

REPORT NUMBER: NCAPSIDE-MGA-2007-004

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**NISSAN MOTOR CO., LTD.
2007 NISSAN ALTIMA
NHTSA NUMBER: M75203**

**PREPARED BY:
MGA RESEARCH CORPORATION
5000 WARREN ROAD
BURLINGTON, WI 53105**



Test Date: December 5, 2006

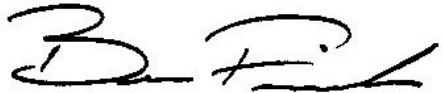
Report Date: January 4, 2007

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
400 SEVENTH STREET, SW, ROOM 5311
WASHINGTON, D.C. 20590**

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-03-D-12005.

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by: 
Ben Fischer, Project Engineer

Date: 1/04/07

Reviewed by: 
David Winkelbauer, Facility Director

Date: 1/04/07

Technical Report Documentation Page

1. Report No. NCAPSIDE-MGA-2007-004	2. Government Accession No.	3. Recipient's Catalog No.																						
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Testing of 2007 Nissan Altima NHTSA No.: M75203		5. Report Date January 4, 2007																						
		6. Performing Organization Code MGA																						
7. Author(s) Ben Fischer, Project Engineer		8. Performing Organization Report No. NCAPSIDE-MGA-2007-004																						
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No.																						
		11. Contract or Grant No. DTNH22-03-D-12005																						
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards 400 Seventh Street, SW, Room 5311 Washington, D.C. 20590		13. Type of Report and Period Covered: <i>Final Report</i> 12/05/06 to 1/04/07																						
		14. Sponsoring Agency Code NVS-111																						
15. Supplementary Notes																								
16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 2007 Nissan Altima to obtain new car assessment and research data indicant of FMVSS No. 214D performance. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on December 5, 2006. The impact velocity of the Moving Deformable Barrier (MDB) was 62.0 km/h, and the ambient temperature at the struck side (drivers) of the vehicle was 21°C. The target vehicle's maximum post test static crush was 308 mm at level 3. The test vehicle's occupant performance is as follows: <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>DRIVER</u></th> <th style="text-align: center;"><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">38.2</td> <td style="text-align: center;">61.1</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">29.8</td> <td style="text-align: center;">65.7</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">43.1</td> <td style="text-align: center;">54.9</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">41</td> <td style="text-align: center;">60</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">58.1</td> <td style="text-align: center;">61.1</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">199</td> <td style="text-align: center;">444</td> </tr> </tbody> </table>					<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	38.2	61.1	Left Lower Rib (LLR) Accel., g	29.8	65.7	Lower Spine (T ₁₂) Accel., g	43.1	54.9	Thoracic Trauma Index (TTI)	41	60	Pelvis (PEV) Accel., g	58.1	61.1	HIC	199	444
	<u>DRIVER</u>	<u>PASS.</u>																						
Left Upper Rib (LUR) Accel., g	38.2	61.1																						
Left Lower Rib (LLR) Accel., g	29.8	65.7																						
Lower Spine (T ₁₂) Accel., g	43.1	54.9																						
Thoracic Trauma Index (TTI)	41	60																						
Pelvis (PEV) Accel., g	58.1	61.1																						
HIC	199	444																						
The 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 Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NPO-230) 400 Seventh Street, S.W. Washington, D.C. 20590																						
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 139	22. Price																					

Form DOT F1700.7 (8-72)

TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	Purpose and Test Procedure	1
2	Summary of NCAP Side Impact Test	2
<u>Data Sheet No.</u>		<u>Page No.</u>
1	General Test and Vehicle Parameter Data	4
2	Test Vehicle Tire Information	6
3	Test Vehicle Information	7
4	Moving Deformable Barrier (MDB) Summary of Results	9
5	Post Test Observations	10
6	Vehicle Pre-Test and Post Test Measurements	11
7	SID/HIII Longitudinal Clearance Dimensions	12
8	SID/HIII Lateral Clearance Dimensions	13
9	Vehicle Side Measurements	14
10	Vehicle Exterior Crush Profiles	15
11	Vehicle Damage Profile Distances	17
12	Deformable Barrier Honeycomb Face Static Crush	18
13	Vehicle Accelerometer Locations	19
14	MDB Accelerometer Locations	20
15	Vehicle Structural Measurements	21
16	High Speed Camera Locations and Data	22
17	Summary of FMVSS 301 Data	23
<u>Appendix</u>		
A	Photographs	A
B	SID/HIII Response Data Traces	B
C	Dummy Calibration Data	C

SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2007 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-03-D-12005. The purpose of this test was to evaluate side impact protection in a 2007 Nissan Altima manufactured by Nissan Motor Co., Ltd.

TEST PROCEDURE

The side impact test was conducted in accordance with the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated November 2002 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA5. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF NCAP SIDE IMPACT TEST

A model year 2007 Nissan Altima 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 62.0 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1678.8 kg and the test weight of the MDB was 1360.8 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on December 5, 2006.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/HIIIs) can be found in Appendix A. Two 50th percentile adult male SID/HIIIs were placed in the driver and left rear passenger designated seating positions according to instructions specified in the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated November 2002. Each SID/HIII was instrumented in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y and Z axes primary and redundant)
- Upper Neck load cell (Fx, Fy, Fz, Mx, My, Mz)

The test vehicle was instrumented with twenty (20) structural accelerometers and the MDB was instrumented with six (6) accelerometers and two (2) contact switches on the bumper to compare left side to right side bumper impact timing. All data channels were recorded with a fully self contained on-board DTS TDAS Pro Data Acquisition System. The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 308 mm at level 3, 750 mm rearward of the vertical impact point. The driver and passenger SID/HIIIs, Serial Nos. 272 and 904 respectively, were calibrated just prior to this test.

Appendix A contains the still photograph prints. Appendix B contains the SID/HIII response data traces. Appendix C contains the dummy calibration data.

The occupant data is summarized below:

ATD position	HIC	T ¹	T ²	TTI (G's)	Peak Pelvis (G's)
Driver	199	41.0	67.2	41	58.1
Passenger	444	49.7	64.5	60	61.1

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Information	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	
Side Torso Airbag	Yes	Yes	No	
Curtain Airbag	Yes	Yes	Yes	Yes

The test data can be found on the NHTSA website at www.nhtsa.dot.gov.

TEST NOTES

There was no valid data collected for:

MDB Rear X after 110 msec.

MDB Rear Y after 110 msec.

Driver Rib Contact

Left Rear Sill Y – Questionable Data

Left Front Sill Y – Questionable Data

DATA SHEET NO. 1**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2007 Nissan AltimaNHTSA No. M75203Test Program: NCAP Side ImpactTest Date: 12/05/2006**TEST VEHICLE INFORMATION**

Make	Nissan
Model	Altima
Body Style	Sedan
NHTSA No.	M75203
VIN	1N4AL21E87C110469
Color	Metallic Jade
Delivery Date	11/13/06
Odometer Reading (mile)	66
Dealer	Boucher Nissan
Transmission	Automatic
Final Drive	Front
Number of Cylinders	4
Engine Displacement (L)	2.5
Engine Placement	Lateral
Automatic Door Locks (ADL)	No
Owner's Manual Details Instructions on Disabling ADLs	N/A

TEST VEHICLE OPTIONS

Driver Front Airbag	Yes
Driver Side Curtain Airbag	Yes
Driver Side Torso Airbag	Yes
Rear Passenger Side Curtain Airbag	Yes
Rear Passenger Side Torso Airbag	No
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Anti-lock Brakes	Yes
Traction Control	Yes
All Wheel Drive	No
Power Seats	Yes
Pretensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., Ltd.
Date of Manufacture	10/06

GVWR (kg)	1941
GAWR Front (kg)	1017
GAWR Rear (kg)	993

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				408
Cargo Wt. (RCLW) (kg)				68

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

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	431.8	277.1		481.3	398.7	
Right	kg	441.4	305.3		445.0	353.8	
Ratio	%	60.0	40.0		55.2	44.8	
Totals	kg	873.2	582.4	1455.6	926.3	752.5	1678.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1455.6
Weight of 2 P572M ATDs	kg	161.5
Rated Cargo/Luggage Weight (RCLW)	kg	68
Calculated Vehicle Target Weight (TVTW)	kg	1685.1

* Actual As Tested Weight (ATW) will be TVTW -5/-10 kg

Weight of Ballast in Spare Tire Well: 28.1 kg

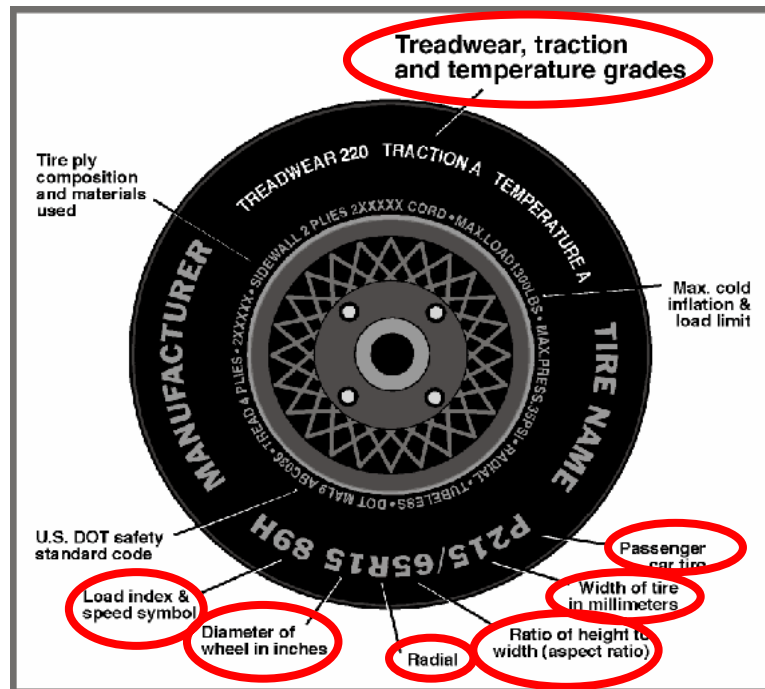
TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	720	720	695	708	1112
As Tested	mm	705	718	654	680	1245
Fully Loaded	mm	705	714	652	675	

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2778
Target Impact Point Aft of Front Axle	mm	449
Actual Impact Point Aft of Front Axle	mm	430

DATA SHEET NO. 2
TEST VEHICLE TIRE INFORMATION



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	220	220
Recommended Tire Size	P215/60R16	P215/60R16
Tire Size on Vehicle	P215/60R16	P215/60R16
Tire Manufacturer	Continental	Continental
Tire Name	Conti Pro Contact	Conti Pro Contact
Tire Type	Passenger	Passenger
Tire Width (mm)	215	215
Ratio of Height to Width (aspect ratio)	60	60
Radial	R	R
Wheel Diameter	16	16
Load Index & Speed Symbol	94T	94T
Treadwear	400	400
Traction Grade	AA	AA
Temperature Grade	A	A

DATA SHEET NO. 3 **TEST VEHICLE INFORMATION**

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

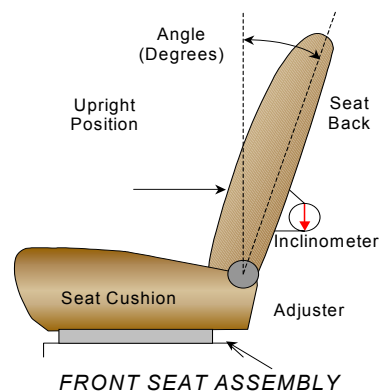
NHTSA No. M75203
 Test Date: 12/05/2006

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle. The procedure is as follows:
 Zero inclinometer on the sill surface before any measurement is taken. Measure angle from headrest post. A 14 degree change from forward-most lock position to test position.

Driver seat back angle: 5.2° at headrest post

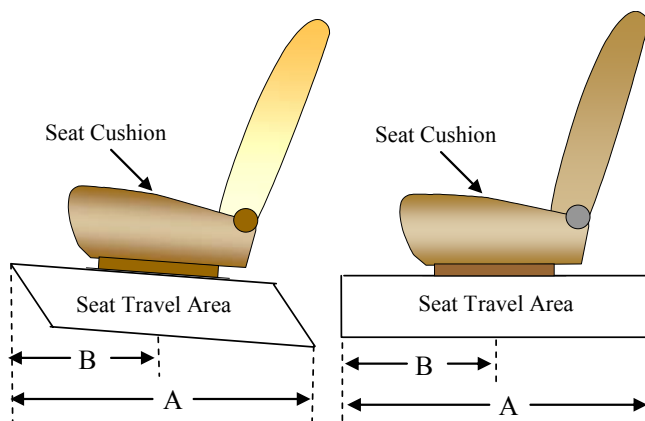
Passenger seat back angle: fixed seatback



SEAT FORE/AFT POSITIONS

SEAT FORE/AFT POSITIONS

	Total Fore/Aft Travel	Placed in position #
Driver Seat	260 mm	130 mm
Rear Seat	non adjustable	non adjustable



DATA SHEET NO. 3 (CONTINUED)

TEST VEHICLE INFORMATION

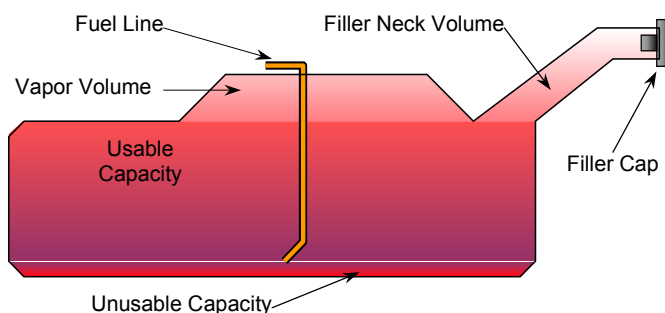
Test Vehicle: 2007 Nissan Altima
Test Program: NCAP Side Impact

NHTSA No. M75203
Test Date: 12/05/2006

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	75.7
Usable Capacity of "Optional" Tank	
92-94% of Usable Capacity	69.6 – 71.2
Actual Amount of Solvent used	70.0
1/3 of Usable Capacity	25.2

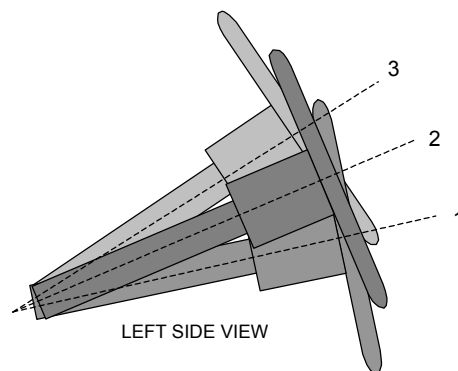
The vehicle is equipped with electric fuel pump. The fuel pump will pump fuel 1) for 1.0 seconds after the ignition is switched to "ON", 2) while the engine is running, and 3) for 1.5 seconds after the engine stops running.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN ASSEMBLY

	Fore/Aft (mm)	Degrees
Lowermost position No. 1	174	15.3
Geometric center position No. 2	192	21.2
Uppermost position No. 3	211	30.1

DATA SHEET NO. 4**MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS**

Test Vehicle: 2007 Nissan Altima
Test Program: NCAP Side Impact

NHTSA No. M75203
Test Date: 12/05/2006

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2588
C.G. Location aft of Front Axle	1101

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	473.5	219.5	
Right	kg	308.3	359.5	
Ratio	%	57.5	42.5	
Totals	kg	781.8	579.0	1360.8

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.0
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.0
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.7

POST TEST OBSERVATIONS
MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	19 forward
Vertical Offset	mm	+/-20	9 up

DATA SHEET NO. 5**POST TEST OBSERVATIONS**

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID HIII / 272	SID HIII / 904
Head Contact	Curtain Airbag	Curtain Airbag
Upper Torso Contact	Side Airbag	Door Panel
Lower Torso Contact	Side Airbag	Door Panel
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Doors were unlocked	Doors were unlocked
Left Side Door Opening	Door remained closed and latched	Door Unlatched but remained closed
Right Side Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	Cracked
Window Damage	Left front and left rear windows broke.
Other Notable Effects	None

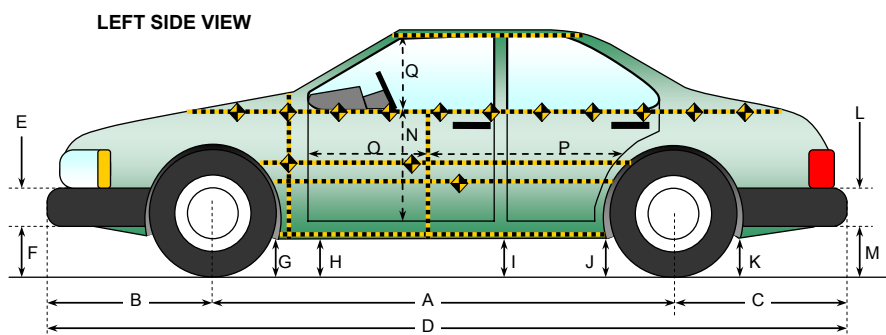
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Occupant Location 01		Occupant Location 04	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No	None	
Side Torso Airbag	Yes	Yes	None	
Curtain Airbag	Yes	Yes	Yes	Yes

DATA SHEET NO. 6
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006



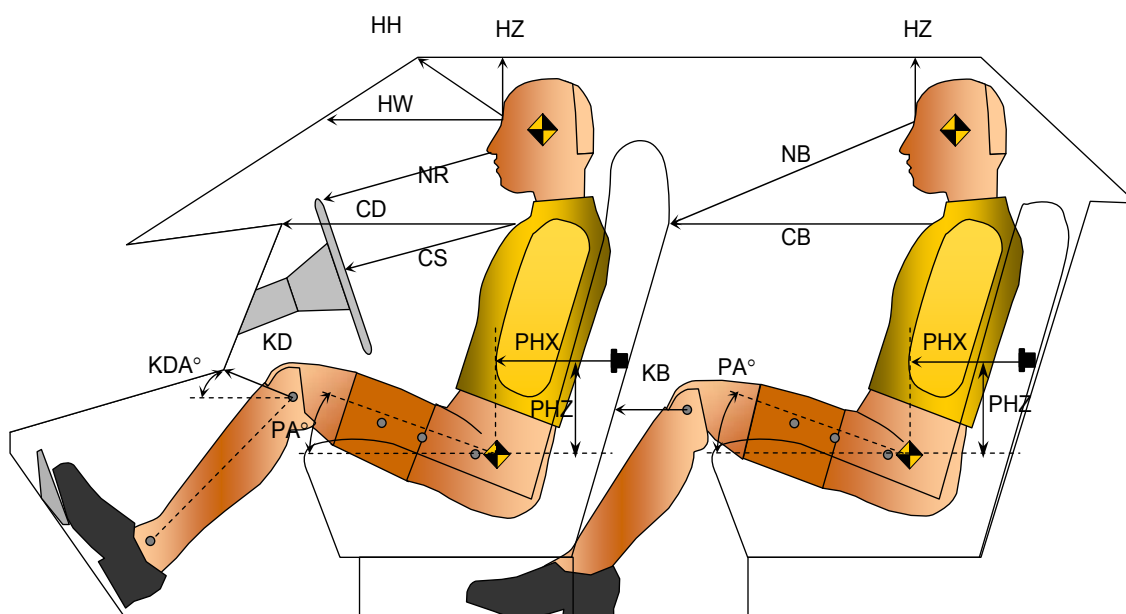
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2778	2755	23
B	Front Axle to FSOV	972	953	19
C	Rear Axle to RSOV	1041	1071	-30
D	Total Length at Centerline	4791	4779	12
E	Front Bumper Thickness	150	150	0
F	Front Bumper Bottom to Ground	241	252	-11
G	Sill Height at Front Wheel Well	158	163	-5
H	Sill Height at Front Door Leading Edge	187	217	-30
I	Sill Height at "B" Pillar	166	184	-18
J1	Sill Height at Rear Wheel Well	150	193	-43
J2	Pinch Weld Height at Rear Wheel Well	159	183	-24
K	Sill Height Aft of Rear Wheel Well	160	157	3
L	Rear Bumper Thickness	316	316	0
M	Rear Bumper Bottom to Ground	206	198	8
N	Sill Height to Window Bottom Sill	711	603	108
O	Front Door Leading Edge to Impact CL	822	766	56
P	Rear Door Trailing Edge to Impact CL	1231	1198	33
Q	Front Window Opening	439	405	34
R	Right Side Length	3516	3525	-9
S	Left Side Length	3516	3485	31
T	Vehicle Width at "B" Post	1787	1593	194

DATA SHEET NO. 7
SID/HII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006

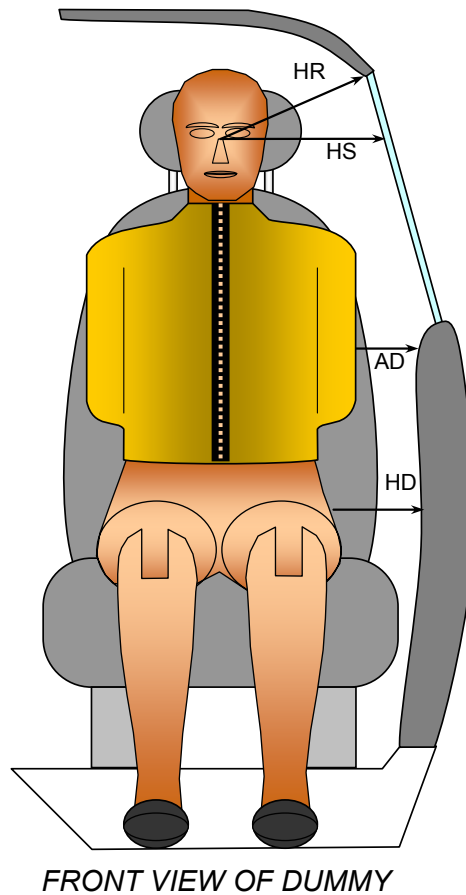


Driver Code	Pass. Code	Measurement Description	Driver S/N 272		Passenger S/N 904	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	446			
HW		Head to Windshield	719			
HZ	HZ	Head to Roof	173		110	
NR	NB	Nose to Rim/Nose to Seatback	438		679	
CD	CB	Chest to Dash or Seatback	548		595	
CS		Chest to Steering Wheel	314			
KDL	KBL	Left Knee to Dash or Seatback	204	32.9	208	29.5
KDR	KBR	Right Knee to Dash or Seatback	197	35.0	194	29.7
PA	PA	Pelvic Angle		24.3		24.9
PHX	PHX	H-Point to Striker (X-Axis)	172		302	
PHZ	PHZ	H-Point to Striker (Z-Axis)	151		288	

DATA SHEET NO. 8
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006

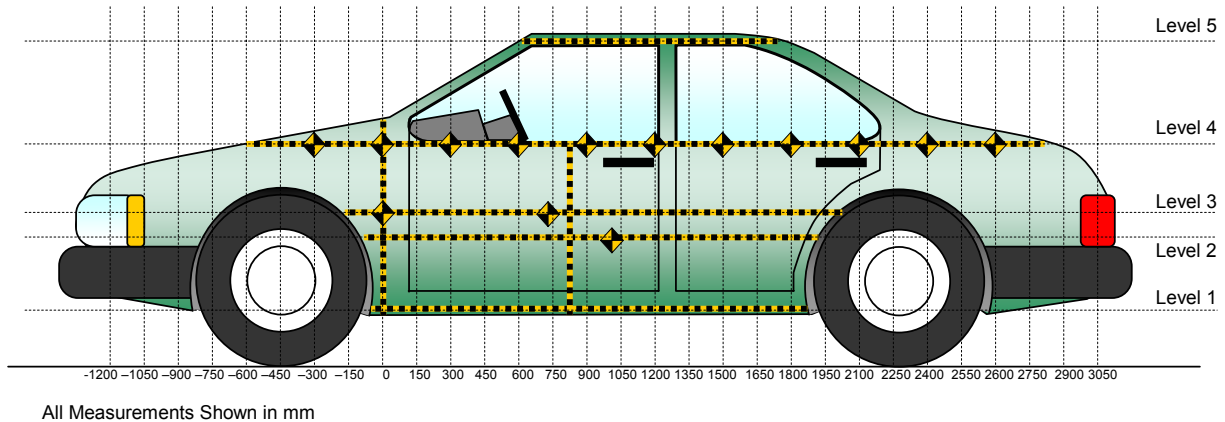


Code	Measurement Description	Units	Driver S/N 272	Passenger S/N 904
HR	Head to Side Header	mm	198	186
HS	Head to Side Window	mm	322	276
AD	Arm to Door	mm	132	121
HD	H-Point to Door	mm	160	155

DATA SHEET NO. 9 **VEHICLE SIDE MEASUREMENTS**

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006



LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
 Measurements along the vertical 800 mm.
 All measurements below in mm.

Level	Measurement Description	Maximum Exterior Static Crush	Distance From Impact	Height Above Ground
5	Window	41	1200	1421
4	Window Sill	175	1350	927
3	Mid Door	308	750	605
2	Occupant H-Point	299	1050	476
1	Sill Top	107	900	238
	Maximum Penetration	308		

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-600				303					306					3	
-450				298					306					8	
-300				295					316					21	
-150			199	296				225	322				26	26	
0	212	205	205	290		300	260	247	314		88	55	42	24	
150	246	209	206	286		344	455	429	297		98	246	223	11	
300	248	208	206	281		346	488	478	362		98	280	272	81	
450	248	208	205	280		348	492	503	422		100	284	298	142	
600	248	208	206	279		350	494	512	434		102	286	306	155	
750	248	208	207	281	516	352	498	515	444	530	104	290	308	163	14
900	247	209	207	282	521	354	506	483	442	544	107	297	276	160	23
1050	247	210	208	285	522	352	509	463	436	560	105	299	255	151	38
1200	248	210	209	287	527	352	457	421	436	568	104	247	212	149	41
1350	247	211	209	291	529	350	466	428	466	567	103	255	219	175	38
1500	247	212	210	295	525	349	452	438	469	558	102	240	228	174	33
1650	246	212	211	300	522	330	433	424	474	551	84	221	213	174	29
1800	235	212	211	305	518	294	372	415	450	549	59	160	204	145	31
1950		205	208	313	518		284	347	388	540		79	139	75	22
2100			202	319	519			262	344	533			60	25	14
2250				327					322					-5	
2400				333					356					23	
2550				345					365					20	
2700				356					374					18	

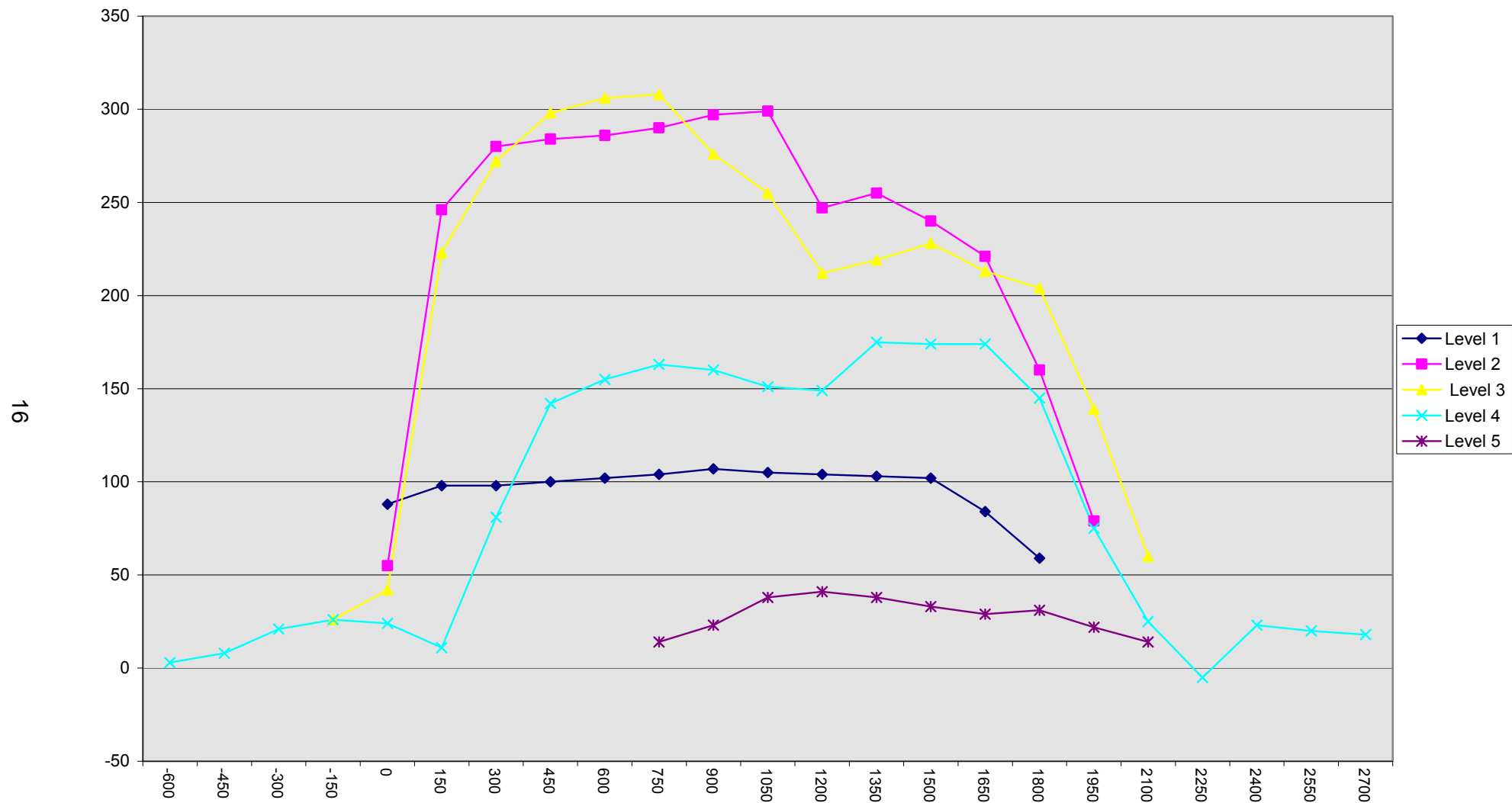
Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

DATA SHEET NO. 10... (continued)
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2007 Nissan Altima
Test Program: NCAP Side Impact

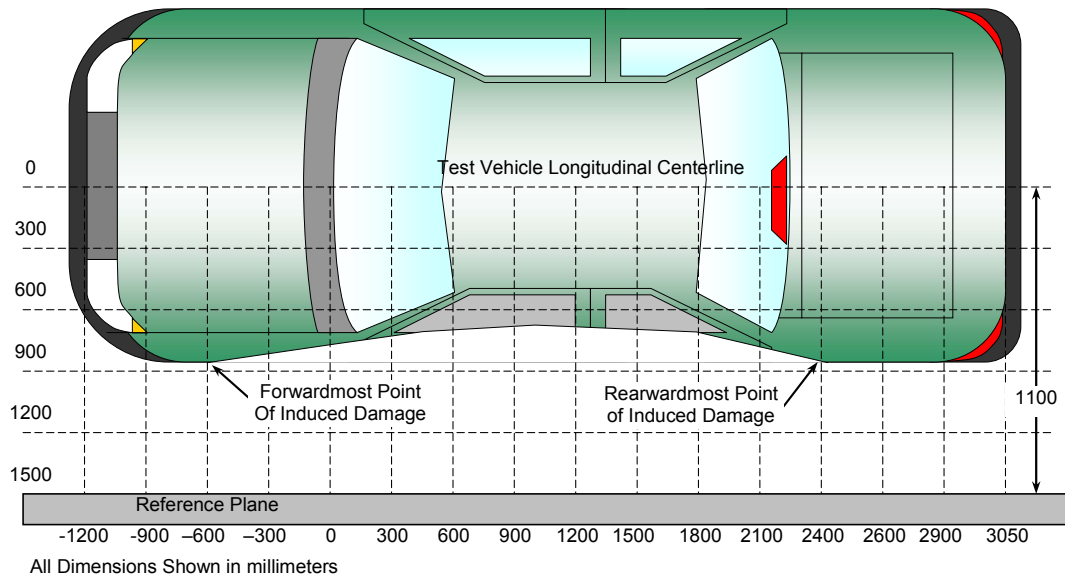
NHTSA No. M75203
Test Date: 12/05/2006



DATA SHEET NO. 11 **VEHICLE DAMAGE PROFILE DISTANCES**

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2250	4	327	322	-5
2	1652	4	300	474	174
3	1064	3	208	516	308
4	498	3	206	510	304
5	-28	4	291	310	19
6	-600	4	303	306	3

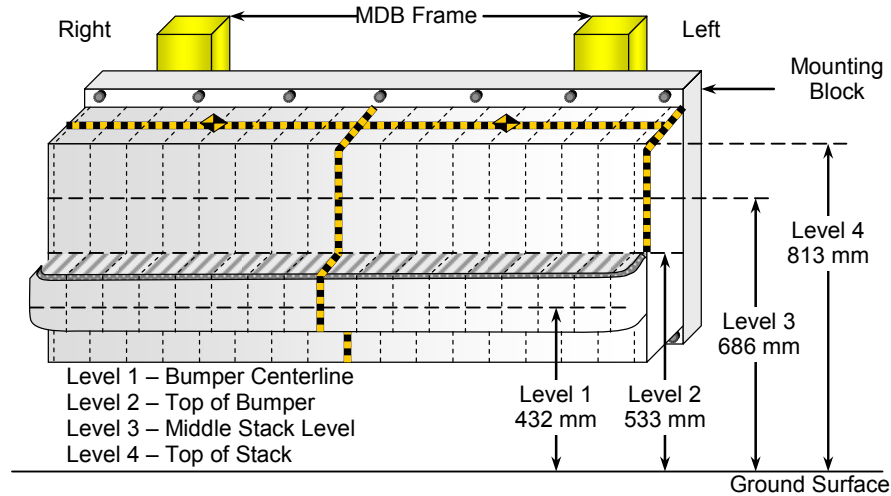
Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body.

