

REPORT NUMBER: SNCAP-CAL-10-1

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**CAMI AUTOMOTIVE INC.
2010 CHEVROLET EQUINOX LS
4-DOOR SUV**

NHTSA NUMBER: MA0117

**PREPARED BY:
CALSPAN CORPORATION
P.O. BOX 400
BUFFALO, NEW YORK 14225**



Test Date: September 24, 2009

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
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WASHINGTON, D.C. 20590**

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Technical Report Documentation Page

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16. Abstract A 55/28 kph 90° Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2010 Chevrolet Equinox LS 4-Door SUV in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on September 24, 2009. The impact velocity of the Moving Deformable Barrier (MDB) was 62.72 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 22°C. The target vehicle's maximum post test static crush was 243 mm at level 3. The test vehicle's occupant performance is as follows: <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>DRIVER</u></th> <th style="text-align: center;"><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">46.3</td> <td style="text-align: center;">30.1</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">49.3</td> <td style="text-align: center;">33.1</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">41.6</td> <td style="text-align: center;">43.5</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">45</td> <td style="text-align: center;">38</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">58</td> <td style="text-align: center;">48</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">179.4</td> <td style="text-align: center;">192.1</td> </tr> </tbody> </table> The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.					<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	46.3	30.1	Left Lower Rib (LLR) Accel., g	49.3	33.1	Lower Spine (T ₁₂) Accel., g	41.6	43.5	Thoracic Trauma Index (TTI)	45	38	Pelvis (PEV) Accel., g	58	48	HIC	179.4	192.1
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17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590																						
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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2007 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00126. The purpose of this test was to evaluate side impact protection in a 2010 Chevrolet Equinox LS 4-Door SUV manufactured by General Motors Corporation. The side impact test was conducted in accordance with the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated July 1997.

SECTION 2

SUMMARY OF NCAP SIDE IMPACT TEST

A model year 2010 Chevrolet Equinox LS 4-Door SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.72 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 1996.0 kg and the test weight of the MDB was 1362.5 kg. The test was conducted at the Calspan Corporation Transportation Sciences Center on September 24, 2009.

One (1) real-time motion picture camera and ten (10) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/HIII's) can be found in Appendix A.

Two 50th percentile adult male SID/HIII's were placed in the driver (P1) and left rear passenger (P4) designated seating positions according to instructions specified in the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated July 1997. Each SID/HIII was instrumented in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y and Z axes primary and redundant)
- Upper Neck load cell (Fx, Fy, Fz, Mx, My, Mz)

The test vehicle was instrumented with twenty-one (21) structural accelerometers and the MDB was instrumented with five (5) accelerometers.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 243 mm at level 3, 1500 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 270 and 269 respectively, were calibrated just prior to this test.

Test data and observations are presented in this section of the report. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIII's, vehicle, and MDB response data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the test equipment information.

The occupant data is summarized below:

ATD position	HIC(36)	T ₁	T ₂	TTI (G's)	Peak Pelvis (G's)
Driver	179.4	54.9	78.8	45	58
Passenger	192.1	46.9	76.8	38	48

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	NA	NA
Side Torso Airbag	Yes	Yes	NA	NA
Side Head/Torso Combination Airbag	NA	NA	NA	NA
Curtain Airbag	Yes	Yes	Yes	Yes

The test instrumentation data listed in Appendix B can be found on the NHTSA website:
www.nhtsa.dot.gov.

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

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009

TEST VEHICLE INFORMATION AND VEHICLE OPTIONS

Make	General Motors Corporation	Driver Front Airbag	Yes
Model	Equinox LS	Driver Side Curtain Airbag	Yes
Body Style	4-Door SUV	Driver Side Torso Airbag	Yes
NHTSA No.	MA0117	Driver Pretensioners	Yes
VIN	2CNALBEW7A6227002	Driver Load Limiters	Yes
Color	Black	Driver Power Seats	Yes
Engine Disp.(L)	2.4	Rear Pass. Side Curtain Airbag	Yes
Engine Cylinders	4	Rear Pass. Side Torso Airbag	No
Engine Placement	Lateral	Rear Pass. Pretensioners	No
Transmission Type	Automatic	Rear Pass. Load Limiters	No
Transmission Speeds	6	Rear Pass. Power Seats	NA
Final Drive	Front	Tilt Wheel	Yes
Air Conditioning	Yes	Anti-lock Brakes	Yes
Power Steering	Yes	Traction Control	Yes
Power Brakes	Yes	Power Windows	Yes
Delivery Date	9/10/09	Power Door Locks	Yes
Odometer Reading (km)	48	Automatic Door Locks (ADL)	Yes
Dealer	West-Herr Chevrolet Orchard Park, NY	Owner's Manual Details Instructions on Disabling ADLs	No

DATA FROM CERTIFICATION LABEL

Manufactured By	CAMI Automotive Inc.	GVWR (kg)	2250
Date of Manufacture	08/09	GAWR Front (kg)	1175
		GAWR Rear (kg)	1240

VEHICLE CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bucket		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				531.0
Cargo Wt. (RCLW) (kg)				136.0 Max

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

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			Fully Loaded (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	494.0	375.0		549.0	497.0		550.0	496.0	
Right	kg	476.0	361.0		500.5	460.0		499.5	450.5	
Ratio	%	56.9	43.1		52.3	47.7		52.6	47.4	
Totals	kg	970.0	736.0	1706.0	1049.5	957.0	2006.5	1049.5	946.5	1996.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1706.0
Weight of 2 P572E ATDs (81.2 kg each)	kg	162.4
Rated Cargo/Luggage Weight (RCLW)	kg	136.0
Calculated Vehicle Target Weight (TVTW)	kg	2004.4

* Actual As Tested Weight (ATW) will be TVTW -4.5/-9.1 kg

Weight of Ballast (including instrumentation package and cameras): 127.6 kg

TEST VEHICLE ATTITUDES

	Units	LF	RF	LR	RR
As Delivered	mm	835	838	865	873
Fully Loaded	mm	815	829	832	846
As Tested	mm	816	830	837	848

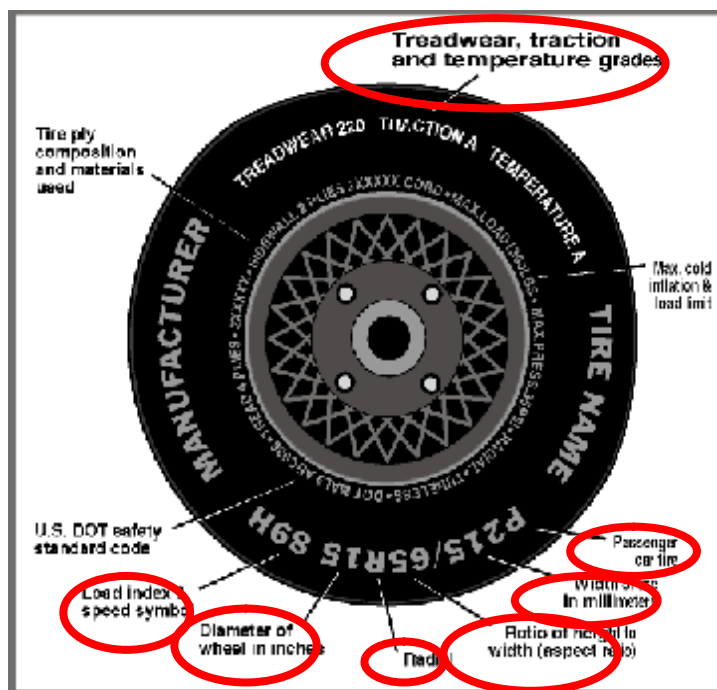
TEST VEHICLE VERTICAL IMPACT LINE AND CG

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2856
Target Impact Point Aft of Front Axle	mm	488
Actual Impact Point Aft of Front Axle	mm	488
As Tested CG (aft of front axle)	mm	1354

DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	240	240
Recommended Tire Size	P225/65R17	P225/65R17
Tire Size on Vehicle	P225/65R17	P225/65R17
Tire Manufacturer	Michelin	Michelin
Tire Name	Latitude Tour	Latitude Tour
Tire Type	Passenger	Passenger
Tire Width (mm)	225	225
Ratio of Height to Width (aspect ratio)	65	65
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index & Speed Symbol	100T	100T
Treadwear	720	720
Traction Grade	A	A
Temperature Grade	B	B

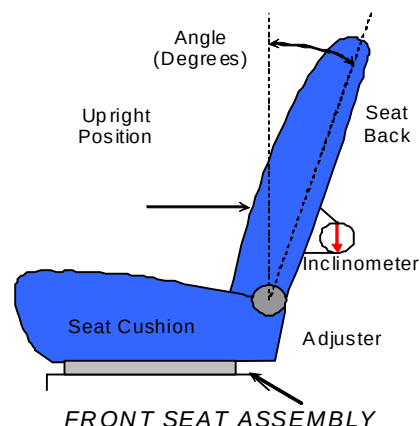
DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle.

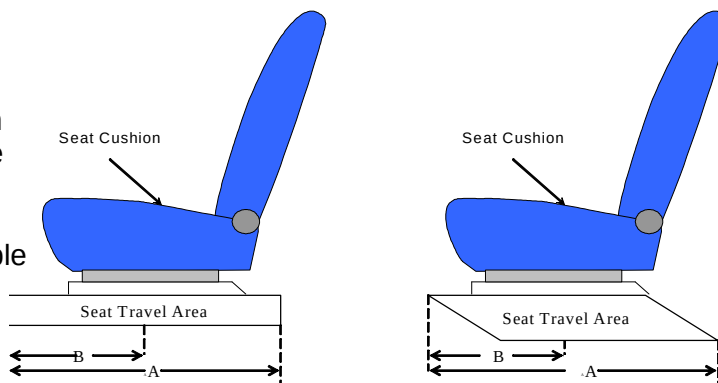


SEAT BACK POSITION

	Driver Seat	Rear Seat
Test Detent (forward-most detent defined as 0)	Not measured	0
Angle (deg. from forward-most locking position)	2.8 degrees	18 degrees
Alternative Measurements to Verify Test Position	Angle measured along head restraint post	None

SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for both the driver and passenger.



SEAT FORE/AFT POSITION

	Driver Seat	Rear Seat
Total Fore/Aft Travel (A) (mm)	344	200
Test Position (B) (mm)	172	100
Test Detent (forward-most detent defined as 0)	Not Applicable	10
Total Number of Detents (including 0)	Not Applicable	21

DATA SHEET NO. 3 (CONTINUED)
TEST VEHICLE INFORMATION

Test Vehicle: 2010 Chevrolet Equinox LS

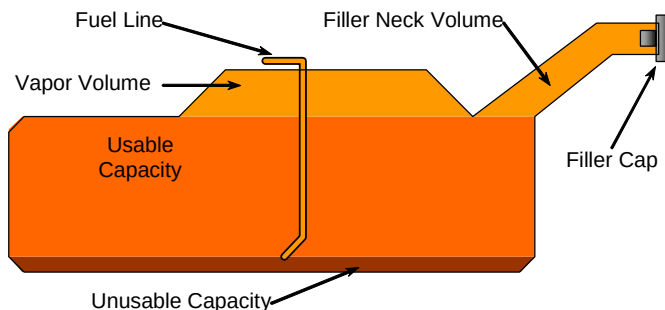
NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009

FUEL SYSTEM INFORMATION

The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat.



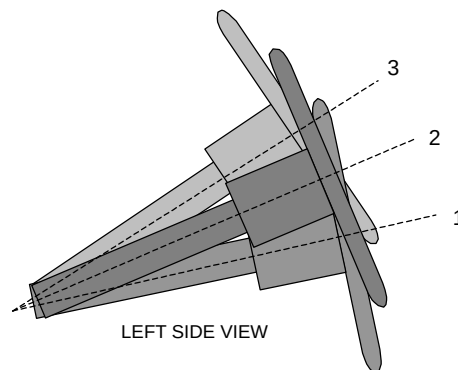
VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard" Fuel Tank	71.2
Usable Capacity of "Optional" Fuel Tank	-
Stoddard Used For Test (92%-94% of Fuel Tank Usable Capacity)	66.2

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

	Fore/Aft Position (mm)	Tilt (degrees)	Tilt (detent)
Lowermost Position No. 1	0	22.8	Not Applicable
Geometric Center Position No. 2 *	28	24.3	Not Applicable
Uppermost Position No. 3	56	25.8	Not Applicable

* Test position

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

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Face	4120
Wheel base of Framework Carriage	2590
Tread of Framework Carriage (front & rear)	1875
C.G. Location aft of Front Axle	1104

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	409.5	281.5	
Right	kg	372.5	299.0	
Ratio	%	57.4	42.6	
Totals	kg	782.0	580.5	1362.5

MDB SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.72
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.72
Impact angle with respect to impactor	°	88.5° to 91.5°	89.4

POST TEST OBSERVATIONS**MDB LEFT EDGE IMPACT POINT DATA**

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	0 mm
Vertical Offset	mm	+/-20	6 mm above

DATA SHEET NO. 5
POST TEST OBSERVATIONS

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 270	SID/HIII / 269
Head Contact	Side of Head – Side Curtain Airbag	Side of Head – Side Curtain Airbag
Upper Torso Contact	Seat Torso Airbag	Rear Left Door
Lower Torso Contact	Seat Torso Airbag	Rear Left Door
Left Knee Contact	Left Front Door	Rear Left Door
Right Knee Contact	No Contact	No Contact

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Doors were unlocked	Doors were unlocked
Left Side Door Opening	Door remained closed and latched. Jammed shut	Door remained closed and latched. Jammed shut
Right Side Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	None
Window Damage	Left Front Window Intact; Left Rear Window shattered
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	NA	NA
Side Torso Airbag	Yes	Yes	NA	NA
Side Head/Torso Combination Airbag	NA	NA	NA	NA
Curtain Airbag	Yes	Yes	Yes	Yes

DATA SHEET NO. 6

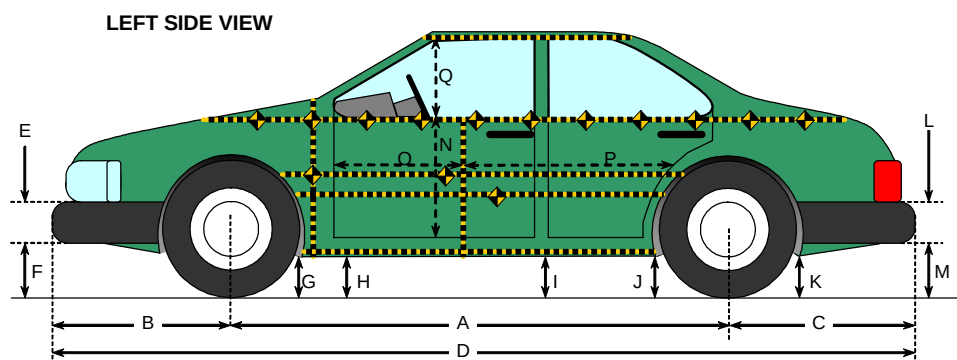
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009



All Measurements in mm

Code	Measurement Description	Pre-Test (delivered)	Pre-Test (as tested)	Post-Test (as tested)	Difference
A	Wheelbase	2856	2856	2844	12
B	Front Axle to FSOV	946	946	956	-10
C	Rear Axle to RSOV	969	969	968	1
D	Total Length at Centerline	4770	4770	4769	1
E	Front Bumper Thickness	120	120	120	0
F	Front Bumper Bottom to Ground	534	429	419	10
G	Sill Height at Front Wheel Well	296	285	283	2
H	Sill Height at Front Door Leading Edge	289	277	279	-2
I	Sill Height at "B" Pillar	295	279	290	-11
J1	Sill Height at Rear Wheel Well	284	258	283	-25
J2	Pinch Weld Height at Rear Wheel Well	317	290	291	-1
K	Sill Height Aft of Rear Wheel Well	307	268	300	-32
L	Rear Bumper Thickness	120	120	120	0
M	Rear Bumper Bottom to Ground	555	508	544	-36
N	Sill Height to Window Bottom Sill	765	765	722	43
O	Front Door Leading Edge to Impact CL	773	773	761	12
P	Rear Door Trailing Edge to Impact CL	1285	1285	1201	84
Q	Front Window Opening	461	461	508	-47
R	Right Side Length	4595	4595	4598	-3
S	Left Side Length	4596	4596	4586	10
T	Vehicle Width at "B" Post	1791	1791	1599	192

DATA SHEET NO. 7

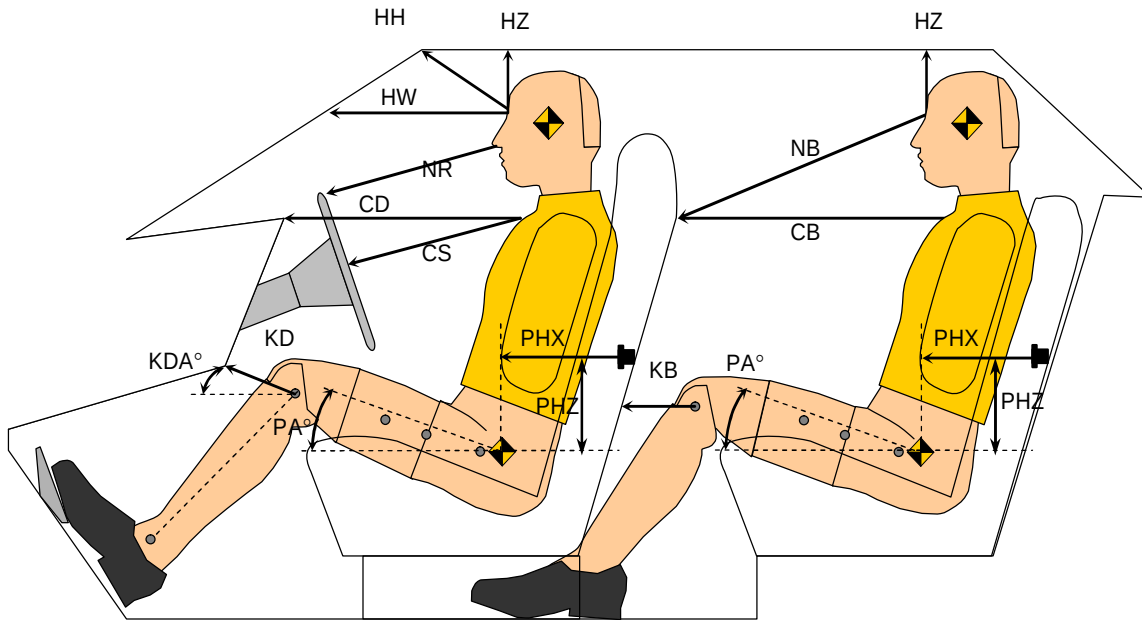
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009

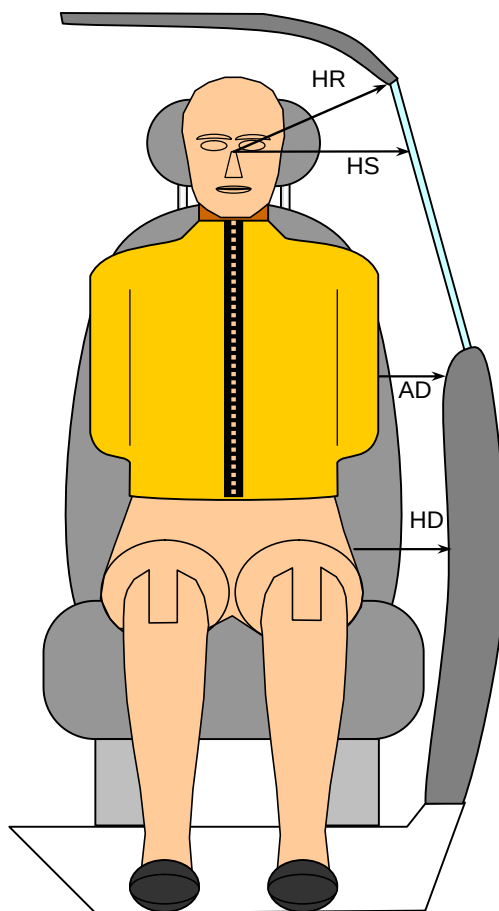


Driver Code	Pass. Code	Measurement Description	Driver S/N 270		Passenger S/N 269	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	436			
HW		Head to Windshield	738			
HZ	HZ	Head to Roof	218		193	
NR	NB	Nose to Rim/Nose to Seatback	415		607	
CD	CB	Chest to Dash or Seatback	540		543	
CS		Chest to Steering Wheel	308			
KDL	KBL	Left Knee to Dash or Seatback	161	25	232	22
KDR	KBR	Right Knee to Dash or Seatback	159	22	225	20
PA	PA	Pelvic Angle		23.3		23.5
PHX	PHX	H-Point to Striker (X-Axis)	204		229	
PHZ	PHZ	H-Point to Striker (Z-Axis)	115		212	

DATA SHEET NO. 8

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009



FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 270	Passenger S/N 269
HR	Head to Side Header	mm	212	202
HS	Head to Side Window	mm	340	345
AD ₁	Arm to Door (at upper rib level)	mm	108	103
AD ₂	Arm to Door (at lower rib level)	mm	118	111
HD	H-Point to Door	mm	155	122

DATA SHEET NO. 9

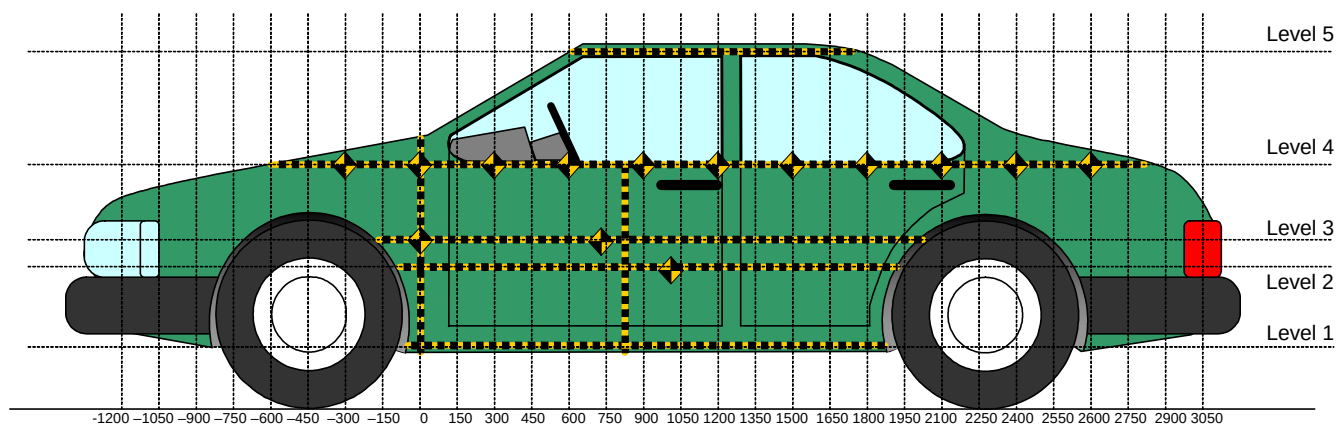
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 750 mm.
All measurements below in mm.

Level	Measurement Description	Maximum Exterior Static Crush	Height Above Ground	Distance From Impact
1	Sill Top	114	399	1800
2	Occupant H-Point	207	641	1650
3	Mid Door	243	759	1500
4	Window Sill	142	1049	1500
5	Window	-4	1586	1050
	Maximum Penetration	243		

DATA SHEET NO. 10

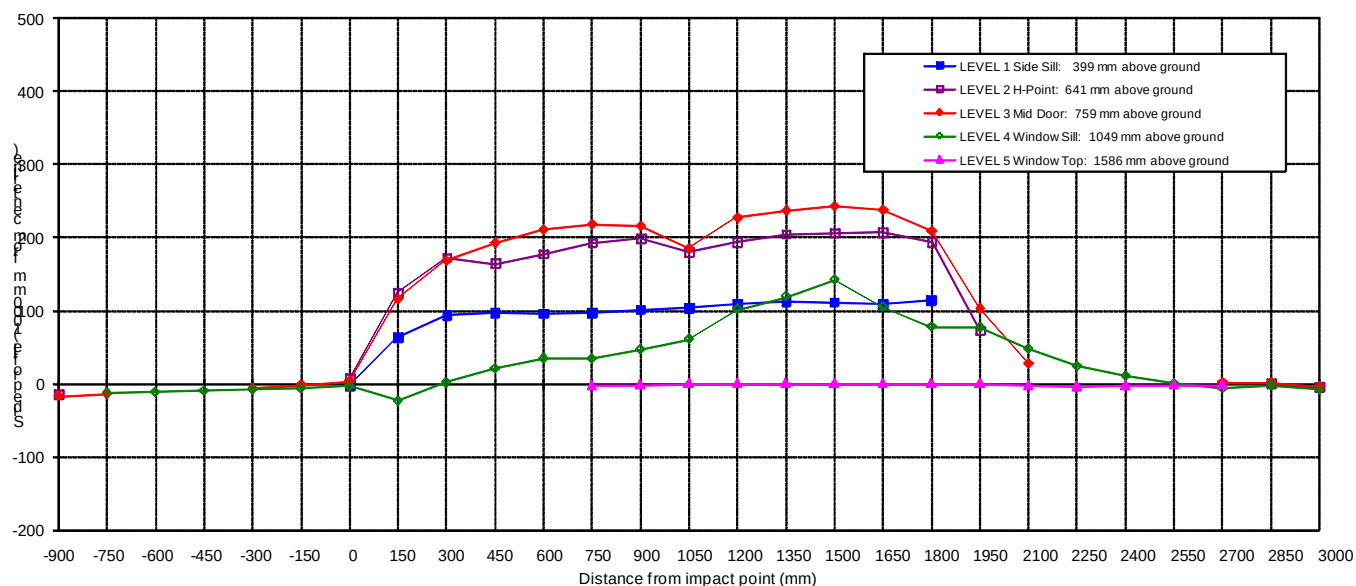
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009



NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																												
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1	399	PRE	--	--	--	--	--	--	104	128	134	135	136	137	137	140	142	142	144	147	130	--	--	--	--	--	--	--	--	
SIDE		POST	--	--	--	--	--	--	101	191	227	232	232	234	238	244	251	254	255	256	244	--	--	--	--	--	--	--	--	
SILL		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	-3	63	93	97	96	97	101	104	109	112	111	109	114	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2 H POINT	641	PRE	99	--	--	--	--	--	92	109	106	104	103	102	102	102	103	103	105	106	102	79	--	--	--	--	--	--	116	161
		POST	83	--	--	--	--	--	99	233	278	268	280	294	300	282	296	307	311	313	295	151	--	--	--	--	--	--	116	156
		CRUSH	-16	N/A	N/A	N/A	N/A	N/A	7	124	172	164	177	192	198	180	193	204	206	207	193	72	N/A	N/A	N/A	N/A	N/A	N/A	0	-5
LEVEL 3 MID DOOR	759	PRE	139	85	--	--	78	83	107	113	109	106	103	102	102	101	101	101	101	103	105	85	72	--	--	--	--	86	124	166
		POST	122	71	--	--	72	82	111	229	277	299	314	320	318	286	328	338	344	341	314	188	100	--	--	--	88	126	162	
		CRUSH	-17	-14	N/A	N/A	-6	-1	4	116	168	193	211	218	216	185	227	237	243	238	209	103	28	N/A	N/A	N/A	2	2	-4	
LEVEL 4 WINDOW SILL	1049	PRE	--	362	292	229	214	204	193	184	175	167	159	153	146	139	134	130	125	127	129	142	135	137	142	149	156	169	197	
		POST	--	350	281	220	206	198	190	161	177	188	194	187	193	200	236	249	267	232	207	219	183	161	153	150	150	167	189	
		CRUSH	N/A	-12	-11	-9	-8	-6	-3	-23	2	21	35	34	47	61	102	119	142	105	78	77	48	24	11	1	-6	-2	-8	
LEVEL 5 WINDOW TOP	1586	PRE	--	--	--	--	--	--	--	--	--	--	--	405	396	393	389	386	383	380	379	379	380	381	384	390	411	--	--	
		POST	--	--	--	--	--	--	--	--	--	--	--	402	394	393	389	386	383	380	379	379	377	377	381	388	409	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-3	-2	0	0	0	0	0	0	0	-3	-4	-3	-2	-2	N/A	N/A	

DATA SHEET NO. 11

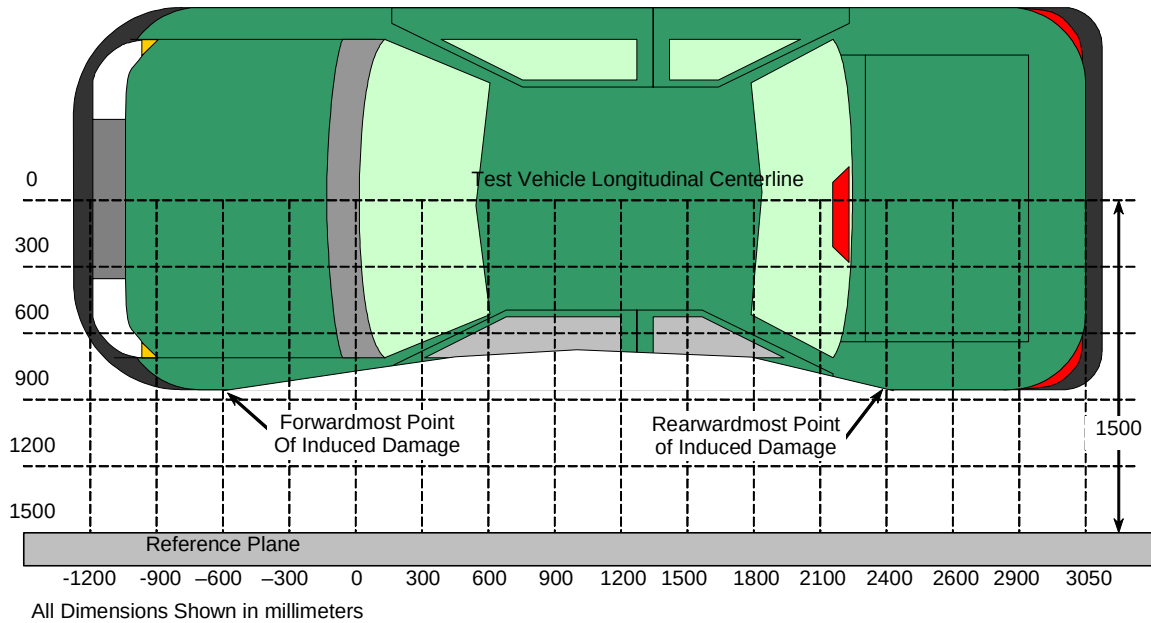
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1 (LR)	2550	4	149	150	1
2	2040	4	138	197	59
3	1530	3	101	343	242
4	1020	3	101	292	191
5	510	3	105	305	200
6 (LF)	0	2	92	99	7

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

DATA SHEET NO. 12

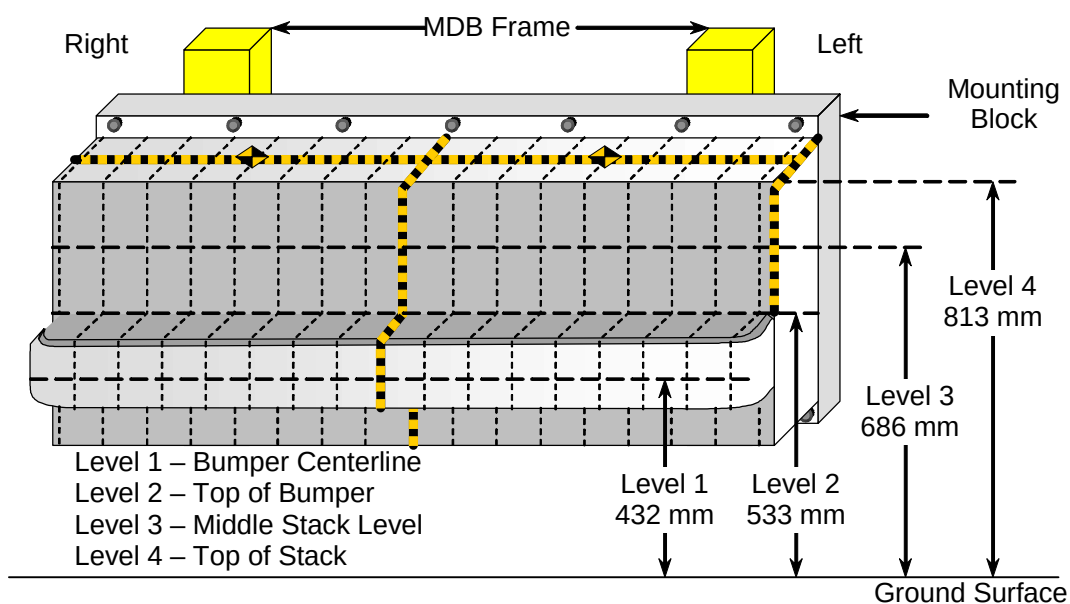
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009



NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)							
			-800	-700	-600	-500	-400	-300	-200	-100	0	100	200	300	400	500	600	700	800
LEVEL 4 TOP STACK	811	PRE	411	412	412	412	412	412	413	413	413	413	413	413	413	413	413	413	412
		POST	329	349	367	377	378	360	333	339	357	370	368	365	357	348	338	315	270
		CRUSH	82	63	45	35	34	52	80	74	56	43	45	48	56	65	75	98	142
LEVEL 3 MID LEVEL	682	PRE	411	411	412	412	412	412	412	412	413	412	412	412	412	412	412	412	412
		POST	333	351	359	360	364	363	354	344	356	375	379	378	373	366	356	335	314
		CRUSH	78	60	53	52	48	49	58	68	57	37	33	34	39	46	56	77	98
LEVEL 2 TOP BUMPER	542	PRE	411	412	412	412	412	412	412	412	413	412	412	412	412	412	412	412	412
		POST	283	286	287	289	291	293	300	304	301	307	311	313	317	320	323	322	312
		CRUSH	128	126	125	123	121	119	112	108	112	105	101	99	95	92	89	90	100
LEVEL 1 MID BUMPER	430	PRE	501	513	513	513	513	513	513	514	514	514	514	514	514	514	514	514	505
		POST	269	287	289	292	295	293	299	304	307	311	314	318	322	325	327	319	295
		CRUSH	232	226	224	221	218	220	214	210	207	203	200	196	192	189	187	195	210

*Heights measured above ground level.

