

REPORT NUMBER: SNCAP-CAL-06-04

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**GENERAL MOTORS CORPORATION
2006 CADILLAC DTS
FOUR-DOOR SEDAN**

NHTSA NUMBER: M60102

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



Test Date: December 15, 2005

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
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Prepared by: _____
Patrick G. MacDiarmid, Jr., Project
Engineer

Date: _____

Reviewed by: _____
David J. Travale, Program Manager
Transportation Sciences Center

Date: _____

Technical Report Documentation Page

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16. Abstract A 55/28 kph 90° Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2006 Cadillac DTS Four-Door Sedan in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Calspan Corporation Crash Test Facility in Buffalo, New York, on December 15, 2005. The impact velocity of the Moving Deformable Barrier (MDB) was 62.28 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 326 mm at level 3. The test vehicle's occupant performance is as follows: <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>DRIVER</u></th> <th style="text-align: center;"><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">54.8</td> <td style="text-align: center;">59.8</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">56.0</td> <td style="text-align: center;">62.5</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">66.0</td> <td style="text-align: center;">64.6</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">61</td> <td style="text-align: center;">64</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">75</td> <td style="text-align: center;">82</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">431</td> <td style="text-align: center;">255</td> </tr> </tbody> </table> The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.					<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	54.8	59.8	Left Lower Rib (LLR) Accel., g	56.0	62.5	Lower Spine (T ₁₂) Accel., g	66.0	64.6	Thoracic Trauma Index (TTI)	61	64	Pelvis (PEV) Accel., g	75	82	HIC	431	255
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17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5111 (NAD-52) 400 Seventh Street, S.W. Washington, D.C. 20590																						
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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2006 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-03-D-22005. The purpose of this test was to evaluate side impact protection in a 2006 Cadillac DTS Four-Door Sedan manufactured by General Motors Corporation. The side impact test was conducted in accordance with the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated July 1997.

SECTION 2

SUMMARY OF NCAP SIDE IMPACT TEST

A model year 2006 Cadillac DTS Four-Door Sedan was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.28 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 2088.0 kg and the test weight of the MDB was 1362.5 kg. The test was conducted at the Calspan Corporation Transportation Sciences Center on December 15, 2005.

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

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

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

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

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 326 mm at level 3, 1650 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 905 and 906 respectively, were calibrated just prior to this test.

Test summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. 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	431.2	36.4	60.6	61	75
Passenger	254.8	43.5	69.0	64	82

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	N/A
Side Torso Airbag	Yes	Yes	No	N/A
Side Head/Torso Combination Airbag	No	N/A	No	N/A
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:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005

TEST VEHICLE INFORMATION AND VEHICLE OPTIONS

Make	Cadillac	Driver Front Airbag	Yes
Model	DTS	Driver Side Curtain Airbag	Yes
Body Style	Four-Door Sedan	Driver Side Torso Airbag	Yes
NHTSA No.	M60102	Driver Pretensioners	Yes
VIN	1G6KD57Y26U108971	Driver Load Limiters	Yes
Color	Silver	Driver Power Seats	Yes
Engine Disp.(L)	4.6	Rear Pass. Side Curtain Airbag	Yes
Engine Cylinders	8	Rear Pass. Side Torso Airbag	No
Engine Placement	Lateral	Rear Pass. Pretensioners	No
Transmission Type	Automatic	Rear Pass. Load Limiters	No
Transmission Speeds	5	Rear Pass. Power Seats	NA
Final Drive	Front	Tilt Wheel	Yes
Air Conditioning	Yes	Anti-lock Brakes	Yes
Power Steering	Yes	Traction Control	Yes
Power Brakes	Yes	Power Windows	Yes
Delivery Date	December 1, 2005	Power Door Locks	Yes
Odometer Reading (km)	50	Automatic Door Locks (ADL)	Yes
Dealer	Ken Barrett	Owner's Manual Details Instructions on Disabling ADLs	No

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors Corporation	GVWR (kg)	2351
Date of Manufacture	08/05	GAWR Front (kg)	1263
		GAWR Rear (kg)	1088

VEHICLE CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Split Bench	Bench		
Number Of Occupants	3	3		6
Capacity Wt. (VCW) (kg)				496
Cargo Wt. (RCLW) (kg)				87.8

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

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005

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	567.5	349.5		617.5	467.5		603.5	471.0	
Right	kg	561.0	368.0		568.5	448.5		577.0	436.5	
Ratio	%	61.1	38.9		56.4	43.6		56.5	43.5	
Totals	kg	1128.5	717.5	1846.0	1186.0	916.0	2102.0	1180.5	907.5	2088.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1846.0
Weight of 2 P572E ATDs (81.2 kg each)	kg	162.4
Rated Cargo/Luggage Weight (RCLW)	kg	87.8
Calculated Vehicle Target Weight (TVTW)	kg	2096.2

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

Weight of Ballast (including instrumentation package and cameras): 79.6 kg

TEST VEHICLE ATTITUDES

	Units	LF	RF	LR	RR
As Delivered	mm	735	735	735	730
Fully Loaded	mm	717	730	715	725
As Tested	mm	720	730	722	729

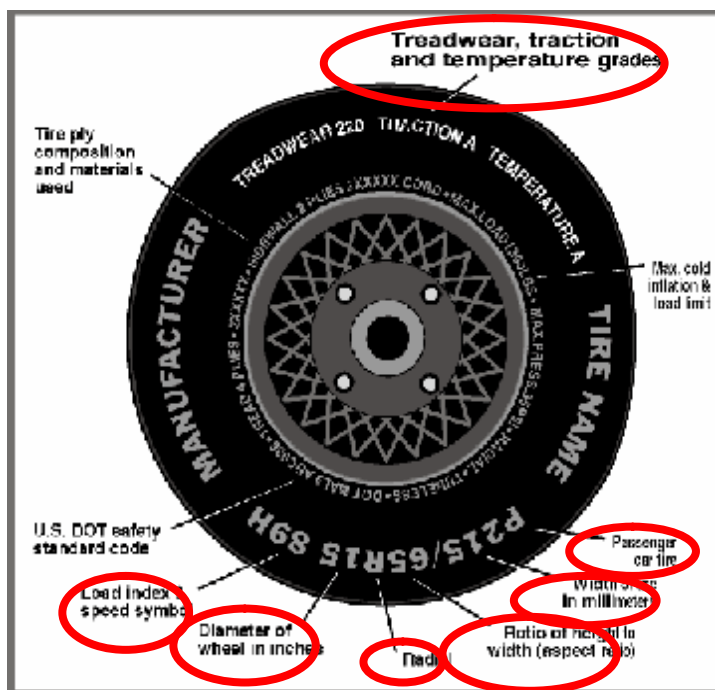
TEST VEHICLE VERTICAL IMPACT LINE AND CG

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2935
Target Impact Point Aft of Front Axle	mm	508
Actual Impact Point Aft of Front Axle	mm	508
As Tested CG (aft of front axle)	mm	1276

DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	210	210
Recommended Tire Size	P235/55R17	P235/55R17
Tire Size on Vehicle	P235/55R17	P235/55R17
Tire Manufacturer	Continental	Continental
Tire Name	Touring Contact AS	Touring Contact AS
Tire Type	P	P
Tire Width (mm)	235	235
Ratio of Height to Width (aspect ratio)	55	55
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index & Speed Symbol	98S	98S
Treadwear	620	620
Traction Grade	A	A
Temperature Grade	B	B

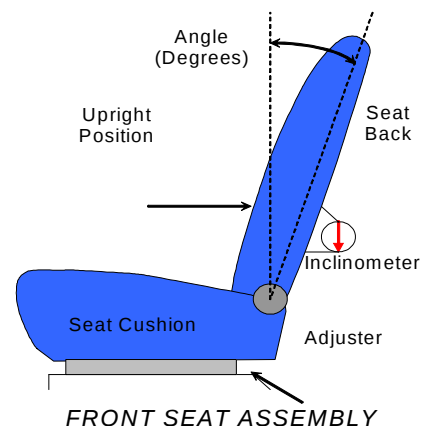
DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005

NORMAL DESIGN RIDING POSITION

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

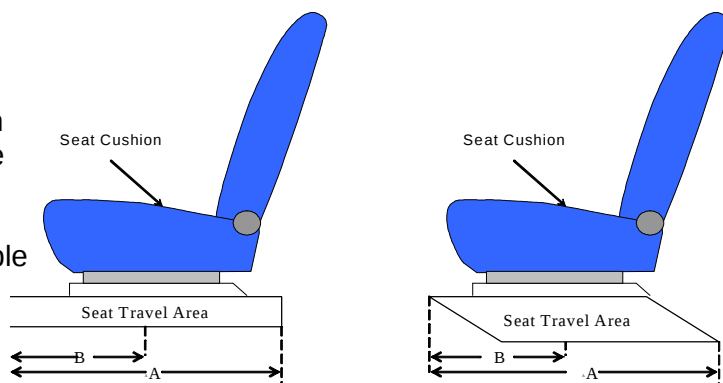


SEAT BACK POSITION

	Driver Seat	Rear Seat
Test Detent (forward-most detent defined as 0)	Electronic	Not Adjustable
Angle (deg. from forward-most locking position)	24	Not Adjustable
Alternative Measurements to Verify Test Position	Head restraint post 10.0° back from full forward	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)	281	Fixed
Test Position (B) (mm)	140.5	Fixed
Test Detent (forward-most detent defined as 0)	Electronic	Fixed
Total Number of Detents (including 0)	Electronic	Fixed

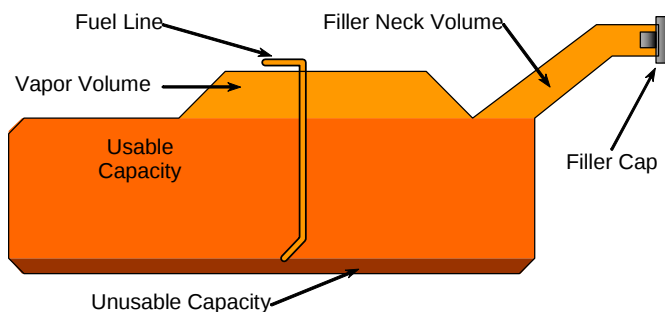
DATA SHEET NO. 3 (CONTINUED)

TEST VEHICLE INFORMATION

Test Vehicle: 2006 Cadillac DTS	NHTSA No. M60102
Test Program: NCAP Side Impact	Test Date: December 15, 2005

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.



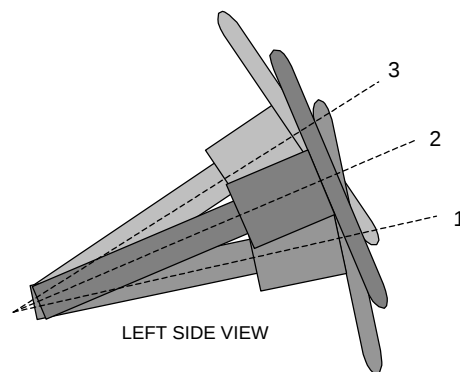
VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard" Fuel Tank	70
Usable Capacity of "Optional" Fuel Tank	-
Stoddard Used For Test (92%-94% of Fuel Tank Usable Capacity)	65.1

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	4.5	6
Geometric Center Position No. 2 *	NA	19.9	3
Uppermost Position No. 3	NA	35.3	0

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

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005

MDB SPECIFICATIONS

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

MDB WEIGHTS

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

MDB SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.28
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.28

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

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	0 mm
Vertical Offset	mm	+/-20	5 mm above

DATA SHEET NO. 5
POST TEST OBSERVATIONS

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 905	SID/HIII / 906
Head Contact	The side of the face and back of the head to the side curtain airbag	The side of the face to the side curtain airbag; the back of the head to the C-Pillar trim.
Upper Torso Contact	Side Airbag	Door Trim Panel
Lower Torso Contact	Side Airbag	Door Trim Panel
Left Knee Contact	Door Trim Panel	Door Trim Panel
Right Knee Contact	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Doors were locked	Doors were locked
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	Cracked along left A-Pillar top corner separated 70 mm in and 70 mm down from upper left corner
Window Damage	Left Side Windows Cracked During the Event
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	No	N/A
Side Torso Airbag	Yes	Yes	No	N/A
Head Bag	No	N/A	No	N/A
Curtain Airbag	Yes	Yes	Yes	Yes

DATA SHEET NO. 6

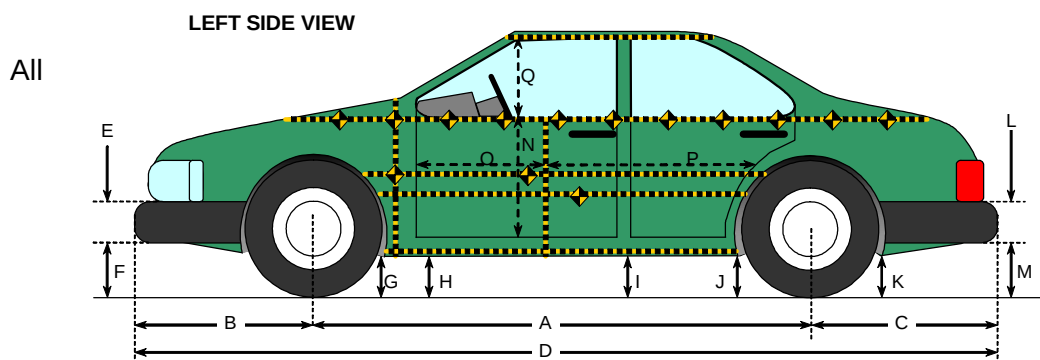
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2006 Cadillac DTS

NHTSA No. M60102

Test Program: NCAP Side Impact

Test Date: December 15, 2005



Measurements in mm

Code	Measurement Description	Pre-Test (delivered)	Pre-Test (as tested)	Post-Test (as tested)	Difference
A	Wheelbase	2935	2935	2907	28
B	Front Axle to FSOV	1098	1098	1117	-19
C	Rear Axle to RSOV	1251	1251	1238	13
D	Total Length at Centerline	5284	5284	5261	23
E	Front Bumper Thickness	258	258	258	0
F	Front Bumper Bottom to Ground	253	245	261	-16
G	Sill Height at Front Wheel Well	207	180	191	-11
H	Sill Height at Front Door Leading Edge	211	184	199	-15
I	Sill Height at "B" Pillar	213	183	216	-33
J1	Sill Height at Rear Wheel Well	203	178	164	14
J2	Pinch Weld Height at Rear Wheel Well	195	170	184	-14
K	Sill Height Aft of Rear Wheel Well	232	211	211	0
L	Rear Bumper Thickness	335	335	335	0
M	Rear Bumper Bottom to Ground	325	309	307	2
N	Sill Height to Window Bottom Sill	712	712	619	93
O	Front Door Leading Edge to Impact CL	872	872	781	91
P	Rear Door Trailing Edge to Impact CL	1242	1242	1106	136
Q	Front Window Opening	439	439	408	31
R	Right Side Length	5151	5151	5143	8
S	Left Side Length	5151	5151	5122	29
T	Vehicle Width at "B" Post	1907	1907	1623	284

DATA SHEET NO. 7

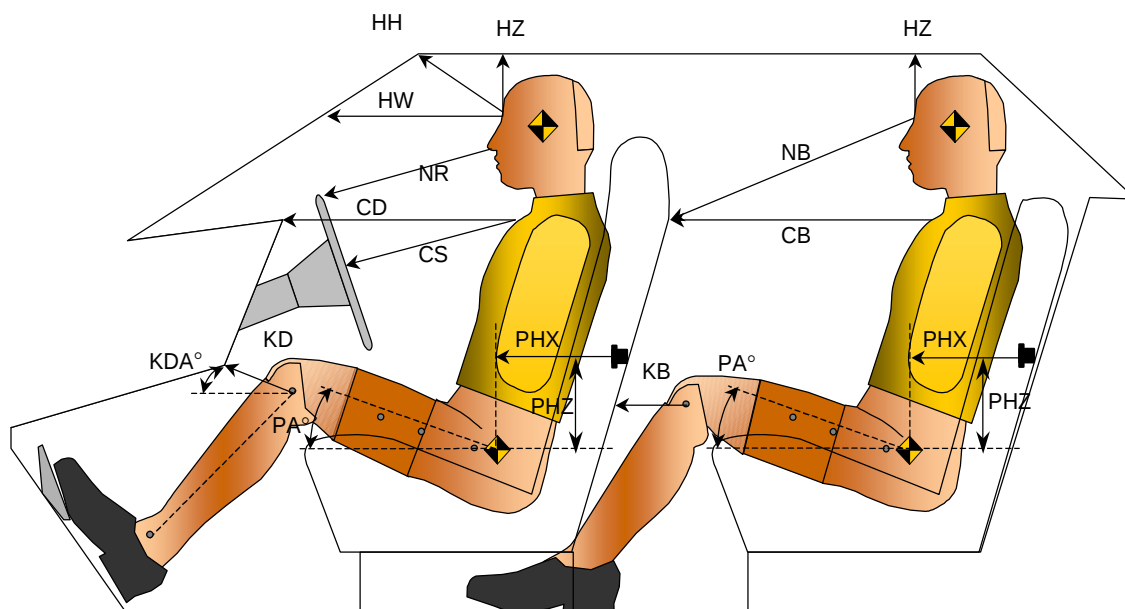
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2006 Cadillac DTS

NHTSA No. M60102

Test Program: NCAP Side Impact

Test Date: December 15, 2005

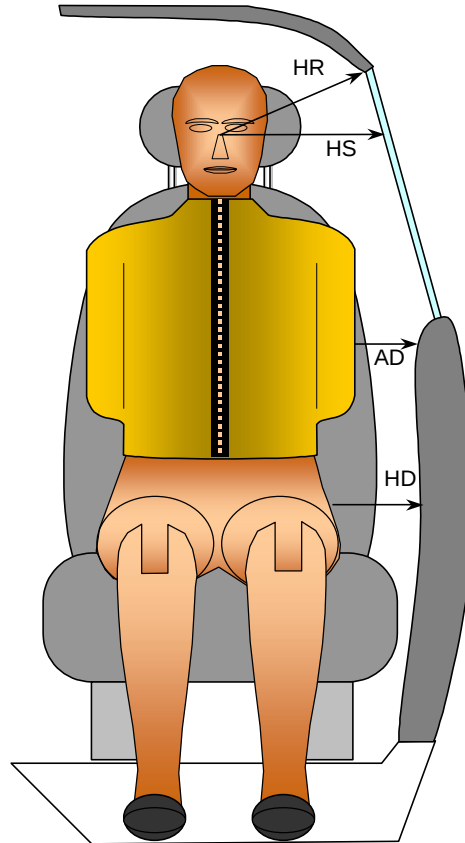


Driver Code	Pass. Code	Measurement Description	Driver S/N 905		Passenger S/N 906	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	410			
HW		Head to Windshield	675			
HZ	HZ	Head to Roof	168		170	
NR	NB	Nose to Rim/Nose to Seatback	455		655	
CD	CB	Chest to Dash or Seatback	549		581	
CS		Chest to Steering Wheel	339			
KDL	KBL	Left Knee to Dash or Seatback	185	40	262	25
KDR	KBR	Right Knee to Dash or Seatback	168	36	283	21
PA	PA	Pelvic Angle		24.0		23.3
PHX	PHX	H-Point to Striker (X-Axis)	200		271	
PHZ	PHZ	H-Point to Striker (Z-Axis)	134		278	

DATA SHEET NO. 8

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005



FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 905	Passenger S/N 906
HR	Head to Side Header	mm	187	150
HS	Head to Side Window	mm	349	336
AD ₁	Arm to Door (at upper rib level)	mm	171	98
AD ₂	Arm to Door (at lower rib level)	mm	167	114
HD	H-Point to Door	mm	172	135

DATA SHEET NO. 9

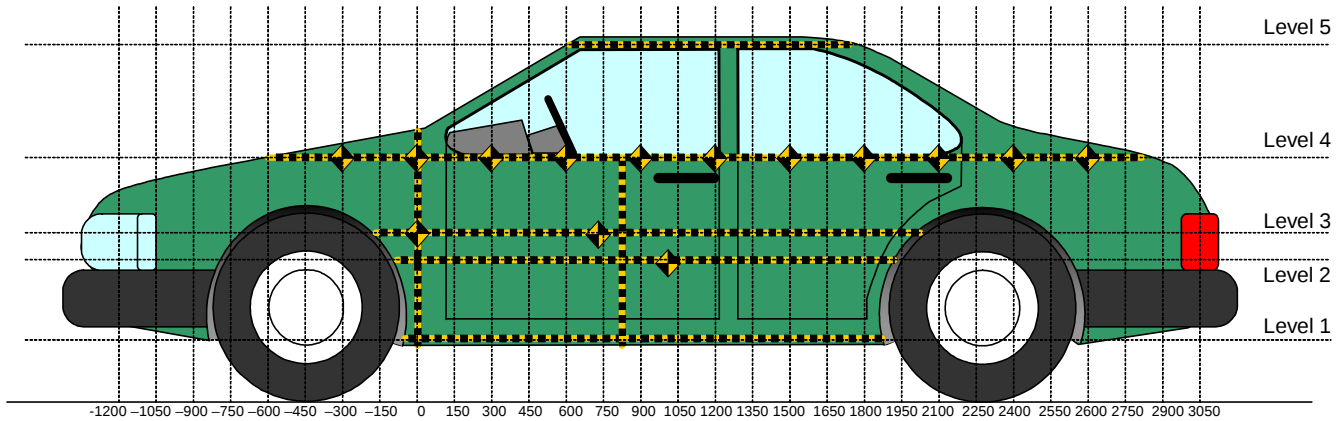
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2006 Cadillac DTS

NHTSA No. M60102

Test Program: NCAP Side Impact

Test Date: December 15, 2005



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.

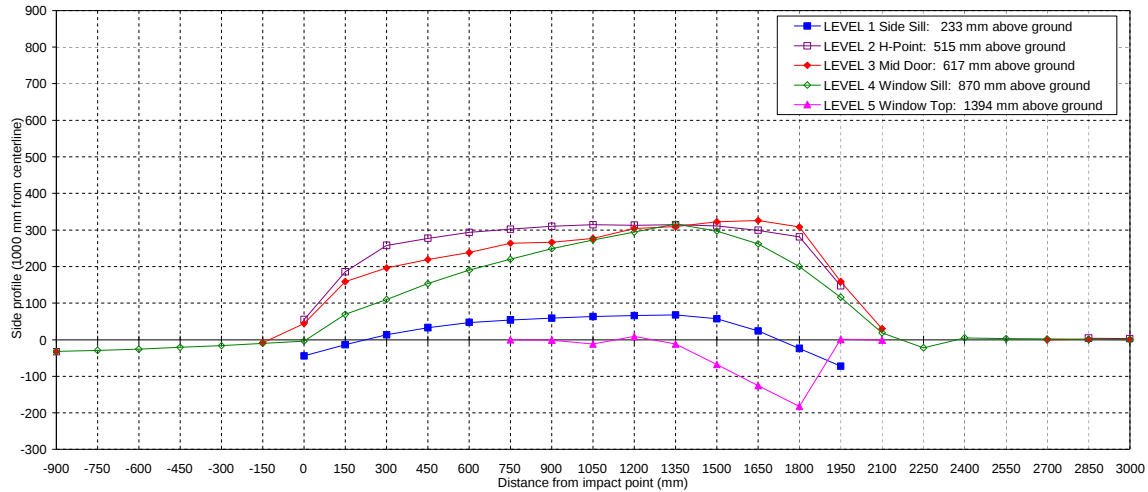
Level	Measurement Description	Maximum Exterior Static Crush	Height Above Ground	Distance From Impact
1	Sill Top	68	233	1350
2	Occupant H-Point	314	515	1050
3	Mid Door	326	617	1650
4	Window Sill	316	870	1350
5	Window	9	1394	1200
	Maximum Penetration	326		

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2006 Cadillac DTS
Test Program: NCAP Side Impact

NHTSA No. M60102
Test Date: December 15, 2005



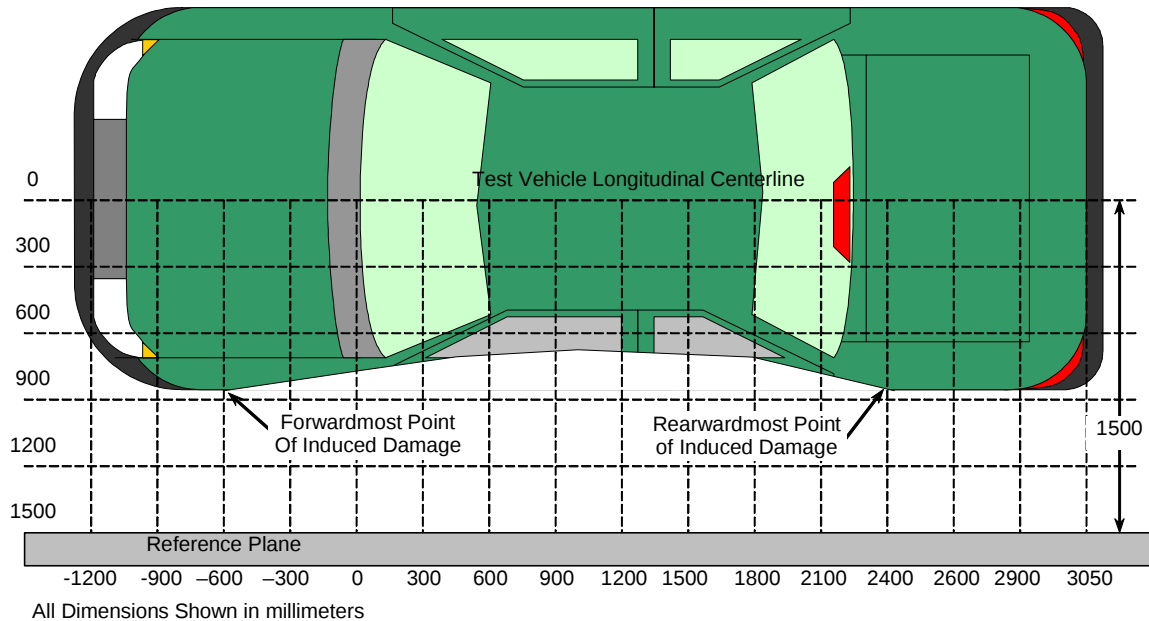
NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

			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	233	PRE	--	--	--	--	--	--	140	139	140	140	140	142	142	143	145	147	145	148	148	147	--	--	--	--	--	--	--	--
		POST	--	--	--	--	--	--	96	125	153	173	187	196	201	206	211	215	202	172	124	75	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	-44	-14	13	33	47	54	59	63	66	68	57	24	-24	-72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2 H POINT	515	PRE	88	--	--	--	--	--	64	62	59	58	57	56	55	55	57	59	62	64	67	71	--	--	--	--	--	88	98	
		POST	55	--	--	--	--	--	119	248	317	335	350	358	365	369	370	373	373	363	348	218	--	--	--	--	--	92	101	
		CRUSH	-33	N/A	N/A	N/A	N/A	N/A	55	186	258	277	293	302	310	314	313	314	311	299	281	147	N/A	N/A	N/A	N/A	N/A	N/A	4	3
LEVEL 3 MID DOOR	617	PRE	110	--	--	--	--	61	64	61	58	56	54	53	52	52	54	56	59	62	65	69	65	--	--	--	70	91	103	
		POST	77	--	--	--	--	53	108	220	254	275	292	317	318	329	358	365	381	388	373	228	95	--	--	--	70	92	104	
		CRUSH	-33	N/A	N/A	N/A	N/A	-8	44	159	196	219	238	264	266	277	304	309	322	326	308	159	30	N/A	N/A	N/A	0	1	1	
LEVEL 4 WINDOW SILL	870	PRE	411	296	184	151	138	127	120	112	105	99	93	90	87	85	84	86	86	88	91	96	100	106	111	118	125	137	149	
		POST	379	267	158	130	122	117	116	181	215	252	283	310	336	358	378	402	383	350	291	212	119	84	116	121	127	138	149	
		CRUSH	-32	-29	-26	-21	-16	-10	-4	69	110	153	190	220	249	273	294	316	297	262	200	116	19	-22	5	3	2	1	0	
LEVEL 5 WINDOW TOP	1394	PRE	--	--	--	--	--	--	--	--	--	--	--	--	490	403	362	357	356	358	362	369	393	489	--	--	--	--	--	
		POST	--	--	--	--	--	--	--	--	--	--	--	--	490	402	350	366	344	290	237	187	394	488	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	-1	-12	9	-12	-68	-125	-182	1	-1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005



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)	2400	870	111	116	5
2	1895	617	68	281	213
3	1390	515	60	373	313
4	885	515	55	364	309
5	380	515	58	327	269
6 (LF)	-125	617	62	62	0

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

DATA SHEET NO. 12

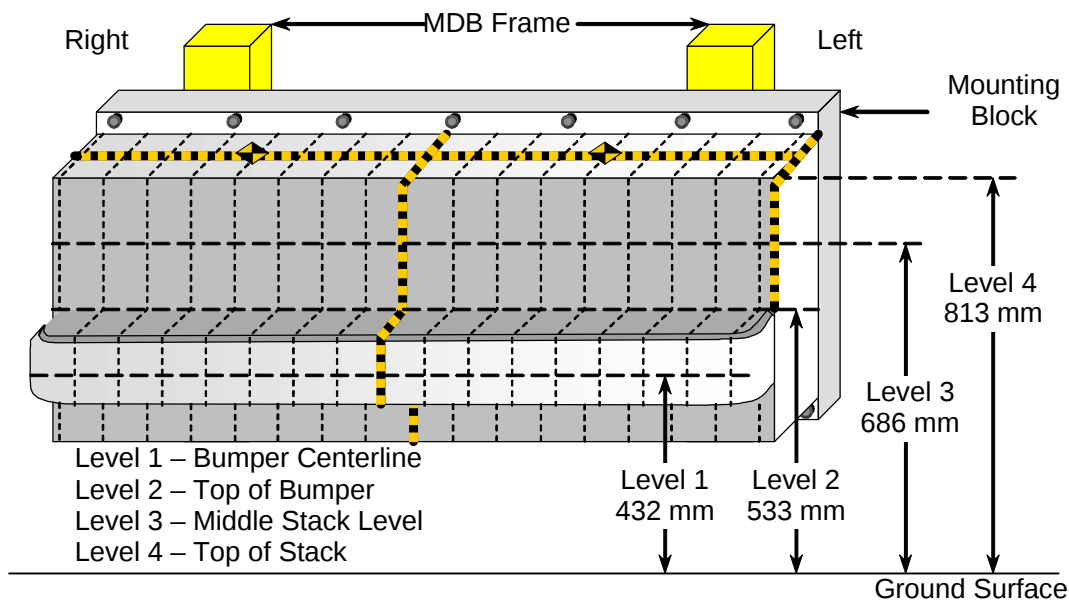
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2006 Cadillac DTS

NHTSA No. M60102

Test Program: NCAP Side Impact

Test Date: December 15, 2005



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

			NOTE: All dimensions are in millimeters with a tolerance of ±3 mm																	
			DISTANCE RIGHT OF CENTER (mm)										DISTANCE LEFT OF CENTER (mm)							
LEVEL	HEIGHT AT CL (mm)*		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800	
LEVEL 4 TOP STACK	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	642	605	582	578	575	582	601	603	602	608	612	615	624	643	668	698	728	
		CRUSH	23	-14	-37	-41	-44	-37	-18	-16	-17	-11	-7	-4	5	24	49	79	109	
LEVEL 3 MID LEVEL	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	608	584	575	572	573	575	584	594	591	586	589	592	600	616	637	670	705	
		CRUSH	-11	-35	-44	-47	-46	-44	-35	-25	-28	-33	-30	-27	-19	-3	18	51	86	
LEVEL 2 TOP BUMPER	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	673	638	651	633	634	635	621	622	622	620	621	621	624	629	634	637	648	
		CRUSH	54	19	32	14	15	16	2	3	3	1	2	2	5	10	15	18	29	
LEVEL 1 MID BUMPER	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	518	519	535	
		POST	579	557	547	545	551	571	571	559	552	552	554	554	556	558	558	561	577	
		CRUSH	44	38	29	27	33	53	53	41	34	34	36	36	38	40	40	42	42	

*Heights measured above ground level.

