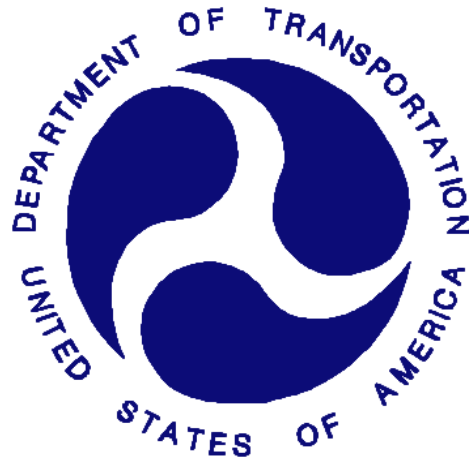


REPORT NUMBER: NCAP-MGA-2012-044

**NEW CAR ASSESSMENT PROGRAM (NCAP)
Frontal Barrier Impact Test**

**CHRYSLER GROUP LLC
2012 Chrysler 300 Limited AWD 4-Dr Sedan
NHTSA No.: MC0331**

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



Test Date: December 21, 2011

Final Report Date: February 21, 2012

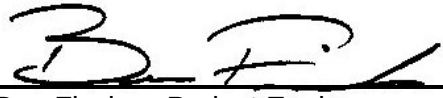
FINAL REPORT

**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: February 21, 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. NCAP-MGA-2012-044		2. Government Accession No.		3. Recipient's Catalog No.																																																			
4. Title and Subtitle Final Report of New Car Assessment Program Frontal Impact Testing of 2012 Chrysler 300 Limited AWD 4-Dr Sedan, NHTSA No.: MC0331				5. Report Date February 21, 2012																																																			
				6. Performing Organization Code MGA																																																			
7. Author(s) Donna Janovicz, Project Manager Ben Fischer, Project Engineer				8. Performing Organization Report No. NCAP-MGA-2012-044																																																			
				10. Work Unit No.																																																			
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105				11. Contract or Grant No. DTNH22-06-D-00028																																																			
				13. Type of Report and Period Covered Final Test Report December 21 to February 21, 2012																																																			
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				14. Sponsoring Agency Code NVS-111																																																			
				15. Supplementary Notes																																																			
16. Abstract A 56.3 km/h NCAP Frontal Impact Test was conducted on the 2012 Chrysler 300 Limited AWD 4-Dr Sedan in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and foot well intrusion performance. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on December 21, 2011. The impact velocity was 56.2 km/h and the ambient temperature at the barrier face at the time of impact was 21.1°C. The target vehicle post-test maximum crush was 599 mm located at the vehicle's centerline. The test vehicle's performance was as follows:																																																							
<table border="1" style="width: 100%; border-collapse: collapse; background-color: #ffff00;"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Threshold</th> <th rowspan="2">Driver ATD</th> <th rowspan="2">Passenger ATD</th> </tr> <tr> <th>50th</th> <th>5th</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td> <td>N/A</td> <td>700</td> <td>700</td> <td>131</td> <td>225</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>52</td> <td>24</td> <td>17</td> </tr> <tr> <td>Nij</td> <td>N/A</td> <td>1</td> <td>1</td> <td>0.25</td> <td>0.37</td> </tr> <tr> <td>Neck Tension</td> <td>N</td> <td>4170</td> <td>2620</td> <td>1280</td> <td>693</td> </tr> <tr> <td>Neck Compression</td> <td>N</td> <td>4000</td> <td>2520</td> <td>61</td> <td>155</td> </tr> <tr> <td>Left Femur Force</td> <td>N</td> <td>10008</td> <td>6805</td> <td>2856</td> <td>1848</td> </tr> <tr> <td>Right Femur Force</td> <td>N</td> <td>10008</td> <td>6805</td> <td>2123</td> <td>1536</td> </tr> </tbody> </table>						Measurement Description	Units	Threshold		Driver ATD	Passenger ATD	50 th	5 th	Head Injury Criteria (HIC ₁₅)	N/A	700	700	131	225	Maximum Chest Compression	mm	63	52	24	17	Nij	N/A	1	1	0.25	0.37	Neck Tension	N	4170	2620	1280	693	Neck Compression	N	4000	2520	61	155	Left Femur Force	N	10008	6805	2856	1848	Right Femur Force	N	10008	6805	2123	1536
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19. Security Classification of Report Unclassified	20. Security Classification of Page Unclassified	21. No. of Pages 163		22. Price																																																			

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SECTION 1 PURPOSE AND SUMMARY OF TEST

PURPOSE

This 56.3 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract number DTNH22-06-D-00028. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

The 56.3 km/h frontal barrier impact was conducted in accordance with the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure.

SUMMARY

A load cell barrier was impacted by a 2012 Chrysler 300 Limited AWD 4-Dr Sedan at a velocity of 56.2 kph. The test was performed at MGA Research Corporation on December 21, 2011. Pre-and post-test photographs of the vehicle and dummies can be found in Appendix A.

Two real-time cameras and fourteen (14) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

One Part 572E, 50th percentile male anthropomorphic test device (ATD), was placed in the driver seating position and one Part 572O 5th percentile female test device (ATD) was placed in the right-front passenger seating position according to dummy placement instructions specified in the Frontal NCAP Laboratory Test Procedure.

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's shoulder belts to measure dummy torso and pelvic section loading.

The driver (position 1) ATD (Serial No. 351) and the right-front passenger (position 2) ATD (Serial No. 634) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 228 channels of data were recorded on an on-board data acquisition system. Appendix B contains the dummy head, chest displacement, neck, and femur response data traces.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard Solvent leakage after the event or during any phase of the static rollover.

The maximum static crush of the vehicle was 599 mm and both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: The driver's head and chest contacted the airbag. The driver's head also contacted the headrest and ceiling. The driver's knees contacted the knee airbag. The passenger's visible contact points were as follows: The passenger's head and chest contacted the airbag. The passenger's head also contacted the headrest. The passenger's knees contacted the glovebox.

The occupant data is summarized below:

ATD position	HIC ₁₅	Nij	Neck Tension (N)	Neck Comp. (N)	3ms Chest Clip (Gs)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)
Driver (50 th)	131	0.25	1280	61	43	24	2856	2123
Passenger (5 th)	225	0.37	693	155	42	17	1848	1536

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

TEST NOTES

There was no valid data collected for:

Top of Engine X after 37 msec.

Left Brake Caliper X after 71 msec.

Load Cell 8-15 is questionable data near 285 ms.

Load Cell 6-13 is questionable data from 140-240 ms.

Load Cell 5-12.

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

SECTION 2
OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MC0331	Traction Control System (TCS)	Yes
Model Year	2012	Auto-Leveling System	No
Make	Chrysler	Automatic Door Locks (ADLs)	Yes
Model	300	Power Window Auto-Reverse	No
Body Style	Sedan	Other Optional Feature	N/A
VIN	2C3CCAHG3CH137269	Driver Front Airbag	Yes
Body Color	Tungsten Metallic	Driver Curtain Airbag	Yes
Odometer (km/mi)	167 / 104	Driver Head/Torso Airbag	No
Engine Displacement (L)	3.6	Driver Torso Airbag	No
Type/No. Cylinders	6	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Longitudinal	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	Yes
Transmission Speeds	8	Pass. Front Airbag	Yes
Overdrive	No	Pass. Curtain Airbag	Yes
Final Drive	AWD	Pass. Torso Airbag	No
Roof Rack	No	Pass. Torso/Pelvis Airbag	Yes
Sunroof/T-Top	Yes	Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Pass. Seat Belt Pretensioner	Yes
Power Seats	Yes	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Pass. Load Limiter	Yes
All-Wheel Drive (AWD)	Yes	Other Safety Restraint	N/A
Does owner's manual provide instructions to turn off automatic door locks?			No

DATA FROM CERTIFICATION LABEL

Manufactured By	Chrysler Group LLC	GVWR (kg)	2495
Date of Manufacture	10-11	GAWR Front (kg)	1275
Vehicle Type	Passenger Car	GAWR Rear (kg)	1275

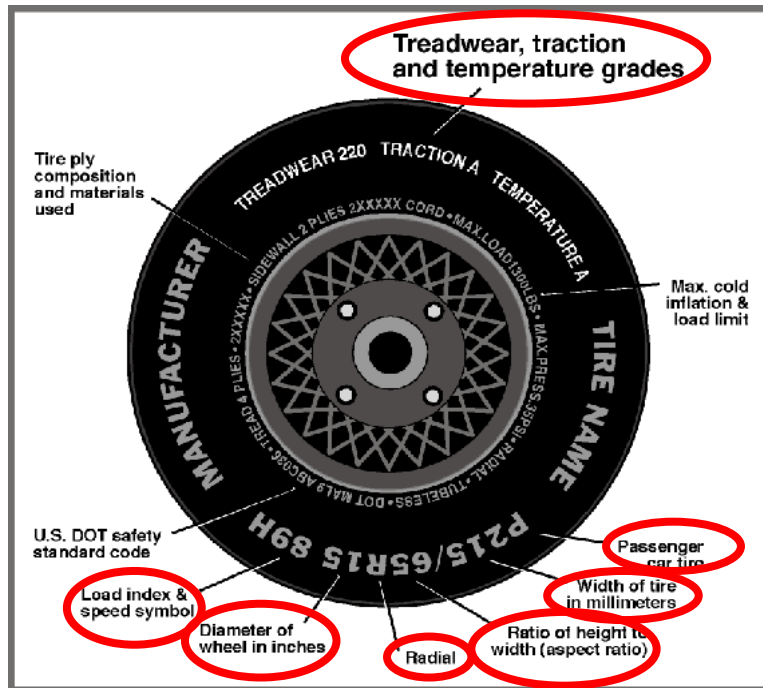
VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Designated Seating Capacity (DSC)	2	3		5
Capacity Weight (VCW) (kg)				392
Cargo Weight (RCLW) (kg)				52

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

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
Test Date: 12/21/2011



TIRE PLACARD INFORMATION

Measured Parameter	Front	Rear
Recommended Cold Tire Pressure (kPa)	210	210
Recommended Tire Size	P235/55R19	P235/55R19

TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Tire Size on Vehicle	P235/55R19	P235/55R19
Tire Manufacturer	Michelin	Michelin
Tire Name	Pilot HXMXM4	Pilot HXMXM4
Tire Type	Passenger	Passenger
Tire Width	235	235
Aspect Ratio	55	55
Radial	Yes	Yes
Wheel Diameter	19	19
Load Index/Speed Symbol	101H	101H
Treadwear	300	300
Traction Grade	A	A
Temperature Grade	A	A
Tire Material	Rubber	Rubber

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

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	510.3	458.6		545.7	530.7	
Right	kg	522.5	462.7		537.1	527.5	
Ratio	%	52.9	47.1		50.6	49.4	
Totals	kg	1032.8	921.3	1954.1	1082.8	1058.2	2141.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1954.1
Weight of 1 P572E ATD & 1 P572O ATD	kg	140.6
Rated Cargo/Luggage Weight (RCLW)	kg	52
Calculated Vehicle Target Weight (TVTW)	kg	2146.7

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	794	790	794	790	1439
As Tested	mm	784	786	773	773	1508
Post Test	mm	894	830	811	737	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	3052
Total Vehicle Length at Left Side	mm	4802
Total Vehicle Length at Centerline	mm	5050
Total Vehicle Length at Right Side	mm	4802
Weight of Ballast in Cargo Area	kg	47.6
Weight of Vehicle Components Removed	kg	28.1
Amount of Stoddard Solvent in Fuel Tank	L	70.0

List of components removed: Right taillight, trunk carpet, jack/tools, spare tire, and rear floor mats.

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

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

TARGET VEHICLE STRUCTURAL MEASUREMENT

	Elements	Pre-Test (mm)
1	Total Length	5050
2	Total Width	1876
3	Bumper Top Height	518
4	Bumper Bottom Height	410
5	Longitudinal Member Top Height	535
6	Distance between Longitudinal Members	780
7	Longitudinal Member Width	140
8	Engine Top Height	968
9	Engine Bottom Height	220
10	Engine and Gearbox Width	1120
11	Front Bumper-Engine Distance	460
12	Front Shock Absorber Fixing Height	895
13	Bonnet Leading Edge Height	886
14	Front Shock Absorber Fixing Width	990
15	Front Bumper – Front Axle Distance	910
16	Front Axle – A-Pillar Distance	482
17	A-Pillar – B-Pillar Distance	1349
18	B-Pillar – Rear Axle Distance	122
19	B-Pillar – C-Pillar Distance	753
20	Roof Sill Bottom Height	1357
21	Roof Sill Top Height	1480
22	Floor Sill Bottom Height	193
23	Floor Sill Top Height	368

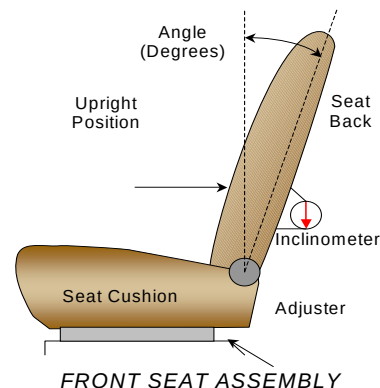
DATA SHEET NO. 2
SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

NOMINAL DESIGN RIDING POSITION

The driver seat back is positioned as close as possible to the manufacturer's design angle. For the passenger seat back, seat back is adjusted following Appendix F, "Driver & Passenger Dummy Seating & Positioning Procedures" in the NCAP Test Procedure dated January 2010.



SEAT BACK ANGLE	Degrees
Driver Seat Back Angle	14.0° on head rest post
Passenger Seat Back Angle	11.6° on head rest post

SEAT FORE/AFT POSITIONS

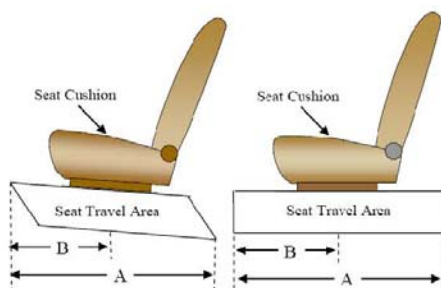
The driver and passenger seat fore/aft positions are adjusted following Appendix F, "Driver & Passenger Dummy Seating & Positioning Procedures" in the NCAP Test Procedure dated January 2010.

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	336 mm	168 mm (foremost as 0)
Passenger Seat	224 mm	0 mm (foremost as 0)

SEAT BELT UPPER ANCHORAGES

The seat belt upper anchorages are positioning following the manufacturer's specified position as listed in Form 1.

	Total # of Positions	Placed in Position #
Driver Seat	4 (1 st as 0)	0 (uppermost as 0)
Passenger Seat	4 (1 st as 0)	0 (uppermost as 0)



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

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

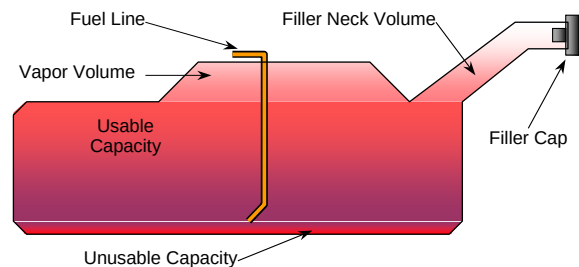
FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of "Standard Tank"	72.3
Usable Capacity of "Optional Tank"	
92-94% of Usable Capacity	66.5 to 67.9
Actual Amount of Solvent used	67.0
1/3 of Usable Capacity	24.1

FUEL PUMP

Describe the fuel pump type, its behavior, and the location of the fuel filler pipe.

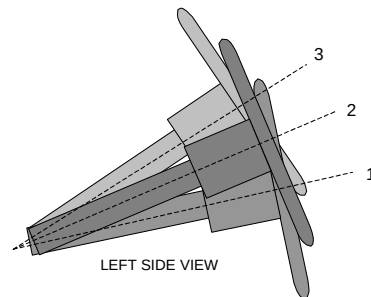
The vehicle is equipped with an electric fuel pump. The fuel pump starts pumping fuel when the key is "ON" position. The fuel pipe is on the left side.



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

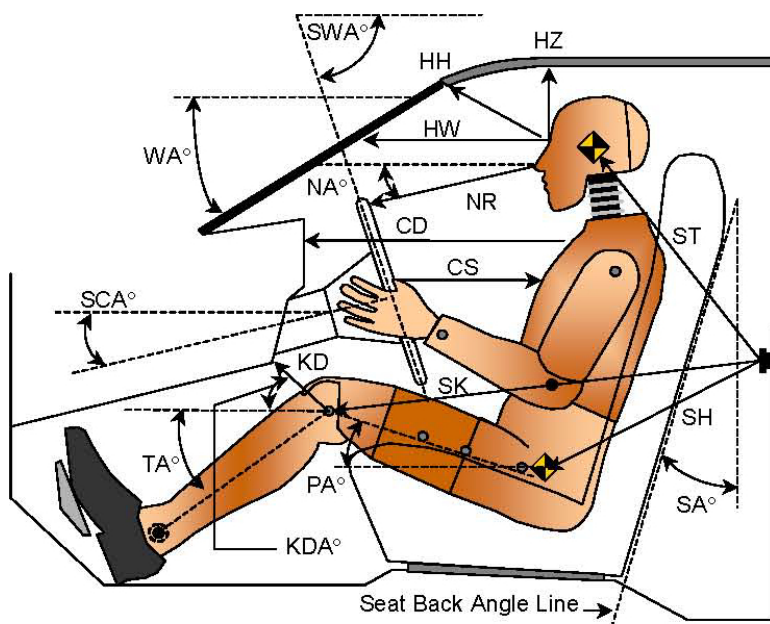
STEERING COLUMN POSITION

	Degrees	Fore/Aft Position (mm)
Lowermost – Position 1	70.6	225
Geometric Center – Position 2	68.3	195
Uppermost – Position 3	66.0	165
Telescoping Steering Wheel Travel		60
Test Position	68.3	195

DATA SHEET NO. 3 DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
Test Date: 12/21/2011



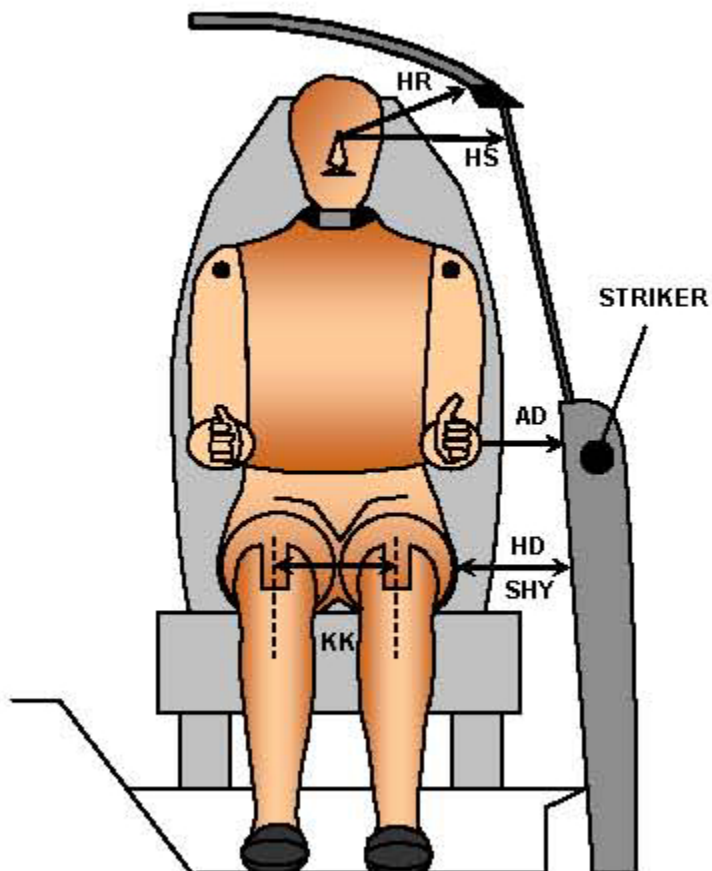
LEFT SIDE VIEW

Code	Measurement Description	Driver S/N 351		Passenger S/N 634	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		26.3		
SWA°	Steering Wheel Angle		68.3		
SCA°	Steering Column Angle		21.7		
SA°	Seat Back Angle (on headrest post)		14.0		11.6
HZ	Head to Roof (Z)	151	90	184	90
HH	Head to Header	415	10.3	314	35.5
HW	Head to Windshield	685	0	672	0
NR	Nose to Rim	388	10.0		
CD	Chest to Dash	528		377	
CS	Chest to Steering Hub	314	5.5		
RA	Rim to Abdomen	192	0		
KDL	Left Knee to Dash	160	45.2	83	37.3
KDR	Right Knee to Dash	135	46.7	85	37.6
PA°	Pelvic Angle		20.3		20.8
TA°	Tibia Angle		49.0		54.4
SK	Striker to Knee	550	97.8	682	98.7
ST	Striker to Head	485	4.5	480	25.6
SH	Striker to H-Point	235	127.0	405	106.7

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011



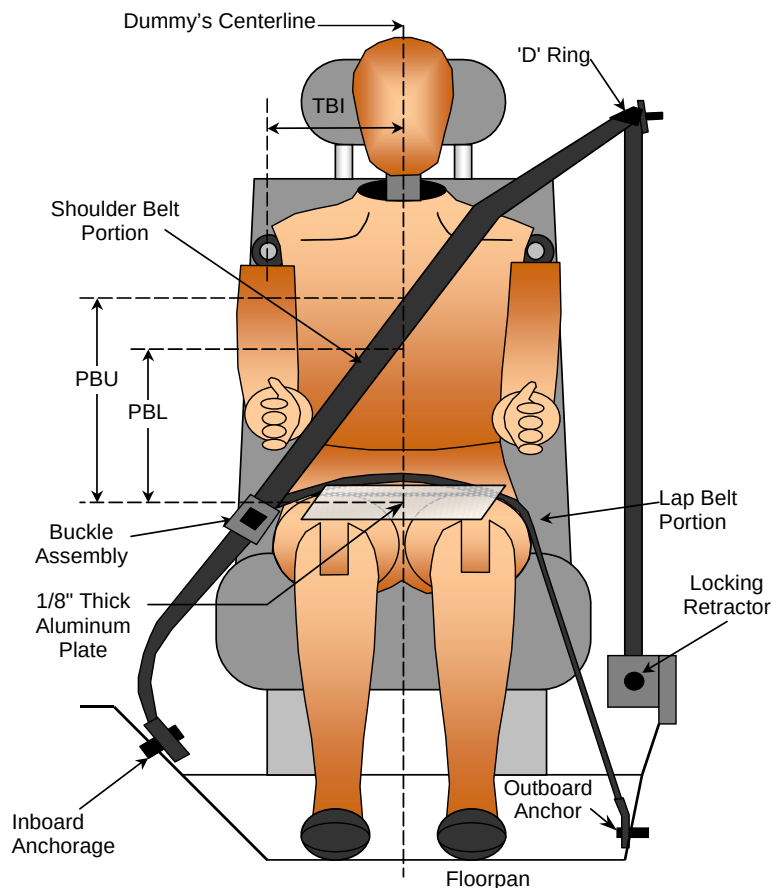
FRONT VIEW OF DUMMY

Code	Measurement Description	Driver S/N 351	Passenger S/N 634
		Length (mm)	
AD	Arm to Door	135	109
HD	H-Point to Door	147	184
HR	Head to Side Header	221	226
HS	Head to Side Window	305	361
KK	Knee to Knee	330	230
SHY	Striker to H-Point (Y Direction)	333	310
AA	Ankle to Ankle	305	155

DATA SHEET NO. 5 SEAT BELT POSITIONING DATA

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
Test Date: 12/21/2011



FRONT VIEW OF DUMMY

SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
PBU - Top surface of reference to belt upper edge	mm	400	330
PBL - Top surface of reference to belt lower edge	mm	320	250

BELT LENGTH DATA

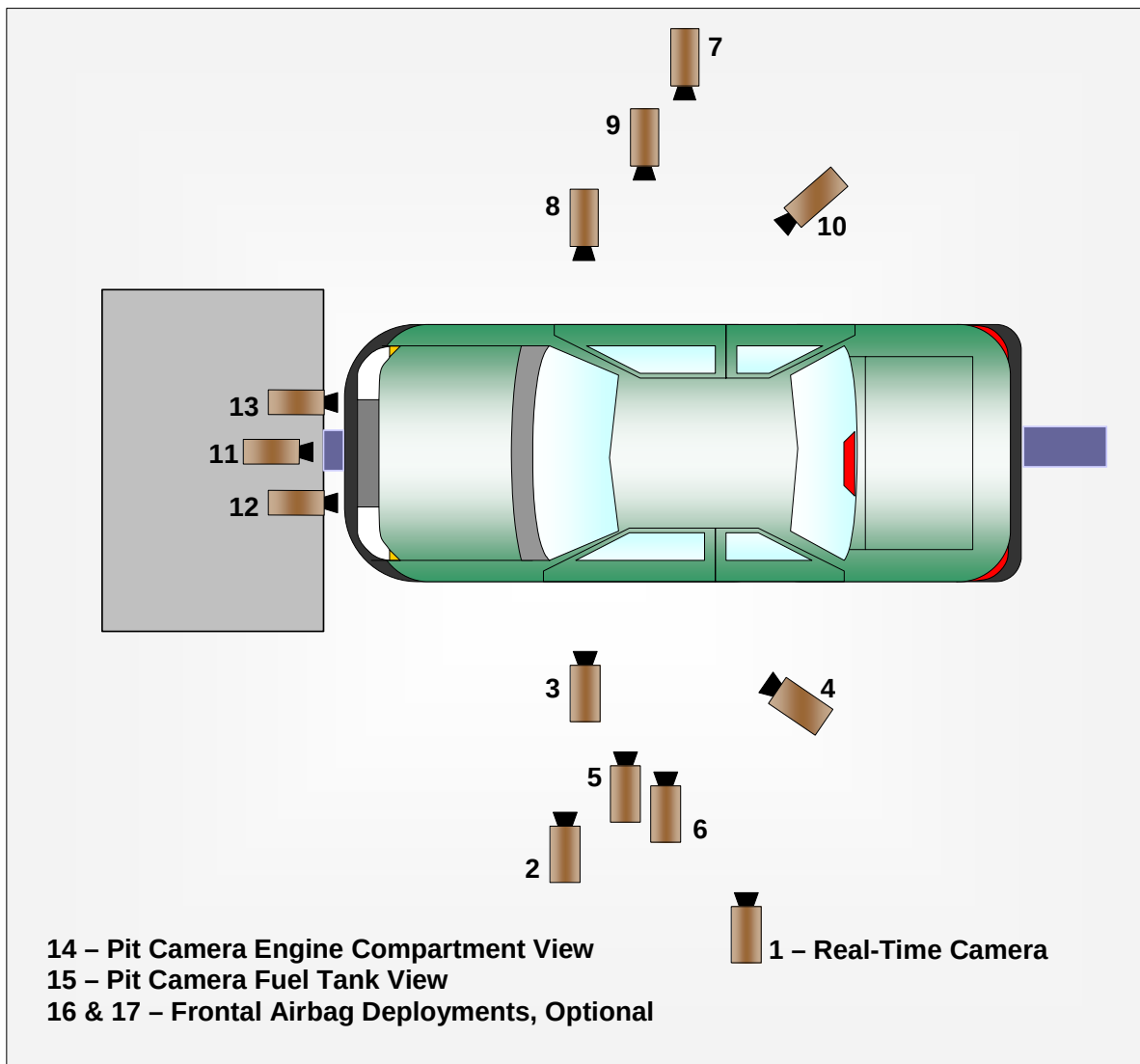
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as measured on ATD	mm	845	890
Lap Belt Length as measured on ATD	mm	600	570
Remainder of belt on reel	mm	1605	1590
Total Belt Length for Continuous Webbing Systems	mm	3050	3050

**DATA SHEET NO. 6
HIGH-SPEED CAMERA LOCATIONS AND DATA**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
Test Date: 12/21/2011

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET NO. 6 (CONTINUED)
CAMERA LOCATIONS AND DATA

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

CAMERA LOCATIONS

No.	Camera View	Coordinates (mm)			Lens (mm)	Speed (fps)
		X*	Y*	Z*		
1	Real-Time Left Overall					30
2	Driver Close-Up	1340	-6620	-1820	35	1000
3	Left Front Half	1100	-4890	-1080	24	1000
4	Left Angle	5530	-4930	-1940	50	1000
5	Steering Column - Top	580	-5230	-1230	24	1000
6	Steering Column - Bottom	550	-5200	-830	24	1000
7	Right Overall	2070	6210	-1090	20	1000
8	Passenger Close-Up	1300	6680	-1830	35	1000
9	Right Front Half	1120	4820	-1100	24	1000
10	Right Angle	5620	4900	-1930	50	1000
11	Windshield	-130	0	-2810	24	1000
12	Driver Windshield	250	-450	-2030	12.5	1000
13	Passenger Windshield	250	450	-2030	12.5	1000
14	Pit Front	1210	0	3150	24	1000
15	Pit Rear	2620	0	3150	24	1000
16	Onboard Driver Side (optional)					
17	Onboard Passenger Side (optional)					
18	Real-Time Pan View					30

***COORDINATES:**

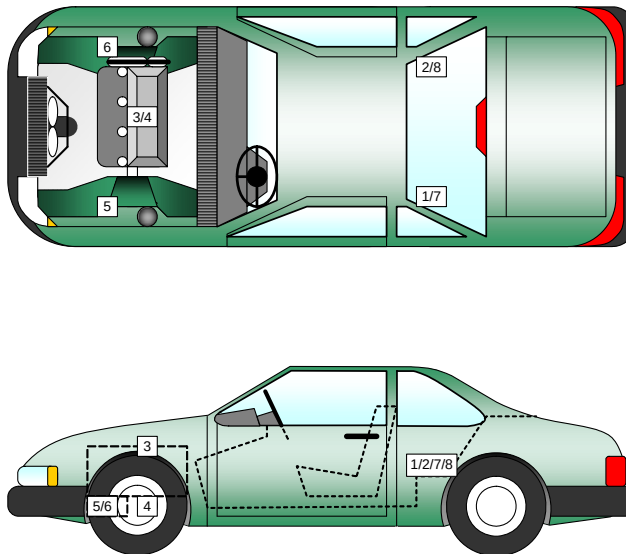
- +X = forward of impact plane
- +Y = right of monorail centerline
- +Z = below ground level

Cameras 16 & 17 were not used for this test.

DATA SHEET NO. 7 **VEHICLE ACCELEROMETER DATA**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Left Rear Accelerometer – X Direction	2027	-396	-225
2	Right Rear Accelerometer – X Direction	2027	360	-225
3	Engine Top X	3942	0	-954
4	Engine Bottom X	4197	0	-260
5	Left Brake Caliper X	4268	-733	-346
6	Right Brake Caliper X	4268	733	-346
7	Left Rear Accelerometer Redundant – X Direction			
8	Right Rear Accelerometer Redundant – X Direction			

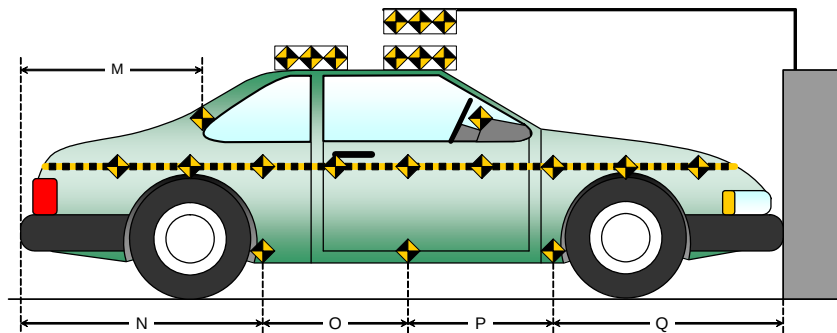
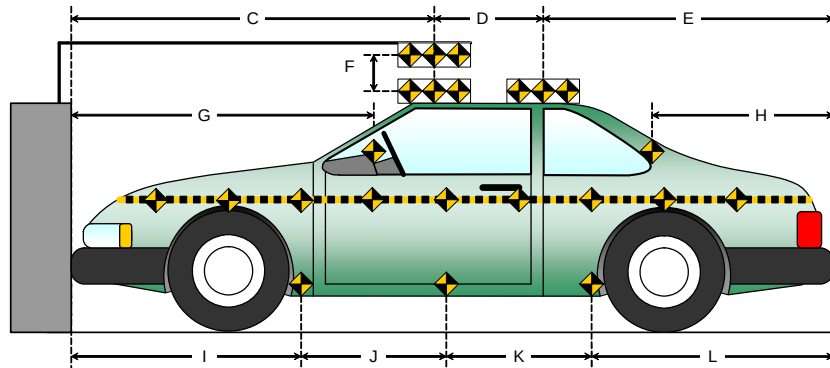
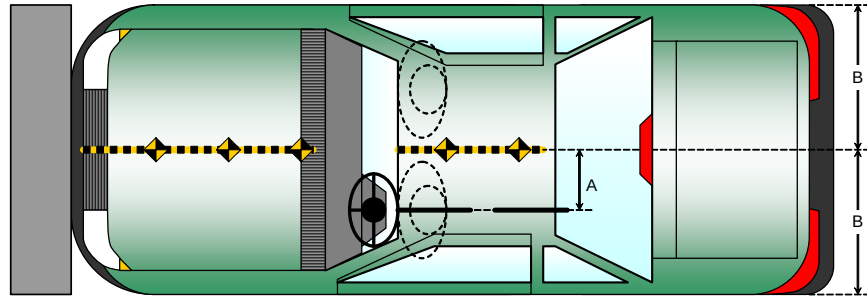
Reference Points: X - Rear Surface of Vehicle (+ forward)
 Y - Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 8
PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

Item	Value (mm)
A	393
B	938
C	2620
D	645
E	1785
F	120
G	
H	1558
I	1402
J	1050
K	1050
L	1548
M	1558
N	1548
O	1050
P	1050
Q	1402

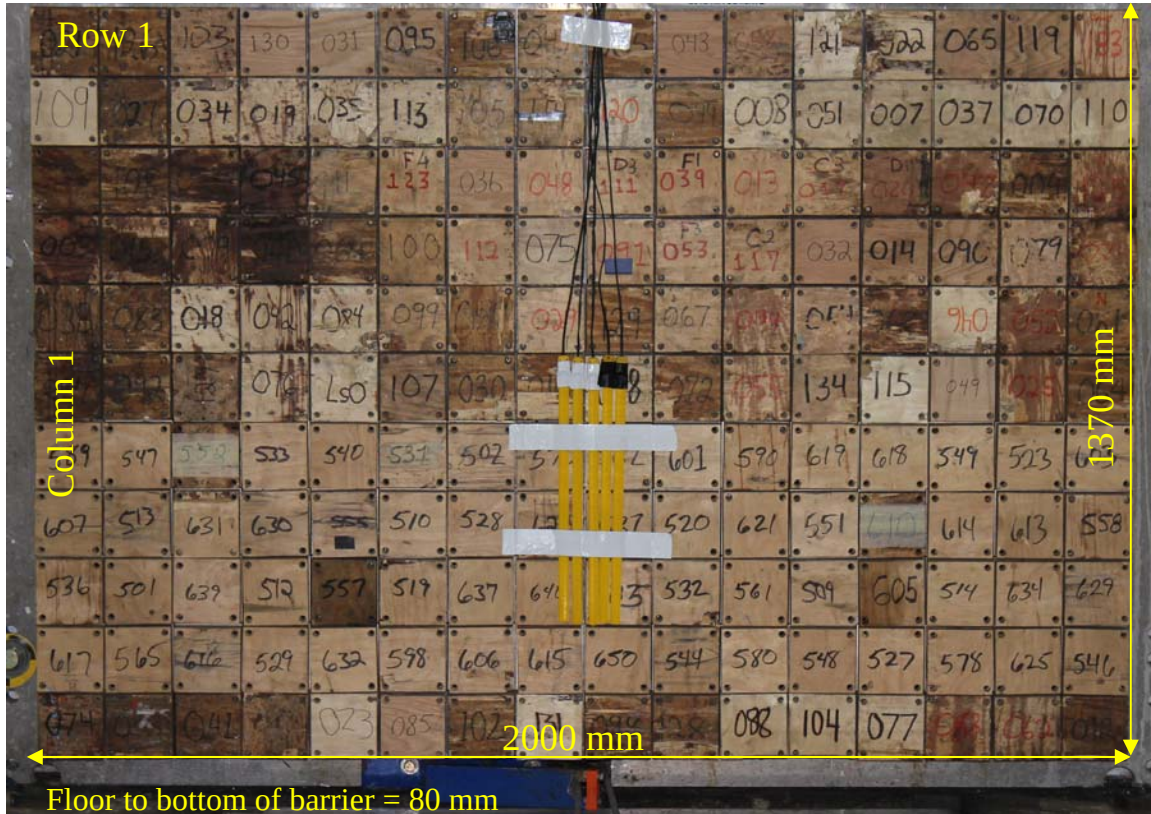


DATA SHEET NO. 9 **LOAD CELL LOCATIONS ON FIXED BARRIER**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

Advanced Research Load Cell Barrier



1-1	1-2	1-3	1-4	1-5	1-6	1-7	1-8	1-9	1-10	1-11	1-12	1-13	1-14	1-15	1-16
2-1	2-2	2-3	2-4	2-5	2-6	2-7	2-8	2-9	2-10	2-11	2-12	2-13	2-14	2-15	2-16
3-1	3-2	3-3	3-4	3-5	3-6	3-7	3-8	3-9	3-10	3-11	3-12	3-13	3-14	3-15	3-16
4-1	4-2	4-3	4-4	4-5	4-6	4-7	4-8	4-9	4-10	4-11	4-12	4-13	4-14	4-15	4-16
5-1	5-2	5-3	5-4	5-5	5-6	5-7	5-8	5-9	5-10	5-11	5-12	5-13	5-14	5-15	5-16
6-1	6-2	6-3	6-4	6-5	6-6	6-7	6-8	6-9	6-10	6-11	6-12	6-13	6-14	6-15	6-16
7-1	7-2	7-3	7-4	7-5	7-6	7-7	7-8	7-9	7-10	7-11	7-12	7-13	7-14	7-15	7-16
8-1	8-2	8-3	8-4	8-5	8-6	8-7	8-8	8-9	8-10	8-11	8-12	8-13	8-14	8-15	8-16
9-1	9-2	9-3	9-4	9-5	9-6	9-7	9-8	9-9	9-10	9-11	9-12	9-13	9-14	9-15	9-16
10-1	10-2	10-3	10-4	10-5	10-6	10-7	10-8	10-9	10-10	10-11	10-12	10-13	10-14	10-15	10-16
11-1	11-2	11-3	11-4	11-5	11-6	11-7	11-8	11-9	11-10	11-11	11-12	11-13	11-14	11-15	11-16

Load Cells are 121 mm x 121 mm with a 7 mm gap in between each load cell.

DATA SHEET NO. 10
TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
Test Date: 12/21/2011

INSTRUMENTATION

Driver Dummy Data Channels	46
Passenger Dummy Data Channels	46
Vehicle Structure Accelerometers	8
Barrier Channels	128
Total	228

CAMERA COVERAGE

High-Speed Vehicle Onboard	0
High-Speed Offboard	14
Real-Time	2
Total	16

**DATA SHEET NO. 11
POST-TEST OBSERVATIONS**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
Test Date: 12/21/2011

TEST DUMMY INFORMATION AND CONTACT LOCATIONS

Description	Driver	Passenger
Dummy Type / Serial No.	HIIL 50% / 351	HIIL 5% / 634
Head Contact	Airbag, Headrest, Ceiling	Airbag, Headrest
Upper Torso Contact	Airbag	Airbag
Lower Torso Contact	None	None
Left Knee Contact	Knee Airbag	Glovebox
Right Knee Contact	Knee Airbag	Glovebox

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Locked/Unlocked Doors	Doors were locked	Doors were locked
Front Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Rear Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Track Shift (mm)	0	6
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Windshield Damage	Cracked
Window Damage	None
Other Notable Effects	None

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	1316
Center	mm	1455
Right Side	mm	1515
Average	mm	1429

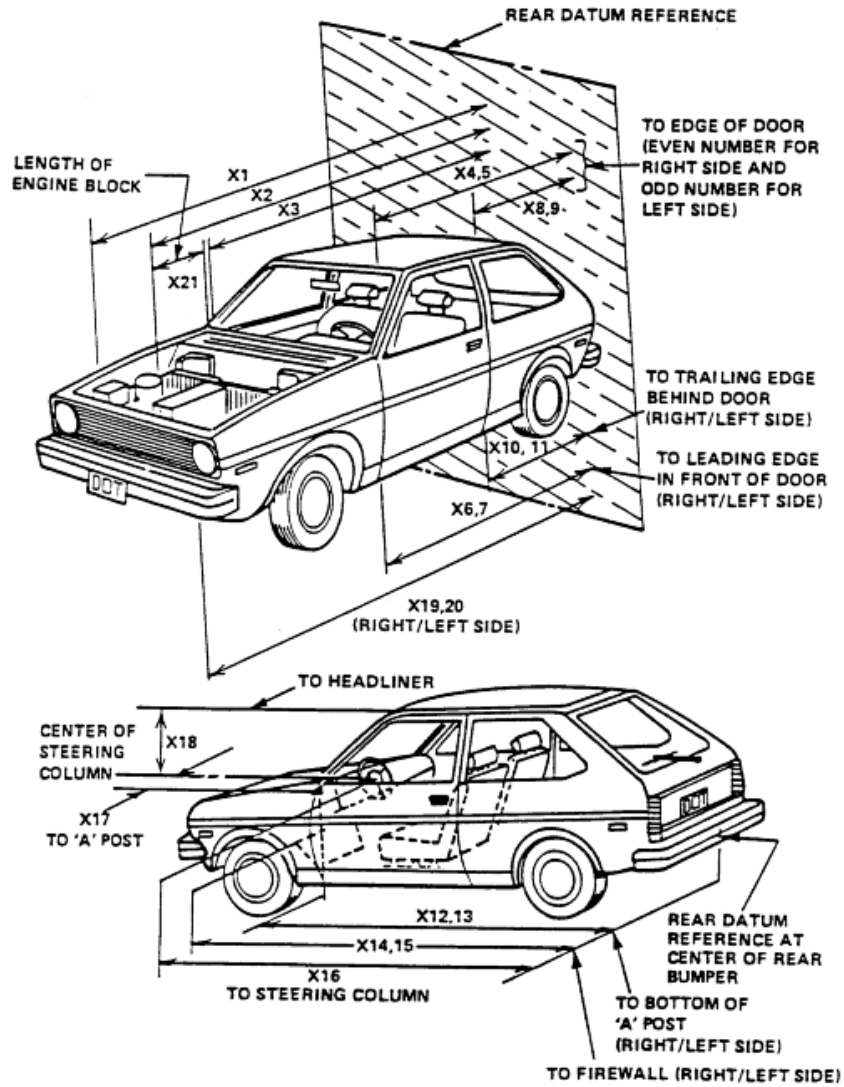
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

DATA SHEET NO. 12 **VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011



DATA SHEET NO. 12 (CONTINUED)
VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

RSOV (Rear Surface of Vehicle)

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	mm	5050	4451	599
2	RSOV to Front of Engine	mm	4404	4204	200
3	RSOV to Firewall	mm	3894	3795	99
4	RSOV to Upper Leading Edge of Right Door	mm	3421	3420	1
5	RSOV to Upper Leading Edge of Left Door	mm	3421	3420	1
6	RSOV to Lower Leading Edge of Right Door	mm	3435	3415	20
7	RSOV to Lower Leading Edge of Left Door	mm	3435	3414	21
8	RSOV to Upper Trailing Edge of Right Door	mm	2252	2259	-7
9	RSOV to Upper Trailing Edge of Left Door	mm	2252	2250	2
10	RSOV to Lower Trailing Edge of Right Door	mm	2284	2264	20
11	RSOV to Lower Trailing Edge of Left Door	mm	2284	2266	18
12	RSOV to Bottom of "A" Post of Right Side	mm	3447	3431	16
13	RSOV to Bottom of "A" Post of Left Side	mm	3447	3403	44
14	RSOV to Firewall, Right Side	mm	3552	3540	12
15	RSOV to Firewall, Left Side	mm	3552	3535	17
16	RSOV to Steering Column	mm	2860	2940	-80
17	Center of Steering Column to "A" Post	mm	400	360	40
18	Center of Steering Column to Headliner	mm	420	395	25
19	RSOV to Right Side of Front Bumper	mm	4802	4386	416
20	RSOV to Left Side of Front Bumper	mm	4802	4300	502
21	Length of Engine Block	mm	440	440	0
RD	RSOV to Right Side of Dash Panel	mm	3076	3069	7
CD	RSOV to Center of Dash Panel	mm	3116	3114	2
LD	RSOV to Left Side of Dash Panel	mm	3062	3059	3

DATA SHEET NO. 13
ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
Test Date: 12/21/2011

VEHICLE INFORMATION

VIN: 2C3CCAHG3CH137269 Wheelbase (mm): 3052
Vehicle Size Category: Sedan Test Weight (kg): 2141.0

ACCELEROMETER DATA

Accelerometer Locations: As per measurements on Page 15

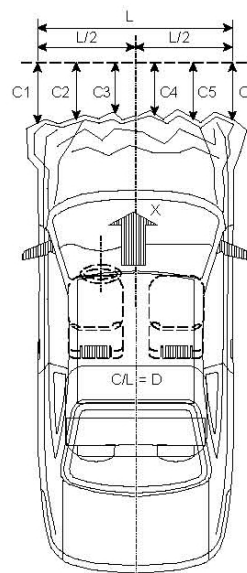
Cal. Procedure/Interval: MGA procedure / 6 month

Integration Algorithm: Trapezoidal Linearity: > 99%

Impact Velocity (km/h): 56.2

Velocity Change (km/h): 63.8

Time of Separation (msec): 125.5



CRUSH PROFILE

Collision Deformation Classification: Frontal

Midpoint of Damage: Centerline

Damage Region Length (mm): 1610

Impact Mode: Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	4802	4300	502
C2	Crush zone 2 at left side	mm	4915	4421	494
C3	Crush zone 3 at left side	mm	5004	4433	571
C4	Crush zone 4 at right side	mm	5004	4447	557
C5	Crush zone 5 at right side	mm	4915	4436	479
C6	Crush zone 6 at right side	mm	4802	4286	516
L	C1 TO C6	mm	1610	1433	177

**DATA SHEET NO. 14
VEHICLE INTRUSION MEASUREMENTS**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
Test Program: NCAP Frontal Barrier Impact Test

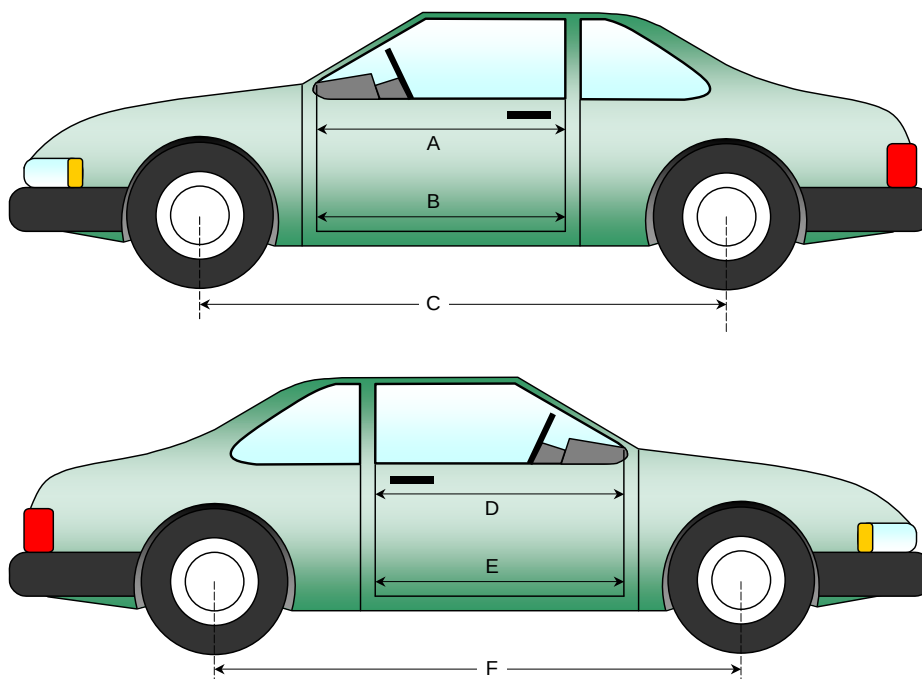
NHTSA No.: MC0331
Test Date: 12/21/2011

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1051	1045	6
B	Left Side Lower	mm	1003	998	5
D	Right Side Upper	mm	1051	1050	1
E	Right Side Lower	mm	1003	995	8

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	3052	2927	125
F	Right Side Wheelbase	mm	3052	2873	179



DATA SHEET NO. 14 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

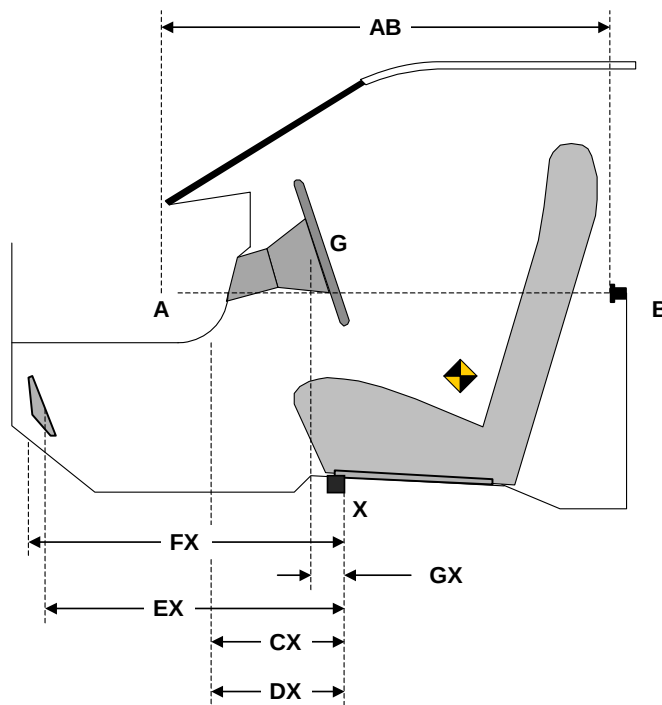
Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside window jam)	mm	860	860	0
CX	Left Knee Bolster to X	mm	278	301	-23
DX	Right Knee Bolster to X	mm	270	295	-25
EX	Brake Pedal to X	mm	584	561	23
FX	Foot Rest to X	mm	667	660	7
GX	Center of Steering Column Wheel Hub to X	mm	59	178	-119

X = Front of Seat Track (stationary)

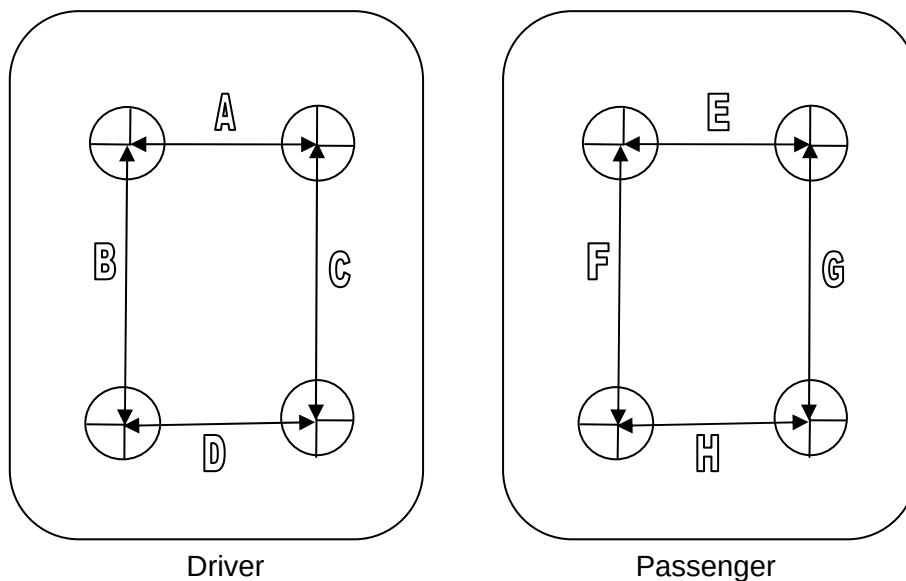


DRIVER COMPARTMENT

DATA SHEET NO. 14 (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011



TOP VIEW THROUGH FLOOR PAN

UNDERBODY FLOORBOARD DEFORMATION

Measurement	Units	Pre-Test	Post-Test	Difference
A	mm	307	307	0
B	mm	307	307	0
C	mm	307	307	0
D	mm	307	307	0
E	mm	307	304	3
F	mm	307	307	0
G	mm	307	307	0
H	mm	307	301	6

DATA SHEET NO. 15
SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

Windshield Mounting Details:

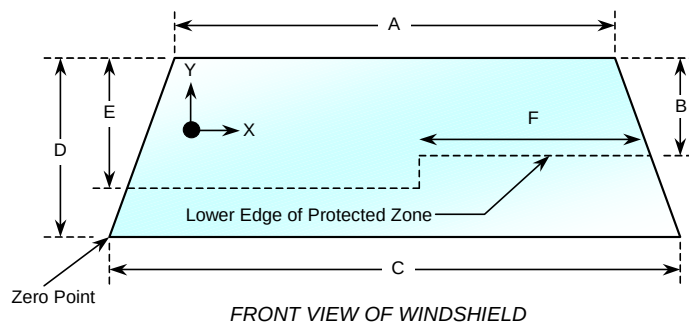
Windshield glass is secured to the vehicle frame with a rubber trim and glue.

