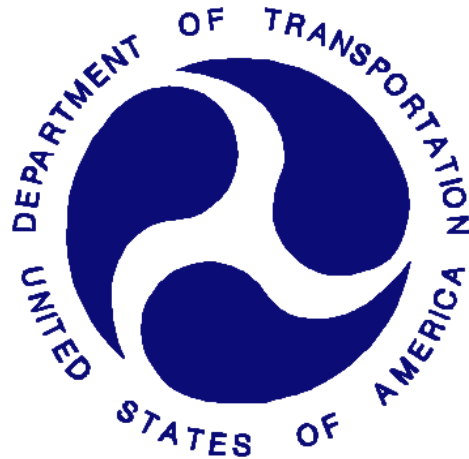


REPORT NUMBER: SINCAP-MGA-2012-059

**NEW CAR ASSESSMENT PROGRAM (NCAP)
Moving Deformable Barrier Side Impact Test**

**HONDA MOTOR CO., LTD
2012 Honda Civic IMA 4-Dr Sedan
NHTSA No.: MC5301**

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



Test Date: February 13, 2012

Final Report Date: April 12, 2012

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NVS-111
1200 New Jersey Ave, SE
Room W43-410
Washington, DC 20590**

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Prepared by: 
Donna Janovicz, Project Manager

Approved by: 
Ben Fischer, Project Engineer

Approval Date: April 12, 2012

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. SINCAP-MGA-2012-059	2. Government Accession No.	3. Recipient's Catalog No.																																																					
4. Title and Subtitle Final Report of New Car Assessment Program Side Impact MDB Testing of a 2012 Honda Civic IMA 4-Dr Sedan; NHTSA No.: MC5301		5. Report Date April 12, 2012																																																					
		6. Performing Organization Code MGA																																																					
7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer		8. Performing Organization Report No. SINCAP-MGA-2012-059																																																					
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		10. Work Unit No.																																																					
		11. Contract or Grant No. DTNH22-09-D-00124																																																					
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave, SE, Room W43-410 Washington, D.C. 20590		13. Type of Report and Period Covered: Final Test Report February 13, 2012 to April 12, 2012																																																					
		14. Sponsoring Agency Code NVS-111																																																					
15. Supplementary Notes																																																							
16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2012 Honda Civic IMA 4-Dr Sedan in accordance with the specifications of the Office of Crashworthiness Standards NCAP Side Laboratory Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on February 13, 2012. The impact velocity of the Moving Deformable Barrier (MDB) was 62.2 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.1°C. The target vehicle post-test maximum crush was 258 mm at level 3. The test vehicle's performance was as follows: <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th colspan="3">Driver ATD (ES-2re)</th> </tr> <tr> <th>Measurement Description</th> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td>N/A</td> <td>1000</td> <td>126</td> </tr> <tr> <td>Maximum Thorax Rib Deflection</td> <td>mm</td> <td>44</td> <td>29</td> </tr> <tr> <td>Total Abdominal Force</td> <td>N</td> <td>2500</td> <td>1359</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td>N</td> <td>6000</td> <td>2329</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th colspan="3">Passenger ATD (SID-IIs)</th> </tr> <tr> <th>Measurement Description</th> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td>N/A</td> <td>1000</td> <td>300</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>Gs</td> <td>82</td> <td>80</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>3788</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38*</td> <td>39</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45*</td> <td>39</td> </tr> </tbody> </table> *Proposed IARV The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.					Driver ATD (ES-2re)			Measurement Description	Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	126	Maximum Thorax Rib Deflection	mm	44	29	Total Abdominal Force	N	2500	1359	Pubic Symphysis Force	N	6000	2329		Passenger ATD (SID-IIs)			Measurement Description	Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	300	Resultant Lower Spine Acceleration	Gs	82	80	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3788	Maximum Thoracic Rib Deflection	mm	38*	39	Maximum Abdomen Rib Deflection	mm	45*	39
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19. Security Classification of Report Unclassified	20. Security Classification of Page Unclassified	21. No. of Pages 210	22. Price																																																				

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SECTION 1

TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY 2012 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 2012 Honda Civic IMA 4-Dr Sedan. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Laboratory Test Procedure dated August 2011.

SECTION 2 SUMMARY OF TEST RESULTS

A 2012 Honda Civic IMA 4-Dr Sedan was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.2 km/h (38.7 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin, on February 13, 2012. Pretest and post test photographs of the test vehicle, the MDB, and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS NCAP Side Laboratory Test Procedure dated August 2011. The side impact event was documented by eleven (11) cameras. Camera locations are included in this report.

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

Primary and Redundant Head CG Triaxial Accelerometers
Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
Abdomen Forward, Middle, and Rear Y-Axis Load Cells
Lower Spine (T12) Triaxial Accelerometers
Pubic Symphysis Y-Axis Load Cell

PASSENGER ATD (SID-IIs)

Primary and Redundant Head CG Triaxial Accelerometers
Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
Abdomen Upper Rib and Lower Rib Y-Axis Displacement Potentiometers
Lower Spine (T12) Triaxial Accelerometers
Acetabulum and Iliac Wing Y-Axis Load Cells

Appendix B contains the dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D contains the test equipment and instrumentation calibration data.

Dummy Injury readings were recorded as follows:

DUMMY INJURY VALUES

Measurement Description	Driver ATD (ES-2re)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	126
Maximum Thorax Rib Deflection	mm	44	29
Total Abdominal Force	N	2500	1359
Pubic Symphysis Force	N	6000	2329

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	300
Resultant Lower Spine Acceleration	Gs	82	80
Total Pelvic Force	N	5525	3788
Maximum Thoracic Rib Deflection	mm	38*	39
Maximum Abdomen Rib Deflection	mm	45*	39

*Proposed IARV

Supplemental restraint information is given below:

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

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

GENERAL COMMENTS

There was no valid data collected for:

Left Lower A-Post Y

Left Lower B-Post Y

Left Mid B-Post Y

Driver Seat Track Y is questionable from 13-16 msec.

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

SECTION 3
OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MC5301	Traction Control System (TCS)	Yes
Model Year	2012	Auto-Leveling System	No
Make	Honda	Automatic Door Locks (ADL)	Yes
Model	Civic IMA	Power Window Auto-Reverse	No
Body Style	Sedan	Other Optional Feature	N/A
VIN	JHMF4F28CS002901	Driver Front Airbag	Yes
Body Color	Polished Metal	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	103 / 64	Driver Head/Torso Airbag	No
Engine Displacement (L)	1.5	Driver Torso Airbag	Yes
Type/No. Cylinders	4	Driver Torso/Pelvis Airbag	No
Engine Placement	Lateral	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	No
Transmission Speeds	Continuous	Rear Pass. Curtain Airbag	Yes
Overdrive	No	Rear Pass. Head/Torso Airbag	No
Final Drive	Front	Rear Pass. Torso Airbag	No
Roof Rack	No	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	No	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
All Wheel Drive (AWD)	No	Other Safety Restraint	N/A
Does owner's manual provide instruction to turn off automatic door locks?			Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda Motor Co., Ltd	GVWR (kg)	1740
Date of Manufacture	09/11	GAWR Front (kg)	910
Vehicle Type	Passenger Car	GAWR Rear (kg)	840

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				385	(A)
DSC x 68.04 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW)				45	(A-B)

VEHICLE SEAT TYPE

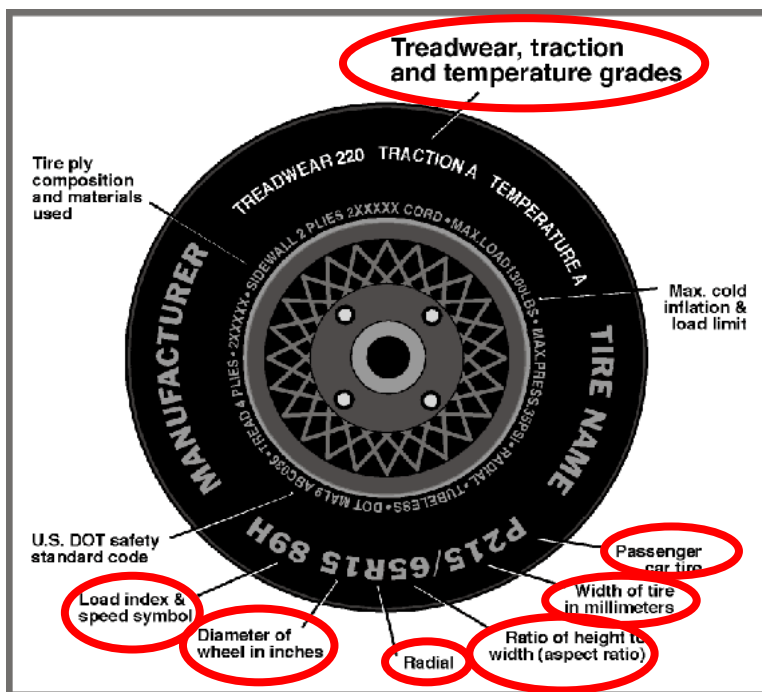
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X					w/lever	
Rear or Second Row		X			X		
Third Row Seat							

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

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
Test Date: 2/13/2012

VEHICLE TIRE INFORMATION



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	220	220
Recommended Tire Size	P195/65R15	P195/65R15

TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Tire Size on Vehicle	P195/65R15	P195/65R15
Tire Manufacturer	Bridgestone	Bridgestone
Tire Name	ECOPIA	ECOPIA
Tire Type	Passenger	Passenger
Tire Width	195	195
Aspect Ratio	65	65
Radial	Yes	Yes
Wheel Diameter	15	15
Load Index/Speed Symbol	89S	89S
Treadwear	380	380
Traction Grade	B	B
Temperature Grade	B	B
Tire Material	Rubber	Rubber

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

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kpa	220	220	220	220
Tire Placard	kpa	220	220	220	220
Owner's Manual	kpa				
As Tested	kpa	220	220	220	220

MDB TIRE SPECIFICATIONS

	Requirement	Units	LF	RF	LR	RR
Tire Size	P205/75R15	N/A	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire	200 ± 21	kpa	220	220	220	220

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	389.6	267.7		433.2	340.7		434.1	346.1	
Right	kg	368.8	265.8		372.8	313.0		371.5	313.9	
Ratio	%	58.7	41.3		55.2	44.8		55.0	45.0	
Totals	kg	758.4	533.5	1291.9	806.0	653.7	1459.7	805.6	660.0	1465.6

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1291.9	(A)
Sum of Actual Weight of 2 P572 ATDs Used	kg	129.3	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	45	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1466.2	(A+B+C)

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)? **YES**

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Weight of Ballast, if any	0.0
Spare tire, jack & tools, right taillight, trunk carpet, right rear speaker.	14.5

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

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

TEST VEHICLE ATTITUDES AND CG

	Units	Fully Loaded	As Tested	Meets Requirement***
Left Front	mm	649	643	Yes
Right Front	mm	660	656	Yes
Right Rear	mm	650	660	Yes
Left Rear	mm	635	645	Yes
Vehicle CG (Aft of Front Axle)	mm	1202	1196	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	49	46	

*** The "As Tested" vehicle attitude measurements must be equal to or within ± 10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well.

DATA SHEET NO. 2
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

SEAT POSITIONING

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the mid-track, lowest, mid-angle position. The struck-side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rear-most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	11.7	10.5	11.1
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCR Height (mm)	SCR Height Position	SCR Height (mm)		
				Rear- most	Mid- Fore/Aft	Forward- Most
Driver Seat	11.1	Fixed	Max	Fixed	Fixed	Fixed
	11.1	Fixed	Mid	Fixed	Fixed	Fixed
	11.1	Fixed	Min	Fixed	Fixed	Fixed
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
	Fixed	Fixed	Mid	Fixed	Fixed	Fixed
	Fixed	Fixed	Min	Fixed	Fixed	Fixed

DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

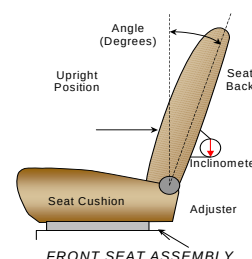
NHTSA No. MC5301
 Test Date: 2/13/2012

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	240	25 (1 st as 1)	120	12 th (1 st as 0)
Front Passenger Seat	240	25 (1 st as 1)	120	12 th (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated design angle. The front passenger's seat back is positioned in a similar manner as the driver's seat back. The struck side rear seat back is fixed. The rear center and non-struck side rear outboard seat backs are also fixed.



Seat	Total Seat Back Angle Range		Test Position from Vertical	
	Degrees	Detents	Degrees	Detent
Driver Seat w/Seated Dummy	60.7		8.0	4 th (1 st as 0)
Front Passenger Seat	57.2		8.4	3 rd (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	Fixed	Fixed	1.2*	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	1.2*	Fixed
Rear Center Seat	Fixed	Fixed	1.2*	Fixed

*Seat back was fixed, angle measured on top of headrest post guide.

DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1.

	Total # of Positions	Placed in Position #
Driver Seat	4 detents (1 st as 1)	0 (uppermost as 0)
Rear Seat	Fixed	Not Applicable

HEAD RESTRAINT ADJUSTMENT

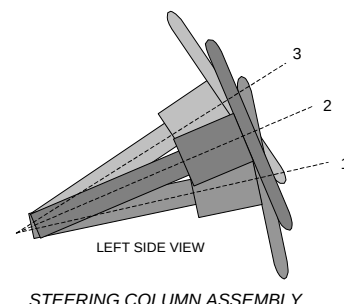
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	6	Highest
Rear Seat	2	Lowest

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel geometric locus is described when it moves through its full range of motion.

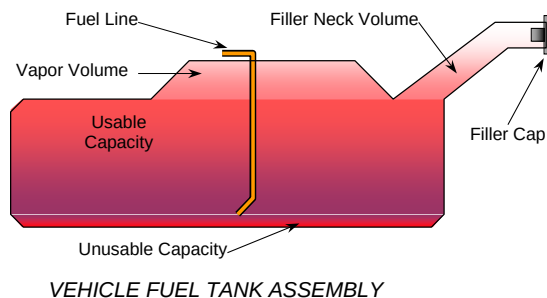
	Degrees	Fore/Aft Position (mm)
Lowermost, Position 1	69.7	160
Geometric Center, Position 2	66.9	144
Uppermost, Position 3	64.0	128
Telescoping Steering Wheel Travel		32
Test Position	66.9	144



FUEL PUMP

Describe the fuel pump type, details about how it operates and the location of the fuel filler pipe.

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



DATA SHEET NO. 2 (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEM DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

FUEL TANK CAPACITY DATA

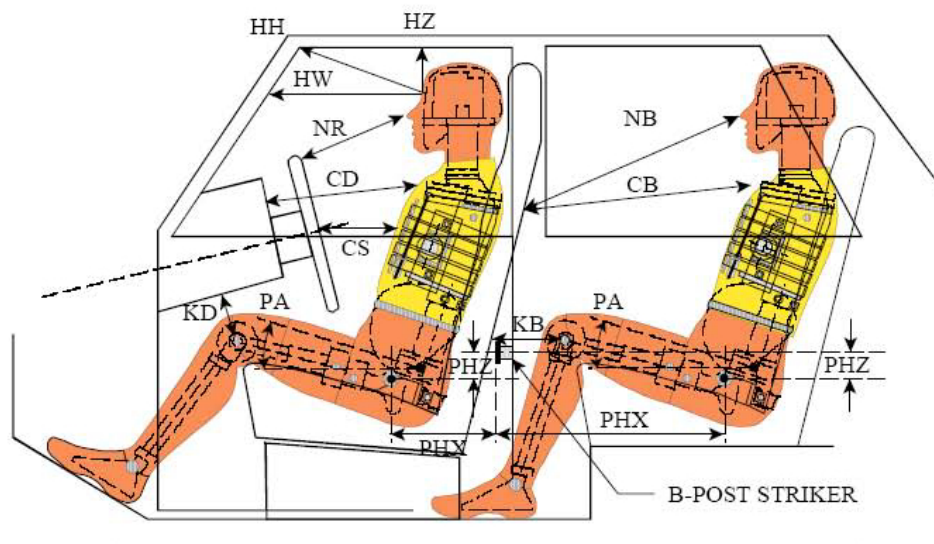
	Liters
Usable Capacity of "Standard" Tank (see Form No. 1)	50.0
Usable Capacity of "Optional" Tank (see Form No. 1)	
Usable Capacity of Standard Tank as Specified in Owner's Manual	50.0
Usable Capacity of Optional Tank as Specified in Owner's Manual	
93% of Usable Capacity	46.5
Actual Amount of Solvent Used	46.5
1/3 of Usable Capacity	16.7

Is the actual amount of solvent used in the test equal to 93% $\pm$ 1%
 of the Usable Capacity stated in Form No. 1? **YES**

DATA SHEET NO. 3 DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
Test Date: 2/13/2012



LEFT SIDE VIEW

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

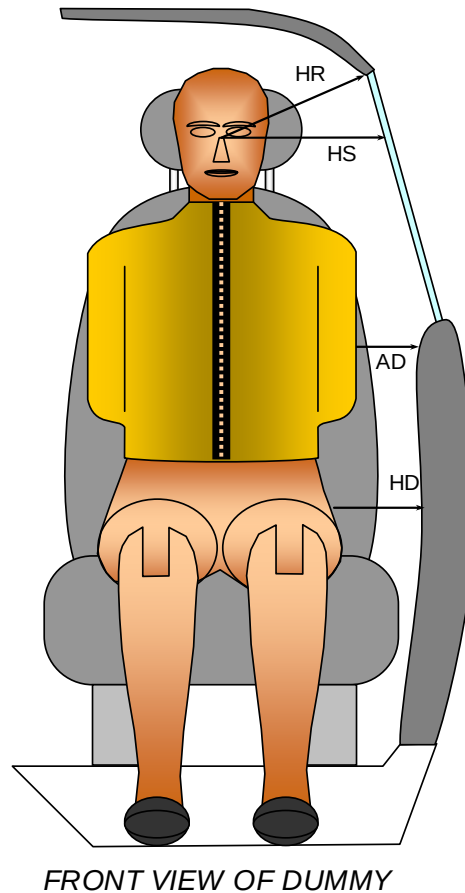
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver S/N 032		Passenger S/N 296	
			Length (mm)	Angle(°)	Length (mm)	Angle(°)
HH		Head to Header	311	11.9		
HW		Head to Windshield	581			
HZ	HZ	Head to Roof Liner	128		236	
NR	NB	Nose to Rim/Seat Back	420	23.7	560	11.9
CD	CB	Chest to Dashboard/Seat Back	580	1.6	555	10.4
CS		Chest to Steering Wheel	350	17.0		
KDL	KBL	Left Knee to Dash/Seat Back	118	26.9	291	24.6
KDR	KBR	Right Knee to Dash/Seat Back	111	25.4	294	25.1
PAX	PAX	Pelvic Tilt Angle X		20.2		24.3
	PAY	Pelvic Tilt Angle Y		0.1		0.2
PHX	PHX	Hip Point to Striker (X-Axis)	246		305	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	198		326	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012



FRONT VIEW OF DUMMY

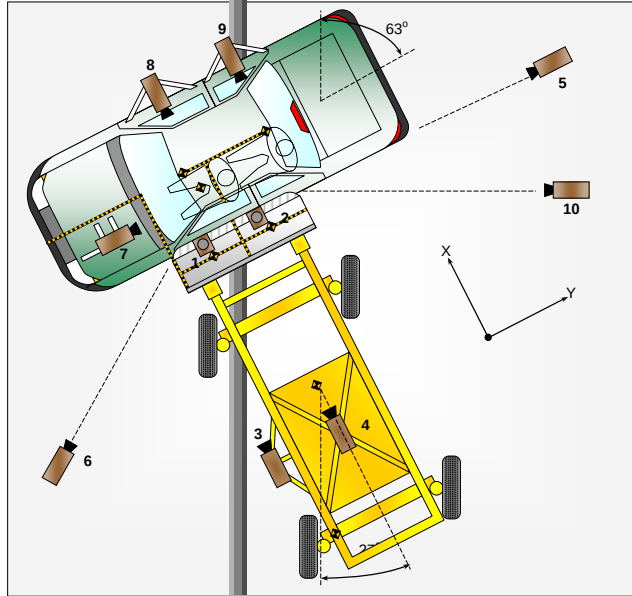
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver S/N 032	Passenger S/N 296
HR	Head to Side Header	mm	193	228
HS	Head to Side Window	mm	324	373
AD	Arm to Door	mm	86	162
HD	Hip Point to Door	mm	161	197

DATA SHEET NO. 5 CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
Test Date: 2/13/2012



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X*	Y*	Z*		
1	Overhead Overall	100	590	-4860	14	1000
2	Overhead Close-Up	100	470	-4860	20	1000
3	Left Impact Point (MDB)				50	1000
4	Side Overall (MDB)				16	1000
5	Rear	70	4450	-1080	24	1000
6	Left Front	2130	-4160	-1070	24	1000
7	Driver Front (OB)				16	1000
8	Driver Side (OB)				8	1000
9	Passenger Side (OB)				8	1000
10	Real Time Left Rear					30
11	Real Time Inrun					30

Reference: Impact Point projected to Ground; +X = To Front of MDB, + Y = To Right of MDB, +Z = Down

* All measurements accurate to ± 6 mm

Explain why camera(s) did not operate as intended: Not Applicable

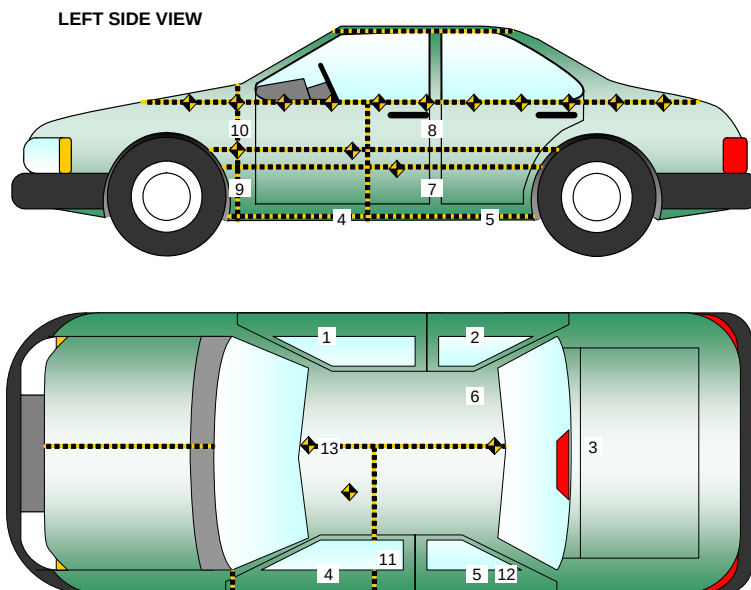
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MDB Accelerometers	5
MDB Contacts	2
Total	62

DATA SHEET NO. 6 **TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
Test Date: 2/13/2012



TEST VEHICLE ACCELEROMETER LOCATIONS

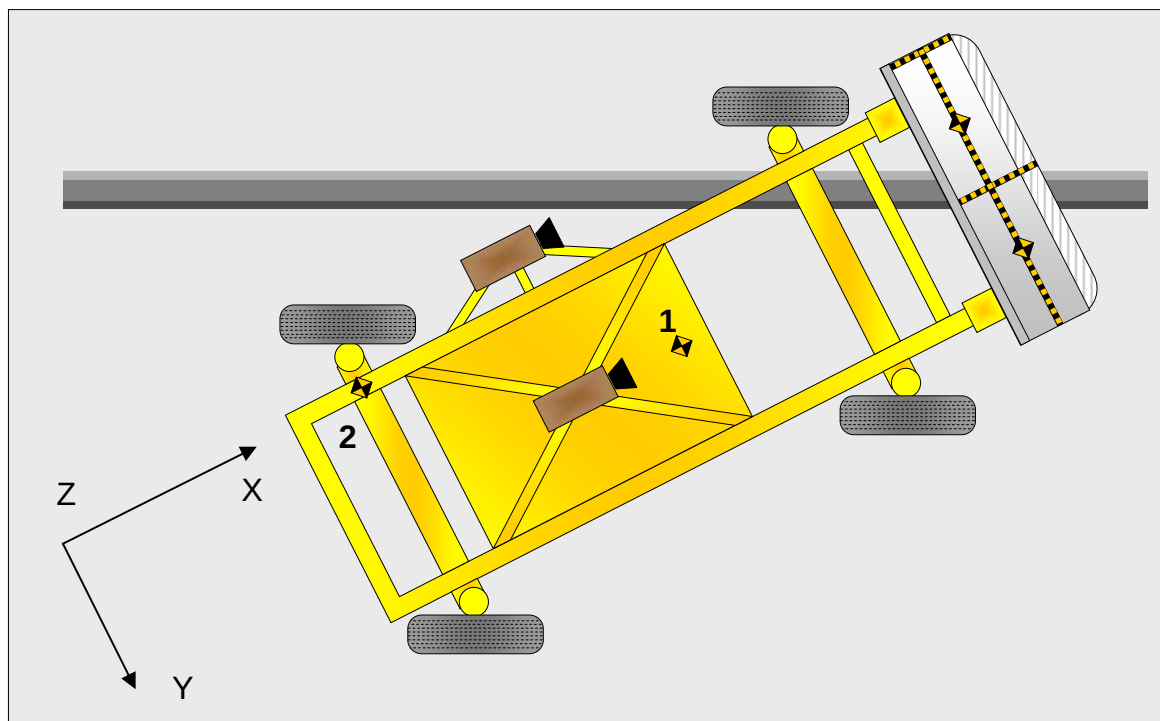
Accelerometer Location				
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2515	79	-209
2	Right Sill at Front Seat	2600	735	-187
3	Right Sill at Rear Seat	1540	735	-189
4	Left Sill at Front Door	2569	-735	-169
5	Left Sill at Rear Door	1549	-735	-187
6	Left Lower A-Post	3085	-673	-361
7	Left Middle A-Post	3130	-790	-718
8	Left Lower B-Post	2003	-697	-610
9	Left Middle B-Post	1997	-691	-781
10	Front Seat Track	2381	-535	-270
11	Rear Seat Structure	1760	-260	-354
12	Rt. Rear Occ. Compartment	1795	350	-207
13	Engine Block	3769	0	-769
14	Rear Above Axle	705	0	-327

Reference: X – Rear Surface of Vehicle (+ forward)
Y - Vehicle Centerline (+ to right)
Z - Ground Plane (+ down)

DATA SHEET NO. 7
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012



MDB ACCELEROMETER LOCATIONS

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

Reference: X - MDB Face (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
Test Date: 2/13/2012

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag	Curtain Airbag
Top of Head	Headliner, Grab Handle	Curtain Airbag, Headliner
Left Side of Head	Curtain Airbag, Headliner	Curtain Airbag, Headliner
Back of Head	Curtain Airbag, Headliner, Headrest	Curtain Airbag, Center Headrest
Left Shoulder	Side Airbag	Door Panel
Upper Torso	Side Airbag, Seatback	None
Lower Torso	Side Airbag, Seatback	Door Panel, Seatback
Left Hip	Door Panel, Seat Cushion	Door Panel, Seat Cushion
Left Knee	Door Panel	Door Panel

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch/ Other Door
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Record Width of Opening at Striker (mm)	N/A	N/A	N/A	N/A	N/A

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

POST-TEST STRUCTURAL OBSERVATIONS

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

DATA SHEET NO. 8 (CONTINUED)
POST-TEST OBSERVATIONS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No			
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other				

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2670
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		395
Actual Impact Point (Aft of Front Axle)	mm		391
Horizontal Offset (+forward / -rearward)	mm	+/- 50 of intended impact point	+4
Vertical Offset (+down / -up)	mm	+/- 20 of intended impact point	+1

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheelbase of Framework Carriage	2592
CG Location aft of Front Axle	1129

MDB WEIGHTS

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

SPEED AND ANGLE AT IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.2
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.3
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	90.2
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.2
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	26.8

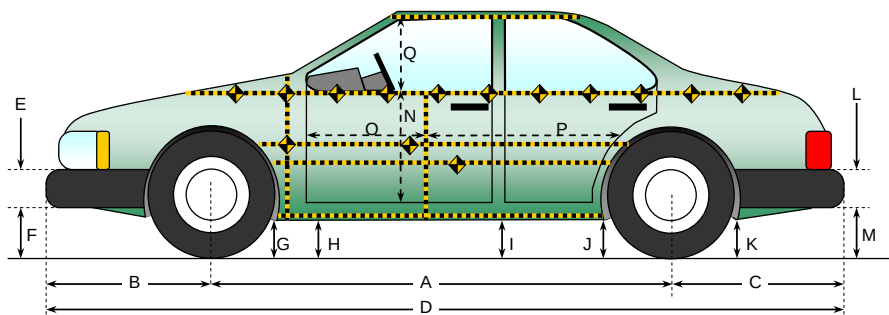
MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Left	169
B	Top of Bumper	533	800	Left	70
C	Mid-Level	686	800	Left	79
D	Top of Stack	813	800	Left	140

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012



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

LEFT SIDE VIEW

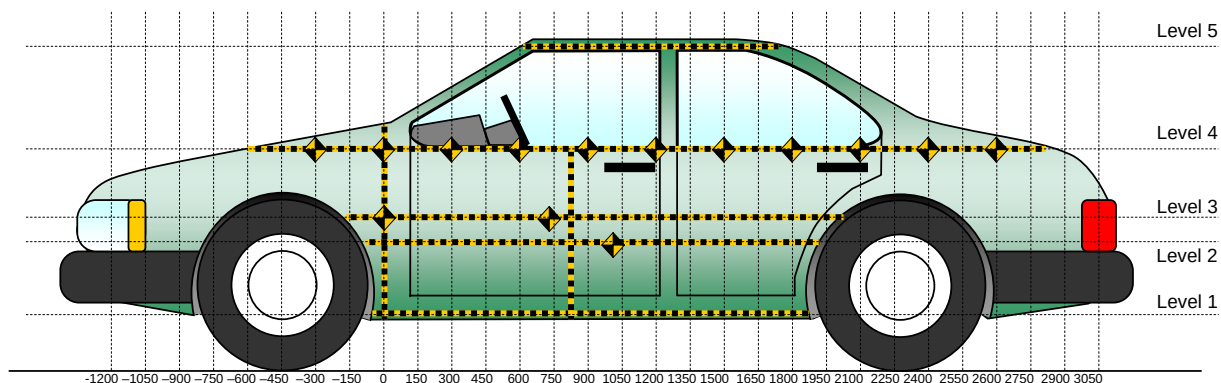
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2670	2674	-4
B	Front Axle to FSOV	884	896	-12
C	Rear Axle to RSOV	953	934	19
D	Total Length at Centerline	4507	4504	3
E	Front Bumper Thickness	120	120	0
F	Front Bumper Bottom to Ground	168	169	-1
G	Sill Height at Front Wheel Well	152	190	-38
H	Sill Height at Front Door Leading Edge	147	194	-47
I	Sill Height at B Pillar	161	211	-50
J1	Sill Height at Rear Wheel Well	160	185	-25
J2	Pinch Weld Height at Rear Wheel Well	155	183	-28
K	Sill Height Aft of Rear Wheel Well	237	234	3
L	Rear Bumper Thickness	130	130	0
M	Rear Bumper Bottom to Ground	235	250	-15
N	Sill Height to Window Bottom Sill	697	591	106
O	Front Door Leading Edge to Impact CL	795	736	59
P	Rear Door Trailing Edge to Impact CL	1100	1060	40
Q	Front Window Opening	395	385	10
R	Right Side Length	3420	3418	2
S	Left Side Length	3420	3398	22
T	Vehicle Width at B Post	1744	1542	202

DATA SHEET NO. 11 **TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS**

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012



All Measurements Shown in mm

LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground (mm)	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	212	41	150
2	Occupant Hip Point	491	243	450
3	Mid Door	577	258	750
4	Window Sill	839	214	1500
5	Window Top	1344	12	1200

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. 11 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012

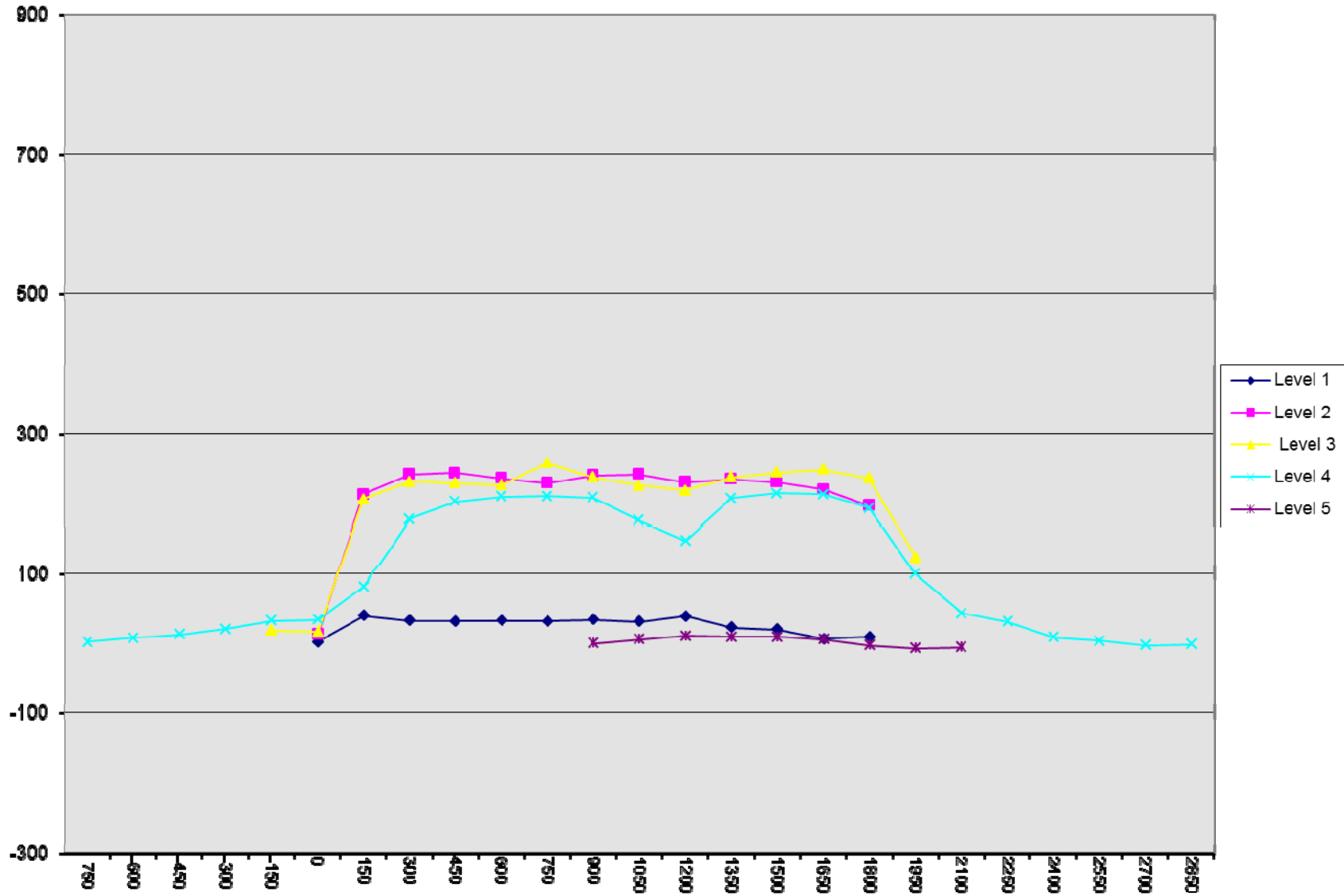
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-750				420					424					4	
-600				362					371					9	
-450				329					343					14	
-300				309					331					22	
-150			225	296				245	330				20	34	
0	251	227	229	286		255	241	247	321		4	14	18	35	
150	260	231	230	277		301	444	436	359		41	213	206	82	
300	263	232	230	275		297	473	461	453		34	241	231	178	
450	264	232	230	273		297	475	459	475		33	243	229	202	
600	264	232	230	270		298	468	456	479		34	236	226	209	
750	267	231	230	268		300	460	488	478		33	229	258	210	
900	266	231	230	262	489	301	471	467	470	491	35	240	237	208	2
1050	267	232	229	258	481	299	473	454	434	488	32	241	225	176	7
1200	269	235	230	252	477	309	465	448	400	489	40	230	218	148	12
1350	270	236	231	249	479	294	470	468	456	490	24	234	237	207	11
1500	270	236	232	249	482	291	466	476	463	493	21	230	244	214	11
1650	268	238	234	248	490	276	458	482	461	497	8	220	248	213	7
1800	264	235	234	248	499	275	432	470	441	498	11	197	236	193	-1
1950			224	266	511			348	365	506			124	99	-5
2100				252	528				296	524				44	-4
2250				255					287					32	
2400				262					272					10	
2550				273					278					5	
2700				289					288					-1	
2850				312					312					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 the test based on an estimated impact point.

DATA SHEET NO. 11 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

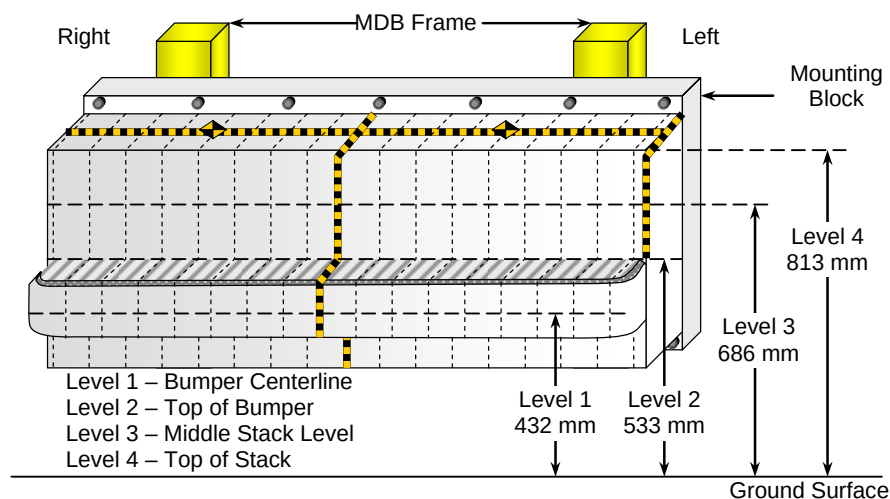
NHTSA No. MC5301
Test Date: 2/13/2012



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
 Test Date: 2/13/2012



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center (mm)								C _L	Distance Left of Center (mm)							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
4	16	6	9	15	27	61	83	73	37	15	13	13	12	12	60	101	140
3	43	40	37	32	20	53	73	67	42	19	7	7	9	10	18	37	79
2	55	55	56	57	53	55	58	56	55	57	60	59	59	57	58	63	70
1	149	154	149	154	152	162	153	152	150	152	145	149	149	149	147	162	169

DATA SHEET NO. 13
FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
 Test Program: NCAP Side MDB Impact Test

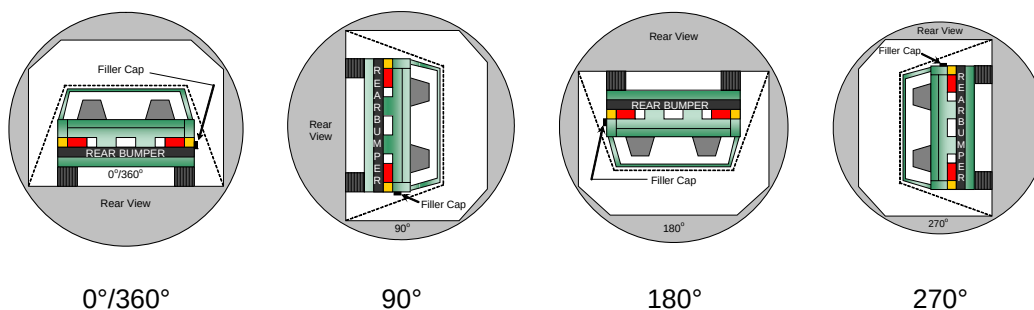
NHTSA No. MC5301
 Test Date: 2/13/2012

Test Time: 11:21 am

Temperature: 21.1° 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°	119	300	419
90° to 180°	113	300	413
180° to 270°	106	300	406
270° to 360°	115	300	415

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

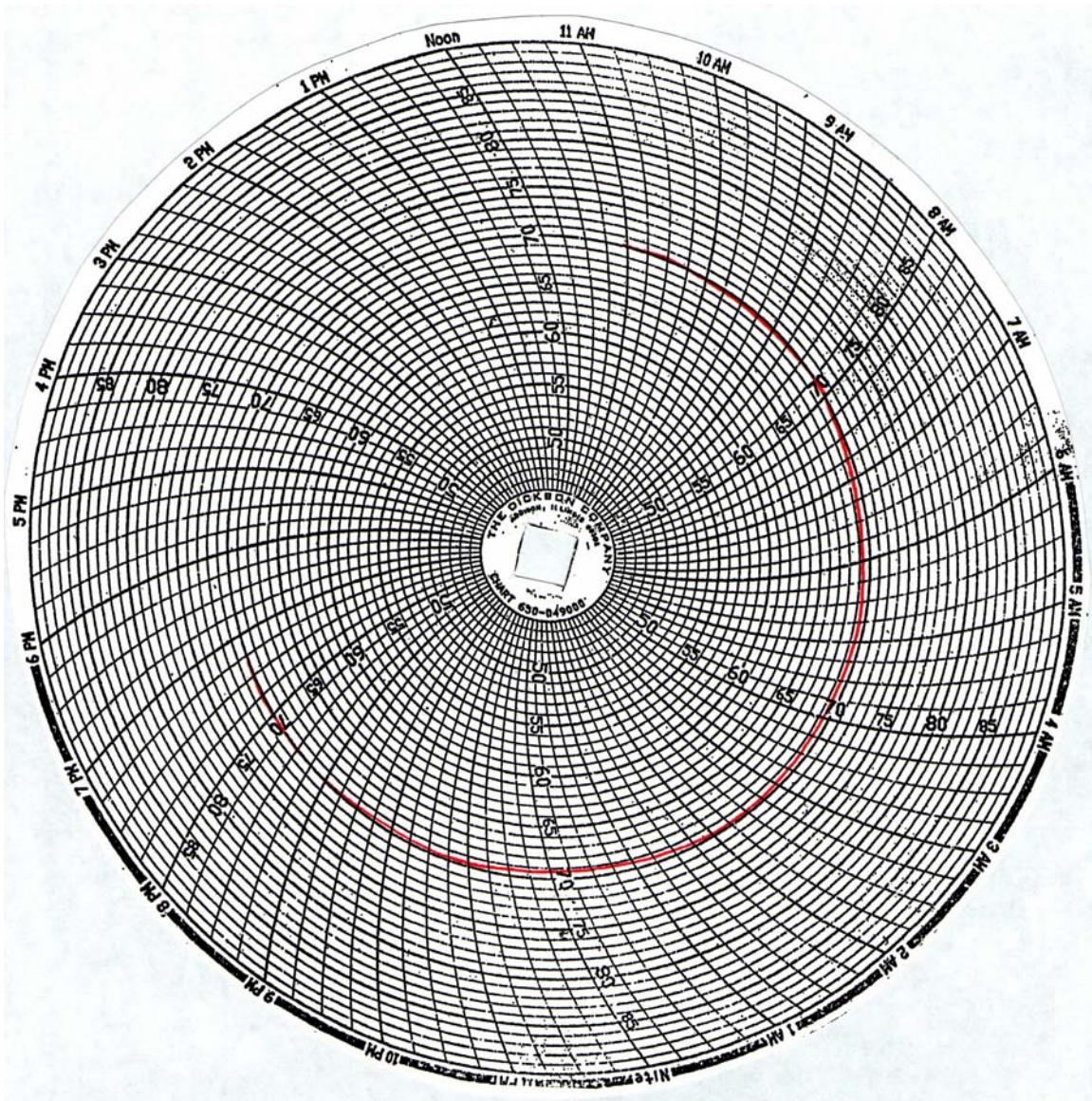
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 14
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2012 Honda Civic IMA 4-Dr Sedan
Test Program: NCAP Side MDB Impact Test

NHTSA No. MC5301
Test Date: 2/13/2012



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As Delivered Right Front Three-Quarter View of Test Vehicle



As Delivered Left Rear Three-Quarter View of Test Vehicle



Pre-Test Frontal View of Test Vehicle



Post-Test Frontal View of Test Vehicle



Pre-Test Left Front Three-Quarter View of Test Vehicle



Post-Test Left Front Three-Quarter View of Test Vehicle



Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



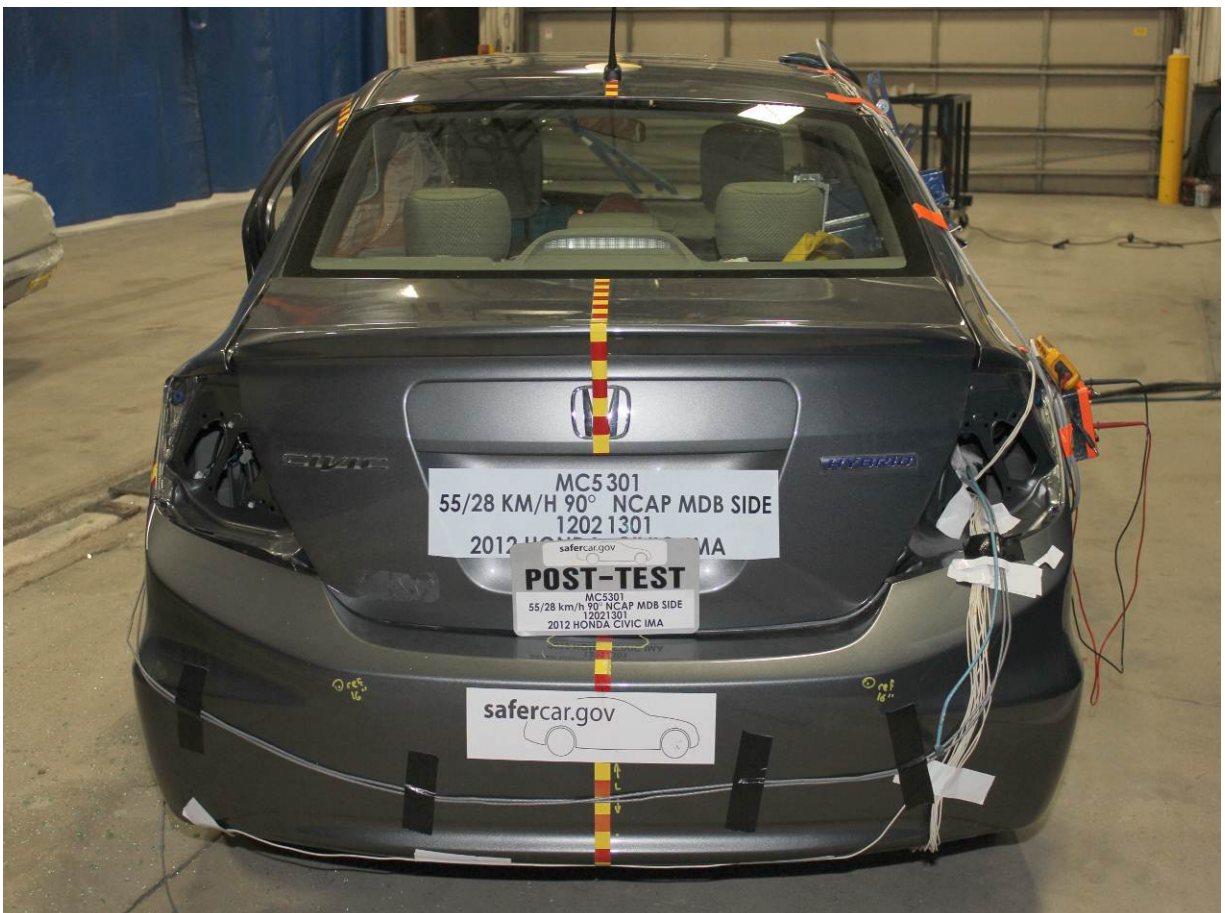
Pre-Test Left Three-Quarter Rear View of Test Vehicle



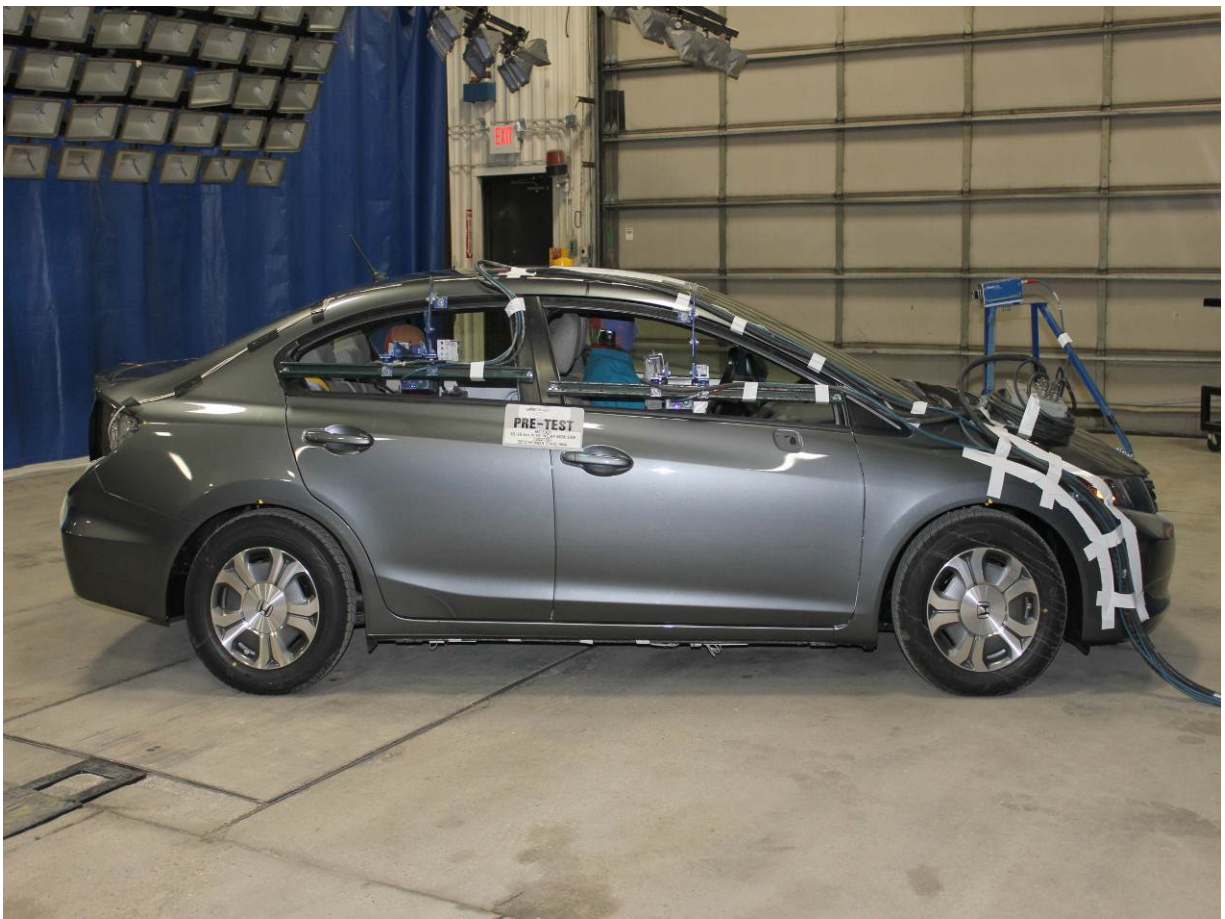
Post-Test Left Three-Quarter Rear View of Test Vehicle



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



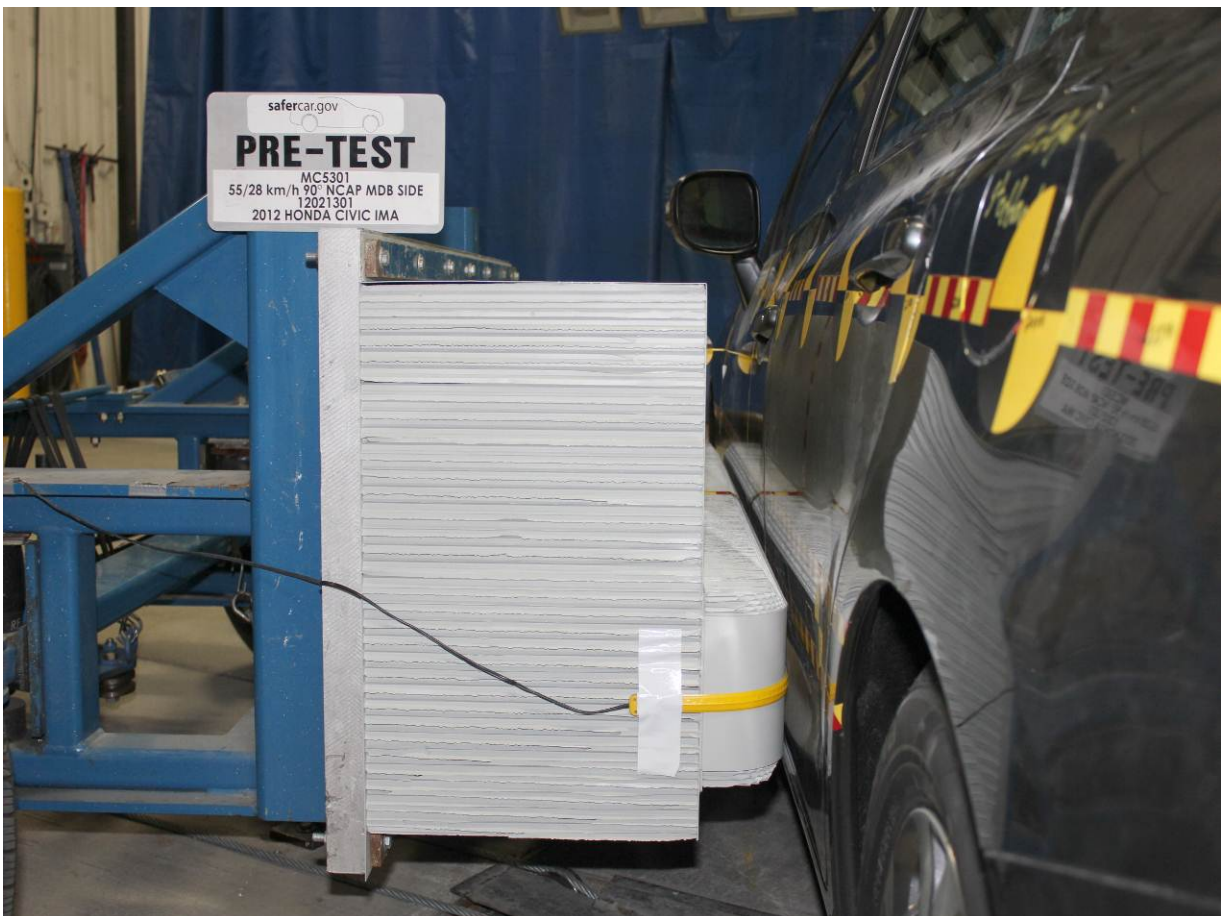
Pre-Test Overhead View of Test Area



Post-Test Overhead View of Test Area



Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle



Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle



Pre-Test Close-Up View of Impact Point Target



Post-Test Close-Up View of Impact Point Target



Pre-Test Left Front Door Latch Close-Up



Post-Test Left Front Door Latch Close-Up



Pre-Test Left Rear Door Latch Close-Up



Post-Test Left Rear Door Latch Close-Up



Pre-Test Front Close-Up View of Driver Dummy



Post-Test Front Close-Up View of Driver Dummy



Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking



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



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



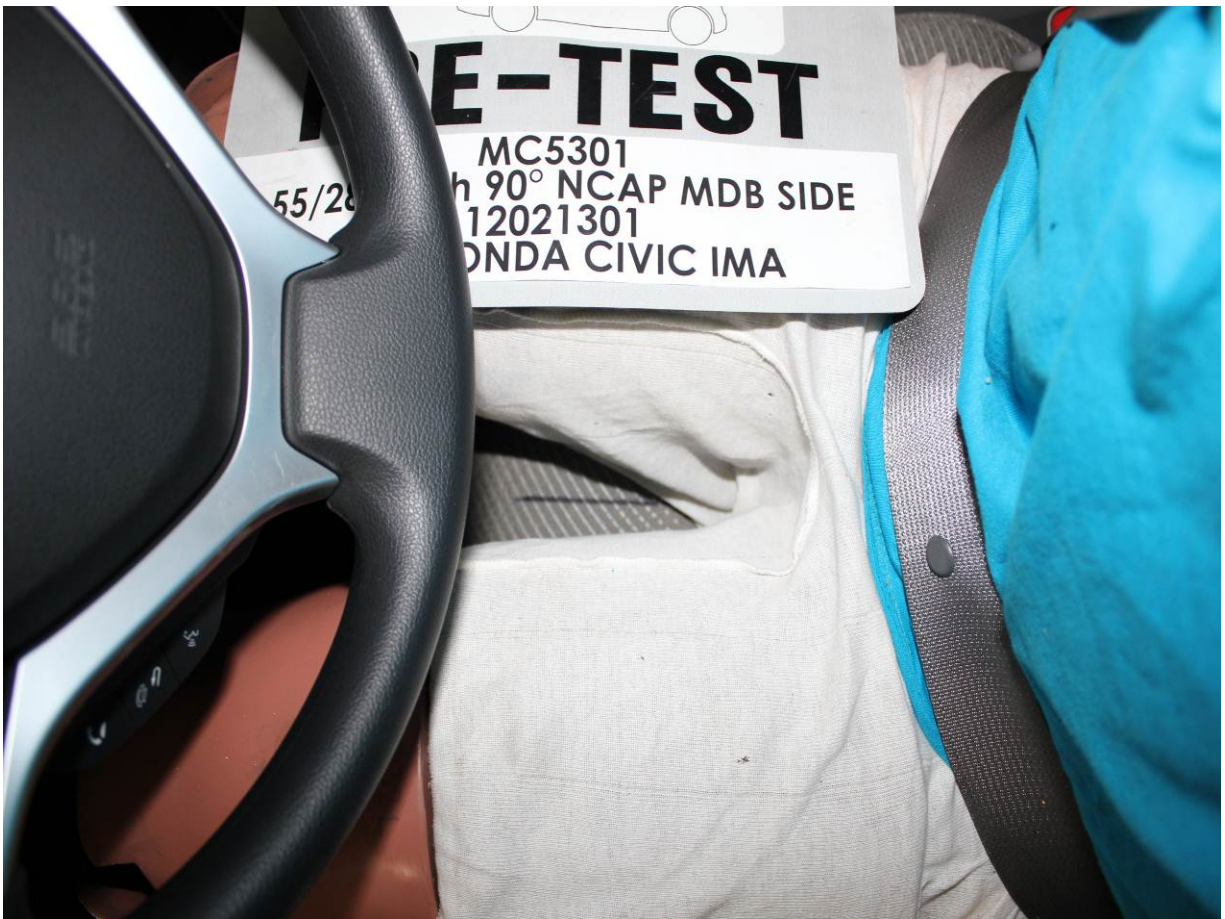
Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



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



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



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



Pre-Test Placement of Driver Dummy's Feet



Pre-Test View of Belt Anchorage for Driver Dummy



Pre-Test Left Side View of Steering Wheel



Pre-Test View of Disengaged Parking Brake



Pre-Test View of Parking Brake



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



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



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



Pre-Test Driver Dummy and Door Clearance View



Post-Test Driver Dummy and Door Clearance View



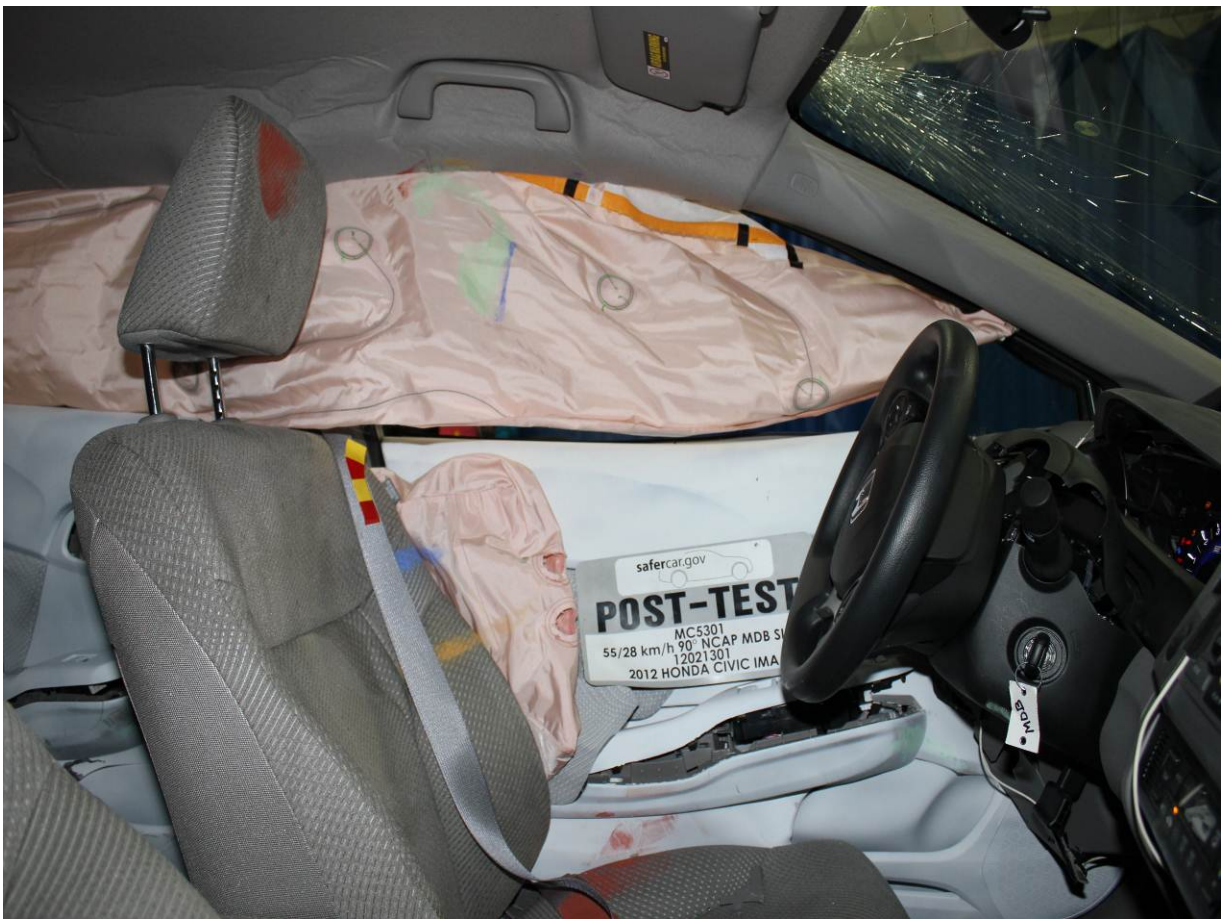
Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



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



Pre-Test Driver Inner Door Panel View



Post-Test Driver Inner Door Panel View



Post-Test Driver Dummy Close-up Head Contact with Vehicle Interior View



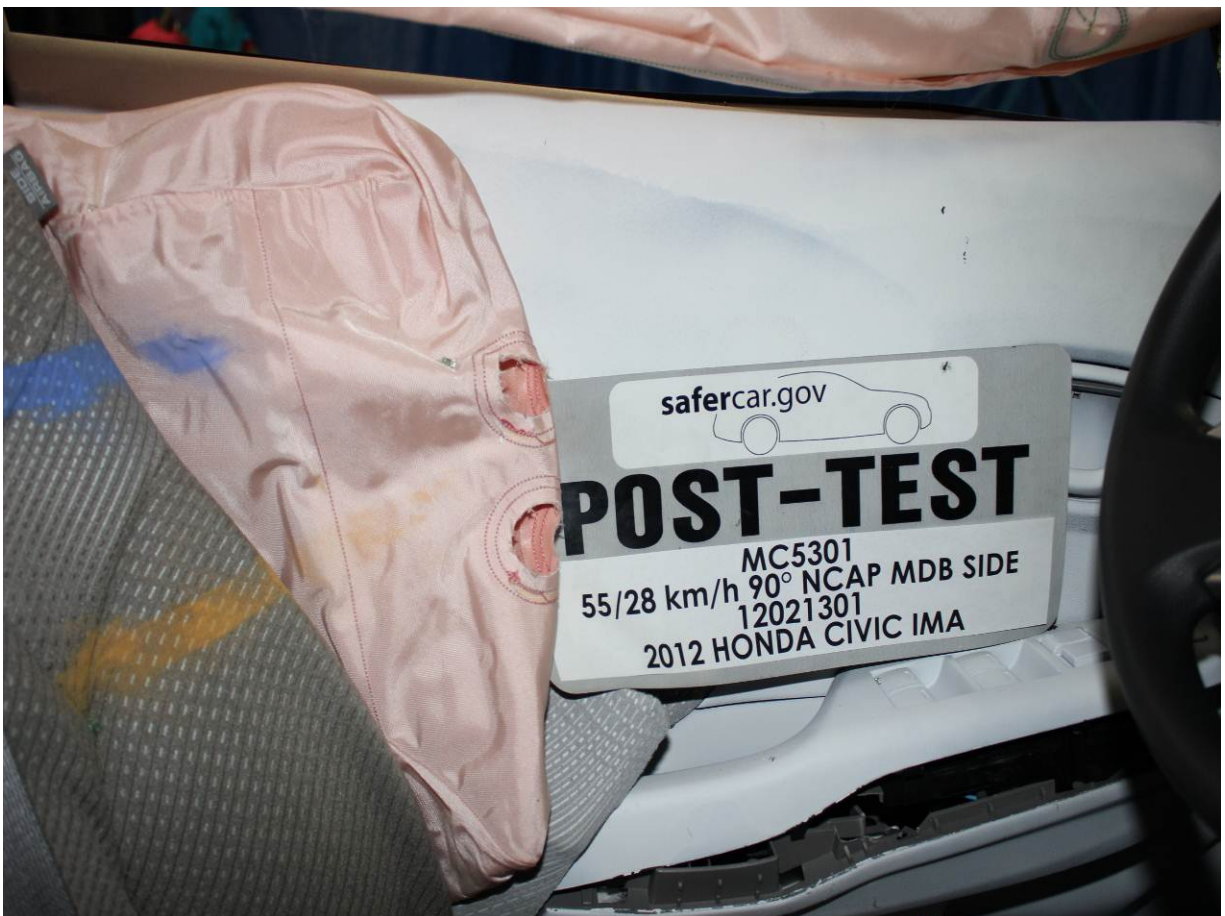
Post-Test Driver Dummy Close-up Head Contact with Vehicle Interior View



Post-Test Driver Dummy Close-up Head Contact with Side Airbag View



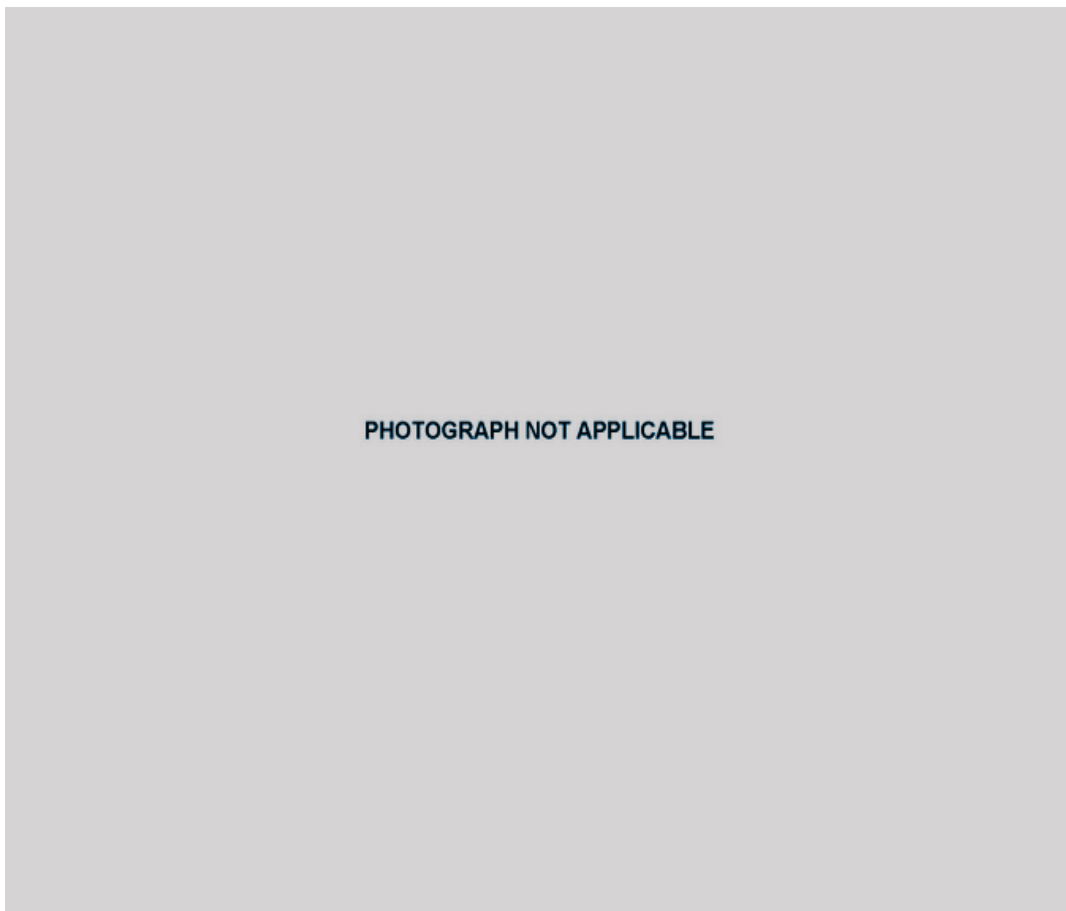
Post-Test Driver Dummy Close-up Torso Contact with Vehicle Interior View



Post-Test Driver Dummy Close-up Torso Contact with Side Airbag View



Post-Test Driver Dummy Close-up Pelvis Contact with Vehicle Interior View



Post-Test Driver Dummy Close-up Pelvis Contact with Side Airbag View



Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking



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



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



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



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



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



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



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



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



Pre-Test Placement of Rear Passenger Dummy's Feet



Pre-Test View of Belt Anchorage for Rear Passenger Dummy



Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



Pre-Test Close-up View of Rear Passenger Seat Back or Head Restraint



Pre-Test Rear Passenger Dummy and Door Clearance View



Post-Test Rear Passenger Dummy and Door Clearance View



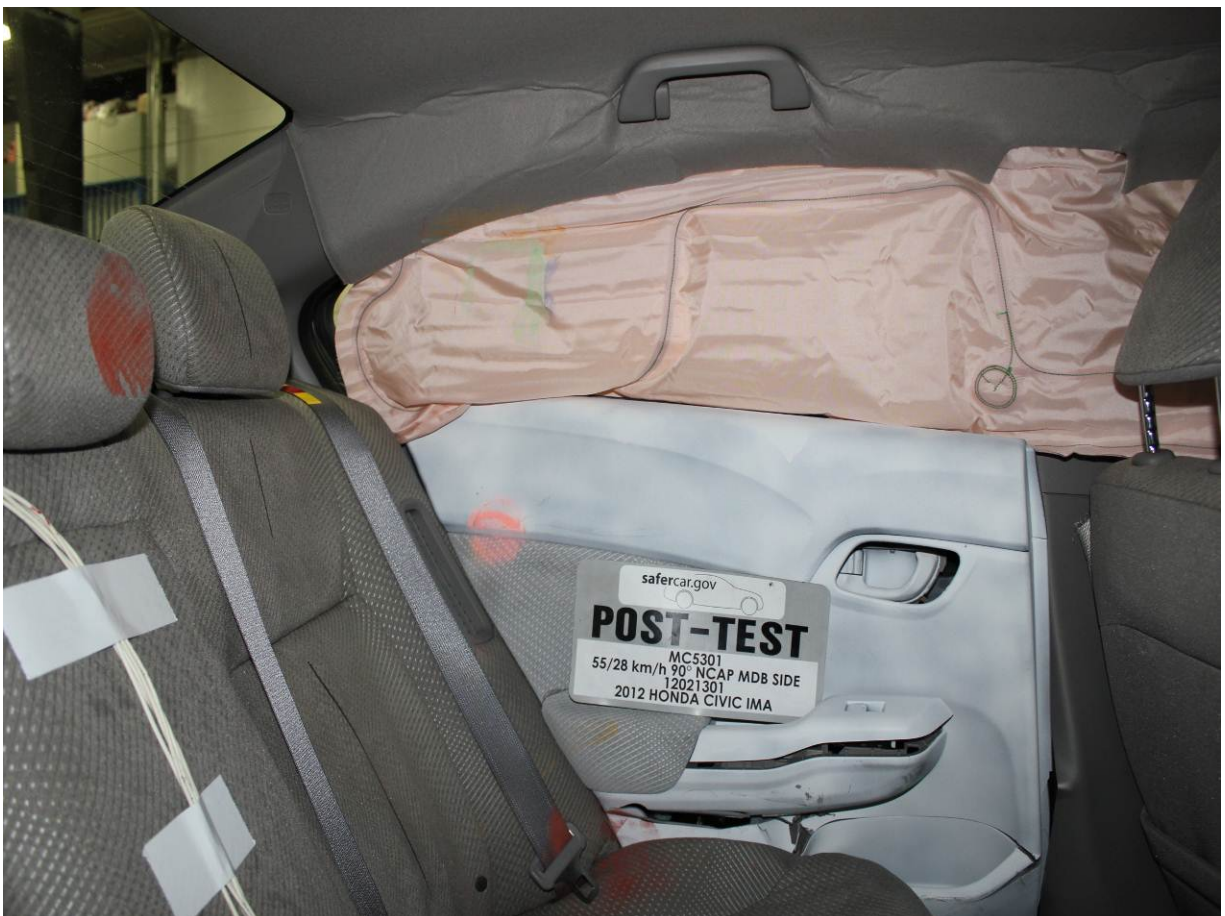
Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



