

REPORT NUMBER: SNCAP-KAR-11-010

**NEW CAR ASSESSMENT PROGRAM (NCAP)
MOVING DEFORMABLE BARRIER SIDE IMPACT TEST**

**NISSAN MOTOR CO., LTD.
2011 NISSAN VERSA 4-DOOR SEDAN**

NHTSA No: MB5216

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



AUGUST 30, 2010

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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16. Abstract

A 55/28 km/h 90 deg. Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2011 Nissan Versa 4-Door Sedan in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at KARCO Engineering, LLC in Adelanto, CA, on August 17, 2010.

The impact velocity of the Moving Deformable Barrier was 61.61 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 37.8 deg. C. The target vehicle's maximum post-test static crush was 292 mm located at level 2. The test vehicle's occupant performance data is as follows:

Measurement Description	Driver ATD (ES-2re)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	158.4
Maximum Thorax Rib Deflection	mm	44	46.2
Total Abdominal Force	N	2500	2058
Pubic Symphysis Force	N	6000	2822

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	639.2
Lower Spine Resultant Acceleration	g	82	80
Total Pelvic Force (Sum of Acetubular and Iliac Forces)	N	5525	5836

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.

17. Key Words New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) ES-2re 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

PURPOSE AND SUMMARY OF TEST

PURPOSE

This moving deformable barrier side impact test is part of the MY 2011 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 2011 Nissan Versa 4-Door Sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated January 2010.

SUMMARY

A 2011 Nissan Versa 4-Door Sedan was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.61 km/h (38.28 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by KARCO Engineering, LLC. in Adelanto, California, on August 17, 2010. Pre- and post-test photographs of the test vehicle, the MDB, and the dummies (ES-2re and SID-IIs) are included in Appendix A of this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated January 2010. The side impact event was documented by 11 cameras. Camera locations are included in Data Sheet No. 5 of this report.

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

Head Accelerometers

Thorax Rib 1 to Rib 3 Potentiometers

Abdomen Forward, Middle, and Rear Load Cells

Lower Spine Accelerometers

Pubic Load Cell

PASSENGER ATD (SID-IIs)

Head Accelerometers

Thorax Upper, Middle and Lower Rib Potentiometers

Abdomen Upper and Lower Rib Potentiometers
 Lower Spine Accelerometers
 Iliac Load Cell
 Acetabulum Load Cell

Dummy injury values were recorded as follows:

Measurement Description	Units	Driver ATD (ES-2re)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	158.4
Maximum Thorax Rib Deflection	mm	44	46.2
Combined Abdominal Force	N	2500	2058
Pubic Symphysis Force	N	6000	2822

Measurement Description	Units	Passenger ATD (SID-IIs)	
		Threshold	Result
Head Injury Criteria (HIC ₃₆)		1000	639.2
Lower Spine (T12) Resultant Acceleration	g	82	80
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	5836

Supplemental restraint information is given below:

Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Airbag 1 (Torso)	Yes	Yes	No	
Side Airbag 2 (Curtain)	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes	No	No	
Seat Belt Load Limiter	Yes	No	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. The driver ATD maximum thorax rib deflection data channel exceeded the maximum value. The passenger ATD total pelvic force exceeded the maximum value.

SECTION 2

OCCUPANT AND VEHICLE INFORMATION/DATA SHEETS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10

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	29.573
Pressure	Tire Pressures	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(t_f - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MB5216
Model Year	2011
Make	Nissan
Model	Versa
Body Style	4-Door Sedan
VIN	3N1CC1AP2BL371854
Body Color	Brilliant Silver
Delivery Date	7/19/2010
Odometer Reading (km / mi)	132/82
Dealer	Empire Nissan
Transmission	4-Speed Automatic
Final Drive	Front
Type / No. of Cylinders	Inline 4
Engine Displacement (L)	1.6
Engine Placement	Transverse
Roof Rack	No
Sunroof / T-Top	No
Tinted Glass	No
Traction Control	No
Power Brakes	Yes
Front Disc	Yes
Rear Disc	No

Anti-Lock Brakes	Yes
All Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	Yes
Driver Torso/Pelvis Airbag	No
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
Pretensioners	Yes
Load Limiters	Yes
Automatic Door Locks	No
Bucket Seats	Yes
Tilt Steering	Yes
Other	
Other	

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

N/A

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., Ltd.
Date of Manufacture	Jun-10

GVWR (kg)	1656
GAWR Front (kg)	850
GAWR Rear (kg)	814

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity	2	3		5	
Capacity Weight (VCW) (kg)				390.0	A
DSC x 68.04 (kg)				340.2	B
Cargo Weight (RCLW) (kg)				49.8	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)

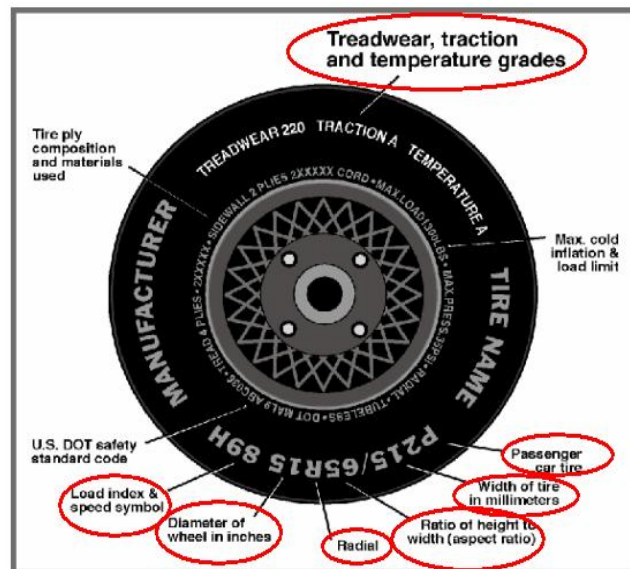
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	275	275
Cold Pressure (kpa)	228	228
Recommended Tire Size	P185/65R14	P185/65R14
Tire Size on Vehicle	P185/65R14	P185/65R14
Tire Model	Bridgestone	Bridgestone
Tire Manufacturer	B381	B381
Treadwear	260	260
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel	1 Polyester, 2 Steel
Load Index/Speed Symbol	85T	85T
Tire Material	Polyester, Steel	Polyester, Steel
DOT Safety Code Right	V67J P3R	V67J P3R
DOT Safety Code Left	V67J P3R	V67J P3R

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	354.5	240.5		397.0	306.0		394.0	318.0	
Right	kg	337.5	226.0		348.5	275.5		338.5	281.5	
Ratio	%	59.7%	40.3%	100.0%	56.2%	43.8%	100.0%	55.0%	45.0%	100.0%
Total	kg	692.0	466.5	1158.5	745.5	581.5	1327.0	732.5	599.5	1332.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1158.5	A
Actual Weight of 2 P572 ATDs Used	kg	125.0	B
Rated Cargo/Luggage Wt (RCLW)	kg	49.8	C
Calculated Vehicle Target Wt (TVTW)	kg	1333.3	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	LF	RF	LR	RR	CG (Aft of Front Axle)
Fully Loaded	mm	674	684	653	660	1169
As Tested	mm	674	678	658	660	1138

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheelbase	mm	2597
Total Vehicle Length at Left Side	mm	3030
Total Vehicle Length at Centerline	mm	4375
Total Vehicle Length at Right Side	mm	3034
Weight of Ballast in Cargo Area	kg	37.0
Weight of Vehicle Components Removed	kg	45.0
Amount of Stoddard Solvent in Fuel Tank	L	41.82

Vehicle components removed to make Target Vehicle Test Weight:

Non-struck side door panels (5.5kg), trunk liner and mat (5.0kg), trunk lining and foam (7.0 kg) spare tire and tools (12.5kg), rear bumper and cover (12.0 kg), tail lights (2.5 kg), rear speakers (0.5 kg), rear windows and molding (7.0 kg)

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Target Impact Point Aft of Front Axle (at level 3)	mm	430
Actual Impact Point Aft of Front Axle	mm	449

DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

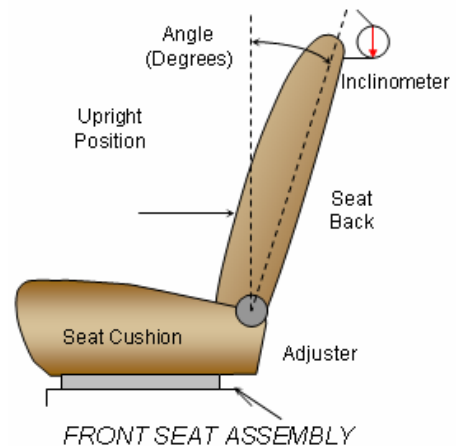
NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10

NOMINAL DESIGN RIDING POSITION

The driver's seat back is set to the manufacturer's designated seat angle, measured from the headrest post. The passenger's seat back is fixed and measured from the headrest post.



SEAT BACK ANGLES

	Degrees (°)
Driver w/Seated Dummy	10.0
Passenger w/Seated Dummy	7.3

SEAT FORE/AFT POSITIONS

Driver seat travel is measured with the seat cushion at the mid angle and the lowermost position. The seat is set to the middle of the fore-aft travel. The passenger seat is fixed.

SEAT FORE/AFT POSITIONING

Seating Position	Total Fore/Aft Travel	Placed in Position
Driver Seat	238	119
Rear Seat	Fixed	Fixed

SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer's design position, the driver for a 50th percentile adult male ATD, the left rear passenger for a 5th percentile adult female ATD. Position number one (1) is the uppermost position.

SEAT BELT UPPER ANCHORAGES

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	4	1
Rear Seat	Fixed	Fixed

DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

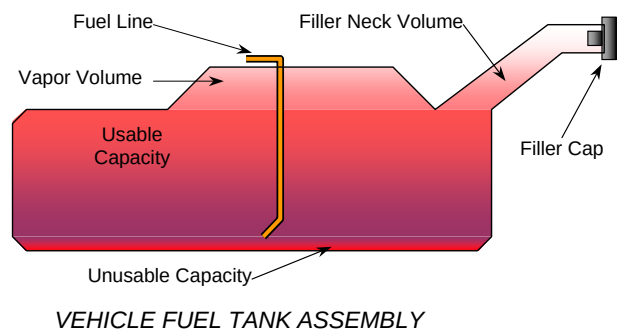
Test Program: MDB Side Impact Test

Test Date: 08/17/10

FUEL TANK CAPACITY

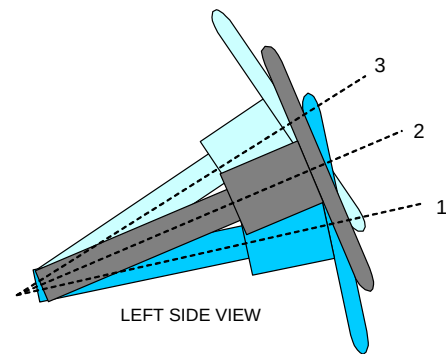
Description	Liters
Usable Capacity of "Standard Tank"	44.97
Usable Capacity of "Optional Tank"	
Usable Capacity Used for FMVSS 301	44.97
Actual Amount of Stoddard Solvent Used	41.82

The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for one second after the ignition switch is turned "on" while the engine is running, and for 1.5 seconds after the engine stops running. The fuel filler door is located on the right rear fender. The standard fuel tank occupies the area under the rear seat.



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 with a reference mark on the steering column to measure telescoping travel.



STEERING COLUMN POSITIONING

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	25.2	
Geometric Center Position, No. 2	27.5	
Uppermost Position, No. 3	29.8	
Telescoping Steering Wheel Travel		
Test Position	27.4	

DATA SHEET NO. 3

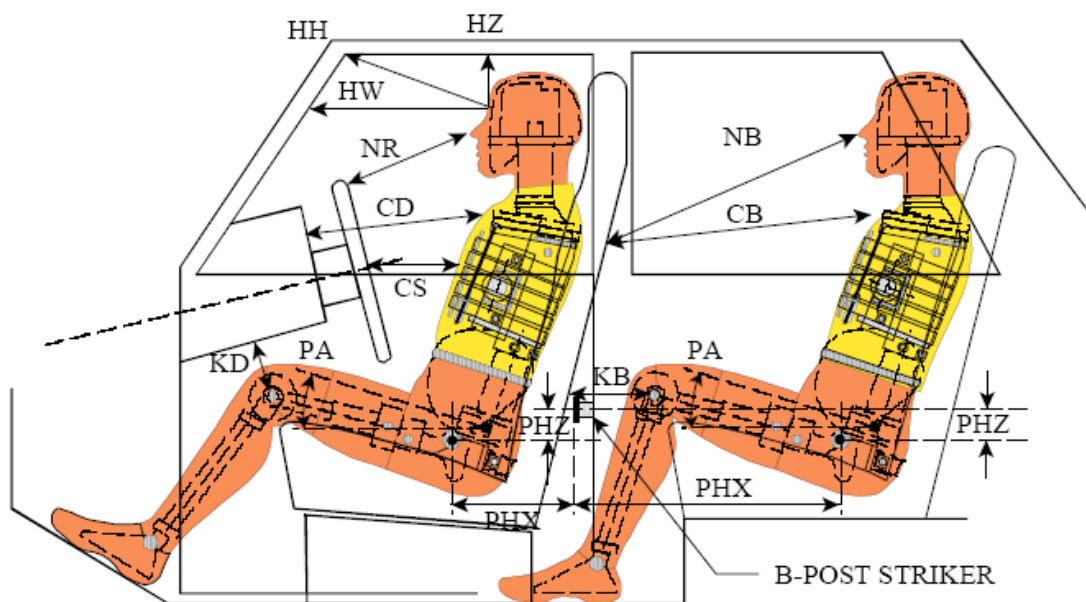
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
REAR DUMMY PHX & PHZ
MEASUREMENTS FOR A 4-DOOR
VEHICLE WOULD USE THE C-POST
STRIKER AS A REFERENCE POINT

DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	368	11.6		
HW		Head to Windshield	591	0.0		
HZ	HZ	Head to Roof	166	90.0	272	90.0
NR	NB	Nose to Rim/Seat Back	452	20.0	678	6.4
CD	CB	Chest to Dash/Seat Back	614	2.9	523	0.0
CS		Chest to Steering Wheel	390	13.8		
KDL	KBL	Left Knee to Dash/Seat Back	126	24.6	376	8.1
KDR	KBR	Right Knee to Dash/Seat Back	129	5.2	367	12.8
PA	PA	Pelvic Angle		17.0		26.2
PHX	PHX	H-Point to Striker (x-axis)	250	0.0	87	0.0
PHZ	PHZ	H-Point to Striker (z-axis)	98	90.0	243	90.0
SA	SA	Seat Back Angle		10.0		7.3

DATA SHEET NO. 4

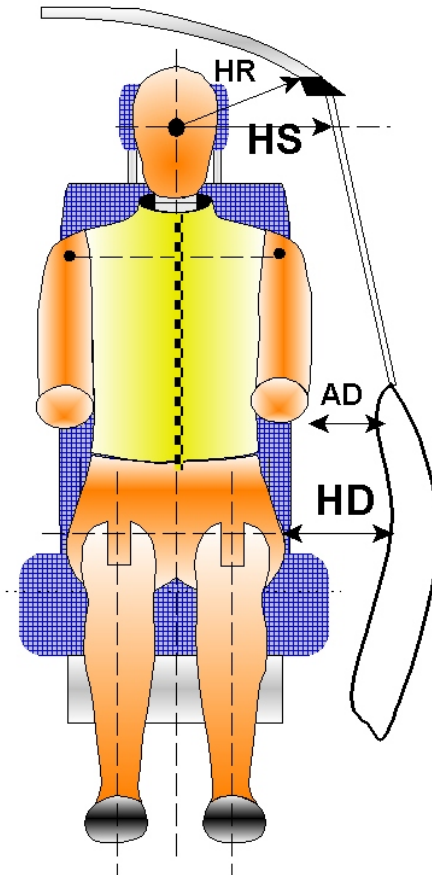
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

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DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	241	252
HS	Head to Side Window	mm	327	365
AD	Arm to Door	mm	84	104
HD	H-Point to Door	mm	125	146

DATA SHEET NO. 5

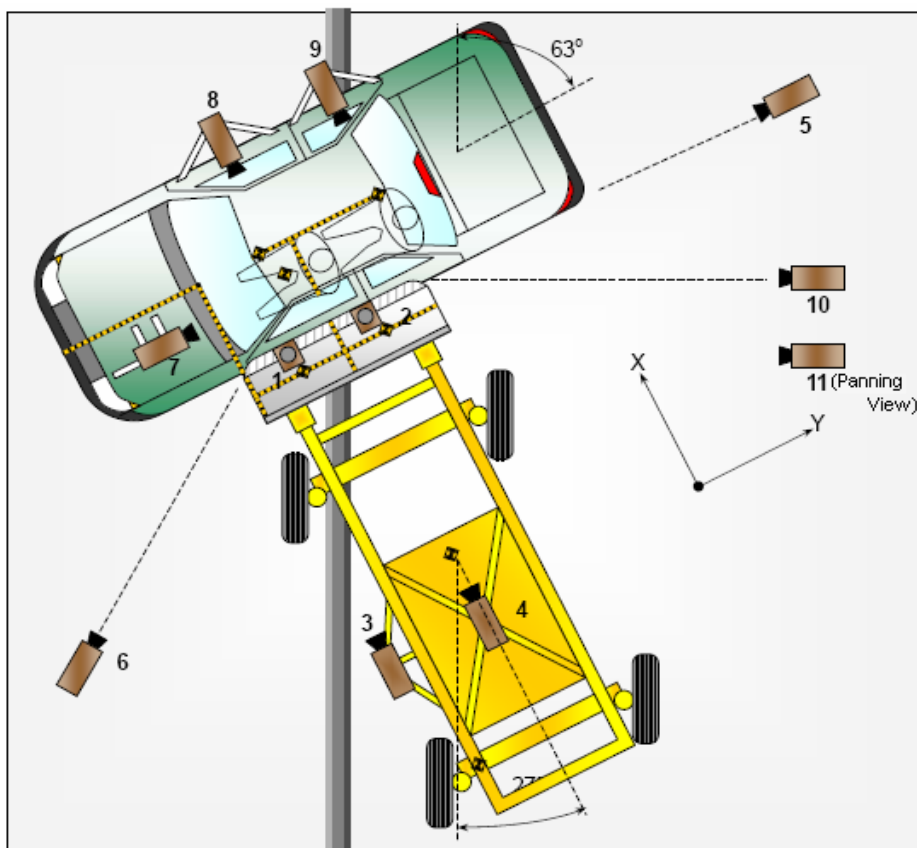
CAMERA LOCATIONS AND DATA

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



CAMERA LOCATIONS AND DATA

Camera No.	View	Coordinates (mm)			Angle	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead Overall	1220	2287	-5486	90	14	1000
2	Overhead Close-Up	609	2287	-5102	90	Zoom	1000
3	Left Impact Point (MDB)	-2134	0	-1143	-4	25	1000
4	Side Overall (MDB)	-3912	838	-1829	-1	12	1000
5	Rear	-64	2485	-1348	0	105	1000
6	Left Front	-2266	-3564	-1475	0	24	1000
7	Driver Front (On-Board)	553	-394	1176	-5	35	1000
8	Driver Side (On-Board)	1407	813	-1098	-8	14	1000
9	Passenger Side (On-Board)	1529	1626	-1165	-12	20	1000
10	Real Time Left Rear					Zoom	30
11	Real Time Inrun	-2484	-3958	-1506		Zoom	30

Reference: Impact Point Projected to Ground

+X = To Front of MDB, +Y = To Right of MDB, +Z = Down

*All measurements accurate to ± 6 mm

DATA SHEET NO. 6

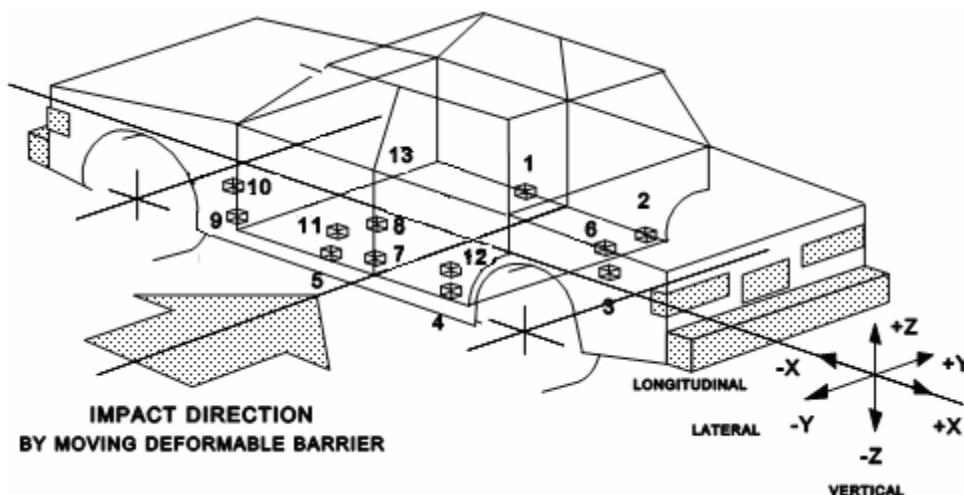
VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

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VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Sensor Description	Coordinates (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2420	610	305
2	Right Sill at Rear Seat	1695	665	340
3	Rear Floorpan Above Axle	983	315	455
4	Left Sill at Rear Door	1510	-630	315
5	Left Sill at Front Door	2370	-410	160
6	Right Rear Occupant Compartment	1740	408	205
7	B-Pillar Lower	1930	-680	550
8	B-Pillar Mid	1930	-680	795
9	A-Pillar Lower	3055	-775	560
10	A-Pillar Mid	3055	-775	720
11	Front Seat Track	2285	-550	255
12	Rear Seat Structure			
13	Vehicle CG	1795	0	345

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

¹ – Not installed.

DATA SHEET NO. 7

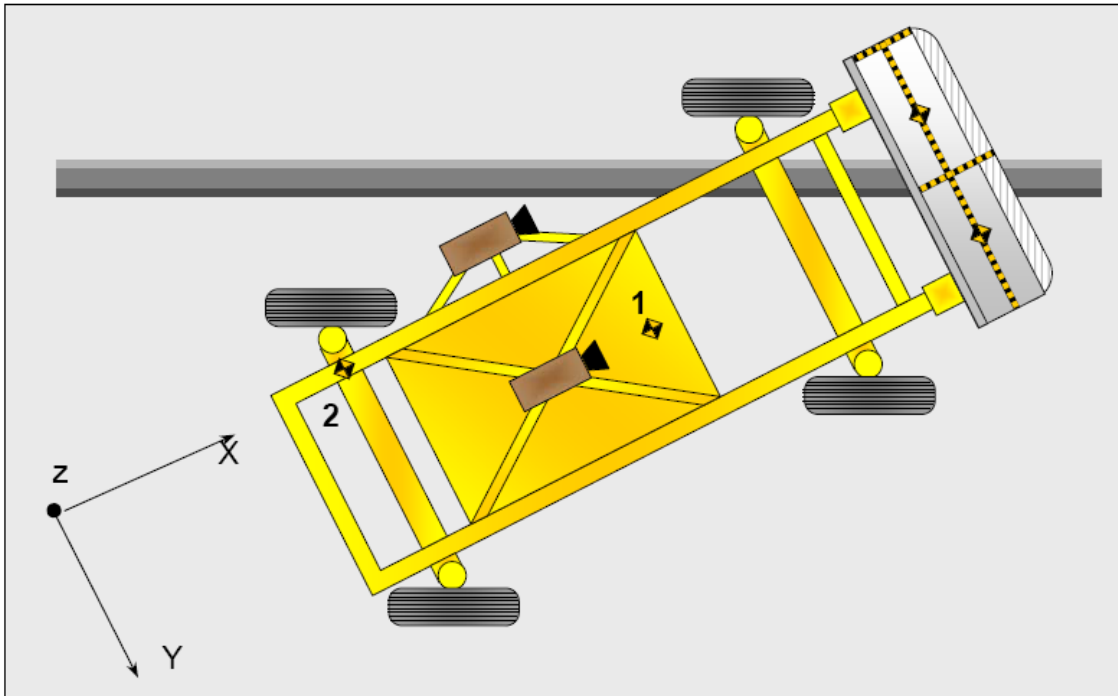
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



MDB ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Measurement		
		X	Y	Z
1	MDB CG	-1195	0	430
2	MDB Rear	-2642	-593	608

Reference: X – Face of MDB (+ rearward)
Y – MDB Centerline (+ to right)
Z – Ground plane (+ up)

DATA SHEET NO. 8**TEST VEHICLE SUMMARY OF RESULTS**Test Vehicle: 2011 Nissan Versa 4-Door SedanNHTSA No. MB5216Test Program: MDB Side Impact TestTest Date: 08/17/10**MAXIMUM EXTERIOR CRUSH**

Level	Description	Units	Maximum Crush	Above Ground
1	Sill Top Height	mm	86	227
2	Occupant H-Point Height	mm	292	557
3	Mid-Door Height	mm	280	608
4	Window Sill Height	mm	259	901
5	Window Top Height	mm	44	1438
	Maximum Penetration	mm	292	

INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Airbag Timing Sensors	4
Vehicle Structure Accelerometers	21
MDB Accelerometers	5
Total No. of Contact Switches	8
Total	70

CAMERA COVERAGE

High-Speed Vehicle On-Board	3
High-Speed Vehicle Off-Board	5
High-Speed MDB On-Board	2
Real Time Panning	1
Total	11

DATA SHEET NO. 9**MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS**Test Vehicle: 2011 Nissan Versa 4-Door SedanNHTSA No. MB5216Test Program: MDB Side Impact TestTest Date: 08/17/10**MDB SPECIFICATIONS**

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1251
Overall Length including Honeycomb Face	4023
Wheel Base of Framework Carriage	2595
C.G. location aft of Front Axle	1118

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	402	298	
Right	kg	377	292	
Ratio	%	56.9%	43.1%	
Totals	kg	779	590	1368

SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.61
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.61
MDB CL to Target Vehicle CL	degrees	88.5-91.5	90.5

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
1	Center of Bumper	432	800	Right	162
2	Top of Bumper	533	800	Right	50
3	Mid Level	686	800	Left	96
4	Top of Stack	813	800	Left	150

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	2

DATA SHEET NO. 10
POST-TEST OBSERVATIONS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Dummy Type/Serial No.	ES-2re, S/N: F035	SID-IIs, S/N: 307
Head Contact	Curtain Airbag, Side Header, Headrest	Curtain Airbag
Upper Torso Contact	Side Airbag	Door Panel
Lower Torso Contact	Side Airbag	Door Panel
Left Knee Contact	Door Panel, Right Knee	Door Panel, Right Knee
Right Knee Contact	Left Knee	Left Knee

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Jammed shut	Jammed shut
Right Side Door Opening	Remained closed and operational	Remained closed and operational
Hatch and Other Doors	Remained closed and operational	Remained closed and operational
Seat Movement	None	None
Seatback Failure	No	No

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions	
Pillar Performance	No separation occurred	
Sill Separation	No separation occurred	
Windshield Damage	None	
Window Damage	Broken	Broken
Other Notable Effects	None	

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

MEDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	-2 (Left)
Vertical Offset	mm	+/- 20	+7 (Up)

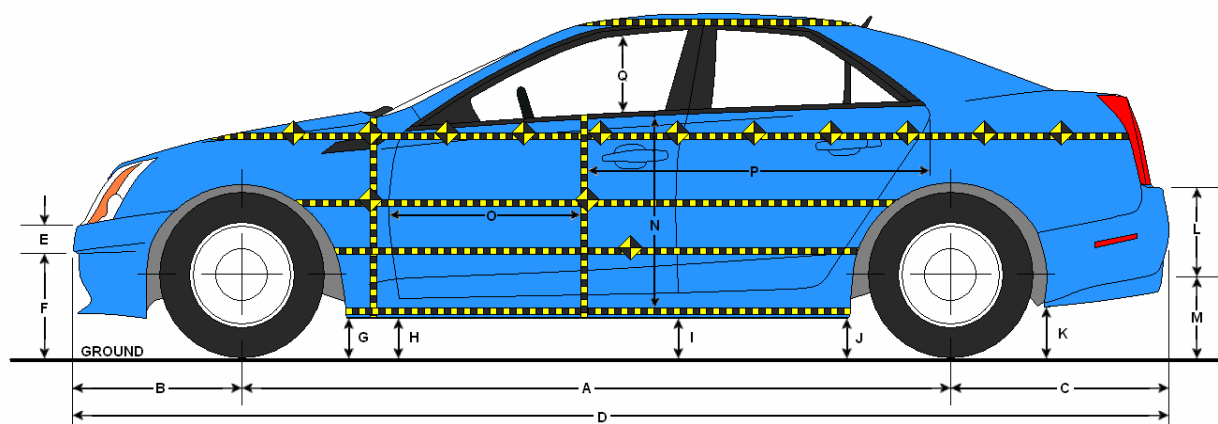
DATA SHEET NO. 11
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



LEFT SIDE VIEW

VEHICLE PRE AND POST-TEST MEASUREMENT INFORMATION

Code	Dimension	Measurement (mm)		
		Pre	Post	Difference
A	Wheelbase	2597	2604	7
B	Front Axle to FSOV	894	893	-1
C	Rear Axle to RSOV	884	877	-7
D	Total Length at Centerline	4375	4375	0
E	Front Bumper Thickness	90	90	0
F	Front Bumper Bottom to Ground	422	442	20
G	Sill Height at Front Wheel Well	179	264	85
H	Sill Height at Front Door Leading Edge	172	261	89
I	Sill Height at B-Pillar	182	308	126
J1	Sill Height at Rear Wheel Well	168	306	138
J2	Pinch Weld Height at Rear Wheel Well	144	237	93
K	Sill Height Aft of Rear Wheel Well	378	427	49
L	Rear Bumper Thickness	224	226	2
M	Bottom of Rear Bumper to Ground	379	432	53
N	Sill Height to Window Bottom Sill	639	593	-46
O	Front Door Leading Edge to Impact CL	777	716	-61
P	Rear Door Trailing Edge to Impact CL	1333	1264	-69
Q	Front Window Opening	453	432	-21
R	Right Side Length	3034	3001	-33
S	Left Side Length	3030	3036	6
T	Vehicle Width at B-Pillar	1694	1482	-212

All measurements in (mm) with tolerance of $\pm 3\text{mm}$

DATA SHEET NO. 12

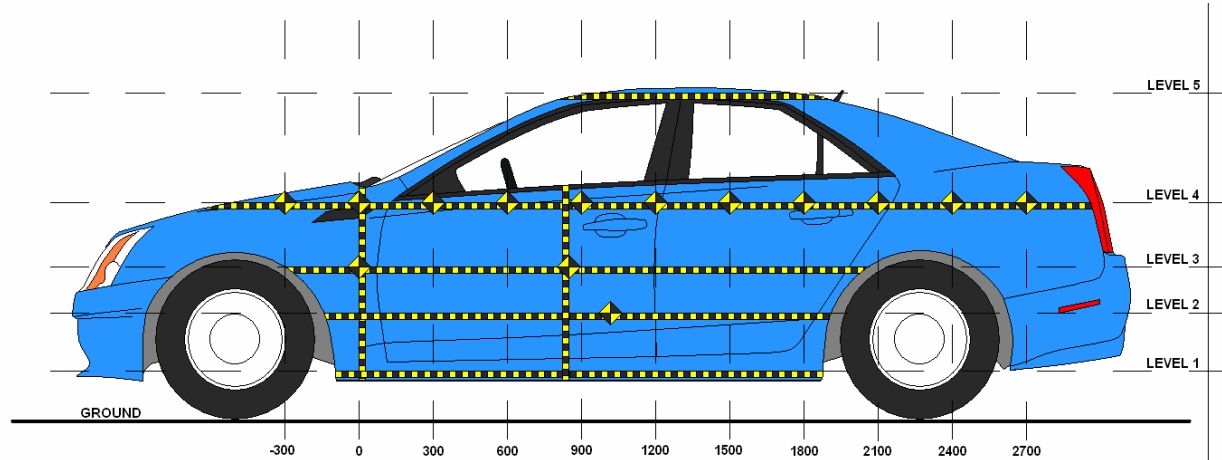
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



Level	Description	Height Above Ground (mm)
1	Sill Top Height	227
2	Occupant H-Point Height	557
3	Mid-Door Height	608
4	Window Sill Height	901
5	Window Top Height	1438

DATA SHEET NO. 12 ... (CONTINUED)

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10

	Pre-Test (mm)					Post-Test (mm)					Difference (mm)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300				784					800					16	
-150				764					785					21	
0		659	662	746			697	695	773			38	33	27	
150	693	666	664	733		746	878	861	776		53	212	197	43	
300	702	664	663	723		757	940	927	829		55	276	264	106	
450	703	663	662	717		766	950	933	880		63	287	271	163	
600	703	661	660	710		774	953	933	905		71	292	273	195	
750	703	661	660	705		781	949	919	906		78	288	259	201	
900	703	660	659	702	909	786	940	908	906	933	83	280	249	204	24
1050	704	660	659	699	904	788	937	903	898	935	84	277	244	199	31
1200	703	661	660	699	904	789	914	888	895	941	86	253	228	196	37
1350	703	661	660	699	905	779	938	903	924	946	76	277	243	225	41
1500	702	662	661	699	909	764	948	928	943	949	62	286	267	244	40
1650	700	663	663	700	914	745	952	943	959	958	45	289	280	259	44
1800	685	666	666	701	923	714	949	943	907	953	29	283	277	206	30
1950		660	662	714	939		814	822	823	962		154	160	109	23
2100				709					737					28	
2250				715					749					34	
2400				722					745					23	
2550				729					745					16	
2700				742					747					5	
2850															

MAXIMUM CRUSH DATA

	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush (mm)	86	292	280	259	44
Distance from Impact (mm)	1200	600	1650	1650	1650

DATA SHEET NO. 12 ... (CONTINUED)

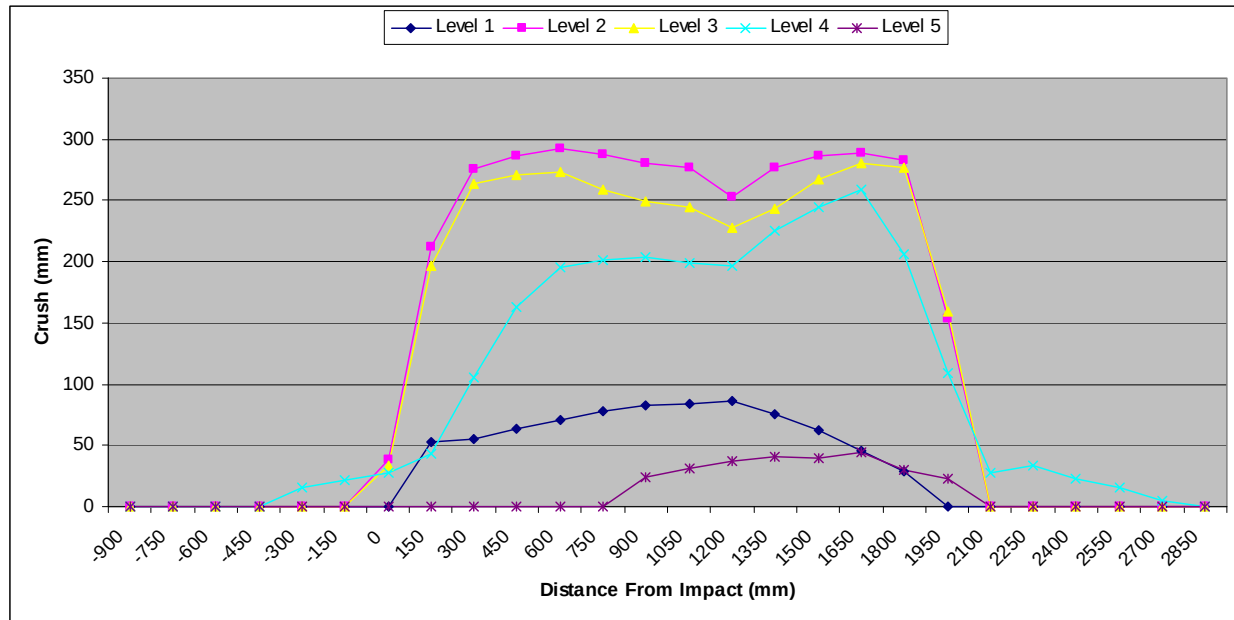
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



DATA SHEET NO. 13

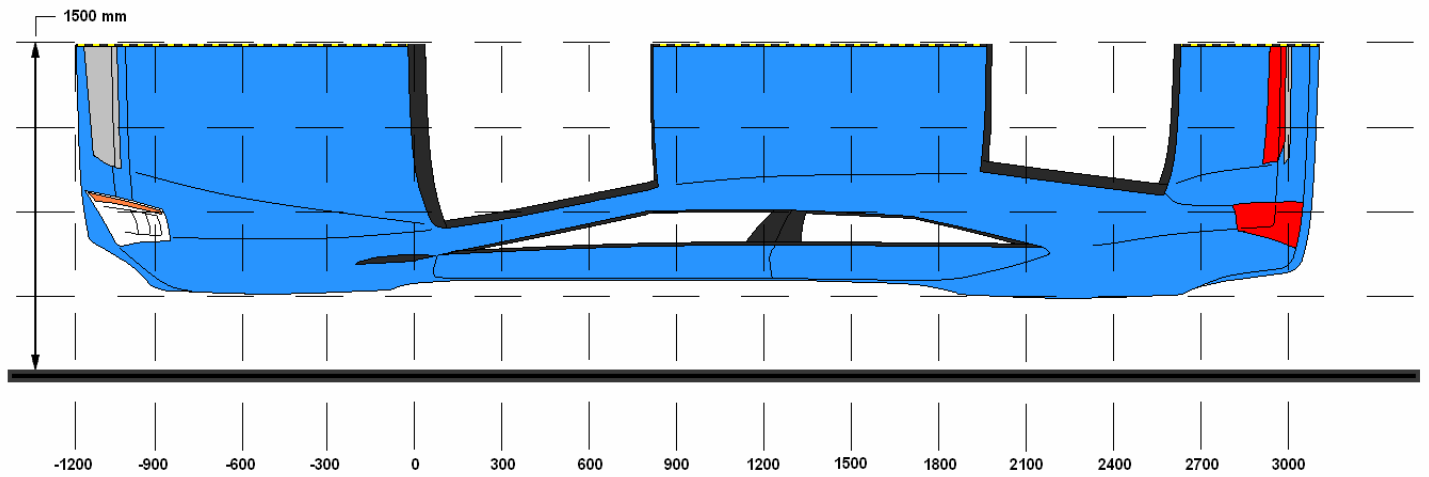
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	1950	3	662	822	160
2	1500	2	662	948	286
3	1050	2	660	937	277
4	600	2	661	953	292
5	150	2	666	878	212
6	-300	4	784	800	16

DATA SHEET NO. 14

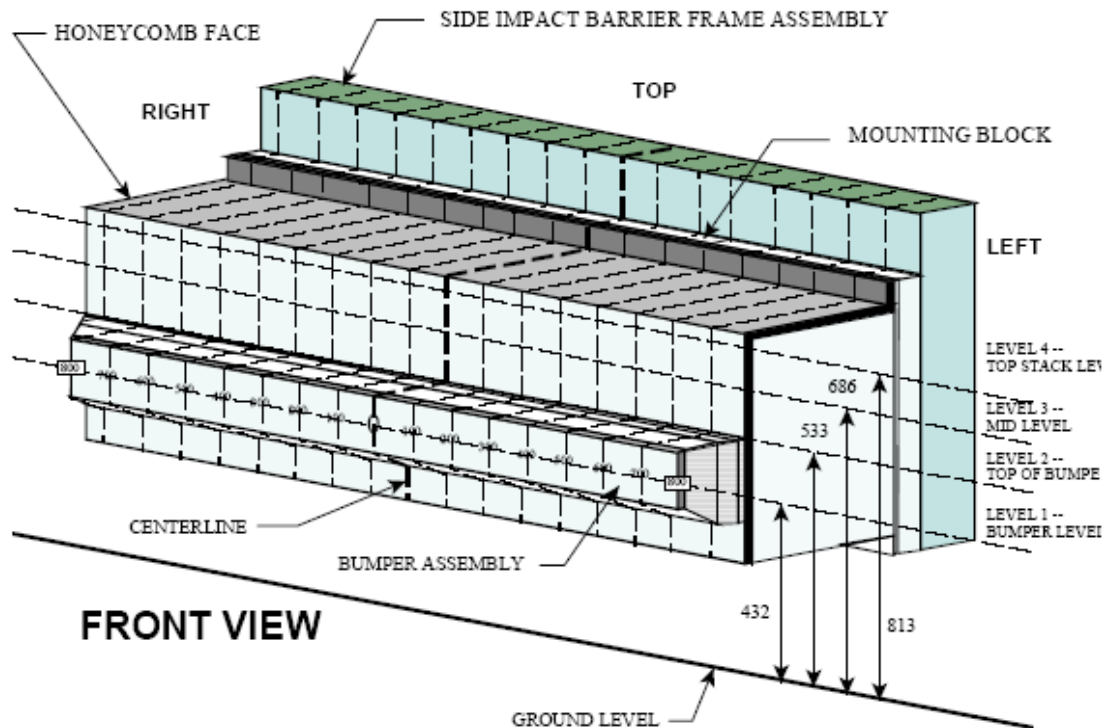
EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	162	137	123	93	97	93	94	88	80	75	72	68	65	68	66	92	108
2	50	33	29	24	23	24	29	22	10	19	19	20	22	24	23	43	45
3	17	-13	-12	-8	-4	13	38	20	7	3	3	4	13	6	10	35	96
4	34	-13	-18	-11	-3	21	41	36	30	19	14	12	11	11	21	100	150

All dimensions in millimeters.

DATA SHEET NO. 15

FMVSS NO. 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

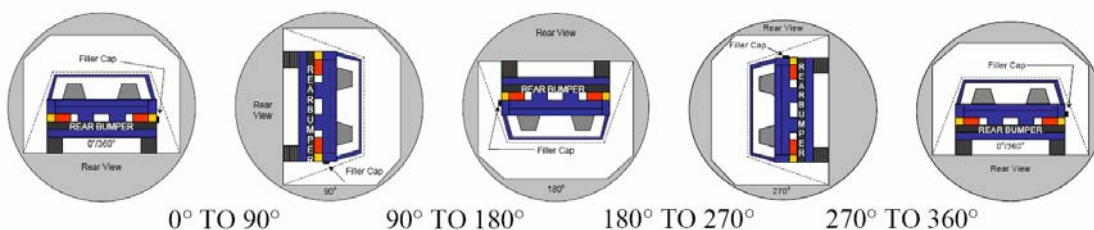
Test Date: 08/17/10

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 37.8° C

Test Time: 1:17 PM

- 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°	84	300	384
90° To 180°	98	300	398
180° To 270°	77	300	377
270° To 360°	81	300	381

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 16

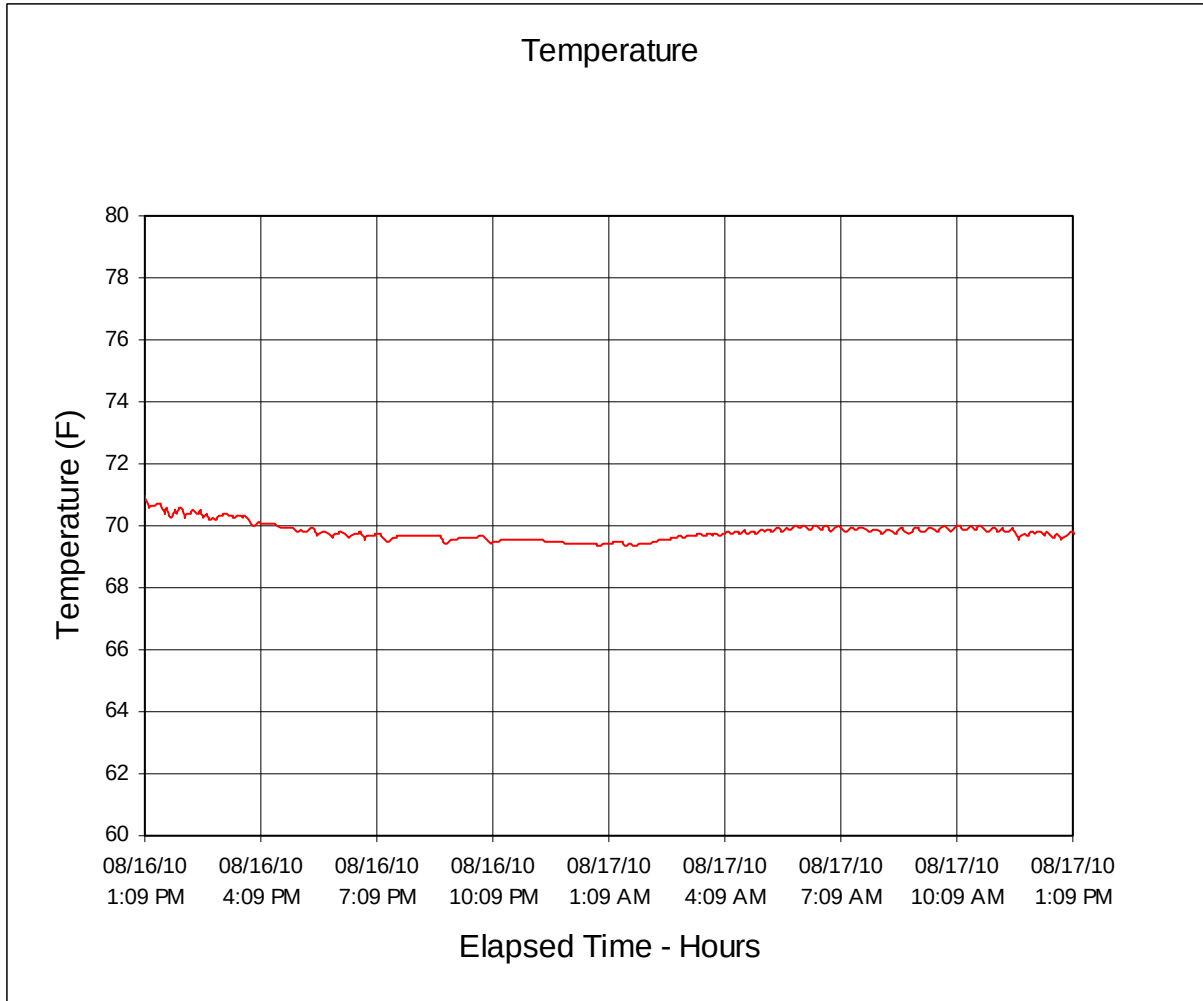
DUMMY / VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2011 Nissan Versa 4-Door Sedan

NHTSA No. MB5216

Test Program: MDB Side Impact Test

Test Date: 08/17/10



APPENDIX A
PHOTOGRAPHS

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FIGURE 1. As-Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



FIGURE 2. As-Delivered Left Rear $\frac{3}{4}$ 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 $\frac{3}{4}$ View of the Test Vehicle



FIGURE 6. Post-Test Left Front $\frac{3}{4}$ View of the 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 $\frac{3}{4}$ View of Test Vehicle



FIGURE 10. Post-Test Left Rear $\frac{3}{4}$ 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
with MDB Positioned Against Side of Target Vehicle at Ideal Impact Point



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



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



FIGURE 18. Pre-Test Right Side View of MDB Positioned Against Side of Target 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 Point Location



FIGURE 21. Pre-Test Left Front Door Latch Close-Up



FIGURE 22. Post-Test Left Front Door Latch Close-Up



FIGURE 23. Pre-Test Left Rear Door Latch Close-Up



FIGURE 24. Post-Test Left Rear Door Latch Close-Up



FIGURE 25. Pre-Test Front Close-Up View of Driver Dummy



FIGURE 26. Post-Test Front Close-Up View of Driver Dummy



FIGURE 27. Pre-Test Left Side View of Driver Dummy
Showing Belt, Chalking, and Contact Switches



FIGURE 28. Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 29. Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



FIGURE 30. Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



FIGURE 31. Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



FIGURE 32. Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning



FIGURE 33. Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



FIGURE 34. Pre-Test Placement of Driver Dummy's Feet



FIGURE 35. Pre-Test View of Belt Anchorage for Driver Dummy to Show Position



FIGURE 36. Pre-Test Left Side View of Steering Wheel to Show Position



FIGURE 37. Pre-Test View of Parking Brake

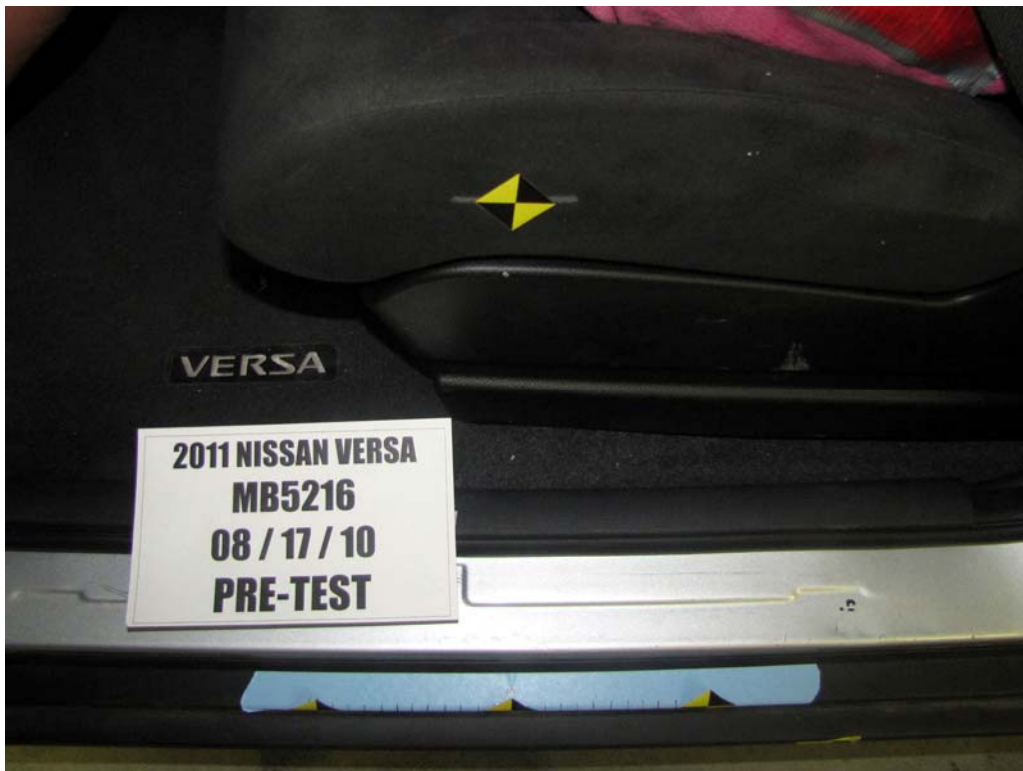


FIGURE 38. Pre-Test Close-Up Left Side View of
Driver Seat Track Showing Test Position



FIGURE 39. Pre-Test Close-Up Left Side View of Driver Seat Back Showing Test Position



FIGURE 40. Pre-Test Close-Up View of Driver Seat Back or Head Restraint Showing Seat Back Test Position



FIGURE 41. Pre-Test Driver Dummy and Door Clearance View



FIGURE 42. Post-Test Driver Dummy and Door Clearance View



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



FIGURE 44. Post-Test Right Side View of Driver Dummy and Front Seat Occupant Compartment



FIGURE 45. Pre-Test Driver Inner Door Panel View



FIGURE 46. Post-Test Driver Dummy Inner Door Panel View
Showing Driver Dummy Contact Locations



