

REPORT NUMBER: NCAPSIDE-MGA-2008-004

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**FORD MOTOR COMPANY
2008 FORD MUSTANG CONVERTIBLE
NHTSA NUMBER: M80208**

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



Test Date: September 14, 2007

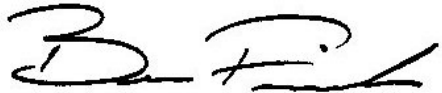
Report Date: October 17, 2007

FINAL REPORT

**PREPARED FOR:
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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 DTNH22-03-D-12005.

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Date: 10/17/07

Technical Report Documentation Page

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16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 2008 Ford Mustang Convertible 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 September 14, 2007. The impact velocity of the Moving Deformable Barrier (MDB) was 62.4 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 223 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;">40.9</td> <td style="text-align: center;">47.2</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">41.7</td> <td style="text-align: center;">48.0</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">52.9</td> <td style="text-align: center;">58.4</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">47</td> <td style="text-align: center;">53</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">58.5</td> <td style="text-align: center;">36.9</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">112</td> <td style="text-align: center;">901</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>PASS.</u>	Left Upper Rib (LUR) Accel., g	40.9	47.2	Left Lower Rib (LLR) Accel., g	41.7	48.0	Lower Spine (T ₁₂) Accel., g	52.9	58.4	Thoracic Trauma Index (TTI)	47	53	Pelvis (PEV) Accel., g	58.5	36.9	HIC	112	901
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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																						
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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2008 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 2008 Ford Mustang Convertible manufactured by Ford Motor Company.

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 2008 Ford Mustang Convertible 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 62.4 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 1782.6 kg and the test weight of the MDB was 1360.8 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on September 14, 2007.

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/HIIs) can be found in Appendix A. Two 50th percentile adult male SID/HIIs 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/HII 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 nineteen (19) 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 223 mm at level 3, 1200 mm rearward of the vertical impact point. The driver and passenger SID/HIIs, 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/HII response data traces. Appendix C contains the dummy calibration data. Appendix D contains the child dummy data.

The occupant data is summarized below:

ATD position	HIC	T ¹	T ²	TTI (G's)	Peak Pelvis (G's)
Driver	112	39.6	75.6	47	58.5
Passenger	901	58.8	67.8	53	36.9

SUPPLEMENTAL RESTRAINT SYSTEM 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	No		No	

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

TEST NOTES

There was no valid data collected for:
Right Front Sill Y

DATA SHEET NO. 1**GENERAL TEST AND VEHICLE PARAMETER DATA**Test Vehicle: 2008 Ford Mustang ConvertibleNHTSA No. M80208Test Program: NCAP Side ImpactTest Date: 9/14/2007**TEST VEHICLE INFORMATION**

Make	Ford
Model	Mustang
Body Style	Convertible
NHTSA No.	M80208
VIN	1ZVHT84N485101195
Color	Dark Candy Apple Red
Delivery Date	8/17/2007
Odometer Reading (mile)	74
Dealer	Gordie Boucher
Transmission	Automatic
Final Drive	Rear
Number of Cylinders	6
Engine Displacement (L)	4.0
Engine Placement	Longitudinal
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	No
Driver Side Torso Airbag	Yes
Rear Passenger Side Curtain Airbag	No
Rear Passenger Side Torso Airbag	No
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Anti-lock Brakes	No
Traction Control	No
All Wheel Drive	No
Power Seats	No
Pretensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Company
Date of Manufacture	07/07

GVWR (kg)	2037
GAWR Front (kg)	971
GAWR Rear (kg)	1066

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket		
Number Of Occupants	2	2		4
Capacity Wt. (VCW) (kg)				301
Cargo Wt. (RCLW) (kg)				29

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

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	419.5	376.9		479.0	451.8	
Right	kg	423.7	379.7		409.1	442.7	
Ratio	%	52.7	47.3		49.8	50.2	
Totals	kg	843.2	756.6	1599.8	888.1	894.5	1782.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1599.8
Weight of 2 P572M ATDs	kg	161.5
Rated Cargo/Luggage Weight (RCLW)	kg	29
Calculated Vehicle Target Weight (TVTW)	kg	1790.3

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

Weight of Ballast in Cargo Area: None

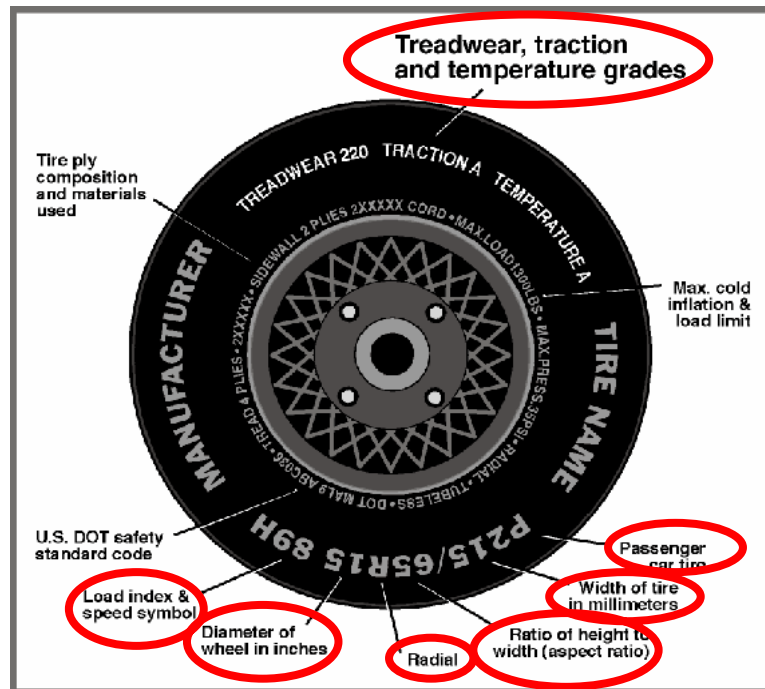
TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	740	733	741	736	1285
As Tested	mm	715	721	721	716	1364
Fully Loaded	mm	713	720	705	715	

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2718
Target Impact Point Aft of Front Axle	mm	418
Actual Impact Point Aft of Front Axle	mm	433

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)	240	240
Recommended Tire Size	P215/65R16	P215/65R16
Tire Size on Vehicle	P215/65R16	P215/65R16
Tire Manufacturer	BF Goodrich	BF Goodrich
Tire Name	Traction T/A	Traction T/A
Tire Type	Passenger	Passenger
Tire Width (mm)	215	215
Ratio of Height to Width (aspect ratio)	65	65
Radial	R	R
Wheel Diameter	16	16
Load Index & Speed Symbol	96T	96T
Treadwear	620	620
Traction Grade	A	A
Temperature Grade	B	B

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

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

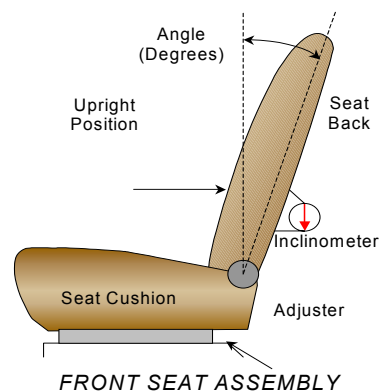
NHTSA No. M80208
 Test Date: 9/14/2007

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle. The procedure is as follows: 330 mm radius from the seat pivot to the backside of the seat back frame. This corresponds to a head restraint post angle of 13.0 degrees.

Driver seat back angle: 13.4 degrees

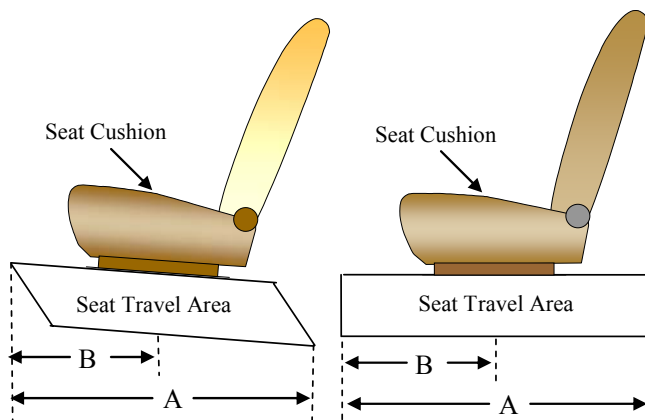
Passenger seat back angle: Fixed



SEAT FORE/AFT POSITIONS

SEAT FORE/AFT POSITIONS

	Total Fore/Aft Travel	Placed in position #
Driver Seat	25 detents	14 th detent (1 st as 1)
Rear Seat	Fixed	Fixed



DATA SHEET NO. 3 (CONTINUED)

TEST VEHICLE INFORMATION

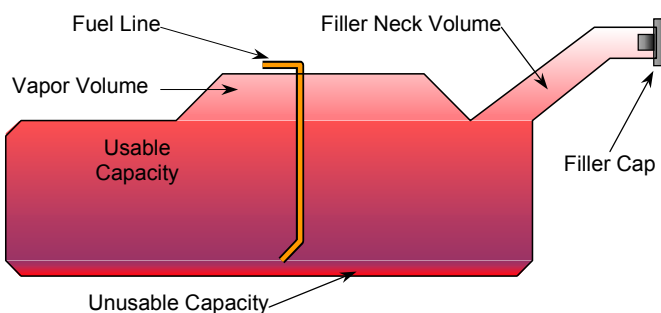
Test Vehicle: 2008 Ford Mustang Convertible
Test Program: NCAP Side Impact

NHTSA No. M80208
Test Date: 9/14/2007

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	61.7
Usable Capacity of "Optional" Tank	
92-94% of Usable Capacity	56.7 – 58.0
Actual Amount of Solvent used	58.0
1/3 of Usable Capacity	20.6

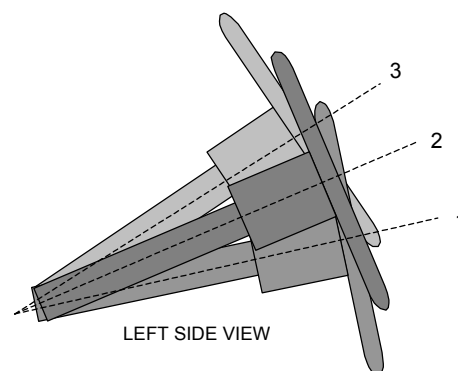
The test vehicle is equipped with an electric fuel pump. The electric fuel pump operates for a prescribed amount of time to pressurize the fuel system following the actuation of the ignition. If no attempt has been made to start the engine within 2 seconds following ignition actuation, the fuel pump will shut off. The fuel pump operates continuously while the engine is running. If the engine stalls, the fuel pump is deactivated. Also, a fuel pump shut-off switch is provided, designed to stop fuel flow to the engine if the vehicle sustains an impact above a certain magnitude.



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		66.0
Geometric center position No. 2		68.2
Uppermost position No. 3		70.4

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

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007

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	62.4
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.6
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.9

POST TEST OBSERVATIONS
MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/-50	15 rearward
Vertical Offset	mm	+/-20	11 up

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

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007

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	Side Airbag	Side Header, RR Headrest
Upper Torso Contact	Side Airbag	Door Panel
Lower Torso Contact	Door Panel	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 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 and left rear windows broke
Other Notable Effects	None

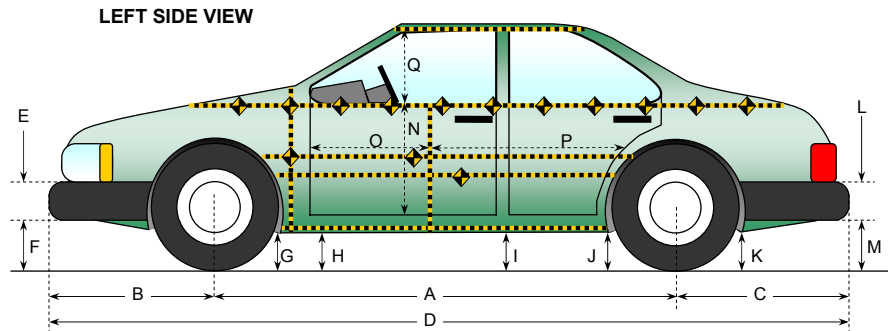
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Occupant Location 01		Occupant Location 04	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No	No	
Side Torso Airbag	Yes	Yes	No	
Curtain Airbag	No		No	

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

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007



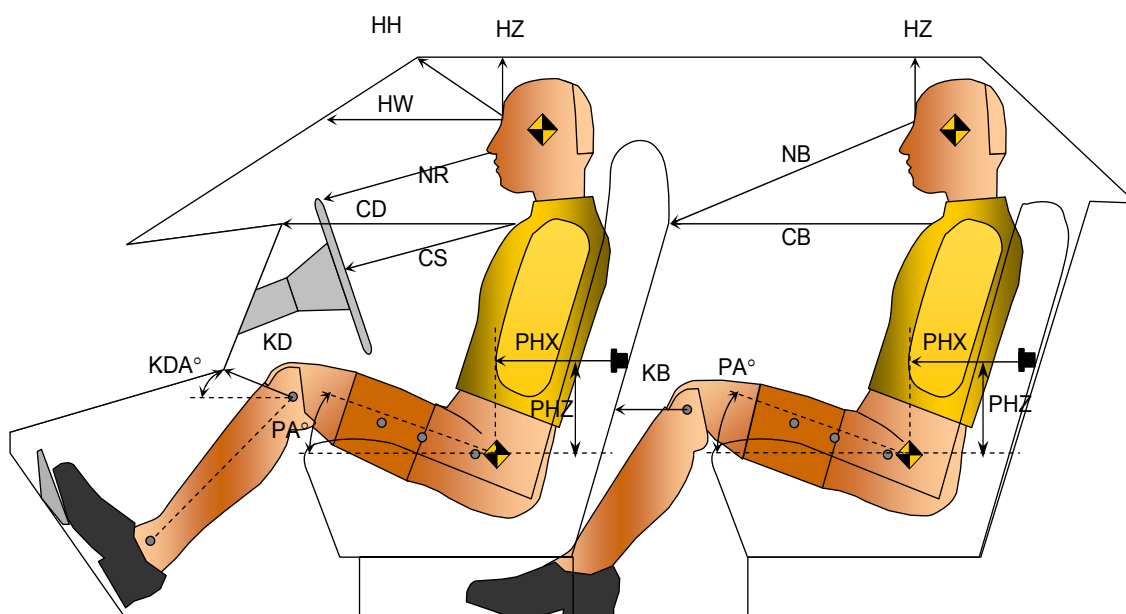
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2718	2710	8
B	Front Axle to FSOV	923	936	-13
C	Rear Axle to RSOV	1142	1082	60
D	Total Length at Centerline	4727	4747	-20
E	Front Bumper Thickness	145	145	0
F	Front Bumper Bottom to Ground	216	228	-12
G	Sill Height at Front Wheel Well	142	145	-3
H	Sill Height at Front Door Leading Edge	143	147	-4
I	Sill Height at "B" Pillar	134	150	-16
J1	Sill Height at Rear Wheel Well	130	156	-26
J2	Pinch Weld Height at Rear Wheel Well	134	153	-19
K	Sill Height Aft of Rear Wheel Well	263	273	-10
L	Rear Bumper Thickness	242	242	0
M	Rear Bumper Bottom to Ground	307	308	-1
N	Sill Height to Window Bottom Sill	740	637	103
O	Front Door Leading Edge to Impact CL	839	837	2
P	Rear Door Trailing Edge to Impact CL	464	451	13
Q	Front Window Opening	340	318	22
R	Right Side Length	4215	4213	2
S	Left Side Length	4212	4175	37
T	Vehicle Width at "B" Post	1822	1676	146

DATA SHEET NO. 7
SID/HII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007

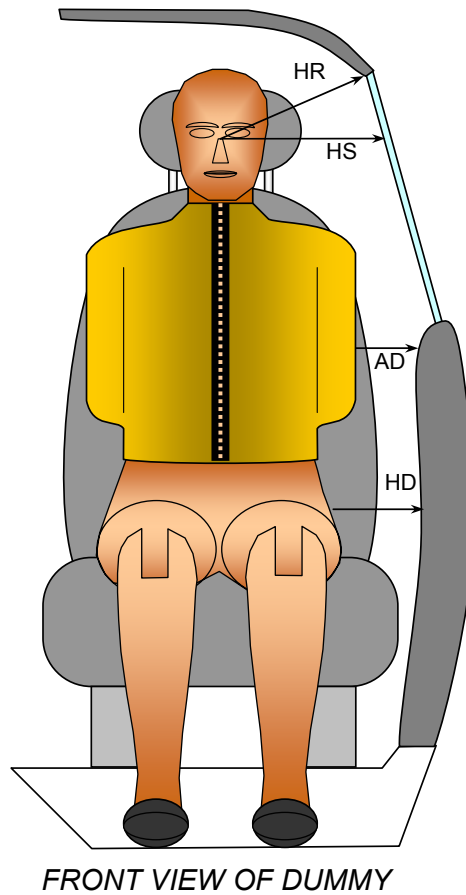


Driver Code	Pass. Code	Measurement Description	Driver S/N 272		Passenger S/N 271	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	321			
HW		Head to Windshield	547			
HZ	HZ	Head to Roof	178		134	
NR	NB	Nose to Rim/Nose to Seatback	393		464	
CD	CB	Chest to Dash or Seatback	495		428	
CS		Chest to Steering Wheel	292			
KDL	KBL	Left Knee to Dash or Seatback	135	35.9	132	31.5
KDR	KBR	Right Knee to Dash or Seatback	109	38.2	120	22.4
PA	PA	Pelvic Angle		24.1		30.0
PHX	PHX	H-Point to Striker (X-Axis)	438		382	
PHZ	PHZ	H-Point to Striker (Z-Axis)	234		148	

DATA SHEET NO. 8
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007

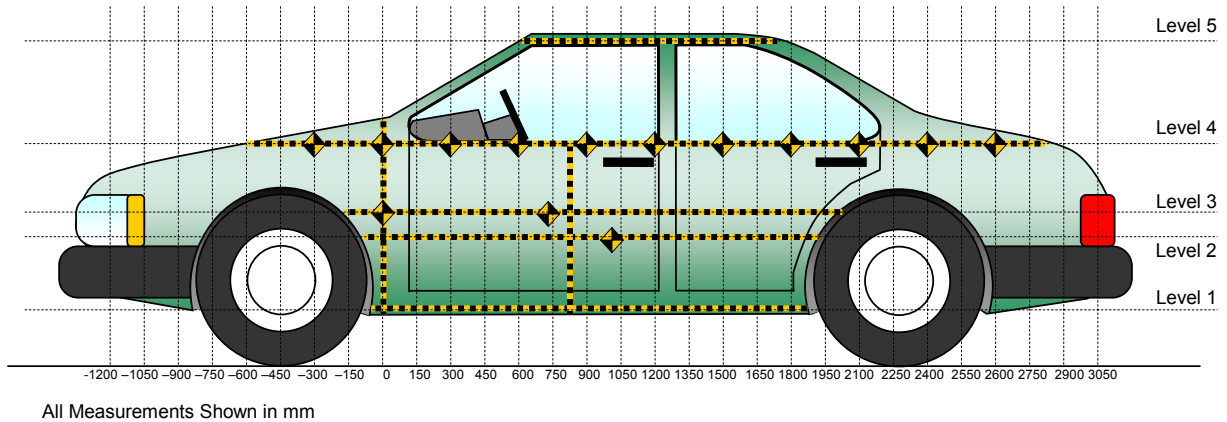


Code	Measurement Description	Units	Driver S/N 272	Passenger S/N 271
HR	Head to Side Header	mm	236	225
HS	Head to Side Window	mm	334	443
AD	Arm to Door	mm	114	34
HD	H-Point to Door	mm	132	106

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

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007



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	10	1200	1314
4	Window Sill	135	1650	933
3	Mid Door	223	1200	612
2	Occupant H-Point	199	300	458
1	Sill Top	56	300	265
	Maximum Penetration	270		

DATA SHEET NO. 10
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-600				330					331					1	
-460				320					329					9	
-300				309					321					12	
-150			186	304				232	319				46	15	
0		198	202	294			284	296	314			86	94	47	
150	255	212	200	288		303	286	341	311		48	74	141	23	
300	255	214	198	281		311	413	370	321		56	199	172	40	
450	256	214	198	278		246	396	393	324		-10	182	195	46	
600	254	212	198	274		237	405	404	333		-17	193	206	59	
750	252	211	199	271		236	402	413	349		-16	191	214	78	
900	252	209	199	271		235	400	421	373		-17	191	222	102	
1050	249	208	199	271	497	235	395	422	371	506	-14	187	223	100	9
1200	249	205	201	275	499	234	379	424	369	509	-15	174	233	94	10
1350	248	202	202	276	504	216	341	392	371	512	-32	139	190	95	8
1500	250	199	204	282	496	189	303	347	371	502	-61	104	143	89	6
1650	258	198	206	284	504	275	355	382	419	508	17	157	176	135	4
1800	259	199	193	290	507	261	316	371	364	509	2	117	178	74	2
1950			177	294	514			281	318	510			104	24	-4
2100				298	524				285	519				-13	-5
2250				305					301					-4	
2400				308					316					8	
2550				314					317					3	
2700				320					320					0	

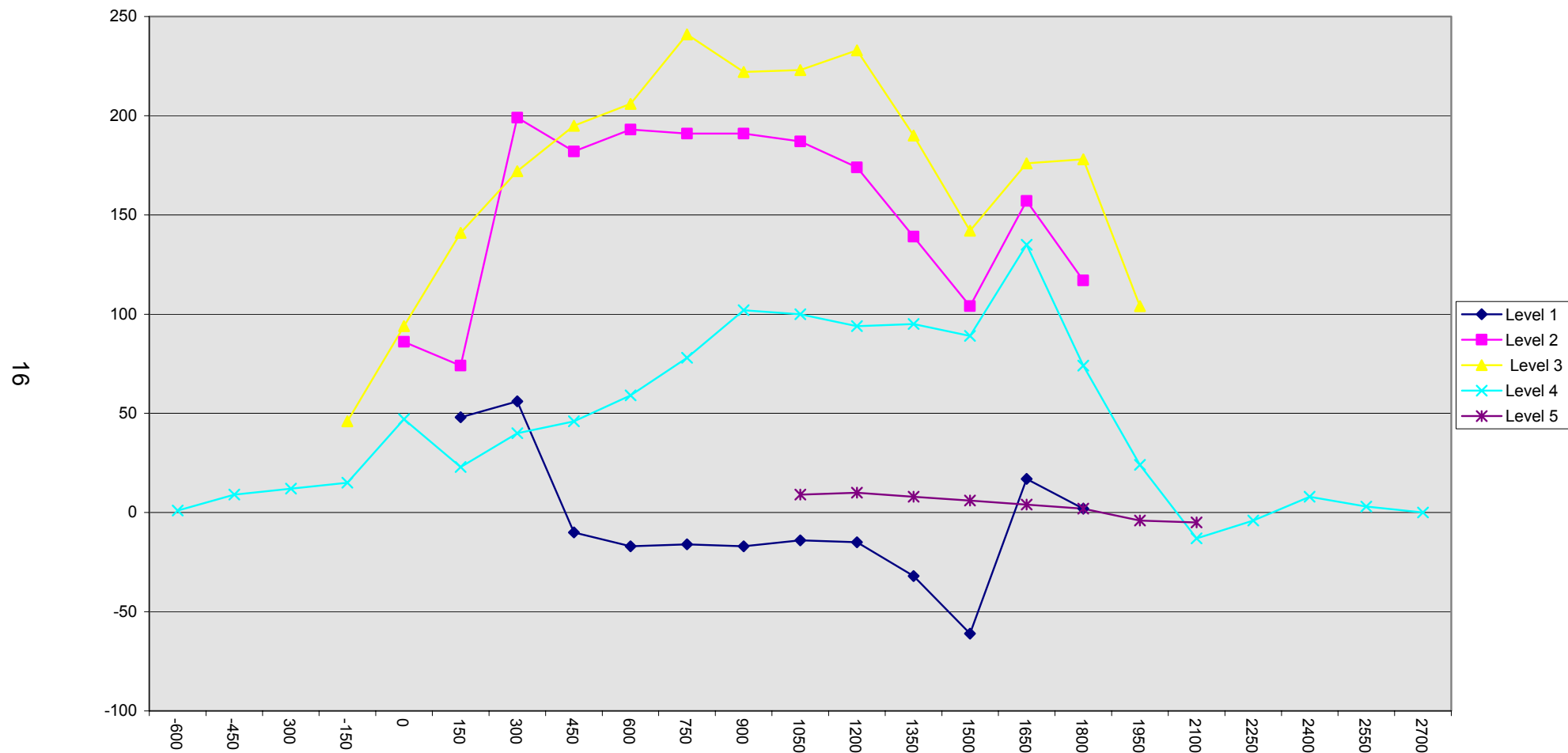
Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

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

Test Vehicle: 2008 Ford Mustang Convertible
Test Program: NCAP Side Impact

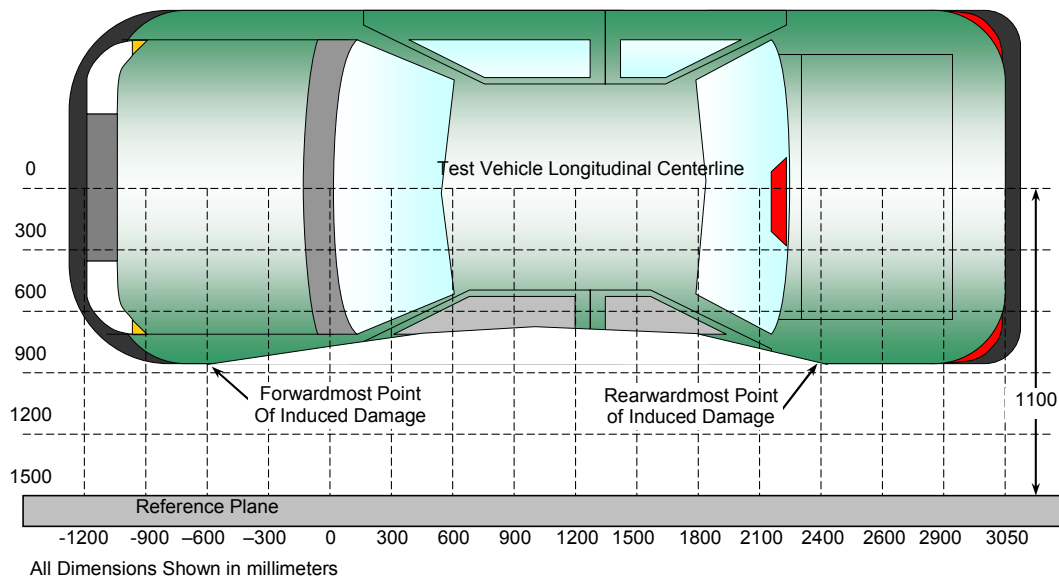
NHTSA No. M80208
Test Date: 9/14/2007



DATA SHEET NO. 11
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2700	4	320	320	0
2	2044	4	296	299	3
3	1350	3	202	415	213
4	700	3	198	440	242
5	50	2	202	348	146
6	-600	4	330	331	1

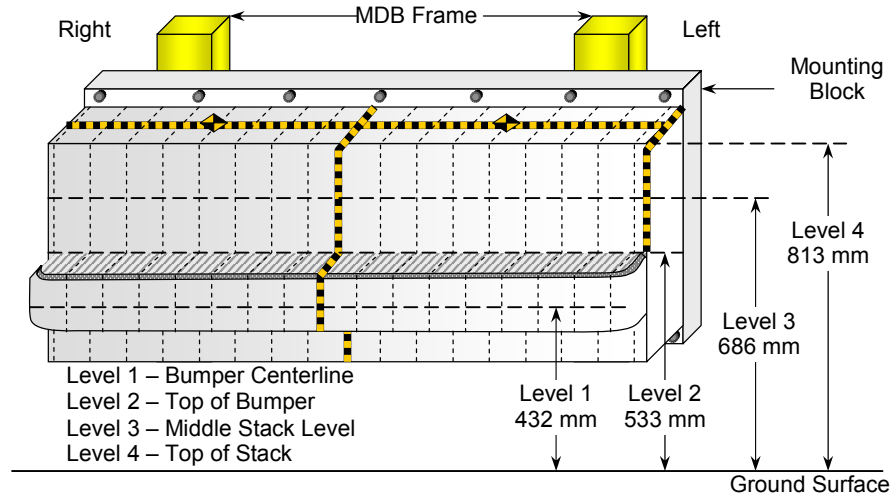
Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body.

DATA SHEET NO. 12

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007



DEFORMABLE BARRIER STATIC CRUSH

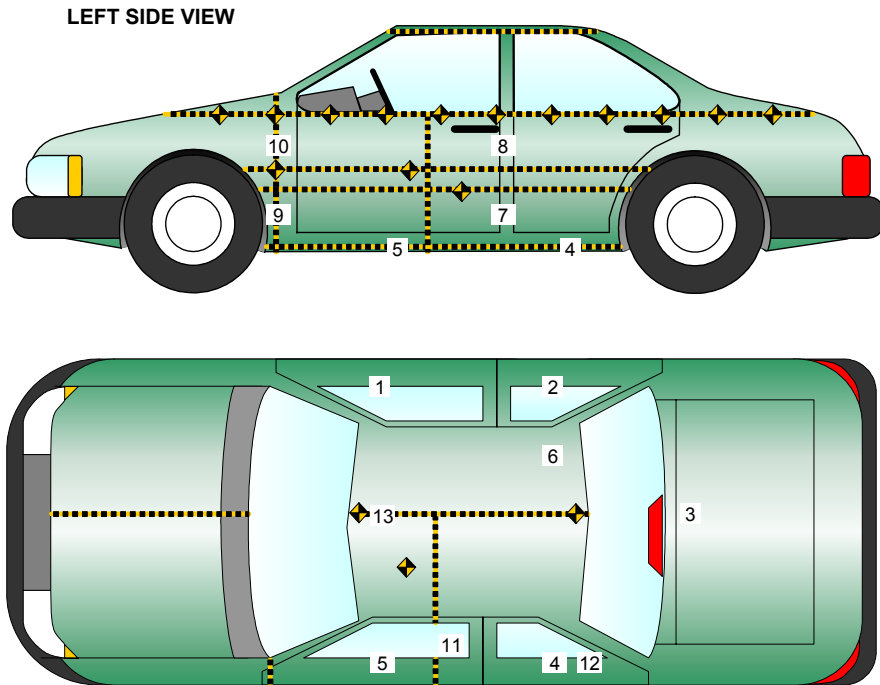
Stack Level	Distance Right of Center								C _L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	234	237	241	224	195	171	155	148	148	147	147	148	153	171	176	174	178
2	167	171	167	134	116	93	83	85	84	84	85	88	88	99	111	124	137
3	69	70	77	44	29	25	25	25	28	31	39	49	72	105	139	144	154
4	75	39	34	22	24	21	26	36	46	105	64	83	103	124	154	156	175

All Dimensions in mm

DATA SHEET NO. 13
VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007



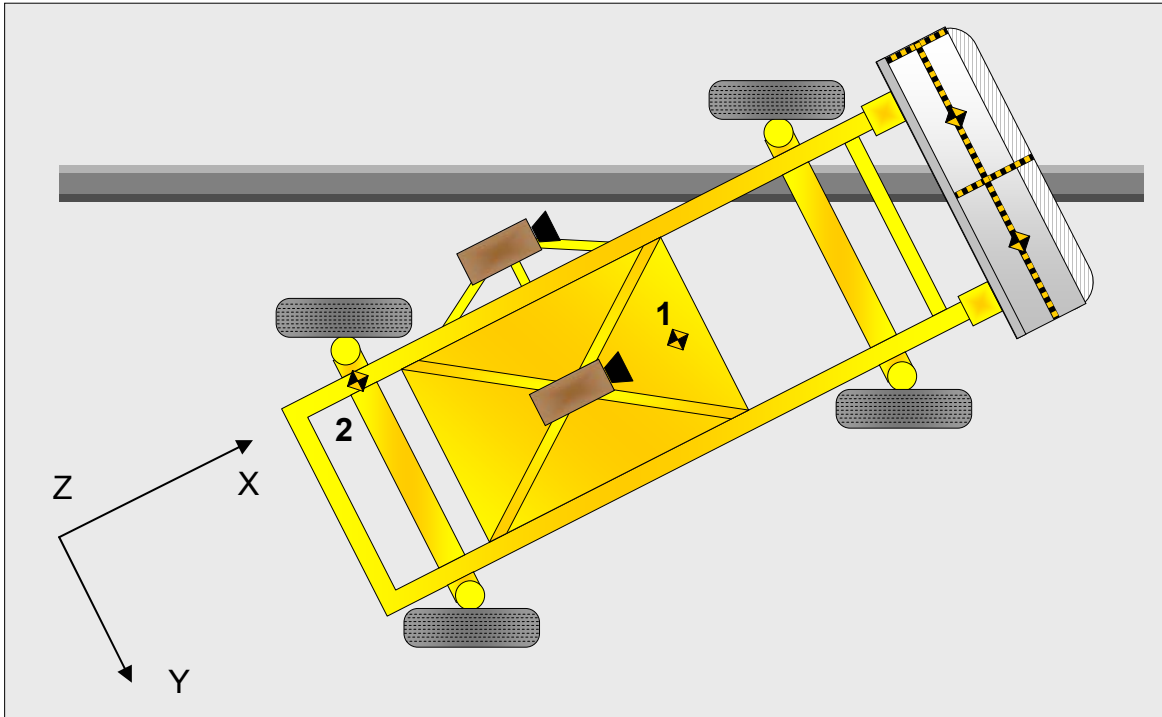
Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2332	715	175
2	Right Sill at Rear Seat	1560	727	174
3	Rear Floorpan Above Axle	950	0	531
4	Left Sill at Rear Door	1564	-728	170
5	Left Sill at Front Door	2337	-715	172
6	Rear Occupant Compartment	1888	-348	217
7	Left Lower B-Post	1836	-622	296
8	Left Middle B-Post			
9	Left Lower A-Post	3095	-653	322
10	Left Middle A-Post	3041	-798	865
11	Front Seat Track	2138	-545	305
12	Rear Seat Track or Structure			
13	Vehicle CG	2590	0	430

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: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007



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: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

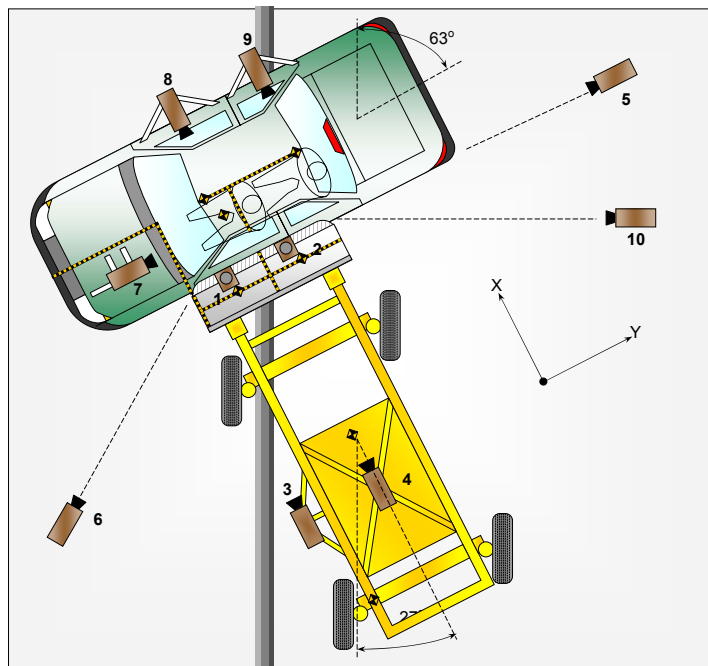
NHTSA No. M80208
 Test Date: 9/14/2007

	Elements	Pre-Test (mm)
1	Total Length	4727
2	Total Width	1822
3	Bumper Top Height	521
4	Bumper Bottom Height	416
5	Longitudinal Member Top Height	510
6	Distance between Longitudinal Members	969
7	Longitudinal Member Width	88
8	Engine Top Height	935
9	Engine Bottom Height	230
10	Engine and gearbox width	362
11	Front bumper-engine distance	527
12	Front shock absorber fixing height	908
13	Bonnet leading edge height	784
14	Front shock absorber fixing width	1095
15	Front bumper – front axle distance	928
16	Front axle – a pillar distance	725
17	A-pillar – B-pillar distance	1235
18	B-Pillar – rear axle distance	765
19	B-pillar – C-pillar distance	
20	Roof sill bottom height	1210
21	Roof sill top height	1320
22	Floor sill bottom height	154
23	Floor sill top height	325

DATA SHEET NO. 16
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Close-up	100	0	5050	50	1000
2	Overhead Overall	-340	0	5050	14	1000
3	MDB Onboard, Impact Point Close-up				50	1000
4	MDB Onboard, Centerline of Impact				16	1000
5	Right Side, Ground Level, Overall	-1210	5200	1280	24	1000
6	Left Side, Ground Level, Overall	1100	-5300	1220	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: 2008 Ford Mustang Convertible
 Test Program: NCAP Side Impact

NHTSA No. M80208
 Test Date: 9/14/2007

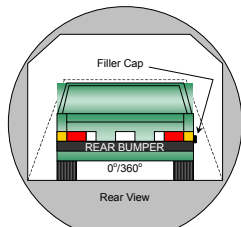
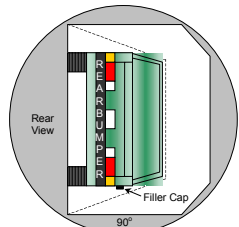
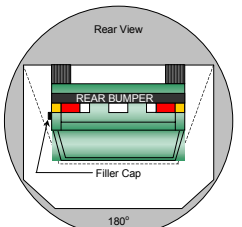
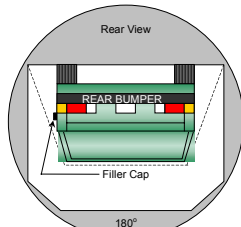
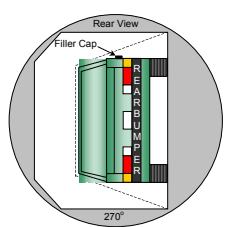
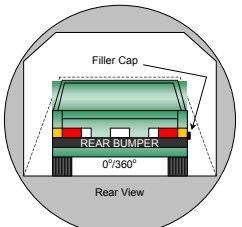
FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 21° C Test Time: 10:43 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°	125	300	First 5	0
90° to 180°	129	300	First 5	0
180° to 270°	122	300	First 5	0
270° to 360°	129	300	First 5	0

APPENDIX A
PHOTOGRAPHS

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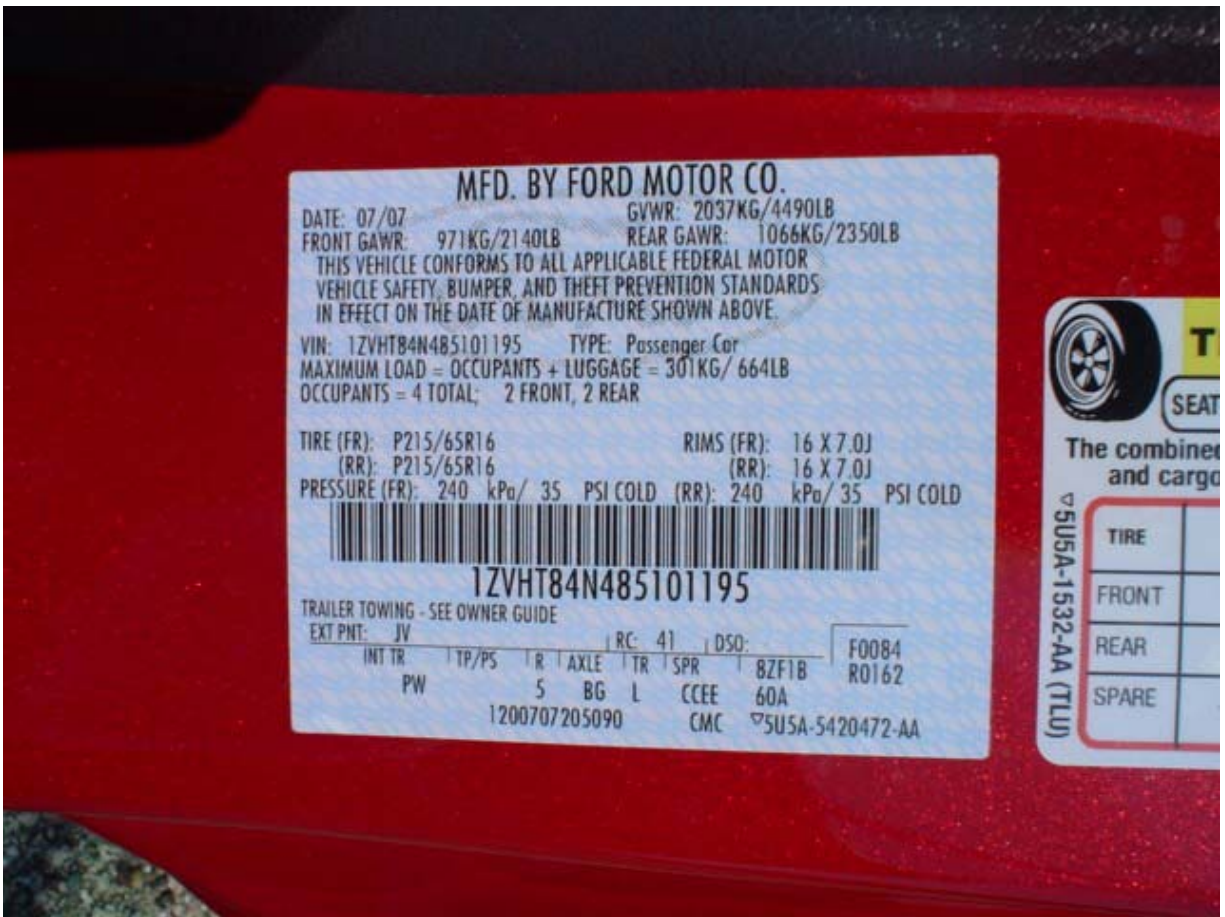
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Left Front $\frac{3}{4}$ View, As Received



