

REPORT NUMBER: 214-CAL-08-04

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT**

**TOYOTA MOTOR MANUFACTURING
2009 TOYOTA MATRIX
4-DOOR HATCHBACK**

NHTSA NUMBER: C95101

**PREPARED BY:
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Test Date: February 21, 2008

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
MAIL CODE: NVS-220, WEST BUILDING 4TH FLOOR
1200 NEW JERSEY AVENUE, SE
WASHINGTON, DC 20590**

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Technical Report Documentation Page

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16. Abstract A 55/28 km/h 90° Moving Deformable Barrier FMVSS 214 Indicant side impact was conducted on the subject 2009 Toyota Matrix 4-Door Hatchback to obtain new car assessment and research data indicant of FMVSS No. 214D performance. The test was conducted at the Calspan Corporation Transportation Sciences Center in Buffalo, New York, on February 21, 2008. The impact velocity of the Moving Deformable Barrier (MDB) was 61.8 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 21°C. The target vehicle's maximum post test static crush was 209 mm at level 2. The test vehicle's occupant performance is as follows:																								
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;"><u>DRIVER</u></th> <th style="width: 20%; text-align: center;"><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">30.6</td> <td style="text-align: center;">65.9</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">34.6</td> <td style="text-align: center;">57.6</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">40.1</td> <td style="text-align: center;">54.1</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">37</td> <td style="text-align: center;">60</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">59</td> <td style="text-align: center;">51</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">204.9</td> <td style="text-align: center;">183.6</td> </tr> </tbody> </table>					<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	30.6	65.9	Left Lower Rib (LLR) Accel., g	34.6	57.6	Lower Spine (T ₁₂) Accel., g	40.1	54.1	Thoracic Trauma Index (TTI)	37	60	Pelvis (PEV) Accel., g	59	51	HIC	204.9	183.6
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HIC	204.9	183.6																						
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.																								
17. Key Words Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID)		18. Distribution Statement <u>Copies of this report are available from:</u> NHTSA Technical Information Services National Highway Traffic Safety Admin. 1200 New Jersey Avenue, SE Washington, DC 20590																						
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SECTION 1
PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-07-D-00064. The purpose of this indicant test was to evaluate side impact protection in a 2009 Toyota Matrix 4-Door Hatchback when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-08, dated December 15, 2006).

SECTION 2

SUMMARY OF FMVSS 214 INDICANT SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-08, dated December 15, 2006).

A model year 2009 Toyota Matrix 4-Door Hatchback 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 61.8 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 1487.0 kg and the test weight of the MDB was 1362.5 kg. The test was conducted at the Calspan Corporation Transportation Sciences Center on February 21, 2008.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/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 209 mm at level 2, 900 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 906 and 905 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	204.9	35.7	67.0	37	59
Passenger	183.6	34.5	70.5	60	51

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: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

TEST VEHICLE INFORMATION AND VEHICLE OPTIONS

Make	Toyota Motor Manufacturing	Driver Front Airbag	Yes
Model	Matrix	Driver Side Curtain Airbag	Yes
Body Style	4-Door Hatchback	Driver Side Torso Airbag	Yes
NHTSA No.	C95101	Driver Pretensioners	Yes
VIN	2T1KU40E39C004997	Driver Load Limiters	Yes
Color	Blue	Driver Power Seats	No
Engine Disp.(L)	1.8	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	4	Rear Pass. Power Seats	NA
Final Drive	Front	Tilt Wheel	Yes
Air Conditioning	Yes	Anti-lock Brakes	Yes
Power Steering	Yes	Traction Control	No
Power Brakes	Yes	Power Windows	Yes
Delivery Date	2/11/08	Power Door Locks	Yes
Odometer Reading (km)	10	Automatic Door Locks (ADL)	Yes
Dealer	West Herr Toyota	Owner's Manual Details Instructions on Disabling ADLs	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Manufacturing	GVWR (kg)	1751
		GAWR Front (kg)	930
Date of Manufacture	1/08	GAWR Rear (kg)	839

VEHICLE CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				385
Cargo Wt. (RCLW) (kg)				44.8

DATA SHEET NO. 1 (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

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	411.0	246.0		460.0	328.5		449.5	328.5	
Right	kg	368.0	265.0		389.0	320.0		389.0	320.0	
Ratio	%	60.4	39.6		56.7	43.3		56.4	43.6	
Totals	kg	779.0	511.0	1290.0	849.0	648.5	1497.5	838.5	648.5	1487.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1290.0
Weight of 2 P572M ATDs (81.2 kg each)	kg	162.4
Rated Cargo/Luggage Weight (RCLW)	kg	44.8
Calculated Vehicle Target Weight (TVTW)	kg	1497.2

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

Weight of Ballast (including instrumentation package and cameras): 34.6 kg

TEST VEHICLE ATTITUDES

	Units	LF	RF	LR	RR
As Delivered	mm	715	716	721	724
Fully Loaded	mm	703	712	686	696
As Tested	mm	704	712	691	696

TEST VEHICLE VERTICAL IMPACT LINE AND CG

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2601
Target Impact Point Aft of Front Axle	mm	361
Actual Impact Point Aft of Front Axle	mm	368
As Tested CG (aft of front axle)	mm	1134.33

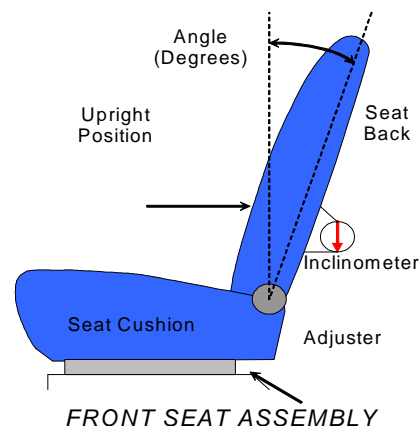
DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

NORMAL DESIGN RIDING POSITION

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

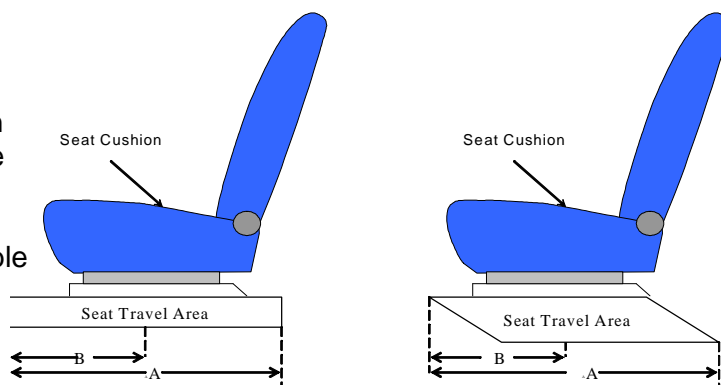


SEAT BACK POSITION

	Driver Seat	Rear Seat
Test Detent (forward-most detent defined as 0)	3	Not Adjustable
Angle (deg. from forward-most locking position)	6.0	Not Adjustable
Alternative Measurements to Verify Test Position	Head restraint post 0.8° back from vertical	NA

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)	274	N/A
Test Position (B) (mm)	137	N/A
Test Detent (forward-most detent defined as 0)	7	N/A
Total Number of Detents (including 0)	16	N/A

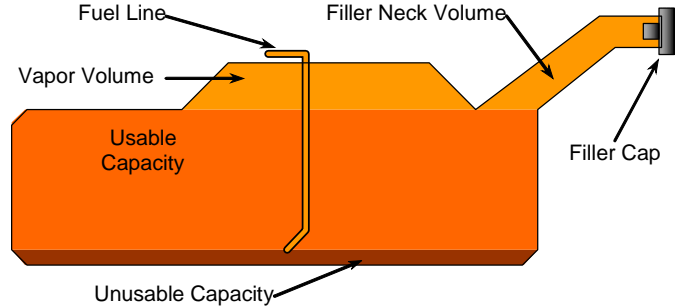
DATA SHEET NO. 3 (CONTINUED)

TEST VEHICLE INFORMATION

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

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.



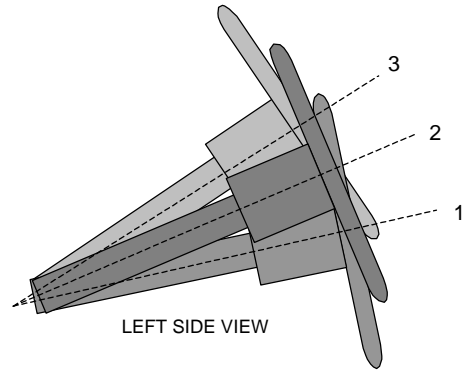
VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

	Liters
Usable Capacity of “Standard” Fuel Tank	50
Usable Capacity of “Optional” Fuel Tank	-
Stoddard Used For Test (92%-94% of Fuel Tank Usable Capacity)	46

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	NA	64.2	N/A
Geometric Center Position No. 2 *	NA	62.8	N/A
Uppermost Position No. 3	NA	61.3	NA

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

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

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	61.8
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.7
Impact angle with respect to impactor	°	88.5° to 91.5°	89.9

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

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	7 mm rearward
Vertical Offset	mm	+/-20	10 mm above

DATA SHEET NO. 5

POST TEST OBSERVATIONS

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 906	SID/HIII / 905
Head Contact	Side Curtain Airbag	Side Curtain Airbag
Upper Torso Contact	Torso Airbag/Upper Door	Upper Door Trim
Lower Torso Contact	Torso Airbag	Door Trim/Arm Rest
Left Knee Contact	Door Trim	Door Trim
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	Door remained closed and latched
Right Side Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

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

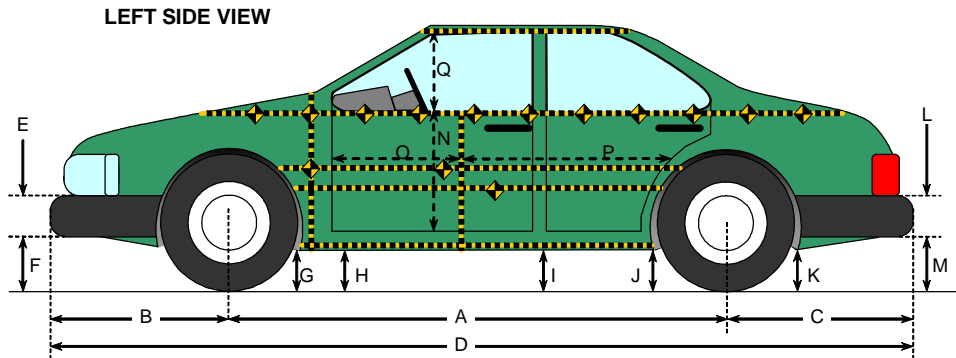
SUPPLEMENTAL RESTRAINT INFORMATION

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: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



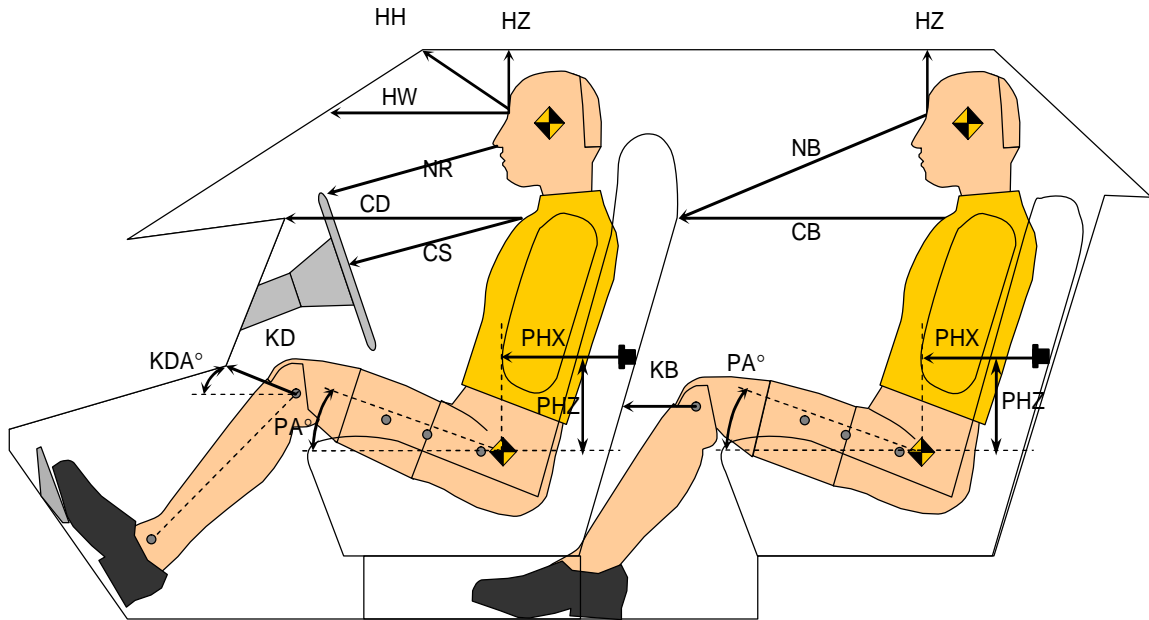
All Measurements in mm

Code	Measurement Description	Pre-Test (delivered)	Pre-Test (as tested)	Post-Test (as tested)	Difference
A	Wheelbase	2601	2601	2599	2
B	Front Axle to FSOV	923	923	938	-15
C	Rear Axle to RSOV	840	840	829	11
D	Total Length at Centerline	4364	4364	4366	-2
E	Front Bumper Thickness	120	120	120	0
F	Front Bumper Bottom to Ground	444	446	446	0
G	Sill Height at Front Wheel Well	201	184	200	-16
H	Sill Height at Front Door Leading Edge	202	185	212	-27
I	Sill Height at "B" Pillar	210	184	261	-77
J1	Sill Height at Rear Wheel Well	208	178	198	-20
J2	Pinch Weld Height at Rear Wheel Well	212	182	245	-63
K	Sill Height Aft of Rear Wheel Well	274	235	240	-5
L	Rear Bumper Thickness	316	316	315	1
M	Rear Bumper Bottom to Ground	317	280	277	3
N	Sill Height to Window Bottom Sill	784	784	702	82
O	Front Door Leading Edge to Impact CL	788	788	771	17
P	Rear Door Trailing Edge to Impact CL	1164	1164	1145	19
Q	Front Window Opening	437	437	453	-16
R	Right Side Length	4240	4240	4244	-4
S	Left Side Length	4236	4236	4238	-2
T	Vehicle Width at "B" Post	1725	1725	1601	124

DATA SHEET NO. 7

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle:	2009 Toyota Matrix 4-Door Hatchback	NHTSA No.	C95101
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	February 21, 2008

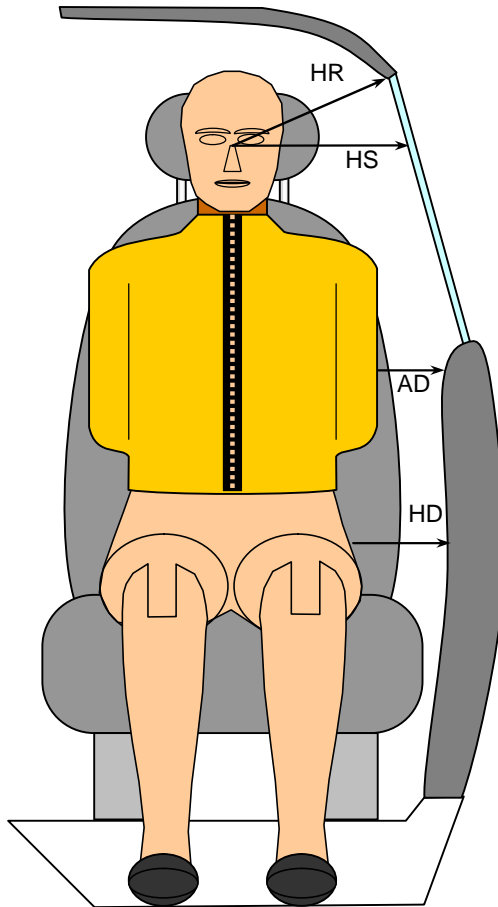


Driver Code	Pass. Code	Measurement Description	Driver S/N 906		Passenger S/N 905	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	342			
HW		Head to Windshield	673			
HZ	HZ	Head to Roof	215		185	
NR	NB	Nose to Rim/Nose to Seatback	423		631	
CD	CB	Chest to Dash or Seatback	541		538	
CS		Chest to Steering Wheel	283			
KDL	KBL	Left Knee to Dash or Seatback	145	23	213	28
KDR	KBR	Right Knee to Dash or Seatback	111	30	212	29
PA	PA	Pelvic Angle		23.4		23.1
PHX	PHX	H-Point to Striker (X-Axis)	211		287	
PHZ	PHZ	H-Point to Striker (Z-Axis)	242		332	

DATA SHEET NO. 8

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



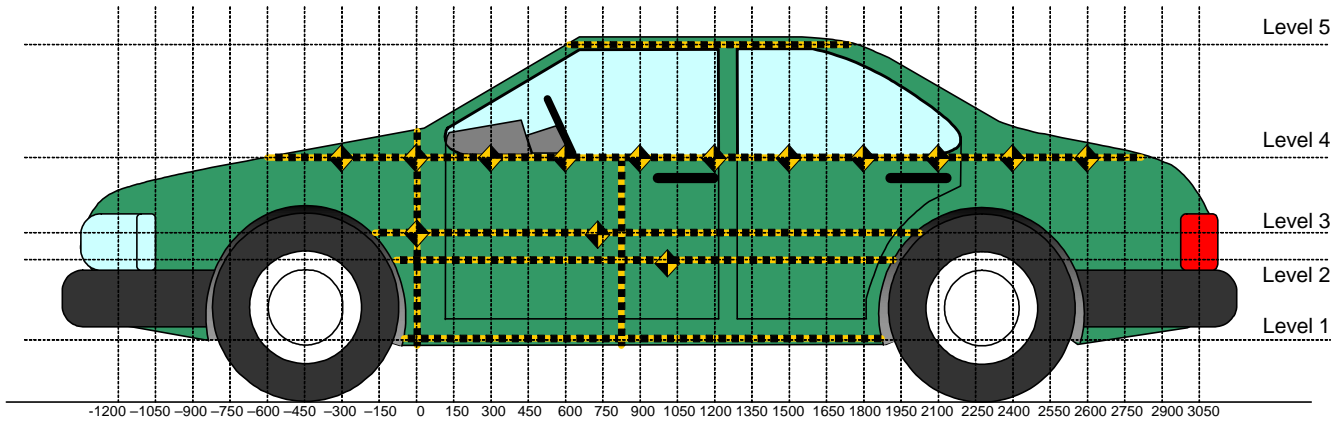
FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 906	Passenger S/N 905
HR	Head to Side Header	mm	187	205
HS	Head to Side Window	mm	305	322
AD ₁	Arm to Door (at upper rib level)	mm	107	117
AD ₂	Arm to Door (at lower rib level)	mm	79	107
HD	H-Point to Door	mm	145	171

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



All Measurements Shown in mm

LEFT SIDE VIEW

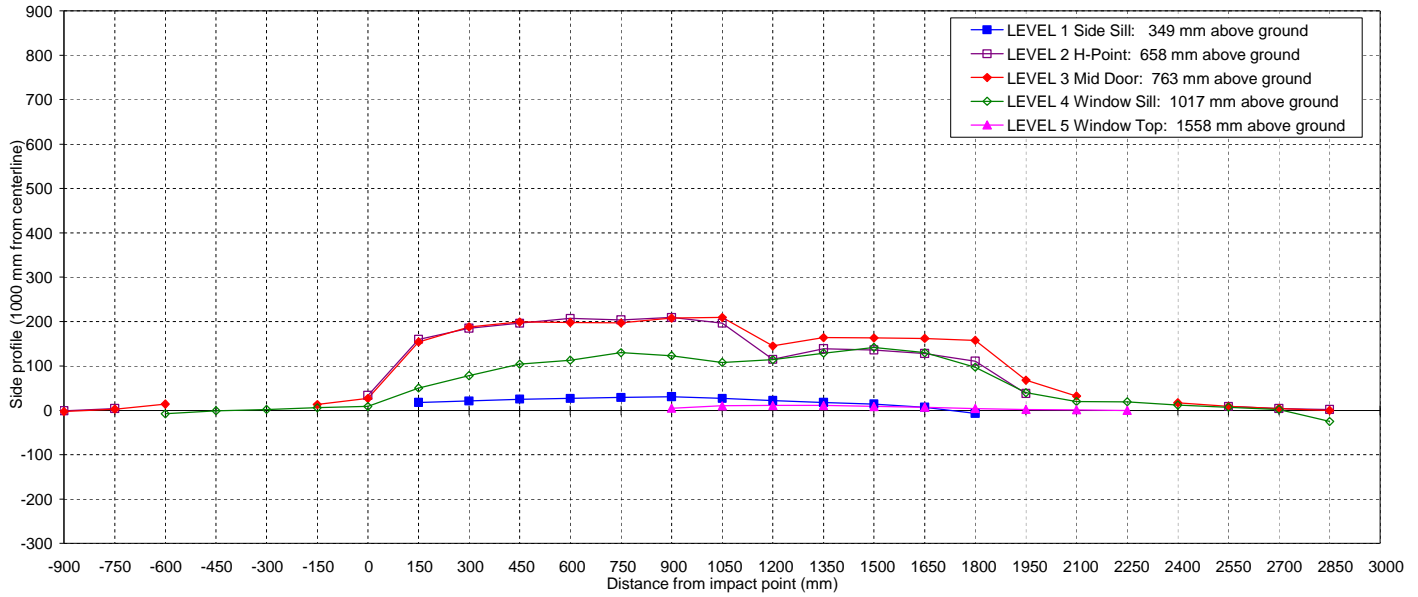
Measurements are taken with vehicle in the as tested condition.
 Measurements along the vertical 750 mm.
 All measurements below in mm.

Level	Measurement Description	Maximum Exterior Static Crush	Height Above Ground	Distance From Impact
1	Sill Top	31	349	900
2	Occupant H-Point	209	658	900
3	Mid Door	209	763	1050
4	Window Sill	142	1017	1500
5	Window	11	1558	1200
	Maximum Penetration	209		

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



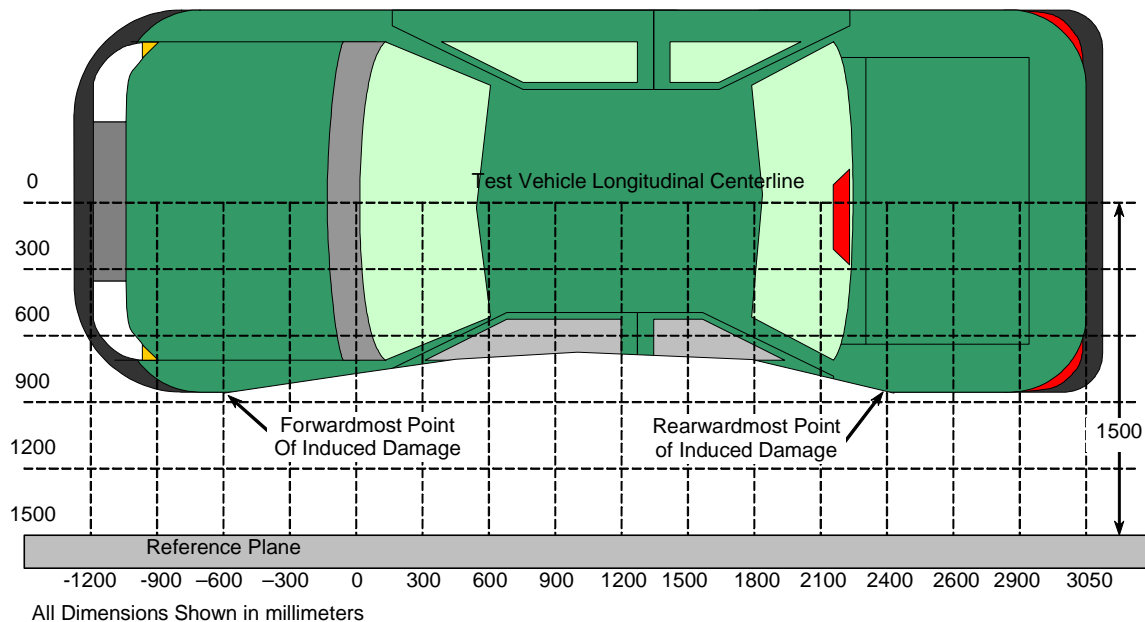
NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

			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 SIDE SILL	349	PRE	--	--	--	--	--	--	--	162	163	161	159	158	157	156	154	152	151	148	141	--	--	--	--	--	--	--	--	
		POST	--	--	--	--	--	--	--	180	184	186	186	187	188	183	176	170	165	155	134	--	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18	21	25	27	29	31	27	22	18	14	7	-7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
LEVEL 2 H POINT	658	PRE	170	135	--	--	--	--	119	135	142	143	143	144	144	145	147	147	146	142	129	118	--	--	--	133	158	195	--	
		POST	169	139	--	--	--	--	153	295	327	339	350	348	353	341	262	286	282	270	240	156	--	--	--	142	162	197	--	
		CRUSH	-1	4	N/A	N/A	N/A	N/A	34	160	185	196	207	204	209	196	115	139	136	128	111	38	N/A	N/A	N/A	9	4	2	N/A	
LEVEL 3 MID DOOR	763	PRE	194	148	124	--	--	115	120	135	138	138	138	138	138	138	139	140	140	138	130	117	115	--	122	138	169	213	--	
		POST	191	151	138	--	--	128	147	289	326	337	336	335	346	347	284	304	303	300	288	185	147	--	139	147	173	213	--	
		CRUSH	-3	3	14	N/A	N/A	13	27	154	188	199	198	197	208	209	145	164	163	162	158	68	32	N/A	17	9	4	0	N/A	
LEVEL 4 WINDOW SILL	1017	PRE	--	--	272	194	173	177	186	189	188	184	178	174	171	166	165	163	163	163	161	162	153	154	163	182	204	261	--	
		POST	--	--	264	193	175	183	195	239	266	288	291	304	294	274	279	292	305	293	258	202	173	173	175	189	206	236	--	
		CRUSH	N/A	N/A	-8	-1	2	6	9	50	78	104	113	130	123	108	114	129	142	130	97	40	20	19	12	7	2	-25	N/A	
LEVEL 5 WINDOW TOP	1558	PRE	--	--	--	--	--	--	--	--	--	--	--	--	413	407	406	406	409	415	424	437	460	508	--	--	--	--		
		POST	--	--	--	--	--	--	--	--	--	--	--	--	--	418	417	417	417	418	422	428	439	461	508	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	10	11	11	9	7	4	2	1	0	N/A	N/A	N/A	N/A	N/A

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle:	2009 Toyota Matrix 4-Door Hatchback	NHTSA No.:	C95101
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	February 21, 2008



TOP VIEW

DAMAGE PROFILE DISTANCES

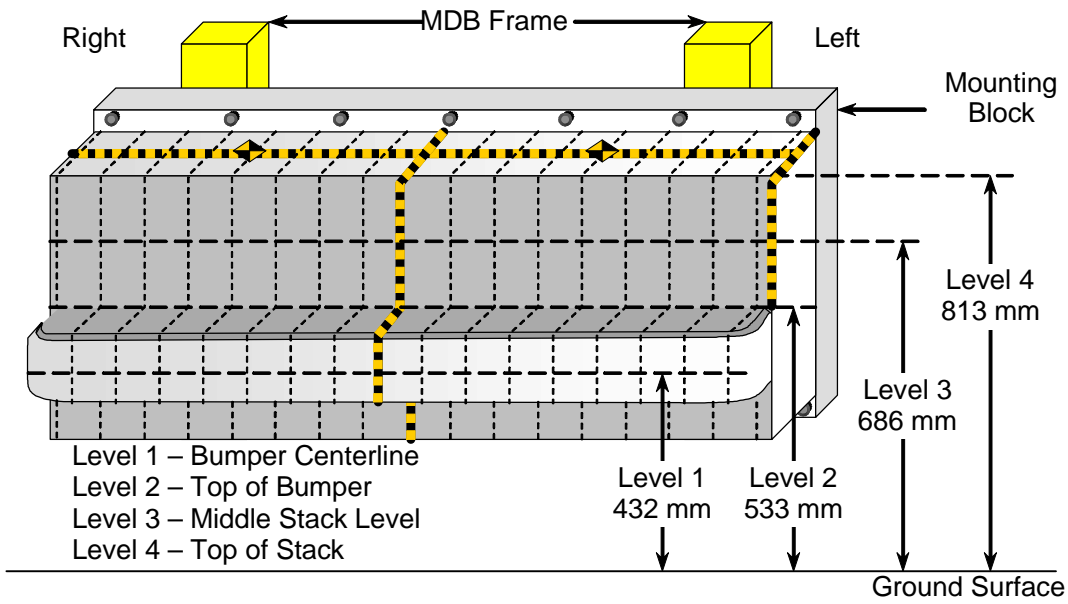
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1 (LR)	2600	658	141	149	8
2	2040	763	116	162	46
3	1480	763	140	303	163
4	920	763	138	346	208
5	360	763	138	330	192
6 (LF)	-200	1017	176	180	4

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: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



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	412	
		POST	335	362	380	387	389	375	339	345	366	374	381	377	379	367	347	324	286
		CRUSH	76	50	32	25	23	37	74	68	47	39	32	36	34	46	66	89	126
LEVEL 3 MID LEVEL	682	PRE	411	411	412	412	412	412	412	413	412	412	412	412	412	412	412	412	
		POST	374	391	401	402	399	393	377	369	396	402	403	401	394	390	376	363	316
		CRUSH	37	20	11	10	13	19	35	43	17	10	9	11	18	22	36	49	96
LEVEL 2 TOP BUMPER	542	PRE	411	412	412	412	412	412	412	413	412	412	412	412	412	412	412	412	
		POST	309	318	325	328	332	337	341	345	348	348	352	355	357	356	347	331	316
		CRUSH	102	94	87	84	80	75	71	67	65	64	60	57	55	56	65	81	96
LEVEL 1 MID BUMPER	430	PRE	501	513	513	513	513	513	513	514	514	514	514	514	514	514	514	505	
		POST	318	339	355	366	371	374	377	382	387	392	396	399	402	402	400	391	372
		CRUSH	183	174	158	147	142	139	136	132	127	122	118	115	112	112	114	123	133

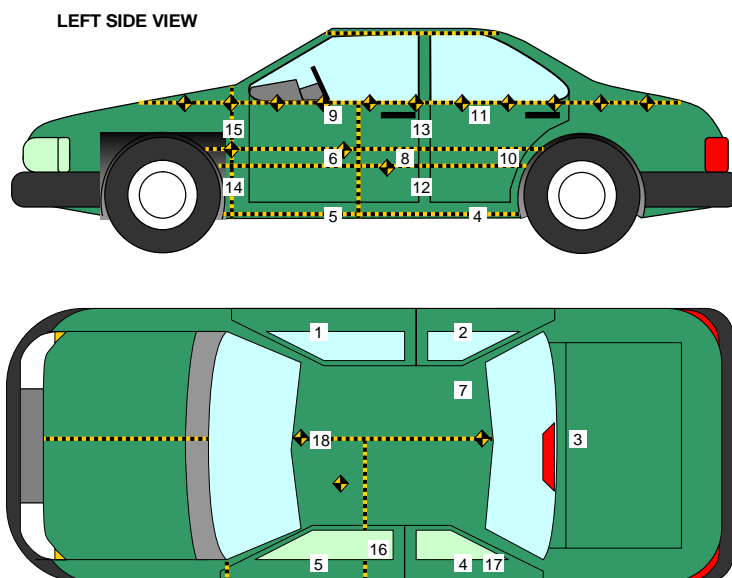
LEVEL	HEIGHT AT CL (mm)*	MAX CRUSH
LEVEL 4 TOP STACK	811	126
LEVEL 3 MID LEVEL	682	96
LEVEL 2 TOP BUMPER	542	102
LEVEL 1 MID BUMPER	430	183

*Heights measured above ground level.

