

REPORT NUMBER: SPNCAP-MGA-2011-009

**NEW CAR ASSESSMENT PROGRAM (NCAP)
Side Impact Pole Test**

**HONDA MFG. OF ALABAMA, LLC
2011 Honda Pilot LX 2WD
NHTSA No.: MB5302**

**MGA RESEARCH CORPORATION
5000 Warren Road
Burlington, WI 53105**



Test Date: August 4, 2010

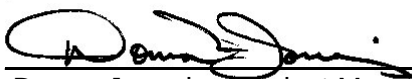
Final Report Date: August 24, 2010

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
1200 New Jersey Ave, SE
Mail Code: NVS 111, Room W43-410
Washington, DC 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.

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

Prepared by: 
Donna Janovicz, Project Manager

Approved by: 
Ben Fischer, Project Engineer

Approval Date: August 24, 2010

FINAL REPORT ACCEPTANCE BY OCWS:

Division Chief, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

COTR, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

Technical Report Documentation Page

1. Report No. SPNCAP-MGA-2011-009		2. Government Accession No.		3. Recipient's Catalog No.																					
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact Pole Testing of 2011 Honda Pilot LX 2WD NHTSA No.: MB5302		5. Report Date August 24, 2010		6. Performing Organization Code MGA																					
		8. Performing Organization Report No. SPNCAP-MGA-2011-009																							
7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer		10. Work Unit No.		11. Contract or Grant No. DTNH22-09-D-00124																					
						13. Type of Report and Period Covered: Final Test Report August 4, 2010 to August 24, 2010																			
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		14. Sponsoring Agency Code NVS-111		15. Supplementary Notes																					
						12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards 1200 New Jersey Ave, SE, Room W43-410 Washington, DC 20590																			
16. Abstract A 32.2 km/h (20 mph), 75° oblique impact NCAP Side Pole Test was conducted on the subject 2011 Honda Pilot LX 2WD in accordance with the specifications of the Office of Crashworthiness Standards NCAP Side Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on August 4, 2010. The impact velocity was 32.5 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21°C. The test vehicle post-test maximum crush was 455 mm at level 3. The test vehicle's performance was as follows: <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th colspan="4" style="text-align: left;">Driver ATD (SID-IIs)</th> </tr> <tr> <th style="text-align: left;">Measurement Description</th> <th style="text-align: left;">Units</th> <th style="text-align: left;">Threshold</th> <th style="text-align: left;">Result</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;">Head Injury Criteria (HIC₃₆)</td> <td>N/A</td> <td>1000</td> <td>438</td> </tr> <tr> <td style="text-align: left;">Resultant Lower Spine Acceleration</td> <td>Gs</td> <td>82</td> <td>51</td> </tr> <tr> <td style="text-align: left;">Combined Acetabular and Iliac Pelvic Force</td> <td>N</td> <td>5525</td> <td>2561</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.						Driver ATD (SID-IIs)				Measurement Description	Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	438	Resultant Lower Spine Acceleration	Gs	82	51	Combined Acetabular and Iliac Pelvic Force	N	5525	2561
Driver ATD (SID-IIs)																									
Measurement Description	Units	Threshold	Result																						
Head Injury Criteria (HIC ₃₆)	N/A	1000	438																						
Resultant Lower Spine Acceleration	Gs	82	51																						
Combined Acetabular and Iliac Pelvic Force	N	5525	2561																						
17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs			18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Reference 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 127	22. Price																						

TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
----------------	--	-----------------

1	Test Purpose and Procedure	1
2	Summary of Test Results	2
3	Occupant and Vehicle Information	4

<u>Data Sheet No.</u>		<u>Page No.</u>
-----------------------	--	-----------------

1	General Test and Vehicle Parameter Data	5
2	Seat, Seat Belt, Steering Wheel Adjustment, and Fuel System Data	8
3	Dummy Longitudinal Clearance Dimensions	10
4	Dummy Lateral Clearance Dimensions	11
5	Camera and Instrumentation Data	12
6	Vehicle Accelerometer Data	13
7	Rigid Pole Load Cell Data	14
8	Post Test Observations	15
9	Vehicle Profile Measurements	16
10	Vehicle Exterior Crush Measurements	17
11	FMVSS 301 Fuel System Integrity Post-Impact Data	21
12	Dummy/Vehicle Temperature Stabilization Data	22

Appendix

A	Photographs	A
B	Dummy Response Data	B
C	Dummy Calibration and Performance Verification Data	C

SECTION 1
TEST PURPOSE AND PROCEDURE

This side impact test is part of the MY 2011 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00124. The purpose of this test is to generate comparative side impact performance in a 2011 Honda Pilot LX 2WD. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated January 2010.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2011 Honda Pilot LX 2WD. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.5 km/h. The test was conducted by MGA Research Corporation in Burlington, Wisconsin, on August 4, 2010. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS NCAP Side Pole Laboratory Test Procedure dated January 2010. Camera locations and other pertinent camera information are included in this report.

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

- Head Accelerometers
- Thorax Upper, Middle, and Lower Rib Potentiometers
- Abdomen Upper and Lower Rib Potentiometers
- Lower Spine Accelerometers
- Iliac Load Cell
- Acetabulum Load Cell

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

The following table summarizes the results of the test:

DUMMY INJURY VALUES

Dummy	HIC (36ms)	Resultant Lower Spine Acceleration	Pelvic Force (N)	
SID-IIs 5 th Percentile Female	438	51	Iliac Wing	672
			Acetabular	1989
			Sum	2561

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) P1		Left Rear (Passenger) P4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	

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

GENERAL COMMENTS

There was no valid data collected for:

Vehicle CG Y after 60 msec.

Right Roof at Impact Line Y at 45 msec.

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

SECTION 3
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MB5302	Anti-Lock Brakes	Yes
Model Year	2011	All Wheel Drive	No
Make	Honda	Power Steering	Yes
Model	Pilot	Driver Front Airbag	Yes
Body Style	MPV	Driver Curtain Airbag	Yes
VIN	5FNYP3H26BB013803	Driver Head/Torso Airbag	No
Body Color	Alabaster Silver M	Driver Torso Airbag	No
Delivery Date	7/13/2010	Driver Torso/Pelvis Airbag	Yes
Odometer (mi)	63	Driver Pelvis Airbag	No
Odometer (km)	101	Driver Knee Airbag	No
Dealer	Boyland Honda	Rear Pass. Front Airbag	No
Transmission	Automatic	Rear Pass. Curtain Airbag	Yes
Final Drive	Front	Rear Pass. Head/Torso Airbag	No
Type/No. Cylinders	6	Rear Pass. Torso Airbag	No
Engine Displacement (L)	3.5	Rear Pass. Torso/Pelvis Airbag	No
Engine Placement	Lateral	Rear Pass. Pelvis Airbag	No
Roof Rack	No	Rear Pass. Knee Airbag	No
Sunroof/T-Top	No	Pretensioners	Yes
Tinted Glass	Yes	Load Limiters	Yes
Traction Control	Yes	Automatic Door Locks	Yes
Power Brakes	Yes	Bucket Seats	Yes
Front Disc	Yes	Tilt Steering	Yes
Rear Disc	Yes	Power Seats	No
Does owner's manual provide instruction to turn off automatic door locks?			Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda Mfg. of Alabama, LLC	GVWR (kg)	2700
Date of Manufacture	06/'10	GAWR Front (kg)	1325
		GAWR Rear (kg)	1450

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3	3	8	
Capacity Weight (VCW) (kg)				600	(A)
DSC x 68.04 kg				544	(B)
Cargo Weight (RCLW) (kg)				56	(A-B)

VEHICLE SEAT TYPE

Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	60/40 Fold-Down	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X					w/Lever	
Rear or Second Row			X			w/Lever	
Third Row Seat			X		X		

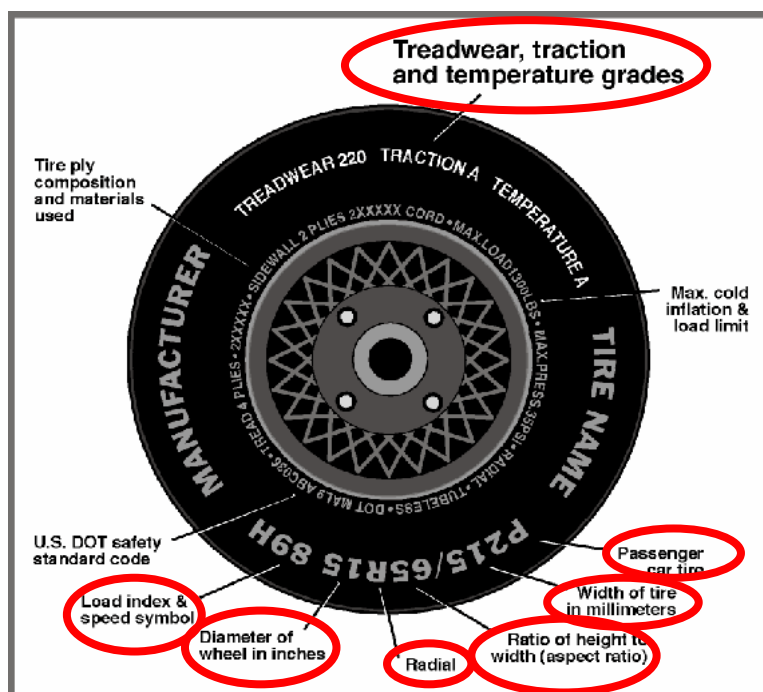
DATA SHEET NO. 1 (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	220	220
Recommended Tire Size	P245/65R17	P245/65R17
Tire Size on Vehicle	P245/65R17	P245/65R17
Tire Model	Goodyear	Goodyear
Tire Manufacturer	Fortera	Fortera
Treadwear	540	540
Traction	A	A
Temperature Grades	B	B
Tire Plies Sidewall	2 poly	2 poly
Tire Plies Body	5	5
Load Index & Speed Symbol	105T	105T
Tire Material	Rubber	Rubber
DOT Safety Code Right	DOT 4B8T 011R 2010	DOT 4B8T 011R 2010
DOT Safety Code Left	DOT 4B8T 011R 2010	DOT 4B8T 011R 2010

DATA SHEET NO. 1 (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	544.3	442.7		581.9	455.9		562.0	494.4	
Right	kg	547.9	425.5		589.7	432.7		549.8	460.8	
Ratio	%	55.7	44.3		56.9	43.1		53.8	46.2	
Totals	kg	1092.2	868.2	1960.4	1171.6	888.6	2060.2	1111.8	955.2	2067.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1960.4	(A)
Actual Weight of 1 P572V ATD (SID-IIs) ATD Used	kg	52.2	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	56	(C)
Calculated Target Vehicle Test Weight (TVTW)	kg	2068.6	(A+B+C)

TEST VEHICLE ATTITUDES AND CG

	Units	As Delivered	As Tested	Fully Loaded
Driver Door Sill Angle (front-to-rear)*	deg	-0.5	-0.5	-0.4
Front Passenger Sill Angle (front-to-rear)*	deg	-0.7	-0.4	-0.3
Front Bumper Angle (left-to-right)**	deg	0.3	0.3	0.4
Rear Bumper Angle (left-to-right)**	deg	0.2	0.2	-0.3
Vehicle CG (Aft of Front Axle)	mm	1230	1198	1284
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	6	6	19

*Front up is positive ** Left up is positive

GENERAL VEHICLE TEST DATA

Measurement Description	Units	Value
Weight of Ballast in Cargo Area	kg	0.0
Weight of Vehicle Components Removed	kg	16.3

Vehicle components removed to meet target vehicle test weight: Cargo compartment, jack & tools, right rear tail light, right front mirror.

TEST VEHICLE IMPACT POINT DATA

Measurement Parameter	Units	Value
Vertical Impact Reference Line (Aft of Front Axle)	mm	1024
Actual Impact Point (Aft of Front Axle)	mm	1044
Impact Point Difference (- forward / + rearward)	mm	20

DATA SHEET NO. 2

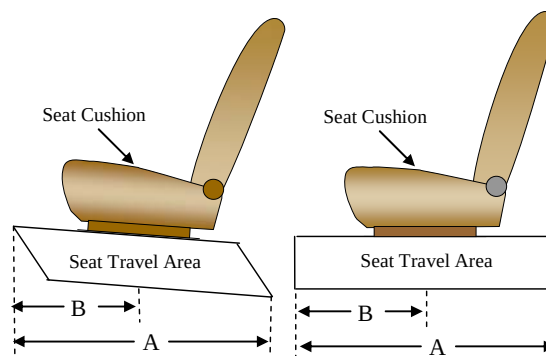
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

SEAT FORE/AFT POSITIONS

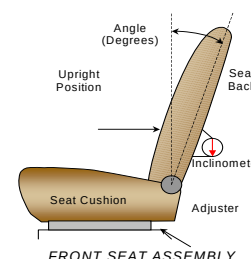
The driver seat was a manual fore/aft adjustable seat with a manual angle adjustment. The seat travel was set as specified in Appendix B of the TP dated January 2010. The right front passenger manual seat was set to match the driver seat. The rear passenger seats' were adjustable fore-aft.



SEAT FORE/AFT POSITIONING	Total Fore/Aft Travel (mm)	Placed in Detent # or Position (mm)
Driver Seat	24 detents	0 detent (full forward)
Front Passenger Seat	24 detents	0 detent (full forward)
Rear Seat – Struck Side		Full Rearward
Rear Seat – Non-Struck Side		Full Rearward

SEAT BACK ANGLE POSITION

The seat back was set as specified in Appendix B of the TP dated January 2010. The seat back angle measurement was made relative to the rocker sill at the headrest post guide.



SEAT BACK ANGLE	Degrees	Detents
Driver Seat Back Angle with Seated Dummy	2.9	
Front Passenger Seat Back Angle	2.9	
Struck Side Rear Seat Back Angle	9.9	
Non-Struck Side Rear Passenger Seat Back Angle	9.9	

SEAT BELT UPPER ANCHORAGE

The driver and passenger seat belt upper anchorages were set at the manufacturer's specified placement in Form 1.

SEAT BELT UPPER ANCHORAGES	Total # of Positions	Placed in Position #
Driver Seat	4 detents	0 (uppermost as 0)
Front Passenger Seat	4 detents	0 (uppermost as 0)

DATA SHEET NO. 2 (CONTINUED)

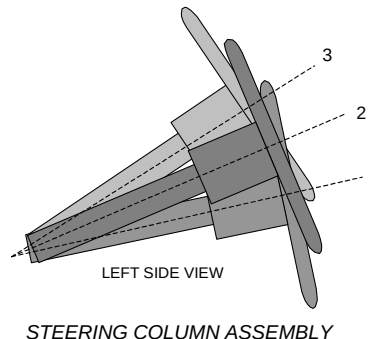
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT, AND FUEL SYSTEM DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

STEERING COLUMN ADJUSTMENT

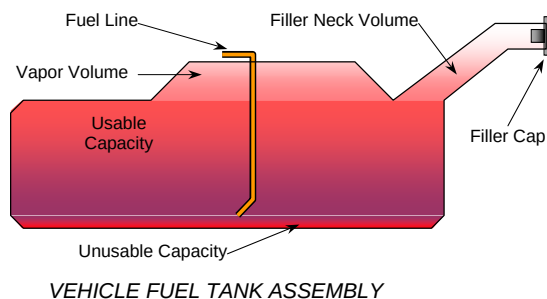
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.



STEERING COLUMN POSITIONING

	Degrees	Fore/Aft Position (mm)
Lowermost - Position 1	69.2	210 mm
Geometric Center – Position 2	66.0	190 mm
Uppermost – Position 3	62.8	170 mm
Telescoping Steering Wheel Travel	6.4	40 mm
Test Position	66.0	190 mm

Describe the fuel pump type, its behavior, and the location of the fuel filler pipe. The test vehicle is equipped with an electric fuel pump. Fuel pump will operate 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. The fuel pipe is on the left side.



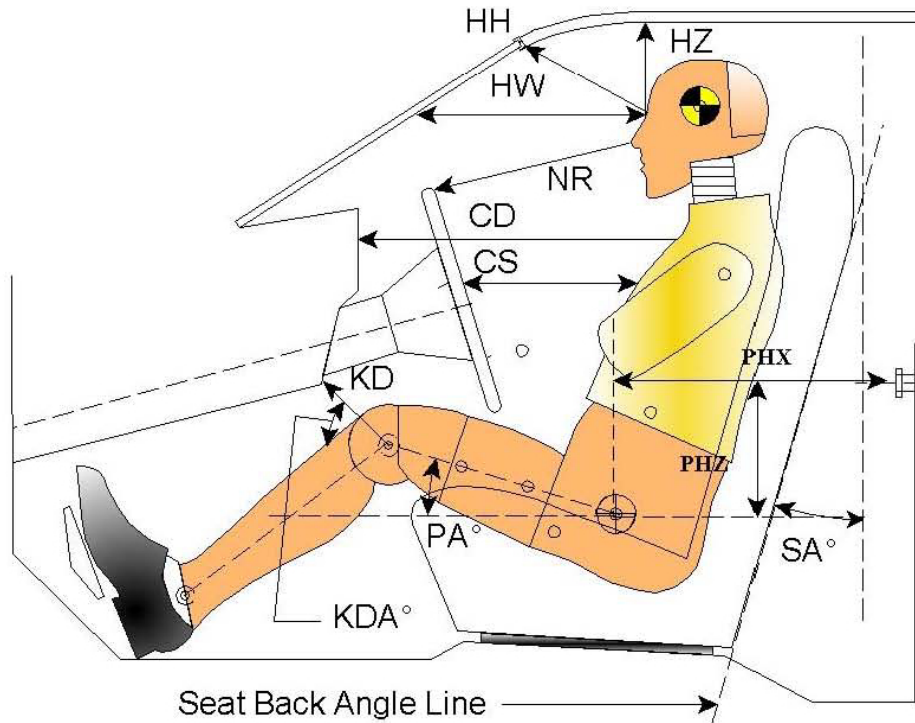
FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of "Standard" Tank	79.5
Usable Capacity of "Optional" Tank	
Usable Capacity of Standard Tank as Specified in Owner's Manual	79.5
Usable Capacity of Optional Tank as Specified in Owner's Manual	
92-94% of Usable Capacity	73.1 to 74.7
Actual Amount of Solvent Used	73.8
1/3 of Usable Capacity	26.5

.DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

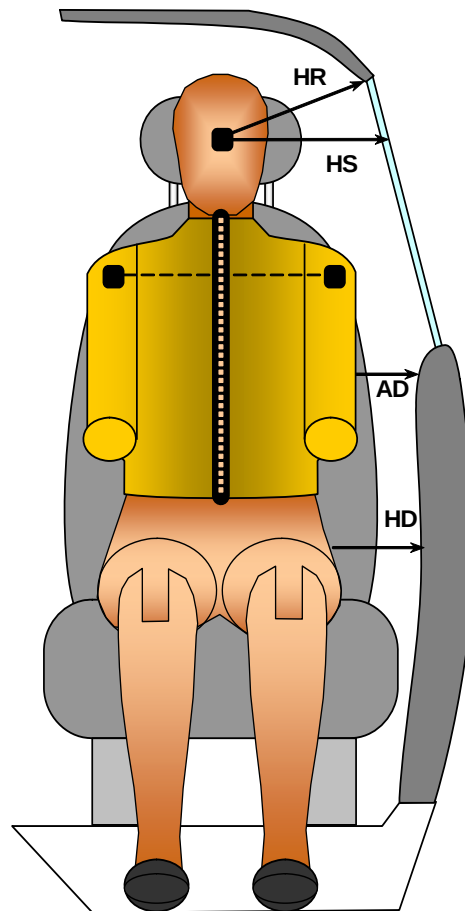


Code	Measurement Description	Driver S/N 296	
		Length (mm)	Angle (°)
HH	Head to Header	350	
HW	Head to Windshield	613	
HZ	Head to Roof	260	
NR	Nose to Rim	228	
CD	Chest to Dash	412	
CS	Chest to Steering Wheel	175	
KDL/KDAL	Left Knee to Dash	83	27.9
KDR/KDAR	Right Knee to Dash	68	25.3
PA	Pelvic Angle		20.0
PHX	H-Point to Striker (X-Axis)	371	
PHZ	H-Point to Striker (Z-Axis)	82	
SA	Seat Back Angle		2.9

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010



FRONT VIEW OF DUMMY

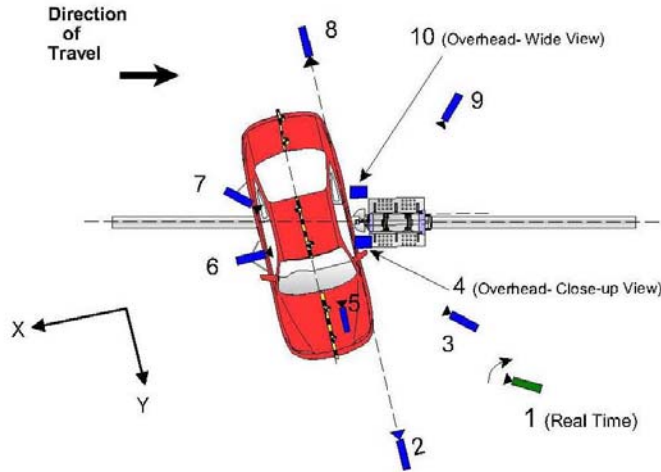
Code	Measurement Description	Driver S/N 296
		Length (mm)
HR	Head to Side Header	296
HS	Head to Side Window	404
AD	Arm to Door	152
HD	H-Point to Door	161

DATA SHEET NO. 5

CAMERA LOCATIONS AND DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010



Reference: From Point of Impact for X and Y; from Ground for Z):
 +X = Forward of Impact, + Y = Right of Impact, +Z = Down

Camera No.	View	Coordinates (mm)			Lens (mm)	Film Speed (fps)
		X*	Y*	Z*		
1	Real-Time Pan View					30
2	Front Ground Level	20	5450	-1660	24	1000
3	Impact Side 45° Forward	-1790	4110	-1680	20	1000
4	Overhead Closeup	40	0	-4520	50	1000
5	Onboard – Driver Front				12.5	1000
6	Onboard – Driver Side				8	1000
7	Onboard – Driver Rear				8	1000
8	Rear Ground Level	0	-6520	-1530	24	1000
9	Impact Side 45° Rearward	-3510	-2780	-1690	20	1000
10	Overhead Wide View	80	0	-4520	14	1000
11	Real-Time Dummy Front View					30

* All measurements accurate to ± 6 mm

Note: Vehicle was at a 15° angle to the rigid pole.

INSTRUMENTATION

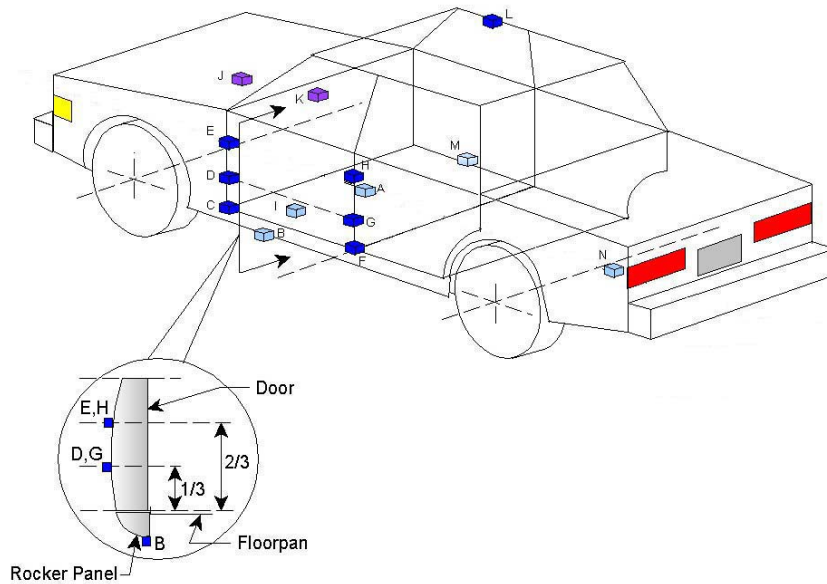
	Number of Channels
Driver Dummy	16
Vehicle Structure	21
Pole Load Cells – Not used	8
Contact Switches	3
Airbag Timing	2
Total No. of Data Channels	50

DATA SHEET NO. 6

VEHICLE ACCELEROMETER DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010



	Accelerometer Location			
	ID	Coordinates (mm)		
		X	Y	Z
A	Vehicle CG	2622	-50	-370
	Vehicle CG Sensor	2622	-85	-370
B	Left Floor Sill	2972	-790	-350
C	A Pillar Sill	3373	-790	-345
D	A Pillar Low	3406	-777	-666
E	A Pillar Mid	3405	-885	-953
F	B Pillar Sill	2346	-790	-350
G	B Pillar Low	2310	-741	-729
H	B Pillar Mid	2310	-751	-984
I	Driver Seat	2715	-610	-604
L	Engine Top	4245	0	-923
J	Firewall	3934	-50	-1043
K	Right Roof	2412	597	-1777
M	Right Floor Sill	2620	790	-365
N	Rear Floorpan	750	0	-657

Reference: From Point of Impact for X and Y; from Ground for Z):
 +X = Forward of Vehicle, + Y = Right of Vehicle, +Z = Down

DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
Test Date: 8/04/2010



254 mm Diameter Rigid Pole

The pole was not instrumented.

Load Cell Locations	
ID	Height From Ground (m)
1	
2	
3	
4	
5	
6	
7	
8	

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

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

TEST DUMMY INFORMATION AND CONTACT

Description	Driver
Dummy Type / Serial No.	SID-IIs / 296
Head Contact	Curtain Airbag, Headrest
Upper Torso Contact	Side Airbag
Lower Torso Contact	Side Airbag
Left Knee Contact	Door Panel
Right Knee Contact	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Doors	Remained closed and jammed shut	Remained closed and jammed shut
Right Side Doors	Remained closed and operational	Remained closed and operational
Hatch and Other Doors	Remained closed and operational	Remained closed and operational
Seat Movement	0	0
Seat Back Failure	None	None

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	Cracked
Window Damage	Left Front Window Broke
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) P1		Left Rear (Passenger) P4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No	No	
Knee Airbag	No		No	
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	

VEHICLE SPEED AND IMPACT DATA

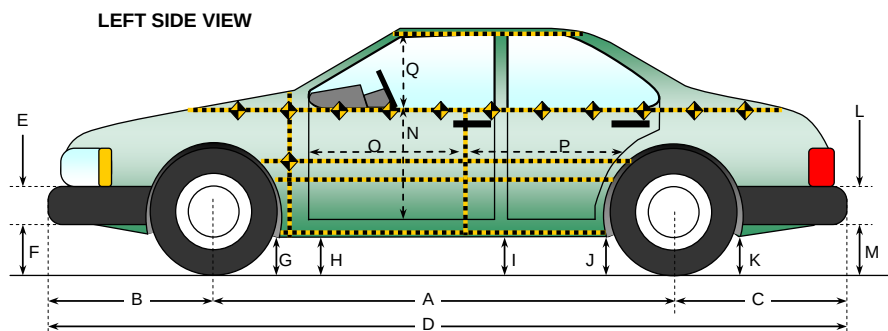
Measured Parameter	Units	Requirement	Value
Horizontal Offset from Vertical Impact Reference Line	mm	+/- 38	+20
Trap No. 1 Velocity (Primary)	km/h	31.4 to 33.0	32.5
Trap No. 2 Velocity (Redundant)	km/h	31.4 to 33.0	32.5

DATA SHEET NO. 9

VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010



All measurements in (mm) with tolerance of ± 3 mm

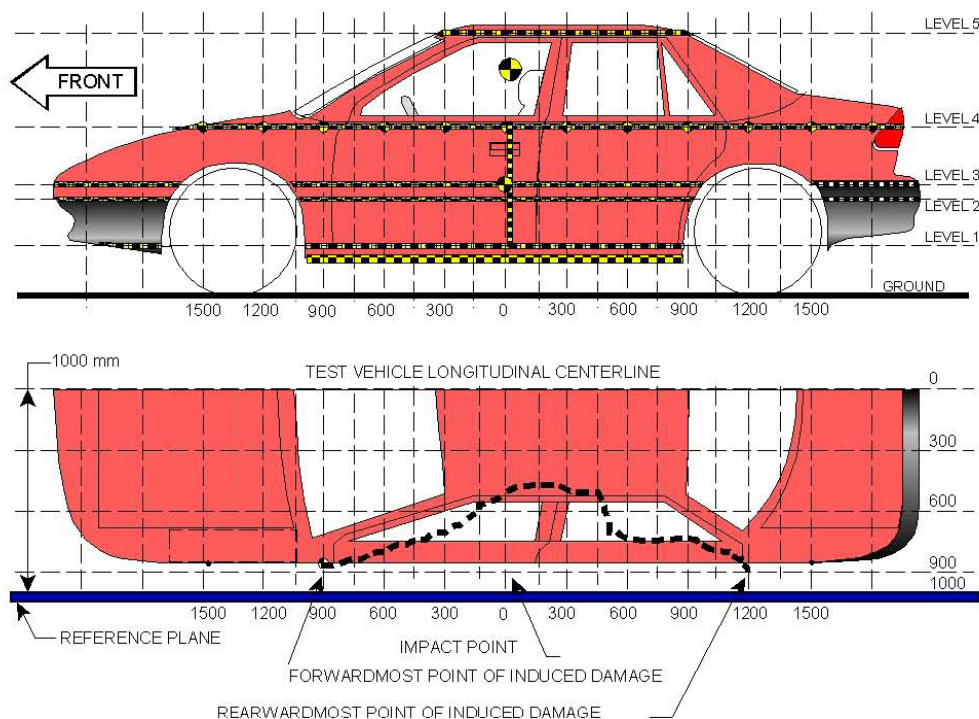
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2778	2740	38
B	Front Axle to FSOV	946	927	19
C	Rear Axle to RSOV	1123	1121	2
D1	Total Vehicle Length at Left Side	4015	3850	165
D2	Total Vehicle Length at Centerline	4847	4788	59
D3	Total Vehicle Length at Right Side	4015	4022	-7
E	Front Bumper Thickness	190	190	0
F	Front Bumper Bottom to Ground	470	522	-52
G	Sill Height at Front Wheel Well	307	304	3
H	Sill Height at Front Door Leading Edge	314	276	38
I	Sill Height at B Pillar	330	296	34
J1	Sill Height at Rear Wheel Well	331	438	-107
J2	Pinch Weld Height at Rear Wheel Well	339	325	14
K	Sill Height Aft of Rear Wheel Well	276	283	-7
L	Rear Bumper Thickness	106	106	0
M	Rear Bumper Bottom to Ground	492	468	24
N	Sill Height to Window Bottom Sill	843	837	6
O	Front Door Leading Edge to Impact CL	547	547	0
P	Rear Door Trailing Edge to Impact CL	1528	1529	-1
Q	Front Window Opening	467	424	43
R	Right Side Length	4015	4022	-7
S	Left Side Length	4015	3850	165
T	Vehicle Width at B Post	1965	1822	143

DATA SHEET NO. 10 **VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010



NOTE: The measurements are taken along the vertical impact reference line.
 Vehicle measurements forward of the vertical impact reference line are negative.

Level	Measurement Description	Height Above Ground (mm)
1	Sill Top	366
2	Occupant H-Point	792
3	Mid-Door	815
4	Window Sill	1168
5	Window Top	1686

DATA SHEET NO. 10 (CONTINUED)

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Honda Pilot LX 2WD
Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
Test Date: 8/04/2010

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1500				285					276					-9	
-1350				262					262					0	
-1200				249					255					6	
-1050				239					251					12	
-900		99	99	231			122	122	247			23	23	16	
-750		100	104	220			129	128	230			29	24	10	
-600	130	115	120	214		180	139	141	243		50	24	21	29	
-525	170	122	122	209		236	185	186	266		66	63	64	57	
-450	195	121	121	208		288	235	237	300		93	114	116	92	
-375	208	119	120	203		341	289	289	341		133	170	169	138	
-300	214	118	118	202		384	346	346	372		170	228	228	170	
-225	213	117	118	196		433	404	406	424		220	287	288	228	
-150	215	117	118	194	409	479	457	460	473	590	264	340	342	279	181
-75	212	117	117	192	399	533	515	515	529	600	321	398	398	337	201
0	215	117	117	188	391	566	562	563	567	632	351	445	446	379	241
75	214	117	117	186	387	557	571	572	574	600	343	454	455	388	213
150	214	117	117	183	386	504	540	543	548	578	290	423	426	365	192
225	215	117	117	182	383	447	484	487	487	553	232	367	370	305	170
300	216	117	118	180	382	389	421	426	424	530	173	304	308	244	148
375	217	118	118	179	380	336	362	362	366	513	119	244	244	187	133
450	218	118	118	177	379	301	298	299	325	495	83	180	181	148	116
525	216	119	119	175	378	285	238	239	302	478	69	119	120	127	100
600	216	120	120	173	378	273	226	226	286	464	57	106	106	113	86
750	218	120	121	172	379	246	202	202	259	443	28	82	81	87	64
900	218	122	122	170	379	222	178	178	233	428	4	56	56	63	49
1050	216	123	125	170	379	196	153	156	210	413	-20	30	31	40	34
1200	192	122	128	170	379	153	127	134	187	400	-39	5	6	17	21
1350		114	117	173	380		90	94	163	396		-24	-23	-10	16
1500		103	104	169	381		103	54	135	397		0	-50	-34	16
1650				175	384				178	398				3	14
1800				185	386				183	394				-2	8
1950				192	391				196	404				4	13

NOTE: The measurements are taken along the vertical impact reference line.
Vehicle measurements forward of the vertical impact reference line are negative.

DATA SHEET NO. 10 (CONTINUED)

VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Honda Pilot LX 2WD
Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
Test Date: 8/04/2010

MAXIMUM CRUSH DATA

	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush (mm)	351	454	455	388	241
Distance From Impact (mm)	0	75	75	75	0

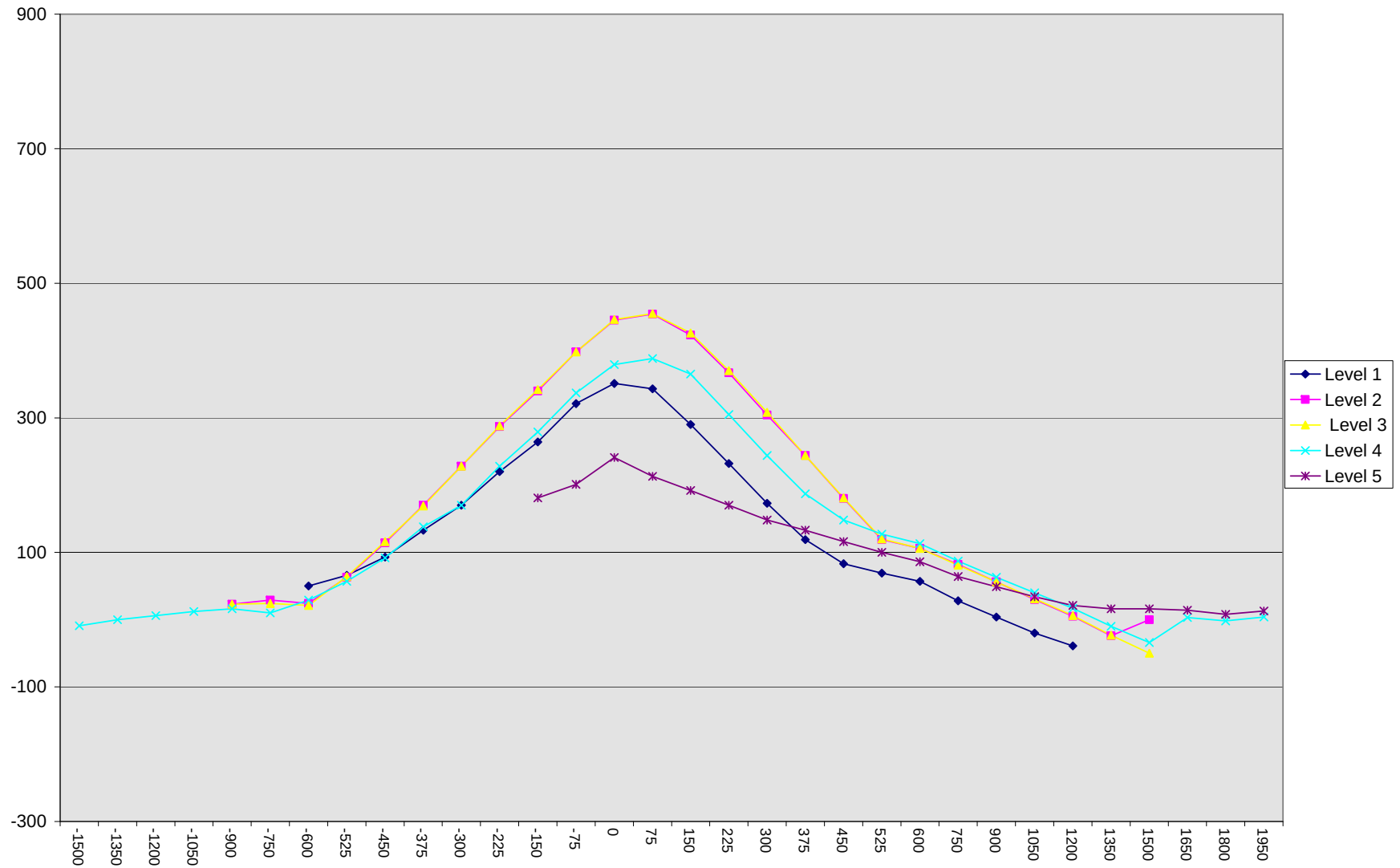
Note: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to test based on an estimated impact point. The final distance to impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

DATA SHEET NO. 10 (CONTINUED)
VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2011 Honda Pilot LX 2WD
Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
Test Date: 8/04/2010

20



DATA SHEET NO. 11

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

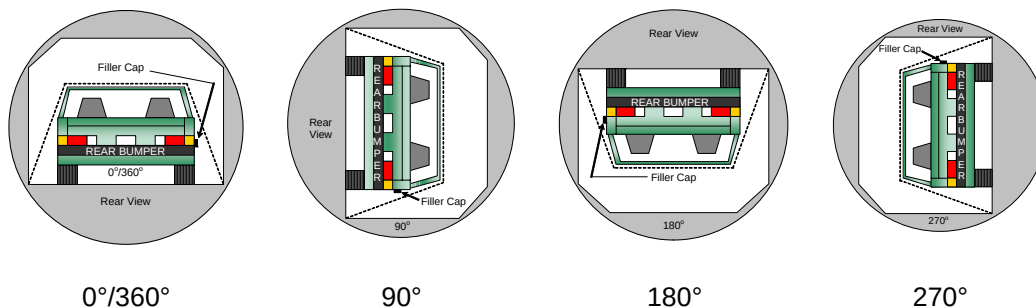
Test Vehicle: 2011 Honda Pilot LX 2WD
 Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
 Test Date: 8/04/2010

Test Time: 11:02 am Temperature: 21° C

- 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



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	117	300	417
90° to 180°	113	300	413
180° to 270°	110	300	410
270° to 360°	119	300	419

FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eight Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

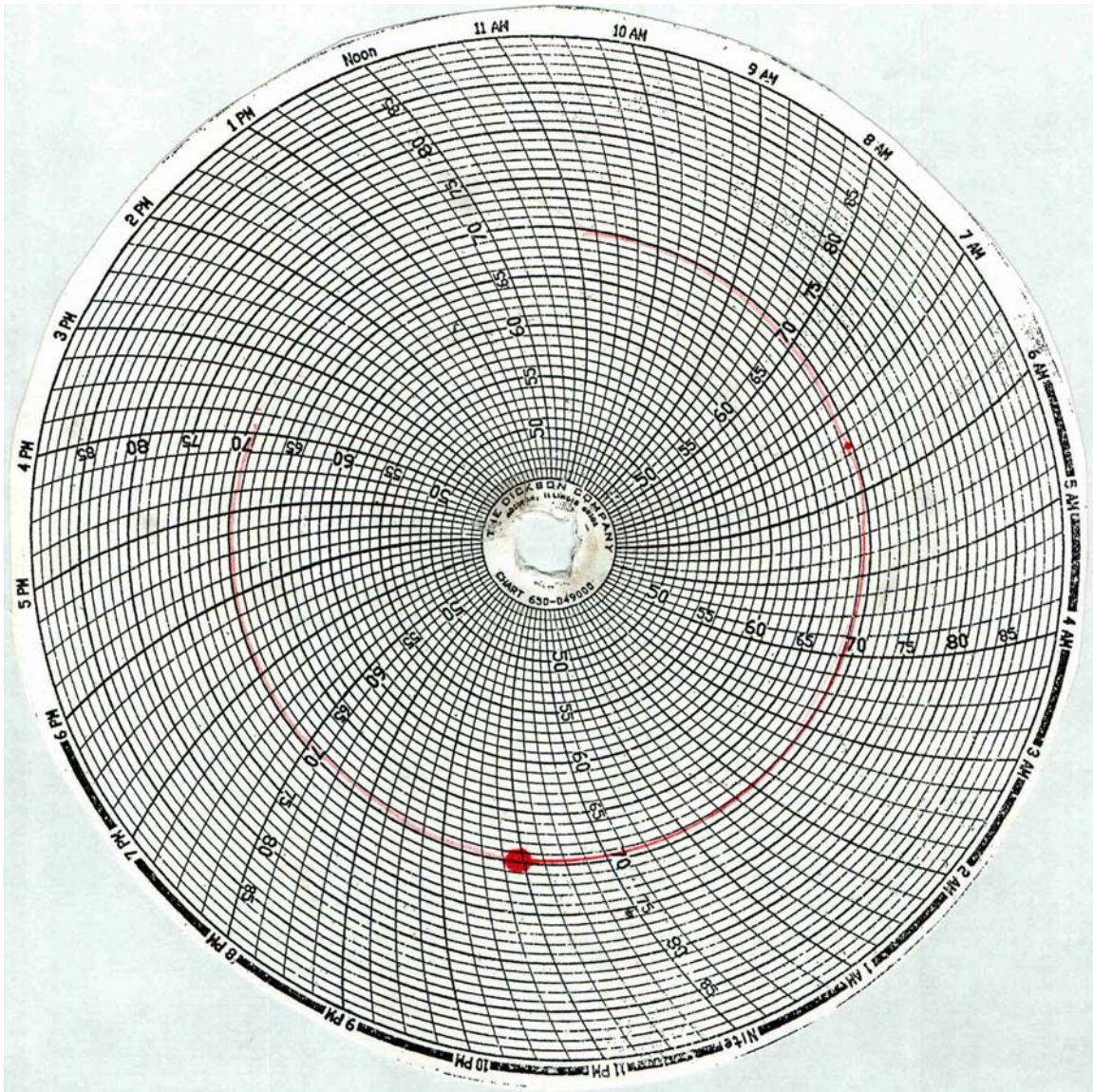
Test Phase	Spillage Location
0° to 90°	
90° to 180°	
180° to 270°	
270° to 360°	

