

REPORT NUMBER: NCAP-KAR-12-018

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

**GENERAL MOTORS DE MEXICO, S. DE R.L. DE C.V.
2012 CADILLAC SRX AWD 5-DOOR MPV**

NHTSA NUMBER: MC0115

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



DECEMBER 12, 2011

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
1200 NEW JERSEY AVE, SE
ROOM W43-410
WASHINGTON, DC 20590**

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7. Authors Mr. Steven D. Matsusaka, Project Engineer, KARCO Mr. Frank Richardson, Program Manager, KARCO				8. Performing Organization Report No. TR-P30001-27-NC																																																					
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12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C 20590				13. Type of Report and Period Covered Final Test Report, November 28, 2011 - December 12, 2011																																																					
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15. Supplementary Notes																																																									
16. Abstract A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2012 Cadillac SRX AWD 5-door MPV in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on November 28, 2011. The impact velocity of the vehicle was 56.27 km/h and the ambient temperature at the barrier face at the time of impact was 18.9 deg. C. The target vehicle's post-test maximum crush was 515 mm at the vehicle's centerline. The test vehicle's performance is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Driver ATD</th> <th colspan="2">Passenger ATD</th> </tr> <tr> <th>Threshold</th> <th>Result</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td> <td>N/A</td> <td>700.0</td> <td>179.6</td> <td>700.0</td> <td>415.2</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>-19</td> <td>52</td> <td>-11</td> </tr> <tr> <td>Nij</td> <td>N/A</td> <td>1</td> <td>0.28</td> <td>1</td> <td>0.38</td> </tr> <tr> <td>Neck Tension</td> <td>N</td> <td>4170</td> <td>1221.8</td> <td>2620</td> <td>878.5</td> </tr> <tr> <td>Neck Compression</td> <td>N</td> <td>4000</td> <td>-101.0</td> <td>2520</td> <td>-578.6</td> </tr> <tr> <td>Left Femur Force</td> <td>N</td> <td>10008</td> <td>-1374.4</td> <td>6805</td> <td>-182.9</td> </tr> <tr> <td>Right Femur Force</td> <td>N</td> <td>10008</td> <td>-346.4</td> <td>6805</td> <td>-459.9</td> </tr> </tbody> </table>						Measurement Description	Units	Driver ATD		Passenger ATD		Threshold	Result	Threshold	Result	Head Injury Criteria (HIC ₁₅)	N/A	700.0	179.6	700.0	415.2	Maximum Chest Compression	mm	63	-19	52	-11	Nij	N/A	1	0.28	1	0.38	Neck Tension	N	4170	1221.8	2620	878.5	Neck Compression	N	4000	-101.0	2520	-578.6	Left Femur Force	N	10008	-1374.4	6805	-182.9	Right Femur Force	N	10008	-346.4	6805	-459.9
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SECTION 1

PURPOSE AND SUMMARY OF TEST

PURPOSE

This 56.3 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program, sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract number DTNH22-06-D-00027. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

The 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure, dated August, 2011.

SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2012 Cadillac SRX AWD 5-Door MPV at a velocity of 56.27 km/h. The test was performed at KARCO Engineering, LLC. on November 28, 2011. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

Three (3) real-time cameras and fourteen (14) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet 6 of this report.

One Part 572E 50th percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O 5th percentile female ATD was placed in the right-front passenger seating position according to dummy placement instructions specified in the Frontal NCAP Laboratory Test Procedure.

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck force transducers, right / left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and the passenger's lap and shoulder belts to measure the dummy pelvic and torso section loading. The driver (position 1) ATD (Serial No. 035) and the right-front passenger (position 2) ATD (Serial No. 635) were calibrated prior to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 136 channels of data were recorded on an on-board data acquisition system. Appendix B contains the dummy response data traces.

There was 100% windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum static crush of the test vehicle was 515 mm at the vehicle's centerline. Both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: The driver ATD's head contacted the airbag and the headrest. The upper torso contacted the airbag. Both the left and right knees contacted the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD's head contacted the airbag and the headrest. The upper torso contacted the airbag. Both the left and right knees contacted the glovebox.

The occupant data is summarized below:

ATD Position	HIC ₁₅	T ¹	T ²	Chest Disp. (mm)	Nij	Neck Tension (N)	Neck Comp. (N)	Left Femur (N)	Right Femur (N)
Driver (50th)	179.6	71.8	86.8	-19	0.28	1221.8	-101.0	-1374.4	-346.4
Passenger (5th)	415.2	68.9	83.9	-11	0.38	878.5	-578.6	-182.9	-459.9

SECTION 2
DATA SHEETS

Test Vehicle:	2012 Cadillac SRX AWD 5-Door MPV	NHTSA No.:	MC0115
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	11/28/11

CONVERSION FACTORS
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: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MC0115
Model Year	2012
Make	Cadillac
Model	SRX
Body Style	5-Door MPV
VIN	3GYFNDE3XCS505461
Body Color	Mocha Steel Metallic
Odometer Reading (km / mi)	232 / 144
Engine Displacement (L)	3.6
Type / No. of Cylinders	V6
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	AWD
Roof Rack	Yes
Sunroof / T-Top	Yes
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	Yes
Anti-Lock Brakes (ABS)	Yes
All Wheel Drive (AWD)	Yes
Traction Control System	Yes

Auto-Leveling System	No
Automatic Door Locks	Yes
Power Window Auto-Reverse	Yes
Other Optional Feature	None
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Pass. Front Airbag	Yes
Pass. Curtain Airbag	Yes
Pass. Head/Torso Airbag	No
Pass. Torso Airbag	No
Pass. Torso/Pelvis Airbag	Yes
Pass. Pelvis Airbag	No
Pass. Knee Airbag	No
Driver Seat Belt Pretensioner	Yes
Pass. Seat Belt Pretensioner	Yes
Driver Load Limiter	Yes
Pass. Load Limiter	Yes
Other Safety Restraint	None

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

No

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors LLC
Date of Manufacture	Aug-11

GVWR (kg)	2520
GAWR Front (kg)	1410
GAWR Rear (kg)	1300

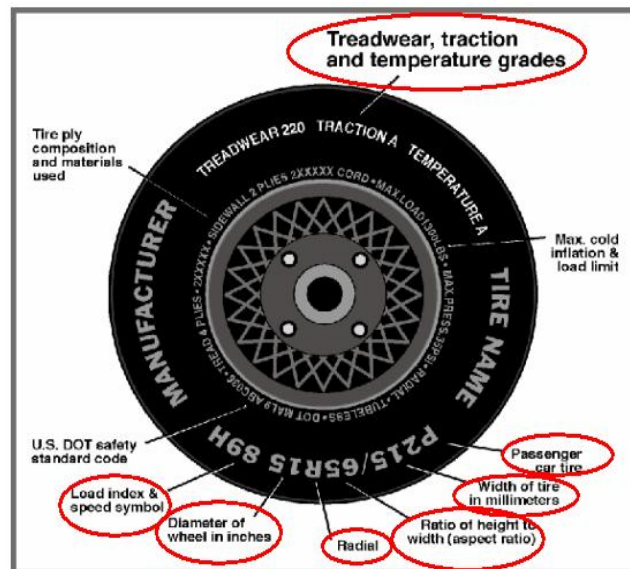
VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Type of Seats	Bucket	Bench			
Designated Seating Capacity	2	3		5	
Capacity Weight (VCW) (kg)				439.0	A
DSC x 68.04 (kg)				340.2	B
Cargo Weight (RCLW) (kg)				98.8	A-B

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2012 Cadillac SRX AWD 5-Door MPV	NHTSA No.:	MC0115
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	11/28/11



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	240	240
Recommended Tire Size	P235/65R18	P235/65R18
Tire Size on Vehicle	P235/65R18	P235/65R18
Tire Manufacturer	Michelin	Michelin
Tire Model	Latitude Tour HP	Latitude Tour HP
Treadwear	440	440
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 1 Polyamide, 2 Steel	2 Polyester, 1 Polyamide, 2 Steel
Load Index / Speed Symbol	104H	104H
Tire Material	Polyester, Polyamide, Steel	Polyester, Polyamide, Steel
DOT Safety Code Left	B9MB 26XX 2911	B9MB 26XX 2911
DOT Safety Code Right	B9MB 26XX 2911	B9MB 26XX 2911

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

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	607.5	454.5		643.5	537.0	
Right	kg	579.0	438.0		595.5	538.0	
Ratio	%	57.1%	42.9%	100.0%	53.5%	46.5%	100.0%
Total	kg	1186.5	892.5	2079.0	1239.0	1075.0	2314.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2079.0	A
Weight of 1 P572E ATD & 1 P572O ATD	kg	141.0	B
Rated Cargo/Luggage Weight (RCLW)	kg	98.8	C
Calculated Vehicle Target Weight (TVTW)	kg	2318.8	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	821	828	846	855	1208
As Tested	mm	813	818	825	835	1308
Post-Test	mm	866	856	831	826	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	2815
Total Vehicle Length at Left Side	mm	4045
Total Vehicle Length at Centerline	mm	4835
Total Vehicle Length at Right Side	mm	4035
Weight of Ballast in Cargo Area	kg	112.7
Weight of Vehicle Components Removed	kg	23.0
Amount of Stoddard Solvent in Fuel Tank	L	73.92

VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

Rear cargo trim and accessories (23.0 kg)

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

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

TARGET VEHICLE STRUCTURAL MEASUREMENTS

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length	4835	4320	-515
2	Total Width	1910	2260	350
3	Bumper Top Height	663	700	37
4	Bumper Bottom Height	530	568	38
5	Longitudinal Member Top Height	620	630	10
6	Distance Between Longitudinal Members	935	1025	90
7	Longitudinal Member Width	60	84	24
8	Engine Top Height	1025	990	-35
9	Engine Bottom Height	229	194	-35
10	Engine and Gearbox Width	560	560	0
11	Front Bumper to Engine Distance	540	300	-240
12	Front Shock Absorber Fixing Height	1045	1033	-12
13	Bonnet Leading Edge Height	897	1047	150
14	Front Shock Absorber Fixing Width	1265	1190	-75
15	Front Bumper to Front Axle Distance	1017	485	-532
16	Front Axle to A-Pillar Distance	563	515	-48
17	A-Pillar to B-Pillar Distance	943	945	2
18	B-Pillar to Rear Axle Distance	1214	1190	-24
19	B-Pillar to C-Pillar Distance	873	873	0
20	Roof Sill Bottom Height	1476	1505	29
21	Roof Sill Top Height	1610	1635	25
22	Floor Sill Bottom Height	280	297	17
23	Floor Sill Top Height	393	415	22

All measurements in millimeters.

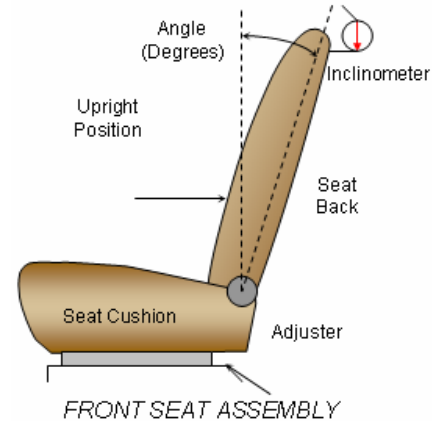
DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle:	2012 Cadillac SRX AWD 5-Door MPV	NHTSA No.:	MC0115
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	11/28/11

NOMINAL DESIGN RIDING POSITION

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

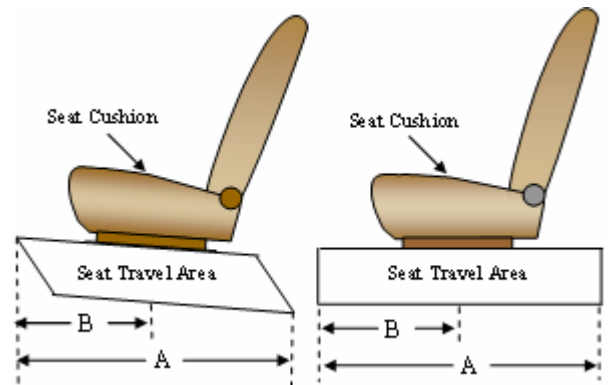


SEAT BACK ANGLE

Seating Position	Degrees
Driver Seat Back Angle	13.9
Passenger Seat Back Angle	16.0

SEAT FORE / AFT POSITIONING

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



SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position
Driver Seat	324 mm	162 mm
Passenger Seat	243 mm	0 mm

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 a 5th percentile adult female ATD for the passenger. Position "H" is the uppermost position, followed by position "M1". Position "L" is the lowermost position.

SEAT BELT UPPER ANCHORAGES

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	5	H
Passenger Seat	5	H

DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

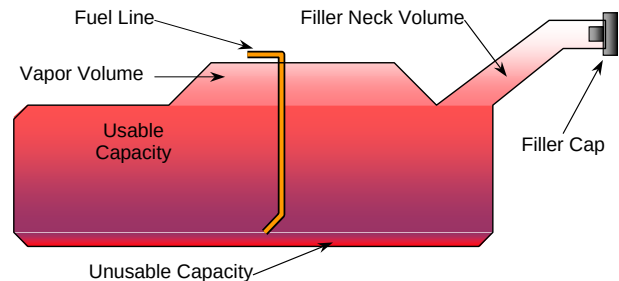
Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	79.49
Usable Capacity of "Optional Tank"	
92 - 94% of Usable Capacity	73.13 to 74.72
Actual Amount of Stoddard Solvent Used	73.92
1/3 of Usable Capacity	26.50

FUEL PUMP

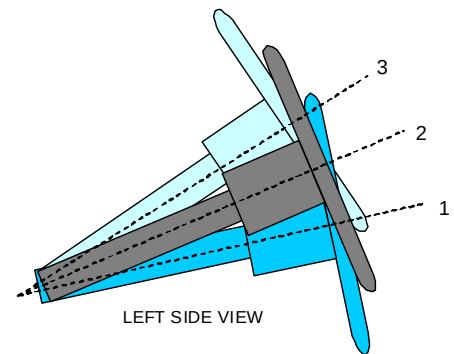
The vehicle is equipped with an electric fuel pump. The fuel pump will operate for a short duration when the ignition is turned to the "on" position and will continuously operate when the engine is running.



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	20.4	0
Geometric Center Position, No. 2	21.9	24
Uppermost Position, No. 3	23.4	48
Telescoping Steering Wheel Travel		48
Test Position	21.9	24

DATA SHEET NO. 3

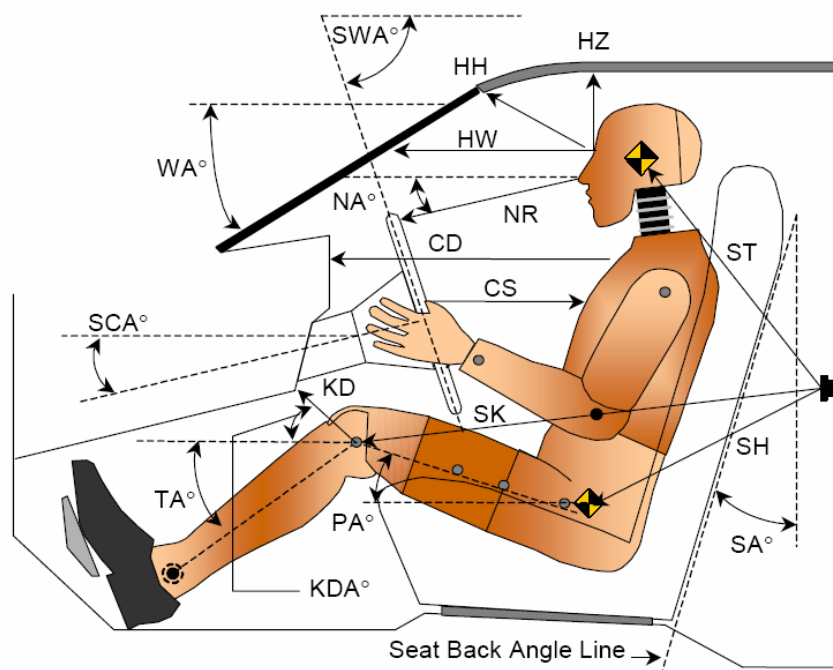
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV

NHTSA No.: MC0115

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 11/28/11



LEFT SIDE VIEW

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		25.6		
SWA°	Steering Wheel Angle		68.1		
SCA°	Steering Column Angle		21.9		
SA°	Seat Back Angle (On Headrest Post)		13.9		16.0
HZ	Head to Roof	220	90.0	255	90.0
HH	Head to Header	415	23.4	357	36.3
HW	Head to Windshield	759	0.0	729	0.0
NR	Nose to Rim	422	5.0	520	31.8
CD	Chest to Dash	570	13.5	450	9.7
CS	Chest to Steering Hub	339	0.0		
RA	Rim to Abdomen	227	0.0		
KDL	Left Knee to Dash	197	34.3	106	46.0
KDR	Right Knee to Dash	175	23.2	127	36.0
PA°	Pelvic Angle		23.9		20.8
TA°	Tibia Angle		42.5		65.3
SK	Striker to Knee	562	1.8	629	4.1
ST	Striker to Head	552	88.1	505	73.6
SH	Striker to H-Point	190	32.9	319	14.8

DATA SHEET NO. 4

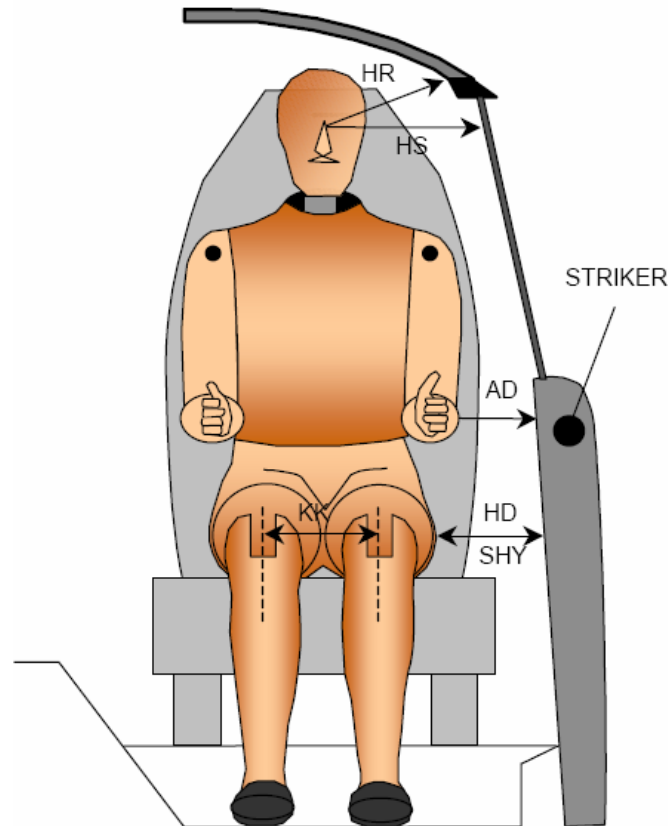
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV

NHTSA No.: MC0115

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 11/28/11



Code	Description	Driver (mm)	Passenger (mm)
AD	Arm to Door	144	110
HD	H-Point to Door	151	189
HR	Head to Side Header	230	248
HS	Head to Side Window	333	348
KK	Knee to Knee	335	230
SHY	Striker to H-Point (Y-Direction)	255	298
AA	Ankle to Ankle	305	188

DATA SHEET NO. 5

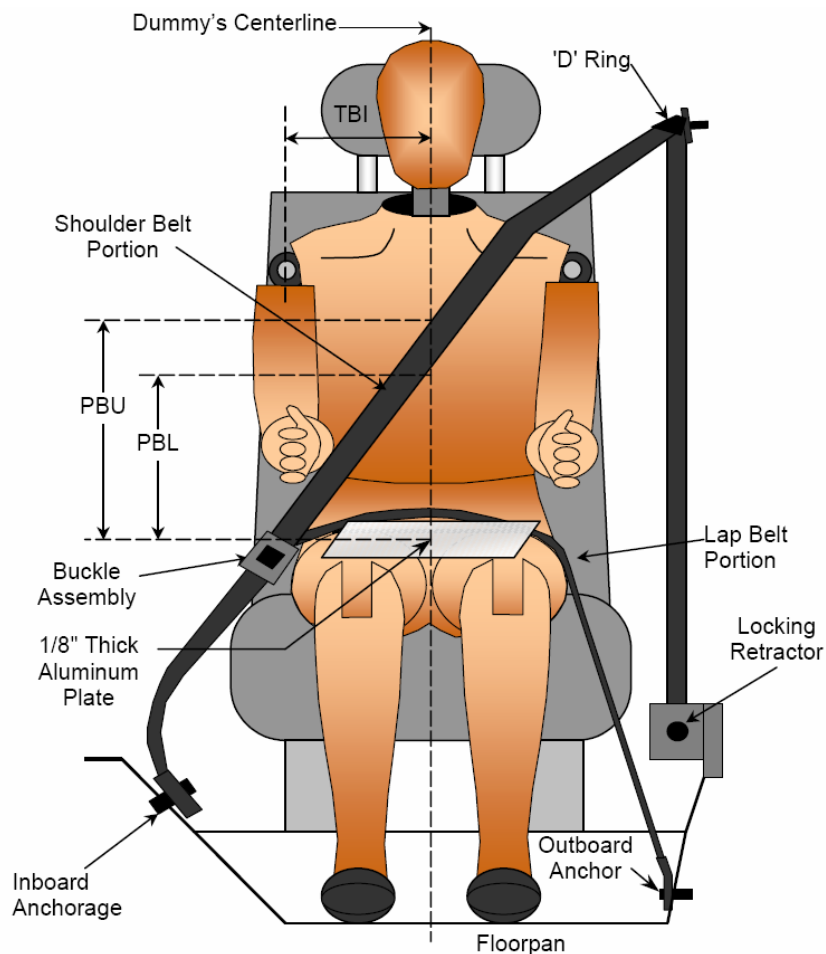
SEAT BELT POSITIONING DATA

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV

NHTSA No.: MC0115

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 11/28/11



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	315
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	290	204

BELT LENGTH DATA

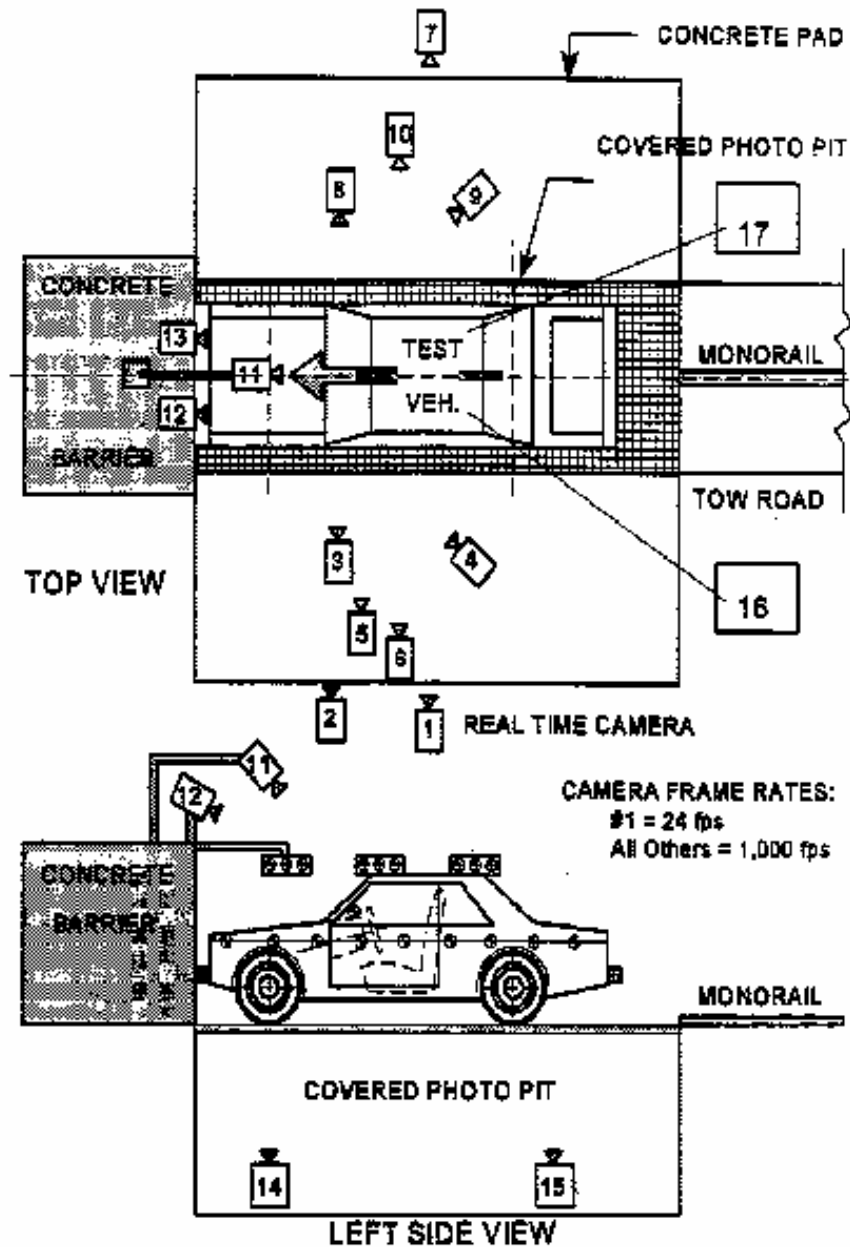
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	820	880
Lap Belt Length as Measured on ATD	mm	480	488
Remainder of Belt on Reel	mm	884	812
Total Belt Length for Continuous Webbing Systems	mm	2184	2180

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET NO. 6 ... (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

CAMERA LOCATIONS

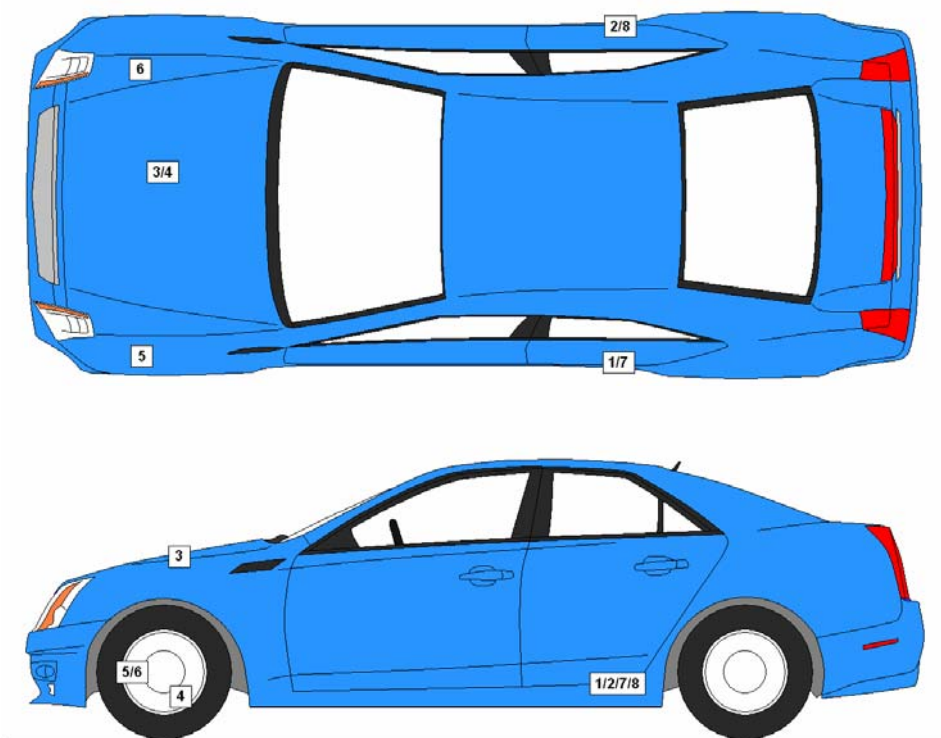
No.	Description	Location (mm)			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Real-Time Left Overall	-11412	-8150	-1484		30
2	Driver Close-Up	-2590	-7950	-1371	24	1000
3	Left Front Half	-1701	-6197	-1701	50	1000
4	Left Angle	-6696	-10308	-3211	ZOOM	1000
5	Steering Column - Top	-1966	-10412	-3688	50	1000
6	Steering Column - Bottom	-1972	-10412	-3379	50	1000
7	Right Overall	-2336	7569	-1012	24	1000
8	Passenger Close-Up	-1733	7581	-1408	50	1000
9	Right Front Half	-1600	8214	-1811	ZOOM	1000
10	Right Angle	-6217	9516	-4830	ZOOM	1000
11	Windshield	-354	0	-5749	12	1000
12	Driver Windshield	297	-366	-2460	12	1000
13	Passenger Windshield	297	366	-2460	24	1000
14	Pit Front	-756	0	1495	12	1000
15	Pit Rear	-3398	0	1495	8	1000
16	Onboard Driver Airbag	-1110	380	-1520		
17	Onboard Passenger Airbag (Optional)	-1110	-380	-1520		
18	Real-Time Left View of Impact (Optional)					
19	Real-Time Right View of Impact					

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

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Description	Location		
		X	Y	Z
1	Left Rear Accelerometer X-Direction	1975	-720	-465
2	Right Rear Accelerometer X-Direction	1975	720	-465
3	Engine Top X	4303	160	-1025
4	Engine Bottom X	4303	182	-229
5	Left Brake Caliper X	3955	-765	-380
6	Right Brake Caliper X	3955	765	-380
7	Left Rear Accelerometer Z-Direction	1975	-720	-465
8	Right Rear Accelerometer Z-Direction	1975	720	-465