The standard requires that the post-test retention measurement be a minimum of 75 percent of the pretest total periphery measurement for vehicles not equipped with occupant passive restraints and 50 percent for each side of the windshield for vehicles, which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 21.1°C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% of Retention
Left Side	2230	2230	100
Right Side	2230	2230	100
Total	4460	4460	100



Item	Units	Value
A	mm	1232
B	mm	470
C	mm	1630
D	mm	799
E	mm	480
F	mm	618

AREA OF PROTECTED ZONE FAILURES - NONE

A. Provide coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one that is normally in contact with the windshield. **None**

X	Y

B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component. **None**

X	Y

DATA SHEET NO. 15 (CONTINUED)
SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA

Test Vehicle:	<u>2012 Chrysler 300 Limited AWD 4-Dr Sedan</u>	NHTSA No.:	<u>MC0331</u>
Test Program:	<u>NCAP Frontal Barrier Impact Test</u>	Test Date:	<u>12/21/2011</u>

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Time: 2:58 pm

Temperature: 21.1° C

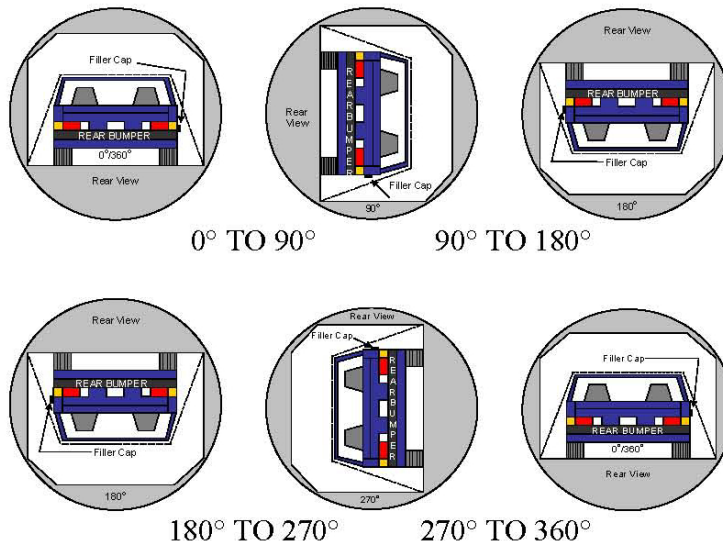
- | | |
|---|--------------|
| A. From impact until vehicle motion ceases:
(Maximum Allowable = 1 ounce) | <u>0</u> oz. |
| B. For the 5 minute period after motion ceases:
(Maximum allowable = 5 ounces) | <u>None</u> |
| C. For the following 25 minutes:
(Maximum allowable = 1 oz./minute) | <u>None</u>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

DATA SHEET NO. 16 **FMVSS 301 STATIC ROLLOVER RESULTS**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011

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



SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	119	300	419
90° to 180°	115	300	415
180° to 270°	107	300	407
270° to 360°	114	300	414

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

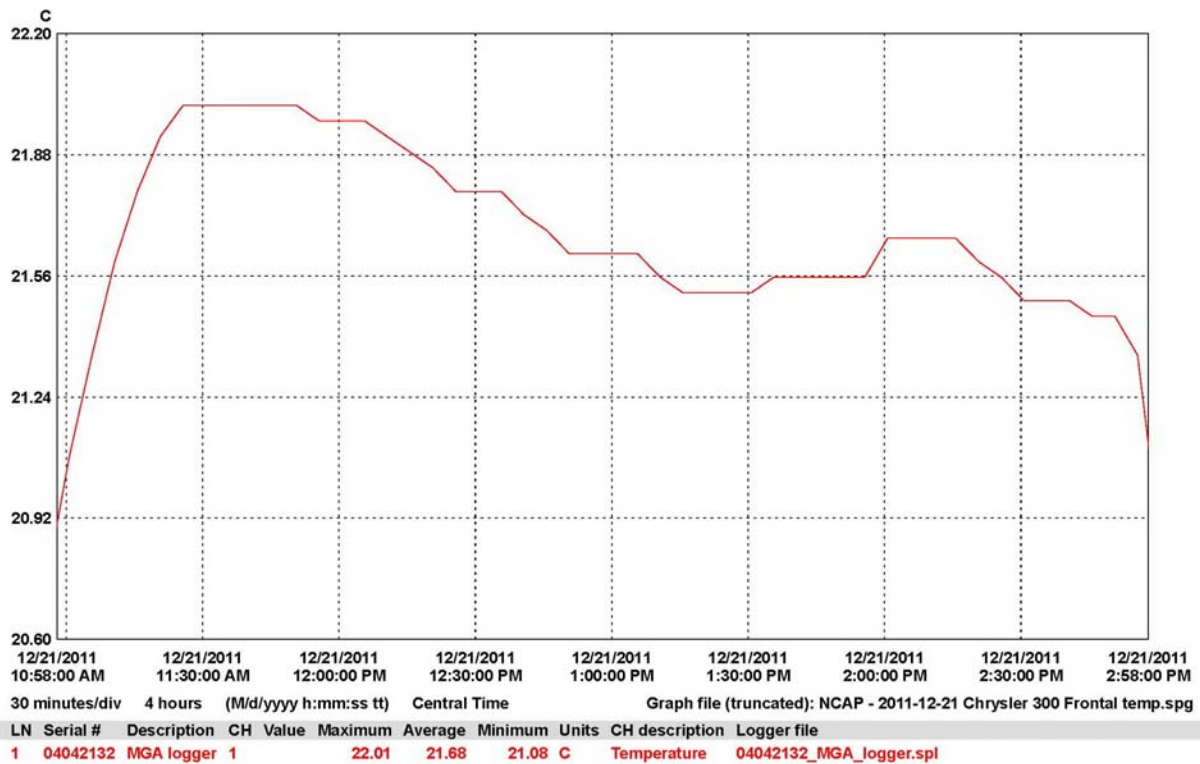
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 17 **DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA**

Test Vehicle: 2012 Chrysler 300 Limited AWD 4-Dr Sedan
 Test Program: NCAP Frontal Barrier Impact Test

NHTSA No.: MC0331
 Test Date: 12/21/2011



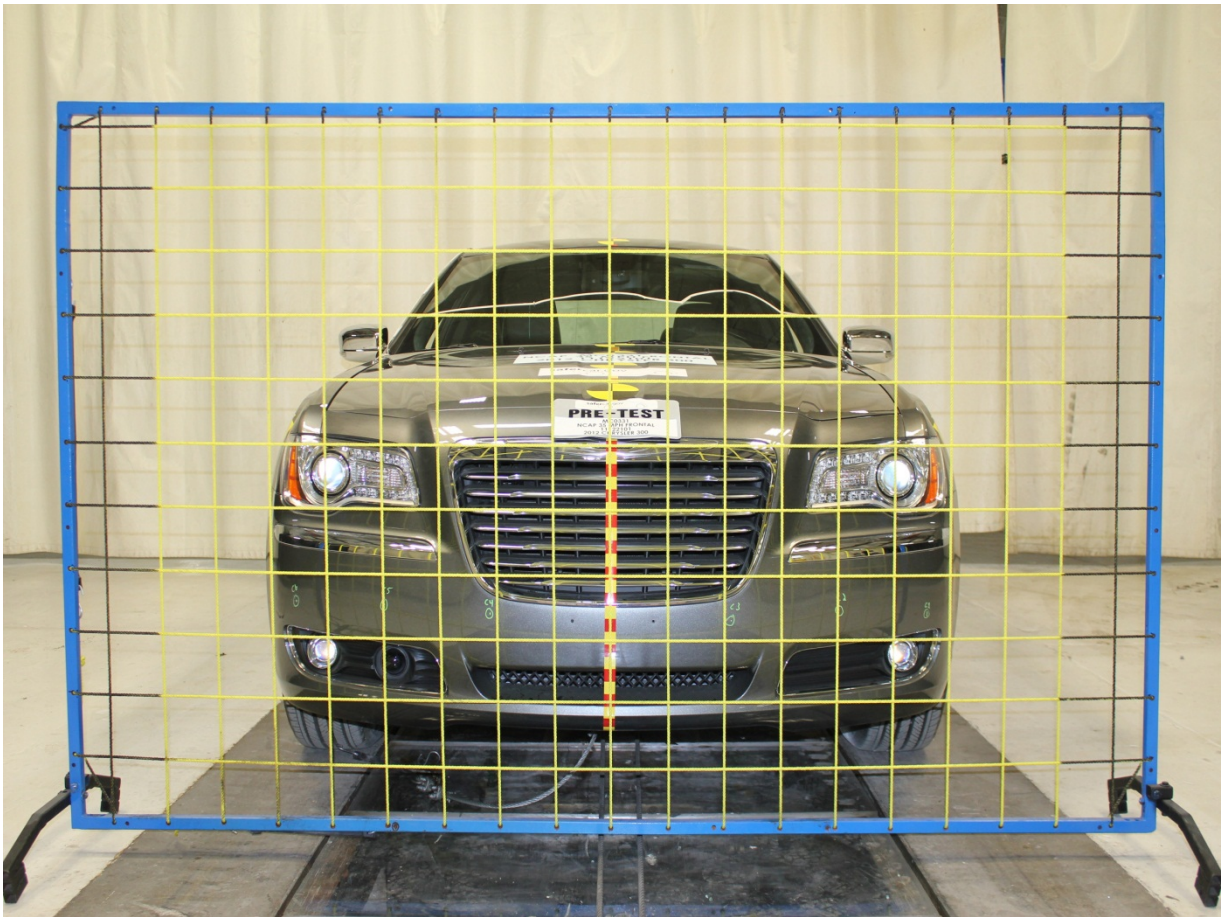
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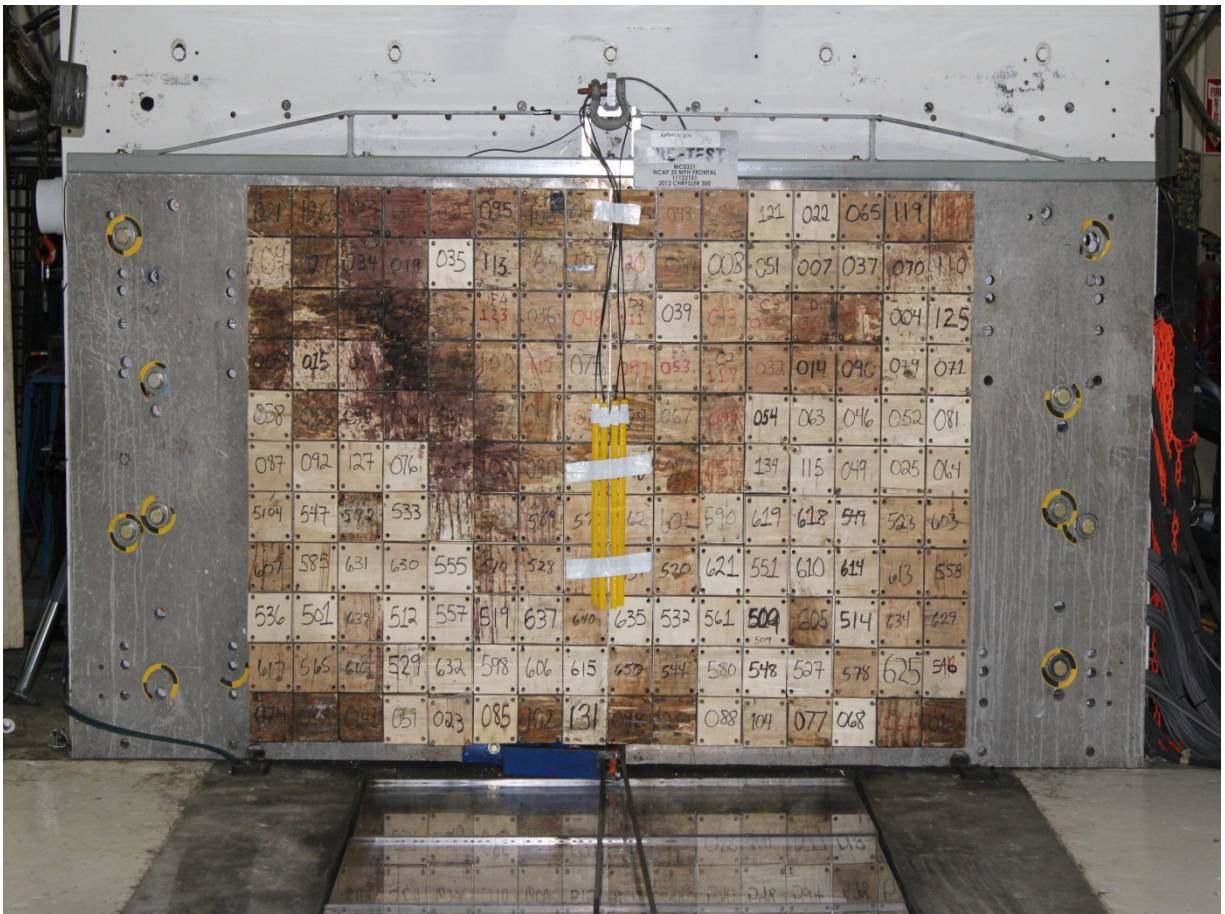
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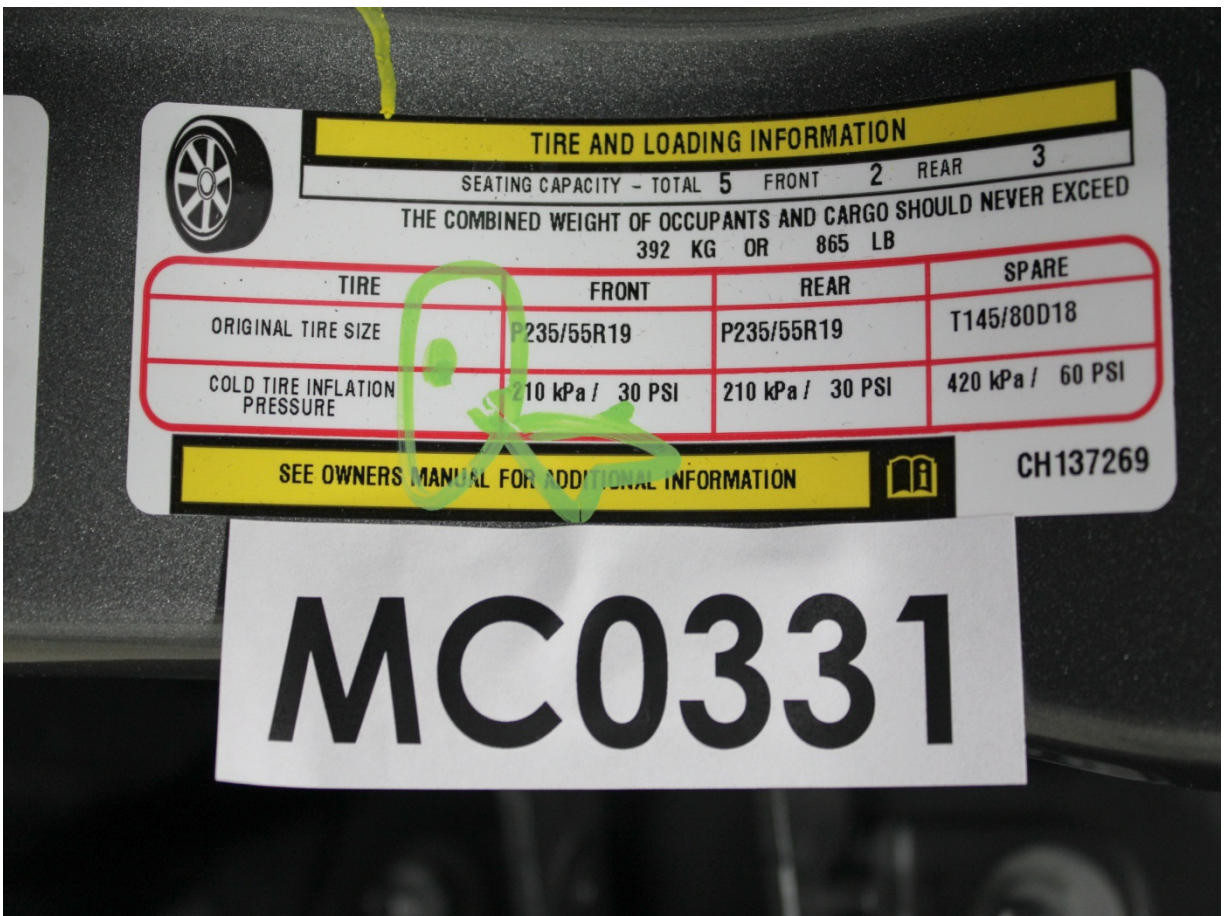
Load Cell Location



Load Cell Wall



Manufacturer's Label



Tire Placard



2012 Chrysler 300 Limited AWD Frontal As Delivered



Left Rear Three-Quarter View, As Received



Pre-Test Front View of Test Vehicle



Post-Test Front View of Test Vehicle



Pre-Test Left View of Test Vehicle



Post-Test Left View of Test Vehicle



Pre-Test Right View of Test Vehicle



Post-Test Right View of Test Vehicle



Pre-Test Right Front Three-Quarter View



Post-Test Right Front Three-Quarter View



Pre-Test Left Rear Three-Quarter View



Post-Test Left Rear Three-Quarter View



Pre-Test Windshield View



Post-Test Windshield View



Pre-Test Engine Compartment View



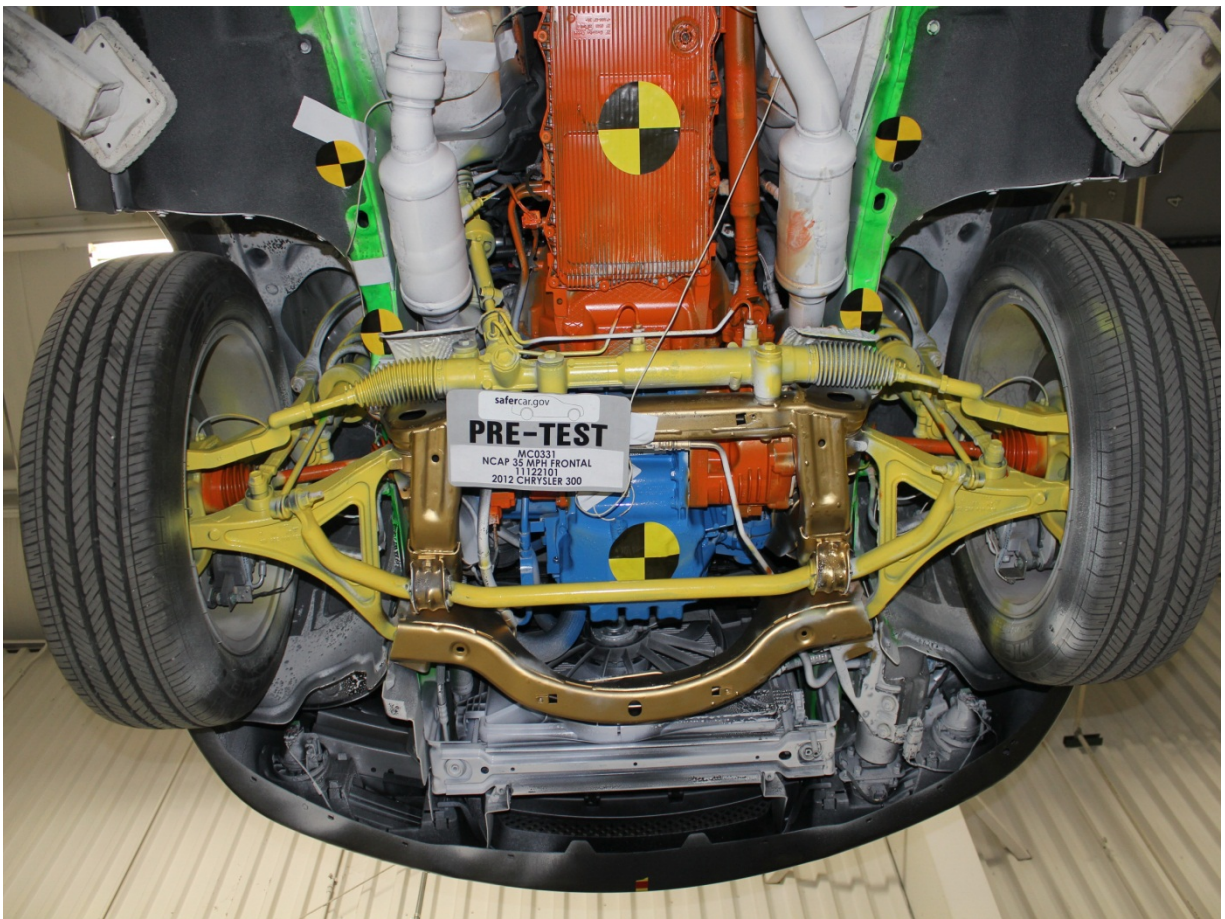
Post-Test Engine Compartment View



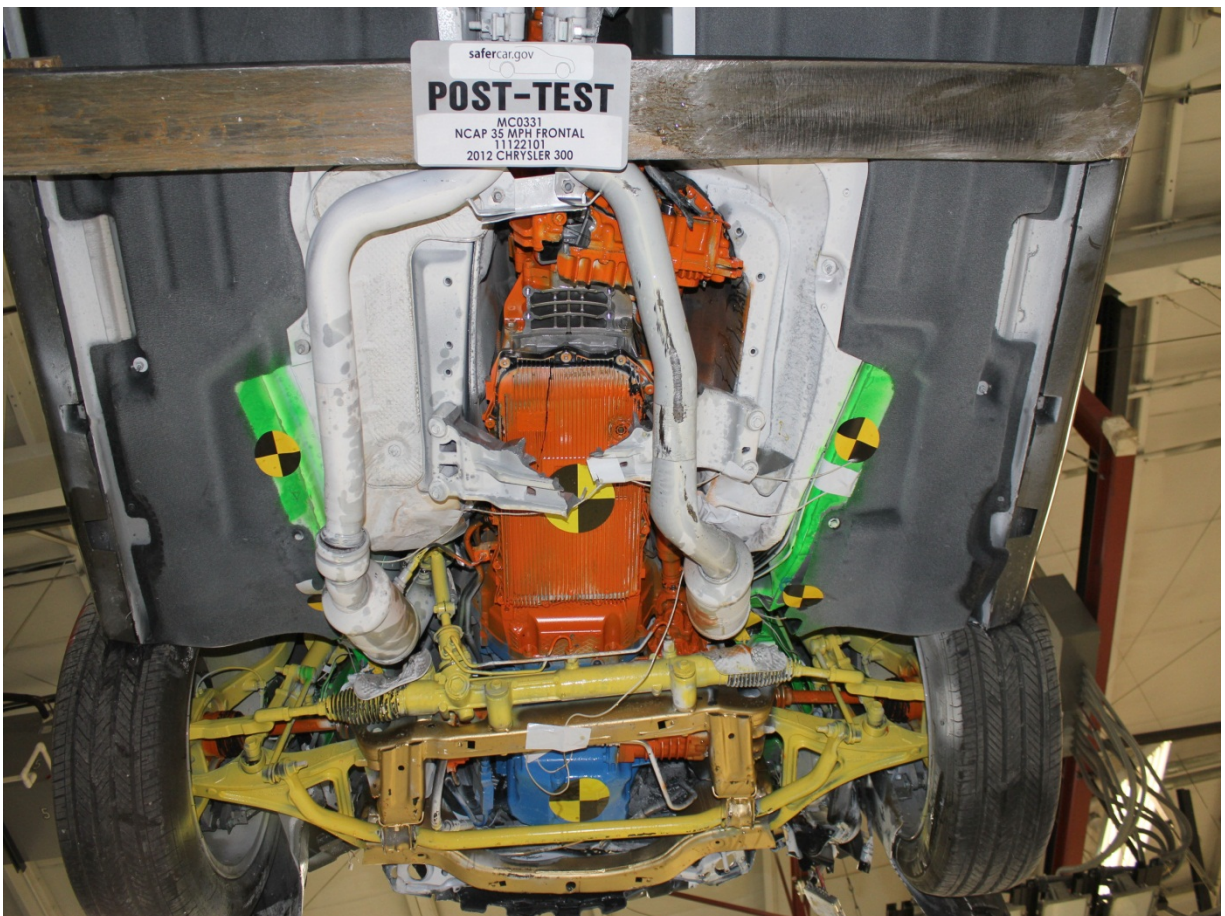
Pre-Test Fuel Filler Cap View



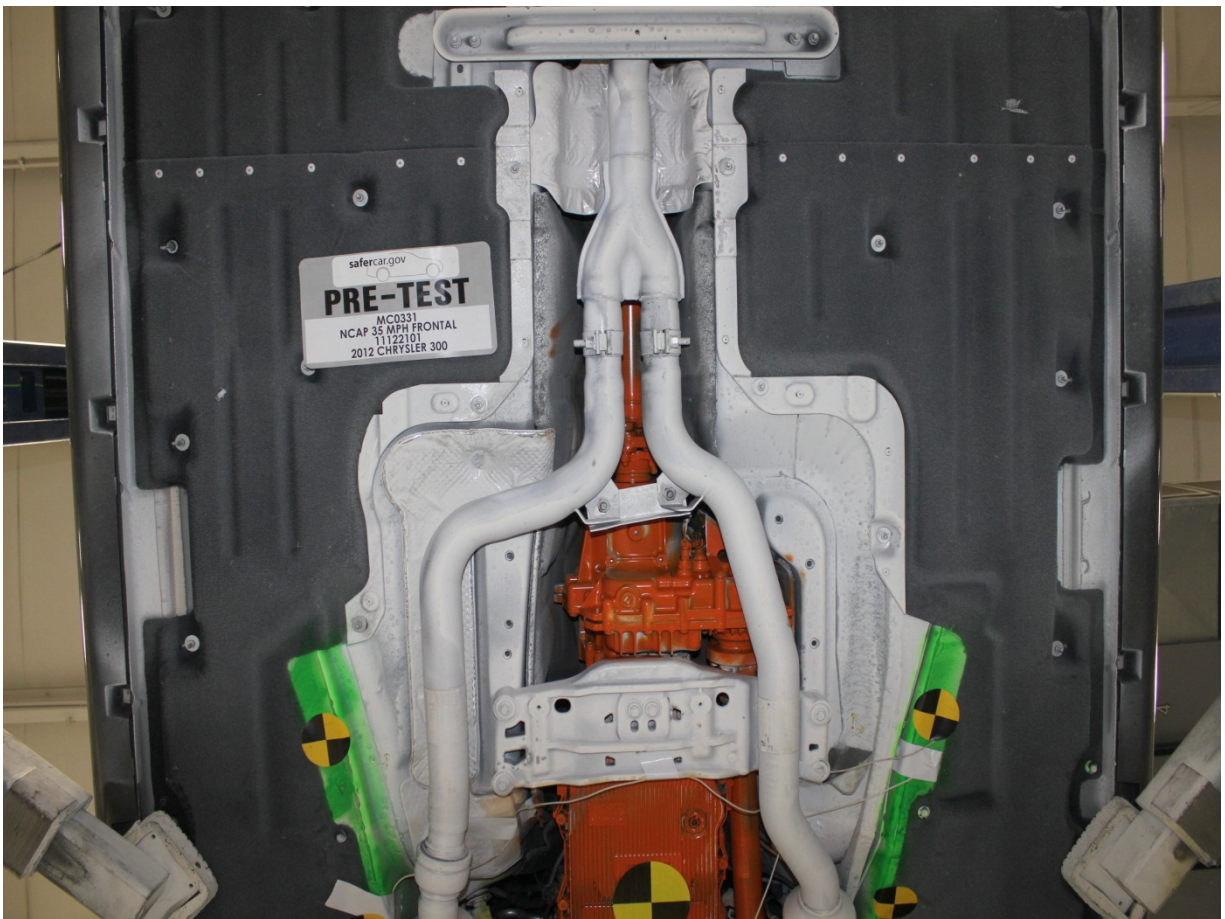
Post-Test Fuel Filler Cap View



Pre-Test Front Underbody View



Post-Test Front Underbody View



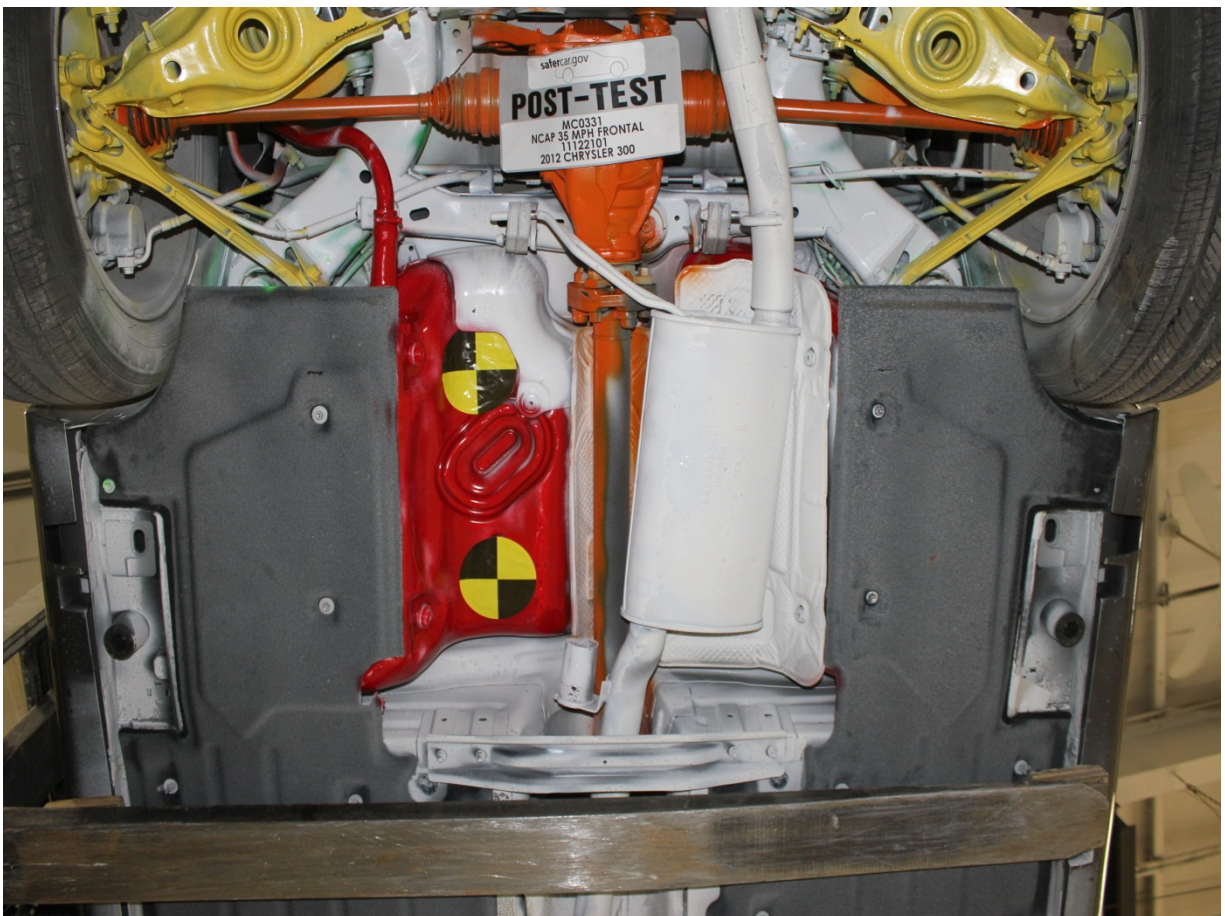
Pre-Test Mid Front Underbody View



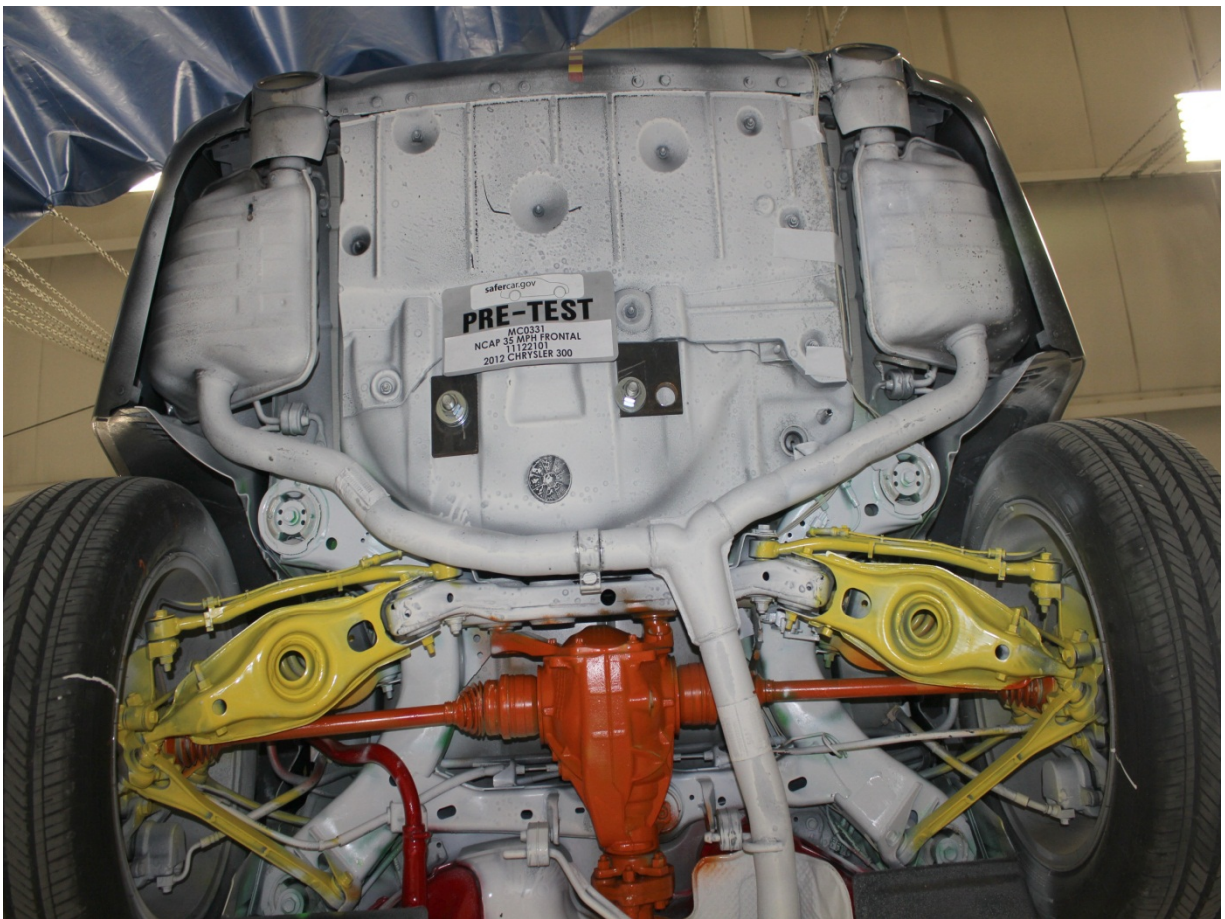
Post-Test Mid Front Underbody View



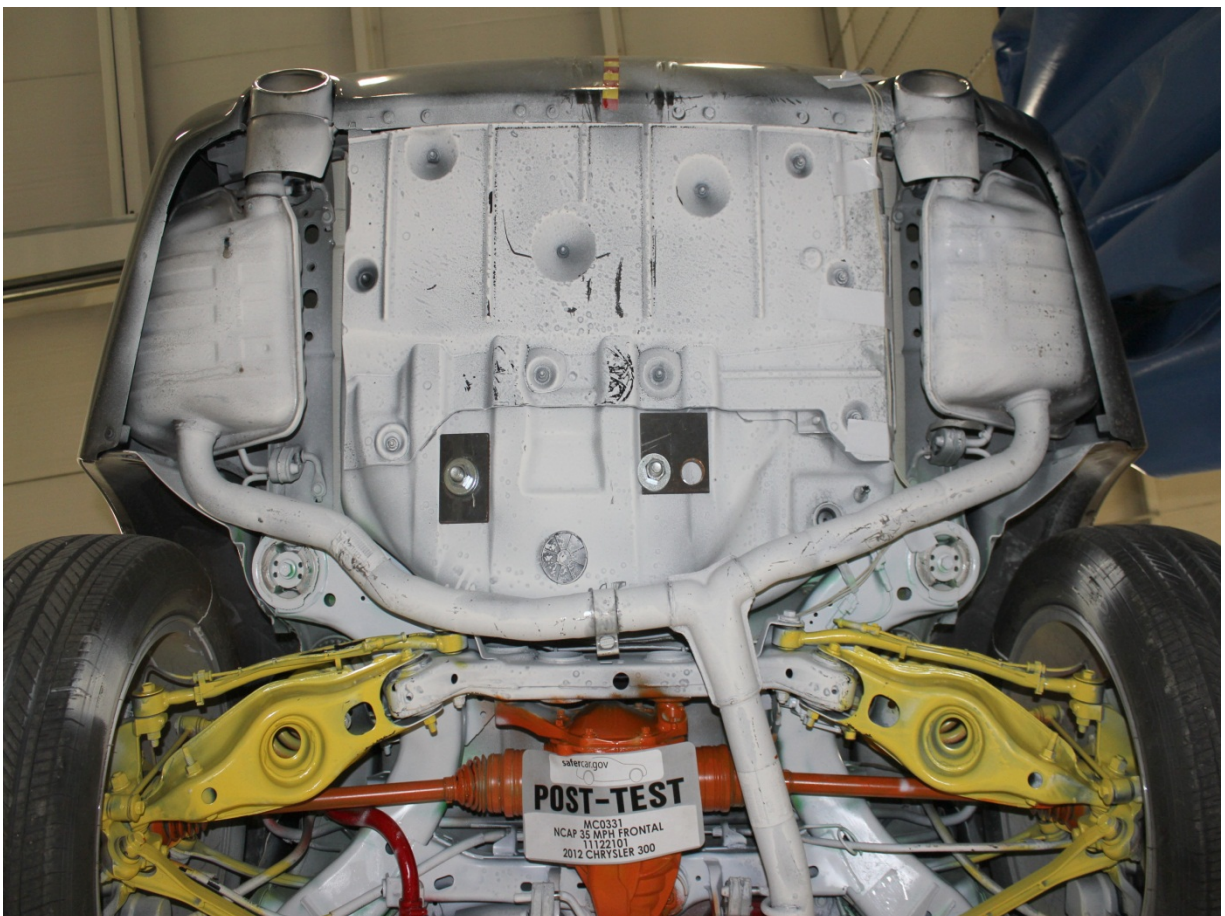
Pre-Test Mid Rear Underbody View



Post-Test Mid Rear Underbody View



Pre-Test Rear Underbody View



Post-Test Rear Underbody View



Pre-Test Dummy Cable Routing



Post-Test Dummy Cable Routing



Pre-Test Driver Dummy Front View



Post-Test Driver Dummy Front View



Pre-Test Driver Dummy Window View



Post-Test Driver Dummy Window View



Pre-Test Driver Dummy and Vehicle Interior (Door Open)



Post-Test Driver Dummy and Vehicle Interior (Door Open)



Pre-Test Driver's Seat Fore-Aft Markings



Post-Test Driver's Seat Fore-Aft Markings



Pre-Test Driver Dummy Feet



Post-Test Driver Dummy Feet



Pre-Test Driver's Side Knee Bolster (without dummy)



Post-Test Driver's Side Knee Bolster (without dummy)



Pre-Test Driver's Side Floorpan



Post-Test Driver's Side Floorpan



Post-Test Driver Dummy Face



Post-Test Driver Dummy Contact with Airbag



Post-Test Driver Dummy Contact with Headrest



Post-Test Driver Dummy Contact with Ceiling



Post-Test Driver Dummy Contact with Knee Airbag



Pre-Test View of the Steering Wheel



Post-Test View of the Steering Wheel



Pre-Test Passenger Dummy Front View



Post-Test Passenger Dummy Front View



Pre-Test Passenger Dummy Window View

PHOTOGRAPH NOT AVAILABLE

Post-Test Passenger Dummy Window View



Pre-Test Passenger Dummy and Vehicle Interior (Door Open)



Post-Test Passenger Dummy and Vehicle Interior (Door Open)