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



Pre-Test Rear Passenger Inner Door Panel View



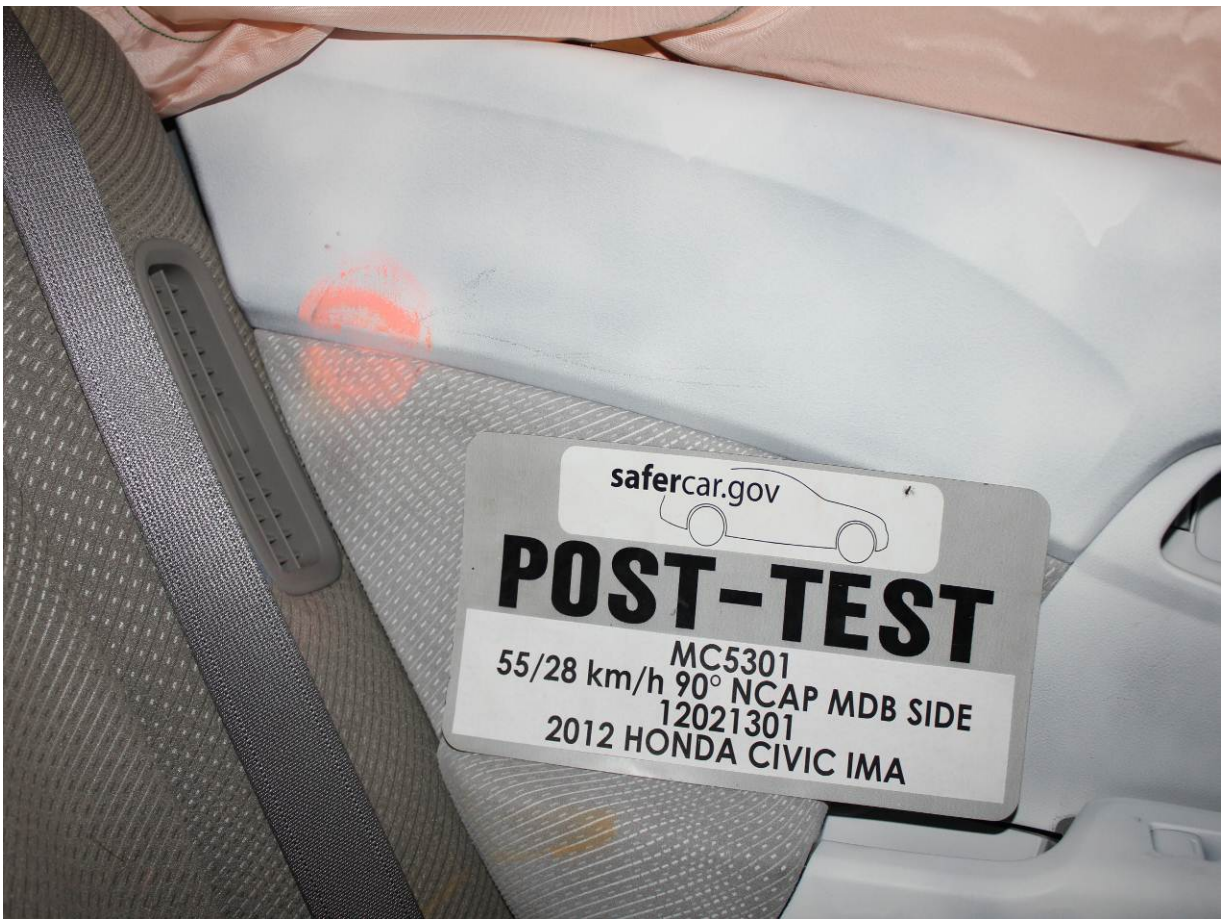
Post-Test Rear Passenger Inner Door Panel View



Post-Test Rear Passenger Dummy Close-up Head Contact with Vehicle Interior View



Post-Test Rear Passenger Dummy Close-up Head Contact with Side Airbag View



Post-Test Rear Passenger Dummy Close-up Torso Contact with Vehicle Interior View



Post-Test Rear Passenger Dummy Close-up Torso Contact with Vehicle Interior View

PHOTOGRAPH NOT APPLICABLE

Post-Test Rear Passenger Dummy Close-up Torso Contact with Side Airbag View



Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Vehicle Interior View

PHOTOGRAPH NOT APPLICABLE

Post-Test Rear Passenger 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



Pre-Test Front View of MDB Impactor Face



Post-Test Front View of MDB Impactor Face



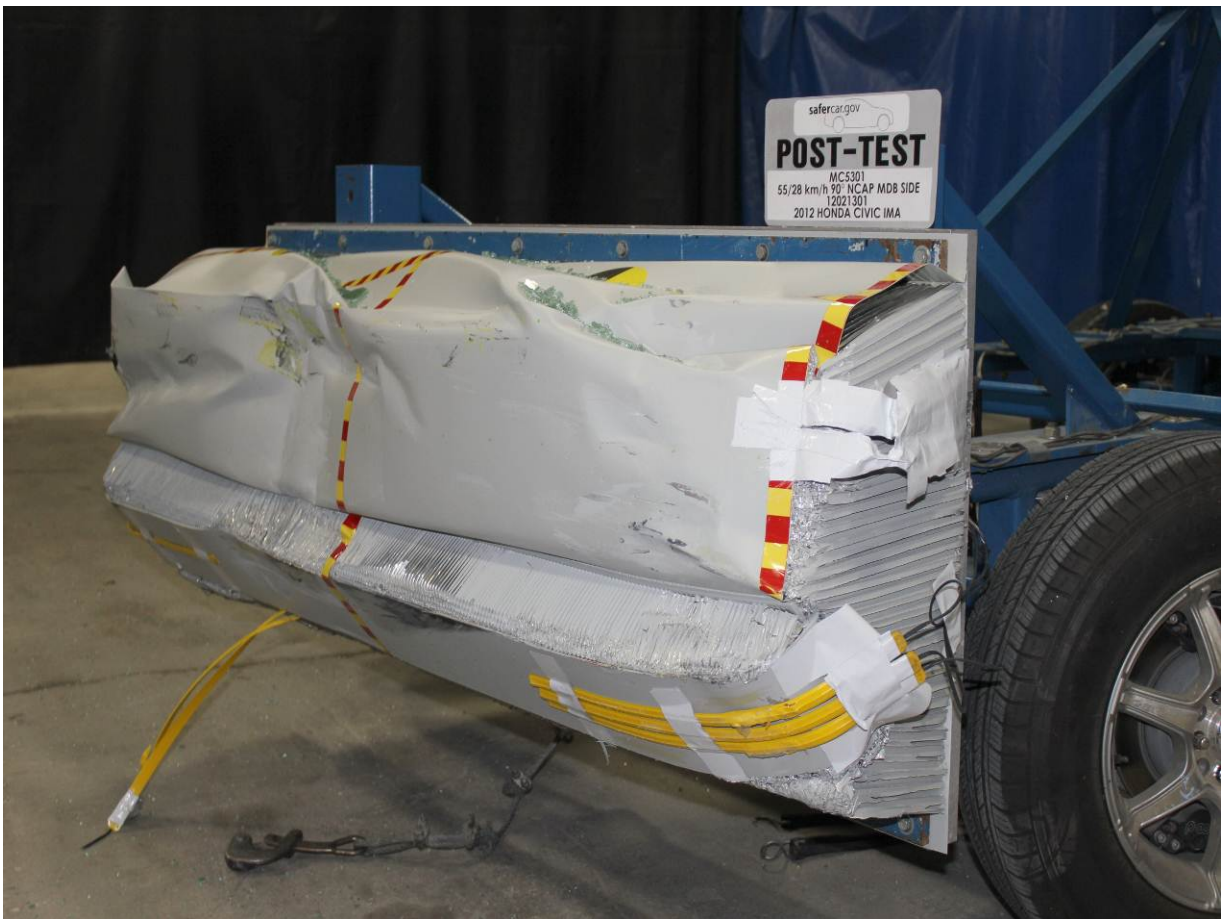
Pre-Test Top View of MDB Impactor Face



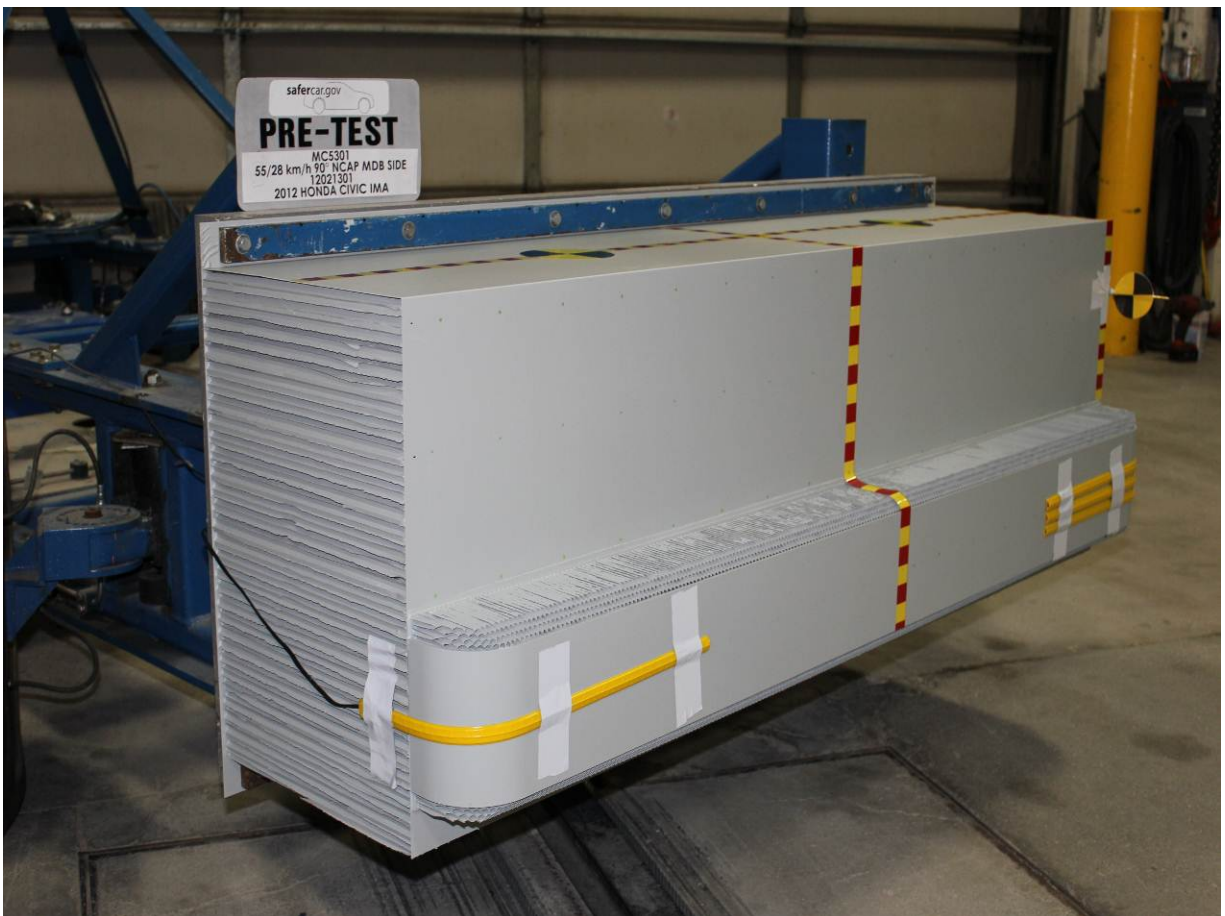
Post-Test Top View of MDB Impactor Face



Pre-Test Left Side View of MDB Impactor Face



Post-Test Left Side View of MDB Impactor Face



Pre-Test Right Side View of MDB Impactor Face



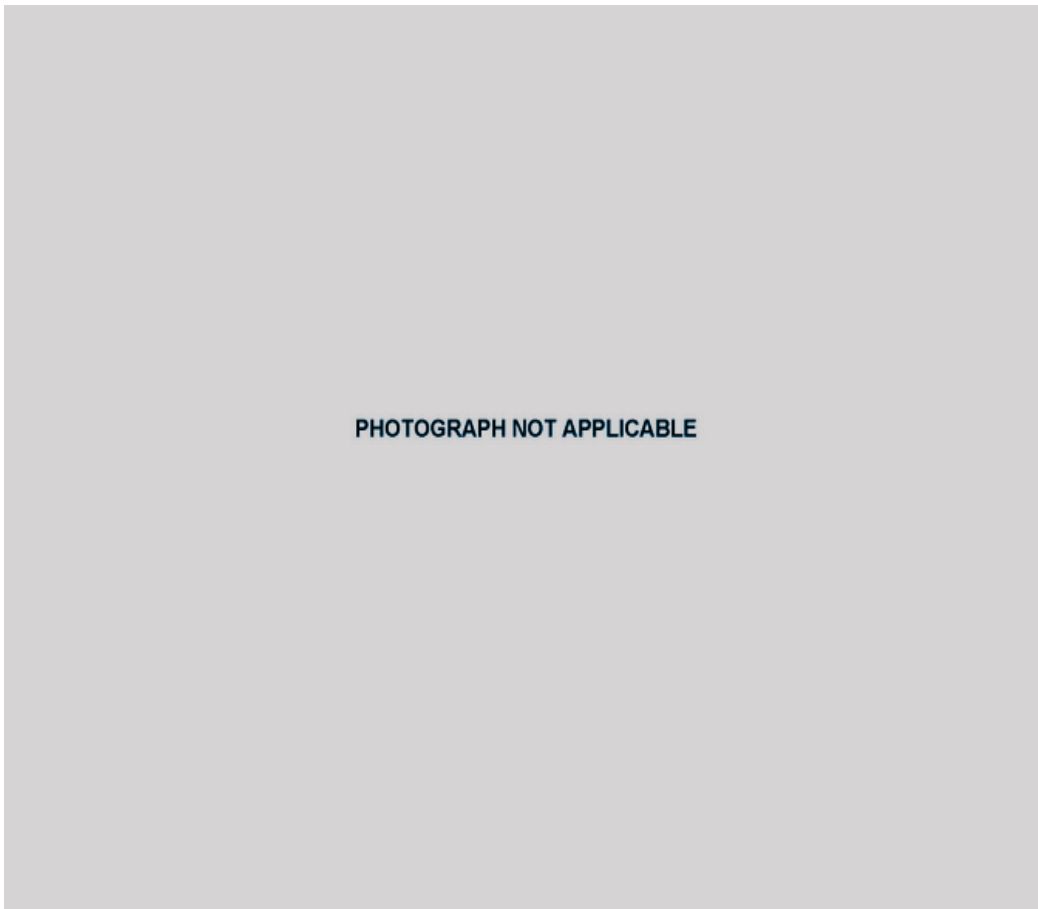
Post-Test Right Side View of MDB Impactor Face



Close-Up View of Vehicle's Certification Label



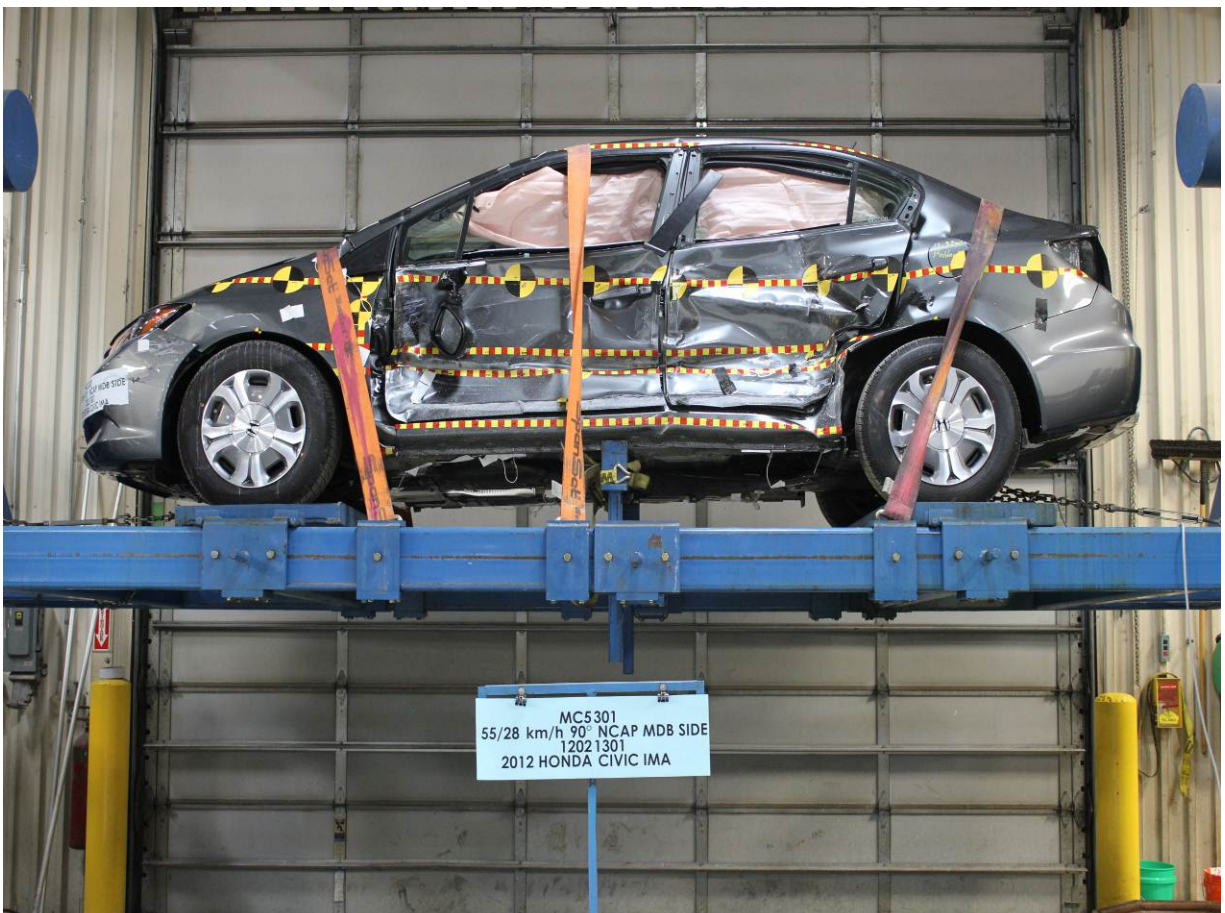
Close-Up View of Vehicle's Tire Information Placard or Label



Pre-Test Ballast View



Post-Test Primary and Redundant Speed Trap Read-Out



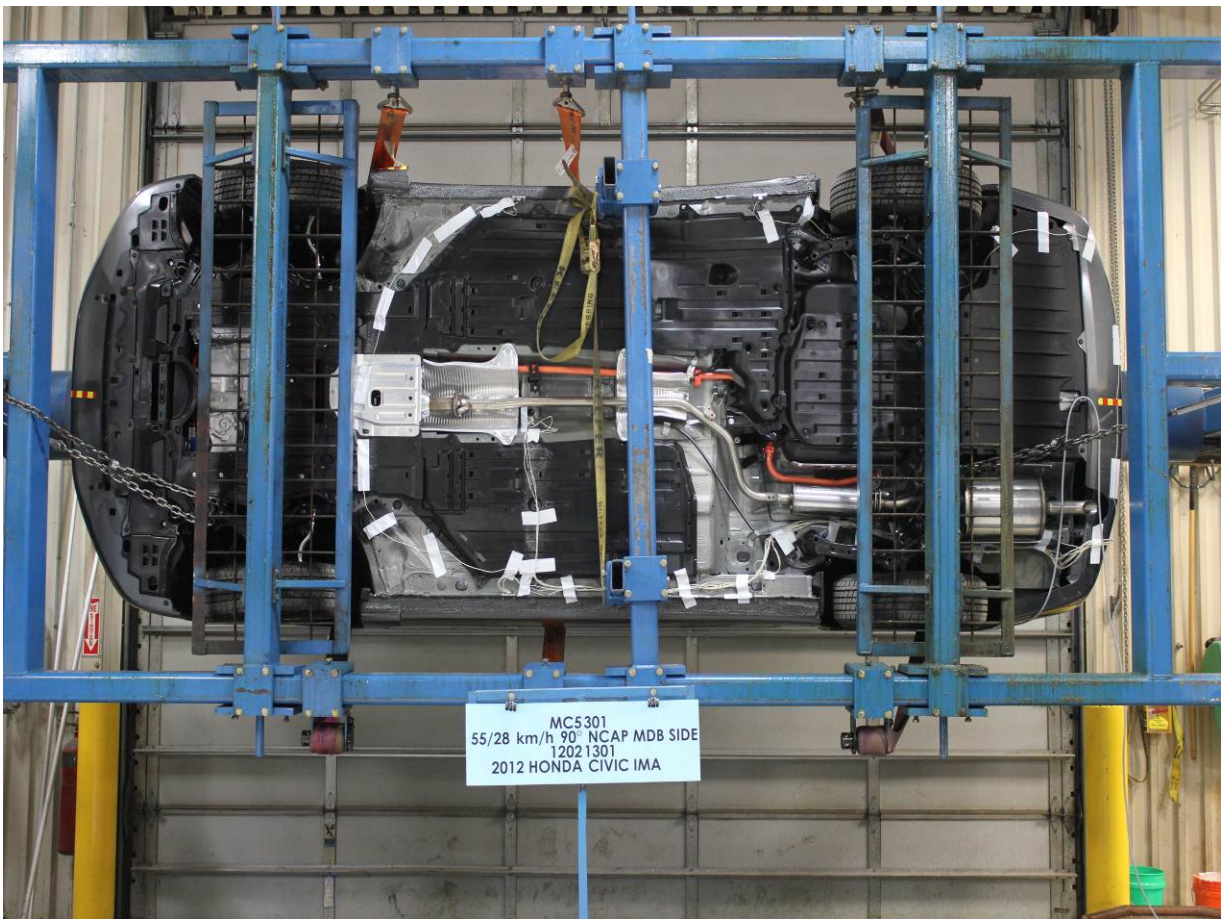
FMVSS No. 301 Static Rollover 0 Degrees



FMVSS No. 301 Static Rollover 90 Degrees



FMVSS No. 301 Static Rollover 180 Degrees



FMVSS No. 301 Static Rollover 270 Degrees



FMVSS No. 301 Static Rollover 360 Degrees



Impact Event

HONDA

2012 CIVIC IMA 4DR 1.1YB
 VEHICLE NUMBER: JHMF84F28C002801
 ENGINE NUMBER: LEA2-1003252 EXT: POLISHED METAL M.
 CONTROL NUMBER: 029517 INT: 001AY

EPA Fuel Economy Estimates

CITY MPG 44 Expected range for most drivers 36 to 52 MPG	Estimated Annual Fuel Cost \$1,260 based on 15,000 miles at \$3.70 per gallon	HIGHWAY MPG 44 Expected range for most drivers 36 to 52 MPG
Combined Fuel Economy This Vehicle 44 14 44 All Compact Cars		

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

STANDARD EQUIPMENT AT NO EXTRA COST

*** TECHNICAL FEATURES ***

- 110hp 1.8-Liter SOHC i-VTEC 4-Cylinder Engine with Integrated Motor Assist (IMA)
- Idle Stop Feature
- Continuously Variable Transmission (CVT)
- Front MacPherson Strut Suspension
- Rear Multi-Link Suspension
- Electric Power-Assisted Rack-and-Pinion Steering
- CARB-Certified ULEV
- Immobilizer Theft-Deterrent System

*** SAFETY FEATURES ***

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

*** INTERIOR FEATURES ***

- 160-Watt AM/FM/CD Audio System with 6 Speakers Incl. MP3/WMA Playback
- Steering Wheel-Mounted Controls
- Bluetooth HandsFreeLink
- Bluetooth Audio
- MP3/Auxiliary Input Jack
- Intelligent Multi-Information Display (iMID)
- Automatic Climate Control System with Air Filtration System
- Driver's Seat Height Adjustment
- Front Center Console with Armrest
- Power Windows and Door Locks
- Driver's Auto Up/Down Window
- Tilt & Telescopic Steering Column
- Front Map Lights & Cargo Area Light
- 12-Volt Power Outlets
- Cruise Control
- Exterior Temperature Gauge
- Floor Mats
- Maintenance Minder System

*** EXTERIOR FEATURES ***

- 15" x 6.0" Lightweight Alloy Wheels
- P195/65 R15 All-Season Tires
- Auto-On/Off Headlights
- Variable Intermittent Windshield Wipers
- Rear Window Defroster
- Power Door Mirrors with Turn Indicators
- Remote Entry System with Trunk Opener
- Security System
- Rear Decklid Spoiler

Manufacturer's Suggested Retail Price

\$24,050.00

Full Tank of Fuel

437357

32 miles

09/11

No Charge

Destination and Handling

770.00

TOTAL VEHICLE PRICE
(includes Pre-Delivery Service)

\$24,820.00

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

Environmental Performance

Protect the environment, choose vehicles with higher scores:

Global Warming Score

10

Average new vehicle Cleanest

Smog Score

7

Average new vehicle Cleanest

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. California Endorsed Pollution Agency

MOTOR WORKS HONDA
 1475 S. BARRINGTON RD
 BARRINGTON, IL 60010

PORT OF ENTRY: PORTLAND
 DELIVERY POINT: SCHAMBURG
 SHIP#: B58-853750
 ROW/SPACE:
 TRANS METHOD: N50 ELWOOD

VIN: JHMF84F28C002801

ORIG. DLR: 207779
 REF. NO: 40546
 HN CODE: HN-6302
 EMISSION: 50 STATE

DEALER: 207779

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE
 U.S./Canadian Parts Content: **65 %**
 Major Sources of Foreign Parts Content:
JAPAN 20 %

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

GOVERNMENT SAFETY RATINGS

Frontal Crash	Driver Passenger	To Be Rated To Be Rated
Star ratings based on the risk of injury in a frontal impact. Frontal ratings should ONLY be compared to other vehicles of similar size and weight.		
Side Crash	Front seat Rear seat	To Be Rated To Be Rated
Star ratings based on the risk of injury in a side impact.		
Rollover		To Be Rated
Star ratings based on the risk of rollover in a single vehicle crash.		

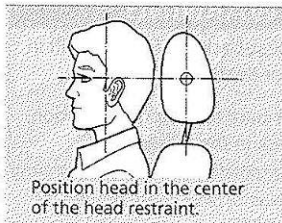
Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA).

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

This vehicle is equipped with a front bumper of a type that has been tested at an impact speed of 5 miles per hour, and a rear bumper of a type that has been tested at an impact speed of 5 miles per hour, resulting in no damage to the vehicle's body and safety systems and minimal damage to the bumper and attachment hardware. "Minimal damage to the bumper" means minor cosmetic damage that can be repaired with the use of common repair materials and without replacing any parts. The stronger the bumper, the less likely the vehicle will require repair after a low-speed collision. This vehicle exceeds the current federal bumper standard of 2.5 miles per hour.

Monroney Label

Adjusting the Head Restraints

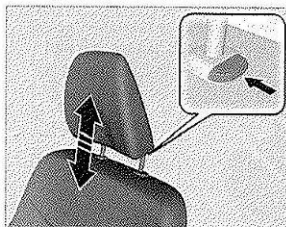


Position head in the center of the head restraint.

Your vehicle is equipped with head restraints in all seating positions.

Head restraints are most effective for protection against whiplash and other rear-impact crash injuries when the center of the back of the occupant's head rests against the center of the restraint. The tops of the occupant's ears should be level with the center height of the restraint.

Adjusting the front head restraint positions



To raise the head restraint: Pull it upward.
To lower the head restraint: Push it down while pressing the release button.

Adjusting the Head Restraints

⚠ WARNING

Improperly positioning head restraints reduces their effectiveness and increases the likelihood of serious injury in a crash.

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

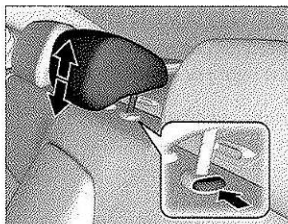
For a head restraint system to work properly:

- 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.

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

Changing the Rear Seat Head Restraint Positions



A passenger sitting in a back seating position should adjust the height of their head restraint to an appropriate position before the vehicle begins moving.

To raise the head restraint:

Pull it upward.

To lower the head restraint:

Push it down while pressing the release button.

Changing the Rear Seat Head Restraint Positions

When a passenger is seated in the rear center seating position, make sure the rear head restraint is adjusted to its highest position.

Removing and Reinstalling the Head Restraints

Head restraints can be removed for cleaning or repair.

To remove a head restraint:

Pull the restraint up as far as it will go. Then push the release button, and pull the restraint up and out.

To reinstall a head restraint:

Insert the legs back in place, then adjust the head restraint to an appropriate height while pressing the release button. Pull up on the restraint to make sure it is locked in position.

Removing and Reinstalling the Head Restraints

⚠ WARNING

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

Always replace the head restraints before driving.

Continued

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



Post-Test Driver Dummy Knee Contact with Vehicle Interior View



Post-Test Left Rear Passenger Dummy Knee Contact with Vehicle Interior View

APPENDIX B

DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

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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 Acceleration Primary vs. Time	B-1
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Figure No. 11.	Driver Posterior Abdomen Force (Y) vs. Time	B-3
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Figure No. 13.	Driver Pubic Symphysis Force (Y) vs. Time	B-4
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Figure No. 16.	Passenger Head Acceleration (Z) Primary vs. Time	B-5
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Figure No. 19.	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-6
Figure No. 20.	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-6
Figure No. 21.	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-6
Figure No. 22.	Passenger Iliac Force on Impact Side (Y) vs. Time	B-7
Figure No. 23.	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-7
Figure No. 24.	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-7

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov

Additional Driver & Passenger Dummy Instrumentation Data

Driver Lower Spine T12 Acceleration (X)
Driver Lower Spine T12 Acceleration (Y)
Driver Lower Spine T12 Acceleration (Z)
Passenger Upper Thorax Rib Deflection (Y)
Passenger Middle Thorax Rib Deflection (Y)
Passenger Lower Thorax Rib Deflection (Y)
Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Passenger Head Acceleration Redundant (X)
Passenger Head Acceleration Redundant (Y)
Passenger Head Acceleration Redundant (Z)

Vehicle Instrumentation Data

Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Right Side Sill at Front Seat Acceleration (X)
Right Side Sill at Front Seat Acceleration (Y)
Right Side Sill at Front Seat Acceleration (Z)
Right Side Sill at Rear Seat Acceleration (X)
Right Side Sill at Rear Seat Acceleration (Y)
Right Side Sill at Rear Seat Acceleration (Z)

Left Side Sill at Front Seat Acceleration (Y)
Left Side Sill at Rear Seat Acceleration (Y)
Lower A-Post Acceleration (Y)
Middle A-Post Acceleration (Y)
Lower B-Post Acceleration (Y)
Middle B-Post Acceleration (Y)
Front Seat Track Acceleration (Y)
Rear Seat Track Acceleration (Y)
Right Rear Occupant Compartment Acceleration (Y)
Engine Block (X)
Engine Block (Y)
Rear Floorpan Above Axle Acceleration (X)
Rear Floorpan Above Axle Acceleration (Y)
Rear Floorpan Above Axle Acceleration (Z)

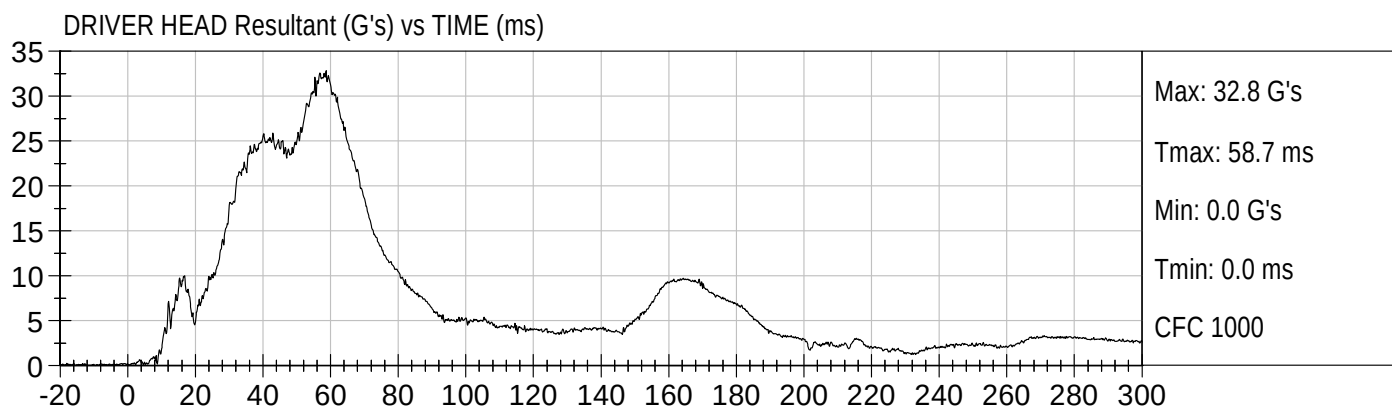
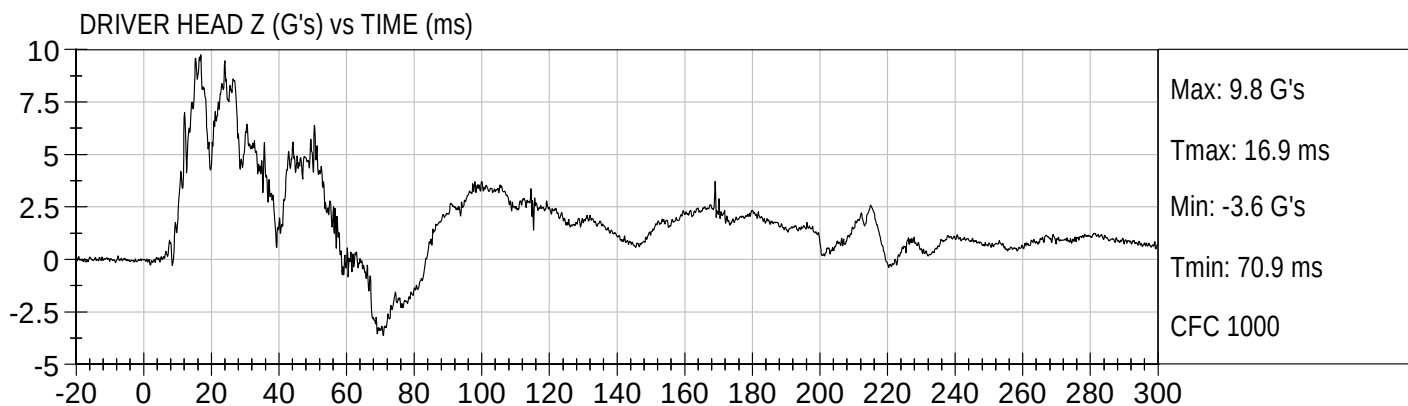
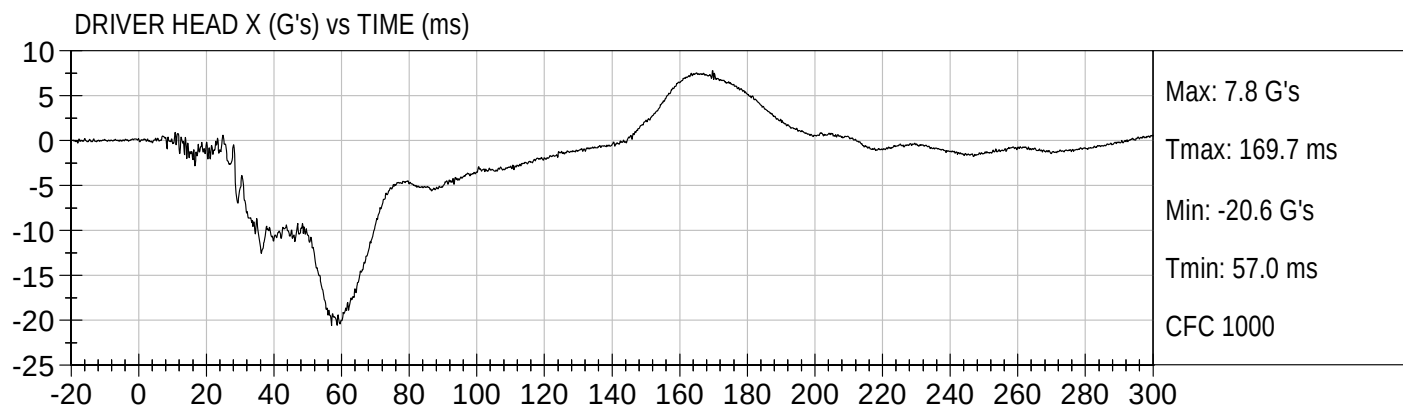
MDB Instrumentation Data

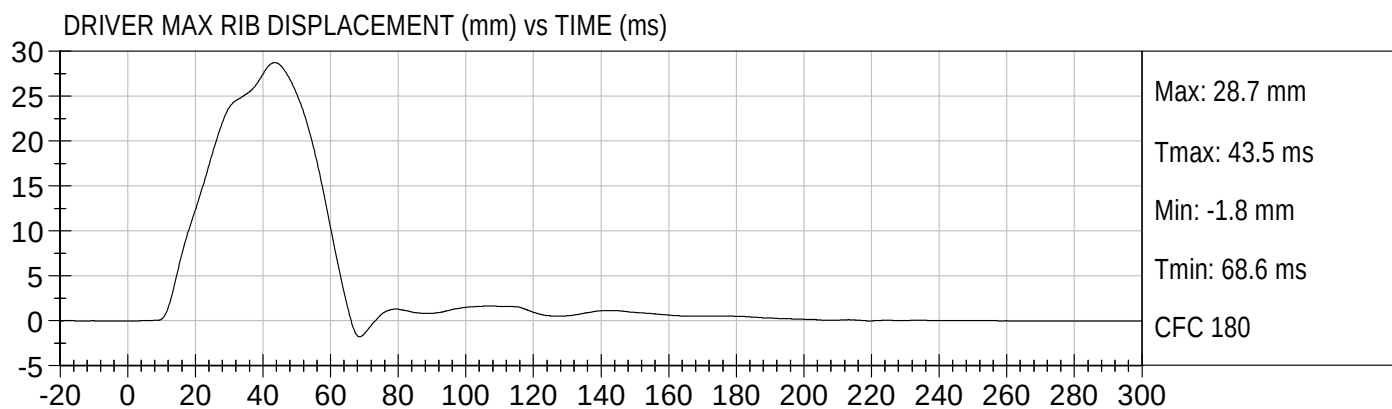
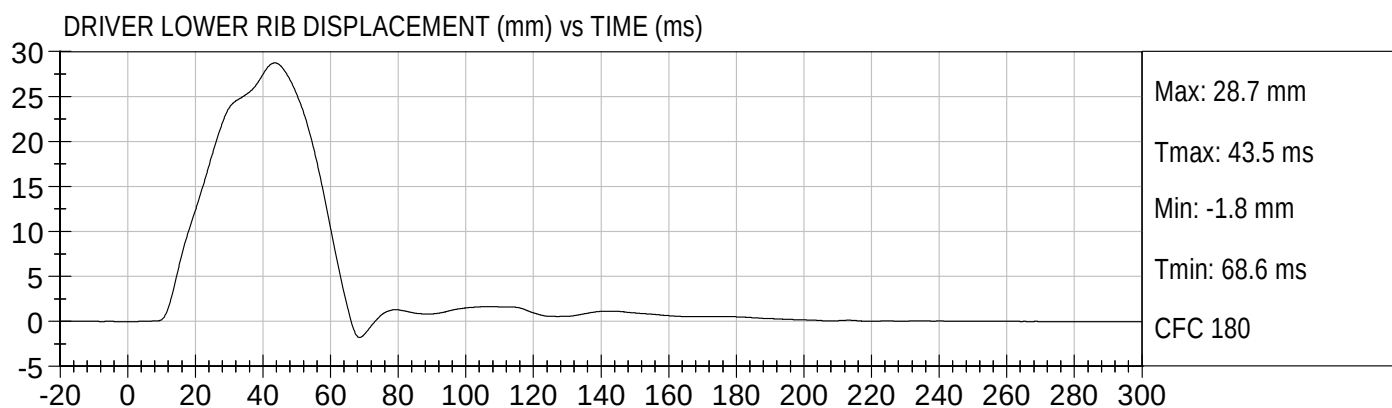
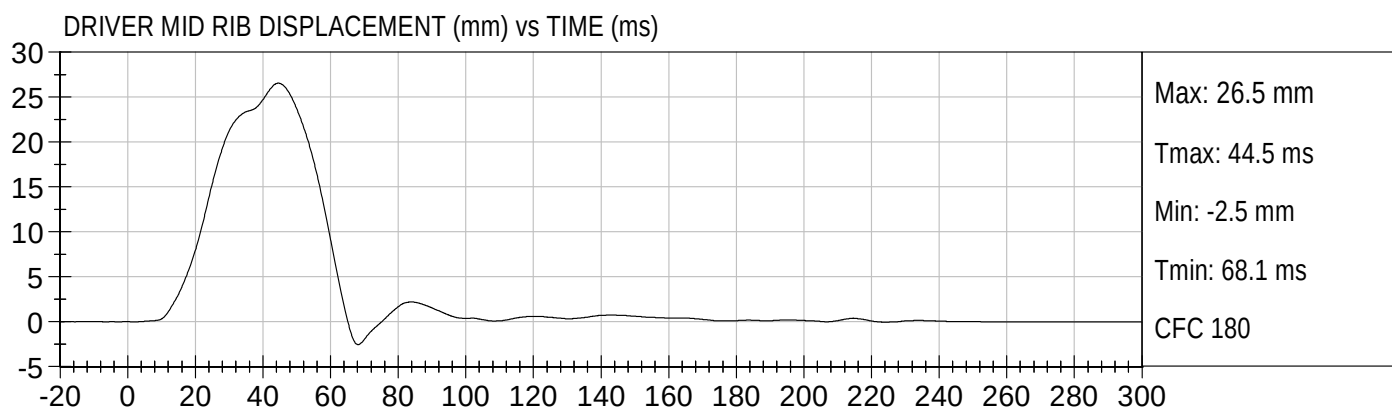
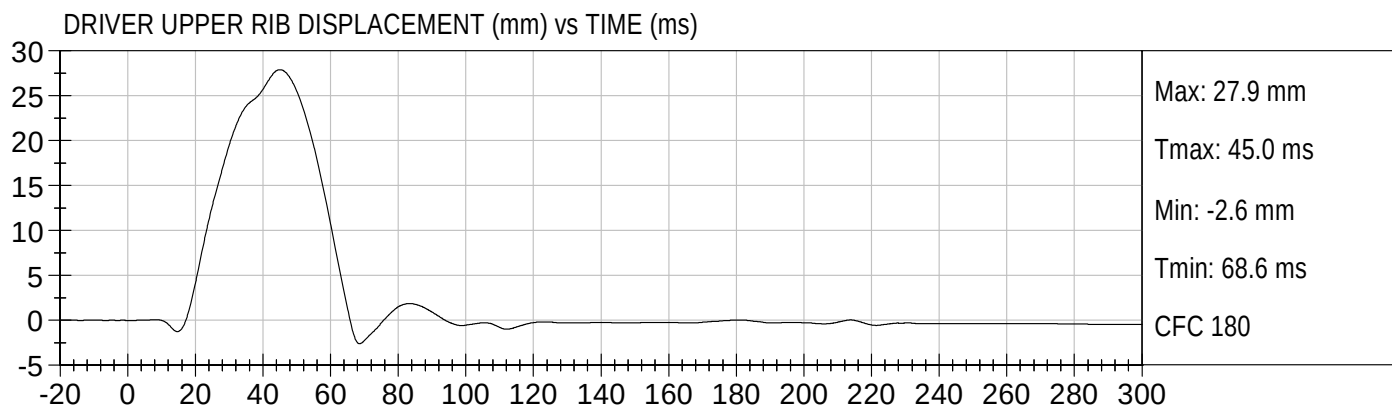
MDB Center of Gravity Acceleration (X)
MDB Center of Gravity Acceleration (Y)
MDB Center of Gravity Acceleration (Z)
MDB Rear Acceleration (X)
MDB Rear Acceleration (Y)
Left MDB Contact Switch
Right MDB Contact Switch



55/28 km/h 90° NCAP MDB Side
2012 Honda Civic IMA - MC5301

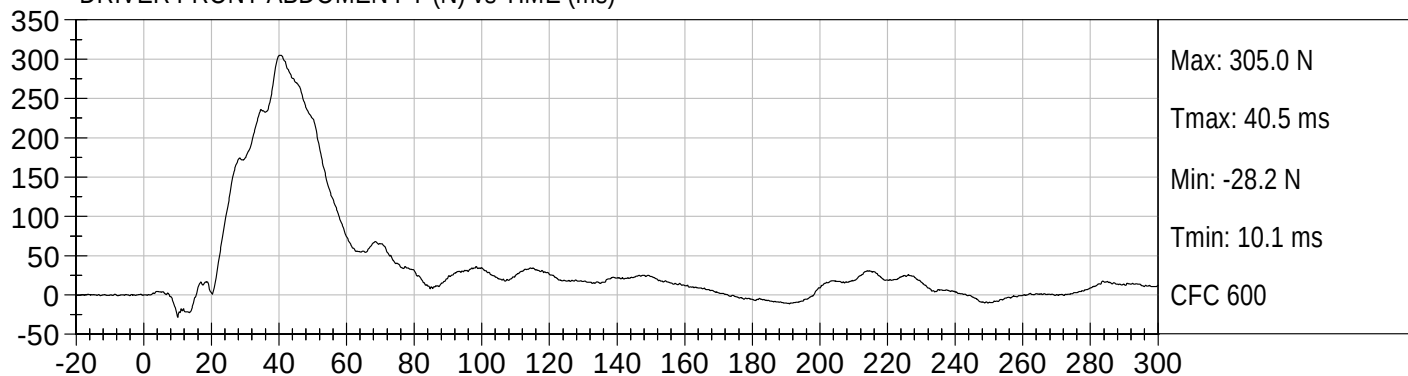
Test Date: 02/13/2012
Speed: 38.7 mph (62.2 km/h)



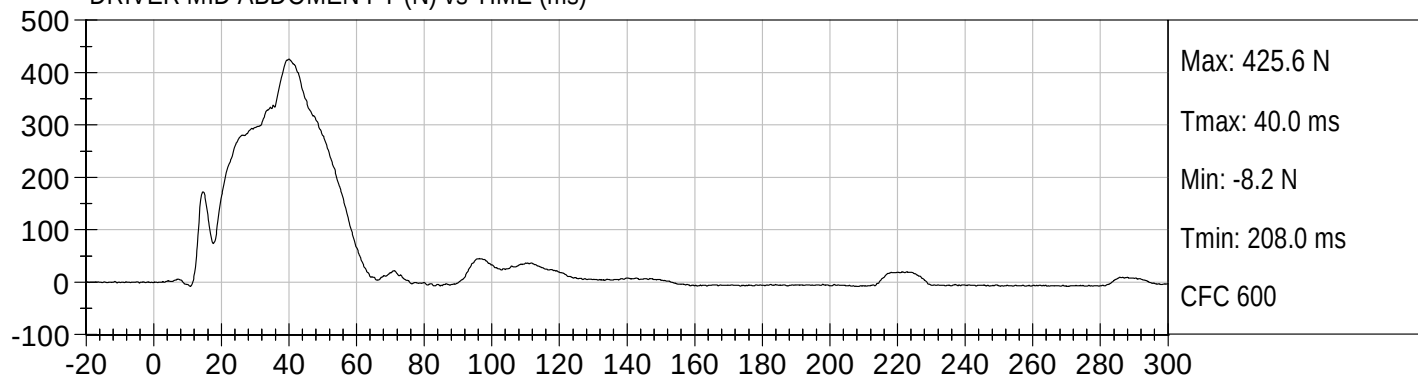




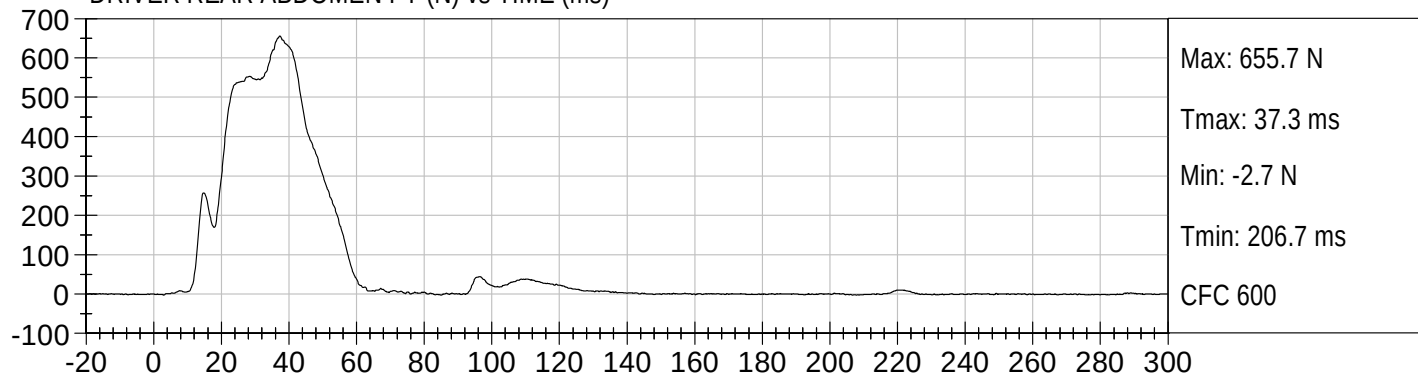
DRIVER FRONT ABDOMEN FY (N) vs TIME (ms)



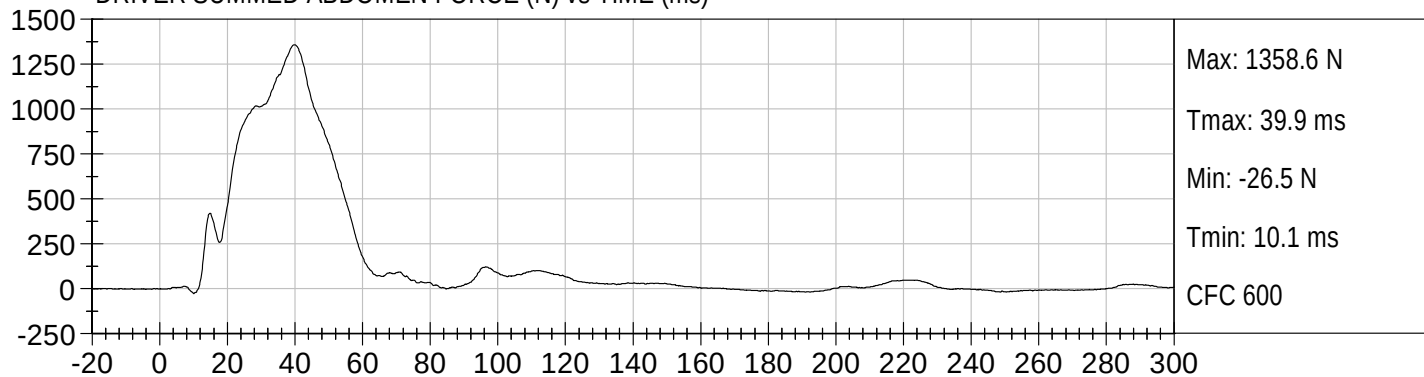
DRIVER MID ABDOMEN FY (N) vs TIME (ms)



DRIVER REAR ABDOMEN FY (N) vs TIME (ms)



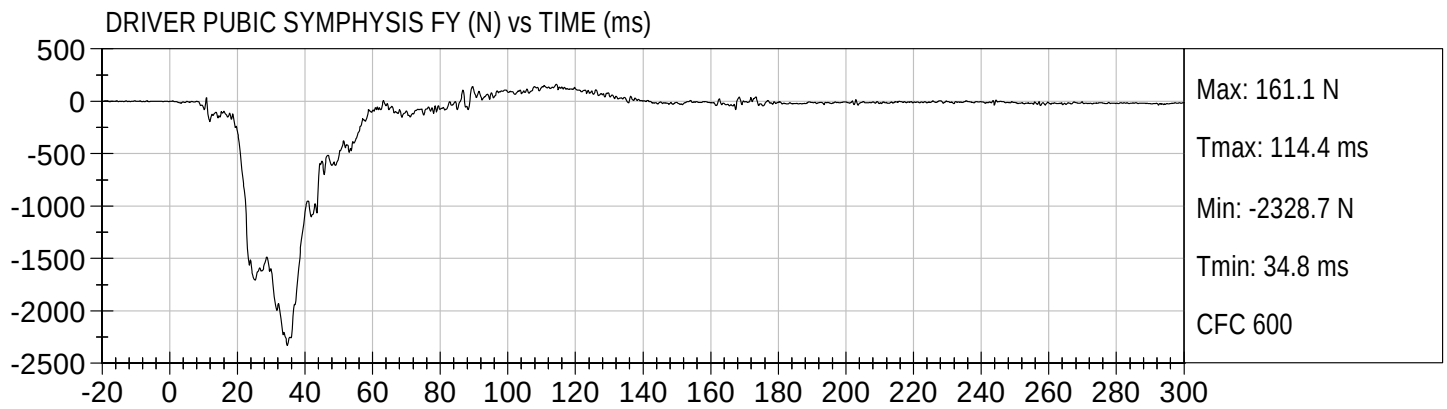
DRIVER SUMMED ABDOMEN FORCE (N) vs TIME (ms)





55/28 km/h 90° NCAP MDB Side
2012 Honda Civic IMA - MC5301

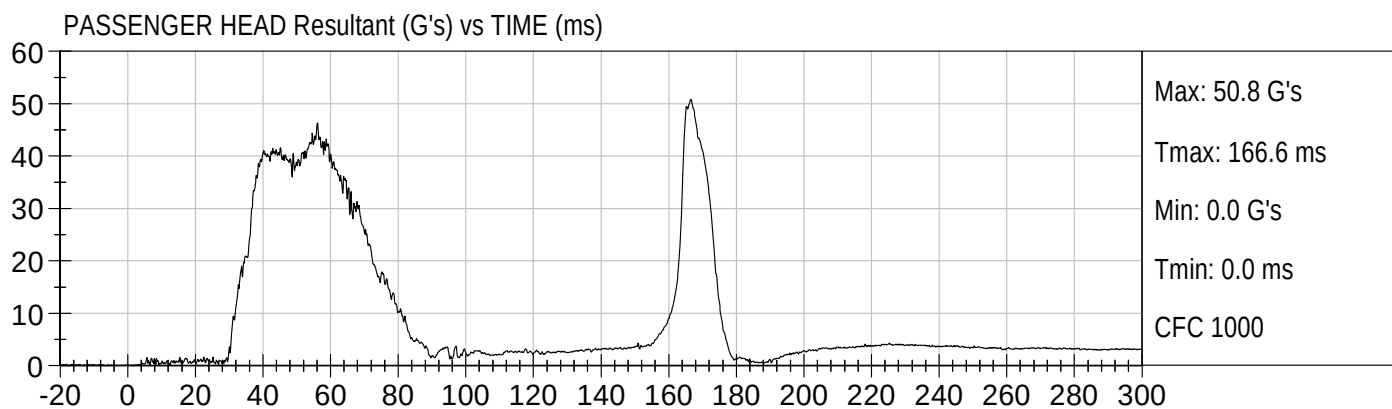
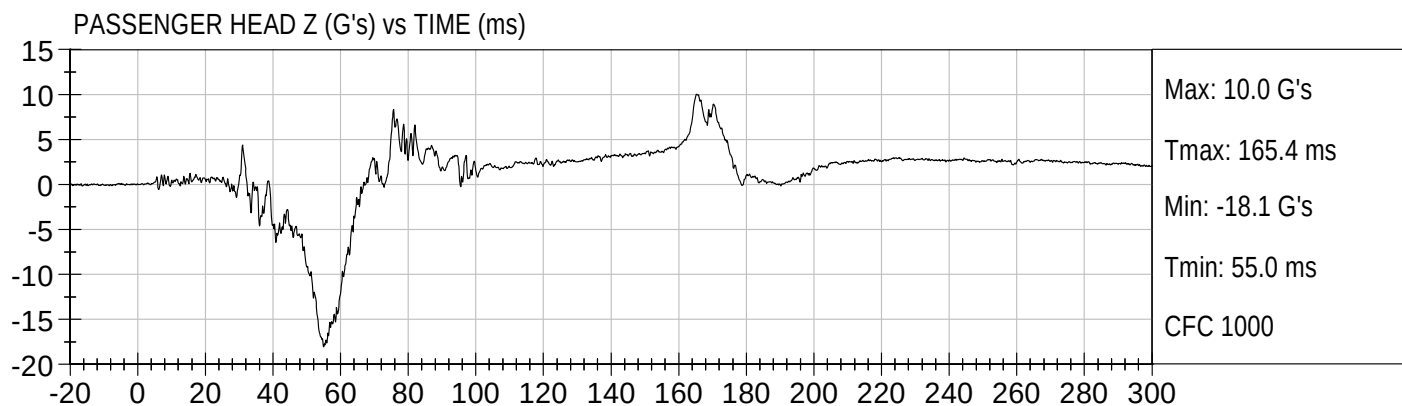
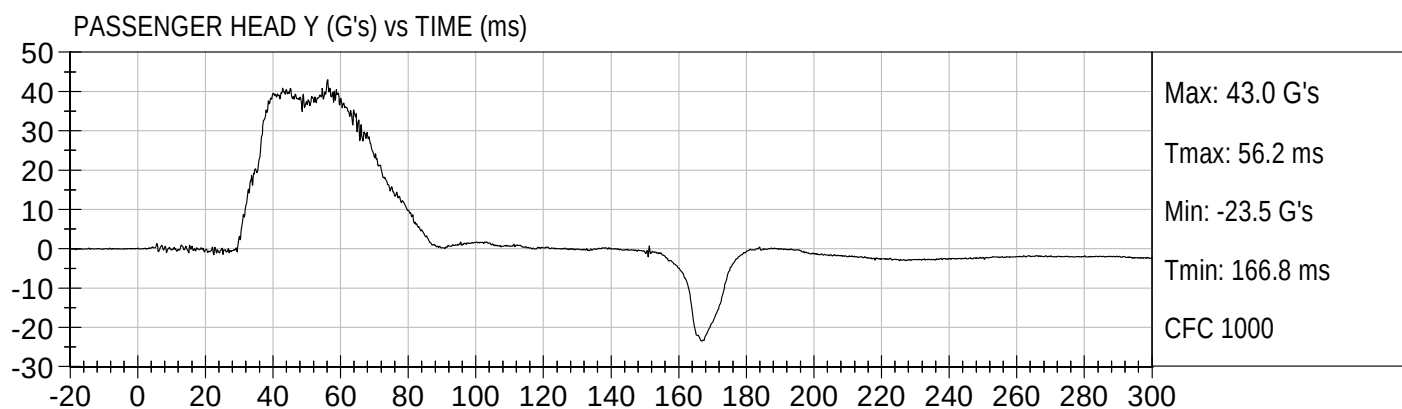
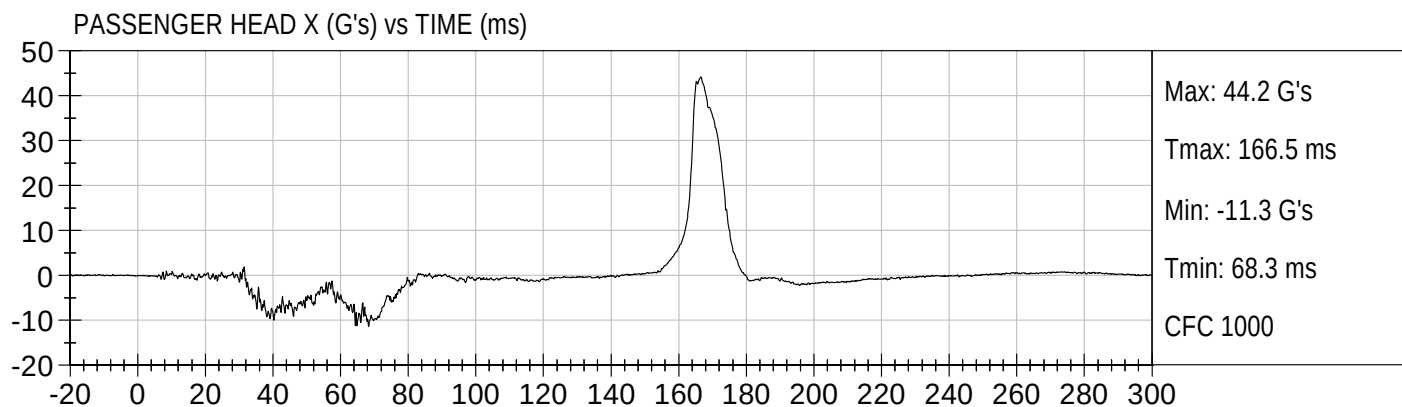
Test Date: 02/13/2012
Speed: 38.7 mph (62.2 km/h)





55/28 km/h 90° NCAP MDB Side
2012 Honda Civic IMA - MC5301

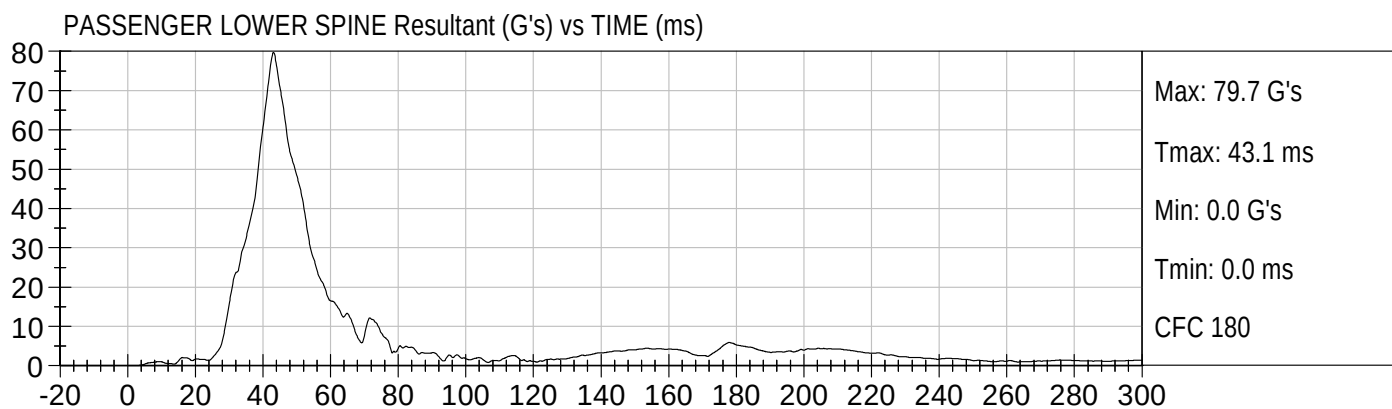
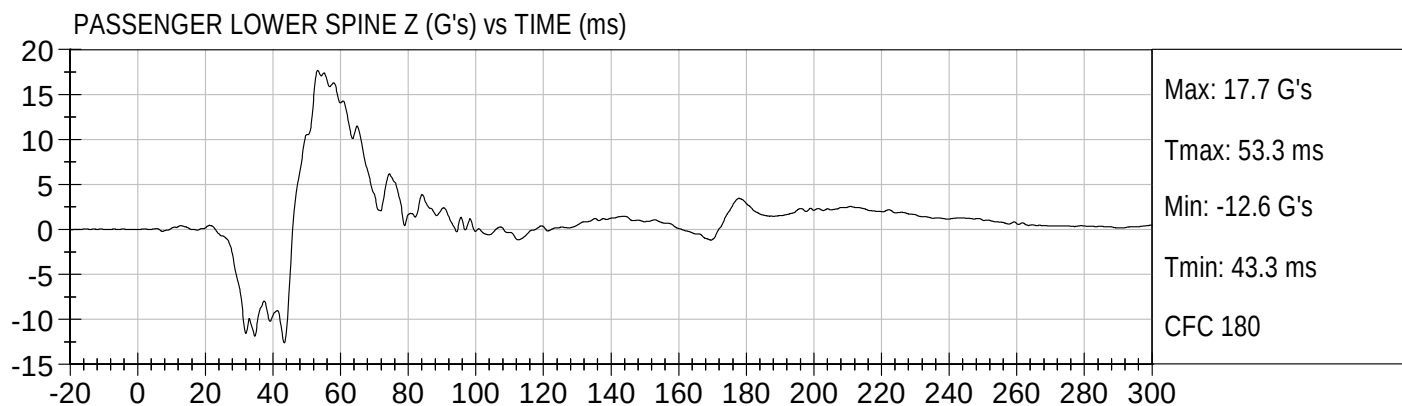
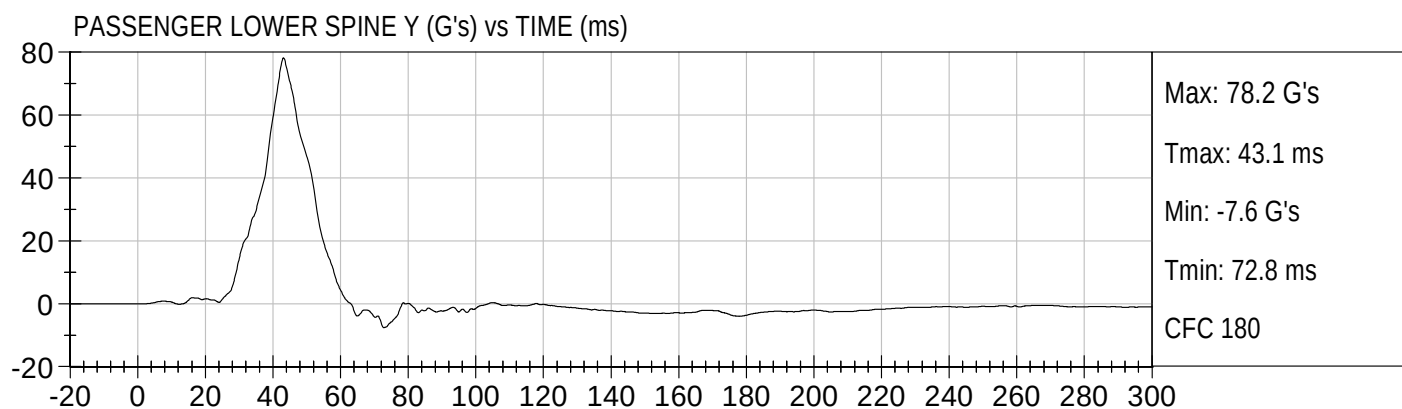
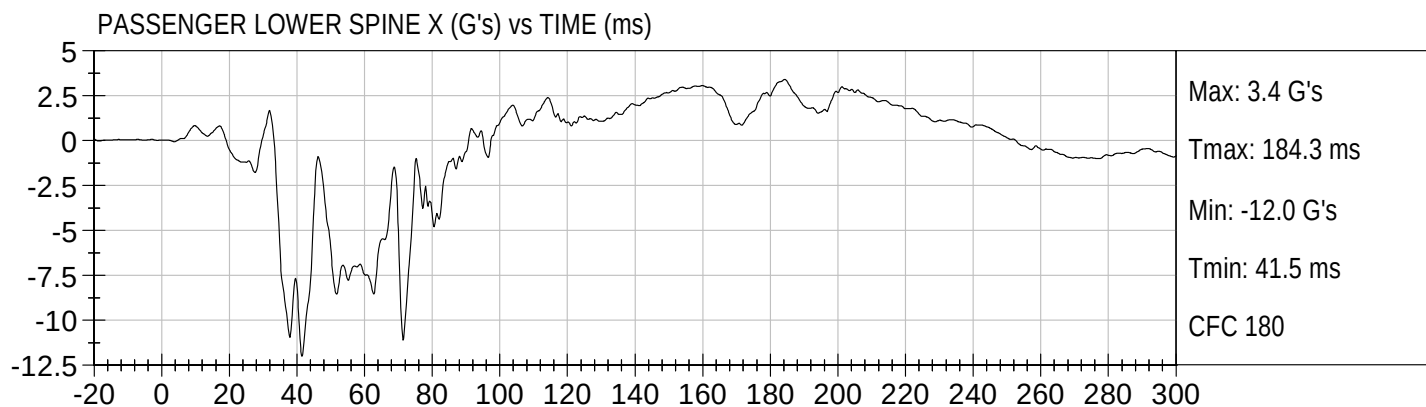
Test Date: 02/13/2012
Speed: 38.7 mph (62.2 km/h)





55/28 km/h 90° NCAP MDB Side
2012 Honda Civic IMA - MC5301

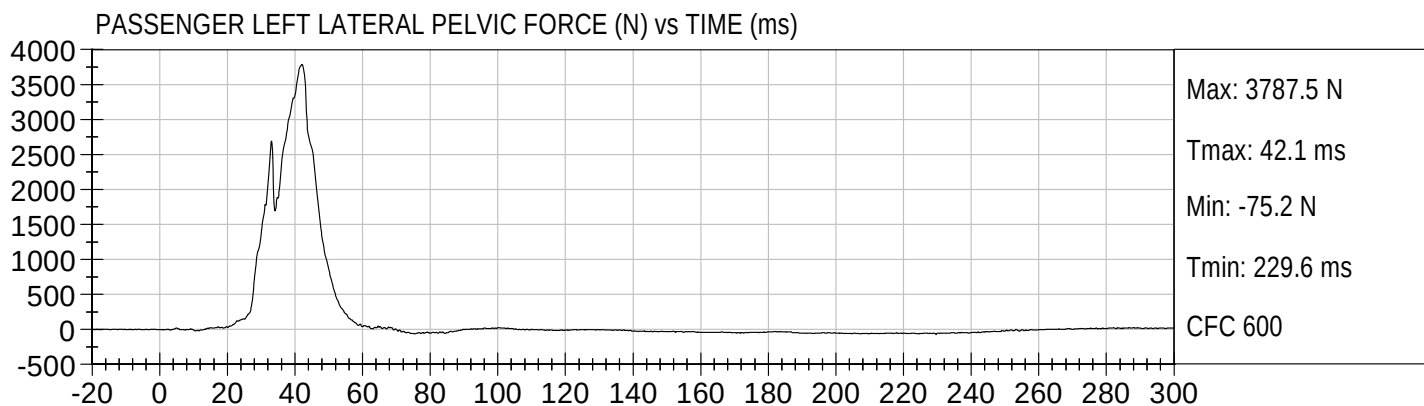
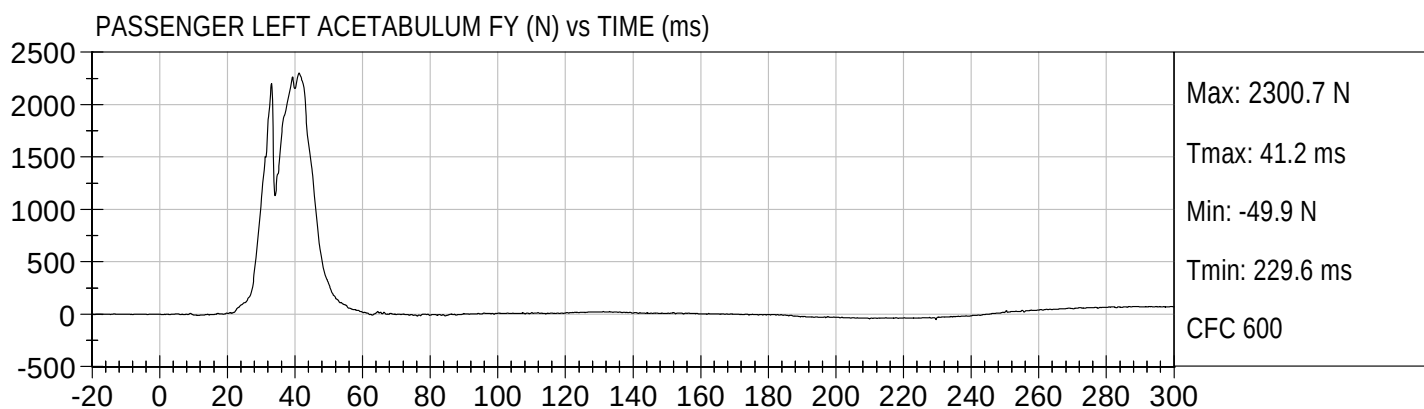
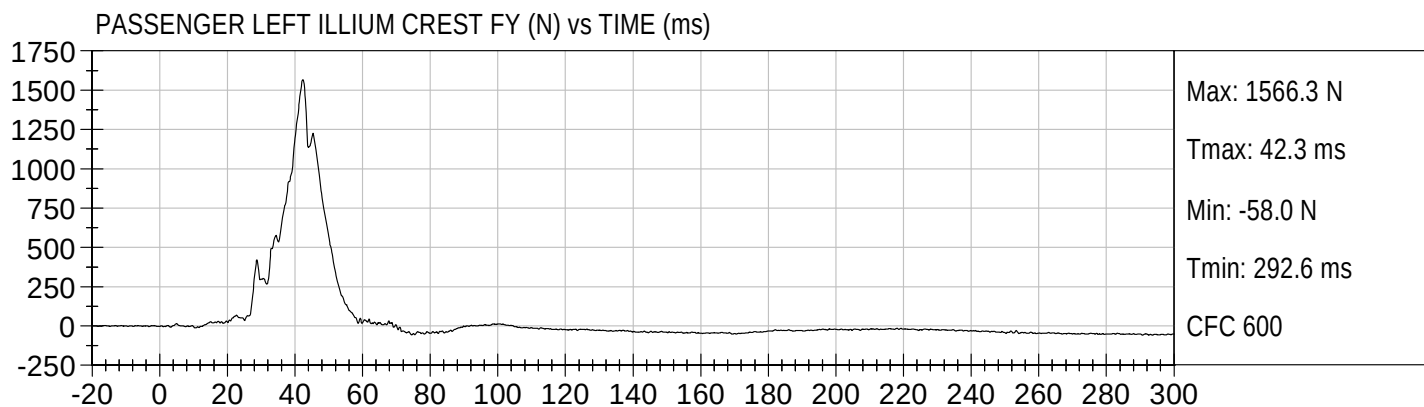
Test Date: 02/13/2012
Speed: 38.7 mph (62.2 km/h)