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 ¾ View



Post-Test Left Rear ¾ View



Pre-Test Rear View



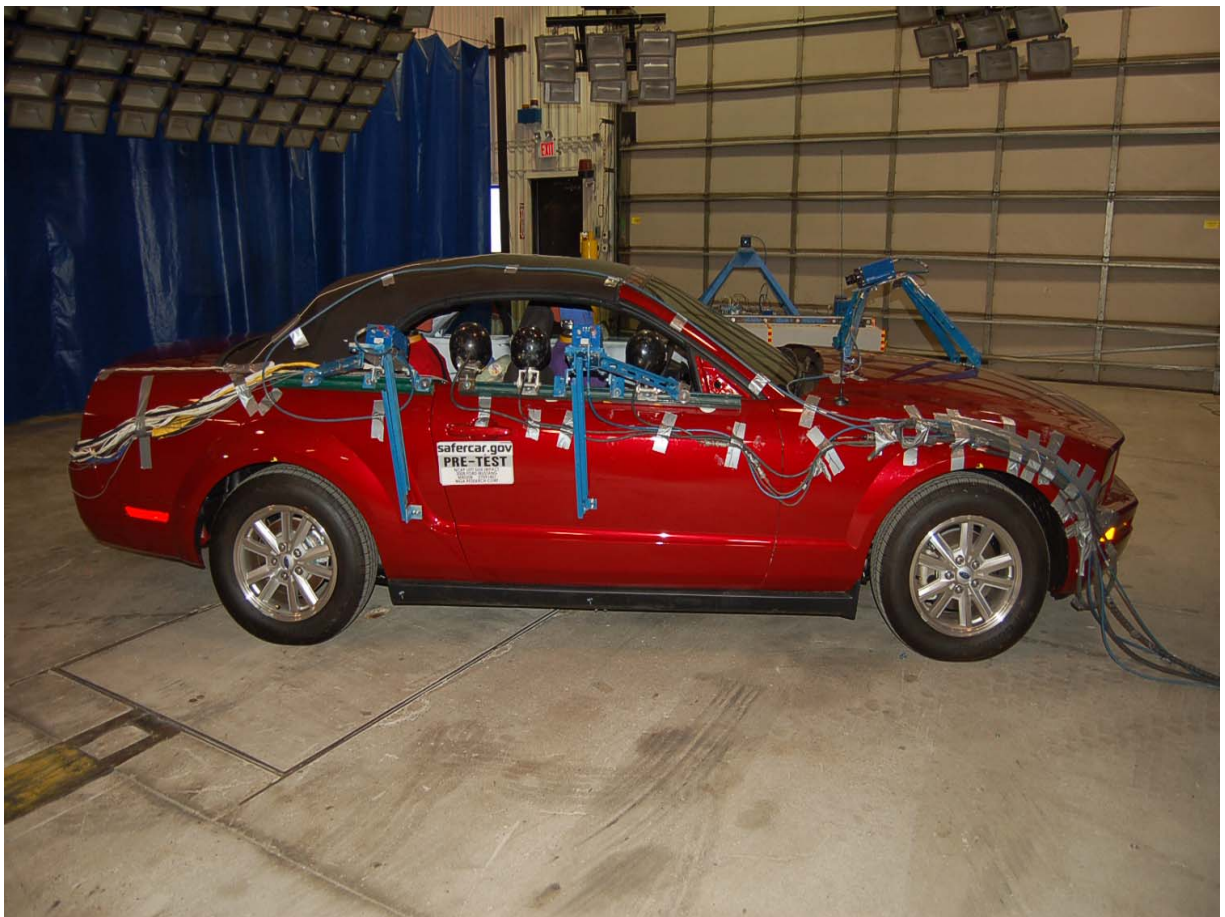
Post-Test Rear View



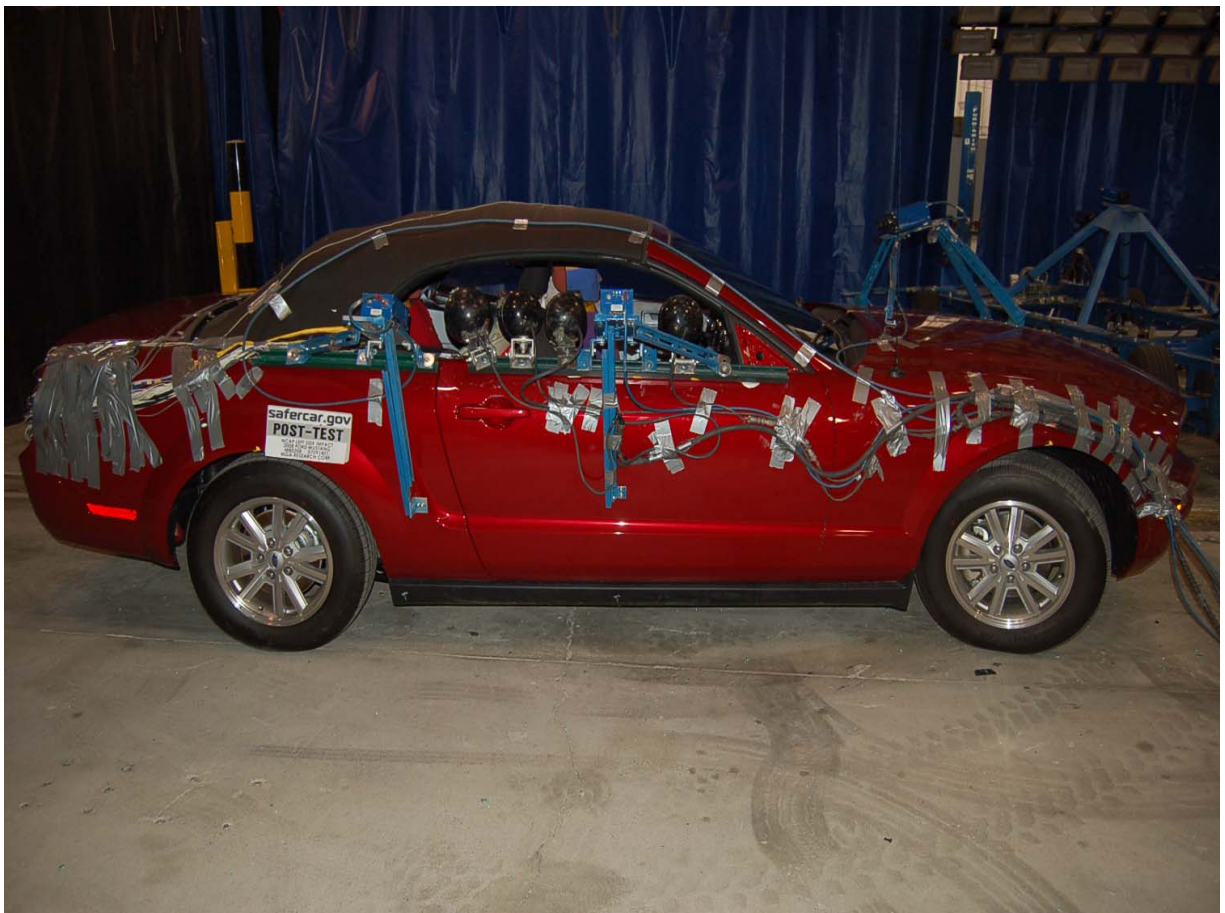
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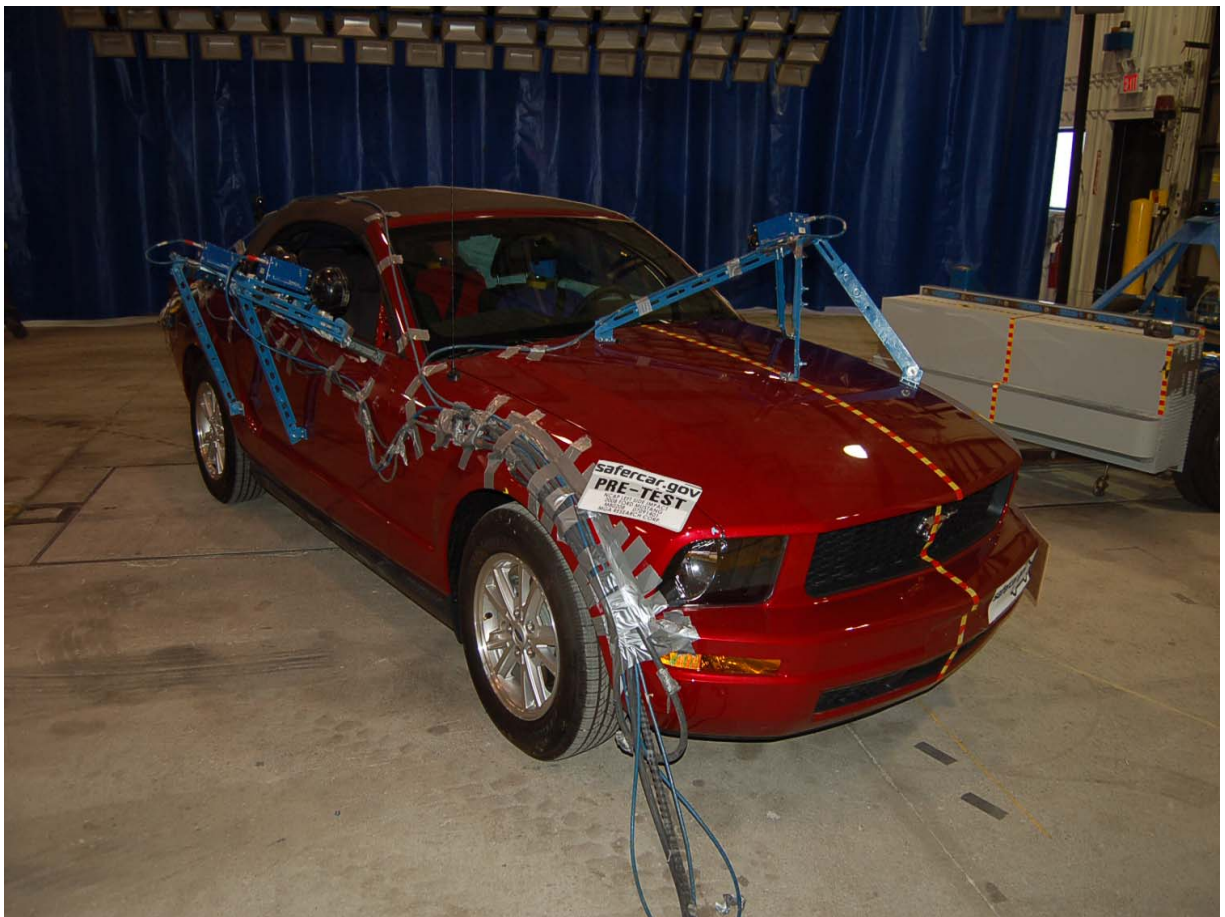
Post-Test Right Rear $\frac{3}{4}$ View



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



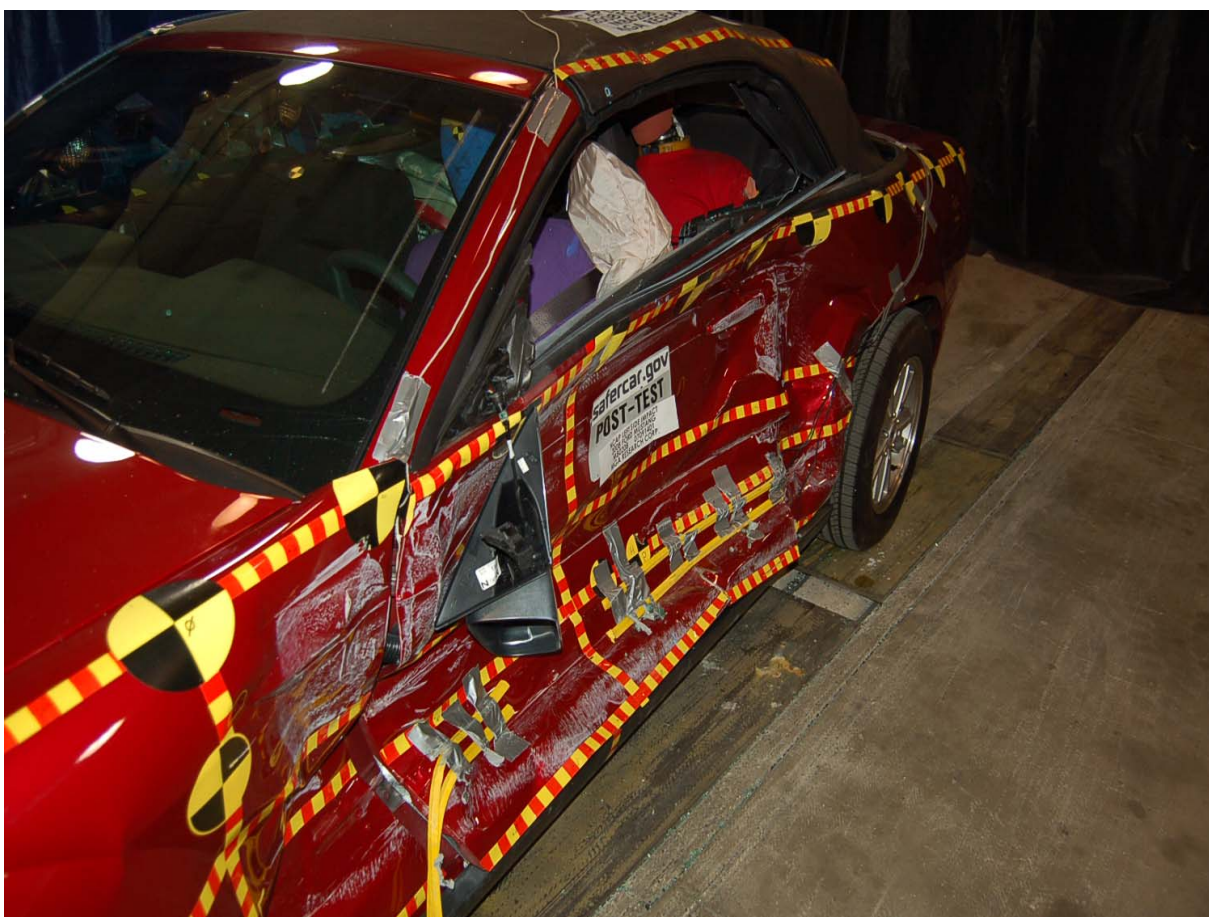
Pre-Test Left Impact Point



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



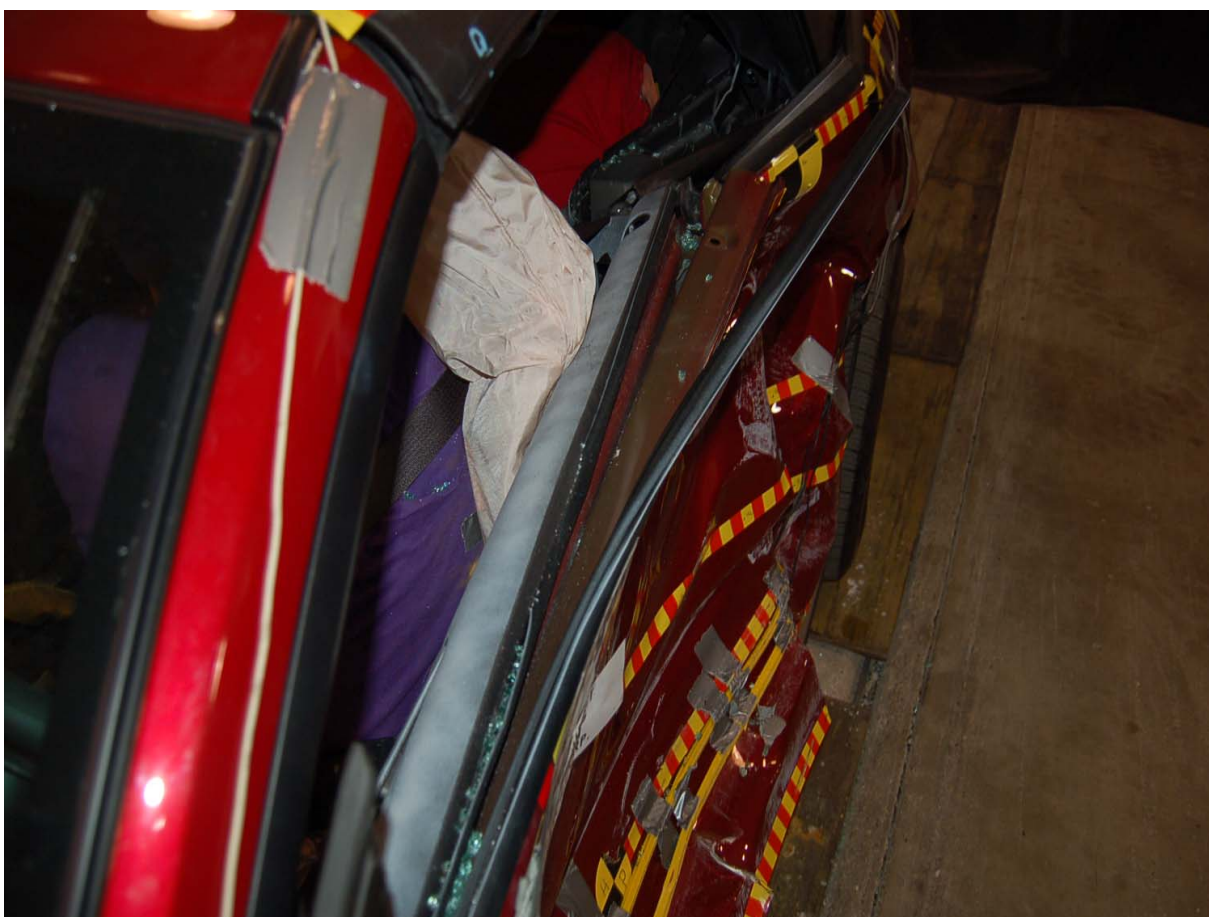
Post-Test Left Side Impact Close-up



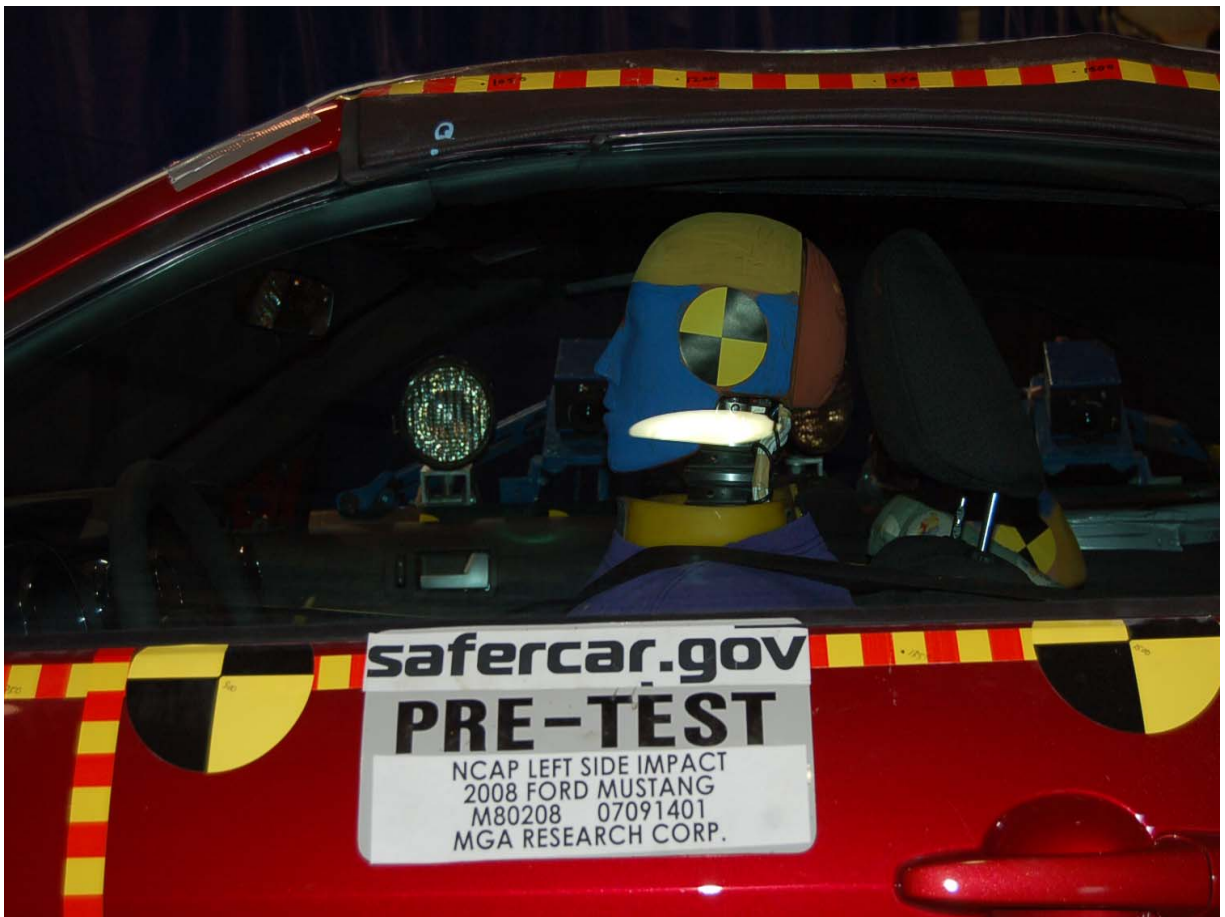
Pre-Test Driver Dummy (Door Open)



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



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



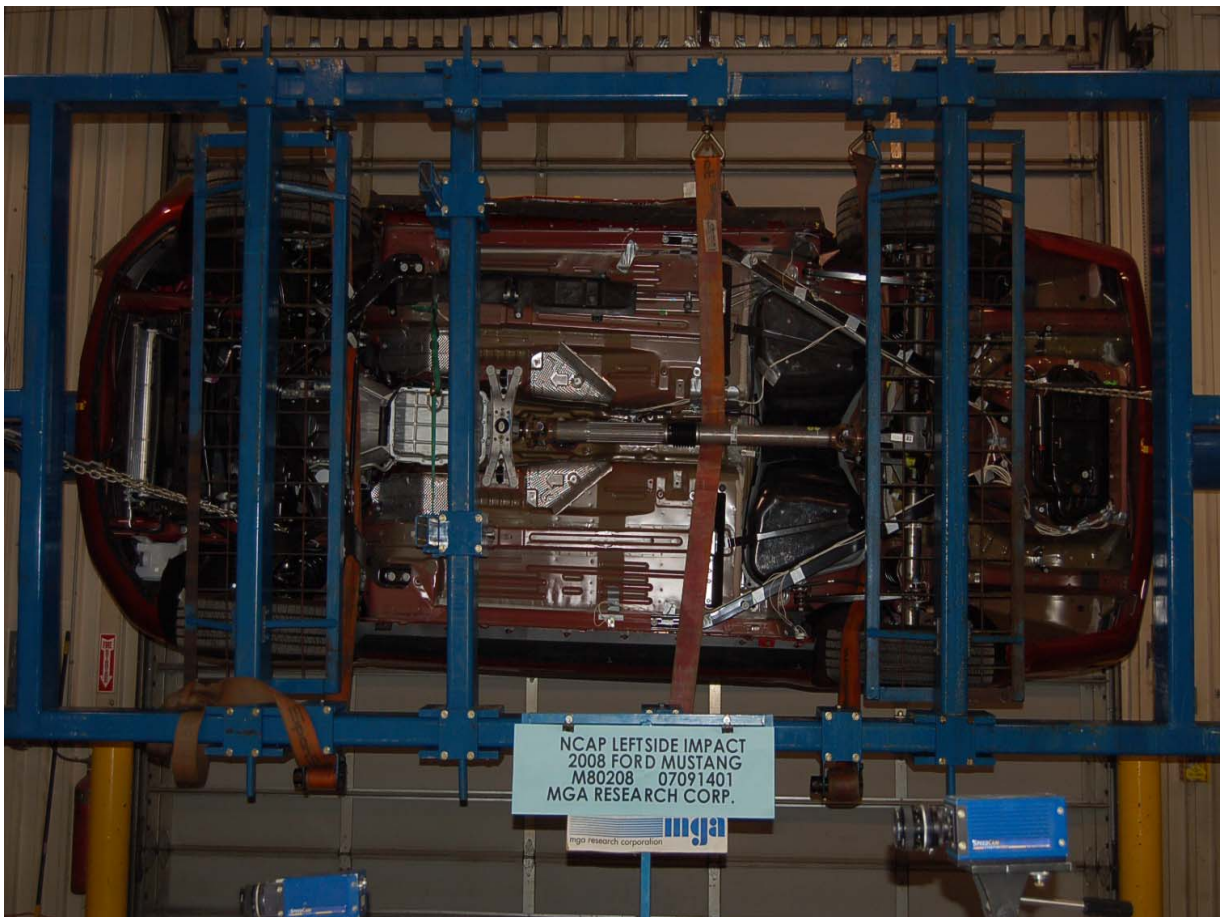
Post-Test Left Side View of Deformable Barrier



Vehicle on Rollover Device (90 Degrees)



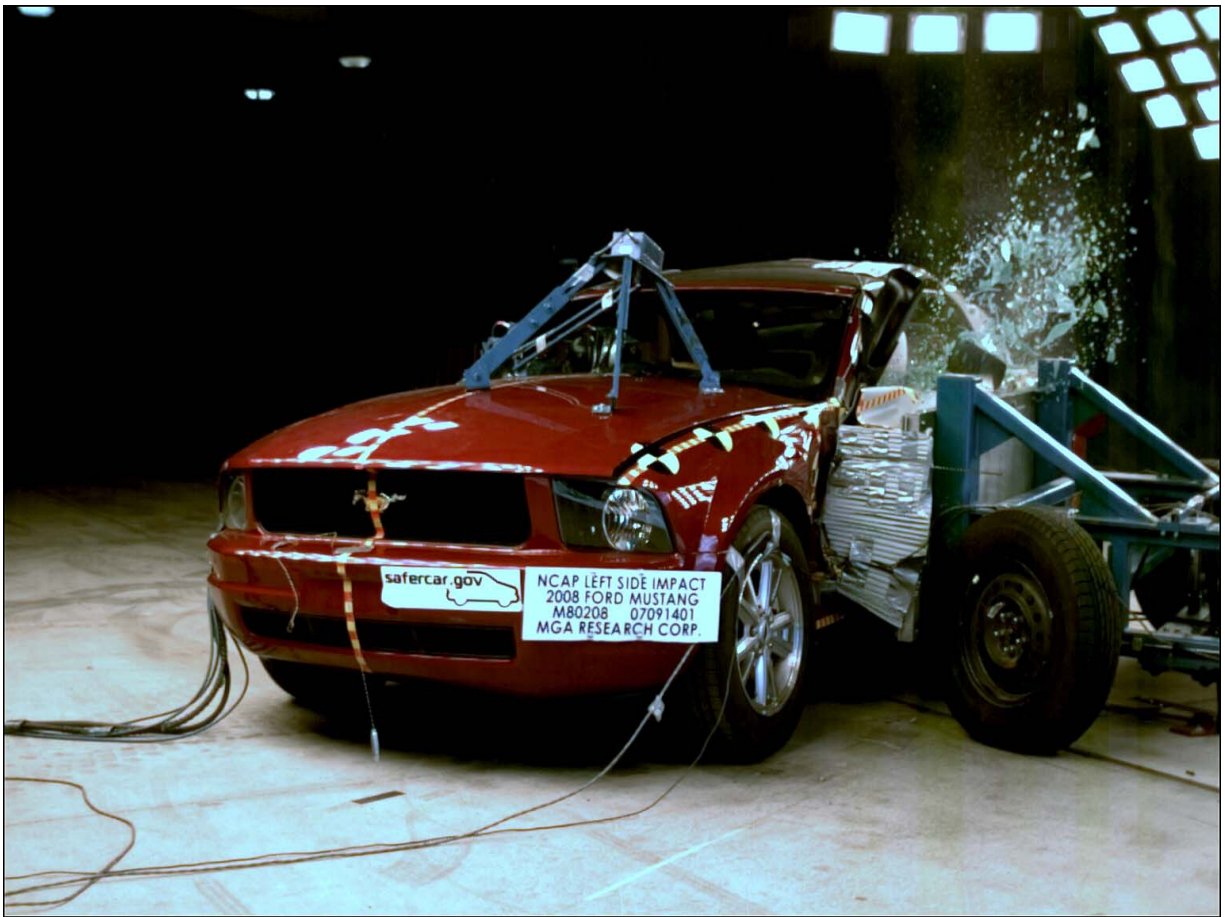
Vehicle on Rollover Device (180 Degrees)



Vehicle on Rollover Device (270 Degrees)



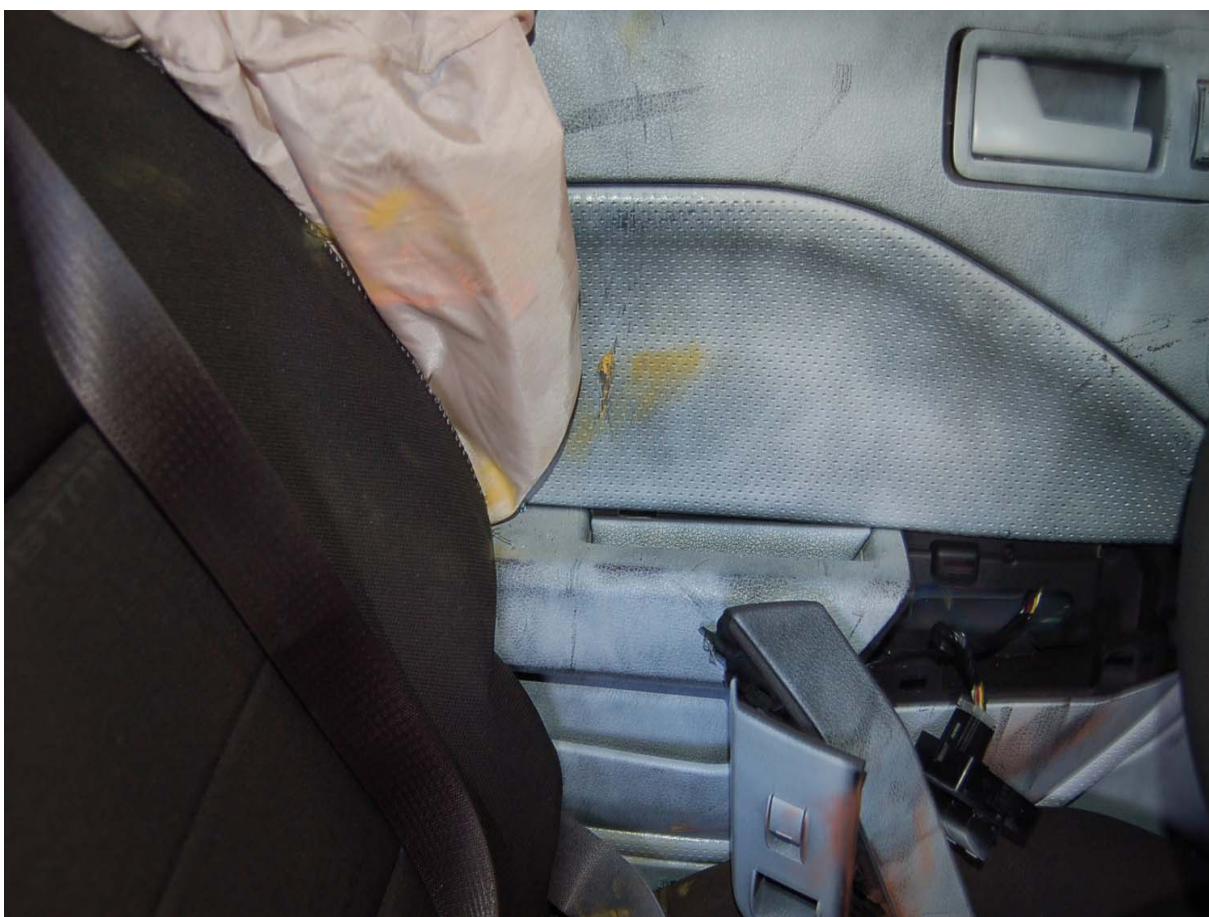
Vehicle on Rollover Device (360 Degrees)



Vehicle Impact



Post-Test Driver Dummy Head Contact



Post-Test Driver Dummy Torso Contact



Post-Test Driver Dummy Contact



Post-Test Passenger Dummy Head 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

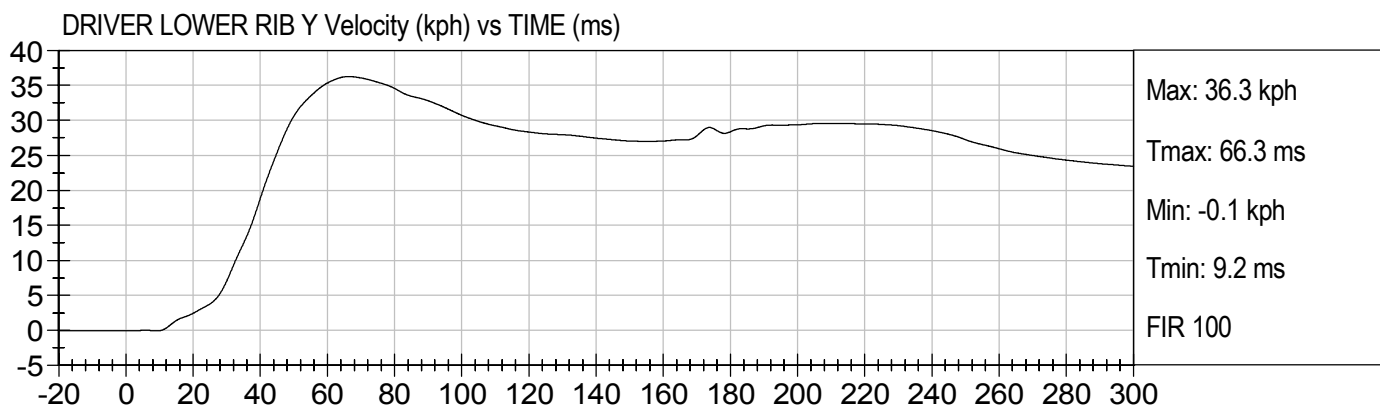
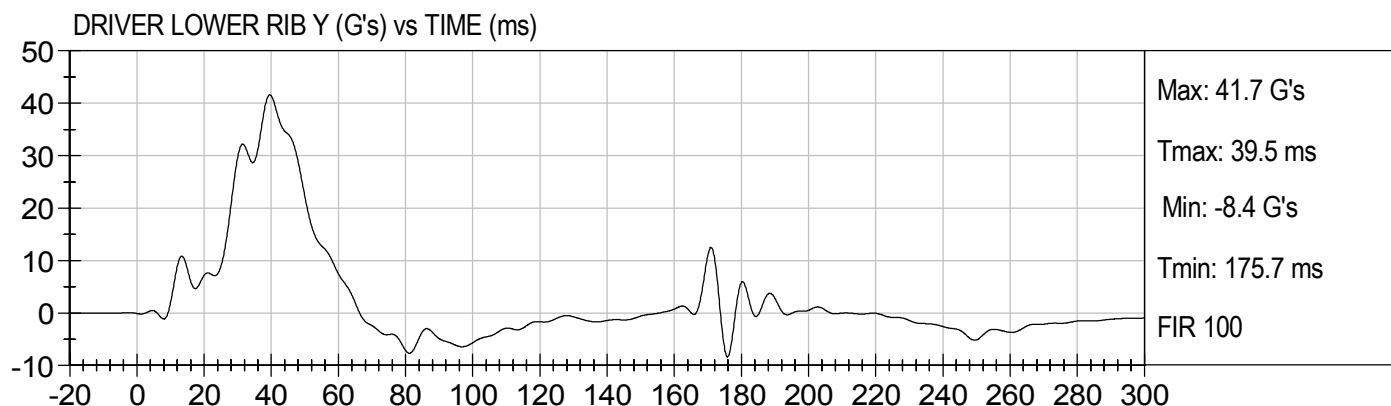
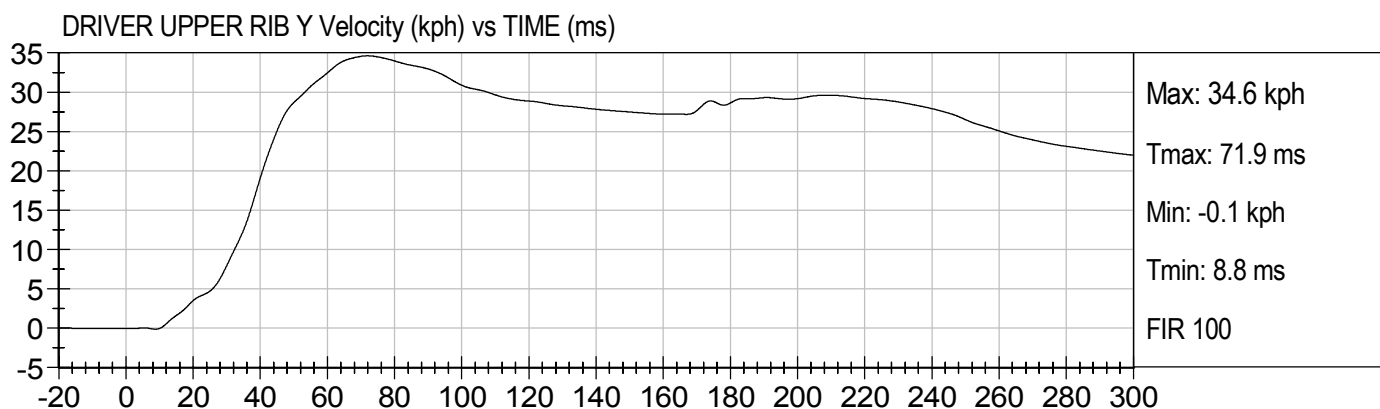
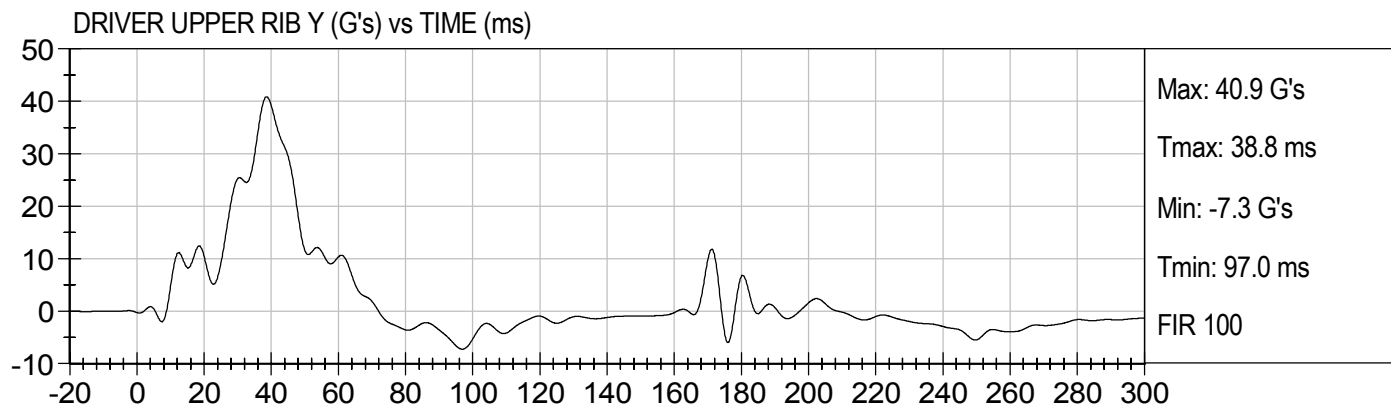
Driver Upper Neck Force Y

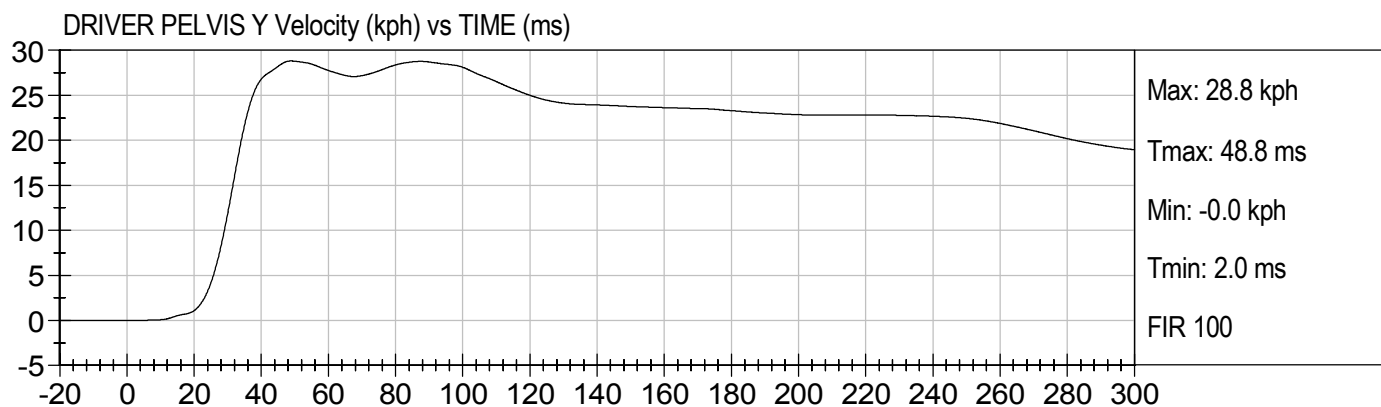
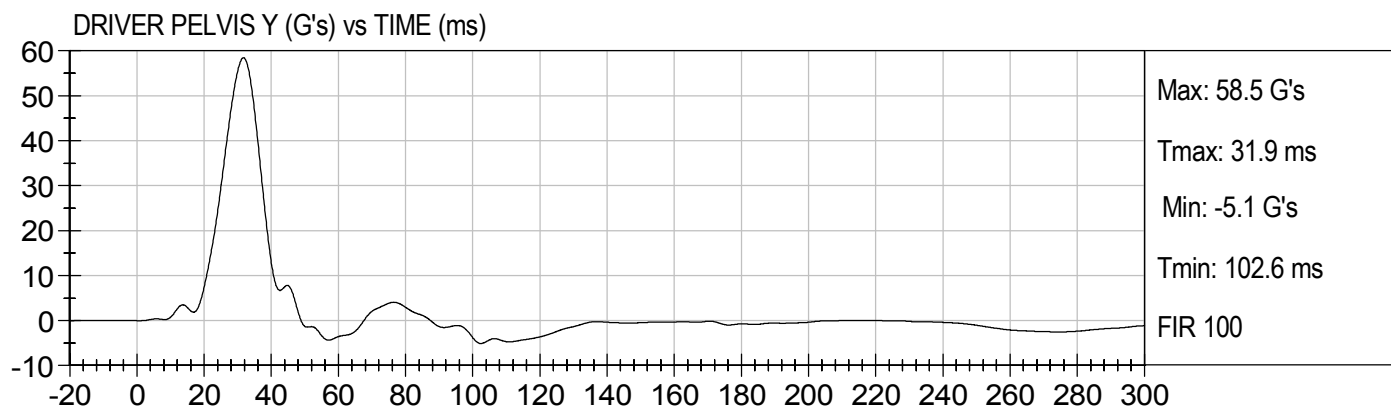
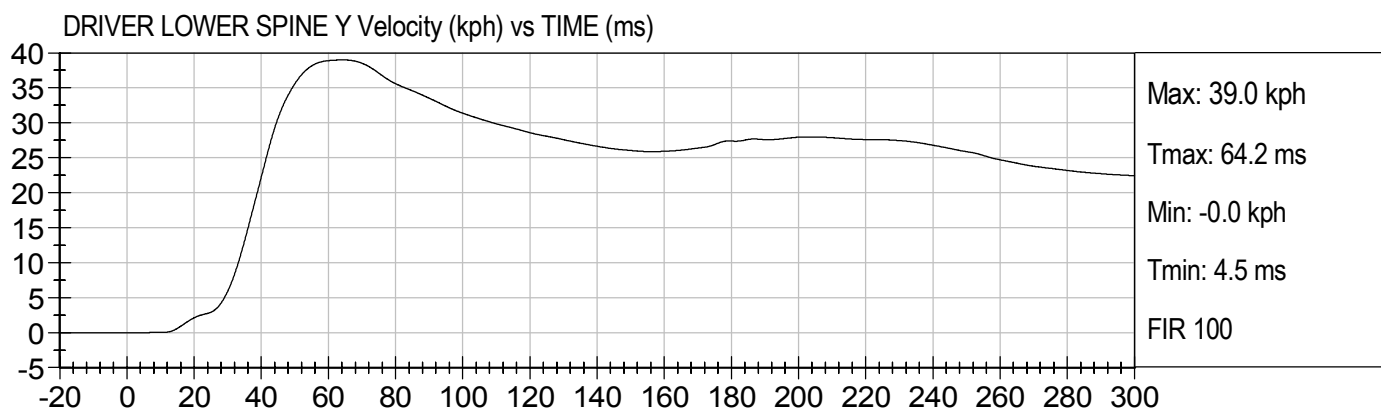
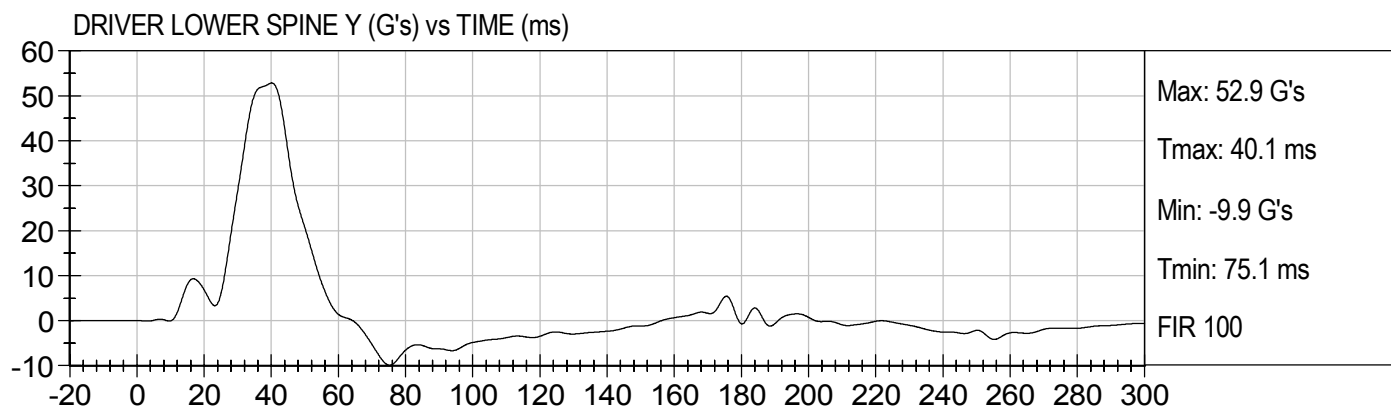
Driver Upper Neck Force Z

