

REPORT NUMBER: SPNCAP-KAR-12-020

**NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

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

NHTSA No: MC0117

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



DECEMBER 13, 2011

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of 2012 Cadillac SRX 5-Door MPV NHTSA No. MC0117		5. Report Date December 13, 2011																												
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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-P31007-07-NC																												
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		14. Sponsoring Agency Code NVS-111																												
15. Supplementary Notes																														
16. Abstract A 32.2 km/h (20 mph) 75 deg. oblique impact Side NCAP Test was conducted on the subject 2012 Cadillac SRX 5-door MPV in accordance with the specifications of the Office of Crash Worthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on November 30, 2011. The impact velocity was 32.0 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 22.8 deg. C. The target vehicle's maximum post-test static crush was 394 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (ES-2re)</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>614</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>mm</td> <td>82</td> <td>60</td> </tr> <tr> <td>Total Pelvic Force (Sum of Acetubular and Iliac Forces)</td> <td>N</td> <td>5525</td> <td>4009</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>N</td> <td>38</td> <td>29</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td>mm</td> <td>45</td> <td>35</td> </tr> </tbody> </table> The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches, and the opposite doors did not open during the side impact event.				Measurement Description	Driver ATD (ES-2re)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	614	Resultant Lower Spine Acceleration	mm	82	60	Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	4009	Maximum Thoracic Rib Deflection	N	38	29	Maximum Abdominal Rib Deflection	mm	45	35
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Reference Division 1200 New Jersey Ave., SE Room W43-410 Washington, DC 20590																												
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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2012 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-09-D-00122. The purpose of this test is to generate comparative side impact performance in a 2012 Cadillac SRX 5-Door MPV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated August 2011.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2012 Cadillac SRX 5-Door MPV. The subject vehicle was towed into the rigid pole at an angle of 75.7° and a velocity of 32.0 km/h. The test was conducted by KARCO Engineering, LLC. in Adelanto, California, on November 30, 2011. Pre- and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated August 2011. Camera locations and other pertinent camera information are included in this report.

The Part 572V (SID-IIs) was instrumented in the accordingly:

- Head CG tri-axial accelerometers
- Thorax upper, middle and lower rib displacement potentiometers
- Abdomen upper and lower rib displacement potentiometers
- Lower spine (12) tri-axial accelerometers
- Iliac load cell
- Acetabulum load cell

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report.

Injury readings for the SID-IIs dummy were recorded as follows:

Measurement Description	Units	Passenger ATD (SID-IIs)	
		IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	614
Lower Spine (T12) Resultant Acceleration	g	82	60
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4009
Maximum Thoracic Rib Deflection	mm	38*	29
Maximum Abdominal Rib Deflection	mm	45*	35

*Proposed IARV

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Torso/Pelvis)	Yes	Yes	No	
Side Airbag 2 (Curtain)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other				

GENERAL COMMENTS

Both the front and rear doors on the struck side of the vehicle remained closed and latched. There was no separation at the hinges or latches. Both doors on the non-struck side remained closed and latched. There were no ATD values that exceeded limits.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV NHTSA No. MC0117
Test Program: NCAP Side Pole Impact Test Test Date: 11/30/11

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 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MC0117
Model Year	2012
Make	Cadillac
Model	SRX
Body Style	5-Door MPV
VIN	3GYFNAE37CS503861
Body Color	Gold Mist Metallic
Odometer Reading (km / mi)	111 / 178
Engine Displacement (L)	3.6
Type / No. of Cylinders	V6
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	Front
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)	No

Traction Control System (TCS)	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
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head/Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso/Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	No
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
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 de Mexico, S. de R.L. de C.V.
Date of Manufacture	Jul-11
Vehicle Type	MPV

GVWR (kg)	2480
GAWR Front (kg)	1410
GAWR Rear (kg)	1300

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	2	3		5	A
Capacity Weight (VCW) (kg)				478.0	B
DSC x 68.04 (kg)				340.2	B
Cargo Weight (RCLW) (kg)				137.8	A-B

VEHICLE SEAT TYPE

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

DATA SHEET NO. 1 ... (CONTINUED)

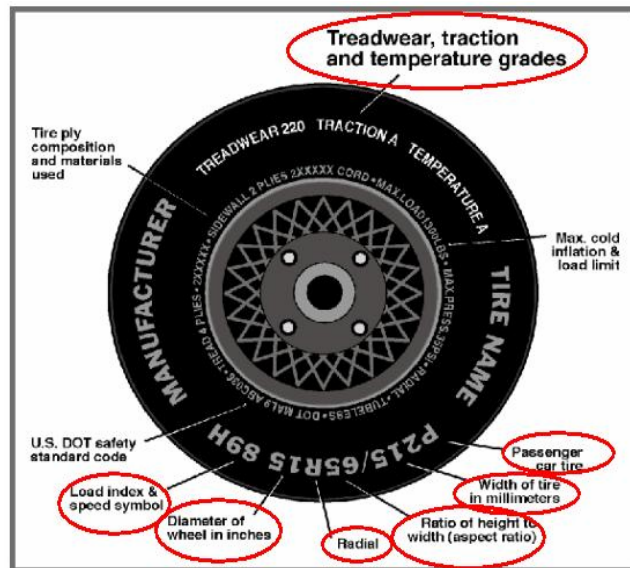
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	300	300
Recommended Tire Size	235/65R18	235/65R18

VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Tire Size on Vehicle	235/65R18	235/65R18
Tire Manufacturer	Michelin	Michelin
Tire Name	Latitude	Latitude
Tire Type	Passenger	Passenger
Tire Width	235	235
Aspect Ratio	65	65
Radial	Yes	Yes
Wheel Diameter	18	18
Load Index/Speed Symbol	104H	104H
Treadware	440	440
Traction Grade	A	A
Temperature Grade	A	A
Tire Material	Polyester, Polyamide, Steel	Polyester, Polyamide, Steel

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	235	240	245	245
Tire Placard	kPa	240	240	240	240
Owner's Manual	kPa	240	240	240	240
As Tested	kPa	240	240	240	240

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	594.0	432.0		595.5	500.0		594.0	526.0	
Right	kg	563.0	412.5		589.0	497.0		562.5	502.0	
Ratio	%	57.8%	42.2%	100.0%	54.3%	45.7%	100.0%	52.9%	47.1%	100.0%
Total	kg	1157.0	844.5	2001.5	1184.5	997.0	2181.5	1156.5	1028.0	2184.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2001.5	A
Actual Weight of 1 P572 O ATD Used	kg	49.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	136.0	C
Calculated Vehicle Target Wt (TVTW)	kg	2186.5	A+B+C

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e.

Calculated Test Vehicle Target Weight -4.5 kg to -9 kg)?

☒ Yes

☐ No

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Non-Struck Side Door Panels and Windows	15.0
Trunk Interior	11.5
Trunk Rails	5.5
Ballast / Equipment Added	168.5

DATA SHEET NO. 1 ... (CONTINUED)**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2012 Cadillac SRX 5-Door MPVNHTSA No. MC0117Test Program: NCAP Side Pole Impact TestTest Date: 11/30/11**TEST VEHICLE ATTITUDE AND CG**

Measurement Description	Units	As Delivered	As Tested	Fully Loaded	Meets Requirement** *
Driver Door Sill Angle (front-to-rear)*	°	-0.5	-0.3	0.0	Yes
Front Passenger Sill Angle (front-to-rear)*	°	-0.3	-0.3	-0.3	Yes
Front Bumper-Line Angle (left-to-right)**	°	-0.6	-0.2	0.5	Yes
Rear Bumper-Line Angle (left-to-right)**	°	-0.3	-0.3	-0.2	Yes
Vehicle CG (Aft of Front Axle)	mm	1189	1287	1326	
Vehicle CG (Left (+)/Right (-) from Longitudinal Centerline)	mm	20	4	21	

*ND=Nose Down (-), NU=Nose Up (+)

**LD=Left Down (-), LU=Left Up (+)

***The "As Tested" vehicle attitude angle measurements must be within "As Delivered" and the "Fully Loaded" vehicle attitude measurements at each location. Indicate "Yes" or "No" for "Meets Requirement"

DATA SHEET NO. 2**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**Test Vehicle: 2012 Cadillac SRX 5-Door MPVNHTSA No. MC0117Test Program: NCAP Side Pole Impact TestTest Date: 11/30/11**SEAT POSITIONING**

The driver's seat is set to the forward most position where the ATD will not contact any interior panels at the mid-height and mid-angle position. The front center seat (if applicable) and right front passenger's seat should be set in a similar manner as the driver's seat. The struck side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rearmost, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	7.8	0.0	3.9
Front Passenger Seat	8.0	0.0	4.0
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle	As Tested SCRP Height	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid Fore/Aft	Forwardmost
Driver Seat	3.9	709	Max	728	731	735
			Mid	702	705	709
			Min	675	678	682
Front Passenger Seat	4.0	708	Max	726	730	734
			Mid	700	704	708
			Min	674	678	632
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

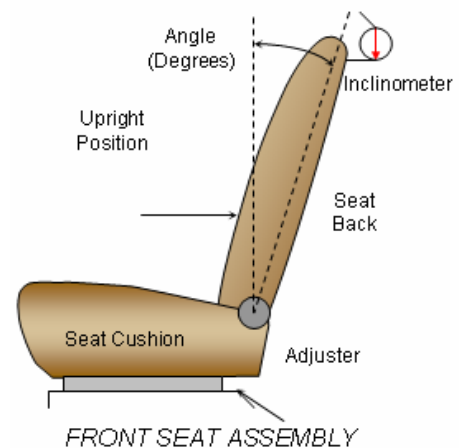
Test Date: 11/30/11

SEAT FORE/AFT POSITION

Seat	Total Fore/Aft Travel		Test Position From Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	244		0	
Front Passenger Seat	244		0	
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BACK ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The right front passenger seat back is set to the same angle as the driver's seat.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degree	Detent*
Driver Seat w/Seated Dummy	92.4		-26.0	
Front Passenger Seat	92.0		-26.0	
Front Center Seat				
Struck Side Rear Seat w/Seated Dummy	9.7	6	11.9	0
Non-Struck Side Rear Seat	9.7	6	11.9	0
Rear Center Seat	9.7	6	11.9	0

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1.

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

DATA SHEET NO. 2 ... (CONTINUED)

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

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11

HEAD RESTRAINT ADJUSTMENT

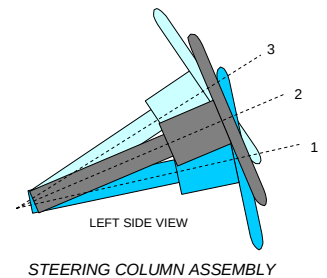
The driver's head restraint is adjusted to the lowest and most full forward in-use position.

	Total No. of Positions	Placed in Position
Driver Seat	9 Vertical	Full Down

STEERING COLUMN ADJUSTMENT

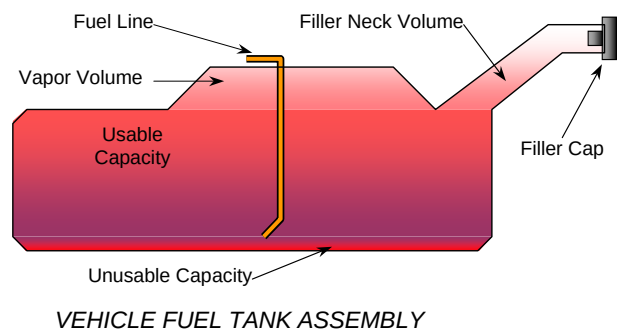
Steering wheel and column adjustments are made so that the steering wheel hub is at the center of the geometric locus it describes when it moves through its full range of motion.

	Degrees	Fore-Aft Position (mm)
Lowermost - Position 1	21.0	0
Geometric Center - Position 2	22.6	25
Uppermost - Position 3	24.2	50
Telescoping Steering Wheel Travel		50
Test Position	22.6	25



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.



DATA SHEET NO. 2 ... (CONTINUED)**SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA**Test Vehicle: 2012 Cadillac SRX 5-Door MPV NHTSA No. MC0117Test Program: NCAP Side Pole Impact Test Test Date: 11/30/11**FUEL TANK CAPACITY**

Description	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	79.49
Usable Capacity of "Optional Tank" (see Form No. 1)	
Usable Capacity of "Standard Tank" (see Owner's Manual)	
Usable Capacity of "Optional Tank" (see Owner's Manual)	
93% of Usable Capacity	73.92
Actual amount of Solvent Used in Test	73.92
1/3 of Usable Capacity	26.50

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

DATA SHEET NO. 3

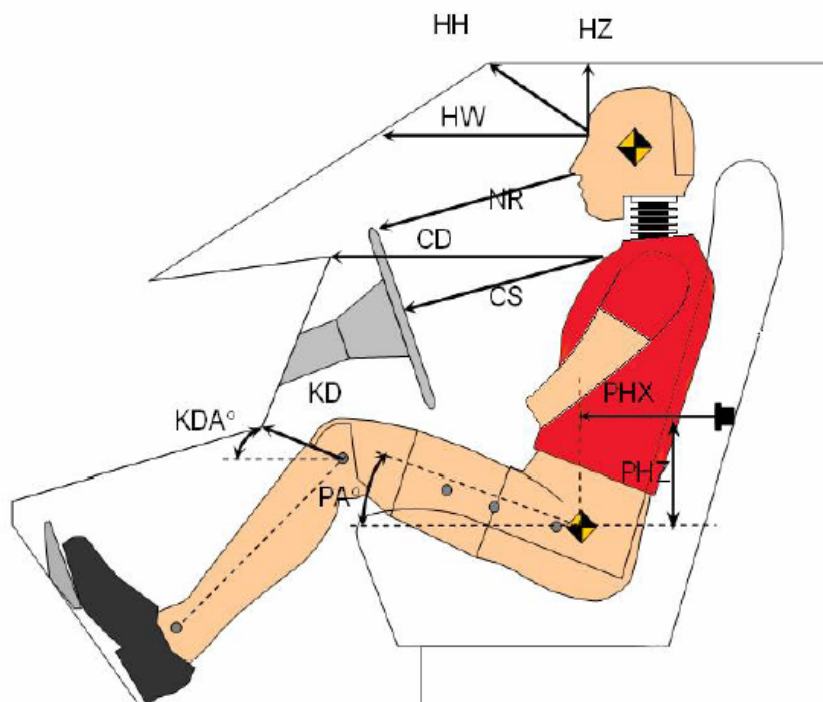
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Description	Driver	
		Length (mm)	Angle (°)
HH	Head to Header	291	
HW	Head to Windshield	646	
HZ	Head to Roof	211	
NR	Nose to Rim	251	
CD	Chest to Dash	427	
CS	Chest to Steering Wheel	197	
KD(L)/KDA(L)°	Left Knee to Dash	121	34.3
KD(R)/KDA(R)°	Right Knee to Dash	90	44.4
PAX°	Pelvic Tilt Angle (x-axis)		20.5
PAY°	Pelvic Tilt Angle (y-axis)		0.2
PHX	Hip Point to Striker (x-axis)	324	
PHZ	Hip Point to Striker (z-axis)	83	

DATA SHEET NO. 4

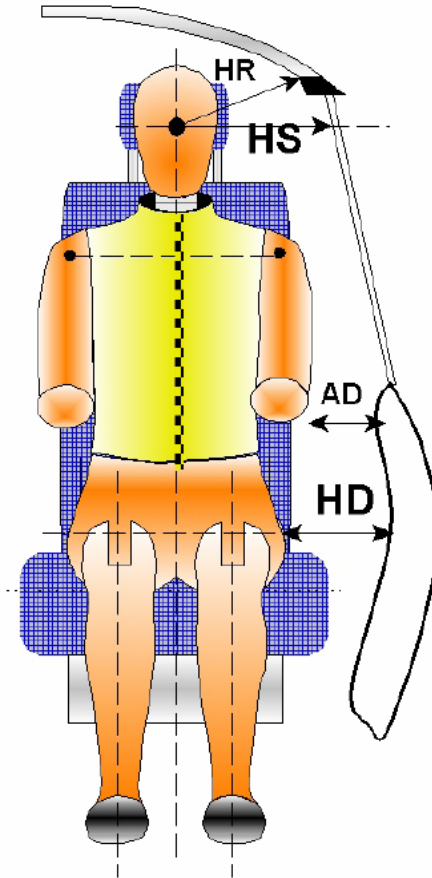
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver
HR	Head to Side Header	mm	245
HS	Head to Side Window	mm	365
AD	Arm to Door	mm	181
HD	H-Point to Door	mm	186

DATA SHEET NO. 5

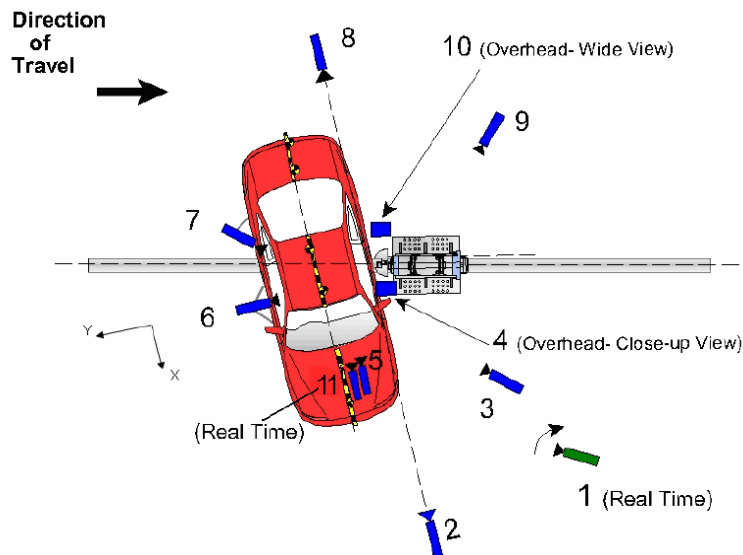
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

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CAMERA LOCATIONS AND DATA

Camera No.	View	Coordinates (m)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real Time Pan View of Impact	8.89	46.57	-3.04		30
2	Front Ground Level - Impact View	8.34	-0.05	-0.93	24	1000
3	Impact Side 45° - Forward Pole View	4.10	-2.15	-1.15	8.5	1000
4	Overhead Close-Up View of Impact	0.00	0.00	-5.79	12.5	1000
5	On-Board - Dummy Front View	1.43	0.42	-1.50	35	400
6	On-Board - Dummy Side View	-0.01	1.62	-1.28	14	1000
7	On-Board - Dummy Rear Oblique View	-0.92	1.60	-1.31	20	1000
8	Rear Ground Level - Impact View	-6.12	-6.23	-0.96	24	1000
9	Impact Side 45° - Rearward Pole View	-8.02	0.04	-1.01	35	1000
10	Overhead Wide View of Impact	-0.06	0.22	-5.79	14	1000
11	Real Time Dummy Front View	1.43	0.45	-1.48		30

Reference from Point of Impact for X and Y; from Ground for Z):

+X = Forward of Vehicle, +Y = Right of Vehicle, +Z = Down

*All measurements accurate to ± 6 mm

INSTRUMENTATION

Driver Dummy Channels	16
Vehicle Structure Accelerometers	18
Pole Load Cells	8
Total	42

