REPORT NUMBER: SNCAP-CAL-07-09

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

FUJI HEAVY INDUSTRIES, LTD
2008 SUBARU IMPREZA
4-DOOR SEDAN

NHTSA NUMBER: M85501

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

Test Date: September 13, 2007

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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Technical Report Documentation Page

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15. *Supplementary Notes*

16. Abstract

A 55/28 kph 90^0 Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2008 Subaru Impreza 4-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 September 13, 2007.The impact velocity of the Moving Deformable Barrier (MDB) was 62.6 km/h, and the ambient temperature at the struck side (driver side) of the vehicle was 22°C. The target vehicle's maximum post test static crush was 277 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	55.5	63.0
Left Lower Rib (LLR) Accel., g	39.3	68.8
Lower Spine (T_{12}) Accel., g	43.7	75.1
Thoracic Trauma Index (TTI)	50	72
Pelvis (PEV) Accel., g	53	71
HIC	142.0	312.1

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 New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection	*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave. SE Washington, D.C. 20590

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Form DOT F1700.7 (8-72)

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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This side impact test was conducted as part of the FY' 2008 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 2008 Subaru Impreza 4-Door Sedan manufactured by Fuji Heavy Industries, LTD. 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 2008 Subaru Impreza 4-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 62.6 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 1596.0 kg and the test weight of the MDB was 1362.5 kg. The test was conducted at the Calspan Corporation Transportation Sciences Center on September 13, 2007.

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/HIIIs) 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 277 mm at level 3, 750 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 269 and 270 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	142.0	43.4	79.3	50	53
Passenger	312.1	40.5	67.5	72	71

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:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

TEST VEHICLE INFORMATION AND VEHICLE OPTIONS

Make	Fuji Heavy Industries, LTD	Driver Front Airbag	Yes
Model	Impreza	Driver Side Curtain Airbag	Yes
Body Style	4-Door Sedan	Driver Side Torso Airbag	Yes
NHTSA No.	M85501	Driver Pretensioners	Yes
VIN	JF1GE61618G502174	Driver Load Limiters	Yes
Color	Dark Gray	Driver Power Seats	No
Engine Disp.(L)	2.5	Rear Pass. Side Curtain Airbag	Yes
Engine Cylinders	4	Rear Pass. Side Torso Airbag	No
Engine Placement	Longitudinal	Rear Pass. Pretensioners	Yes
Transmission Type	Manual	Rear Pass. Load Limiters	Yes
Transmission Speeds	5	Rear Pass. Power Seats	NA
Final Drive	4 Wheel	Tilt Wheel	Yes
Air Conditioning	Yes	Anti-lock Brakes	Yes
Power Steering	Yes	Traction Control	Yes
Power Brakes	Yes	Power Windows	Yes
Delivery Date	8/23/07	Power Door Locks	Yes
Odometer Reading (km)	39	Automatic Door Locks (ADL)	No
Dealer	West Herr Subaru	Owner's Manual Details Instructions on Disabling ADLs	NA

DATA FROM CERTIFICATION LABEL

Manufactured By	Fuji Heavy Industries, LTD	GVWR (kg)	1950
		GAWR Front (kg)	990
Date of Manufacture	06/2007	GAWR Rear (kg)	1000

VEHICLE CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number Of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				385.0
Cargo Wt. (RCLW) (kg)				44.8

DATA SHEET NO. 1 (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

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	397.0	311.0		449.5	395.5		436.0	393.5	
Right	kg	392.0	294.0		397.5	361.5		404.0	362.5	
Ratio	%	56.6	43.4		53.0	47.0		52.6	47.4	
Totals	kg	789.0	605.0	1394.0	853.5	756.0	1609.5	840.0	756.0	1596.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1394.0
Weight of 2 P572E ATDs (81.2 kg each)	kg	162.4
Rated Cargo/Luggage Weight (RCLW)	kg	44.8
Calculated Vehicle Target Weight (TVTW)	kg	1601.2

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

Weight of Ballast (including instrumentation package and cameras): 39.6 kg

TEST VEHICLE ATTITUDES

	Units	LF	RF	LR	RR
As Delivered	mm	700	710	700	701
Fully Loaded	mm	679	701	664	674
As Tested	mm	682	701	663	673

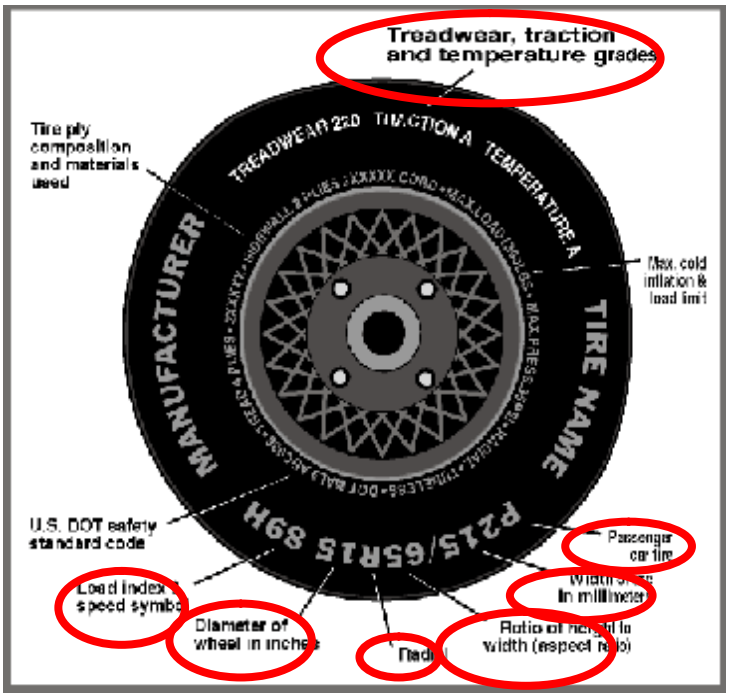
TEST VEHICLE VERTICAL IMPACT LINE AND CG

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2627
Target Impact Point Aft of Front Axle	mm	374
Actual Impact Point Aft of Front Axle	mm	374
As Tested CG (aft of front axle)	mm	1244

DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	230	230
Recommended Tire Size	P205/55R16	P205/55R16
Tire Size on Vehicle	P205/55R16	P205/55R16
Tire Manufacturer	Bridgestone	Bridgestone
Tire Name	Potenza RE	Potenza RE
Tire Type	Passenger	Passenger
Tire Width (mm)	205	205
Ratio of Height to Width (aspect ratio)	55	55
Radial	Yes	Yes
Wheel Diameter	16	16
Load Index & Speed Symbol	89V	89V
Treadwear	260	260
Traction Grade	A	A
Temperature Grade	A	A

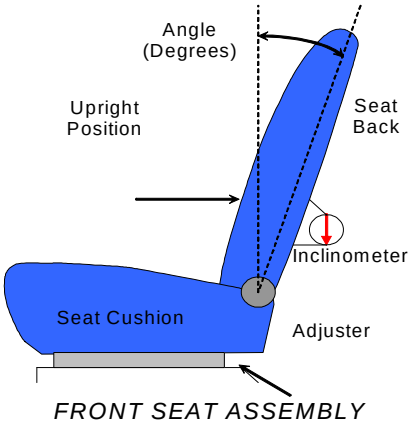
DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

NORMAL DESIGN RIDING POSITION

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



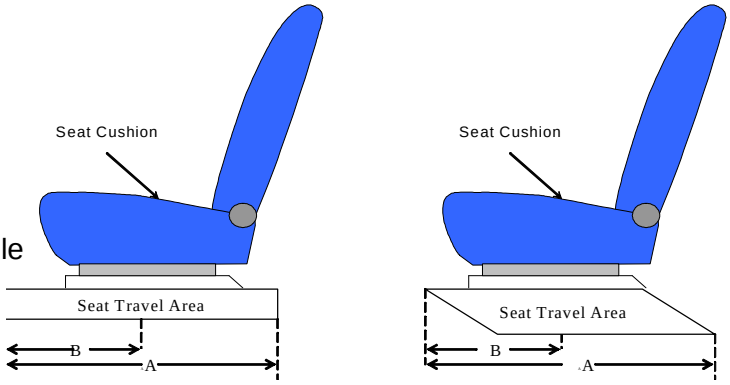
FRONT SEAT ASSEMBLY

SEAT BACK POSITION

	Driver Seat	Rear Seat
Test Detent (forward-most detent defined as 0)	Detent 7	Not Adjustable
Angle (deg. from forward-most locking position)	14	Not Adjustable
Alternative Measurements to Verify Test Position	N/A	N/A

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

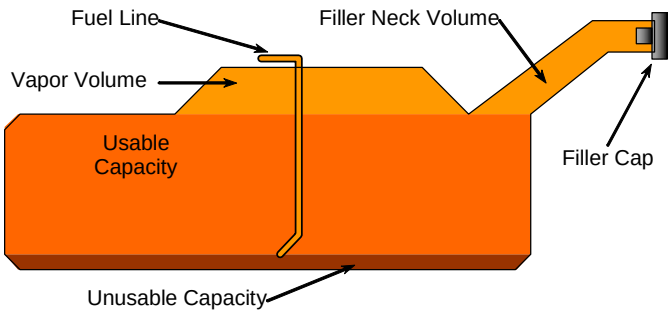
	Driver Seat	Rear Seat
Total Fore/Aft Travel (A) (mm)	254	N/A (fixed)
Test Position (B) (mm)	127	N/A
Test Detent (forward-most detent defined as 0)	9	N/A (fixed)
Total Number of Detents (including 0)	19	N/A (fixed)

DATA SHEET NO. 3 (CONTINUED)
TEST VEHICLE INFORMATION

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

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.



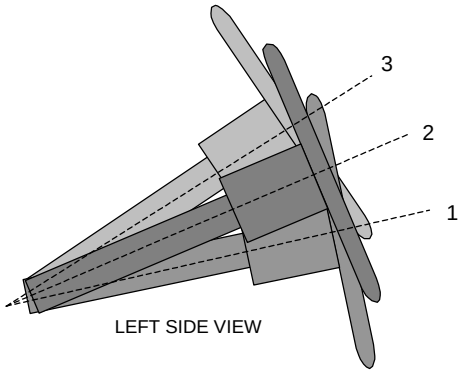
VEHICLE FUEL TANK ASSEMBLY

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard" Fuel Tank	60.0
Usable Capacity of "Optional" Fuel Tank	N/A
Stoddard Used For Test (92%-94% of Fuel Tank Usable Capacity)	55.2

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITION

	Fore/Aft Position (mm)	Tilt (degrees)	Tilt (detent)
Lowermost Position No. 1	N/A	20.5	N/A
Geometric Center Position No. 2 *	N/A	22.0	N/A
Uppermost Position No. 3	N/A	23.5	N/A

* Test position

DATA SHEET NO. 4

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

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	62.6
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.6

POST TEST OBSERVATIONS

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	0 mm
Vertical Offset	mm	+/-20	9 mm above

DATA SHEET NO. 5

POST TEST OBSERVATIONS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 269	SID/HIII / 270
Head Contact	Side of Head with Side Curtain airbag	Side of Head with Side Curtain airbag
Upper Torso Contact	Side Torso Airbag	Interior Door
Lower Torso Contact	Side Torso Airbag/Door Trim	Interior Door
Left Knee Contact	Door Trim	Door Trim
Right Knee Contact	Dashpanel	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 Front and Left Rear Passenger Window Broke
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT INFORMATION

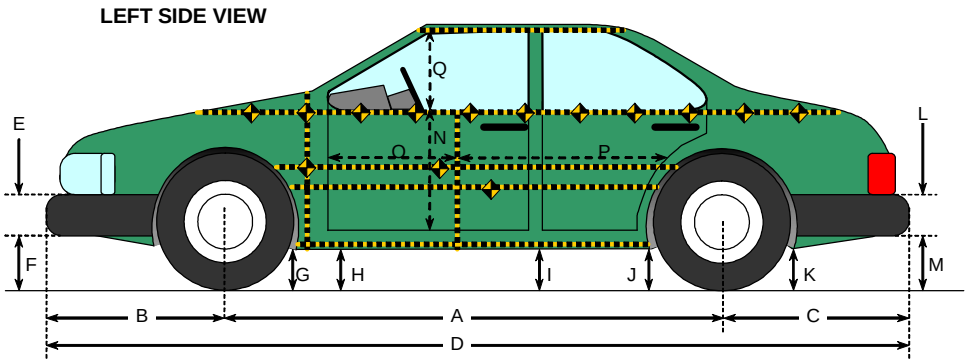
Restraint Type	Left Front (Driver)		Left Rear (Passenger)	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	No	NA	NA
Side Torso Airbag	Yes	Yes	NA	NA
Side Head/Torso Combination Airbag	NA	NA	NA	NA
Curtain Airbag	Yes	Yes	Yes	Yes