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS

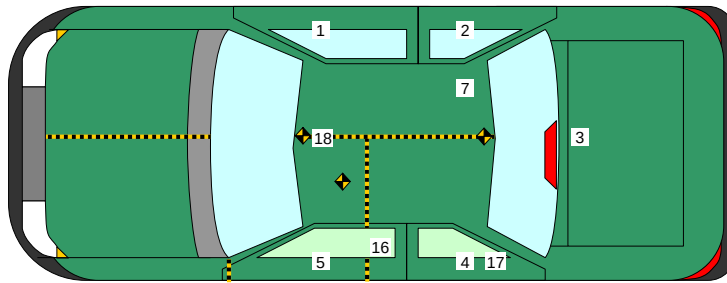
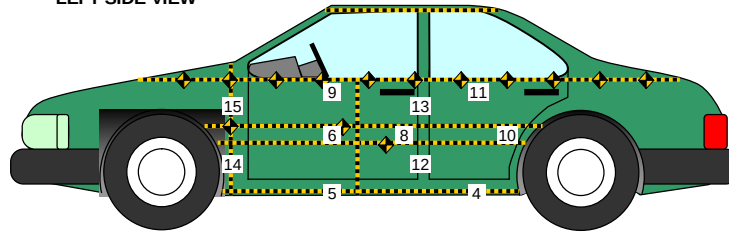
Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009

LEFT SIDE VIEW



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2922	655	391
2	Right Sill at Rear Seat	1967	656	389
3	Rear Floorpan Above Axle	1017	8	728
4	Left Sill at Rear Door	1946	-662	383
5	Left Sill at Front Door	2950	-658	378
6	Left Front Door C/L**	-	-	-
7	Rear Occupant Compartment	2140	420	363
8	Left Front Door Mid-Rear**	-	-	-
9	Left Front Door Upper C/L**	-	-	-
10	Left Rear Door Mid-Rear**	-	-	-
11	Left Rear Door Upper C/L**	-	-	-
12	Left Lower B-Post	2269	-688	540
13	Left Middle B-Post	2188	-686	1060
14	Left Lower A-Post	3271	-651	476
15	Left Middle A-Post	3220	-657	1148
16	Front Seat Track	2326	-578	460
17	Rear Seat Track or Structure	1018	-484	736
18	Vehicle CG	2639	31	697

Reference Points X - Test Vehicle Rear Bumper (+ forward)

Y - Test Vehicle Centerline (+ to right)

Z - Ground Plane (+ down)

** Accelerometer was not requested by the COTR.

DATA SHEET NO. 14

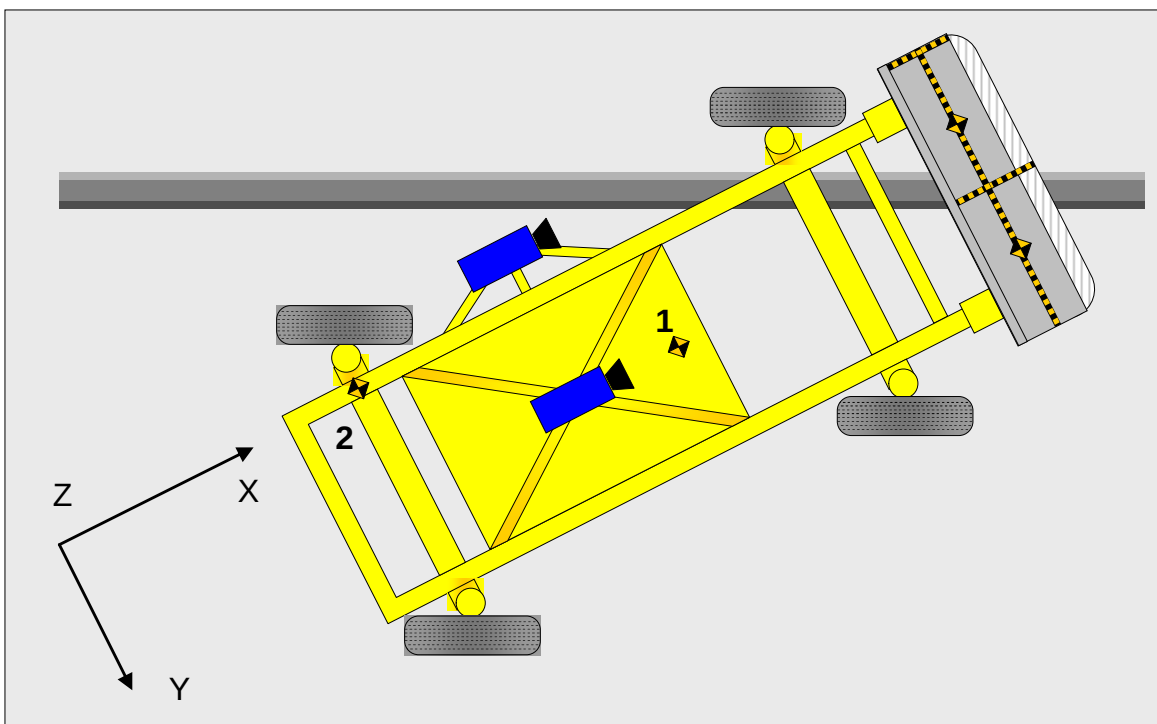
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	MDB CG	1859	0	-330
2	MDB Rear	386	-660	-660

Reference Points
 X - MDB Rear Bumper (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ down)

DATA SHEET NO. 15
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009

	Elements	Pre-Test (mm)
1	Total Length	4770
2	Total Width	1791
3	Bumper Top Height	530
4	Bumper Bottom Height	410
5	Longitudinal Member Top Height	574
6	Distance between Longitudinal Members	1093
7	Longitudinal Member Width	118
8	Engine Top Height	1025
9	Engine Bottom Height	225
10	Engine and gearbox width	579
11	Front bumper-engine distance	4770
12	Front shock absorber fixing height	909
13	Bonnet leading edge height	904
14	Front shock absorber fixing width	1169
15	Front bumper – front axle distance	946
16	Front axle – a pillar distance	548
17	A-pillar – B-pillar distance	1066
18	B-Pillar – rear axle distance	1242
19	B-pillar – C-pillar distance	1117
20	Roof sill bottom height	1493
21	Roof sill top height	1617
22	Floor sill bottom height	430
23	Floor sill top height	366

DATA SHEET NO. 16

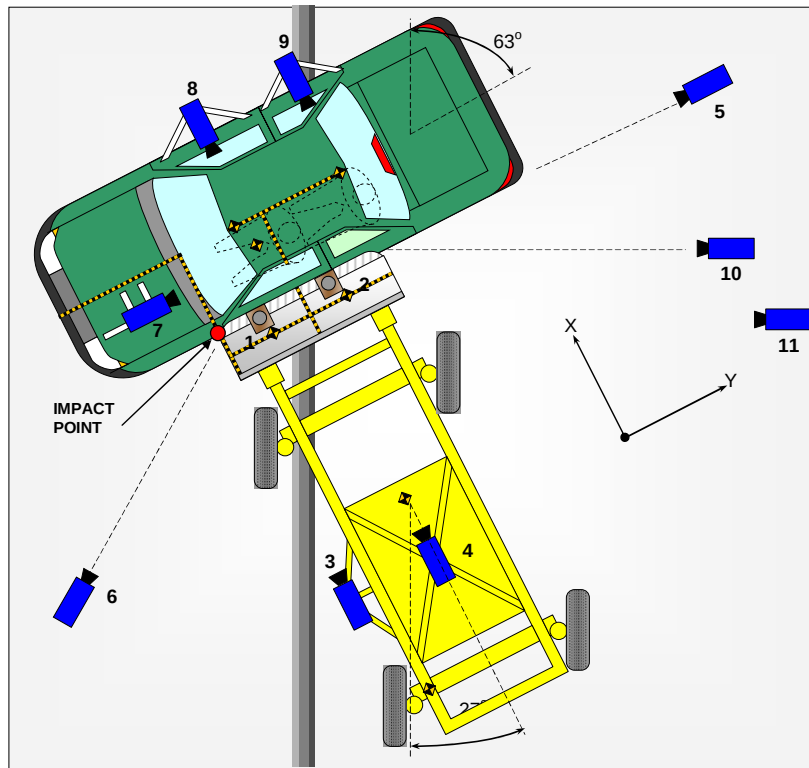
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2010 Chevrolet Equinox LS

NHTSA No. MA0117

Test Program: NCAP Side Impact

Test Date: September 24, 2009



No.	Camera View	Location (mm)			Angle (deg)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Overall	72	812	-4880	-90	8	1000
2	Overhead Close-up	195	855	-4880	-90	28	1000
3	MDB Onboard, Impact Point Close-up	-1470	0	-847	0	13	500
4	MDB Onboard, Centerline of Impact	-1140	838	-1587	-17	7.5	500
5	Right Side, Ground Level, Overall	-200	10870	970	-2	50	1000
6	Left Side, Ground Level, Overall	-4690	-2560	1000	-1	50	1000
7	Vehicle Onboard Front SID/HIII, Front	545	-550	1395	-7	25	500
8	Vehicle Onboard Front SID/HIII, Side	1600	760	1220	-7	12.5	500
9	Vehicle Onboard Rear SID/HIII, Side	1600	1745	1275	-5	12.5	500
10	Secondary Impact Point	-2580	1910	965	-2	25	1000
11	Real Time Coverage						30

Reference Points
 X - Impact Line
 Y - MDB Left Edge Impact Point
 Z - Ground Plane

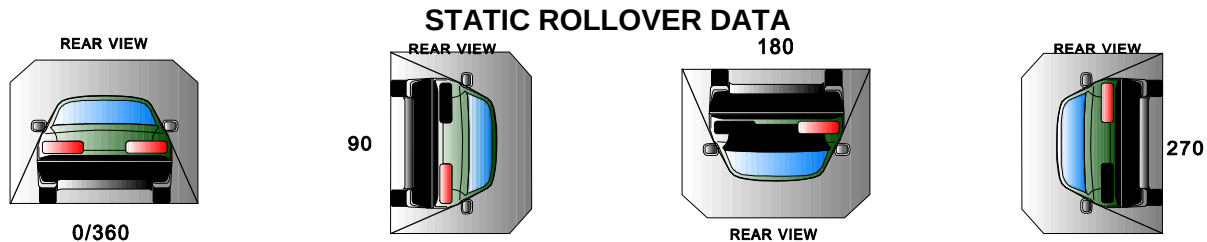
DATA SHEET NO. 17
SUMMARY OF FMVSS 301 DATA

Test Vehicle:	2010 Chevrolet Equinox LS	NHTSA No.	MA0117
Test Program:	NCAP Side Impact	Test Date:	September 24, 2009

FUEL SYSTEM INTEGRITY POST IMPACT DATA

Time Interval	FMVSS 301 Maximum Allowable Spillage	Spillage (g)
Impact Until Motion Ceases	28 g	0
First Five Minutes Following Impact	142 g	0
Next 25 Minutes	28 g / 1 minute	0

Spillage Location(s)	None
----------------------	------



Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	04	seconds	5	minutes	6	minutes	4	seconds	7	minutes
90° - 180°	1	minutes	04	seconds	5	minutes	6	minutes	4	seconds	7	minutes
180°-270°	1	minutes	02	seconds	5	minutes	6	minutes	2	seconds	7	minutes
270°-360°	1	minutes	09	seconds	5	minutes	6	minutes	9	seconds	7	minutes

Rollover Stage	Spillage (g)			
	First 5 min. from onset of rotation	6 th min.	7 th min.	8 th min. (if required)
0° - 90°	0	0	0	0
90° - 180°	0	0	0	0
180°-270°	0	0	0	0
270°-360°	0	0	0	0
FMVSS 301 Maximum Allowable (for each 90° stage)	142	28	28	28

Rollover Stage	Spillage Location(s)
0° - 90°	None
90° - 180°	None
180°-270°	None
270°-360°	None

APPENDIX A
PHOTOGRAPHS

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A-25	Pre-Test Right Side View of MDB Impactor Face	A-16
A-26	Post-Test Right Side View of MDB Impactor Face	A-16
A-27	Pre-Test Top View of MDB Impactor Face	A-17
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A-40	Post-Test Left Occupant Compartment View of Driver	A-23
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A-42	Post-Test Left Occupant Compartment View of Passenger	A-24
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A-49	Pre-Test Left Rear $\frac{3}{4}$ View of Left Side Doors	A-28
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Figure A-1: As Received Left Front $\frac{3}{4}$ View



Figure A-2: As Received Right Rear $\frac{3}{4}$ View

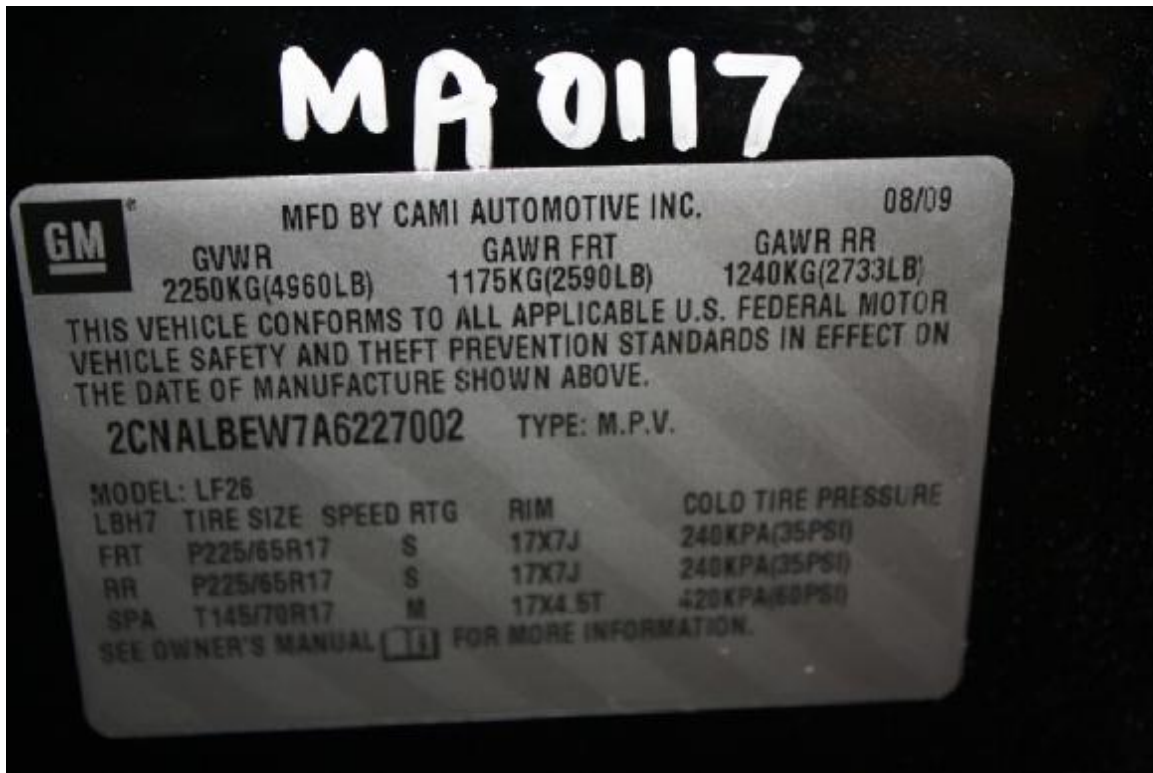


Figure A-3: Vehicle Certification Label

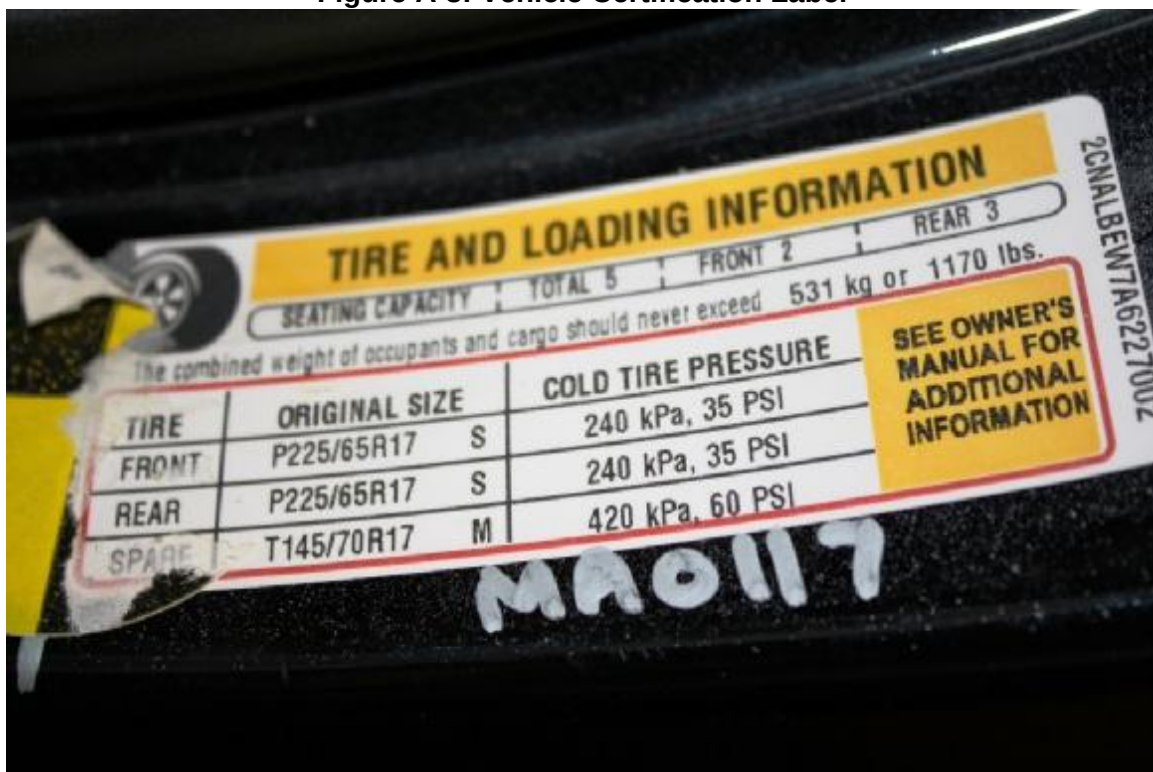


Figure A-4: Vehicle Tire Placard Label



Figure A-5: Pre-Test Front View



Figure A-6: Post-Test Front View



Figure A-7: Pre-Test Left Front $\frac{3}{4}$ View

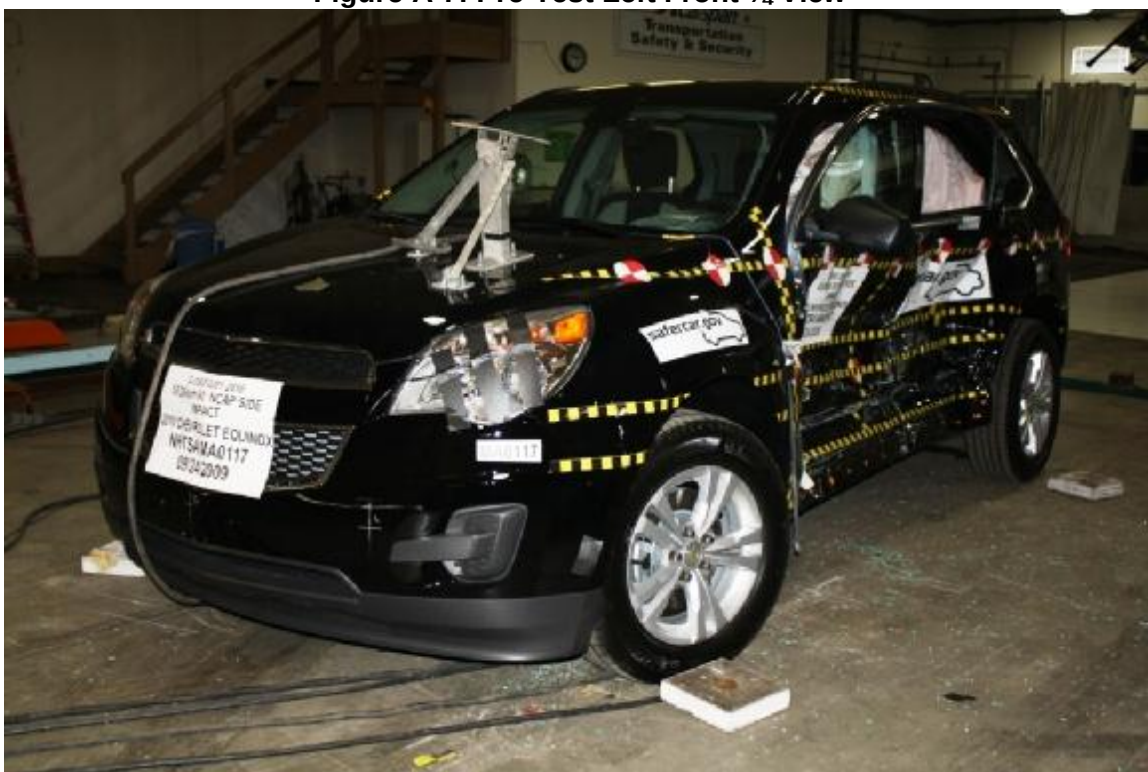


Figure A-8: Post-Test Left Front $\frac{3}{4}$ View



Figure A-9: Pre-Test Left Side View



Figure A-10: Post-Test Left Side View



Figure A-11: Pre-Test Left Rear $\frac{3}{4}$ View



Figure A-12: Post-Test Left Rear $\frac{3}{4}$ View



Figure A-13: Pre-Test Rear View



Figure A-14: Post-Test Rear View



Figure A-15: Pre-Test Right Rear $\frac{3}{4}$ View

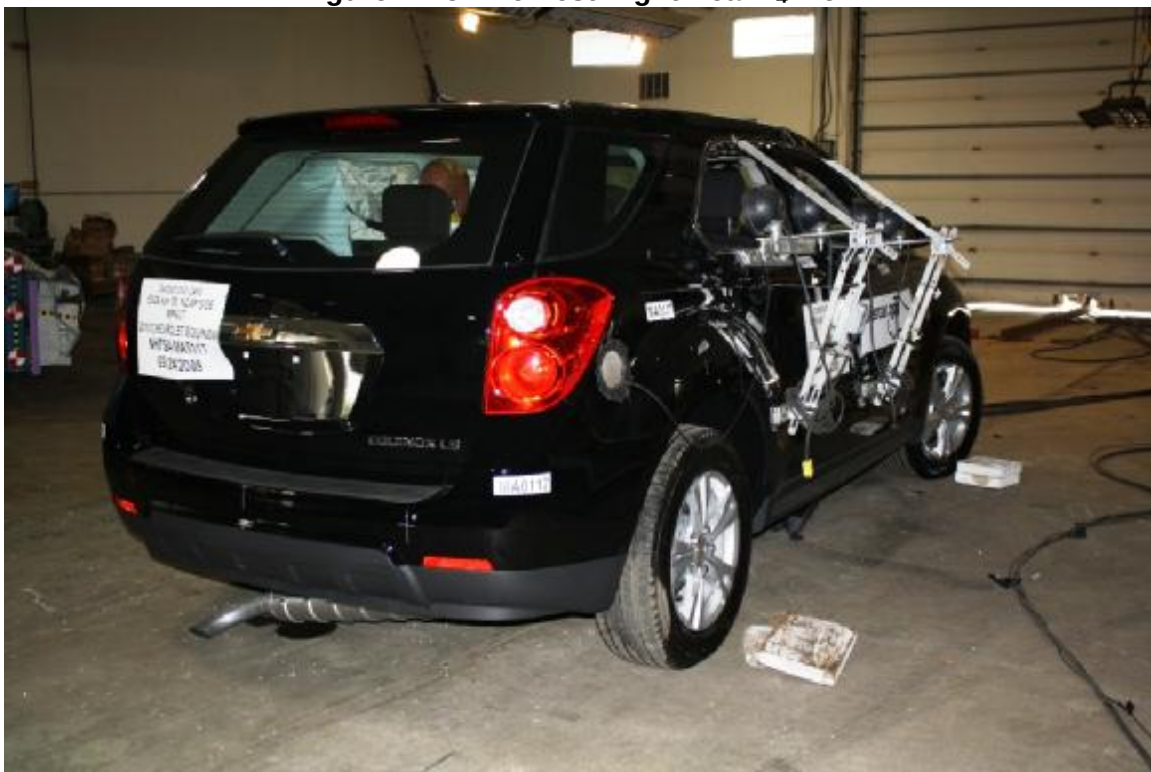


Figure A-16: Post-Test Right Rear $\frac{3}{4}$ View



Figure A-17: Pre-Test Right Side View



Figure A-18: Post-Test Right Side View



Figure A-19: Pre-Test Right Front $\frac{3}{4}$ View



Figure A-20: Post-Test Right Front $\frac{3}{4}$ View



Figure A-21: Pre-Test Frontal View of MDB Impactor Face



Figure A-22: Post-Test Frontal View of MDB Impactor Face



Figure A-23: Pre-Test Left Side View of MDB Impactor Face



Figure A-24: Post-Test Left Side View of MDB Impactor Face



Figure A-25: Pre-Test Right Side View of MDB Impactor Face



Figure A-26: Post-Test Right Side View of MDB Impactor Face



Figure A-27: Pre-Test Top View of MDB Impactor Face



Figure A-28: Post-Test Top View of MDB Impactor Face



Figure A-29: Pre-Test Left Side View of Aligned MDB and Vehicle



Figure A-30: Pre-Test Right Side View of Aligned MDB and Vehicle



Figure A-31: Pre-Test Overhead View of Aligned MDB and Vehicle



Figure A-32: Post-Test Overhead View of MDB and Vehicle



Figure A-33: Pre-Test Close-Up View of Impact Point Target



Figure A-34: Post-Test Close-Up View of Impact Point Target



Figure A-35: Pre-Test Right Occupant Compartment View of Driver



Figure A-36: Post-Test Right Occupant Compartment View of Driver



Figure A-37: Pre-Test Right Occupant Compartment View of Passenger



Figure A-38: Post-Test Right Occupant Compartment View of Passenger



Figure A-39: Pre-Test Left Occupant Compartment View of Driver



Figure A-40: Post-Test Left Occupant Compartment View of Driver



Figure A-41: Pre-Test Left Occupant Compartment View of Passenger



Figure A-42: Post-Test Left Occupant Compartment View of Passenger



Figure A-43: Pre-Test Left Front Interior Trim



Figure A-44: Post-Test Left Front Interior Trim



Figure A-45: Pre-Test Left Rear Interior Trim



Figure A-46: Post-Test Left Rear Interior Trim



Figure A-47: Pre-Test Left Front $\frac{3}{4}$ View of Left Side Doors



Figure A-48: Post-Test Left Front $\frac{3}{4}$ View of Left Side Doors



Figure A-49: Pre-Test Left Rear $\frac{3}{4}$ View of Left Side Doors



Figure A-50: Post-Test Left Rear $\frac{3}{4}$ View of Left Side Doors



Figure A-51: Rollover 90 Degrees



Figure A-52: Rollover 180 Degrees



Figure A-53: Rollover 270 Degrees



Figure A-54: Rollover 360 Degrees



Figure A-55: Impact Photo

APPENDIX B
SID/HIII, VEHICLE AND MDB RESPONSE DATA
(SAE sign convention)