DATA SHEET NO. 6

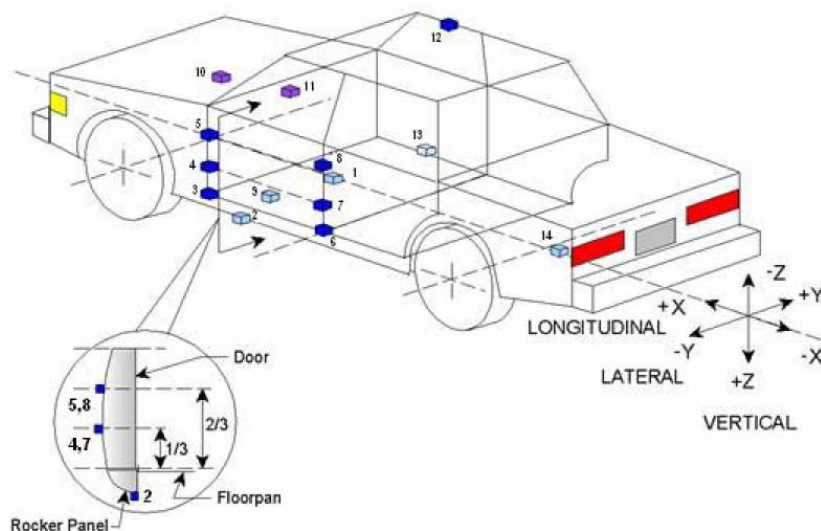
TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	1990	0	-350
2	Left Floor Sill			
3	A-Pillar Sill	2900	-435	-205
4	A-Pillar Low	3295	-865	-400
5	A-Pillar Mid	3295	-865	-535
6	B-Pillar Sill	3295	-865	-870
7	B-Pillar Low			
8	B-Pillar Mid			
9	Driver Seat Track	2285	-655	-880
10	Engine Top	4145	255	-625
11	Firewall	3770	420	-640
12	Right Roof	2310	500	-610
13	Right Floor Sill	970	750	-445
14	Rear Floorpan	475	670	-565

Reference: X – Rear surface of vehicle (+ forward)
Y – Vehicle centerline (+ to right)
Z – Ground plane (+ down)

DATA SHEET NO. 7

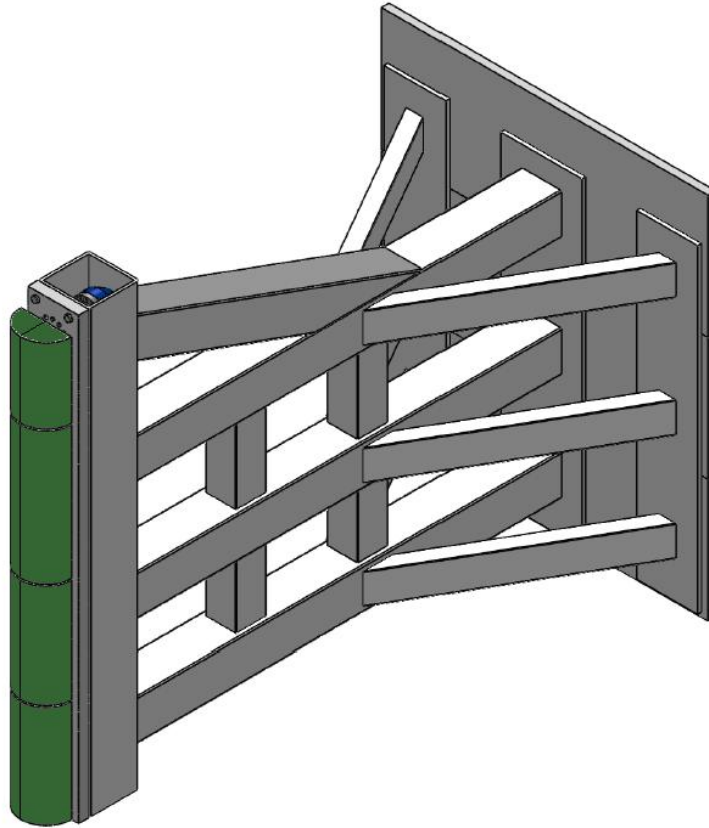
RIGID POLE LOAD CELL DATA

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



RIGID POLE LOAD CELL LOCATIONS

ID	Units	Height From Ground
1	mm	87
2	mm	468
3	mm	648
4	mm	978
5	mm	1168
6	mm	1651
7	mm	1816
8	mm	2057

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

Test Vehicle: 2012 Cadillac SRX 5-Door MPV NHTSA No. MC0117
 Test Program: NCAP Side Pole Impact Test Test Date: 11/30/11

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver SID-IIs Dummy
Face	Curtain Airbag
Top of Head	Curtain Airbag
Left Side of Head	Curtain Airbag
Back of Head	Head Restraint
Left Shoulder	Curtain Airbag, Side Airbag
Upper Torso	Side Airbag, Seat
Lower Torso	Side Airbag, Seat
Left Hip	Side Airbag, Seat
Left Knee	Door Panel

POST-TEST DOOR PERFORMANCE

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

POST-TEST SEAT PERFORMANCE

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

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	No Separation
Windshield Damage	Broken
Side Window Damage	Left Front Window Broken
Other Notable Effects	Partial Door Skin Separation

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

Test Vehicle: 2012 Cadillac SRX 5-Door MPV NHTSA No. MC0117
 Test Program: NCAP Side Pole Impact Test Test Date: 11/30/11

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Torso/Pelvis)	Yes	Yes	No	
Side Airbag 2 (Curtain)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes	Yes	No	
Other				

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vertical Impact Reference Line (Aft of Front Axle)(Intended Impact Point)	mm		1160
Actual Impact Point (Aft of Front Axle)	mm		1175
Horizontal Offset (+ forward / - rearward)	mm	± 38 of Intended Impact Point	-15
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	°	75 ± 3	75.7
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.0
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.0

DATA SHEET NO. 9

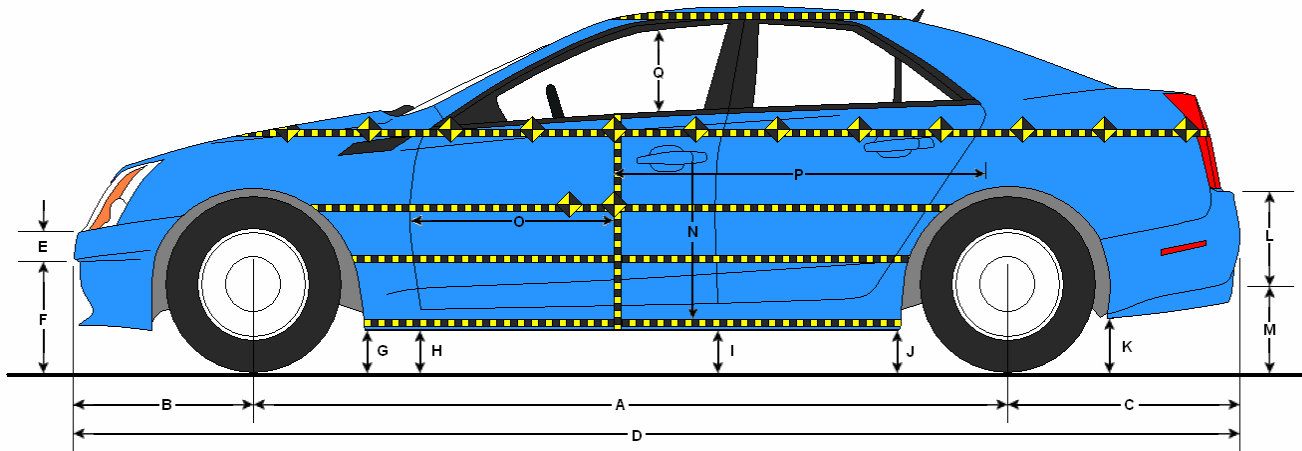
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2817	2795	-22
B	Front Axle to FSOV	1016	996	-20
C	Rear Axle to RSOV	997	1011	14
D	Total Length at Centerline	4832	4802	-30
E	Front Bumper Thickness	312	311	-1
F	Front Bumper Bottom to Ground	357	396	39
G	Sill Height at Front Wheel Well	265	284	19
H	Sill Height at Front Door Leading Edge	271	297	26
I	Sill Height at B-Pillar	322	350	28
J1	Sill Height at Rear Wheel Well	286	302	16
J2	Pinch Weld Height at Rear Wheel Well	277	295	18
K	Sill Height Aft of Rear Wheel Well	345	348	3
L	Rear Bumper Thickness	125	126	1
M	Rear Bumper Bottom to Ground	588	569	-19
N	Sill Height to Bottom of Front Window Sill	660	780	120
O	Front Door Leading Edge to Impact CL	590	513	-77
P	Rear Door Trailing Edge to Impact CL	1391	1323	-68
Q	Front Window Opening	440	454	14
R	Right Side Length	3325	3339	14
S	Left Side Length	3329	3255	-74
T	Vehicle Width at B-Pillar	1861	1808	-53

All measurements in mm with tolerance of ± 3 mm

DATA SHEET NO. 10

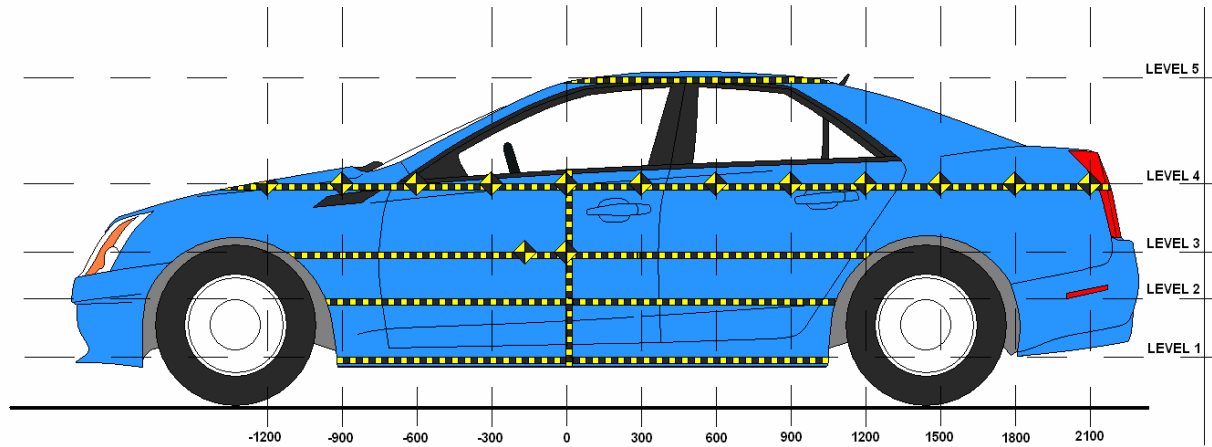
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

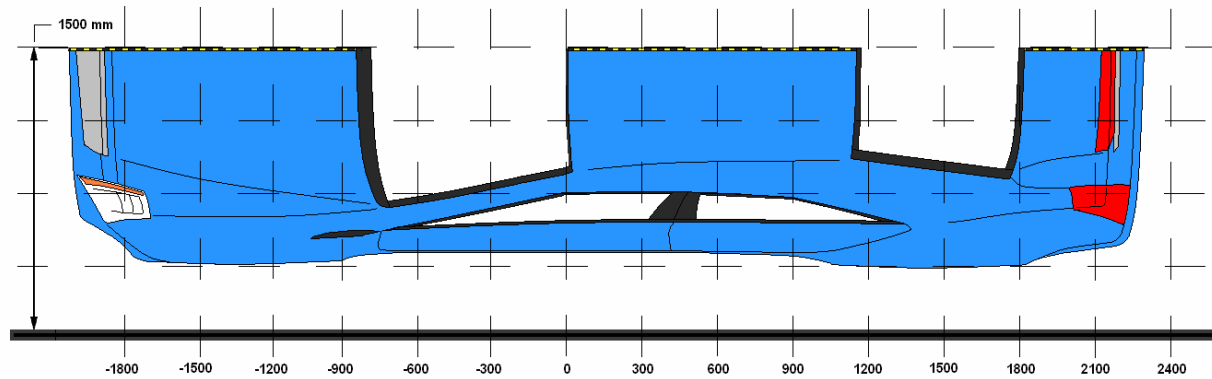
NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



LEFT SIDE VIEW



OVERHEAD VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	389	324	0
2	Occupant H-Point	695	389	0
3	Mid-Door	756	394	0
4	Window Sill	1061	363	0
5	Window Top	1607	161	0

DATA SHEET NO. 10 ... (CONTINUED)

TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900			545	662				600	710				55	48	
-750		562	561	654			621	620	714			59	59	60	
-600	609	567	566	643		677	630	622	666		68	63	56	23	
-450	609	566	565	635		739	728	724	727		130	162	159	92	
-300	609	566	565	627		792	801	811	801		183	235	246	174	
-150	610	566	565	620		855	879	888	887		245	313	323	267	
0	610	567	565	613	889	934	956	959	976	1050	324	389	394	363	161
150	611	567	565	608	899	870	911	918	940	1046	259	344	353	332	147
300	611	568	566	604	894	744	773	781	819	1026	133	205	215	215	132
450	609	570	567	602	889	707	681	680	725	1006	98	111	113	123	117
600	612	571	568	599	886	693	664	664	705	987	81	93	96	106	101
750	614	572	571	597	884	676	648	648	686	970	62	76	77	89	86
900	615	574	573	598	883	660	631	632	668	958	45	57	59	70	75
1050	616	576	575	603	884	644	614	616	657	945	28	38	41	54	61
1200	618	566	568	614	887	629	588	592	649	938	11	22	24	35	51
1350			551	609	892			579	627	938			28	18	46
1500				613	897				646	937				33	40
1650				619	906				650	945				31	39
1800				629					658					29	
1950															
2100															
2250															
2400															
2550															
2700															
2850															

DATA SHEET NO. 10 ... (CONTINUED)

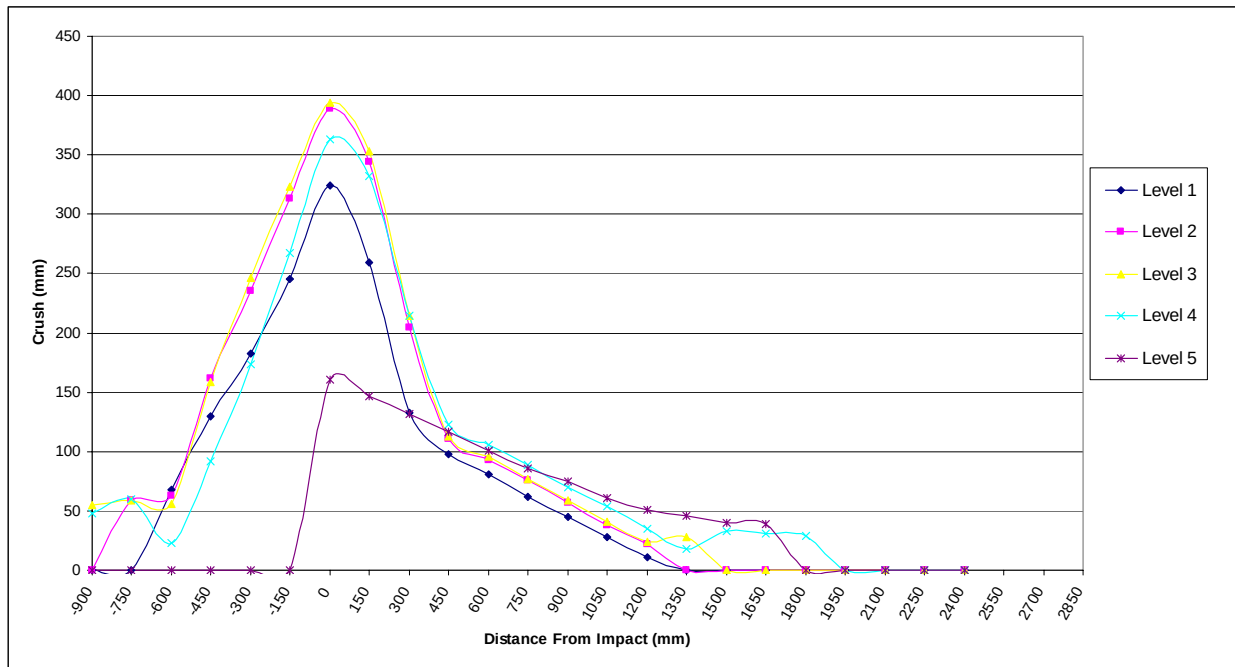
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



DATA SHEET NO. 11

FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

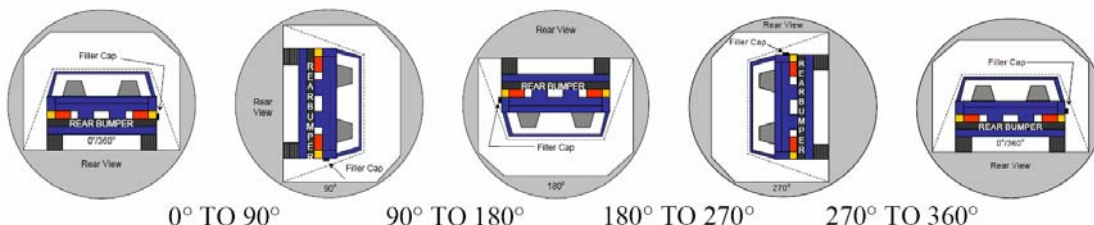
Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11

Temperature at Time of Impact: 22.8° C

Test Time: 11:00 AM

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



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	80	300	380
90° To 180°	82	300	382
180° To 270°	78	300	378
270° To 360°	80	300	380

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°	No Spillage Occurred
90° To 180°	No Spillage Occurred
180° To 270°	No Spillage Occurred
270° To 360°	No Spillage Occurred