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2703	655	-398
2	Right Sill at Rear Seat	1823	659	-397
3	Rear Floorpan Above Axle	1070	-3	-596
4	Left Sill at Rear Door	1817	-651	-378
5	Left Sill at Front Door	2663	-652	-395
6	Left Front Door C/L**	-	-	-
7	Rear Occupant Compartment	1865	443	-311
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	2021	-651	-469
13	Left Middle B-Post	1918	-637	-1121
14	Left Lower A-Post	3013	-583	-584
15	Left Middle A-Post	2923	-629	-1206
16	Front Seat Track	2094	-542	-440
17	Rear Seat Track or Structure	1000	-440	-629
18	Vehicle CG	2327	19	-567

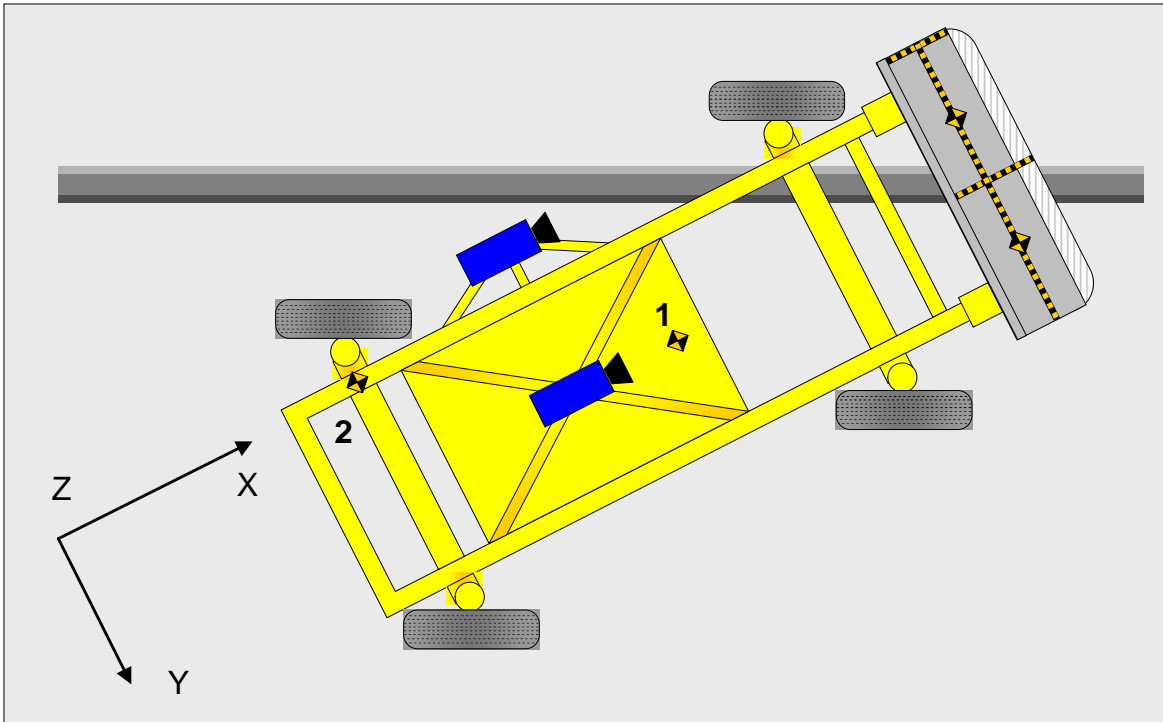
Reference Points X - Test Vehicle Rear Bumper (+ forward)
 Y - Test Vehicle Centerline (+ to right)
 Z - Ground Plane (+ down)

** Accelerometer was not requested by the COTR.

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



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**

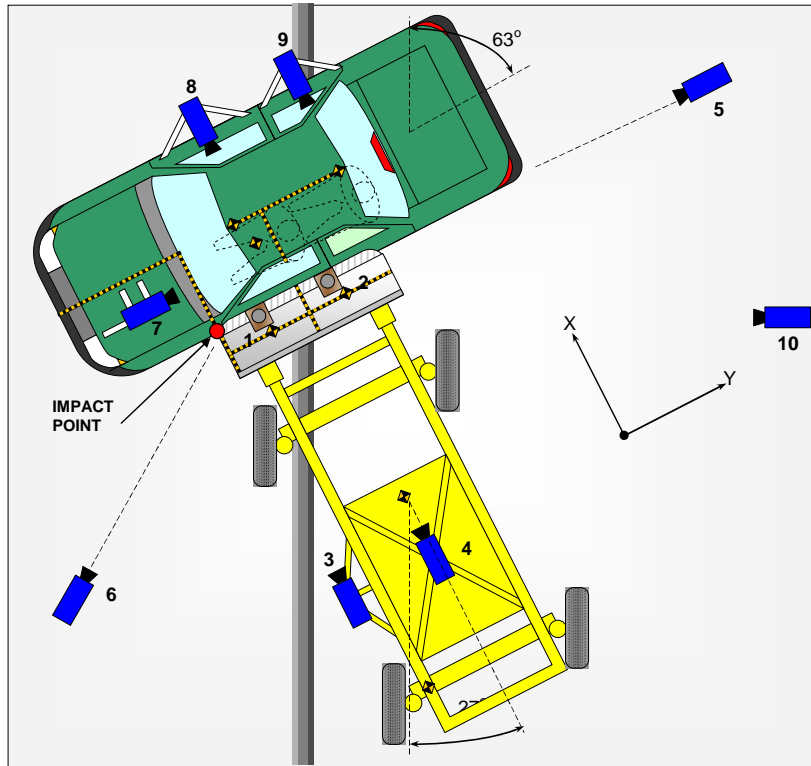
Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

	Elements	Pre-Test (mm)
1	Total Length	4364
2	Total Width	1725
3	Bumper Top Height	677
4	Bumper Bottom Height	562
5	Longitudinal Member Top Height	658
6	Distance between Longitudinal Members	1092
7	Longitudinal Member Width	87
8	Engine Top Height	987
9	Engine Bottom Height	330
10	Engine and gearbox width	466
11	Front bumper-engine distance	4364
12	Front shock absorber fixing height	616
13	Bonnet leading edge height	816
14	Front shock absorber fixing width	0
15	Front bumper – front axle distance	923
16	Front axle – a pillar distance	409
17	A-pillar – B-pillar distance	1069
18	B-Pillar – rear axle distance	1123
19	B-pillar – C-pillar distance	1018
20	Roof sill bottom height	1484
21	Roof sill top height	1569
22	Floor sill bottom height	358
23	Floor sill top height	451

DATA SHEET NO. 16

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008



No.	Camera View	Location (mm)			Angle (deg)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Close-up	72	812	-4880	-90	8	500
2	Overhead Overall	195	855	-4880	-90	28	500
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	210	11450	970	-2	50	500
6	Left Side, Ground Level, Overall	-2065	-1995	955	-5	28	500
7	Vehicle Onboard Front SID/HIII, Front	475	360	1345	-6	25	1000
8	Vehicle Onboard Front SID/HIII, Side	1485	822	1095	-6	12.5	1000
9	Vehicle Onboard Rear SID/HIII, Side	1444	1650	1160	-7	12.5	1000
10	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**

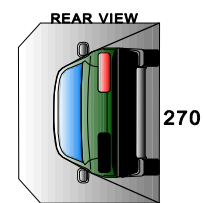
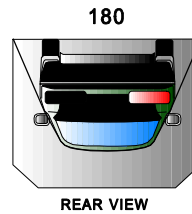
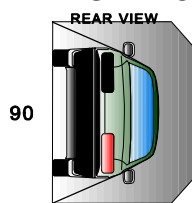
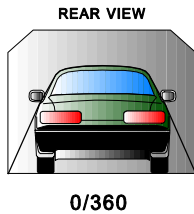
Test Vehicle: 2009 Toyota Matrix 4-Door Hatchback NHTSA No. C95101
 Test Program: FMVSS 214 Indicant Side Impact Test Date: February 21, 2008

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
----------------------	------

STATIC ROLLOVER DATA



Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
	minutes	seconds	minutes	seconds	minutes	seconds	minutes	seconds	minutes	seconds	minutes	seconds
0° - 90°	1	17	5	6	17	7	17	5	6	17	7	17
90° - 180°	1	05	5	6	5	7	5	6	5	5	7	5
180°-270°	1	00	5	6	0	7	0	6	0	0	7	0
270°-360°	1	12	5	6	12	7	12	5	6	12	7	12

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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Figure A-1: As Received Left Front $\frac{3}{4}$ View



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

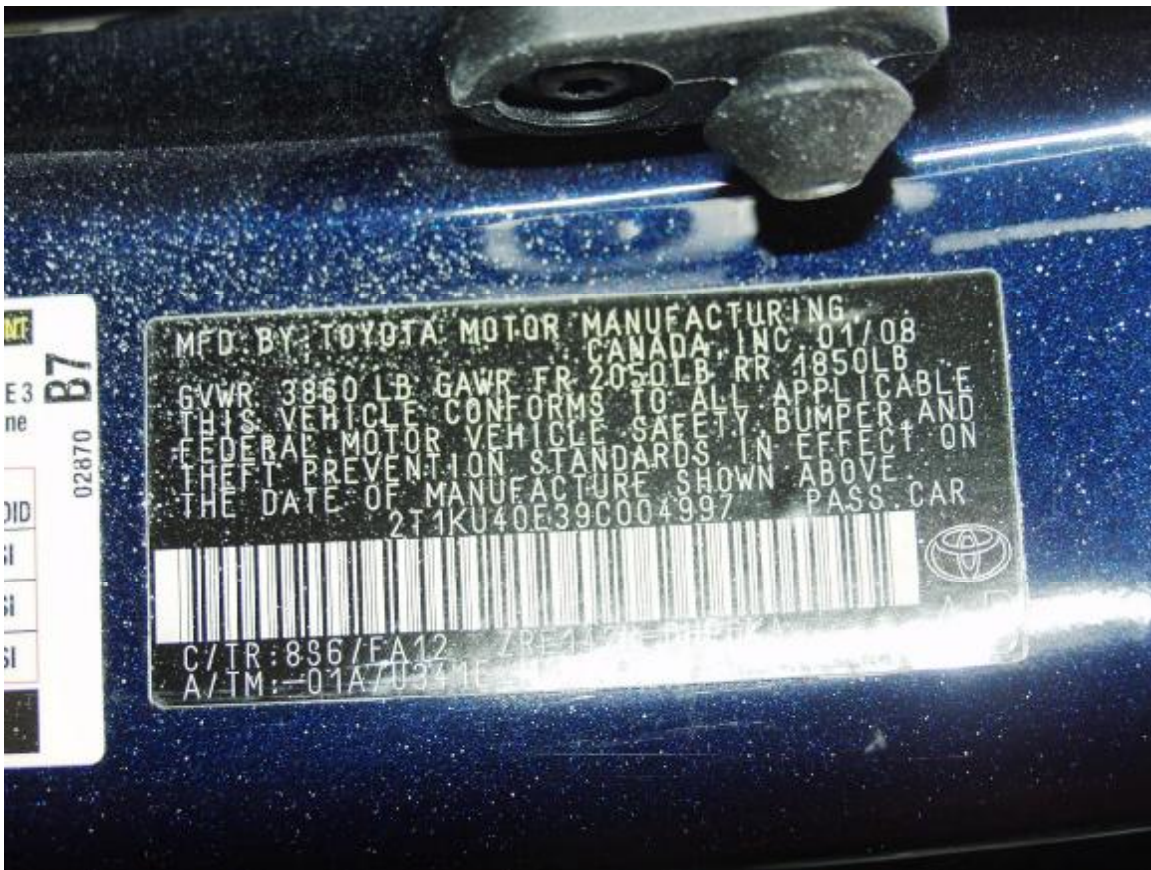


Figure A-3: Vehicle Certification Label

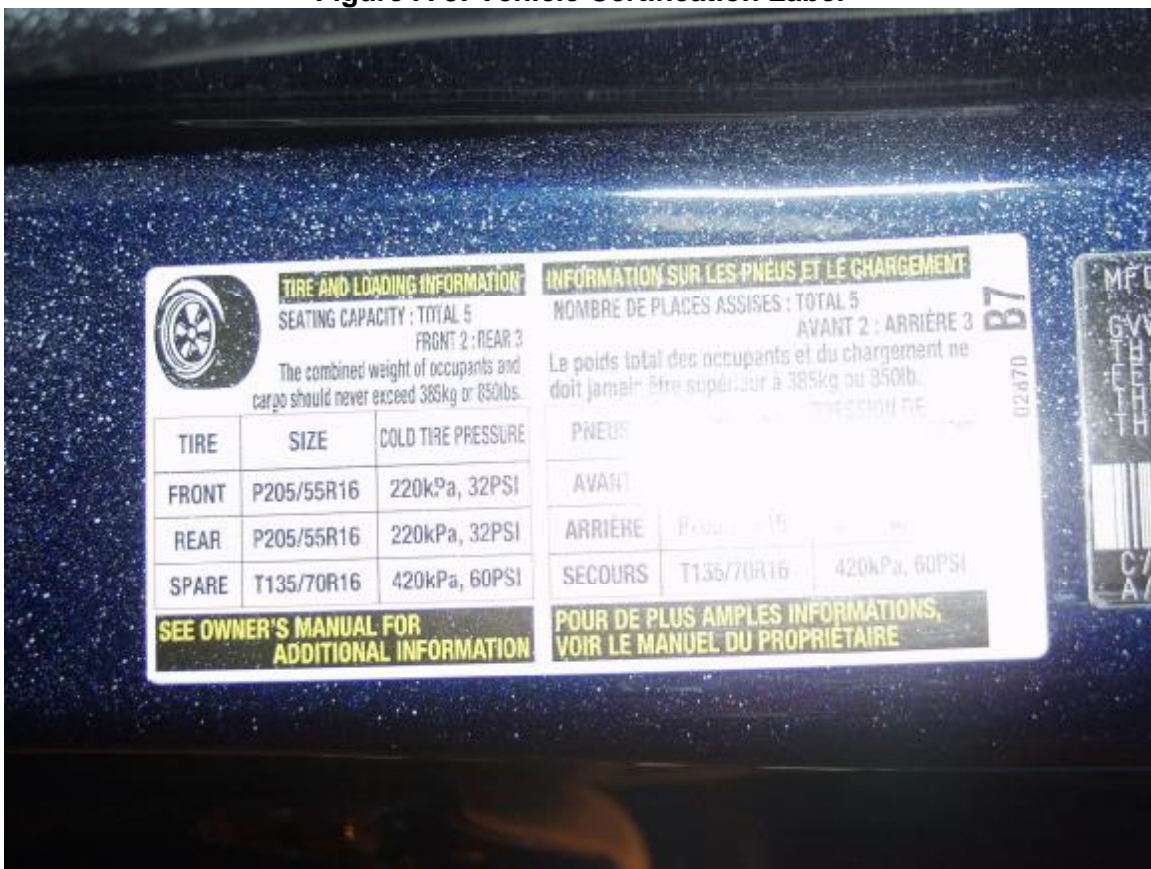


Figure A-4: Vehicle Tire Placard Label



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

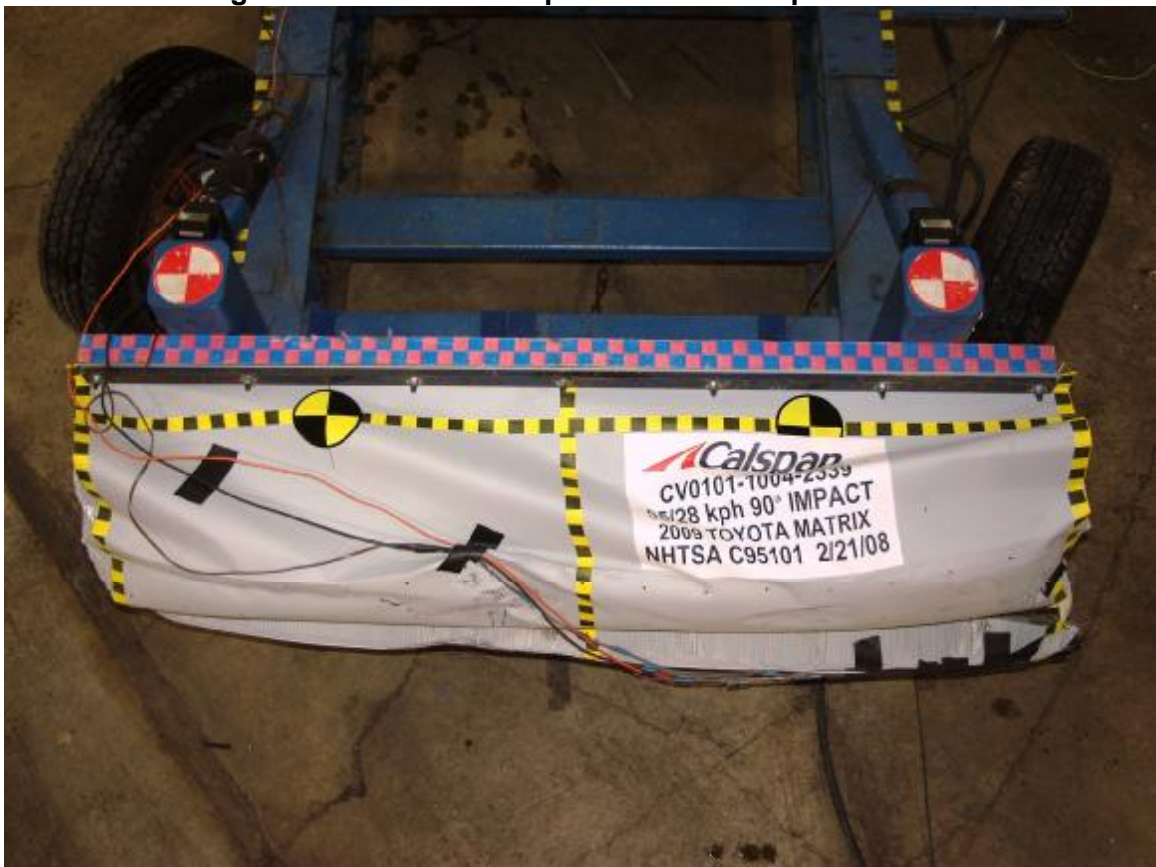


Figure A-28: Post-Test Top View of MDB Impactor Face



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

Not Available

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 ¾ View of Left Side Doors



Figure A-48: Post-Test Left Front ¾ 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

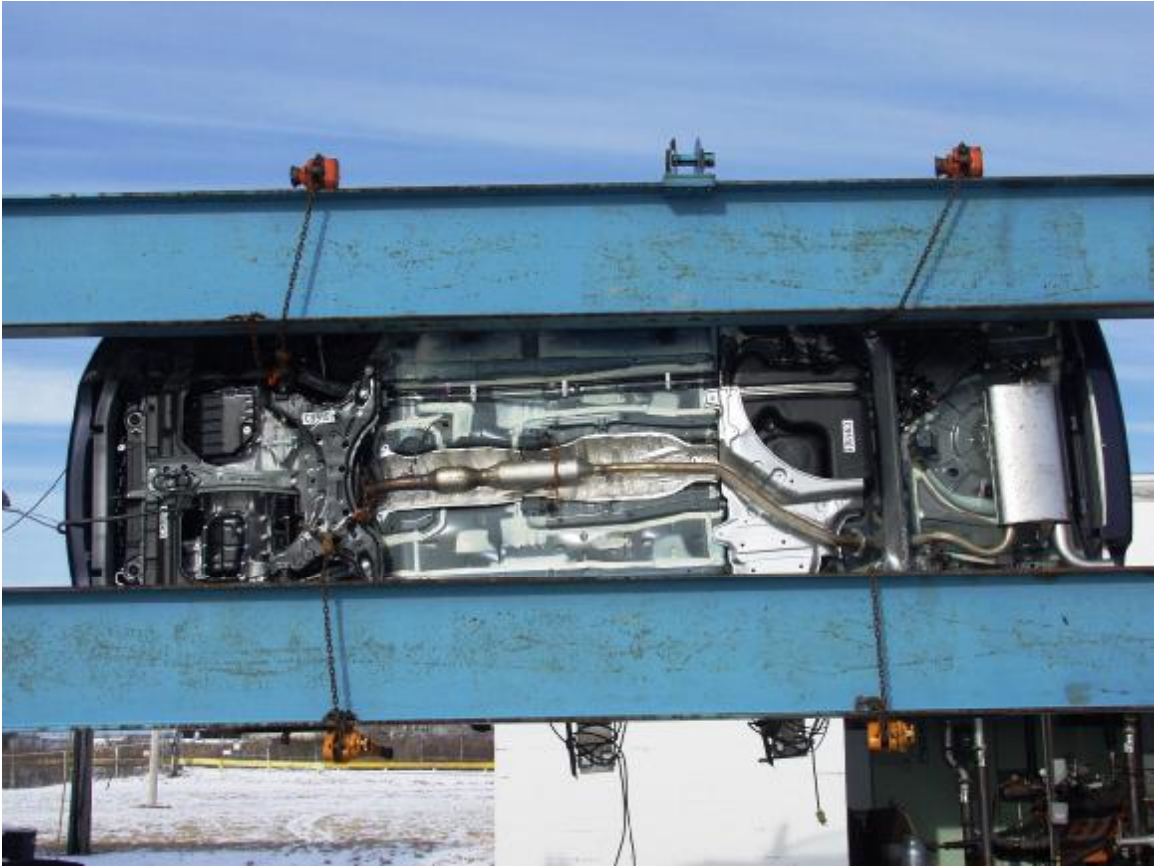


Figure A-53: Rollover 270 Degrees

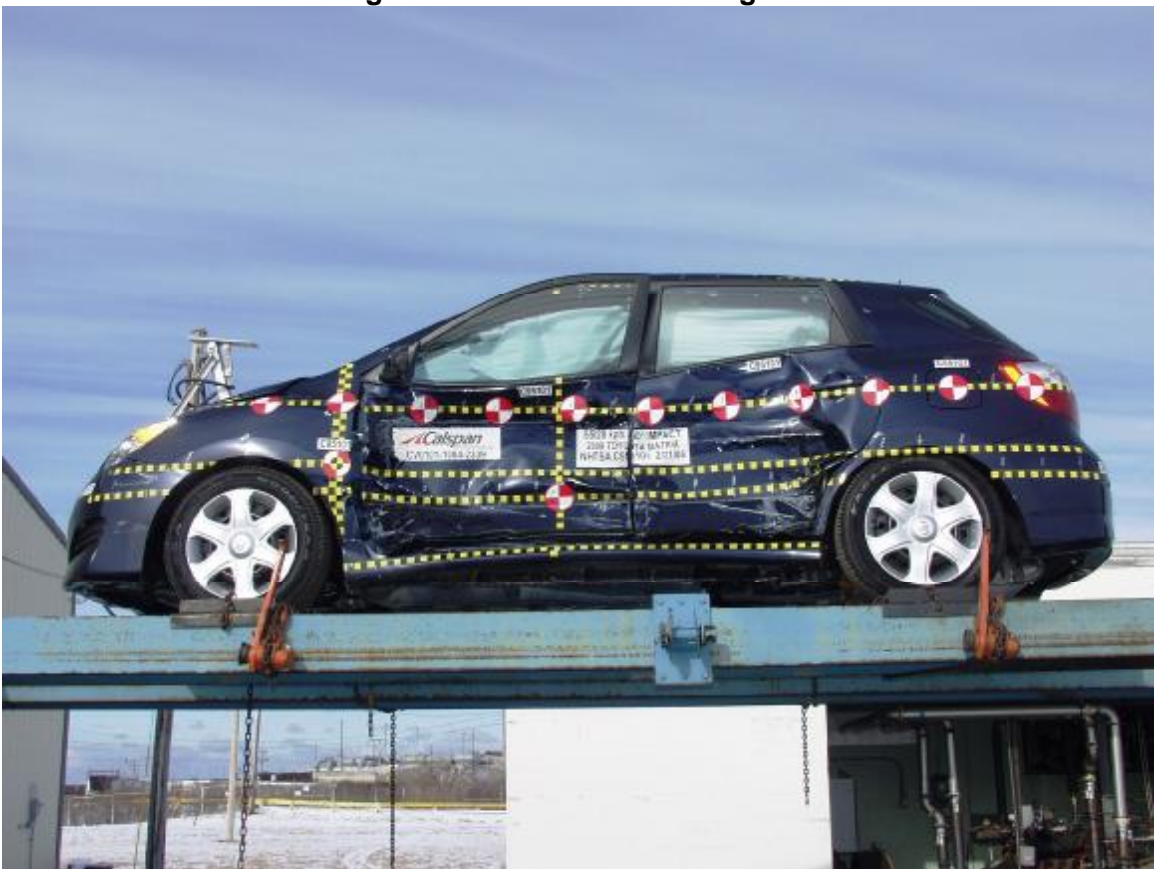


Figure A-54: Rollover 360 Degrees



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
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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