DATA SHEET NO. 12

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006



DEFORMABLE BARRIER STATIC CRUSH

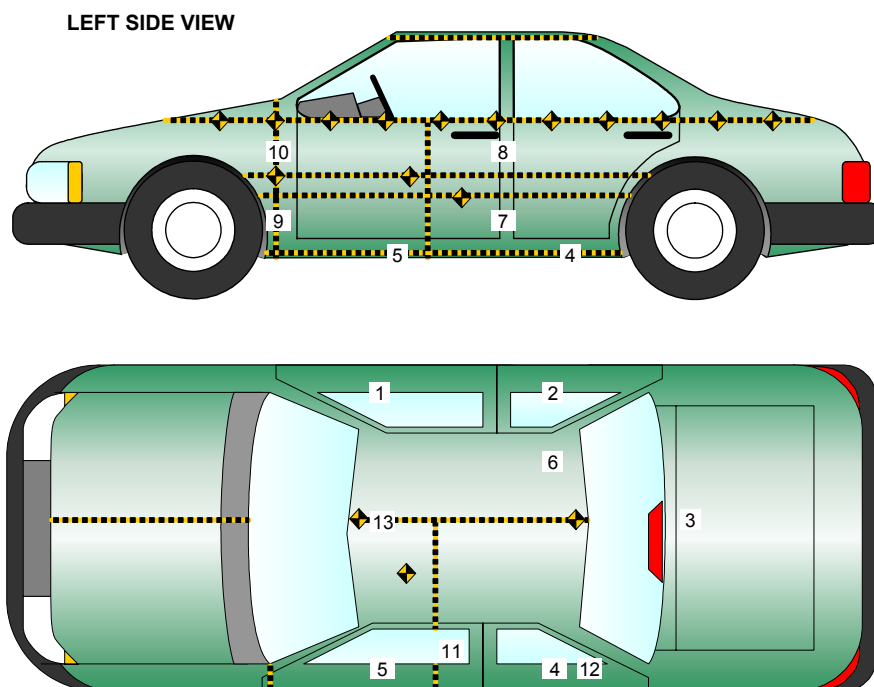
Stack Level	Distance Right of Center								C _L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	108	115	113	112	117	125	124	121	109	107	105	108	107	110	116	126	135
2	49	39	38	40	43	52	53	53	46	42	44	47	50	53	57	65	76
3	53	19	10	14	13	38	54	49	31	23	14	11	13	18	25	47	97
4	44	7	5	6	14	30	35	26	19	14	20	21	26	39	65	116	158

All Dimensions in mm

DATA SHEET NO. 13
VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006



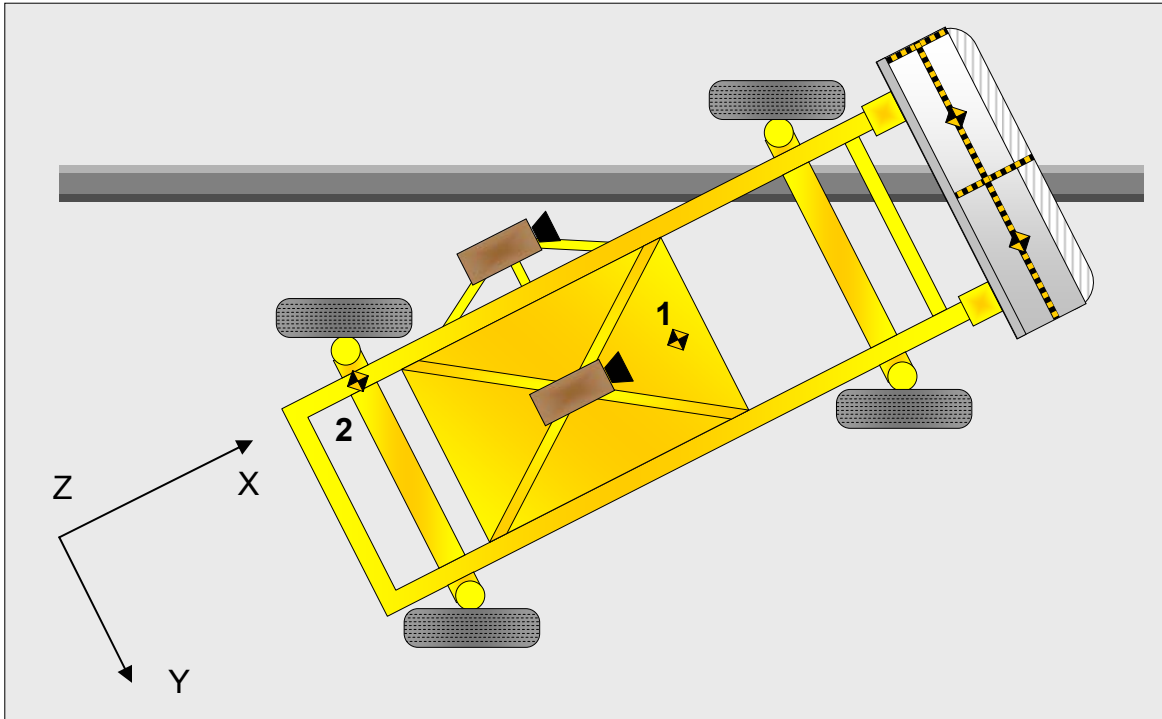
Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2583	730	206
2	Right Sill at Rear Seat	1786	730	200
3	Rear Floorpan Above Axle	960	0	495
4	Left Sill at Rear Door	1774	-733	204
5	Left Sill at Front Door	2596	-733	204
6	Rear Occupant Compartment	1880	288	386
7	Left Lower B-Post	2190	-720	473
8	Left Middle B-Post	2205	-712	732
9	Left Lower A-Post	3350	-712	489
10	Left Middle A-Post	3353	-795	807
11	Front Seat Track	1546	-520	220
12	Rear Seat Track or Structure			
13	Vehicle CG	2678	-10	355

Reference Points X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 14
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	MDB CG	-1092	0	-483
2	MDB Rear	-2591	-625	-622

Reference Points X - MDB Front Axle (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 15
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2007 Nissan Altima
Test Program: NCAP Side Impact

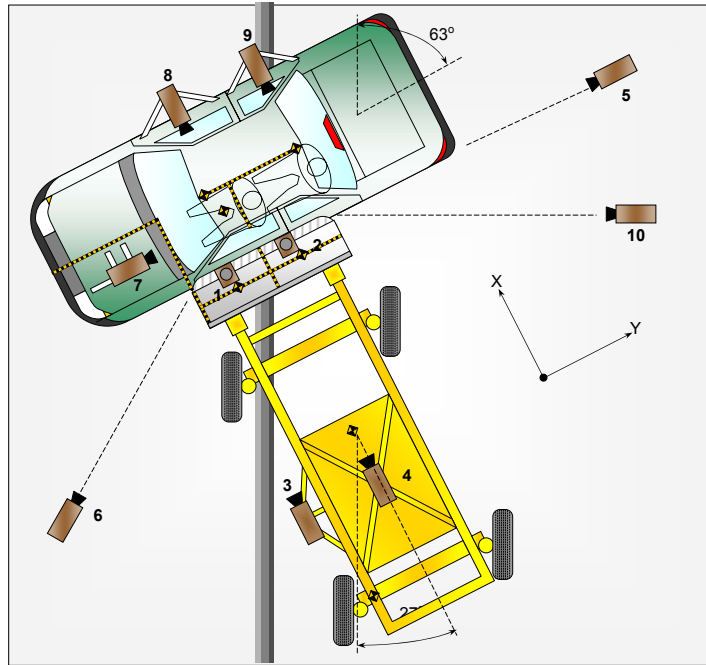
NHTSA No. M75203
Test Date: 12/05/2006

	Elements	Pre-Test (mm)
1	Total Length	4791
2	Total Width	1787
3	Bumper Top Height	523
4	Bumper Bottom Height	400
5	Longitudinal Member Top Height	560
6	Distance between Longitudinal Members	945
7	Longitudinal Member Width	90
8	Engine Top Height	800
9	Engine Bottom Height	170
10	Engine and gearbox width	926
11	Front bumper-engine distance	512
12	Front shock absorber fixing height	850
13	Bonnet leading edge height	756
14	Front shock absorber fixing width	1170
15	Front bumper – front axle distance	890
16	Front axle – a pillar distance	460
17	A-pillar – B-pillar distance	1168
18	B-Pillar – rear axle distance	1150
19	B-pillar – C-pillar distance	1020
20	Roof sill bottom height	1382
21	Roof sill top height	1444
22	Floor sill bottom height	210
23	Floor sill top height	293

DATA SHEET NO. 16
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Close-up	720	-30	4840	50	1000
2	Overhead Overall	-940	1190	4840	14	1000
3	MDB Onboard, Impact Point Close-up				50	1000
4	MDB Onboard, Centerline of Impact				25	1000
5	Right Side, Ground Level, Overall	-3030	6375	1195	24	1000
6	Left Side, Ground Level, Overall	3070	-3945	1185	24	1000
7	Vehicle Onboard Front SID/HIII, Front				12.5	1000
8	Vehicle Onboard Front SID/HIII, Side				8	1000
9	Vehicle Onboard Rear SID/HIII, Side				8	1000
10	Real Time Coverage				13	24

Reference Points X - Impact Line
 Y - MDB Left Edge Impact Point
 Z - Ground Plane

DATA SHEET NO. 17
SUMMARY OF FMVSS 301 DATA

Test Vehicle: 2007 Nissan Altima
 Test Program: NCAP Side Impact

NHTSA No. M75203
 Test Date: 12/05/2006

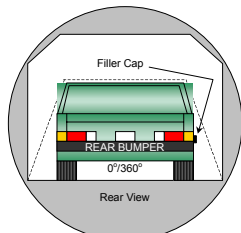
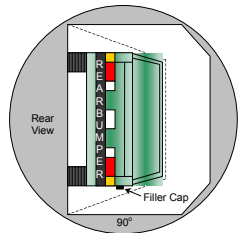
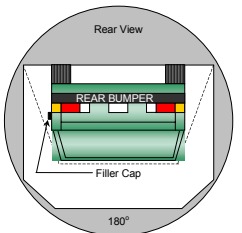
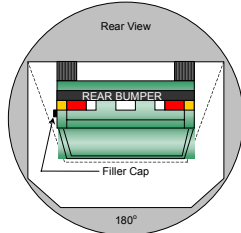
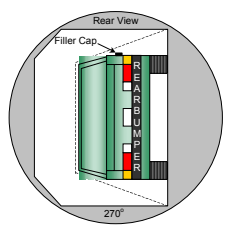
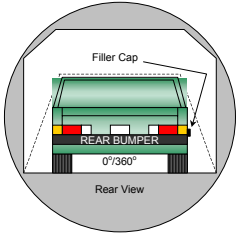
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 21° C Test Time: 12:30 pm

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0 oz.
 (Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: None
 (Maximum allowable = 5 ounces)
- C. For the following 25 minutes: None
 (Maximum allowable = 1 oz./minute)
- D. Spillage Details: None

FMVSS 301 STATIC ROLLOVER DATA

			1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds. 2. The position hold time at each position is 300 seconds (minimum). 3. Details of Stoddard Solvent spillage locations: None
0° to 90° 90° to 180°			
			
180° to 270° 270° to 360°			

Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage Collection Time (min)	Spillage (oz.)
0° to 90°	123	300	First 5	0
90° to 180°	117	300	First 5	0
180° to 270°	115	300	First 5	0
270° to 360°	122	300	First 5	0

APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

	<u>Page No.</u>
Photo No. 1. Left Front $\frac{3}{4}$ View, As Received	A-1
Photo No. 2. Right Rear $\frac{3}{4}$ View, As Received	A-1
Photo No. 3. Manufacturer's Label	A-2
Photo No. 4. Tire Placard	A-2
Photo No. 5. Pre-Test Front View	A-3
Photo No. 6. Post-Test Front View	A-3
Photo No. 7. Pre-Test Left Front $\frac{3}{4}$ View	A-4
Photo No. 8. Post-Test Left Front $\frac{3}{4}$ View	A-4
Photo No. 9. Pre-Test Left Side View	A-5
Photo No. 10. Post-Test Left Side View	A-5
Photo No. 11. Pre-Test Left Rear $\frac{3}{4}$ View	A-6
Photo No. 12. Post-Test Left Rear $\frac{3}{4}$ View	A-6
Photo No. 13. Pre-Test Rear View	A-7
Photo No. 14. Post-Test Rear View	A-7
Photo No. 15. Pre-Test Right Rear $\frac{3}{4}$ View	A-8
Photo No. 16. Post-Test Right Rear $\frac{3}{4}$ View	A-8
Photo No. 17. Pre-Test Right Side View	A-9
Photo No. 18. Post-Test Right Side View	A-9
Photo No. 19. Pre-Test Right Front $\frac{3}{4}$ View	A-10
Photo No. 20. Post-Test Right Front $\frac{3}{4}$ View	A-10
Photo No. 21. Pre-Test Overhead View	A-11
Photo No. 22. Post-Test Overhead View	A-11
Photo No. 23. Pre-Test Overhead Close-up View	A-12
Photo No. 24. Post-Test Overhead Close-up View	A-12
Photo No. 25. Pre-Test Left Impact Point	A-13
Photo No. 26. Post-Test Left Impact Point	A-13
Photo No. 27. Pre-Test Front $\frac{3}{4}$ View of Left Side Door	A-14
Photo No. 28. Post-Test Front $\frac{3}{4}$ View of Left Side Door	A-14
Photo No. 29. Pre-Test Rear $\frac{3}{4}$ View of Left Side Door	A-15

	<u>Page No.</u>
Photo No. 30. Post-Test Rear ¾ View of Left Side Door	A-15
Photo No. 31. Pre-Test Left Side Impact Close-up	A-16
Photo No. 32. Post-Test Left Side Impact Close-up	A-16
Photo No. 33. Pre-Test Driver Dummy (Door Open)	A-17
Photo No. 34. Pre-Test Driver Dummy (Through Window)	A-18
Photo No. 35. Post-Test Driver Dummy (Through Window)	A-18
Photo No. 36. Pre-Test Driver Dummy Right Side View	A-19
Photo No. 37. Post-Test Driver Dummy Right Side View	A-19
Photo No. 38. Pre-Test Passenger Dummy (Door Open)	A-20
Photo No. 39. Pre-Test Passenger Dummy (Through Window)	A-21
Photo No. 40. Post-Test Passenger Dummy (Through Window)	A-21
Photo No. 41. Pre-Test Passenger Dummy Right Side View	A-22
Photo No. 42. Post-Test Passenger Dummy Right Side View	A-22
Photo No. 43. Pre-Test Front View of Deformable Barrier	A-23
Photo No. 44. Post-Test Front View of Deformable Barrier	A-23
Photo No. 45. Pre-Test Top View of Deformable Barrier	A-24
Photo No. 46. Post-Test Top View of Deformable Barrier	A-24
Photo No. 47. Pre-Test Right Side View of Deformable Barrier	A-25
Photo No. 48. Post-Test Right Side View of Deformable Barrier	A-25
Photo No. 49. Pre-Test Left Side View of Deformable Barrier	A-26
Photo No. 50. Post-Test Left Side View of Deformable Barrier	A-26
Photo No. 51. Vehicle on Rollover Device (90 Degrees)	A-27
Photo No. 52. Vehicle on Rollover Device (180 Degrees)	A-27
Photo No. 53. Vehicle on Rollover Device (270 Degrees)	A-28
Photo No. 54. Vehicle on Rollover Device (360 Degrees)	A-28
Photo No. 55. Vehicle Impact	A-29
Photo No. 56. Post-Test Driver Dummy Head Contact (airbag)	A-30
Photo No. 57. Post-Test Driver Dummy Head Contact (headrest)	A-30
Photo No. 58. Post-Test Driver Dummy Torso Contact	A-31
Photo No. 59. Post-Test Driver Dummy Contact	A-31
Photo No. 60. Post-Test Passenger Dummy Head Contact (airbag)	A-32

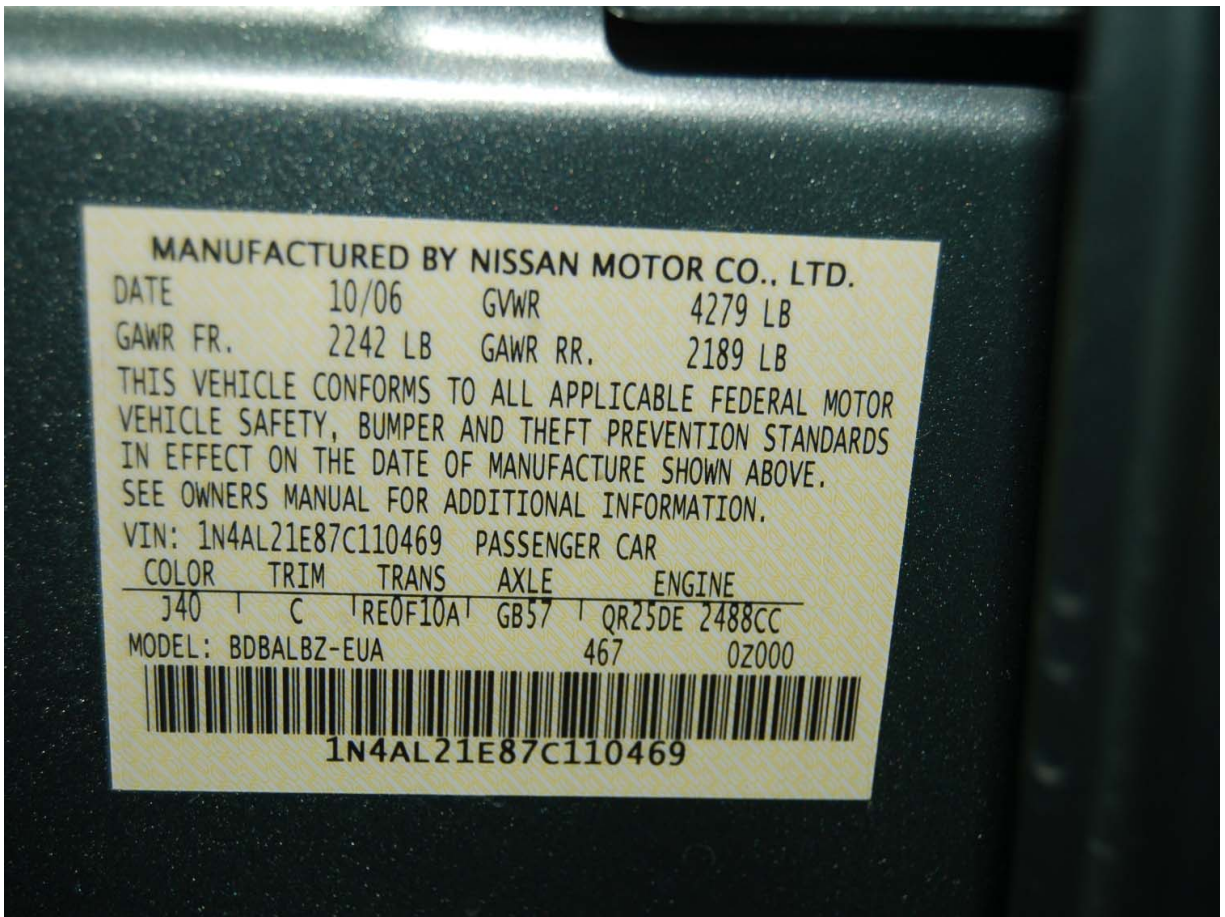
	<u>Page No.</u>
Photo No. 61. Post-Test Passenger Dummy Head Contact (headrest)	A-32
Photo No. 62. Post-Test Passenger Dummy Torso Contact	A-33
Photo No. 63. Post-Test Passenger Dummy Contact	A-33



Left Front $\frac{3}{4}$ View, As Received



Right Rear $\frac{3}{4}$ View, As Received



Manufacturer's Label



Tire Placard



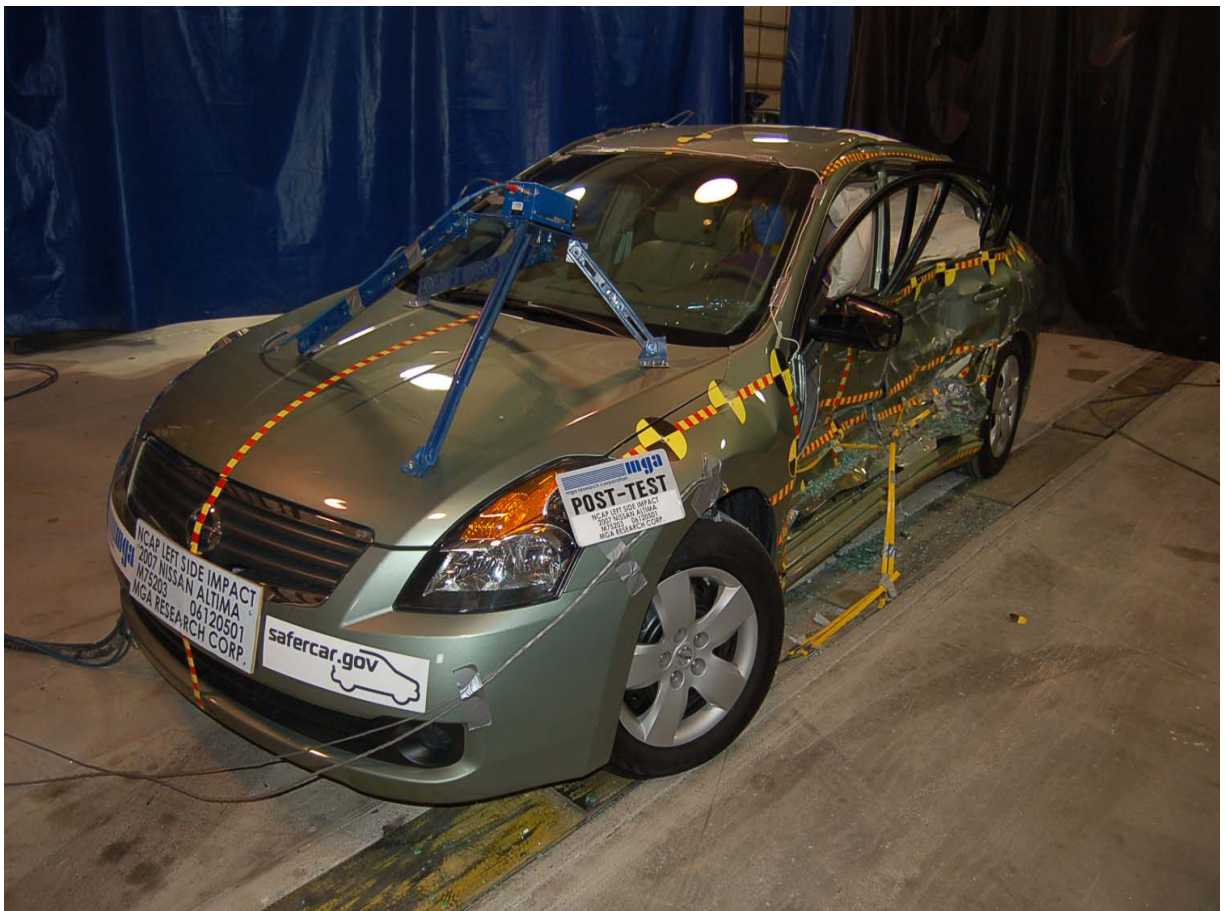
Pre-Test Front View



Post-Test Front View



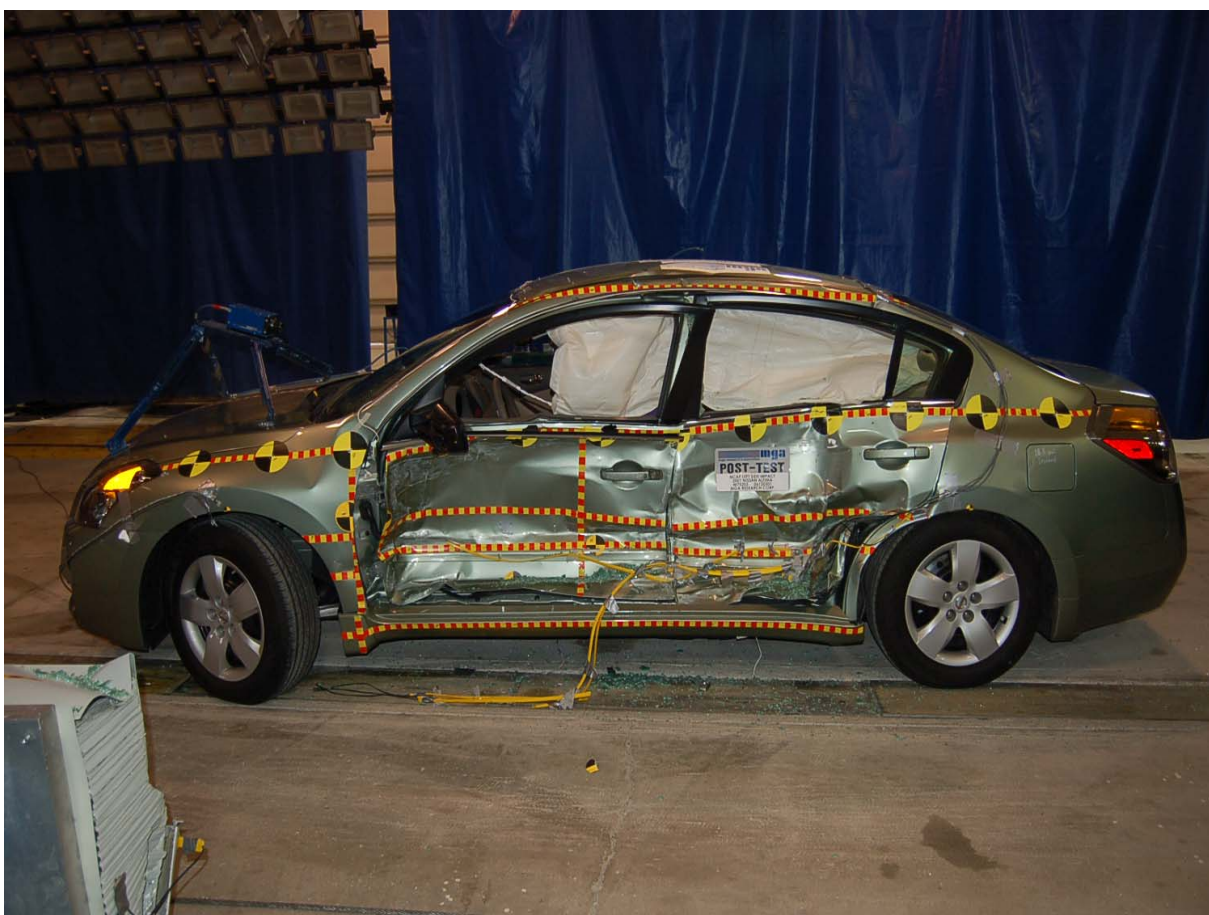
Pre-Test Left Front $\frac{3}{4}$ View



Post-Test Left Front $\frac{3}{4}$ View



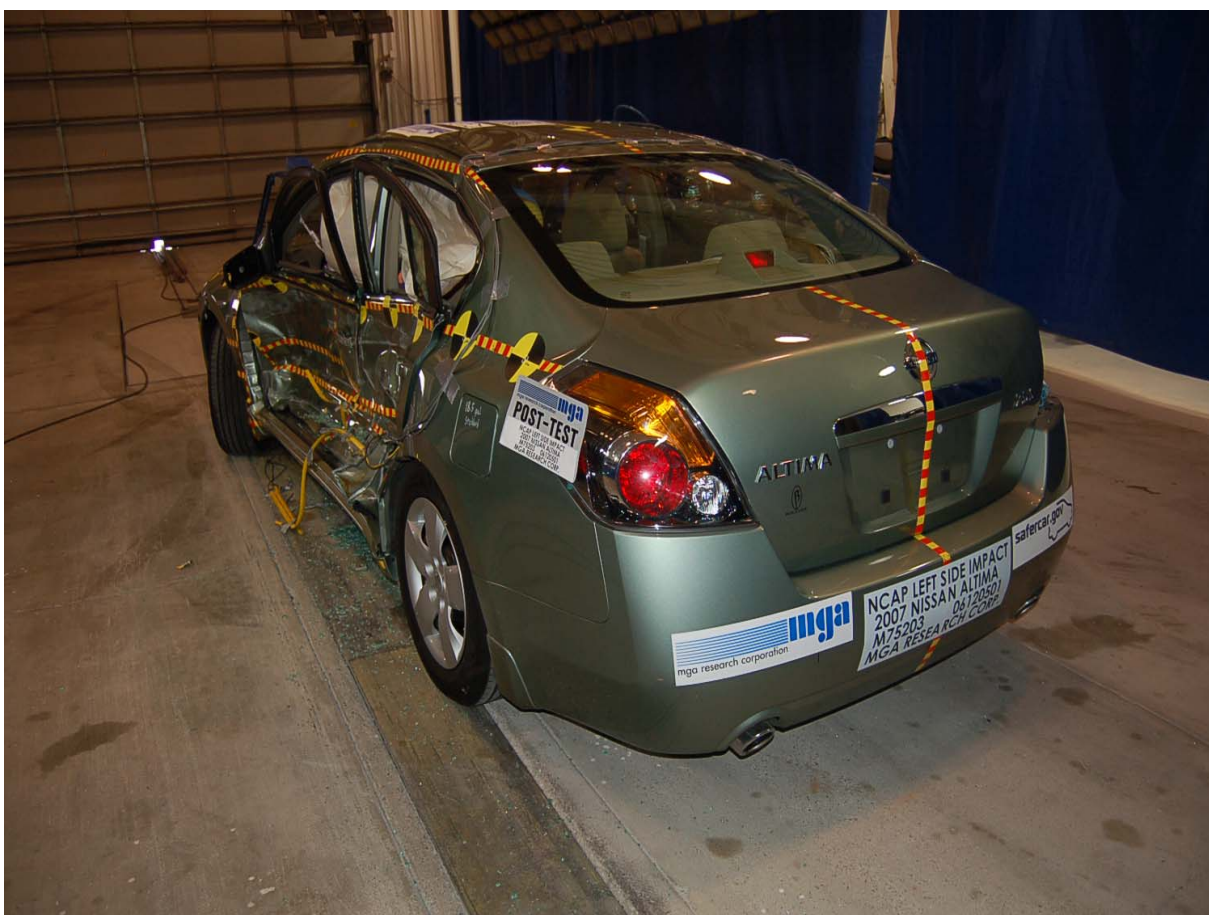
Pre-Test Left Side View



Post-Test Left Side View



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



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



Pre-Test Rear View



Post-Test Rear View



Pre-Test Right Rear $\frac{3}{4}$ View



Post-Test Right Rear $\frac{3}{4}$ View



Pre-Test Right Side View



Post-Test Right Side View



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



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



Pre-Test Overhead View



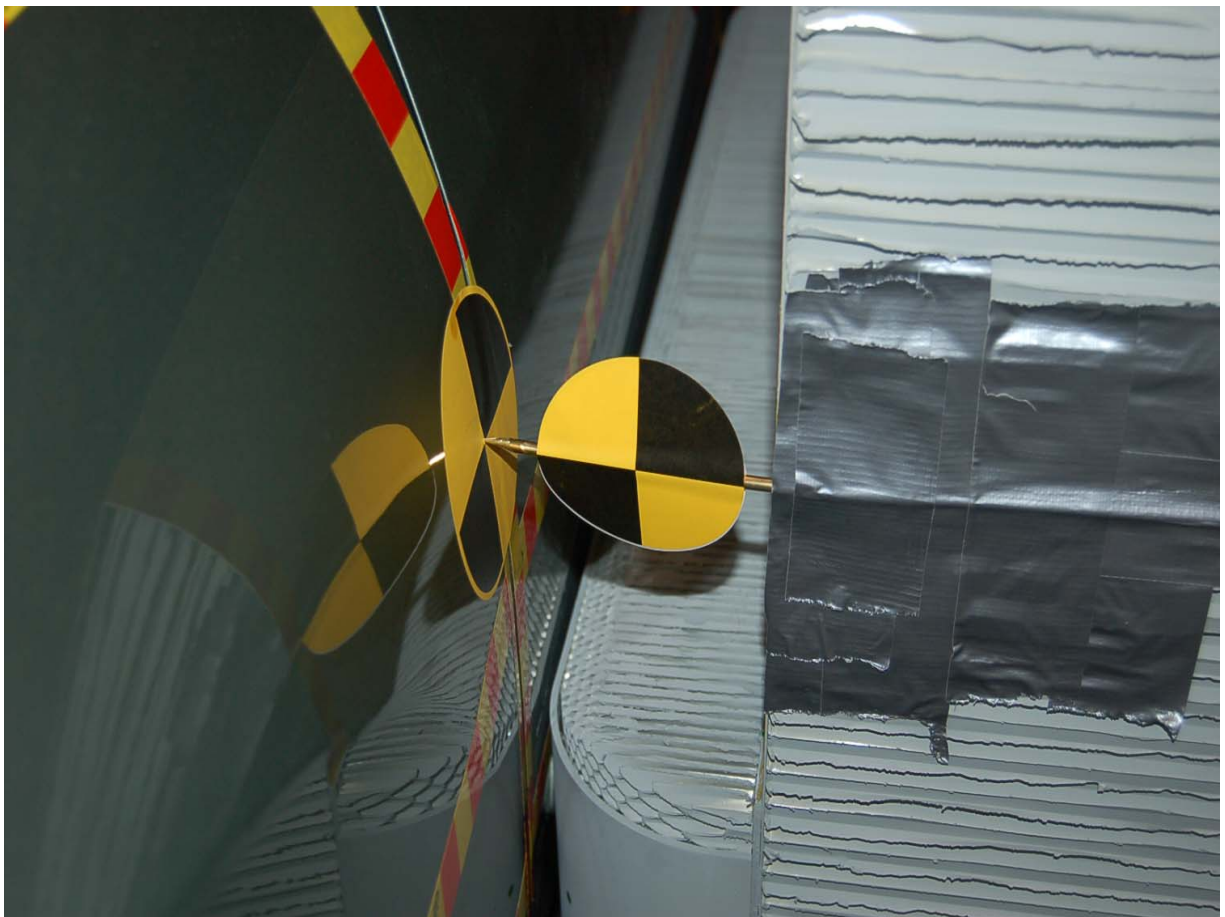
Post-Test Overhead View



Pre-Test Overhead Close-up View



Post-Test Overhead Close-up View



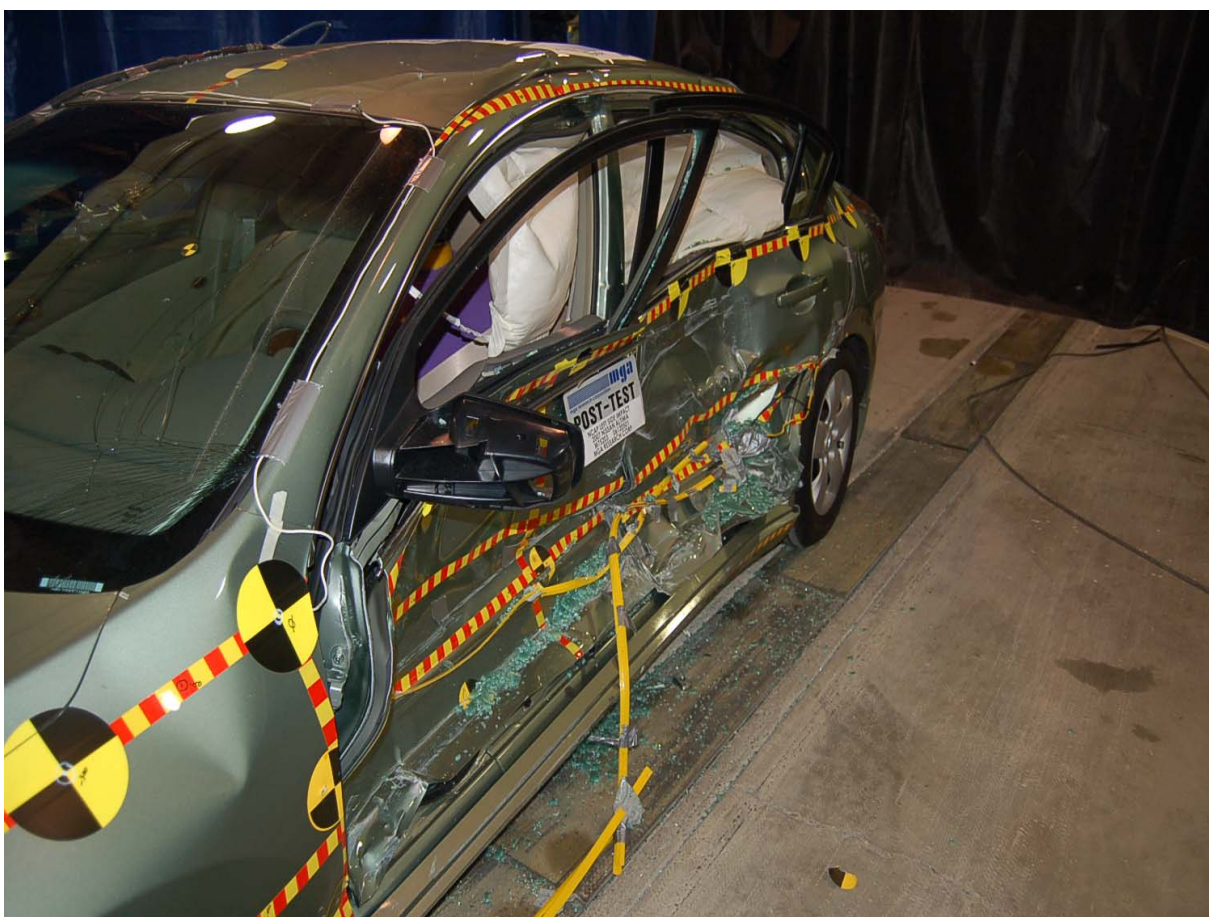
Pre-Test Left Impact Point



Post-Test Left Impact Point



Pre-Test Front $\frac{3}{4}$ View of Left Side Door



Post-Test Front $\frac{3}{4}$ View of Left Side Door



Pre-Test Rear $\frac{3}{4}$ View of Left Side Door



Post-Test Rear $\frac{3}{4}$ View of Left Side Door



Pre-Test Left Side Impact Close-up



Post-Test Left Side Impact Close-up



Pre-Test Driver Dummy (Door Open)