Pre-Test Passenger's Seat Fore-Aft Markings



Post-Test Passenger's Seat Fore-Aft Markings



Pre-Test Passenger Dummy Feet



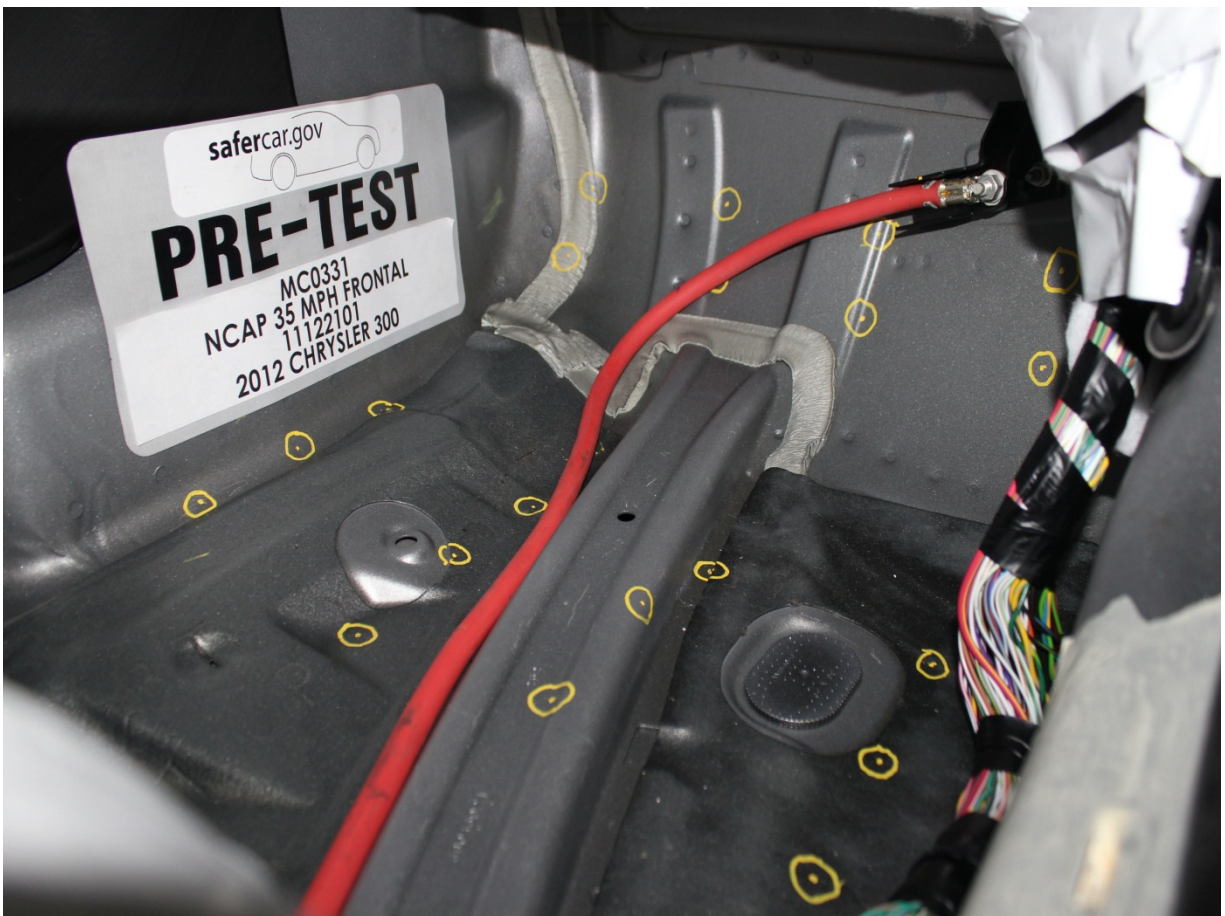
Post-Test Passenger Dummy Feet



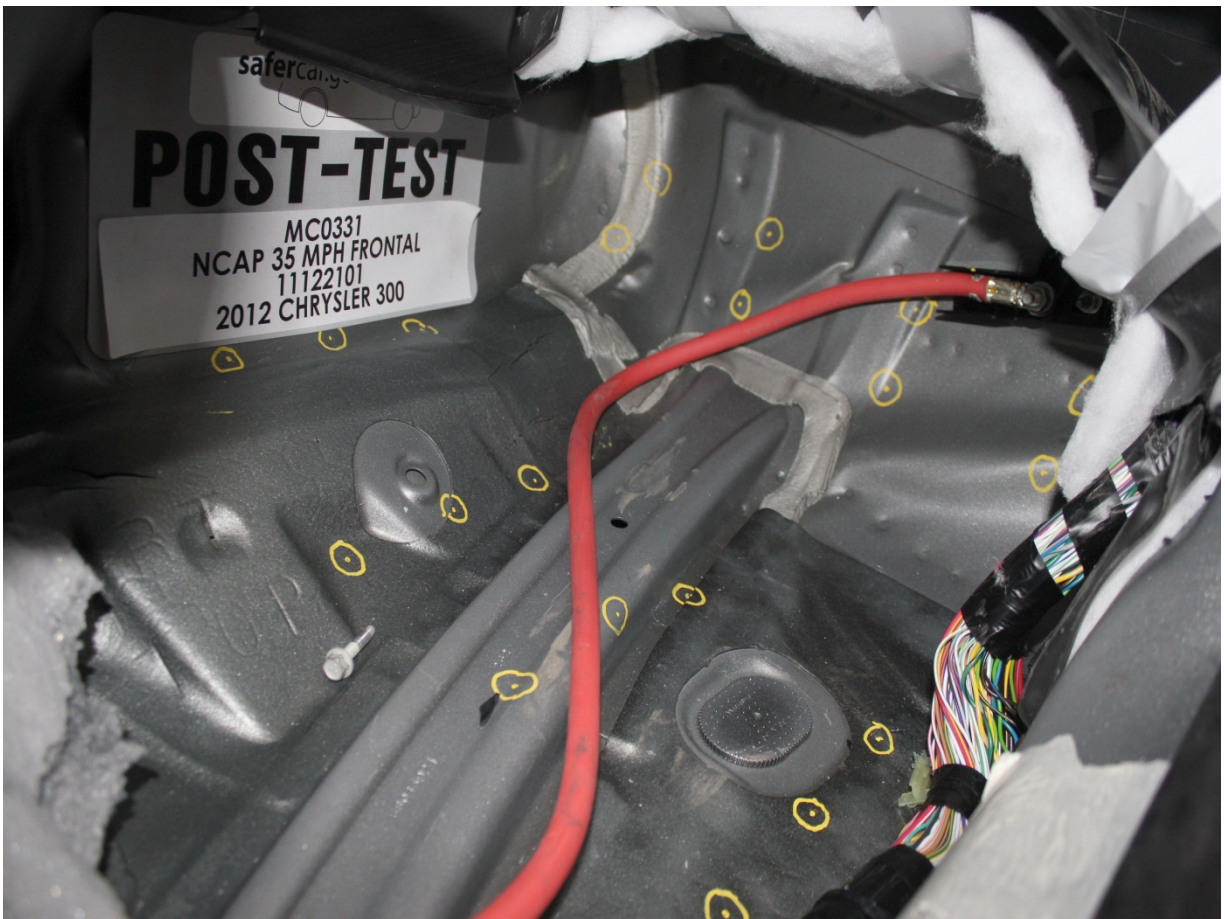
Pre-Test Passenger's Side Knee Bolster (without dummy)



Post-Test Passenger's Side Knee Bolster (without dummy)



Pre-Test Passenger's Side Floorpan



Post-Test Passenger's Side Floorpan



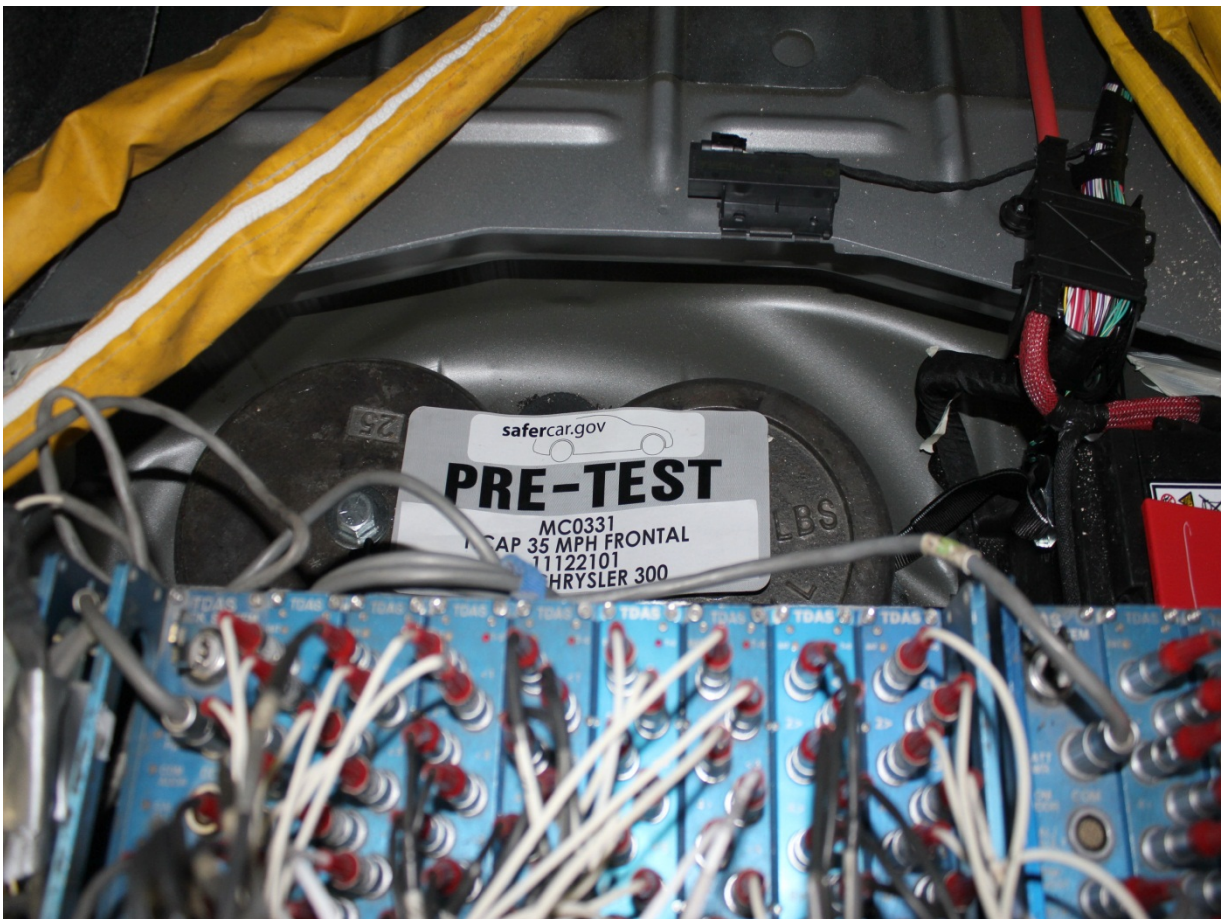
Post-Test Passenger Dummy Contact with Airbag



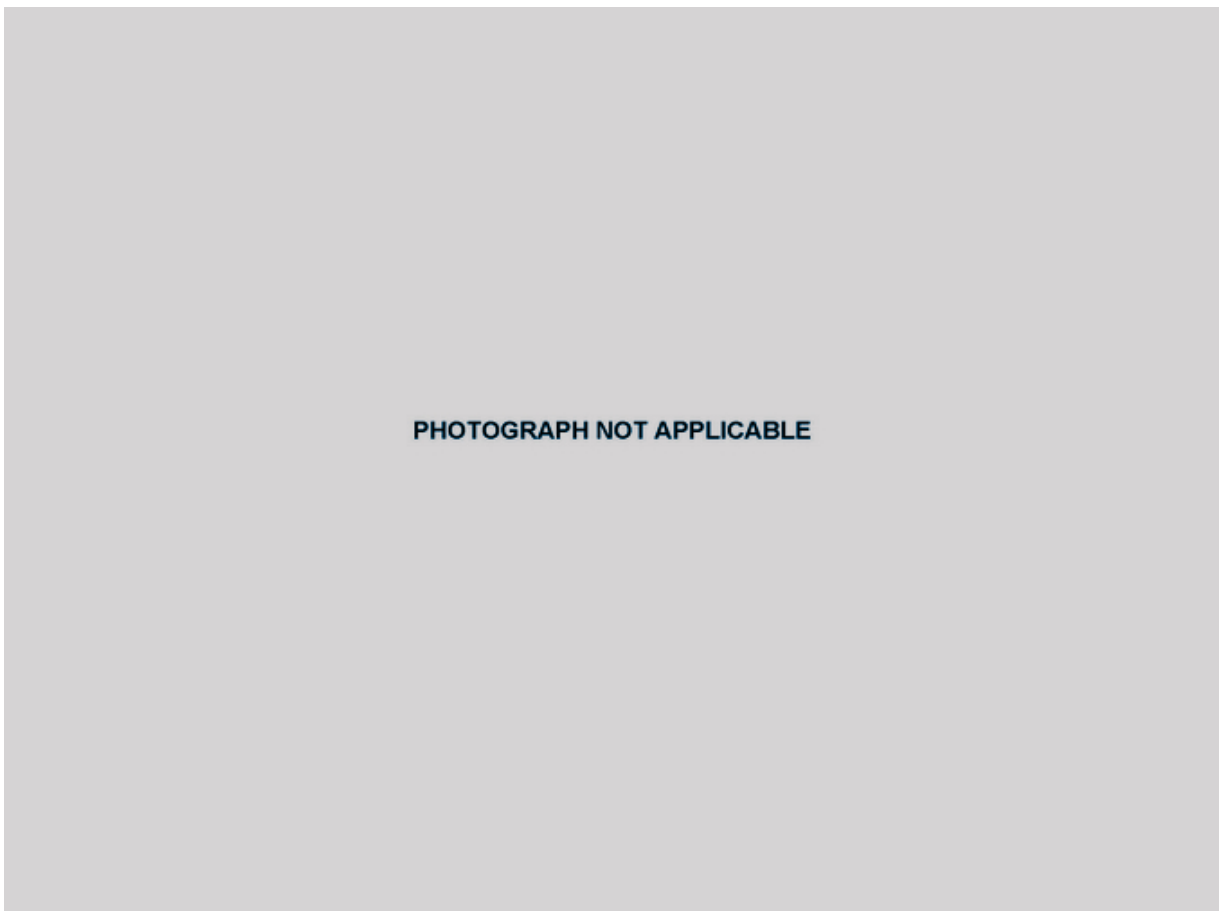
Post-Test Passenger Dummy Contact with Headrest



Post-Test Passenger Dummy Contact with Knee Bolster



Ballast Installed in Vehicle



PHOTOGRAPH NOT APPLICABLE

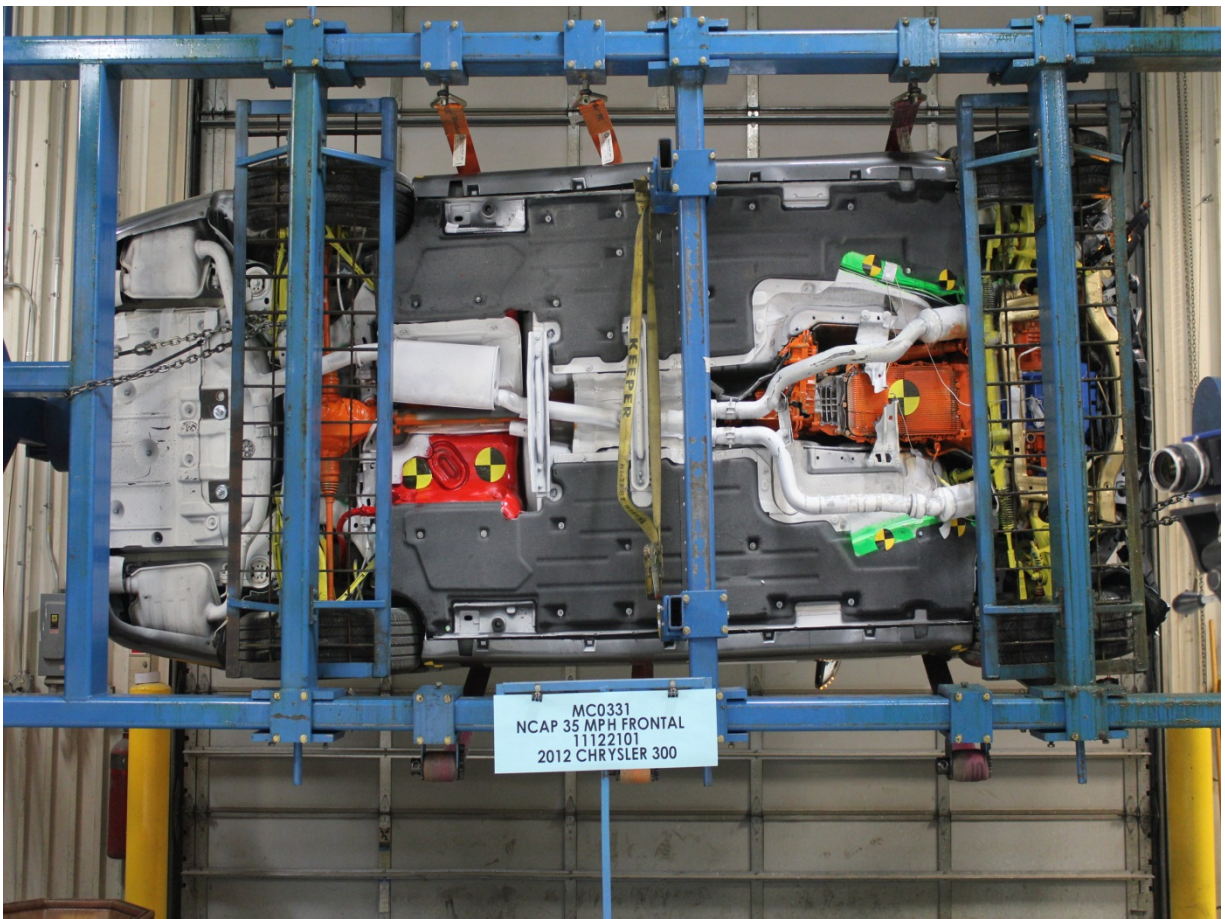
Post-Test Stoddard Solvent Spillage Location View



Post-Test Speed Trap Read-Out



Vehicle at 0 Degrees on Static Rollover Device



Vehicle at 90 Degrees on Static Rollover Device



Vehicle at 180 Degrees on Static Rollover Device



Vehicle at 270 Degrees on Static Rollover Device



Vehicle at 360 Degrees on Static Rollover Device



2012 Chrysler 300 Limited AWD Frontal Impact Event



2012 300 LIMITED AWD

For more information visit: www.chrysler.com Chrysler Group LLC
or call 1-800-CHRYSLER

THIS VEHICLE IS MANUFACTURED TO MEET SPECIFIC UNITED STATES REQUIREMENTS. THIS VEHICLE IS NOT MANUFACTURED FOR SALE OR REGISTRATION OUTSIDE OF THE UNITED STATES.

MANUFACTURER'S SUGGESTED RETAIL PRICE OF THIS MODEL INCLUDING DEALER PREPARATION

Base Price: \$34,320

CHRYSLER 300 LIMITED AWD
 Exterior Color: Tungsten Metallic Clear Coat Exterior Paint
 Interior Color: Black Interior Color
 Interior: Luxury Leather-trimmed Bucket Seats
 Engine: 3.6-Liter V6 24-Valve VVT Engine
 Transmission: 9-Speed Auto Transmission with E-Shifter

STANDARD EQUIPMENT (UNLESS REPLACED BY OPTIONAL EQUIPMENT)
FUNCTIONAL/SAFETY FEATURES
 Heavy Duty Anti-Lock 4-Wheel Disc Brakes
 Electronic Stability Control
 All-Speed Traction Control
 Electrohydraulic Power Steering
 Advanced Multistage Front Airbags
 Supplemental Side-Curtain Front and Rear Airbags
 Supplemental Front Seat-Mounted Side Airbags
 Driver Inflatable Knee-Booster Airbag
 Reactive Head Restraints
 Security Alarm
 Sentry Key Theft Deterrent System
 Keyless Enter-N-Go
 Remote Proximity Keyless Entry
 Remote Start System
 Speed Control
 Speed Sensitive Power Locks
 Variable Intermittent Windshield Wipers
 19.1-Gallon Fuel Tank
 Tire Pressure Monitoring Display

INTERIOR FEATURES
 Luxury Leather-trimmed Bucket Seats
 Power Front Driver and Passenger Seats
 Heated Front Seats
 Air Conditioning with Dual Zone Auto Temp Control
 Humidity Sensor
 Leather-Wrapped Steering Wheel
 Steering Wheel-Mounted Audio Controls
 Tilt / Telescope Steering Column
 Leather-Wrapped Shift Knob
 8.4" Uconnect now Uconnect Touch 4.3S COM/MP3/SAT
 6 Premium Speakers
 Uconnect Voice Command with Bluetooth
 Bluetooth Streaming Audio
 Audio Jack Input for Mobile Devices
 Remote USB Port
 SiriusXM Satellite Radio w/ 1-yr Radio Subscription
 For More Information, Call 1-888-539-7474
 Power Heated Mirrors
 8.4" Uconnect now Uconnect Touch Up & Down Feature

EXTERIOR FEATURES
 19-Inch x 7.5-Inch Polished/Painted Aluminum Wheels
 P225/55R19 90W All Season Performance Tires
 Active Transfer Case with Front Axle Disconnect
 4-Wheel Independent Suspension AWD

Bright Surround / Liquid Chrome Bars
 Dedicated LED Daytime Running Headlamps
 Bi-Function Halogen Projector Headlamp
 Fog Lamps

OPTIONAL EQUIPMENT
 Customer Preferred Package 27H \$2,420
 SafetyTec
 Power Multi-Function Mirrors with Manual Fold-Away
 Adaptive Bi-Xenon HID Headlamps
 Automatic Headlamp Leveling System
 Adaptive Cruise Control (ACC)
 Forward Collision Warning
 Blind Spot and Cross Path Detection
 SmartBeam Headlamps
 Rear Fog Lamps
 Rain Sensitive Windshield Wipers
 Universal Garage Door Opener
 Exterior Mirrors with Supplemental Signals
 Exterior Mirrors with Courtesy Lamps
 Dual-Pane Panoramic Sunroof
 Flex Fuel Vehicle \$1,295

DESTINATION CHARGE \$825
TOTAL BEFORE DISCOUNT \$38,850

8.4" Radio Delete Credit: -\$1,200
 This Vehicle built with a 4.3" instead of the standard 8.4" Radio and without Rear Camera due to parts shortage. A price credit has been applied to this vehicle.

TOTAL PRICE: * \$37,660

WARRANTY COVERAGE
 5-year or 100,000-mile Powertrain Limited Warranty.
 3-year or 36,000-mile Basic Limited Warranty.
 24-hour towing assistance, certain restrictions apply.
 Ask Dealer for a copy of the limited warranties or see your owner's manual for details.

5 YEAR/100,000 MILE POWERTRAIN WARRANTY

Assembly Point/Port of Entry: BRAMPTON, ONTARIO, CANADA
 VIN: 2C3-CAH33CH-137269 L4-VOL 8152 1001

SHIP TO: 68610 14
 HANSEN BOULEVARD
 NORTH ALABAMA 35894-8803
 SOLD TO: 61 8803
 ROYER FORD CHRYSLER JEEP DOODGE
 200 HANSEN BOULEVARD
 NORTH ALABAMA 35894-8803

THIS LABEL IS ADDED TO THIS VEHICLE TO COMPLY WITH FEDERAL LAW. THE LABEL CANNOT BE REMOVED OR ALTERED PRIOR TO DELIVERY TO THE ULTIMATE PURCHASER.
 * EXcludes taxes, license, title, and dealer fees and dealer supplied and installed options and accessories. **MSRP. THIS PRICE, DISCOUNT, IF ANY, IS BASED ON PRICE OF OPTION IF PURCHASED SEPARATELY.

EPA Fuel Economy Estimates

These estimates reflect new EPA methods beginning with 2008 models.

CITY MPG

18

Expected range for most drivers
14 to 22 MPG

Estimated Annual Fuel Cost

\$2,642

based on 15,000 miles at \$3.70 per gallon

Combined Fuel Economy

21

This vehicle

14 28
ALL LARGE CARS

HIGHWAY MPG

27

Expected range for most drivers
22 to 32 MPG

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

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

GOVERNMENT SAFETY RATINGS

This vehicle has not been rated by the government for frontal crash, side crash or rollover risk.

Source: National Highway Traffic Safety Administration (NHTSA).

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

Bumper Performance
 This vehicle is equipped with bumper systems that can withstand a frontal barrier impact speed of 2.5 miles per hour and a rear barrier impact speed of 2.5 miles per hour with no more damage than allowed by the Federal bumper standard. The Federal bumper standard allows damage to the bumpers and attaching hardware and specifies barrier tests to be conducted at 2.5 miles per hour.

PARTS CONTENT INFORMATION

FOR VEHICLES IN THIS COUNTRY:
 U.S./CANADIAN PARTS CONTENT: 59 %
 MAJOR SOURCES OF FOREIGN PARTS CONTENT:
 MEXICO: 16 %
 NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:
 FINAL ASSEMBLY POINT:
 BRAMPTON, ONTARIO, CANADA
 COUNTRY OF ORIGIN:
 ENGINE: MEXICO
 TRANSMISSION: GERMANY

APPENDIX B

DUMMY RESPONSE DATA TRACES

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Figure No. 4.	Driver Head Resultant Acceleration vs. Time	B-1
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Figure No. 27.	Passenger Chest Resultant Z Acceleration vs. Time	B-9

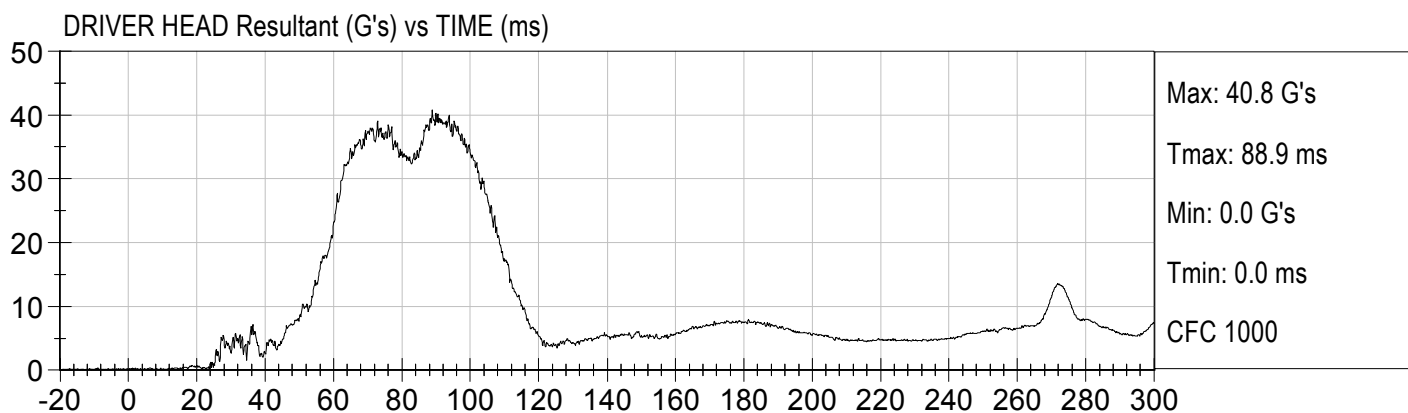
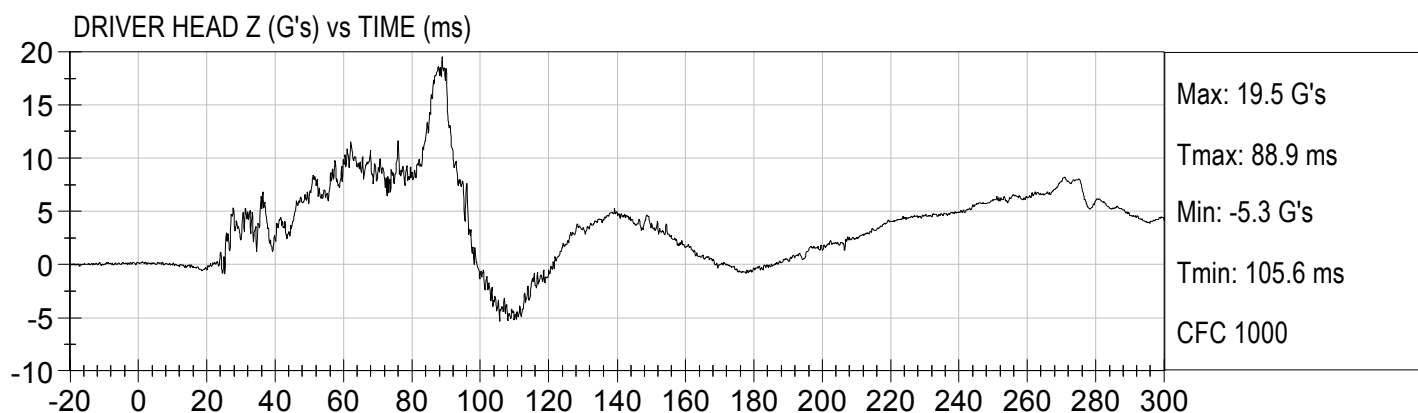
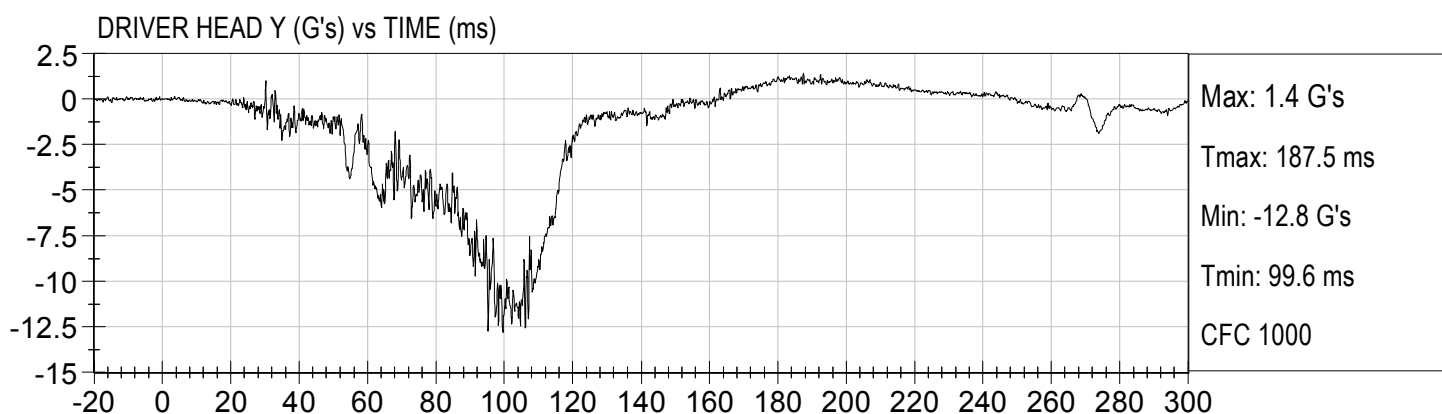
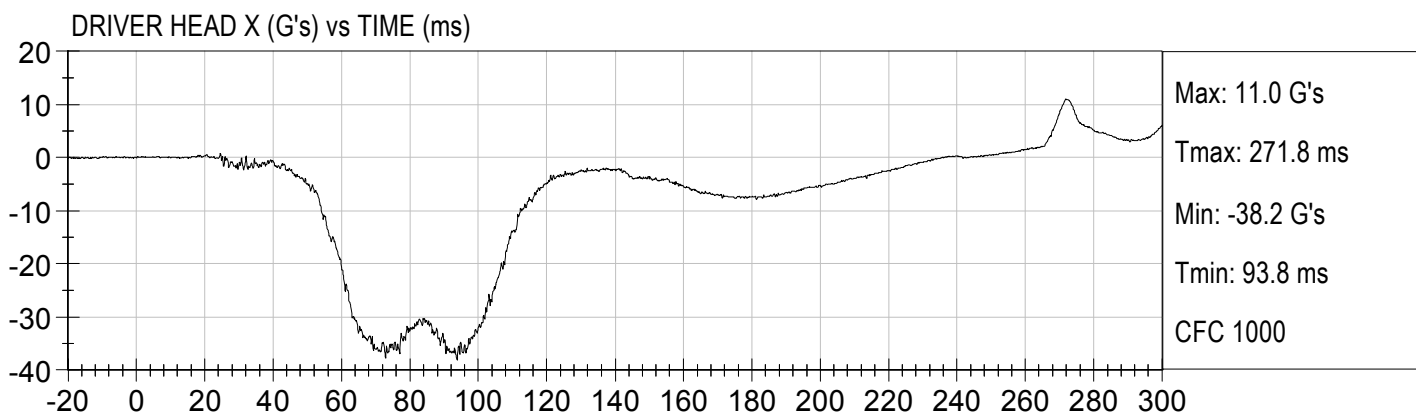
	<u>Page No.</u>
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Figure No. 29. Passenger Neck Force Z vs. Time	B-10
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Figure No. 34. Passenger Nij (NCE) vs. Time	B-11
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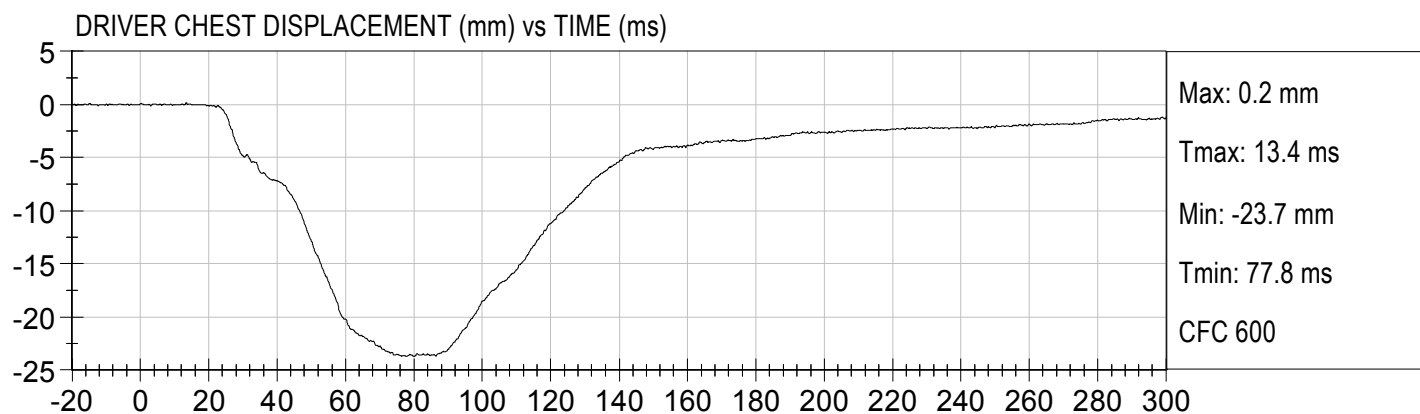
The following additional dummy and vehicle response data can be found in the R&D section of the NHTSA website at www.nhtsa.dot.gov

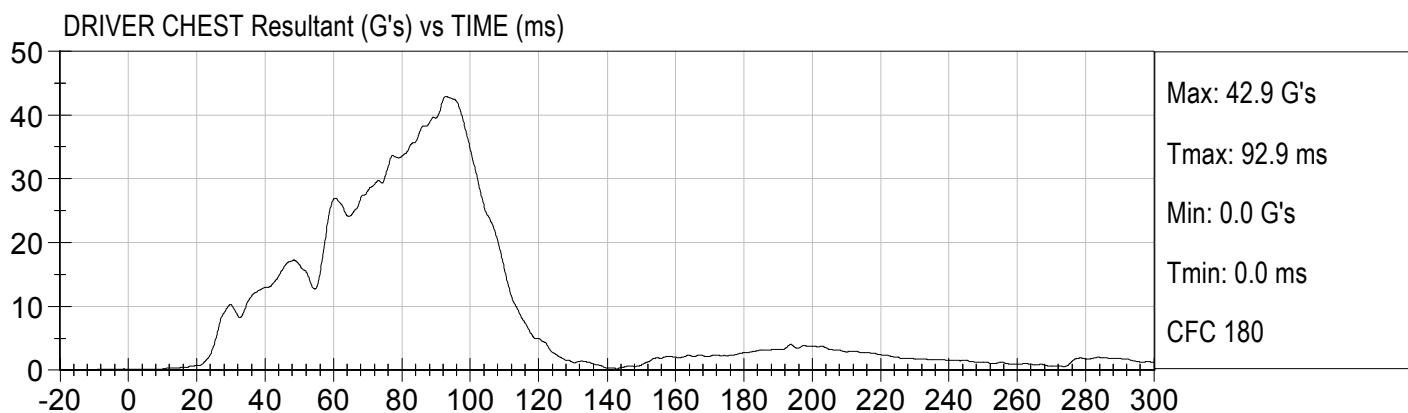
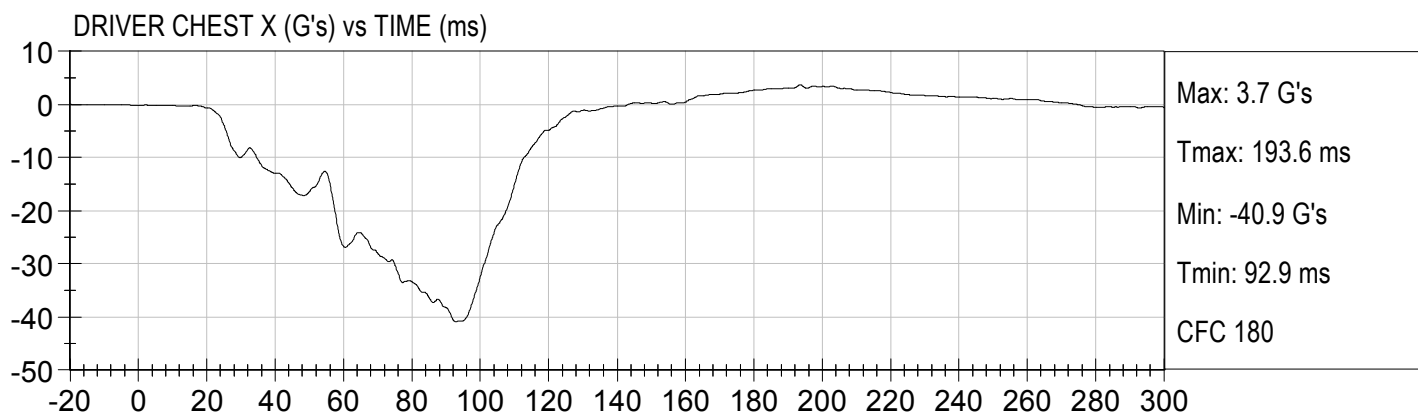
Driver Head X Redundant
 Driver Head Y Redundant
 Driver Head Z Redundant
 Driver Upper Neck Force Y
 Driver Upper Neck Moment X
 Driver Upper Neck Moment Z
 Driver Chest X Redundant
 Driver Chest Y Redundant
 Driver Chest Z Redundant
 Driver Pelvis X
 Driver Pelvis Y
 Driver Pelvis Z
 Driver Left Femur Redundant
 Driver Right Femur Redundant
 Driver Left Upper Tibia Moment X
 Driver Left Upper Tibia Moment Y
 Driver Left Upper Tibia Force Z
 Driver Left Lower Tibia Moment X

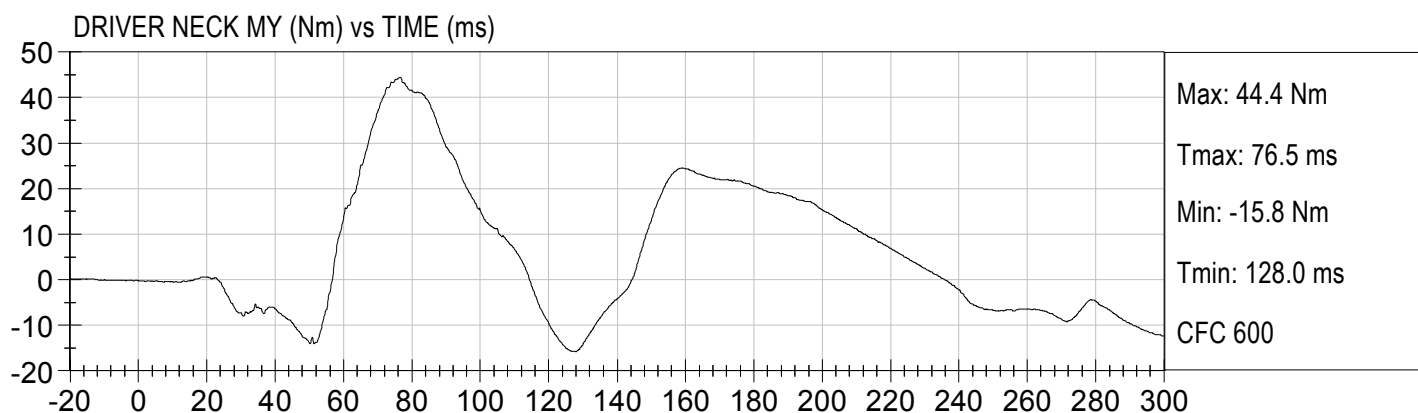
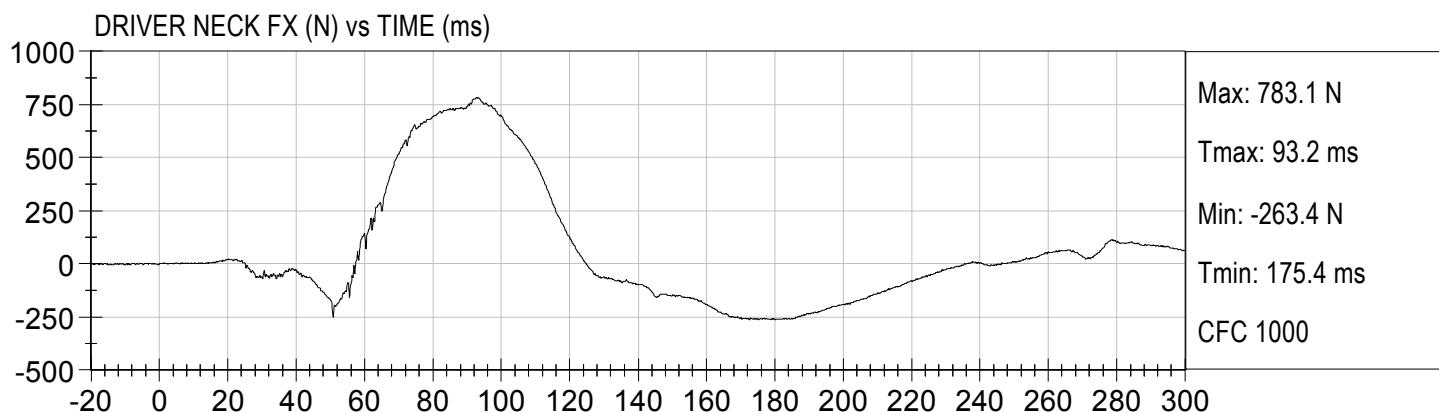
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Upper Tibia Moment X
Driver Right Upper Tibia Moment Y
Driver Right Upper Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Fore Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Right Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z
Driver Lap Belt Force
Driver Shoulder Belt Force
Passenger Head X Redundant
Passenger Head Y Redundant
Passenger Head Z Redundant
Passenger Upper Neck Force Y
Passenger Upper Neck Moment X
Passenger Upper Neck Moment Z
Passenger Chest X Redundant
Passenger Chest Y Redundant
Passenger Chest Z Redundant
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Left Femur Redundant
Passenger Right Femur Redundant
Passenger Left Upper Tibia Moment X

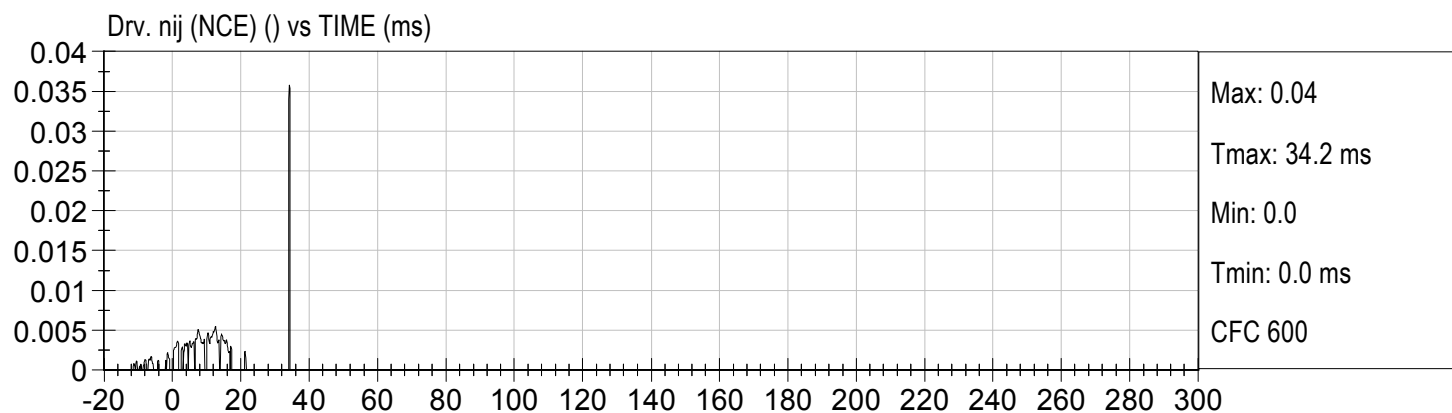
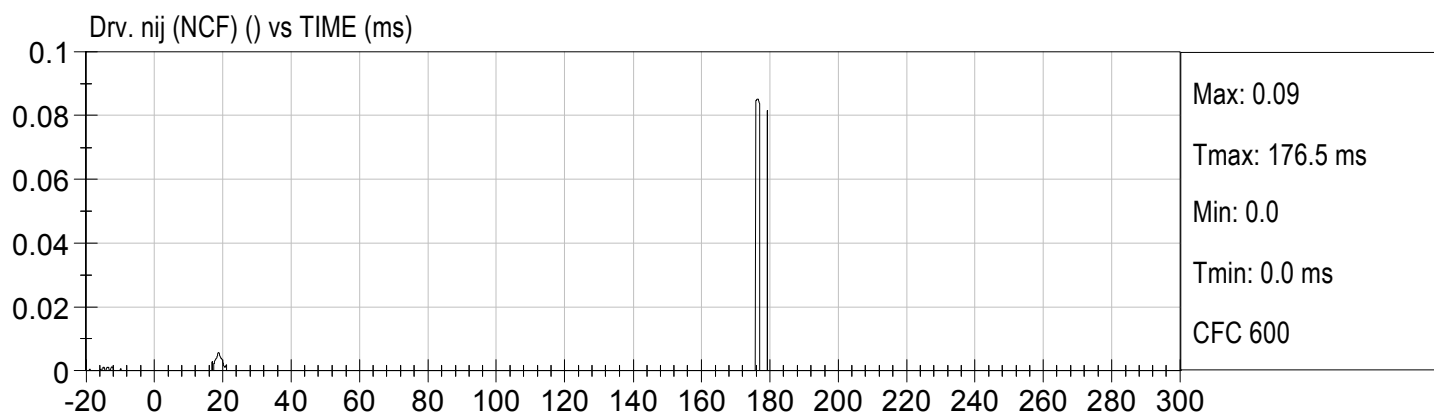
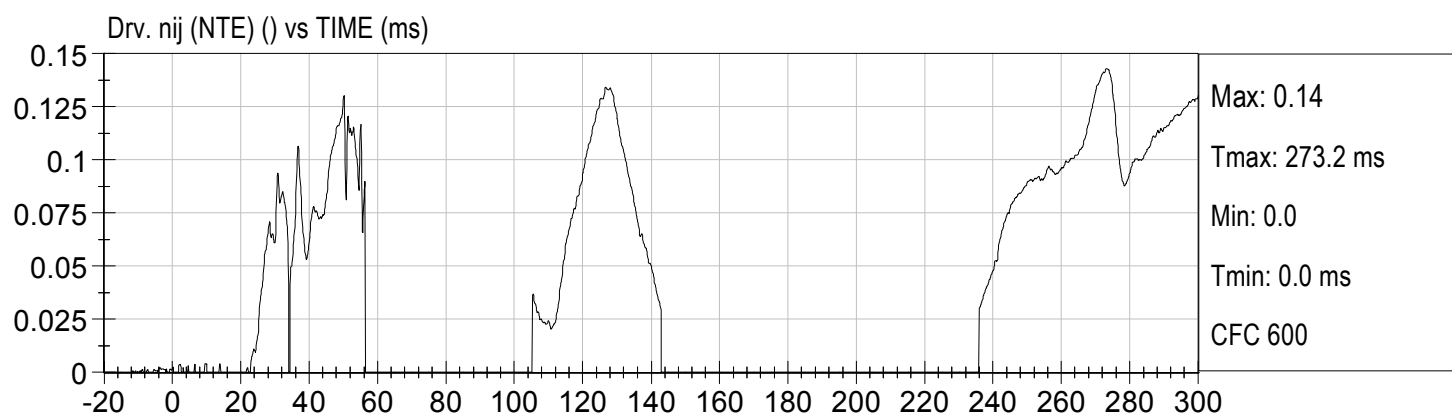
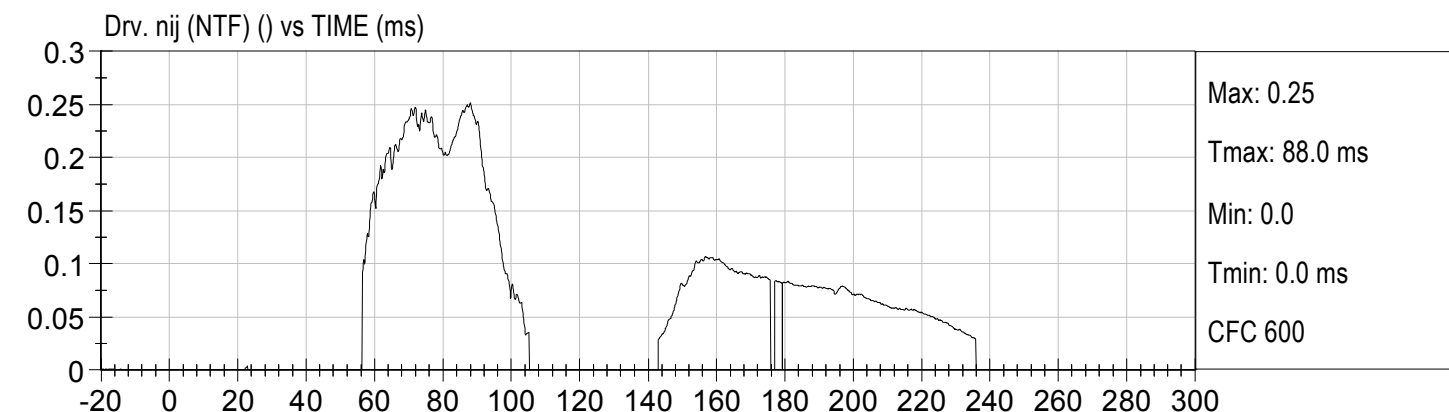
Passenger Left Upper Tibia Moment Y
Passenger Left Upper Tibia Force Z
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Right Upper Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Fore Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Right Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Passenger Lap Belt Force
Passenger Shoulder Belt Force
Left Rear Seat Crossmember X
Right Rear Seat Crossmember X
Vehicle Engine Top X
Vehicle Engine Bottom X
Vehicle Left Brake Caliper X
Vehicle Right Brake Caliper X
Left Rear Seat Crossmember Xr
Right Rear Seat Crossmember Xr
Advanced Research Load Cell Barrier – 128 channels