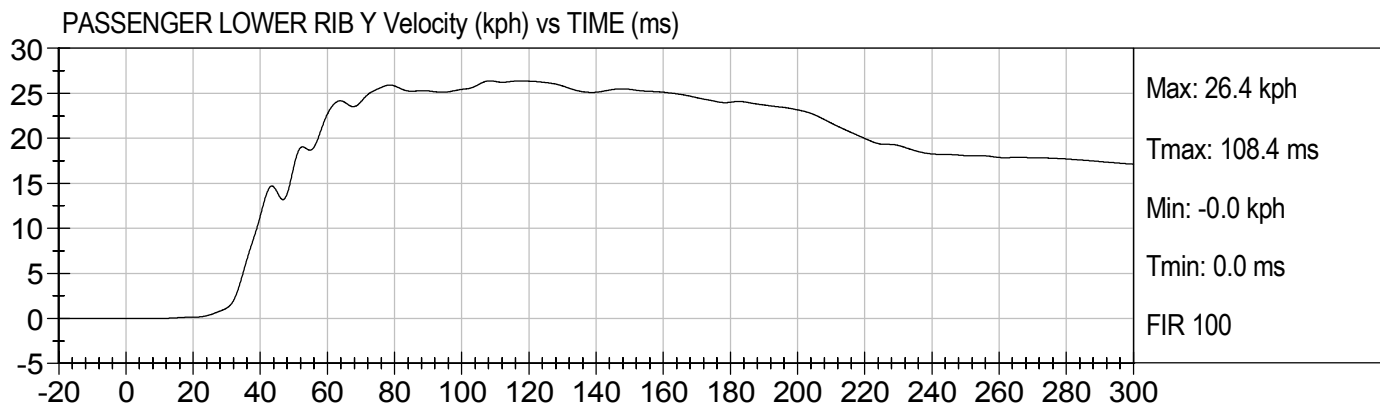
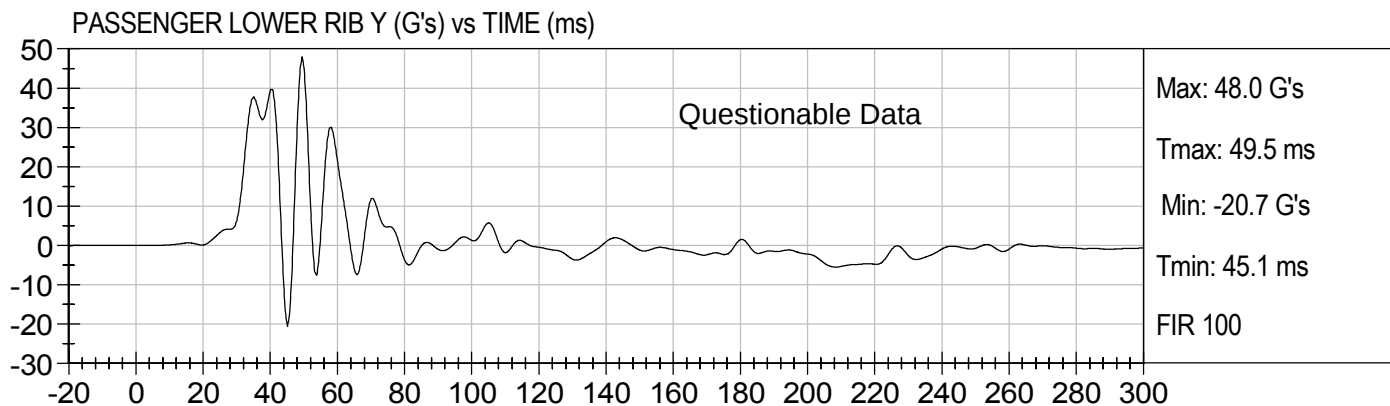
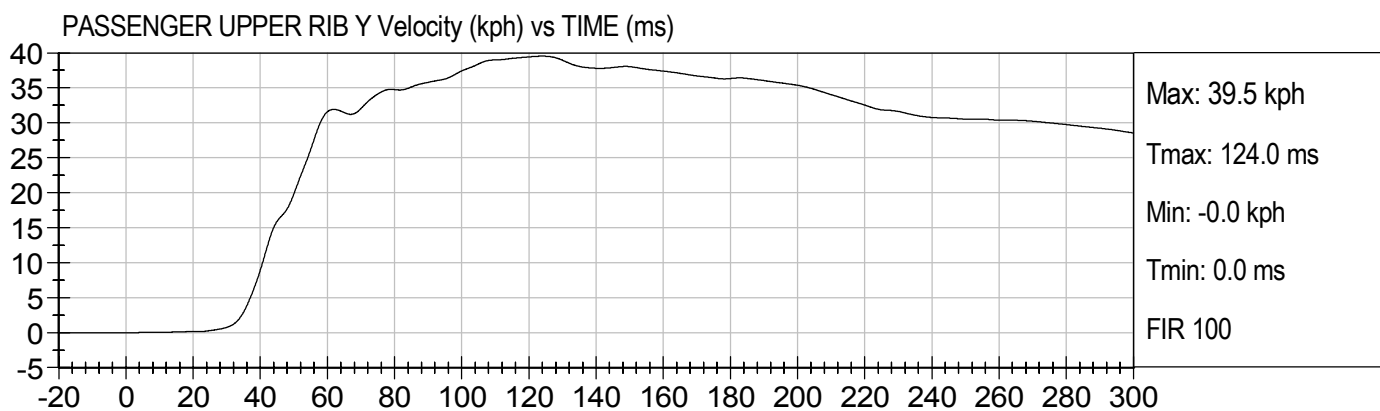
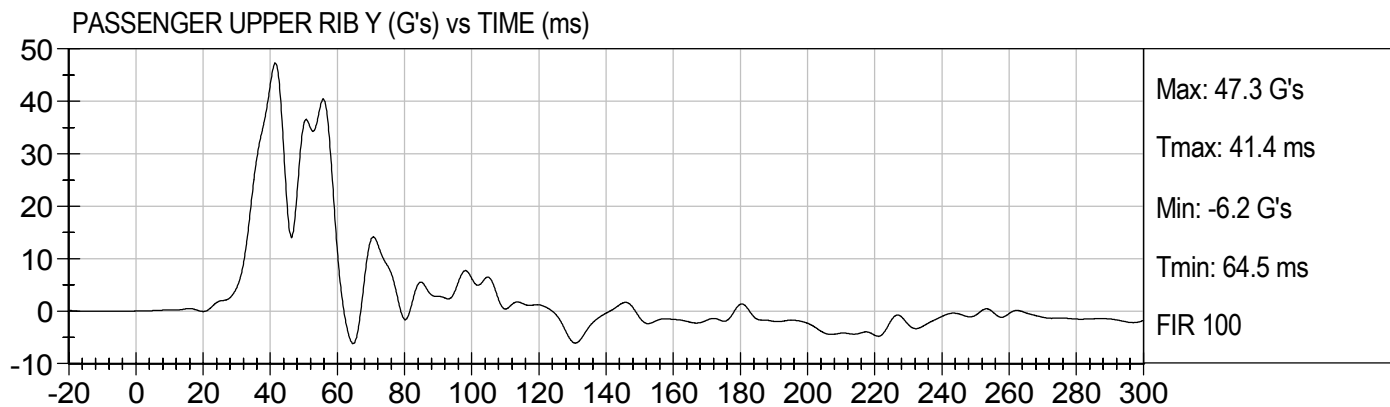
Driver Upper Neck Moment X

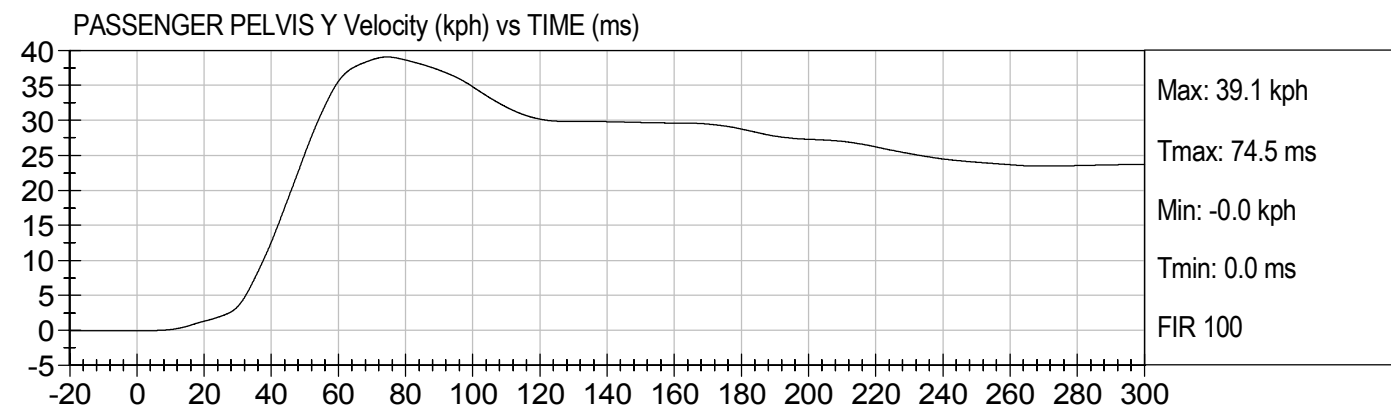
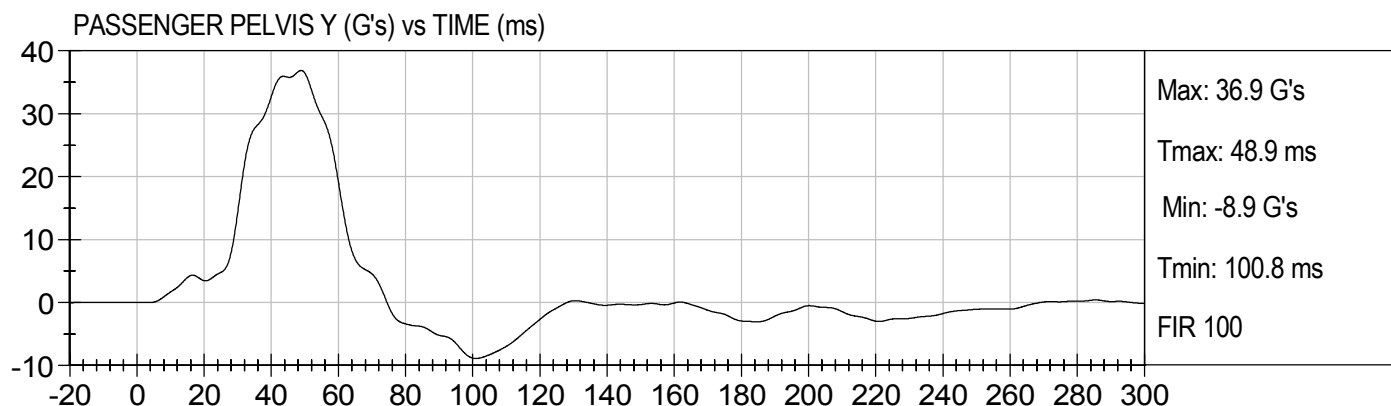
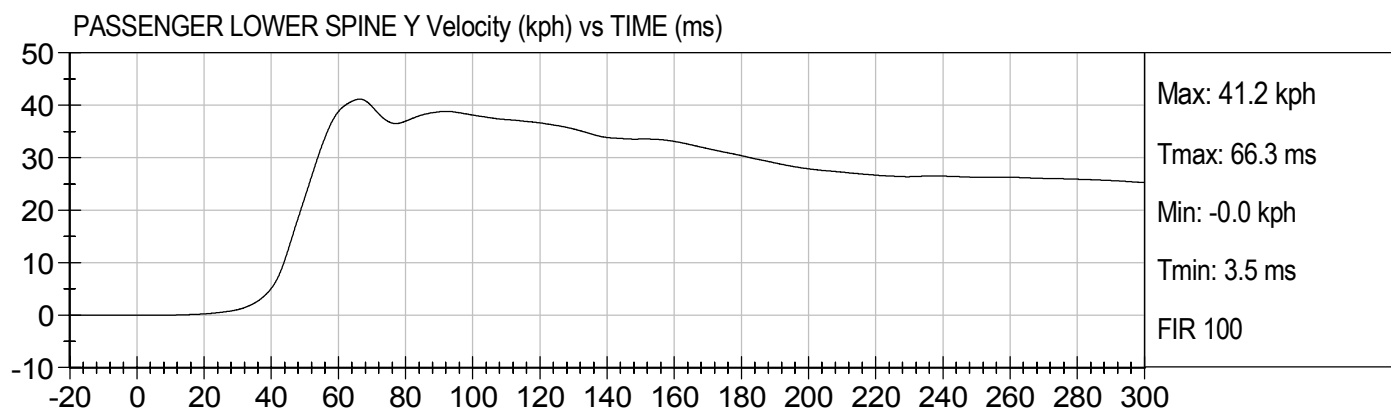
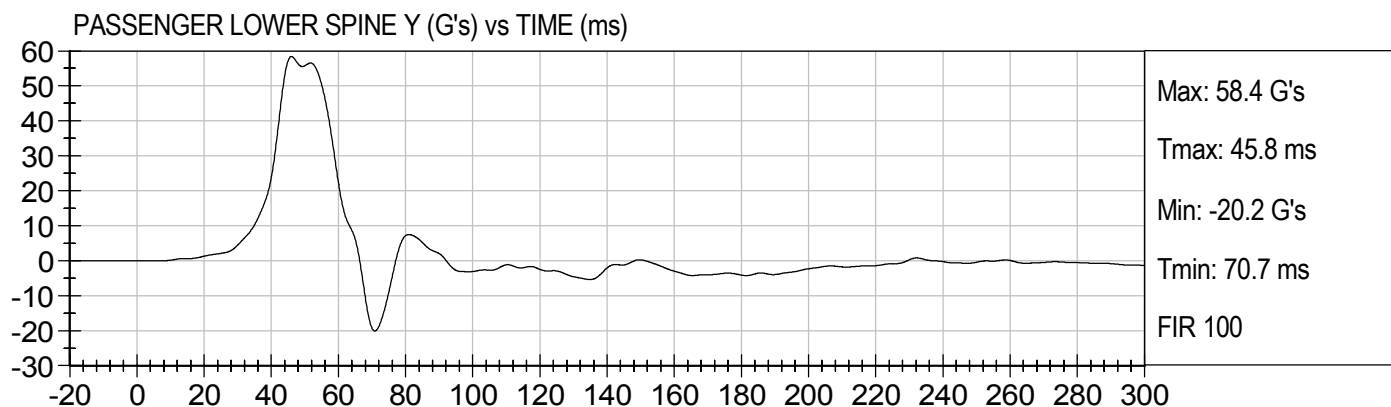
Driver Upper Neck Moment Y
Driver Upper Neck Moment Z
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y
Driver Thorax Contact
Driver Pelvis Contact
Passenger Head X Primary
Passenger Head Y Primary
Passenger Head Z Primary
Passenger Head 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 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: D07270

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	


Laboratory Technician


Approved By

8/30/2007

Test Date

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

ATD Serial No: 272

Test I.D: D072701

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	40	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	-10.5	Pass
			Overall Test Results	Pass


Laboratory Technician


Approved By

9/4/07
Test Date



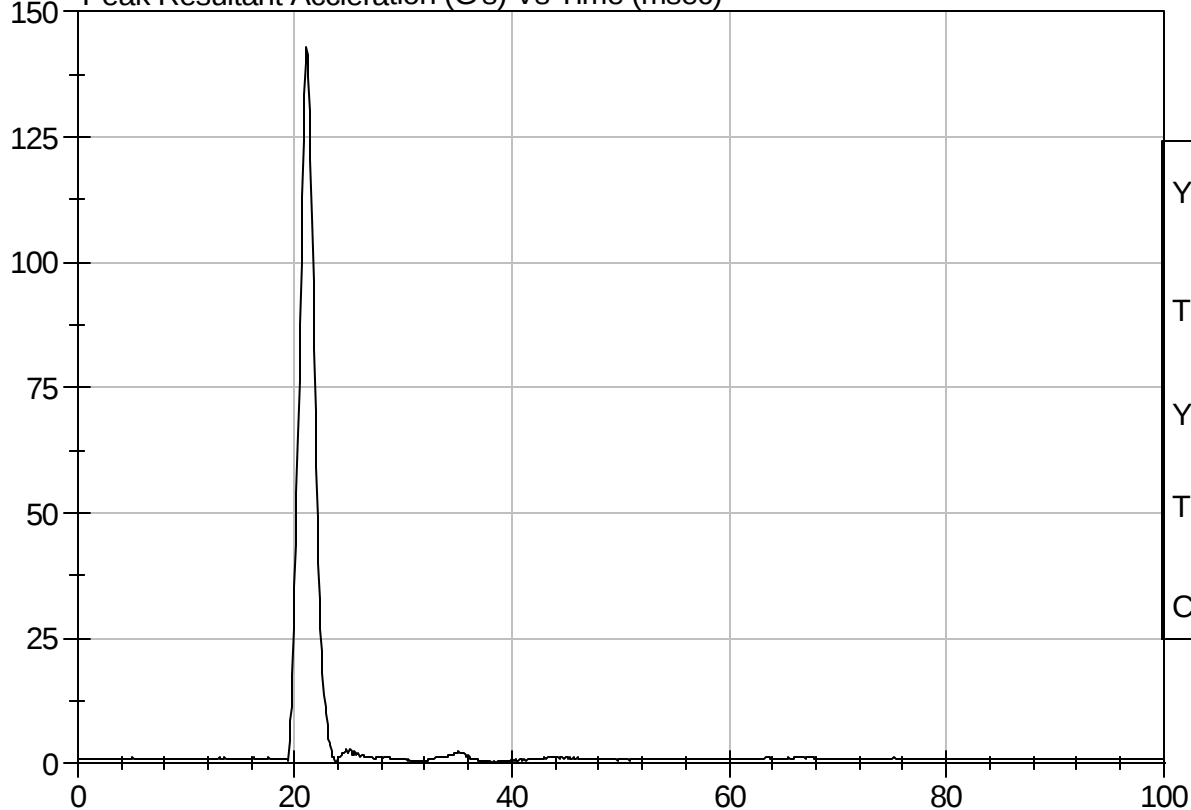
Test Description: Head Drop

Test Date: 9/4/07

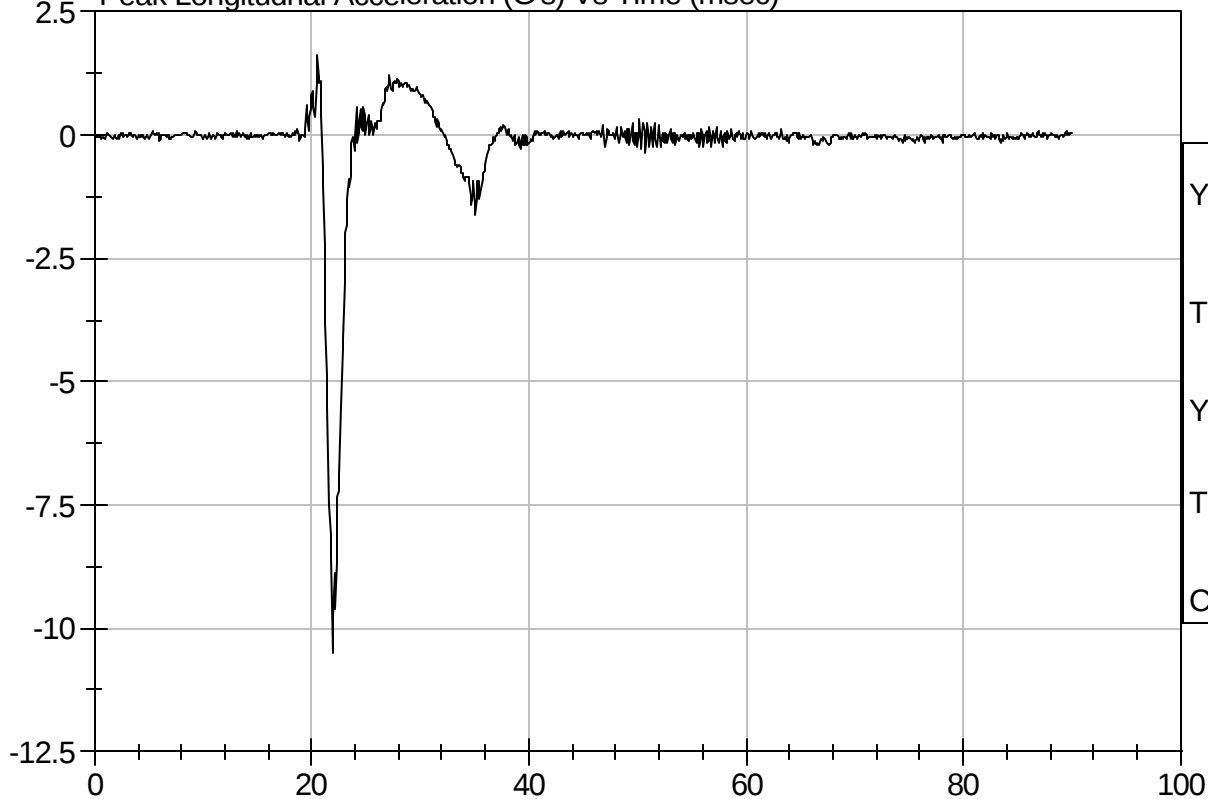
Component: D072701

Speed: 0 ft/s, 0 m/s

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



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

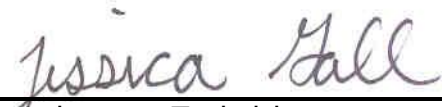


SID/HIII Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 272

Test I.D: D072702

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	44	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	20	Pass
Overall Test Results				Pass


Laboratory Technician

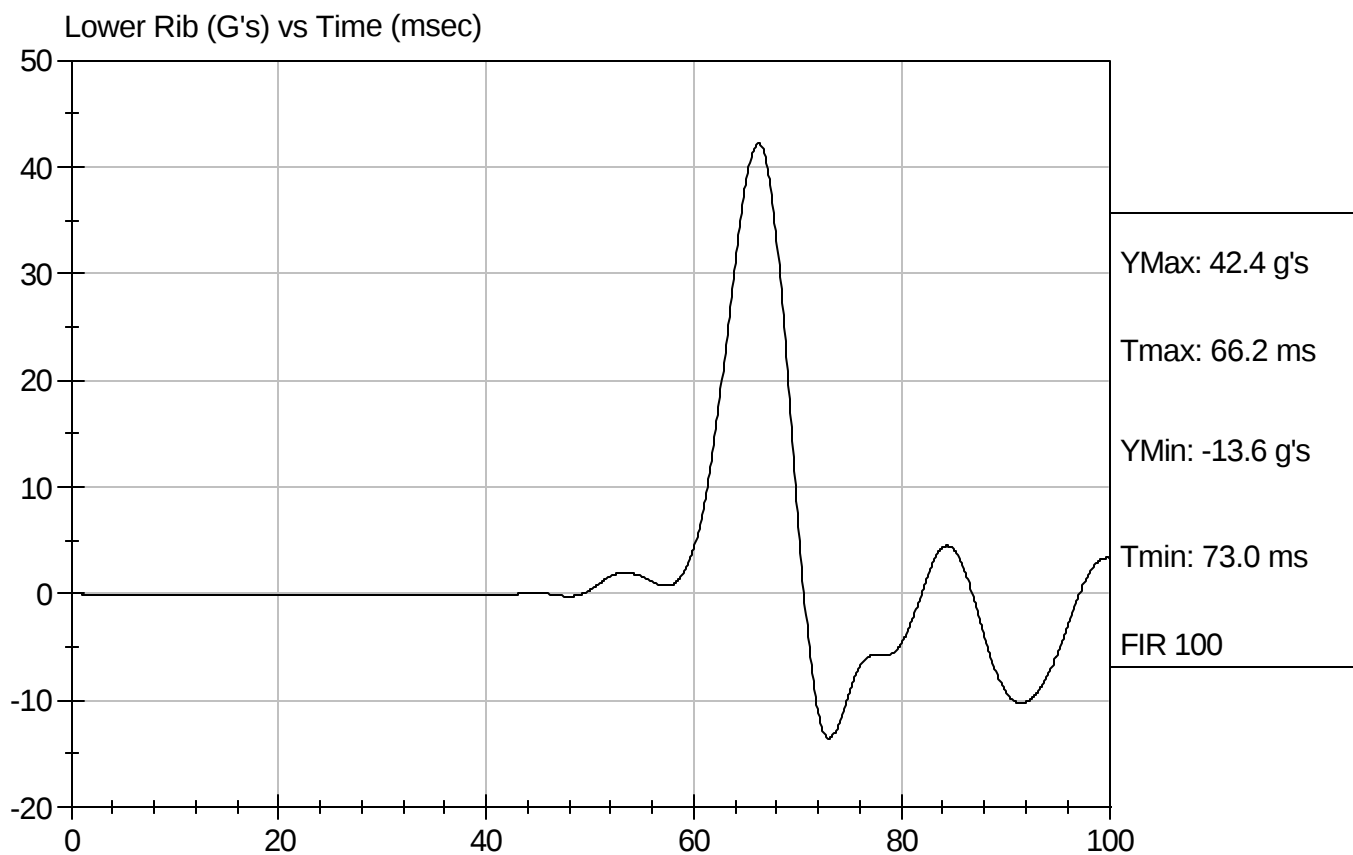
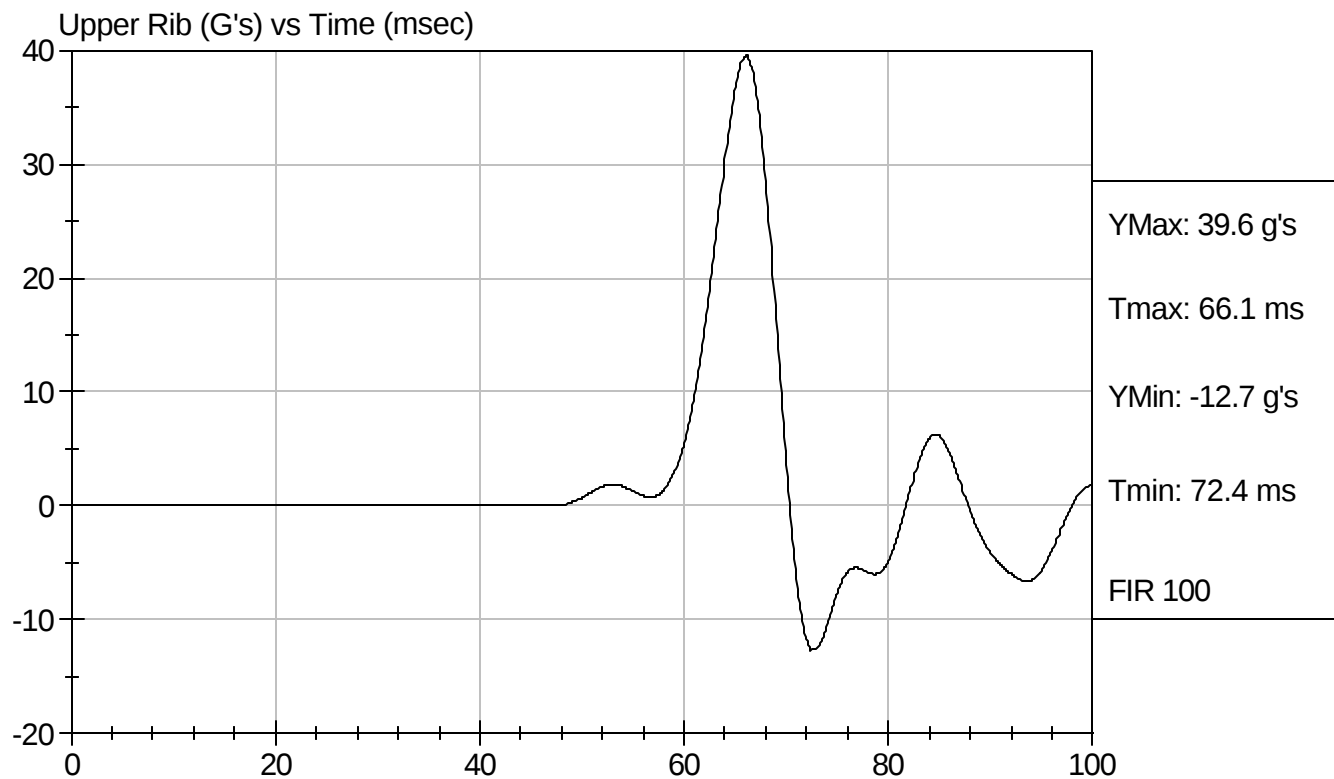

Approved By

9/4/07
Test Date



Test Desc: Thorax Impact
Component ID: D072702

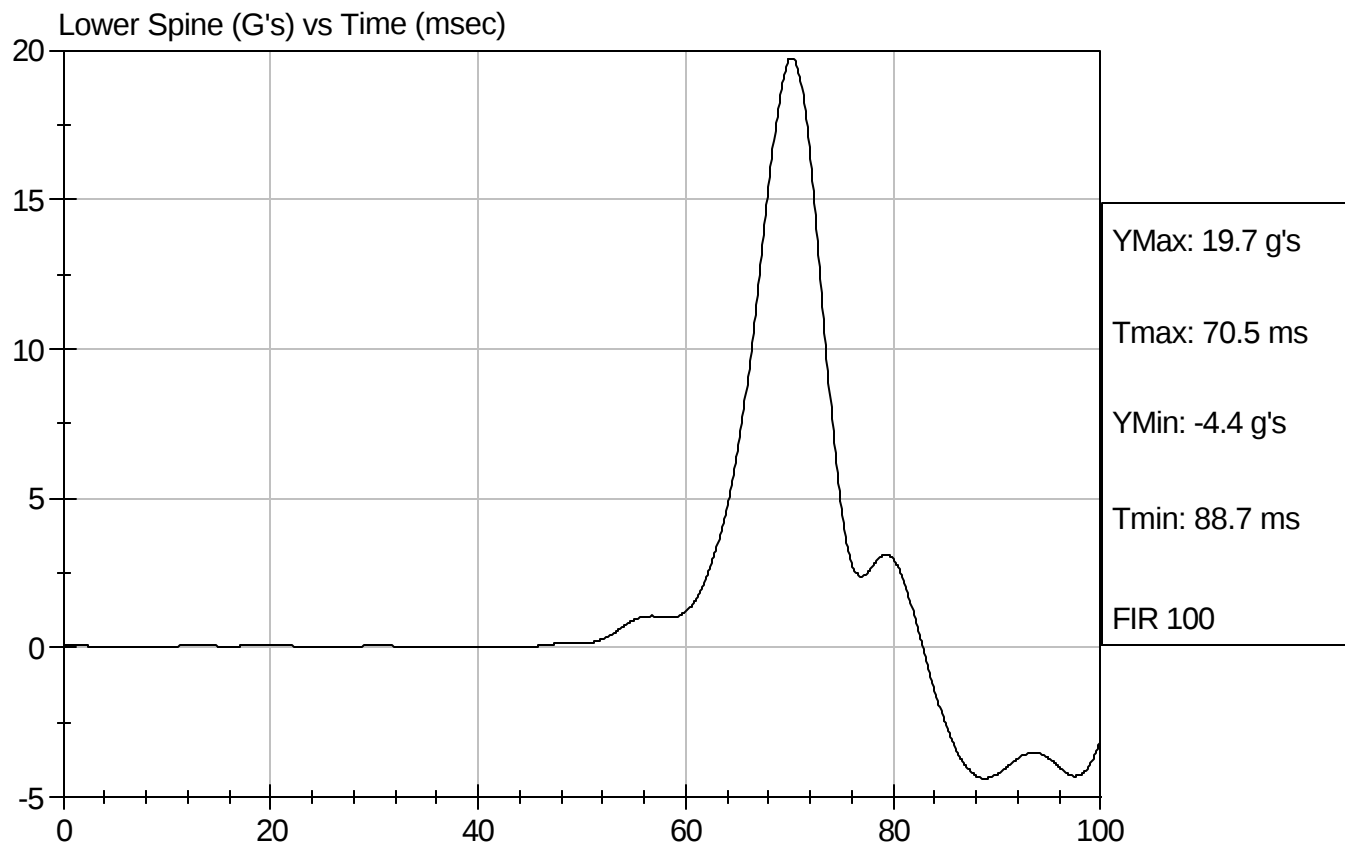
Test Date: 9/4/07
Speed: 14.00 ft/sec, 4.27 m/sec





Test Desc: Thorax Impact
Component ID: D072702

Test Date: 9/4/07
Speed: 14.00 ft/sec, 4.27 m/sec



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

ATD Serial No: 272

Test I.D: D072703

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	41	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

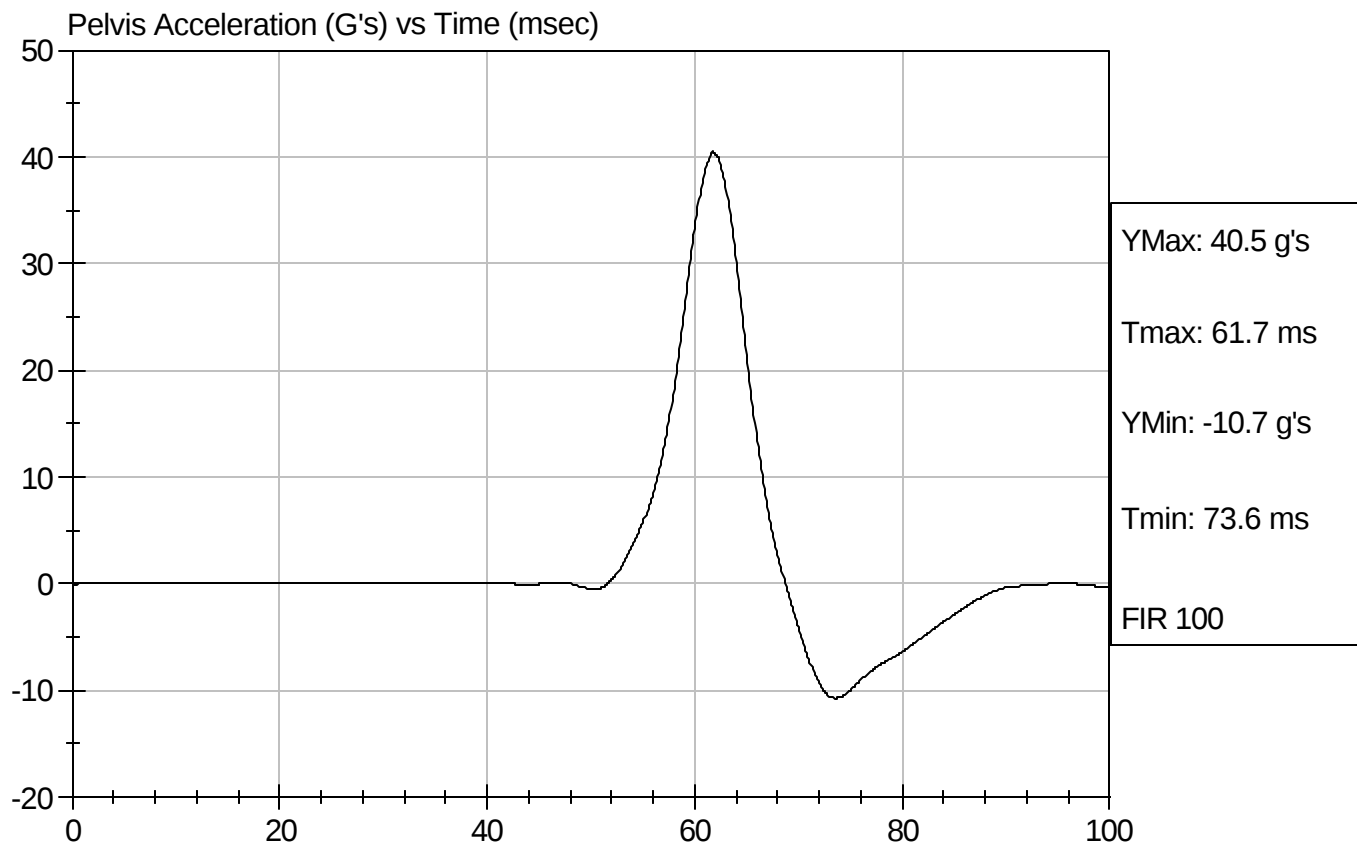
David Winkelbauer
Approved By

9/4/07
Test Date



Test Desc: Pelvis Impact
Component ID: D072703

Test Date: 9/4/07
Speed: 14.12 ft/sec, 4.30 m/sec



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

ATD Serial No: 272

Test I.D: D072704

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Force At 12.7 mm	N	104 -162	132	Pass
Force At 19 mm	N	163 - 222	178	Pass
Force At 25.4 mm	N	222 - 280	239	Pass
Force At 33 mm	N	325 - 391	333	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

9/4/07
Test Date

David Winkelbauer
Approved By

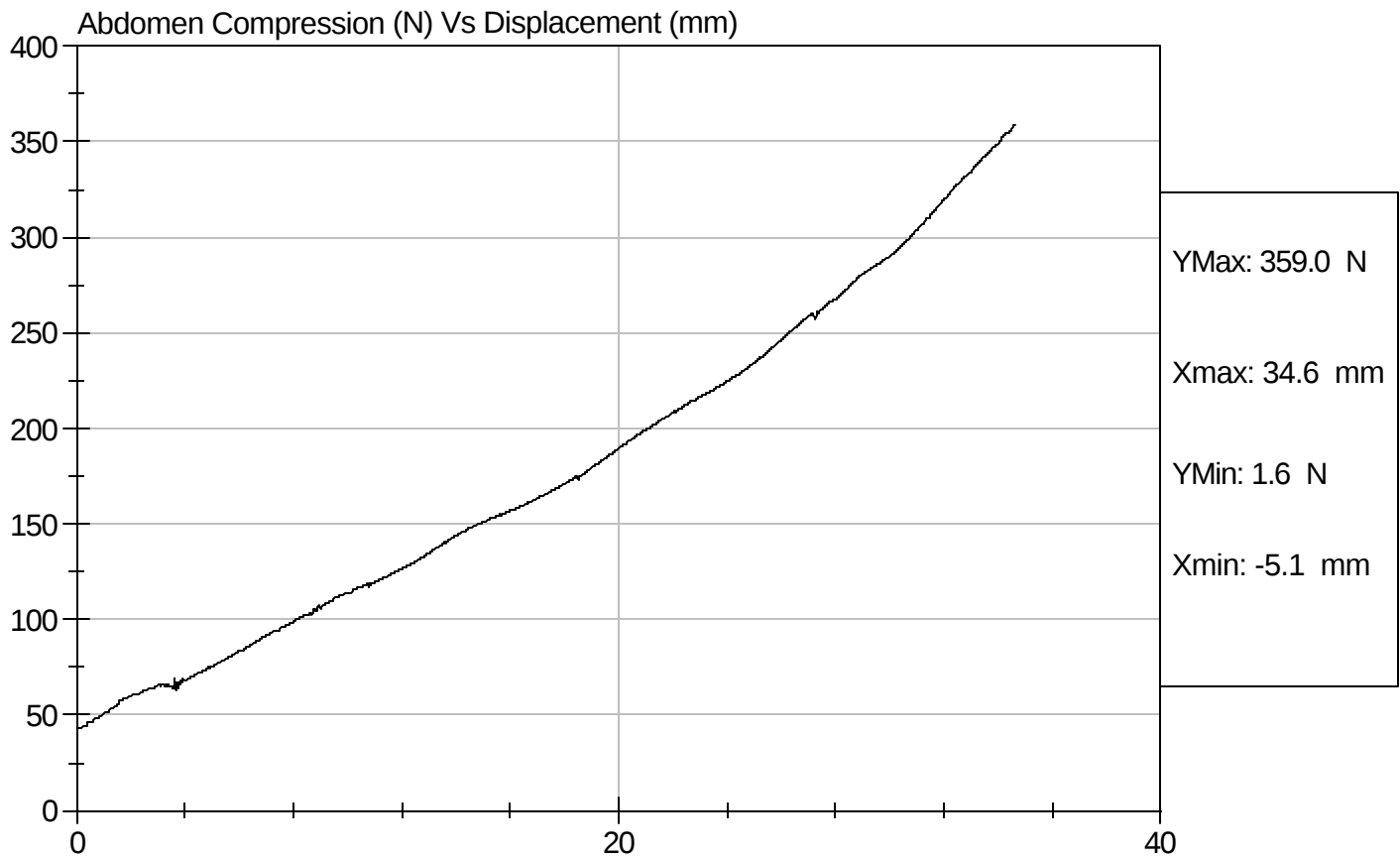


Test Description: Abdomen Compression

Test Date: 9/4/07

Component: D072704

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 272

Test I.D: D072705

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	44	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	185.6	Pass
Force At 40 deg	N	204.6 - 258.0	254.5	Pass
Return Angle	Deg	12 Maximum	6	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