DATA CHANNEL FILTER CLASS SUMMARY

Data Type	SAE Filter Class
Dummy Head Accelerations	CFC 1000
Rib Accelerations	FIR 100
Spine Accelerations	FIR 100
Pelvis Accelerations	FIR 100

DATA CHANNEL TITLE KEY

Prefix	Suffix
V1 = Vehicle 1 (Moving Barrier)	Ax = Acceleration, X-direction
V2 = Vehicle 2 (Test Vehicle)	Ay = Acceleration, Y-direction
P1 = Left Front Seating Position (Driver)	Az = Acceleration, Z-direction
P4 = Left Second Row Seating Position (Passenger)	Fx = Force, X-direction
A1-A18 = Accelerometer Location Number	Fy = Force, Y-direction
	Fz = Force, Z-direction
	Mx = Moment about X
	My = Moment about Y
	Mz = Moment about Z

TABLE OF DATA PLOTS

PLOT	PLOT NAME[UNITS, CHANNEL FILTER CLASS]	PAGE
1	V2P1 Head Ax [g, CFC_1000]	B-5
2	V2P1 Head Ay [g, CFC_1000]	B-5
3	V2P1 Head Az [g, CFC_1000]	B-5
4	V2P1 Head Ar [g, CFC_1000]	B-5
5	V1P1 Upper Rib Ay [g, FIR_100]	B-6
6	V1P1 Lower Rib Ay [g, FIR_100]	B-6
7	V1P1 Lower Spine Ay [g, FIR_100]	B-6
8	V1P1 Pelvic Ay [g, FIR_100]	B-6
9	V2P4 Head Ax [g, CFC_1000]	B-7
10	V2P4 Head Ay [g, CFC_1000]	B-7
11	V2P4 Head Az [g, CFC_1000]	B-7
12	V2P4 Head Ar [g, CFC_1000]	B-7
13	V1P4 Upper Rib Ay [g, FIR_100]	B-8
14	V1P4 Lower Rib Ay [g, FIR_100]	B-8
15	V1P4 Lower Spine Ay [g, FIR_100]	B-8
16	V1P4 Pelvic Ay [g, FIR_100]	B-8

The following dummy, vehicle and load cell response data can be found in the research and development section of the NHTSA website at: www.nhtsa.dot.gov

V2P1 Head Ax	V2A1 Right Front Sill Ax
V2P1 Head Ay	V2A1 Right Front Sill Ay
V2P1 Head Az	V2A1 Right Front Sill Az
V2P1 Upper Neck Fx	V2A2 Right Rear Sill Ax
V2P1 Upper Neck Fy	V2A2 Right Rear Sill Ay
V2P1 Upper Neck Fz	V2A2 Right Rear Sill Az
V2P1 Upper Neck Mx	V2A3 Rear Floorpan Ax
V2P1 Upper Neck My	V2A3 Rear Floorpan Ay
V2P1 Upper Neck Mz	V2A3 Rear Floorpan Az
V2P1 Upper Rib Ay	V2A4 Left Rear Sill Ay
V2P1 Upper Rib Redundant Ay	V2A5 Left Front Sill Ay
V2P1 Lower Rib Ay	V2A6 Left Front Door C/L Ay
V2P1 Lower Rib Redundant Ay	V2A7 Right Rear Compartment Ay
V2P1 Lower Spine Ay	V2A8 Left Front Door Midrear Ay
V2P1 Lower Spine Redundant Ay	V2A9 Left Front Door Upper C/L Ay
V2P1 Pelvic Ay	V2A10 Left Rear Door Midrear Ay
V2P1 Pelvic Redundant Ay	V2A11 Left Rear Door Upper C/L Ay
V2P4 Head Ax	V2A12 Left Lower B Post Ay
V2P4 Head Ay	V2A13 Left Mid B Post Ay
V2P4 Head Az	V2A14 Left Lower A Post Ay
V2P4 Upper Neck Fx	V2A15 Left Mid A Post Ay
V2P4 Upper Neck Fy	V2A16 Front Seat Track Ay
V2P4 Upper Neck Fz	V2A17 Rear Seat Track Ay
V2P4 Upper Neck Mx	V2A18 Target CG Ax
V2P4 Upper Neck My	V2A18 Target CG Ay
V2P4 Upper Neck Mz	V2A18 Target CG Az
V2P4 Upper Rib Ay	V1 Moving Barrier CG Ax
V2P4 Upper Rib Redundant Ay	V1 Moving Barrier CG Ay
V2P4 Lower Rib Ay	V1 Moving Barrier CG Az
V2P4 Lower Rib Redundant Ay	V1 Moving Barrier Left Rail Ax
V2P4 Lower Spine Ay	V1 Moving Barrier Left Rail Ay
V2P4 Lower Spine Redundant Ay	
V2P4 Pelvic Ay	
V2P4 Pelvic Redundant Ay	

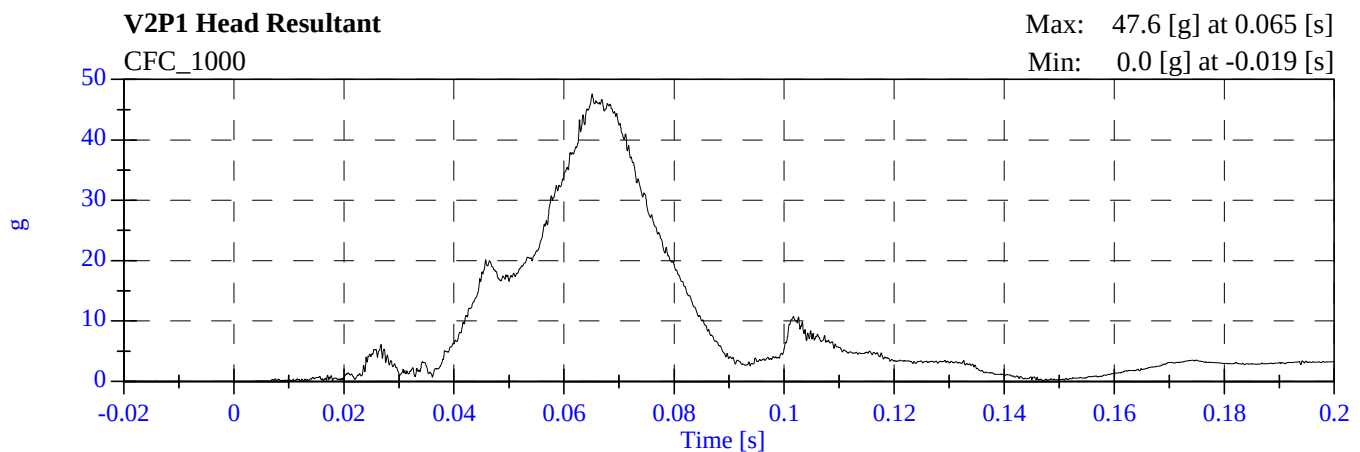
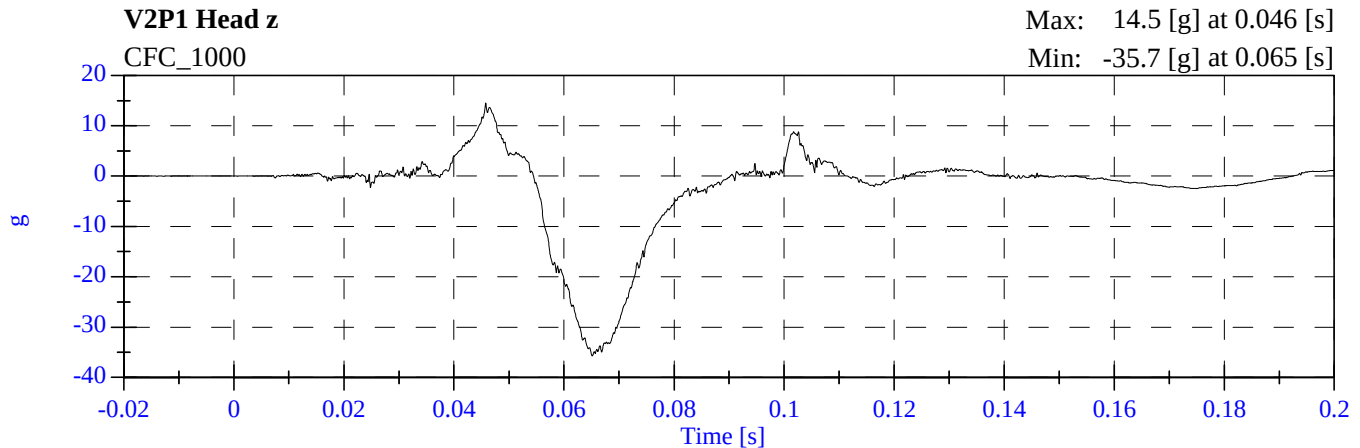
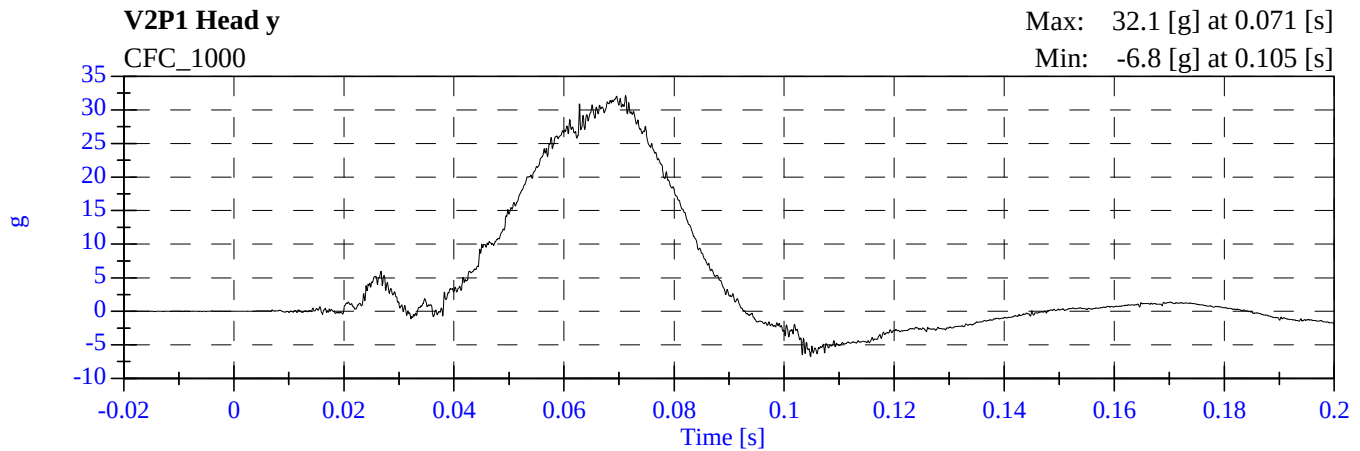
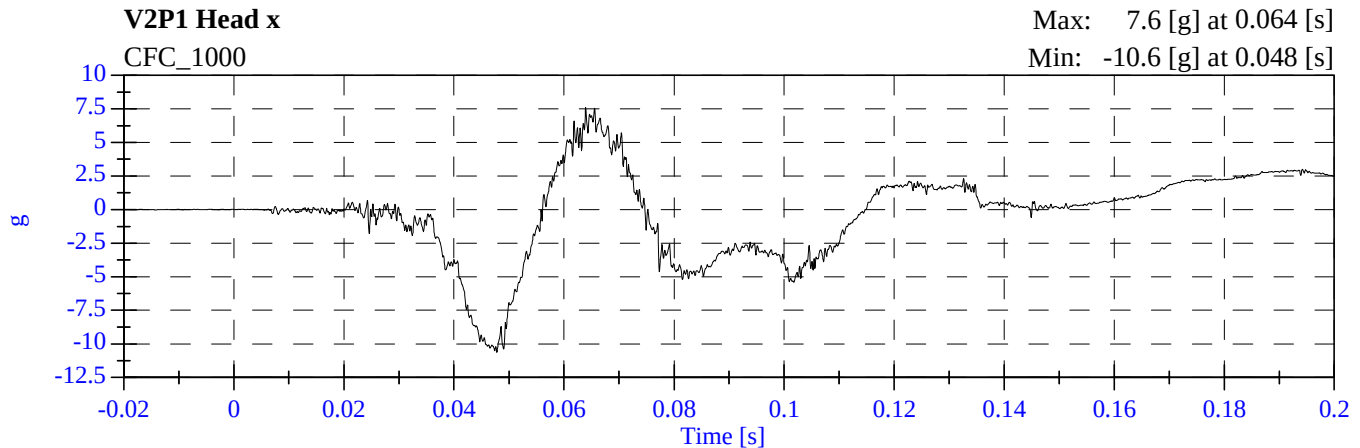
TEST NOTES

The following data anomalies occurred:

V2 Right Front Sill X – Invalid Data – sensor not mounted properly.
V2 Right Front Sill Y – Invalid Data – sensor not mounted properly.
V2 Right Front Sill Z – Invalid Data – sensor not mounted properly.
V2 Left Lower B-Pillar Y – Questionable data after 189 milliseconds.

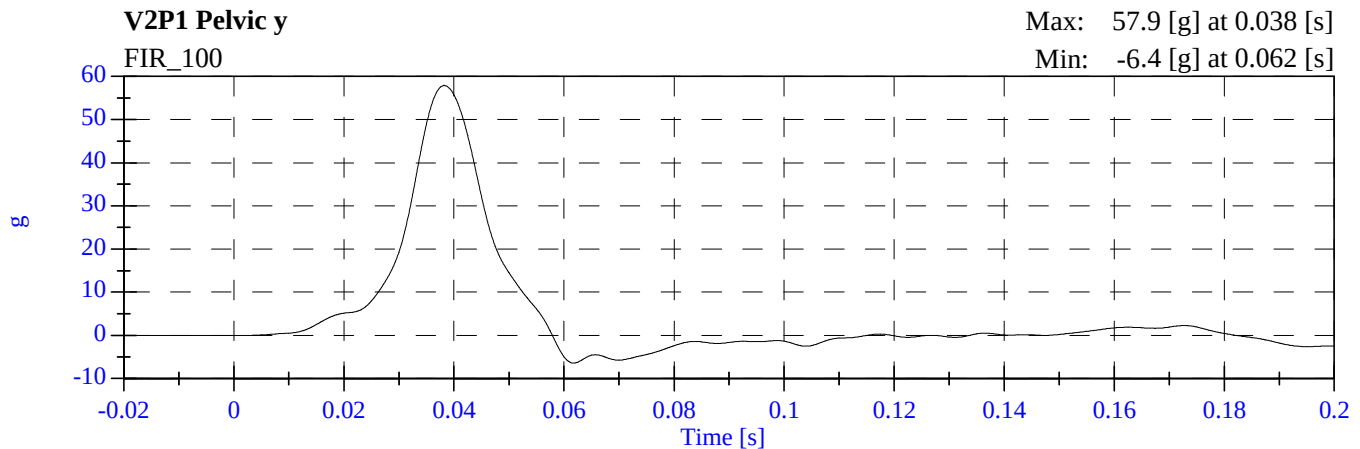
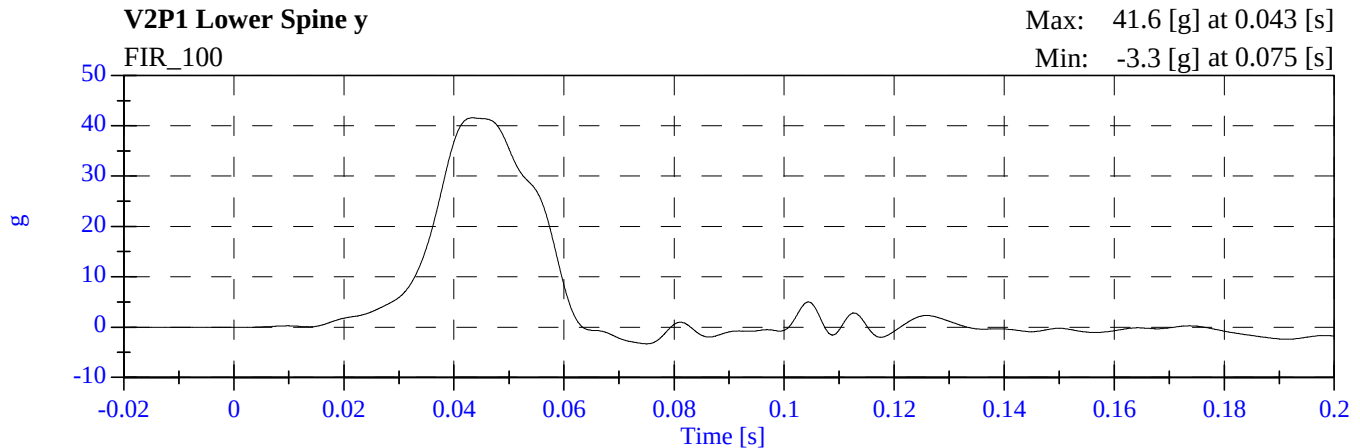
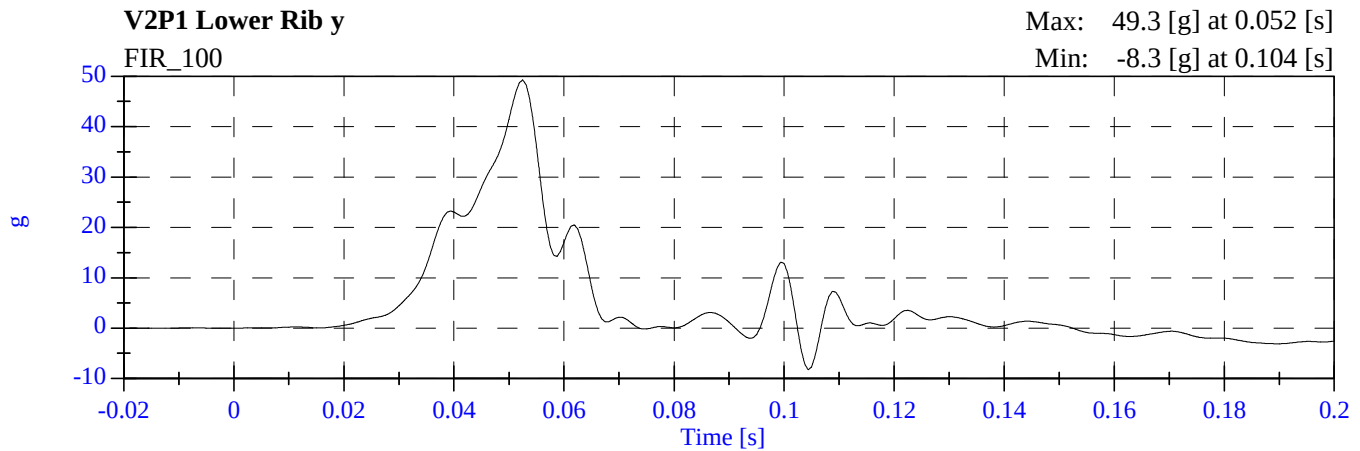
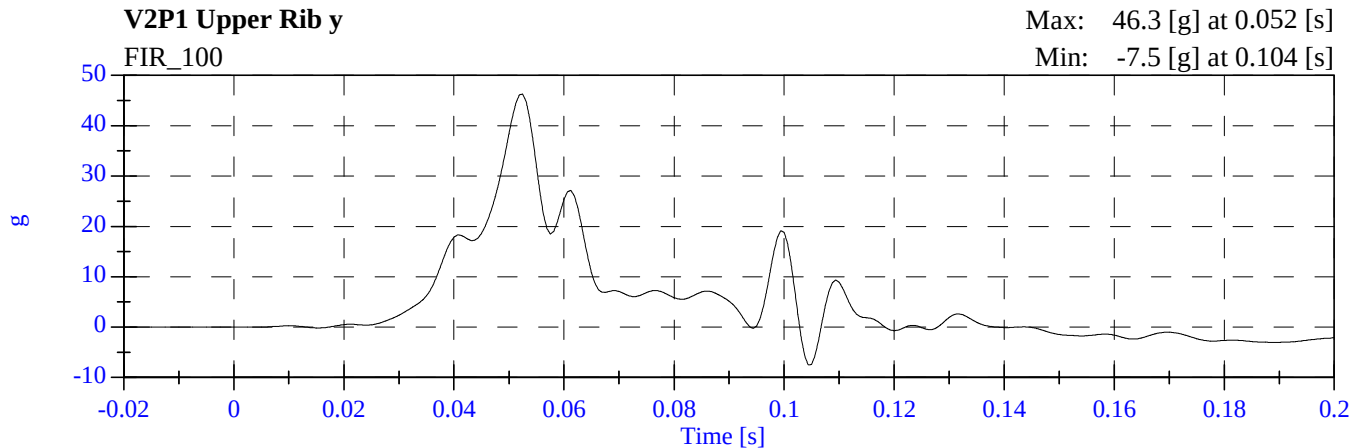
Side NCAP 2010 Chevrolet Equinox

MA0117 - September 24, 2009

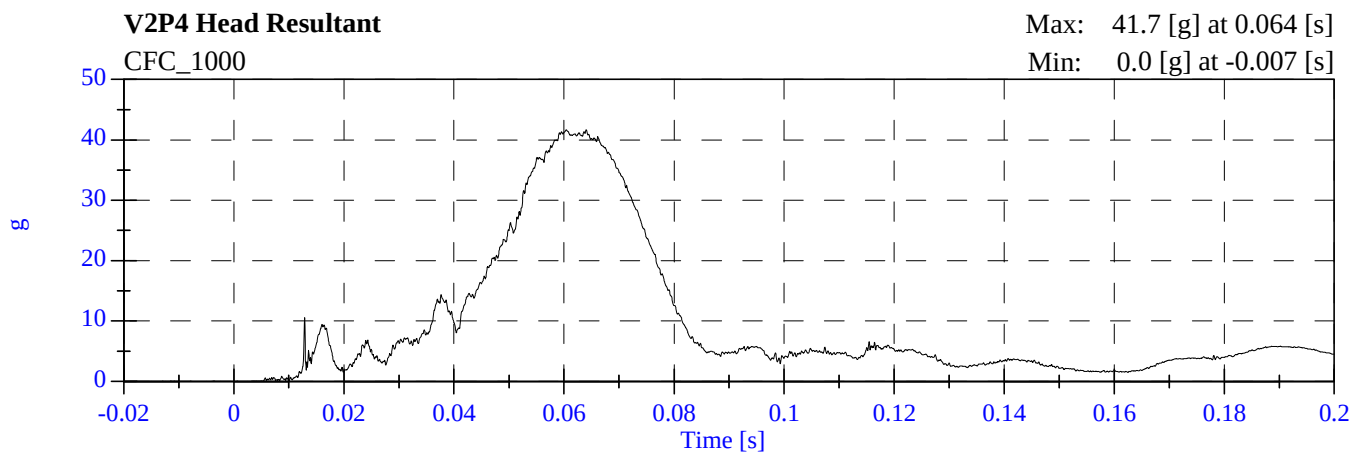
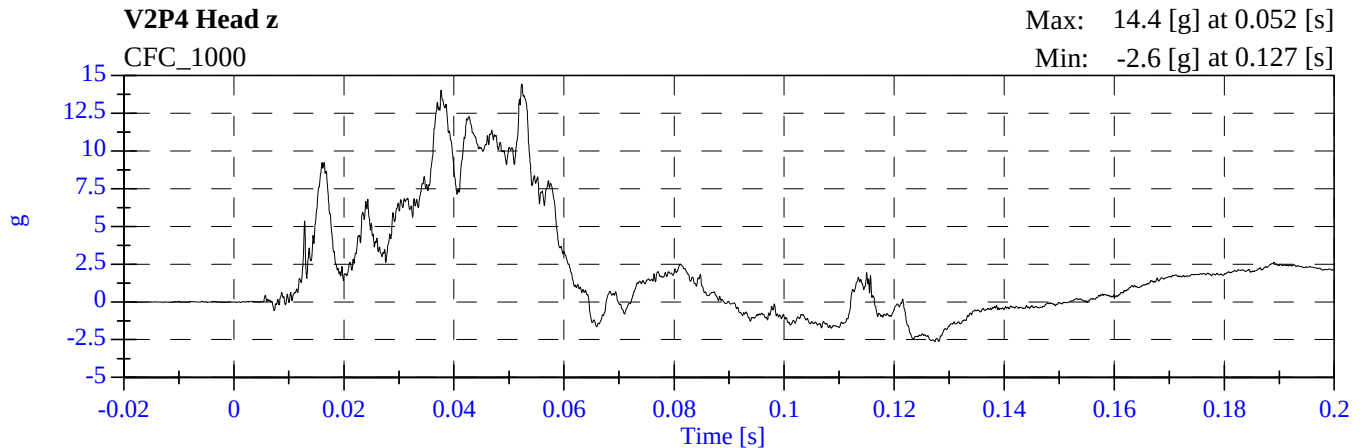
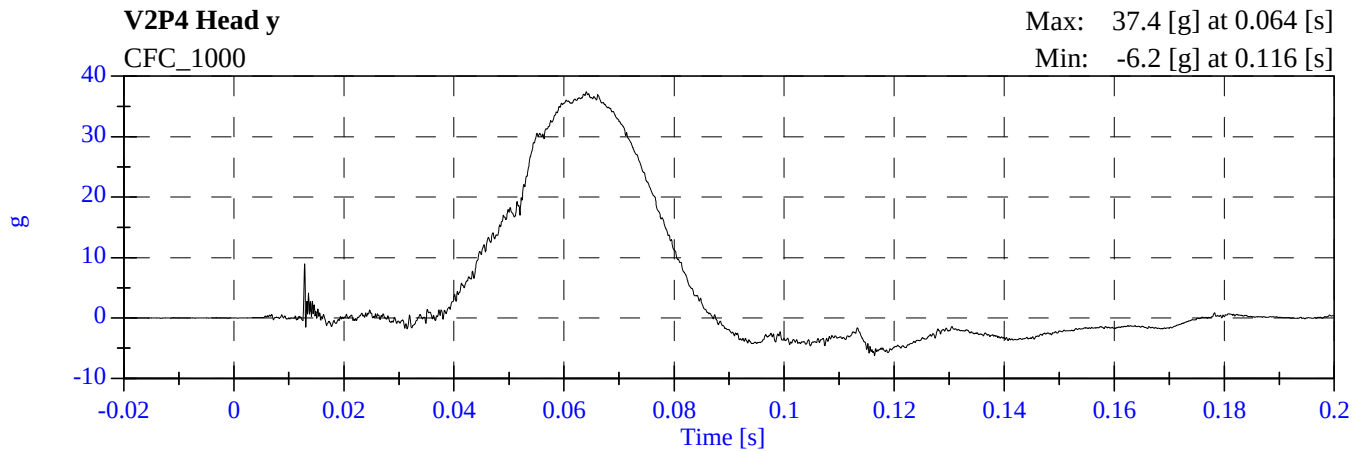
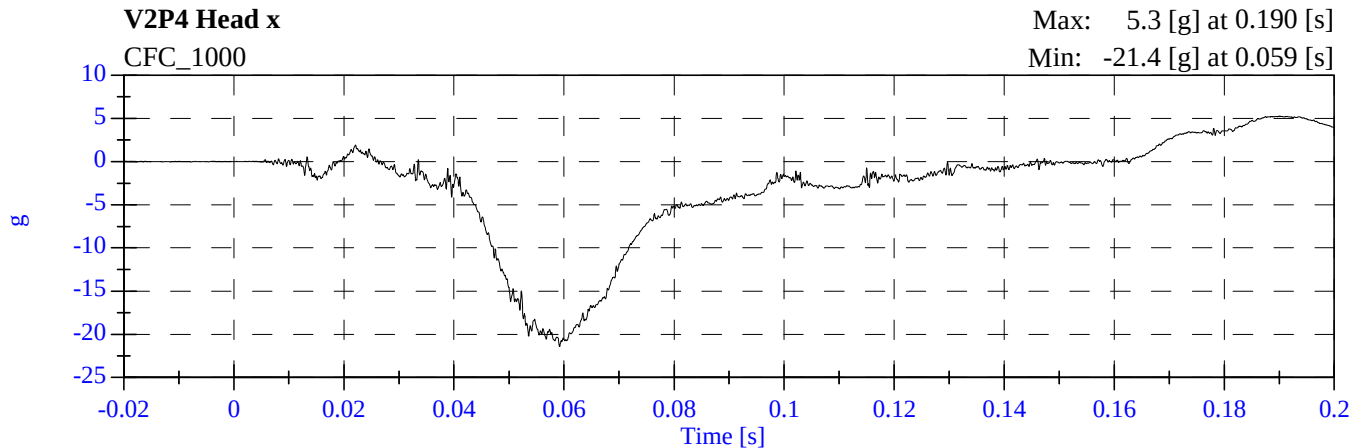


