peak Rotation about X-Axis	30.3	37.0	deg	31.54	Pass

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-166 Fz	2/9/2016	2/8/2017
Ankle Y Potentiometer	Contelec PD210-4B	DS-0528	2/19/2016	2/18/2017



ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	LX045	Laboratory Supervisor	M. Goehle

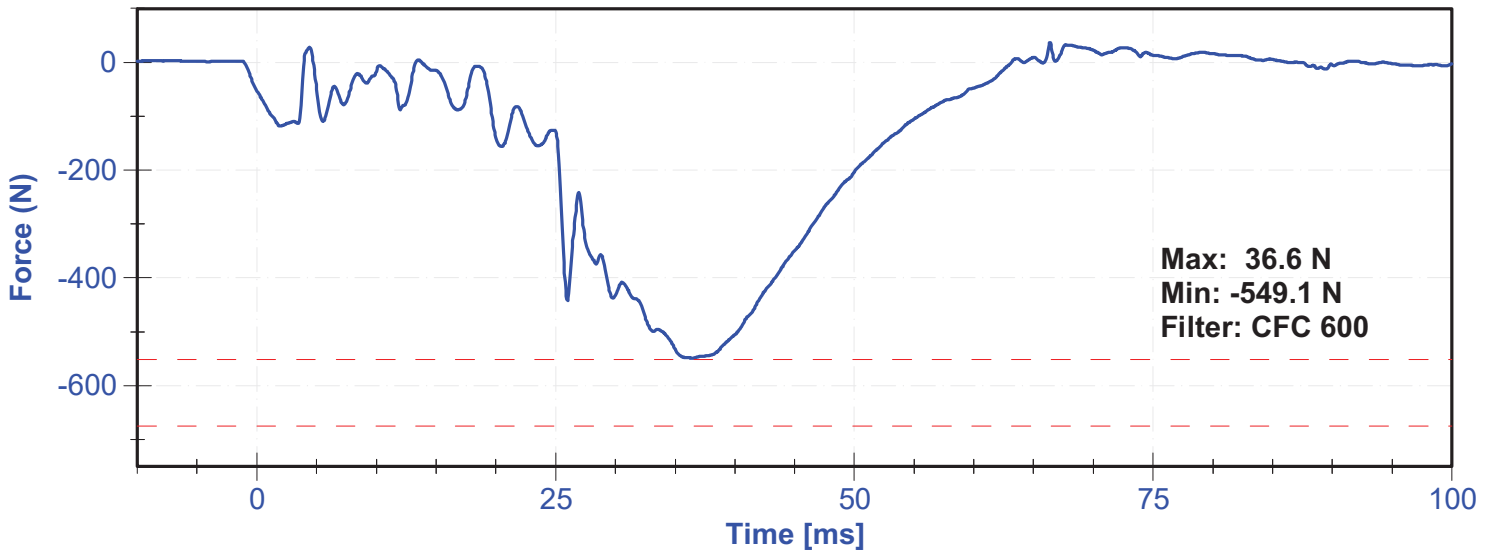
Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.8	Pass
Humidity	10	70	%	38.5	Pass
Velocity	1.9	2.1	m/s	1.924	Pass
Lower Tibia Compressive Force	-675	-552	N	-549.1	Fail
Peak Moment about X-Axis	-44.4	-36.3	Nm	-43.57	Pass
Peak Rotation about X-Axis	-37.0	-30.3	deg	-33.36	Pass

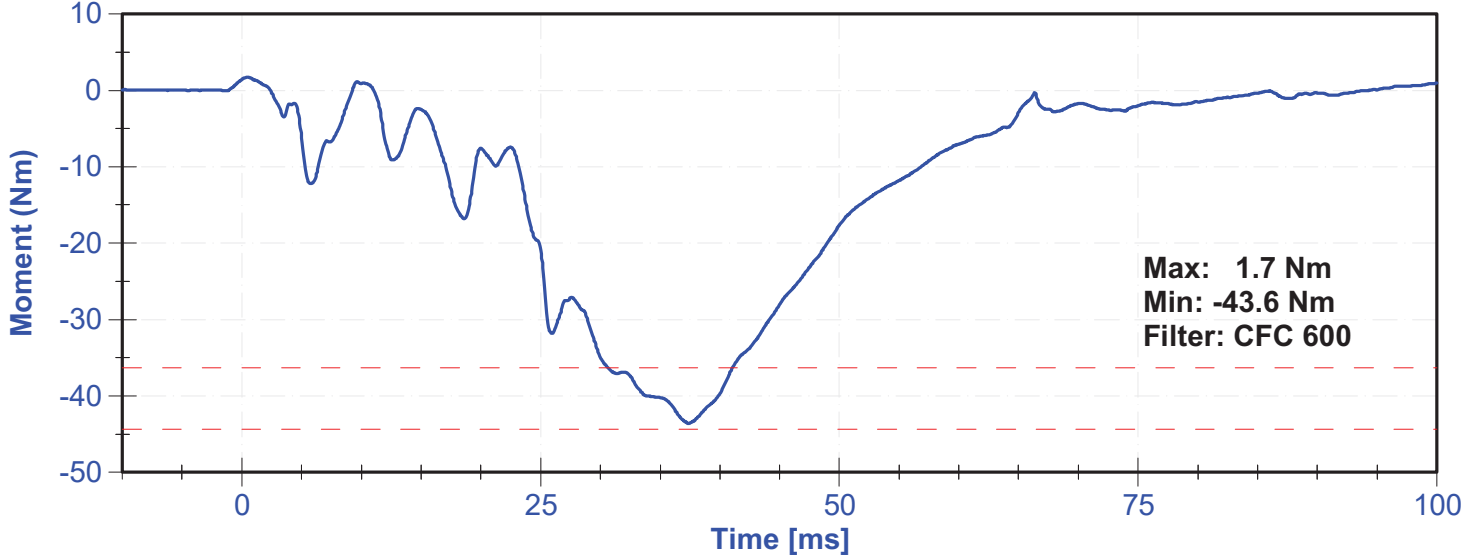
Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-166 Fz	2/9/2016	2/8/2017
Ankle Y Potentiometer	Contelec PD210-4B	DS-0528	2/19/2016	2/18/2017