9/4/07
Test Date

David Winkelbauer
Approved By

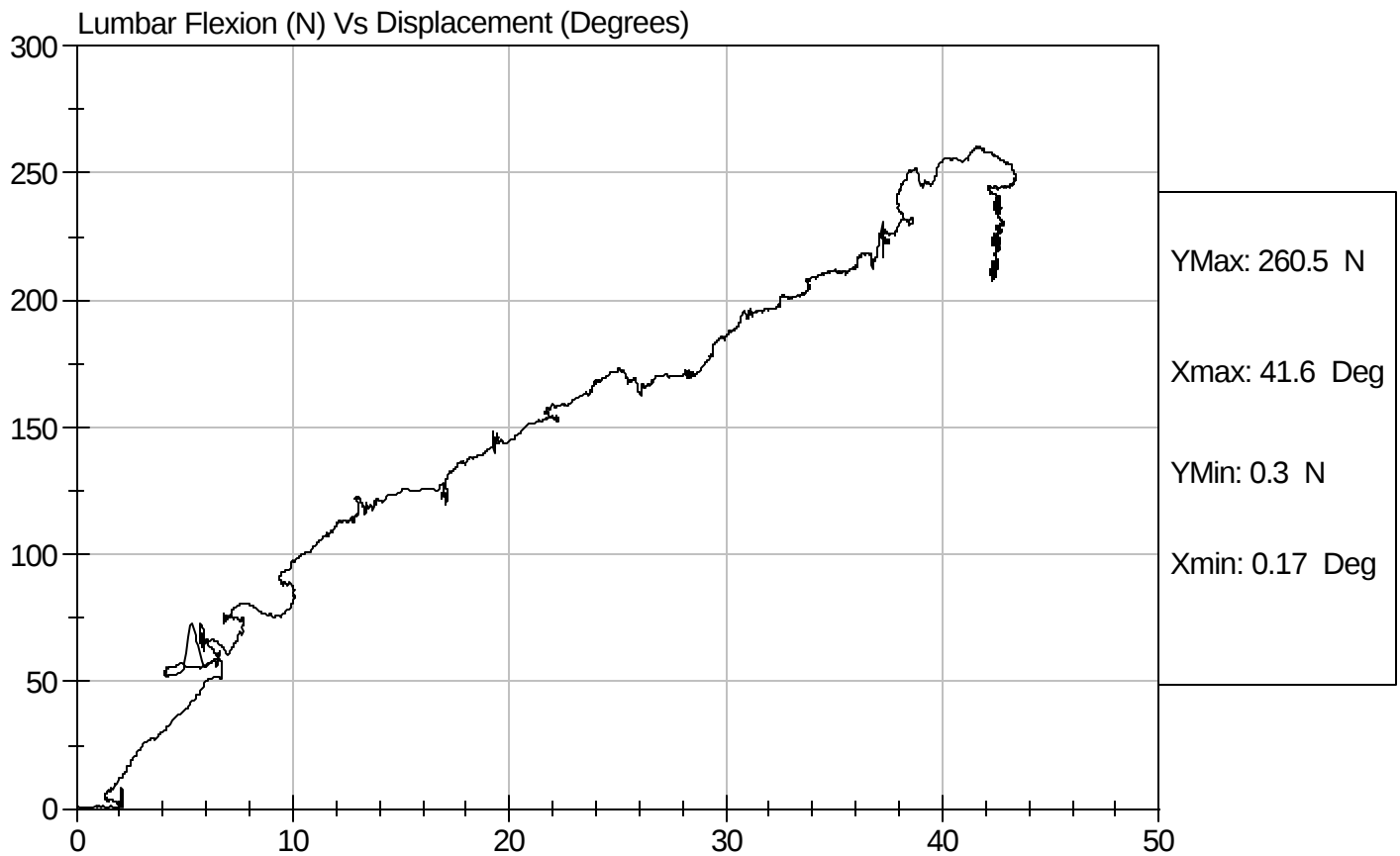


Test Description: Lumbar Flexion

Test Date: 9/4/07

Component: D072705

Speed: 0 ft/sec, 0 m/sec

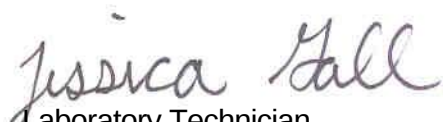


SID/HIII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 272

Test I.D: D072709

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	20.6	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Impact Velocity		m/s	6.89 to 7.13	7.07	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.07	Pass
	20 msec	m/s	4.12 to 5.10	4.19	Pass
	30 msec	m/s	5.73 to 7.01	5.88	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.88	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	70	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	58	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	77	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	57	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	10	Pass


Laboratory Technician


Approved By

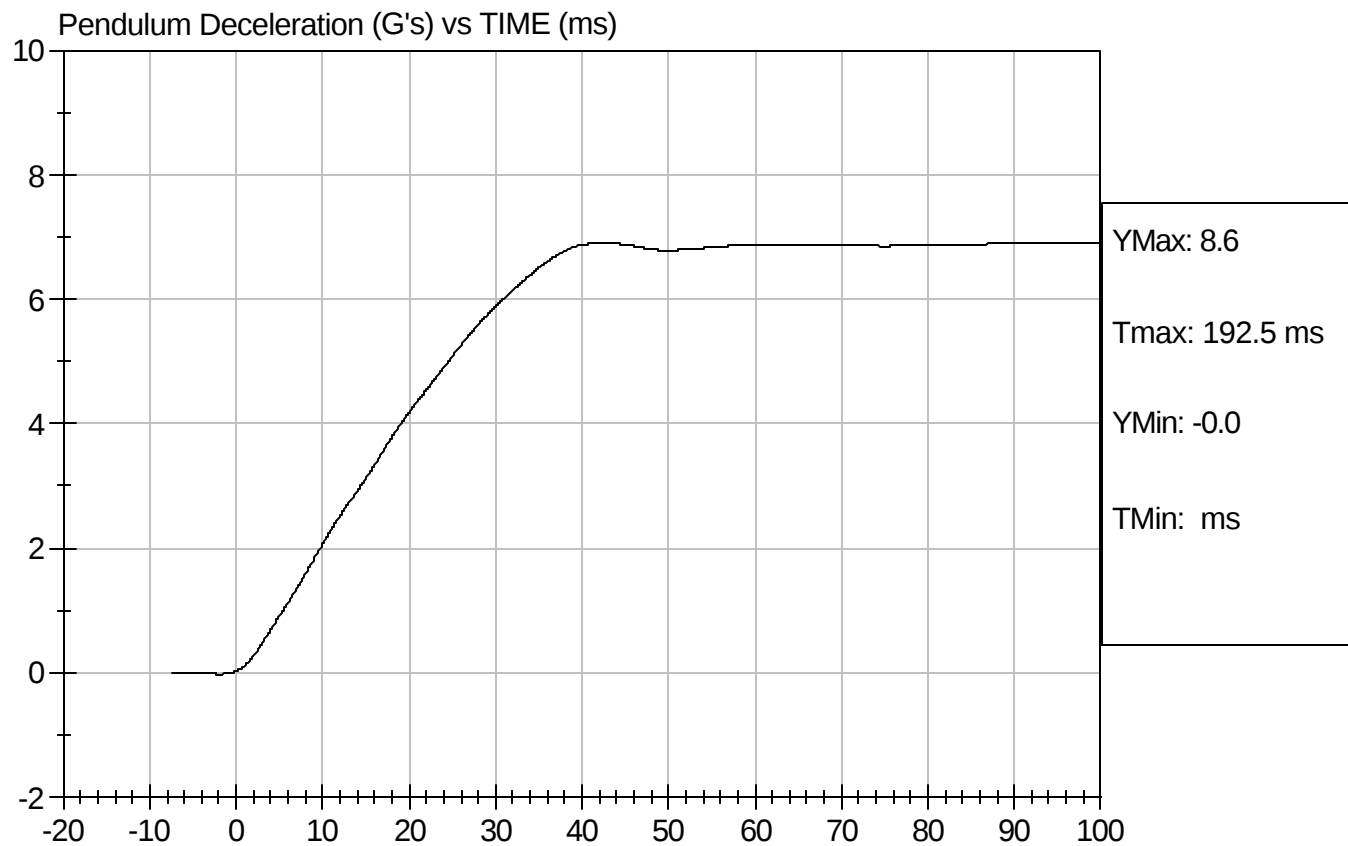
9/4/07

Test Date



Test Desc: Neck Bending
Component ID: D072709

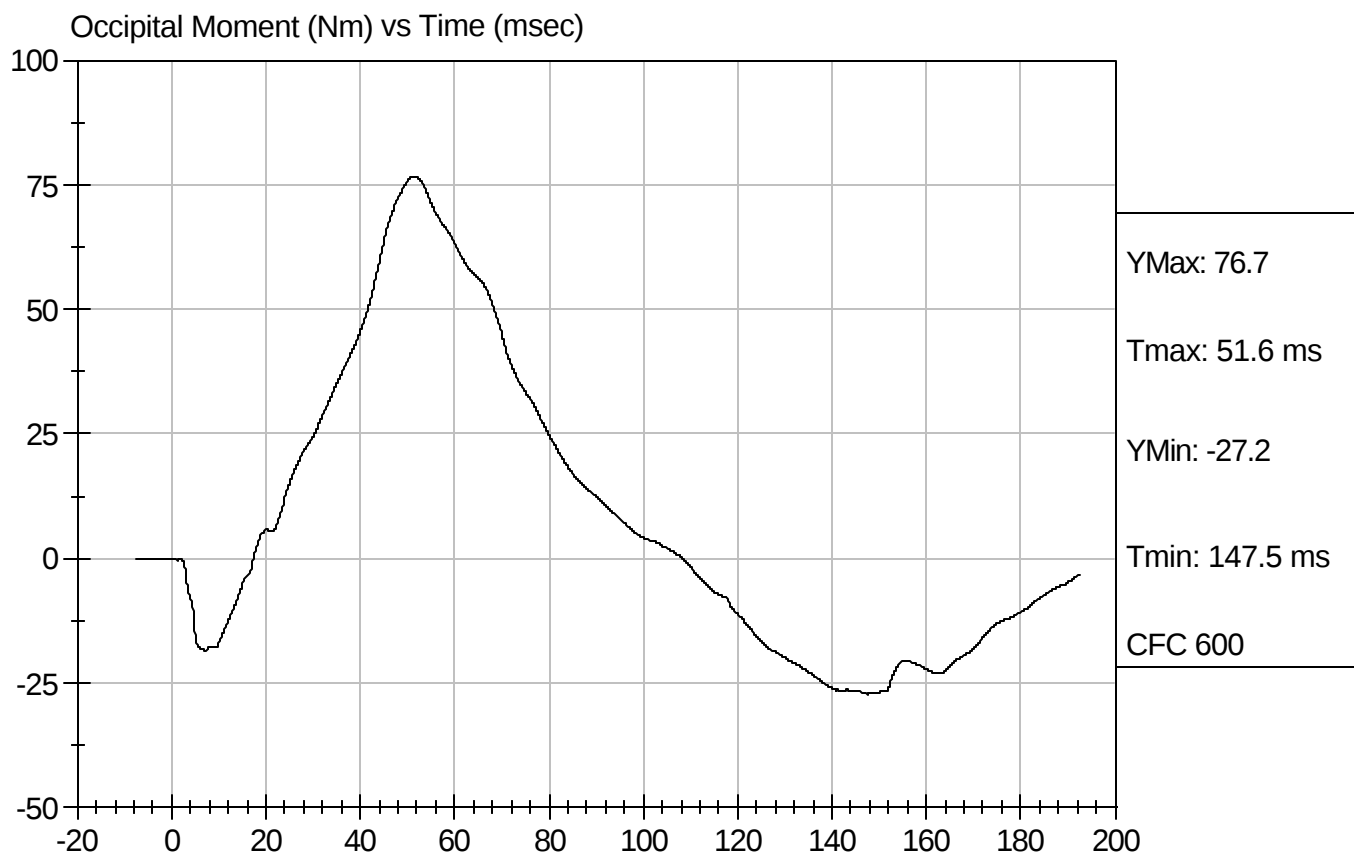
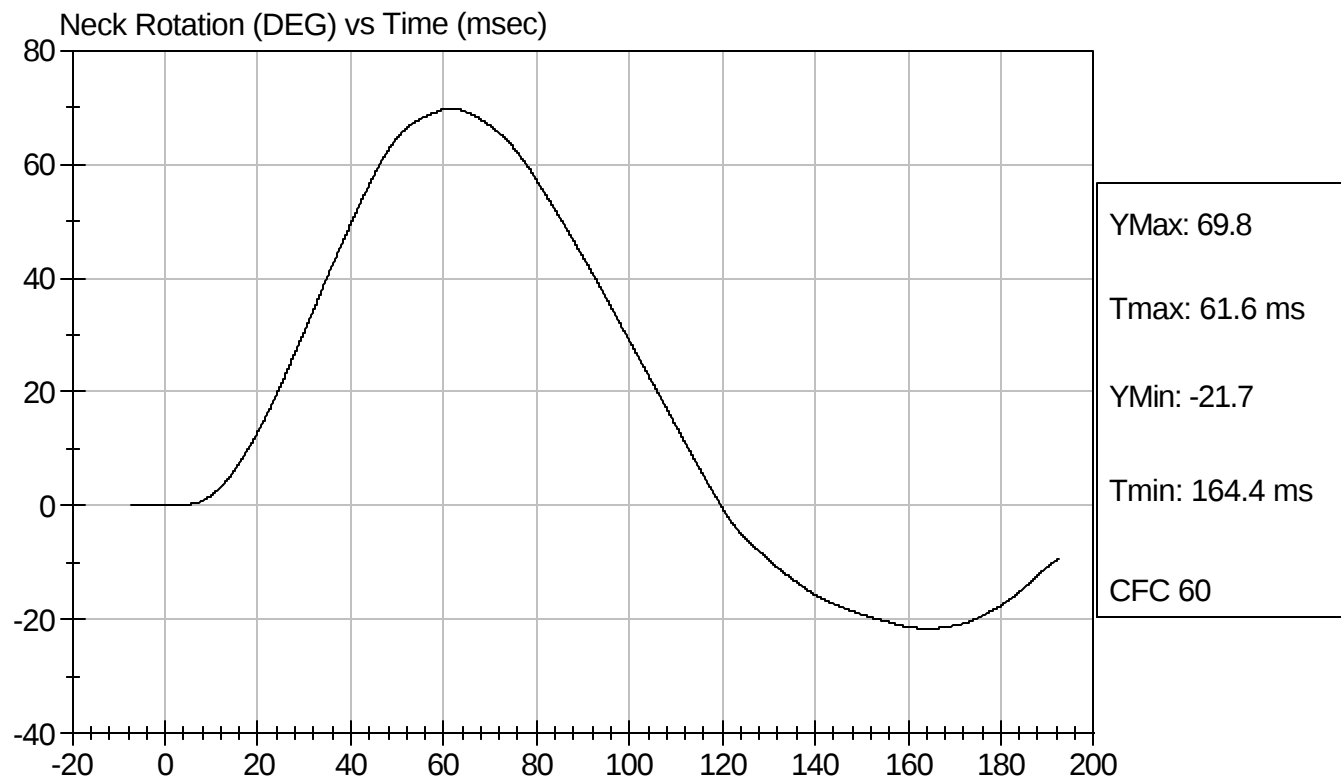
Test Date: 9/4/07
Speed: 23.21 ft/sec, 7.07 m/sec





Test Desc: Neck Bending
Component ID: D072709

Test Date: 9/4/07
Speed: 23.21 ft/sec, 7.07 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: D072891

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	39	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	-10.2	Pass
Overall Test Results				Pass


Laboratory Technician


Approved By

9/17/07
Test Date



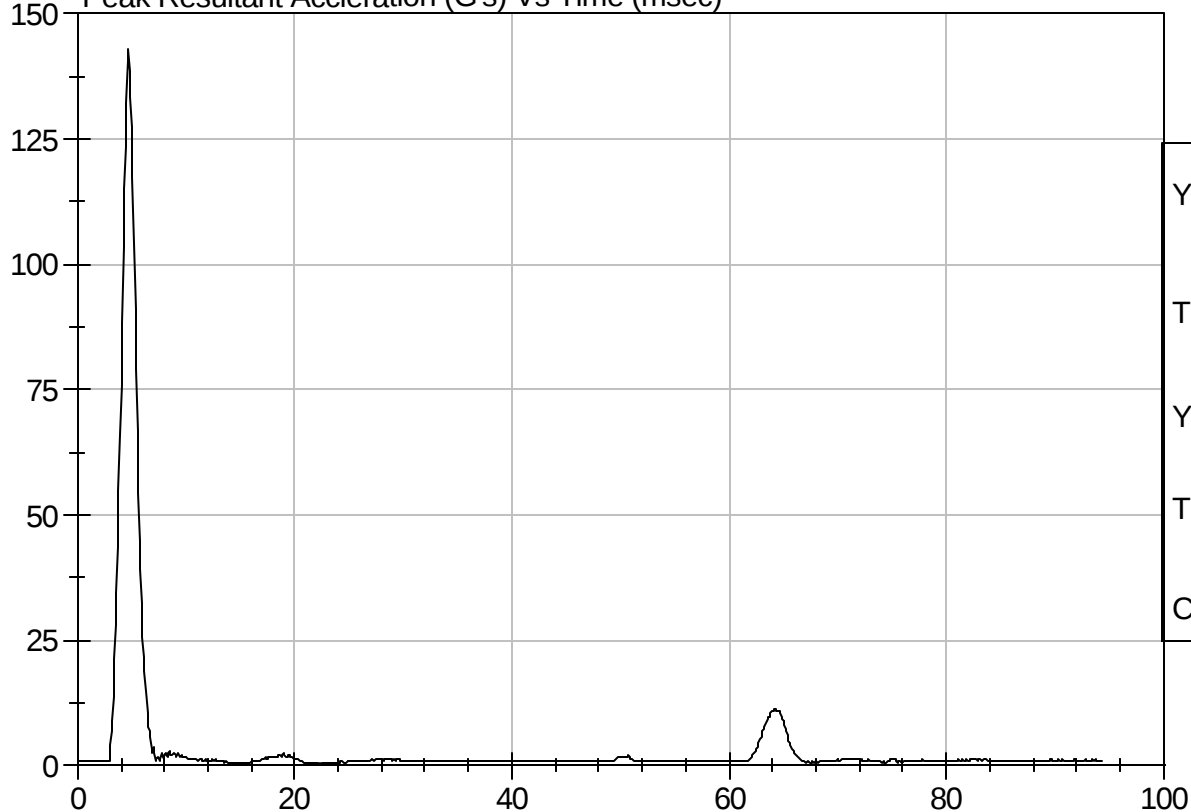
Test Description: Head Drop

Test Date: 9/17/07

Component: D072891

Speed: 0 ft/s, 0 m/s

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



YMax: 142.8 G

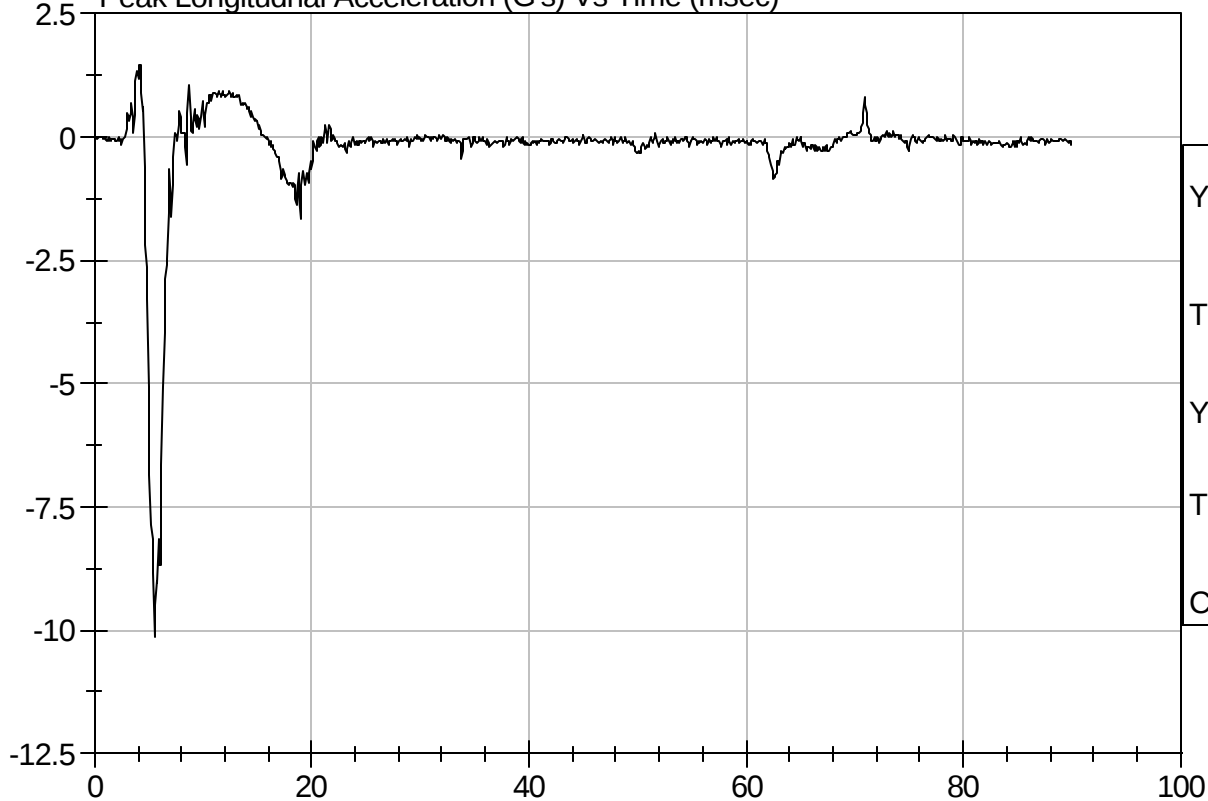
Tmax: 4.7 ms

YMin: 0.3 G

Tmin: 22.2 ms

CFC 1000

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



YMax: 1.5 G

Tmax: 4.2 ms

YMin: -10.2 G

Tmin: 5.5 ms

CFC 1000

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

ATD Serial No: 272

Test I.D: D072892

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Probe Velocity	m/s	4.22 - 4.31	4.30	Pass
Upper Rib	G's	37 - 46	37	Pass
Lower Rib	G's	37 - 46	39	Pass
Lower Spine	G's	15 - 22	21	Pass
Overall Test Results				Pass


Laboratory Technician

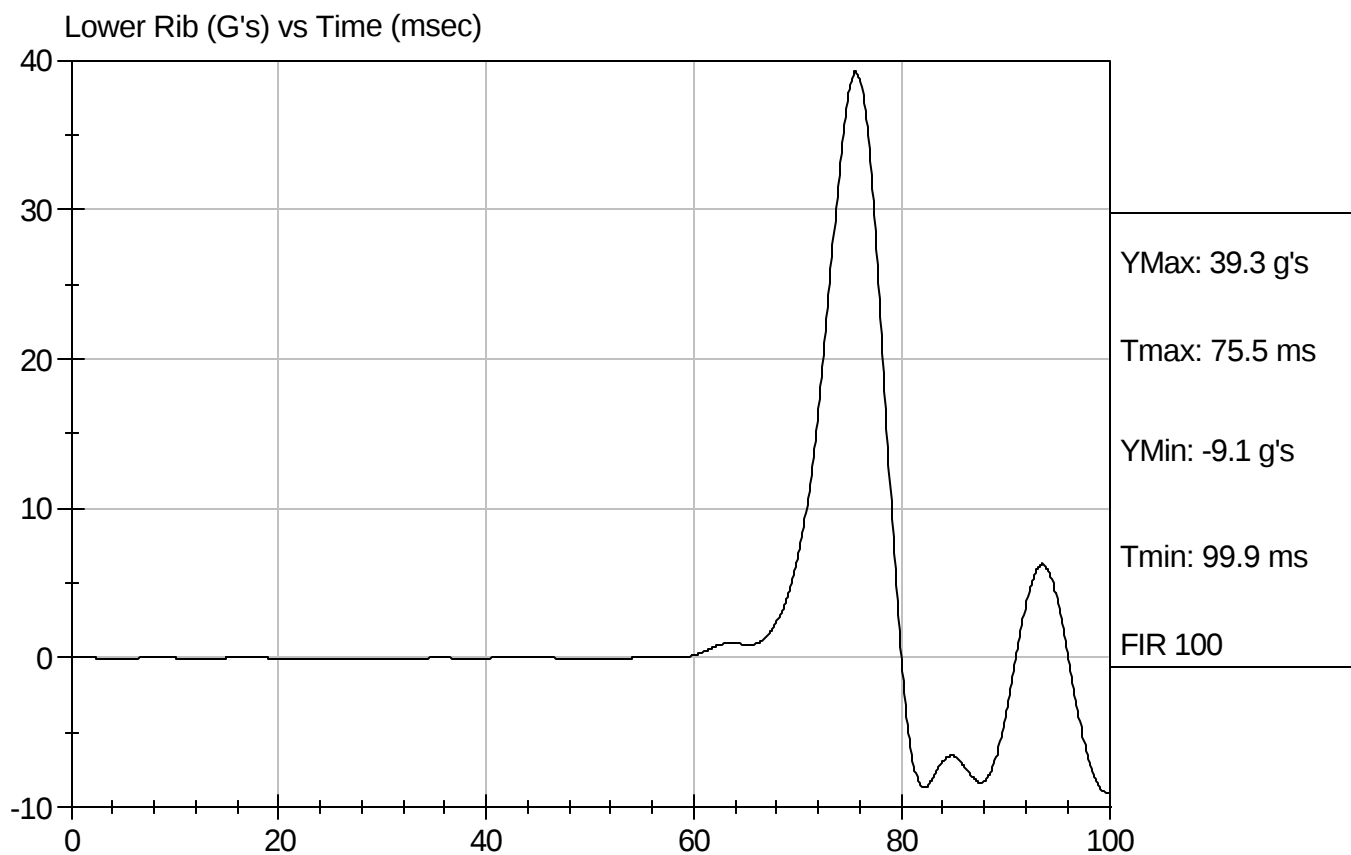
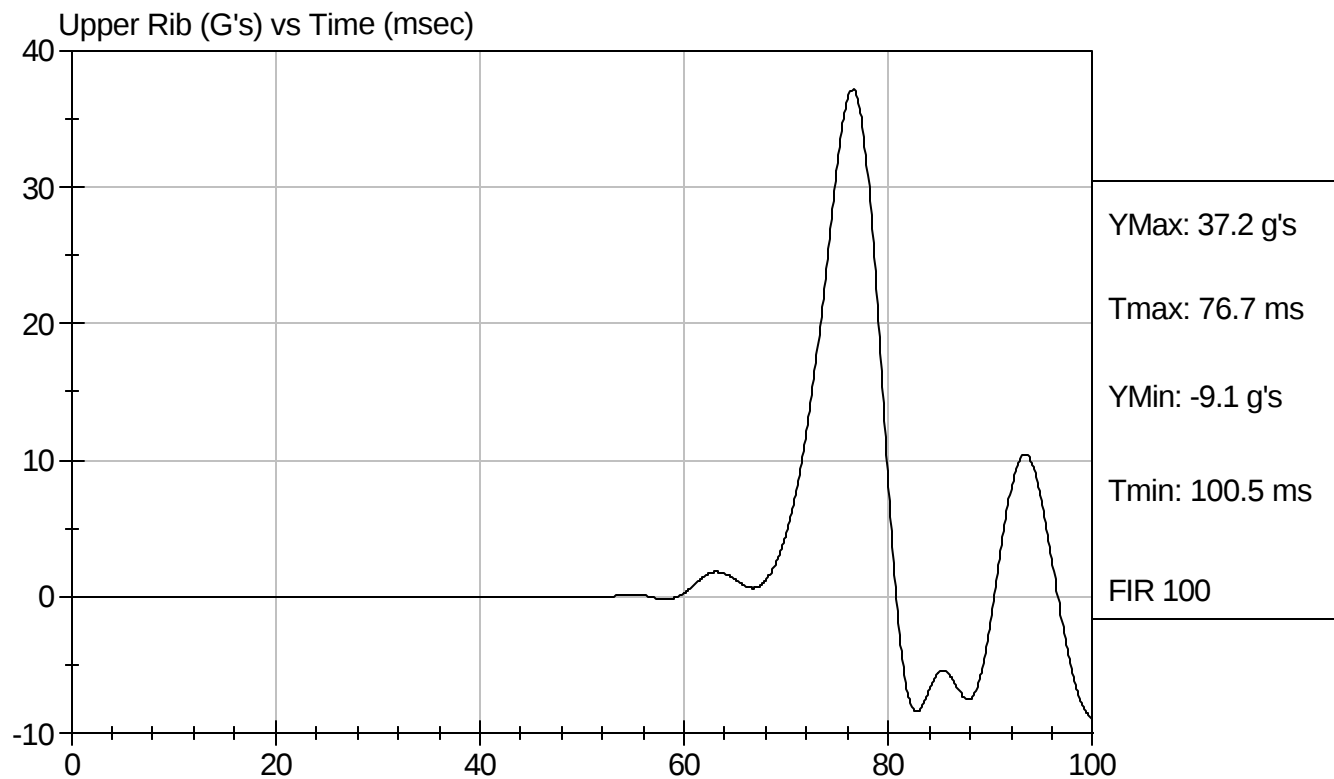

Approved By

9/17/07
Test Date



Test Desc: Thorax Impact
Component ID: D072892

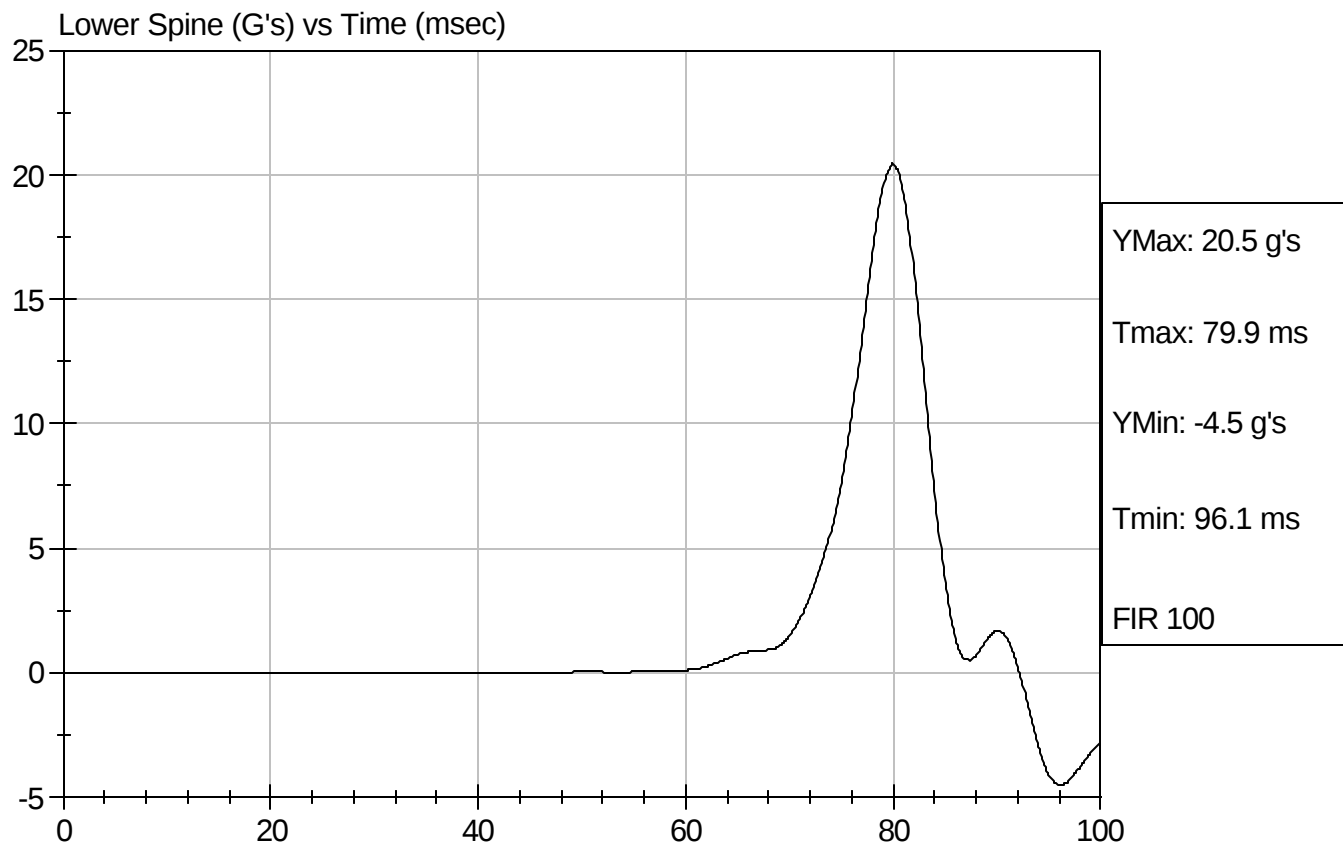
Test Date: 9/17/07
Speed: 14.12 ft/sec, 4.30 m/sec





Test Desc: Thorax Impact
Component ID: D072892

Test Date: 9/17/07
Speed: 14.12 ft/sec, 4.30 m/sec



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

ATD Serial No: 272

Test I.D: D072893

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	38	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	43	Pass
Overall Test Results				Pass


Laboratory Technician

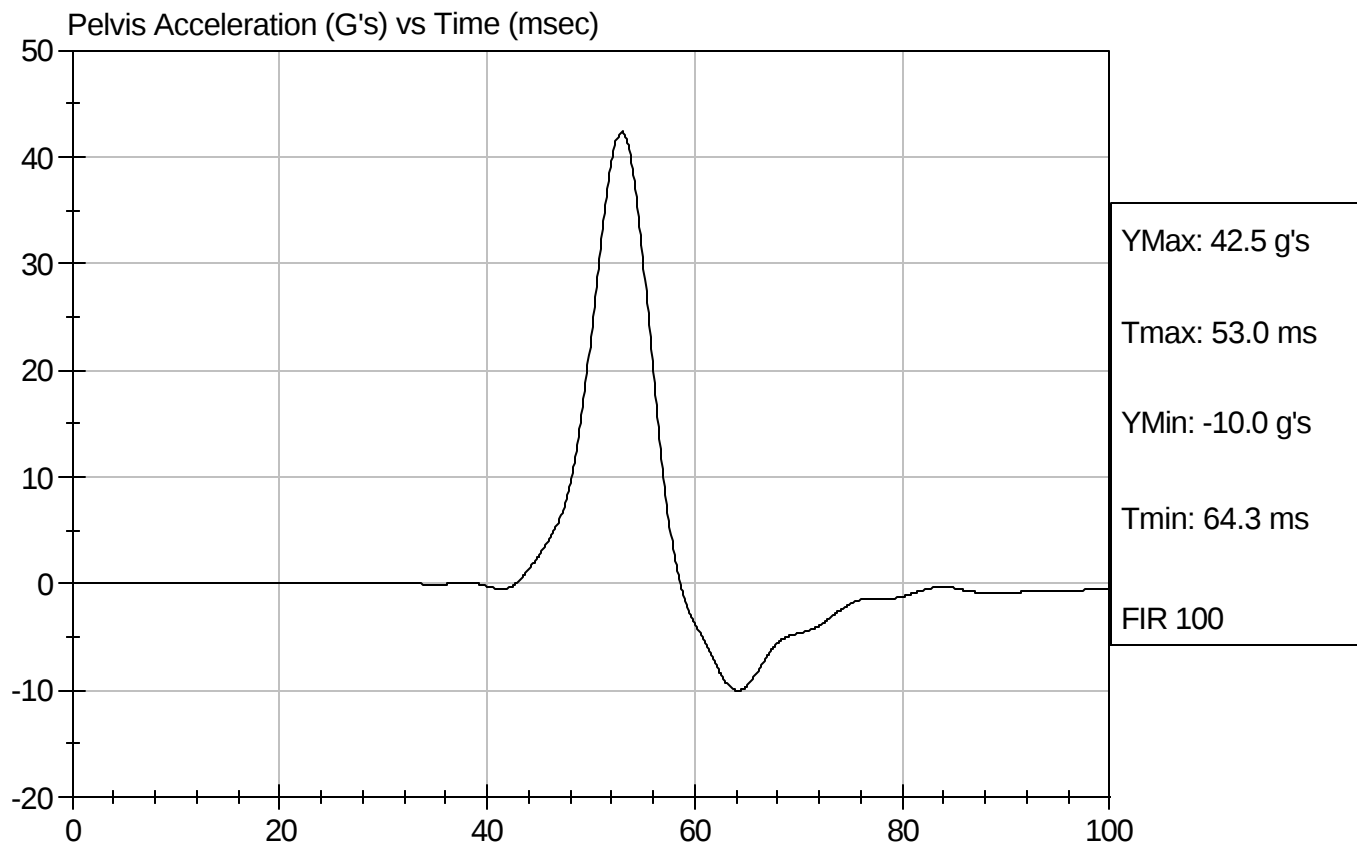

Approved By

9/17/07
Test Date



Test Desc: Pelvis Impact
Component ID: D072893

Test Date: 9/17/07
Speed: 14.12 ft/sec, 4.30 m/sec



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

ATD Serial No: 272

Test I.D: D072894

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Force At 12.7 mm	N	104 -162	130	Pass
Force At 19 mm	N	163 - 222	178	Pass
Force At 25.4 mm	N	222 - 280	237	Pass
Force At 33 mm	N	325 - 391	326	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

9/17/07
Test Date

David Winkelbauer
Approved By

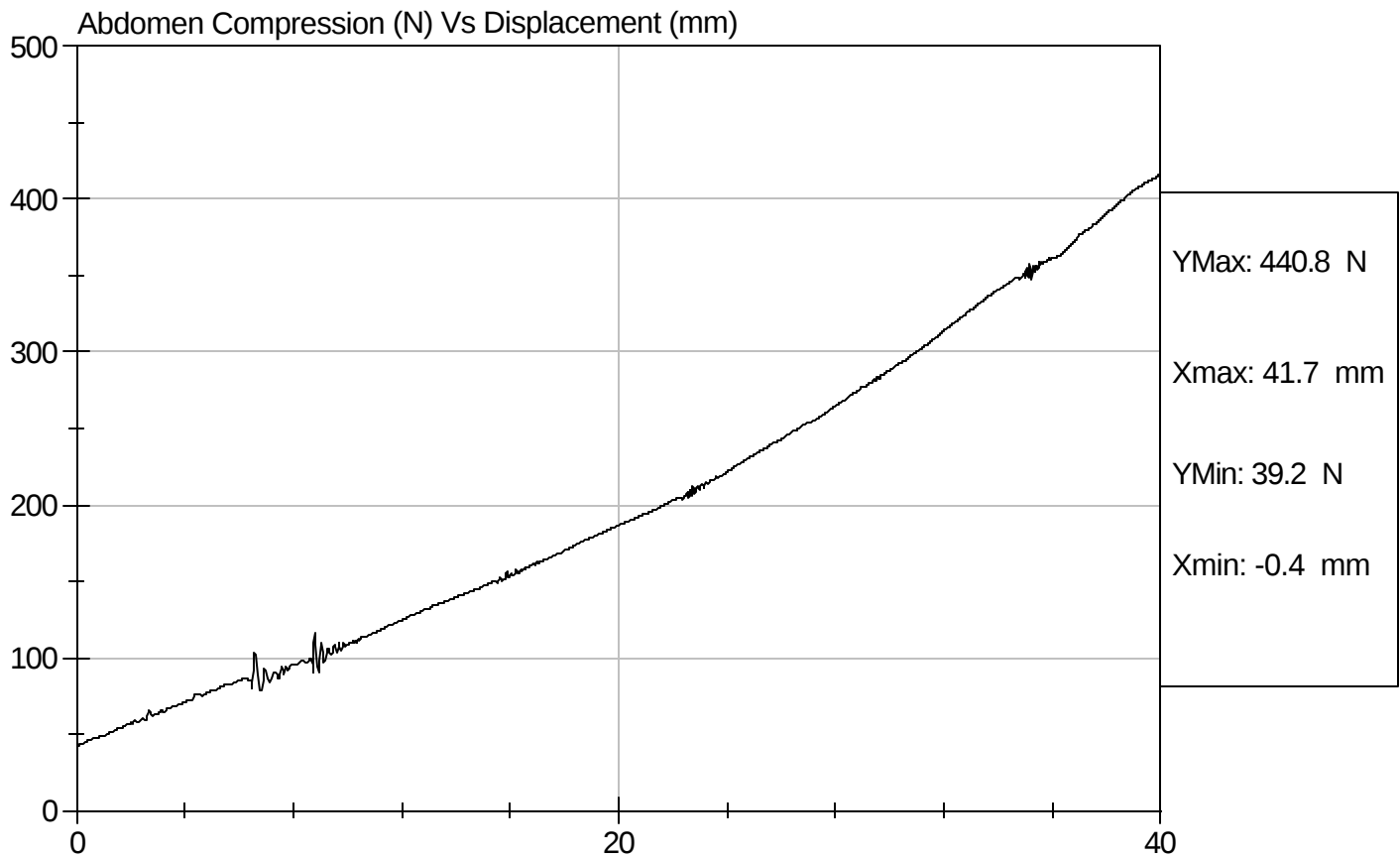


Test Description: Abdomen Compression

Test Date: 9/17/07

Component: D072894

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 272

Test I.D: D072895

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.7	Pass
Laboratory Relative Humidity	%	10 to 70	41	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	117.8	Pass
Force At 30 deg	N	151.2 - 204.6	184.9	Pass
Force At 40 deg	N	204.6 - 258.0	254.3	Pass
Return Angle	Deg	12 Maximum	6	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