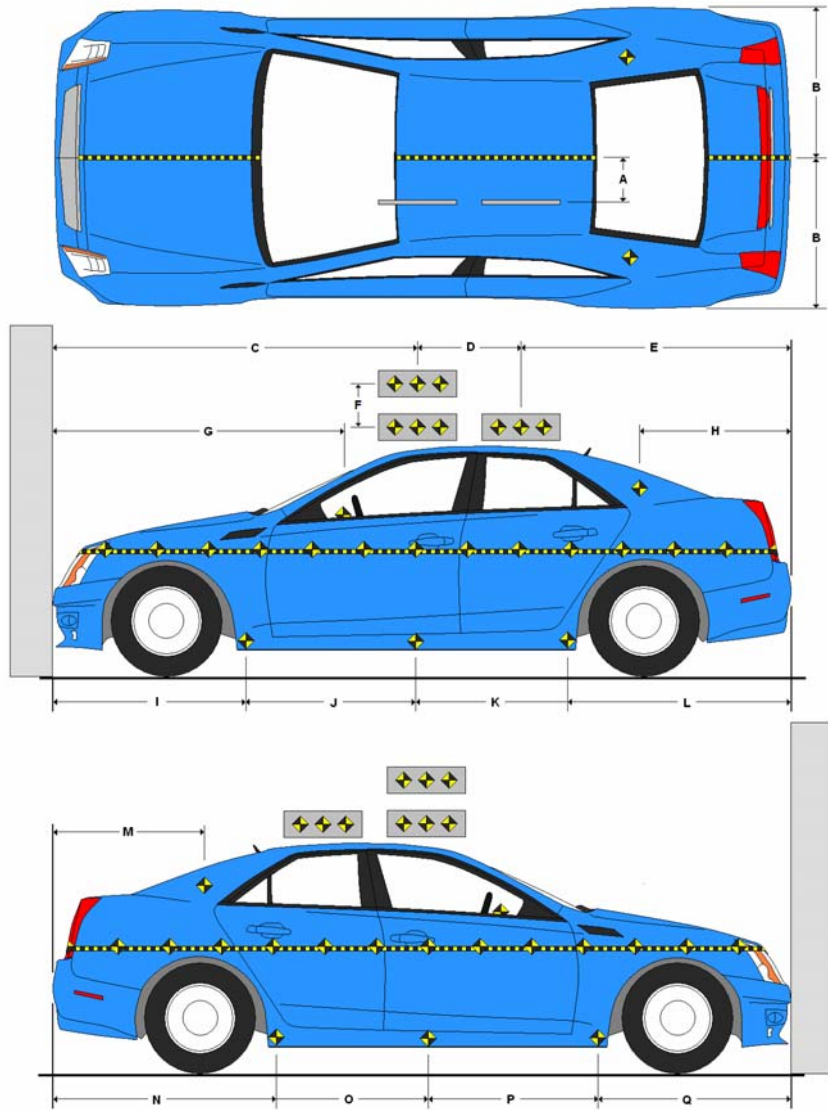
Reference Points: X – Rear Surface of Vehicle (+ forward)
Y – Vehicle Centerline (+ to right)
Z – Ground Plane (+ down)

DATA SHEET NO. 8

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

Item	Value
A	
B	955
C	2440
D	610
E	1801
F	305
G	1870
H	860
I	1532
J	891
K	891
L	1527
M	788
N	1483
O	905
P	905
Q	1535



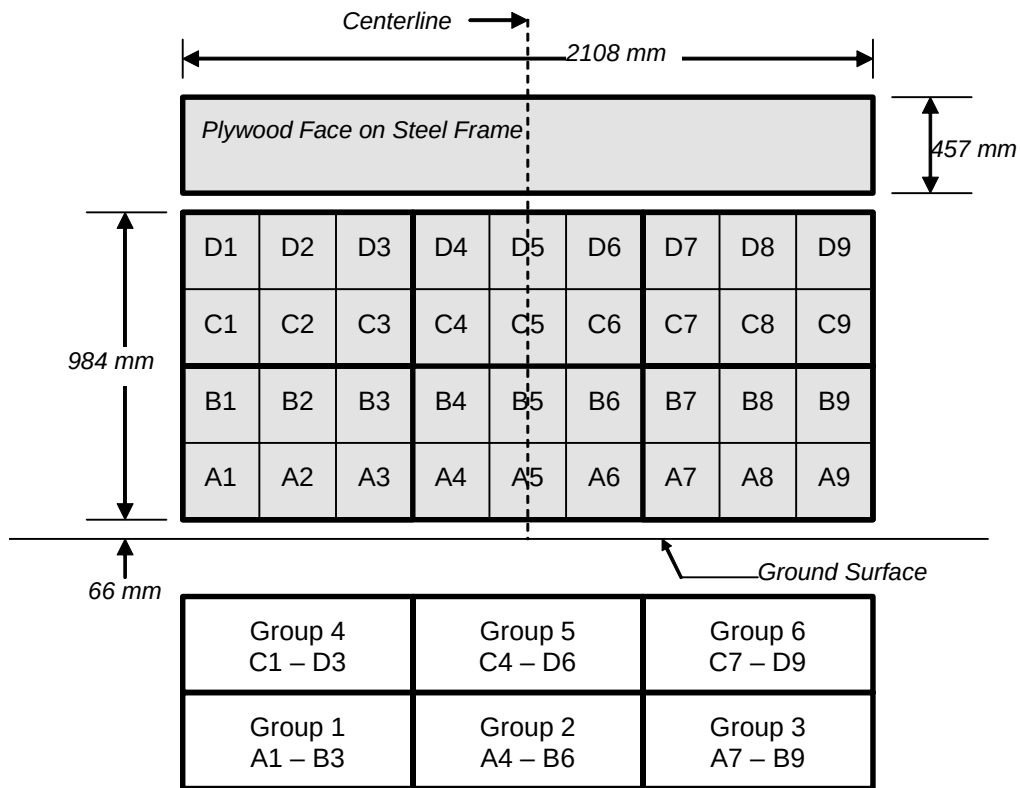
All measurements in millimeters.

DATA SHEET NO. 9

LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

36 Load Cell Rigid Barrier (NHTSA Standard) Load Cell Locations on Fixed Barrier



6 Groups of 6 Load Cells Each

DATA SHEET NO. 10

TEST VEHICLE CAMERA AND INSTRUMENTATION SUMMARY

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

INSTRUMENTATION

Driver Dummy Accelerometers	44
Passenger Dummy Accelerometers	44
Vehicle Structure Accelerometers	8
Seat Belt Load Cells	4
Load Cell Barrier	36
Total	136

CAMERA COVERAGE

High-Speed Vehicle On Board	0
High-Speed Off board	14
Real Time	3
Total	17

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

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

TEST DUMMY INFORMATION AND CONTACT

Description	Driver	Passenger
Dummy Type/Serial No.	P572E 50th Percentile Male ATD / 035	P572O 5th Percentile Female ATD / 635
Head Contact	Airbag, Headrest	Airbag, Headrest
Upper Torso Contact	Airbag	Airbag
Lower Torso Contact	None	None
Left Knee Contact	Knee Bolster	Glovebox
Right Knee Contact	Knee Bolster	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)	12	16
Seat Back Failure	None	None
Glazing Damage	None	None

POST TEST STRUCTURAL OBSERVATIONS

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

VEHICLE REBOUND FROM BARRIER

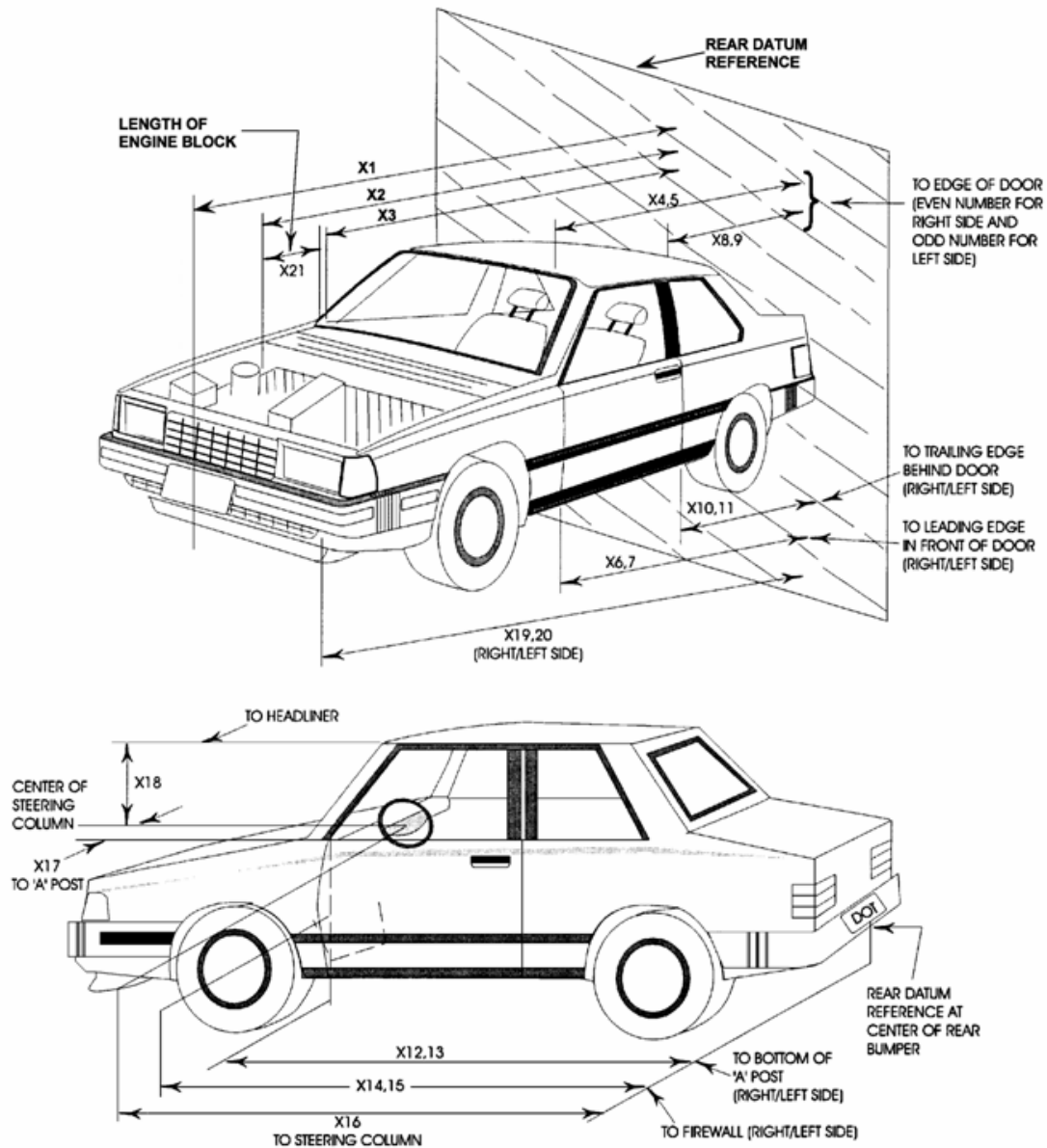
Measured Parameter	Units	Value
Left Side	mm	1377
Center	mm	1287
Right Side	mm	1329
Average	mm	1331

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

DATA SHEET NO. 12
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

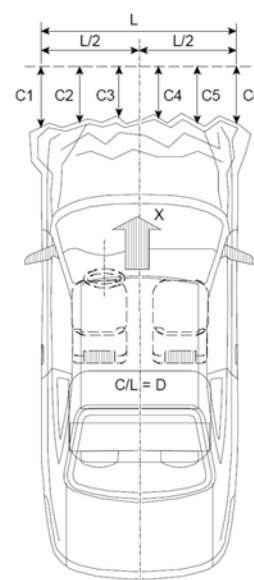


DATA SHEET NO. 12 ... (CONTINUED)**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	4835	4320	-515
2	Rear Surface of Vehicle to Front of Engine	4295	4020	-275
3	RSOV to Firewall	3765	3675	-90
4	RSOV to Upper Leading Edge of Right Door	3280	3273	-7
5	RSOV to Upper Leading Edge of Left Door	3286	3265	-21
6	RSOV to Lower Leading Edge of Right Door	3274	3268	-6
7	RSOV to Lower Leading Edge of Left Door	3274	3263	-11
8	RSOV to Upper Trailing Edge of Right Door	2197	2192	-5
9	RSOV to Upper Trailing Edge of Left Door	2208	2183	-25
10	RSOV to Lower Trailing Edge of Right Door	2220	2220	0
11	RSOV to Lower Trailing Edge of Left Door	2222	2212	-10
12	RSOV to Bottom of A-Pillar, Right Side	3216	3216	0
13	RSOV to Bottom of A-Pillar, Left Side	3216	3198	-18
14	RSOV to Firewall, Right Side	3743	3665	-78
15	RSOV to Firewall, Left Side	3743	3660	-83
16	RSOV to Steering Column	2785	2832	47
17	Center of Steering Column to A-Pillar	425	440	15
18	Center of Steering Column to Headliner	435	440	5
19	RSOV to Right Side of Front Bumper	4035	3973	-62
20	RSOV to Left Side of Front Bumper	4045	3918	-127
21	Length of Engine Block	635	635	0
RD	RSOV to Right Side of Dash Panel	2967	2970	3
CD	RSOV to Center of Dash Panel	2887	2914	27
LD	RSOV to Left Side of Dash Panel	2990	2963	-27

All measurements in millimeters.

DATA SHEET NO. 13**ACCIDENT INVESTIGATION DATA**Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPVNHTSA No.: MC0115Test Program: 56 km/h Frontal Impact NCAP TestTest Date: 11/28/11**VEHICLE INFORMATION**VIN: 3GYFNDE3XCS505461Wheelbase (mm): 2815Vehicle Size Category: 5-Door MPVTest Weight (kg): 2314.0**ACCELEROMETER DATA**Accelerometer Locations: Left Rear CrossmemberCal. Procedure/Interval: Drop Test / 6 monthsIntegration Algorithm: NHTSA StandardImpact Velocity (km/h): 56.27Velocity Change (km/h): 64.8Time of Separation (msec): 67.1Linearity: Good**CRUSH PROFILE**Collision Deformation Classification: 12FDEW2Midpoint of Damage: Vehicle CenterlineDamage Region Length (mm): 1412Impact Mode: Full Frontal

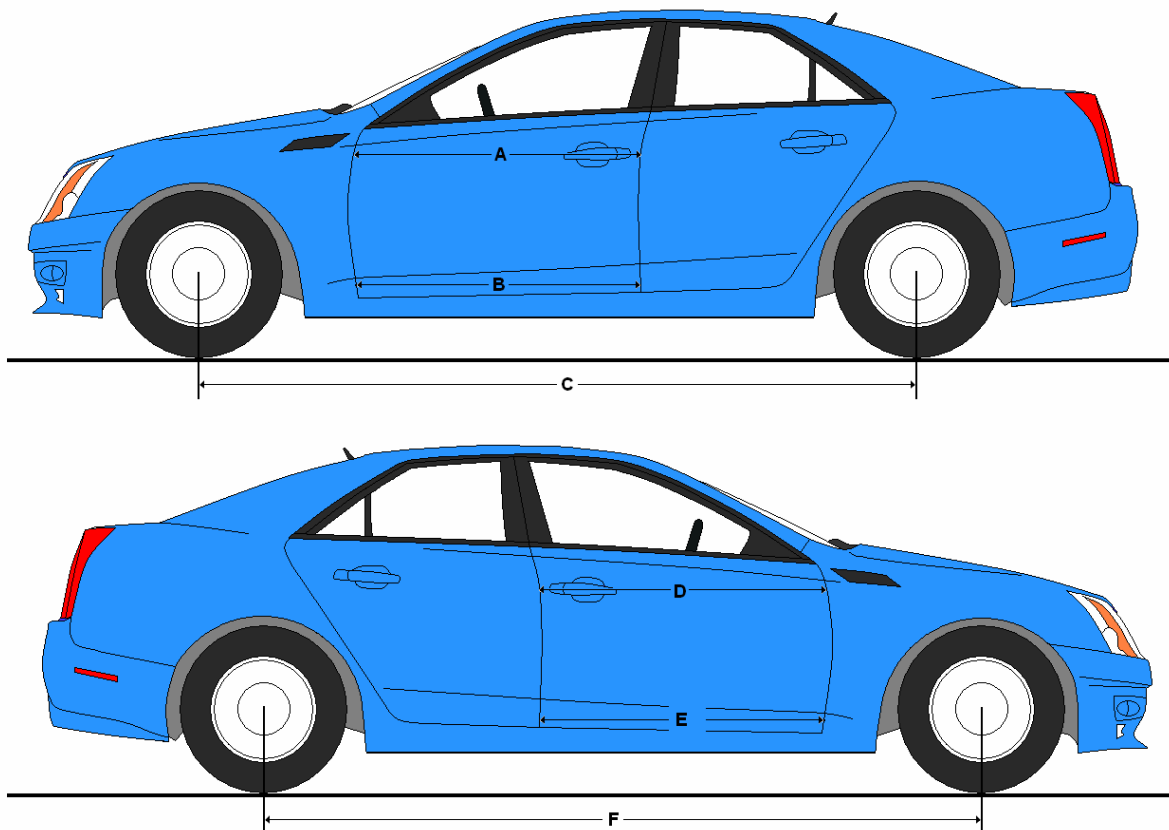
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	262	600	338
C2	Crush Zone 2 at Left Side	mm	95	555	460
C3	Crush Zone 3 at Left Side	mm	30	533	503
C4	Crush Zone 4 at Right Side	mm	30	531	501
C5	Crush Zone 5 at Right Side	mm	95	553	458
C6	Crush Zone 6 at Right Side	mm	262	591	329
L	C1 to C6	mm	1412		

DATA SHEET NO. 14**VEHICLE INTRUSION MEASUREMENTS**Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPVNHTSA No.: MC0115Test Program: 56 km/h Frontal Impact NCAP TestTest Date: 11/28/11**DOOR OPENING WIDTH**

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	943	945	-2
B	Left Side Lower	mm	914	916	-2
D	Right Side Upper	mm	944	944	0
E	Right Side Lower	mm	920	919	1

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2815	2763	52
F	Right Side Wheelbase	mm	2815	2782	33



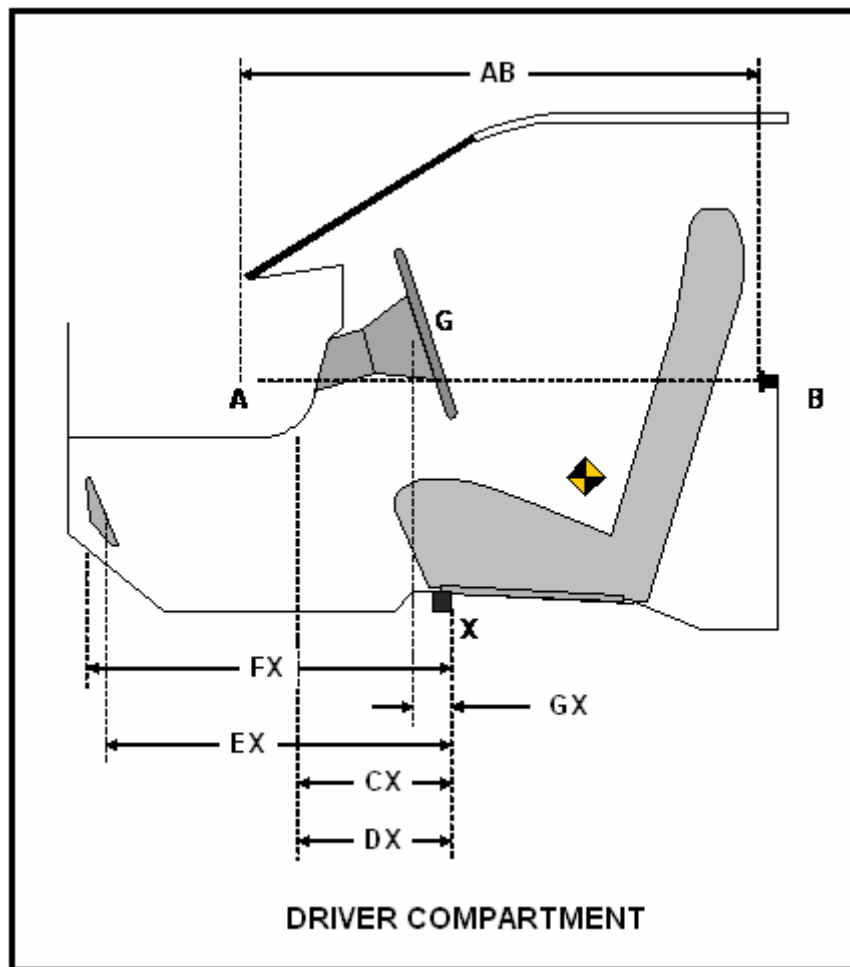
DATA SHEET NO. 14 ... (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

DRIVER COMPARTMENT INTRUSION

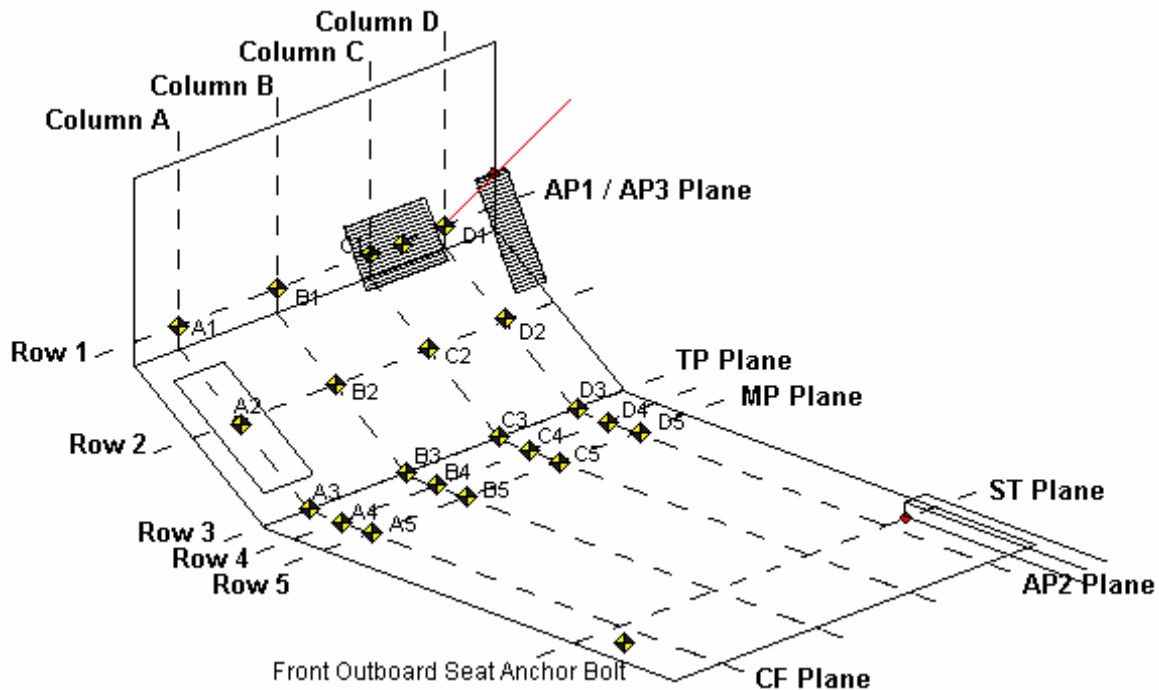
Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	817	734	83
CX	Left Knee Bolster to X	mm	220	250	-30
DX	Right Knee Bolster to X	mm	300	245	55
EX	Brake Pedal to X	mm	515	480	35
FX	Foot Rest to X	mm	520	606	-86
GX	Center of Steering Wheel Hub to X	mm	45	91	-46

X = Front of Seat Track (Stationary)



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

Test Vehicle:	2012 Cadillac SRX AWD 5-Door MPV	NHTSA No.:	MC0115
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	11/28/11



AP1: Y-Z Plane passing through D1

AP2: X-Z Plane passing through D1

AP3: X-Y plane passing through D1

MP: Y-Z plane, halfway between the ST plane and AP1 plane

CF Plane: X-Z plane passes through center of footrest.

BP Plane: X-Z plane passes through center of brake pedal

TP Plane: Y-Z plane, intersection of BP Plane and the intersection of the toe pan and floorboard

Column A: intersection of vehicle and CF plane

Column D: Intersection of vehicle and AP2 plane

Row 1: intersection of the vehicle and the AP3 Plane

Row 3: intersection of the vehicle and TP plane

Row 5: intersection of the vehicle and MP plane

Row 2: evenly spaced between row 1 and 3

Row 4: evenly spaced between row 3 and 5

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

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

DRIVER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	668	685	686	701	655	672	667	672	13	13	19	29
2	582	580	583	604	570	567	566	587	12	13	17	17
3	473	465	464	474	461	455	452	458	12	10	12	16
4	392	388	387	391	381	376	376	374	11	12	11	17
5	318	314	309	301	306	302	297	288	12	12	12	13

DRIVER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-85	-165	-252	-386	-89	-174	-260	-393	4	9	8	7
2	-78	-161	-246	-381	-85	-169	-253	-386	7	8	7	5
3	-67	-156	-242	-378	-75	-165	-248	-381	8	9	6	3
4	-62	-157	-241	-375	-68	-163	-247	-380	6	6	6	5
5	-58	-150	-237	-373	-65	-156	-242	-380	7	6	5	7

DRIVER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	21	1	-4	-30	21	4	-2	-25	0	-3	-2	-5
2	-77	-79	-80	-113	-78	-81	-80	-115	1	2	0	2
3	-150	-128	-129	-153	-151	-129	-130	-156	1	1	1	3
4	-153	-134	-133	-157	-154	-134	-133	-157	1	0	0	0
5	-153	-133	-133	-135	-153	-132	-131	-130	0	-1	-2	-5

All measurements in millimeters

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

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

PASSENGER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	701	687	690	667	687	665	669	654	14	22	21	13
2	598	581	583	584	592	572	575	573	6	9	8	11
3	459	462	463	471	455	459	458	467	4	3	5	4
4	385	384	390	387	381	380	385	383	4	4	5	4
5	307	309	312	310	304	306	307	306	3	3	5	4

PASSENGER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	393	257	168	75	375	248	158	61	18	9	10	14
2	390	257	163	70	374	242	149	58	16	15	14	12
3	388	250	161	65	373	235	145	51	15	15	16	14
4	385	248	161	66	370	232	145	51	15	16	16	15
5	386	247	159	64	370	231	144	48	16	16	15	16

PASSENGER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-35	-12	-7	14	-5	26	33	52	-30	-38	-40	-38
2	-121	-87	-88	-87	-96	-62	-62	-54	-25	-25	-26	-33
3	-161	-135	-135	-158	-142	-113	-112	-131	-19	-22	-23	-27
4	-162	-138	-139	-160	-139	-114	-115	-134	-23	-24	-24	-26
5	-137	-136	-135	-156	-110	-111	-111	-129	-27	-25	-24	-27

All measurements in millimeters

DATA SHEET NO. 15

SUMMARY OF FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

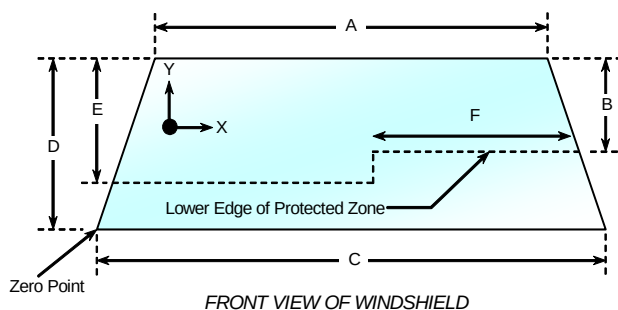
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with plastic and rubber molding sealed with rubber cement.