Pre-Test Driver Dummy (Through Window)



Post-Test Driver Dummy (Through Window)



Pre-Test Driver Dummy Right Side View



Post-Test Driver Dummy Right Side View



Pre-Test Passenger Dummy (Door Open)



Pre-Test Passenger Dummy (Through Window)



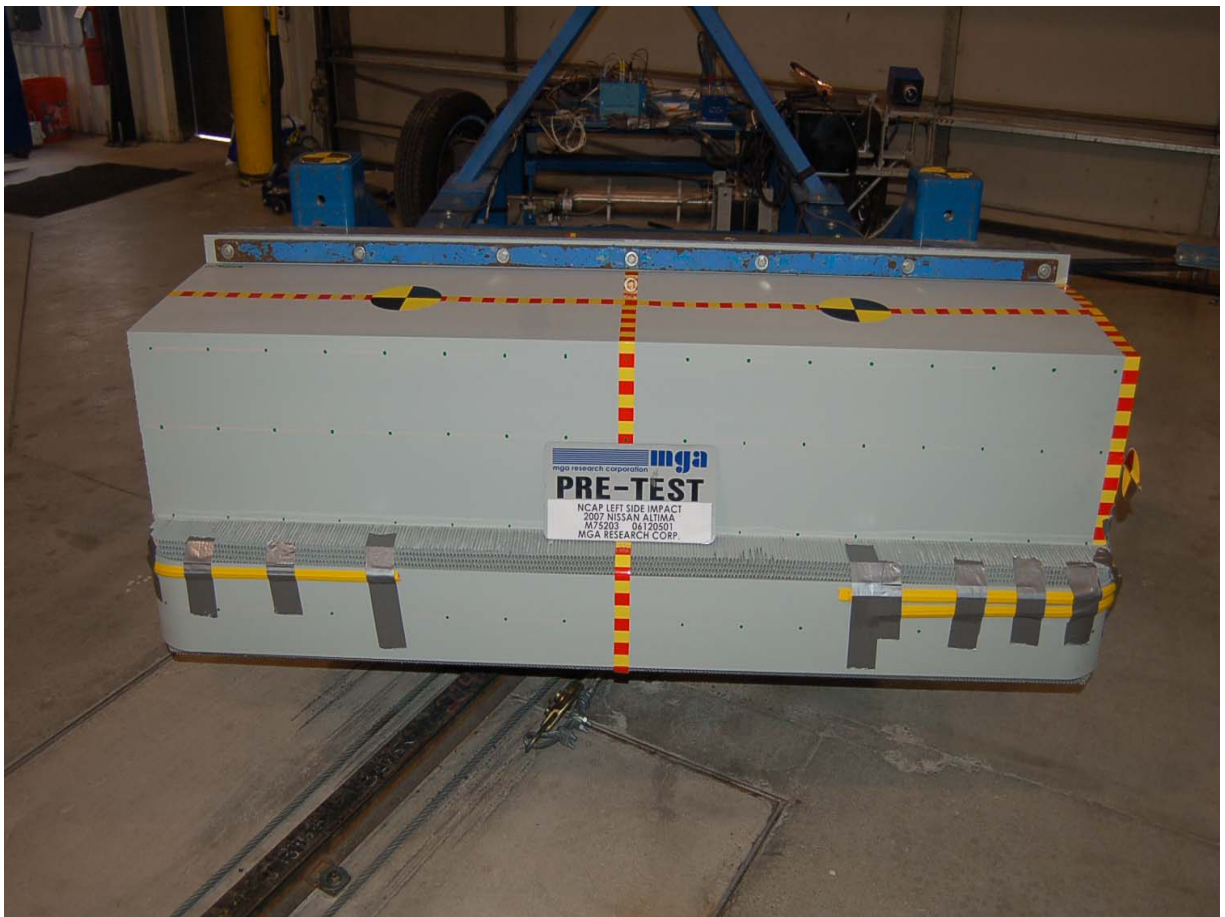
Post-Test Passenger Dummy (Through Window)



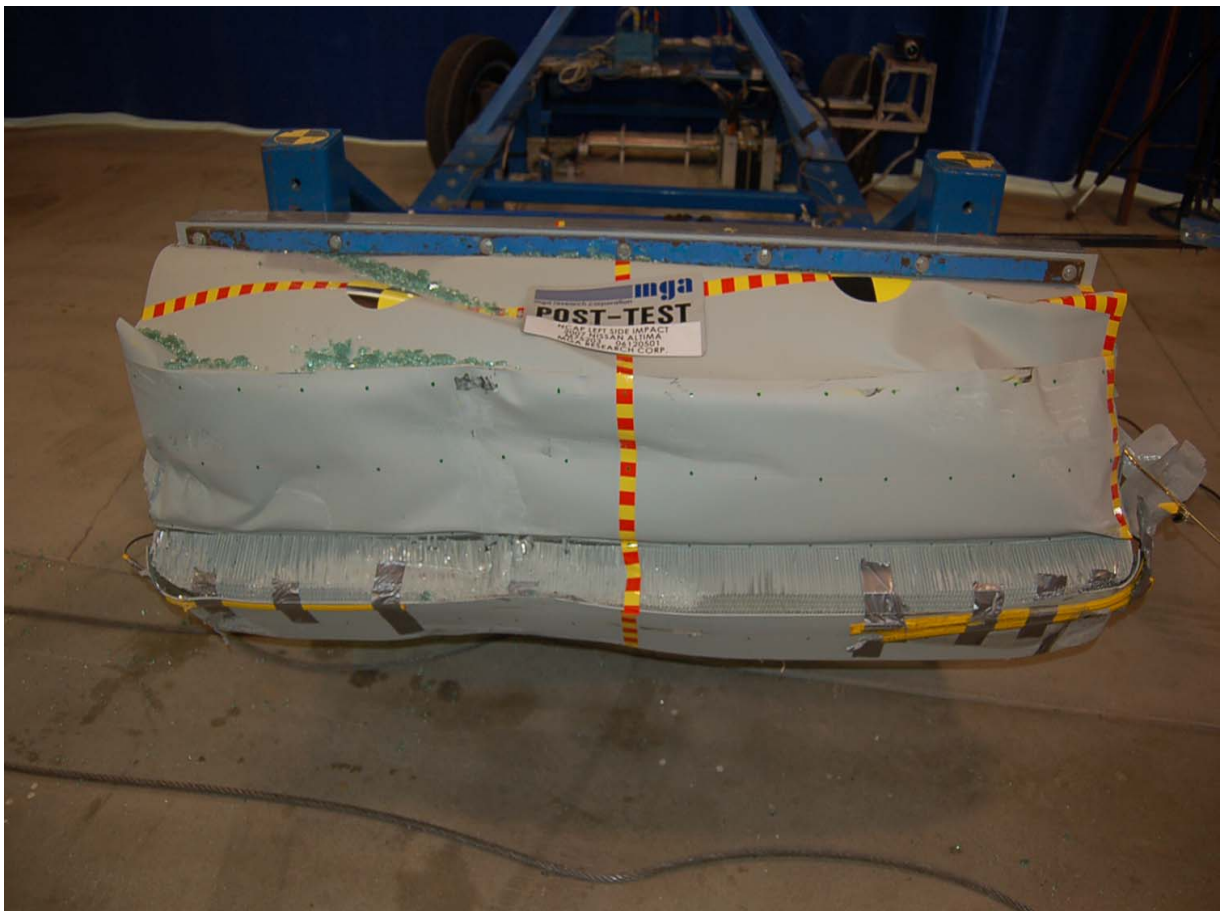
Pre-Test Passenger Dummy Right Side View



Post-Test Passenger Dummy Right Side View



Pre-Test Front View of Deformable Barrier



Post-Test Front View of Deformable Barrier



Pre-Test Top View of Deformable Barrier



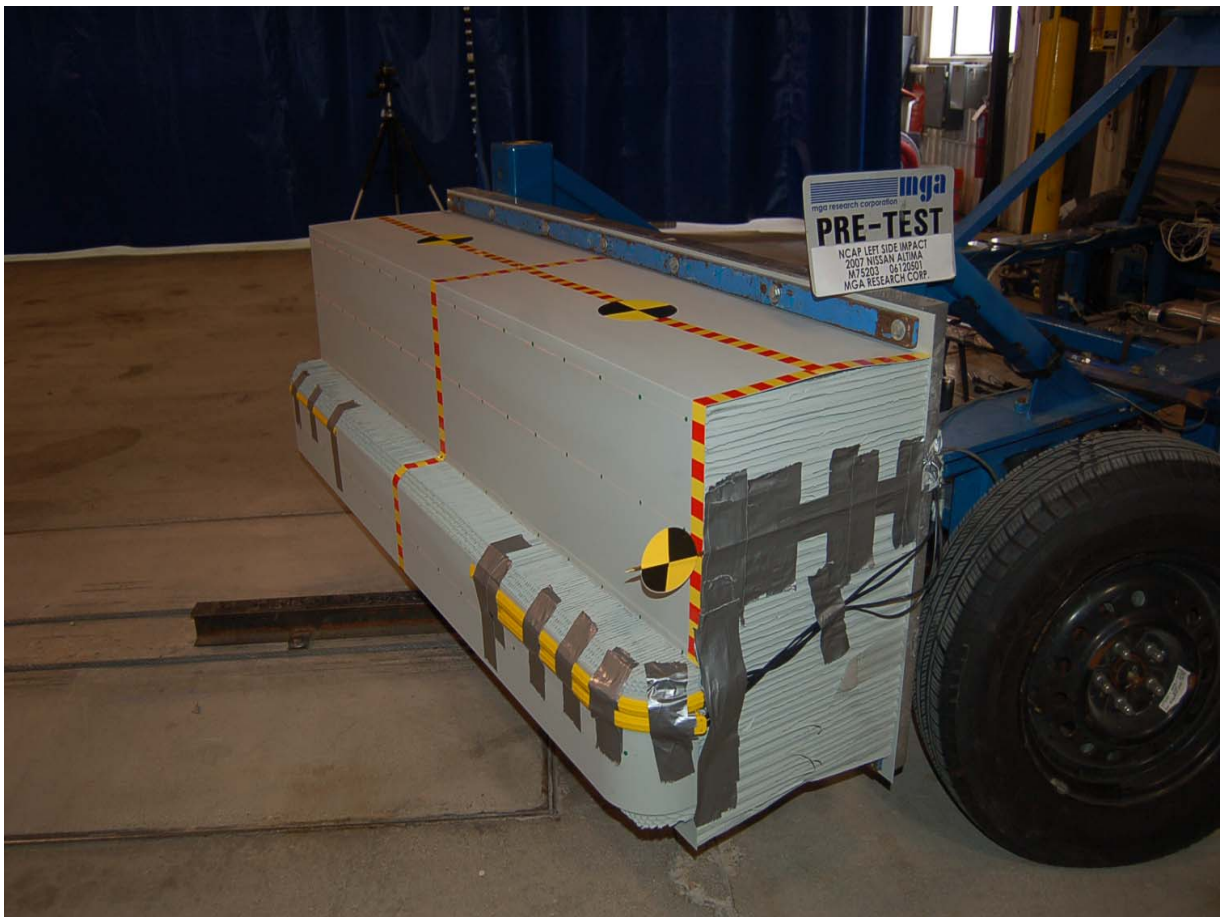
Post-Test Top View of Deformable Barrier



Pre-Test Right Side View of Deformable Barrier



Post-Test Right Side View of Deformable Barrier



Pre-Test Left Side View of Deformable Barrier



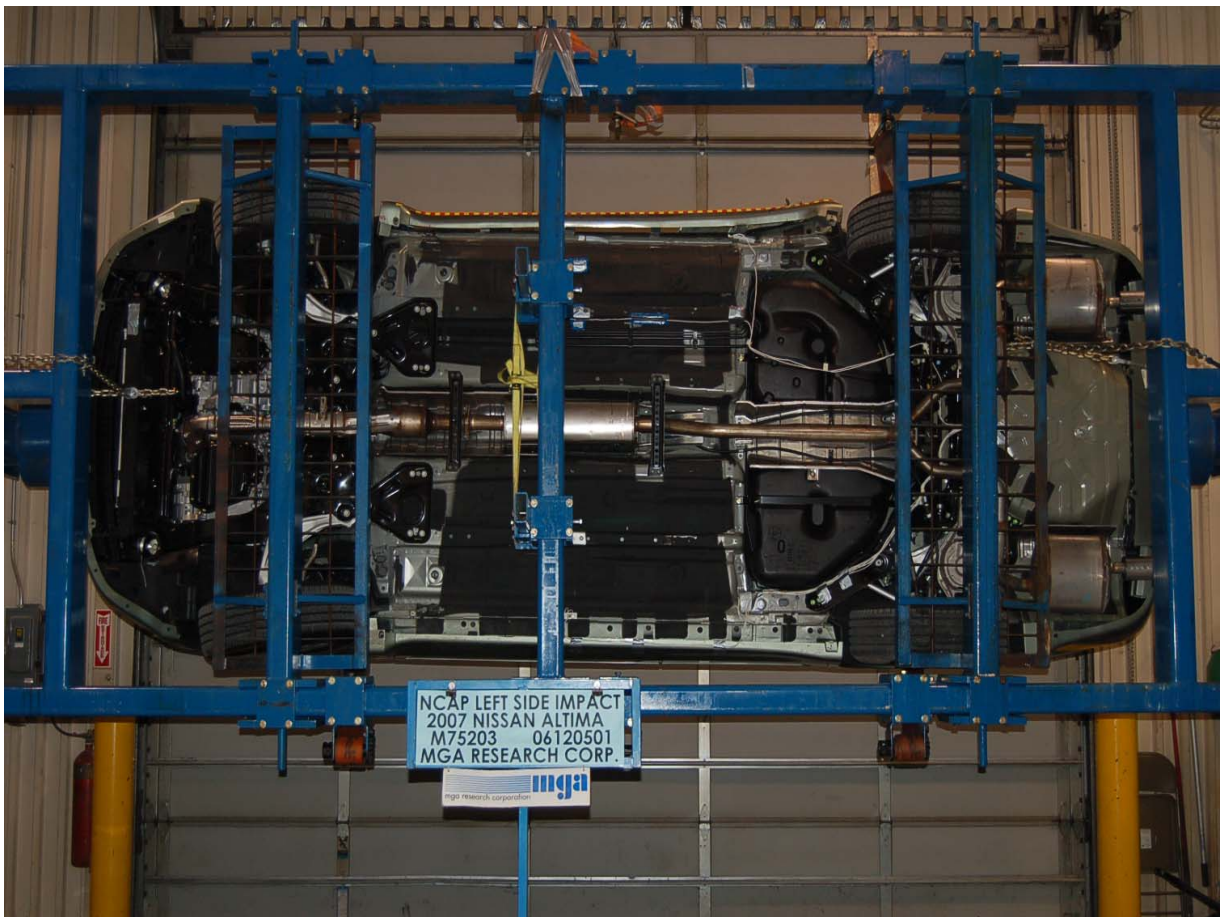
Post-Test Left Side View of Deformable Barrier



Vehicle on Rollover Device (90 Degrees)



Vehicle on Rollover Device (180 Degrees)



Vehicle on Rollover Device (270 Degrees)



Vehicle on Rollover Device (360 Degrees)



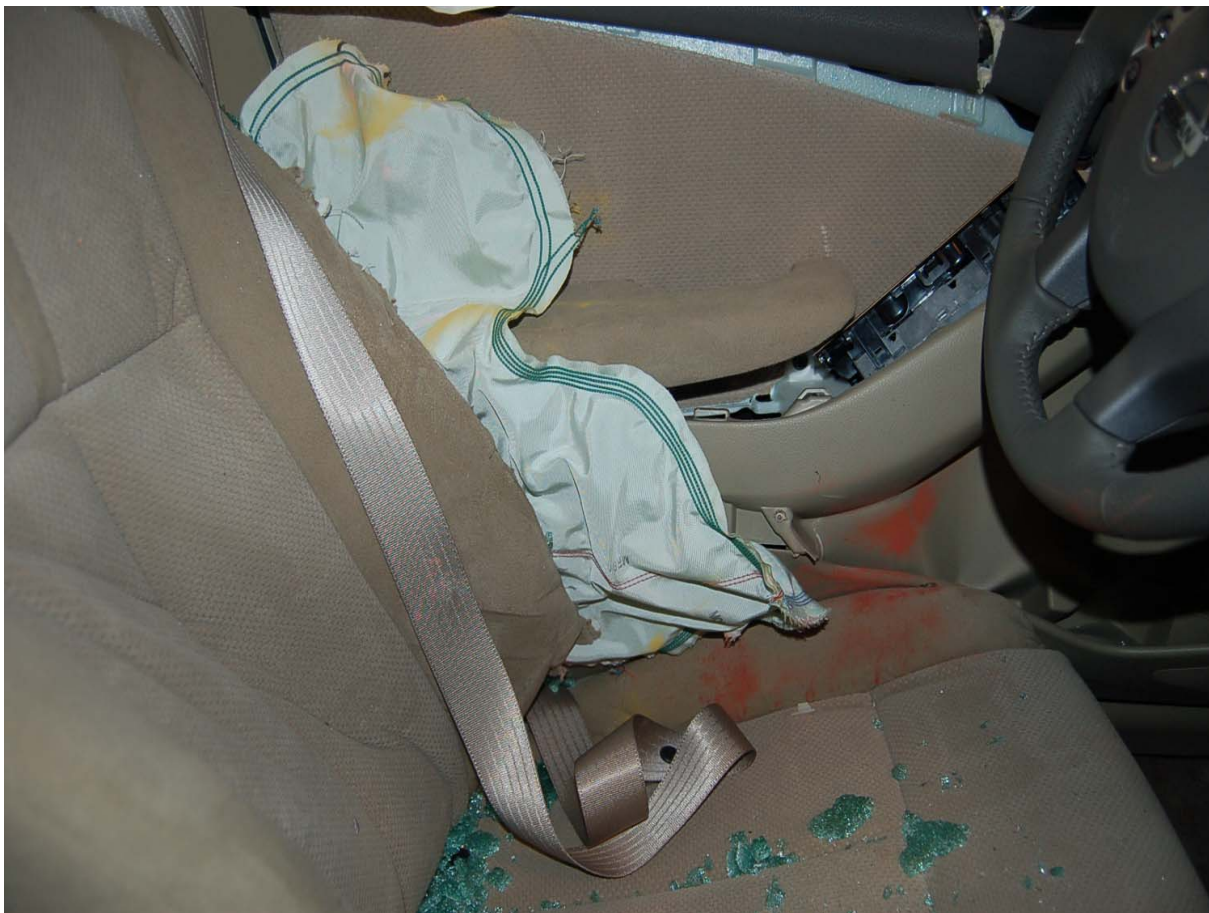
Vehicle Impact



Post-Test Driver Dummy Head Contact (airbag)



Post-Test Driver Dummy Head Contact (headrest)



Post-Test Driver Dummy Torso Contact



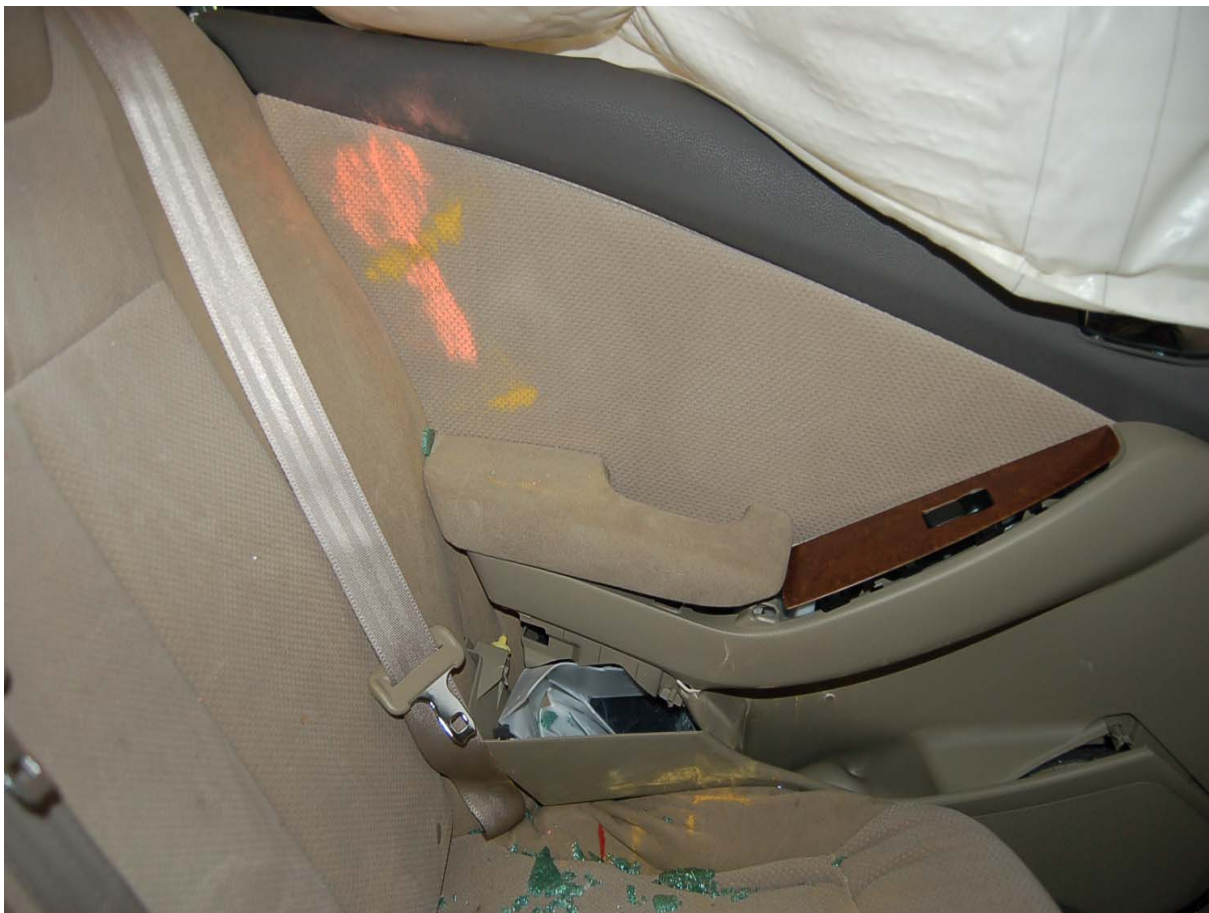
Post-Test Driver Dummy Contact



Post-Test Passenger Dummy Head Contact (airbag)



Post-Test Passenger Dummy Head Contact (headrest)



Post-Test Passenger Dummy Torso Contact



Post-Test Passenger Dummy Contact

APPENDIX B

SID/HIII RESPONSE DATA TRACES

TABLE OF DATA PLOTS

Page No.

List of Data Plots Provided in the Test Report

Figure No. 1.	Driver Upper Rib Y Acceleration vs. Time	B-1
Figure No. 2.	Driver Upper Rib Y Velocity vs. Time	B-1
Figure No. 3.	Driver Lower Rib Y Acceleration vs. Time	B-1
Figure No. 4.	Driver Lower Rib Y Velocity vs. Time	B-1
Figure No. 5.	Driver Lower Spine Y Acceleration vs. Time	B-2
Figure No. 6.	Driver Lower Spine Y Velocity vs. Time	B-2
Figure No. 7.	Driver Pelvis Y Acceleration vs. Time	B-2
Figure No. 8.	Driver Pelvis Y Velocity vs. Time	B-2
Figure No. 9.	Passenger Upper Rib Y Acceleration vs. Time	B-3
Figure No. 10.	Passenger Upper Rib Y Velocity vs. Time	B-3
Figure No. 11.	Passenger Lower Rib Y Acceleration vs. Time	B-3
Figure No. 12.	Passenger Lower Rib Y Velocity vs. Time	B-3
Figure No. 13.	Passenger Lower Spine Y Acceleration vs. Time	B-4
Figure No. 14.	Passenger Lower Spine Y Velocity vs. Time	B-4
Figure No. 15.	Passenger Pelvis Y Acceleration vs. Time	B-4
Figure No. 16.	Passenger Pelvis Y Velocity vs. Time	B-4

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

Driver Head X Primary

Driver Head Y Primary

Driver Head Z Primary

Driver Head X Redundant

Driver Head Y Redundant

Driver Head Z Redundant

Driver Upper Neck Force X

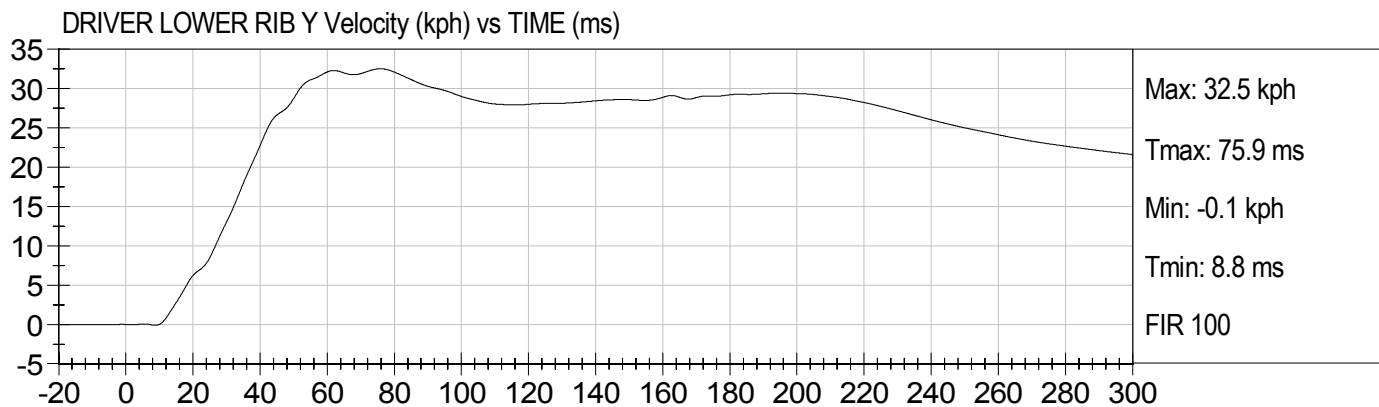
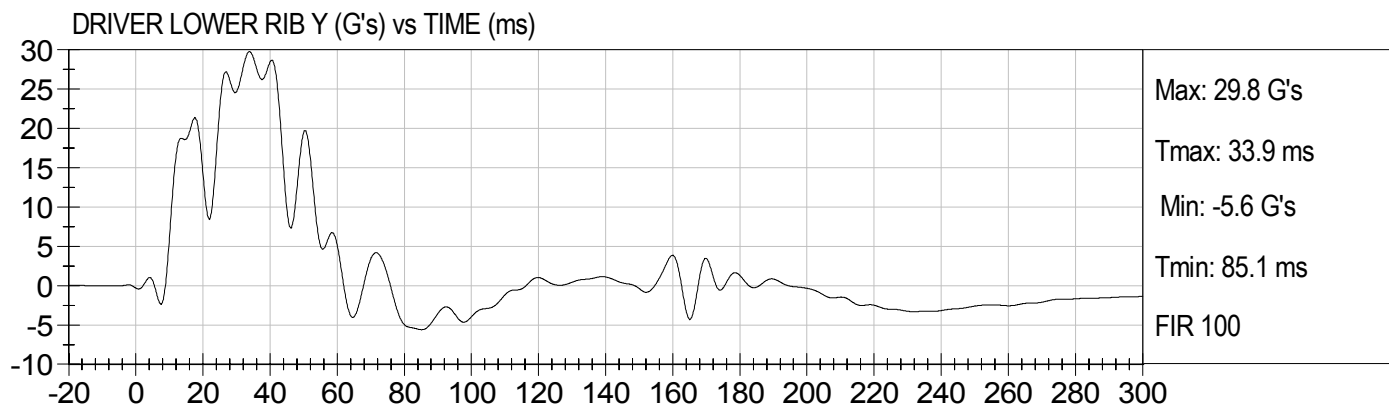
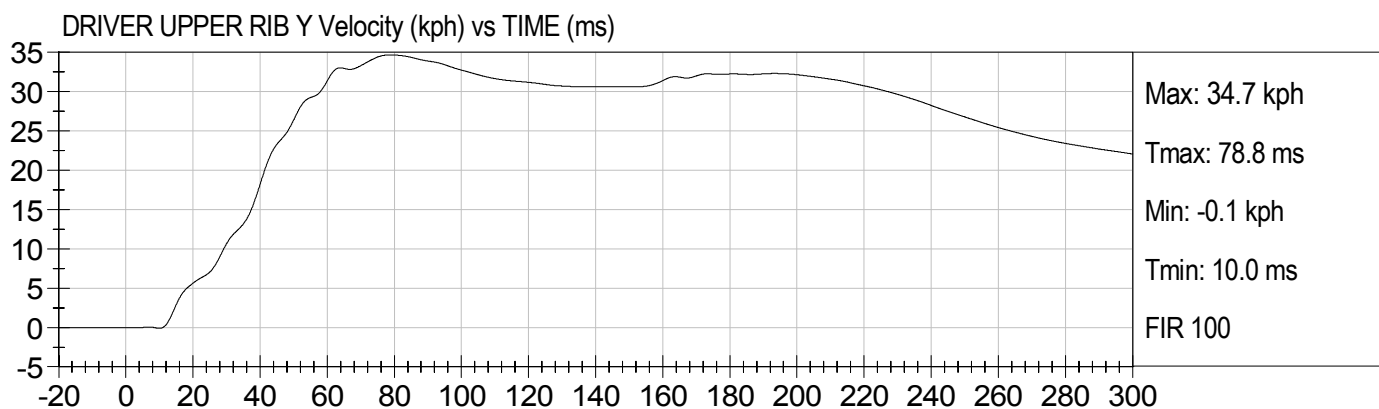
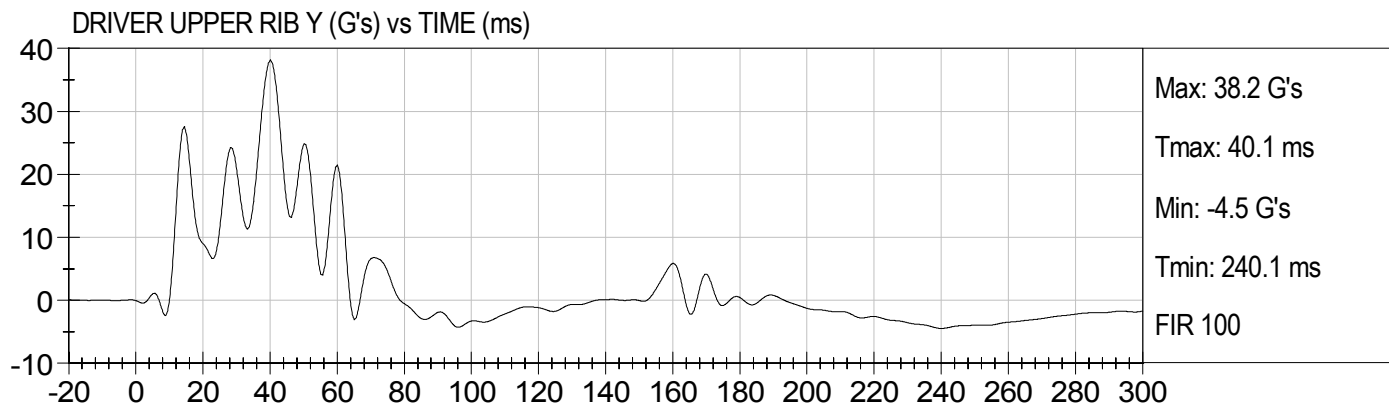
Driver Upper Neck Force Y

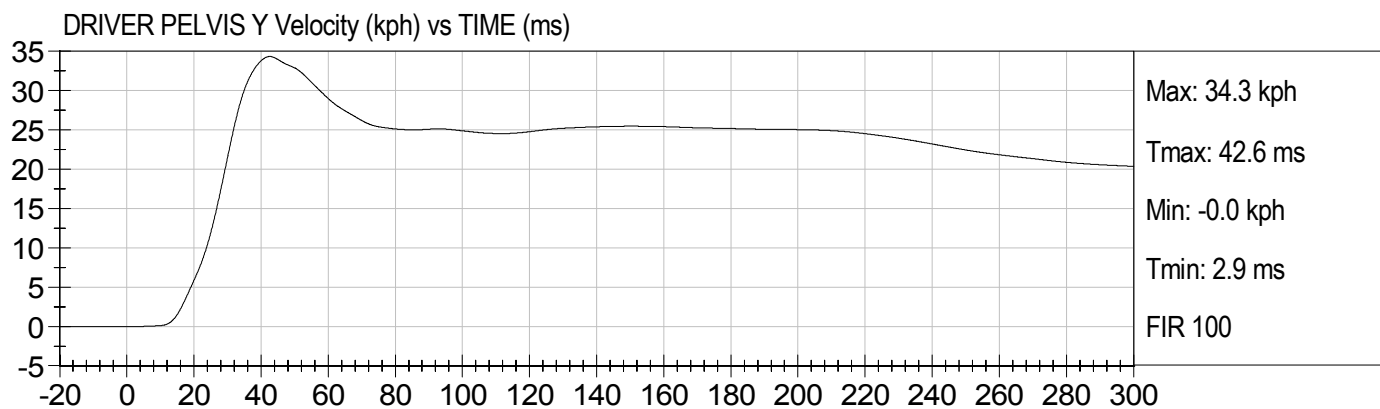
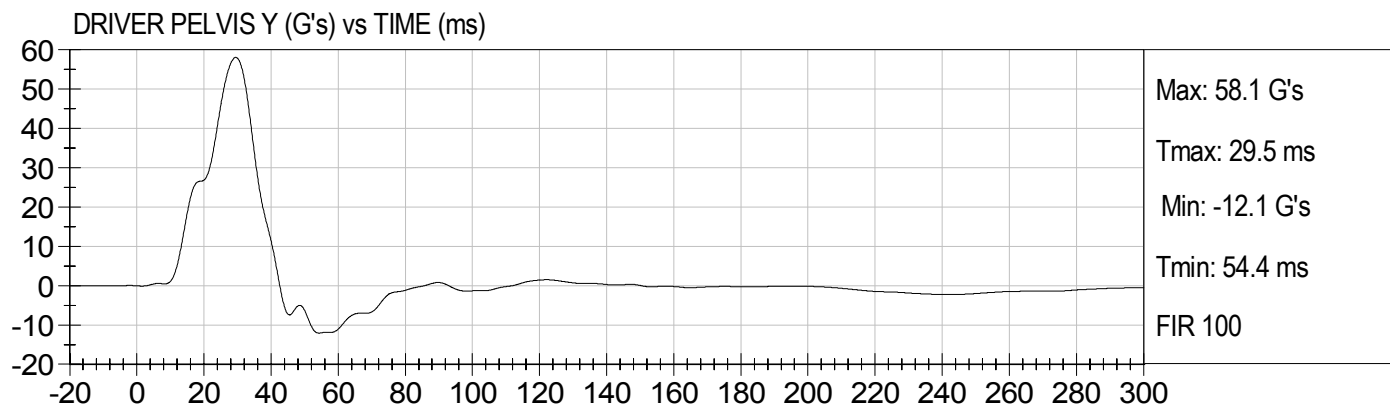
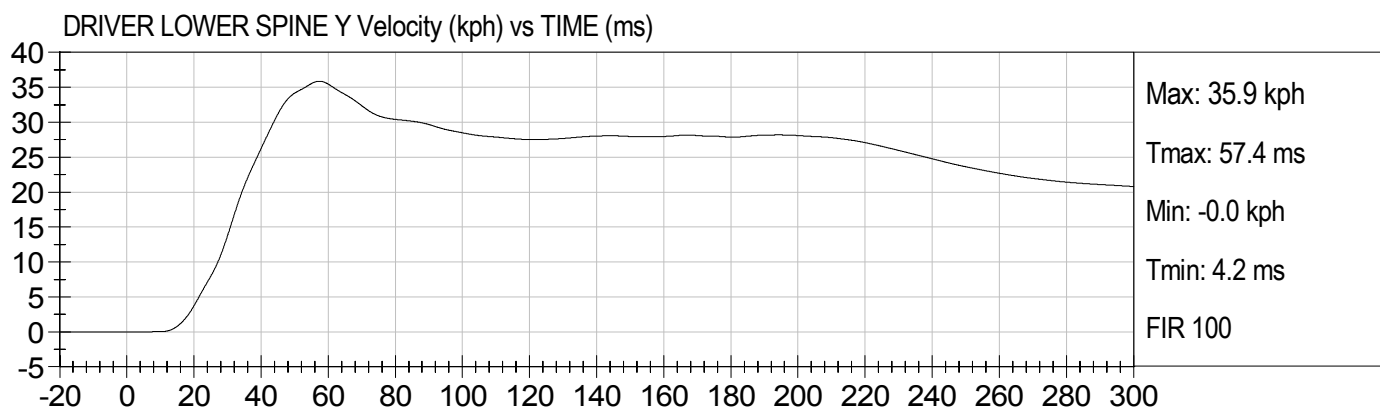
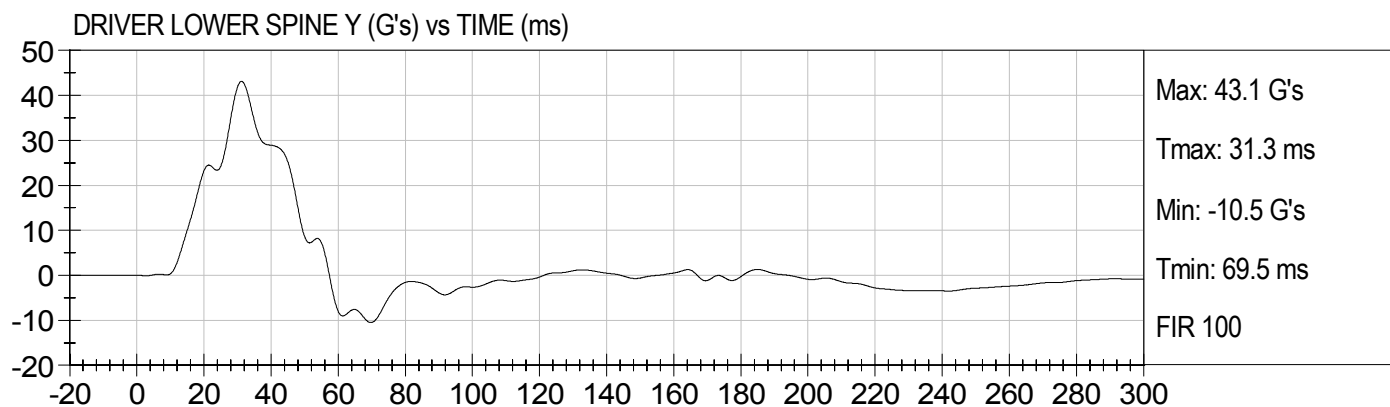
Driver Upper Neck Force Z