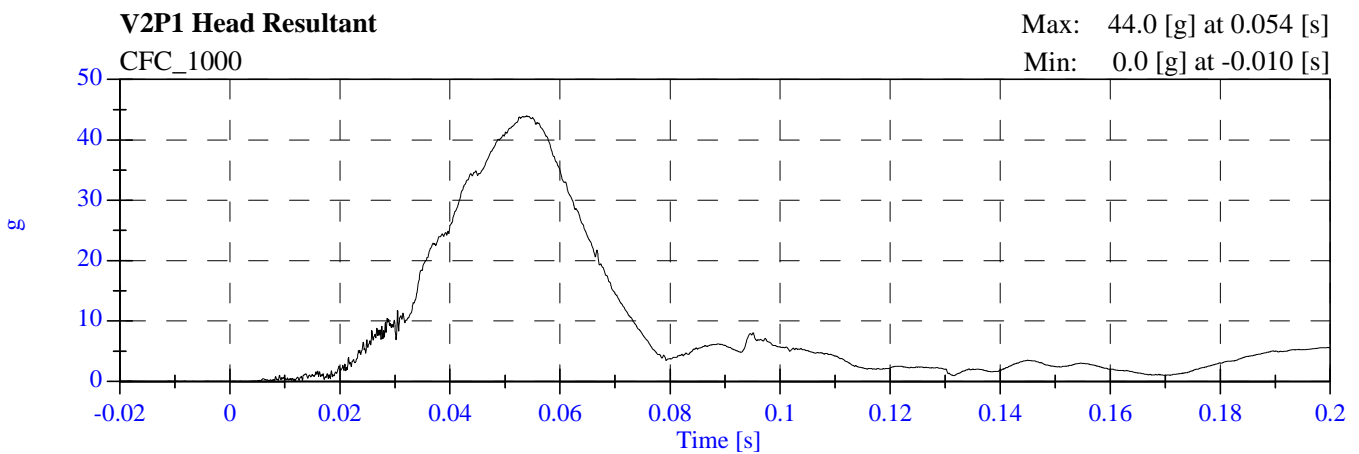
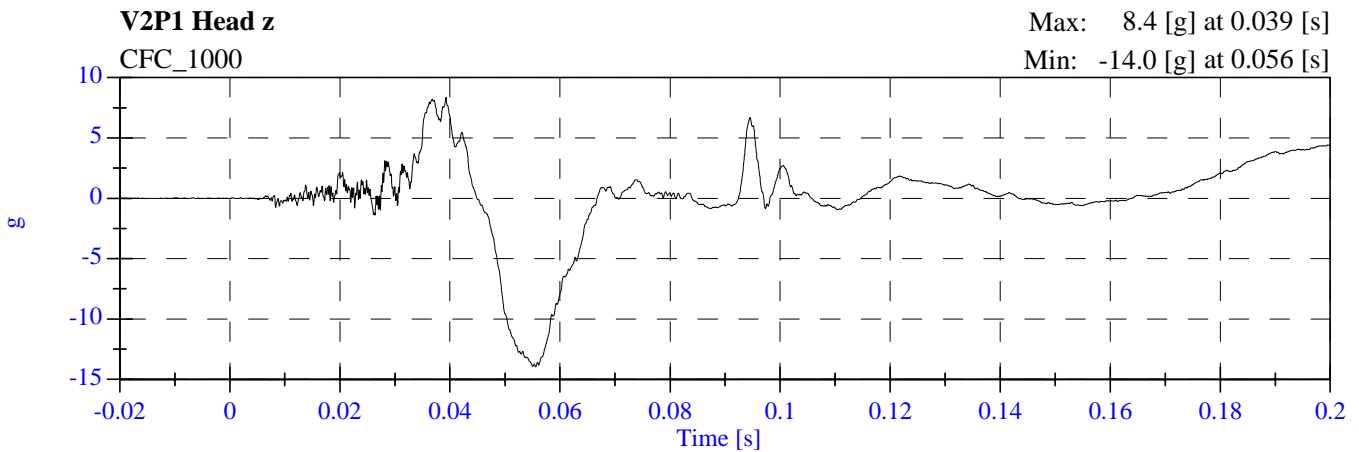
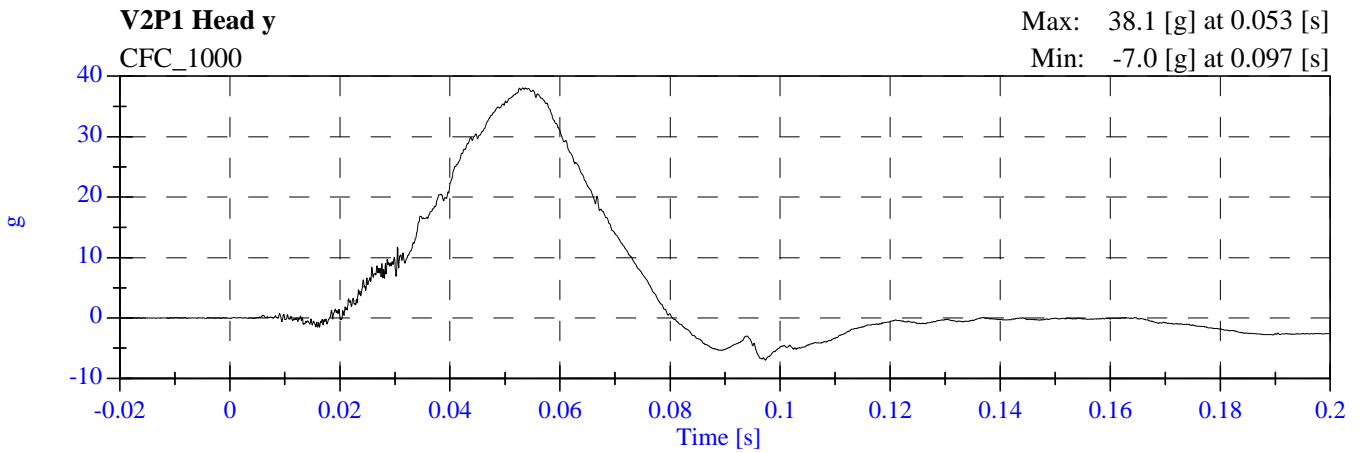
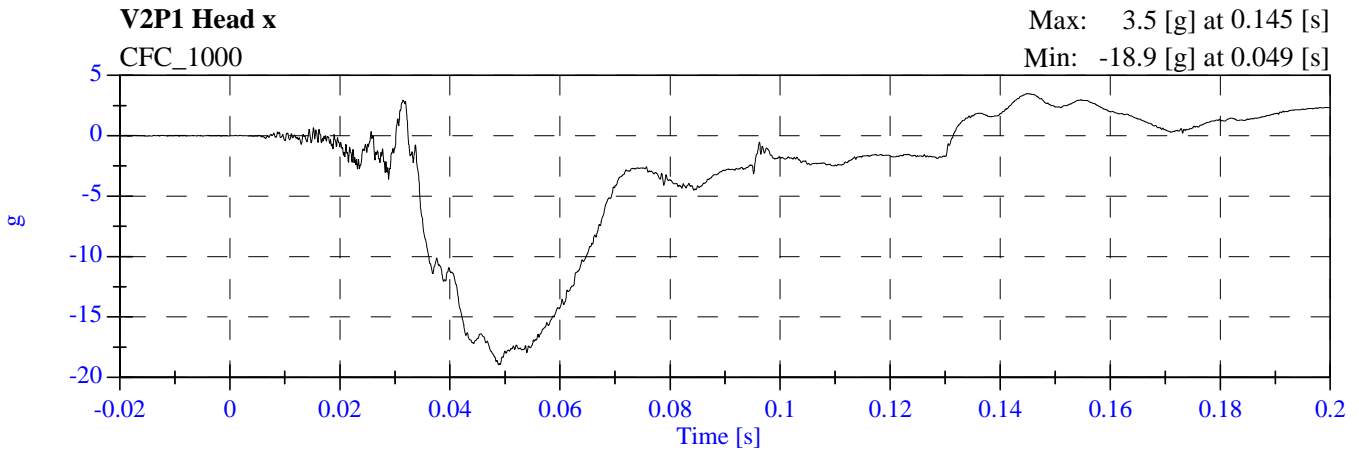
The following dummy, vehicle and load cell response data can be found in the research and development section of the NHTSA website at: www.nhtsa.dot.gov

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

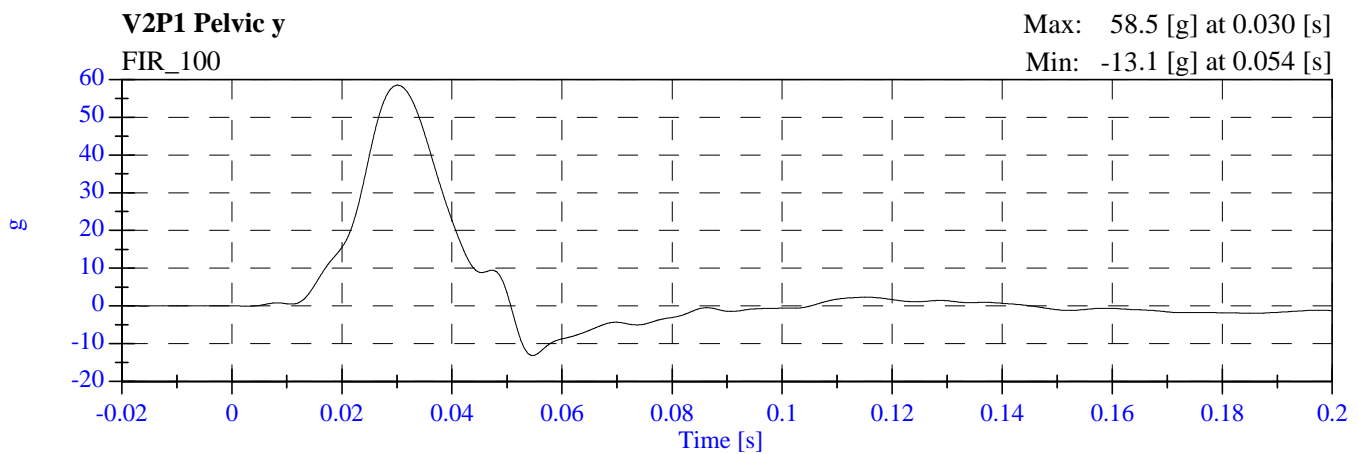
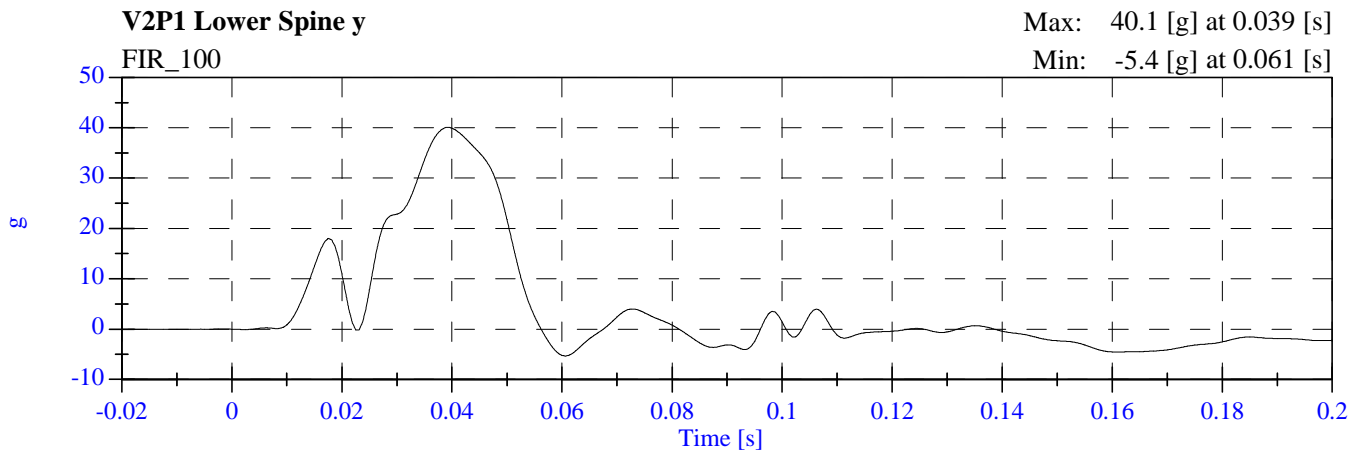
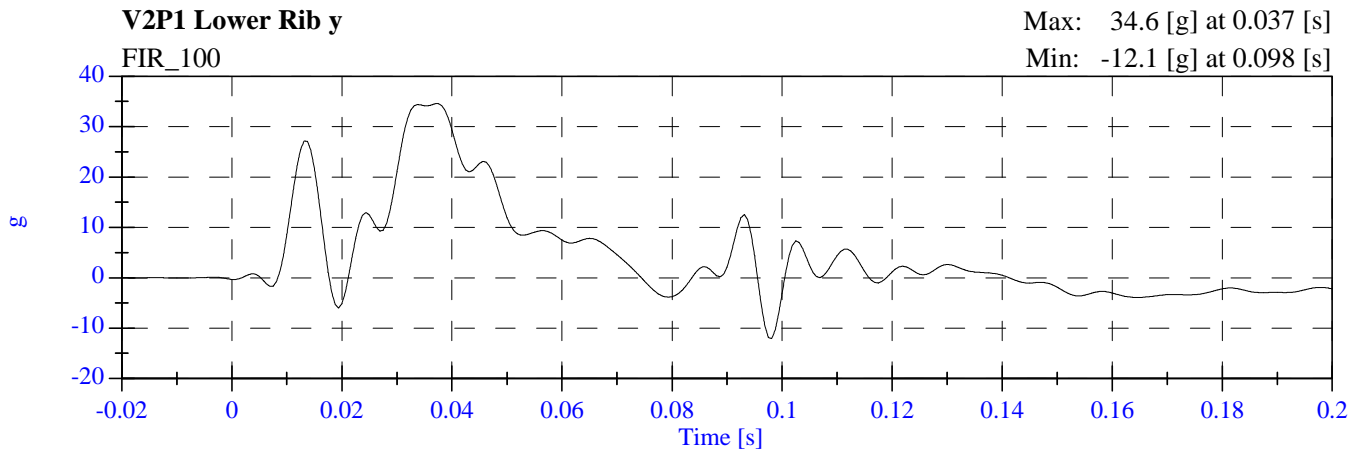
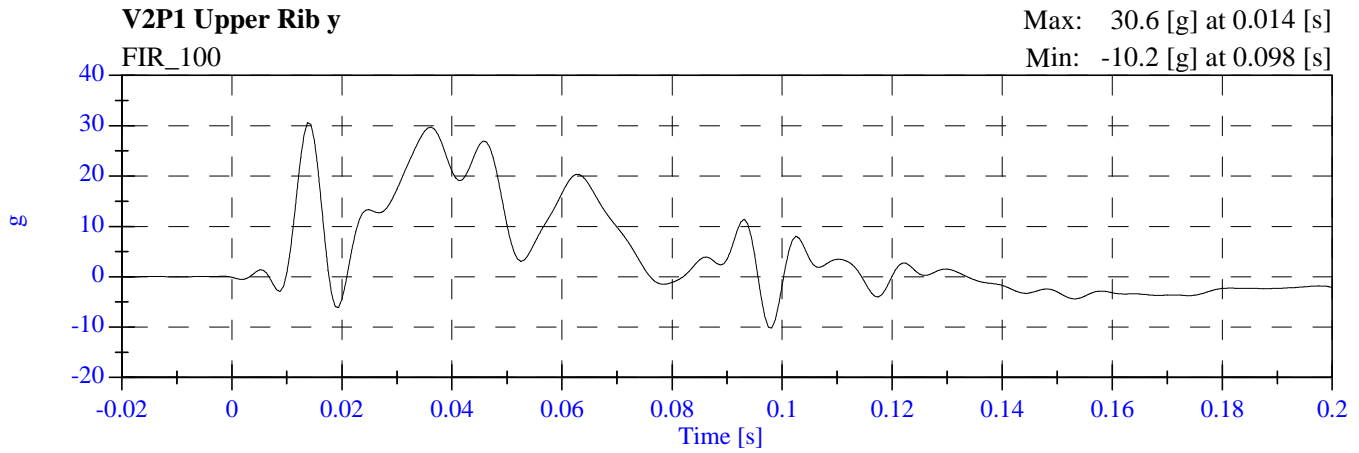
TEST NOTES

The following channel anomalies occurred:

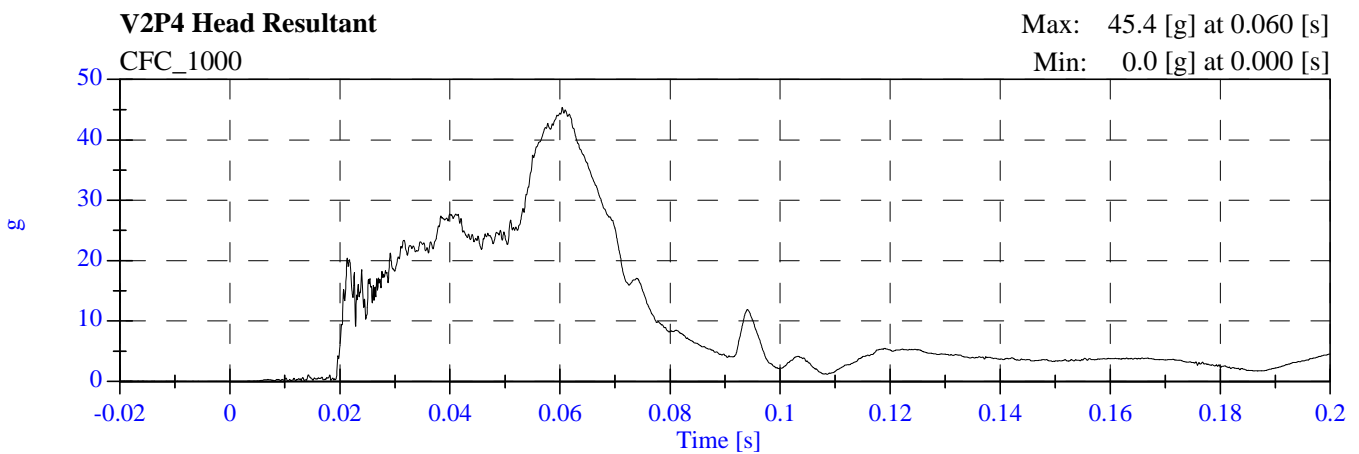
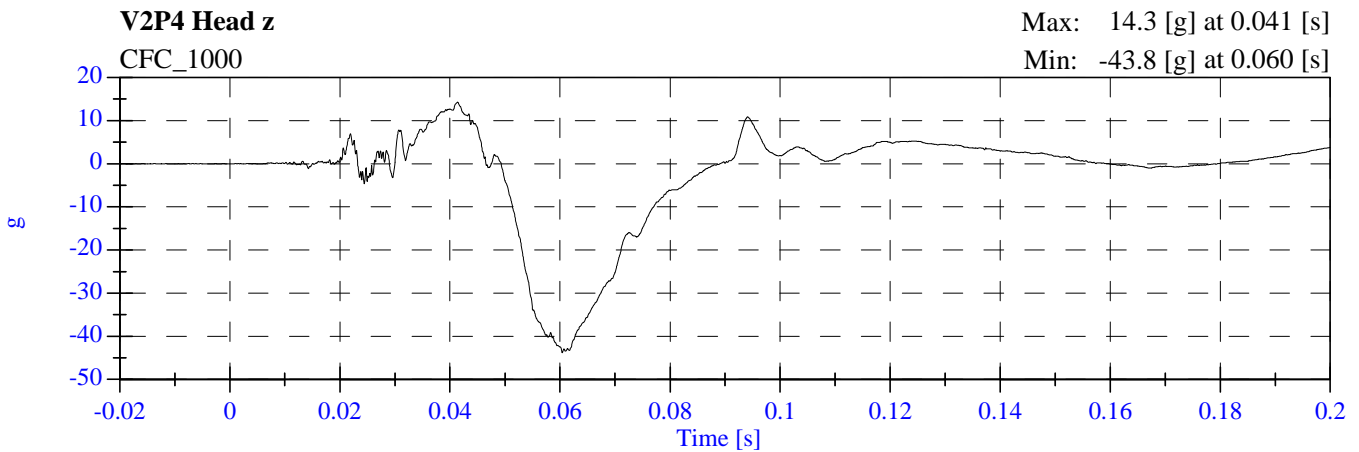
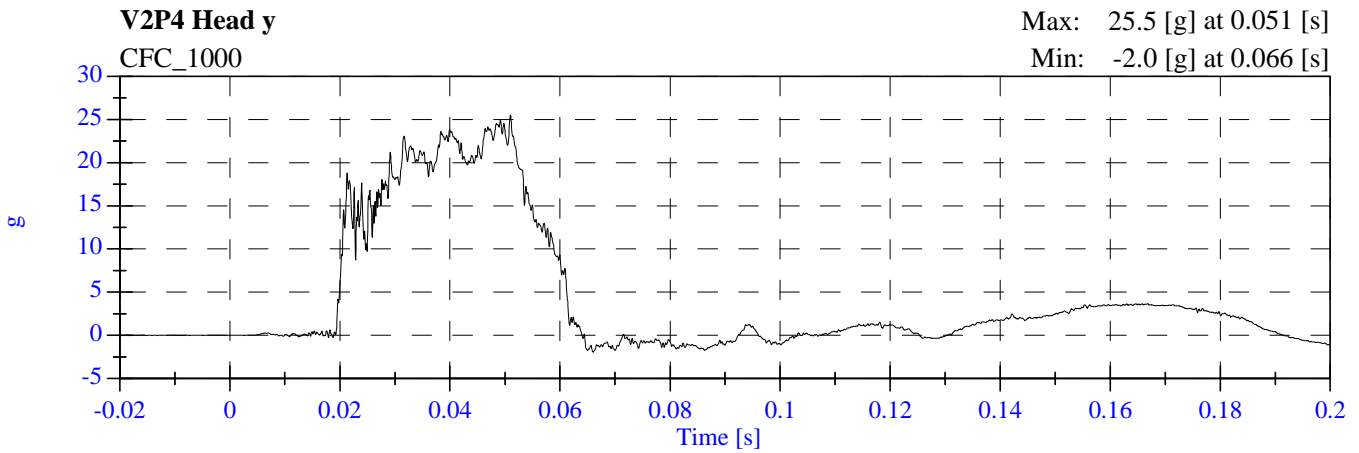
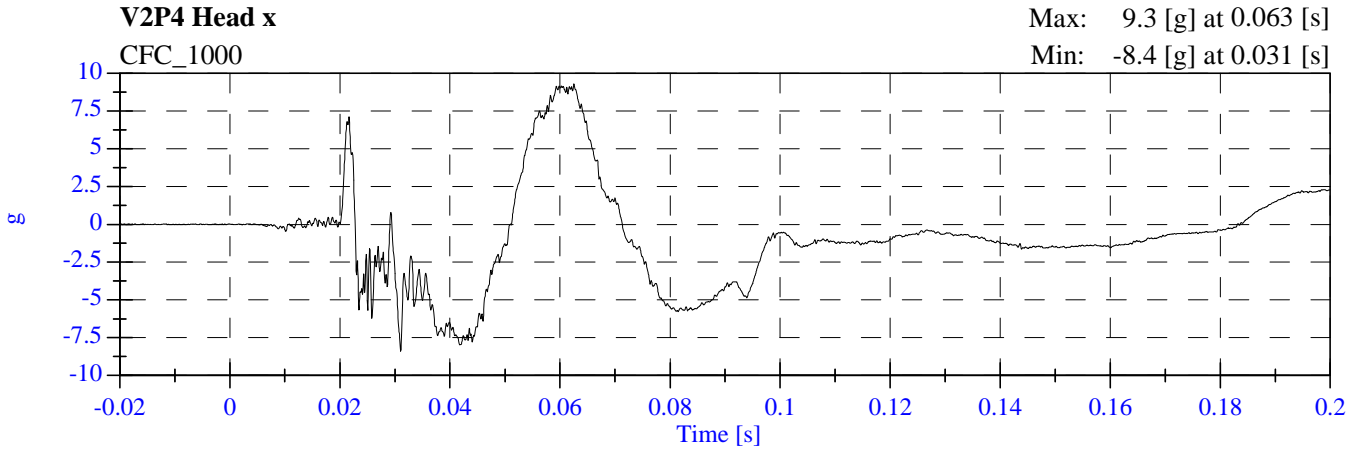
FMVSS 214i Test 4 2009 Toyota Matrix C95101 - February 21, 2008



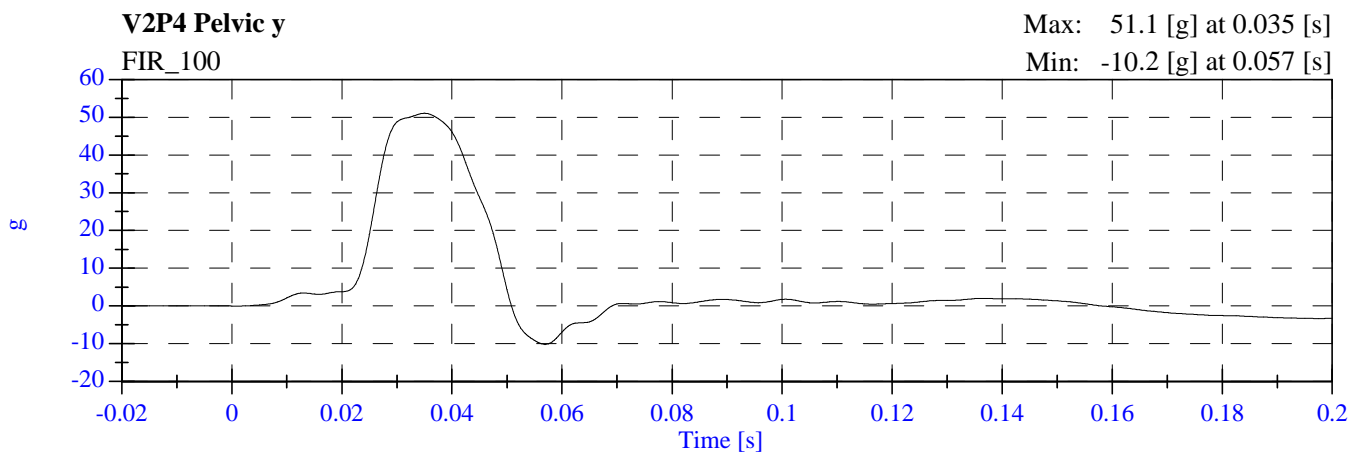
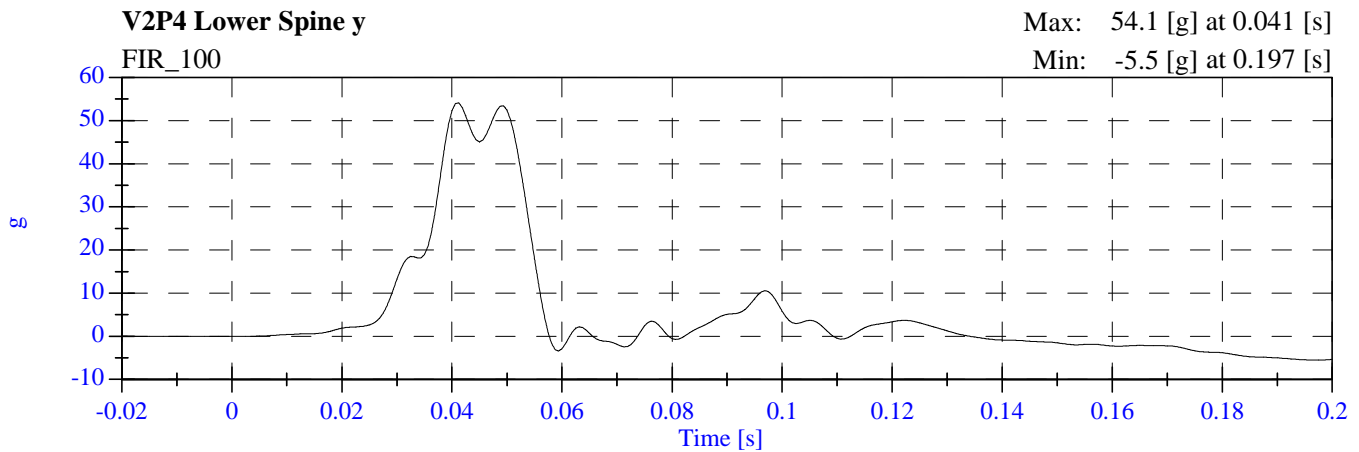
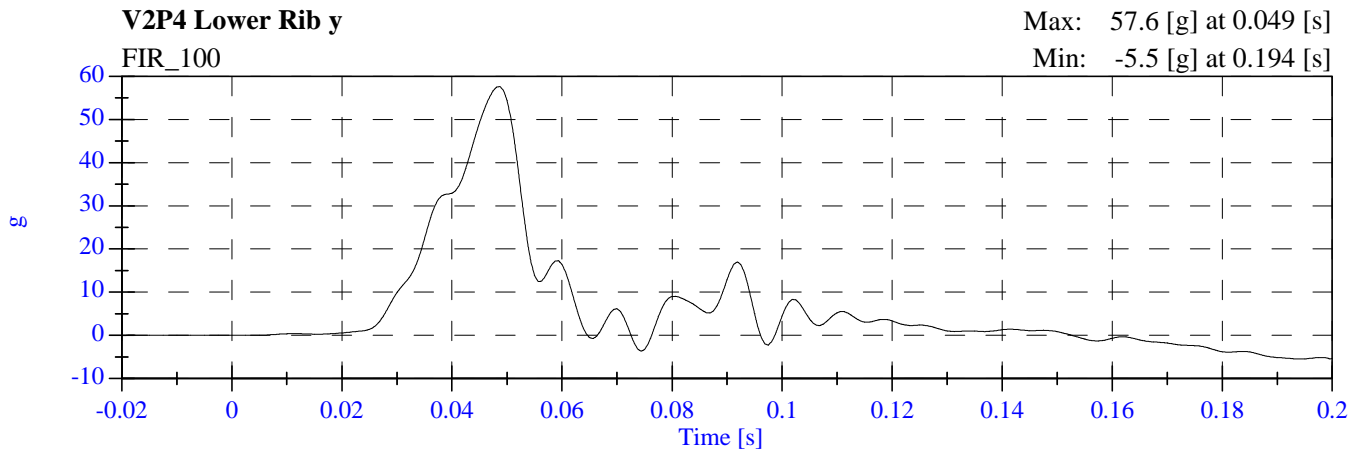
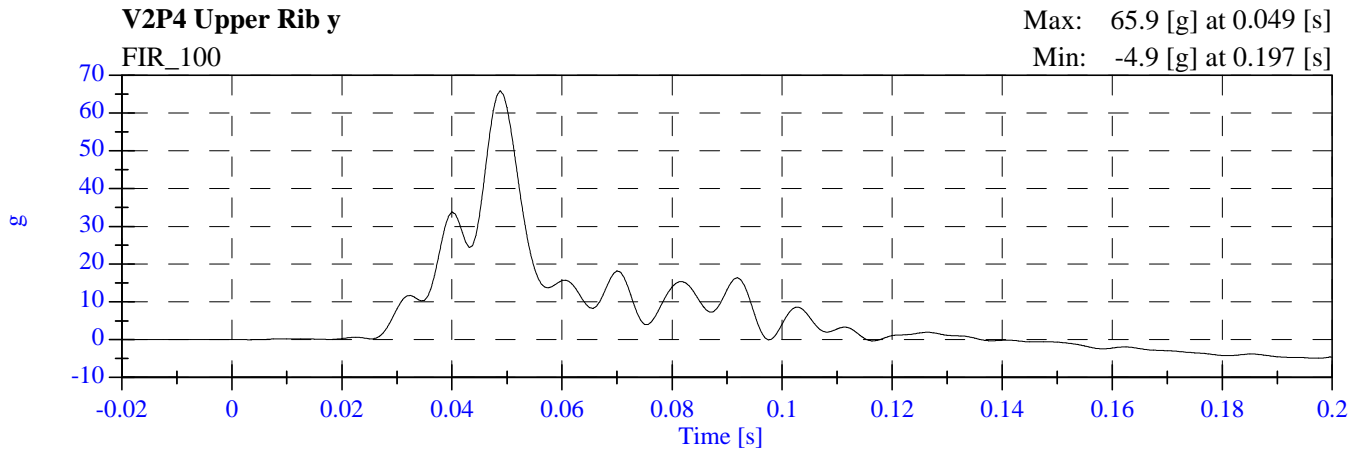
FMVSS 214i Test 4 2009 Toyota Matrix C95101 - February 21, 2008