FIGURE 47. Post-Test Driver Dummy Close-Up Head Contact With Vehicle Interior View



FIGURE 48. Post-Test Driver Dummy Close-Up Head Contact with Side Airbag View



FIGURE 49. Post-Test Driver Dummy Close-Up Torso Contact with Vehicle Interior View



FIGURE 50. Post-Test Driver Dummy Close-Up Torso Contact with Side Airbag View



FIGURE 51. Post-Test Driver Dummy Close-Up Pelvis Contact with Vehicle Interior View



FIGURE 52. Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View



FIGURE 53. Pre-Test Left Side View of Rear Passenger Dummy
Showing Belt, Chalking, and Contact Switches



FIGURE 54. Pre-Test Left Side View of Rear Passenger Dummy
Shoulder and Door Top View



FIGURE 55. Post-Test Left Side View of Rear Passenger Dummy
Shoulder and Door Top View



FIGURE 56. Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning



FIGURE 57. Pre-Test Frontal View of Rear Passenger Dummy
Head and Shoulders in Relation to Head Restraint



FIGURE 58. Pre-Test Overhead View of Rear Passenger
Seat Pan Prior to Dummy Positioning



FIGURE 59. Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



FIGURE 60. Pre-Test View of Rear Passenger Dummy's Neck
Showing Position of Adjustable Neck Bracket



FIGURE 61. Pre-Test View of Rear Passenger Dummy's Head
Showing Dummy's Head is Level



FIGURE 62. Pre-Test Placement of Rear Passenger Dummy's Feet

Photograph Not Available

FIGURE 63. Pre-Test View of Belt Anchorage for
Rear Passenger Dummy to Show Position



FIGURE 64. Pre-Test Close-Up Left Side View of
Rear Passenger Seat Track Showing Test Position



FIGURE 65. Pre-Test Close-Up Left Side View of Rear Passenger Seat Back Showing Test Position



FIGURE 66. Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint Showing Seat Back Test Position



FIGURE 67. Pre-Test Rear Passenger Dummy and Door Clearance View



FIGURE 68. Post-Test Rear Passenger Dummy and Door Clearance View



FIGURE 69. Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 70. Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



FIGURE 71. Pre-Test Rear Passenger Inner Door Panel View



FIGURE 72. Post-Test Rear Passenger Inner Door Panel View
Showing Rear Passenger Dummy Contact Locations



FIGURE 73. Post-Test Rear Passenger Dummy Close-Up
Head Contact with Vehicle Interior View



FIGURE 74. Post-Test Rear Passenger Dummy Close-Up
Head Contact With Side Airbag View



FIGURE 75. Post-Test Rear Passenger Dummy Close-Up
Torso Contact with Vehicle Interior View

No Dummy Torso Contact with Side Airbag

FIGURE 76. Post-Test Rear Passenger Dummy Close-Up
Torso Contact with Side Airbag View



FIGURE 77. Post-Test Rear Passenger Dummy Close-Up
Pelvis Contact with Vehicle Interior View

No Dummy Pelvis Contact with Side Airbag

FIGURE 78. Post-Test Rear Passenger Dummy Close-Up
Pelvis Contact with Side Airbag View



FIGURE 79. Pre-Test View of Fuel Filler Cap



FIGURE 80. Post-Test View of Fuel Filler Cap



FIGURE 81. Pre-Test Front View of MDB Impactor Face



FIGURE 82. Post-Test Front View of MDB Impactor Face



FIGURE 83. Pre-Test Top View of MDB Impactor Face



FIGURE 84. Post-Test Top View of MDB Impactor Face



FIGURE 85. Pre-Test Left Side View of MDB Impactor Face



FIGURE 86. Post-Test Left Side View of MDB Impactor Face



FIGURE 87. Pre-Test Right Side View of MDB Impactor Face



FIGURE 88. Post-Test Right Side View of MDB Impactor Face



FIGURE 89. Close-Up View of Vehicle's Certification Label



FIGURE 90. Close-Up View of Vehicle's Tire Information Placard

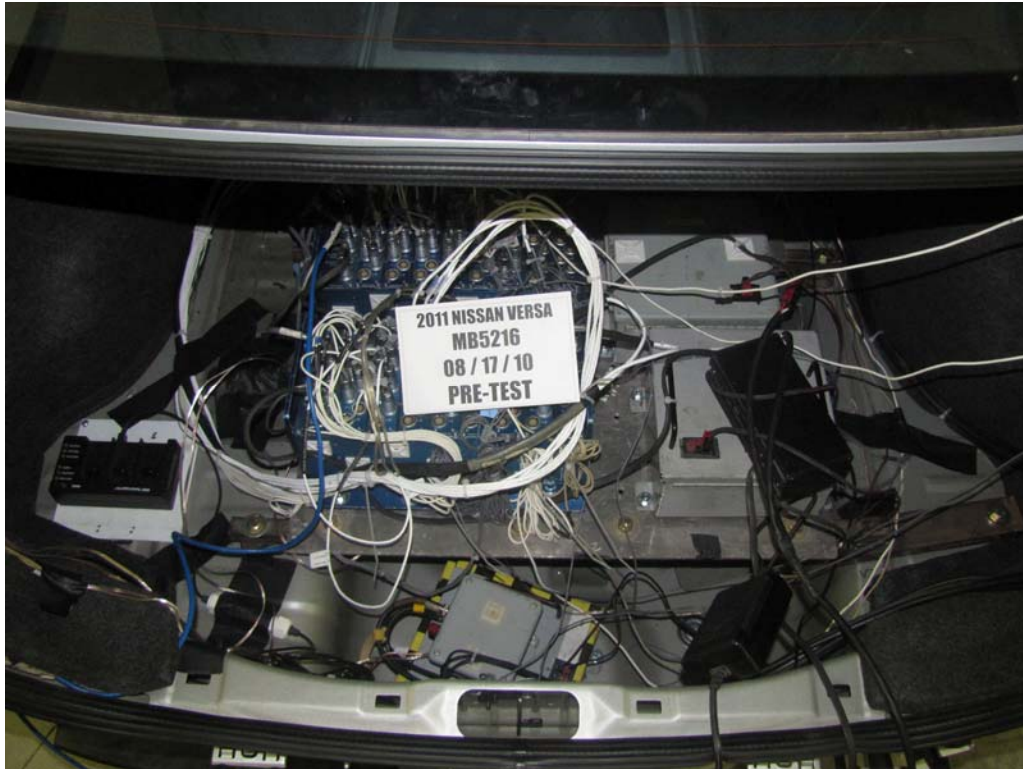


FIGURE 91. Pre-Test Ballast View



FIGURE 92. Post-Test Primary and Redundant Speed Trap Read-Out



FIGURE 93. FMVSS No. 301/305 Rollover 0°

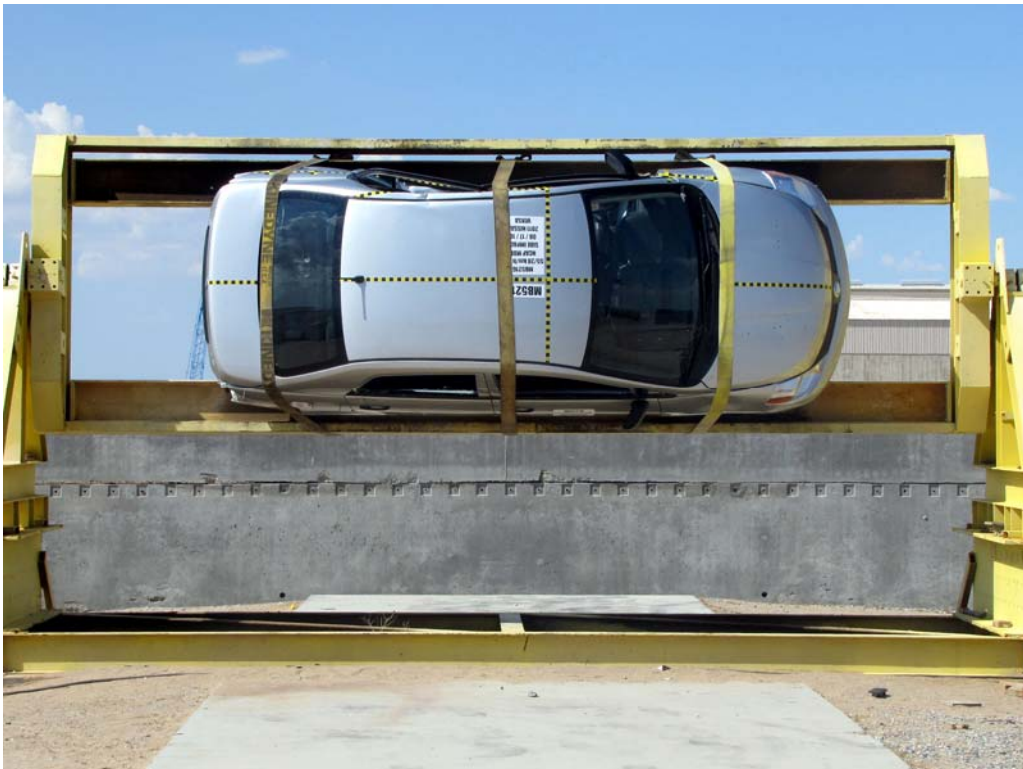


FIGURE 94. FMVSS No. 301/305 Rollover 90°



FIGURE 95. FMVSS No. 301/305 Rollover 180°



FIGURE 96. FMVSS No. 301/305 Rollover 270°

11 VERSA 1.6 SEDAN

Life is Big,
ous Accommodations

COMFORT & CONVENIENCE

- Air Conditioning with Cabin Microfilter
- 4-Way Adjustable Driver's Seat
- Cloth Seat & Door Trim
- 4 Speakers With Audio Pre-Amp
- Tilt Steering Column
- Variable Intermittent Windshield Wipers
- Rear Window Defroster w/Timer
- Front Door Map Pockets
- Dual Front & Rear Cup Holders
- Front & Rear Passenger Assist Grips
- Day/Night Rearview Mirror
- 12-Volt Power Outlet
- Remote Fuel/Filler Door Release

EXTERIOR FEATURES

- Black Manual Folding & Operating Side View Mirrors
- Black Door Handles
- Multi-Reflector Halogen Headlights
- Black Decklid Finisher
- Black Front Grill
- Fixed Roof Antenna
- Energy-Absorbing Body Color
- Front & Rear Fascias

Manufacturer's Suggested Retail Base Price: \$12,240.00

Options Included by Manufacturer FIVE-PIECE FLOOR/TRUNK MAT SET 155.00

Destination Charges: 750.00

Total * \$13,145.00

EPA Fuel Economy Estimates

CITY MPG **25**

Expected range for most drivers 20 to 30 MPG

Estimated Annual Fuel Cost **\$1,392**

based on 15,000 miles at \$2.60 per gallon

HIGHWAY MPG **33**

Expected range for most drivers 27 to 39 MPG

Combined Fuel Economy

This Vehicle **28**

12 50 ALL MIDDLE CARS

Your actual mileage will vary depending on how you drive and maintain your vehicle.

See the FREE Fuel Economy Guide at dealers or www.fueleconomy.gov

GOVERNMENT SAFETY RATINGS

Frontal Crash	Driver Passenger	Not Rated
Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat Rear seat	Not Rated
Star ratings based on the risk of injury in a side impact.		
Rollover	Not Rated	
Star ratings based on the risk of rollover in a single vehicle crash.		

Star ratings range from 1 to 5 stars (★★★★★), with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA).

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

DELIVERY

VEHICLE COLORS:
EXT: BRILLIANT SILVER
INT: CHARCOAL

FINAL ASSEMBLY POINT:
AGUASABAY JIMEX

TRANSPORT METHOD:
TRUCK

DEALER:
FONTANA NISSAN
16444 S HIGHLAND AVE
FONTANA CA 92336

VIN: 3N1CC1AP2BL371854
EMS: 50 STATE EMISSIONS
MDL: 11111-371854 K23-G
OPT: A-C039.93

20100618031129R15159

This Vehicle qualifies for Nissan's **Security+Plus Vehicle Protection Plan**

The only service agreement backed by Nissan!
Ask your dealer for details, or call 1-800-NISSAN-1 for more information

FIGURE 99. Monroney Label

HEAD RESTRAINTS (Hatchback model and front seats of Sedan model)

WARNING

Head restraints supplement the other vehicle safety systems. They may provide additional protection against injury in certain rear-end collisions. Adjust the head restraints properly, as specified in this section. Check the adjustment after someone else uses the seat. Do not attach anything to the head restraint stalks or remove the head restraint. Do not use the seat if the head restraint has been removed. If the head restraint was removed, reinstalled and properly adjust the head restraint before an occupant uses the seating position. Failure to follow these instructions can reduce the effectiveness of the head restraints. This may increase the risk of serious injury or death in a collision.

Adjustable headrests

↑ indicates the seating position is not equipped with a head restraint or adjustable headrest.

1. Head restraint

2. Adjustment notches

3. Lock knob

4. Stakes

Adjustment

Adjust the head restraint so the center is level with the center of the seat occupant's ears.

To raise the head restraint, pull it up.

To lower, push and hold the lock knob and push the head restraint down.

1-8 Safety—Seats, seat belts and supplemental restraint system

Removal

Use the following procedure to remove the adjustable head restraints.

1. Pull the head restraint up to the highest position.
2. Push and hold the lock knob.
3. Remove the head restraint from the seat.
4. Store the head restraint properly so it is not loose in the vehicle.
5. Reinstall and properly adjust the head restraint before an occupant uses the seating position.

Install

1. Align the head restraint stalks with the holes in the seat. Make sure the head restraint is facing the correct direction. The stalks with the adjustment notches (2) must be installed on the hole with the lock knob (3).
2. Push and hold the lock knob and push the head restraint down.
3. Properly adjust the head restraint before an occupant uses the seating position.

Front-seat Active Head Restraints

The Active Head Restraint system forward sensing the force that the seatback exerts from the occupant in a rear-end collision. The movement of the head restraint helps support the occupant's head by reducing the backward movement and helping absorb some of the forces that may lead to whiplash-type injuries.

Active Head Restraints are effective for collisions at low to medium speeds in which it is said that whiplash-type injuries occur.

Active Head Restraints operate only in certain rear-end collisions. After the collision, the head restraints return to their original position.

1-8 Safety—Seats, seat belts and supplemental restraint system

FIGURE 100. Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

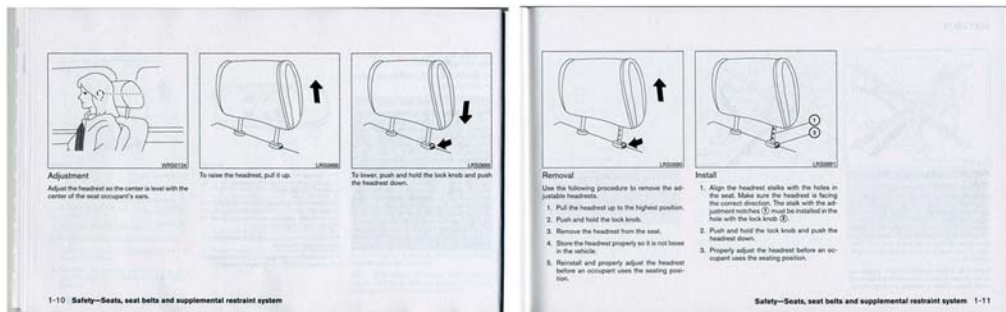
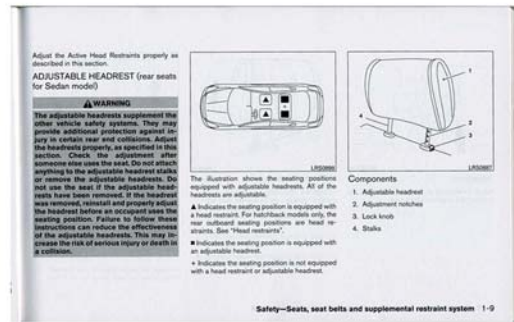


FIGURE 101. Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

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 Upper Thorax Rib Deflection (Y) vs. Time	B-2
6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-2
7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-2
8	Driver Thorax Rib Deflection Maximum vs. Time	B-2
9	Driver Anterior Abdominal Force (Y) vs. Time	B-3
10	Driver Middle Abdominal Force (Y) vs. Time	B-3
11	Driver Posterior Abdominal Force (Y) vs. Time	B-3
12	Driver Total Abdominal Force (Y) vs. Time	B-3
13	Driver Pubic Symphysis Force (Y) vs. Time	B-4
14	Passenger Head Acceleration (X) vs. Time Primary	B-5
15	Passenger Head Acceleration (Y) vs. Time Primary	B-5
16	Passenger Head Acceleration (Z) vs. Time Primary	B-5
17	Passenger Head Resultant Acceleration Primary vs. Time	B-5
18	Passenger Lower Spine T12 Acceleration (X) vs. Time	B-6
19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-6
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-6
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-6
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-7
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-7
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-7

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

Driver & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)

Driver Lower Spine T12 Acceleration (Y)

Driver Lower Spine T12 Acceleration (Z)

Passenger Upper Thorax Rib Deflection (Y)

Passenger Middle Thorax Rib Deflection (Y)

Passenger Lower Thorax Rib Deflection (Y)
Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Driver Shoulder Contact Switch
Driver Torso Contact Switch
Driver Pelvis Contact Switch
Passenger Head Acceleration Redundant (X)
Passenger Head Acceleration Redundant (Y)
Passenger Head Acceleration Redundant (Z)
Passenger Shoulder Contact Switch
Passenger Torso Contact Switch
Passenger Pelvis Contact Switch

Vehicle Instrumentation Data

Driver Side Airbag Timing
Driver Side Curtain Airbag Timing
Passenger Side Airbag Timing (if applicable)
Passenger Side Curtain Airbag Timing (if different from Driver)
Right Side Sill at Front Seat Acceleration (X)
Right Side Sill at Front Seat Acceleration (Y)
Right Side Sill at Front Seat Acceleration (Z)
Right Side Sill at Rear Seat Acceleration (X)
Right Side Sill at Rear Seat Acceleration (Y)
Right Side Sill at Rear Seat Acceleration (Z)
Rear Floorpan Above Axle Acceleration (X)
Rear Floorpan Above Axle Acceleration (Y)
Rear Floorpan Above Axle Acceleration (Z)
Left Side Sill at Front Seat Acceleration (Y)
Left Side Sill at Rear Seat Acceleration (Y)
Right Rear Occupant Compartment Acceleration (Y)
Lower A-Post Acceleration (Y)
Upper A-Post Acceleration (Y)
Lower B-Post Acceleration (Y)
Upper B-Post Acceleration (Y)

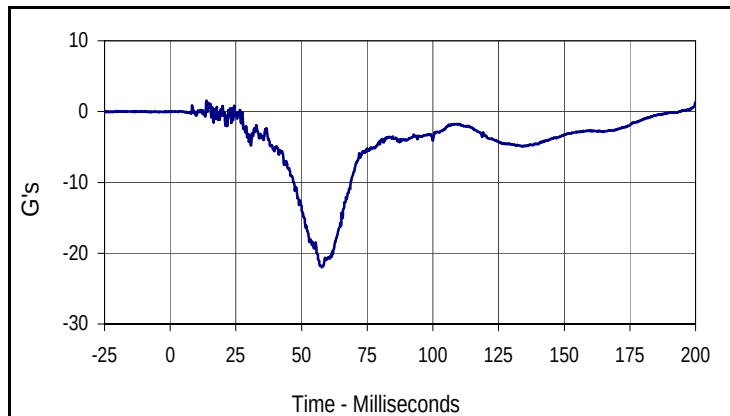
Front Seat Track Acceleration (Y)
Rear Seat Track Acceleration (Y)
Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)

MDB Instrumentation Data

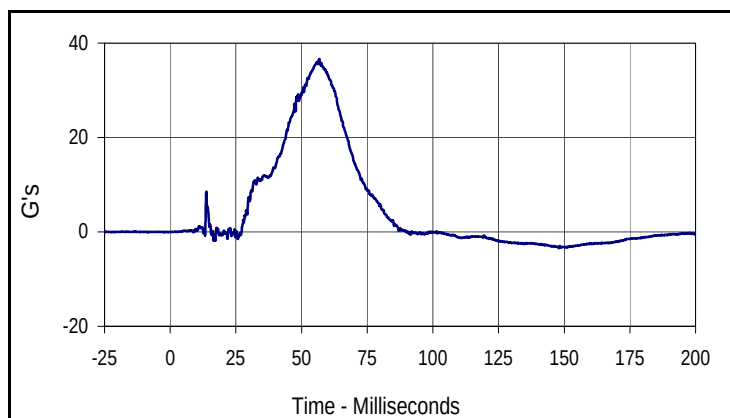
MDB Center of Gravity Acceleration (X)
MDB Center of Gravity Acceleration (Y)
MDB Center of Gravity Acceleration (Z)
MDB Rear Acceleration (X)
MDB Rear Acceleration (Y)
Left MDB Contact Switch
Right MDB Contact Switch

Test Vehicle: 2011 Nissan Versa 4-Door Sedan
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

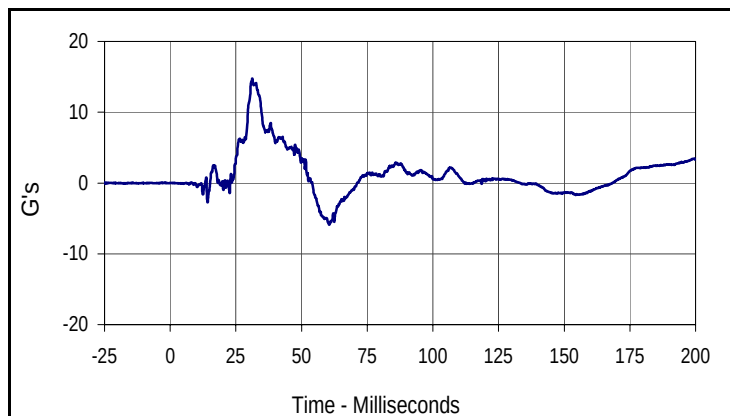
Test Date: 8/17/10
 NHTSA No.: MB5216



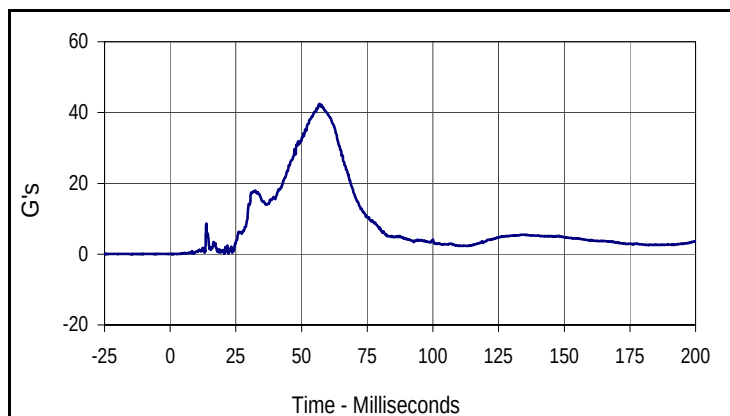
Curve Description			
Driver Head Acceleration X Primary			
CURNO	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
1.6	13.8	-22.0	57.7



Curve Description			
Driver Head Acceleration Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
36.6	56.7	-3.4	148.0



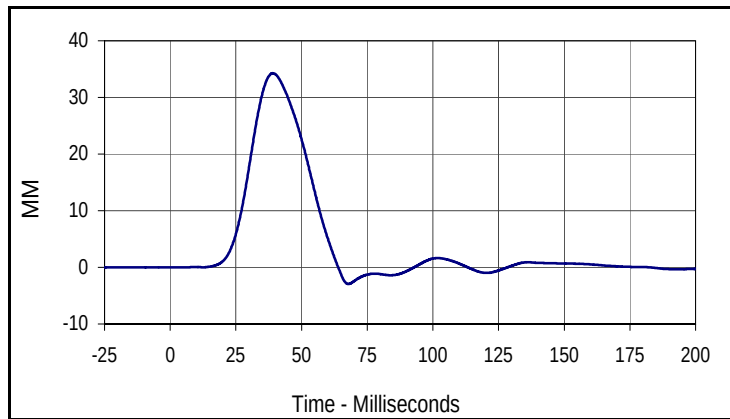
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14.7	31.3	-5.9	60.5



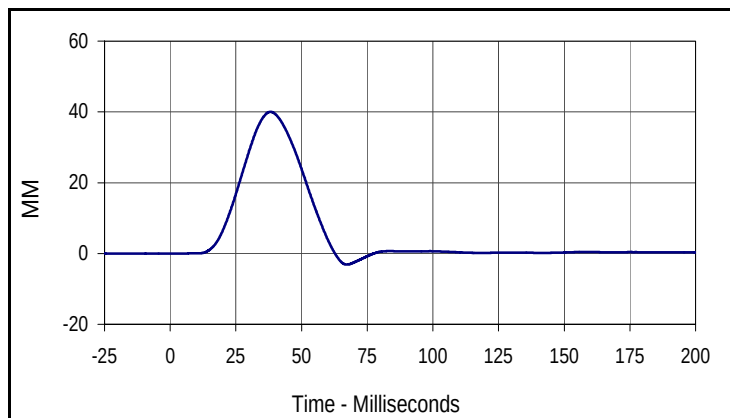
Curve Description			
Driver Head Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
42.4	56.8	0.0	1.3

Test Vehicle: 2011 Nissan Versa 4-Door Sedan
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