DATA SHEET NO. 6

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

All



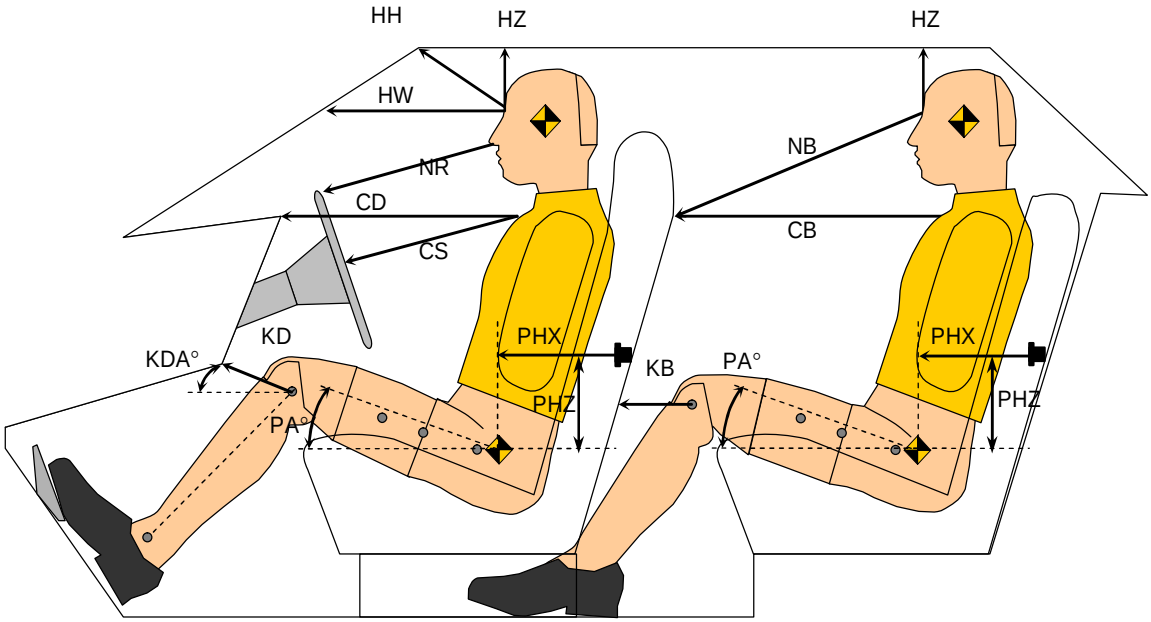
Measurements in mm

Code	Measurement Description	Pre-Test (delivered)	Pre-Test (as tested)	Post-Test (as tested)	Difference
A	Wheelbase	2627	2627	2599	28
B	Front Axle to FSOV	954	954	983	-29
C	Rear Axle to RSOV	997	997	977	20
D	Total Length at Centerline	4578	4578	4559	19
E	Front Bumper Thickness	144	144	144	0
F	Front Bumper Bottom to Ground	385	377	398	-21
G	Sill Height at Front Wheel Well	157	134	138	-4
H	Sill Height at Front Door Leading Edge	188	165	192	-27
I	Sill Height at "B" Pillar	193	163	207	-44
J1	Sill Height at Rear Wheel Well	178	141	154	-13
J2	Pinch Weld Height at Rear Wheel Well	191	154	181	-27
K	Sill Height Aft of Rear Wheel Well	188	145	152	-7
L	Rear Bumper Thickness	220	220	220	0
M	Rear Bumper Bottom to Ground	432	394	393	1
N	Sill Height to Window Bottom Sill	720	720	675	45
O	Front Door Leading Edge to Impact CL	733	733	698	35
P	Rear Door Trailing Edge to Impact CL	1139	1139	1057	82
Q	Front Window Opening	423	423	402	21
R	Right Side Length	4477	4477	4469	8
S	Left Side Length	4461	4461	4453	8
T	Vehicle Width at "B" Post	1740	1740	1488	252

DATA SHEET NO. 7

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

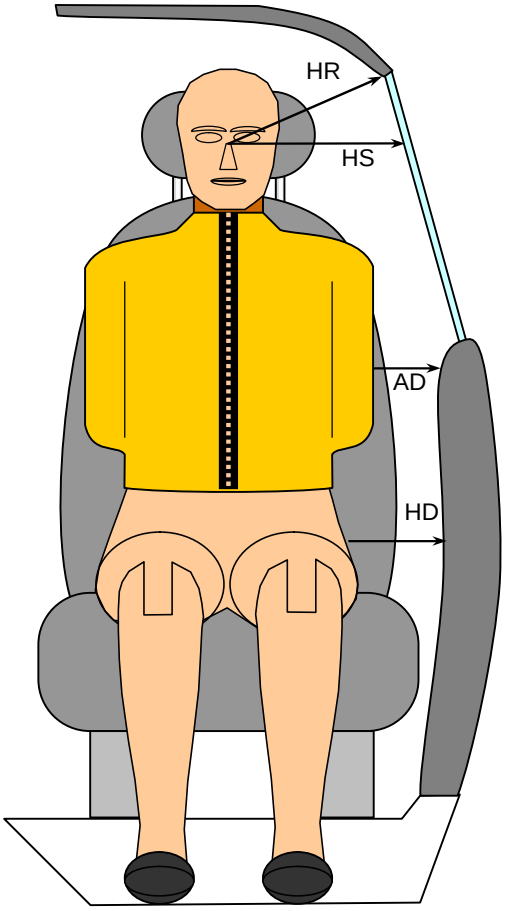


Driver Code	Pass. Code	Measurement Description	Driver S/N 269		Passenger S/N 270	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	352			
HW		Head to Windshield	595			
HZ	HZ	Head to Roof	210		151	
NR	NB	Nose to Rim/Nose to Seatback	455		649	
CD	CB	Chest to Dash or Seatback	572		545	
CS		Chest to Steering Wheel	362			
KDL	KBL	Left Knee to Dash or Seatback	163	22	190	32
KDR	KBR	Right Knee to Dash or Seatback	153	20	180	32
PA	PA	Pelvic Angle		23.6		24.4
PHX	PHX	H-Point to Striker (X-Axis)	186		223	
PHZ	PHZ	H-Point to Striker (Z-Axis)	173		267	