9/17/07
Test Date

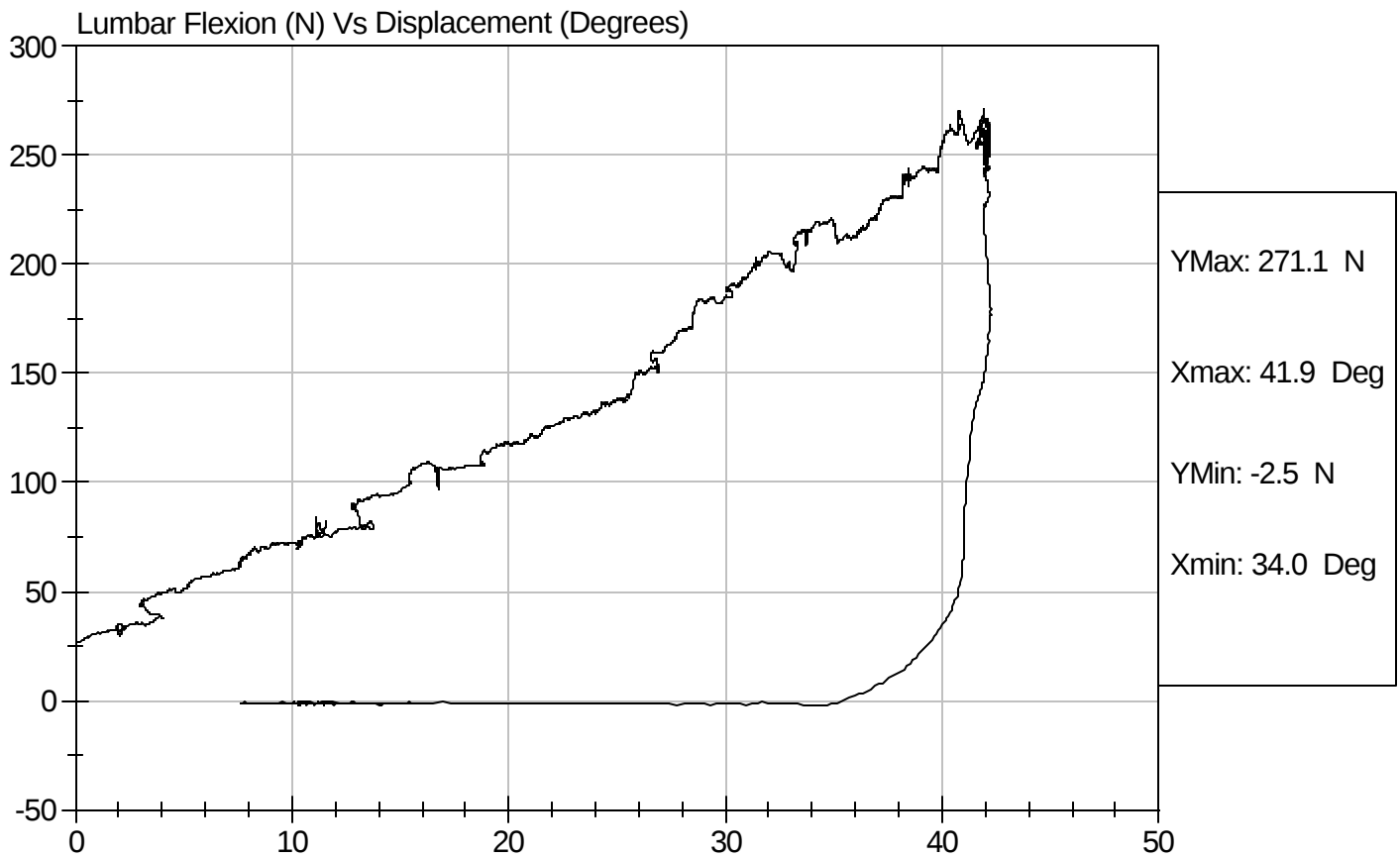


Test Description: Lumbar Flexion

Test Date: 9/17/07

Component: D072895

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: D072899

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	20.6	Pass
Laboratory Relative Humidity		%	10 to 70	42	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.26	Pass
	20 msec	m/s	4.12 to 5.10	4.56	Pass
	30 msec	m/s	5.73 to 7.01	6.36	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.80	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	71	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	60	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	74	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	59	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	12	Pass


 Laboratory Technician

9/17/07

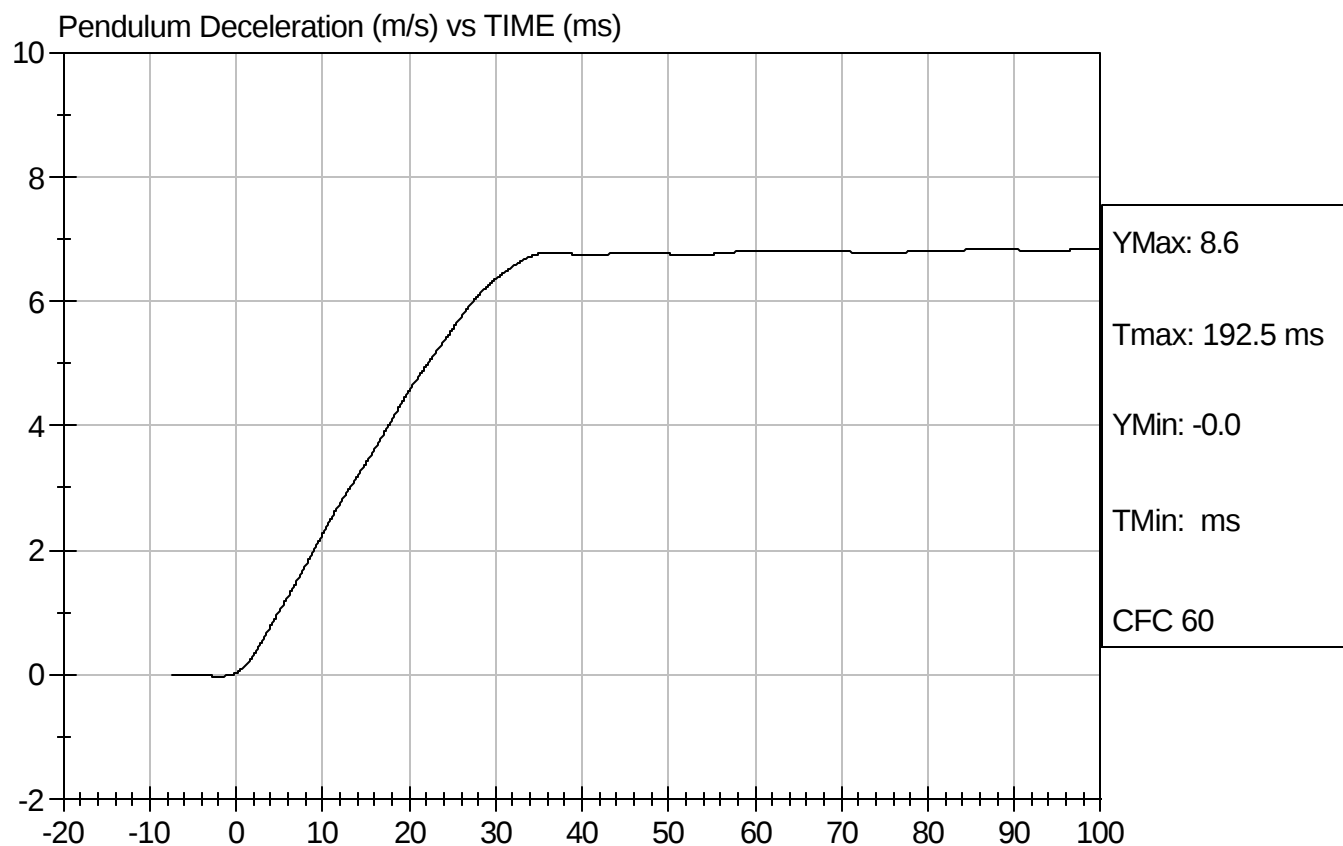
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D072899

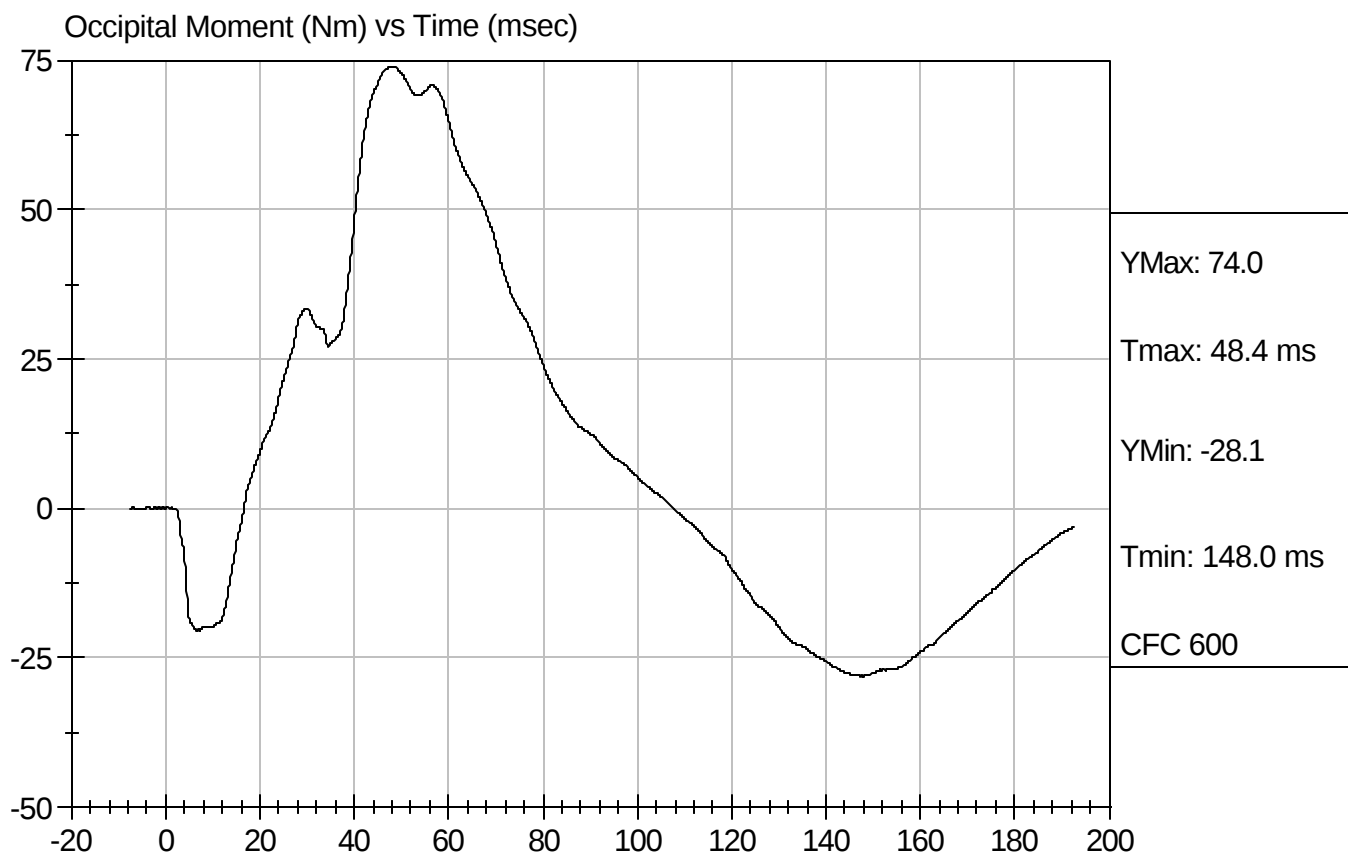
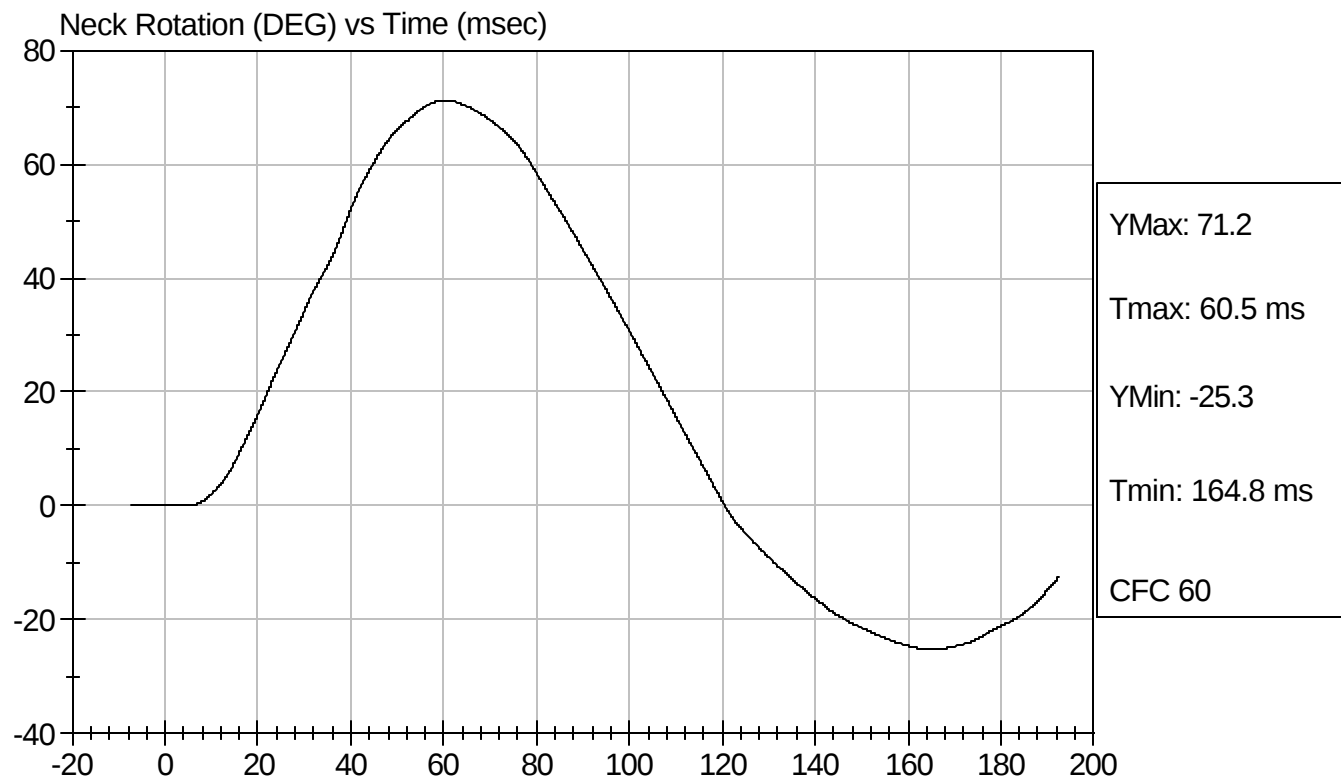
Test Date: 9/17/07
Speed: 23.148 ft/sec, 7.06 m/sec





Test Desc: Neck Bending
Component ID: D072899

Test Date: 9/17/07
Speed: 23.148 ft/sec, 7.06 m/sec



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

9/17/2007
Test Date

CERTIFICATION DATA

Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Pre-Test Calibration

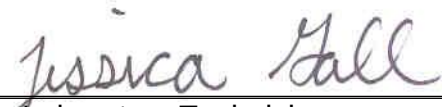
External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis 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: D07269

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	


Laboratory Technician


Approved By

9/4/2007
Test Date

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

ATD Serial No: 271

Test I.D: D072691

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Peak Resultant Acceleration	G's	120 to 150	134	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-10.2	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

David Winkelbauer
Approved By

9/4/07
Test Date



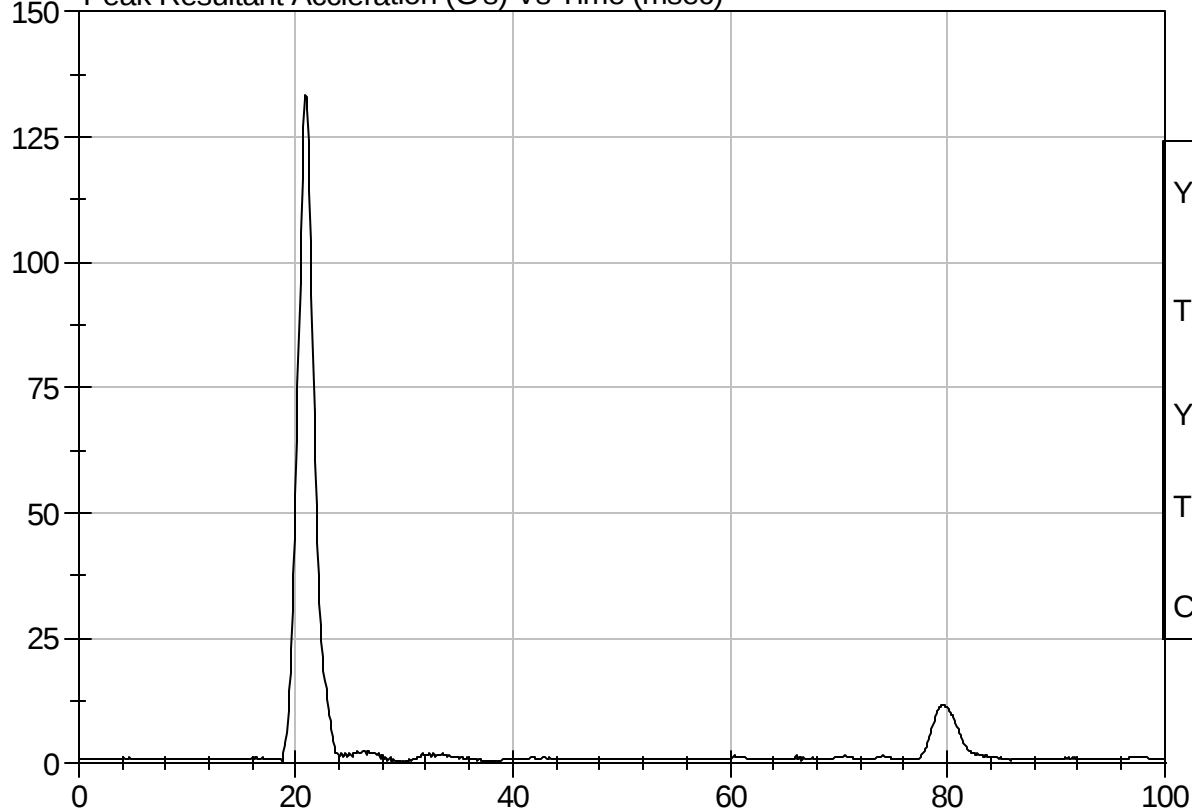
Test Description: Head Drop

Test Date: 9/4/07

Component: D072691

Speed: 0 ft/s, 0 m/s

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



YMax: 133.6 G

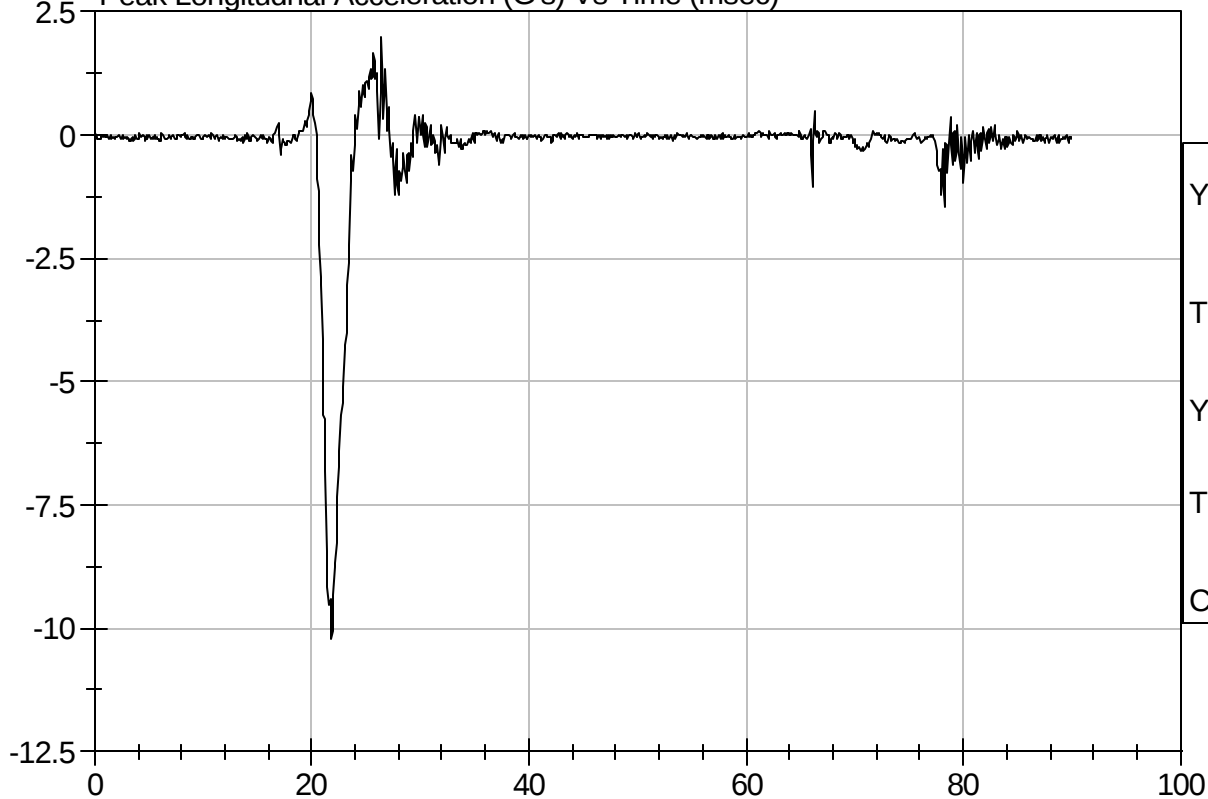
Tmax: 20.9 ms

YMin: 0.2 G

Tmin: 30.0 ms

CFC 1000

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



YMax: 2.0 G

Tmax: 26.4 ms

YMin: -10.2 G

Tmin: 21.8 ms

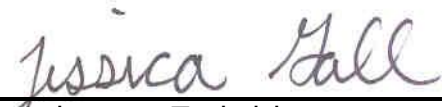
CFC 1000

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

ATD Serial No: 271

Test I.D: D072692

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Probe Velocity	m/s	4.22 - 4.31	4.27	Pass
Upper Rib	G's	37 - 46	44	Pass
Lower Rib	G's	37 - 46	44	Pass
Lower Spine	G's	15 - 22	19	Pass
Overall Test Results				Pass


Laboratory Technician

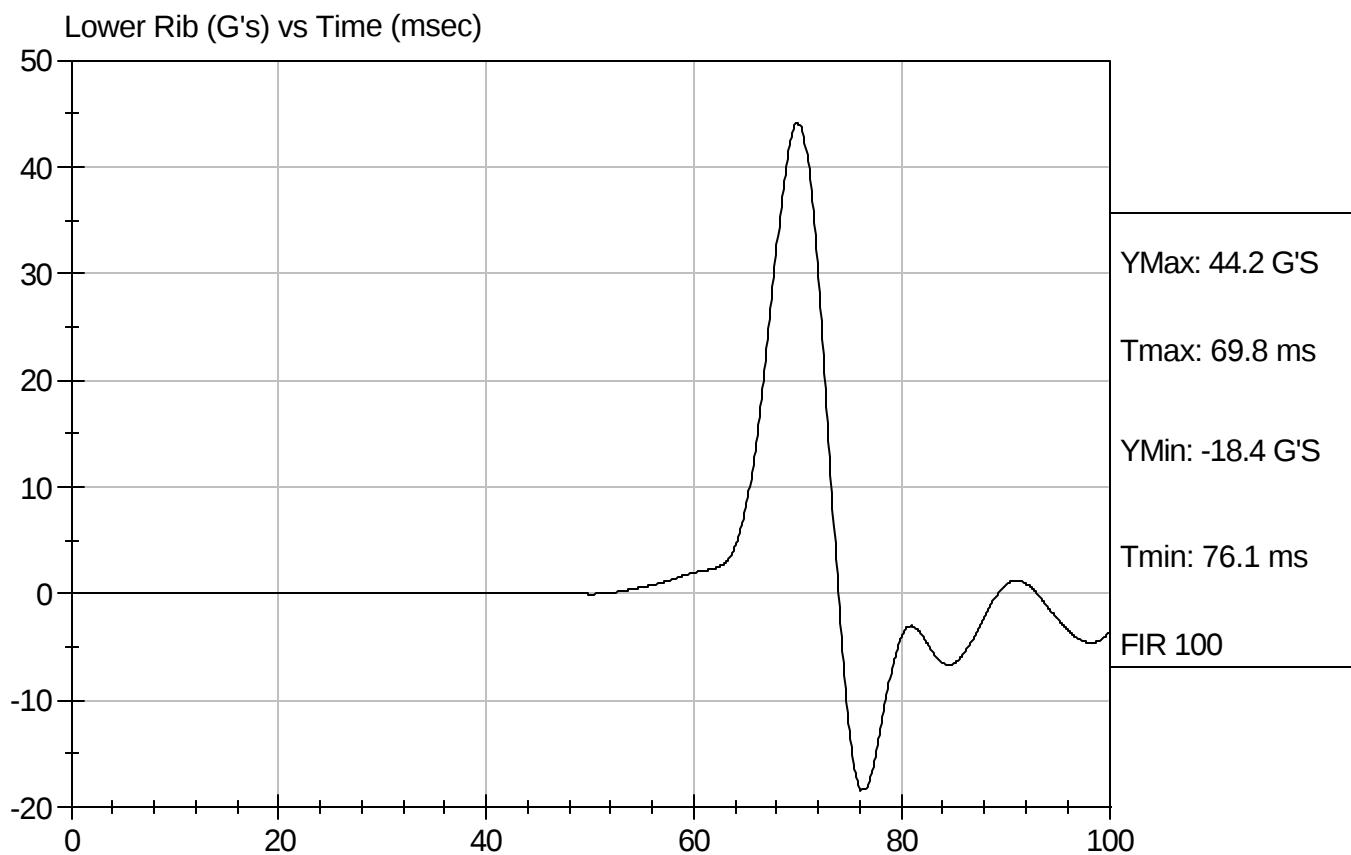
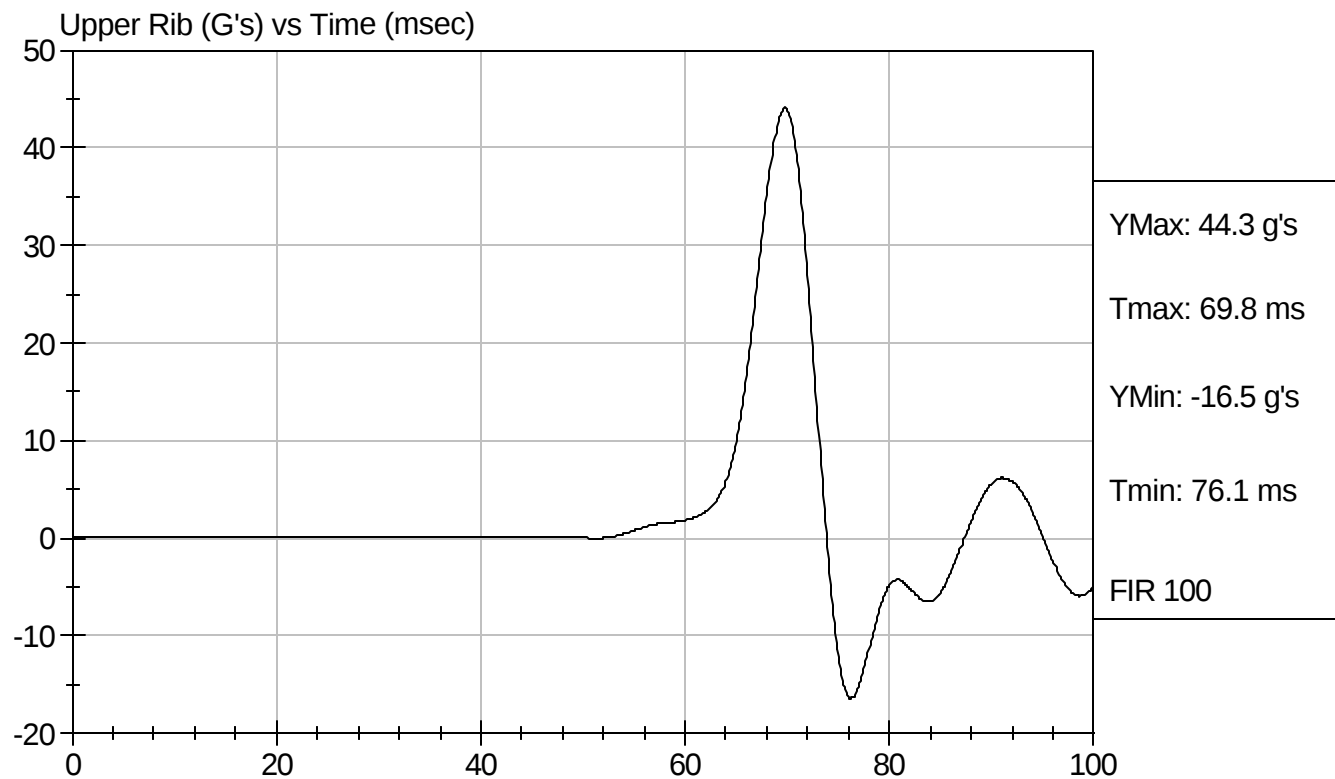

Approved By

9/4/07
Test Date



Test Desc: Thorax Impact
Component ID: D072692

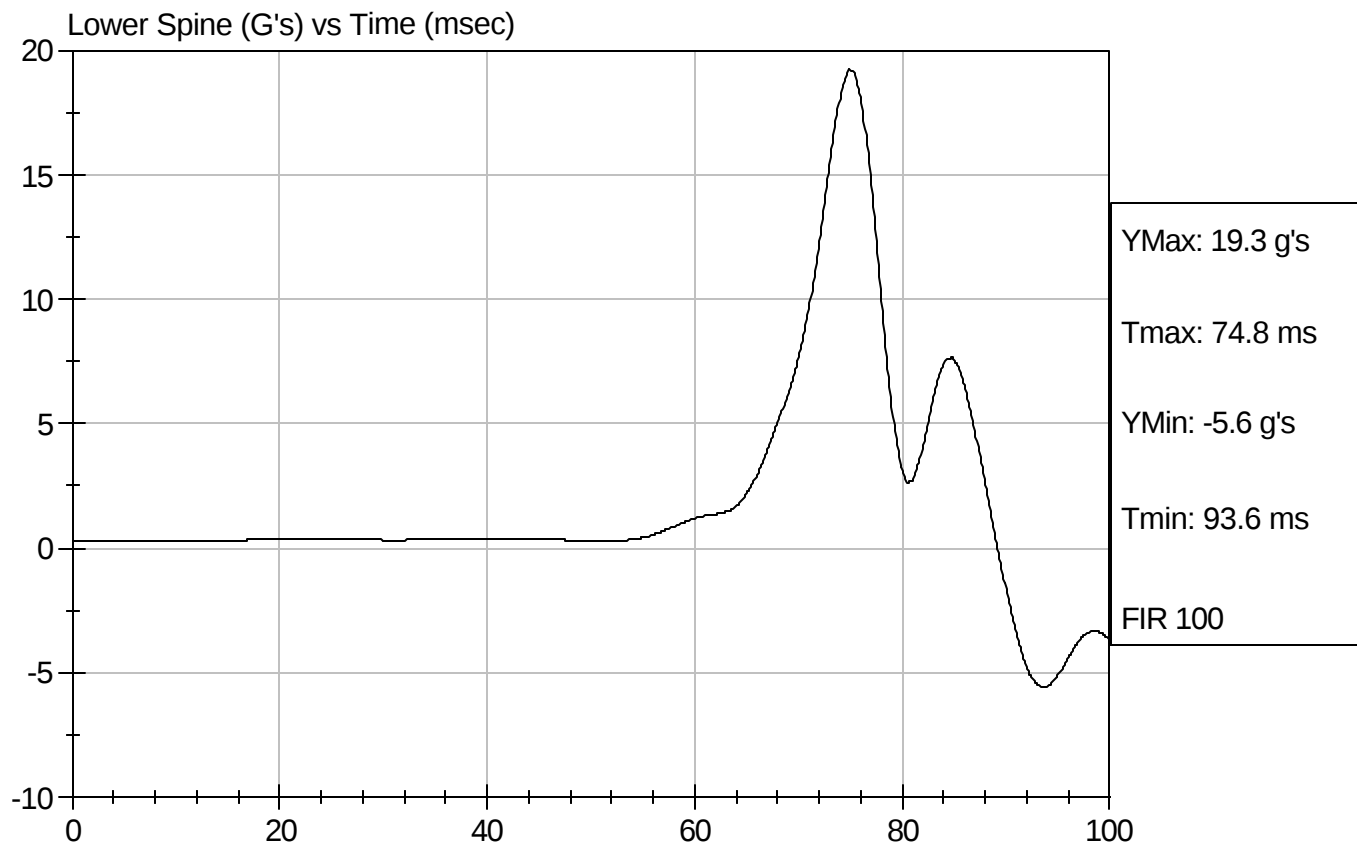
Test Date: 9/4/07
Speed: 14.0 ft/sec, 4.27 m/sec





Test Desc: Thorax Impact
Component ID: D072692

Test Date: 9/4/07
Speed: 14.0 ft/sec, 4.27 m/sec



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

ATD Serial No: 271

Test I.D: D072693

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	46	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

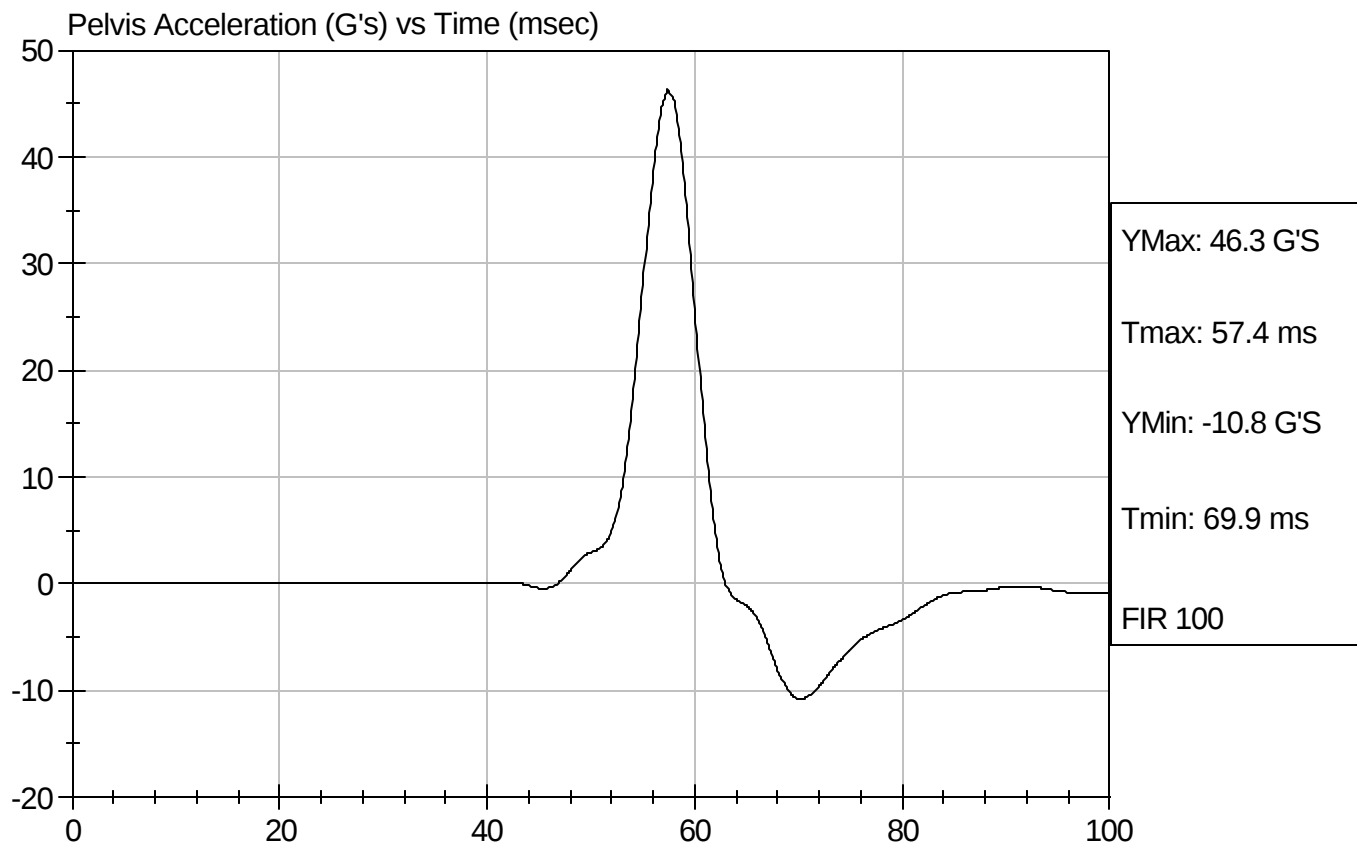
David Winkelbauer
Approved By

9/4/07
Test Date



Test Desc: Pelvis Impact
Component ID: D072693

Test Date: 9/4/07
Speed: 14.1 ft/sec, 4.30 m/sec



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

ATD Serial No: 271

Test I.D.: D072694

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Force At 12.7 mm	N	104 -162	147	Pass
Force At 19 mm	N	163 - 222	207	Pass
Force At 25.4 mm	N	222 - 280	277	Pass
Force At 33 mm	N	325 - 391	375	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

9/4/07
Test Date

David Winkelbauer
Approved By

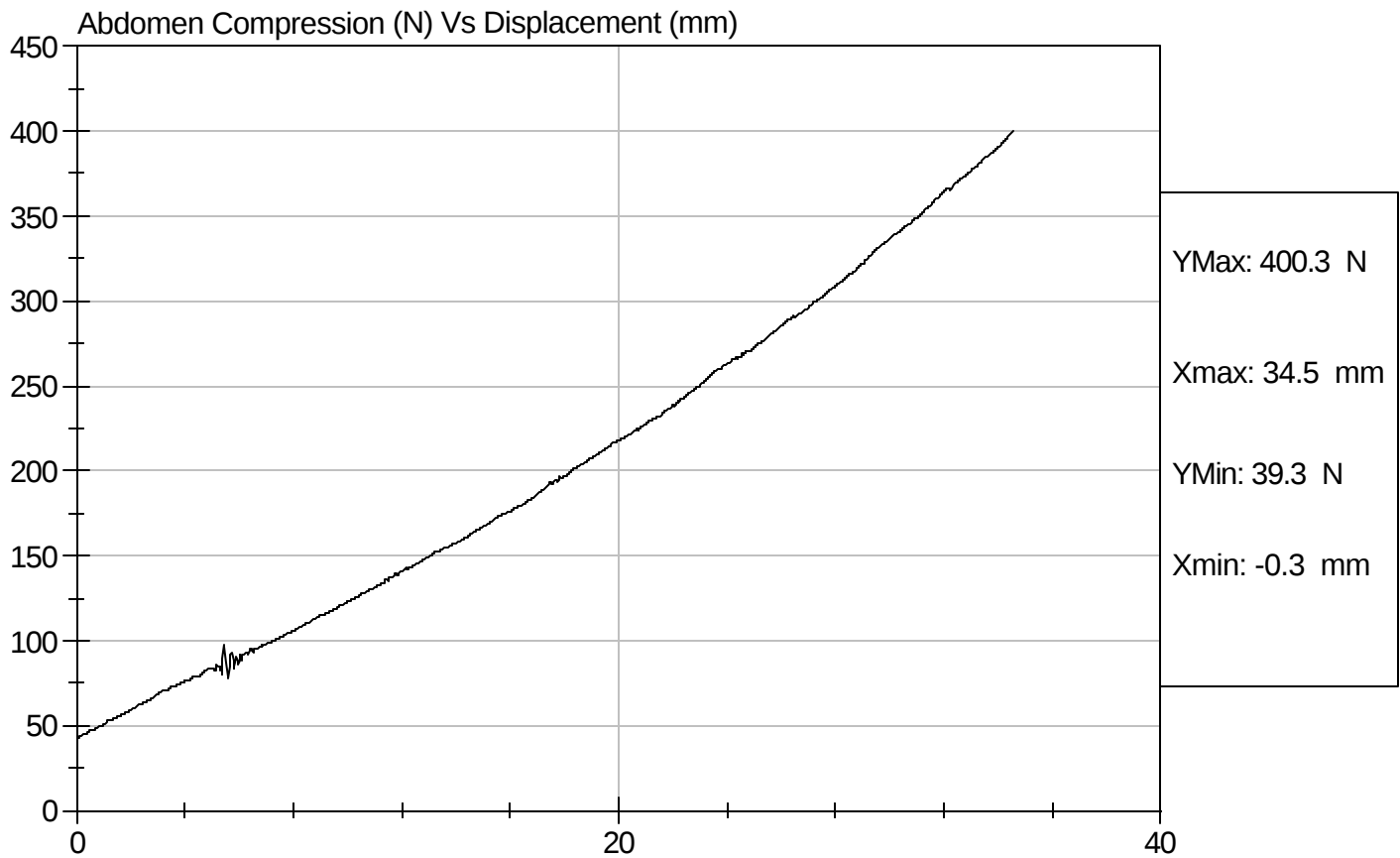


Test Description: Abdomen Compression

Test Date: 9/4/07

Component: D072694

Speed: 0 ft/sec, 0 m/sec

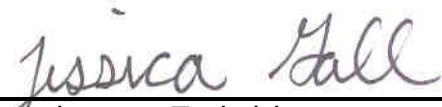


SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 271

Test I.D: D072695

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	122.7	Pass
Force At 30 deg	N	151.2 - 204.6	174.3	Pass
Force At 40 deg	N	204.6 - 258.0	231.8	Pass
Return Angle	Deg	12 Maximum	4	Pass
Overall Test Results			Pass	


