

REPORT NUMBER: NCAPSIDE-MGA-2010-009

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**HONDA OF AMERICA MFG., INC.
2010 HONDA ACCORD CROSSTOUR 2WD EX
NHTSA NUMBER: MA5307**

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



Test Date: January 7, 2010

Report Date: February 24, 2010

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
1200 NEW JERSEY AVENUE, SE, ROOM W43-410
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 DTNH22-09-D-00124.

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Date: 2/24/2010

Technical Report Documentation Page

1. Report No. NCAPSIDE-MGA-2010-009	2. Government Accession No.	3. Recipient's Catalog No.																						
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Testing of 2010 Honda Accord Crosstour 2WD EX; NHTSA No.: MA5307		5. Report Date February 24, 2010																						
		6. Performing Organization Code MGA																						
7. Author(s) Joe Fleck, Project Engineer Ben Fischer, Project Engineer		8. Performing Organization Report No. NCAPSIDE-MGA-2010-009																						
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No.																						
		11. Contract or Grant No. DTNH22-09-D-00124																						
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Rulemaking, Office of Crashworthiness Standards 1200 New Jersey Ave, SE, Room W43-410, NVS-111 Washington, D.C. 20590		13. Type of Report and Period Covered: <i>Final Report</i> 1/07/2010 to 2/24/2010																						
		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 2010 Honda Accord Crosstour 2WD EX 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 January 7, 2010. The impact velocity of the Moving Deformable Barrier (MDB) was 62.1 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 262 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>PASSENGER</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">27.1</td> <td style="text-align: center;">54.5</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">27.0</td> <td style="text-align: center;">60.3</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">42.4</td> <td style="text-align: center;">45.9</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">35</td> <td style="text-align: center;">53</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">46.7</td> <td style="text-align: center;">51.1</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">81</td> <td style="text-align: center;">173</td> </tr> </tbody> </table> 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.					<u>DRIVER</u>	<u>PASSENGER</u>	Left Upper Rib (LUR) Accel., g	27.1	54.5	Left Lower Rib (LLR) Accel., g	27.0	60.3	Lower Spine (T ₁₂) Accel., g	42.4	45.9	Thoracic Trauma Index (TTI)	35	53	Pelvis (PEV) Accel., g	46.7	51.1	HIC	81	173
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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, 1200 New Jersey Ave, SE Washington, D.C. 20590																						
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 140	22. Price																					

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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00124. The purpose of this test was to evaluate side impact protection in a 2010 Honda Accord Crosstour 2WD EX manufactured by Honda of America Mfg., Inc.

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 2010 Honda Accord Crosstour 2WD EX 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 62.1 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 1943.6 kg and the test weight of the MDB was 1361.5 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on January 7, 2010.

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 five (5) 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 262 mm at level 3, 1500 mm rearward of the vertical impact point. The driver and passenger SID/HIIIs, Serial Nos. 272 and 271 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	81	39.5	75.5	35	46.7
Passenger	173	42.1	69.1	53	51.1

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Information	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	
Side Torso/Pelvis Airbags	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:

- Driver Neck Force Y
- Left Rear Sill Y after 90 msec.
- Left Lower B-Post Y
- Left Mid B-Post Y
- Left Lower A-Post Y after 30 msec.
- Left Mid A-Post Y after 30 msec.

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

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010

TEST VEHICLE INFORMATION

Make	Honda
Model	Accord Crosstour
Body Style	MPV
NHTSA No.	MA5307
VIN	5J6TF1H37AL001009
Color	White Diamond
Delivery Date	12/17/2009
Odometer Reading (mile)	72 miles
Dealer	Rosen Honda
Transmission	Automatic
Final Drive	Front
Number of Cylinders	6
Engine Displacement (L)	3.5
Engine Placement	Lateral
Automatic Door Locks (ADL)	Yes
Owner's Manual Details Instructions on Disabling ADLs	Yes

TEST VEHICLE OPTIONS

Driver Front Airbag	Yes
Driver Side Curtain Airbag	Yes
Driver Side Torso/Pelvis Airbags	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	Honda of America Mfg., Inc.
Date of Manufacture	11/'09

GVWR (kg)	2240
GAWR Front (kg)	1190
GAWR Rear (kg)	1080

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				385
Cargo Wt. (RCLW) (kg)				45

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

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	518.4	366.5		573.3	446.8	
Right	kg	502.6	355.2		516.2	407.3	
Ratio	%	58.6	41.4		56.1	43.9	
Totals	kg	1021.0	721.7	1742.7	1089.5	854.1	1943.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1742.7
Weight of 2 P572M ATDs	kg	161.5
Rated Cargo/Luggage Weight (RCLW)	kg	45
Calculated Vehicle Target Weight (TVTW)	kg	1949.2

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

Weight of Ballast in Trunk (kg): 4.1

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	774	781	777	785	1160
As Tested	mm	764	778	759	768	1230
Fully Loaded	mm	764	775	747	767	

TEST VEHICLE VERTICAL IMPACT LINE DATA

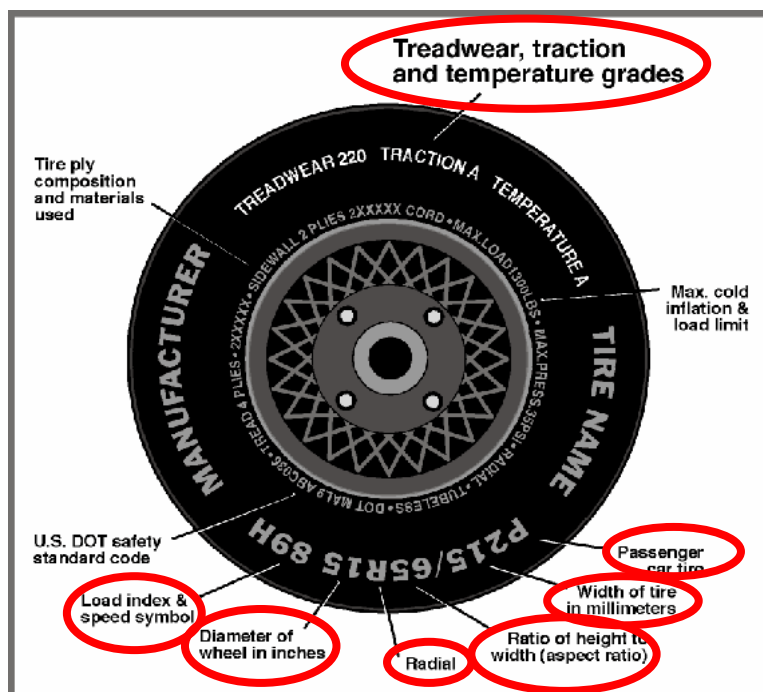
Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2800
Target Impact Point Aft of Front Axle	mm	460
Actual Impact Point Aft of Front Axle	mm	473

DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Test Pressure (kPa)	220	220
Recommended Tire Size	225/65R17	225/65R17
Tire Size on Vehicle	225/65R17	225/65R17
Tire Manufacturer	Bridgestone	Bridgestone
Tire Name	Dueler H/T	Dueler H/T
Tire Type	Passenger	Passenger
Tire Width (mm)	225	225
Ratio of Height to Width (aspect ratio)	65	65
Radial	R	R
Wheel Diameter	17	17
Load Index & Speed Symbol	102T	102T
Treadwear	360	360
Traction Grade	B	B
Temperature Grade	B	B

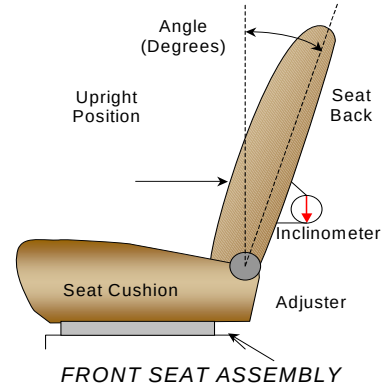
DATA SHEET NO. 3 **TEST VEHICLE INFORMATION**

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle. The procedure is as follows: For the driver's seat, set seat back 20 degrees rearward from the forward most locked position back adjustments. The left rear passenger's seat is non-adjustable.

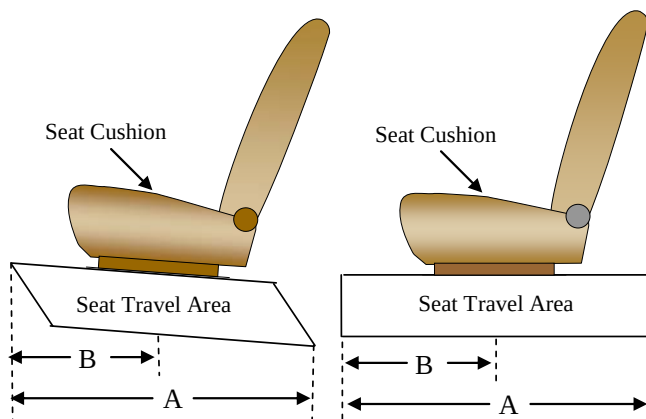


Driver seat back angle: 10.7 degrees at the headrest post

Passenger seat back angle: fixed

SEAT FORE/AFT POSITIONS

	Total Fore/Aft Travel	Placed in position #
Driver Seat	286 mm	143 mm
Rear Seat	Fixed	Fixed



DATA SHEET NO. 3 (CONTINUED)

TEST VEHICLE INFORMATION

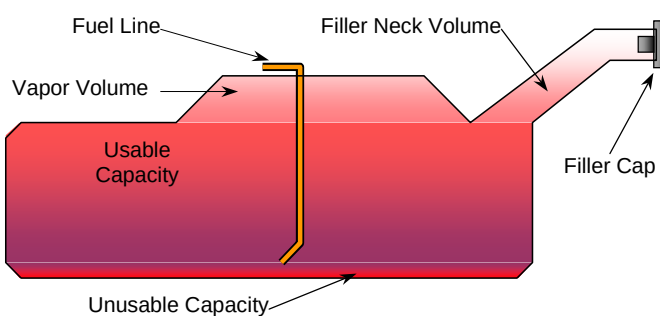
Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
Test Program: NCAP Side Impact

NHTSA No. MA5307
Test Date: 1/07/2010

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	70.0
Usable Capacity of "Optional" Tank	
92-94% of Usable Capacity	64.4 to 65.8
Actual Amount of Solvent used	65.1
1/3 of Usable Capacity	23.3

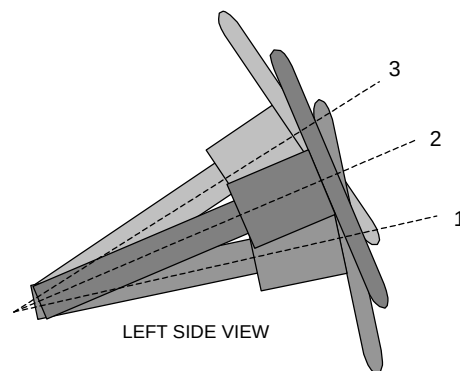
The test vehicle is equipped with an electric fuel pump. After the ignition key is turned from LOCK (0) to ON (II) position. The pump will be filled up for two seconds. And then the pressure is maintained.



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.



LEFT SIDE VIEW

STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITION

	Fore/Aft (mm)	Degrees
Lowermost position No. 1	264	71.8
Geometric center position No. 2	247	68.3
Uppermost position No. 3	230	64.8

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

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
Test Program: NCAP Side Impact

NHTSA No. MA5307
Test Date: 1/07/2010

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2592
C.G. Location aft of Front Axle	1129

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	411.8	281.6	
Right	kg	356.8	311.3	
Ratio	%	56.5	43.5	
Totals	kg	768.6	592.9	1361.5

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.1
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.3
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.8

POST TEST OBSERVATIONS
MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	13 rearward
Vertical Offset	mm	+/-20	6 down

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

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID HIII / 272	SID HIII / 271
Head Contact	Curtain Airbag, Headrest	Curtain Airbag, Headliner, Headrest
Upper Torso Contact	Side Airbag	Curtain 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	Struck side door was unlocked; Non-struck side door was unlocked	Struck side door was unlocked; Non-struck side door was unlocked
Left Side Door Opening	Door remained closed and latched	Door remained closed and latched
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	None
Window Damage	Left Front Window Broke
Other Notable Effects	None

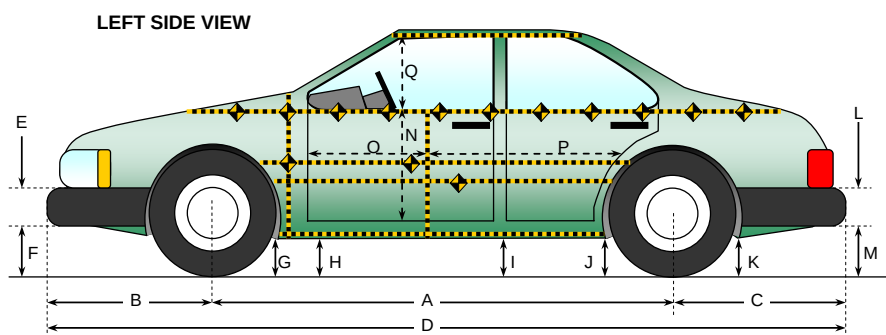
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

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

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



All Measurements in mm

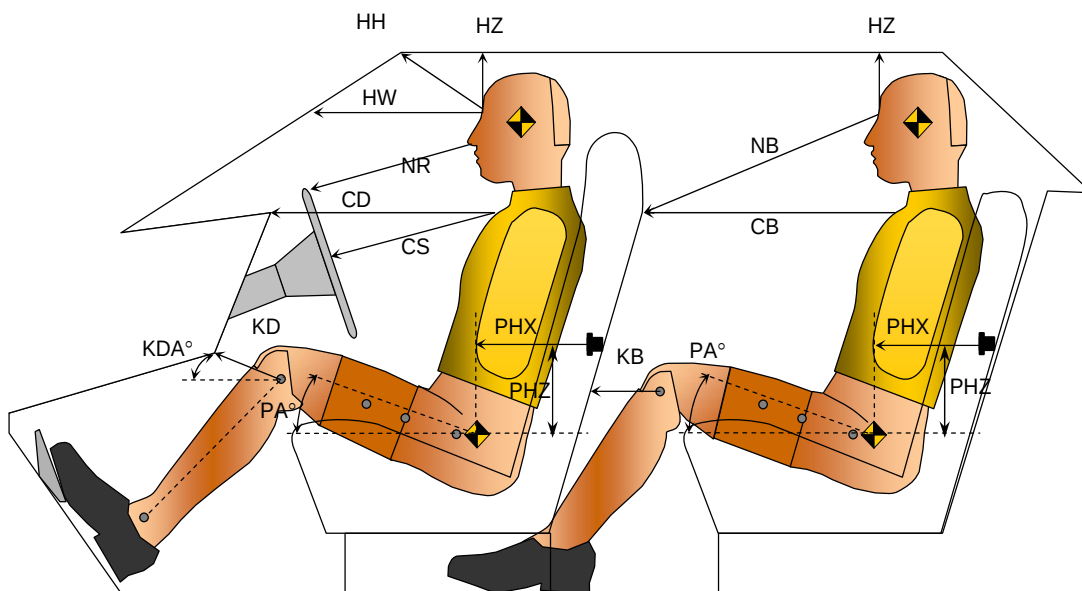
Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2800	2795	5
B	Front Axle to FSOV	1030	1040	-10
C	Rear Axle to RSOV	1155	1150	5
D	Total Length at Centerline	4985	4985	0
E	Front Bumper Thickness	134	134	0
F	Front Bumper Bottom to Ground	269	283	-14
G	Sill Height at Front Wheel Well	214	236	-22
H	Sill Height at Front Door Leading Edge	219	232	-13
I	Sill Height at "B" Pillar	215	235	-20
J1	Sill Height at Rear Wheel Well	212	230	-18
J2	Pinch Weld Height at Rear Wheel Well	218	225	-7
K	Sill Height Aft of Rear Wheel Well	254	248	6
L	Rear Bumper Thickness	130	130	0
M	Rear Bumper Bottom to Ground	365	382	-17
N	Sill Height to Window Bottom Sill	805	*	*
O	Front Door Leading Edge to Impact CL	855	836	19
P	Rear Door Trailing Edge to Impact CL	1188	1100	88
Q	Front Window Opening	400	380	20
R	Right Side Length	3545	3543	2
S	Left Side Length	3545	3531	14
T	Vehicle Width at "B" Post	1863	1625	238

* Trim fell off.

DATA SHEET NO. 7
SID/HII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010

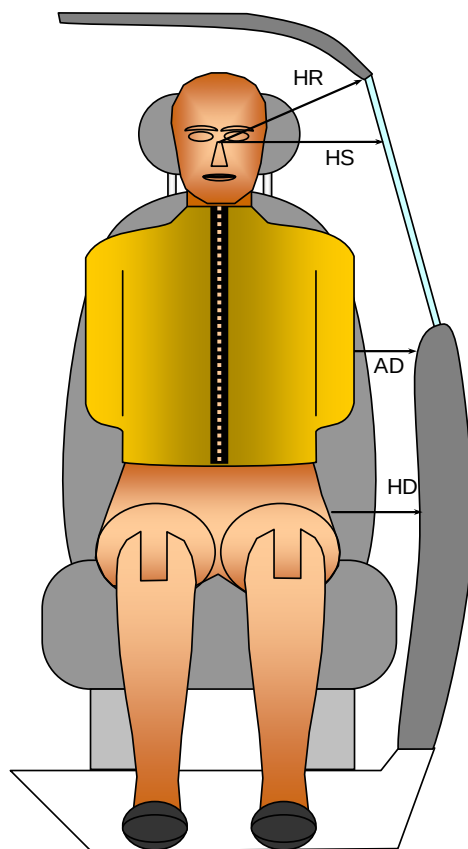


Driver Code	Pass. Code	Measurement Description	Driver S/N 272		Passenger S/N 271	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	370			
HW		Head to Windshield	646			
HZ	HZ	Head to Roof	155		147	
NR	NB	Nose to Rim/Nose to Seatback	425		670	
CD	CB	Chest to Dash or Seatback	538		580	
CS		Chest to Steering Wheel	324			
KDL	KBL	Left Knee to Dash or Seatback	155	30.9	284	18.4
KDR	KBR	Right Knee to Dash or Seatback	140	25.8	270	19.6
PA	PA	Pelvic Angle		24.5		23.7
PHX	PHX	H-Point to Striker (X-Axis)	232		213	
PHZ	PHZ	H-Point to Striker (Z-Axis)	163		251	

DATA SHEET NO. 8
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



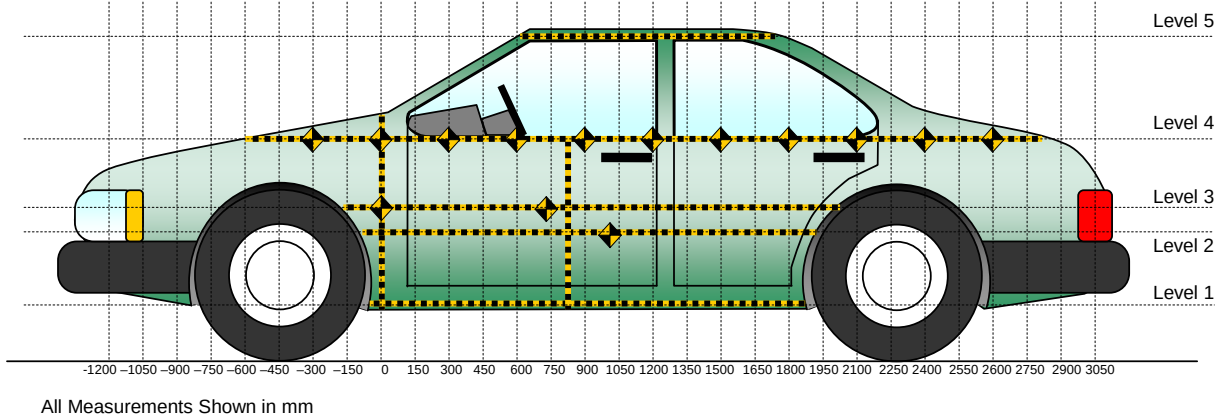
FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 272	Passenger S/N 271
HR	Head to Side Header	mm	193	170
HS	Head to Side Window / C-Post Trim	mm	334	206
AD	Arm to Door	mm	107	113
HD	H-Point to Door	mm	161	164

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

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



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	24	1350	1446
4	Window Sill	102	1200	1013
3	Mid Door	262	1500	648
2	Occupant H-Point	231	450	546
1	Sill Top	50	1200	265
	Maximum Penetration	262		

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900				315					314					-1	
-750				292					298					6	
-600				275					285					10	
-450				269					282					13	
-300				267					290					23	
-150			150	272				165	305				15	33	
0	208	159	159	271		210	175	243	289		2	16	84	18	
150	202	168	165	271		230	320	324	285		28	152	159	14	
300	202	172	167	269		235	399	346	298		33	227	179	29	
450	200	174	168	269		235	405	374	302		35	231	206	33	
600	197	175	168	270		238	404	384	334		41	229	216	64	
750	196	176	168	273	499	242	396	404	344	512	46	220	236	71	13
900	195	177	168	274	495	243	390	412	340	509	48	213	244	66	14
1050	195	179	169	280	498	245	378	397	345	512	50	199	228	65	14
1200	198	181	171	278	498	248	394	410	380	517	50	213	239	102	19
1350	196	181	173	284	499	245	408	430	370	523	49	227	257	86	24
1500	198	180	173	281	499	240	395	435	352	522	42	215	262	71	23
1650	200	176	170	294	502	234	385	420	338	523	34	209	250	44	21
1800	202	165	165	295	511	215	364	404	324	523	13	199	239	29	12
1950		156	155	305	516		266	321	315	528		110	166	10	12
2100				308	524				319	539				11	15
2250				312	538				332	550				20	12
2400				322					333					11	
2550				335					344					9	
2700				345					354					9	
2850				360					365					5	
3000				375					380					5	

Reference plane is parallel to test vehicle longitudinal centerline.

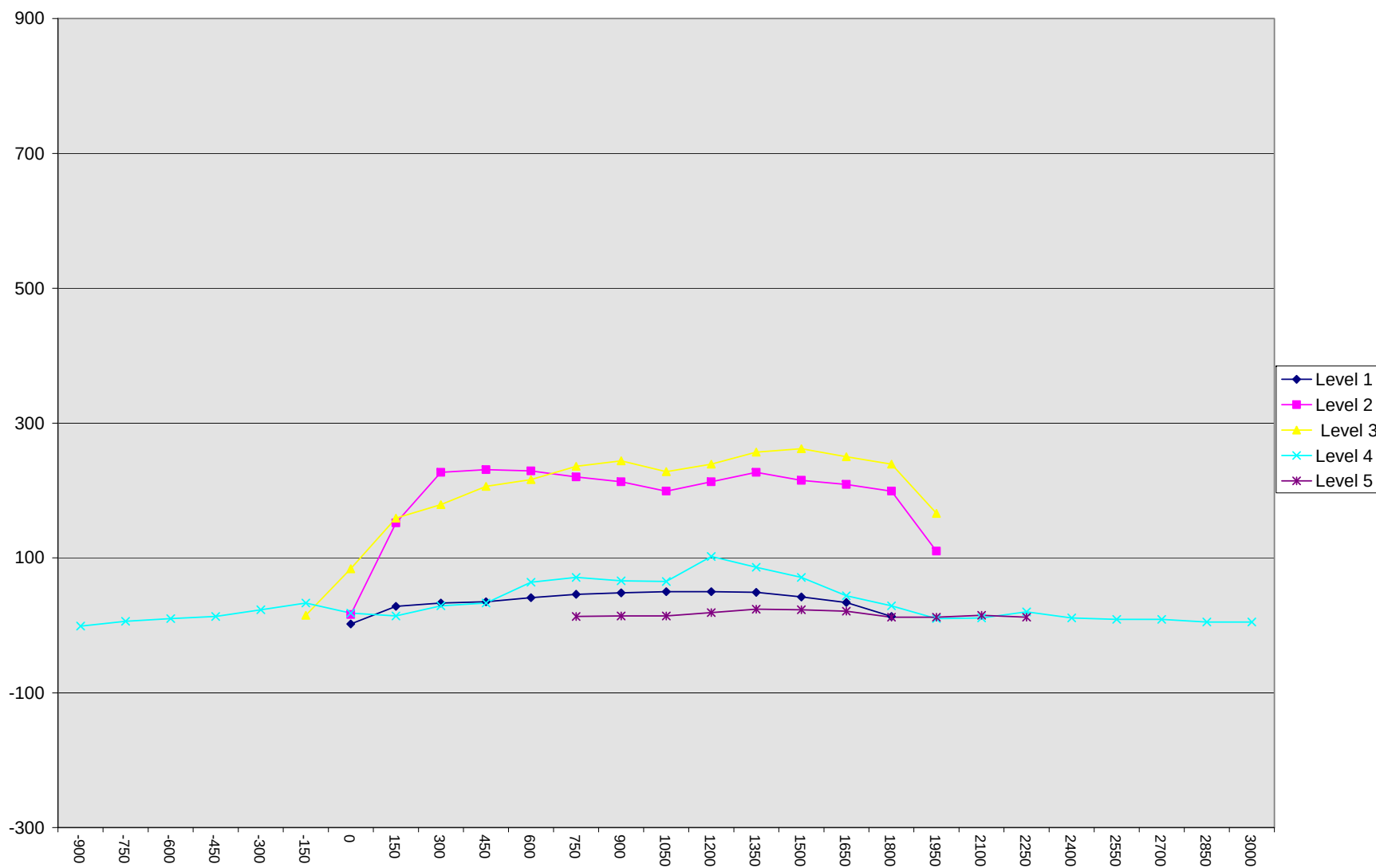
Given dimensions = Reference plane to car body

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

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
Test Program: NCAP Side Impact

NHTSA No. MA5307
Test Date: 1/07/2010

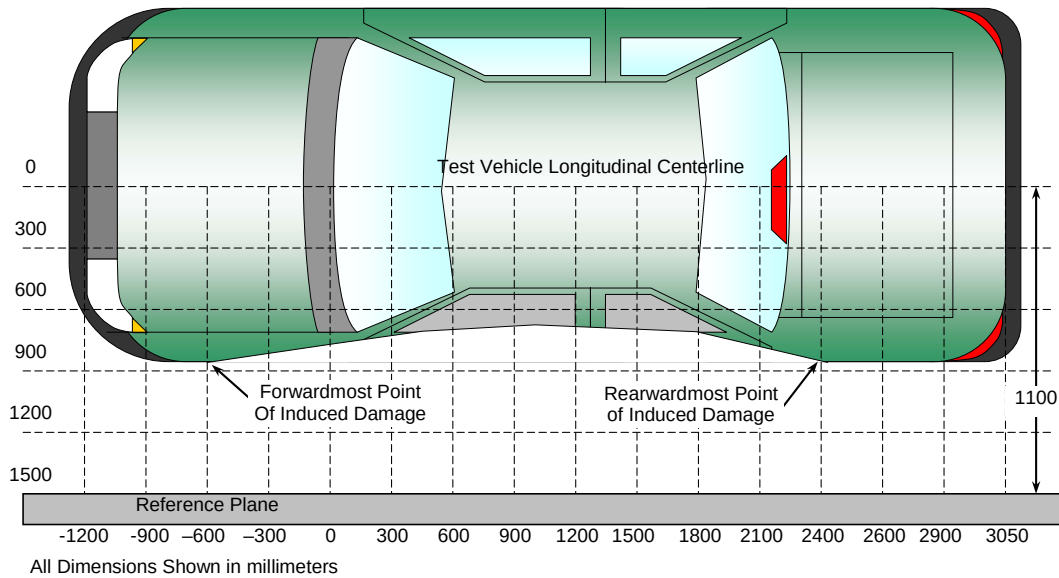
16



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	3000	4	375	380	5
2	2220	4	310	338	28
3	1570	3	172	435	263
4	645	3	225	421	196
5	-120	4	273	300	27
6	-900	4	315	314	-1

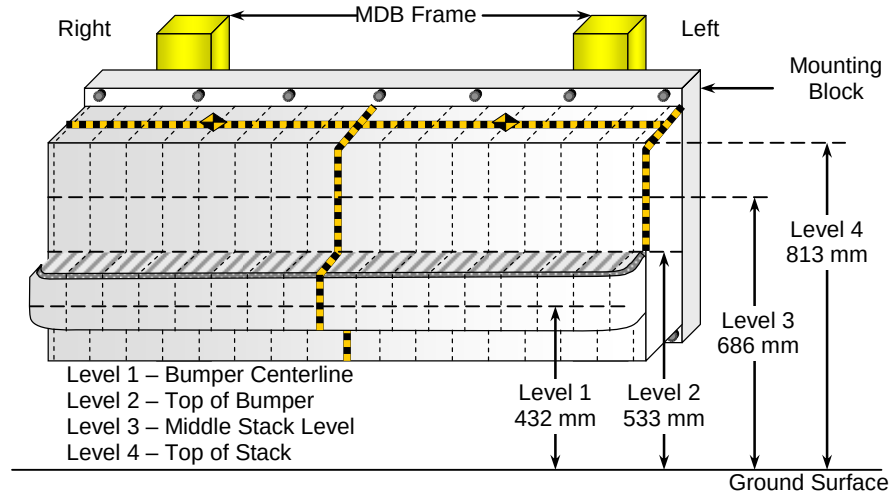
Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body.