FMVSS 214i Test 4 2009 Toyota Matrix C95101 - February 21, 2008



FMVSS 214i Test 4 2009 Toyota Matrix C95101 - February 21, 2008



APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION
CONFIGURED FOR LEFT SIDE IMPACT

Date: February 12, 2008 Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID H3 NO.: 906		SID H3 NO.: 905	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	902	902
RH- Rib Height (mm)	501 - 521	511	511	513	513
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	239	239	239	239
KV- Knee Pivot from Back Line (mm)	511 - 526	518	518	521	521
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	493	493
HW- Hip Width (mm)	356 - 391	386	386	381	381
THORAX IMPACTS					
TEMPERATURE (• C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	33	33	33	33
PROBE SPEED (m/s)	4.27 - 4.33	4.29	4.29	4.29	4.27
UPPER RIB (g's)	37 - 46	37.21	43.45	45.31	44.67
LOWER RIB (g's)	37 - 46	37.91	41.71	44.34	41.38
LOWER SPINE (g's)	15 - 22	19.82	21.58	21.48	20.94
PELVIS IMPACT					
TEMPERATURE (• C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	33	33	33	33
PROBE SPEED (m/s)	4.27 - 4.33	4.29	4.29	4.27	427
PELVIS (g's)	40 - 60	52.47	59.19	44.27	44.96

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 906

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
Date: February 12, 2008 Laboratory Technician: B. Swiecicki

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.: 906 Sequential Test Number: 1
Date: February 12, 2008 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	902
RH- Rib Height (mm)	502 – 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	239
KH- Knee Pivot from Back Line (mm)	511 – 526	518
KV- Knee Pivot to Floor (mm)	490 – 505	493
HW- Hip Width (mm)	356 - 391	386

REMARKS: None

Shock Impact Low (3.05 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906

Date: 08-01-07

Sequential Test Number: 1 File: 906SL 08-1-07

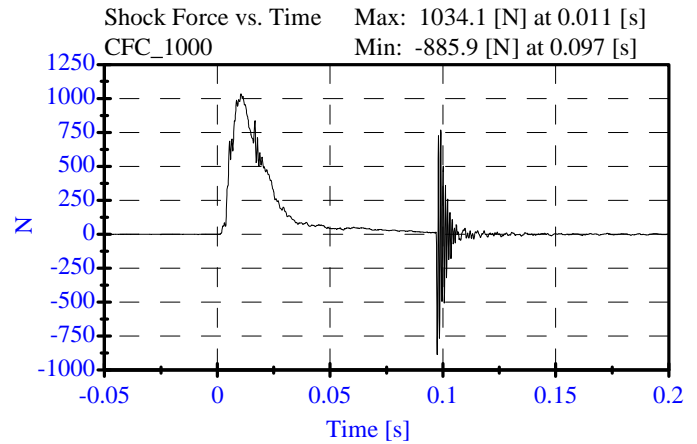
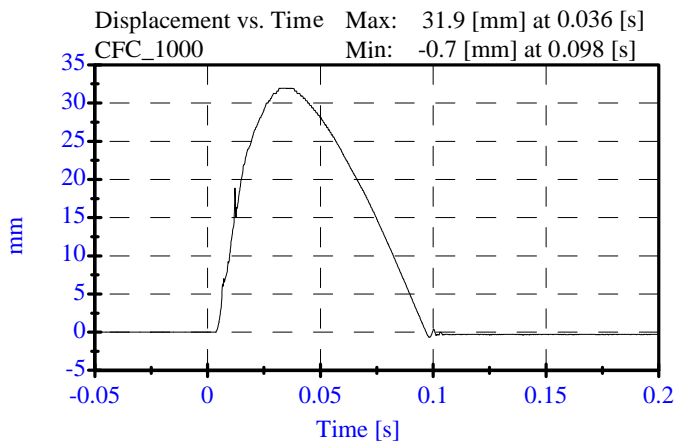
Laboratory Technician: B. Swiecicki

<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 %	36.00 %	Passed
Displacement:	30.00-35.00 mm	31.95 mm	Passed
Maximum Force:	836.00-1125.00 N	1034.07 N	Passed

Impact Test Velocity: 3.05 m/s

Damper Identification: 906

Damper Setting: 5



Shock Impact Med (4.27 m/s)

PRE TEST

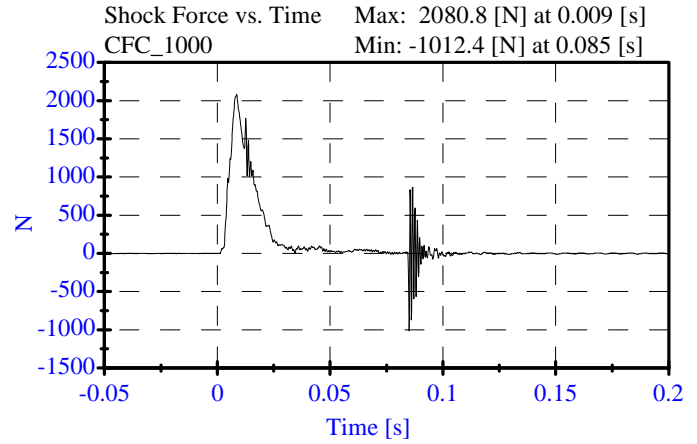
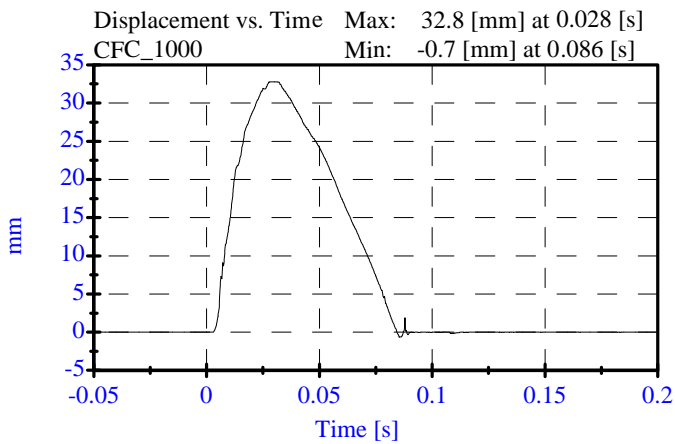
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 08-01-07

Sequential Test Number: 1 File: 906SM 08-1-07
Laboratory Technician: B. Swiecicki

<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 %	36.00 %	Passed
Displacement:	32.00-37.00 mm	32.78 mm	Passed
Maximum Force:	1730.00-2099.00 N	2080.78 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 906
Damper Setting: 5



Shock Impact high (6.10 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906

Date: 08-01-07

Sequential Test Number: 1 File: 906SH 08-1-07

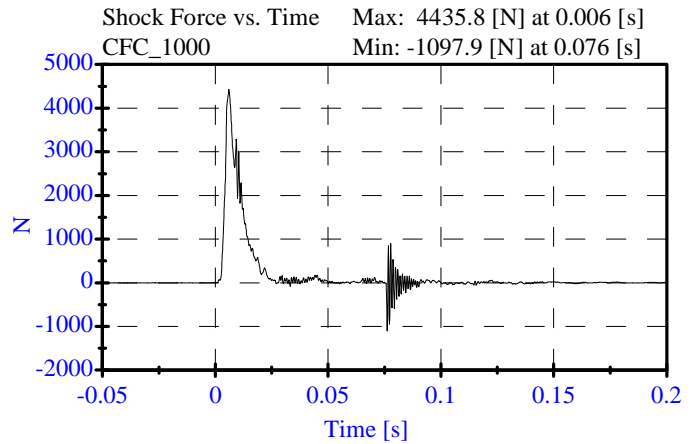
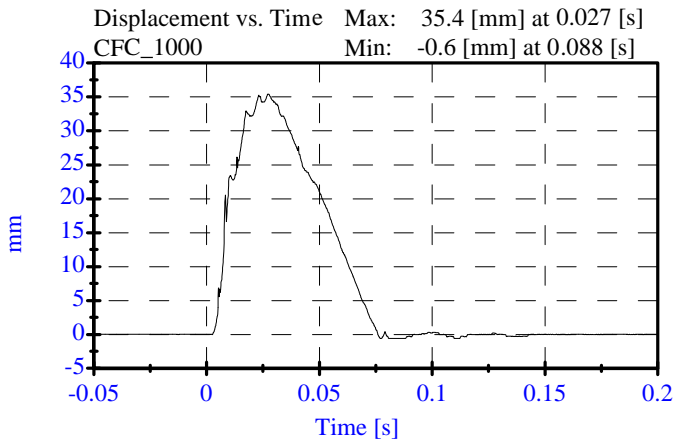
Laboratory Technician: B. Swiecicki

<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 %	36.00 %	Passed
Displacement:	33.00-40.00 mm	35.42 mm	Passed
Maximum Force:	3741.00-4448.00 N	4435.77 N	Passed

Impact Test Velocity: 6.10 m/s

Damper Identification: 906

Damper Setting: 5

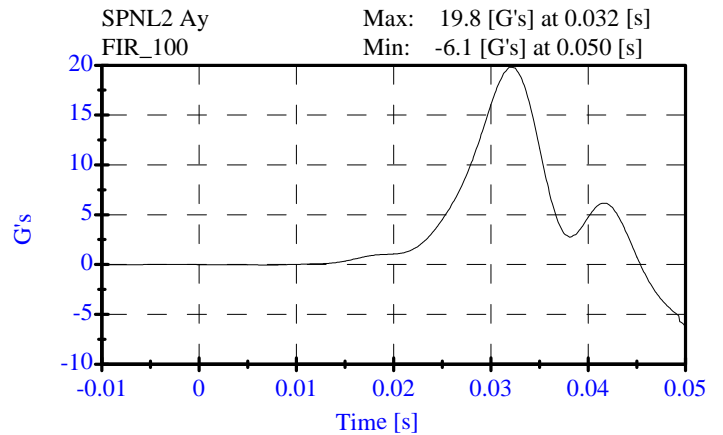
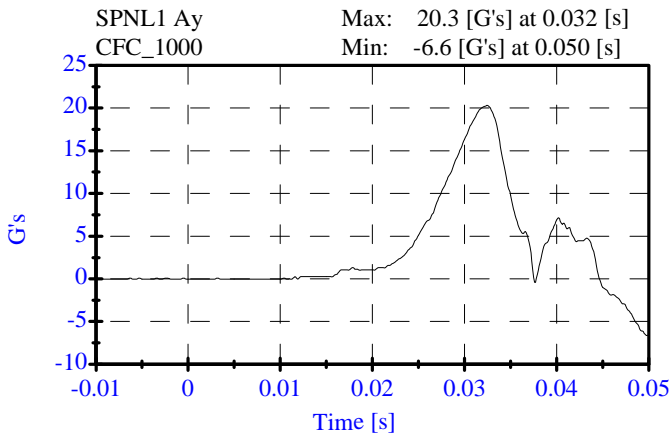
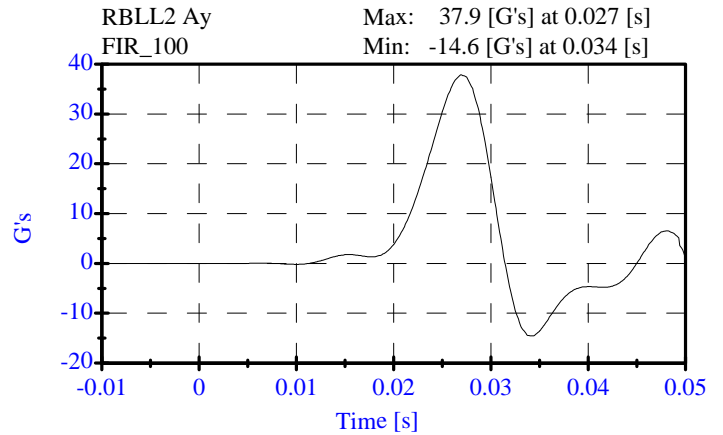
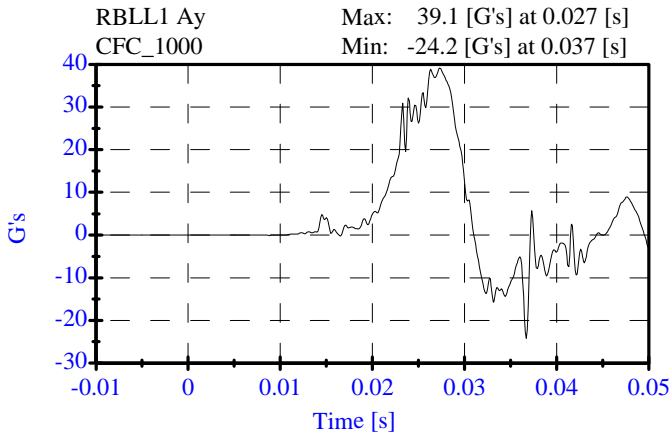
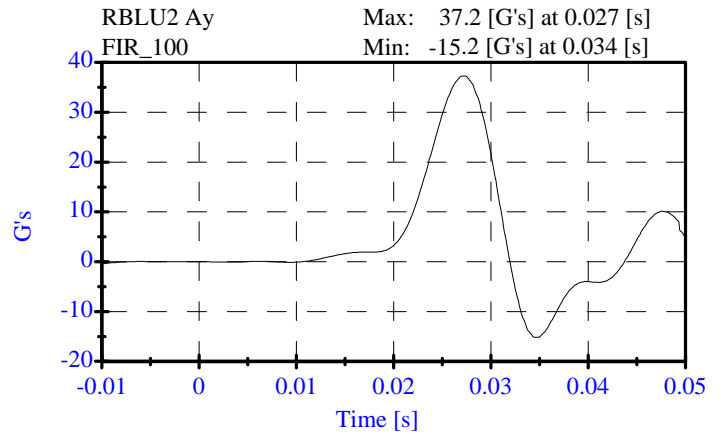
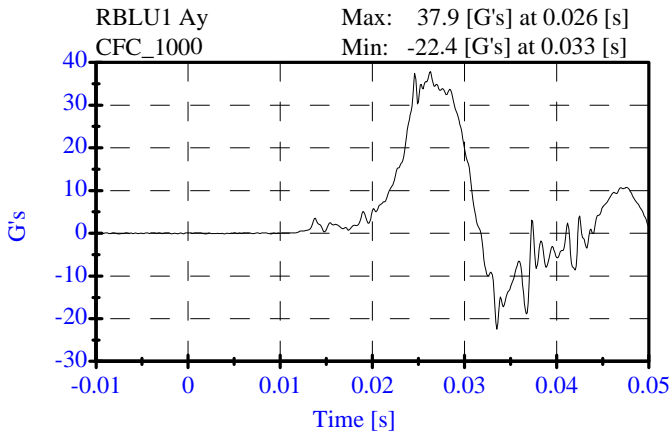


Thorax Impact Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
 Date: 02-11-08

Sequential Test Number: 1 File: 906T1 02-11-08
 Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	37.21 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	37.91 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	19.82 G's	Passed



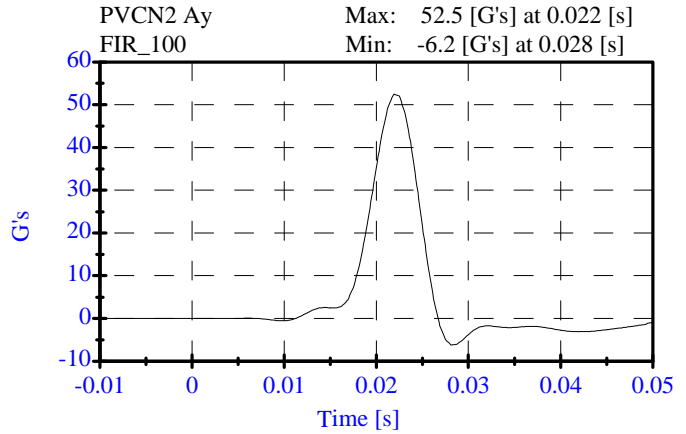
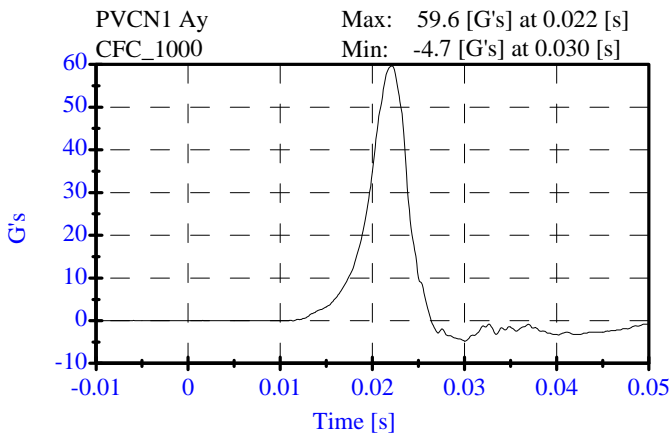
**Pelvis Impact Test
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 02-11-08

Sequential Test Number: 1 File: 906P 02-11-08
Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	52.47 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.3 ms	Passed

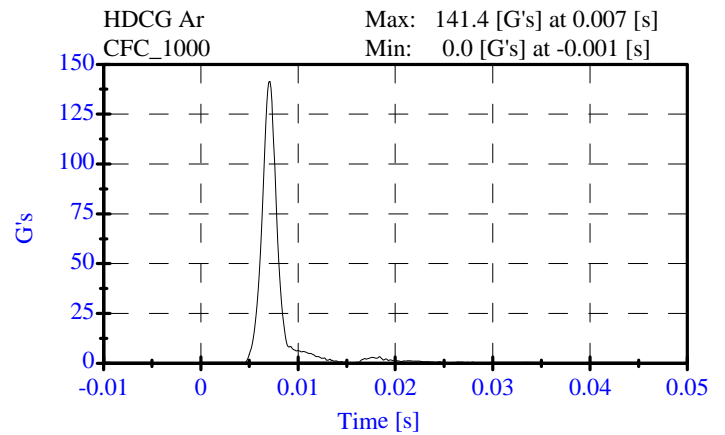
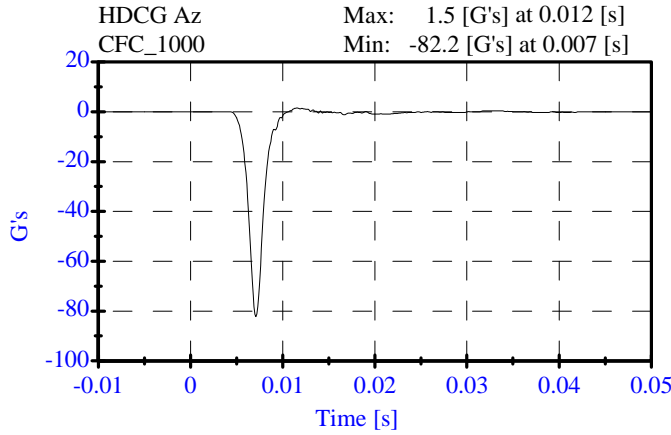
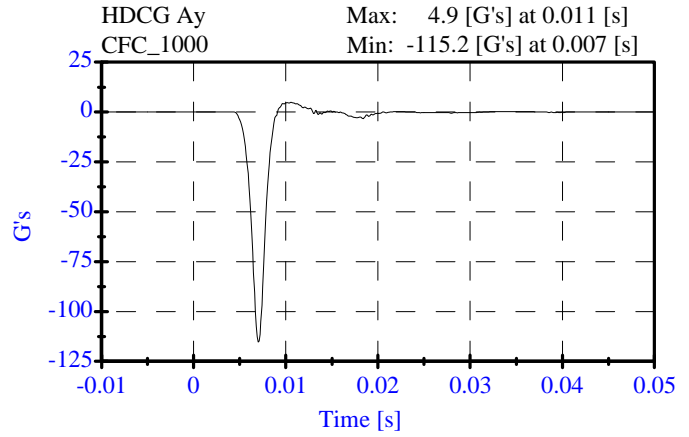
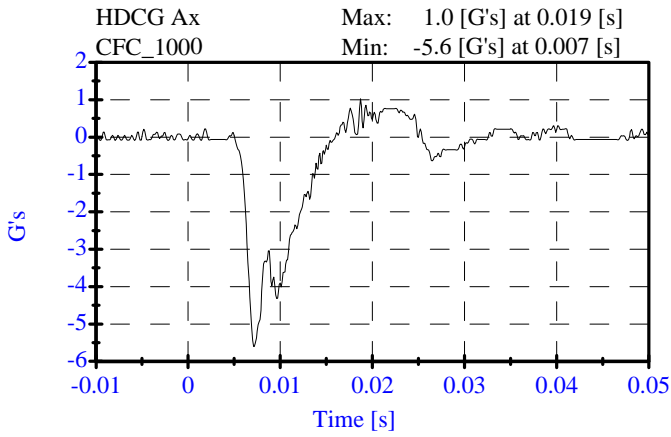


Head Drop Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
 Date: 02-07-08

Sequential Test Number: 1 File: 906H 02-07-08
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	141.36 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.02 Gs	Passed
Curve PerCent NonModal:	< 15%	5.99 %	Passed



**Neck Test
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 02-08-08

Sequential Test Number: 1 File: 906N 02-07-08
Laboratory Technician: B. Swiecicki

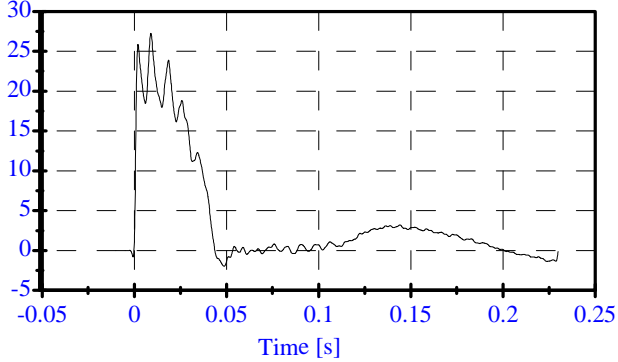
<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.08 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.14 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	5.84 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.13 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	68.58 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.00 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	81.33 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	53.30 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	5.10 ms	Passed

**Neck Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT**

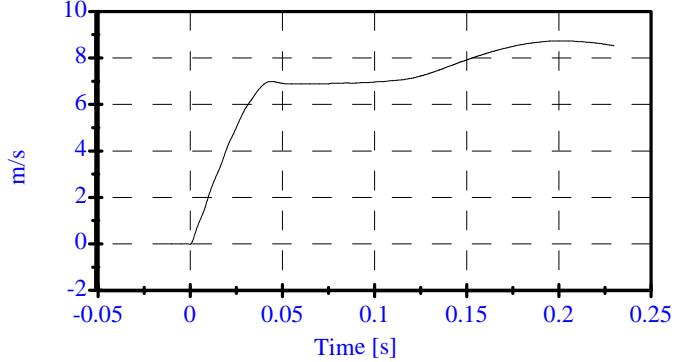
ATD Serial No: 906
Date: 02-08-08

Sequential Test Number: 1 File: 906N 02-07-08
Laboratory Technician: B. Swiecicki

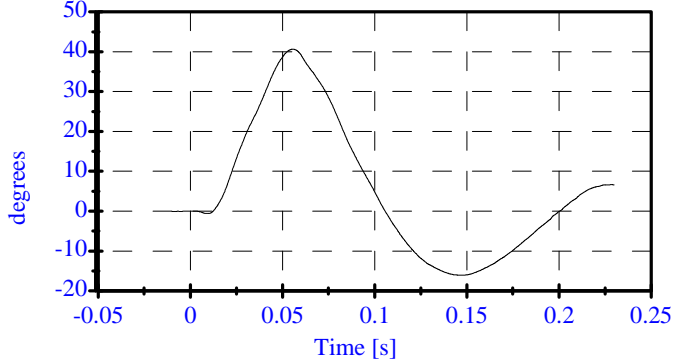
Pend Ax CFC_180 Max: 27.3 [] at 0.009 [s]
Min: -2.0 [] at 0.049 [s]



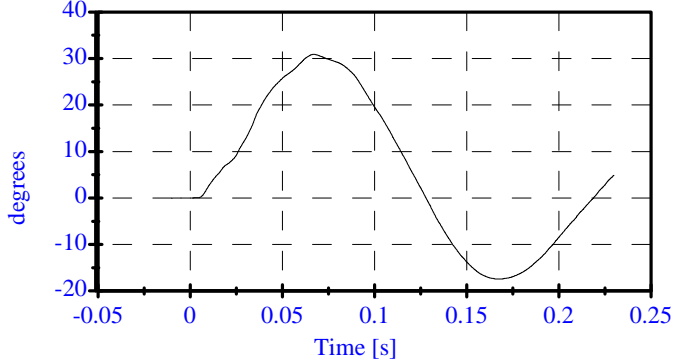
Pend Vx CFC_180 Max: 8.7 [m/s] at 0.201 [s]
Min: -0.0 [m/s] at -0.000 [s]



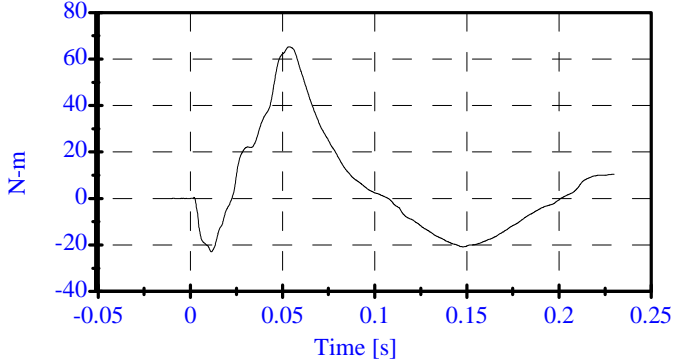
Head Rot CFC_180 Max: 40.6 [degrees] at 0.056 [s]
Min: -16.0 [degrees] at 0.147 [s]



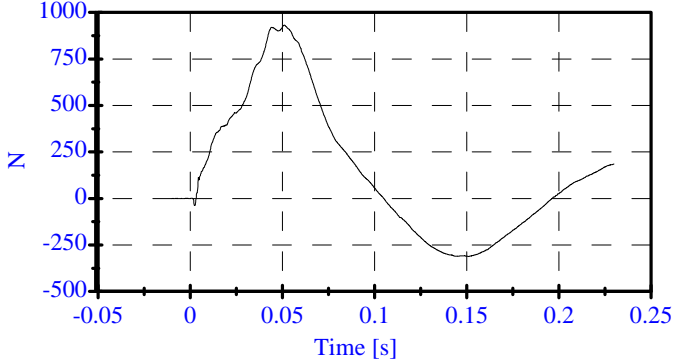
Arm Rot CFC_180 Max: 30.9 [degrees] at 0.067 [s]
Min: -17.4 [degrees] at 0.167 [s]



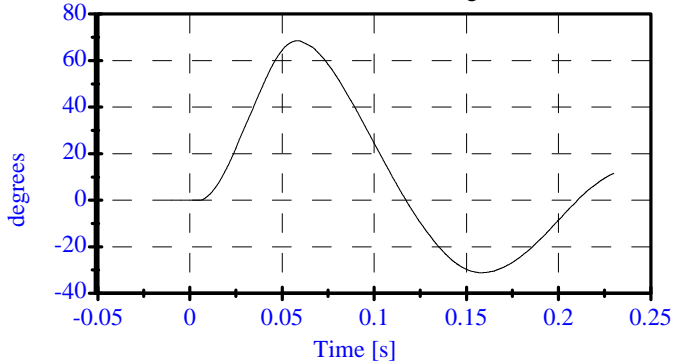
Neck Mx CFC_600 Max: 65.1 [N-m] at 0.054 [s]
Min: -23.0 [N-m] at 0.011 [s]