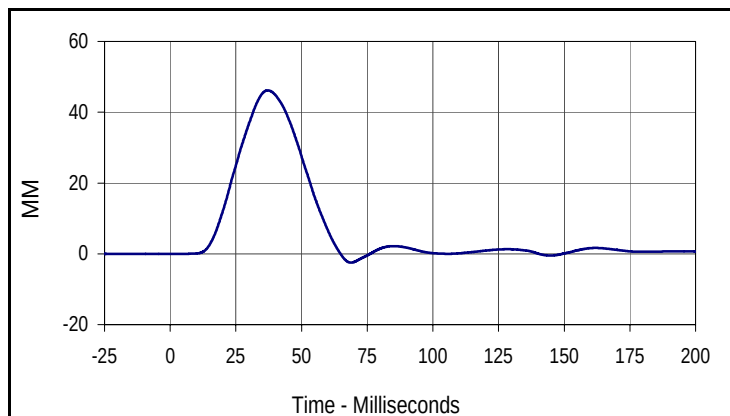
Test Date: 8/17/10
 NHTSA No.: MB5216



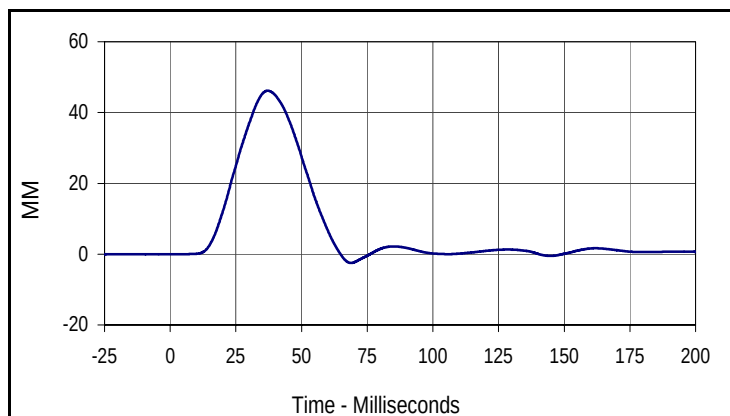
Curve Description			
Driver Upper Thorax Rib Deflection Y			
CURNO	Type	SAE Class	Units
007	FIL	180	MM
Max	Time	Min	Time
34.3	39.1	-2.9	67.8



Curve Description			
Driver Middle Thorax Rib Deflection Y			
CURNO	Type	SAE Class	Units
008	FIL	180	MM
Max	Time	Min	Time
40.0	38.2	-3.1	67.2



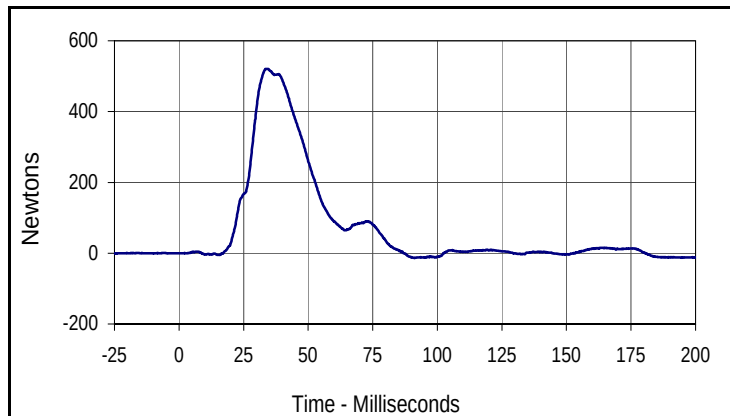
Curve Description			
Driver Lower Thorax Rib Deflection Y			
CURNO	Type	SAE Class	Units
009	FIL	180	MM
Max	Time	Min	Time
46.2	37.1	-2.5	68.8



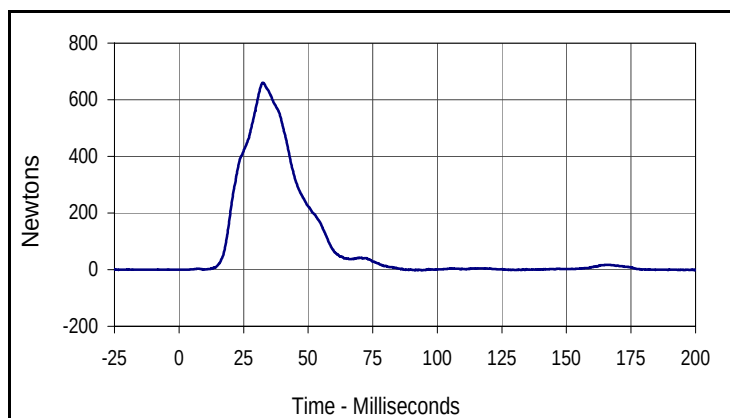
Curve Description			
Driver Thorax Rib Deflection Maximum			
CURNO	Type	SAE Class	Units
010	FIL	180	MM
Max	Time	Min	Time
46.2	37.1	-2.5	68.8

Test Vehicle: 2011 Nissan Versa 4-Door Sedan
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

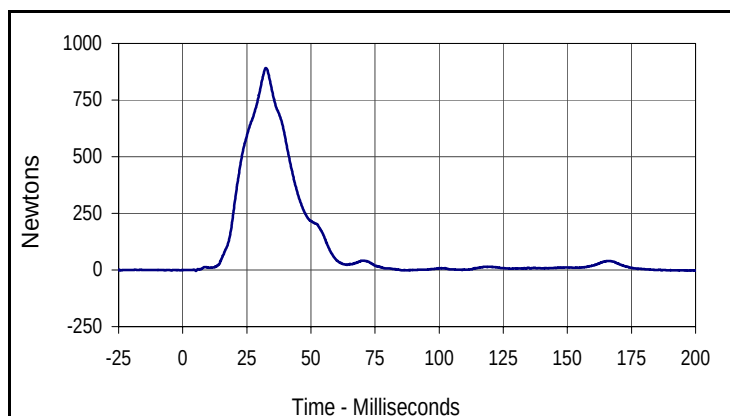
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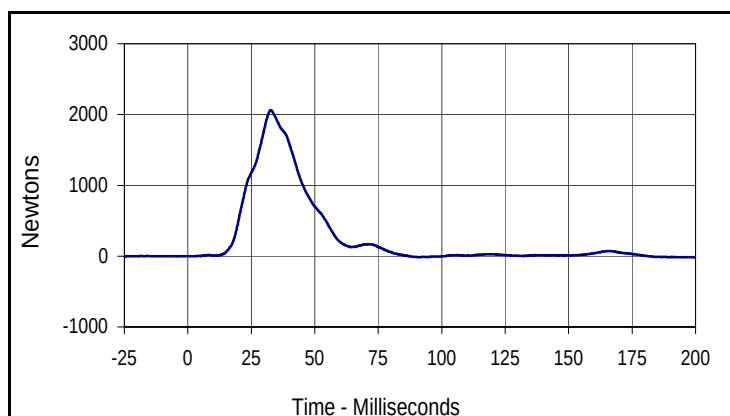
Curve Description			
Driver Anterior Abdominal Force Y			
CURNO	Type	SAE Class	Units
013	FIL	600	Newtons
Max	Time	Min	Time
520.6	34.4	-13.4	91.1



Curve Description			
Driver Middle Abdominal Force Y			
CURNO	Type	SAE Class	Units
014	FIL	600	Newtons
Max	Time	Min	Time
659.7	32.4	-2.5	94.1



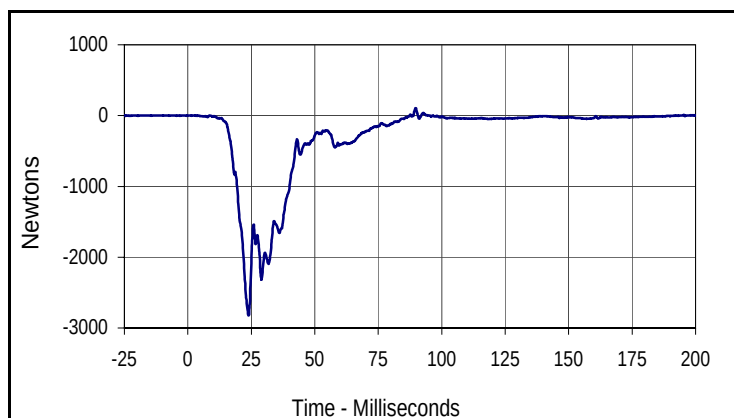
Curve Description			
Driver Posterior Abdominal Force Y			
CURNO	Type	SAE Class	Units
015	FIL	600	Newtons
Max	Time	Min	Time
891.7	32.4	-4.1	5.2



Curve Description			
Driver Total Abdominal Force			
CURNO	Type	SAE Class	Units
013	RES	600	Newtons
Max	Time	Min	Time
2058.1	32.7	-15.8	197.7

Test Vehicle: 2011 Nissan Versa 4-Door Sedan
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

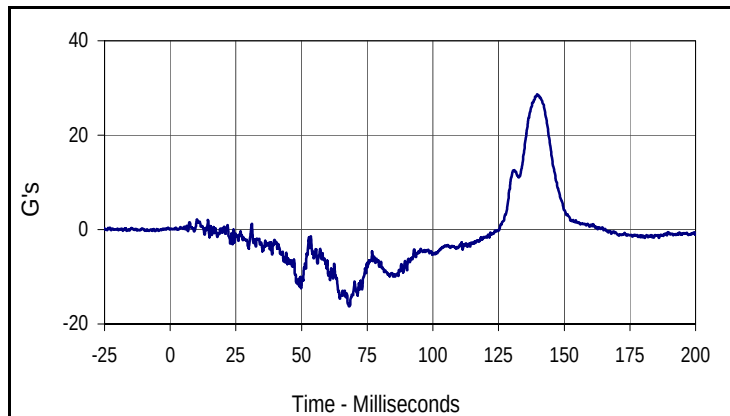
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 NHTSA No.: MB5216



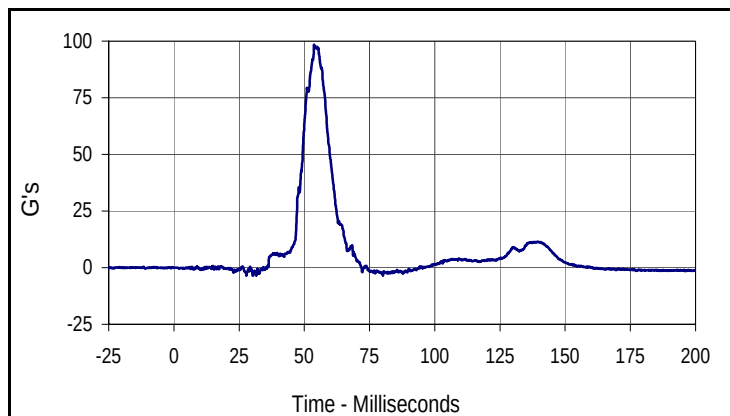
Curve Description			
Driver Pubic Symphysis Force Y			
CURNO	Type	SAE Class	Units
016	FIL	600	Newtons
Max	Time	Min	Time
104.0	89.8	-2822.3	23.9

Test Vehicle: 2011 Nissan Versa 4-Door Sedan
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

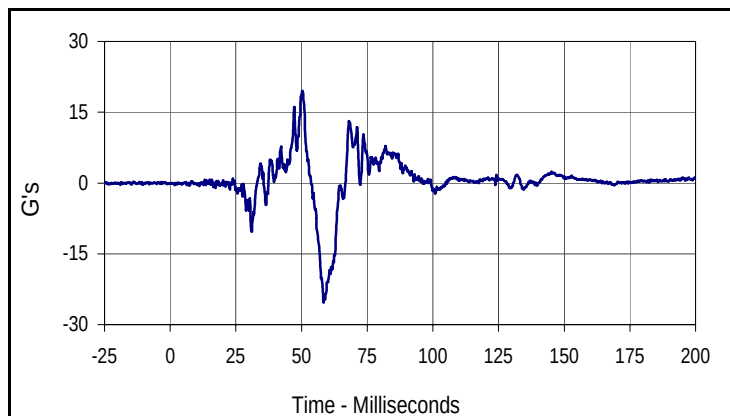
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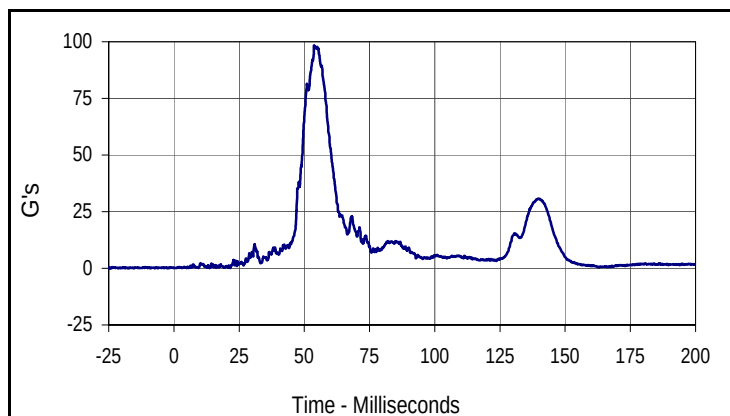
Curve Description			
Passenger Head Acceleration X Primary			
CURNO	Type	SAE Class	Units
021	FIL	1000	G's
Max	Time	Min	Time
28.7	139.7	-16.3	68.1



Curve Description			
Passenger Head Acceleration Y Primary			
CURNO	Type	SAE Class	Units
022	FIL	1000	G's
Max	Time	Min	Time
98.4	53.8	-3.5	30.2



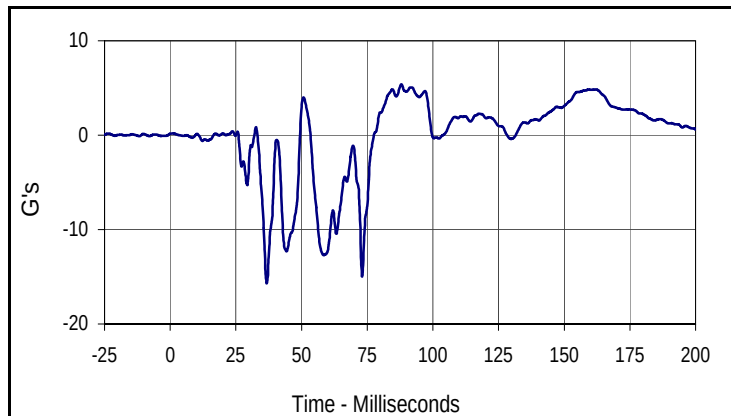
Curve Description			
Passenger Head Acceleration Z Primary			
CURNO	Type	SAE Class	Units
023	FIL	1000	G's
Max	Time	Min	Time
19.6	50.3	-25.3	58.4



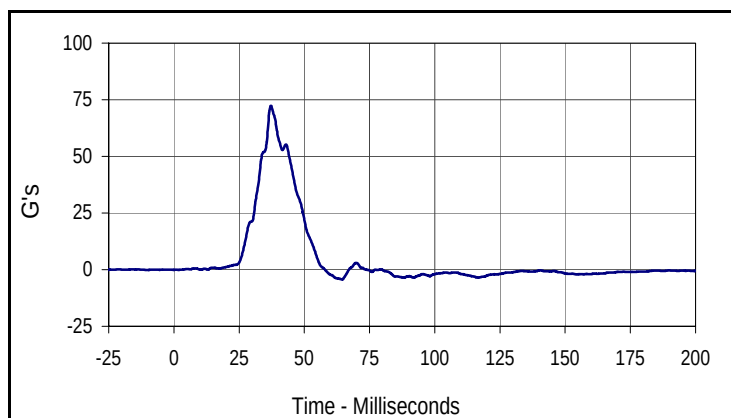
Curve Description			
Passenger Head Acceleration Resultant Primary			
CURNO	Type	SAE Class	Units
021	RES	1000	G's
Max	Time	Min	Time
98.4	53.8	0.1	1.0

Test Vehicle: 2011 Nissan Versa 4-Door Sedan
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

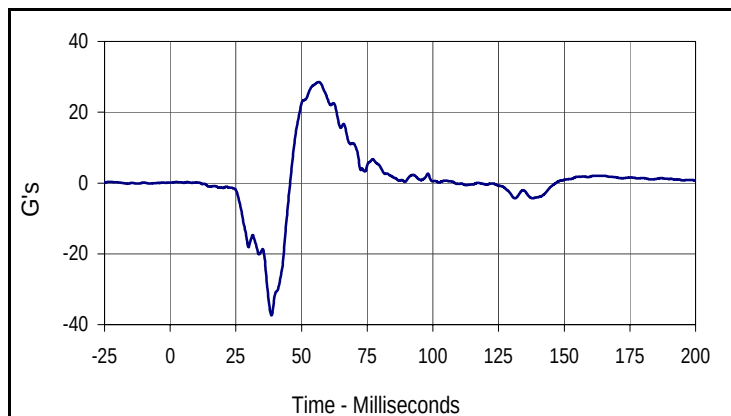
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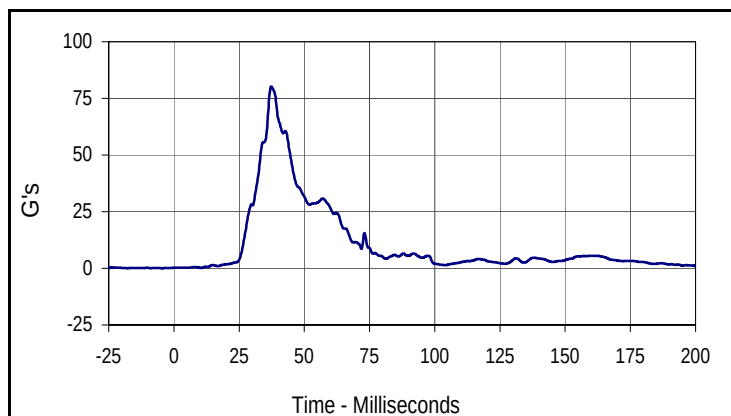
Curve Description			
Passenger Lower Spine T12 Acceleration X			
CURNO	Type	SAE Class	Units
037	FIL	180	G's
Max	Time	Min	Time
5.4	88.0	-15.7	36.8



Curve Description			
Passenger Lower Spine T12 Acceleration Y			
CURNO	Type	SAE Class	Units
038	FIL	180	G's
Max	Time	Min	Time
72.4	37.2	-4.3	64.4



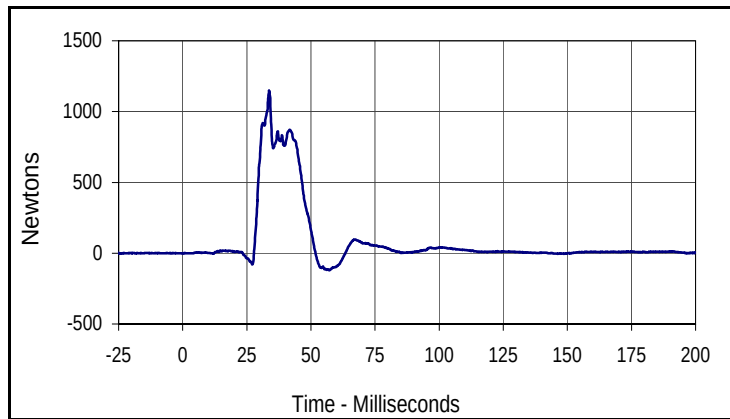
Curve Description			
Passenger Lower Spine T12 Acceleration Z			
CURNO	Type	SAE Class	Units
039	FIL	180	G's
Max	Time	Min	Time
28.5	56.6	-37.3	38.6



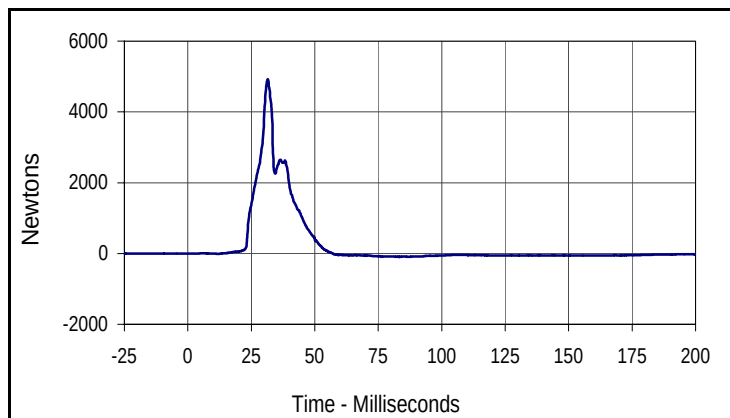
Curve Description			
Passenger Lower Spine T12 Acceleration Resultant			
CURNO	Type	SAE Class	Units
037	RES	180	G's
Max	Time	Min	Time
80.3	37.3	0.2	10.7

Test Vehicle: 2011 Nissan Versa 4-Door Sedan
 Test Program: 61 km/h (38 mph) Side Impact NCAP 27° Moving Deformable Barrier Test

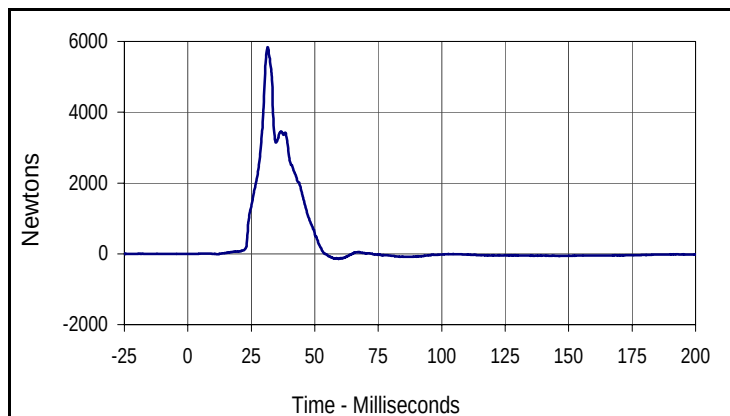
Test Date: 8/17/10
 NHTSA No.: MB5216



Curve Description			
Passenger Iliac Wing Force on Impact Side Y			
CURNO	Type	SAE Class	Units
043	FIL	600	Newtons
Max	Time	Min	Time
1148.4	33.7	-120.3	57.1



Curve Description			
Passenger Acetabulum Force on Impact Side Y			
CURNO	Type	SAE Class	Units
042	FIL	600	Newtons
Max	Time	Min	Time
4922.5	31.5	-98.1	83.3



Curve Description			
Passenger Total Pelvic Force			
CURNO	Type	SAE Class	Units
042	SUM	600	Newtons
Max	Time	Min	Time
5836.3	31.5	-148.4	59.4

APPENDIX C
DUMMY CALIBRATION DATA

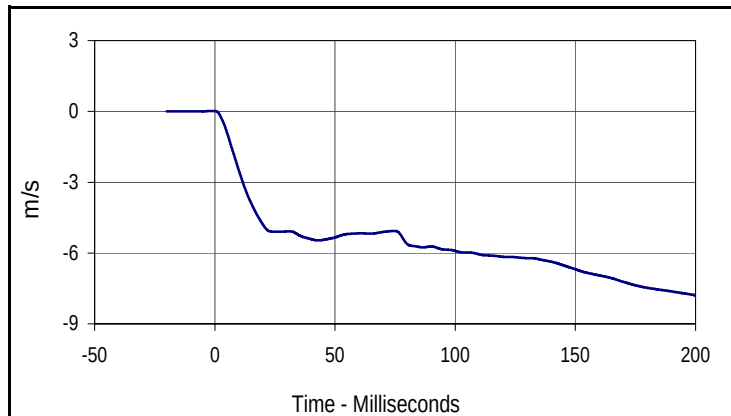
APPENDIX C
PRE-TEST / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: ES2re Neck Calibration
 ATD Serial No.: F035

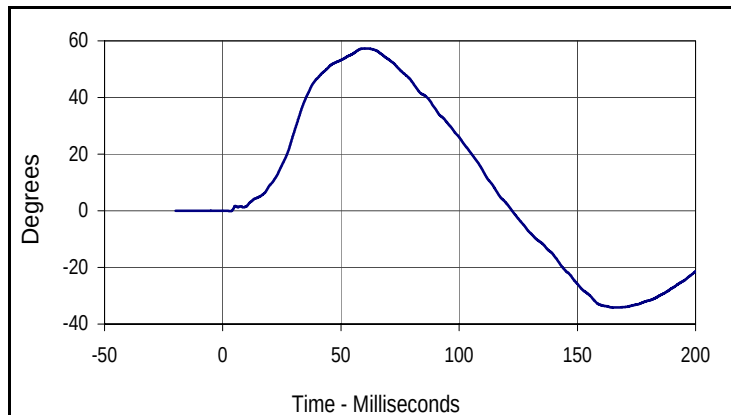
Test Date: 8/12/10
 Test I.D.: NB08B



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
Pendulum Velocity		m/s	3.30 to 3.50	3.38	Pass
Pendulum Deceleration	1 msec	m/s	0.0 to -.050	-0.008	Pass
	3 msec	m/s	-.250 to -.375	-0.347	Pass
	14 msec	m/s	-3.20 to -3.70	-3.64	Pass
Headform Rotation	Max	Degrees	49.0 to 58.0	57.3	Pass
	Time	msec	54.0 to 66.0	60.9	Pass
Maximum Rotation To Time Zero Crossing		msec	53.0 to 88.0	61.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	0.1	-7.8	200.0



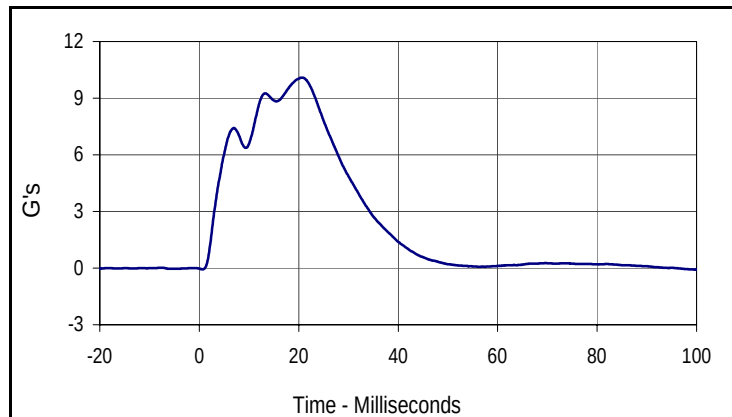
Curve Description			
Headform Rotation			
CURNO	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
57.3	60.9	-34.2	164.9

Test Program: ES2re Shoulder Calibration
 ATD Serial No.: F035

Test Date: 8/12/10
 Test I.D.: SH07B



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
Probe Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	10.1	Pass
Overall Test Results			Pass	