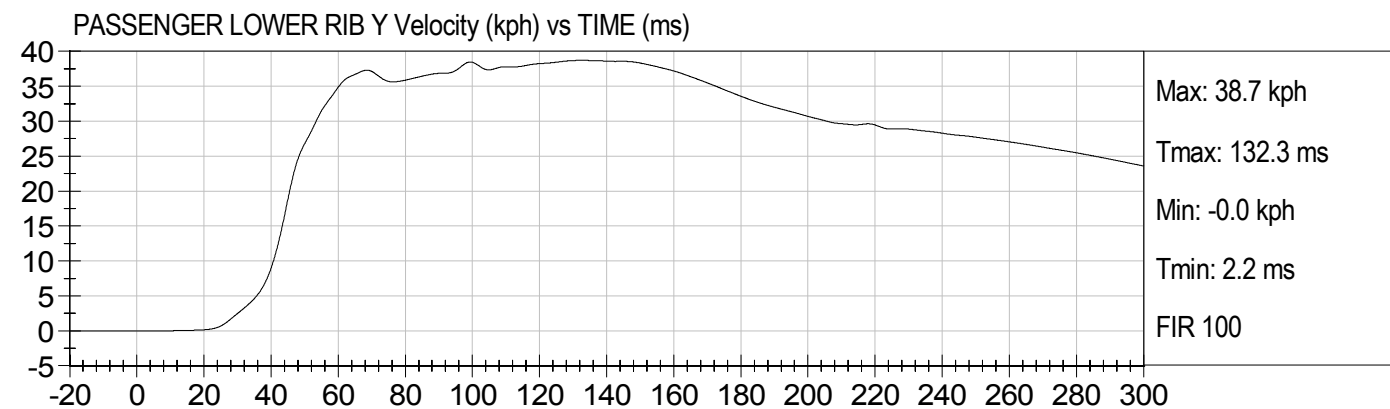
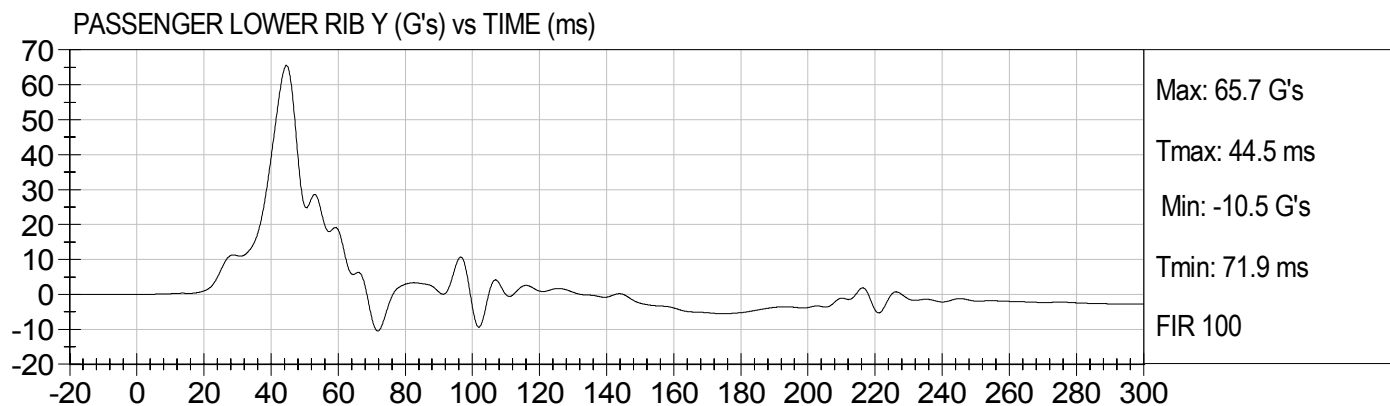
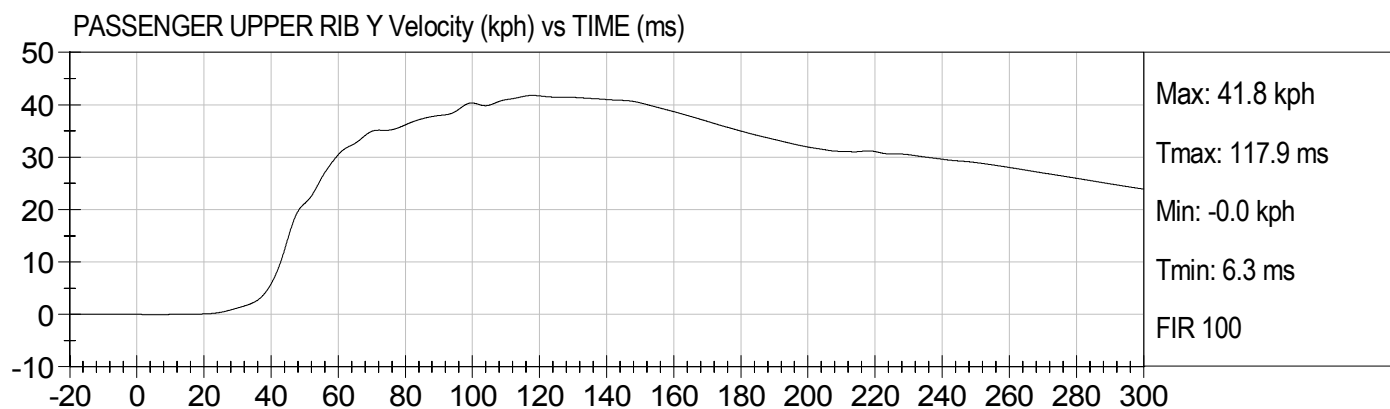
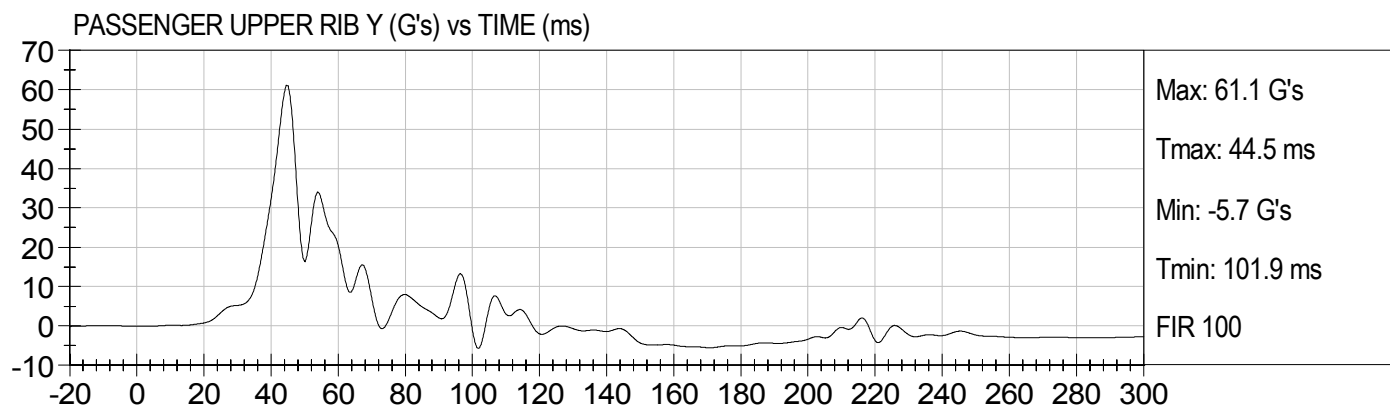
Driver Upper Neck Moment X

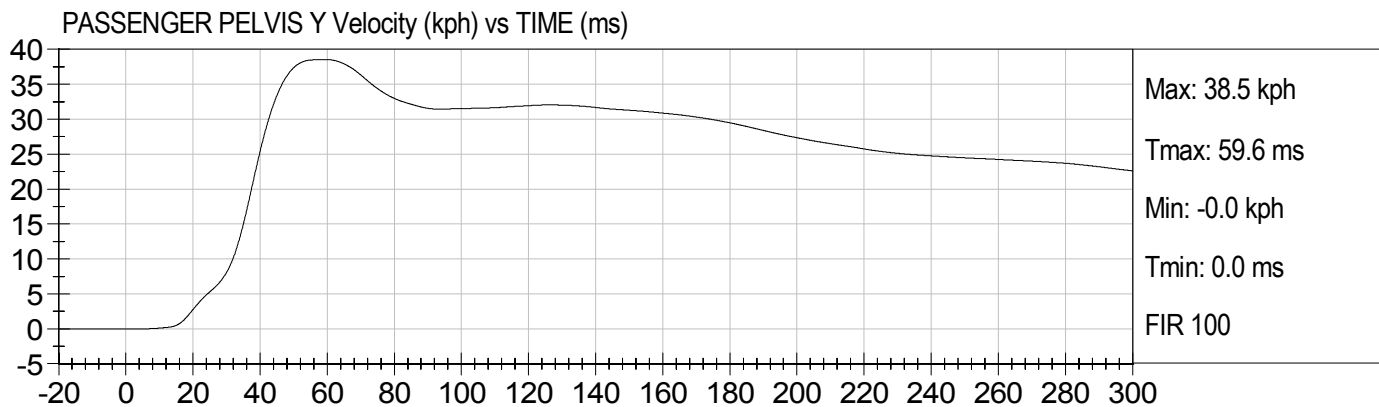
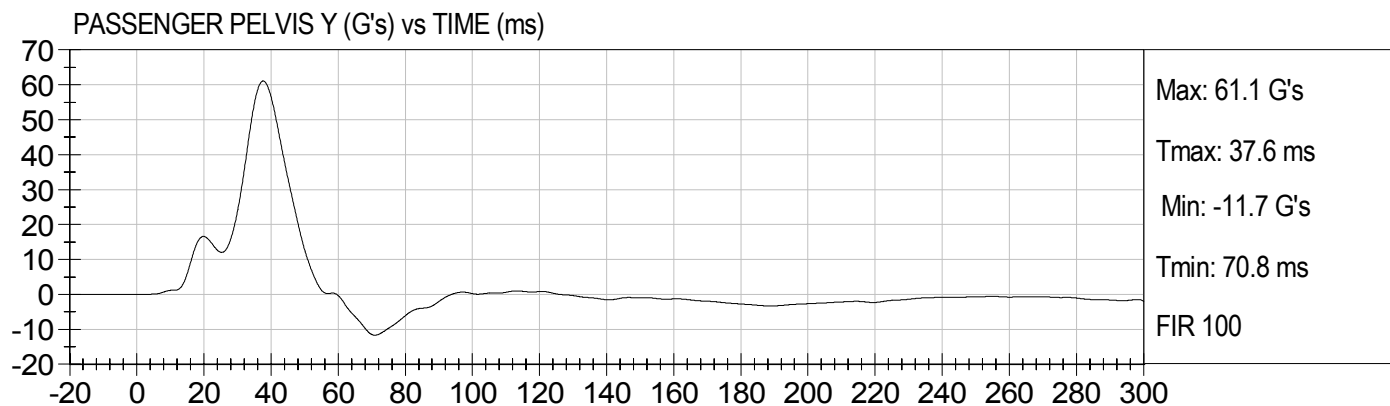
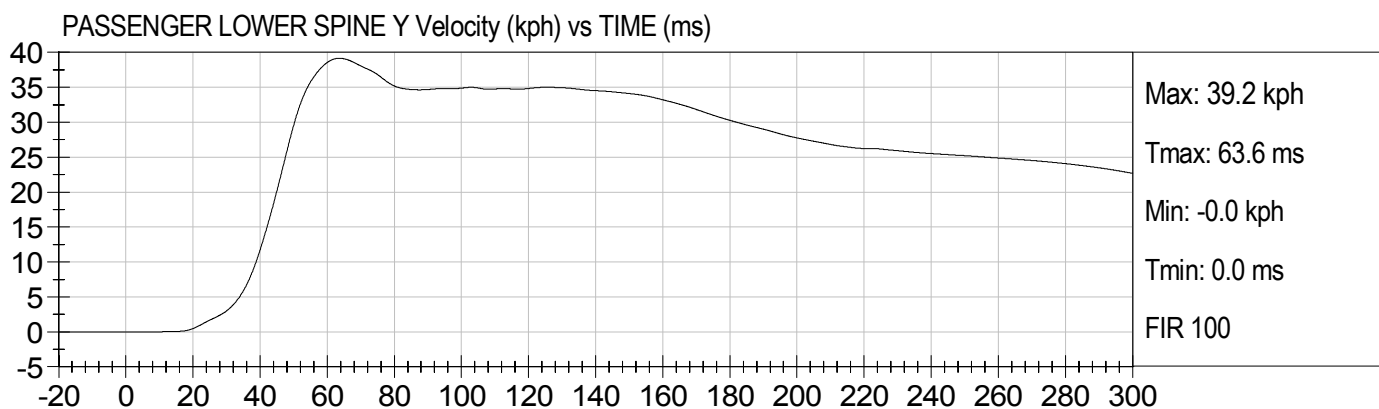
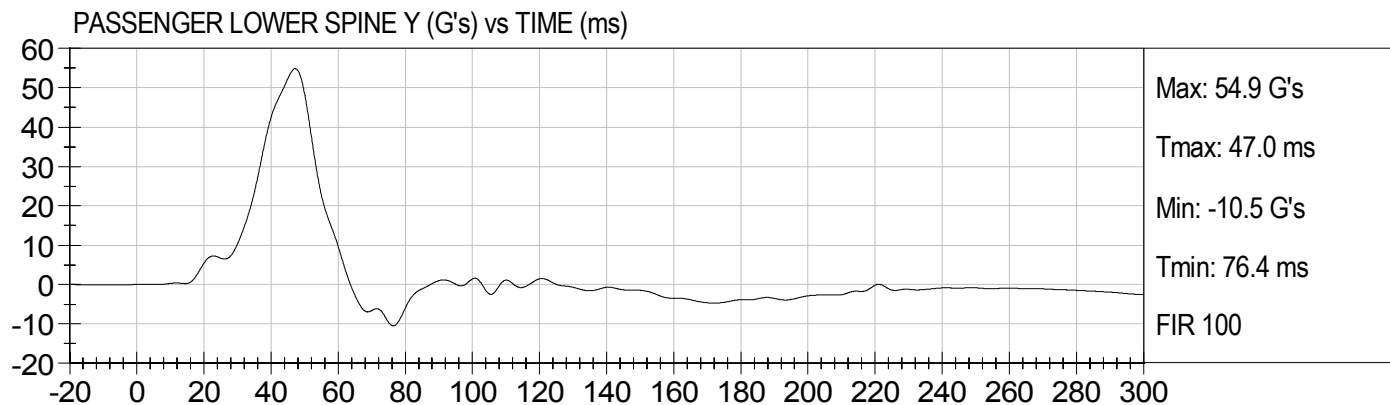
Driver Upper Neck Moment Y
Driver Upper Neck Moment Z
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y
Driver Thorax Contact
Driver Pelvis Contact
Passenger Head X Primary
Passenger Head Y Primary
Passenger Head Z Primary
Passenger Head X Redundant
Passenger Head Y Redundant
Passenger Head Z Redundant
Passenger Upper Neck Force X
Passenger Upper Neck Force Y
Passenger Upper Neck Force Z
Passenger Upper Neck Moment X
Passenger Upper Neck Moment Y
Passenger Upper Neck Moment Z
Passenger Upper Rib Redundant Y
Passenger Lower Rib Redundant Y
Passenger Lower Spine Redundant Y
Passenger Pelvis Redundant Y
Passenger Thorax Contact
Passenger Pelvis Contact
Vehicle Right Sill at Front Seat X
Vehicle Right Sill at Front Seat Y
Vehicle Right Sill at Front Seat Z
Vehicle Right Sill at Rear Seat X
Vehicle Right Sill at Rear Seat Y
Vehicle Right Sill at Rear Seat Z

Vehicle Rear Floor Above Axle X
Vehicle Rear Floor Above Axle Y
Vehicle Rear Floor Above Axle Z
Vehicle Left Sill at Rear Door Y
Vehicle Left Sill at Front Door Y
Vehicle Right Rear Occupant Compartment
Vehicle B-Post Lower Y
Vehicle B-Post Middle Y
Vehicle A-Post Lower Y
Vehicle A-Post Middle Y
Vehicle Left Front Seat Track
Vehicle CG X
Vehicle CG Y
Vehicle CG Z
MDB CG X
MDB CG Y
MDB CG Z
MDB Rear X
MDB Rear Y
MDB Rear Z
MDB Left Bumper Contact
MDB Right Bumper Contact









APPENDIX C
DUMMY CALIBRATION DATA

CERTIFICATION DATA

Dummy Serial Number: 272

Calibration Test Results Summary

Dummy Serial Number: 272

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID/HIII Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 272

Test I.D: D06329

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	907	Pass
RH - Rib Height	mm	501 - 521	520	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	230	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	525	Pass
SW - Knee Pivot to Floor	mm	490 - 505	495	Pass
HW - Hip Width	mm	356 - 391	358	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

11/16/2006

Test Date

SID/HIII Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 272

Test I.D: D063291

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Peak Resultant Acceleration	G's	120 to 150	138	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-12.7	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

11/16/2006
Test Date



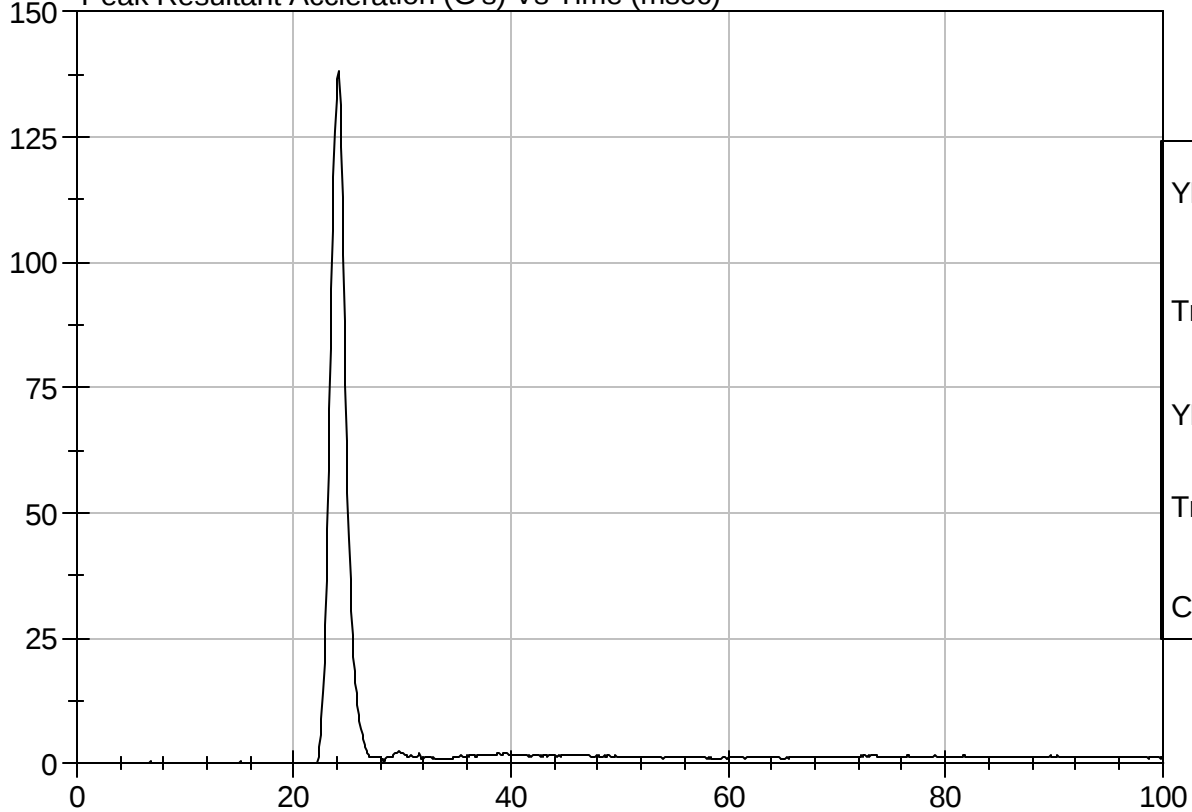
Test Description: Head Drop

Test Date: 11/16/2006

Component: D063291

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



YMax: 138.3 G

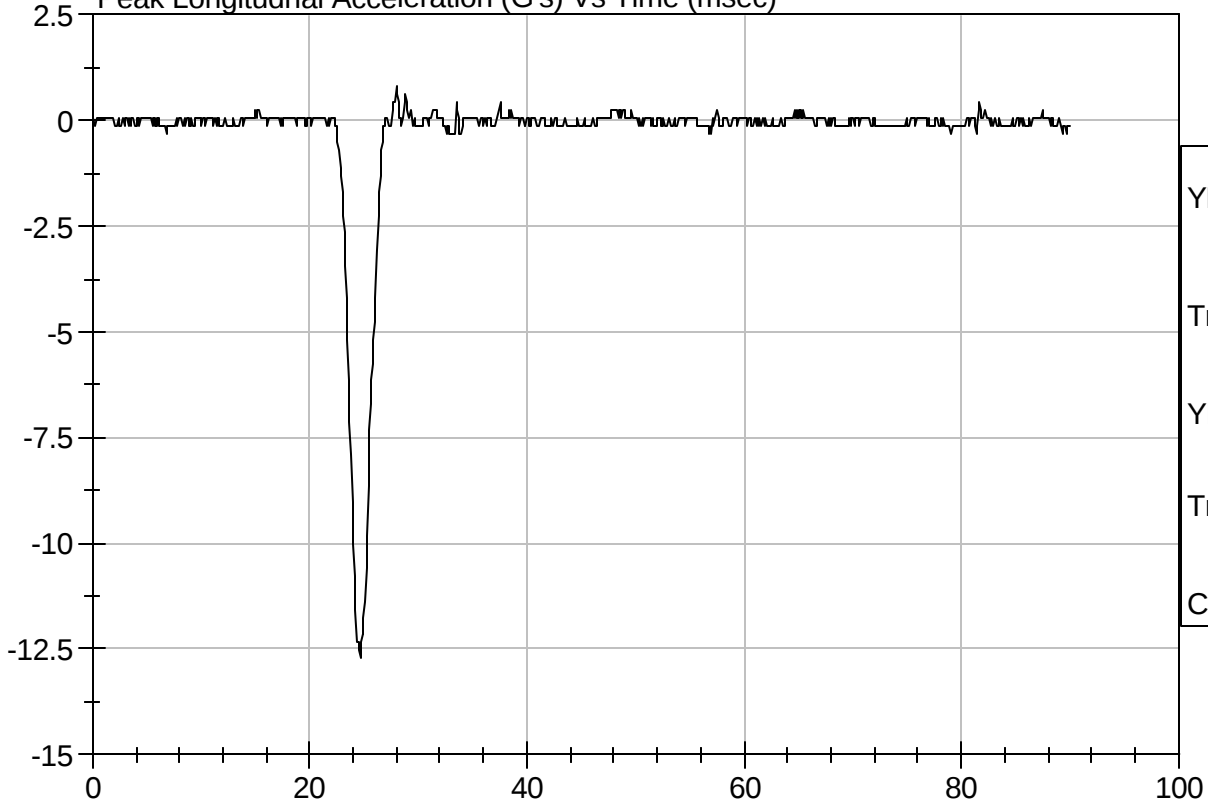
Tmax: 24.1 ms

YMin: 0.1 G

Tmin: -0.3 ms

CFC 1000

Peak Longitudnal Acceleration (G's) Vs Time (msec)



YMax: 0.8 G

Tmax: 28.0 ms

YMin: -12.7 G

Tmin: 24.7 ms

CFC 1000

SID/HIII Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 272

Test I.D: D063292

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	26	Pass
Probe Velocity	m/s	4.22 - 4.31	4.29	Pass
Upper Rib	G's	37 - 46	42	Pass
Lower Rib	G's	37 - 46	40	Pass
Lower Spine	G's	15 - 22	19	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

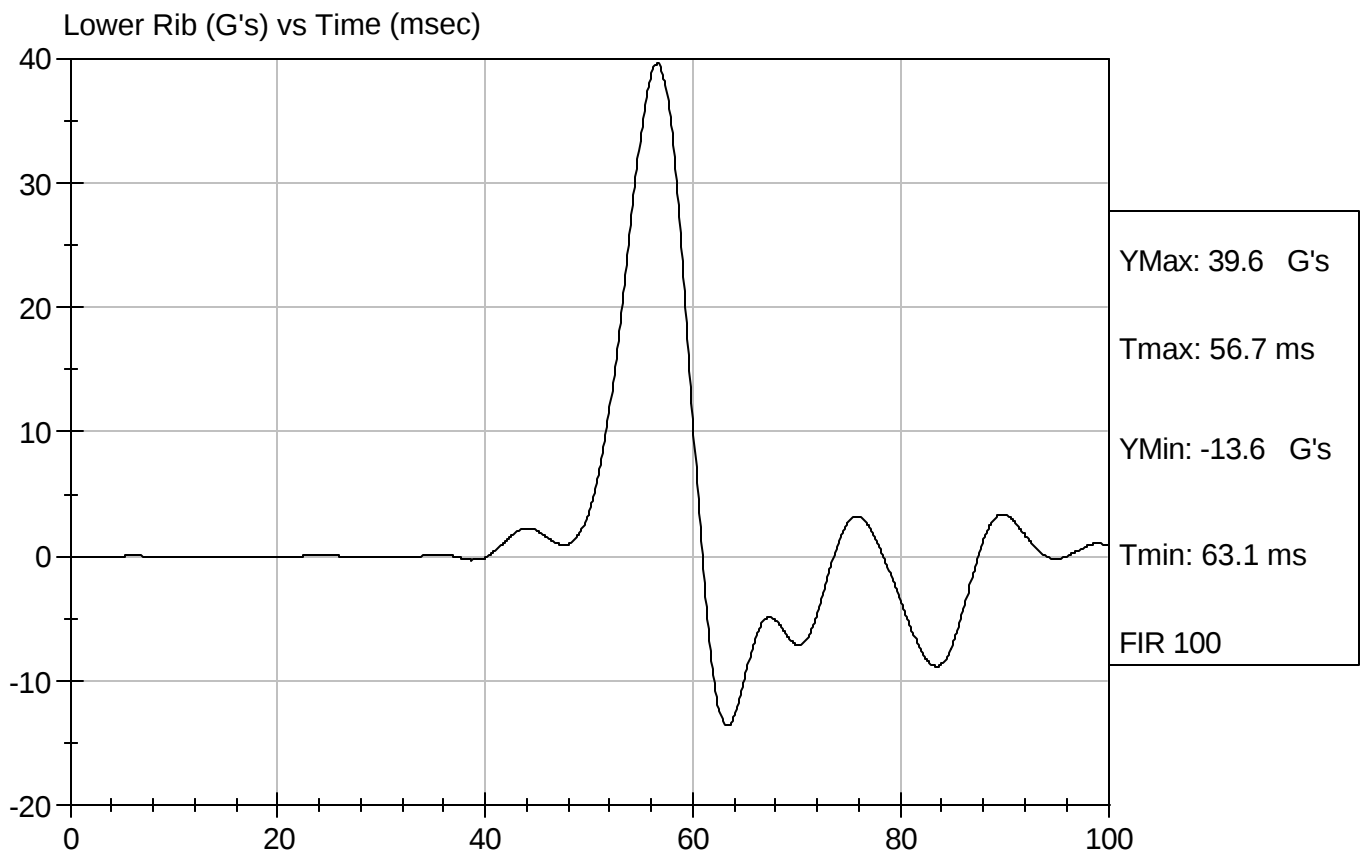
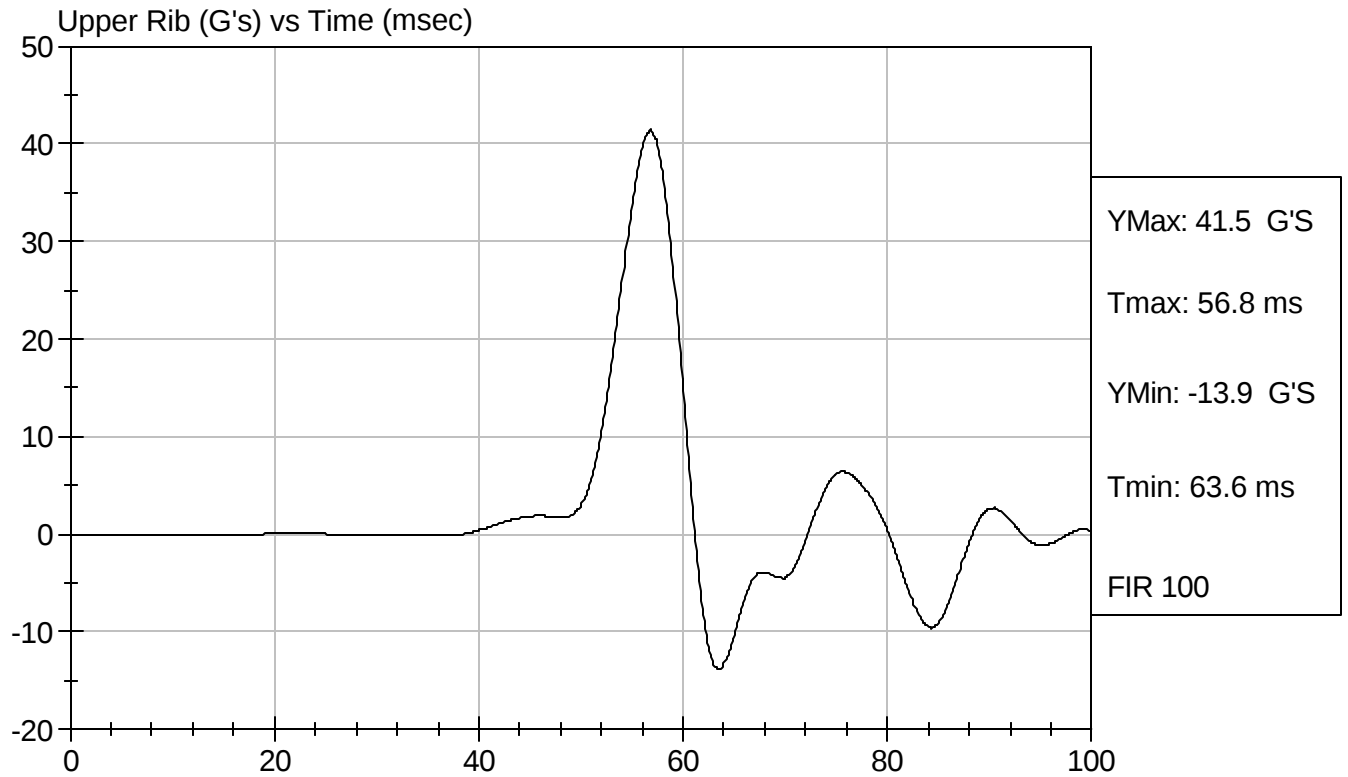
David Winkelbauer
Approved By

11/16/2006
Test Date



Test Desc: Thorax Impact
Component ID: D063292

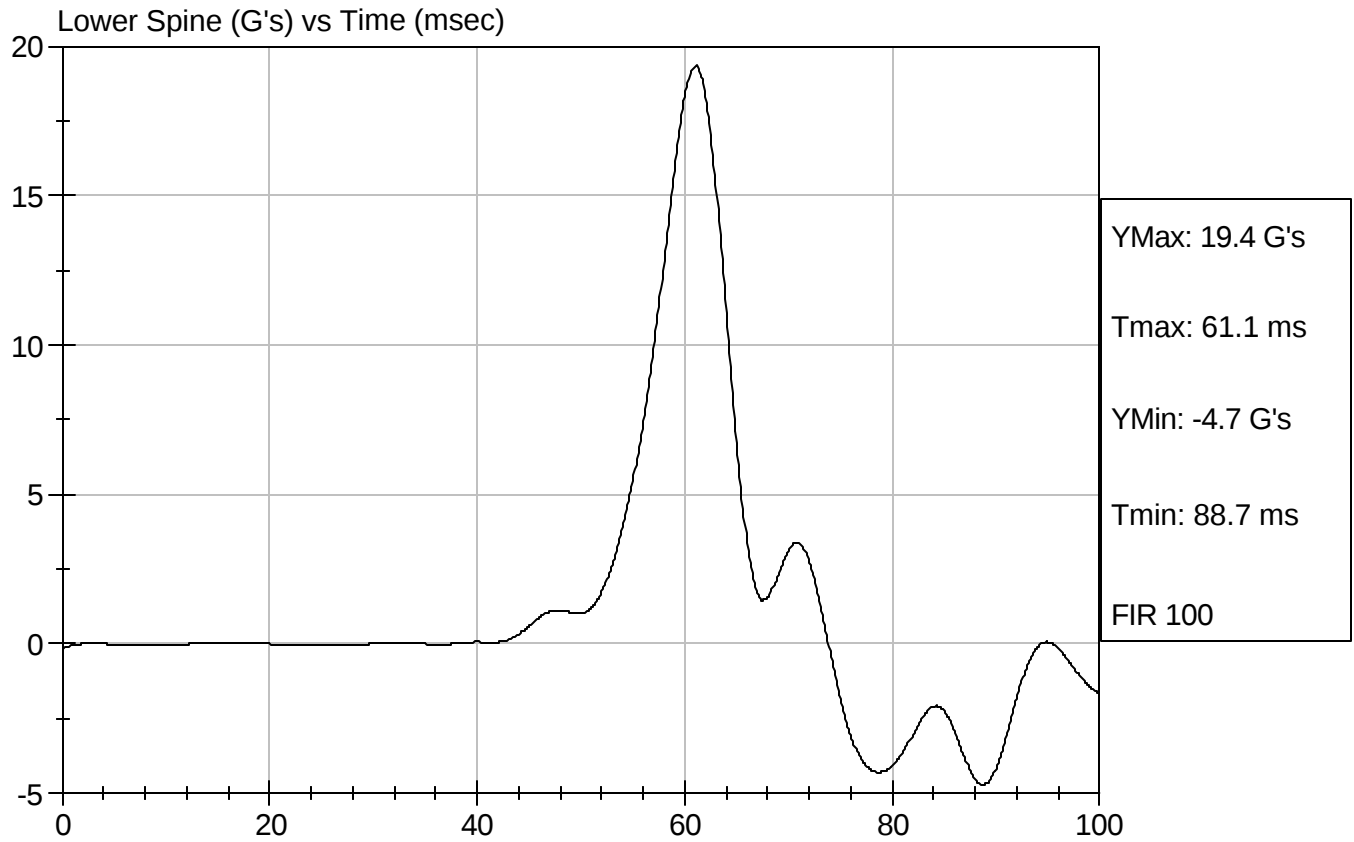
Test Date: 11/16/2006
Speed: 14.08 ft/sec, 4.29 m/sec