DATA SHEET NO. 12

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



DEFORMABLE BARRIER STATIC CRUSH

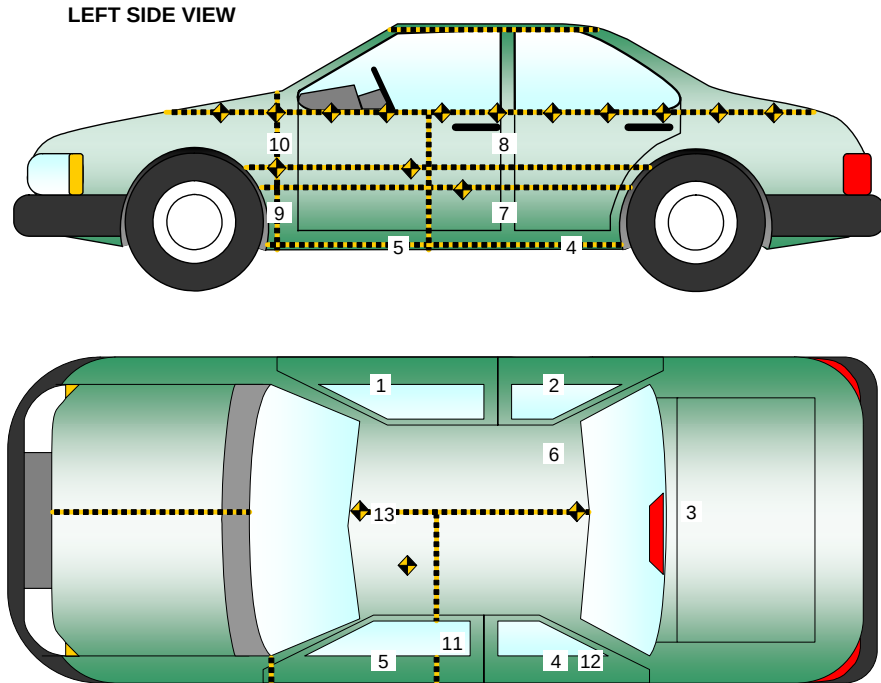
Stack Level	Distance Right of Center								C _L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	212	210	205	203	201	205	200	199	194	190	194	193	192	191	190	189	193
2	112	101	92	90	85	80	78	83	79	76	82	85	86	84	83	82	88
3	48	29	22	28	25	30	57	70	49	27	18	16	18	28	45	73	105
4	90	55	35	35	45	62	98	82	53	50	47	43	45	53	81	106	128

All Dimensions in mm

DATA SHEET NO. 13
VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



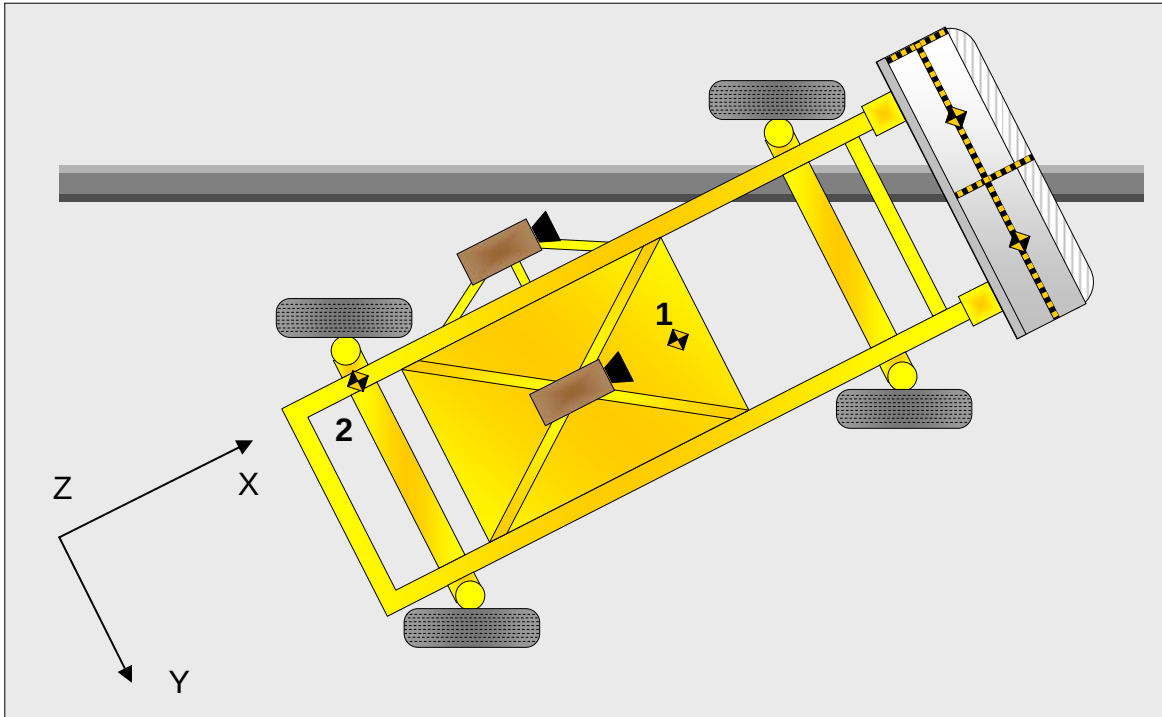
Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2705	755	-240
2	Right Sill at Rear Seat	1666	756	-245
3	Rear Floorpan Above Axle	1115	0	-564
4	Left Sill at Rear Door	1664	-756	-246
5	Left Sill at Front Door	2712	-755	-240
6	Rear Occupant Compartment	2052	350	-245
7	Left Lower B-Post	2371	-750	-616
8	Left Middle B-Post	2313	-742	-823
9	Left Lower A-Post	3411	-737	-516
10	Left Middle A-Post	3465	-845	-790
11	Front Seat Track	2502	-545	-405
12	Rear Seat Track or Structure			
13	Vehicle CG	2585	0	-445

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: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	MDB CG	-1105	0	-330
2	MDB Rear	-2580	-650	-625

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: 2010 Honda Accord Crosstour 2WD EX
Test Program: NCAP Side Impact

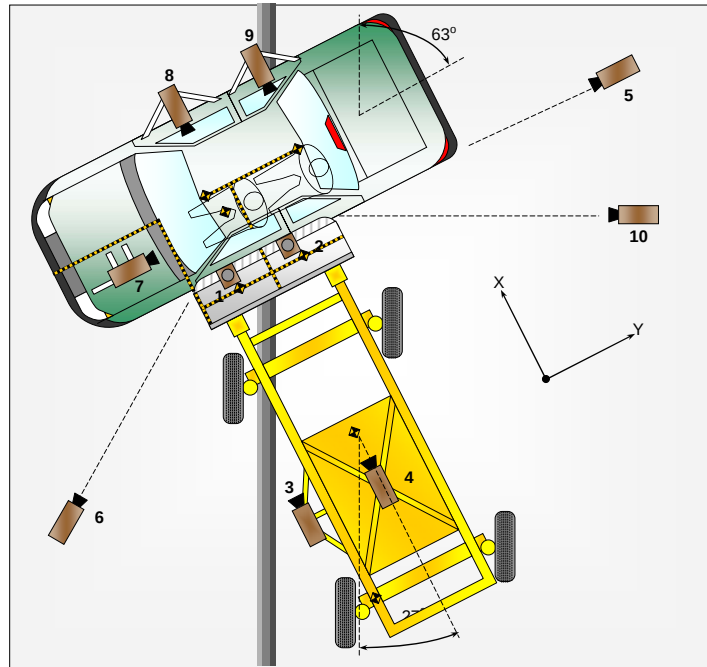
NHTSA No. MA5307
Test Date: 1/07/2010

	Elements	Pre-Test (mm)
1	Total Length	4985
2	Total Width	1863
3	Bumper Top Height	582
4	Bumper Bottom Height	498
5	Longitudinal Member Top Height	590
6	Distance between Longitudinal Members	914
7	Longitudinal Member Width	95
8	Engine Top Height	905
9	Engine Bottom Height	237
10	Engine and gearbox width	870
11	Front bumper-engine distance	504
12	Front shock absorber fixing height	894
13	Bonnet leading edge height	828
14	Front shock absorber fixing width	970
15	Front bumper – front axle distance	1030
16	Front axle – a pillar distance	475
17	A-pillar – B-pillar distance	1150
18	B-Pillar – rear axle distance	1178
19	B-pillar – C-pillar distance	714
20	Roof sill bottom height	1386
21	Roof sill top height	1497
22	Floor sill bottom height	255
23	Floor sill top height	379

DATA SHEET NO. 16
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Close-up	-510	-260	-5055	50	1000
2	Overhead Overall	695	1280	-5050	14	1000
3	MDB Onboard, Impact Point Close-up				50	
4	MDB Onboard, Centerline of Impact				16	
5	Right Side, Ground Level, Overall	45	7180	-1230	24	1000
6	Left Side, Ground Level, Overall	-1415	-5295	-1225	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: 2010 Honda Accord Crosstour 2WD EX
 Test Program: NCAP Side Impact

NHTSA No. MA5307
 Test Date: 1/07/2010

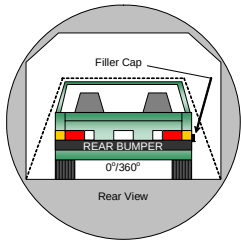
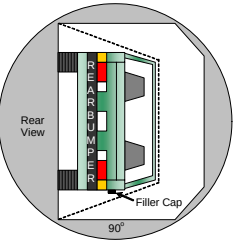
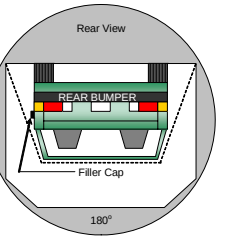
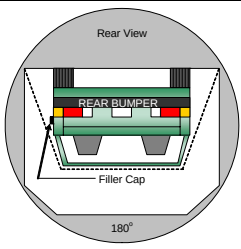
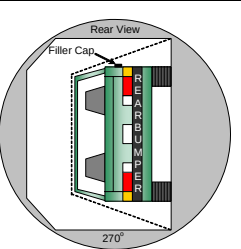
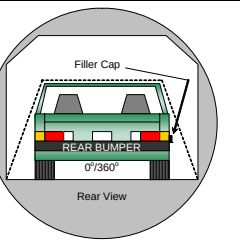
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 21° C Test Time: 11:39 am

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°	117	300	First 5	0
90° to 180°	119	300	First 5	0
180° to 270°	125	300	First 5	0
270° to 360°	115	300	First 5	0

APPENDIX A
PHOTOGRAPHS

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



Left 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



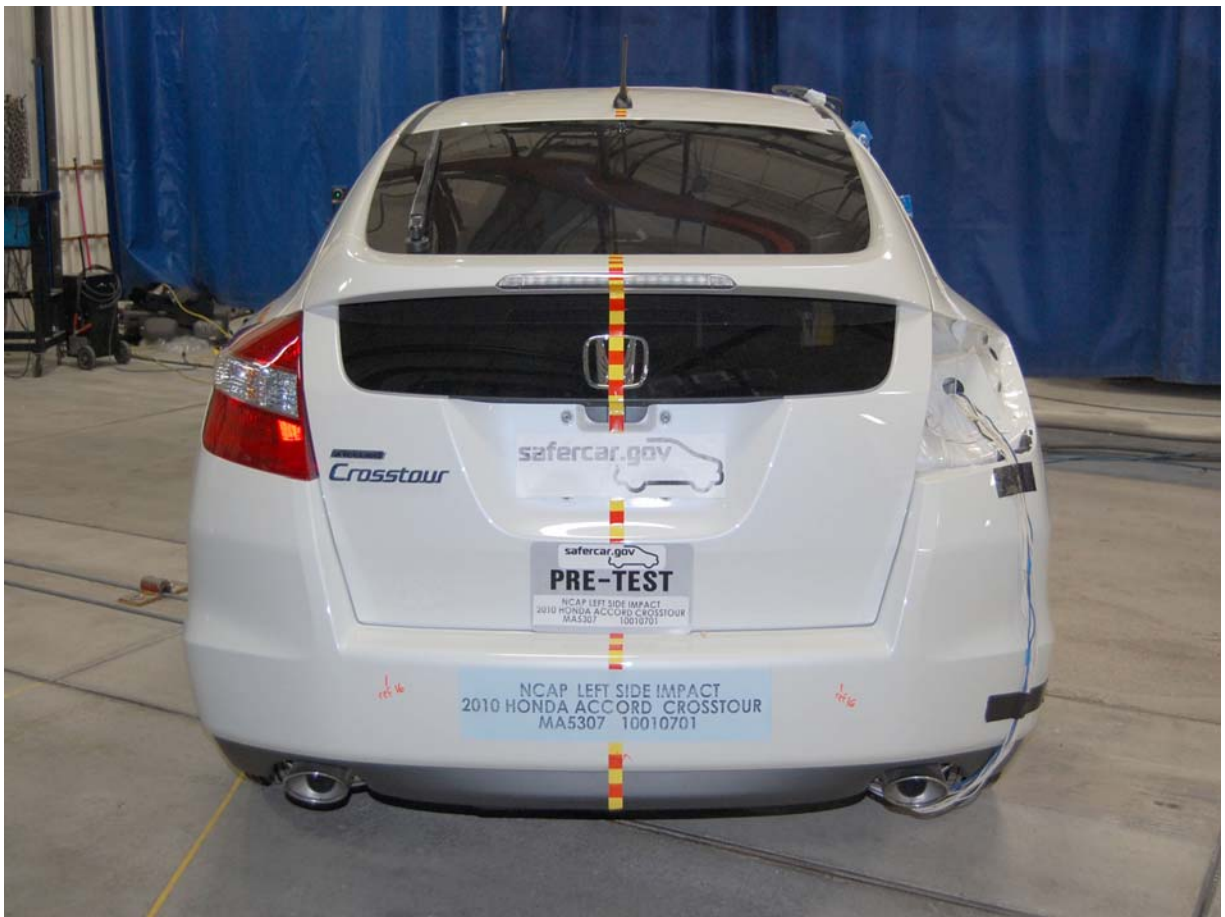
Post-Test Left Side View



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 Left Impact Point



Post-Test Left Impact Point



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



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



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



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



Pre-Test Left Side Impact Close-up



Post-Test Left Side Impact Close-up



Pre-Test Overhead View



Post-Test Overhead View



Pre-Test Overhead Close-up View



Post-Test Overhead Close-up View



Pre-Test Driver Dummy (Door Open)



Pre-Test Driver Dummy Clearance From Door



Post-Test Driver Dummy Clearance From Door



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 Clearance From Door



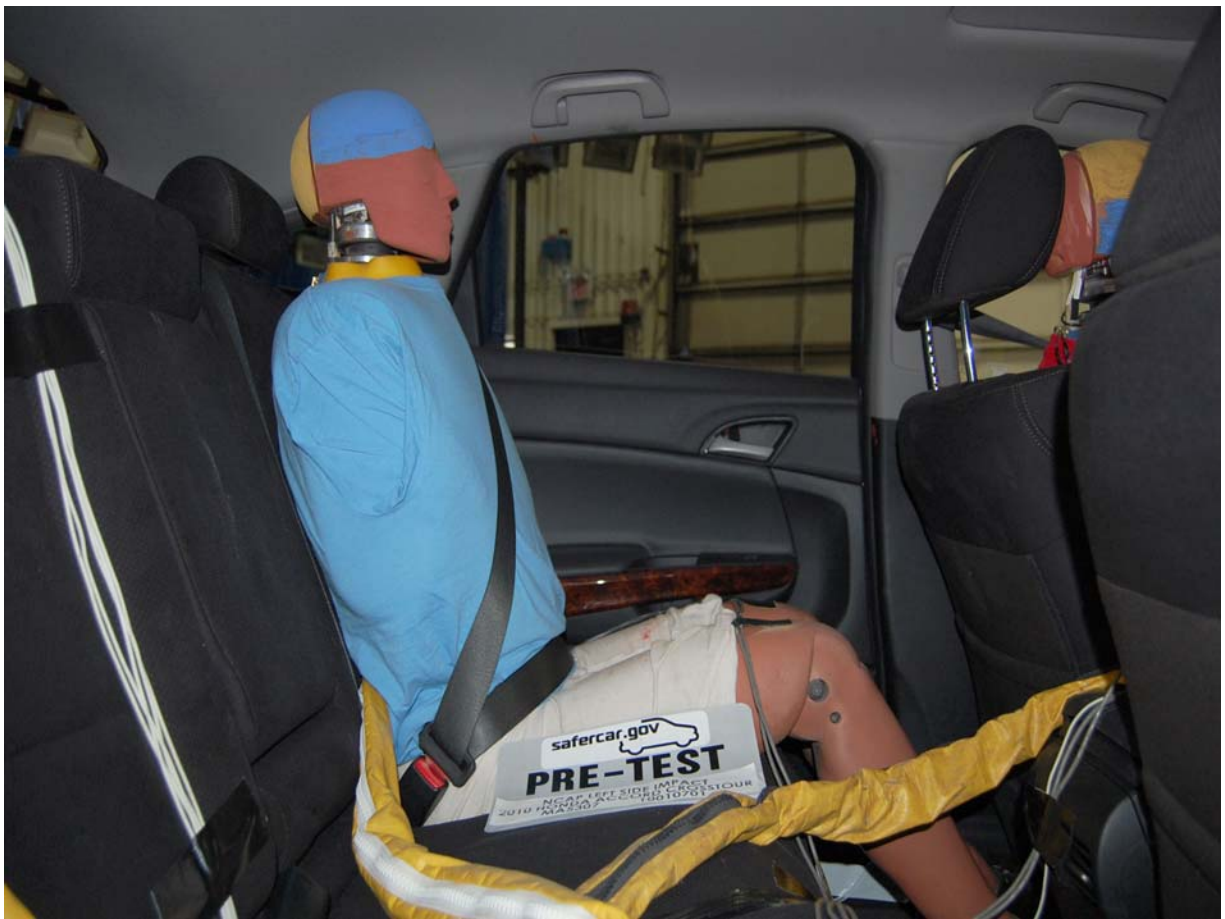
Post-Test Passenger Dummy Clearance From Door



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



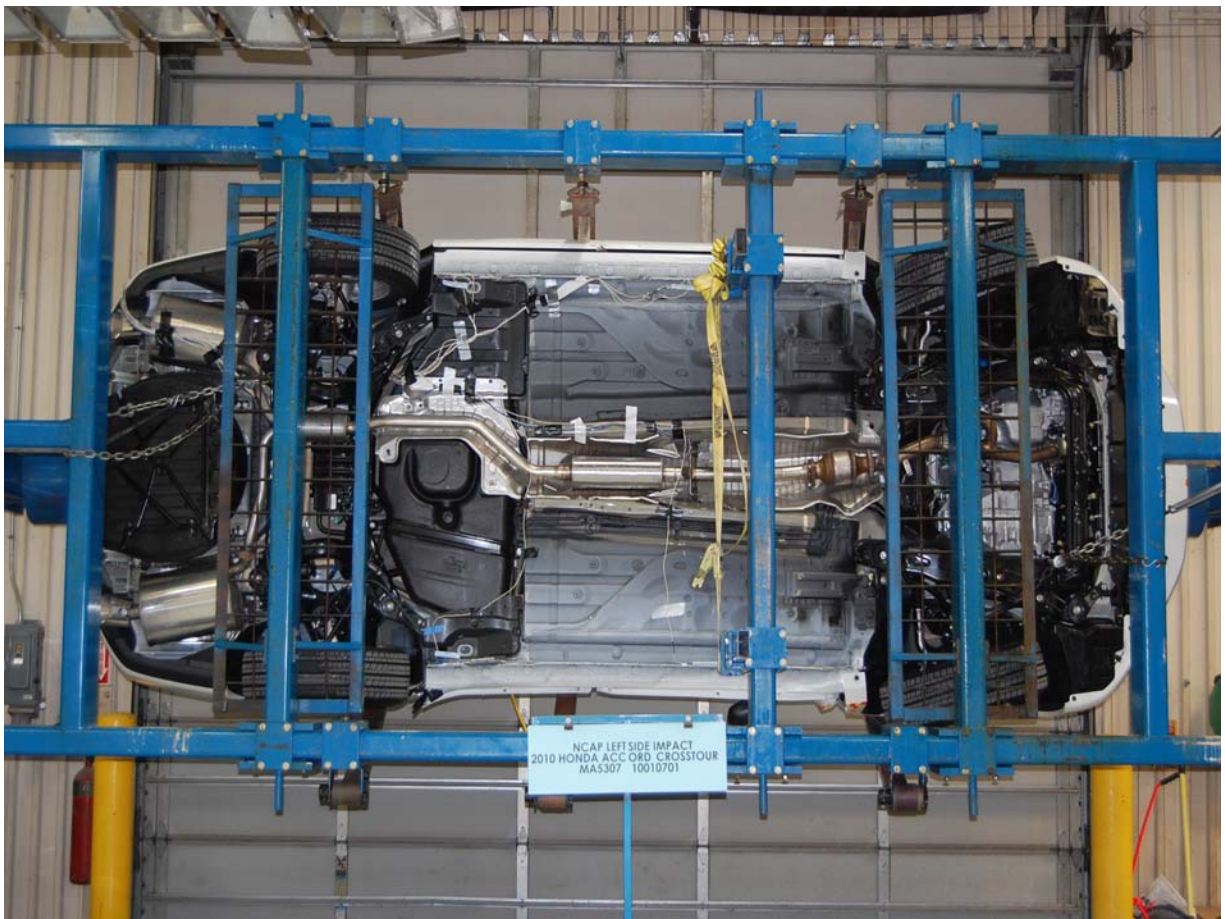
Post-Test Right Side View of Deformable Barrier



Pre-Test Left Side View of Deformable Barrier



Post-Test Left Side View of Deformable Barrier



Vehicle on Rollover Device (90 Degrees)



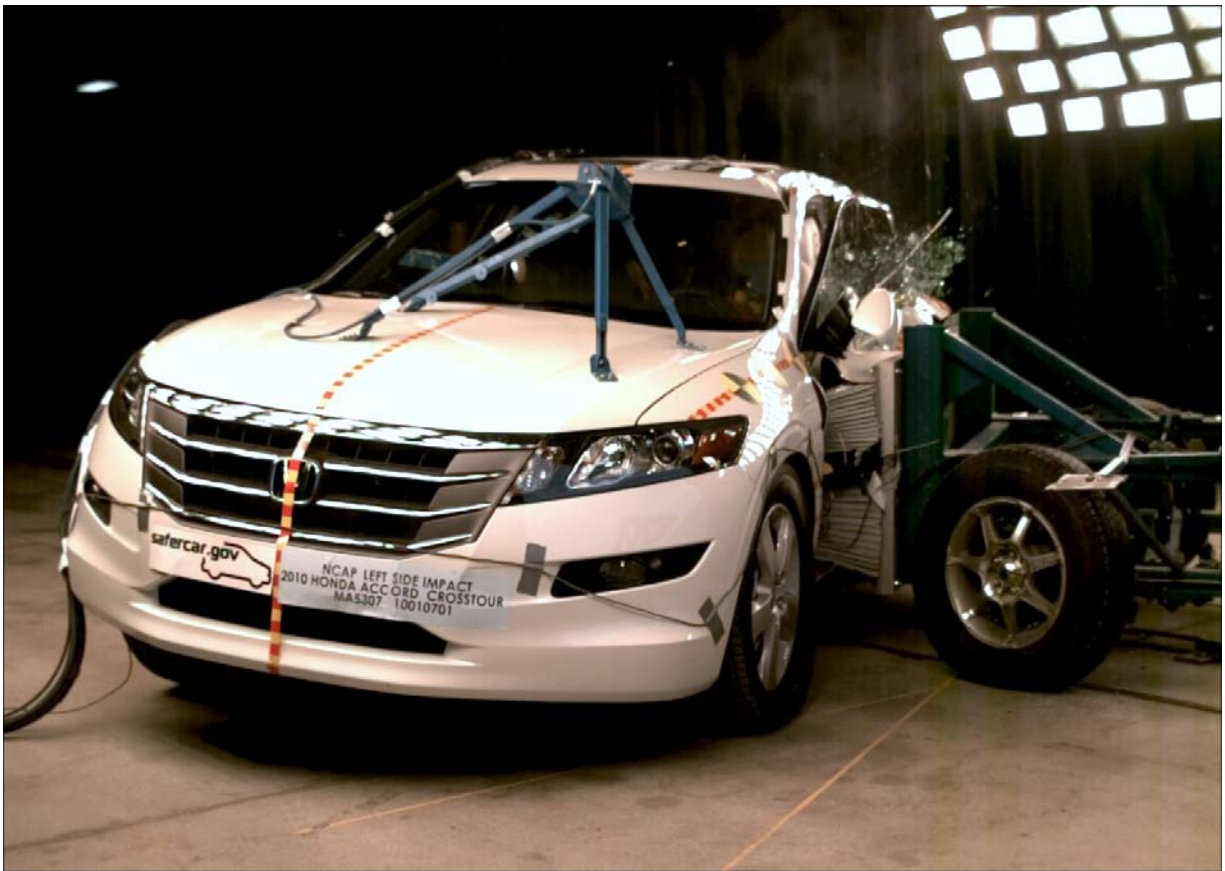
Vehicle on Rollover Device (180 Degrees)



Vehicle on Rollover Device (270 Degrees)



Vehicle on Rollover Device (360 Degrees)



Vehicle Impact



Post-Test Driver Dummy Head Contact View



Post-Test Driver Dummy Torso Contact



Post-Test Driver Dummy Contact



Post-Test Passenger Dummy Head Contact View



Post-Test Passenger Dummy Torso Contact



Post-Test Passenger Dummy Contact

APPENDIX B
SID/HIII RESPONSE DATA TRACES

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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

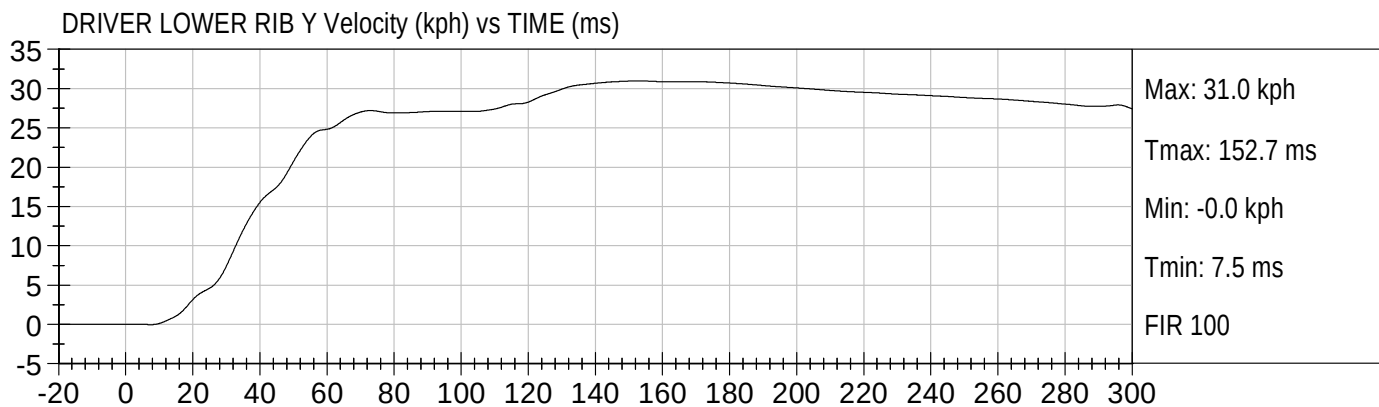
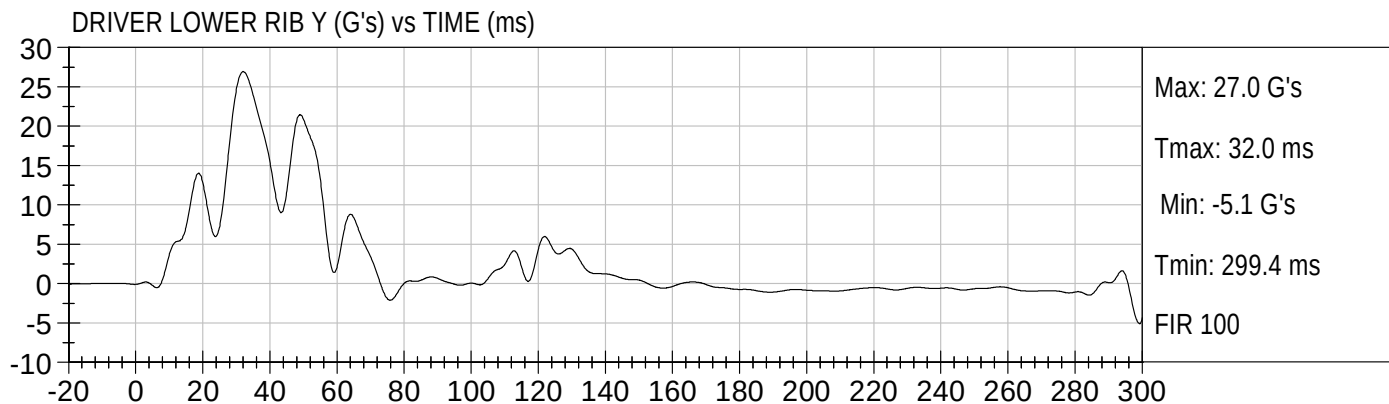
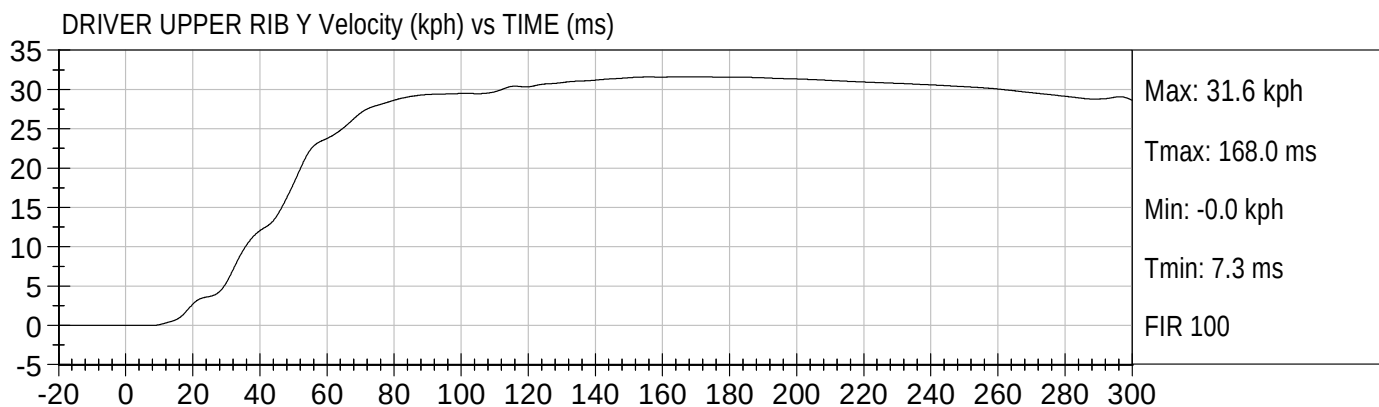
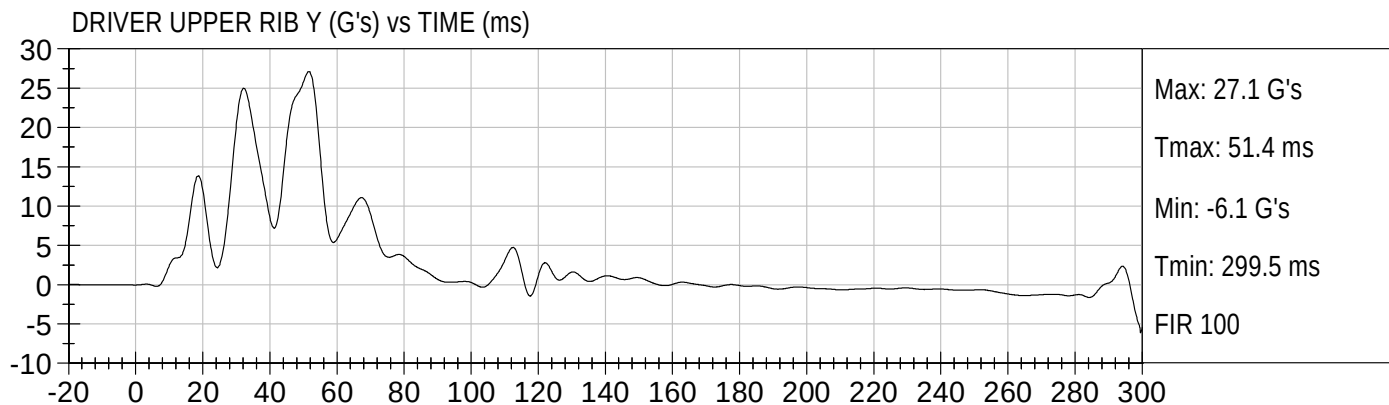
Driver Upper Neck Force Y