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS

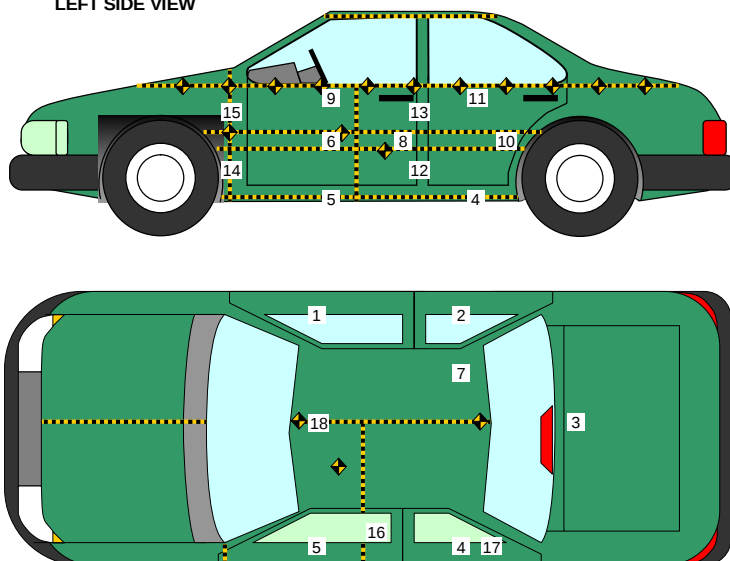
Test Vehicle: 2006 Cadillac DTS

NHTSA No. M60102

Test Program: NCAP Side Impact

Test Date: December 15, 2005

LEFT SIDE VIEW



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	3411	-700	-317
2	Right Sill at Rear Seat	2334	-703	-294
3	Rear Floorpan Above Axle	1332	15	-523
4	Left Sill at Rear Door	2360	700	-244
5	Left Sill at Front Door	3430	699	-301
6	Left Front Door C/L **	-	-	-
7	Rear Occupant Compartment	2382	-348	-187
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	2531	702	-291
13	Left Middle B-Post	2501	692	-892
14	Left Lower A-Post	3577	656	-330
15	Left Middle A-Post	3537	680	-982
16	Front Seat Track	2632	573	-252
17	Rear Seat Track or Structure	1146	518	-710
18	Vehicle CG	3283	1	-391

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

Y - Test Vehicle Centerline (+ to right)

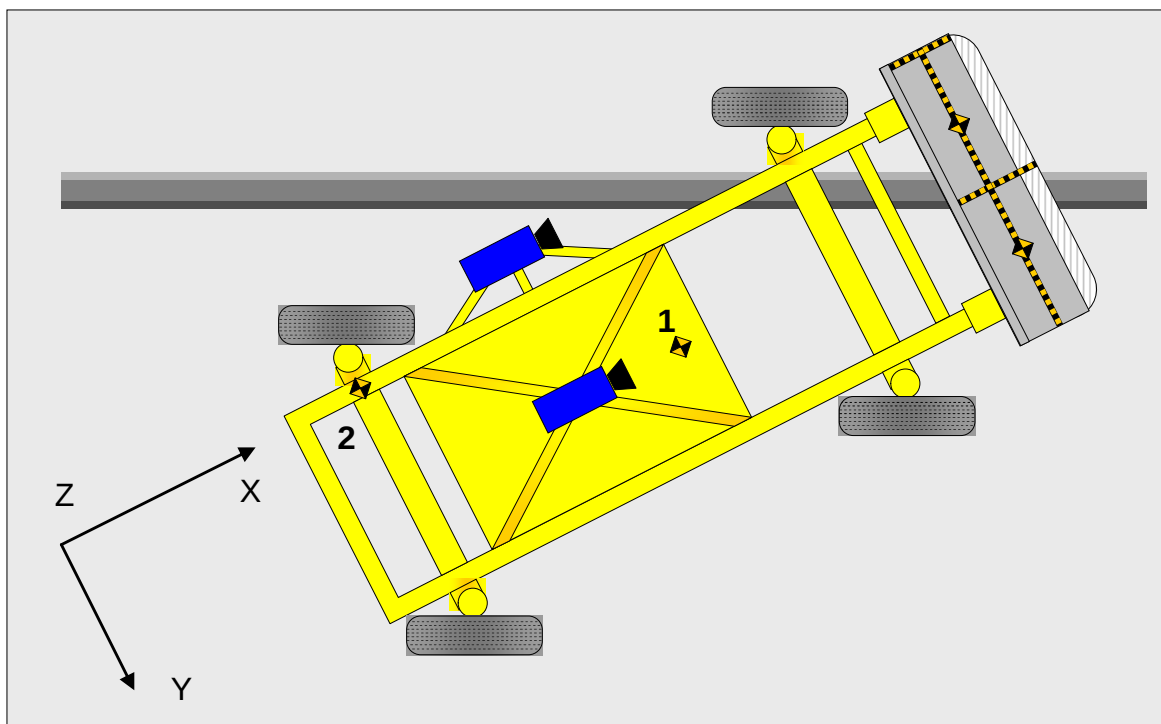
Z - Ground Plane (+ down)

** Accelerometer was not requested by the COTR.

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS

Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005



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:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005

	Elements	Pre-Test (mm)
1	Total Length	5284
2	Total Width	1907
3	Bumper Top Height	515
4	Bumper Bottom Height	405
5	Longitudinal Member Top Height	5400
6	Distance between Longitudinal Members	1090
7	Longitudinal Member Width	95
8	Engine Top Height	846
9	Engine Bottom Height	190
10	Engine and gearbox width	870
11	Front bumper-engine distance	513
12	Front shock absorber fixing height	905
13	Bonnet leading edge height	736
14	Front shock absorber fixing width	1230
15	Front bumper – front axle distance	1105
16	Front axle – a pillar distance	580
17	A-pillar – B-pillar distance	988
18	B-Pillar – rear axle distance	1267
19	B-pillar – C-pillar distance	964
20	Roof sill bottom height	1268
21	Roof sill top height	1420
22	Floor sill bottom height	203
23	Floor sill top height	360

DATA SHEET NO. 16

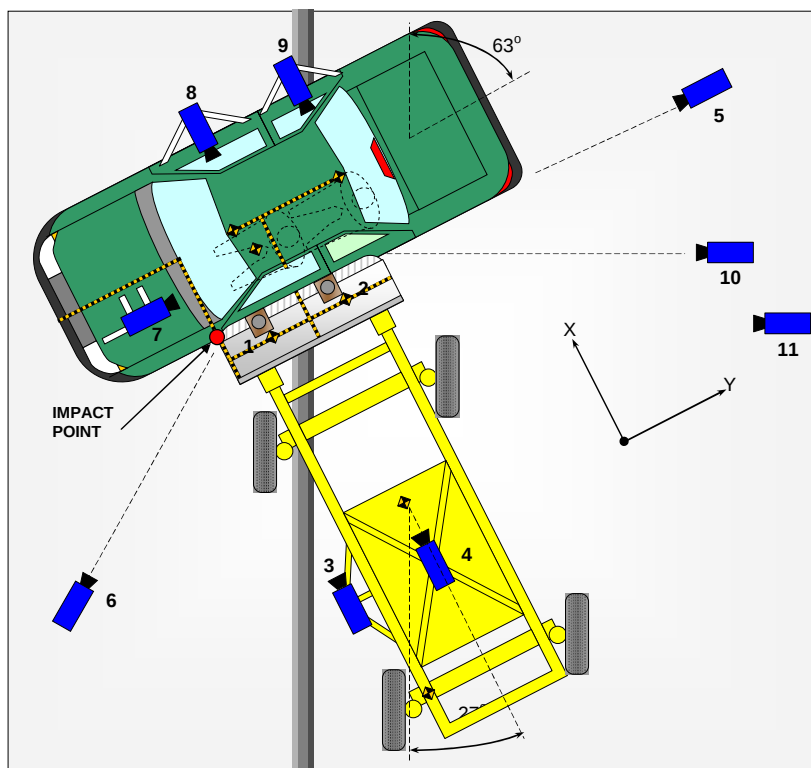
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2006 Cadillac DTS

NHTSA No. M60102

Test Program: NCAP Side Impact

Test Date: December 15, 2005



No.	Camera View	Location (mm)			Angle (deg)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Overall	72	812	-4880	-90	8	500
2	Overhead Close-up	195	855	-4880	-90	28	1000
3	MDB Onboard, Impact Point Close-up	-1470	0	-847	0	13	500
4	MDB Onboard, Centerline of Impact	-1140	838	-1587	-17	7.5	500
5	Right Side, Ground Level, Overall	11040	0	-1073	-2.5	50	1000
6	Left Side, Ground Level, Overall	4480	3340	-1070	-4.0	25	1000
7	Vehicle Onboard Front SID/HIII, Front	570	-620	-1265	-8.5	25	1000
8	Vehicle Onboard Front SID/HIII, Side	1725	760	-1055	-9.0	12.5	1000
9	Vehicle Onboard Rear SID/HIII, Side	1810	1715	-1050	-11	12.5	1000
10	Secondary Impact Point	-2050	1765	-1020	-7	28	500
11	Real Time Coverage						30

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

DATA SHEET NO. 17
SUMMARY OF FMVSS 301 DATA

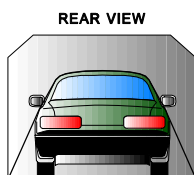
Test Vehicle:	2006 Cadillac DTS	NHTSA No.	M60102
Test Program:	NCAP Side Impact	Test Date:	December 15, 2005

FUEL SYSTEM INTEGRITY POST IMPACT DATA

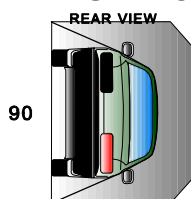
Time Interval	FMVSS 301 Maximum Allowable Spillage	Spillage (g)
Impact Until Motion Ceases	28 g	0
First Five Minutes Following Impact	142 g	0
Next 25 Minutes	28 g / 1 minute	0

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

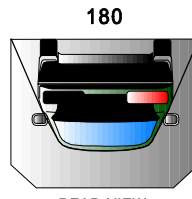
STATIC ROLLOVER DATA



0/360

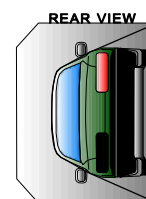


90



180

REAR VIEW



270

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes
90° - 180°	1	minutes	09	seconds	5	minutes	6	minutes	9	seconds	7	minutes
180°-270°	1	minutes	03	seconds	5	minutes	6	minutes	3	seconds	7	minutes
270°-360°	1	minutes	14	seconds	5	minutes	6	minutes	14	seconds	7	minutes

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

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

APPENDIX A
PHOTOGRAPHS

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A-37	Pre-Test Right Occupant Compartment View of Passenger	A-22
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A-44	Post-Test Left Front Interior Trim	A-25
A-45	Pre-Test Left Rear Interior Trim	A-26
A-46	Post-Test Left Rear Interior Trim	A-26
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Figure A-1: As Received Left Front $\frac{3}{4}$ View



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



Figure A-3: Vehicle Certification Label



Figure A-4: Vehicle Tire Placard Label



Figure A-5: Pre-Test Front View



Figure A-6: Post-Test Front View



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



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



Figure A-9: Pre-Test Left Side View



Figure A-10: Post-Test Left Side View



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



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



Figure A-13: Pre-Test Rear View



Figure A-14: Post-Test Rear View



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



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



Figure A-17: Pre-Test Right Side View



Figure A-18: Post-Test Right Side View



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



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



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



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



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



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



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

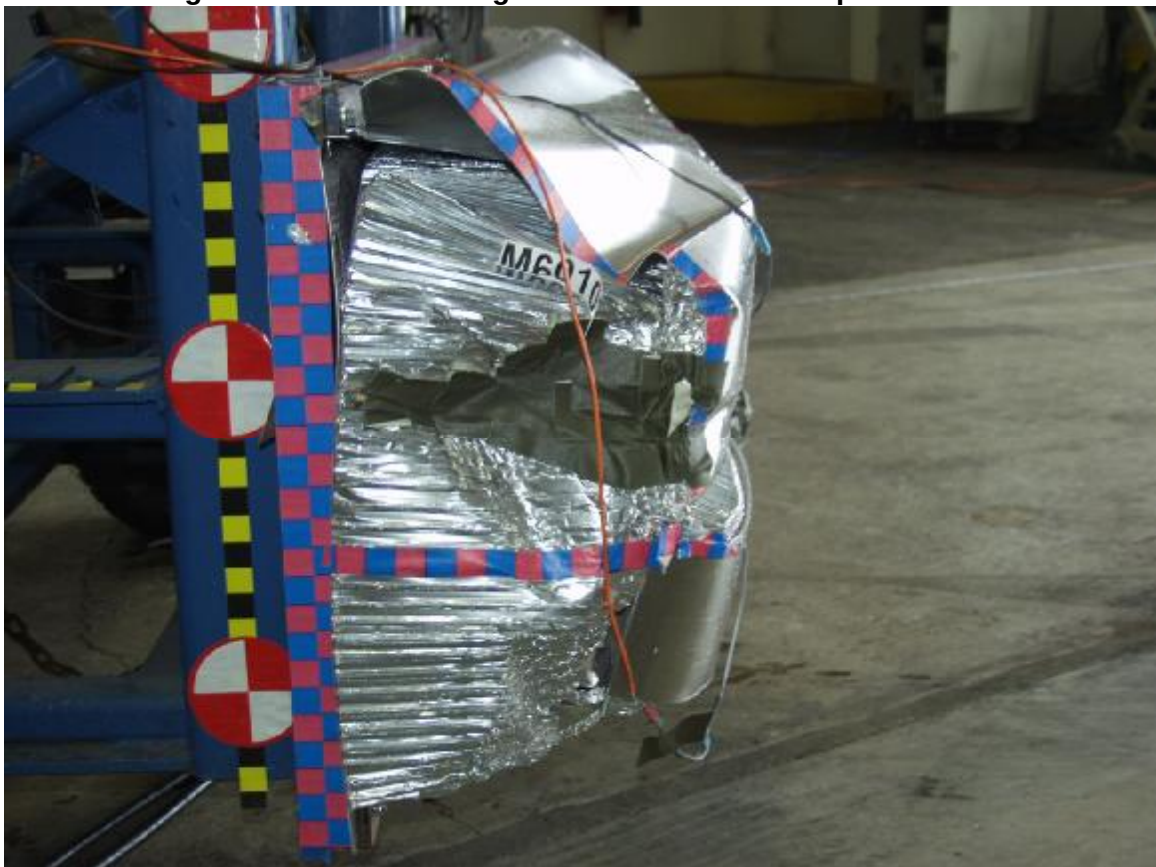


Figure A-26: Post-Test Right Side View of MDB Impactor Face



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



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



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



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



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



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



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



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



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



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



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



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



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



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



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

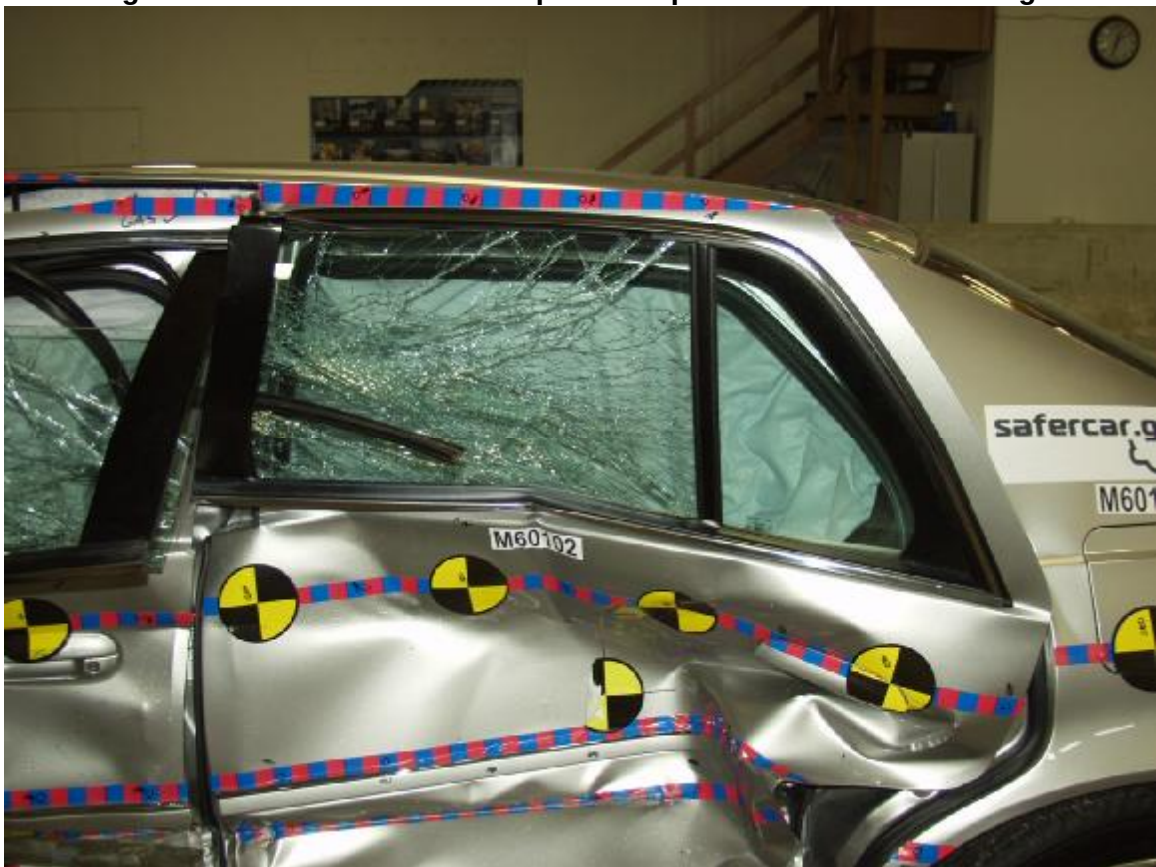


Figure A-42: Post-Test Left Occupant Compartment View of Passenger



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



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



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



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



Figure A-47: Pre-Test Left Front 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

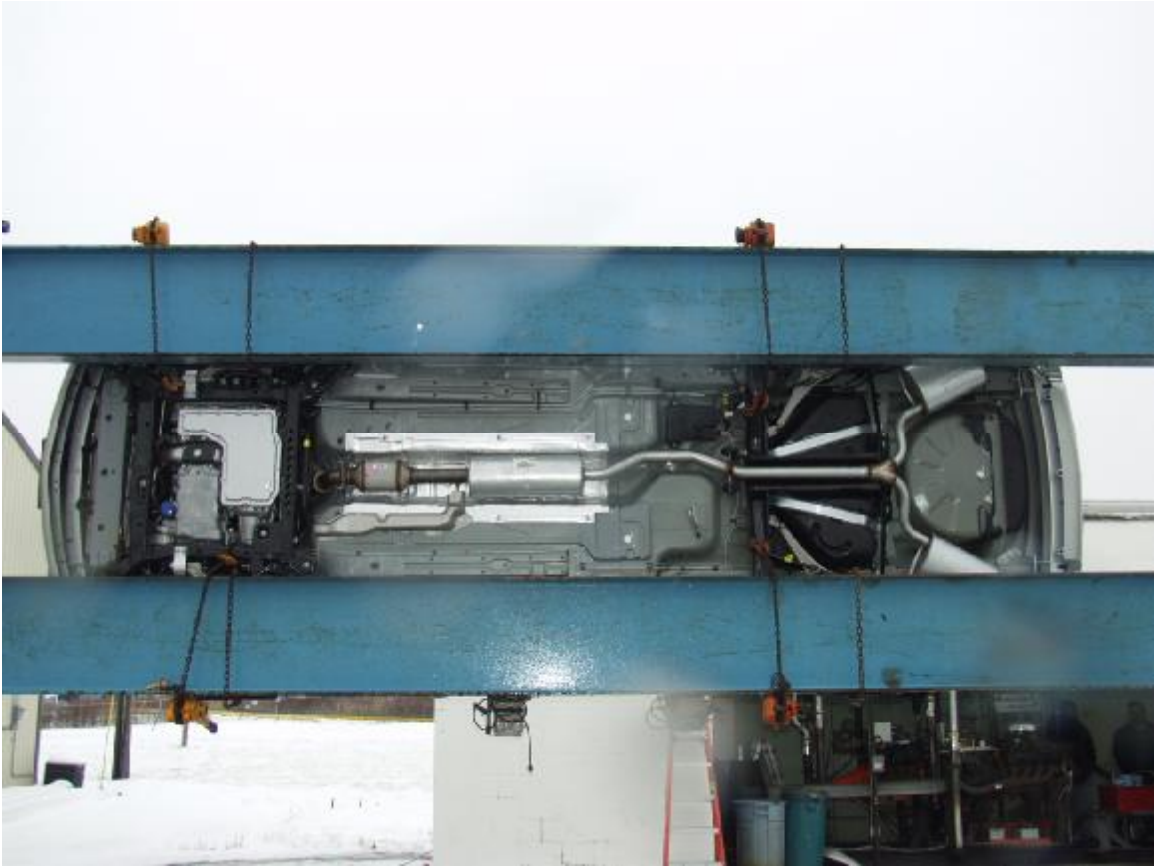


Figure A-53: Rollover 270 Degrees



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
12	V2P4 Head Ar [g, CFC_1000]	B-7
13	V1P4 Upper Rib Ay [g, FIR_100]	B-8
14	V1P4 Lower Rib Ay [g, FIR_100]	B-8
15	V1P4 Lower Spine Ay [g, FIR_100]	B-8
16	V1P4 Pelvic Ay [g, FIR_100]	B-8