DATA SHEET NO. 12

DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA

Test Vehicle: 2011 Honda Pilot LX 2WD
Test Program: NCAP Side Pole Impact Test

NHTSA No. MB5302
Test Date: 8/04/2010



APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

	<u>Page No.</u>
Photo No. 1. As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle	A-1
Photo No. 2. As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle	A-1
Photo No. 3. Pre-Test Frontal View of Test Vehicle	A-2
Photo No. 4. Post-Test Frontal View of Test Vehicle	A-2
Photo No. 5. Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-3
Photo No. 6. Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle	A-3
Photo No. 7. Pre-Test Left Side View of Test Vehicle	A-4
Photo No. 8. Post-Test Left Side View of Test Vehicle	A-4
Photo No. 9. Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-5
Photo No. 10. Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle	A-5
Photo No. 11. Pre-Test Rear View of Test Vehicle	A-6
Photo No. 12. Post-Test Rear View of Test Vehicle	A-6
Photo No. 13. Pre-Test Right Side View of Test Vehicle	A-7
Photo No. 14. Post-Test Right Side View of Test Vehicle	A-7
Photo No. 15. Pre-Test Overhead View of Test Vehicle and Pole	A-8
Photo No. 16. Post-Test Overhead View of Test Vehicle and Pole	A-8
Photo No. 17. Pre-Test Left Side View of Pole Positioned Against Side of Vehicle at Ideal Impact Point	A-9
Photo No. 18. Pre-Test Right Side View of Pole Positioned Against Side of Vehicle at Ideal Impact Point	A-9
Photo No. 19. Pre-Test Close-Up View of Impact Point Target	A-10
Photo No. 20. Post-Test Close-Up View of Impact Point Target Showing Impact Location	A-10

		<u>Page No.</u>
Photo No. 21.	Pre-Test Front Close-Up View of Dummy	A-11
Photo No. 22.	Post-Test Front Close-Up View of Dummy	A-11
Photo No. 23.	Pre-Test Left Side View of Dummy Showing Belts, Chalking, and Contact Switches (Door Open)	A-12
Photo No. 24.	Pre-Test Left Side View of Dummy Shoulder and Door Top View	A-13
Photo No. 25.	Post-Test Left Side View of Dummy Shoulder and Door Top View	A-13
Photo No. 26.	Pre-Test Frontal View of Seat Back Prior to Dummy Positioning	A-14
Photo No. 27.	Pre-Test Frontal View of Dummy Head and Shoulders in Relation to Head Restraint	A-14
Photo No. 28.	Pre-Test Frontal View of Seat Pan Prior to Dummy Positioning	A-15
Photo No. 29.	Pre-Test Overhead View of Dummy Thighs on Seat Pan	A-15
Photo No. 30.	Pre-Test View of Dummy's Neck Showing Position of Adjustable Neck Bracket	A-16
Photo No. 31.	Pre-Test View of Dummy's Head Showing Dummy's Head is Level	A-16
Photo No. 32.	Pre-Test Placement of Dummy's Feet	A-17
Photo No. 33.	Pre-Test View of Belt Anchorage for Dummy to Show Position	A-17
Photo No. 34.	Pre-Test Left Side View of Steering Wheel to Show Position	A-18
Photo No. 35.	Pre-Test View of Parking Brake	A-18
Photo No. 36.	Pre-Test Close-Up Left Side View of Driver Seat Track Showing Test Position	A-19
Photo No. 37.	Pre-Test Close-Up Left Side View of Driver Seat Back Showing Test Position	A-19
Photo No. 38.	Pre-Test Close-Up View of Driver Seat Back or Head Restraint Showing Seat Back Test Position	A-20
Photo No. 39.	Pre-Test Dummy and Door Clearance View	A-21
Photo No. 40.	Post-Test Dummy and Door Clearance View	A-21

		<u>Page No.</u>
Photo No. 41.	Pre-Test Right Side View of Dummy and Front Seat Occupant Compartment	A-22
Photo No. 42.	Post-Test Right Side View of Dummy and Front Seat Occupant Compartment	A-22
Photo No. 43.	Pre-Test Inner Door Panel View	A-23
Photo No. 44.	Post-Test Inner Door Panel View Showing Dummy Contact Location	A-23
Photo No. 45.	Post-Test Dummy Close-Up Head Contact with Vehicle View	A-24
Photo No. 46.	Post-Test Dummy Close-Up Head Contact with Side Airbag View	A-24
Photo No. 47.	Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View	A-25
Photo No. 48.	Post-Test Dummy Close-Up Torso Contact with Side Airbag View	A-25
Photo No. 49.	Post-Test Dummy Close-Up Pelvis Contact View, if applicable	A-26
Photo No. 50.	Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View	A-26
Photo No. 51.	Pre-Test View of Fuel Filler Cap or Fuel Filler Neck	A-27
Photo No. 52.	Post-Test View of Fuel Filler Cap or Fuel Filler Neck	A-27
Photo No. 53.	Close-Up View of Vehicle's Certification Label	A-28
Photo No. 54.	Close-Up View of Vehicle's Tire Information Placard or Label	A-28
Photo No. 55.	Pre-Test Pole Barrier Front View	A-29
Photo No. 56.	Post-Test Pole Barrier Front View	A-29
Photo No. 57.	Pre-Test Pole Barrier Side View	A-30
Photo No. 58.	Post-Test Pole Barrier Side View	A-30
Photo No. 59.	Pre-Test Ballast View	A-31
Photo No. 60.	Post-Test Primary and Redundant Speed Trap Read-Out	A-31
Photo No. 61.	FMVSS No. 301/305 Rollover 0 Degrees	A-32

	<u>Page No.</u>
Photo No. 62. FMVSS No. 301/305 Rollover 90 Degrees	A-32
Photo No. 63. FMVSS No. 301/305 Rollover 180 Degrees	A-33
Photo No. 64. FMVSS No. 301/305 Rollover 270 Degrees	A-33
Photo No. 65. FMVSS No. 301/305 Rollover 360 Degrees	A-34
Photo No. 66. Impact Event (Impact Side)	A-34
Photo No. 67. Monroney Label	A-35
Photo No. 68. Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-36
Photo No. 69. Head Restraint Use and Adjustment Information from Vehicle Owner's Manual	A-37



As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle



Pre-Test Frontal View of Test Vehicle



Post-Test Frontal View of Test Vehicle



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



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



Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



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



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



Pre-Test Rear View of Test Vehicle



Post-Test Rear View of Test Vehicle



Pre-Test Right Side View of Test Vehicle



Post-Test Right Side View of Test Vehicle



Pre-Test Overhead View of Test Vehicle and Pole



Post-Test Overhead View of Test Vehicle and Pole



Pre-Test Left Side View of Pole Positioned Against Side of Vehicle at Ideal Impact Point



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



Pre-Test Close-Up View of Impact Point Target



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



Pre-Test Front Close-Up View of Dummy



Post-Test Front Close-Up View of Dummy



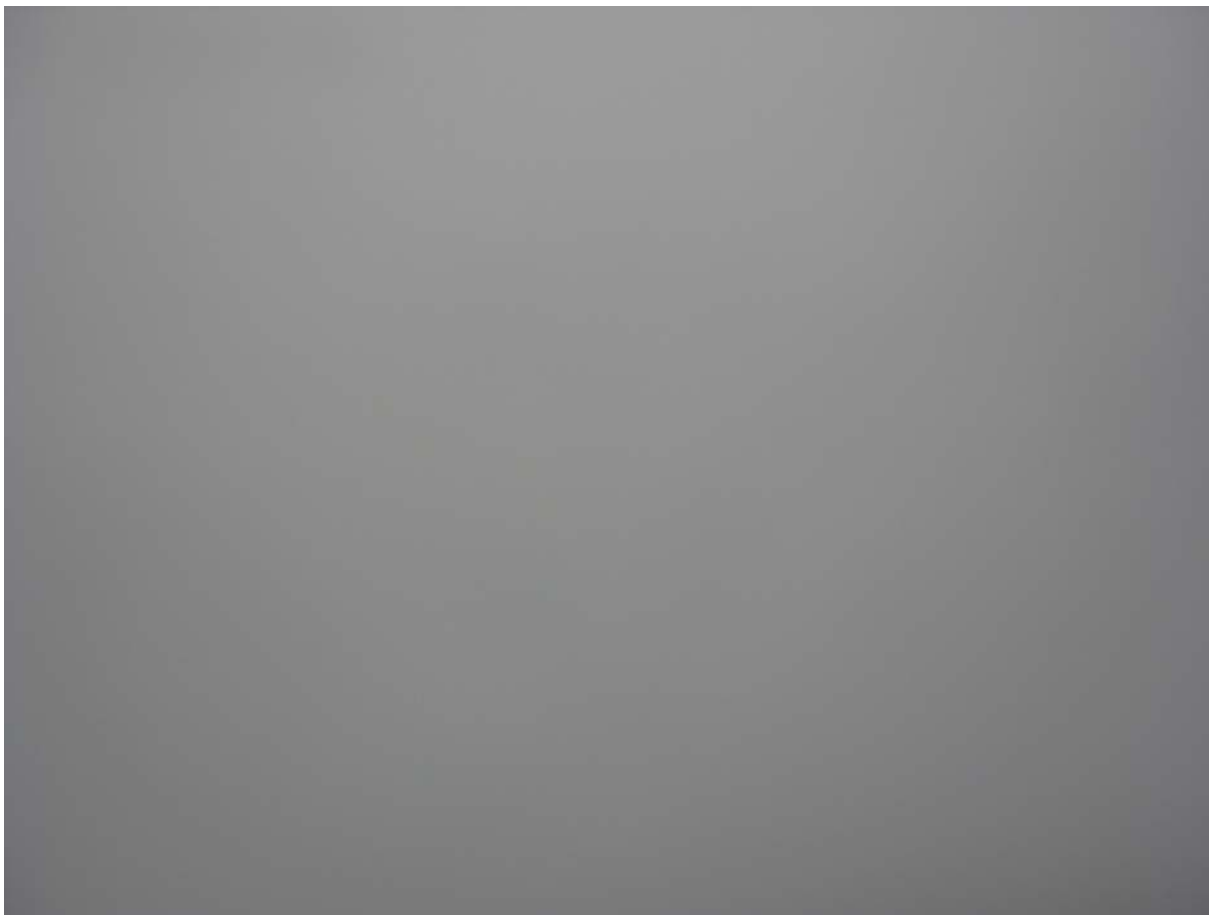
Pre-Test Left Side View of Dummy Showing Belts, Chalking, and Contact Switches (Door Open)



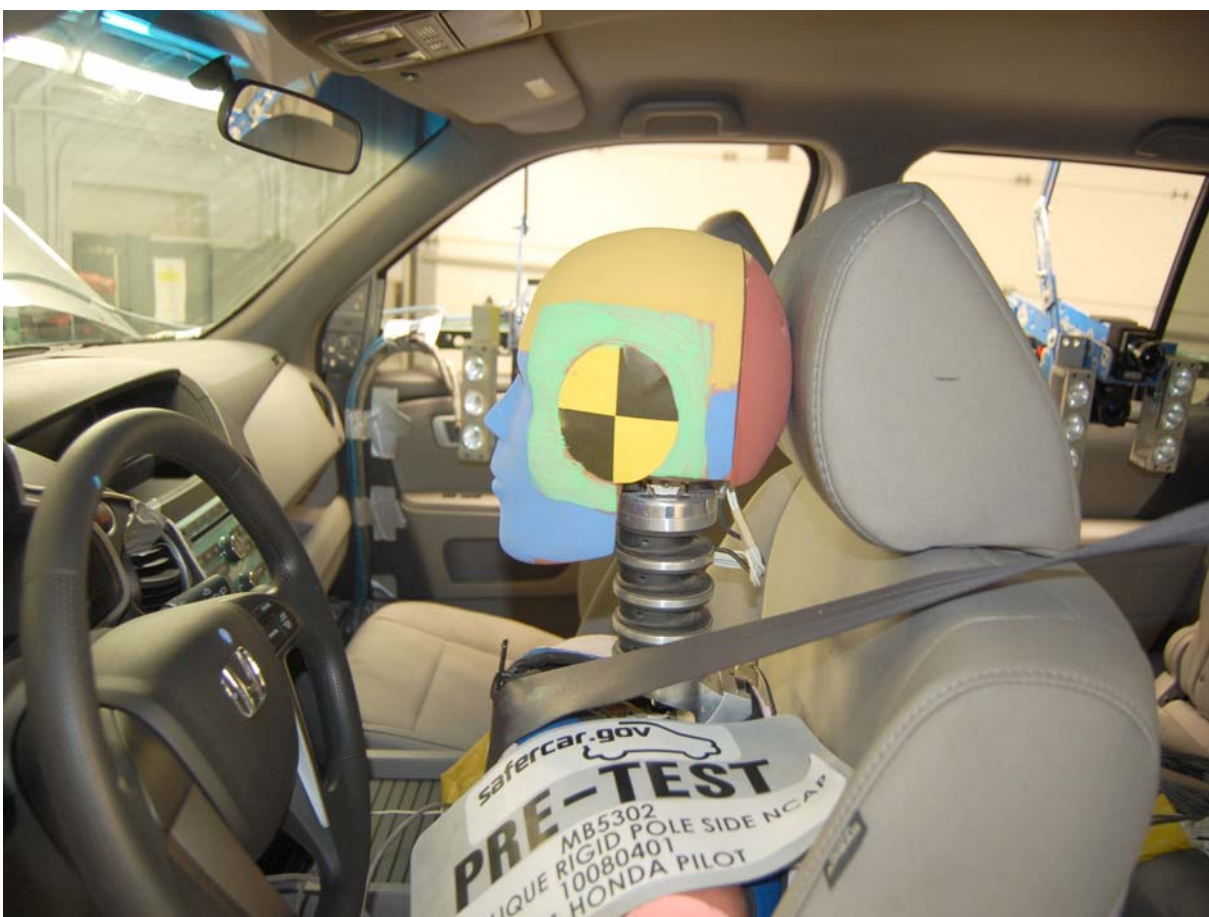
Pre-Test Left Side View of Dummy Shoulder and Door Top View



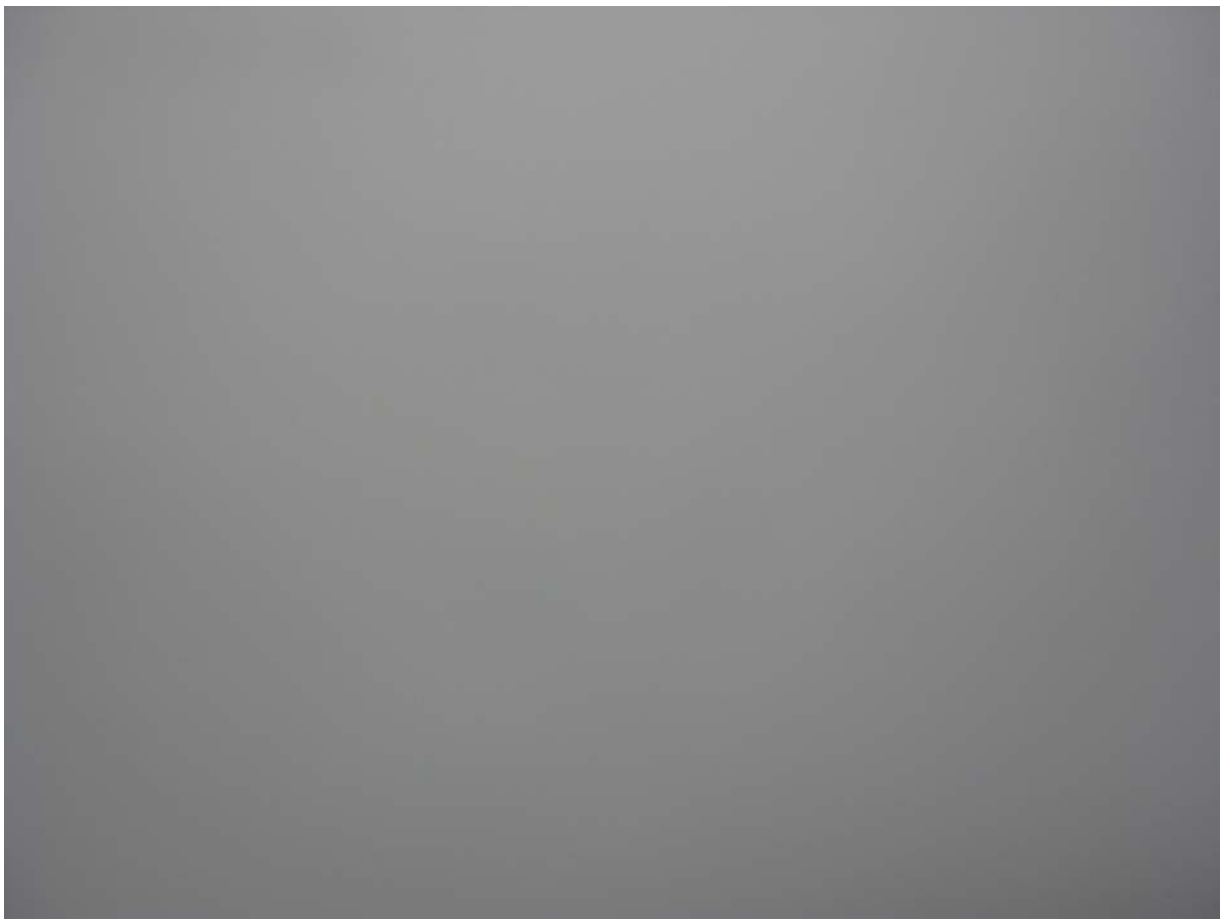
Post-Test Left Side View of Dummy Shoulder and Door Top View



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



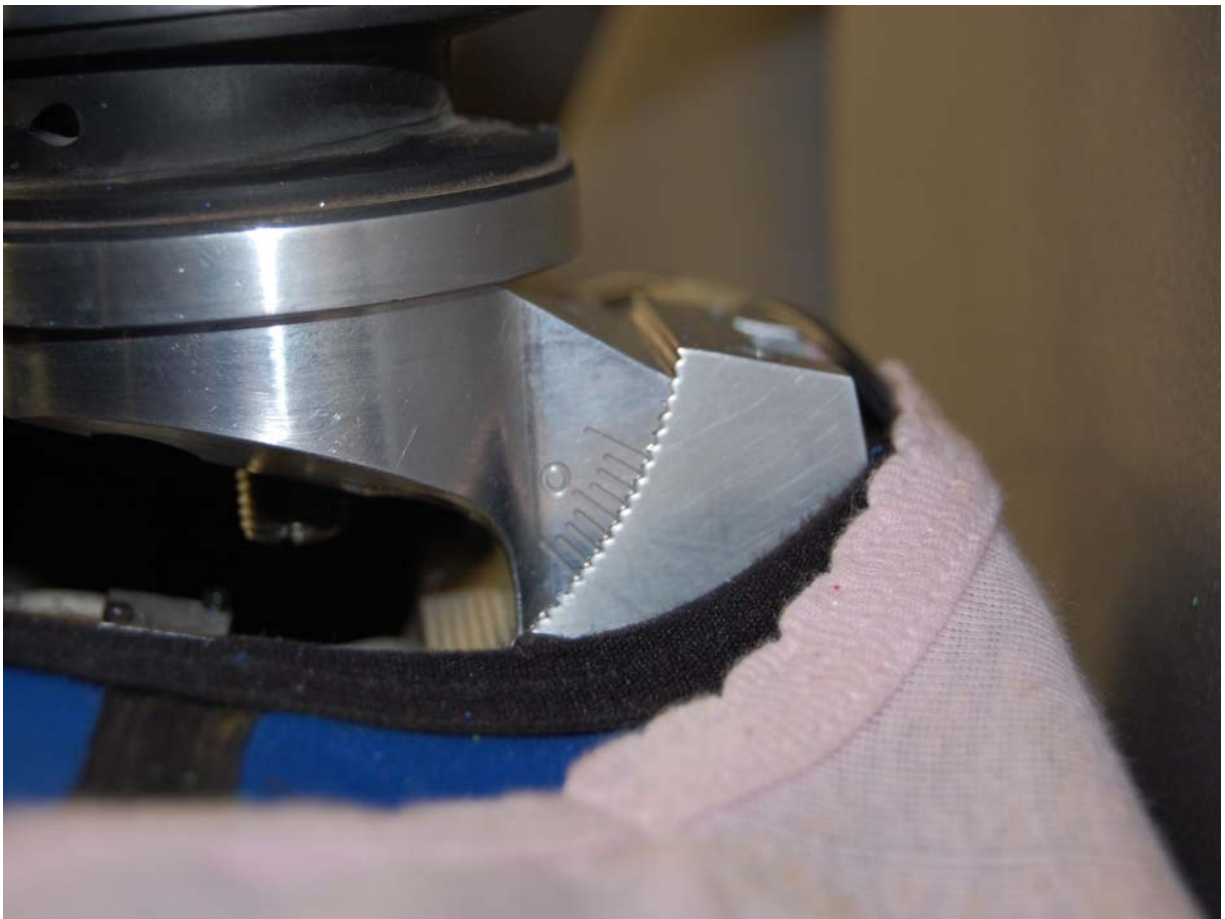
Pre-Test Frontal View of Dummy Head and Shoulders in Relation to Head Restraint



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



Pre-Test Overhead View of Dummy Thighs on Seat Pan



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



Pre-Test View of Dummy's Head Showing Dummy's Head is Level



Pre-Test Placement of Dummy's Feet



Pre-Test View of Belt Anchorage for Dummy to Show Position



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



Pre-Test View of Parking Brake



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



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



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



Pre-Test Dummy and Door Clearance View



Post-Test Dummy and Door Clearance View



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



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



Pre-Test Inner Door Panel View



Post-Test Inner Door Panel View Showing Dummy Contact Location



Post-Test Dummy Close-Up Head Contact with Vehicle View



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



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



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



Post-Test Dummy Close-Up Pelvis Contact View



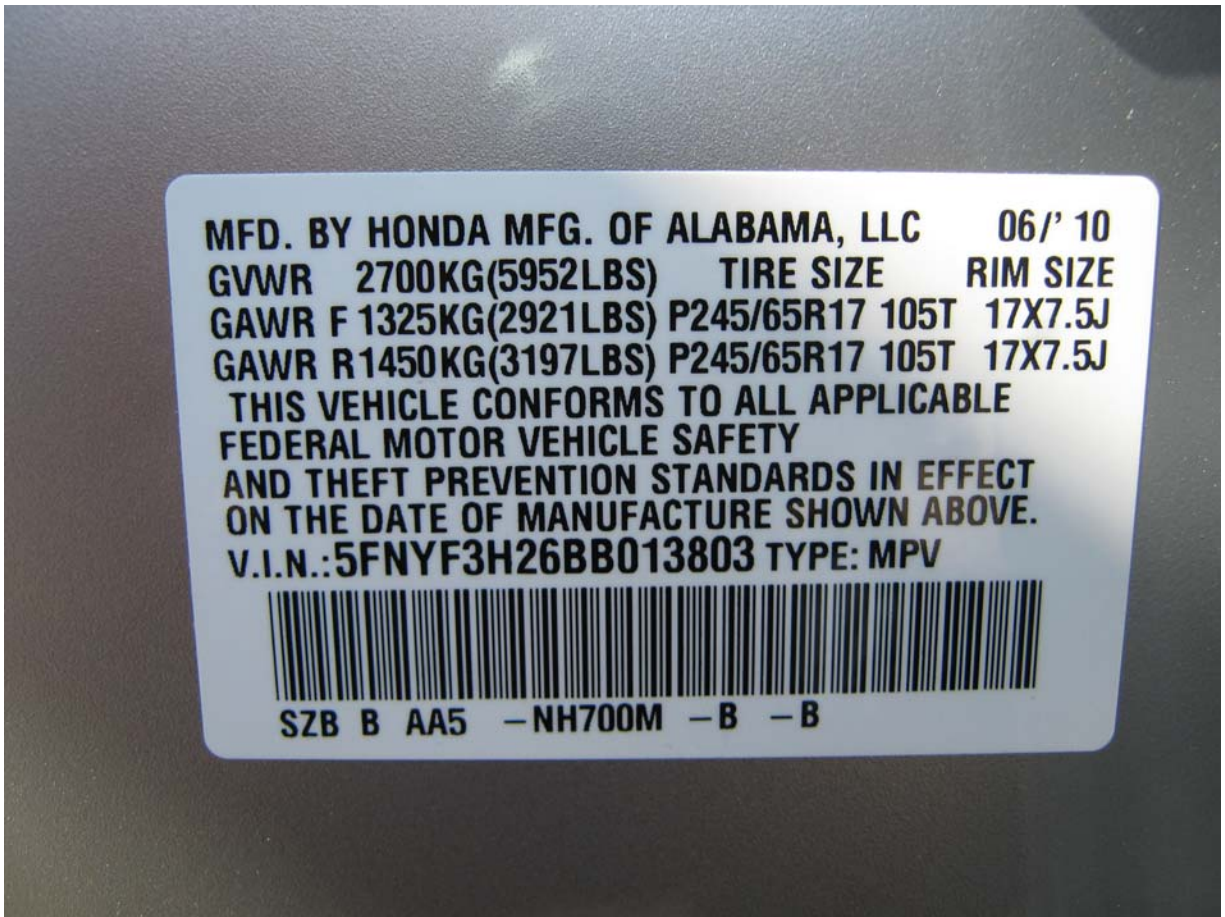
Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



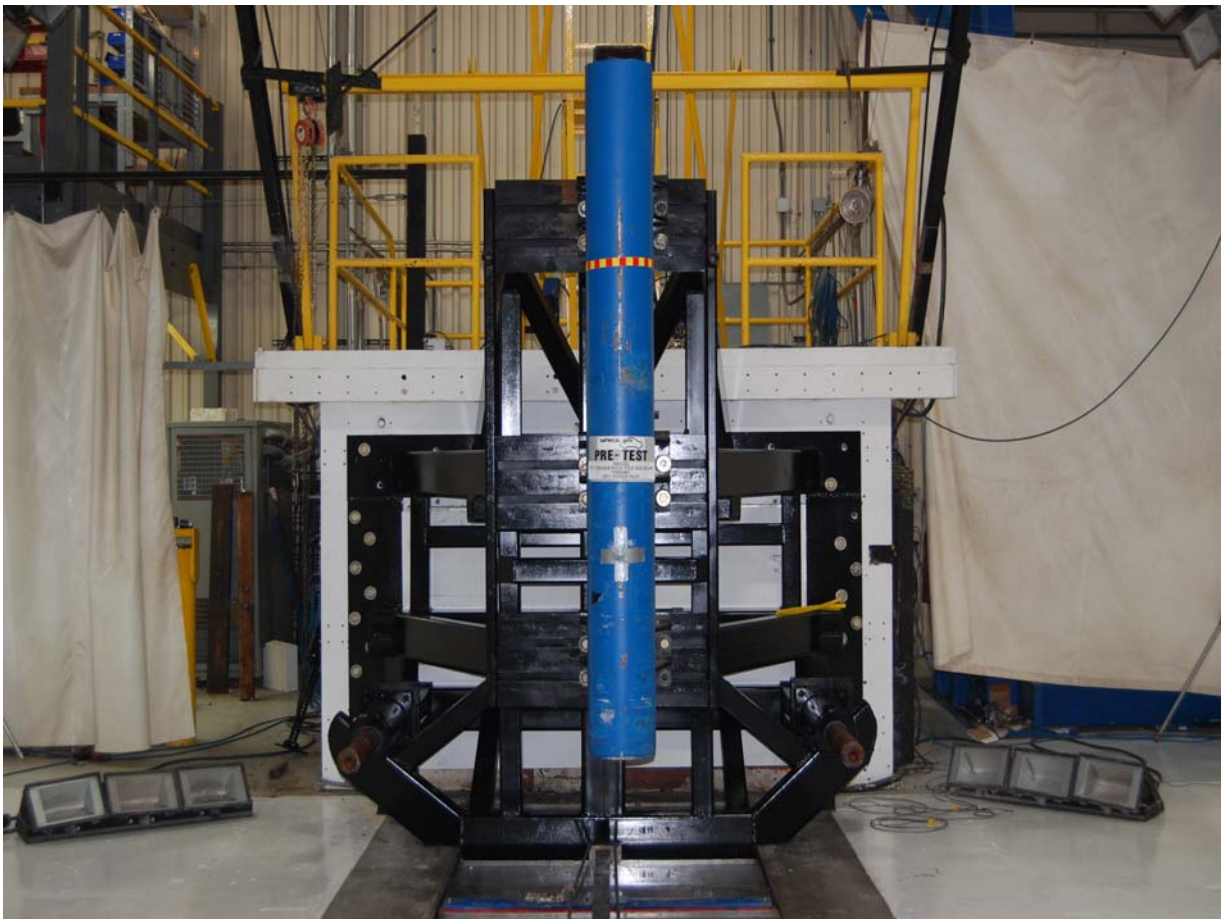
Post-Test View of Fuel Filler Cap or Fuel Filler Neck



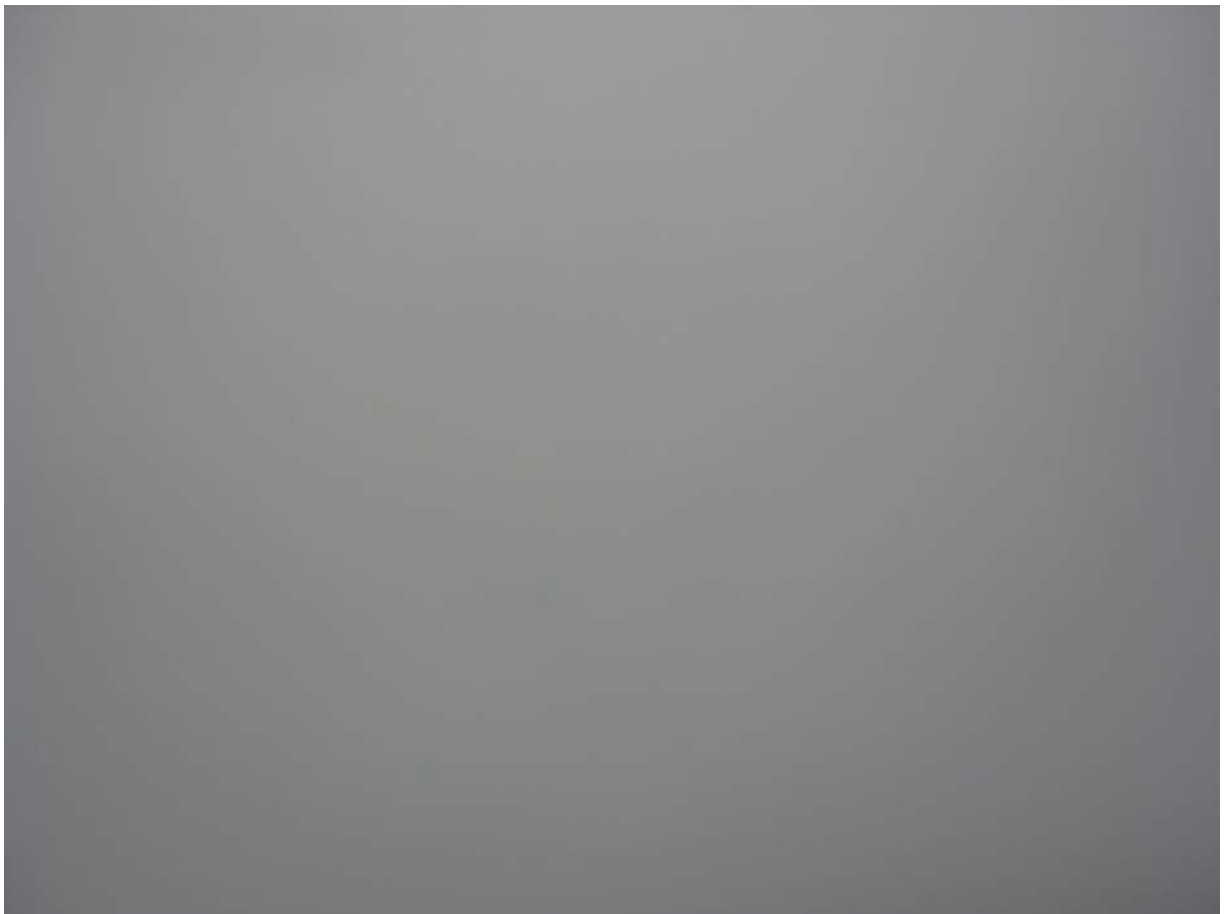
Close-Up View of Vehicle's Certification Label



Close-Up View of Vehicle's Tire Information Placard of Label



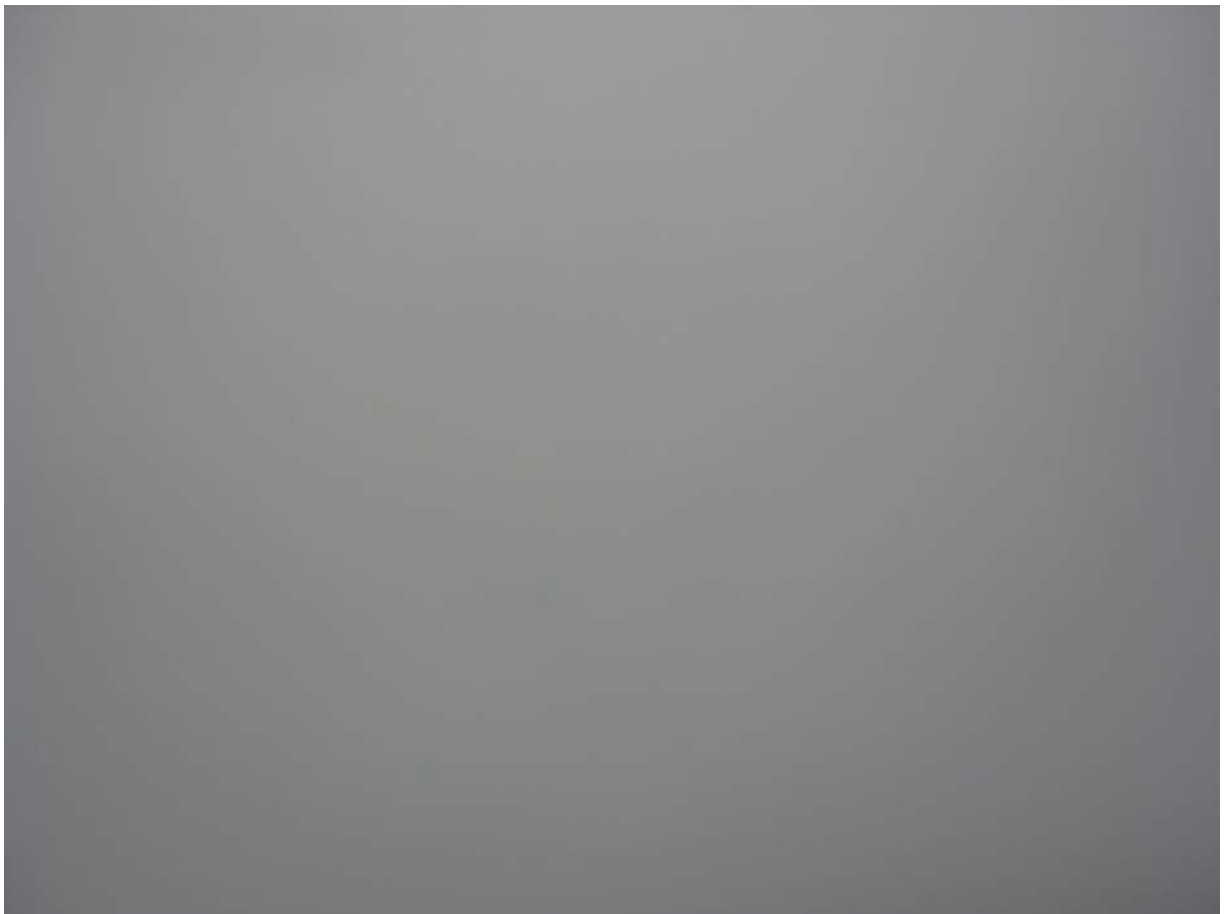
Pre-Test Pole Barrier Front View



Post-Test Pole Barrier Front View



Pre-Test Pole Barrier Side View



Post-Test Pole Barrier Side View



Pre-Test Ballast View



Post-Test Primary and Redundant Speed Trap Read-Out



FMVSS No. 301/305 Rollover 0 Degrees



FMVSS No. 301/305 Rollover 90 Degrees



FMVSS No. 301/305 Rollover 180 Degrees



FMVSS No. 301/305 Rollover 270 Degrees



FMVSS No. 301/305 Rollover 360 Degrees



Impact Event (Impact Side)

HONDA

2011 PILOT 5DR 2WD LX

VEHICLE NUMBER: 5FN9F3H268B013803
ENGINE NUMBER: J352A-3038690 EXT: A ADVANTAGE SILVER M
CONTROL NUMBER: 941524 INT: GRAY

STANDARD EQUIPMENT AT NO EXTRA COST

TECHNICAL FEATURES

- 250hp 3.5-liter SOHC 24-Valve VTEC Engine with Variable Valve Timing and Lift
- MP3/Auxiliary Input Jack
- Front and Rear Air Conditioning
- Driver's Seat Height Adjustment
- Tilt & Telescopic Steering Column
- 60/40 Fold-Down 2nd and 3rd Rows
- Power Windows and Programmable Auto Door Locks
- Front Auto Up/Down Windows
- Trip Computer and Compass
- Crutch Control
- Power Mirrors with Memory and Power Lock
- 1st and 2nd Row Floor Mats

EXTERIOR FEATURES

- 17" x 7.5" Styled Steel Wheels
- P245/65 R17 All-Season Tires
- Remote Entry System
- Auto-On/Off Headlights
- Power Door Mirrors
- Body Side Moldings
- Power Windows
- Integrated Class III Trailer Hitch
- Pre-Wired for Trailer Harness

SAFETY FEATURES

- Driver's and Front Passenger's Dual-Stage Airbags (SRS)
- Driver's and Front Passenger's Side Airbags
- Three Row Side Curtain Airbags
- Active Front Head Restraints
- Vehicle Stability Assist (VSA)
- Anti-Lock Braking System (ABS)
- Brake Assist
- ACE Body Structure
- 3-Point Seat Belts
- Front Seat Belts with Automatic Tensioning System
- Tire Pressure Monitoring System
- Side-Impact Door Beams
- Daytime Running Lights (DRL)
- LATCH System for Child Seats

Manufacturer's Suggested Retail Price: **\$28,045.00**

Full Tank of Fuel: No Charge

Destination and Handling: 780.00

TOTAL VEHICLE PRICE (includes Pre-Delivery Service): **\$28,825.00**

License and title fees, state and local taxes and dealer options and accessories are not included in the manufacturer's suggested retail price.

BOYLAND HONDA
6141 S. 27TH STREET
GREENFIELD, WI 53221

PORT OF ENTRY: ALABAMA
DELIVERY POINT: SCHAUMBURG
SHIP#: 740-008
ROW/SPACE: 138-006
TRANS.METHOD: N50 ELWOOD

VIN: 5FN9F3H268B013803

ORIG. DLR: 208276
REF. NO: 40219
HM CODE: HN-0001
EMISSION: 50 STATE
DEALER: 208276

Environmental Performance

Protect the environment, choose vehicles with higher scores:

Global Warming Score

1 5 10
Average new vehicle

Smog Score

1 5 10
Average new vehicle

Vehicle emissions are a primary contributor to global warming and smog. Scores are determined by the California Air Resources Board based on this vehicle's measured emissions. Please visit www.driveclean.ca.gov for more information. AIR RESOURCES BOARD

EPA Fuel Economy Estimates

189 mi/gal

CITY MPG 17
Expected range for most drivers 14 to 20 MPG

Estimated Annual Fuel Cost \$2,051
based on 15,000 miles at \$2.60 per gallon

Highway MPG 23
Expected range for most drivers 19 to 27 MPG

Combined Fuel Economy This Vehicle 19
All SUVs

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

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

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE
U.S./Canadian Parts Content: **70 %**

NOTE: Parts content does not include final assembly, distribution or other non-parts costs.