Test Desc: Thorax Impact
Component ID: D063292

Test Date: 11/16/2006
Speed: 14.08 ft/sec, 4.29 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 272

Test I.D: D063293

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Probe Velocity	m/s	4.27 - 4.33	4.27	Pass
Pelvis Acceleration	G's	40 - 60	40	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

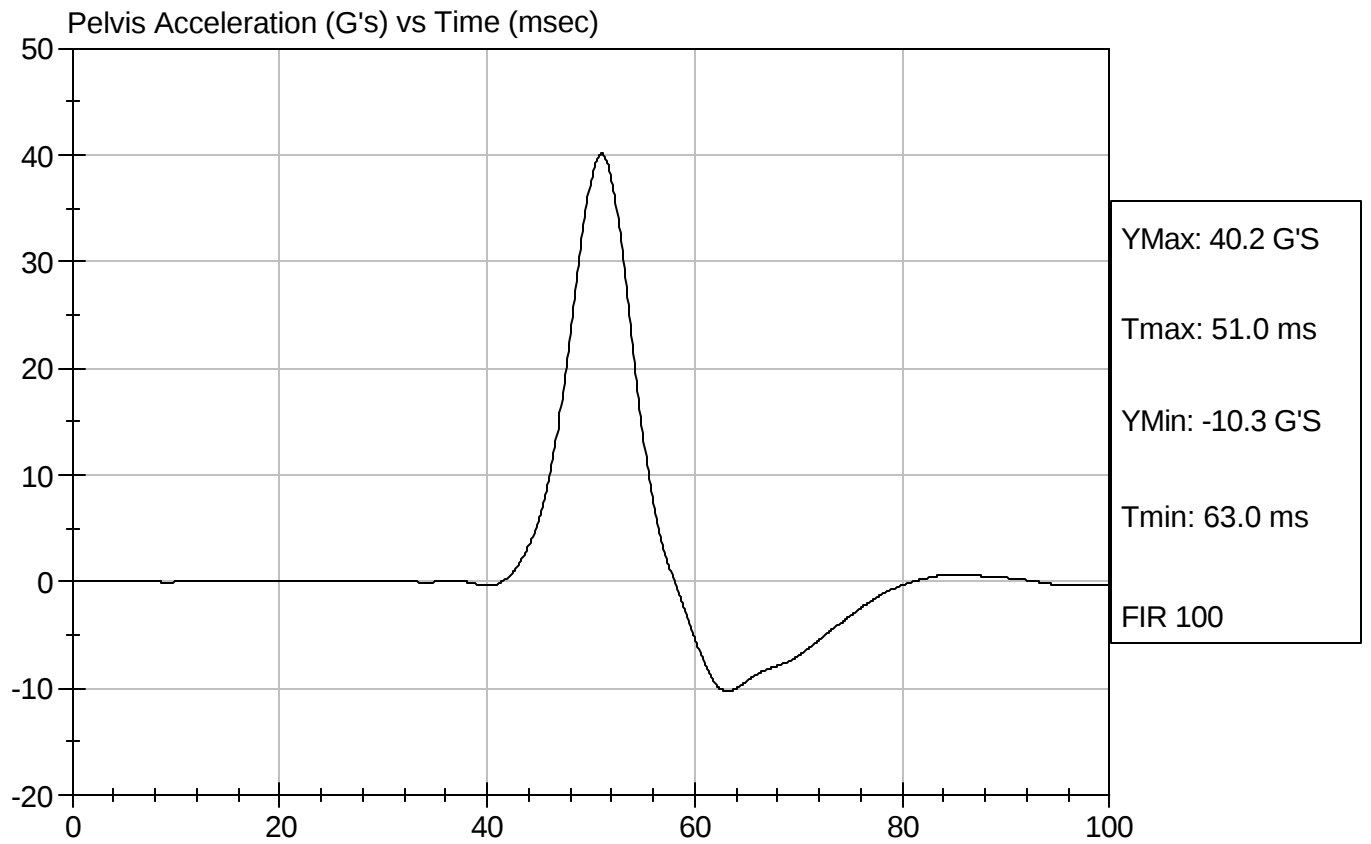
David Winkelbauer
Approved By

11/16/2006
Test Date



Test Desc: Pelvis Impact
Component ID: D063293

Test Date: 11/16/2006
Speed: 14.02 ft/sec, 4.27 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 272

Test I.D: D063294

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Force At 12.7 mm	N	104 -162	151	Pass
Force At 19 mm	N	163 - 222	211	Pass
Force At 25.4 mm	N	222 - 280	276	Pass
Force At 33 mm	N	325 - 391	391	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

11/16/2006

Test Date

David Winkelbauer
Approved By

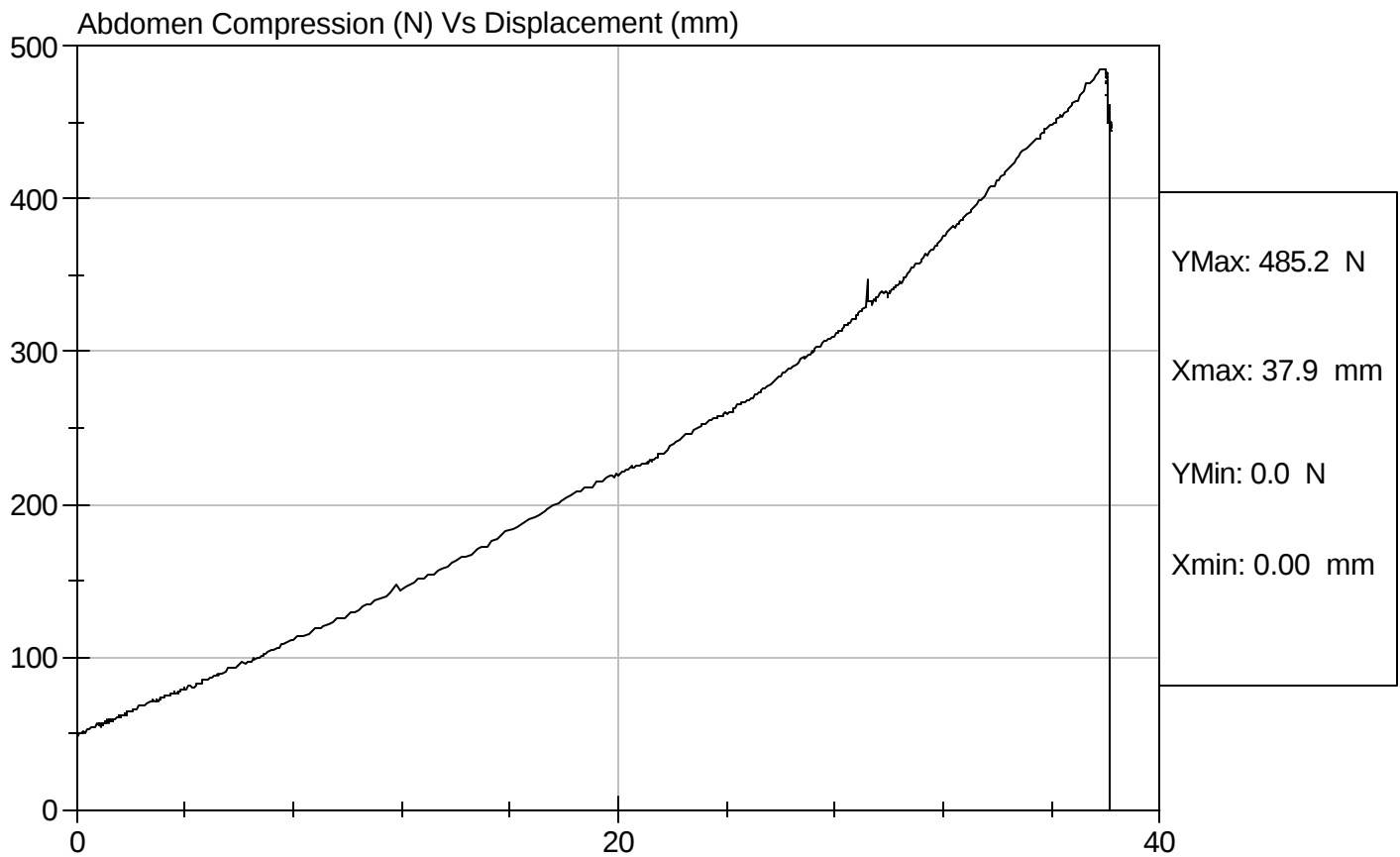


Test Description: Abdomen Compression

Test Date: 11/16/2006

Component: D063294

Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 272

Test I.D: D063295

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	128.5	Pass
Force At 30 deg	N	151.2 - 204.6	174.5	Pass
Force At 40 deg	N	204.6 - 258.0	209.0	Pass
Return Angle	Deg	12 Maximum	4	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

11/16/2006
Test Date

David Winkelbauer
Approved By

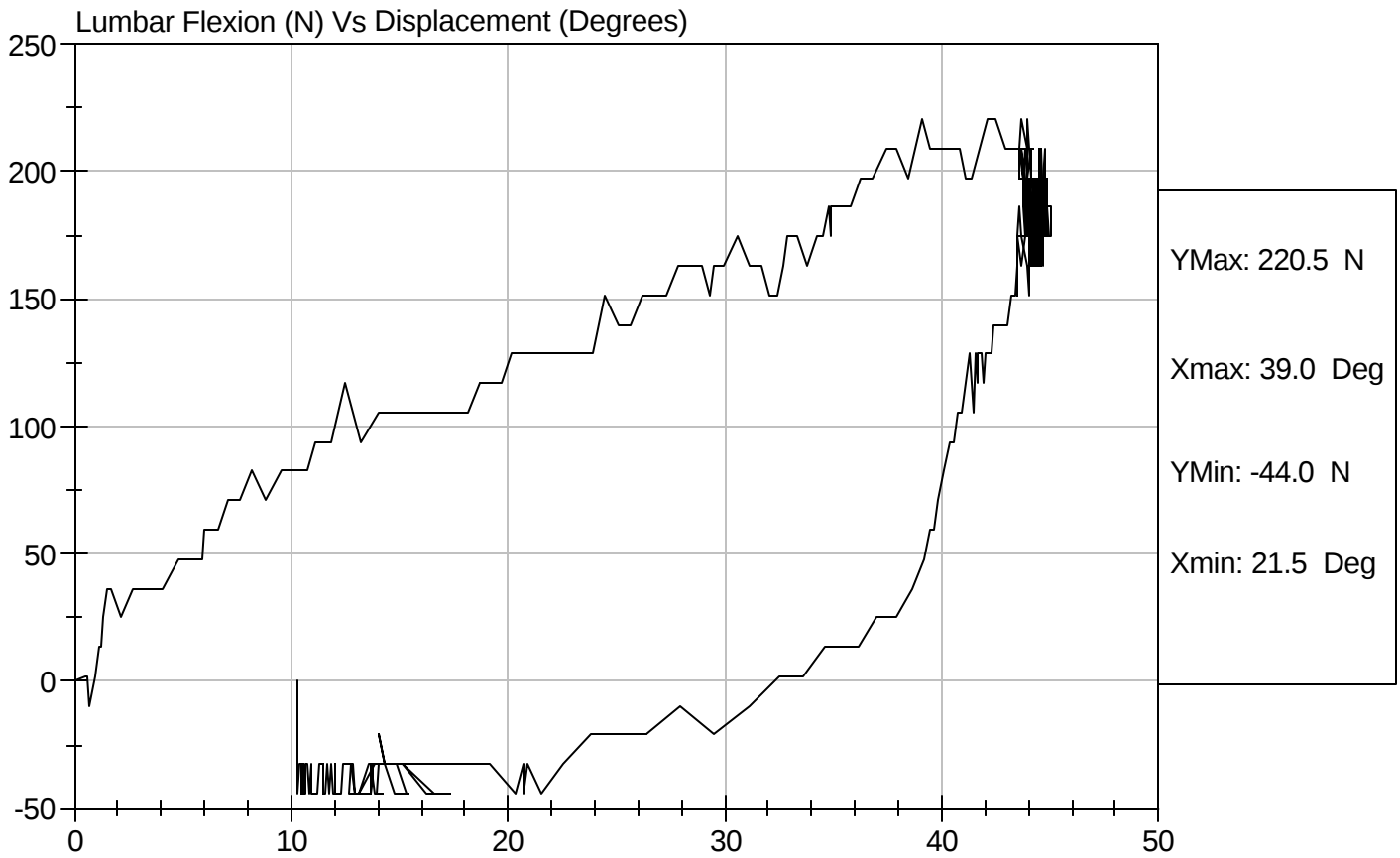


Test Description: Lumbar Flexion

Test Date: 11/16/2006

Component: D063295

Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 272

Test I.D: D063299

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	24	Pass
Impact Velocity		m/s	6.89 to 7.13	7.08	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.35	Pass
	20 msec	m/s	4.12 to 5.10	4.80	Pass
	30 msec	m/s	5.73 to 7.01	6.69	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.08	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	74	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	59	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	78	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	58	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	12	Pass


 Laboratory Technician

11/16/2006

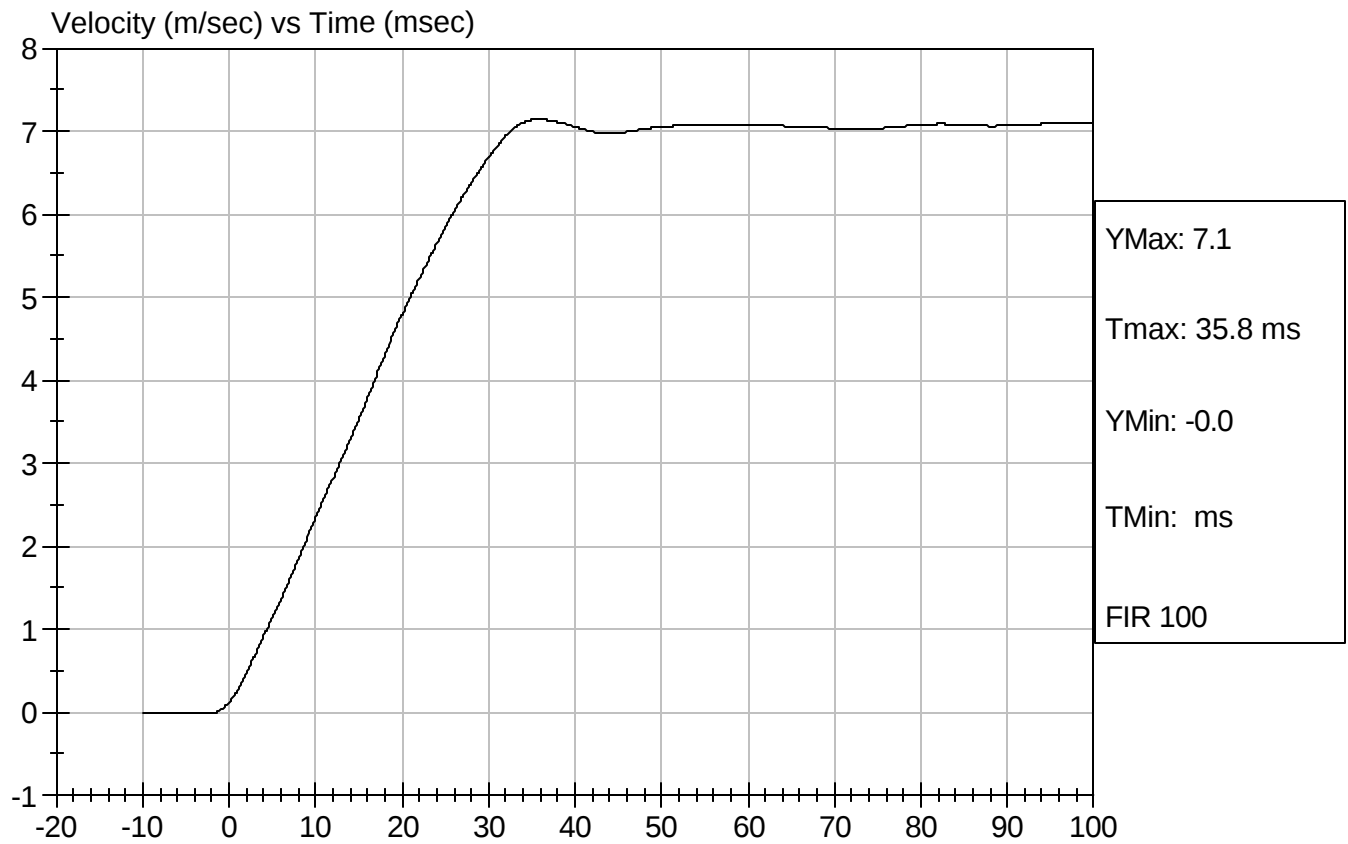
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D063299

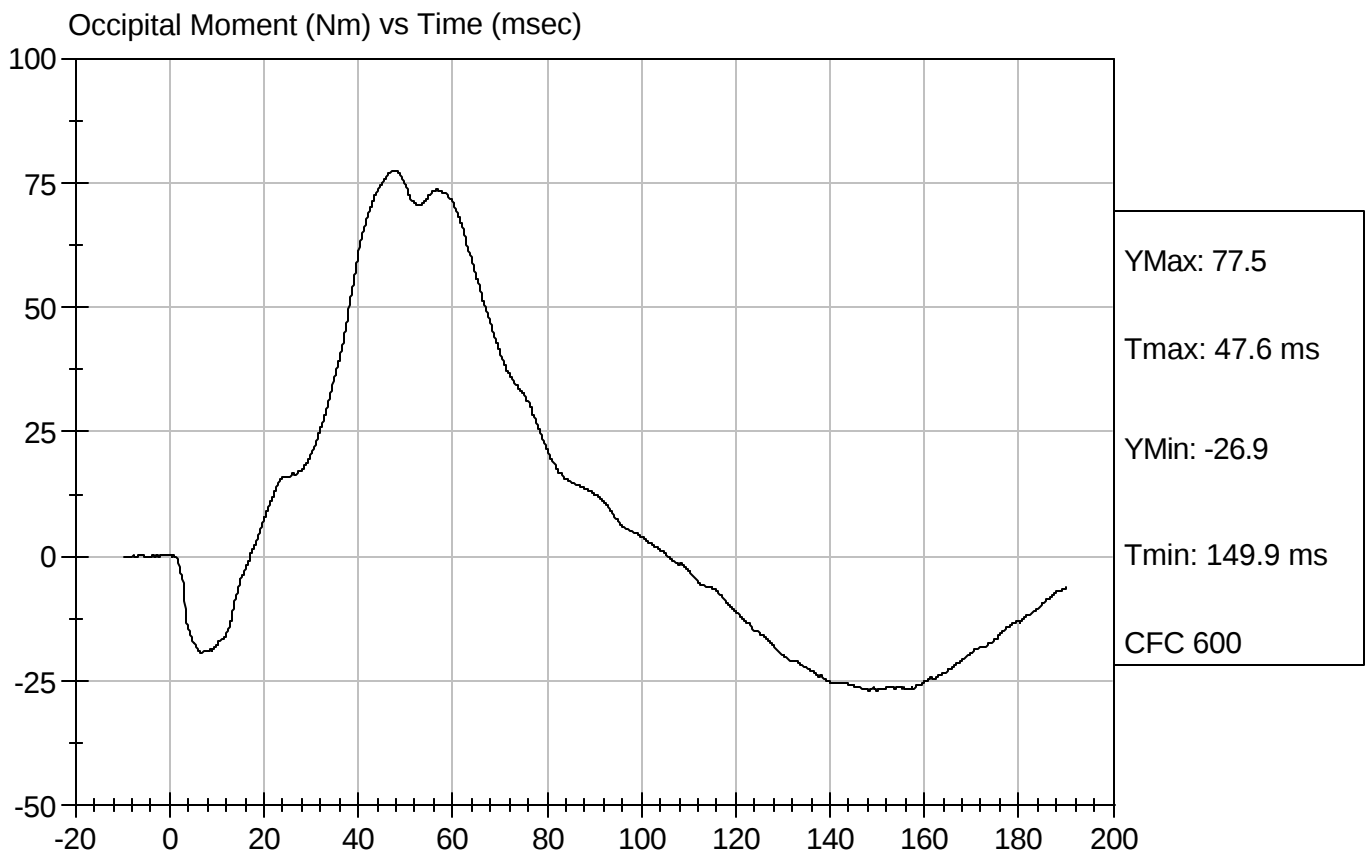
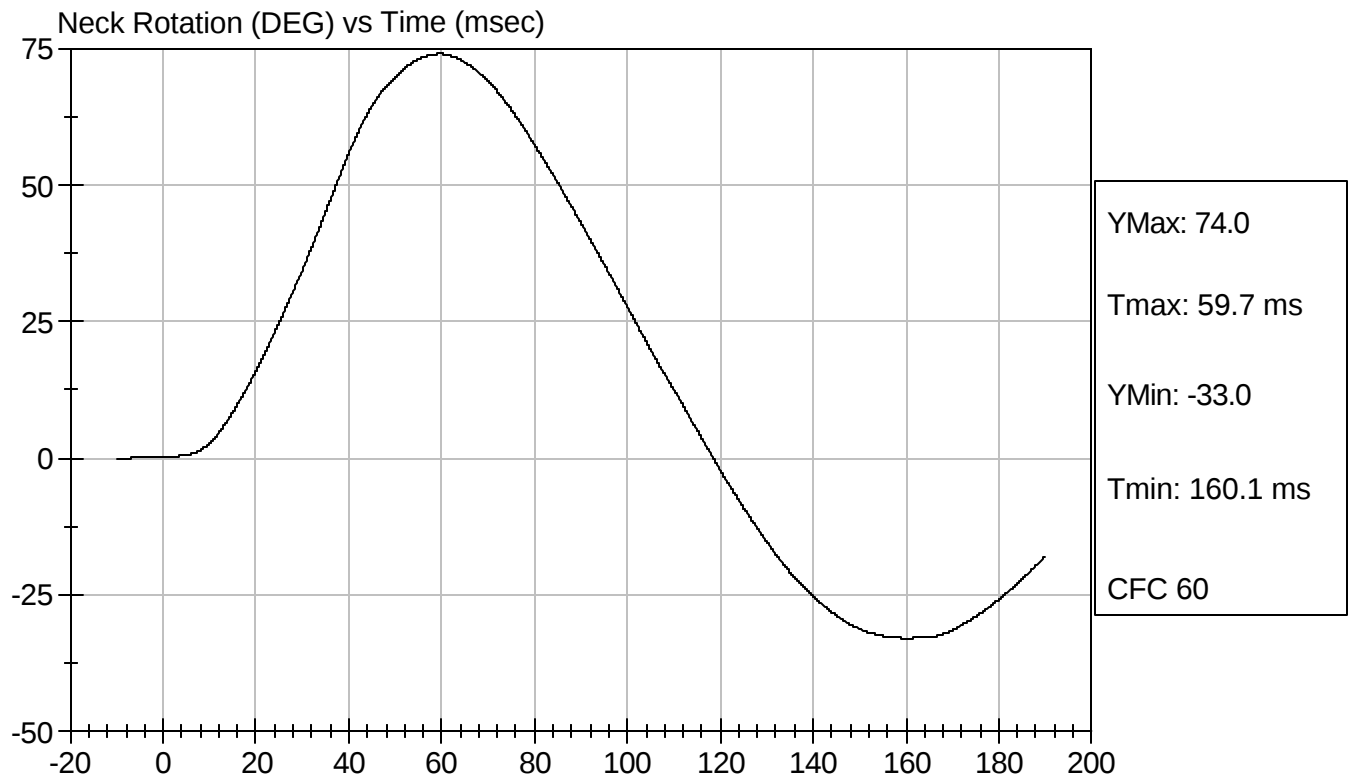
Test Date: 11/16/2006
Speed: 23.24 ft/sec, 7.08 m/sec





Test Desc: Neck Bending
Component ID: D063299

Test Date: 11/16/2006
Speed: 23.24 ft/sec, 7.08 m/sec



Calibration Test Results Summary

Dummy Serial Number: 272

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID/HIII Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 272

Test I.D: D063411

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Peak Resultant Acceleration	G's	120 to 150	138	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-13.4	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

12/06/2006
Test Date

David Winkelbauer
Approved By



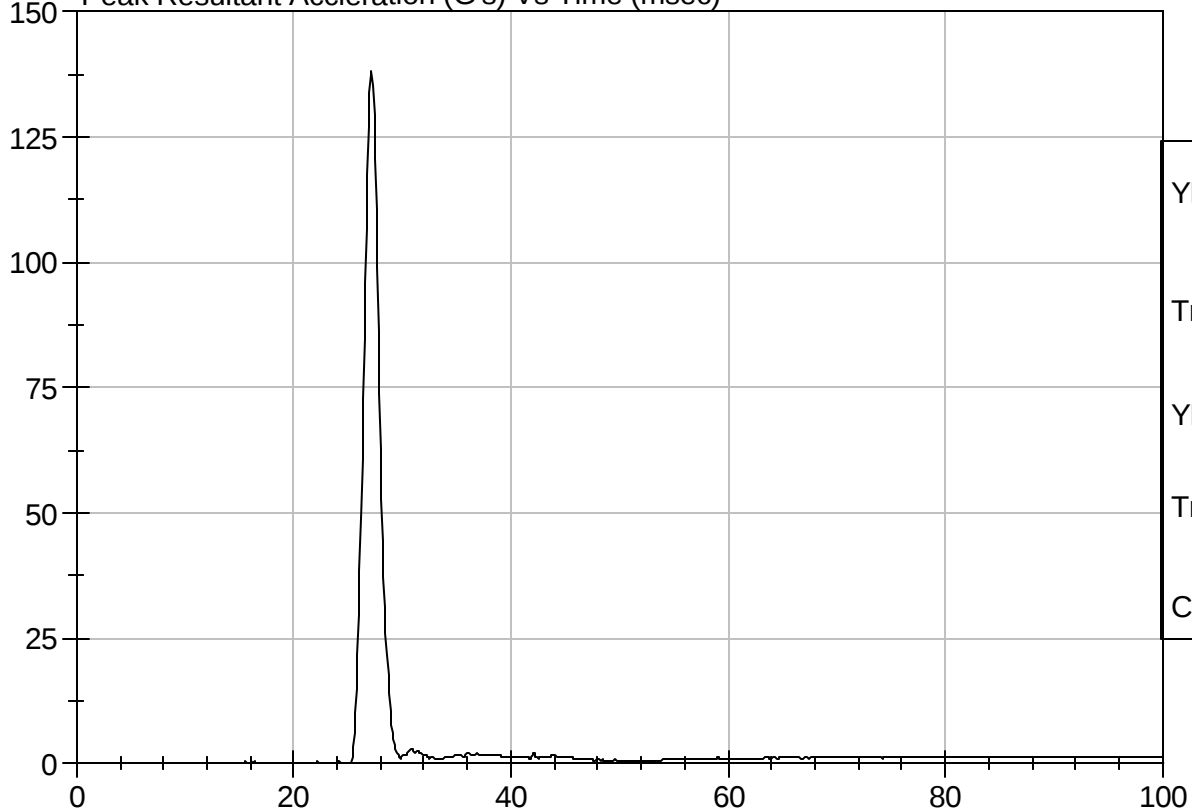
Test Description: Head Drop

Test Date: 12/06/2006

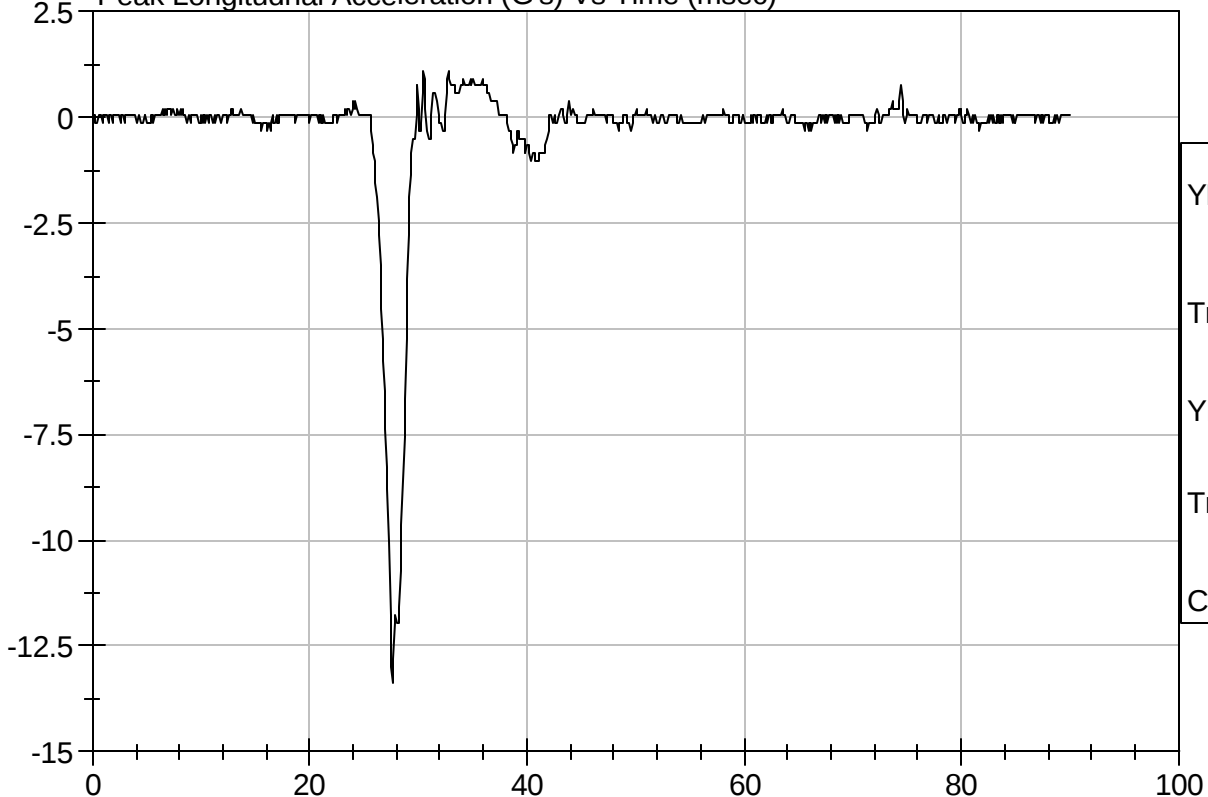
Component: D063411

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



Peak Longitudnal Acceleration (G's) Vs Time (msec)



SID/HIII Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 272

Test I.D: D063412

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Probe Velocity	m/s	4.22 - 4.31	4.29	Pass
Upper Rib	G's	37 - 46	41	Pass
Lower Rib	G's	37 - 46	40	Pass
Lower Spine	G's	15 - 22	15	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