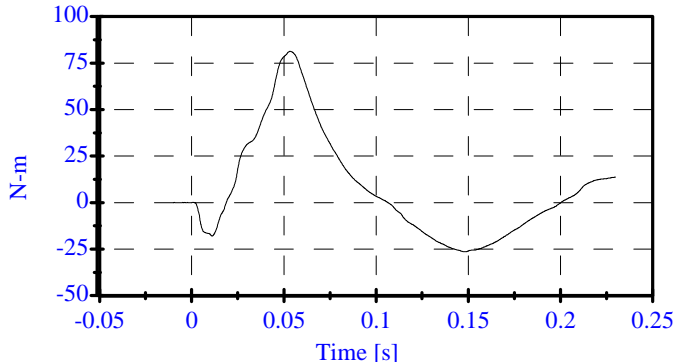
Neck Fy CFC_1000 Max: 931.8 [N] at 0.051 [s]
Min: -312.7 [N] at 0.151 [s]



Tot Rot CFC_180 Max: 68.6 [degrees] at 0.058 [s]
Min: -31.1 [degrees] at 0.158 [s]



MOCX Max: 81.3 [N-m] at 0.053 [s]
Min: -26.3 [N-m] at 0.148 [s]



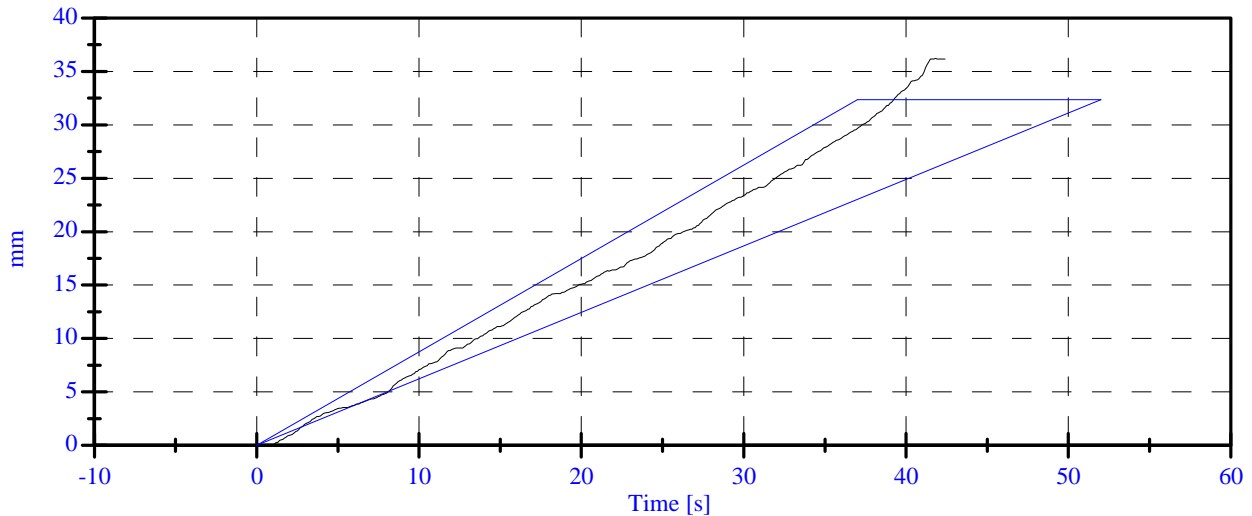
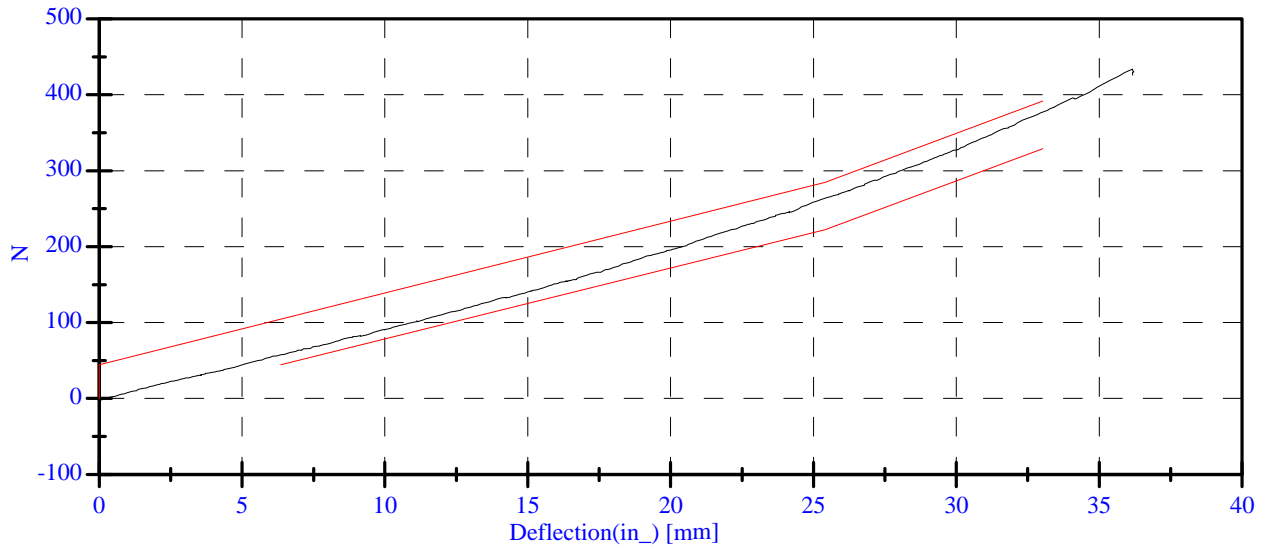
Abdomen Compression Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
 Date: 02-12-08

Sequential Test Number: 1 File: 906 Ab 02-12-08
 Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	120.51 N	Passed
Force at 19.05 mm :	162.98-220.99 N	186.12 N	Passed
Force at 25.40 mm :	221.97-280.02 N	263.69 N	Passed
Force at 33.02 mm :	324.99-391.00 N	376.42 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906

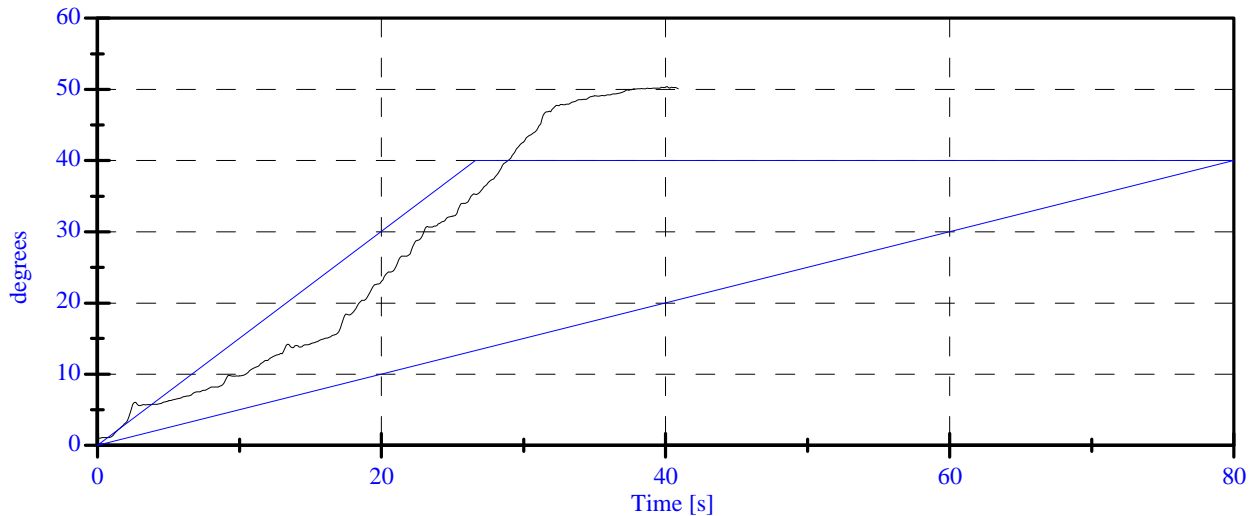
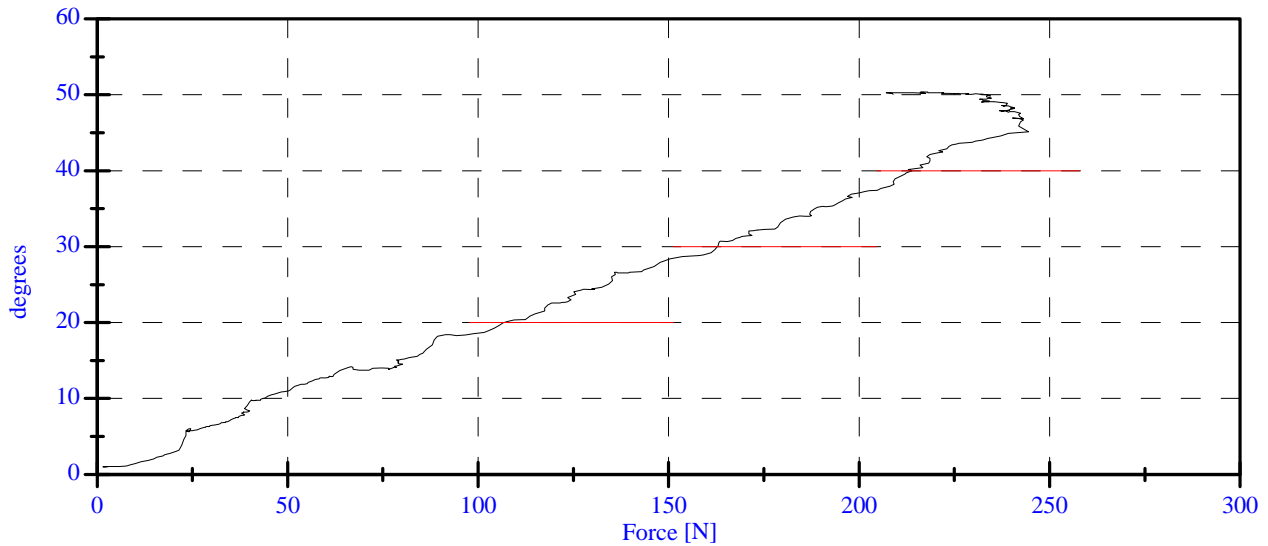
Date: 02-11-08

Sequential Test Number: 1 File: 906 Spine 02-11-08

Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	2.61 N	Passed
Force at 20 Deg:	97.86-151.24 N	106.55 N	Passed
Force at 30 Deg:	151.24-204.62 N	162.96 N	Passed
Force at 40 Deg:	204.62-258.00 N	213.88 N	Passed
Return Angle	12 Deg Max	0.40 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
 Date: February 12, 2008 Laboratory Technician: B. Swiecicki

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.: 905

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
Date: February 12, 2008 Laboratory Technician: B. Swiecicki

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.: 905 Sequential Test Number: 1
Date: February 12, 2008 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	381

REMARKS: None

Shock Impact Low (3.05 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

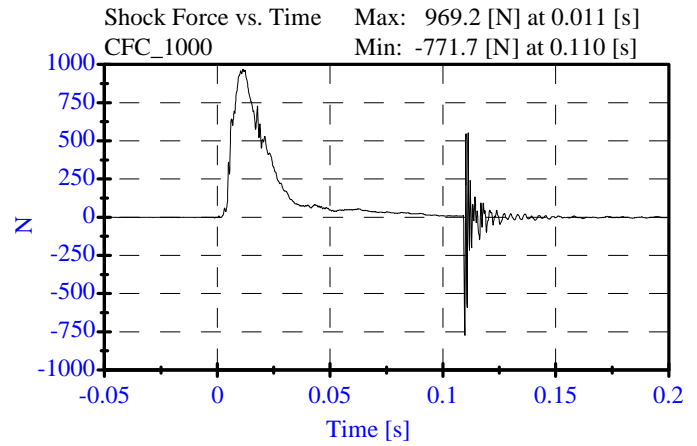
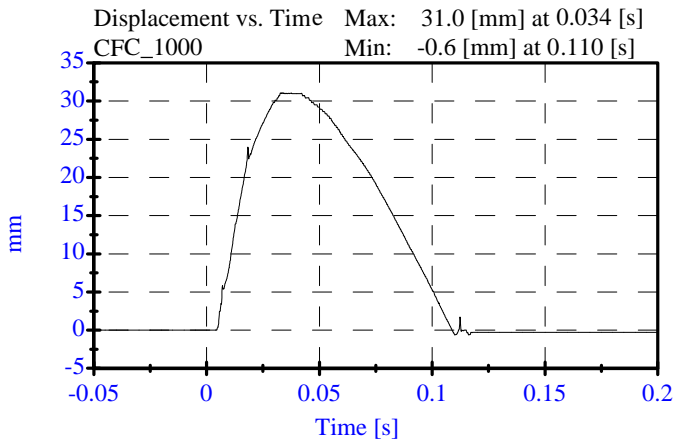
ATD Serial No: 905

Date: 08-01-07

Sequential Test Number: 1 File: 905SL 08-1-07

Laboratory Technician: B. Swiecicki

<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 %	36.00 %	Passed
Displacement:	30.00-35.00 mm	31.05 mm	Passed
Maximum Force:	836.00-1125.00 N	969.22 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	905		
Damper Setting:	5		



Shock Impact Med (4.27 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905

Date: 08-01-07

Sequential Test Number: 1 File: 905SM 08-1-07

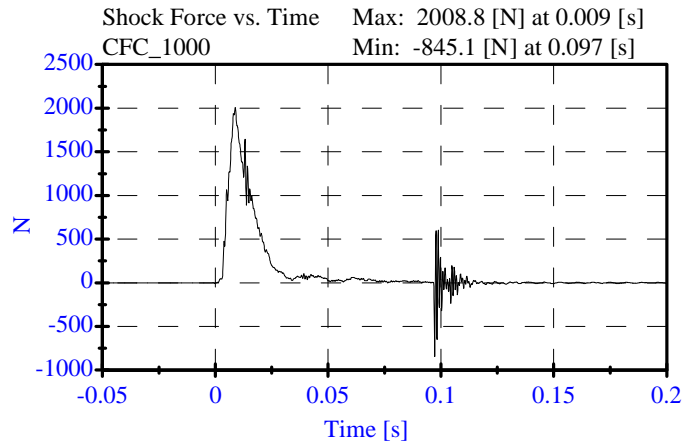
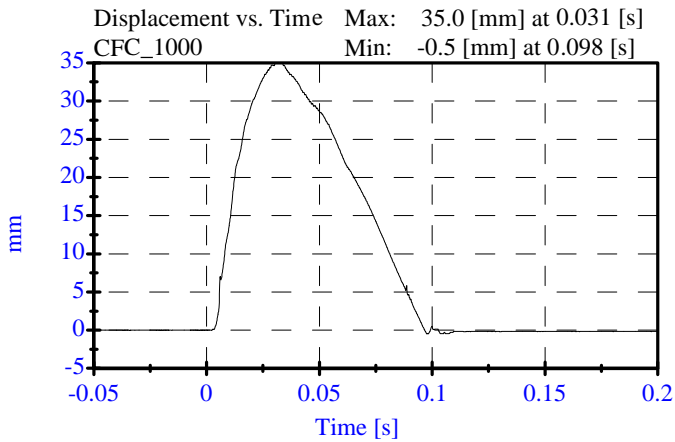
Laboratory Technician: B. Swiecicki

<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 %	36.00 %	Passed
Displacement:	32.00-37.00 mm	34.98 mm	Passed
Maximum Force:	1730.00-2099.00 N	2008.82 N	Passed

Impact Test Velocity: 4.27 m/s

Damper Identification: 905

Damper Setting: 5



Shock Impact High (6.10 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

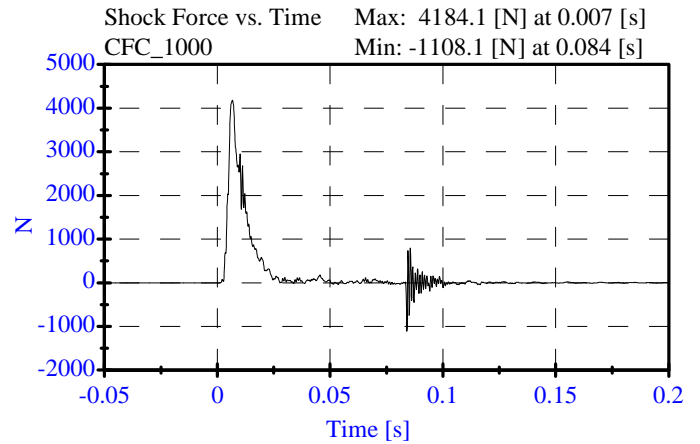
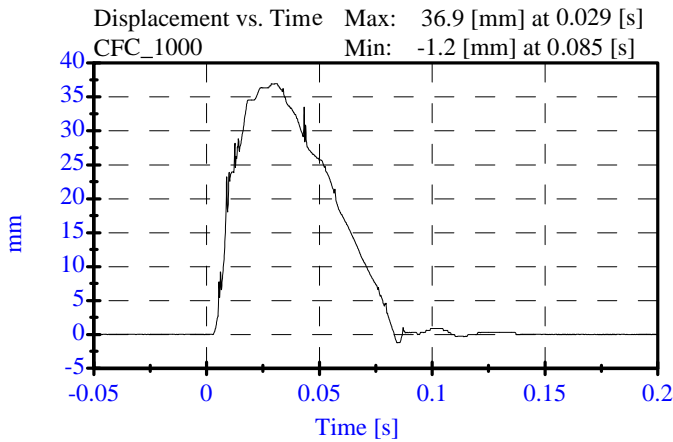
ATD Serial No: 905

Date: 08-01-07

Sequential Test Number: 1 File: 905SH 08-1-07

Laboratory Technician: B. Swiecicki

<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 %	36.00 %	Passed
Displacement:	33.00-40.00 mm	36.94 mm	Passed
Maximum Force:	3741.00-4448.00 N	4184.07 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	905		
Damper Setting:	5		

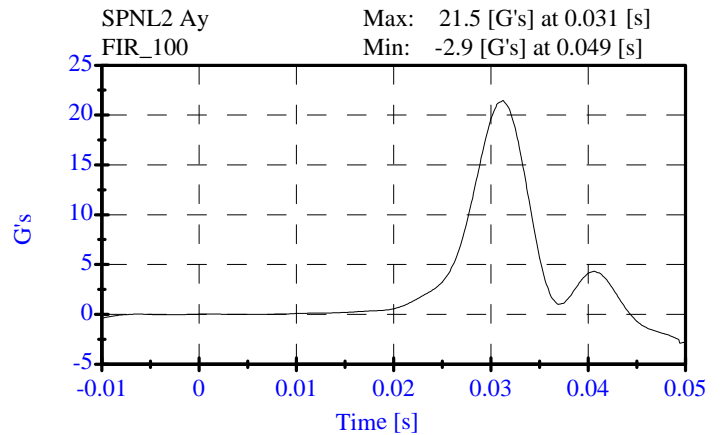
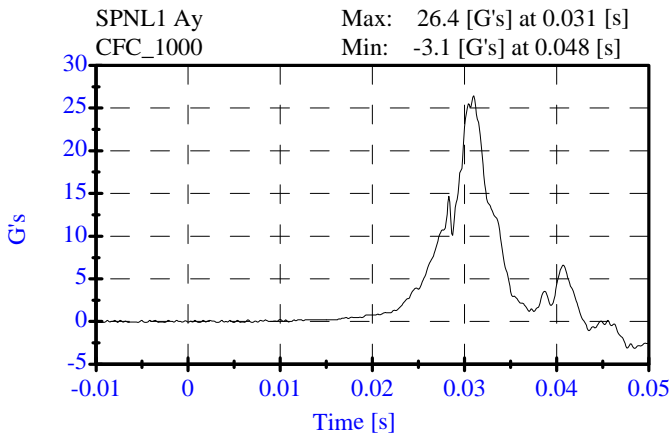
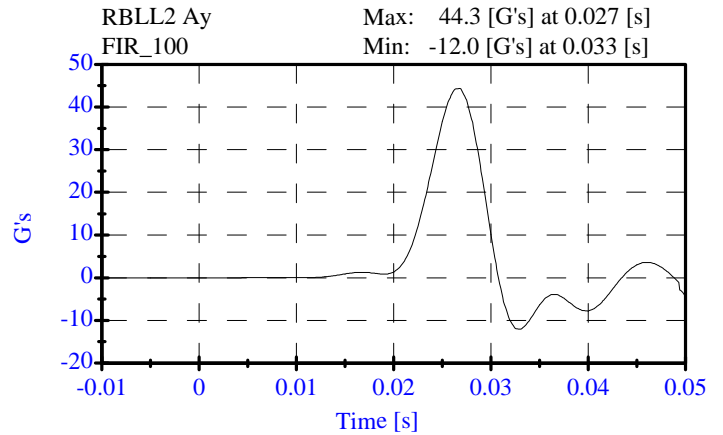
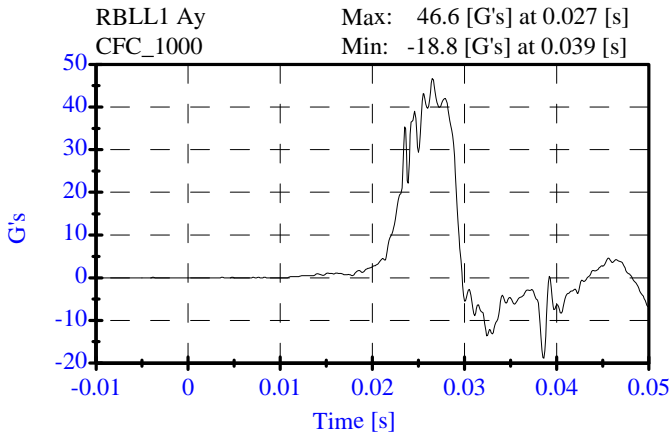
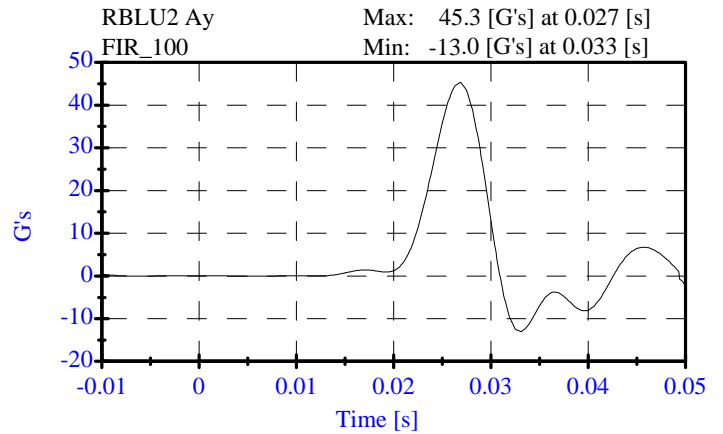
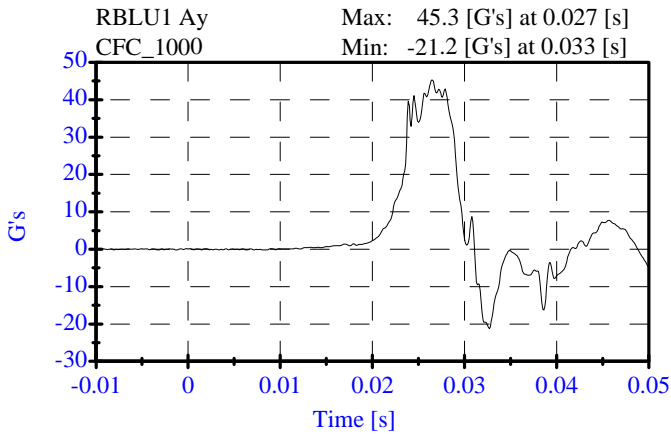


Thorax Impact Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
 Date: 02-11-08

Sequential Test Number: 1 File: 905T 02-11-08
 Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	45.31 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	44.34 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.48 G's	Passed



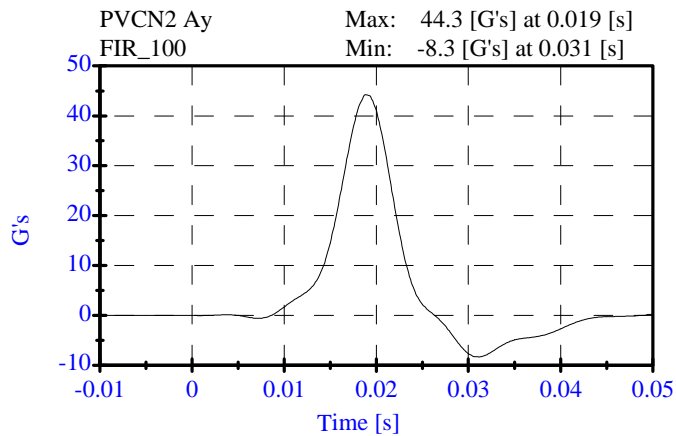
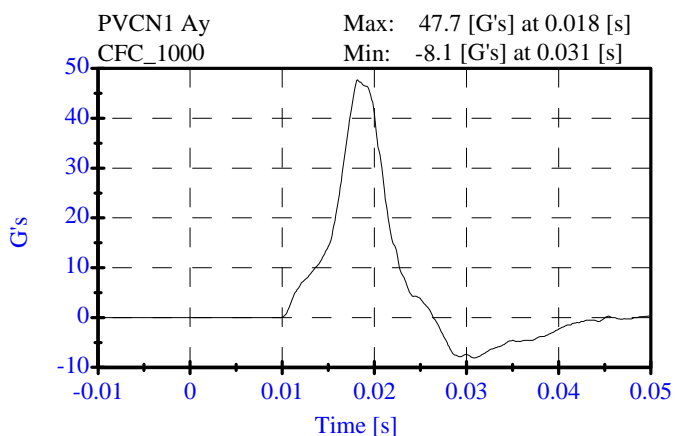
**Pelvis Impact Test
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-11-08

Sequential Test Number: 1 File: 905P 02-11-08
Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	44.27 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.5 ms	Passed

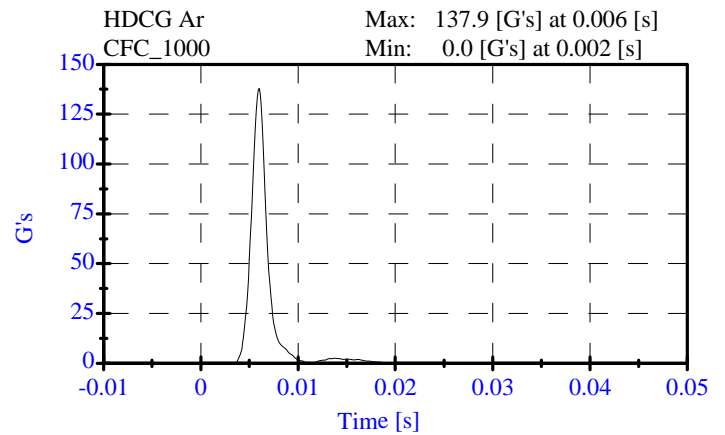
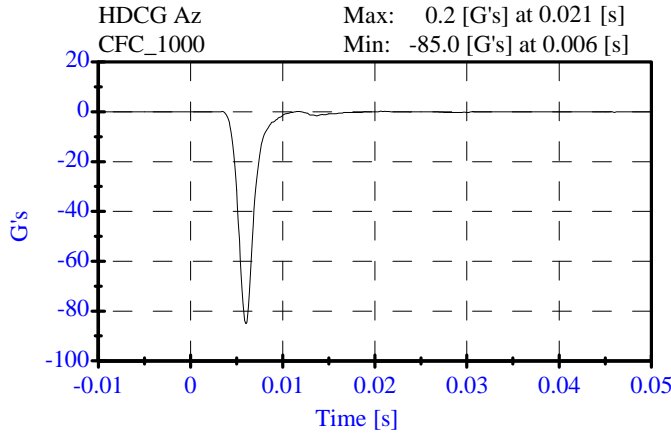
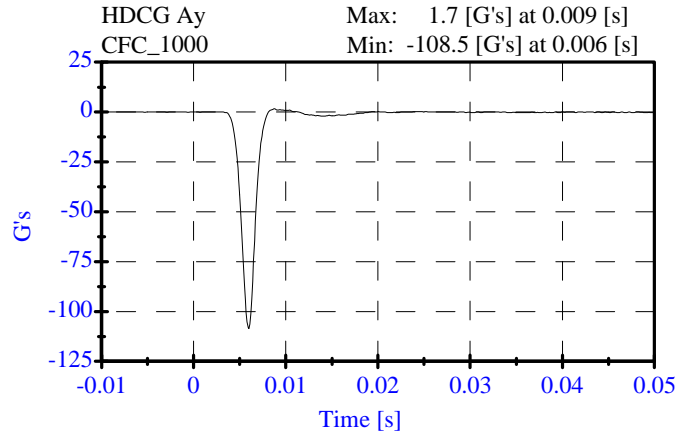
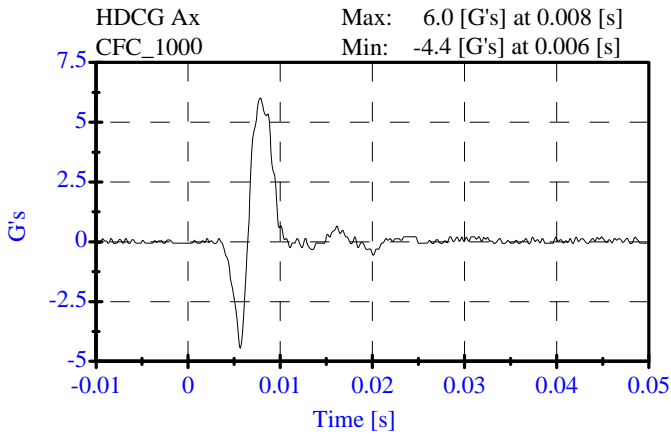