GOVERNMENT SAFETY RATINGS

	Driver	Passenger
Frontal Crash	Not Rated	Not Rated
Side Crash	Not Rated	Not Rated
Rollover	Not Rated	Not Rated

Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.

Star ratings based on the risk of injury in a side impact.

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

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

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

FOR THIS VEHICLE

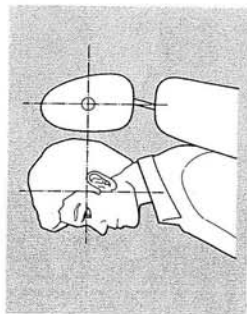
Final Assembly Point:
USA
LINCOLN, ALABAMA

Country of Origin: Engine:
U.S.A.

Transmission:
U.S.A.

Monroney Label

4. Adjust the Head Restraints



Adjust the driver's head restraint so the center of the back of your head rests against the center of the restraint.

Have passengers adjust their head restraints properly as well. Taller persons should adjust their restraint as high as possible.

⚠ WARNING

Improperly positioning head restraints reduces their effectiveness and you can be seriously injured in a crash.

Make sure head restraints are in place and positioned properly before driving.

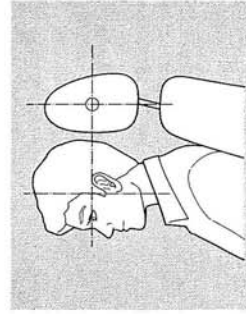
Properly adjusted head restraints will help protect occupants from whiplash and other crash injuries.

See page 157 for how to adjust the head restraints and how the driver's and front passenger's active head restraints work.

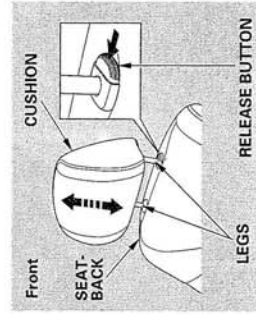
Head Restraints

See page 16 for important safety information and a warning about improperly positioning head restraints.

Your vehicle is equipped with head restraints in all seating positions to help protect you and your passengers from the likelihood of whiplash and other injuries.



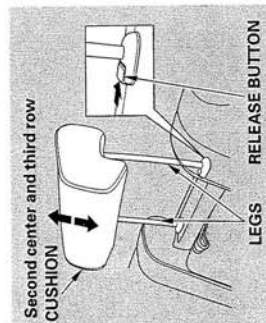
They are most effective when you adjust them so the center of the back of the occupant's head rests against the center of the restraint.



Adjusting the Head Restraint

The head restraints adjust for height. You need both hands to adjust the restraint. Do not attempt to adjust it while driving. To raise it, pull upward. To lower the restraint, push the release button sideways, and push the restraint down.

CONTINUED



Removing the Head Restraint
To remove a head restraint for cleaning or repair, pull it up as far as it will go. Push the release button, then pull the restraint out of the seat-back.

⚠ WARNING

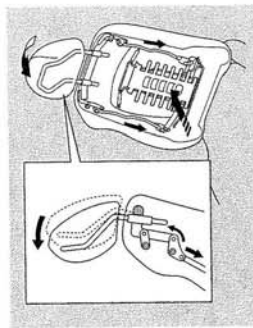
Failure to reinstall the head restraints can result in severe injury during a crash.

Always replace the head restraints before driving.

When reinstalling a head restraint, put the legs back in place. Then adjust it to the appropriate height while pressing the release button.

Make sure the head restraint locks in position when you reinstall it.

Active Head Restraints



The driver's and front passenger's seats have active head restraints. If the vehicle is struck severely from the rear, the occupant properly secured with the seat belt will be pushed against the seat-back and the head restraint will automatically move forward.

This reduces the distance between the restraint and the occupant's head. It also helps protect the occupants against the likelihood of whiplash and injuries to the neck and upper spine.

After a collision, the activated restraint should return to its normal position.

If the restraints do not return to their normal position, or in the event of a severe collision, have the vehicle inspected by a Honda dealer.

For a head restraint system to work properly:

- Do not hang any items on the head restraints, or from the restraint legs.
- Do not place any object between an occupant and the seat-back.
- Install each restraint in its proper location.
- Only use genuine Honda replacement head restraints.

APPENDIX B
DUMMY RESPONSE DATA

TABLE OF DATA PLOTS

		<u>Page No.</u>
List of Data Plots Provided in the Test Report		
Figure No. 1.	Driver Head Acceleration (X) Primary vs. Time	B-1
Figure No. 2.	Driver Head Acceleration (Y) Primary vs. Time	B-1
Figure No. 3.	Driver Head Acceleration (Z) Primary vs. Time	B-1
Figure No. 4.	Driver Head Resultant Primary Acceleration vs. Time	B-1
Figure No. 5.	Driver Lower Spine T12 Acceleration (X) vs. Time	B-2
Figure No. 6.	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-2
Figure No. 7.	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-2
Figure No. 8.	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-2
Figure No. 9.	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-3
Figure No. 10.	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-3
Figure No. 11.	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-3

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 Acceleration (X) Redundant

Driver Head Acceleration (Y) Redundant

Driver Head Acceleration (Z) Redundant

Driver Upper Thorax Rib Deflection (Y)

Driver Middle Thorax Rib Deflection (Y)

Driver Lower Thorax Rib Deflection (Y)

Driver Upper Abdomen Rib Deflection (Y)

Driver Lower Abdomen Rib Deflection (Y)

Driver Shoulder Contact Switch

Driver Torso Contact Switch

Driver Pelvis Contact Switch

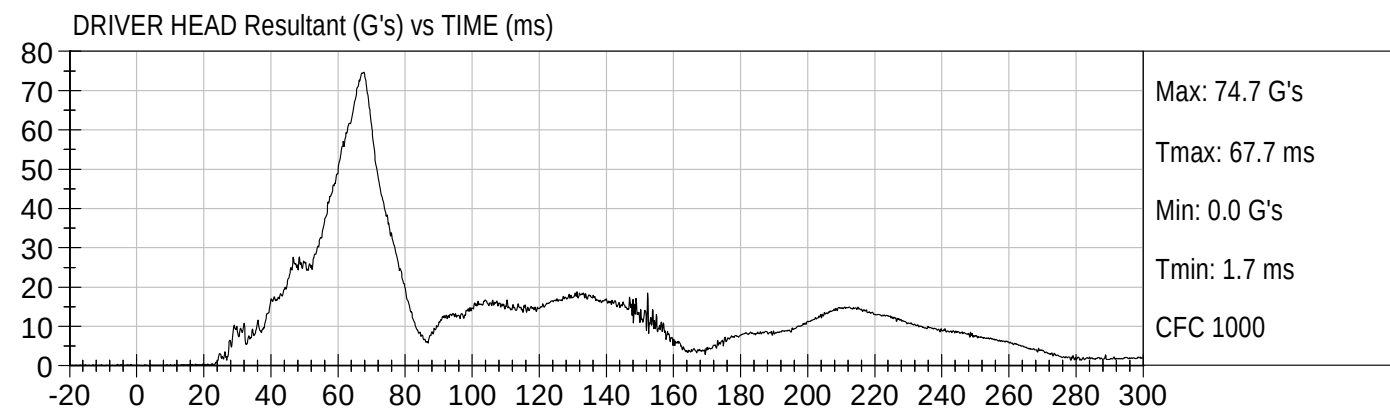
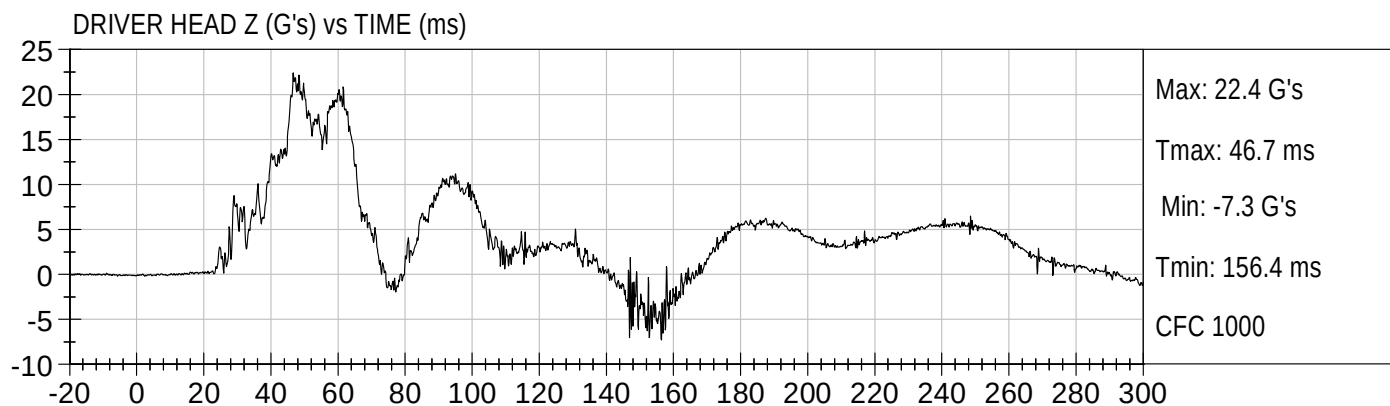
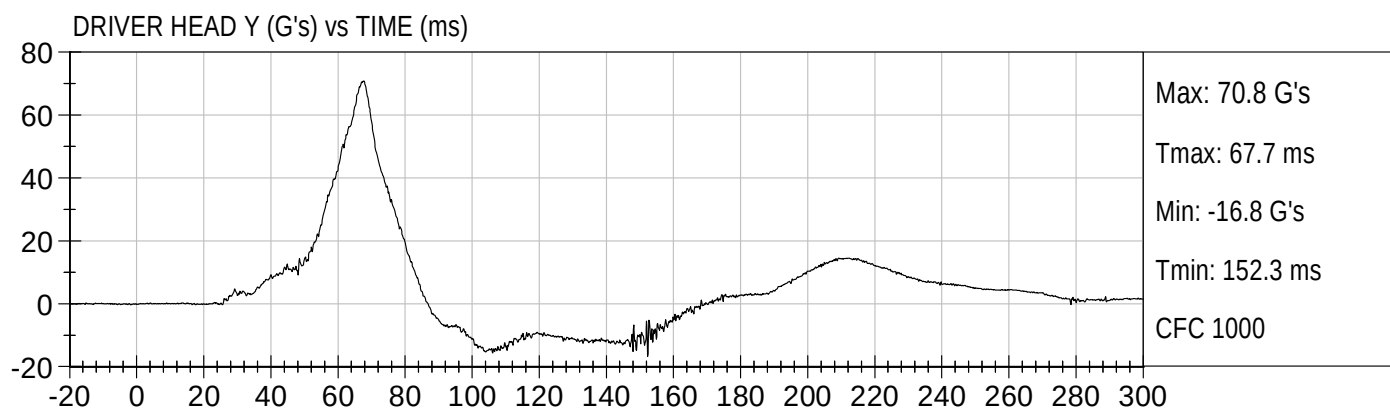
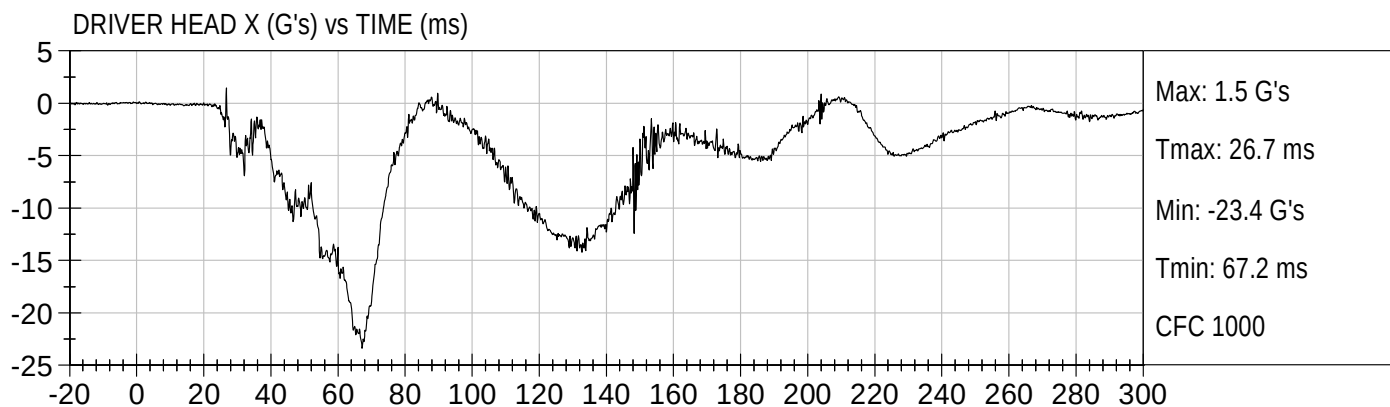
Vehicle CG Acceleration (X)

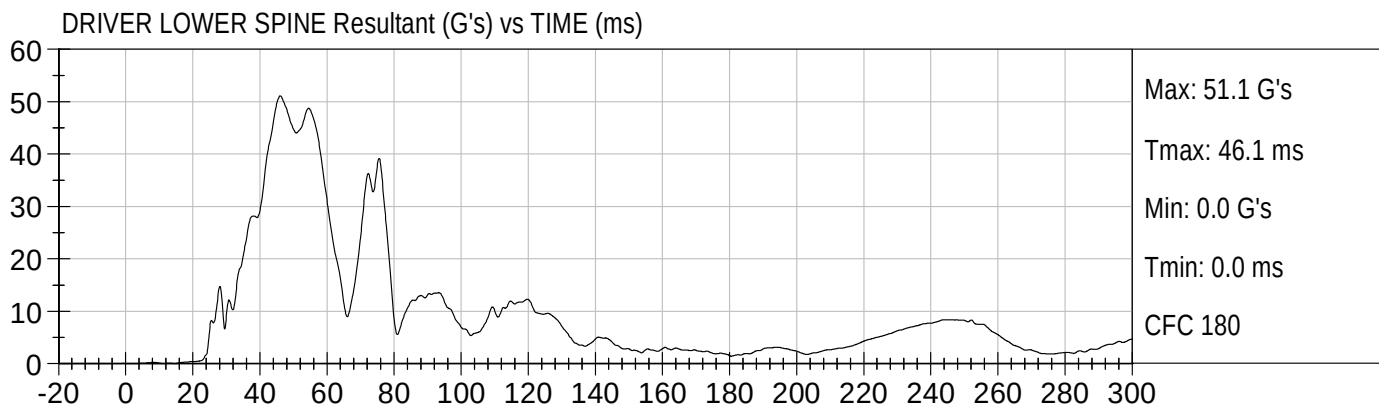
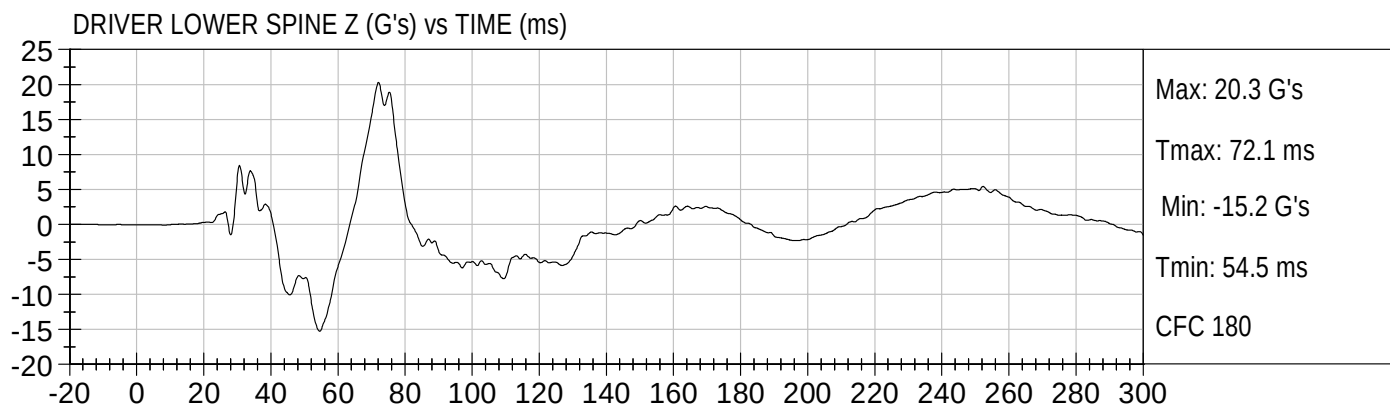
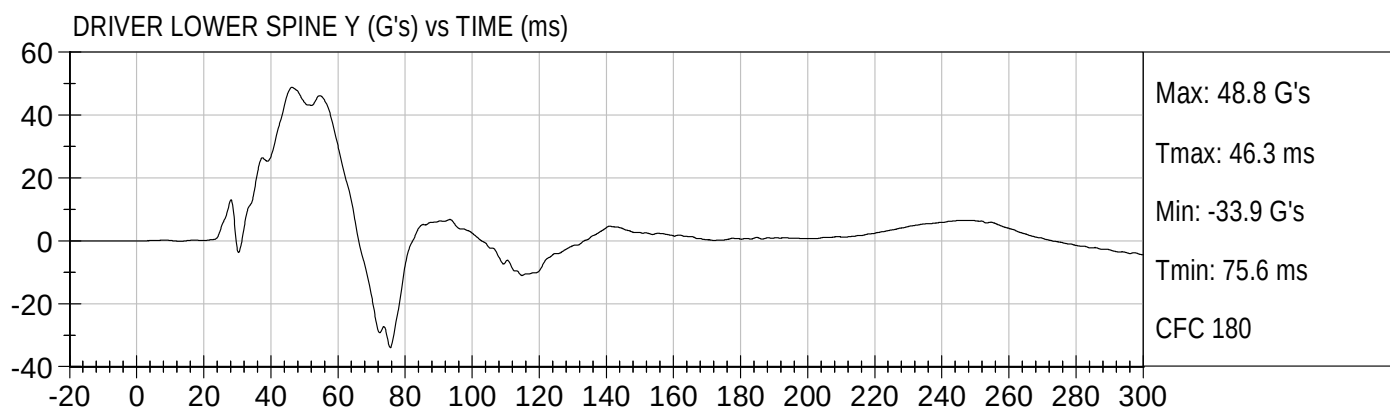
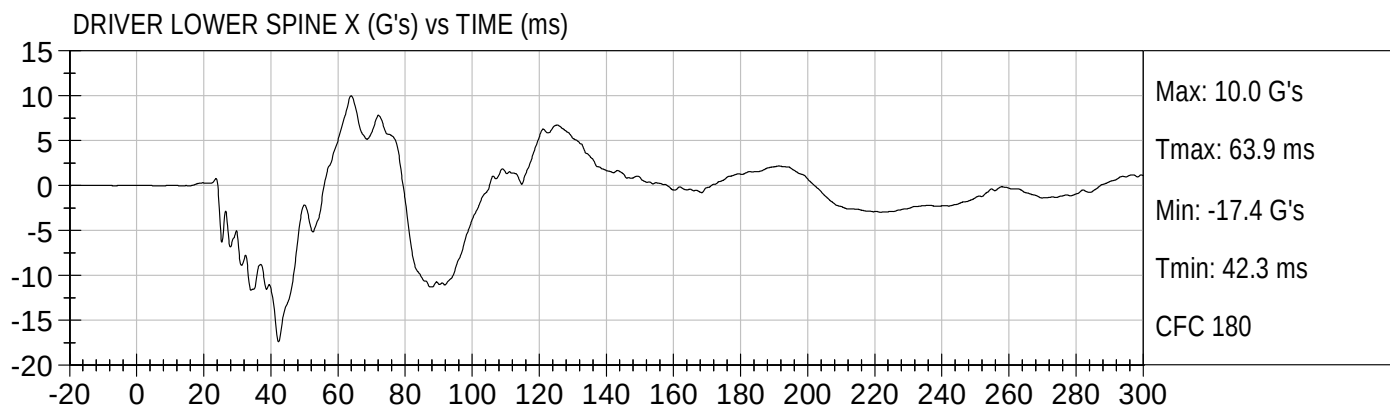
Vehicle CG Acceleration (Y)

Vehicle CG Acceleration (Z)

Vehicle CG Angular Rate About X (Roll)

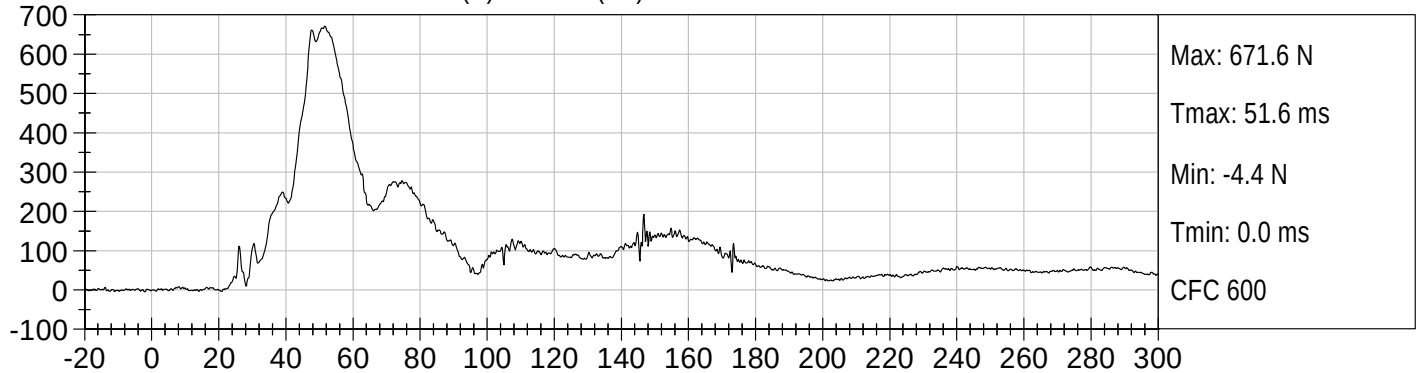
Vehicle CG Angular Rate About Y (Pitch)
Vehicle CG Angular Rate About Z (Yaw)
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)
Left B-Pillar Sill Acceleration (Y)
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy H-Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)
Driver Side Airbag Timing
Driver Side Curtain Airbag Timing
Load Cell Pole Barrier #1 Force (Y) – Not used
Load Cell Pole Barrier #2 Force (Y) – Not used
Load Cell Pole Barrier #3 Force (Y) – Not used
Load Cell Pole Barrier #4 Force (Y) – Not used
Load Cell Pole Barrier #5 Force (Y) – Not used
Load Cell Pole Barrier #6 Force (Y) – Not used
Load Cell Pole Barrier #7 Force (Y) – Not used
Load Cell Pole Barrier #8 Force (Y) – Not used



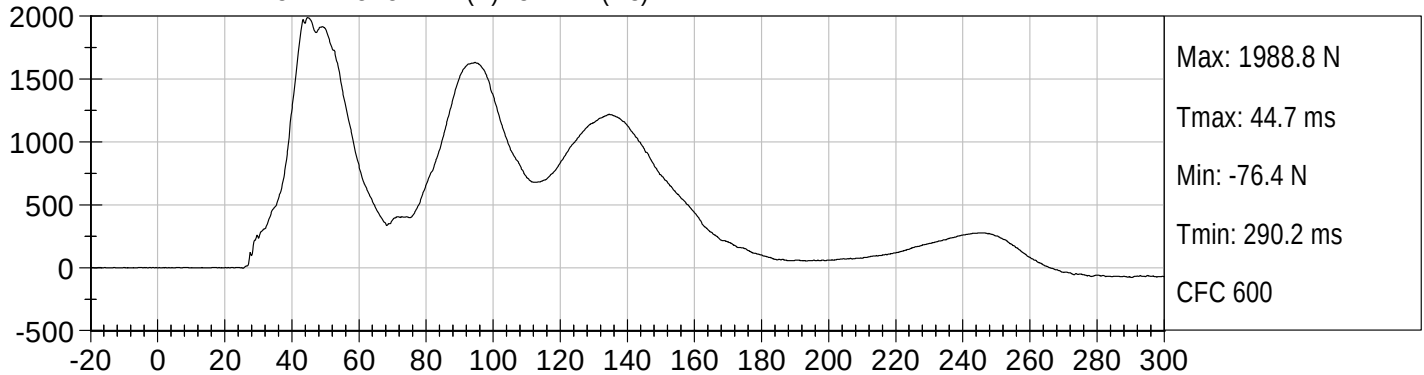




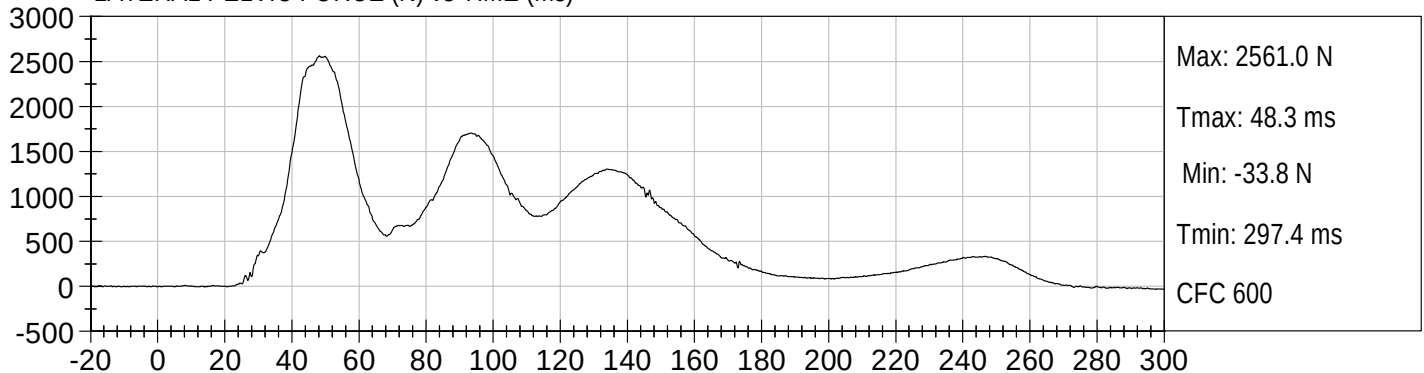
DRIVER LEFT ILLIUM CREST FY (N) vs TIME (ms)



DRIVER LEFT ACETABULUM FY (N) vs TIME (ms)



LATERAL PELVIC FORCE (N) vs TIME (ms)



APPENDIX C

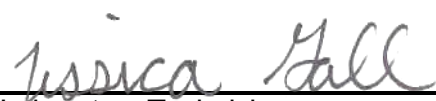
DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA

MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D102461

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	49	Pass
Peak Resultant Acceleration	G's	115 to 137	123	Pass
Peak Lateral Acceleration	G's	+/- 15	-6.1	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

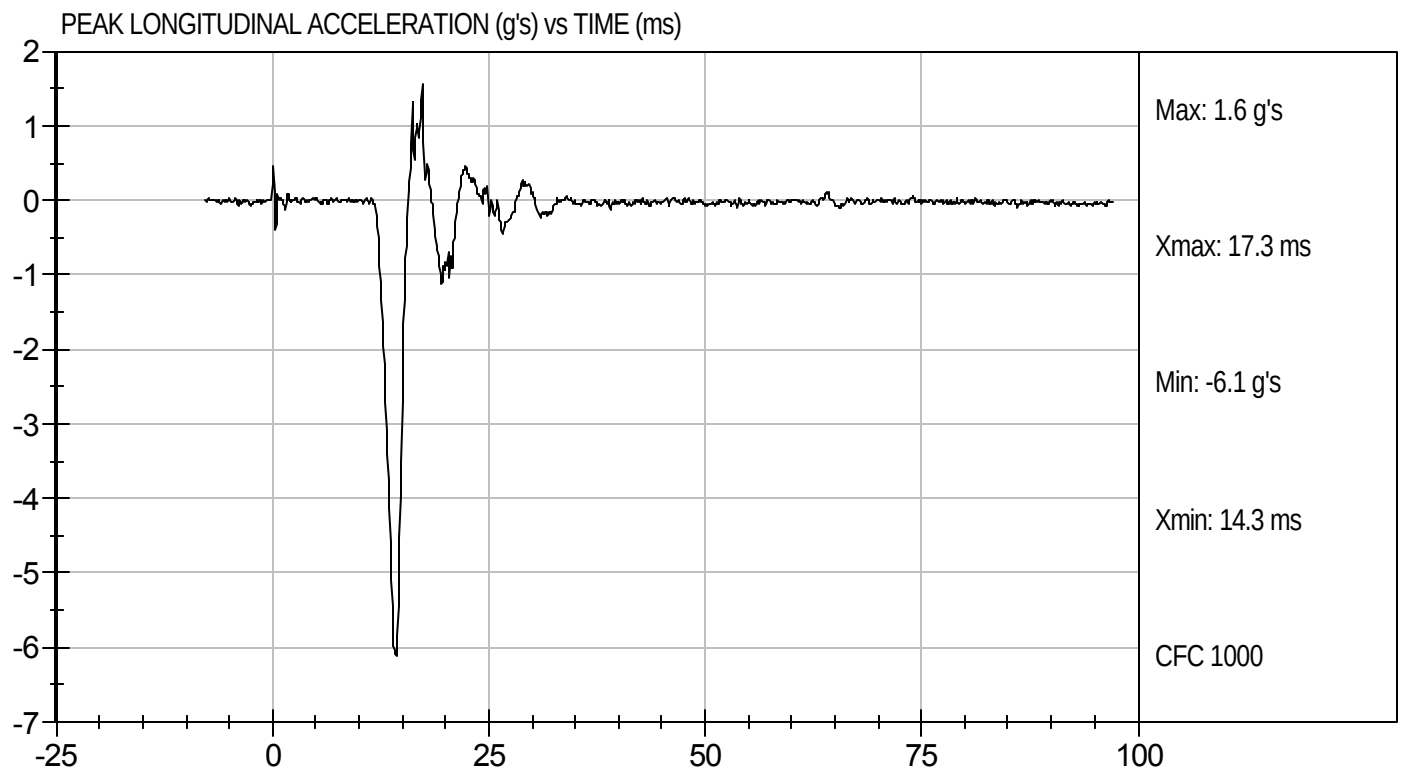
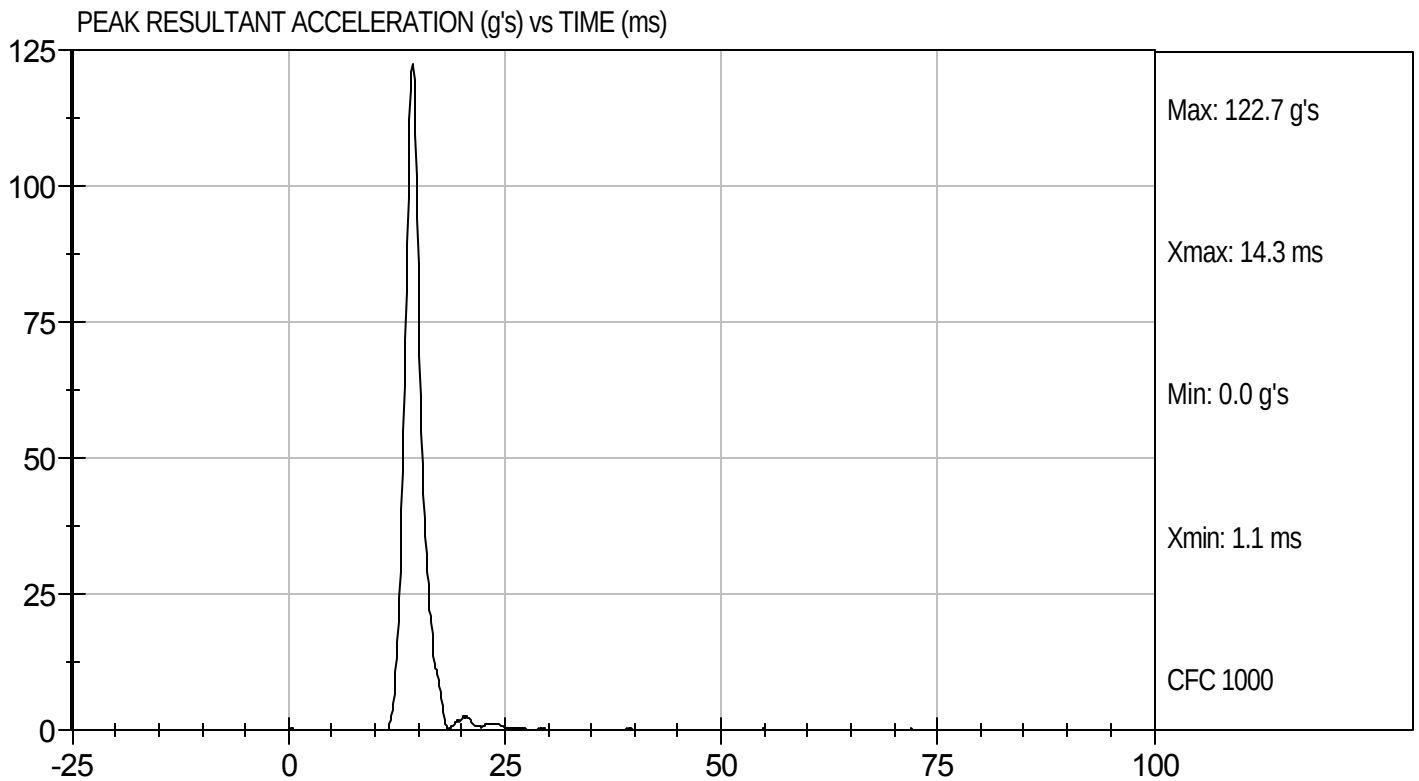
7/30/10
Test Date


Approved By



Test Desc: Head Drop
Component ID: D102461

Test Date: 7/30/10
Velocity: 0 ft/s, 0 m/s

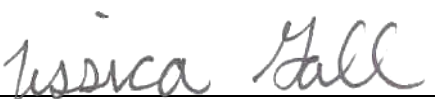


MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIS BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102462

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.9	Pass
Humidity		%	10 to 70	49	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.50	Pass
	15 ms	m/s	3.30 to 4.10	3.58	Pass
	20 ms	m/s	4.40 to 5.40	4.73	Pass
	25 ms	m/s	5.40 to 6.10	5.56	Pass
	25-100 ms	m/s	5.50 to 6.20	5.59	Pass
Maximum D-Plane Rotation		deg	71 to 81	74	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	61	Pass
Maximum Occipital Condyle Moment during Rotation Interval Nm			-44 to -36	-39	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	114	Pass
Overall Test Results				Pass	


 Laboratory Technician

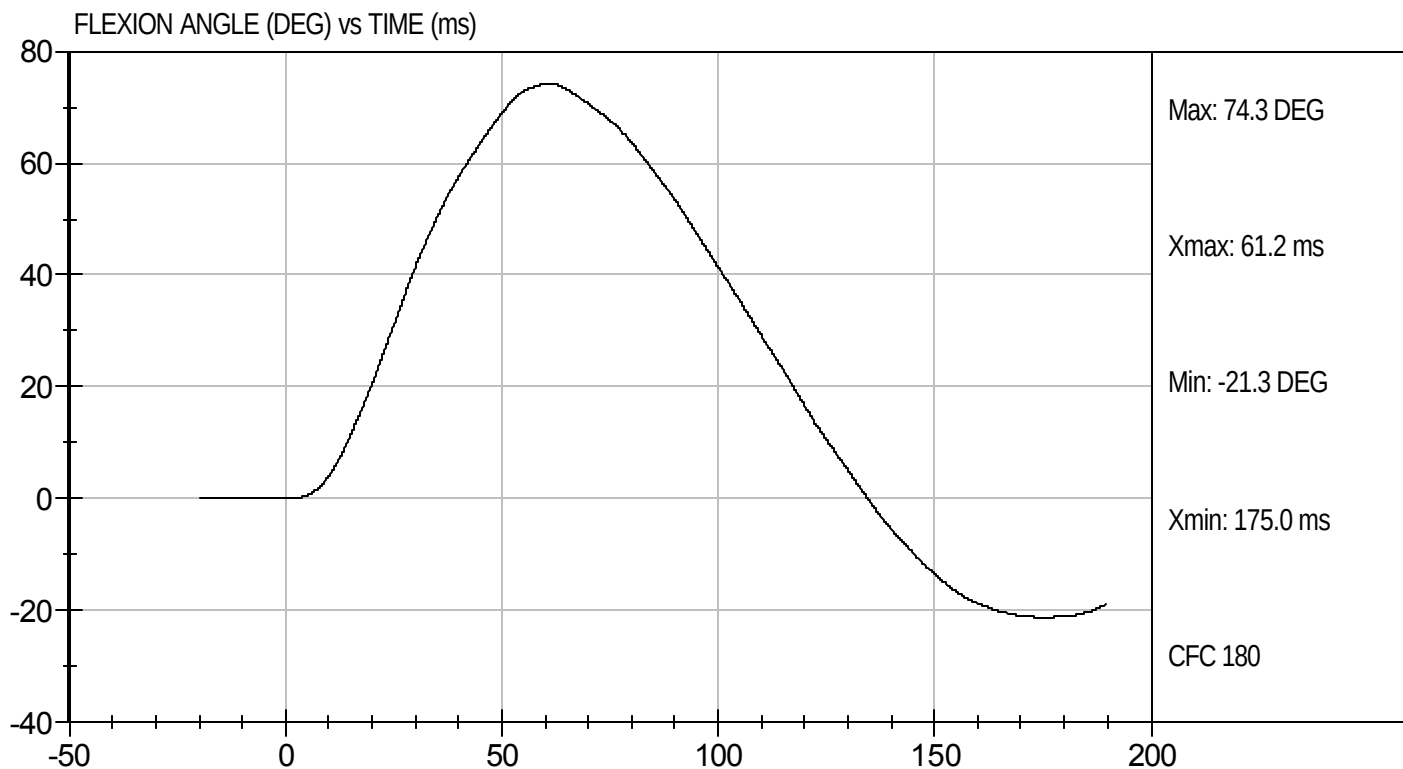
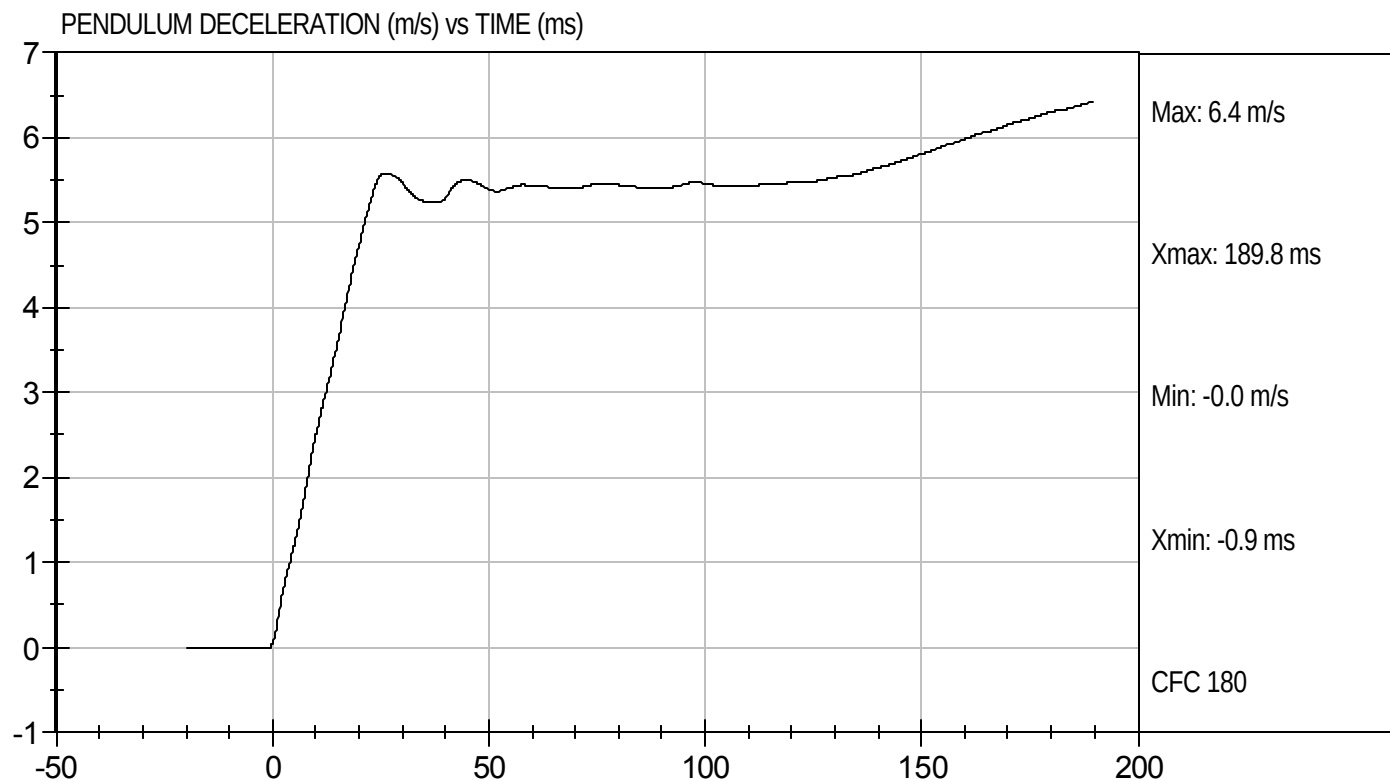
7/30/10
 Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D102462