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

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

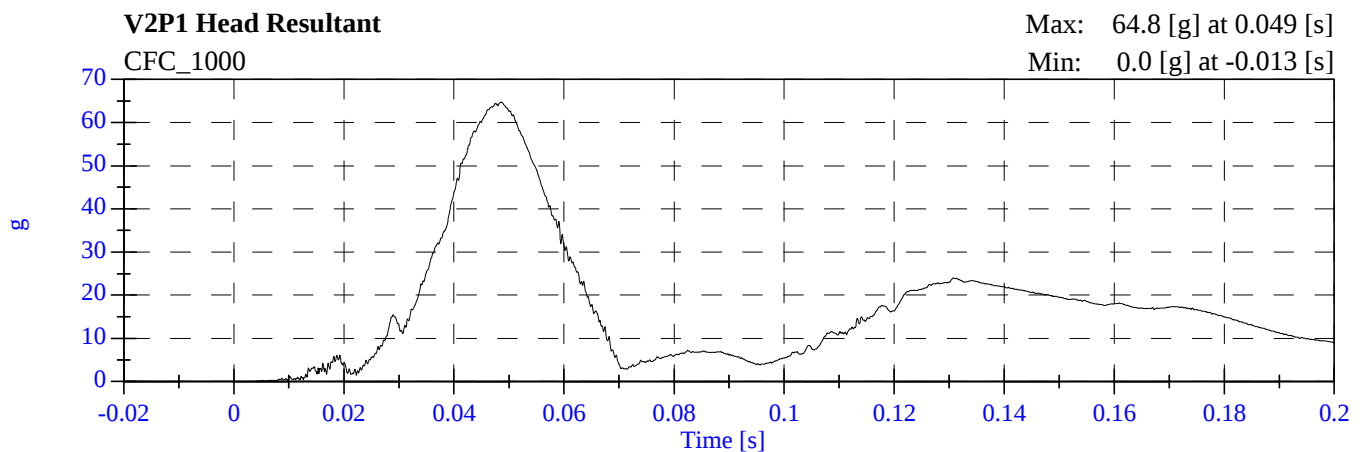
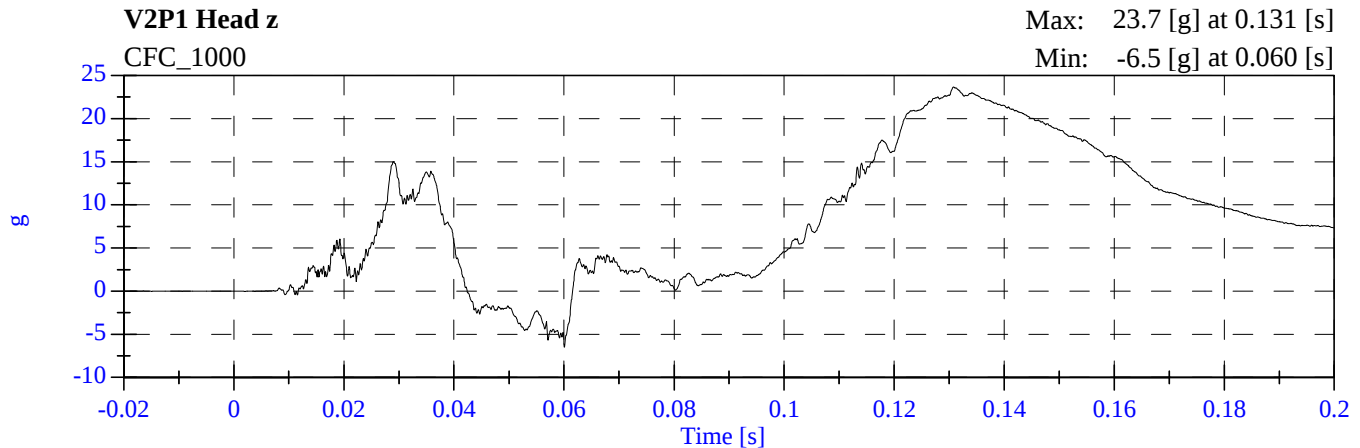
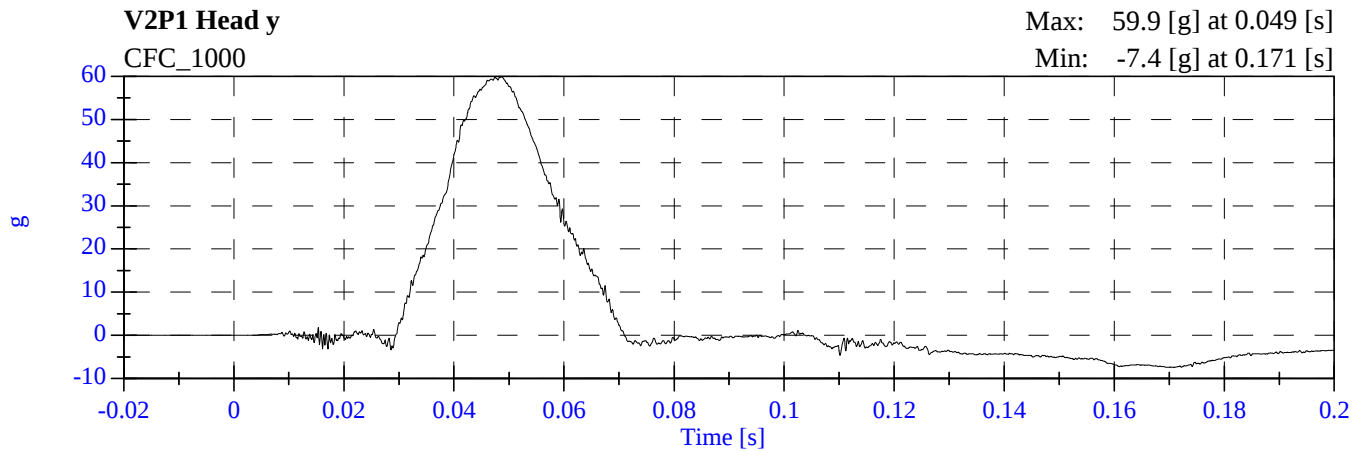
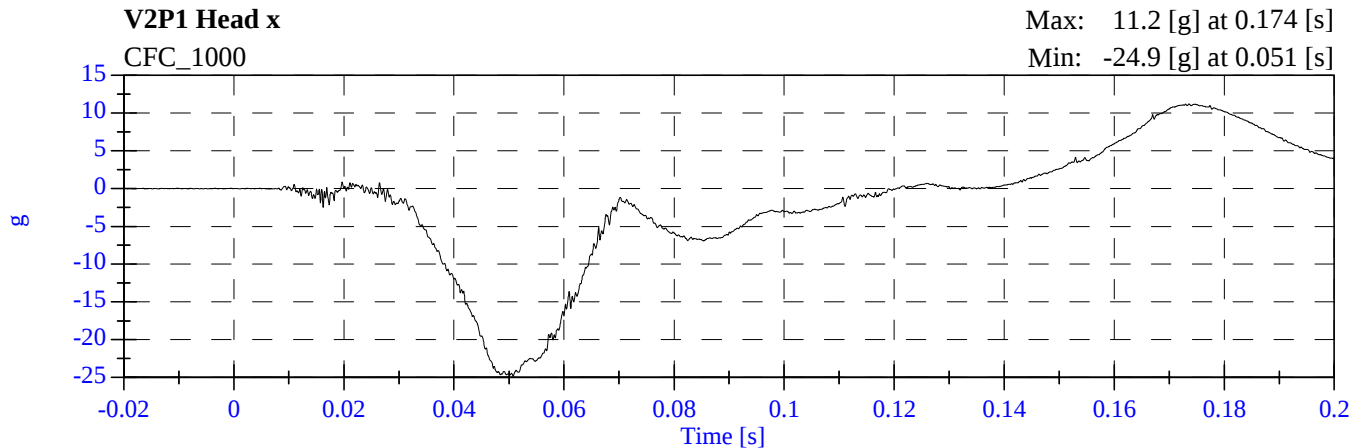
TEST NOTES

The following data anomalies occurred:

V2A18 Target CG Ax	Sensor Dislodged at 21 ms
V2A18 Target CG Ay	Sensor Dislodged at 21 ms
V2A18 Target CG Az	Sensor Dislodged at 21 ms

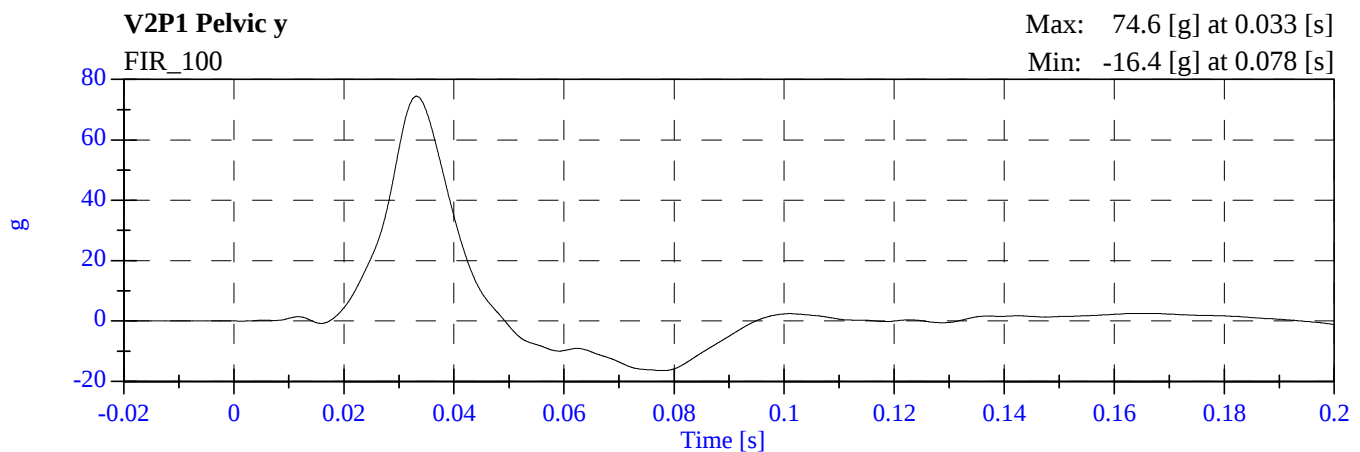
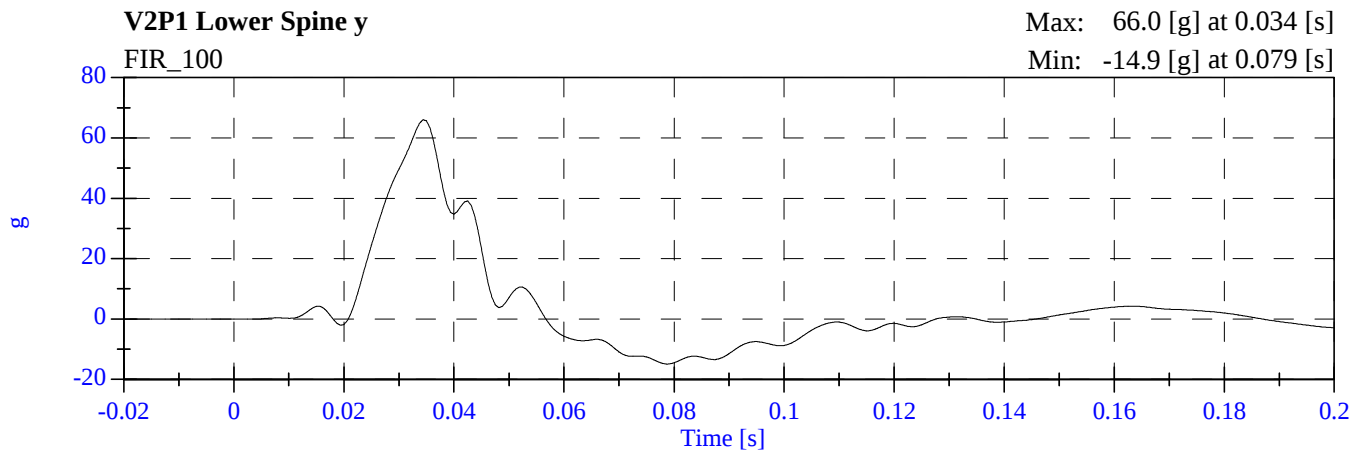
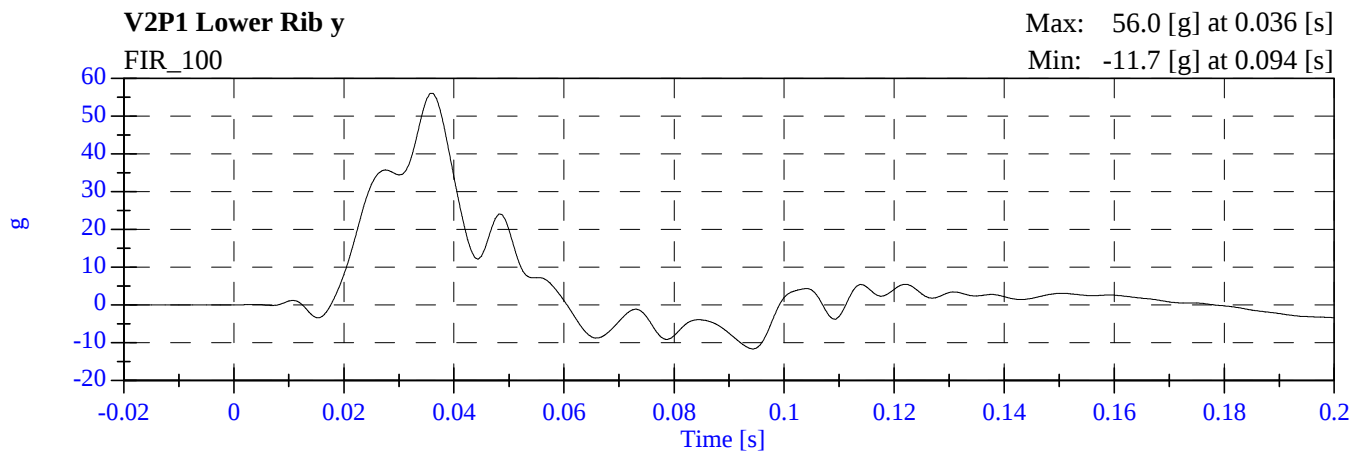
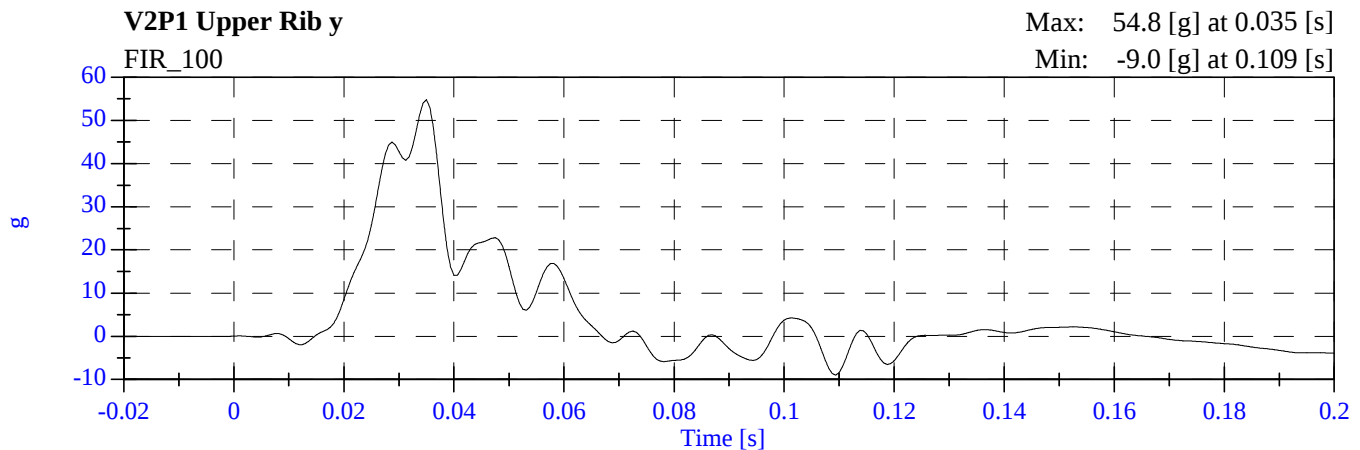
2006 SNCAP Test 4 2006 Cadillac DTS

M60102 - December 15, 2005



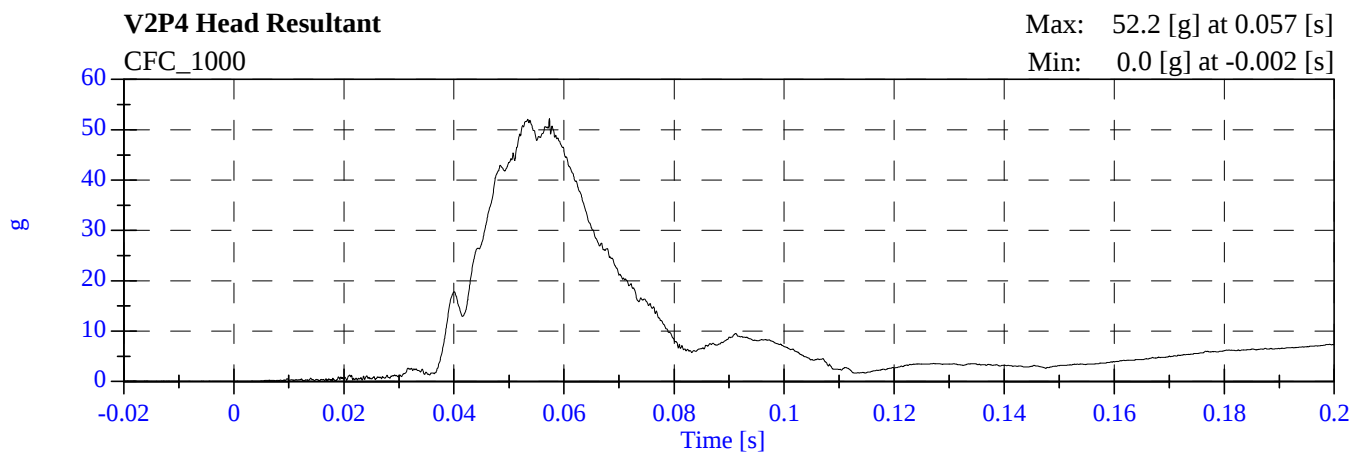
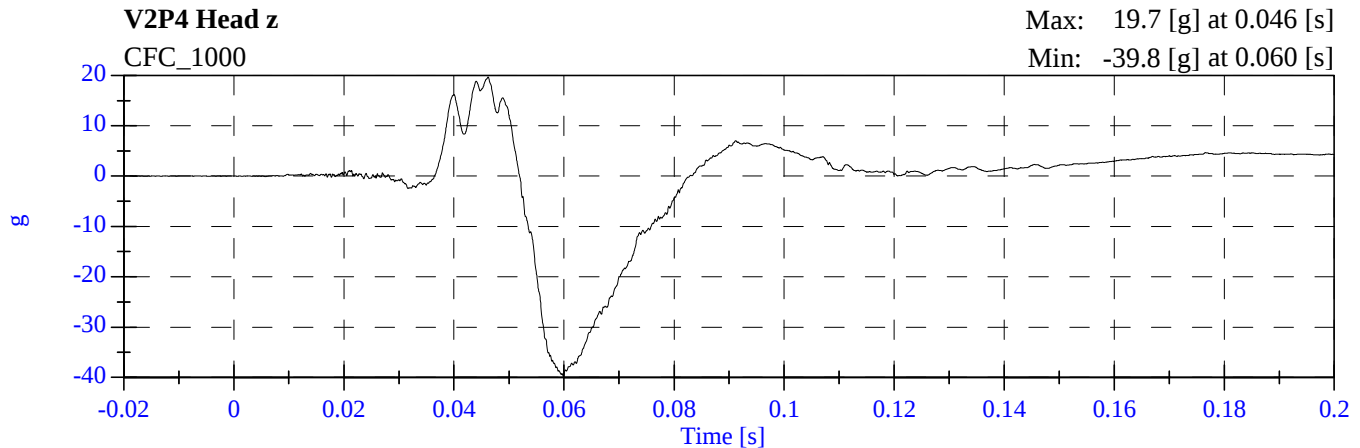
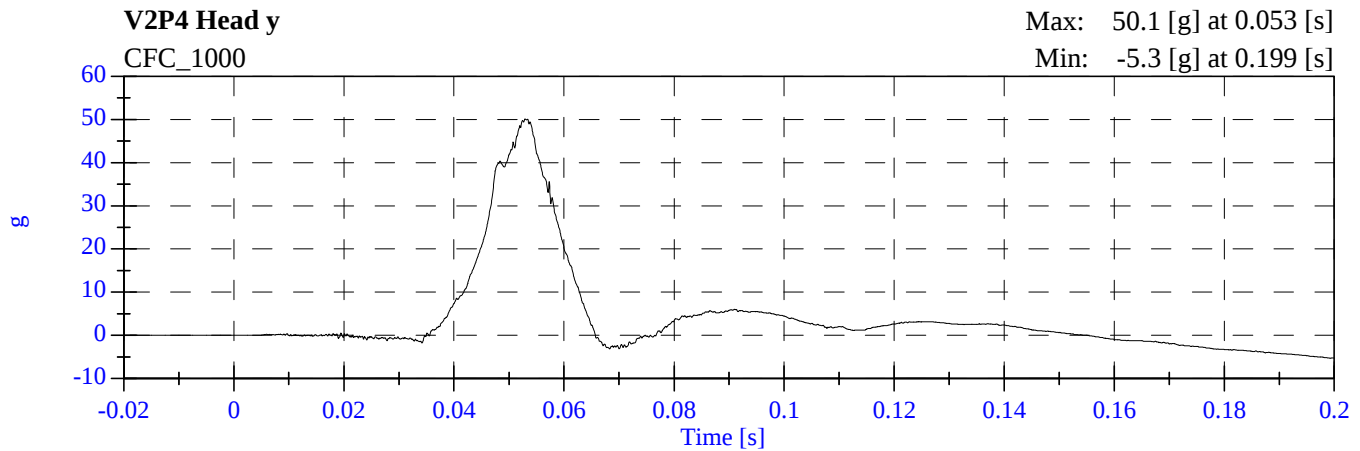
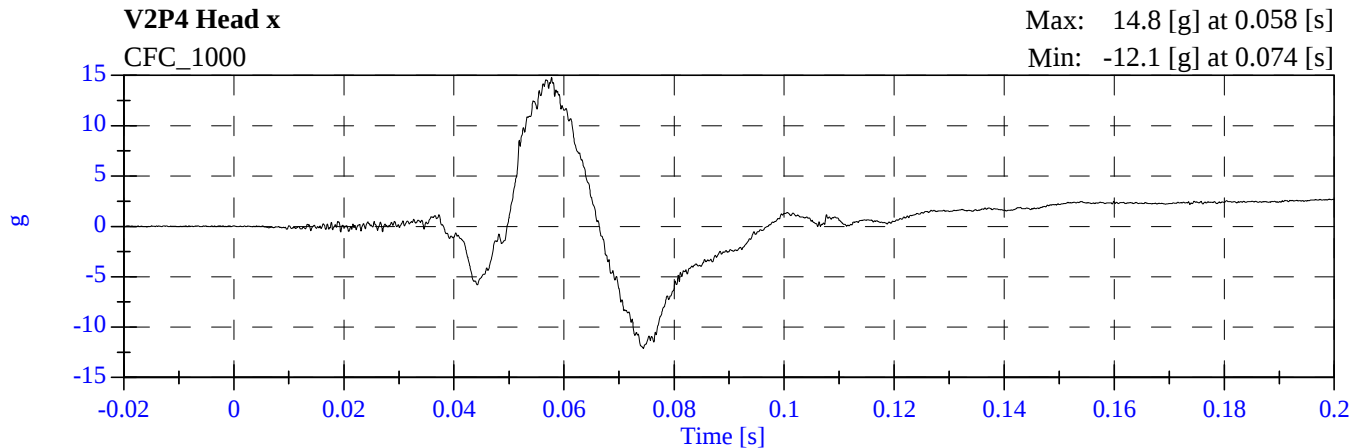
2006 SNCAP Test 4 2006 Cadillac DTS

M60102 - December 15, 2005



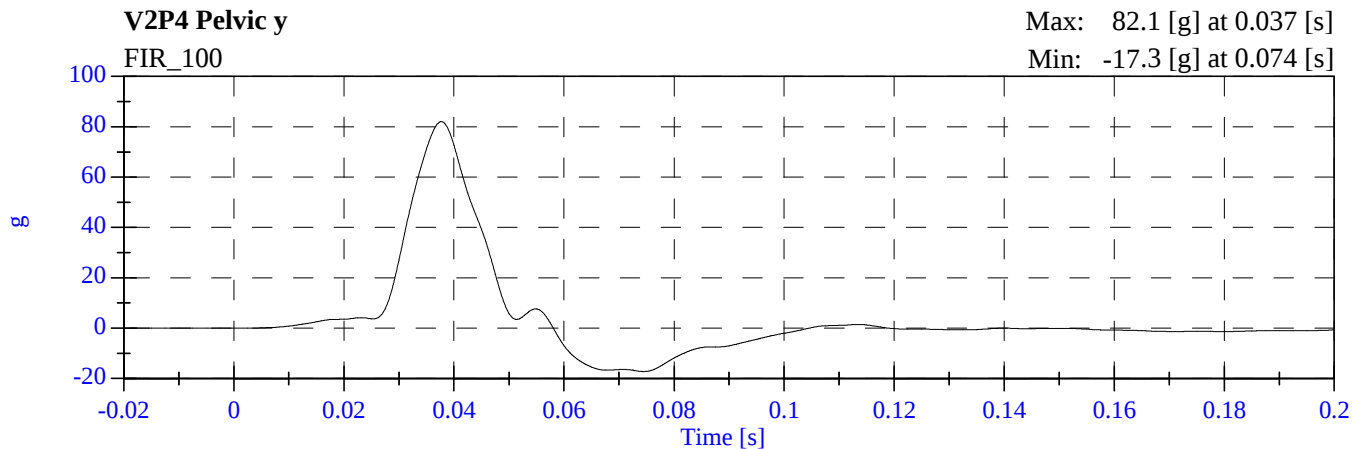
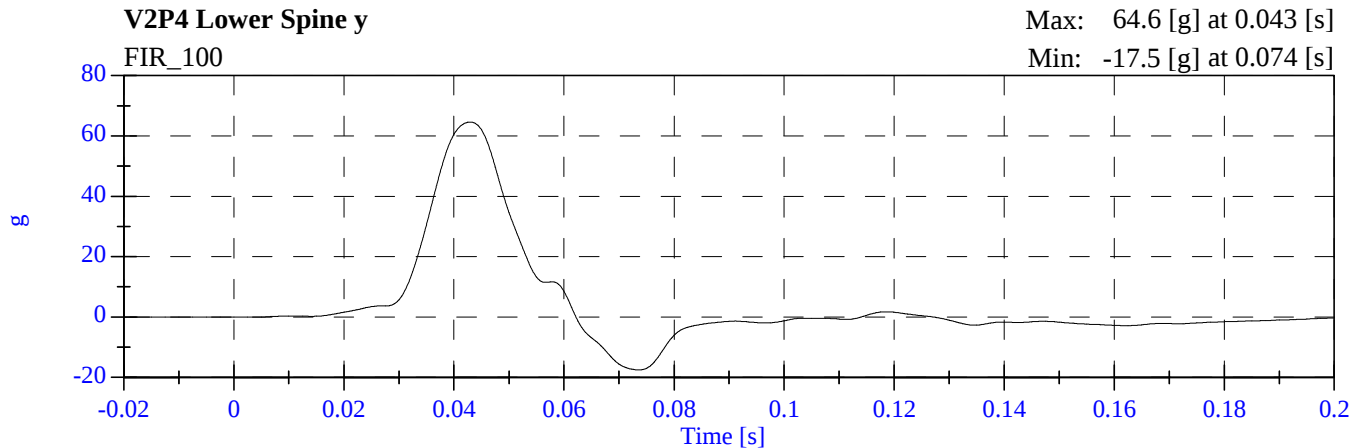
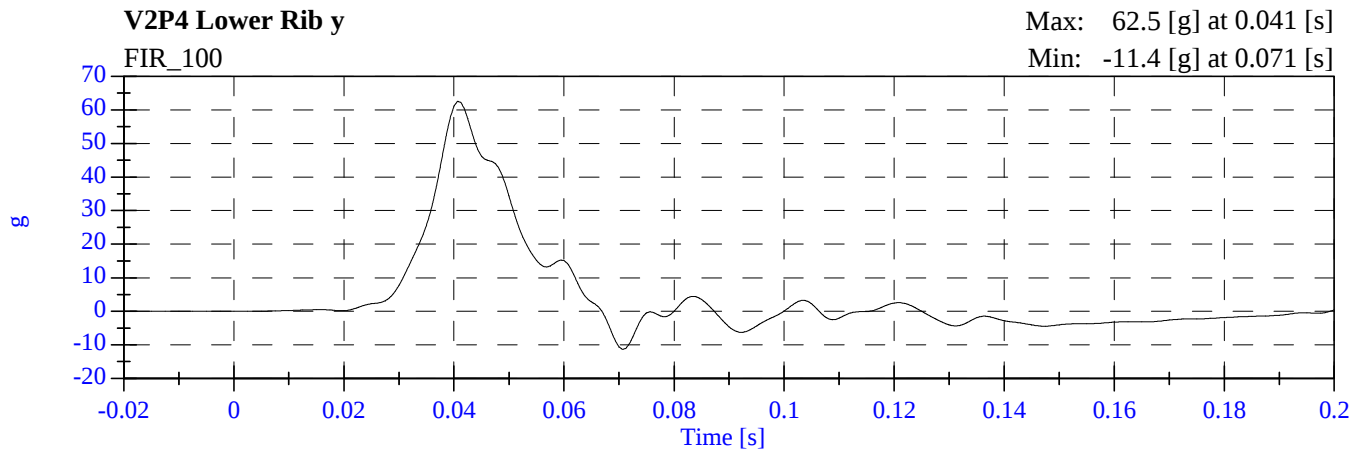
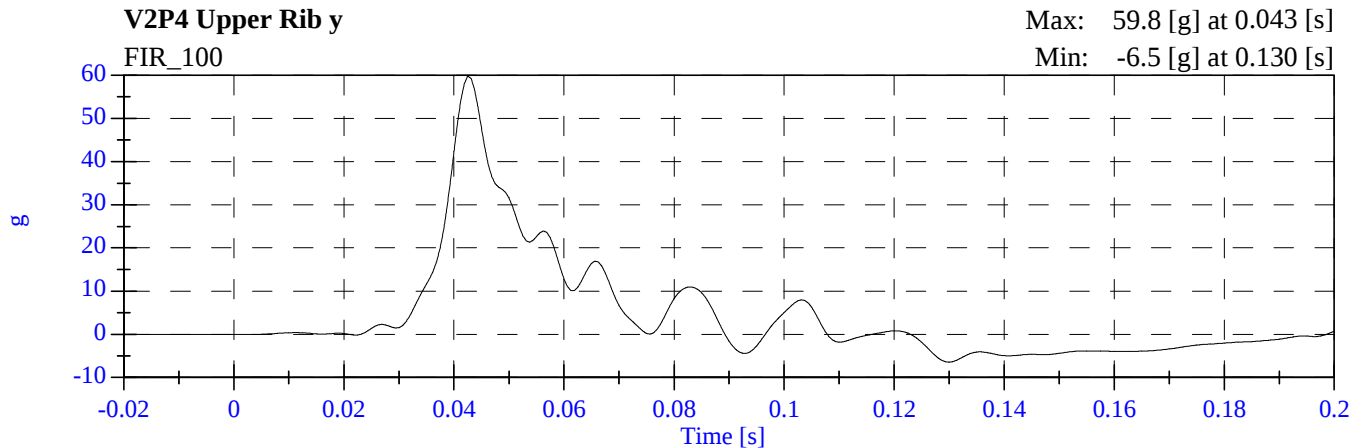
2006 SNCAP Test 4 2006 Cadillac DTS