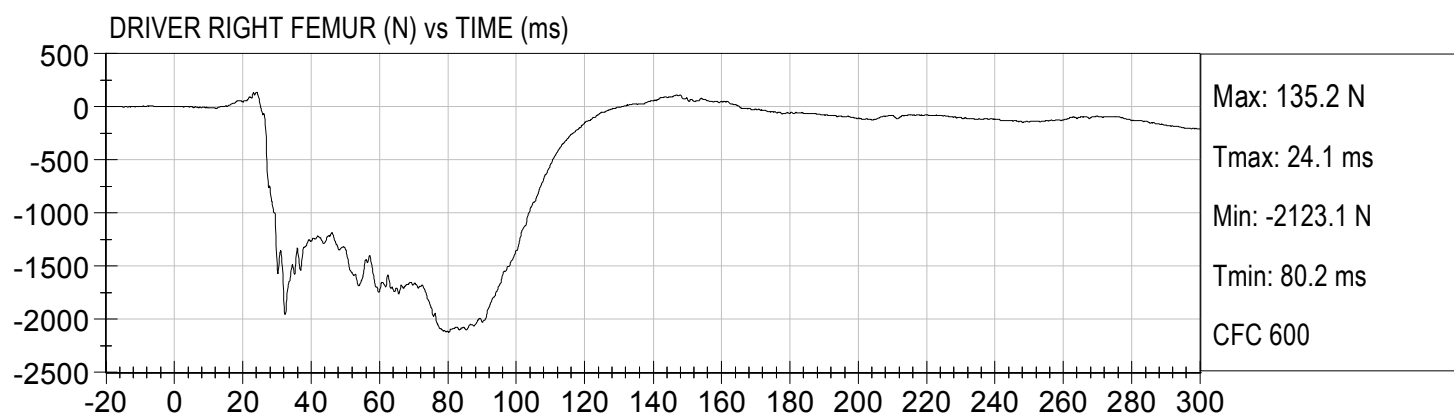
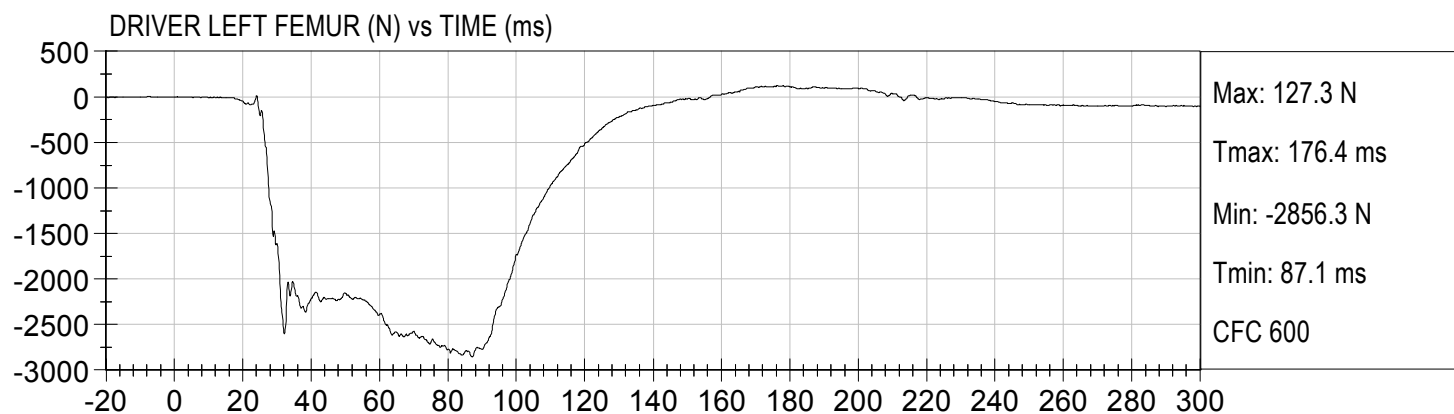


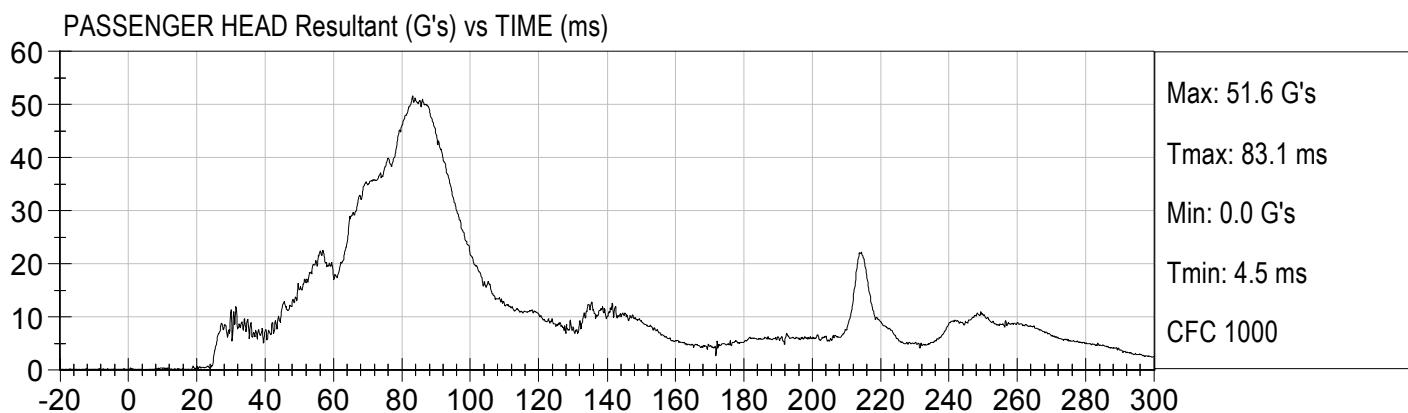
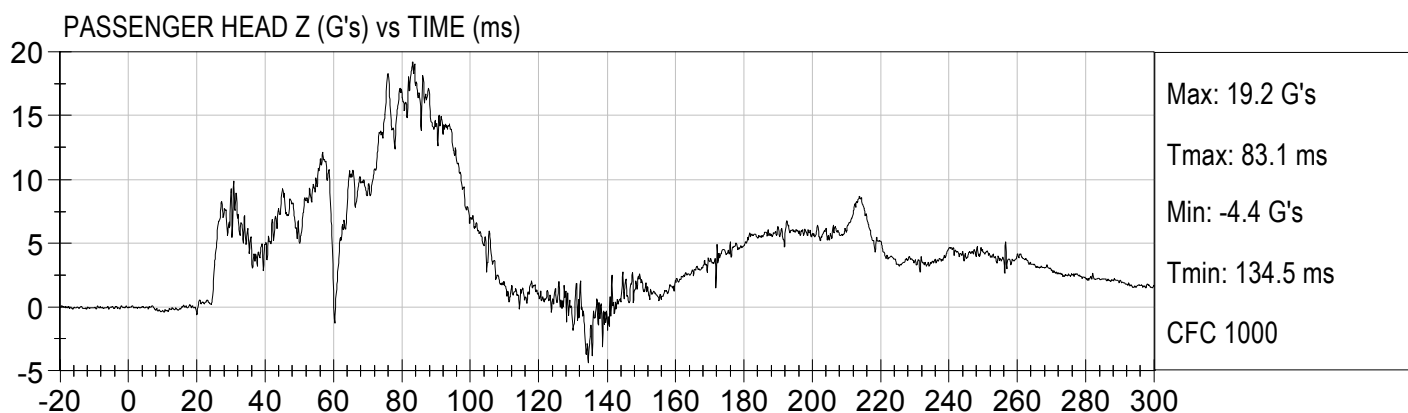
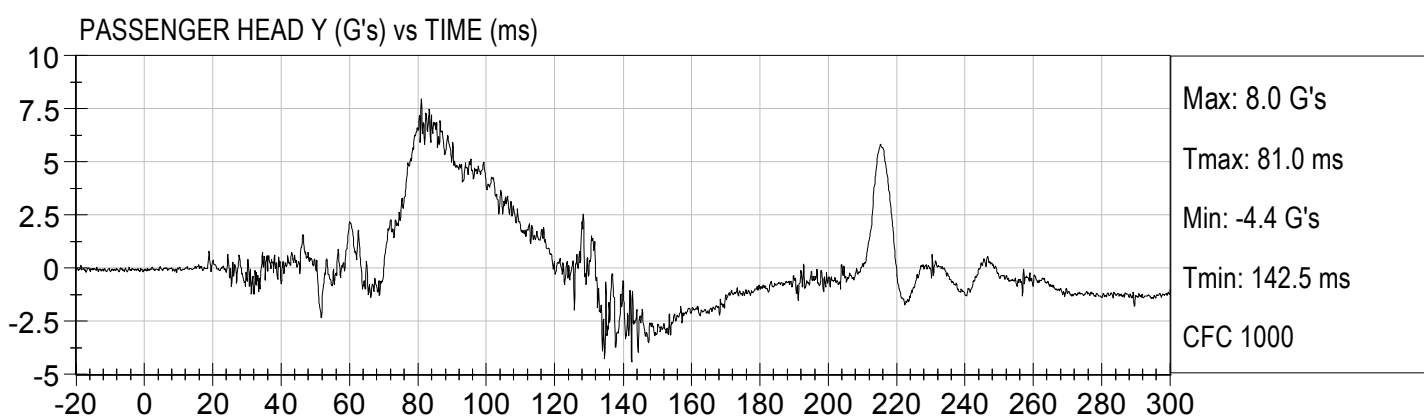
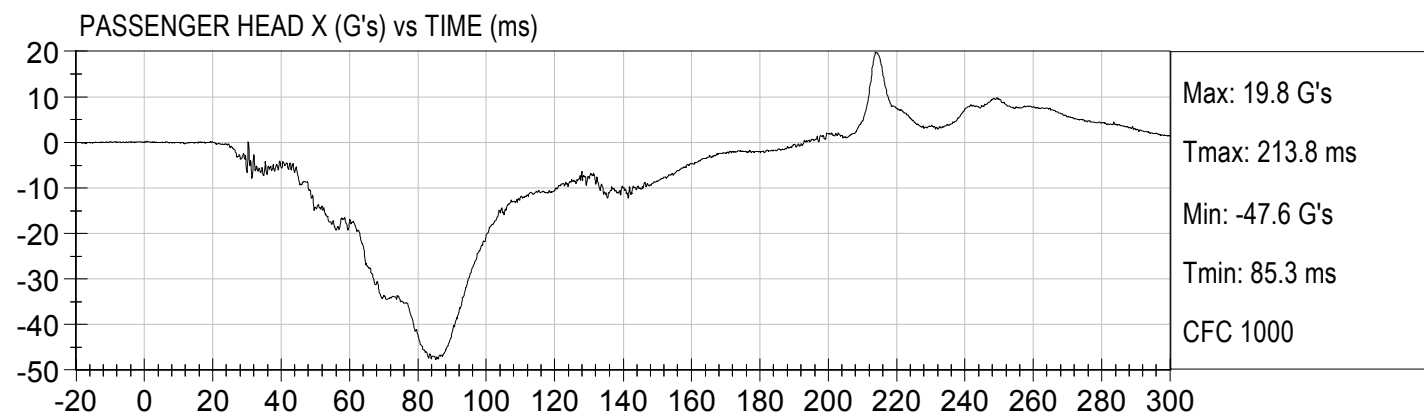


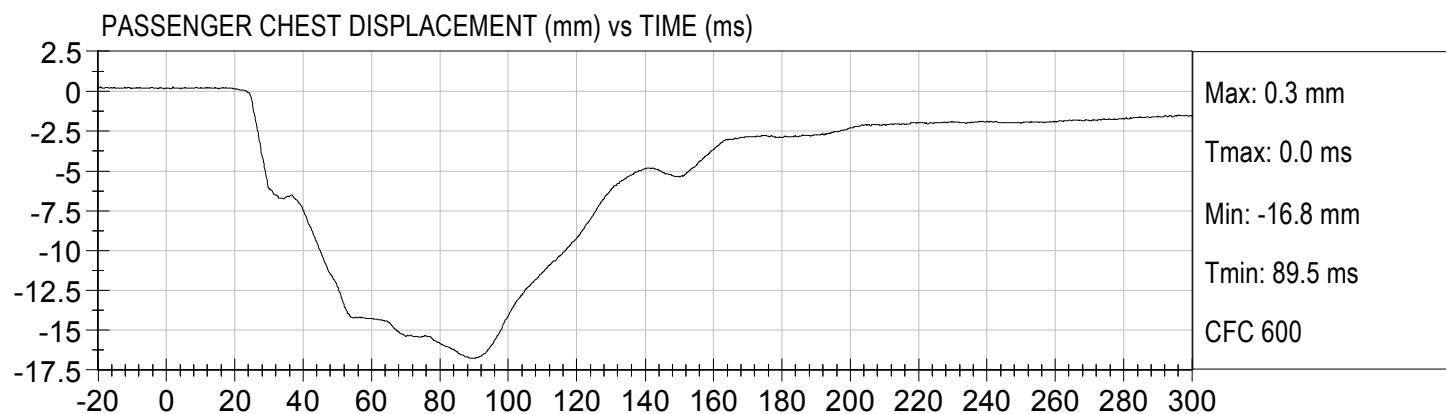






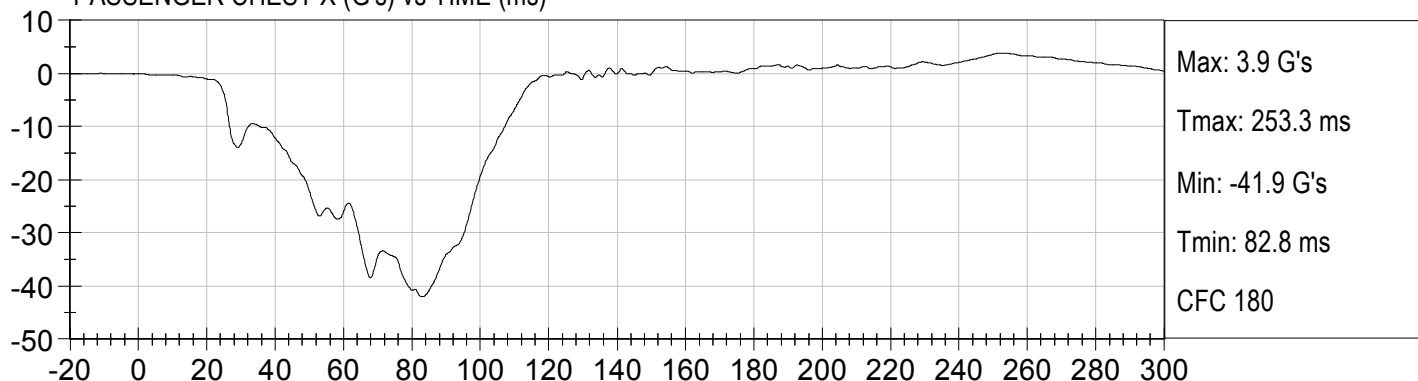




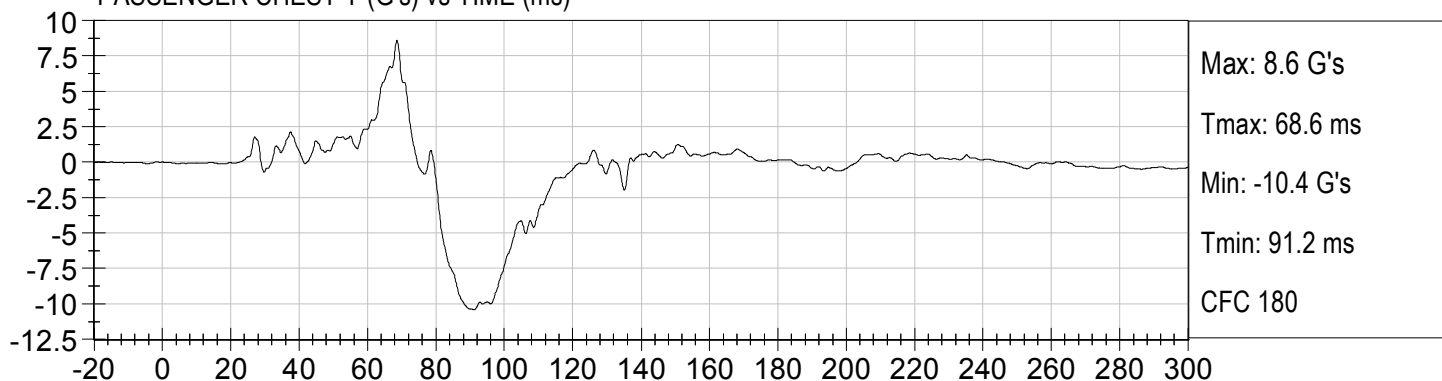




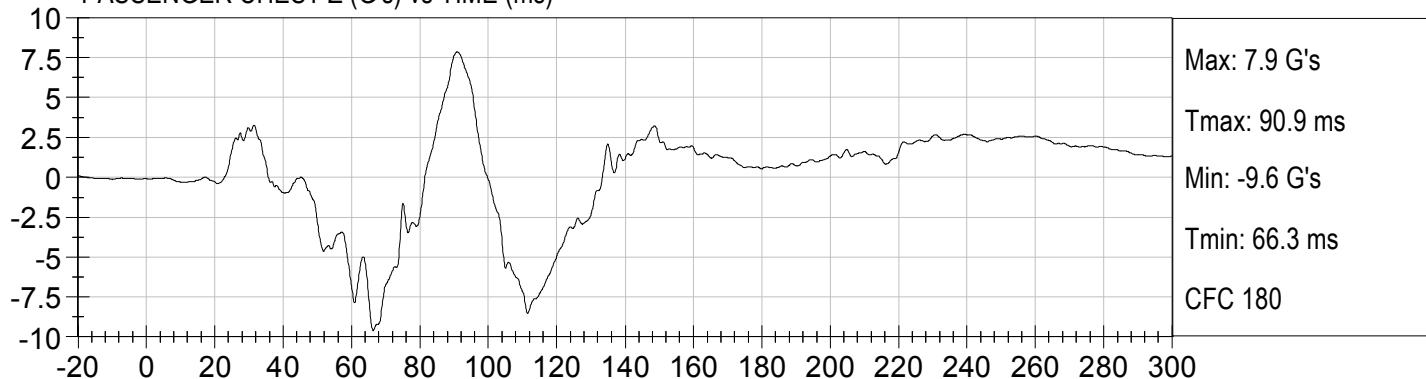
PASSENGER CHEST X (G's) vs TIME (ms)



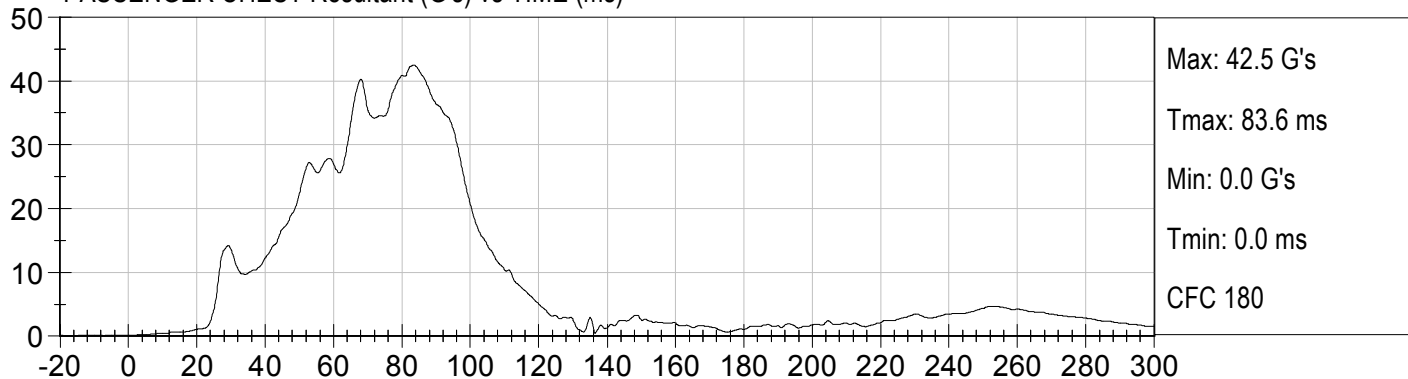
PASSENGER CHEST Y (G's) vs TIME (ms)

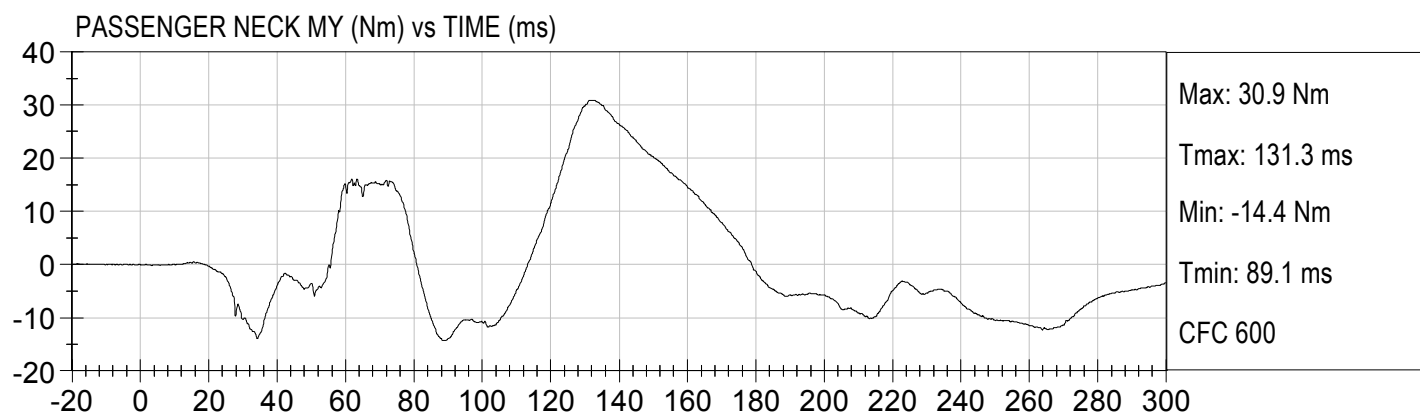
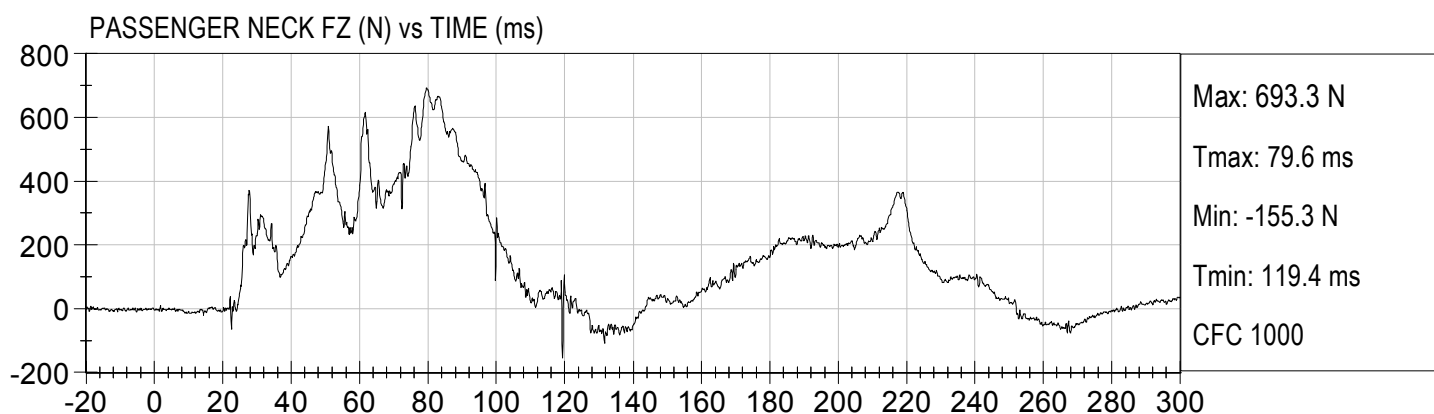


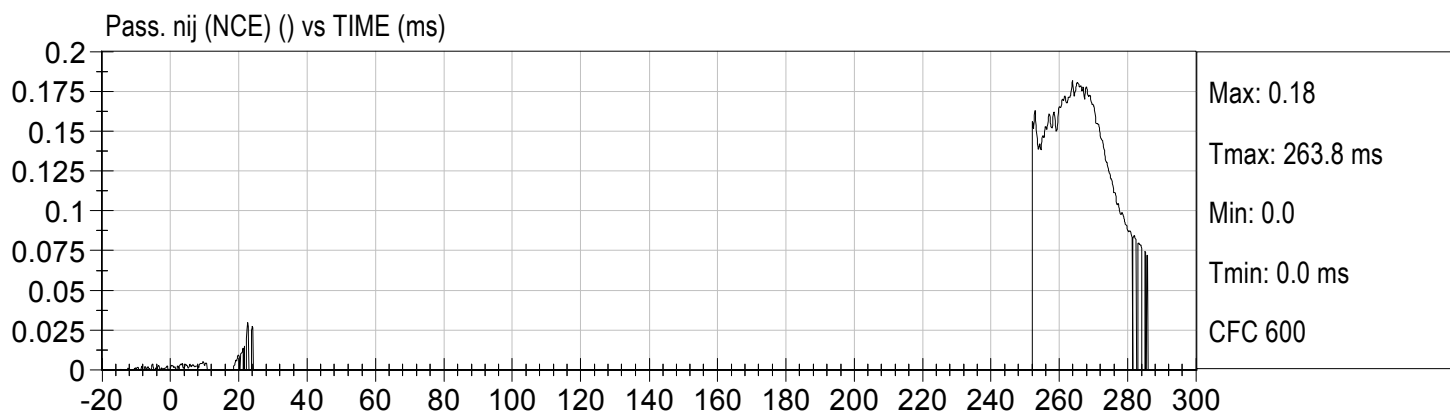
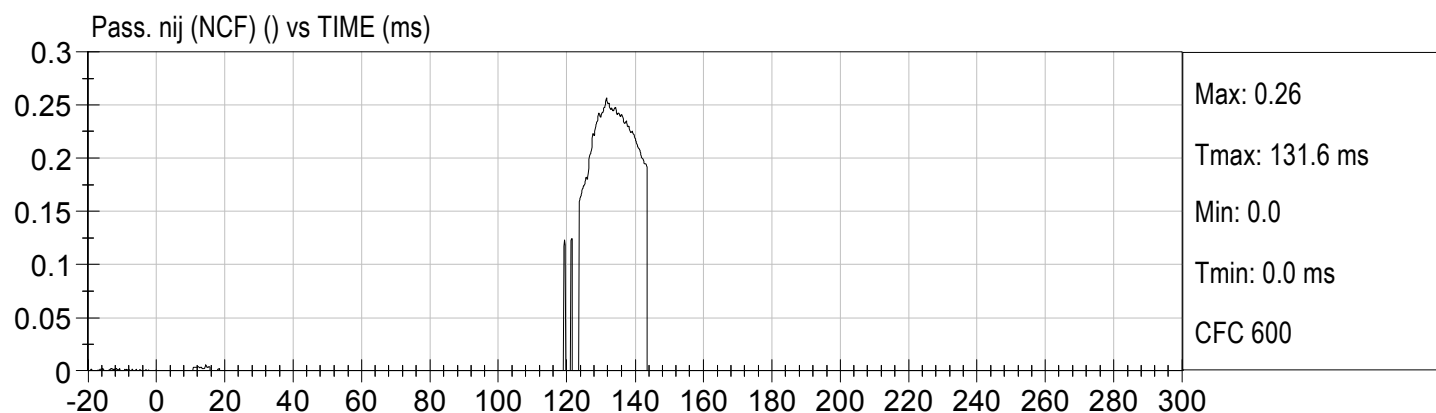
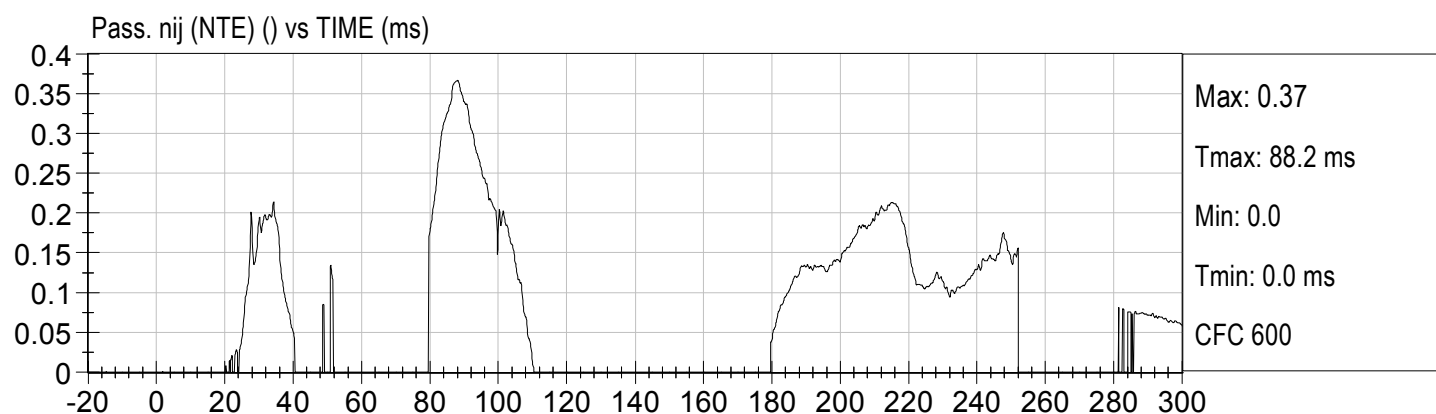
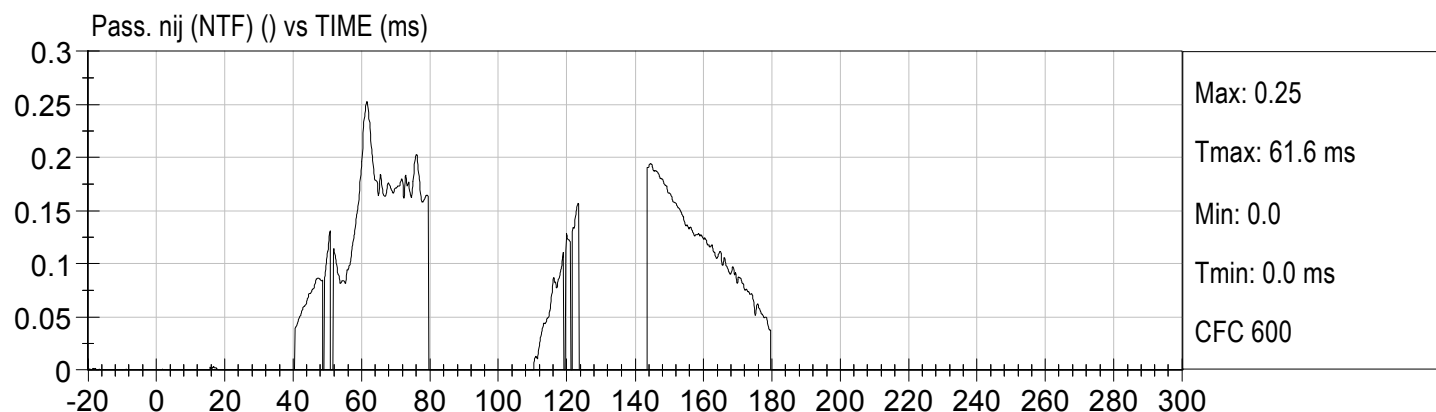
PASSENGER CHEST Z (G's) vs TIME (ms)

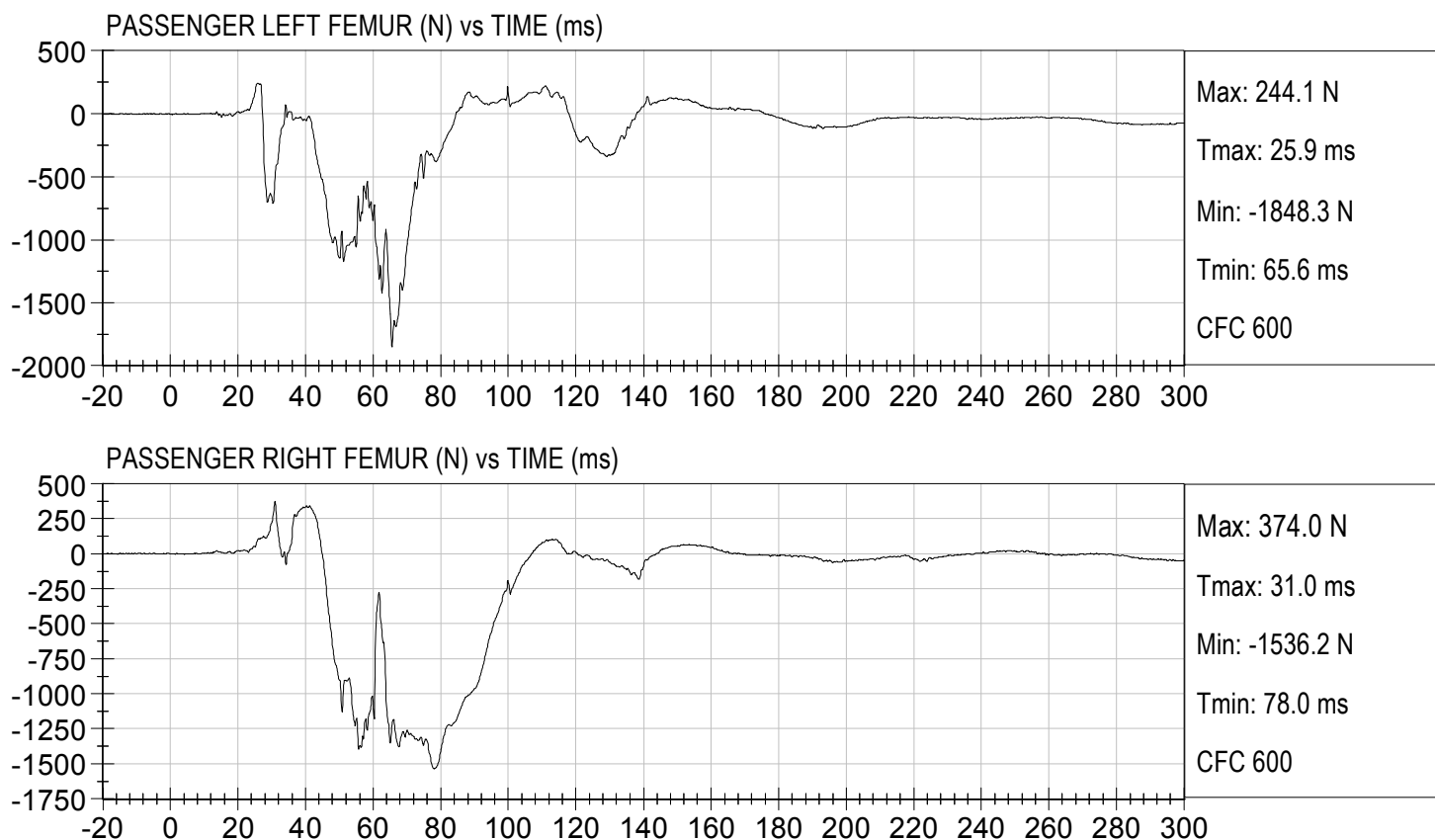


PASSENGER CHEST Resultant (G's) vs TIME (ms)









APPENDIX C

DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA

Hybrid III, 50th External Measurements
SN: 351

HYBRID III, PART 572, SUBPART E EXTERNAL DIMENSIONS				
DIMENSION	DESCRIPTION	DETAILS	ASSEMBLY DIMENSION (inches)	ACTUAL MEASUREMENT
A	TOTAL SITTING HEIGHT	Seat surface to highest point on top of the head.	34.6–35.0	34.8
B	SHOULDER PIVOT HEIGHT	Centerline of shoulder pivot bolt to the seat surface.	19.9-20.5	20.0
C	H-POINT HEIGHT	Reference	3.3-3.5	3.4
D	H-POINT LOCATION FROM BACKLINE	Reference	5.3-5.5	5.5
E	SHOULDER PIVOT FROM BACKLINE	Center of the shoulder clevis to the rear vertical surface of the fixture.	3.3-3.7	3.5
F	THIGH CLEARANCE	Measured at the highest point on the upper femur segment.	5.5-6.1	6.0
G	BACK OF ELBOW TO WRIST PIVOT	back of the elbow flesh to the wrist pivot in line with the elbow and wrist pivots	11.4-12.0	11.8
H	HEAD BACK TO BACKLINE	Back of Skull cap skin to seat rear vertical surface (Reference)	1.6-1.8	1.7
I	SHOULDER TO- ELBOW LENGTH	Measure from the highest point on top of the shoulder clevis to the lowest part of the flesh on the elbow in line with the elbow pivot bolt.	13.0-13.6	13.3
J	ELBOW REST HEIGHT	Measure from the flesh below the elbow pivot bolt to the seat surface.	7.5-8.3	7.8
K	BUTTOCK TO KNEE LENGTH	The forward most part of the knee flesh to the rear vertical surface of the fixture.	22.8-23.8	23.8
L	POPLITEAL HEIGHT	Seat surface to the plane of the horizontal plane of the bottom of the feet.	16.9-17.9	17.0
M	KNEE PIVOT HEIGHT	Centerline of knee pivot bolt to the horizontal plane of the bottom of the feet.	19.1-19.7	19.5
N	BUTTOCK POPLITEAL LENGTH	The rearmost surface of the lower leg to the same point on the rear surface of the buttocks used for dim. "K".	17.8-18.8	18.8

HYBRID III, SUBPART E EXTERIOR DIMENSIONS, continued				
DIMENSION	DESCRIPTION	DETAILS		ACTUAL MEASUREMENT
O	CHEST DEPTH WITHOUT JACKET	Measured 16.9-17.1 in. above seat surface	8.4-9.0	8.5
P	FOOT LENGTH	Tip of toe to rear of heel	9.9-10.5	10.3
V	SHOULDER BREADTH	Outside edges of right and left shoulder clevises	16.3-17.2	16.5
W	FOOT BREADTH	The widest part of the foot	3.6-4.2	4.0
Y	CHEST CIRCUMFERENCE (WITH CHEST JACKET)	Measured 16.9-17.1 in. above seat surface	38.2-39.4	39.2
Z	WAIST CIRCUMFERENCE	Measured 8.9-9.1 in. above seat surface	32.9-34.1	33.7
AA	REFERENCE LOCATION FOR MEASUREMENT OF CHEST CIRCUMFERENCE	Reference	16.9-17.1	17.0
BB	REFERENCE LOCATION FOR MEASUREMENT OF WAIST CIRCUMFERENCE	Reference	8.9-9.1	9.0

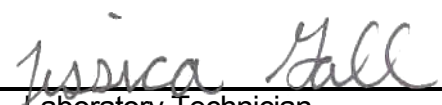
NOTE: THE H-POINT IS LOCATED 1.83 INCHES FORWARD AND 2.57 INCHES DOWN FROM THE CENTER OF THE PELVIS ANGLE REFERENCE HOLE.