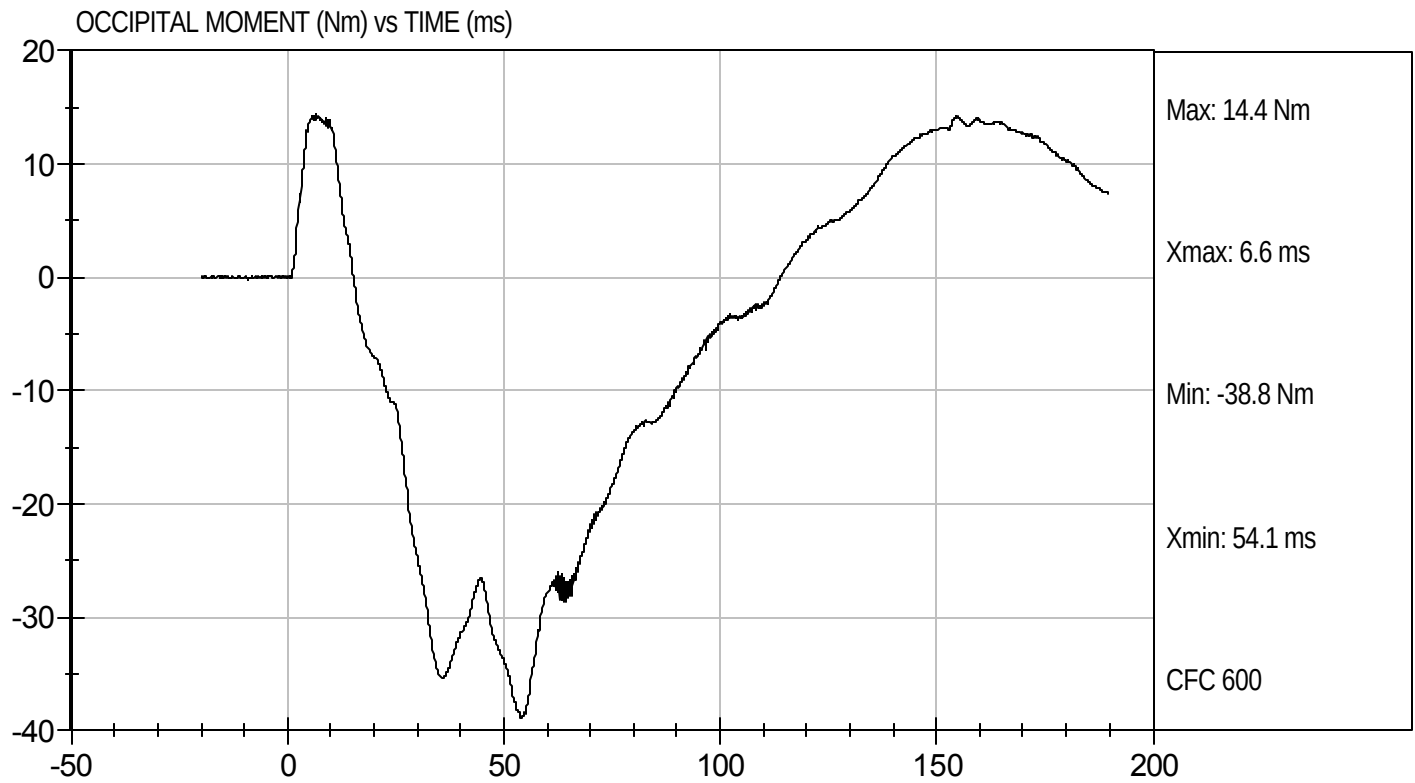
Test Date: 7/30/10
Velocity: 18.32 ft/s, 5.58 m/s





Test Desc: Neck Bending
Component ID: D102462

Test Date: 7/30/10
Velocity: 18.32 ft/s, 5.58 m/s

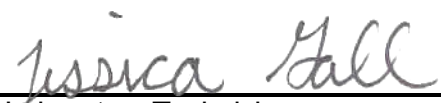


MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D102463

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	32	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
Overall Test Results				Pass


Laboratory Technician

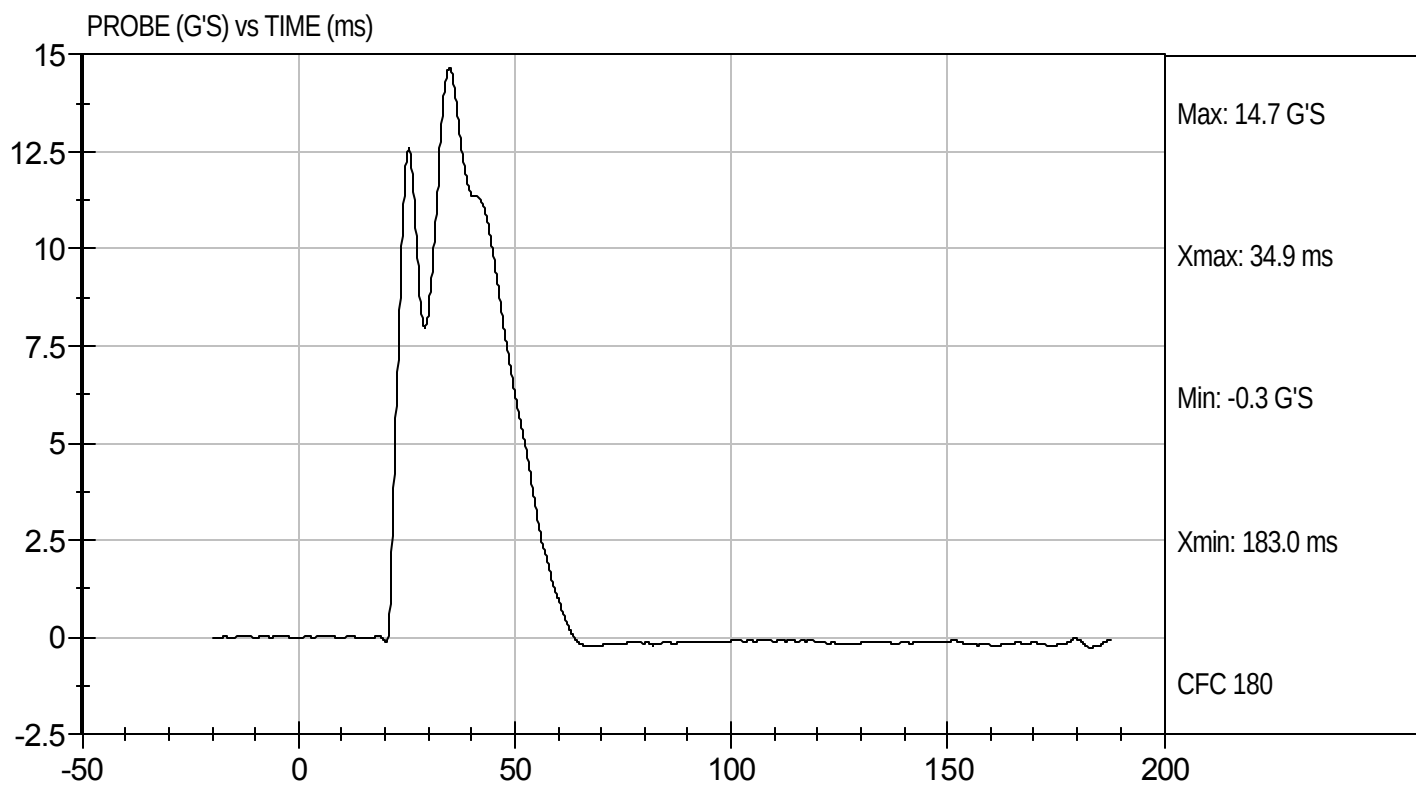
7/29/10
Test Date


Approved By



Test Desc: Shoulder Impact
Component ID: D102463

Test Date: 7/29/10
Velocity: 14.0 ft/s, 4.27 m/s

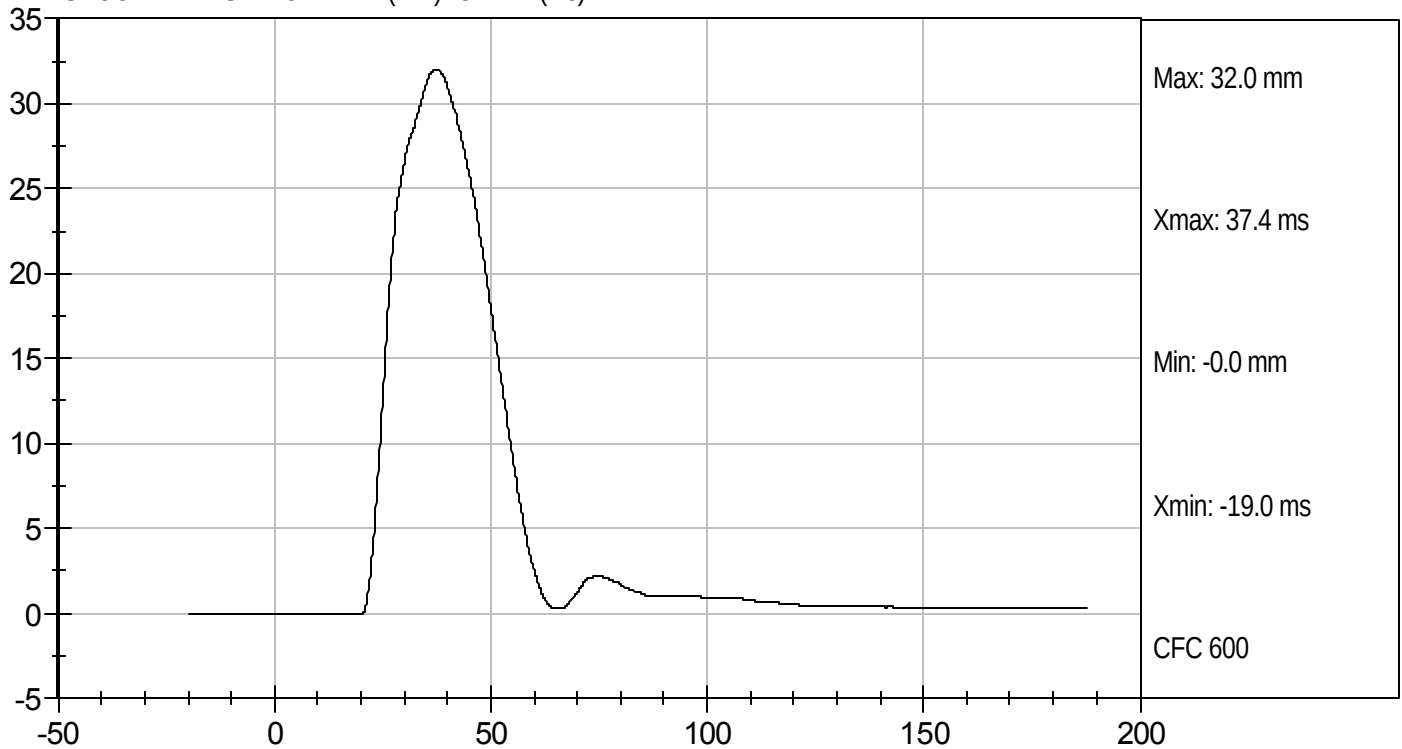




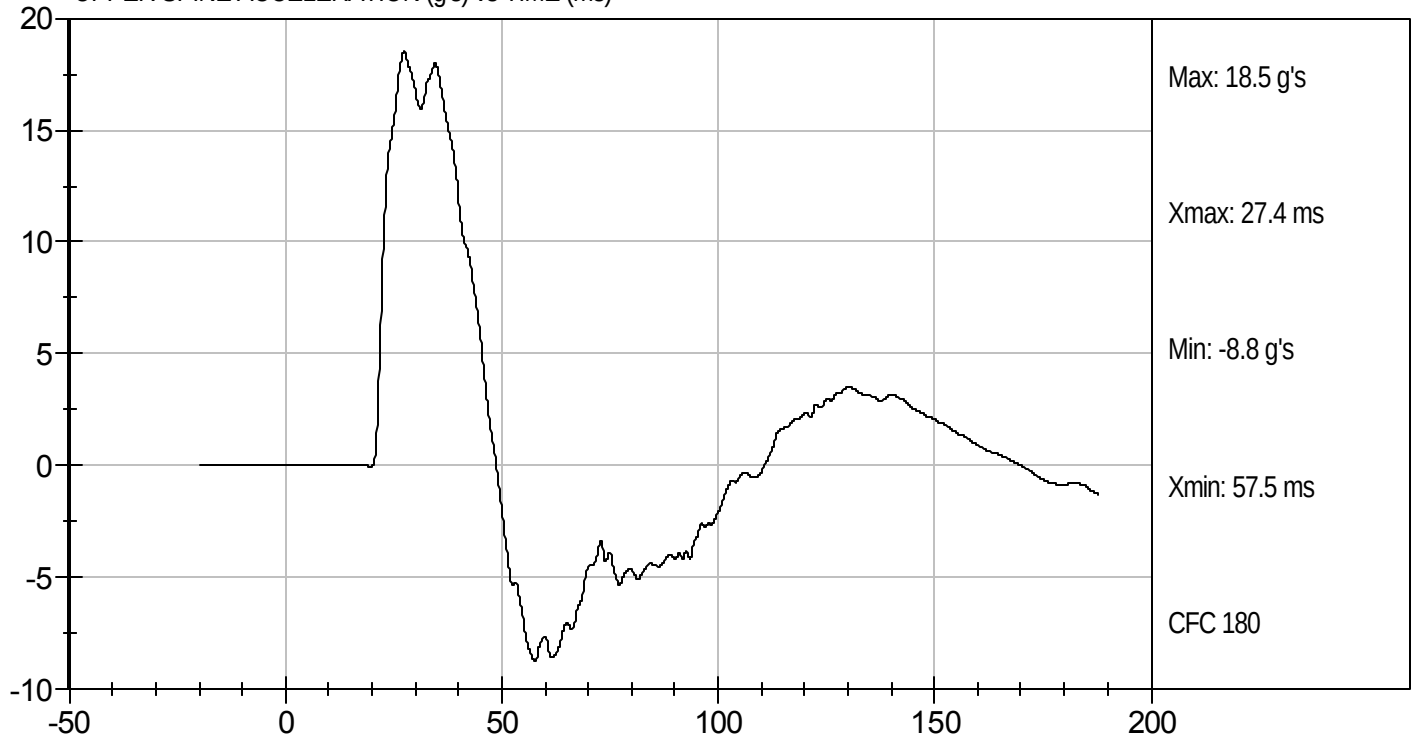
Test Desc: Shoulder Impact
Component ID: D102463

Test Date: 7/29/10
Velocity: 14.0 ft/s, 4.27 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (ms)



UPPER SPINE ACCELERATION (g's) vs TIME (ms)



MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102464

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Peak Impactor Acceleration	G's	30 to 36	32	Pass
Shoulder Displacement	mm	31 to 40	35	Pass
Upper Rib Displacement	mm	25 to 32	26	Pass
Middle Rib Displacement	mm	30 to 36	31	Pass
Lower Rib Displacement	mm	32 to 38	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	37	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
Overall Test Results			Pass	


 Laboratory Technician

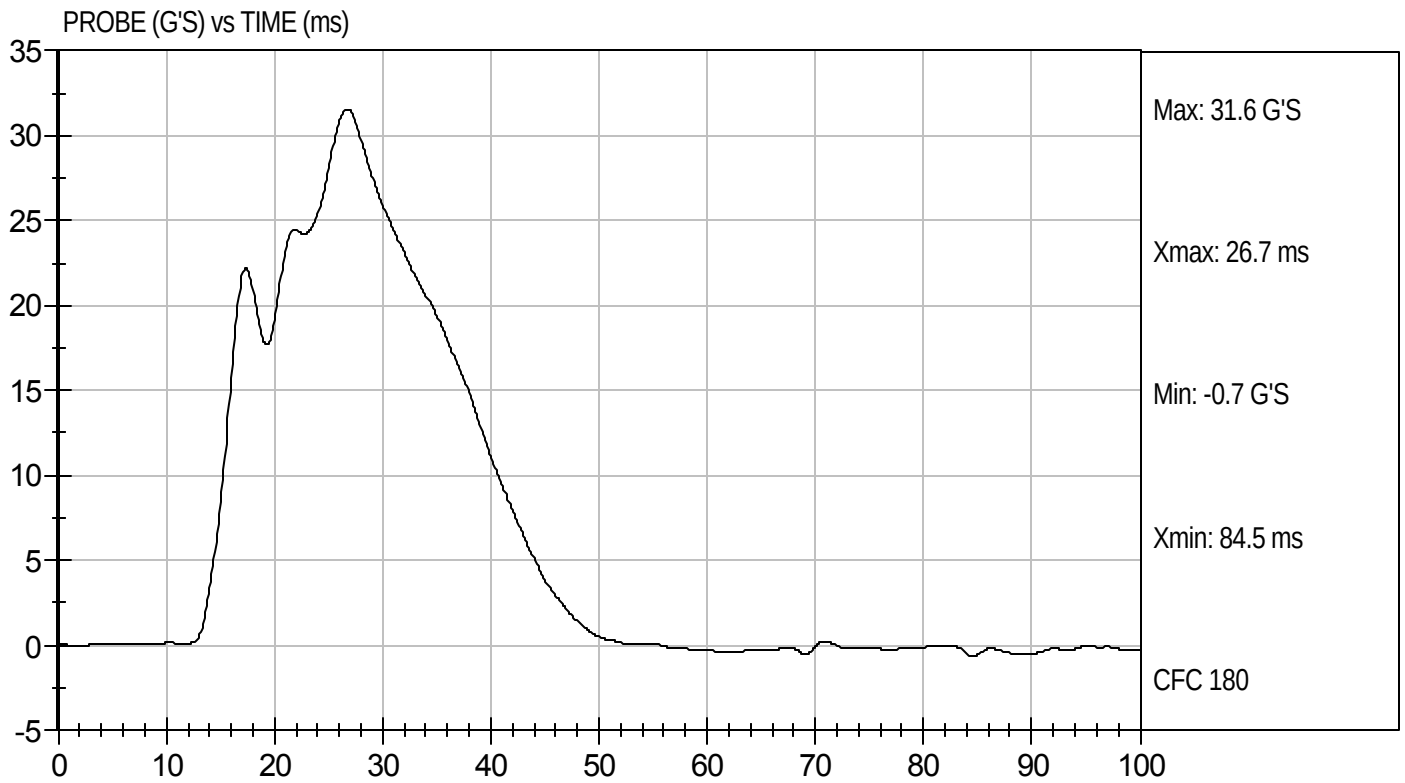
7/29/10
 Test Date


 Approved By



Test Desc: Thorax With Arm
Component ID: D102464

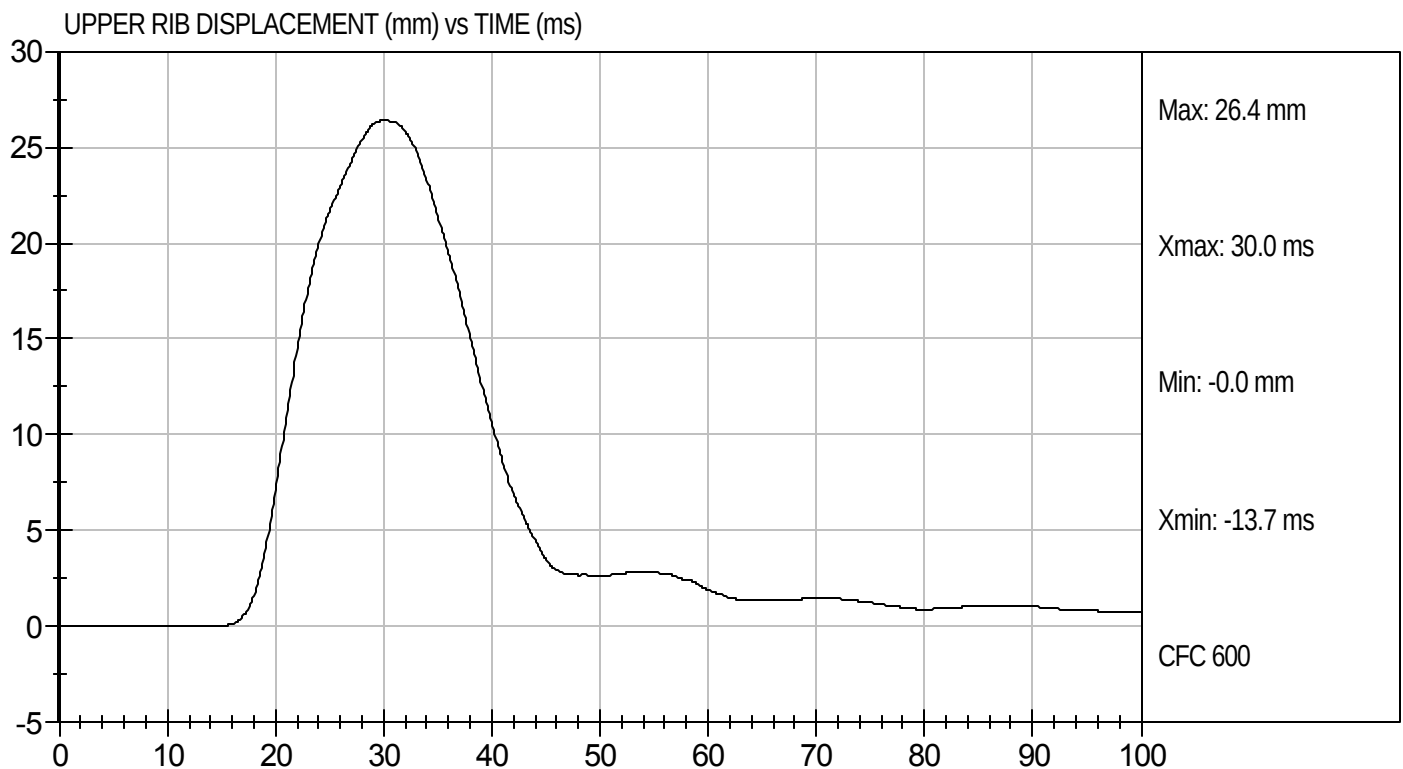
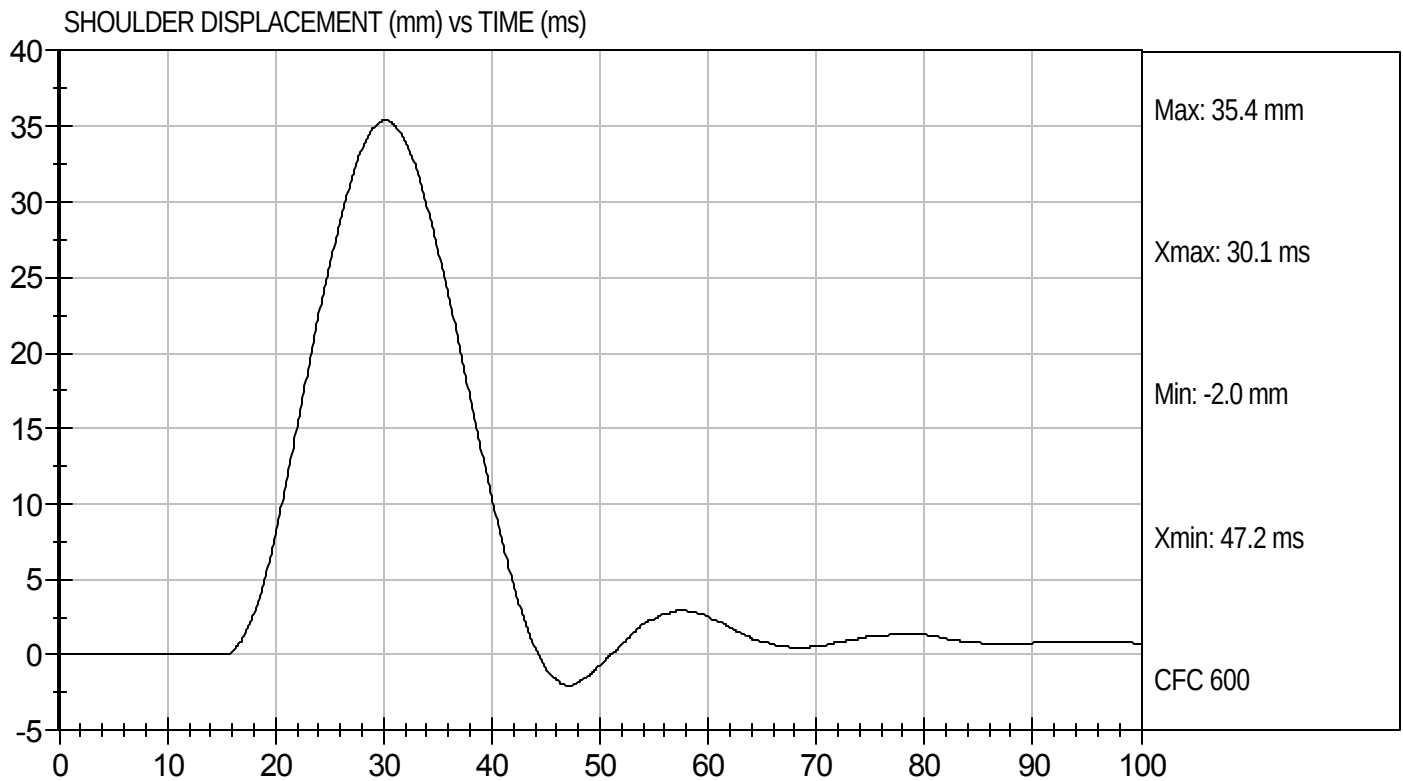
Test Date: 7/29/10
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Thorax With Arm
Component ID: D102464

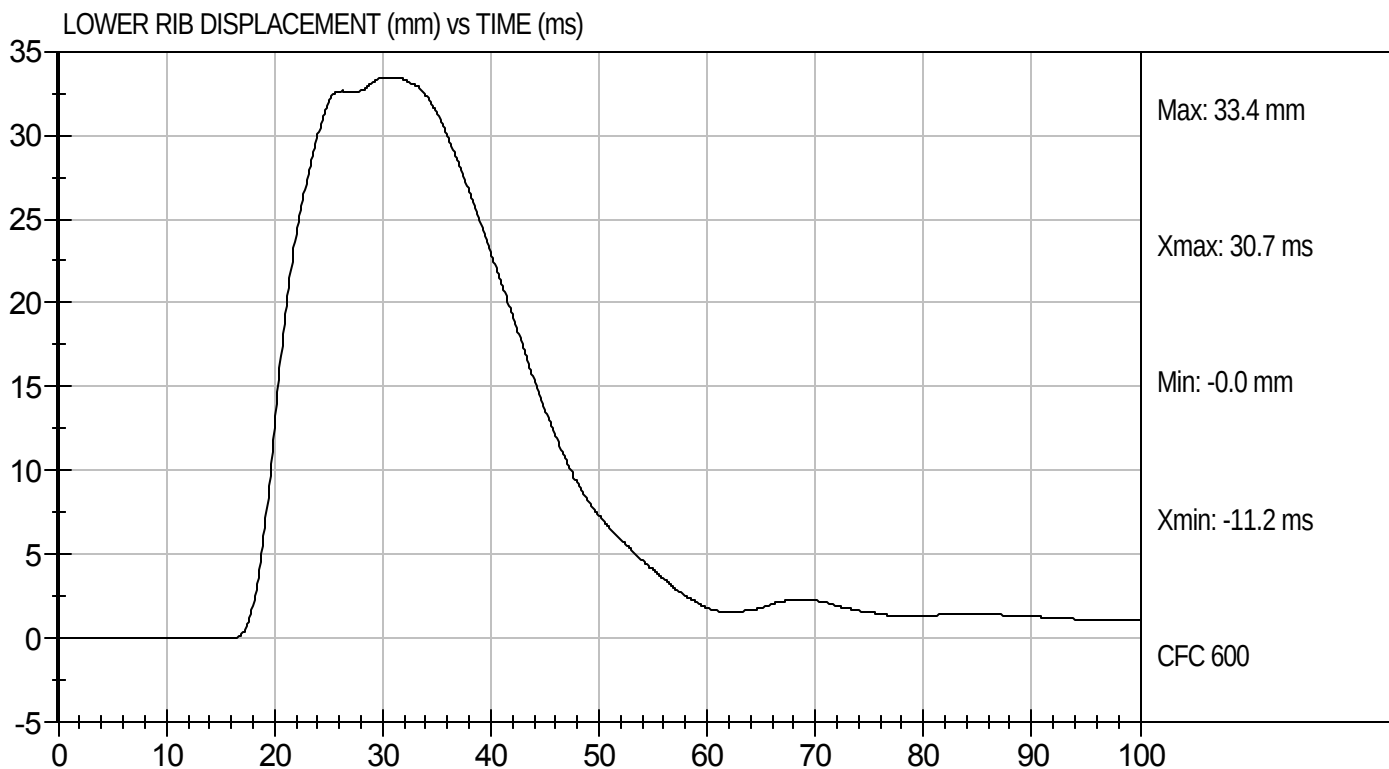
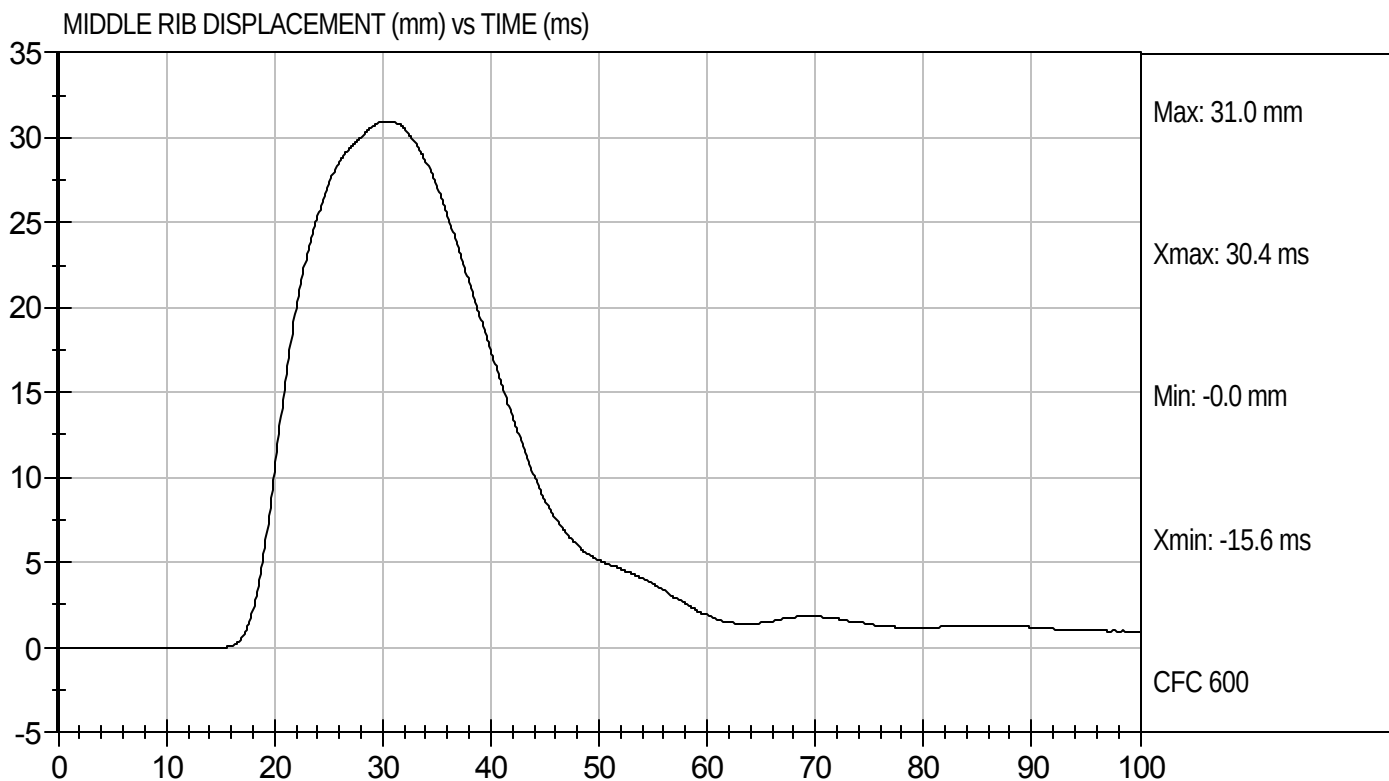
Test Date: 7/29/10
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Thorax With Arm
Component ID: D102464

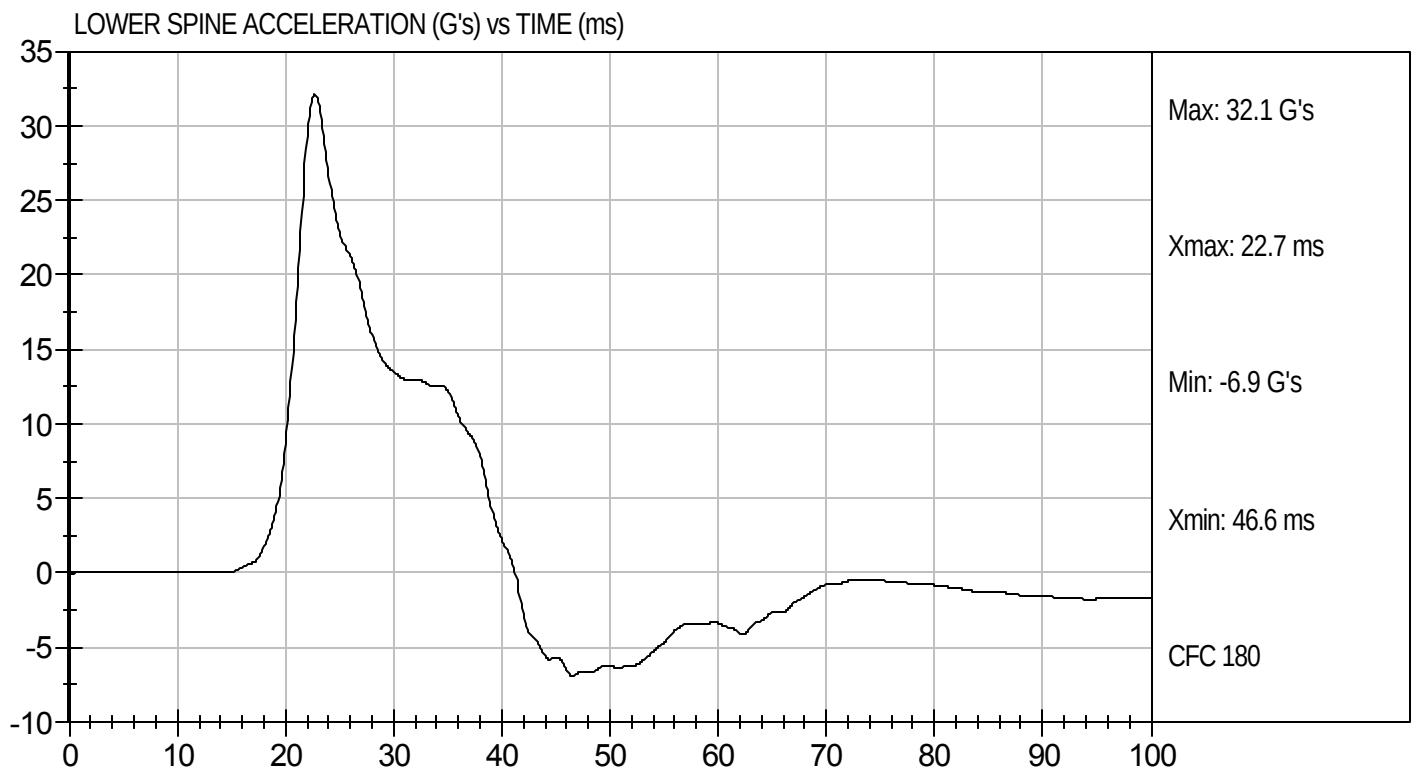
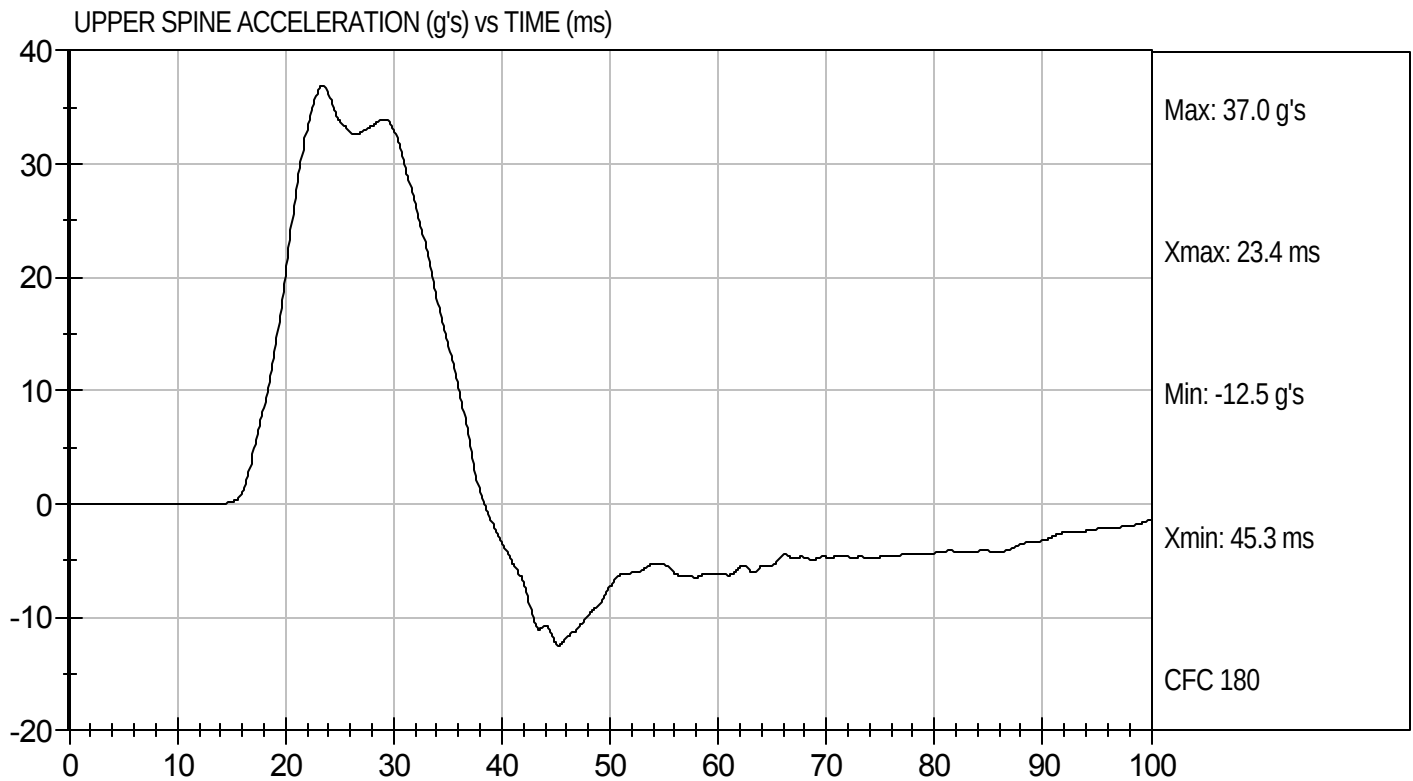
Test Date: 7/29/10
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Thorax With Arm
Component ID: D102464

Test Date: 7/29/10
Velocity: 21.9 ft/s, 6.68 m/s

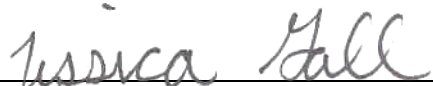


MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-1Is BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102465

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Peak Impactor Force	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	32	Pass
Middle Rib Displacement	mm	39 to 45	40	Pass
Lower Rib Displacement	mm	35 to 43	39	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	13	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	10	Pass
Overall Test Results				Pass