DATA SHEET NO. 14

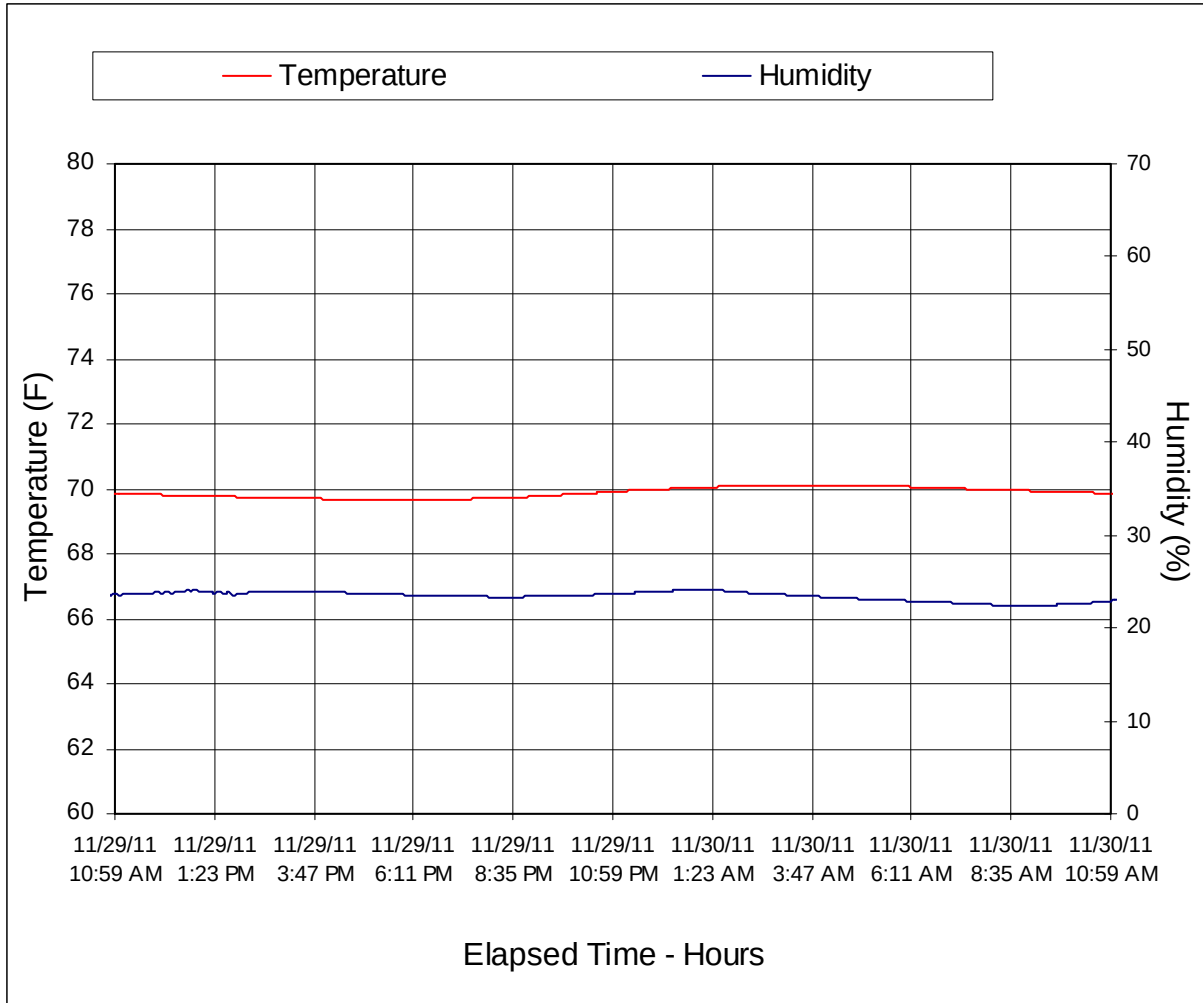
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION

Test Vehicle: 2012 Cadillac SRX 5-Door MPV

NHTSA No. MC0117

Test Program: NCAP Side Pole Impact Test

Test Date: 11/30/11



APPENDIX A
PHOTOGRAPHS

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FIGURE 1. As-Delivered Right Front Three-Quarter View of Test Vehicle



FIGURE 2. As-Delivered Left Rear Three-Quarter View of Test Vehicle



FIGURE 3. Pre-Test Frontal View of Test Vehicle



FIGURE 4. Post-Test Frontal View of Test Vehicle



FIGURE 5. Pre-Test Left Front Three-Quarter View of Test Vehicle



FIGURE 6. Post-Test Left Front Three-Quarter View of Test Vehicle



FIGURE 7. Pre-Test Left Side View of Test Vehicle



FIGURE 8. Post-Test Left Side View of Test Vehicle



FIGURE 9. Pre-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 10. Post-Test Left Rear Three-Quarter View of Test Vehicle



FIGURE 11. Pre-Test Rear View of Test Vehicle



FIGURE 12. Post-Test Rear View of Test Vehicle



FIGURE 13. Pre-Test Right Side View of Test Vehicle



FIGURE 14. Post-Test Right Side View of Test Vehicle



FIGURE 15. Pre-Test Overhead View of Test Vehicle and Pole



FIGURE 16. Post-Test Overhead View of Test Vehicle and Pole



FIGURE 17. Pre-Test Left Side View of Pole
Positioned Against Side of Vehicle at Impact Point



FIGURE 18. Pre-Test Right Side View of Pole
Positioned Against Side of Vehicle at Ideal Impact Point



FIGURE 19. Pre-Test Close-Up View of Impact Point Target



FIGURE 20. Post-Test Close-Up View of Impact Point Target Showing Impact Location



FIGURE 21. Pre-Test Front Close-Up View of Dummy



FIGURE 22. Post-Test Front Close-Up View of Dummy



FIGURE 23. Pre-Test Left Side View of Dummy Showing Belt, Chalking, and Contact Switches



FIGURE 24. Pre-Test Left Side View of Dummy Shoulder and Driver Door Top View



FIGURE 25. Post-Test Left Side View of Dummy Shoulder and Door Top View



FIGURE 26. Pre-Test Frontal View of Seat Back Prior to Dummy Positioning



FIGURE 27. Pre-Test Frontal View of Dummy Head and Shoulders
in Relation to Head Restraint



FIGURE 28. Pre-Test Frontal View of Seat Pan Prior to Dummy Positioning



FIGURE 29. Pre-Test Overhead View of Dummy Thighs on Seat Pan



FIGURE 30. Pre-Test View of Dummy's Neck Showing Position of Adjustable Neck Bracket



FIGURE 31. Pre-Test View of Dummy's Head Showing Dummy's Head Is Level



FIGURE 32. Pre-Test Placement of Dummy's Feet



FIGURE 33. Pre-Test View of Belt Anchorage for Dummy



FIGURE 34. Pre-Test Left Side View of Steering Wheel



FIGURE 35. View of Disengaged Parking Brake



FIGURE 35a. View of Parking Brake Lever



FIGURE 36. Pre-Test View of Parking Brake



FIGURE 37. Pre-Test Close-Up Left Side View of Driver Seat Track



FIGURE 38. Pre-Test Close-Up Left Side View of Driver Seat Back



FIGURE 39. Pre-Test Close-Up View of Driver Seat Back or Head Restraint



FIGURE 40. Pre-Test Driver Dummy and Door Clearance



FIGURE 41. Post-Test Driver Dummy and Door Clearance



FIGURE 42. Pre-Test Right Side View of Dummy and Front Seat Occupant Compartment



FIGURE 43. Post-Test Right Side View of Dummy and Front Seat Occupant Compartment



FIGURE 44. Pre-Test Inner Driver Door Panel View



FIGURE 45. Post-Test Inner Driver Door Panel View
Showing Dummy Contact Locations



FIGURE 46. Post-Test Dummy Close-Up Head Contact with Vehicle Interior View



FIGURE 47. Post-Test Dummy Close-Up Head Contact with Side Airbag View



FIGURE 48. Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 49. Post-Test Dummy Close-Up Torso Contact with Side Airbag View