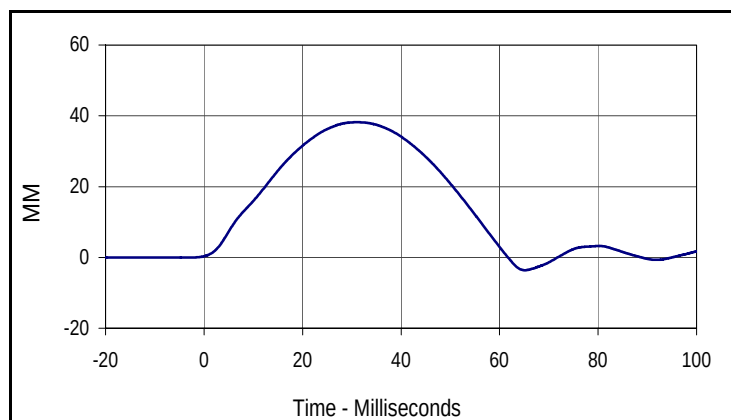
Curve Description			
Probe Impactor Acceleration			
CURNO	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
10.1	20.7	-0.1	99.9

Test Program: ES2re Rib Module Calibration
 ATD Serial No.: F035 Rib #1

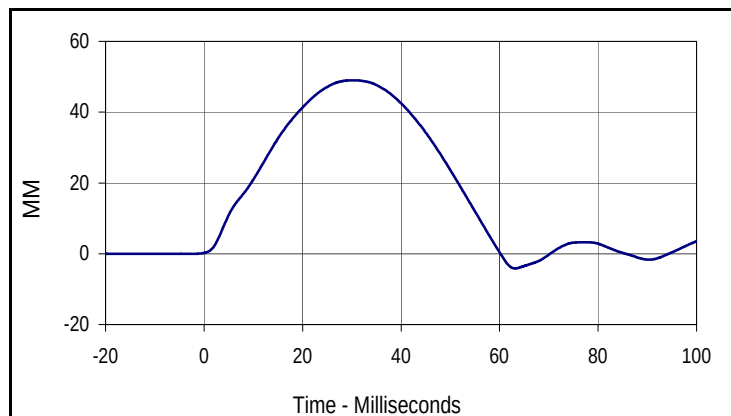
Test Date: 8/12/10
 Test I.D.: RIB08A



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
Peak Rib Deflection at 459 MM Drop Height	MM	36 to 40	38.2	Pass
Peak Rib Deflection at 815 MM Drop Height	MM	46 to 51	49.0	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Deflection (459 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.2	31.1	-3.6	65.1



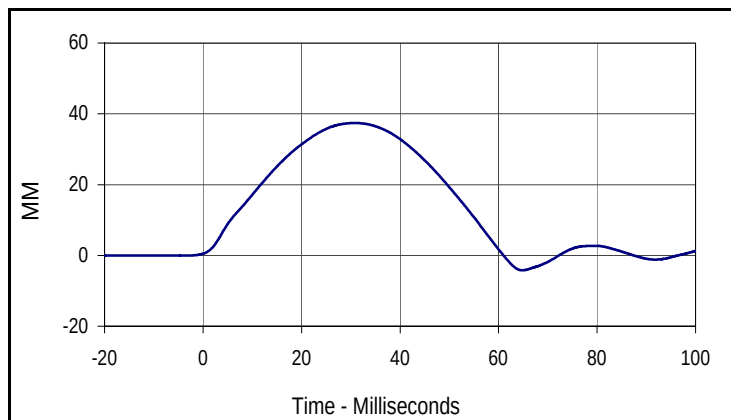
Curve Description			
Upper Rib Deflection (815 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
49.0	30.2	-4.1	63.2

Test Program: ES2re Rib Module Calibration
 ATD Serial No.: F035 Rib #2

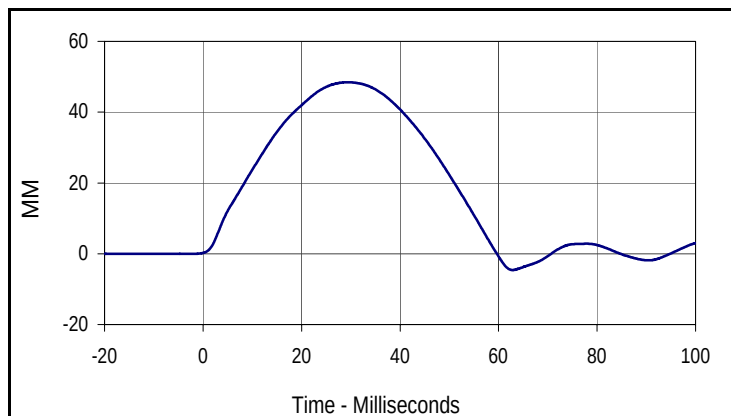
Test Date: 8/12/10
 Test I.D.: RIB08B



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
Peak Rib Deflection at 459 MM Drop Height	MM	36 to 40	37.4	Pass
Peak Rib Deflection at 815 MM Drop Height	MM	46 to 51	48.4	Pass
Overall Test Results			Pass	



Curve Description			
Middle Rib Deflection (459 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
37.4	30.9	-4.2	64.8



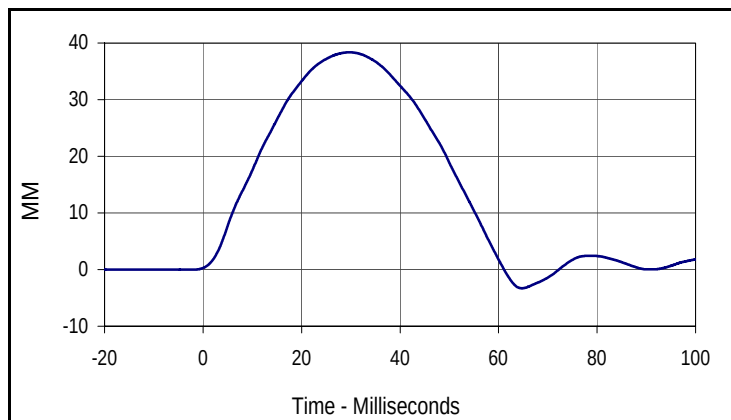
Curve Description			
Middle Rib Deflection (815 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
48.4	29.4	-4.6	62.9

Test Program: ES2re Rib Module Calibration
 ATD Serial No.: F035 Rib #3

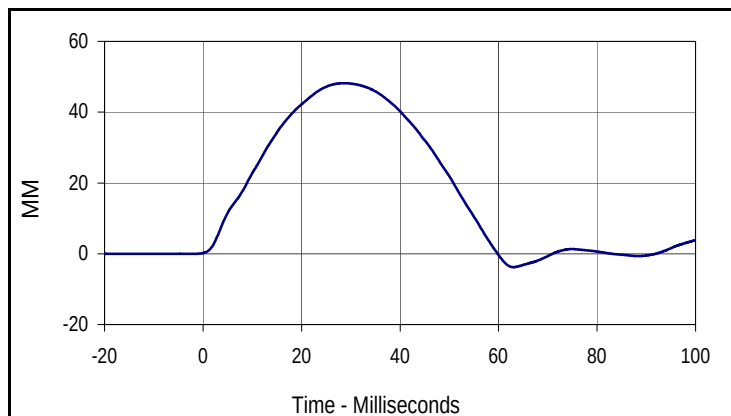
Test Date: 8/12/10
 Test I.D.: RIB08C



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
Peak Rib Deflection at 459 MM Drop Height	MM	36 to 40	38.4	Pass
Peak Rib Deflection at 815 MM Drop Height	MM	46 to 51	48.2	Pass
Overall Test Results			Pass	



Curve Description			
Lower Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.4	29.7	-3.3	64.7



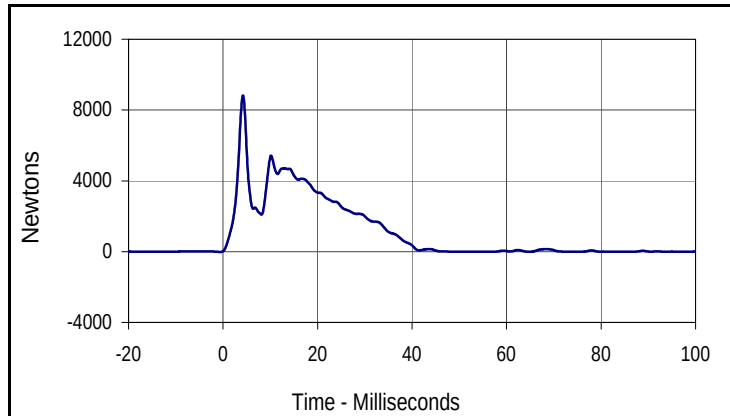
Curve Description			
Lower Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
48.2	28.6	-3.8	63.0

Test Program: ES2re Thorax Calibration
 ATD Serial No.: F035

Test Date: 8/12/10
 Test I.D.: TH08A



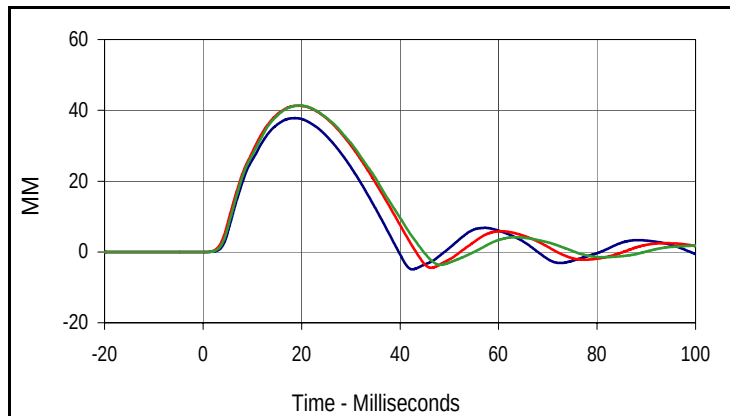
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	5.40 to 5.60	5.44	Pass
Impactor Force	N	5100 to 6200	5417.1	Pass
	msec	> 6.0 msec	10.2	Pass
Upper Rib Deflection	MM	34 to 41	37.8	Pass
Middle Rib Deflection	MM	37 to 45	41.3	Pass
Lower Rib Deflection	MM	37 to 44	41.4	Pass
Overall Test Results			Pass	



Curve Description

Impactor Force

CURNO	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
8810.4	4.2	-26.4	-0.5



Curve Description

Upper, Middle, Lower Rib Deflections

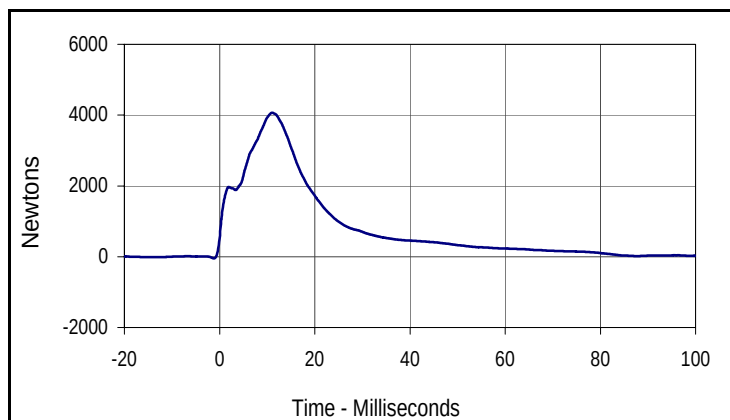
CURNO(s)	Type	SAE Class	Units
002-003-004	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
37.8	18.7	-4.9	42.5
Max (Middle)	Time	Min (Middle)	Time
41.3	19.4	-4.5	46.4
Max (Lower)	Time	Min (Lower)	Time
41.4	19.5	-3.6	48.2

Test Program: ES2re Abodomen Calibration
 ATD Serial No.: F035

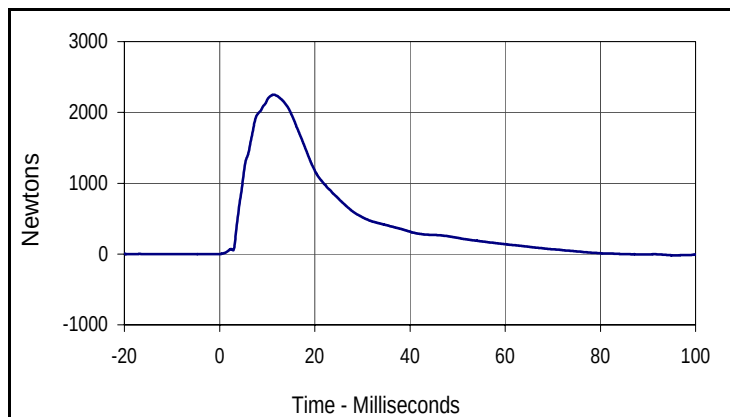
Test Date: 8/12/10
 Test I.D.: ABD08B



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
Probe Velocity	m/s	3.90 to 4.10	3.93	Pass
Impactor Force	N	4000 to 4800	4069.5	Pass
	msec	10.6 to 13.0	11.0	Pass
Abdominal Force	N	2200 to 2700	2250.9	Pass
	msec	10.0 to 12.3	11.4	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
CURNO	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4069.5	11.0	-47.9	-1.2



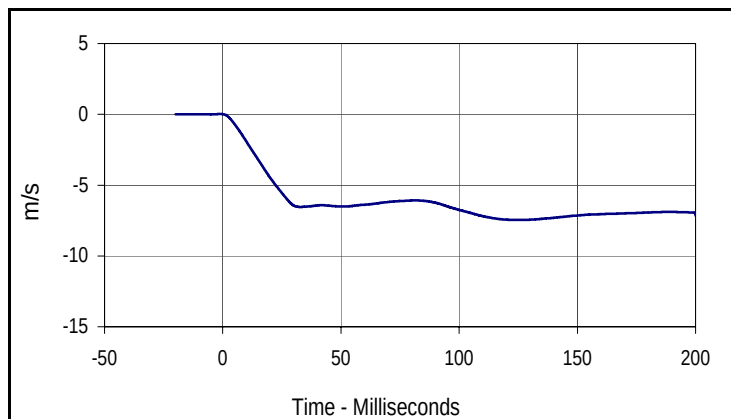
Curve Description			
Abdomen Sum Resultant			
CURNO	Type	SAE Class	Units
002	RES	600	Newtons
Max	Time	Min	Time
2250.9	11.4	-19.3	95.8

Test Program: ES2re Lumbar Spine Calibration
 ATD Serial No.: F035

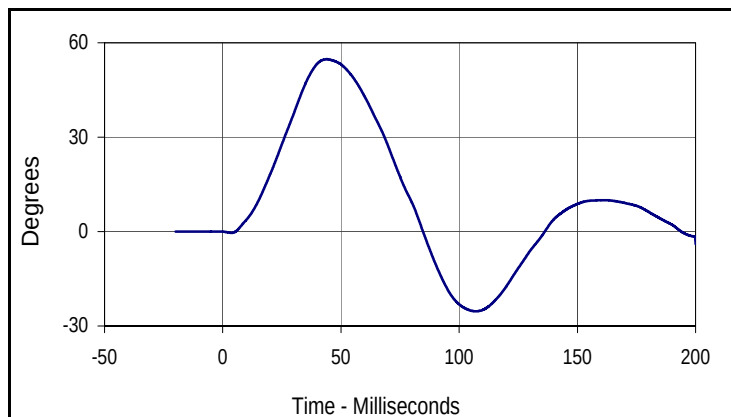
Test Date: 8/12/10
 Test I.D.: SP08A



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
Pendulum Velocity		m/s	5.95 to 6.15	6.07	Pass
Pendulum Deceleration	1 msec	m/s	0.0 to -.050	-0.030	Pass
	3.7 msec	m/s	-.240 to -.425	-0.414	Pass
	27 msec	m/s	-5.80 to -6.50	-5.96	Pass
	30 msec	m/s	< -6.50	-6.44	Pass
Headform Rotation	Max	Degrees	45.0 to 55.0	54.8	Pass
	Time	msec	39.0 to 53.0	43.8	Pass
Maximum Rotation To Time Zero Crossing		msec	37.0 to 57.0	41.0	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-2.2	-7.5	123.6



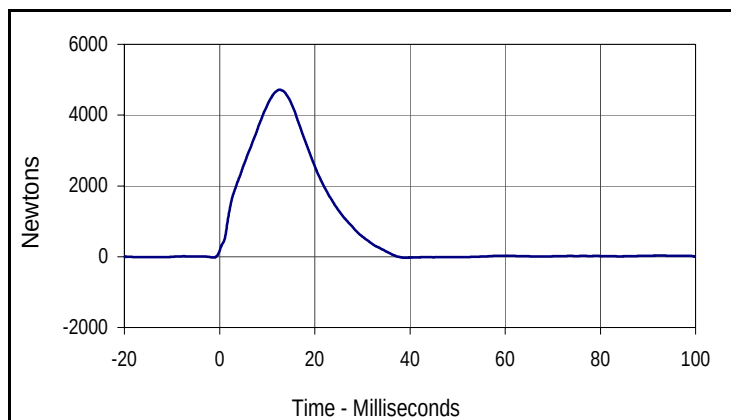
Curve Description			
Headform Rotation			
CURNO	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
54.8	43.8	-25.3	106.8

Test Program: ES2re Pelvis Calibration
 ATD Serial No.: F035

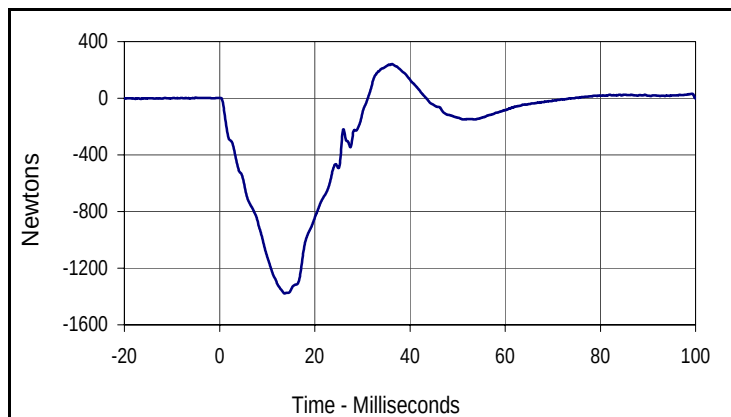
Test Date: 8/12/10
 Test I.D.: PL08A



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
Probe Velocity	m/s	4.20 to 4.40	4.26	Pass
Impactor Force	N	4700 to 5400	4719.7	Pass
	msec	11.8 to 16.1	12.6	Pass
Pubic Symphysis Load	N	-1230 to -1590	-1378.6	Pass
	msec	12.2 to 17.0	13.7	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
CURNO	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4719.7	12.6	-28.5	39.4



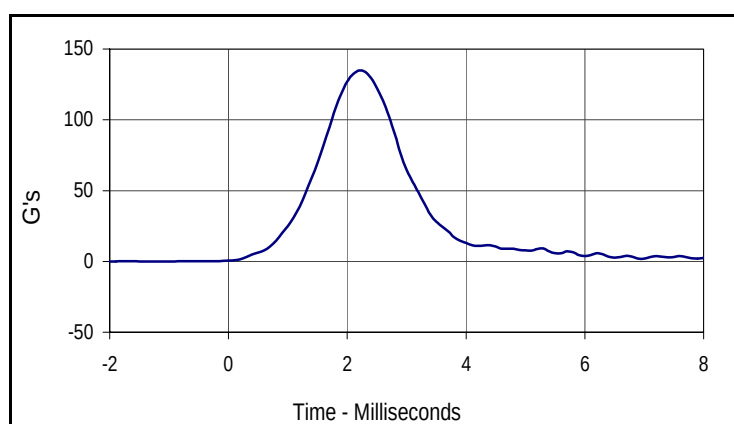
Curve Description			
Pubic FY			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
241.5	36.3	-1378.6	13.7

Test Program: ES2re Lateral Head Drop Calibration
 ATD Serial No.: F035

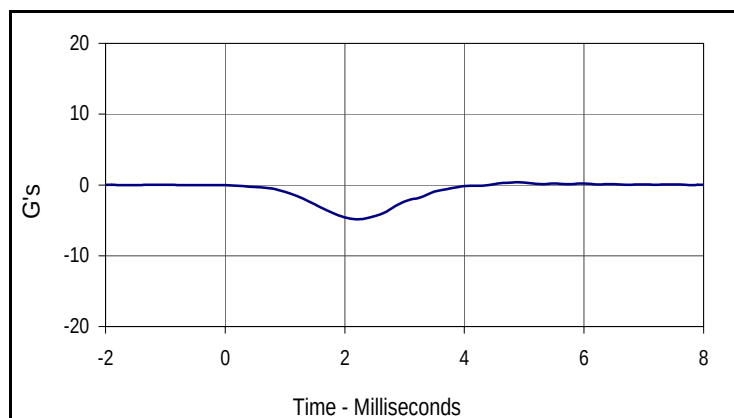
Test Date: 8/12/10
 Test I.D.: HD08A



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
Peak Resultant Acceleration	G's	125 to 155	135.0	Pass
Peak Longitudinal Acceleration	G's	≤15	4.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	6.8	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
135.0	2.2	0.0	-2.0



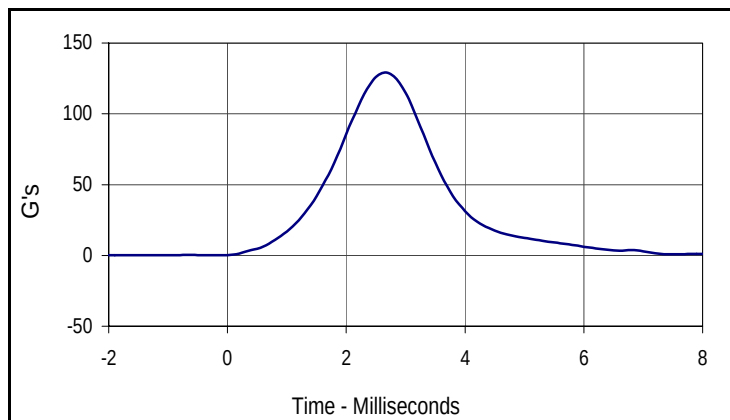
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.4	4.9	-4.9	2.2

Test Program: SID IIs Lateral Head Drop Calibration
 ATD Serial No.: 307

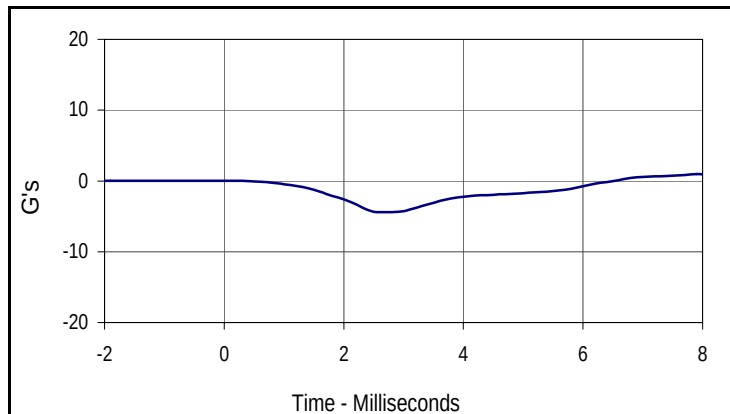
Test Date: 8/13/10
 Test I.D.: HD08C



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
Peak Resultant Acceleration	G's	115 to 137	128.9	Pass
Peak Longitudinal Acceleration	G's	≤15	4.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	9.5	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
128.9	2.7	0.1	-2.0



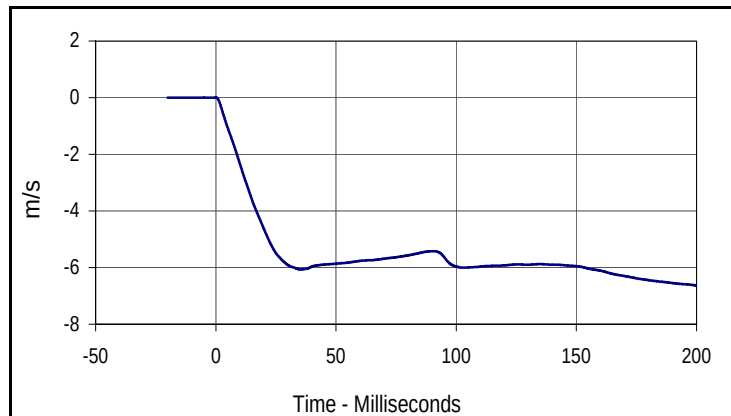
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.0	-1.7	-4.4	2.6

Test Program: SID IIs Neck Calibration
 ATD Serial No.: 307

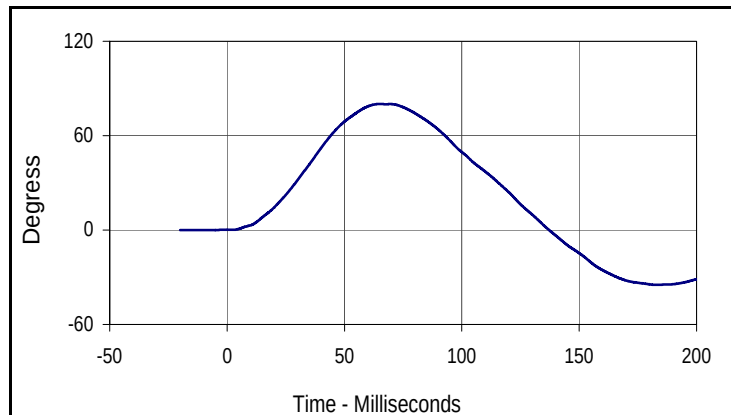
Test Date: 8/13/10
 Test I.D.: NB08C



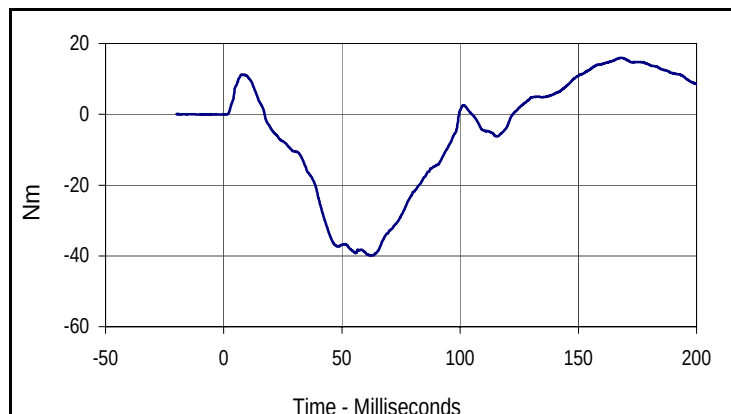
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.52	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.3	Pass
	15 msec	m/s	-3.30 to -4.10	-3.6	Pass
	20 msec	m/s	-4.40 to -5.40	-4.6	Pass
	25 msec	m/s	-5.40 to -6.10	-5.5	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.1	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	80.1	Pass
	Time	msec	50.0 to 70.0	64.9	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-40.0	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	122.3	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.2	-6.6	200.0