MGA RESEARCH CORPORATION
HEAD DROP TEST
HYBRID III 50TH PERCENTILE MALE

ATD Serial No: 351

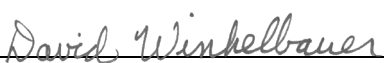
Test ID: D114271

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.6	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Peak Resultant Acceleration	G's	225 - 275	270	Pass
Peak Lateral Acceleration	G's	<= +/- 15.0	4.6	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 10% of peak	Yes	Pass
Overall Test Results				Pass



Laboratory Technician

12/19/11
Test Date

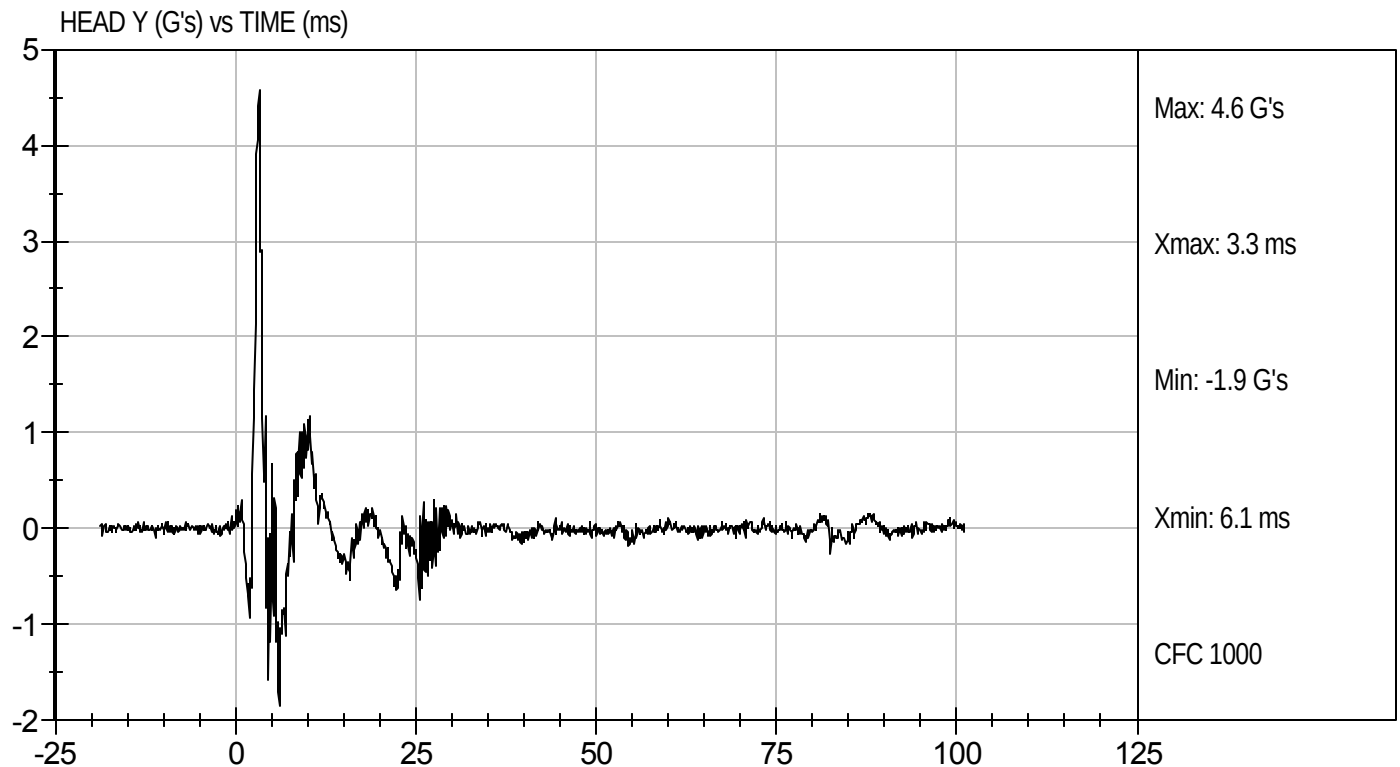
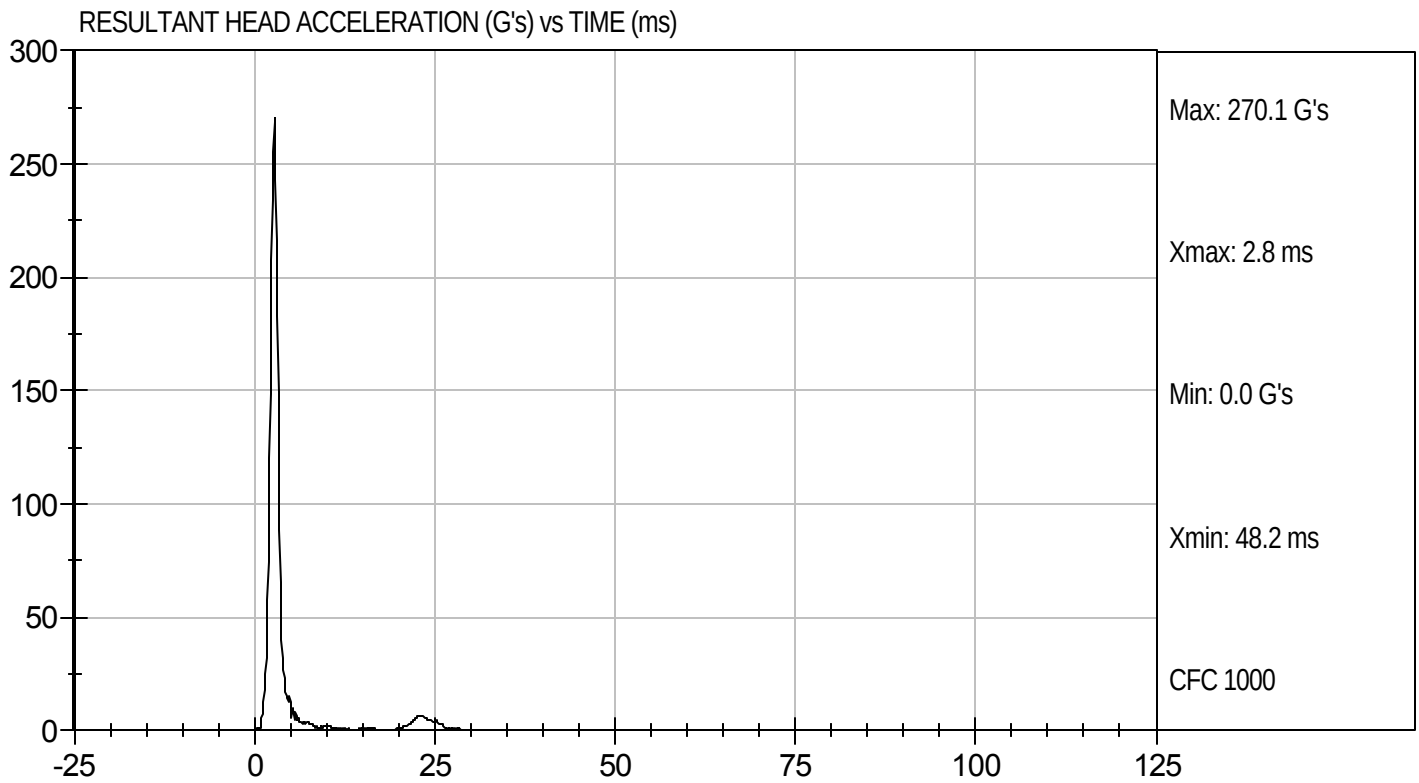


Approved By



Test Desc: Head Drop
Component ID: D114271

Test Date: 12/19/11
Velocity: 0 ft/s, 0 m/s



MGA RESEARCH CORPORATION
NECK FLEXION TEST
HYBRID III 50TH PERCENTILE MALE

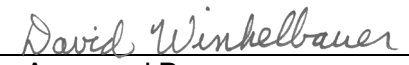
ATD Serial No: 351

Test I.D.: D114272

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity		%	10 to 70	28	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 ms	G's	22.50 to 27.50	23.87	Pass
	20 ms	G's	17.60 to 22.60	17.72	Pass
	30 ms	G's	12.50 to 18.50	13.08	Pass
Peak Pendulum Deceleration After 30 ms		G's	<= 29.0	13.1	Pass
Deceleration Decay Time to Cross 5 G's		ms	34.0 to 42.0	39.8	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	66.2	Pass
	Time	ms	57.0 to 64.0	59.4	Pass
"D" Plane Rotation Decay Time To Zero Crossing		ms	113.0 to 128.0	114.6	Pass
Moment About Occipital Condyle	Maximum	N m	88.1 to 108.5	91.5	Pass
	Time	ms	47.0 to 58.0	54.5	Pass
Positive Moment Decay Time To Zero Crossing		ms	97.0 to 107.0	102.6	Pass
Overall Test Results					Pass


 Laboratory Technician

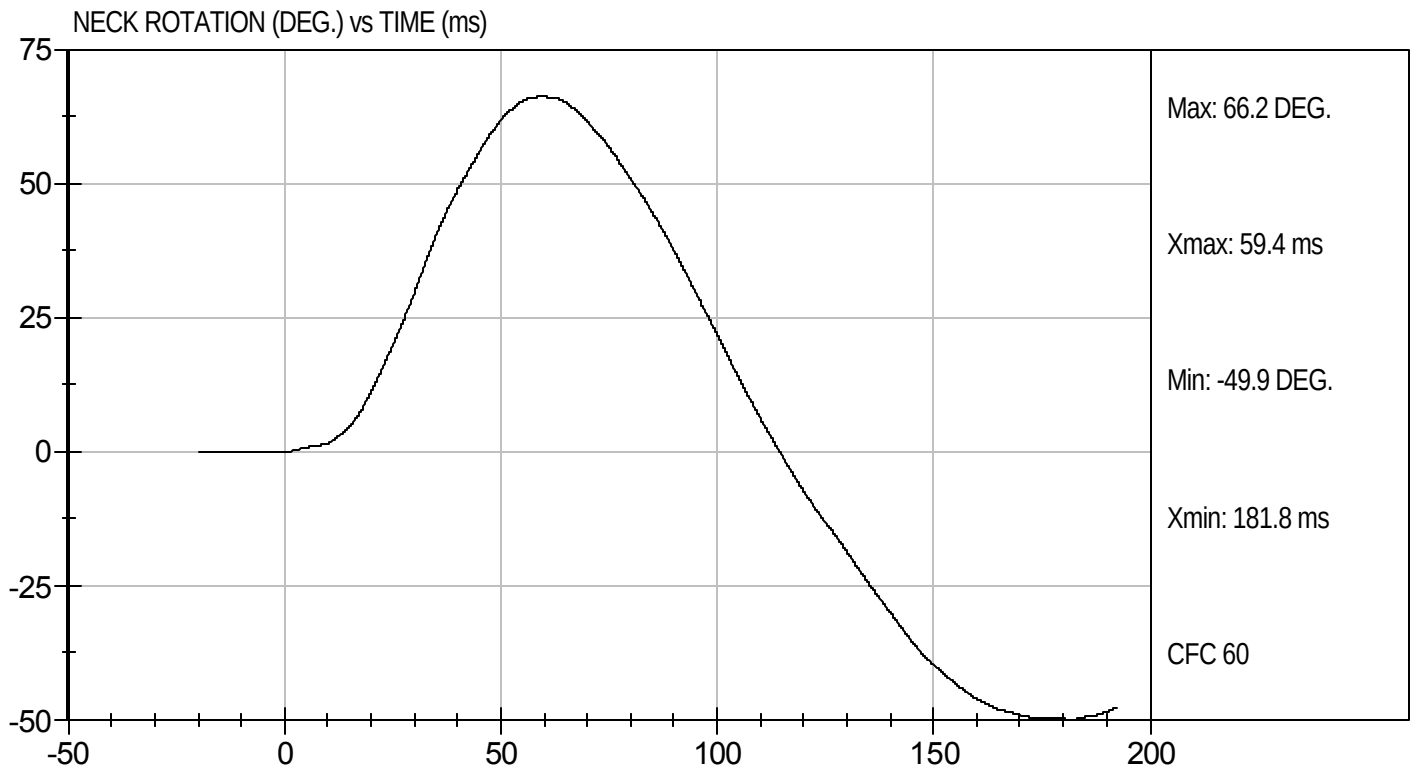
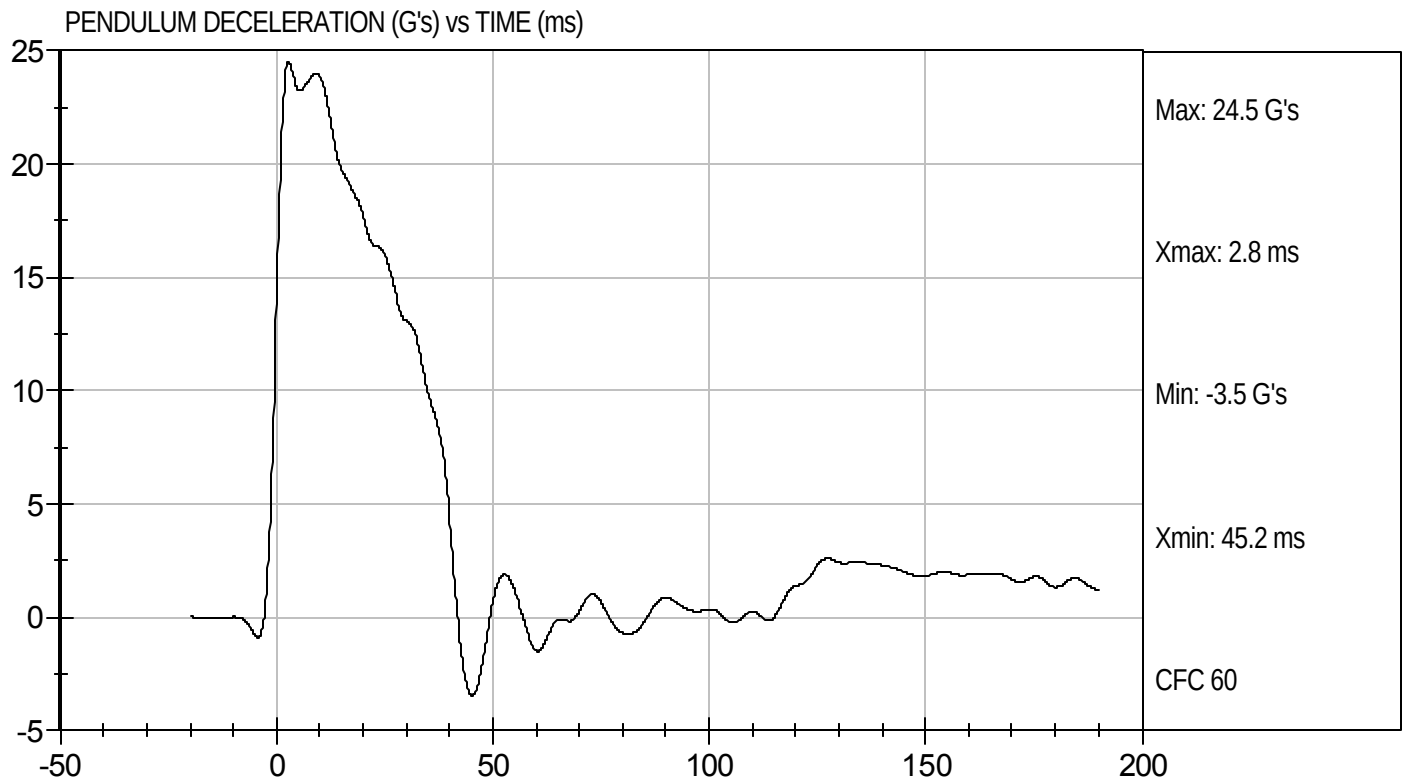
12/19/11
 Test Date


 Approved By



Test Desc: Neck Flexion
Component ID: D114272

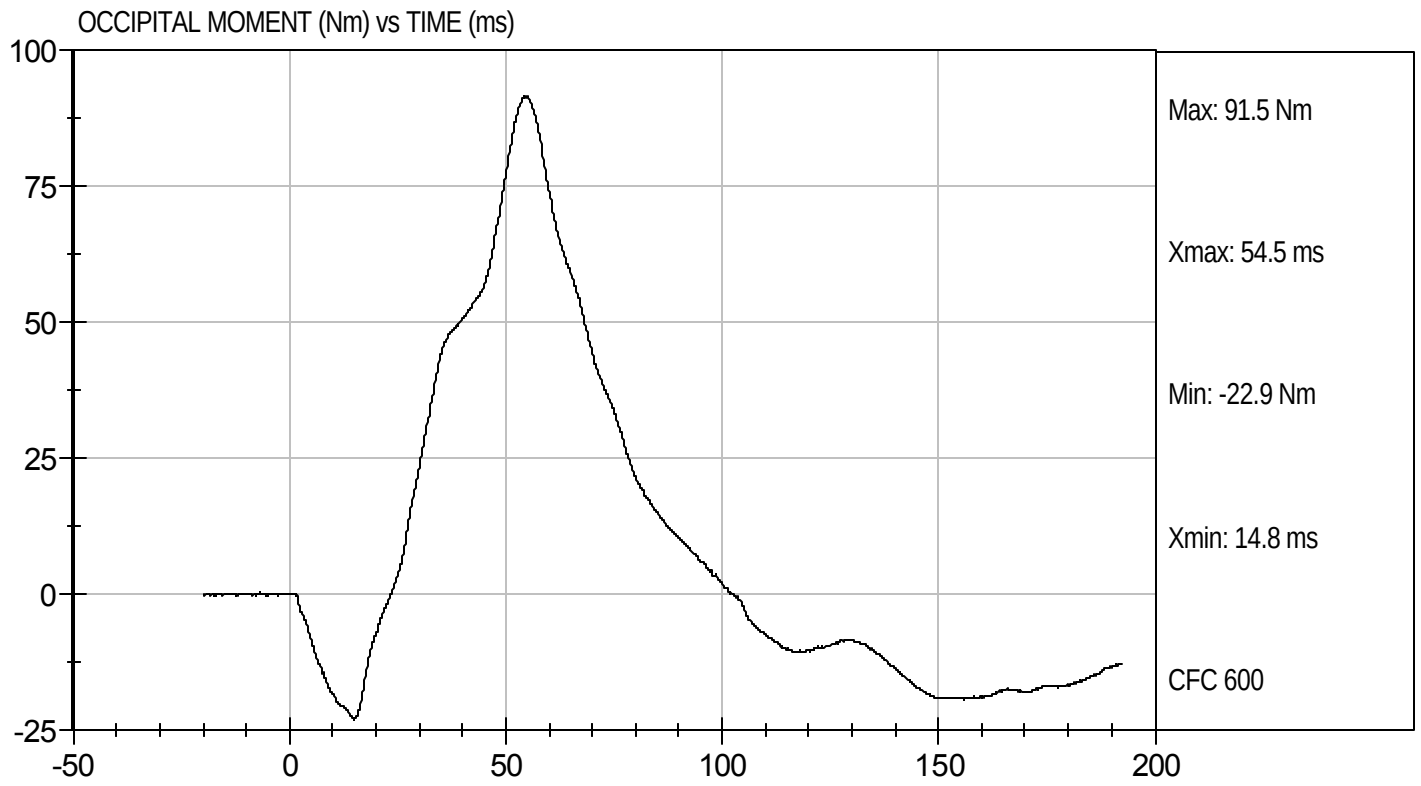
Test Date: 12/19/11
Velocity: 23.15 ft/s, 7.06 m/s





Test Desc: Neck Flexion
Component ID: D114272

Test Date: 12/19/11
Velocity: 23.15 ft/s, 7.06 m/s



MGA RESEARCH CORPORATION
NECK EXTENSION TEST
HYBRID III 50TH PERCENTILE MALE

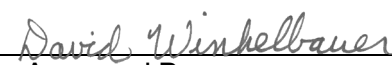
ATD Serial No: 351

Test I.D.: D114273

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity		%	10 to 70	28	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.12	Pass
Pendulum Deceleration	10 ms	G's	17.20 to 21.20	18.20	Pass
	20 ms	G's	14.00 to 19.00	14.19	Pass
	30 ms	G's	11.00 to 16.00	12.45	Pass
Peak Pendulum Deceleration After 30 ms		G's	<= 22.0	12.9	Pass
Deceleration Decay Time to Cross 5 G's		ms	38.0 to 46.0	38.4	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	97.2	Pass
	Time	ms	72.0 to 82.0	78.2	Pass
"D" Plane Rotation Decay Time To Zero Crossing		ms	147.0 to 174.0	157.5	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to -79.9	-59.9	Pass
	Time	ms	65.0 to 79.0	71.7	Pass
Negative Moment Decay Time To Zero Crossing		ms	120.0 to 148.0	144.9	Pass
Overall Test Results					Pass


 Laboratory Technician

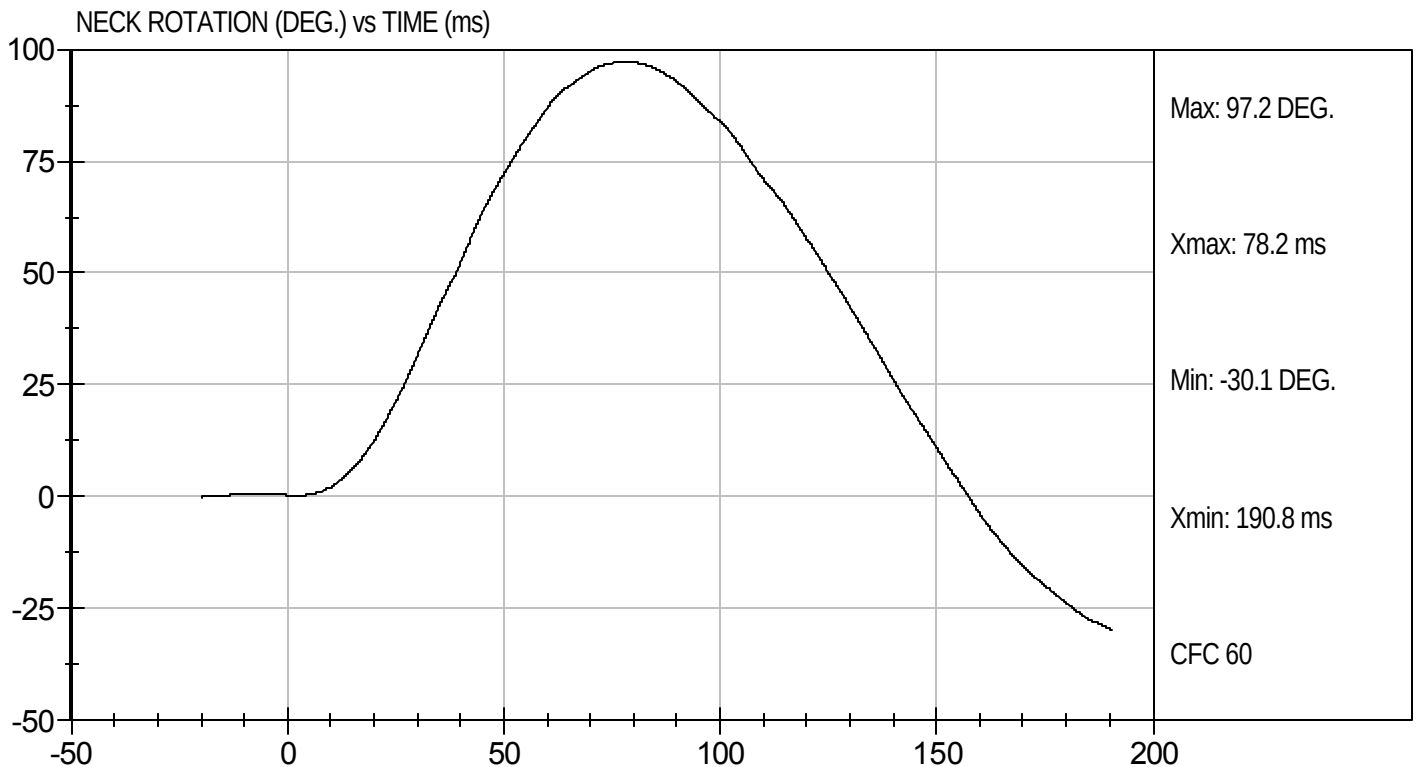
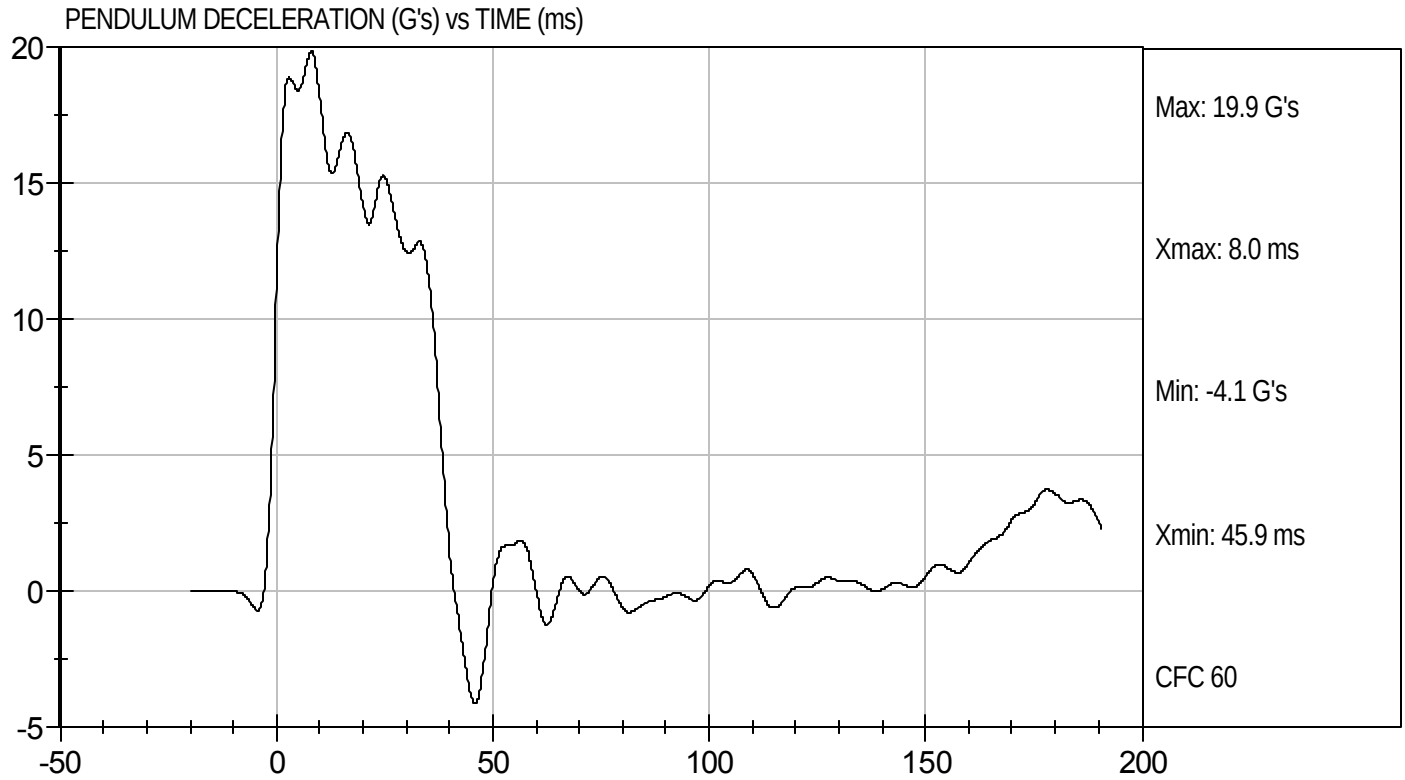
12/19/11
 Test Date


 Approved By



Test Desc: Neck Extension
Component ID: D114273

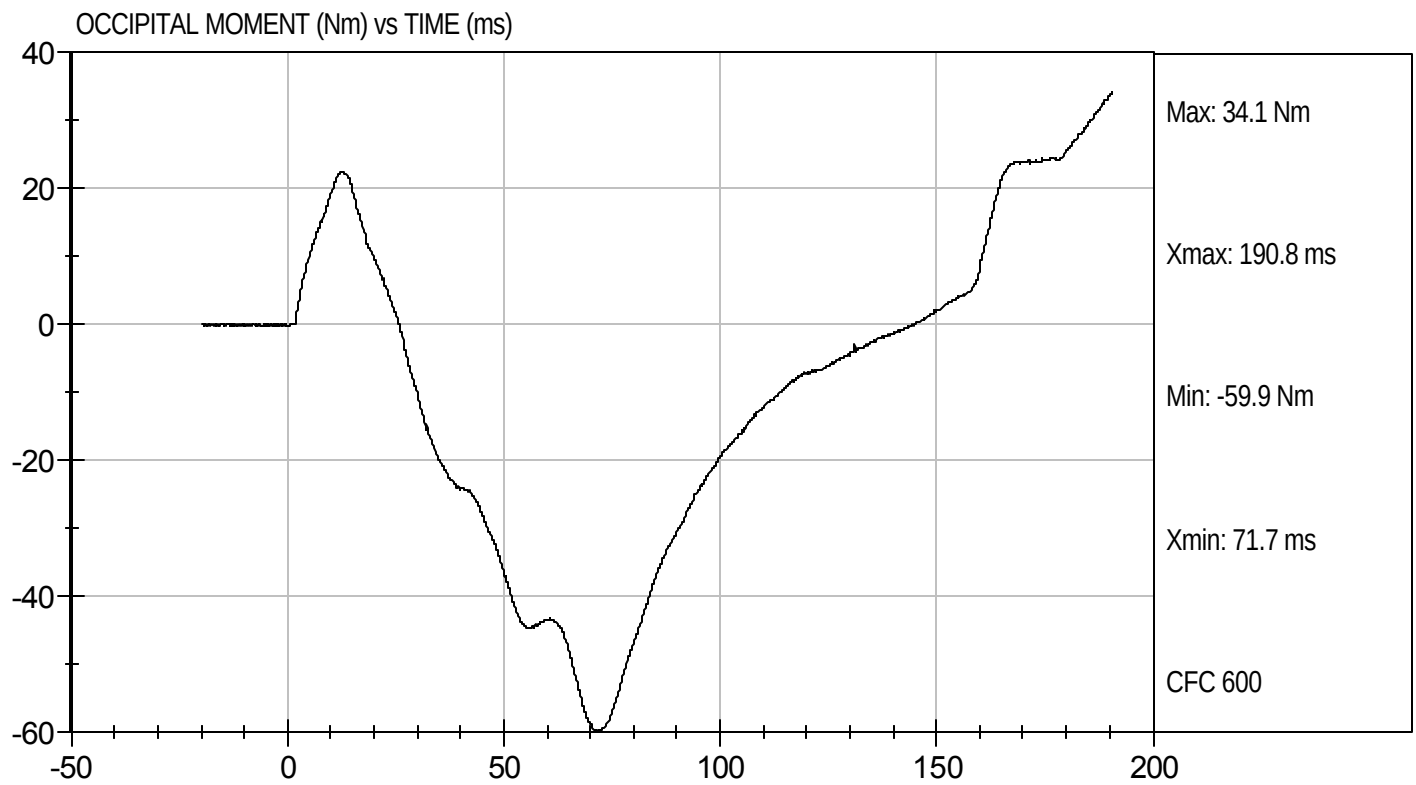
Test Date: 12/19/11
Velocity: 20.08 ft/s, 6.12 m/s





Test Desc: Neck Extension
Component ID: D114273

Test Date: 12/19/11
Velocity: 20.08 ft/s, 6.12 m/s



MGA RESEARCH CORPORATION
THORAX IMPACT
HYBRID III 50TH PERCENTILE MALE

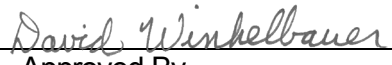
ATD Serial No: 351

Test I.D: D114274

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Velocity	m/s	6.58 to 6.82	6.68	Pass
Peak Probe Force	N	5159 to 5893	5,299	Pass
Peak Sternum Displacement	cm	6.35 to 7.26	6.59	Pass
Internal Hysteresis	%	69 to 85	71	Pass
			Overall Test Results	Pass


Laboratory Technician

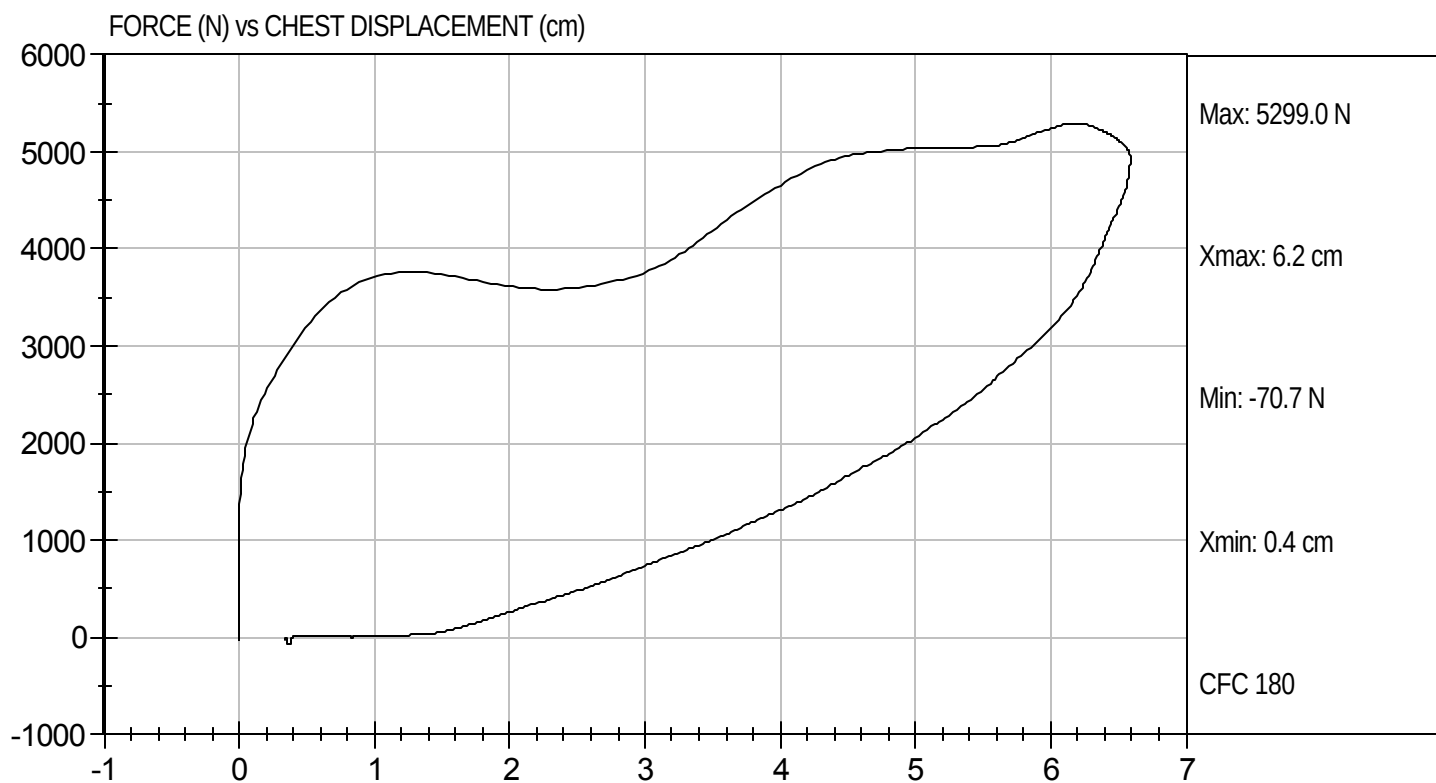
12/19/11
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D114274

Test Date: 12/19/11
Velocity: 21.9 ft/s, 6.68 m/s

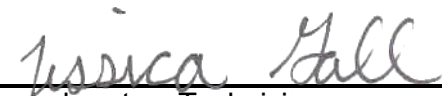


MGA RESEARCH CORPORATION
RIGHT KNEE IMPACT TEST
HYBRID III 50TH PERCENTILE MALE

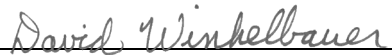
ATD Serial No: 351

Test I.D: D114275

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	26	Pass
Probe Velocity	m/s	2.07 to 2.13	2.11	Pass
Peak Probe Force	Newtons	4715 to 5782	4,920	Pass
Overall Test Results				Pass


Laboratory Technician

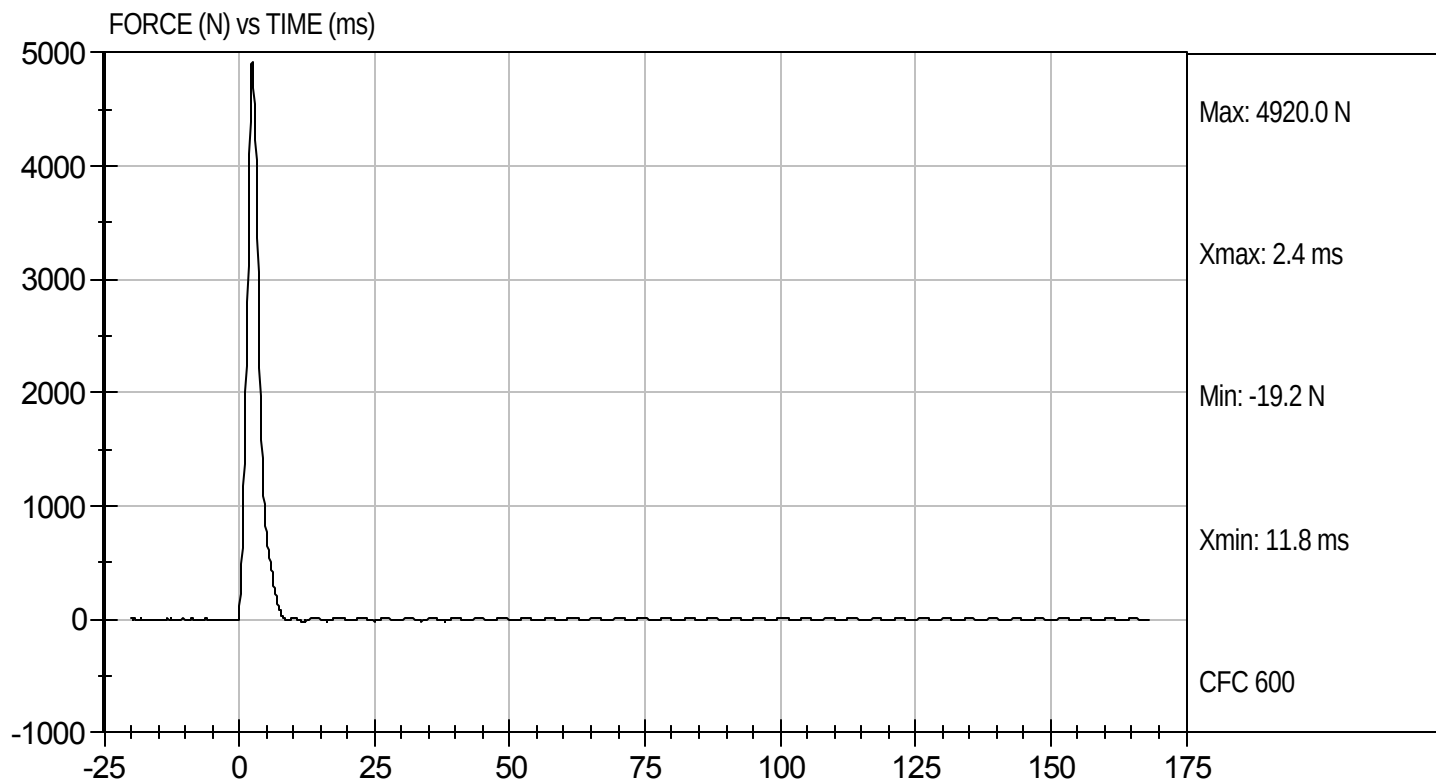
12/19/11
Test Date


Approved By



Test Desc: Right Knee
Component ID: D114275

Test Date: 12/19/11
Velocity: 6.92 ft/s, 2.11 m/s



MGA RESEARCH CORPORATION
LEFT KNEE IMPACT TEST
HYBRID III 50TH PERCENTILE MALE

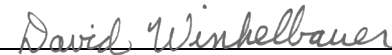
ATD Serial No: 351

Test I.D: D114276

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	22.0	Pass
Laboratory Relative Humidity	%	10 to 70	26	Pass
Probe Velocity	m/s	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	4,938	Pass
Overall Test Results				Pass


Laboratory Technician

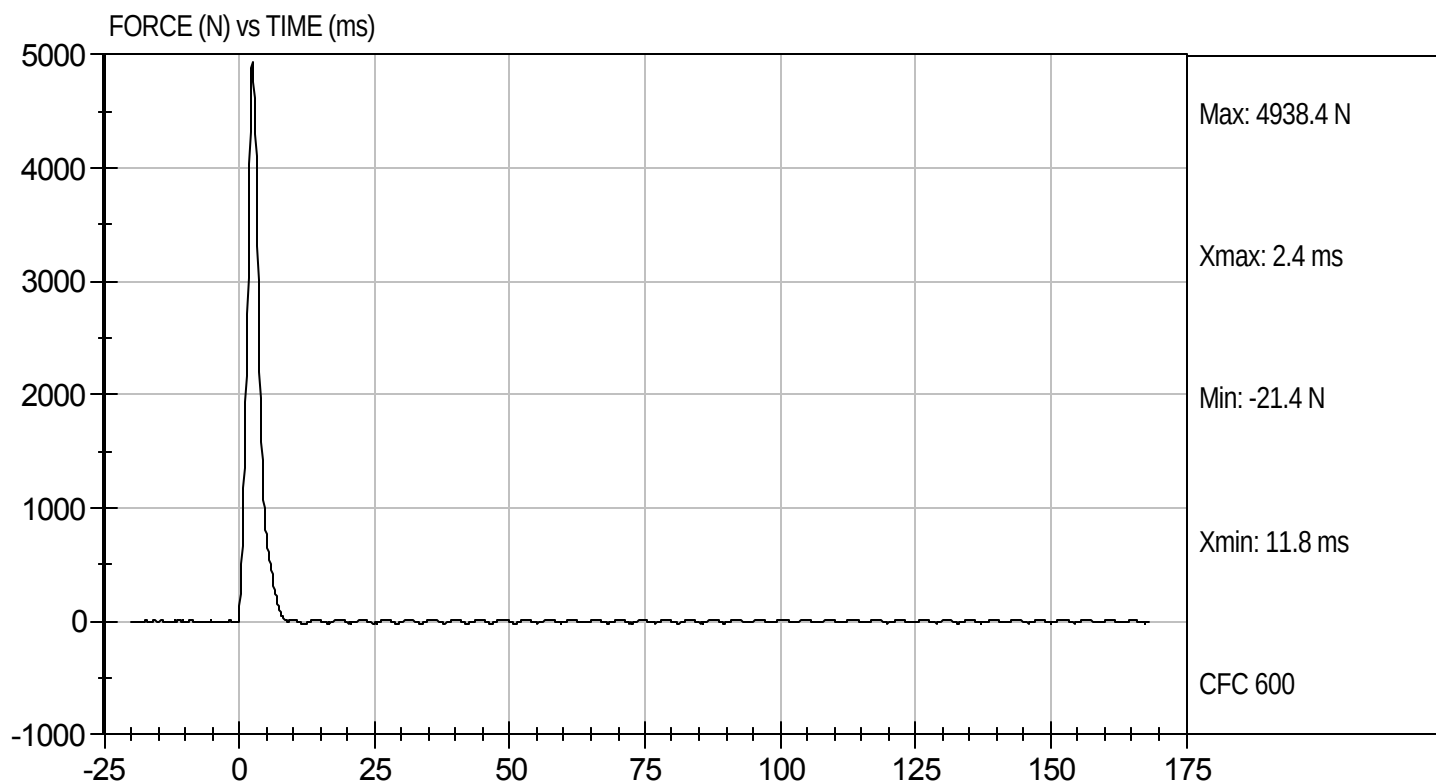
12/19/11
Test Date


Approved By



Test Desc: Left Knee
Component ID: D114276

Test Date: 12/19/11
Velocity: 6.89 ft/s, 2.10 m/s



MGA RESEARCH CORPORATION
HIP-FEMUR FLEXION TEST
HYBRID III 50TH PERCENTILE MALE

ATD Serial No: 351

Test I.D: D114270

Tested Parameter	Units	Specification	Result		Pass/Fail
			Right	Left	
Laboratory Temperature	deg C	18.9 to 25.6	21.6	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	28	28	Pass
Rotation Rate	deg/s	5.0 -10.0	5.7	5.7	Pass
30 Degrees	Nm	94.9 Nm Max	60.2	59.4	Pass
150 ft-lbf / 203.4 Nm	Deg	40.0 - 50.0 Degree Max Rotation	43.2	42.3	Pass
Overall Test Results					Pass


 Laboratory Technician

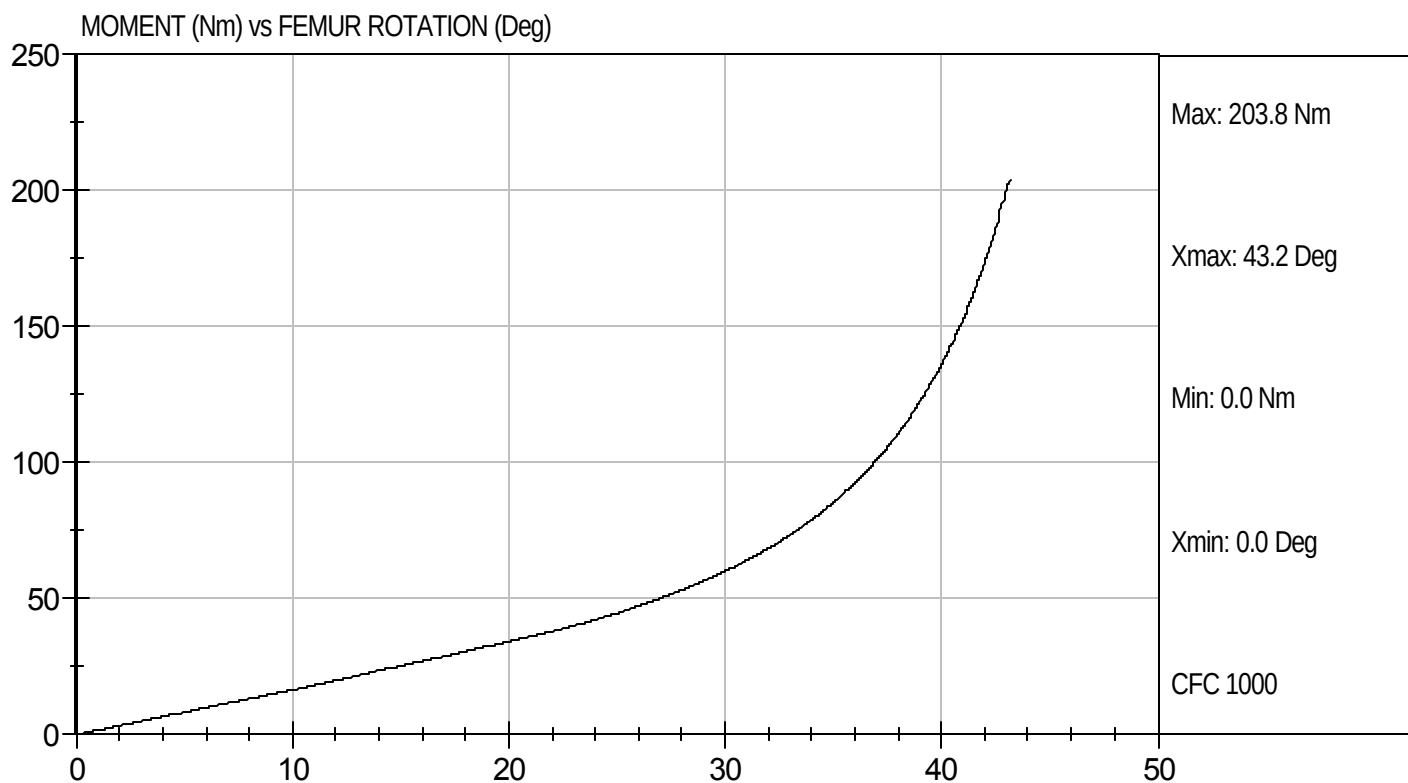
12/19/11
 Test Date


 Approved By



Test Desc: Hip Femur Flexion
Component ID: D114279

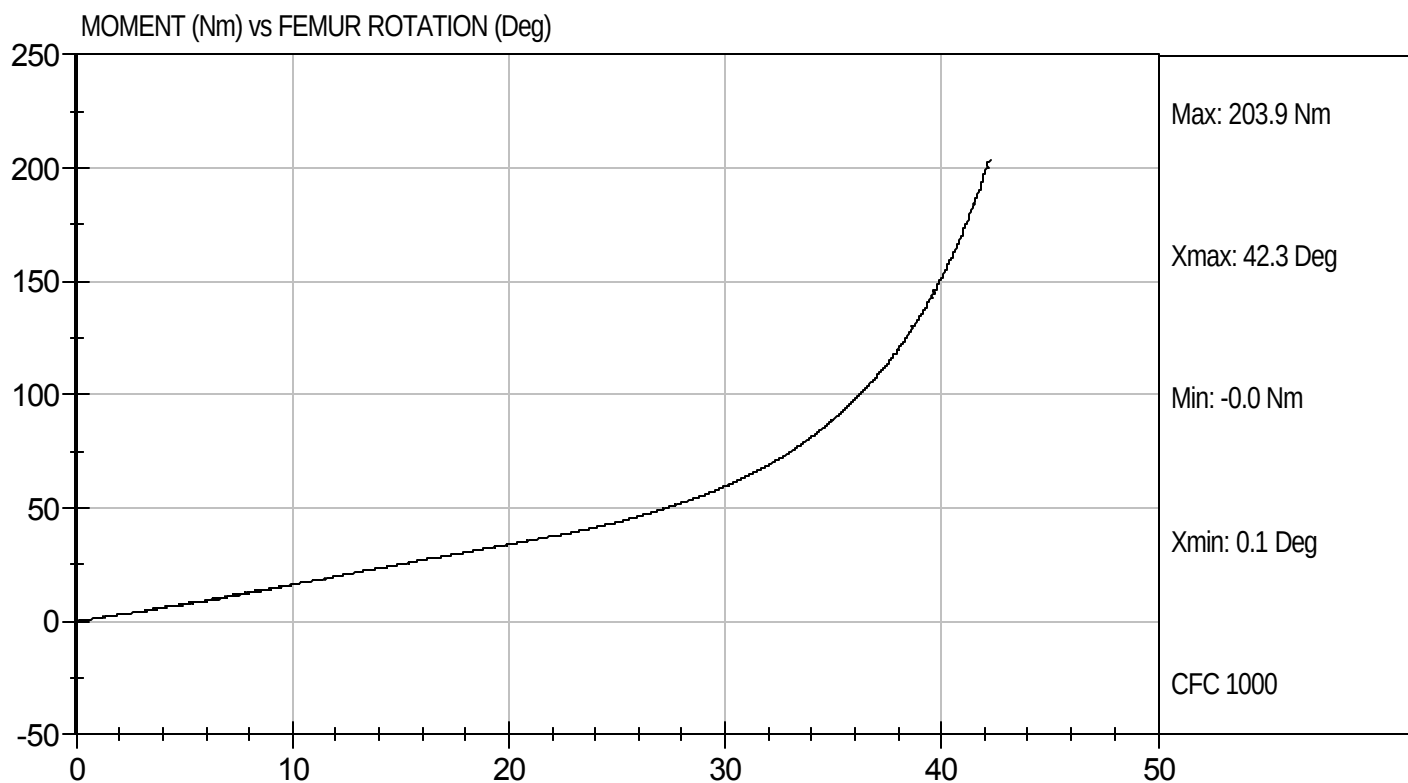
Test Date: 12/19/11
Velocity: 0 ft/s, 0.00 m/s





Test Desc: Hip Femur Flexion
Component ID: D114270

Test Date: 12/19/11
Velocity: 0 ft/s, 0.00 m/s

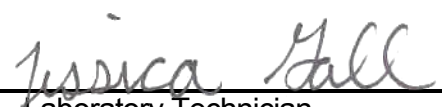


MGA RESEARCH CORPORATION
HEAD DROP TEST
HYBRID III 50TH PERCENTILE MALE

ATD Serial No: 351

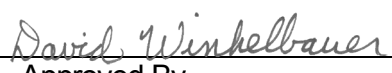
Test ID: D114351

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Peak Resultant Acceleration	G's	225 - 275	249	Pass
Peak Lateral Acceleration	G's	<= +/- 15.0	-9.1	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 10% of peak	Yes	Pass
Overall Test Results				Pass