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: 21.4° C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2265	2265	100.0%
Right Side	2265	2265	100.0%
Total	4530	4530	100.0%



Item	Units	Value
A	mm	1210
B	mm	404
C	mm	1480
D	mm	920
E	mm	535
F	mm	500

AREAS OF PROTECTED ZONE FAILURES

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

X	Y

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

X	Y

DATA SHEET NO. 15 ... (CONTINUED)

SUMMARY OF FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 18.9° C Test Time: 12:55 PM

Stoddard Solvent Spillage Measurements

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

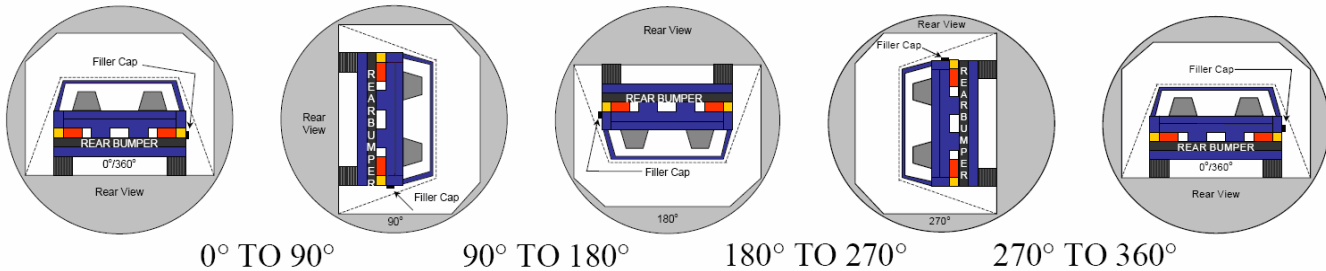
DATA SHEET NO. 16
FMVSS 301 STATIC ROLLOVER

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV

NHTSA No.: MC0115

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 11/28/11



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°	82	300	382
90° To 180°	84	300	384
180° To 270°	78	300	378
270° To 360°	79	300	379

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			

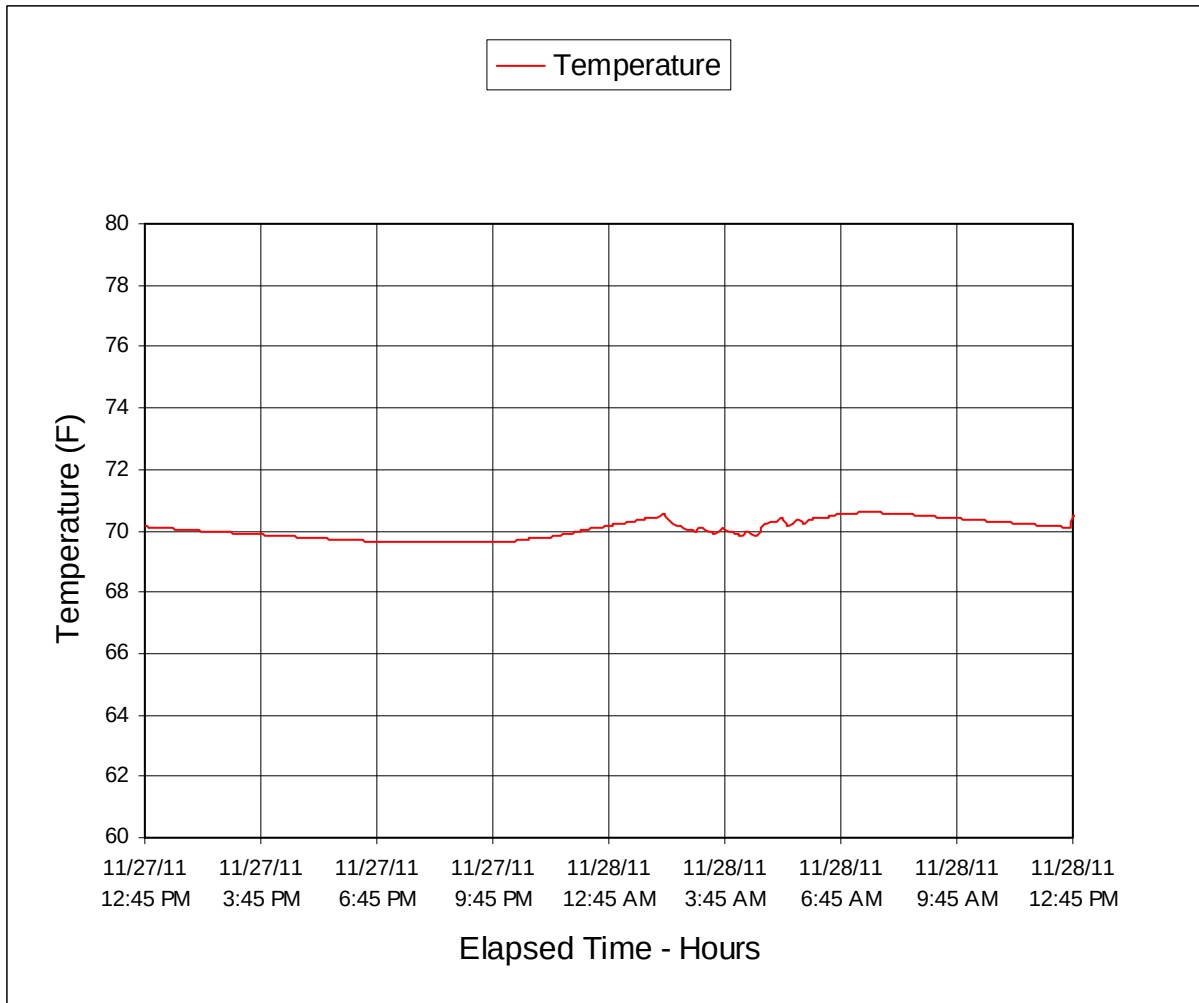
SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° To 90°	N/A
90° To 180°	N/A
180° To 270°	N/A
270° To 360°	N/A

DATA SHEET NO. 17

DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV NHTSA No.: MC0115
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 11/28/11



APPENDIX A
PHOTOGRAPHS

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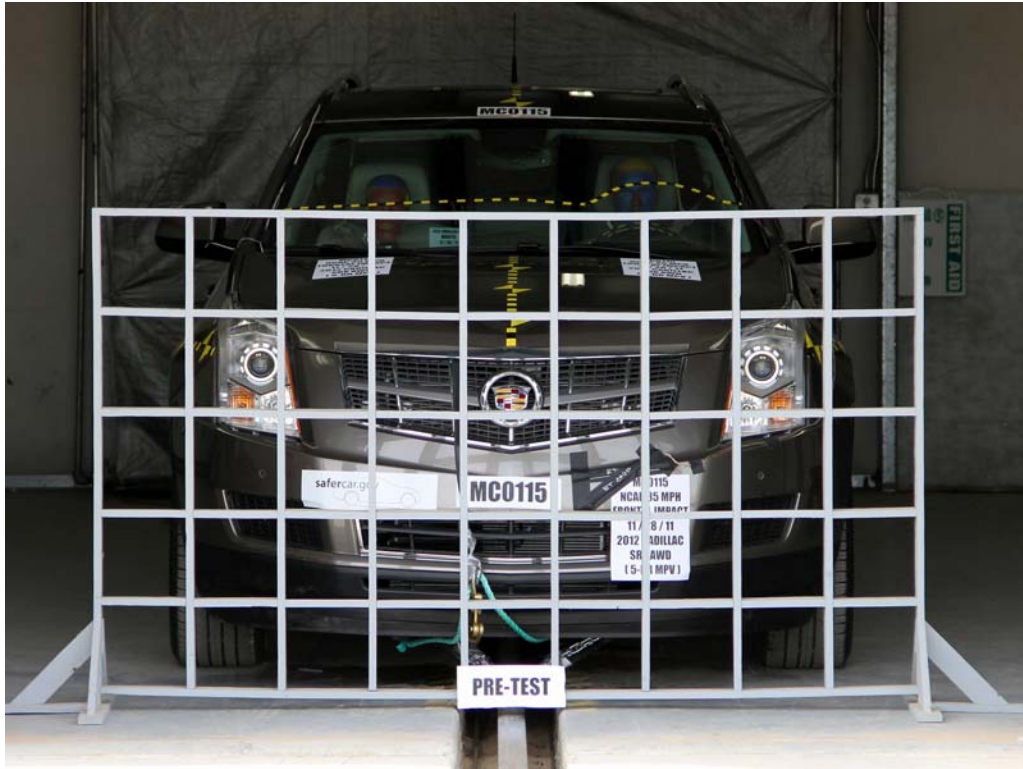


FIGURE 1. Load Cell Location



FIGURE 2. Load Cell Wall



FIGURE 3. Manufacturer's Label

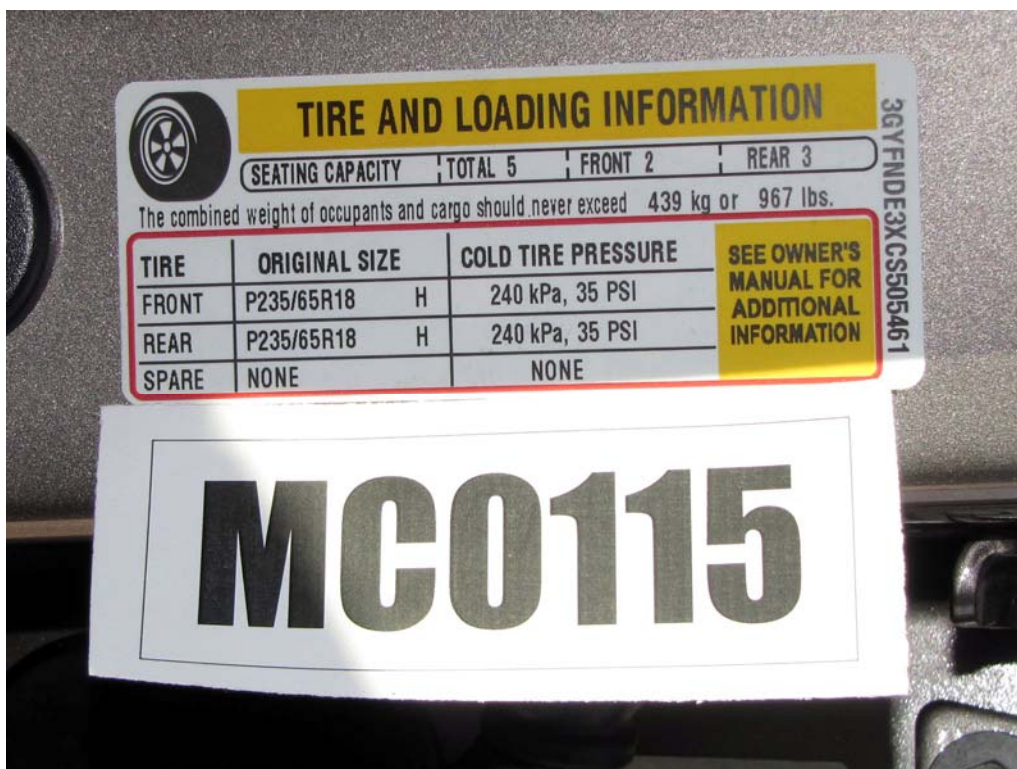


FIGURE 4. Tire Placard



FIGURE 5. 2012 Cadillac SRX AWD Frontal as Delivered



FIGURE 6. Left Rear $\frac{3}{4}$ View, As Received



FIGURE 7. Pre-Test Front View of Test Vehicle

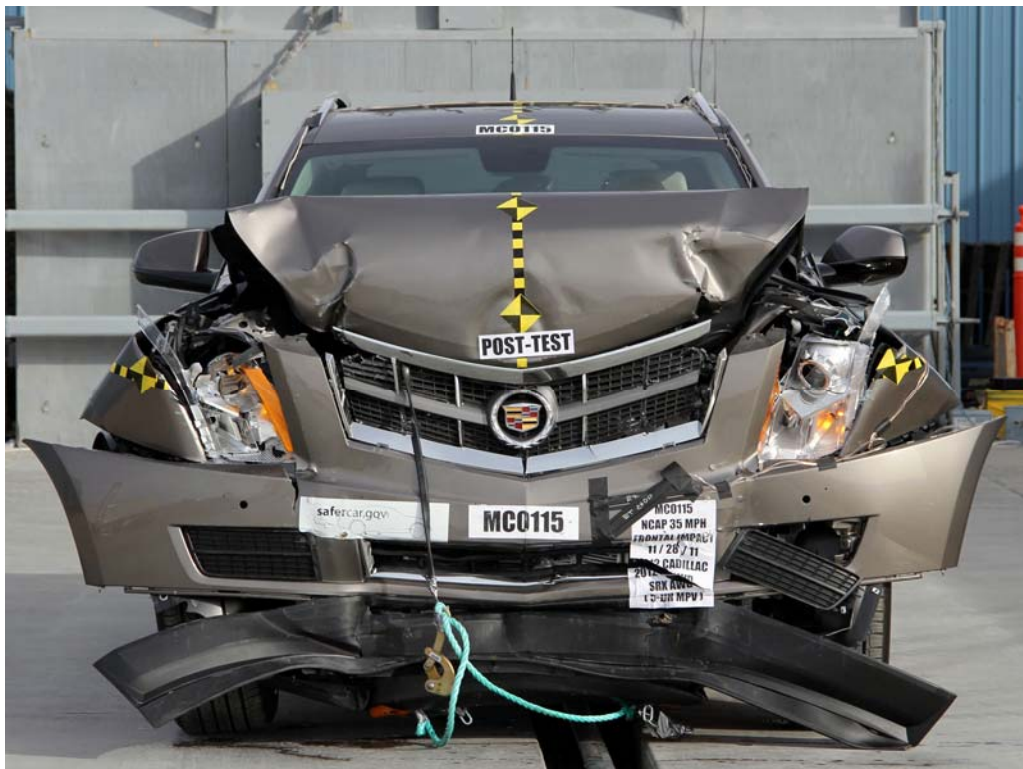


FIGURE 8. Post-Test Front View of Test Vehicle



FIGURE 9. Pre-Test Left View of Test Vehicle



FIGURE 10. Post-Test Left View of Test Vehicle



FIGURE 11. Pre-Test Right View of Test Vehicle



FIGURE 12. Post-Test Right View of Test Vehicle



FIGURE 13. Pre-Test Right Front $\frac{3}{4}$ View



FIGURE 14. Post-Test Right Front $\frac{3}{4}$ View



FIGURE 15. Pre-Test Left Rear $\frac{3}{4}$ View



FIGURE 16. Post-Test Left Rear $\frac{3}{4}$ View

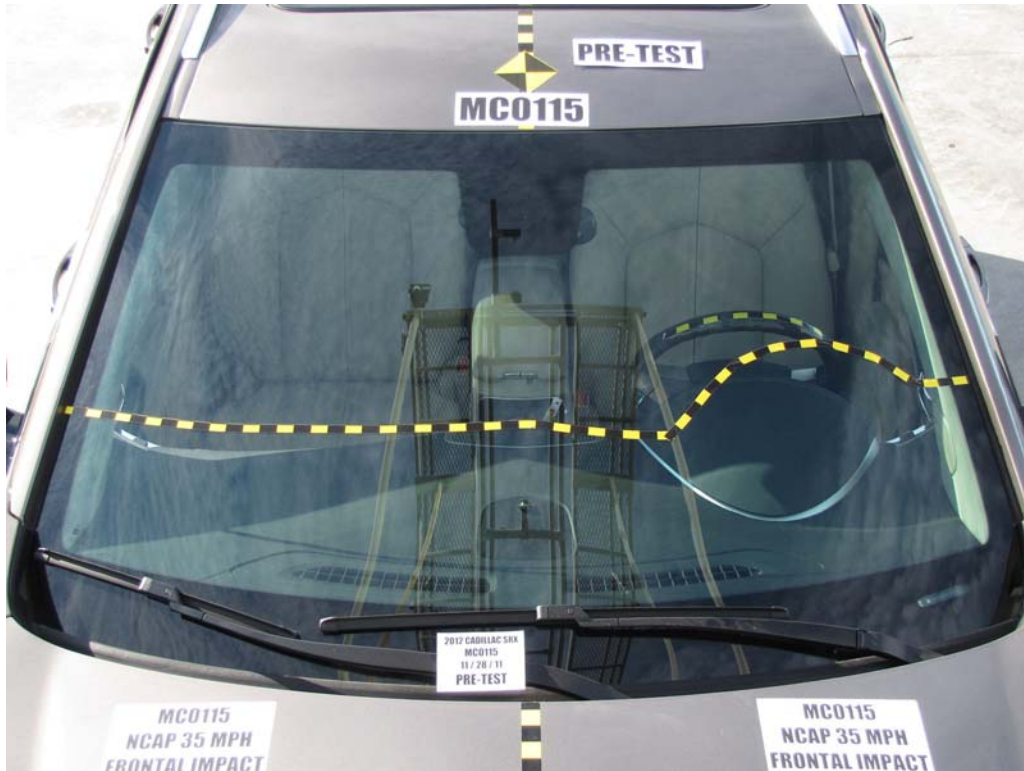


FIGURE 17. Pre-Test Windshield View



FIGURE 18. Post-Test Windshield View



FIGURE 19. Pre-Test Engine Compartment View

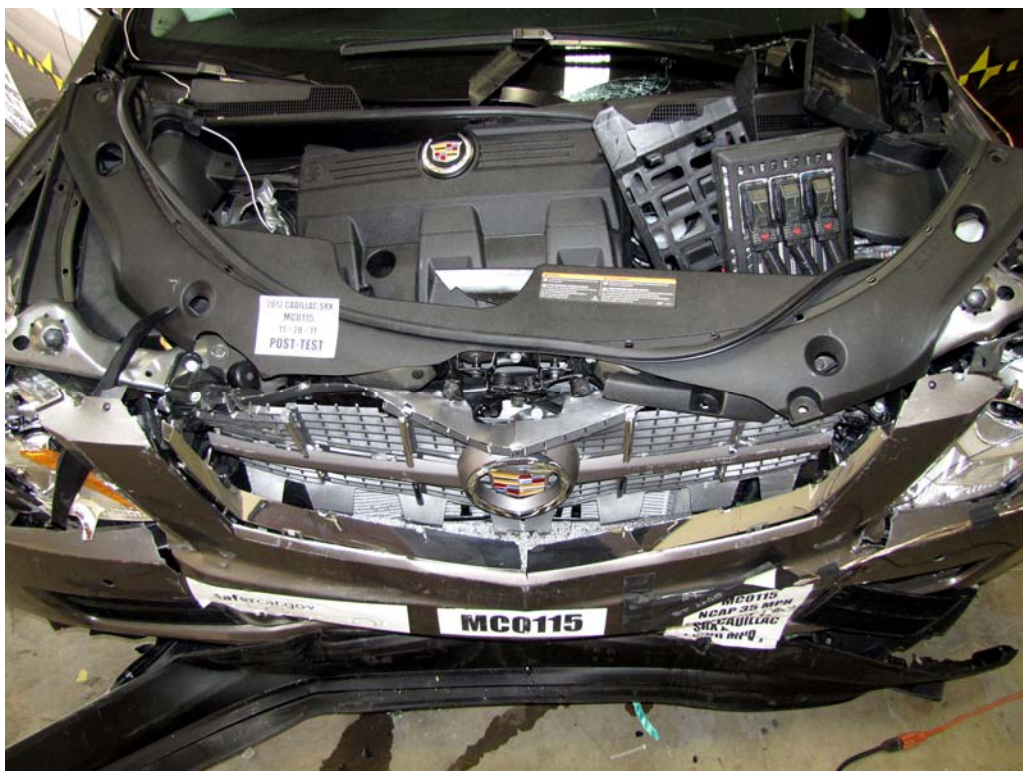


FIGURE 20. Post-Test Engine Compartment View



FIGURE 21. Pre-Test Fuel Filler Cap View



FIGURE 22. Post-Test Fuel Filler Cap View

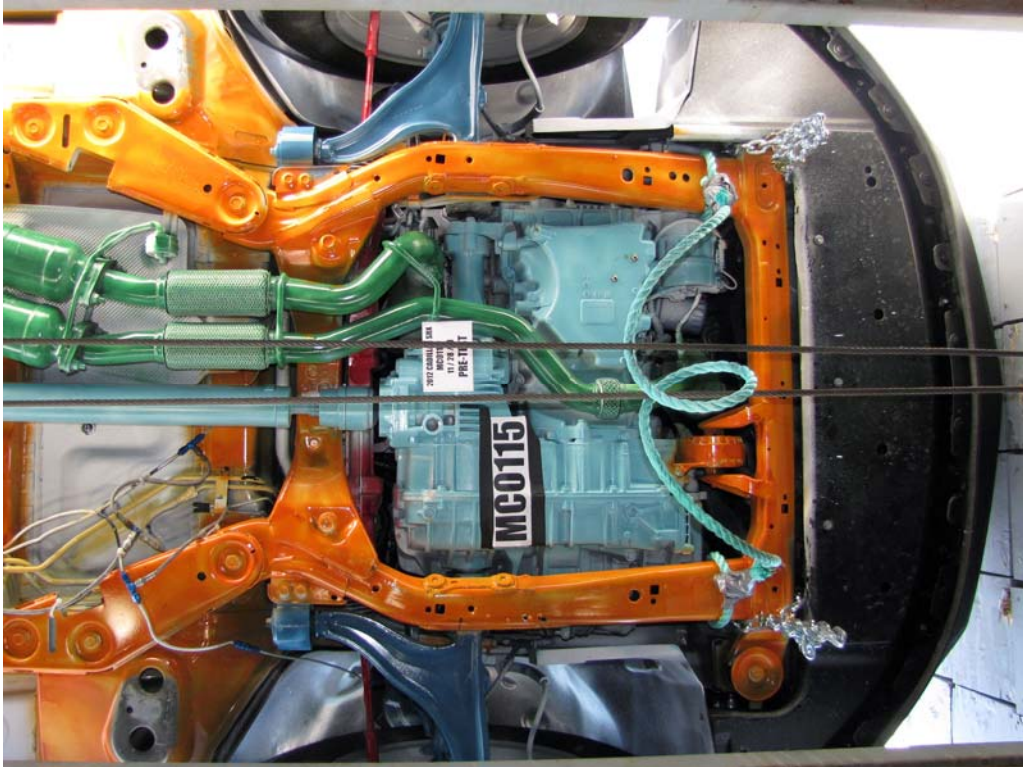


FIGURE 23. Pre-Test Front Underbody View

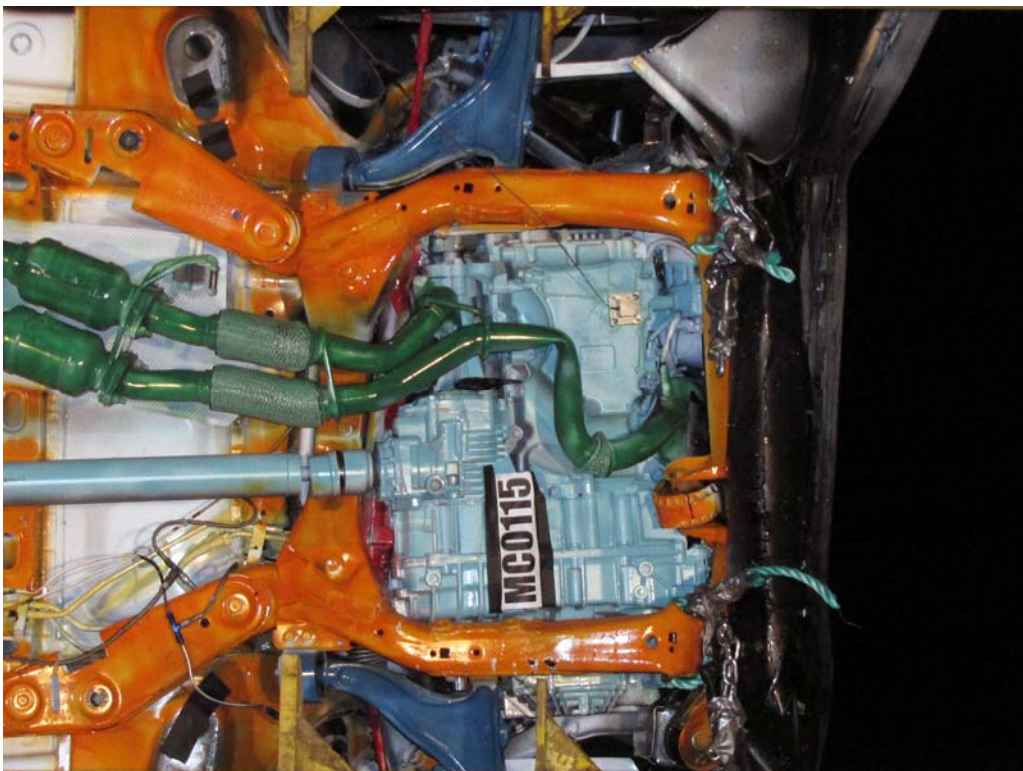


FIGURE 24. Post-Test Front Underbody View

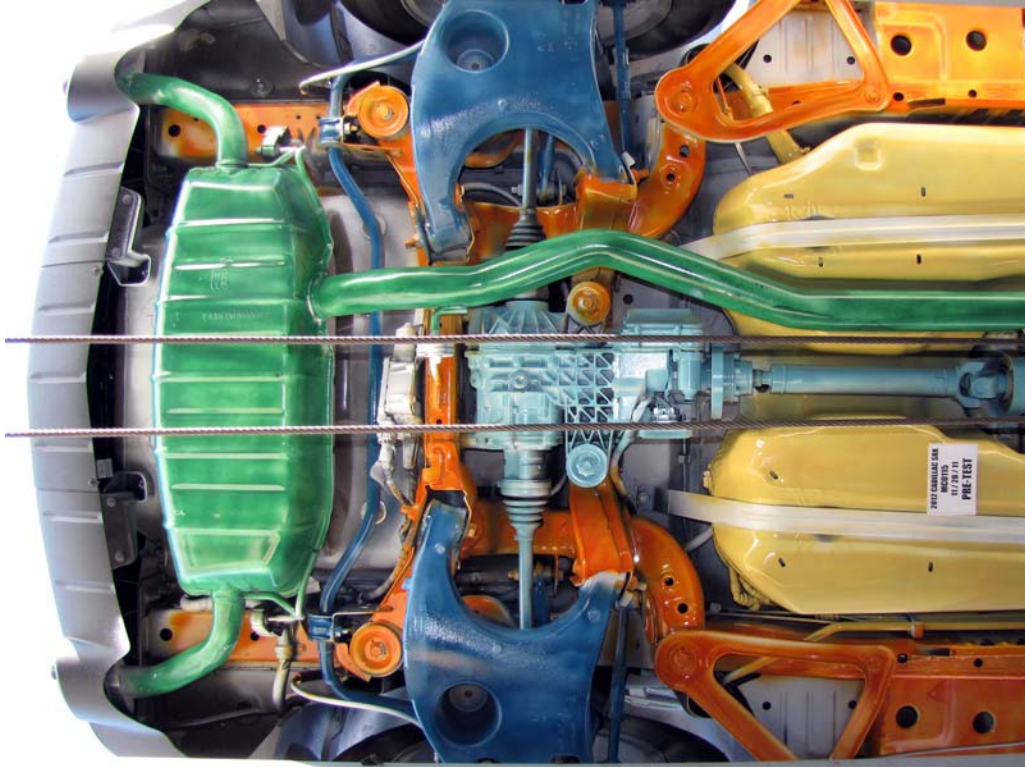


FIGURE 25. Pre-Test Rear Underbody View



FIGURE 26. Post-Test Rear Underbody View



FIGURE 27. Pre-Test Dummy Cable Routing



FIGURE 28. Post-Test Dummy Cable Routing



FIGURE 29. Pre-Test Driver Dummy Front View



FIGURE 30. Post-Test Driver Dummy Front View



FIGURE 31. Pre-Test Driver Dummy Window View



FIGURE 32. Post-Test Driver Dummy Window View



FIGURE 33. Pre-Test Driver Dummy and Vehicle Interior View



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



FIGURE 35. Pre-Test Driver's Seat Fore-Aft Markings



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



FIGURE 37. Pre-Test Driver Dummy Feet



FIGURE 38. Post-Test Driver Dummy Feet



FIGURE 39. Pre-Test Driver's Side Knee Bolster



FIGURE 40. Post-Test Driver's Side Knee Bolster

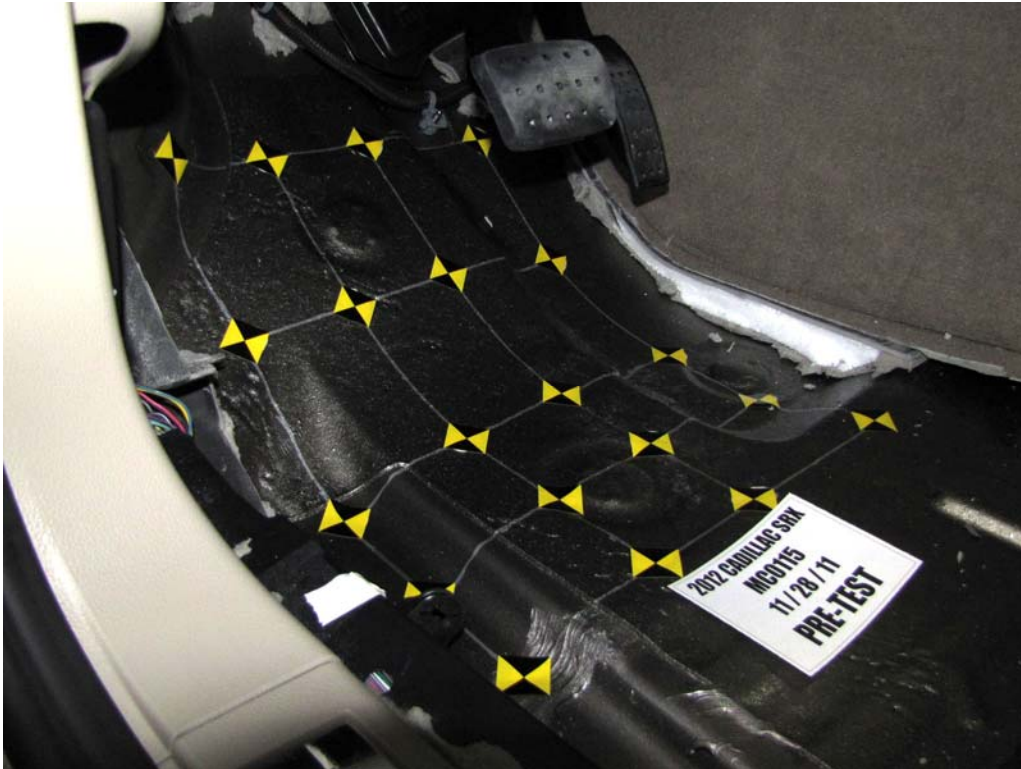


FIGURE 41. Pre-Test Driver's Side Floorpan

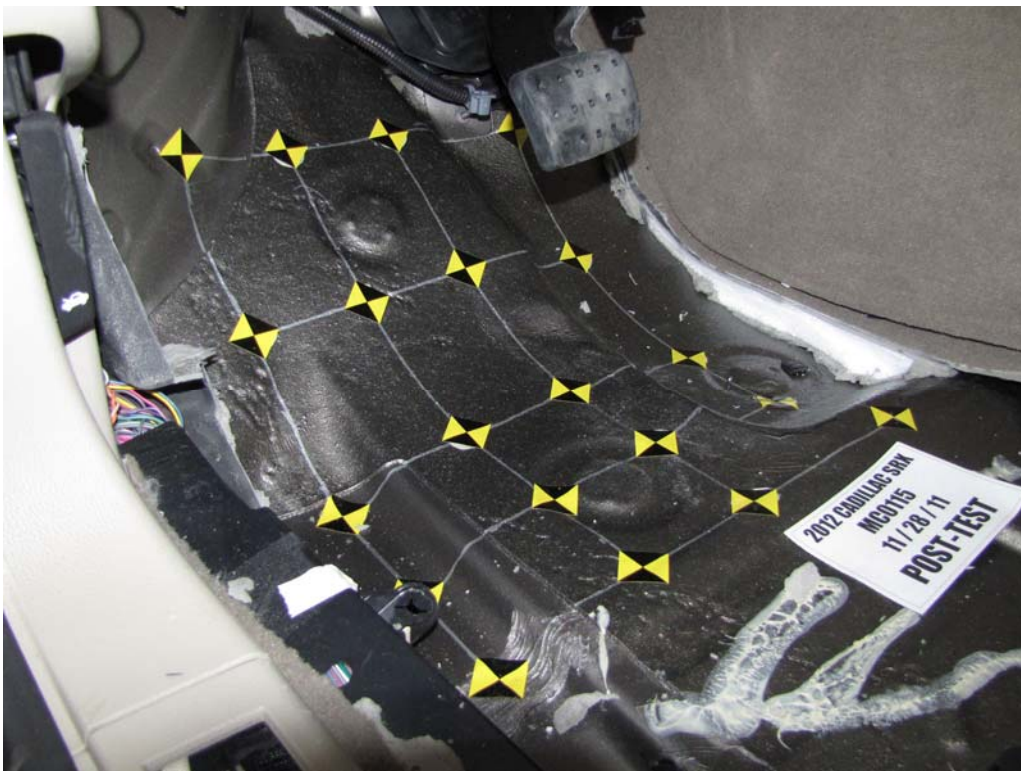


FIGURE 42. Post-Test Driver's Side Floorpan



FIGURE 43. Post-Test Driver Dummy Face



FIGURE 44. Post-Test Driver Dummy Contact With Airbag



FIGURE 45. Post-Test Driver Dummy Contact With Headrest



FIGURE 45a. Post-Test Driver Dummy Contact With Knee Bolster



FIGURE 46. Pre-Test View of the Steering Wheel



FIGURE 47. Post-Test View of the Steering Wheel



FIGURE 48. Pre-Test Passenger Dummy Front View



FIGURE 49. Post-Test Passenger Dummy Front View



FIGURE 50. Pre-Test Passenger Dummy Window View



FIGURE 51. Post-Test Passenger Dummy Window View



FIGURE 52. Pre-Test Passenger Dummy and Vehicle Interior View



FIGURE 53. Post-Test Passenger Dummy and Vehicle Interior View



FIGURE 54. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 55. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 56. Pre-Test Passenger Dummy Feet