FIGURE 50. Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View

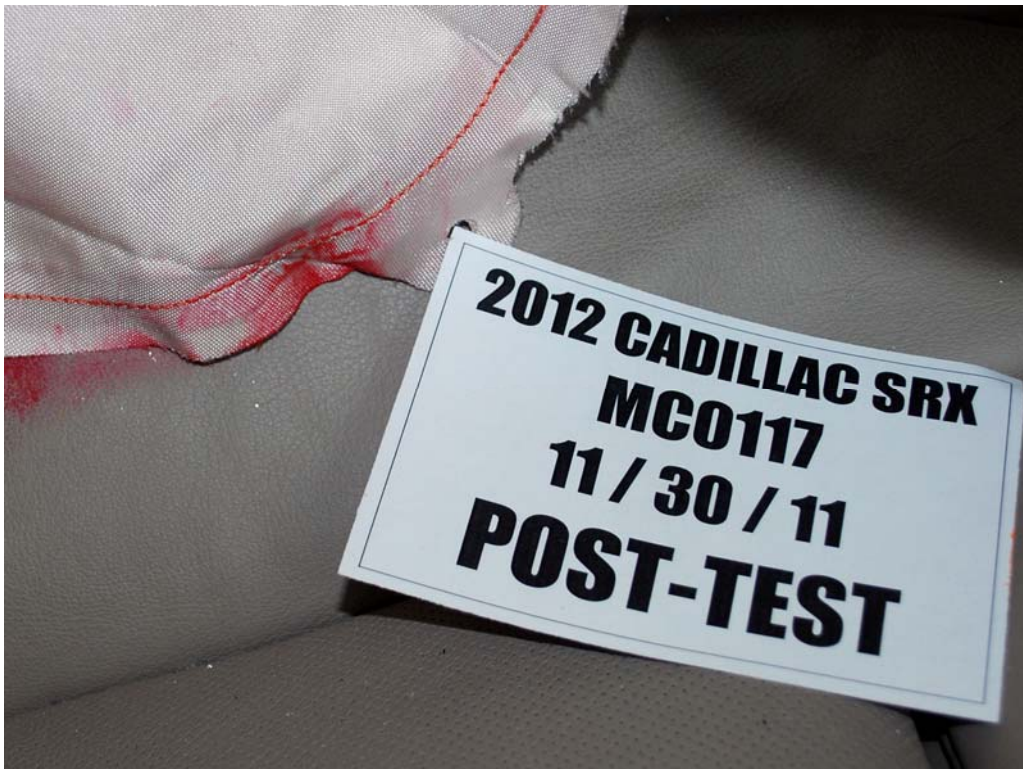


FIGURE 51. Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View





FIGURE 54. Close-Up View of Vehicle's Certification Label

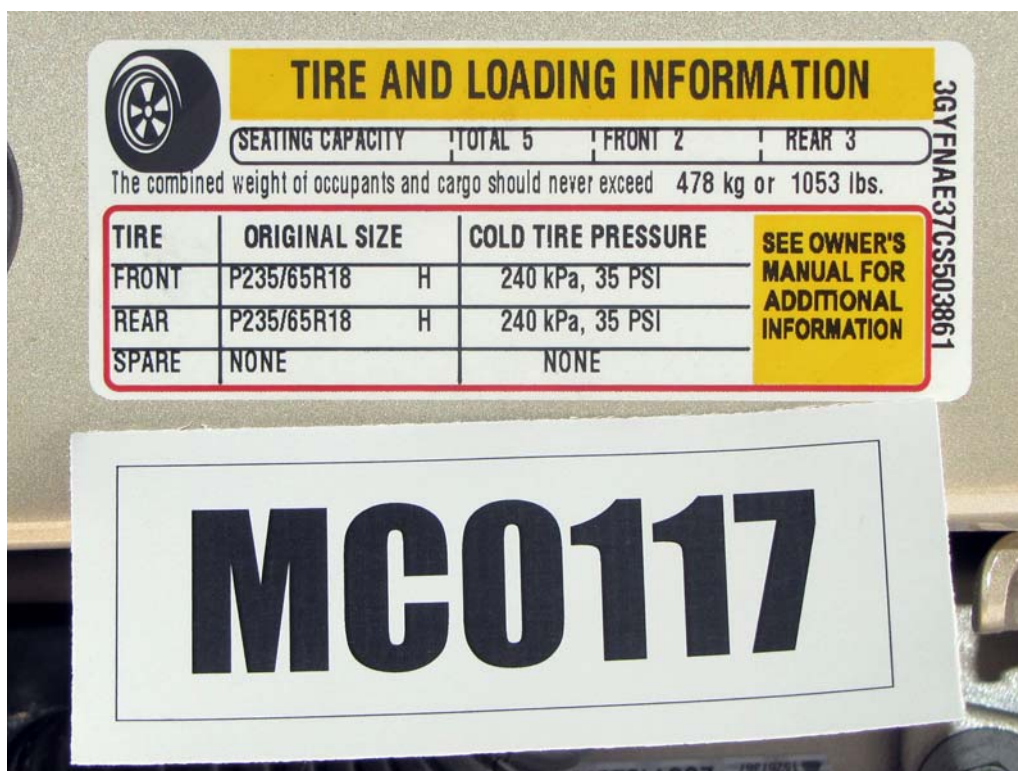


FIGURE 55. Close-Up View of Vehicle's Tire Information Placard



FIGURE 56. Pre-Test Pole Barrier Front View



FIGURE 57. Post-Test Pole Barrier Front View

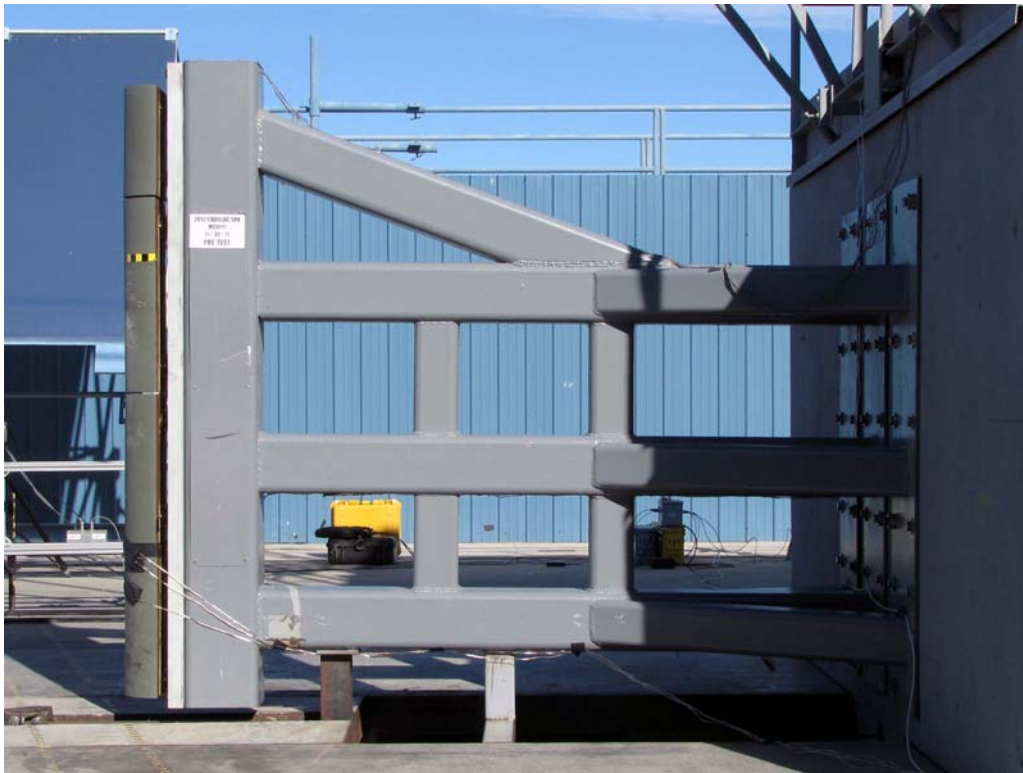


FIGURE 58. Pre-Test Pole Barrier Side View



FIGURE 59. Post-Test Pole Barrier Side View



FIGURE 60. Pre-Test Ballast View



FIGURE 61. Post-Test Primary and Redundant Speed Trap Read-Out

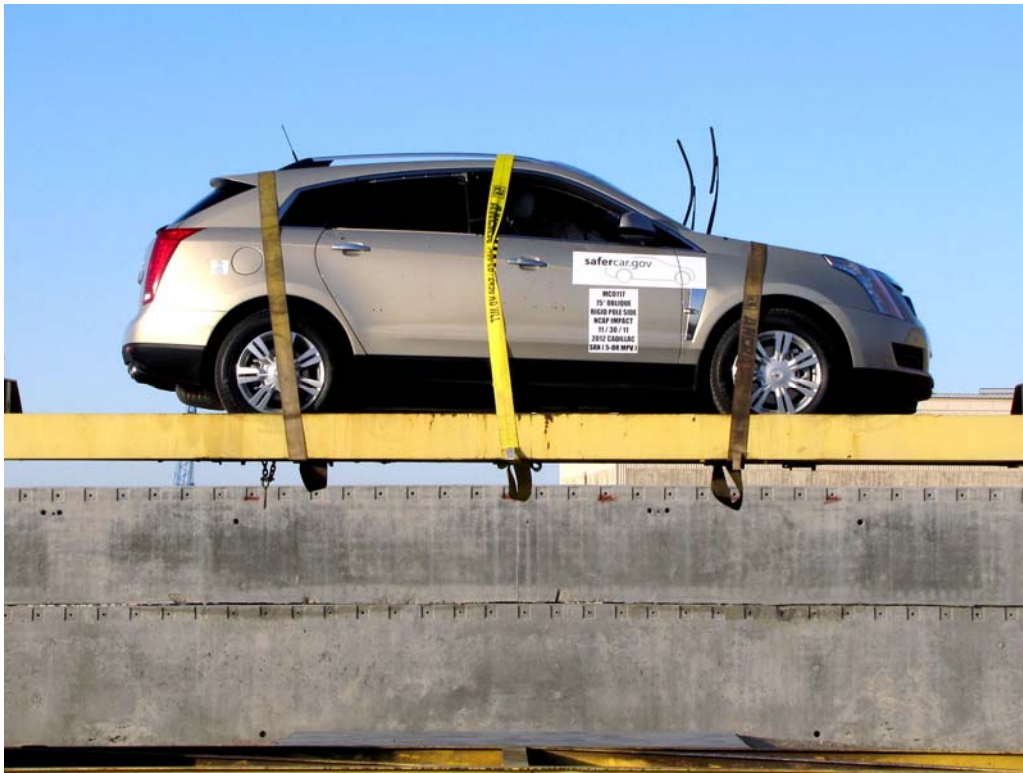


FIGURE 62. FMVSS No. 301-305 Rollover 0 Degrees



FIGURE 63. FMVSS No. 301-305 Rollover 90 Degrees



FIGURE 64. FMVSS No. 301-305 Rollover 180 Degrees

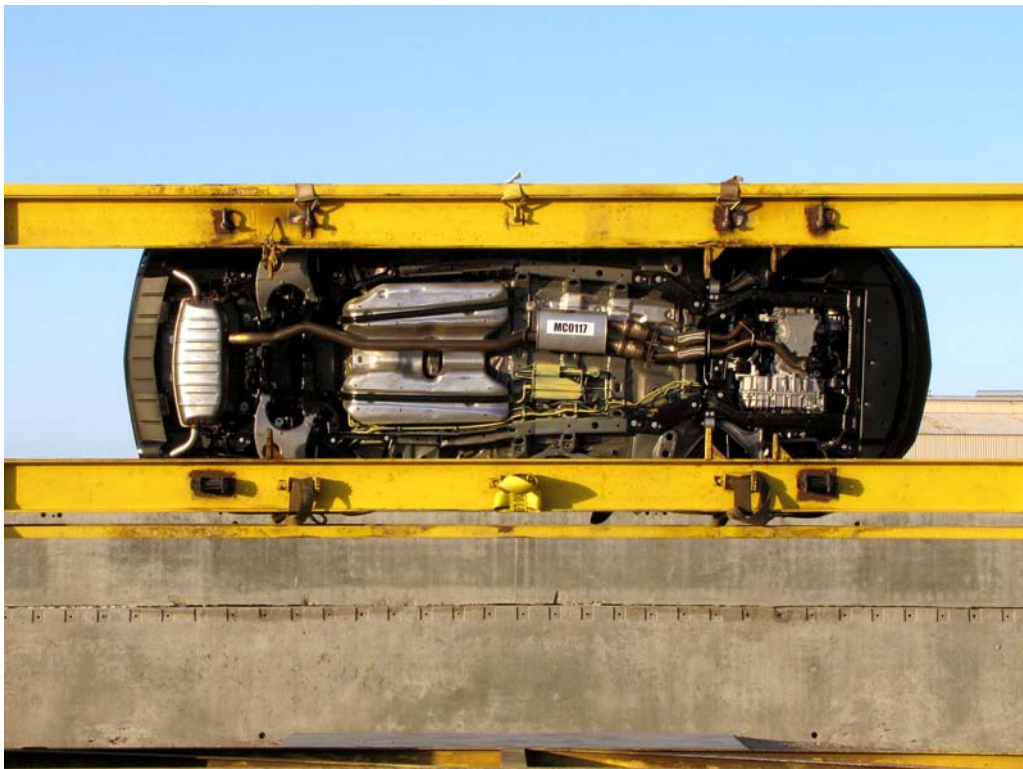


FIGURE 65. FMVSS No. 301-305 Rollover 270 Degrees

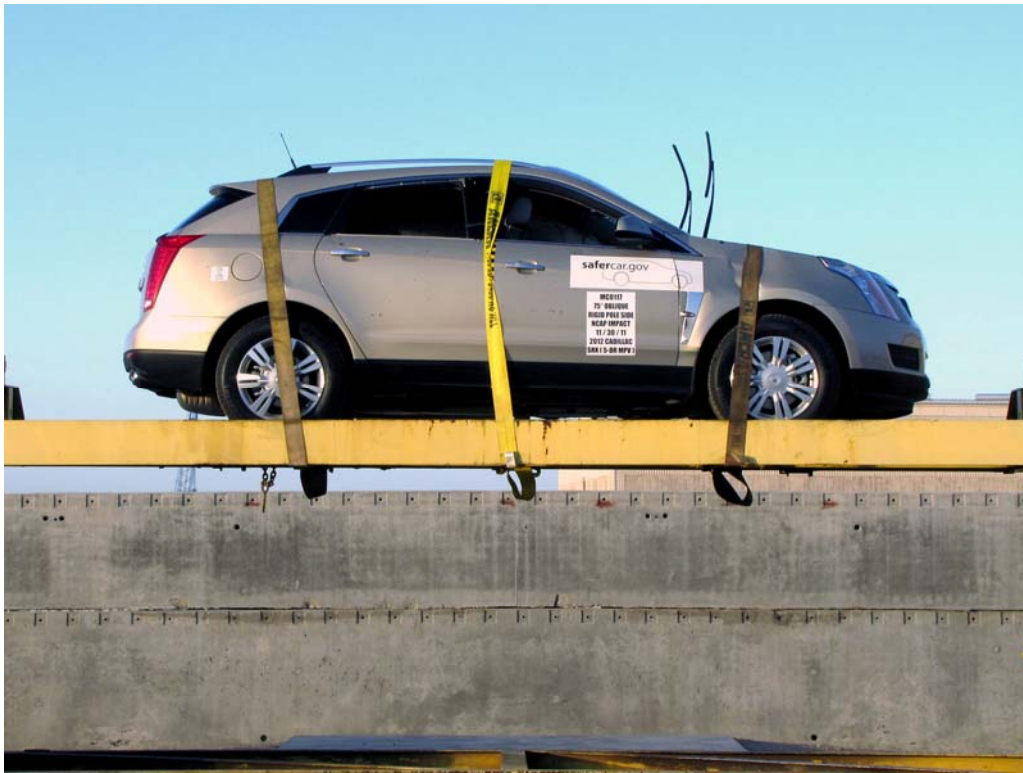


FIGURE 66. FMVSS No. 301-305 Rollover 360 Degrees



FIGURE 67. Impact Event

2012 SRX FWD LUXURY COLLECTION

EXTERIOR: GOLD MIST METALLIC
INTERIOR: SHALE W/ BROWNSTONE ACCENTS

ENGINE 3.6L, SHI V6
TRANSMISSION, 6 SPD AUTOMATIC

Visit us at www.cadillac.com

STANDARD EQUIPMENT

CADILLAC SHIELD

- 4 YEAR/50,000 MILE* LIMITED WARRANTY
- 5 YEAR/100,000 MILE* POWERTRAIN LIMITED WARRANTY
- 1 YEAR/50,000 MILE* PREMIUM CARE MAINTENANCE
- 3 YEAR/100,000 MILE* COUNTRY TRANSPORTATION
- 3 YEAR/100,000 MILE* ROADSIDE ASSISTANCE
- 1 YR UNLIMITED DIRECTIONS AND CONNECTIONS WITH AUTOMATIC CRASH RESPONSE & TURN-BY-TURN NAVIGATION (ASK DEALER ABOUT REGIONAL COVERAGE)
- *WHICHEVER COMES FIRST, SEE DEALER FOR DETAILS.

PERFORMANCE

- ENGINE 3.6L, SHI V6
- 6-SPEED MANUAL
- TRANSMISSION, 6 SPD AUTOMATIC
- 4 WHEEL INDEPENDENT SUSPENSION SYSTEM
- WHEELS, 18" ALUMINUM, BRIGHT FINISH

LUXURY/CONVENIENCE

- AUDIO SYSTEM, BOSE® SPEAKER
- AM/FM STEREO, CD PLAYER
- AUX JACK & USB PORT
- BLUETOOTH FOR PHONE
- LEATHER WRAP STEERING WHEEL, RADIO CONTROLS
- STEERING COLUMN, HANE AND TELESCOPING
- CRUISE CONTROL
- ADJUSTABLE SEATBELTS
- DRIVER & FRONT PASSENGER HEATED LEATHER SEATS
- PAIR SEAT ADJUST, DRIVER & W/

SAFETY AND SECURITY

- 2011 TOP SAFETY AWARD FROM THE INSURANCE INSTITUTE FOR HIGHWAY SAFETY
- AIRBAGS, DRIVER & FRONT PASSENGER
- AIRBAGS - SIDE HEAD CURTAIN
- AIRBAG SENSING SYSTEM
- REAR VISION CAMERA SYSTEM
- DAYTIME RUNNING LAMPS
- CARGO SHOVE, RETRACTABLE
- TIRE PRESSURE MONITOR SYSTEM
- REAR DR LOCKS CHILD SECURITY
- THEFT DETECTION SYSTEM
- STABILITRAK® - STABILITY CONTROL SYSTEM W/ TRACTION CONTROL
- WINDOWS, POWER FRONT EXPRESS UP & DOWN, REAR EXPRESS DOWN

OTHER

- TIRE INFLATION KIT IN PLACE OF SPARE TIRE

OPTIONS & PRICING

STANDARD VEHICLE PRICE **\$38,715.00**

OPTIONAL EQUIPMENT (SEE LISTING)

AUDIO SYSTEM W/ NAVIGATION 2,395.00

SINGLE CD/MP3 PLAYER, BOSE 10-SPEAKER SYSTEM, 8" TOUCHSCREEN AND 40 GB, 5.1 SURROUND SOUND

TOTAL OPTIONS **\$2,395.00**

TOTAL VEHICLE & OPTIONS **\$41,110.00**

DESTINATION CHARGE **\$75.00**

TOTAL VEHICLE PRICE* \$43,985.00

EPA Fuel Economy Estimates

GASOLINE CITY MPG 17

Expected range for most drivers **14 to 20 MPG**

GASOLINE HIGHWAY MPG 24

Expected range for most drivers **19 to 29 MPG**

Estimated Annual Fuel Cost \$2,367

based on 15,000 miles at \$3.10 per gallon of GASOLINE

Combined GASOLINE Fuel Economy This Vehicle 19

10 to 27 MPG

GOVERNMENT SAFETY RATINGS

Frontal Crash: Driver Not Rated, Passenger Not Rated

Side Crash: Front seat Not Rated, Rear seat Not Rated

Rollover: ★★ ★

Star ratings based on the risk of injury in a single vehicle crash.

Star rating range from 1 to 5 stars (★★★★★) with 5 being the highest.

Source: National Highway Traffic Safety Administration (NHTSA)

www.safercar.gov or 1-888-327-4236

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:
U.S./CANADIAN PARTS CONTENT: 26%
MAJOR SOURCES OF FOREIGN PARTS CONTENT: MEXICO 65%

NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:
FINAL ASSEMBLY POINT: RAMOS ARIZPE, CO. MEXICO
COUNTRY OF ORIGIN: ENGINE: MEXICO
TRANSMISSION: UNITED STATES

LM

307-1409736

FIGURE 68. Monroney Label

3-2 Seats and Restraints

Child Restraints

- Older Children 3-36
- Infants and Young Children 3-38
- Child Restraint Systems 3-41
- Where to Put the Restraint 3-43
- Lower Anchors and Tethers for Children (LATCH System) 3-45
- Replacing LATCH System Parts After a Crash 3-53
- Securing Child Restraints (Rear Seat) 3-54
- Securing Child Restraints (Front Passenger Seat) 3-56

Head Restraints

WARNING

With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not drive until the head restraints for all occupants are installed and adjusted properly.

Front Seats

The vehicle's front seats have adjustable head restraints in the outboard seating positions.

Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.

Rear Seats

The vehicle's rear seats have adjustable head restraints in the outboard seating positions.

The height of the head restraint can be adjusted. To raise or lower the head restraint, press the button located on the side of the head restraint, and pull up or push the head restraint down, and release the button. Pull and push on the head restraint after the button is released to make sure that it is locked in place.

The front seat outboard head restraints are not designed to be removed.

The vehicle's rear seat has an adjustable headrest in the center seating position that can be adjusted the same way as the outboard head restraints.

If you are installing a child restraint in the rear seat, see "Securing a Child Restraint Designed for the LATCH System" under Lower Anchors and Tethers for Children (LATCH System) on page 3-45.

Seats and Restraints 3-3

FIGURE 69. Head Restraint Use and Adjustment
Information from Vehicle Manual

APPENDIX B
DUMMY RESPONSE DATA

TABLE OF DATA PLOTS

Plot		Page
1	Driver Head Acceleration (X) Primary vs. Time	B-1
2	Driver Head Acceleration (Y) Primary vs. Time	B-1
3	Driver Head Acceleration (Z) Primary vs. Time	B-1
4	Driver Head Resultant Acceleration Primary vs. Time	B-1
5	Driver Lower Spine T12 Acceleration (X) vs. Time	B-2
6	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-2
7	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-2
8	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-2
9	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-3
10	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-3
11	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-3

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at

www.NHTSA.dot.gov

Additional Driver Dummy Instrumentation Data

Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Driver Upper Thorax Rib Deflection (Y)
Driver Middle Thorax Rib Deflection (Y)
Driver Lower Thorax Rib Deflection (Y)
Driver Upper Abdomen Rib Deflection (Y)
Driver Lower Abdomen Rib Deflection (Y)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)

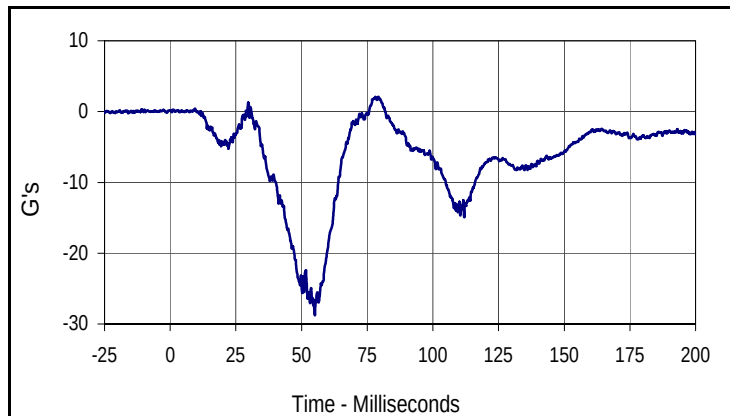
Left B-Pillar Sill Acceleration
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

Pole Instrumentation Data

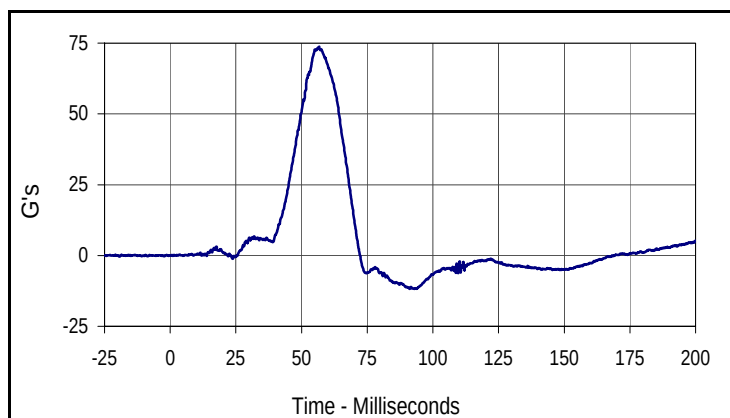
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

Test Vehicle: 2012 Cadillac SRX 5-Door MPV
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

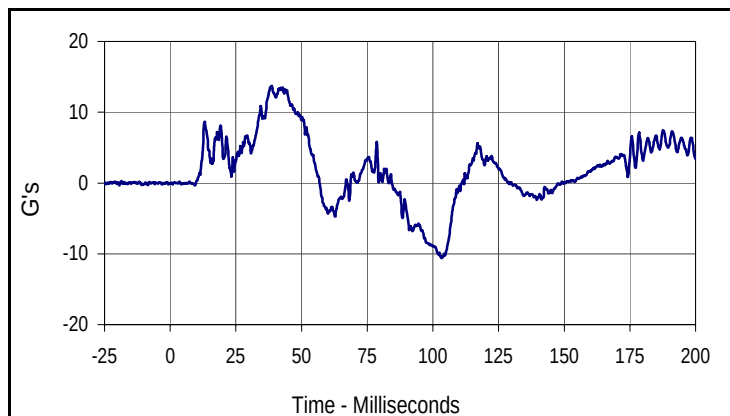
Test Date: 11/30/11
 NHTSA No.: MC0117



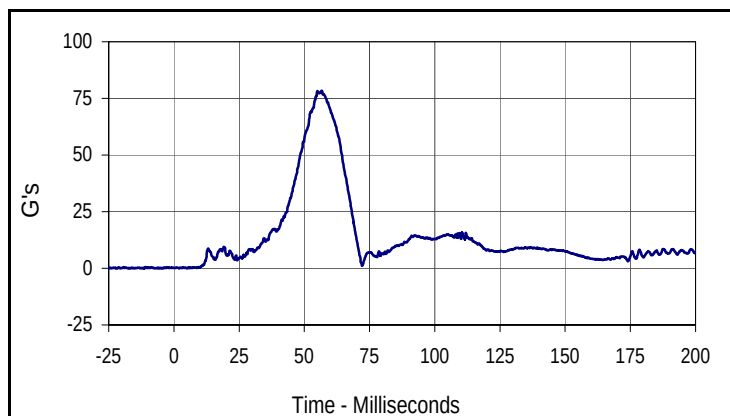
Curve Description			
Driver Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.1	78.1	-28.8	55.0



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
73.7	56.7	-11.8	91.2



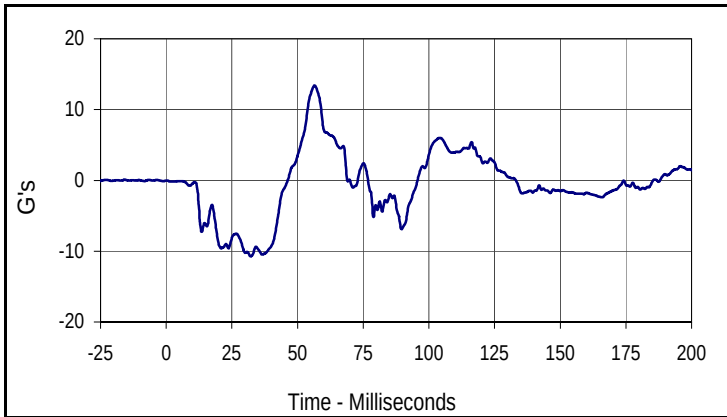
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
13.7	38.7	-10.6	103.4



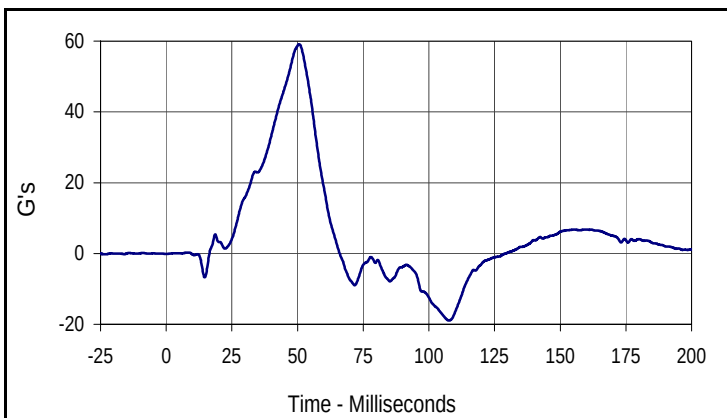
Curve Description			
Driver Head Acceleration Primary Res.			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
78.4	56.7	0.0	2.0

Test Vehicle: 2012 Cadillac SRX 5-Door MPV
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

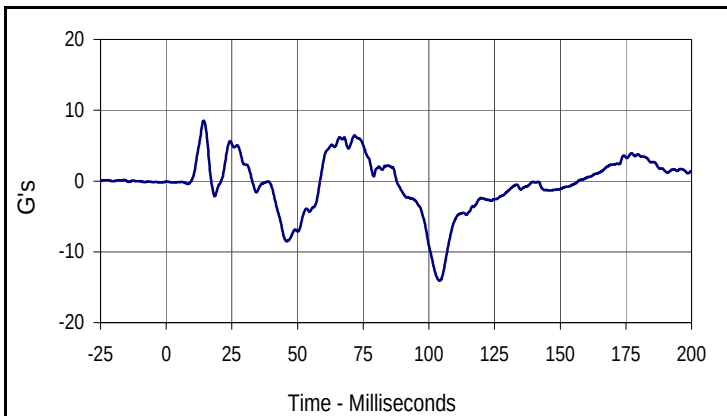
Test Date: 11/30/11
 NHTSA No.: MC0117



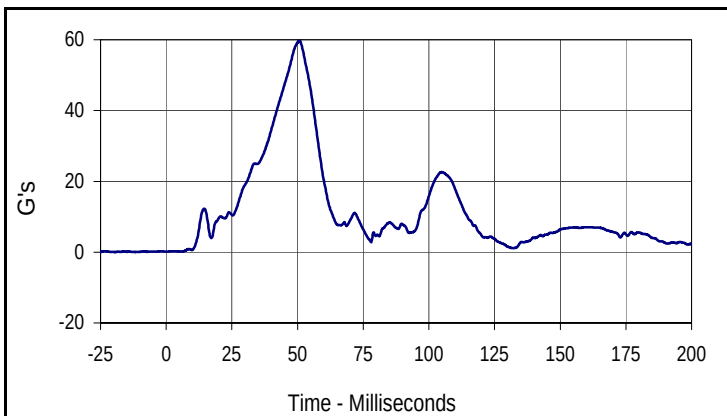
Curve Description			
Driver Lower Spine T12 Acceleration X			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
13.4	56.5	-10.7	32.2



Curve Description			
Driver Lower Spine T12 Acceleration Y			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
59.1	50.6	-18.9	107.6