Laboratory Technician

12/21/11
Test Date

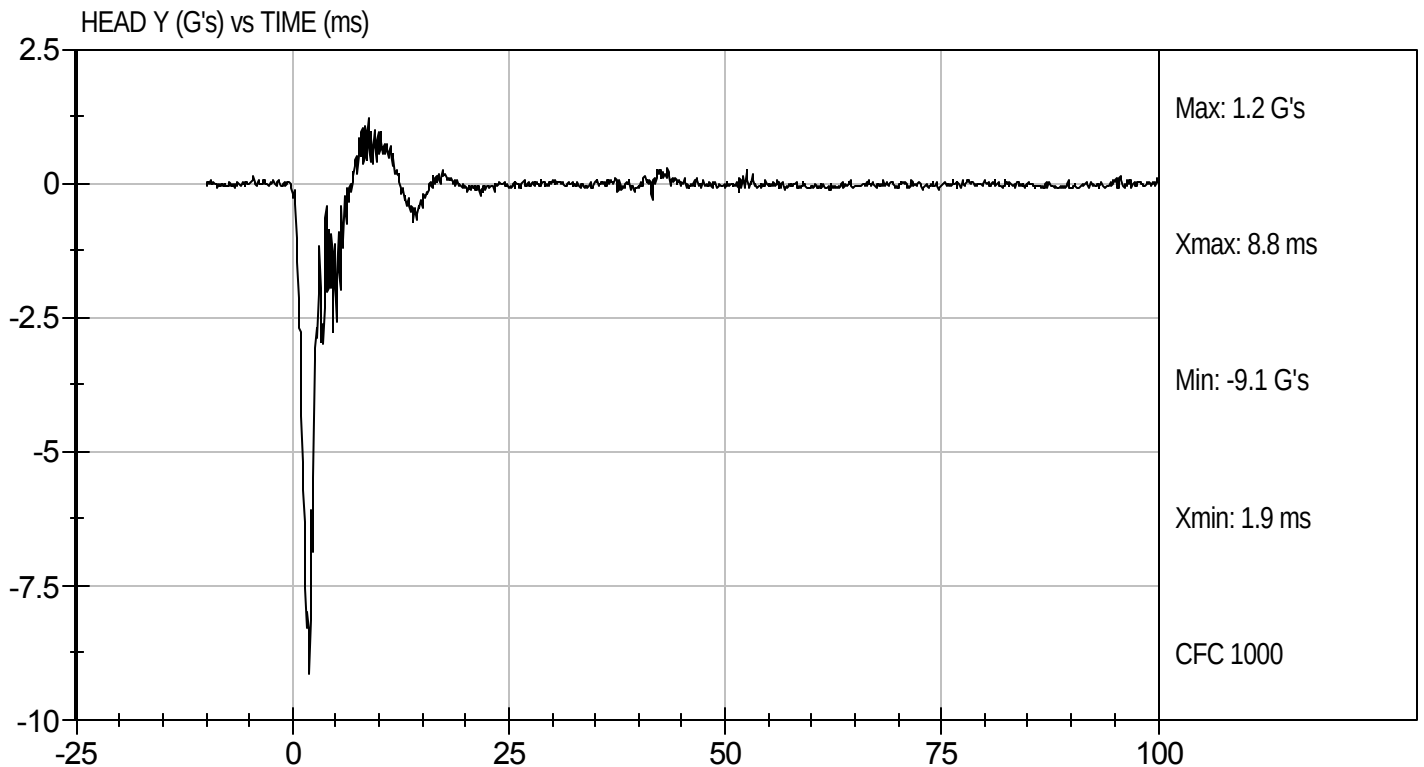
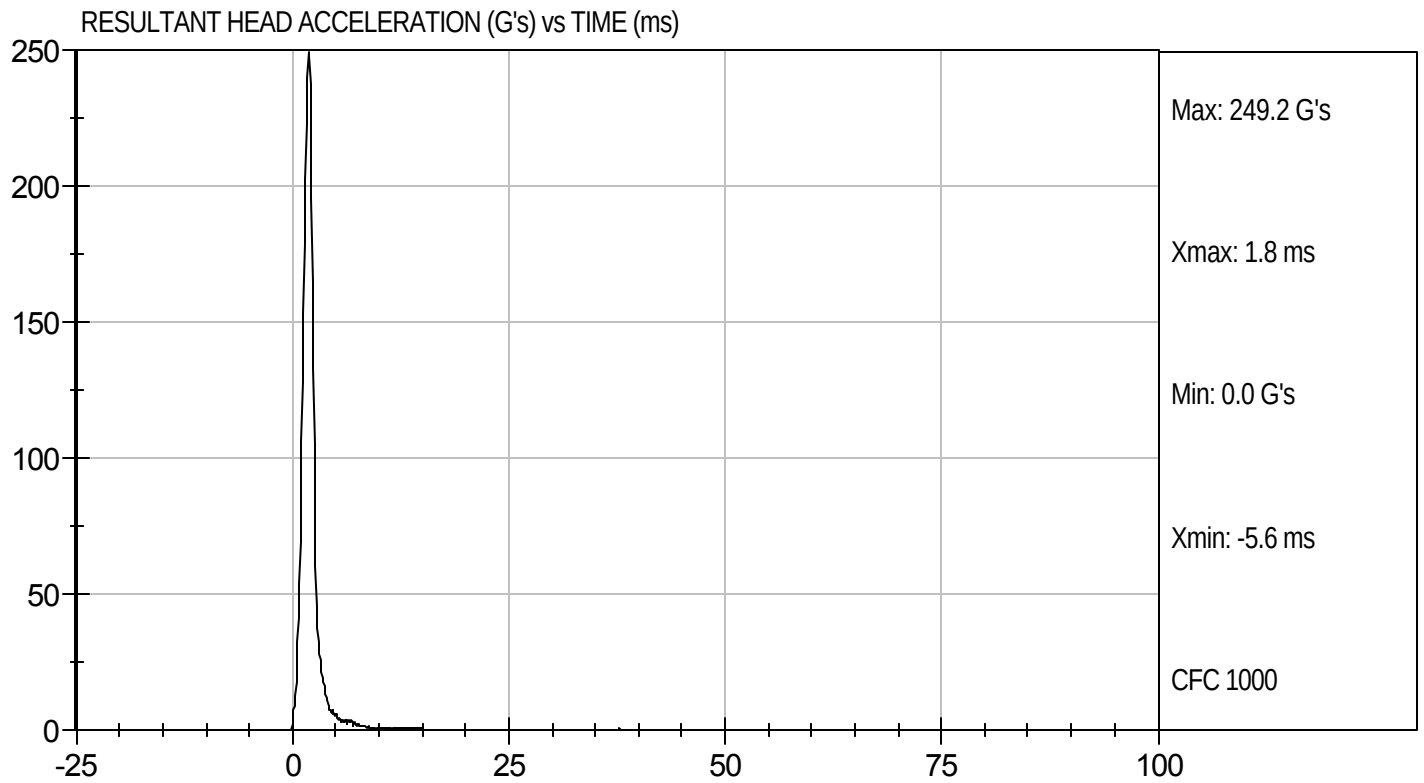


Approved By



Test Desc: Head Drop
Component ID: D114351

Test Date: 12/21/11
Velocity: 0 ft/s, 0 m/s



MGA RESEARCH CORPORATION
NECK FLEXION TEST
HYBRID III 50TH PERCENTILE MALE

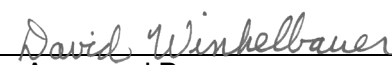
ATD Serial No: 351

Test I.D.: D114352

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	22	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 ms	G's	22.50 to 27.50	24.12	Pass
	20 ms	G's	17.60 to 22.60	19.09	Pass
	30 ms	G's	12.50 to 18.50	13.83	Pass
Peak Pendulum Deceleration After 30 ms		G's	<= 29.0	13.9	Pass
Deceleration Decay Time to Cross 5 G's		ms	34.0 to 42.0	35.1	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	64.0 to 78.0	69.4	Pass
	Time	ms	57.0 to 64.0	57.3	Pass
"D" Plane Rotation Decay Time To Zero Crossing		ms	113.0 to 128.0	115.3	Pass
Moment About Occipital Condyle	Maximum	N m	88.1 to 108.5	91.5	Pass
	Time	ms	47.0 to 58.0	48.4	Pass
Positive Moment Decay Time To Zero Crossing		ms	97.0 to 107.0	97.3	Pass
Overall Test Results					Pass


 Laboratory Technician

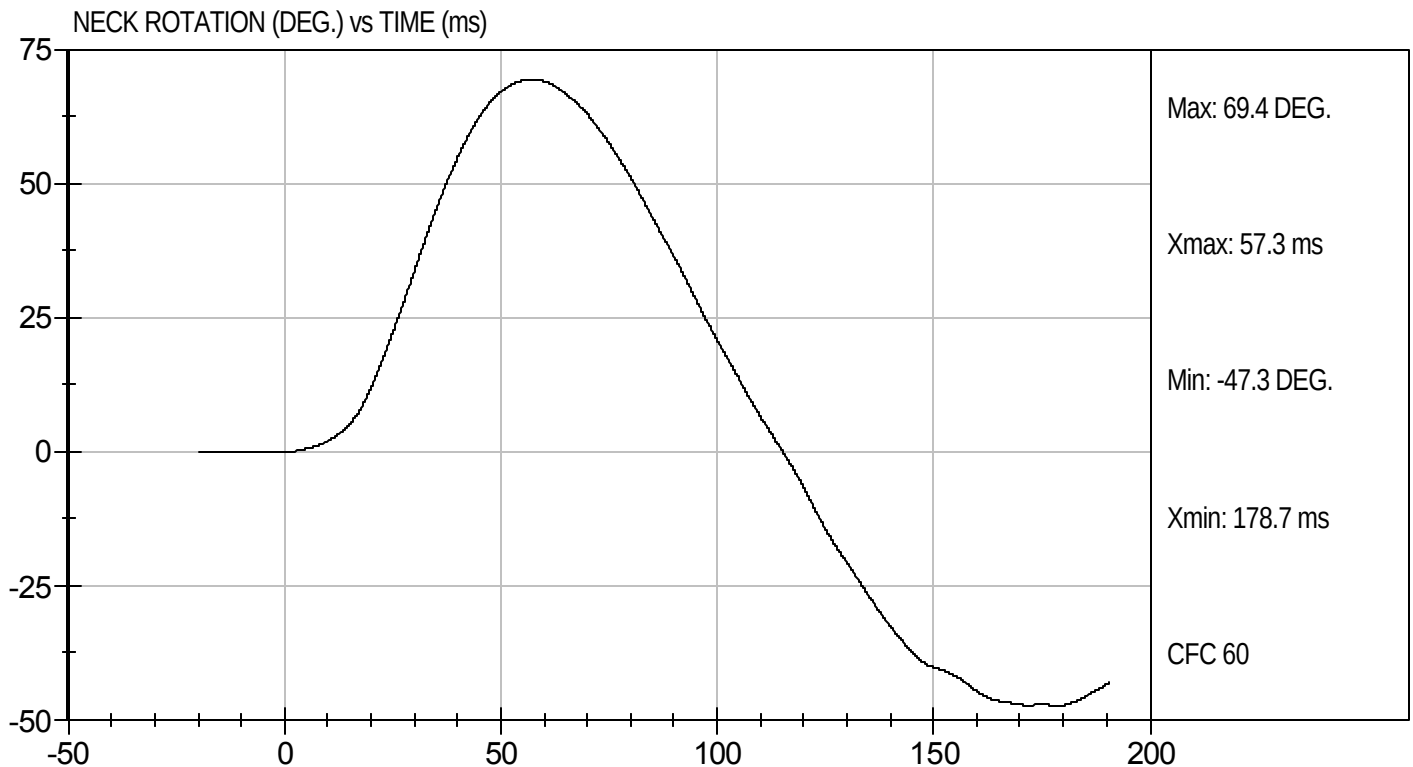
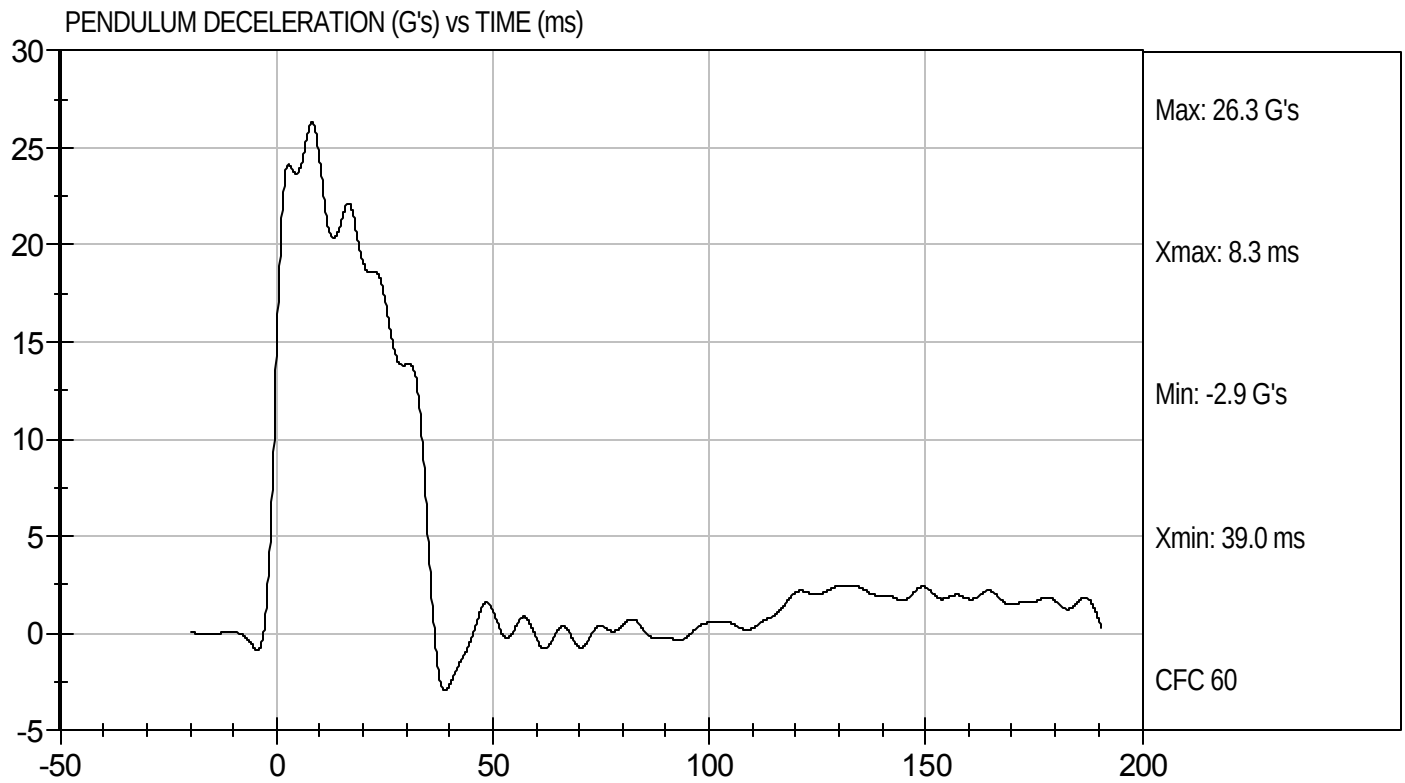
12/22/11
 Test Date


 Approved By



Test Desc: Neck Flexion
Component ID: D114352

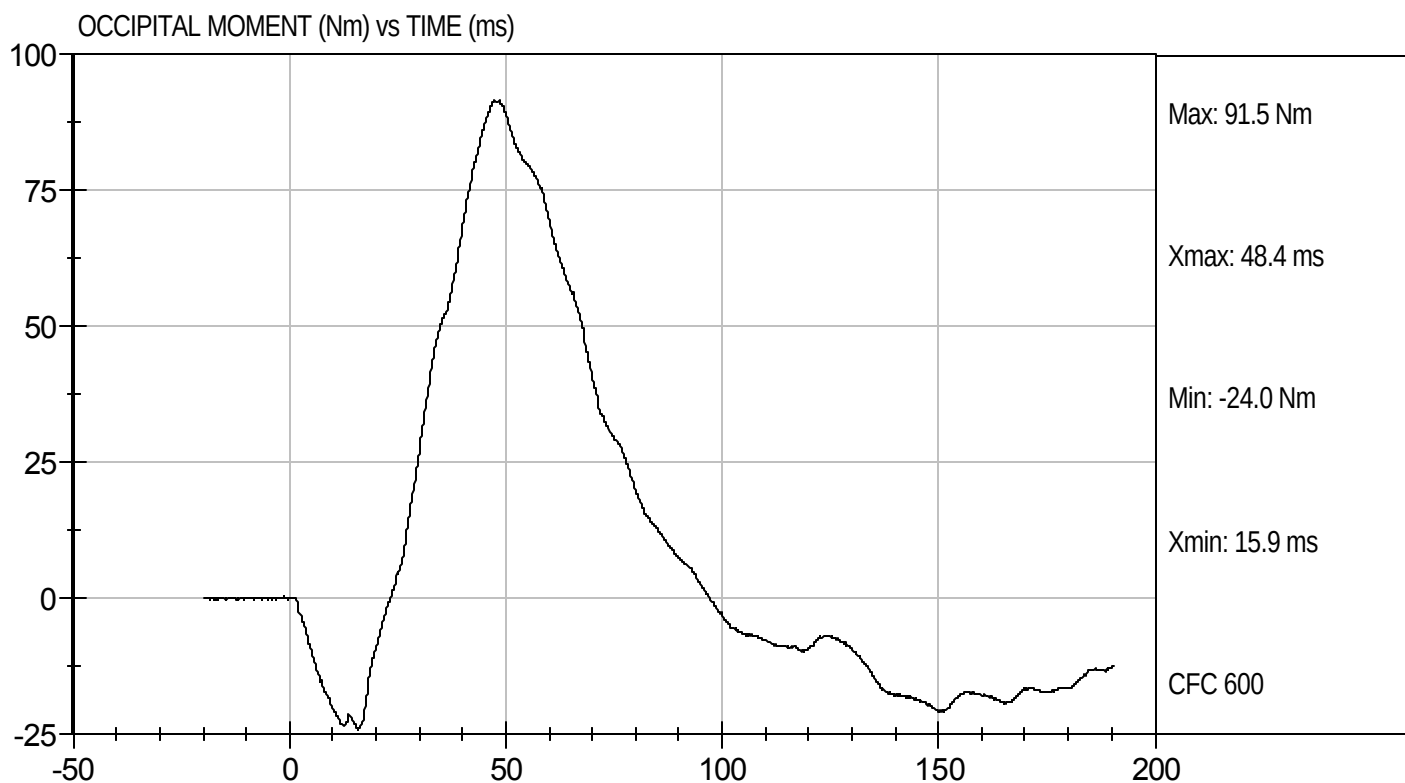
Test Date: 12/22/11
Velocity: 23.15 ft/s, 7.06 m/s





Test Desc: Neck Flexion
Component ID: D114352

Test Date: 12/22/11
Velocity: 23.15 ft/s, 7.06 m/s



MGA RESEARCH CORPORATION
NECK EXTENSION TEST
HYBRID III 50TH PERCENTILE MALE

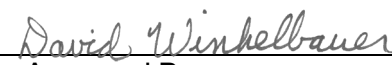
ATD Serial No: 351

Test I.D.: D114353

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity		%	10 to 70	23	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.12	Pass
Pendulum Deceleration	10 ms	G's	17.20 to 21.20	18.58	Pass
	20 ms	G's	14.00 to 19.00	16.26	Pass
	30 ms	G's	11.00 to 16.00	12.97	Pass
Peak Pendulum Deceleration After 30 ms		G's	<= 22.0	15.1	Pass
Deceleration Decay Time to Cross 5 G's		ms	38.0 to 46.0	38.6	Pass
Maximum "D" Plane Rotation	Maximum	Degrees	81.0 to 106.0	94.7	Pass
	Time	ms	72.0 to 82.0	76.9	Pass
"D" Plane Rotation Decay Time To Zero Crossing		ms	147.0 to 174.0	156.7	Pass
Moment About Occipital Condyle	Maximum	Nm	-52.9 to -79.9	-59.0	Pass
	Time	ms	65.0 to 79.0	69.8	Pass
Negative Moment Decay Time To Zero Crossing		ms	120.0 to 148.0	143.5	Pass
Overall Test Results					Pass


 Laboratory Technician

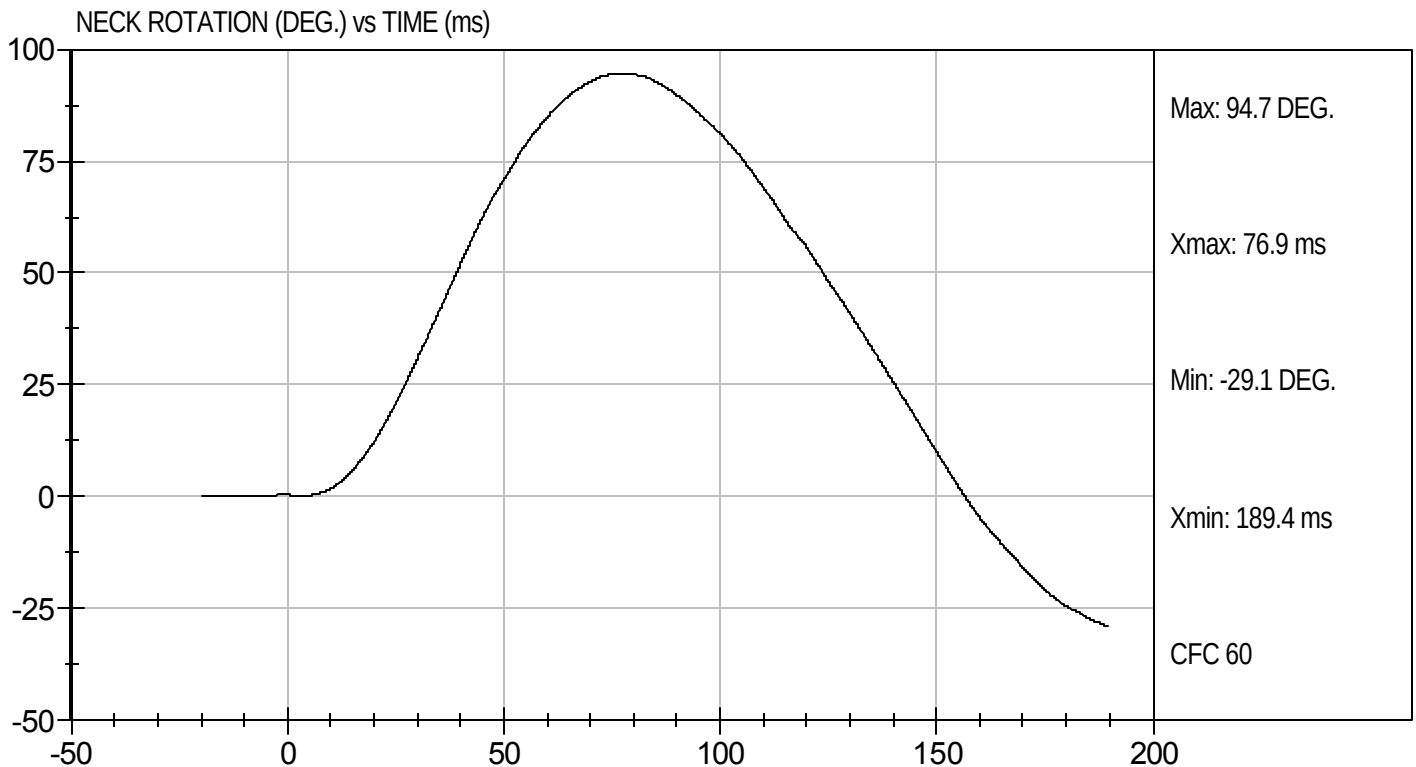
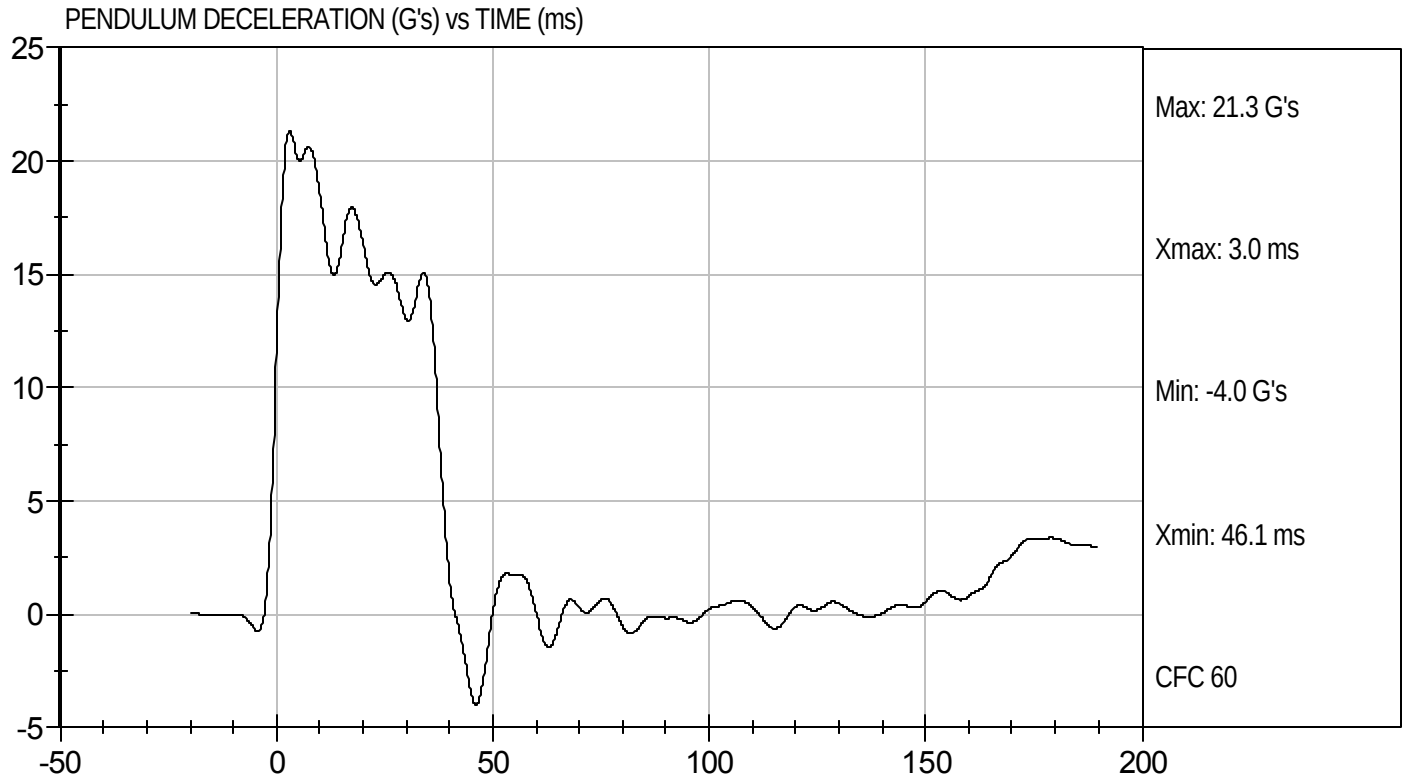
12/22/11
 Test Date


 Approved By



Test Desc: Neck Extension
Component ID: D114353

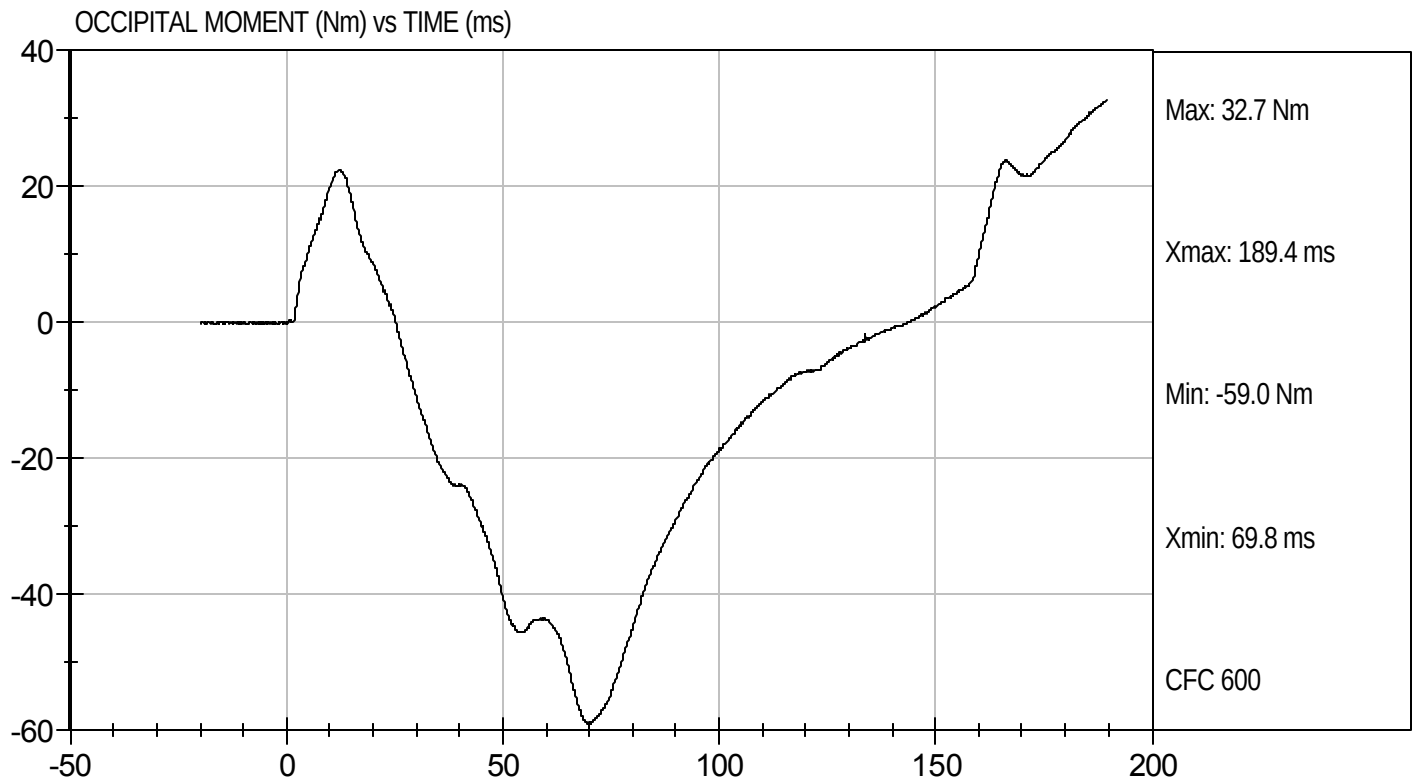
Test Date: 12/22/11
Velocity: 20.08 ft/s, 6.12 m/s





Test Desc: Neck Extension
Component ID: D114353

Test Date: 12/22/11
Velocity: 20.08 ft/s, 6.12 m/s

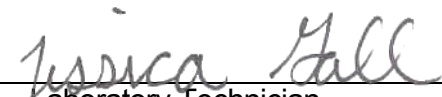


MGA RESEARCH CORPORATION
THORAX IMPACT
HYBRID III 50TH PERCENTILE MALE

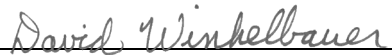
ATD Serial No: 351

Test I.D: D114354

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	29	Pass
Probe Velocity	m/s	6.58 to 6.82	6.77	Pass
Peak Probe Force	N	5159 to 5893	5,395	Pass
Peak Sternum Displacement	cm	6.35 to 7.26	6.49	Pass
Internal Hysteresis	%	69 to 85	70	Pass
Overall Test Results			Pass	


Laboratory Technician

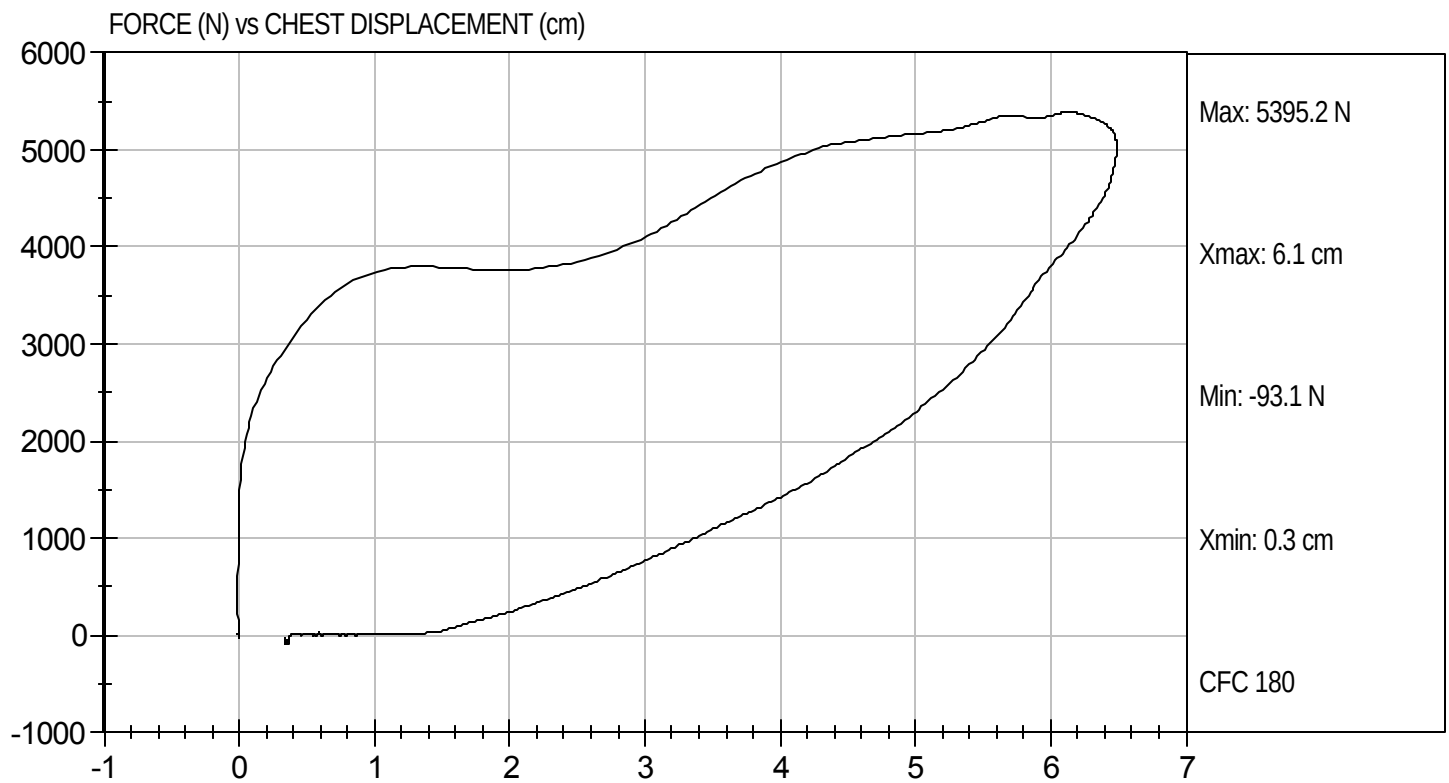
12/22/11
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D114354

Test Date: 12/22/11
Velocity: 22.22 ft/s, 6.77 m/s



MGA RESEARCH CORPORATION
RIGHT KNEE IMPACT TEST
HYBRID III 50TH PERCENTILE MALE

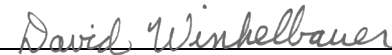
ATD Serial No: 351

Test I.D: D114355

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	29	Pass
Probe Velocity	m/s	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5,270	Pass
Overall Test Results				Pass


Laboratory Technician

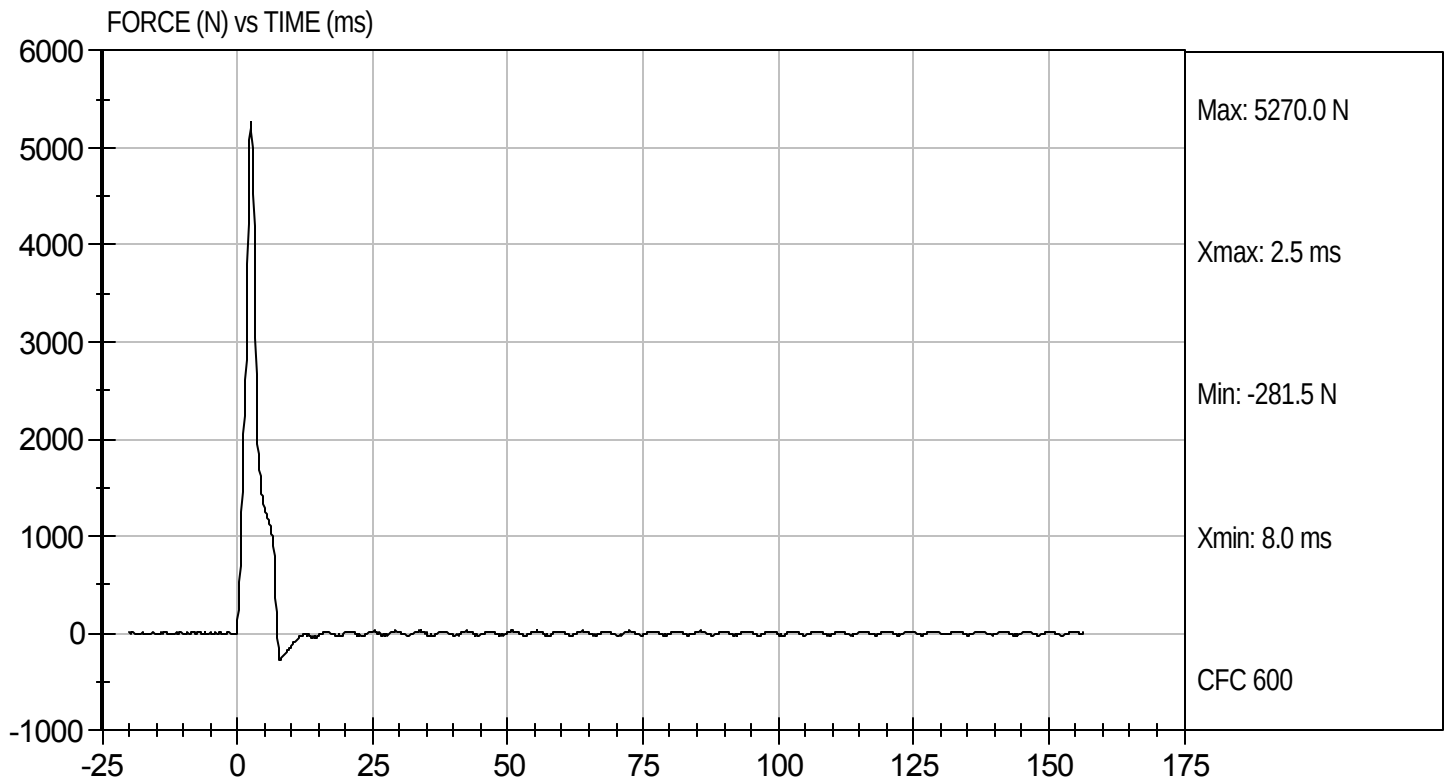
12/21/11
Test Date


Approved By



Test Desc: Right Knee
Component ID: D114355

Test Date: 12/21/11
Velocity: 6.85 ft/s, 2.09 m/s



MGA RESEARCH CORPORATION
LEFT KNEE IMPACT TEST
HYBRID III 50TH PERCENTILE MALE

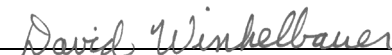
ATD Serial No: 351

Test I.D: D114356

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	29	Pass
Probe Velocity	m/s	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5,121	Pass
Overall Test Results				Pass


Laboratory Technician

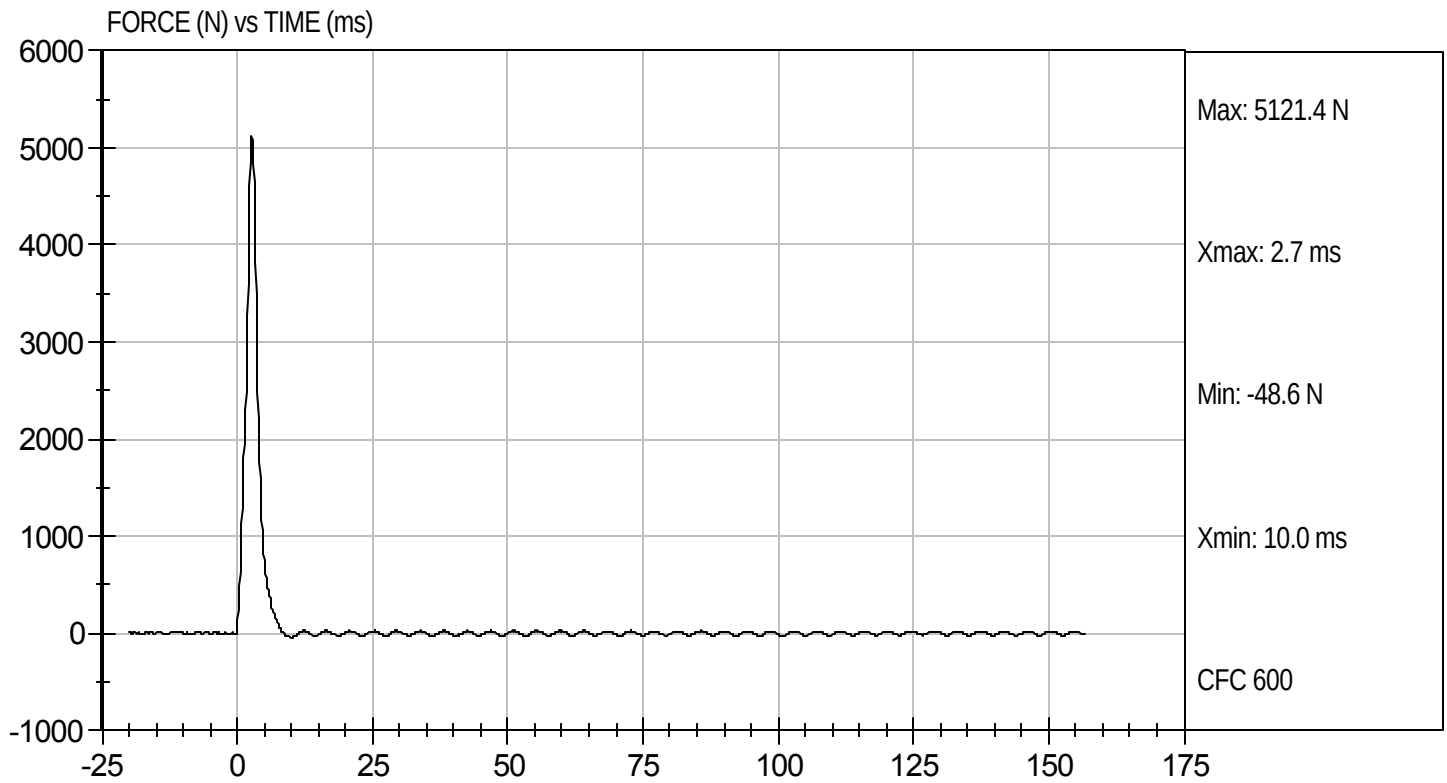
12/21/11
Test Date


Approved By



Test Desc: Left Knee
Component ID: D114356

Test Date: 12/21/11
Velocity: 6.89 ft/s, 2.10 m/s



MGA RESEARCH CORPORATION
HIP-FEMUR FLEXION TEST
HYBRID III 50TH PERCENTILE MALE

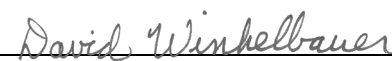
ATD Serial No: 351

Test I.D: D114350

Tested Parameter	Units	Specification	Result		Pass/Fail
			Right	Left	
Laboratory Temperature	deg C	18.9 to 25.6	21.6	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	28	28	Pass
Rotation Rate	deg/s	5.0 -10.0	5.7	5.7	Pass
30 Degrees	Nm	94.9 Nm Max	61.2	61.1	Pass
150 ft-lbf / 203.4 Nm	Deg	40.0 - 50.0 Degree Max Rotation	42.7	41.9	Pass
Overall Test Results					Pass


 Laboratory Technician

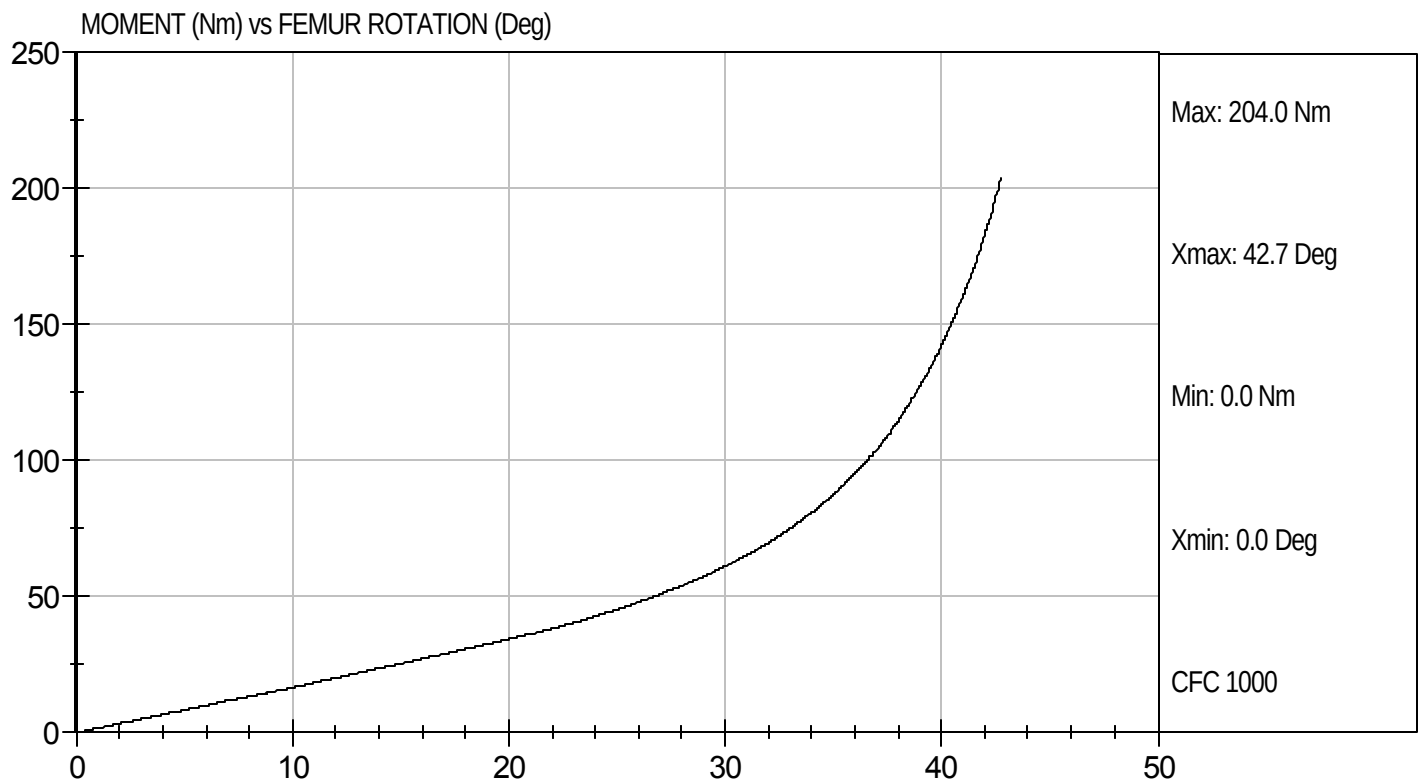
12/21/11
 Test Date


 Approved By



Test Desc: Hip Femur Flexion
Component ID: D114359

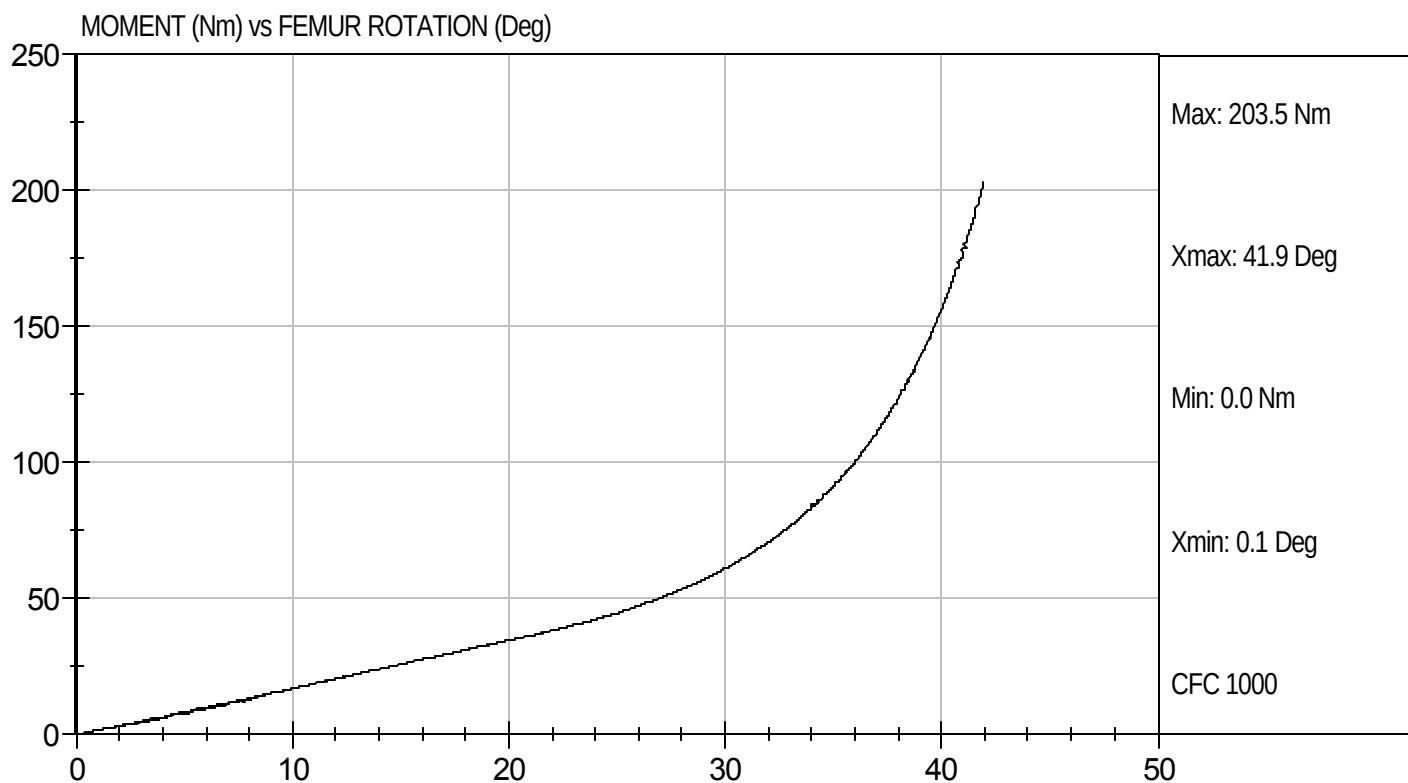
Test Date: 12/21/11
Velocity: 0 ft/s, 0.00 m/s