Laboratory Technician


Approved By

9/4/07
Test Date

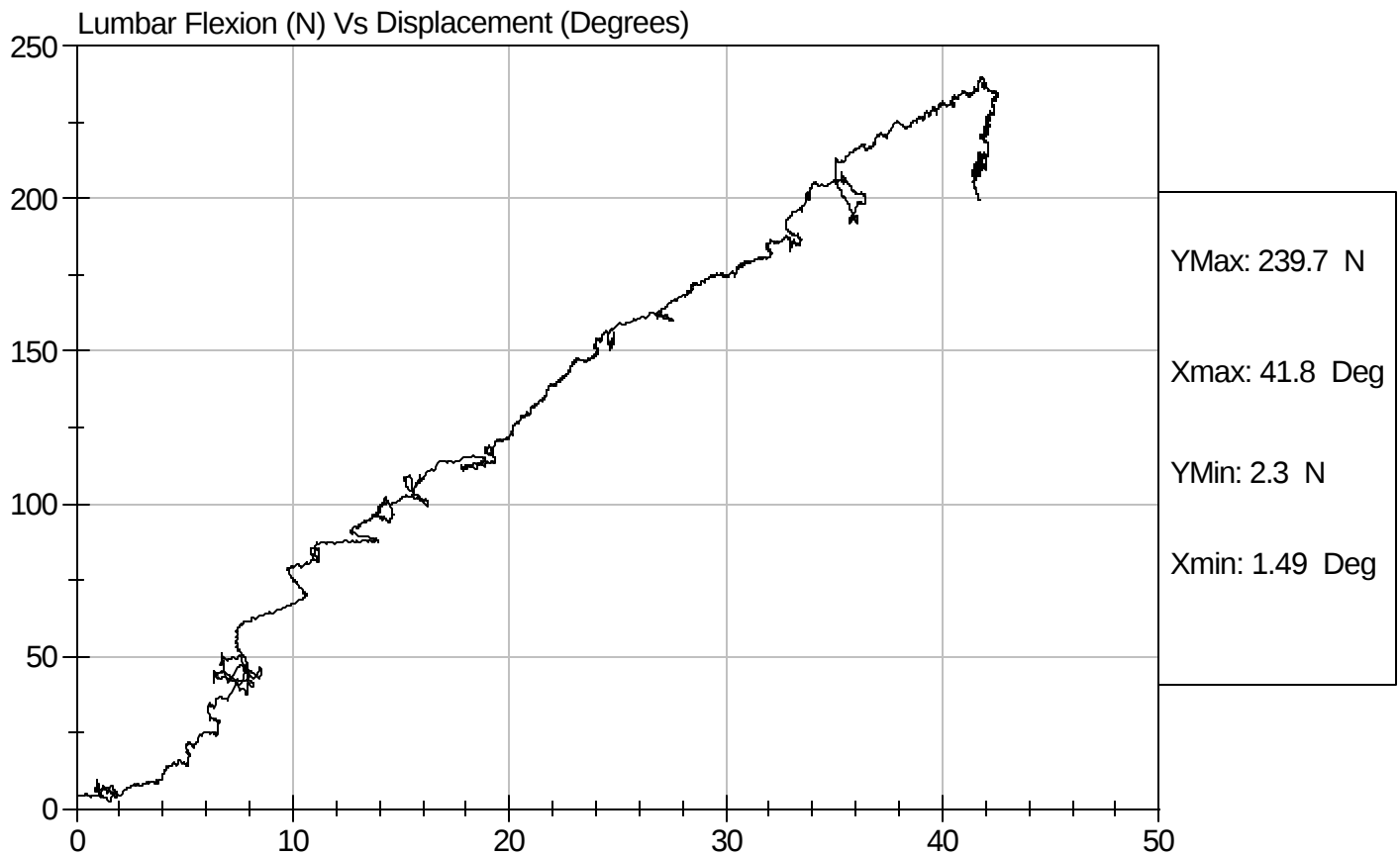


Test Description: Lumbar Flexion

Test Date: 9/4/07

Component: D072695

Speed: 0 ft/sec, 0 m/sec

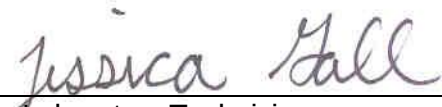


SID/HIII Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 271

Test I.D: D072699

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	20.6	Pass
Laboratory Relative Humidity		%	10 to 70	40	Pass
Impact Velocity		m/s	6.89 to 7.13	6.96	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.35	Pass
	20 msec	m/s	4.12 to 5.10	4.64	Pass
	30 msec	m/s	5.73 to 7.01	6.51	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.77	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	73	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	75	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	61	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	13	Pass


 Laboratory Technician

9/4/07

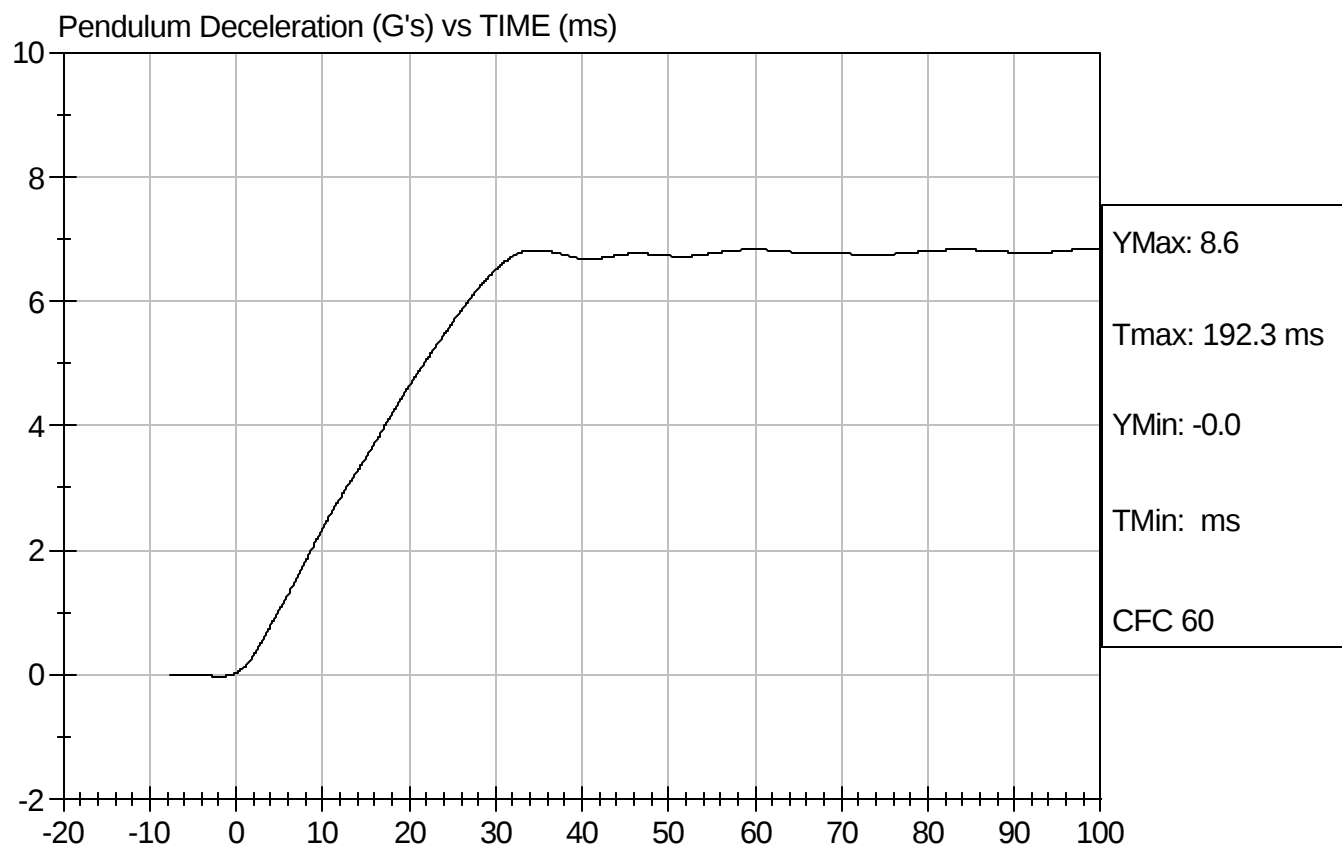
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D072699

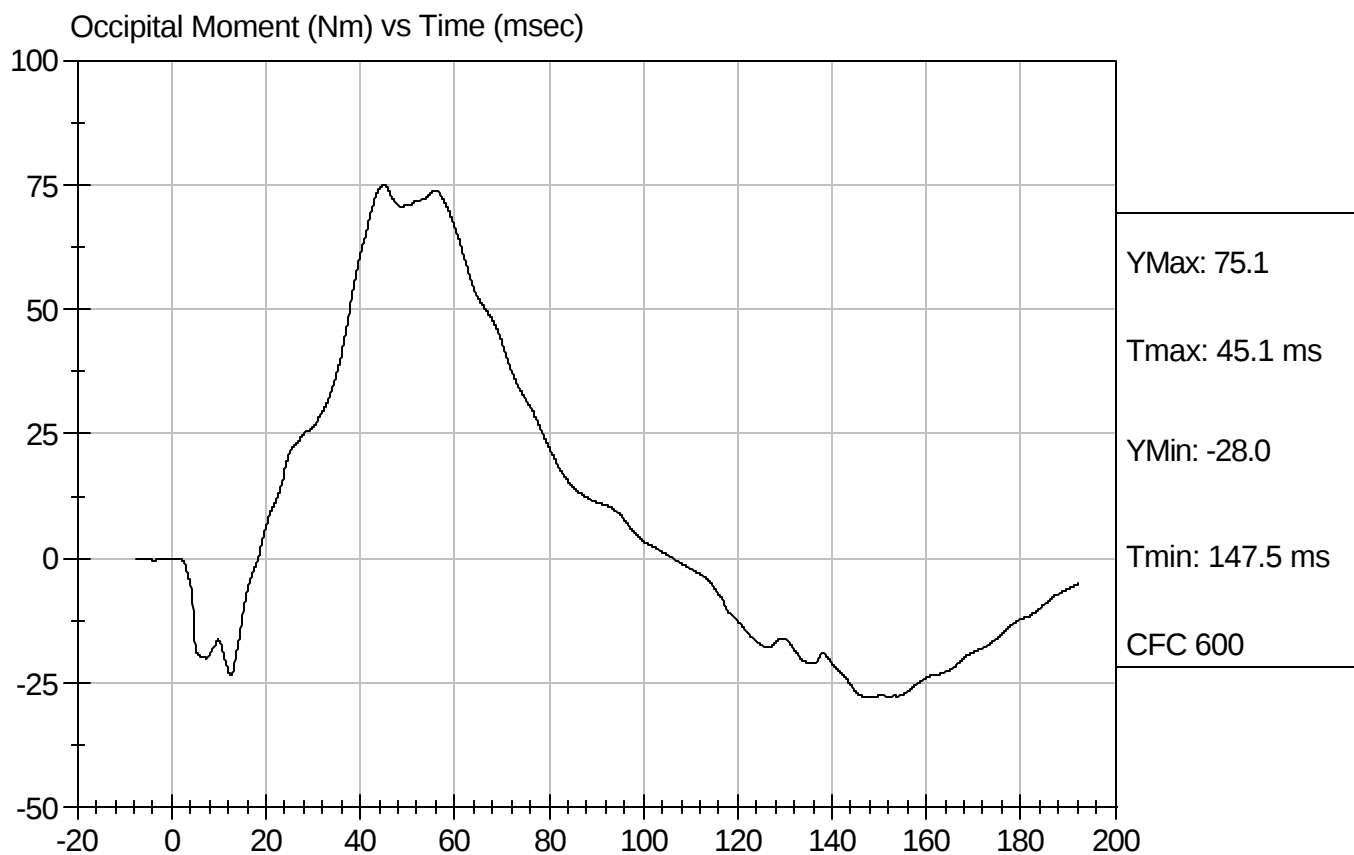
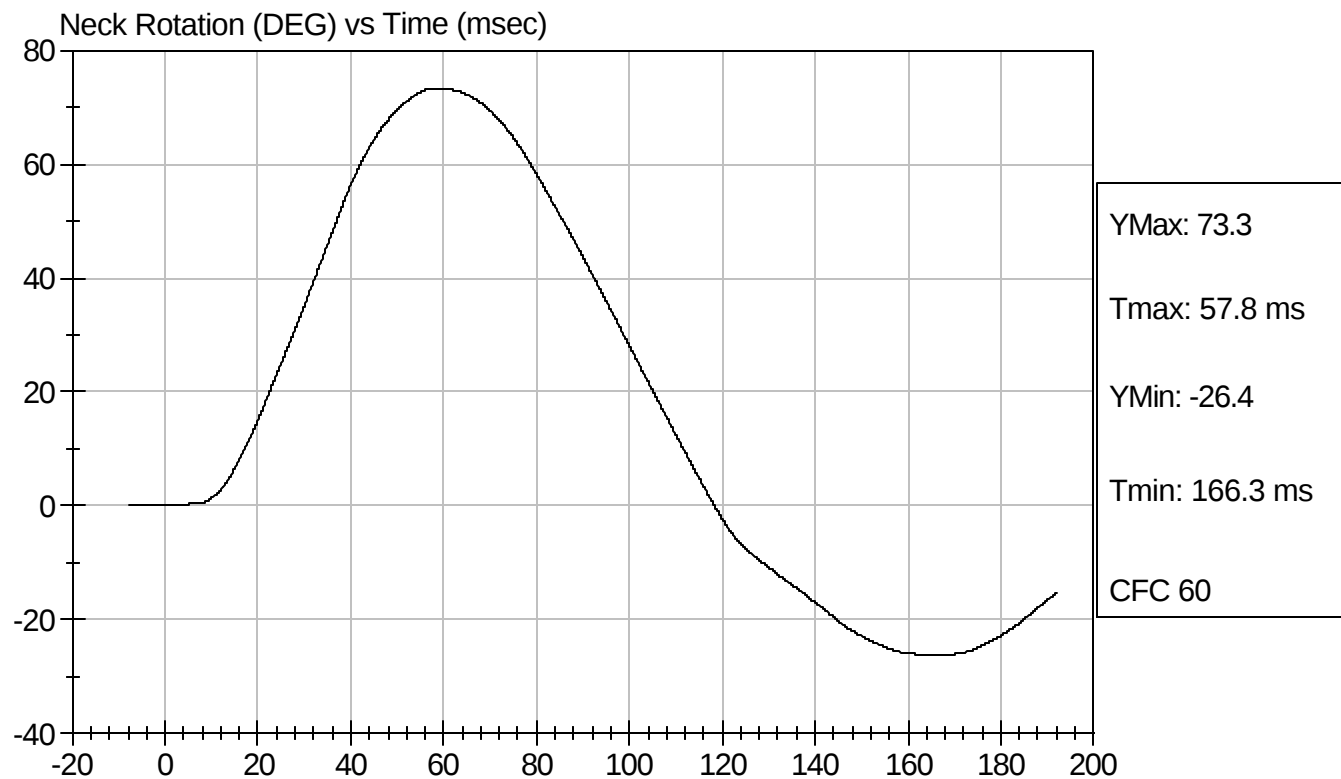
Test Date: 9/4/07
Speed: 22.83 ft/sec, 6.96 m/sec





Test Desc: Neck Bending
Component ID: D072699

Test Date: 9/4/07
Speed: 22.83 ft/sec, 6.96 m/sec



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: D072881

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	39	Pass
Peak Resultant Acceleration	G's	120 to 150	134	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-14.0	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

9/17/07
Test Date

David Winkelbauer
Approved By



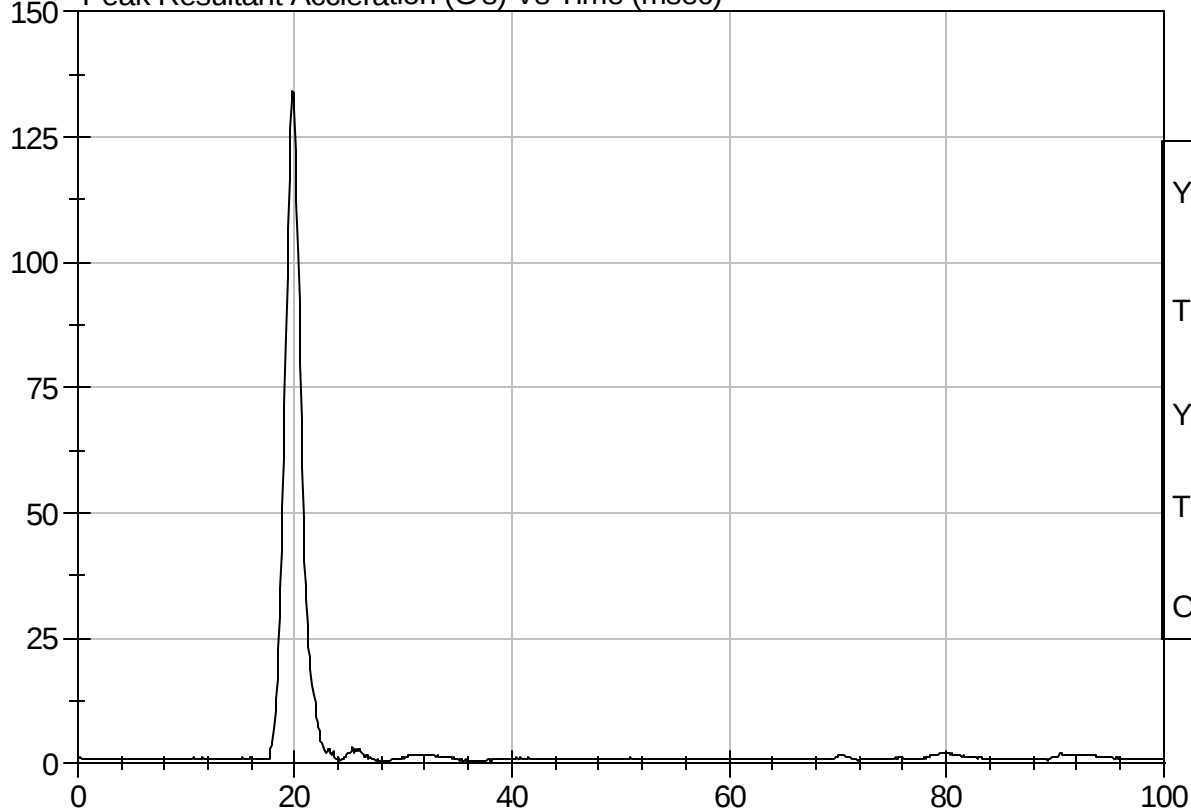
Test Description: Head Drop

Test Date: 9/17/07

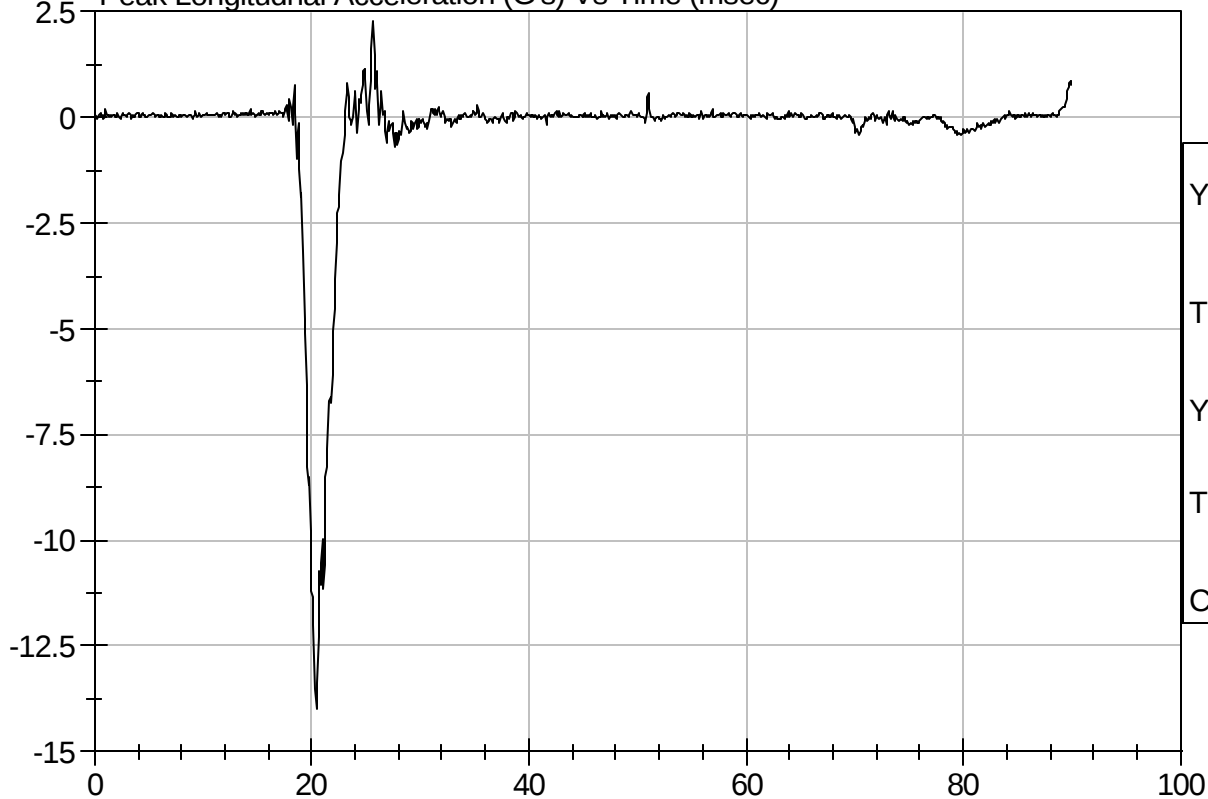
Component: D072881

Speed: 0 ft/s, 0 m/s

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



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



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

ATD Serial No: 271

Test I.D: D072882

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	40	Pass
Probe Velocity	m/s	4.22 - 4.31	4.23	Pass
Upper Rib	G's	37 - 46	44	Pass
Lower Rib	G's	37 - 46	44	Pass
Lower Spine	G's	15 - 22	17	Pass
Overall Test Results				Pass


Laboratory Technician

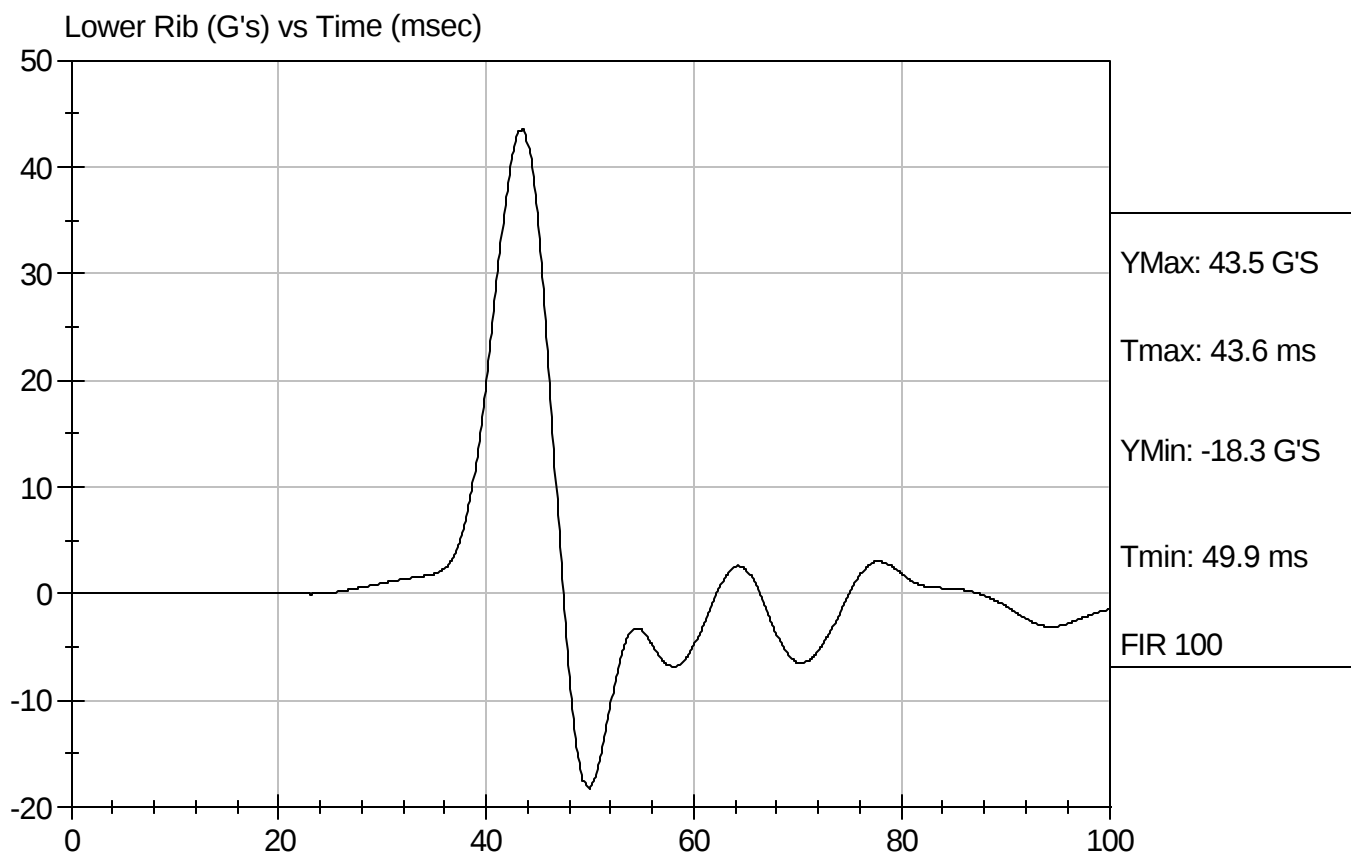
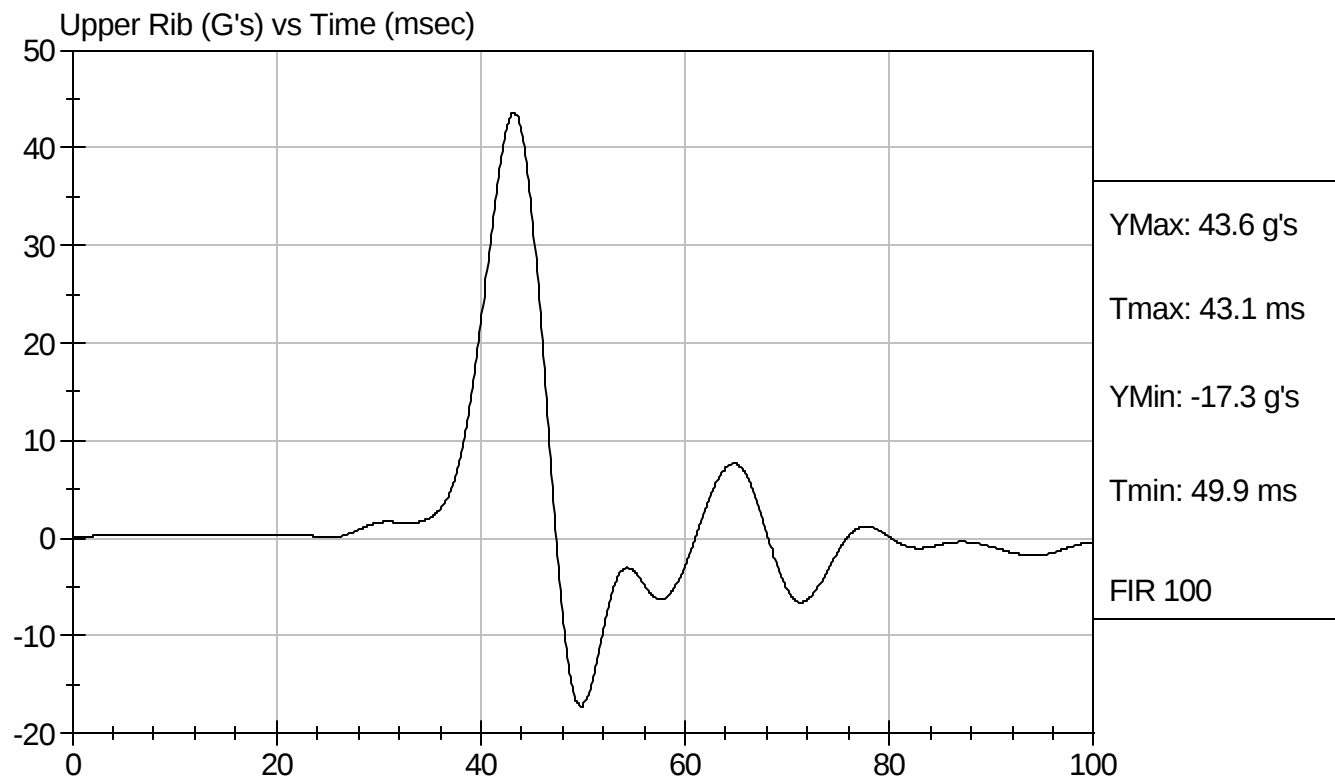

Approved By

9/17/07
Test Date



Test Desc: Thorax Impact
Component ID: D072882

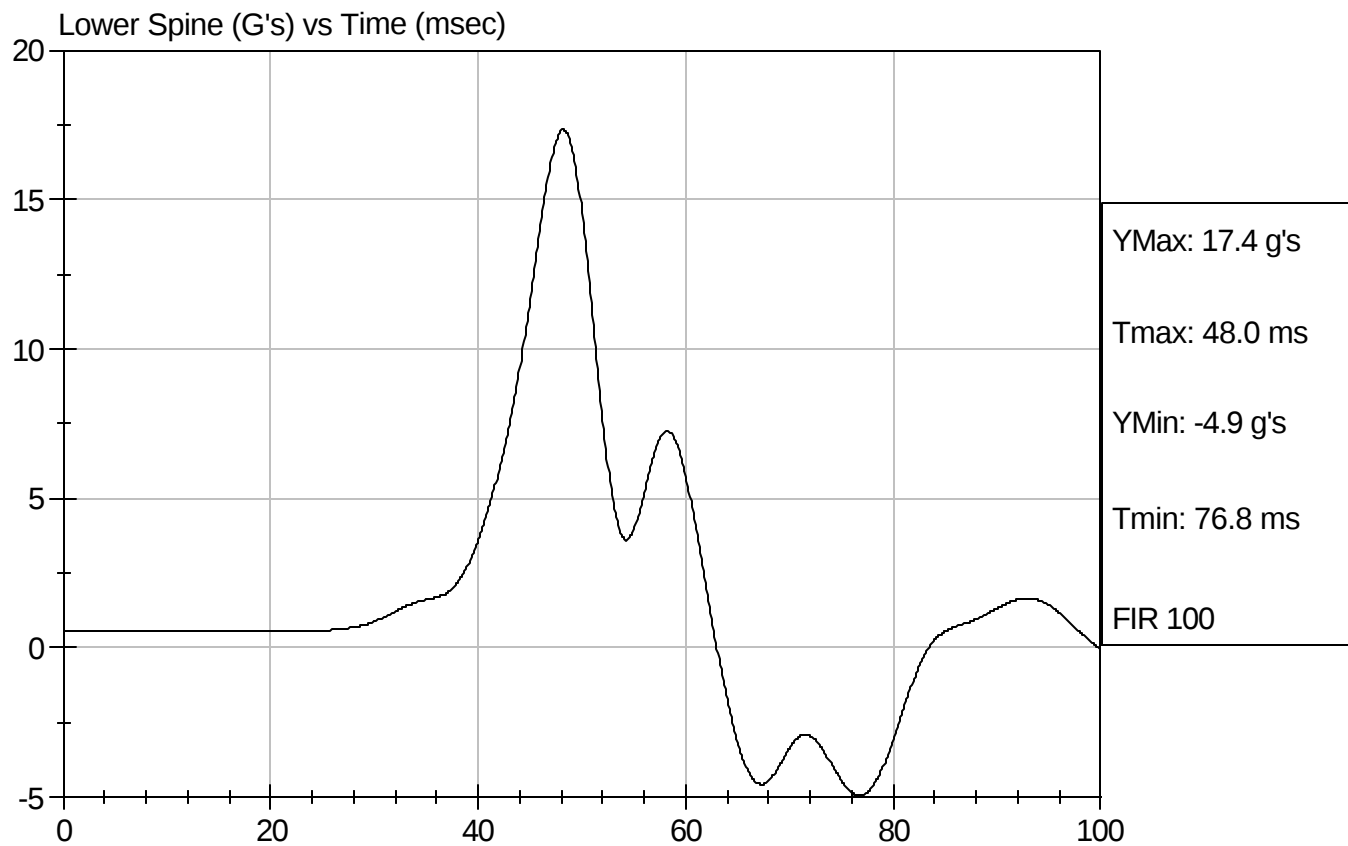
Test Date: 9/17/07
Speed: 13.89 ft/sec, 4.23 m/sec





Test Desc: Thorax Impact
Component ID: D072882

Test Date: 9/17/07
Speed: 13.89 ft/sec, 4.23 m/sec



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

ATD Serial No: 271

Test I.D: D072883

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	39	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	44	Pass
Overall Test Results			Pass	


Laboratory Technician

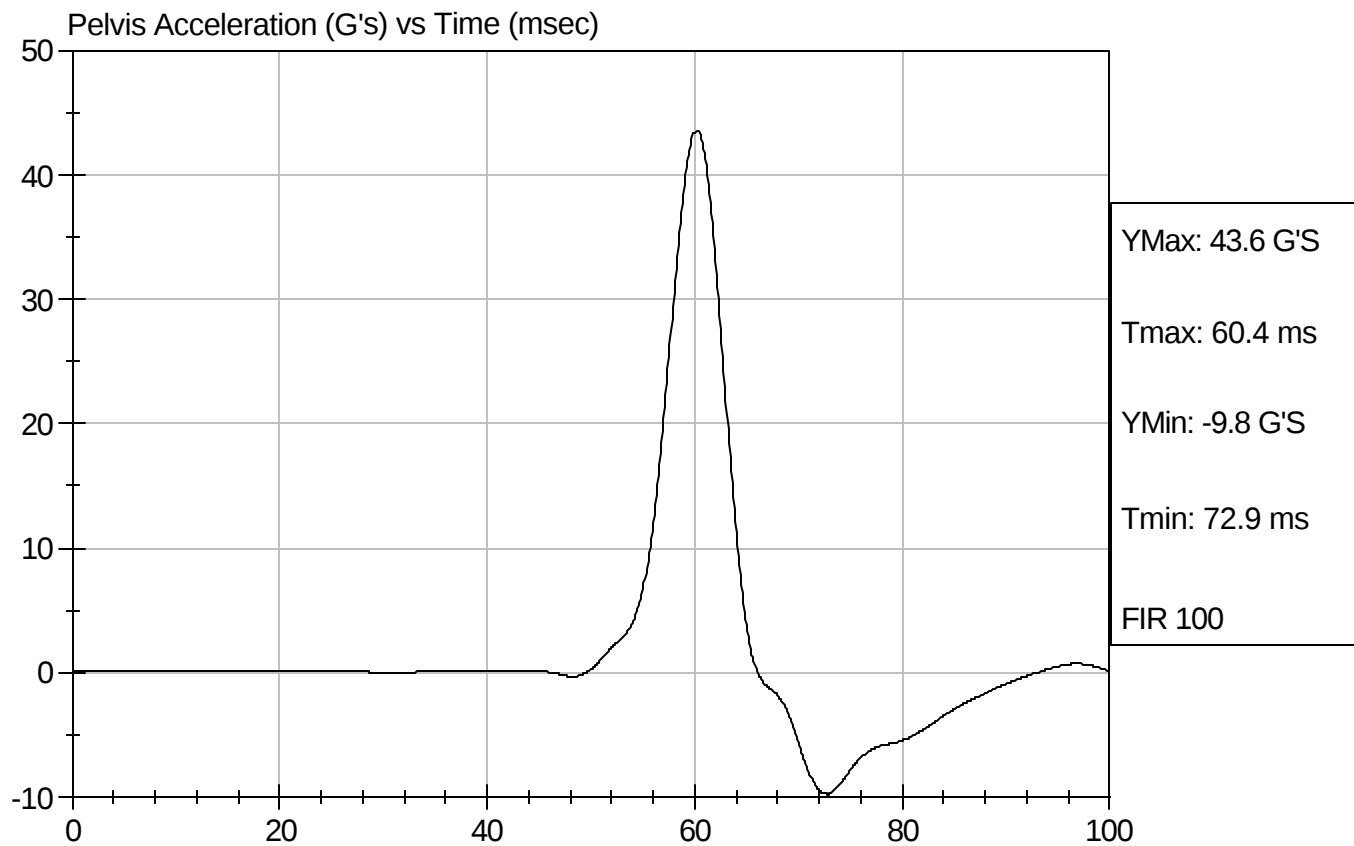

Approved By

9/17/07
Test Date



Test Desc: Pelvis Impact
Component ID: D072883

Test Date: 9/17/07
Speed: 14.1 ft/sec, 4.30 m/sec



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

ATD Serial No: 271

Test I.D: D072884

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	39	Pass
Force At 12.7 mm	N	104 -162	144	Pass
Force At 19 mm	N	163 - 222	199	Pass
Force At 25.4 mm	N	222 - 280	271	Pass
Force At 33 mm	N	325 - 391	364	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

9/17/07
Test Date

David Winkelbauer
Approved By

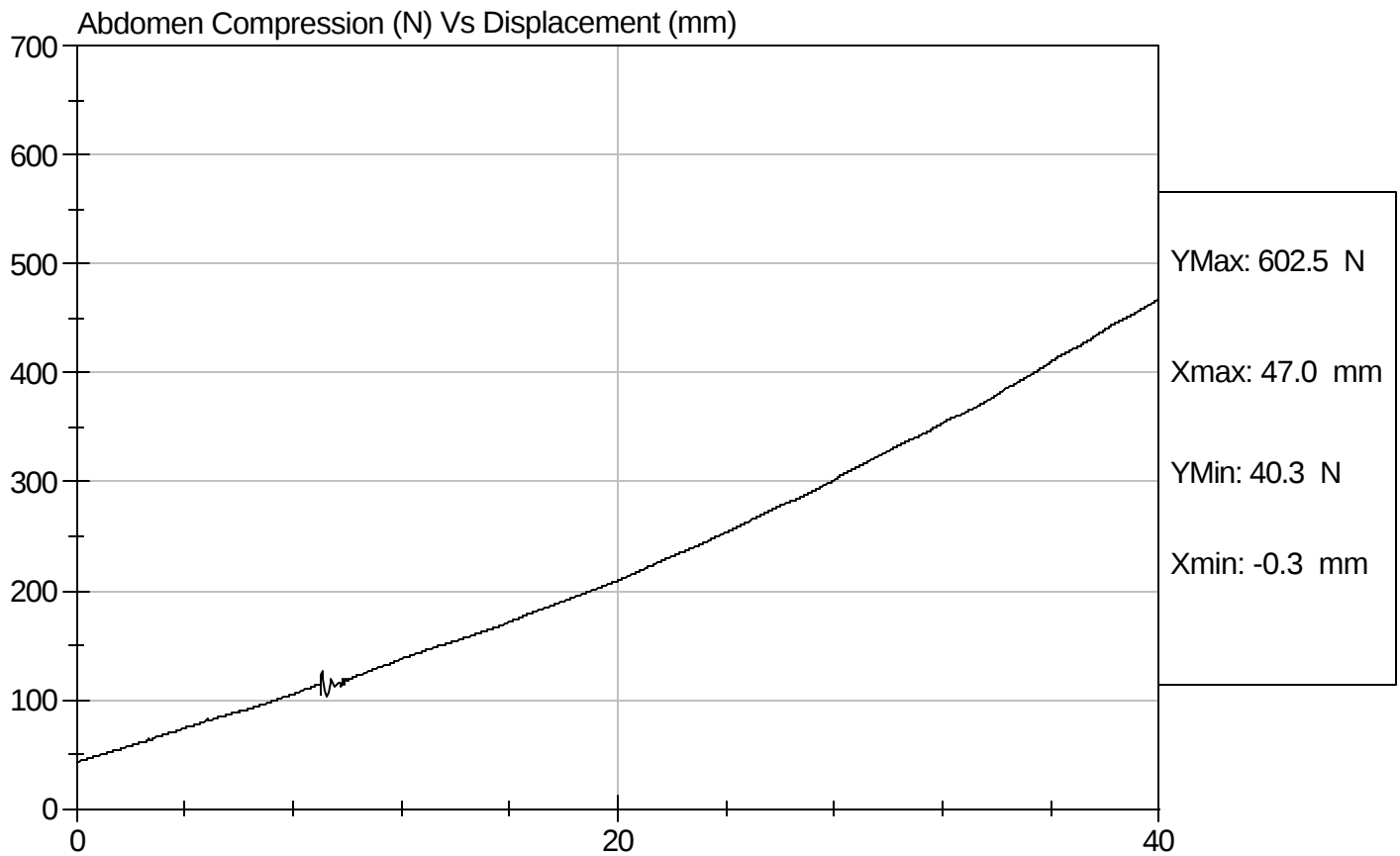


Test Description: Abdomen Compression

Test Date: 9/17/07

Component: D072884

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 271

Test I.D: D072885

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	41	Pass
Force At 0 deg	N	0 - 26.7	0	Pass
Force At 20 deg	N	97.9 - 151.2	118.7	Pass
Force At 30 deg	N	151.2 - 204.6	167.5	Pass
Force At 40 deg	N	204.6 - 258.0	233.7	Pass
Return Angle	Deg	12 Maximum	4	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