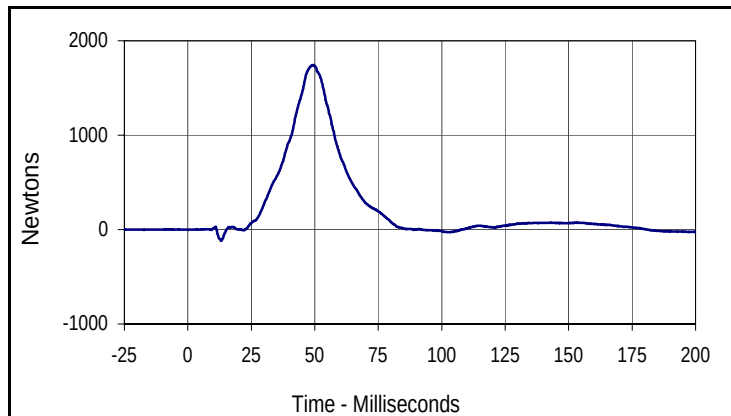
Curve Description			
Driver Lower Spine T12 Acceleration Z			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
8.5	14.3	-14.1	104.1



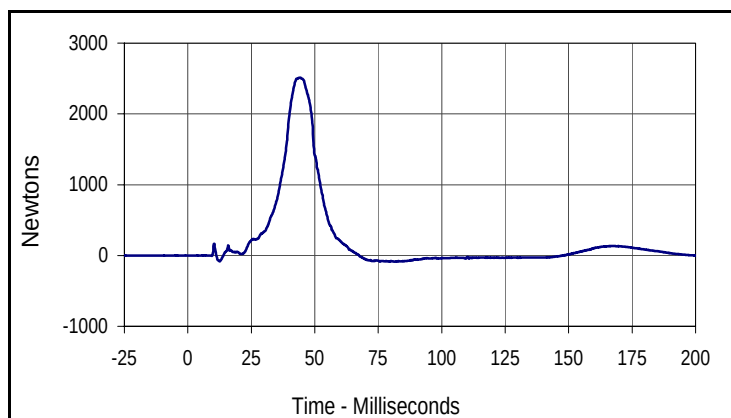
Curve Description			
Driver Lower Spine T12 Acceleration Res.			
Plot No.	Type	SAE Class	Units
008	RES	180	G's
Max	Time	Min	Time
59.7	50.6	0.1	0.7

Test Vehicle: 2012 Cadillac SRX 5-Door MPV
 Test Program: 32 km/h (20 mph) Side Impact NCAP 75° Rigid Pole Test

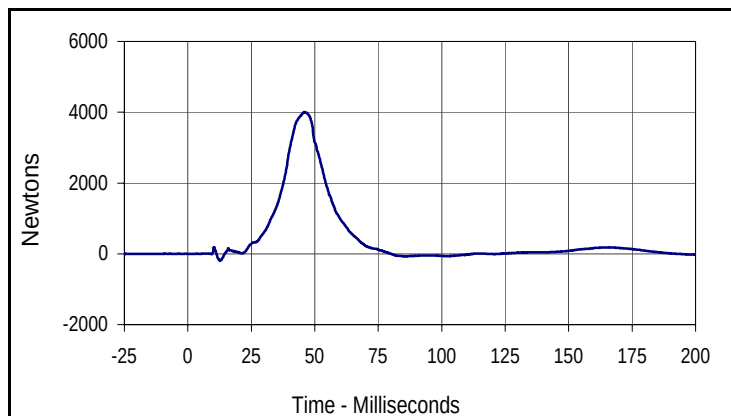
Test Date: 11/30/11
 NHTSA No.: MC0117



Curve Description			
Driver Iliac Wing Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
009	FIL	600	Newtons
Max	Time	Min	Time
1743.9	49.4	-119.4	13.1



Curve Description			
Driver Acetabulum Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
010	FIL	600	Newtons
Max	Time	Min	Time
2512.5	44.2	-88.7	81.7



Curve Description			
Driver Total Pelvic Force on Impact Side Y			
Plot No.	Type	SAE Class	Units
011	SUM	600	Newtons
Max	Time	Min	Time
4008.5	45.9	-182.1	13.0

APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

Test Program: SID IIs External Measurements
 ATD Serial No.: 299

Test Date: 11/15/11
 Test I.D.: N/A



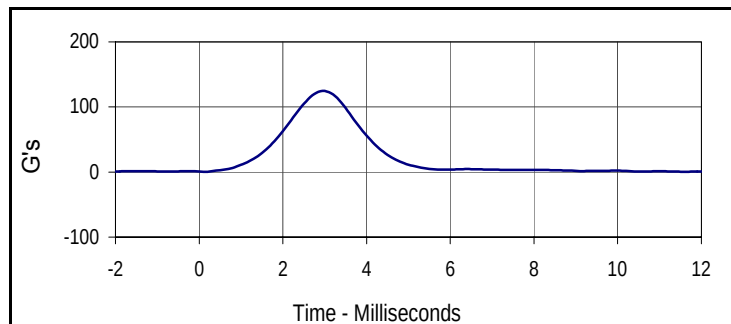
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
A	Sitting Height	mm	772 - 788	776	Pass
B	Shoulder Pivot Height	mm	437 - 453	442	Pass
C	H-Point Height	mm	79 - 89	80	Pass
D	H-Point from Seatback	mm	141 - 151	147	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	101	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	146	Pass
H	Head Back from Backline	mm	40 - 46	46	Pass
I	Head Depth	mm	178 - 188	186	Pass
J	Head Circumference	mm	541 - 551	548	Pass
K	Buttock to Knee Length	mm	514 - 540	527	Pass
L	Popliteal Height	mm	343 - 369	352	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	400	Pass
N	Buttock Popliteal Length	mm	416 - 442	429	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	200	Pass
P	Foot Length	mm	216 - 232	220	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	316	Pass
R	Arm Length	mm	249 - 259	256	Pass
S	Knee Joint to Seatback	mm	477 - 493	485	Pass
V	Shoulder Width	mm	341 - 357	350	Pass
W	Foot Width	mm	78 - 94	92	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	878	Pass
Z	Waist Circumference	mm	760 - 791	773	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 299

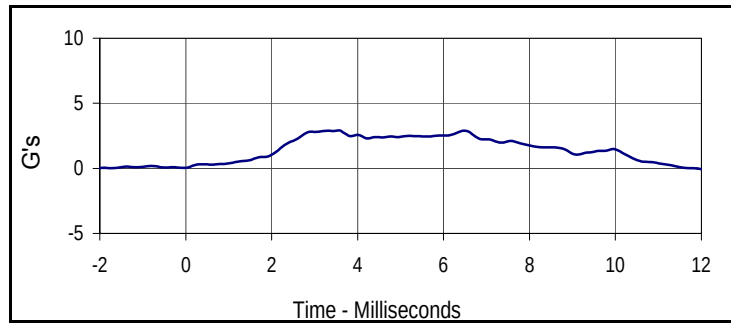
Test Date: 11/22/11
 Test I.D.: 299HD11A



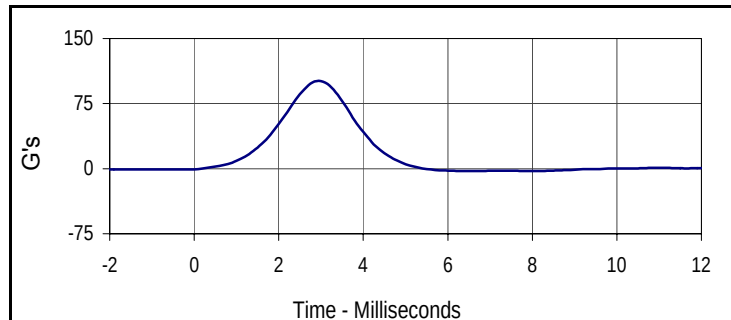
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	250	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.7	Pass
Peak Head Resultant Acceleration		G's	115 to 137	124.6	Pass
Peak Head X Acceleration		G's	<15	2.9	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse		%	<15	9.0	Pass
Overall Test Results				Pass	



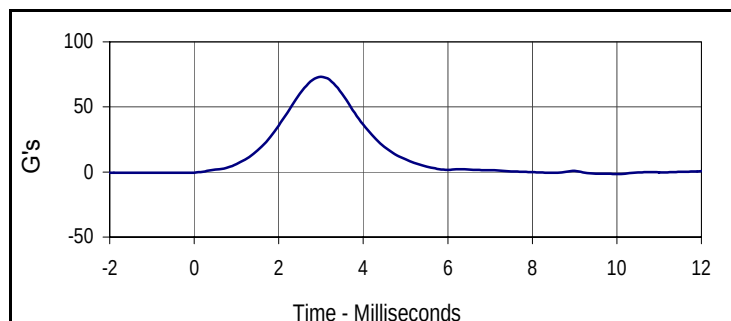
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
124.6	3.0	0.4	0.2



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.9	3.5	0.0	-1.7



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
101.0	2.9	-2.8	6.4



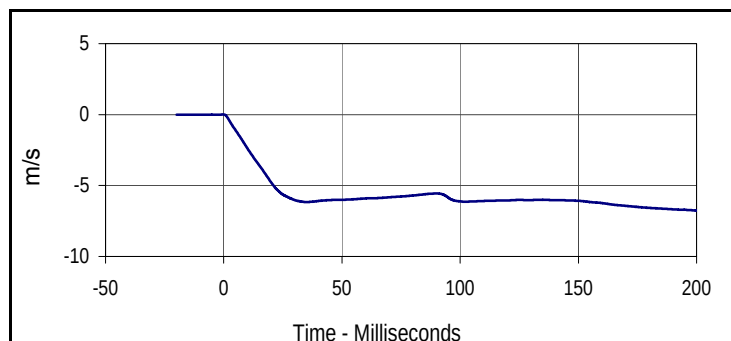
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
73.1	3.0	-1.6	10.0

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

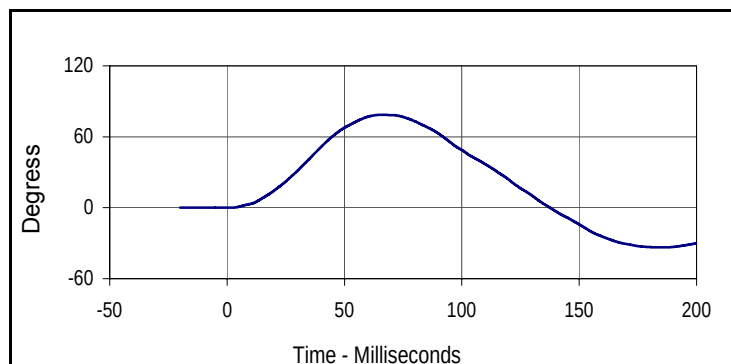
Test Date: 11/22/11
 Test I.D.: 299NB11A



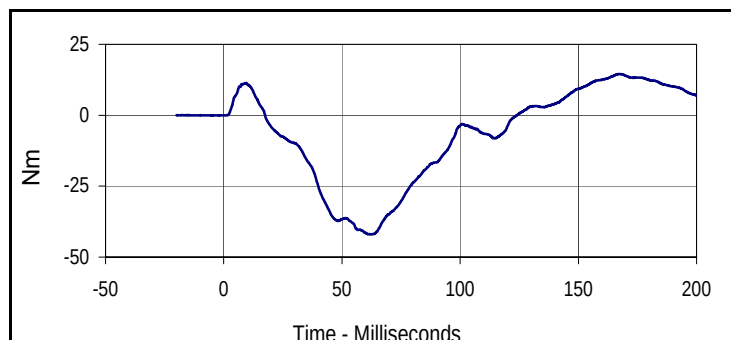
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	250	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.8	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.55	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.38	Pass
	15 msec	m/s	-3.30 to -4.10	-3.56	Pass
	20 msec	m/s	-4.40 to -5.40	-4.77	Pass
	25 msec	m/s	-5.40 to -6.10	-5.64	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.16	Pass
D-Plane Rotation	Max	Degrees	71 to 81	78.6	Pass
	Time	msec	50 to 70	65.6	Pass
Peak Occipital Condyle Moment		Nm	-36 to -44	-42.0	Pass
Decaying Moment Time to Cross 0 Nm		msec	102 to 126	124.1	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.3	-6.8	200.0



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
78.6	65.6	-33.6	184.8



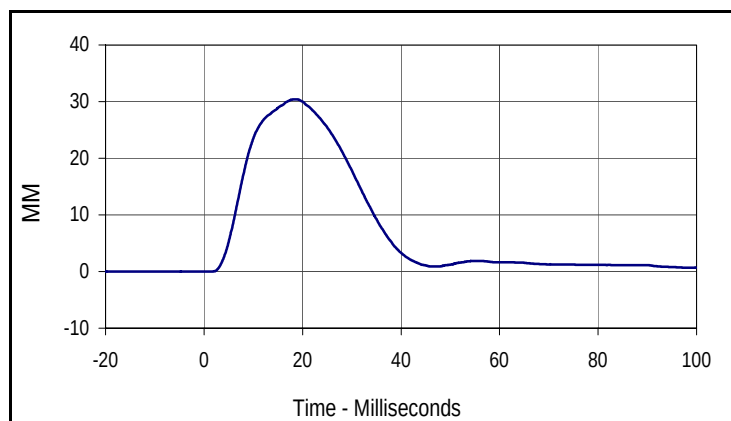
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
14.5	167.2	-42.0	62.5

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 299

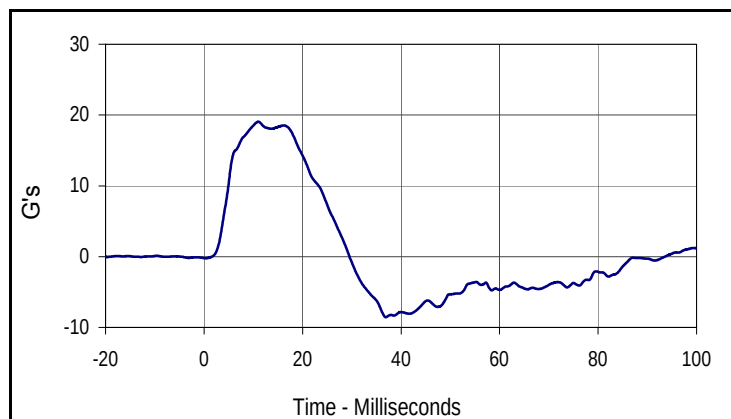
Test Date: 11/15/11
 Test I.D.: 299SH023



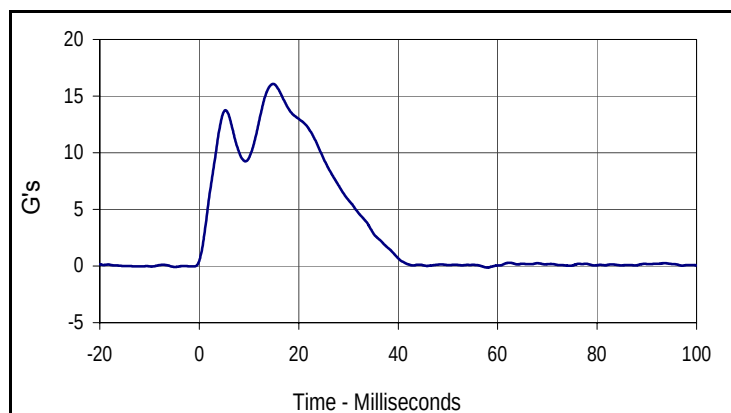
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	330	Pass
Temperature During Soak	Max °C	20.6 to 22.2	21.7	Pass
	Min °C		20.7	Pass
Humidity During Soak	Max %	10.0 to 70.0	40.0	Pass
	Min %		28.0	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.8	Pass
Impactor Velocity	m/s	4.20 to 4.40	4.29	Pass
Peak Shoulder Deflection	mm	28 to 37	30.4	Pass
Peak Lateral Spine Acceleration Y	G's	17 to 22	19.0	Pass
Peak Impactor Acceleration	G's	13 to 18	16.1	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.4	18.6	0.0	-3.9



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.0	11.0	-8.6	36.9



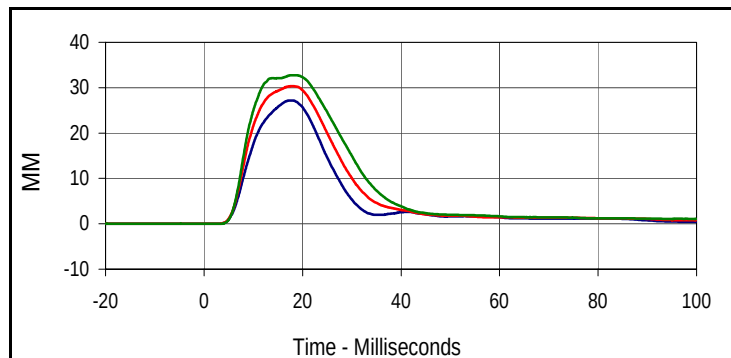
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.1	14.8	-0.1	57.9

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

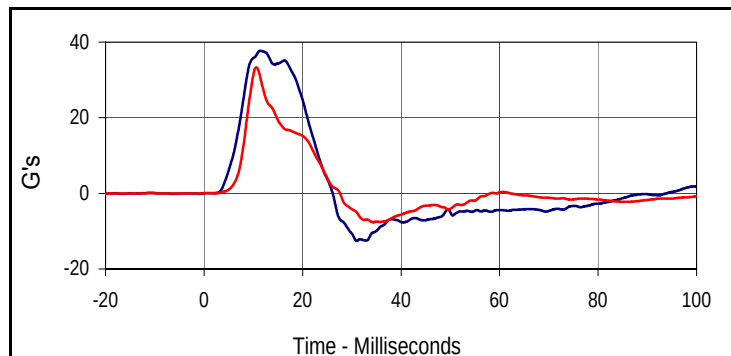
Test Date: 11/15/11
 Test I.D.: 299TWA023



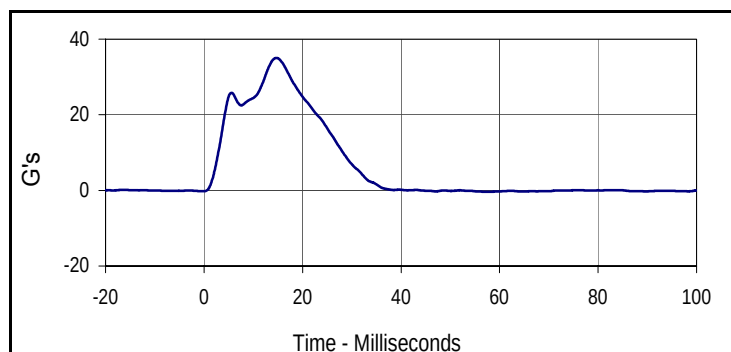
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	370	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.7	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.6	Pass
Peak Shoulder Deflection	mm	31 to 40	35.2	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.2	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.3	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	32.7	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.7	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	33.3	Pass
Peak Impactor Acceleration	G's	30 to 36	35.0	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.2	17.7	0.0	-8.2
Middle Thorax Deflection			
Max	Time	Min	Time
30.3	17.9	0.0	-5.9
Lower Thorax Deflection			
Max	Time	Min	Time
32.7	17.7	0.0	1.5