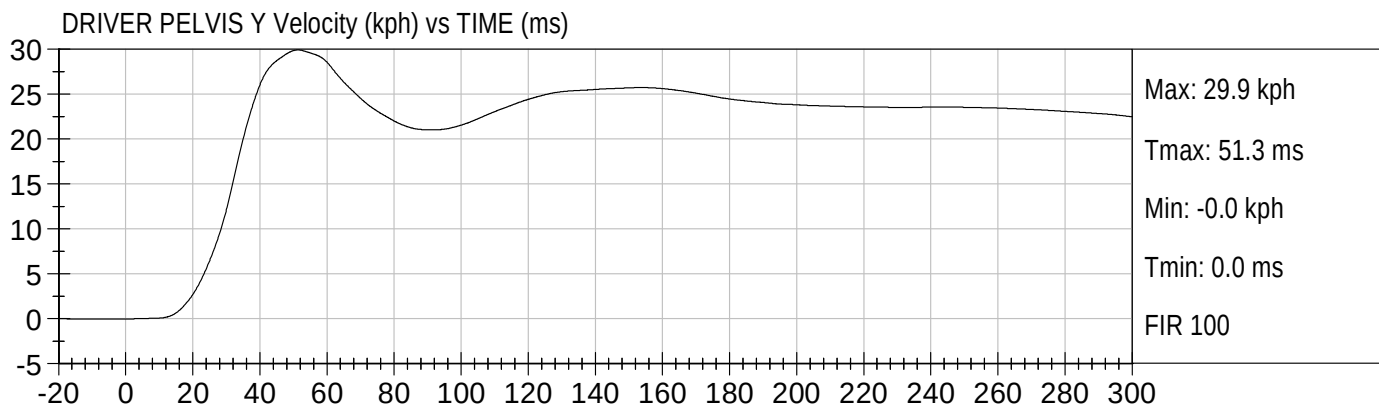
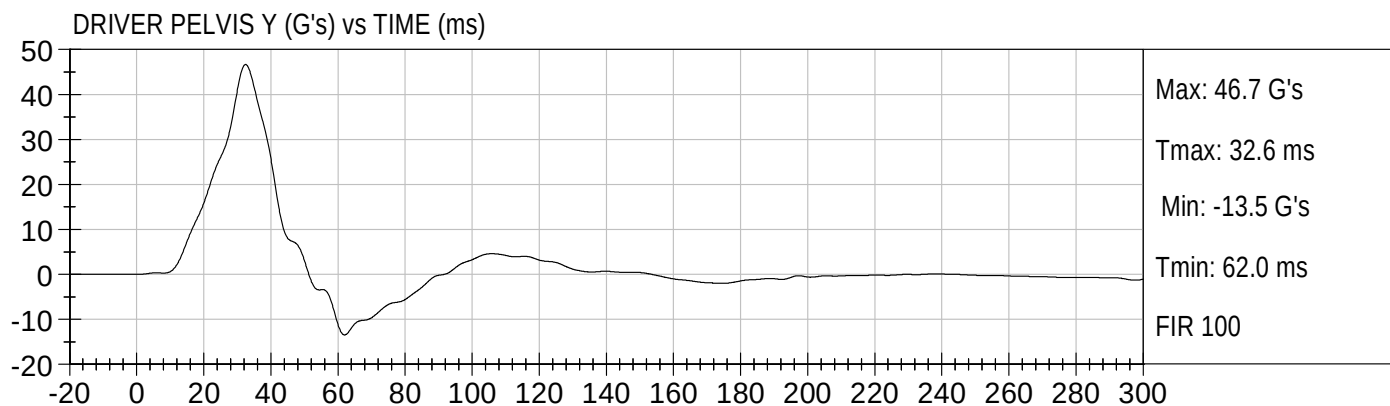
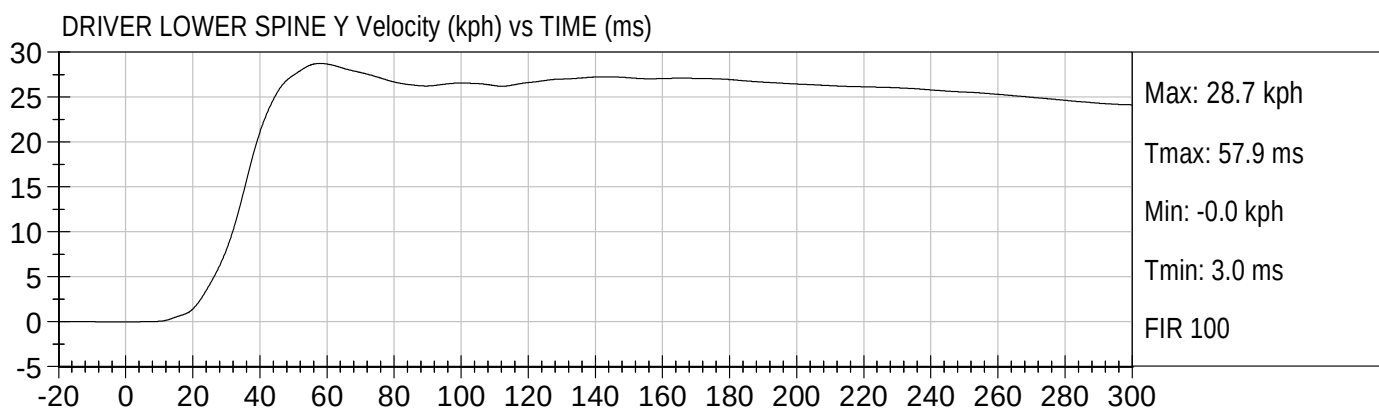
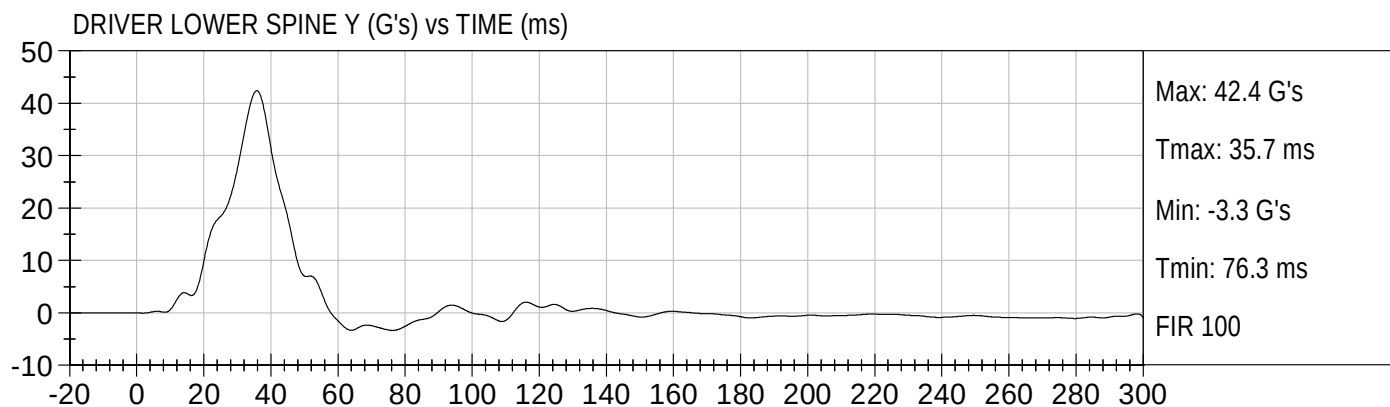
Driver Upper Neck Force Z

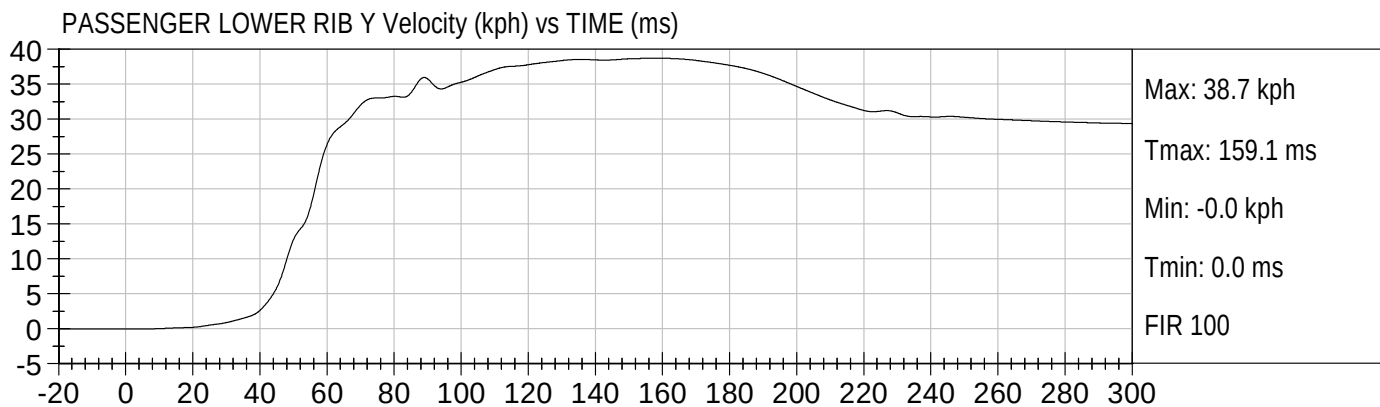
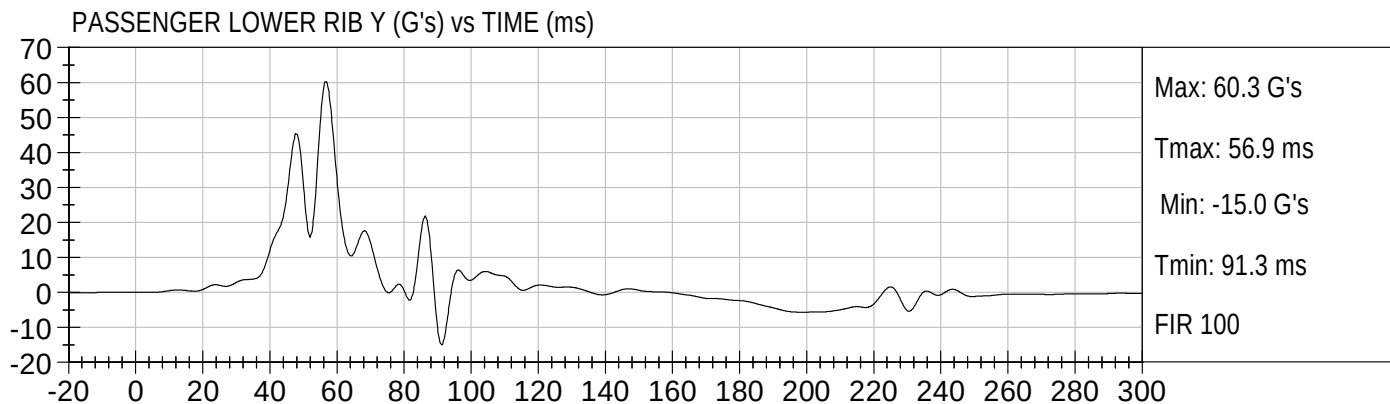
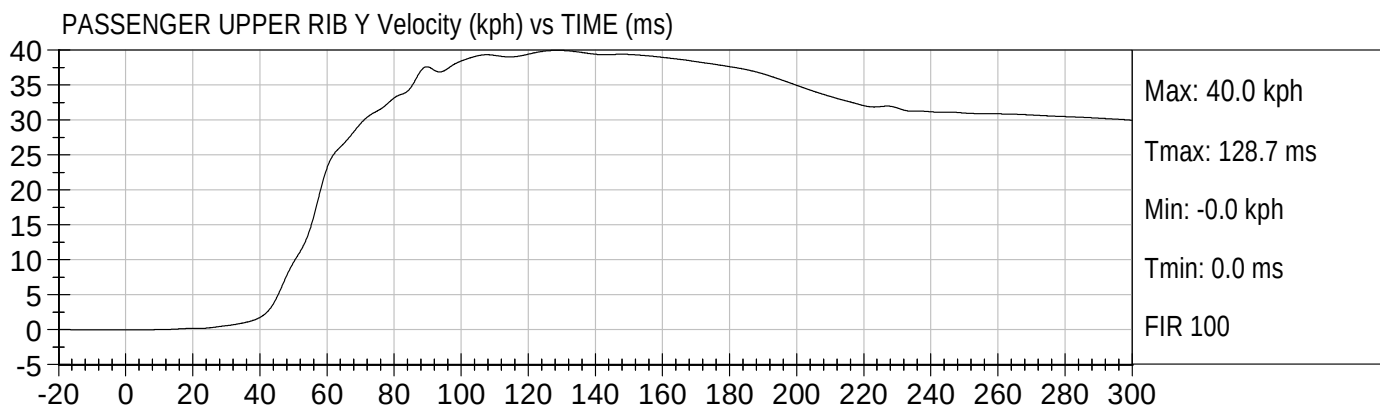
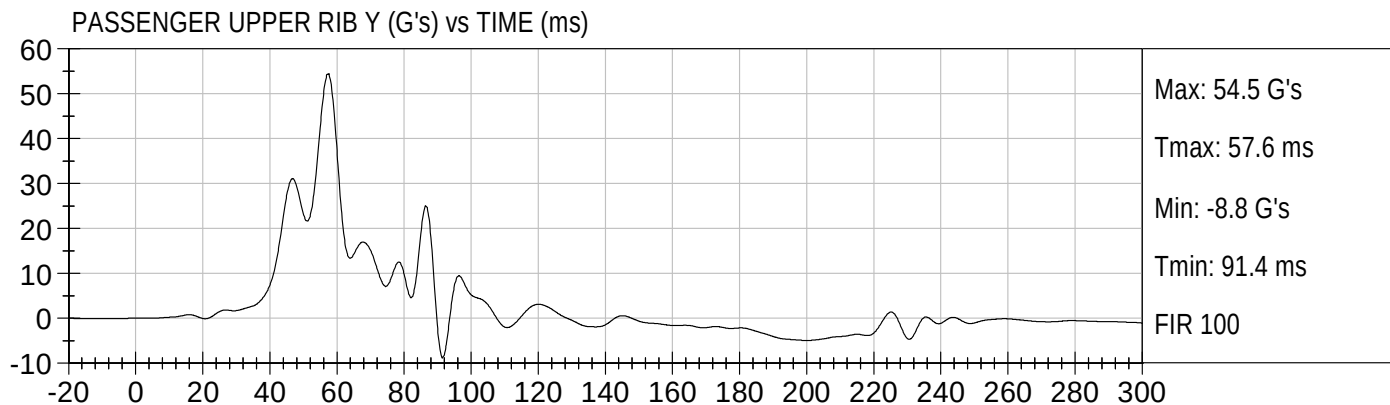
Driver Upper Neck Moment X

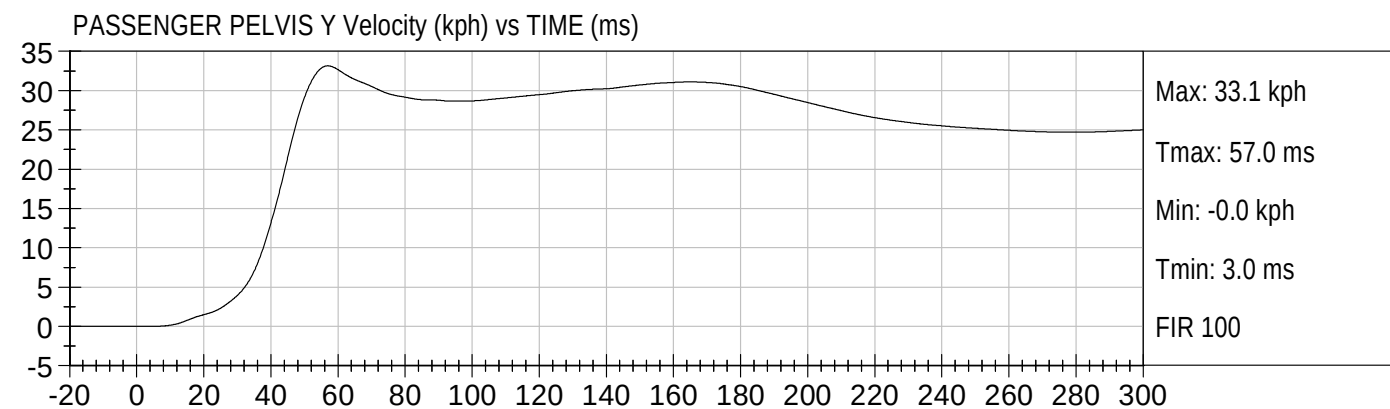
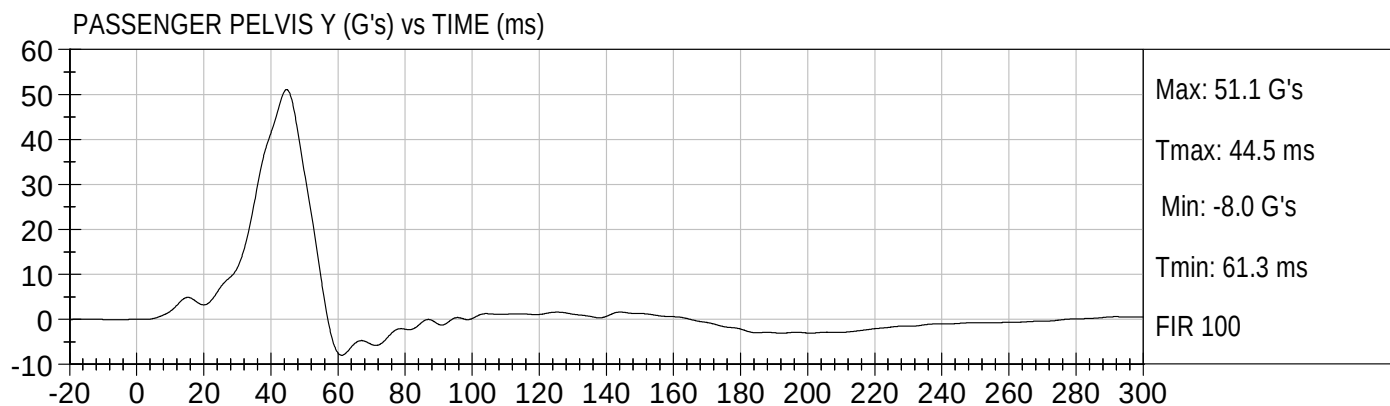
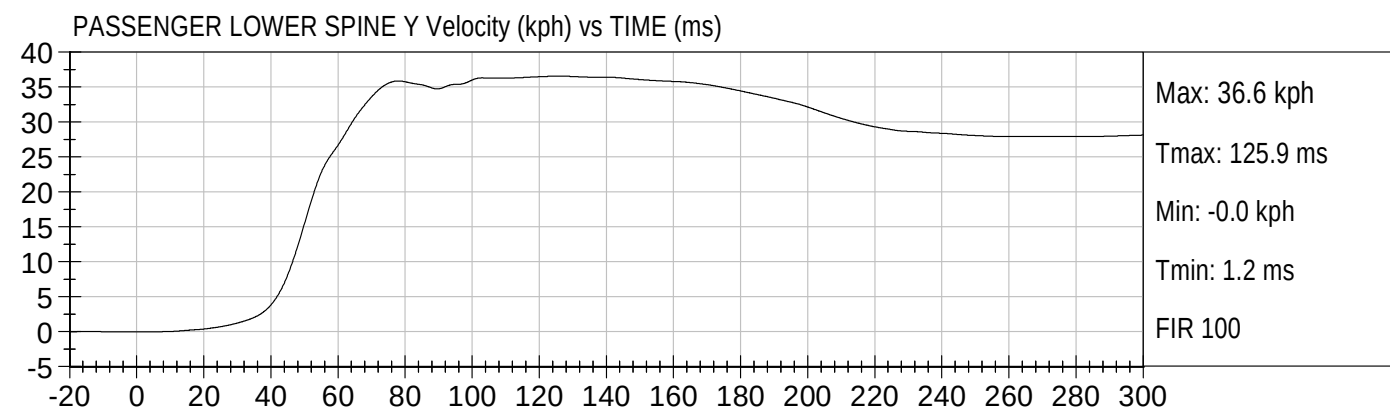
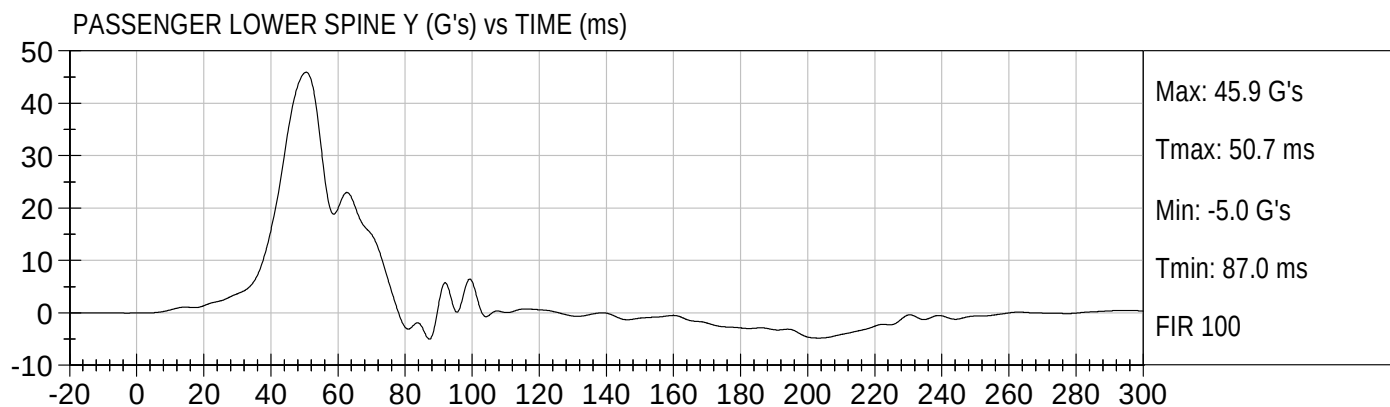
Driver Upper Neck Moment Y
Driver Upper Neck Moment Z
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y
Driver Thorax Contact
Driver Pelvis Contact
Passenger Head X Primary
Passenger Head Y Primary
Passenger Head Z Primary
Passenger Head 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 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 Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 272

Test I.D: D09296

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

12/1/2009
Test Date

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

ATD Serial No: 272

Test I.D: D092961

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Peak Resultant Acceleration	G's	120 to 150	134	Pass
Is Resultant Curve Unimodal?	N/A	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	7.6	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

11/30/09
Test Date

David Winkelbauer
Approved By



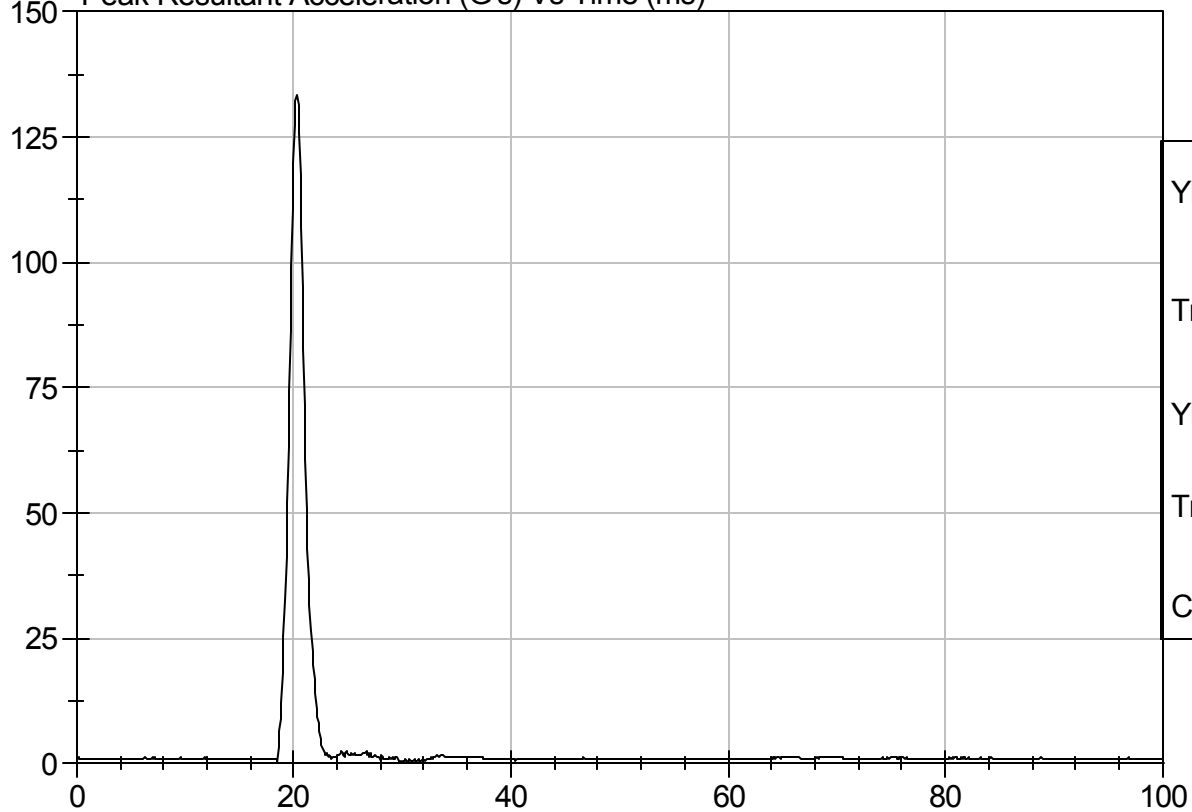
Test Description: Head Drop

Test Date: 11/30/09

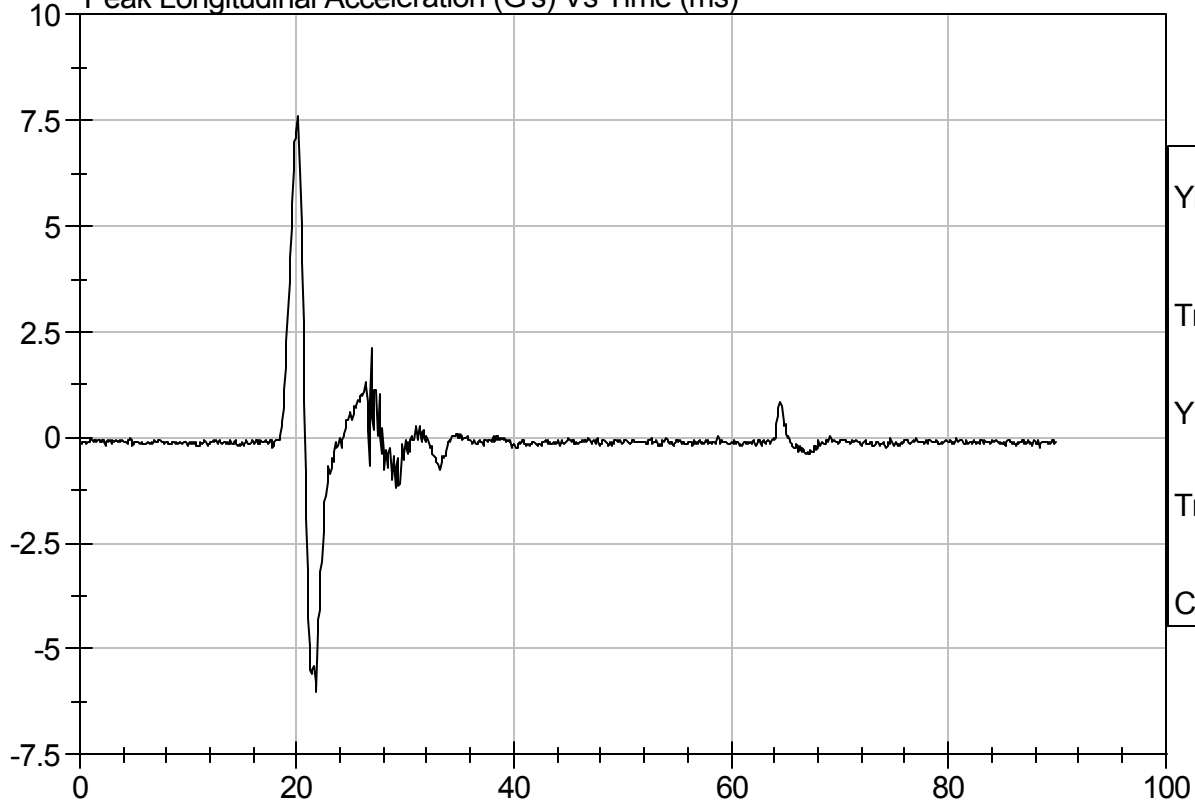
Component: D092961

Speed: 0 ft/s, 0.00 m/s

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



Peak Longitudinal Acceleration (G's) Vs Time (ms)



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

ATD Serial No: 272

Test I.D: D092962

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Probe Velocity	m/s	4.22 - 4.31	4.27	Pass
Upper Rib	G's	37 - 46	40	Pass
Lower Rib	G's	37 - 46	42	Pass
Lower Spine	G's	15 - 22	21	Pass
Overall Test Results				Pass


Laboratory Technician

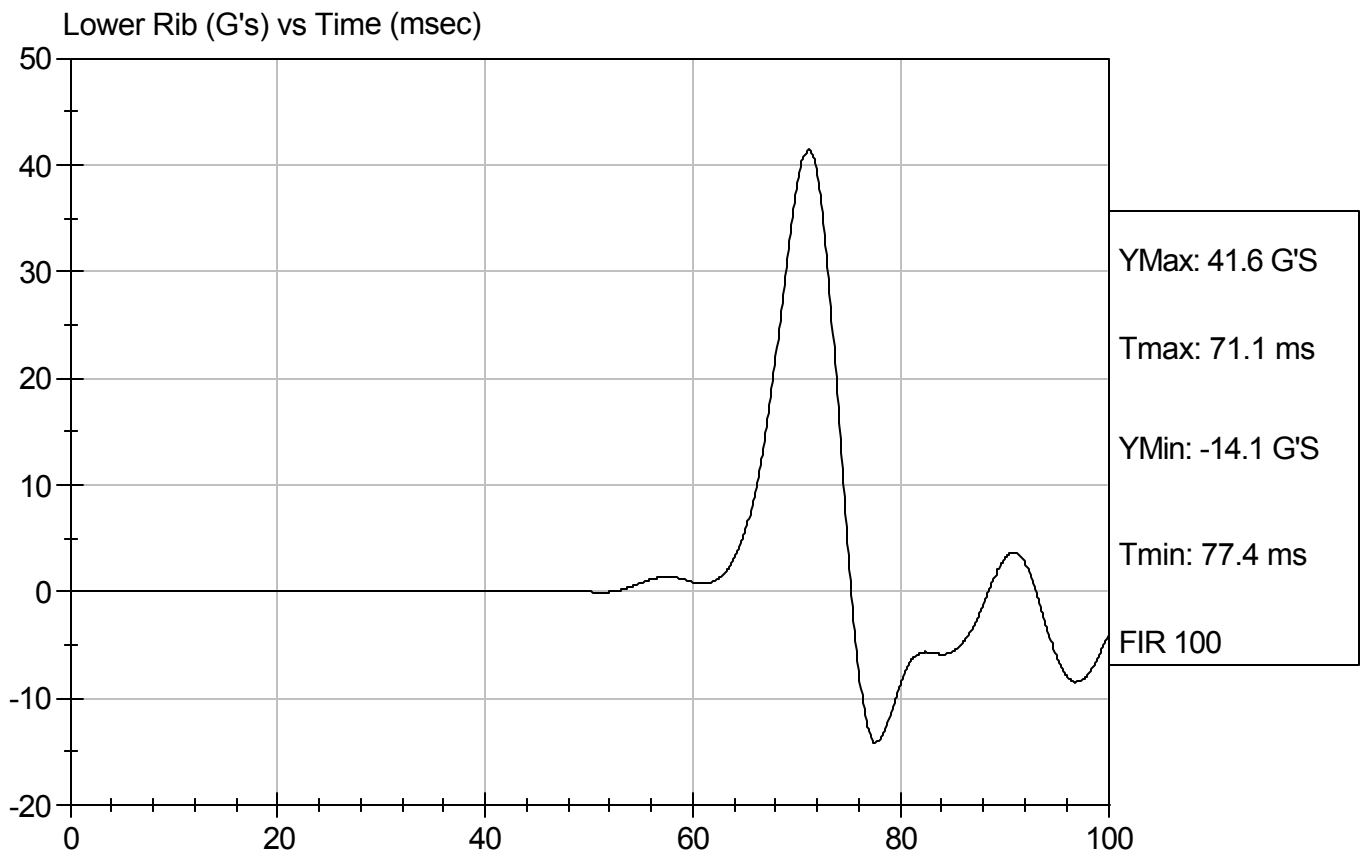
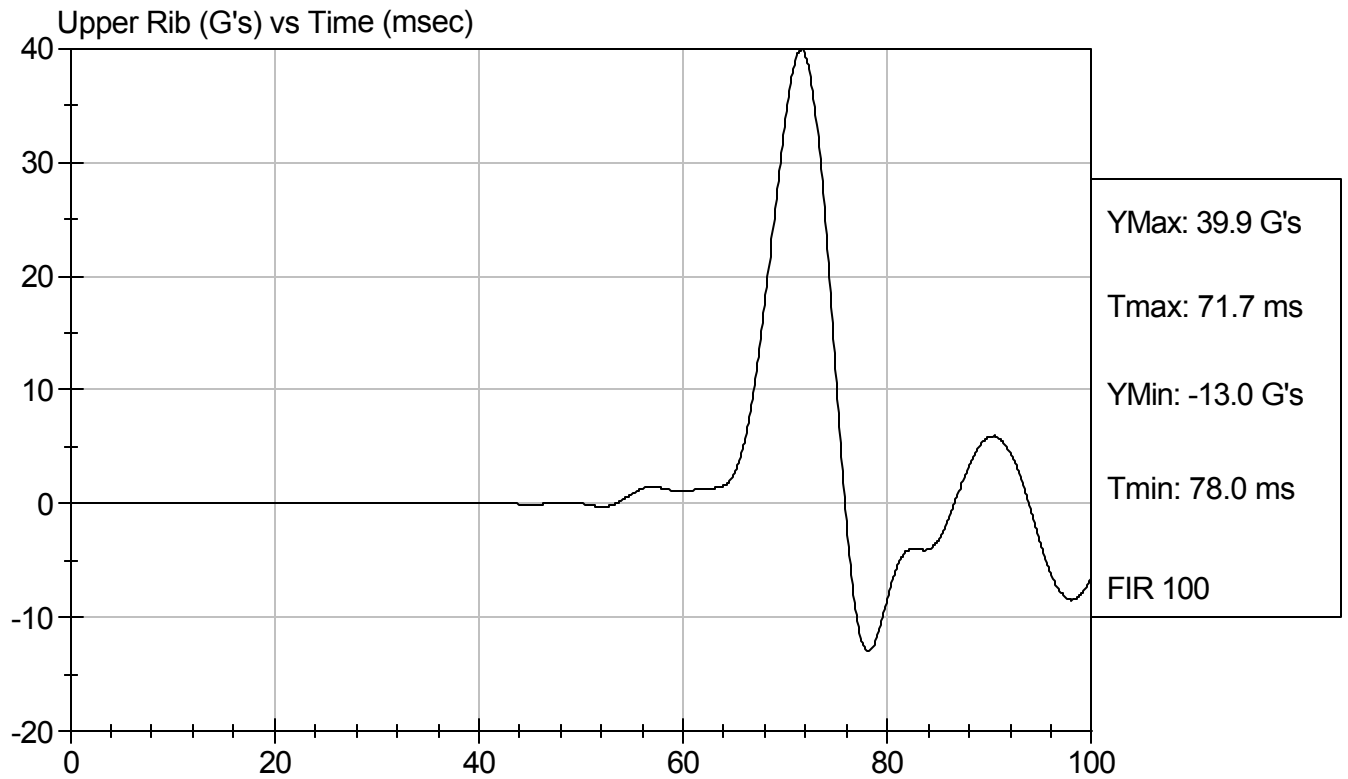