M60102 - December 15, 2005



2006 SNCAP Test 4 2006 Cadillac DTS

M60102 - December 15, 2005



APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: December 12, 2005; January 4, 2006 Sequential Test Number: 4; 5
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID H3 NO.: 905		SID H3 NO.: 906	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	904	904	907	907
RH- Rib Height (mm)	501 - 521	516	516	516	516
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	241	241	241	241
KV- Knee Pivot from Back Line (mm)	511 - 526	521	521	518	518
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	493	493
HW- Hip Width (mm)	356 - 391	368	368	381	381
THORAX IMPACTS					
TEMPERATURE (• C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	35.00	27.00	35.00	27.00
PROBE SPEED (m/s)	4.27 - 4.33	4.30	4.33	4.32	4.33
UPPER RIB (g's)	37 - 46	42.83	43.88	45.02	45.81
LOWER RIB (g's)	37 - 46	42.23	41.48	45.40	45.08
LOWER SPINE (g's)	15 - 22	21.52	21.27	21.66	21.52
PELVIS IMPACT					
TEMPERATURE (• C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	35.00	27.00	35.00	27.00
PROBE SPEED (m/s)	4.27 - 4.33	4.33	4.29	4.31	4.30
PELVIS (g's)	40 - 60	45.66	40.30	48.47	45.56

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: 4
Date: December 12, 2005	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: 4
Date: December 12, 2005 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	904
RH- Rib Height (mm)	502 – 520	516
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	241
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	368

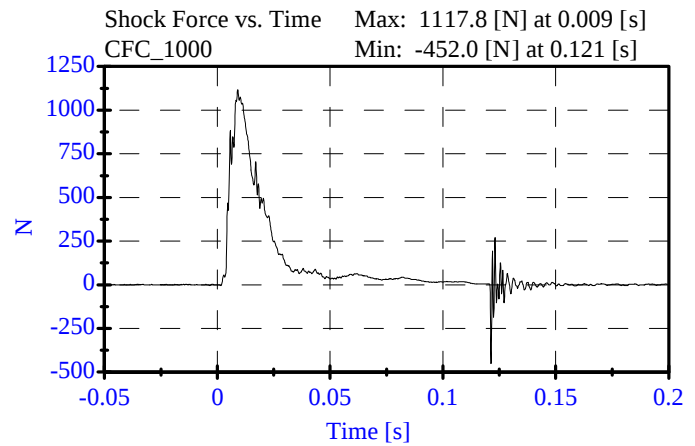
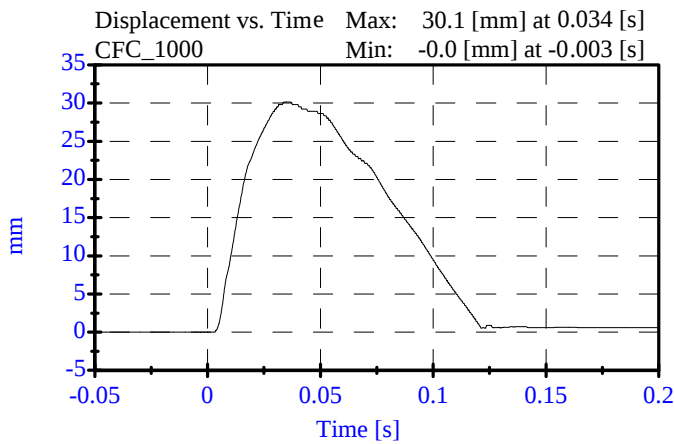
REMARKS: None

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

ATD Serial No: 905
Date: August 1, 2005

Sequential Test Number: 1 File: 905SL 08-01-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Displacement:	30.00-35.00 mm	30.15 mm	Passed
Maximum Force:	836.00-1125.00 N	1117.76 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	905		
Damper Setting:	5		



Shock Impact (4.27 m/s)

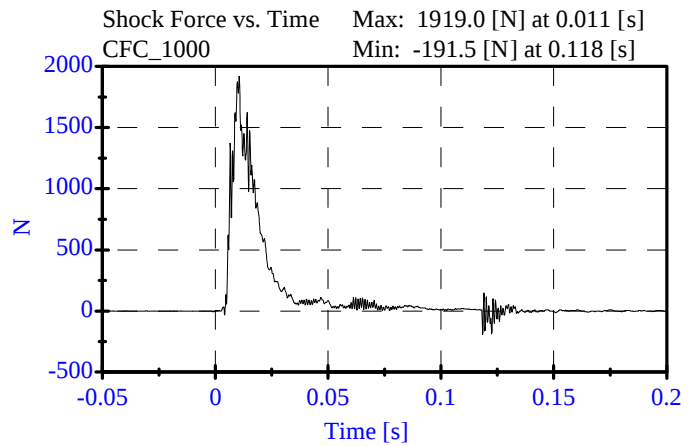
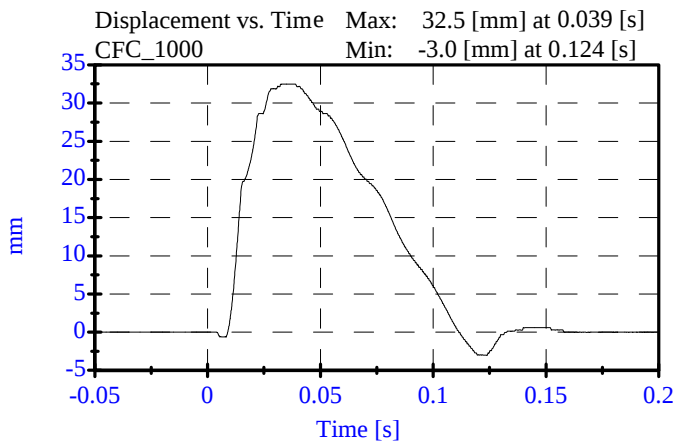
PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: August 1, 2005

Sequential Test Number: 1 File: 905SM1 08-01-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Displacement:	32.00-37.00 mm	32.50 mm	Passed
Maximum Force:	1730.00-2099.00 N	1918.95 N	Passed
Impact Test Velocity:	4.27 m/s		
Damper Identification:	905		
Damper Setting:	5		

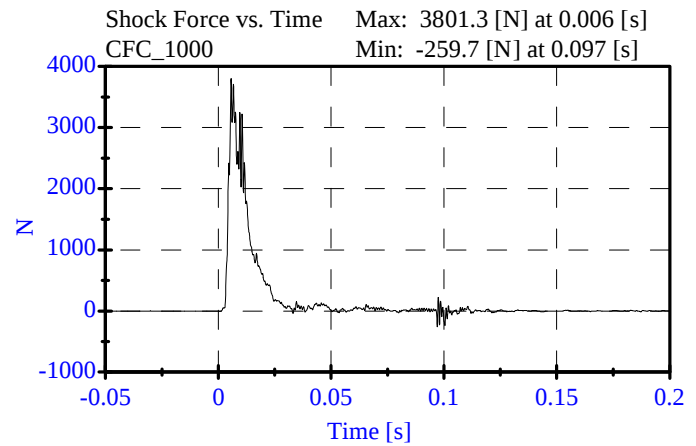
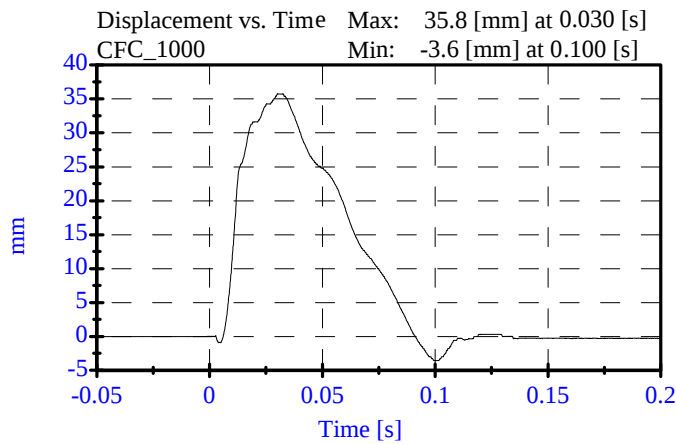


Shock Impact (6.10 m/s)
PRE TEST
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: August 1, 2005

Sequential Test Number: 1 File: 905SH1 08-01-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Displacement:	33.00-40.00 mm	35.75 mm	Passed
Maximum Force:	3741.00-4448.00 N	3801.26 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	905		
Damper Setting:	5		

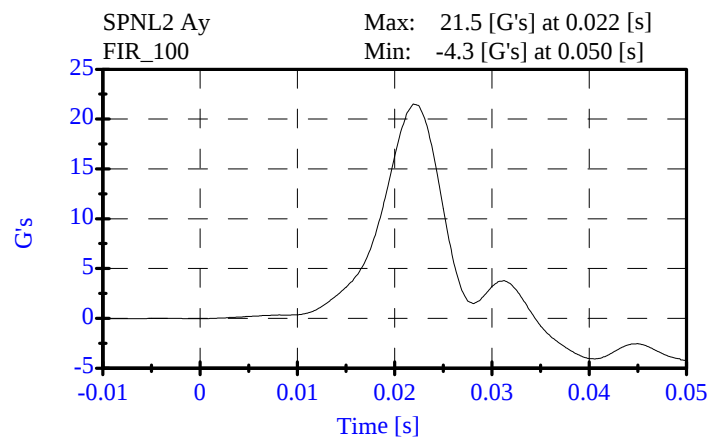
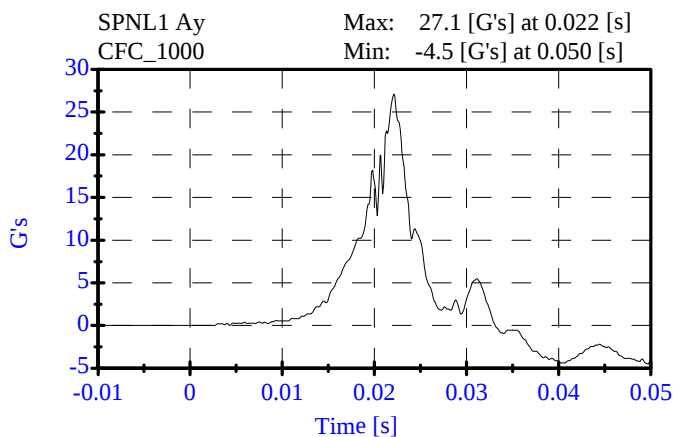
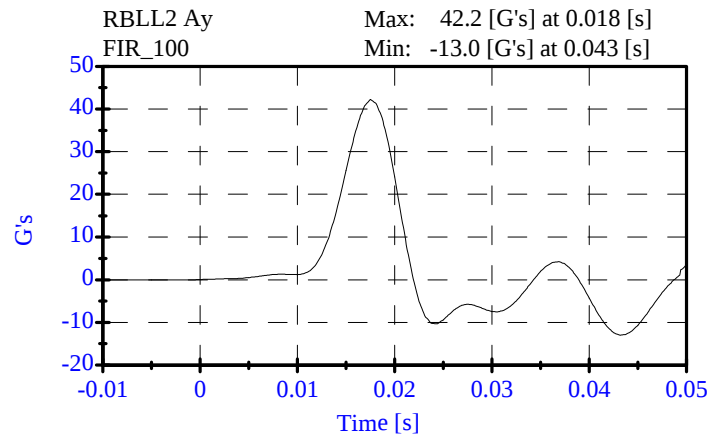
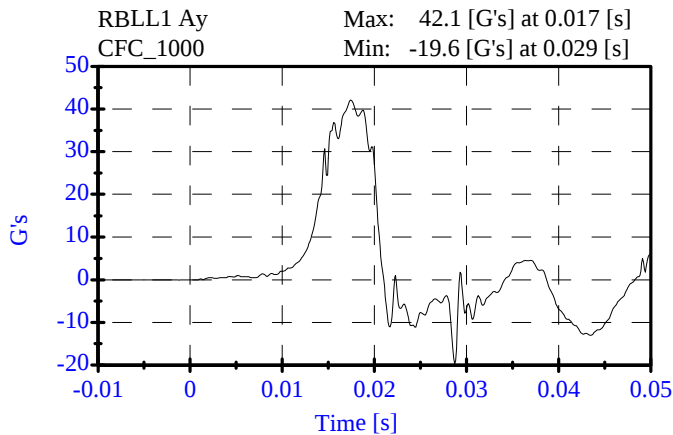
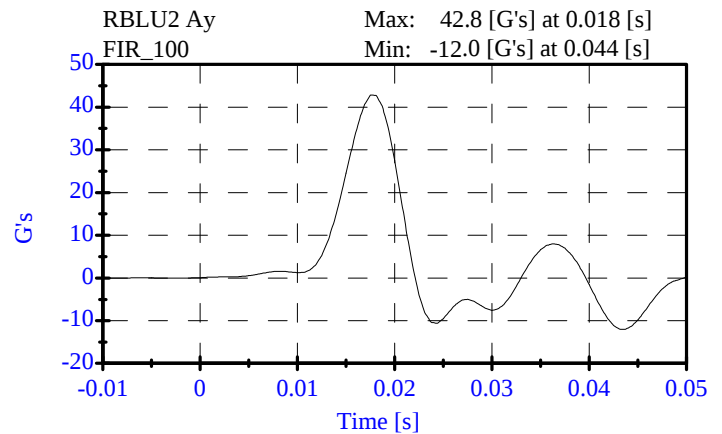
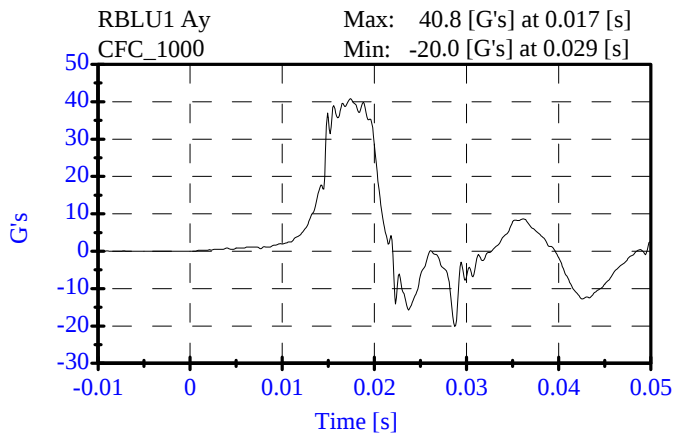


Thorax Impact
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: December 12, 2005

Sequential Test Number: 1 File: 905T 12-12-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	42.83 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	42.23 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.52 G's	Passed



Pelvic Impact

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

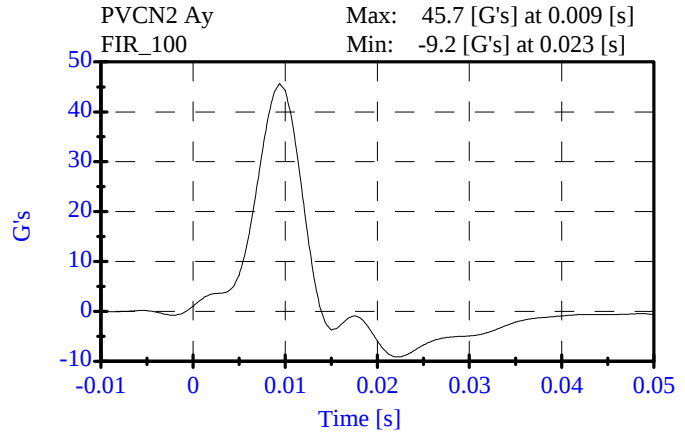
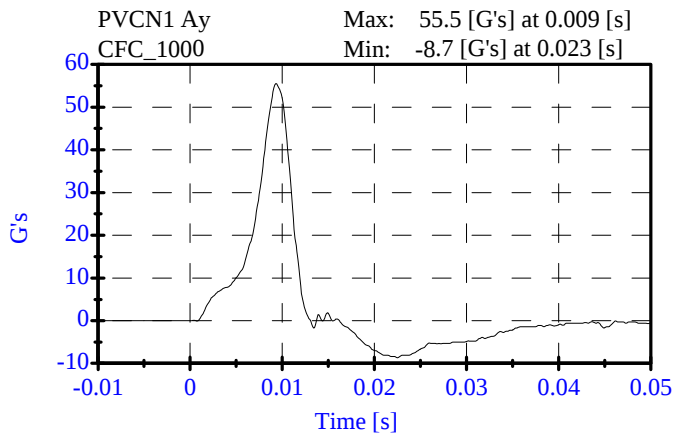
ATD Serial No: 905

Date: December 12, 2005

Sequential Test Number: 1 File: 905P1 12-12-05

Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.33 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	45.66 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.6 ms	Passed



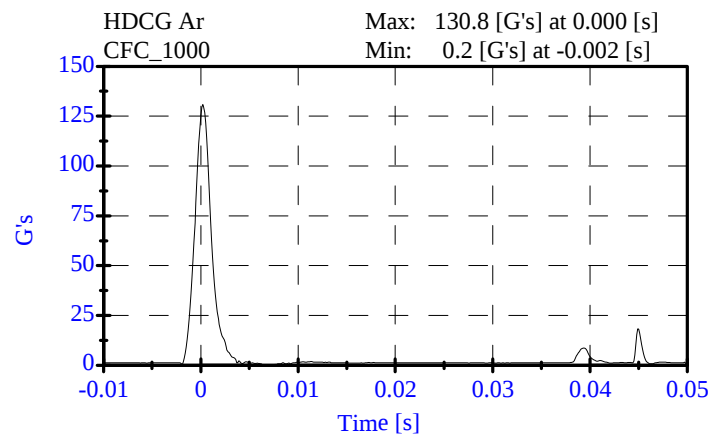
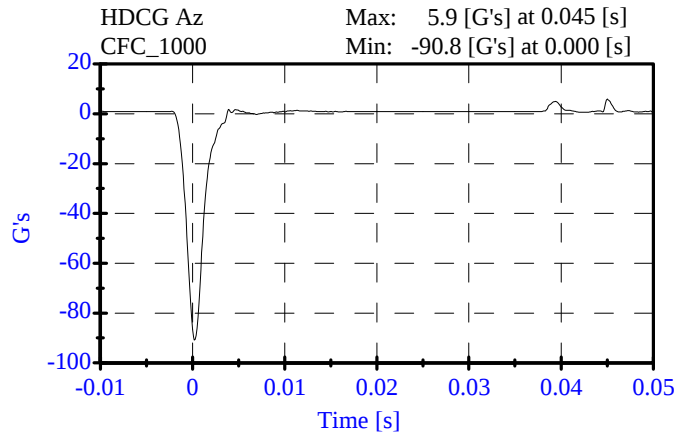
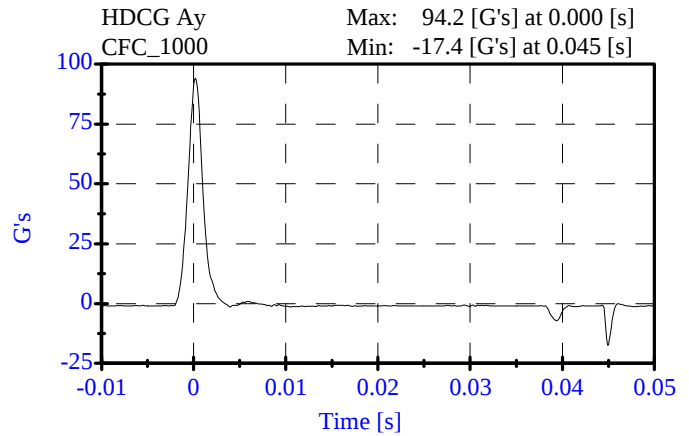
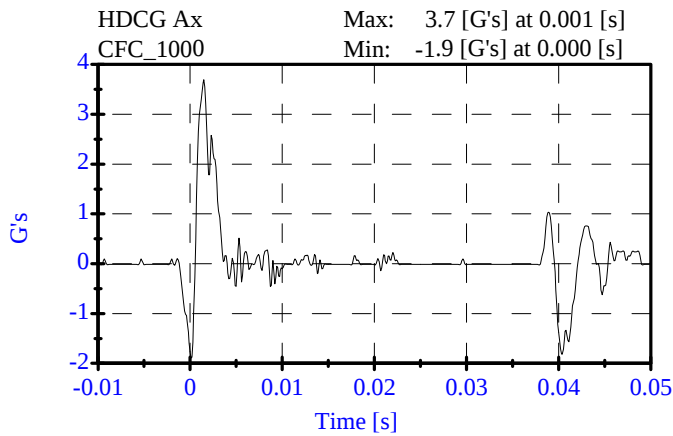
Head Drop Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: December 8, 2005

Sequential Test Number: 1 File: 905h1 12-08-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	130.84 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	3.69 Gs	Passed
Curve PerCent NonModal:	< 15%	13.99 %	Passed



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

ATD Serial No: 905
Date: December 9, 2005

Sequential Test Number: 1 File: 905n1 12-09-05
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 %	41.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.01 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.16 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.52 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.53 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.51 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	68.77 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.50 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	87.35 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	54.60 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.90 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

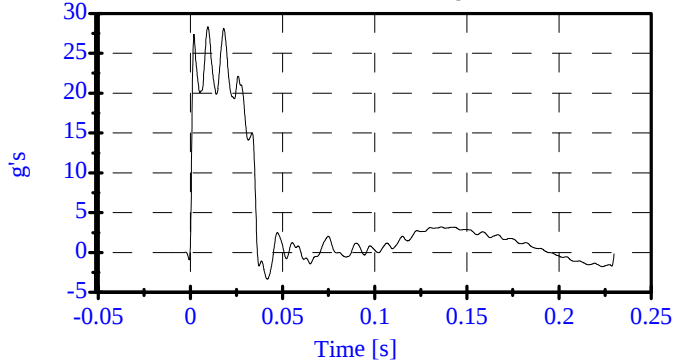
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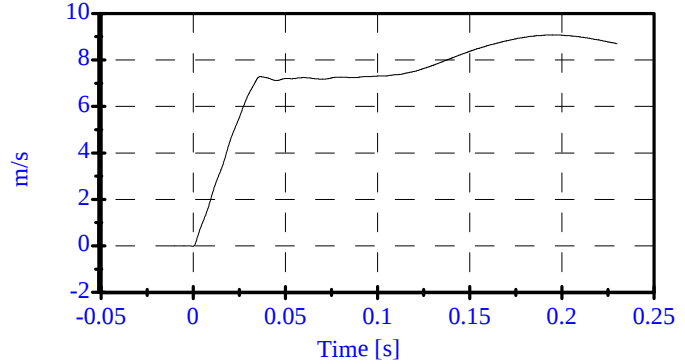
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Laboratory Technician: B. Swiecicki

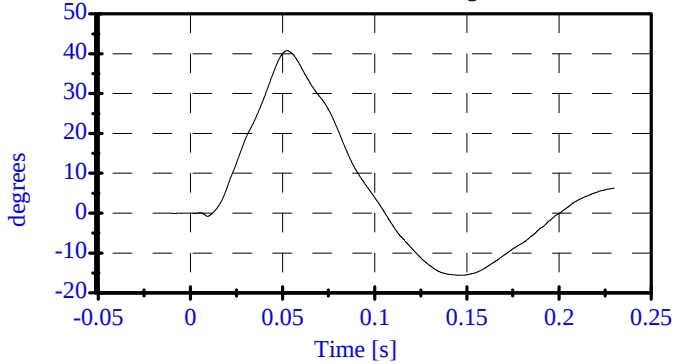
Pend Ax
CFC_180
Max: 28.3 [g's] at 0.009 [s]
Min: -3.3 [g's] at 0.042 [s]



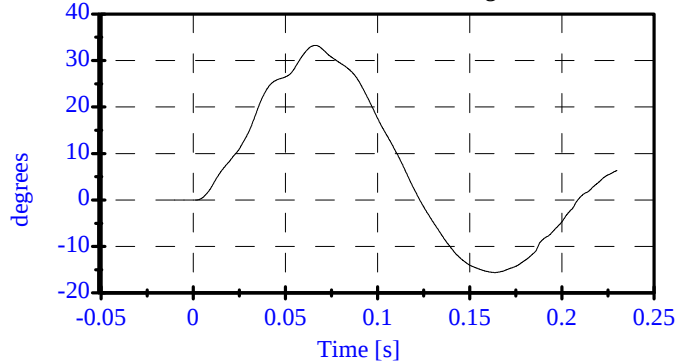
Pend Vx
CFC_180
Max: 9.1 [m/s] at 0.194 [s]
Min: -0.0 [m/s] at -0.000 [s]



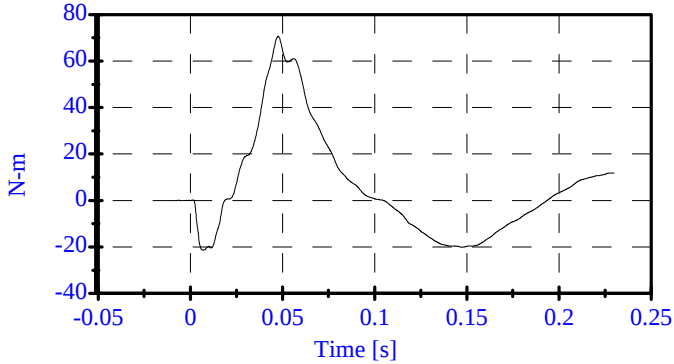
Head Rot
CFC_180
Max: 40.8 [degrees] at 0.053 [s]
Min: -15.5 [degrees] at 0.146 [s]



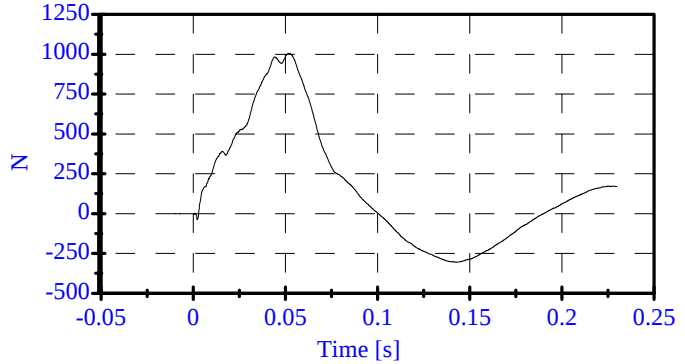
Arm Rot
CFC_180
Max: 33.3 [degrees] at 0.066 [s]
Min: -15.6 [degrees] at 0.164 [s]



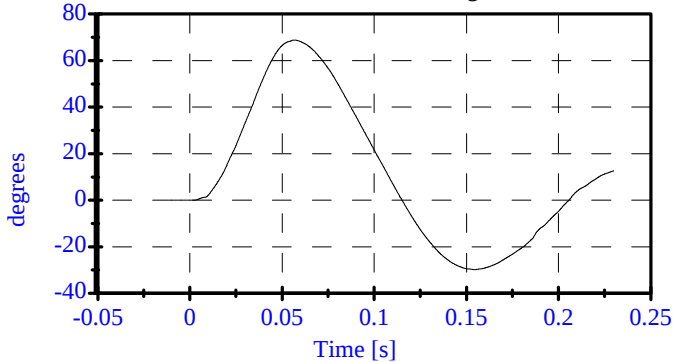
Neck Mx
CFC_600
Max: 70.6 [N-m] at 0.048 [s]
Min: -21.3 [N-m] at 0.007 [s]



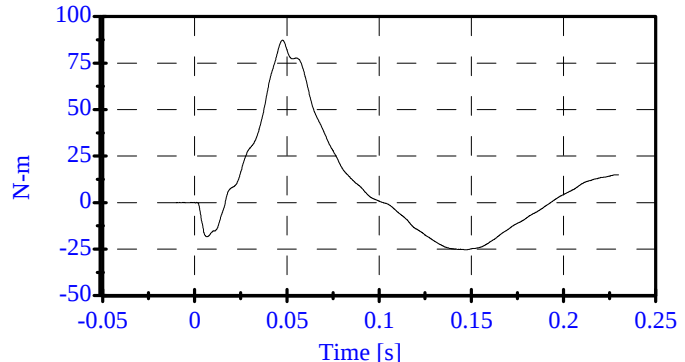
Neck Fy
CFC_1000
Max: 1006.1 [N] at 0.052 [s]
Min: -304.5 [N] at 0.143 [s]



Tot Rot
CFC_180
Max: 68.8 [degrees] at 0.057 [s]
Min: -29.8 [degrees] at 0.154 [s]



MOCX
Max: 87.4 [N-m] at 0.048 [s]
Min: -25.3 [N-m] at 0.147 [s]