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
80.1	64.9	-34.8	182.6



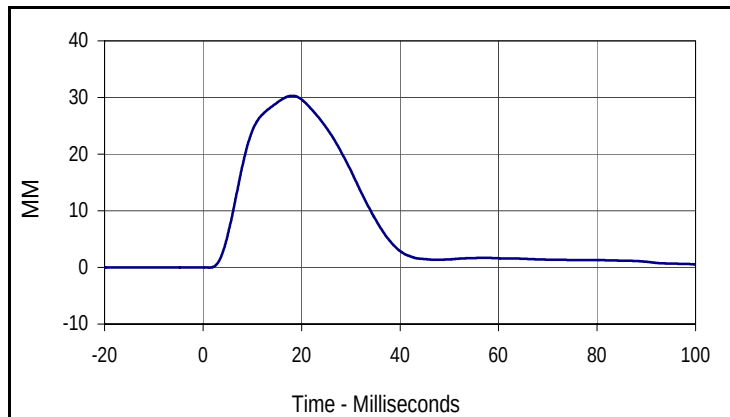
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
16.0	168.3	-40.0	61.9

Test Program: SID IIs Shoulder Calibration
 ATD Serial No.: 307

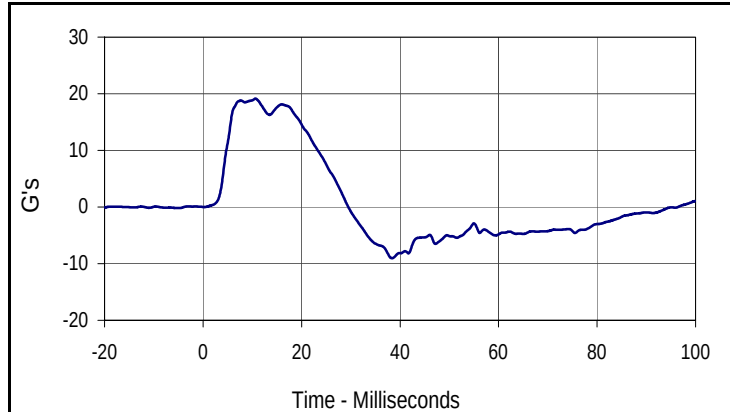
Test Date: 8/13/10
 Test I.D.: SH08C



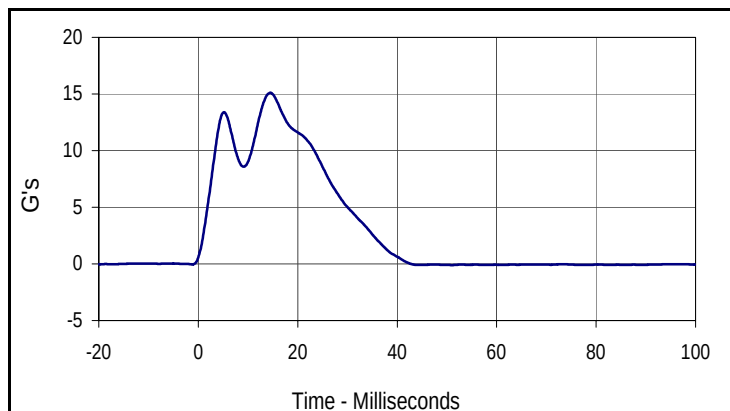
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.27	Pass
Shoulder Deflection	MM	28 to 37	30.3	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	19.1	Pass
Peak Impactor Acceleration	G's	13 to 18	15.1	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Acceleration			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
30.3	18.1	0.0	1.3



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.1	10.6	-9.0	38.4



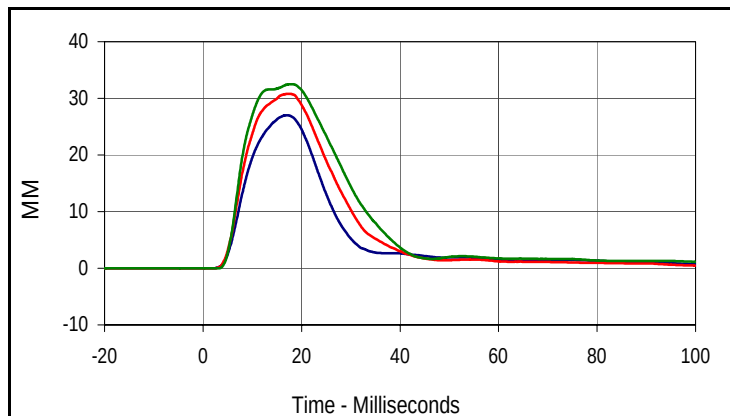
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.1	14.5	-0.1	51.1

Test Program: SID IIs Thorax with Arm Calibration
 ATD Serial No.: 307

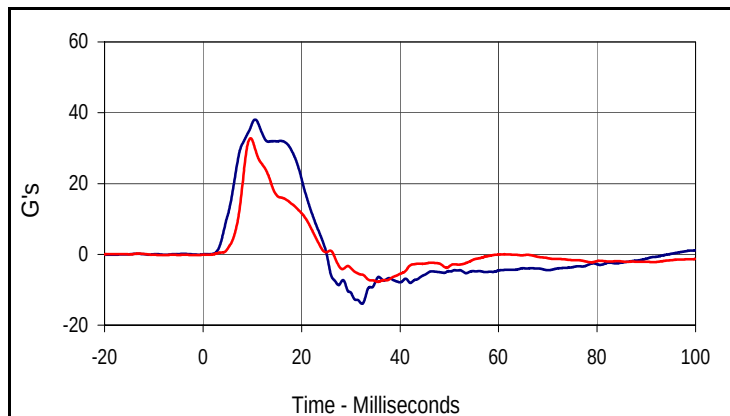
Test Date: 8/13/10
 Test I.D.: TH08C



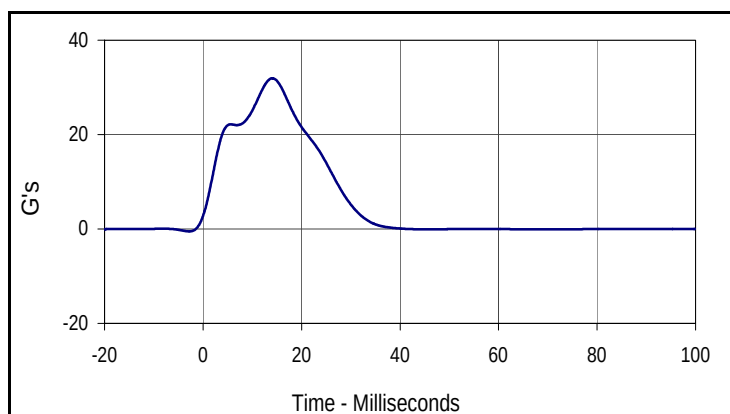
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.71	Pass
Shoulder Deflection	MM	31 to 40	34.9	Pass
Upper Thorax Rib Deflection	MM	25 to 32	27.0	Pass
Middle Thorax Rib Deflection	MM	30 to 36	30.8	Pass
Lower Thorax Rib Deflection	MM	32 to 38	32.5	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	38.1	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	32.8	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	31.9	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.0	17.0	0.0	-15.7
Middle Thorax Deflection			
Max	Time	Min	Time
30.8	17.2	0.0	-18.9
Lower Thorax Deflection			
Max	Time	Min	Time
32.5	18.0	0.0	-0.9



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
38.1	10.5	-14.0	32.3
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
32.8	9.6	-7.8	35.6



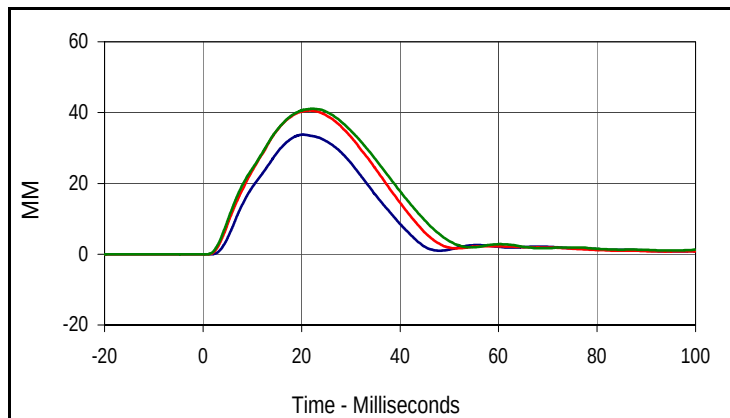
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
31.9	14.1	-0.5	-2.8

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 307

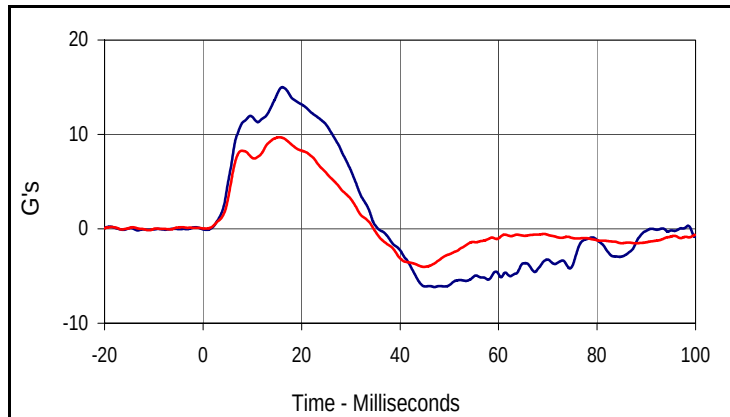
Test Date: 8/13/10
 Test I.D.: TOA08C



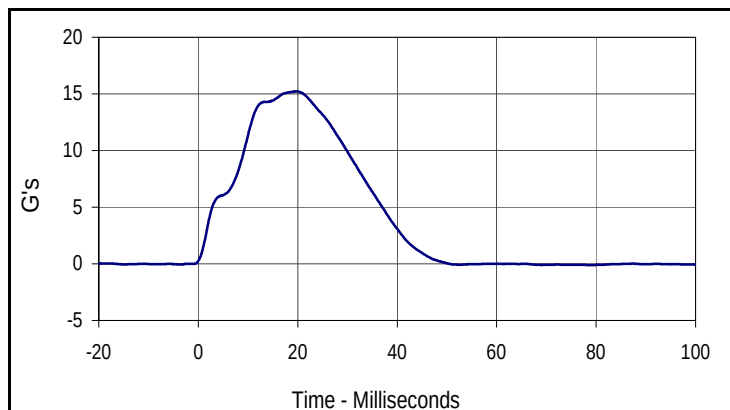
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.24	Pass
Upper Thorax Rib Deflection	MM	32 to 40	33.8	Pass
Middle Thorax Rib Deflection	MM	39 to 45	40.5	Pass
Lower Thorax Rib Deflection	MM	35 to 43	41.1	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.0	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	9.7	Pass
Peak Impactor Acceleration	G's	14 to 18	15.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
33.8	20.3	0.0	-10.1
Middle Thorax Deflection			
Max	Time	Min	Time
40.5	21.6	0.0	-14.5
Lower Thorax Deflection			
Max	Time	Min	Time
41.1	22.2	0.0	0.8



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.0	16.1	-6.2	47.0
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
9.7	15.4	-4.0	44.8



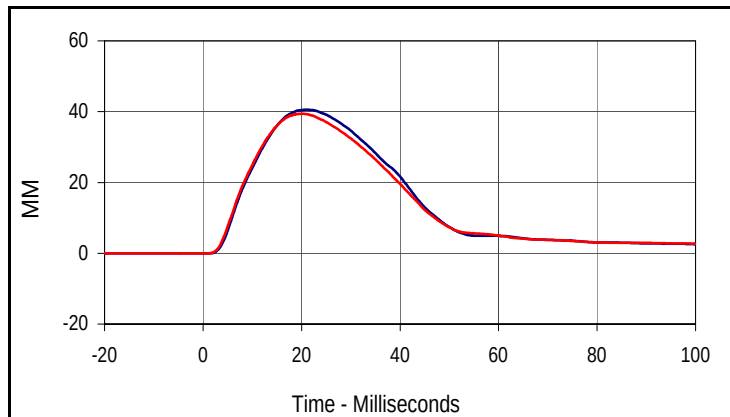
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
15.2	19.7	-0.1	78.6

Test Program: SID IIs Abdomen Calibration
 ATD Serial No.: 307

Test Date: 8/13/10
 Test I.D.: AB08C

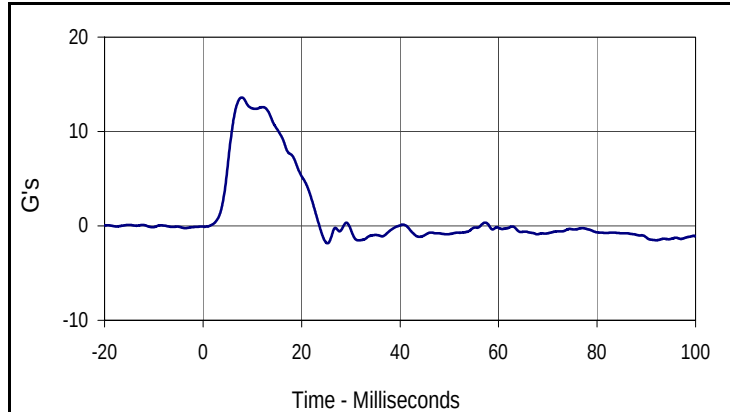


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.21	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	40.5	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	39.4	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	13.6	Pass
Peak Impactor Acceleration	G's	12 to 16	15.7	Pass
Overall Test Results			Pass	

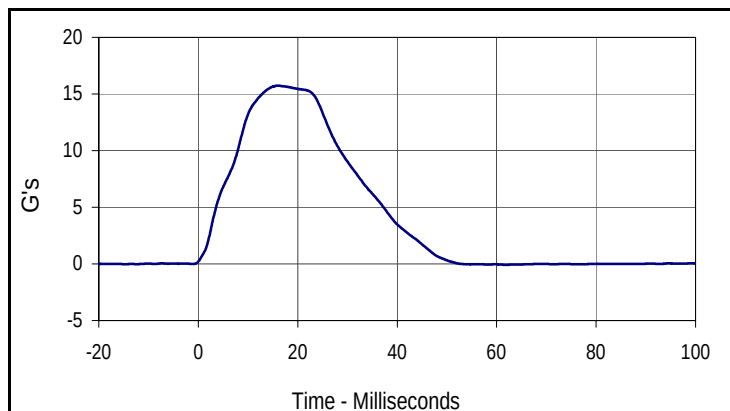


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
40.5	21.3	0.0	-11.7

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
39.4	20.1	0.0	-17.5



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
13.6	7.9	-1.8	25.3



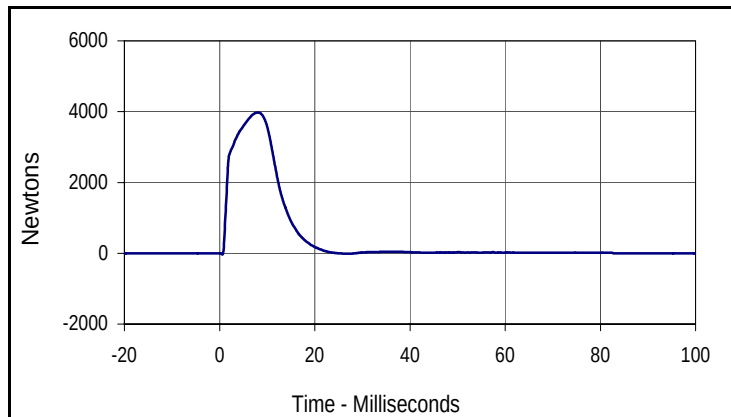
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.7	16.0	-0.1	62.0

Test Program: SID IIs Pelvis Acetabulum Calibration
 ATD Serial No.: 307

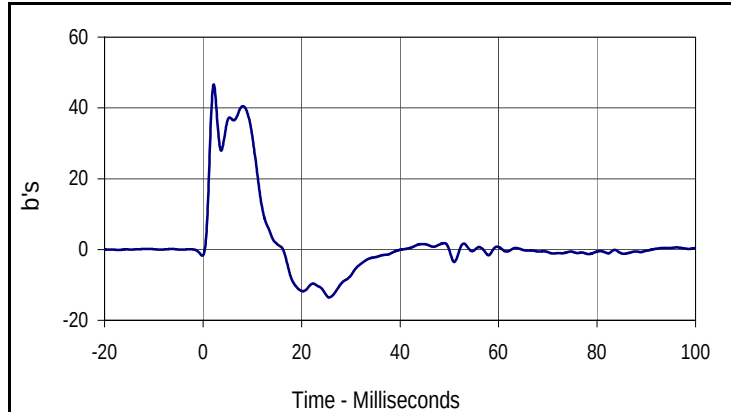
Test Date: 8/13/10
 Test I.D.: PA08C



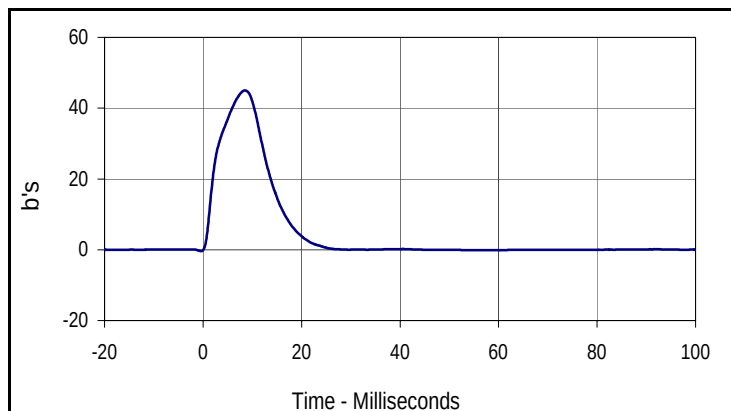
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.65	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	3978.5	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	40.5	Pass
Peak Impactor Acceleration	G's	38 to 47	45.0	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3978.5	8.0	-34.1	0.6



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	b's
Max	Time	Min	Time
46.6	2.2	-13.5	25.6



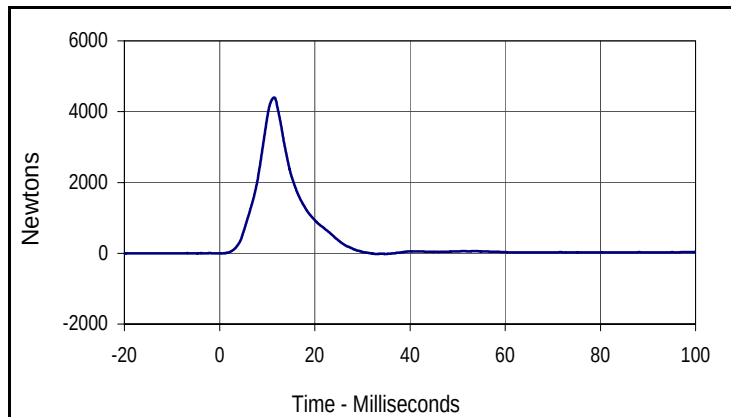
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	b's
Max	Time	Min	Time
45.0	8.5	-0.4	-0.4

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 307

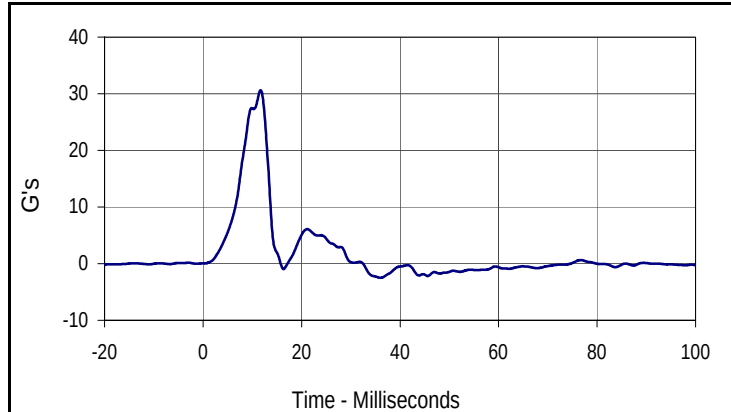
Test Date: 8/13/10
 Test I.D.: PL08C



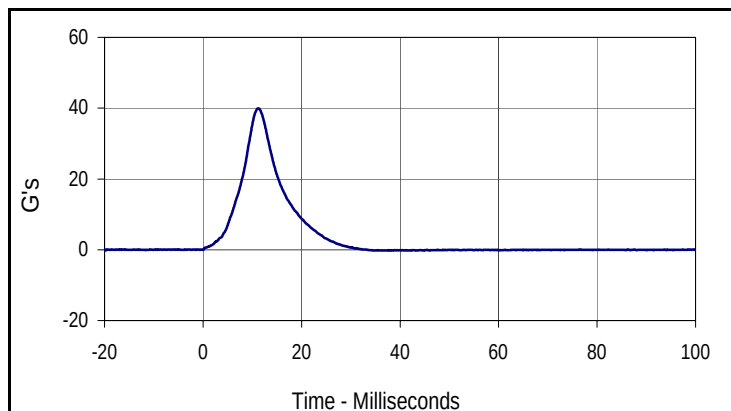
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.20	Pass
Peak Iliac Force	Newtons	4100 to 5100	4403.1	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	30.6	Pass
Peak Impactor Acceleration	G's	36 to 45	39.9	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4403.1	11.5	-24.6	32.9



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
30.6	11.7	-2.5	36.0



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
39.9	11.2	-0.2	34.6

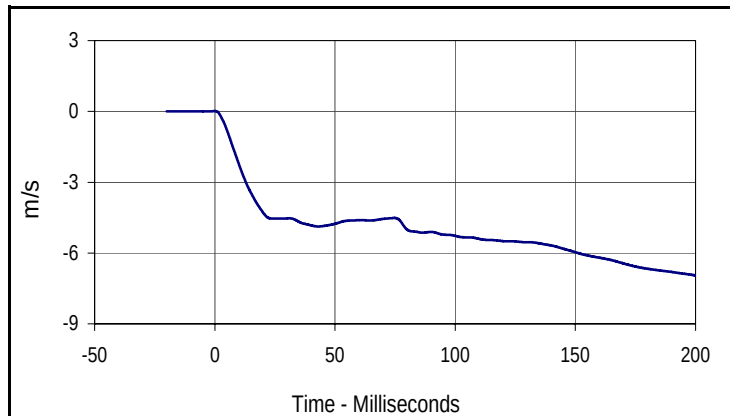
APPENDIX C
POST-TEST / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program: ES2re Neck Calibration
 ATD Serial No.: F035

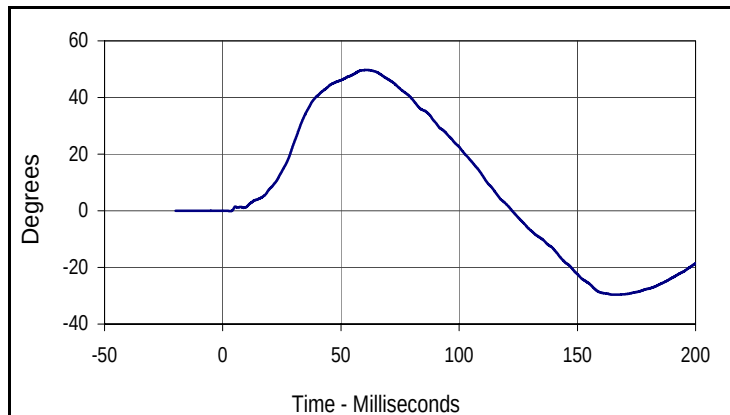
Test Date: 8/19/10
 Test I.D.: NB08C



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
Pendulum Velocity		m/s	3.30 to 3.50	3.35	Pass
Pendulum Deceleration	1 msec	m/s	0.0 to -.050	-0.007	Pass
	3 msec	m/s	-.250 to -.375	-0.309	Pass
	14 msec	m/s	-3.20 to -3.70	-3.25	Pass
Headform Rotation	Max	Degrees	49.0 to 58.0	49.7	Pass
	Time	msec	54.0 to 66.0	59.8	Pass
Maximum Rotation To Time Zero Crossing		msec	53.0 to 88.0	61.3	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	0.1	-7.0	200.0



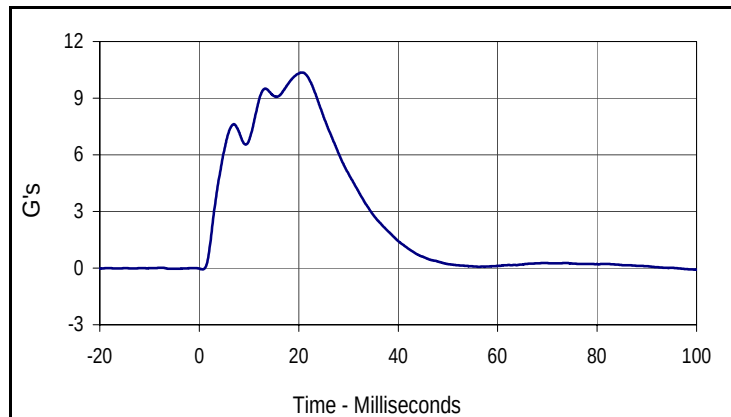
Curve Description			
Headform Rotation			
CURNO	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
49.7	60.9	-29.6	164.9