9/17/07
Test Date

David Winkelbauer
Approved By

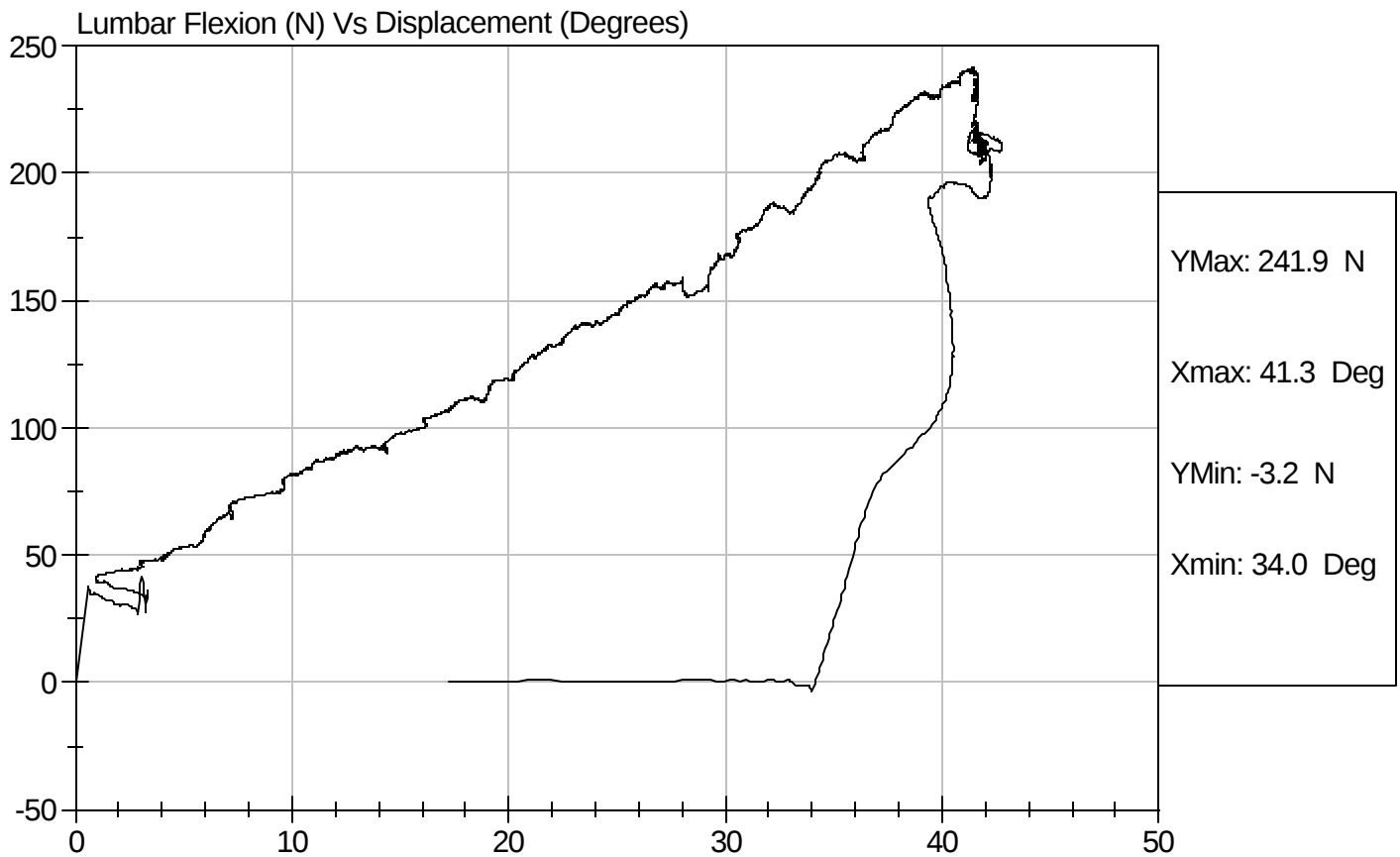


Test Description: Lumbar Flexion

Test Date: 9/17/07

Component: D072885

Speed: 0 ft/sec, 0 m/sec



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

ATD Serial No: 271

Test I.D: D072889

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	20.6	Pass
Laboratory Relative Humidity		%	10 to 70	42	Pass
Impact Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.14	Pass
	20 msec	m/s	4.12 to 5.10	4.39	Pass
	30 msec	m/s	5.73 to 7.01	6.22	Pass
	40 to 70 msec	m/s	6.27 to 7.64	6.81	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	70	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	59	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	75	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	63	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	15	Pass


 Laboratory Technician

9/17/07

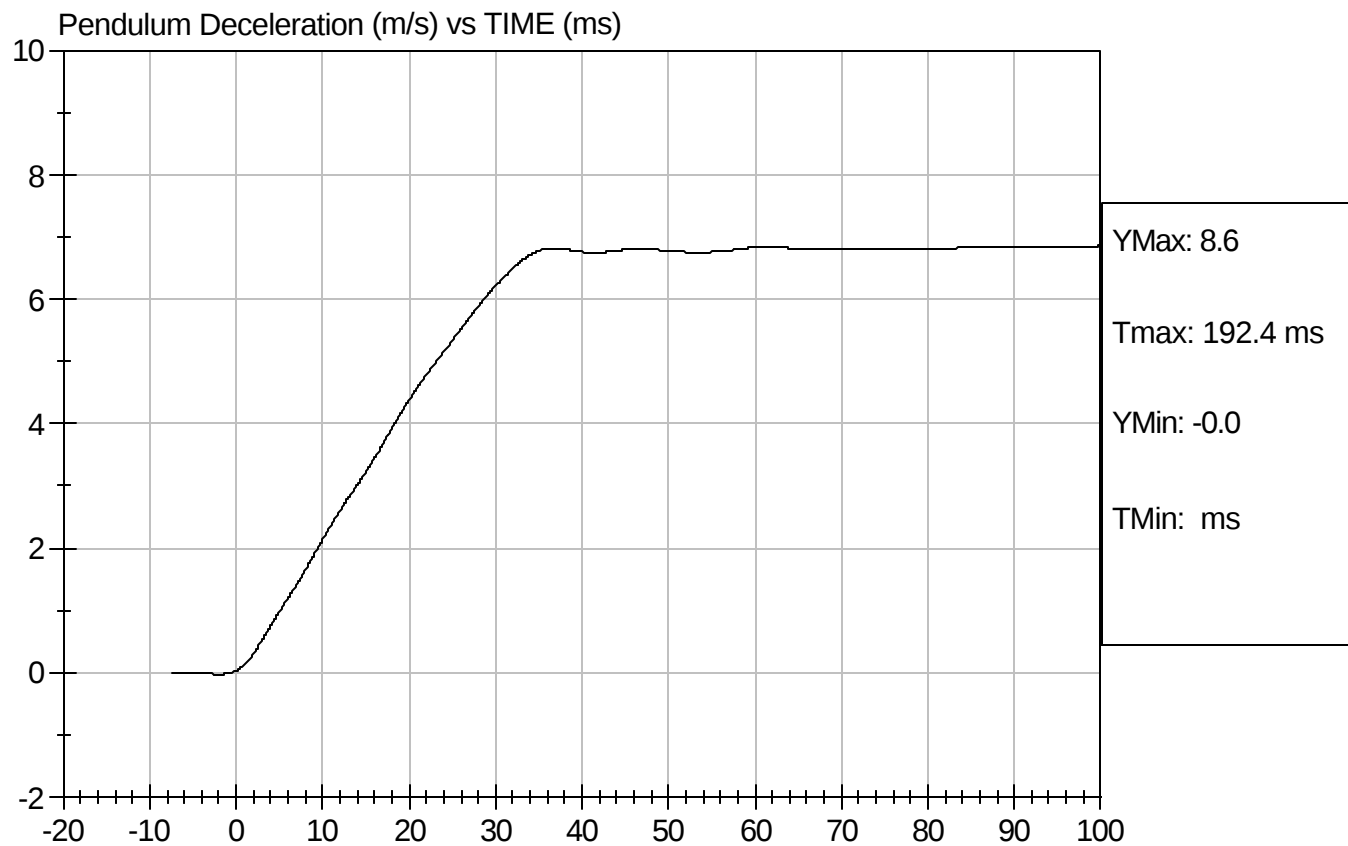
Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D072889

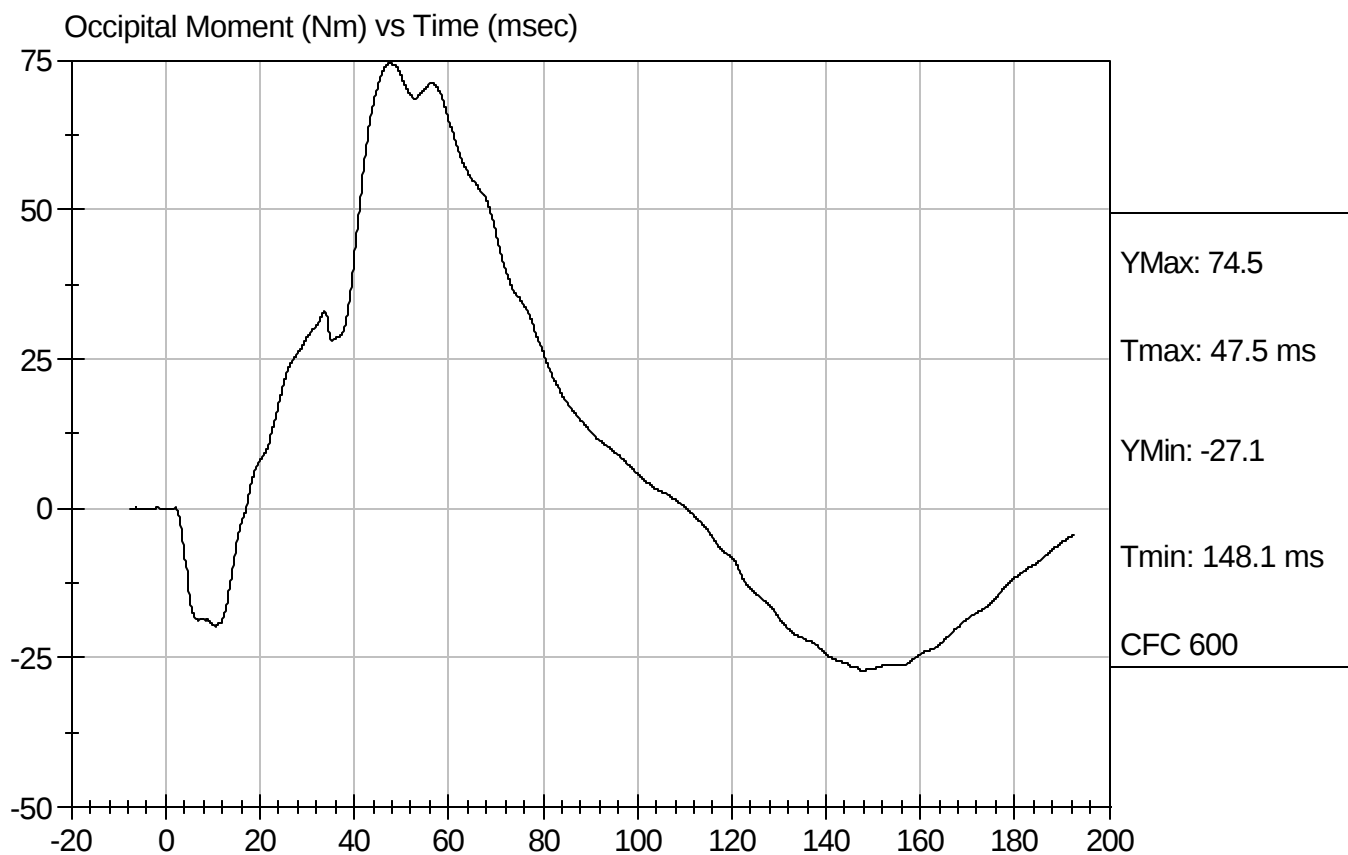
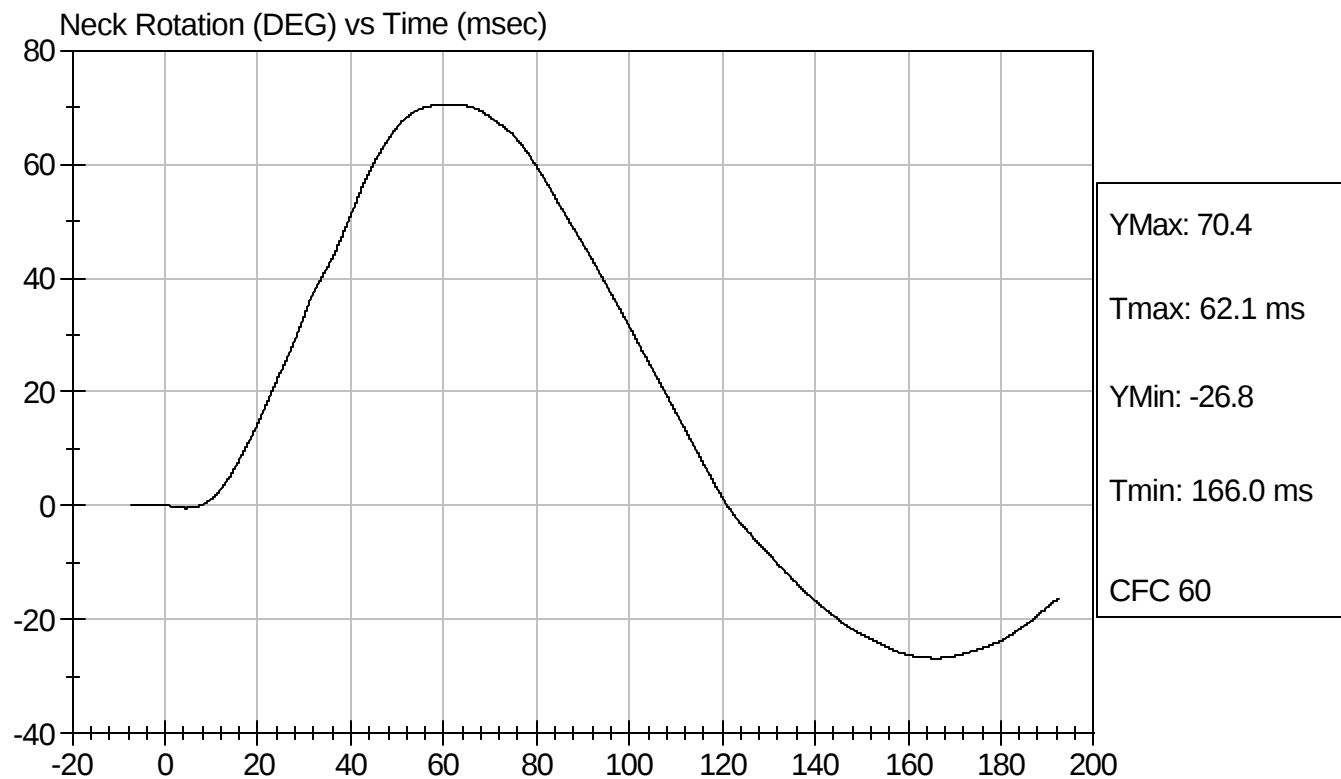
Test Date: 9/17/07
Speed: 23.148 ft/sec, 7.06 m/sec





Test Desc: Neck Bending
Component ID: D072889

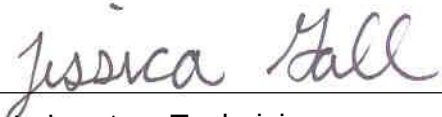
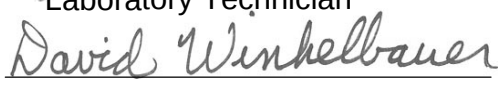
Test Date: 9/17/07
Speed: 23.148 ft/sec, 7.06 m/sec



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


Laboratory Technician

Approved By

9/17/2007
Test Date

APPENDIX D
CHILD DUMMY DATA

SUMMARY OF TEST

Measurement Description	Units	Threshold	P3 ATD
Head Injury Criteria (HIC36)	N/A	N/A	196
Head Injury Criteria (HIC15)	N/A	390	106
Max. Thorax Accel. (3msec Clip)	G's	50	34

The child dummy was instrumented with head, chest, and upper six axial neck force and moment sensors.

The right rear (Position 3) child dummy (S/N 093) was calibrated previous to this test. Child dummy certification information can be found in this Appendix.

Position 3 was rear facing and used the vehicle LATCH attachment.

TEST VEHICLE WEIGHTS

	Units	As Tested (ATW) (Axle)		
		Front	Rear	Total
Left	kg	479.0	451.8	
Right	kg	409.1	442.7	
Ratio	%	49.8	50.2	
Totals	kg	888.1	894.5	1782.6

As tested weight of vehicle includes two ATDs, one CRABI with CRS, cargo, equipment and instrumentation.

TEST NOTES

None

TEST DUMMY INFORMATION

Description	Position 3 CRS
Dummy Type / Serial No.	12 month old CRABI / 093
Number of Data Channels	12
Restraint System	Graco Snugride (Rear Facing)

POST TEST SEAT DATA

Location	Seat Movement (mm)	Seat Back Failure
P1 (Left Front)	0	None
P2 (Right Front)	0	None
P3 (Right Rear)	0	None
P4 (Left Rear)	0	None

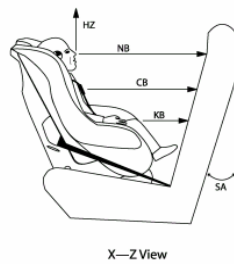
VISIBLE DUMMY CONTACT POINTS

Description	Position 3 CRS
Head Contact	Head to LR Passenger
Upper Torso Contact	None
Lower Torso Contact	None
Left Foot Contact	None
Right Foot Contact	Foot to RR Seat Back

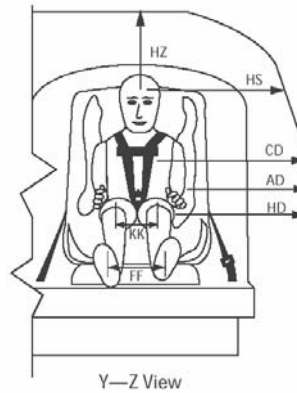
CHILD DUMMY POSITIONING IN VEHICLE

Child Restraint System (Position 3)	Graco Snugride (Rear Facing)
NHTSA No.	M80208

Dummy Measurements for Rear-facing CRS Passengers



HZ	-	Head to Roof
NB	-	Nose to Front of Back Seat
CB	-	Chest to Front of Back Seat
KB	-	Knee to Front of Back Seat
SA	-	Seat Back Angle



X—Z View

HZ	-	Head to Roof
HS	-	Head to Side Window
CD	-	Chest to Door
AD	-	Arm to Door
HD	-	H-Point to Door
KK	-	Knee to Knee
FF	-	Foot to Foot
NB	-	Nose to Front Seat Back
CB	-	Chest to Front Seat Back
KB	-	Knee to Front Seat Back
TB	-	Toe to Front Seat Back
SA	-	Seat Back Angle

Measurement	Pre-Test (mm)	Post-Test (mm)
	P3 CRS (093)	P3 CRS (093)
SA (deg)	Fixed	
HS	350	441
CD	334	365
AD	157	215
HD	201	272
HZ	357	391
NB	496	521
CB	419	428
KK	96	110
FF	97	131
KB - LEFT	189	218
KB - RIGHT	187	220
TB - LEFT	50	70
TB - RIGHT	58	52

All dimensions in mm (unless noted)
P3 – Right Rear Passenger (Rear Facing)

CRS PERFORMANCE DATA

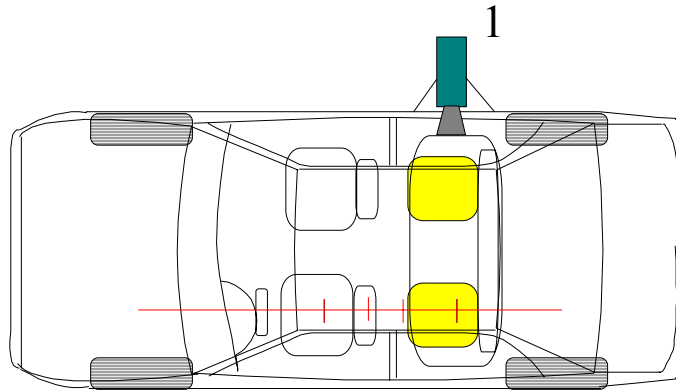
Child Restraint System (Position 3)	Graco Snugride (Rear Facing)
NHTSA No.	M80208

POSITION 3 CRS POST-TEST INSPECTION

Location	Damage	Remarks
Upper Tether Strap		
Upper Tether Buckle		
Upper Tether Hook		
Vehicle Upper Tether Anchor		
Lower Anchor Strap	None	
Lower Anchor Buckle	None	
Lower Anchor Hooks	None	
Vehicle Lower CRS Anchors	None	
Harness Connections	None	
Cracks on CRS	None	
Fabric Tears on CRS	None	
Vehicle Seat Structure	None	
Vehicle Seat Fabric Tears	None	
Child Dummy	None	CRABI 12 Month Old

CRS CAMERA DATA

Child Restraint System (Position 3)	Graco Snugride (Rear Facing)
NHTSA No.	M80208



No.	Camera View	Location (mm) *			Angle (deg)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Vehicle Onboard Rear SID/HIII, Side					8	1000

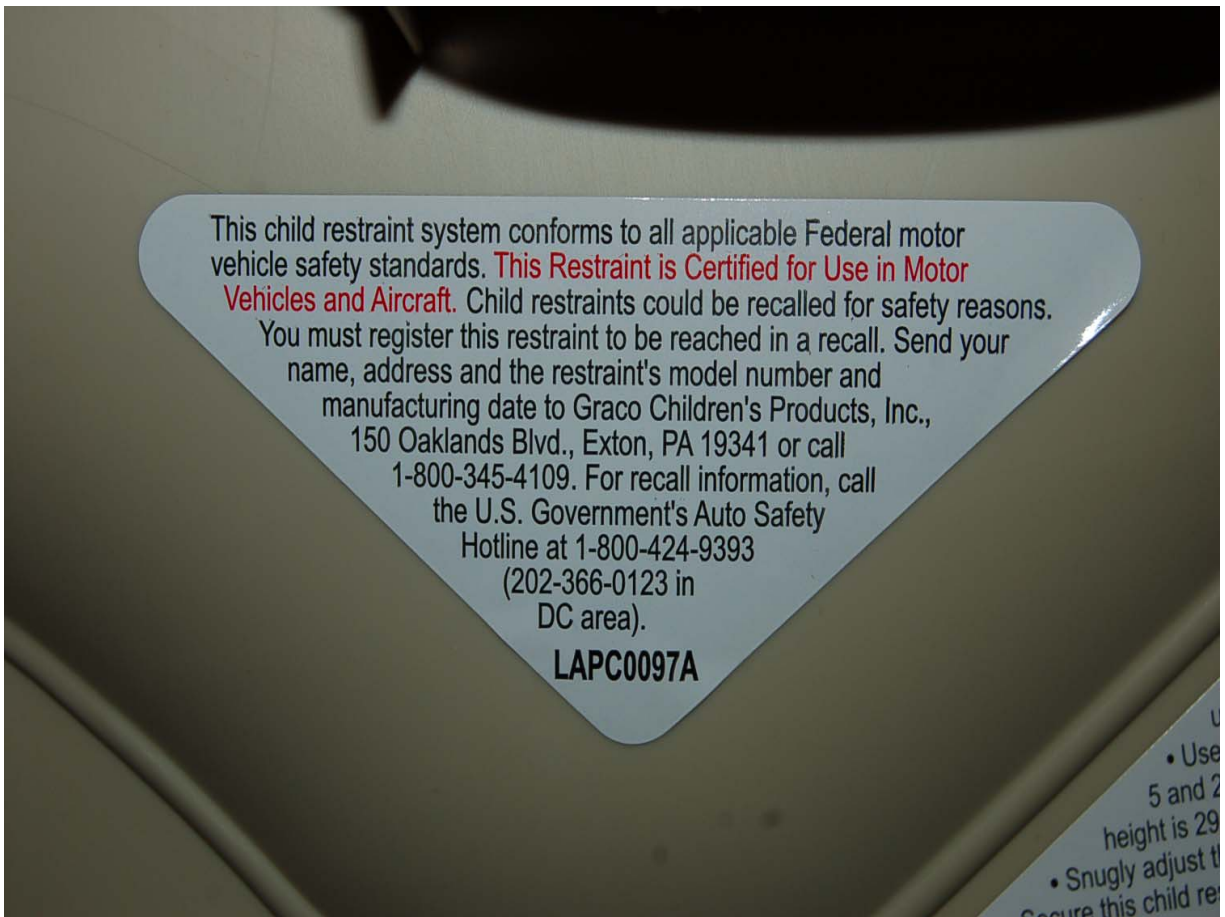
***COORDINATES:**

- +X = film plane rearward of barrier
- +Y = film plane to right of monorail centerline
- +Z = film plane above ground level

PHOTOGRAPHS

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Figure No. 3.	Post-Test Front View of Position 3 CRS	D-8
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Figure No. 5.	Post-Test Rear View of Position 3 CRS	D-9
Figure No. 6.	Pre-Test Left Side View of Position 3 CRS	D-10
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Figure No. 8.	Pre-Test Right Side View of Position 3 CRS	D-11
Figure No. 9.	Post-Test Right Side View of Position 3 CRS	D-11
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Figure No. 11.	Post-Test Position 3 Right Side View	D-12



Close-up View of Position 3 CRS Label



Pre-Test Front View of Position 3 CRS



Post-Test Front View of Position 3 CRS



Pre-Test Rear View of Position 3 CRS



Post-Test Rear View of Position 3 CRS



Pre-Test Left Side View of Position 3 CRS



Post-Test Left Side View of Position 3 CRS



Pre-Test Right Side View of Position 3 CRS



Post-Test Right Side View of Position 3 CRS



Pre-Test Position 3 Right Side View



Post-Test Position 3 Right Side View

CHILD DUMMY RESPONSE DATA TRACES

TABLE OF DATA PLOTS

		<u>Page No.</u>
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Figure No. 12.	RRP Child Head X Acceleration vs. Time	D-14
Figure No. 13.	RRP Child Head Y Acceleration vs. Time	D-14
Figure No. 14.	RRP Child Head Z Acceleration vs. Time	D-14
Figure No. 15.	RRP Child Head Resultant Acceleration vs. Time	D-14
Figure No. 16.	RRP Child Neck X Force vs. Time	D-15
Figure No. 17.	RRP Child Neck Y Force vs. Time	D-15
Figure No. 18.	RRP Child Neck Z Force vs. Time	D-15
Figure No. 19.	RRP Child Neck Resultant Force vs. Time	D-15
Figure No. 20.	RRP Child Neck X Moment vs. Time	D-16
Figure No. 21.	RRP Child Neck Y Moment vs. Time	D-16
Figure No. 22.	RRP Child Neck Z Moment vs. Time	D-16
Figure No. 23.	RRP Child Neck Resultant Moment vs. Time	D-16
Figure No. 24.	RRP Child Chest X Acceleration vs. Time	D-17
Figure No. 25.	RRP Child Chest Y Acceleration vs. Time	D-17
Figure No. 26.	RRP Child Chest Z Acceleration vs. Time	D-17
Figure No. 27.	RRP Child Chest Resultant Acceleration vs. Time	D-17

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

RRP Child Seat X Acceleration vs. Time

RRP Child Seat Y Acceleration vs. Time

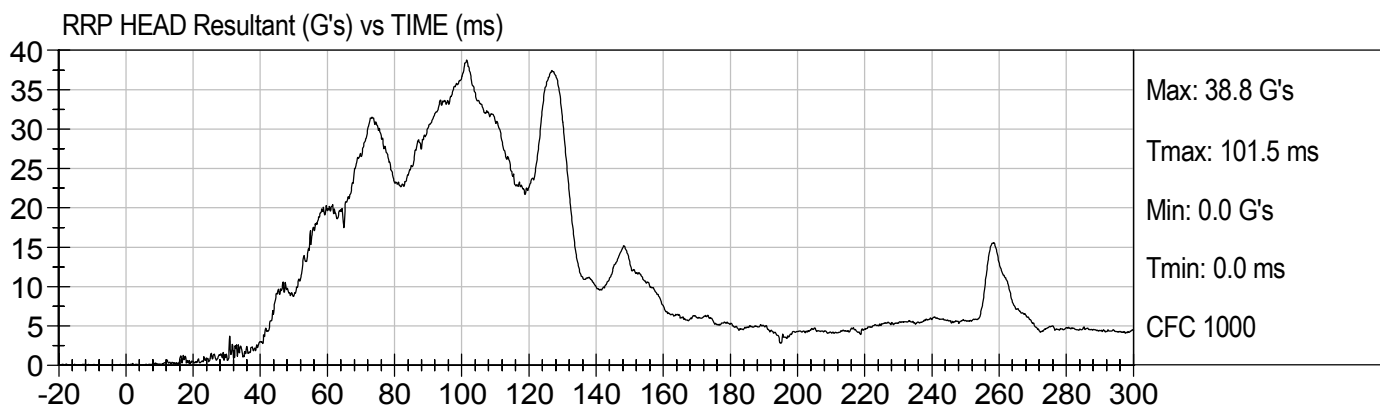
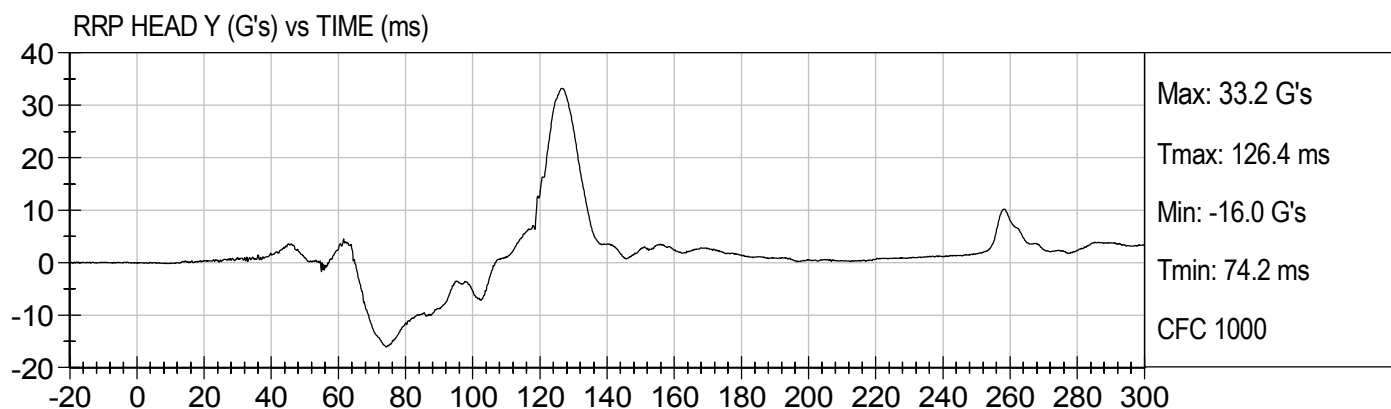
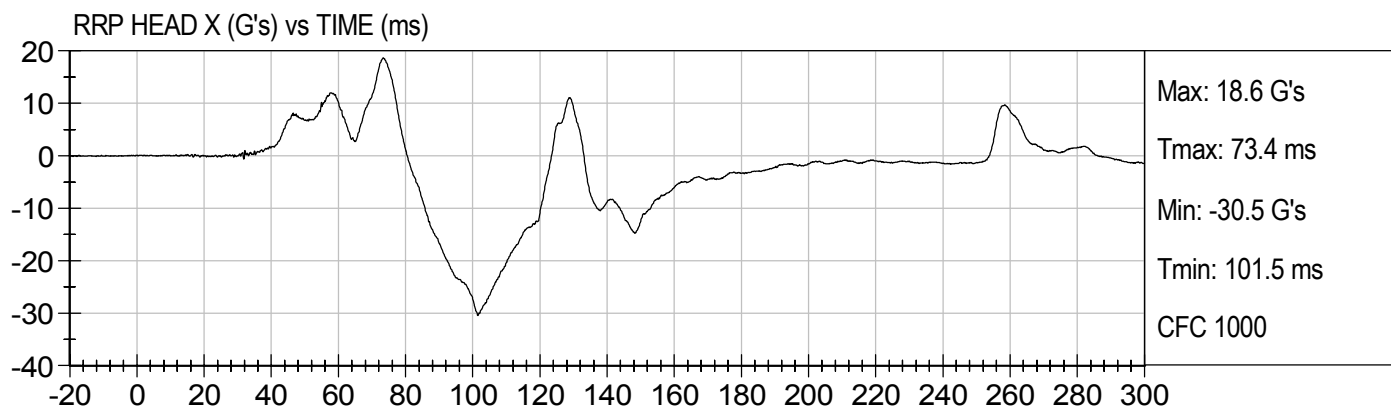
RRP Child Seat Z Acceleration vs. Time

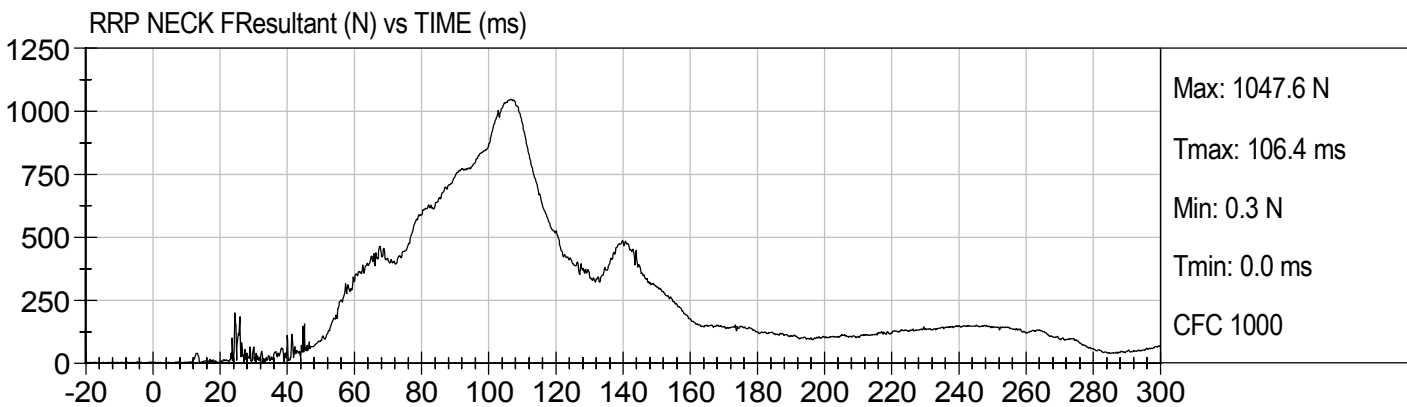
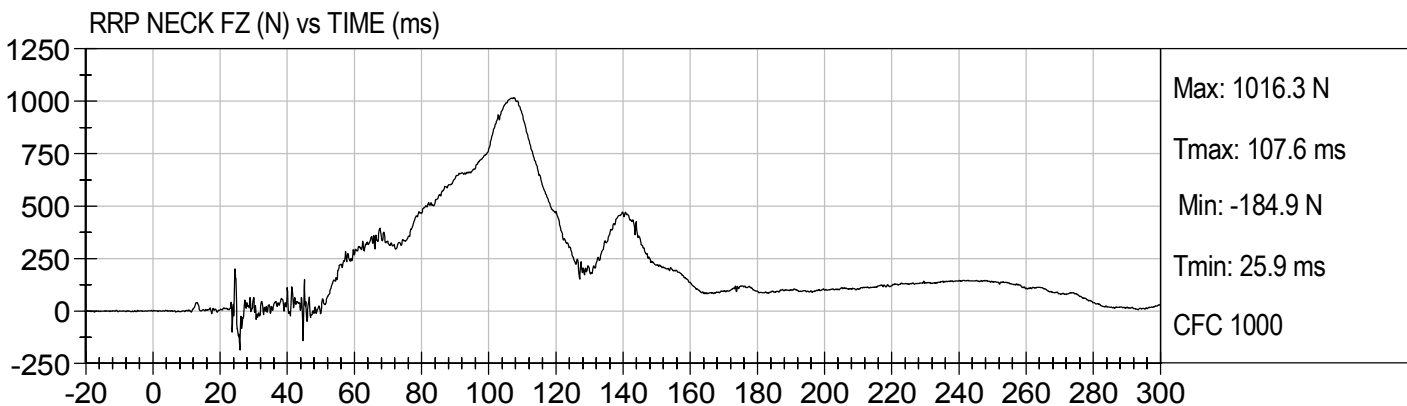
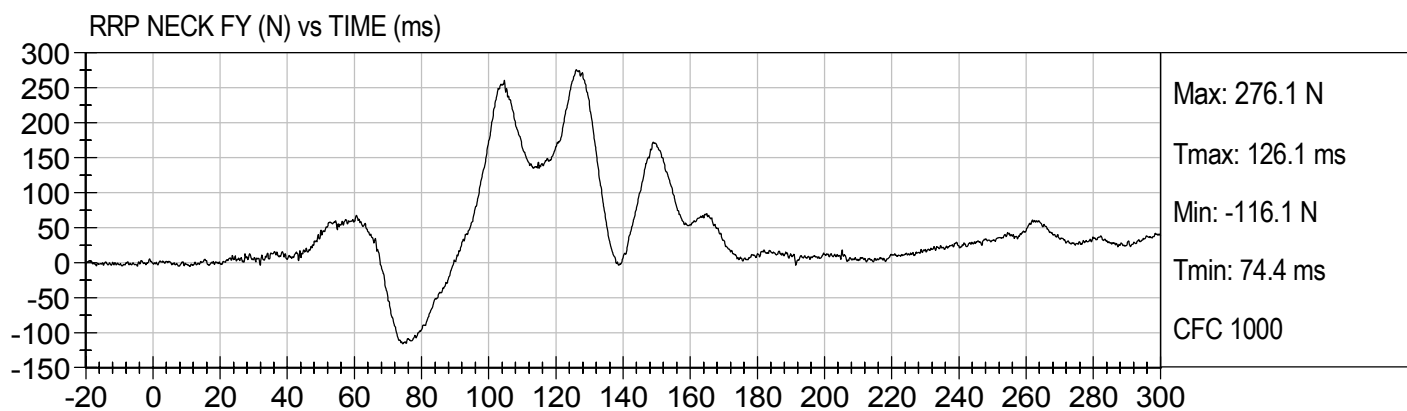
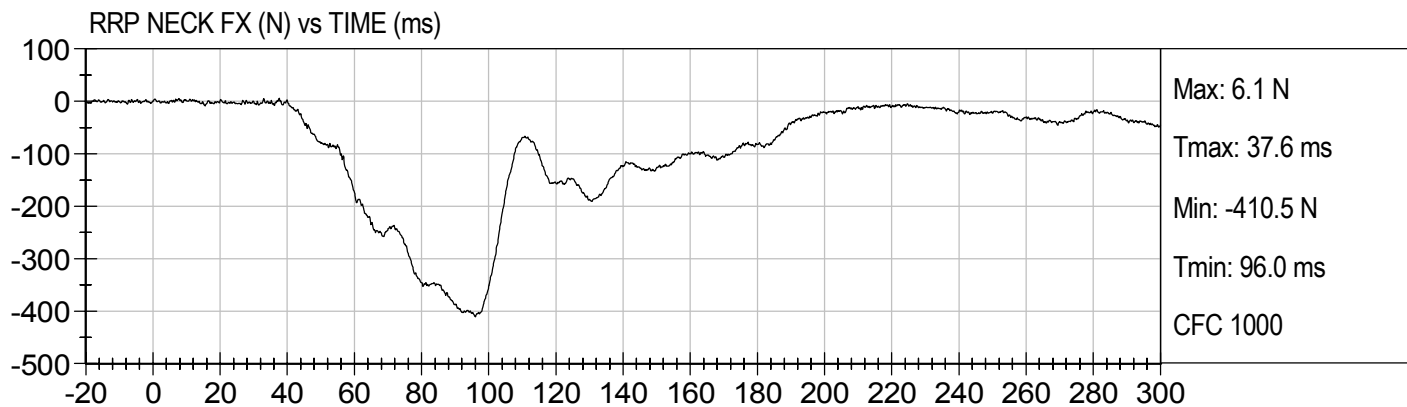
RRP Child Seat Resultant Acceleration vs. Time

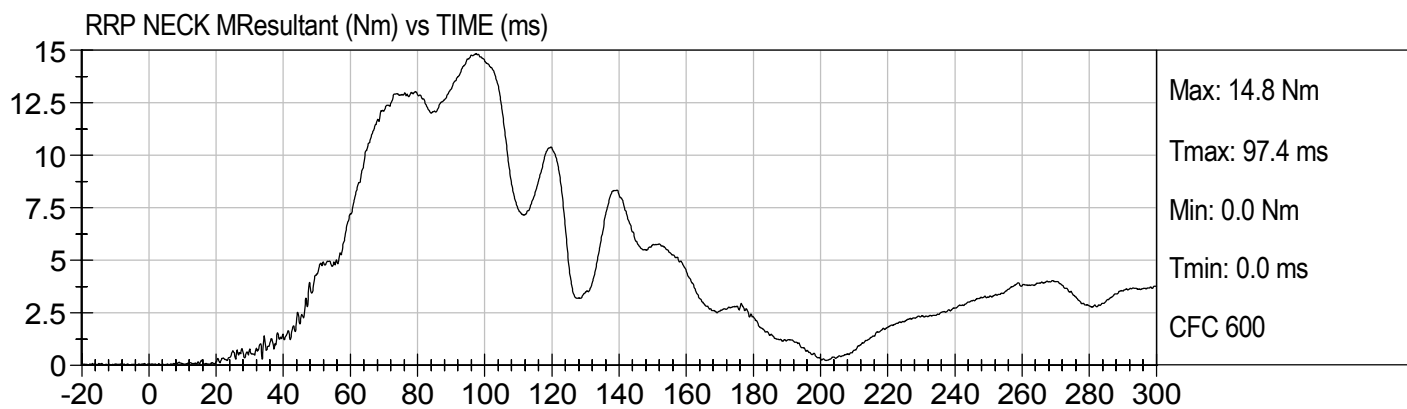
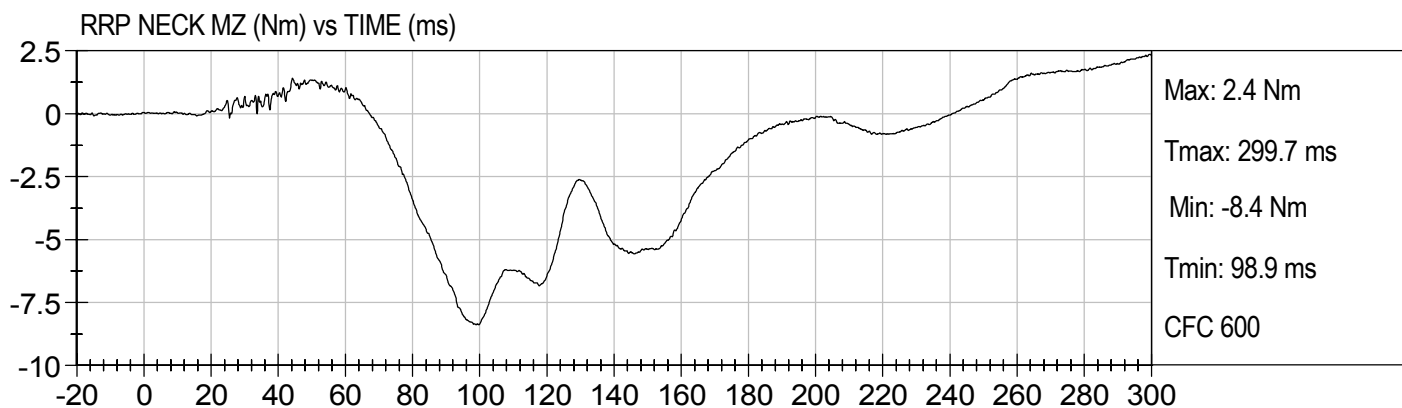
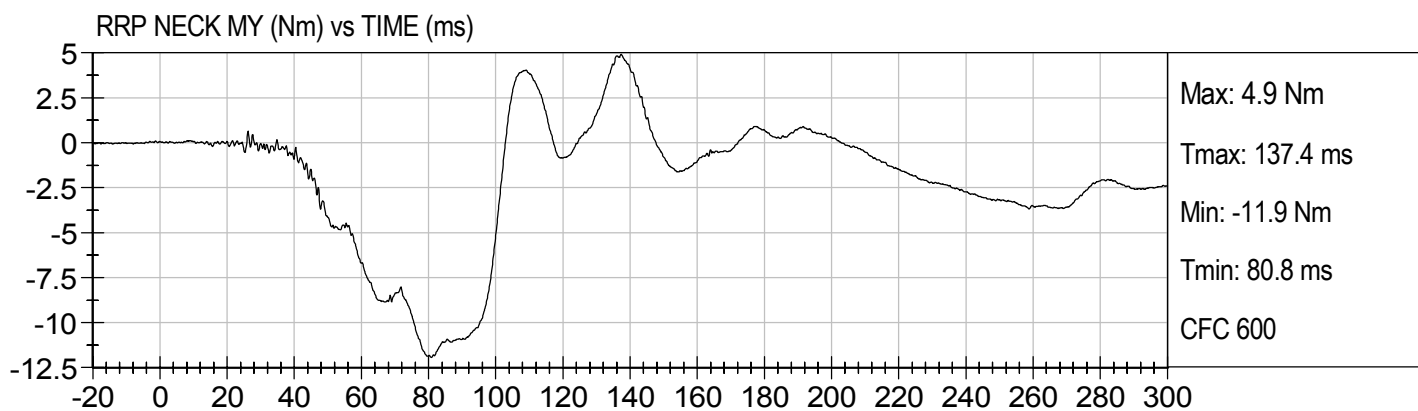
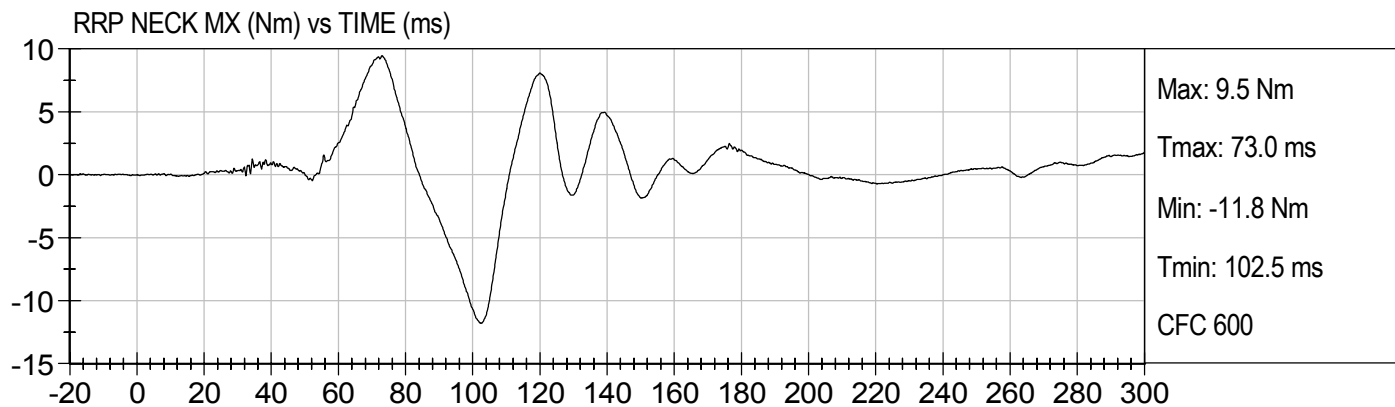