DATA SHEET NO. 8

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



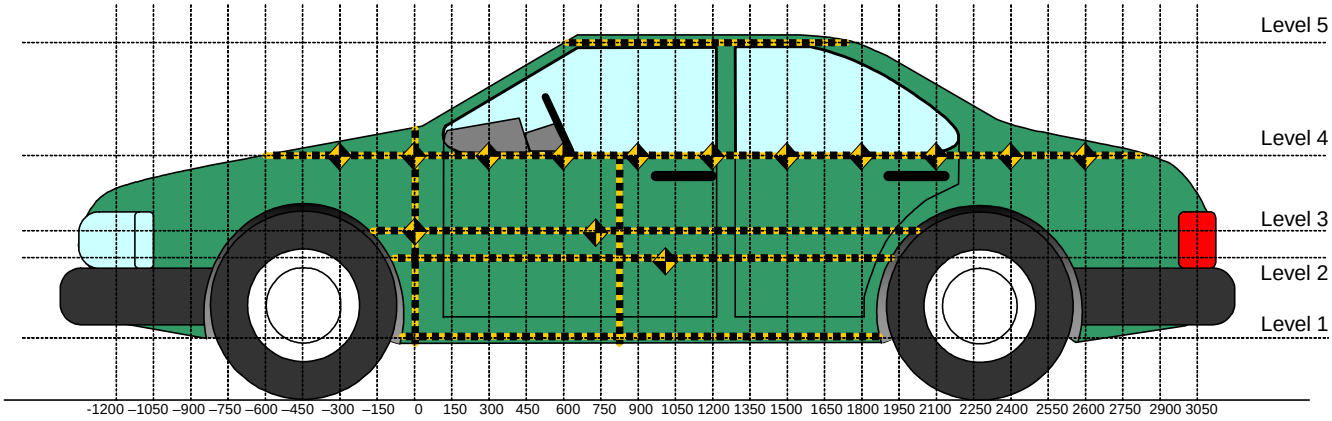
FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 269	Passenger S/N 270
HR	Head to Side Header	mm	207	183
HS	Head to Side Window	mm	312	354
AD_1	Arm to Door (at upper rib level)	mm	109	100
AD_2	Arm to Door (at lower rib level)	mm	126	99
HD	H-Point to Door	mm	140	182

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



All Measurements Shown in mm

LEFT SIDE VIEW

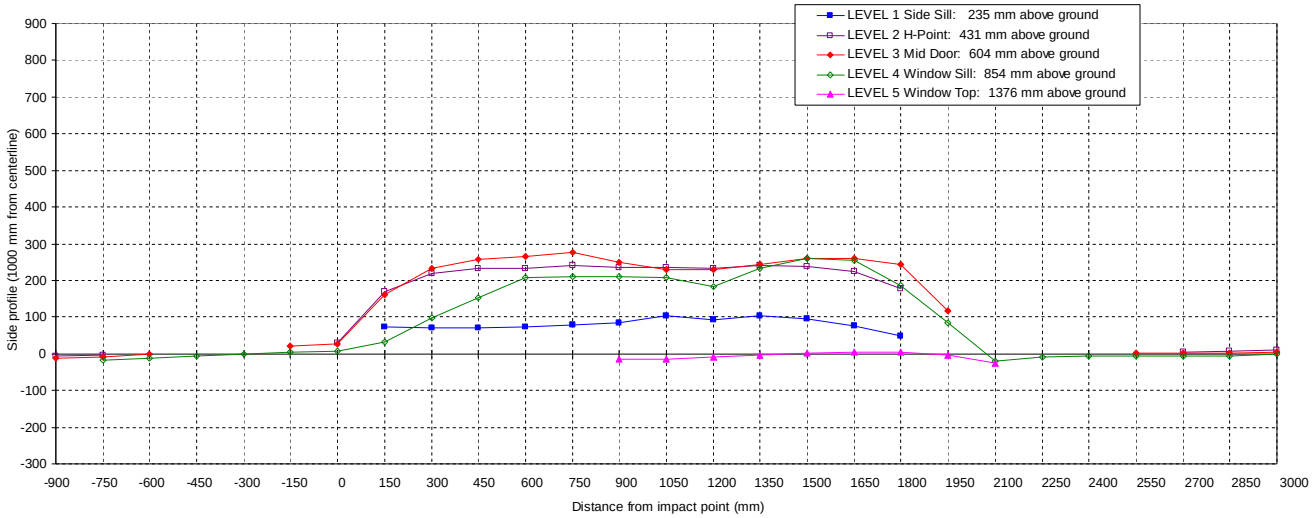
Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 750 mm.
All measurements below in mm.

Level	Measurement Description	Maximum Exterior Static Crush	Height Above Ground	Distance From Impact
1	Sill Top	104	235	1350
2	Occupant H-Point	241	431	750
3	Mid Door	277	604	750
4	Window Sill	260	854	1500
5	Window	5	1376	1800
	Maximum Penetration	277		