Test Desc: Hip Femur Flexion
Component ID: D114350

Test Date: 12/21/11
Velocity: 0 ft/s, 0.00 m/s



Hybrid III, 5th External Measurements
SN: 634

HYBRID III, PART 572, SUBPART O EXTERNAL DIMENSIONS				
DIMENSION	DESCRIPTION	DETAILS	ASSEMBLY DIMENSION (mm)	ACTUAL MEASUREMENT
A	TOTAL SITTING HEIGHT	Seat surface to highest point on top of the head.	774.7-800.1	784.6
B	SHOULDER PIVOT HEIGHT	Centerline of shoulder pivot bolt to the seat surface.	431.8-457.2	449.0
C	H-POINT HEIGHT	Reference	81.3-86.3	85.0
D	H-POINT LOCATION FROM BACKLINE	Reference	144.8-149.8	145.0
E	SHOULDER PIVOT FROM BACKLINE	Center of the shoulder clevis to the rear vertical surface of the fixture.	68.6-83.8	79.2
F	THIGH CLEARANCE	Measured at the highest point on the upper femur segment.	119.4-134.6	125.6
G	BACK OF ELBOW TO WRIST PIVOT	back of the elbow flesh to the wrist pivot in line with the elbow and wrist pivots	243.9-259.1	253.4
H	HEAD BACK TO BACKLINE	Back of Skull cap skin to seat rear vertical surface (Reference)	43.2-48.2	45.0
I	SHOULDER TO- ELBOW LENGTH	Measure from the highest point on top of the shoulder clevis to the lowest part of the flesh on the elbow in line with the elbow pivot bolt.	276.8-297.2	277.8
J	ELBOW REST HEIGHT	Measure from the flesh below the elbow pivot bolt to the seat surface.	182.8-203.2	197.5
K	BUTTOCK TO KNEE LENGTH	The forward most part of the knee flesh to the rear vertical surface of the fixture.	520.7-546.1	541.4
L	POPLITEAL HEIGHT	Seat surface to the plane of the horizontal plane of the bottom of the feet.	355.6-376.0	362.1
M	KNEE PIVOT HEIGHT	Centerline of knee pivot bolt to the horizontal plane of the bottom of the feet.	393.7-419.1	400.4
N	BUTTOCK POPLITEAL LENGTH	The rearmost surface of the lower leg to the same point on the rear surface of the buttocks used for dim. "K".	414-439.4	428.6

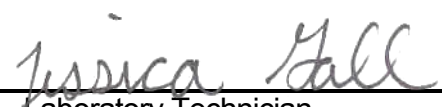
HYBRID III, SUBPART O EXTERNAL DIMENSIONS, continued				
DIMENSION	DESCRIPTION	DETAILS	ASSEMBLY DIMENSION (mm)	ACTUAL MEASUREMENT
O	CHEST DEPTH WITHOUT JACKET	Measured 304.8 ± 5.1 mm above seat surface	175.3-190.5	181.6
P	FOOT LENGTH	Tip of toe to rear of heel	218.5-233.7	224.7
Q	STANDING HEIGHT	(THEORETICAL)	1501.1	N/A
R	BUTTOCK TO KNEE PIVOT LENGTH	The rear surface of the buttocks to the knee pivot bolt	457.2-482.6	482.0
S	HEAD BREADTH	The widest part of the head	137.1-147.3	139.6
T	HEAD DEPTH	Back of the head to the forehead	177.8-188.0	179.2
U	HIP BREADTH	The widest part of the hip	299.7-314.9	306.1
V	SHOULDER BREADTH	Outside edges of right and left shoulder clevises	350.5-365.7	355.5
W	FOOT BREADTH	The widest part of the foot	78.8-94.0	90.0
X	HEAD CIRCUMFERENCE	Measured at the point as in dim. "T"	528.3-548.7	540.6
Y	CHEST CIRCUMFERENCE (WITH CHEST JACKET)	Measured 345.4 ± 12.7 mm above seat surface	850.9-881.3	868.7
Z	WAIST CIRCUMFERENCE	Measured 165.1 ± 5.1 mm above seat surface	759.5-789.9	786.8
AA	REFERENCE LOCATION FOR MEASUREMENT OF CHEST CIRCUMFERENCE	Reference	332.7-358.1	345.4
BB	REFERENCE LOCATION FOR MEASUREMENT OF WAIST CIRCUMFERENCE	Reference	160.1-170.2	165.1

MGA RESEARCH CORPORATION
HEAD DROP TEST
HYBRID III 5TH PERCENTILE

ATD Serial No: 634

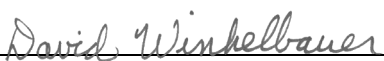
Test ID: D114281

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Peak Resultant Acceleration	G's	250 to 300	277	Pass
Peak Lateral Acceleration	G's	+/- 15	-12.2	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 10% of peak	Yes	Pass
Overall Test Results				Pass



Laboratory Technician

12/19/11
Test Date

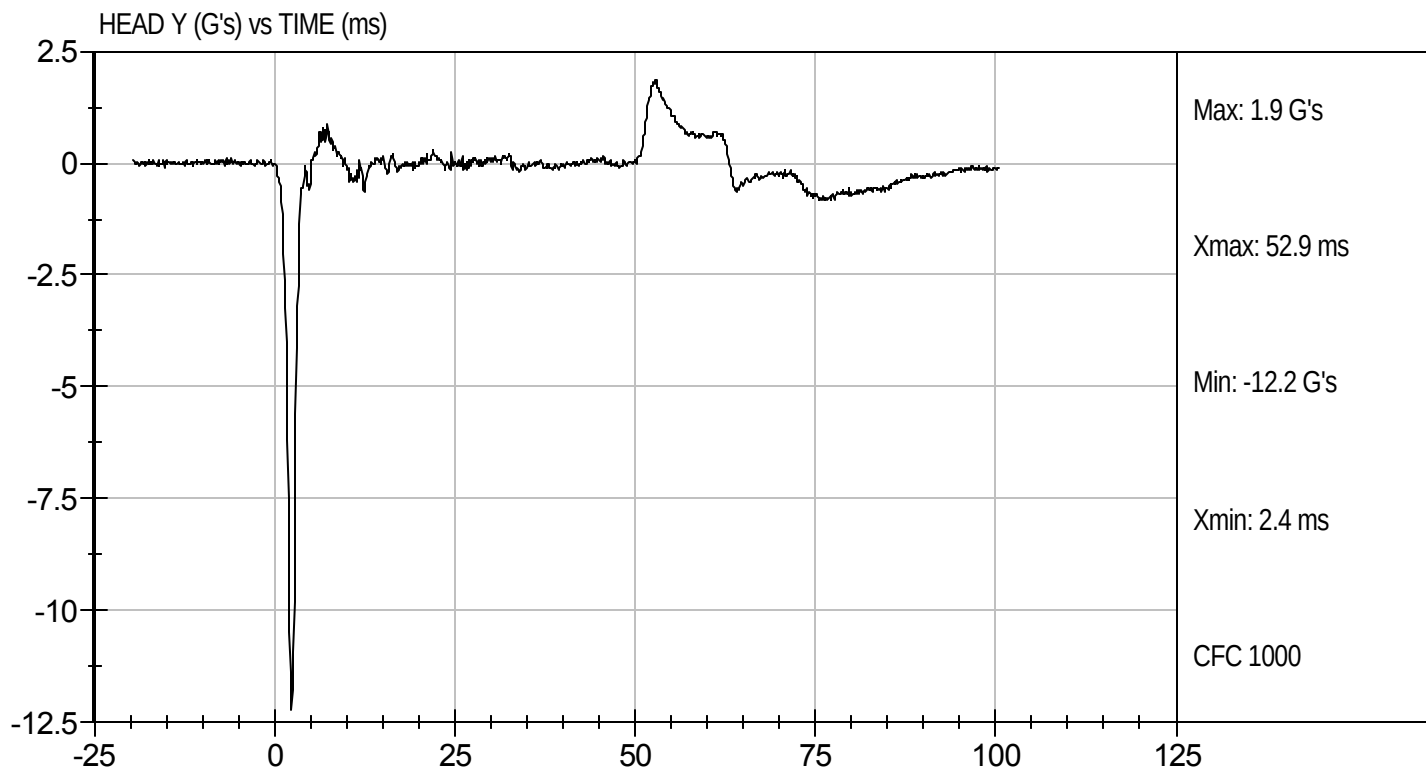
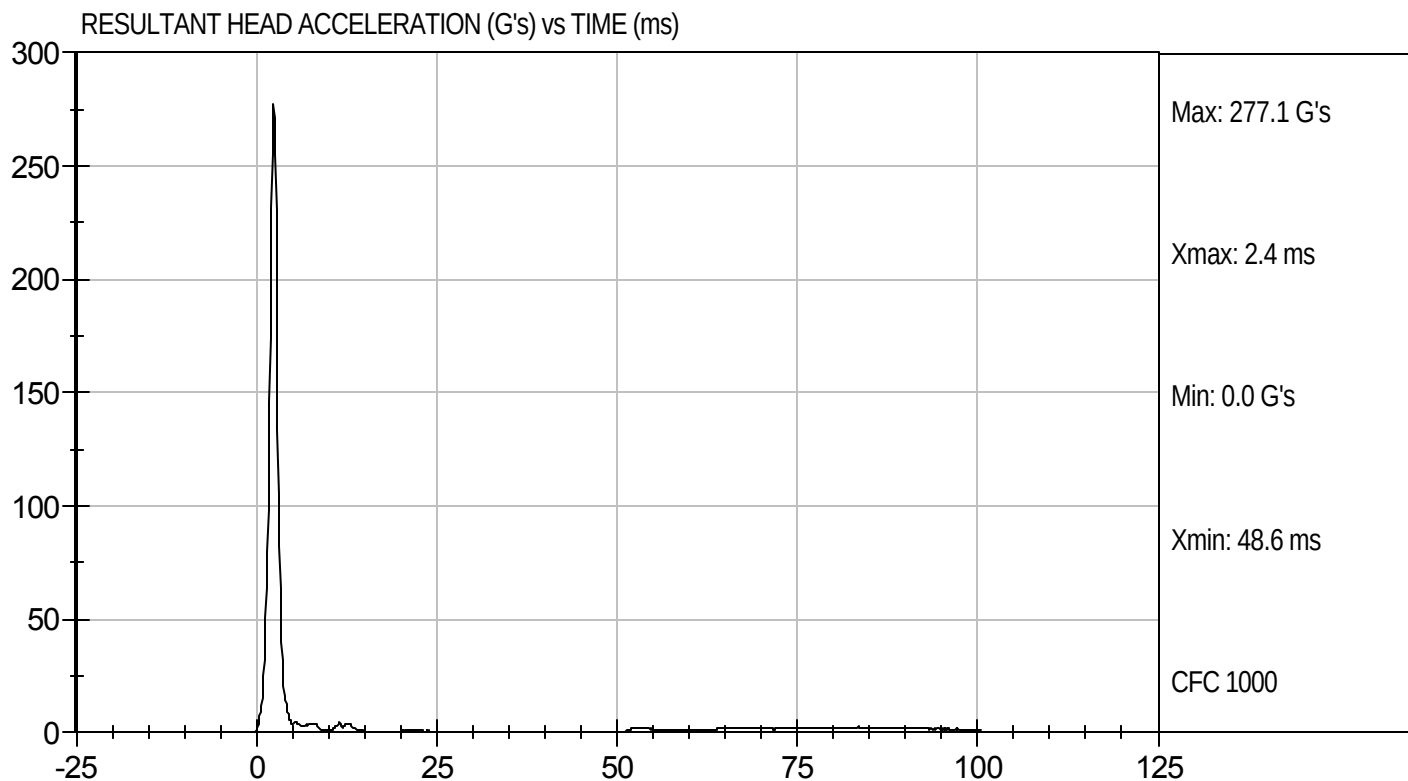


Approved By



Test Desc: Head Drop
Component ID: D114281

Test Date: 12/19/11
Velocity: 0 ft/s, 0 m/s



MGA RESEARCH CORPORATION
NECK FLEXION TEST
HYBRID III 5TH PERCENTILE

ATD Serial No: 634

Test I.D: D114282

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	27	Pass
Pendulum Speed		m/s	6.89 to 7.13	7.06	Pass
Pendulum Pulse	10 ms	m/s	2.1 to 2.5	2.3	Pass
	20 ms	m/s	4.0 to 5.0	4.2	Pass
	30 ms	m/s	5.8 to 7.0	5.8	Pass
D Plane Rotation	Max	deg	77 to 91	78	Pass
Occipital Condyle Moment within Deflection Corridor		Nm	69 to 83	70	Pass
Positive Moment Time Curve Decay to 10 Nm		ms	80 to 100	88	Pass
Overall Results				Pass	


Laboratory Technician

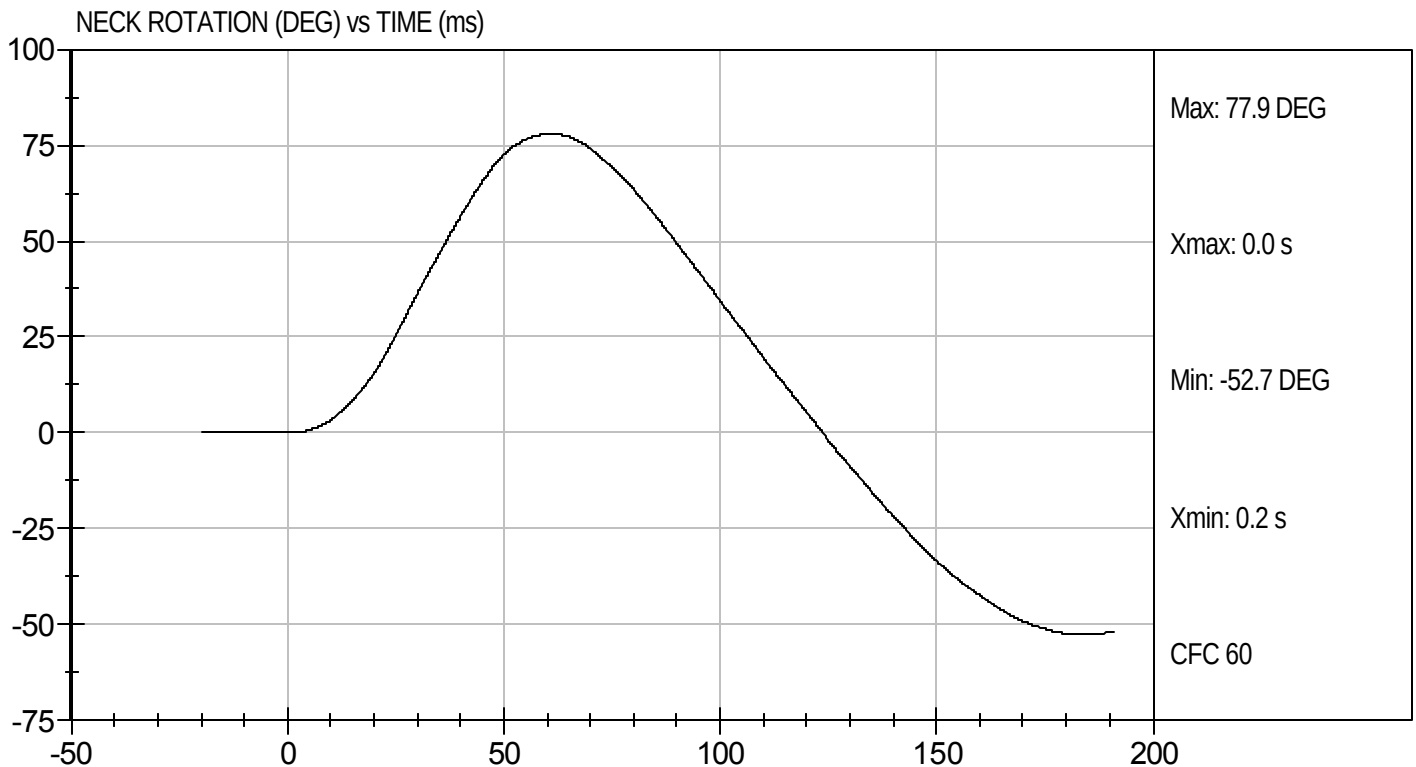
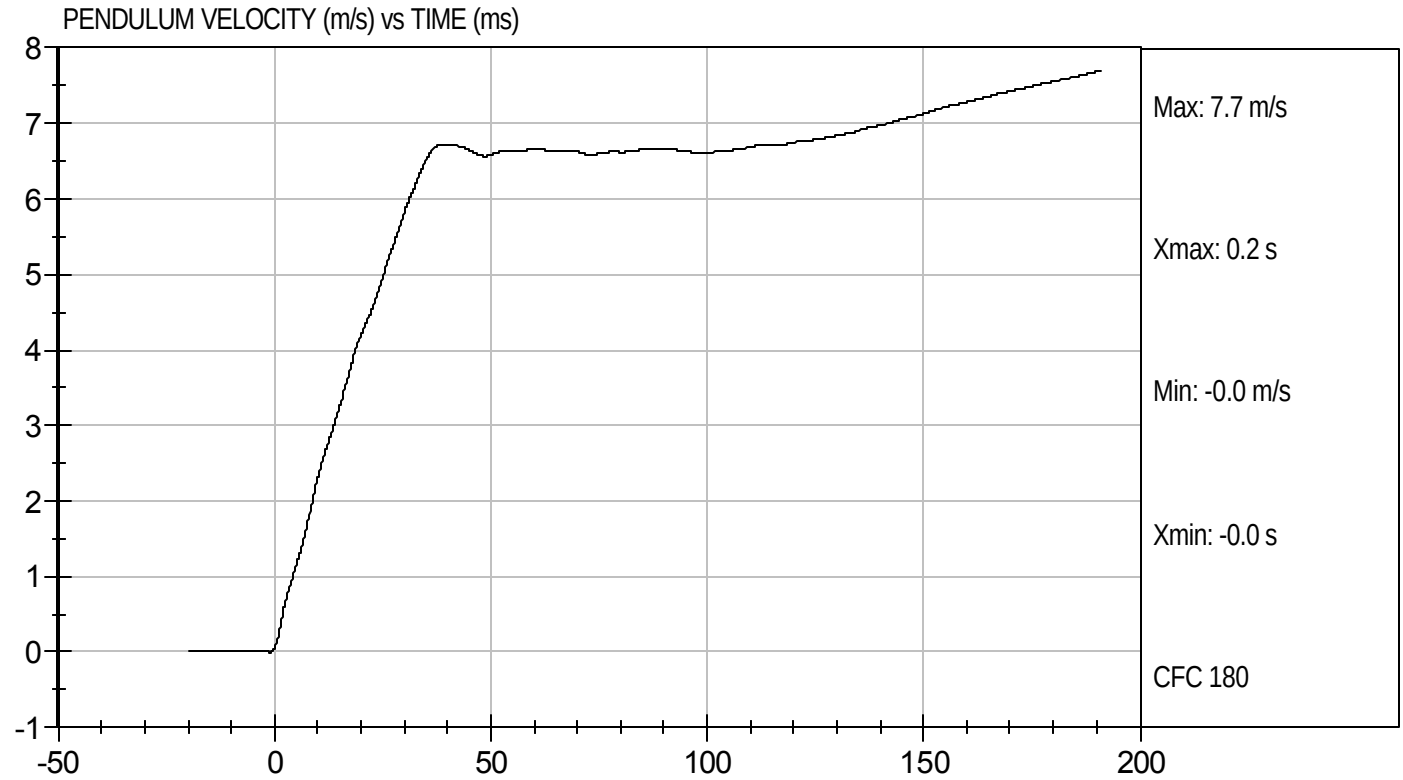
12/19/11
Test Date


Approved By



Test Desc: Neck Flexion
Component ID: D114282

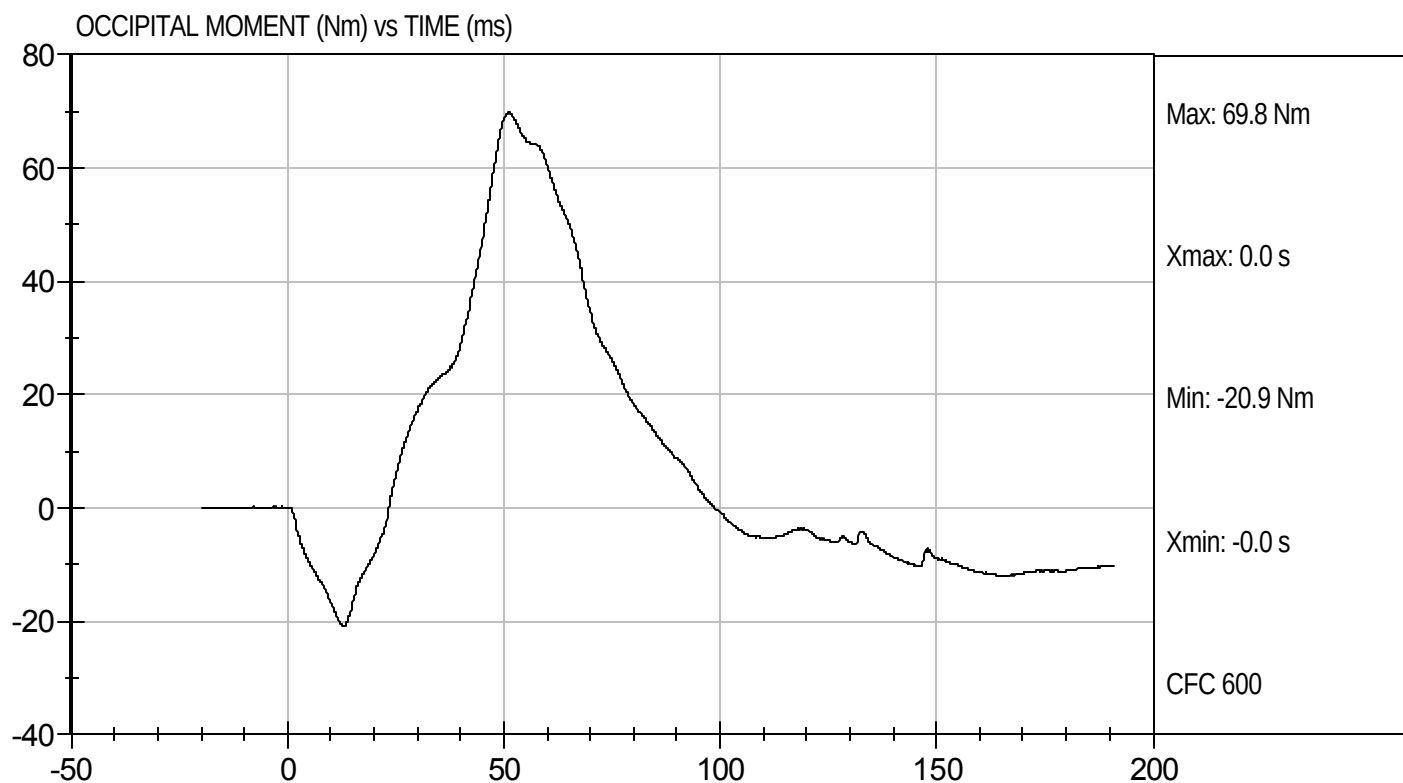
Test Date: 12/19/11
Velocity: 23.15 ft/s, 7.06 m/s





Test Desc: Neck Flexion
Component ID: D114282

Test Date: 12/19/11
Velocity: 23.15 ft/s, 7.06 m/s



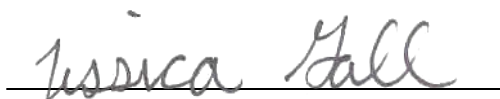
MGA RESEARCH CORPORATION

NECK EXTENSION TEST

HYBRID III 5TH PERCENTILE

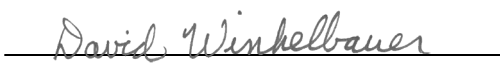
ATD Serial No: 634Test I.D: D114283

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	27	Pass
Pendulum Speed		m/s	5.95 to 6.19	6.12	Pass
Pendulum Pulse	10 ms	m/s	1.5 to 1.9	1.8	Pass
	20 ms	m/s	3.1 to 3.9	3.5	Pass
	30 ms	m/s	4.6 to 5.6	5.1	Pass
D Plane Rotation	Max	deg	99 to 114	109	Pass
Occipital Condyle Moment within Deflection Corridor		Nm	-65 to -53	-56	Pass
Negative Moment Time Curve Decay to -10 Nm		ms	94 to 114	104	Pass
Overall Results					Pass


 Laboratory Technician

12/19/11

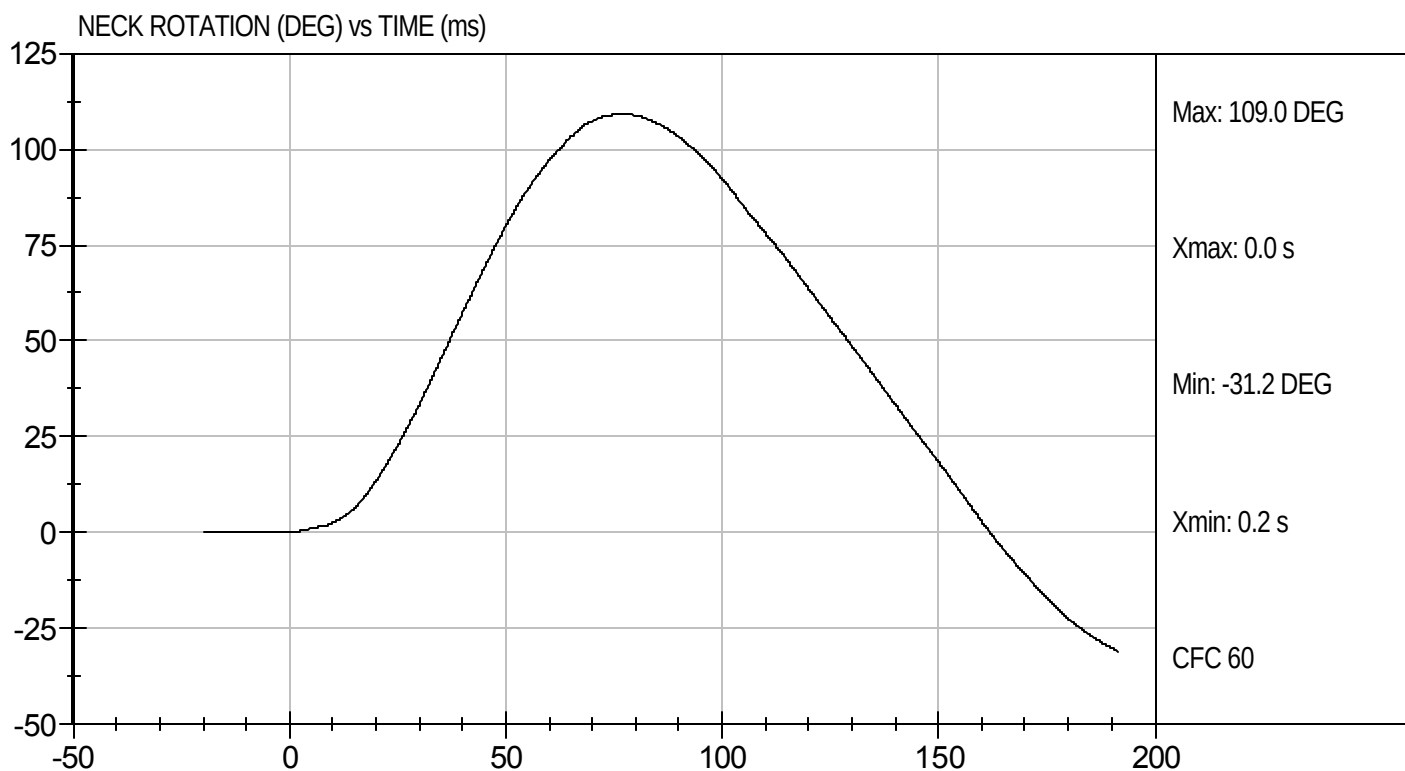
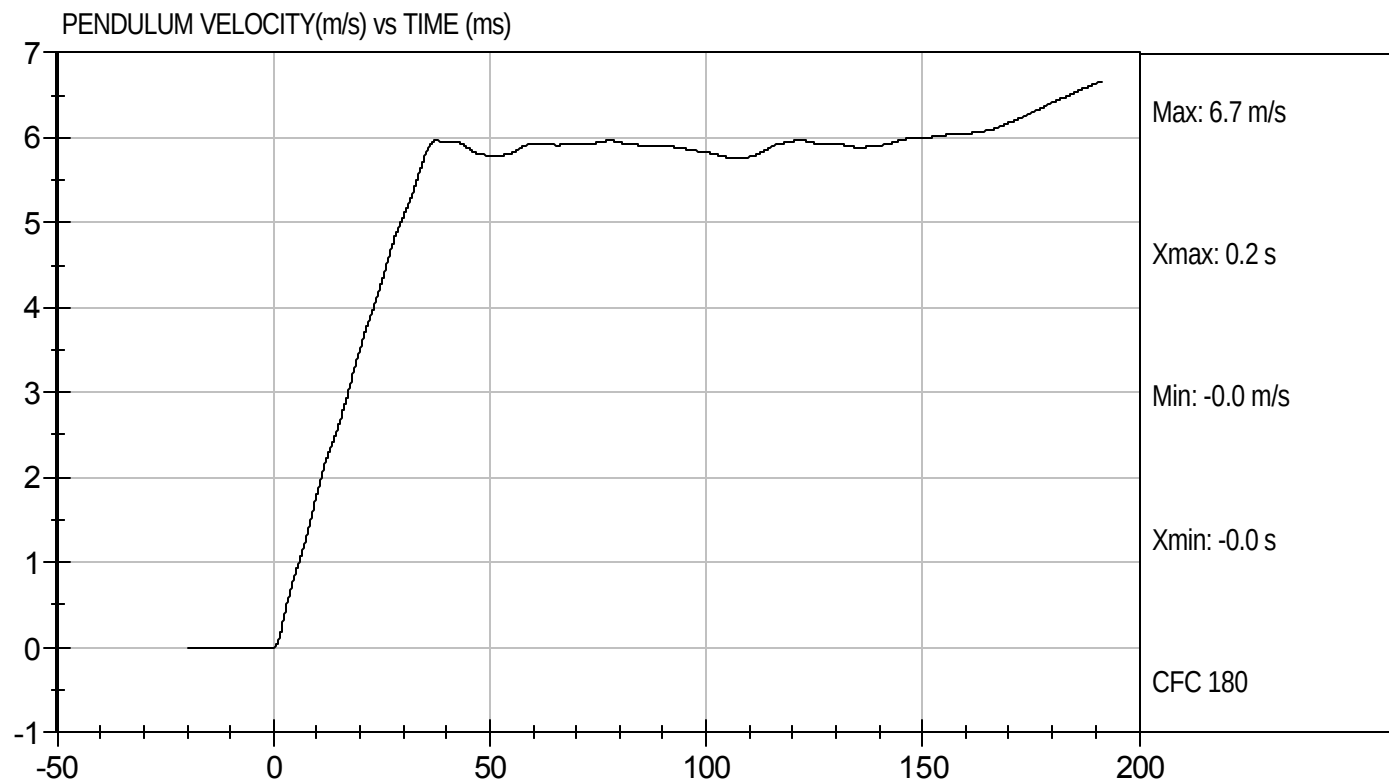
Test Date


 Approved By



Test Desc: Neck Extension
Component ID: D114283

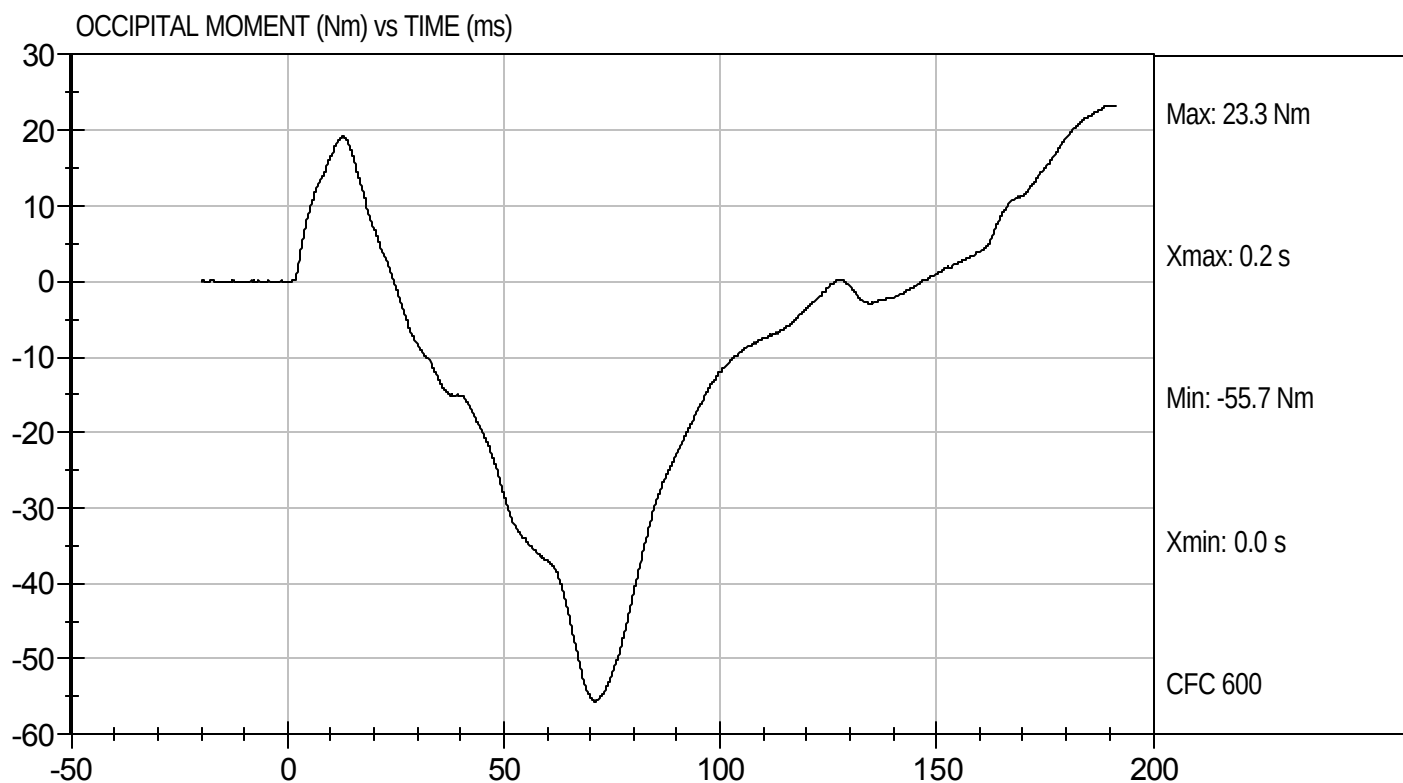
Test Date: 12/19/11
Velocity: 20.08 ft/s, 6.12 m/s





Test Desc: Neck Extension
Component ID: D114283

Test Date: 12/19/11
Velocity: 20.08 ft/s, 6.12 m/s

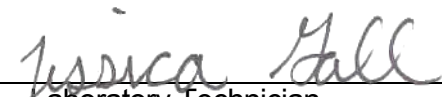


MGA RESEARCH CORPORATION
THORAX IMPACT
HYBRID III 5TH PERCENTILE

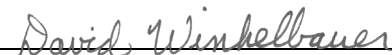
ATD Serial No: 634

Test I.D: D114284

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.4	Pass
Relative Humidity	%	10 to 70	28	Pass
Probe Speed	m/s	6.59 to 6.83	6.68	Pass
Peak Deflection	mm	50 to 58	53	Pass
Peak Resistive Force w/in Deflection Corridor	kN	3.9 to 4.4	4.30	Pass
Internal Hysteresis	%	69 to 85	69	Pass
Peak Force 18 mm - 50 mm	N	<= 4,600 N	4270	Pass
Overall Test Results				Pass


Laboratory Technician

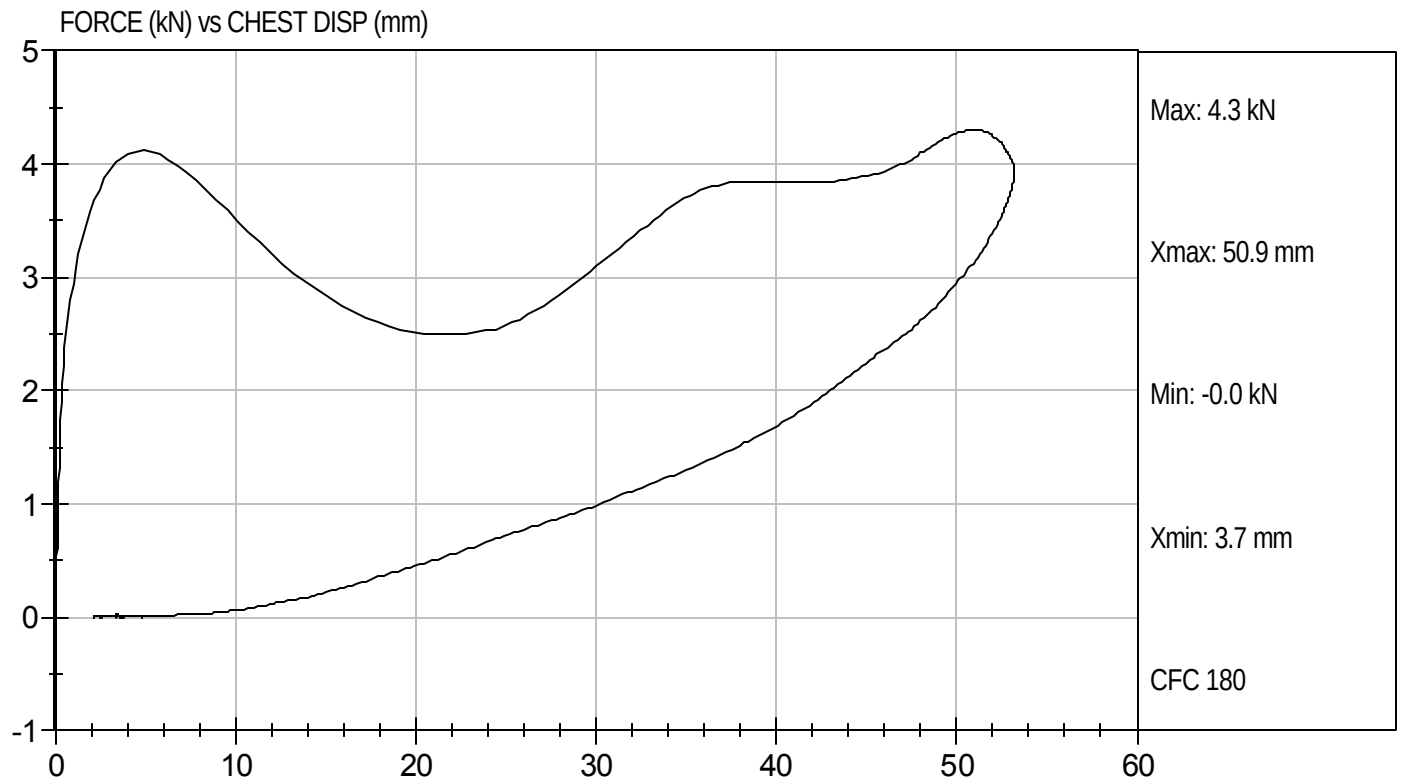
12/19/11
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D114284

Test Date: 12/19/11
Velocity: 21.93 ft/s, 6.68 m/s

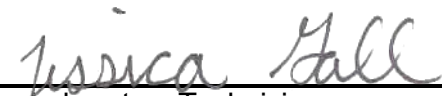


MGA RESEARCH CORPORATION
RIGHT KNEE IMPACT TEST
HYBRID III 5TH PERCENTILE

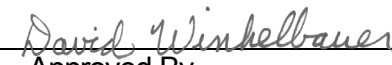
ATD Serial No: 634

Test I.D: D114285

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	22.1	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Probe Speed	m/s	2.07 to 2.13	2.12	Pass
Maximum Force	kN	3.45 to 4.06	3.52	Pass
Overall Test Results				Pass


Laboratory Technician

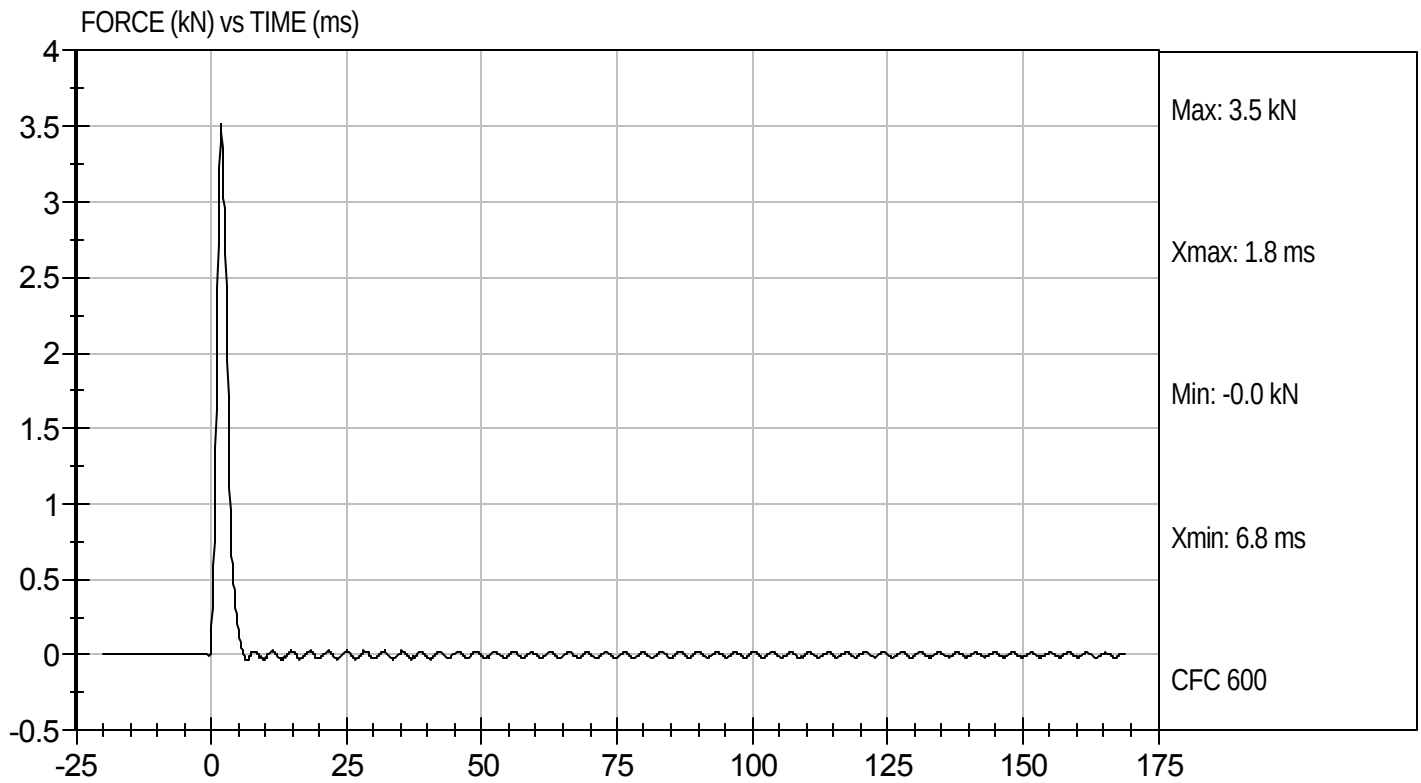
12/19/11
Test Date


Approved By



Test Desc: Right Knee
Component ID: D114285

Test Date: 12/19/11
Velocity: 6.94 ft/s, 2.12 m/s



MGA RESEARCH CORPORATION

LEFT KNEE IMPACT TEST

HYBRID III 5TH PERCENTILE

ATD Serial No: 634

Test I.D: D114286

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	22.1	Pass
Laboratory Relative Humidity	%	10 to 70	27	Pass
Probe Speed	m/s	2.07 to 2.13	2.12	Pass
Maximum Force	kN	3.45 to 4.06	3.74	Pass
Overall Test Results				Pass