Side NCAP 2010 Chevrolet Equinox

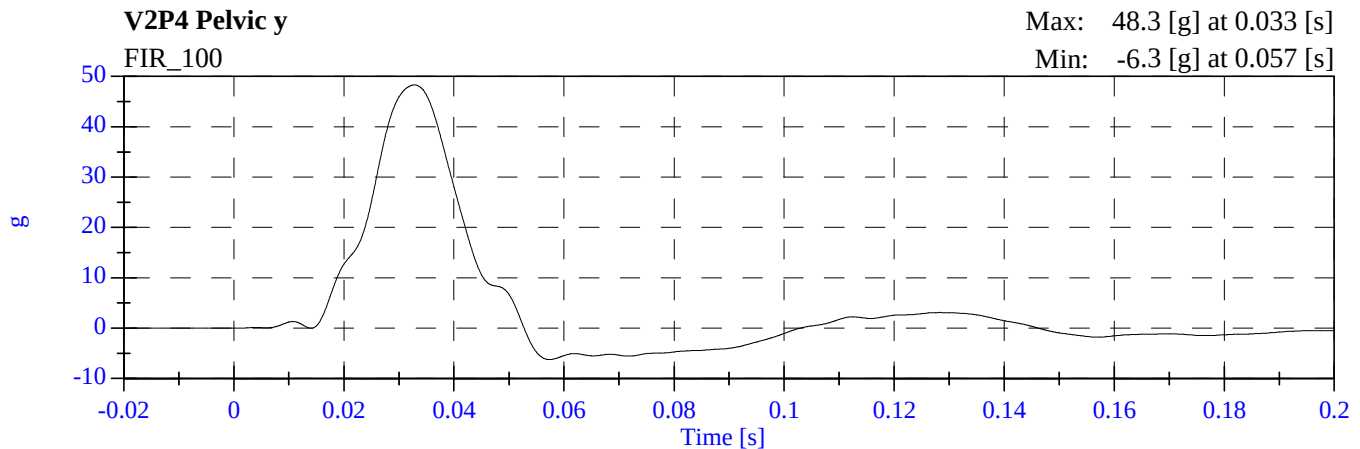
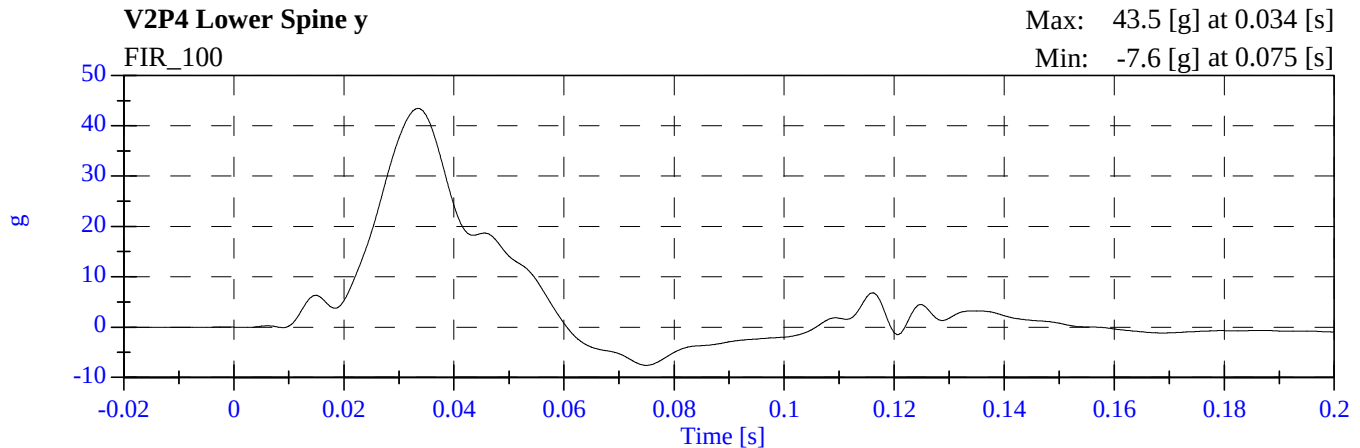
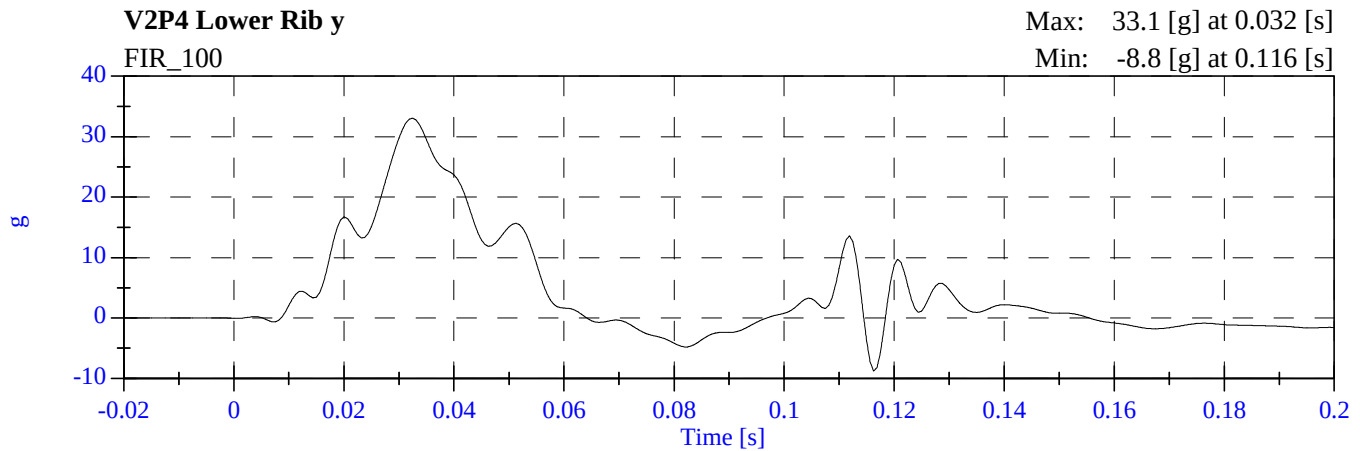
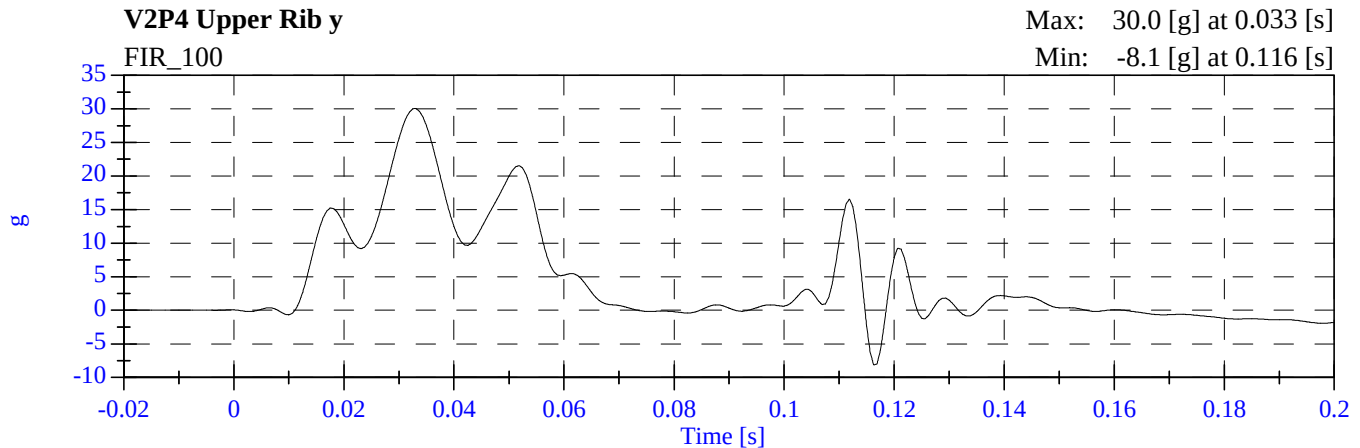
MA0117 - September 24, 2009



Side NCAP 2010 Chevrolet Equinox MA0117 - September 24, 2009



Side NCAP 2010 Chevrolet Equinox MA0117 - September 24, 2009



APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: 7/2/09; 10/27/09

Sequential Test Number:

1

Laboratory Technician:

A. Rudniski

TEST PARAMETER	SPECIFICATION	SID H3 NO.: 270		SID H3 NO.: 269	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	899	899	899	899
RH- Rib Height (mm)	501 - 521	505	505	505	505
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	234	233	234	233
KV- Knee Pivot from Back Line (mm)	511 - 526	518	517	516	516
SW- Knee Pivot to Floor (mm)	490 - 505	495	495	493	493
HW- Hip Width (mm)	356 - 391	384	384	381	381
THORAX IMPACTS					
TEMPERATURE (• C)	18.9 - 25.5	22.2	21.1	22.2	21.1
RELATIVE HUMIDITY (%)	10 - 70	62	38	62	34
PROBE SPEED (m/s)	4.27 - 4.33	4.30	4.31	4.31	4.31
UPPER RIB (g's)	37 - 46	40.86	39.32	41.78	41.32
LOWER RIB (g's)	37 - 46	39.71	38.66	41.12	40.53
LOWER SPINE (g's)	15 - 22	20.30	21.22	18.75	18.53
PELVIS IMPACT					
TEMPERATURE (• C)	18.9 - 25.5	22.2	21.1	23.3	21.1
RELATIVE HUMIDITY (%)	10 - 70	62	40	53	40
PROBE SPEED (m/s)	4.27 - 4.33	4.31	4.31	4.31	4.30
PELVIS (g's)	40 - 60	43.85	51.83	45.95	48.41

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 270

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270	Sequential Test Number: 1
Date: 7/2/09	Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270	Sequential Test Number: 1
Date: 7/2/09	Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	899
RH- Rib Height (mm)	502 – 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	234
KH- Knee Pivot from Back Line (mm)	511 – 526	518
KV- Knee Pivot to Floor (mm)	490 – 505	495
HW- Hip Width (mm)	356 - 391	384

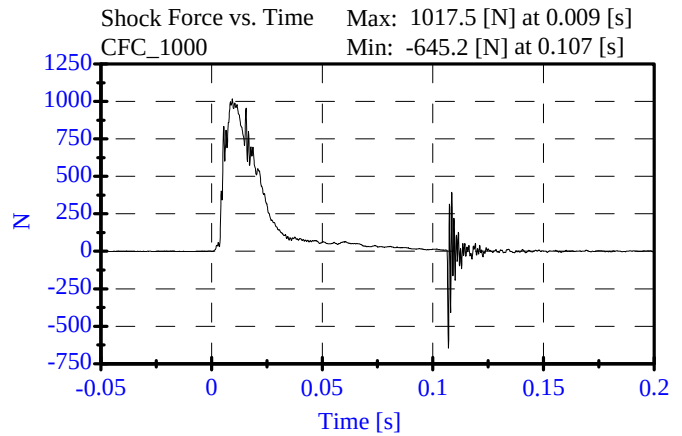
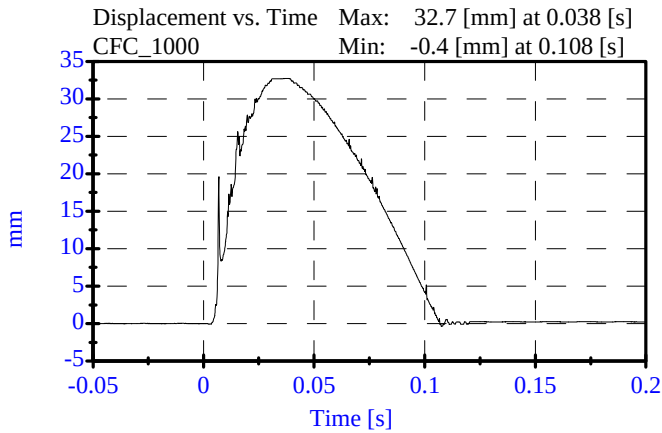
REMARKS: None

Shock Test Low (3.05 m/s)
PRE TEST
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 04-06-09

Sequential Test Number: 1 File: 270SL 04-06-09
Laboratory Technician: A. Rudniski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Displacement:	30.00-35.00 mm	32.73 mm	Passed
Maximum Force:	836.00-1125.00 N	1017.49 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	270		
Damper Setting:	5		



Shock Test Medium (4.27 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

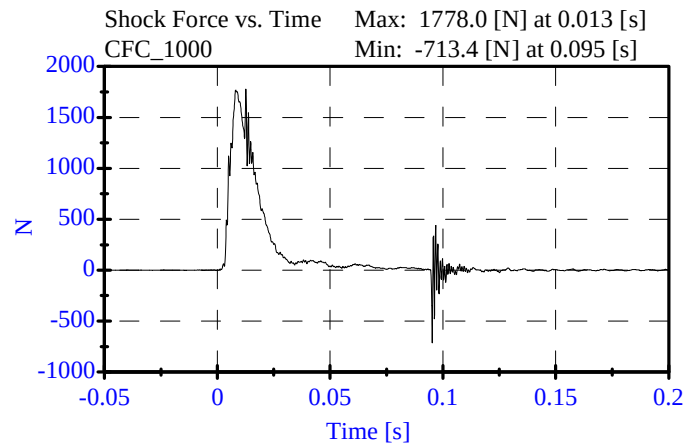
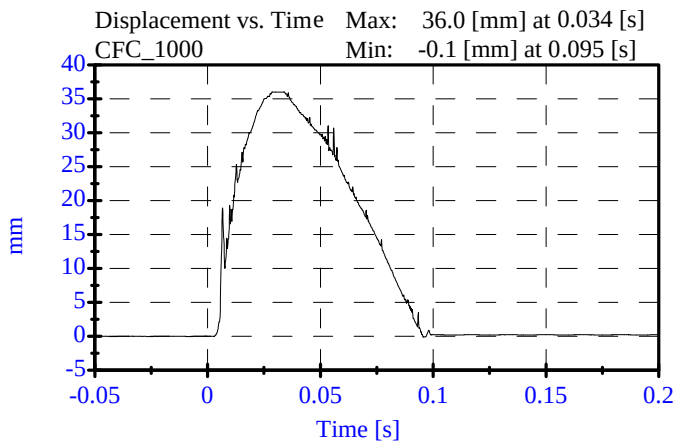
ATD Serial No: 270

Date: 04-06-09

Sequential Test Number: 1 File: 270SM 04-06-09

Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Displacement:	32.00-37.00 mm	36.02 mm	Passed
Maximum Force:	1730.00-2099.00 N	1778.00 N	Passed
Impact Test Velocity:	4.27 m/s		
Damper Identification:	270		
Damper Setting:	5		

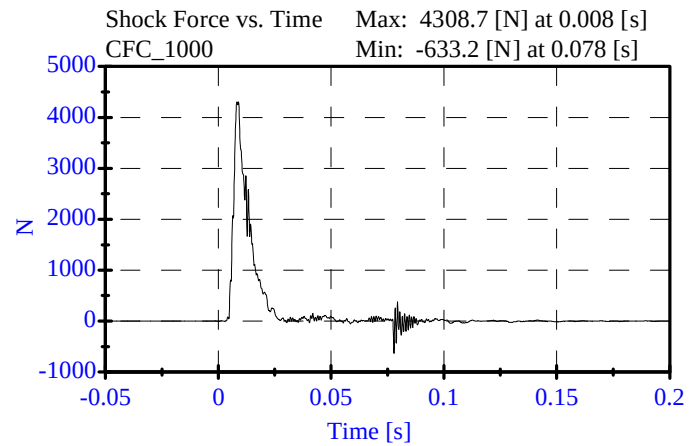
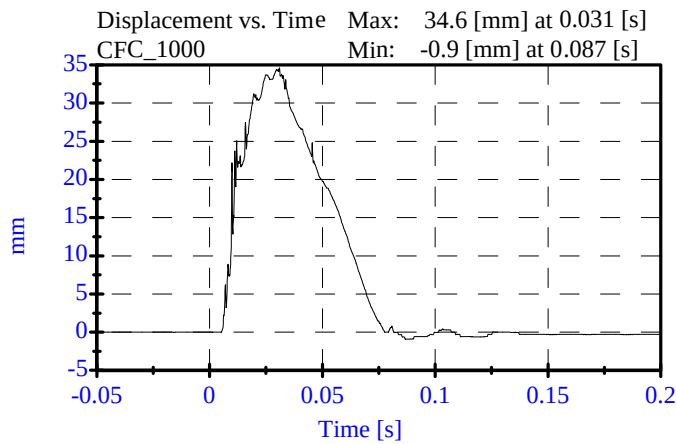


Shock Test High (6.10 m/s)
PRE TEST
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 04-06-09

Sequential Test Number: 1 File: 270SH2 04-06-09
Laboratory Technician: A. Rudniski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Displacement:	33.00-40.00 mm	34.65 mm	Passed
Maximum Force:	3741.00-4448.00 N	4308.68 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	270		
Damper Setting:	5		

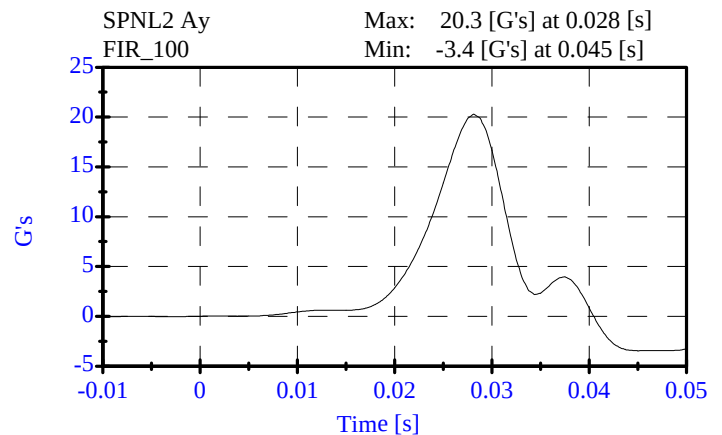
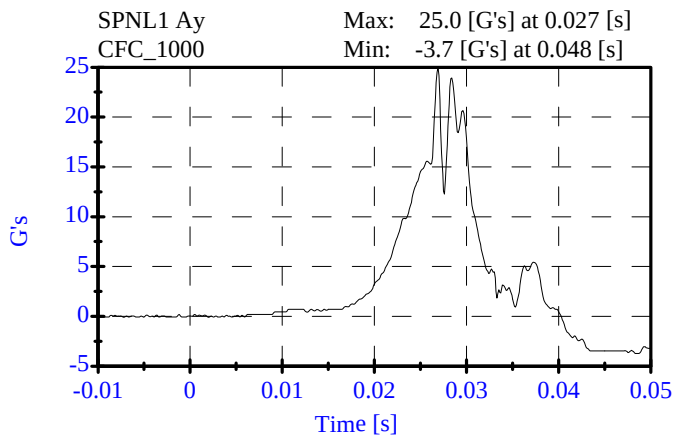
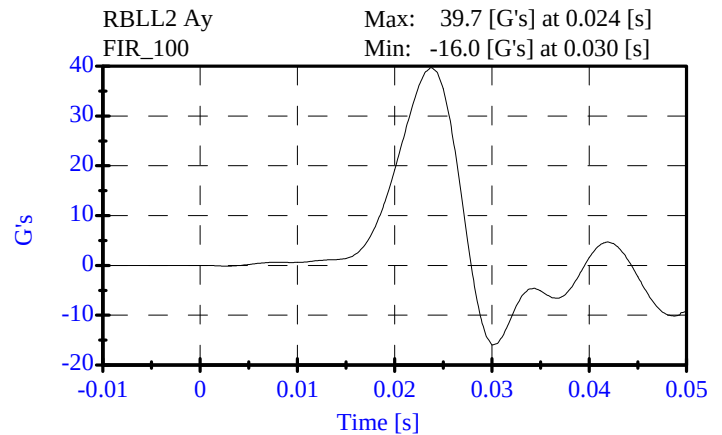
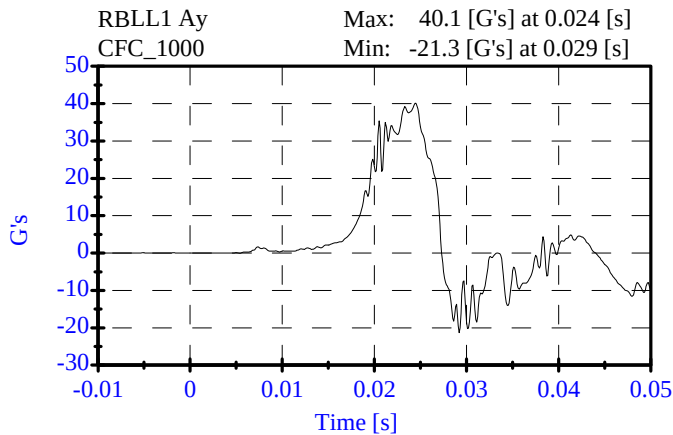
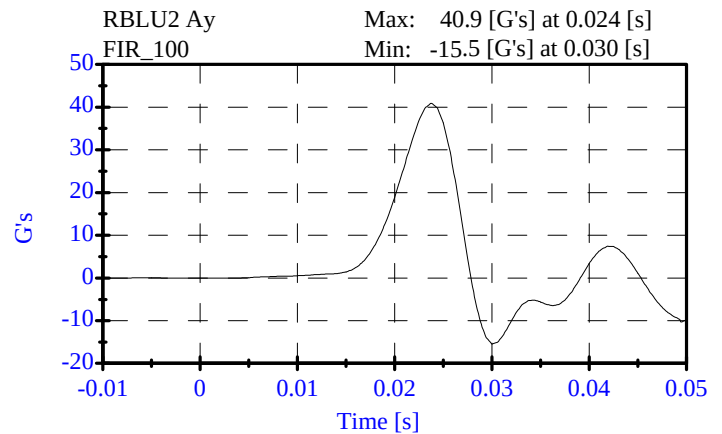
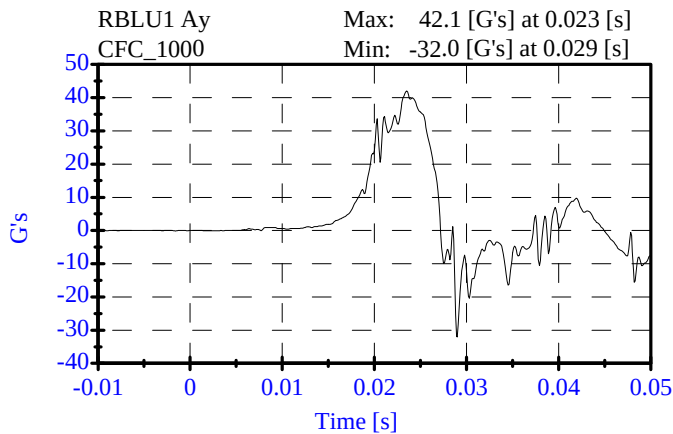


Thorax Impact Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 07-02-09

Sequential Test Number: 1 File: 270T 07-02-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	40.86 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	39.71 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	20.30 G's	Passed

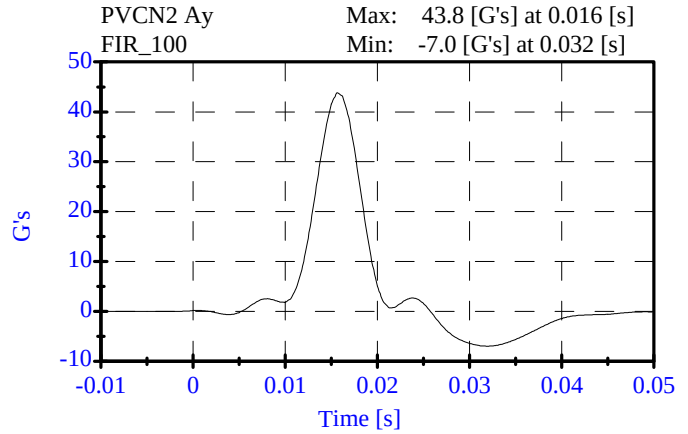
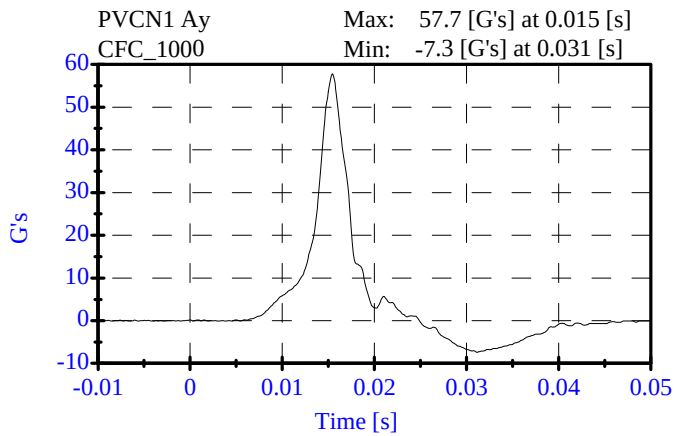


Pelvis Impact Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 07-02-09

Sequential Test Number: 1 File: 270P 07-02-09
Laboratory Technician: A. Rudniski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	43.85 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.6 ms	Passed

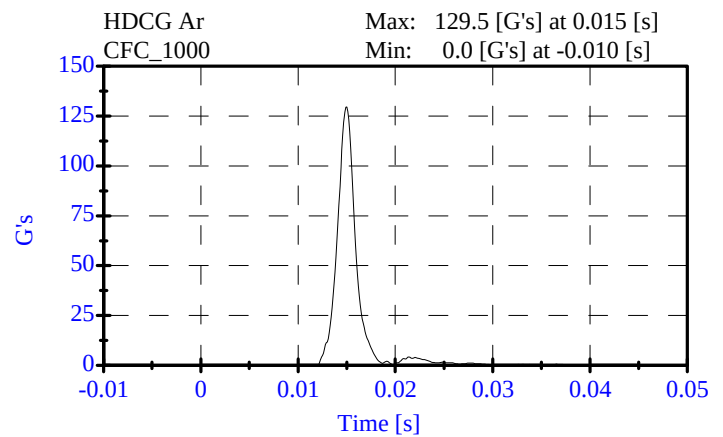
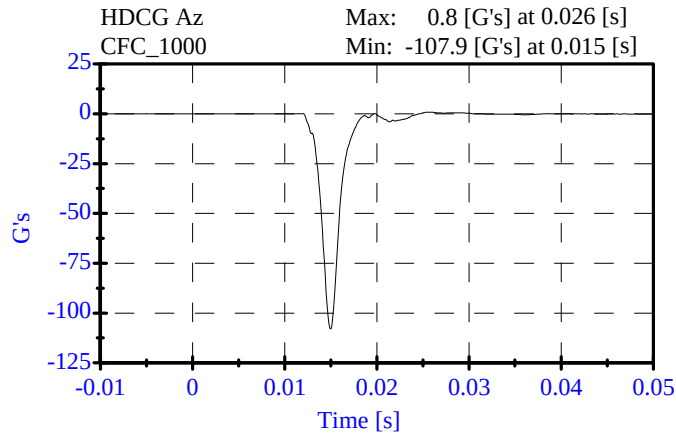
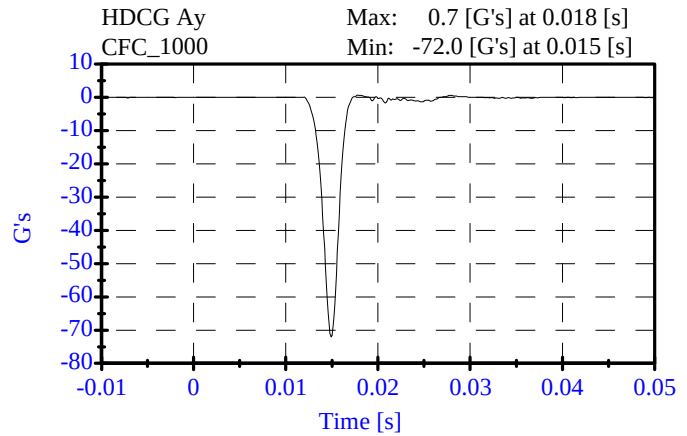
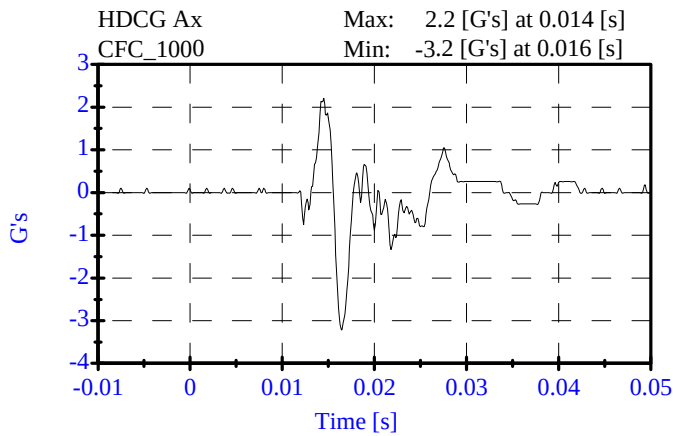


Head Drop Test **Pre-Test** **CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270
Date: 06-26-09

Sequential Test Number: 1 File: 270H 06-26-09
Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	23.3 C	Passed
Lab Humidity:	10-70 %	68.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	129.54 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	2.20 Gs	Passed
Curve PerCent NonModal:	< 15%	3.22 %	Passed



Neck Flexion Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 06-29-09

Sequential Test Number: 1 File: 270N2 06-29-09
Laboratory Technician: A. Rudnski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.20 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.47 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.26 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.60 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	71.04 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.90 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	81.87 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	53.90 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	10.30 ms	Passed

Neck Flexion Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

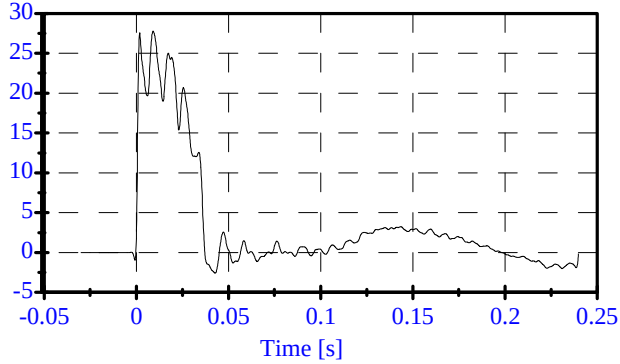
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Date: 06-29-09

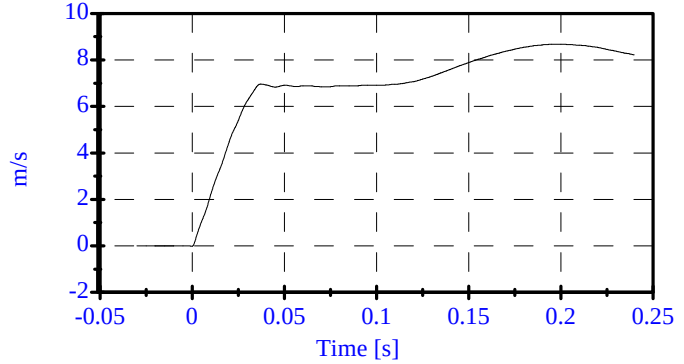
Sequential Test Number: 1 File: 270N2 06-29-09