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



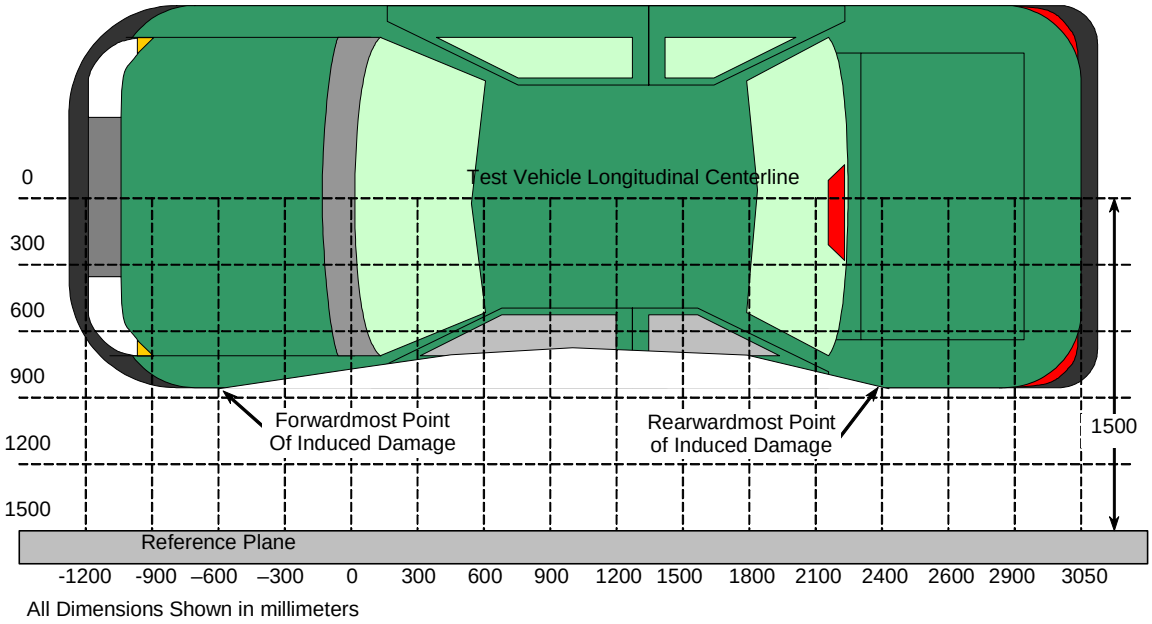
NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

			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		PRE	--	--	--	--	--	--	--	164	169	169	170	171	172	172	173	174	175	175	167	--	--	--	--	--	--	--	--	--
SIDE	235	POST	--	--	--	--	--	--	--	237	239	240	244	251	257	275	266	278	271	250	215	--	--	--	--	--	--	--	--	--
SILL		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	73	70	71	74	80	85	103	93	104	96	75	48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2		PRE	192	144	--	--	--	--	121	132	133	133	134	135	136	137	140	142	143	146	144	--	--	--	--	--	--	165	179	201
H	431	POST	185	141	--	--	--	--	151	301	352	365	366	376	372	372	373	383	380	370	322	--	--	--	--	--	--	170	186	210
POINT		CRUSH	-7	-3	N/A	N/A	N/A	N/A	30	169	219	232	232	241	236	235	233	241	237	224	178	N/A	N/A	N/A	N/A	N/A	N/A	5	7	9
LEVEL 3		PRE	227	172	129	--	--	119	126	132	132	131	132	132	133	135	138	139	141	143	144	141	--	--	--	156	173	187	211
MID	604	POST	215	164	127	--	--	139	152	294	364	389	397	409	381	365	369	382	402	403	389	258	--	--	--	157	176	190	216
DOOR		CRUSH	-12	-8	-2	N/A	N/A	20	26	162	232	258	265	277	248	230	231	243	261	260	245	117	N/A	N/A	N/A	1	3	3	5
LEVEL 4		PRE	--	412	316	255	227	213	204	195	189	182	176	174	172	169	169	168	170	174	180	167	195	208	212	217	221	231	250
WINDOW	854	POST	--	396	304	248	226	217	212	226	286	334	384	385	384	376	351	402	430	428	367	251	176	200	207	212	216	226	249
SILL		CRUSH	N/A	-16	-12	-7	-1	4	8	31	97	152	208	211	212	207	182	234	260	254	187	84	-19	-8	-5	-5	-5	-5	-1
LEVEL 5		PRE	--	--	--	--	--	--	--	--	--	--	--	--	511	440	438	440	444	451	463	494	710	--	--	--	--	--	--
WINDOW	1376	POST	--	--	--	--	--	--	--	--	--	--	--	--	496	426	430	436	445	455	468	490	685	--	--	--	--	--	--
TOP		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	-15	-14	-8	-4	1	4	5	-4	-25	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



TOP VIEW

DAMAGE PROFILE DISTANCES

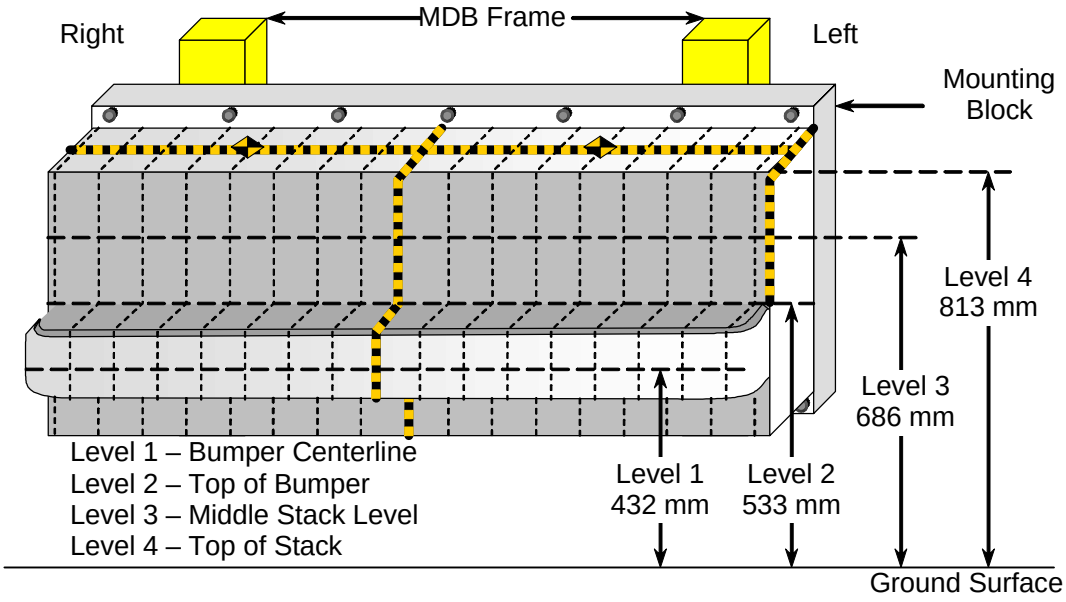
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1 (LR)	2850	431	179	182	3
2	2220	854	148	172	24
3	1590	604	127	377	250
4	960	604	123	373	250
5	330	431	128	333	205
6 (LF)	-300	854	193	189	-4

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:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