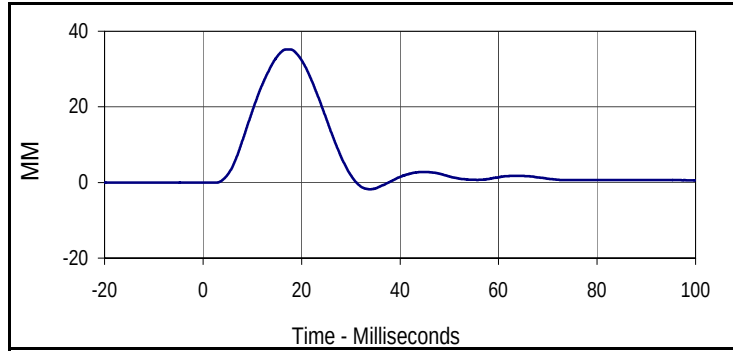
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.7	11.4	-12.6	31.0
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
33.3	10.6	-7.6	34.3



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
35.0	14.7	-0.4	57.8

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

Test Date: 11/15/11
 Test I.D.: 299TWA023



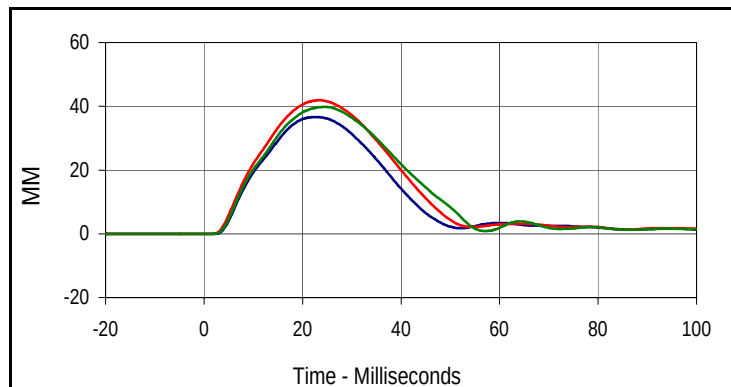
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
35.2	17.2	-1.8	33.9

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 299

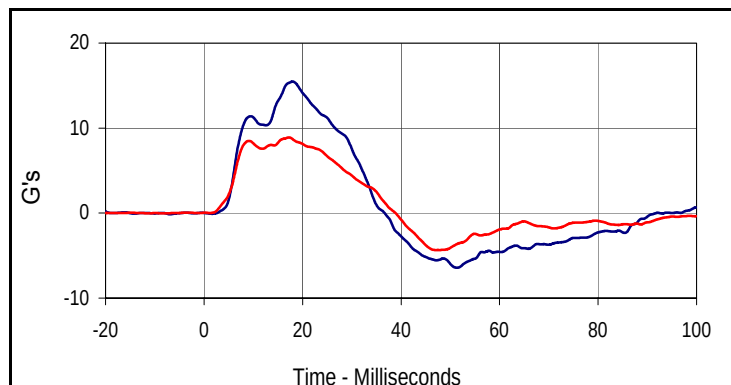
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 Test I.D.: 299TWOA023



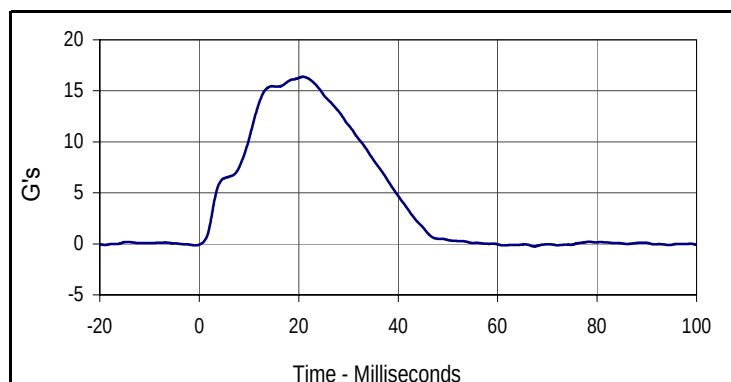
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	395	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.8	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Thorax Rib Deflection	mm	32 to 40	36.6	Pass
Peak Middle Thorax Rib Deflection	mm	39 to 45	41.9	Pass
Peak Lower Thorax Rib Deflection	mm	35 to 43	39.8	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.5	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	8.9	Pass
Peak Impactor Acceleration	G's	14 to 18	16.4	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
36.6	22.4	0.0	-19.1
Middle Thorax Deflection			
Max	Time	Min	Time
41.9	23.5	0.0	-0.2
Lower Thorax Deflection			
Max	Time	Min	Time
39.8	24.4	0.0	-19.5



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.5	18.0	-6.4	51.3
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.9	17.3	-4.3	46.9



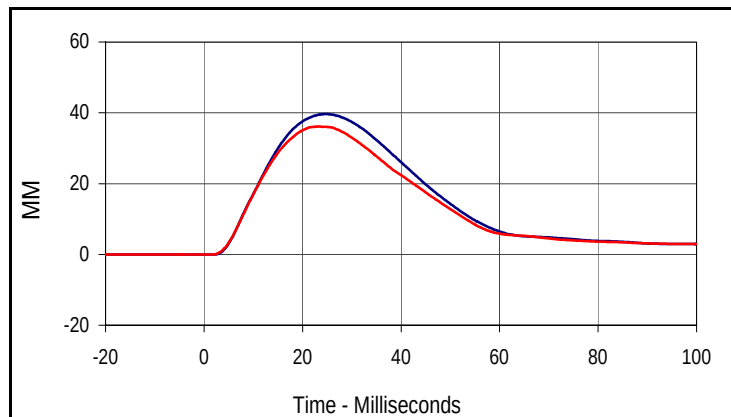
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.4	20.8	-0.3	67.4

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 299

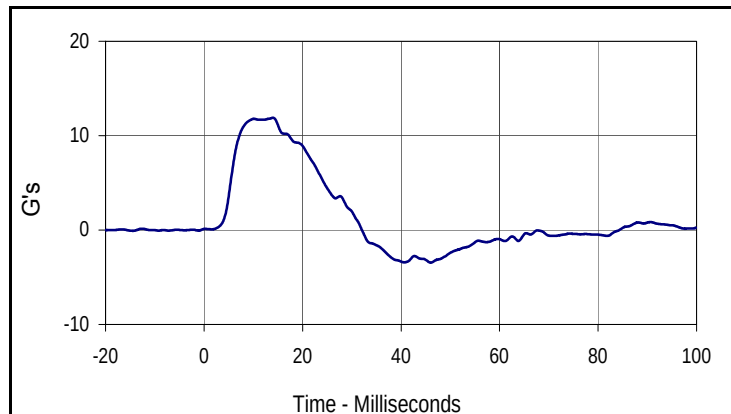
Test Date: 11/15/11
 Test I.D.: 299ABD023



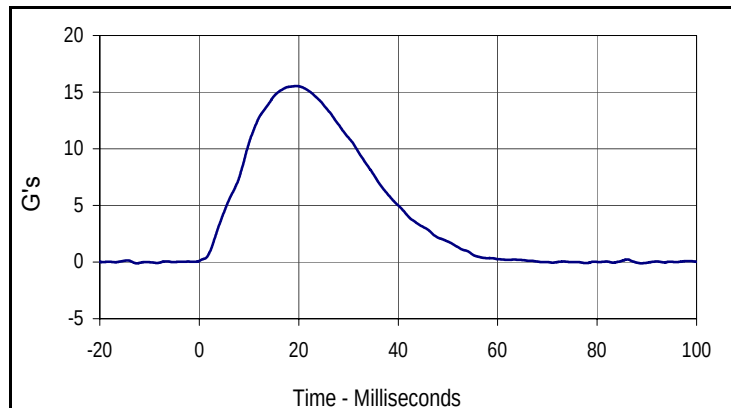
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	420	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	30.8	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	39.6	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	36.1	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.9	Pass
Peak Impactor Acceleration	G's	12 to 16	15.6	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
39.6	24.5	0.0	-11.9
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
36.1	23.2	0.0	-13.2

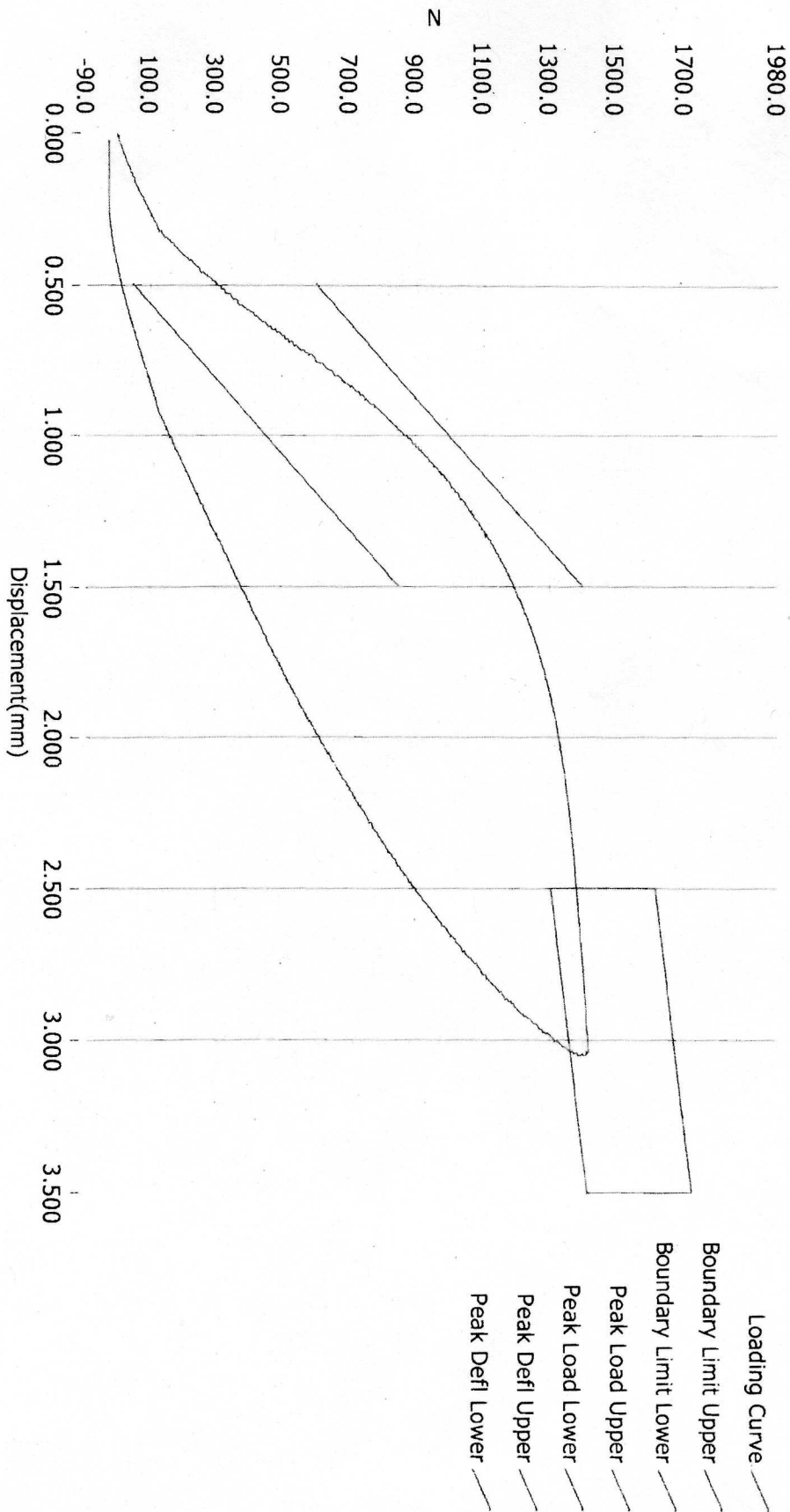


Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.9	14.0	-3.4	46.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.6	19.6	-0.1	-12.6

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID

Part Serial Number

Test Date

Test Time

Cert ID

ATD Serial Number

ATD Type

36375

SIDIIs

Current Date : 9/23/2010

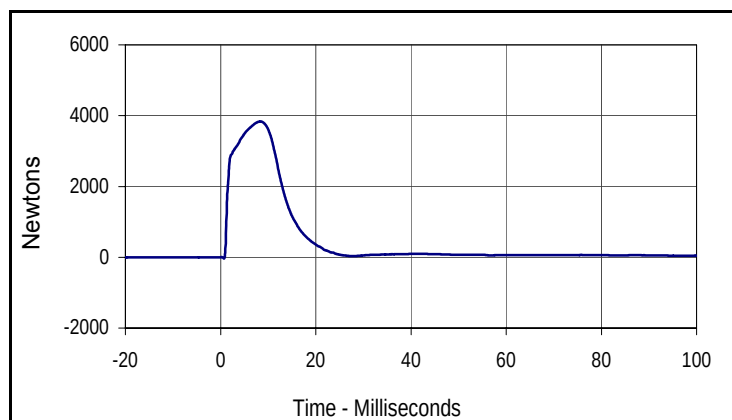
Current Time : 01:11:25

Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 299

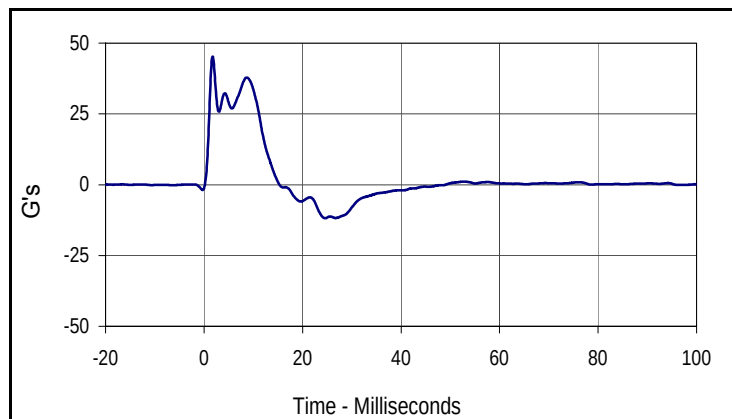
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 Test I.D.: 299ACET023



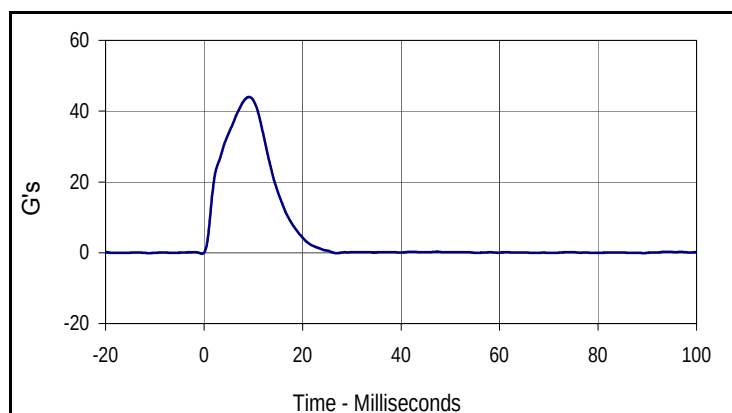
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	455	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	31.4	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Acetabulum Force Y	Newtons	3600 to 4300	3835.4	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	37.8	Pass
Peak Impactor Acceleration	G's	38 to 47	44.0	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3835.4	8.4	-37.3	0.7



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
45.2	1.7	-11.8	24.6



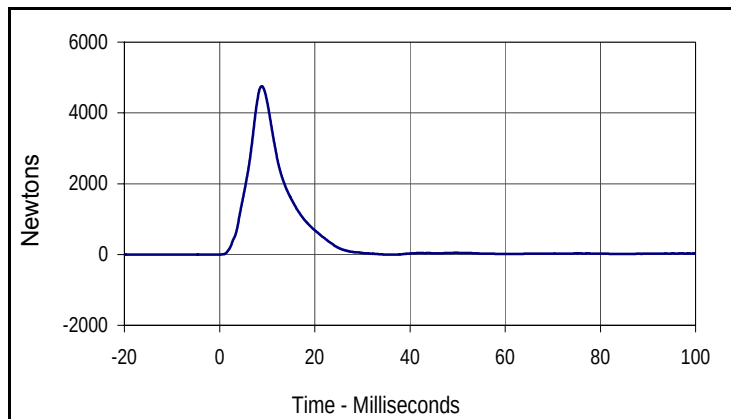
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
44.0	9.2	-0.3	-0.4

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

Test Date: 11/15/11
 Test I.D.: 299PL023



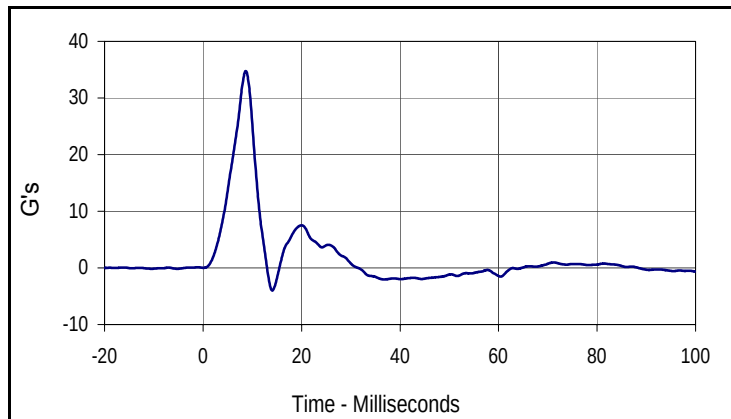
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	530	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.5	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	31.4	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.4	Pass
Peak Iliac Force	Newtons	4100 to 5100	4755.9	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	34.8	Pass
Peak Impactor Acceleration	G's	36 to 45	41.7	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

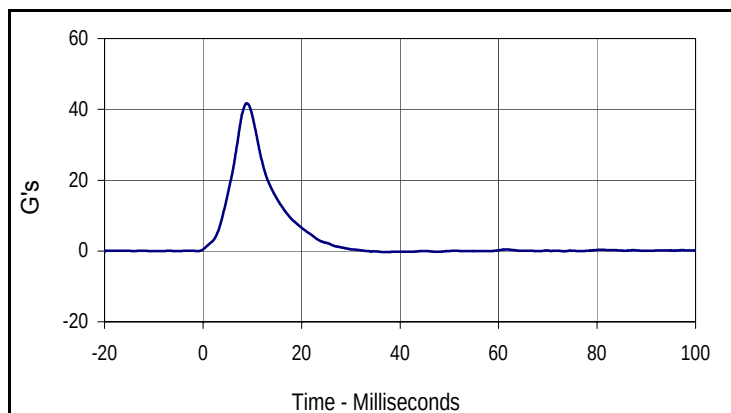
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4755.9	8.9	-2.8	-11.4