Test Program: ES2re Shoulder Calibration
 ATD Serial No.: F035

Test Date: 8/19/10
 Test I.D.: SH08C



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
Probe Velocity	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	10.4	Pass
Overall Test Results			Pass	



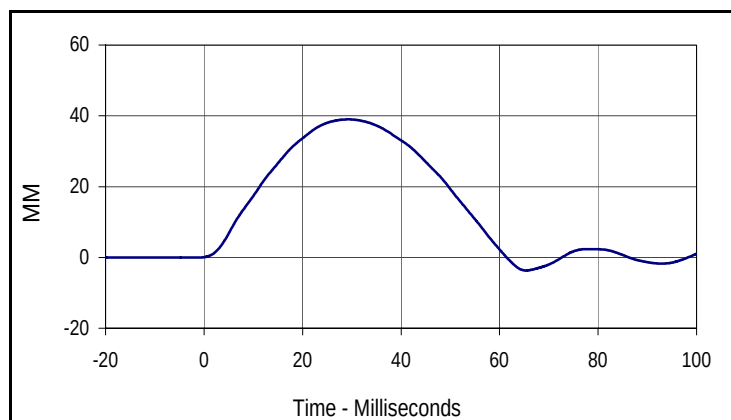
Curve Description			
Probe Impactor Acceleration			
CURNO	Type	SAE Class	Units
001	FIL	180	G's
Max	Time	Min	Time
10.4	20.7	-0.1	99.9

Test Program: ES2re Rib Module Calibration
 ATD Serial No.: F035 Rib #1

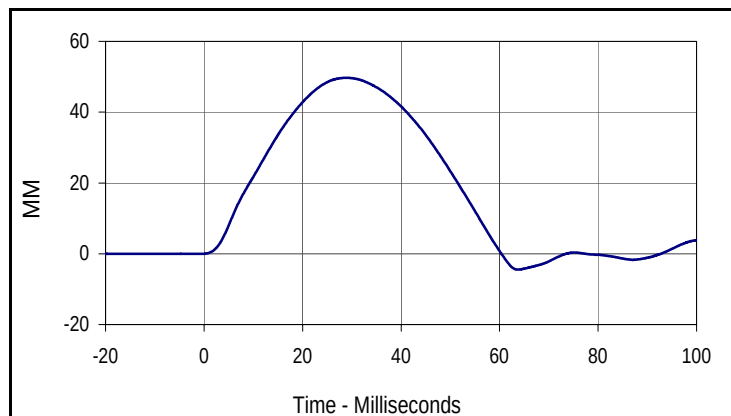
Test Date: 8/19/10
 Test I.D.: RIB08D



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
Peak Rib Deflection at 459 MM Drop Height	MM	36 to 40	39.0	Pass
Peak Rib Deflection at 815 MM Drop Height	MM	46 to 51	49.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Deflection (459 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
39.0	29.3	-3.7	65.4



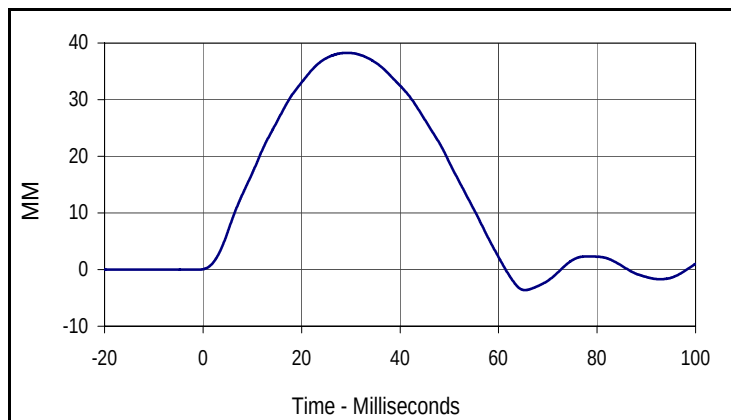
Curve Description			
Upper Rib Deflection (815 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
49.7	28.9	-4.5	63.7

Test Program: ES2re Rib Module Calibration
 ATD Serial No.: F035 Rib #2

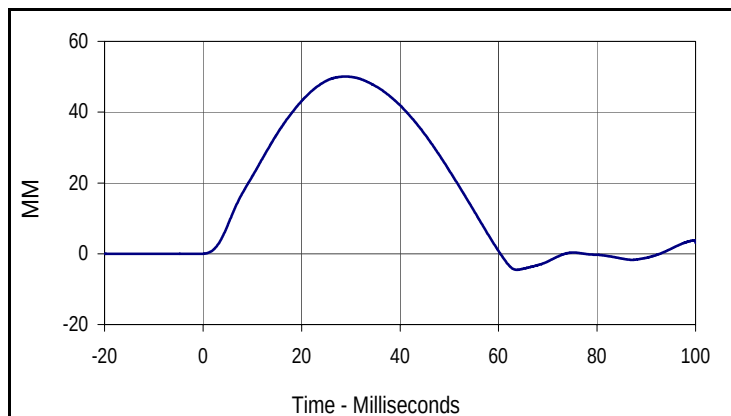
Test Date: 8/19/10
 Test I.D.: RIB08E



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
Peak Rib Deflection at 459 MM Drop Height	MM	36 to 40	38.3	Pass
Peak Rib Deflection at 815 MM Drop Height	MM	46 to 51	50.1	Pass
Overall Test Results			Pass	



Curve Description			
Middle Rib Deflection (459 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
38.3	29.3	-3.6	65.4



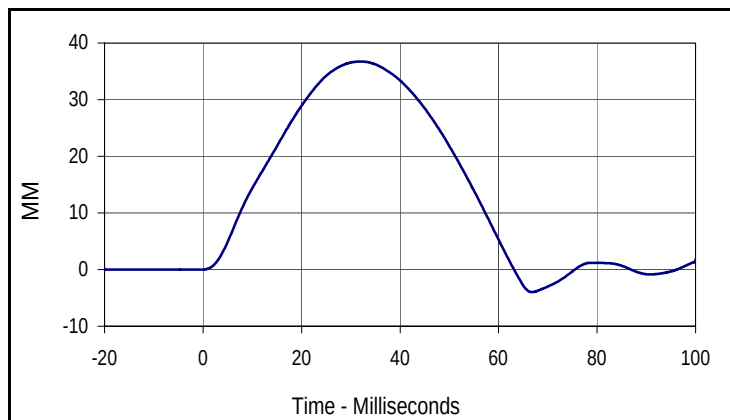
Curve Description			
Middle Rib Deflection (815 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
50.1	28.9	-4.5	63.7

Test Program: ES2re Rib Module Calibration
 ATD Serial No.: F035 Rib #3

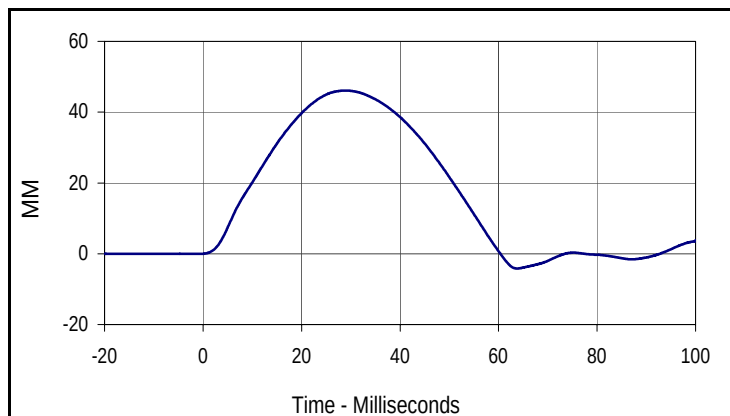
Test Date: 8/19/10
 Test I.D.: RIB08F



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
Peak Rib Deflection at 459 MM Drop Height	MM	36 to 40	36.7	Pass
Peak Rib Deflection at 815 MM Drop Height	MM	46 to 51	46.1	Pass
Overall Test Results			Pass	



Curve Description			
Lower Rib Deflection (459 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
36.7	32.0	-4.0	66.8



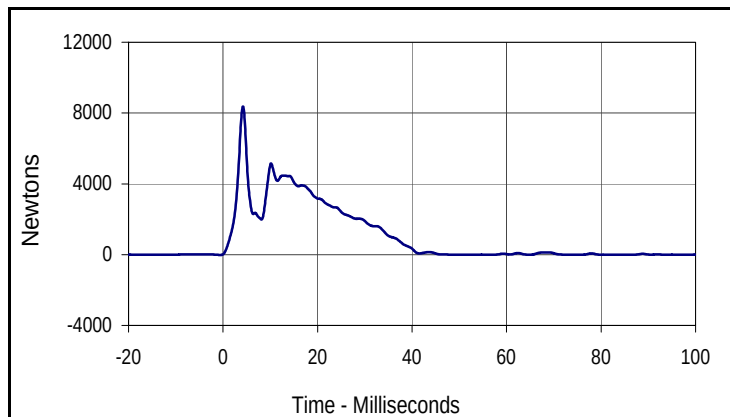
Curve Description			
Lower Rib Deflection (815 MM Drop Height)			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
46.1	28.9	-4.2	63.8

Test Program: ES2re Thorax Calibration
 ATD Serial No.: F035

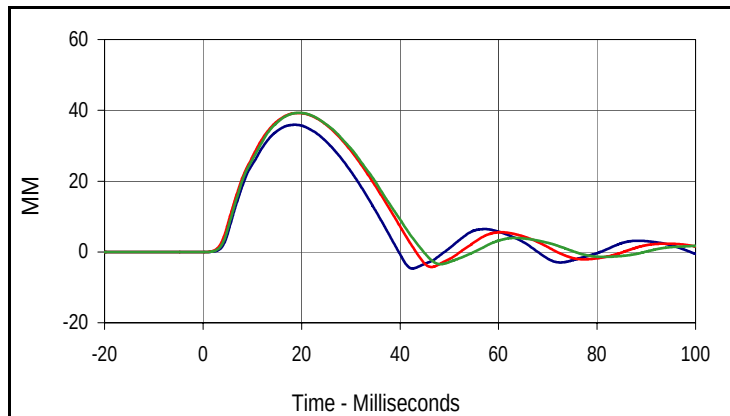
Test Date: 8/19/10
 Test I.D.: TH08B



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
Probe Velocity	m/s	5.40 to 5.60	5.42	Pass
Impactor Force	N	5100 to 6200	5146.3	Pass
	msec	> 6.0 msec	9.9	Pass
Upper Rib Deflection	MM	34 to 41	35.9	Pass
Middle Rib Deflection	MM	37 to 45	39.2	Pass
Lower Rib Deflection	MM	37 to 44	39.3	Pass
Overall Test Results			Pass	



Curve Description			
Impactor Force			
CURNO	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
8369.9	4.2	-25.0	-0.5



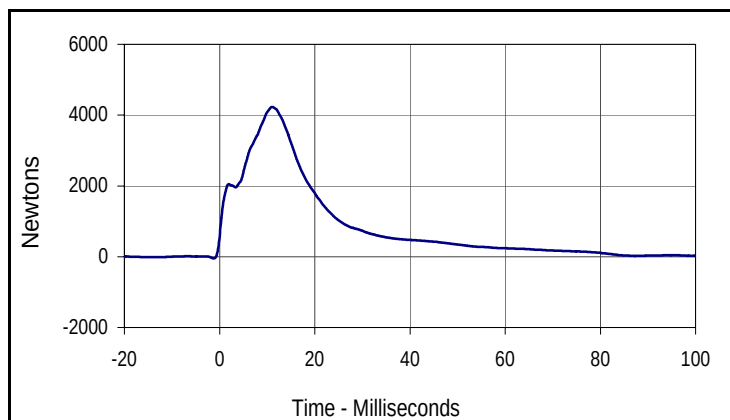
Curve Description			
Upper, Middle, Lower Rib Deflections			
CURNO(s)	Type	SAE Class	Units
002-003-004	FIL	180	MM
Max (Upper)	Time	Min (Upper)	Time
35.9	18.7	-4.7	42.5
Max (Middle)	Time	Min (Middle)	Time
39.2	19.4	-4.3	46.4
Max (Lower)	Time	Min (Lower)	Time
39.3	19.5	-3.5	48.2

Test Program: ES2re Abodomen Calibration
 ATD Serial No.: F035

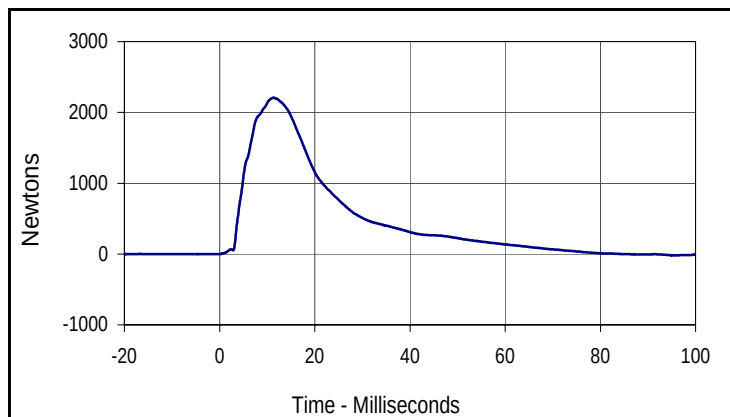
Test Date: 8/19/10
 Test I.D.: ABD08C



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
Probe Velocity	m/s	3.90 to 4.10	3.95	Pass
Impactor Force	N	4000 to 4800	4230.8	Pass
	msec	10.6 to 13.0	11.0	Pass
Abdominal Force	N	2200 to 2700	2206.8	Pass
	msec	10.0 to 12.3	11.4	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
CURNO	Type	SAE Class	Units
001	FIL	180	Newtons
Max	Time	Min	Time
4230.8	11.0	-50.0	-1.2



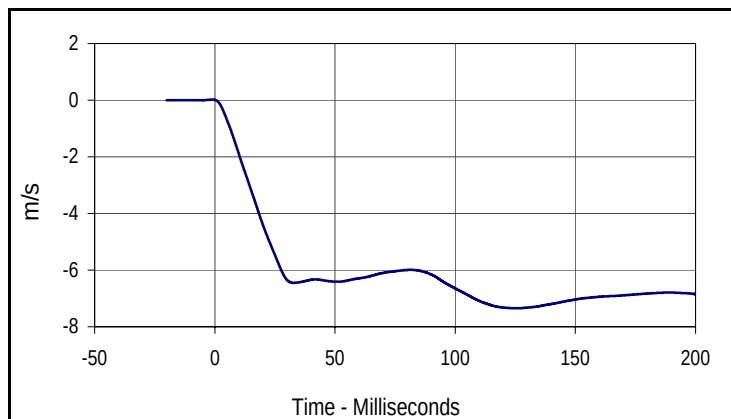
Curve Description			
Abdomen Sum Resultant			
CURNO	Type	SAE Class	Units
002	RES	600	Newtons
Max	Time	Min	Time
2206.8	11.4	-18.9	95.8

Test Program: ES2re Lumbar Spine Calibration
 ATD Serial No.: F035

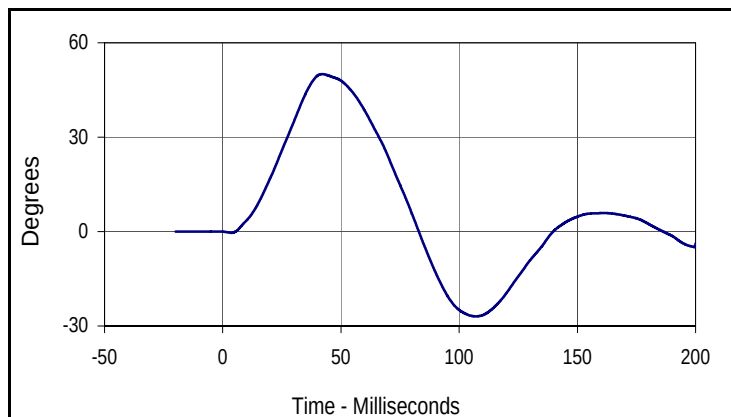
Test Date: 8/19/10
 Test I.D.: SP08C



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
Pendulum Velocity		m/s	5.95 to 6.15	6.00	Pass
Pendulum Deceleration	1 msec	m/s	0.0 to -.050	-0.030	Pass
	3.7 msec	m/s	-.240 to -.425	-0.411	Pass
	27 msec	m/s	-5.80 to -6.50	-5.87	Pass
	30 msec	m/s	< -6.50	-6.35	Pass
Headform Rotation	Max	Degrees	45.0 to 55.0	50.0	Pass
	Time	msec	39.0 to 53.0	42.1	Pass
Maximum Rotation To Time Zero Crossing		msec	37.0 to 57.0	40.9	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
0.0	-1.0	-7.3	125.4



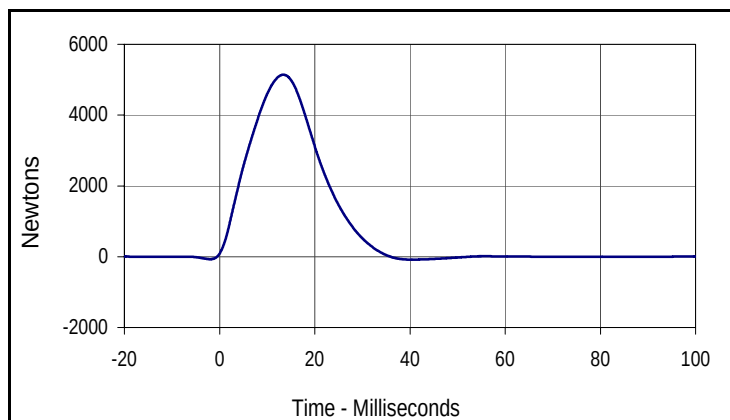
Curve Description			
Headform Rotation			
CURNO	Type	SAE Class	Units
002	FIL	180	Degrees
Max	Time	Min	Time
50.0	42.1	-26.9	107.0

Test Program: ES2re Pelvis Calibration
 ATD Serial No.: F035

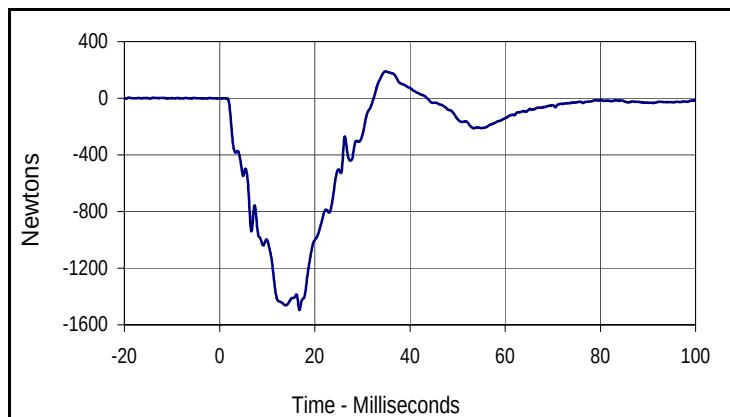
Test Date: 8/19/10
 Test I.D.: PL08A



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
Probe Velocity	m/s	4.20 to 4.40	4.27	Pass
Impactor Force	N	4700 to 5400	5139.7	Pass
	msec	11.8 to 16.1	13.4	Pass
Pubic Symphysis Load	N	-1230 to -1590	-1495.9	Pass
	msec	12.2 to 17.0	16.8	Pass
Overall Test Results				Pass



Curve Description			
Impactor Force			
CURNO	Type	SAE Class	Units
001	FIL	60	Newtons
Max	Time	Min	Time
5139.7	13.4	-82.0	40.4



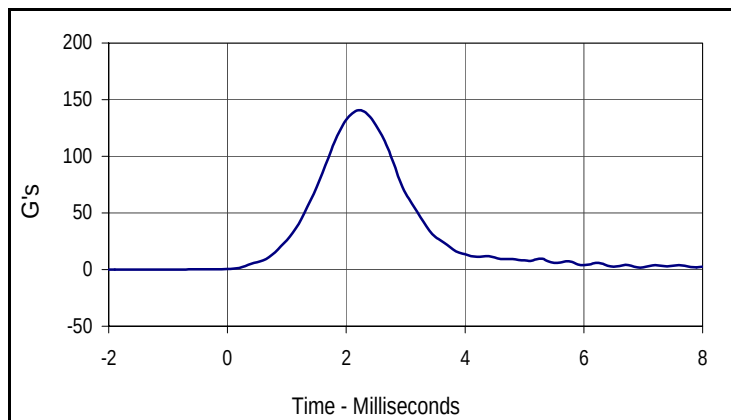
Curve Description			
Pubic FY			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
190.1	34.8	-1495.9	16.8

Test Program: ES2re Lateral Head Drop Calibration
 ATD Serial No.: F035

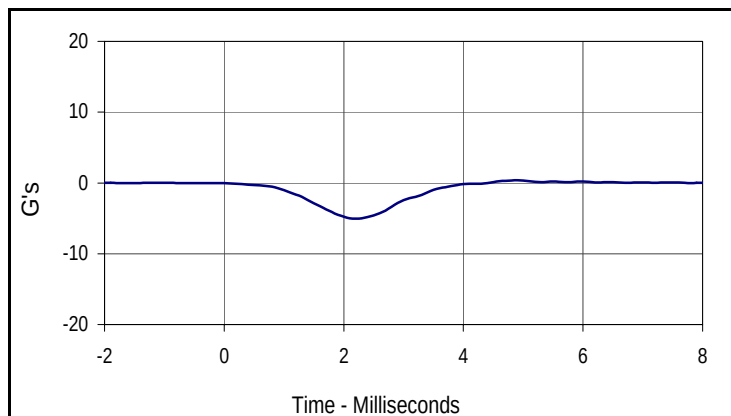
Test Date: 8/19/10
 Test I.D.: HD08A



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
Peak Resultant Acceleration	G's	125 to 155	140.5	Pass
Peak Longitudinal Acceleration	G's	≤15	5.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	6.8	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
140.5	2.2	0.0	-2.0



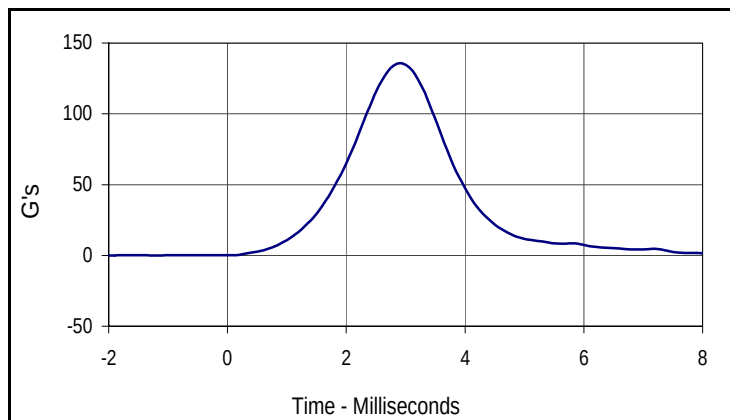
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.4	4.9	-5.0	2.2

Test Program: SID IIs Lateral Head Drop Calibration
 ATD Serial No.: 307

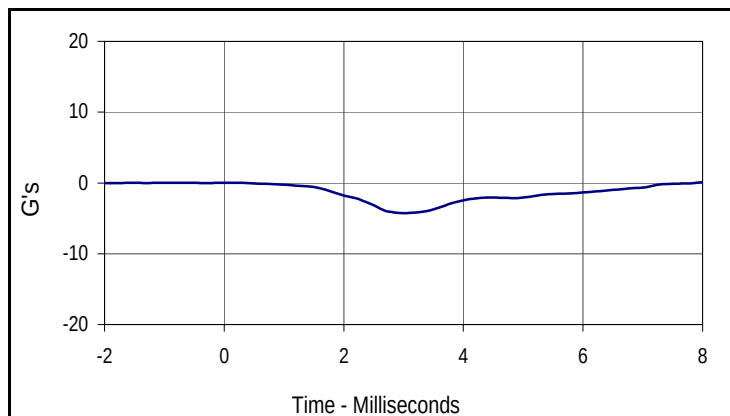
Test Date: 8/20/10
 Test I.D.: HD08D



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
Peak Resultant Acceleration	G's	115 to 137	135.8	Pass
Peak Longitudinal Acceleration	G's	≤15	4.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	8.6	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
135.8	2.9	0.0	-1.2



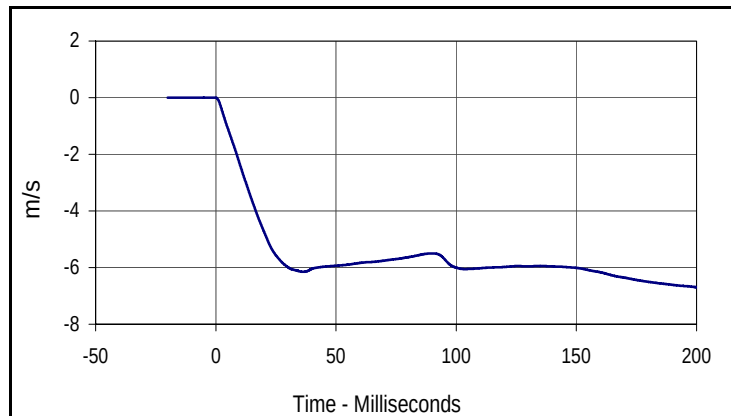
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.0	0.1	-4.3	3.0