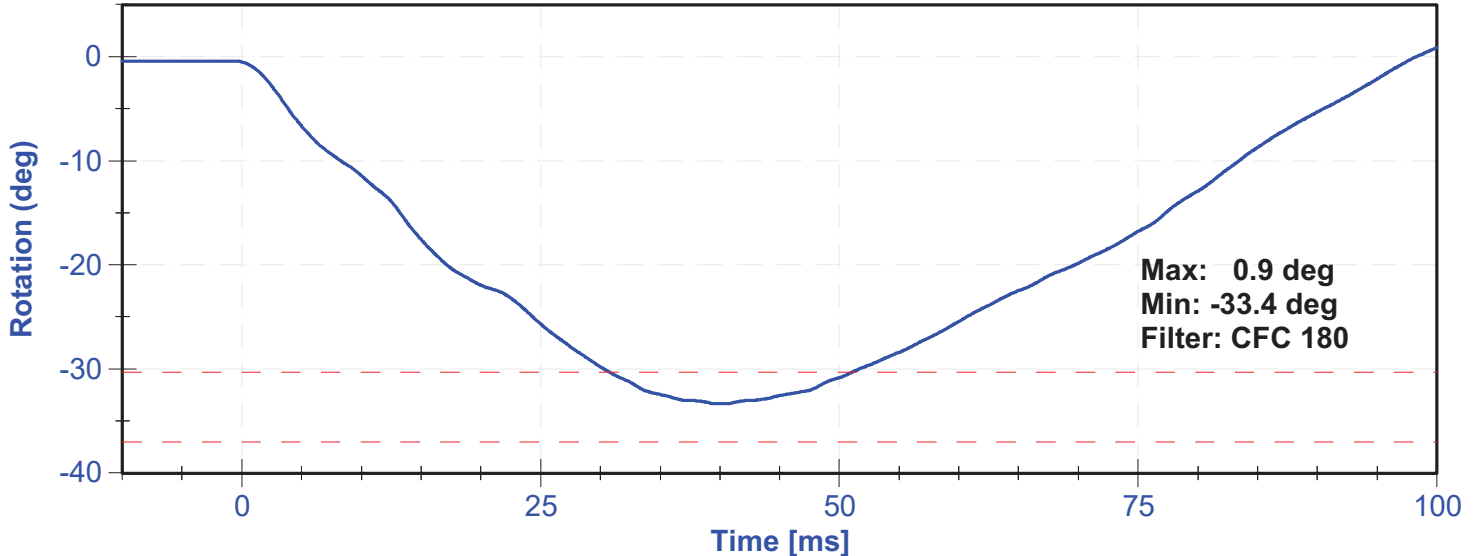
Compressive Tibia Force



Ankle Moment About X-Axis



Ankle Rotation About X-Axis



ATD Manufacturer	Humanetics	Test Technician	M.Hartung
ATD Serial Number	DL9207	Laboratory Supervisor	M. Goehle

Results

Test Parameter	Minimum Specification	Maximum Specification	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	20.9	Pass
Humidity	10	70	%	50.1	Pass
Velocity	3.9	4.1	m/s	3.920	Pass
Lower Tibia Compressive Force	-3346	-2738	N	-3788.2	Fail

Transducer Calibrations

Channel	Manufacturer	Serial Number	Calibration Date	Calibration Due Date
Pendulum Accelerometer	ENDEVCO 7264CT	AC-P32227	8/27/2015	8/26/2016
Lower Tibia Load Cell	Denton 4929J	LC-166 Fz	2/9/2016	2/8/2017

Compressive Tibia Force