55/28 km/h 90° NCAP MDB Side
2012 Honda Civic IMA - MC5301

Test Date: 02/13/2012
Speed: 38.7 mph (62.2 km/h)



APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

ES-2re External Measurements
SN: 032

No.	Name	Spec. (mm)	Result	Pass/Fail
1	Sitting Height	900 - 918	915	Pass
2	Seat to Shoulder Joint	558 - 572	568	Pass
3	Seat to Lower Face of Thoracic Spine Box	346 - 356	355	Pass
4	Seat to Hip Joint (center of bolt)	97 - 103	98	Pass
5	Sole to Seat, Sitting	333 - 451	440	Pass
6	Head Width	152 - 158	157	Pass
7	Shoulder/Arm Width	461 - 479	464	Pass
8	Thorax Width	322 - 332	323	Pass
9	Abdomen Width	273 - 287	281	Pass
10	Pelvis Lap Width	359 - 373	370	Pass
11	Head Depth	196 - 206	203	Pass
12	Thorax Depth	262 - 272	264	Pass
13	Abdomen Depth	194 - 204	196	Pass
14	Pelvis Depth	235 - 245	236	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150 - 160	151	Pass
16	Back of Buttocks to Front Knee	597 - 615	607	Pass

MGA RESEARCH CORPORATION

HEAD DROP TEST

ES-2re DUMMY

ATD Serial No: 032Test ID: D12241

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	11	Pass
Peak Resultant Acceleration	G's	125 to 155	147	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-13.2	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

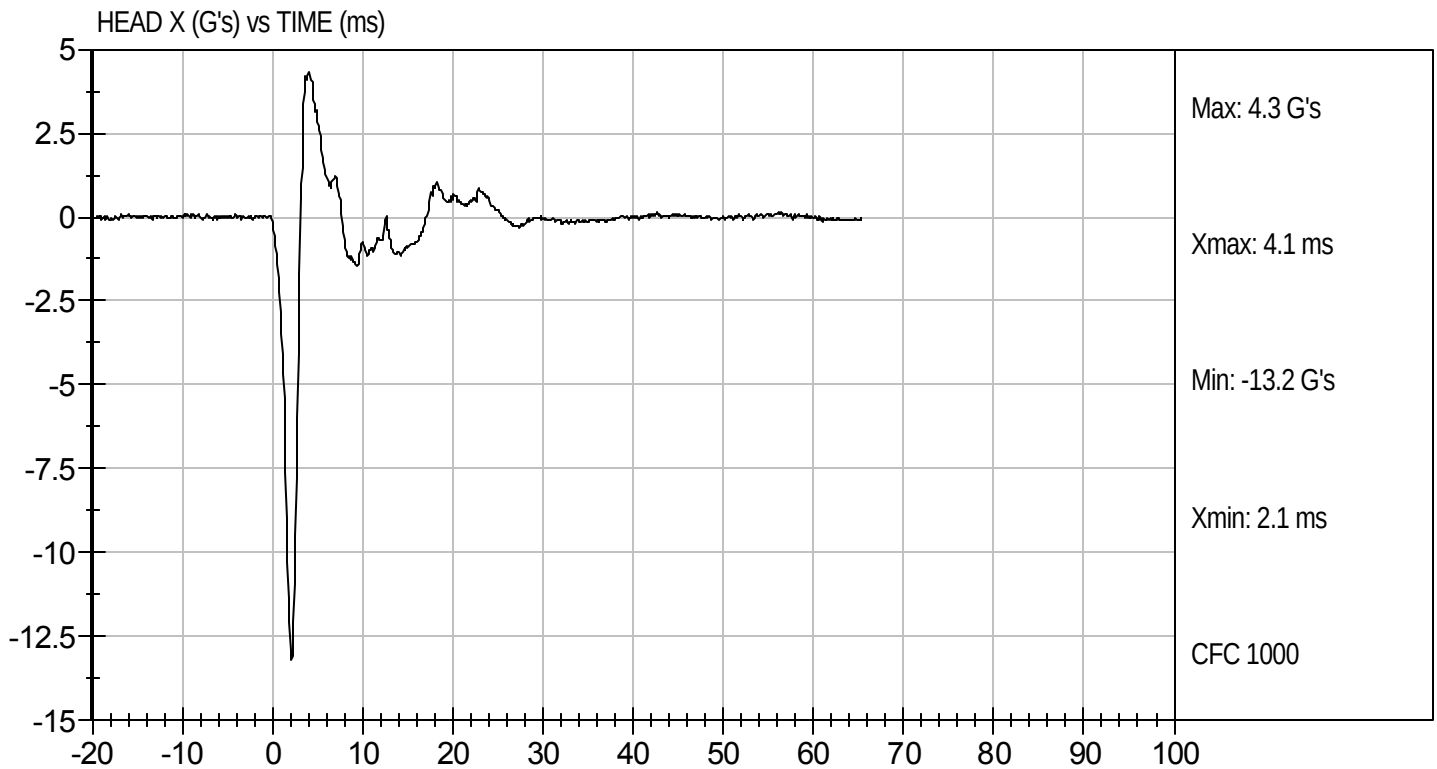
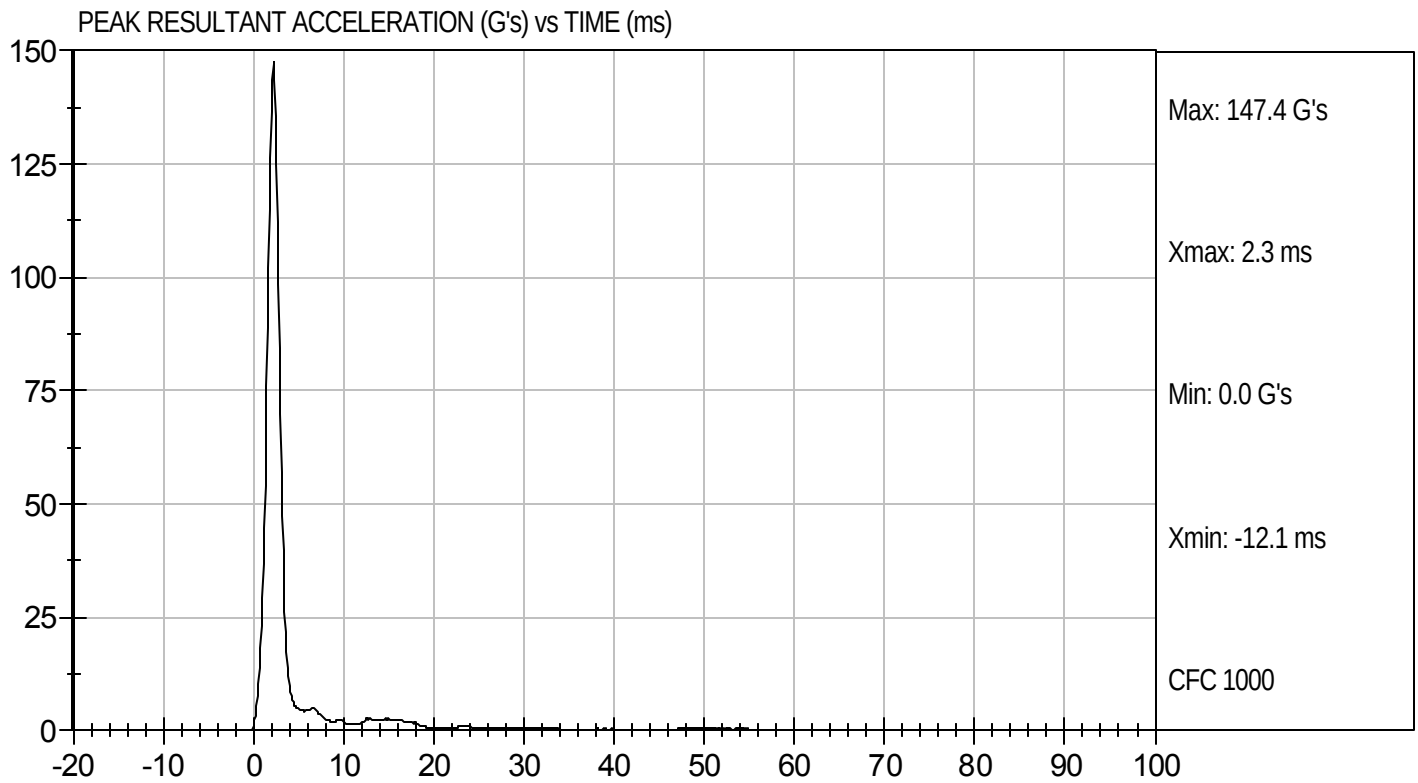
1/20/12
Test Date

David Winkelbauer
Approved By



Test Desc: Head Drop
Component ID: D12241

Test Date: 1/20/12
Velocity: 0 ft/s, 0 m/s

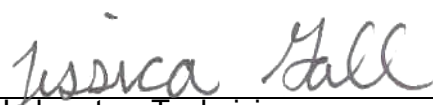


MGA RESEARCH CORPORATION
NECK PENDULUM TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12242

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.0 to 22.0	21.8	Pass
Laboratory Relative Humidity		%	10 to 70	11	Pass
Pendulum Speed		m/s	3.3 to 3.5	3.4	Pass
Pendulum Deceleration	1 ms	m/s	0.00 to -0.05	-0.02	Pass
	3 ms	m/s	-0.25 to -0.375	-0.32	Pass
	14 ms	m/s	-3.20 to -3.70	-3.26	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	51.2	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	57.8	Pass
Head Rotation Decay Time to 0 degree		ms	53.0 to 88.0	55.6	Pass
Overall Test Results					Pass


 Laboratory Technician

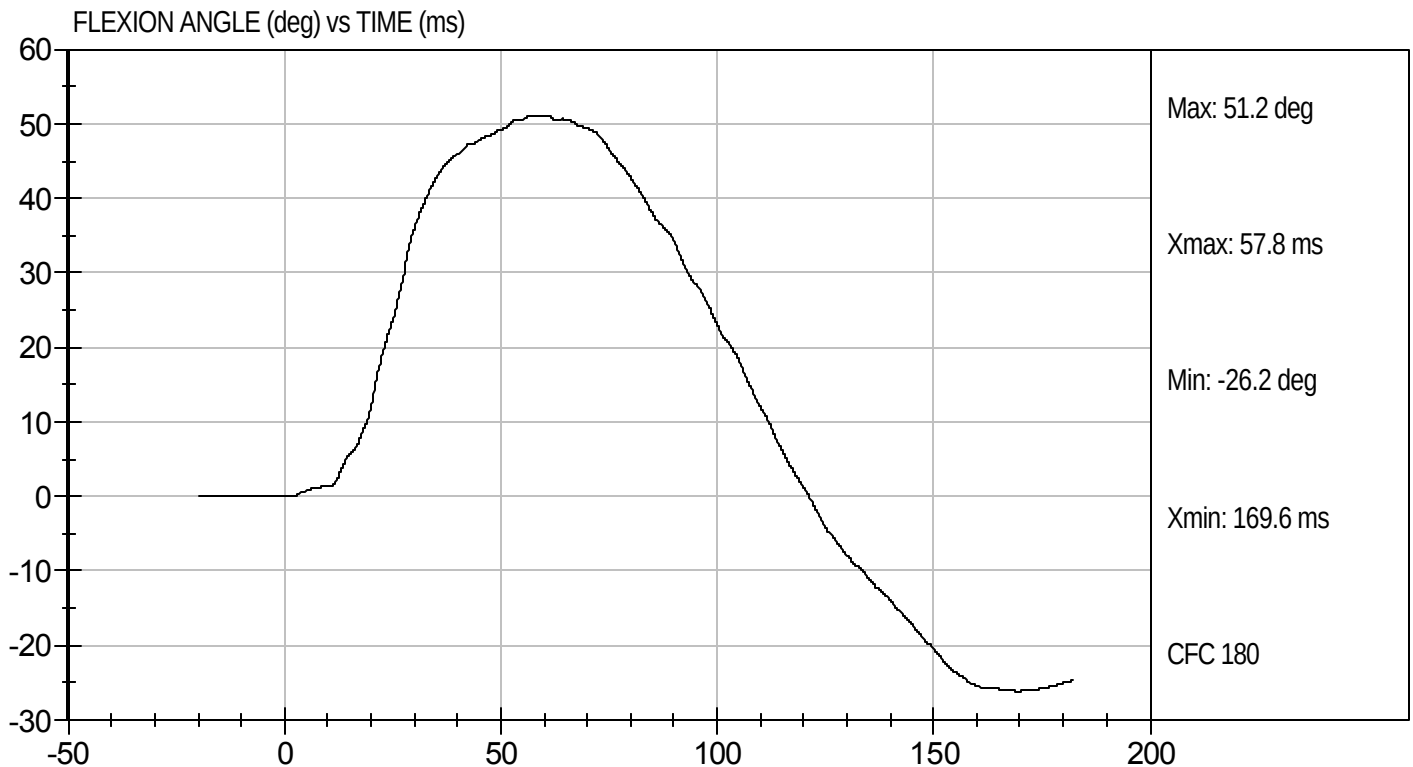
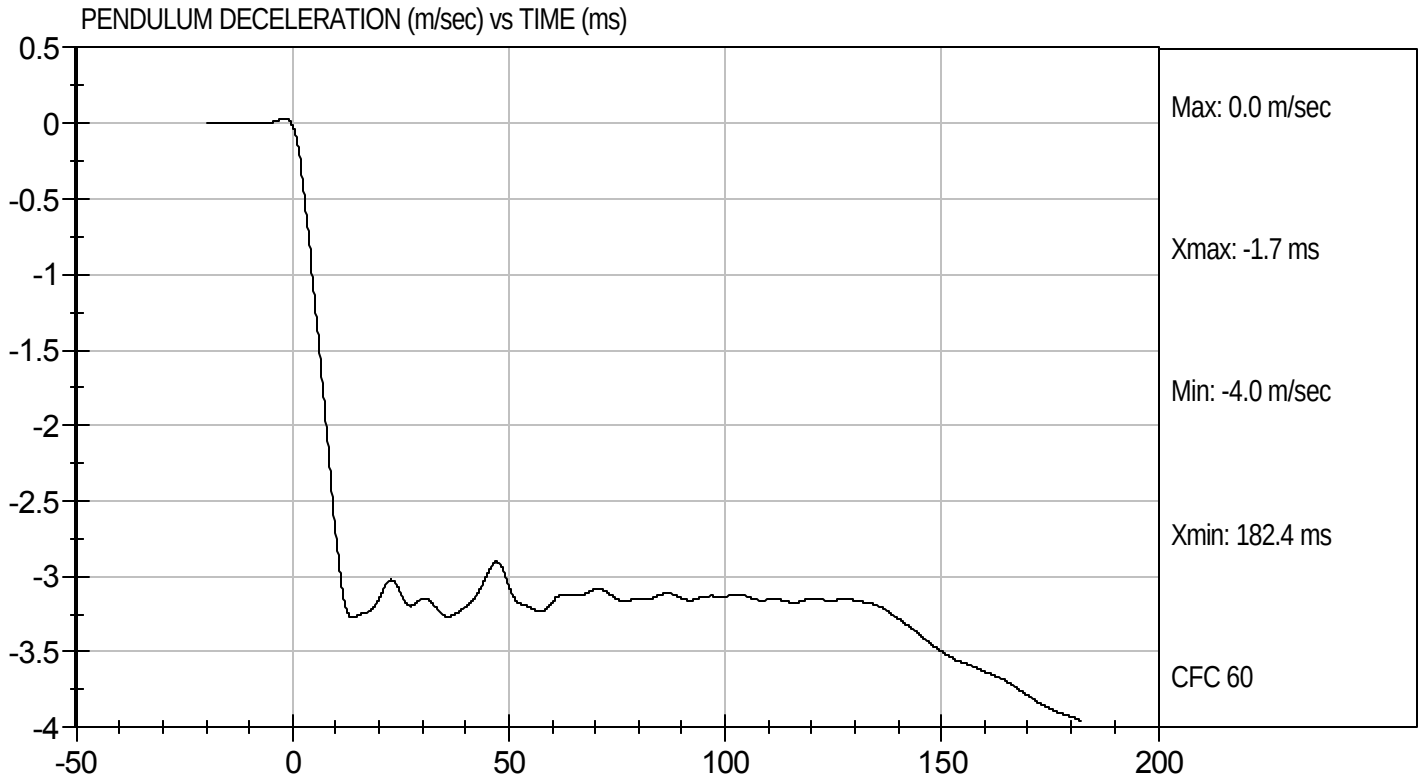
1/20/12
 Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D12242

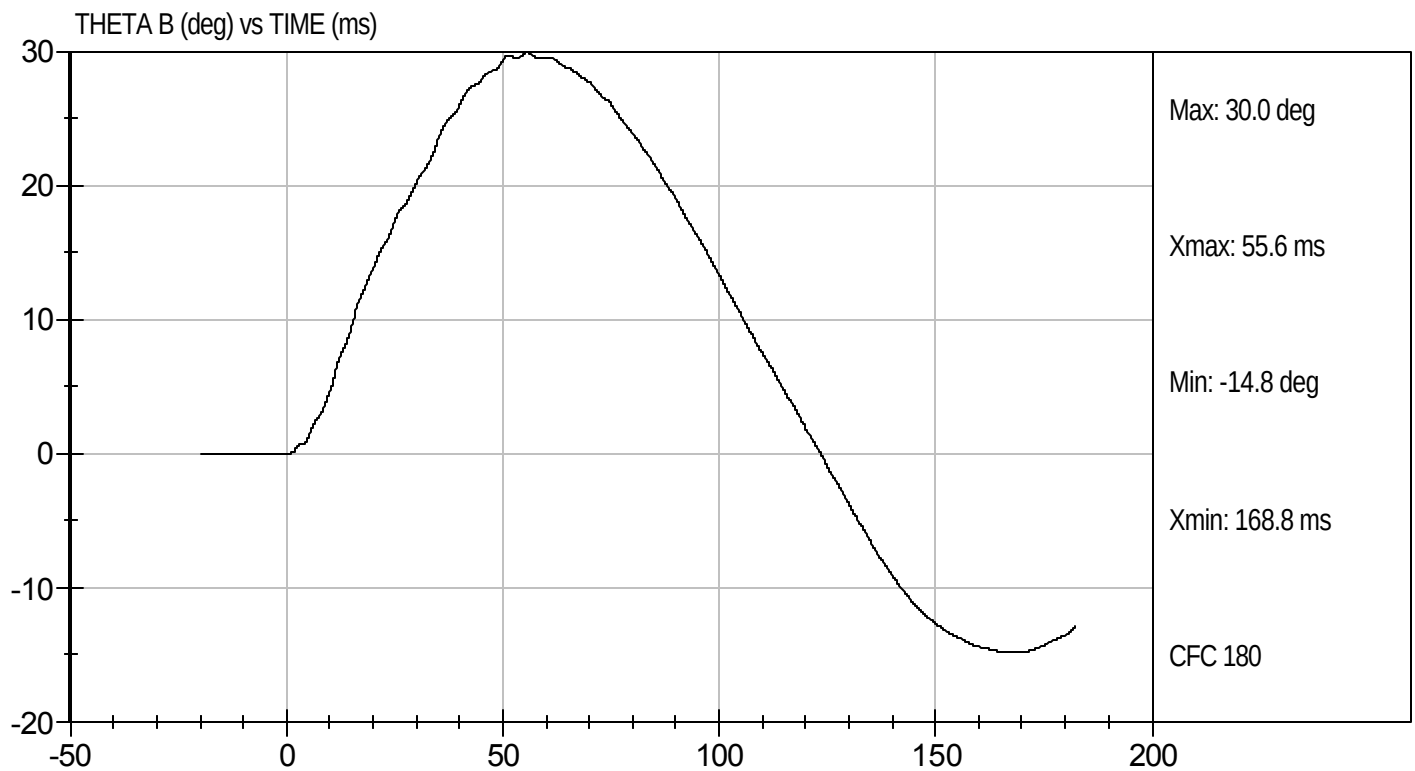
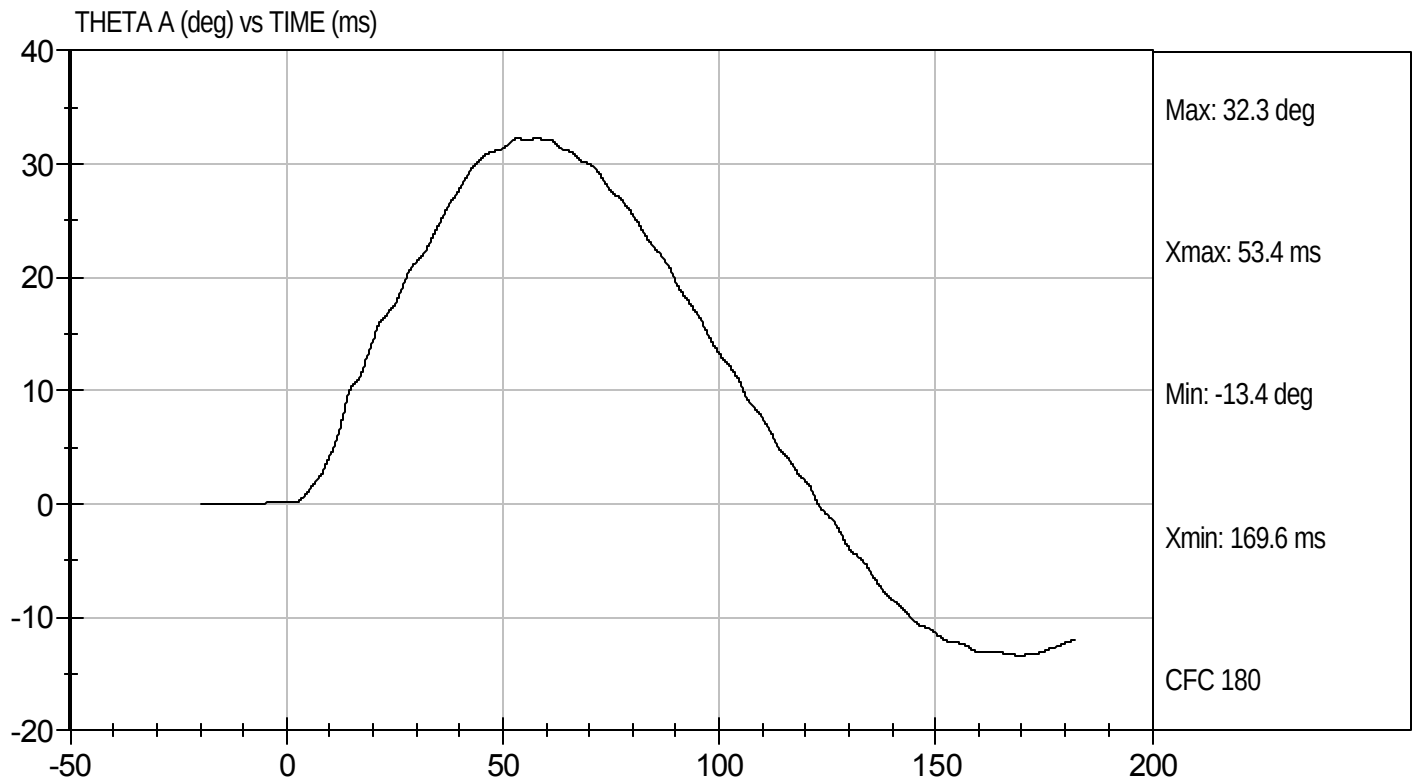
Test Date: 1/20/12
Velocity: 11.26 ft/s, 3.4 m/s





Test Desc: Neck Bending
Component ID: D12242

Test Date: 1/20/12
Velocity: 11.26 ft/s, 3.4 m/s



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12243

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.1	Pass
Laboratory Relative Humidity	%	10 to 70	14	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.3	Pass
Peak Shoulder Acceleration	G's	7.5 to 10.5	10.1	Pass
Time of Peak Shoulder Acceleration	ms	NA	13.2	Pass
Overall Test Results			Pass	


Laboratory Technician

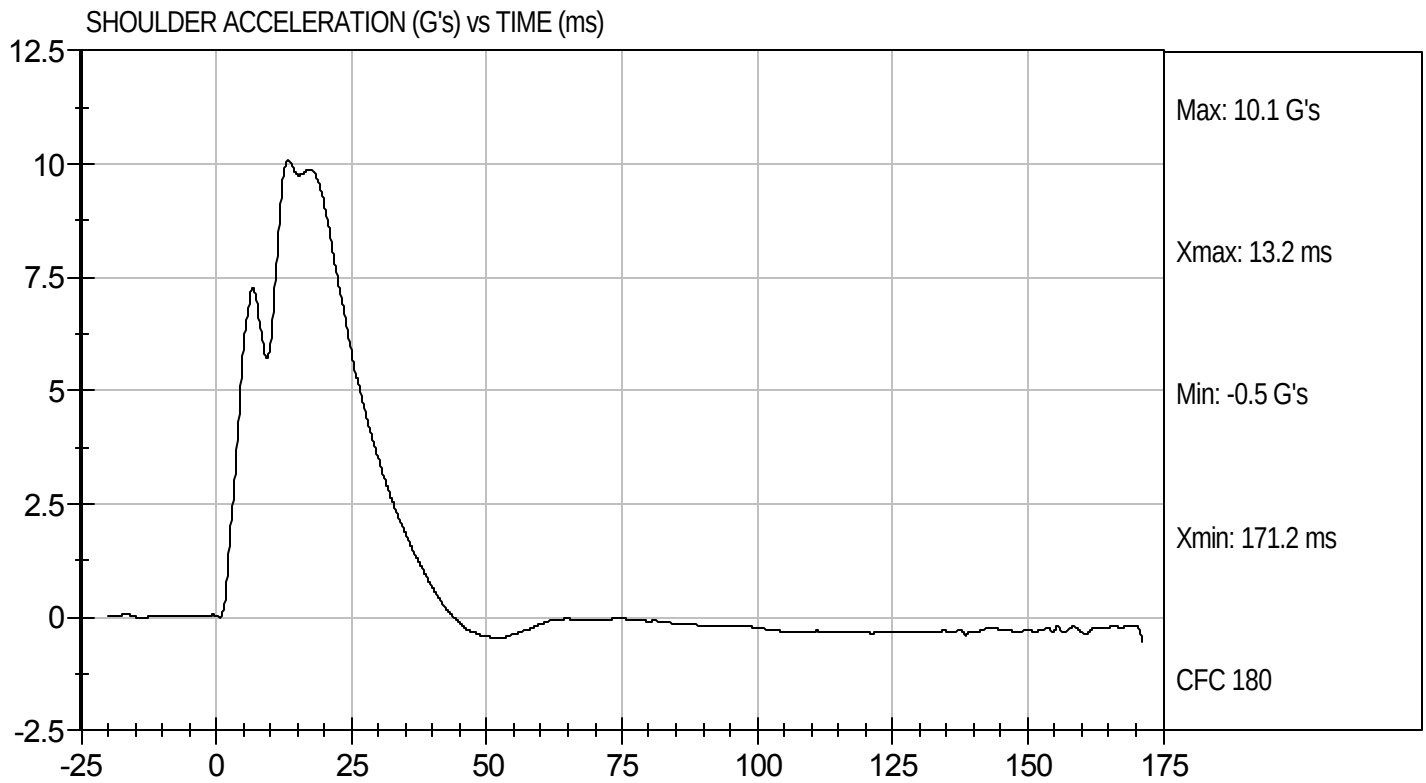
1/19/12
Test Date


Approved By



Test Desc: Shoulder Impact
Component ID: D12243

Test Date: 1/19/12
Velocity: 14.12 ft/s, 4.3 m/s



MGA RESEARCH CORPORATION

UPPER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12244

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	11	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	38.0	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.3	Pass
			Overall Test Results	Pass

Jessica Hall
Laboratory Technician

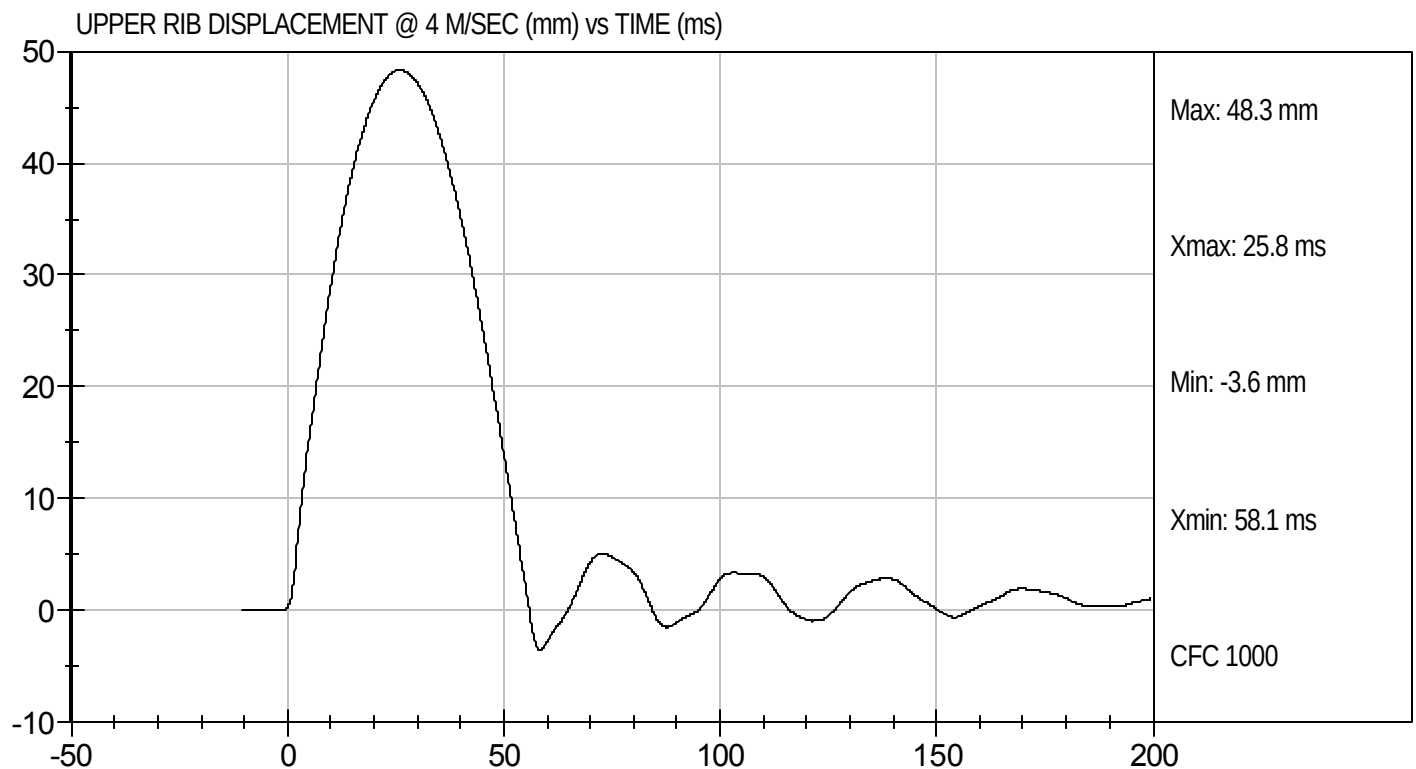
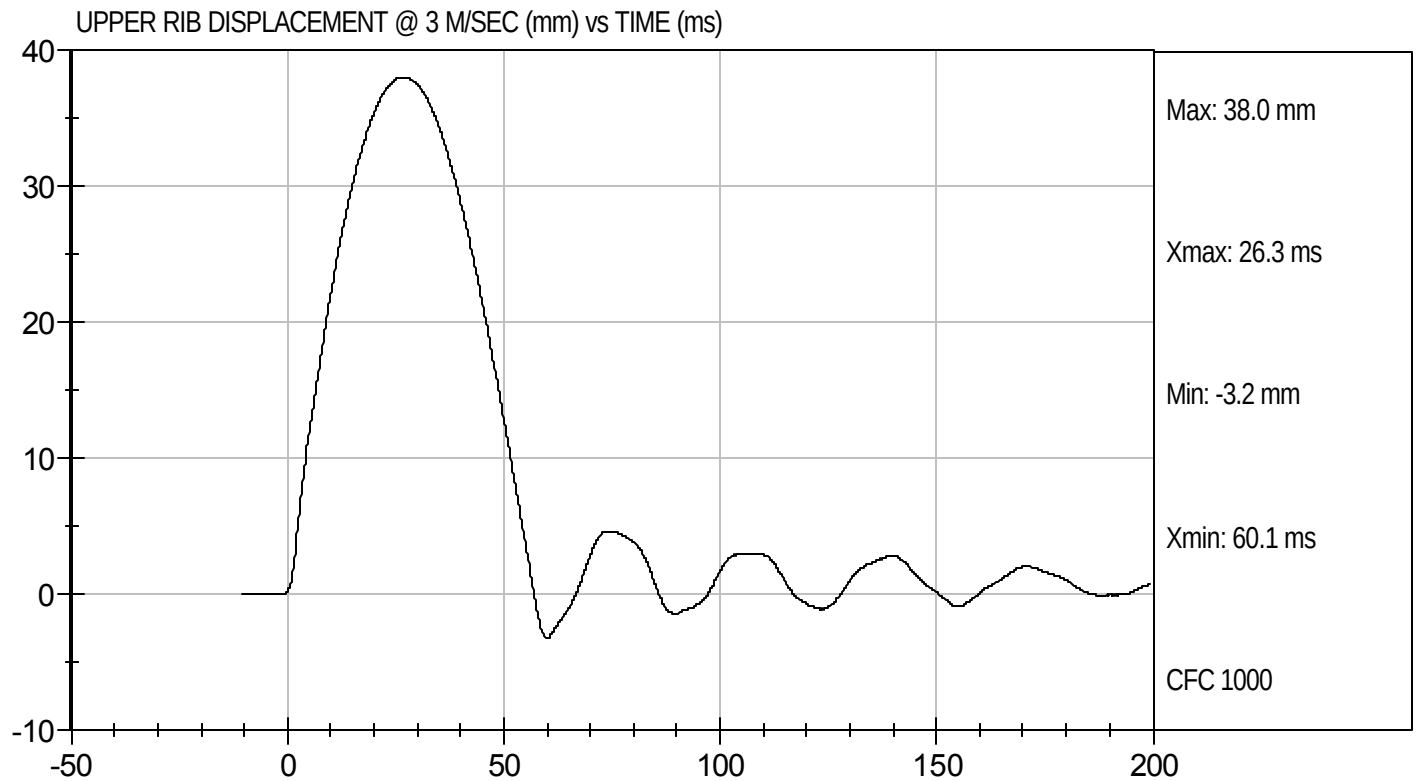
1/20/12
Test Date

David Winkelbauer
Approved By



Test Desc: Rib Impact - Upper
Component ID: D12244

Test Date: 1/20/12



MGA RESEARCH CORPORATION

MID RIB TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12245

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	11	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	38.2	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	47.8	Pass
			Overall Test Results	Pass


Laboratory Technician

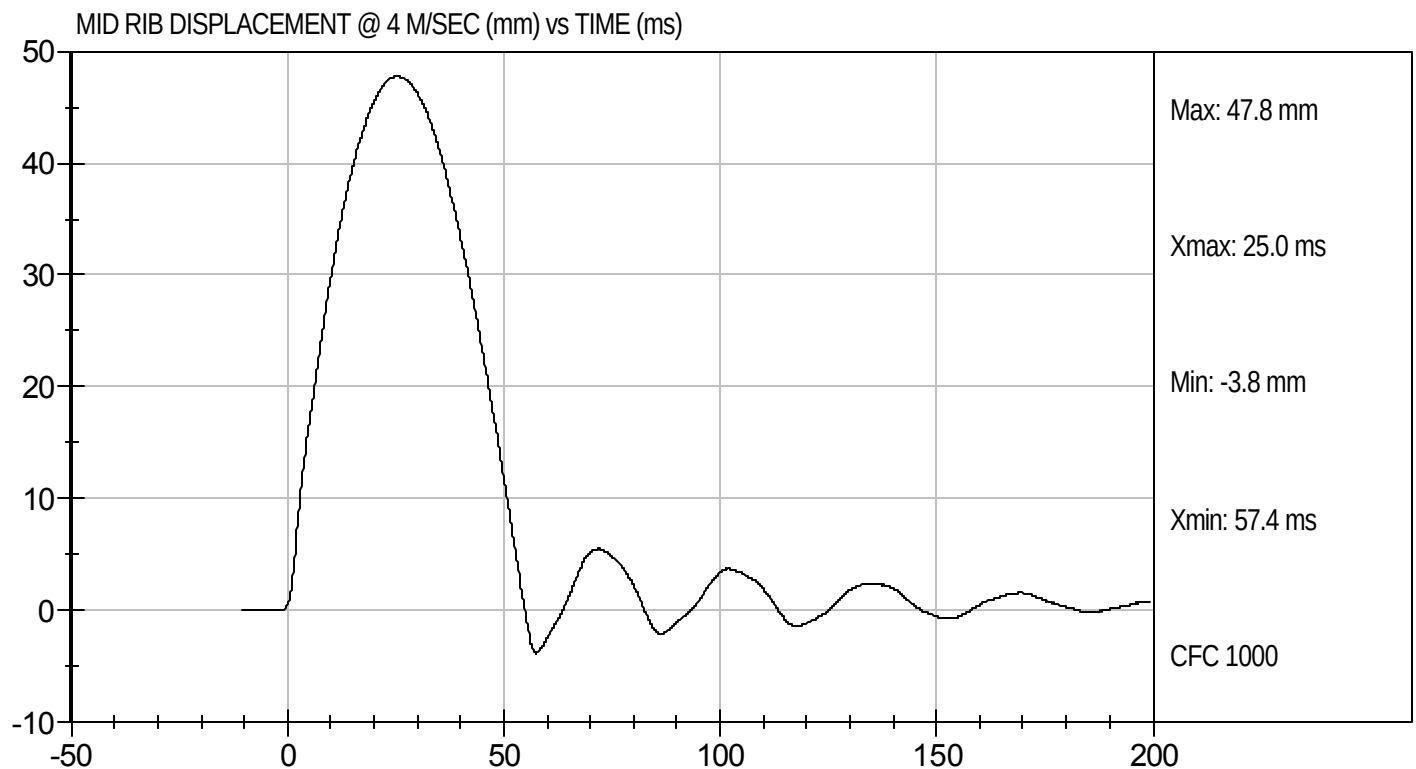
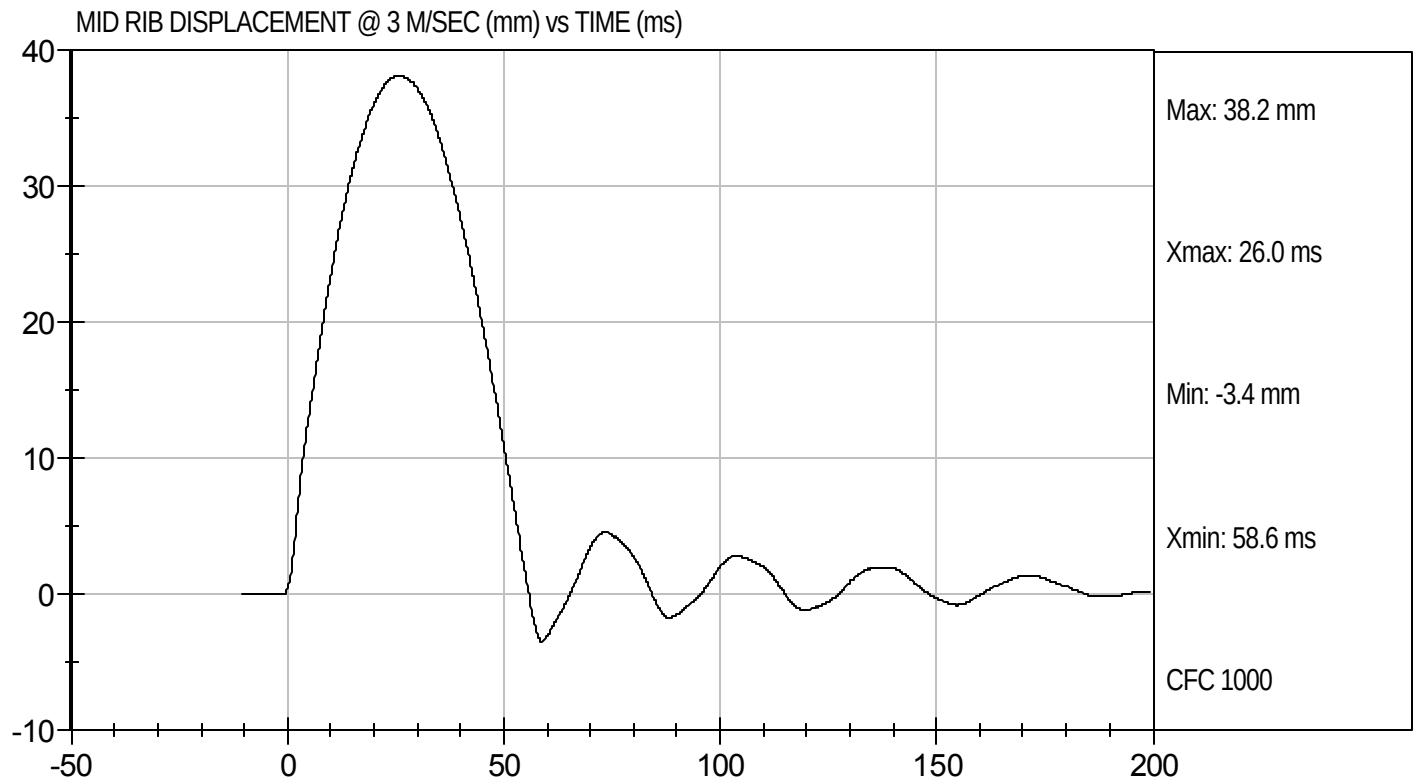
1/20/12
Test Date


Approved By



Test Desc: Rib Impact - Mid
Component ID: D12245

Test Date: 1/20/12



MGA RESEARCH CORPORATION

LOWER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

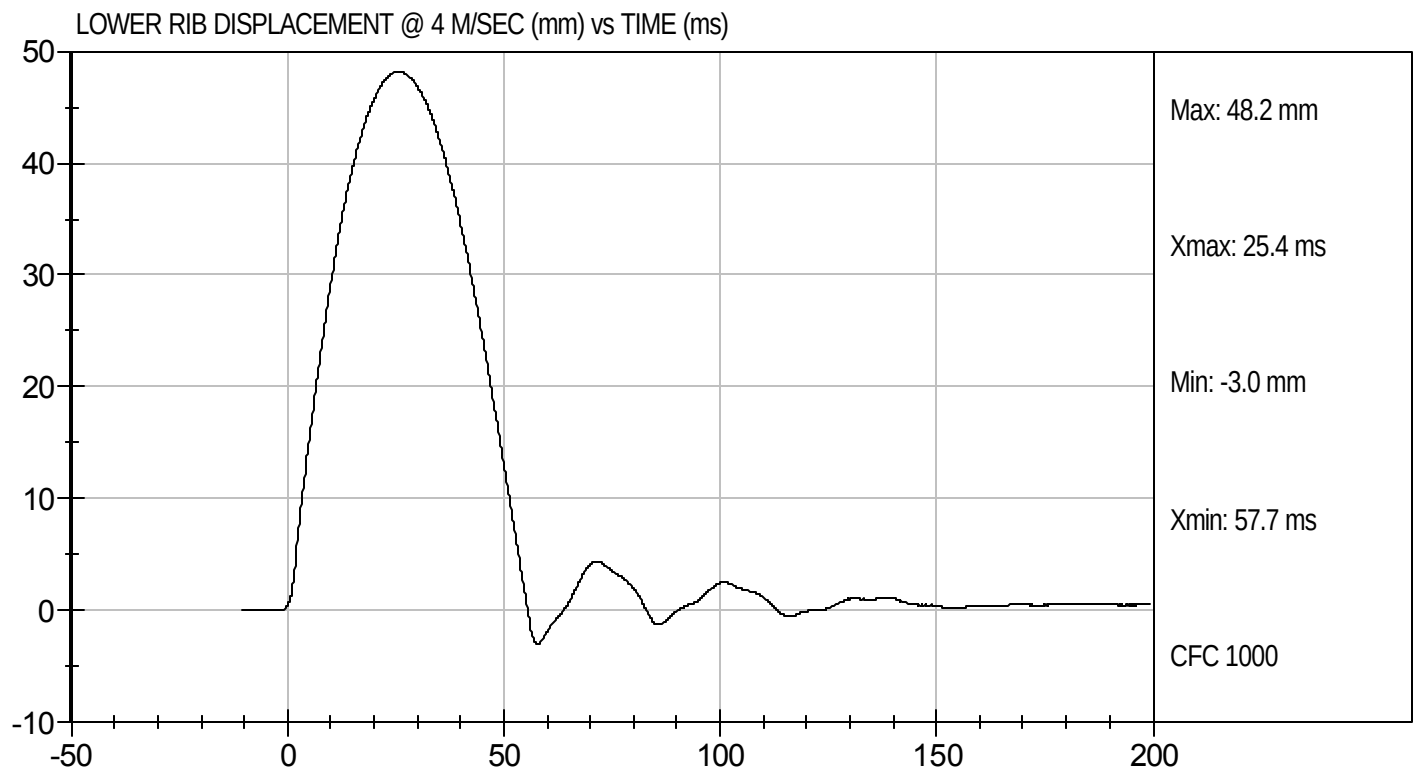
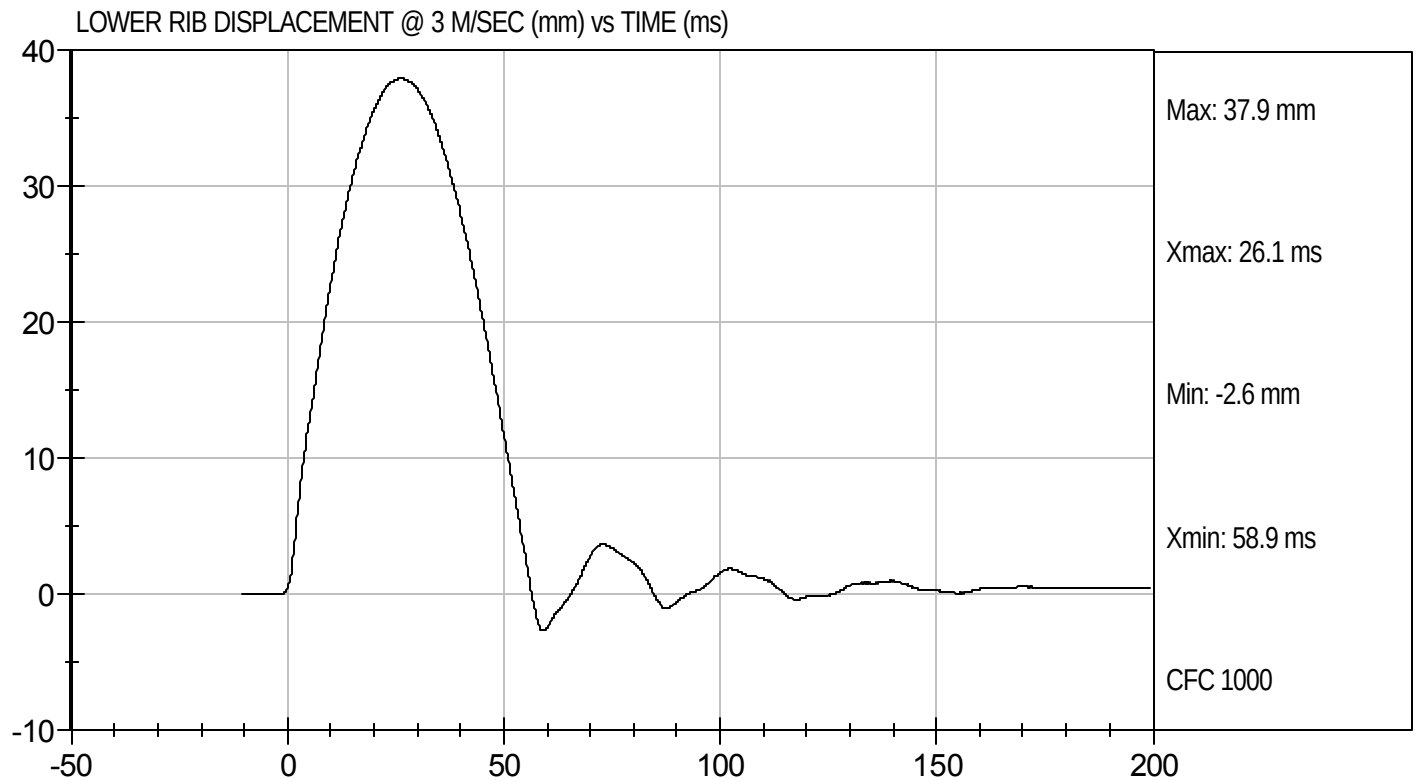
Test I.D: D12246

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	11	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.9	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.2	Pass
			Overall Test Results	Pass

Jessica Gall
Laboratory Technician

1/20/12
Test Date

David Winkelbauer
Approved By



MGA RESEARCH CORPORATION
FULL BODY THORAX IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12240

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	22.1	Pass
Humidity	%	10 to 70	14	Pass
Probe Speed	m/s	5.40 to 5.60	5.58	Pass
Maximum Impactor Force (after 6 ms)	kN	5.10 to 6.20	5.19	Pass
Upper Rib Displacement	mm	34.0 to 41.0	36.7	Pass
Middle Rib Displacement	mm	37.0 to 45.0	39.9	Pass
Lower Rib Displacement	mm	37.0 to 44.0	39.5	Pass
			Overall Test Results	Pass


Laboratory Technician

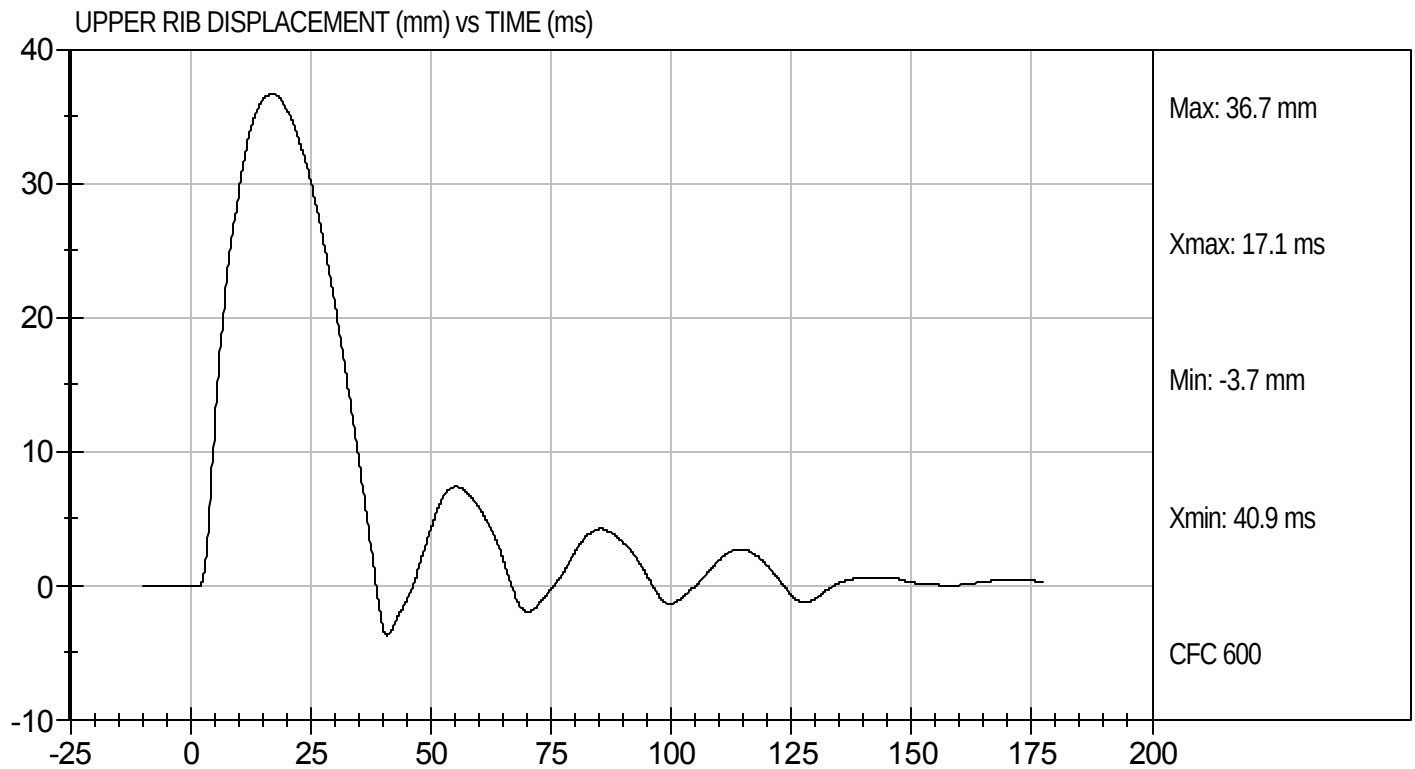
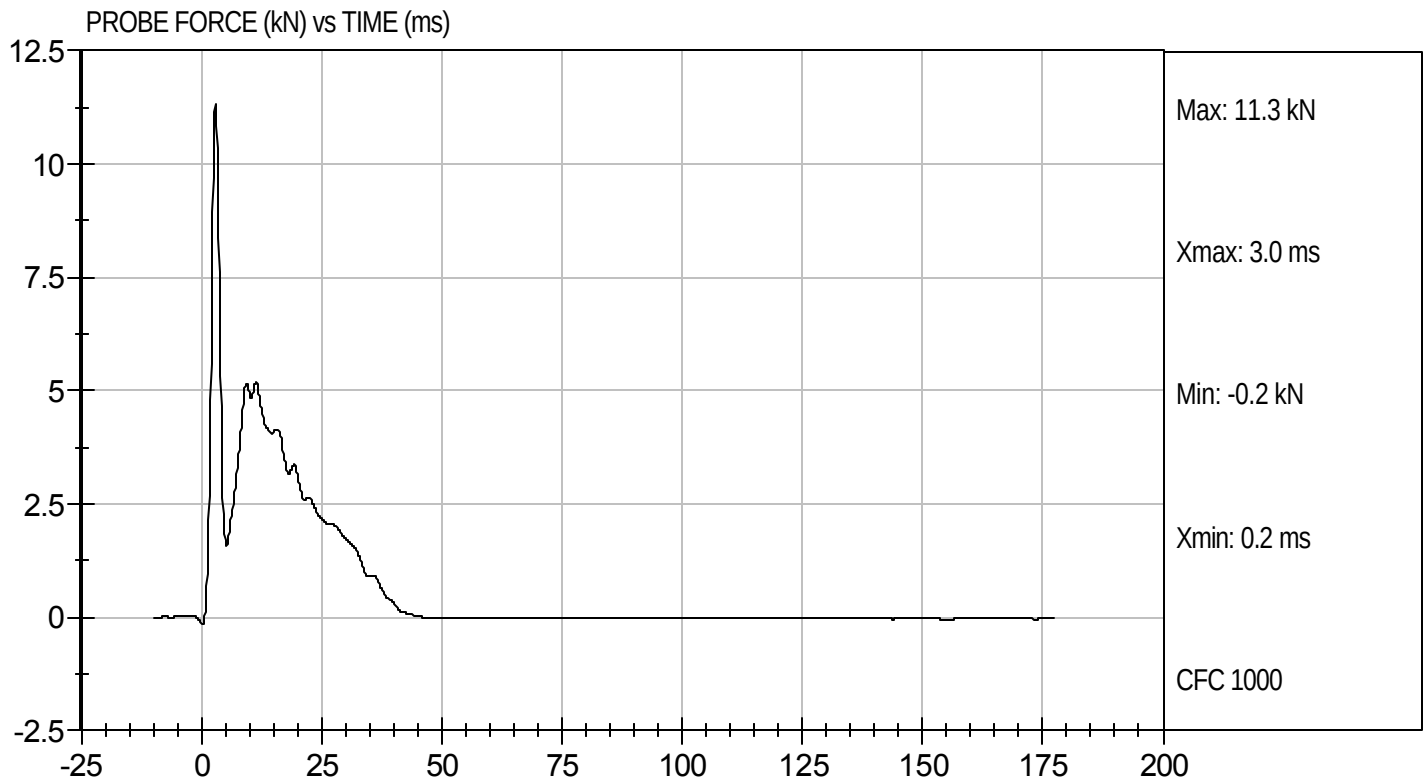
1/19/12
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D12240

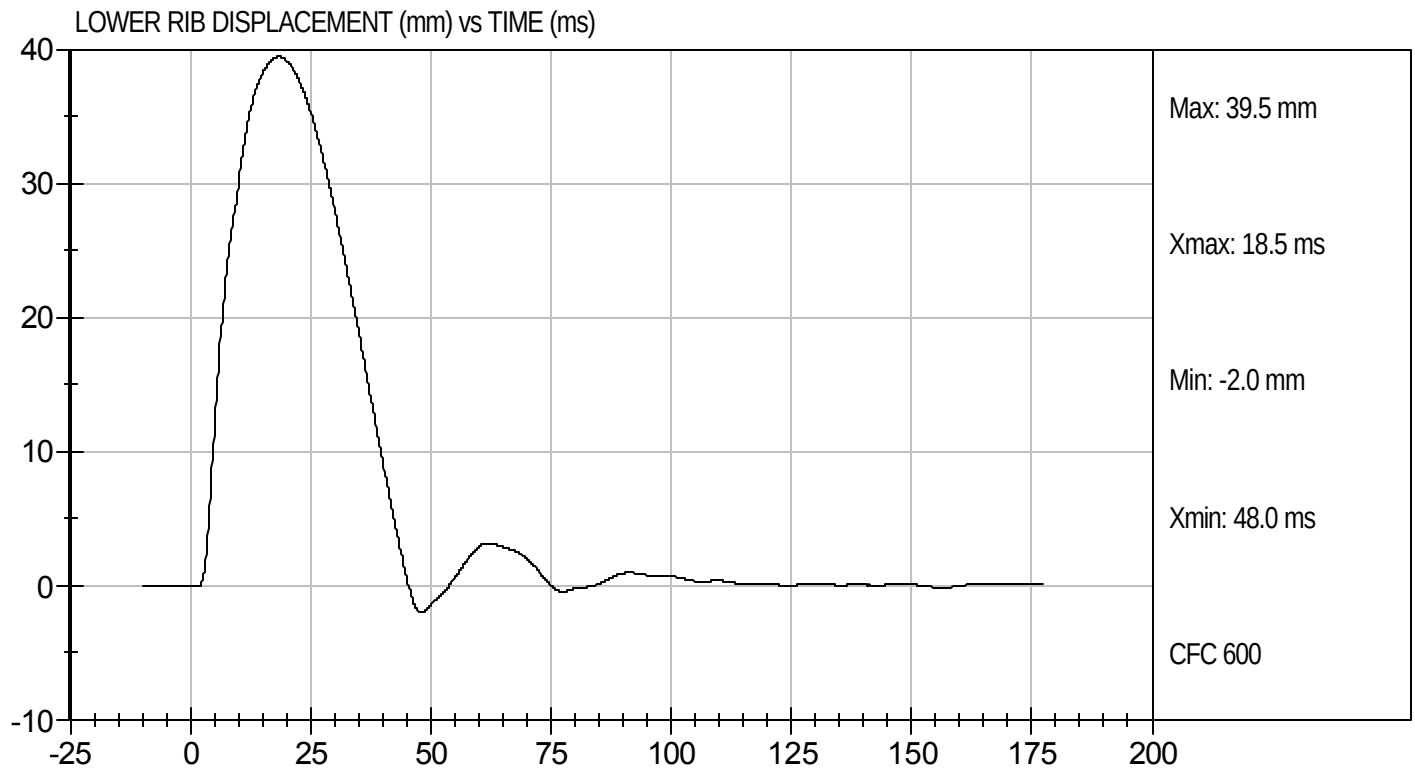
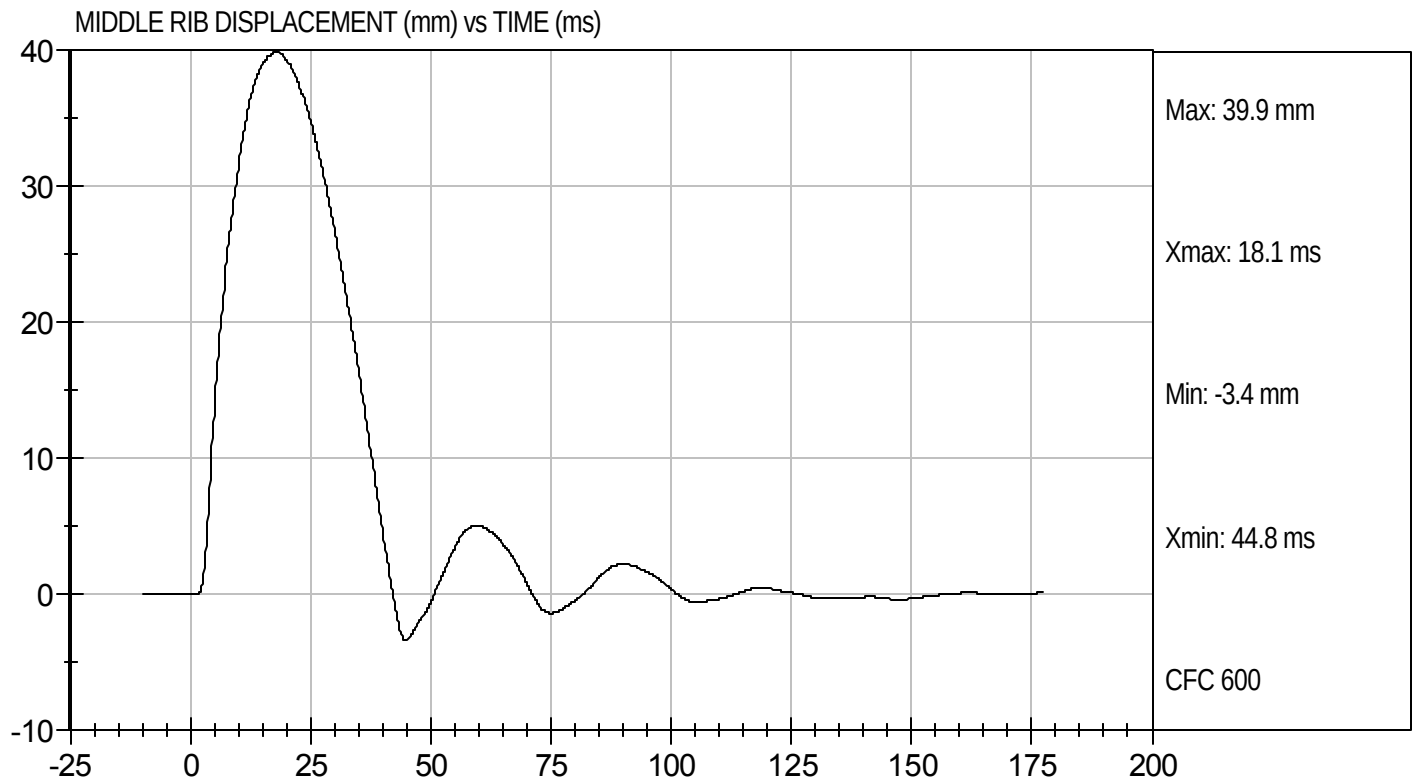
Test Date: 1/19/12
Velocity: 18.31 ft/s, 5.58 m/s





Test Desc: Thorax Impact
Component ID: D12240

Test Date: 1/19/12
Velocity: 18.31 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION

ABDOMEN TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12247

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	13	Pass
Probe Speed	m/s	3.90 to 4.10	4.06	Pass
Maximum Impact Force	kN	4.00 to 4.80	4.38	Pass
Time of Maximum Impact Force	ms	10.60 to 13.00	10.70	Pass
Maximum Total Abdomen Force	kN	2.20 to 2.70	2.57	Pass
Time of Maximum Abdomen Force	ms	10.00 to 12.30	10.40	Pass
Overall Test Results				Pass


Laboratory Technician

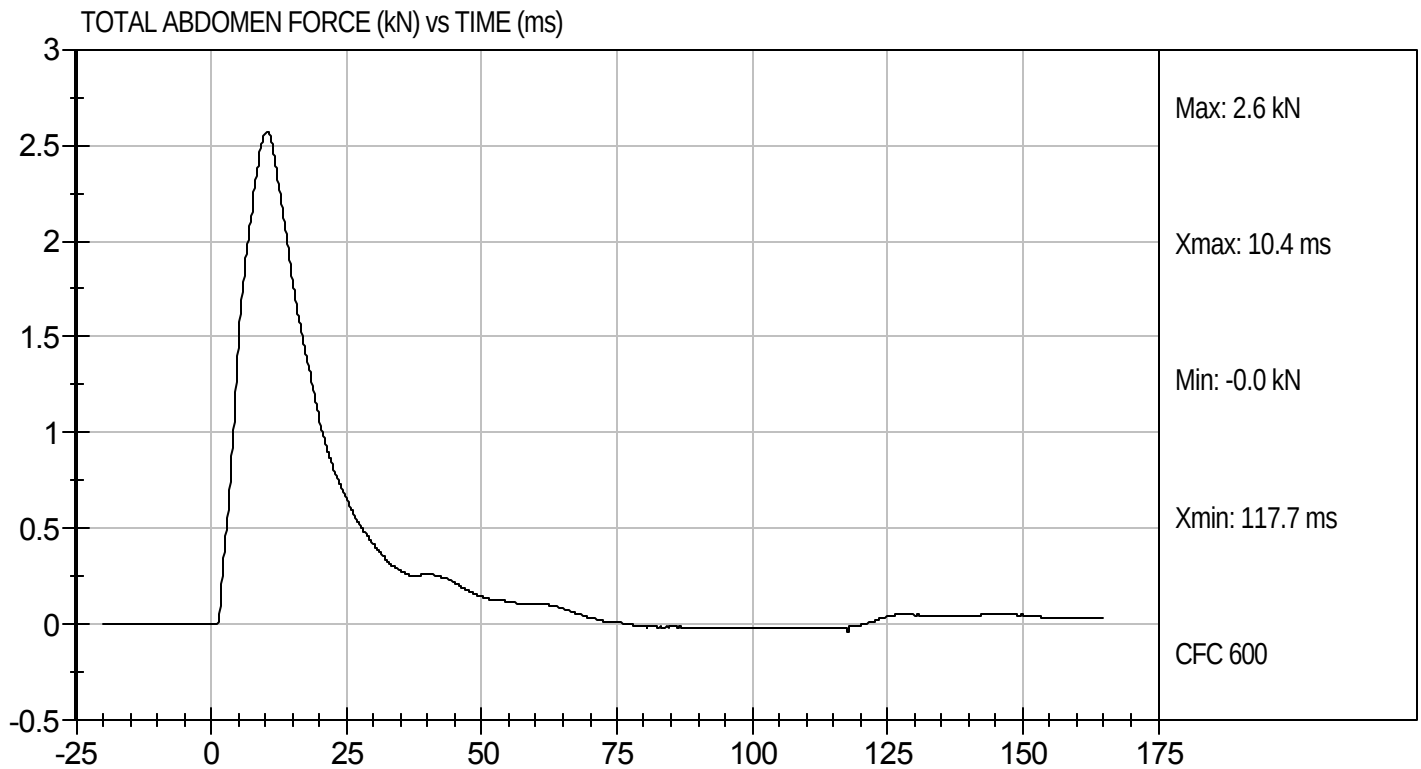
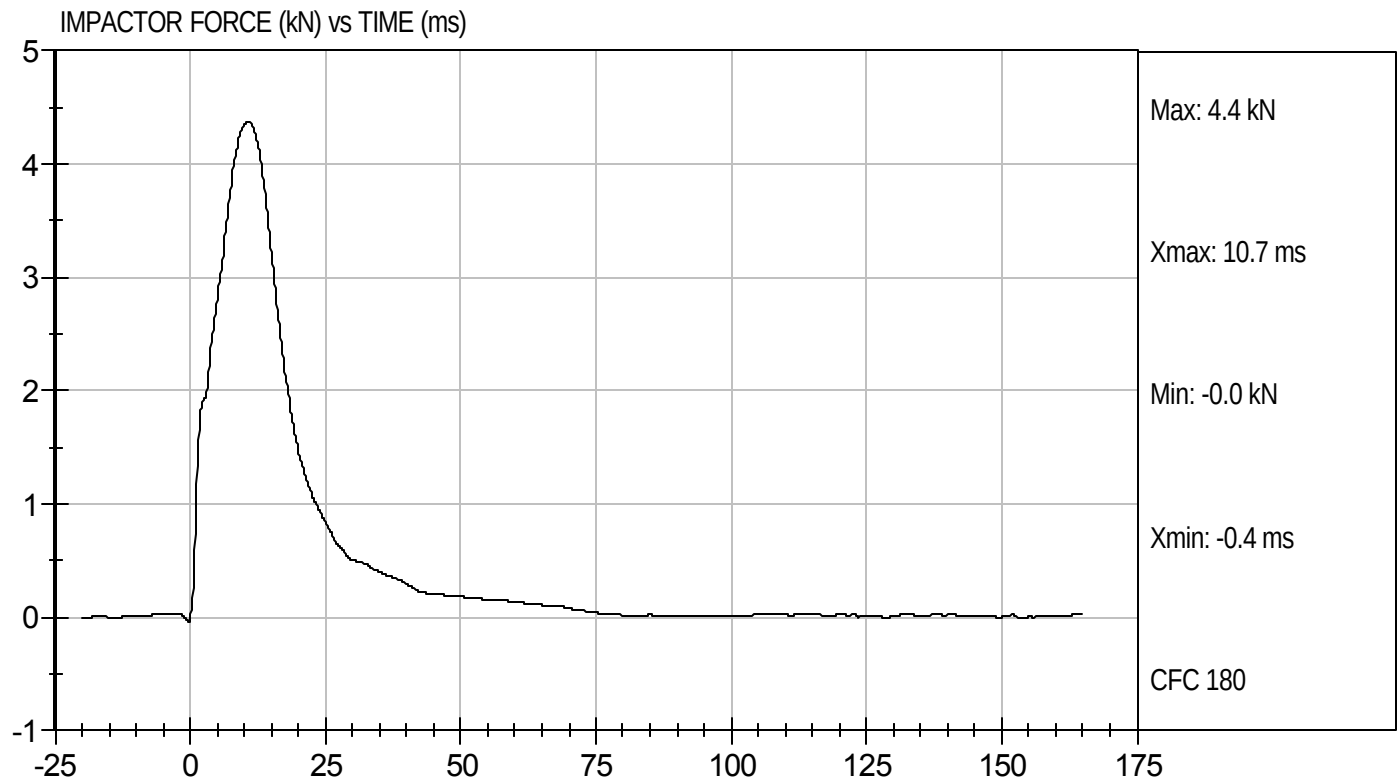
1/20/12
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D12247