Test Program: SID IIs Neck Calibration
 ATD Serial No.: 307

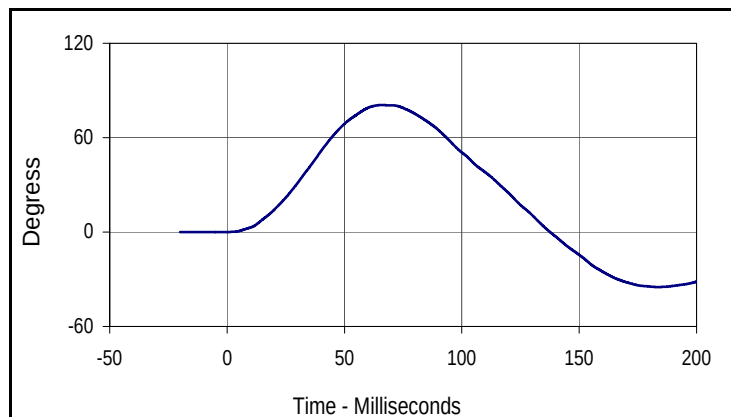
Test Date: 8/20/10
 Test I.D.: NB08D



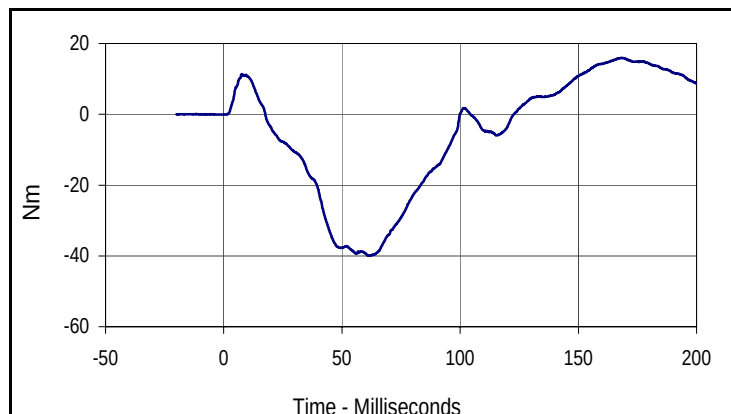
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.51 to 5.63	5.57	Pass
Pendulum Deceleration	10 msec	m/s	-2.20 to -2.80	-2.3	Pass
	15 msec	m/s	-3.30 to -4.10	-3.6	Pass
	20 msec	m/s	-4.40 to -5.40	-4.7	Pass
	25 msec	m/s	-5.40 to -6.10	-5.6	Pass
	25-100 msec	m/s	-5.50 to -6.20	-6.1	Pass
Translation-Rotation	Max	Degrees	71.0 to 81.0	80.7	Pass
	Time	msec	50.0 to 70.0	65.8	Pass
Peak Occipital Condyle Moment		Nm	-36.0 to -44.0	-39.9	Pass
Decaying Moment Time to Cross 0 Nm		msec	102.0 to 126.0	122.7	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
0.0	-0.5	-6.7	200.0



Curve Description			
Maximum Translation Rotation			
CURNO	Type	SAE Class	Units
002	FIL	60	Degress
Max	Time	Min	Time
80.7	65.8	-34.9	183.5



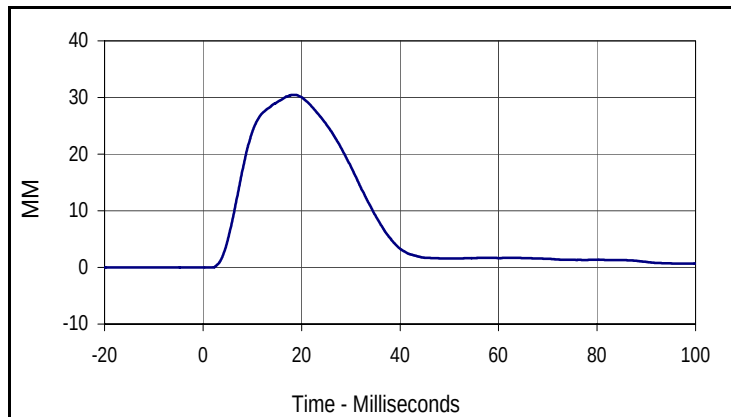
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
15.9	168.5	-39.9	62.0

Test Program: SID IIs Shoulder Calibration
 ATD Serial No.: 307

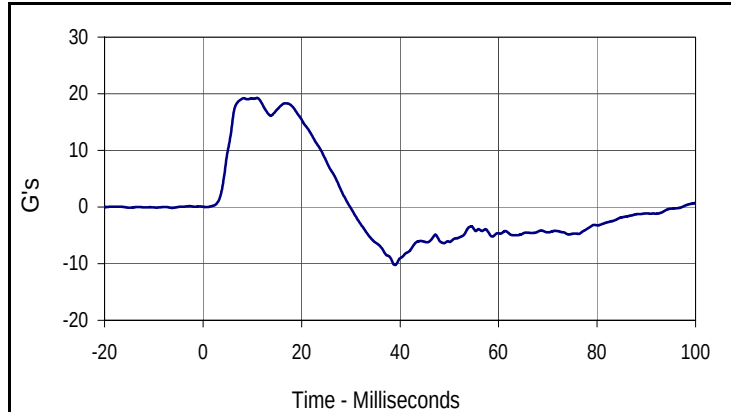
Test Date: 8/20/10
 Test I.D.: SH08D



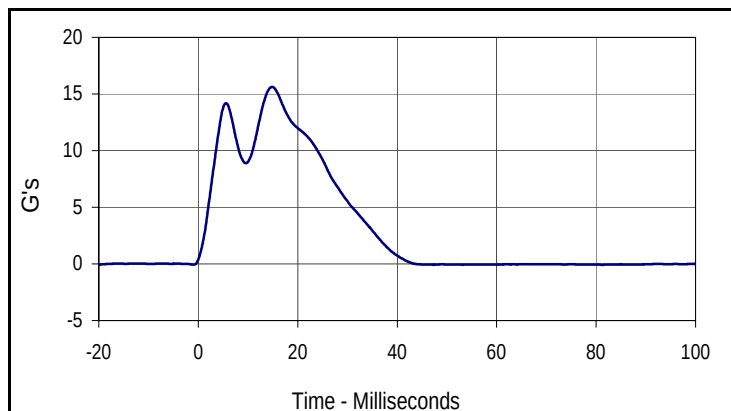
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.28	Pass
Shoulder Deflection	MM	28 to 37	30.5	Pass
Peak Upper Spine Y Acceleration	G's	17 to 22	19.3	Pass
Peak Impactor Acceleration	G's	13 to 18	15.6	Pass
Overall Test Results			Pass	



Curve Description			
Shoulder Acceleration			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
30.5	18.6	0.0	1.0



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
19.3	11.0	-10.2	39.0



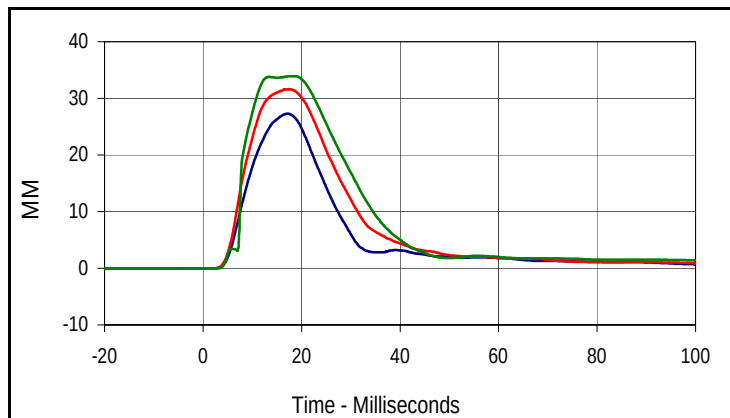
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
15.6	14.8	-0.1	81.3

Test Program: SID IIs Thorax with Arm Calibration
 ATD Serial No.: 307

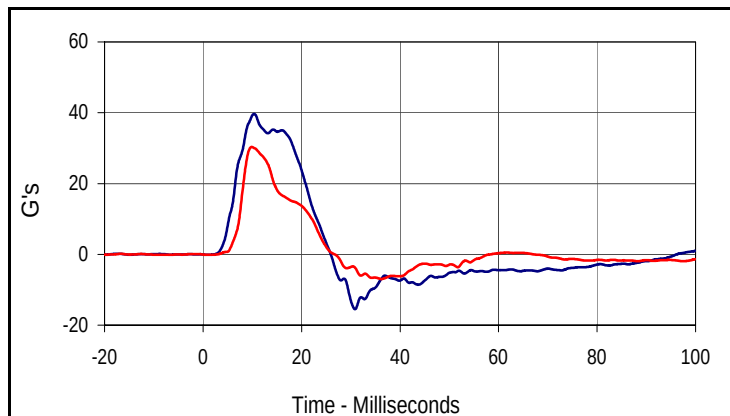
Test Date: 8/20/10
 Test I.D.: TH08D



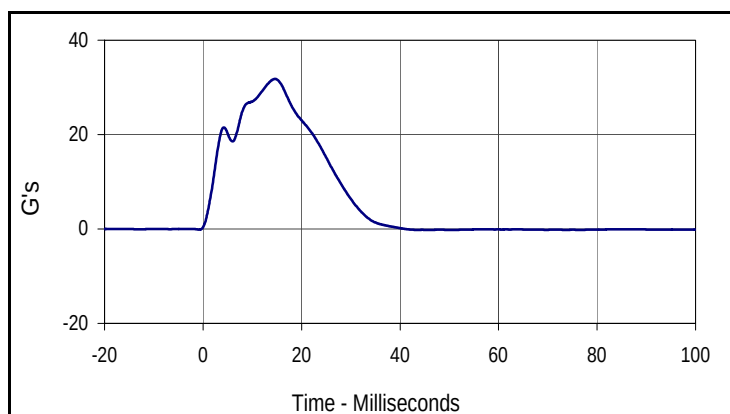
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.75	Pass
Shoulder Deflection	MM	31 to 40	33.4	Pass
Upper Thorax Rib Deflection	MM	25 to 32	27.3	Pass
Middle Thorax Rib Deflection	MM	30 to 36	31.6	Pass
Lower Thorax Rib Deflection	MM	32 to 38	33.9	Pass
Peak Upper Spine Y Acceleration	G's	34 to 43	39.7	Pass
Peak Lower Spine Y Acceleration	G's	29 to 37	30.3	Pass
Peak Impactor Acceleration After 5 msec.	G's	30 to 36	31.8	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
27.3	17.2	0.0	-12.8
Middle Thorax Deflection			
Max	Time	Min	Time
31.6	17.4	0.0	-3.0
Lower Thorax Deflection			
Max	Time	Min	Time
33.9	18.4	0.0	-17.7



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
39.7	10.4	-15.5	30.8
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
30.3	9.9	-7.0	36.2



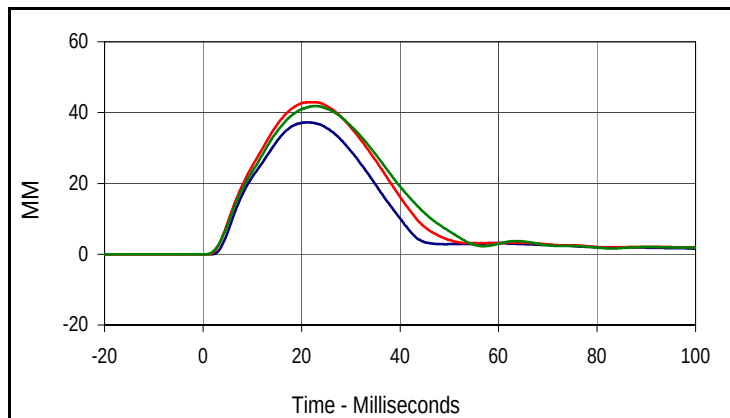
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
31.8	14.6	-0.2	50.4

Test Program: SID IIs Thorax w/o Arm Calibration
 ATD Serial No.: 307

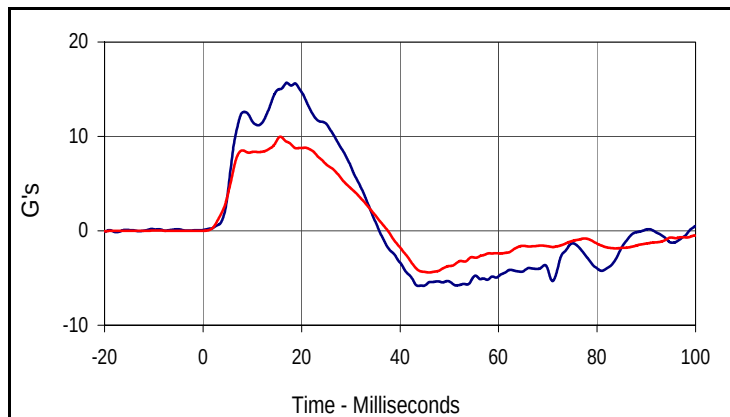
Test Date: 8/20/10
 Test I.D.: TOA08D



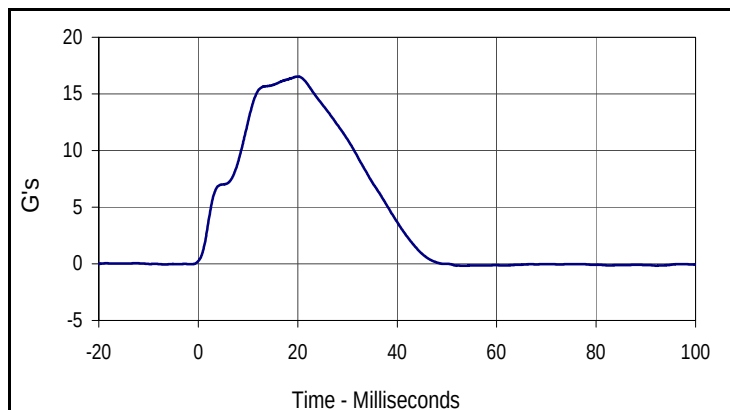
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.25	Pass
Upper Thorax Rib Deflection	MM	32 to 40	37.2	Pass
Middle Thorax Rib Deflection	MM	39 to 45	42.9	Pass
Lower Thorax Rib Deflection	MM	35 to 43	41.8	Pass
Peak Upper Spine Y Acceleration	G's	13 to 17	15.7	Pass
Peak Lower Spine Y Acceleration	G's	7 to 11	10.0	Pass
Peak Impactor Acceleration	G's	14 to 18	16.5	Pass
Overall Test Results			Pass	



Curve Description			
Upper Thorax Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
37.2	21.3	0.0	1.0
Middle Thorax Deflection			
Max	Time	Min	Time
42.9	22.1	0.0	-3.0
Lower Thorax Deflection			
Max	Time	Min	Time
41.8	22.8	0.0	-4.7



Curve Description			
Upper Spine Y Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.7	17.0	-5.8	43.7
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
005	FIL	180	G's
Max	Time	Min	Time
10.0	15.7	-4.4	45.9



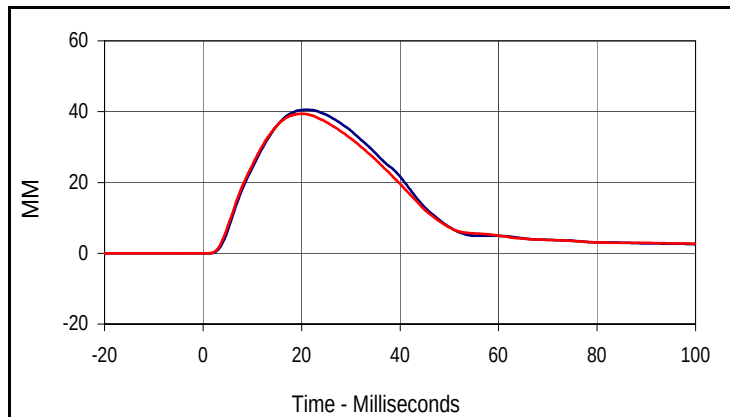
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
16.5	20.0	-0.2	53.5

Test Program: SID IIs Abdomen Calibration
 ATD Serial No.: 307

Test Date: 8/20/10
 Test I.D.: AB08D

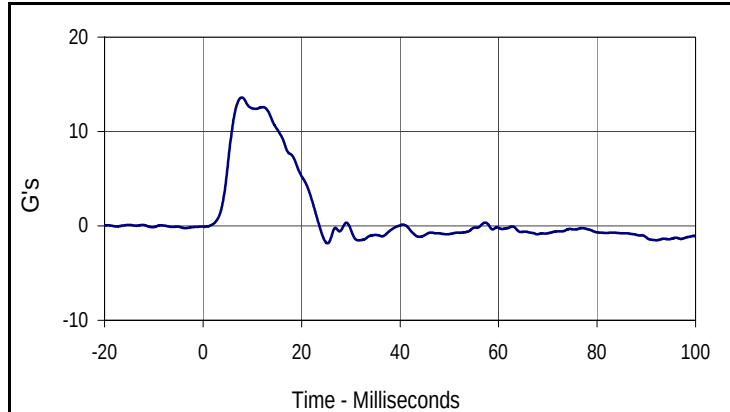


Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.20 to 4.40	4.24	Pass
Upper Abdominal Rib Deflection	MM	36 to 47	40.5	Pass
Lower Abdominal Rib Deflection	MM	33 to 44	39.4	Pass
Peak Lower Spine Y Acceleration	G's	9 to 14	13.6	Pass
Peak Impactor Acceleration	G's	12 to 16	15.7	Pass
Overall Test Results			Pass	

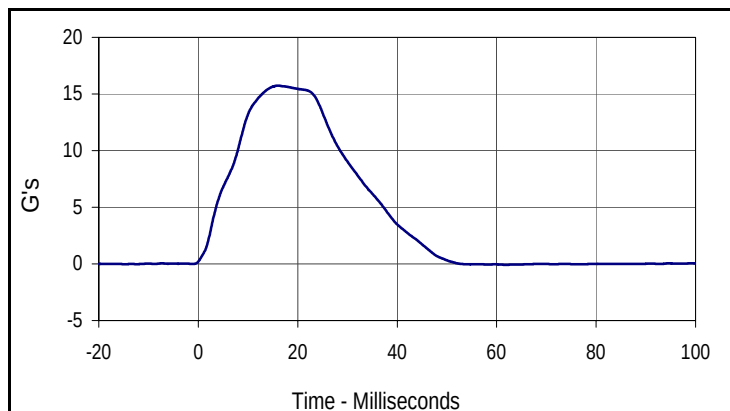


Curve Description			
Upper Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
001	FIL	600	MM
Max	Time	Min	Time
40.5	21.3	0.0	-11.7

Curve Description			
Lower Abdominal Rib Deflection			
CURNO	Type	SAE Class	Units
002	FIL	600	MM
Max	Time	Min	Time
39.4	20.1	0.0	-17.5



Curve Description			
Lower Spine Y Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
13.6	7.9	-1.8	25.3



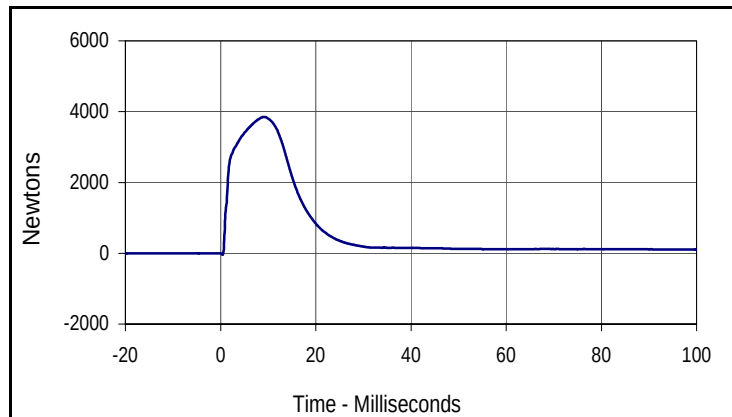
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
15.7	16.0	-0.1	62.0

Test Program: SID IIs Pelvis Acetabulum Calibration
 ATD Serial No.: 307

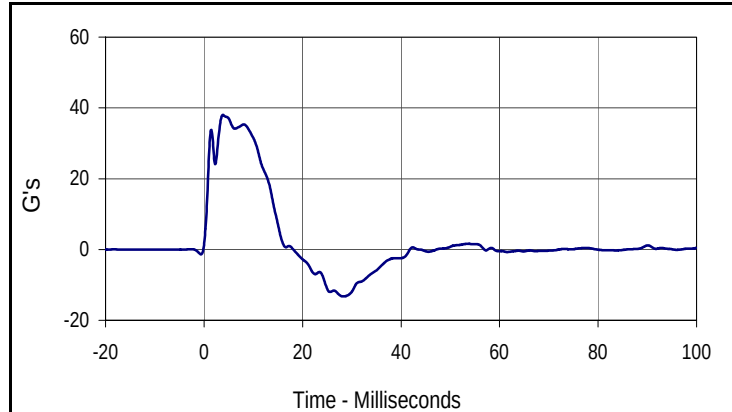
Test Date: 8/20/10
 Test I.D.: PA08D



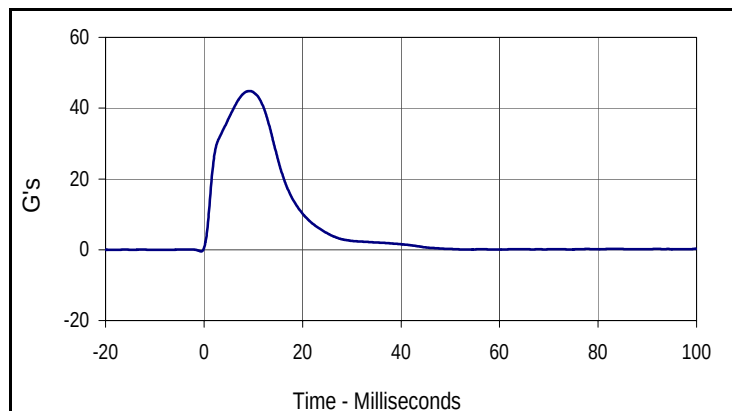
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	6.60 to 6.80	6.66	Pass
Peak Acetabulum Force	Newtons	3600 to 4300	3852.3	Pass
Peak Pelvis Y Acceleration After 6 msec.	G's	34 to 42	35.3	Pass
Peak Impactor Acceleration	G's	38 to 47	44.8	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Acetabulum Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3852.3	9.0	-41.5	0.4



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
38.0	3.8	-13.2	28.2



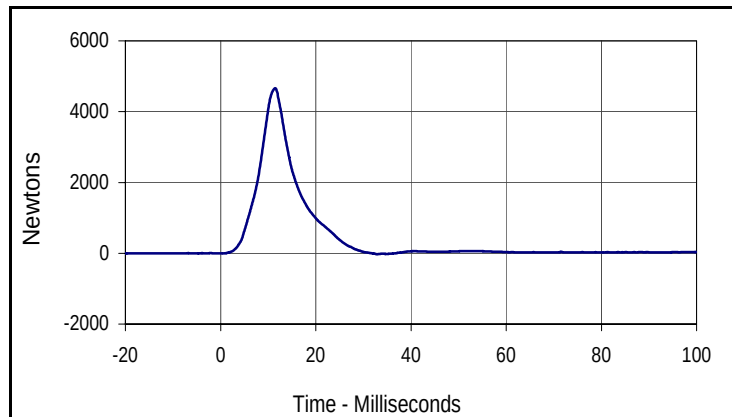
Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
44.8	9.3	-0.5	-0.6

Test Program: SID IIs Pelvis Iliac Calibration
 ATD Serial No.: 307

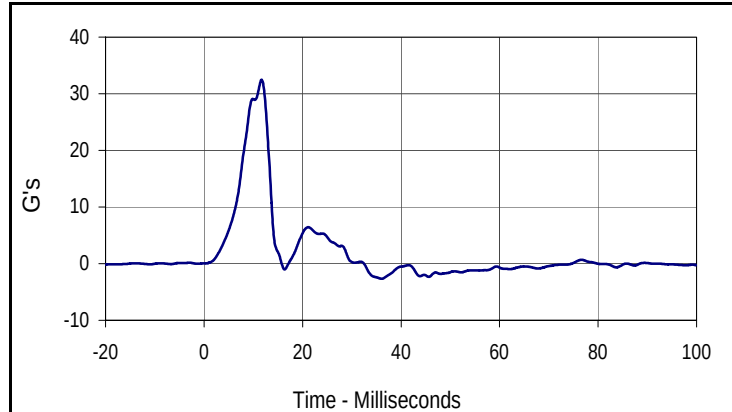
Test Date: 8/20/10
 Test I.D.: PL08D



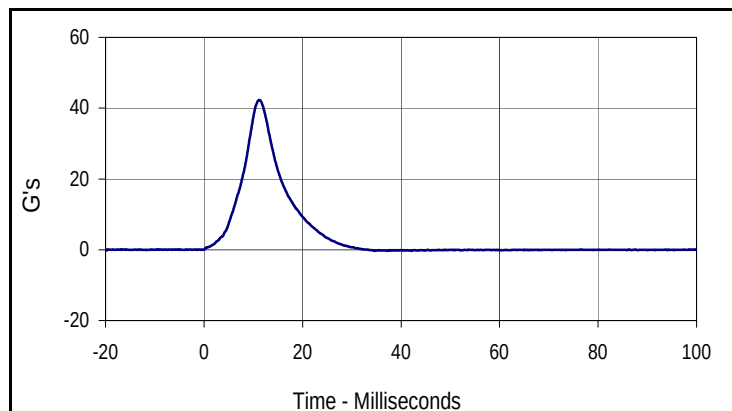
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity	m/s	4.2 to 4.4	4.20	Pass
Peak Iliac Force	Newtons	4100 to 5100	4662.8	Pass
Peak Pelvis Y Acceleration	G's	28 to 39	32.5	Pass
Peak Impactor Acceleration	G's	36 to 45	42.3	Pass
Overall Test Results			Pass	



Curve Description			
Pelvis Iliac Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4662.8	11.5	-26.2	32.9



Curve Description			
Pelvis Y Acceleration			
CURNO	Type	SAE Class	Units
002	FIL	180	G's
Max	Time	Min	Time
32.5	11.7	-2.7	36.0



Curve Description			
Impactor Acceleration			
CURNO	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
42.3	11.2	-0.3	42.1