Laboratory Technician

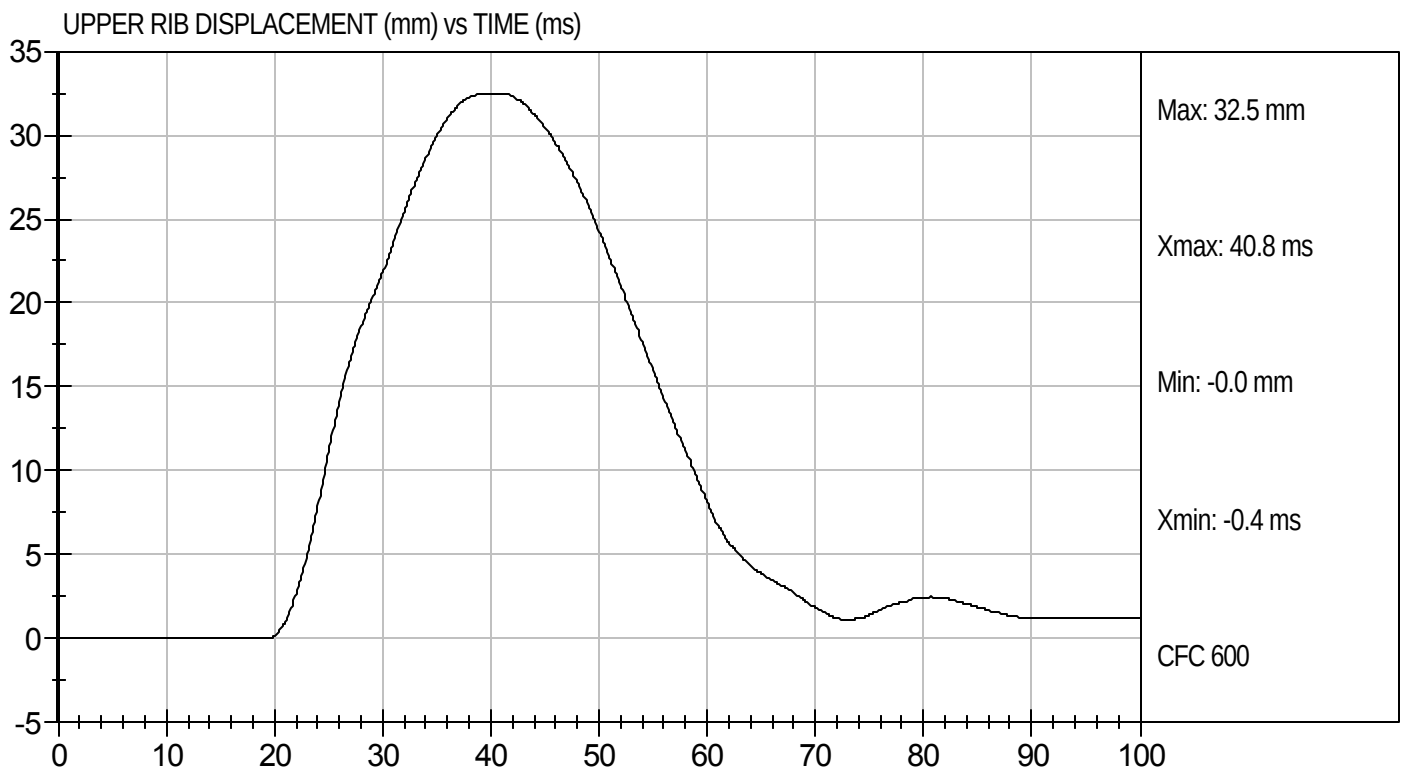
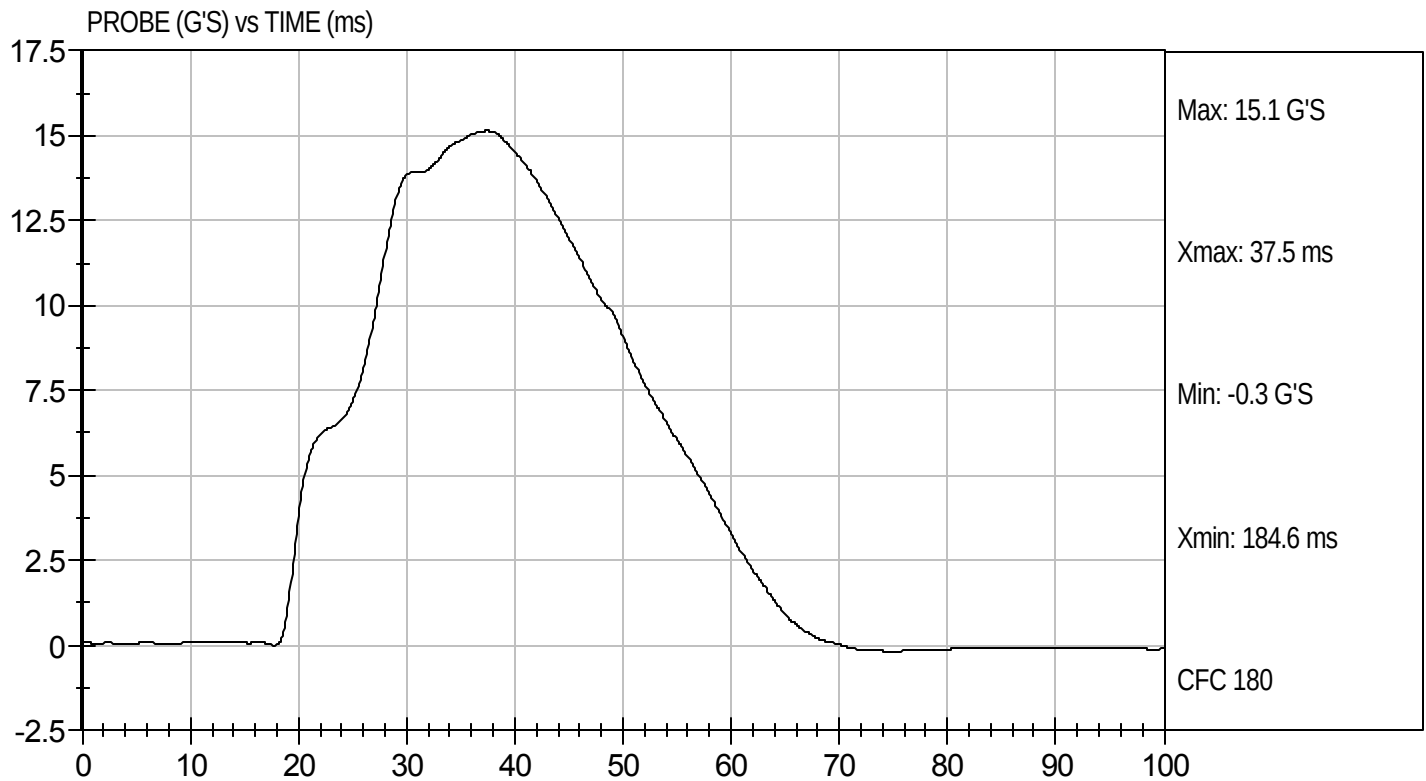
7/29/10
Test Date


Approved By



Test Desc: Thorax Without Arm
Component ID: D102465

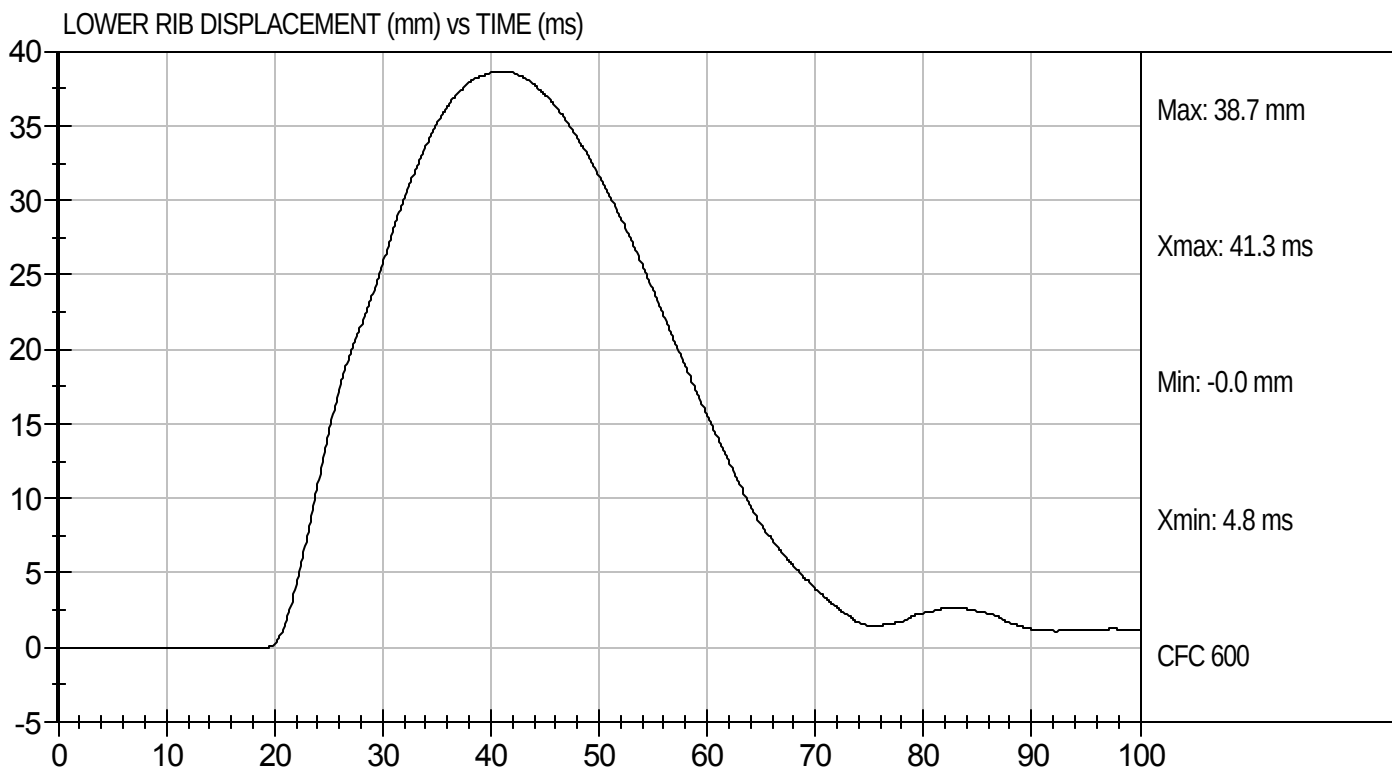
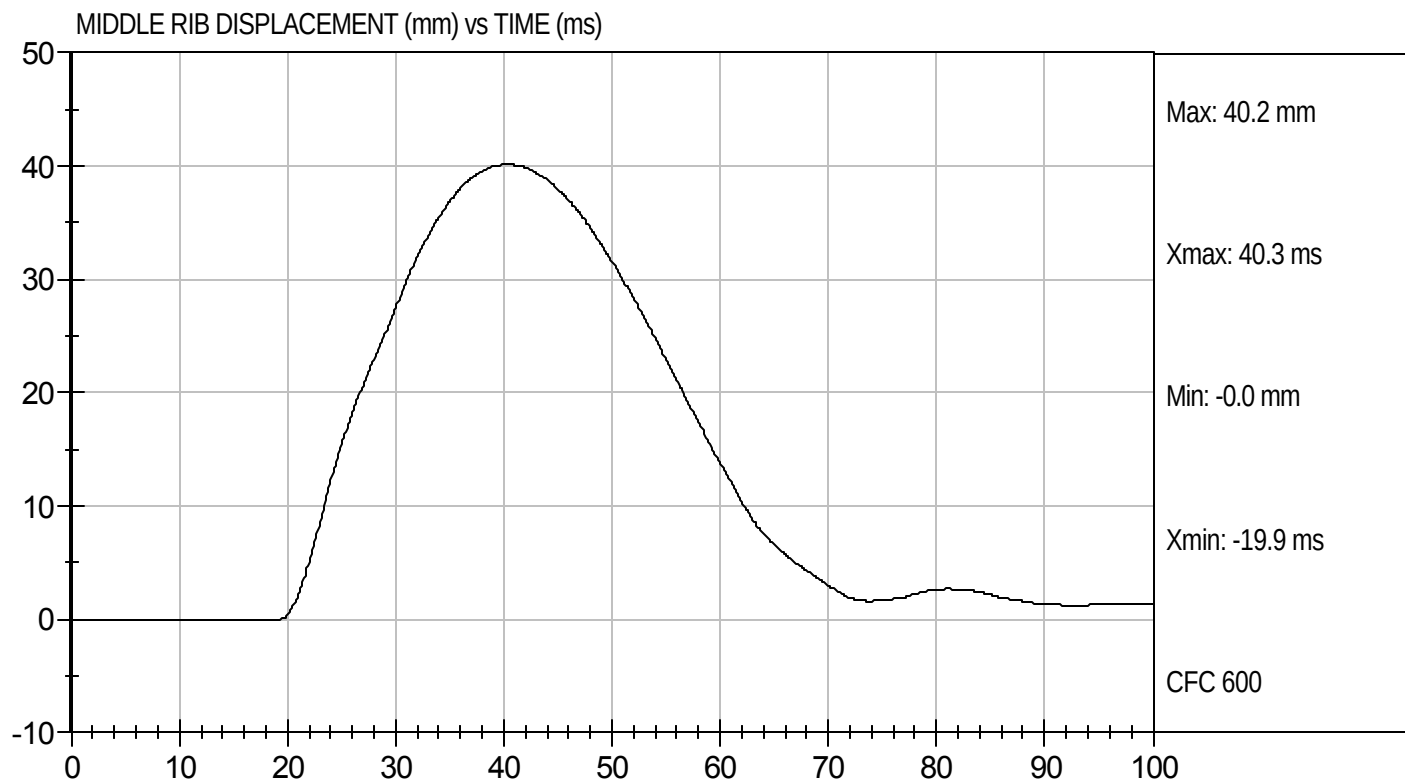
Test Date: 7/29/10
Velocity: 14.0 ft/s, 4.27 m/s





Test Desc: Thorax Without Arm
Component ID: D102465

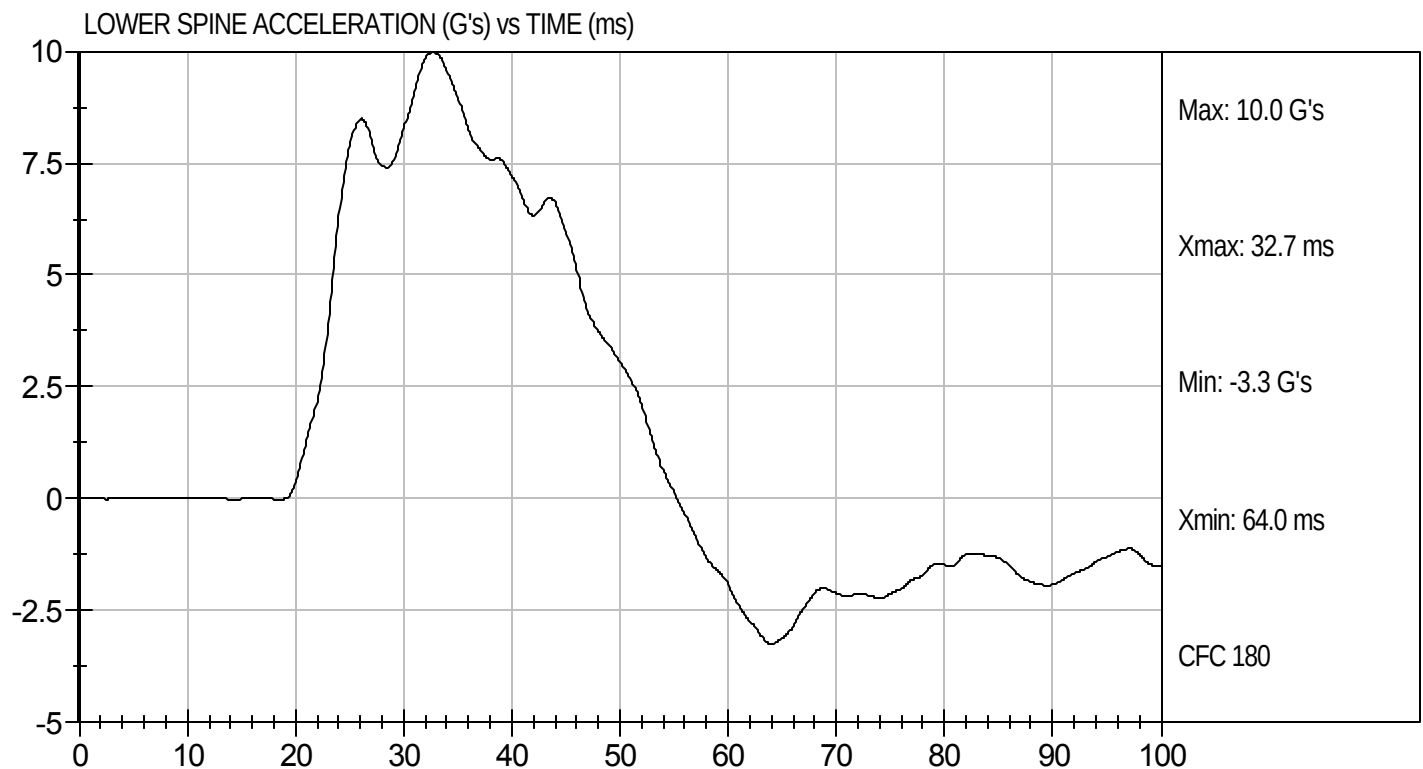
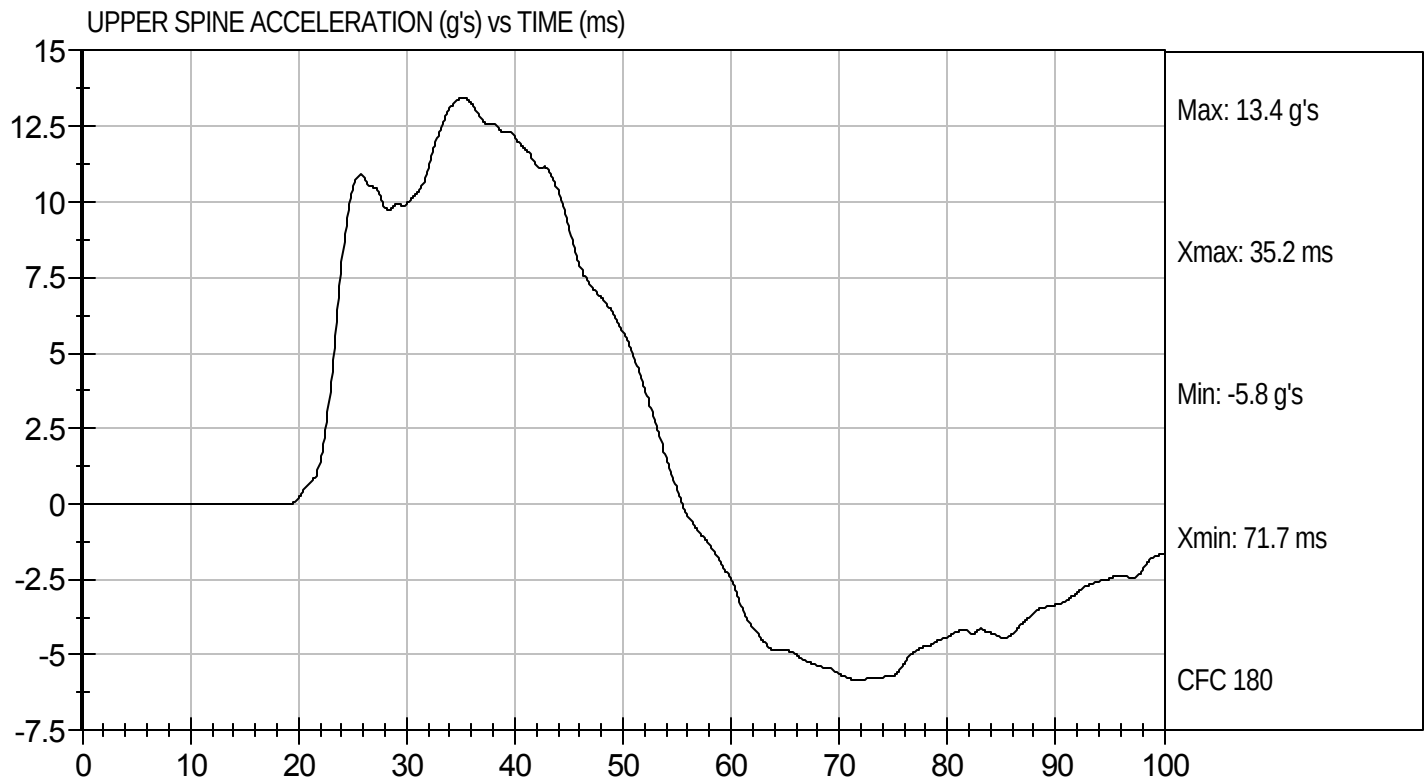
Test Date: 7/29/10
Velocity: 14.0 ft/s, 4.27 m/s





Test Desc: Thorax Without Arm
Component ID: D102465

Test Date: 7/29/10
Velocity: 14.0 ft/s, 4.27 m/s



MGA RESEARCH CORPORATION
ABDOMINAL IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

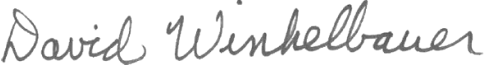
ATD Serial No: 296

Test I.D: D102466

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Peak Impactor Acceleration	G's	12 to 16	14	Pass
Upper Rib Displacement	mm	36 to 47	38	Pass
Lower Rib Displacement	mm	33 to 44	38	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass


Laboratory Technician

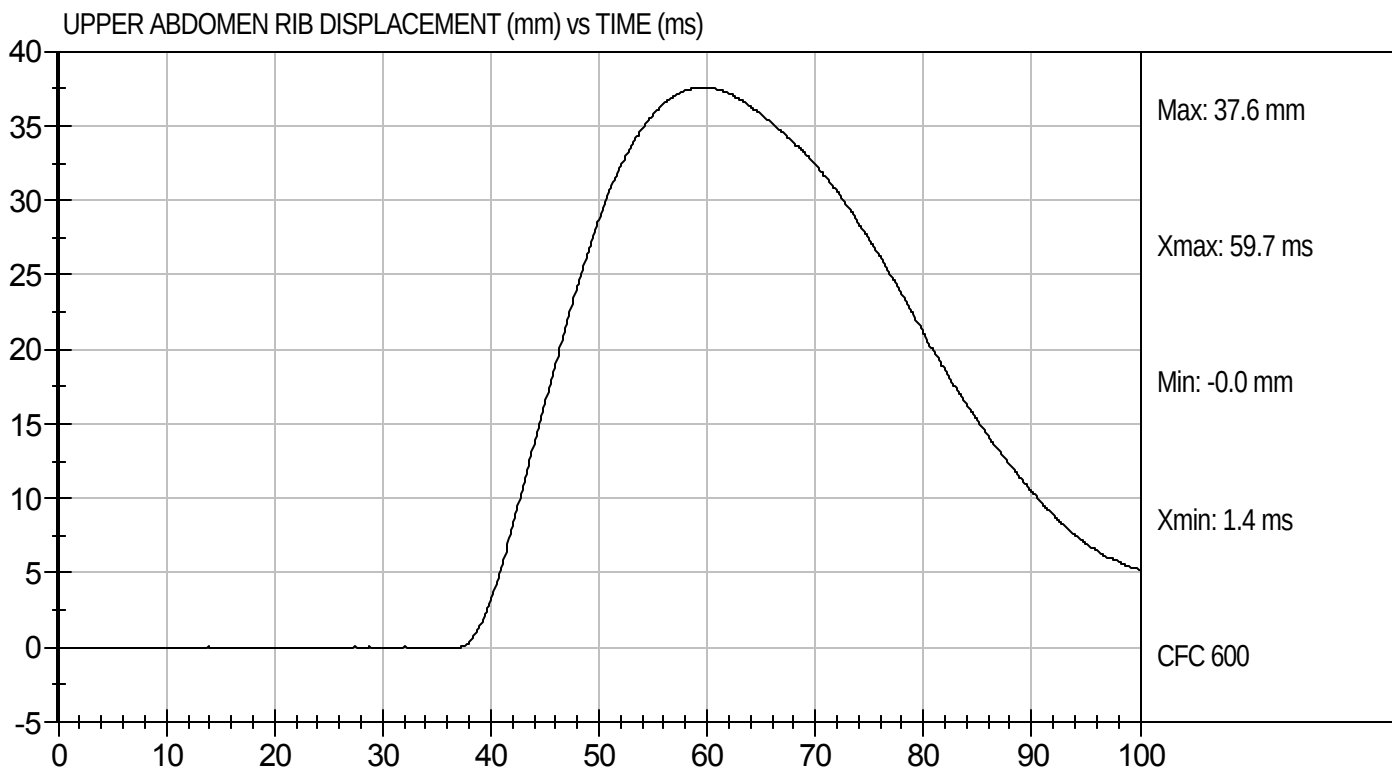
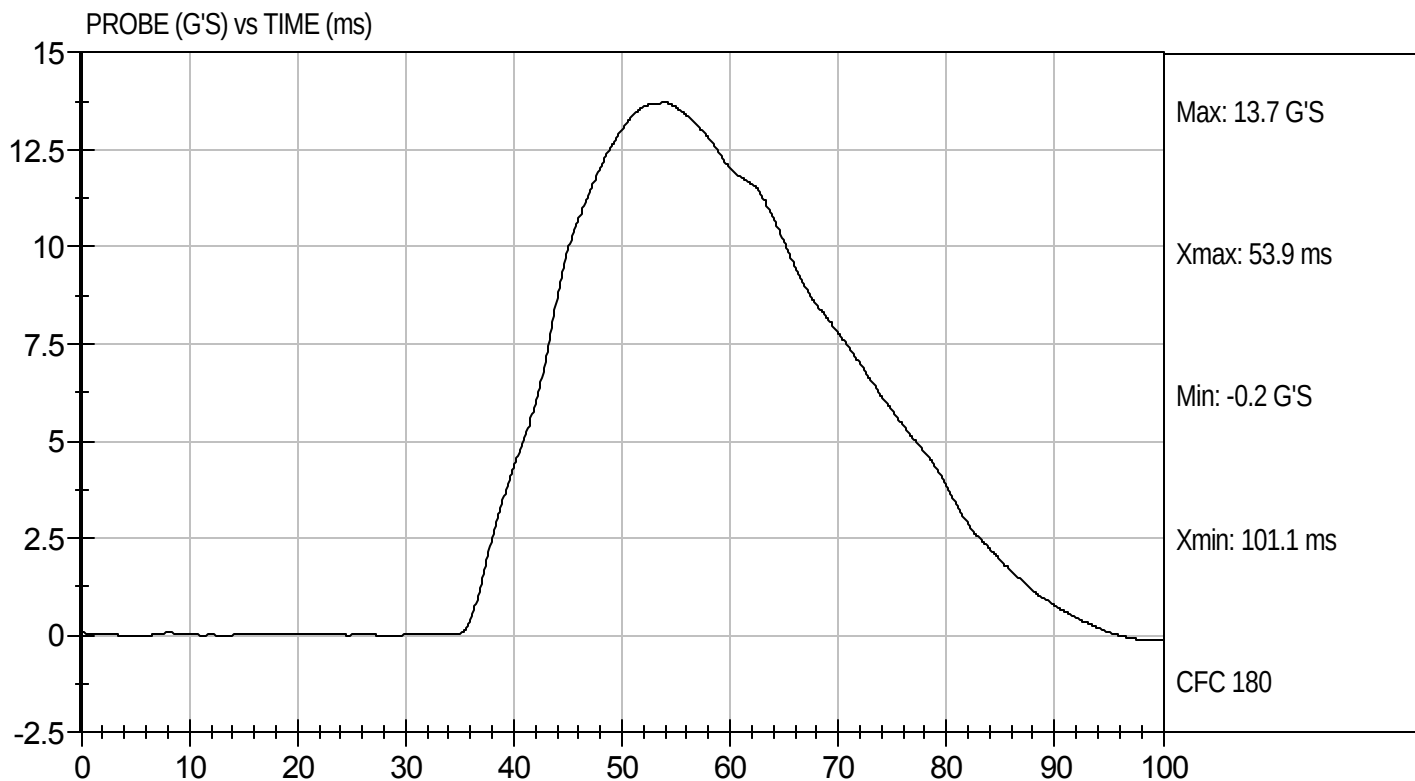
7/29/10
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D102466

Test Date: 7/29/10
Velocity: 14.1 ft/s, 4.30 m/s

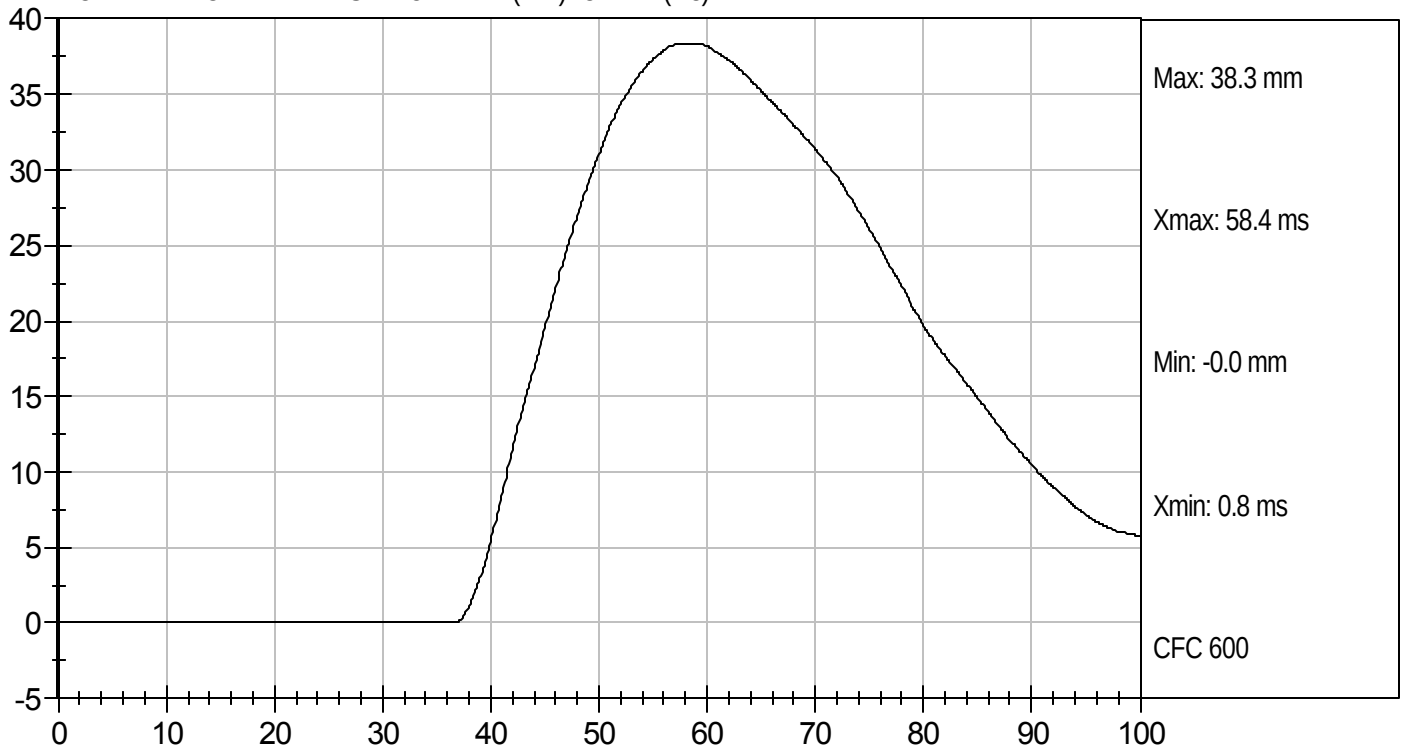




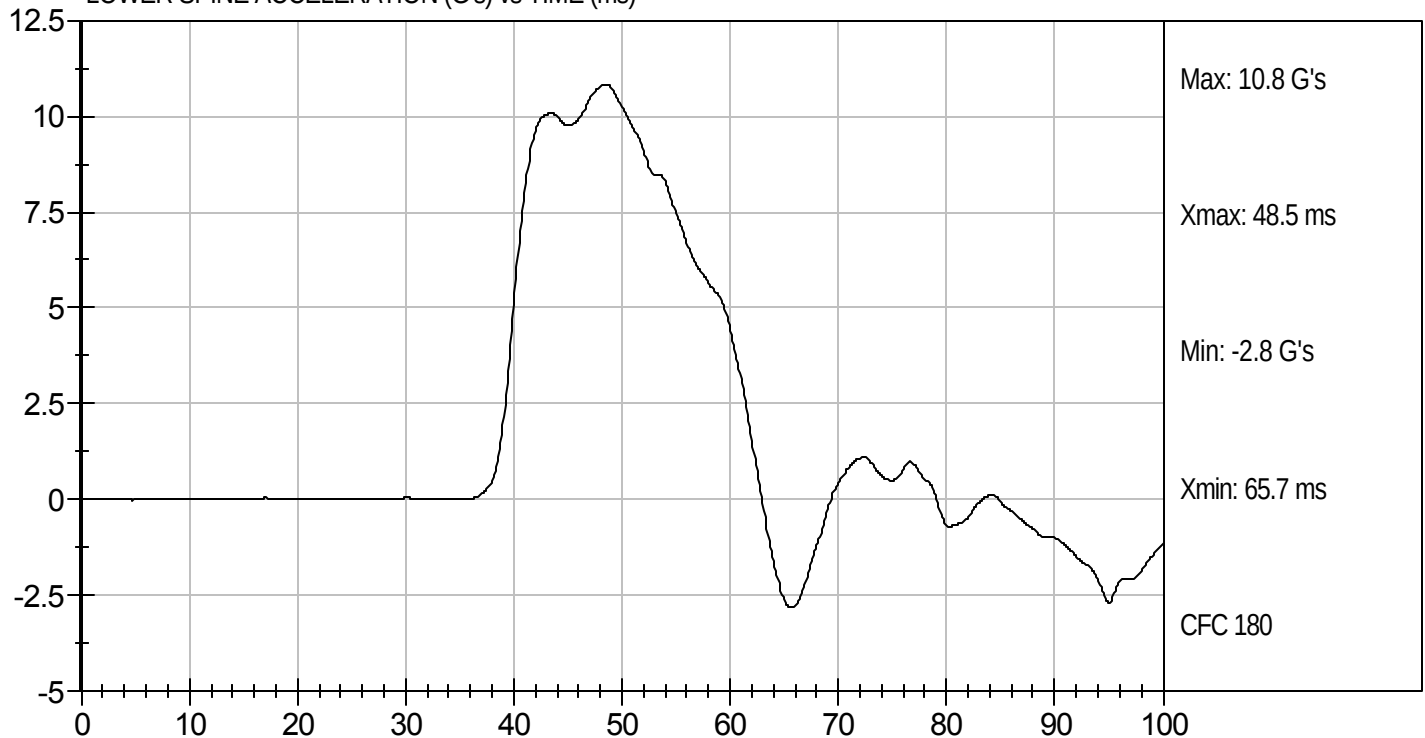
Test Desc: Abdomen Impact
Component ID: D102466

Test Date: 7/29/10
Velocity: 14.1 ft/s, 4.30 m/s

LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER SPINE ACCELERATION (G's) vs TIME (ms)

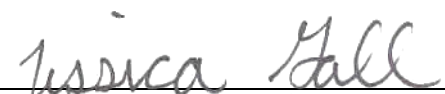


MGA RESEARCH CORPORATION
PELVIS IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102467

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.1	Pass
Humidity	%	10 to 70	48	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	38 to 47	42	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	39	Pass
Peak Acetabulum Force	N	3600 to 4300	4050	Pass
Overall Test Results			Pass	


Laboratory Technician

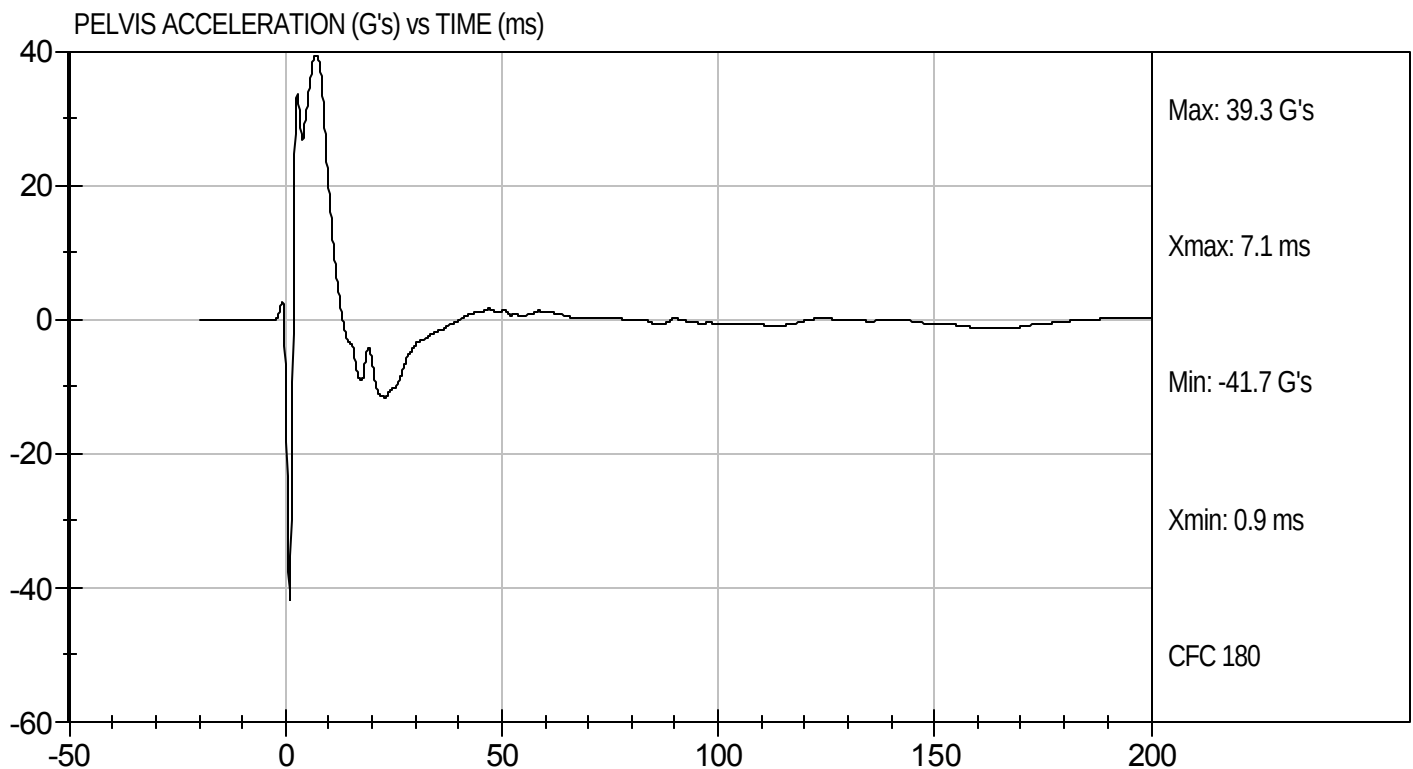
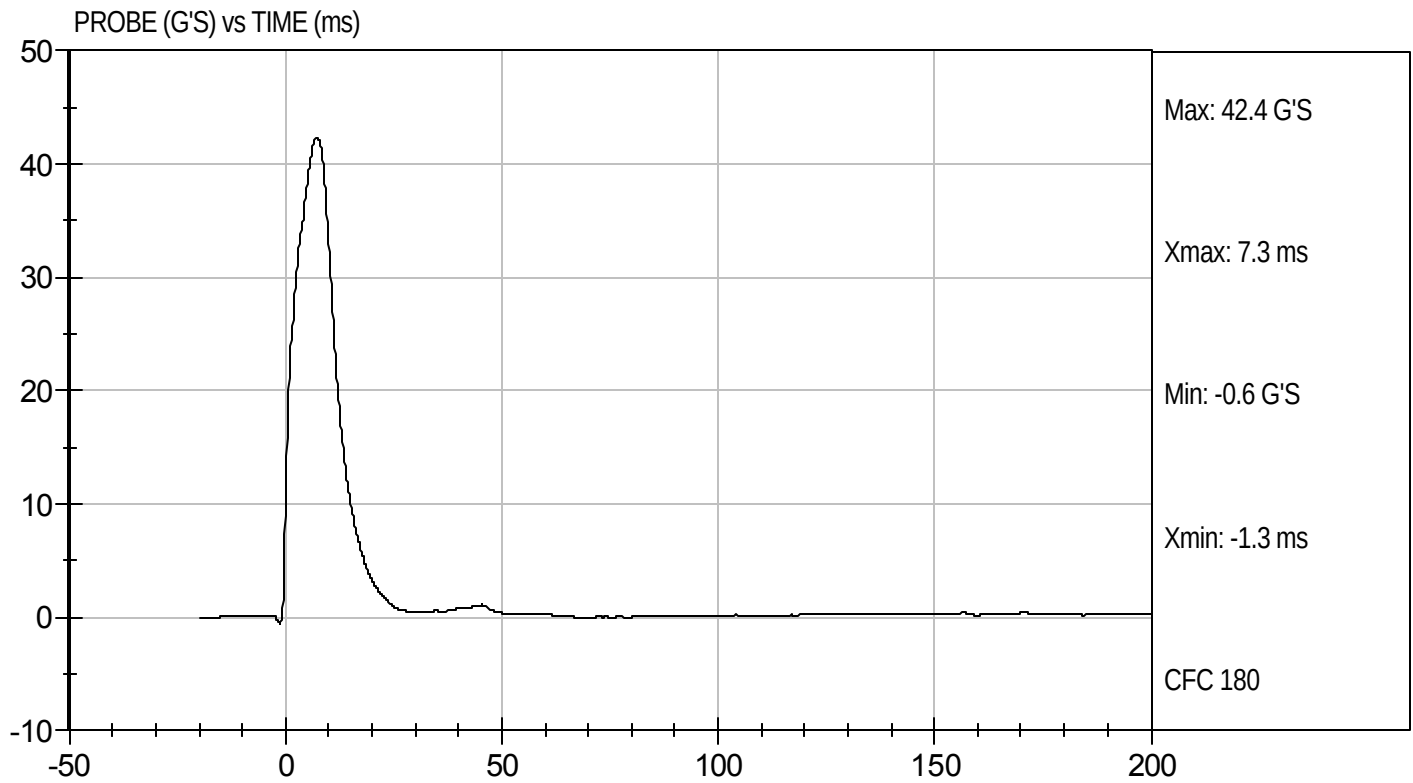
7/29/10
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D102467