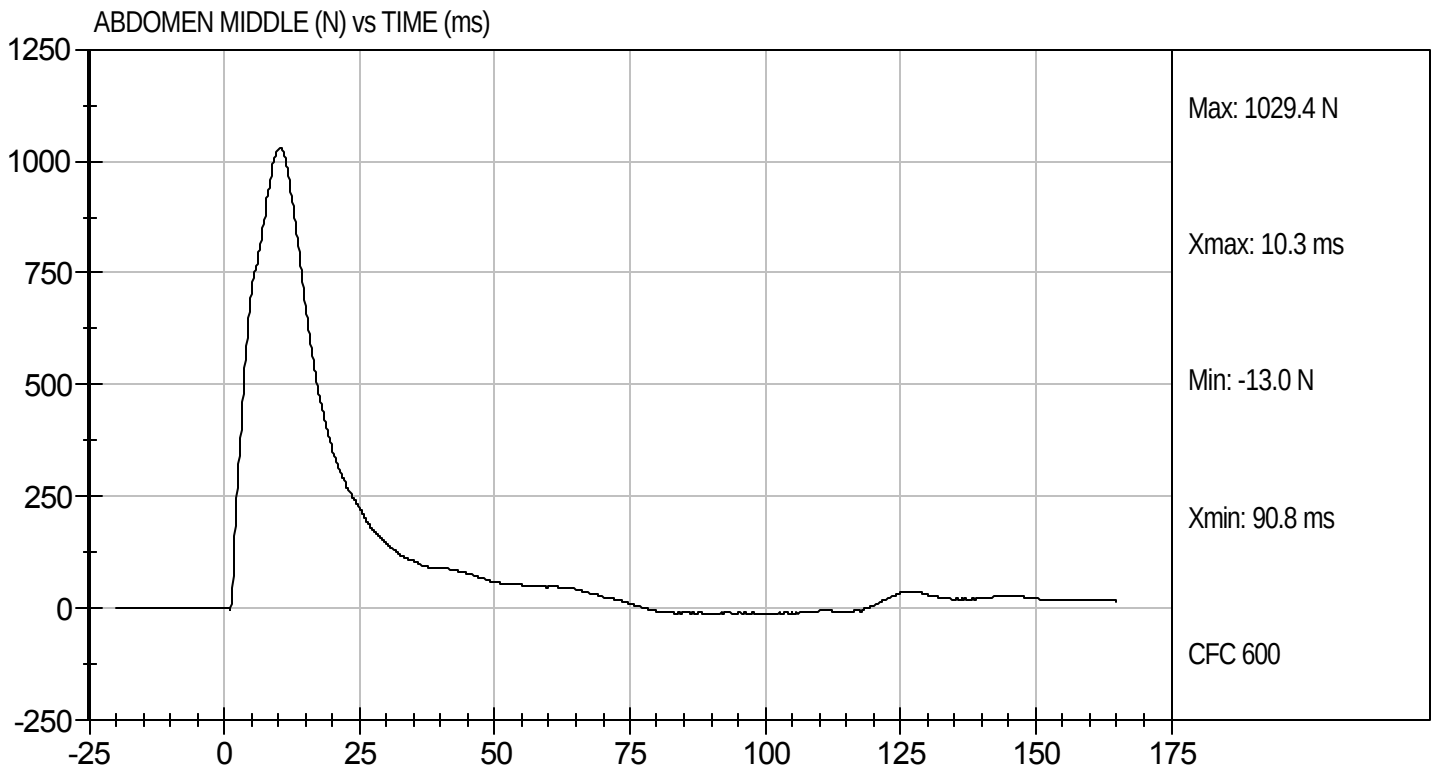
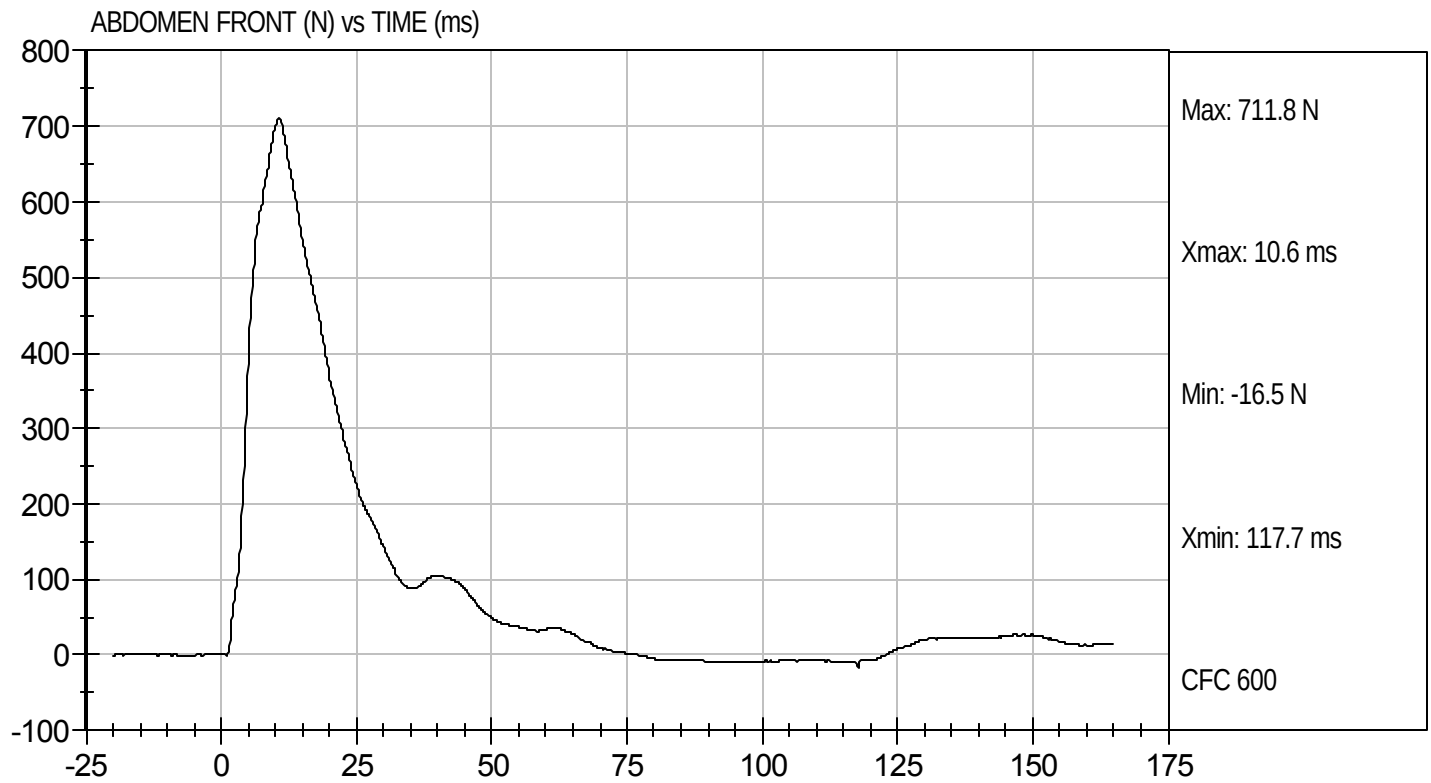
Test Date: 1/20/12
Velocity: 13.33 ft/s, 4.06 m/s





Test Desc: Abdomen Impact
Component ID: D12247

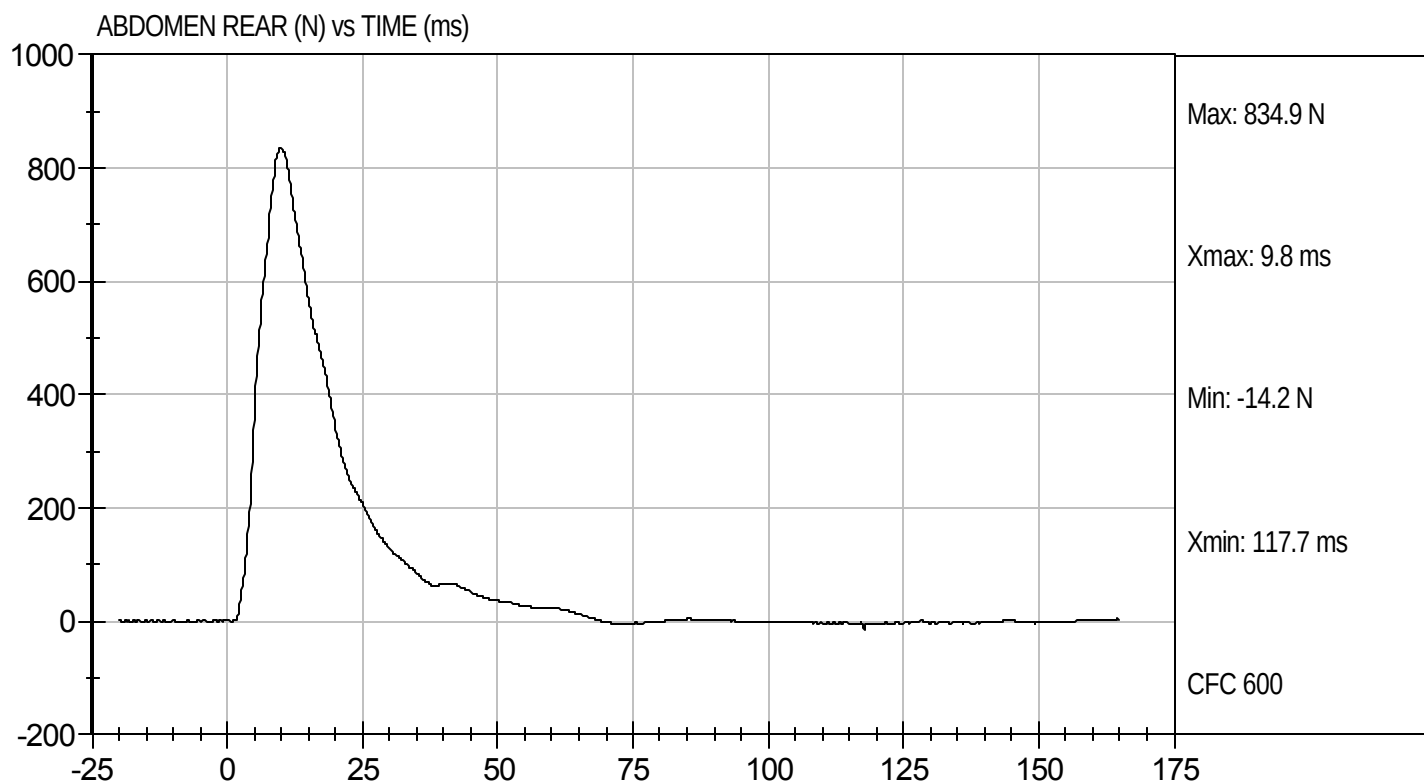
Test Date: 1/20/12
Velocity: 13.33 ft/s, 4.06 m/s





Test Desc: Abdomen Impact
Component ID: D12247

Test Date: 1/20/12
Velocity: 13.33 ft/s, 4.06 m/s

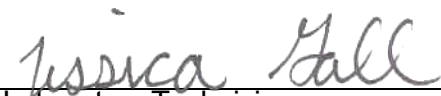


MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D.: D12248

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity		%	10 to 70	11	Pass
Pendulum Speed		m/s	5.95 to 6.15	6.12	Pass
Pendulum Deceleration	1 ms	m/s	-0.05 to 0.00	-0.01	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.42	Pass
	27 ms	m/s	-6.50 to -5.80	-5.81	Pass
	30 ms	m/s	>= -6.5	-5.68	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	50.9	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	43.7	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	43	Pass
Overall Results					Pass


 Laboratory Technician

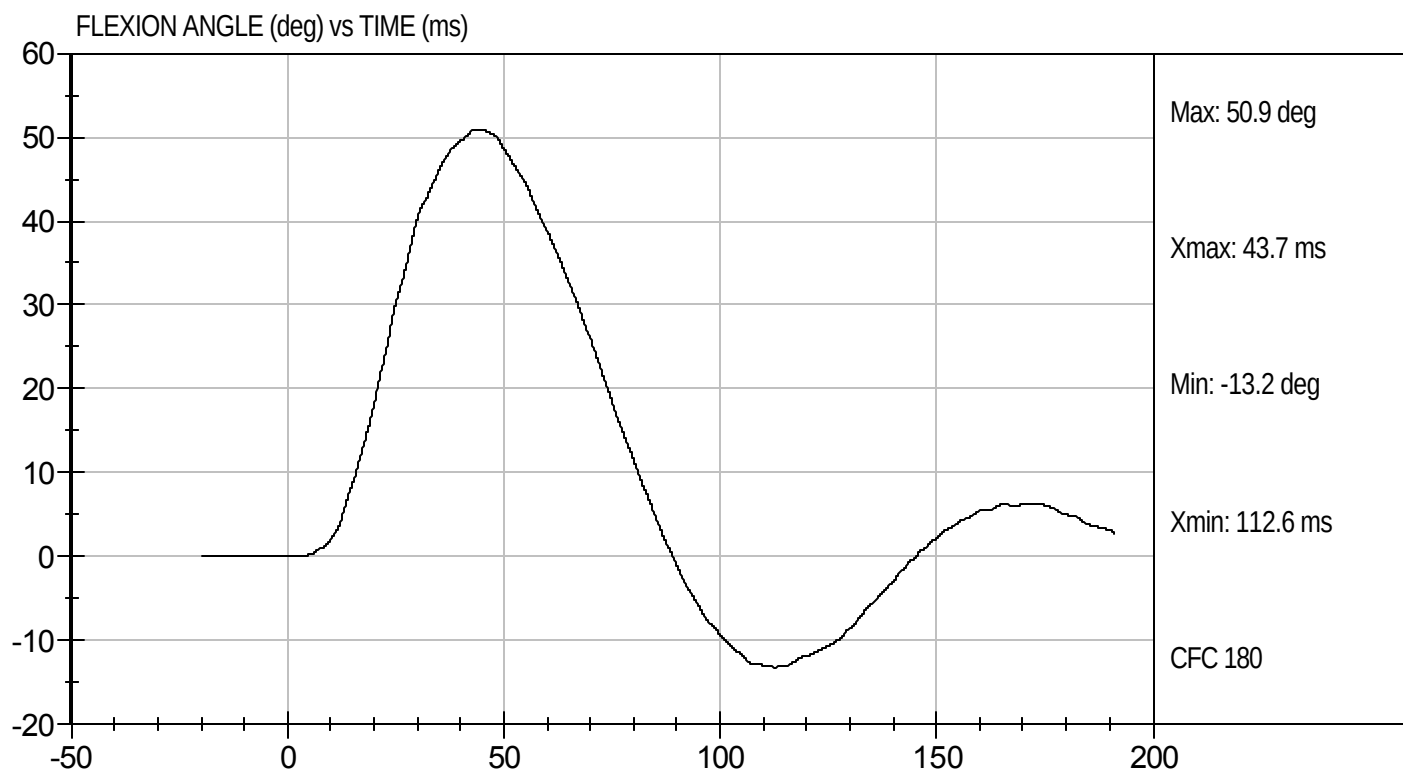
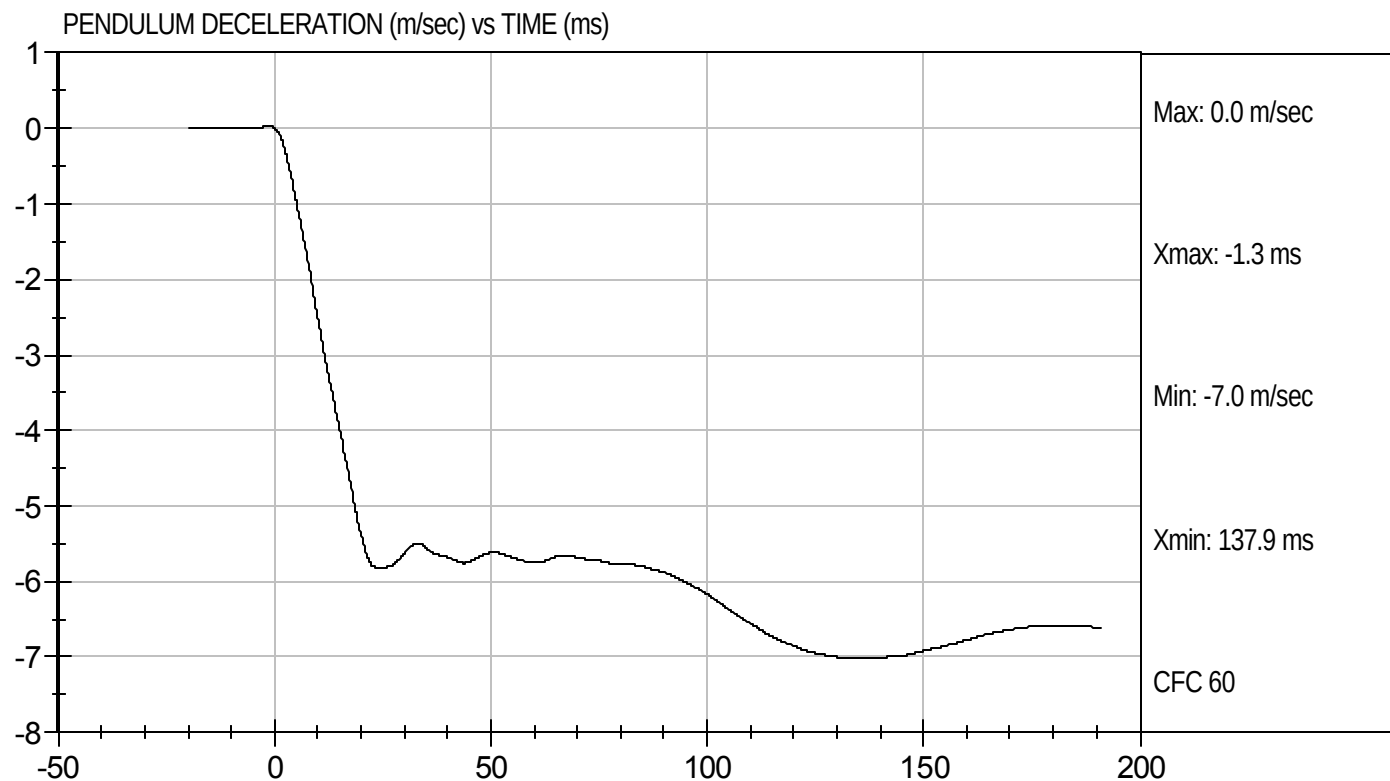
1/20/12
 Test Date


 Approved By



Test Desc: Lumbar Bending
Component ID: D12248

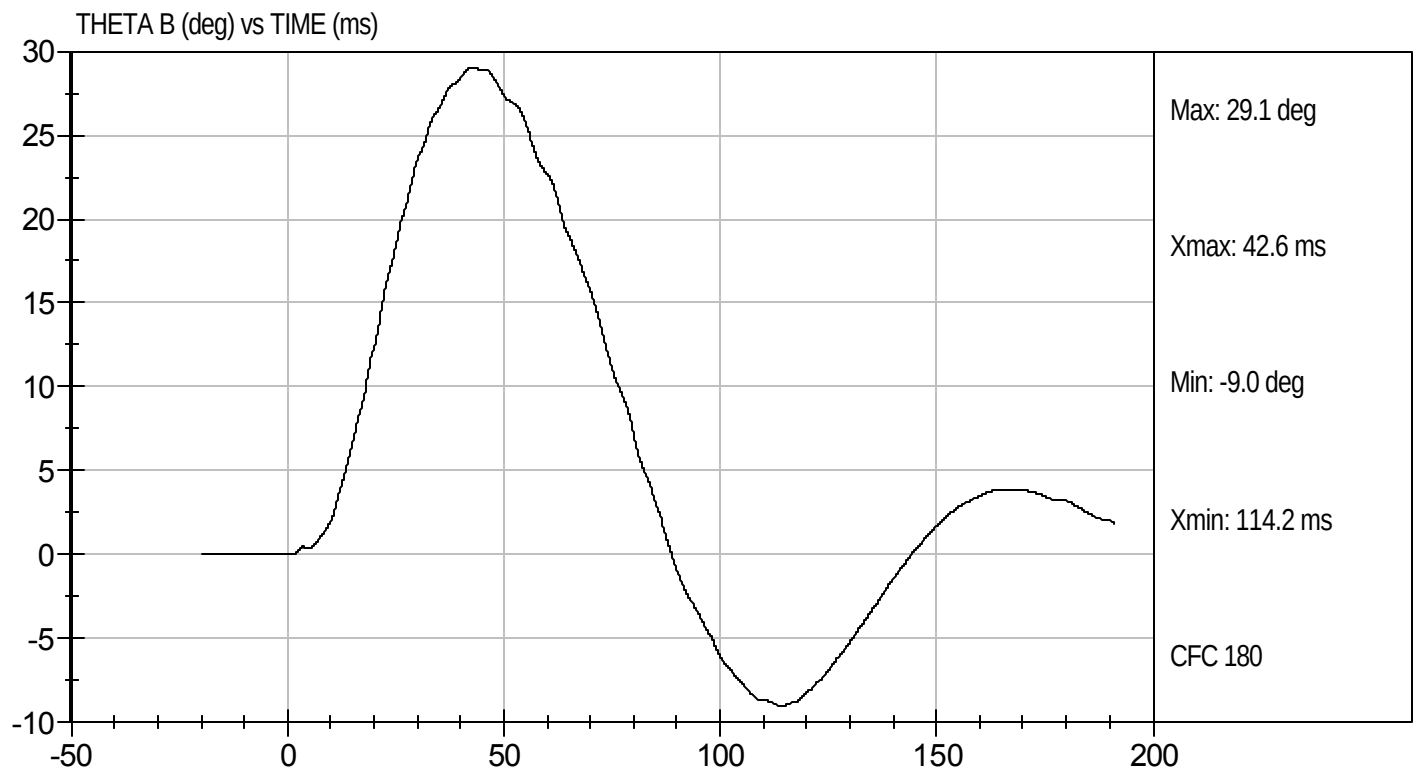
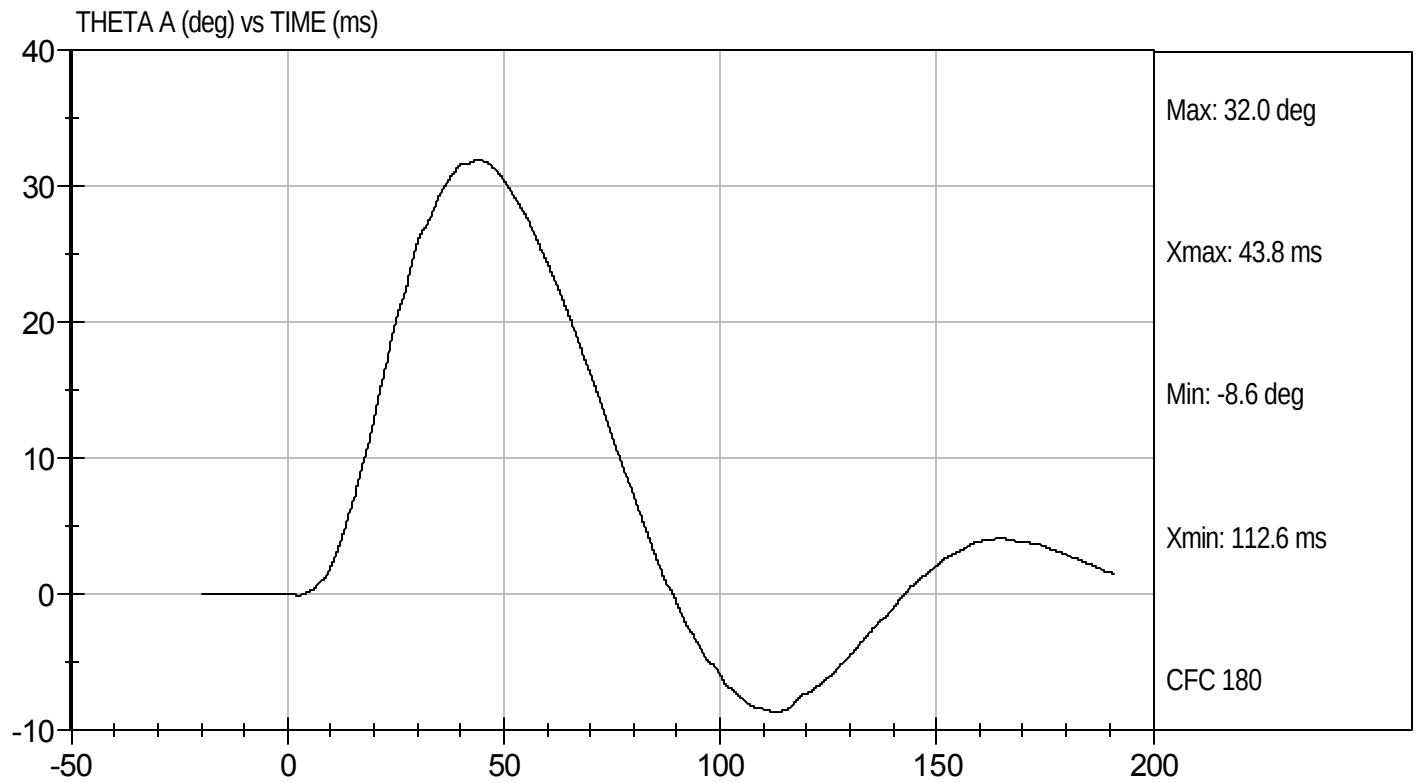
Test Date: 1/20/12
Velocity: 20.08 ft/s, 6.12 m/s





Test Desc: Lumbar Bending
Component ID: D12248

Test Date: 1/20/12
Velocity: 20.08 ft/s, 6.12 m/s



MGA RESEARCH CORPORATION

**PELVIS TEST
ES-2re DUMMY**

ATD Serial No: 032

Test I.D: D12249

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	22.1	Pass
Laboratory Relative Humidity	%	10 to 70	14	Pass
Probe Speed	m/s	4.20 to 4.40	4.30	Pass
Maximum Impactor Force	kN	4.70 to 5.40	4.93	Pass
Time of Maximum Impactor Force	ms	11.80 to 16.10	12.50	Pass
Maximum Pubic Force	kN	1.23 to 1.59	1.28	Pass
Time of Maximum Pubic Force	ms	12.20 to 17.00	14.60	Pass
Overall Test Results				Pass


Laboratory Technician

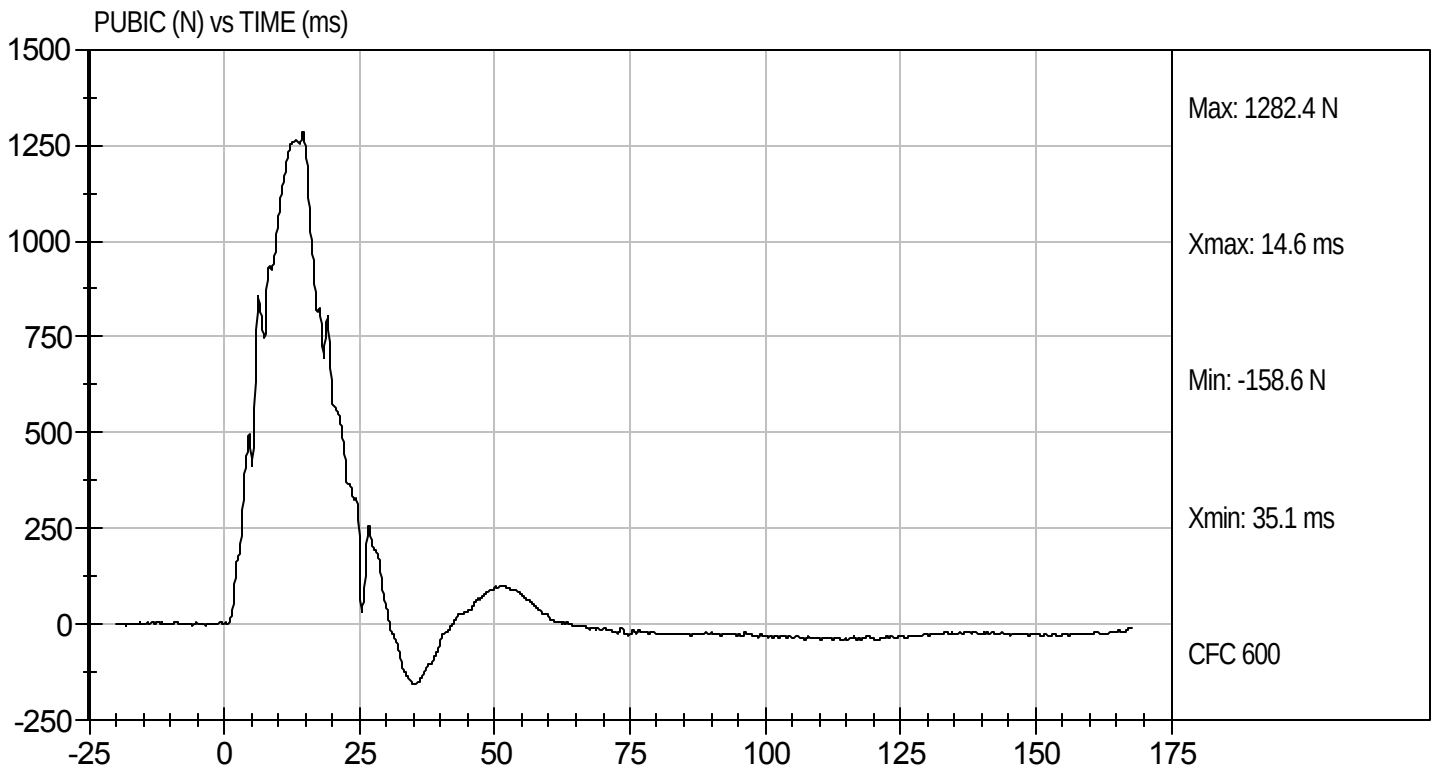
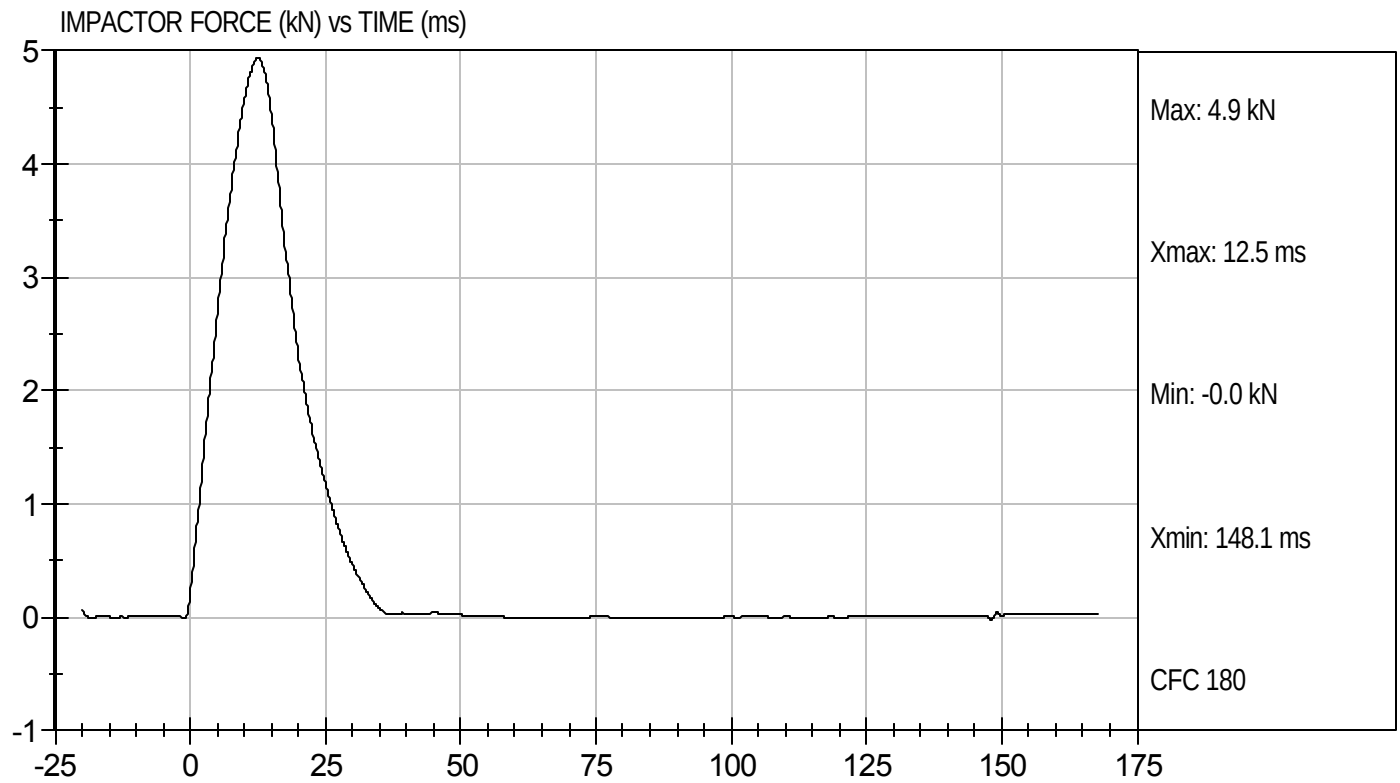
1/19/12
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D12249

Test Date: 1/19/12
Velocity: 14.12 ft/s, 4.30 m/s



MGA RESEARCH CORPORATION

HEAD DROP TEST

ES-2re DUMMY

ATD Serial No: 032

Test ID: D12451

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	17	Pass
Peak Resultant Acceleration	G's	125 to 155	147	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-8.5	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

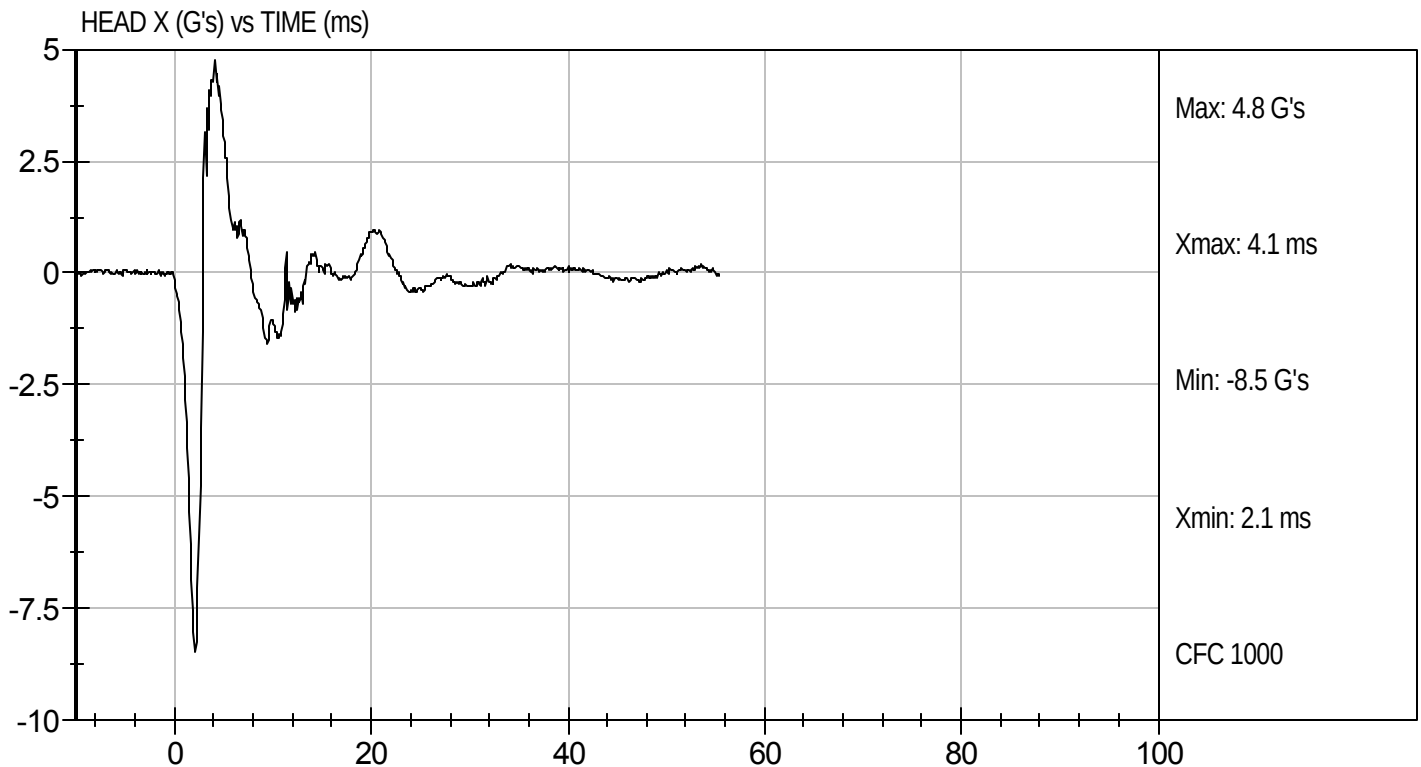
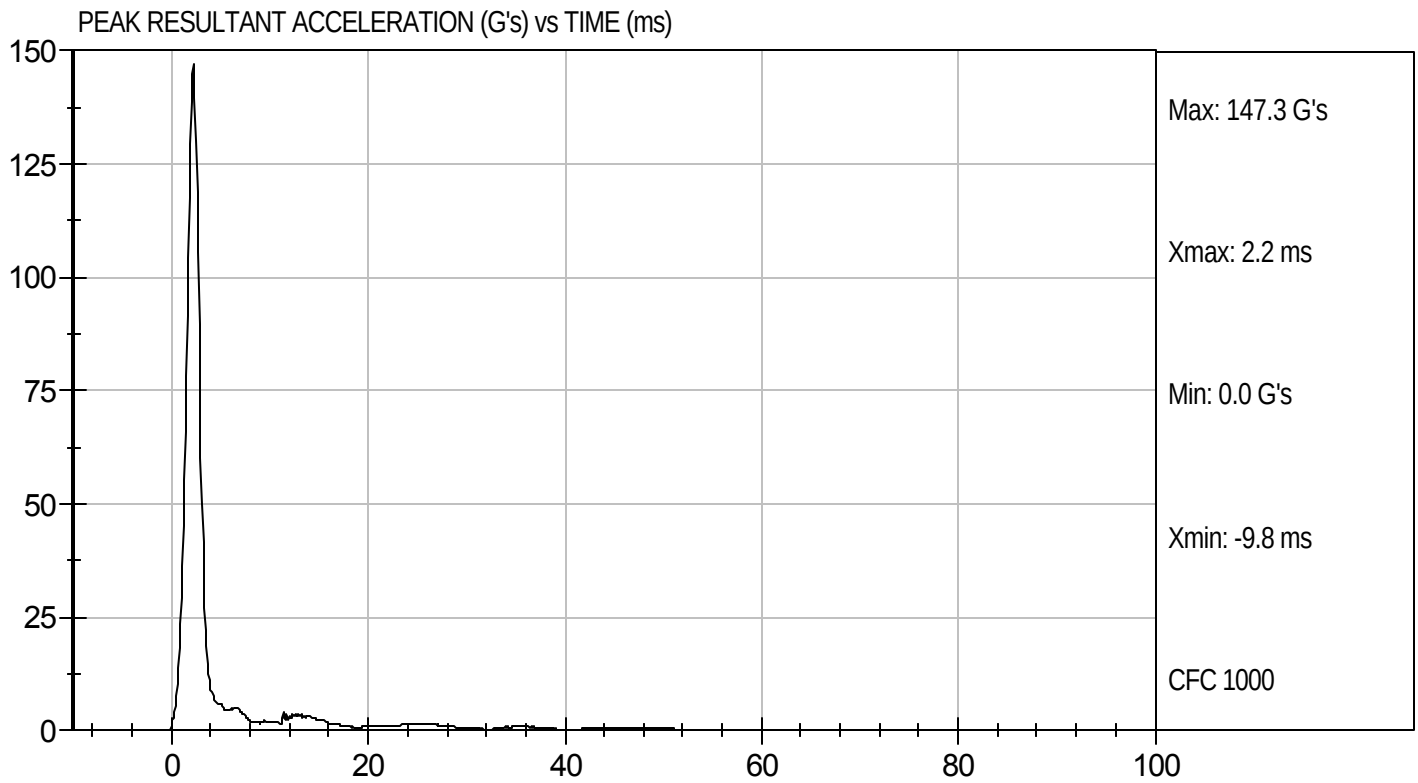
2/13/12
Test Date


Approved By



Test Desc: Head Drop
Component ID: D12451

Test Date: 2/13/12
Velocity: 0 ft/s, 0 m/s



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12452

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	18.0 to 22.0	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	16	Pass
Pendulum Speed		m/s	3.3 to 3.5	3.5	Pass
Pendulum Deceleration	1 ms	m/s	0.00 to -0.05	-0.01	Pass
	3 ms	m/s	-0.25 to -0.375	-0.34	Pass
	14 ms	m/s	-3.20 to -3.70	-3.35	Pass
Maximum Flexion Angle		deg	49.0 to 59.0	51.5	Pass
Time of Maximum Flexion Angle		ms	54.0 to 66.0	60.0	Pass
Head Rotation Decay Time to 0 degree		ms	53.0 to 88.0	58.4	Pass
Overall Test Results					Pass


 Laboratory Technician

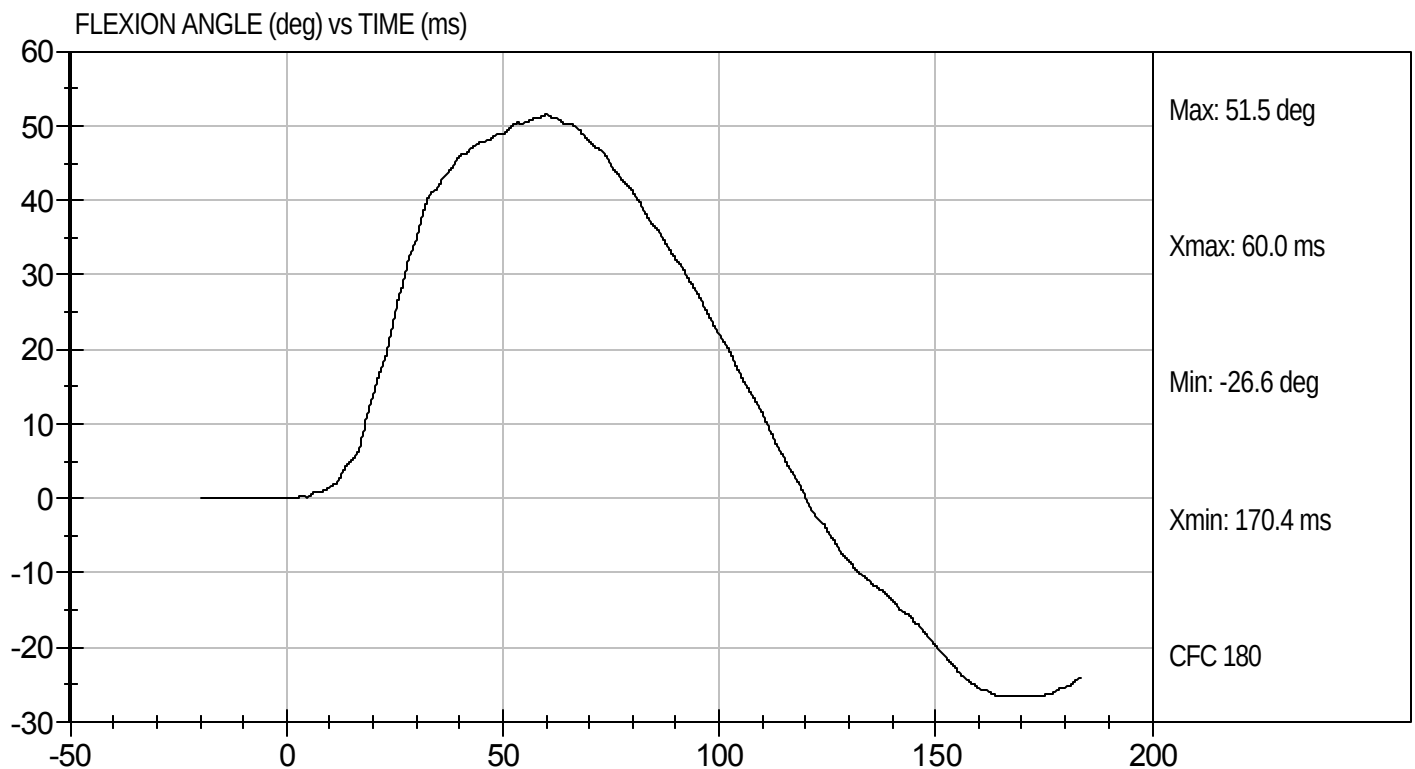
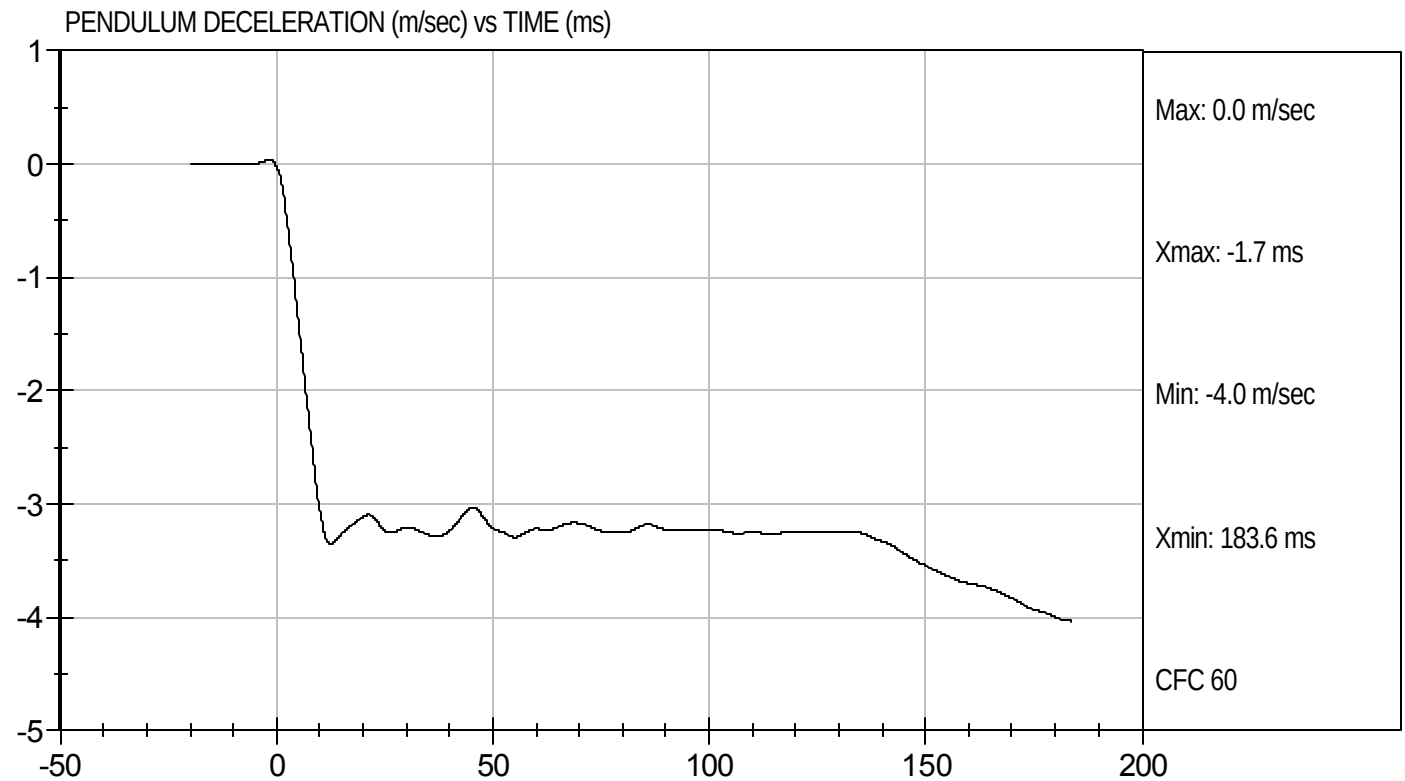
2/13/12
 Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D12452

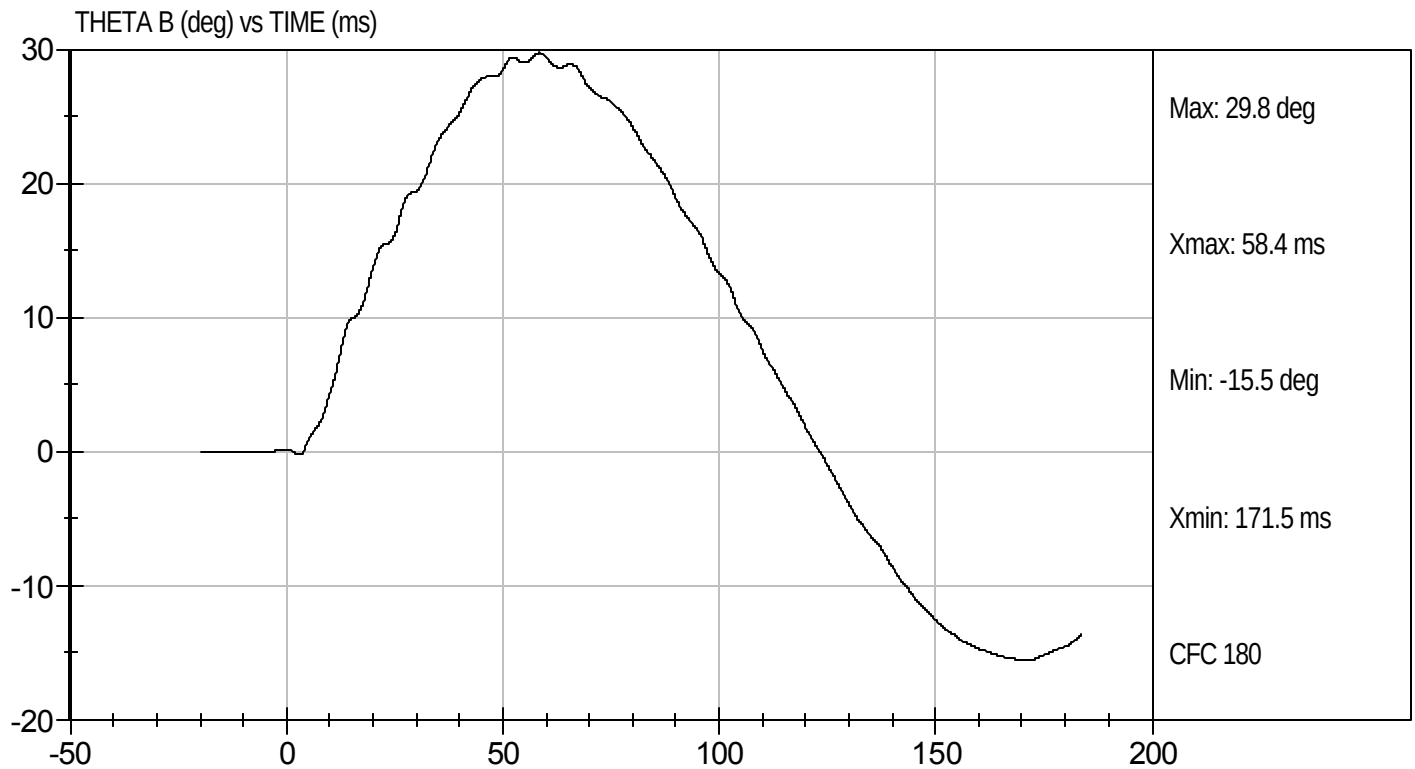
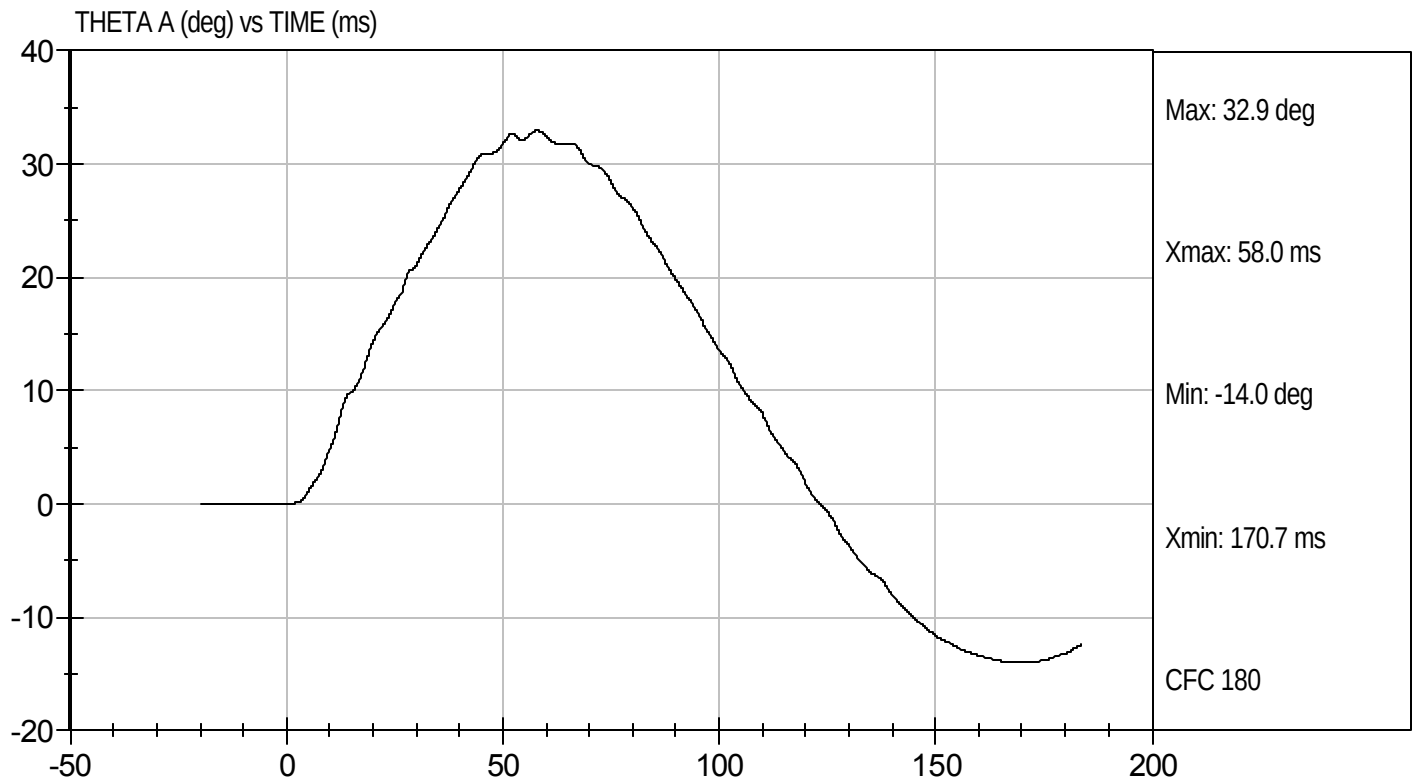
Test Date: 2/13/12
Velocity: 11.34 ft/s, 3.5 m/s





Test Desc: Neck Bending
Component ID: D12452

Test Date: 2/13/12
Velocity: 11.34 ft/s, 3.5 m/s



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12453

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	17	Pass
Pendulum Speed	m/s	4.2 to 4.4	4.3	Pass
Peak Shoulder Acceleration	G's	7.5 to 10.5	9.9	Pass
Time of Peak Shoulder Acceleration	ms	NA	16.9	Pass
Overall Test Results			Pass	



Laboratory Technician

2/13/12

Test Date

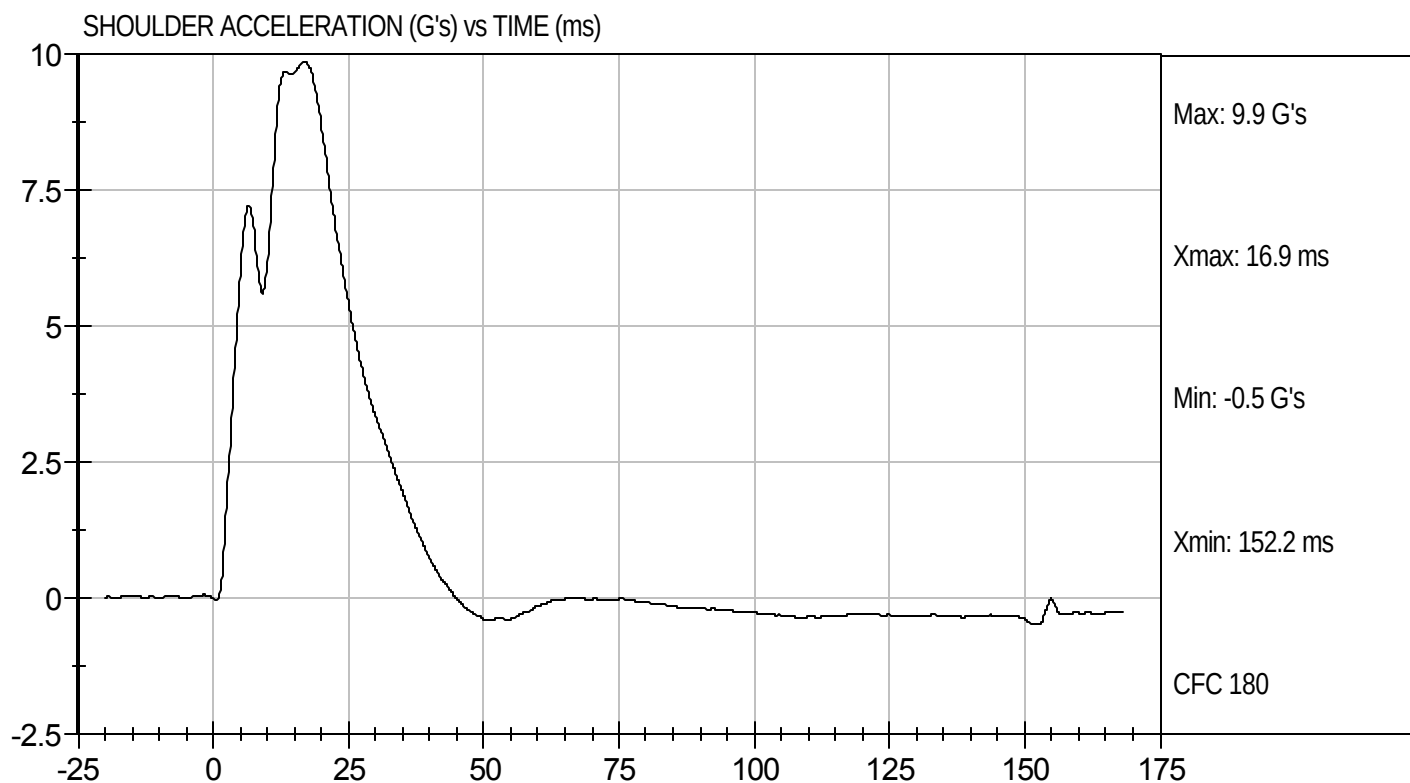


Approved By



Test Desc: Shoulder Impact
Component ID: D12453

Test Date: 2/13/12
Velocity: 14.00 ft/s, 4.3 m/s



MGA RESEARCH CORPORATION

UPPER RIB TEST
EUROSID 2 DUMMY

ATD Serial No: 032

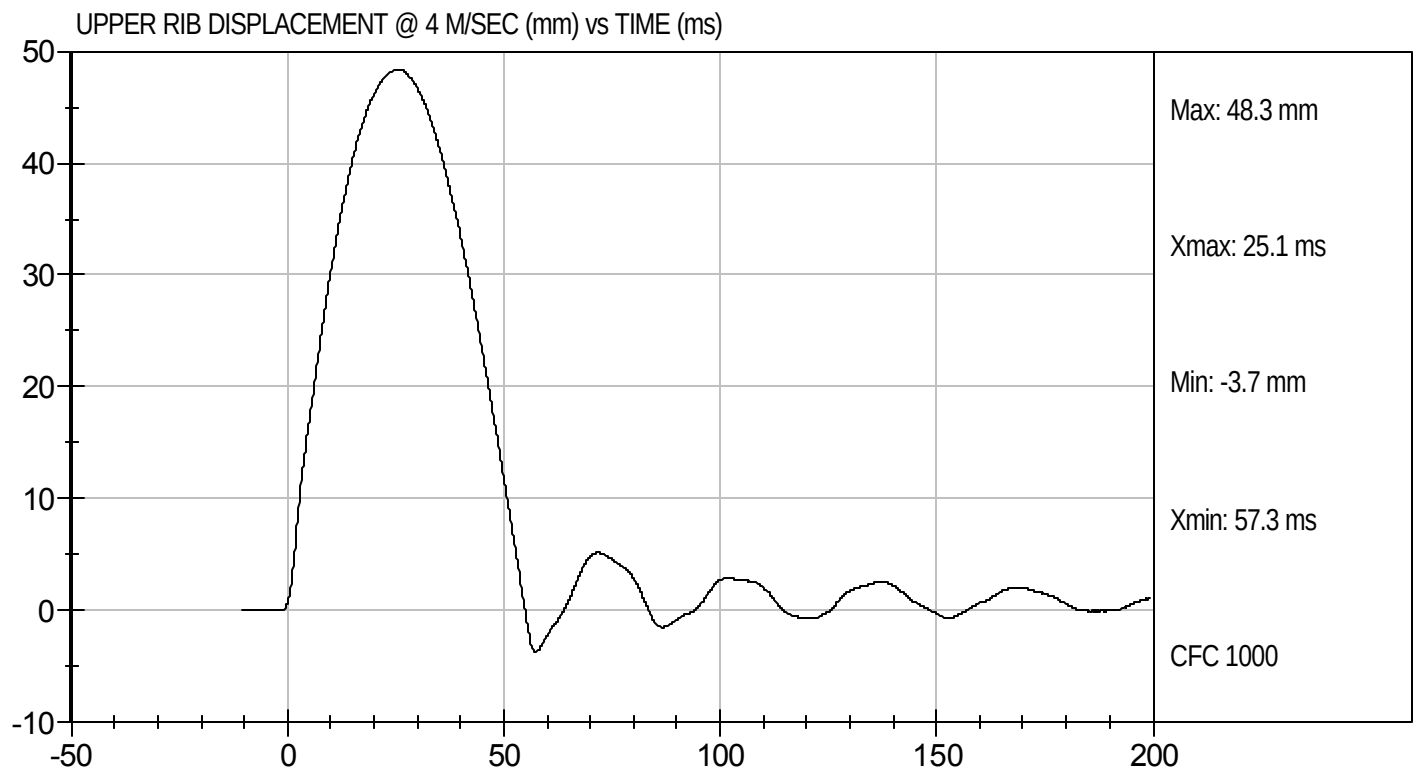
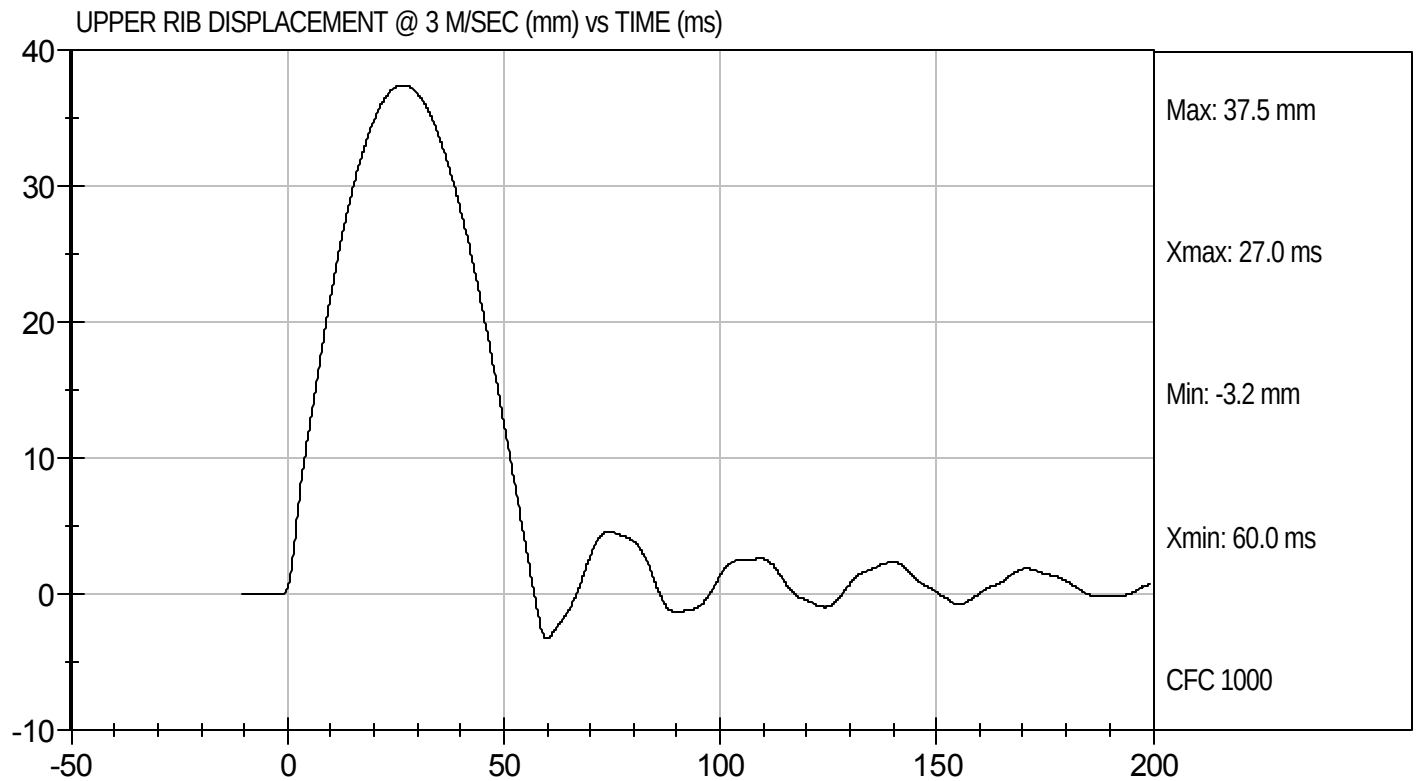
Test I.D: D12454

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	16	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.5	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.3	Pass
Overall Test Results			Pass	


Laboratory Technician

2/13/12
Test Date


Approved By



MGA RESEARCH CORPORATION

MID RIB TEST
EUROSID 2 DUMMY

ATD Serial No: 032

Test I.D: D12455

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	16	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	37.2	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	47.3	Pass
Overall Test Results			Pass	


Laboratory Technician

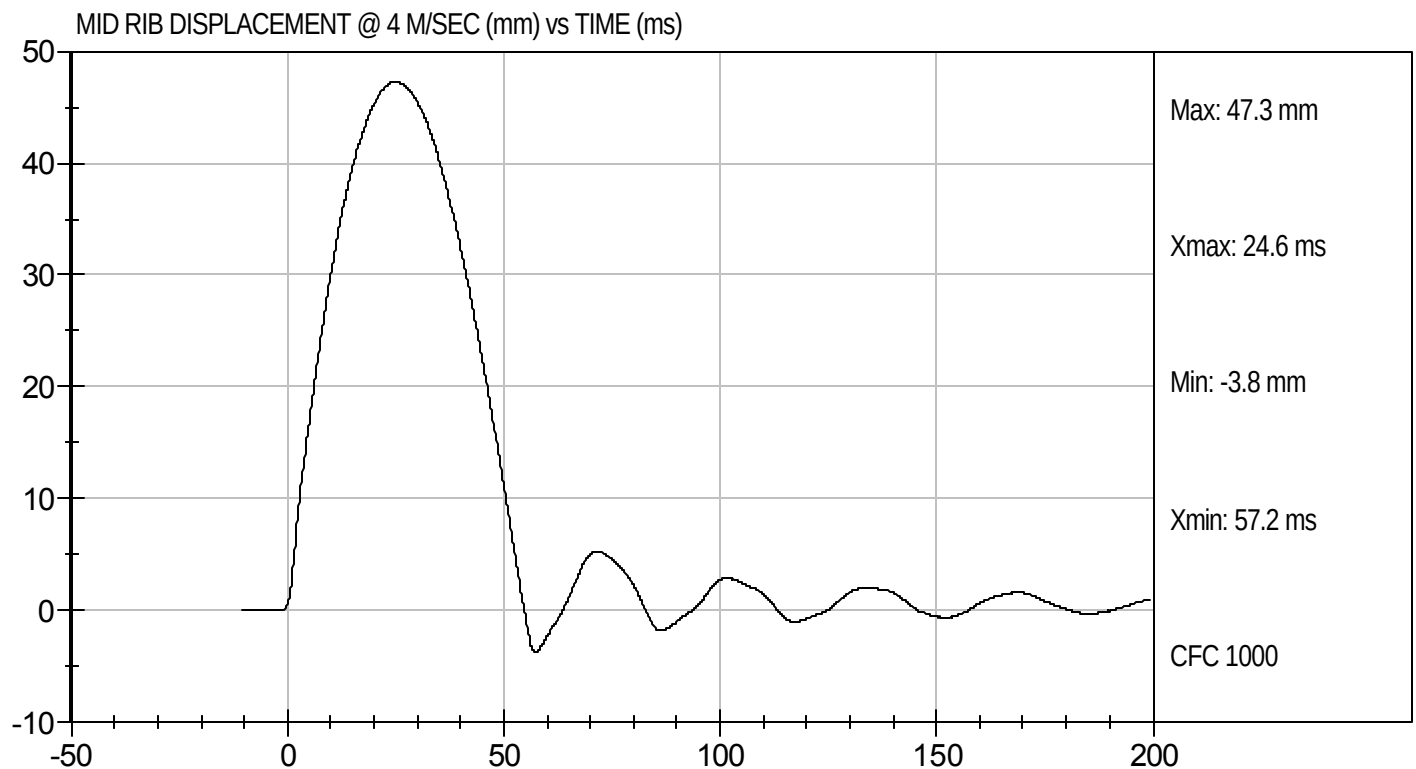
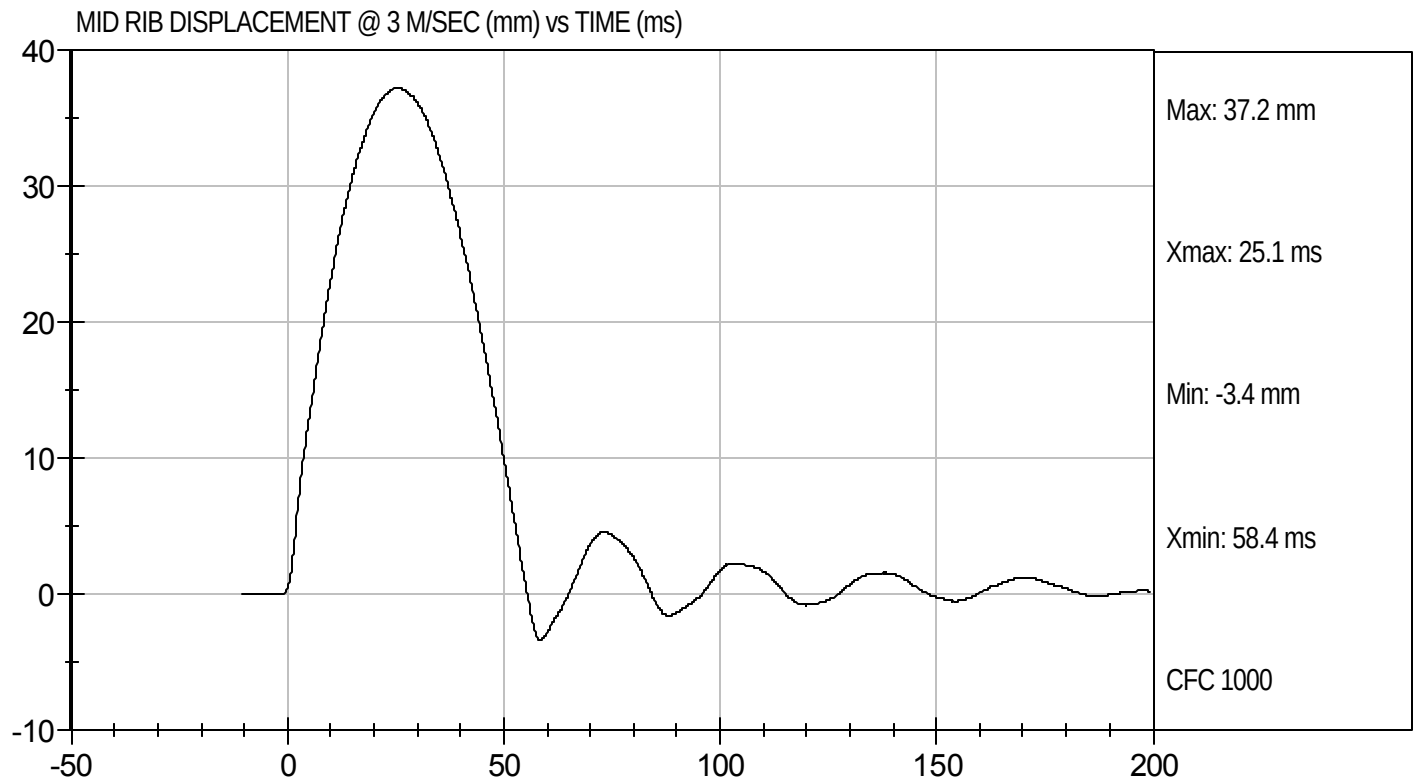
2/13/12
Test Date