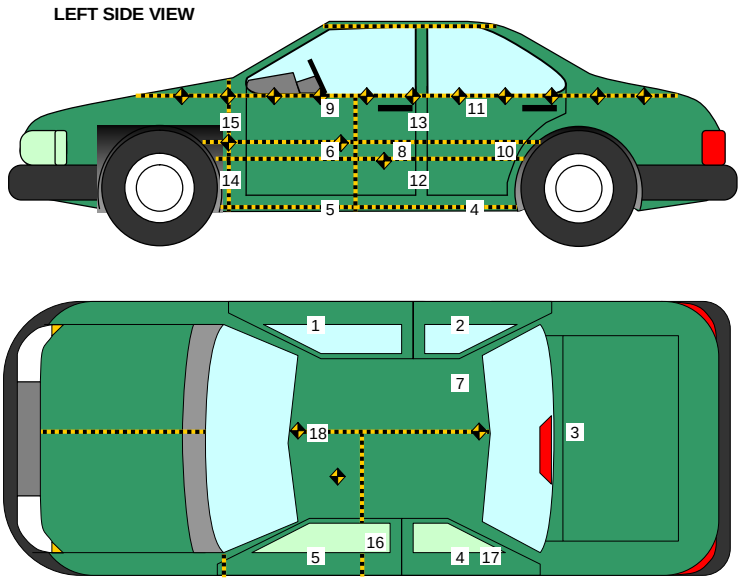
LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)							
			800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
LEVEL 4	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
TOP		POST	662	621	609	616	631	664	671	654	633	633	636	638	638	663	698	729	783
STACK		CRUSH	43	2	-10	-3	12	45	52	35	14	14	17	19	19	44	79	110	164
LEVEL 3	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
MID		POST	651	628	620	626	626	638	654	643	625	623	623	623	627	635	648	683	748
LEVEL		CRUSH	32	9	1	7	7	19	35	24	6	4	4	4	8	16	29	64	129
LEVEL 2	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
TOP		POST	691	688	681	677	679	680	686	683	679	675	675	678	678	685	691	704	721
BUMPER		CRUSH	72	69	62	58	60	61	67	64	60	56	56	59	59	66	72	85	102
LEVEL 1	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	518	519	535
MID		POST	667	656	652	651	657	671	667	659	648	640	628	629	627	630	637	654	687
BUMPER		CRUSH	132	137	134	133	139	153	149	141	130	122	110	111	109	112	119	135	152

LEVEL	HEIGHT AT CL (mm)*	MAX CRUSH
LEVEL 4	813	
TOP		164
STACK		
LEVEL 3	686	
MID		129
LEVEL		
LEVEL 2	533	
TOP		102
BUMPER		
LEVEL 1	432	
MID		153
BUMPER		

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2769	629	-249
2	Right Sill at Rear Seat	1926	602	-215
3	Rear Floorpan Above Axle	1083	-10	-570
4	Left Sill at Rear Door	2019	-598	-209
5	Left Sill at Front Door	2879	-629	-250
6	Left Front Door C/L**	-	-	-
7	Rear Occupant Compartment	1941	430	-203
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	2060	-665	-400
13	Left Middle B-Post	1992	-649	-909
14	Left Lower A-Post	3087	-651	-366
15	Left Middle A-Post	2988	-633	-978
16	Front Seat Track	2210	-548	-264
17	Rear Seat Track or Structure	1756	-590	-341
18	Vehicle CG	2408	8	-420

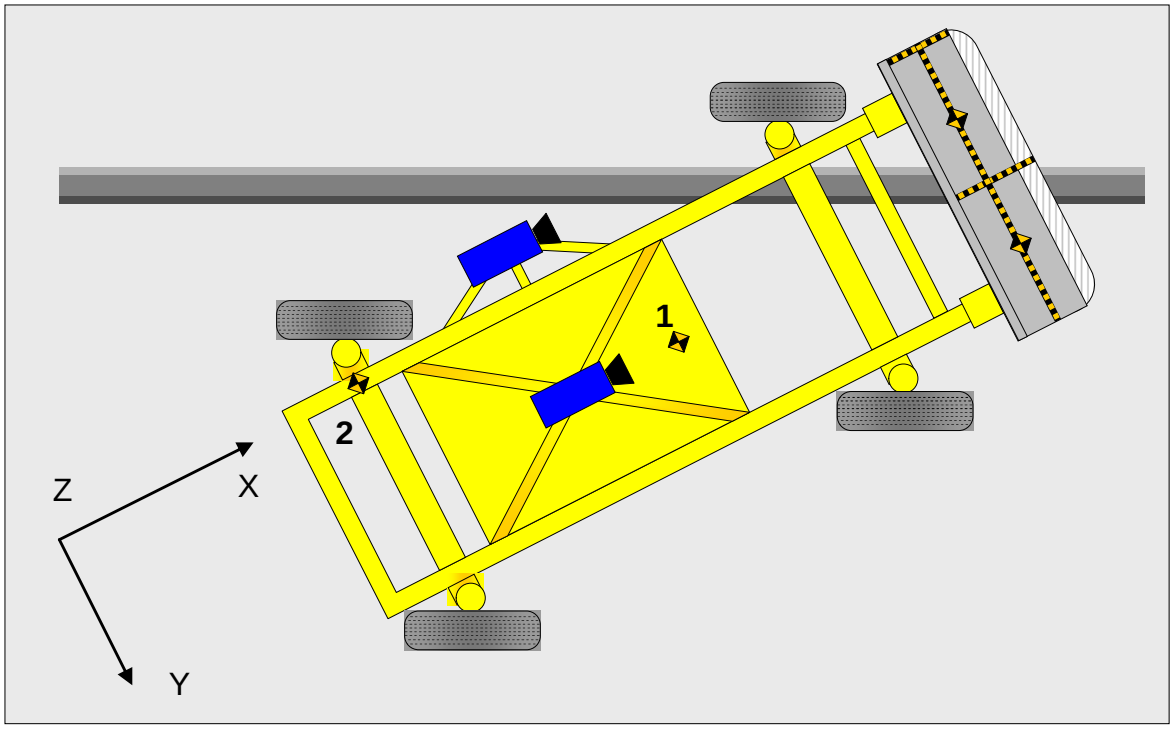
Reference Points X - Test Vehicle Rear Bumper (+ forward)
Y - Test Vehicle Centerline (+ to right)
Z - Ground Plane (+ down)