Approved By

11/30/09
Test Date



Test Desc: Thorax Impact
Component ID: D092962

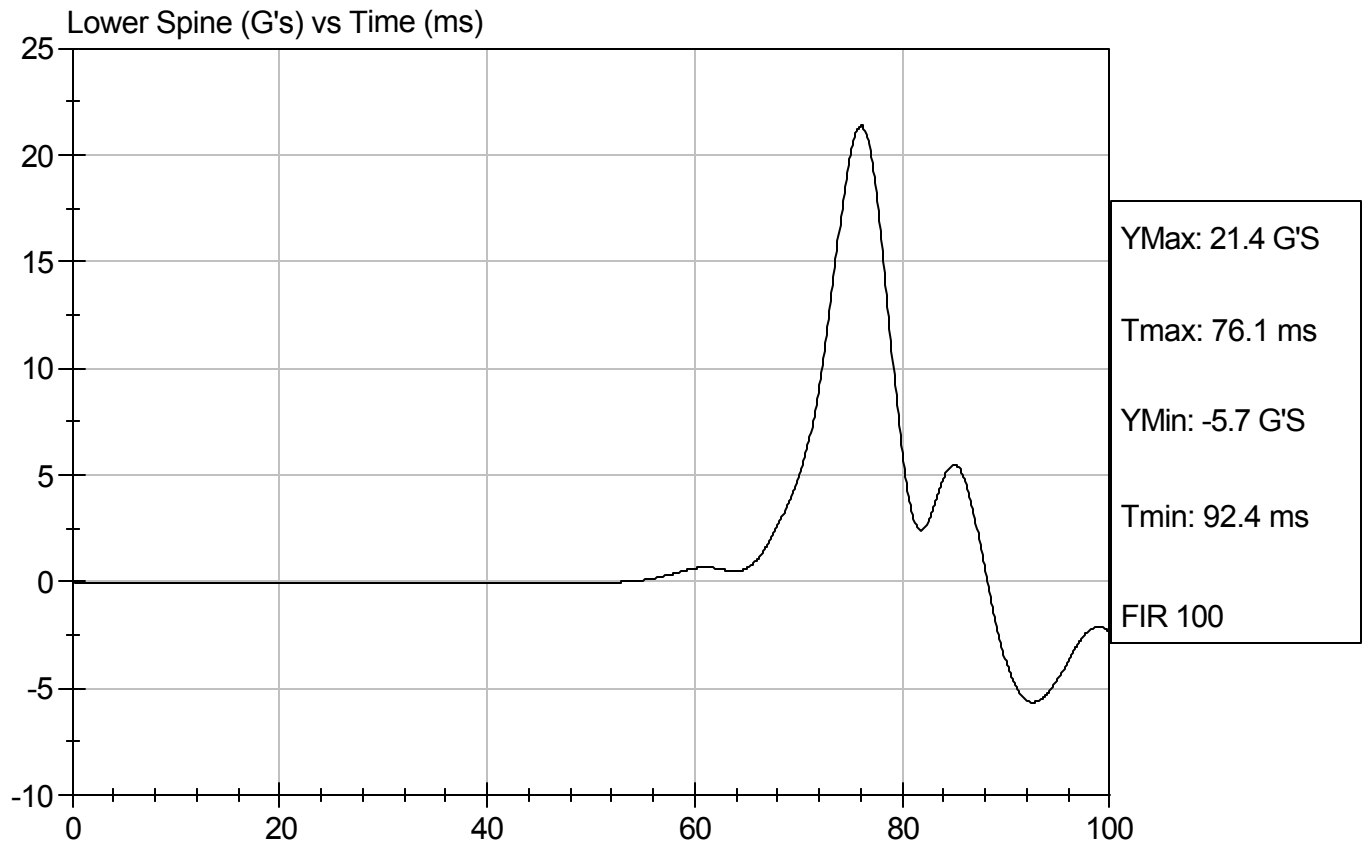
Test Date: 11/30/09
Speed: 14.01 ft/s, 4.27 m/s





Test Desc: Thorax Impact
Component ID: D092962

Test Date: 11/30/09
Speed: 14.01 ft/s, 4.27 m/s



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 272

Test I.D: D092963

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	43	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

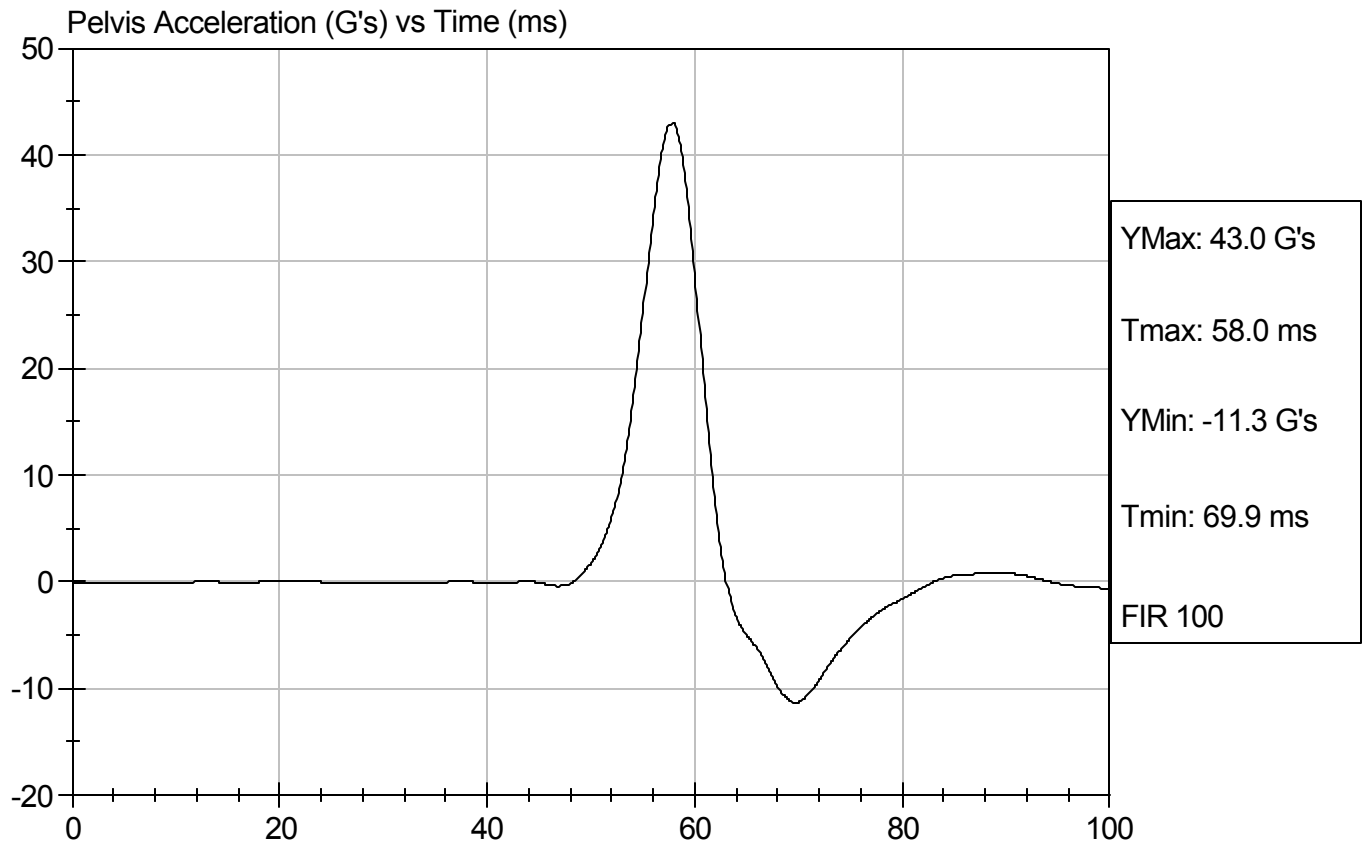
David Winkelbauer
Approved By

11/30/09
Test Date



Test Desc: Pelvis Impact
Component ID: D092963

Test Date: 11/30/09
Speed: 14.12 ft/s, 4.30 m/s



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

ATD Serial No: 272

Test I.D: D092964

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Force At 12.7 mm	N	104 -162	137	Pass
Force At 19 mm	N	163 - 222	193	Pass
Force At 25.4 mm	N	222 - 280	262	Pass
Force At 33 mm	N	325 - 391	361	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

12/1/09
Test Date

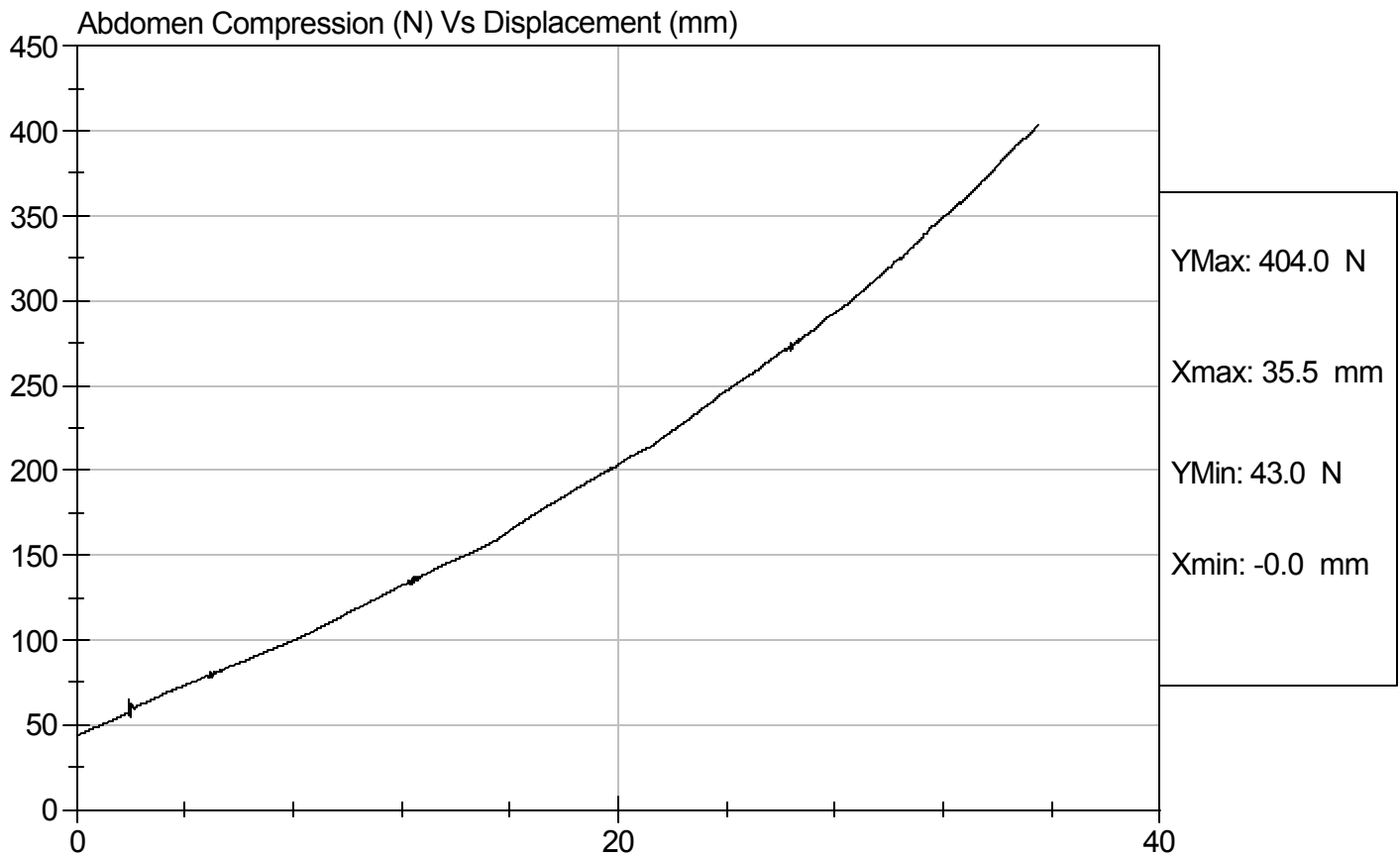


Test Description: Abdomen Compression

Test Date: 12/1/09

Component: D092964

Speed: 0 ft/s, 0 m/s



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

ATD Serial No: 272

Test I.D: D092965

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	145.1	Pass
Force At 30 deg	N	151.2 - 204.6	200.6	Pass
Force At 40 deg	N	204.6 - 258.0	253.3	Pass
Return Angle	Deg	12 Maximum	4	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

12/1/09
Test Date

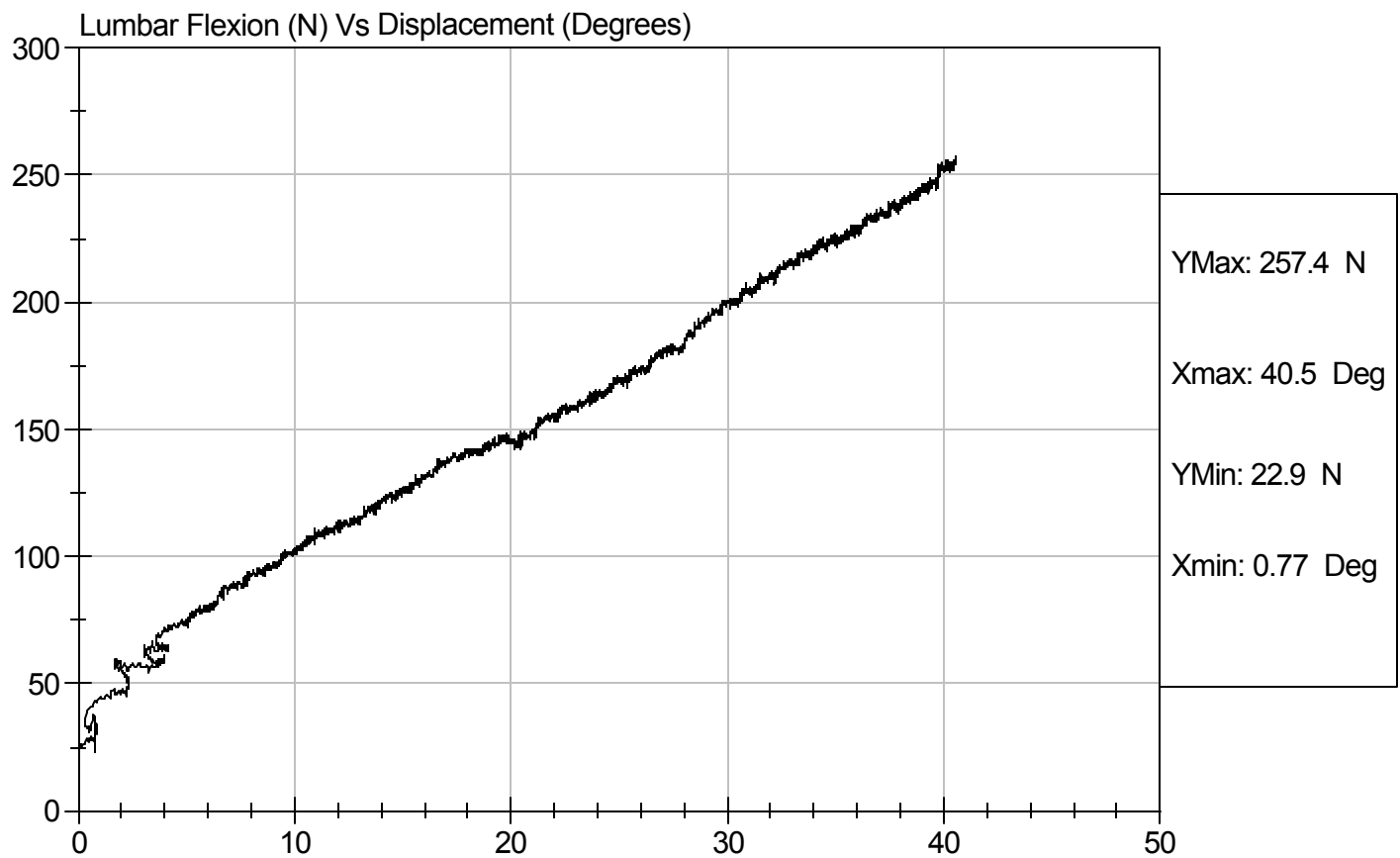


Test Description: Lumbar Flexion

Test Date: 12/1/09

Component: D092965

Speed: 0 ft/s, 0 m/s



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

ATD Serial No: 272

Test I.D: D092969

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	25	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 ms	m/s	1.96 to 2.55	2.42	Pass
	20 ms	m/s	4.12 to 5.10	4.71	Pass
	30 ms	m/s	5.73 to 7.01	6.52	Pass
	40 to 70 ms	m/s	6.27 to 7.64	6.85	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	69	Pass
Head Rotation Peak to Zero - Decay Time		ms	58 to 67	58	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	79	Pass
Mx Peak To Zero - Decay Time		ms	49 to 64	57	Pass
Mx Peak to Max. Head Rotation		ms	2 to 16	14	Pass


 Laboratory Technician

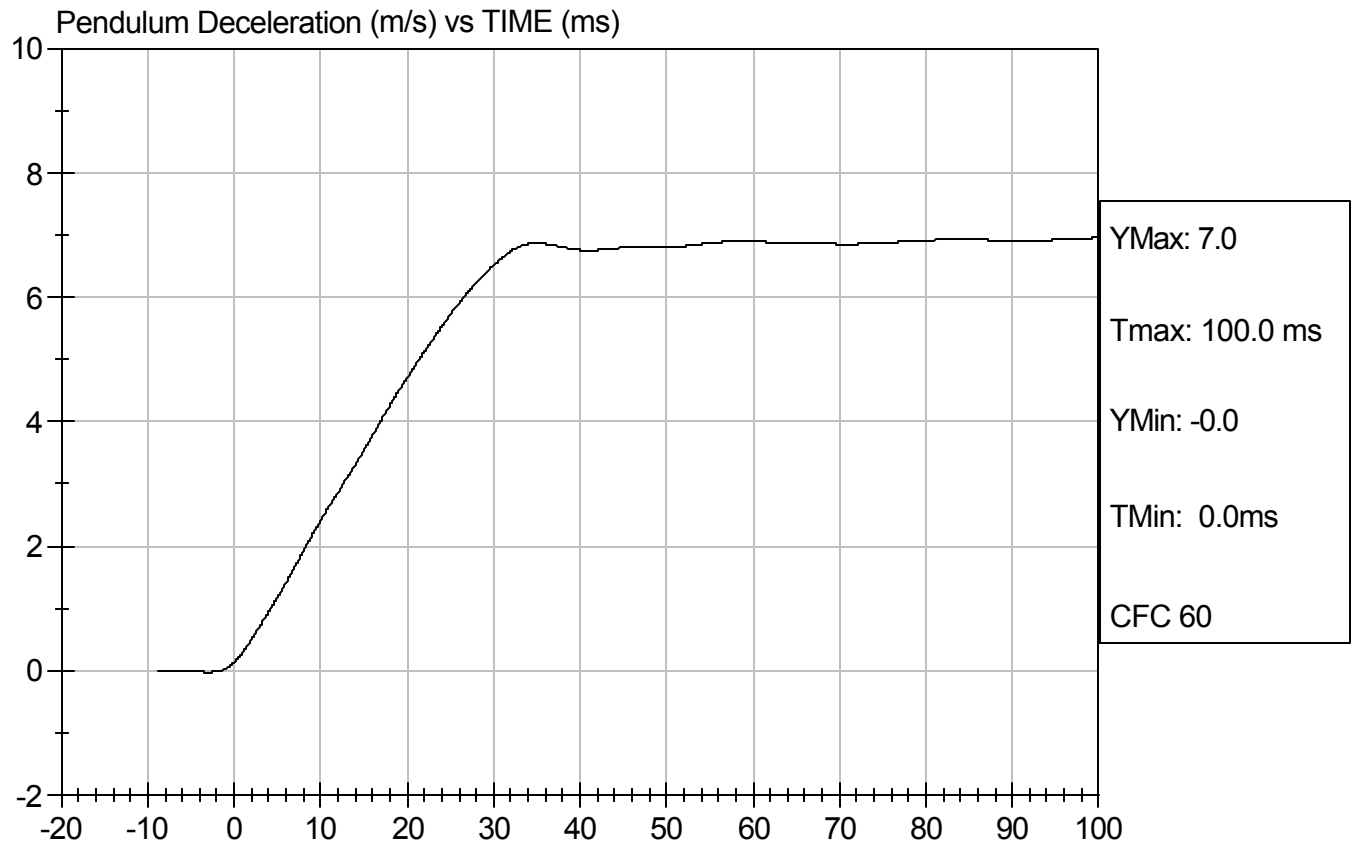

 Approved By

12/1/09
 Test Date



Test Desc: Neck Bending
Component ID: D092969

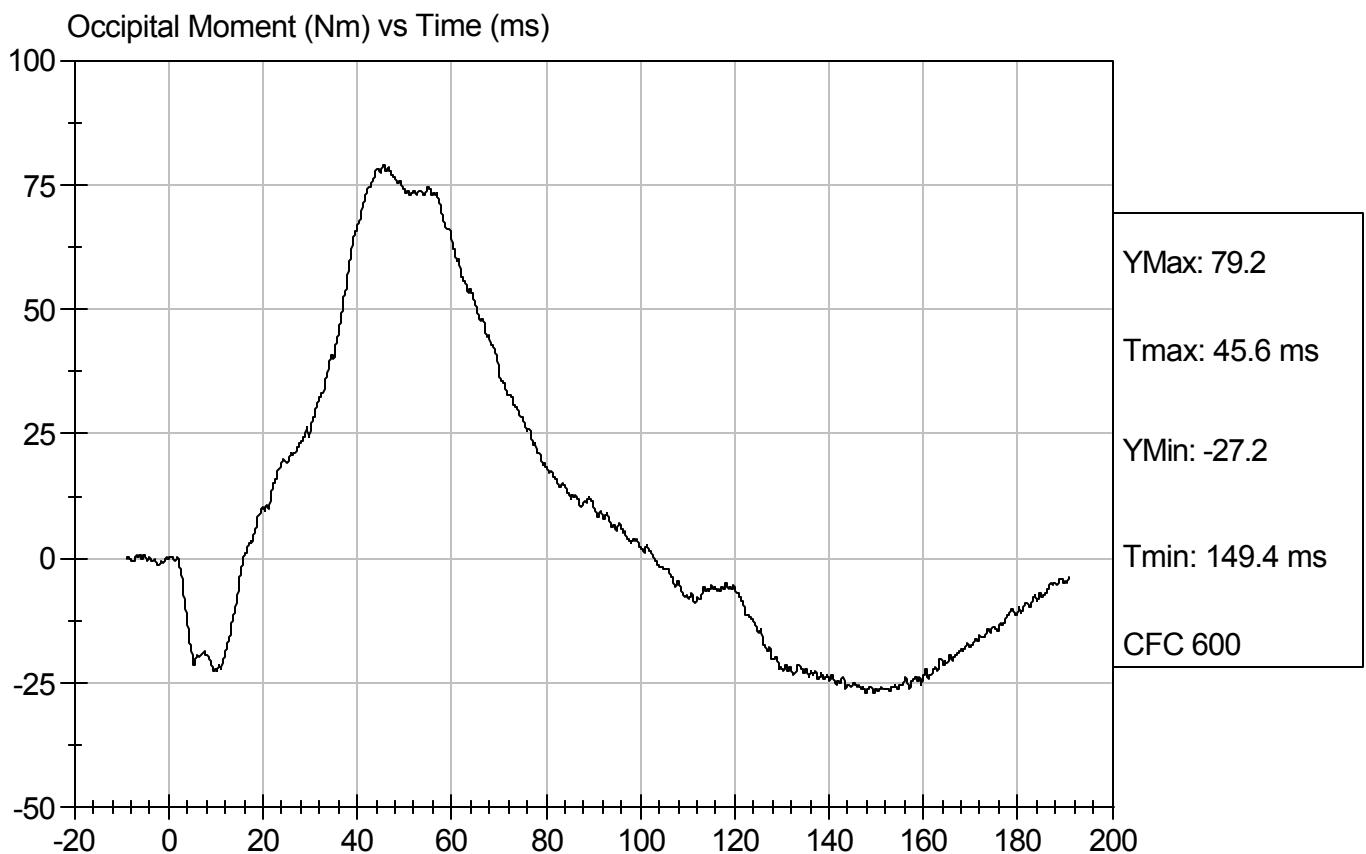
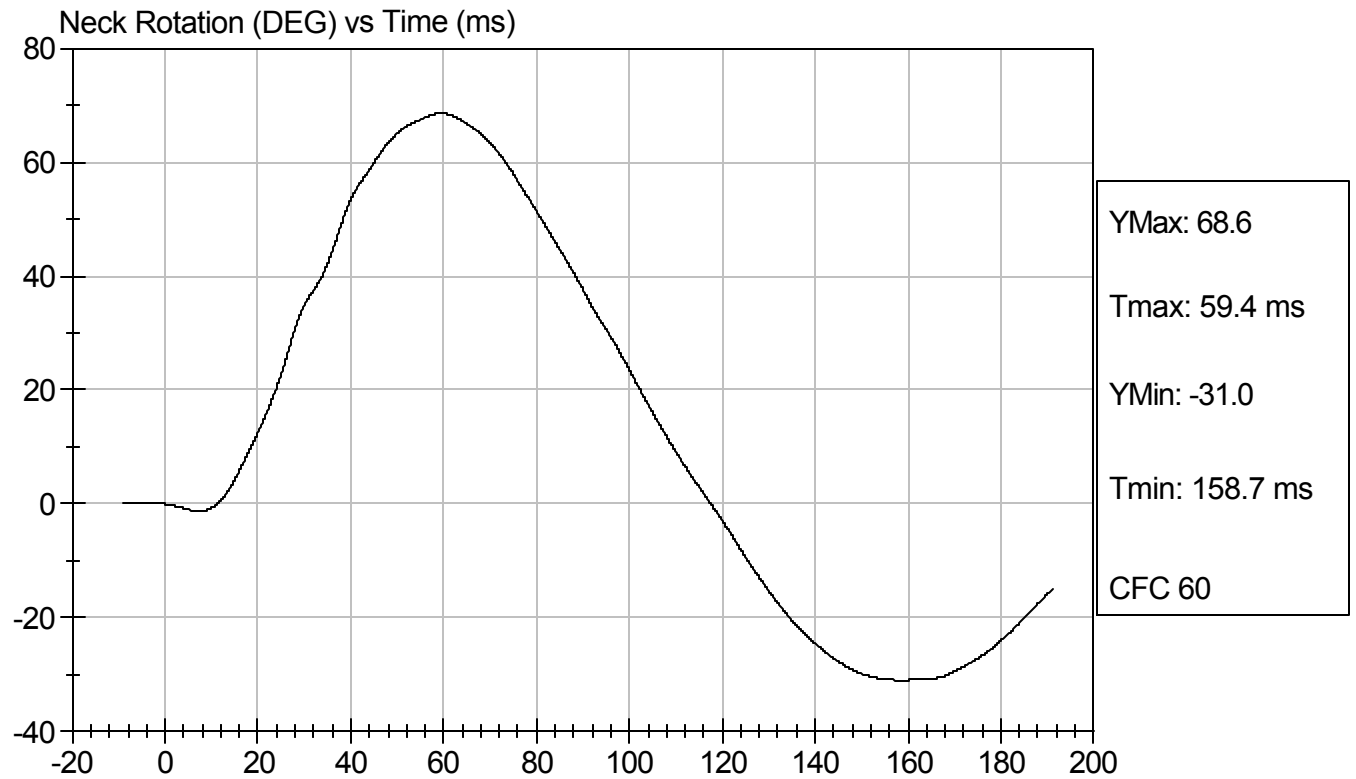
Test Date: 12/1/09
Speed: 23.15 ft/sec, 7.06 m/sec





Test Desc: Neck Bending
Component ID: D092969

Test Date: 12/1/09
Speed: 23.15 ft/s, 7.06 m/s



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: D10031

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	19	Pass
Peak Resultant Acceleration	G's	120 to 150	138	Pass
Is Resultant Curve Unimodal?	N/A	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-9.0	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