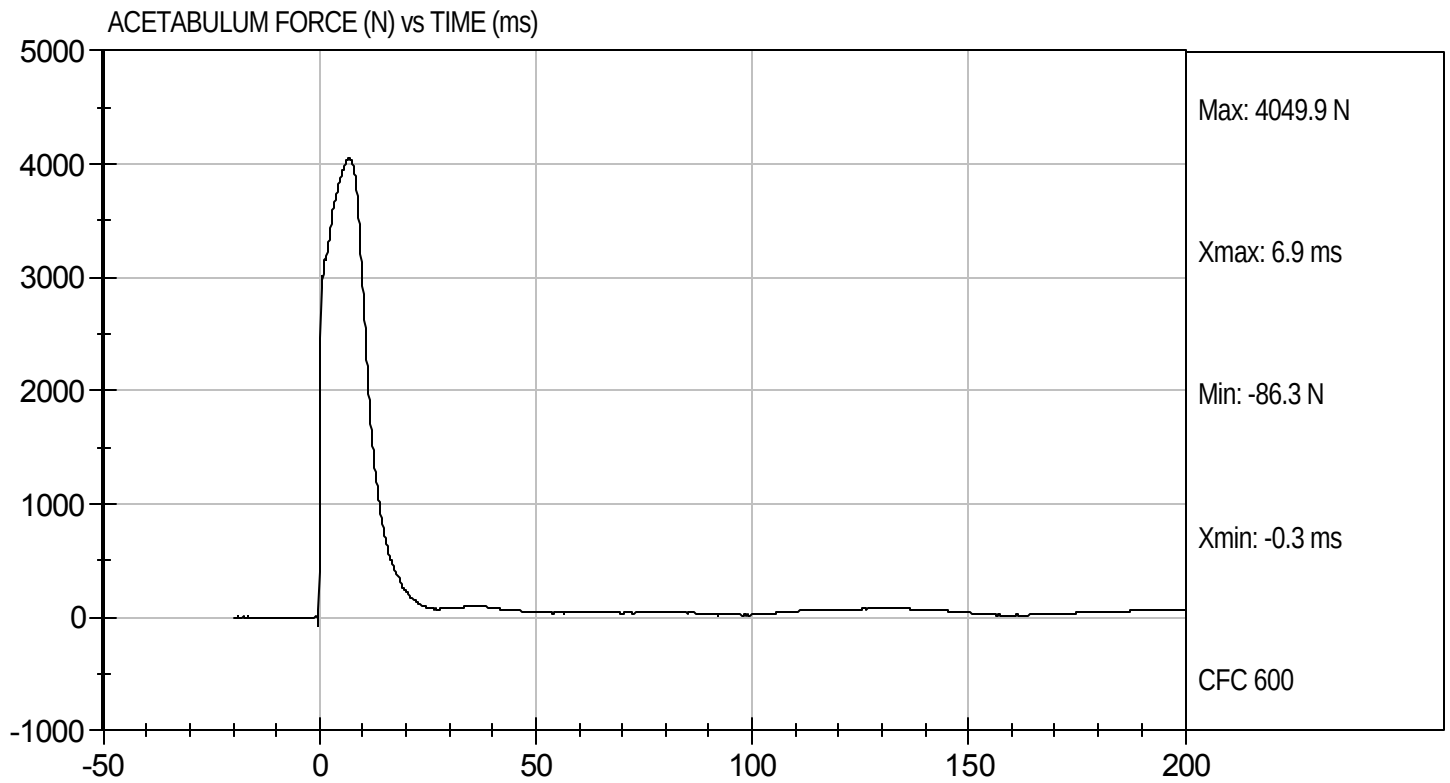
Test Date: 7/29/10
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Pelvis Impact
Component ID: D102467

Test Date: 7/29/10
Velocity: 22.22 ft/s, 6.77 m/s



MGA RESEARCH CORPORATION
ILIAC IMPACT TEST
SID-IIIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102468

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	20.9	Pass
Humidity	%	10 to 70	47	Pass
Impact Velocity	m/s	4.20 to 4.40	4.33	Pass
Peak Impactor Acceleration	G's	36 to 45	37	Pass
Pelvis Y Acceleration	G's	28 to 39	33	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4388	Pass
Overall Test Results			Pass	


Laboratory Technician

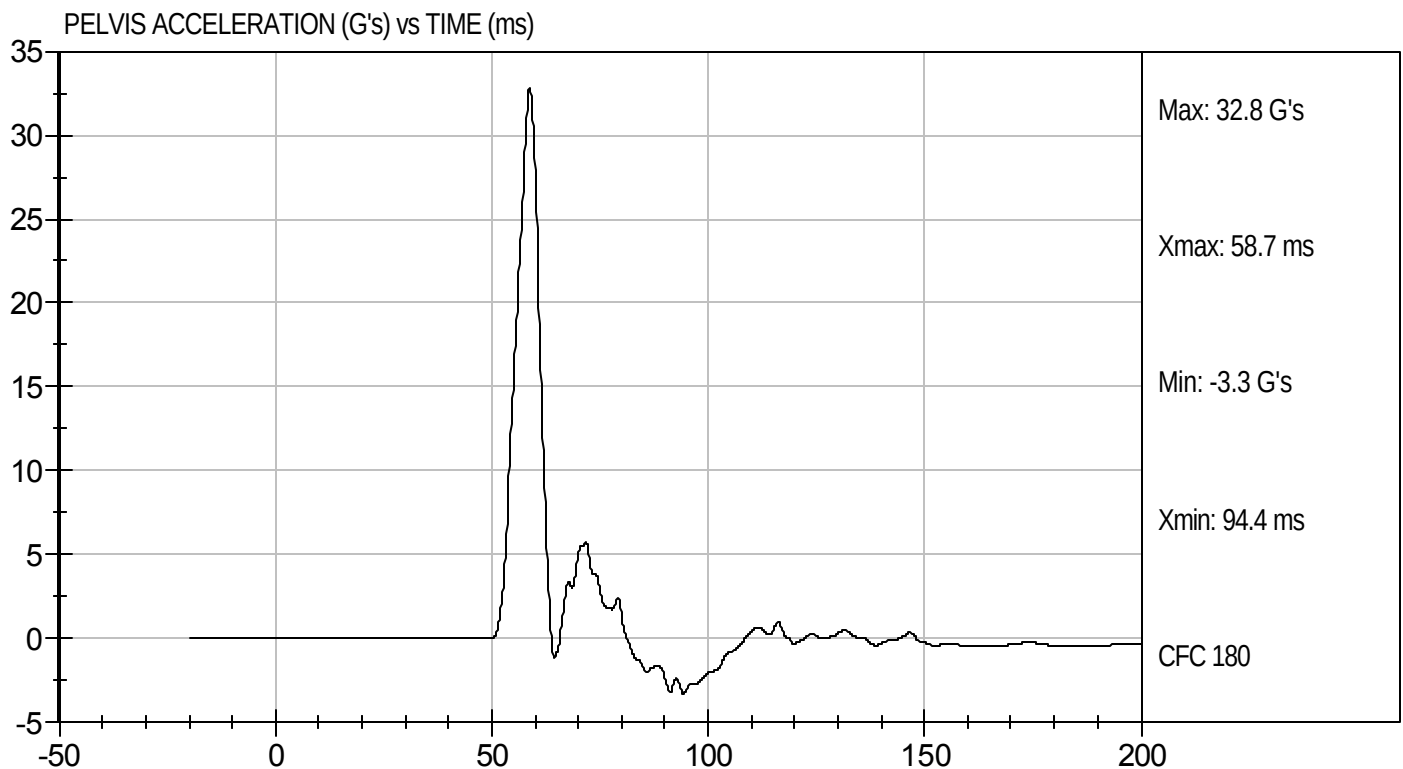
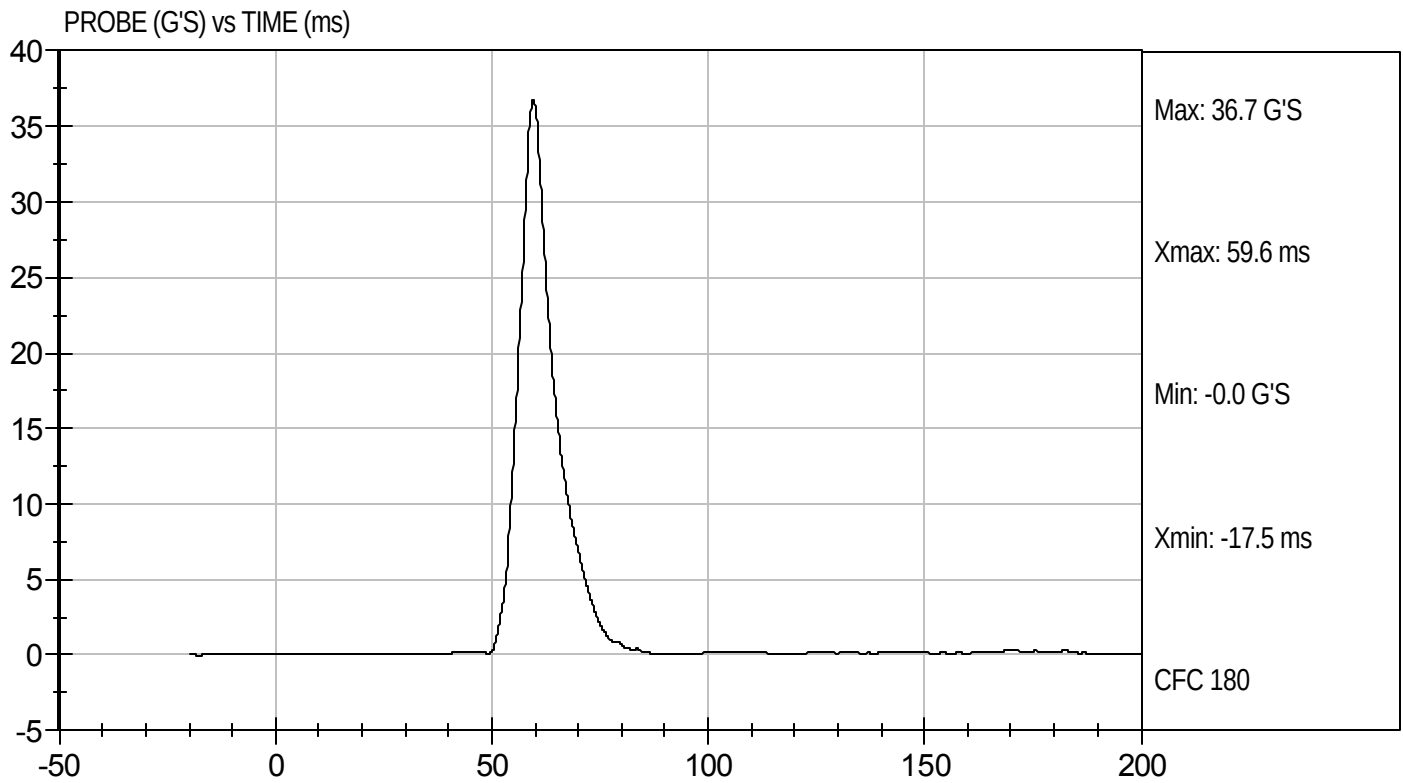
7/29/10
Test Date


Approved By



Test Desc: Iliac Impact
Component ID: D102468

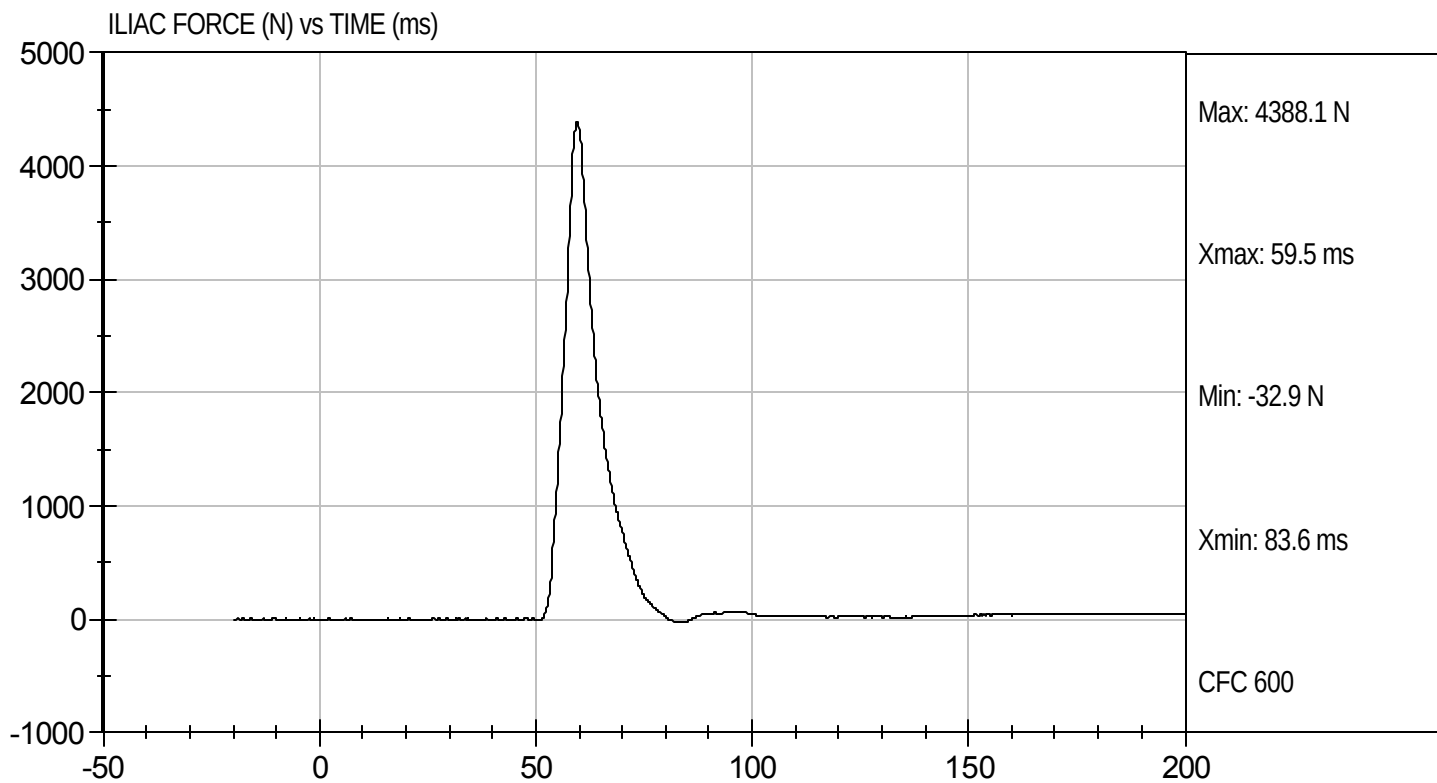
Test Date: 7/29/10
Velocity: 14.2 ft/s, 4.33 m/s





Test Desc: Iliac Impact
Component ID: D102468

Test Date: 7/29/10
Velocity: 14.2 ft/s, 4.33 m/s

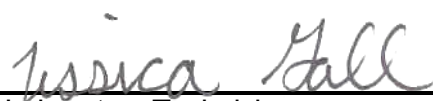


MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D102521

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	58	Pass
Peak Resultant Acceleration	G's	115 to 137	125	Pass
Peak Lateral Acceleration	G's	+/- 15	6.7	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

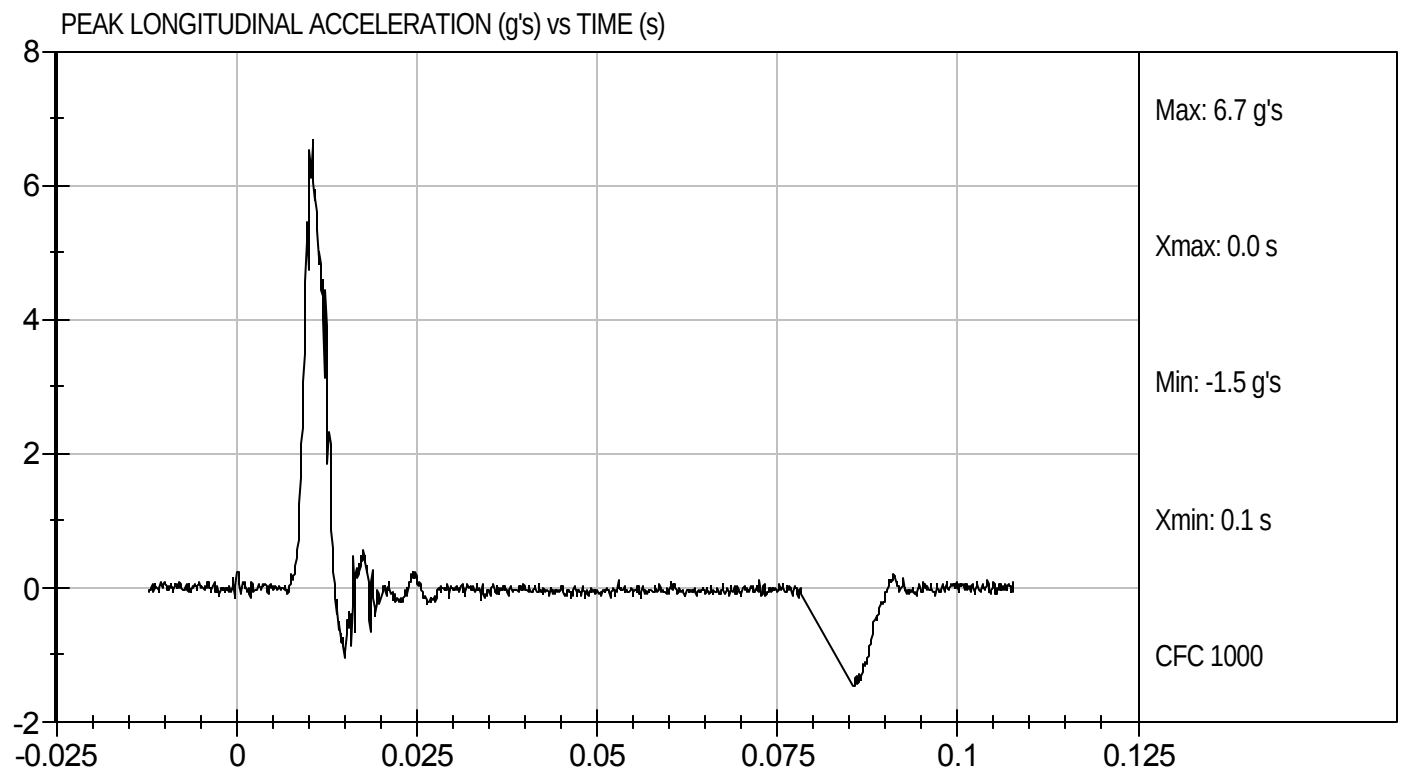
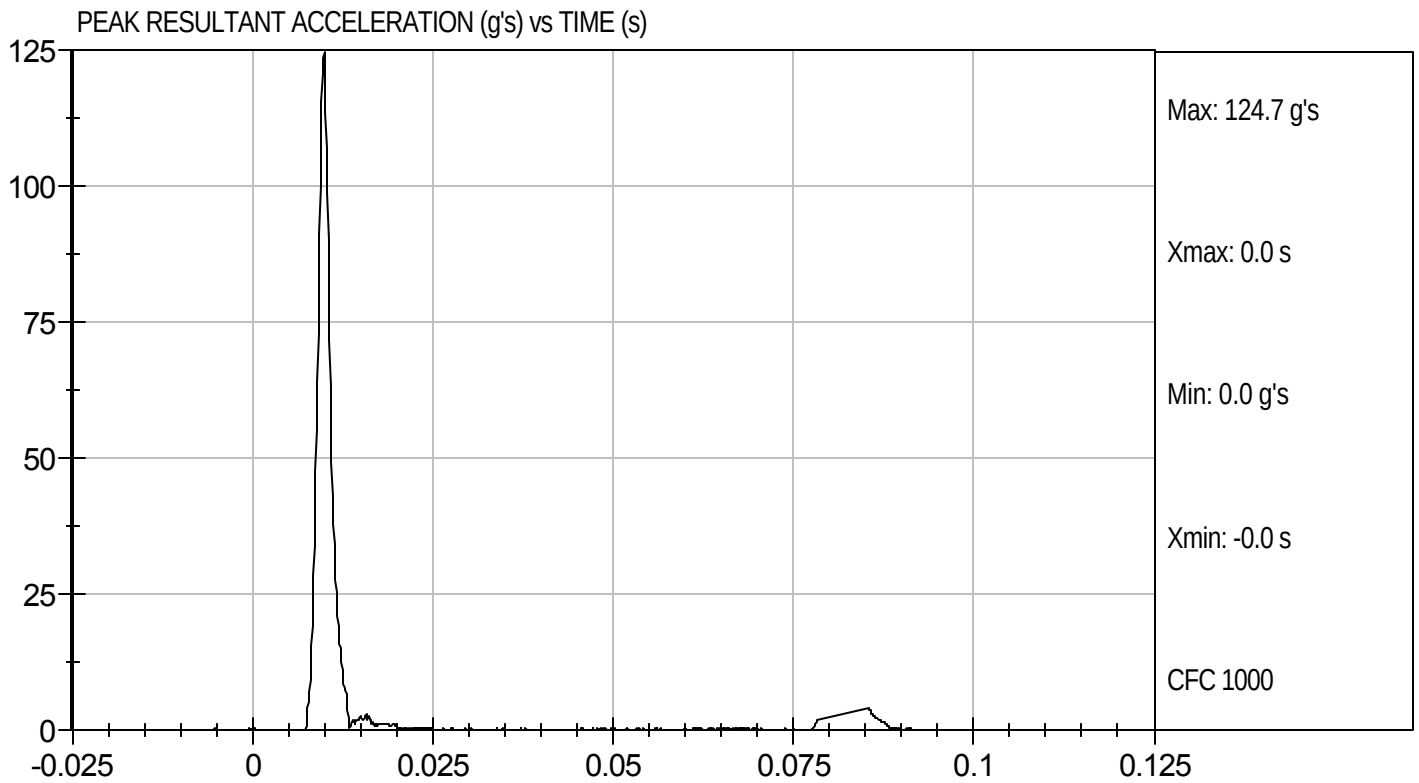
8/4/10
Test Date


Approved By



Test Desc: Head Drop
Component ID: D102521

Test Date: 8/4/10
Velocity: 0 ft/s, 0 m/s



MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102522

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.5	Pass
Humidity		%	10 to 70	58	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.60	Pass
	15 ms	m/s	3.30 to 4.10	3.75	Pass
	20 ms	m/s	4.40 to 5.40	4.99	Pass
	25 ms	m/s	5.40 to 6.10	5.53	Pass
	25-100 ms	m/s	5.50 to 6.20	5.54	Pass
Maximum D-Plane Rotation		deg	71 to 81	72	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	58	Pass
Maximum Occipital Condyle Moment during Rotation Interval Nm			-44 to -36	-42	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	115	Pass
Overall Test Results				Pass	


 Laboratory Technician

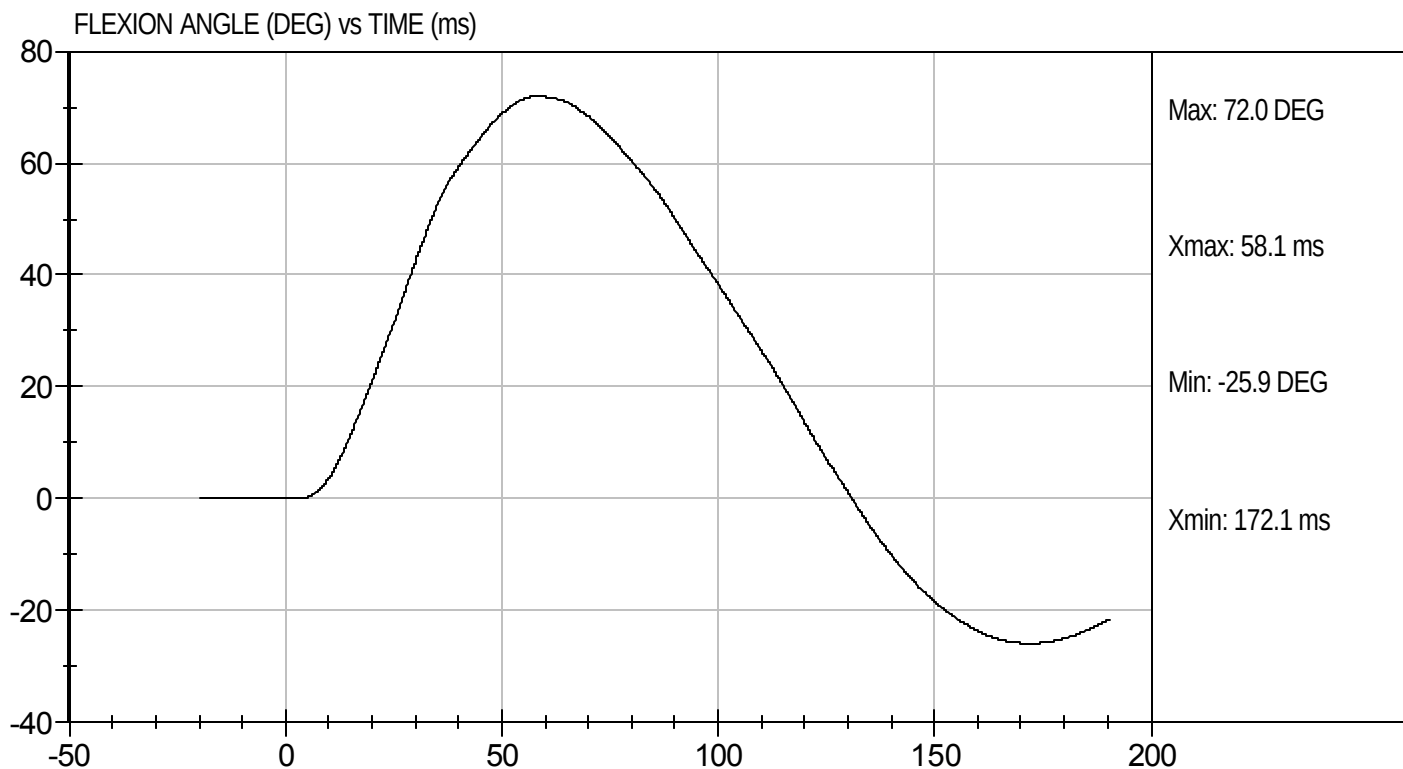
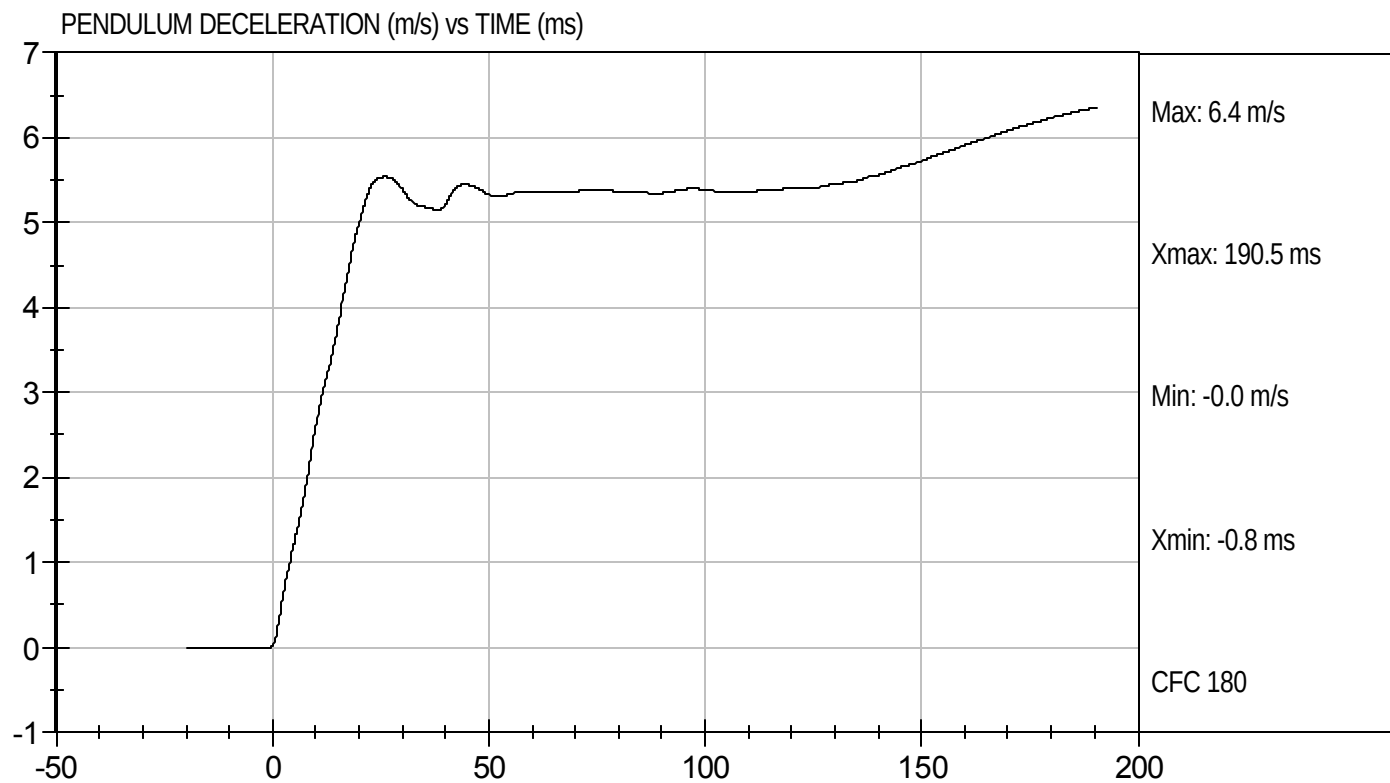
8/4/10
 Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D102522

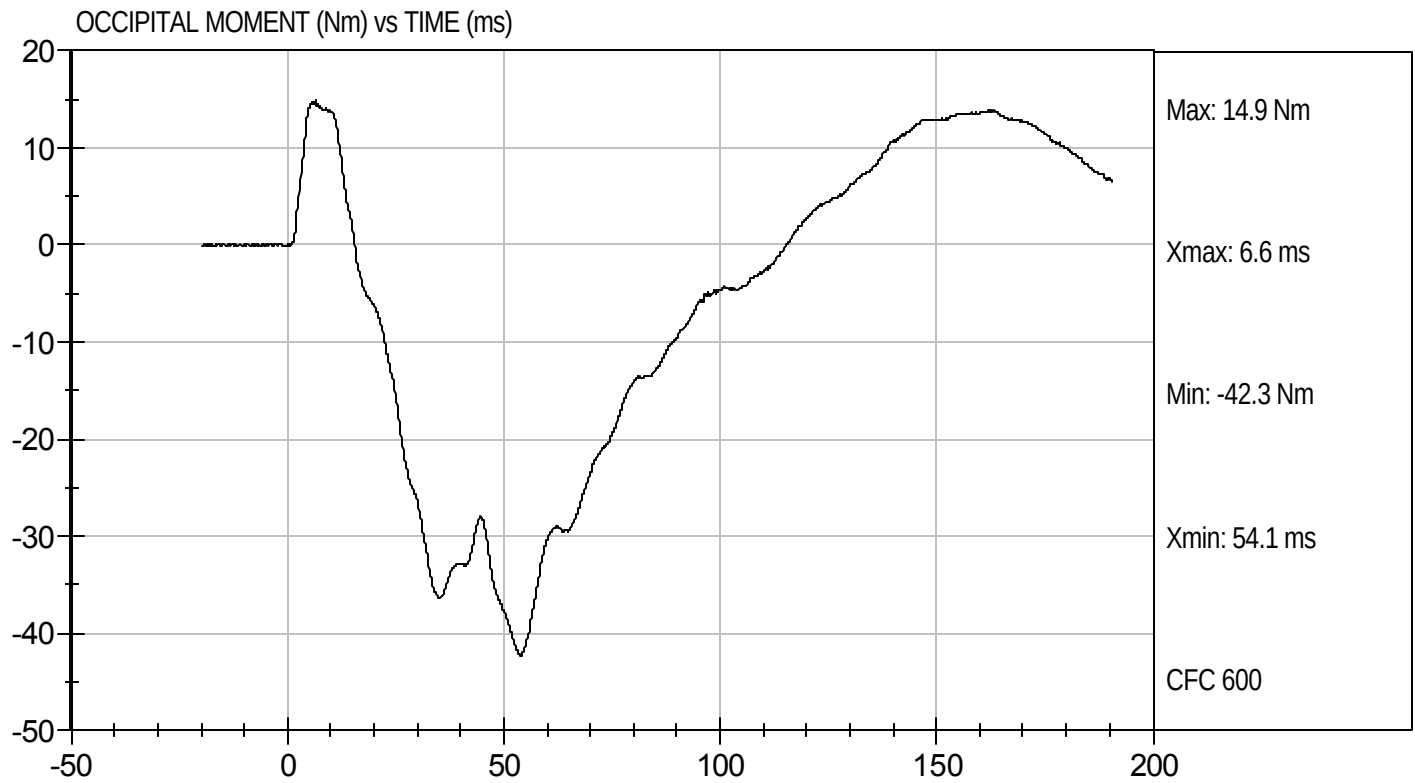
Test Date: 8/4/10
Velocity: 18.32 ft/s, 5.58 m/s





Test Desc: Neck Bending
Component ID: D102522

Test Date: 8/4/10
Velocity: 18.32 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D102523

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	58	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	31	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
Overall Test Results				Pass


Laboratory Technician

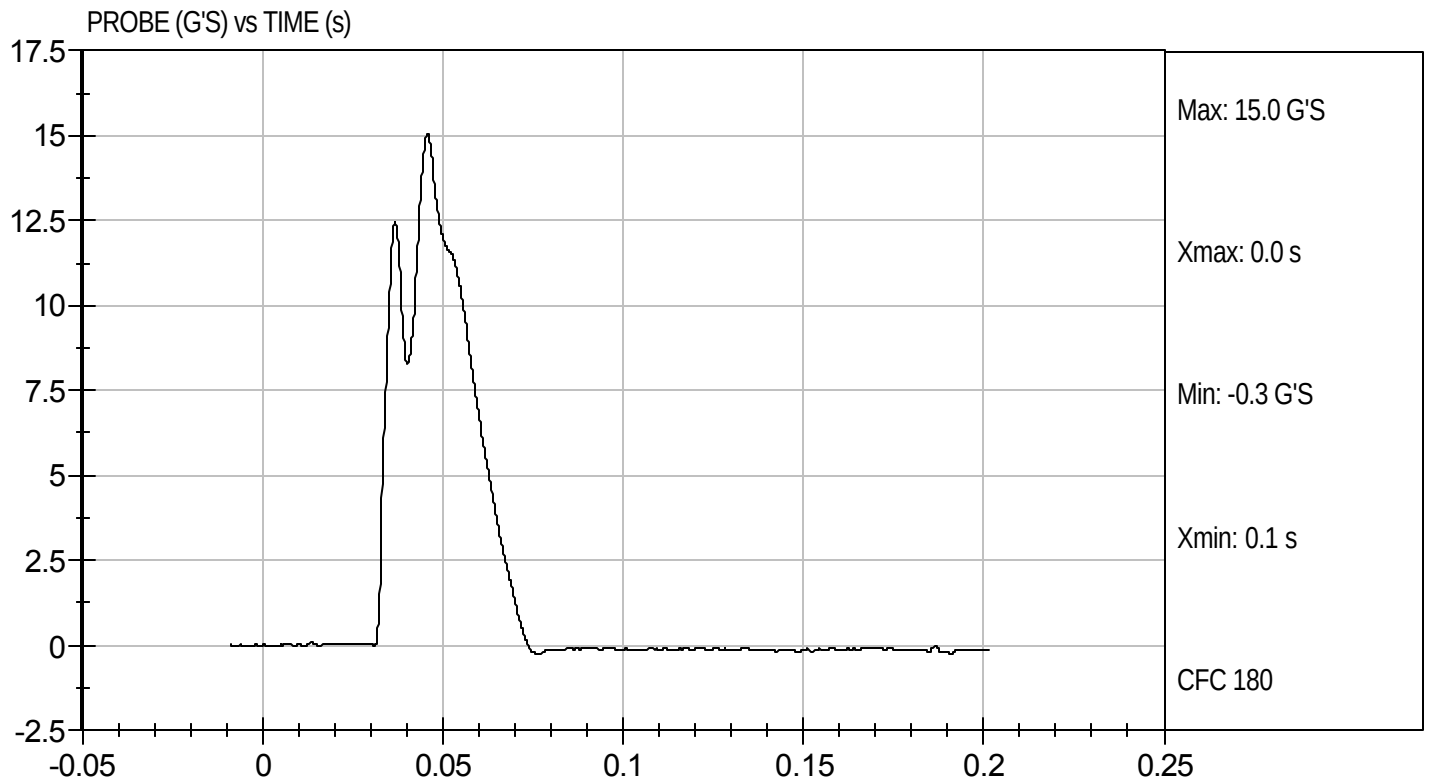
8/4/10
Test Date


Approved By



Test Desc: Shoulder Impact
Component ID: D102523

Test Date: 8/4/10
Velocity: 14.01 ft/s, 4.27 m/s

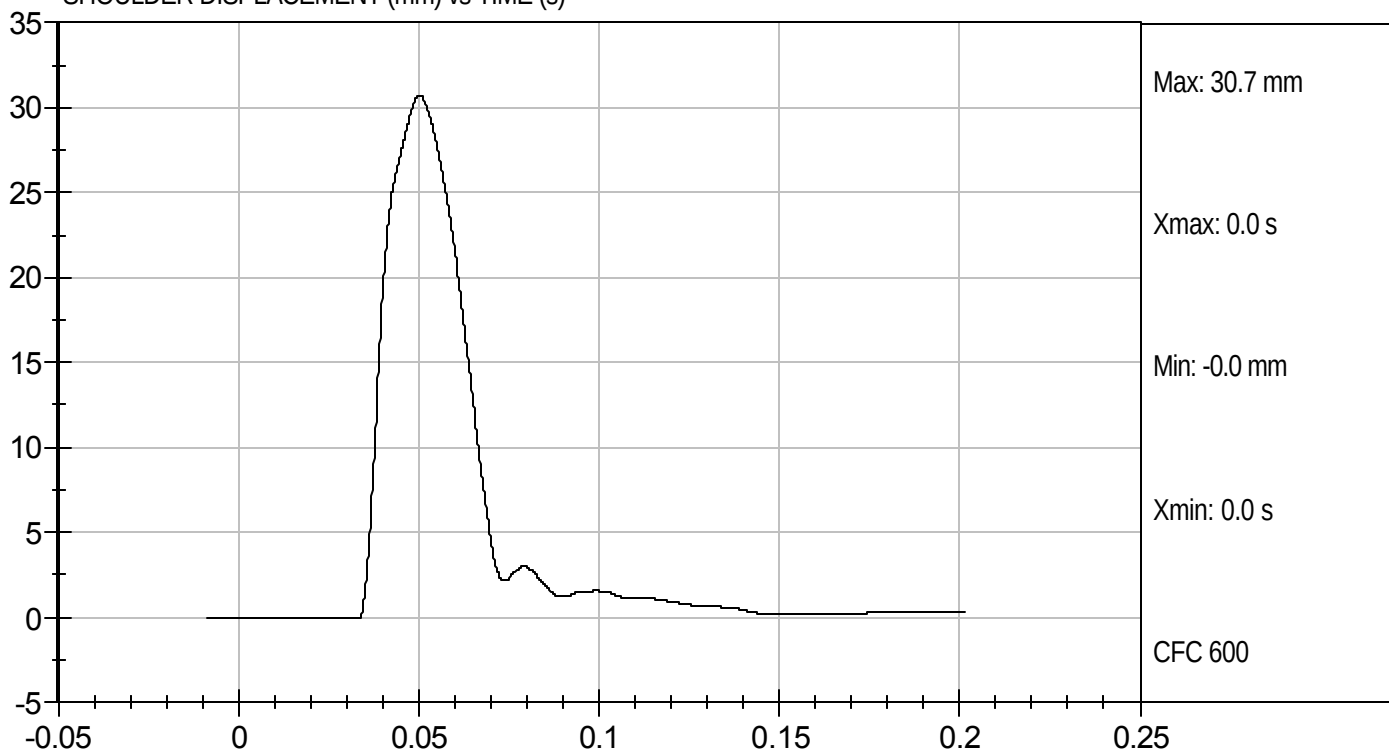




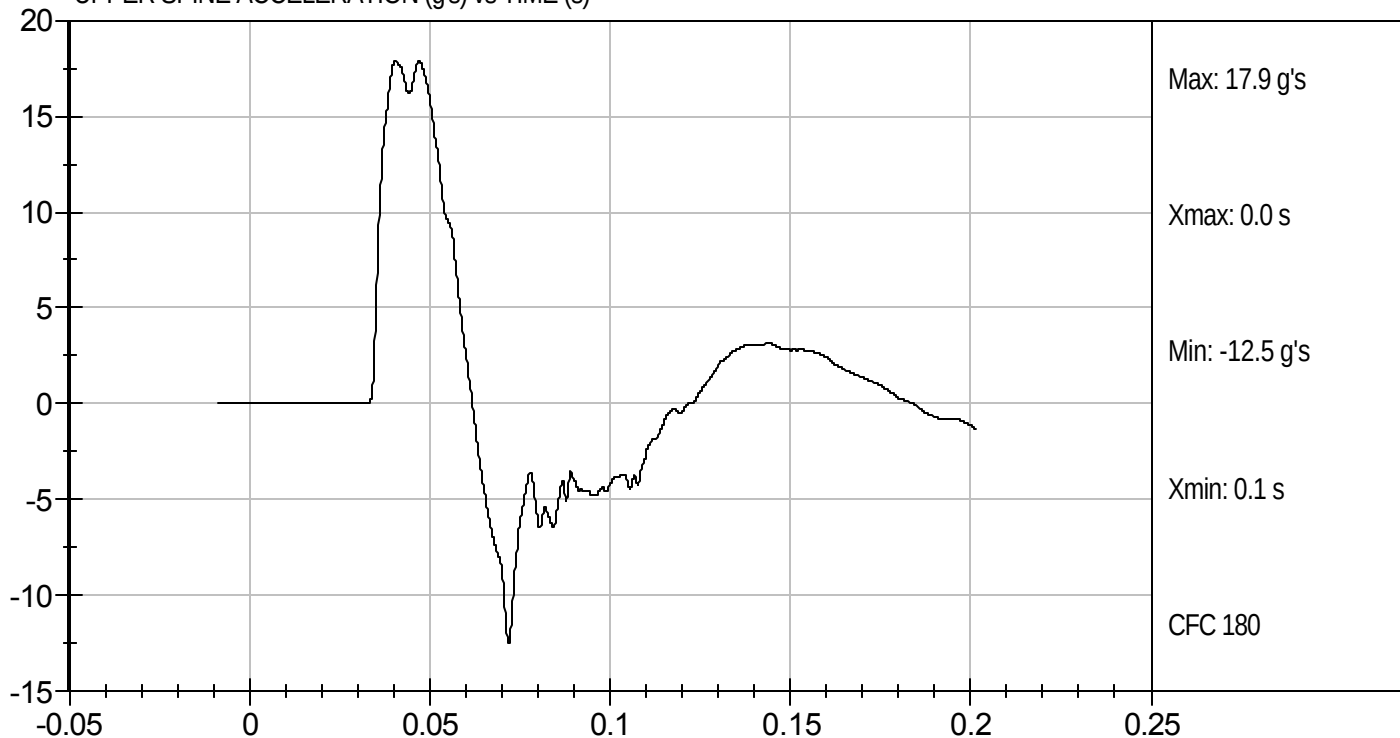
Test Desc: Shoulder Impact
Component ID: D102523