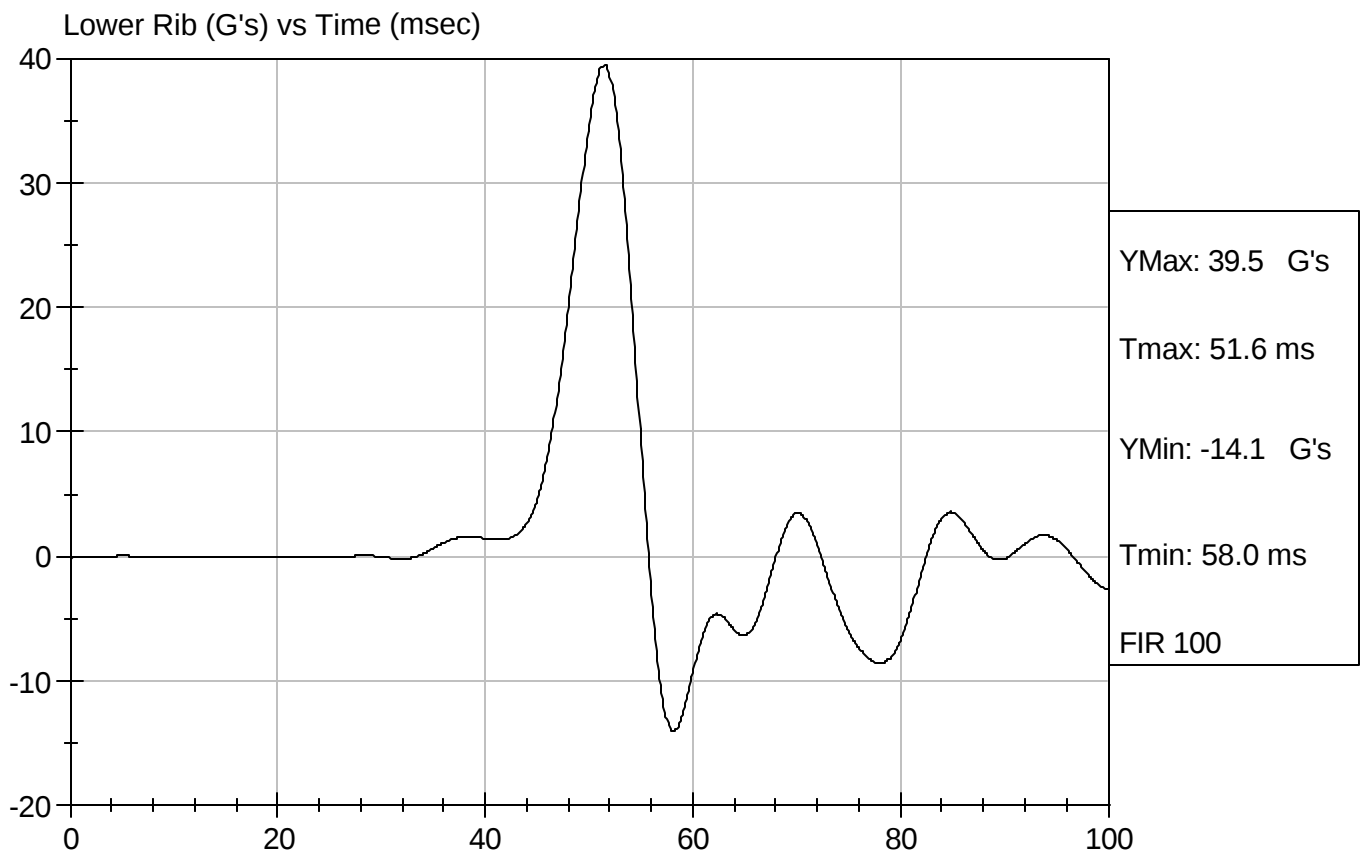
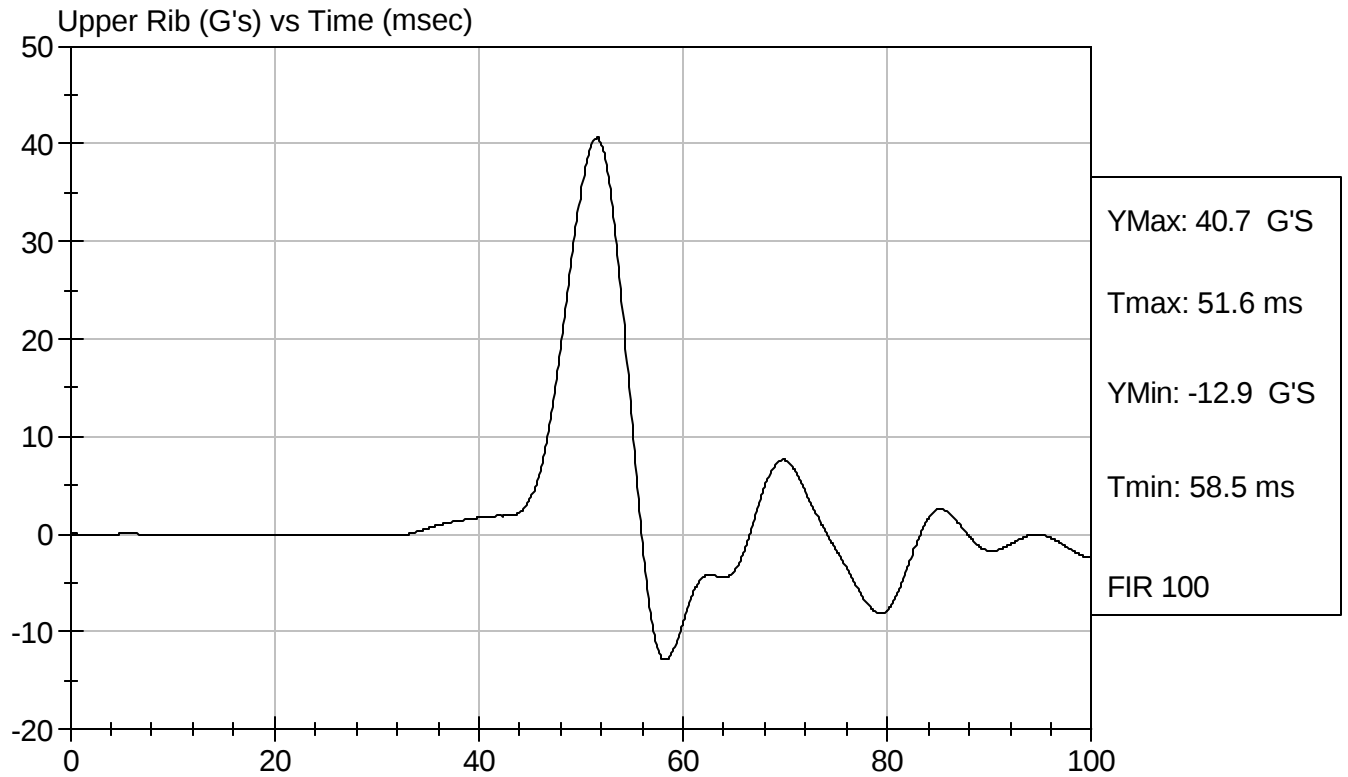
David Winkelbauer
Approved By

12/06/2006
Test Date



Test Desc: Thorax Impact
Component ID: D063412

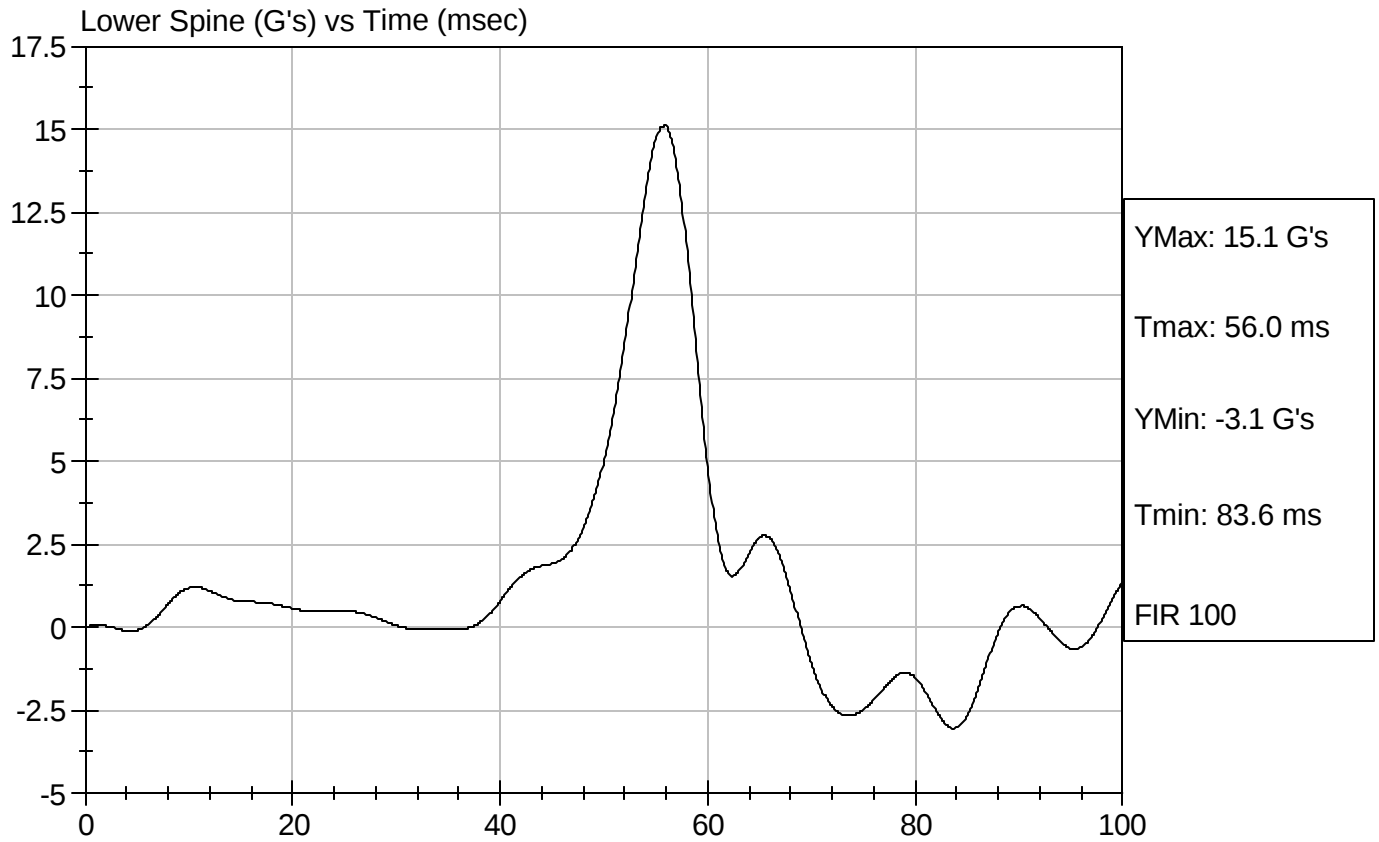
Test Date: 12/06/2006
Speed: 14.08 ft/sec, 4.29 m/sec





Test Desc: Thorax Impact
Component ID: D063412

Test Date: 12/06/2006
Speed: 14.08 ft/sec, 4.29 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 272

Test I.D: D063413

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.7	Pass
Laboratory Relative Humidity	%	10 to 70	17	Pass
Probe Velocity	m/s	4.27 - 4.33	4.33	Pass
Pelvis Acceleration	G's	40 - 60	40	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

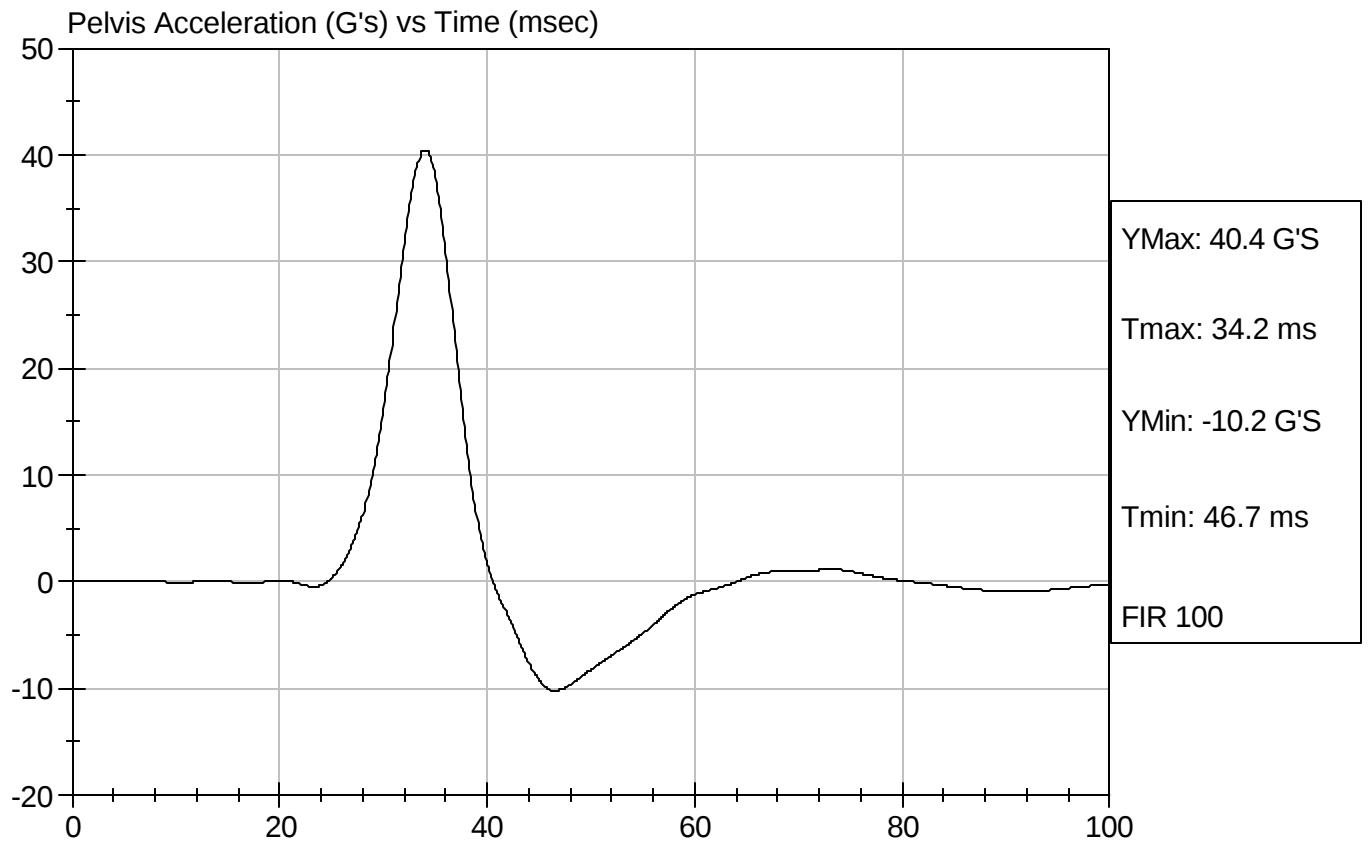
David Winkelbauer
Approved By

12/05/2006
Test Date



Test Desc: Pelvis Impact
Component ID: D063413

Test Date: 12/05/2006
Speed: 14.2 ft/sec, 4.33 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 272

Test I.D: D063414

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Force At 12.7 mm	N	104 -162	145	Pass
Force At 19 mm	N	163 - 222	196	Pass
Force At 25.4 mm	N	222 - 280	251	Pass
Force At 33 mm	N	325 - 391	341	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

12/06/2006
Test Date

David Winkelbauer
Approved By



Test Description: Abdomen Compression

Test Date: 12/06/2006

Component: D063414

Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 272

Test I.D: D063415

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	110.6	Pass
Force At 30 deg	N	151.2 - 204.6	179.6	Pass
Force At 40 deg	N	204.6 - 258.0	248.6	Pass
Return Angle	Deg	12 Maximum	2	Pass
			Overall Test Results	Pass


Laboratory Technician


Approved By

12/06/2006
Test Date

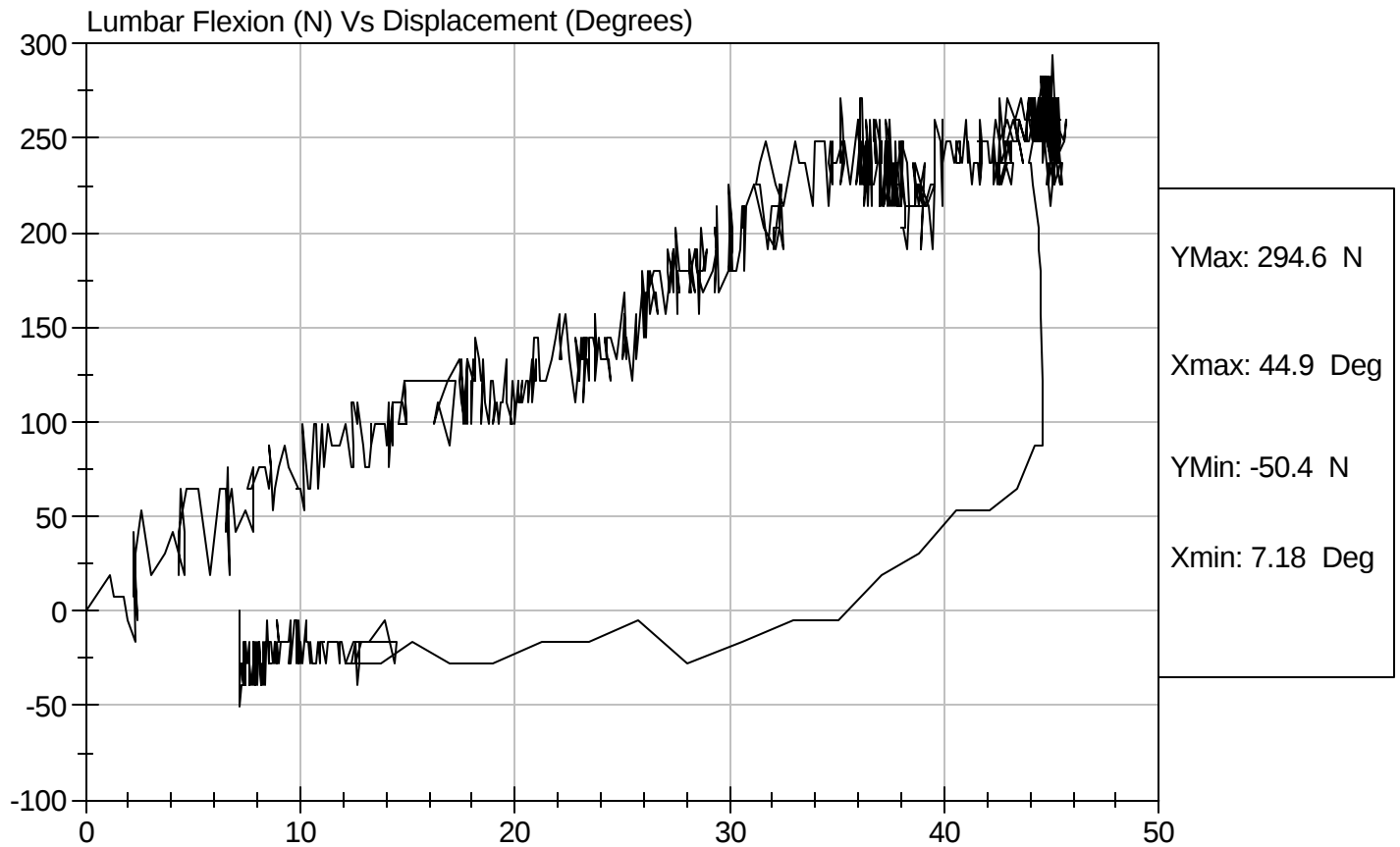


Test Description: Lumbar Flexion

Test Date: 12/06/2006

Component: D063415

Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 272

Test I.D: D063419

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	23	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.25	Pass
	20 msec	m/s	4.12 to 5.10	4.55	Pass
	30 msec	m/s	5.73 to 7.01	6.36	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.99	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	73	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	58	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	81	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	56	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	11	Pass


 Laboratory Technician

12/06/2006

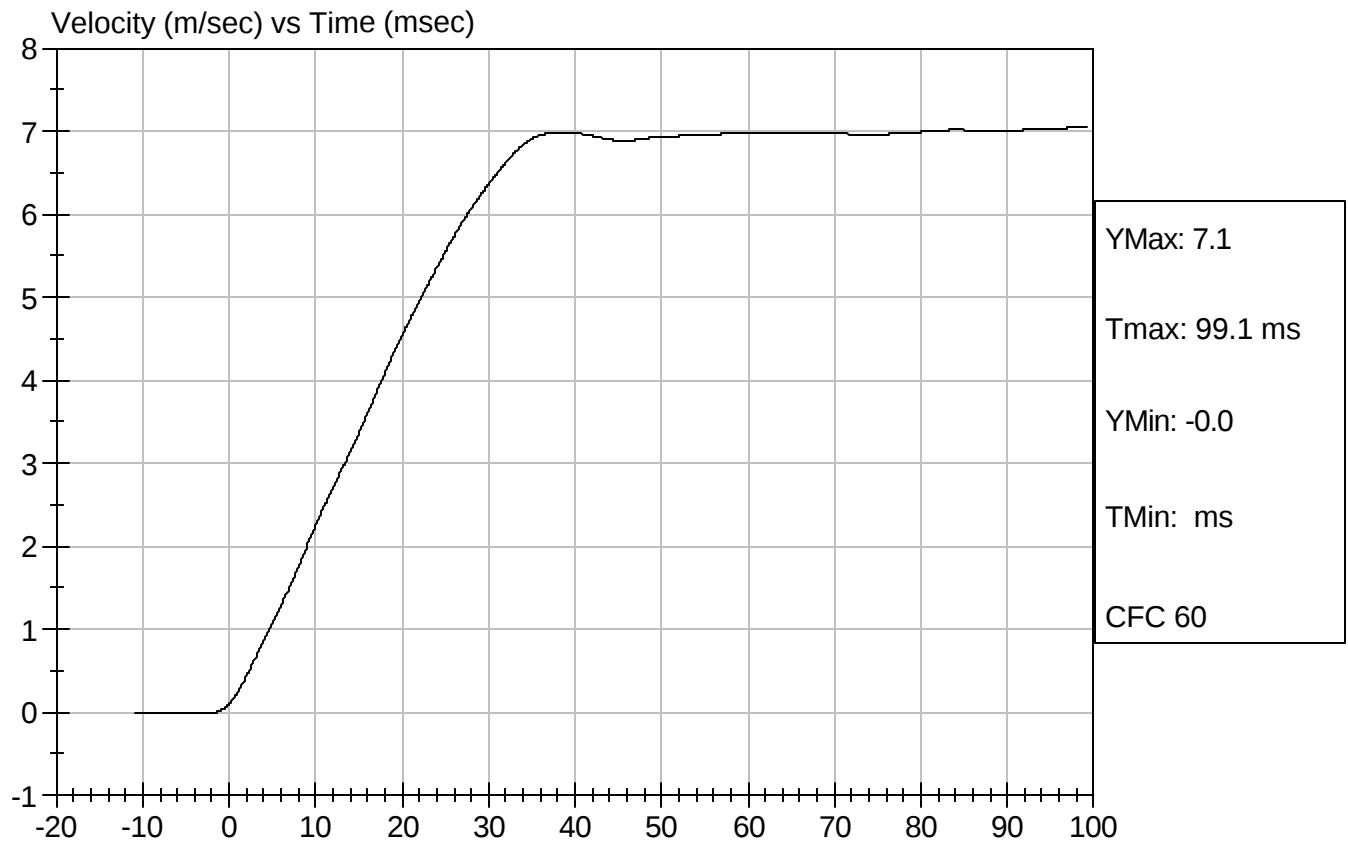
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D063419

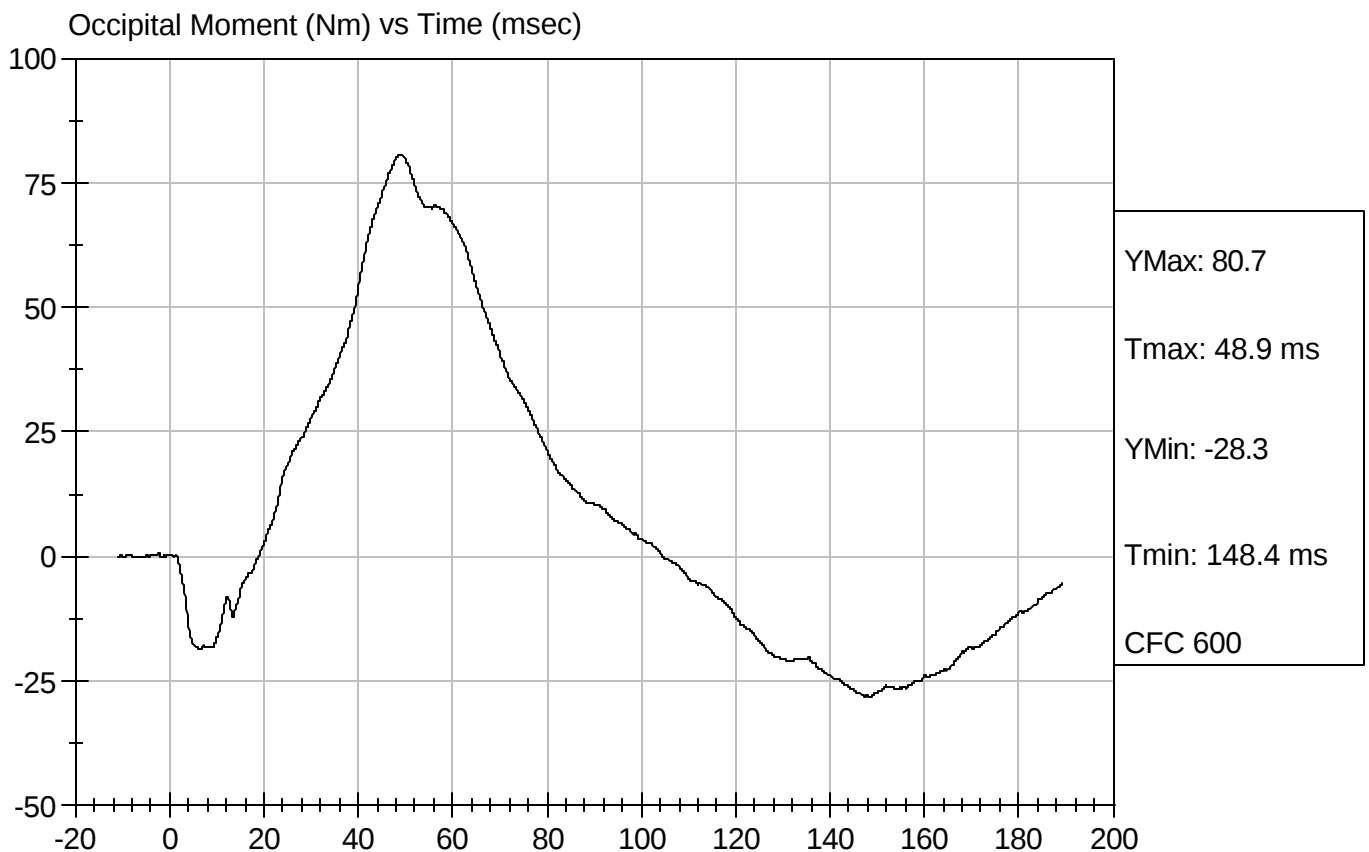
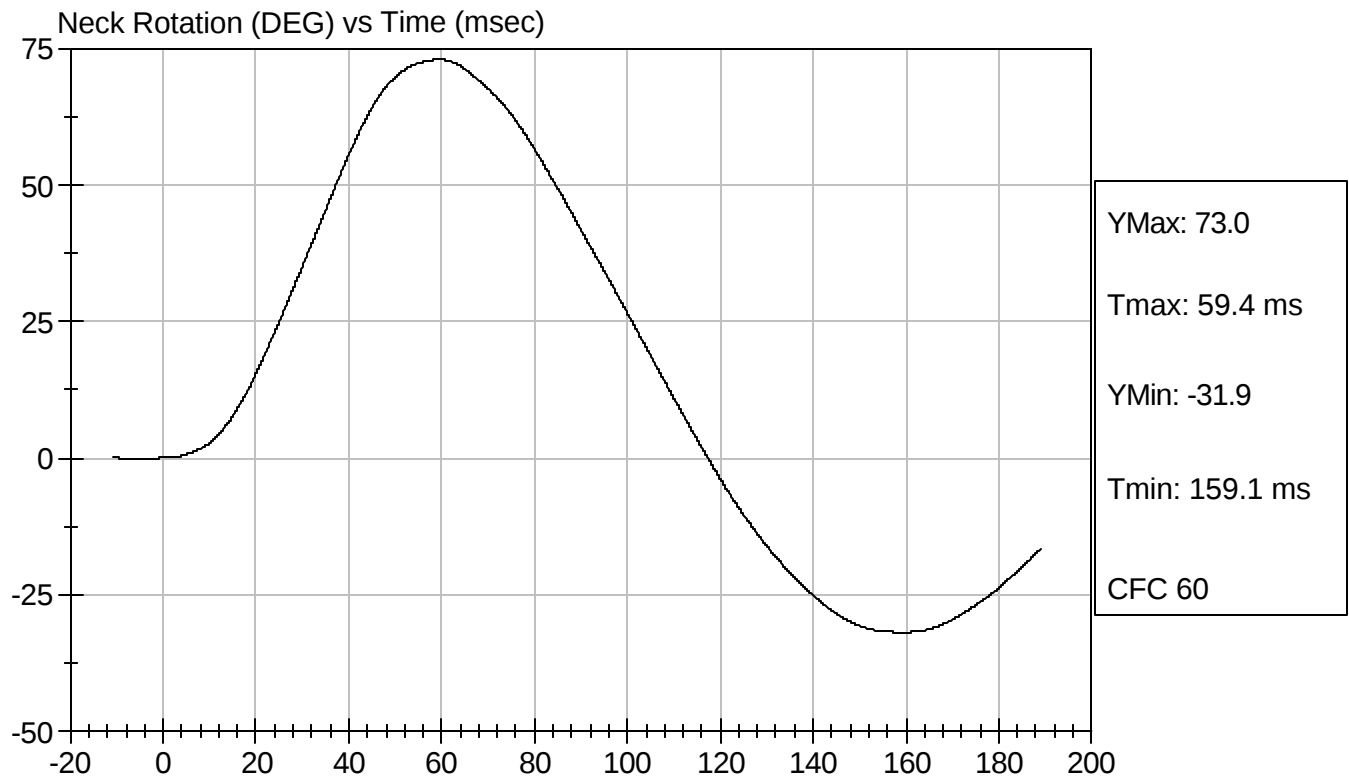
Test Date: 12/06/2006
Speed: 23.15 ft/sec, 7.06 m/sec





Test Desc: Neck Bending
Component ID: D063419

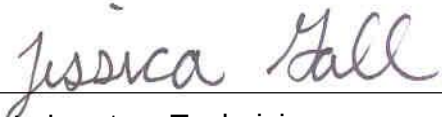
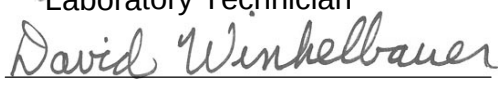
Test Date: 12/06/2006
Speed: 23.15 ft/sec, 7.06 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 272

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass


Laboratory Technician

Approved By

12/06/2006
Test Date

CERTIFICATION DATA

Dummy Serial Number: 904

Calibration Test Results Summary

Dummy Serial Number: 904

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID/HIII Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 904

Test I.D: D06330

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	906	Pass
RH - Rib Height	mm	501 - 521	508	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	240	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	523	Pass
SW - Knee Pivot to Floor	mm	490 - 505	496	Pass
HW - Hip Width	mm	356 - 391	360	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

11/16/2006
Test Date

SID/HIII Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 904

Test I.D: D063301

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Peak Resultant Acceleration	G's	120 to 150	136	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-10.3	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

11/16/2006
Test Date

David Winkelbauer
Approved By



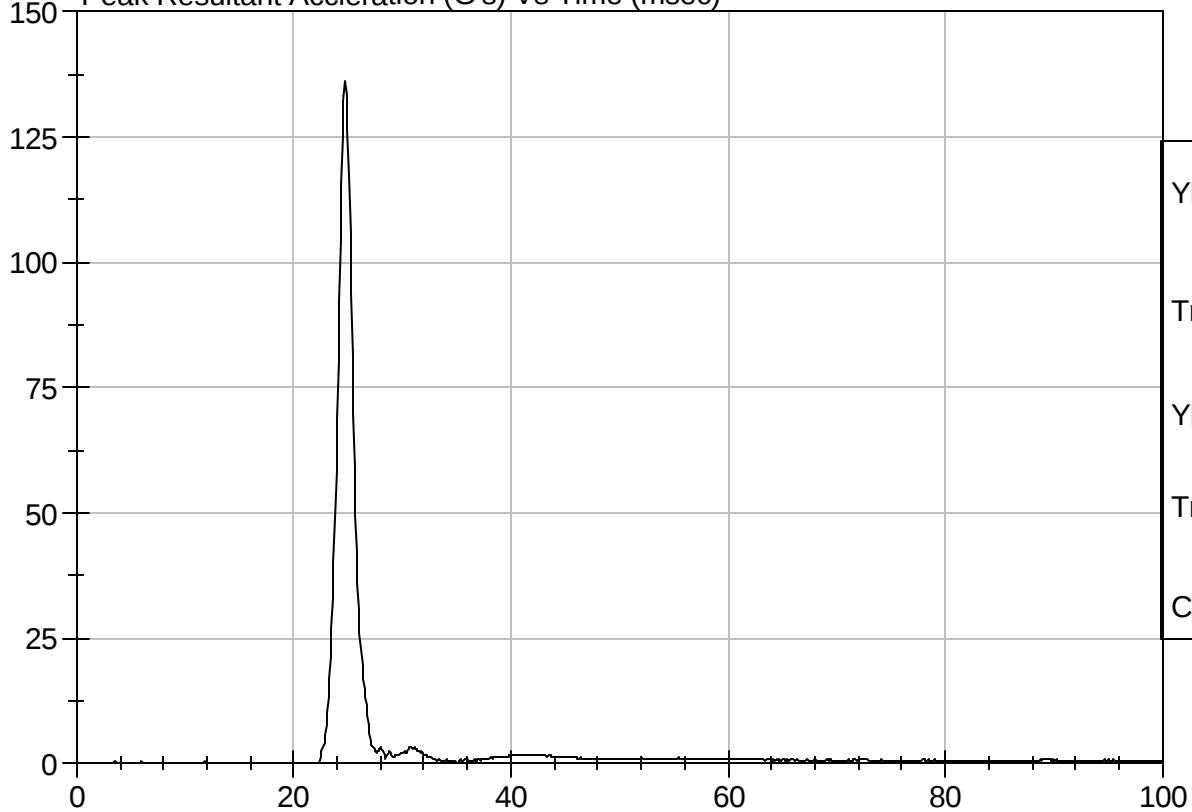
Test Description: Head Drop

Test Date: 11/16/2006

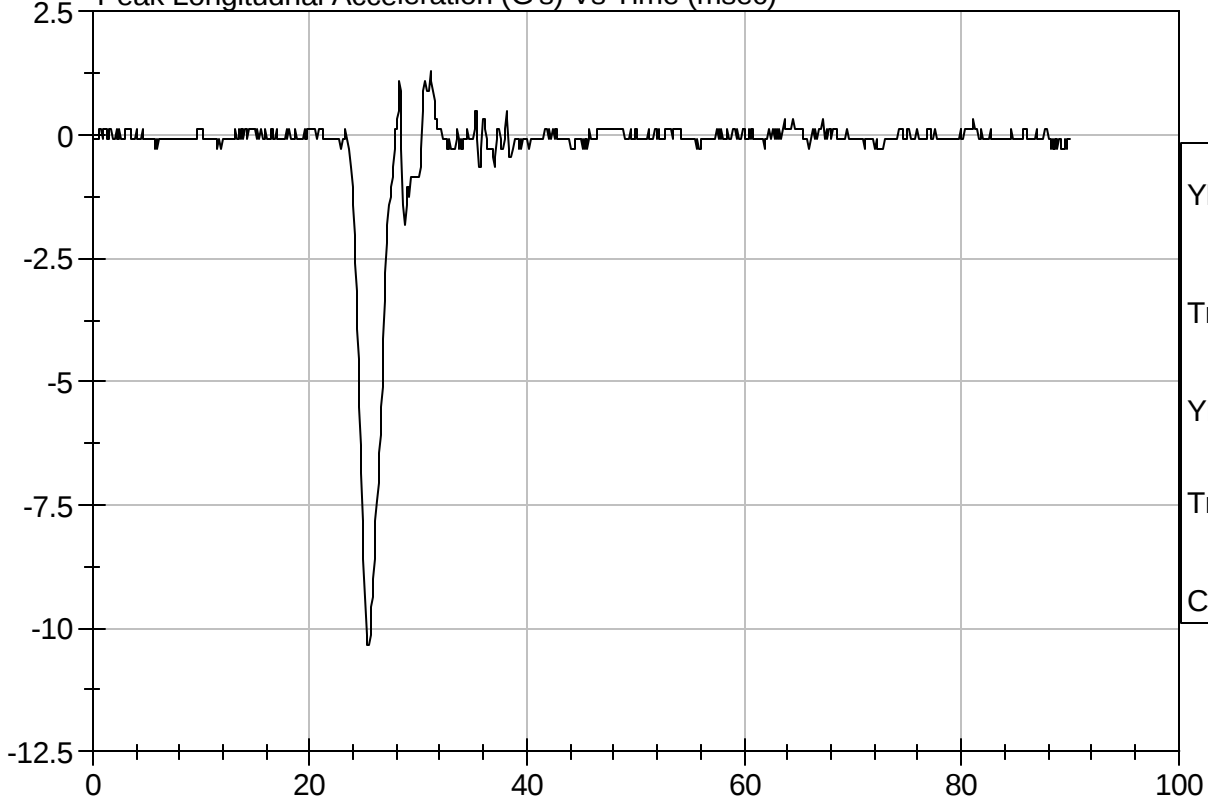
Component: D063301

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



Peak Longitudnal Acceleration (G's) Vs Time (msec)



SID/HIII Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 904

Test I.D: D063302

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Probe Velocity	m/s	4.22 - 4.31	4.30	Pass
Upper Rib	G's	37 - 46	41	Pass
Lower Rib	G's	37 - 46	42	Pass
Lower Spine	G's	15 - 22	19	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