Laboratory Technician: A. Rudniski

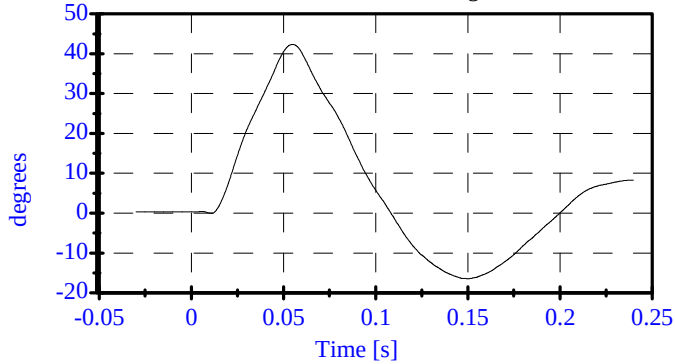
Pend Ax
CFC_180
Max: 27.8 [] at 0.009 [s]
Min: -2.6 [] at 0.043 [s]



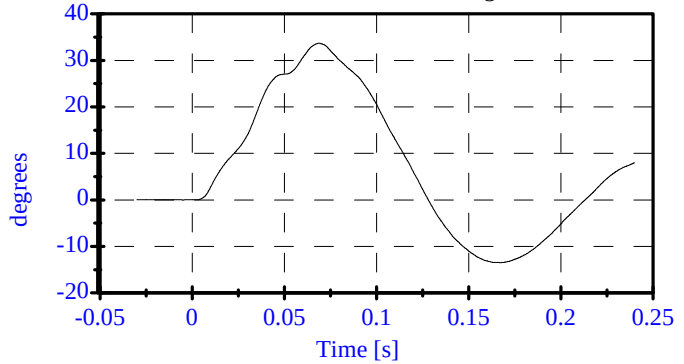
Pend Vx
CFC_180
Max: 8.7 [m/s] at 0.198 [s]
Min: -0.0 [m/s] at -0.000 [s]



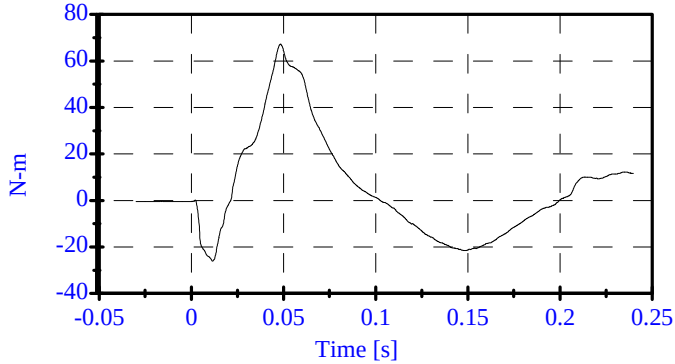
Head Rot
CFC_180
Max: 42.3 [degrees] at 0.055 [s]
Min: -16.4 [degrees] at 0.150 [s]



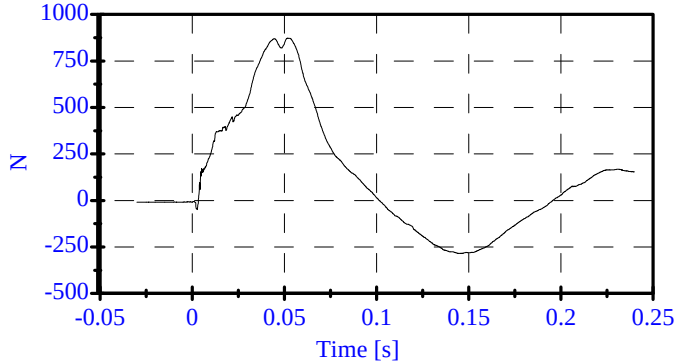
Arm Rot
CFC_180
Max: 33.7 [degrees] at 0.069 [s]
Min: -13.5 [degrees] at 0.167 [s]



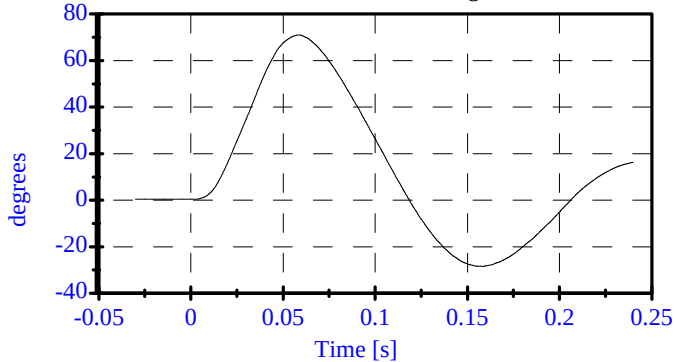
Neck Mx
CFC_600
Max: 67.3 [N-m] at 0.048 [s]
Min: -26.1 [N-m] at 0.012 [s]



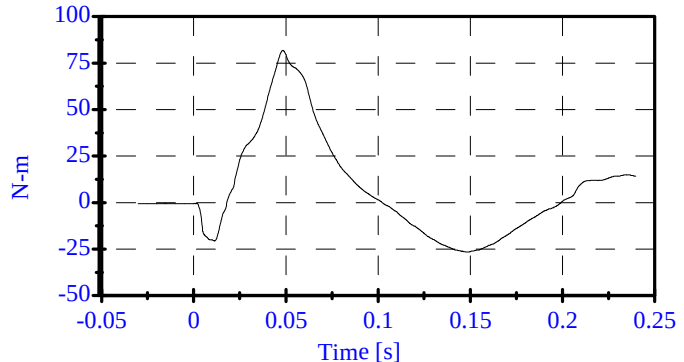
Neck Fy
CFC_1000
Max: 873.1 [N] at 0.052 [s]
Min: -285.6 [N] at 0.145 [s]



Tot Rot
CFC_180
Max: 71.0 [degrees] at 0.059 [s]
Min: -28.4 [degrees] at 0.158 [s]



MOCX
Max: 81.9 [N-m] at 0.048 [s]
Min: -26.6 [N-m] at 0.148 [s]



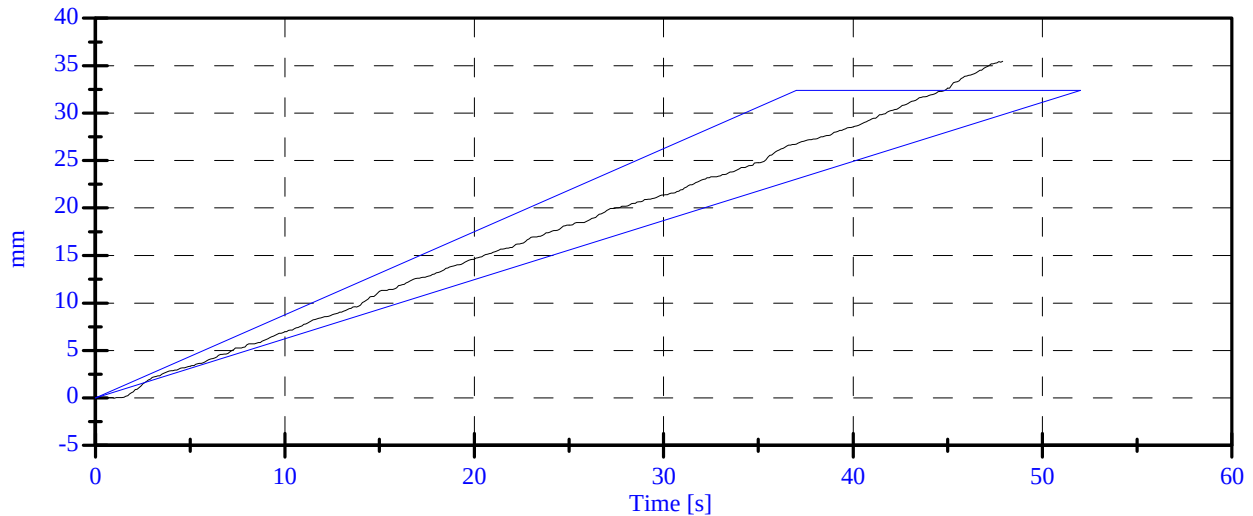
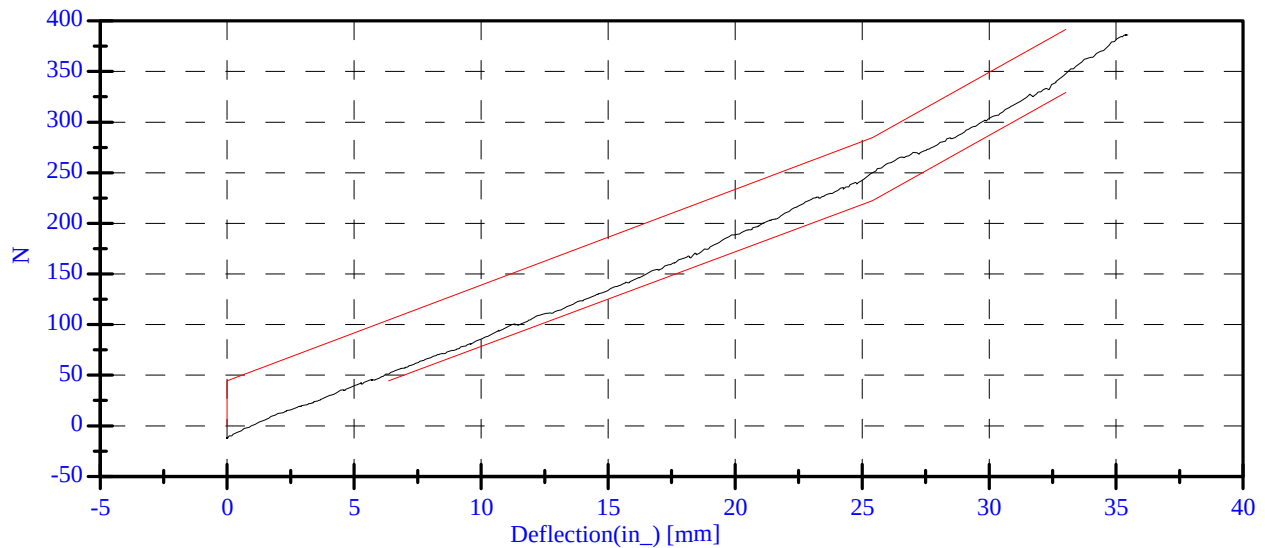
Abdominal Compression Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 07-02-09

Sequential Test Number: 1 File: 270 Ab 07-02-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	113.69 N	Passed
Force at 19.05 mm :	162.98-220.99 N	176.48 N	Passed
Force at 25.40 mm :	221.97-280.02 N	248.76 N	Passed
Force at 33.02 mm :	324.99-391.00 N	346.22 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270

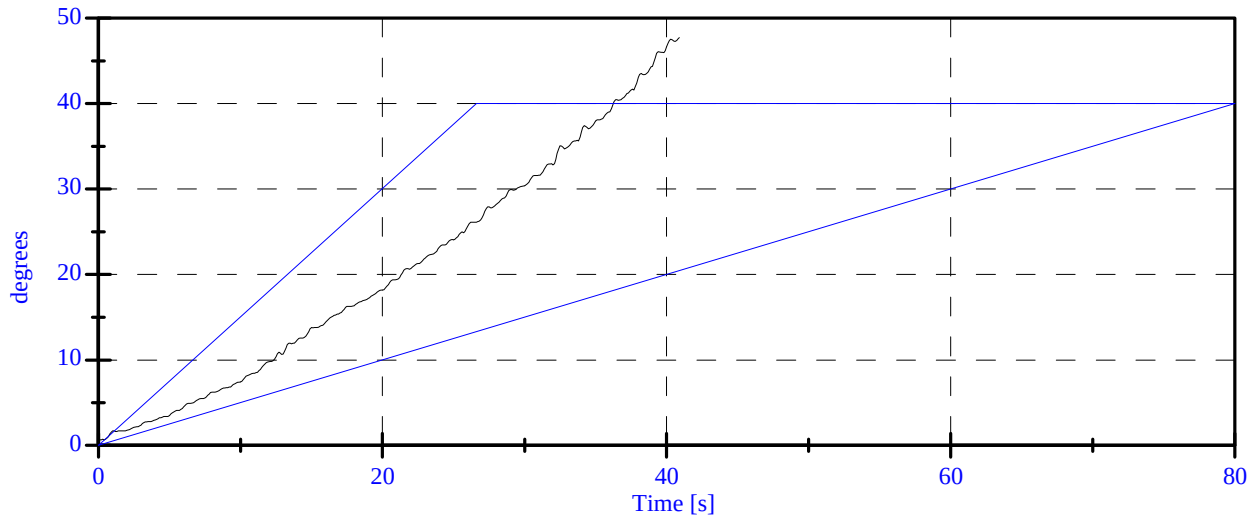
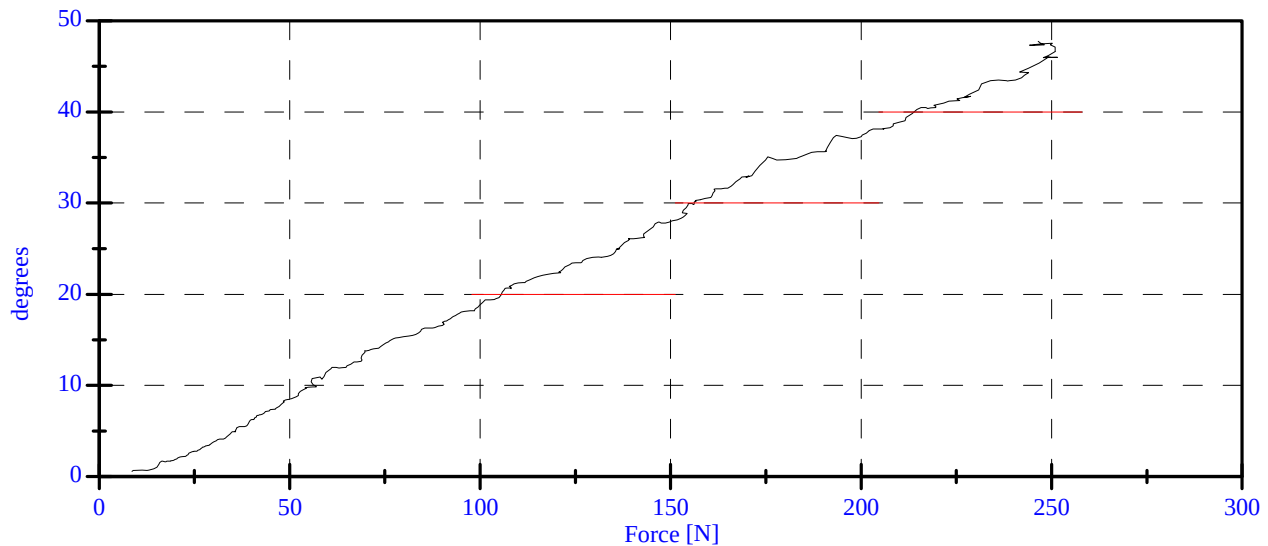
Date: 07-02-09

Sequential Test Number: 1 File: 270Spine 07-02-09

Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	8.62 N	Passed
Force at 20 Deg:	97.86-151.24 N	105.50 N	Passed
Force at 30 Deg:	151.24-204.62 N	156.17 N	Passed
Force at 40 Deg:	204.62-258.00 N	213.36 N	Passed
Return Angle	12 Deg Max	10.35 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
 Date: 6/26/09 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 269

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269	Sequential Test Number: 1
Date: 7/2/09	Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269	Sequential Test Number: 1
Date: 7/2/09	Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	516
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	381

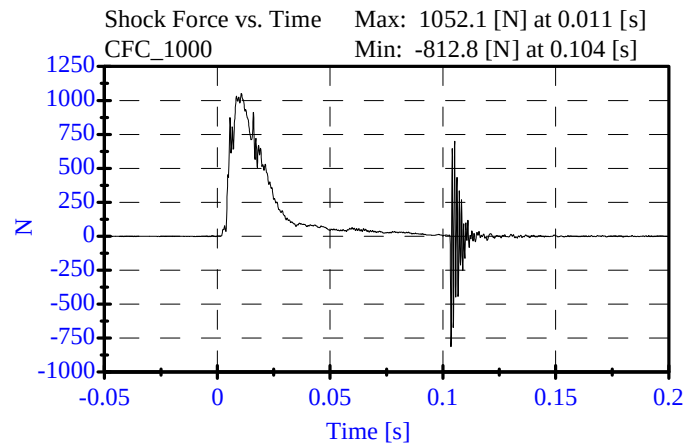
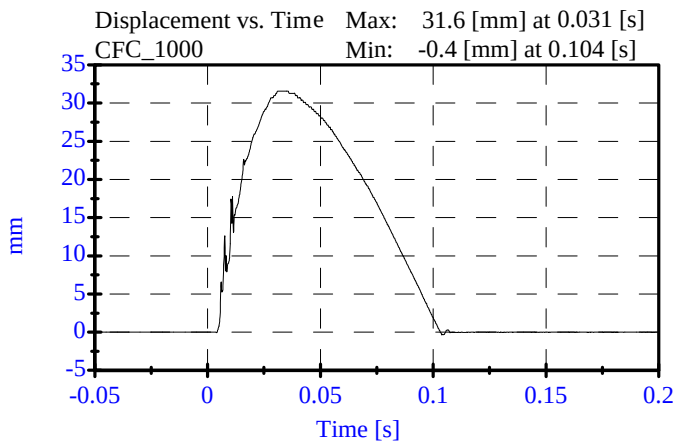
REMARKS: None

Shock Test Low (3.05 m/s)
PRE TEST
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 04-06-09

Sequential Test Number: 1 File: 269SL 04-06-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Displacement:	30.00-35.00 mm	31.59 mm	Passed
Maximum Force:	836.00-1125.00 N	1052.06 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	269		
Damper Setting:	5		



Shock Test Medium (4.27 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

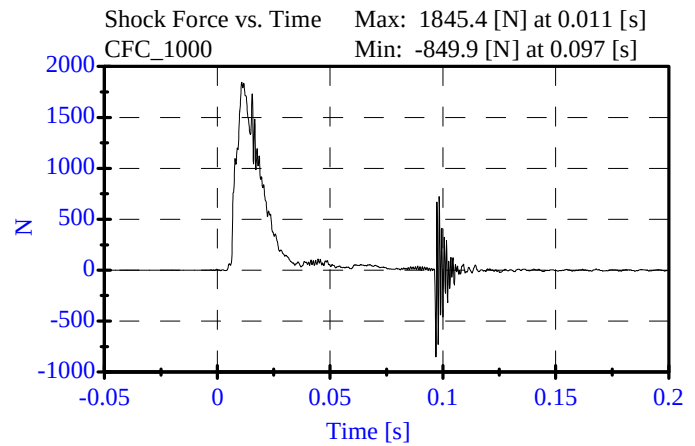
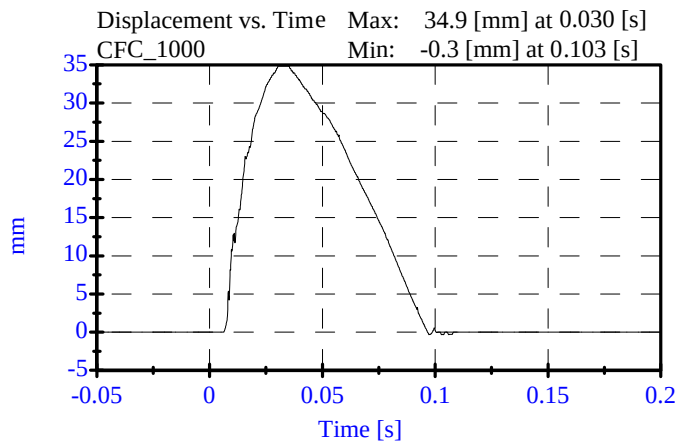
ATD Serial No: 269

Date: 04-06-09

Sequential Test Number: 1 File: 269SM 04-06-09

Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Displacement:	32.00-37.00 mm	34.85 mm	Passed
Maximum Force:	1730.00-2099.00 N	1845.37 N	Passed
Impact Test Velocity:	4.27 m/s		
Damper Identification:	269		
Damper Setting:	5		

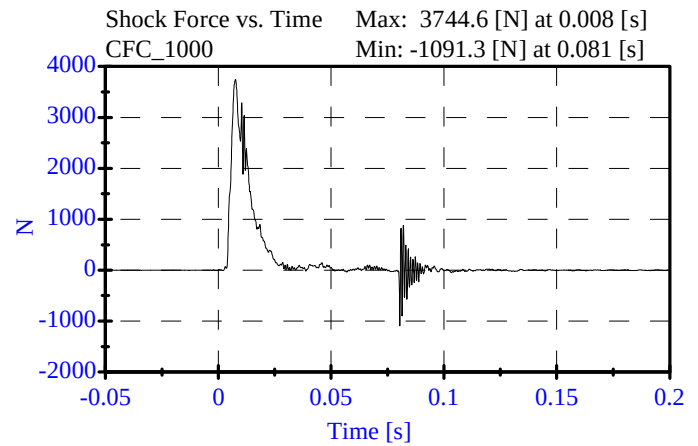
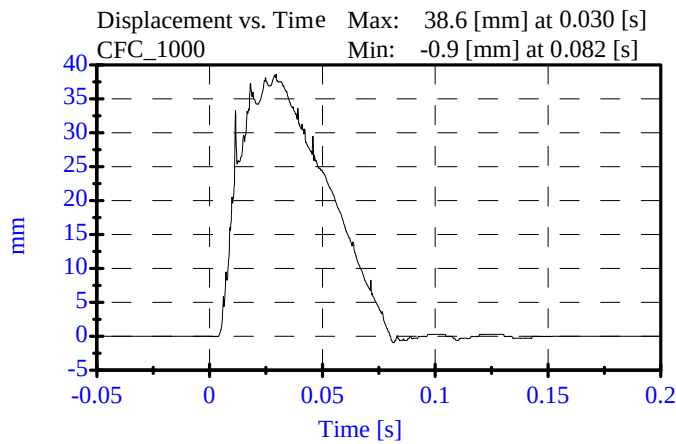


Shock Test High (6.10 m/s)
PRE TEST
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 04-06-09

Sequential Test Number: 1 File: 269SH 04-06-09
Laboratory Technician: A. Rudniski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Displacement:	33.00-40.00 mm	38.65 mm	Passed
Maximum Force:	3741.00-4448.00 N	3744.61 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	269		
Damper Setting:	5		

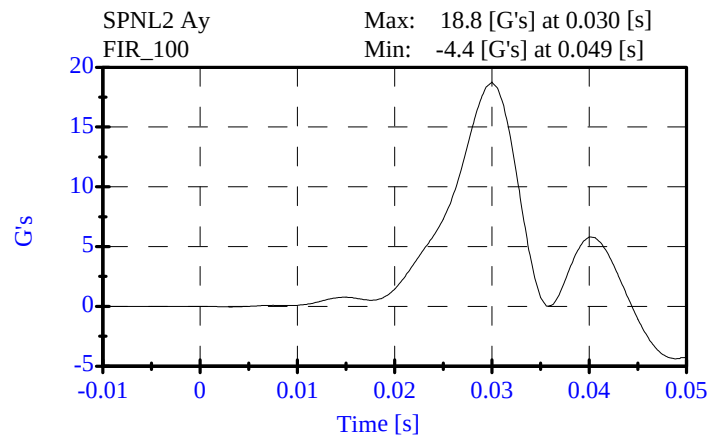
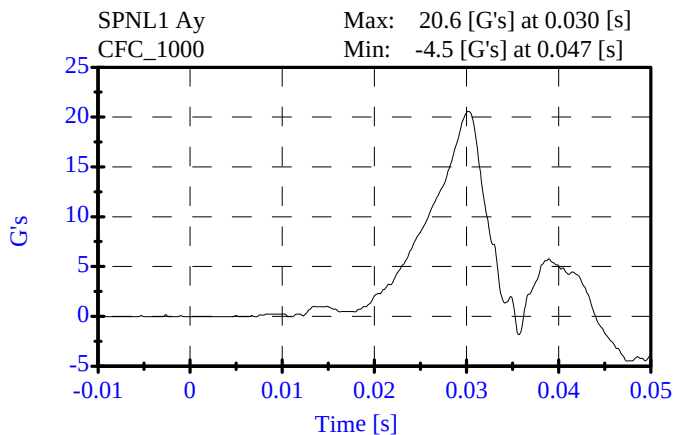
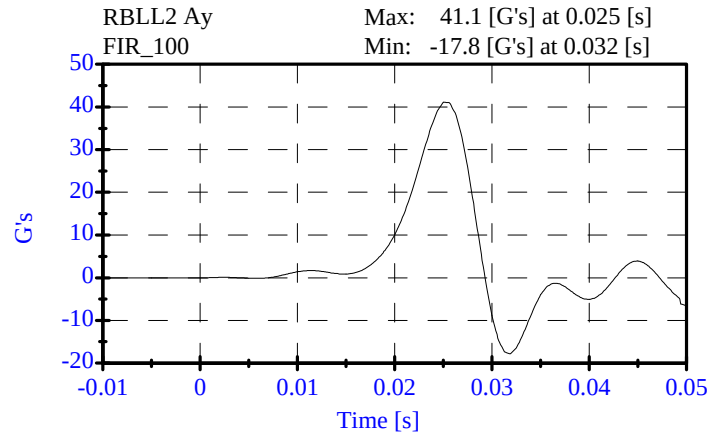
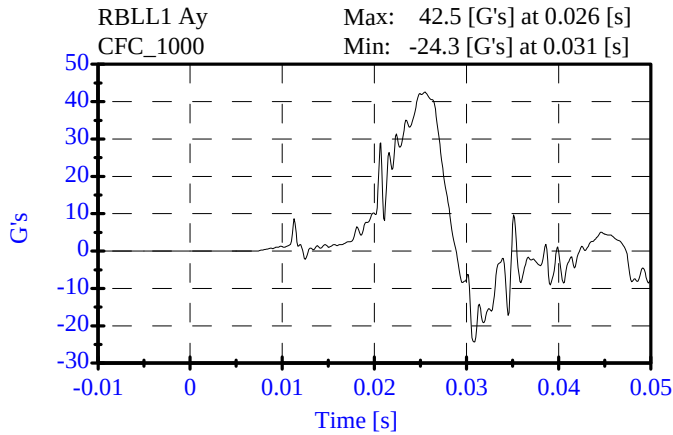
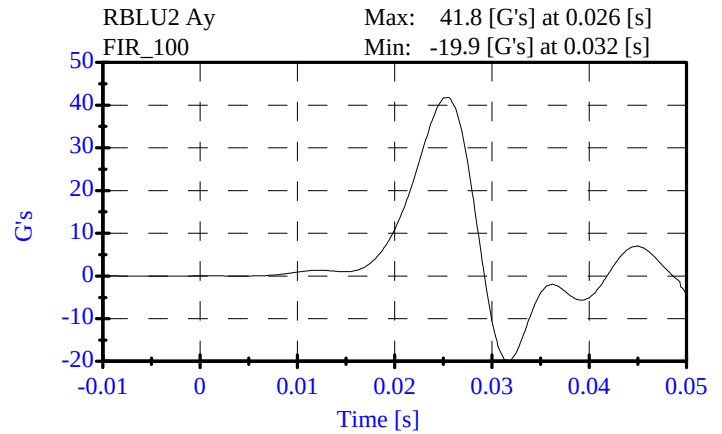
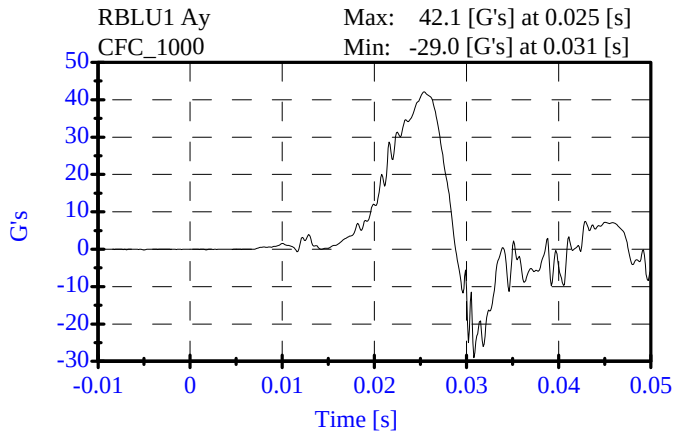


Thorax Impact Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 07-02-09

Sequential Test Number: 1 File: 269T1 07-02-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	41.78 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	41.12 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	18.75 G's	Passed

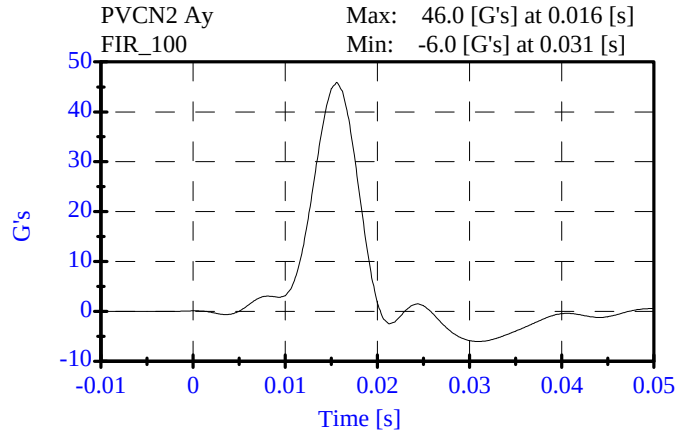
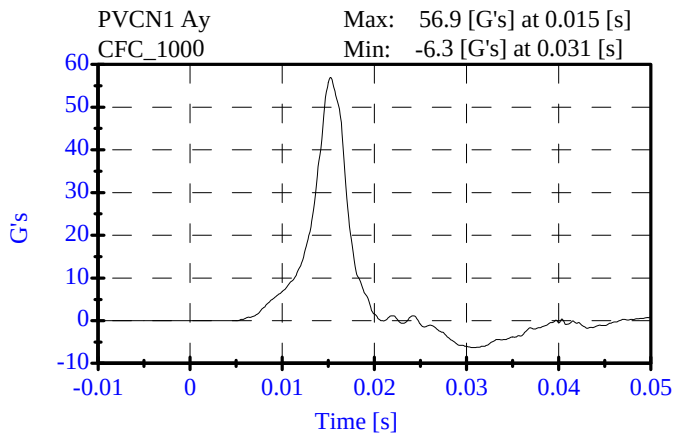