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
34.8	8.7	-4.0	14.1



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
41.7	8.9	-0.3	37.2

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

Test Program: SID IIs External Measurements
 ATD Serial No.: 299

Test Date: 12/3/11
 Test I.D.: N/A



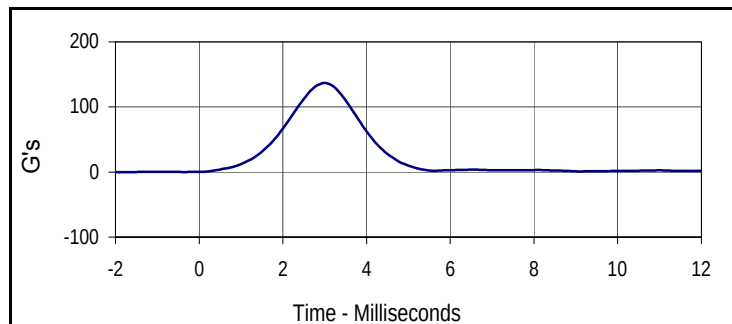
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
A	Sitting Height	mm	772 - 788	777	Pass
B	Shoulder Pivot Height	mm	437 - 453	442	Pass
C	H-Point Height	mm	79 - 89	81	Pass
D	H-Point from Seatback	mm	141 - 151	147	Pass
E	Shoulder Pivot from Backline	mm	97 - 107	101	Pass
F	Thigh Clearance	mm	119 - 135	125	Pass
G	Head Breadth	mm	140 - 148	146	Pass
H	Head Back from Backline	mm	40 - 46	46	Pass
I	Head Depth	mm	178 - 188	186	Pass
J	Head Circumference	mm	541 - 551	547	Pass
K	Buttock to Knee Length	mm	514 - 540	527	Pass
L	Popliteal Height	mm	343 - 369	352	Pass
M	Knee Pivot to Floor Height	mm	392 - 409	401	Pass
N	Buttock Popliteal Length	mm	416 - 442	429	Pass
O	Chest Depth w/o Jacket	mm	195 - 211	200	Pass
P	Foot Length	mm	216 - 232	220	Pass
Q	Hip Breadth with Pelvic Plug	mm	313 - 323	317	Pass
R	Arm Length	mm	249 - 259	256	Pass
S	Knee Joint to Seatback	mm	477 - 493	485	Pass
V	Shoulder Width	mm	341 - 357	350	Pass
W	Foot Width	mm	78 - 94	92	Pass
Y	Chest Circumference with Jacket	mm	851 - 881	878	Pass
Z	Waist Circumference	mm	760 - 791	773	Pass
Overall Test Results					Pass

Test Program: SID IIs Head Drop Test
 ATD Serial No.: 299

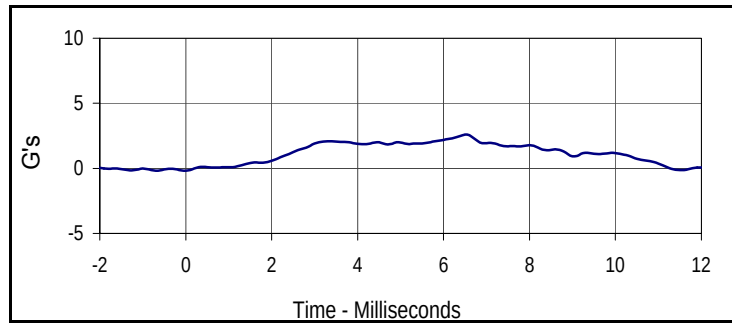
Test Date: 12/3/11
 Test I.D.: 299HD024



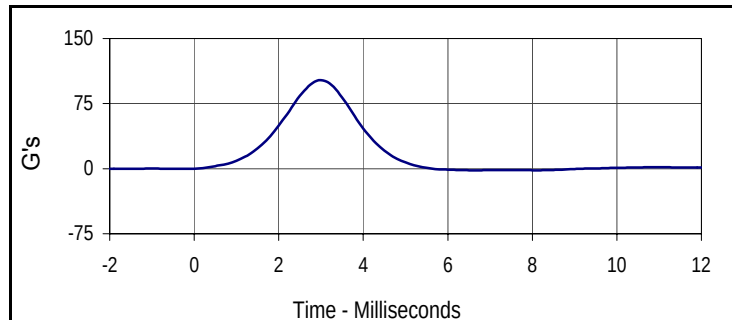
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	245	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	37.4	Pass
Peak Head Resultant Acceleration	G's	115 to 137	136.9	Pass
Peak Head X Acceleration	G's	<15	2.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	7.2	Pass
Overall Test Results				Pass



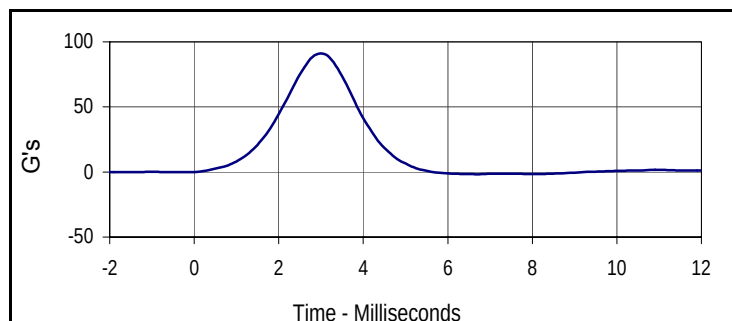
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
136.9	3.0	0.0	-1.9



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.2	6.0	-0.2	0.0



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
102.0	3.0	-1.9	6.7



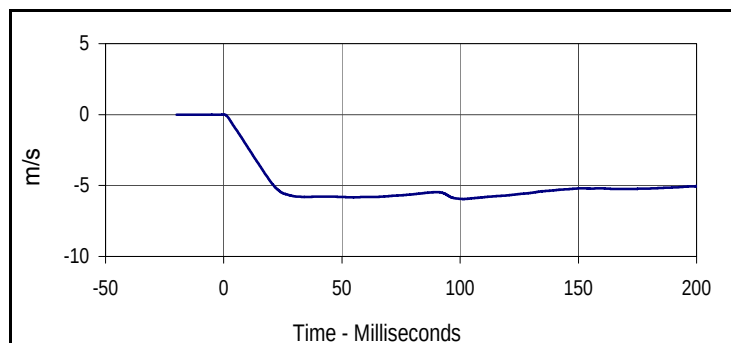
Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
91.2	3.0	-1.7	6.7

Test Program: SID IIs Neck Flexion Test
 ATD Serial No.: 299

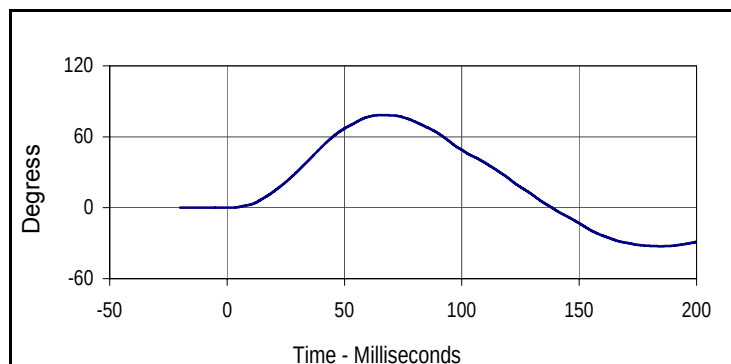
Test Date: 12/3/11
 Test I.D.: 299NB024



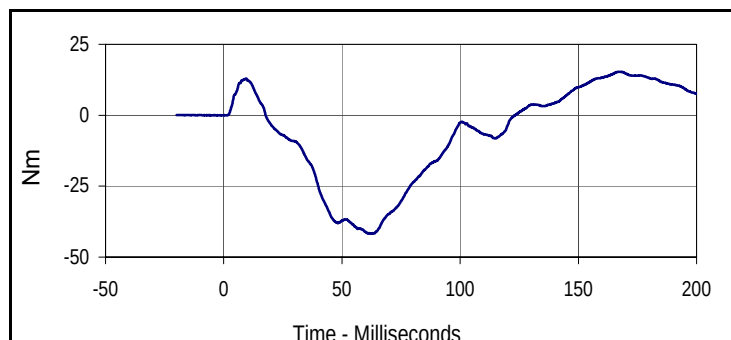
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	250	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	30.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.9	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.60	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.27	Pass
	15 msec	m/s	-3.30 to -4.10	-3.54	Pass
	20 msec	m/s	-4.40 to -5.40	-4.76	Pass
	25 msec	m/s	-5.40 to -6.10	-5.54	Pass
	25-100 msec	m/s	-5.50 to -6.20	-5.94	Pass
D-Plane Rotation	Max	Degrees	71 to 81	78.4	Pass
	Time	msec	50 to 70	65.5	Pass
Peak Occipital Condyle Moment		Nm	-36 to -44	-41.8	Pass
Decaying Moment Time to Cross 0 Nm		msec	102 to 126	123.3	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.4	-6.0	101.4



Curve Description			
Maximum Translation Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
78.4	65.5	-32.5	184.7



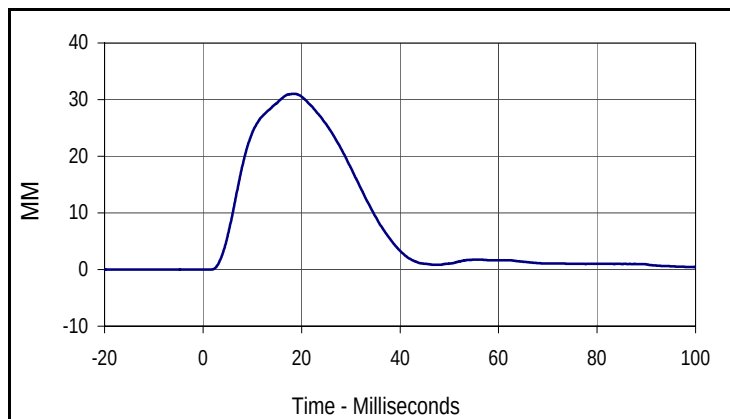
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
15.4	167.2	-41.8	62.4

Test Program: SID IIs Shoulder Impact Test
 ATD Serial No.: 299

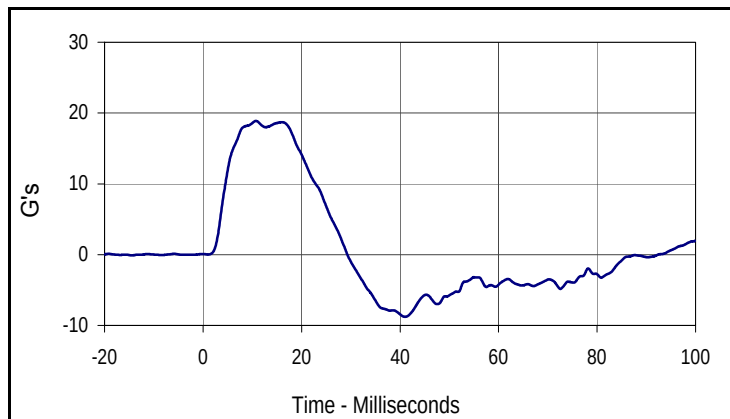
Test Date: 12/3/11
 Test I.D.: 299SH024



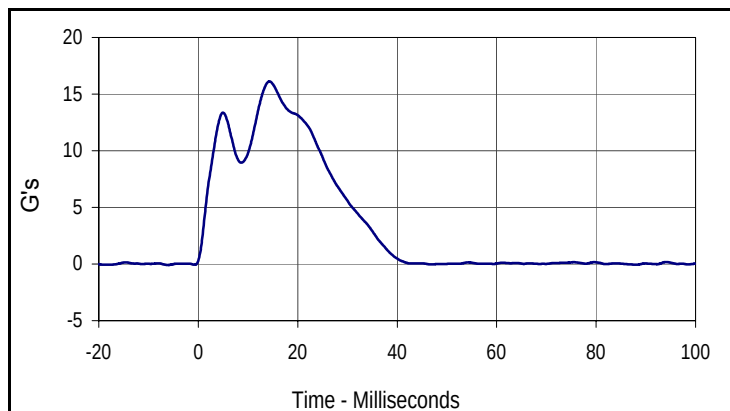
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	275	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	37.1	Pass
Impactor Velocity		m/s	4.20 to 4.40	4.28	Pass
Peak Shoulder Deflection		mm	28 to 37	31.0	Pass
Peak Lateral Spine Acceleration Y		G's	17 to 22	18.9	Pass
Peak Impactor Acceleration		G's	13 to 18	16.1	Pass
Overall Test Results				Pass	



Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
31.0	18.3	0.0	-2.1



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
18.9	10.7	-8.8	41.0



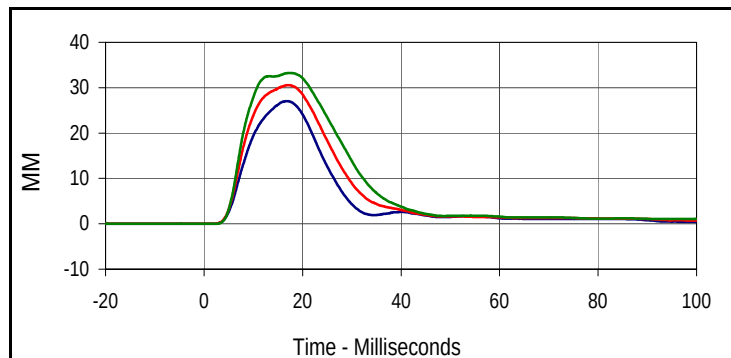
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
16.1	14.3	-0.1	-6.1

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

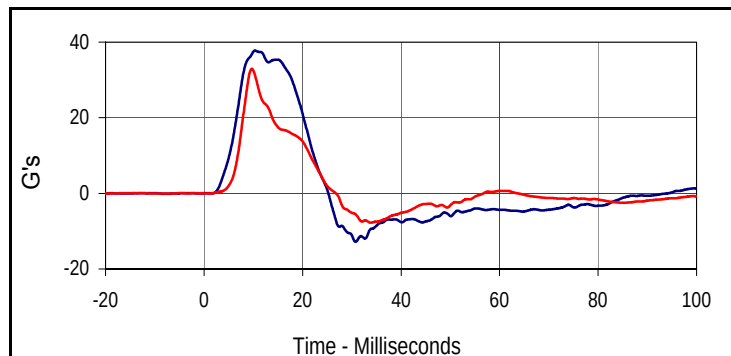
Test Date: 12/3/11
 Test I.D.: 299TWA024



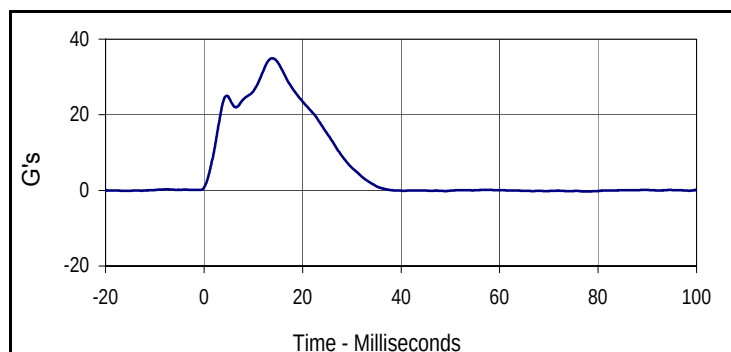
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	300	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.9	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Shoulder Deflection	mm	31 to 40	34.7	Pass
Peak Upper Thorax Rib Deflection	mm	25 to 32	27.1	Pass
Peak Middle Thorax Rib Deflection	mm	30 to 36	30.6	Pass
Peak Lower Thorax Rib Deflection	mm	32 to 38	33.2	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	37.8	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.9	Pass
Peak Impactor Acceleration	G's	30 to 36	34.9	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.1	16.8	0.0	-12.5
Middle Thorax Deflection			
Max	Time	Min	Time
30.6	17.1	0.0	-14.4
Lower Thorax Deflection			
Max	Time	Min	Time
33.2	17.6	0.0	-19.7



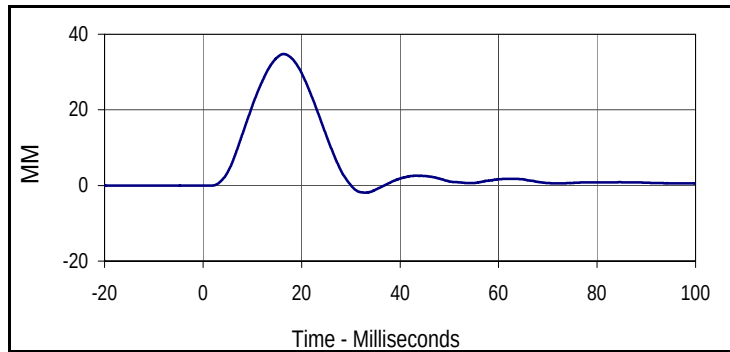
Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
37.8	10.3	-12.8	30.8
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.9	9.7	-7.8	33.9



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
34.9	13.8	-0.3	77.4

Test Program: SID IIs Thorax with Arm Impact Test
 ATD Serial No.: 299

Test Date: 12/3/11
 Test I.D.: 299TWA024



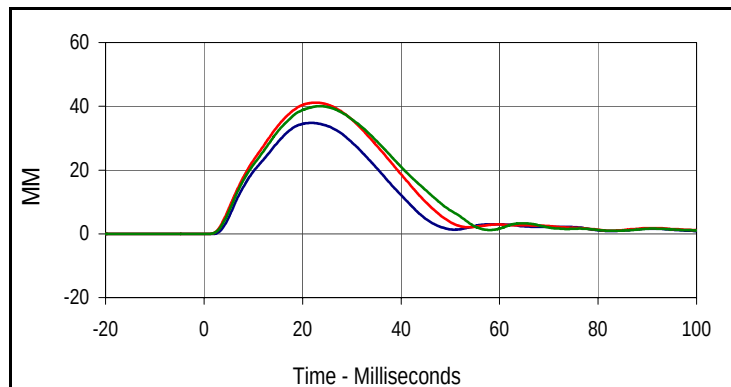
Curve Description			
Shoulder Deflection			
Plot No.	Type	SAE Class	Units
007	FIL	600	MM
Max	Time	Min	Time
34.7	16.3	-1.9	33.1

Test Program: SID IIs Thorax without Arm Impact Test
 ATD Serial No.: 299

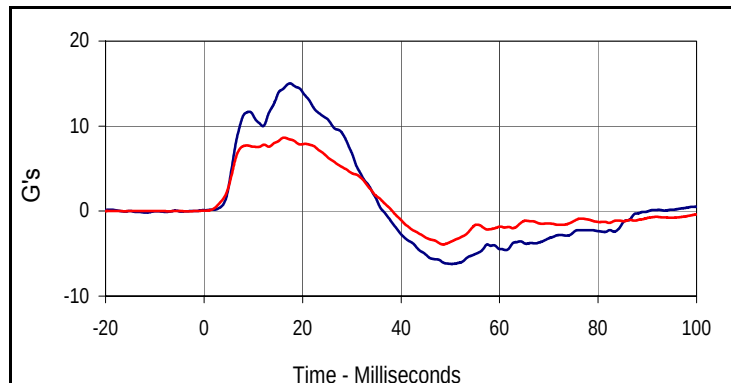
Test Date: 12/3/11
 Test I.D.: 299TWOA024