Approved By



Test Desc: Rib Impact - Mid
Component ID: D12455

Test Date: 2/13/12



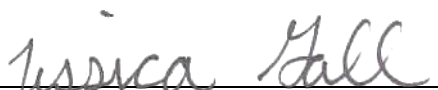
MGA RESEARCH CORPORATION

**LOWER RIB TEST
EUROSID 2 DUMMY**

ATD Serial No: 032

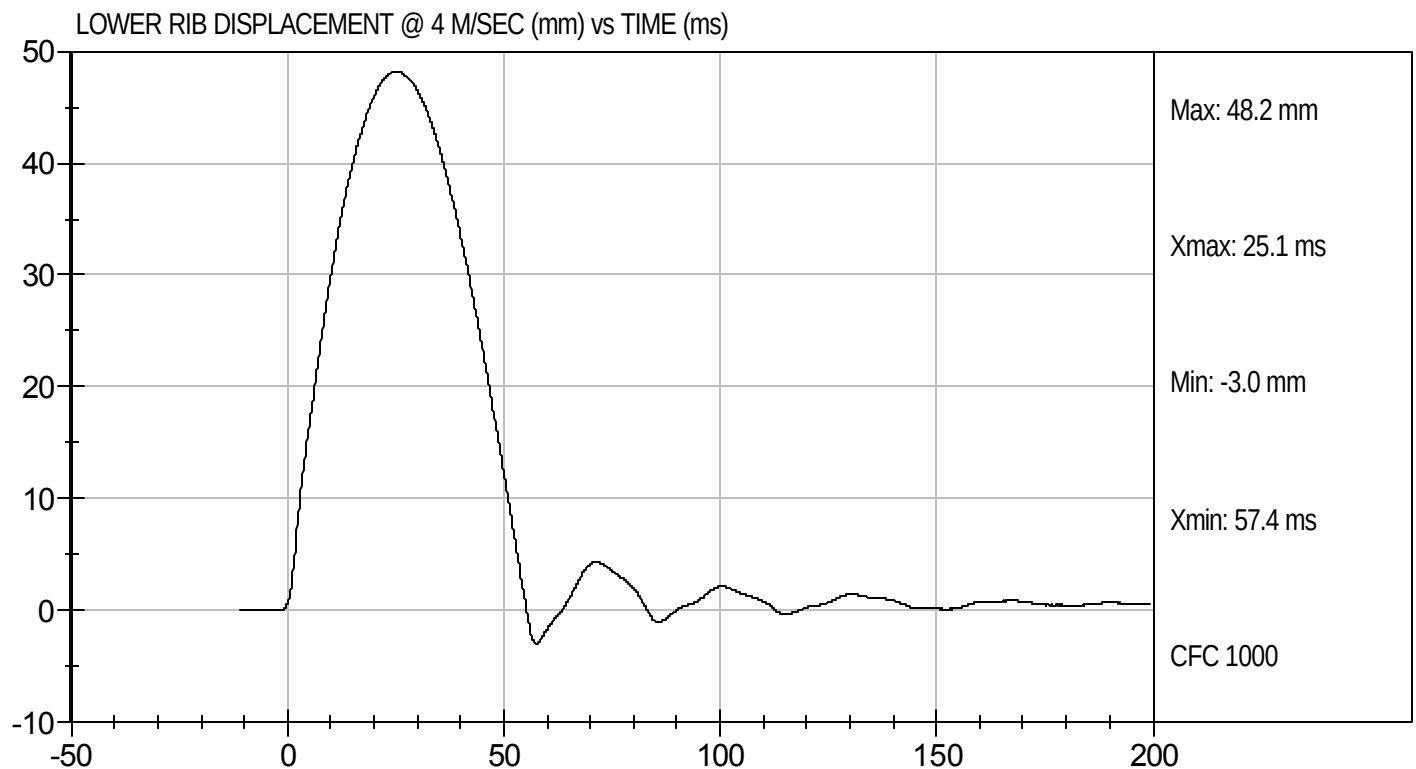
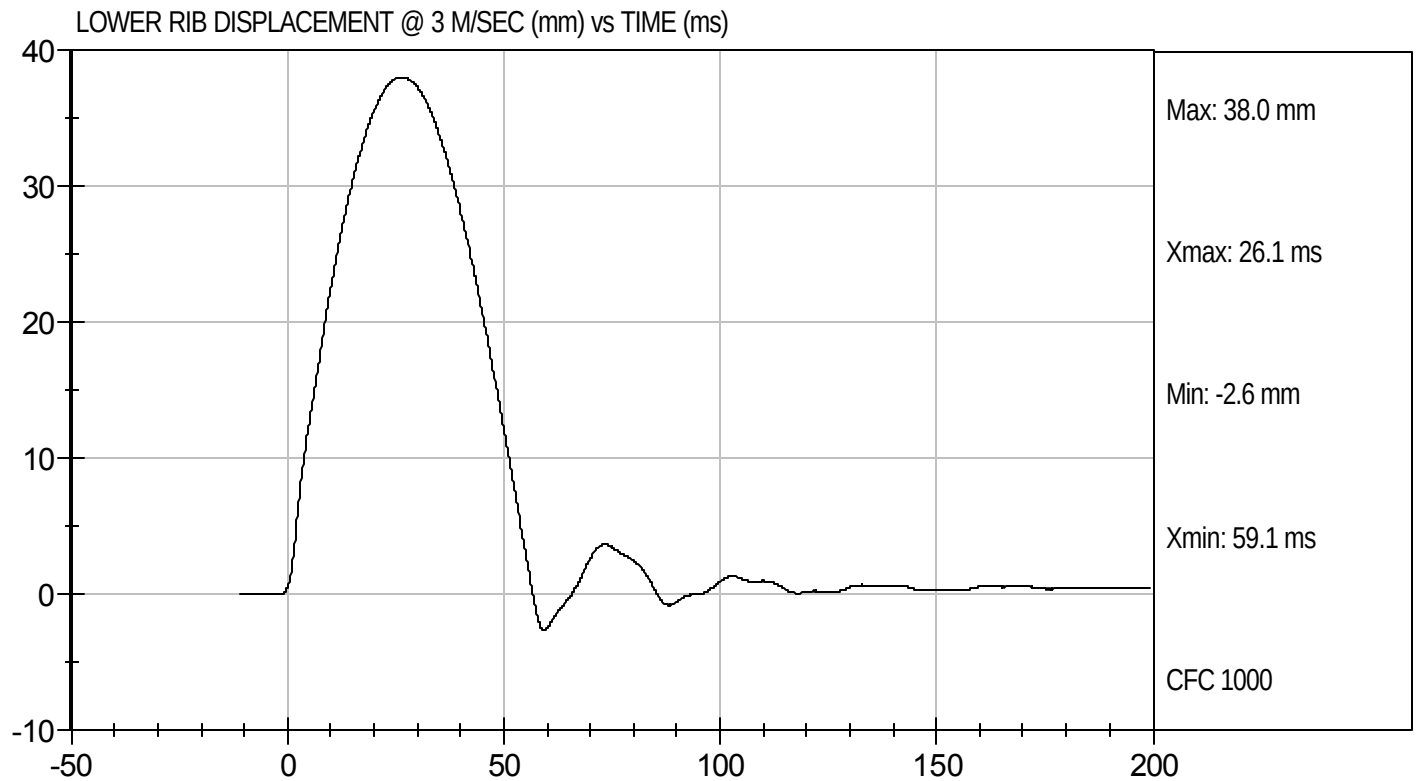
Test I.D: D12456

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	16	Pass
Displacement at 3 m/s	mm	36.0 to 40.0	38.0	Pass
Displacement at 4 m/s	mm	46.0 to 51.0	48.2	Pass
			Overall Test Results	Pass


Laboratory Technician

2/13/12
Test Date


Approved By



MGA RESEARCH CORPORATION
FULL BODY THORAX IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12450

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	17	Pass
Probe Speed	m/s	5.40 to 5.60	5.58	Pass
Maximum Impactor Force (after 6 ms)	kN	5.10 to 6.20	5.11	Pass
Upper Rib Displacement	mm	34.0 to 41.0	36.8	Pass
Middle Rib Displacement	mm	37.0 to 45.0	39.5	Pass
Lower Rib Displacement	mm	37.0 to 44.0	38.7	Pass
			Overall Test Results	Pass


Laboratory Technician

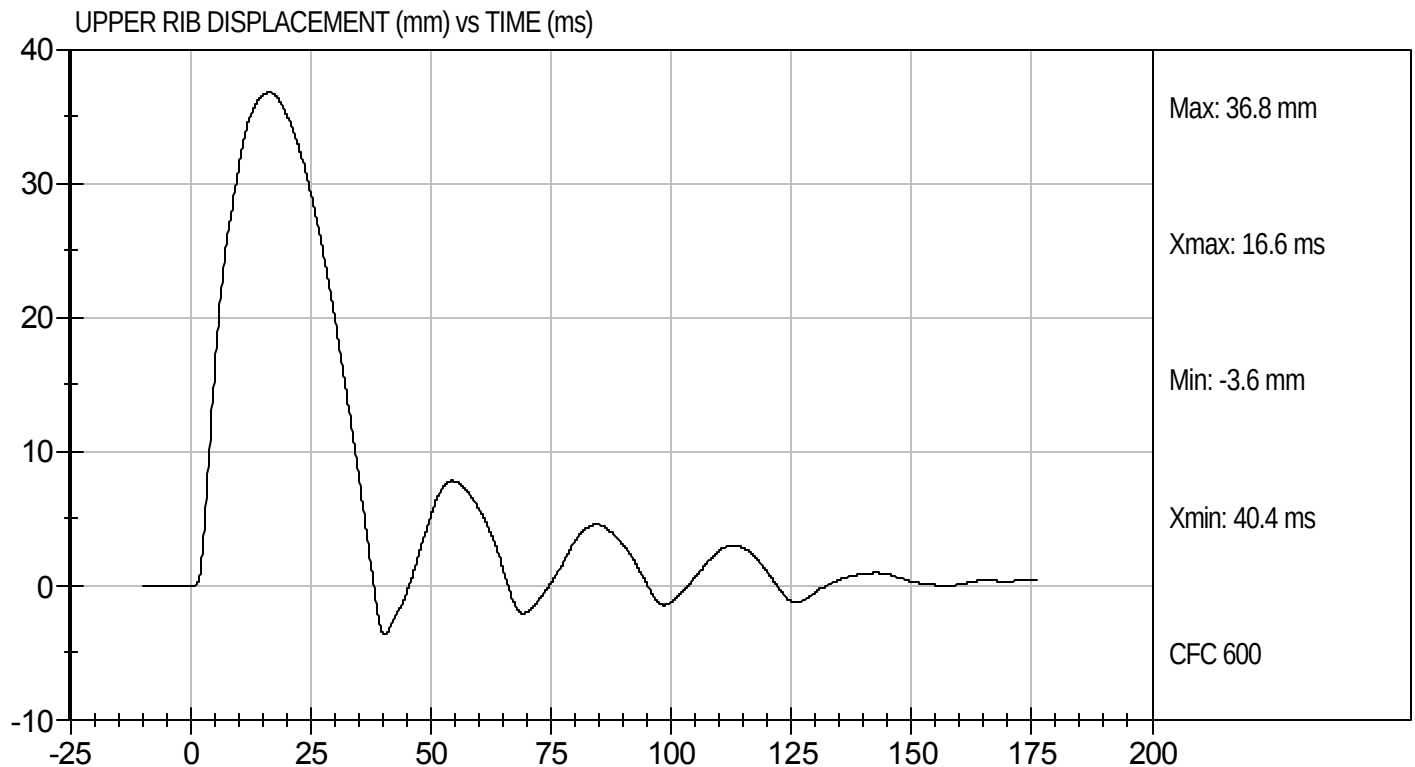
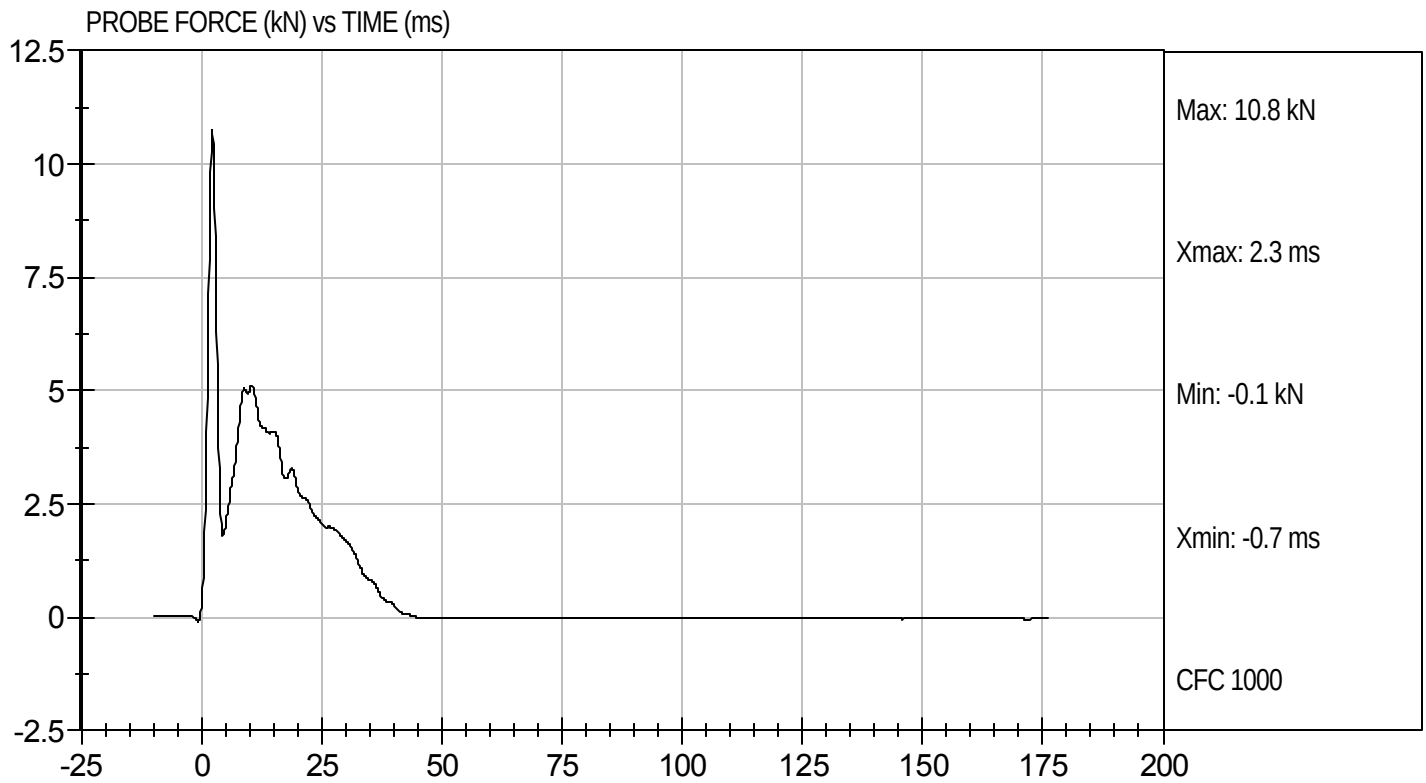
2/14/12
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D12450

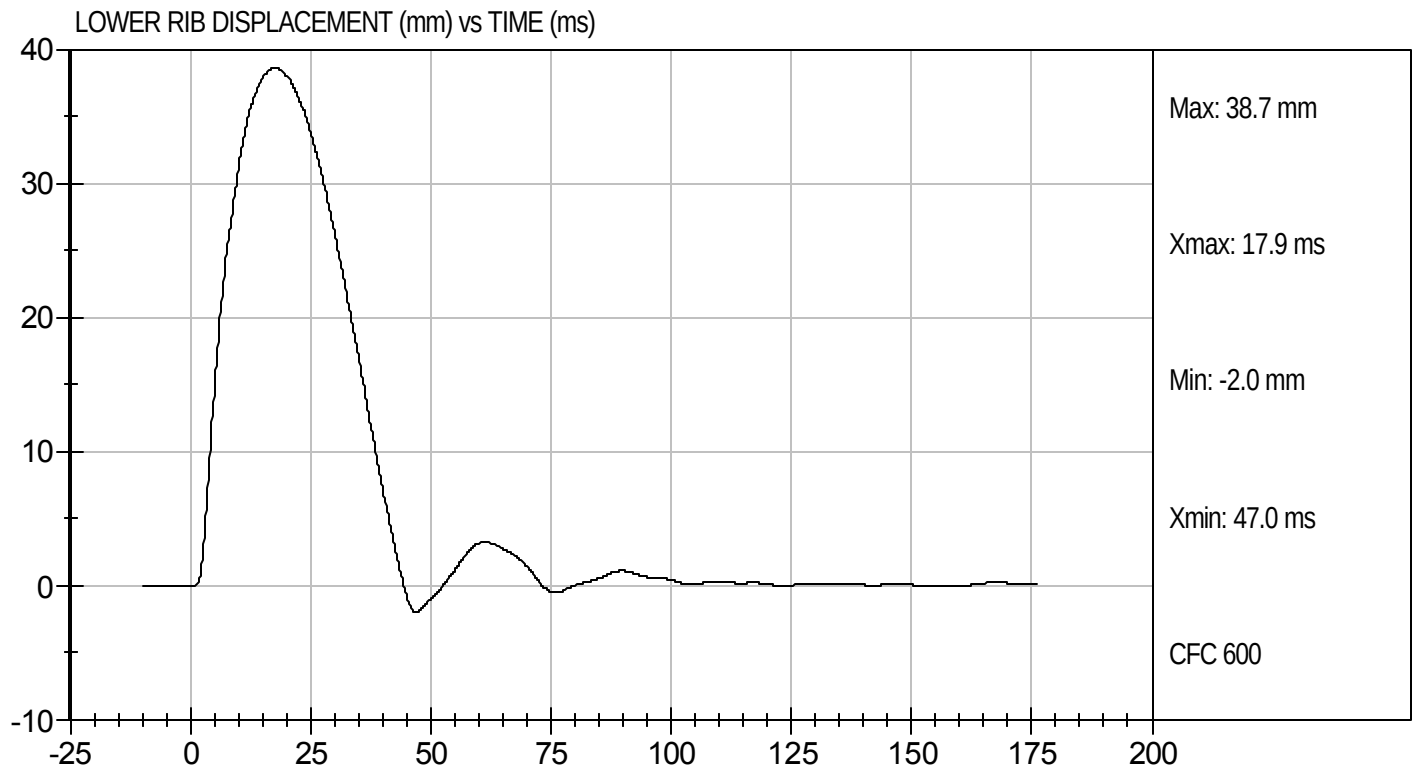
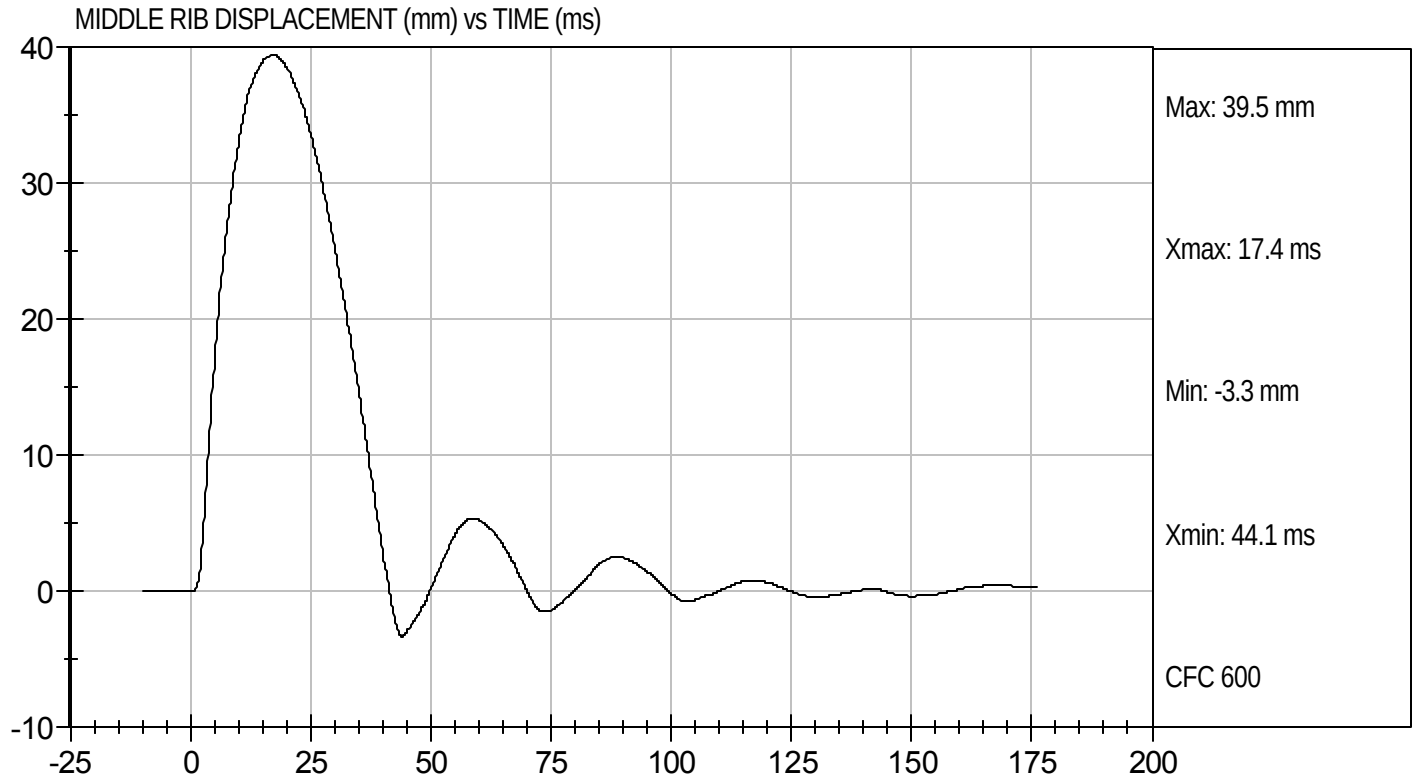
Test Date: 2/14/12
Velocity: 18.31 ft/s, 5.58 m/s





Test Desc: Thorax Impact
Component ID: D12450

Test Date: 2/14/12
Velocity: 18.31 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION

ABDOMEN TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D12457

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	17	Pass
Probe Speed	m/s	3.90 to 4.10	3.93	Pass
Maximum Impact Force	kN	4.00 to 4.80	4.13	Pass
Time of Maximum Impact Force	ms	10.60 to 13.00	11.10	Pass
Maximum Total Abdomen Force	kN	2.20 to 2.70	2.49	Pass
Time of Maximum Abdomen Force	ms	10.00 to 12.30	10.20	Pass
Overall Test Results				Pass


Laboratory Technician

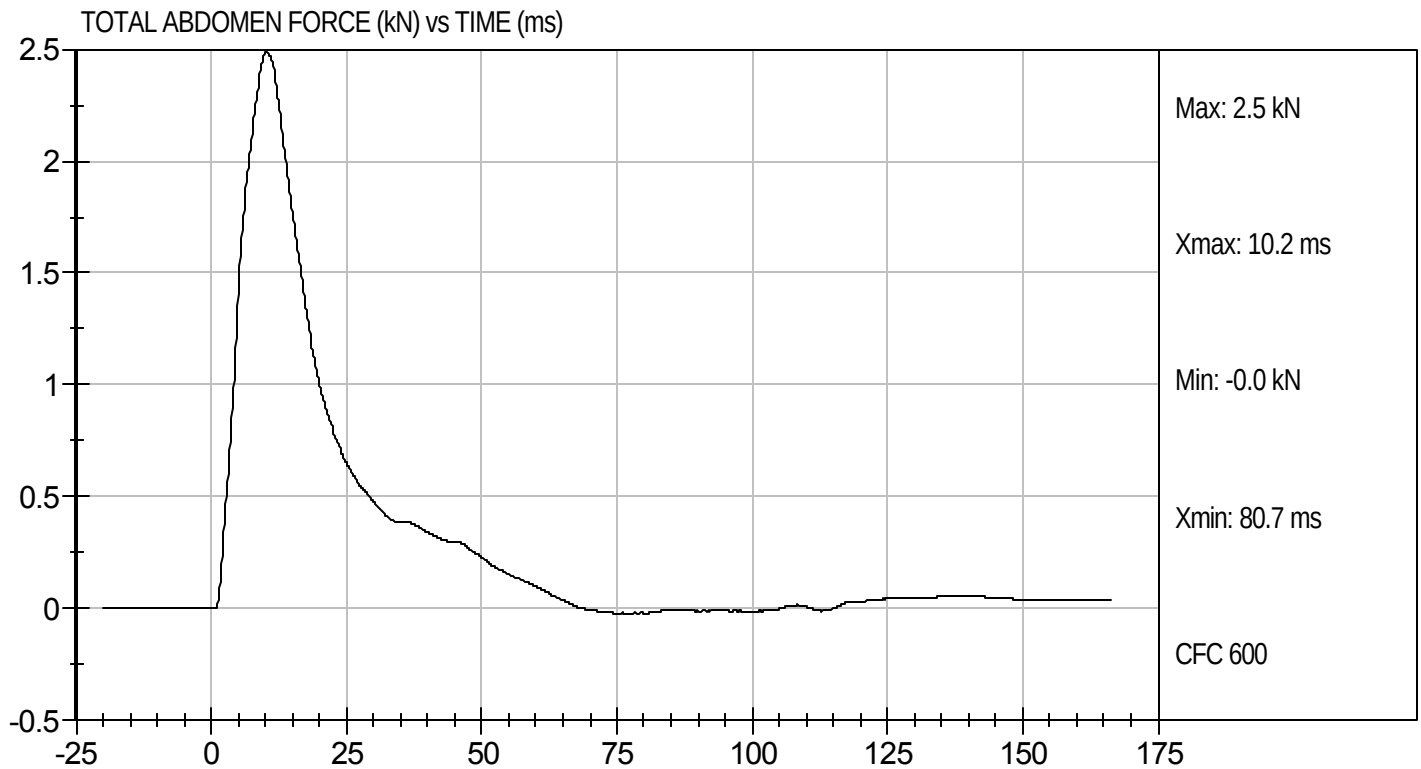
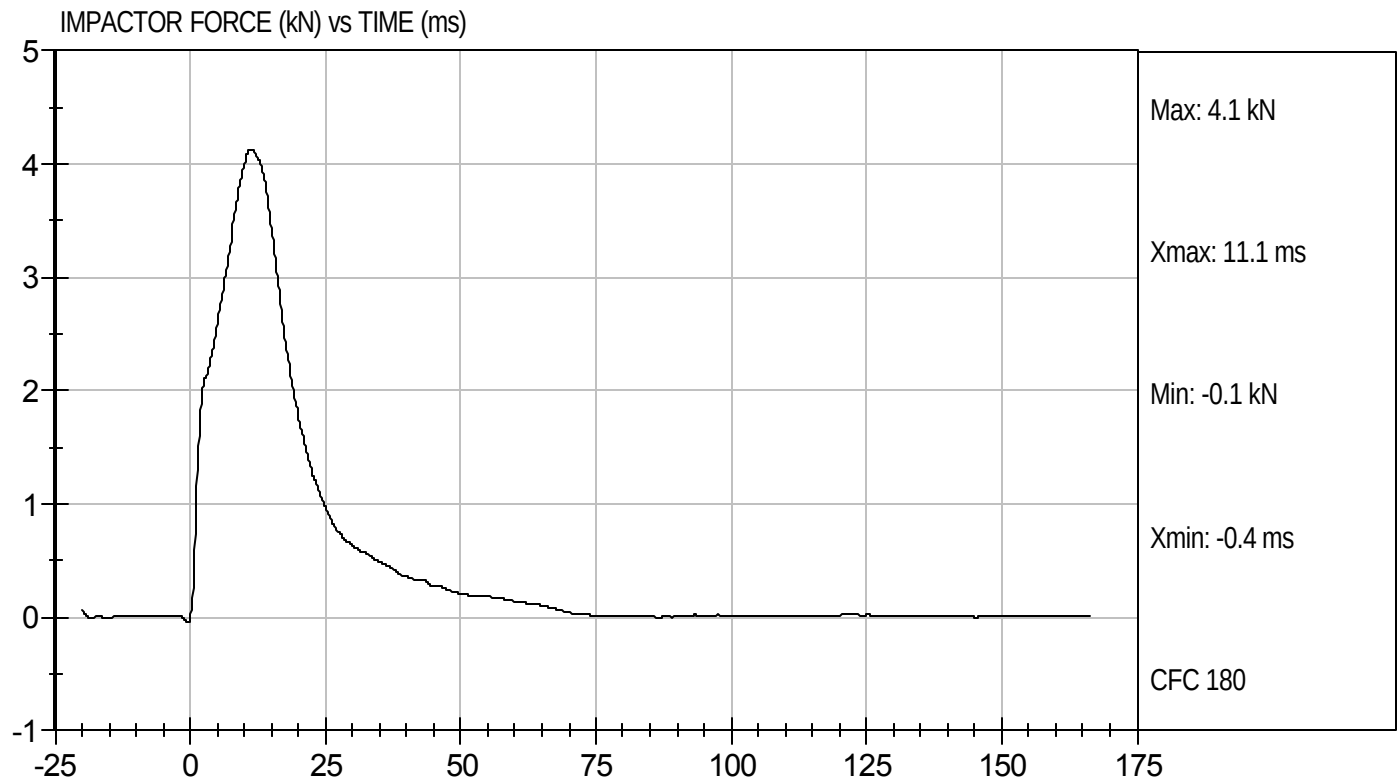
2/13/12
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D12457

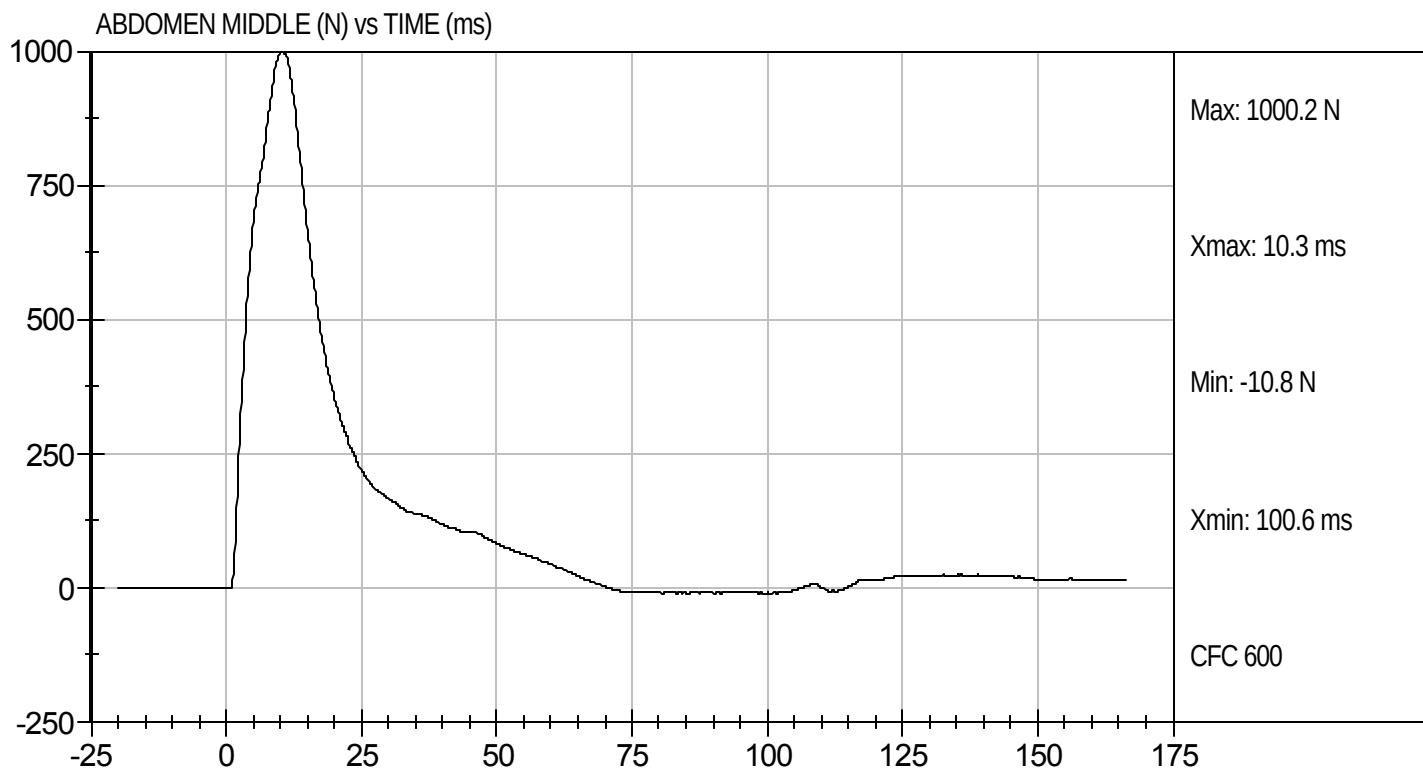
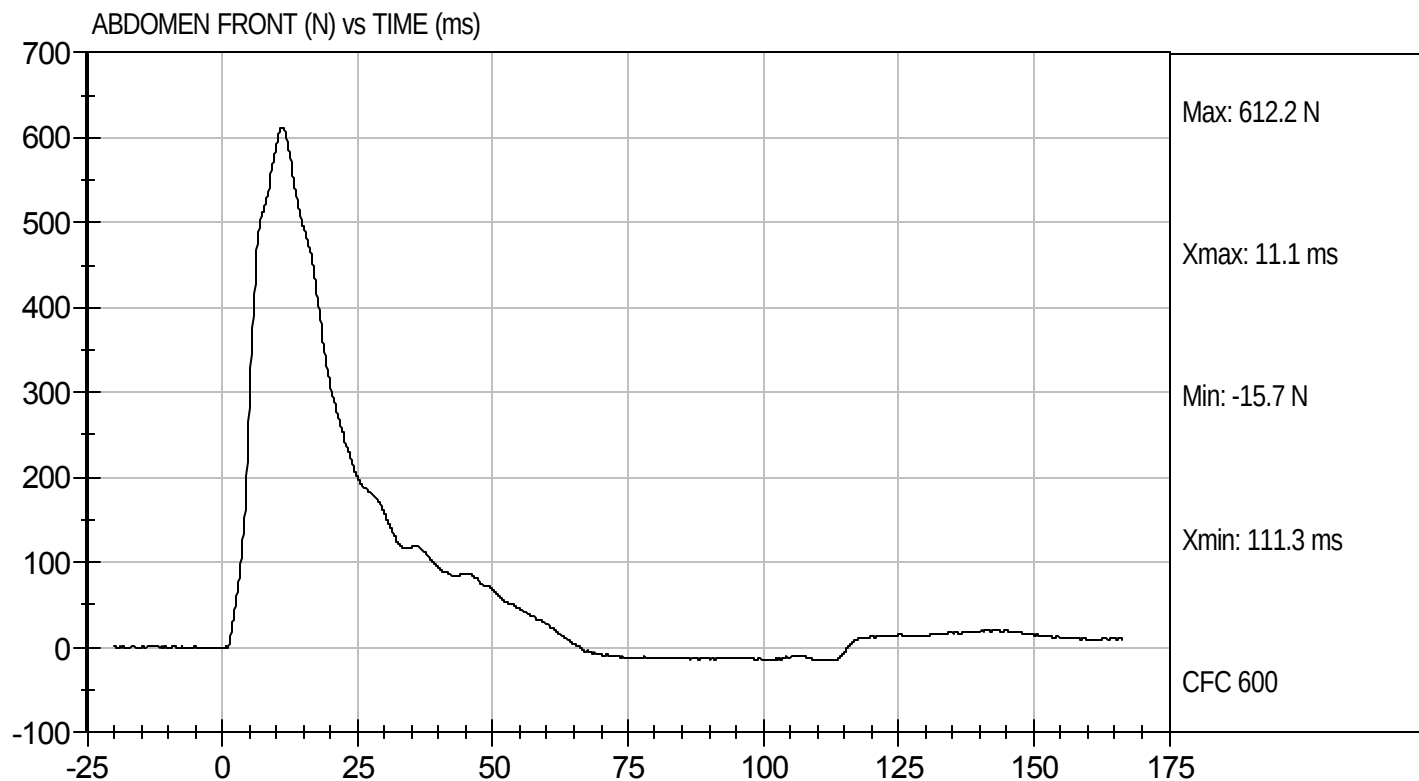
Test Date: 2/13/12
Velocity: 12.91 ft/s, 3.93 m/s





Test Desc: Abdomen Impact
Component ID: D12457

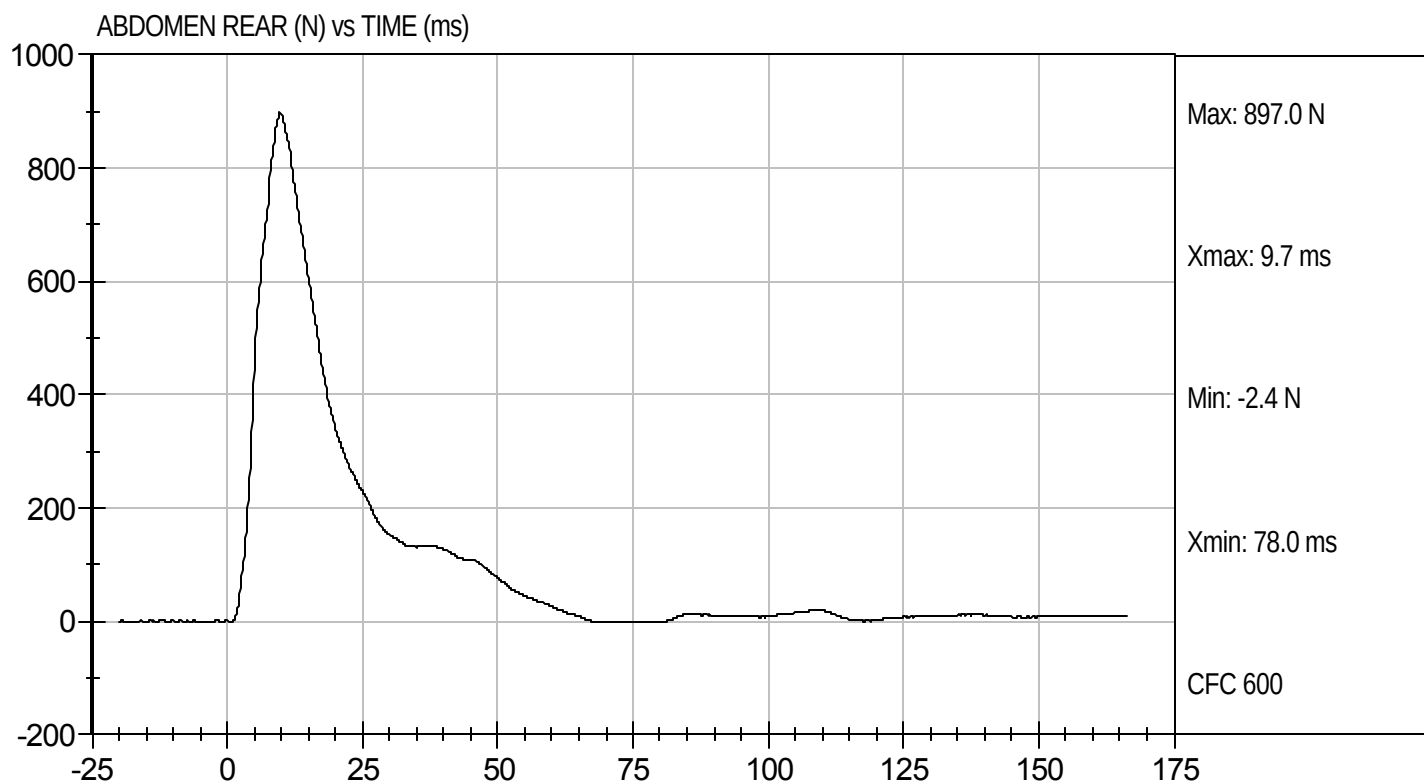
Test Date: 2/13/12
Velocity: 12.91 ft/s, 3.93 m/s





Test Desc: Abdomen Impact
Component ID: D12457

Test Date: 2/13/12
Velocity: 12.91 ft/s, 3.93 m/s

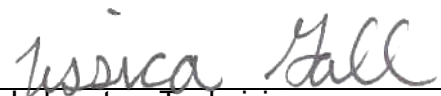


MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
ES-2re DUMMY

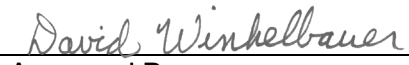
ATD Serial No: 032

Test I.D: D12458

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	16	Pass
Pendulum Speed		m/s	5.95 to 6.15	6.12	Pass
Pendulum Deceleration	1 ms	m/s	-0.05 to 0.00	-0.01	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.42	Pass
	27 ms	m/s	-6.50 to -5.80	-5.97	Pass
	30 ms	m/s	>= -6.5	-5.88	Pass
Maximum Flexion Angle		deg	45.0 to 55.0	48.5	Pass
Time of Maximum Flexion Angle		ms	39.0 to 53.0	44.7	Pass
Headform Rotation Decay to Initial Position		ms	37 to 57	42	Pass
Overall Results				Pass	


 Laboratory Technician

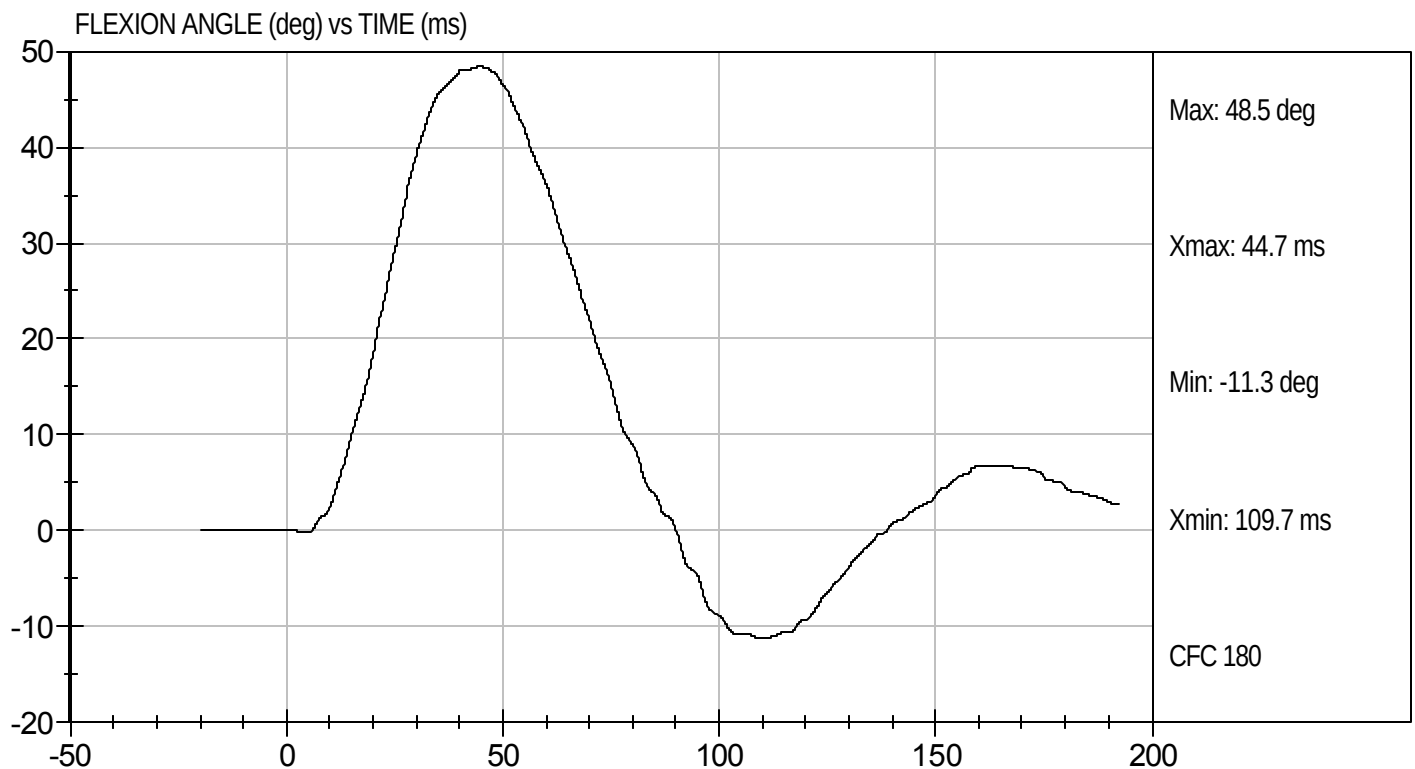
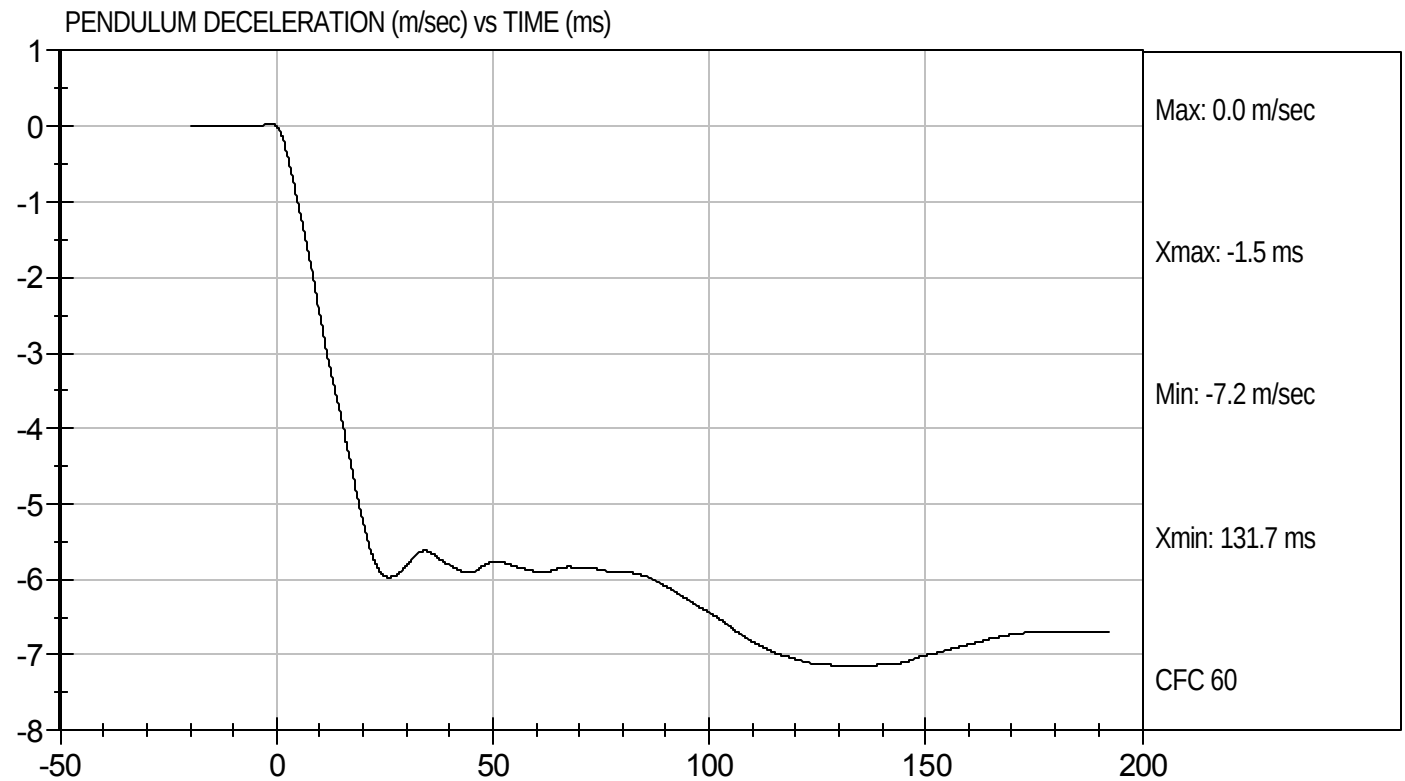
2/13/12
 Test Date


 Approved By



Test Desc: Lumbar Bending
Component ID: D12458

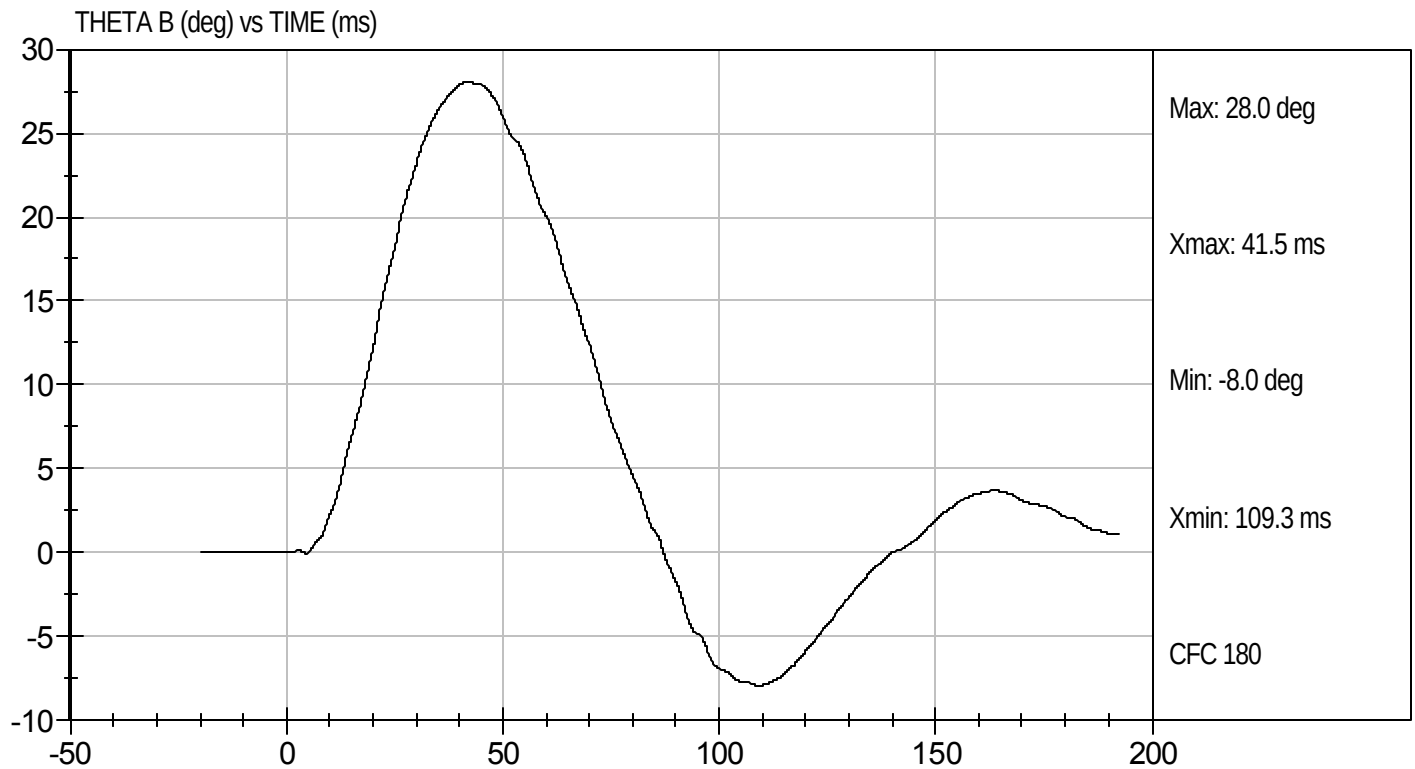
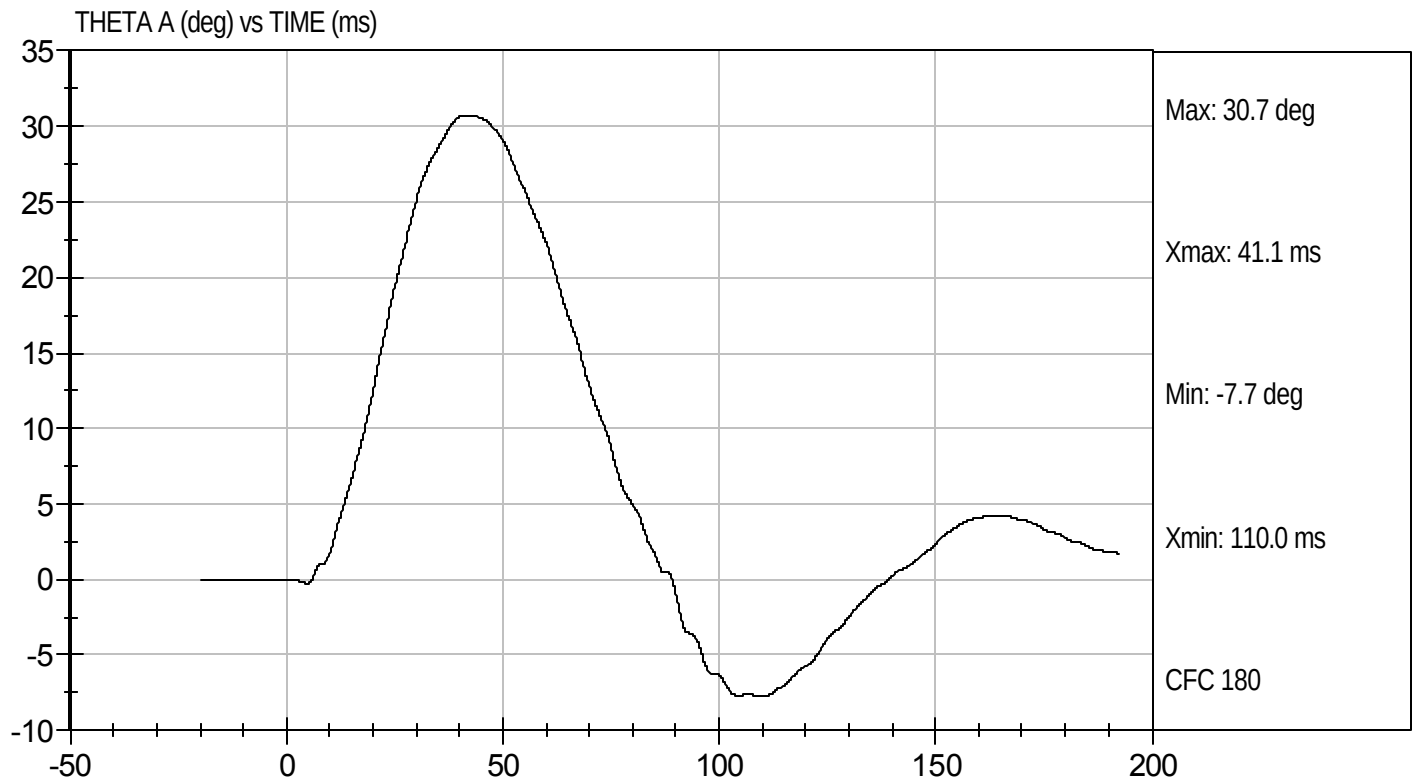
Test Date: 2/13/12
Velocity: 20.08 ft/s, 6.12 m/s





Test Desc: Lumbar Bending
Component ID: D12458

Test Date: 2/13/12
Velocity: 20.08 ft/s, 6.12 m/s



MGA RESEARCH CORPORATION

**PELVIS TEST
ES-2re DUMMY**

ATD Serial No: 032

Test I.D: D12459

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	17	Pass
Probe Speed	m/s	4.20 to 4.40	4.30	Pass
Maximum Impactor Force	kN	4.70 to 5.40	5.03	Pass
Time of Maximum Impactor Force	ms	11.80 to 16.10	13.10	Pass
Maximum Pubic Force	kN	1.23 to 1.59	1.39	Pass
Time of Maximum Pubic Force	ms	12.20 to 17.00	14.20	Pass
Overall Test Results				Pass


Laboratory Technician

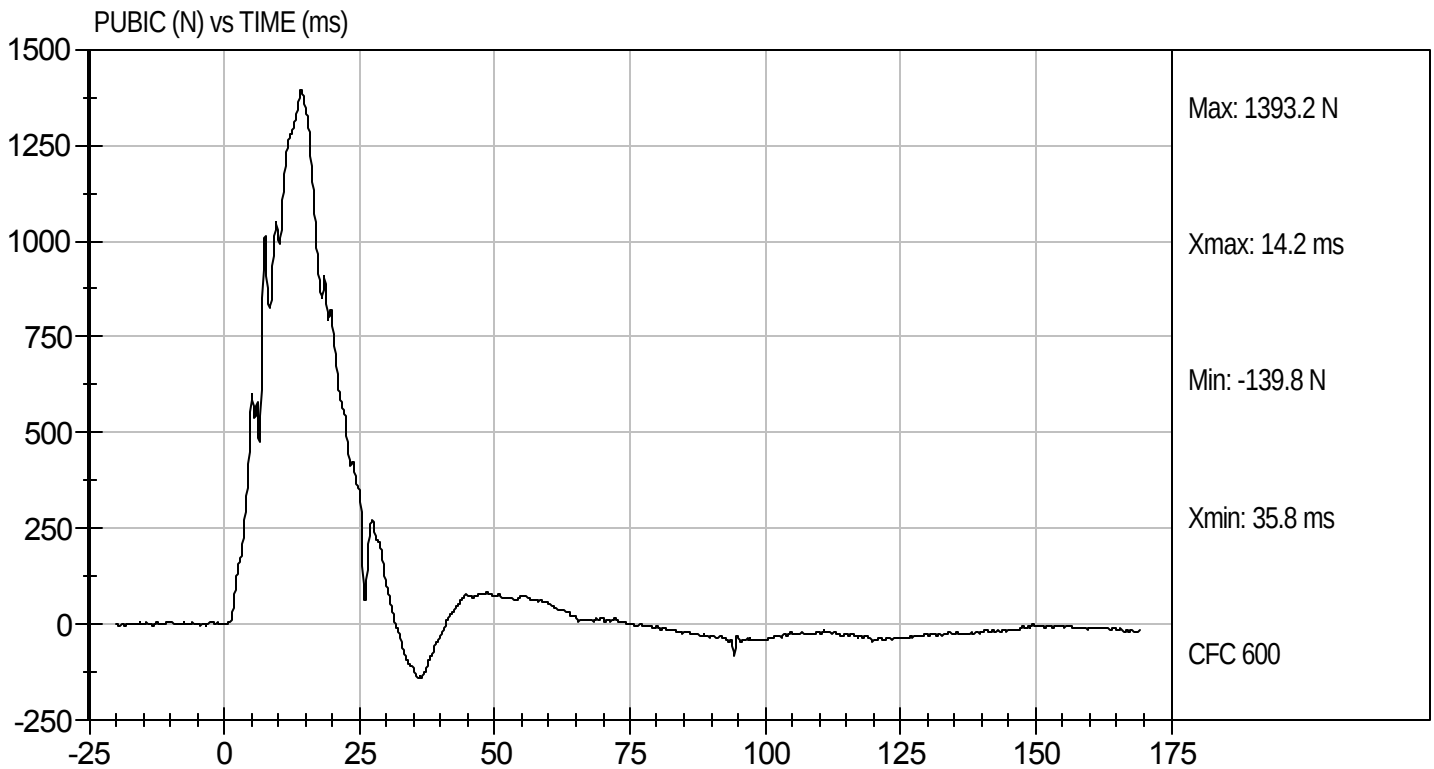
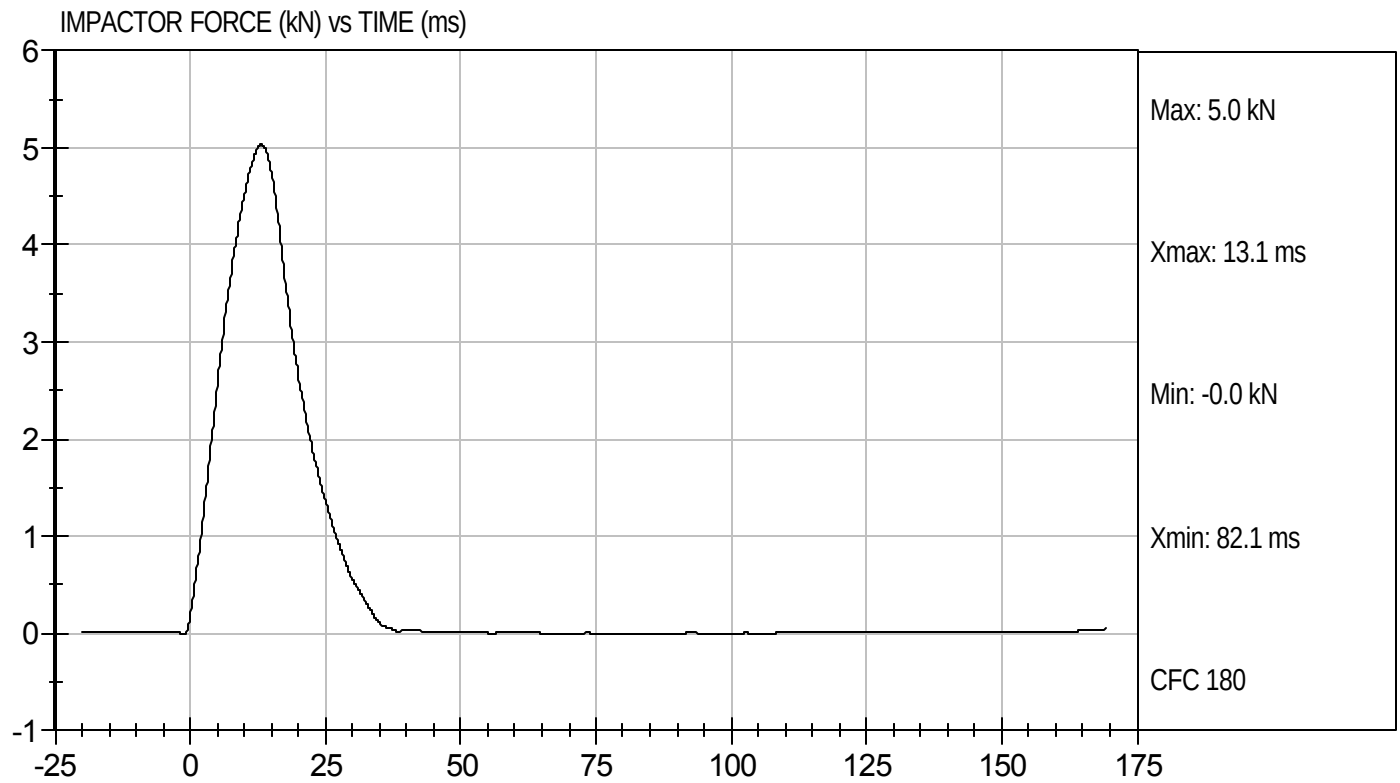
2/13/12
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D12459

Test Date: 2/13/12
Velocity: 14.12 ft/s, 4.30 m/s



SID-IIsD External Measurements
SN: 296

No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	784	Pass
B	Shoulder Pivot Height	437 - 453	442	Pass
C	H-point Height	79 - 89	83	Pass
D	H-point from Seatback	141 - 151	145	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 -135	121	Pass
G	Head Breadth	140 - 148	142	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	180	Pass
J	Head Circumference	541 - 551	548	Pass
K	Buttock to Knee Length	514 - 540	535	Pass
L	Popliteal Height	343 - 369	358	Pass
M	Knee Pivot to Floor Height	392 - 409	404	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	206	Pass
P	Foot Length	216 - 232	219	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	316	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	481	Pass
V	Shoulder Width	341 - 357	346	Pass
W	Foot Width	78 - 94	85	Pass
Y	Chest Circumference w/ jacket	851 - 881	870	Pass
Z	Waist Circumference	761 - 791	772	Pass

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

ATD Serial No: 296

Test ID: D12261

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	15	Pass
Peak Resultant Acceleration	G's	115 to 137	117	Pass
Peak Longitudinal Acceleration	G's	+/- 15	2.7	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

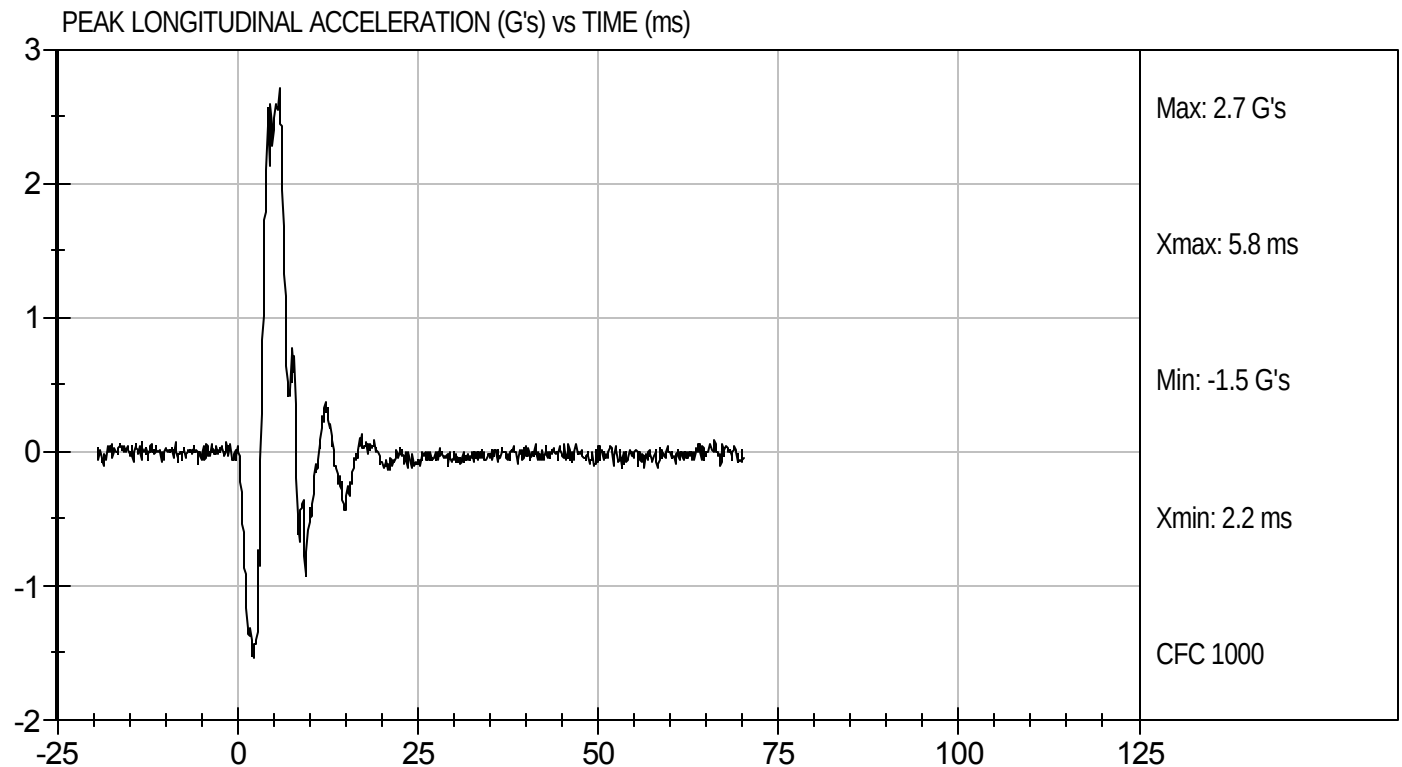
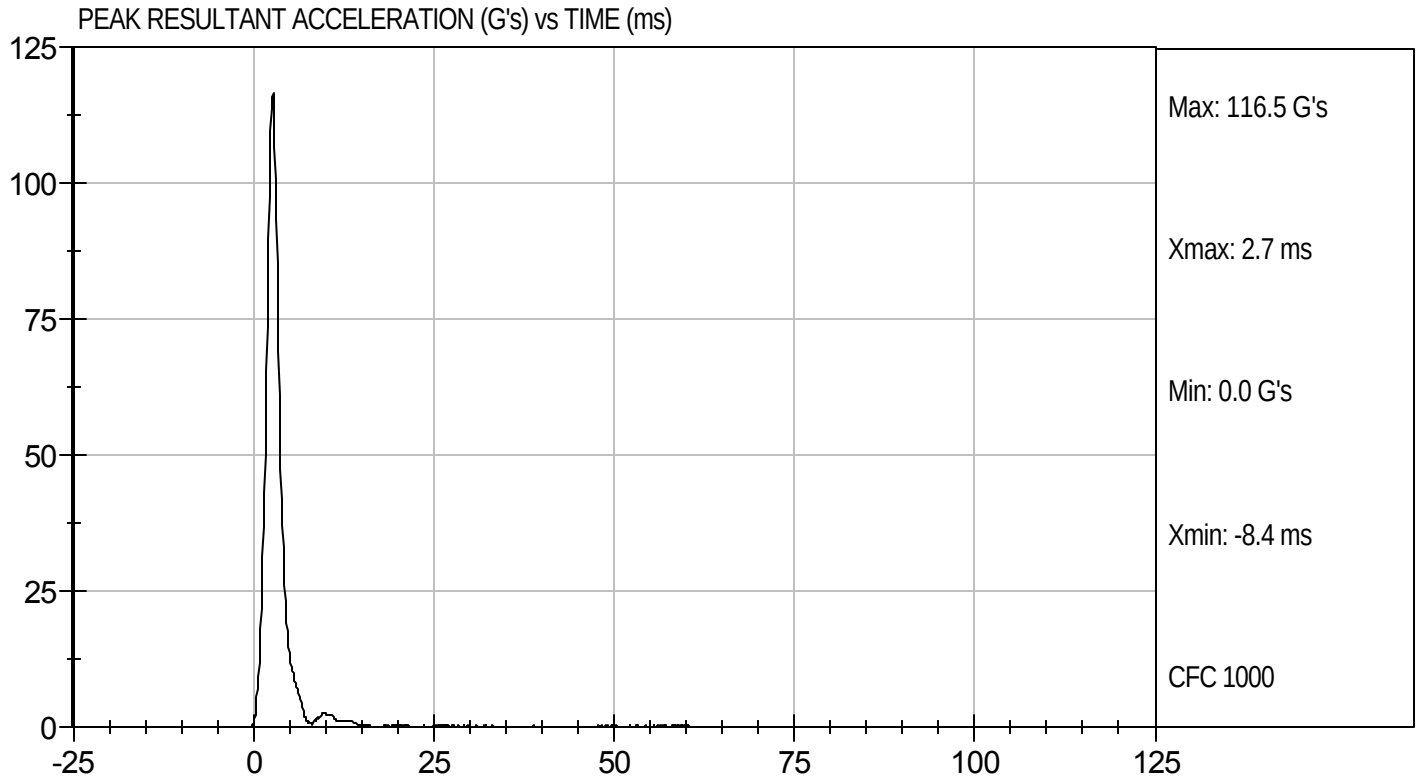
1/20/12
Test Date

David Winkelbauer
Approved By



Test Desc: Head Drop
Component ID: D12261

Test Date: 1/20/12
Velocity: 0 ft/s, 0 m/s

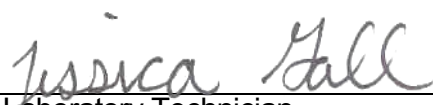


MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D12262

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.6	Pass
Humidity		%	10 to 70	15	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.73	Pass
	15 ms	m/s	3.30 to 4.10	3.93	Pass
	20 ms	m/s	4.40 to 5.40	5.26	Pass
	25 ms	m/s	5.40 to 6.10	5.56	Pass
	25-100 ms	m/s	5.50 to 6.20	5.58	Pass
Maximum D-Plane Rotation		deg	71 to 81	74	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	60	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	116	Pass
Overall Test Results				Pass	