Pelvis Impact Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 07-01-09

Sequential Test Number: 1 File: 269P 07-01-09
Laboratory Technician: A. Rudniski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	23.3 C	Passed
Lab Humidity:	10-70 %	53.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	45.95 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.7 ms	Passed

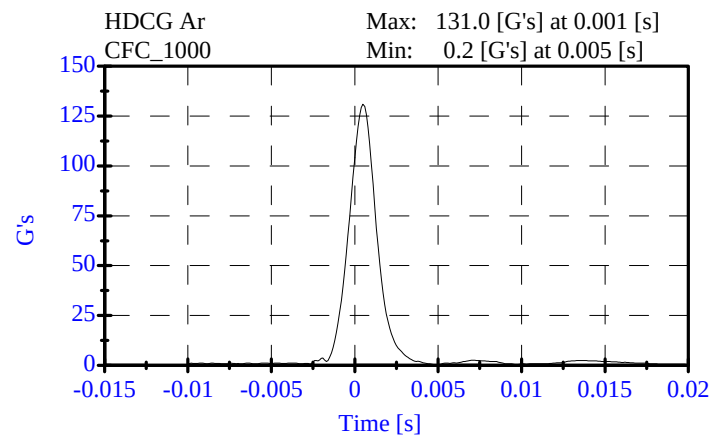
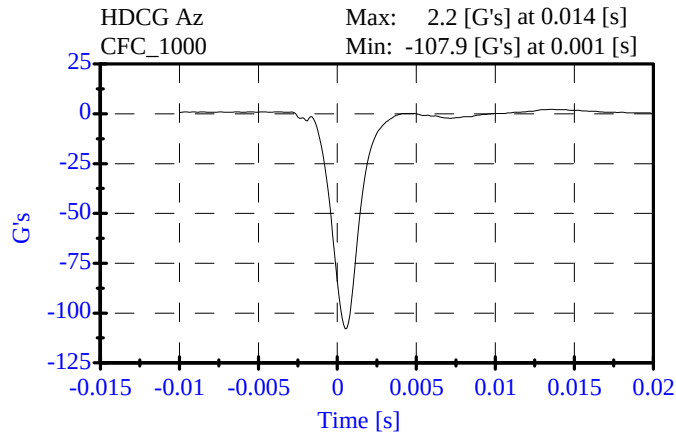
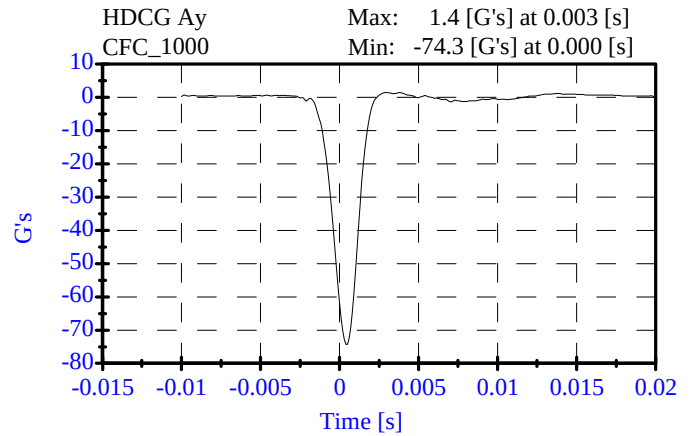
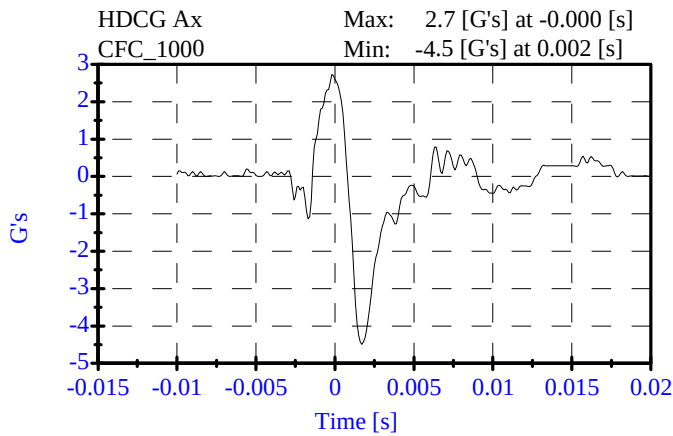


Head Drop Test **Pre-Test** **CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269
Date: 06-26-09

Sequential Test Number: 1 File: 269H1 06-26-09
Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	23.3 C	Passed
Lab Humidity:	10-70 %	66.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	130.96 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	2.73 Gs	Passed
Curve PerCent NonModal:	< 15%	2.06 %	Passed



Neck Flexion Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 06-29-09

Sequential Test Number: 1 File: 269N 06-26-09
Laboratory Technician: A. Rudnski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.09 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.33 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.23 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.44 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	72.16 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	62.70 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	76.20 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	57.40 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	10.90 ms	Passed

Neck Flexion Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

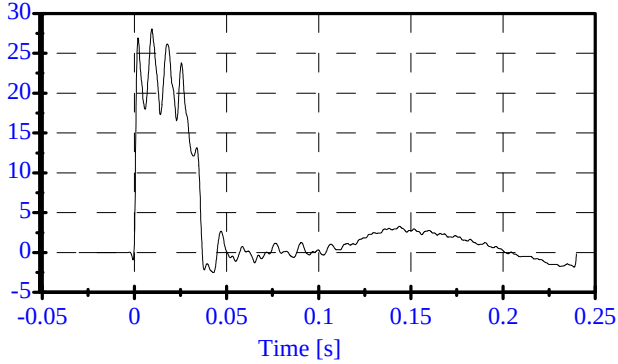
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Date: 06-29-09

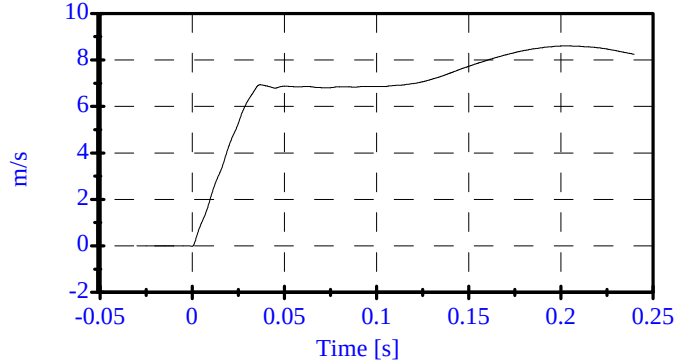
Sequential Test Number: 1 File: 269N 06-26-09

Laboratory Technician: A. Rudniski

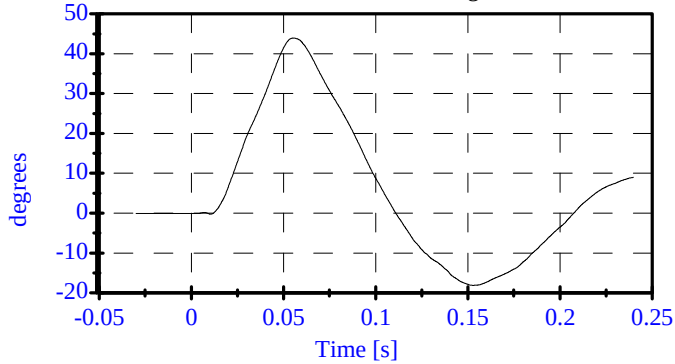
Pend Ax
CFC_180
Max: 28.1 [] at 0.010 [s]
Min: -2.5 [] at 0.043 [s]



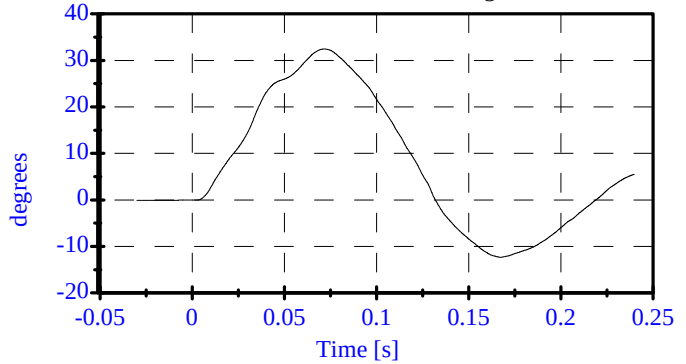
Pend Vx
CFC_180
Max: 8.6 [m/s] at 0.201 [s]
Min: -0.0 [m/s] at -0.000 [s]



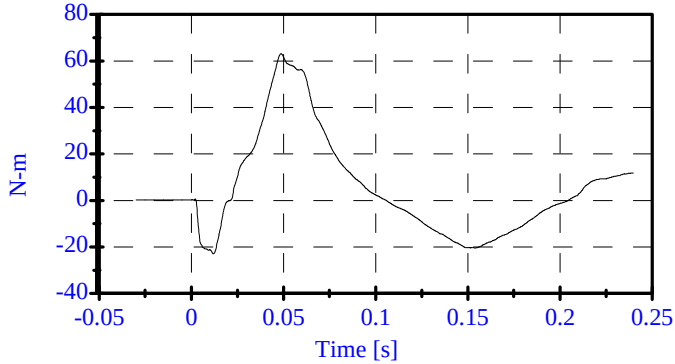
Head Rot
CFC_180
Max: 43.9 [degrees] at 0.055 [s]
Min: -18.1 [degrees] at 0.153 [s]



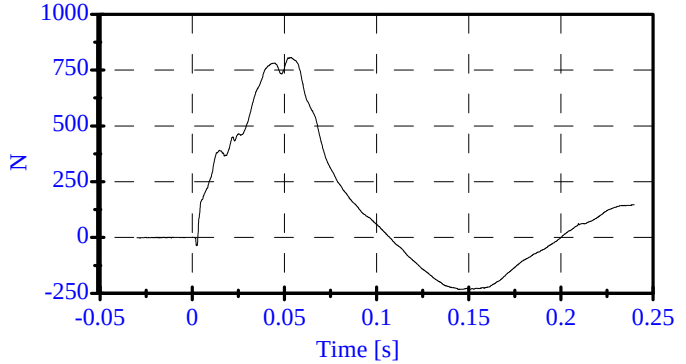
Arm Rot
CFC_180
Max: 32.5 [degrees] at 0.072 [s]
Min: -12.3 [degrees] at 0.167 [s]



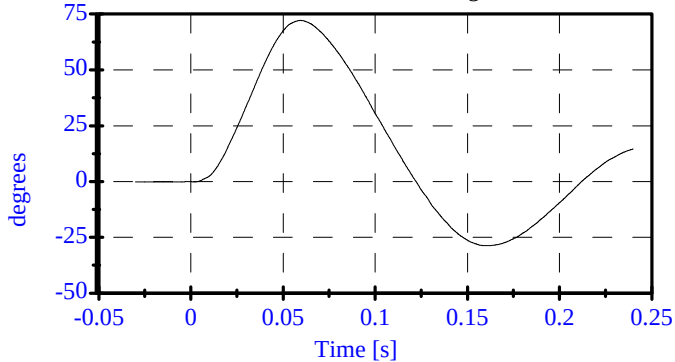
Neck Mx
CFC_600
Max: 63.2 [N-m] at 0.049 [s]
Min: -23.0 [N-m] at 0.012 [s]



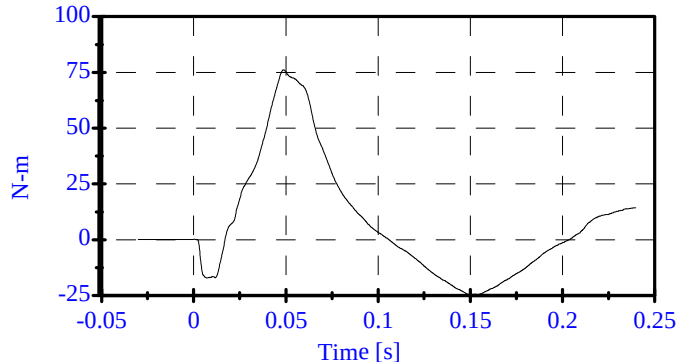
Neck Fy
CFC_1000
Max: 806.8 [N] at 0.053 [s]
Min: -232.3 [N] at 0.145 [s]



Tot Rot
CFC_180
Max: 72.2 [degrees] at 0.060 [s]
Min: -28.7 [degrees] at 0.161 [s]



MOCX
Max: 76.2 [N-m] at 0.049 [s]
Min: -24.6 [N-m] at 0.154 [s]



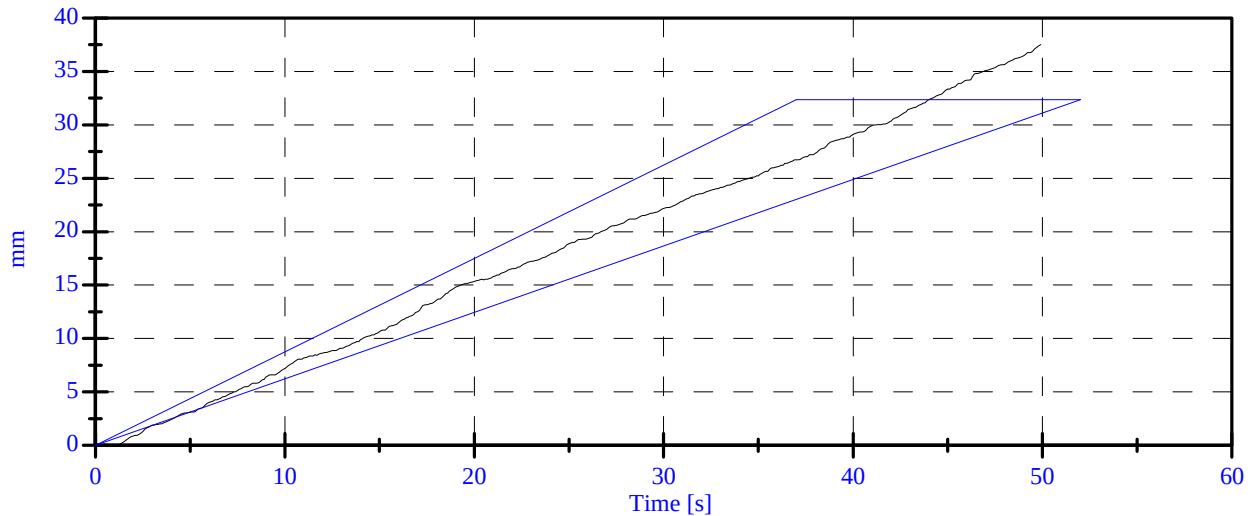
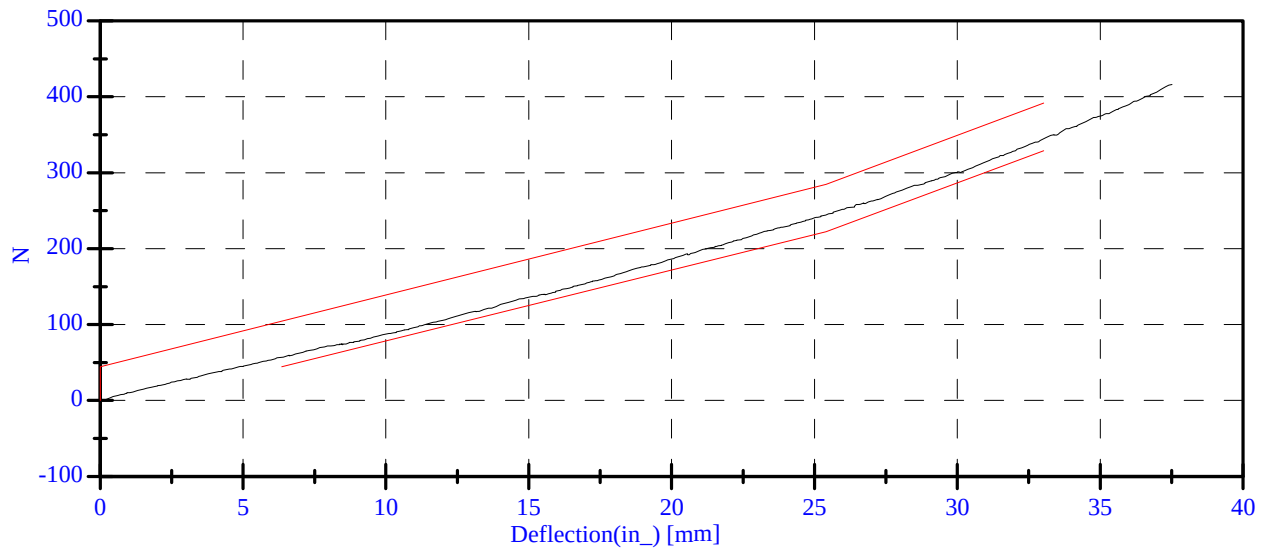
Abdominal Compression Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 07-02-09

Sequential Test Number: 1 File: 269 Ab 07-02-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	115.88 N	Passed
Force at 19.05 mm :	162.98-220.99 N	175.75 N	Passed
Force at 25.40 mm :	221.97-280.02 N	244.01 N	Passed
Force at 33.02 mm :	324.99-391.00 N	346.22 N	Passed

ABDOMINAL COMPRESSION TEST



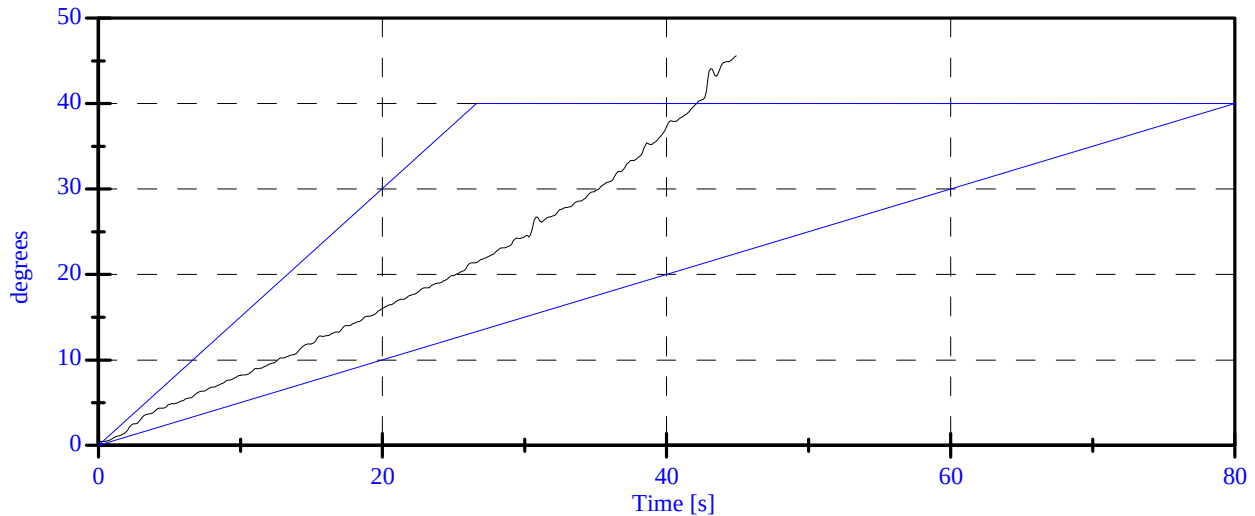
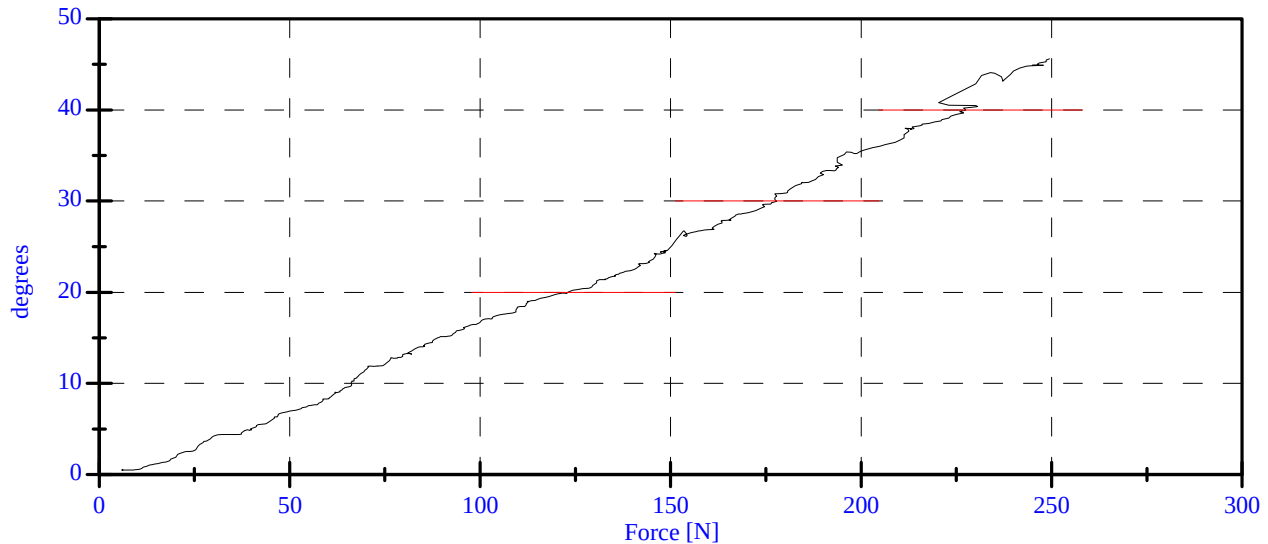
Lumbar Spine Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 07-02-09

Sequential Test Number: 1 File: 269 Spine 07-02-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	62.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	6.27 N	Passed
Force at 20 Deg:	97.86-151.24 N	123.26 N	Passed
Force at 30 Deg:	151.24-204.62 N	177.84 N	Passed
Force at 40 Deg:	204.62-258.00 N	227.46 N	Passed
Return Angle	12 Deg Max	8.45 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
 Date: 7/20/09 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 270

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 10/27/09 Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 10/22/09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	233
KH- Knee Pivot from Back Line (mm)	511 - 526	517
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	384

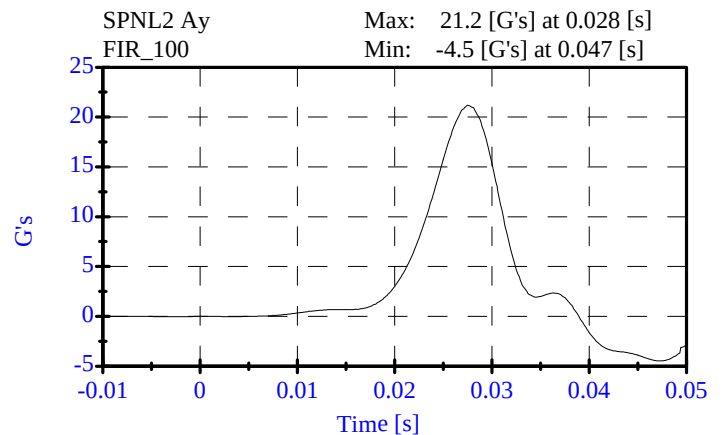
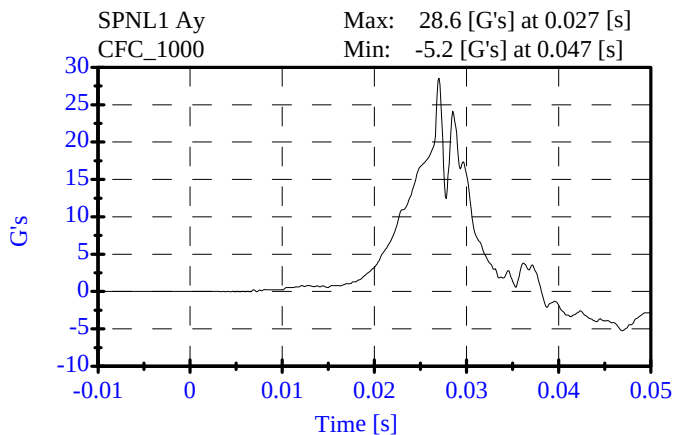
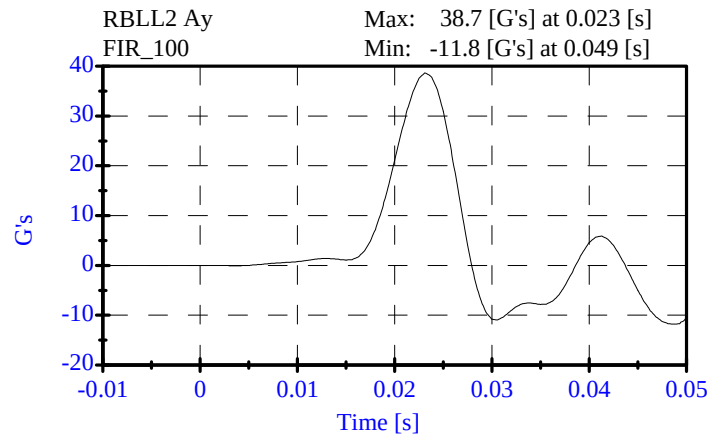
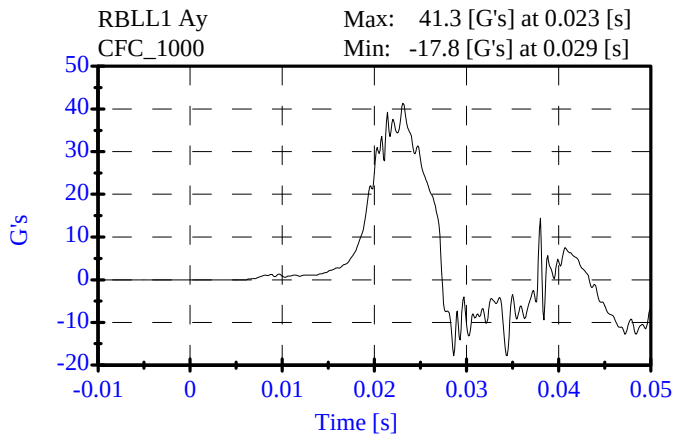
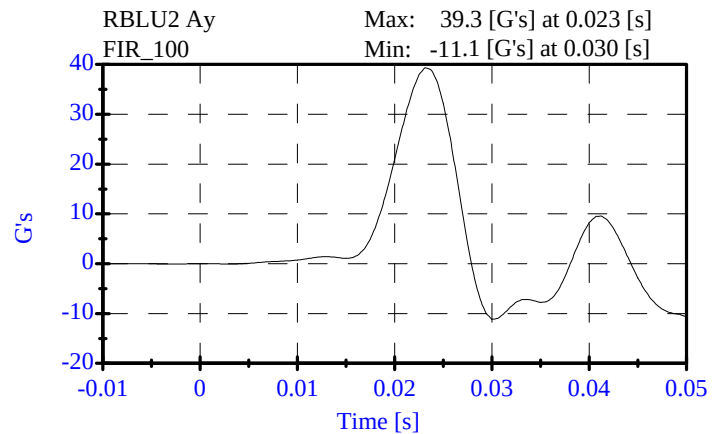
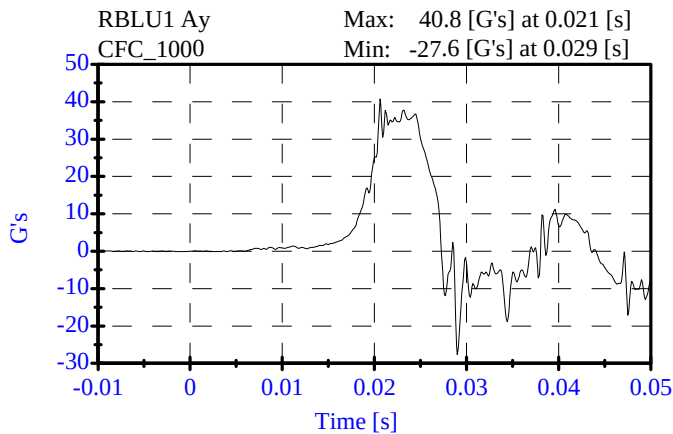
REMARKS: None

Thorax Impact Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 10-23-09

Sequential Test Number: 1 File: 270T 10-23-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	38.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	39.32 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	38.66 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.22 G's	Passed



Pelvis Impact Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

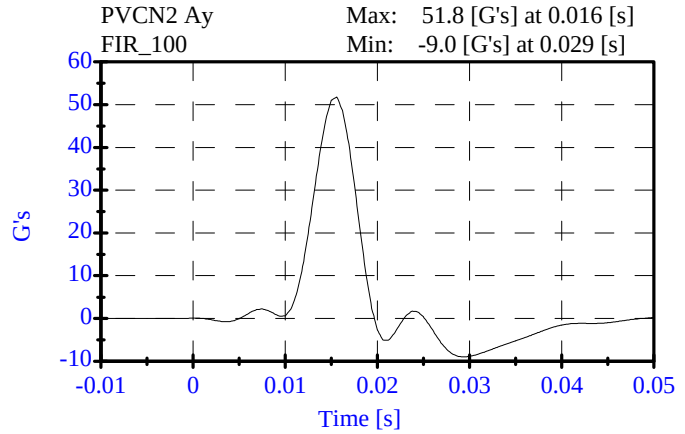
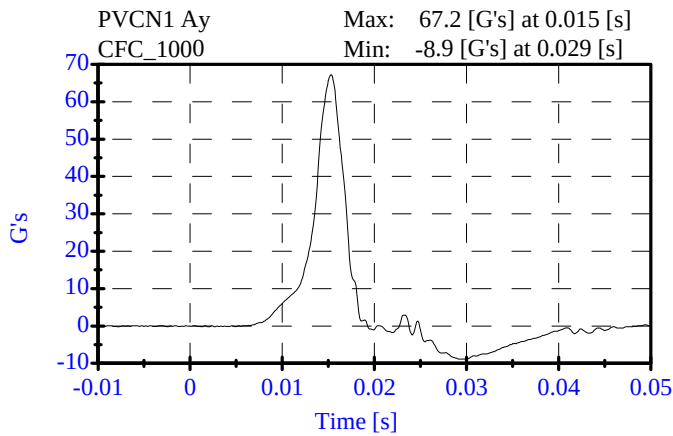
ATD Serial No: 270

Date: 10-23-09

Sequential Test Number: 1 File: 270P3 10-23-09

Laboratory Technician: A. Rudniski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	51.83 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.7 ms	Passed