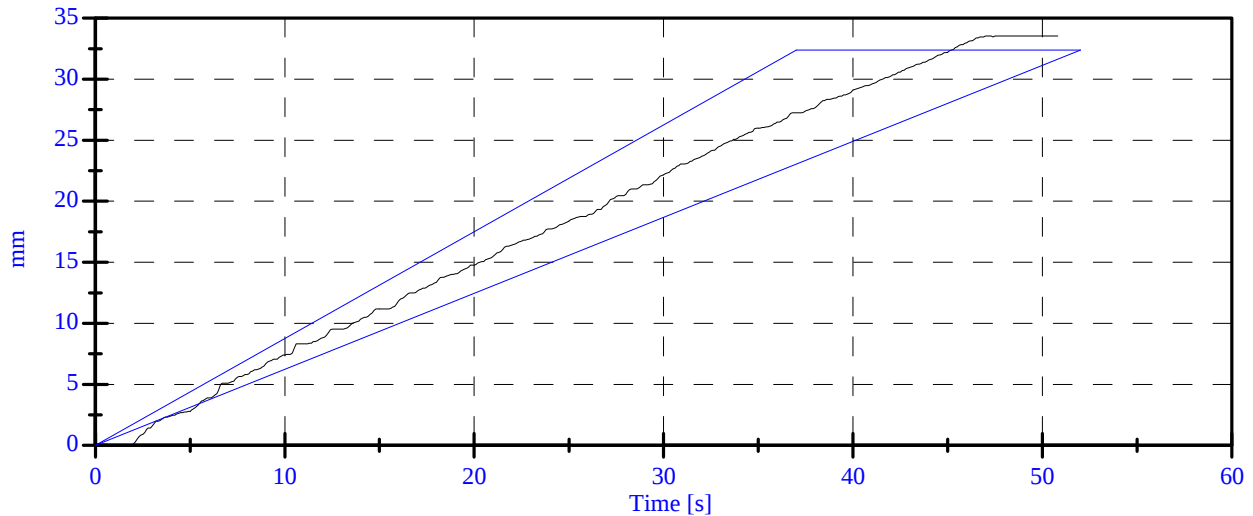
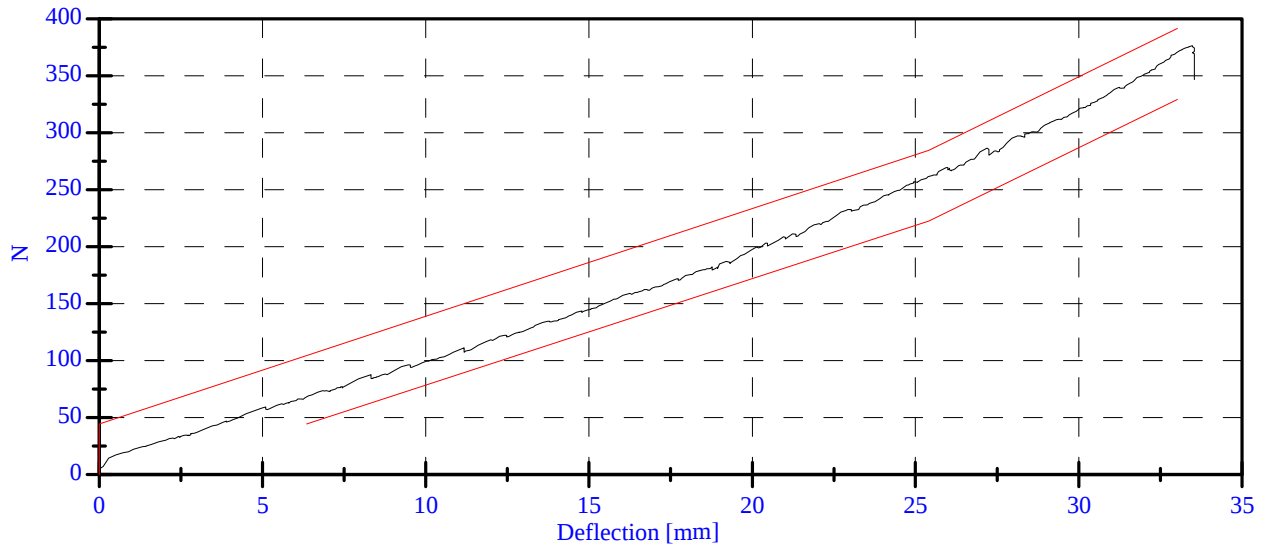
Abdomen Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: December 12, 2005

Sequential Test Number: 1 File: 905ab 12-12-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	125.49 N	Passed
Force at 19.05 mm :	162.98-220.99 N	184.94 N	Passed
Force at 25.40 mm :	221.97-280.02 N	261.42 N	Passed
Force at 33.02 mm :	324.99-391.00 N	370.17 N	Passed

ABDOMINAL COMPRESSION TEST



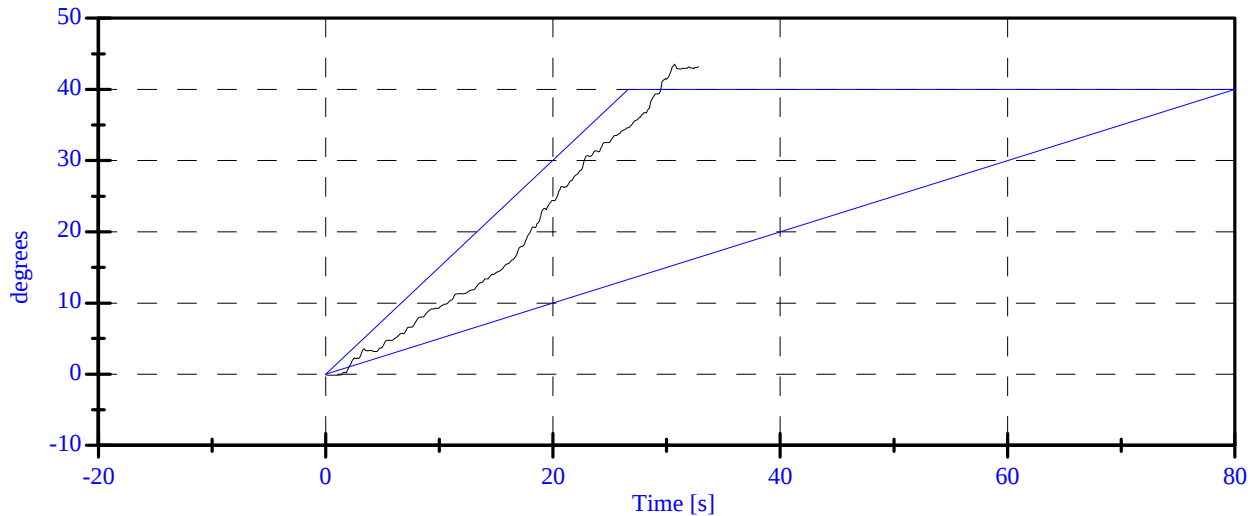
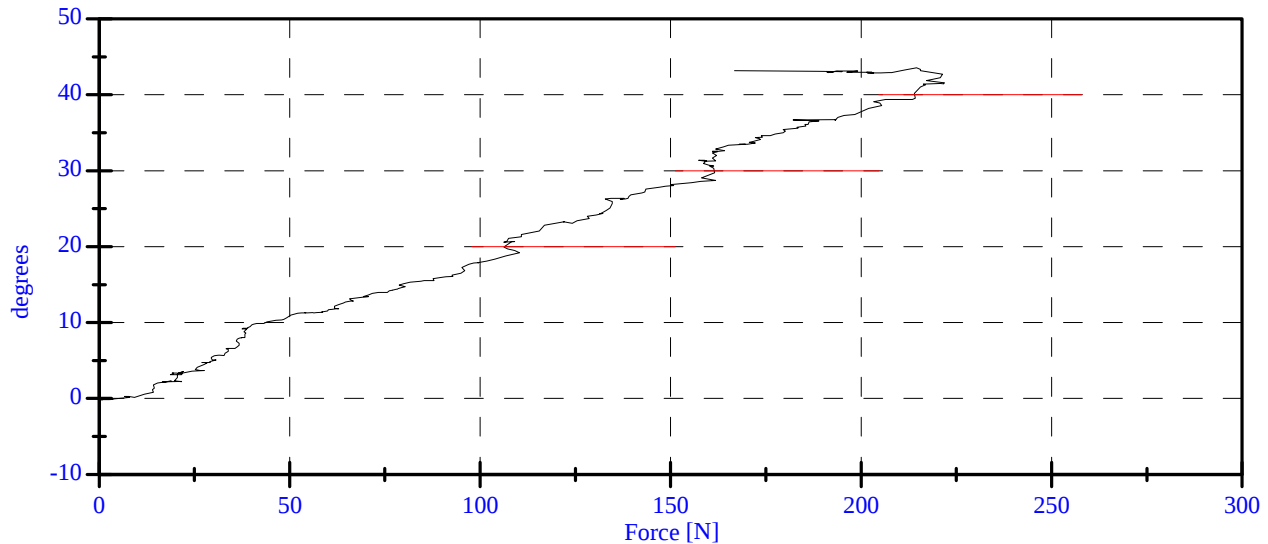
**Lumbar Spine
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 906
Date: December 12, 2005

Sequential Test Number: 1 File: 905S 12-12-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	0.00 N	Passed
Force at 20 Deg:	97.86-151.24 N	106.16 N	Passed
Force at 30 Deg	151.24-204.62 N	161.53 N	Passed
Force at 40 Deg	204.62-258.00 N	214.02 N	Passed
Return Angle	12 Deg Max	4.35 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 4
 Date: December 12, 2005 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.: 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: 4
Date: December 12, 2005	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: 4
Date: December 12, 2005 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	907
RH- Rib Height (mm)	502 - 520	516
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	241
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	381

REMARKS: None

Shock Impact - Low (3.05 m/s)

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

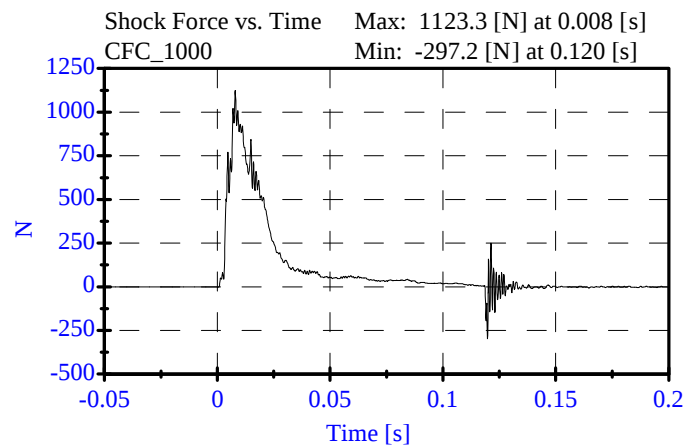
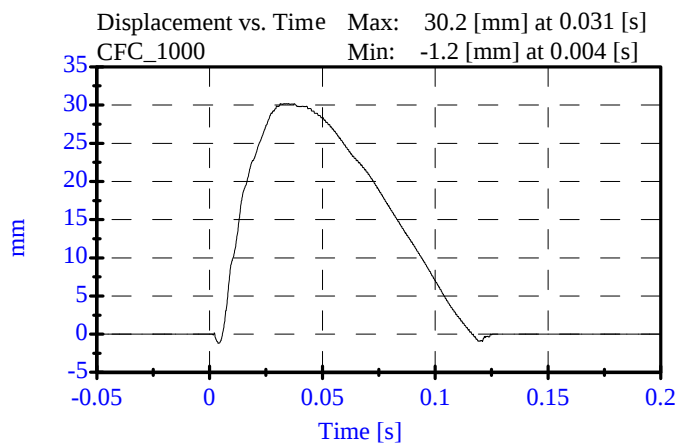
ATD Serial No: 906

Date: July 29, 2005

Sequential Test Number: 1 File: 906SL 07-29-05

Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Displacement:	30.00-35.00 mm	30.17 mm	Passed
Maximum Force:	836.00-1125.00 N	1123.31 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

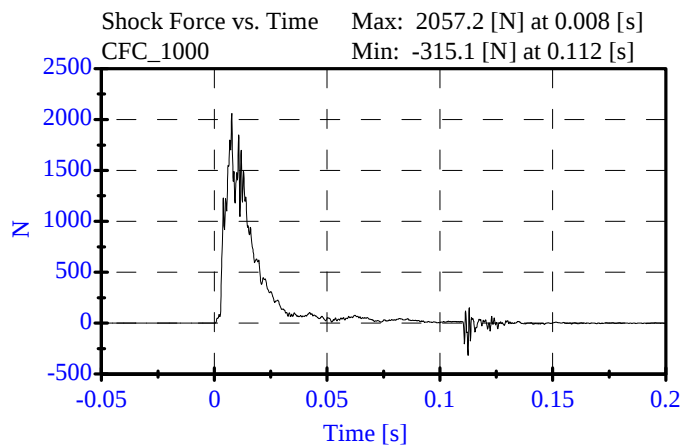
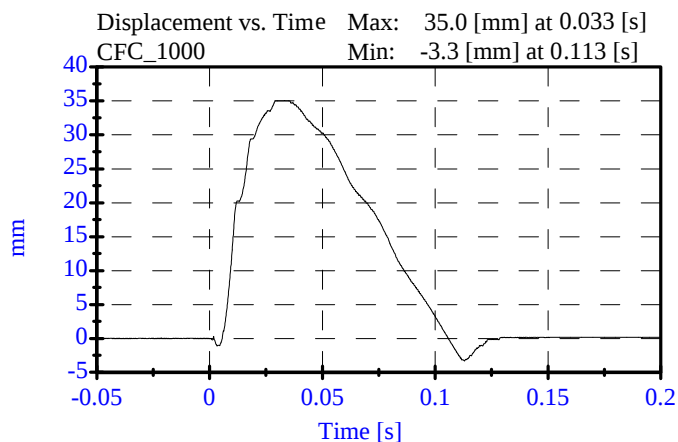
ATD Serial No: 906

Date: July 29, 2005

Sequential Test Number: 1 File: 906SM1 07-29-05

Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Displacement:	32.00-37.00 mm	35.03 mm	Passed
Maximum Force:	1730.00-2099.00 N	2057.25 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

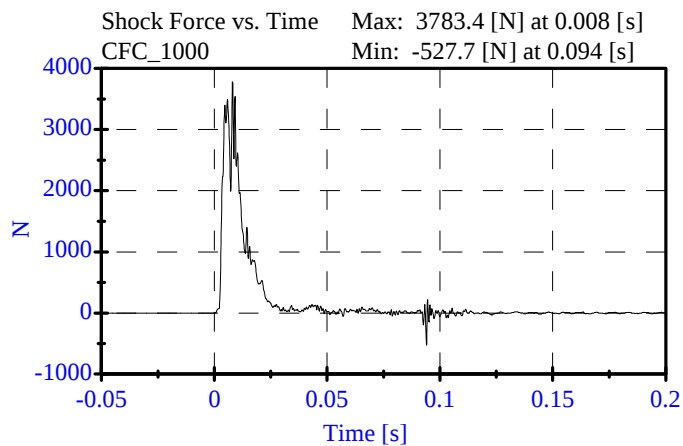
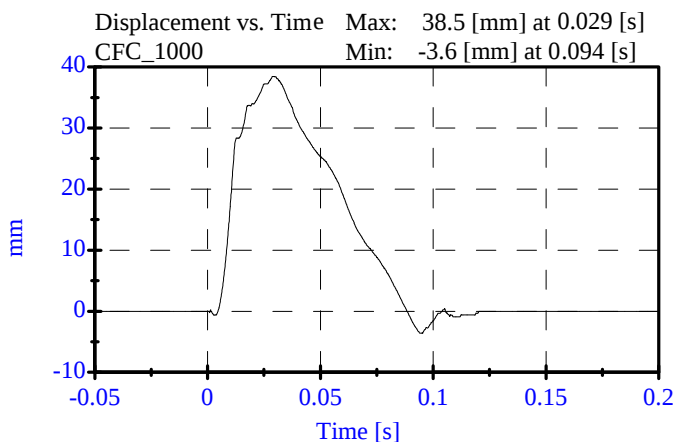
ATD Serial No: 906

Date: July 29, 2005

Sequential Test Number: 1 File: 906SH 07-29-05

Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Displacement:	33.00-40.00 mm	38.46 mm	Passed
Maximum Force:	3741.00-4448.00 N	3783.39 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	906		
Damper Setting:	5		

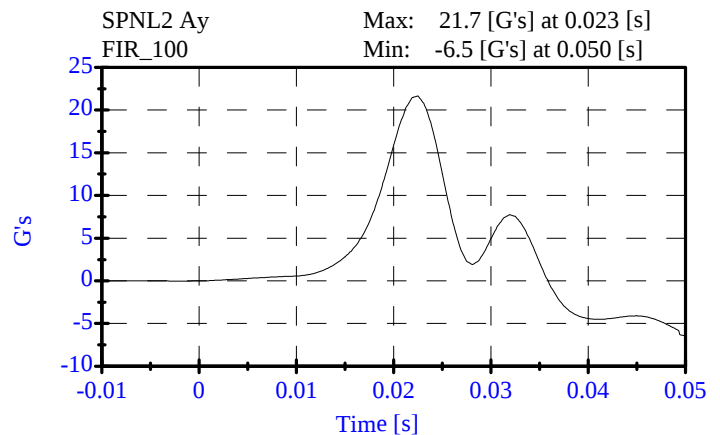
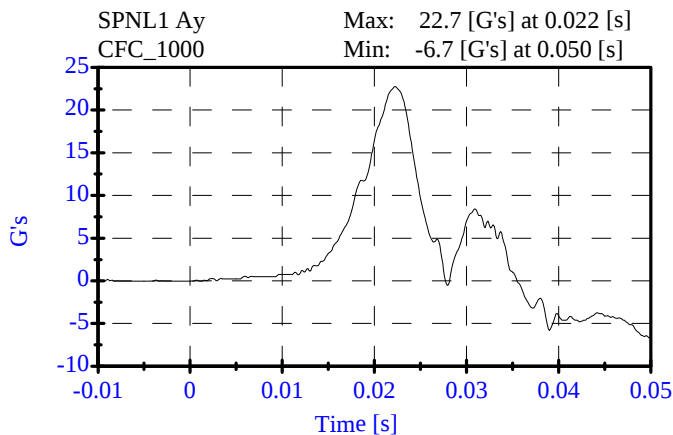
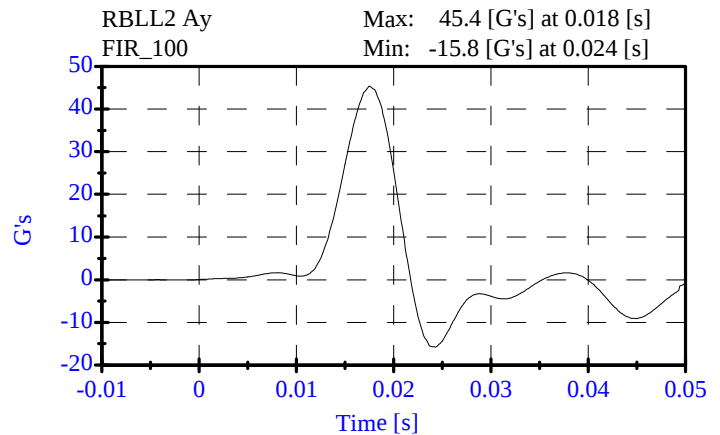
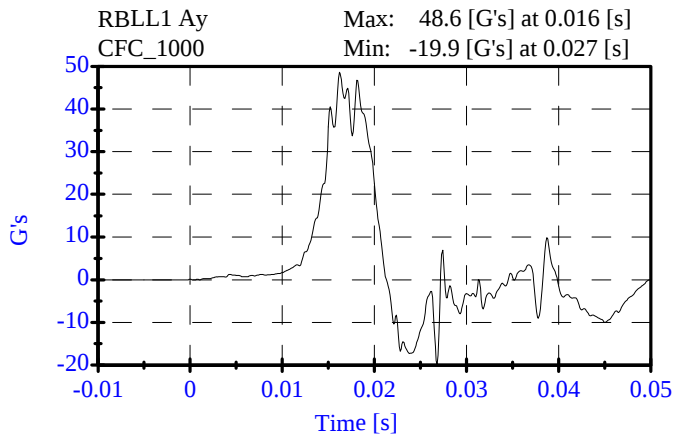
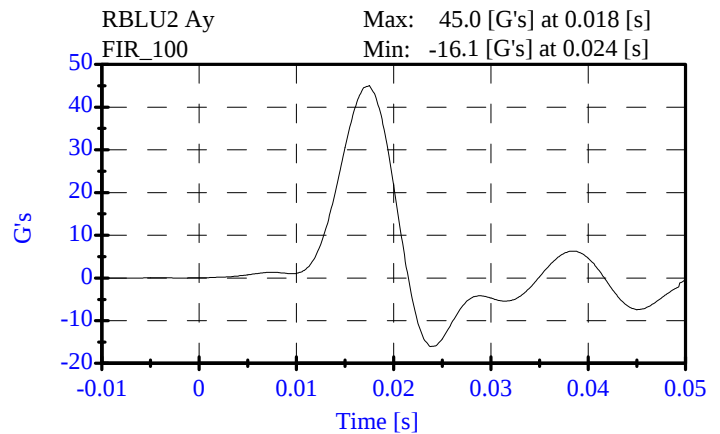
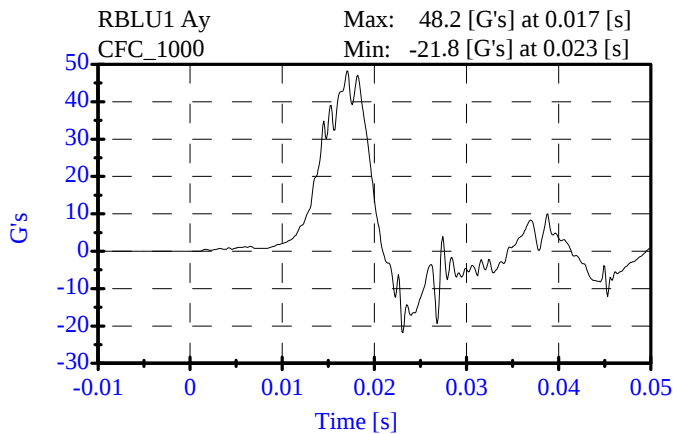


Thorax Impact
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: December 12, 2005

Sequential Test Number: 1 File: 906T 12-12-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.32 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	45.02 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	45.40 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.66 G's	Passed



Pelvic Impact

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

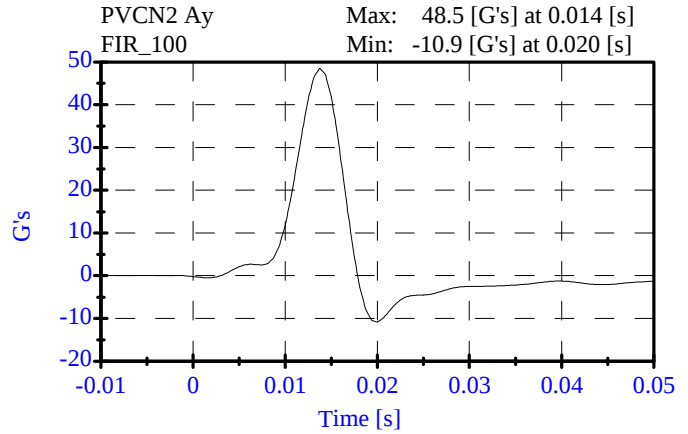
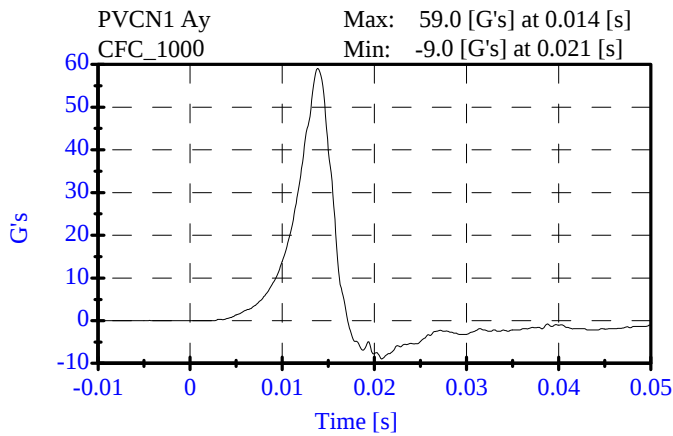
ATD Serial No: 906

Date: December 12, 2005

Sequential Test Number: 1 File: 906P 12-12-05

Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	48.47 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.7 ms	Passed



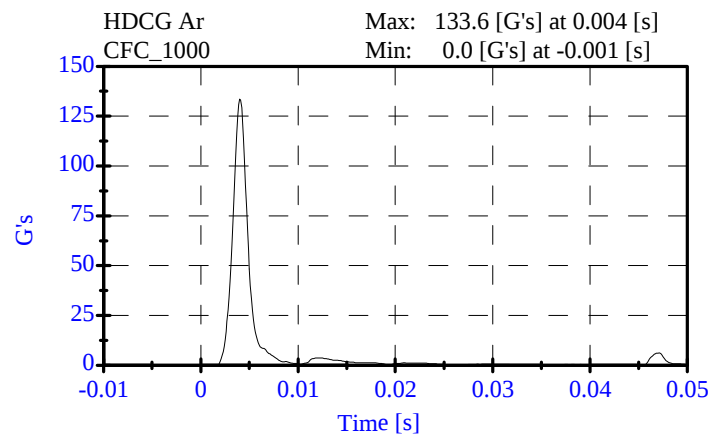
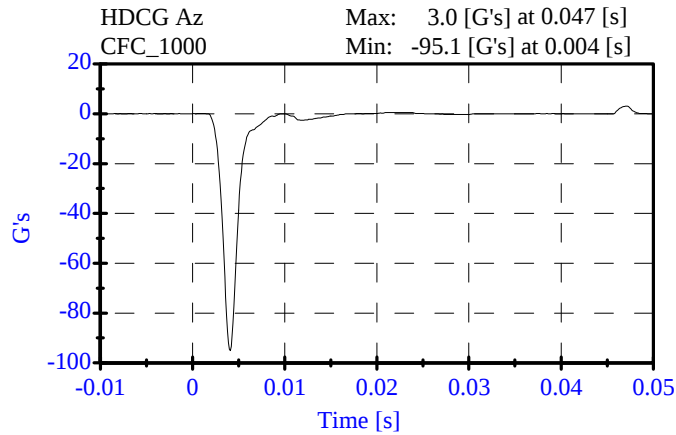
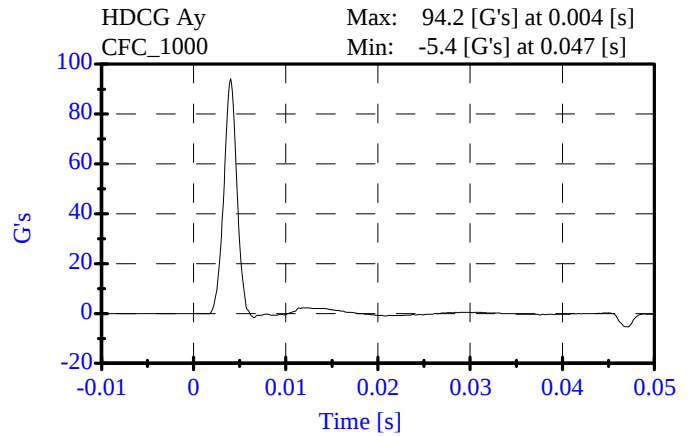
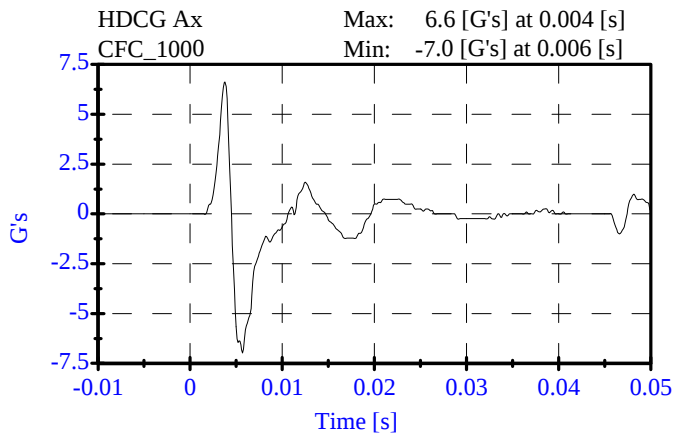
Head Drop Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: December 8, 2005

Sequential Test Number: 1 File: 906H1 12-08-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	133.57 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	6.61 Gs	Passed
Curve PerCent NonModal:	< 15%	4.64 %	Passed