1/8/10
Test Date



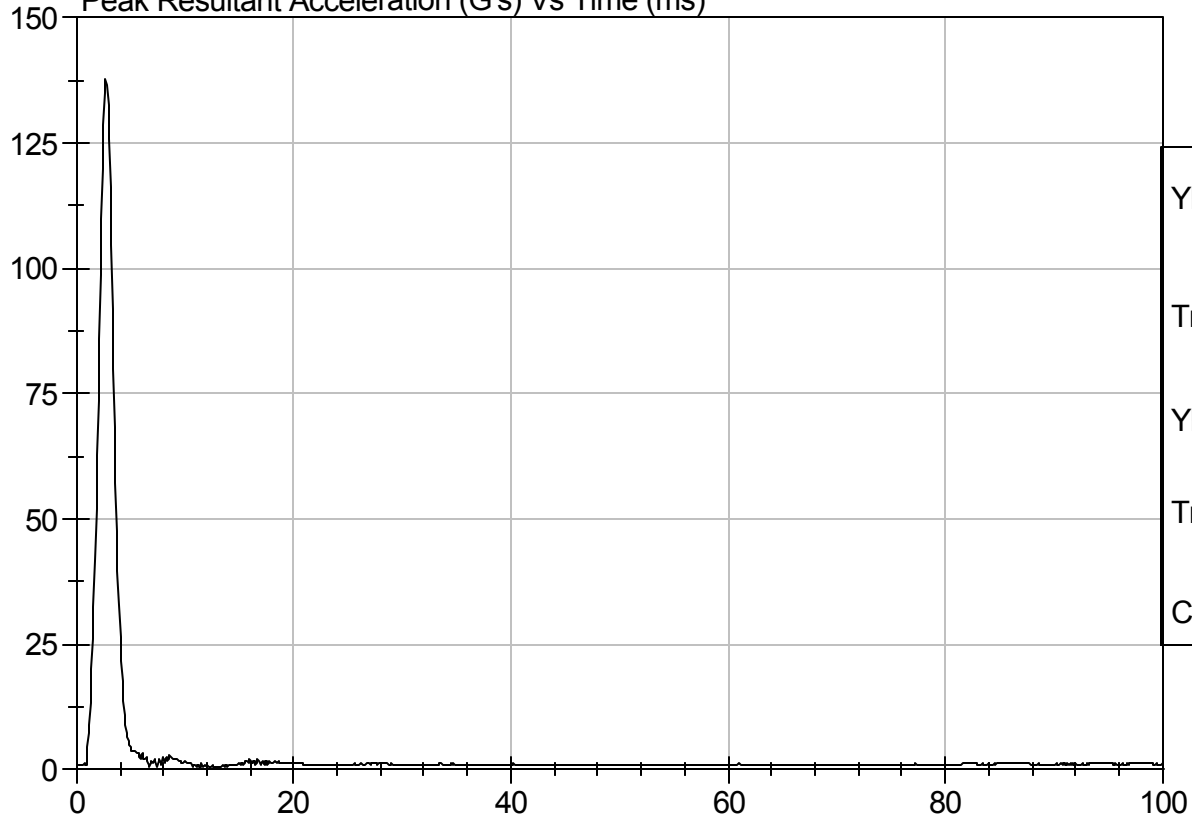
Test Description: Head Drop

Test Date: 1/8/10

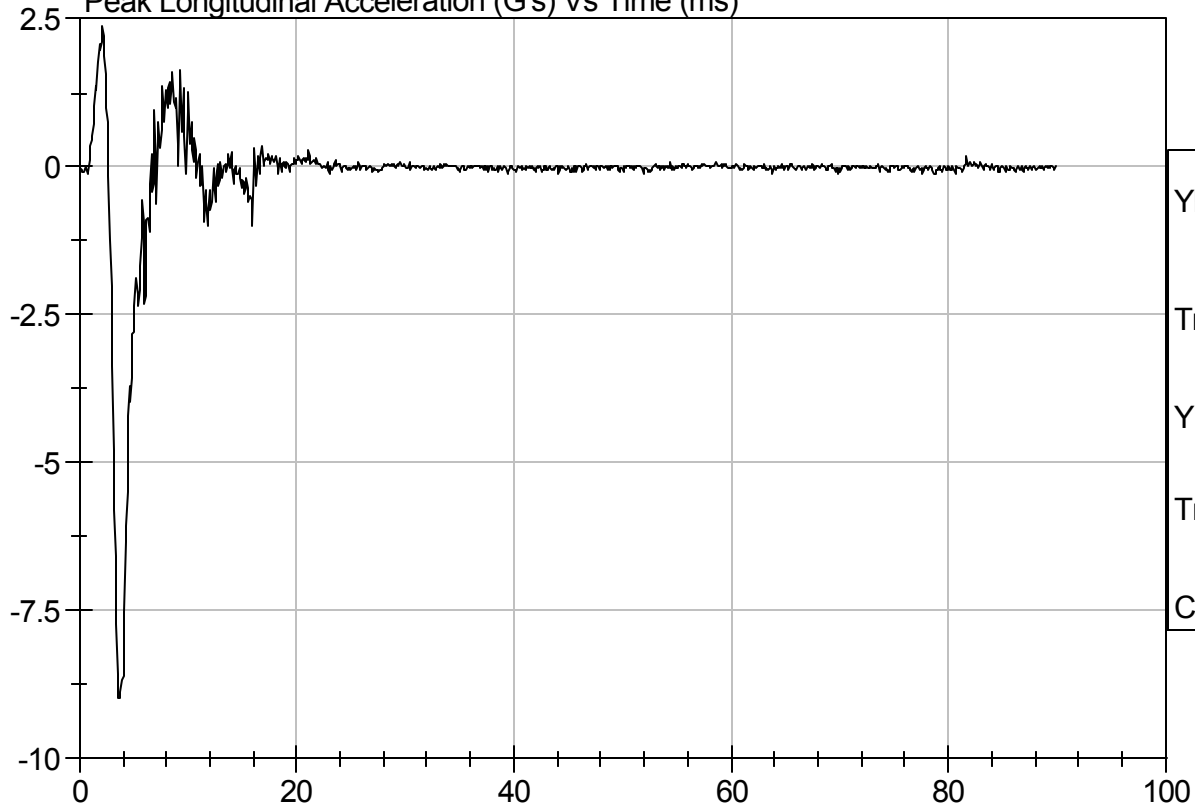
Component: D10031

Speed: 0 ft/s, 0 m/s

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



Peak Longitudinal Acceleration (G's) Vs Time (ms)



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

ATD Serial No: 272

Test I.D: D10032

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Probe Velocity	m/s	4.22 - 4.31	4.27	Pass
Upper Rib	G's	37 - 46	41	Pass
Lower Rib	G's	37 - 46	39	Pass
Lower Spine	G's	15 - 22	20	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

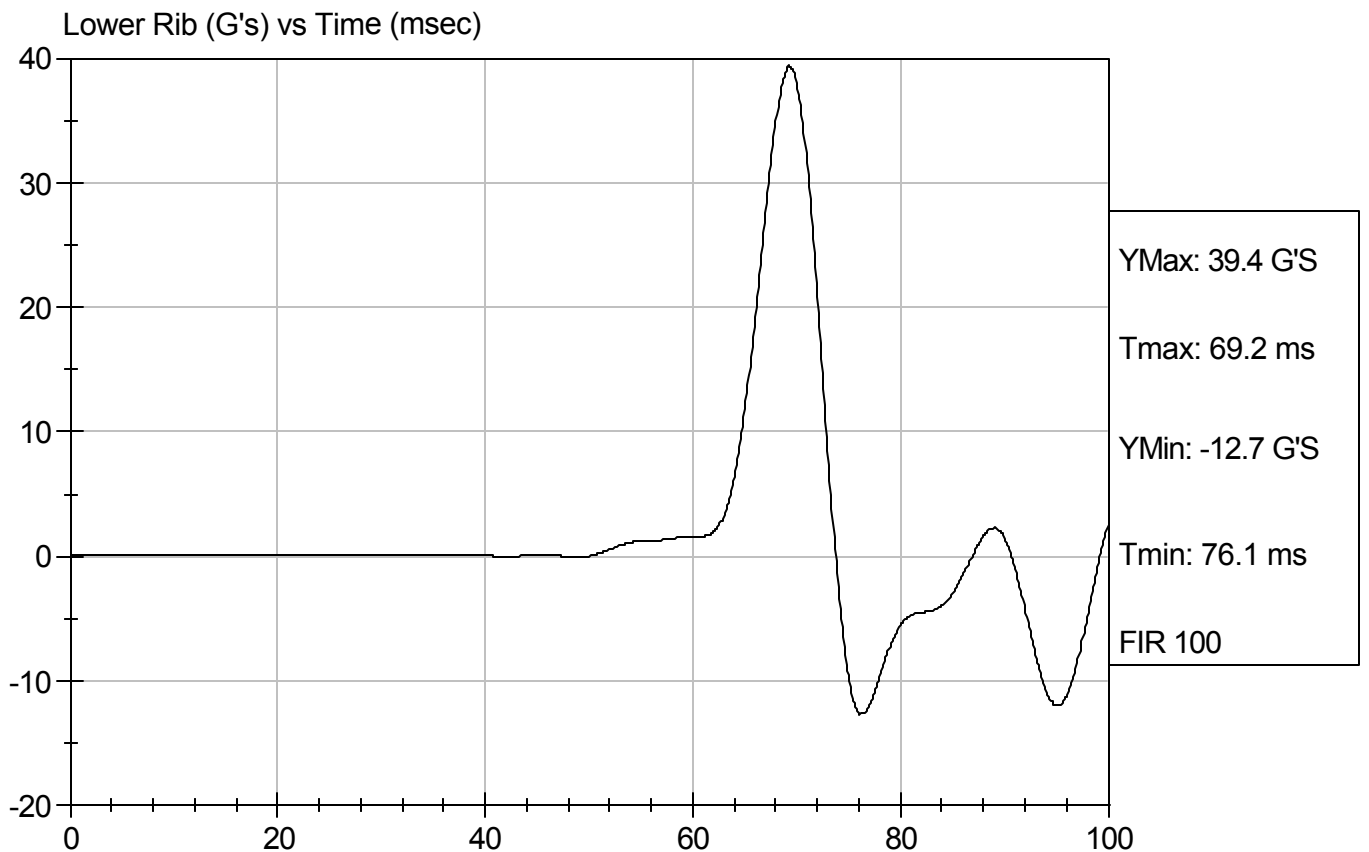
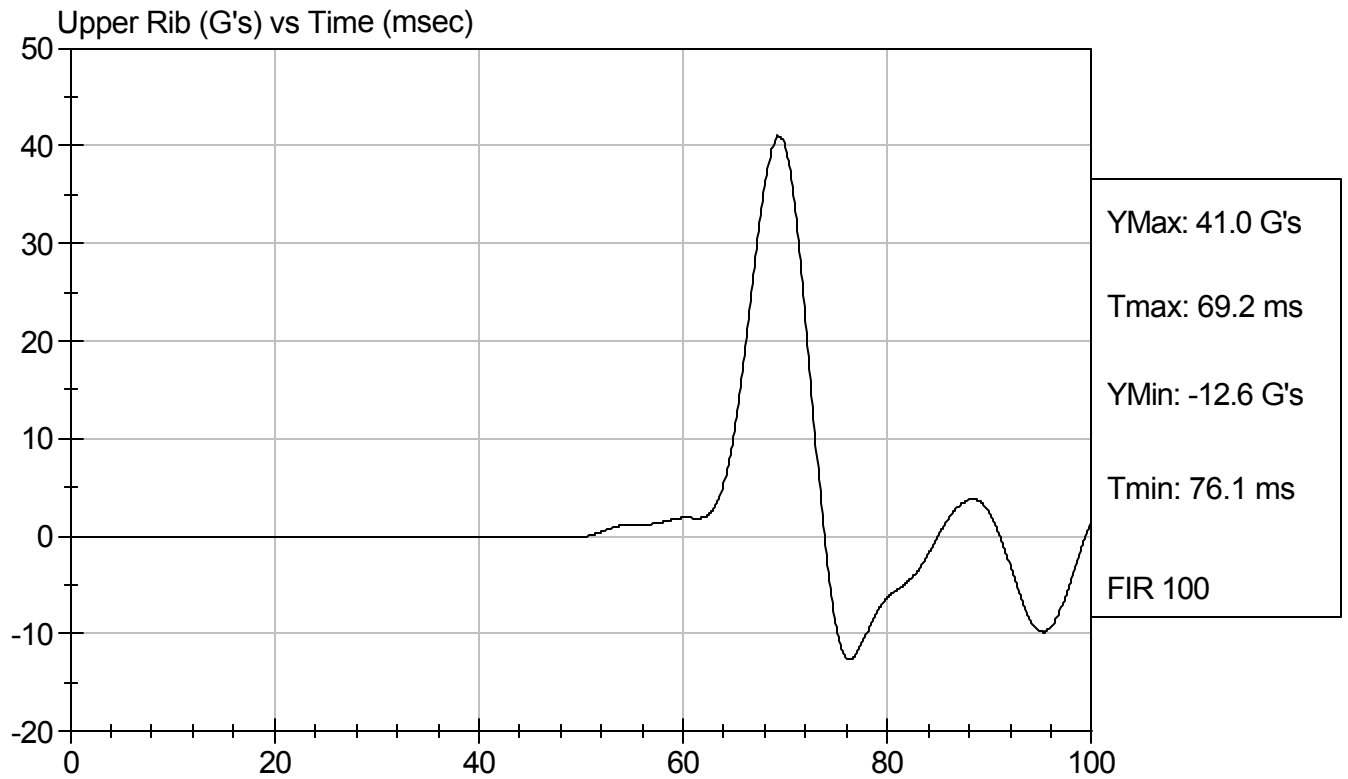
David Winkelbauer
Approved By

1/7/10
Test Date



Test Desc: Thorax Impact
Component ID: D10032

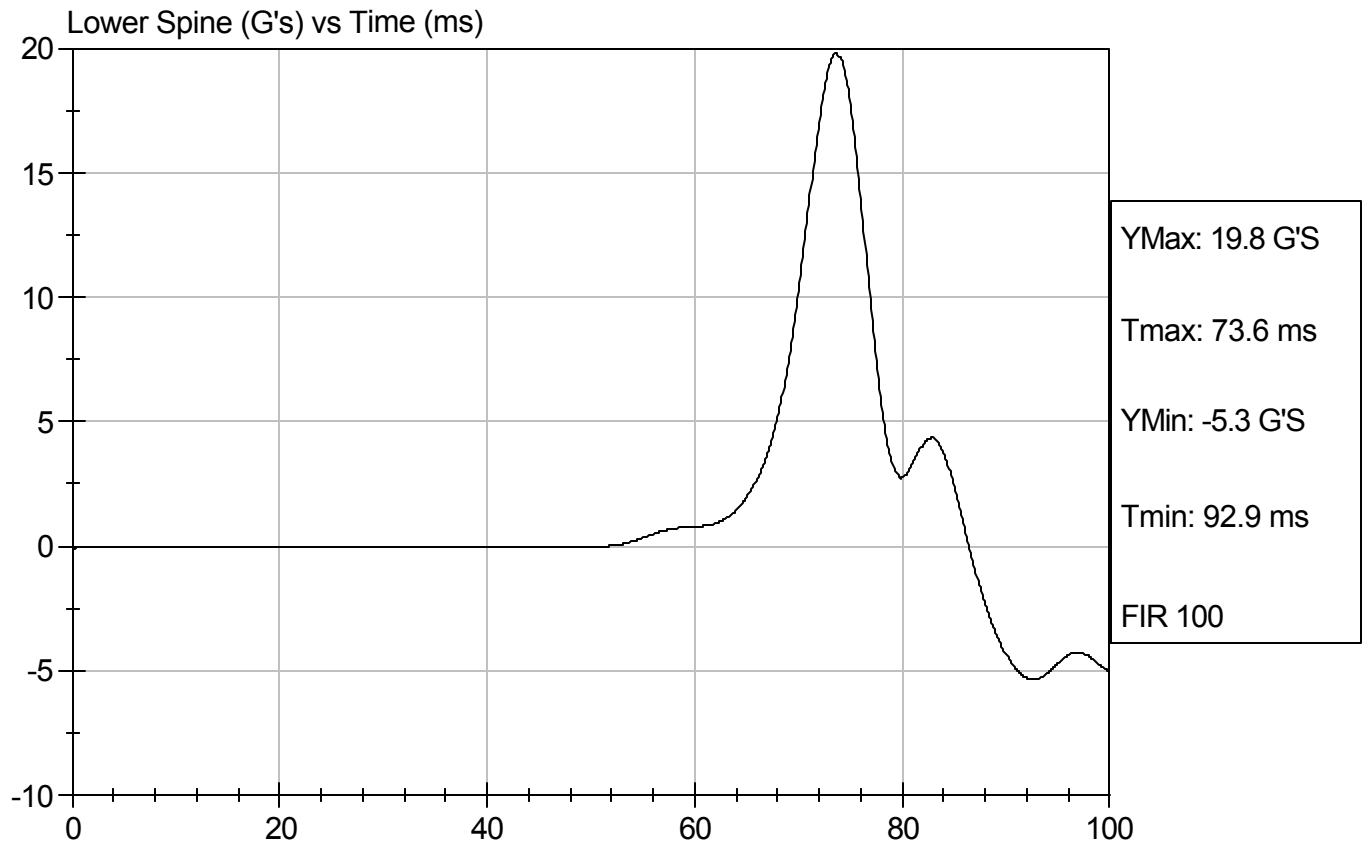
Test Date: 1/7/10
Speed: 14.00 ft/s, 4.27 m/s





Test Desc: Thorax Impact
Component ID: D10032

Test Date: 1/7/10
Speed: 14.00 ft/s, 4.27 m/s



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 272

Test I.D: D10033

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	42	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

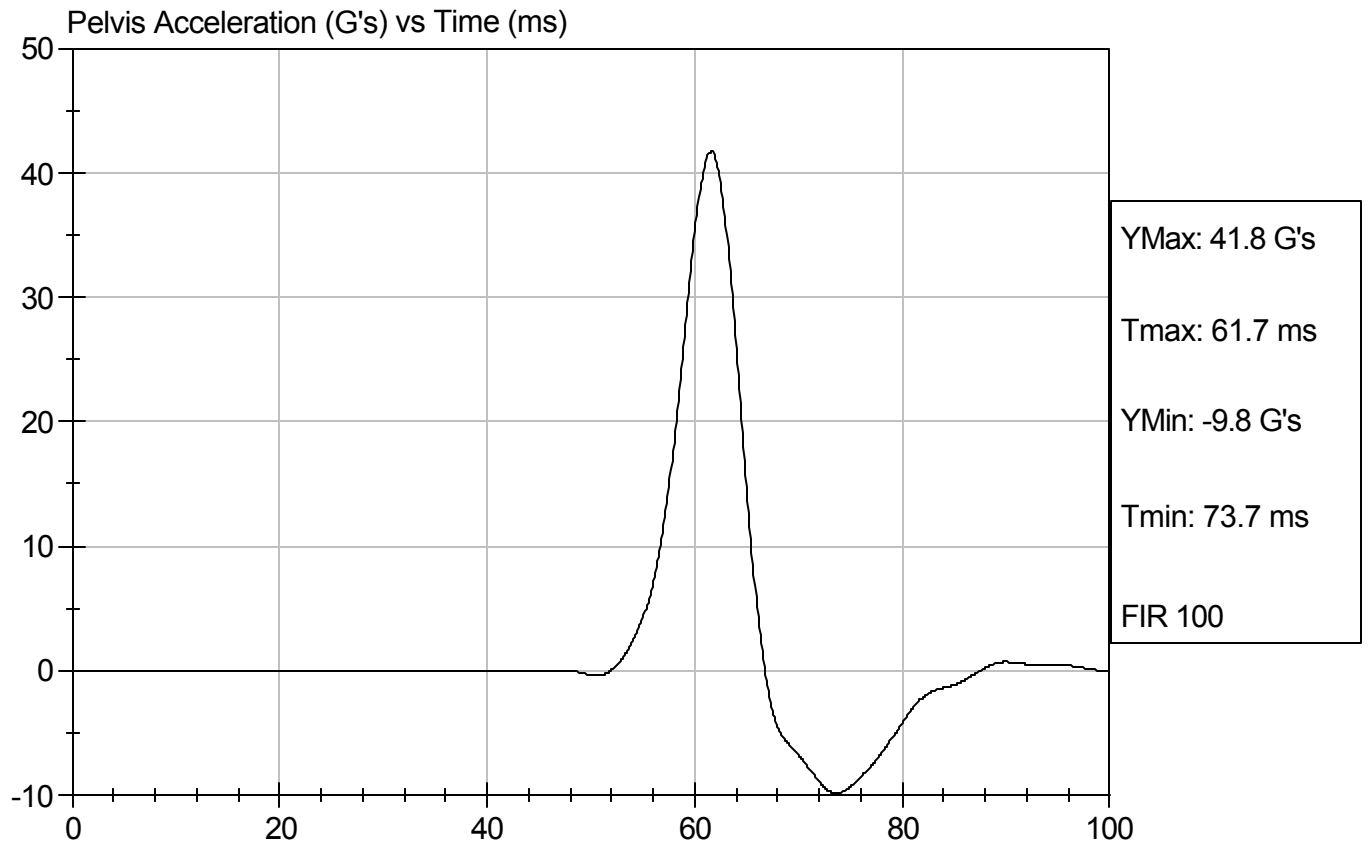
1/7/10
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D10033

Test Date: 1/7/10
Speed: 14.12 ft/s, 4.30 m/s



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

ATD Serial No: 272

Test I.D: D10034

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Force At 12.7 mm	N	104 -162	126	Pass
Force At 19 mm	N	163 - 222	182	Pass
Force At 25.4 mm	N	222 - 280	248	Pass
Force At 33 mm	N	325 - 391	338	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

1/8/10
Test Date

David Winkelbauer
Approved By

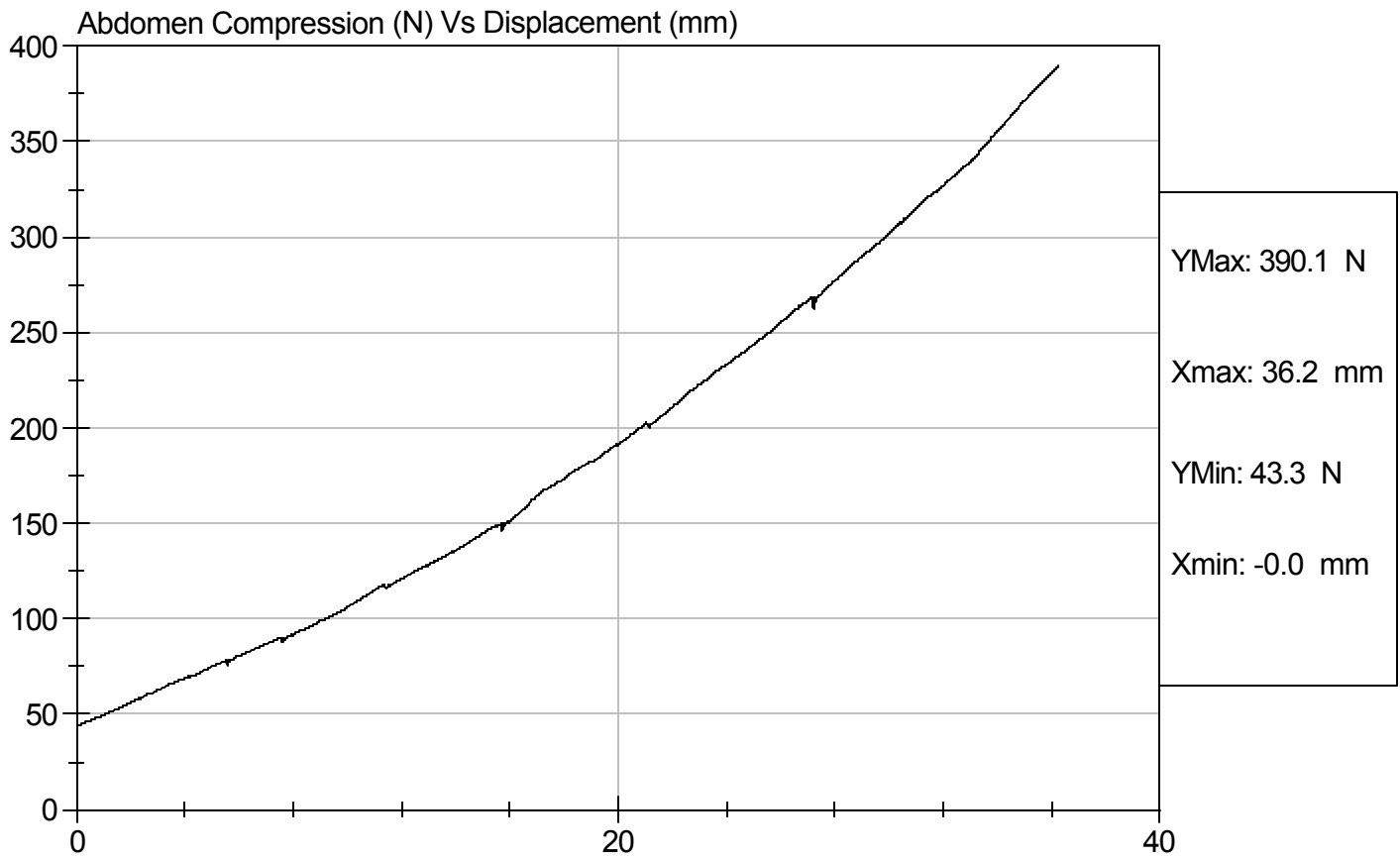


Test Description: Abdomen Compression

Test Date: 1/8/10

Component: D10034

Speed: 0 ft/s, 0 m/s

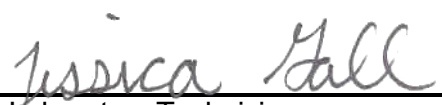


SID/HIII Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 272

Test I.D: D10035

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	142.9	Pass
Force At 30 deg	N	151.2 - 204.6	185.7	Pass
Force At 40 deg	N	204.6 - 258.0	212.9	Pass
Return Angle	Deg	12 Maximum	5	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

1/8/10
Test Date

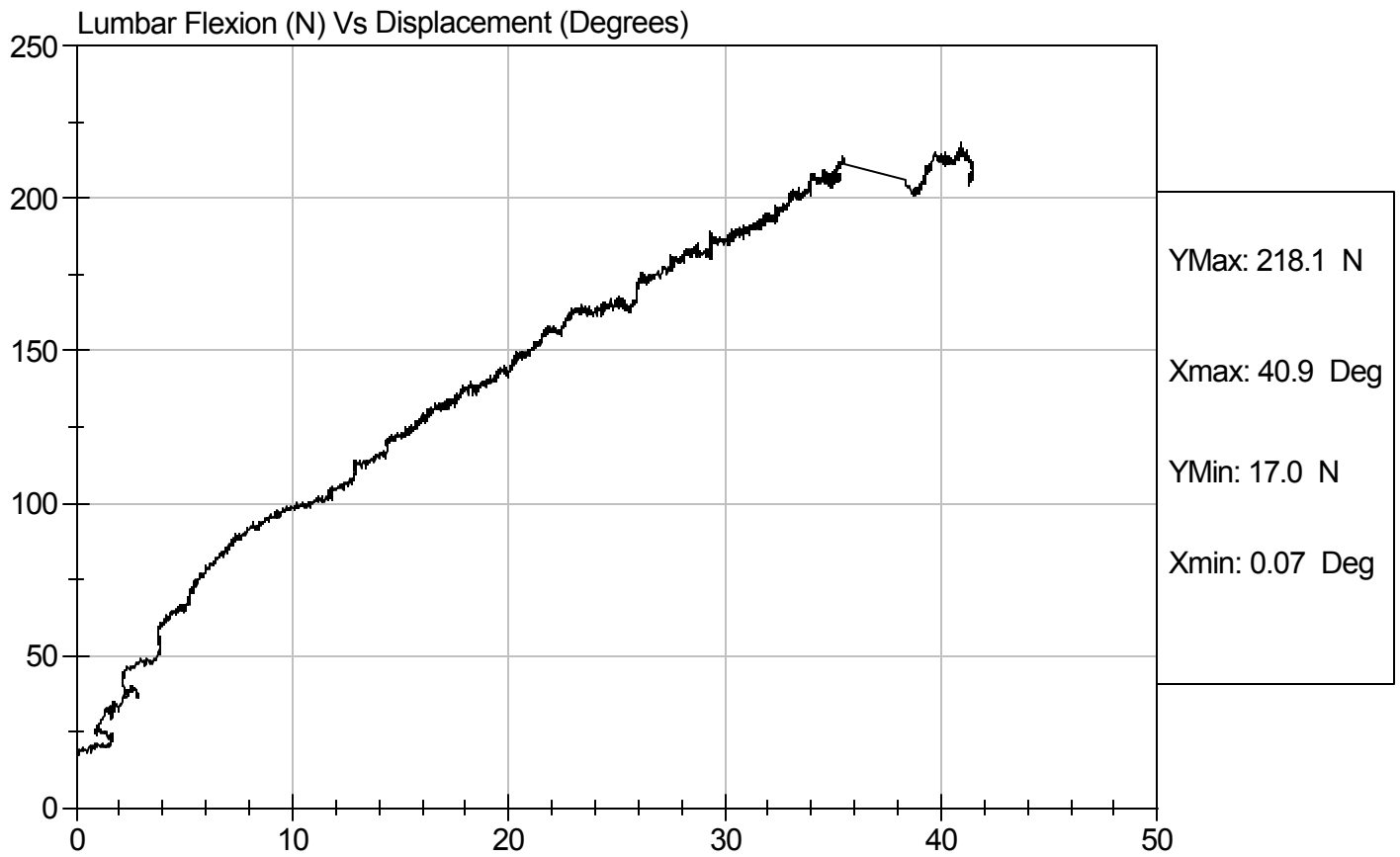


Test Description: Lumbar Flexion

Test Date: 1/8/10

Component: D10035

Speed: 0 ft/s, 0 m/s



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

ATD Serial No: 272

Test I.D: D10039

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity		%	10 to 70	19	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 ms	m/s	1.96 to 2.55	2.35	Pass
	20 ms	m/s	4.12 to 5.10	4.48	Pass
	30 ms	m/s	5.73 to 7.01	6.22	Pass
	40 to 70 ms	m/s	6.27 to 7.64	6.89	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	74	Pass
Head Rotation Peak to Zero - Decay Time		ms	58 to 67	67	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	77	Pass
Mx Peak To Zero - Decay Time		ms	49 to 64	54	Pass
Mx Peak to Max. Head Rotation		ms	2 to 16	13	Pass