FIGURE 57. Post-Test Passenger Dummy Feet



FIGURE 58. Pre-Test Passenger's Side Knee Bolster



FIGURE 59. Post-Test Passenger's Side Knee Bolster



FIGURE 60. Pre-Test Passenger's Side Floorpan



FIGURE 61. Post-Test Passenger's Side Floorpan



FIGURE 62. Post-Test Passenger Dummy Contact With Airbag



FIGURE 62a. Post-Test Passenger Dummy Contact With Headrest

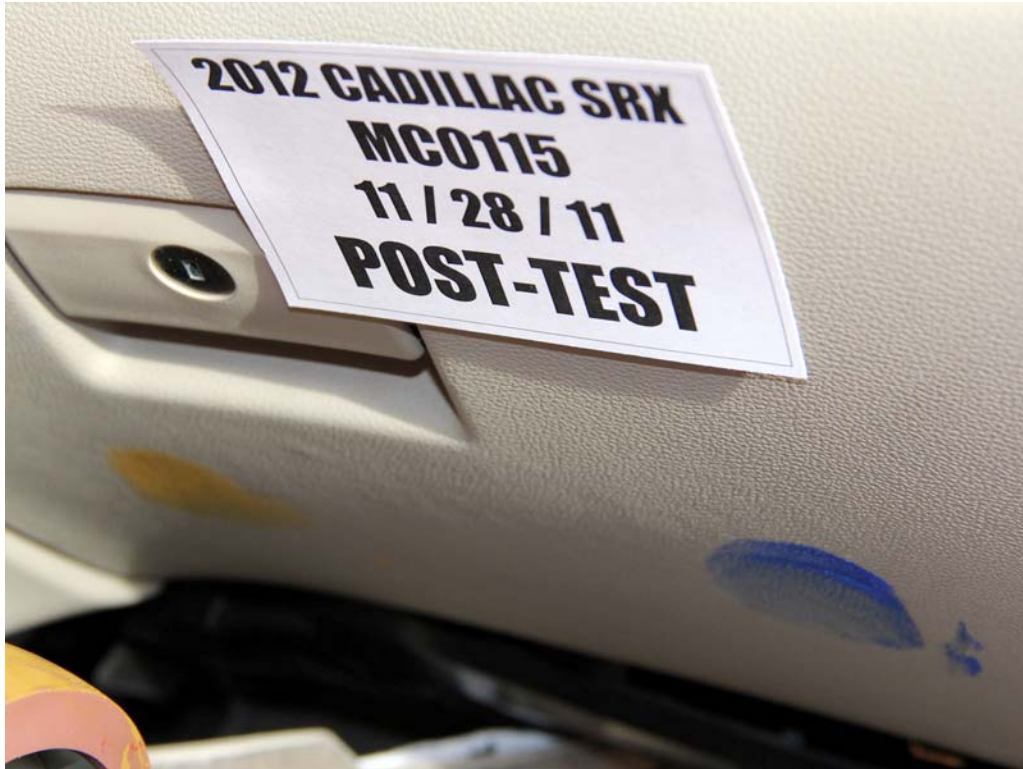


FIGURE 62b. Post-Test Passenger Dummy Contact With Glovebox



FIGURE 63. Photograph of Ballast Installed in Vehicle

Photograph Not Applicable No Stoddard Solvent Spillage

FIGURE 64. Post-Test Stoddard Solvent Spillage Location View



FIGURE 65. Post-Test Speed Trap Read-Out



FIGURE 66. Vehicle at 0°on Static Rollover Device

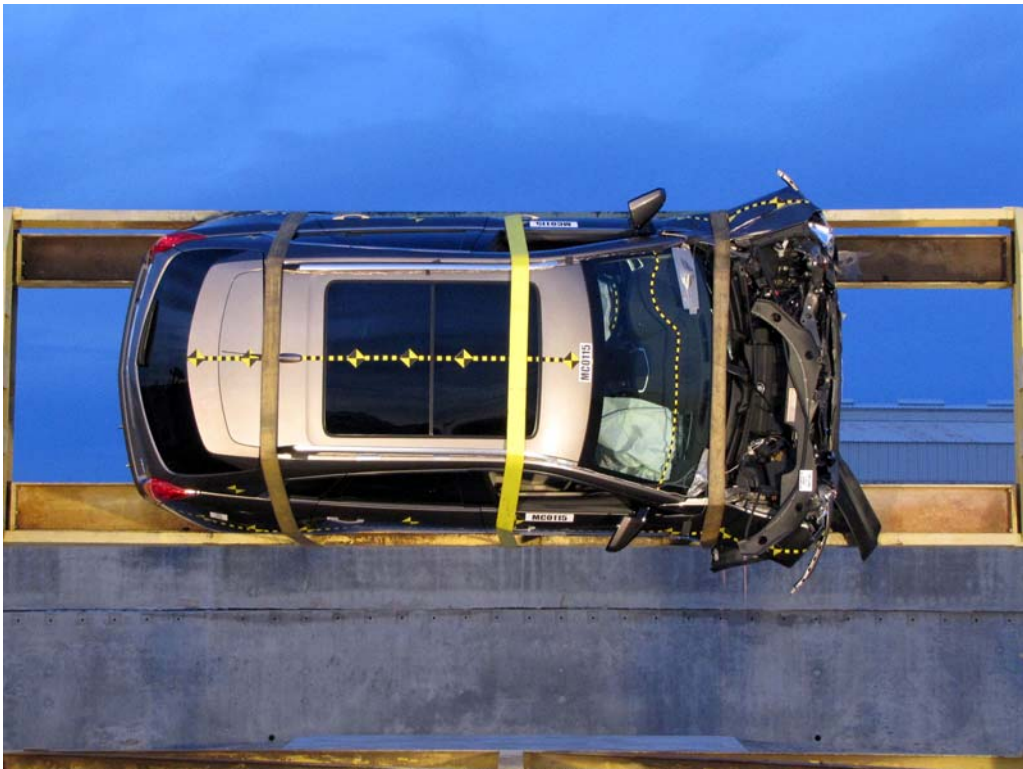


FIGURE 67. Vehicle at 90°on Static Rollover Device



FIGURE 68. Vehicle at 180°on Static Rollover Device

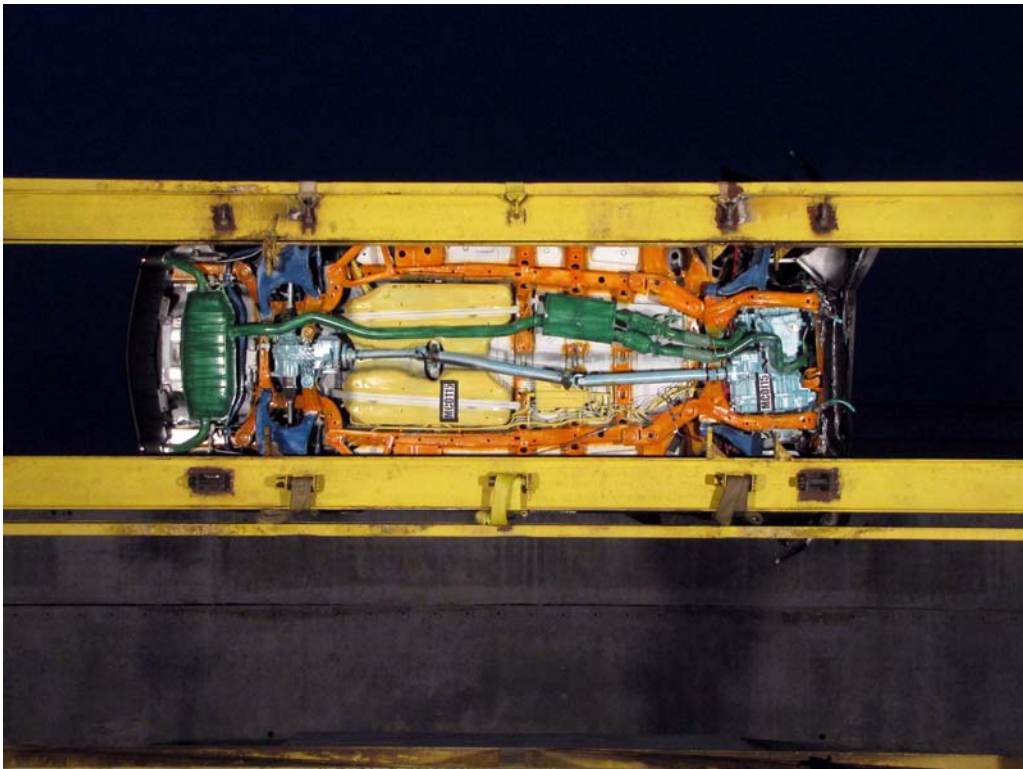


FIGURE 69. Vehicle at 270°on Static Rollover Device

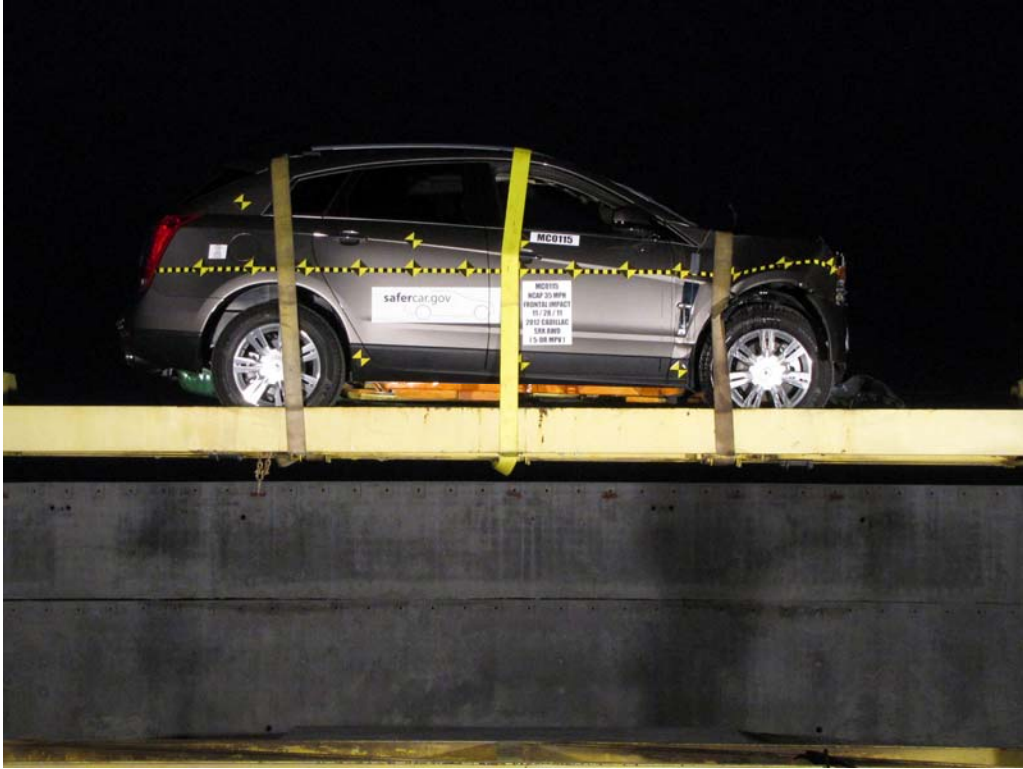


FIGURE 70. Vehicle at 360°on Static Rollover Device



FIGURE 71. 2012 Cadillac SRX AWD Frontal Impact Event

APPENDIX B
DUMMY RESPONSE DATA TRACES

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The following additional dummy and vehicle response data can be found in the R&D section of the NHTSA website at www.nhtsa.dot.gov

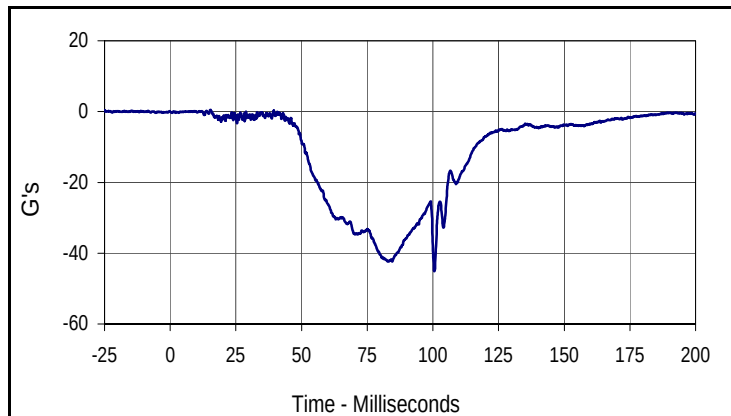
Driver Head X Acceleration Redundant
Driver Head Y Acceleration Redundant
Driver Head Z Acceleration Redundant
Driver Upper Neck Force Y
Driver Upper Neck Moment X
Driver Upper Neck Moment Z
Driver Chest X Acceleration Redundant
Driver Chest Y Acceleration Redundant
Driver Chest Z Acceleration Redundant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

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

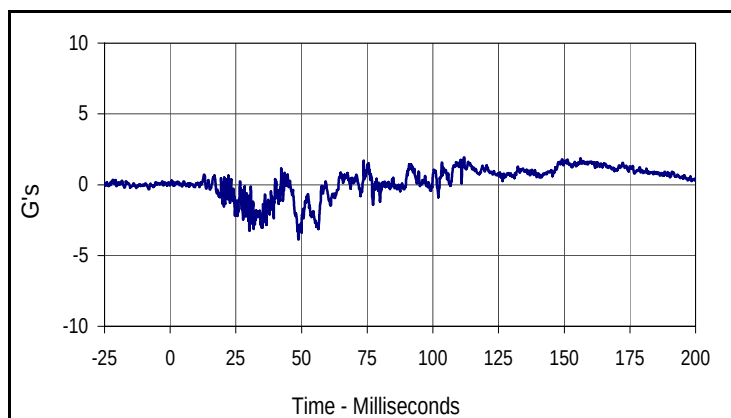
Left Rear Seat Crossmember Z
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Vehicle Engine Top X
Vehicle Engine Bottom X
Vehicle Left Brake Caliper X
Vehicle Right Brake Caliper X
Load Cell Barrier A1-A9
Load Cell Barrier B1-B9
Load Cell Barrier C1-C9
Load Cell Barrier D1-D9

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

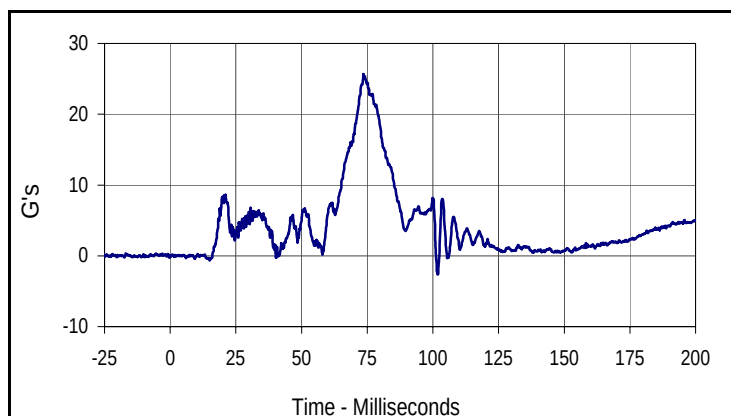
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 Test Date: 11/28/11



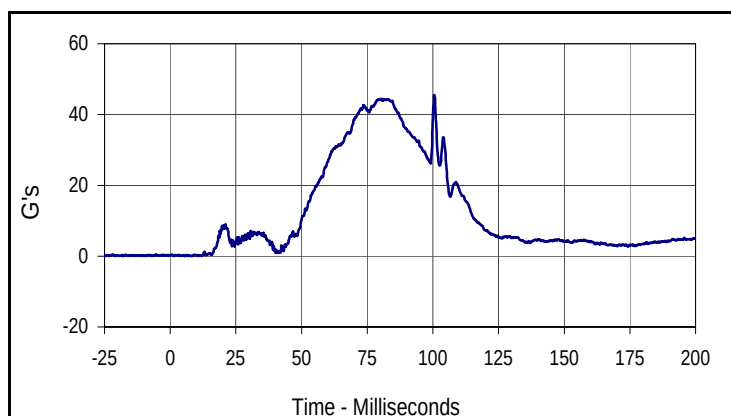
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001	FIL	1000	G's
Max	Time	Min	Time
0.5	15.3	-45.1	100.6



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.9	111.9	-3.9	48.8



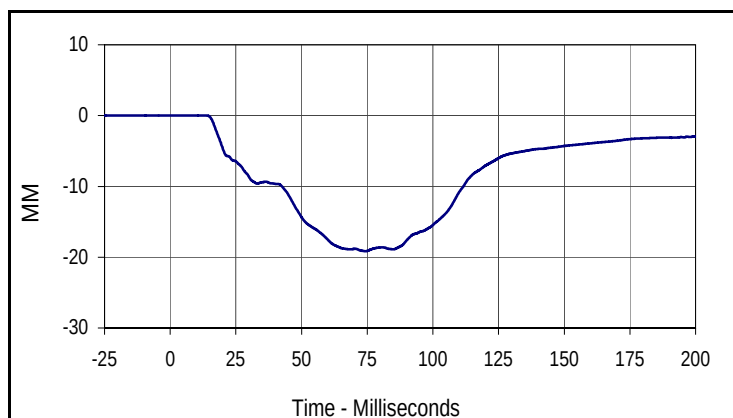
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Plot No.	Type	SAE Class	Units
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25.7	73.6	-2.7	101.8



Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
45.5	100.5	0.0	5.6

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

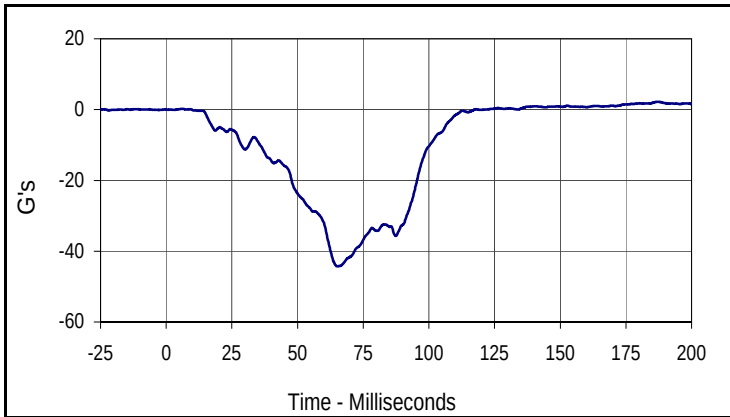
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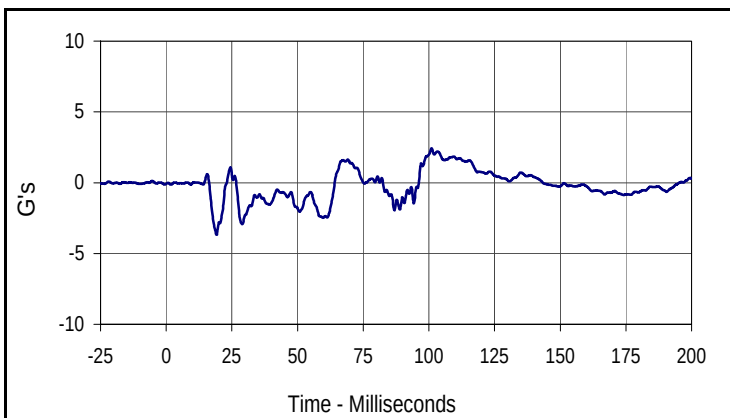
Curve Description			
Driver Chest Deflection			
Plot No.	Type	SAE Class	Units
005	FIL	180	MM
Max	Time	Min	Time
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Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

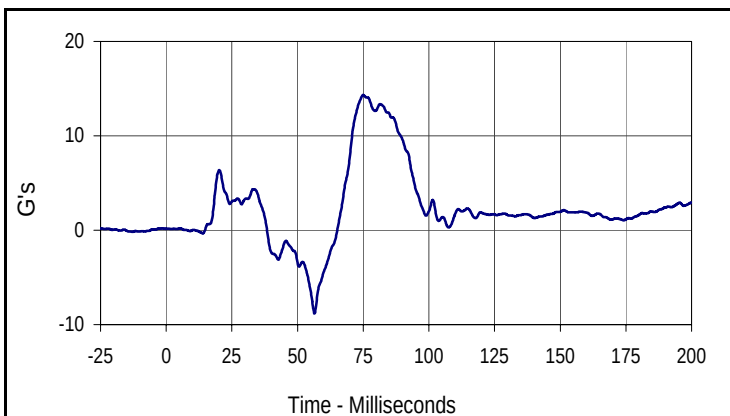
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 Test Date: 11/28/11



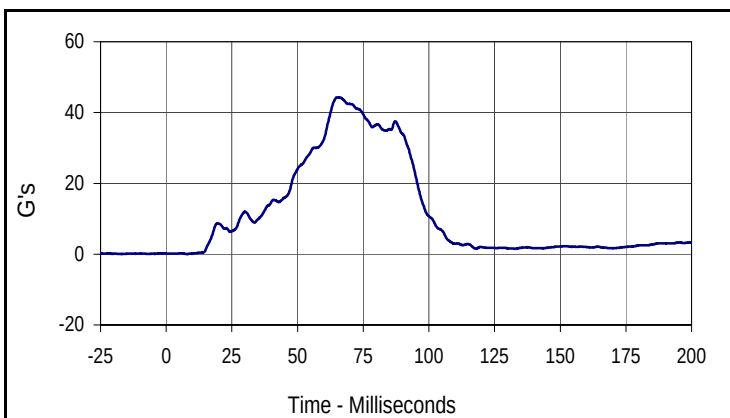
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Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
2.2	186.9	-44.3	65.1



Curve Description			
Driver Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
2.4	101.0	-3.7	19.2



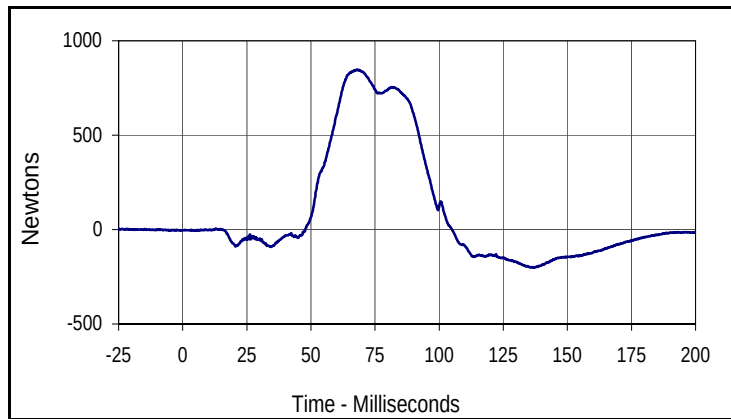
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Driver Chest Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
008	FIL	180	G's
Max	Time	Min	Time
14.3	75.0	-8.8	56.5



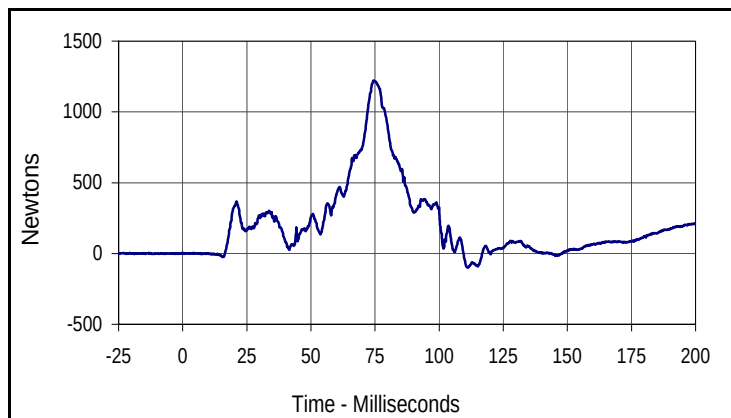
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Driver Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
009	RES	180	G's
Max	Time	Min	Time
44.3	65.1	0.0	8.0

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

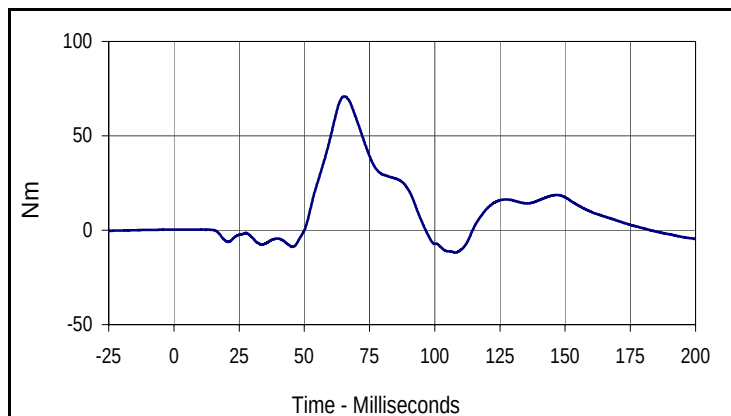
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 Test Date: 11/28/11



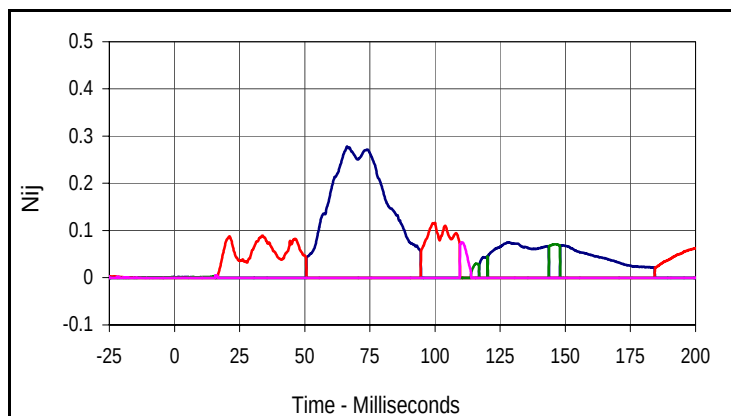
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Driver Upper Neck Force X			
Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
848.1	67.8	-202.3	136.7



Curve Description			
Driver Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
1221.8	74.4	-101.0	111.1