 Laboratory Technician

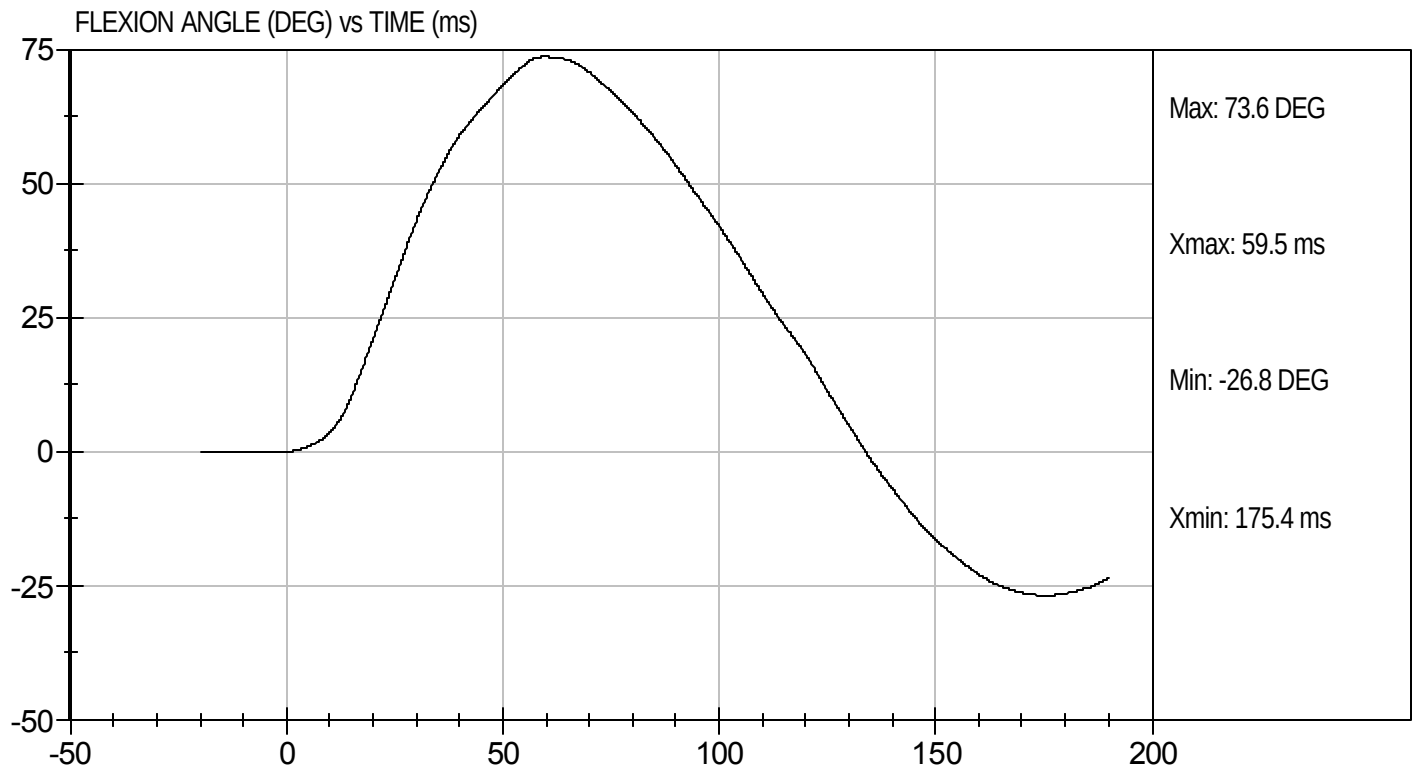
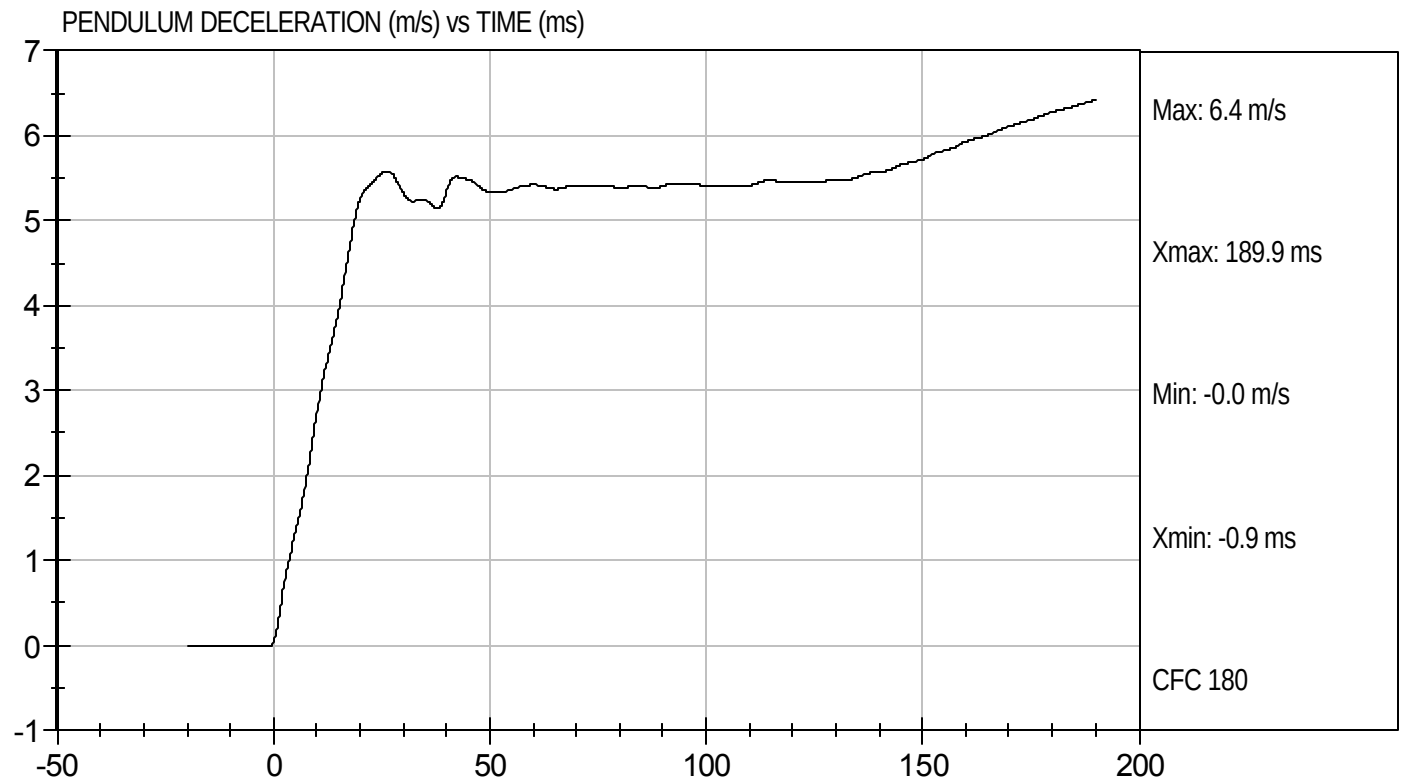
1/20/12
 Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D12262

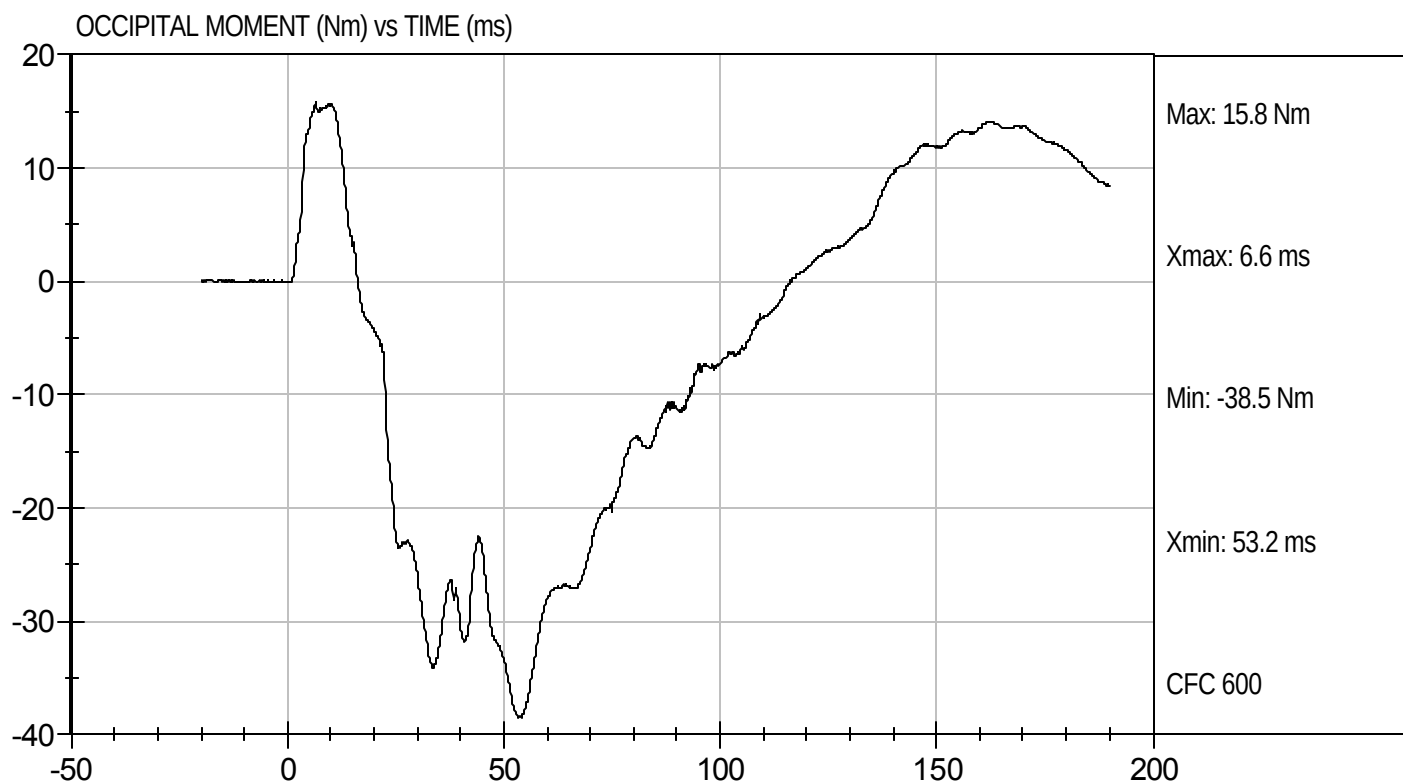
Test Date: 1/20/12
Velocity: 18.31 ft/s, 5.58 m/s





Test Desc: Neck Bending
Component ID: D12262

Test Date: 1/20/12
Velocity: 18.31 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-11s BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D12263

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	16	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	30	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
Overall Test Results				Pass


Laboratory Technician

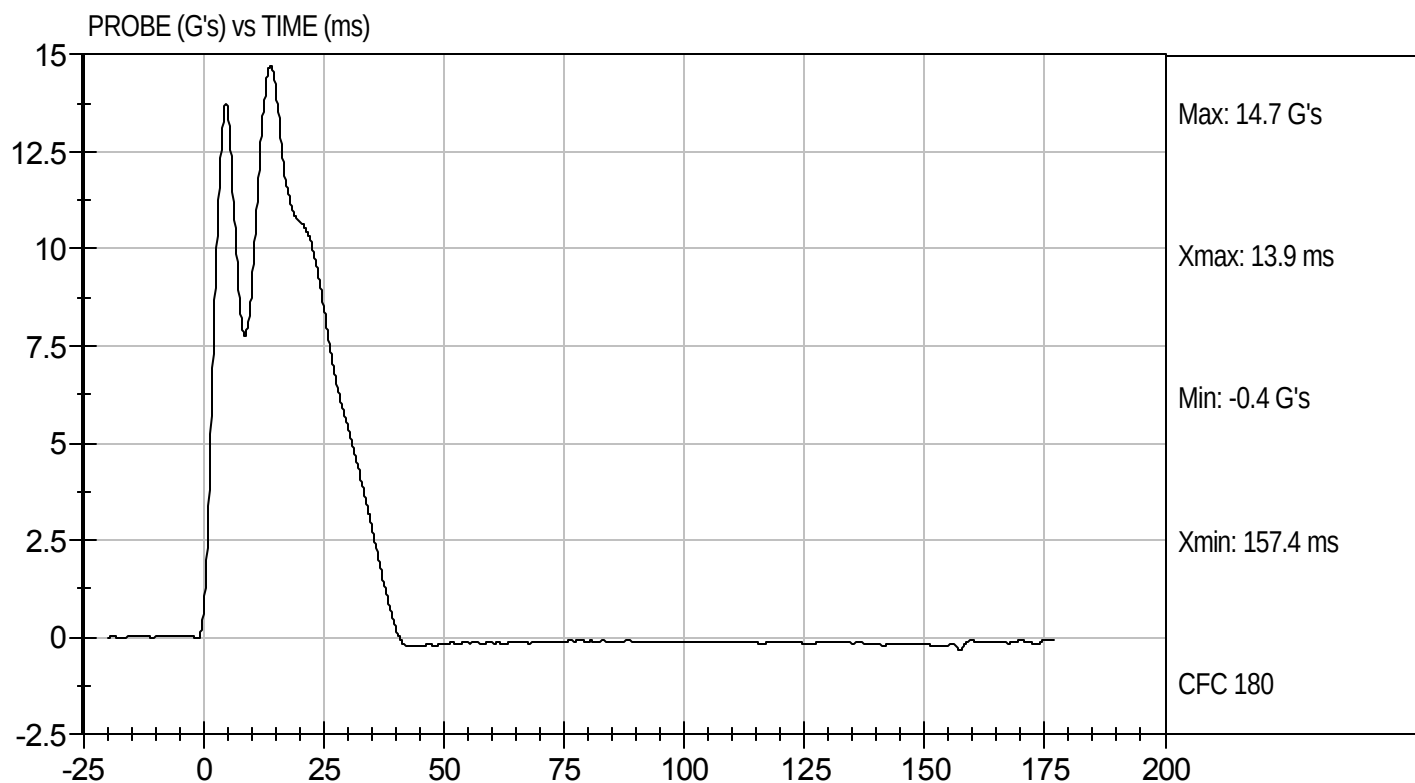
1/20/12
Test Date


Approved By



Test Desc: Shoulder Impact
Component ID: D12263

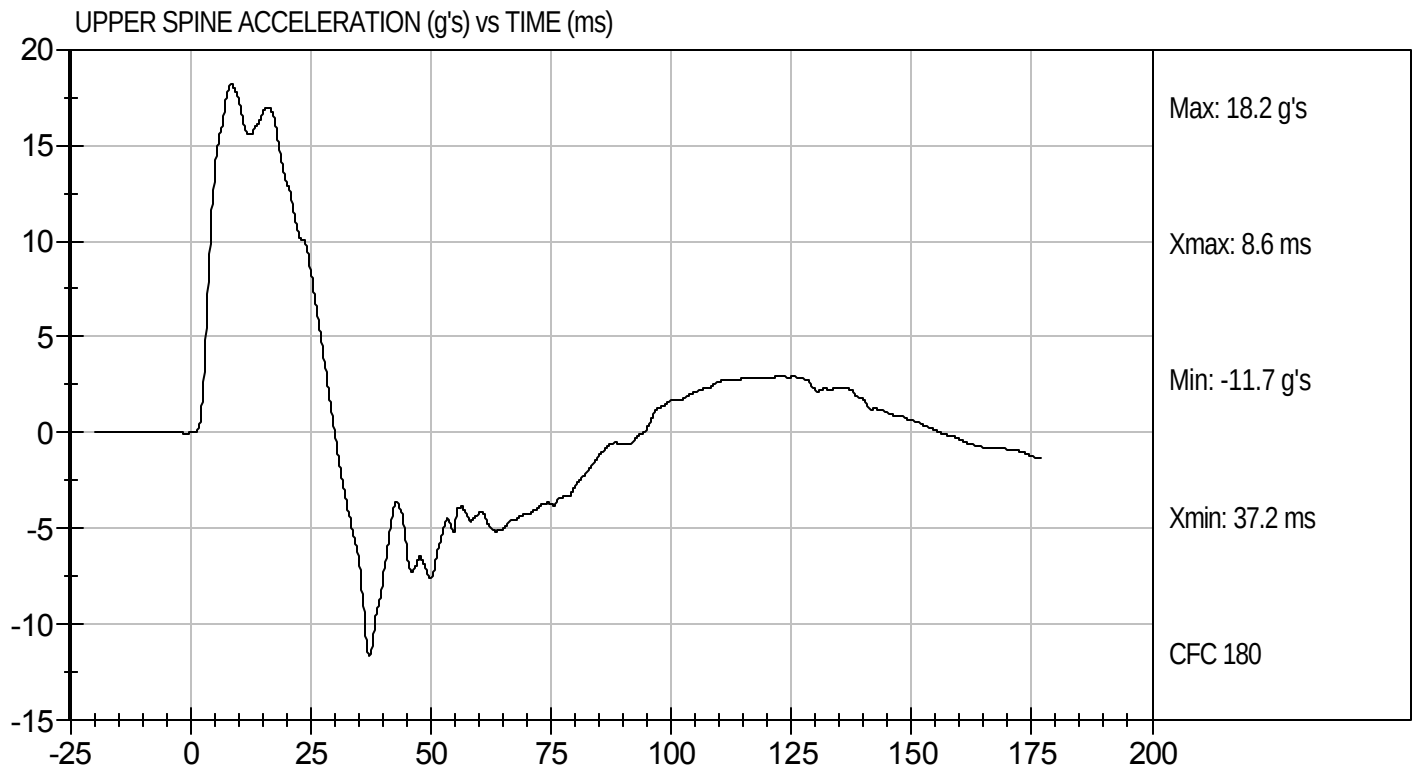
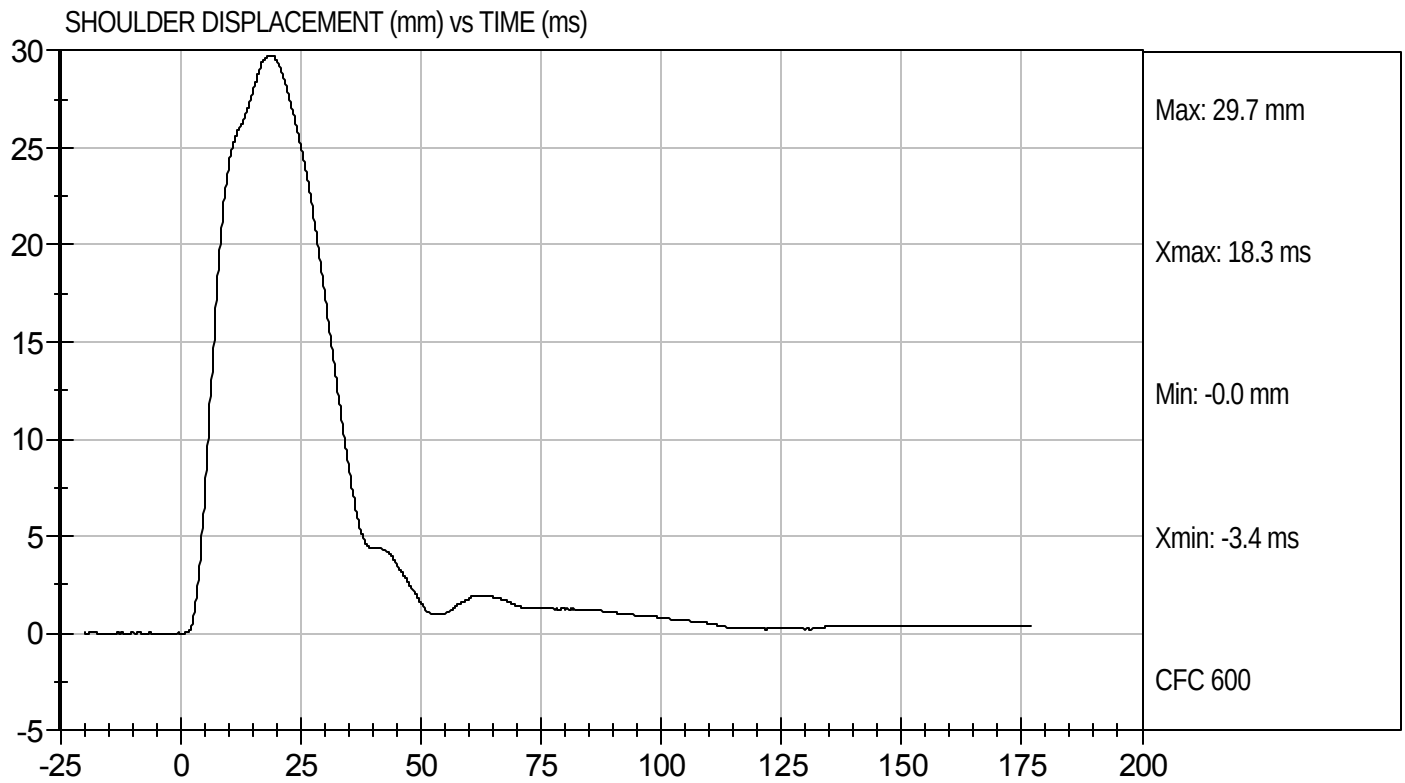
Test Date: 1/20/12
Velocity: 14.12 ft/s, 4.30 m/s





Test Desc: Shoulder Impact
Component ID: D12263

Test Date: 1/20/12
Velocity: 14.12 ft/s, 4.30 m/s

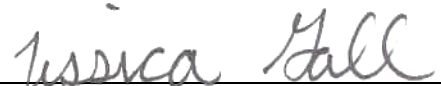


MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D12264

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	16	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	32	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	32	Pass
Lower Rib Displacement	mm	32 to 38	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	33	Pass
Overall Test Results				Pass


Laboratory Technician

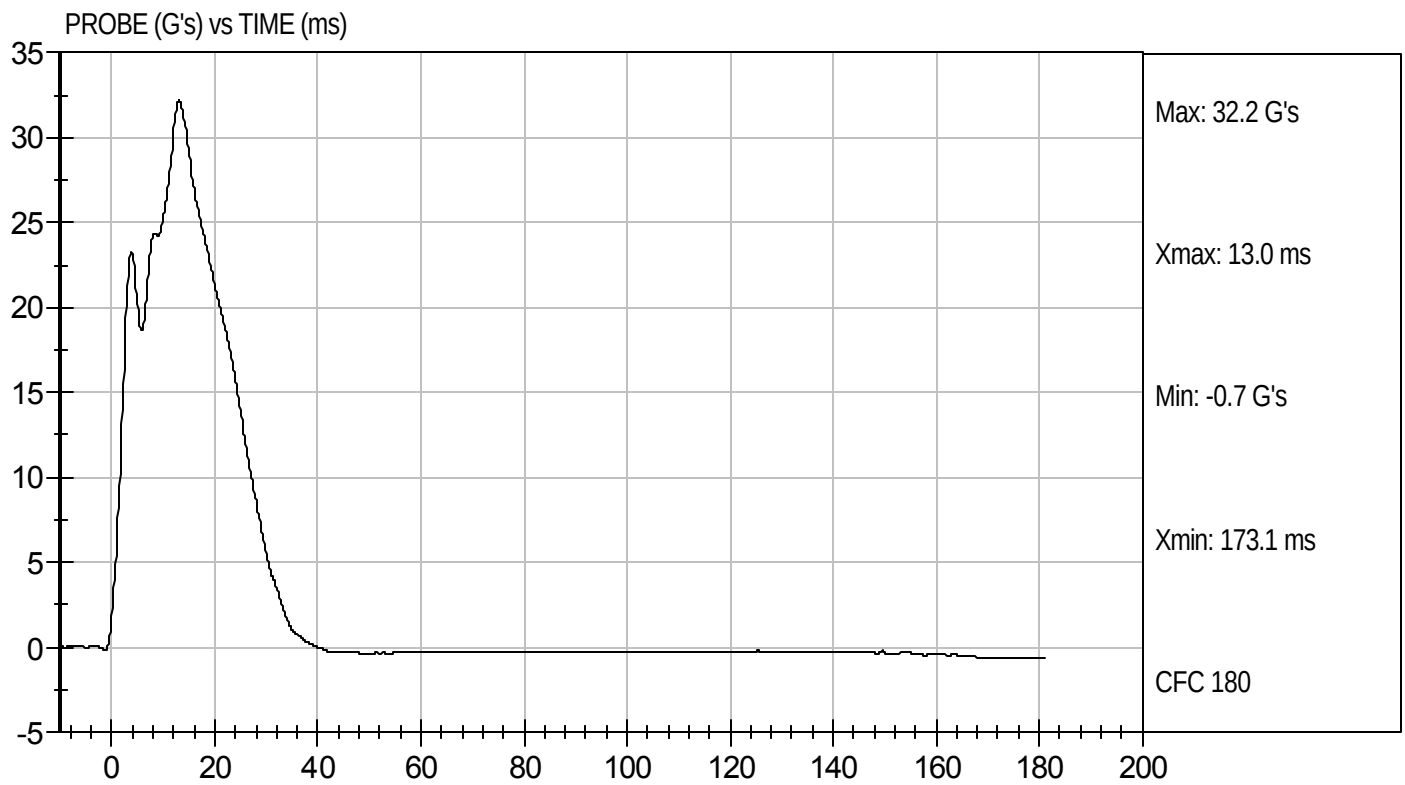
1/20/12
Test Date


Approved By



Test Desc: Thorax With Arm
Component ID: D12264

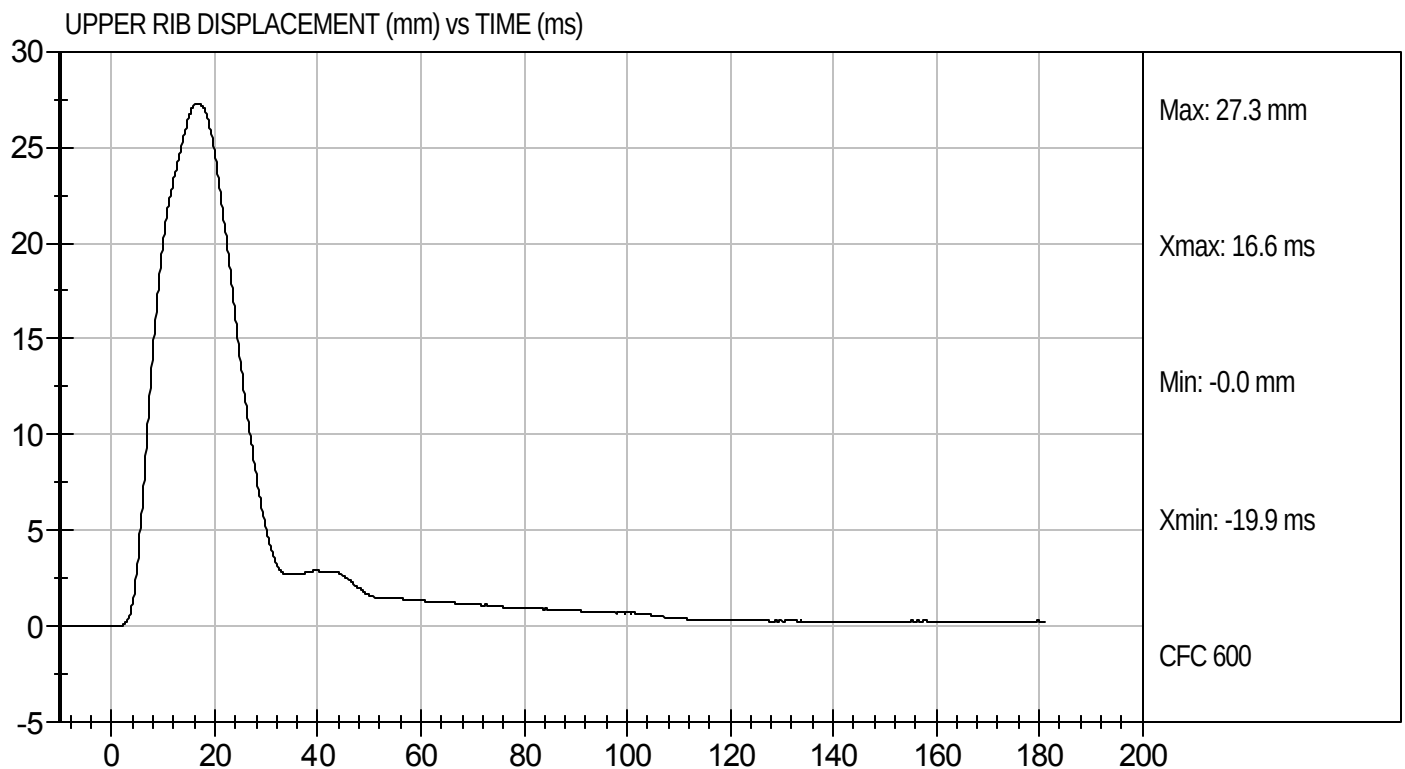
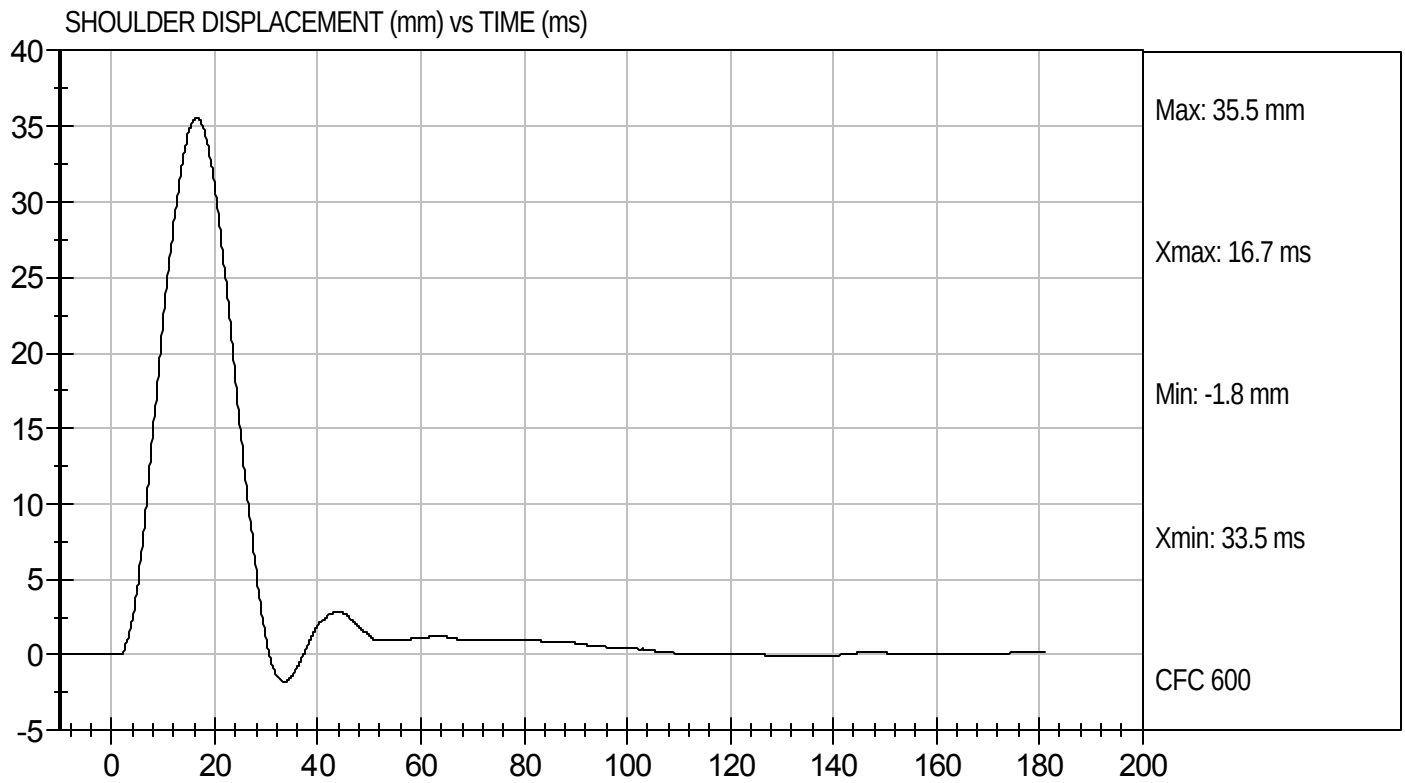
Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D12264

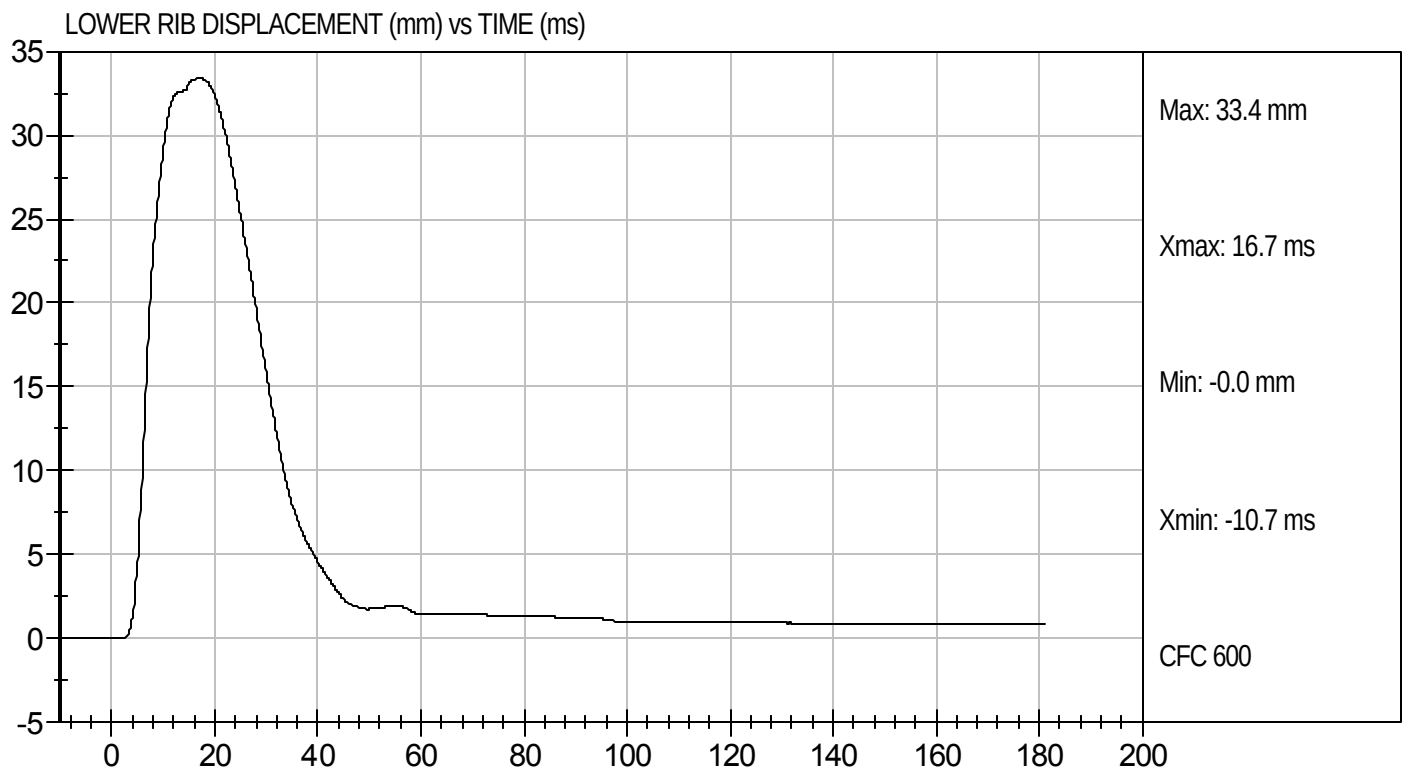
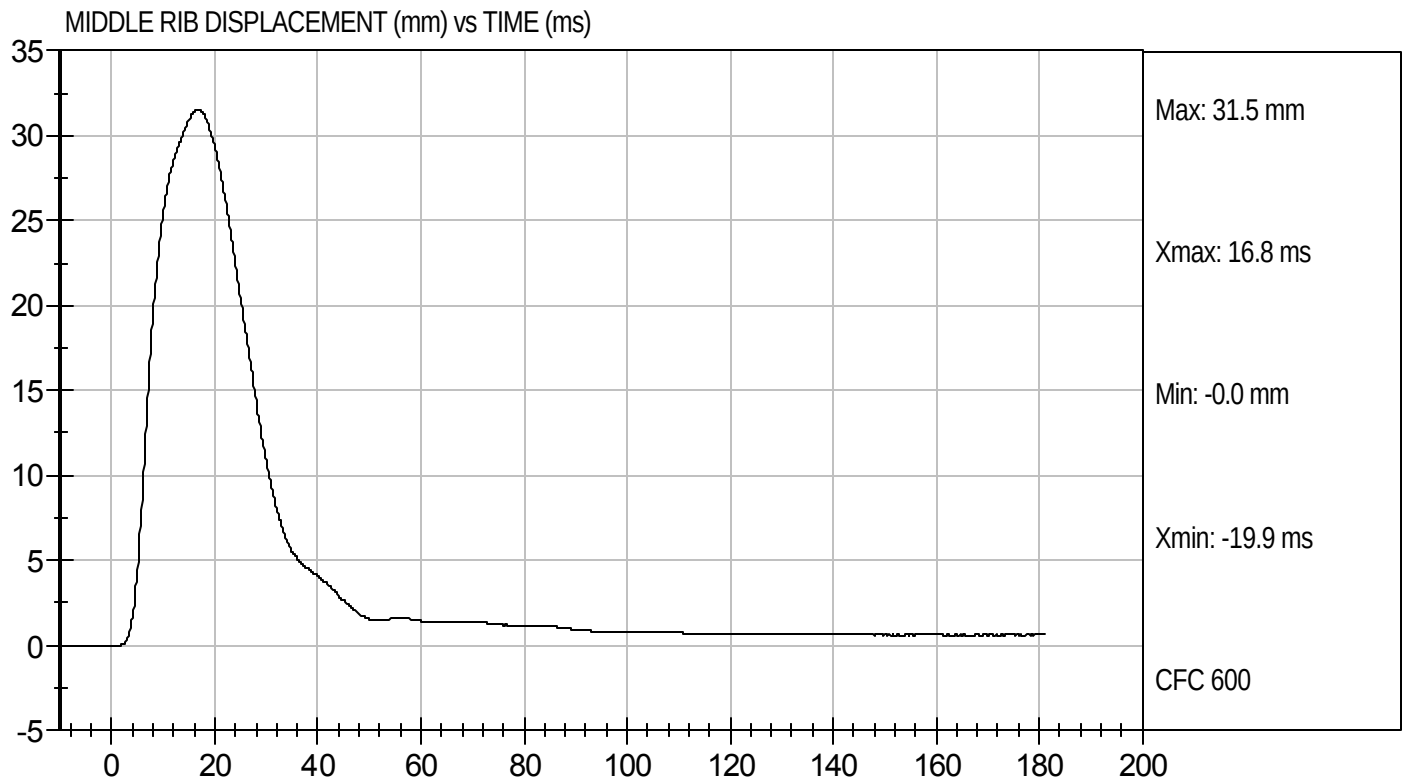
Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D12264

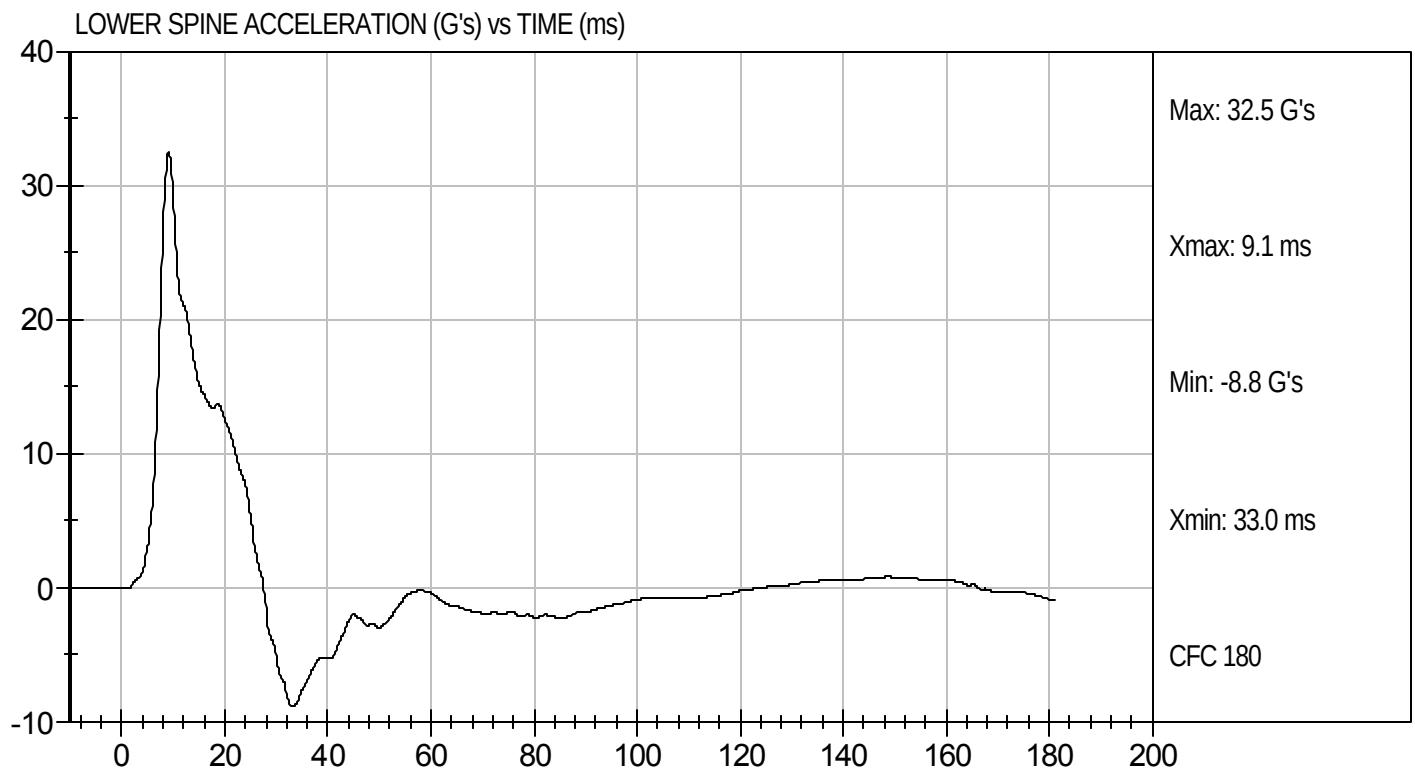
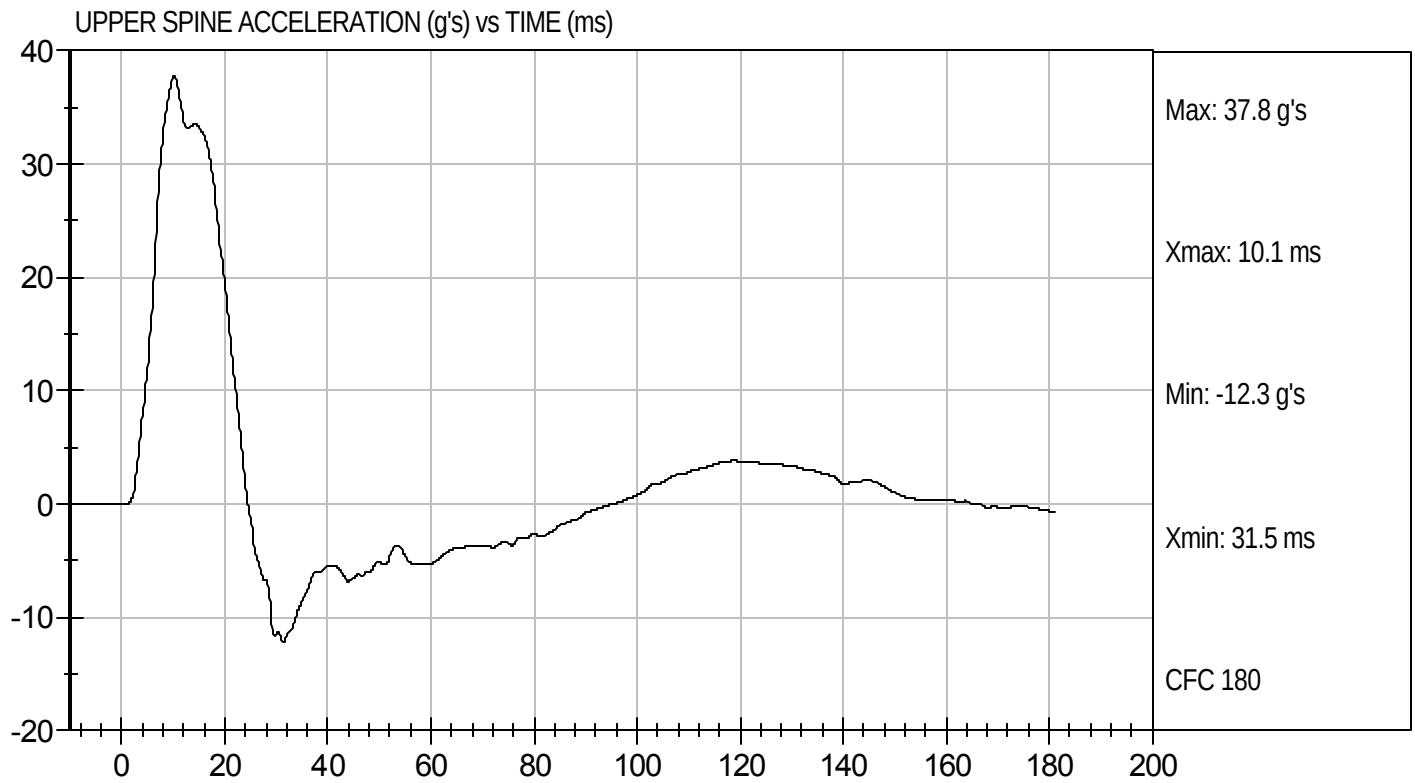
Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D12264

Test Date: 1/20/12
Velocity: 22.22 ft/s, 6.77 m/s



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

ATD Serial No: 296

Test I.D: D12265

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Force	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	34	Pass
Middle Rib Displacement	mm	39 to 45	40	Pass
Lower Rib Displacement	mm	35 to 43	38	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	


Laboratory Technician

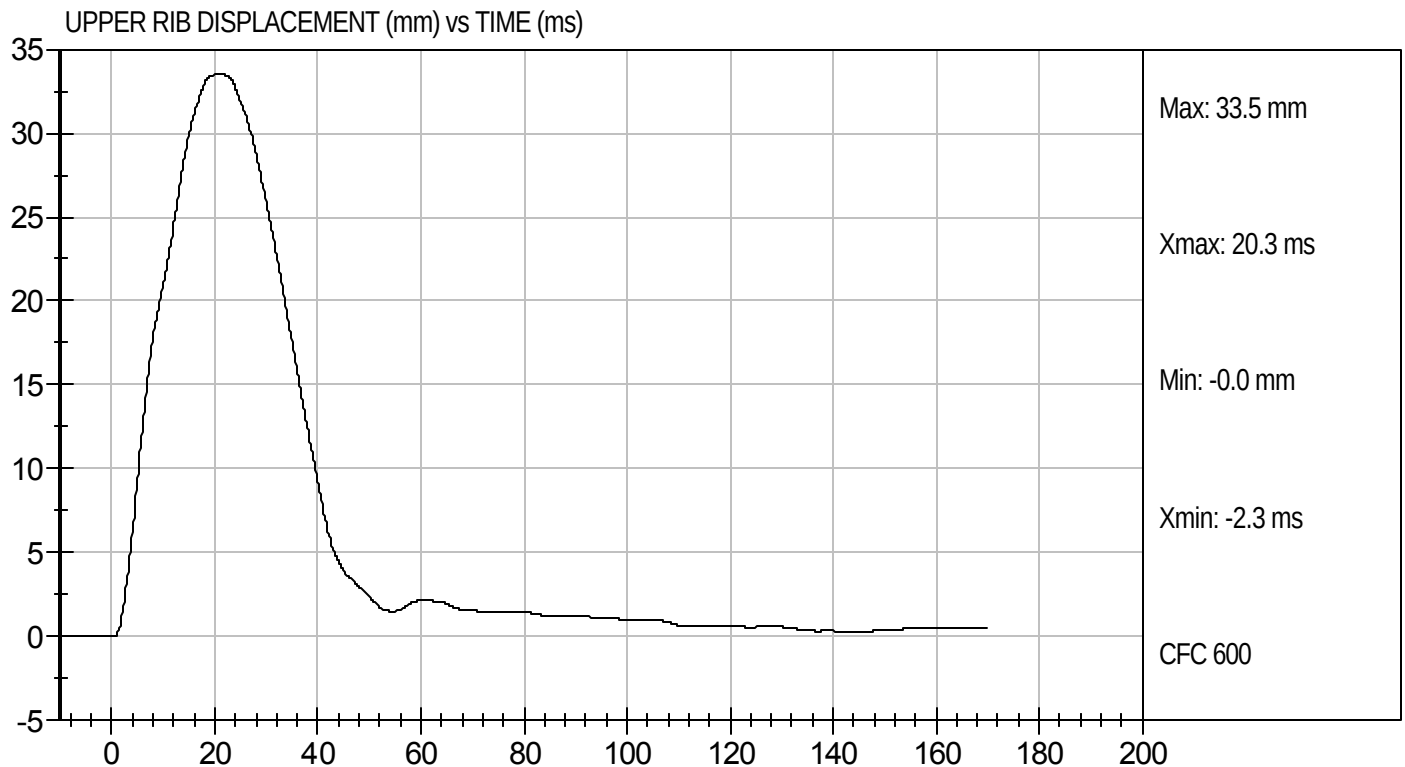
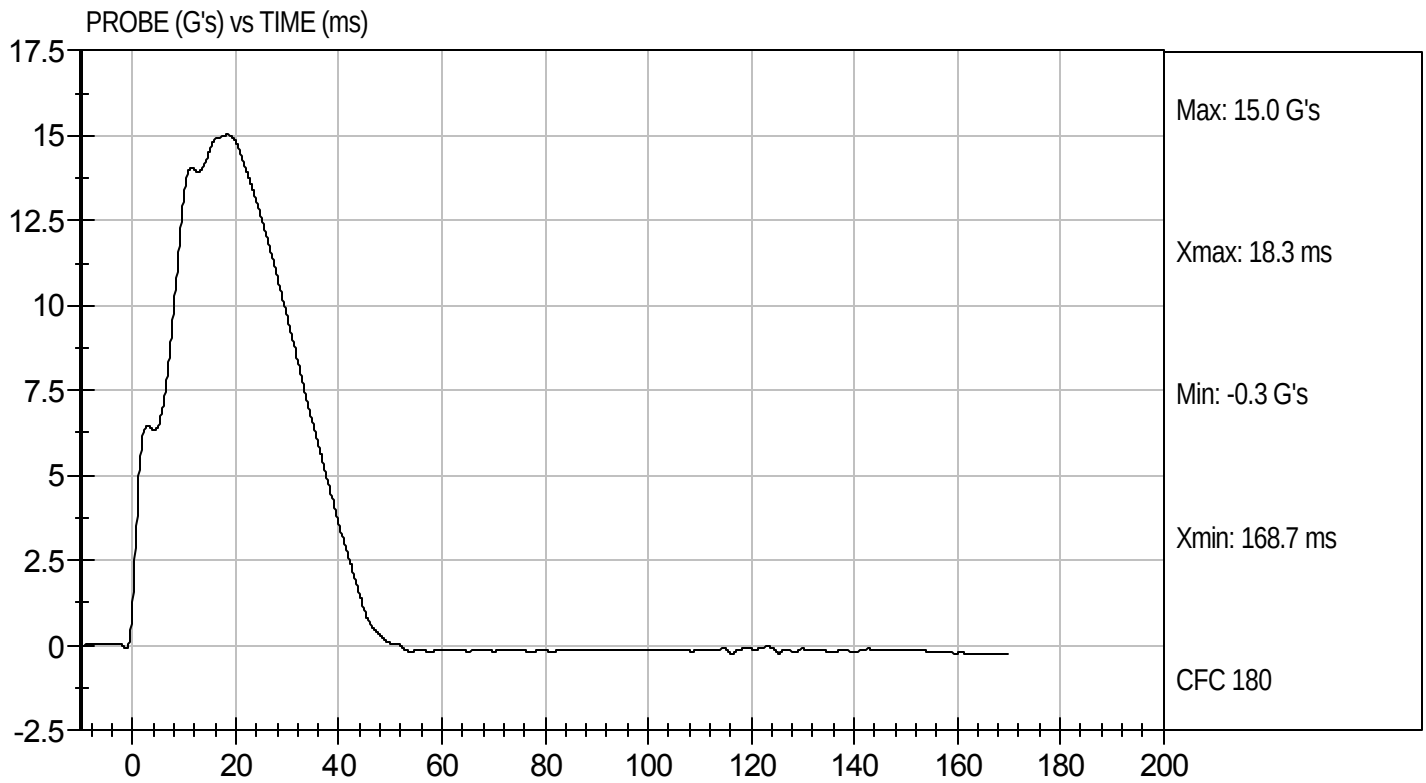
1/23/12
Test Date


Approved By



Test Desc: Thorax Without Arm
Component ID: D12265

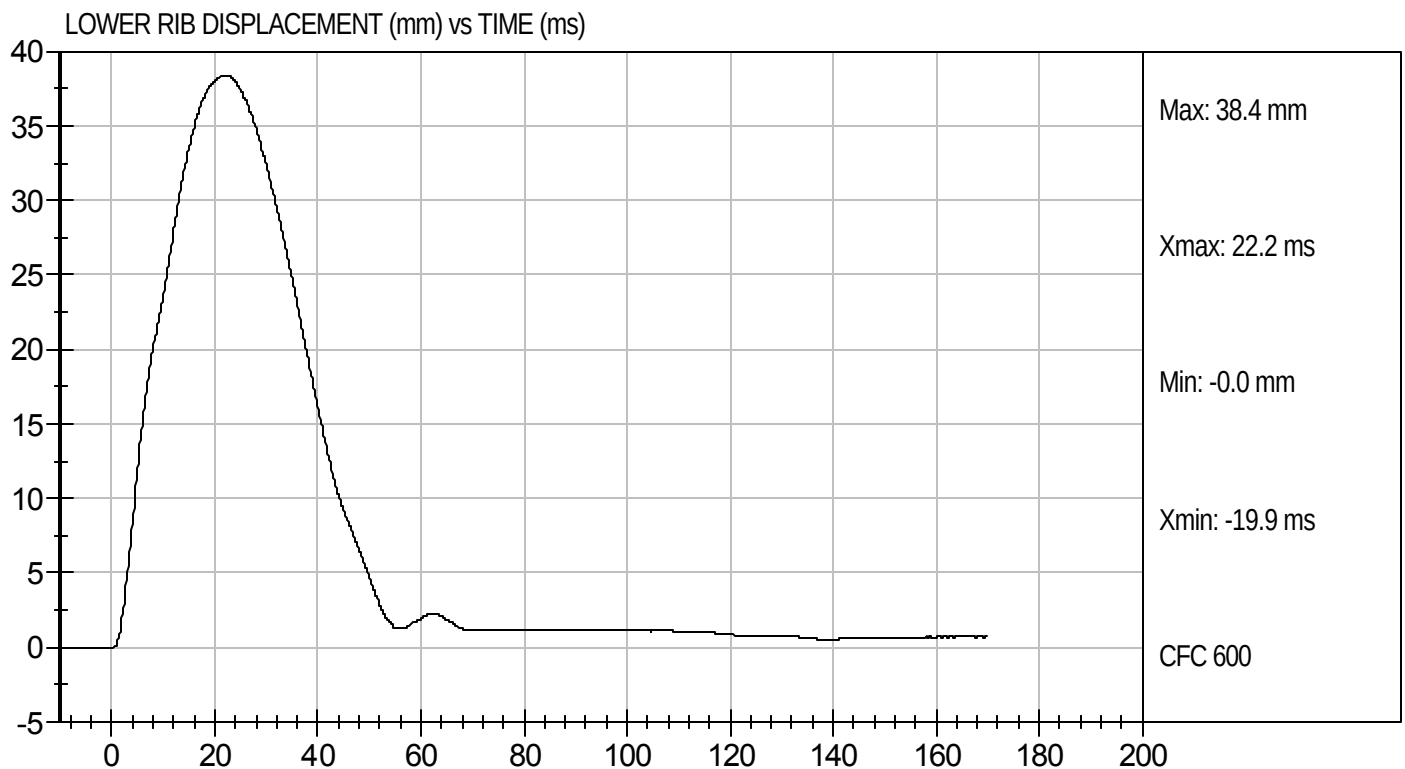
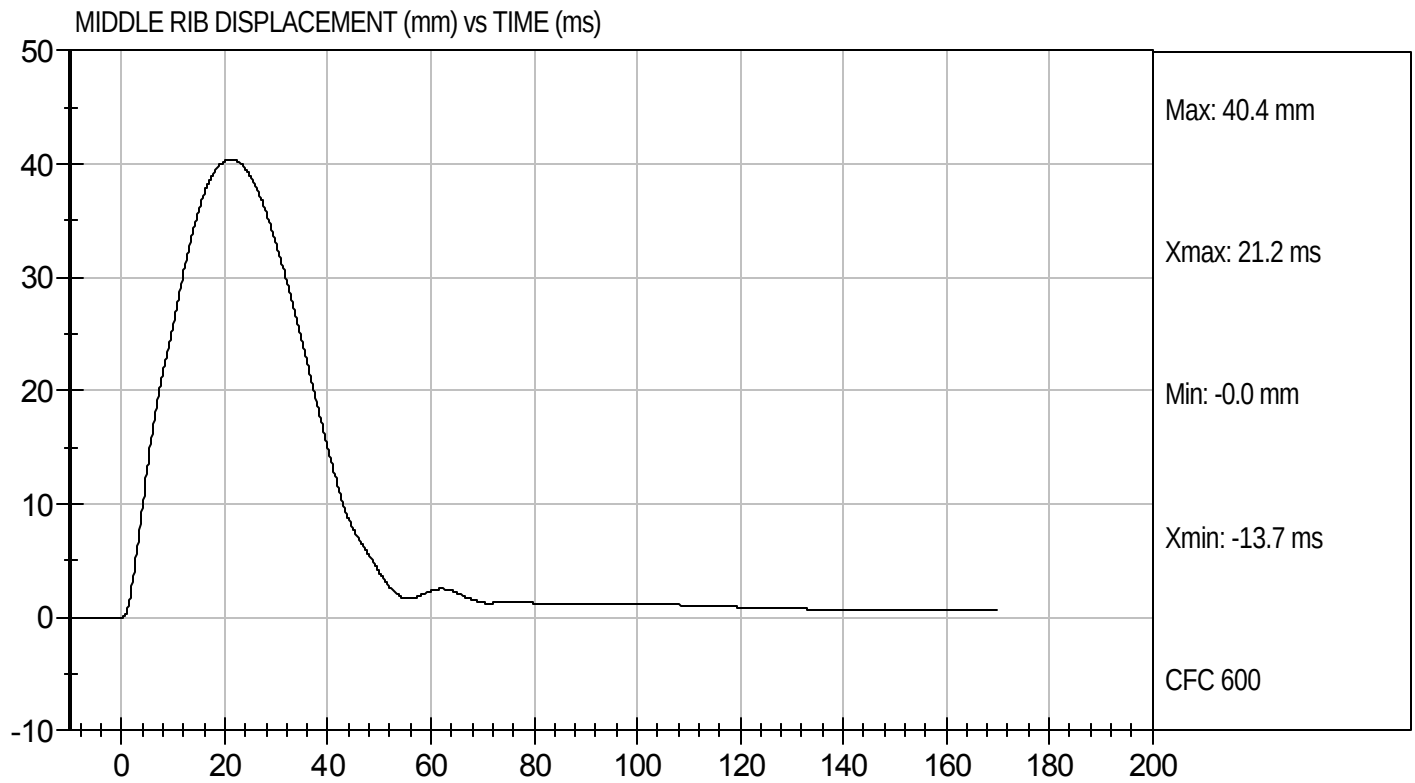
Test Date: 1/23/12
Velocity: 14.24 ft/s, 4.34 m/s





Test Desc: Thorax Without Arm
Component ID: D12265

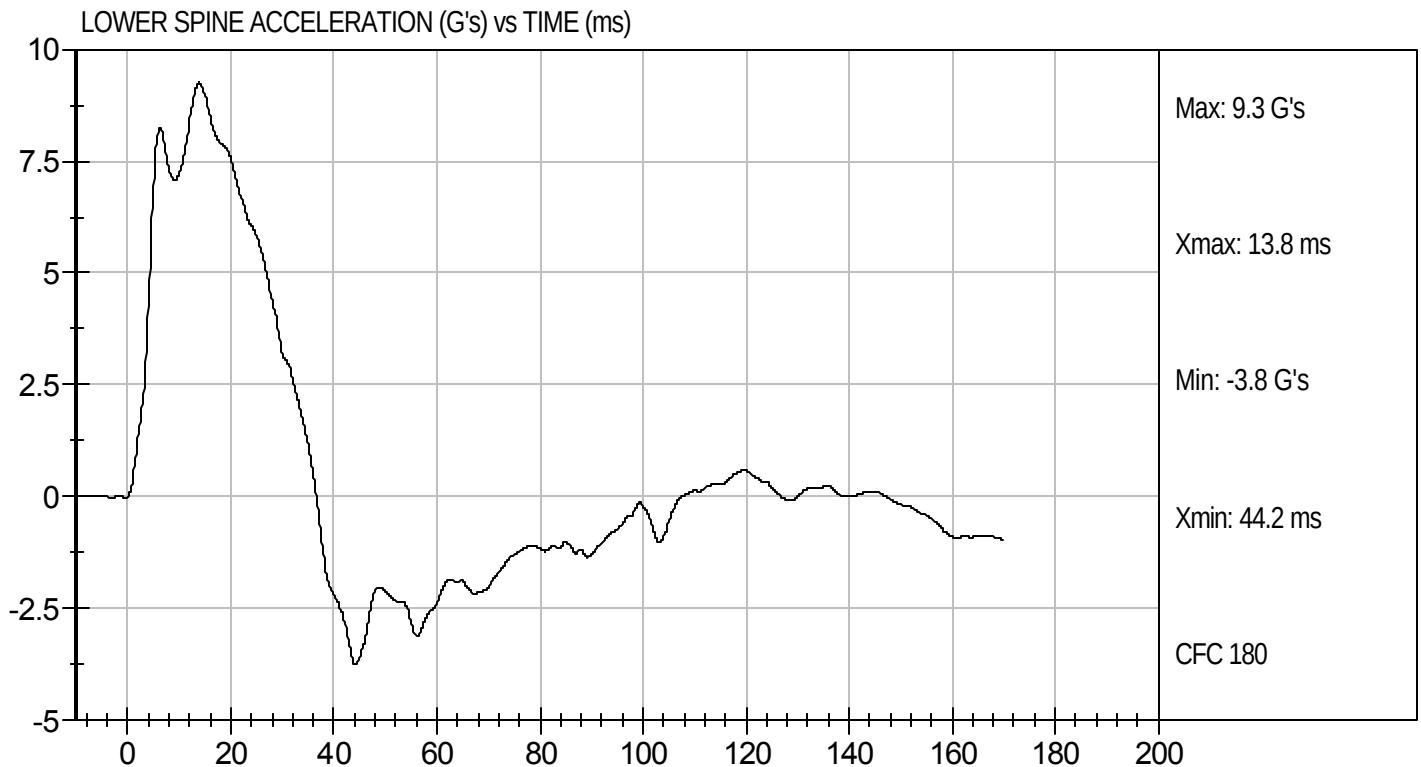
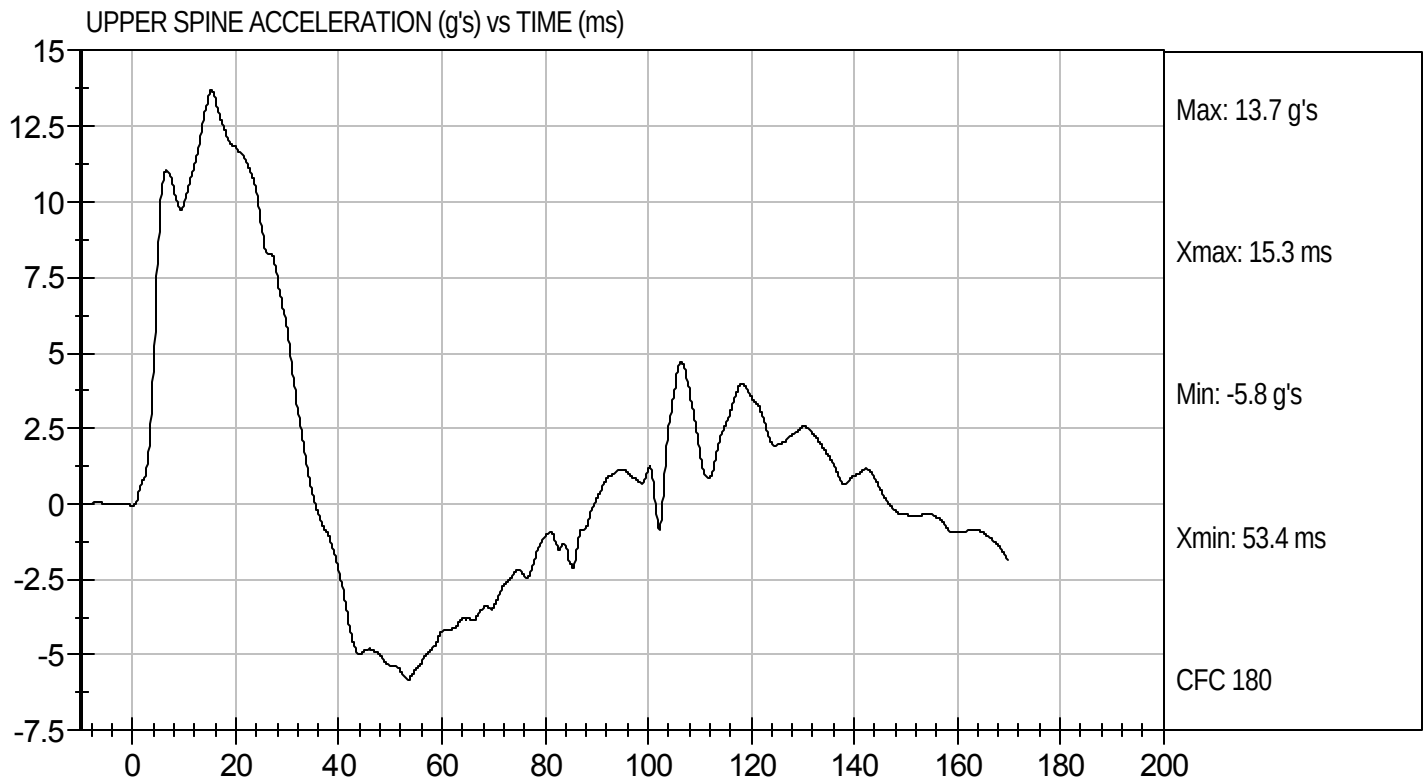
Test Date: 1/23/12
Velocity: 14.24 ft/s, 4.34 m/s





Test Desc: Thorax Without Arm
Component ID: D12265

Test Date: 1/23/12
Velocity: 14.24 ft/s, 4.34 m/s

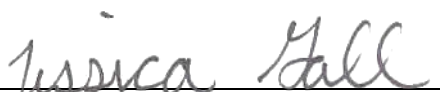


MGA RESEARCH CORPORATION
ABDOMINAL IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D12266

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	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	36	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	11	Pass
			Overall Test Results	Pass


Laboratory Technician

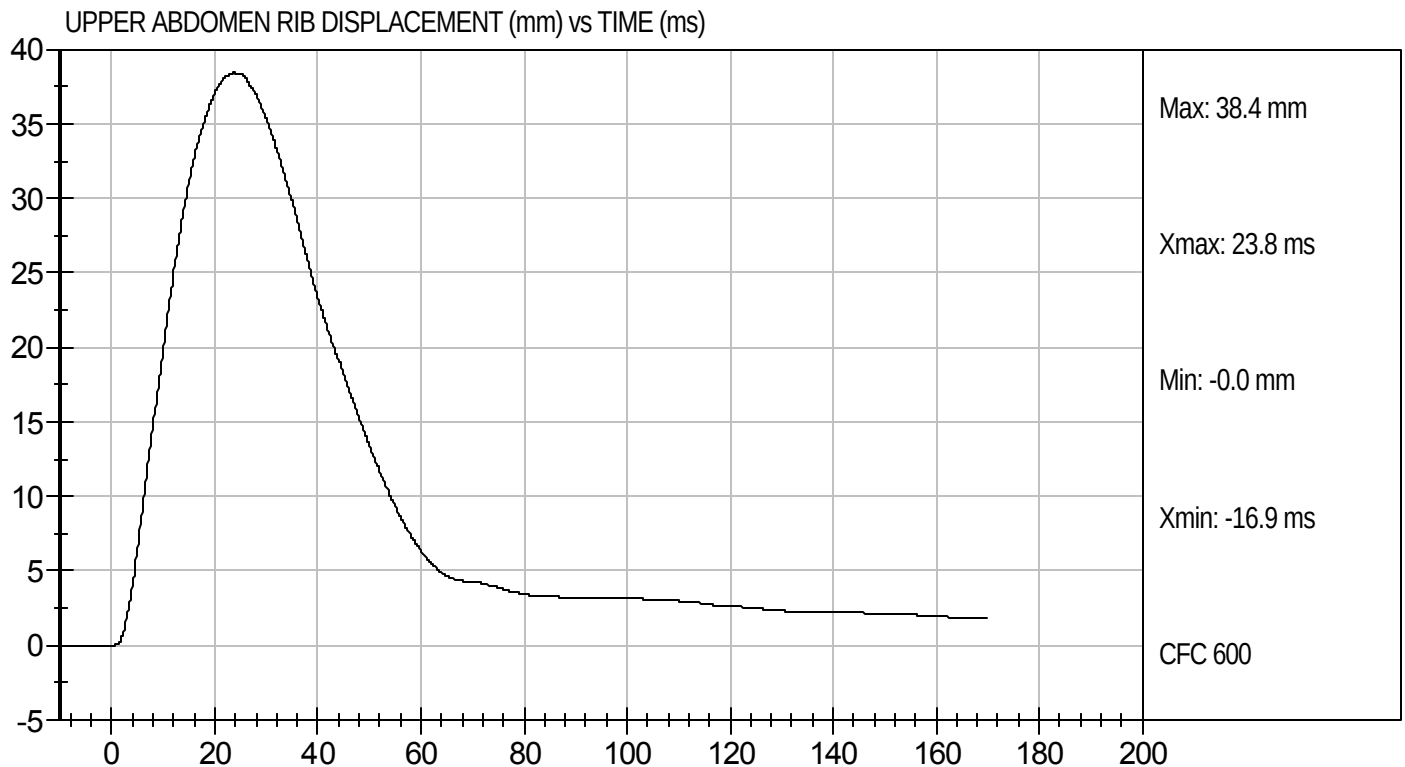
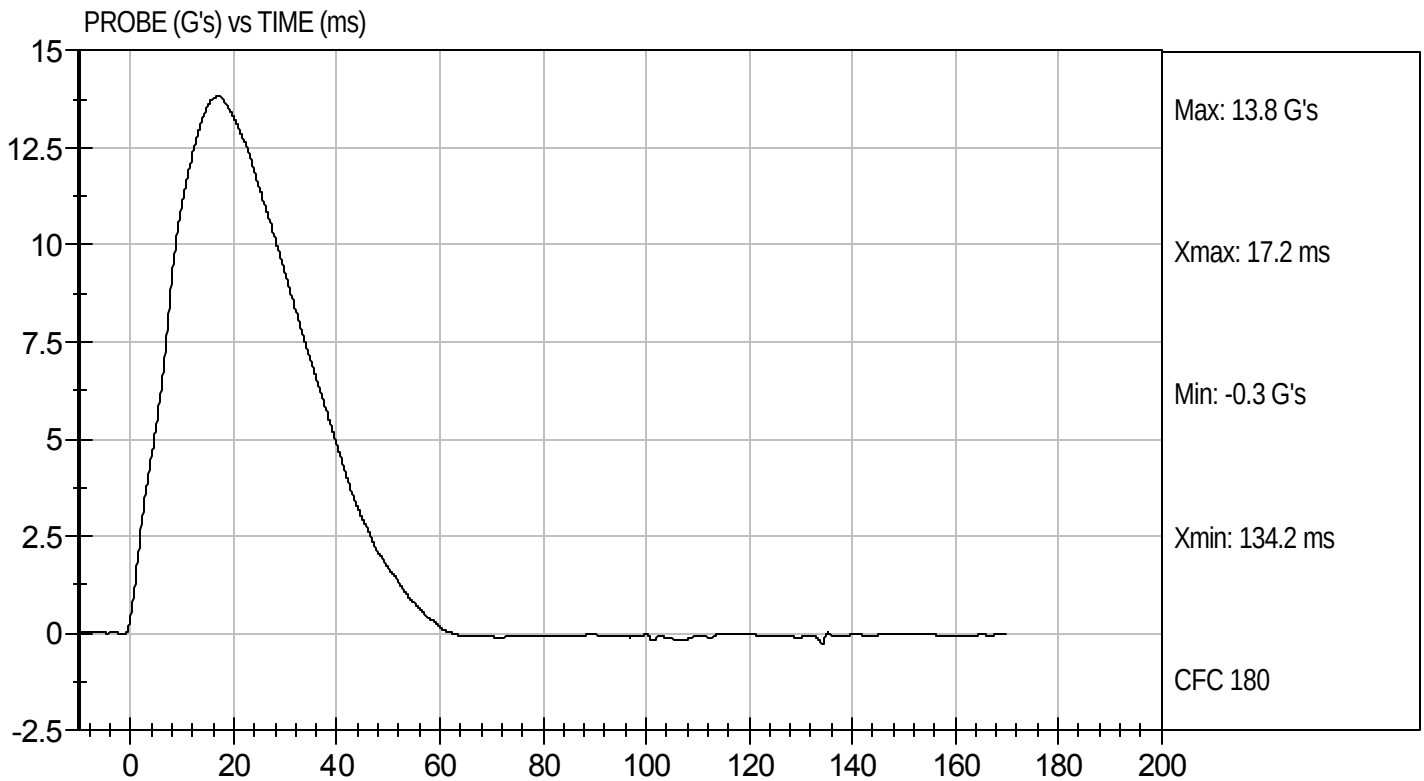
1/23/12
Test Date