 Laboratory Technician

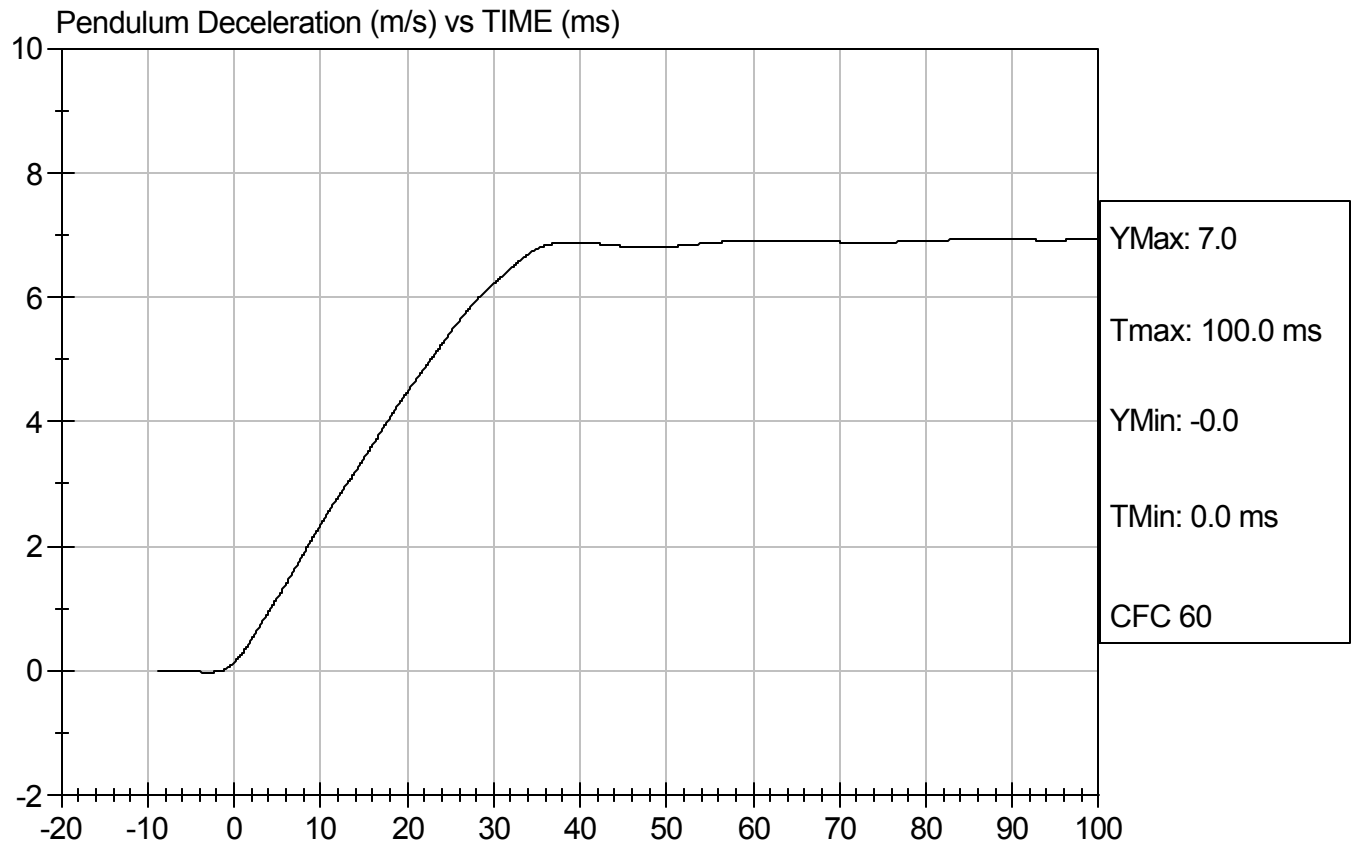

 Approved By

1/8/10
 Test Date



Test Desc: Neck Bending
Component ID: D10039

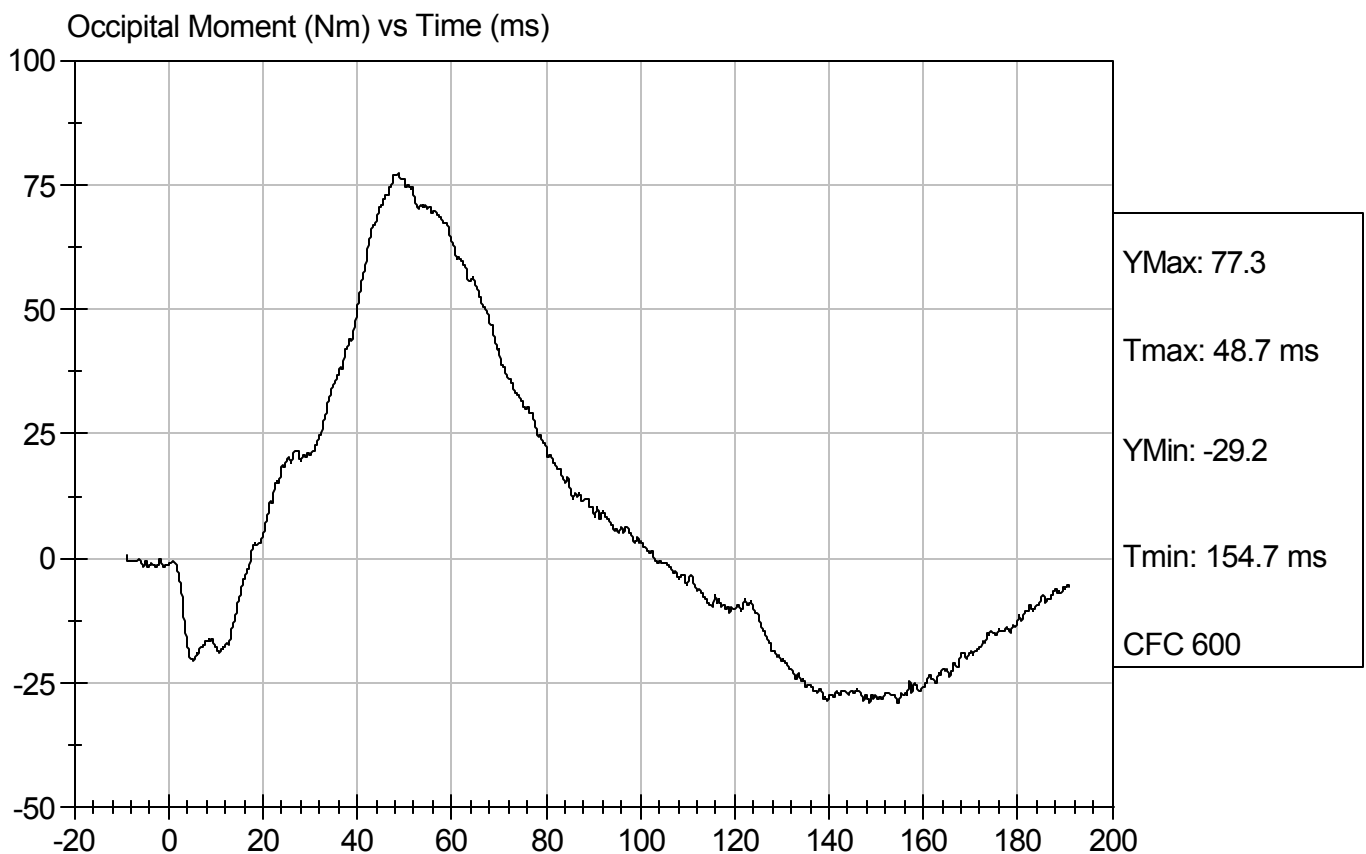
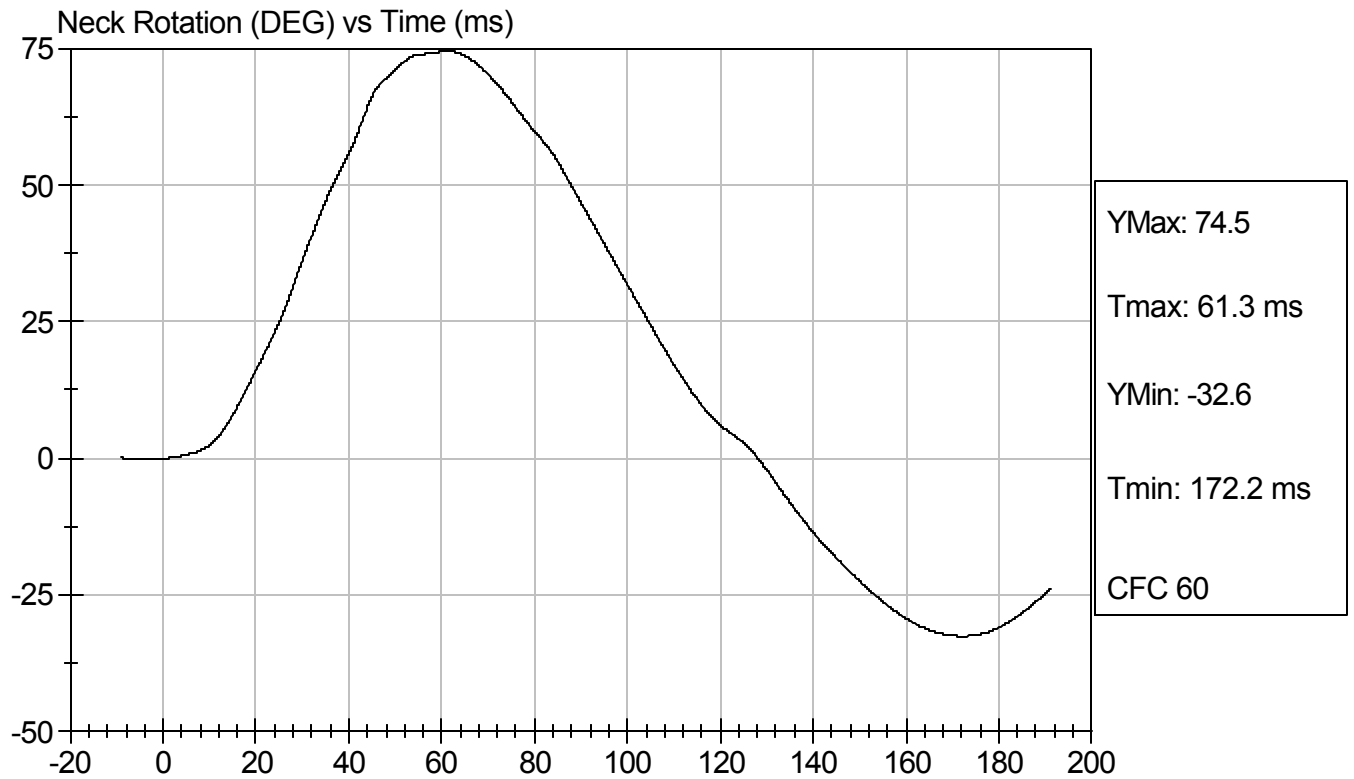
Test Date: 1/8/10
Speed: 23.15 ft/s, 7.06 m/s





Test Desc: Neck Bending
Component ID: D10039

Test Date: 1/8/10
Speed: 23.15 ft/s, 7.06 m/s



SID 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

Jessica Hall
Laboratory Technician
David Winkelbauer
Approved By

1/8/2010
Test Date

CERTIFICATION DATA

Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

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 Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 271

Test I.D: D09295

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	905	Pass
RH - Rib Height	mm	501 - 521	502	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	239	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	526	Pass
SW - Knee Pivot to Floor	mm	490 - 505	497	Pass
HW - Hip Width	mm	356 - 391	371	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

12/1/2009
Test Date

David Winkelbauer
Approved By

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

ATD Serial No: 271

Test I.D: D092951

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Peak Resultant Acceleration	G's	120 to 150	140	Pass
Is Resultant Curve Unimodal?	N/A	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	13.8	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

11/30/09
Test Date



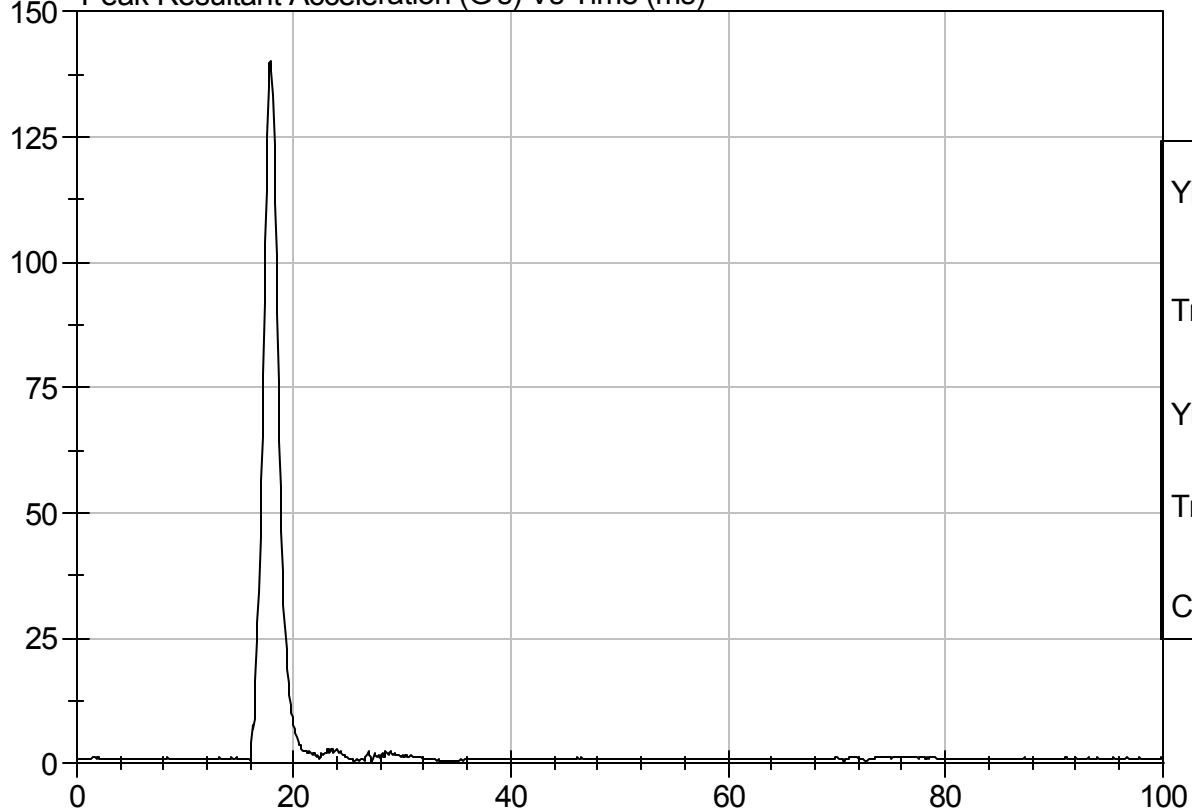
Test Description: Head Drop

Test Date: 11/30/09

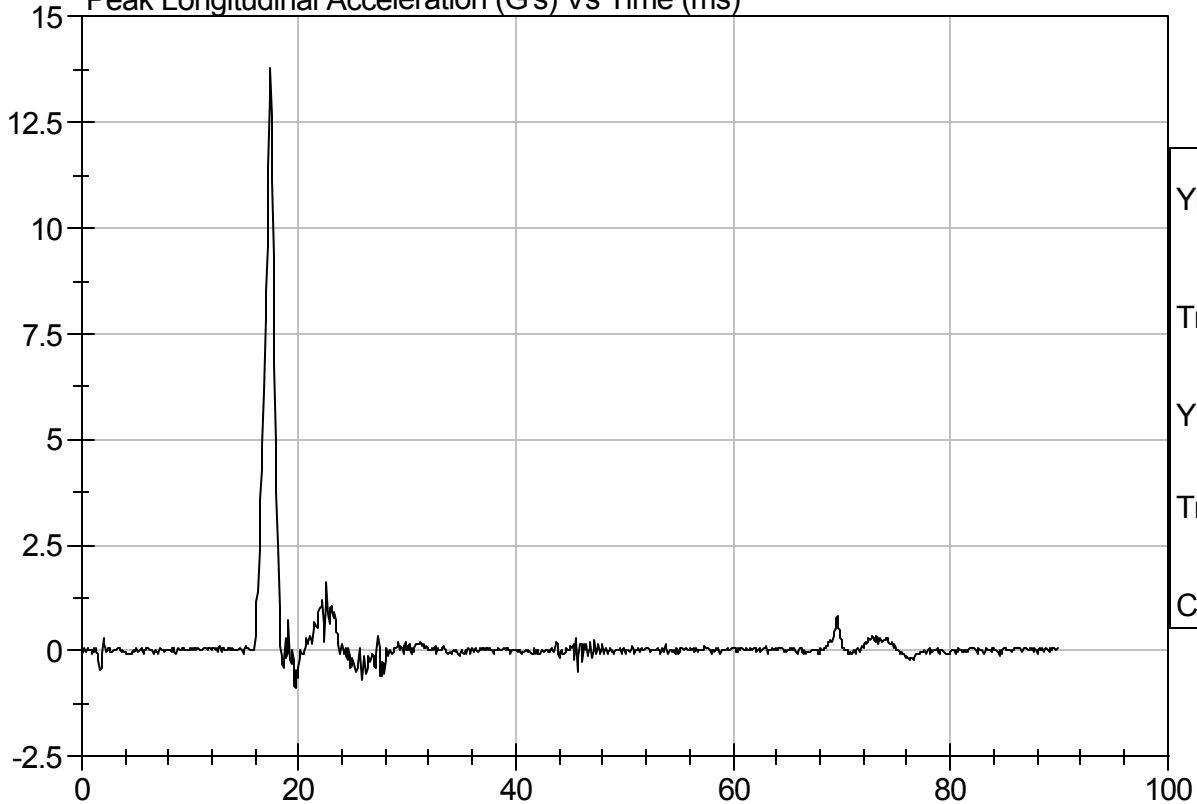
Component: D092951

Speed: 0 ft/s, 0.00 m/s

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



Peak Longitudinal Acceleration (G's) Vs Time (ms)



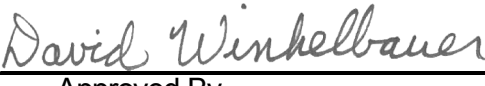
SID/HIII Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 271

Test I.D: D092952

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	24	Pass
Probe Velocity	m/s	4.22 - 4.31	4.27	Pass
Upper Rib	G's	37 - 46	39	Pass
Lower Rib	G's	37 - 46	41	Pass
Lower Spine	G's	15 - 22	22	Pass
Overall Test Results				Pass


Laboratory Technician

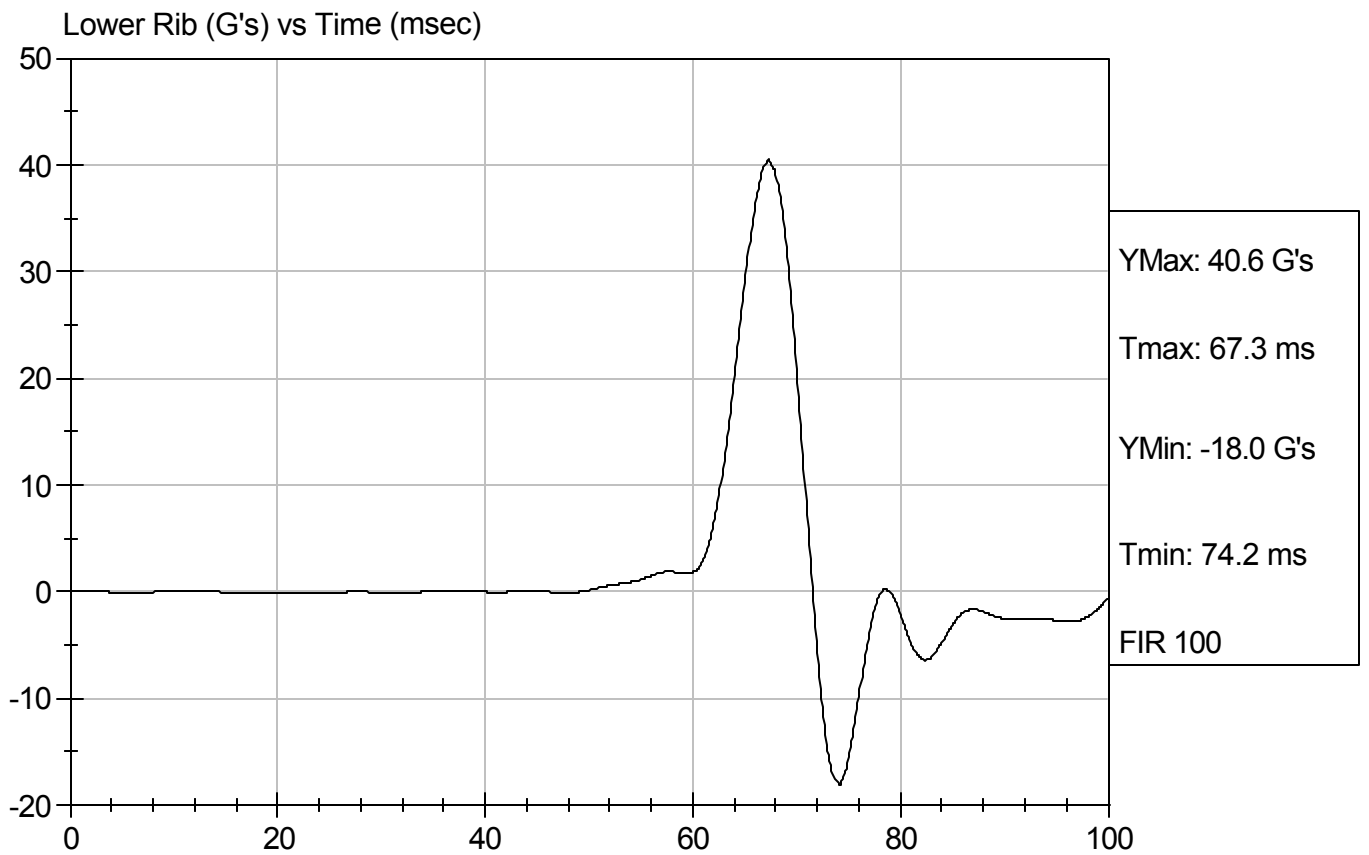
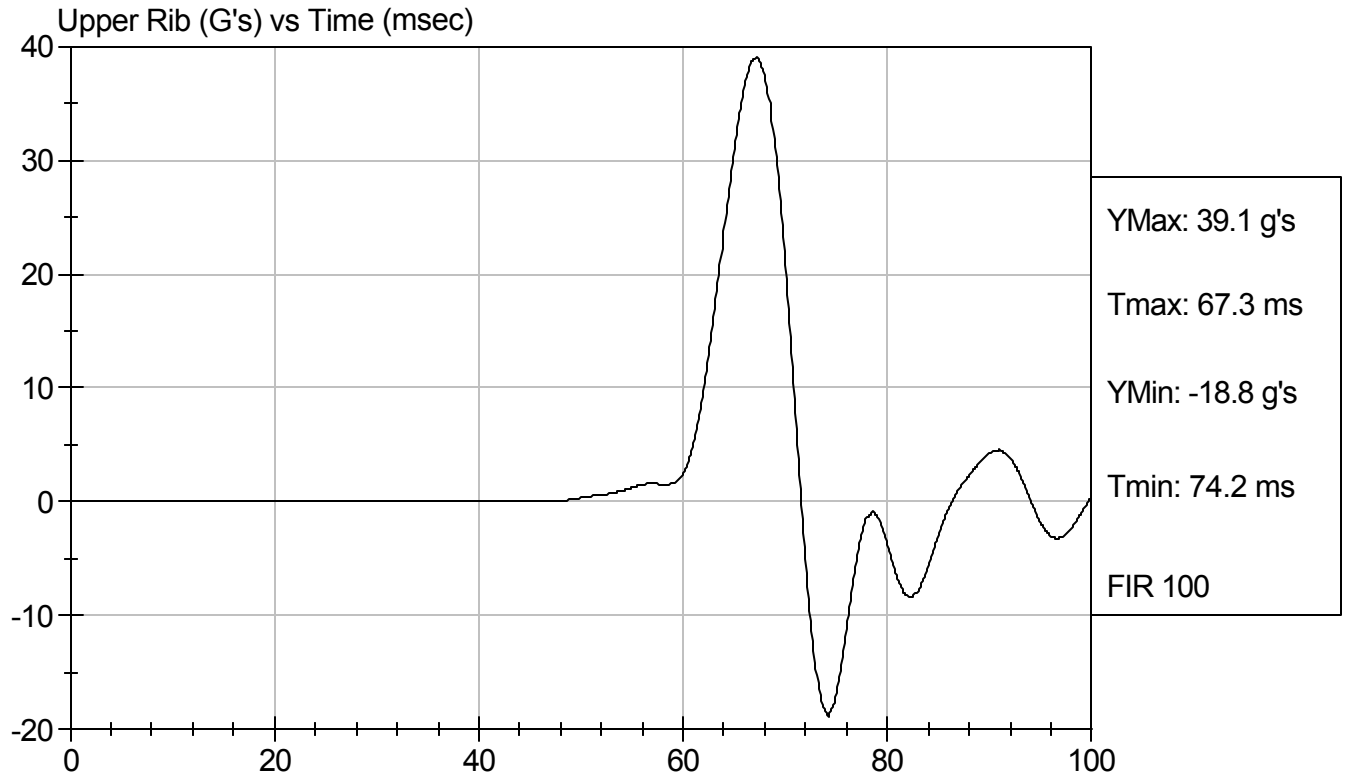

Approved By

11/30/09
Test Date



Test Desc: Thorax Impact
Component ID: D092952

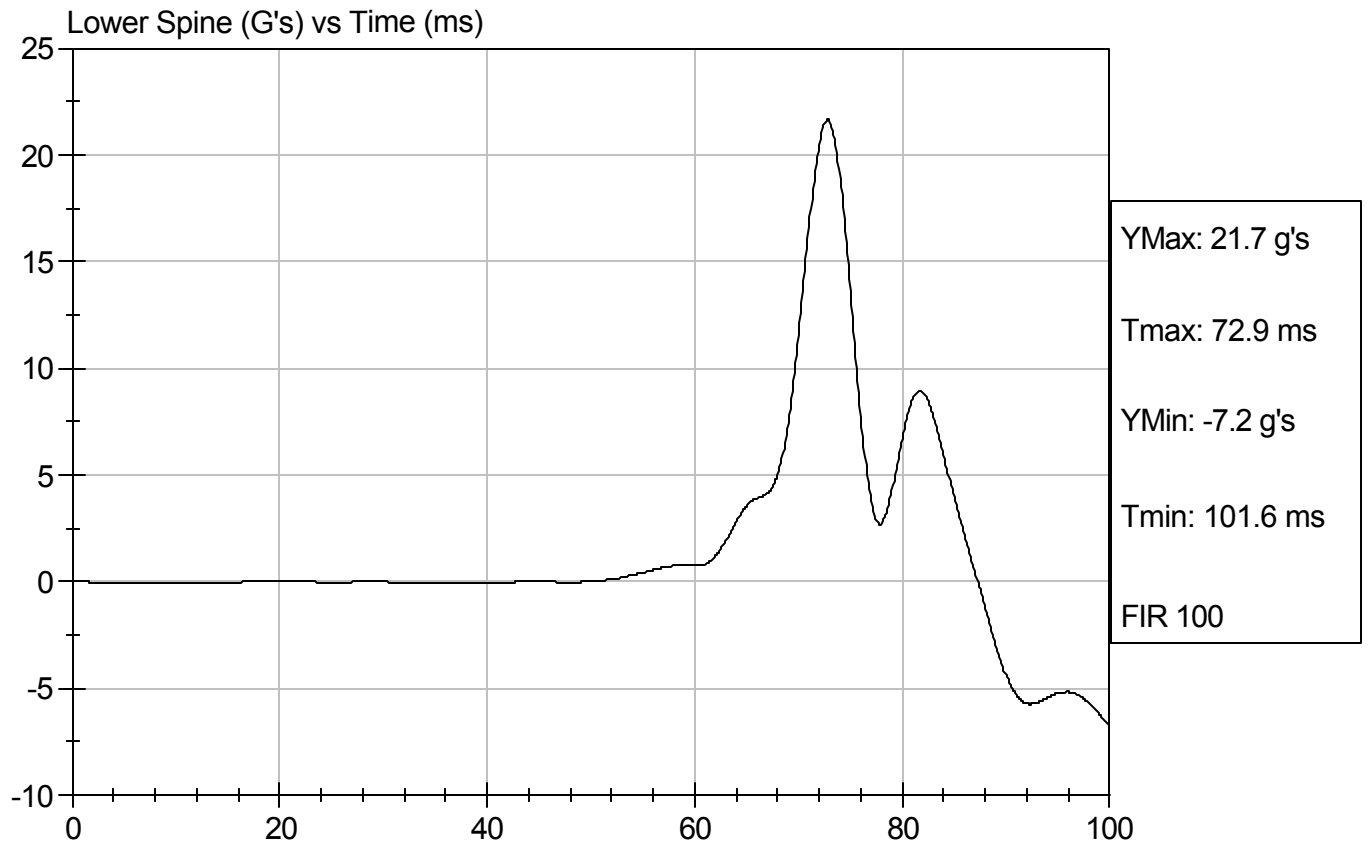
Test Date: 11/30/09
Speed: 14.01 ft/s, 4.27 m/s





Test Desc: Thorax Impact
Component ID: D092952

Test Date: 11/30/09
Speed: 14.01 ft/s, 4.27 m/s



SID/HIII Calibration Data Sheet

Side Impact Dummy

Pelvis Impact Test

ATD Serial No: 271

Test I.D: D092953

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	24	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

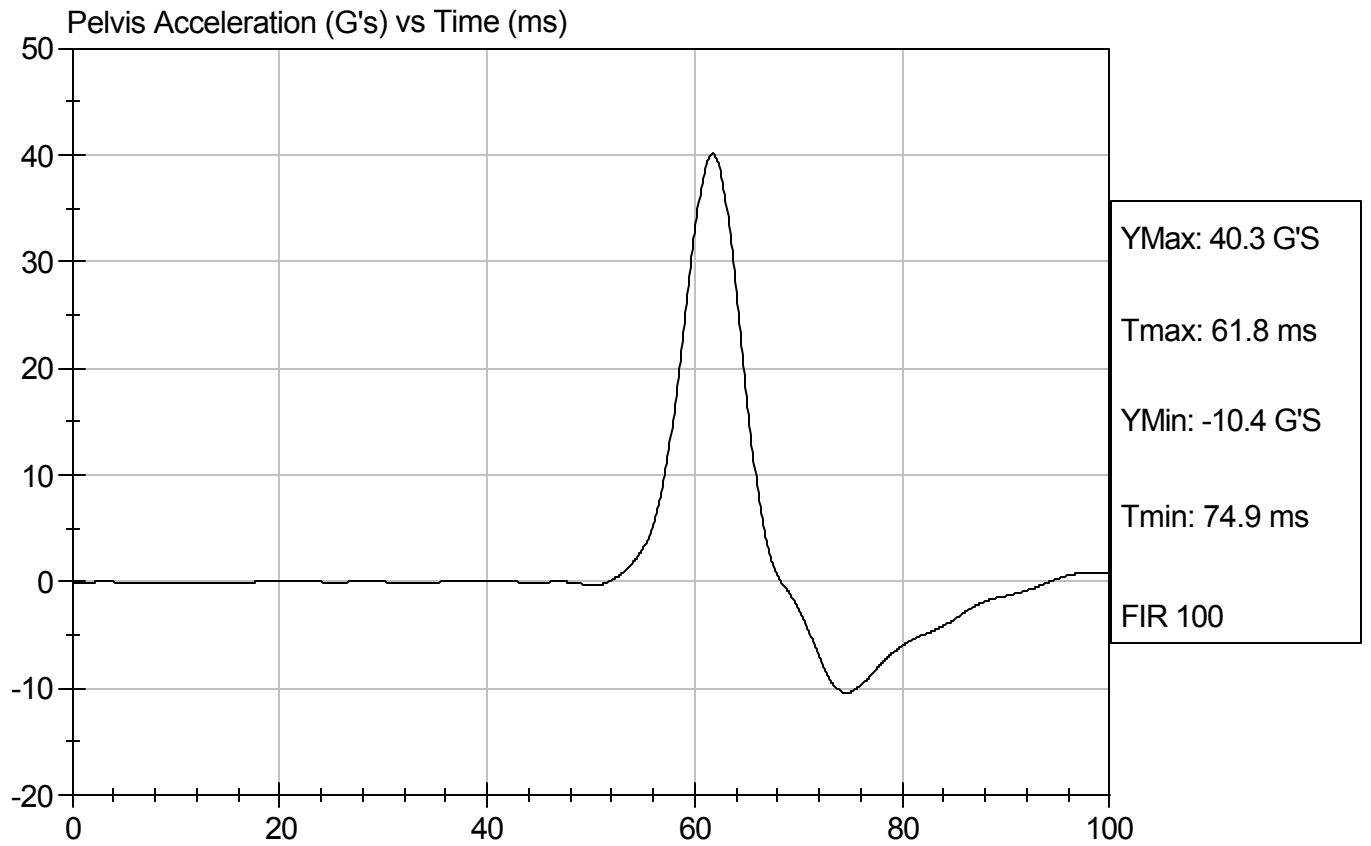
David Winkelbauer
Approved By

11/30/09
Test Date



Test Desc: Pelvis Impact
Component ID: D092953

Test Date: 11/30/09
Speed: 14.01 ft/s, 4.27 m/s



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

ATD Serial No: 271

Test I.D: D092954

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Force At 12.7 mm	N	104 -162	145	Pass
Force At 19 mm	N	163 - 222	205	Pass
Force At 25.4 mm	N	222 - 280	278	Pass
Force At 33 mm	N	325 - 391	372	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