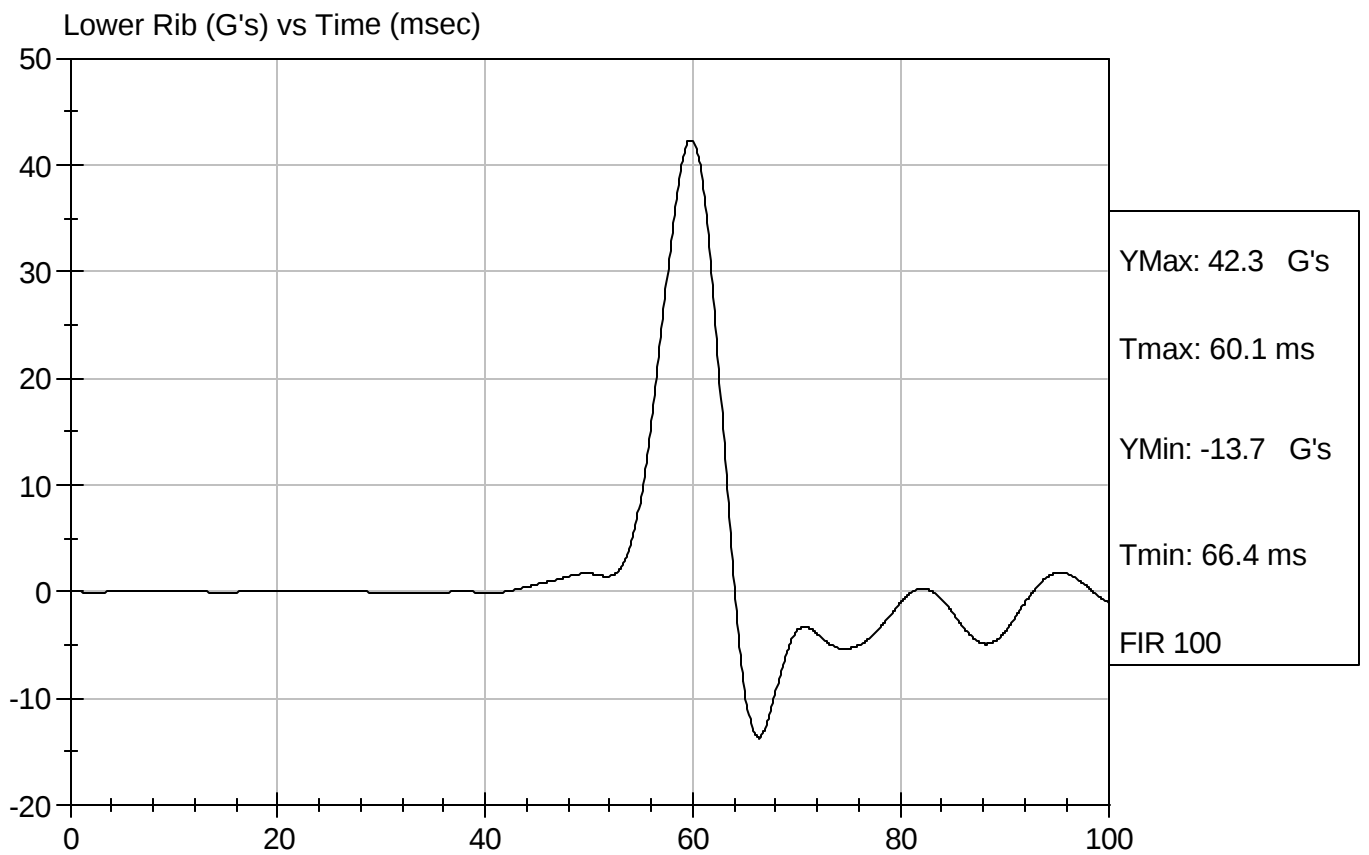
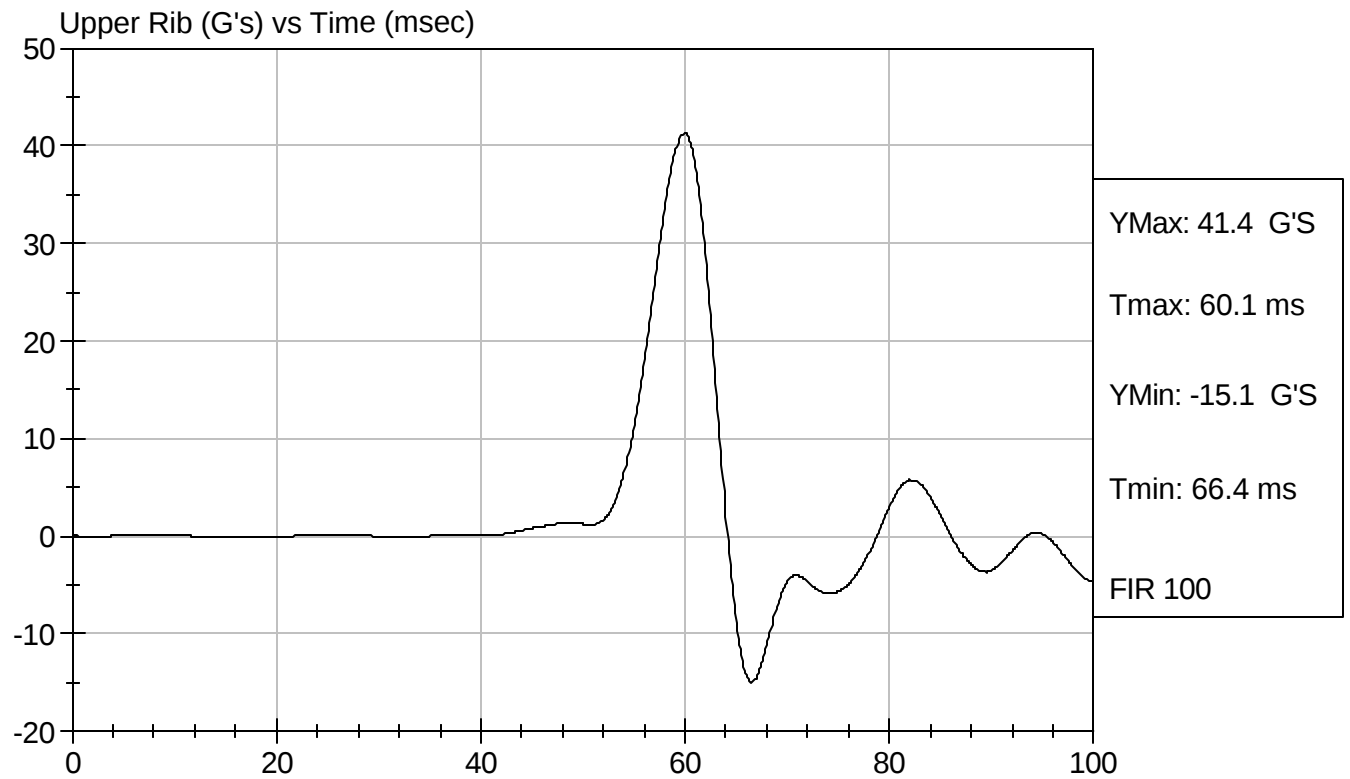
11/16/2006
Test Date

David Winkelbauer
Approved By



Test Desc: Thorax Impact
Component ID: D063302

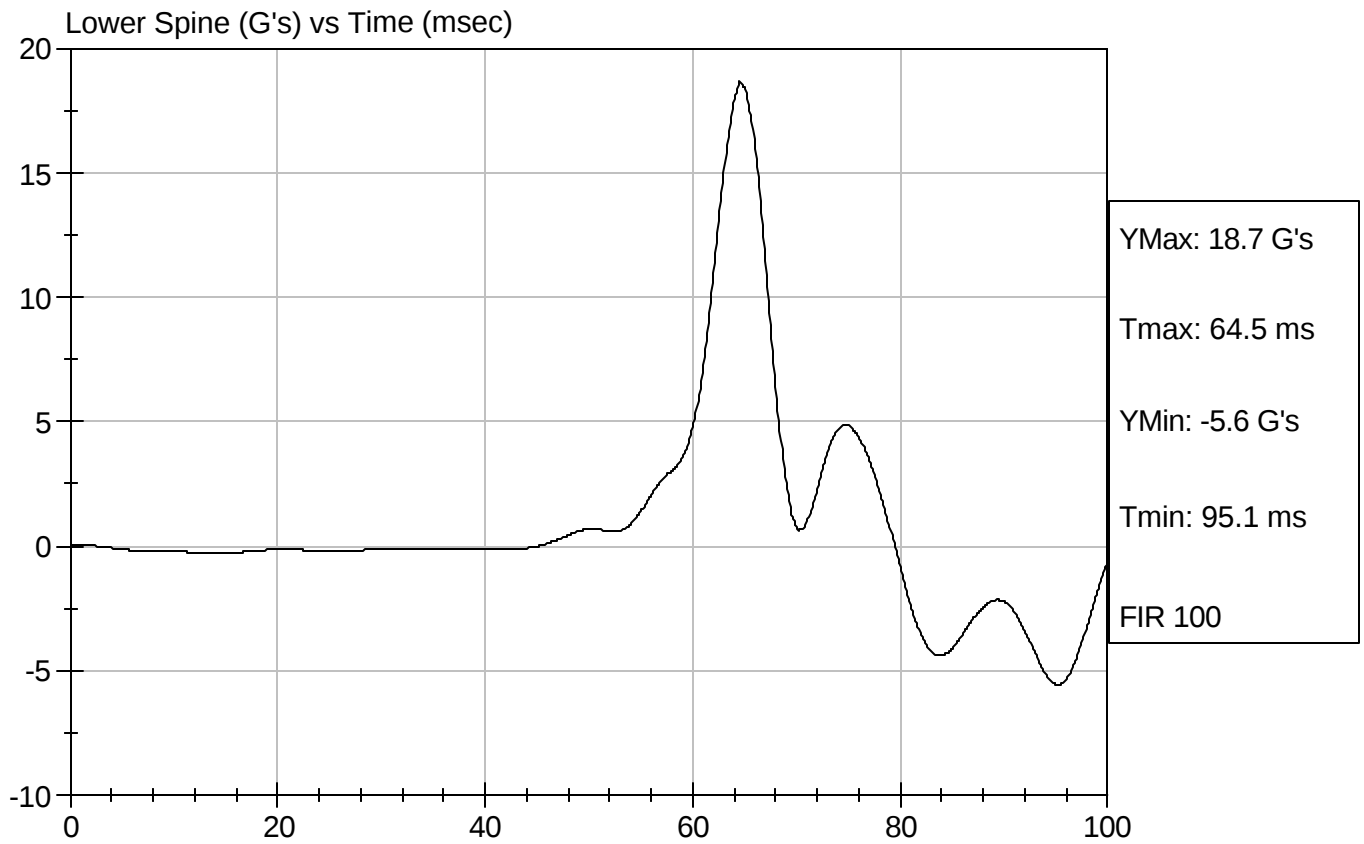
Test Date: 11/16/2006
Speed: 14.12 ft/sec, 4.30 m/sec





Test Desc: Thorax Impact
Component ID: D063302

Test Date: 11/16/2006
Speed: 14.12 ft/sec, 4.30 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 904

Test I.D: D063303

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	26	Pass
Probe Velocity	m/s	4.27 - 4.33	4.32	Pass
Pelvis Acceleration	G's	40 - 60	45	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

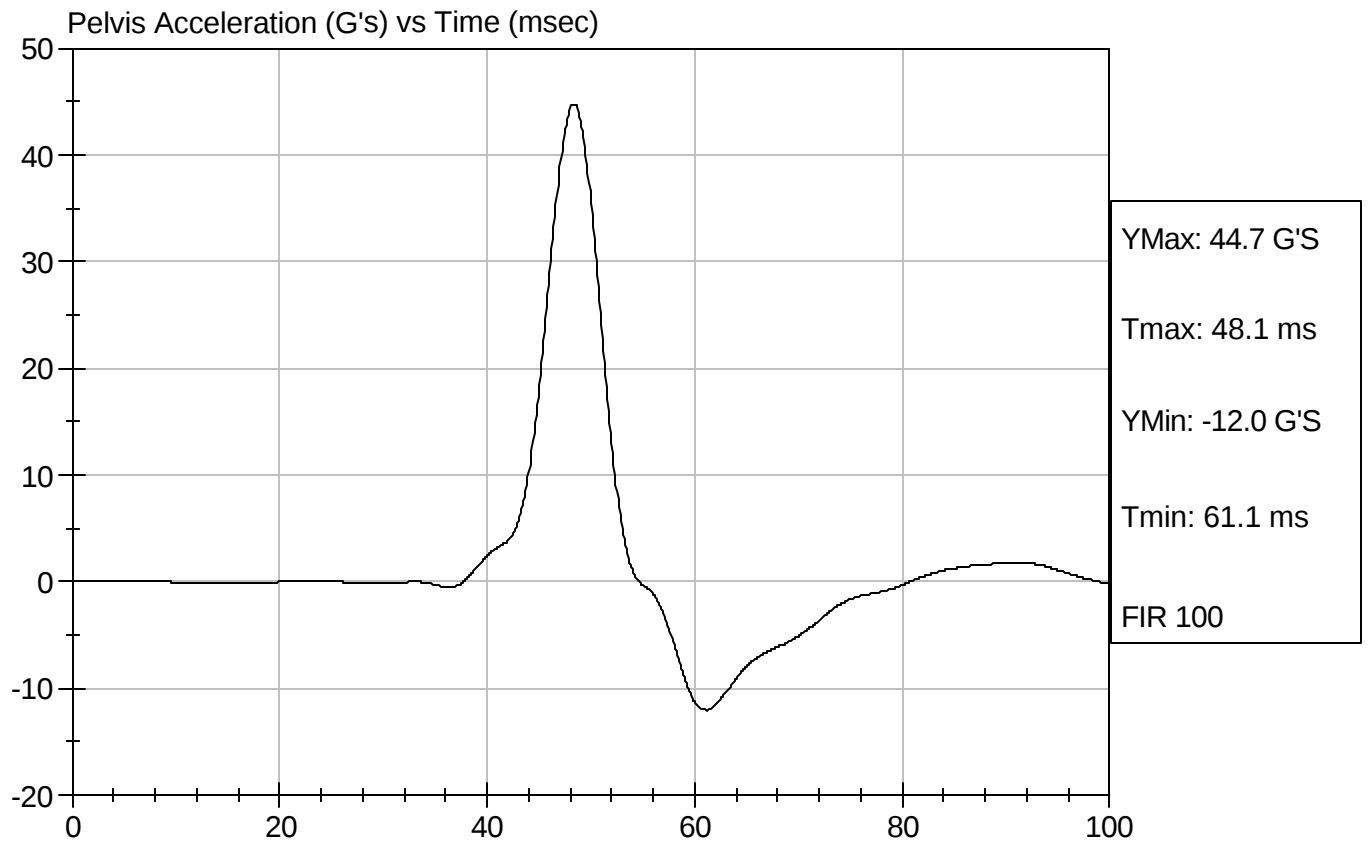
David Winkelbauer
Approved By

11/16/2006
Test Date



Test Desc: Pelvis Impact
Component ID: D063303

Test Date: 11/16/2006
Speed: 14.17 ft/sec, 4.32 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 904

Test I.D: D063304

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Force At 12.7 mm	N	104 -162	148	Pass
Force At 19 mm	N	163 - 222	208	Pass
Force At 25.4 mm	N	222 - 280	271	Pass
Force At 33 mm	N	325 - 391	371	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

11/16/2006
Test Date

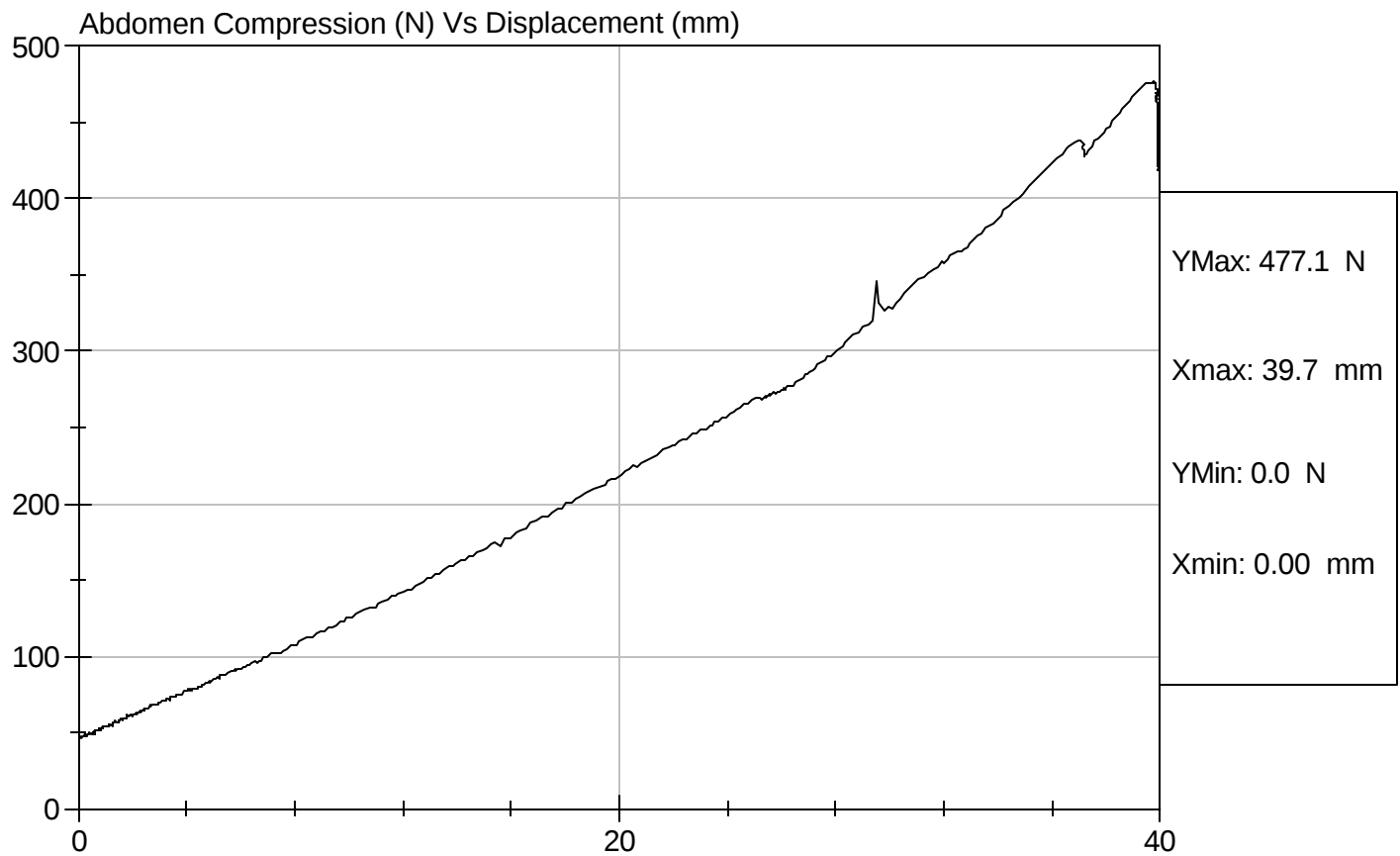


Test Description: Abdomen Compression

Test Date: 11/16/2006

Component: D063304

Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 904

Test I.D: D063305

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	144.0	Pass
Force At 30 deg	N	151.2 - 204.6	201.5	Pass
Force At 40 deg	N	204.6 - 258.0	236.0	Pass
Return Angle	Deg	12 Maximum	5	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

11/16/2006
Test Date

David Winkelbauer
Approved By

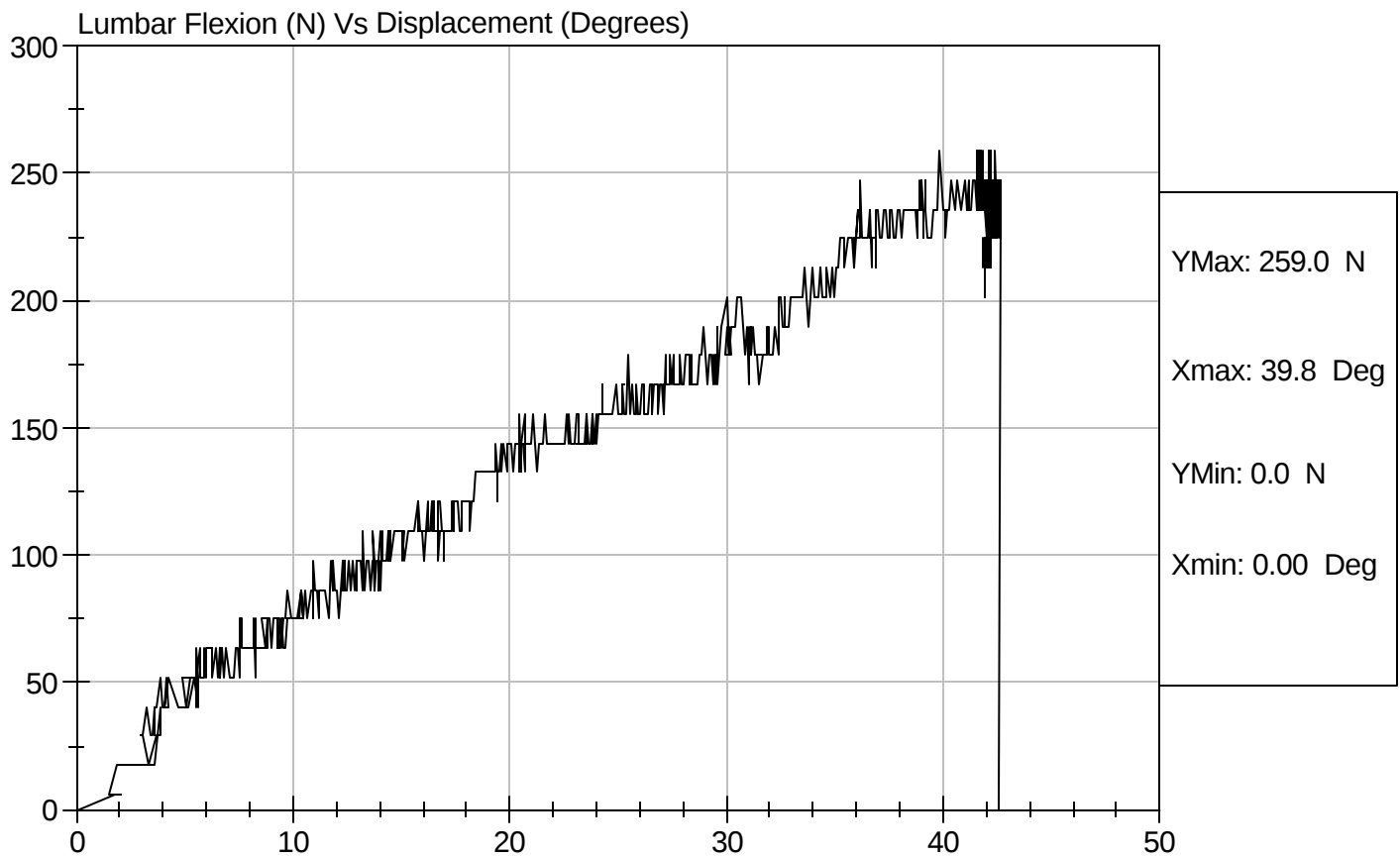


Test Description: Lumbar Flexion

Test Date: 11/16/2006

Component: D063305

Speed: 0 ft/sec, 0 m/sec



SID/HII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 904

Test I.D: D063309

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity		%	10 to 70	24	Pass
Impact Velocity		m/s	6.89 to 7.13	7.10	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.44	Pass
	20 msec	m/s	4.12 to 5.10	4.85	Pass
	30 msec	m/s	5.73 to 7.01	6.87	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.05	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	75	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	58	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	78	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	59	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	15	Pass


 Laboratory Technician

11/16/2006

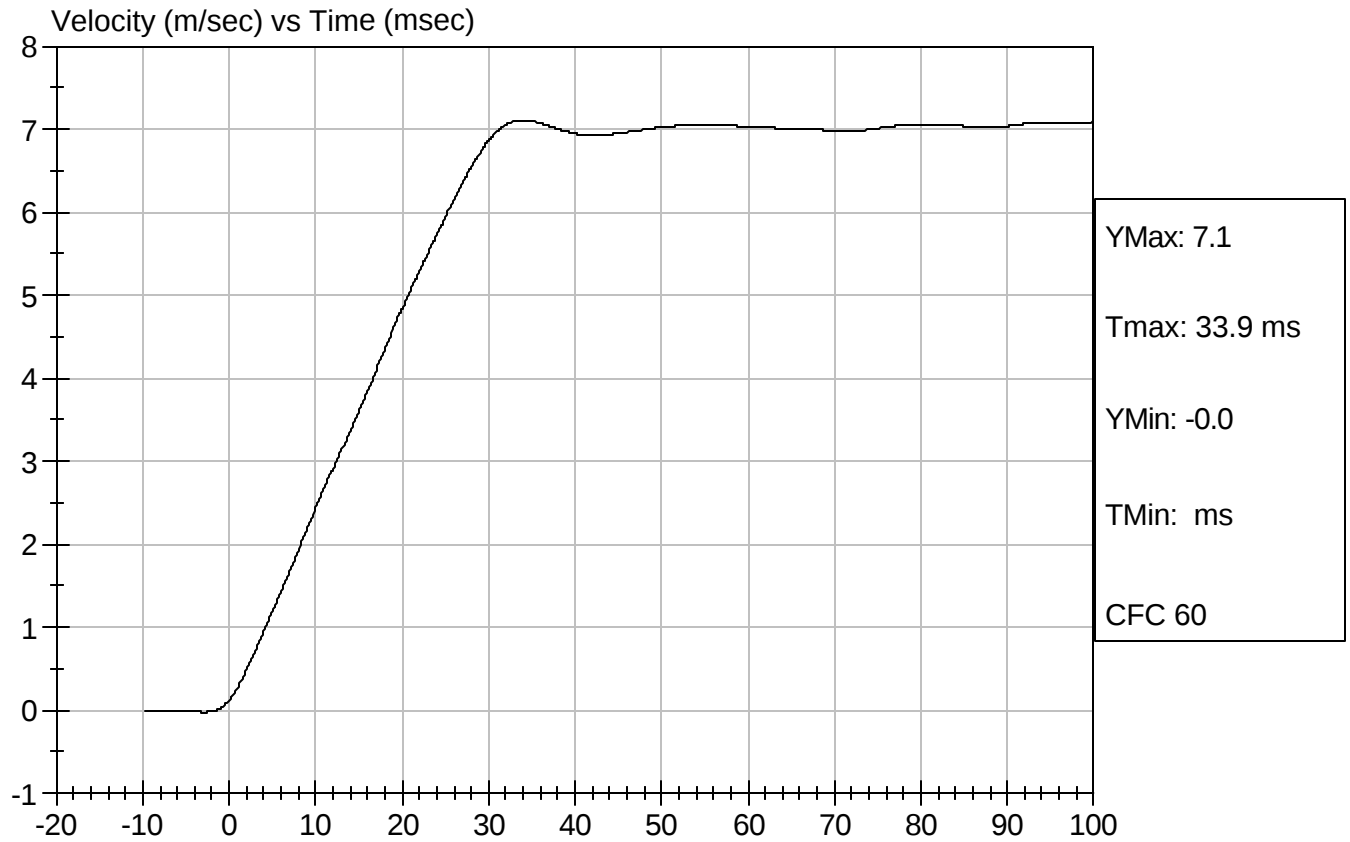
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D063309

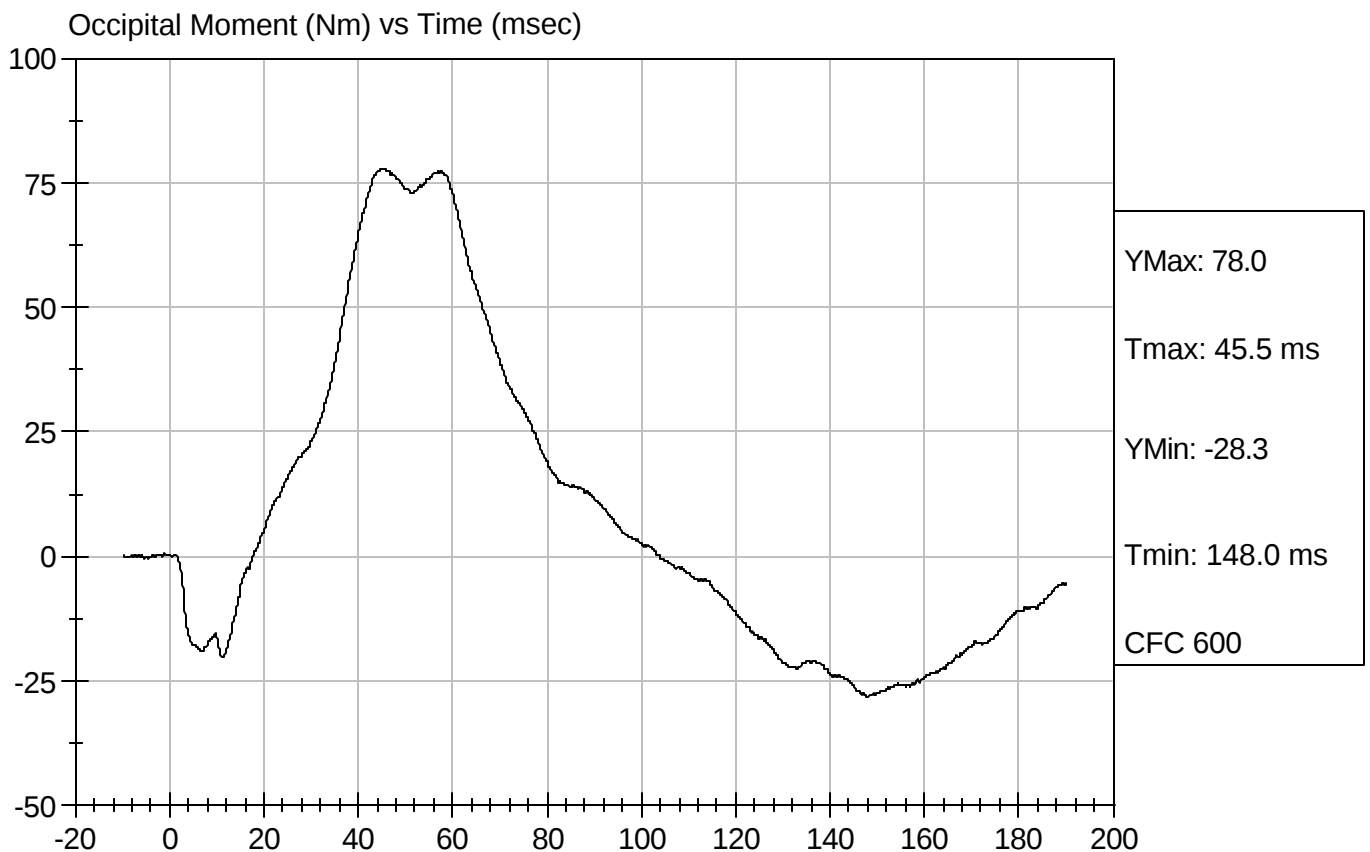
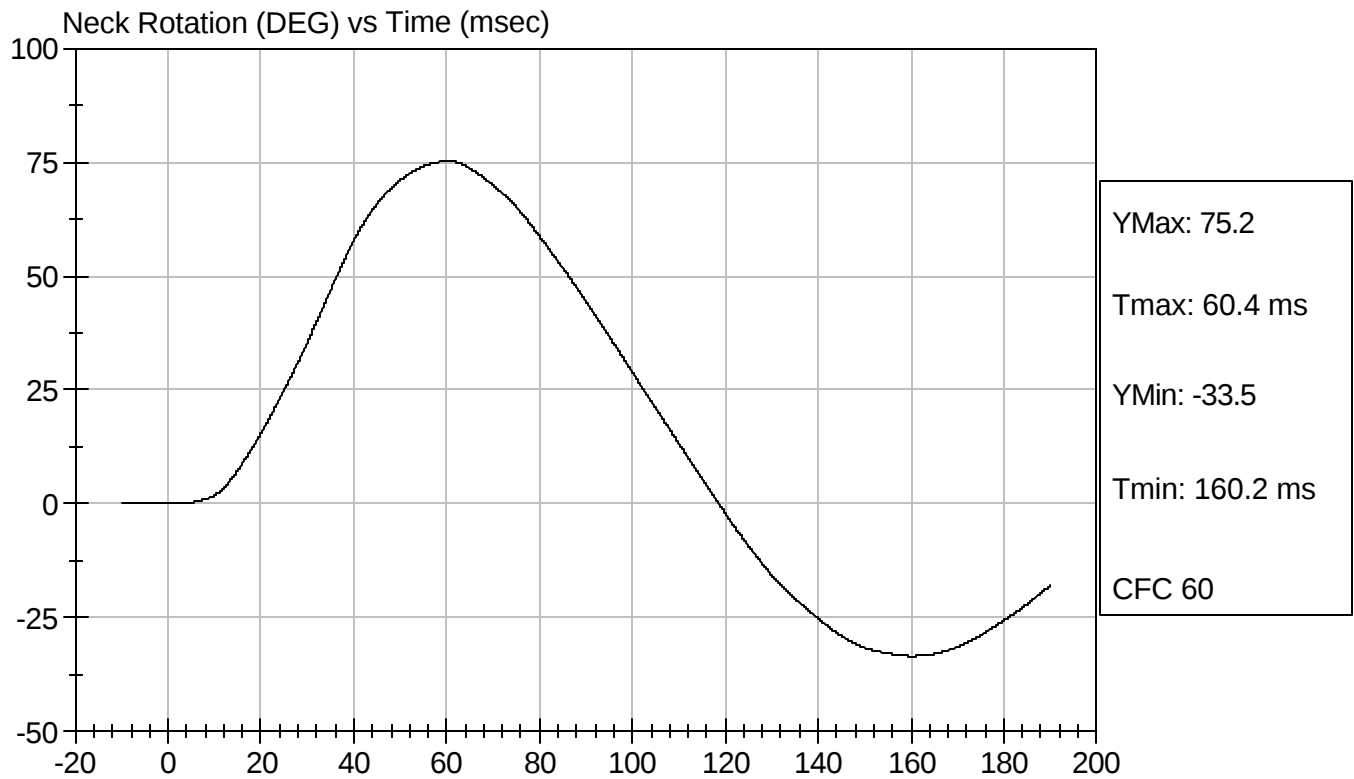
Test Date: 11/16/2006
Speed: 23.29 ft/sec, 7.10 m/sec





Test Desc: Neck Bending
Component ID: D063309

Test Date: 11/16/2006
Speed: 23.29 ft/sec, 7.10 m/sec



Calibration Test Results Summary

Dummy Serial Number: 904

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID/HIII Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 904

Test I.D: D063421

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Peak Resultant Acceleration	G's	120 to 150	143	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-6.9	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