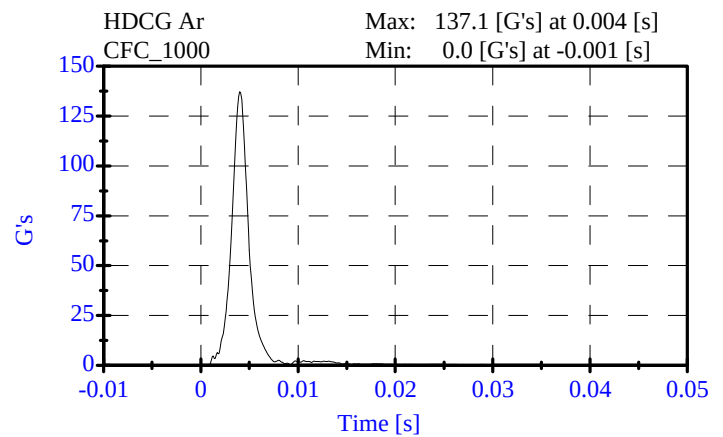
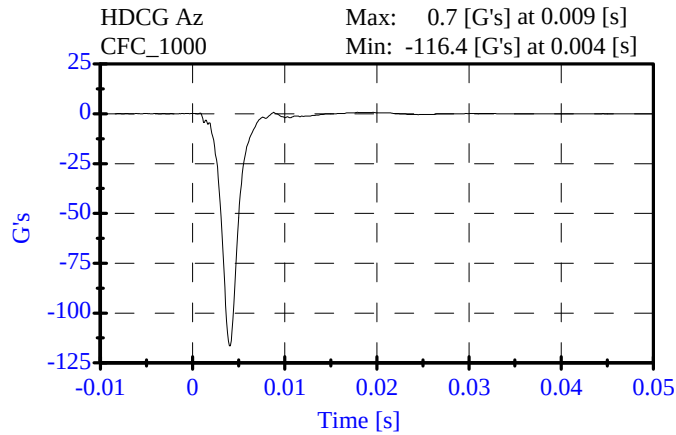
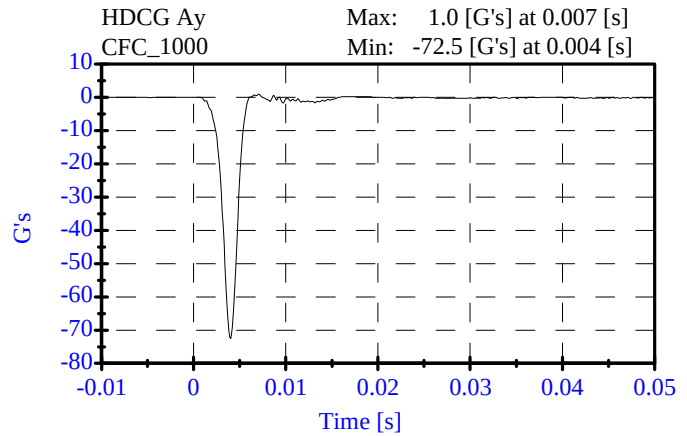
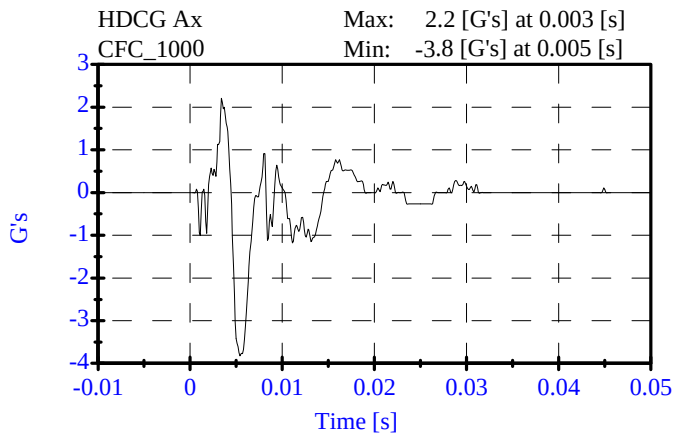


Head Drop Test **Post-Test** **CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270
Date: 10-22-09

Sequential Test Number: 1 File: 270H 10-22-09
Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	39.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	137.12 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	2.20 Gs	Passed
Curve PerCent NonModal:	< 15%	1.86 %	Passed



Neck Flexion Test**Post-Test****CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270

Date: 10-22-09

Sequential Test Number: 1 File: 270N 10-22-09

Laboratory Technician: A. Rudnski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	39.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.99 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.23 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.48 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.23 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.58 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.28 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	60.70 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	80.71 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	53.60 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	9.80 ms	Passed

Neck Flexion Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

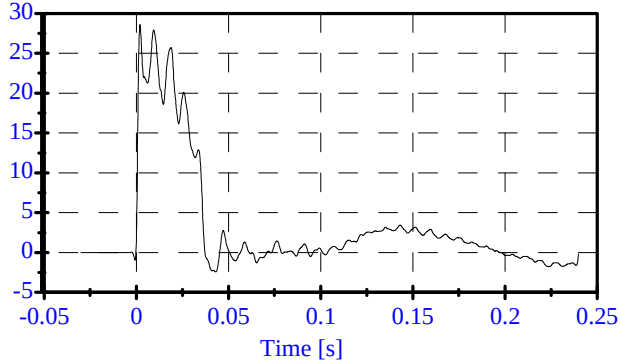
ATD Serial No: 270

Date: 10-22-09

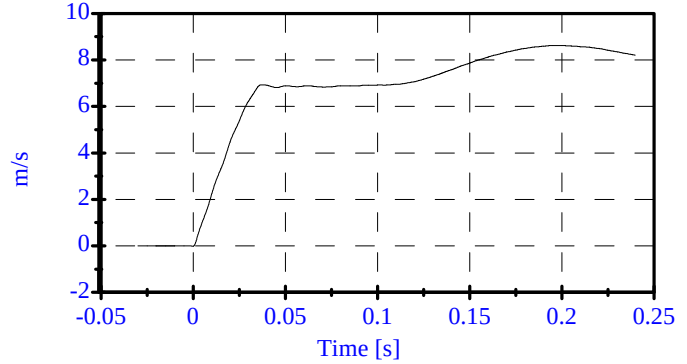
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Laboratory Technician: A. Rudniski

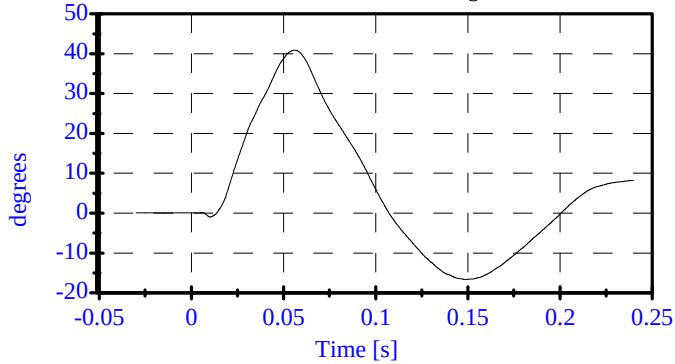
Pend Ax
CFC_180
Max: 28.6 [] at 0.002 [s]
Min: -2.4 [] at 0.043 [s]



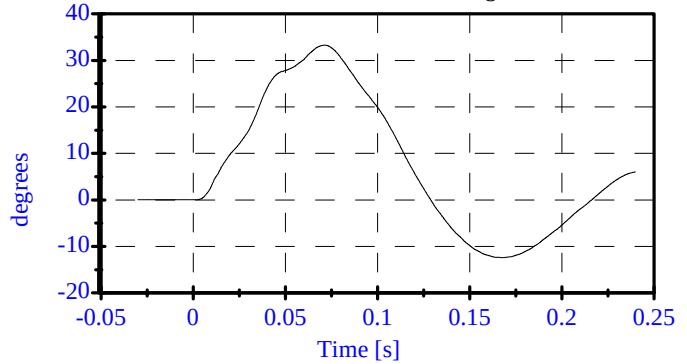
Pend Vx
CFC_180
Max: 8.6 [m/s] at 0.198 [s]
Min: -0.0 [m/s] at -0.000 [s]



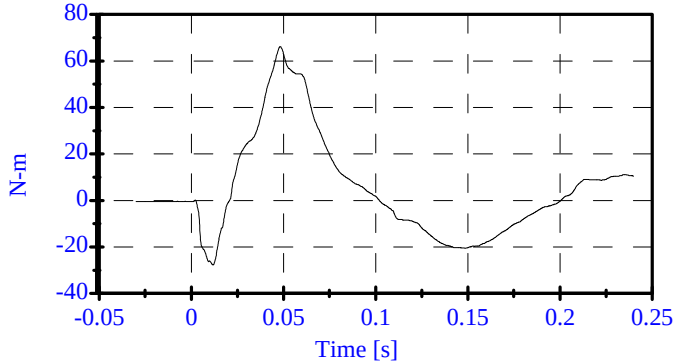
Head Rot
CFC_180
Max: 40.9 [degrees] at 0.056 [s]
Min: -16.6 [degrees] at 0.149 [s]



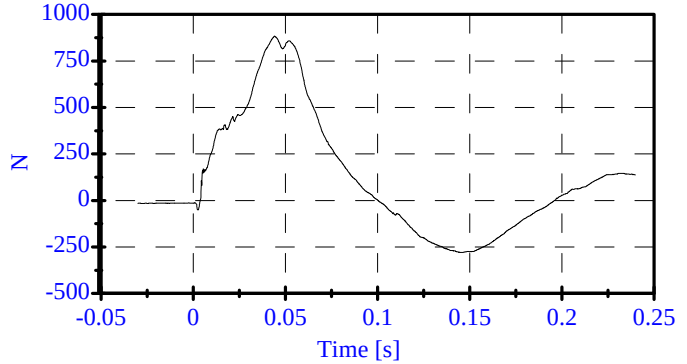
Arm Rot
CFC_180
Max: 33.3 [degrees] at 0.071 [s]
Min: -12.4 [degrees] at 0.168 [s]



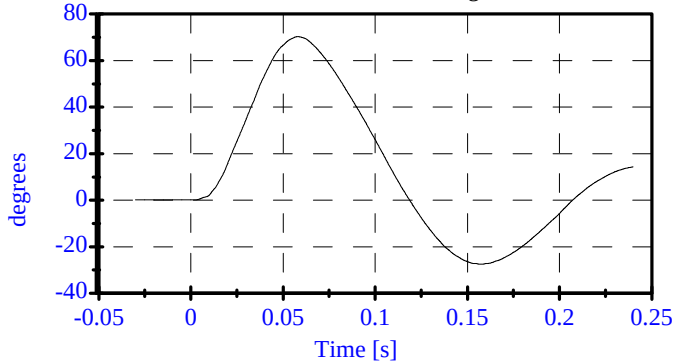
Neck Mx
CFC_600
Max: 66.2 [N-m] at 0.048 [s]
Min: -27.8 [N-m] at 0.012 [s]



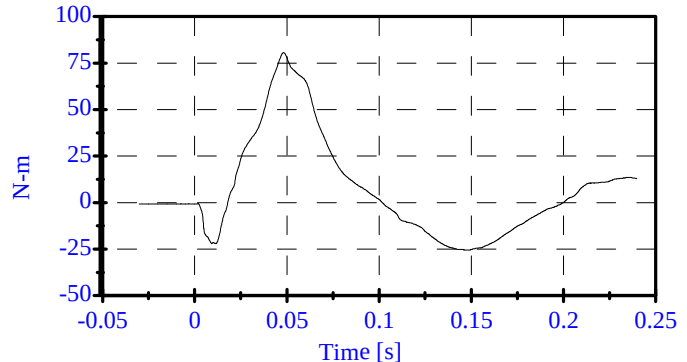
Neck Fy
CFC_1000
Max: 882.8 [N] at 0.044 [s]
Min: -280.2 [N] at 0.146 [s]



Tot Rot
CFC_180
Max: 70.3 [degrees] at 0.058 [s]
Min: -27.5 [degrees] at 0.157 [s]



MOCX
Max: 80.7 [N-m] at 0.048 [s]
Min: -25.5 [N-m] at 0.148 [s]



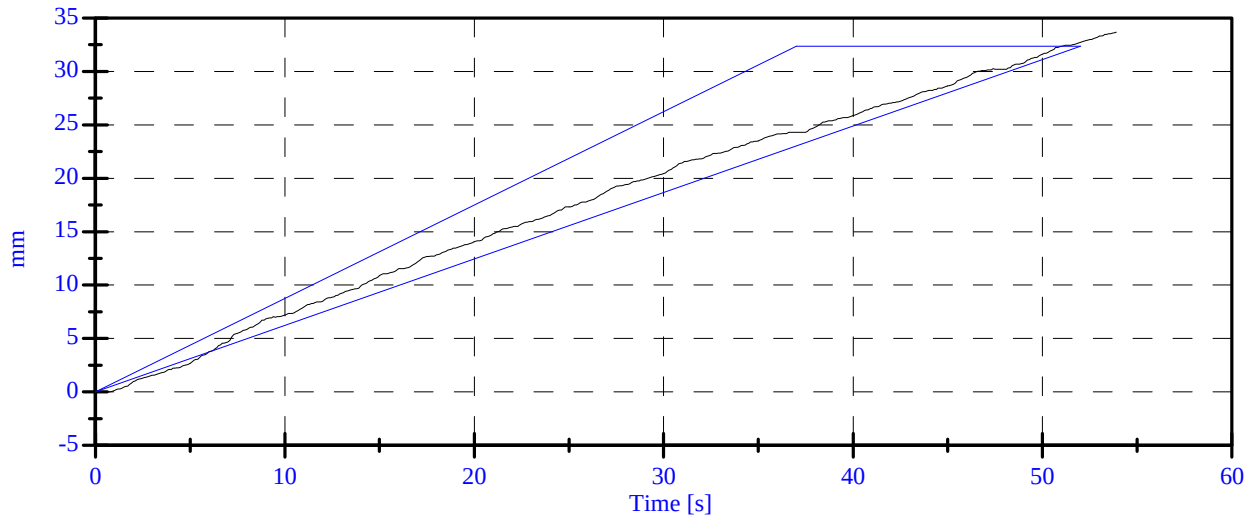
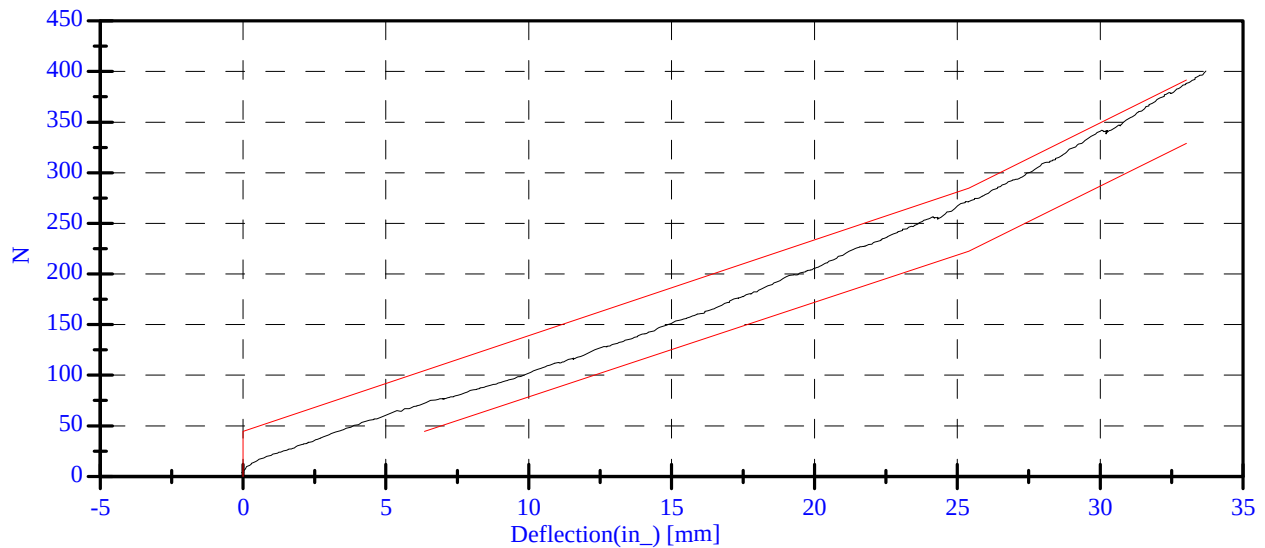
Abdominal Compression Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270
Date: 10-23-09

Sequential Test Number: 1 File: 270Ab 10-23-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	20.6 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	130.48 N	Passed
Force at 19.05 mm :	162.98-220.99 N	197.29 N	Passed
Force at 25.40 mm :	221.97-280.02 N	271.02 N	Passed
Force at 33.02 mm :	324.99-391.00 N	387.11 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270

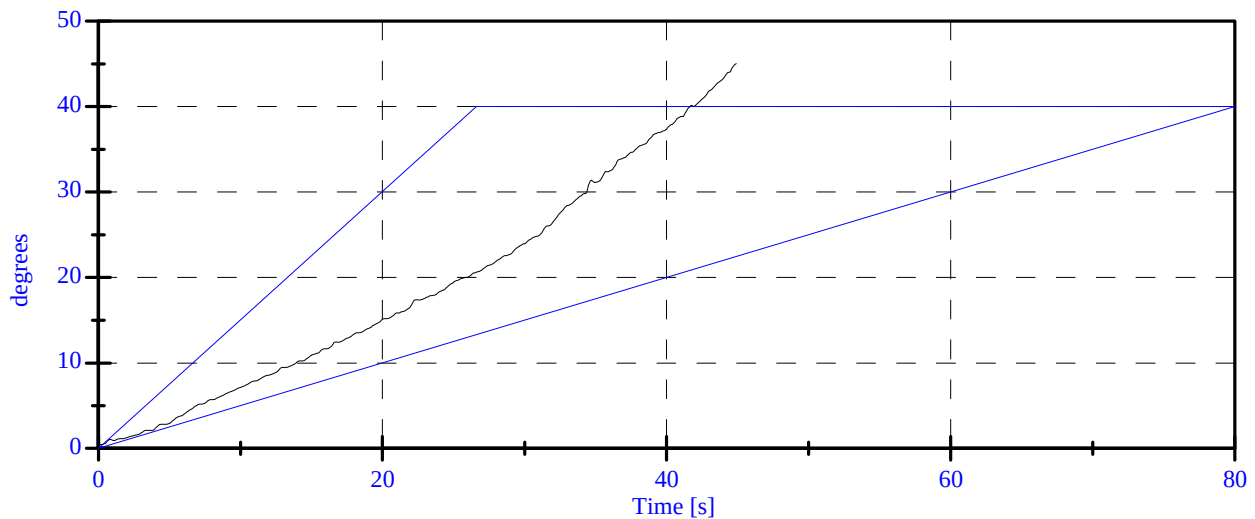
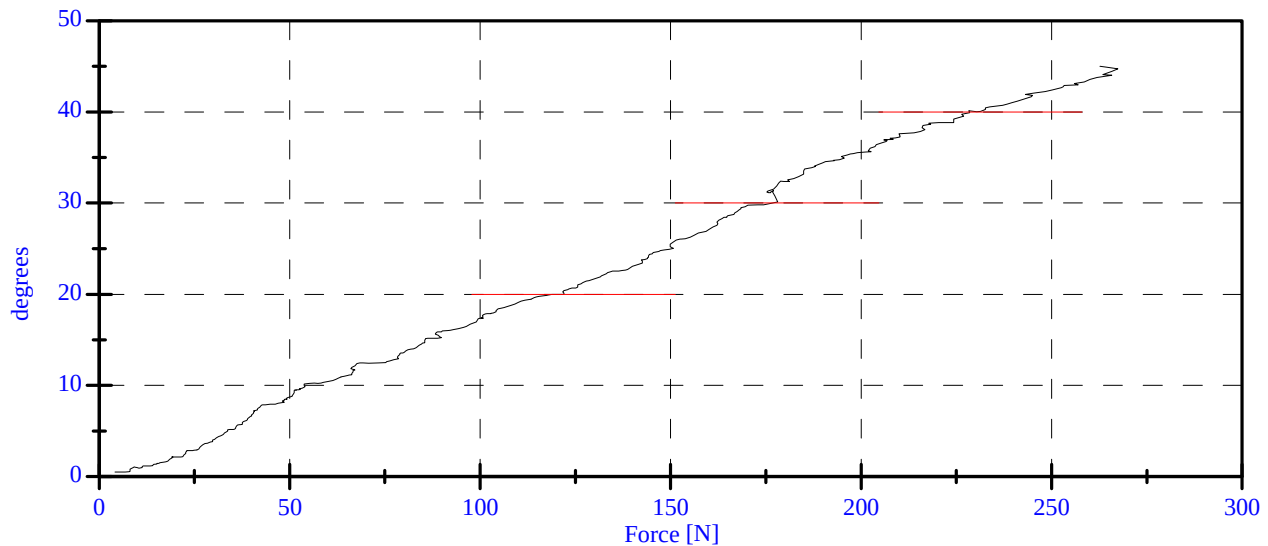
Date: 10-27-09

Sequential Test Number: 1 File: 270 Spine 10-27-09

Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	34.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	4.18 N	Passed
Force at 20 Deg:	97.86-151.24 N	118.82 N	Passed
Force at 30 Deg	151.24-204.62 N	178.11 N	Passed
Force at 40 Deg	204.62-258.00 N	230.34 N	Passed
Return Angle	12 Deg Max	6.59 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 10/22/09 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 269

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 10/27/09 Laboratory Technician: A. Rudniski

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
LATERAL NECK BEND TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 10/22/09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	233
KH- Knee Pivot from Back Line (mm)	511 - 526	516
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	381

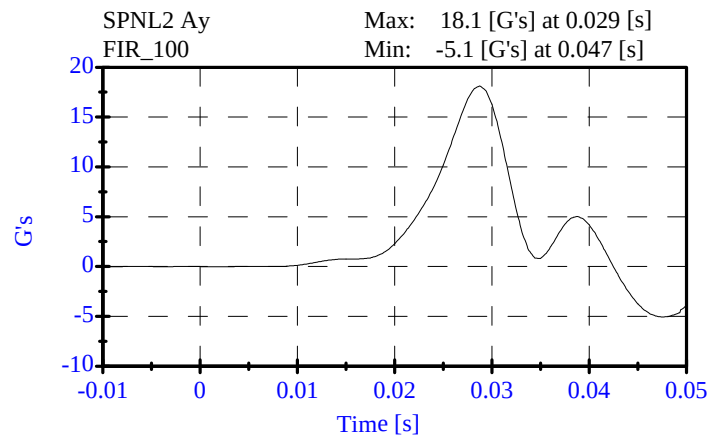
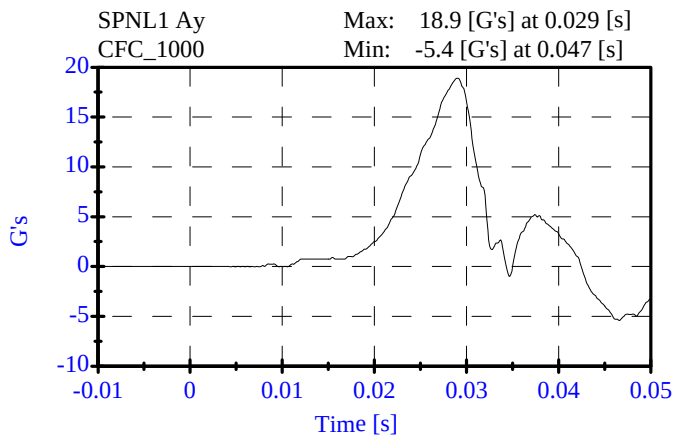
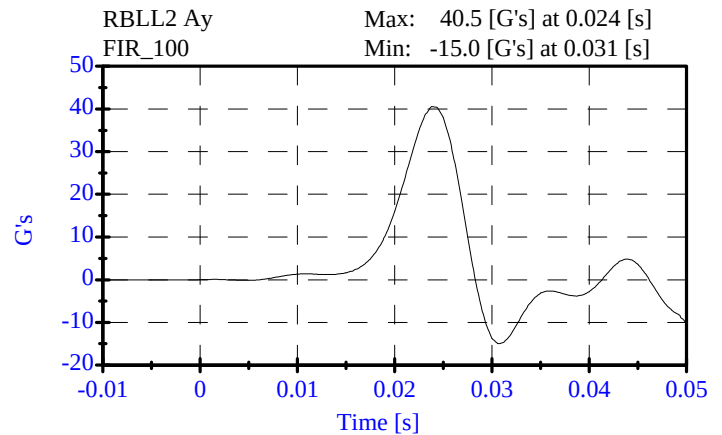
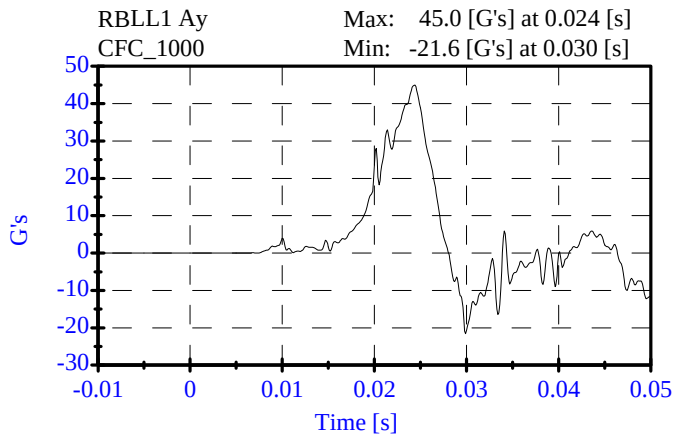
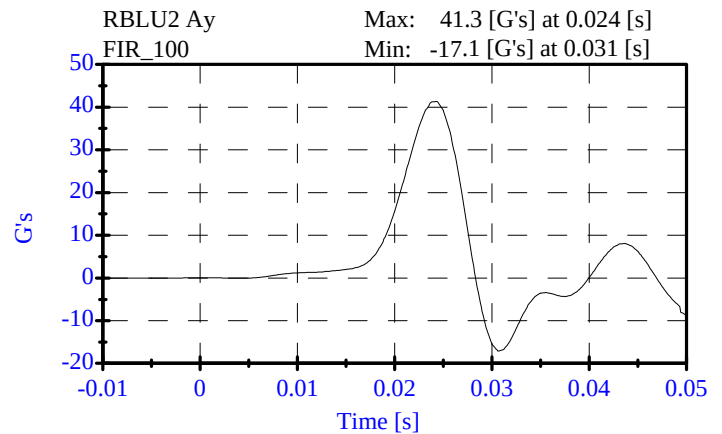
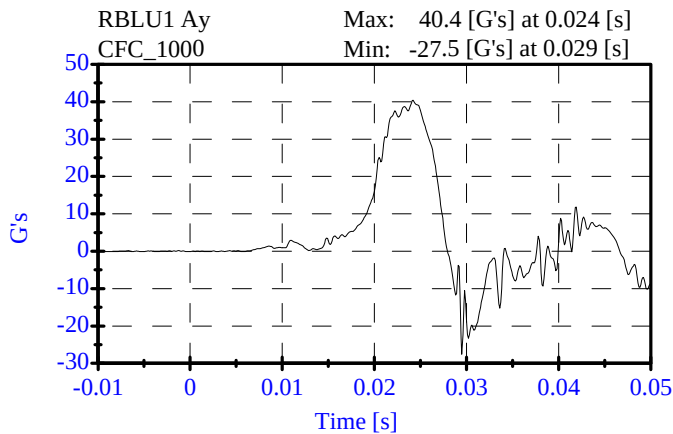
REMARKS: None

Thorax Impact Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 10-27-09

Sequential Test Number: 1 File: 269T1 10-27-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	34.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	41.32 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	40.53 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	18.13 G's	Passed



Pelvis Impact Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

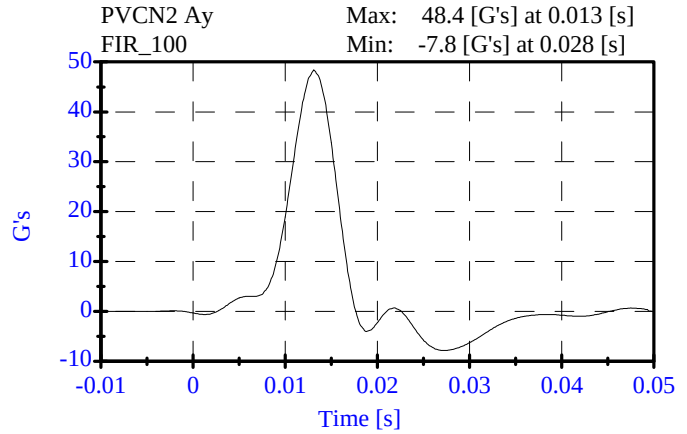
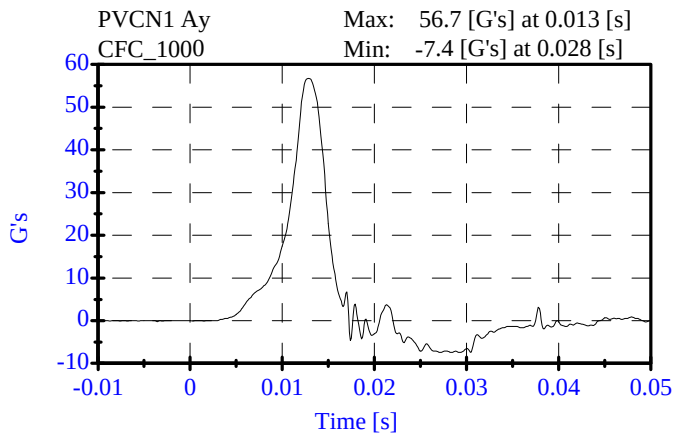
ATD Serial No: 269

Date: 10-23-09

Sequential Test Number: 1 File: 269P 10-23-09

Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	48.41 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.8 ms	Passed