12/1/09
Test Date

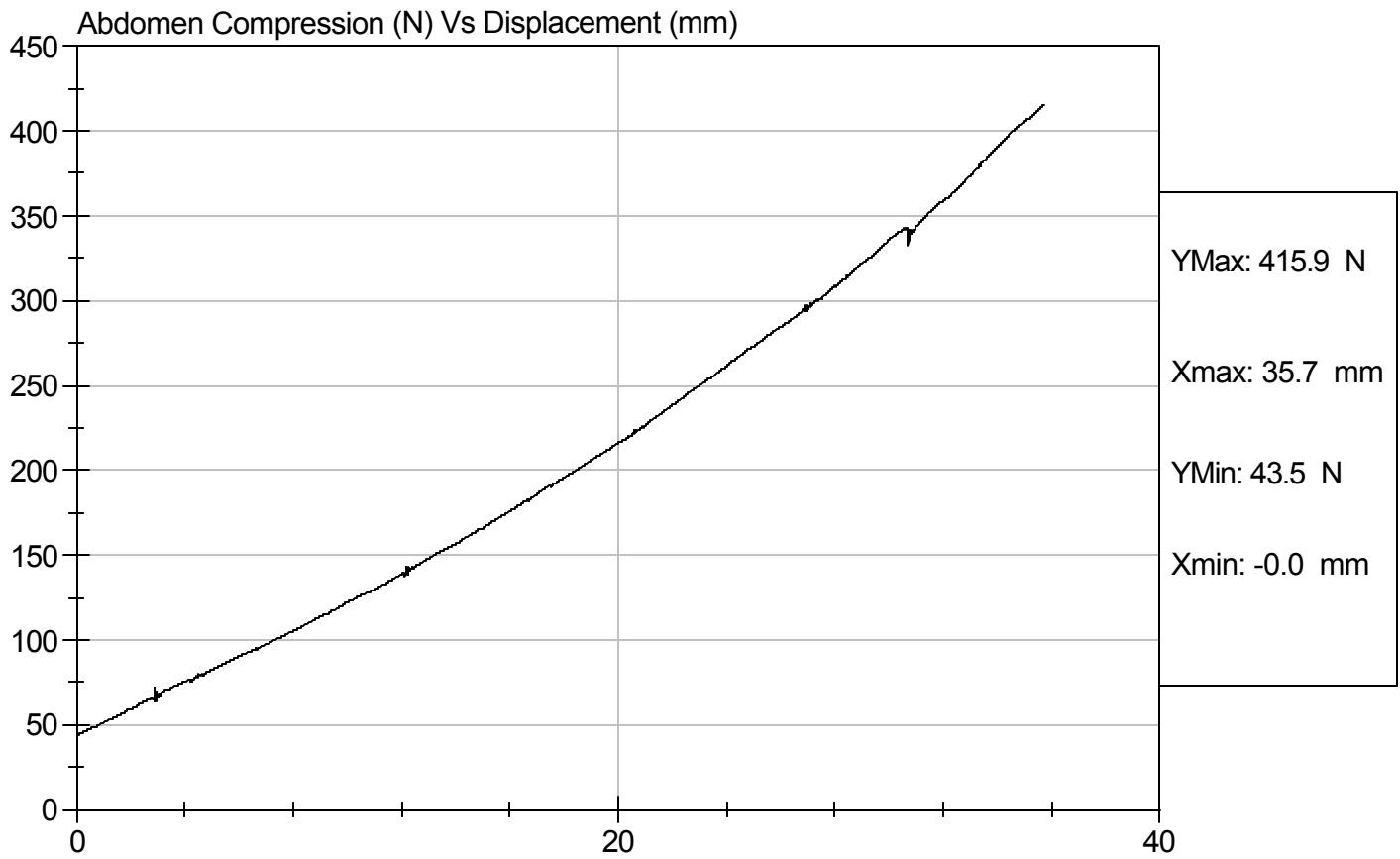


Test Description: Abdomen Compression

Test Date: 12/1/09

Component: D092954

Speed: 0 ft/s, 0 m/s



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

ATD Serial No: 271

Test I.D: D092955

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	25	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	140.3	Pass
Force At 30 deg	N	151.2 - 204.6	191.7	Pass
Force At 40 deg	N	204.6 - 258.0	256.1	Pass
Return Angle	Deg	12 Maximum	5	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

12/1/09
Test Date

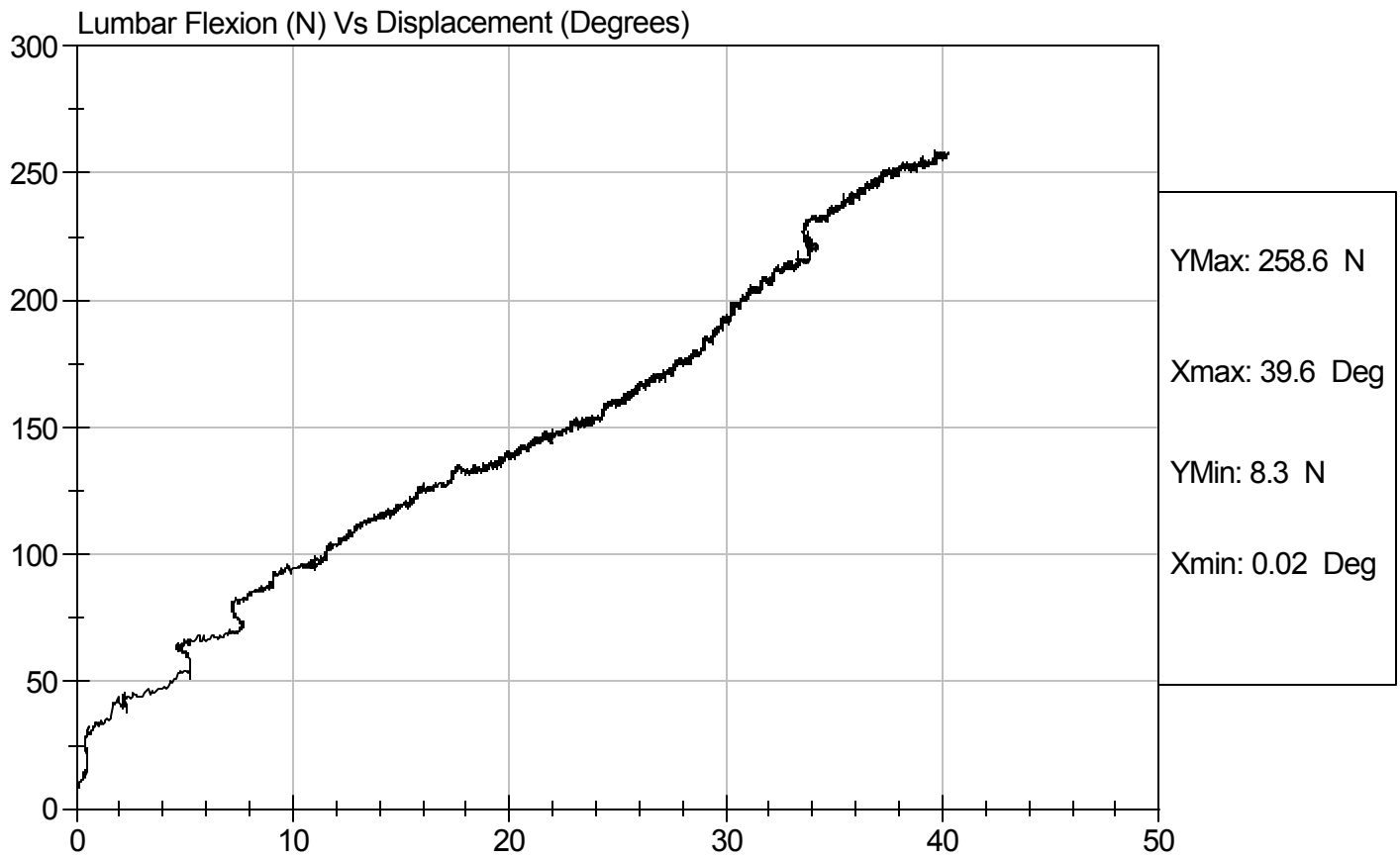


Test Description: Lumbar Flexion

Test Date: 12/1/09

Component: D092955

Speed: 0 ft/s, 0 m/s



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

ATD Serial No: 271

Test I.D: D092959

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	25	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 ms	m/s	1.96 to 2.55	2.45	Pass
	20 ms	m/s	4.12 to 5.10	4.65	Pass
	30 ms	m/s	5.73 to 7.01	6.41	Pass
	40 to 70 ms	m/s	6.27 to 7.64	6.87	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	73	Pass
Head Rotation Peak to Zero - Decay Time		ms	58 to 67	62	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	77	Pass
Mx Peak To Zero - Decay Time		ms	49 to 64	57	Pass
Mx Peak to Max. Head Rotation		ms	2 to 16	13	Pass


 Laboratory Technician


 Approved By

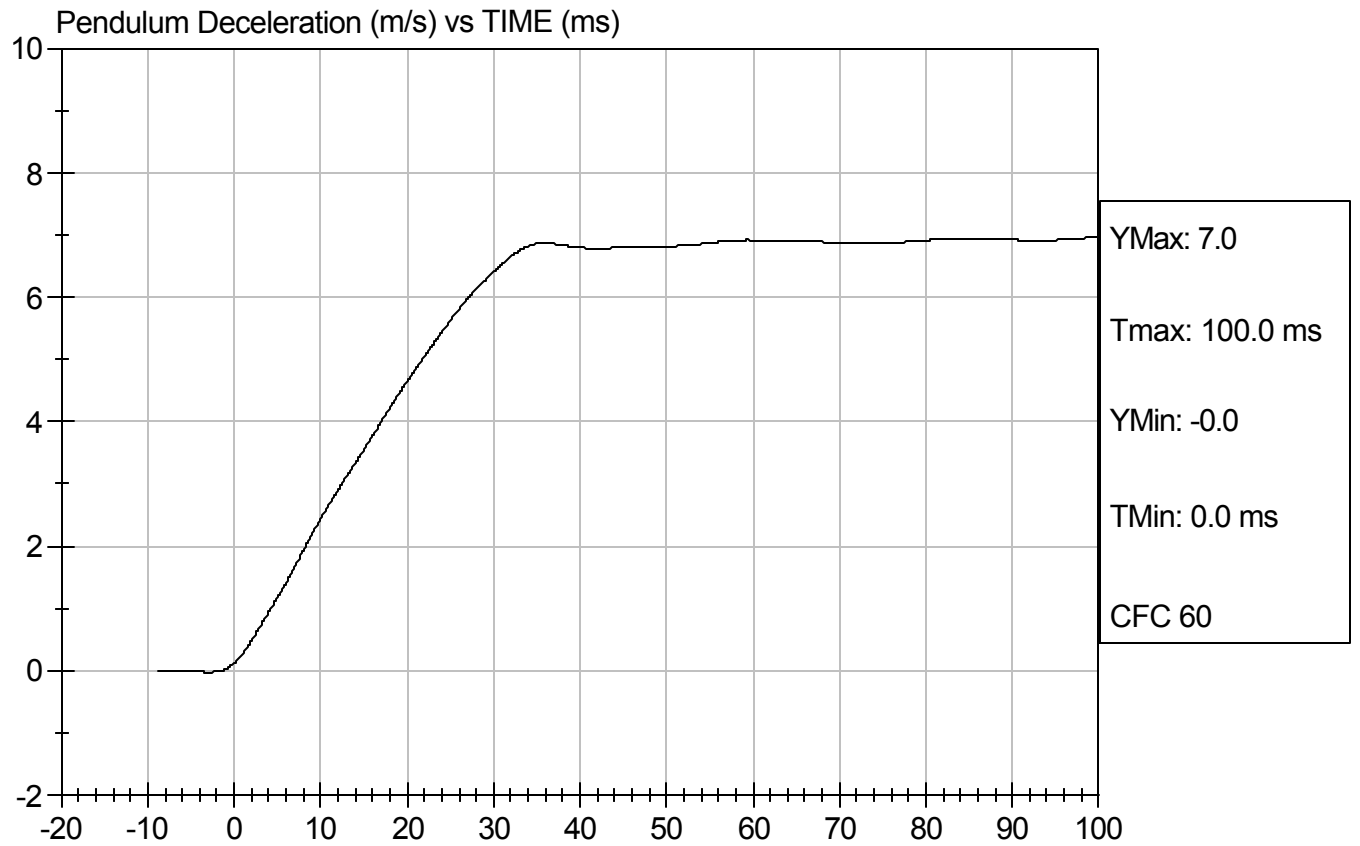
12/1/09

Test Date



Test Desc: Neck Bending
Component ID: D092959

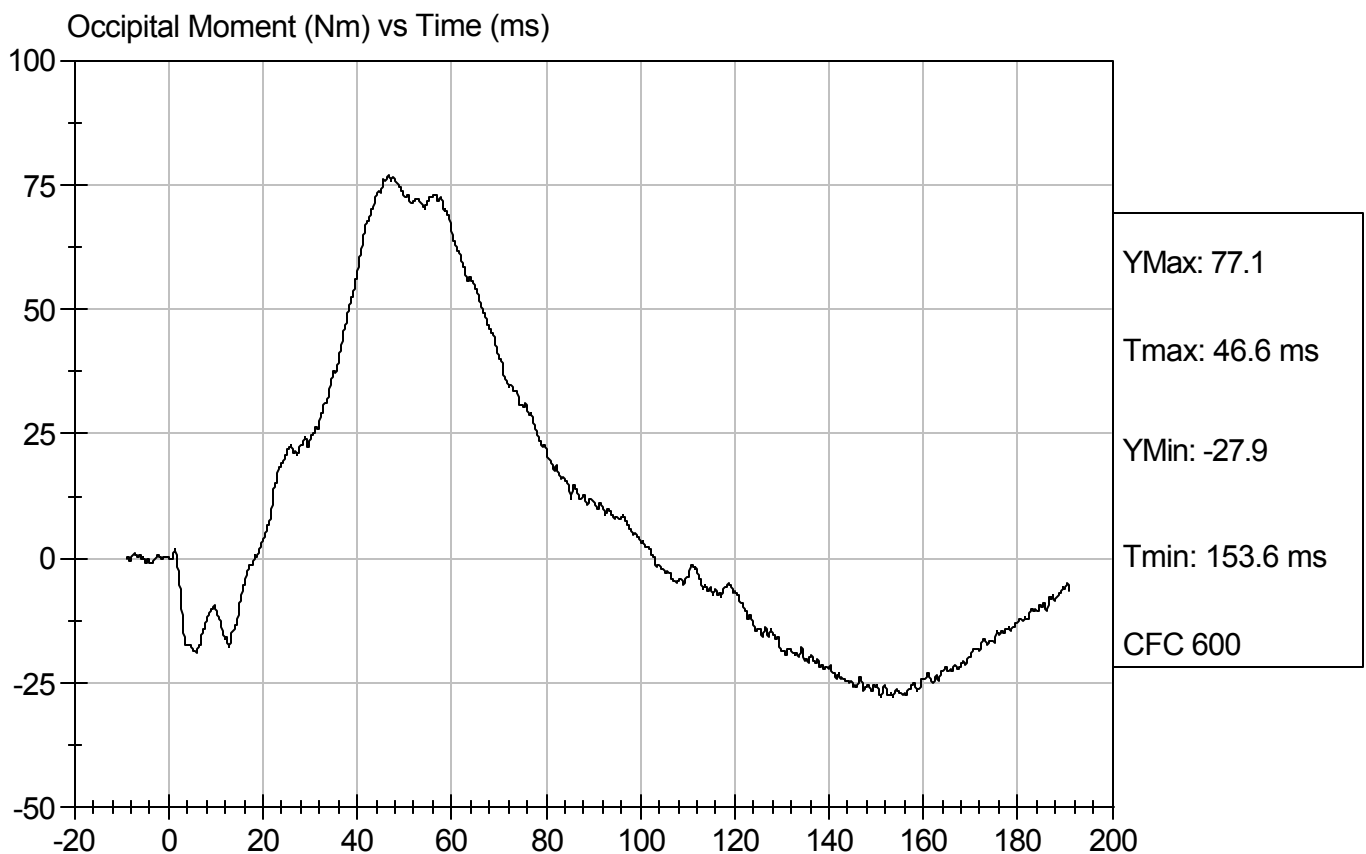
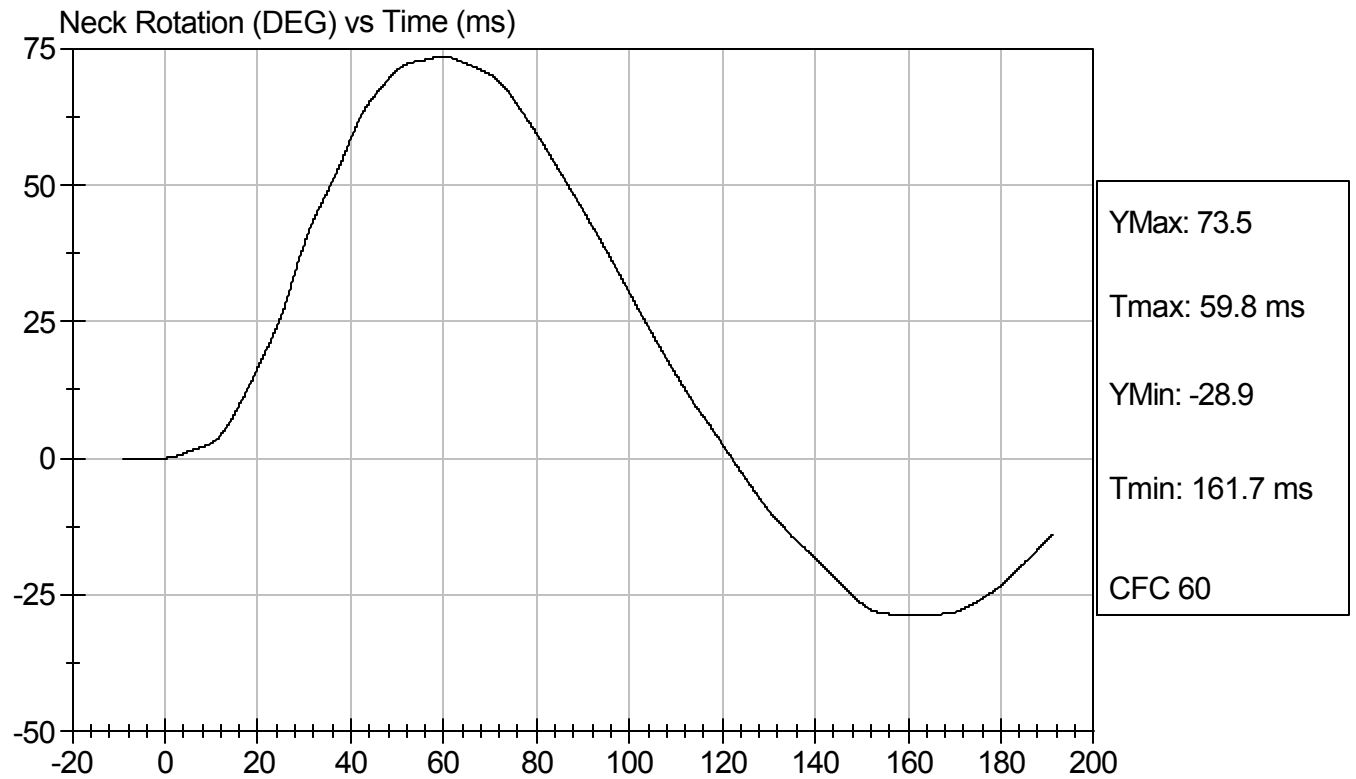
Test Date: 12/1/09
Speed: 23.15 ft/s, 7.06 m/s





Test Desc: Neck Bending
Component ID: D092959

Test Date: 12/1/09
Speed: 23.15 ft/s, 7.06 m/s



Calibration Test Results Summary

Dummy Serial Number: 271

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: 271

Test I.D: D10021

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	19	Pass
Peak Resultant Acceleration	G's	120 to 150	143	Pass
Is Resultant Curve Unimodal?	N/A	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-5.4	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

1/8/10
Test Date



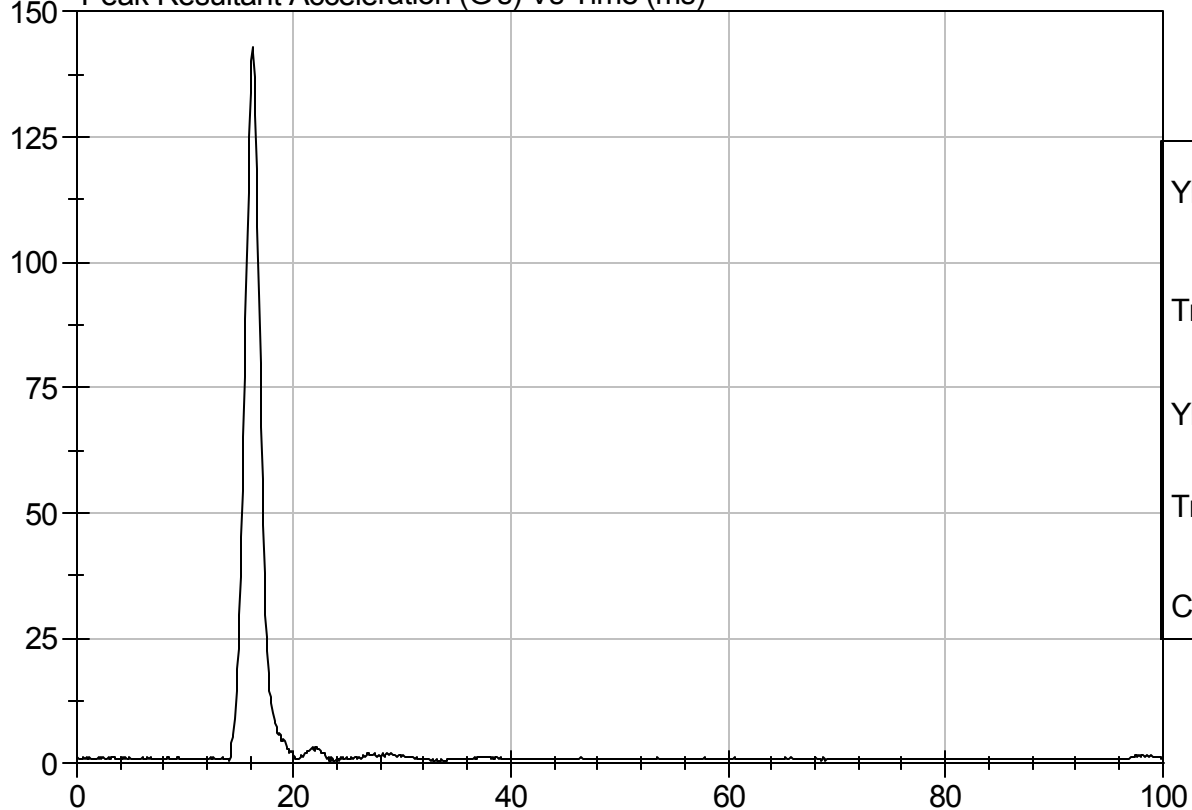
Test Description: Head Drop

Test Date: 1/8/10

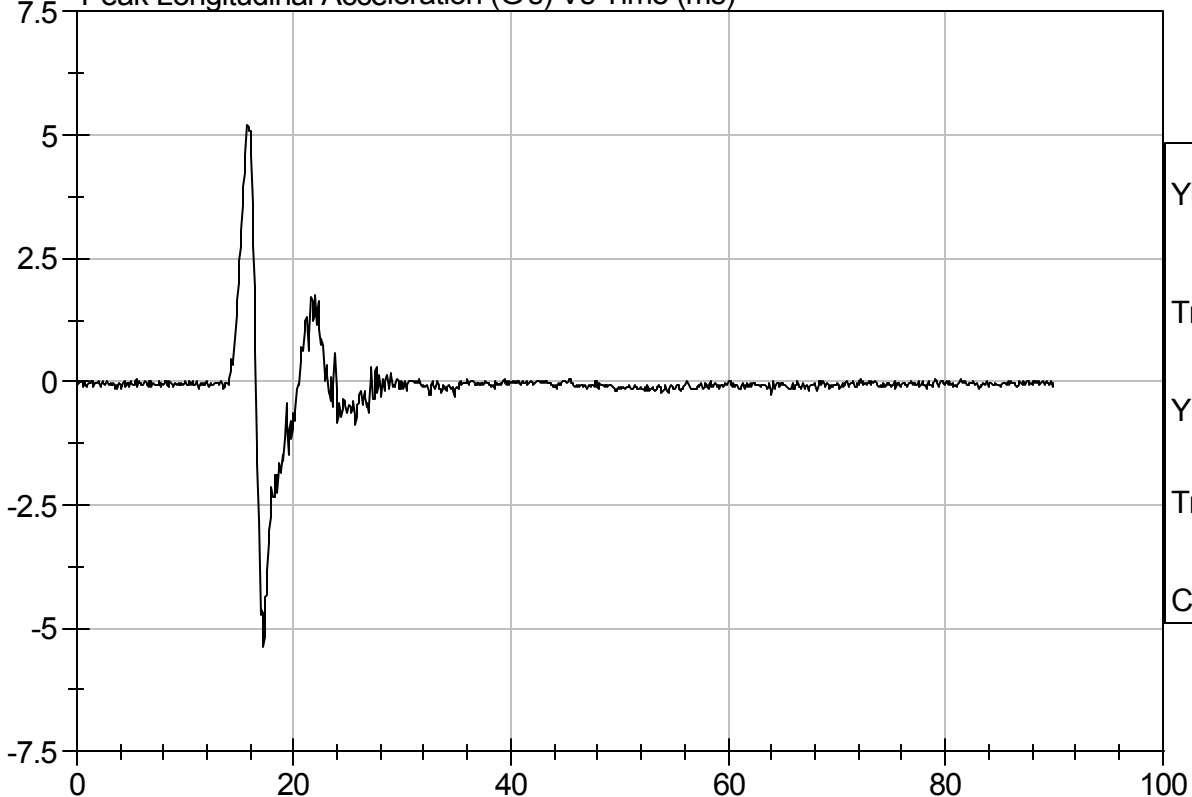
Component: D10021

Speed: 0 ft/s, 0 m/s

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



Peak Longitudinal Acceleration (G's) Vs Time (ms)



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

ATD Serial No: 271

Test I.D: D10022

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Probe Velocity	m/s	4.22 - 4.31	4.30	Pass
Upper Rib	G's	37 - 46	39	Pass
Lower Rib	G's	37 - 46	39	Pass
Lower Spine	G's	15 - 22	20	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

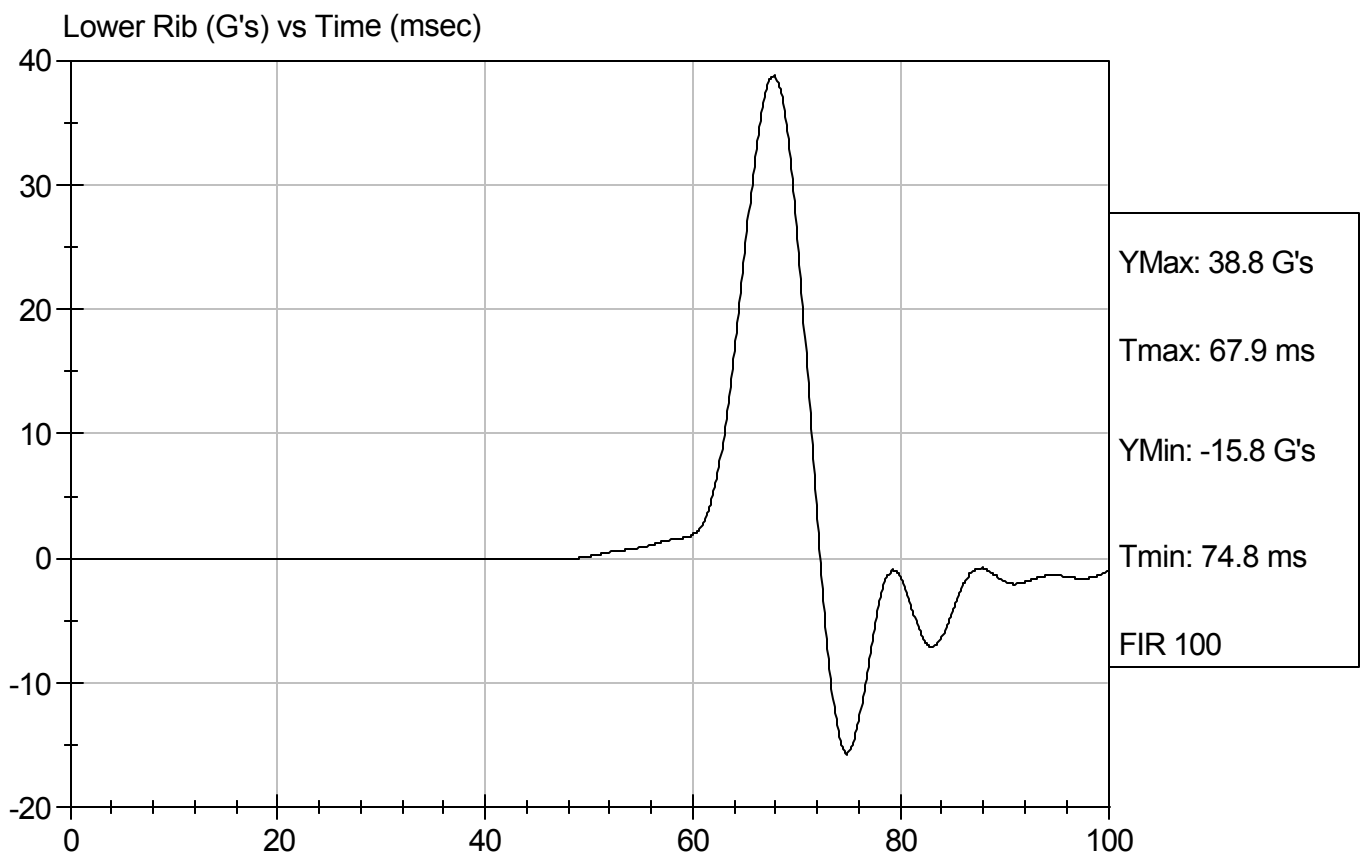
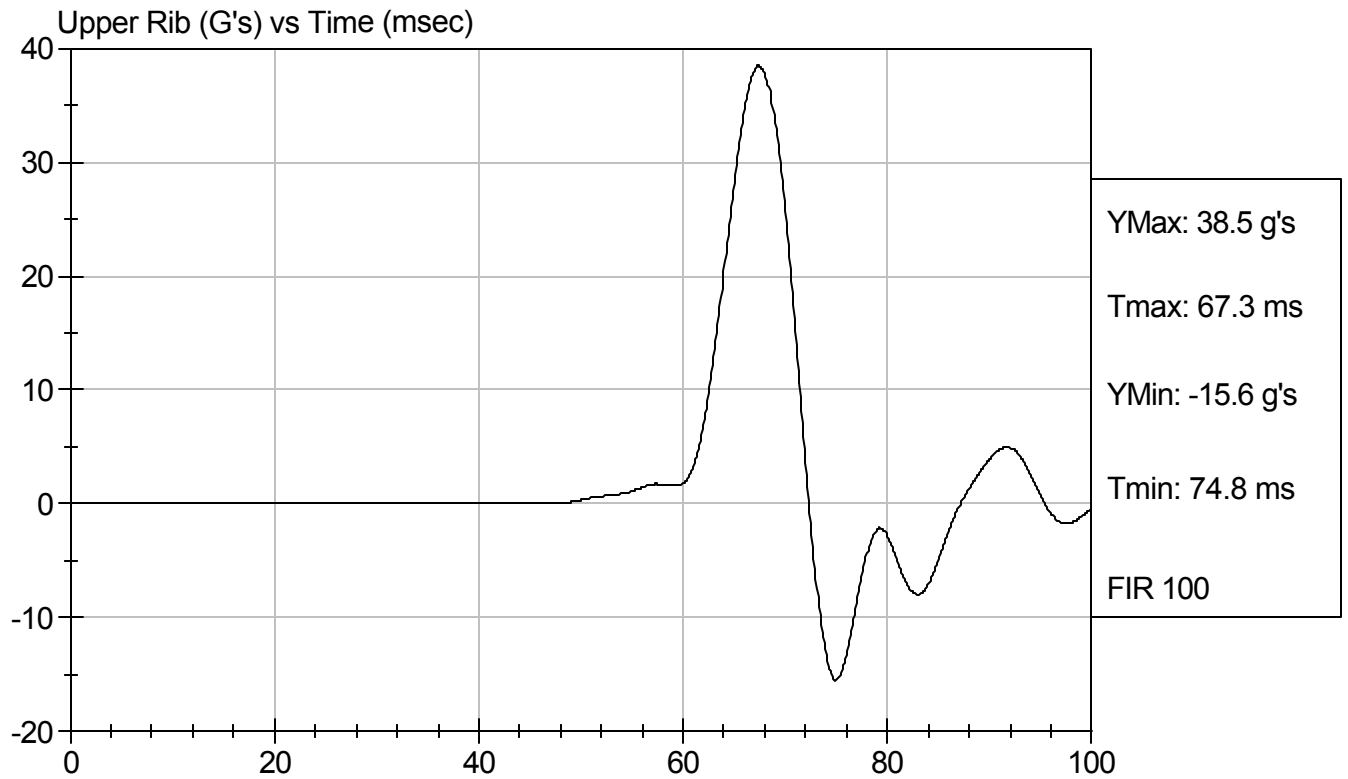
David Winkelbauer
Approved By