Approved By



Test Desc: Abdomen Impact
Component ID: D12266

Test Date: 1/23/12
Velocity: 14.12 ft/s, 4.30 m/s

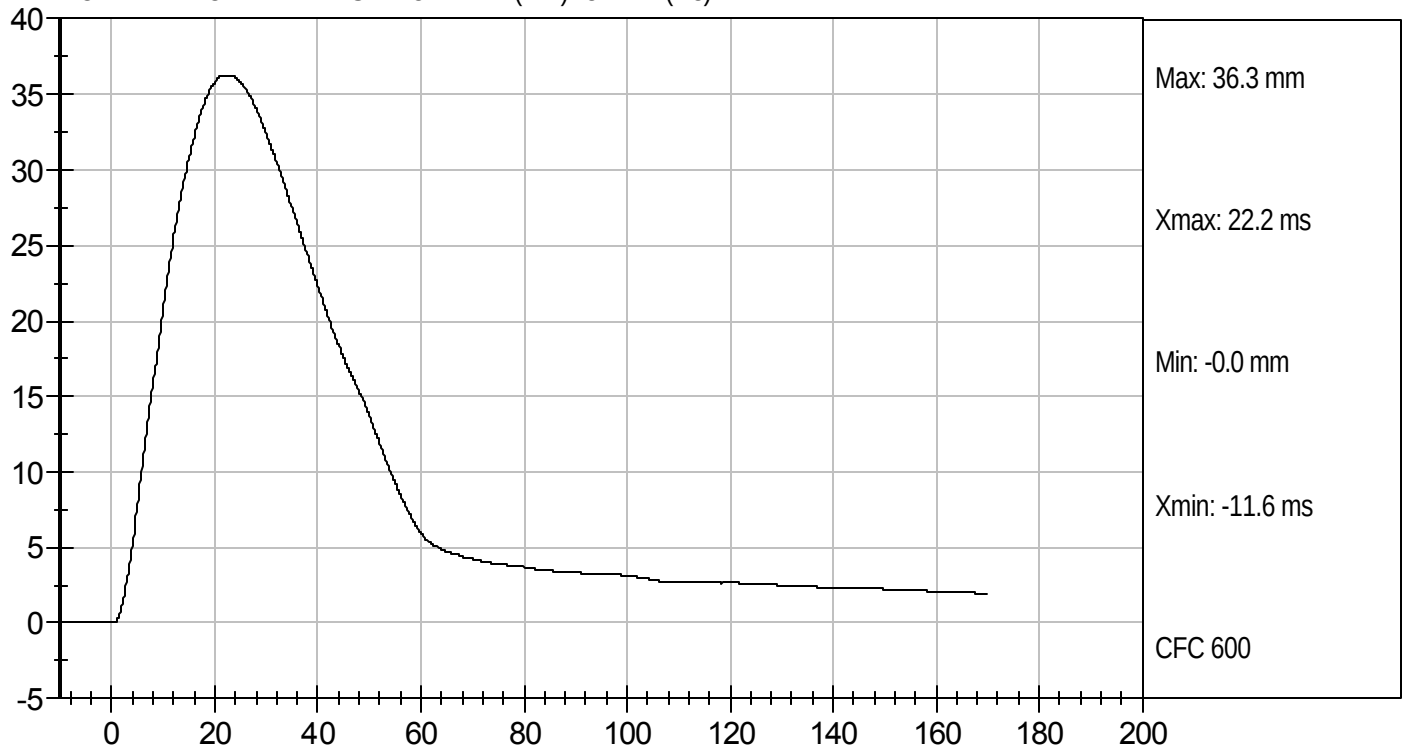




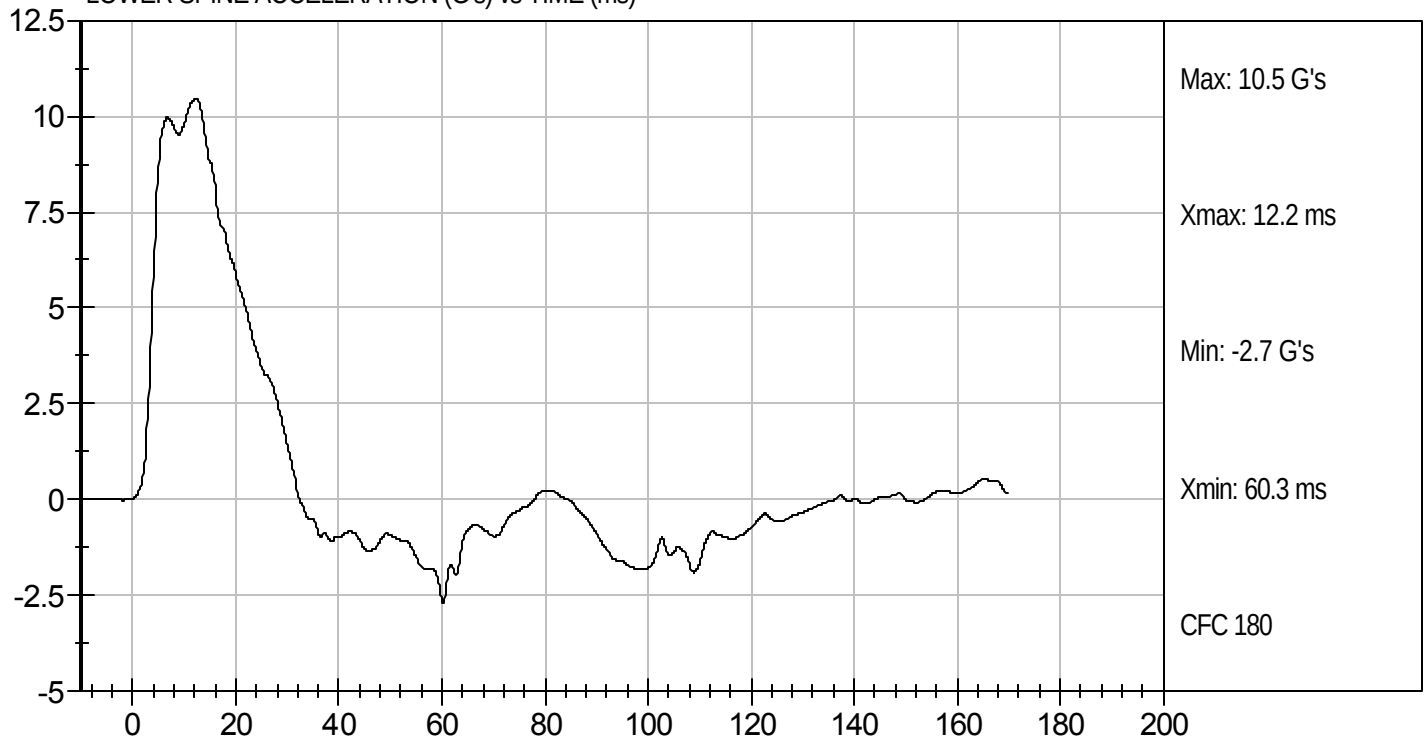
Test Desc: Abdomen Impact
Component ID: D12266

Test Date: 1/23/12
Velocity: 14.12 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: D12267

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Peak Impactor Acceleration	G's	38 to 47	44	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	3965	Pass
Overall Test Results			Pass	


Laboratory Technician

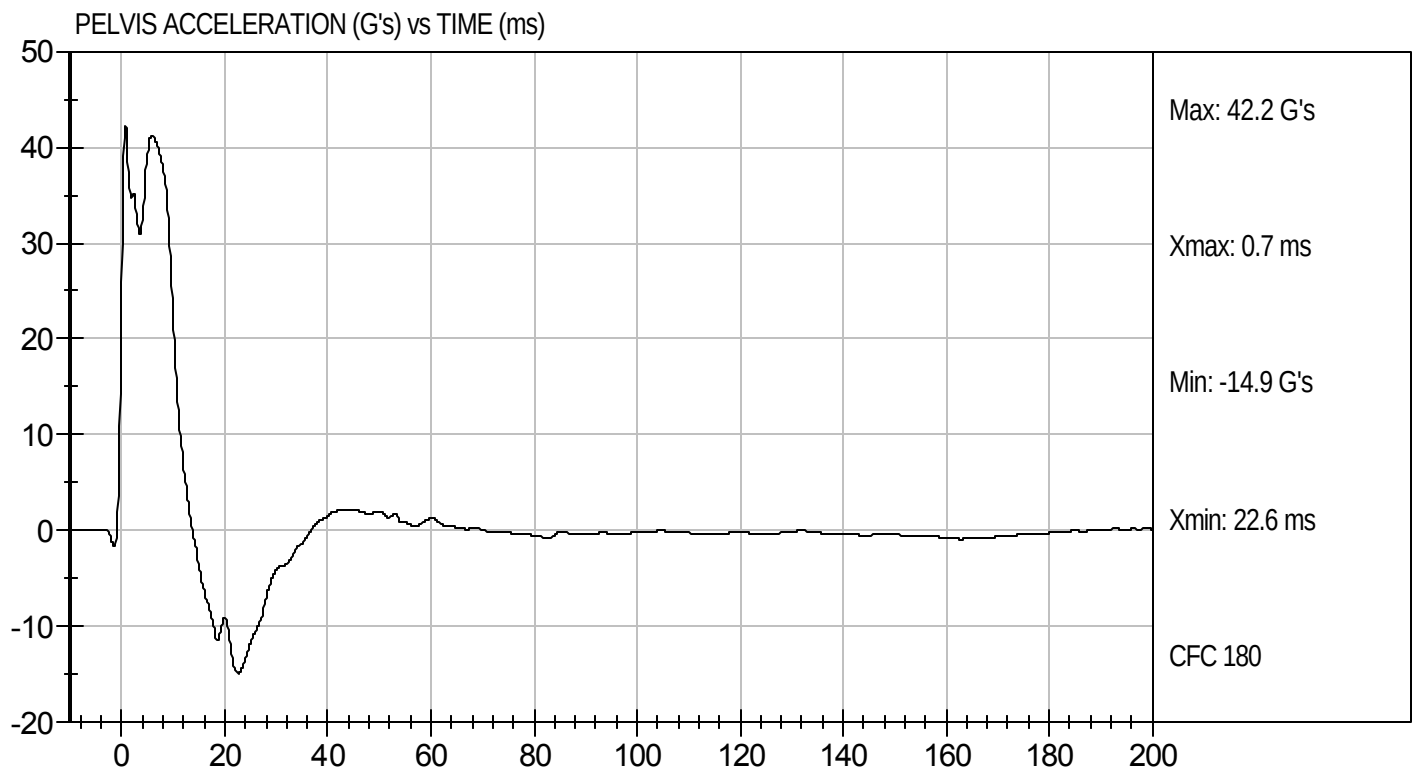
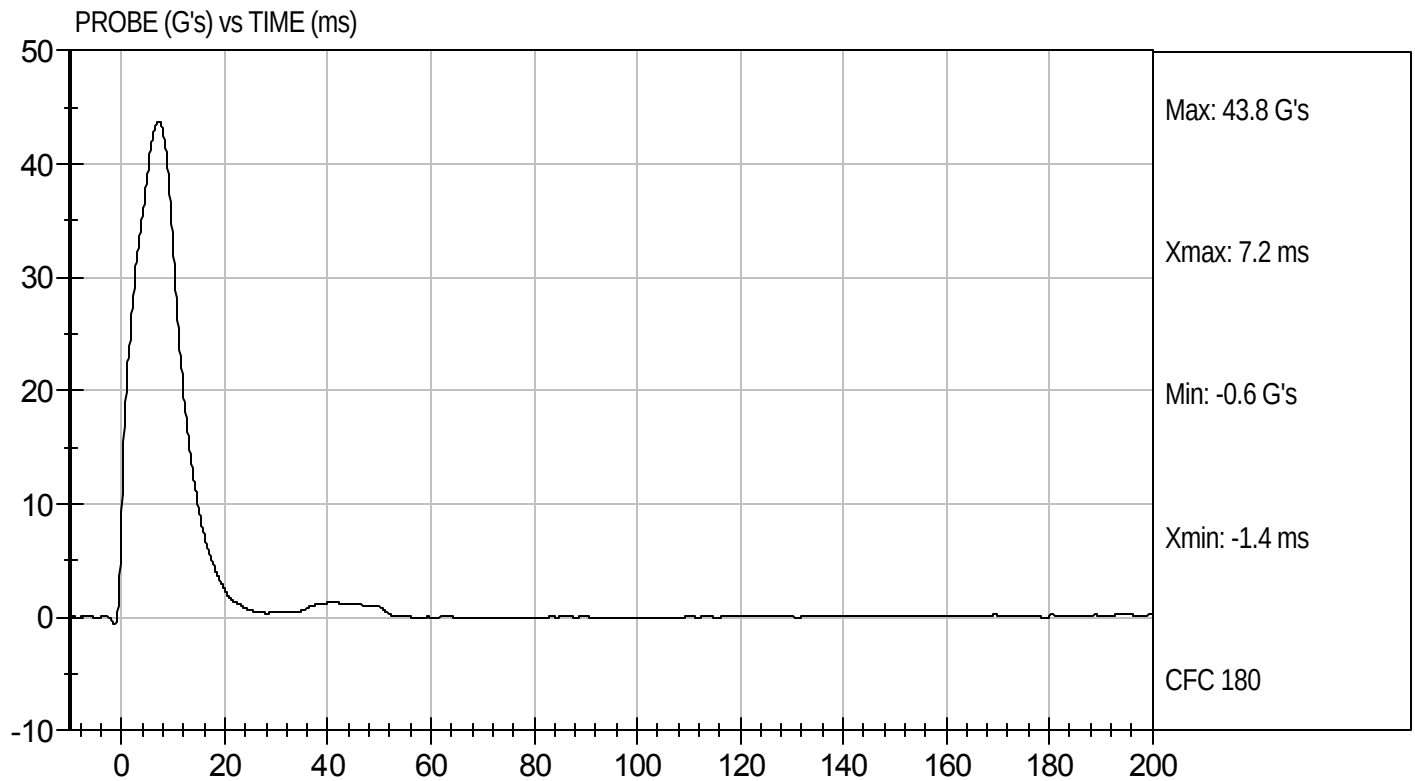
1/23/12
Test Date


Approved By



Test Desc: Pelvis Impact
Component ID: D12267

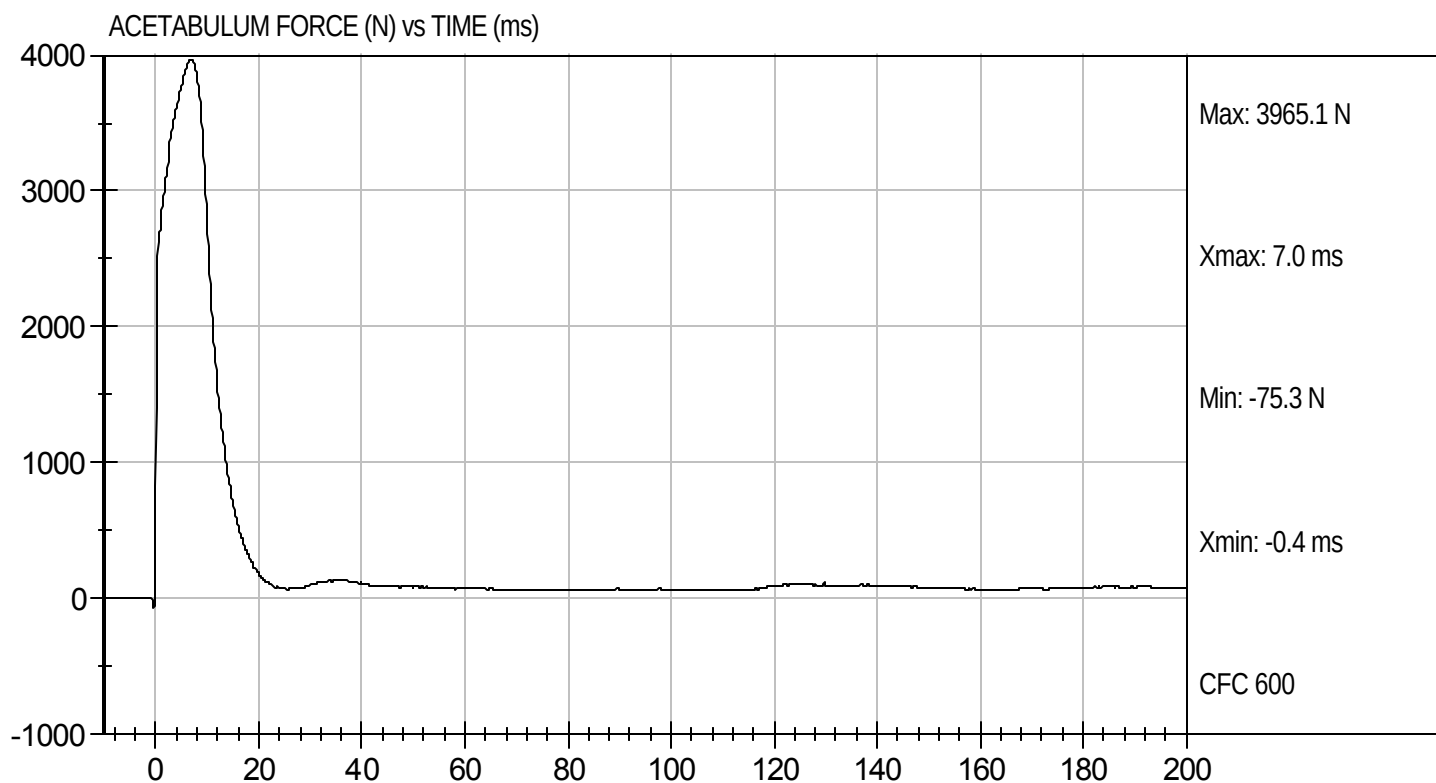
Test Date: 1/23/12
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Pelvis Impact
Component ID: D12267

Test Date: 1/23/12
Velocity: 21.9 ft/s, 6.68 m/s

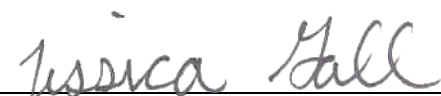


MGA RESEARCH CORPORATION
ILIAC IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D12268

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	29	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Peak Impactor Acceleration	G's	36 to 45	37	Pass
Pelvis Y Acceleration	G's	28 to 39	28	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4510	Pass
Overall Test Results			Pass	


Laboratory Technician

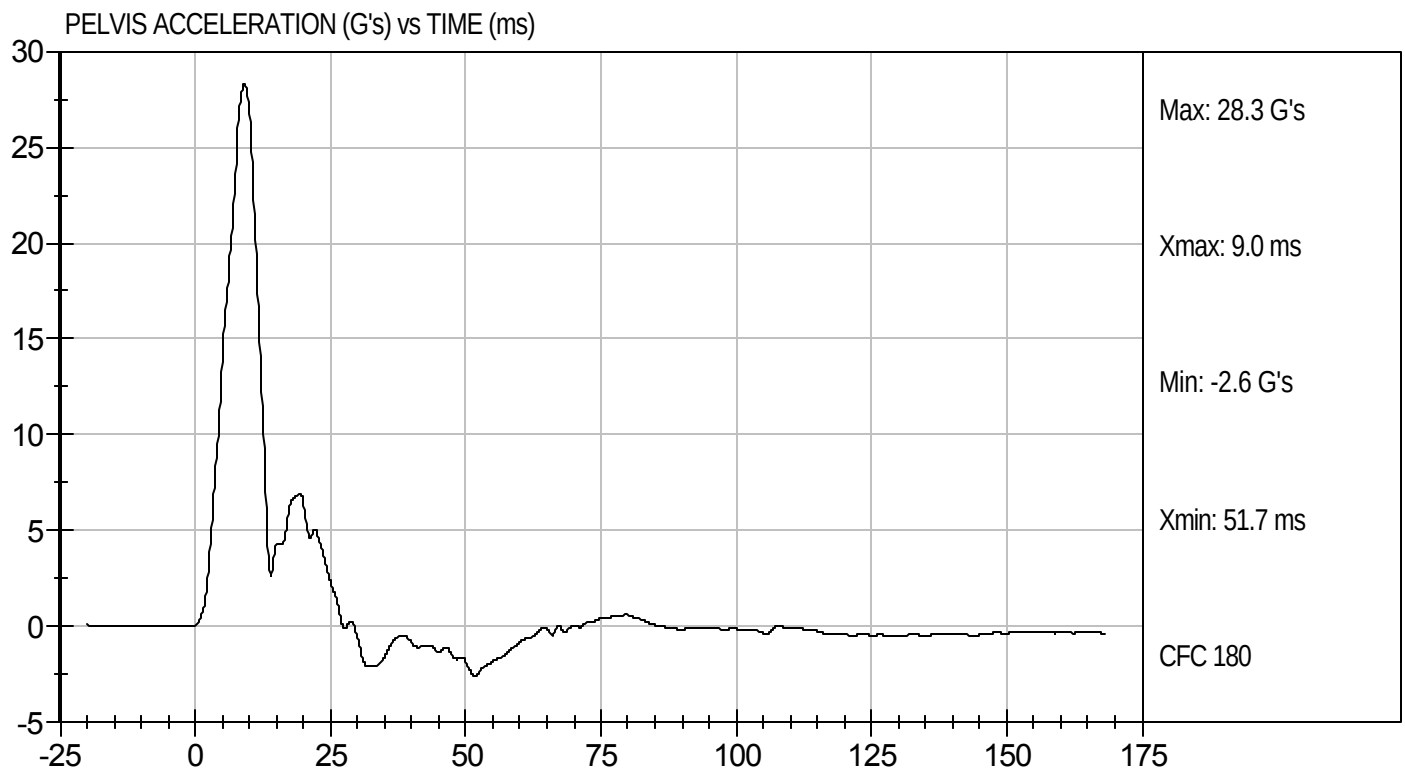
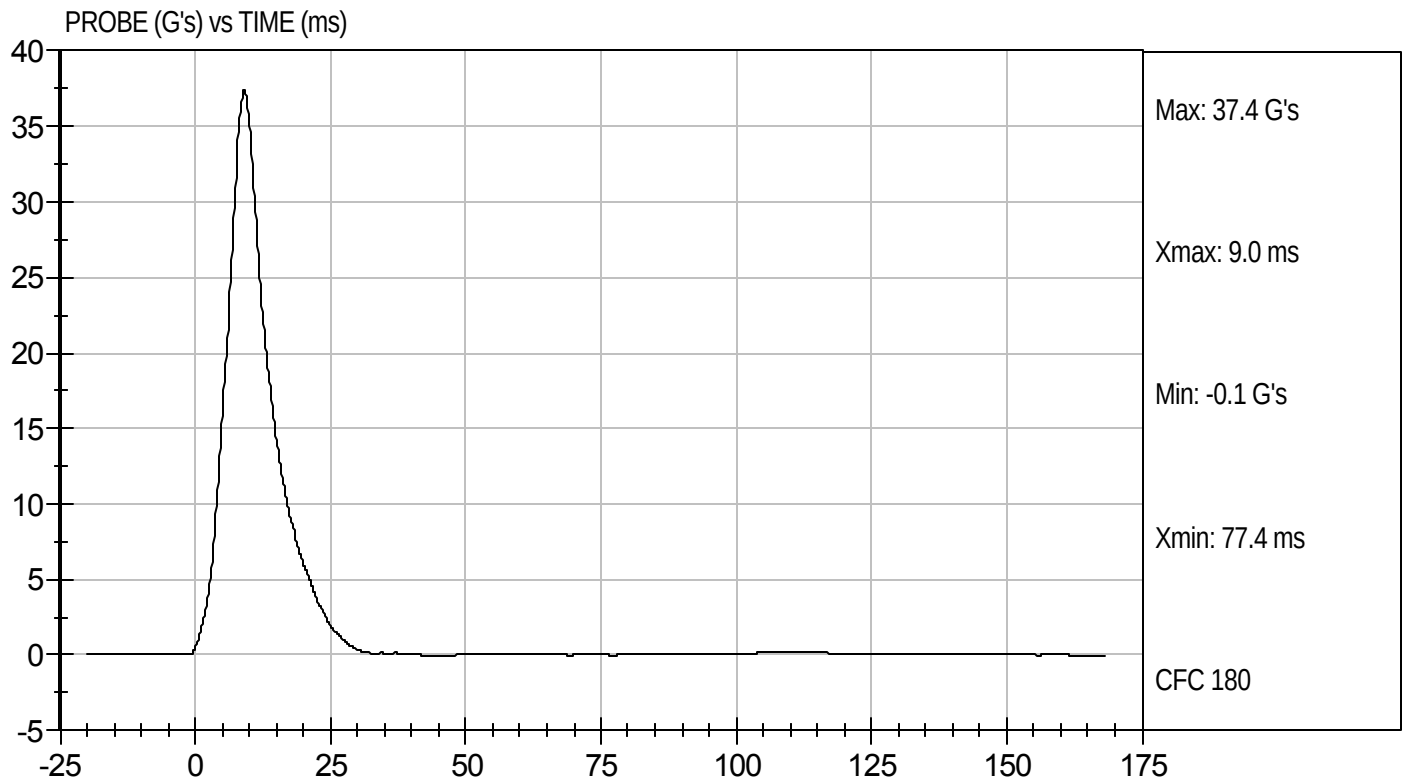
1/23/12
Test Date


Approved By



Test Desc: Iliac Impact
Component ID: D12268

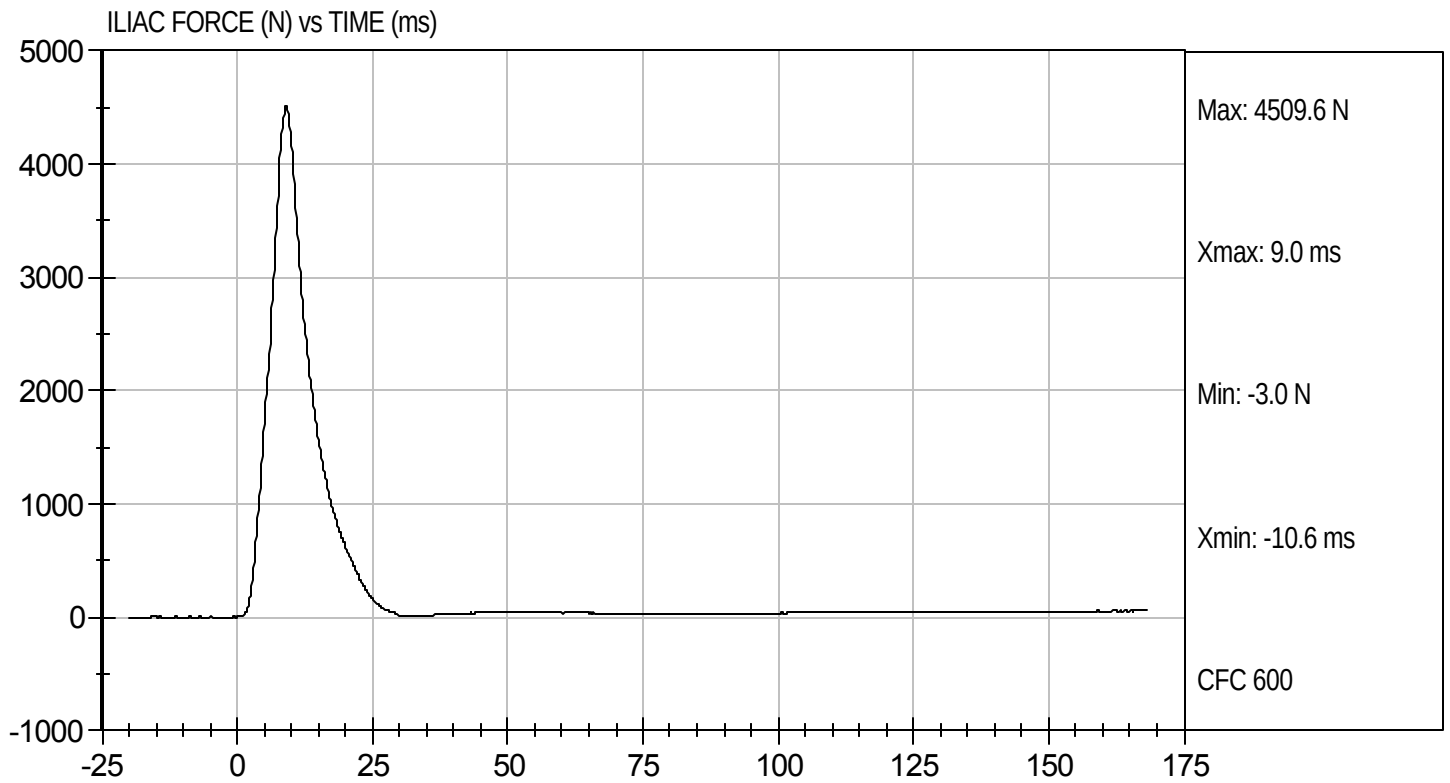
Test Date: 1/23/12
Velocity: 13.88 ft/s, 4.23 m/s





Test Desc: Iliac Impact
Component ID: D12268

Test Date: 1/23/12
Velocity: 13.88 ft/s, 4.23 m/s

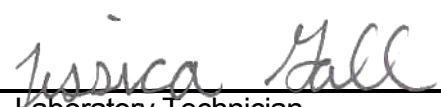


MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D12461

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	16	Pass
Peak Resultant Acceleration	G's	115 to 137	119	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-4.6	Pass
Unimodal	N/A	<15%	Yes	Pass
Overall Test Results				Pass



Laboratory Technician

2/13/12
Test Date

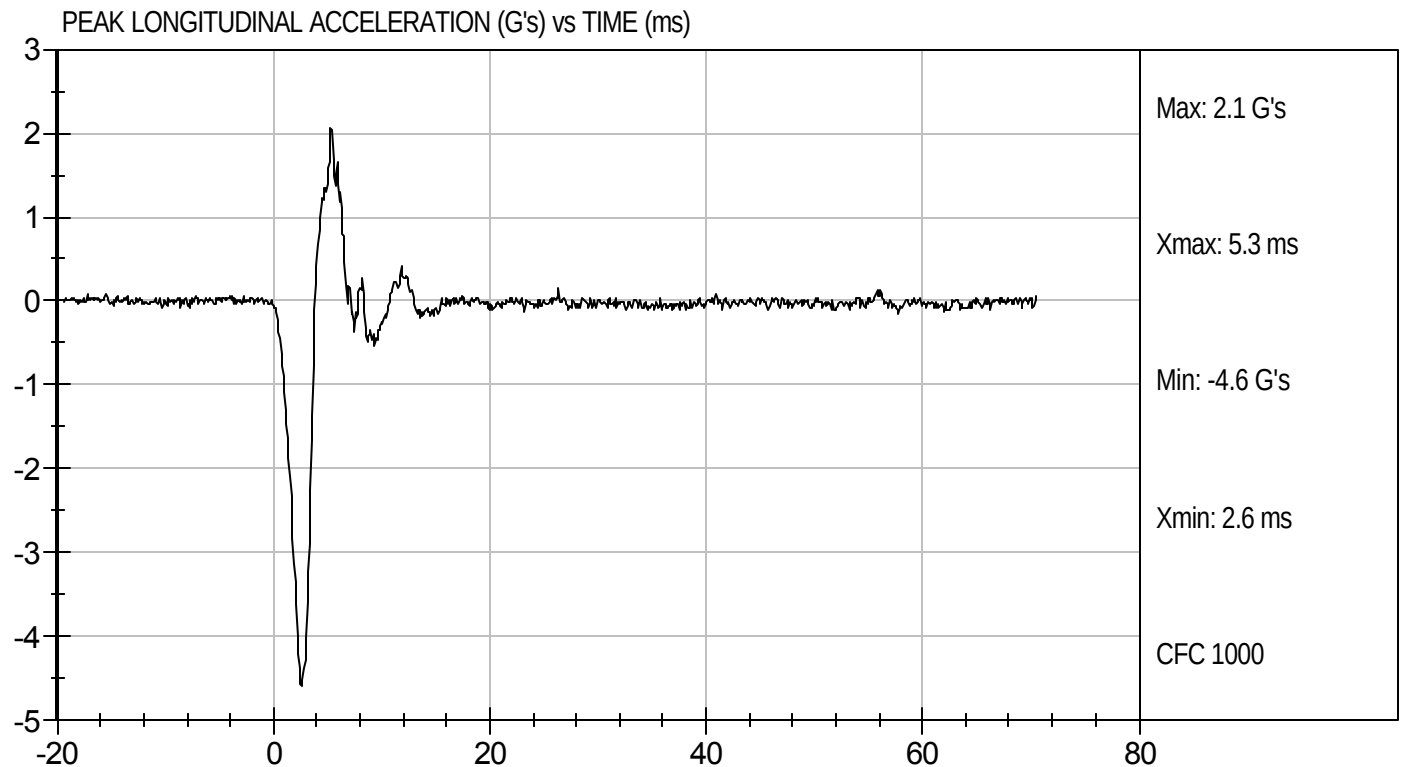
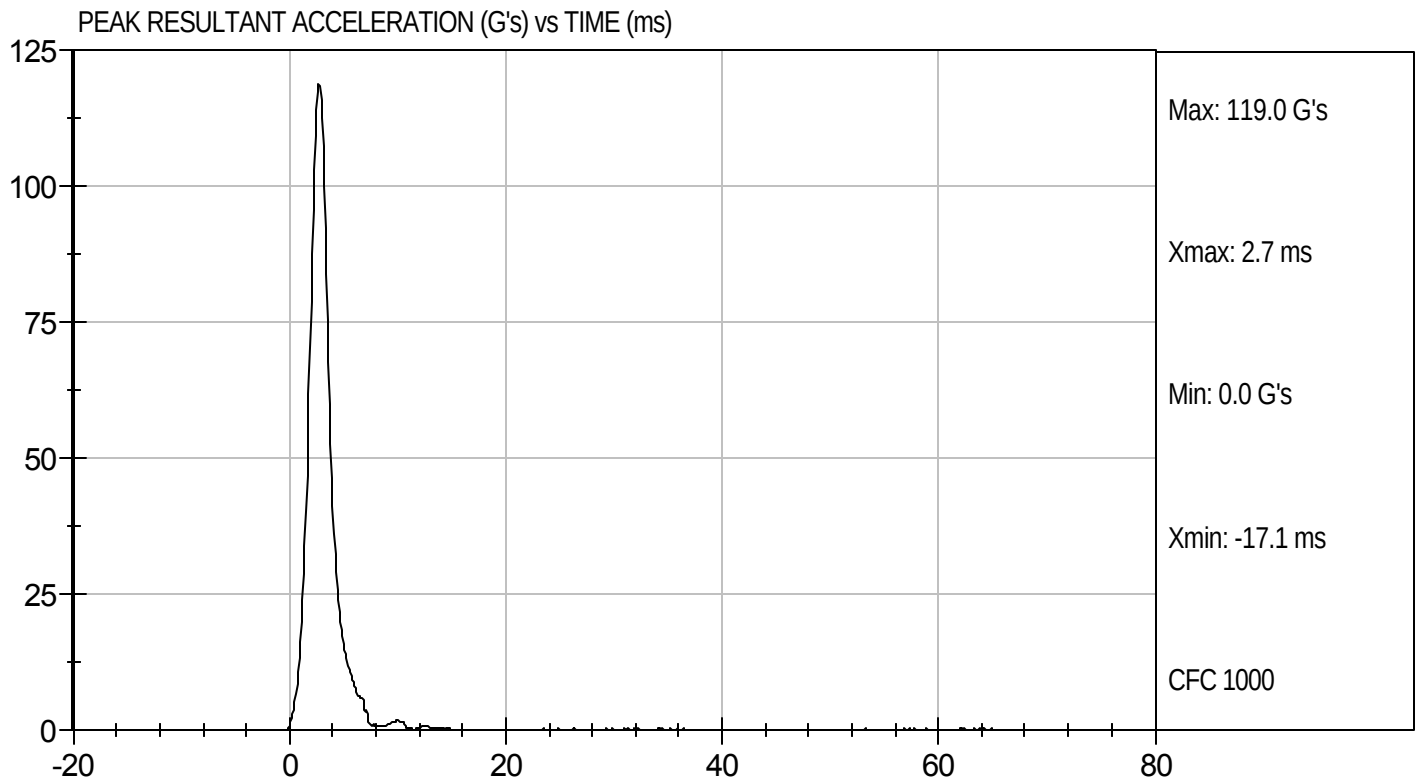


Approved By



Test Desc: Head Drop
Component ID: D12461

Test Date: 2/13/12
Velocity: 0 ft/s, 0 m/s

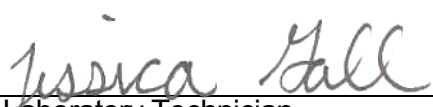


MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D12462

Tested Parameter		Units	Specification	Result	Pass/Fail
Temperature		deg C	20.6 to 22.2	21.6	Pass
Humidity		%	10 to 70	16	Pass
Impact Velocity		m/s	5.51 to 5.63	5.58	Pass
Delta Velocity	10 ms	m/s	2.20 to 2.80	2.44	Pass
	15 ms	m/s	3.30 to 4.10	3.51	Pass
	20 ms	m/s	4.40 to 5.40	4.70	Pass
	25 ms	m/s	5.40 to 6.10	5.53	Pass
	25-100 ms	m/s	5.50 to 6.20	5.57	Pass
Maximum D-Plane Rotation		deg	71 to 81	71	Pass
Time of Maximum D-Plane Rotation		ms	50 to 70	62	Pass
Maximum Occipital Condyle Moment during Rotation Interval Nm			-44 to -36	-40	Pass
Time of Moment Decay to 0 Nm		ms	102 to 126	119	Pass
Overall Test Results				Pass	


 Laboratory Technician

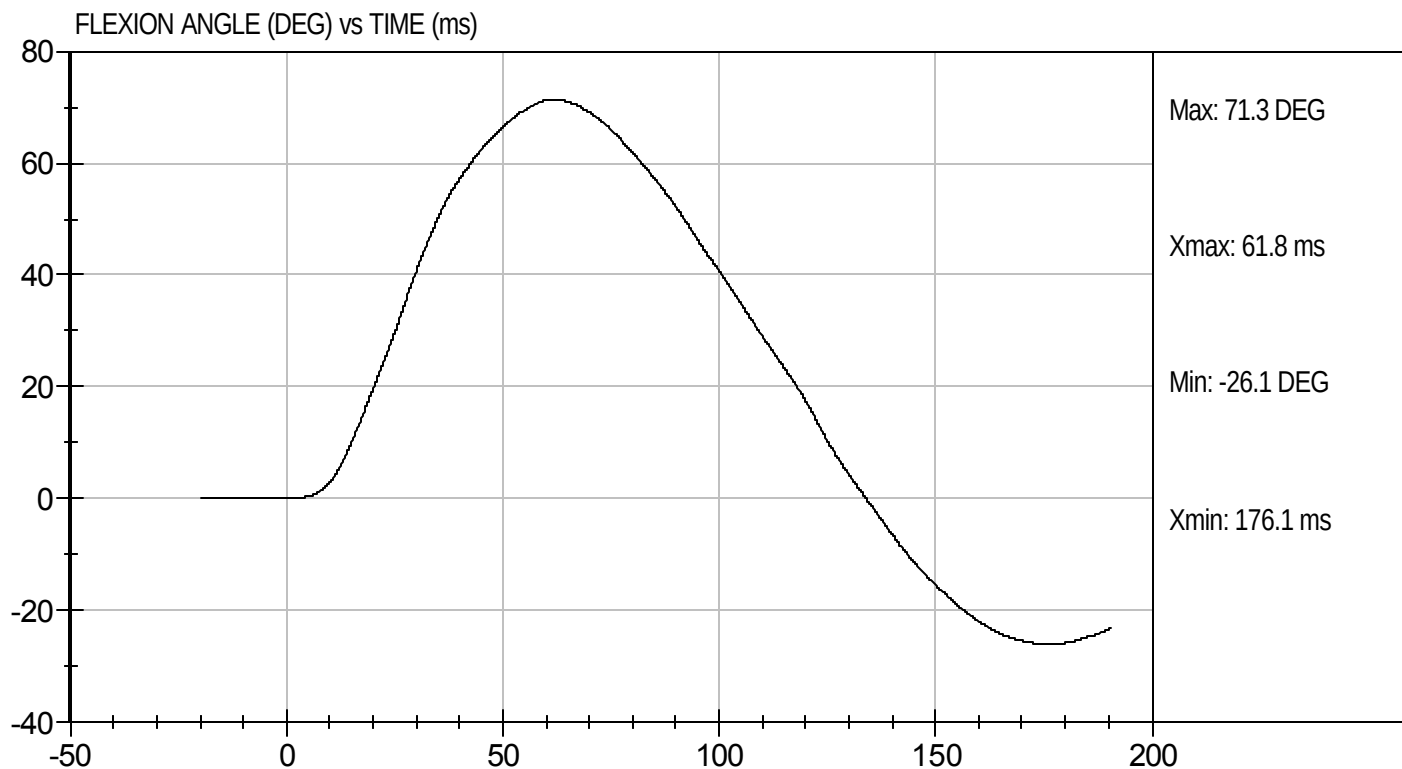
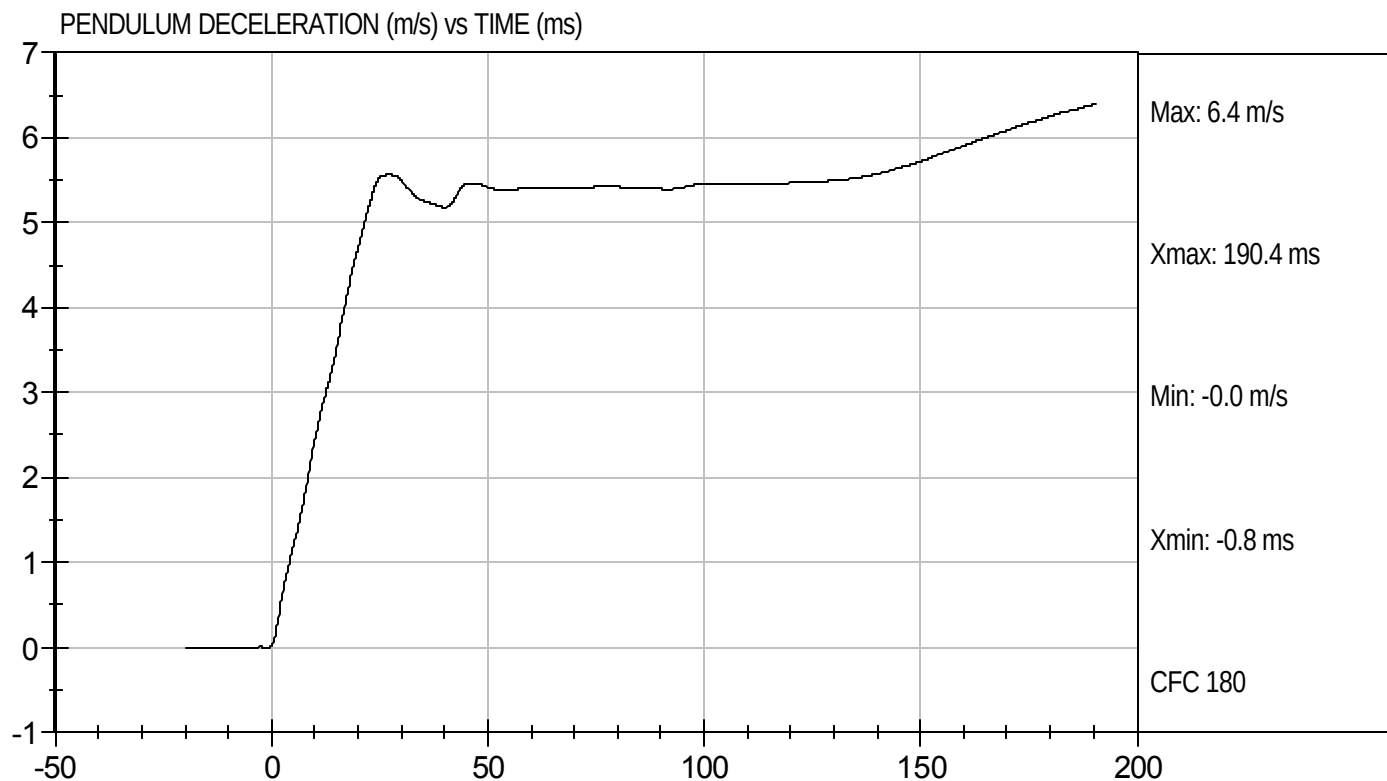
2/13/12
 Test Date


 Approved By



Test Desc: Neck Bending
Component ID: D12462

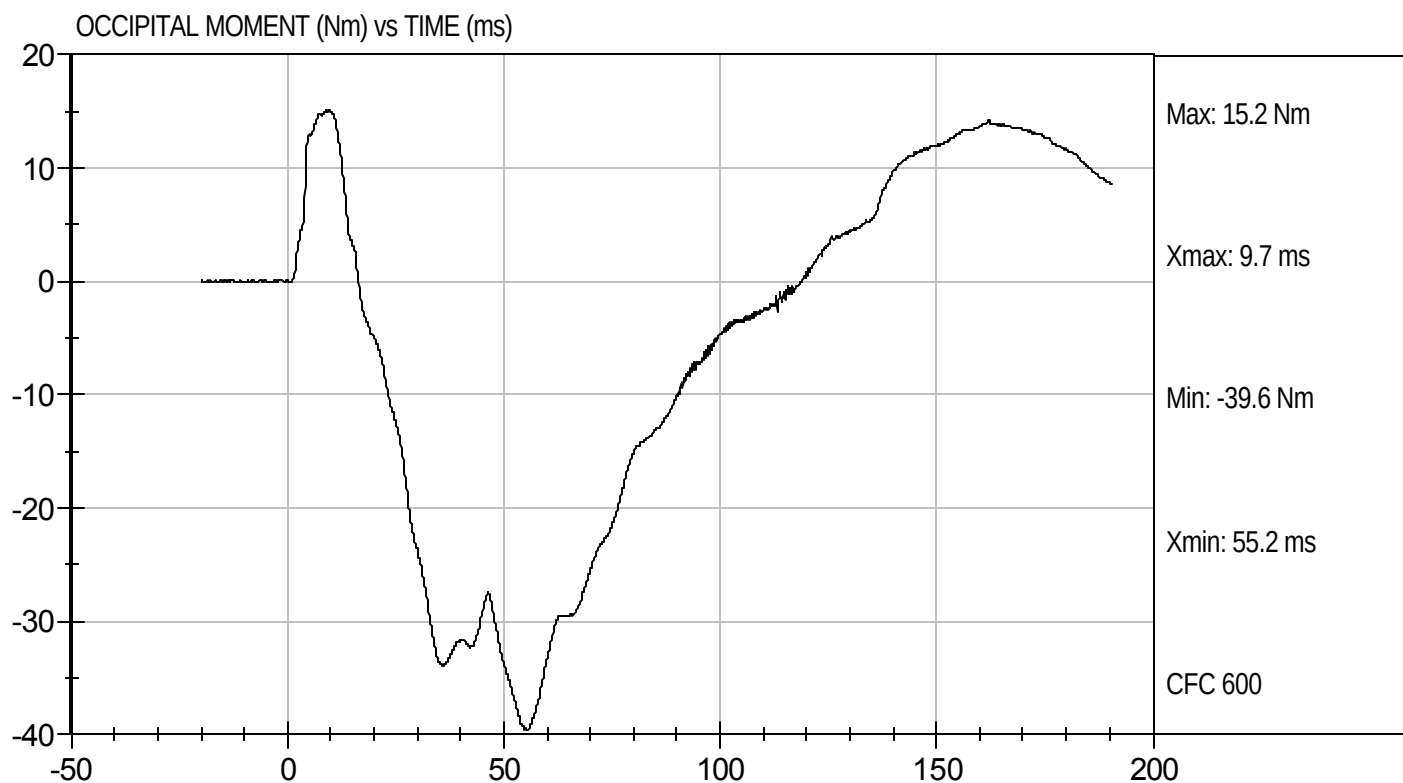
Test Date: 2/13/12
Velocity: 18.32 ft/s, 5.58 m/s





Test Desc: Neck Bending
Component ID: D12462

Test Date: 2/13/12
Velocity: 18.32 ft/s, 5.58 m/s



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-11s BUILD LEVEL D DUMMY

ATD Serial No: 296

Test ID: D12463

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	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	19	Pass
Overall Test Results				Pass


Laboratory Technician

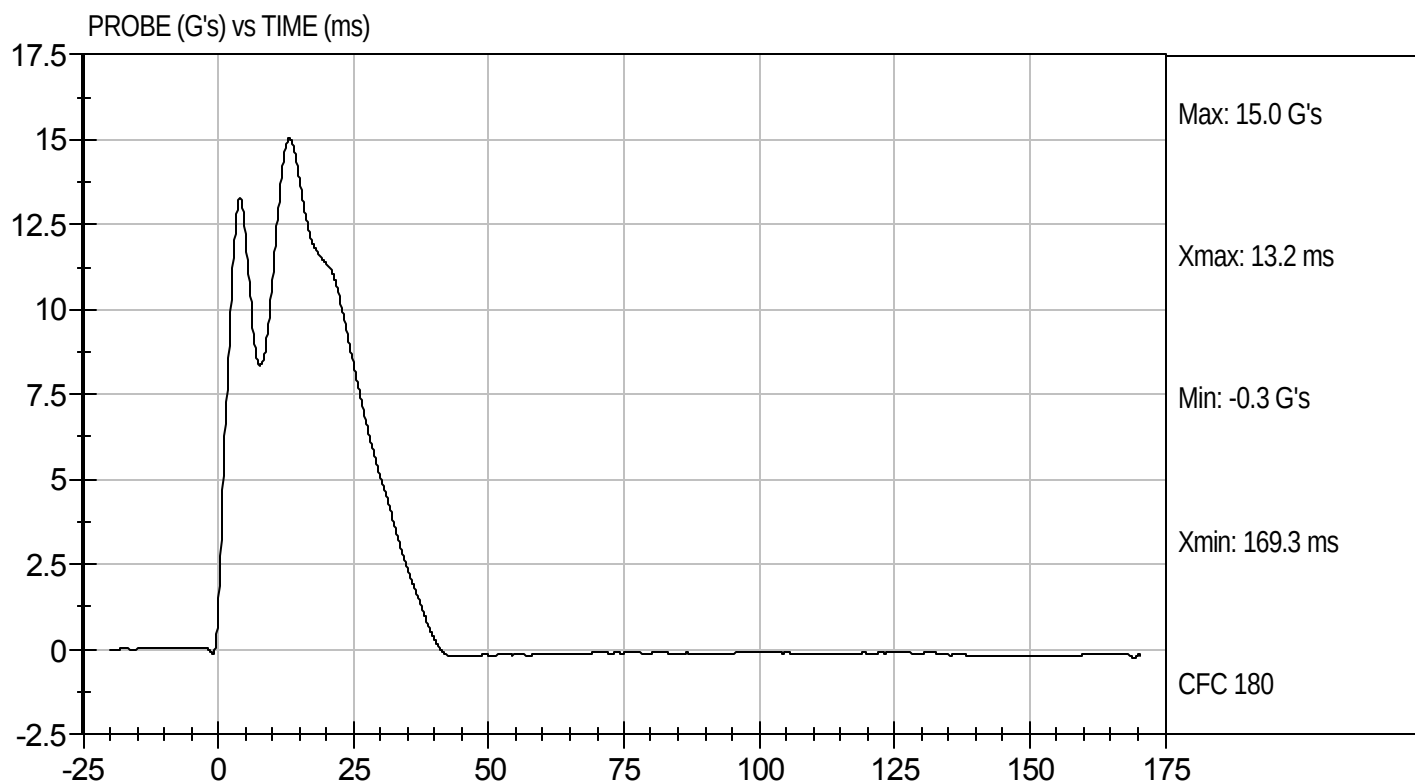
2/13/12
Test Date


Approved By



Test Desc: Shoulder Impact
Component ID: D12463

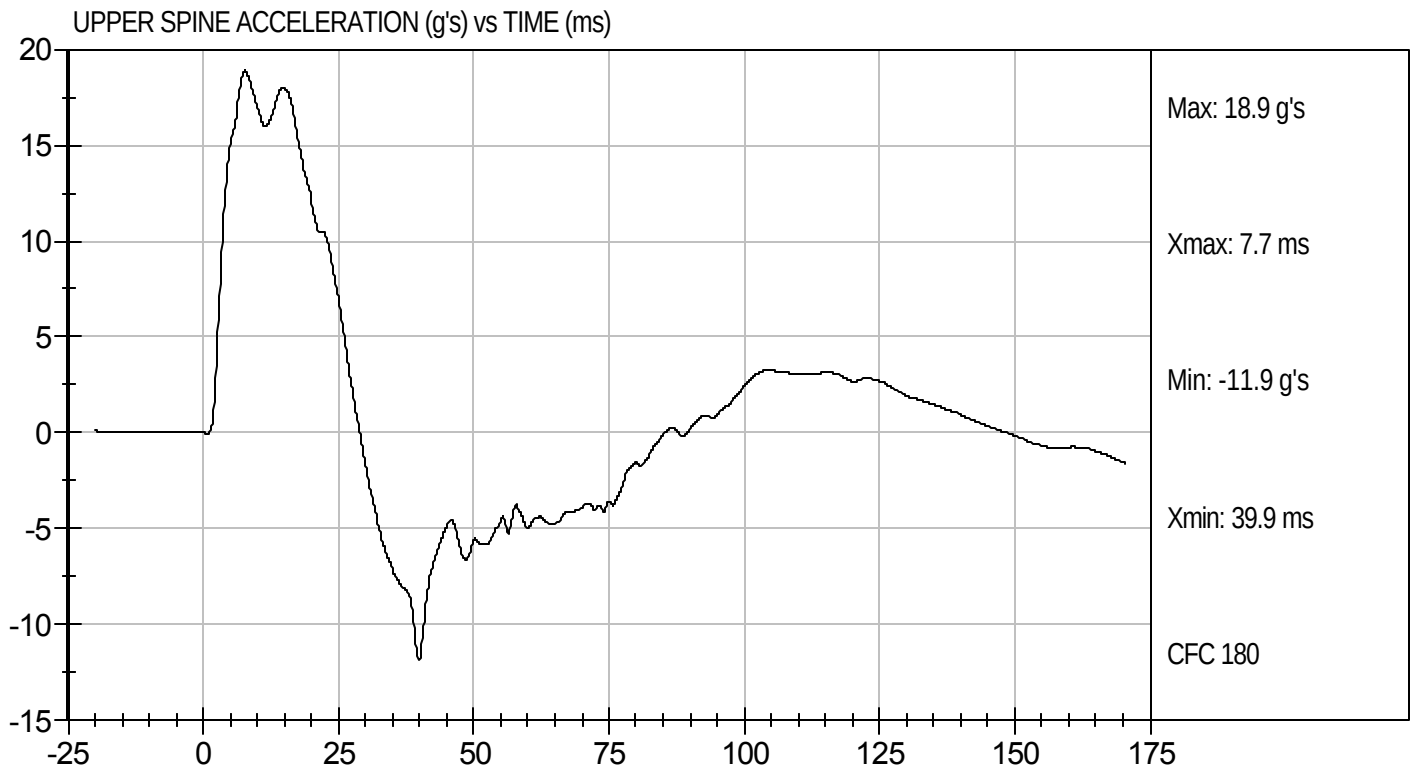
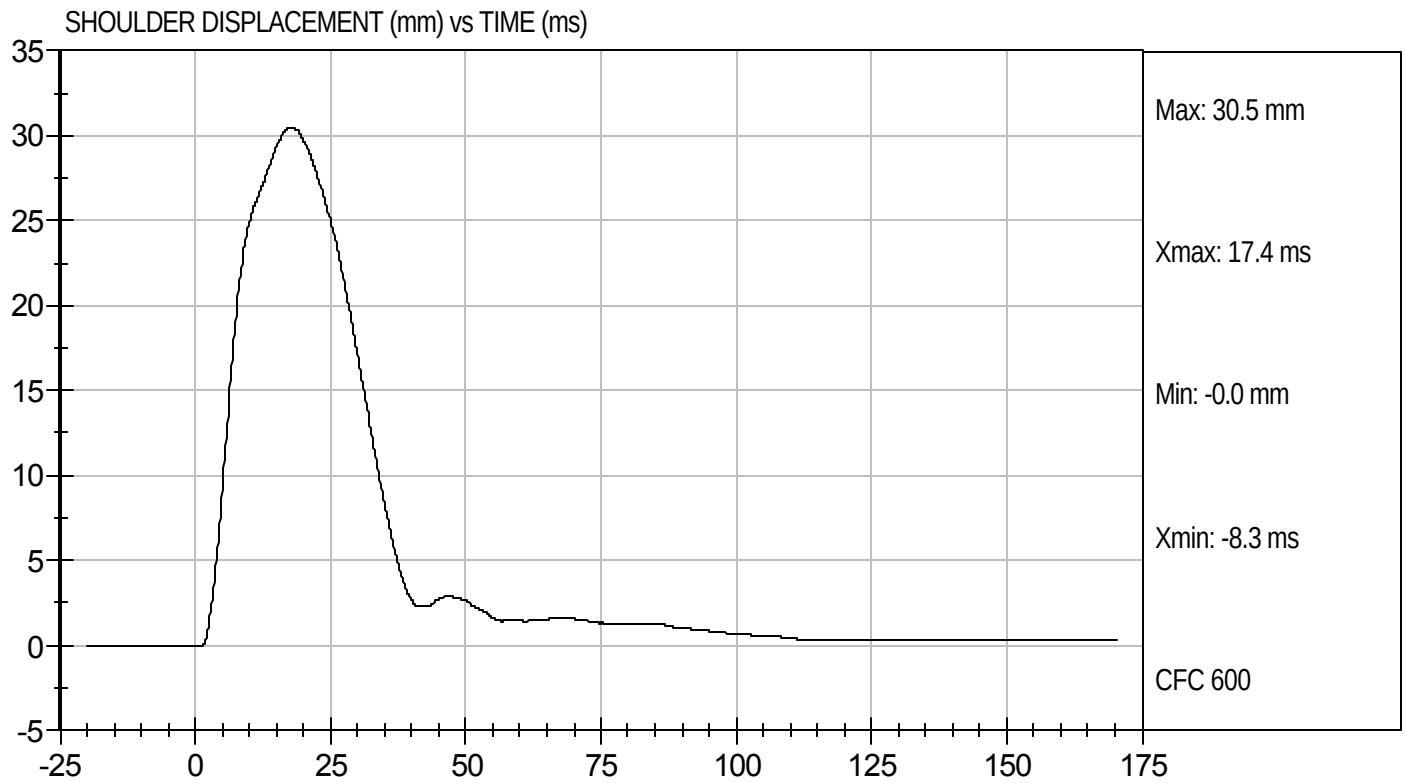
Test Date: 2/13/12
Velocity: 14.12 ft/s, 4.30 m/s





Test Desc: Shoulder Impact
Component ID: D12463

Test Date: 2/13/12
Velocity: 14.12 ft/s, 4.30 m/s



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

ATD Serial No: 296

Test I.D: D12464

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Peak Impactor Acceleration	G's	30 to 36	33	Pass
Shoulder Displacement	mm	31 to 40	35	Pass
Upper Rib Displacement	mm	25 to 32	27	Pass
Middle Rib Displacement	mm	30 to 36	32	Pass
Lower Rib Displacement	mm	32 to 38	33	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	38	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	32	Pass
Overall Test Results			Pass	

Jessica Gall
Laboratory Technician

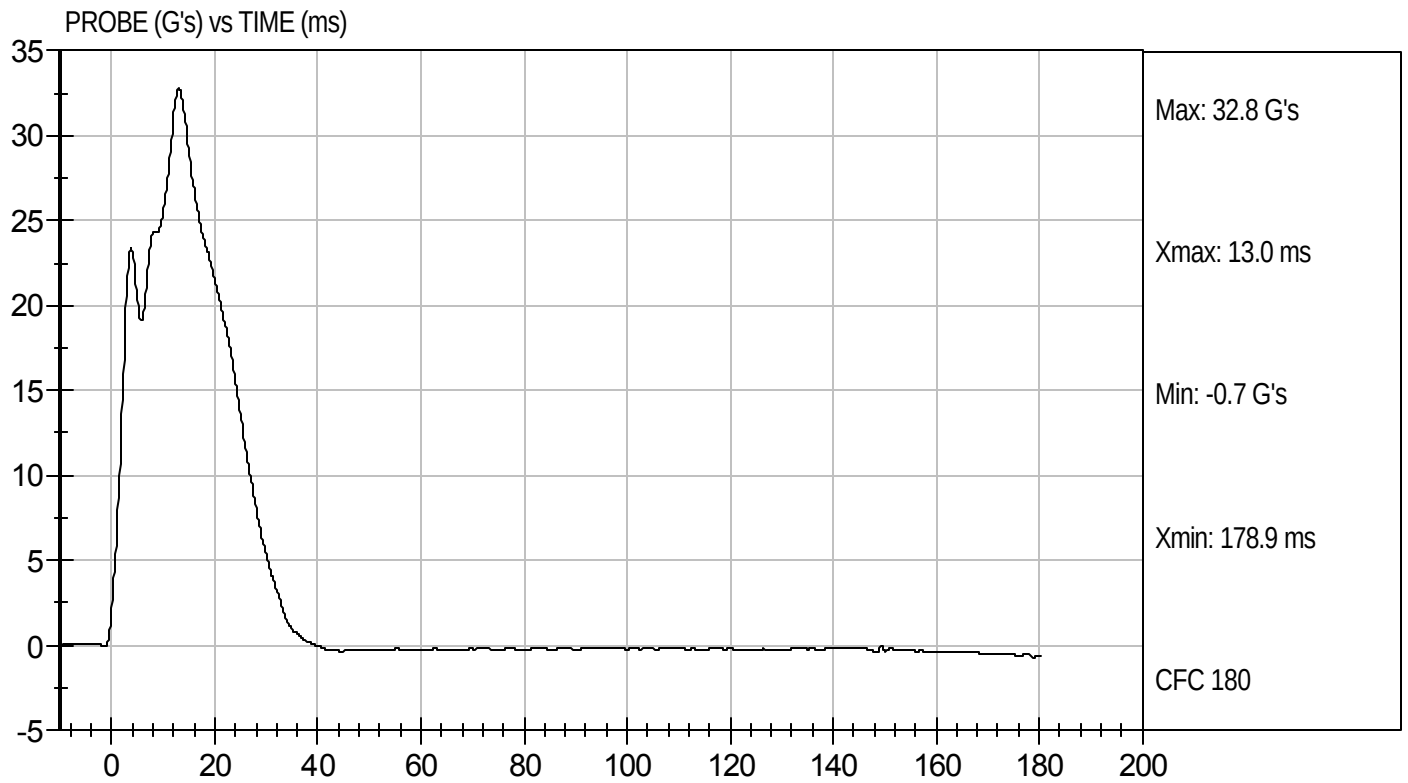
2/13/12
Test Date

David Winkelbauer
Approved By



Test Desc: Thorax With Arm
Component ID: D12464

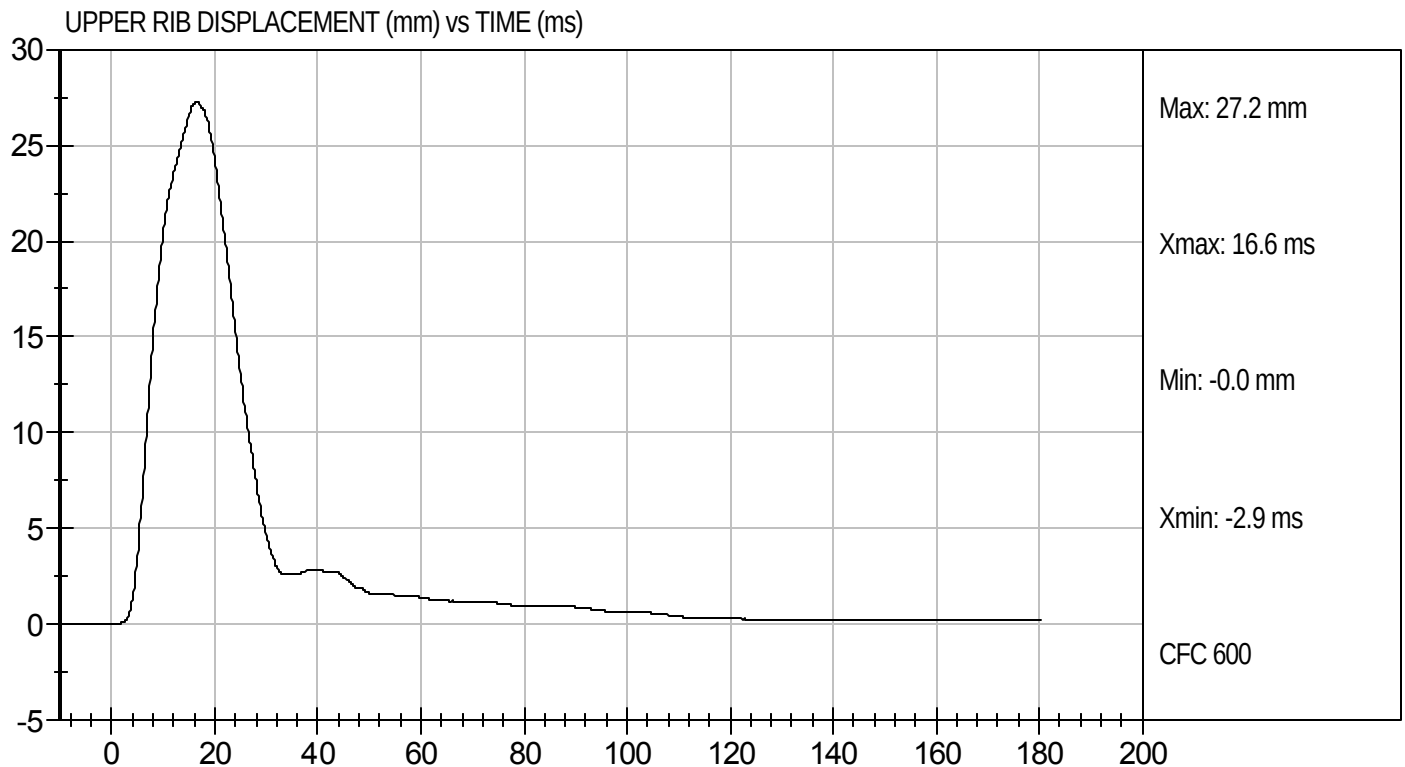
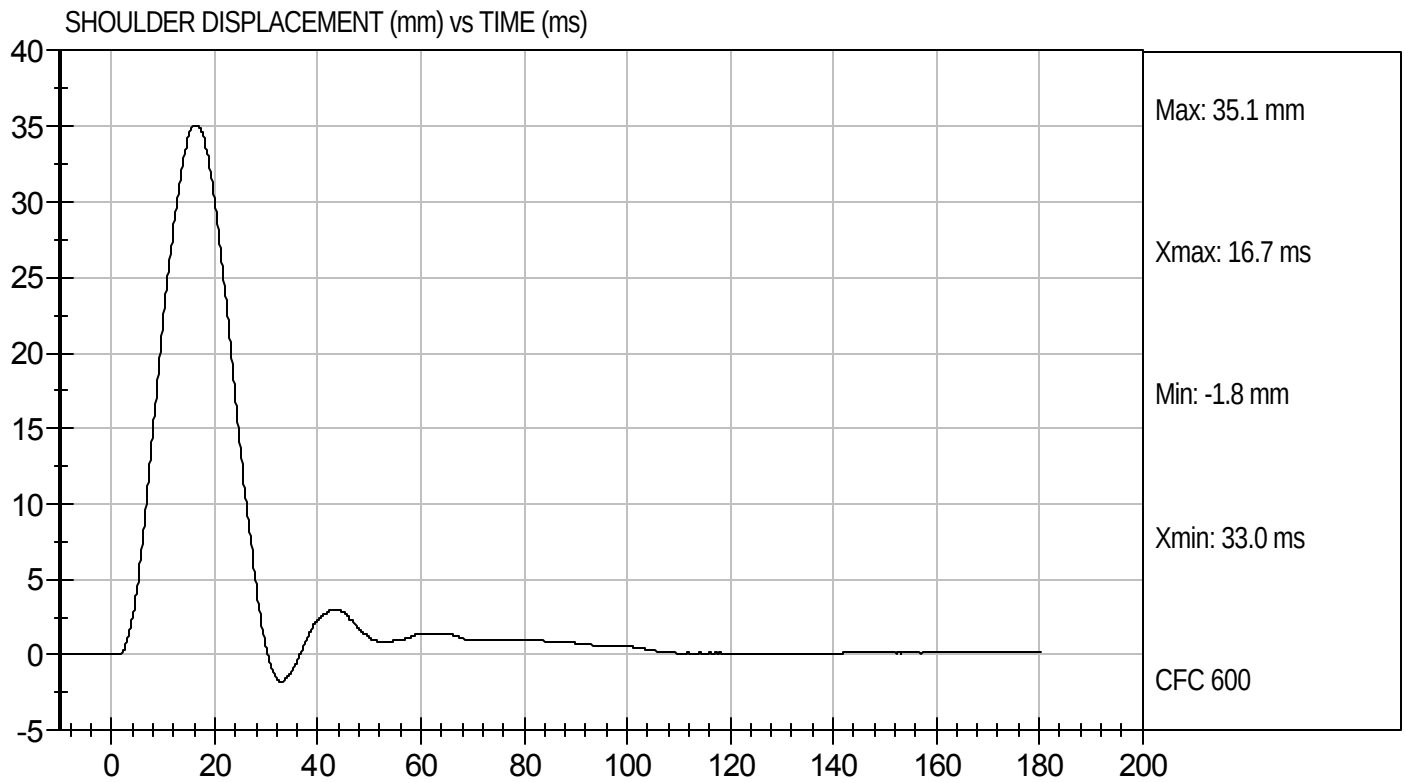
Test Date: 2/13/12
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D12464