Head Drop Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

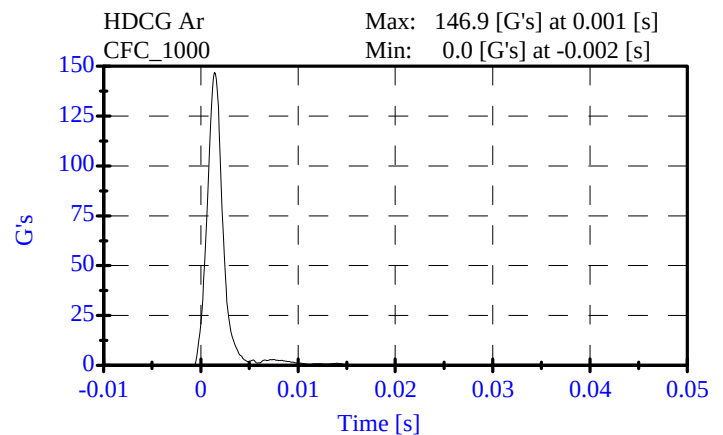
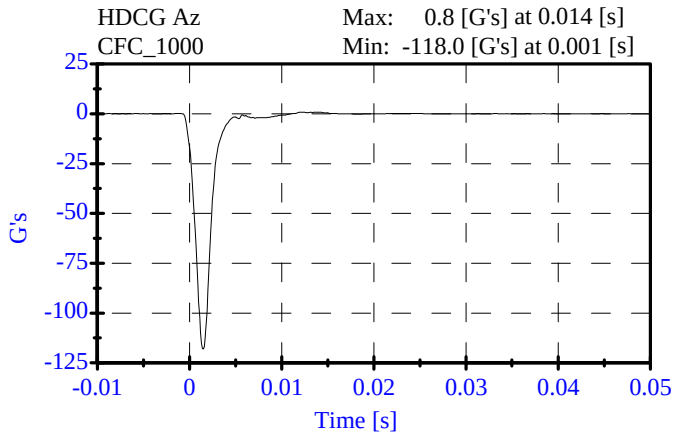
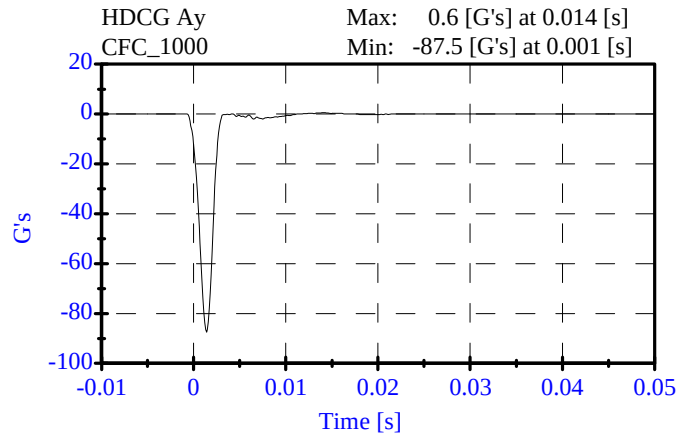
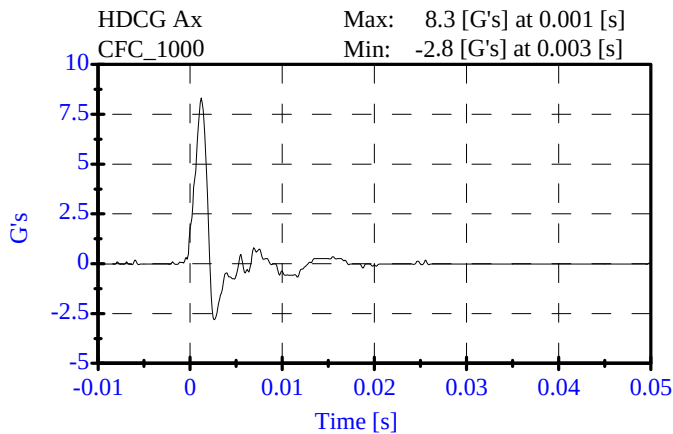
ATD Serial No: 269

Date: 10-22-09

Sequential Test Number: 1 File: 269H1 10-22-09

Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	39.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	146.89 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	8.32 Gs	Passed
Curve PerCent NonModal:	< 15%	2.00 %	Passed



Neck Flexion Test**Post-Test****CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269

Sequential Test Number: 1 File: 269N 10-22-09

Date: 10-22-09

Laboratory Technician: A. Rudnski

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	39.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.25 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.62 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.49 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.59 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.95 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	61.70 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	78.03 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	57.00 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	11.50 ms	Passed

Neck Flexion Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

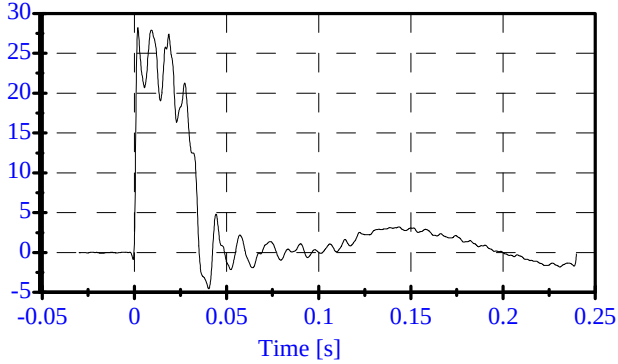
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Date: 10-22-09

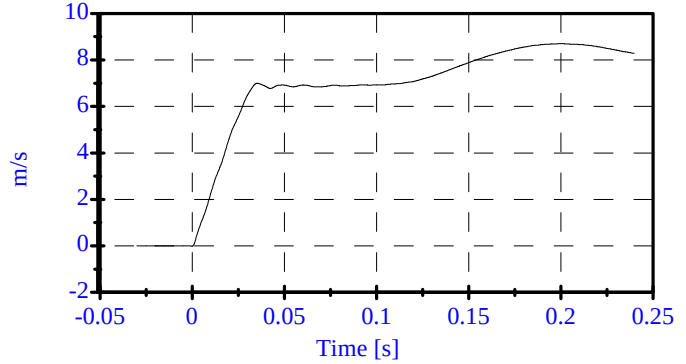
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Laboratory Technician: A. Rudniski

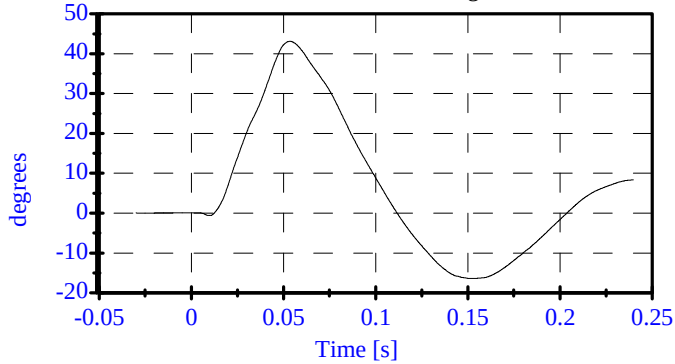
Pend Ax
CFC_180
Max: 28.2 [] at 0.002 [s]
Min: -4.5 [] at 0.040 [s]



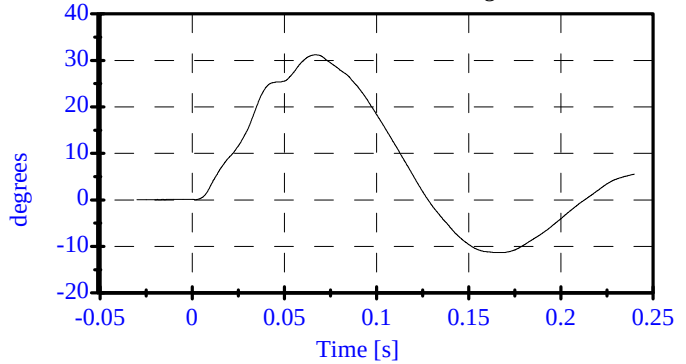
Pend Vx
CFC_180
Max: 8.7 [m/s] at 0.200 [s]
Min: -0.0 [m/s] at -0.000 [s]



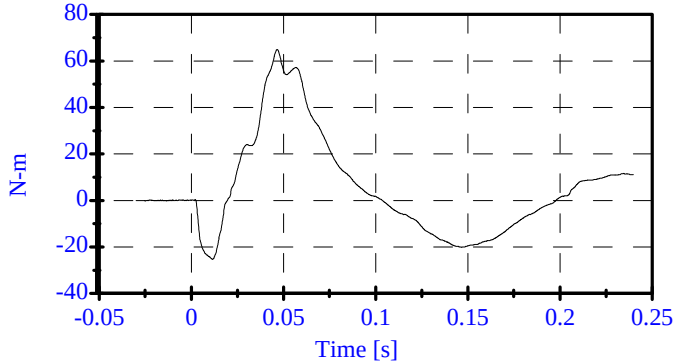
Head Rot
CFC_180
Max: 43.1 [degrees] at 0.054 [s]
Min: -16.4 [degrees] at 0.153 [s]



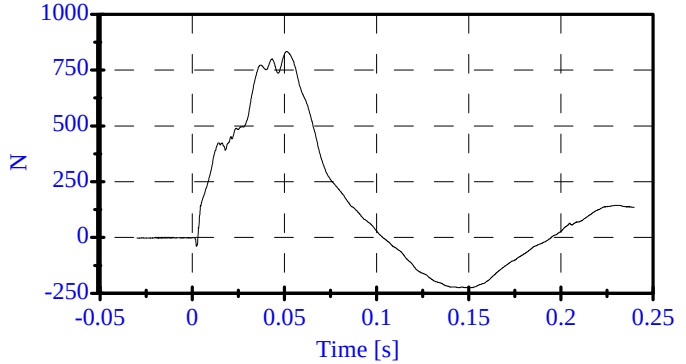
Arm Rot
CFC_180
Max: 31.2 [degrees] at 0.067 [s]
Min: -11.3 [degrees] at 0.167 [s]



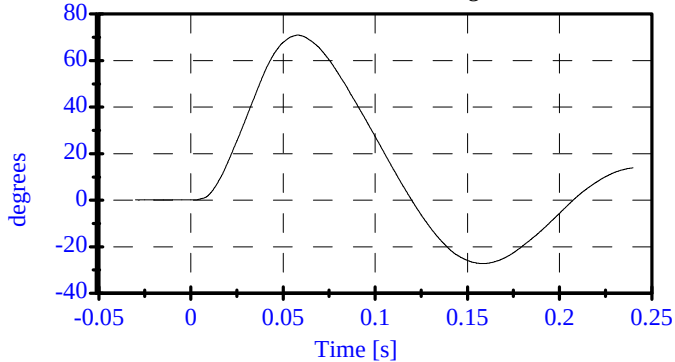
Neck Mx
CFC_600
Max: 64.9 [N-m] at 0.047 [s]
Min: -25.4 [N-m] at 0.012 [s]



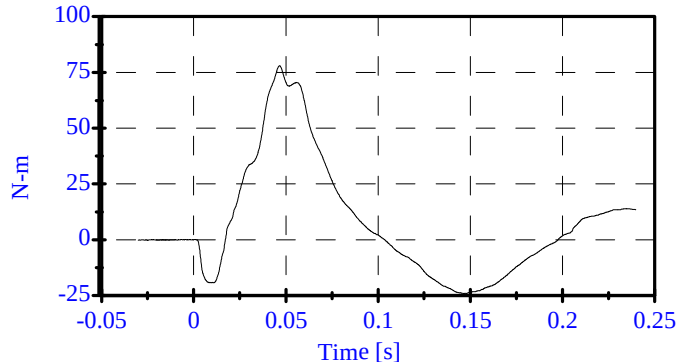
Neck Fy
CFC_1000
Max: 834.3 [N] at 0.051 [s]
Min: -224.6 [N] at 0.150 [s]



Tot Rot
CFC_180
Max: 71.0 [degrees] at 0.058 [s]
Min: -27.3 [degrees] at 0.158 [s]



MOCX
Max: 78.0 [N-m] at 0.047 [s]
Min: -24.1 [N-m] at 0.147 [s]



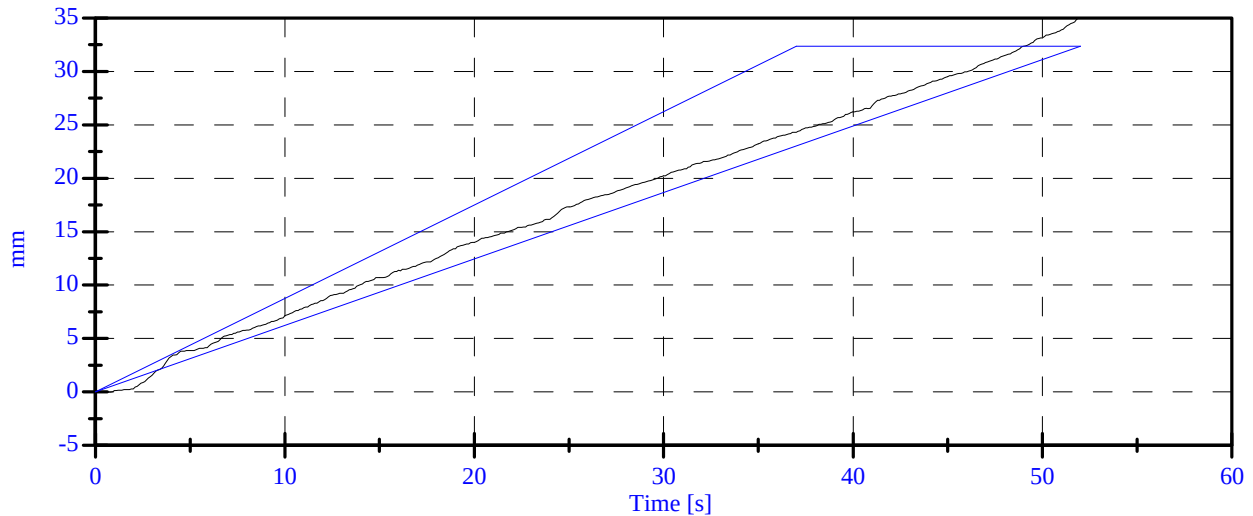
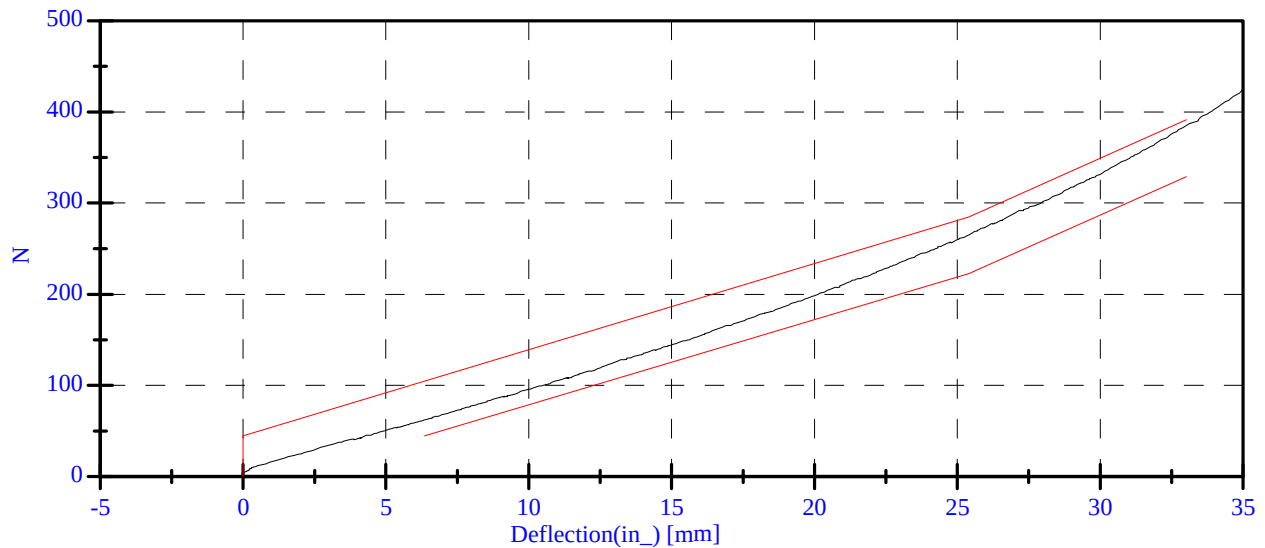
Abdominal Compression Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269
Date: 10-23-09

Sequential Test Number: 1 File: 269Ab 10-23-09
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	20.6 C	Passed
Lab Humidity:	10-70 %	36.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	125.37 N	Passed
Force at 19.05 mm :	162.98-220.99 N	187.07 N	Passed
Force at 25.40 mm :	221.97-280.02 N	264.09 N	Passed
Force at 33.02 mm :	324.99-391.00 N	386.01 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269

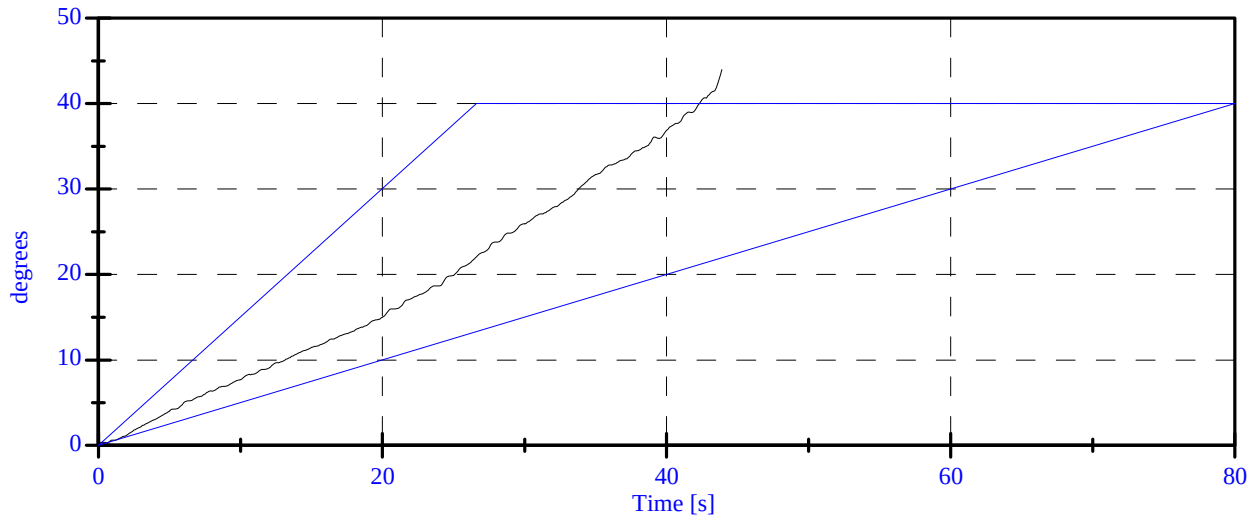
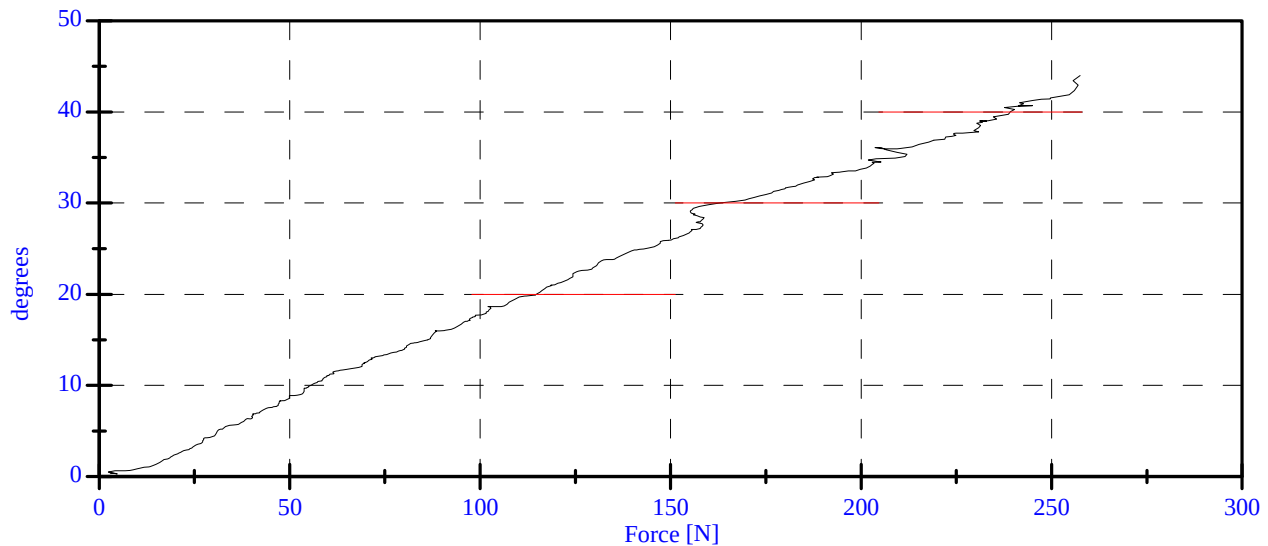
Date: 10-27-09

Sequential Test Number: 1 File: 269Spine 10-27-09

Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	34.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	4.70 N	Passed
Force at 20 Deg:	97.86-151.24 N	114.91 N	Passed
Force at 30 Deg:	151.24-204.62 N	162.96 N	Passed
Force at 40 Deg:	204.62-258.00 N	239.22 N	Passed
Return Angle	12 Deg Max	7.83 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

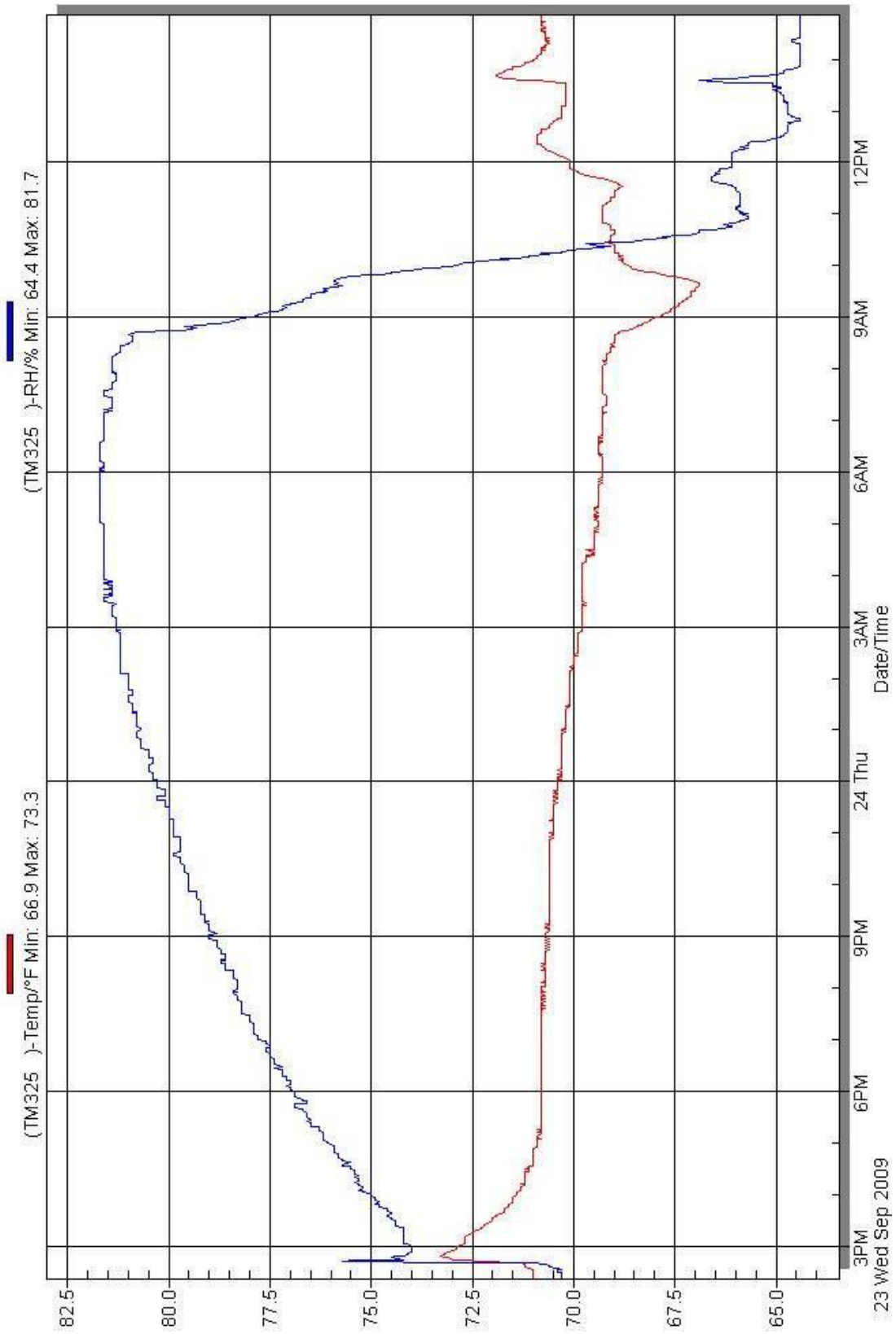
SID H3 Serial No.: 269 Sequential Test Number: 1
 Date: 10/22/09 Laboratory Technician: A. Rudniski

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

TEMPERATURE TRACE

Downloaded Data - Thursday, September 24, 2009



APPENDIX D

TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID/HIII INSTRUMENTATION

	FRONT SID/HIII NO.: 270		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P52088	ENDEVCO	7/27/2009
HEAD AY	AC-P52095	ENDEVCO	7/27/2009
HEAD AZ	AC-P58986	ENDEVCO	7/27/2009
HEAD AX REDUNDANT	AC-P58908	ENDEVCO	7/27/2009
HEAD AY REDUNDANT	AC-P59021	ENDEVCO	7/27/2009
HEAD AZ REDUNDANT	AC-P58794	ENDEVCO	7/27/2009
UPPER NECK FX	LC-810Fx	DENTON	12/8/2008
UPPER NECK FY	LC-810Fy	DENTON	12/8/2008
UPPER NECK FZ	LC-810Fz	DENTON	12/8/2008
UPPER NECK MX	LC-810Mx	DENTON	12/8/2008
UPPER NECK MY	LC-810My	DENTON	12/8/2008
UPPER NECK MZ	LC-810Mz	DENTON	12/8/2008
UPPER RIB	AC-P49192	ENDEVCO	7/27/2009
LOWER RIB	AC-P51734	ENDEVCO	7/27/2009
LOWER SPINE	AC-P51689	ENDEVCO	7/27/2009
PELVIS	AC-P58762	ENDEVCO	7/27/2009
UPPER RIB REDUNDANT	AC-P51713	ENDEVCO	7/27/2009
LOWER RIB REDUNDANT	AC-P59020	ENDEVCO	7/27/2009
LOWER SPINE REDUNDANT	AC-P58776	ENDEVCO	7/27/2009
PELVIS REDUNDANT	AC-P58905	ENDEVCO	7/27/2009

	REAR SID/HIII NO.: 269		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P58998	ENDEVCO	7/24/2009
HEAD AY	AC-P58909	ENDEVCO	7/24/2009
HEAD AZ	AC-P51279	ENDEVCO	7/24/2009
HEAD AX REDUNDANT	AC-P58780	ENDEVCO	7/24/2009
HEAD AY REDUNDANT	AC-P58997	ENDEVCO	7/24/2009
HEAD AZ REDUNDANT	AC-P58912	ENDEVCO	7/24/2009
UPPER NECK FX	LC-498Fx	DENTON	4/20/2009
UPPER NECK FY	LC-498Fy	DENTON	4/20/2009
UPPER NECK FZ	LC-498Fz	DENTON	4/20/2009
UPPER NECK MX	LC-498Mx	DENTON	4/20/2009
UPPER NECK MY	LC-498My	DENTON	4/20/2009
UPPER NECK MZ	LC-498Mz	DENTON	4/20/2009
UPPER RIB	AC-P51969	ENDEVCO	7/24/2009
LOWER RIB	AC-P51950	ENDEVCO	7/24/2009
LOWER SPINE	AC-P51970	ENDEVCO	7/24/2009
PELVIS	AC-P51946	ENDEVCO	7/24/2009
UPPER RIB REDUNDANT	AC-P51948	ENDEVCO	7/24/2009
LOWER RIB REDUNDANT	AC-P51974	ENDEVCO	7/24/2009
LOWER SPINE REDUNDANT	AC-P51965	ENDEVCO	7/24/2009
PELVIS REDUNDANT	AC-P51945	ENDEVCO	7/24/2009

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-P16671	ENDEVCO	4/2/2009
RIGHT FRONT SILL (Y)	AC-P32288	ENDEVCO	4/2/2009
RIGHT FRONT SILL (Z)	AC-P23885	ENDEVCO	4/2/2009
RIGHT REAR SILL (X)	AC-P35811	ENDEVCO	4/2/2009
RIGHT REAR SILL (Y)	AC-P35789	ENDEVCO	4/2/2009
RIGHT REAR SILL (Z)	AC-P35803	ENDEVCO	4/2/2009
REAR FLOORPAN ABOVE AXLE (X)	AC-P16841	ENDEVCO	4/3/2009
REAR FLOORPAN ABOVE AXLE (Y)	AC-P35793	ENDEVCO	4/3/2009
REAR FLOORPAN ABOVE AXLE (Z)	AC-A13829	ENDEVCO	4/3/2009
LEFT REAR SILL (Y)	AC-P26259	ENDEVCO	4/25/2009
LEFT FRONT SILL (Y)	AC-P35788	ENDEVCO	5/27/2009
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-P16862	ENDEVCO	4/27/2009
LOWER LEFT B- PILLAR (Y)	AC-P23873	ENDEVCO	4/2/2009
MIDDLE LEFT B-PILLAR (Y)	AC-P38132	ENDEVCO	5/26/2009
LOWER LEFT A-PILLAR (Y)	AC-P26269	ENDEVCO	4/27/2009
UPPER LEFT A-PILLAR (Y)	AC-P23926	ENDEVCO	4/2/2009
FRONT SEAT TRACK (Y)	AC-P19222	ENDEVCO	5/26/2009
REAR SEAT TRACK (Y)	AC-P23788	ENDEVCO	4/3/2009
VEHICLE CG (X)	AC-P35757	ENDEVCO	4/2/2009
VEHICLE CG (Y)	AC-P21399	ENDEVCO	4/3/2009
VEHICLE CG (Z)	AC-P23899	ENDEVCO	4/27/2009
MDB CG (X)	AC-C16680	ENDEVCO	4/9/2009
MDB CG (Y)	AC-C14948	ENDEVCO	4/9/2009
MDB CG (Z)	AC-CP30	ENDEVCO	4/9/2009
MDB REAR FRAME MEMBER (X)	AC-C15007	ENDEVCO	4/9/2009
MDB REAR FRAME MEMBER (Y)	AC-C16499	ENDEVCO	4/9/2009

REMARKS: None