1/7/10
Test Date



Test Desc: Thorax Impact
Component ID: D10022

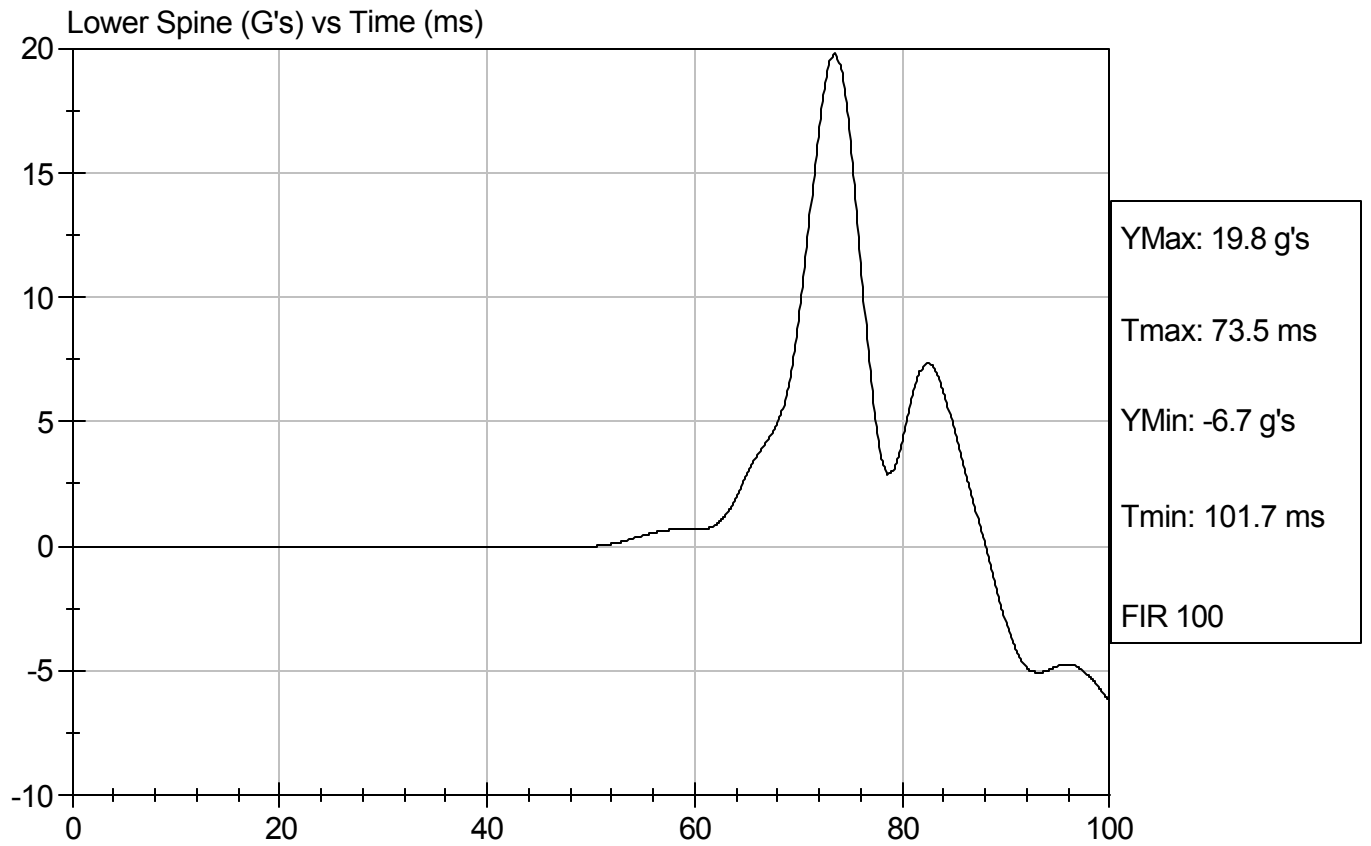
Test Date: 1/7/10
Speed: 14.12 ft/s, 4.30 m/s





Test Desc: Thorax Impact
Component ID: D10022

Test Date: 1/7/10
Speed: 14.12 ft/s, 4.30 m/s



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

ATD Serial No: 271

Test I.D: D10023

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	44	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

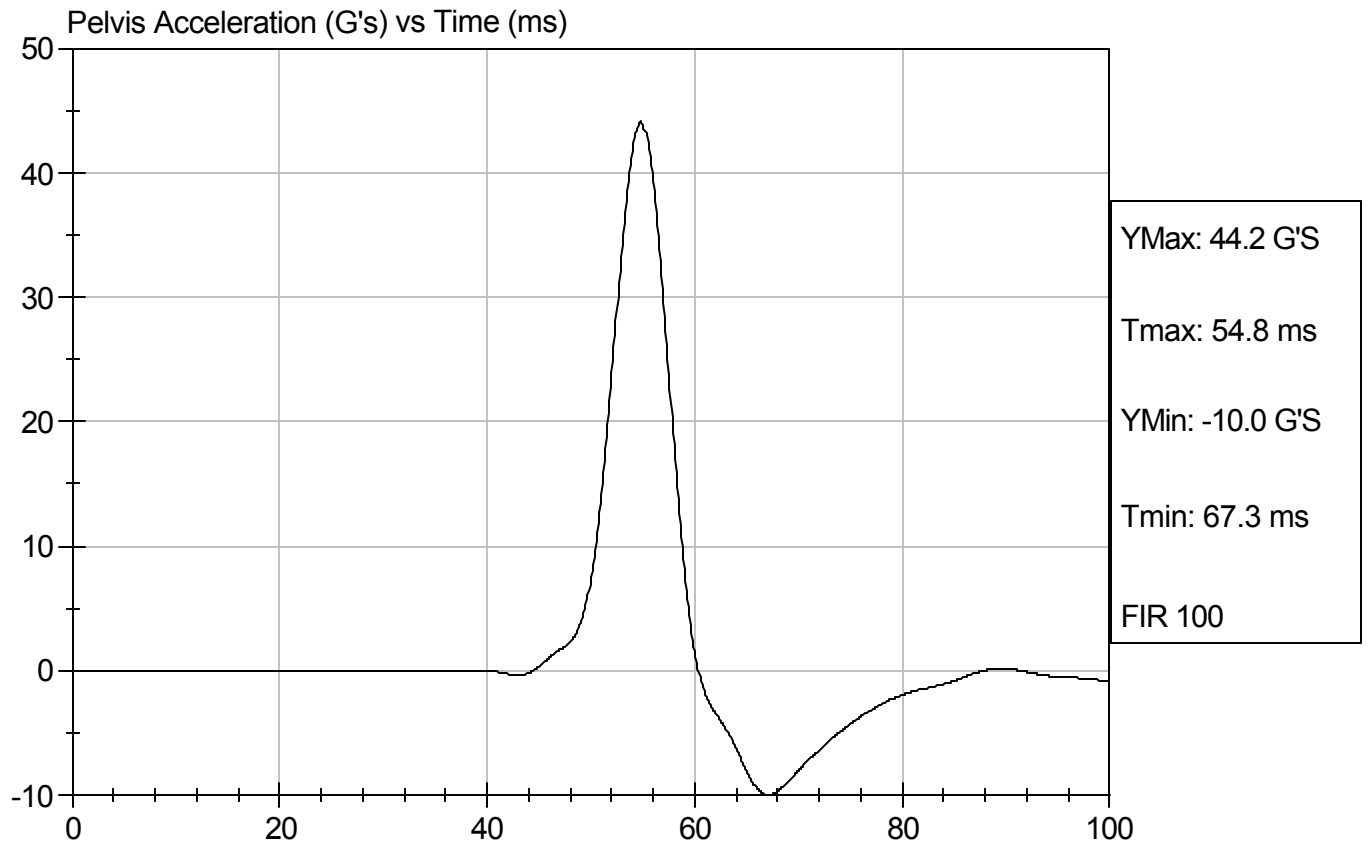
David Winkelbauer
Approved By

1/7/10
Test Date



Test Desc: Pelvis Impact
Component ID: D10023

Test Date: 1/7/10
Speed: 14.12 ft/s, 4.30 m/s



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

ATD Serial No: 271

Test I.D: D10024

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Force At 12.7 mm	N	104 -162	139	Pass
Force At 19 mm	N	163 - 222	199	Pass
Force At 25.4 mm	N	222 - 280	268	Pass
Force At 33 mm	N	325 - 391	366	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

1/8/10
Test Date

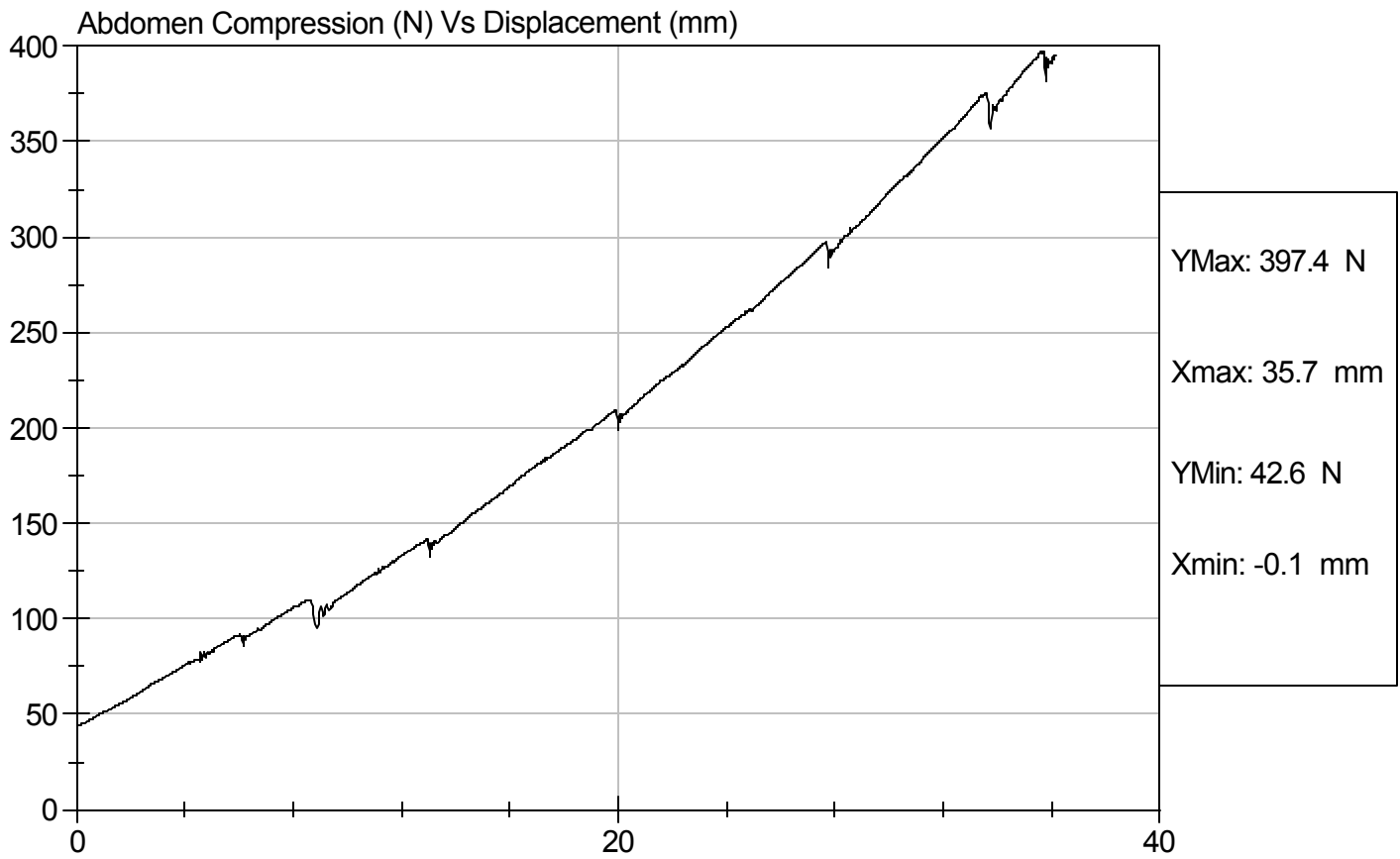


Test Description: Abdomen Compression

Test Date: 1/8/10

Component: D10024

Speed: 0 ft/s, 0 m/s



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

ATD Serial No: 271

Test I.D: D10025

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.9	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	117.4	Pass
Force At 30 deg	N	151.2 - 204.6	164.8	Pass
Force At 40 deg	N	204.6 - 258.0	242.6	Pass
Return Angle	Deg	12 Maximum	6	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

David Winkelbauer
Approved By

1/8/10
Test Date

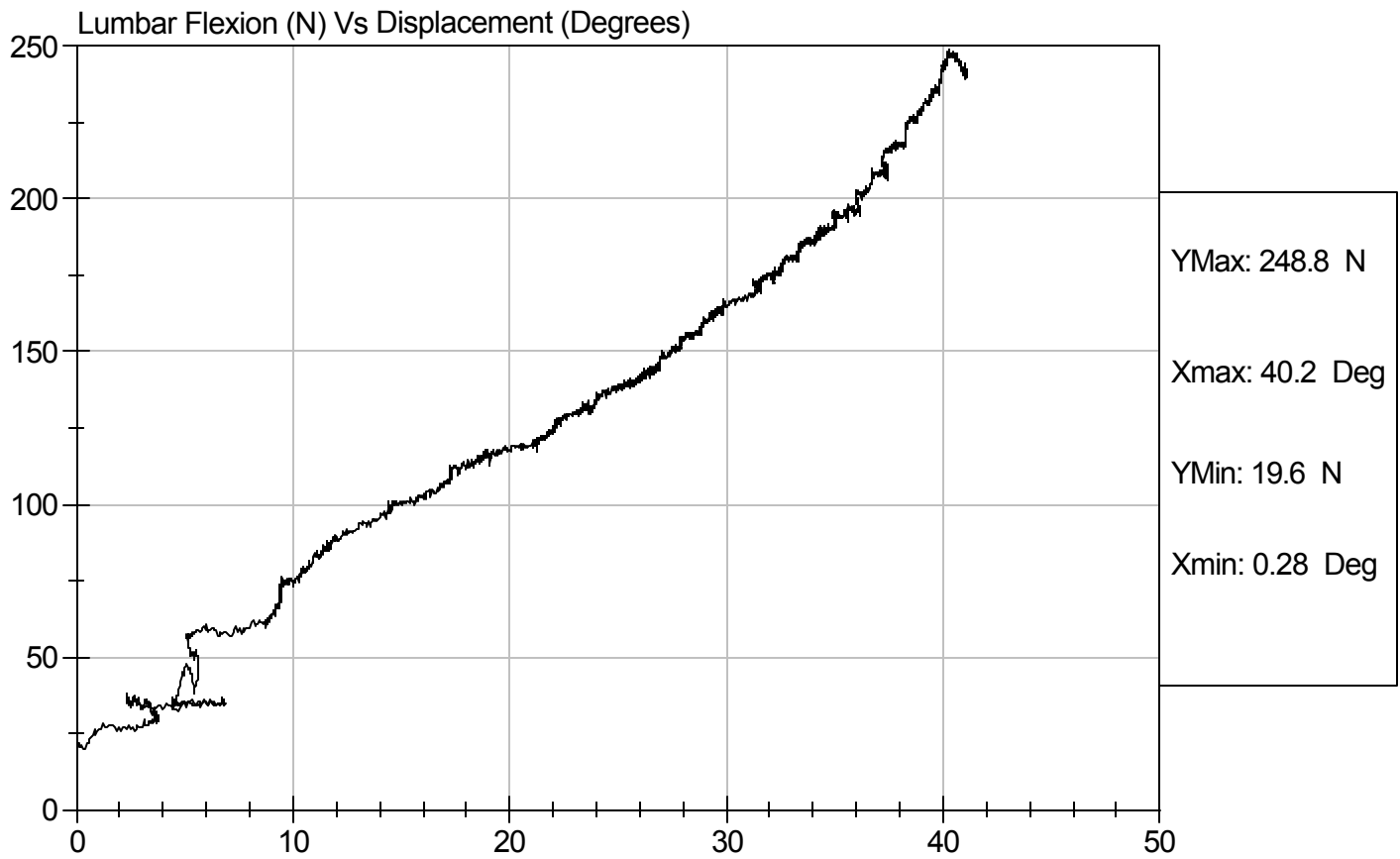


Test Description: Lumbar Flexion

Test Date: 1/8/10

Component: D10025

Speed: 0 ft/s, 0 m/s

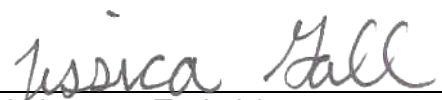


SID/HIII Calibration Data Sheet
Side Impact Dummy
Neck Pendulum Test

ATD Serial No: 271

Test I.D: D10029

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.9	Pass
Laboratory Relative Humidity		%	10 to 70	19	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 ms	m/s	1.96 to 2.55	2.38	Pass
	20 ms	m/s	4.12 to 5.10	4.57	Pass
	30 ms	m/s	5.73 to 7.01	6.29	Pass
	40 to 70 ms	m/s	6.27 to 7.64	6.92	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	73	Pass
Head Rotation Peak to Zero - Decay Time		ms	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	78	Pass
Mx Peak To Zero - Decay Time		ms	49 to 64	53	Pass
Mx Peak to Max. Head Rotation		ms	2 to 16	9	Pass


 Laboratory Technician


 Approved By

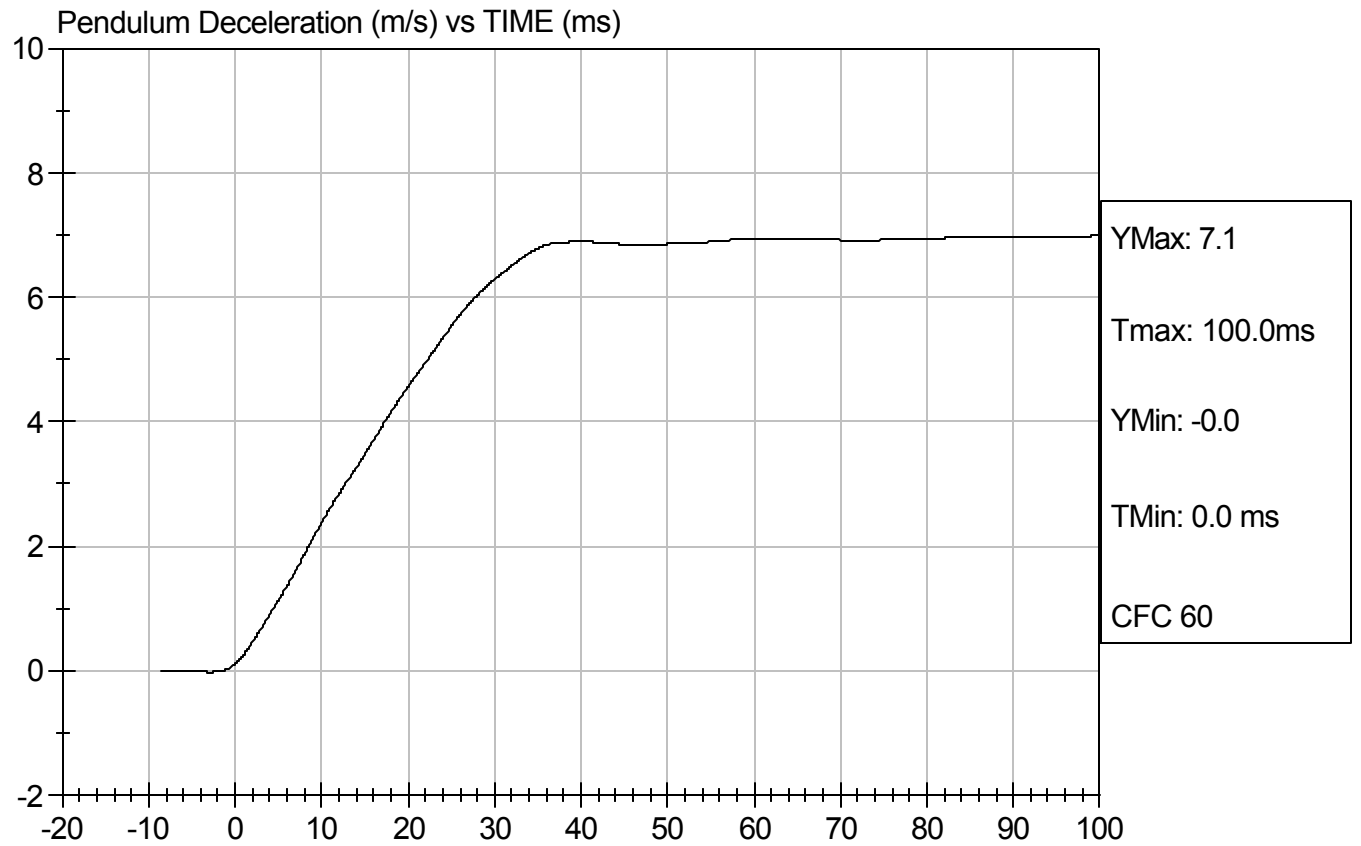
1/8/10

Test Date



Test Desc: Neck Bending
Component ID: D10029

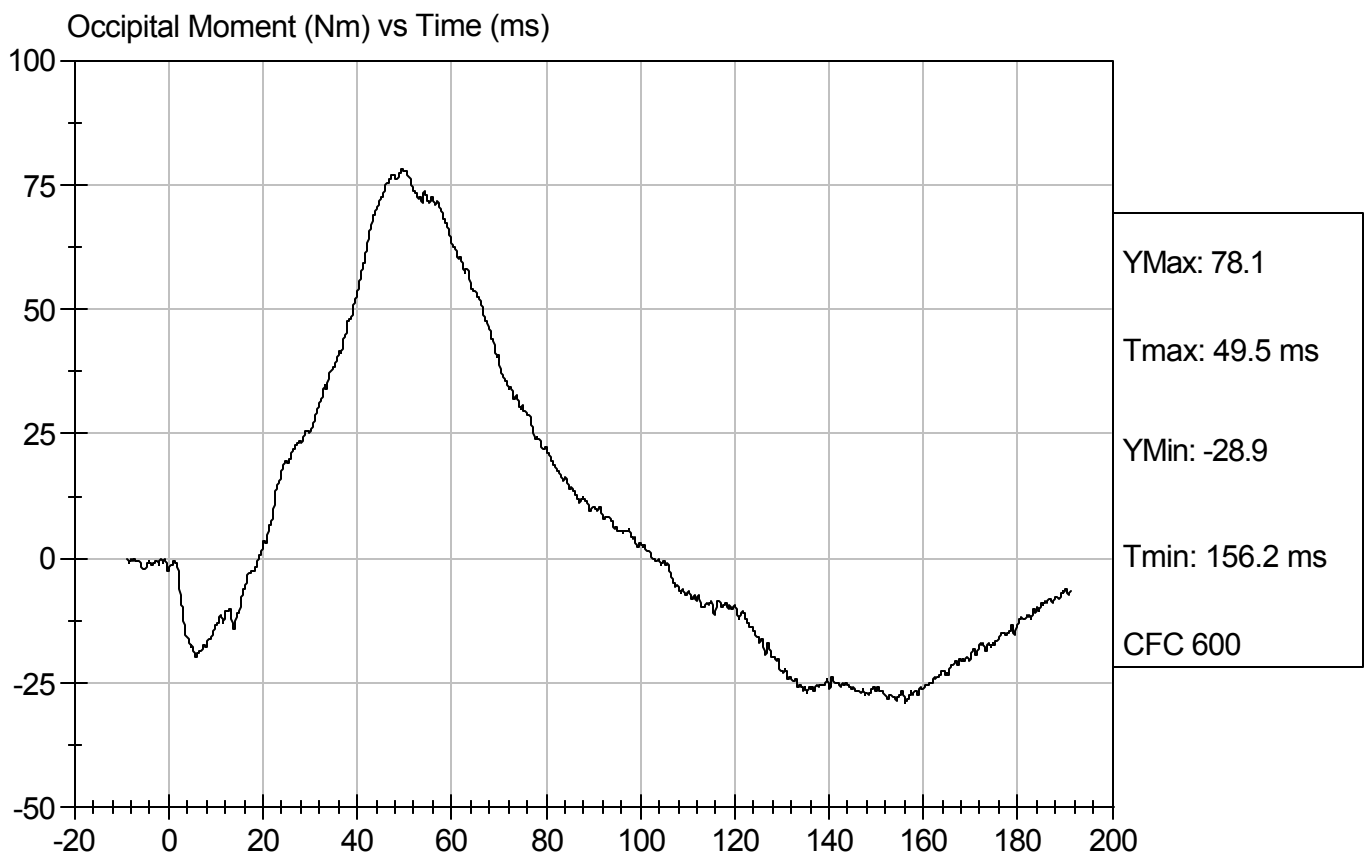
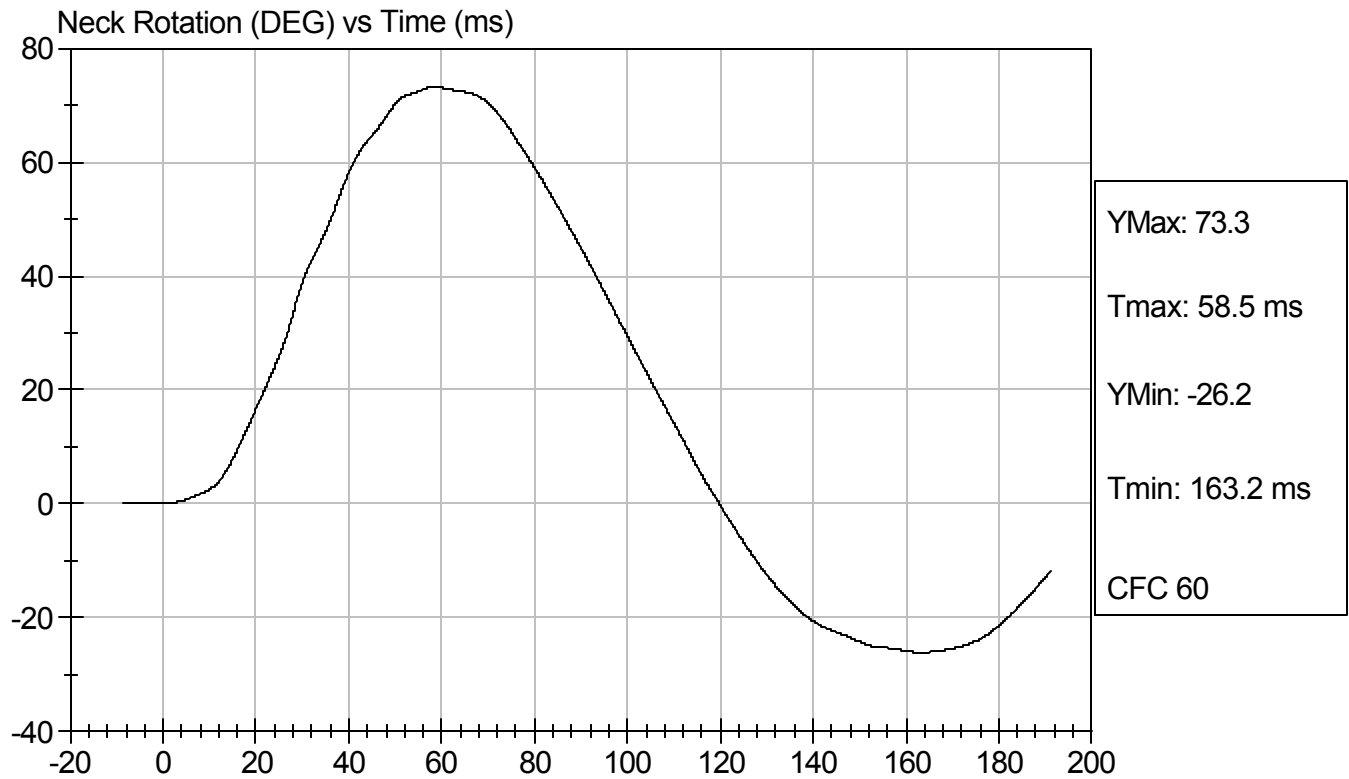
Test Date: 1/8/10
Speed: 23.15 ft/s, 7.06 m/s





Test Desc: Neck Bending
Component ID: D10029

Test Date: 1/8/10
Speed: 23.15 ft/s, 7.06 m/s



SID Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 271

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

Jessica Hall
Laboratory Technician
David Winkelbauer
Approved By

1/8/2010
Test Date