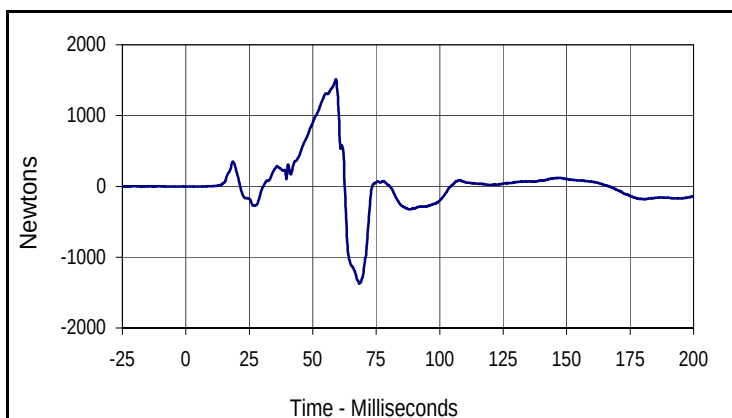
Curve Description			
Driver Upper Neck Moment Y			
Plot No.	Type	SAE Class	Units
012	FIL	600	Nm
Max	Time	Min	Time
70.9	65.3	-11.9	107.8



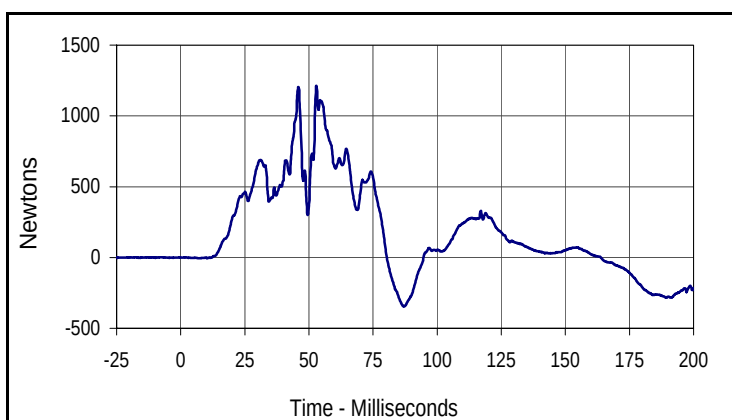
Curve Description			
Driver Nij			
Units	Type	Max	Time
Ntf	FIL	0.28	66.2
Units	Type	Max	Time
Nte	FIL	0.12	100.0
Units	Type	Max	Time
Ncf	FIL	0.07	146.5
Units	Type	Max	Time
Nce	FIL	0.07	110.5

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: MC0115
 Test Date: 11/28/11



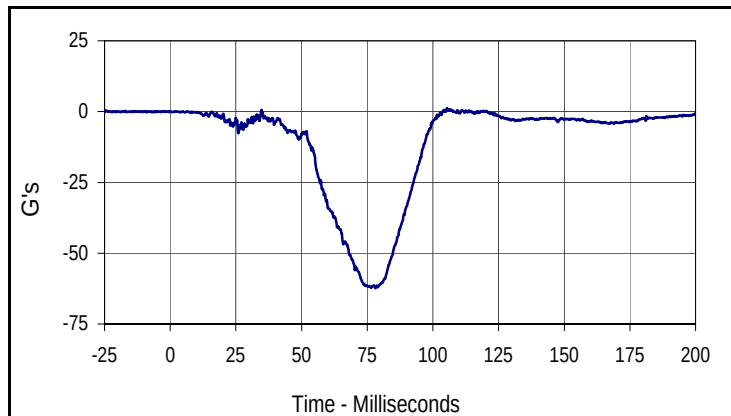
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Driver Left Femur Force			
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Max	Time	Min	Time
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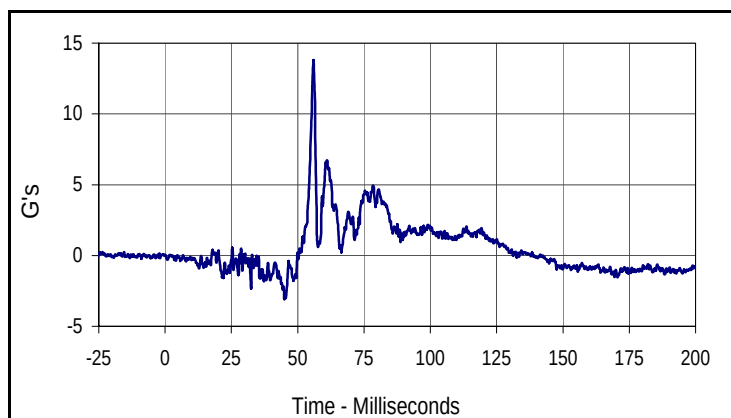
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Driver Right Femur Force			
Plot No.	Type	SAE Class	Units
014	FIL	600	Newtons
Max	Time	Min	Time
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Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

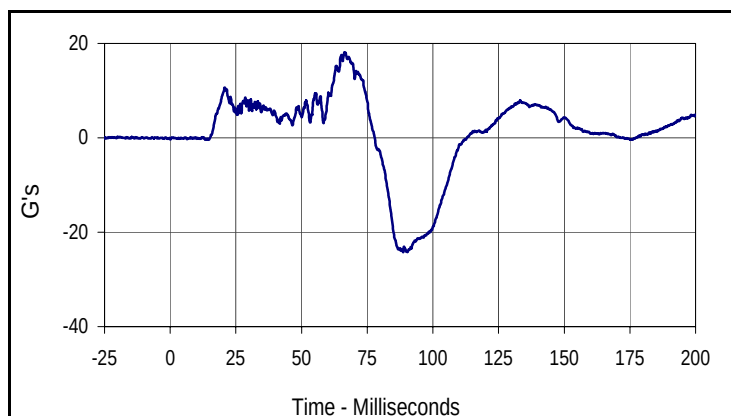
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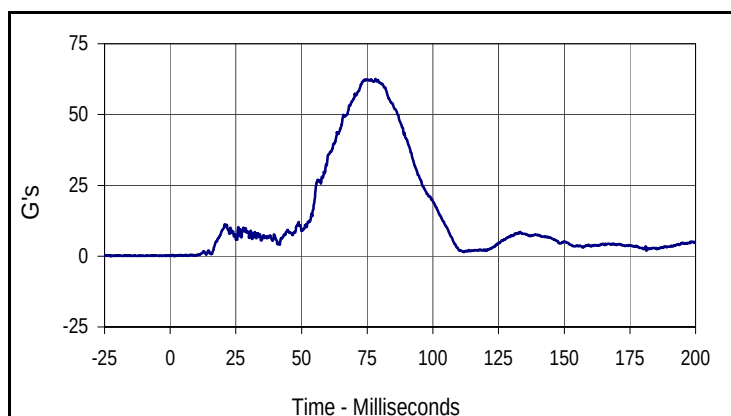
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Plot No.	Type	SAE Class	Units
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1.2	105.4	-62.3	78.2



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
13.8	56.0	-3.1	45.0



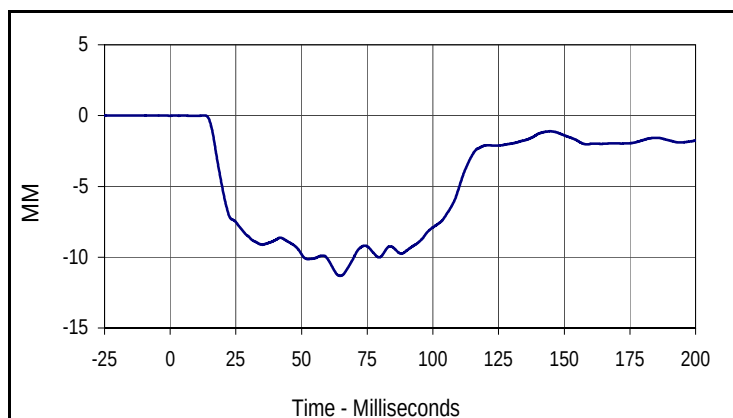
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Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
017	FIL	1000	G's
Max	Time	Min	Time
18.1	66.6	-24.2	90.4



Curve Description			
Passenger Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
018	RES	1000	G's
Max	Time	Min	Time
62.5	78.2	0.0	1.6

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

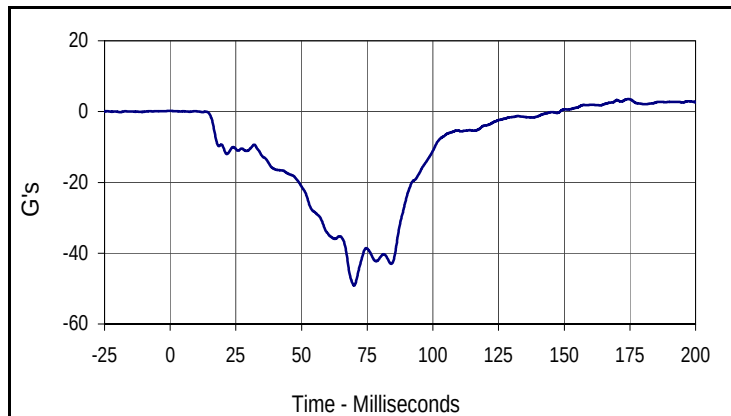
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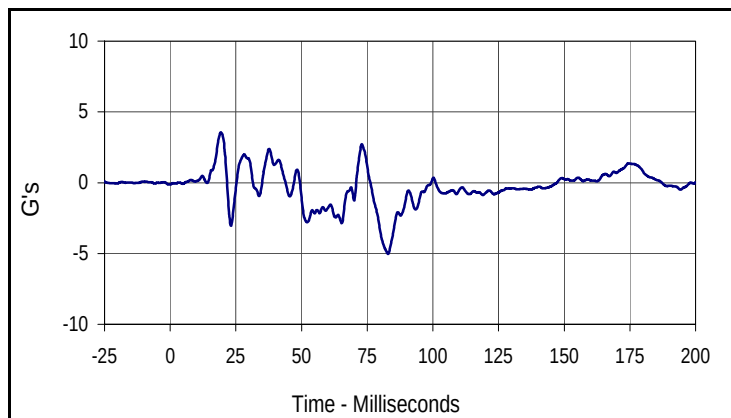
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Passenger Chest Deflection			
Plot No.	Type	SAE Class	Units
019	FIL	180	MM
Max	Time	Min	Time
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Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

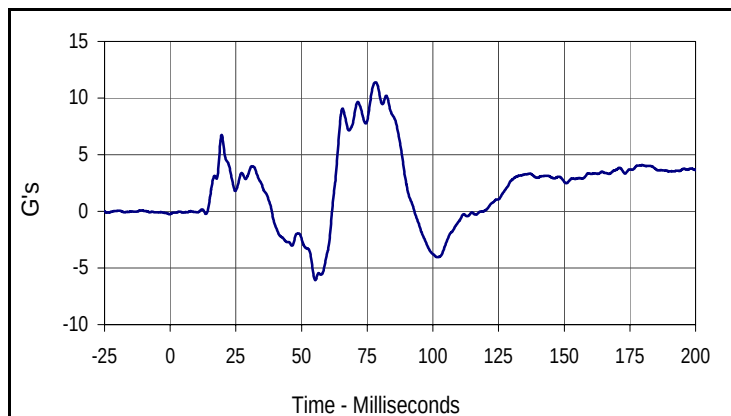
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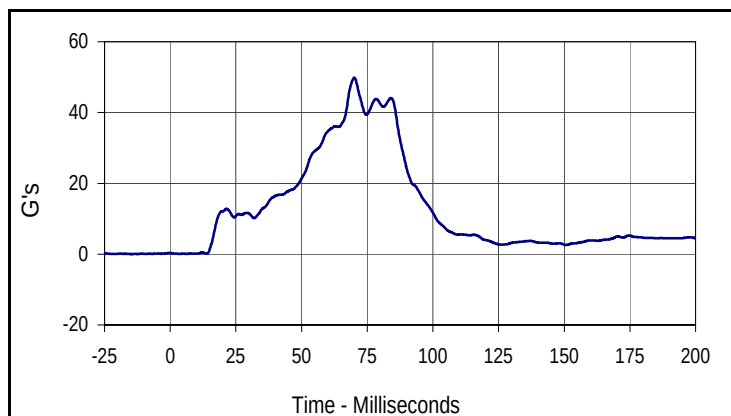
Curve Description			
Passenger Chest Acceleration X Primary			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
3.5	174.4	-49.1	70.0



Curve Description			
Passenger Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
3.6	19.3	-5.0	82.9



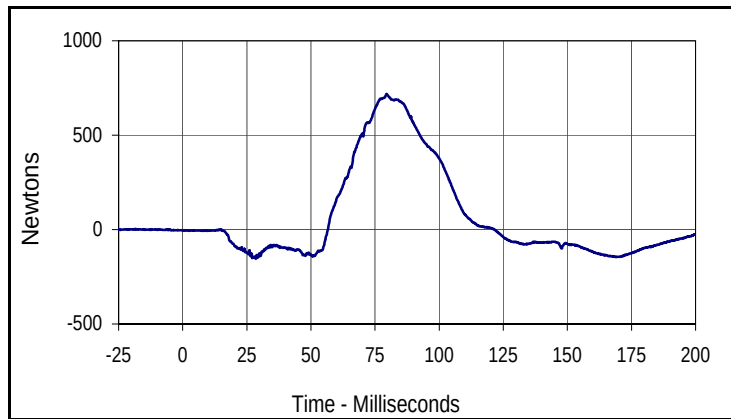
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Plot No.	Type	SAE Class	Units
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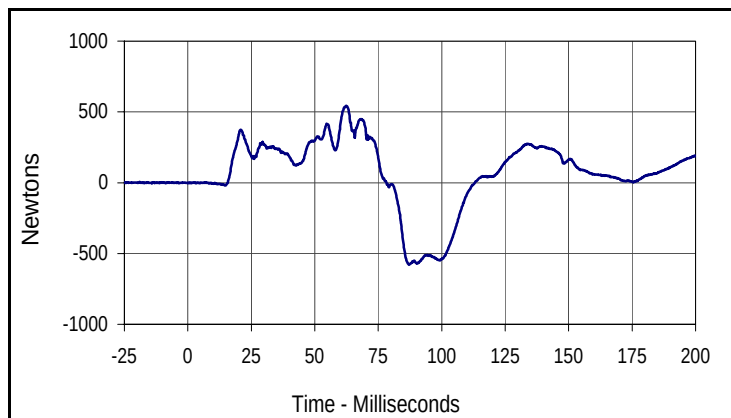
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Passenger Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
49.8	70.0	0.0	3.6

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

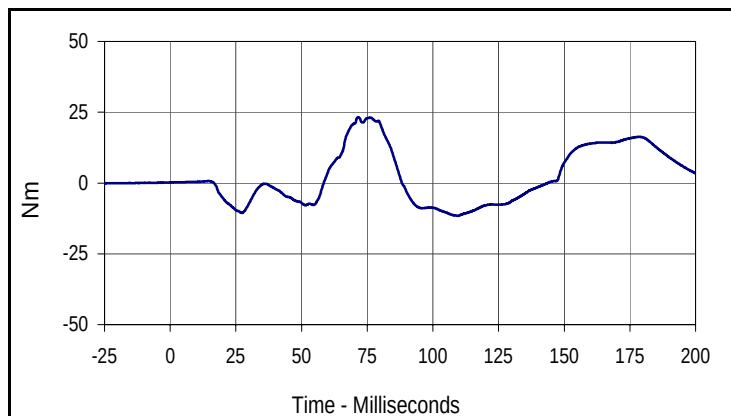
NHTSA No.: MC0115
 Test Date: 11/28/11



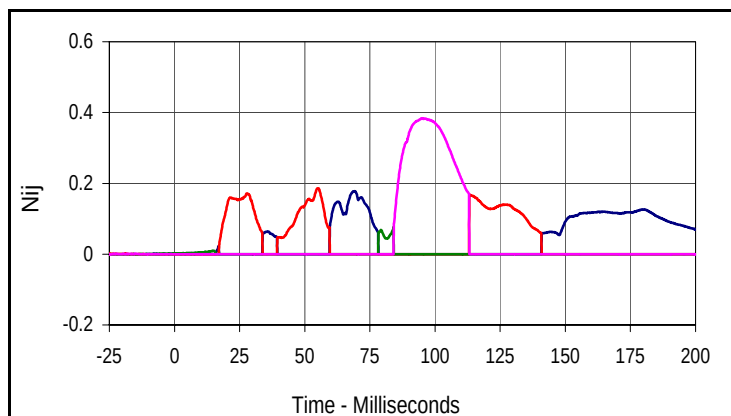
Curve Description			
Passenger Upper Neck Force X			
Plot No.	Type	SAE Class	Units
024	FIL	1000	Newtons
Max	Time	Min	Time
719.3	79.5	-153.6	28.5



Curve Description			
Passenger Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
025	FIL	1000	Newtons
Max	Time	Min	Time
543.1	62.4	-578.6	87.1



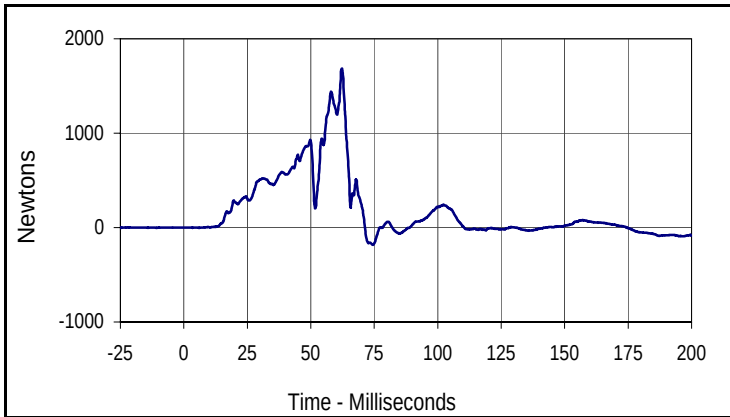
Curve Description			
Passenger Upper Neck Moment Y			
Plot No.	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
23.2	71.6	-11.6	109.4



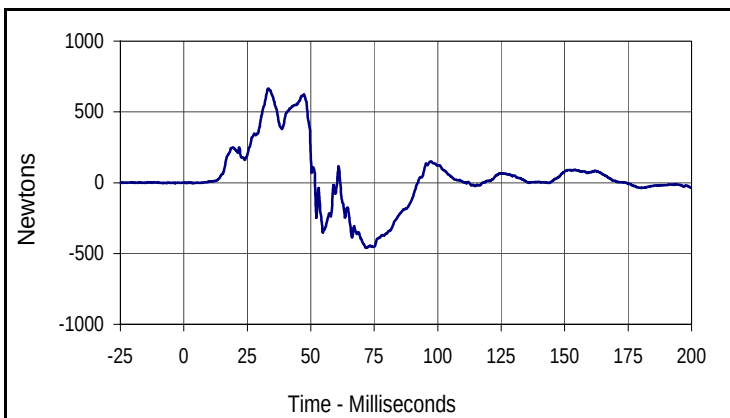
Curve Description			
Passenger Nij			
Units	Type	Max	Time
Ntf	FIL	0.20	229.7
Units	Type	Max	Time
Nte	FIL	0.24	227.9
Units	Type	Max	Time
Ncf	FIL	0.09	267.4
Units	Type	Max	Time
Nce	FIL	0.38	95.1

Test Vehicle: 2012 Cadillac SRX AWD 5-Door MPV
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: MC0115
 Test Date: 11/28/11



Curve Description			
Passenger Left Femur Force			
Plot No.	Type	SAE Class	Units
027	FIL	600	Newtons
Max	Time	Min	Time
1686.2	62.3	-182.9	74.5



Curve Description			
Passenger Right Femur Force			
Plot No.	Type	SAE Class	Units
028	FIL	600	Newtons
Max	Time	Min	Time
665.4	33.2	-459.9	71.7

APPENDIX C
DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA

APPENDIX C
PRE-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: Hybrid III 50th Percentile Male Dummy Damage Checklist
 ATD Serial No.: 035

Test Date: 11/9/11
 Test I.D.: N/A



Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 11/9/11

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.14	Pass
Laboratory Relative Humidity	%	10 to 70	39.9	Pass
A - Total sitting height	mm	879 to 889	882	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - H point height	mm	84 to 89	86	Pass
D - H point location from backline	mm	135 to 140	137	Pass
E - Shoulder pivot from backline	mm	84 to 94	86	Pass
F - Thigh clearance	mm	140 to 155	148	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	297	Pass
H - Head back to backline	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	206	Pass
K - Buttock to knee length	mm	579 to 604	589	Pass
L - Popliteal length	mm	429 to 455	436	Pass
M - Knee pivot height	mm	485 to 500	488	Pass
N - Buttock popliteal length	mm	452 to 477	472	Pass
O - Chest depth without jacket	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	432	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference (with chest jacket)	mm	970 to 1001	986	Pass
Z - Waist circumference	mm	836 to 866	864	Pass
AA - Location for chest circumference	mm	429 to 434	433	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results			Pass	

Test Program: Hybrid III 50th Percentile Male Head Drop Test

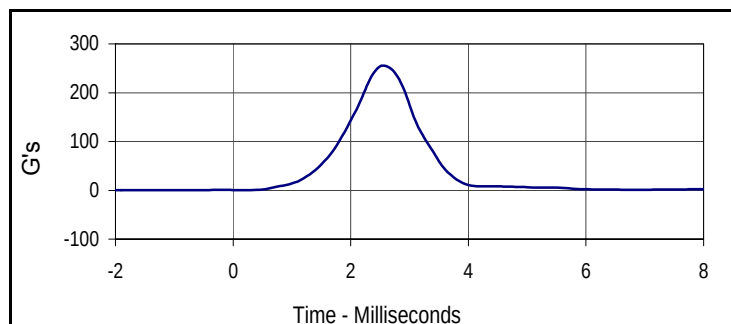
Test Date: 11/9/11

ATD Serial No.: 035

Test I.D.: M035HD024



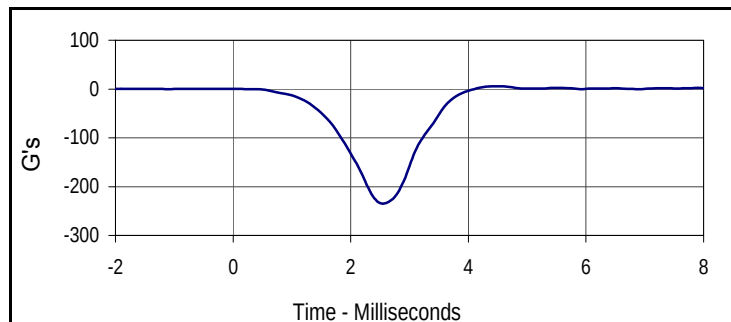
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	255	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.2	Pass
Peak Resultant Acceleration		G's	225.0 to 275.0	254.5	Pass
Peak Lateral Acceleration		G's	≤15.0	3.3	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	4.2	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

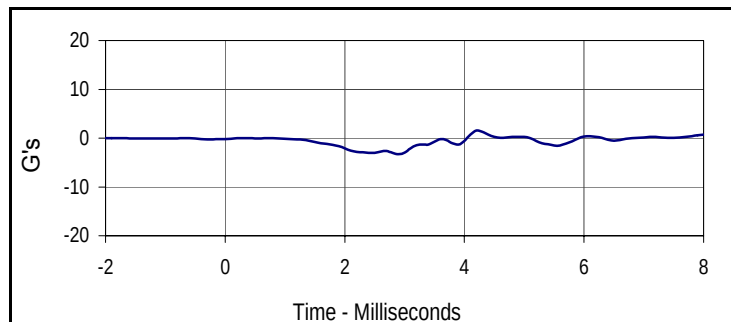
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
254.5	2.6	0.0	-2.0



Curve Description

Head X

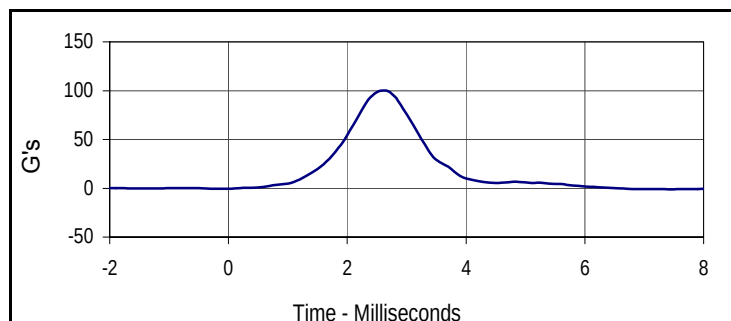
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.8	4.5	-234.0	2.5



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
1.6	4.2	-3.3	2.9



Curve Description

Head Z

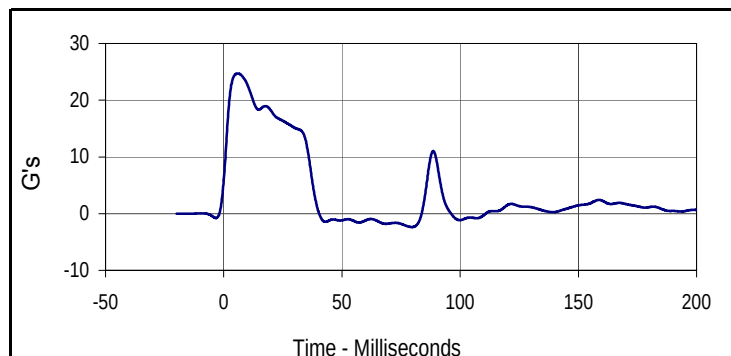
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
100.3	2.6	-0.6	-0.2

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 035

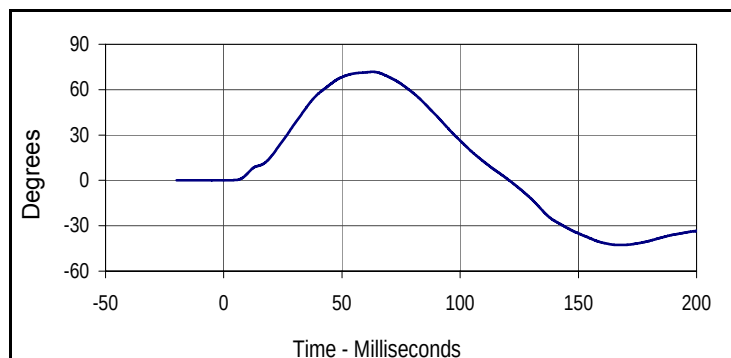
Test Date: 11/9/11
 Test I.D.: M035NF024



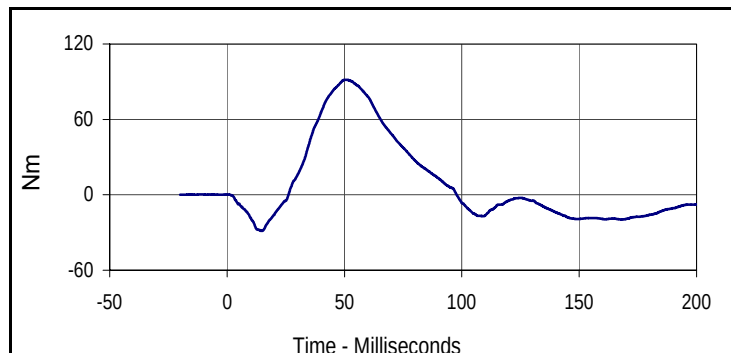
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	285	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.2	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	20.9	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	39.6	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.01	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.7	Pass
	20 Msec.	G's	17.6 to 22.6	18.1	Pass
	30 Msec.	G's	12.5 to 18.5	15.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	15.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	37.8	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	71.8	Pass
	Time	Msec.	57.0 to 64.0	63.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	120.8	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	91.6	Pass
	Time	Msec.	47.0 to 58.0	50.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.8	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
24.7	5.9	-2.4	79.6



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
71.8	63.1	-42.8	167.7



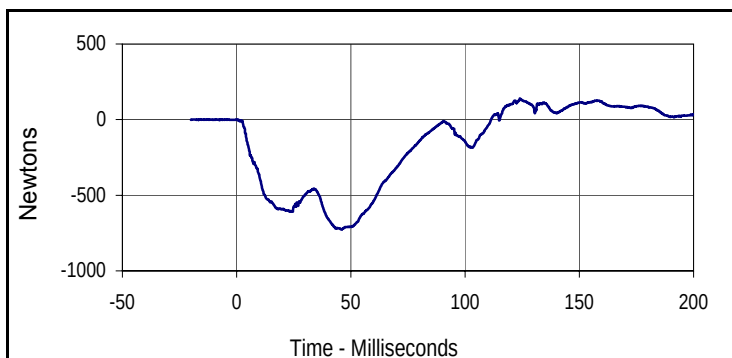
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
91.6	50.9	-28.7	14.5