Laboratory Technician

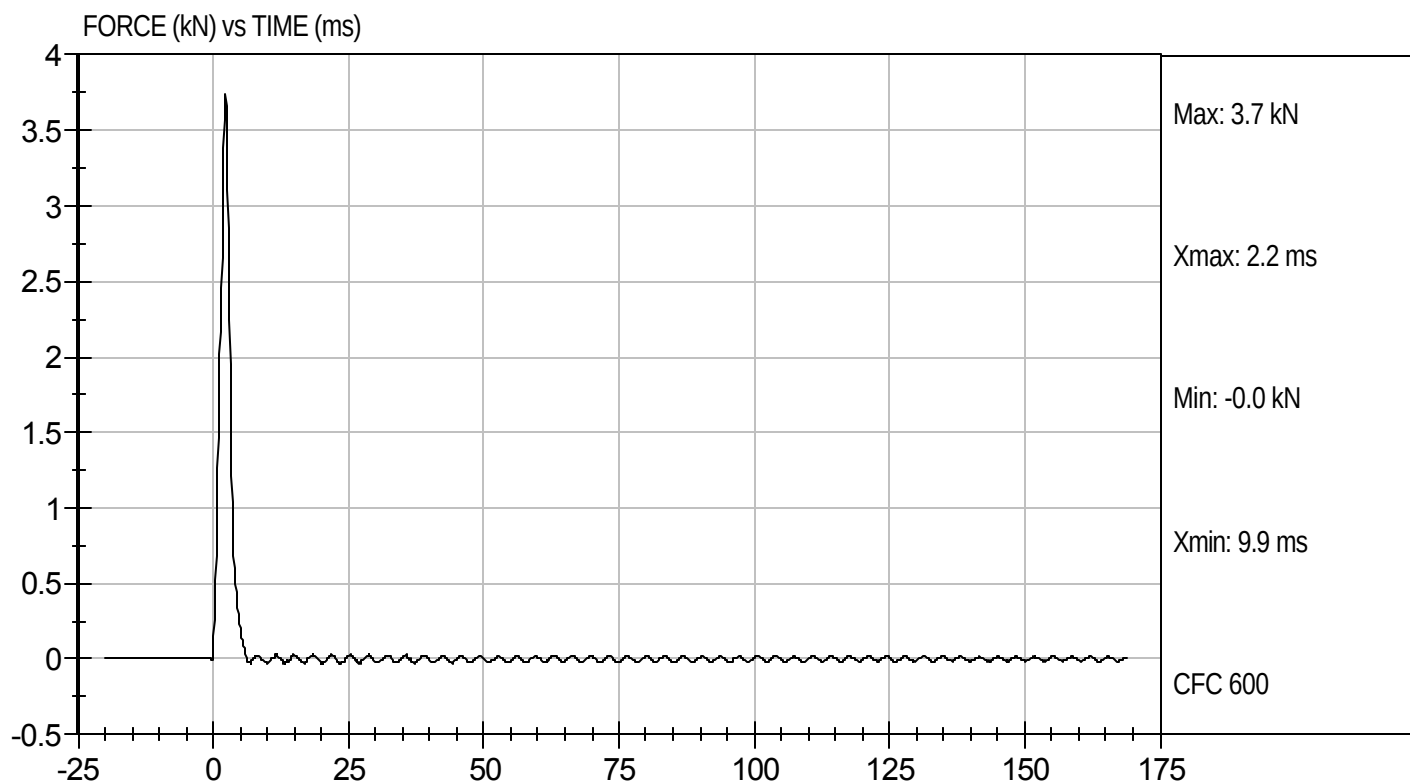
12/19/11
Test Date


Approved By



Test Desc: Left Knee
Component ID: D114286

Test Date: 12/19/11
Velocity: 6.97 ft/s, 2.12 m/s



MGA RESEARCH CORPORATION

TORSO FLEXION TEST

HYBRID III 5TH PERCENTILE

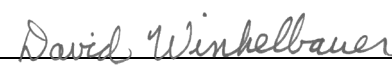
ATD Serial No: 634Test I.D: D114287

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	28	Pass
Initial Angle	deg	0 to 20	15	Pass
Return Angle	deg	+/- 8	7	Pass
Force at 45 deg	N	320 to 390	371	Pass
Upper Torso Deflection Rate	Deg/sec	0.5 to 1.5	1.0	Pass
Overall Result				Pass


Laboratory Technician

12/19/11

Test Date

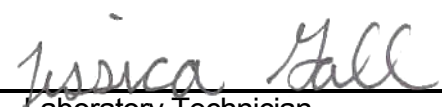

Approved By

MGA RESEARCH CORPORATION
HEAD DROP TEST
HYBRID III 5TH PERCENTILE

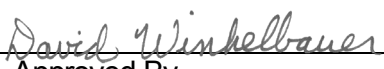
ATD Serial No: 634

Test ID: D114361

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Peak Resultant Acceleration	G's	250 to 300	295	Pass
Peak Lateral Acceleration	G's	+/- 15	-4.5	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 10% of peak	Yes	Pass
Overall Test Results				Pass


Laboratory Technician

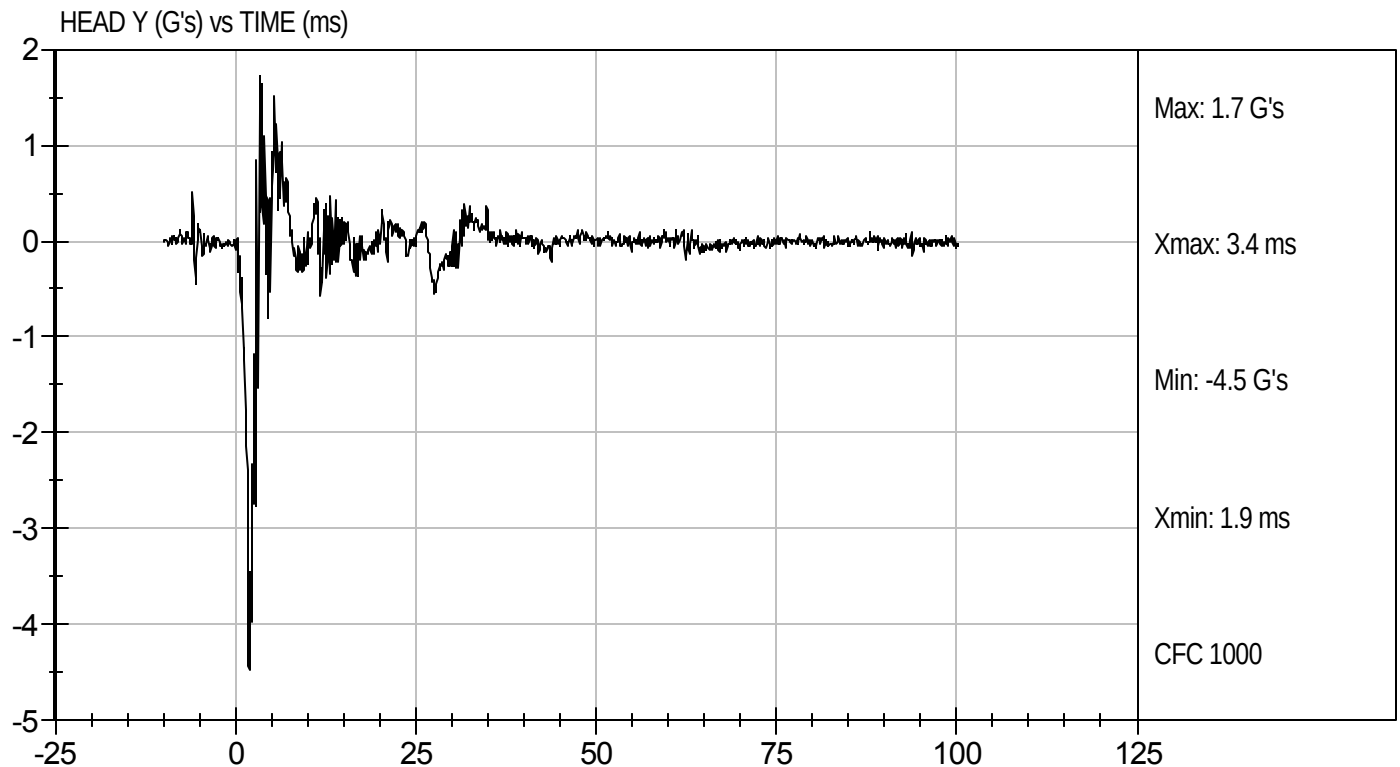
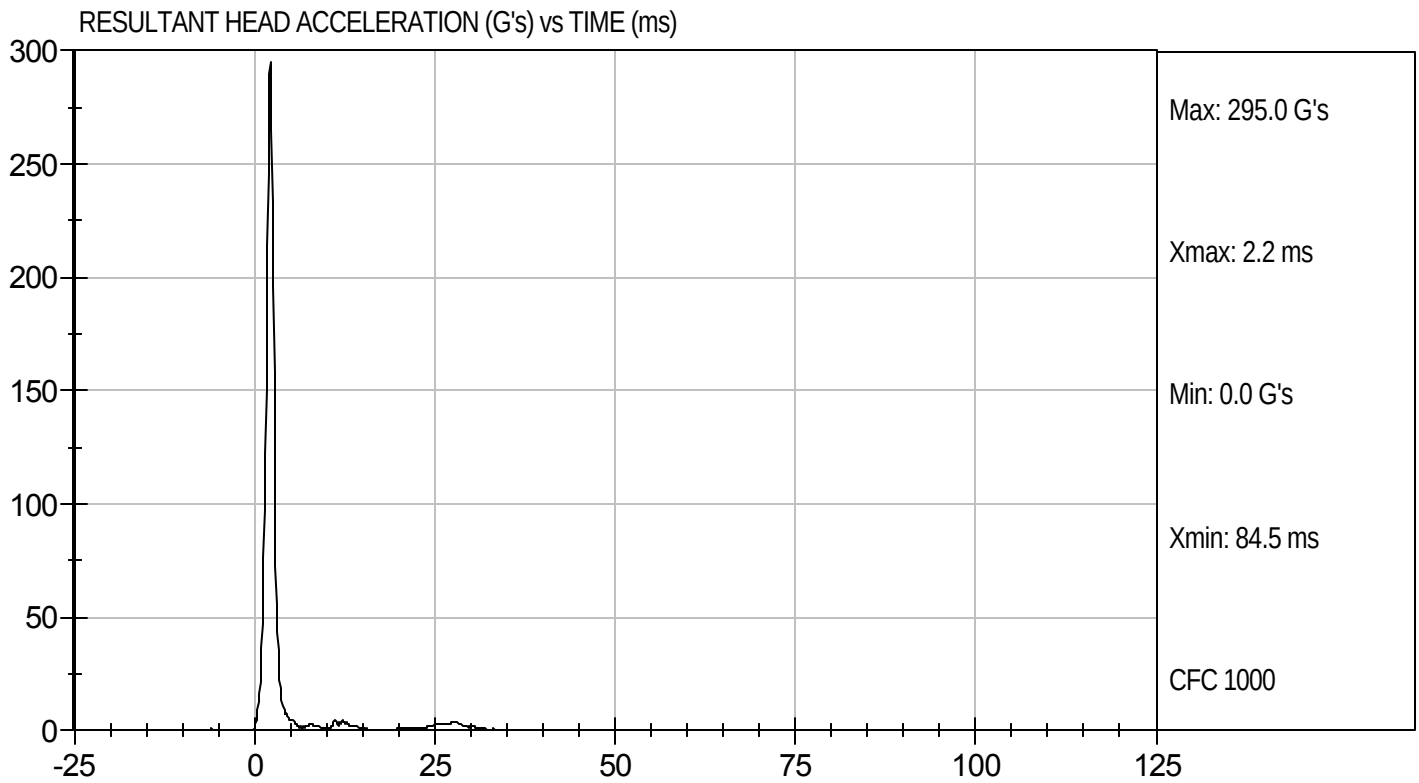
12/21/11
Test Date


Approved By



Test Desc: Head Drop
Component ID: D114361

Test Date: 12/21/11
Velocity: 0 ft/s, 0 m/s



MGA RESEARCH CORPORATION
NECK FLEXION TEST
HYBRID III 5TH PERCENTILE

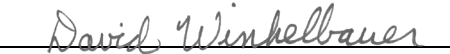
ATD Serial No: 634

Test I.D: D114362

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	28	Pass
Pendulum Speed		m/s	6.89 to 7.13	7.06	Pass
Pendulum Pulse	10 ms	m/s	2.1 to 2.5	2.4	Pass
	20 ms	m/s	4.0 to 5.0	4.6	Pass
	30 ms	m/s	5.8 to 7.0	6.4	Pass
D Plane Rotation	Max	deg	77 to 91	78	Pass
Occipital Condyle Moment within Deflection Corridor		Nm	69 to 83	70	Pass
Positive Moment Time Curve Decay to 10 Nm		ms	80 to 100	83	Pass
Overall Results				Pass	


Laboratory Technician

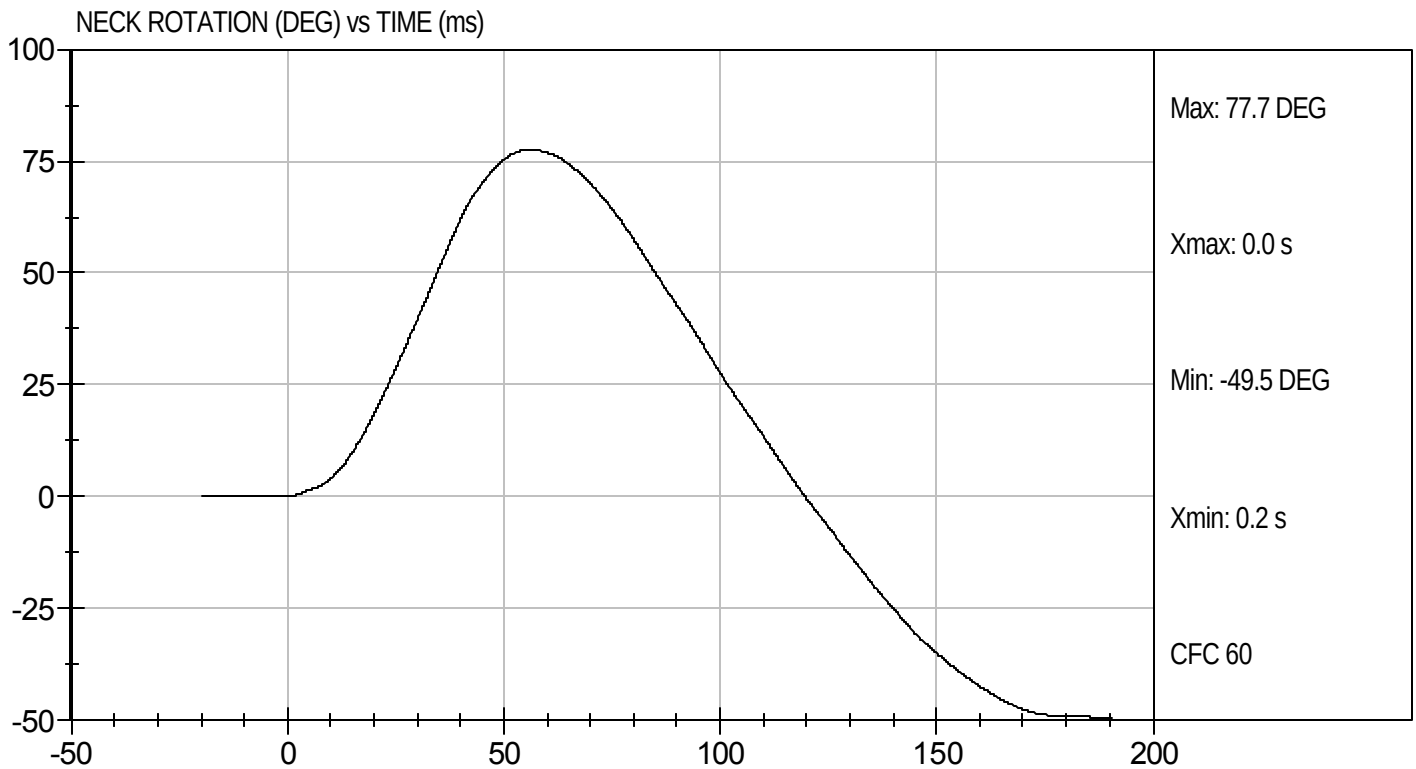
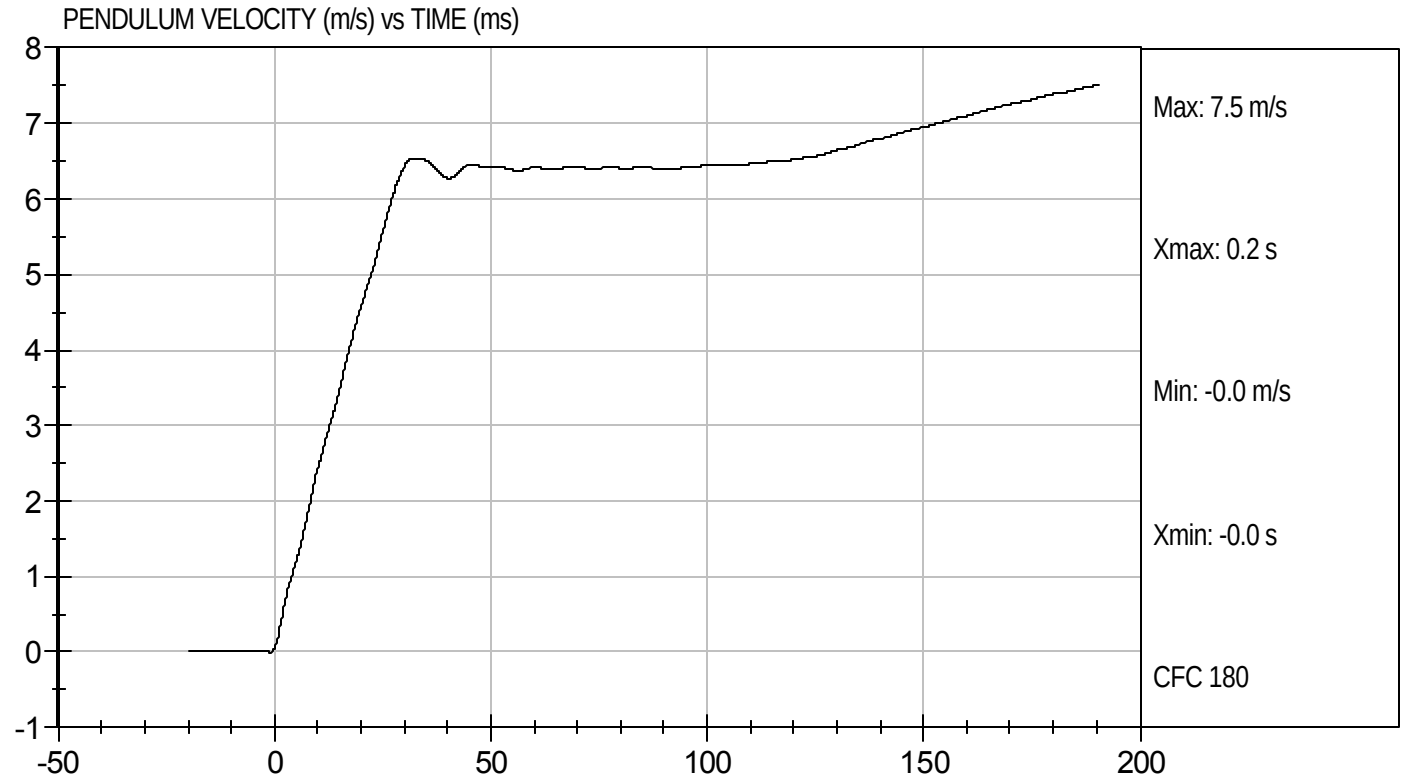
12/22/11
Test Date


Approved By



Test Desc: Neck Flexion
Component ID: D114362

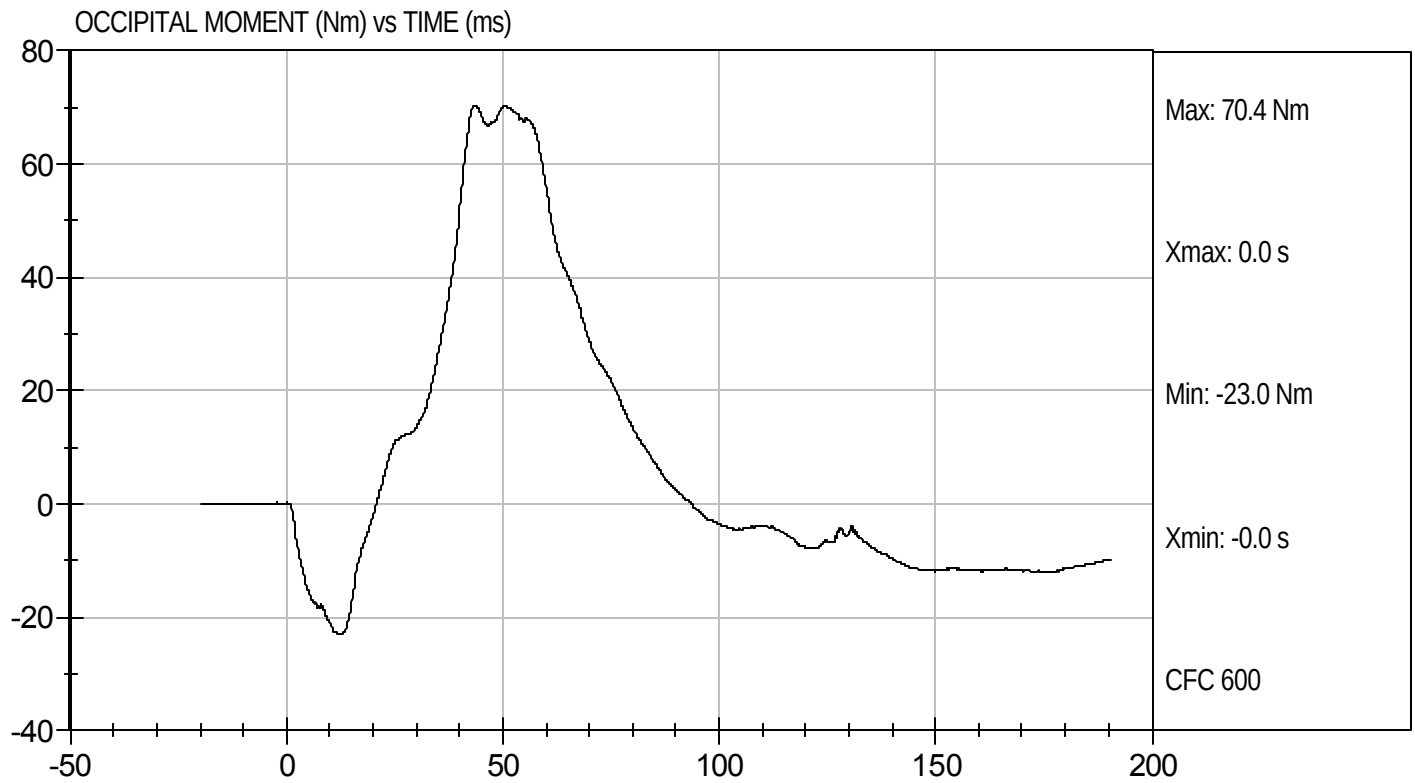
Test Date: 12/22/11
Velocity: 23.15 ft/s, 7.06 m/s





Test Desc: Neck Flexion
Component ID: D114362

Test Date: 12/22/11
Velocity: 23.15 ft/s, 7.06 m/s



MGA RESEARCH CORPORATION

NECK EXTENSION TEST

HYBRID III 5TH PERCENTILE

ATD Serial No: 634Test I.D: D114363

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	28	Pass
Pendulum Speed		m/s	5.95 to 6.19	6.12	Pass
Pendulum Pulse	10 ms	m/s	1.5 to 1.9	1.7	Pass
	20 ms	m/s	3.1 to 3.9	3.4	Pass
	30 ms	m/s	4.6 to 5.6	4.8	Pass
D Plane Rotation	Max	deg	99 to 114	100	Pass
Occipital Condyle Moment within Deflection Corridor		Nm	-65 to -53	-53	Pass
Negative Moment Time Curve Decay to -10 Nm		ms	94 to 114	103	Pass
Overall Results					Pass

Jessica Hall
Laboratory Technician

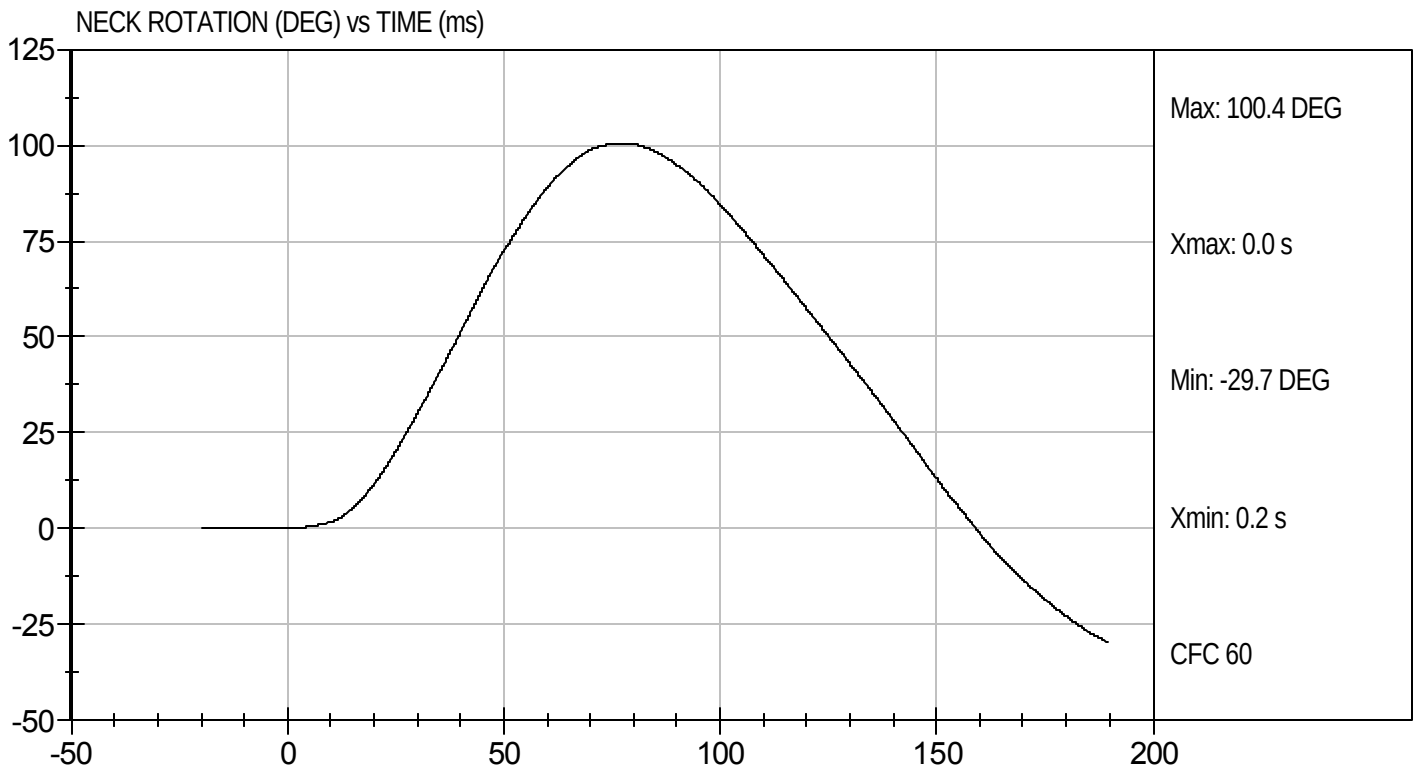
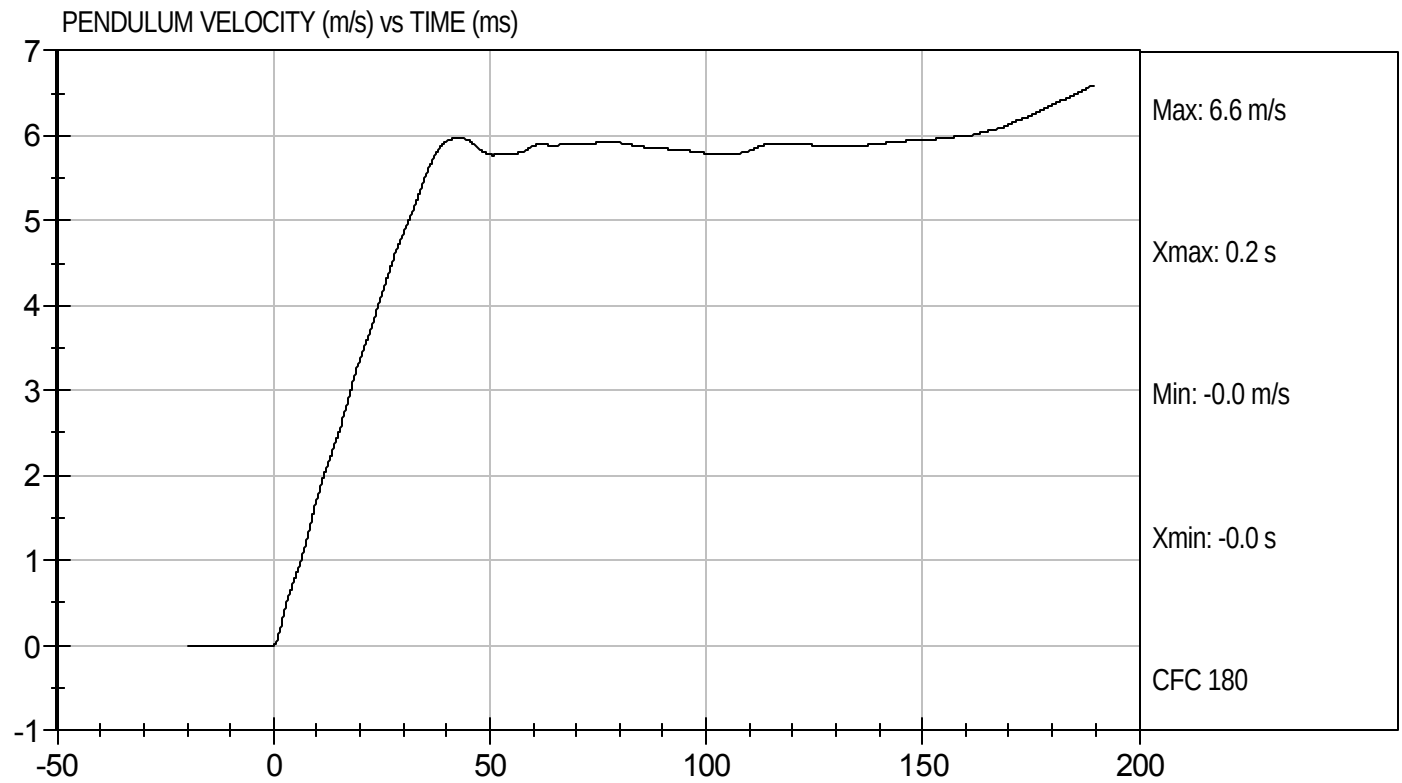
12/22/11
Test Date

David Winkelbauer
Approved By



Test Desc: Neck Extension
Component ID: D114363

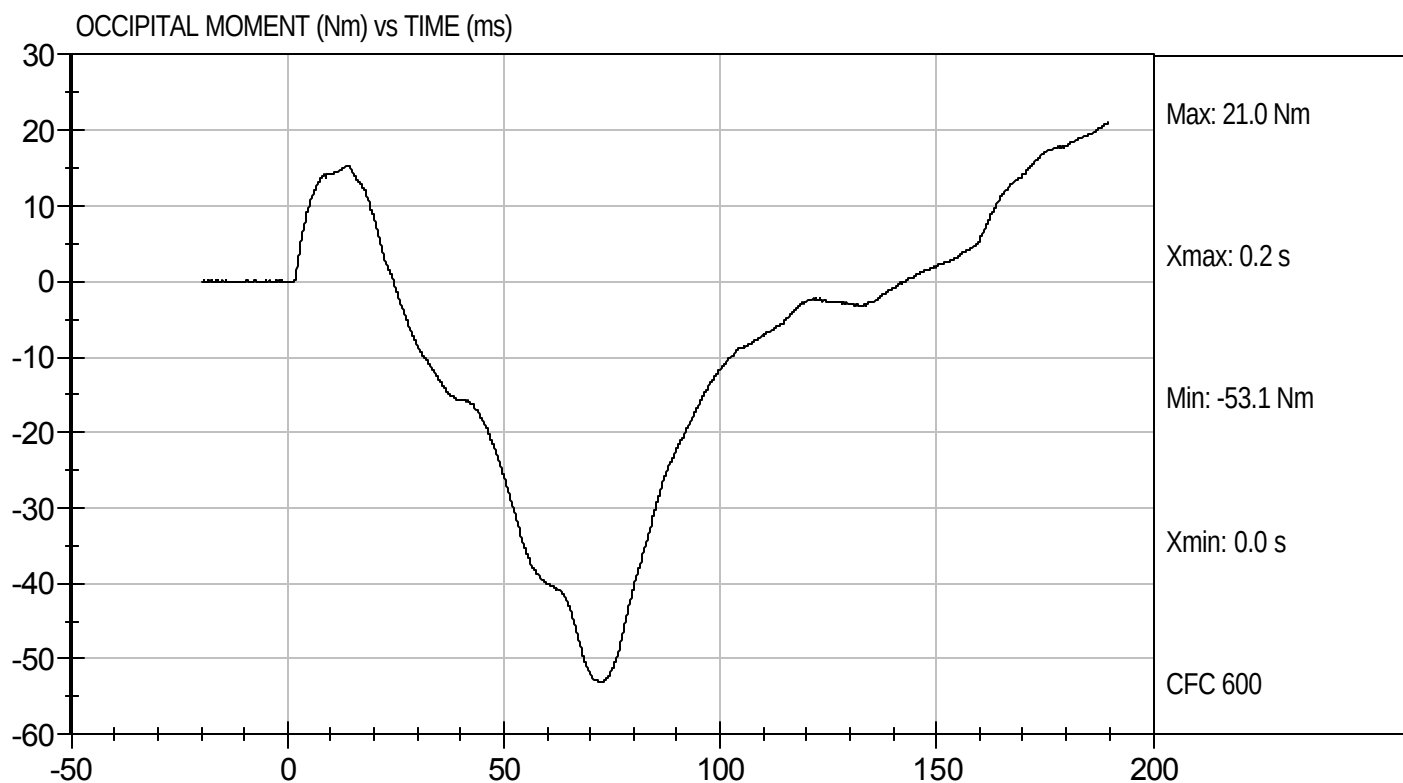
Test Date: 12/22/11
Velocity: 20.08 ft/s, 6.12 m/s





Test Desc: Neck Extension
Component ID: D114363

Test Date: 12/22/11
Velocity: 20.08 ft/s, 6.12 m/s

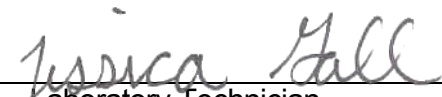


MGA RESEARCH CORPORATION
THORAX IMPACT
HYBRID III 5TH PERCENTILE

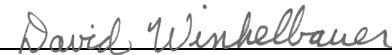
ATD Serial No: 634

Test I.D: D114364

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Relative Humidity	%	10 to 70	29	Pass
Probe Speed	m/s	6.59 to 6.83	6.77	Pass
Peak Deflection	mm	50 to 58	52	Pass
Peak Resistive Force w/in Deflection Corridor	kN	3.9 to 4.4	4.19	Pass
Internal Hysteresis	%	69 to 85	69	Pass
Peak Force 18 mm - 50 mm	N	<= 4,600 N	4191	Pass
			Overall Test Results	Pass


Laboratory Technician

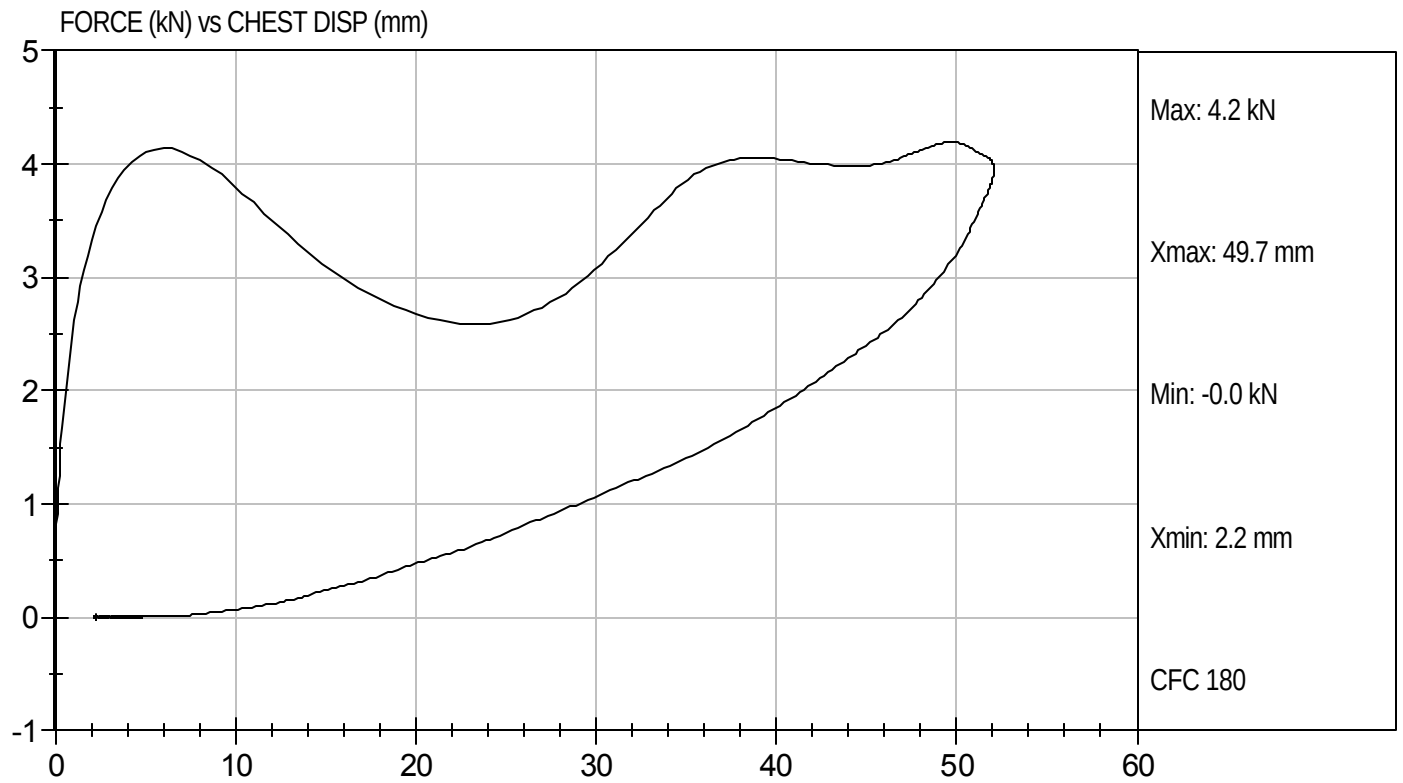
12/22/11
Test Date


Approved By



Test Desc: Thorax Impact
Component ID: D114364

Test Date: 12/22/11
Velocity: 22.22 ft/s, 6.77 m/s



MGA RESEARCH CORPORATION
RIGHT KNEE IMPACT TEST
HYBRID III 5TH PERCENTILE

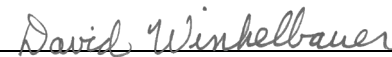
ATD Serial No: 634

Test I.D: D114365

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Speed	m/s	2.07 to 2.13	2.12	Pass
Maximum Force	kN	3.45 to 4.06	3.91	Pass
Overall Test Results				Pass


Laboratory Technician

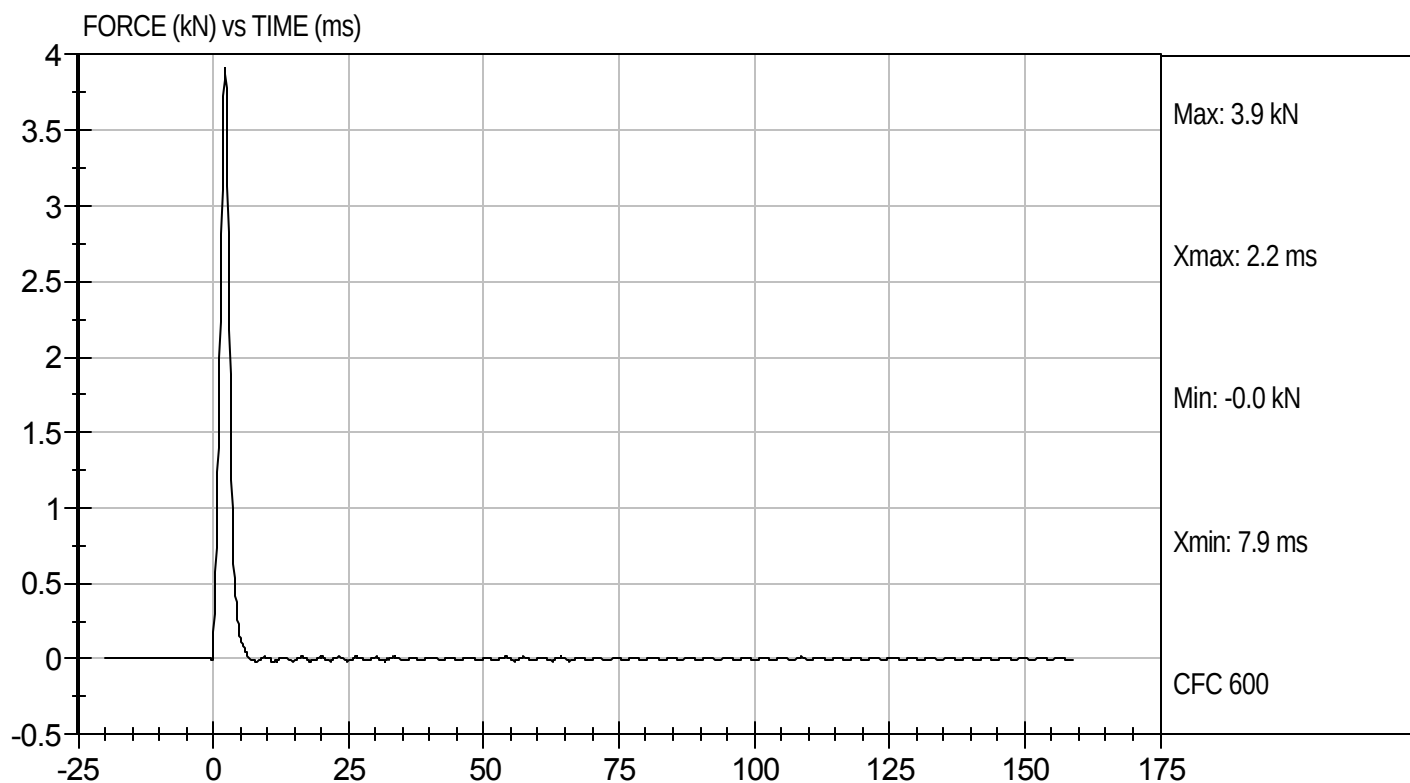
12/21/11
Test Date


Approved By



Test Desc: Right Knee
Component ID: D114365

Test Date: 12/21/11
Velocity: 6.97 ft/s, 2.12 m/s



MGA RESEARCH CORPORATION

LEFT KNEE IMPACT TEST

HYBRID III 5TH PERCENTILE

ATD Serial No: 634

Test I.D: D114366

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	28	Pass
Probe Speed	m/s	2.07 to 2.13	2.12	Pass
Maximum Force	kN	3.45 to 4.06	3.69	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

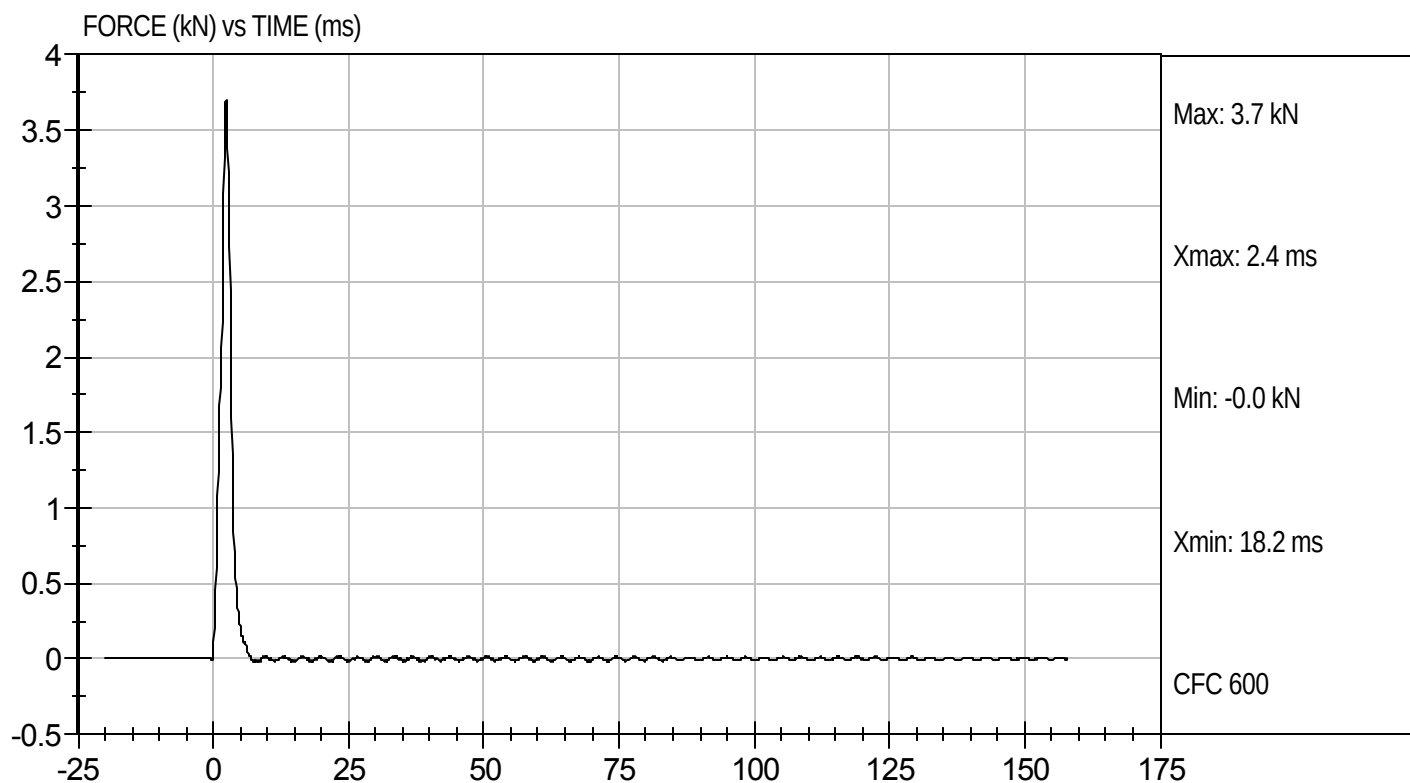
12/21/11
Test Date

David Winkelbauer
Approved By



Test Desc: Left Knee
Component ID: D114366

Test Date: 12/21/11
Velocity: 6.97 ft/s, 2.12 m/s



MGA RESEARCH CORPORATION
TORSO FLEXION TEST
HYBRID III 5TH PERCENTILE

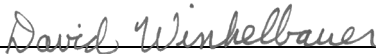
ATD Serial No: 634

Test I.D: D114367

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	29	Pass
Initial Angle	deg	0 to 20	13	Pass
Return Angle	deg	+/- 8	6	Pass
Force at 45 deg	N	320 to 390	388	Pass
Upper Torso Deflection Rate	Deg/sec	0.5 to 1.5	1.0	Pass
Overall Result			Pass	


Laboratory Technician

12/22/11
Test Date


Approved By