**Head Drop Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 905
Date: 02-07-08

Sequential Test Number: 1 File: 905H 02-07-08
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	137.87 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	6.00 Gs	Passed
Curve PerCent NonModal:	< 15%	1.88 %	Passed



**Neck Test
Pre-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-08-08

Sequential Test Number: 1 File: 905N7 02-07-08
Laboratory Technician: B. Swiecicki

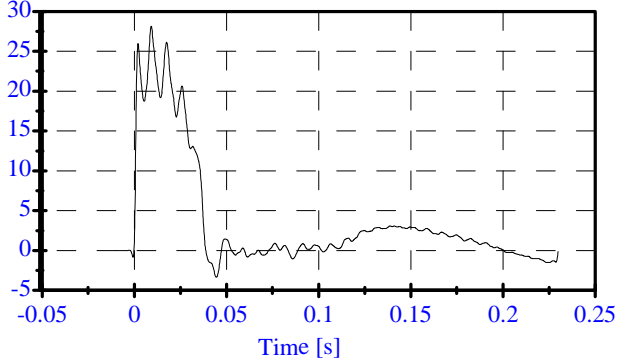
<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.00 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.10 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.33 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.10 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	6.98 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	60.10 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	87.09 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	54.40 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	7.50 ms	Passed

**Neck Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT**

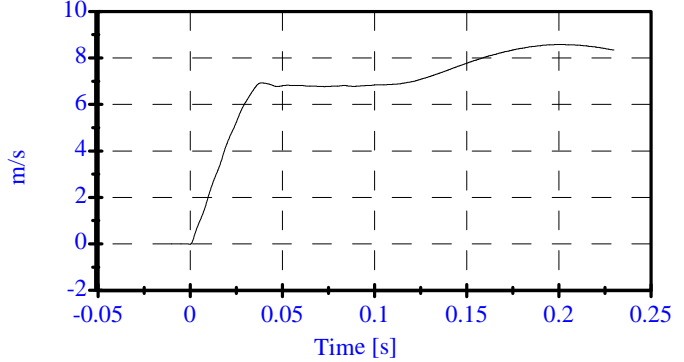
ATD Serial No: 905
Date: 02-08-08

Sequential Test Number: 1 File: 905N7 02-07-08
Laboratory Technician: B. Swiecicki

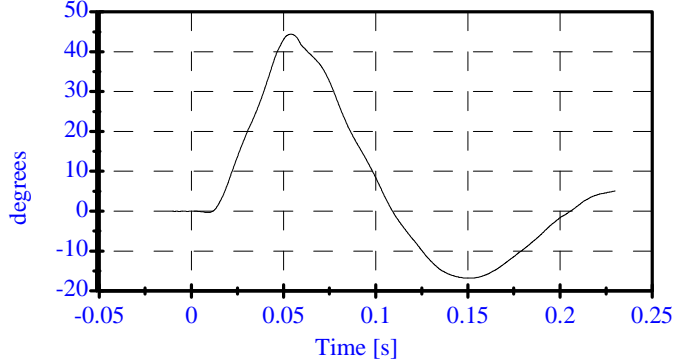
Pend Ax CFC_180 Max: 28.2 [] at 0.009 [s]
Min: -3.3 [] at 0.045 [s]



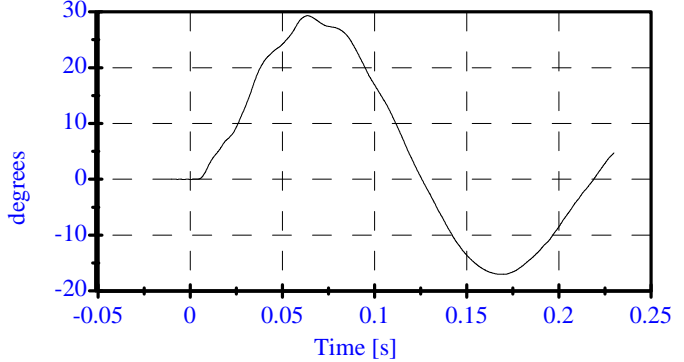
Pend Vx CFC_180 Max: 8.6 [m/s] at 0.200 [s]
Min: -0.0 [m/s] at -0.000 [s]



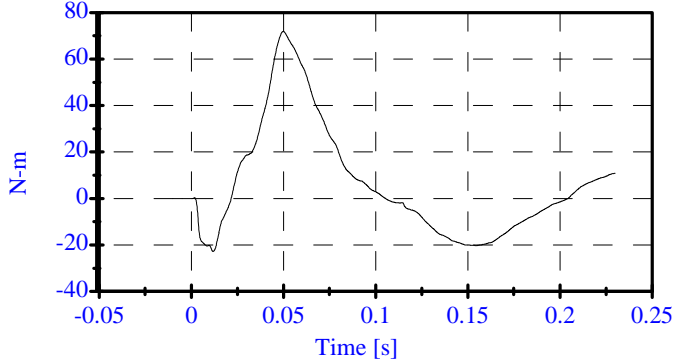
Head Rot CFC_180 Max: 44.4 [degrees] at 0.054 [s]
Min: -16.8 [degrees] at 0.152 [s]



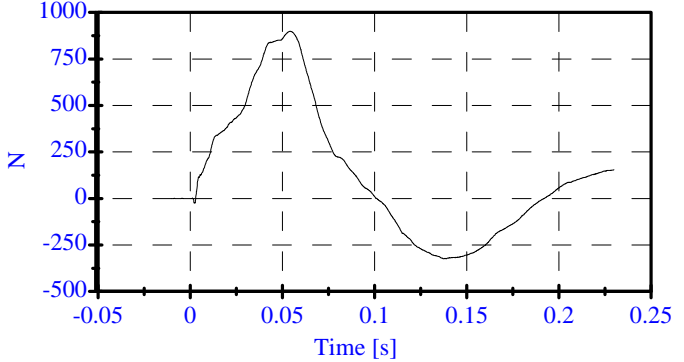
Arm Rot CFC_180 Max: 29.3 [degrees] at 0.064 [s]
Min: -17.0 [degrees] at 0.170 [s]



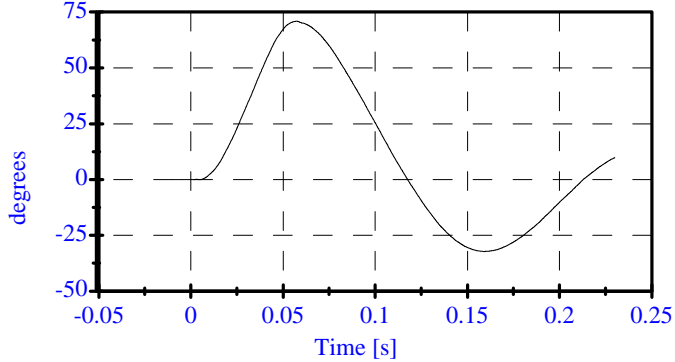
Neck Mx CFC_600 Max: 71.8 [N-m] at 0.050 [s]
Min: -22.8 [N-m] at 0.012 [s]



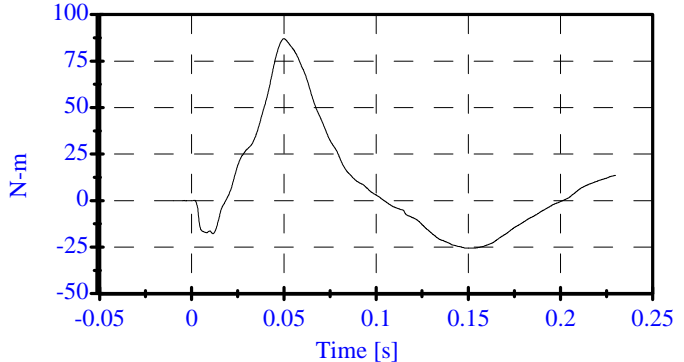
Neck Fy CFC_1000 Max: 898.9 [N] at 0.054 [s]
Min: -323.5 [N] at 0.139 [s]



Tot Rot CFC_180 Max: 70.9 [degrees] at 0.057 [s]
Min: -32.2 [degrees] at 0.159 [s]



MOCX Max: 87.1 [N-m] at 0.050 [s]
Min: -25.6 [N-m] at 0.149 [s]



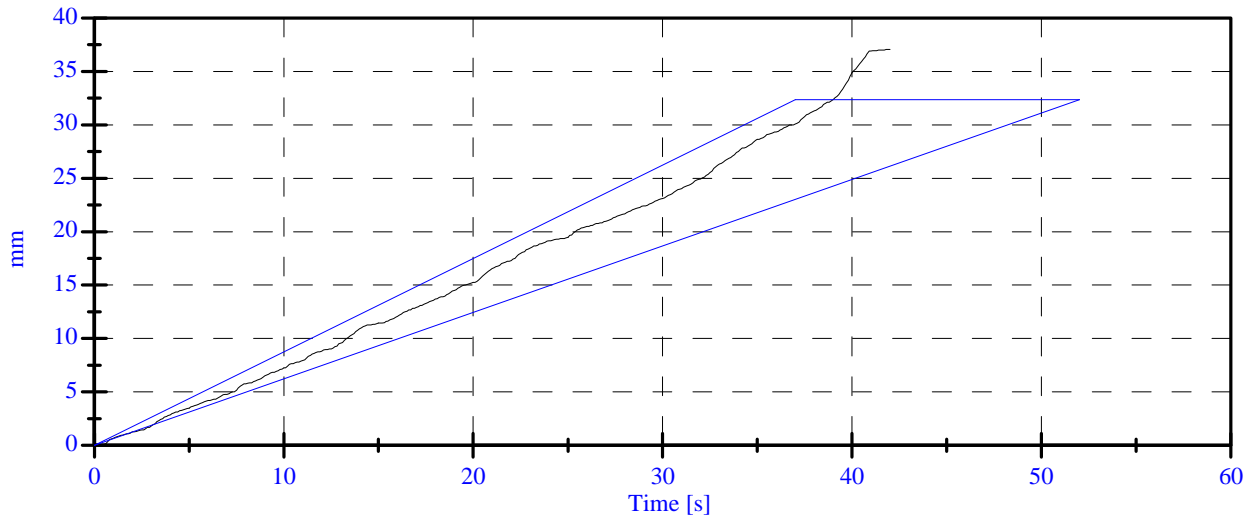
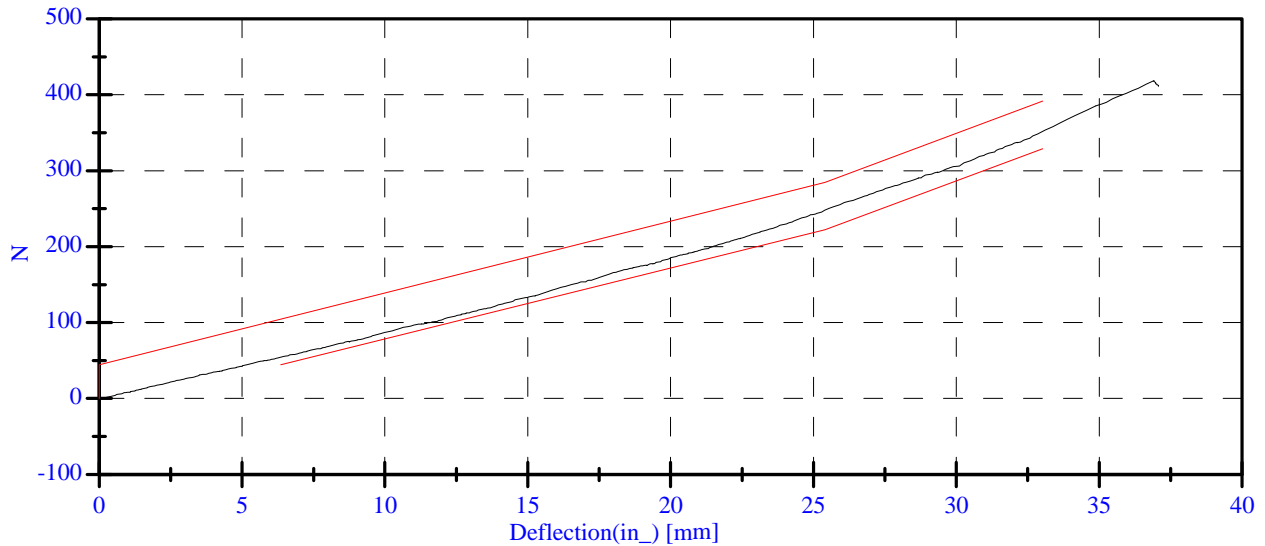
Abdomen Compression Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
 Date: 02-12-08

Sequential Test Number: 1 File: 905 Ab 02-12-08
 Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	112.90 N	Passed
Force at 19.05 mm :	162.98-220.99 N	174.88 N	Passed
Force at 25.40 mm :	221.97-280.02 N	248.10 N	Passed
Force at 33.02 mm :	324.99-391.00 N	353.22 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905

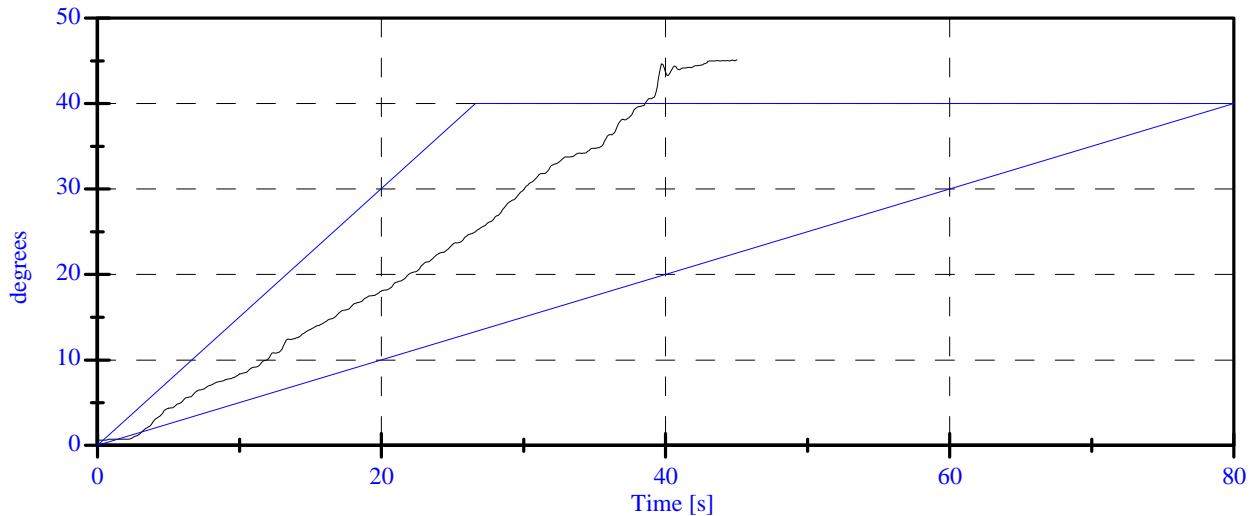
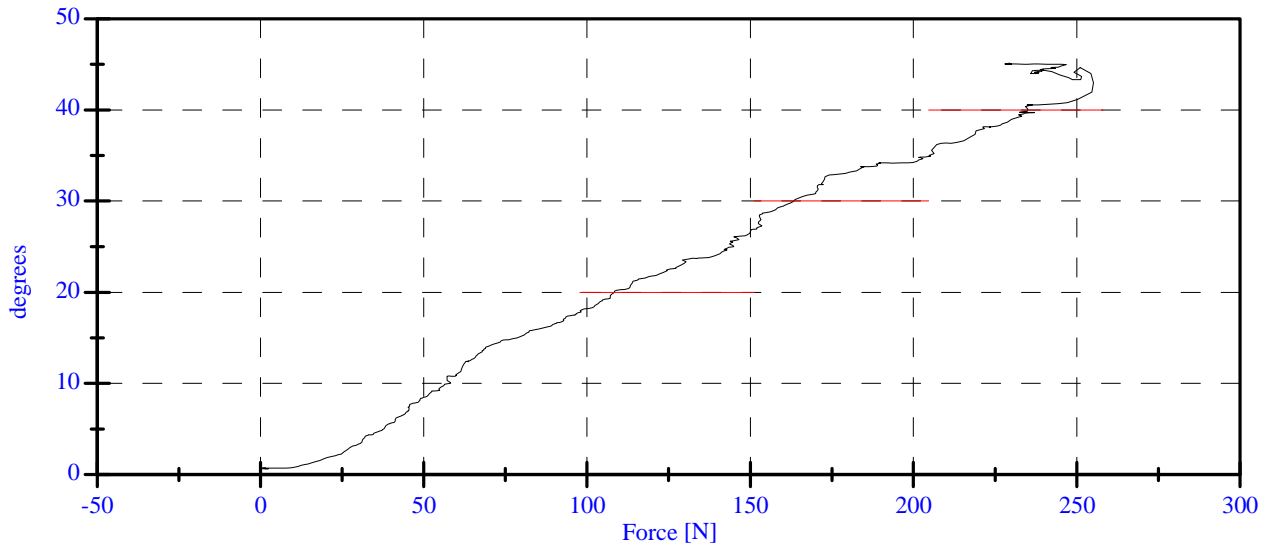
Date: 02-12-08

Sequential Test Number: 1 File: 905 Spine 02-11-08

Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	0.26 N	Passed
Force at 20 Deg:	97.86-151.24 N	108.38 N	Passed
Force at 30 Deg:	151.24-204.62 N	163.22 N	Passed
Force at 40 Deg:	204.62-258.00 N	235.04 N	Passed
Return Angle	12 Deg Max	9.46 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
 Date: February 12, 2008 Laboratory Technician: B. Swiecicki

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.: 906

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
Date: February 28, 2008 Laboratory Technician: B. Swiecicki

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.: 906 Sequential Test Number: 1
Date: February 28, 2008 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	386

REMARKS: None

Thorax Impact

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

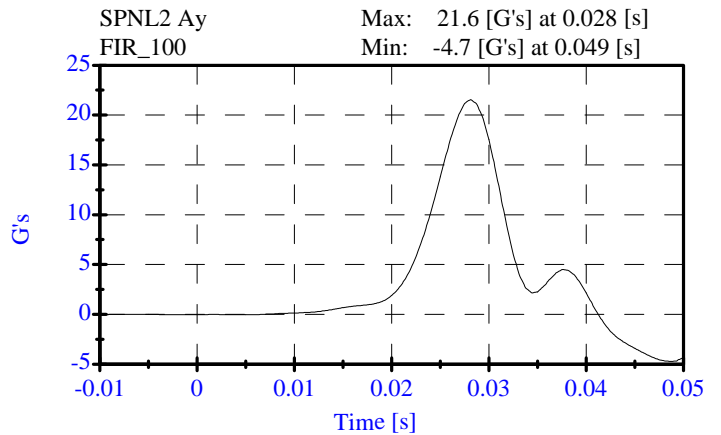
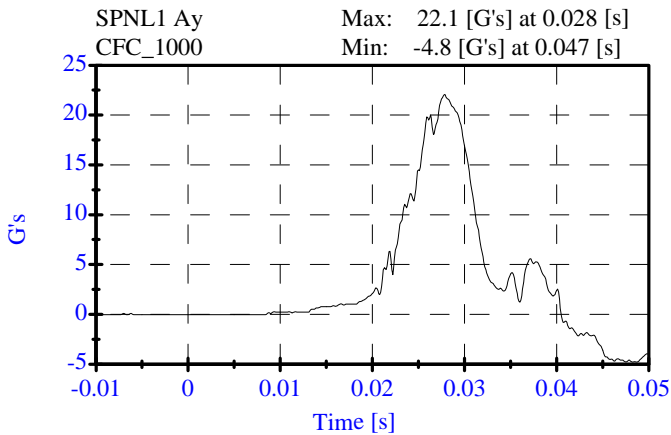
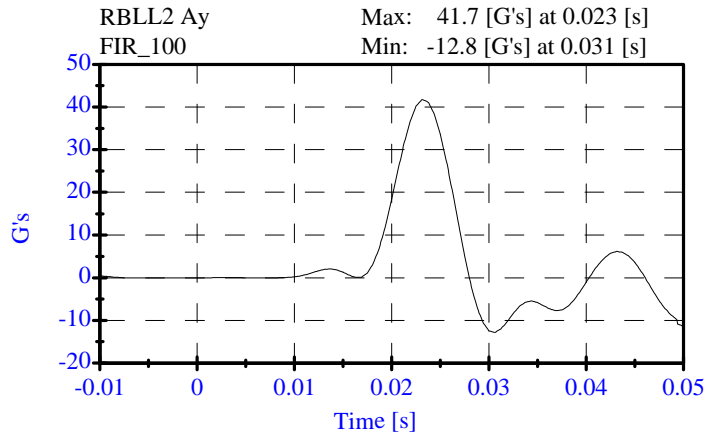
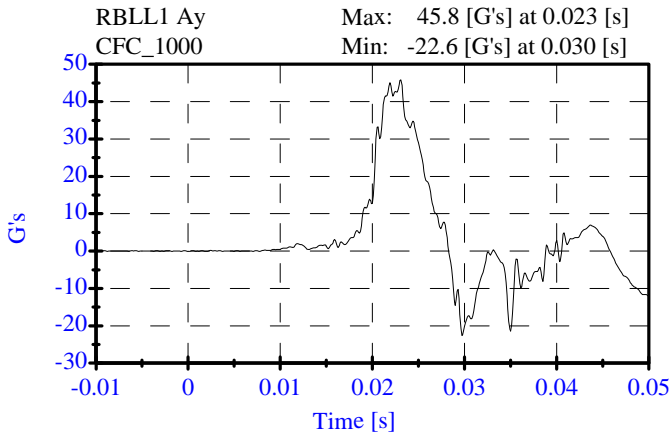
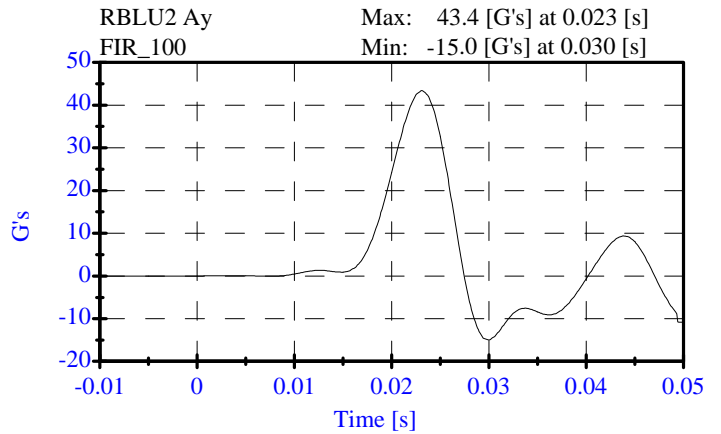
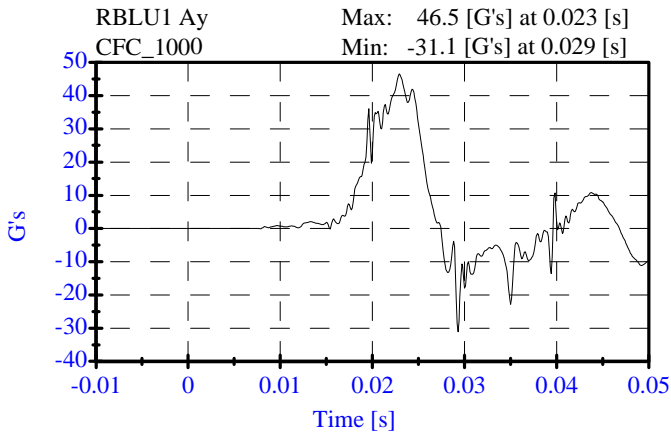
ATD Serial No: 906

Date: 02-28-08

Sequential Test Number: 1 File: 906T 02-28-08

Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	43.45 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	41.71 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.58 G's	Passed



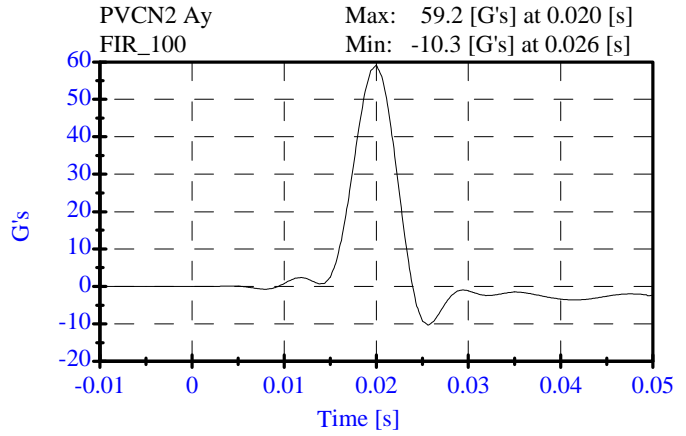
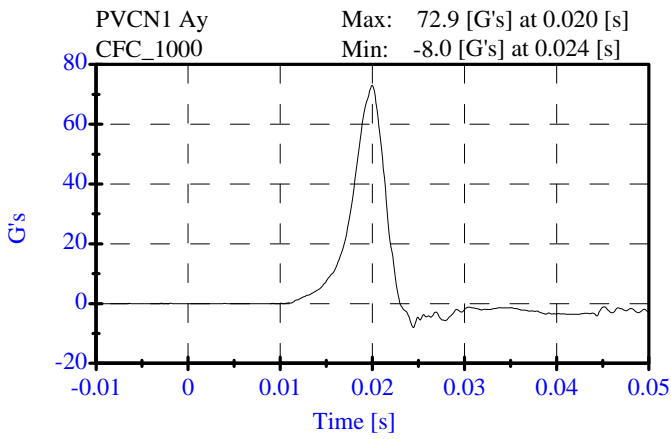
**Pelvis Impact Test
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-28-08

Sequential Test Number: 1 File: 906P 02-28-08
Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	59.19 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.0 ms	Passed

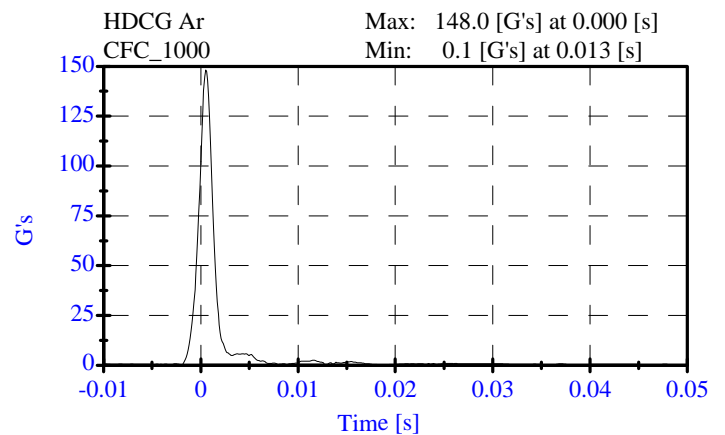
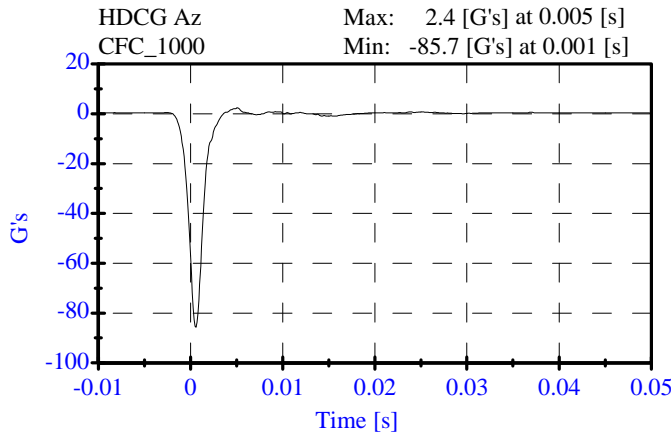
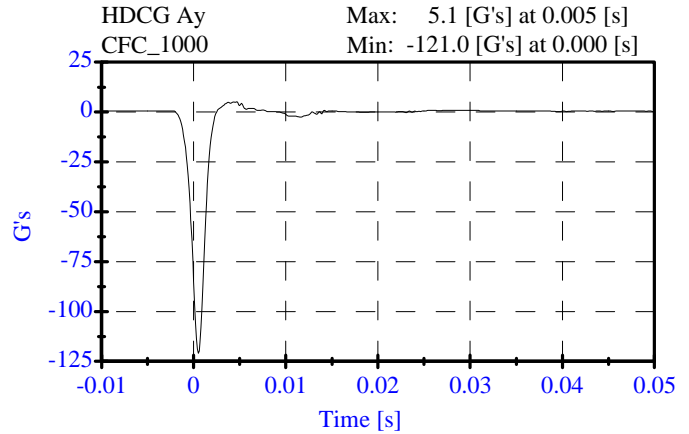
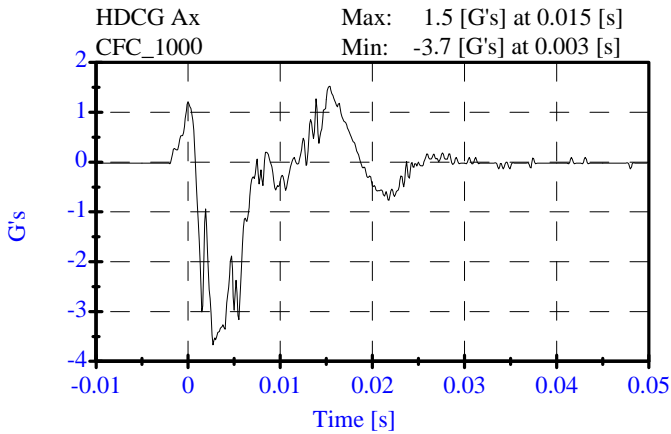