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

ATD Serial No: 906
Date: December 9, 2005

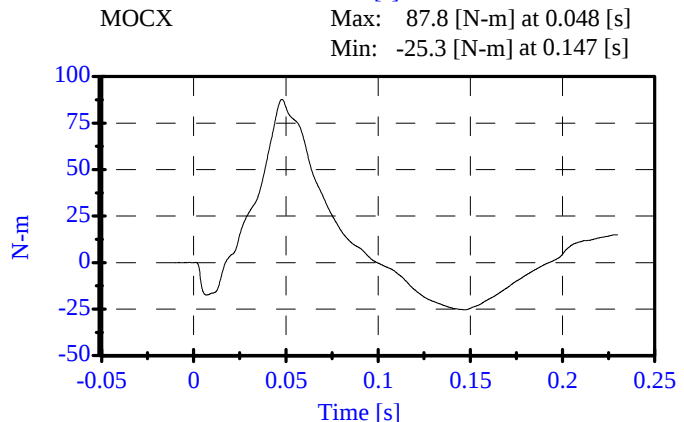
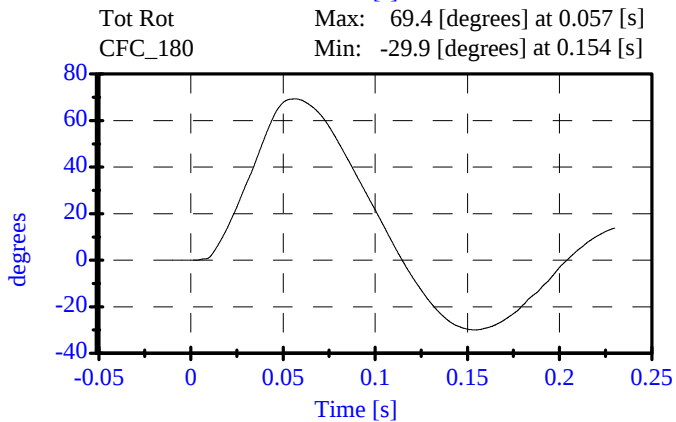
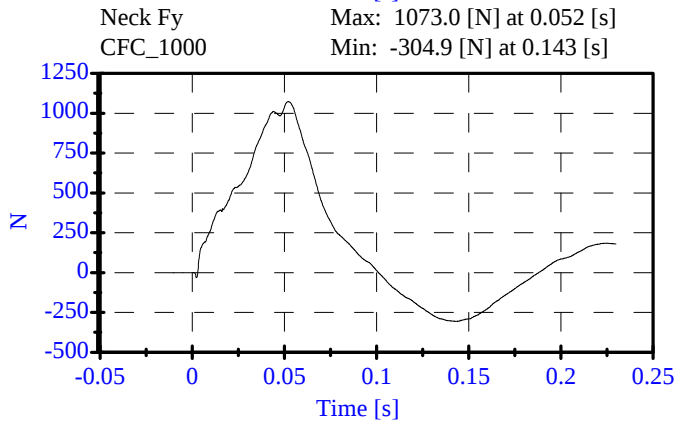
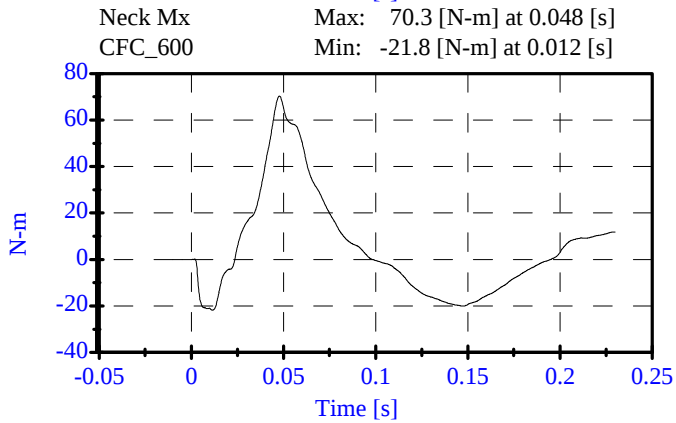
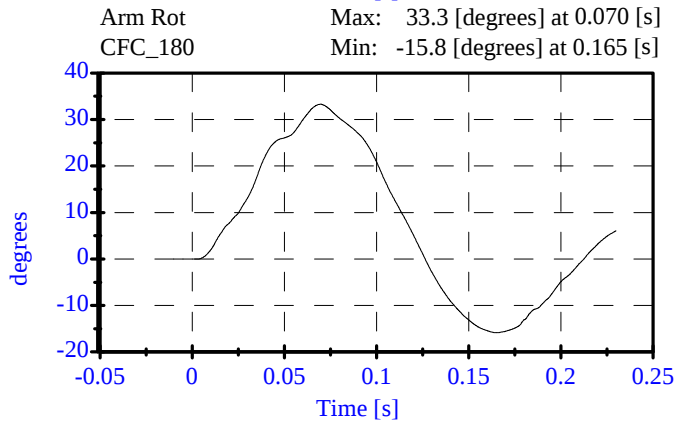
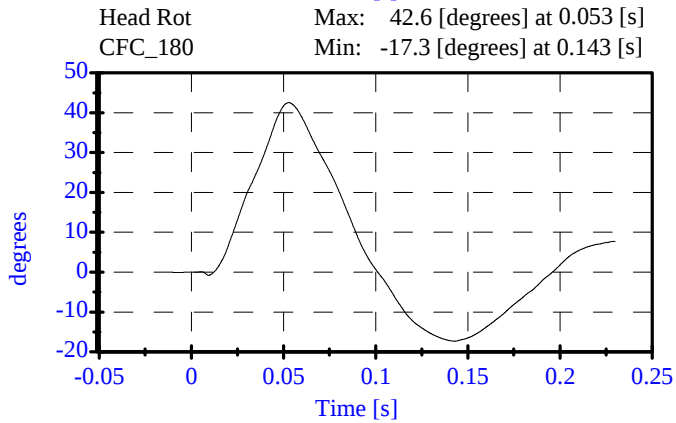
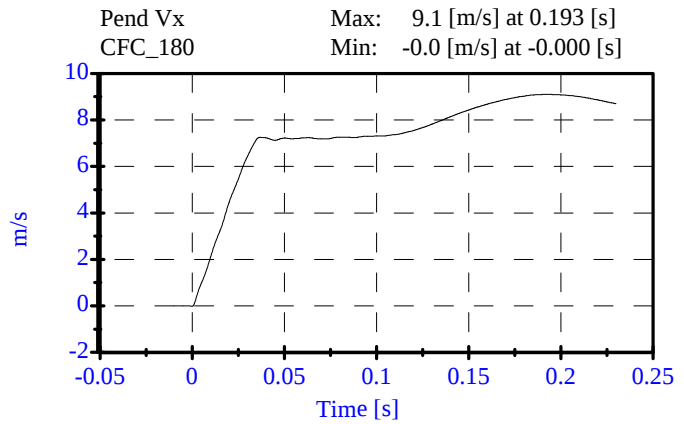
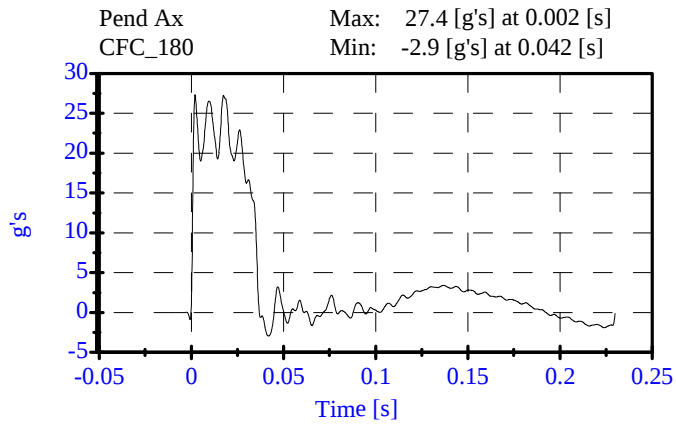
Sequential Test Number: 1 File: 906n1 12-09-05
Laboratory Technician: B. Swiecicki

<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 %	40.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.01 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.12 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	6.44 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.55 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	69.37 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.10 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	87.78 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	51.70 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.80 ms	Passed

Neck Test
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: December 9, 2005

Sequential Test Number: 1 File: 906n1 12-09-05
Laboratory Technician: B. Swiecicki



Abdomen Test

Pre-Test

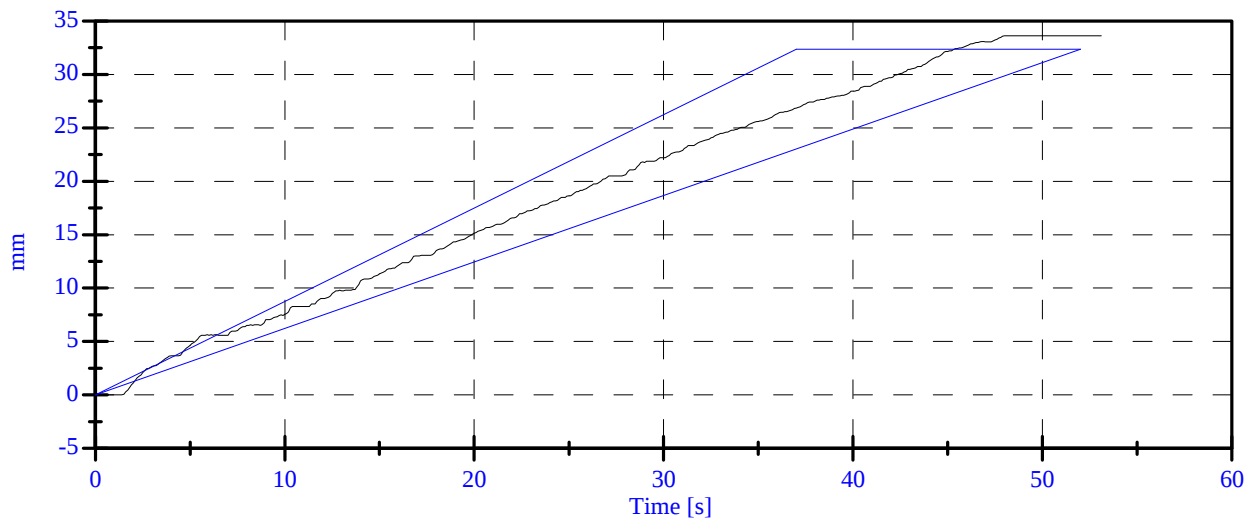
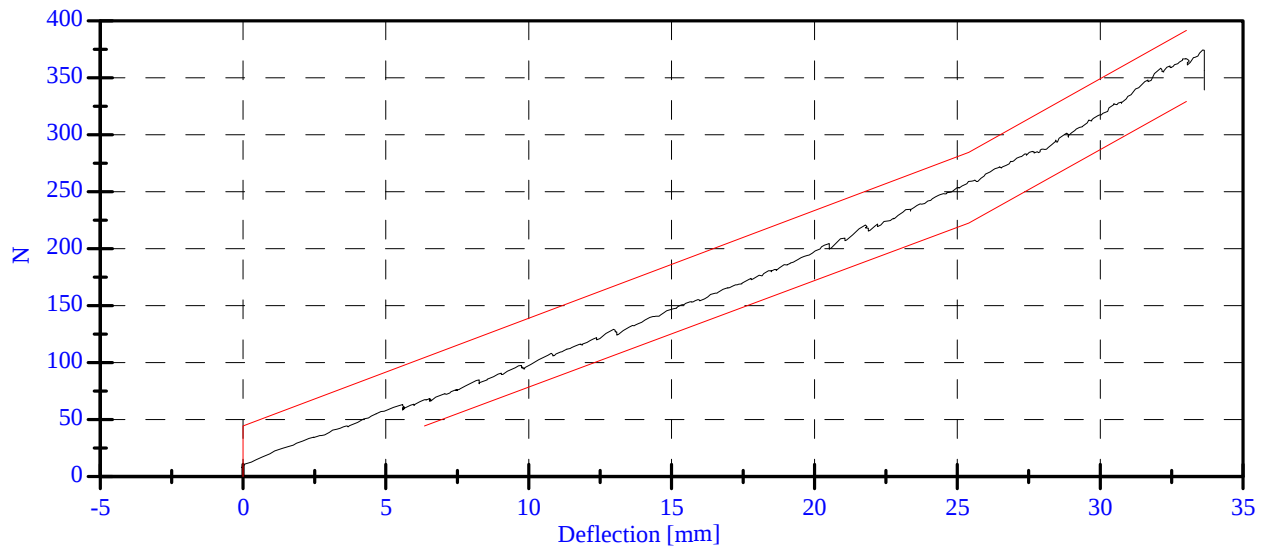
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: December 12, 2005

Sequential Test Number: 1 File: 906ab 12-12-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	129.12 N	Passed
Force at 19.05 mm :	162.98-220.99 N	185.66 N	Passed
Force at 25.40 mm :	221.97-280.02 N	258.89 N	Passed
Force at 33.02 mm :	324.99-391.00 N	366.18 N	Passed

ABDOMINAL COMPRESSION TEST



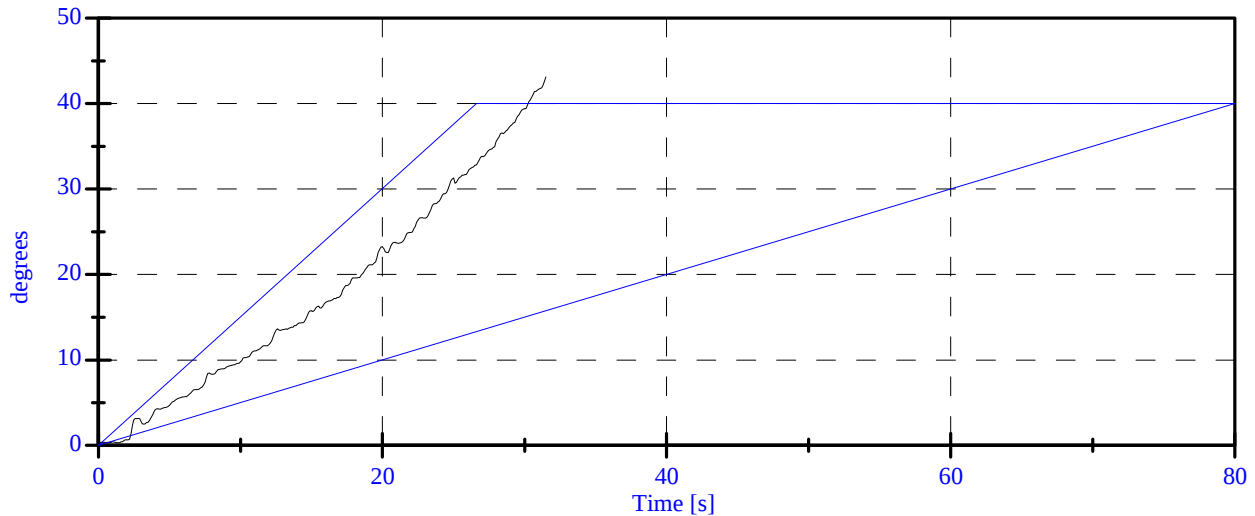
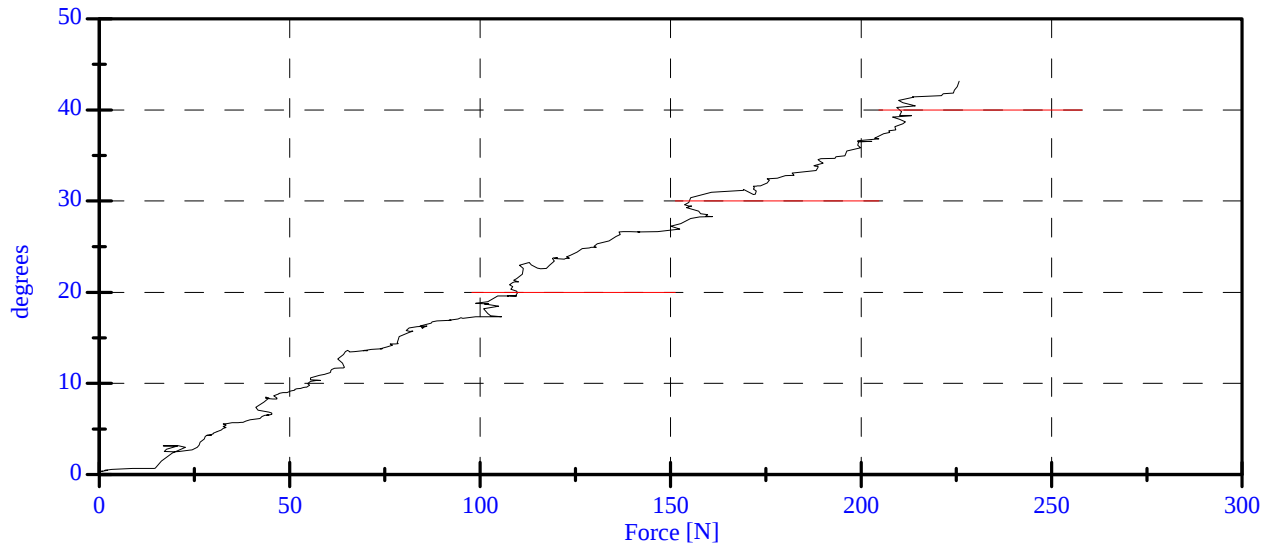
**Lumbar Spine
Pre-Test
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 906
Date: December 12, 2005

Sequential Test Number: 1 File: 906S 12-12-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	0.00 N	Passed
Force at 20 Deg:	97.86-151.24 N	109.82 N	Passed
Force at 30 Deg	151.24-204.62 N	154.74 N	Passed
Force at 40 Deg	204.62-258.00 N	210.63 N	Passed
Return Angle	12 Deg Max	3.64 deg	Passed

LUMBAR SPINE FLEXION TEST



PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 906 Sequential Test Number: 4
Date: December 12, 2005 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: 5
Date: January 4, 2006	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: 5
Date: January 4, 2006 Laboratory Technician: B. Swiecicki

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

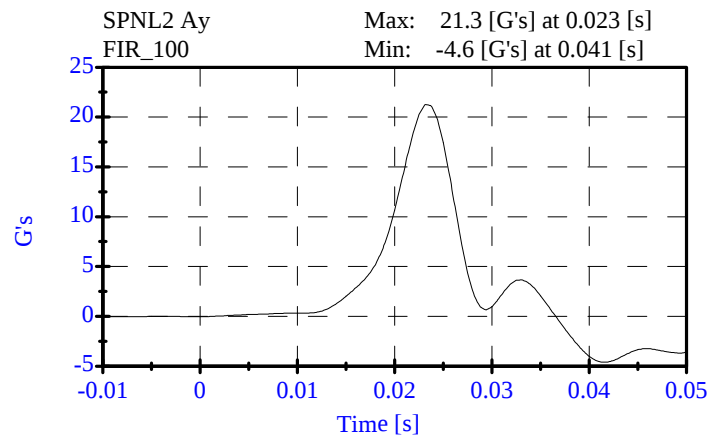
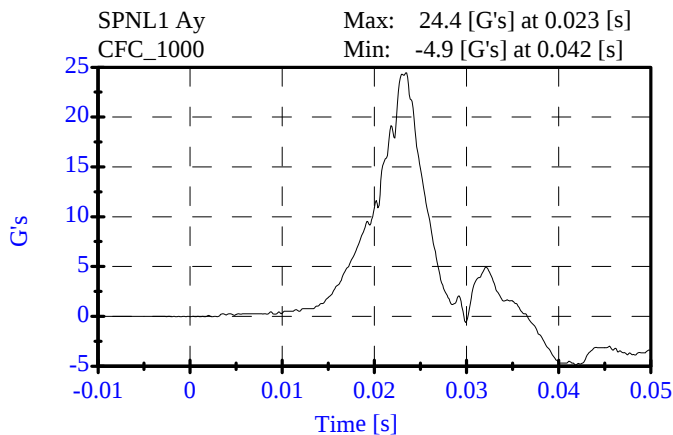
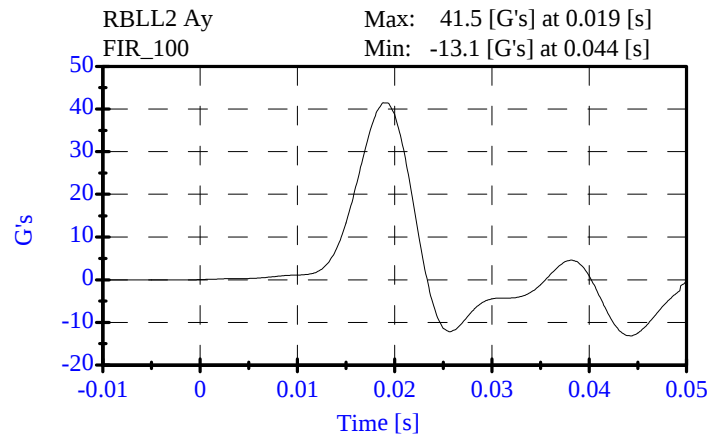
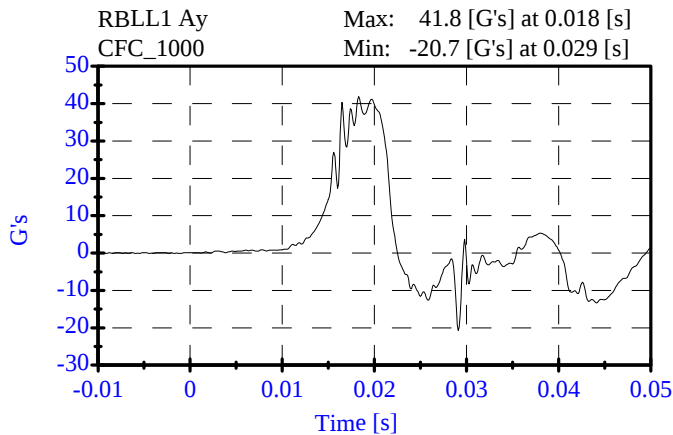
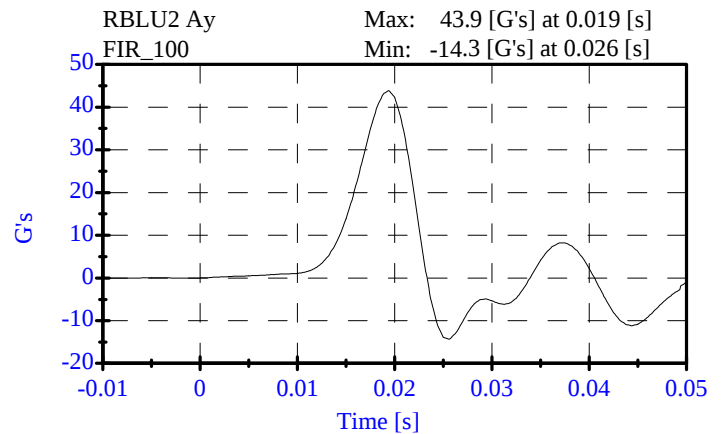
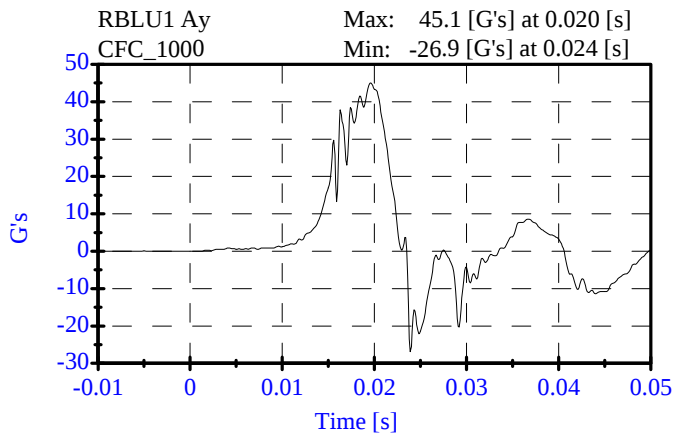
REMARKS: None

Thorax Impact
Post-Test
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: January 4, 2006

Sequential Test Number: 1 File: 905T 01-04-06
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	27.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.33 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	43.88 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	41.48 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.27 G's	Passed



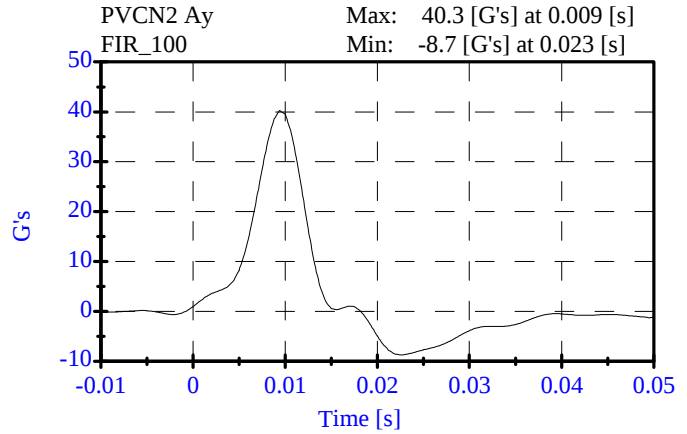
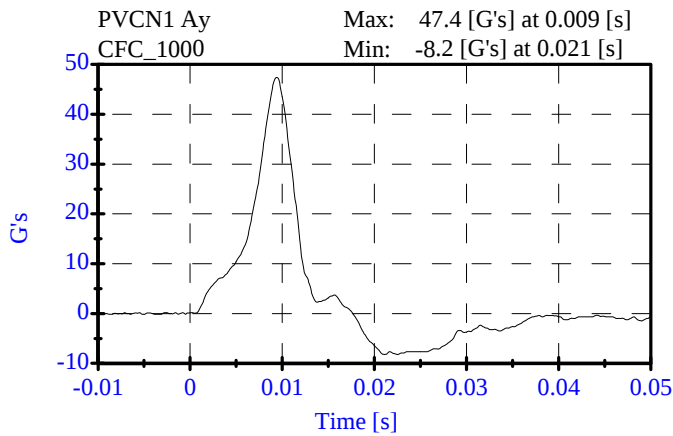
**Pelvic Impact
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: January 4, 2006

Sequential Test Number: 1 File: 905P1 01-04-06
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 %	27.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	40.30 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.6 ms	Passed



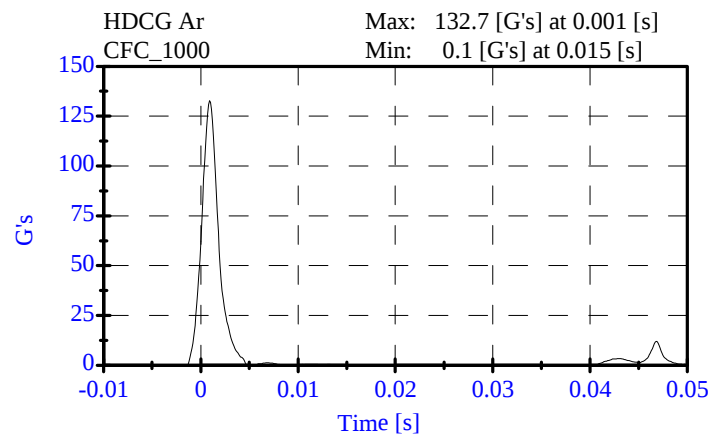
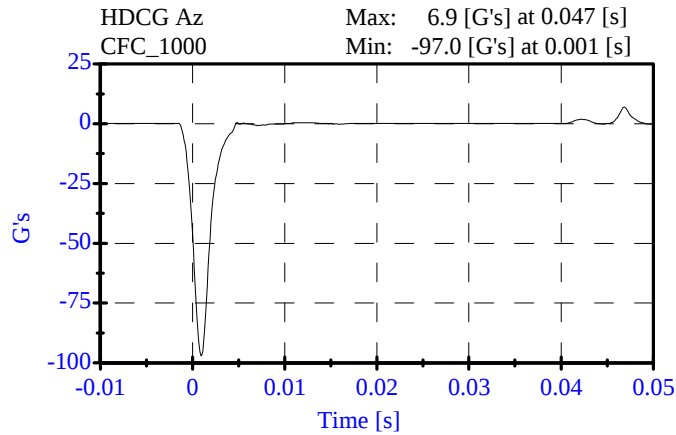
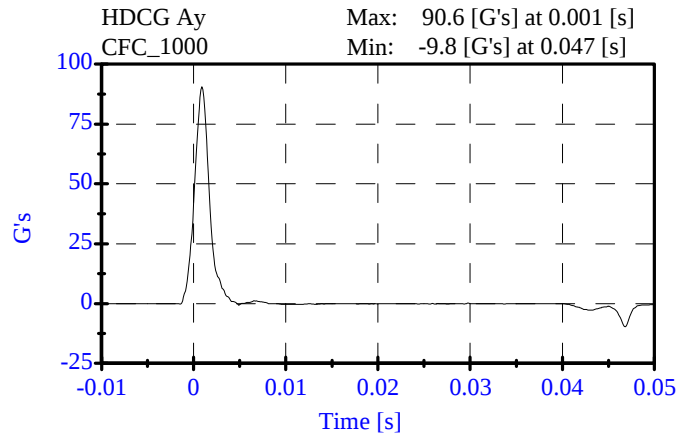
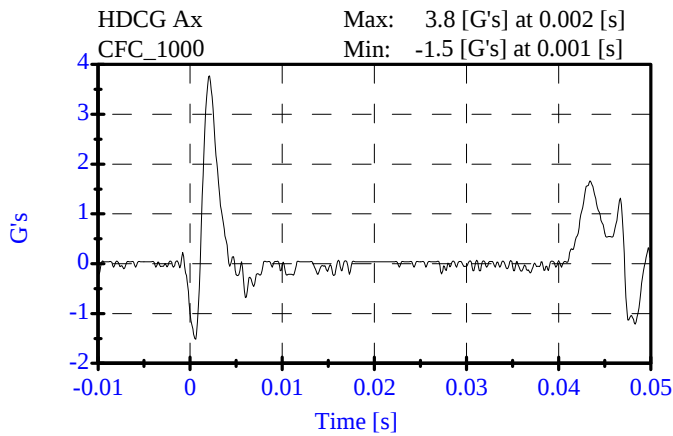
Head Drop **Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: December 22, 2005