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

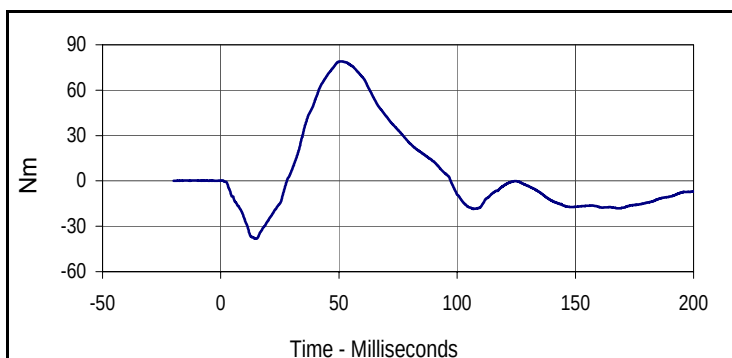
Test Date: 11/9/11

ATD Serial No.: 035

Test I.D.: M035NF024



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
140.0	124.0	-726.2	45.9



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
79.0	51.1	-38.3	14.5

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

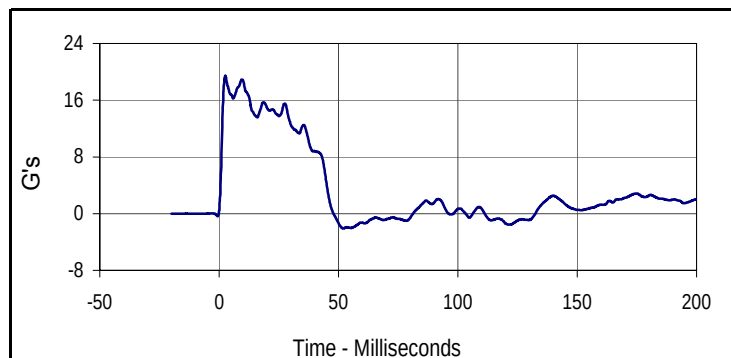
Test Date: 11/9/11

ATD Serial No.: 035

Test I.D.: M035NE024



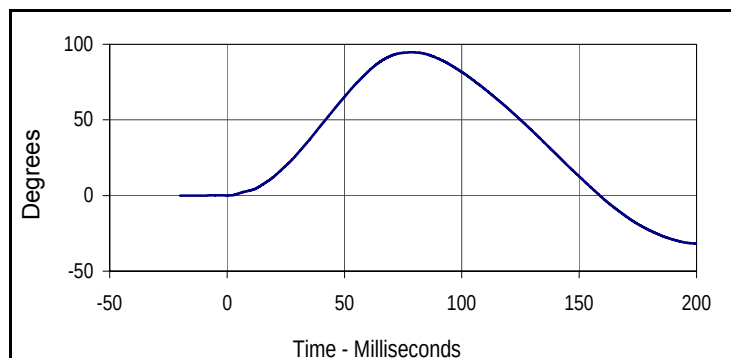
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	330	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.1	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	39.4	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.00	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.8	Pass
	20 Msec.	G's	14.0 to 19.0	15.0	Pass
	30 Msec.	G's	11.0 to 16.0	12.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	12.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	44.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	94.7	Pass
	Time	Msec.	72.0 to 82.0	78.6	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	158.8	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-66.1	Pass
	Time	Msec.	65.0 to 79.0	68.5	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.4	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

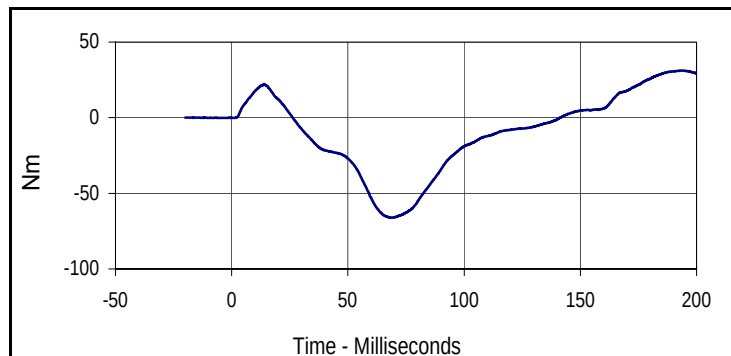
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.4	2.6	-2.1	52.0



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
94.7	78.6	-31.8	200.0



Curve Description

Moment About Occipital Condyle

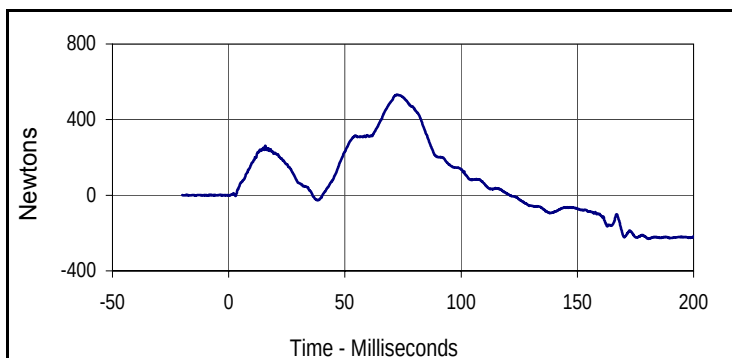
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
31.1	194.2	-66.1	68.5

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

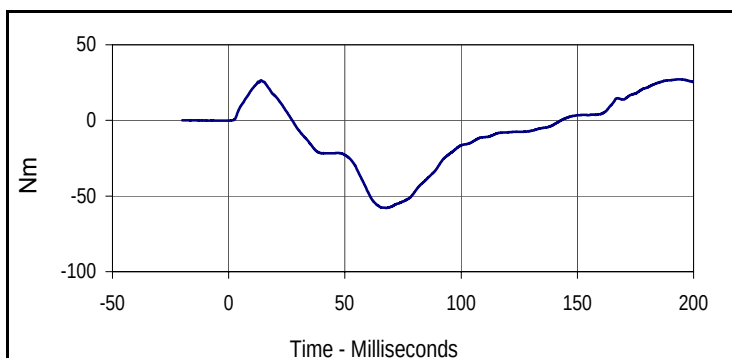
Test Date: 11/9/11

ATD Serial No.: 035

Test I.D.: M035NE024



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
532.7	72.3	-230.7	180.5



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
27.2	194.0	-57.9	67.8

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

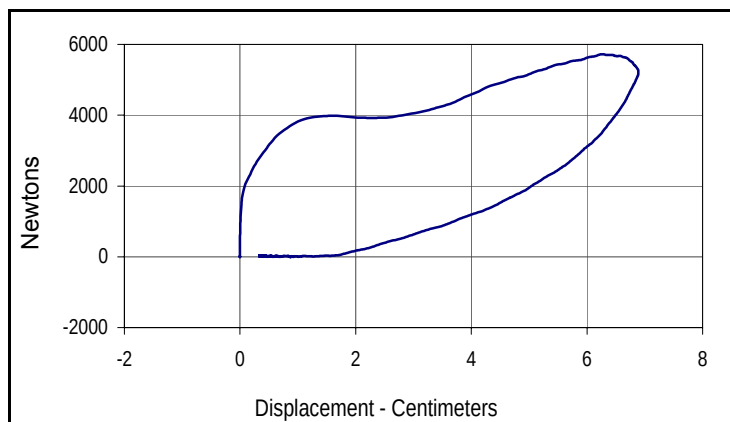
Test Date: 11/9/11

ATD Serial No.: 035

Test I.D.: M035CH024



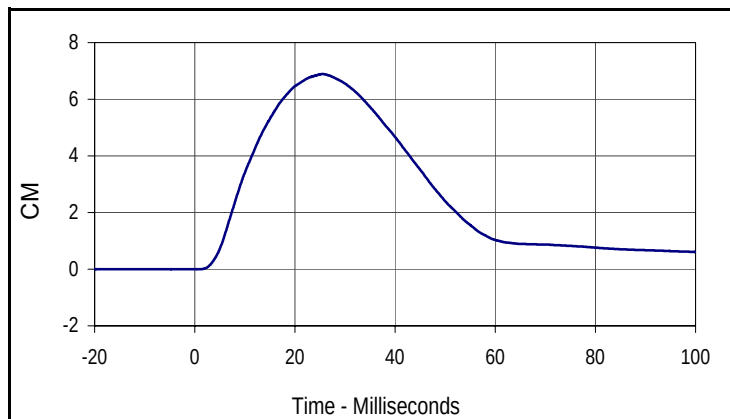
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	410	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	39.9	Pass
Probe Velocity		m/s	6.58 to 6.82	6.63	Pass
Peak Probe Force		Newtons	5159 to 5893	5720	Pass
Peak Sternum Deflection		CM	6.35 to 7.26	6.89	Pass
Internal Hysteresis		%	69 to 85	70.9	Pass
Overall Test Results				Pass	



Curve Description

Probe Force vs. Chest Deflection

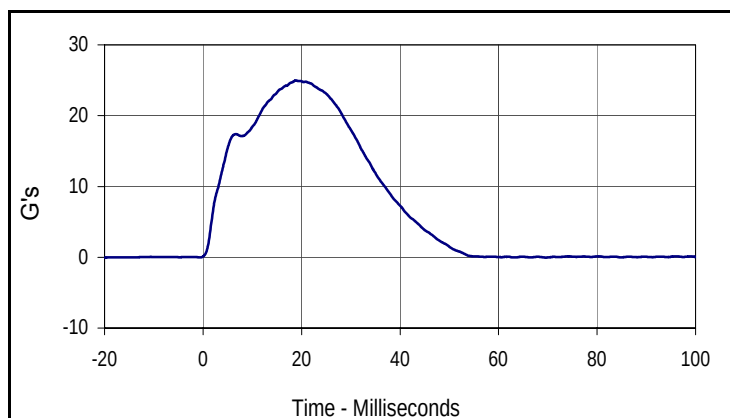
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	70.9
Peak Probe Force		Peak Chest Deflection	
5720		6.89	



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
6.9	25.5	0.0	0.8



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
25.0	18.8	-0.1	-20.0

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 ATD Serial No.: 035

Test Date: 11/9/11
 Test I.D.: M035LK024 , M035RK024



Left Knee

Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	460	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.5	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force		Newtons	4715 to 5782	5035	Pass
Overall Test Results				Pass	

Right Knee

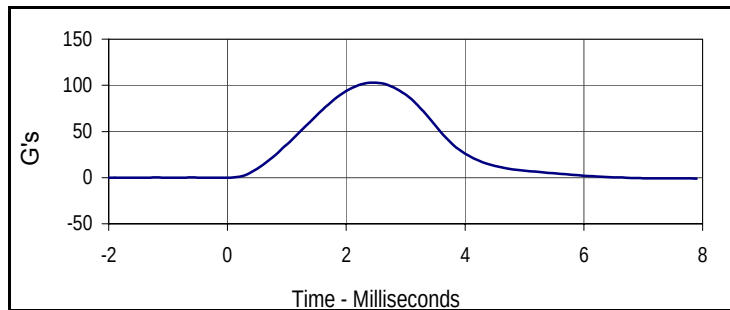
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force		Newtons	4715 to 5782	5029	Pass
Overall Test Results				Pass	



Curve Description

Left Knee Probe Force

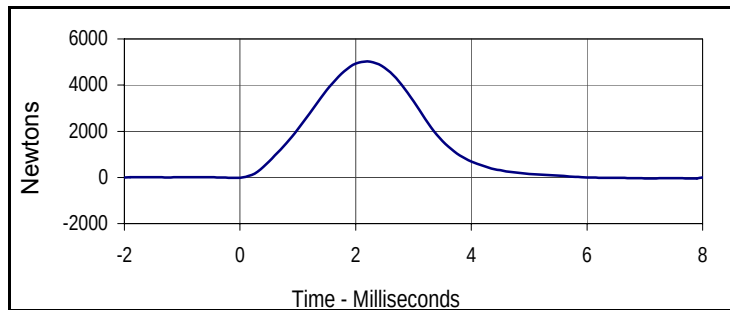
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5035.3	2.5	-47.4	7.9



Curve Description

Left Knee Acceleration

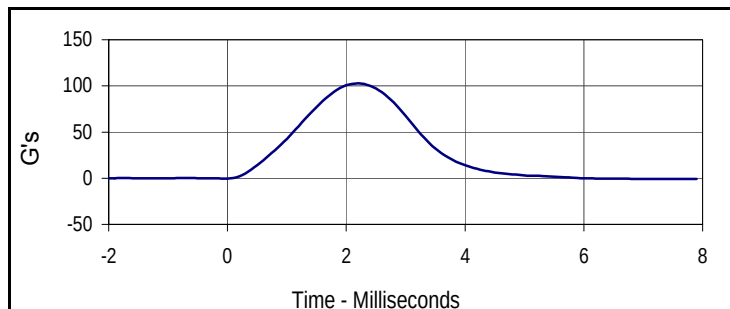
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
102.9	2.5	-1.0	7.9



Curve Description

Right Knee Probe Force

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
5029.3	2.2	-44.2	7.9



Curve Description

Right Knee Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
102.8	2.2	-0.9	7.9

Test Program: Hybrid III 50th Percentile Male Hip Joint-Femur Flexion Test
 ATD Serial No.: 035

Test Date: 11/9/11
 Test I.D.: M035LF024, M035RF024

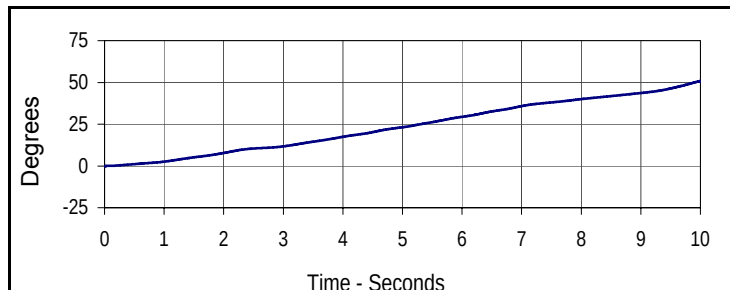


Left Hip Joint-Femur Results

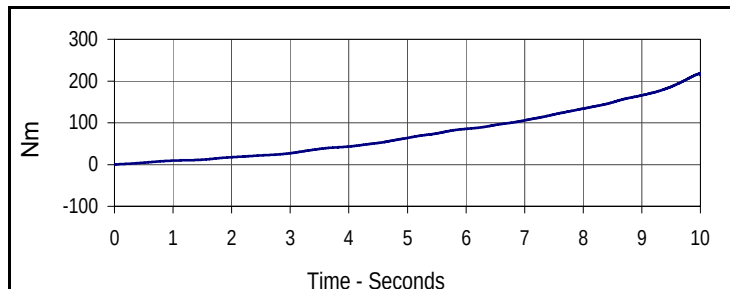
Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	530	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	20.9	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	39.6	Pass
Rotation Rate	deg/sec	5 to 10	5.1	Pass
Femur Torque at 30°	Nm	≤ 95	86.9	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	48.6	Pass
Overall Test Results				Pass

Right Hip Joint-Femur Results

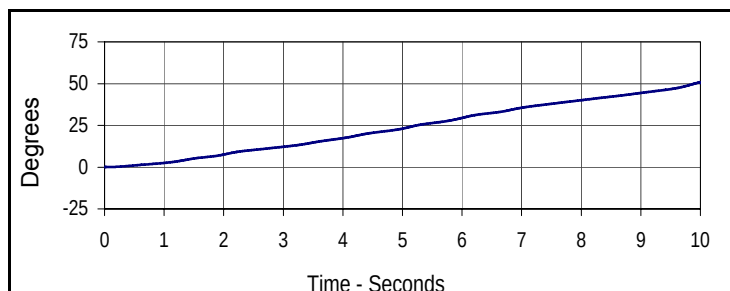
Rotation Rate	deg/sec	5 to 10	5.1	Pass
Femur Torque at 30°	Nm	≤ 95	84.8	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	48.5	Pass
Overall Test Results				Pass



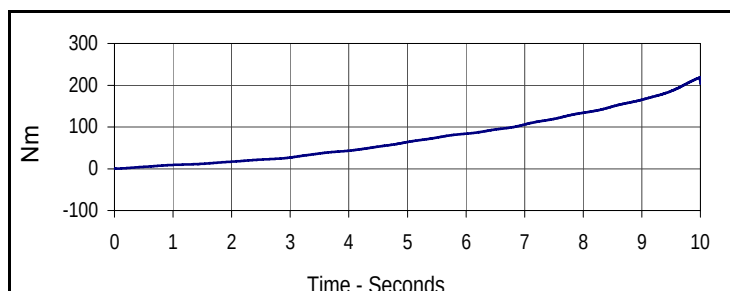
Curve Description			
Left Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
50.8	10.0	0.0	0.0



Curve Description			
Left Femur Torque			
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
218.4	10.0	0.4	0.0



Curve Description			
Right Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
50.8	10.0	0.0	0.0



Curve Description			
Right Femur Torque			
Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
218.5	10.0	0.1	0.0

Test Program: Hybrid III 5th Percentile Female Dummy Damage Checklist

Test Date: 11/22/11

ATD Serial No.: 635

Test I.D.: N/A



Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 11/22/11

ATD Serial No.: 635

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.36	Pass
Laboratory Relative Humidity	%	10 to 70	29.8	Pass
A - Total sitting height	mm	774.7 to 800.1	779	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	435	Pass
C - H point height	mm	81.3 to 86.3	85	Pass
D - H point location from backline	mm	144.8 to 149.8	147	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	78	Pass
F - Thigh clearance	mm	119.4 to 134.6	125	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	246	Pass
H - Head back to backline	mm	40.7 to 45.7	45	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	284	Pass
J - Elbow rest height	mm	182.8 to 203.2	198	Pass
K - Buttock to knee length	mm	520.7 to 546.1	535	Pass
L - Popliteal length	mm	355.6 to 376.0	373	Pass
M - Knee pivot height	mm	393.7 to 419.1	395	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	430	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	187	Pass
P - Foot length	mm	218.5 to 233.7	220	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	475	Pass
S - Head Breadth	mm	137.1 to 147.3	142	Pass
T - Head Depth	mm	177.8 to 188.0	182	Pass
U - Hip Breadth	mm	299.7 to 314.9	302	Pass
V - Shoulder breadth	mm	350.5 to 365.7	357	Pass
W - Foot breadth	mm	78.8 to 94.0	84	Pass
X - Head circumference	mm	528.3 to 548.7	546	Pass
Y - Chest circumference (with chest jacket)	mm	850.8 to 881.3	858	Pass
Z - Waist circumference	mm	759.5 to 789.9	787	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	300	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	165	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female Head Drop Test

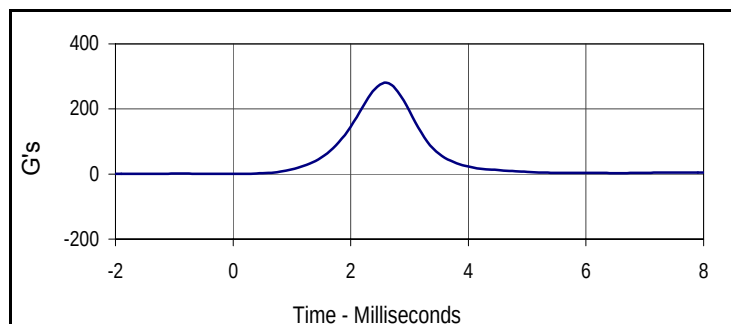
Test Date: 11/22/11

ATD Serial No.: 635

Test I.D.: F635HD022



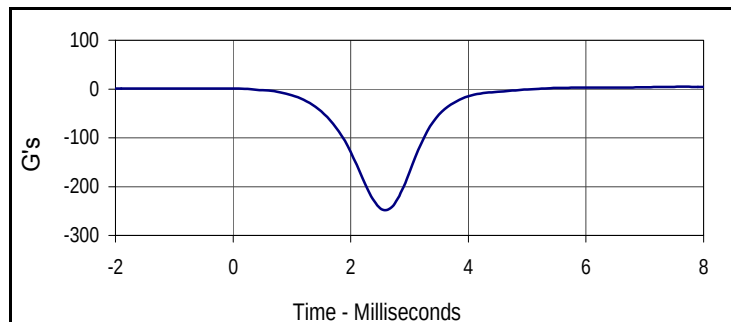
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	275	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.2	Pass
Peak Resultant Acceleration		G's	250.0 to 300.0	280.7	Pass
Peak Lateral Acceleration		G's	≤15.0	3.4	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	1.8	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

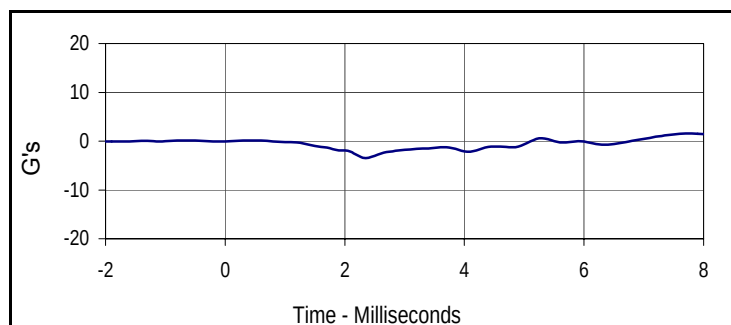
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
280.7	2.6	0.3	0.2



Curve Description

Head X

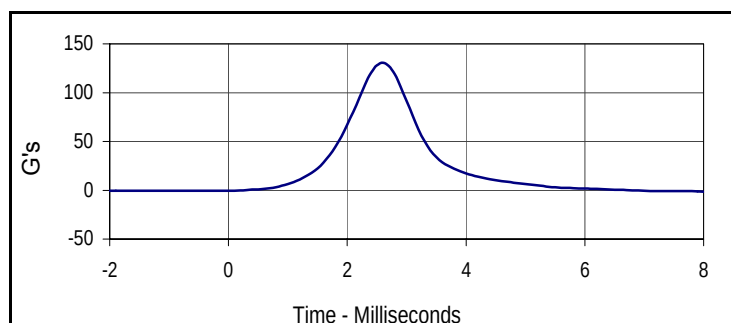
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.9	6.0	-248.4	2.6



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
0.6	5.3	-3.4	2.4



Curve Description

Head Z

Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
130.8	2.6	-0.6	-0.4

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

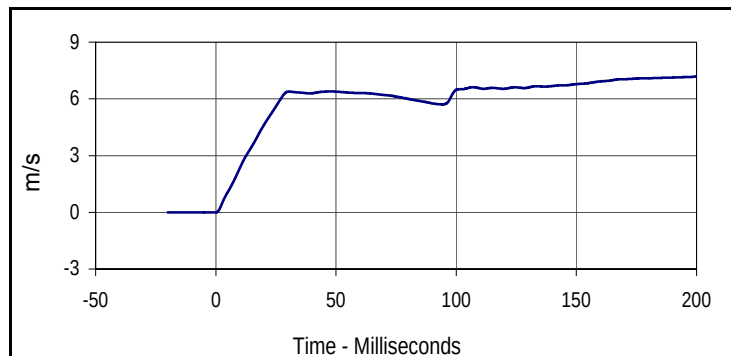
Test Date: 11/22/11

ATD Serial No.: 635

Test I.D.: F635NF022



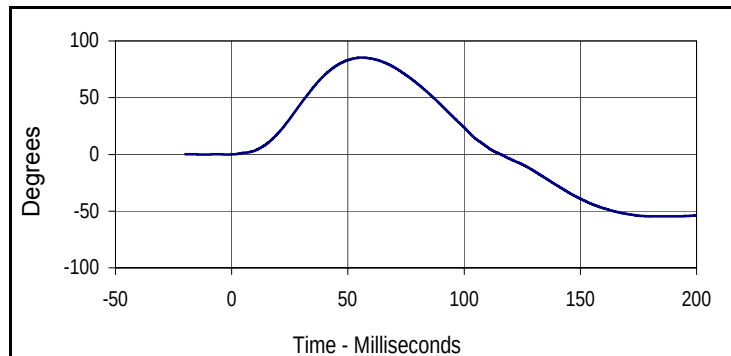
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	305	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.7	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.04	Pass
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.3	Pass
	20 Msec.	m/s	4.0 to 5.0	4.6	Pass
	30 Msec.	m/s	5.8 to 7.0	6.4	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	85.4	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	78.5	Pass
Positive Moment Decay, Time To 10 Nm		Msec.	80.0 to 100.0	84.5	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Velocity

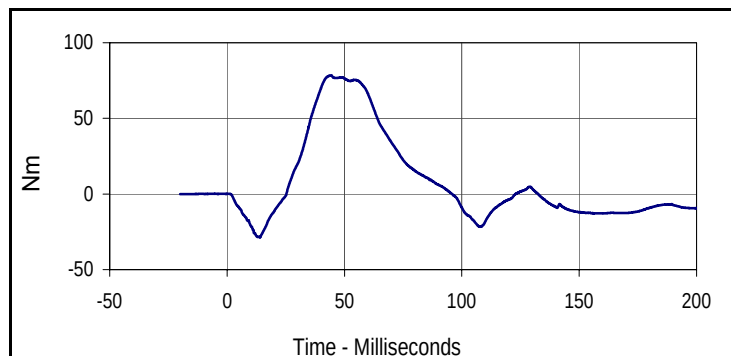
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
7.2	200.0	0.0	-0.2



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
85.4	56.1	-54.6	187.2



Curve Description

Moment About Occipital Condyle

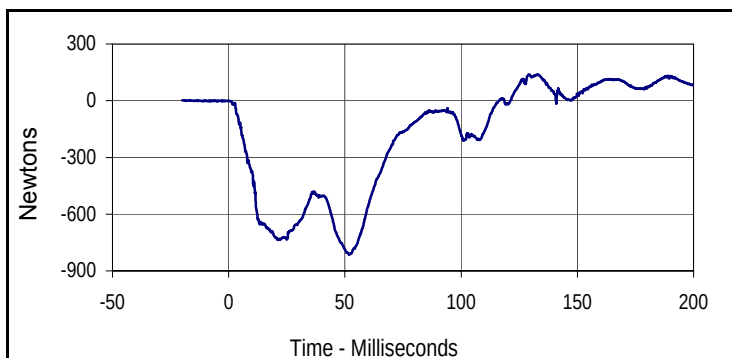
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
78.5	43.8	-28.6	13.9

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

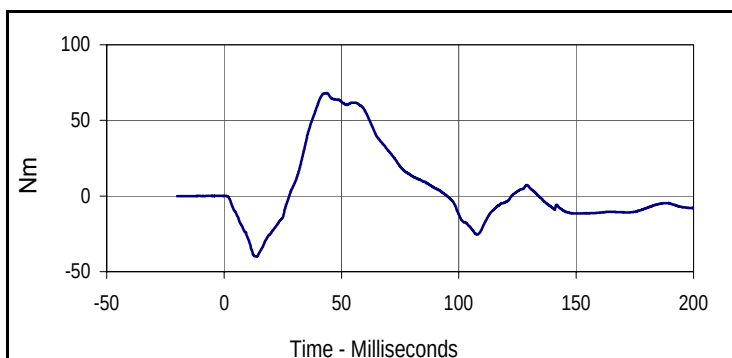
ATD Serial No.: 635

Test Date: 11/22/11

Test I.D.: F635NF022



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
139.4	129.2	-815.5	51.9



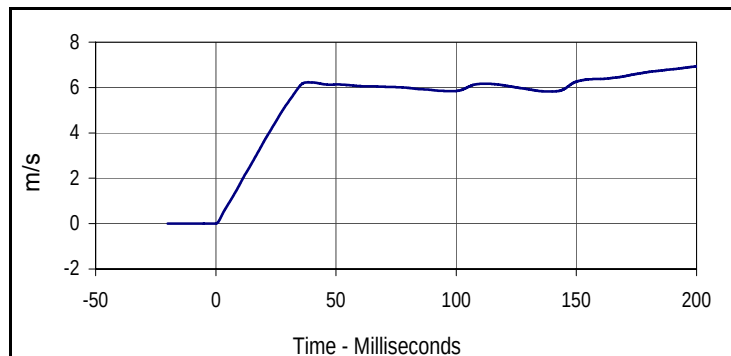
Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
68.1	43.6	-40.0	13.9

Test Program: Hybrid III 5th Percentile Female Neck Extension Test
 ATD Serial No.: 635

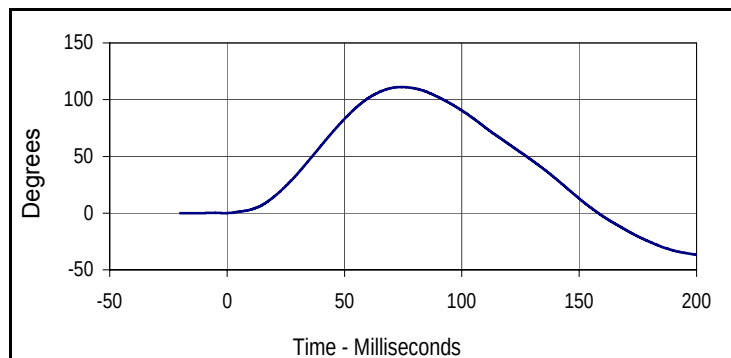
Test Date: 11/22/11
 Test I.D.: F635NE022



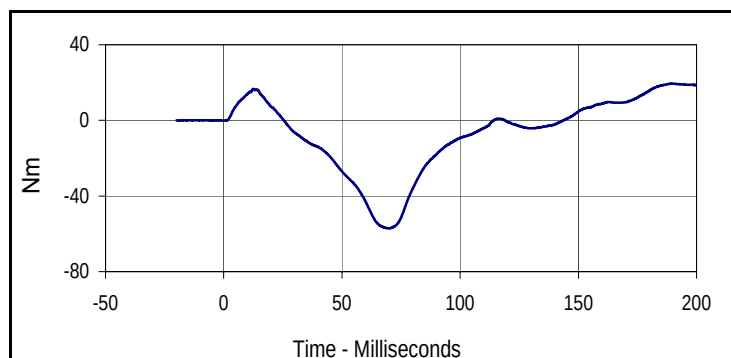
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	365	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.5	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.02	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.7	Pass
	20 Msec.	m/s	3.1 to 3.9	3.6	Pass
	30 Msec.	m/s	4.6 to 5.6	5.3	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	111.1	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-57.2	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	98.8	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
6.9	200.0	0.0	-0.6