Test Date: 8/4/10
Velocity: 14.01 ft/s, 4.27 m/s

SHOULDER DISPLACEMENT (mm) vs TIME (s)



UPPER SPINE ACCELERATION (g's) vs TIME (s)



MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102524

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.5	Pass
Humidity	%	10 to 70	58	Pass
Impact Velocity	m/s	6.60 to 6.80	6.69	Pass
Peak Impactor Acceleration	G's	30 to 36	33	Pass
Shoulder Displacement	mm	31 to 40	36	Pass
Upper Rib Displacement	mm	25 to 32	27	Pass
Middle Rib Displacement	mm	30 to 36	31	Pass
Lower Rib Displacement	mm	32 to 38	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	35	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	33	Pass
Overall Test Results			Pass	


 Laboratory Technician

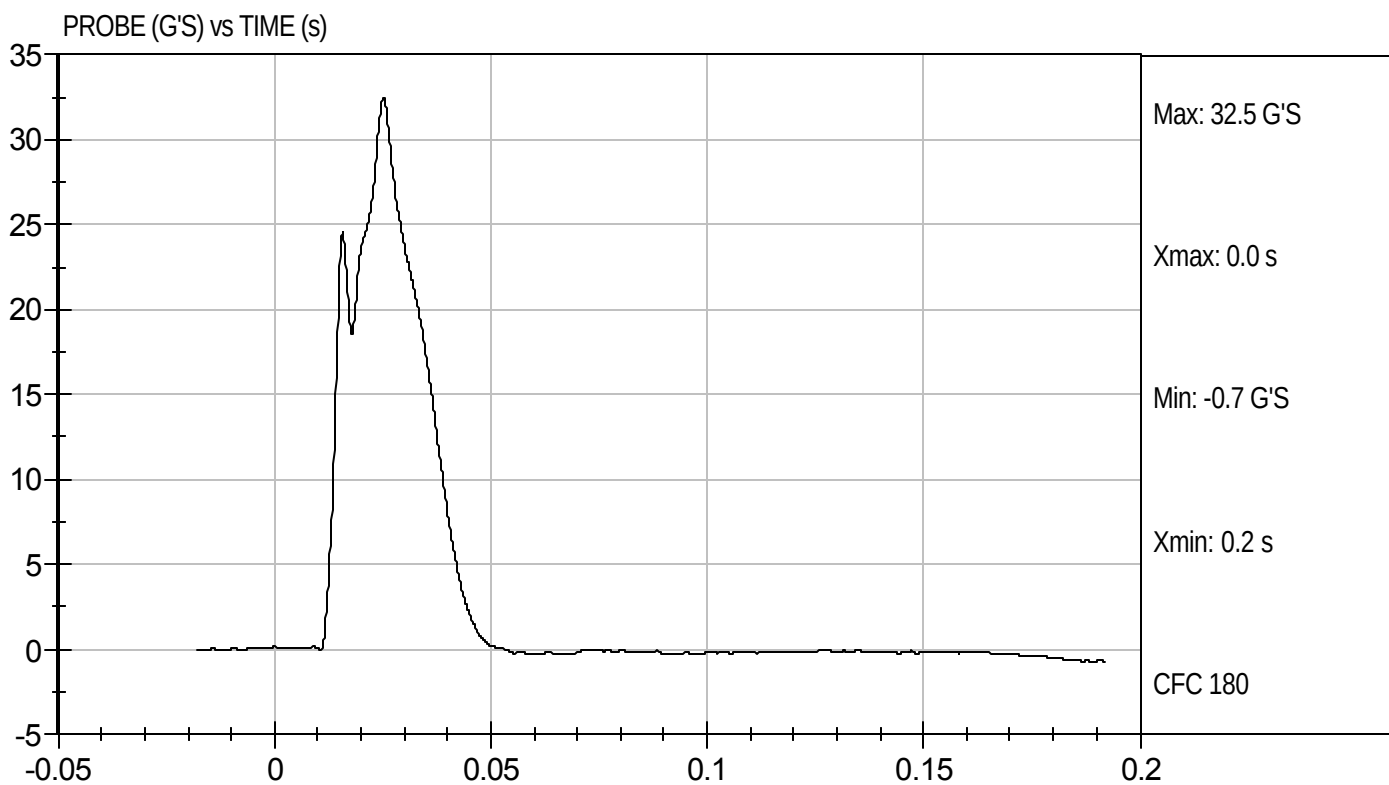
8/4/10
 Test Date


 Approved By



Test Desc: Thorax With Arm
Component ID: D102524

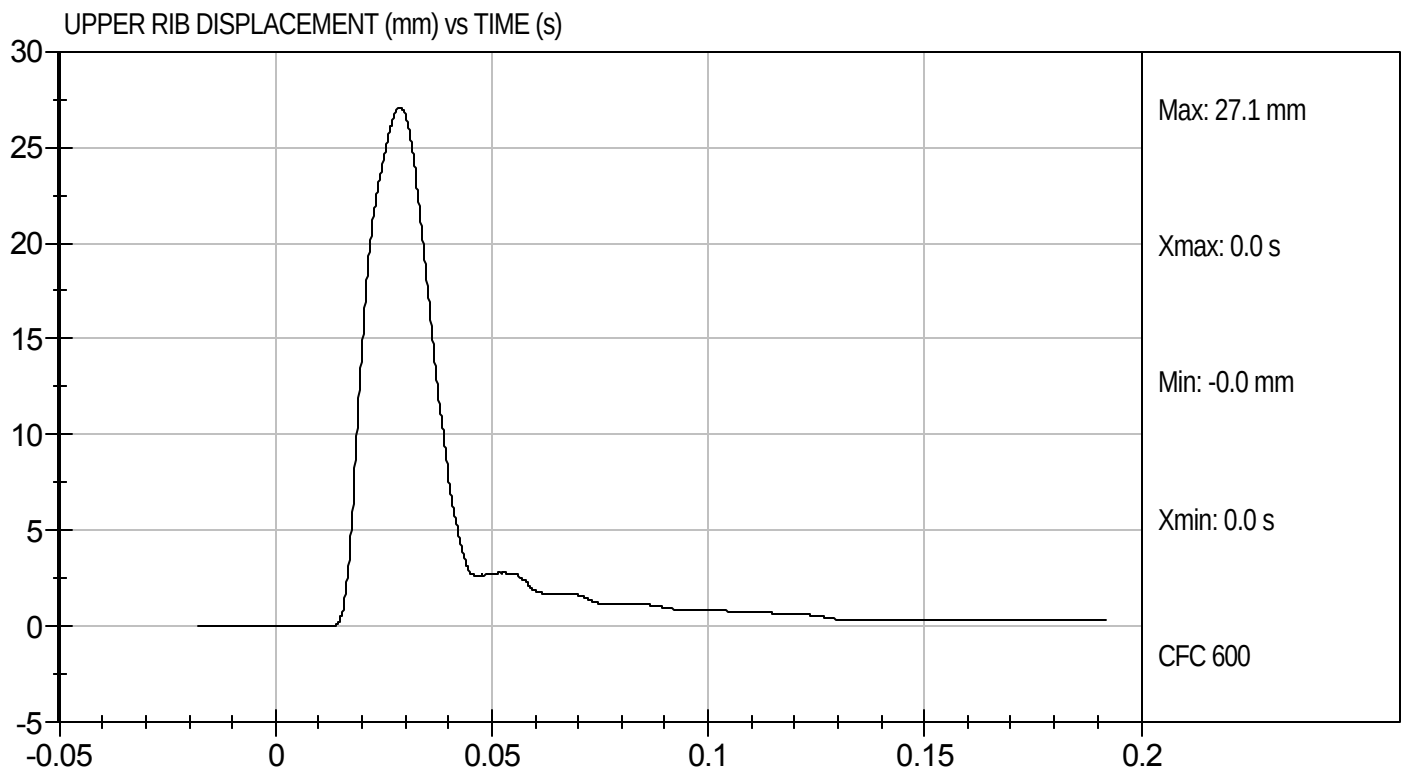
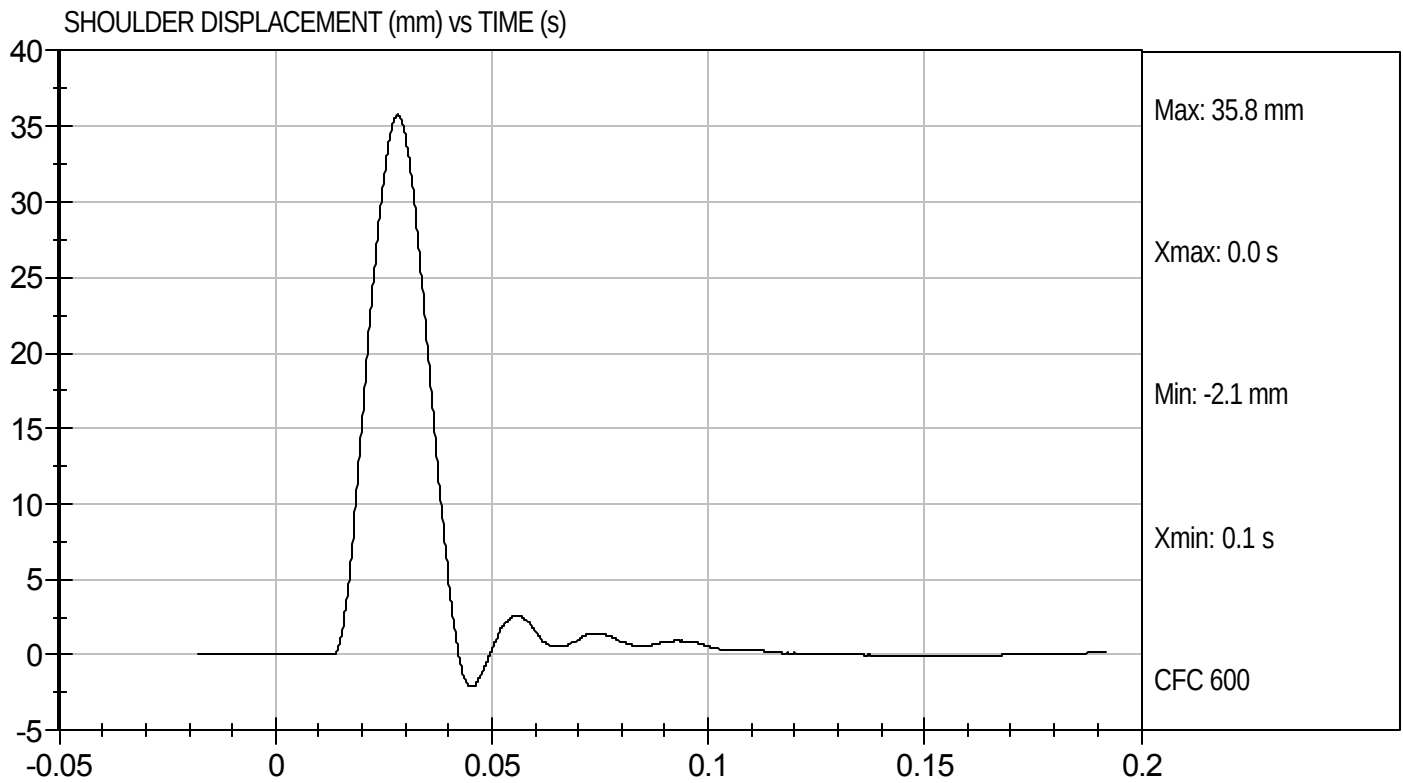
Test Date: 8/4/10
Velocity: 21.96 ft/s, 6.69 m/s





Test Desc: Thorax With Arm
Component ID: D102524

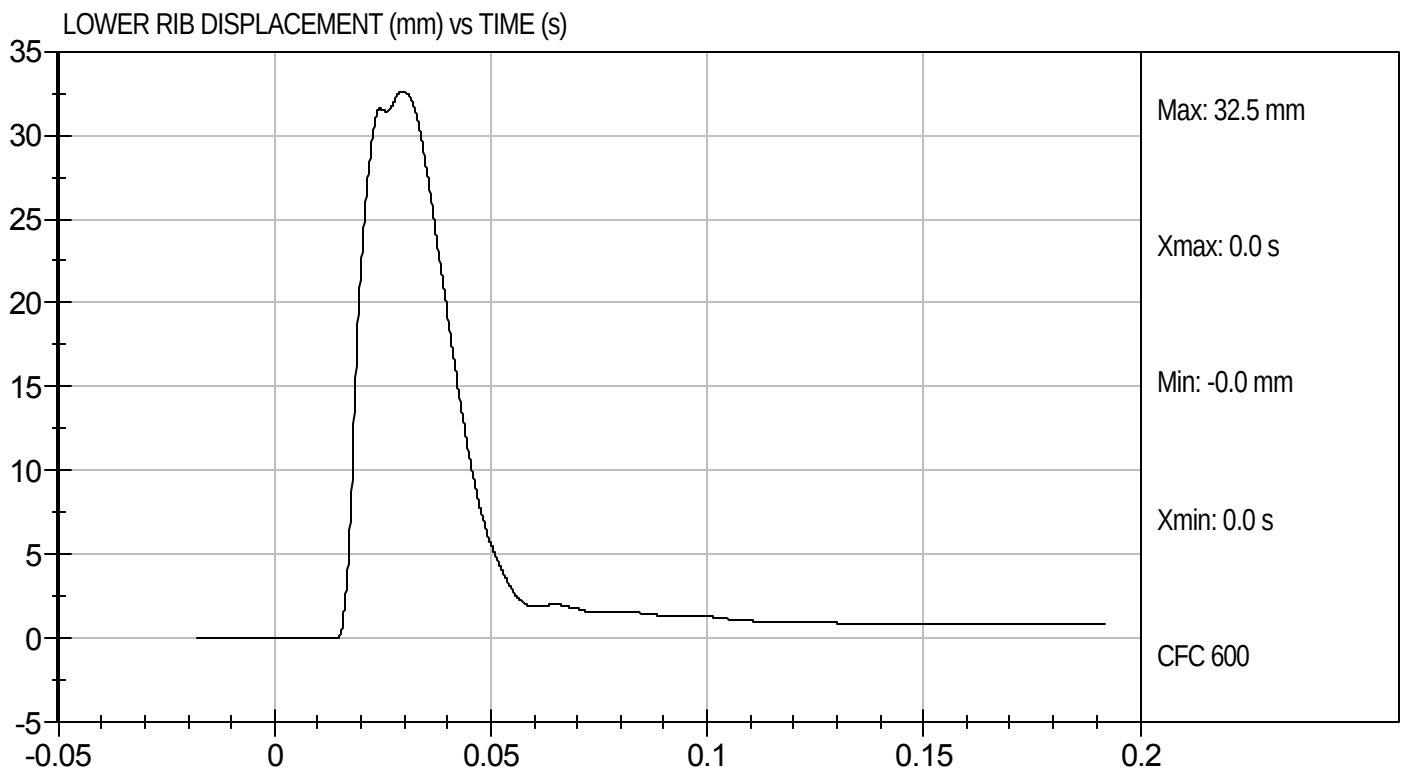
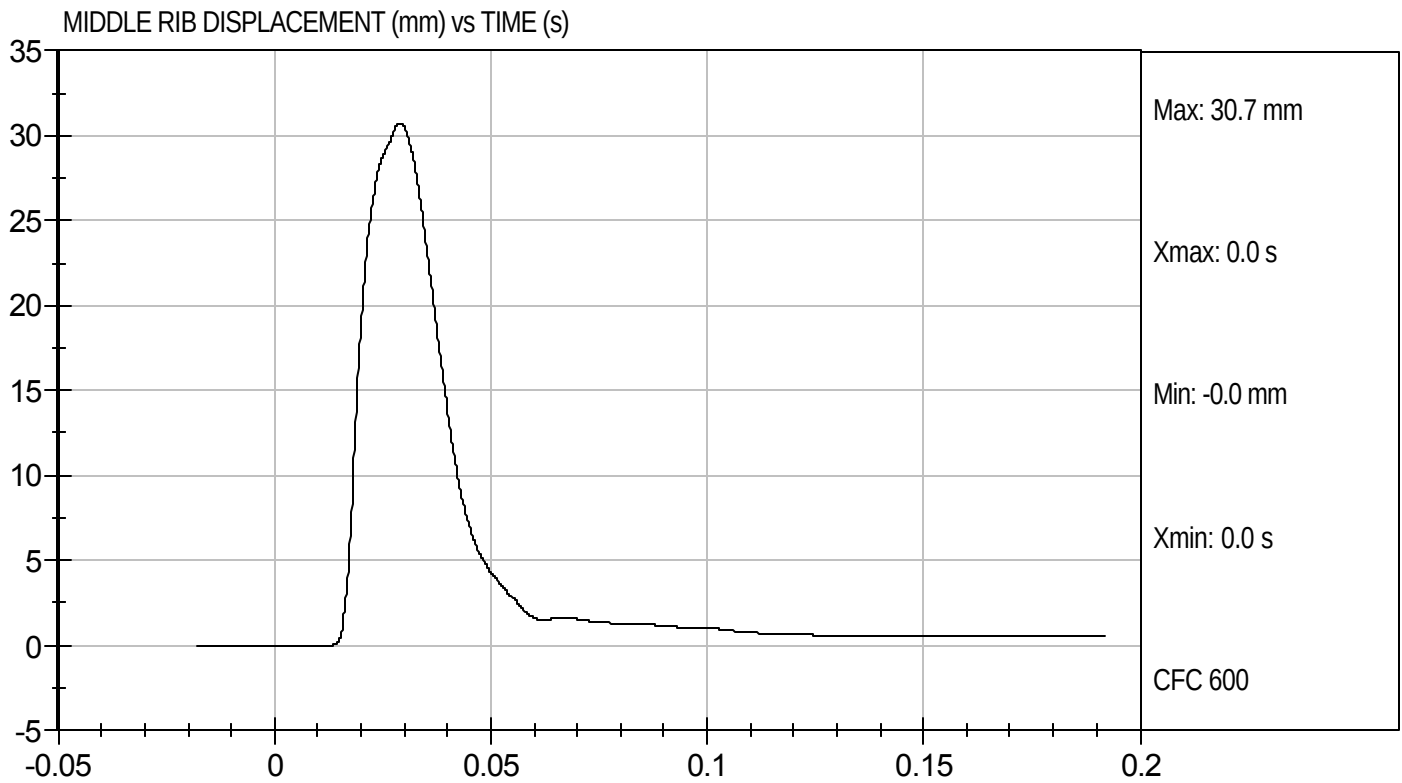
Test Date: 8/4/10
Velocity: 21.96 ft/s, 6.69 m/s





Test Desc: Thorax With Arm
Component ID: D102524

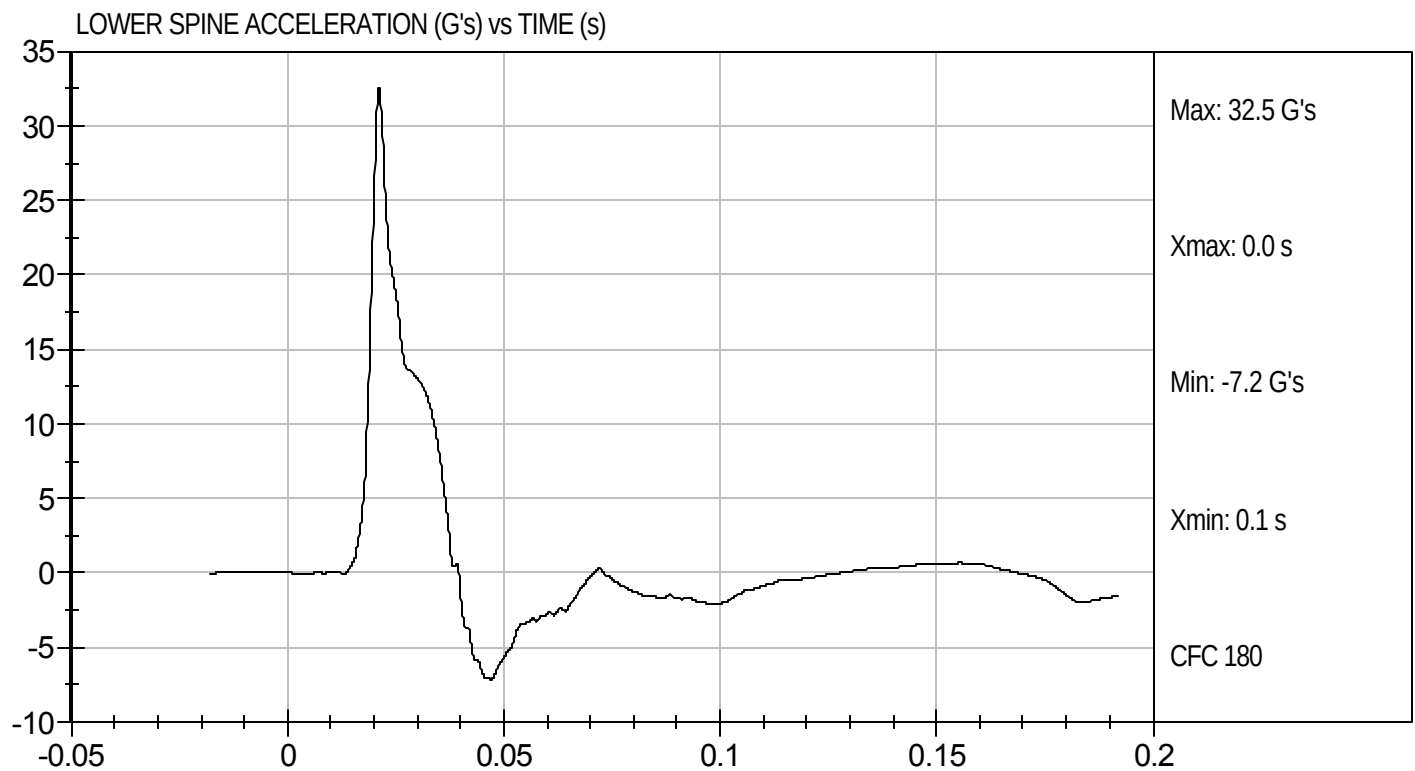
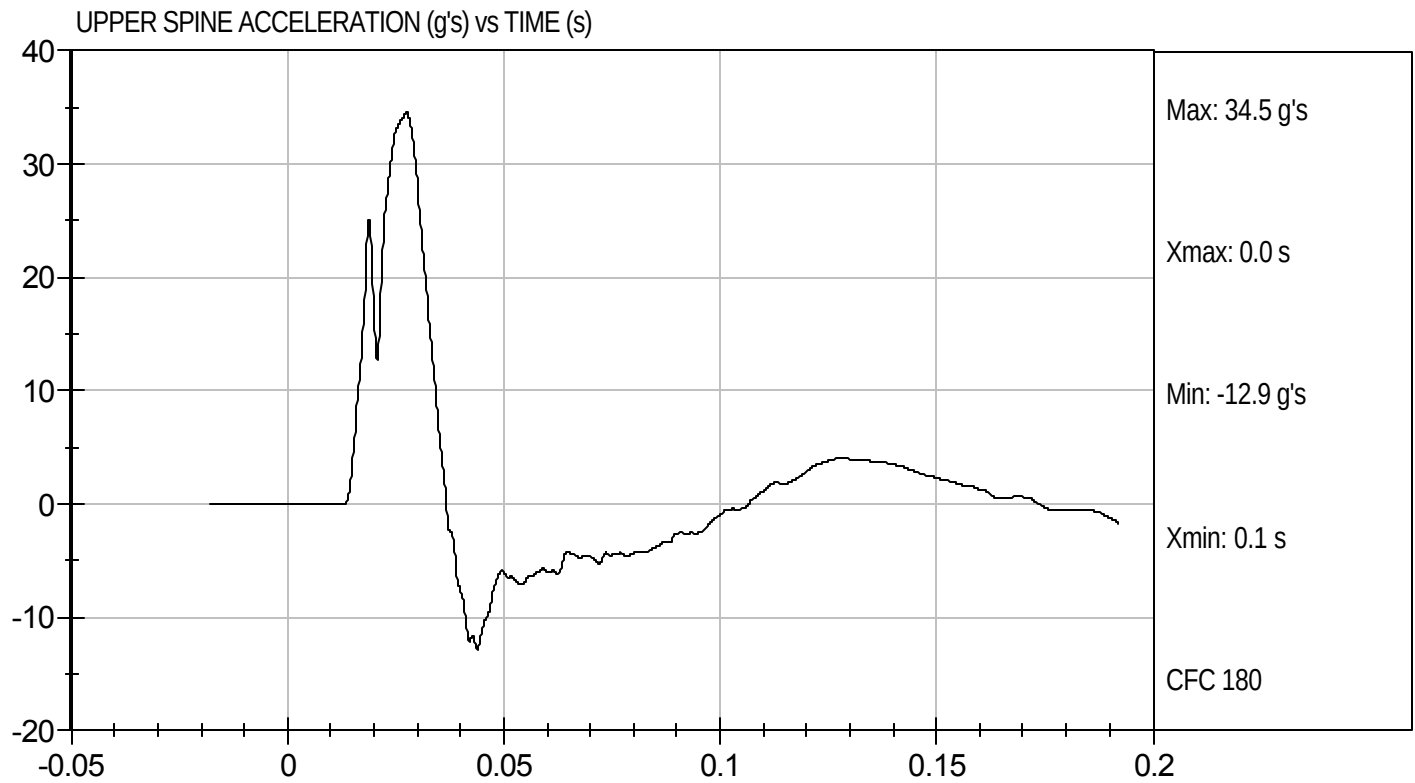
Test Date: 8/4/10
Velocity: 21.96 ft/s, 6.69 m/s





Test Desc: Thorax With Arm
Component ID: D102524

Test Date: 8/4/10
Velocity: 21.96 ft/s, 6.69 m/s



MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102525

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.2	Pass
Humidity	%	10 to 70	51	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Peak Impactor Force	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	35	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	39	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

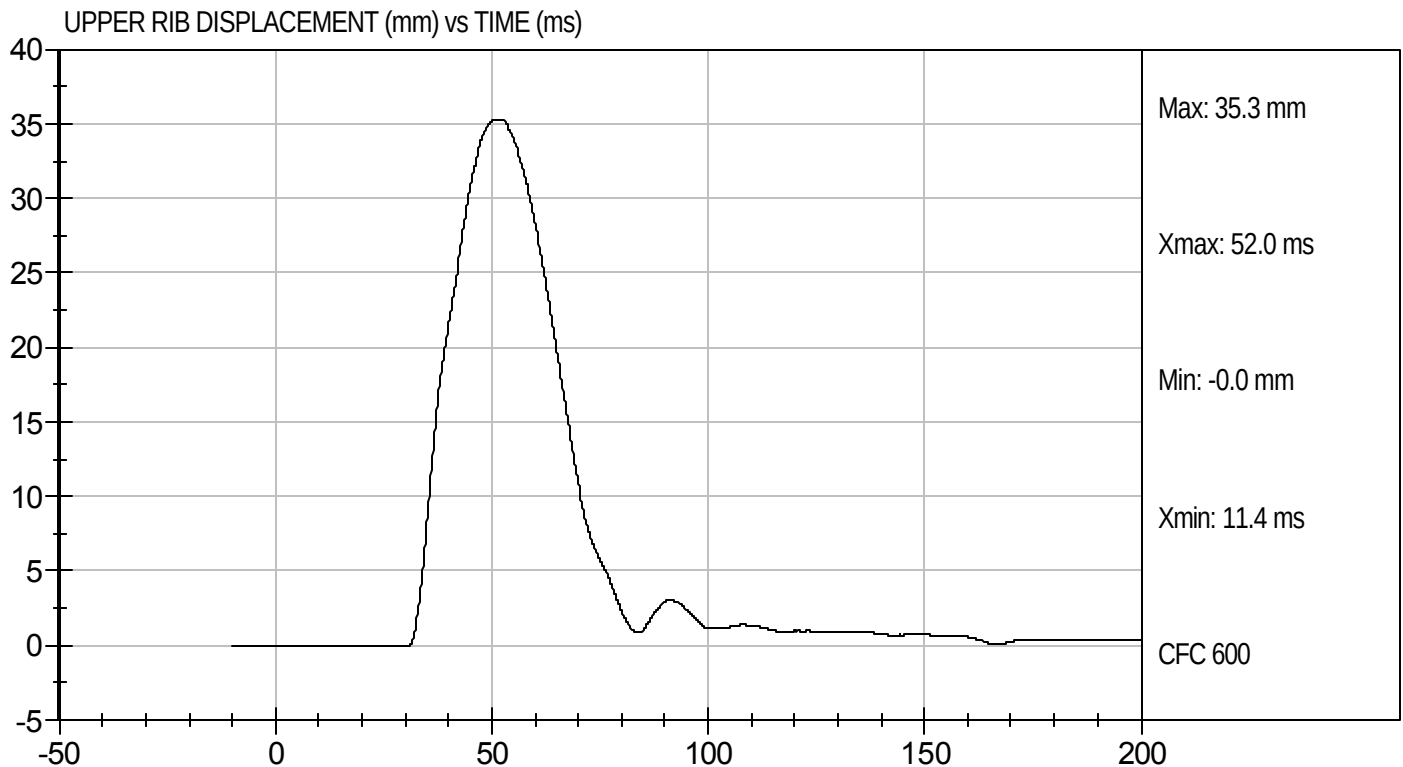
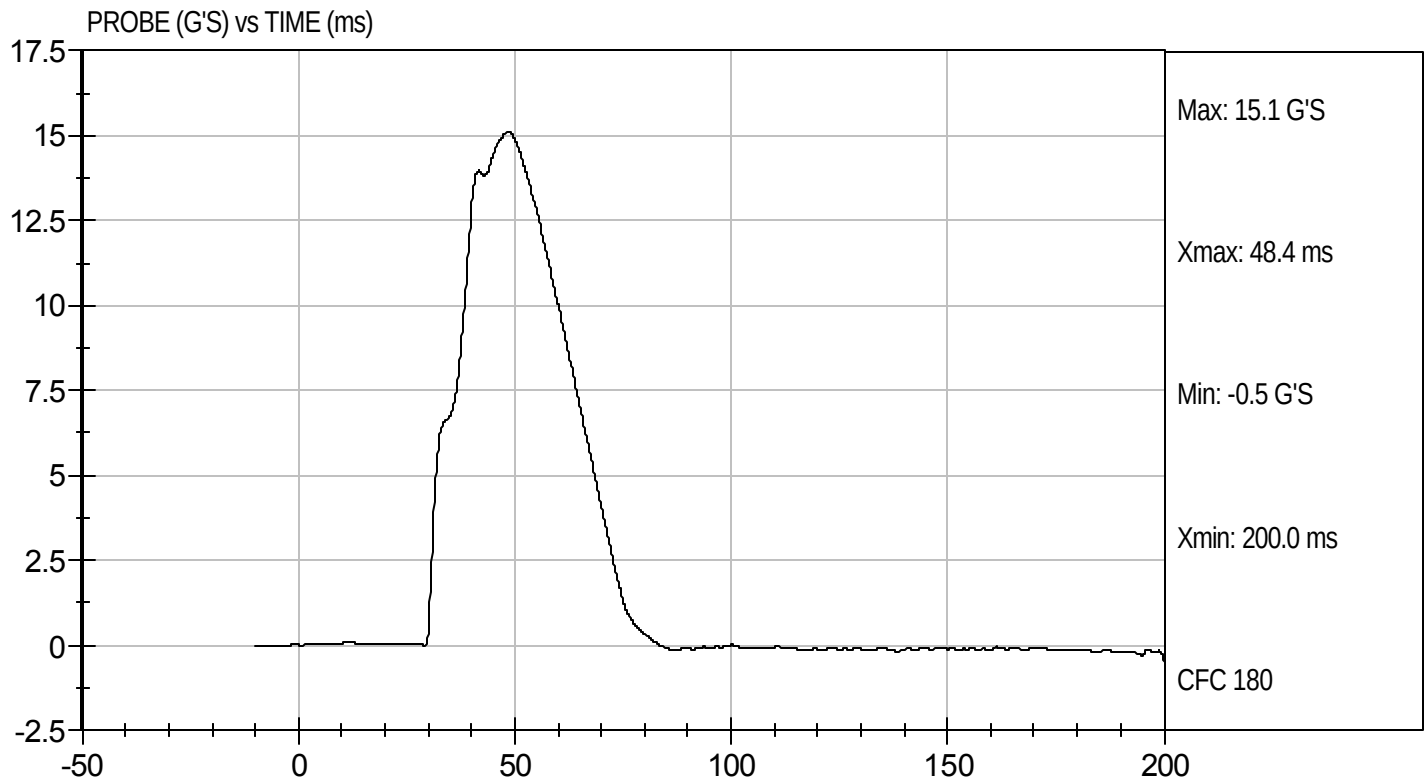
8/5/10
Test Date

David Winkelbauer
Approved By



Test Desc: Thorax Without Arm
Component ID: D102525

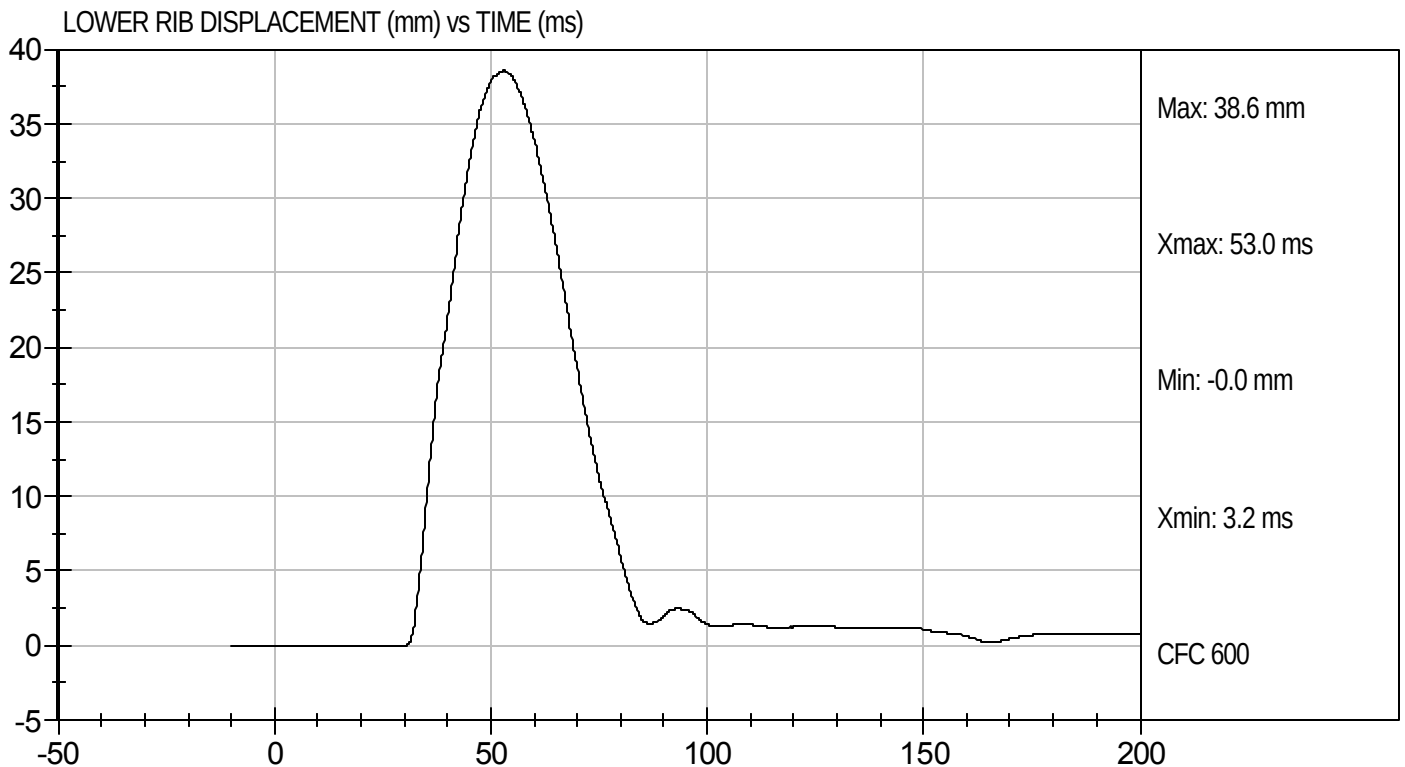
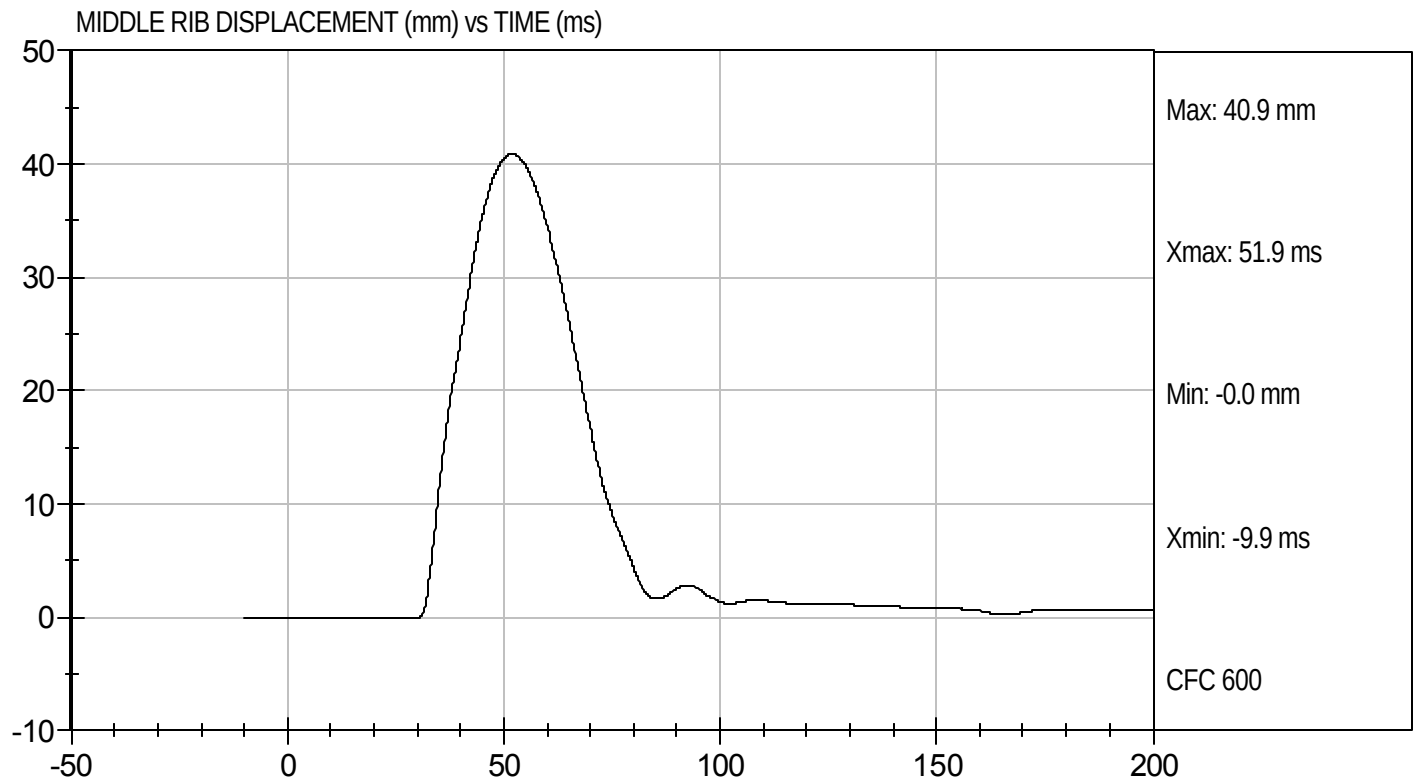
Test Date: 8/5/10
Velocity: 14.1 ft/s, 4.30 m/s