**Head Drop Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 906
Date: 02-25-08

Sequential Test Number: 1 File: 906H 02-25-08
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	148.03 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.52 Gs	Passed
Curve PerCent NonModal:	< 15%	3.98 %	Passed



**Neck Test
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: 02-26-08

Sequential Test Number: 1 File: 906N4 02-25-08
Laboratory Technician: B. Swiecicki

<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 %	33.00 %	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	2.38 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.72 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.72 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.05 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	71.34 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.80 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	76.42 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	60.10 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	9.20 ms	Passed

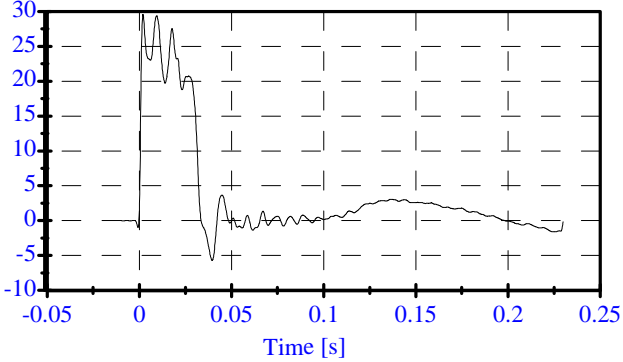
Neck Test
Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

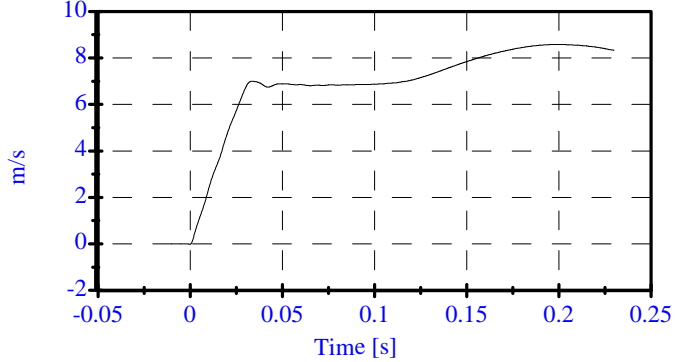
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Date: 02-26-08

Sequential Test Number: 1 File: 906N4 02-25-08
Laboratory Technician: B. Swiecicki

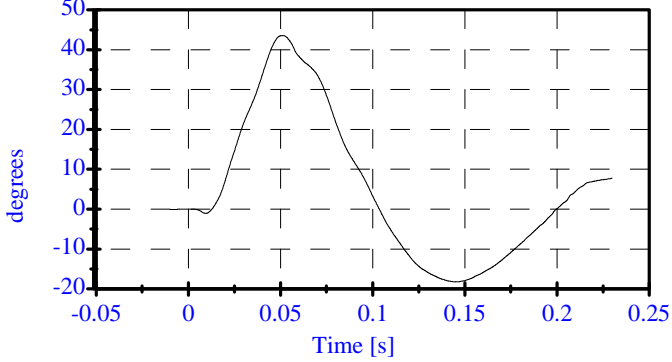
Pend Ax CFC_180 Max: 29.6 [] at 0.002 [s]
Min: -5.7 [] at 0.039 [s]



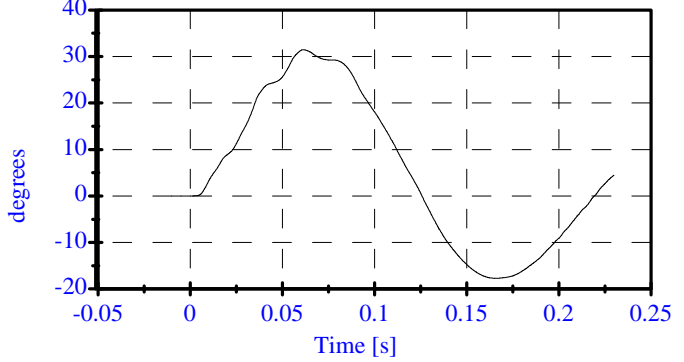
Pend Vx CFC_180 Max: 8.6 [m/s] at 0.198 [s]
Min: -0.0 [m/s] at -0.000 [s]



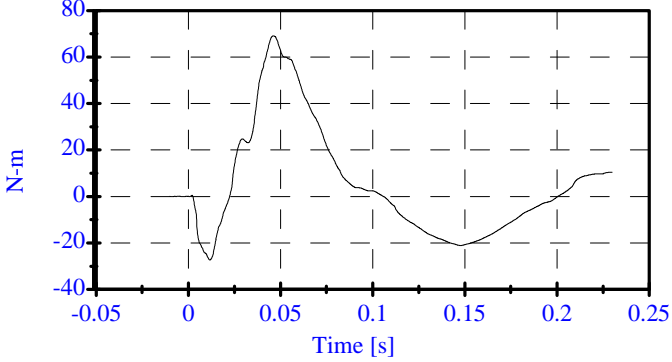
Head Rot CFC_180 Max: 43.6 [degrees] at 0.051 [s]
Min: -18.2 [degrees] at 0.145 [s]



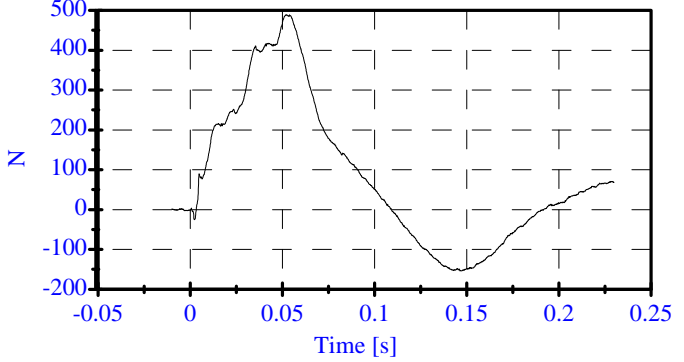
Arm Rot CFC_180 Max: 31.4 [degrees] at 0.061 [s]
Min: -17.7 [degrees] at 0.166 [s]



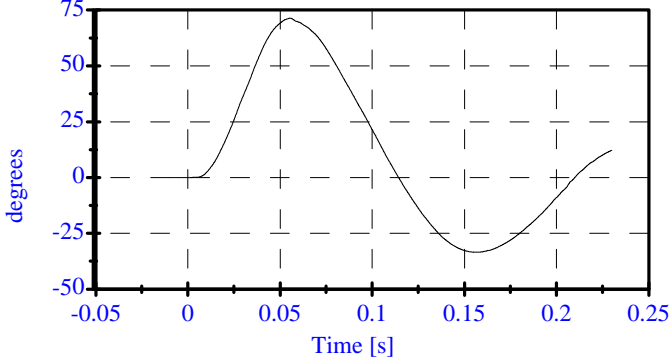
Neck Mx CFC_600 Max: 69.0 [N-m] at 0.046 [s]
Min: -27.3 [N-m] at 0.012 [s]



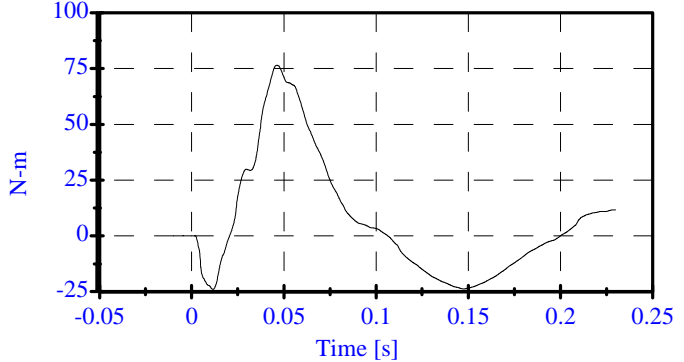
Neck Fy CFC_1000 Max: 489.2 [N] at 0.052 [s]
Min: -153.4 [N] at 0.146 [s]



Tot Rot CFC_180 Max: 71.3 [degrees] at 0.055 [s]
Min: -33.4 [degrees] at 0.158 [s]



MOCX Max: 76.4 [N-m] at 0.046 [s]
Min: -24.0 [N-m] at 0.012 [s]



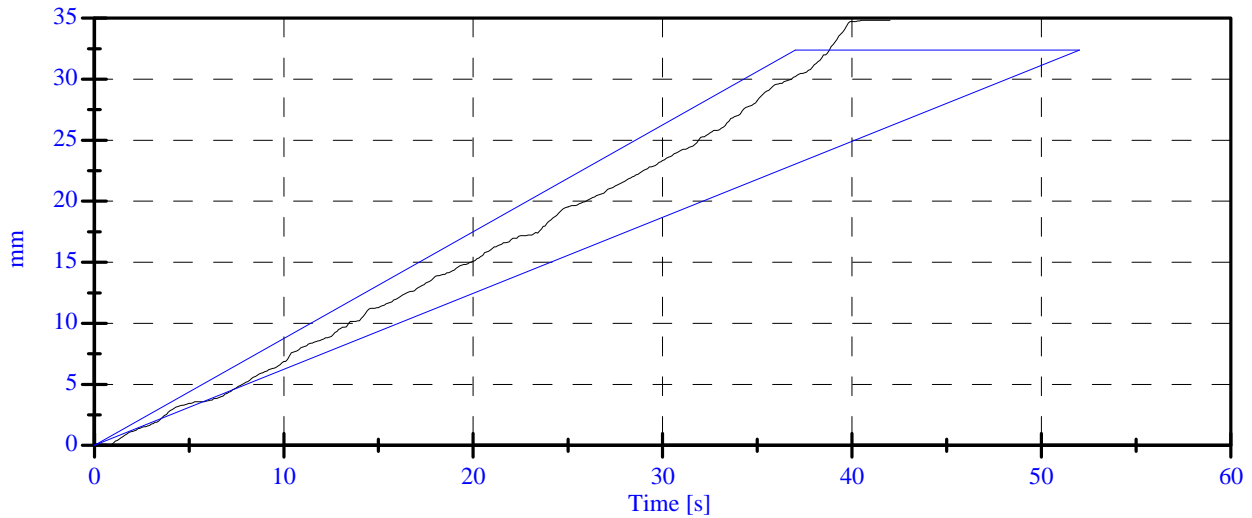
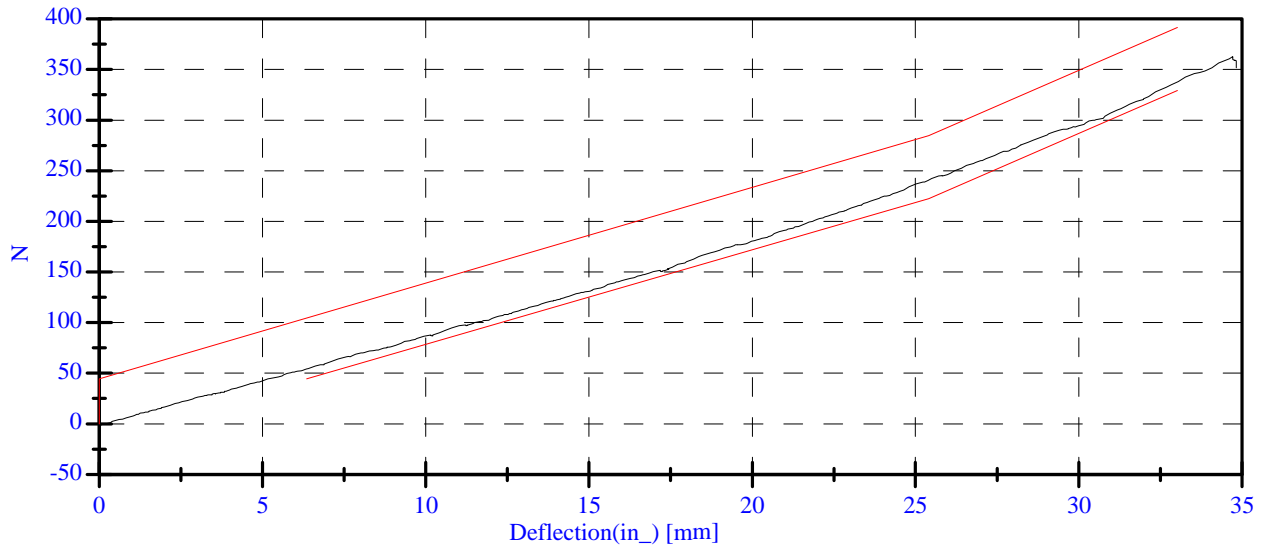
**Abdominal Compression Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 906
Date: 02-28-08

Sequential Test Number: 1 File: 906 Ab 02-28-08
Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	112.90 N	Passed
Force at 19.05 mm :	162.98-220.99 N	171.62 N	Passed
Force at 25.40 mm :	221.97-280.02 N	240.49 N	Passed
Force at 33.02 mm :	324.99-391.00 N	338.00 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906

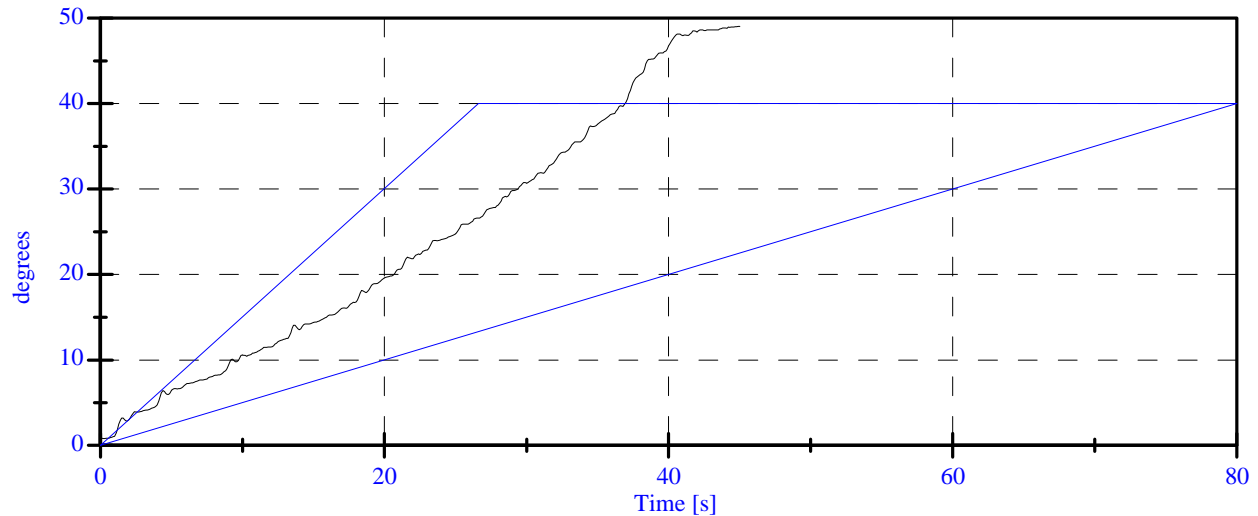
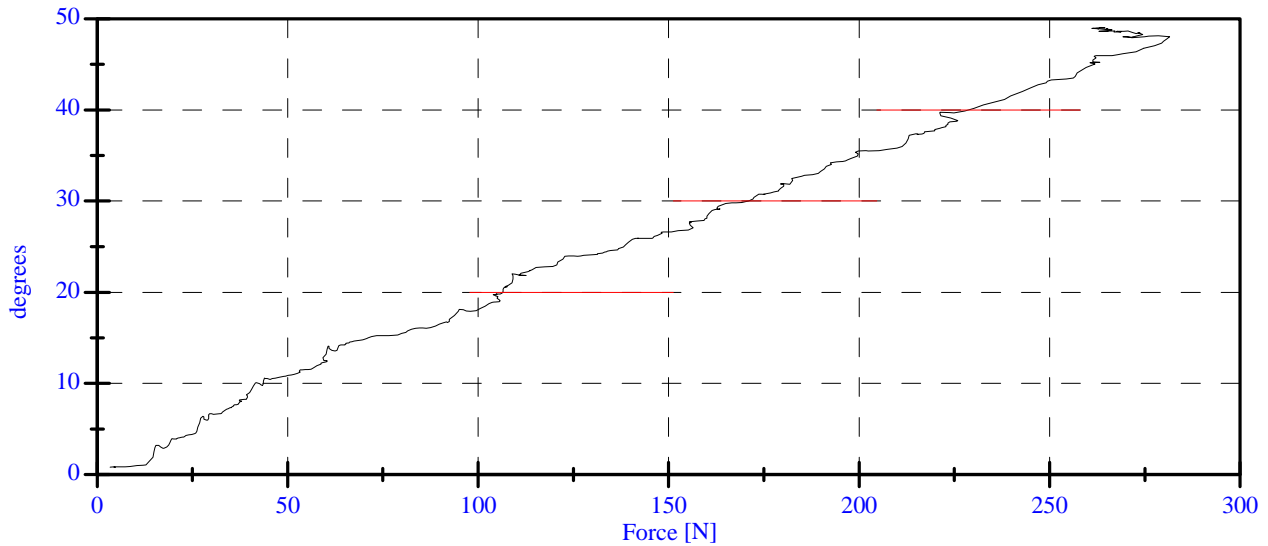
Date: 02-28-08

Sequential Test Number: 1 File: 906 Spine 02-28-08

Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	3.39 N	Passed
Force at 20 Deg:	97.86-151.24 N	106.55 N	Passed
Force at 30 Deg:	151.24-204.62 N	171.05 N	Passed
Force at 40 Deg:	204.62-258.00 N	227.72 N	Passed
Return Angle	12 Deg Max	8.00 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 1
 Date: February 28, 2008 Laboratory Technician: B. Swiecicki

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.: 905

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 1
Date: February 28, 2008 Laboratory Technician: B. Swiecicki

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.: 905 Sequential Test Number: 1
Date: February 28, 2008 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	521
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	381

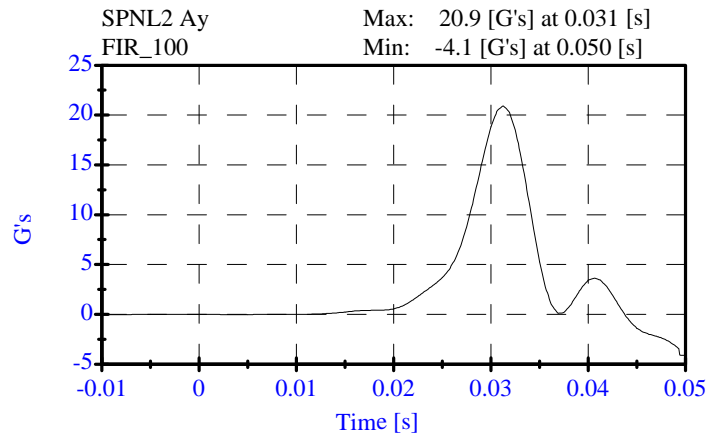
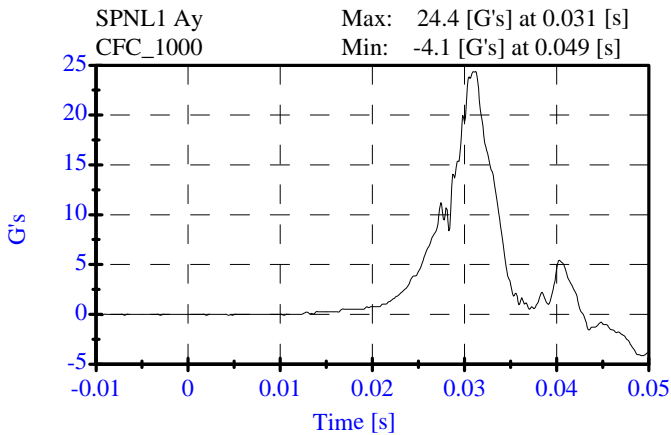
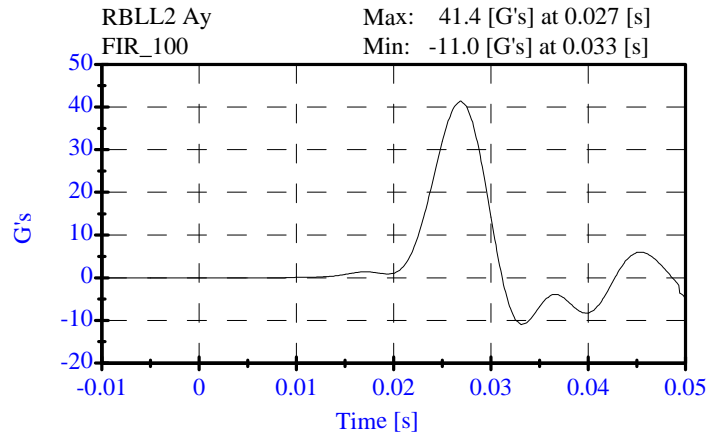
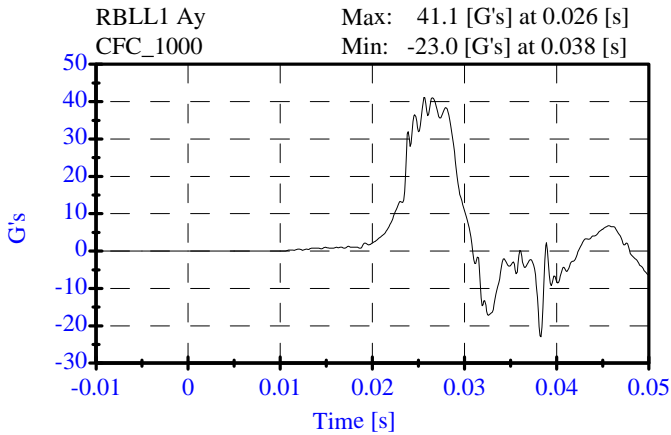
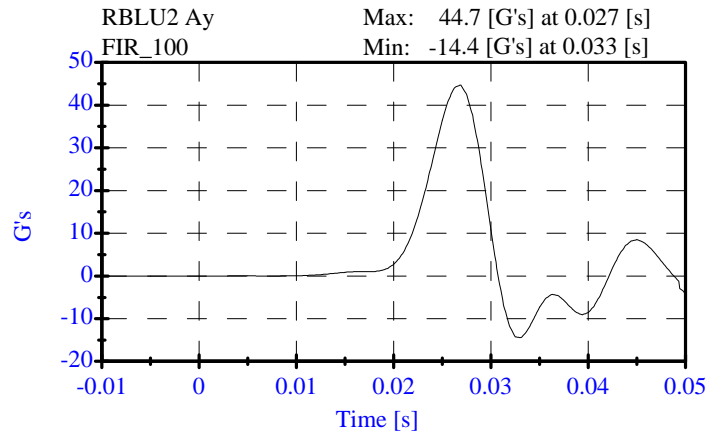
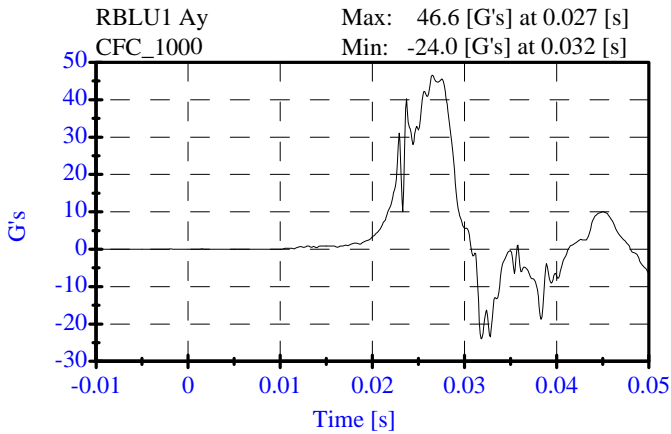
REMARKS: None

Thorax Impact Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
 Date: 02-28-08

Sequential Test Number: 1 File: 905T1 02-27-08
 Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	44.67 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	41.38 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	20.94 G's	Passed



Pelvis Impact Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

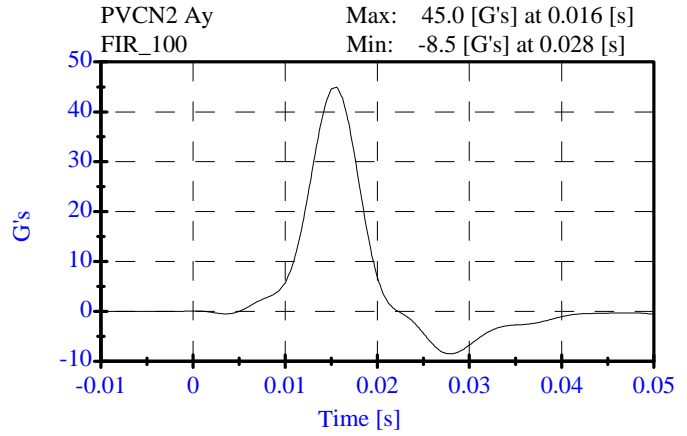
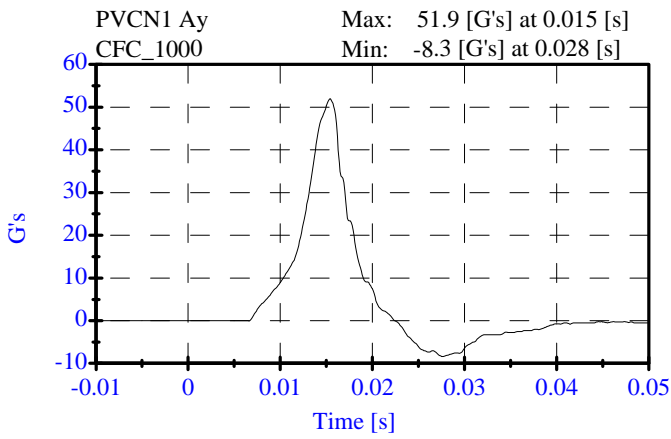
ATD Serial No: 905

Date: 02-27-08

Sequential Test Number: 1 File: 905P 02-27-08

Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	44.96 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	6.4 ms	Passed