12/06/2006
Test Date

David Winkelbauer
Approved By



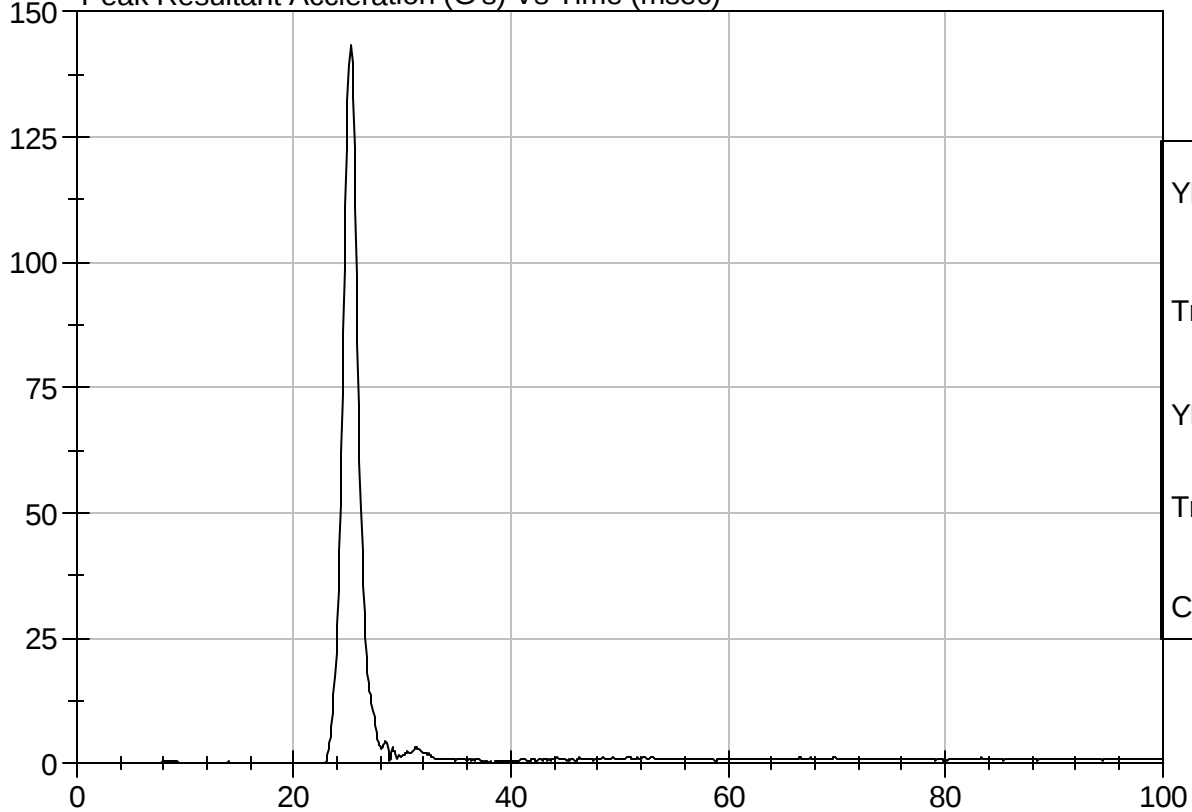
Test Description: Head Drop

Test Date: 12/06/2006

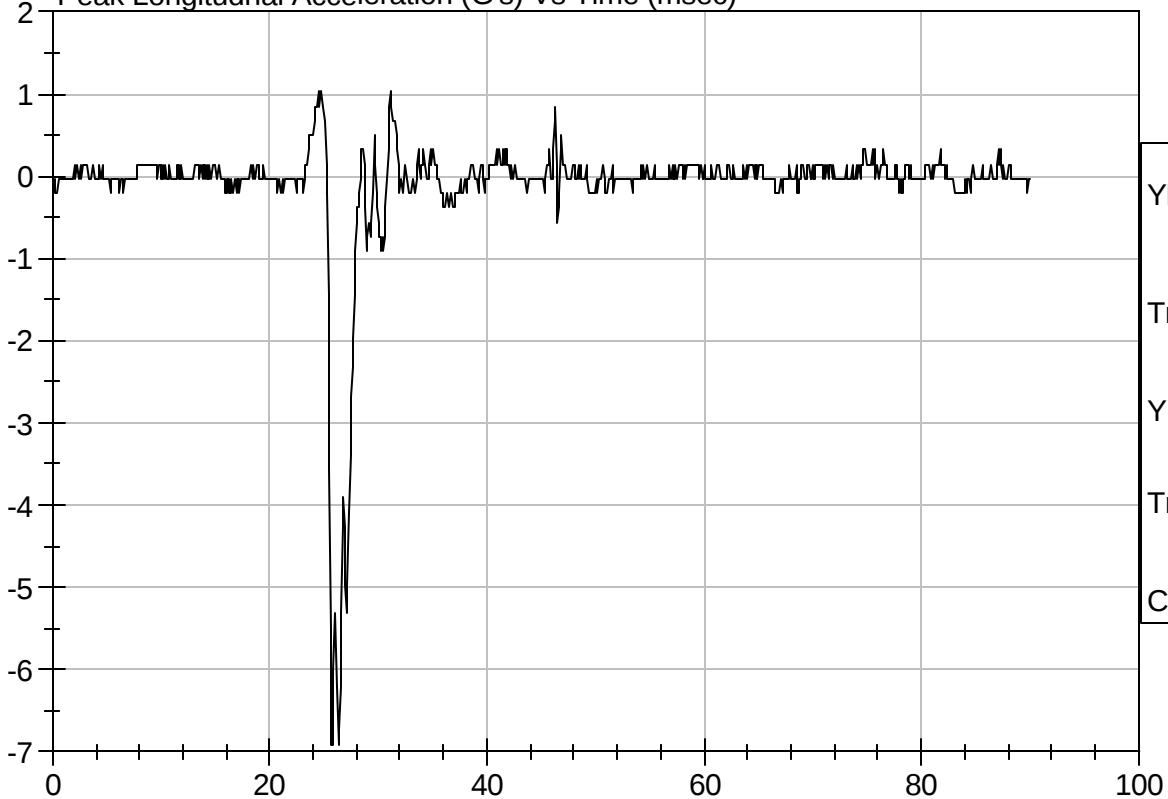
Component: D063421

Speed: 0 ft/s, 0.00 m/s

Peak Resultant Acceleration (G's) Vs Time (msec)



Peak Longitudnal Acceleration (G's) Vs Time (msec)



SID/HIII Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 904

Test I.D: D063422

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Probe Velocity	m/s	4.22 - 4.31	4.27	Pass
Upper Rib	G's	37 - 46	38	Pass
Lower Rib	G's	37 - 46	38	Pass
Lower Spine	G's	15 - 22	21	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

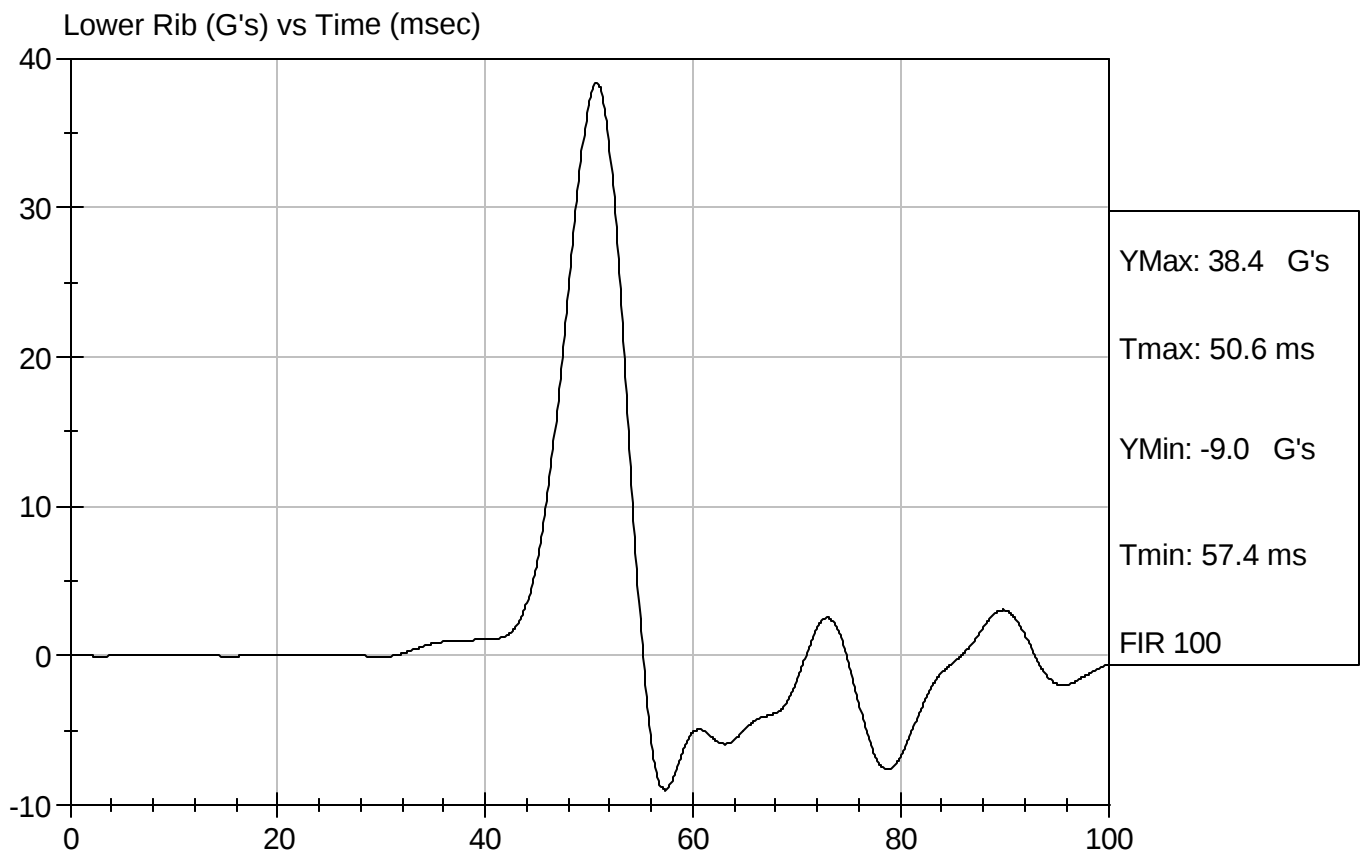
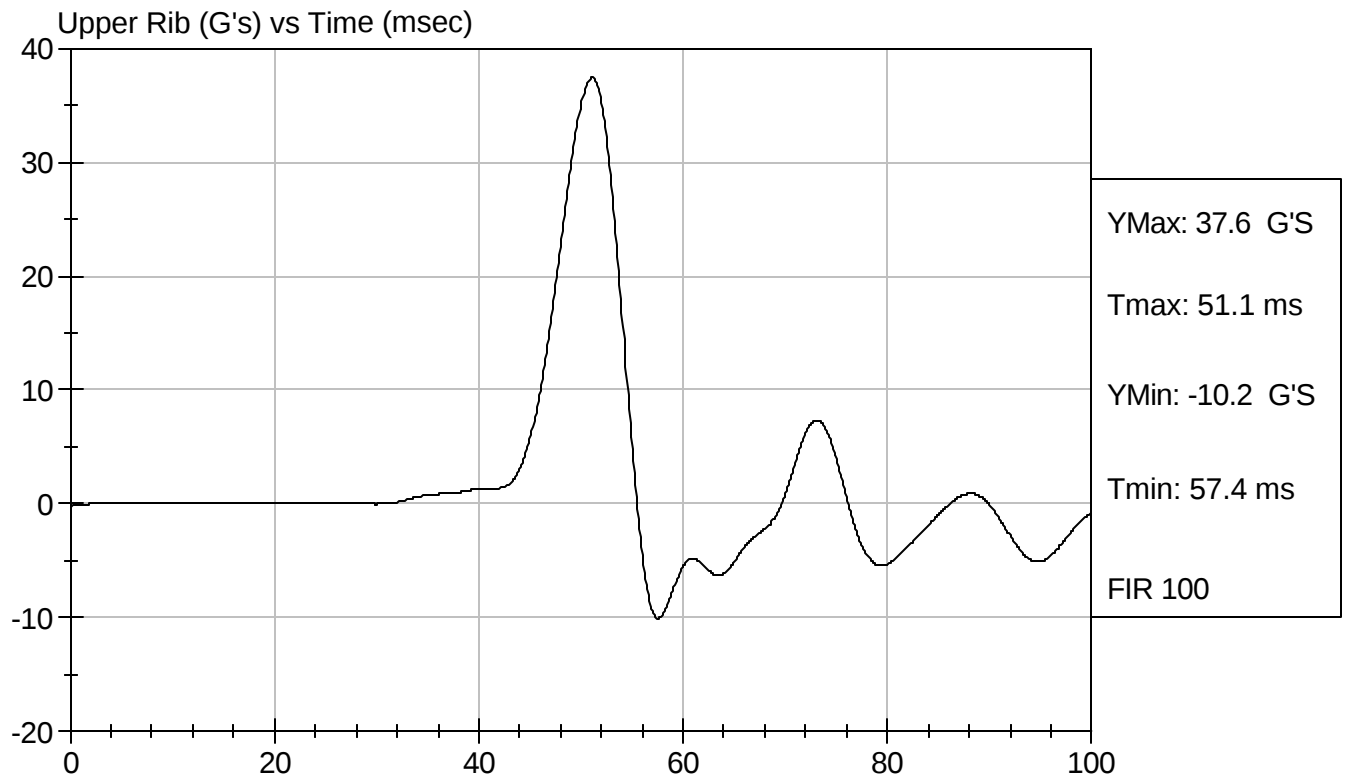
David Winkelbauer
Approved By

12/06/2006
Test Date



Test Desc: Thorax Impact
Component ID: D063422

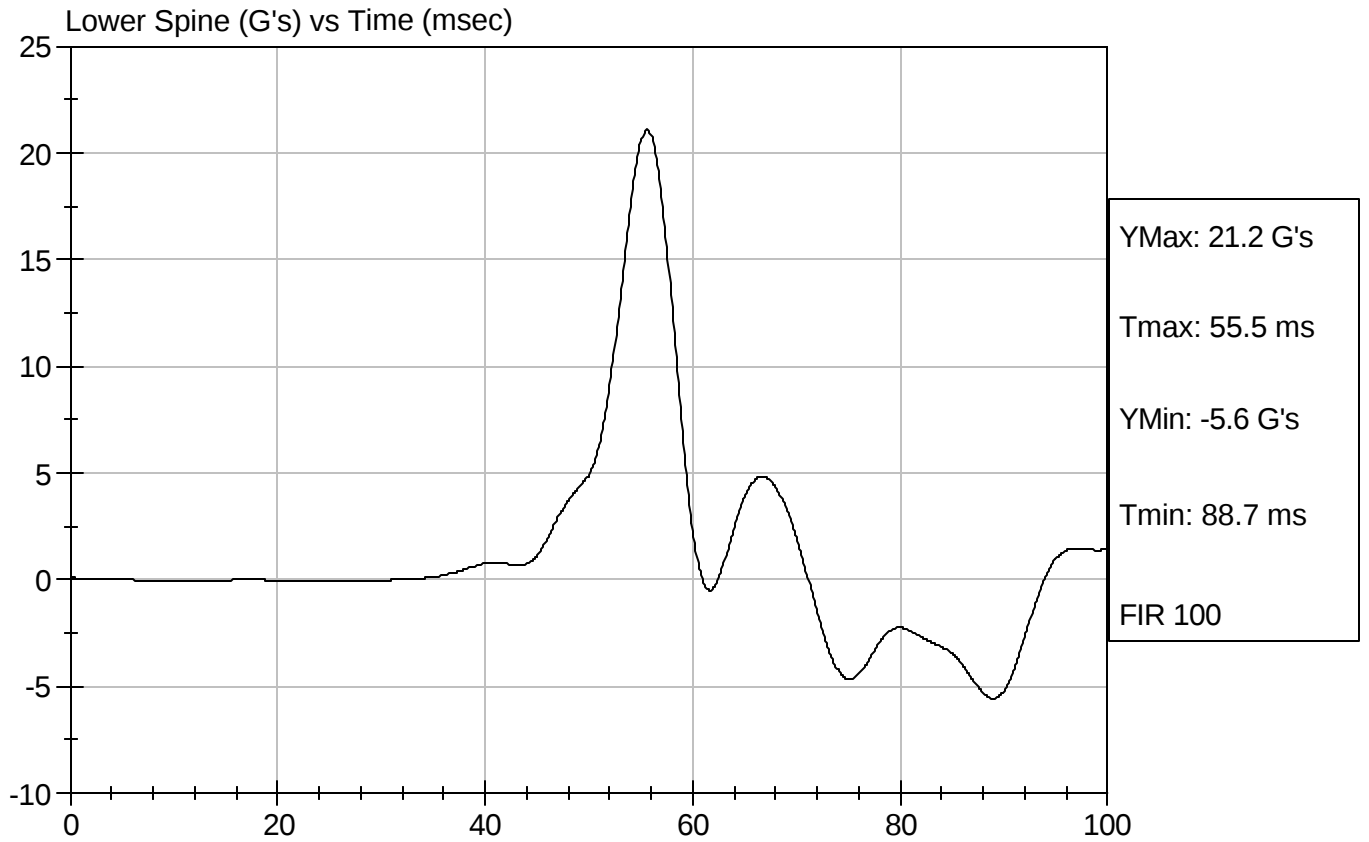
Test Date: 12/06/2006
Speed: 14.02 ft/sec, 4.27 m/sec





Test Desc: Thorax Impact
Component ID: D063422

Test Date: 12/06/2006
Speed: 14.02 ft/sec, 4.27 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 904

Test I.D: D063423

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	18	Pass
Probe Velocity	m/s	4.27 - 4.33	4.32	Pass
Pelvis Acceleration	G's	40 - 60	44	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

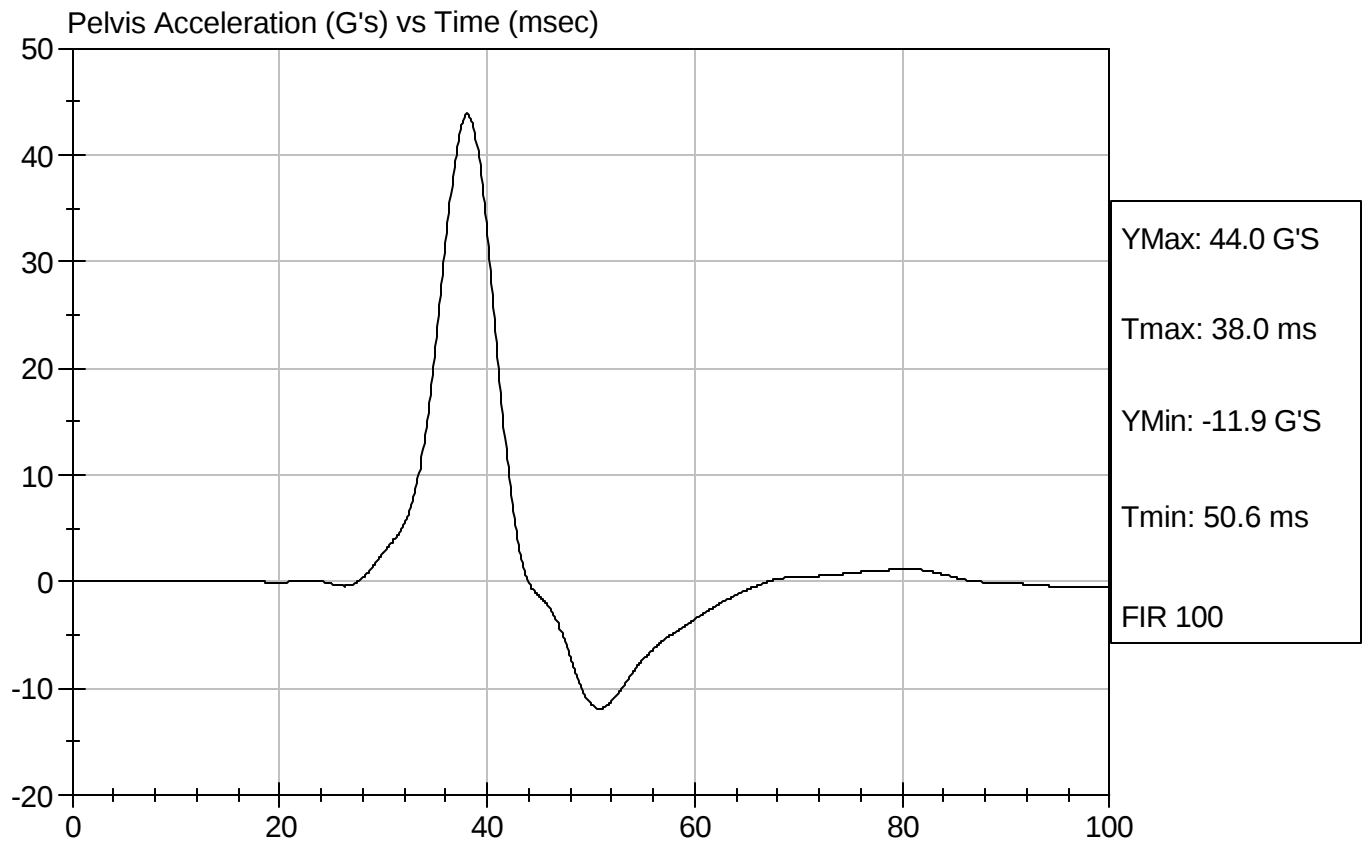
David Winkelbauer
Approved By

12/05/2006
Test Date



Test Desc: Pelvis Impact
Component ID: D063423

Test Date: 12/05/2006
Speed: 14.16 ft/sec, 4.32 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 904

Test I.D: D063424

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Force At 12.7 mm	N	104 -162	142	Pass
Force At 19 mm	N	163 - 222	195	Pass
Force At 25.4 mm	N	222 - 280	260	Pass
Force At 33 mm	N	325 - 391	348	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

12/06/2006
Test Date

David Winkelbauer
Approved By



Test Description: Abdomen Compression

Test Date: 12/06/2006

Component: D063424

Speed: 0 ft/sec, 0 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 904

Test I.D: D063425

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	23	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	145.1	Pass
Force At 30 deg	N	151.2 - 204.6	202.6	Pass
Force At 40 deg	N	204.6 - 258.0	237.1	Pass
Return Angle	Deg	12 Maximum	3	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

12/06/2006
Test Date

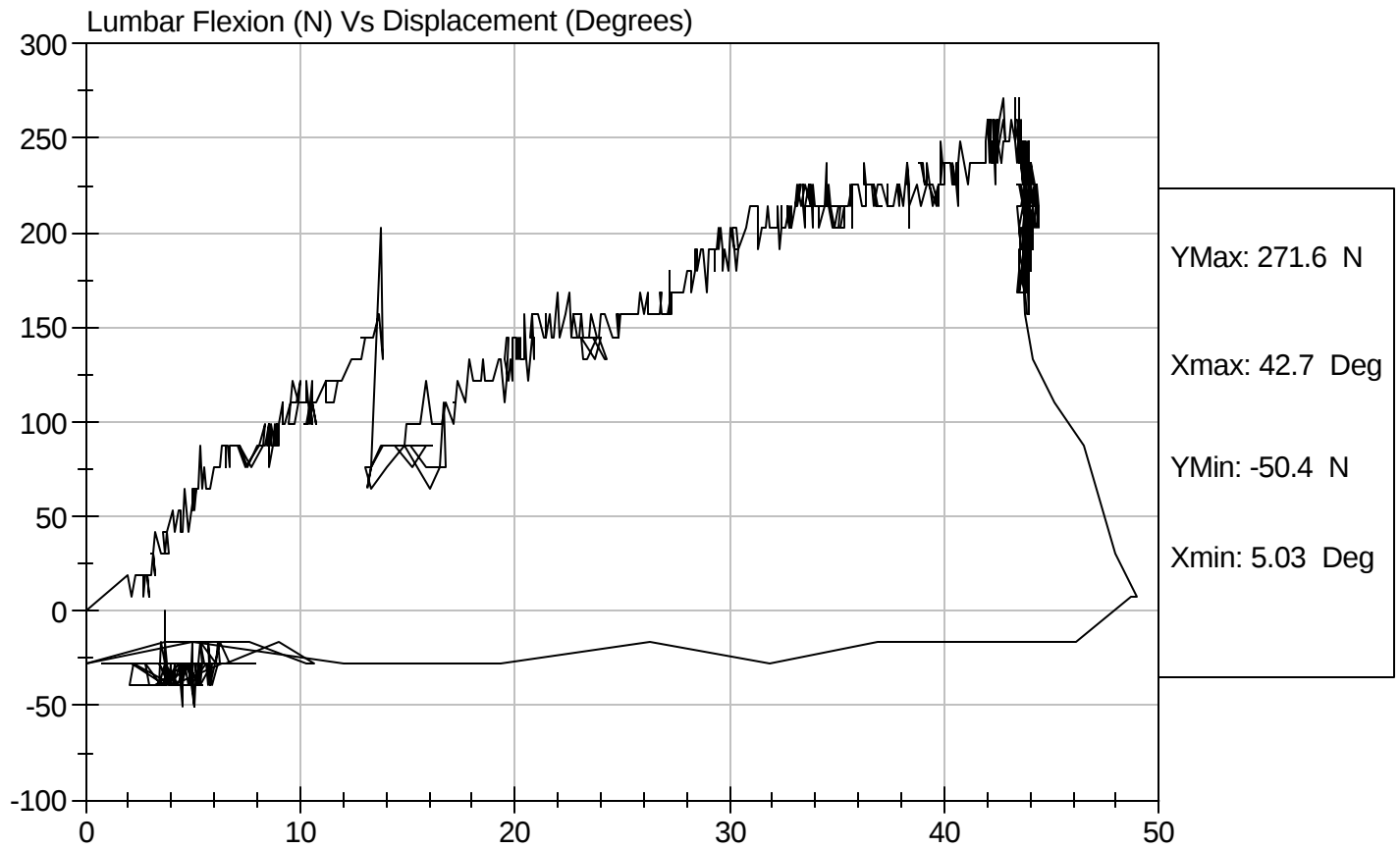


Test Description: Lumbar Flexion

Test Date: 12/06/2006

Component: D063425

Speed: 0 ft/sec, 0 m/sec



SID/HII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 904

Test I.D: D063429

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	24	Pass
Impact Velocity		m/s	6.89 to 7.13	7.07	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.02	Pass
	20 msec	m/s	4.12 to 5.10	4.34	Pass
	30 msec	m/s	5.73 to 7.01	6.20	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.81	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	74	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	59	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	78	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	58	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	11	Pass


 Laboratory Technician

12/06/2006

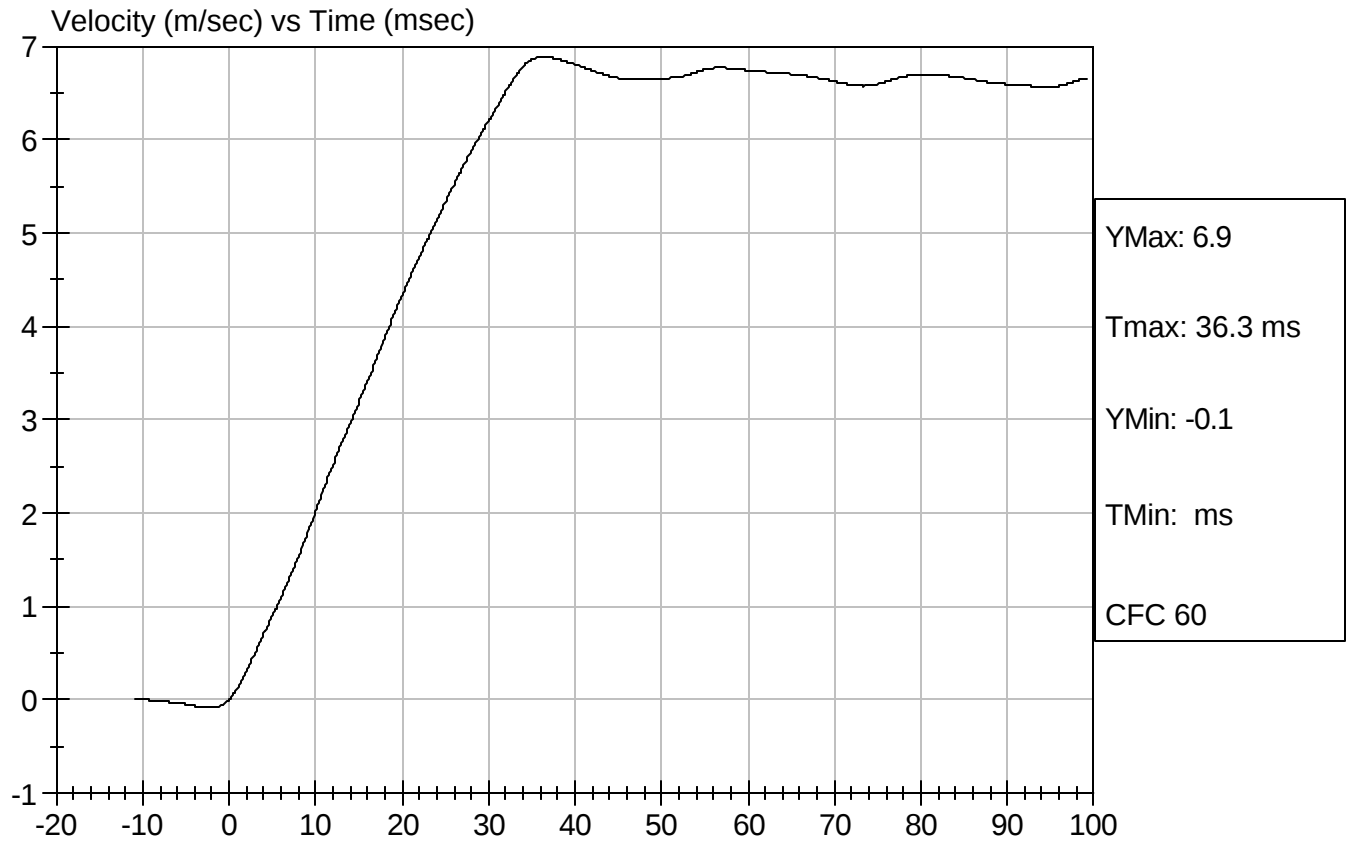
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D063429

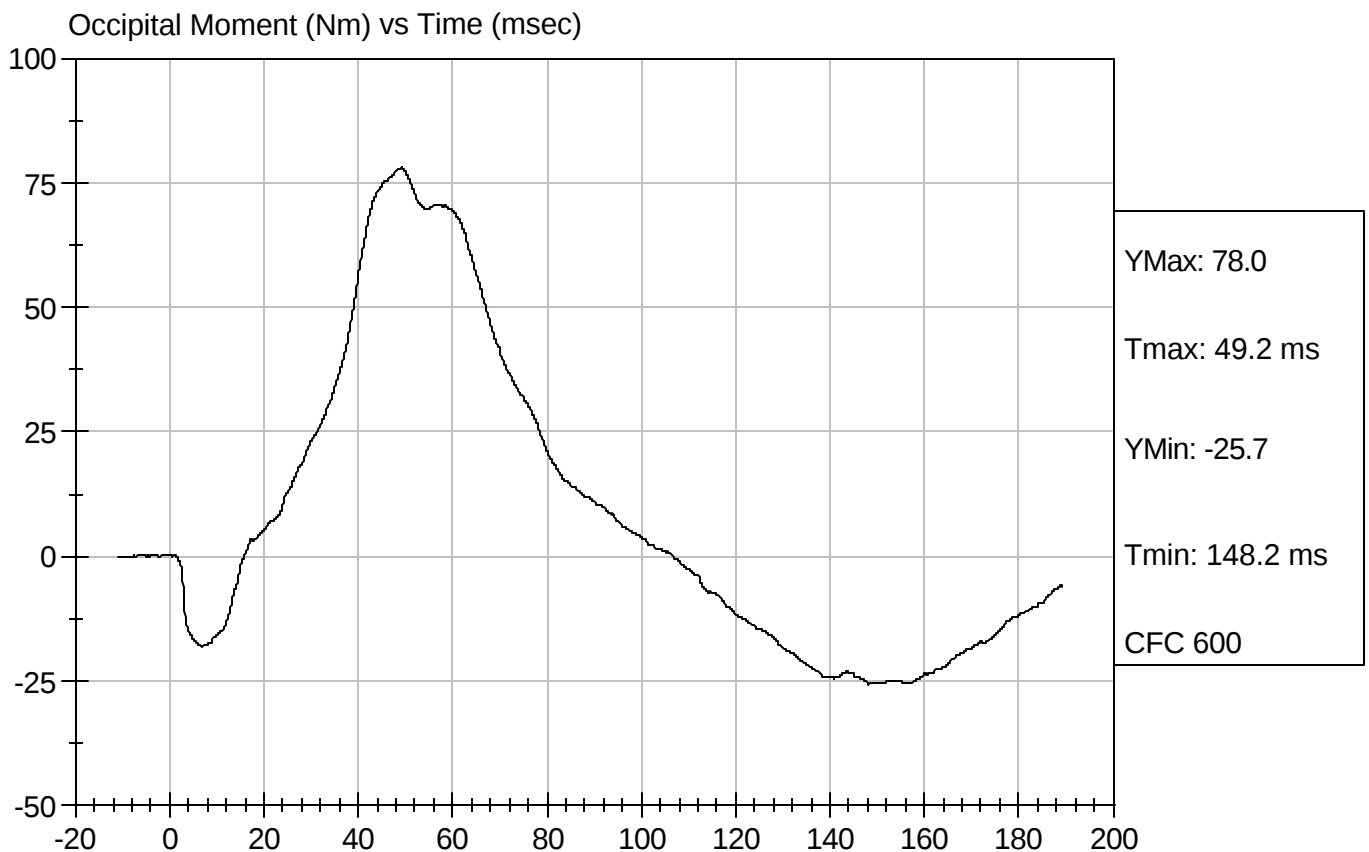
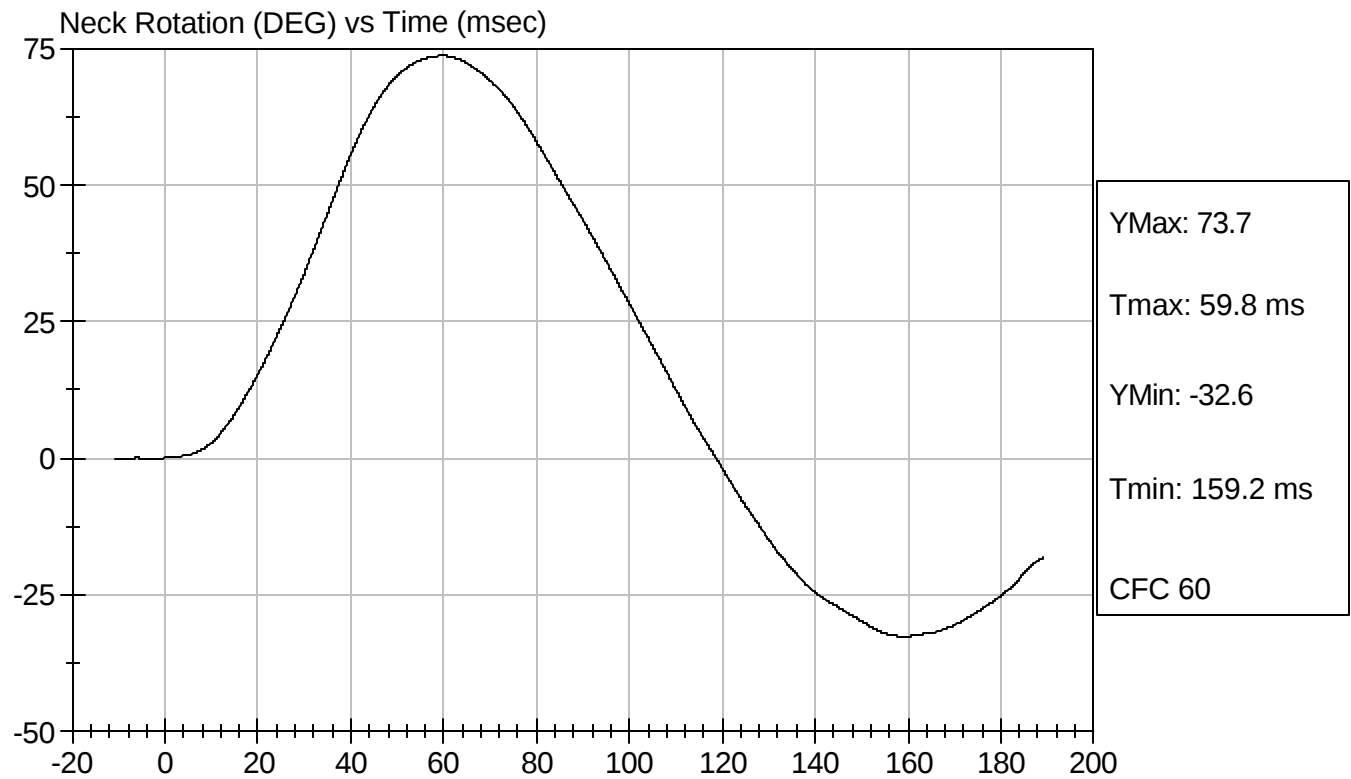
Test Date: 12/06/2006
Speed: 23.21 ft/sec, 7.07 m/sec





Test Desc: Neck Bending
Component ID: D063429

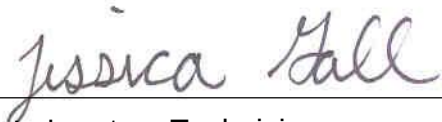
Test Date: 12/06/2006
Speed: 23.21 ft/sec, 7.07 m/sec



SID/HIII Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 904

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass


Laboratory Technician

Approved By

12/06/2006
Test Date