Test Desc: Thorax Without Arm
Component ID: D102525

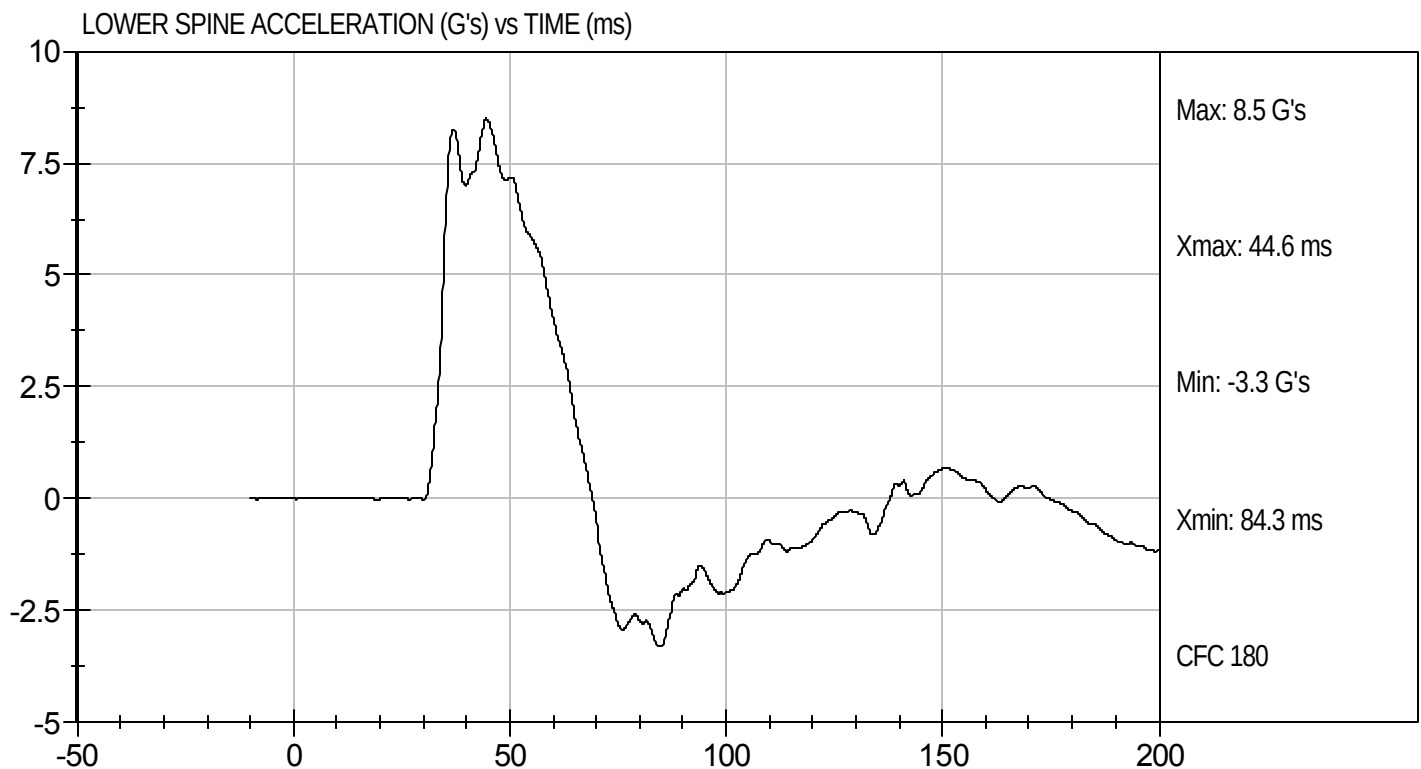
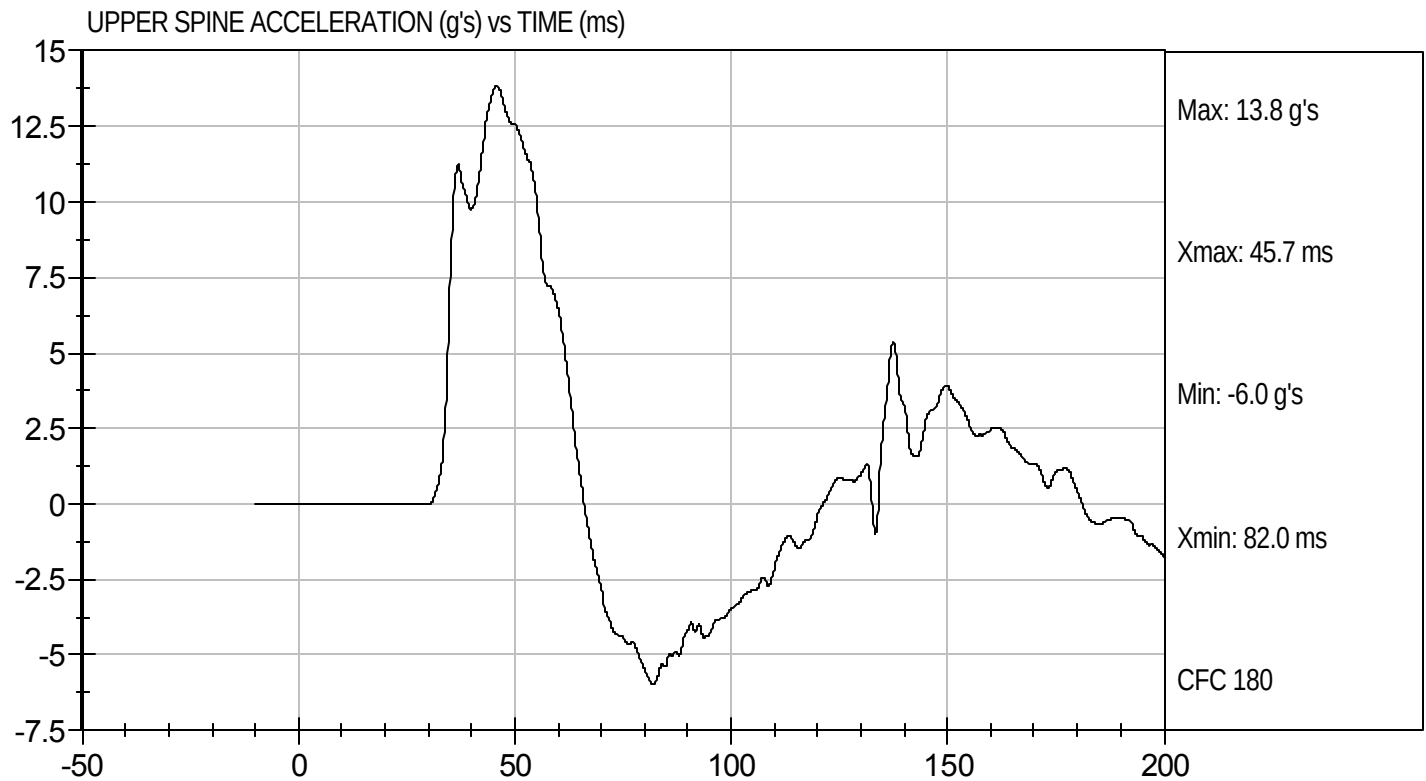
Test Date: 8/5/10
Velocity: 14.1 ft/s, 4.30 m/s





Test Desc: Thorax Without Arm
Component ID: D102525

Test Date: 8/5/10
Velocity: 14.1 ft/s, 4.30 m/s



MGA RESEARCH CORPORATION
ABDOMINAL IMPACT TEST
SID-II's BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102526

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.2	Pass
Humidity	%	10 to 70	51	Pass
Impact Velocity	m/s	4.20 to 4.40	4.21	Pass
Peak Impactor Acceleration	G's	12 to 16	14	Pass
Upper Rib Displacement	mm	36 to 47	42	Pass
Lower Rib Displacement	mm	33 to 44	37	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
Overall Test Results				Pass


Laboratory Technician

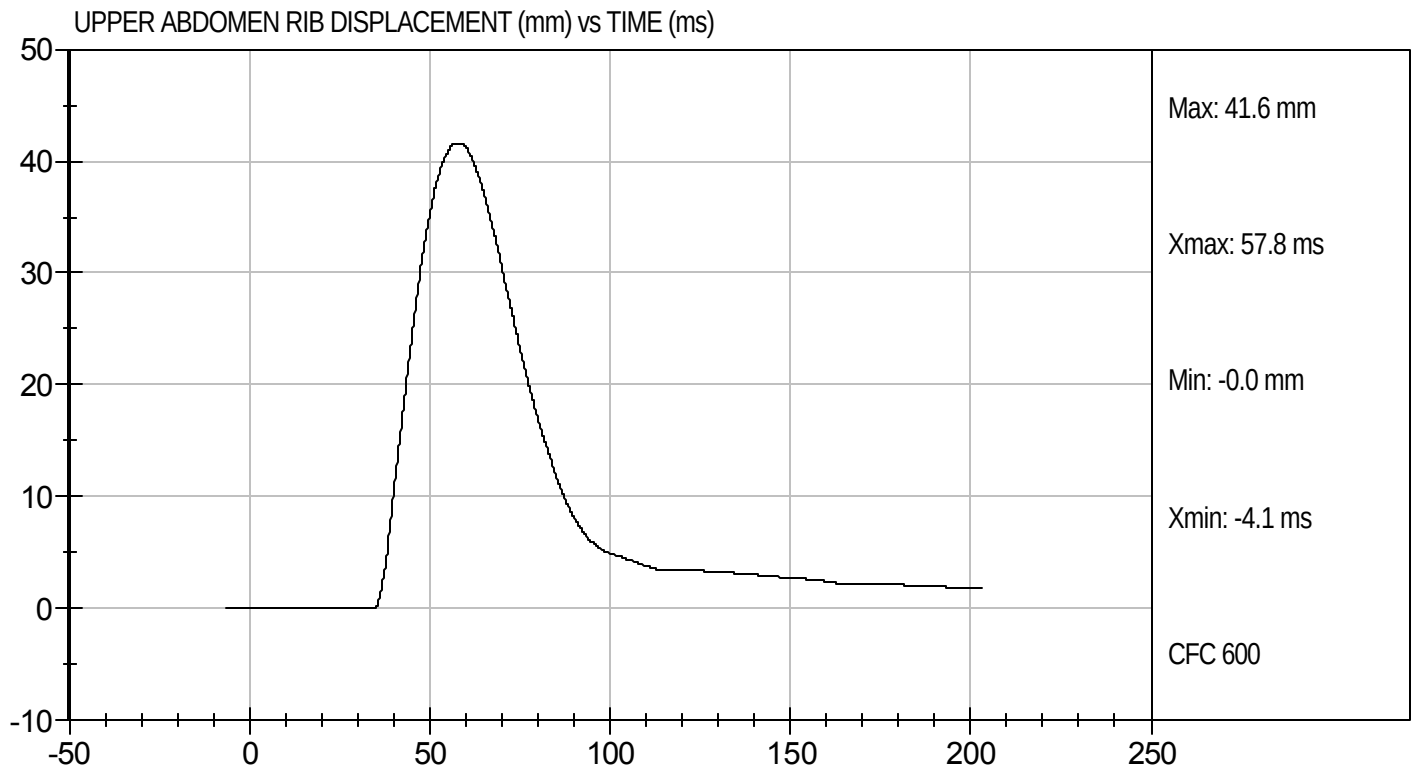
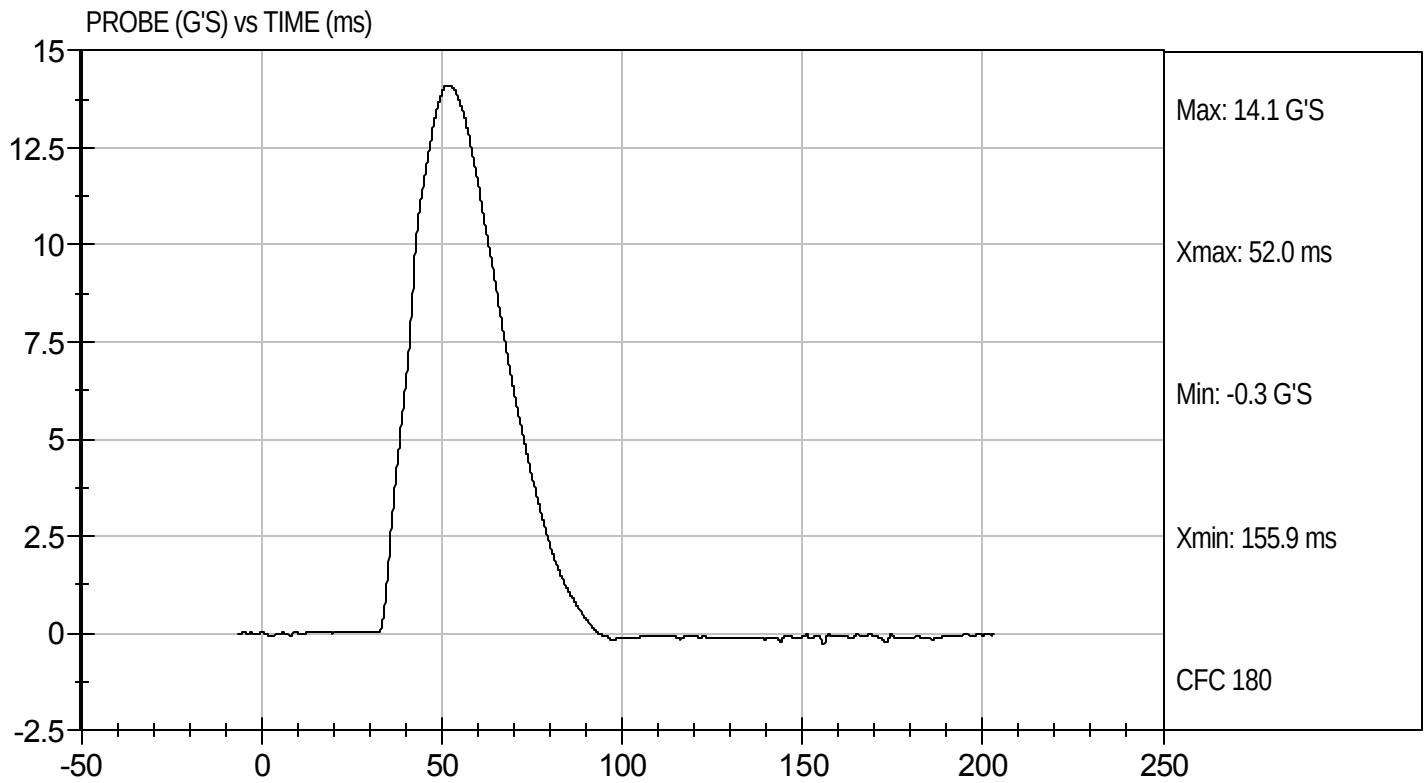
8/5/10
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D102526

Test Date: 8/5/10
Velocity: 13.8 ft/s, 4.21 m/s

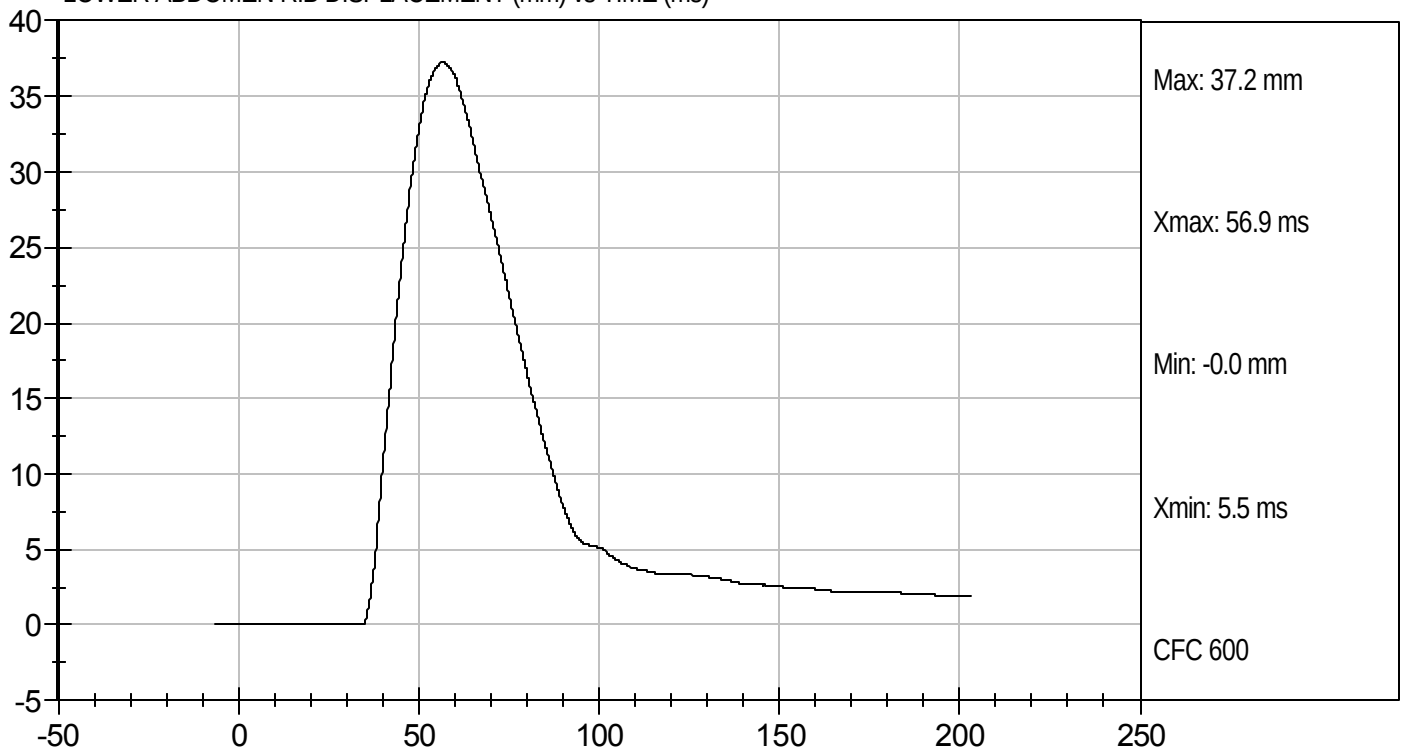




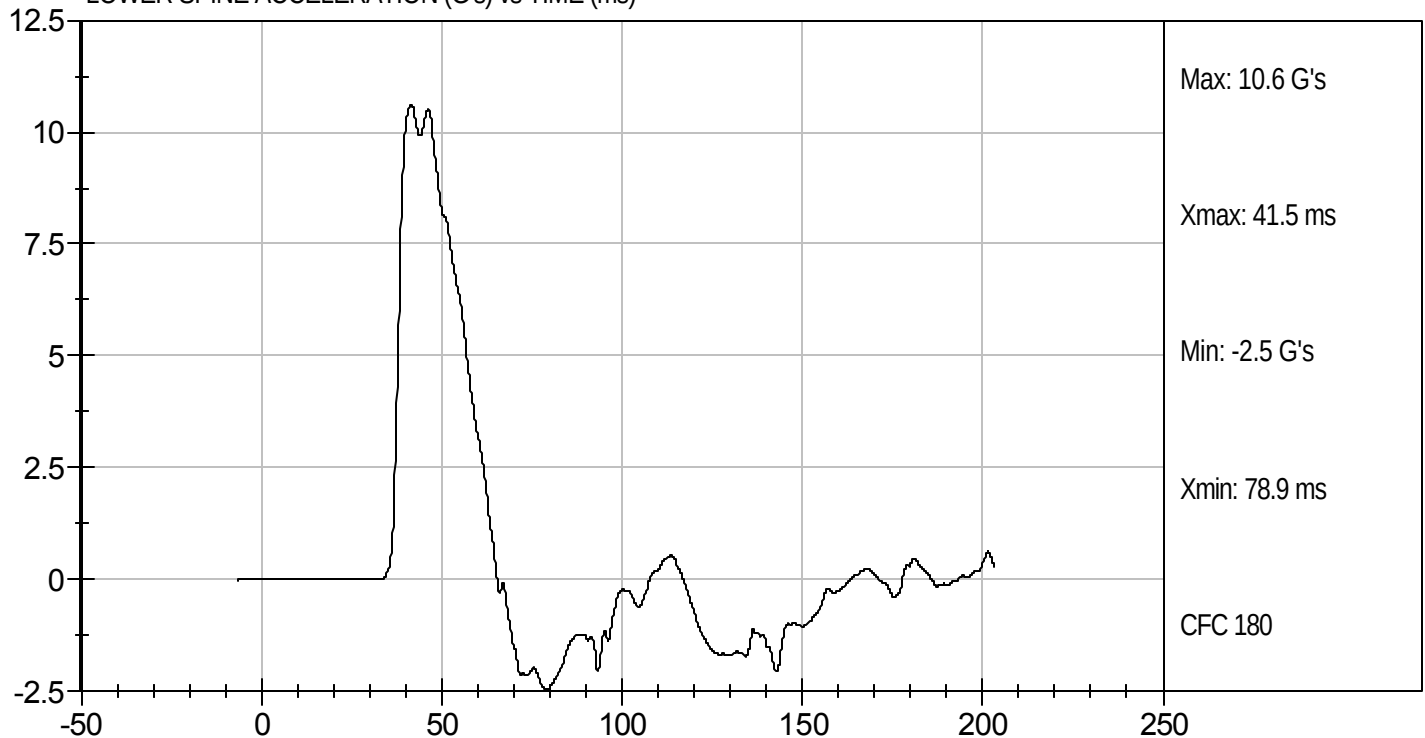
Test Desc: Abdomen Impact
Component ID: D102526

Test Date: 8/5/10
Velocity: 13.8 ft/s, 4.21 m/s

LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER SPINE ACCELERATION (G's) vs TIME (ms)

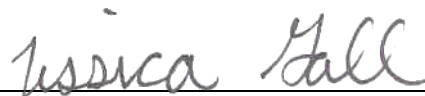


MGA RESEARCH CORPORATION
PELVIS IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102527

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.2	Pass
Humidity	%	10 to 70	51	Pass
Impact Velocity	m/s	6.60 to 6.80	6.71	Pass
Peak Impactor Acceleration	G's	38 to 47	43	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	40	Pass
Peak Acetabulum Force	N	3600 to 4300	4070	Pass
			Overall Test Results	Pass


Laboratory Technician

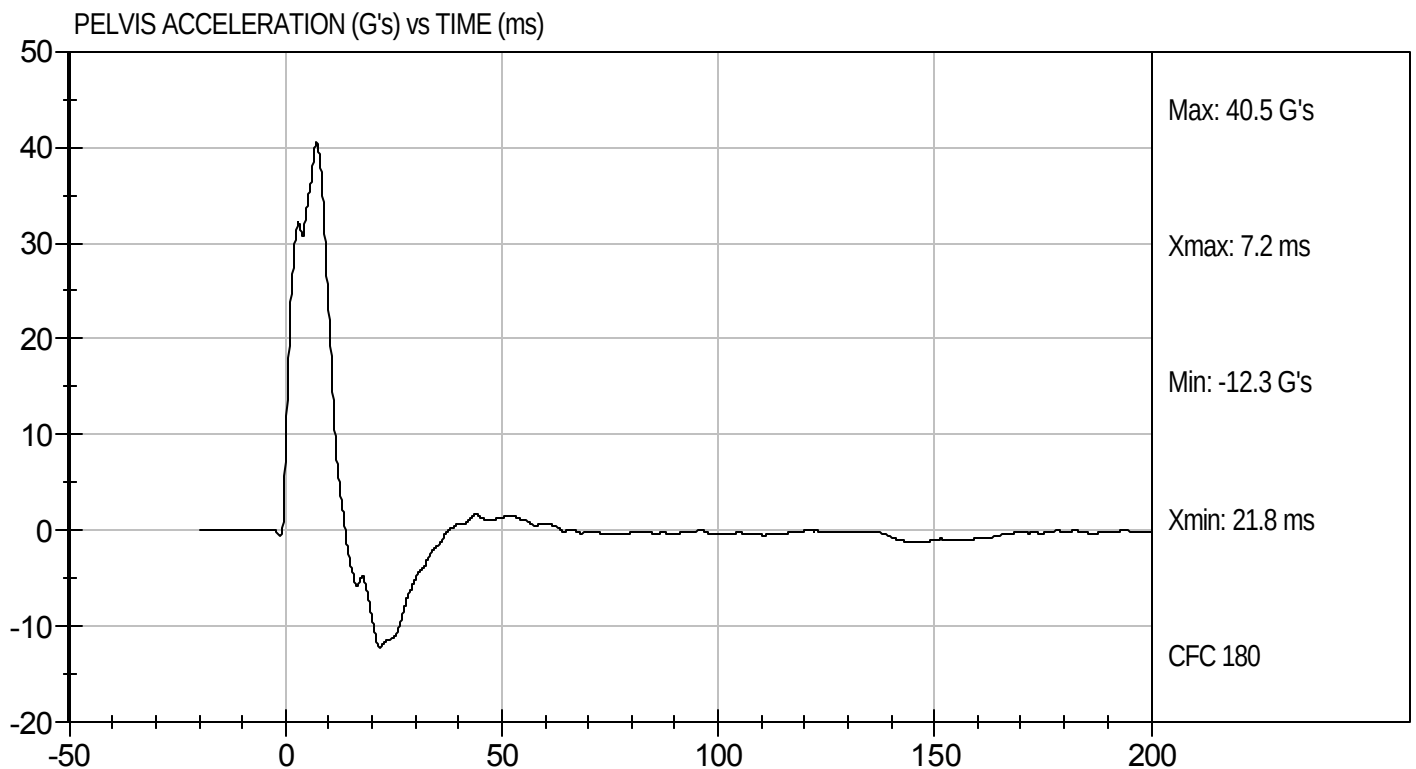
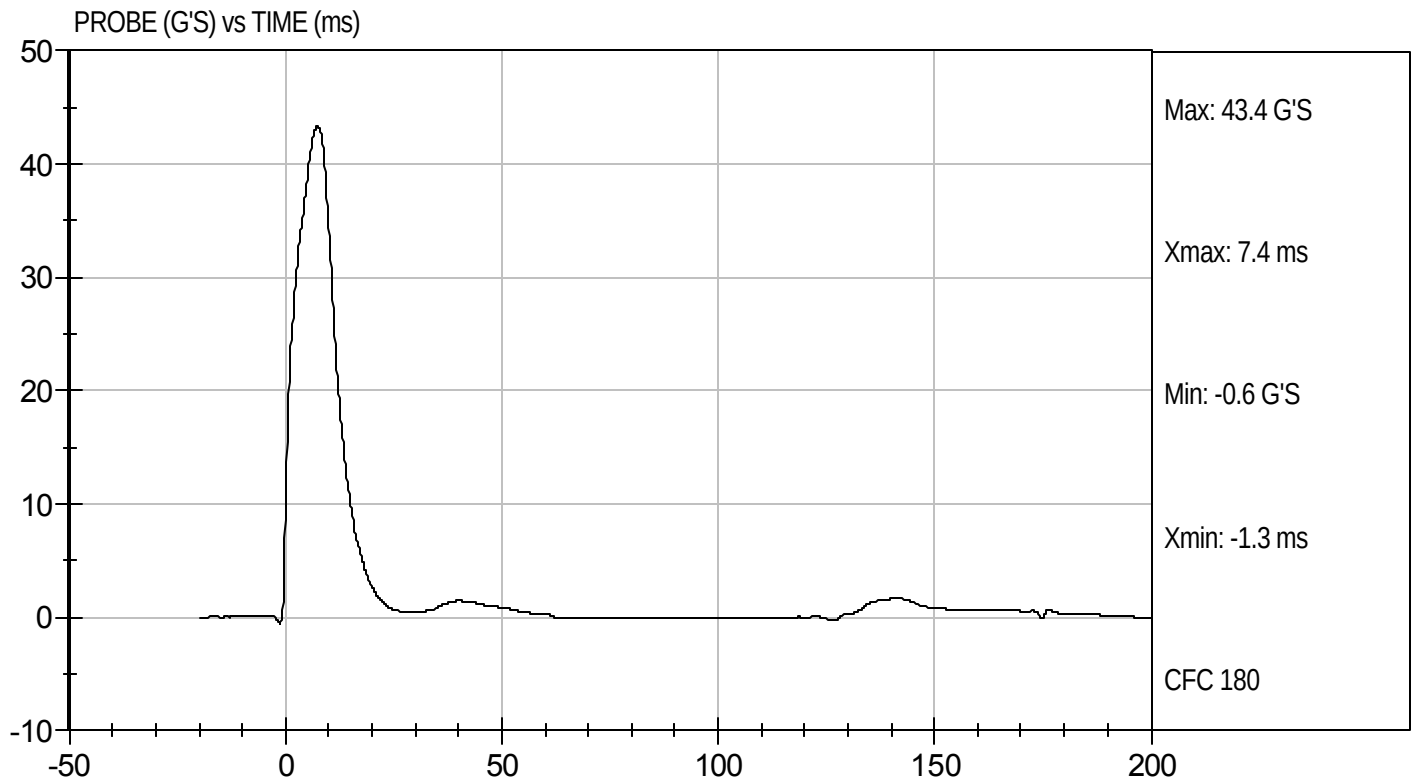
8/5/10
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D102527

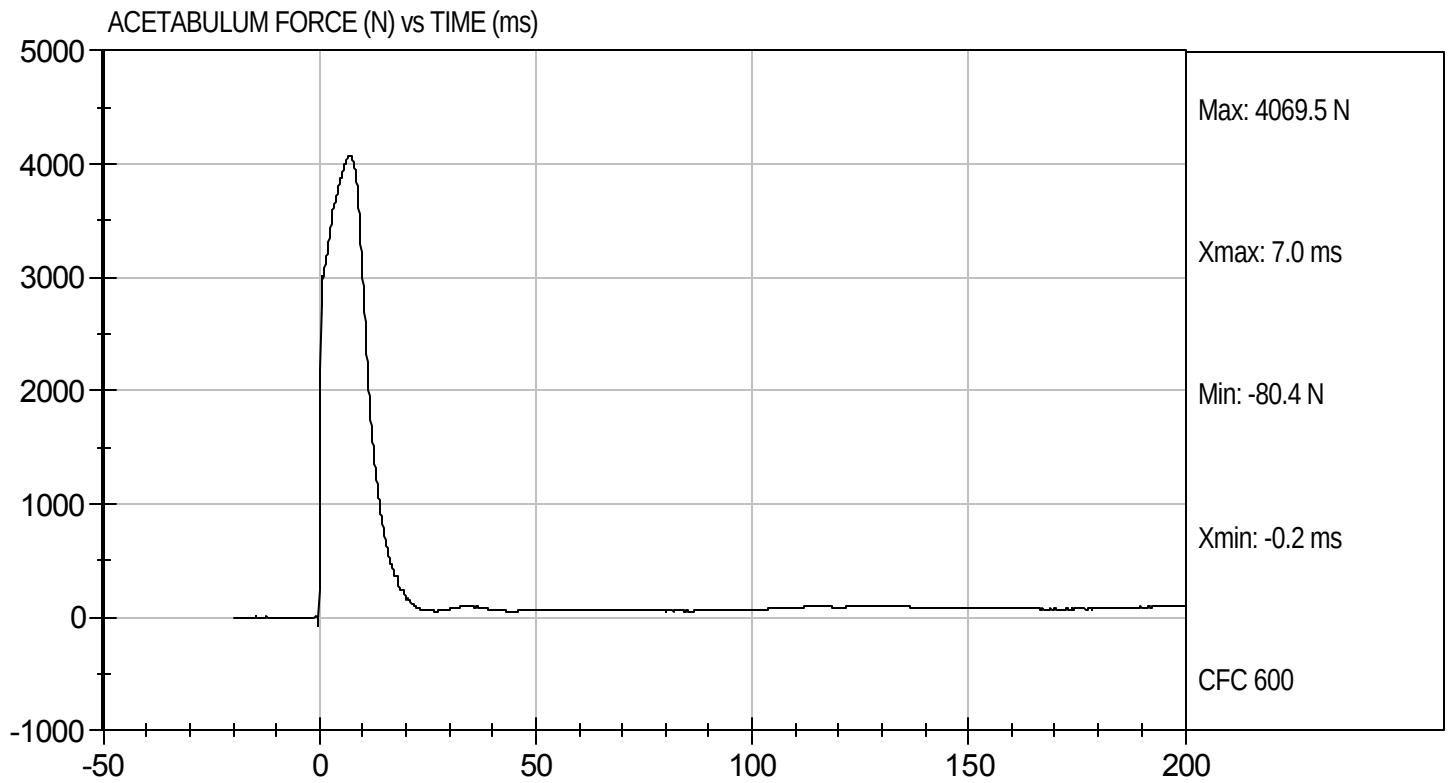
Test Date: 8/5/10
Velocity: 22.0 ft/s, 6.71 m/s





Test Desc: Pelvis Impact
Component ID: D102527

Test Date: 8/5/10
Velocity: 22.0 ft/s, 6.71 m/s



MGA RESEARCH CORPORATION
ILIAC IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D102528

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.2	Pass
Humidity	%	10 to 70	51	Pass
Impact Velocity	m/s	4.20 to 4.40	4.36	Pass
Peak Impactor Acceleration	G's	36 to 45	39	Pass
Pelvis Y Acceleration	G's	28 to 39	36	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4774	Pass
			Overall Test Results	Pass


Laboratory Technician

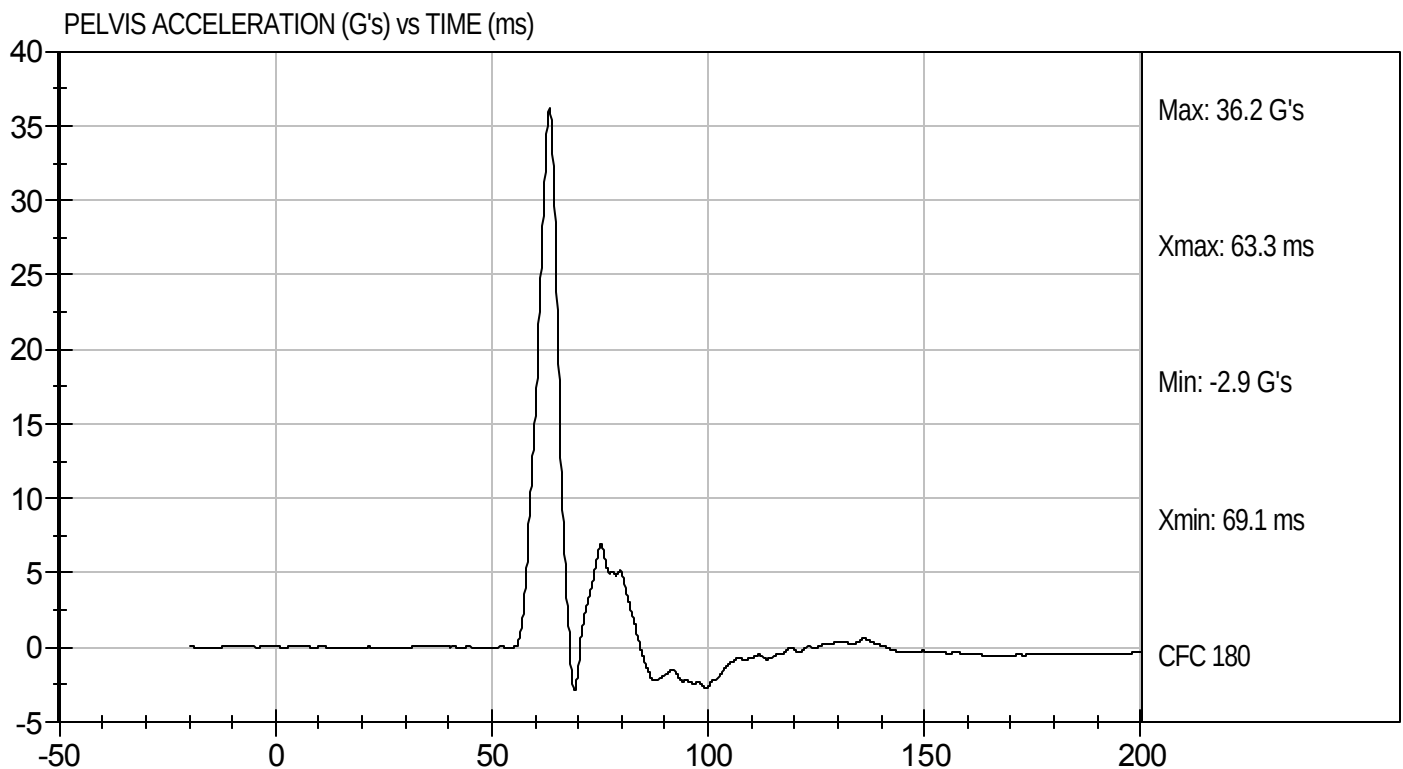
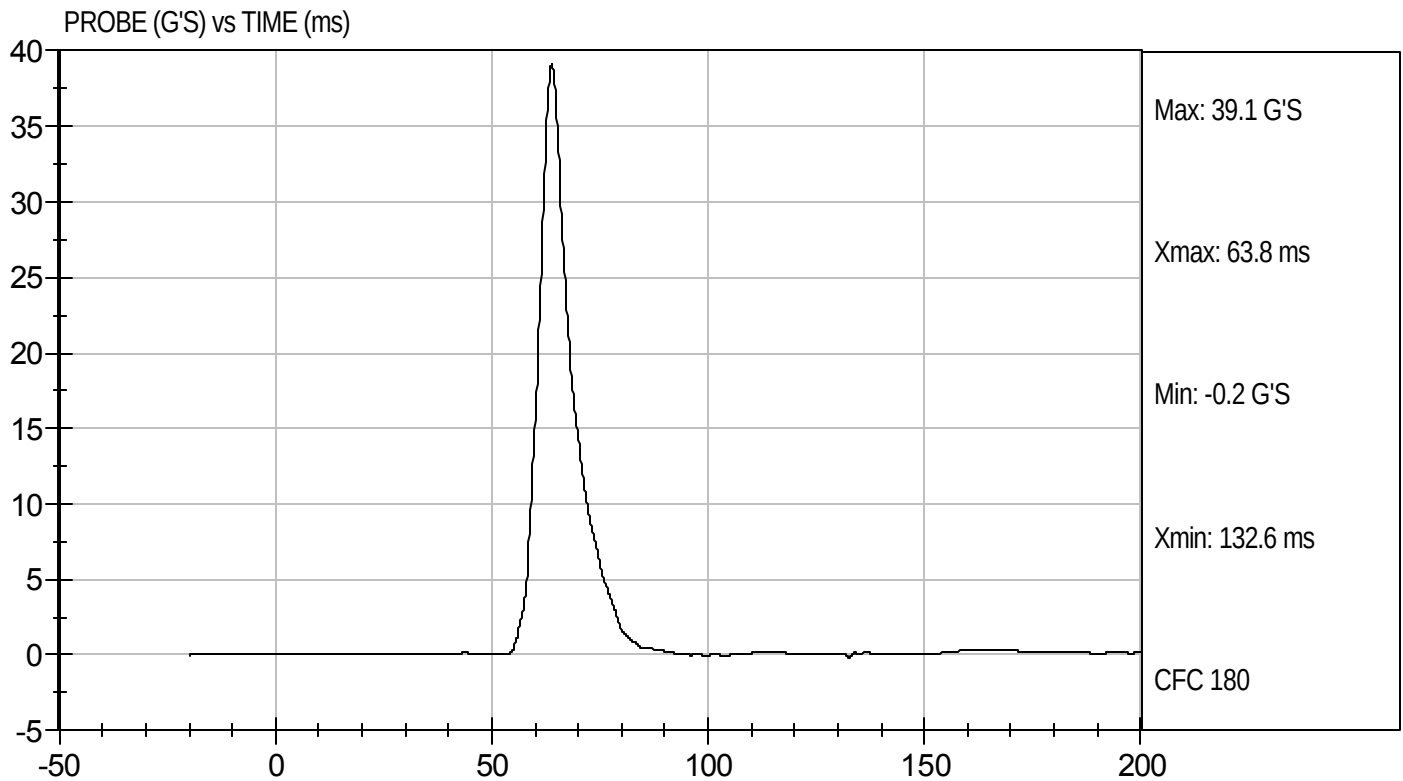
8/5/10
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D102528

Test Date: 8/5/10
Velocity: 14.3 ft/s, 4.36 m/s





Test Desc: Pelvis Impact
Component ID: D102528

Test Date: 8/5/10
Velocity: 14.3 ft/s, 4.36 m/s