** Accelerometer was not requested by the COTR.

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



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

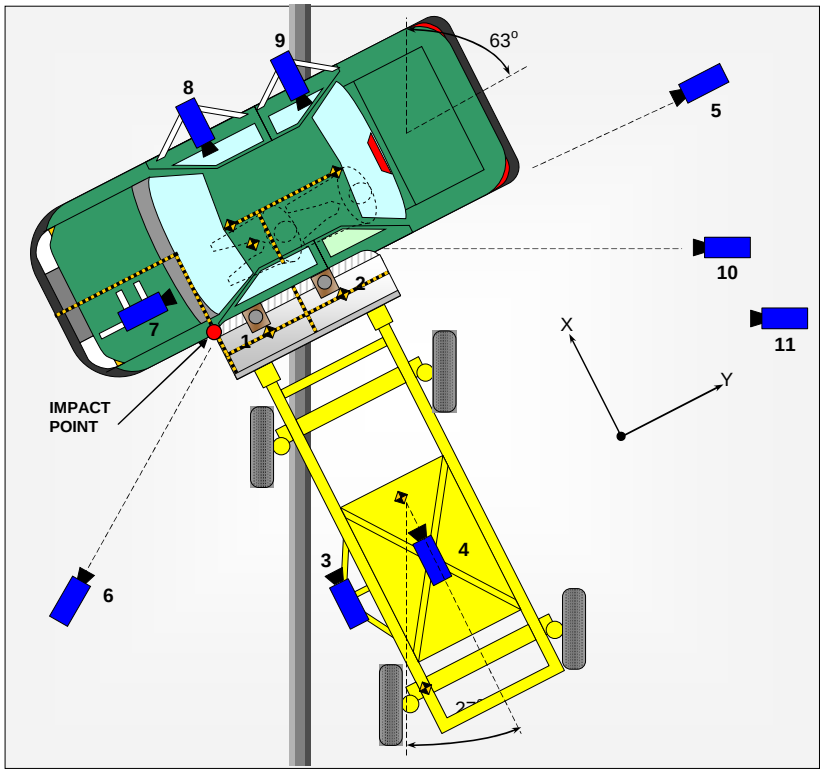
Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

	Elements	Pre-Test (mm)
1	Total Length	4578
2	Total Width	1740
3	Bumper Top Height	515
4	Bumper Bottom Height	328
5	Longitudinal Member Top Height	491
6	Distance between Longitudinal Members	988
7	Longitudinal Member Width	64
8	Engine Top Height	816
9	Engine Bottom Height	234
10	Engine and gearbox width	732
11	Front bumper-engine distance	442
12	Front shock absorber fixing height	829
13	Bonnet leading edge height	694
14	Front shock absorber fixing width	1127
15	Front bumper – front axle distance	954
16	Front axle – a pillar distance	1153
17	A-pillar – B-pillar distance	402
18	B-Pillar – rear axle distance	1072
19	B-pillar – C-pillar distance	979
20	Roof sill bottom height	1365
21	Roof sill top height	1416
22	Floor sill bottom height	177
23	Floor sill top height	261

DATA SHEET NO. 16

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007



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	0	10097	1038	-3	50	1000
6	Left Side, Ground Level, Overall	-1955	-1721	971	-2	28	1000
7	Vehicle Onboard Front SID/HIII, Front	552	-419	1244	-10	25	1000
8	Vehicle Onboard Front SID/HIII, Side	1540	824	1022	-8	13	1000
9	Vehicle Onboard Rear SID/HIII, Side	1530	1710	1059	-9	12.5	1000
10	Secondary Impact Point	-4980	2824	1026	-2	50	500
11	Real Time Coverage						30

Reference Points
X - Impact Line (Positive – Impact Point Forward)
Y - MDB Left Edge Impact Point (Positive – To Right)
Z - Ground Plane (Positive – Down)

DATA SHEET NO. 17
SUMMARY OF FMVSS 301 DATA

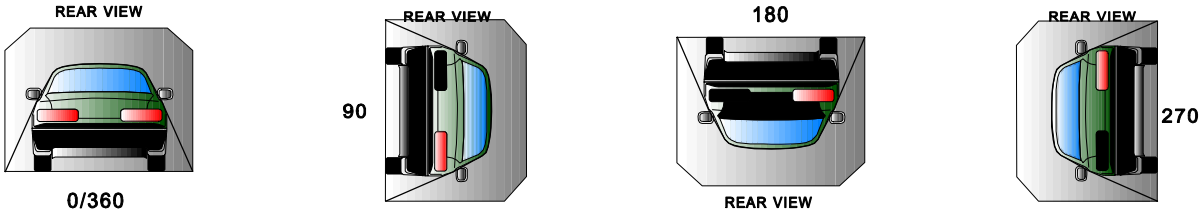
Test Vehicle:	2008 Subaru Impreza	NHTSA No.	M85501
Test Program:	NCAP Side Impact	Test Date:	September 13, 2007

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	
0º - 90º	1	minutes	13	seconds	5	minutes	6	minutes	13	seconds	7	minutes
90º - 180º	1	minutes	01	seconds	5	minutes	6	minutes	1	seconds	7	minutes
180º-270º	1	minutes	01	seconds	5	minutes	6	minutes	1	seconds	7	minutes
270º-360º	1	minutes	12	seconds	5	minutes	6	minutes	12	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)
0º - 90º	0	0	0	0
90º - 180º	0	0	0	0
180º-270º	0	0	0	0
270º-360º	0	0	0	0
FMVSS 301 Maximum Allowable (for each 90º stage)	142	28	28	28

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

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

TABLE OF PHOTOGRAPHS (continued)