Sequential Test Number: 1 File: 905H1 12-22-05
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	38.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	132.73 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	3.77 Gs	Passed
Curve PerCent NonModal:	< 15%	9.06 %	Passed



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

ATD Serial No: 905
Date: January 3, 2006

Sequential Test Number: 1 File: 905N 01-03-06
Laboratory Technician: B. Swiecicki

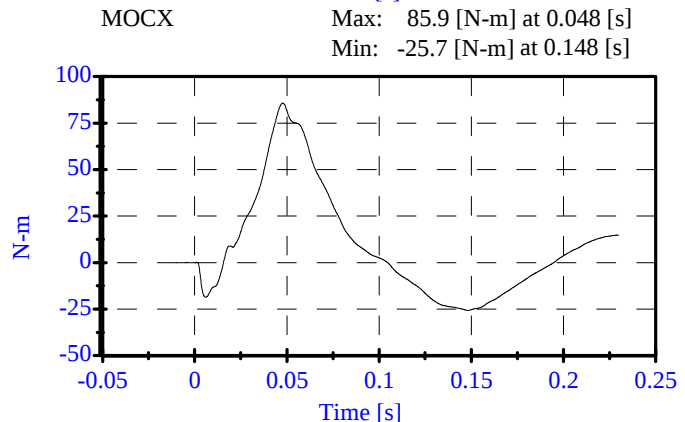
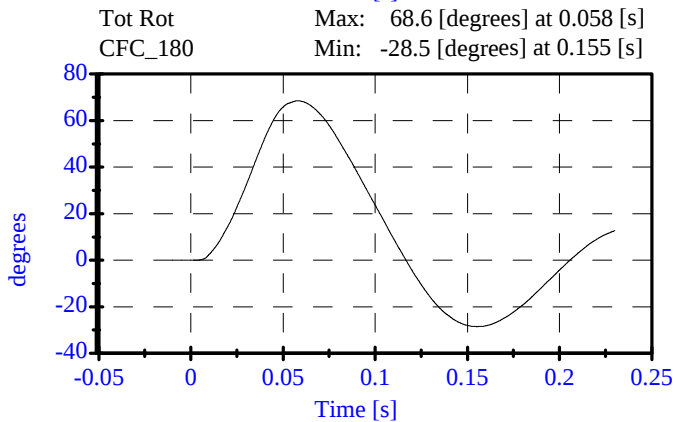
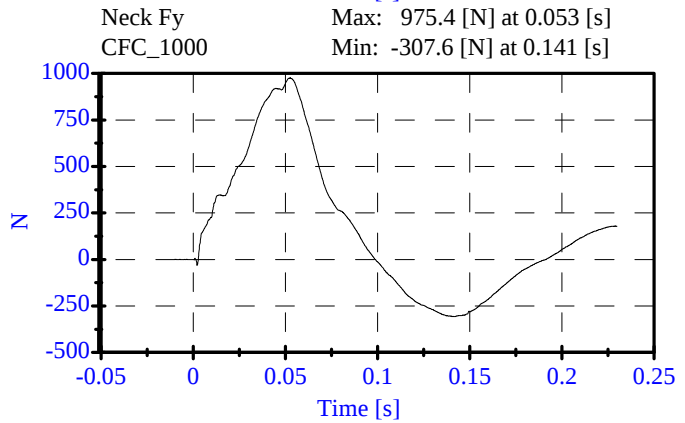
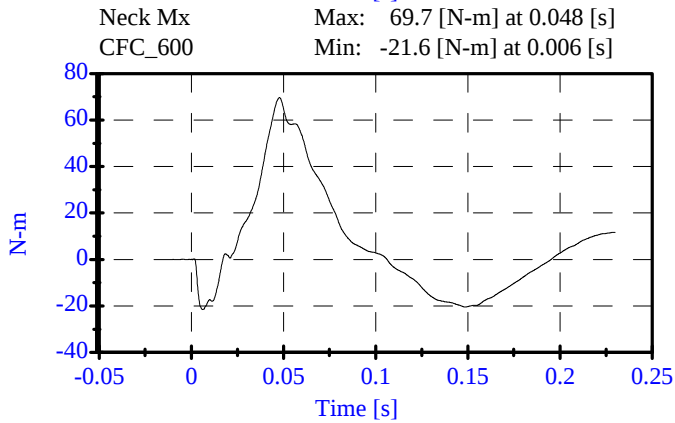
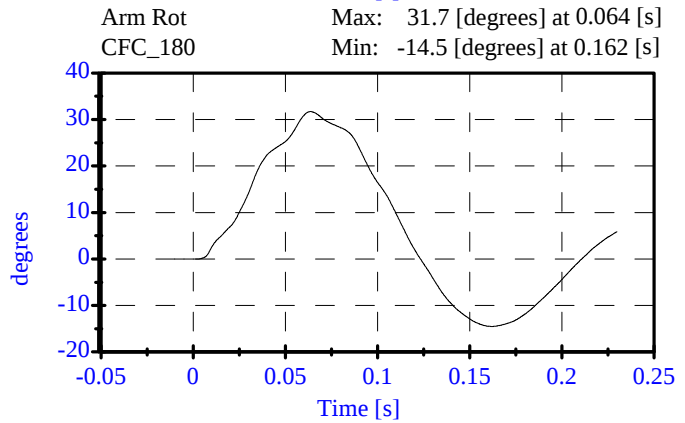
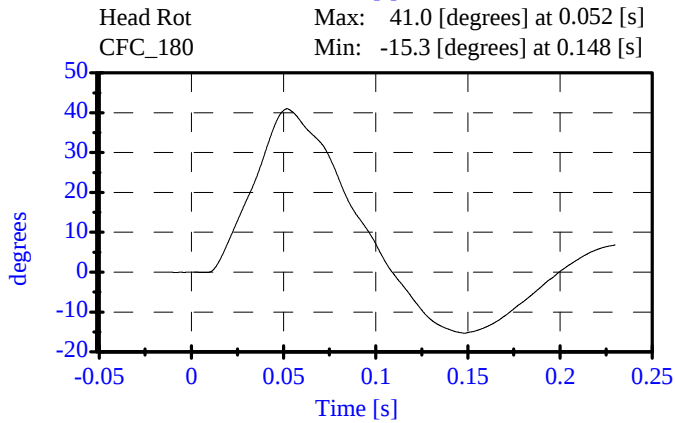
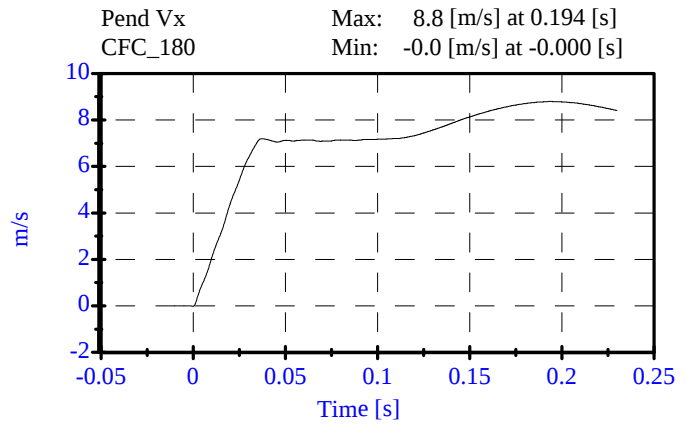
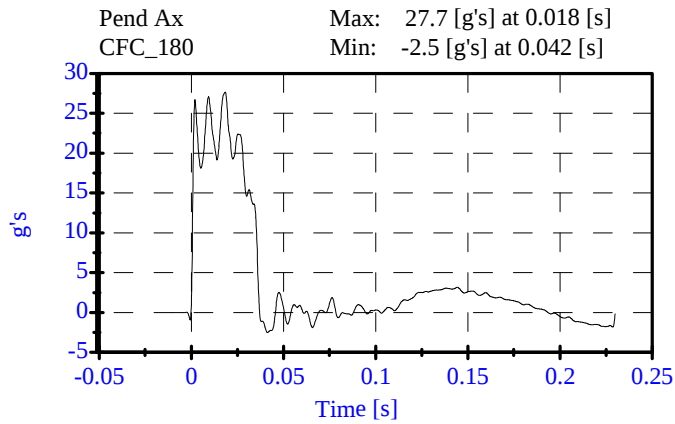
<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.01 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.07 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.39 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.38 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.33 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	68.55 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	85.87 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	56.90 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	10.10 ms	Passed

Neck Test
Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: January 3, 2006

Sequential Test Number: 1 File: 905N 01-03-06
Laboratory Technician: B. Swiecicki



Abdomen Test

Post-Test

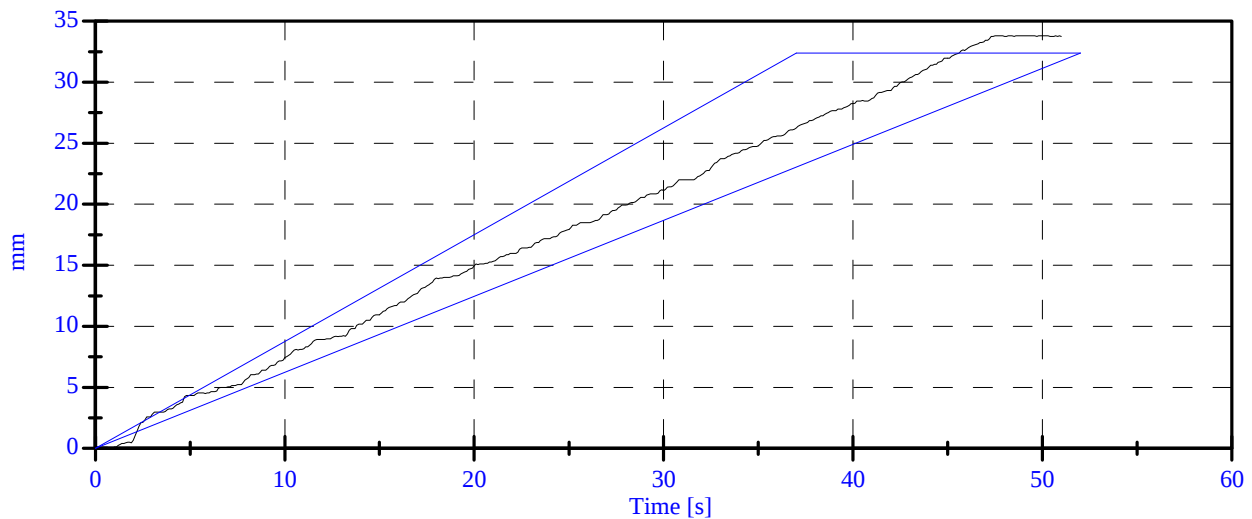
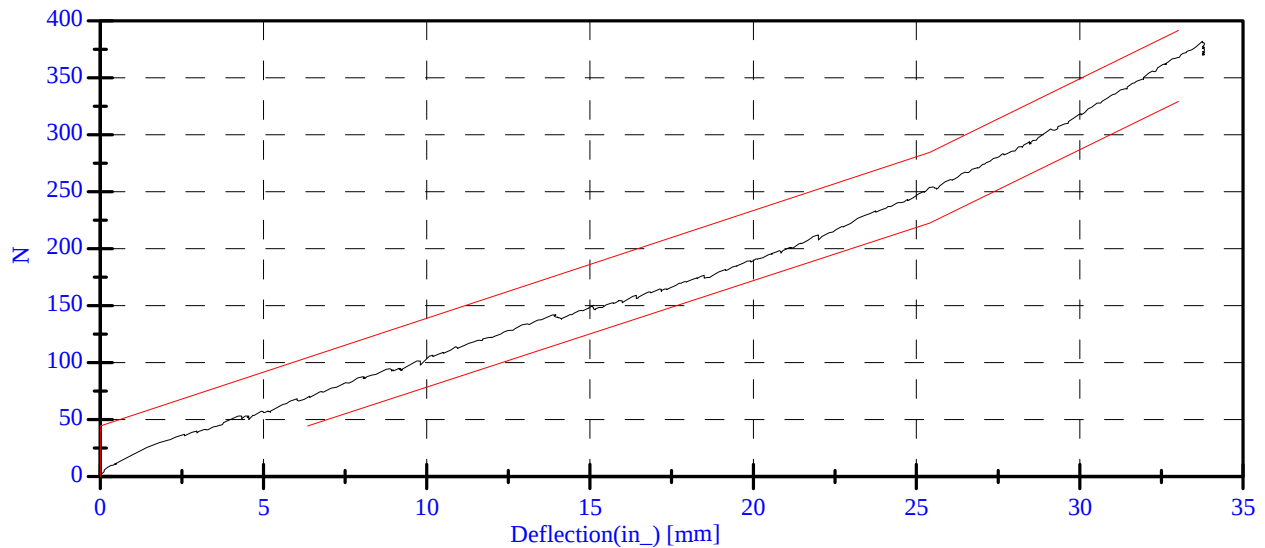
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: January 4, 2006

Sequential Test Number: 1 File: 905A 01-04-06
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	133.10 N	Passed
Force at 19.05 mm :	162.98-220.99 N	181.68 N	Passed
Force at 25.40 mm :	221.97-280.02 N	253.45 N	Passed
Force at 33.02 mm :	324.99-391.00 N	367.99 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine

Post-Test

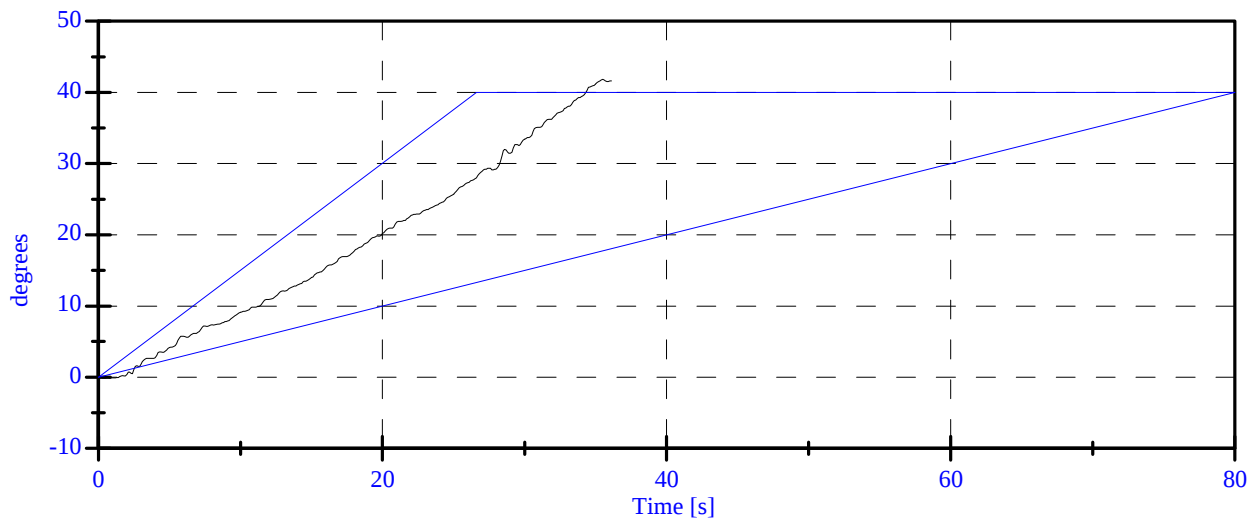
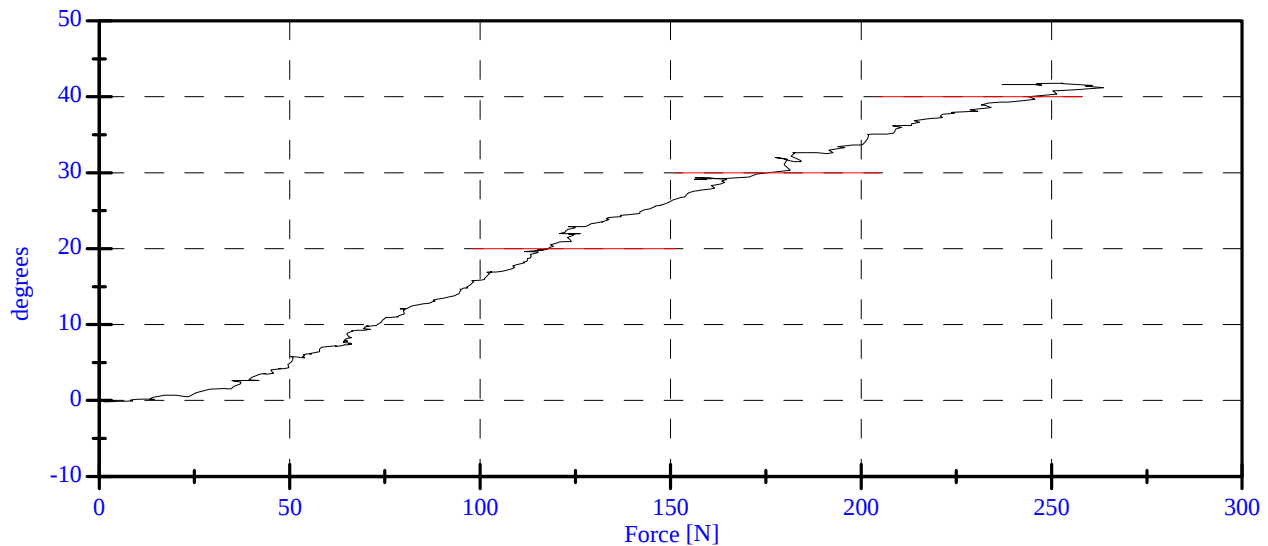
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 905
Date: January 4, 2006

Sequential Test Number: 1 File: 905S 01-04-06
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	7.97 N	Passed
Force at 20 Deg:	97.86-151.24 N	117.65 N	Passed
Force at 30 Deg	151.24-204.62 N	172.50 N	Passed
Force at 40 Deg	204.62-258.00 N	244.05 N	Passed
Return Angle	12 Deg Max	2.75 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 905 Sequential Test Number: 5
 Date: January 4, 2006 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: 5
Date: January 4, 2006	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: 5
Date: January 4, 2006 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	907
RH- Rib Height (mm)	502 - 520	516
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	241
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	381

REMARKS: None

Thorax Impact

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

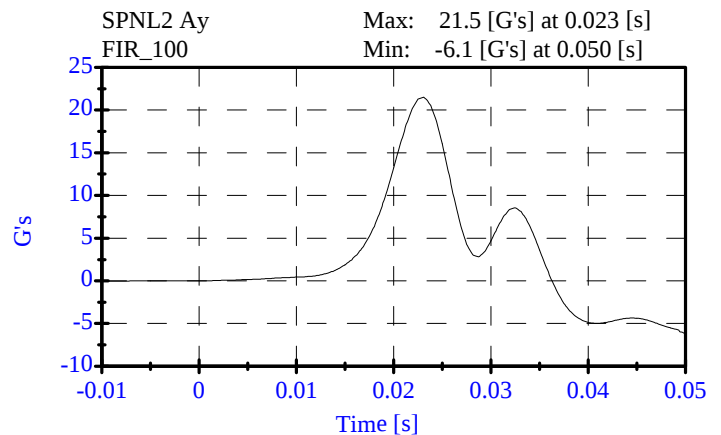
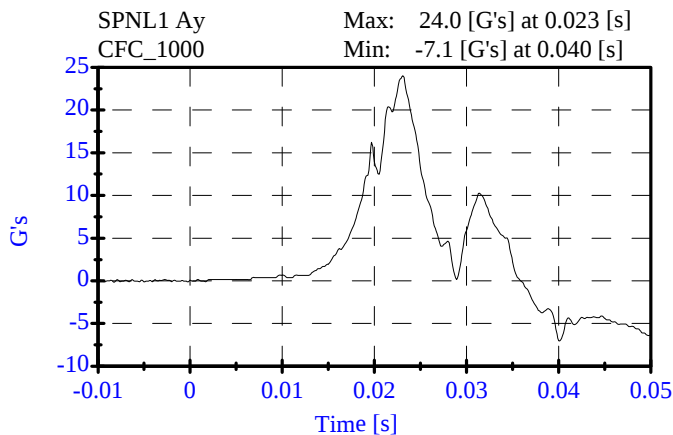
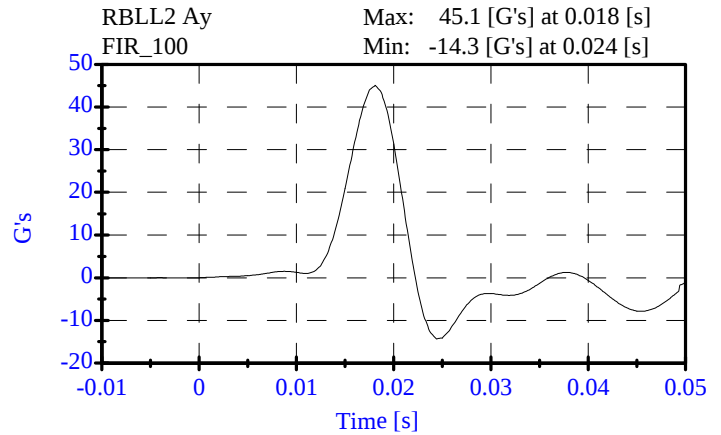
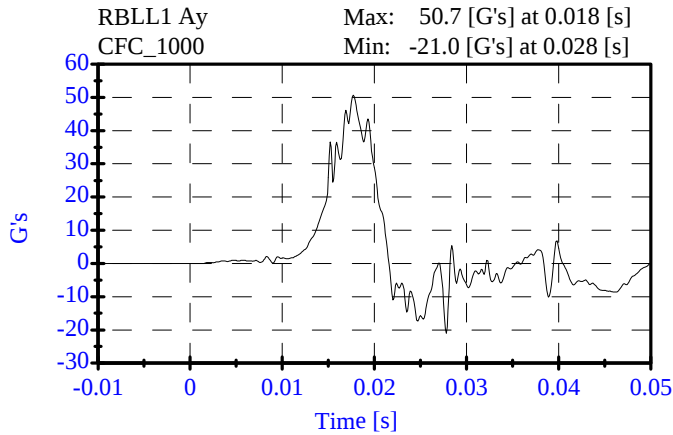
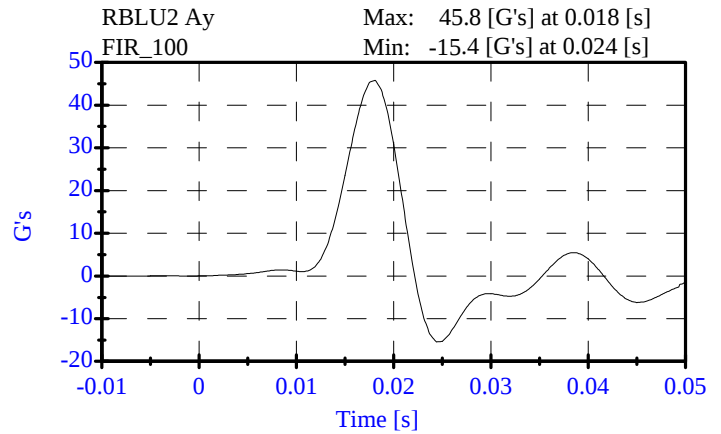
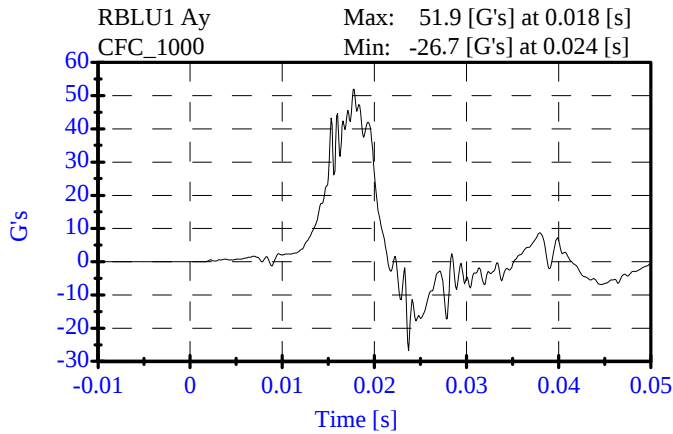
ATD Serial No: 906

Date: January 4, 2006

Sequential Test Number: 1 File: 906T 01-04-06

Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	27.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.33 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	45.81 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	45.08 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.52 G's	Passed



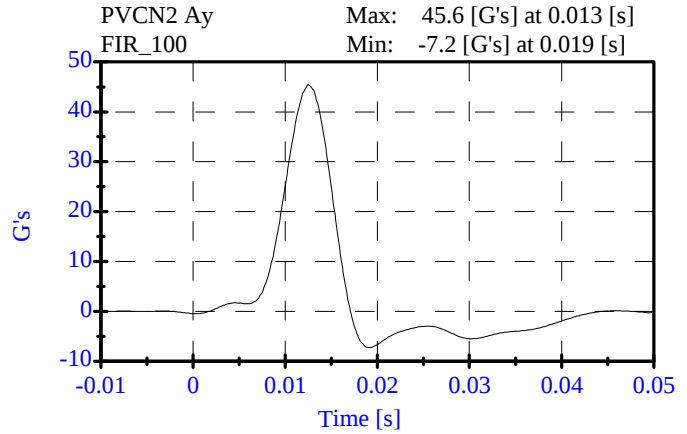
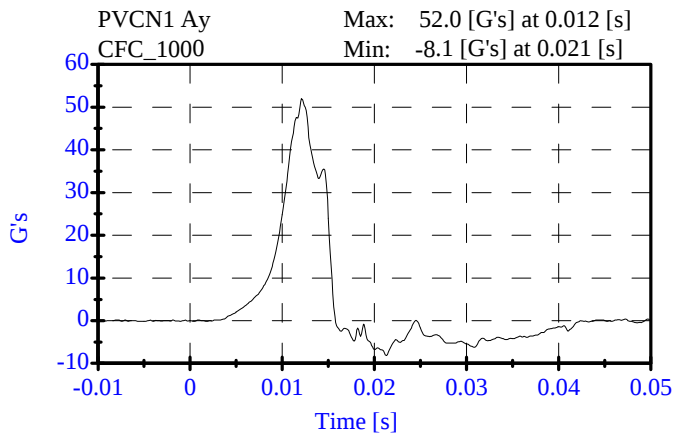
**Pelvic Impact
Post-Test**

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: January 4, 2006

Sequential Test Number: 1 File: 906P 01-04-06
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 %	27.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	45.56 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.8 ms	Passed