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
111.1	74.0	-36.6	200.0



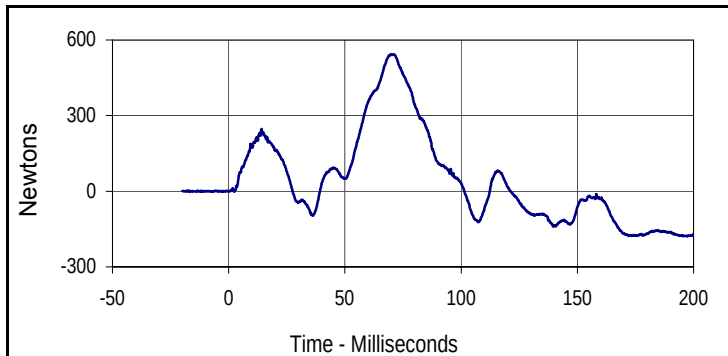
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
19.5	189.7	-57.2	69.9

Test Program: Hybrid III 5th Percentile Female Neck Extension Test

ATD Serial No.: 635

Test Date: 11/22/11

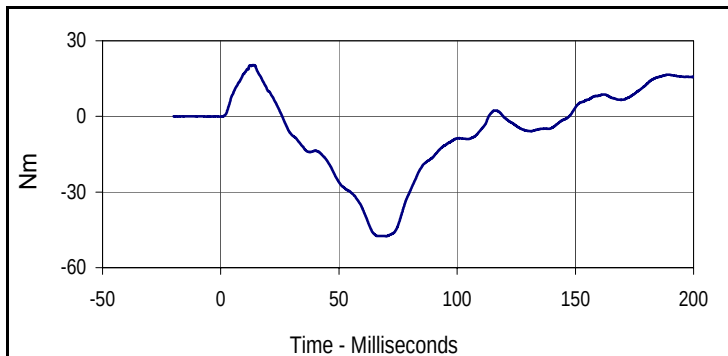
Test I.D.: F635NE022



Curve Description

Upper Neck Force X

Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
542.9	69.8	-178.9	197.2



Curve Description

Neck Moment Y

Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
20.4	13.6	-47.5	69.9

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test

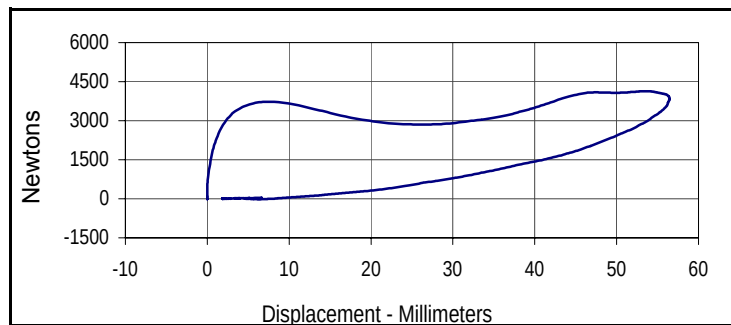
Test Date: 11/22/11

ATD Serial No.: 635

Test I.D.: F635CH022



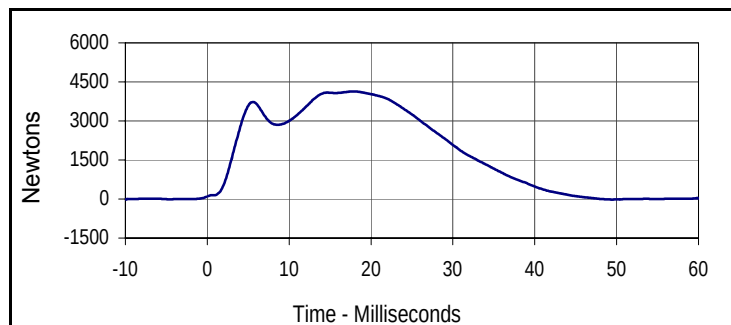
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	485	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.5	Pass
Probe Velocity		m/s	6.59 to 6.83	6.71	Pass
Peak Chest Deflection		mm	50.0 to 58.0	56.5	Pass
Peak Force Between 50 and 58 MM		Newtons	3900 to 4400	4089	Pass
Peak Force Between 18 and 50 MM		Newtons	≤4600	4132	Pass
Internal Hysteresis		%	69 to 85	70.7	Pass
Overall Test Results					Pass



Curve Description

Probe Force vs. Chest Deflection

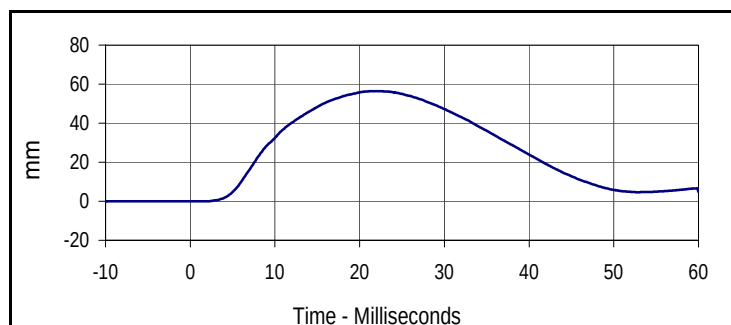
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	70.7
Peak Probe Force		Peak Chest Deflection	
4131.5		56.5	



Curve Description

Probe Force

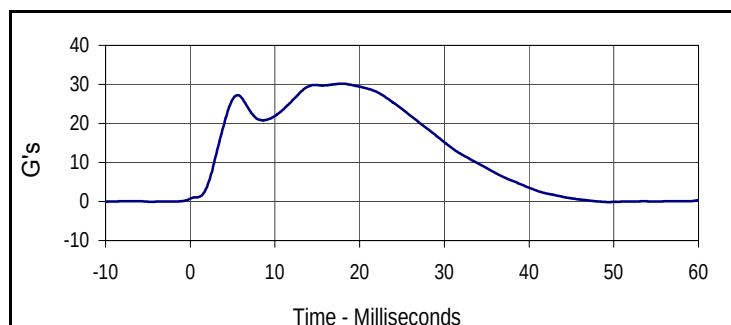
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4131.5	17.7	-19.4	49.4



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
003	FIL	600	mm
Max	Time	Min	Time
56.5	22.0	0.0	-6.2



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
30.2	17.7	-0.1	49.4

Test Program: Hybrid III 5th Percentile Female Knee Impact Test

Test Date: 11/22/11

ATD Serial No.: 635

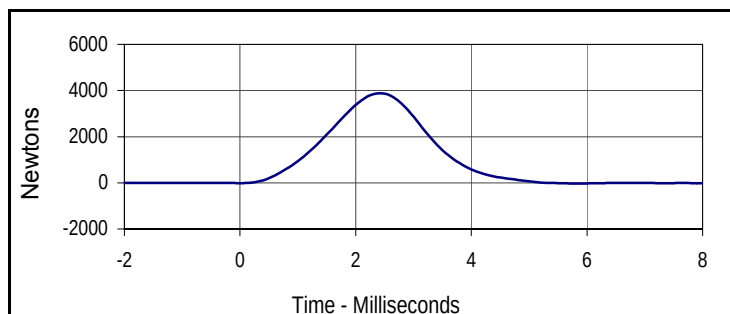
Test I.D.: F635LK022, F635RK022

**Left Knee**

Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	425	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	34.8	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force		Newtons	3450 to 4060	3883	Pass
Overall Test Results					Pass

Right Knee

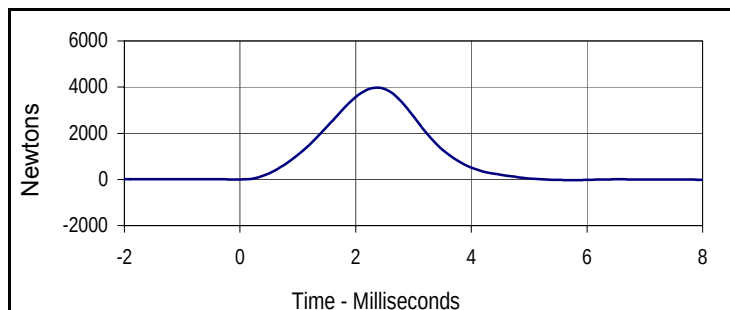
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.094	Pass
Peak Probe Force		Newtons	3450 to 4060	3974	Pass
Overall Test Results					Pass

**Curve Description****Left Knee Probe Force**

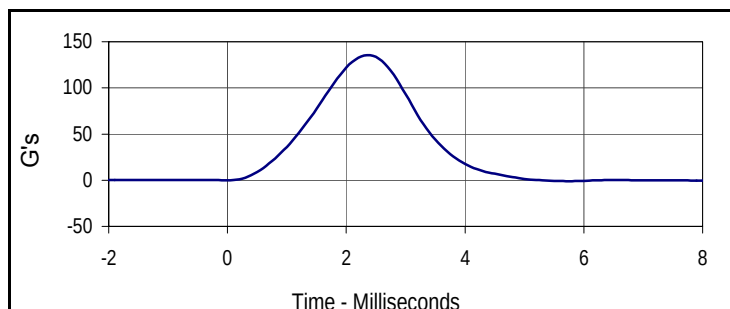
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3882.7	2.4	-32.0	5.9

**Curve Description****Left Knee Acceleration**

Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
132.5	2.4	-1.1	5.9

**Curve Description****Right Knee Probe Force**

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3973.6	2.4	-29.7	5.8

**Curve Description****Right Knee Acceleration**

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
135.6	2.4	-1.0	5.8

Test Program: Hybrid III 5th Percentile Female Torso Flexion Test

Test Date: 11/22/11

ATD Serial No.: 635

Test I.D.: F635TF022



Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	545	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.6	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.9	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.7	Pass
Initial Reference Plane Angle		Degrees	≤ 20	8.3	Pass
Peak Force at 45° +/-0.5°		Newtons	320.0 to 390.0	358.4	Pass
Torso Rotation Rate		deg/sec	0.5 to 1.5	0.7	Pass
Final Reference Plane Angle		Degrees	+/-8	3.9	Pass
Overall Test Results					Pass

APPENDIX C
POST-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: Hybrid III 50th Percentile Male Dummy Damage Checklist

Test Date: 11/30/11

ATD Serial No.: 035

Test I.D.: N/A



Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 11/30/11

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.22	Pass
Laboratory Relative Humidity	%	10 to 70	29.7	Pass
A - Total sitting height	mm	879 to 889	882	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - H point height	mm	84 to 89	86	Pass
D - H point location from backline	mm	135 to 140	138	Pass
E - Shoulder pivot from backline	mm	84 to 94	85	Pass
F - Thigh clearance	mm	140 to 155	146	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	299	Pass
H - Head back to backline	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	334	Pass
J - Elbow rest height	mm	190 to 211	207	Pass
K - Buttock to knee length	mm	579 to 604	587	Pass
L - Popliteal length	mm	429 to 455	437	Pass
M - Knee pivot height	mm	485 to 500	489	Pass
N - Buttock popliteal length	mm	452 to 477	472	Pass
O - Chest depth without jacket	mm	213 to 229	224	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	434	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference (with chest jacket)	mm	970 to 1001	987	Pass
Z - Waist circumference	mm	836 to 866	864	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results			Pass	

Test Program: Hybrid III 50th Percentile Male Head Drop Test

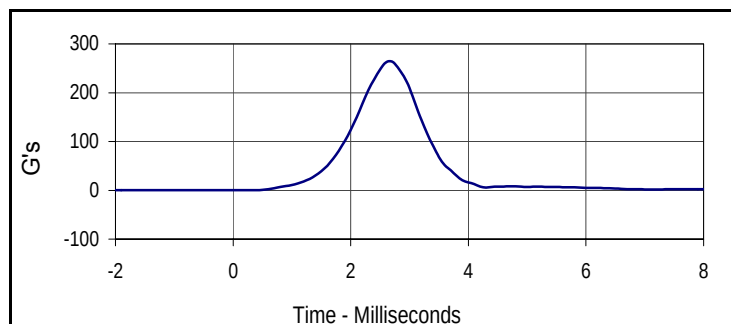
Test Date: 11/30/11

ATD Serial No.: 035

Test I.D.: M035HD025



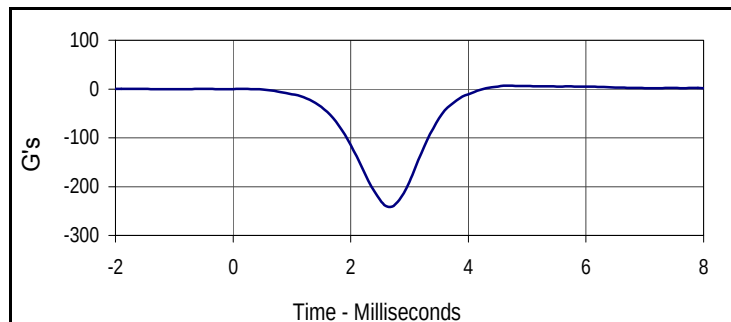
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	250	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	35.3	Pass
Peak Resultant Acceleration		G's	225.0 to 275.0	263.8	Pass
Peak Lateral Acceleration		G's	≤15.0	3.4	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	6.1	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

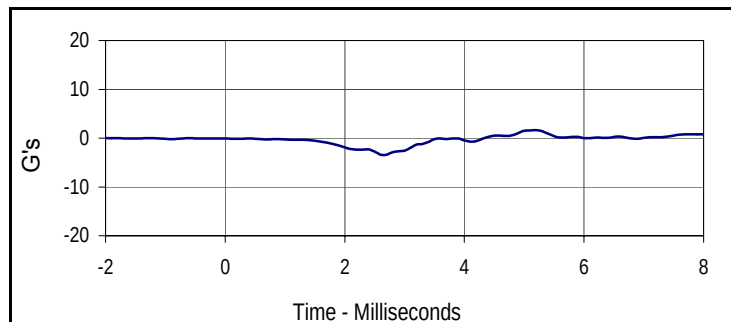
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
263.8	2.7	0.0	-2.0



Curve Description

Head X

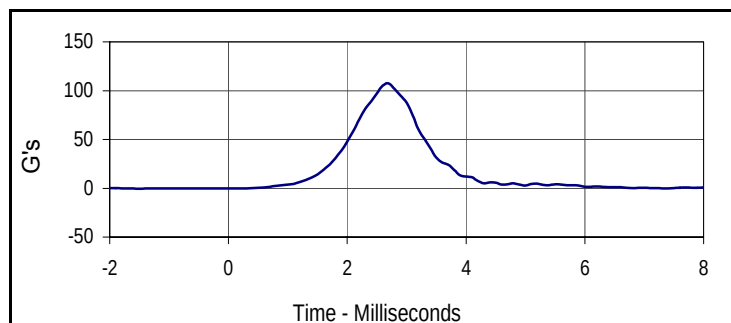
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.8	4.7	-240.9	2.7



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
1.6	5.2	-3.4	2.7



Curve Description

Head Z

Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
107.2	2.7	-0.4	-1.5

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

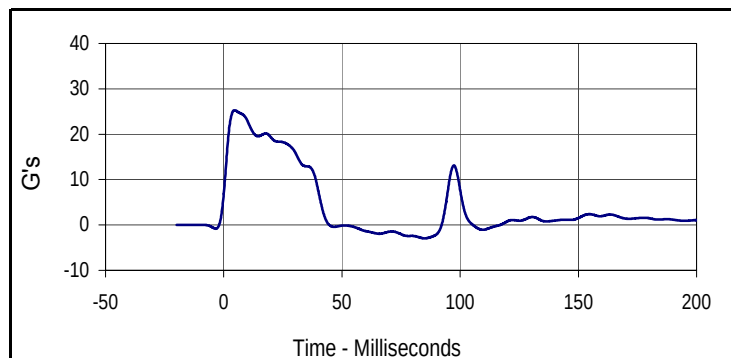
Test Date: 11/30/11

ATD Serial No.: 035

Test I.D.: M035NF025



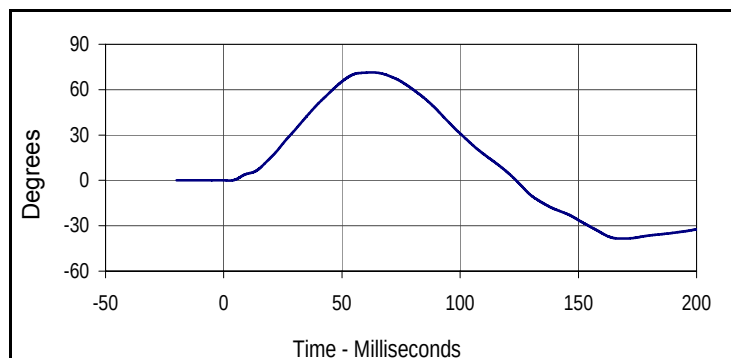
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	300	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	33.3	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.9	Pass
	20 Msec.	G's	17.6 to 22.6	19.3	Pass
	30 Msec.	G's	12.5 to 18.5	16.2	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	16.2	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	41.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	71.4	Pass
	Time	Msec.	57.0 to 64.0	62.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	123.7	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	87.1	Pass
	Time	Msec.	47.0 to 58.0	54.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.2	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

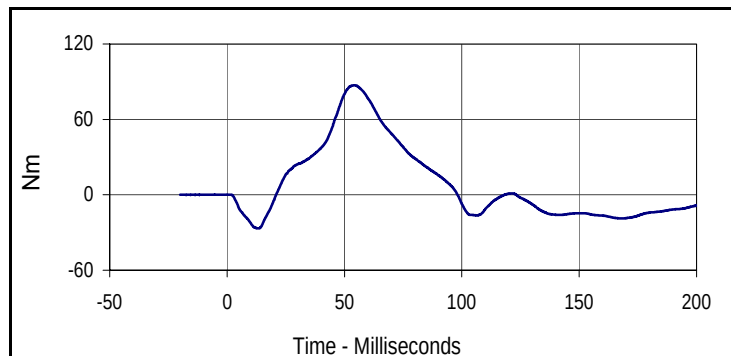
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
25.3	4.6	-2.9	84.9



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
71.4	62.8	-38.5	168.6



Curve Description

Moment About Occipital Condyle

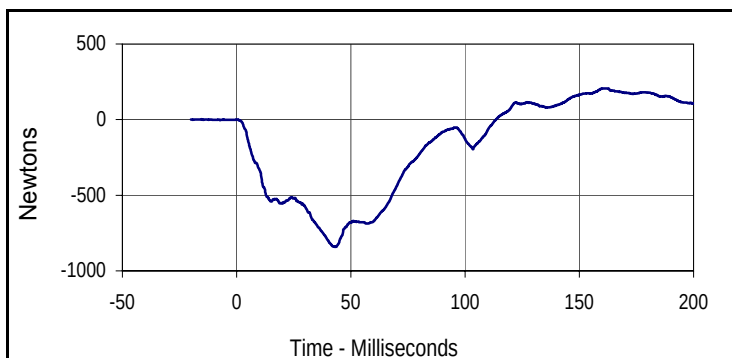
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
87.1	54.4	-26.7	13.4

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

ATD Serial No.: 035

Test Date: 11/30/11

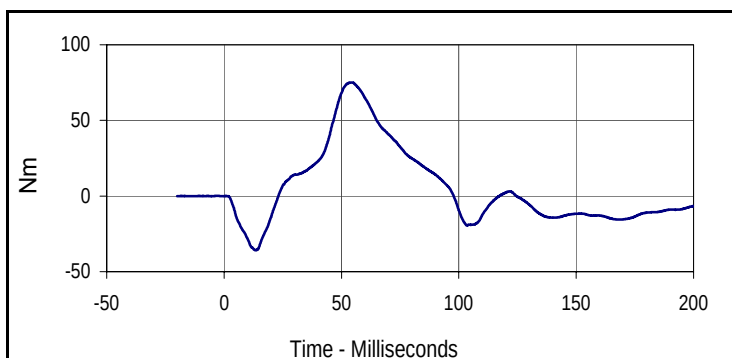
Test I.D.: M035NF025



Curve Description

Neck Force X

Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
206.9	161.6	-841.0	43.4



Curve Description

Neck Moment Y

Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
75.1	54.4	-35.8	13.5

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

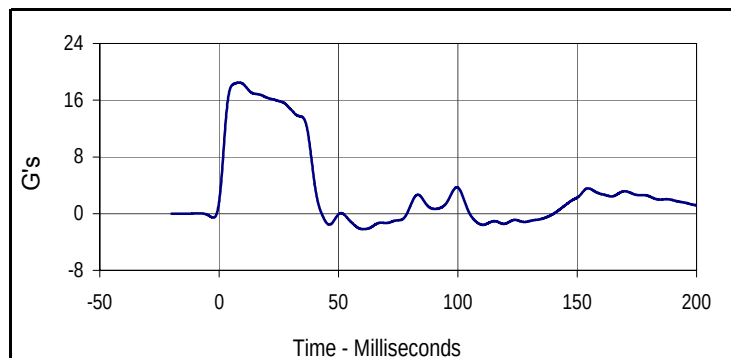
Test Date: 11/30/11

ATD Serial No.: 035

Test I.D.: M035NE025



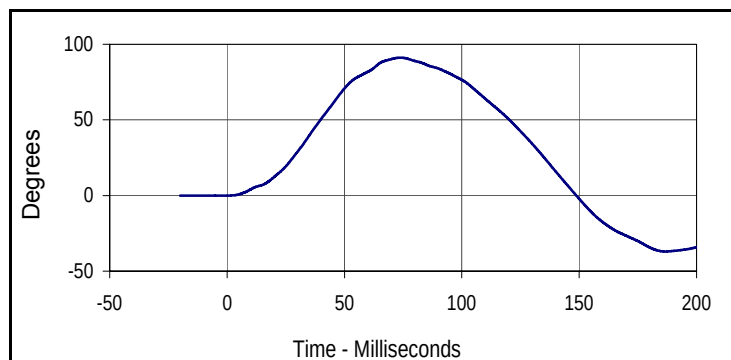
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	325	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	34.7	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.08	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.3	Pass
	20 Msec.	G's	14.0 to 19.0	16.4	Pass
	30 Msec.	G's	11.0 to 16.0	14.7	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	14.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	91.1	Pass
	Time	Msec.	72.0 to 82.0	73.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	148.8	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-70.7	Pass
	Time	Msec.	65.0 to 79.0	69.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	147.2	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

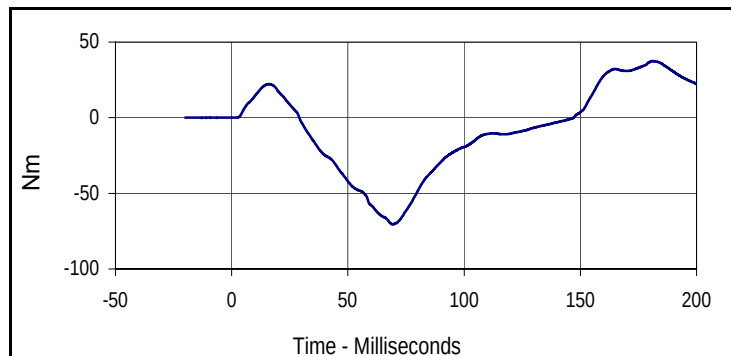
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.5	8.3	-2.2	60.2



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
91.1	73.9	-37.0	186.6



Curve Description

Moment About Occipital Condyle

Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
37.5	181.1	-70.7	69.2

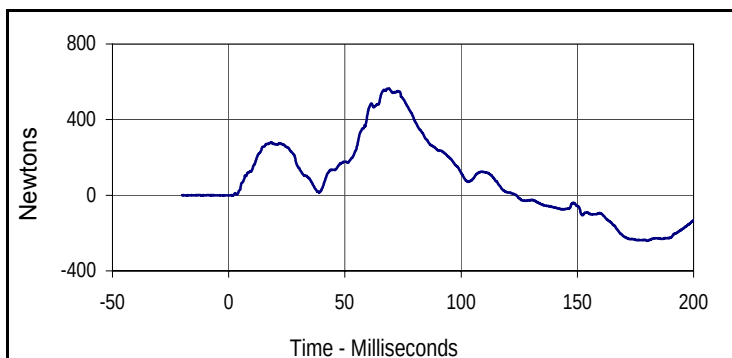
Test Program: Hybrid III 50th Percentile Male Neck Extension Test

Test Date: 11/30/11

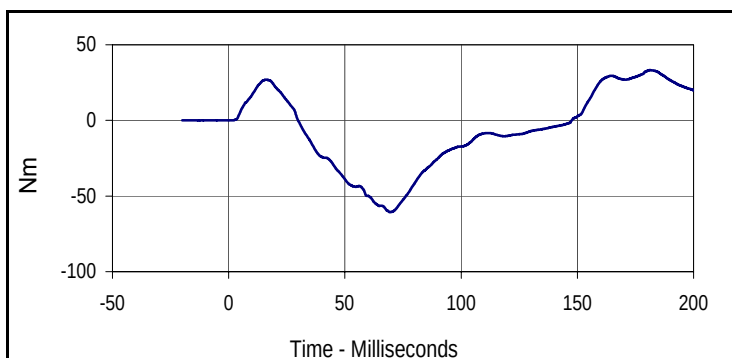


ATD Serial No.: 035

Test I.D.: M035NE025



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
564.6	68.7	-241.5	179.9



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
33.3	181.1	-60.7	69.3

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

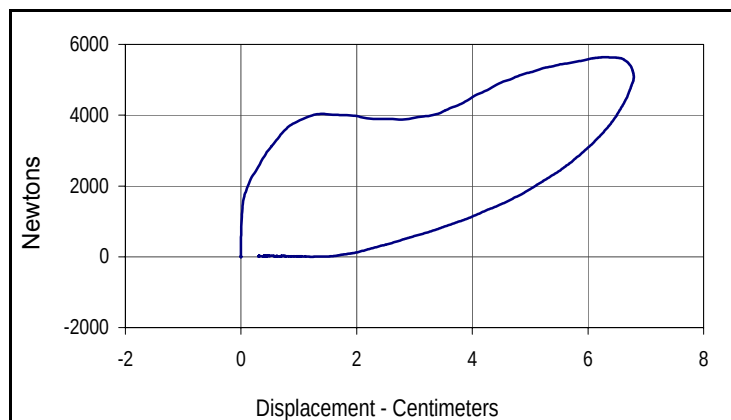
Test Date: 11/30/11

ATD Serial No.: 035

Test I.D.: M035CH025



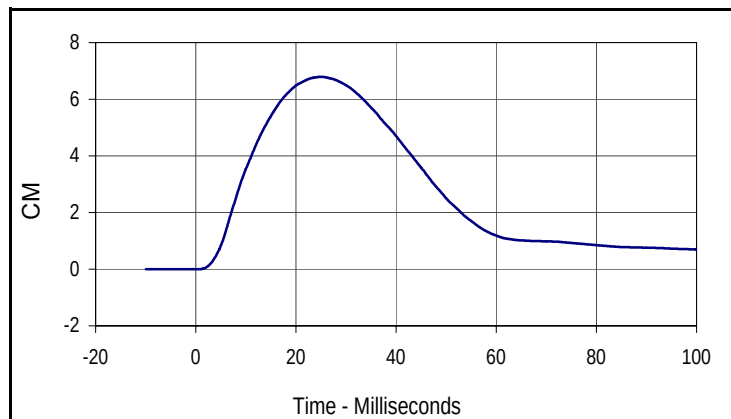
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	410	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	35.2	Pass
Probe Velocity		m/s	6.58 to 6.82	6.65	Pass
Peak Probe Force		Newtons	5159 to 5893	5639	Pass
Peak Sternum Deflection		CM	6.35 to 7.26	6.79	Pass
Internal Hysteresis		%	69 to 85	72.2	Pass
Overall Test Results				Pass	



Curve Description

Probe Force vs. Chest Deflection

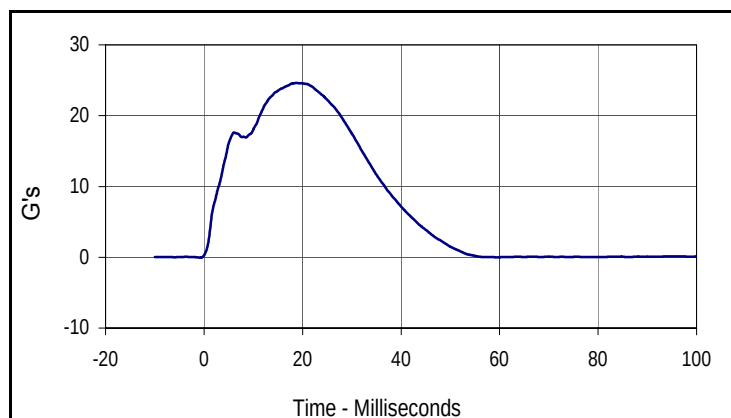
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	72.2
Peak Probe Force		Peak Chest Deflection	
5639		6.79	



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
6.8	25.1	0.0	0.5



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
24.6	18.8	0.0	-0.8

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 ATD Serial No.: 035

Test Date: 11/30/11
 Test I.D.: M035LK025 , M035RK025

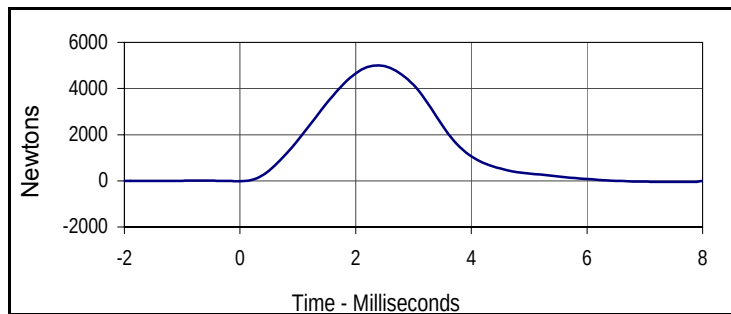


Left Knee

Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	440	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.6	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.6	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force		Newtons	4715 to 5782	5005	Pass
Overall Test Results				Pass	