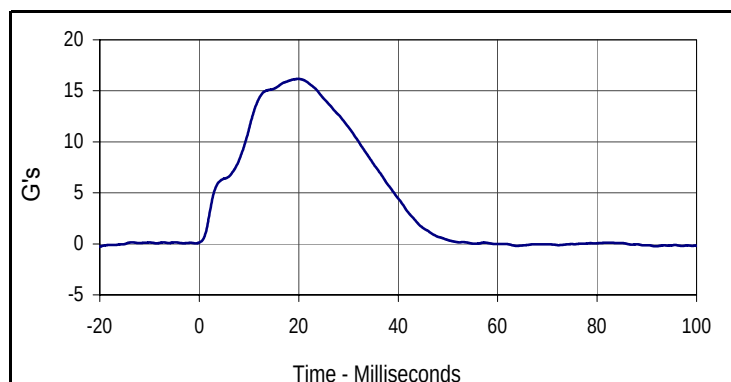
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥180	325	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	40.0	Pass
	Min	%		28.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	36.7	Pass
Impactor Velocity		m/s	4.2 to 4.4	4.3	Pass
Peak Upper Thorax Rib Deflection		mm	32 to 40	34.8	Pass
Peak Middle Thorax Rib Deflection		mm	39 to 45	41.2	Pass
Peak Lower Thorax Rib Deflection		mm	35 to 43	40.0	Pass
Peak Upper Spine Y Acceleration		G's	13 to 17	15.0	Pass
Peak Lower Spine Y Acceleration		G's	7 to 11	8.6	Pass
Peak Impactor Acceleration		G's	14 to 18	16.2	Pass
Overall Test Results				Pass	



Curve Description			
Upper Thorax Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
34.8	21.7	0.0	1.1
Middle Thorax Deflection			
Max	Time	Min	Time
41.2	22.7	0.0	0.4
Lower Thorax Deflection			
Max	Time	Min	Time
40.0	23.5	0.0	0.3



Curve Description			
Upper Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.0	17.5	-6.2	50.3
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
8.6	16.3	-3.9	48.5



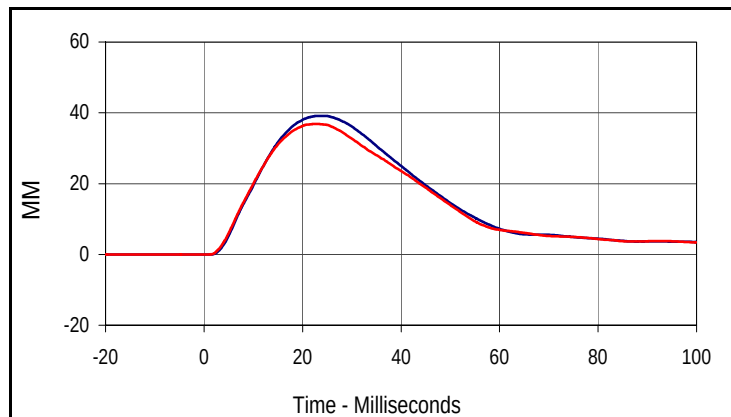
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.2	19.9	-0.3	-20.0

Test Program: SID IIs Abdomen Impact Test
 ATD Serial No.: 299

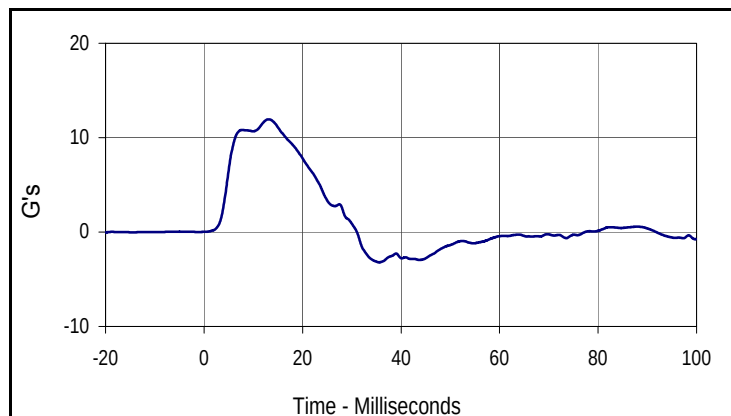
Test Date: 12/3/11
 Test I.D.: 299ABD024



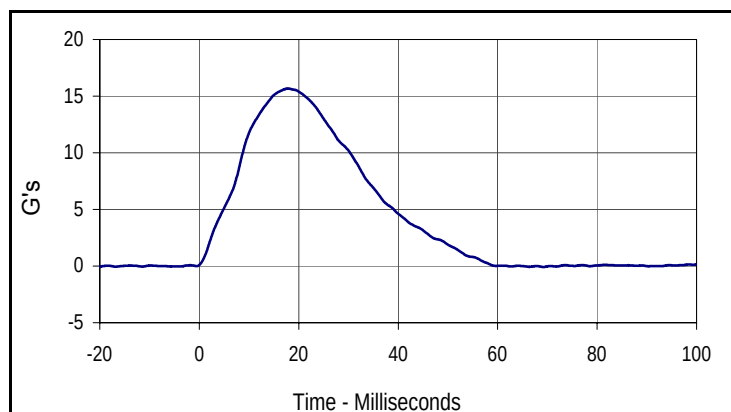
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	360	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.7	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.3	Pass
Peak Upper Abdominal Rib Deflection	mm	36 to 47	39.1	Pass
Peak Lower Abdominal Rib Deflection	mm	33 to 44	36.9	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	11.9	Pass
Peak Impactor Acceleration	G's	12 to 16	15.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
39.1	23.6	0.0	-5.0
Curve Description			
Lower Abdominal Rib Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
36.9	22.6	0.0	-6.8



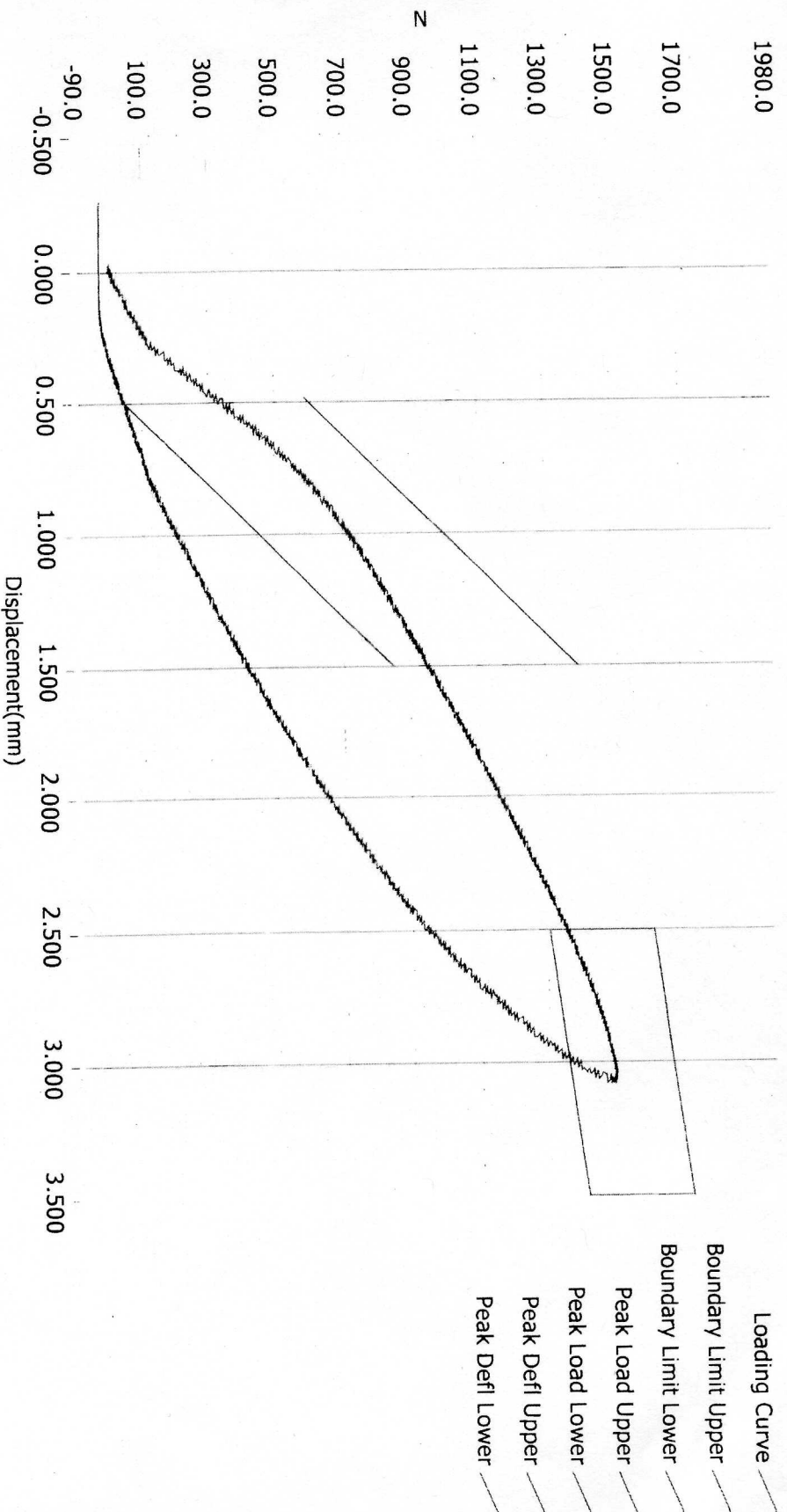
Curve Description			
Lower Spine Y Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
11.9	13.1	-3.2	35.6



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.7	17.9	-0.1	69.2

MC0117 POST TEST CAL

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID

Part Serial Number

Test Date
10/6/2010

Test Time
5:04 PM

Cert ID

ATD Serial Number

ATD Type
SIDIIs

36858

Current Date : 10/6/2010

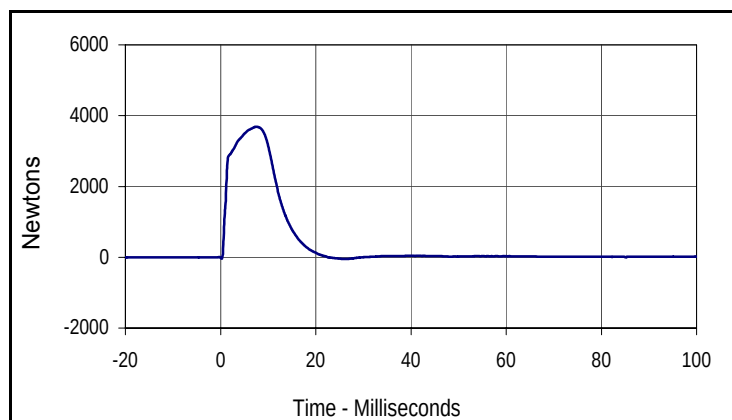
Current Time : 17:05:14

Test Program: SID IIs Pelvis Acetabulum Impact Test
 ATD Serial No.: 299

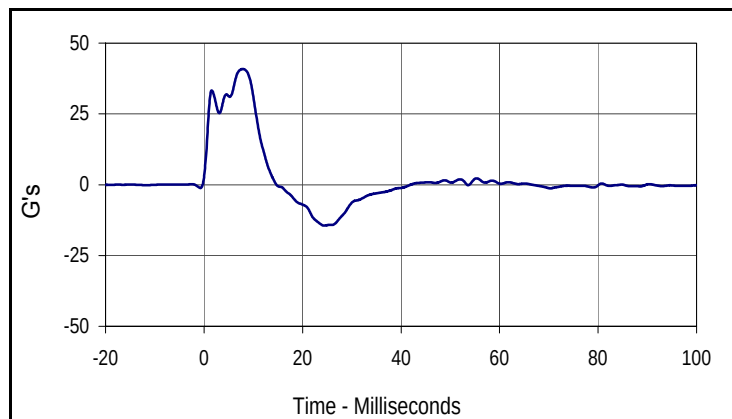
Test Date: 12/3/11
 Test I.D.: 299ACET024



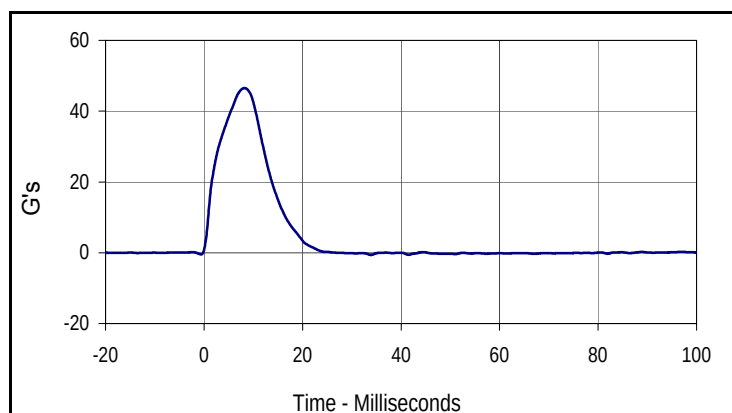
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	380	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.1	Pass
Impactor Velocity	m/s	6.6 to 6.8	6.7	Pass
Peak Acetabulum Force Y	Newtons	3400 to 4200	3685.3	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	40.8	Pass
Peak Impactor Acceleration	G's	38 to 47	46.5	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3685.3	7.5	-50.8	26.4



Curve Description			
Pelvis Y Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
40.8	7.8	-14.4	24.4



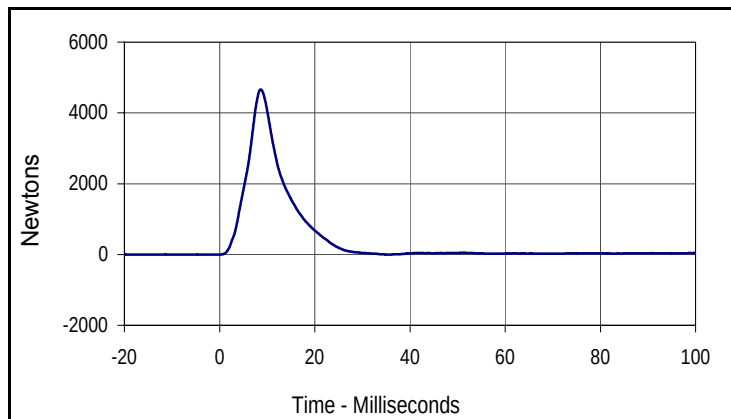
Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
46.5	8.2	-0.6	33.9

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 299

Test Date: 12/3/11
 Test I.D.: 299PL024



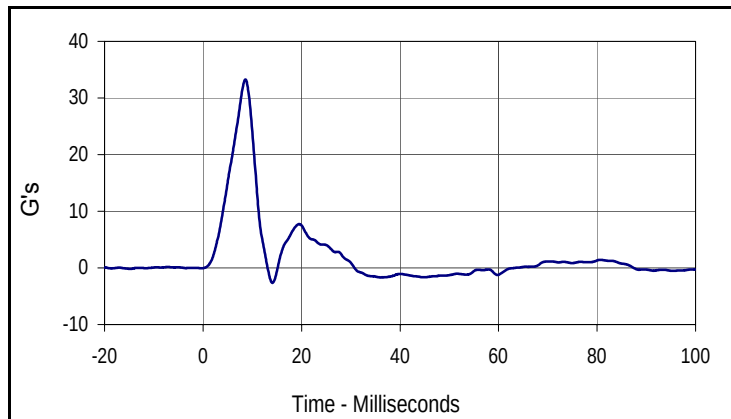
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥180	420	Pass
Temperature During Soak	Max	20.6 to 22.2	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	40.0	Pass
	Min		28.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	36.1	Pass
Impactor Velocity	m/s	4.2 to 4.4	4.4	Pass
Peak Iliac Force	Newtons	4100 to 5100	4658.4	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	33.3	Pass
Peak Impactor Acceleration	G's	36 to 45	41.3	Pass
Overall Test Results			Pass	



Curve Description

Pelvis Iliac Force

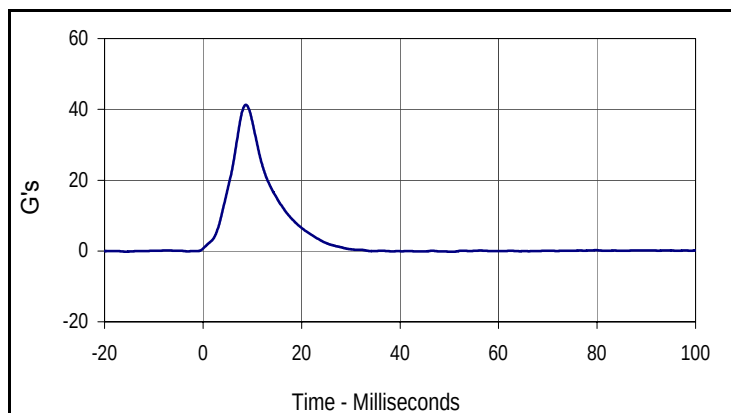
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4658.4	8.7	-2.2	-18.6



Curve Description

Pelvis Y Acceleration

Plot No.	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
33.3	8.6	-2.7	14.1



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
41.3	8.7	-0.2	50.8

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

TABLE 1 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 299			
				Serial Number	Manufacturer	Calibration	
Head Accelerometers				X	P51926	Endevco	8/8/11
				Y	P51929	Endevco	8/8/11
				Z	P51934	Endevco	8/8/11
Displacement Potentiometers	Shoulder		Y	1074	FTSS	8/8/11	
	Thoracic Rib	Upper	Y	1143	FTSS	8/8/11	
		Middle	Y	1160	FTSS	8/8/11	
		Lower	Y	1213	FTSS	8/8/11	
	Abdominal Rib	Upper	Y	1218	FTSS	8/8/11	
		Lower	Y	1234	FTSS	8/8/11	
Lower Spine Accelerometers (T12)				X	P63999	Endevco	8/5/11
				Y	P58872	Endevco	8/4/11
				Z	P58795	Endevco	8/4/11
Acetabulum Load Cell				Y	272	Denton	7/22/11
Iliac Wing Load Cell				Y	284	Denton	7/22/11
Pelvis Plug (Struck Side)					36274	FTSS	9/22/10
Pelvis Plug (Non-Struck Side)					36527	FTSS	9/24/10

TABLE 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	Ketx5a	ICSensor	6/20/11
Vehicle Center of Gravity	Y	Ketx5b	ICSensor	6/20/11
Vehicle Center of Gravity	Z	Ketx5c	ICSensor	6/20/11
Left Floor Sill	Y	EJ62J	Endevco	6/17/11
A-Pillar Sill	Y	J36724	Endevco	3/30/11
A-Pillar Low	Y	00L20-A20	Endevco	10/28/11
A-Pillar Mid	Y	J24288	Endevco	3/22/11
B-Pillar Sill	Y	N/A	N/A	N/A
B-Pillar Low	Y	N/A	N/A	N/A
B-Pillar Mid	Y	N/A	N/A	N/A
Driver Seat	Y	J21907	Endevco	3/30/11
Engine Top	X	BI60H	Endevco	7/22/11
Engine Top	Y	AR17	Endevco	7/22/11
Firewall	Y	BJ54H	Endevco	5/30/11
Right Roof	Y	EK16J	Endevco	2/3/11
Right Floor Sill	Y	BG29H	Endevco	5/6/11
Rear Floorpan	X	Ketx11a	Endevco	7/19/11
Rear Floorpan	Y	Ketx11b	Endevco	7/19/11

TABLE 3 – Pole Instrumentation

	Serial Number	Manufacturer	Calibration Date
Load Cell 1	131822A	Interface	8/8/11
Load Cell 2	132304A	Interface	8/8/11
Load Cell 3	19477	Interface	8/8/11
Load Cell 4	19325	Interface	8/8/11
Load Cell 5	131827A	Interface	8/8/11
Load Cell 6	132302A	Interface	8/8/11
Load Cell 7	19267	Interface	8/8/11
Load Cell 8	19321	Interface	8/8/11