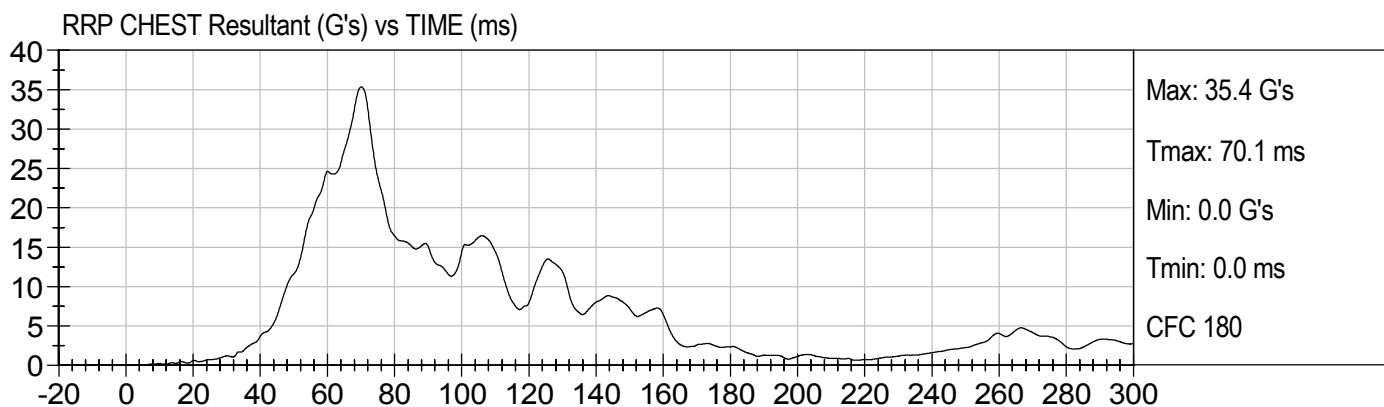
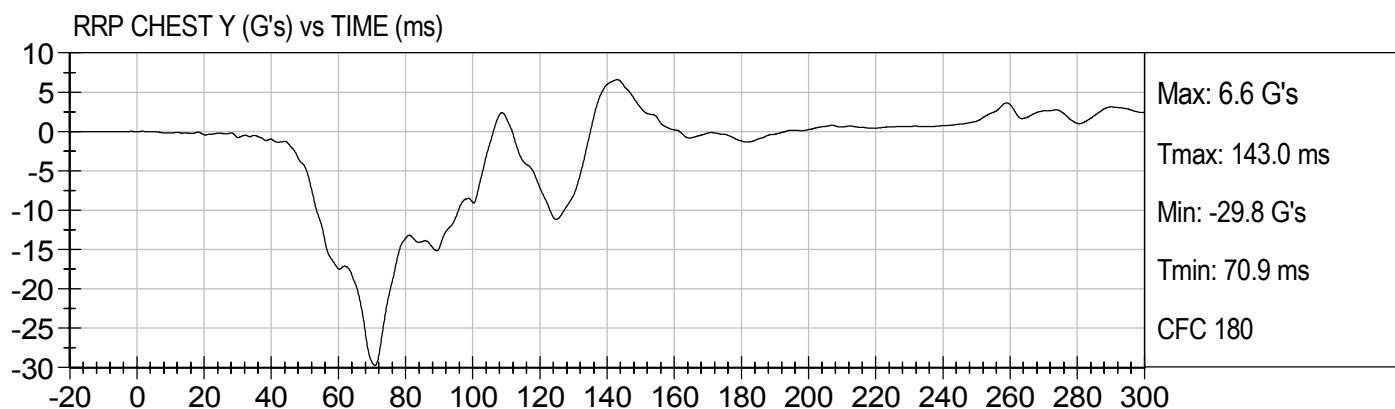
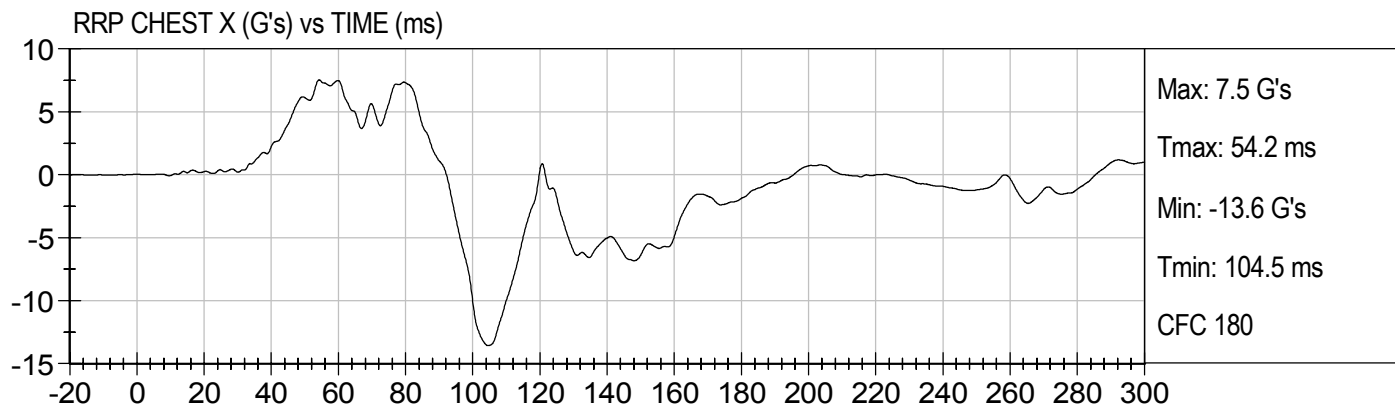
NCAP LEFT SIDE
2008 FORD MUSTANG CONVERTIBLE M80208

Test Date: 09/14/2007
Speed: 38.8 mph (62.4 km/h)









CHILD DUMMY CALIBRATION INFORMATION

MGA RESEARCH CORPORATION
FRONT HEAD DROP TEST
CRABI 12 MONTH

ATD Serial No: 093

Test ID: D072541

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Peak Resultant Acceleration	G's	100 to 120	110	Pass
Peak Lateral Acceleration	G's	+/- 15	-3	Pass
Unimodal	N/A	within 17% of peak	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

8/23/07
Test Date

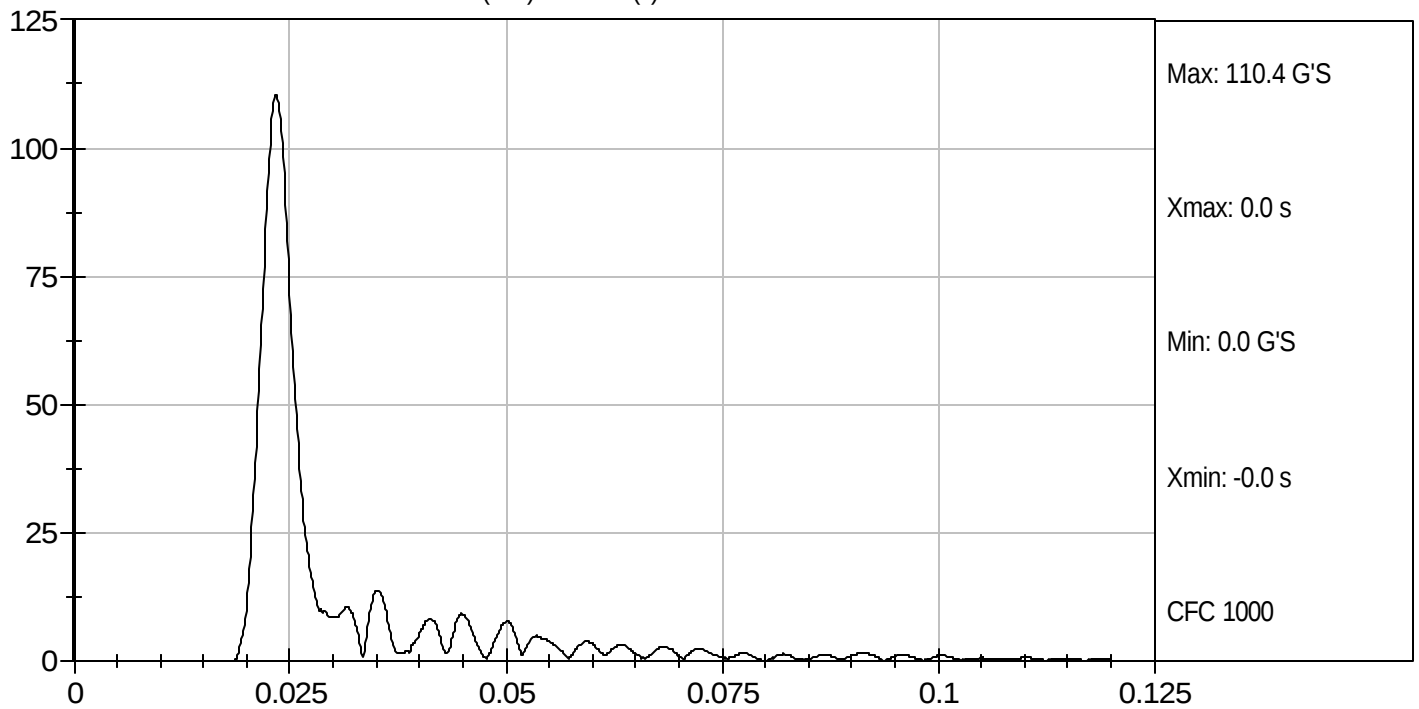

Approved By



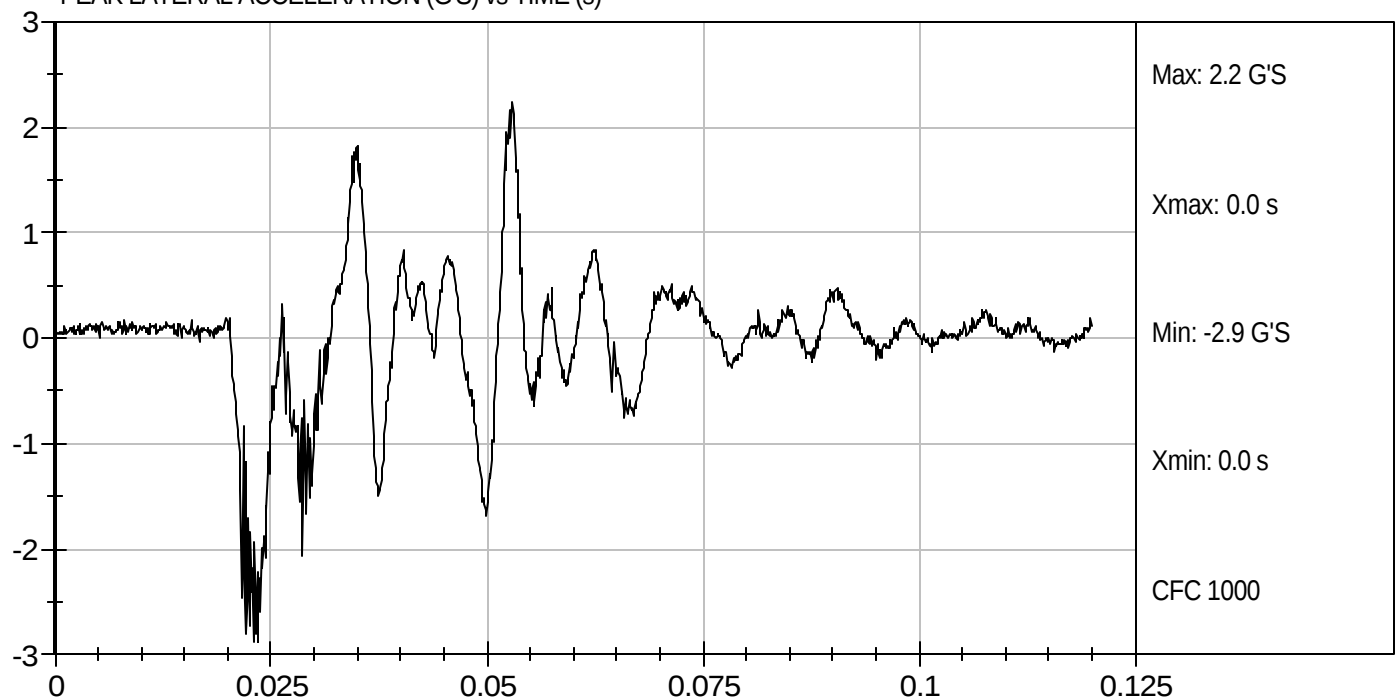
Test Desc: Head Drop
Component ID: D072541

Test Date: 8/23/07
Velocity: 0 ft/s, 0 m/s

PEAK RESULTANT ACCELERATION (G'S) vs TIME (s)



PEAK LATERAL ACCELERATION (G'S) vs TIME (s)



MGA RESEARCH CORPORATION
NECK FLEXION TEST
CRABI 12 MONTH

ATD Serial No: 093

Test I.D: D072542

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	20.8	Pass
Humidity		%	10 to 70	46	Pass
Impact Velocity		m/s	5.1 to 5.3	5.2	Pass
Pendulum Deceleration	10 msec	m/s	1.6 to 2.3	1.9	Pass
	20 msec	m/s	3.4 to 4.2	3.6	Pass
	25 msec	m/s	4.3 to 5.2	4.4	Pass
D Plane Rotation		deg	75.0 to 86.0	83.1	Pass
Moment About Occipital Condyle		Nm	36.0 to 45.0	40.2	Pass
Positive Moment - Time Curve Decay to 5 Nm		msec	60 to 80	74	Pass
Overall Test Results				Pass	



Laboratory Technician

8/23/07

Test Date



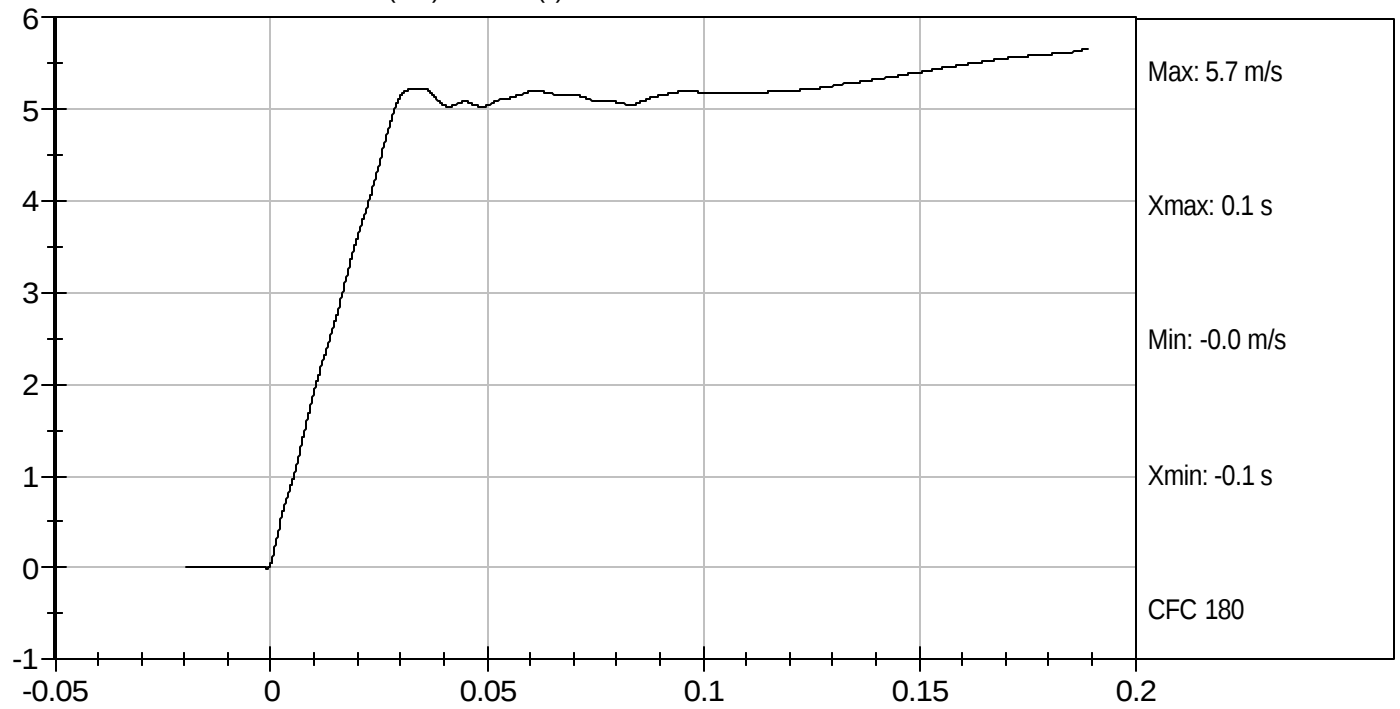
Approved By



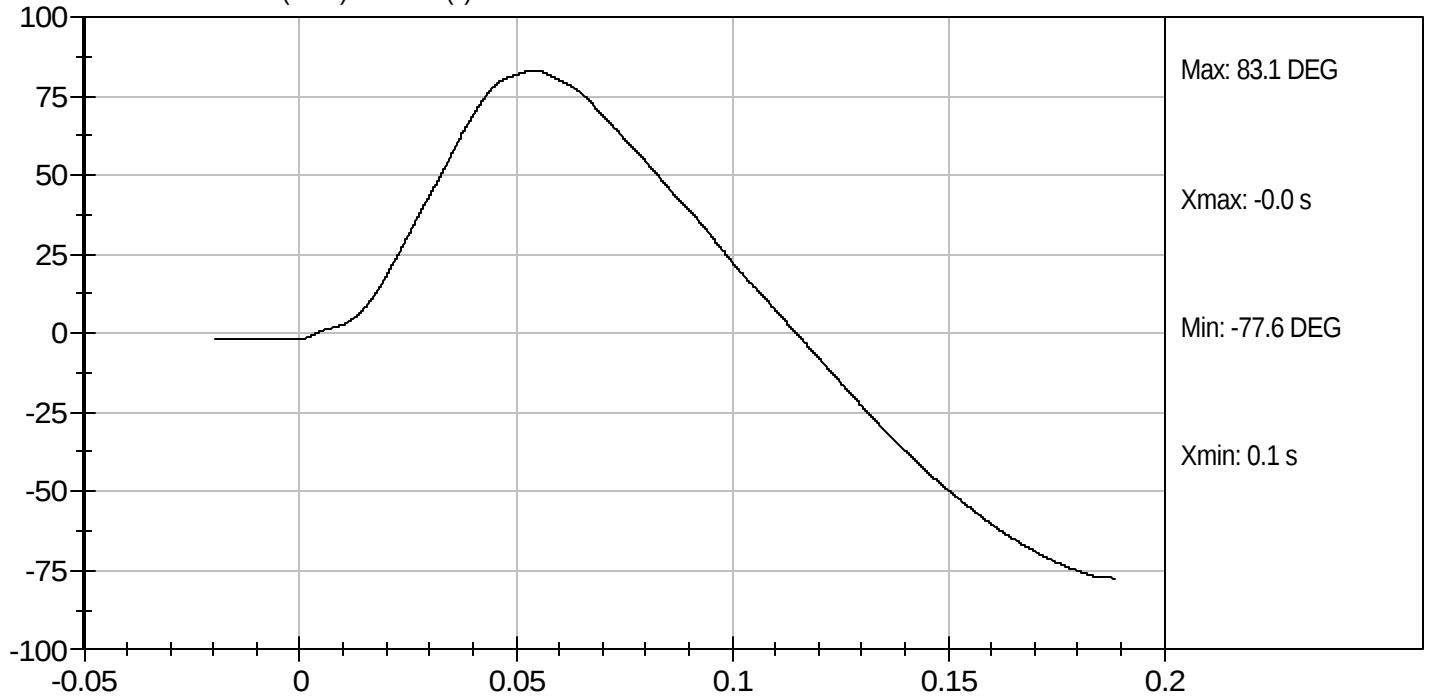
Test Desc: Neck Flexion
Component ID: D072542

Test Date: 8/23/07
Velocity: 17.006 ft/s, 5.2 m/s

PENDULUM DECELERATION (m/s) vs TIME (s)



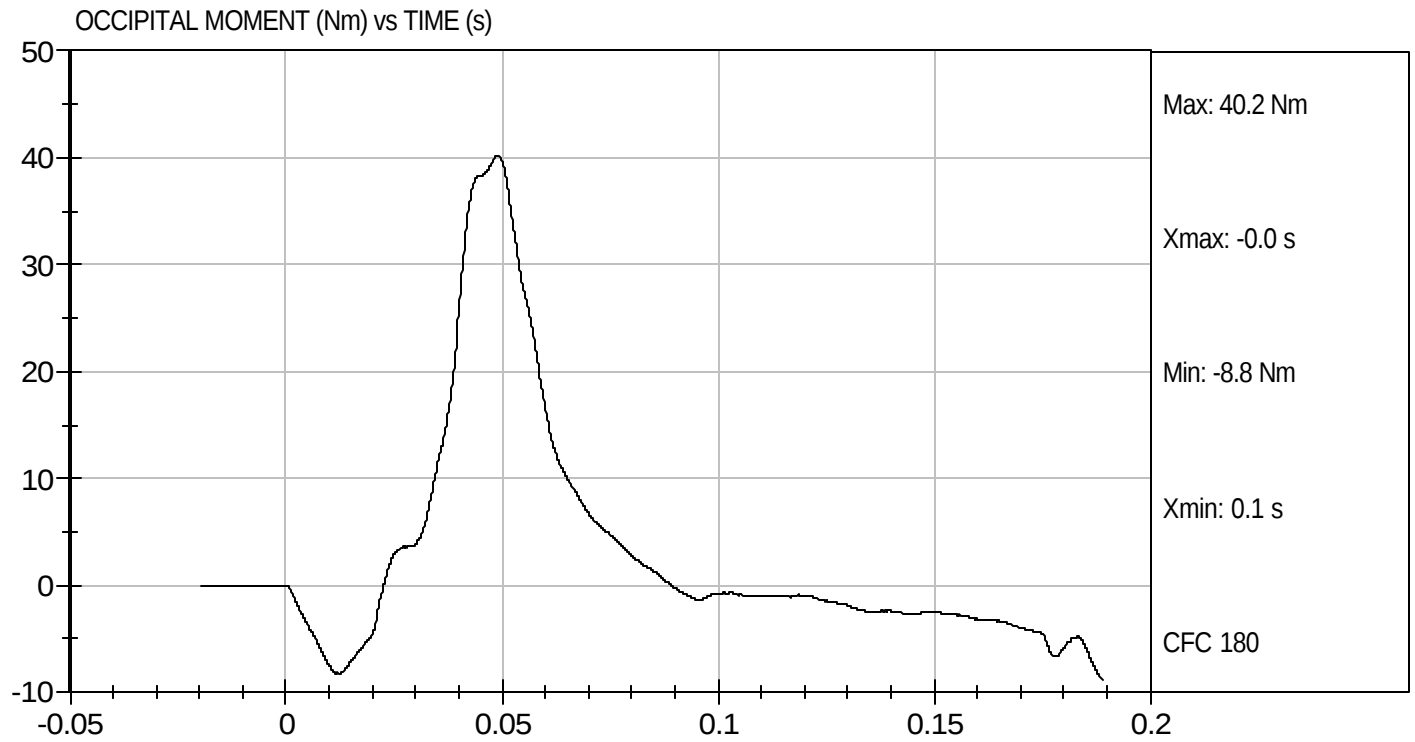
FLEXION ANGLE (DEG) vs TIME (s)





Test Desc: Neck Flexion
Component ID: D072542

Test Date: 8/23/07
Velocity: 17.006 ft/s, 5.2 m/s



MGA RESEARCH CORPORATION
NECK EXTENSION TEST
CRABI 12 MONTH

ATD Serial No: 093

Test I.D: D072543

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	20.8	Pass
Humidity		%	10 to 70	46	Pass
Pendulum Speed		m/s	2.4 to 2.6	2.5	Pass
Pendulum Deceleration	6 msec	m/s	0.8 to 1.2	1.0	Pass
	10 msec	m/s	1.5 to 2.1	2.0	Pass
	14 msec	m/s	2.2 to 2.9	2.3	Pass
D Plane Rotation		deg	80.0 to 92.0	80.3	Pass
Moment About Occipital Condyle		Nm	-23.0 to -12.0	-19.1	Pass
Negative Moment - Time Curve Decay to -5 Nm		msec	76 to 90	77	Pass
Overall Test Results				Pass	


 Laboratory Technician

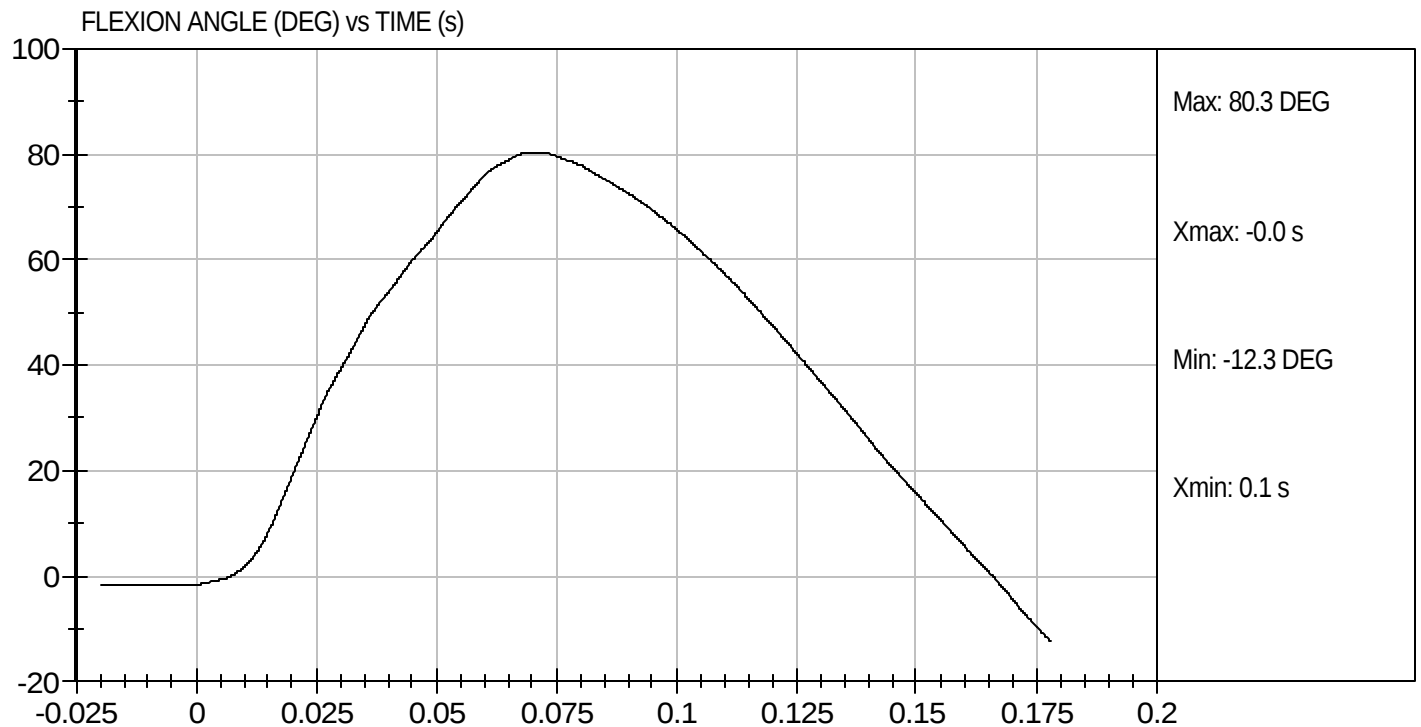
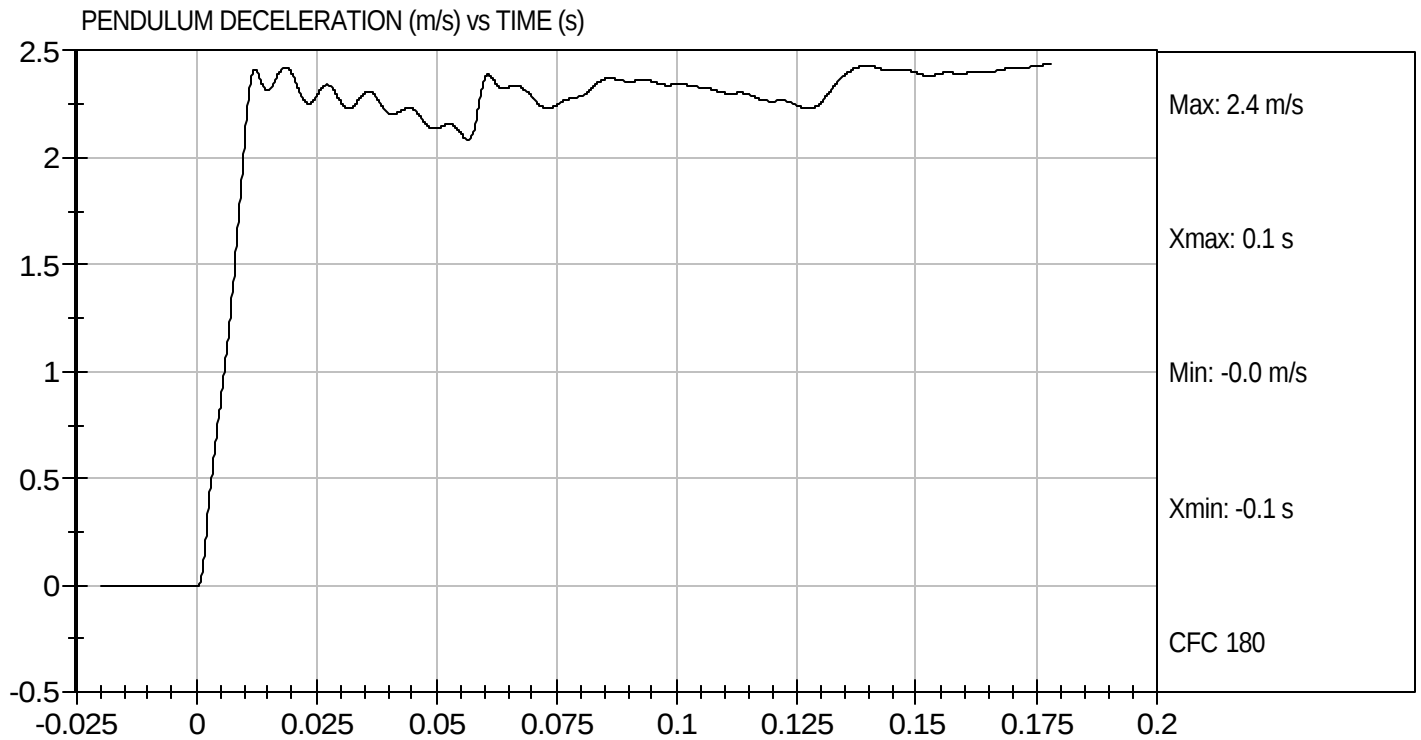
8/23/07
 Test Date


 Approved By



Test Desc: Neck Extension
Component ID: D072543

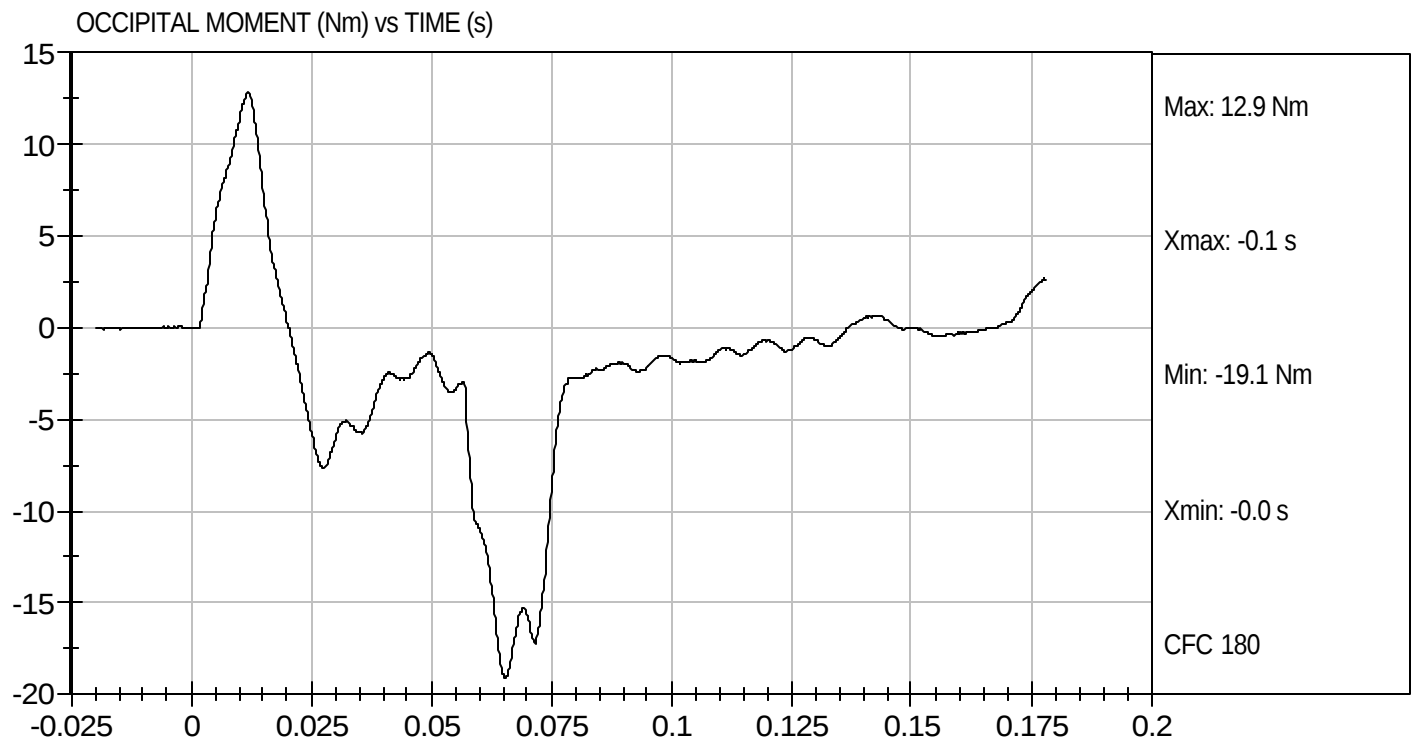
Test Date: 8/23/07
Velocity: 8.33 ft/s, 2.5 m/s





Test Desc: Neck Extension
Component ID: D072543

Test Date: 8/23/07
Velocity: 8.33 ft/s, 2.5 m/s



MGA RESEARCH CORPORATION
THORAX IMPACT TEST
CRABI 12 MONTH

ATD Serial No: 093

Test I.D: D072544

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	20.6	Pass
Laboratory Relative Humidity	%	10 to 70	43	Pass
Probe Speed	m/sec	4.9 to 5.1	5.03	Pass
Probe Force	kN	1.51 to 1.80	1.55	Pass
Overall Test Results				Pass


Laboratory Technician

8/23/07

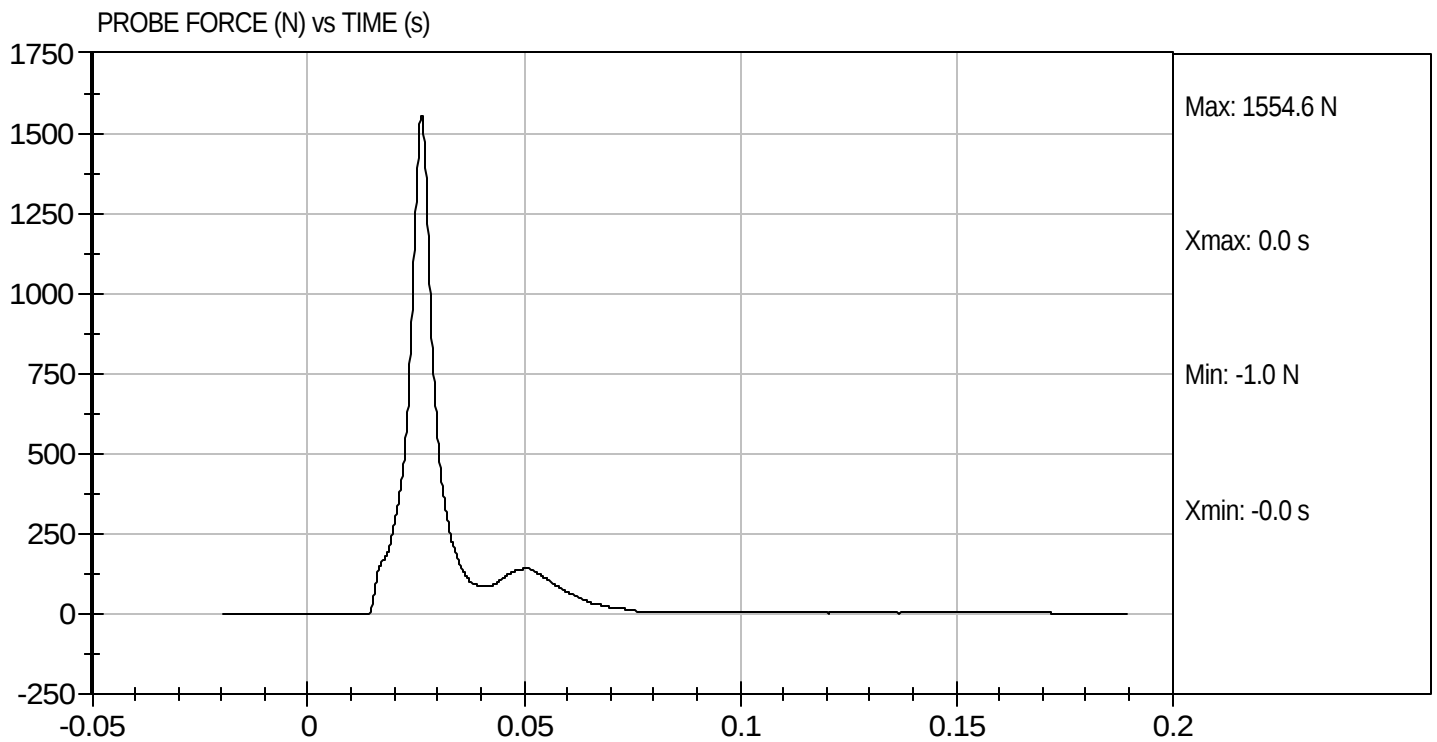
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D072544

Test Date: 8/23/07
Velocity: 16.5 ft/s, 5.03 m/s

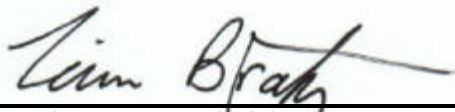


MGA RESEARCH CORPORATION
REAR HEAD DROP TEST
CRABI 12 MONTH

ATD Serial No: 093

Test ID: D072545

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	20.8	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Peak Resultant Acceleration	G's	55 to 71	69	Pass
Peak Lateral Acceleration	G's	+/- 15	3	Pass
Unimodal	N/A	within 17% of peak	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

8/23/07
Test Date


Approved By



Test Desc: Head Drop
Component ID: D072545

Test Date: 8/23/07
Velocity: 0 ft/s, 0 m/s