Right Knee

Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force		Newtons	4715 to 5782	5011	Pass
Overall Test Results				Pass	



Curve Description

Left Knee Probe Force

Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5004.7	2.4	-43.4	7.8



Curve Description

Left Knee Acceleration

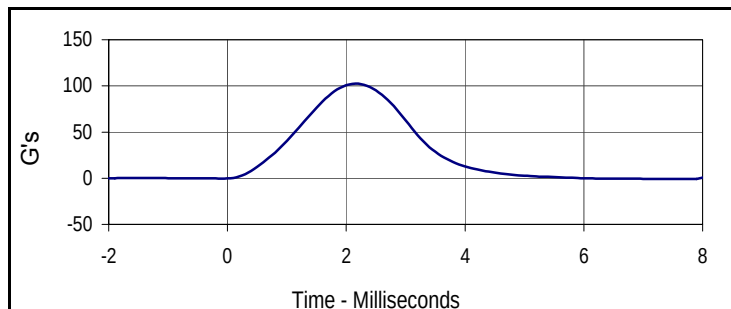
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
102.3	2.4	-0.9	7.8



Curve Description

Right Knee Probe Force

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
5011.2	2.2	-43.3	10.0



Curve Description

Right Knee Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
102.4	2.2	-0.9	10.0

Test Program: Hybrid III 50th Percentile Male Hip Joint-Femur Flexion Test
 ATD Serial No.: 035

Test Date: 11/30/11
 Test I.D.: M035LF025, M035RF025

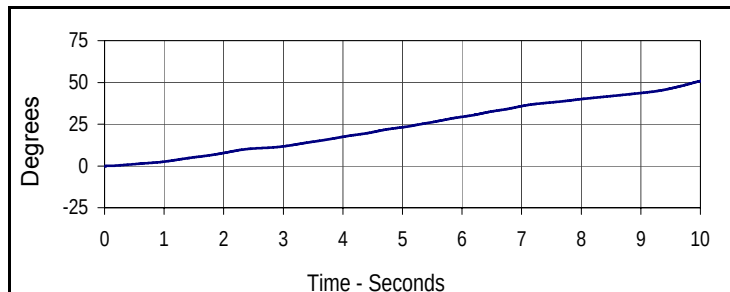


Left Hip Joint-Femur Results

Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	485	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		21.1	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		29.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	34.5	Pass
Rotation Rate	deg/sec	5 to 10	5.1	Pass
Femur Torque at 30°	Nm	≤ 95	86.9	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	48.4	Pass
Overall Test Results				Pass

Right Hip Joint-Femur Results

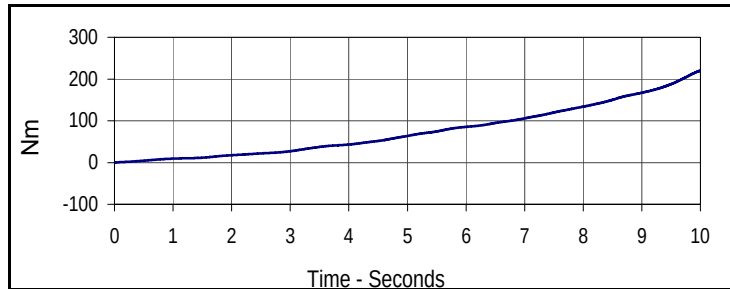
Rotation Rate	deg/sec	5 to 10	5.1	Pass
Femur Torque at 30°	Nm	≤ 95	85.7	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	48.4	Pass
Overall Test Results				Pass



Curve Description

Left Hip-Femur Rotation

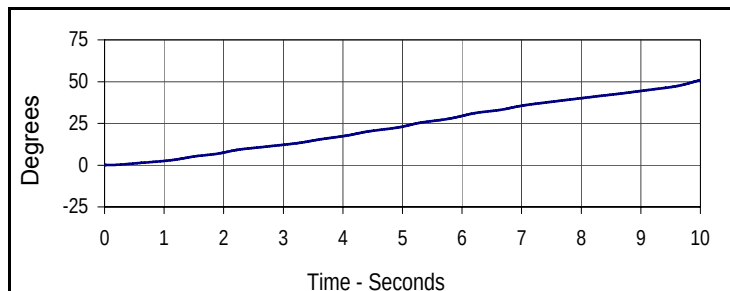
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
50.8	10.0	0.0	0.0



Curve Description

Left Femur Torque

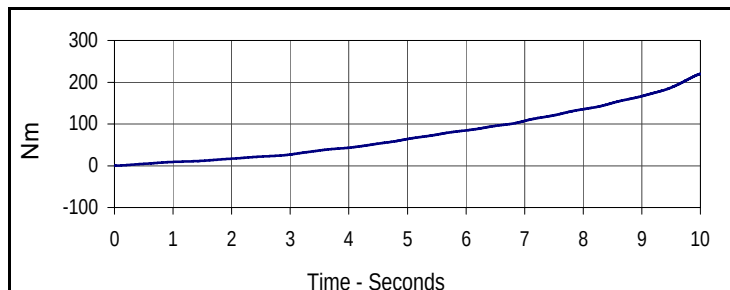
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
219.9	10.0	0.4	0.0



Curve Description

Right Hip-Femur Rotation

Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
50.8	10.0	0.0	0.0



Curve Description

Right Femur Torque

Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
219.9	10.0	0.1	0.0

Test Program: Hybrid III 5th Percentile Female Dummy Damage Checklist

Test Date: 11/30/11

ATD Serial No.: 635

Test I.D.: N/A



Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 11/30/11

ATD Serial No.: 635

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.18	Pass
Laboratory Relative Humidity	%	10 to 70	31.7	Pass
A - Total sitting height	mm	774.7 to 800.1	778	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	449	Pass
C - H point height	mm	81.3 to 86.3	85	Pass
D - H point location from backline	mm	144.8 to 149.8	145	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	80	Pass
F - Thigh clearance	mm	119.4 to 134.6	126	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	251	Pass
H - Head back to backline	mm	40.7 to 45.7	43	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	281	Pass
J - Elbow rest height	mm	182.8 to 203.2	199	Pass
K - Buttock to knee length	mm	520.7 to 546.1	530	Pass
L - Popliteal length	mm	355.6 to 376.0	374	Pass
M - Knee pivot height	mm	393.7 to 419.1	399	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	185	Pass
P - Foot length	mm	218.5 to 233.7	221	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	476	Pass
S - Head Breadth	mm	137.1 to 147.3	143	Pass
T - Head Depth	mm	177.8 to 188.0	181	Pass
U - Hip Breadth	mm	299.7 to 314.9	300	Pass
V - Shoulder breadth	mm	350.5 to 365.7	359	Pass
W - Foot breadth	mm	78.8 to 94.0	91	Pass
X - Head circumference	mm	528.3 to 548.7	539	Pass
Y - Chest circumference (with chest jacket)	mm	850.8 to 881.3	859	Pass
Z - Waist circumference	mm	759.5 to 789.9	766	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	300	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	165	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female Head Drop Test

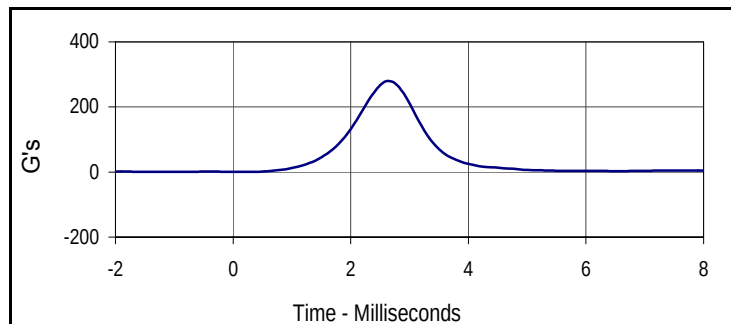
Test Date: 11/30/11

ATD Serial No.: 635

Test I.D.: F635HD023



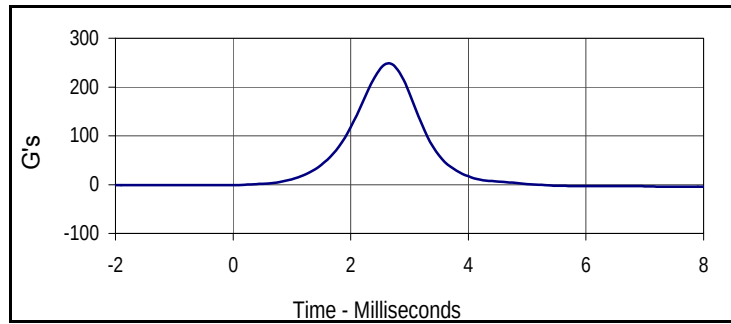
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	270	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.6	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.7	Pass
Peak Resultant Acceleration		G's	250.0 to 300.0	279.0	Pass
Peak Lateral Acceleration		G's	≤15.0	3.3	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	1.7	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

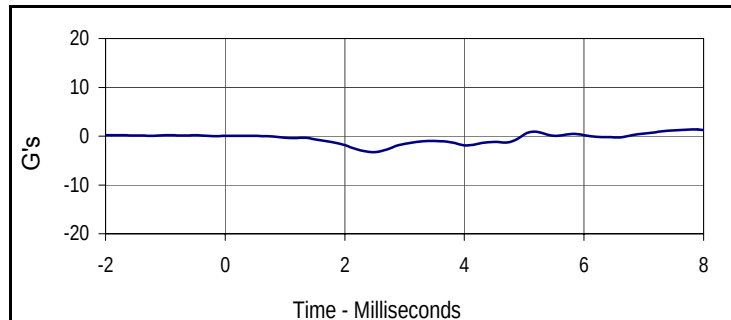
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
279.0	2.6	0.2	0.3



Curve Description

Head X

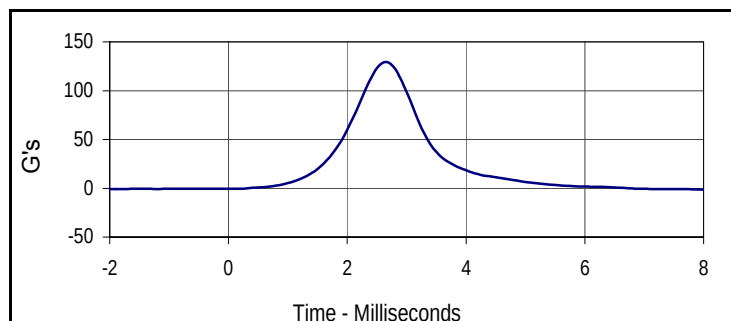
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
247.5	2.6	-3.1	6.0



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
0.9	5.2	-3.3	2.5



Curve Description

Head Z

Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
128.6	2.6	-0.8	-2.0

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

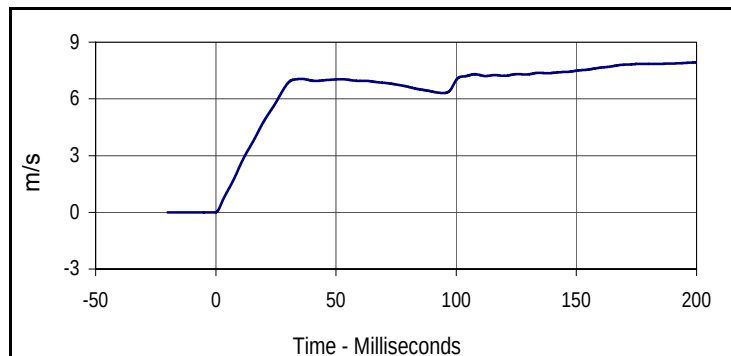
Test Date: 11/30/11

ATD Serial No.: 635

Test I.D.: F635NF023



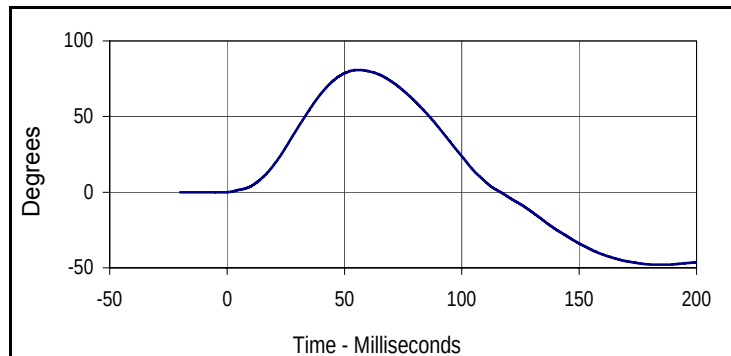
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	345	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	35.2	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.02	Pass
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.45	Pass
	20 Msec.	m/s	4.0 to 5.0	4.82	Pass
	30 Msec.	m/s	5.8 to 7.0	6.84	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	80.8	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	78.6	Pass
Positive Moment Decay, Time To 10 Nm		Msec.	80.0 to 100.0	86.3	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Velocity

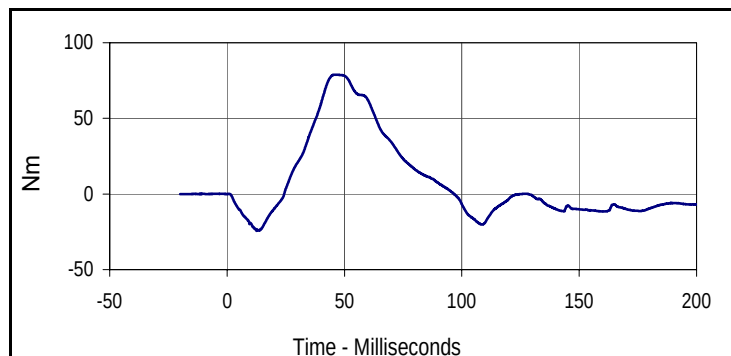
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
7.9	200.0	0.0	-0.4



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
80.8	55.9	-47.9	187.8



Curve Description

Moment About Occipital Condyle

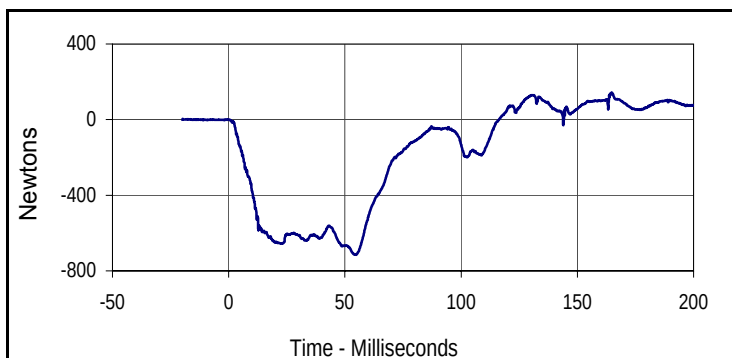
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
78.9	47.0	-24.4	12.5

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

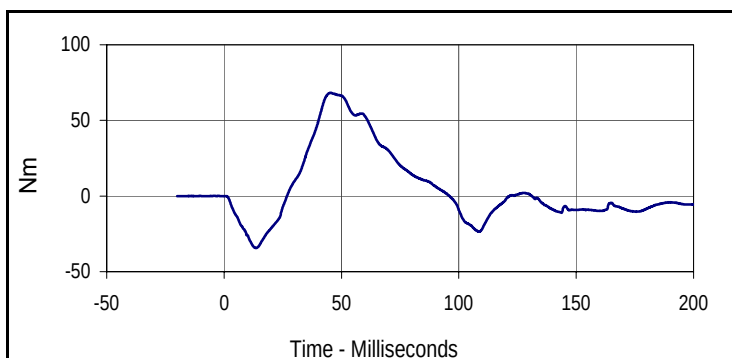
ATD Serial No.: 635

Test Date: 11/30/11

Test I.D.: F635NF023



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
143.0	164.9	-714.9	54.8



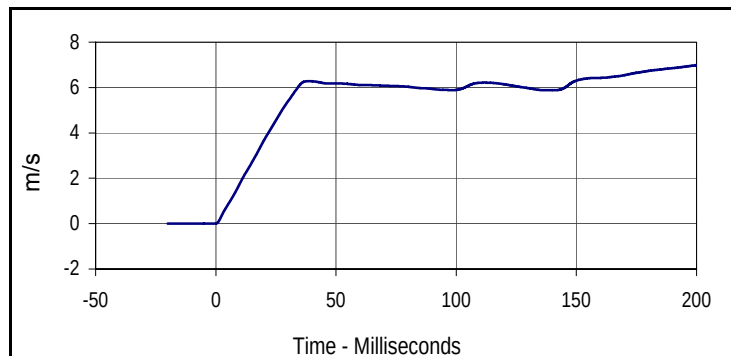
Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
68.2	45.5	-34.3	13.8

Test Program: Hybrid III 5th Percentile Female Neck Extension Test
 ATD Serial No.: 635

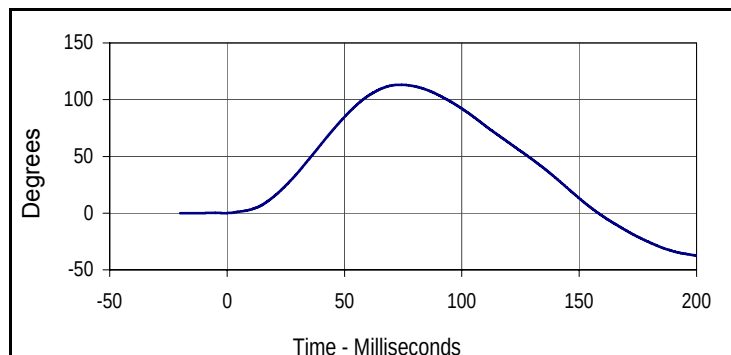
Test Date: 11/30/11
 Test I.D.: F635NE023



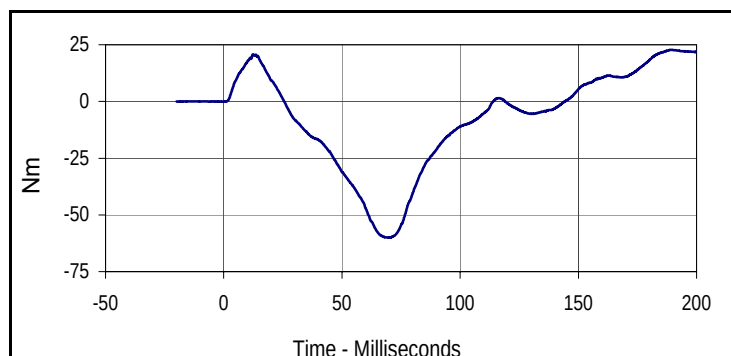
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	360	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.8	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.6	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.13	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.8	Pass
	20 Msec.	m/s	3.1 to 3.9	3.7	Pass
	30 Msec.	m/s	4.6 to 5.6	5.4	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	113.2	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-60.0	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	102.9	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
7.0	200.0	0.0	-0.6



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
113.2	73.7	-37.4	200.0



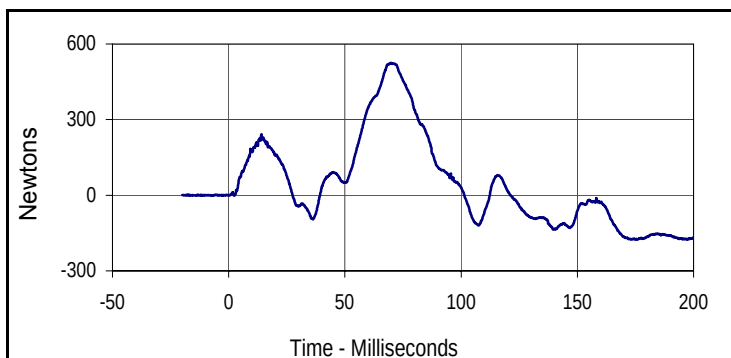
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
22.8	189.7	-60.0	69.9

Test Program: Hybrid III 5th Percentile Female Neck Extension Test

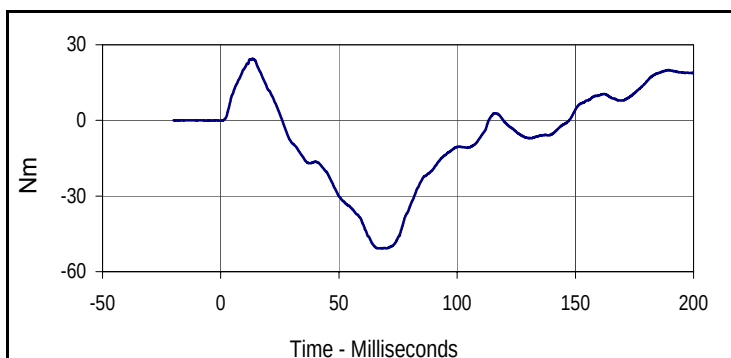
ATD Serial No.: 635

Test Date: 11/30/11

Test I.D.: F635NE023



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
525.5	69.8	-175.7	175.0



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
24.5	13.5	-50.7	67.2

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test

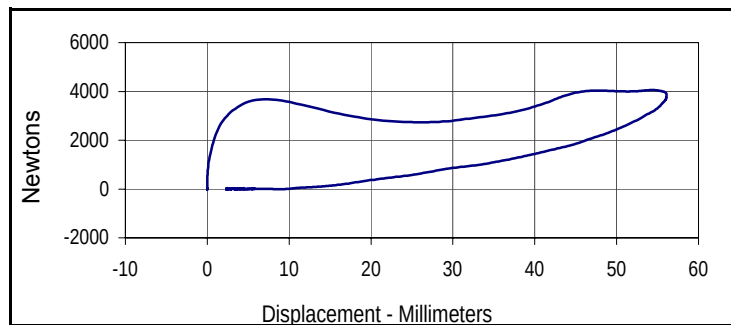
Test Date: 11/30/11

ATD Serial No.: 635

Test I.D.: F635CH023



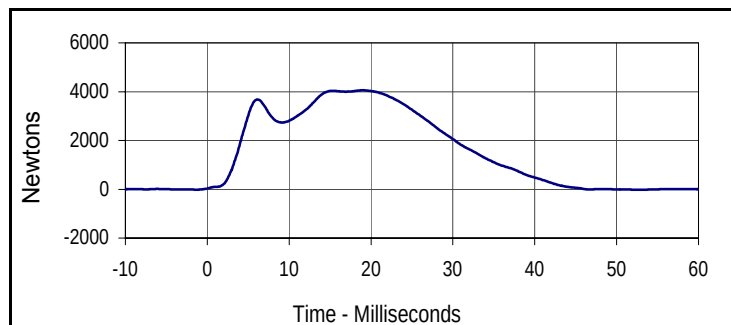
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	455	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.4	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	35.2	Pass
Probe Velocity		m/s	6.59 to 6.83	6.71	Pass
Peak Chest Deflection		mm	50.0 to 58.0	56.1	Pass
Peak Force Between 50 and 58 MM		Newtons	3900 to 4400	4035	Pass
Peak Force Between 18 and 50 MM		Newtons	≤4600	4054	Pass
Internal Hysteresis		%	69 to 85	69.9	Pass
Overall Test Results					Pass



Curve Description

Probe Force vs. Chest Deflection

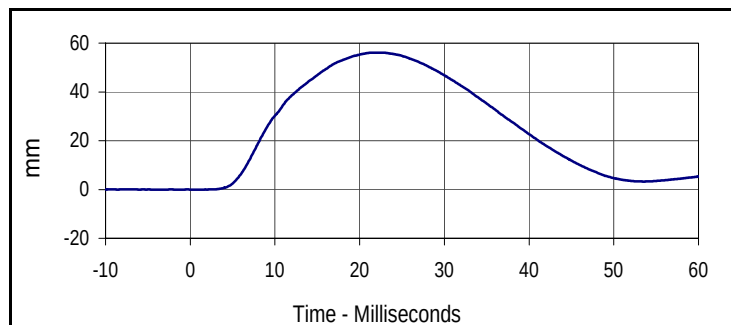
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	69.9
Peak Probe Force		Peak Chest Deflection	
4053.5		56.1	



Curve Description

Probe Force

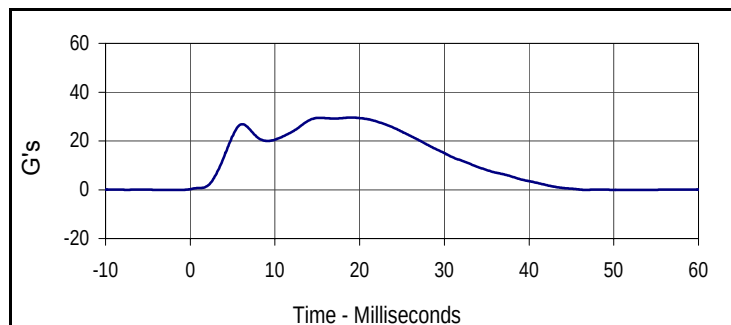
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4053.5	19.0	-22.9	181.6



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
003	FIL	600	mm
Max	Time	Min	Time
56.1	21.7	0.0	-1.5



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
29.6	19.0	-0.1	52.8

Test Program: Hybrid III 5th Percentile Female Knee Impact Test

Test Date: 11/30/11

ATD Serial No.: 635

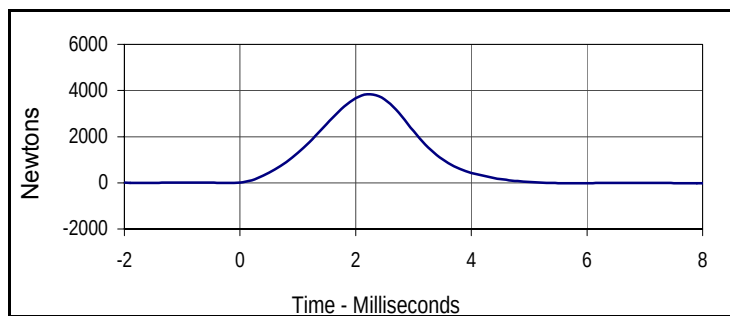
Test I.D.: F635LK023, F635RK023

**Left Knee**

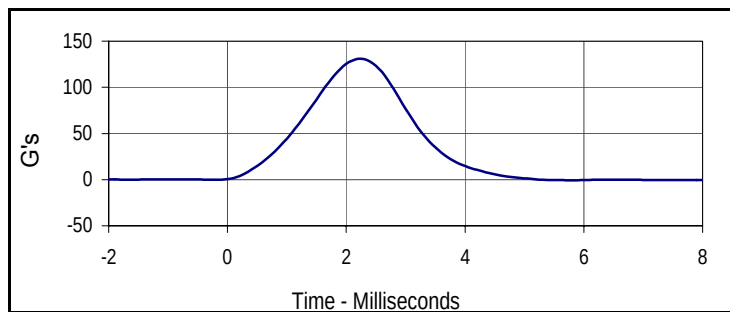
Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	500	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.6	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	35.8	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force		Newtons	3450 to 4060	3835	Pass
Overall Test Results					Pass

Right Knee

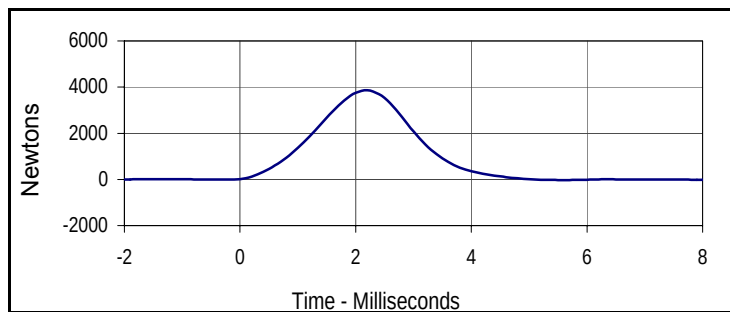
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.100	Pass
Peak Probe Force		Newtons	3450 to 4060	3861	Pass
Overall Test Results					Pass

**Curve Description****Left Knee Probe Force**

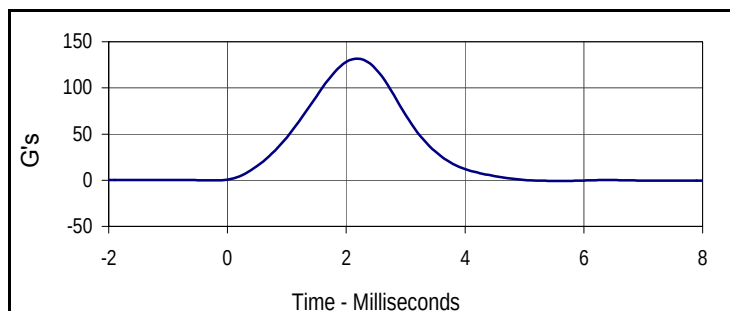
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3834.9	2.2	-18.6	9.3

**Curve Description****Left Knee Acceleration**

Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
130.8	2.2	-0.6	9.3

**Curve Description****Right Knee Probe Force**

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3860.5	2.2	-25.5	5.6

**Curve Description****Right Knee Acceleration**

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
131.7	2.2	-0.9	5.6

Test Program: Hybrid III 5th Percentile Female Torso Flexion Test

Test Date: 11/30/11

ATD Serial No.: 635

Test I.D.: F635TF023



Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	300	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		21.1	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	34.3	Pass
Initial Reference Plane Angle		Degrees	≤ 20	8.7	Pass
Peak Force at 45° +/-0.5°		Newtons	320.0 to 390.0	341.0	Pass
Torso Rotation Rate		deg/sec	0.5 to 1.5	0.7	Pass
Final Reference Plane Angle		Degrees	+/-8	4.8	Pass
Overall Test Results				Pass	