Head Drop Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

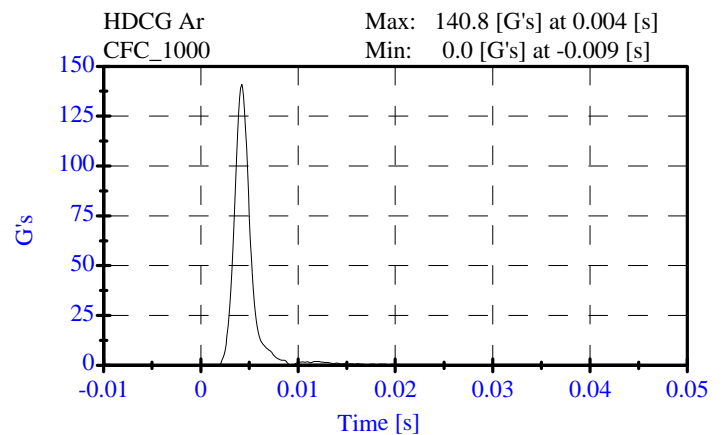
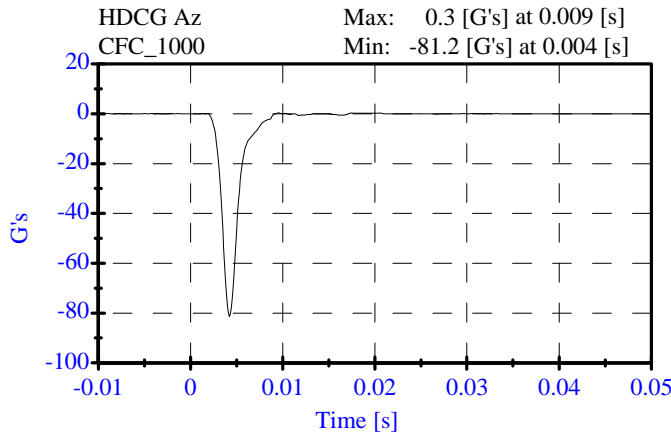
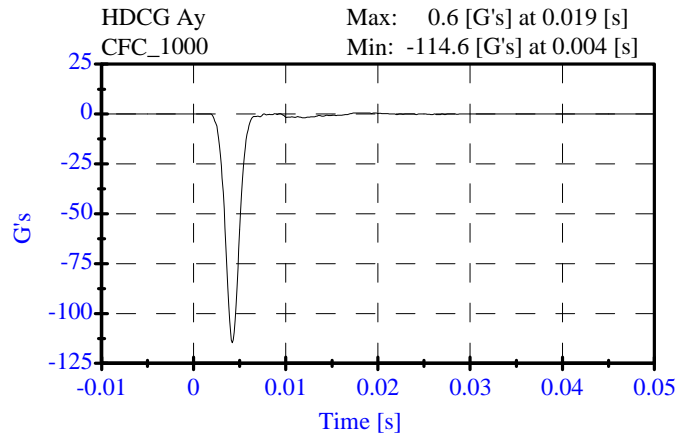
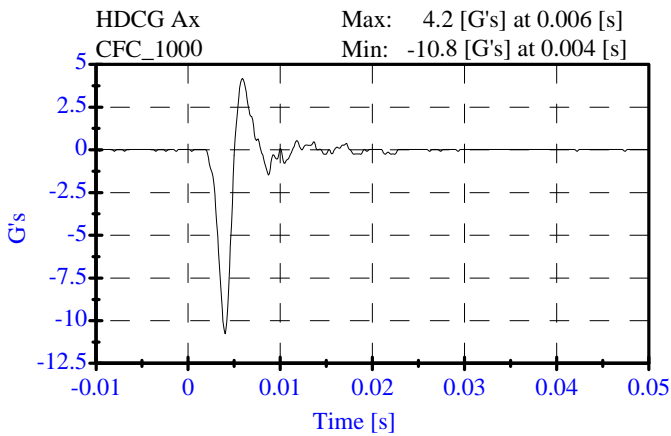
ATD Serial No: 905

Date: 02-25-08

Sequential Test Number: 1 File: 905H 02-25-08

Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	140.84 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	4.17 Gs	Passed
Curve PerCent NonModal:	< 15%	1.84 %	Passed



**Neck Test
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: 02-25-08

Sequential Test Number: 1 File: 905N 02-25-08
Laboratory Technician: B. Swiecicki

<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 %	33.00 %	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	2.19 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.46 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.29 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.00 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.16 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	60.90 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	79.91 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	58.00 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.10 ms	Passed

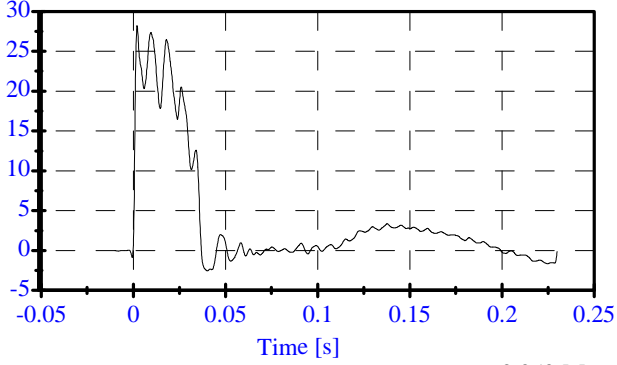
Neck Test
Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

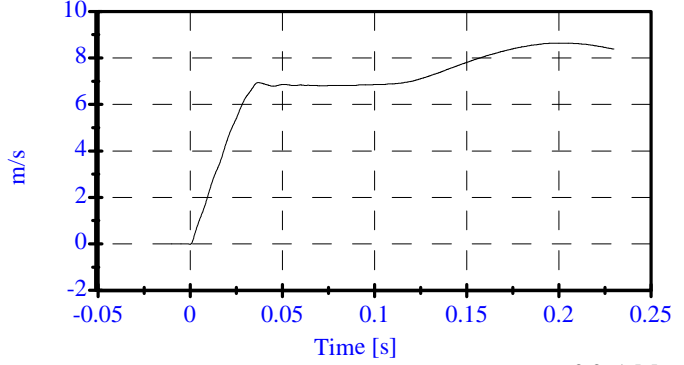
ATD Serial No: 905
Date: 02-25-08

Sequential Test Number: 1 File: 905N 02-25-08
Laboratory Technician: B. Swiecicki

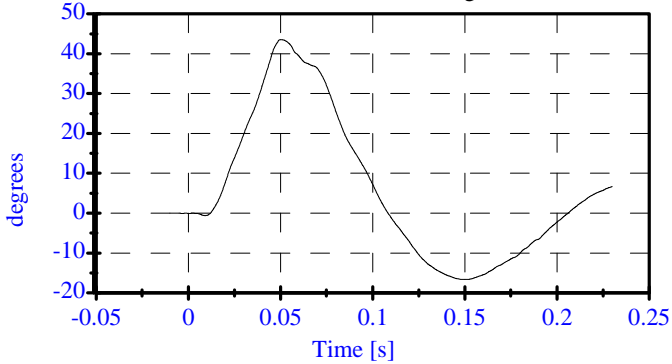
Pend Ax CFC_180 Max: 28.2 [] at 0.002 [s]
Min: -2.5 [] at 0.040 [s]



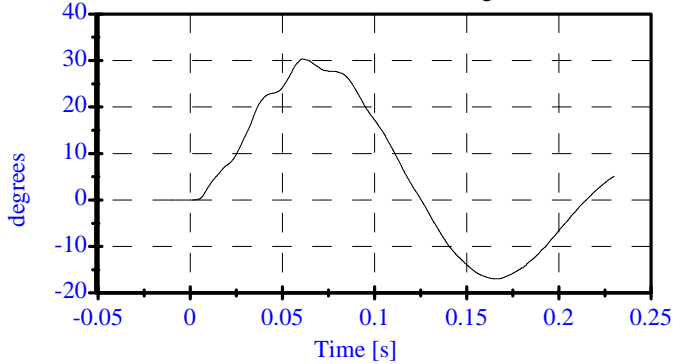
Pend Vx CFC_180 Max: 8.6 [m/s] at 0.199 [s]
Min: -0.0 [m/s] at -0.000 [s]



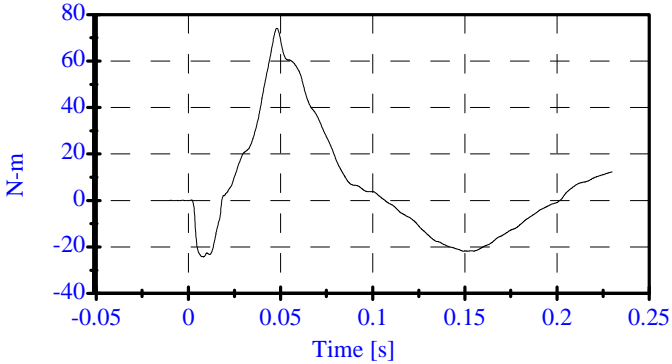
Head Rot CFC_180 Max: 43.6 [degrees] at 0.050 [s]
Min: -16.6 [degrees] at 0.150 [s]



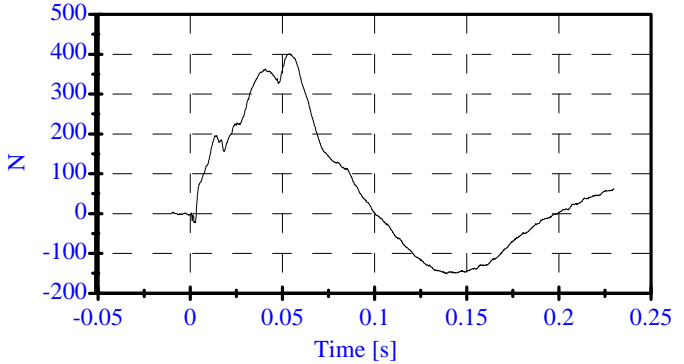
Arm Rot CFC_180 Max: 30.3 [degrees] at 0.061 [s]
Min: -17.0 [degrees] at 0.166 [s]



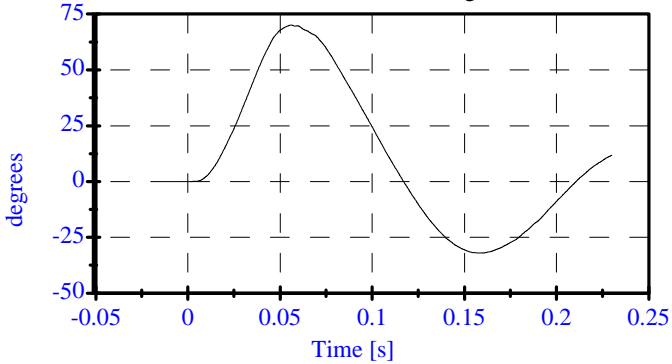
Neck Mx CFC_600 Max: 74.1 [N-m] at 0.048 [s]
Min: -24.3 [N-m] at 0.008 [s]



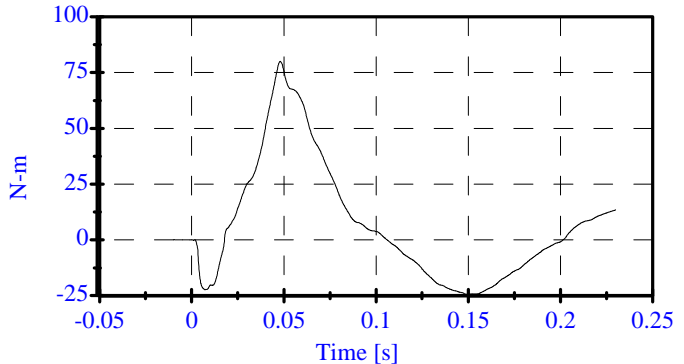
Neck Fy CFC_1000 Max: 401.2 [N] at 0.054 [s]
Min: -149.6 [N] at 0.138 [s]



Tot Rot CFC_180 Max: 70.2 [degrees] at 0.056 [s]
Min: -32.0 [degrees] at 0.158 [s]



MOCX Max: 79.9 [N-m] at 0.048 [s]
Min: -24.4 [N-m] at 0.149 [s]



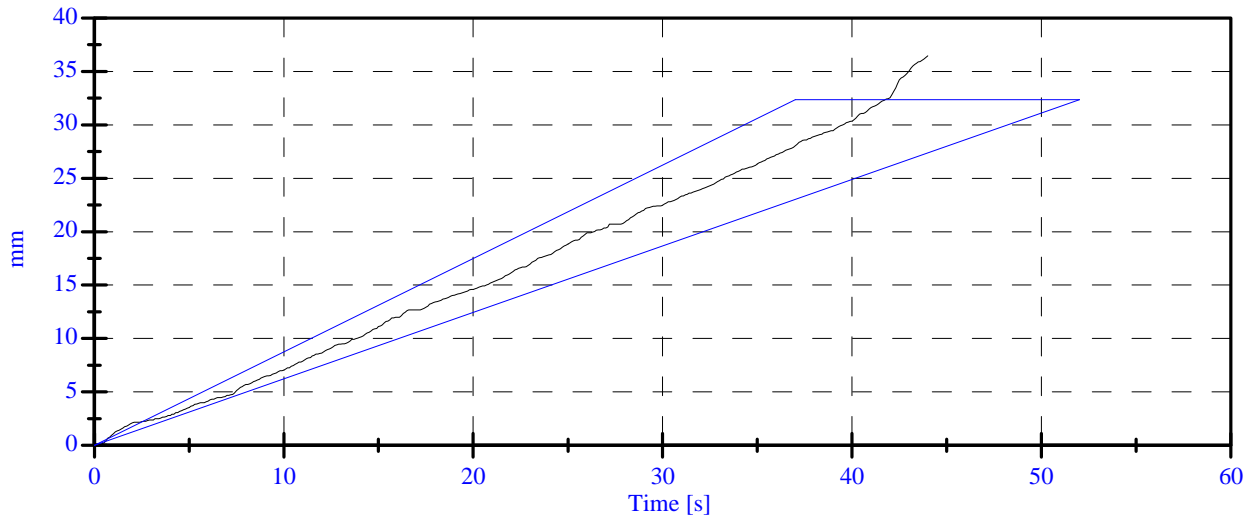
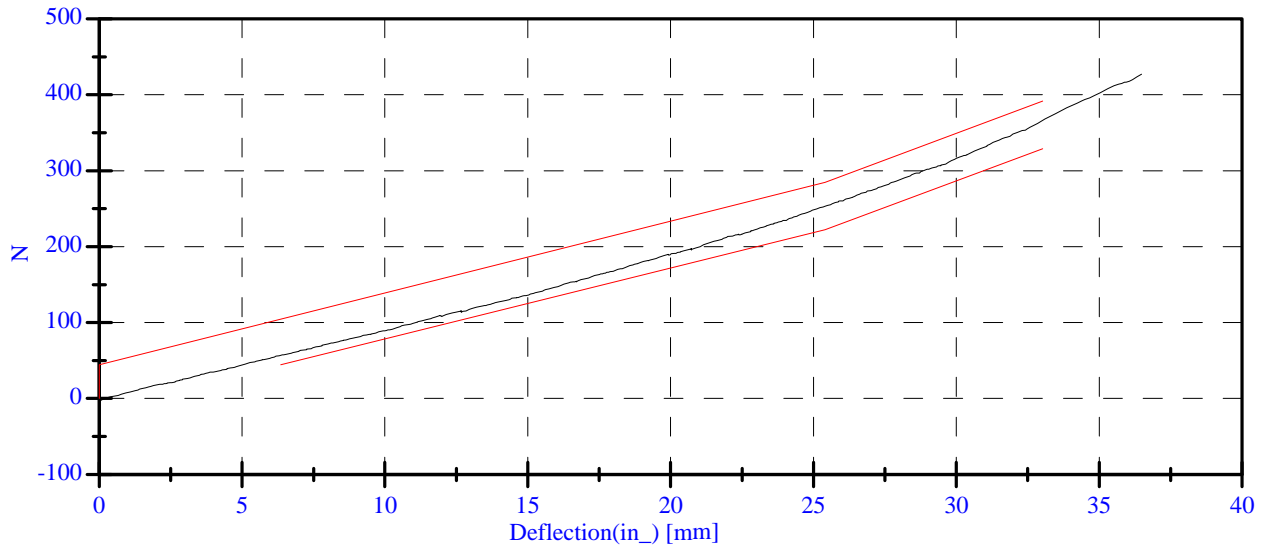
**Abdominal Compression Test
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 905
Date: 02-28-08

Sequential Test Number: 1 File: 905 Ab 02-28-08
Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	117.25 N	Passed
Force at 19.05 mm :	162.98-220.99 N	180.68 N	Passed
Force at 25.40 mm :	221.97-280.02 N	253.18 N	Passed
Force at 33.02 mm :	324.99-391.00 N	368.08 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905

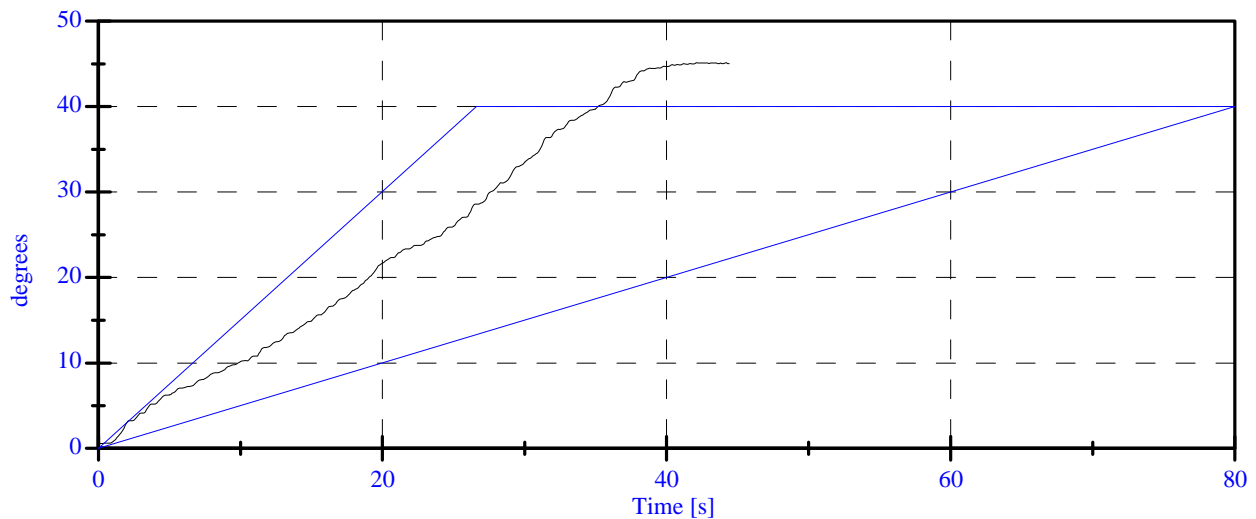
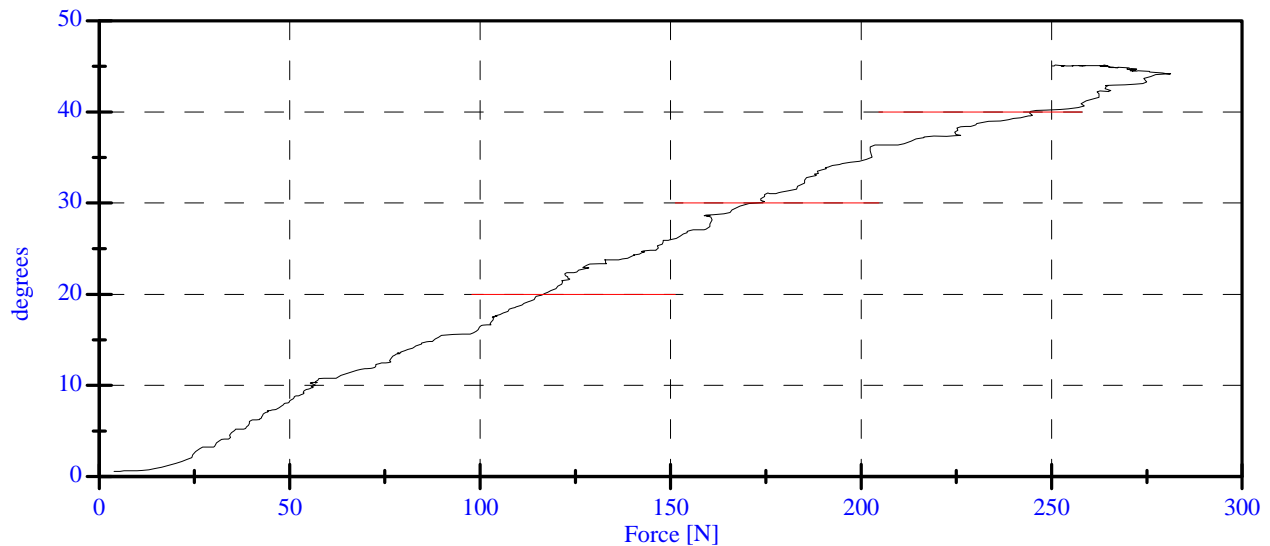
Date: 02-28-08

Sequential Test Number: 1 File: 905 Spine 02-28-08

Laboratory Technician: B. Swiecicki

<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 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	3.92 N	Passed
Force at 20 Deg:	97.86-151.24 N	117.00 N	Passed
Force at 30 Deg:	151.24-204.62 N	172.62 N	Passed
Force at 40 Deg:	204.62-258.00 N	244.44 N	Passed
Return Angle	12 Deg Max	7.77 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

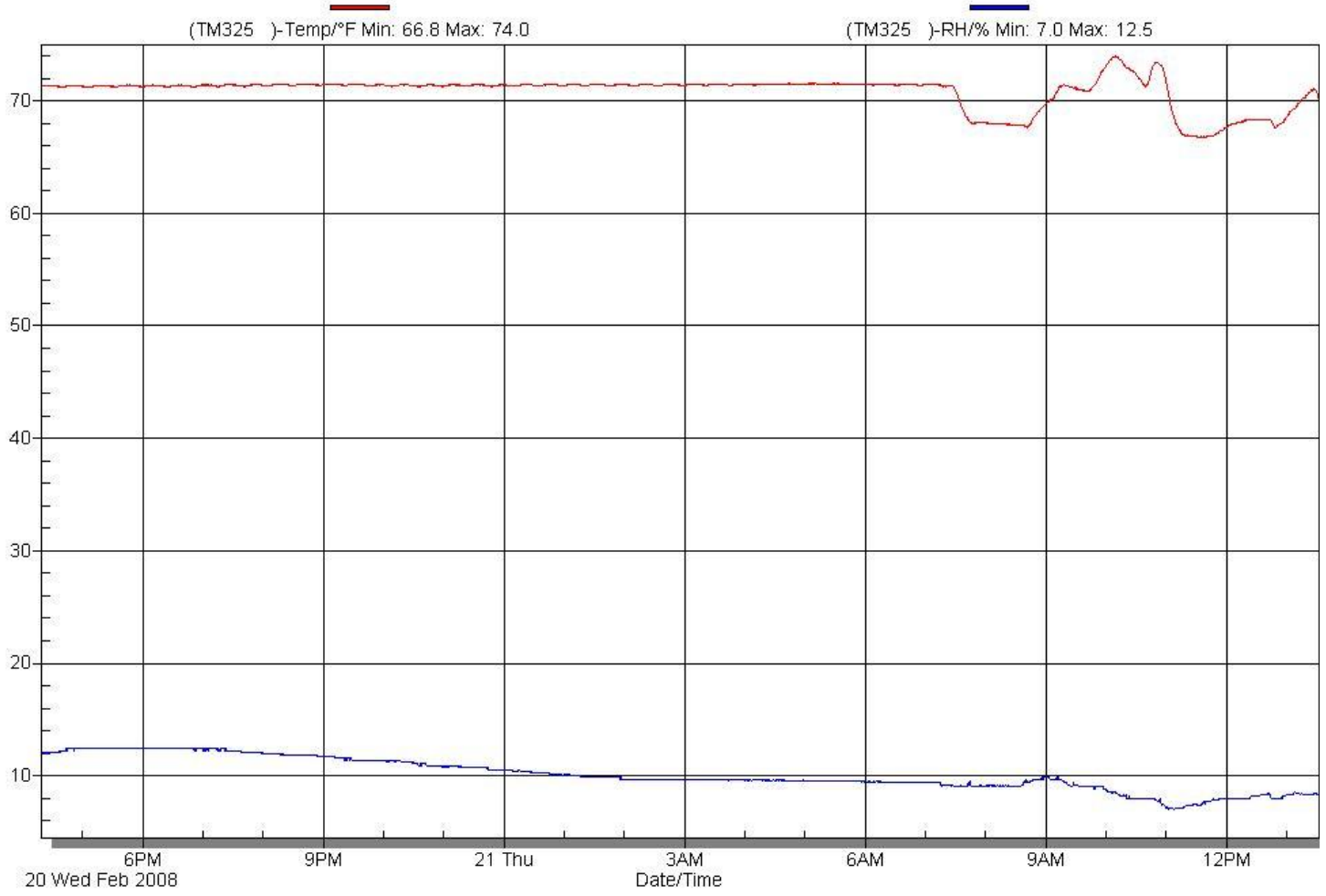
SID H3 Serial No.: 905 Sequential Test Number: 1
 Date: February 28, 2008 Laboratory Technician: B. Swiecicki

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, February 21, 2008



APPENDIX D
TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID/HIII INSTRUMENTATION

	FRONT SID/HIII NO.: 906		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P35764	ENDEVCO	24-Jan-08
HEAD AY	AC-P39736	ENDEVCO	24-Jan-08
HEAD AZ	AC-P39729	ENDEVCO	24-Jan-08
HEAD AX REDUNDANT	AC-P52255	ENDEVCO	17-Jan-08
HEAD AY REDUNDANT	AC-P52398	ENDEVCO	18-Jan-08
HEAD AZ REDUNDANT	AC-P52405	ENDEVCO	18-Jan-08
UPPER NECK FX	LC-798Fx	DENTON	12-Jul-07
UPPER NECK FY	LC-798Fy	DENTON	12-Jul-07
UPPER NECK FZ	LC-798Fz	DENTON	12-Jul-07
UPPER NECK MX	LC-798Mx	DENTON	12-Jul-07
UPPER NECK MY	LC-798My	DENTON	12-Jul-07
UPPER NECK MZ	LC-798Mz	DENTON	12-Jul-07
UPPER RIB	AC-P39575	ENDEVCO	24-Jan-08
LOWER RIB	AC-P16866	ENDEVCO	24-Jan-08
LOWER SPINE	AC-P16645	ENDEVCO	25-Jan-08
PELVIS	AC-P23139	ENDEVCO	24-Jan-08
UPPER RIB REDUNDANT	AC-P15526	ENDEVCO	24-Jan-08
LOWER RIB REDUNDANT	AC-P16656	ENDEVCO	24-Jan-08
LOWER SPINE REDUNDANT	AC-P19343	ENDEVCO	24-Jan-08
PELVIS REDUNDANT	AC-P17539	ENDEVCO	24-Jan-08

	REAR SID/HIII NO.: 905		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P21373	ENDEVCO	24-Jan-08
HEAD AY	AC-P23128	ENDEVCO	24-Jan-08
HEAD AZ	AC-P21297	ENDEVCO	24-Jan-08
HEAD AX REDUNDANT	AC-P52388	ENDEVCO	17-Jan-08
HEAD AY REDUNDANT	AC-P52389	ENDEVCO	18-Jan-08
HEAD AZ REDUNDANT	AC-P52415	ENDEVCO	18-Jan-08
UPPER NECK FX	LC-1626Fx	DENTON	13-Jul-07
UPPER NECK FY	LC-1626Fy	DENTON	13-Jul-07
UPPER NECK FZ	LC-1626Fz	DENTON	13-Jul-07
UPPER NECK MX	LC-1626Mx	DENTON	13-Jul-07
UPPER NECK MY	LC-1626My	DENTON	13-Jul-07
UPPER NECK MZ	LC-1626Mz	DENTON	13-Jul-07
UPPER RIB	AC-P15736	ENDEVCO	24-Jan-08
LOWER RIB	AC-P16289	ENDEVCO	24-Jan-08
LOWER SPINE	AC-P52394	ENDEVCO	17-Jan-08
PELVIS	AC-P35804	ENDEVCO	24-Jan-08
UPPER RIB REDUNDANT	AC-P16593	ENDEVCO	24-Jan-08
LOWER RIB REDUNDANT	AC-P23142	ENDEVCO	24-Jan-08
LOWER SPINE REDUNDANT	AC-P52413	ENDEVCO	17-Jan-08
PELVIS REDUNDANT	AC-P17242	ENDEVCO	24-Jan-08

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-P32464	ENDEVCO	06-Sep-07
RIGHT FRONT SILL (Y)	AC-P32139	ENDEVCO	01-Feb-08
RIGHT FRONT SILL (Z)	AC-P32455	ENDEVCO	01-Feb-08
RIGHT REAR SILL (X)	AC-P16625	ENDEVCO	25-Jan-08
RIGHT REAR SILL (Y)	AC-P23957	ENDEVCO	25-Jan-08
RIGHT REAR SILL (Z)	AC-P19216	ENDEVCO	25-Jan-08
REAR FLOORPAN ABOVE AXLE (X)	AC-P17285	ENDEVCO	28-Jan-08
REAR FLOORPAN ABOVE AXLE (Y)	AC-P17283	ENDEVCO	28-Jan-08
REAR FLOORPAN ABOVE AXLE (Z)	AC-P14393	ENDEVCO	28-Jan-08
LEFT REAR SILL (Y)	AC-P23904	ENDEVCO	07-Nov-07
LEFT FRONT SILL (Y)	AC-J32832	ENDEVCO	06-Feb-08
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-P24145	ENDEVCO	08-Nov-07
LOWER LEFT B- PILLAR (Y)	AC-P21135	ENDEVCO	03-Oct-07
MIDDLE LEFT B-PILLAR (Y)	AC-P18948	ENDEVCO	01-Feb-08
LOWER LEFT A-PILLAR (Y)	AC-P23926	ENDEVCO	01-Feb-08
UPPER LEFT A-PILLAR (Y)	AC-P18785	ENDEVCO	01-Feb-08
FRONT SEAT TRACK (Y)	AC-P39731	ENDEVCO	07-Feb-08
REAR SEAT TRACK (Y)	AC-P23288	ENDEVCO	28-Jan-08
VEHICLE CG (X)	AC-P23134	ENDEVCO	14-Nov-07
VEHICLE CG (Y)	AC-P18792	ENDEVCO	14-Nov-07
VEHICLE CG (Z)	AC-P17535	ENDEVCO	14-Nov-07
MDB CG (X)	AC-C15007	ENDEVCO	12-Sep-07
MDB CG (Y)	AC-C16416	ENDEVCO	12-Sep-07
MDB CG (Z)	AC-C16499	ENDEVCO	12-Sep-07
MDB REAR FRAME MEMBER (X)	AC-C14948	ENDEVCO	12-Sep-07
MDB REAR FRAME MEMBER (Y)	AC-C16680	ENDEVCO	12-Sep-07

REMARKS: None