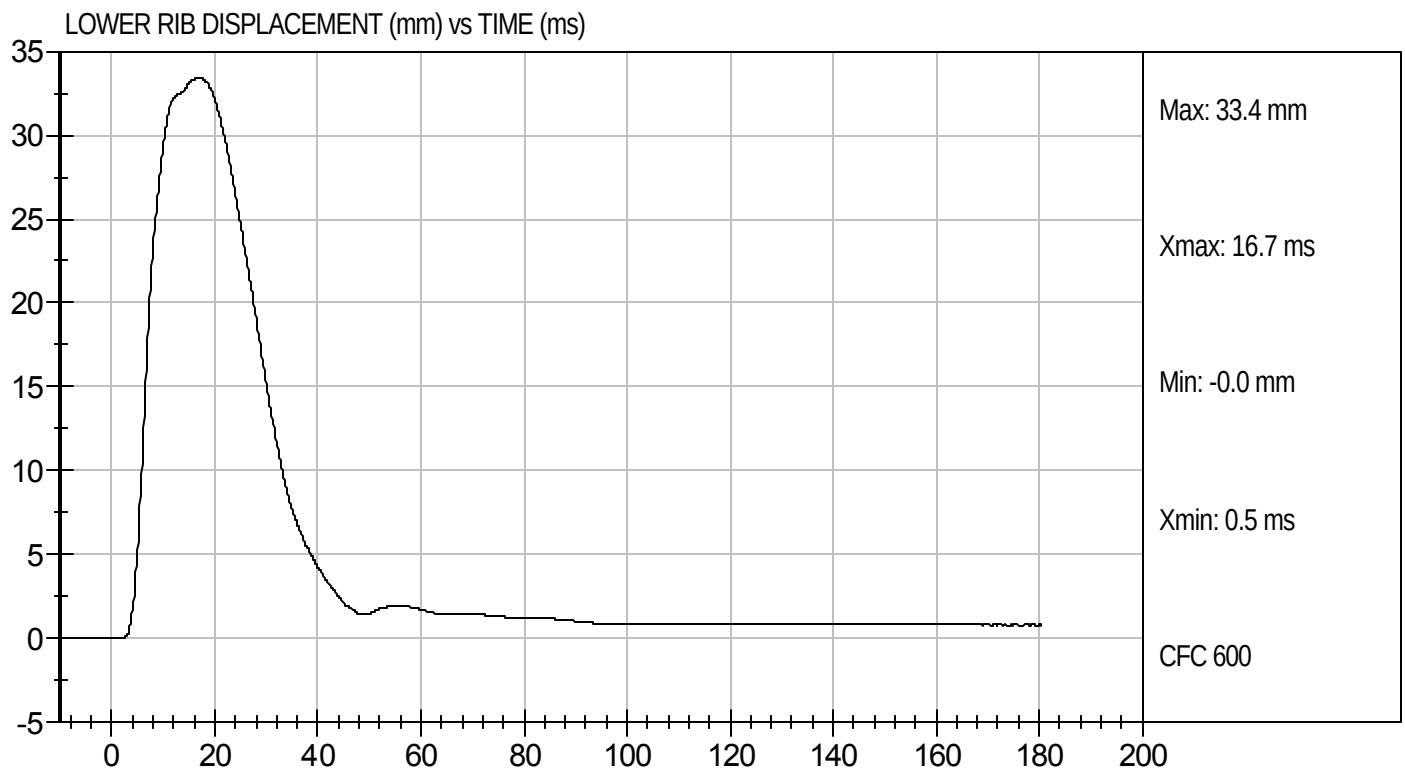
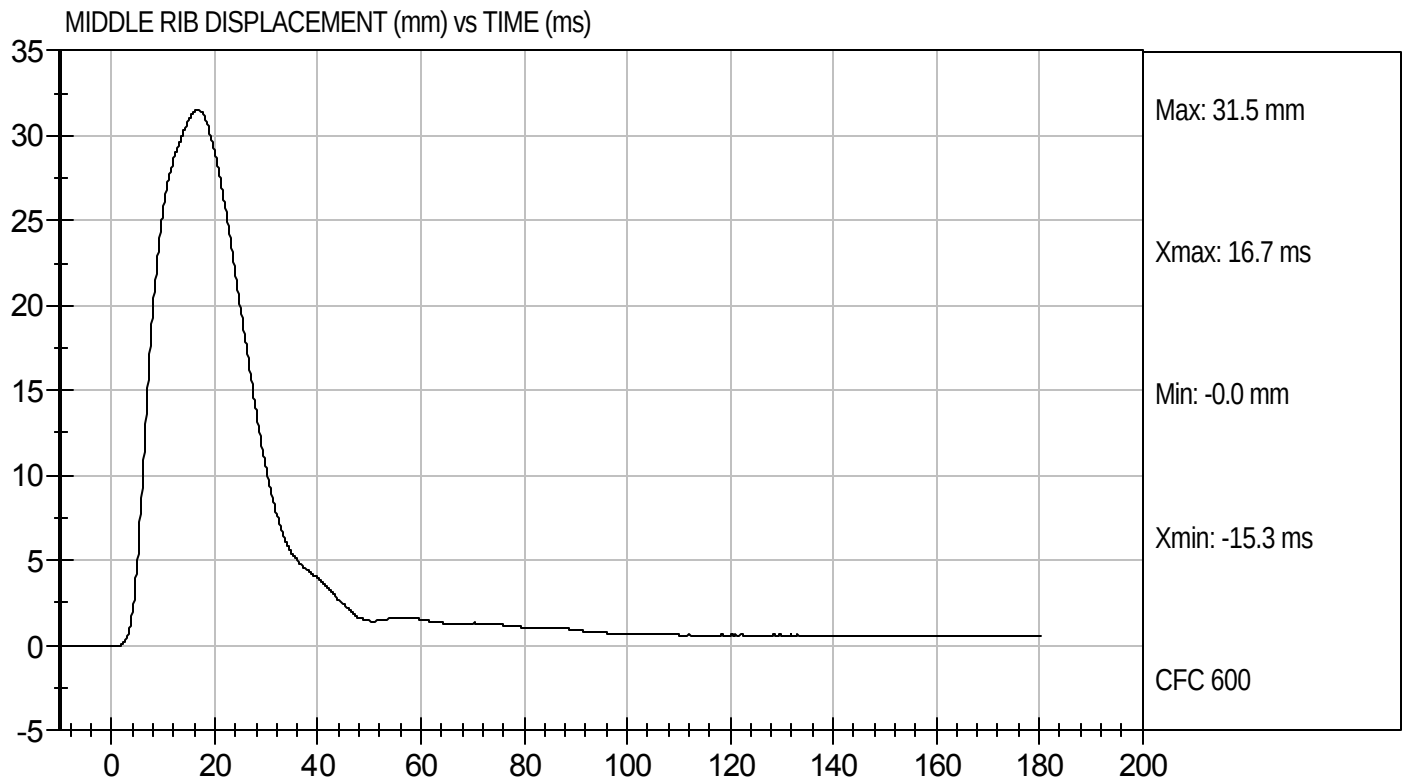
Test Date: 2/13/12
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D12464

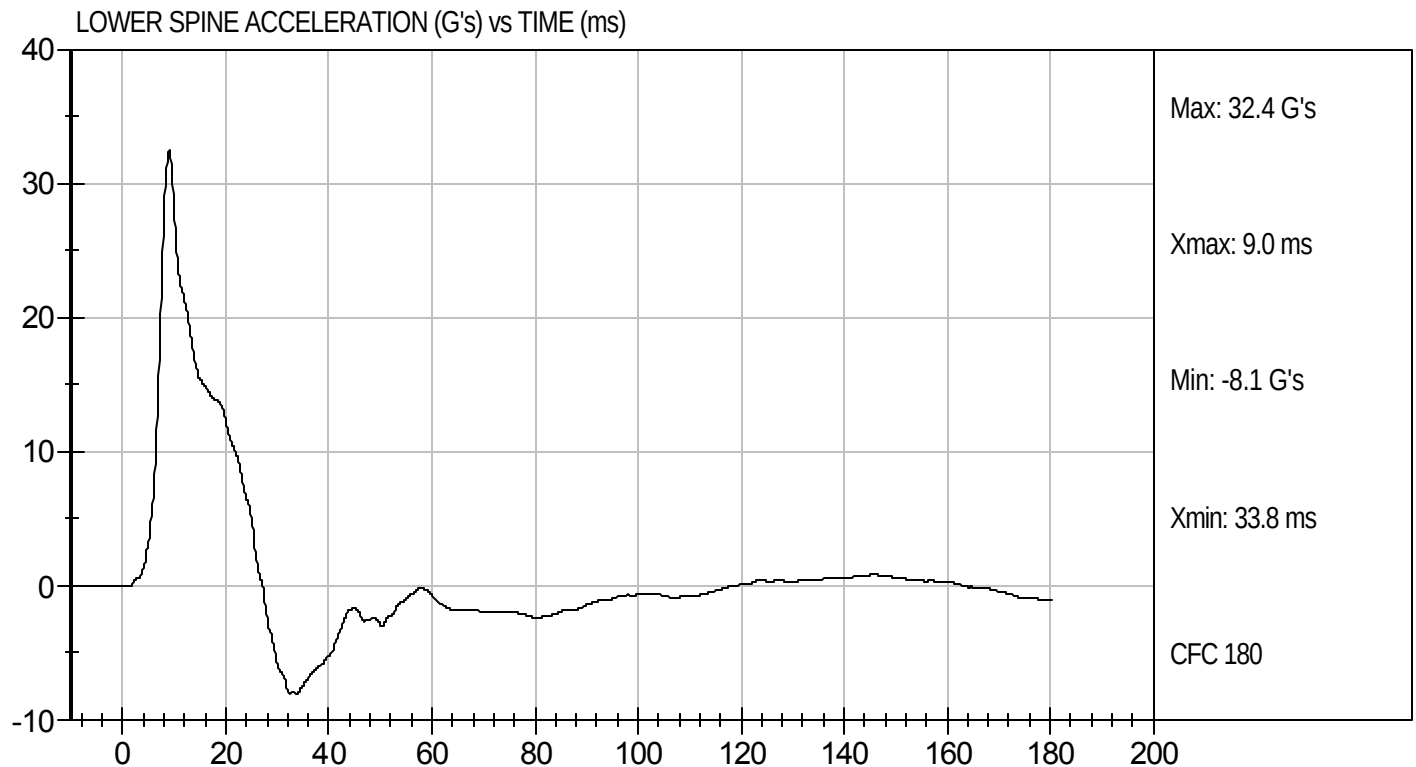
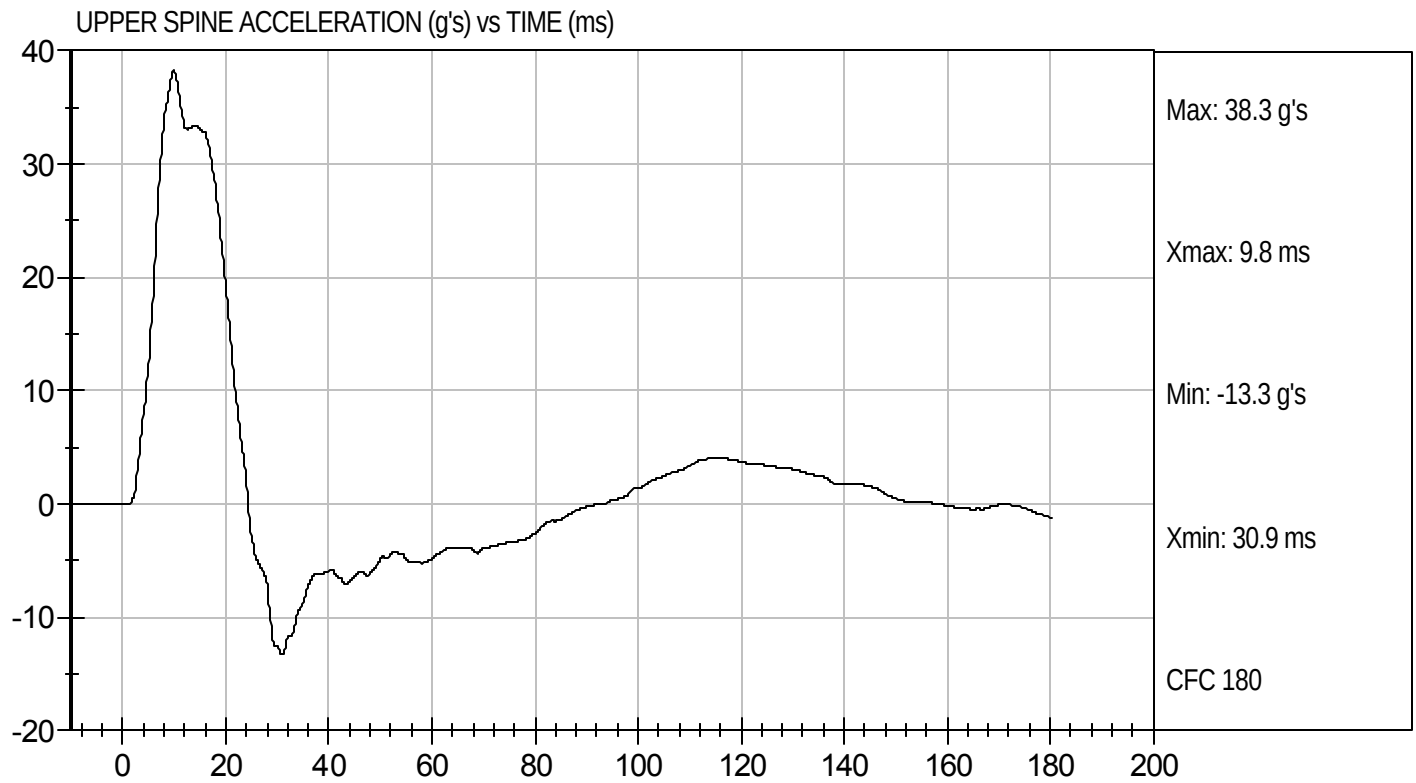
Test Date: 2/13/12
Velocity: 22.22 ft/s, 6.77 m/s





Test Desc: Thorax With Arm
Component ID: D12464

Test Date: 2/13/12
Velocity: 22.22 ft/s, 6.77 m/s



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

ATD Serial No: 296

Test I.D: D12465

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Peak Impactor Force	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	36	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	38	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	8	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

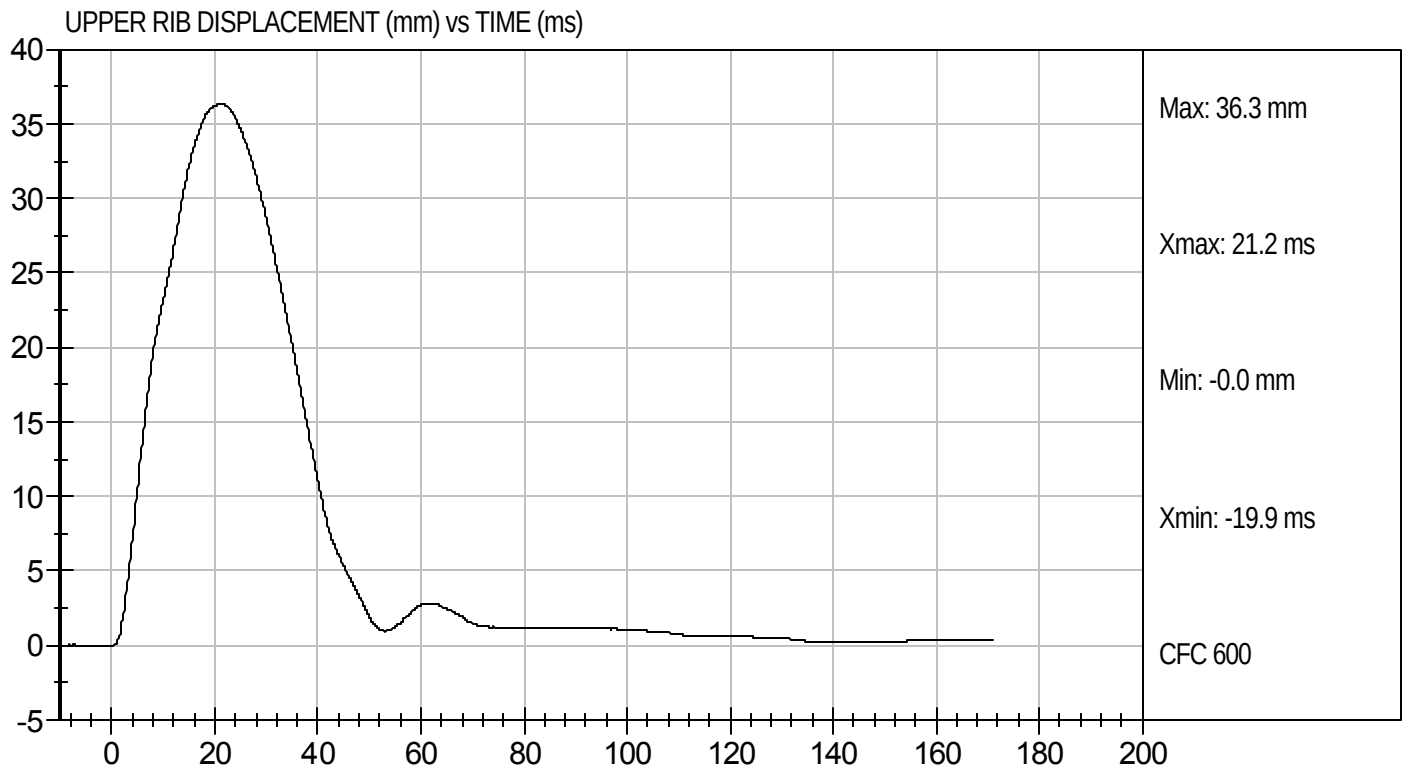
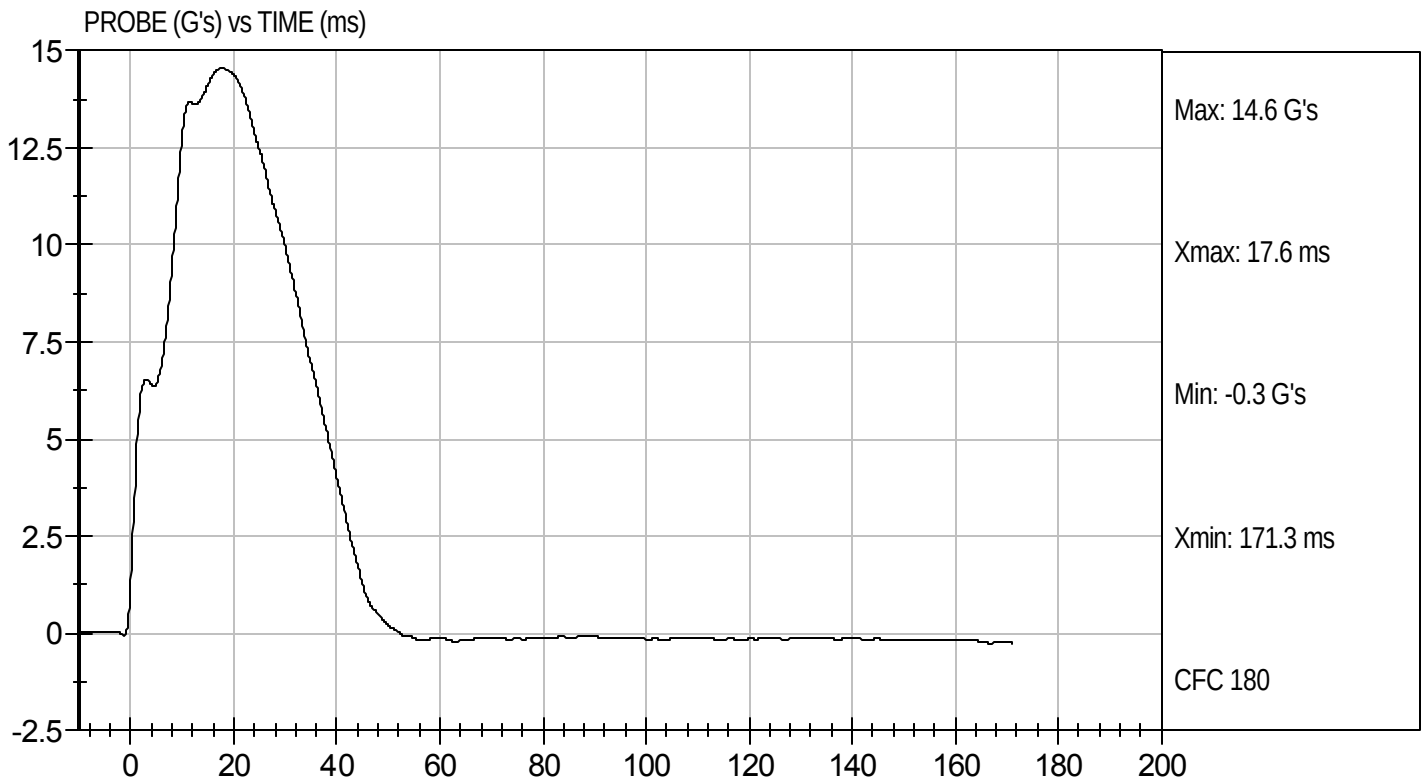
2/13/12
Test Date

David Winkelbauer
Approved By



Test Desc: Thorax Without Arm
Component ID: D12465

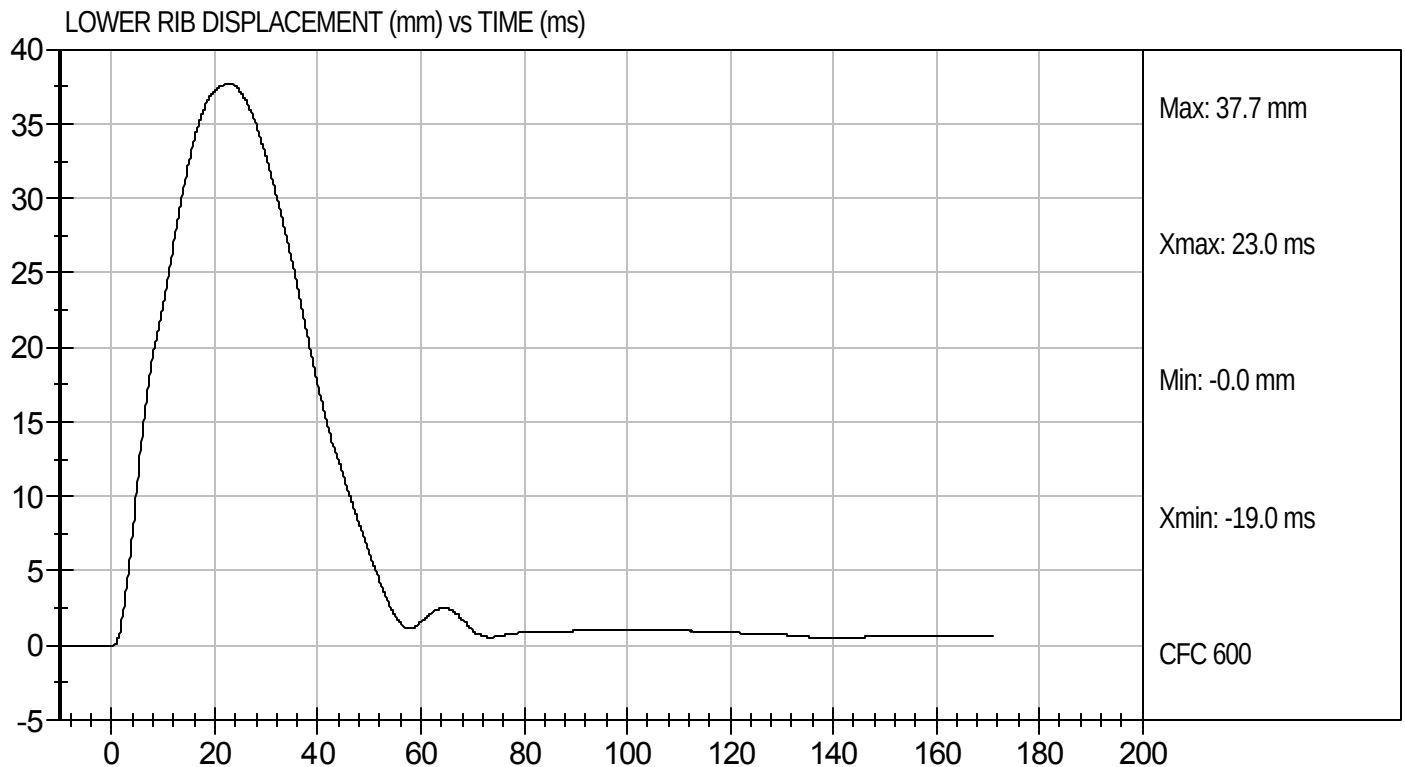
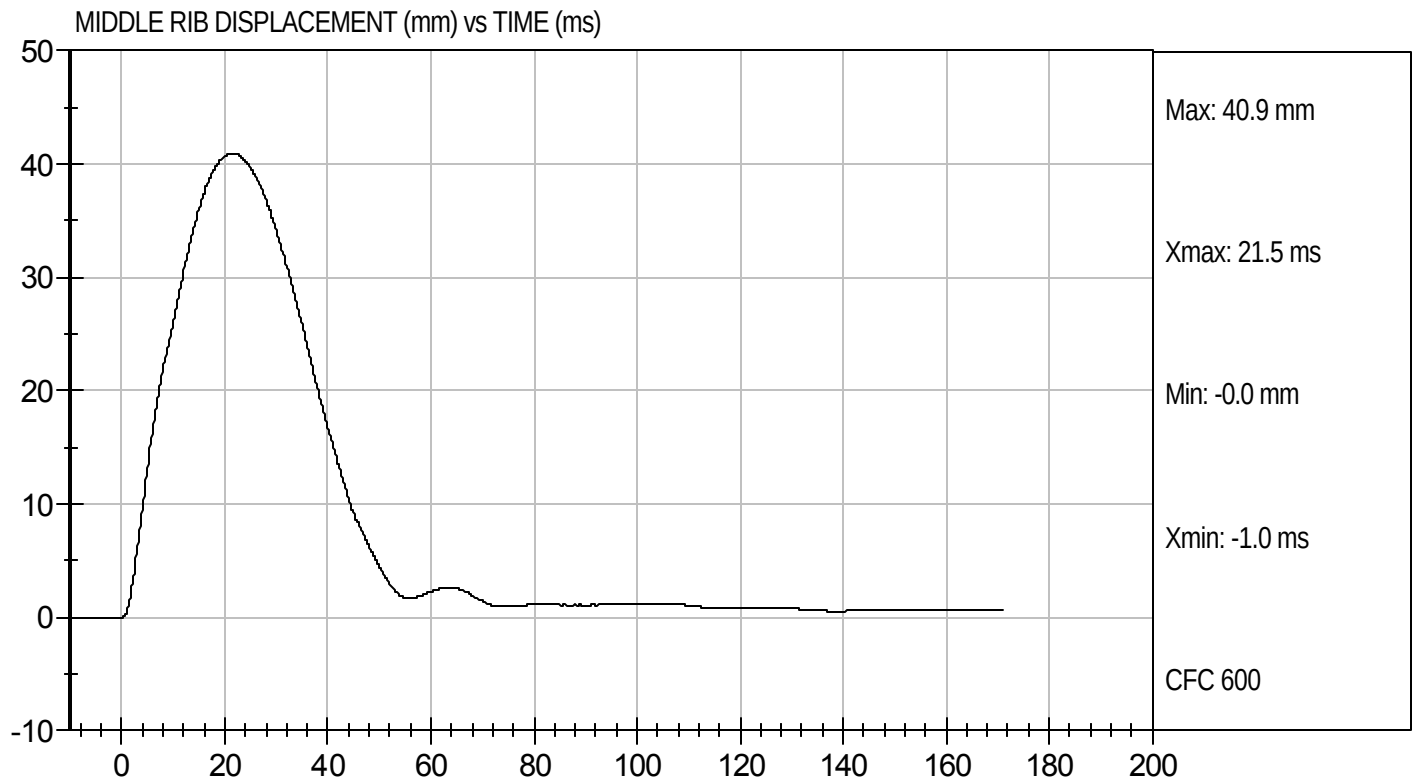
Test Date: 2/13/12
Velocity: 13.88 ft/s, 4.23 m/s





Test Desc: Thorax Without Arm
Component ID: D12465

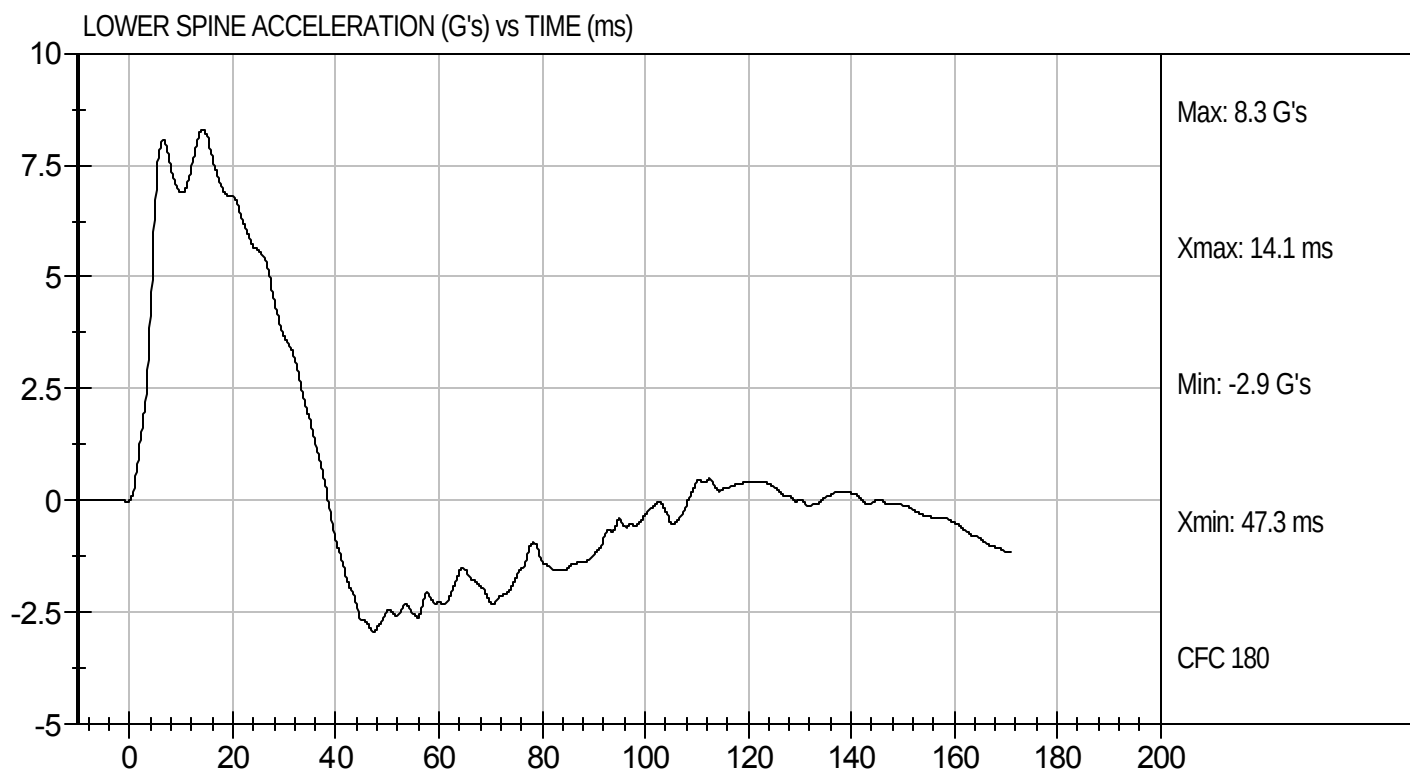
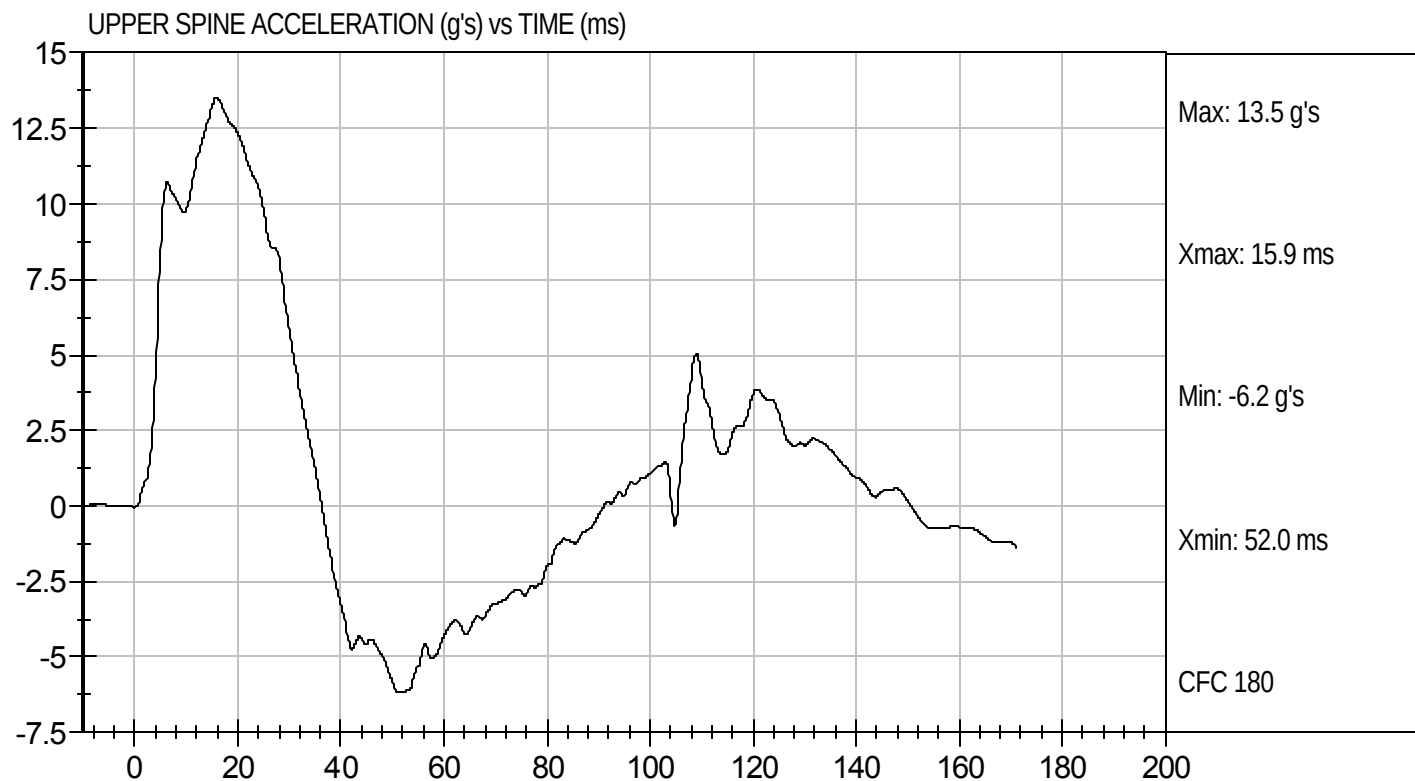
Test Date: 2/13/12
Velocity: 13.88 ft/s, 4.23 m/s





Test Desc: Thorax Without Arm
Component ID: D12465

Test Date: 2/13/12
Velocity: 13.88 ft/s, 4.23 m/s



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

ATD Serial No: 296

Test I.D: D12466

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	17	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	37	Pass
Lower Rib Displacement	mm	33 to 44	35	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
Overall Test Results			Pass	

Jessica Hall
Laboratory Technician

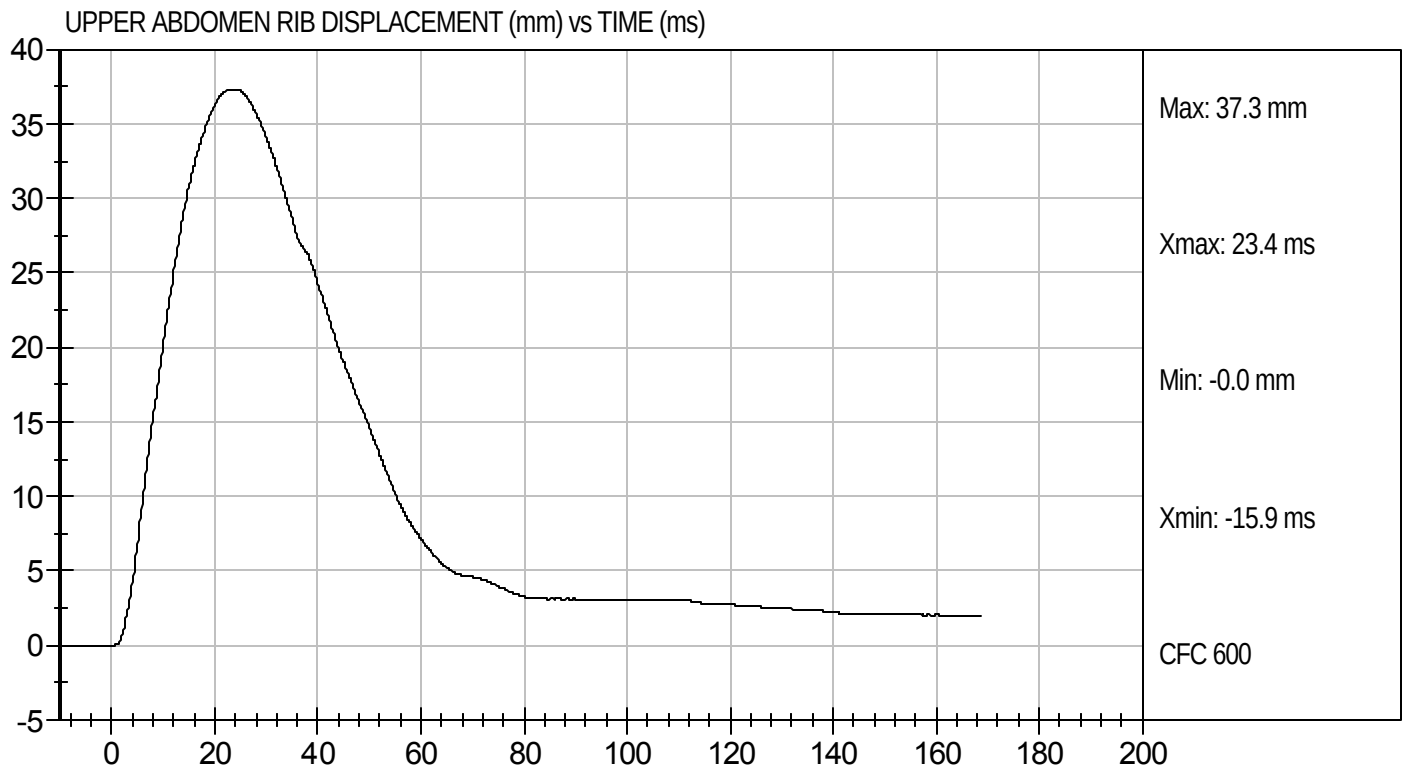
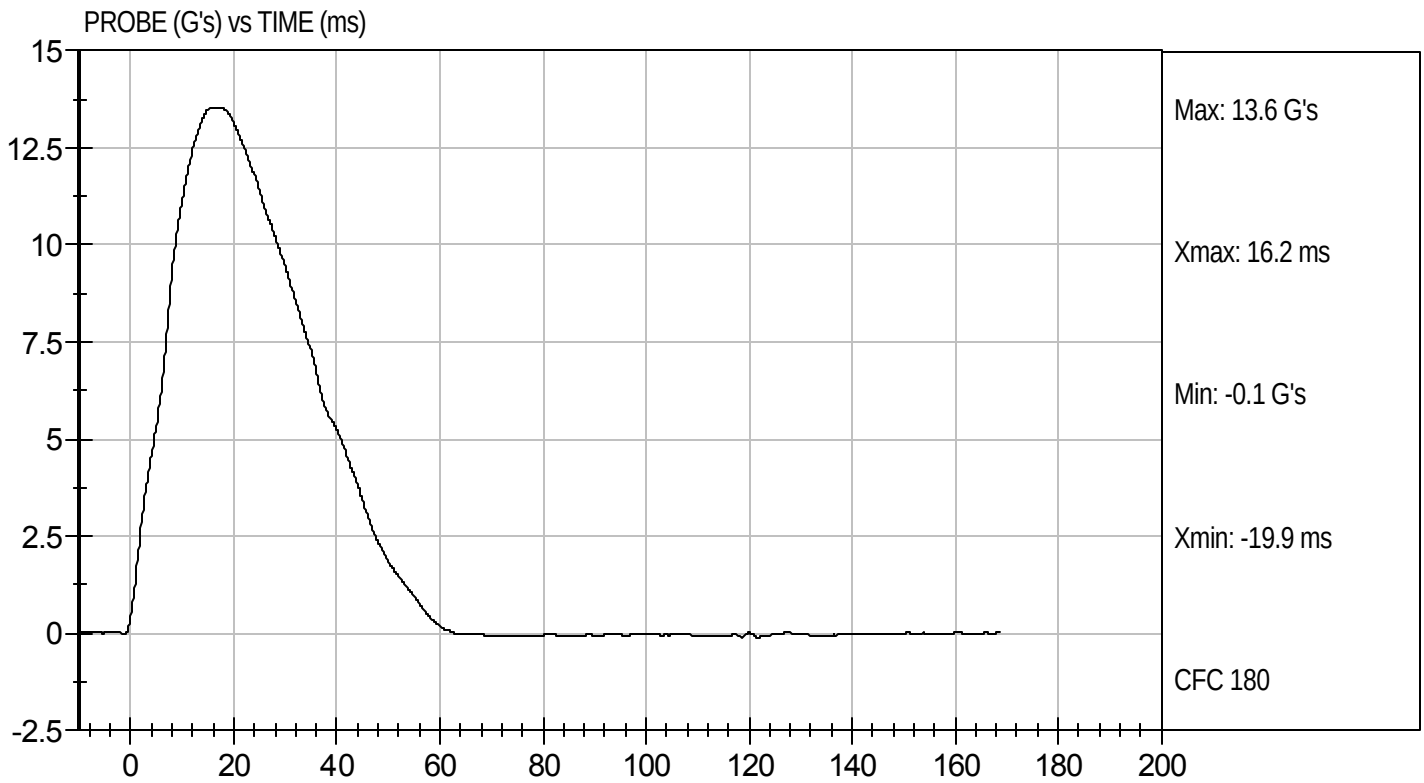
2/13/12
Test Date

David Winkelbauer
Approved By



Test Desc: Abdomen Impact
Component ID: D12466

Test Date: 2/13/12
Velocity: 14.12 ft/s, 4.30 m/s

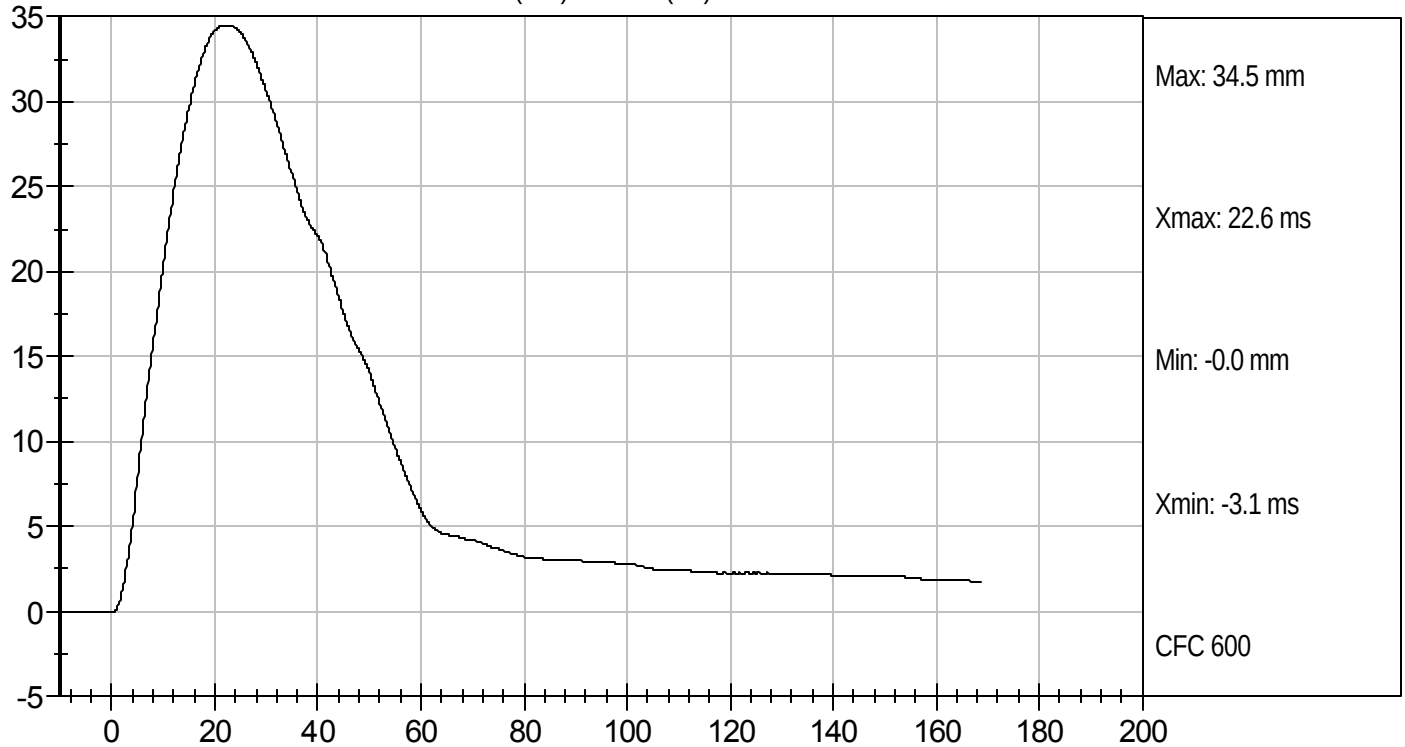




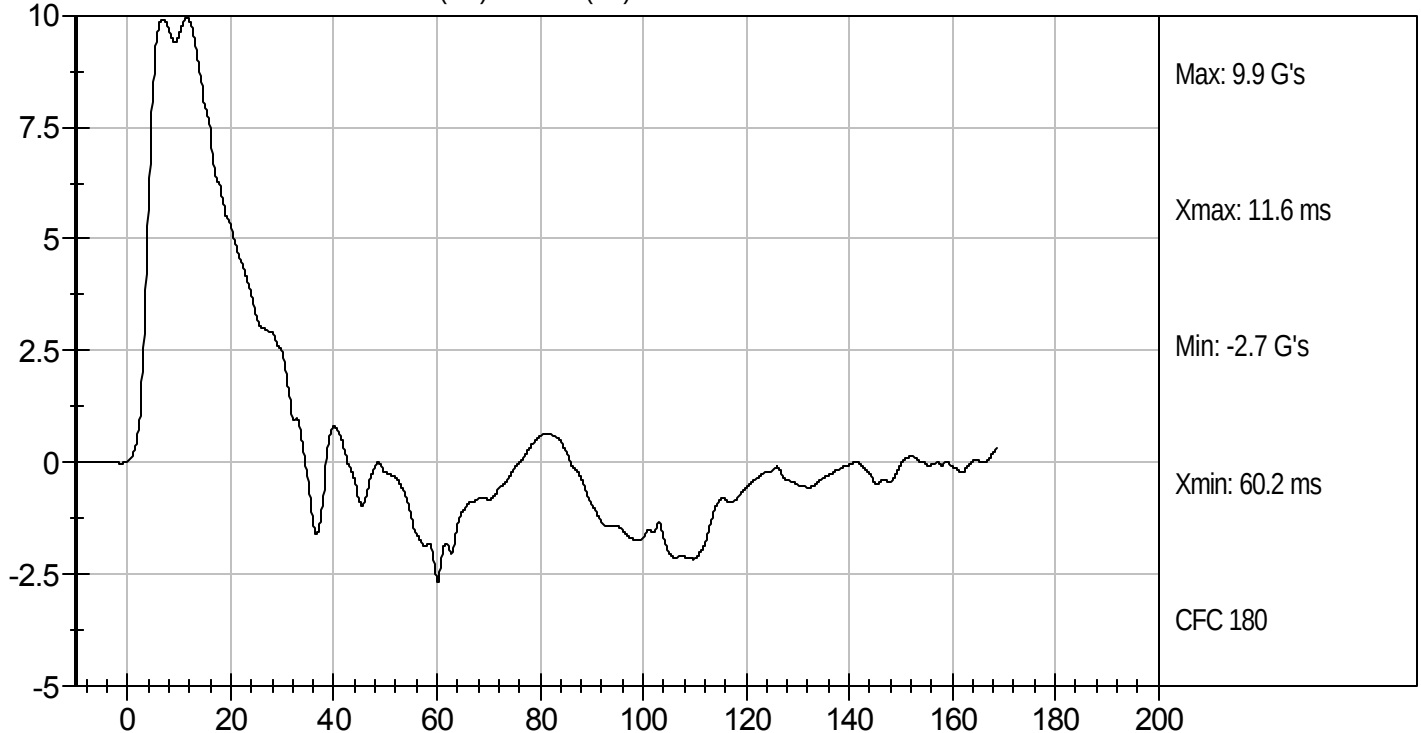
Test Desc: Abdomen Impact
Component ID: D12466

Test Date: 2/13/12
Velocity: 14.12 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: D12467

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Peak Impactor Acceleration	G's	38 to 47	42	Pass
Pelvis Y Acceleration after 6 ms	G's	34 to 42	41	Pass
Peak Acetabulum Force	N	3600 to 4300	3934	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

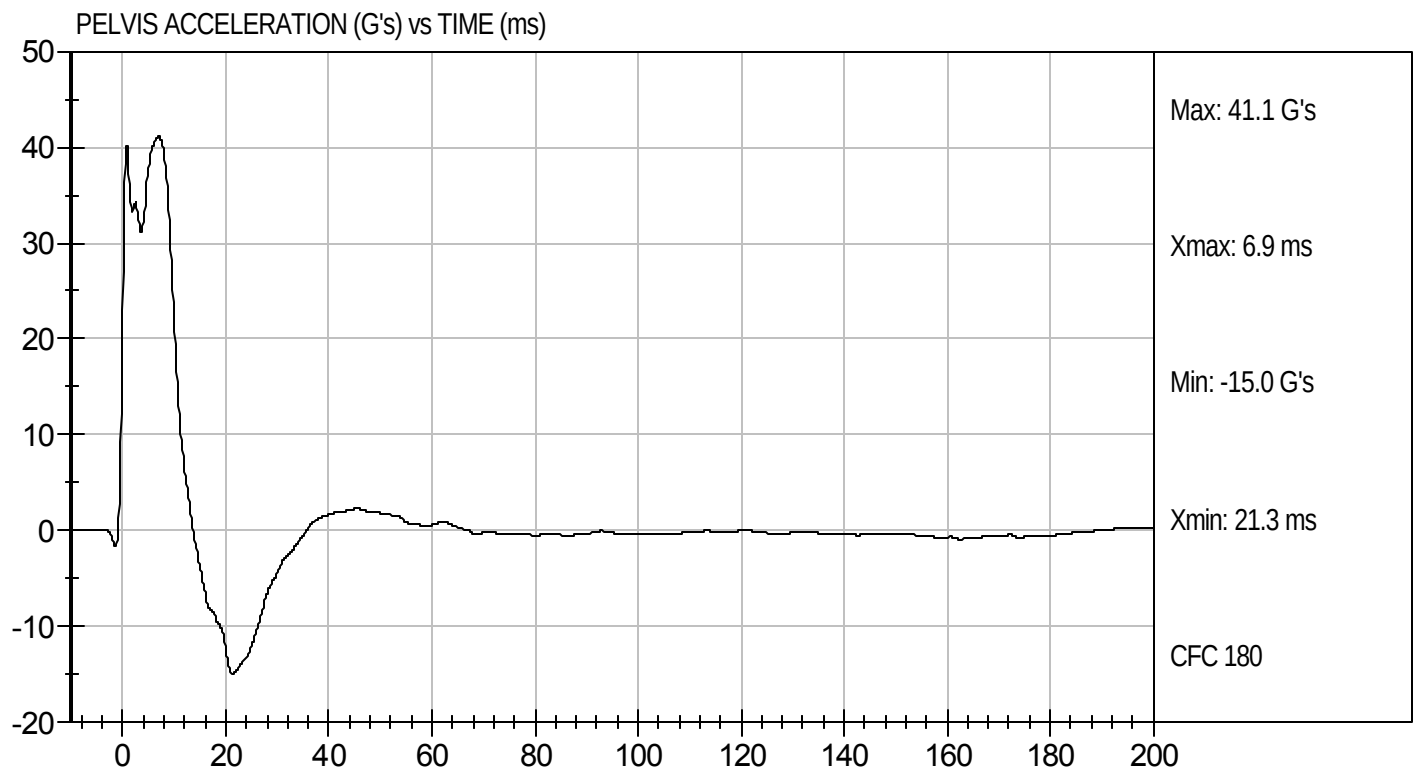
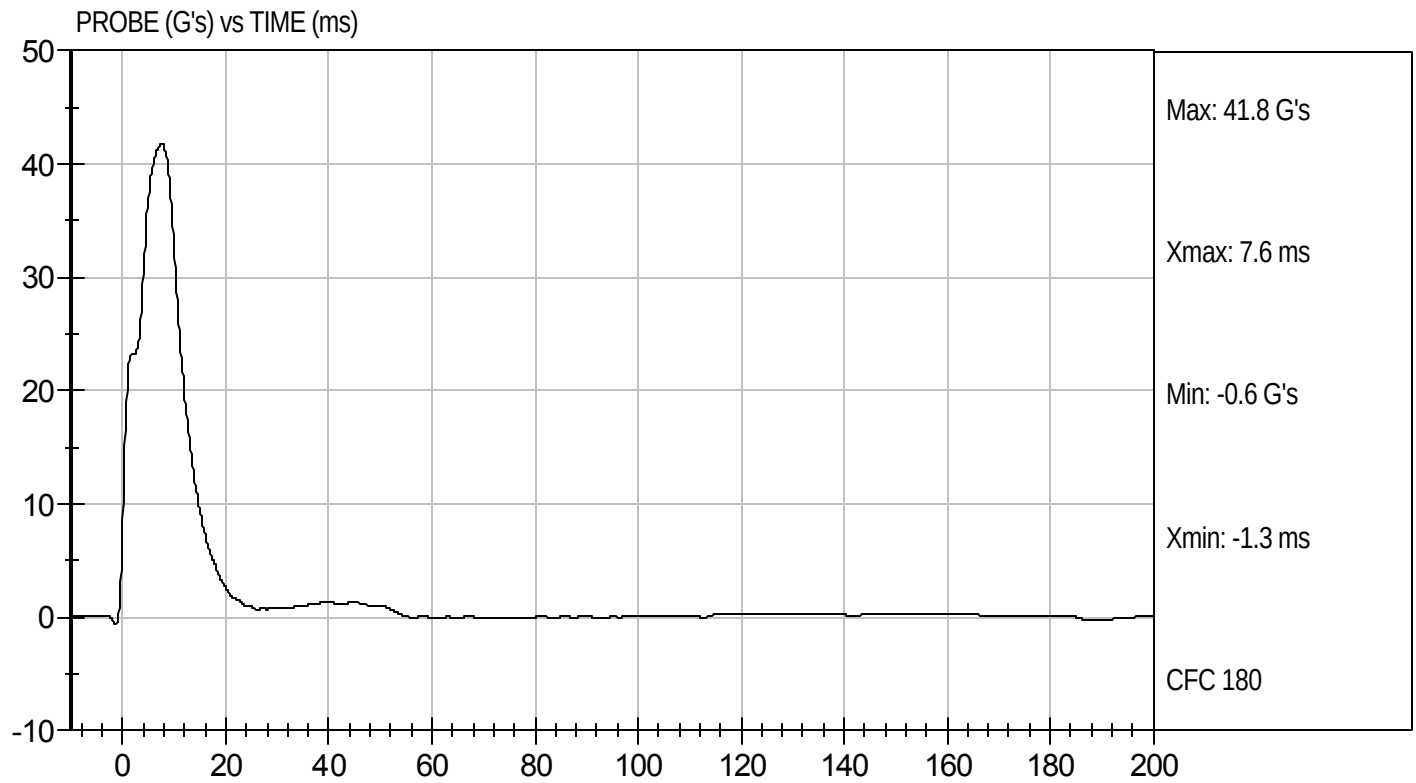
2/13/12
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D12467

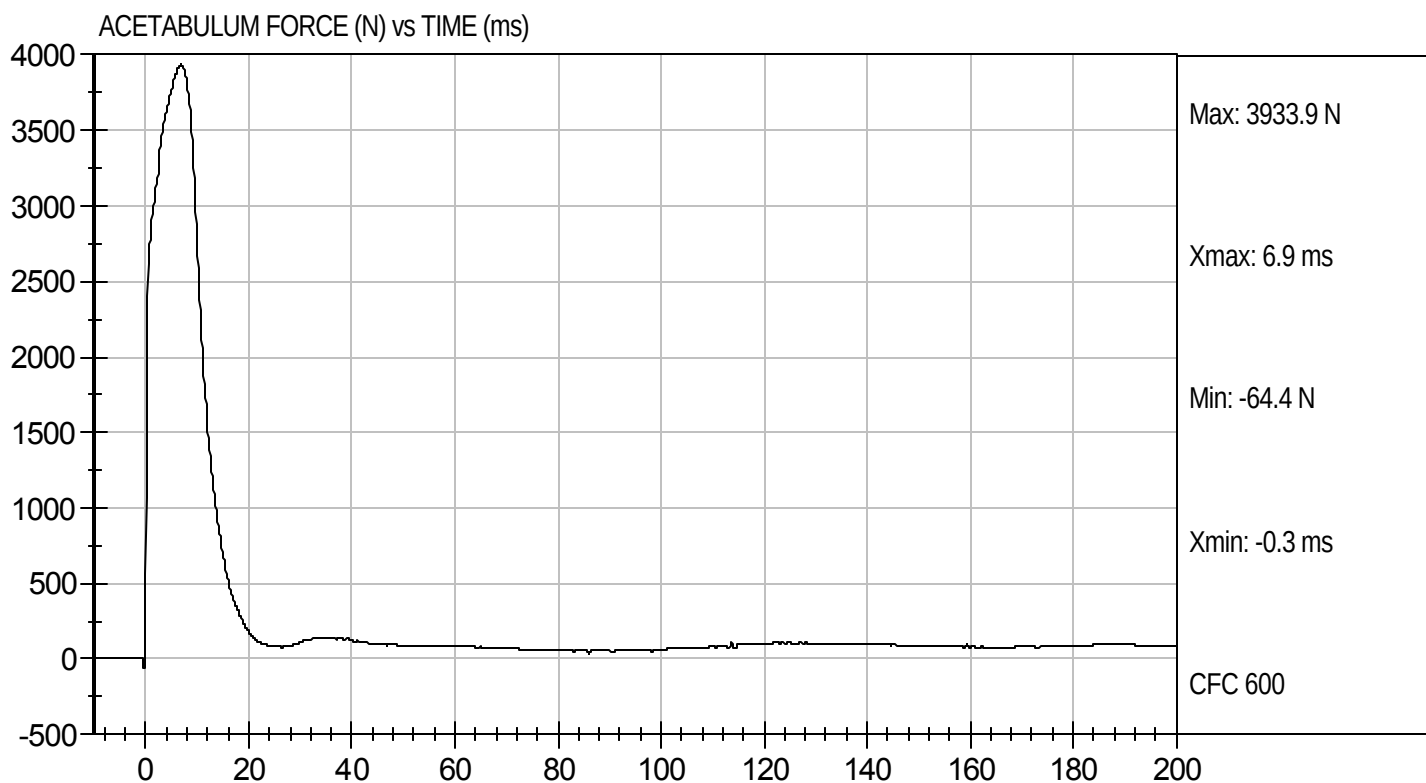
Test Date: 2/13/12
Velocity: 21.9 ft/s, 6.68 m/s





Test Desc: Pelvis Impact
Component ID: D12467

Test Date: 2/13/12
Velocity: 21.9 ft/s, 6.68 m/s

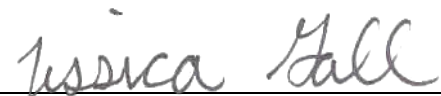


MGA RESEARCH CORPORATION
ILIAC IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D12468

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.7	Pass
Humidity	%	10 to 70	17	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Peak Impactor Acceleration	G's	36 to 45	37	Pass
Pelvis Y Acceleration	G's	28 to 39	29	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4408	Pass
Overall Test Results			Pass	


Laboratory Technician

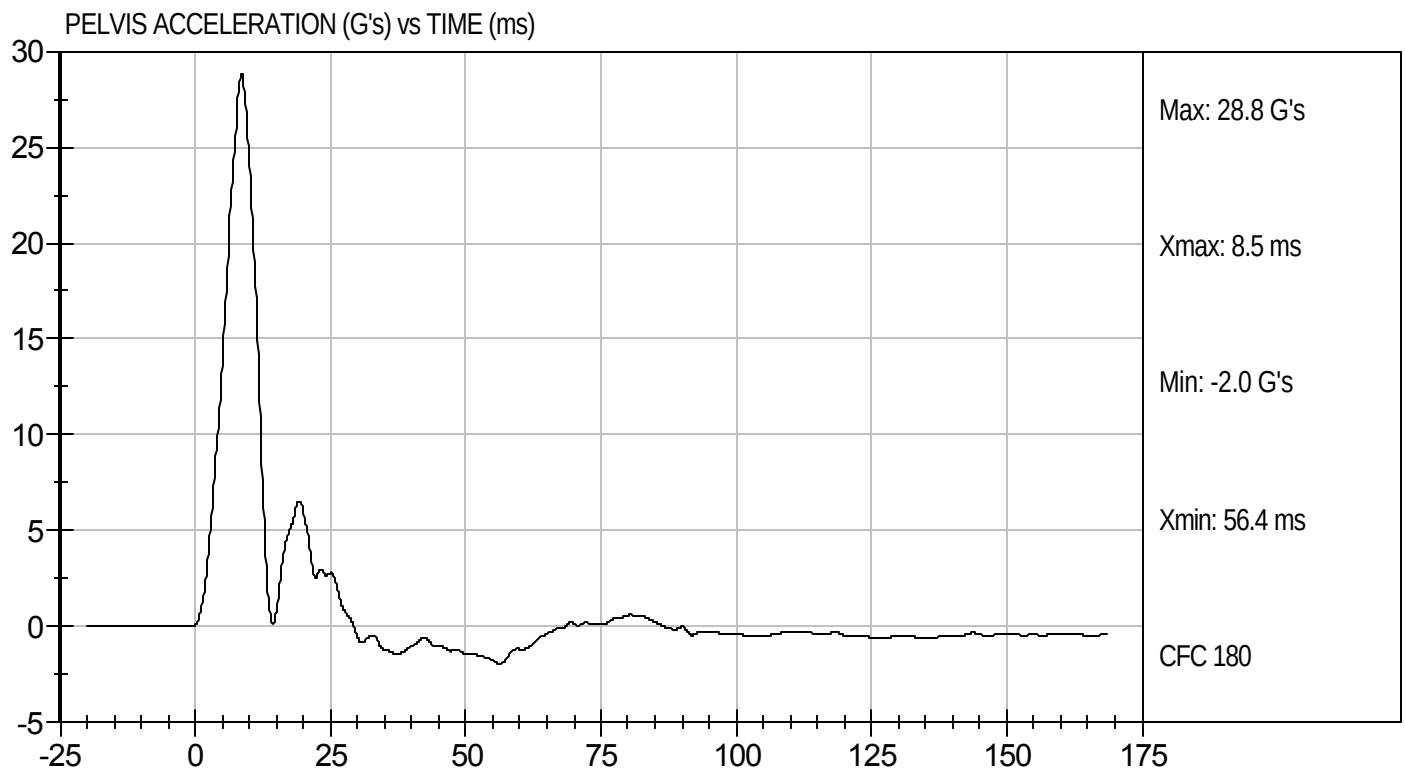
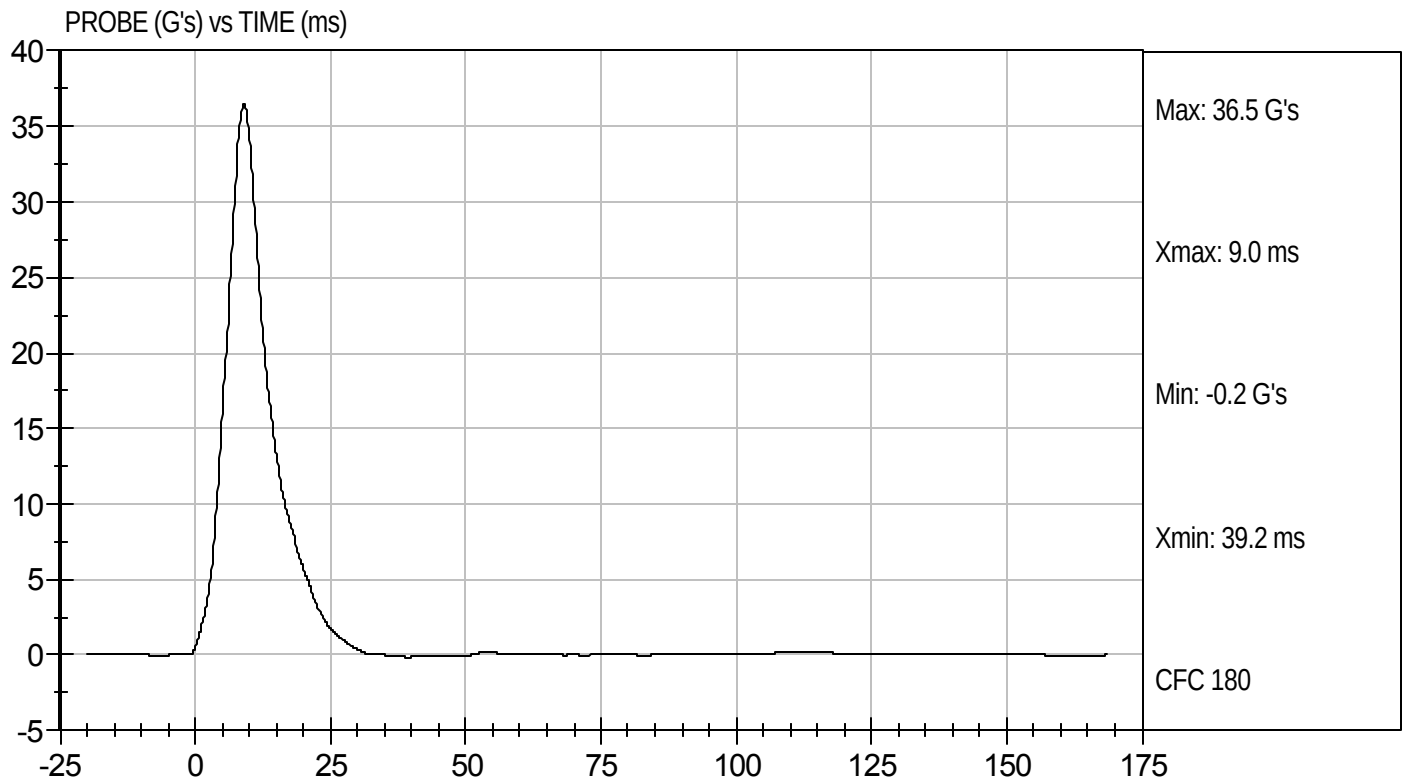
2/13/12
Test Date


Approved By



Test Desc: Iliac Impact
Component ID: D12468

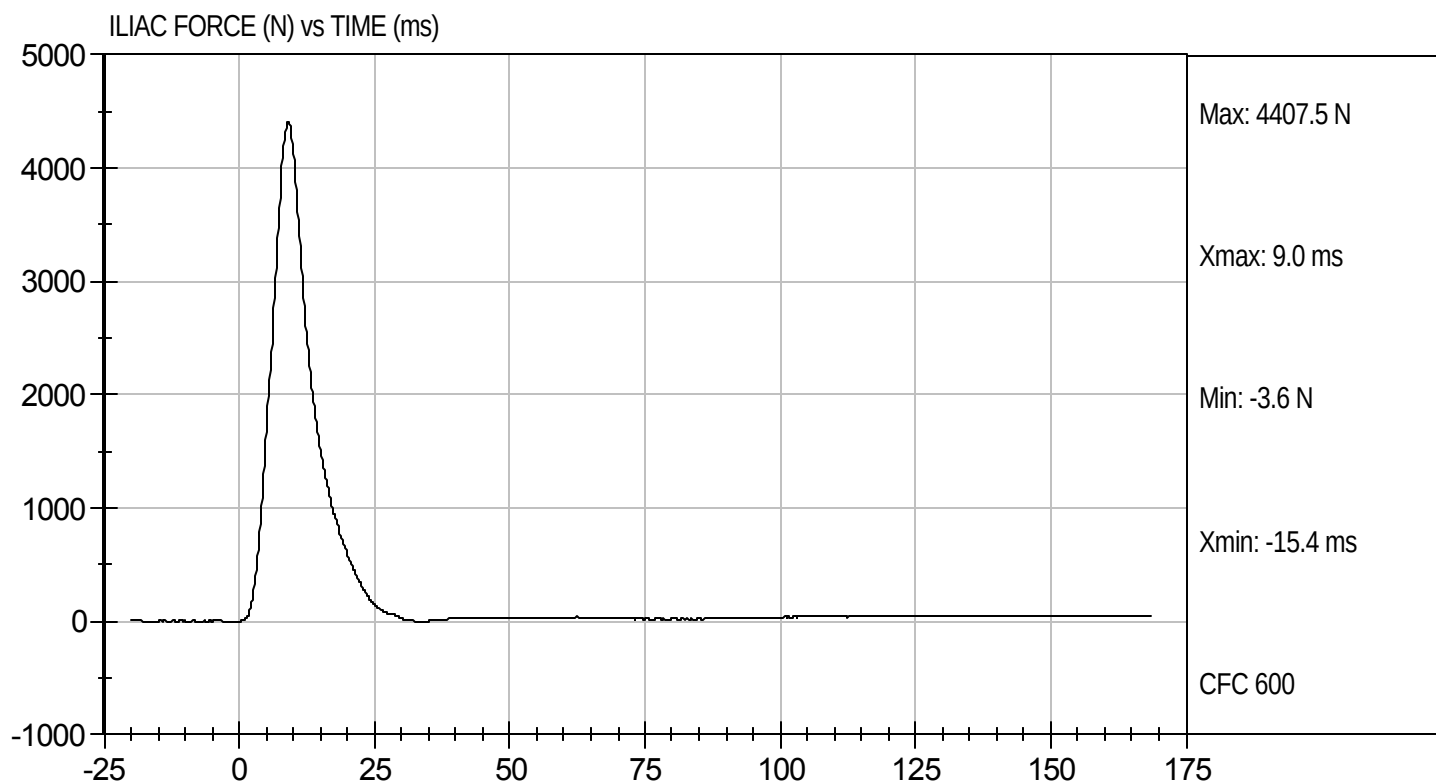
Test Date: 2/13/12
Velocity: 14.24 ft/s, 4.34 m/s





Test Desc: Iliac Impact
Component ID: D12468

Test Date: 2/13/12
Velocity: 14.24 ft/s, 4.34 m/s



APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N 032		
			Serial Number	Manufacturer	Calibration Date
Head Accelerometers		X	P73737	Endevco	10/04/11
		Y	P73738	Endevco	10/04/11
		Z	P73740	Endevco	10/04/11
Head Accelerometers		Xr	P66627	Endevco	10/10/11
		Yr	P73753	Endevco	10/04/11
		Zr	P73754	Endevco	10/04/11
Thorax Rib Displacement Potentiometers	Upper	Y	G176	Honeywell	10/12/11
	Middle	Y	G169	Honeywell	10/12/11
	Lower	Y	G164	Honeywell	10/12/11
Abdomen Load Cells	Forward	Y	ABG1513	Denton	05/20/11
	Middle	Y	ABG1531	Denton	05/20/11
	Rear	Y	ABG1536	Denton	05/20/11
Lower Spine Accelerometers (T12)		X	P73742	Endevco	10/04/11
		Y	P73743	Endevco	10/04/11
		Z	P73749	Endevco	10/04/11
Pubic Symphysis Load Cell		Y	PG462	Denton	05/20/11

Table 2 – Dummy Instrumentation (SID-IIs)

			SID-IIs S/N 296			
			Serial Number	Manufacturer	Calibration Date	
Head Accelerometers			X	P67363	Endevco	10/13/11
			Y	P67364	Endevco	10/13/11
			Z	P67365	Endevco	10/13/11
Head Accelerometers			X	P64023	Endevco	10/13/11
			Y	P66672	Endevco	10/13/11
			Z	P66762	Endevco	10/13/11
Displacement Potentiometers	Thoracic Rib	Upper	Y	G1214	FTSS	10/18/11
		Middle	Y	G1163	FTSS	10/18/11
		Lower	Y	G1158	FTSS	10/18/11
	Abdominal Rib	Upper	Y	G1146	FTSS	10/18/11
		Lower	Y	G1126	FTSS	10/18/11
Lower Spine Accelerometers (T12)			X	P67286	Endevco	09/22/11
			Y	P67289	Endevco	09/22/11
			Z	P67291	Endevco	09/22/11
Acetabulum Load Cell			Y	ACG269	FTSS	12/23/11
Iliac Wing Load Cell			Y	IWG282	FTSS	12/23/11
Pelvis Plug (struck side)				46420	FTSS	09/22/11
Pelvis Plug (non-struck side)				47274	FTSS	10/17/11

Table 3 – Vehicle Instrumentation

		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	P59265	Endevco	08/22/11
Vehicle Center of Gravity	Y	P59264	Endevco	08/22/11
Vehicle Center of Gravity	Z	P59266	Endevco	08/22/11
Right Sill at Front Seat	X	P63503	Endevco	10/25/11
Right Sill at Front Seat	Y	P63505	Endevco	10/25/11
Right Sill at Front Seat	Z	P63504	Endevco	10/25/11
Right Sill at Rear Seat	X	P63352	Endevco	10/25/11
Right Sill at Rear Seat	Y	P63354	Endevco	10/25/11
Right Sill at Rear Seat	Z	P63353	Endevco	10/25/11
Left Sill at Front Door	Y	P52215	Endevco	12/13/11
Left Sill at Rear Door	Y	P63550	Endevco	09/12/11
Left A-Post Lower	Y	P53288	Endevco	09/12/11
Left A-Post Middle	Y	P38350	Endevco	01/12/12
Left B-Post Lower	Y	P47894	Endevco	09/12/11
Left B-Post Middle	Y	P63930	Endevco	09/28/11
Front Seat Track	Y	P47079	Endevco	10/20/11
Rear Seat Track or Structure	Y	P49520	Endevco	08/22/11
Right Rear Occ. Compartment	Y	P55699	Endevco	09/12/11
Engine Block	X	P63343	Endevco	11/04/11
Engine Block	Y	P63342	Endevco	11/04/11
Rear Floorpan Above Axle	X	P59331	Endevco	08/22/11
Rear Floorpan Above Axle	Y	P59332	Endevco	08/22/11
Rear Floorpan Above Axle	Z	P59330	Endevco	08/22/11

Table 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	P59379	Endevco	12/14/11
MDB Center of Gravity	Y	P59380	Endevco	12/14/11
MDB Center of Gravity	Z	P59381	Endevco	12/14/11
Left Frame at Rear Axle Centerline	X	P59279	Endevco	12/13/11
Left Frame at Rear Axle Centerline	Y	P59280	Endevco	12/13/11