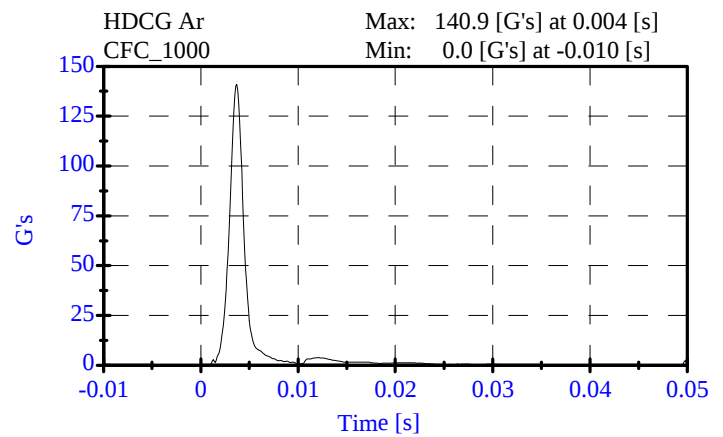
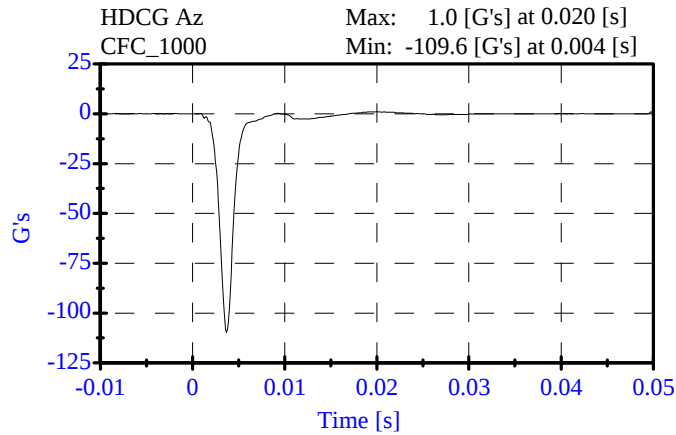
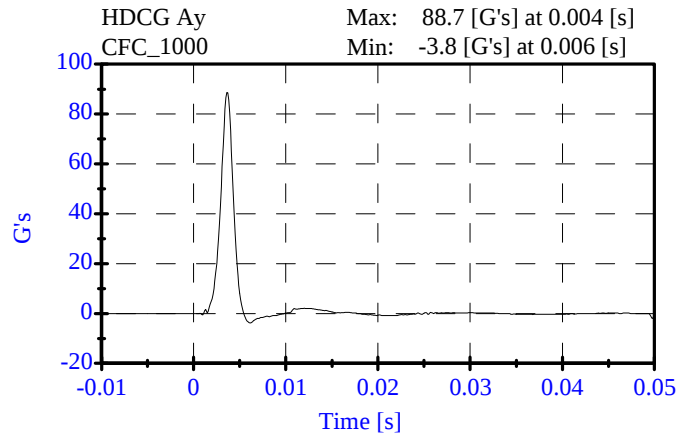
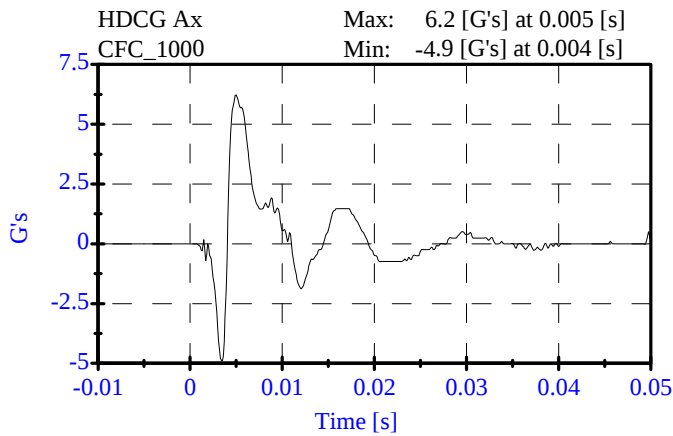
Head Drop Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: January 2, 2006

Sequential Test Number: 1 File: 906H1 01-02-06
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	140.92 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	6.21 Gs	Passed
Curve PerCent NonModal:	< 15%	2.76 %	Passed



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

ATD Serial No: 906
Date: January 2, 2006

Sequential Test Number: 1 File: 906N1 01-02-06
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 %	29.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.01 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.06 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.36 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.37 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.48 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.39 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.40 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	86.90 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	51.70 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.80 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

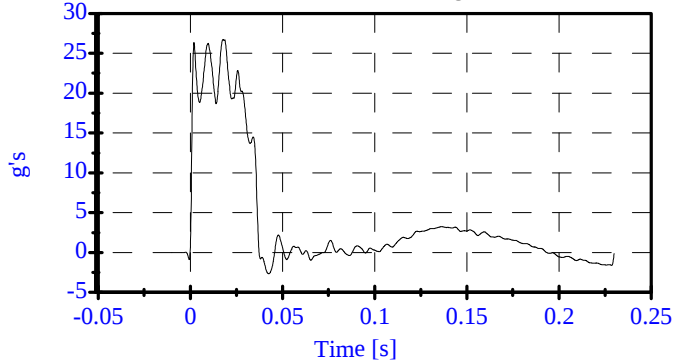
ATD Serial No: 906

Date: January 2, 2006

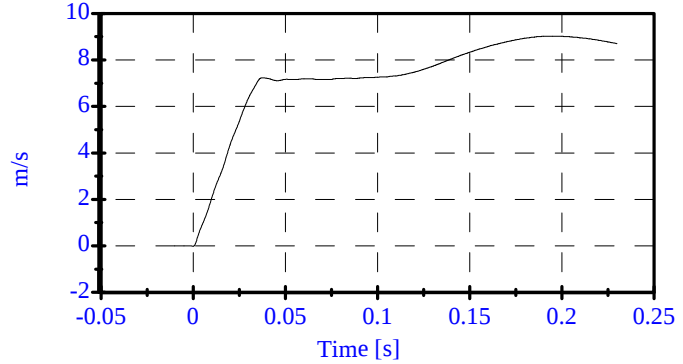
Sequential Test Number: 1 File: 906N1 01-02-06

Laboratory Technician: B. Swiecicki

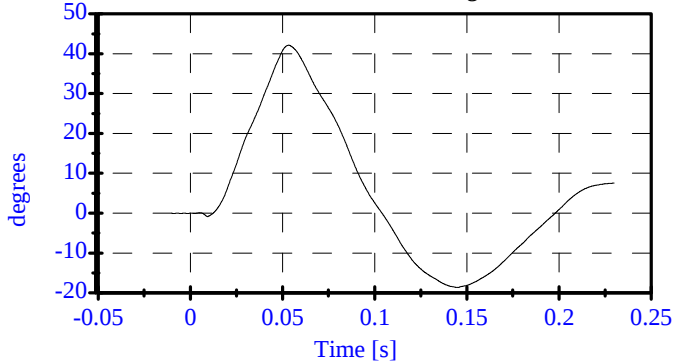
Pend Ax
CFC_180
Max: 26.7 [g's] at 0.018 [s]
Min: -2.7 [g's] at 0.043 [s]



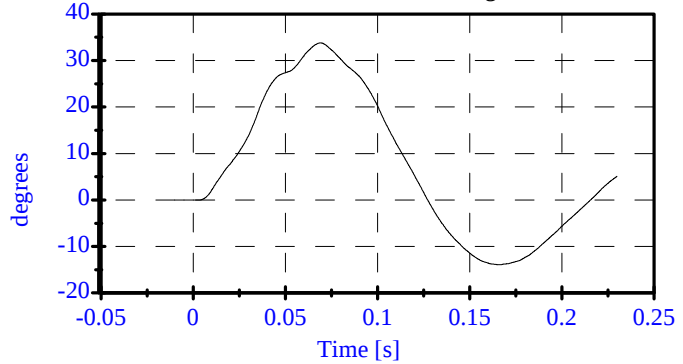
Pend Vx
CFC_180
Max: 9.0 [m/s] at 0.194 [s]
Min: -0.0 [m/s] at -0.000 [s]



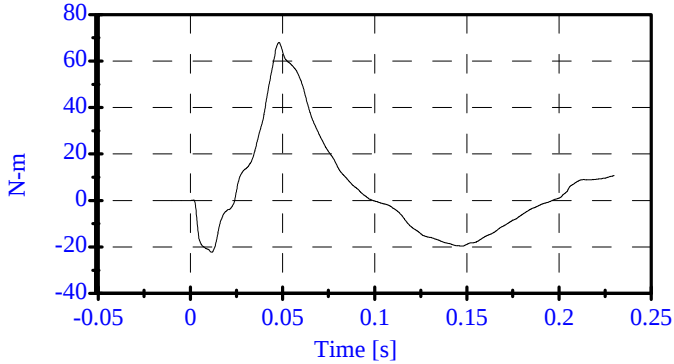
Head Rot
CFC_180
Max: 42.2 [degrees] at 0.053 [s]
Min: -18.6 [degrees] at 0.145 [s]



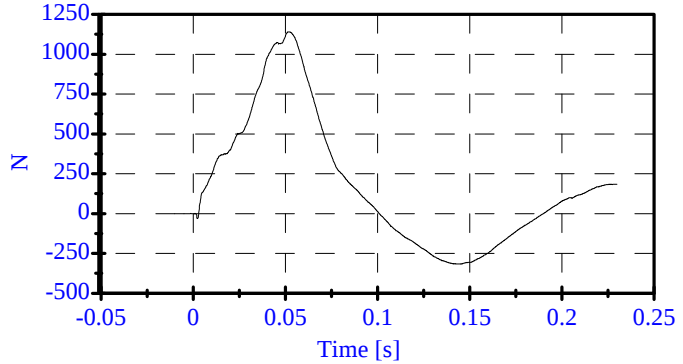
Arm Rot
CFC_180
Max: 33.8 [degrees] at 0.069 [s]
Min: -13.9 [degrees] at 0.166 [s]



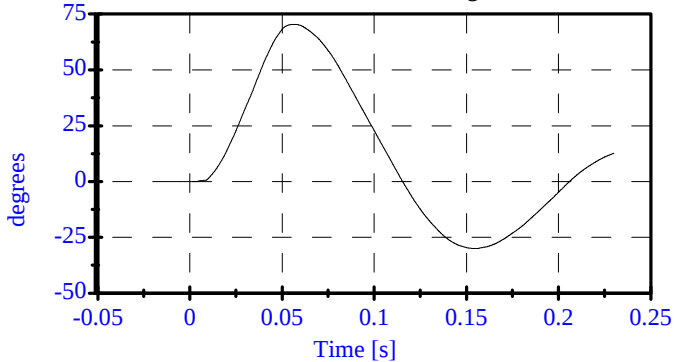
Neck Mx
CFC_600
Max: 67.9 [N-m] at 0.048 [s]
Min: -22.3 [N-m] at 0.012 [s]



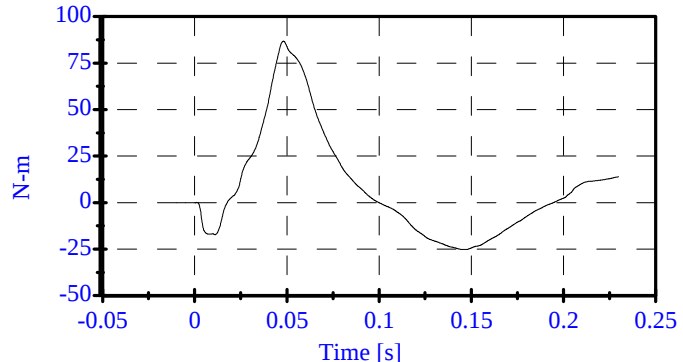
Neck Fy
CFC_1000
Max: 1140.7 [N] at 0.051 [s]
Min: -314.3 [N] at 0.141 [s]



Tot Rot
CFC_180
Max: 70.4 [degrees] at 0.057 [s]
Min: -29.9 [degrees] at 0.155 [s]



MOCX
Max: 86.9 [N-m] at 0.048 [s]
Min: -25.1 [N-m] at 0.147 [s]



Abdomen Test

Post-Test

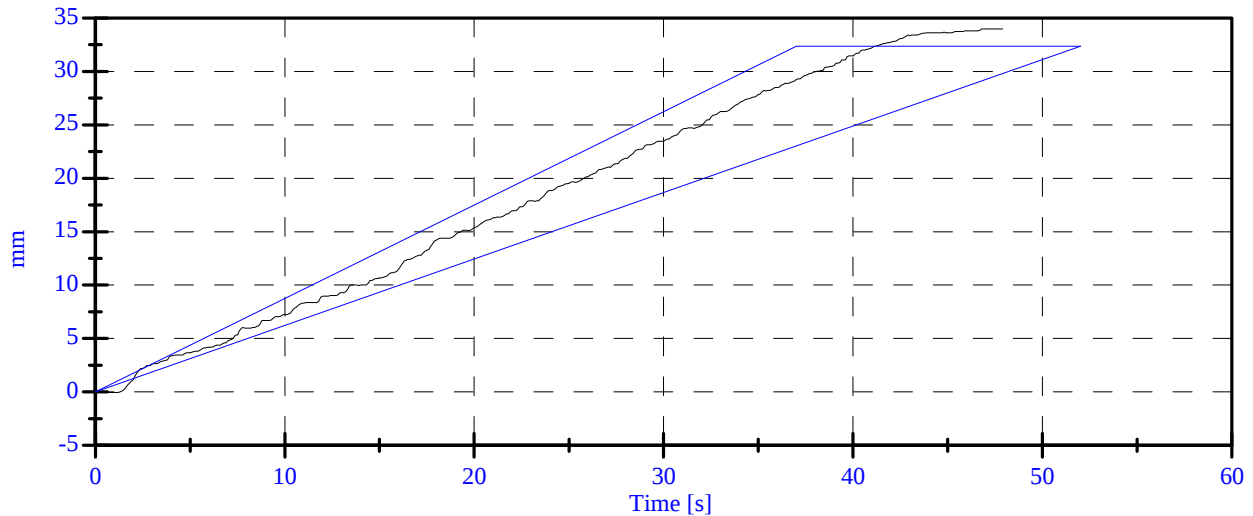
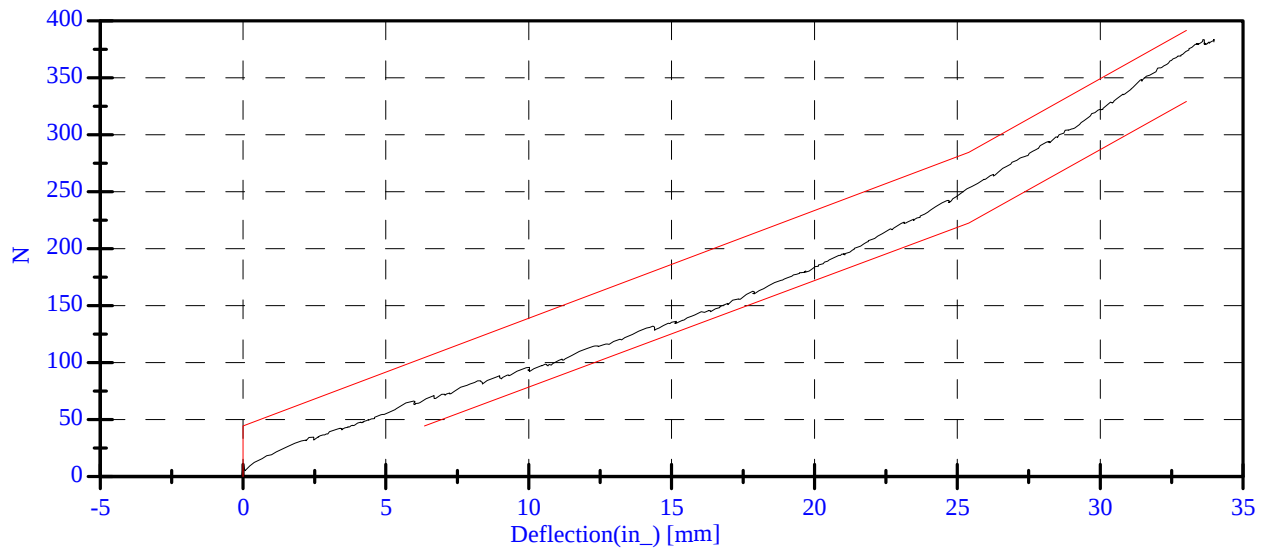
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: January 4, 2006

Sequential Test Number: 1 File: 906A 01-04-06
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	118.60 N	Passed
Force at 19.05 mm :	162.98-220.99 N	174.43 N	Passed
Force at 25.40 mm :	221.97-280.02 N	252.72 N	Passed
Force at 33.02 mm :	324.99-391.00 N	373.07 N	Passed

ABDOMINAL COMPRESSION TEST



Lumbar Spine

Post-Test

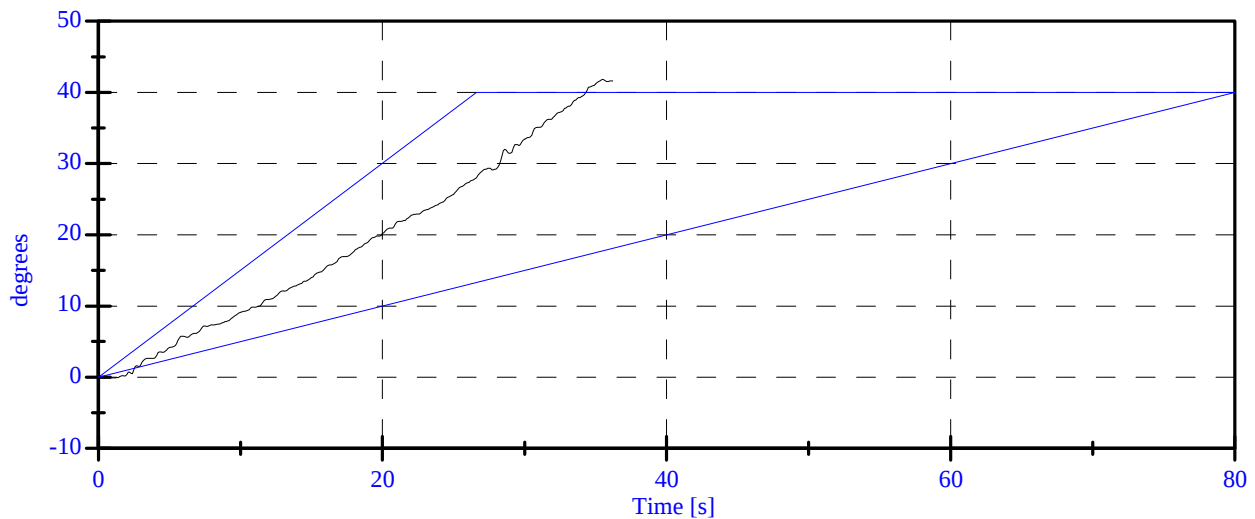
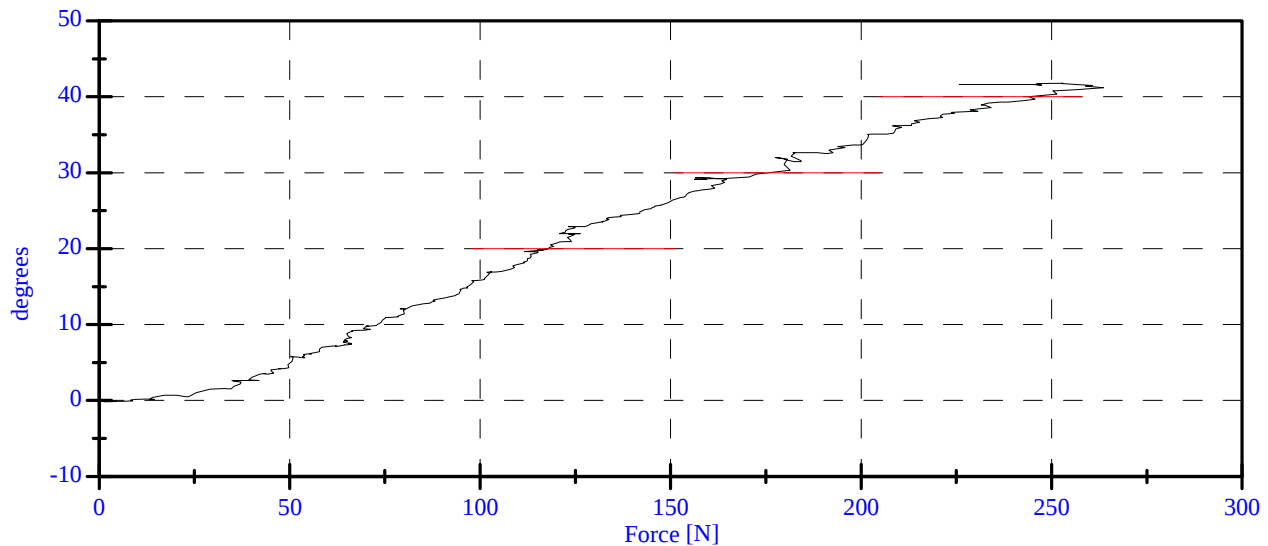
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 906
Date: January 4, 2006

Sequential Test Number: 1 File: 906S 01-04-06
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	29.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	7.97 N	Passed
Force at 20 Deg:	97.86-151.24 N	117.65 N	Passed
Force at 30 Deg	151.24-204.62 N	172.50 N	Passed
Force at 40 Deg	204.62-258.00 N	244.05 N	Passed
Return Angle	12 Deg Max	2.75 deg	Passed

LUMBAR SPINE FLEXION TEST



POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

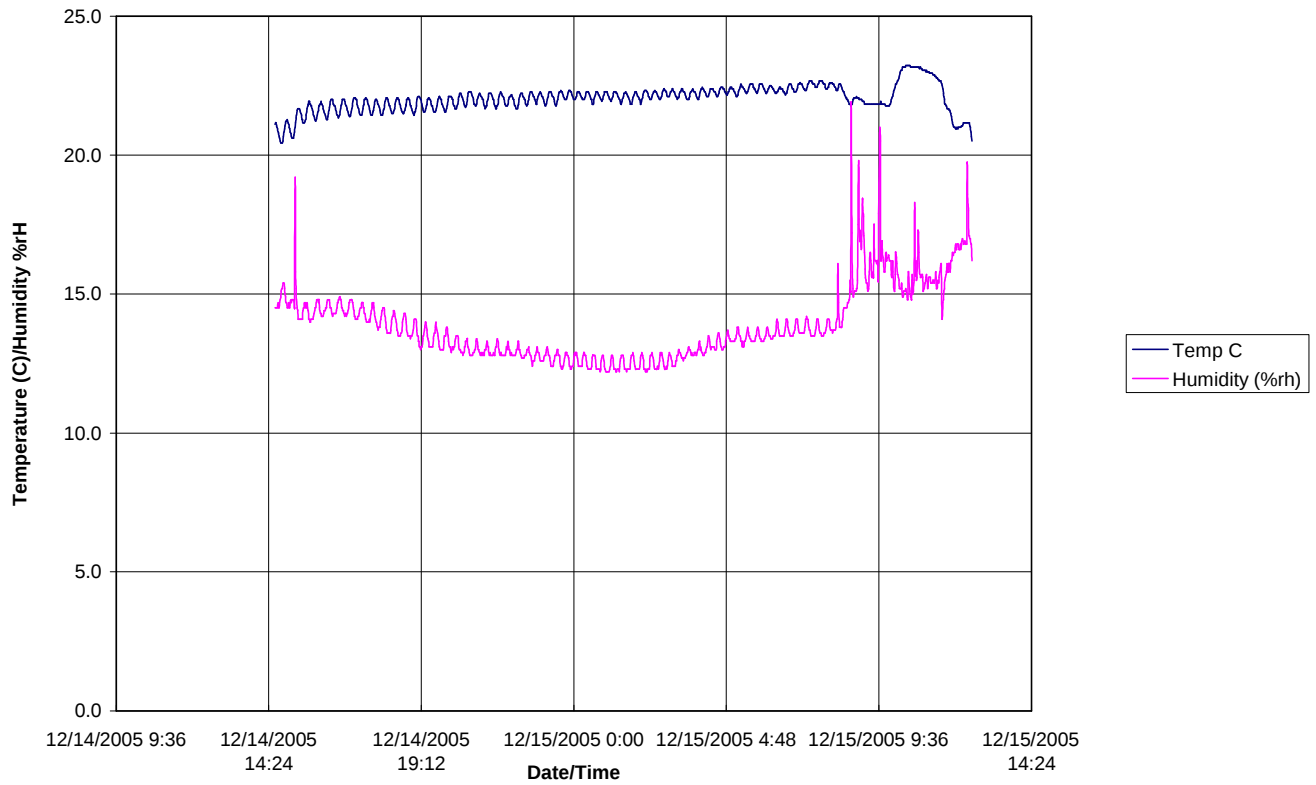
SID H3 Serial No.: 906 Sequential Test Number: _____
 Date: January 4, 2006 Laboratory Technician: B. Swiecicki

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

M60102 Side Impact NCAP Temperature Trace



APPENDIX D

TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID/HIII INSTRUMENTATION

	FRONT SID/HIII NO.: 905		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P21373	ENDEVCO	13-Jul-05
HEAD AY	AC-P23128	ENDEVCO	13-Jul-05
HEAD AZ	AC-P21297	ENDEVCO	13-Jul-05
UPPER NECK FX	LC-1626Fx	DENTON	25-Jun-05
UPPER NECK FY	LC-1626Fy	DENTON	25-Jun-05
UPPER NECK FZ	LC-1626Fz	DENTON	25-Jun-05
UPPER NECK MX	LC-1626Mx	DENTON	25-Jun-05
UPPER NECK MY	LC-1626My	DENTON	25-Jun-05
UPPER NECK MZ	LC-1626Mz	DENTON	25-Jun-05
UPPER RIB	AC-P15736	ENDEVCO	14-Jul-05
LOWER RIB	AC-P16289	ENDEVCO	14-Jul-05
LOWER SPINE	AC-P16761	ENDEVCO	14-Jul-05
PELVIS	AC-P23960	ENDEVCO	14-Jul-05
UPPER RIB REDUNDANT	AC-P16593	ENDEVCO	14-Jul-05
LOWER RIB REDUNDANT	AC-P23142	ENDEVCO	14-Jul-05
LOWER SPINE REDUNDANT	AC-P21516	ENDEVCO	14-Jul-05
PELVIS REDUNDANT	AC-P32221	ENDEVCO	14-Jul-05

	REAR SID/HIII NO.: 906		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P23788	ENDEVCO	15-Jul-05
HEAD AY	AC-P21393	ENDEVCO	15-Jul-05
HEAD AZ	AC-P16845	ENDEVCO	15-Jul-05
UPPER NECK FX	LC-798Fx	DENTON	31-May-05
UPPER NECK FY	LC-798Fy	DENTON	31-May-05
UPPER NECK FZ	LC-798Fz	DENTON	31-May-05
UPPER NECK MX	LC-798Mx	DENTON	31-May-05
UPPER NECK MY	LC-798My	DENTON	31-May-05
UPPER NECK MZ	LC-798Mz	DENTON	31-May-05
UPPER RIB	AC-P16862	ENDEVCO	15-Jul-05
LOWER RIB	AC-P16866	ENDEVCO	14-Jul-05
LOWER SPINE	AC-P16645	ENDEVCO	15-Jul-05
PELVIS	AC-P23139	ENDEVCO	18-Jul-05
UPPER RIB REDUNDANT	AC-P23156	ENDEVCO	15-Jul-05
LOWER RIB REDUNDANT	AC-P16656	ENDEVCO	15-Jul-05
LOWER SPINE REDUNDANT	AC-P19343	ENDEVCO	15-Jul-05
PELVIS REDUNDANT	AC-P17539	ENDEVCO	18-Jul-05

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-J30491	ENDEVCO	18-Jul-05
RIGHT FRONT SILL (Y)	AC-J33071	ENDEVCO	18-Jul-05
RIGHT FRONT SILL (Z)	AC-J31011	ENDEVCO	18-Jul-05
RIGHT REAR SILL (X)	AC-P19111	ENDEVCO	18-Jul-05
RIGHT REAR SILL (Y)	AC-P24011	ENDEVCO	18-Jul-05
RIGHT REAR SILL (Z)	AC-P23161	ENDEVCO	18-Jul-05
REAR FLOORPAN ABOVE AXLE (X)	AC-J33843	ENDEVCO	19-Jul-05
REAR FLOORPAN ABOVE AXLE (Y)	AC-P16625	ENDEVCO	19-Jul-05
REAR FLOORPAN ABOVE AXLE (Z)	AC-P23178	ENDEVCO	19-Jul-05
LEFT REAR SILL (Y)	AC-FGP43	ICS	12-Oct-05
LEFT FRONT SILL (Y)	AC-9440-017	GS SENSORS	13-Oct-05
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-9440-039	GS SENSORS	17-Oct-05
LOWER LEFT B- PILLAR (Y)	AC-P19253	ENDEVCO	08-Jul-05
MIDDLE LEFT B-PILLAR (Y)	AC-P23174	ENDEVCO	11-Jul-05
LOWER LEFT A-PILLAR (Y)	AC-FGP46	ICS	13-Oct-05
UPPER LEFT A-PILLAR (Y)	AC-FGP23	ICS	12-Oct-05
FRONT SEAT TRACK (Y)	AC-P16616	ENDEVCO	18-Jul-05
REAR SEAT TRACK (Y)	AC-P19217	ENDEVCO	18-Jul-05
VEHICLE CG (X)	AC-J31101	ENDEVCO	18-Jul-05
VEHICLE CG (Y)	AC-J31020	ENDEVCO	18-Jul-05
VEHICLE CG (Z)	AC-J31059	ENDEVCO	18-Jul-05
MDB CG (X)	AC-C16433	ENDEVCO	08-Dec-05
MDB CG (Y)	AC-C16416	ENDEVCO	08-Dec-05
MDB CG (Z)	AC-C16499	ENDEVCO	08-Dec-05
MDB REAR FRAME MEMBER (X)	AC-C14948	ENDEVCO	08-Dec-05
MDB REAR FRAME MEMBER (Y)	AC-C16680	ENDEVCO	08-Dec-05

REMARKS: None