Figure A-1: As Received Left Front ¾ View

Figure A-2: As Received Right Rear ¾ View

Figure A-3: Vehicle Certification Label

Figure A-4: Vehicle Tire Placard Label

Figure A-5: Pre-Test Front View

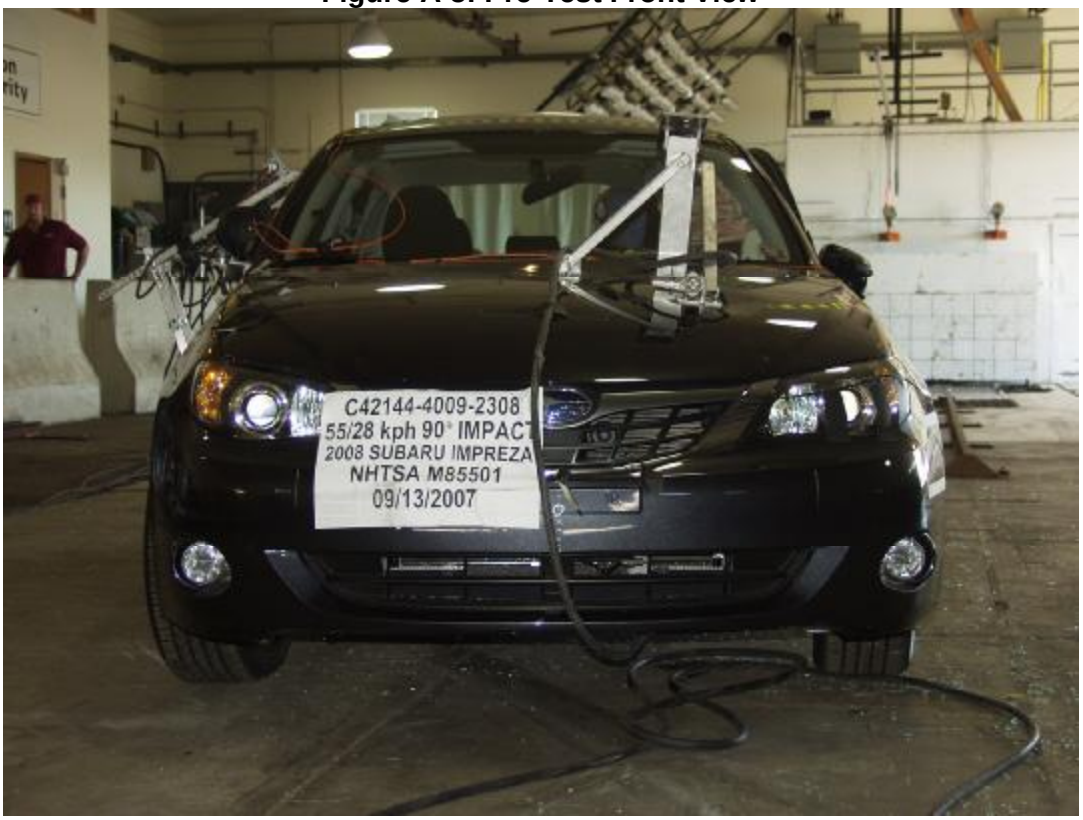


Figure A-6: Post-Test Front View

Figure A-7: Pre-Test Left Front ¾ View

Figure A-8: Post-Test Left Front ¾ View

Figure A-9: Pre-Test Left Side View

Figure A-10: Post-Test Left Side View

Figure A-11: Pre-Test Left Rear ¾ View

Figure A-12: Post-Test Left Rear ¾ View

Figure A-13: Pre-Test Rear View

Figure A-14: Post-Test Rear View

Figure A-15: Pre-Test Right Rear ¾ View

Figure A-16: Post-Test Right Rear ¾ View

Figure A-17: Pre-Test Right Side View

Figure A-18: Post-Test Right Side View

Figure A-19: Pre-Test Right Front ¾ View

Figure A-20: Post-Test Right Front ¾ 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

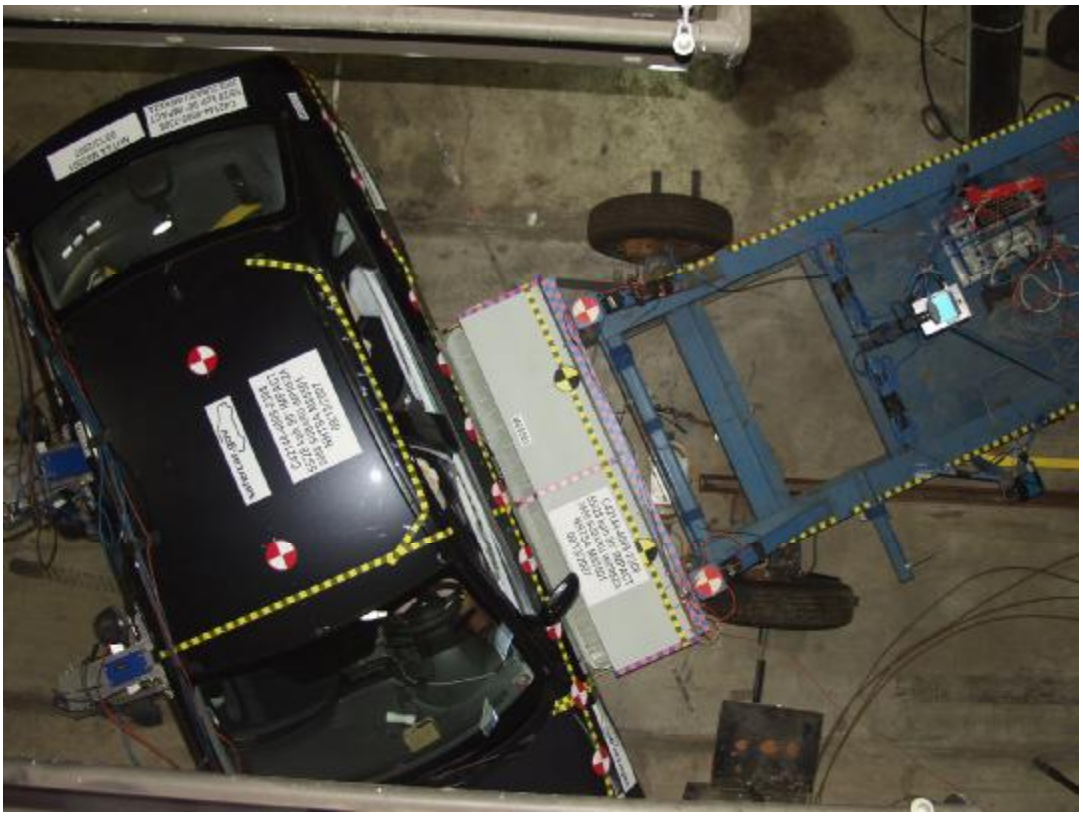


Figure A-31: Pre-Test Overhead View of Aligned MDB and Vehicle

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 ¾ View of Left Side Doors

Figure A-50: Post-Test Left Rear ¾ View of Left Side Doors

Figure A-51: Rollover 90 Degrees

Figure A-52: Rollover 180 Degrees

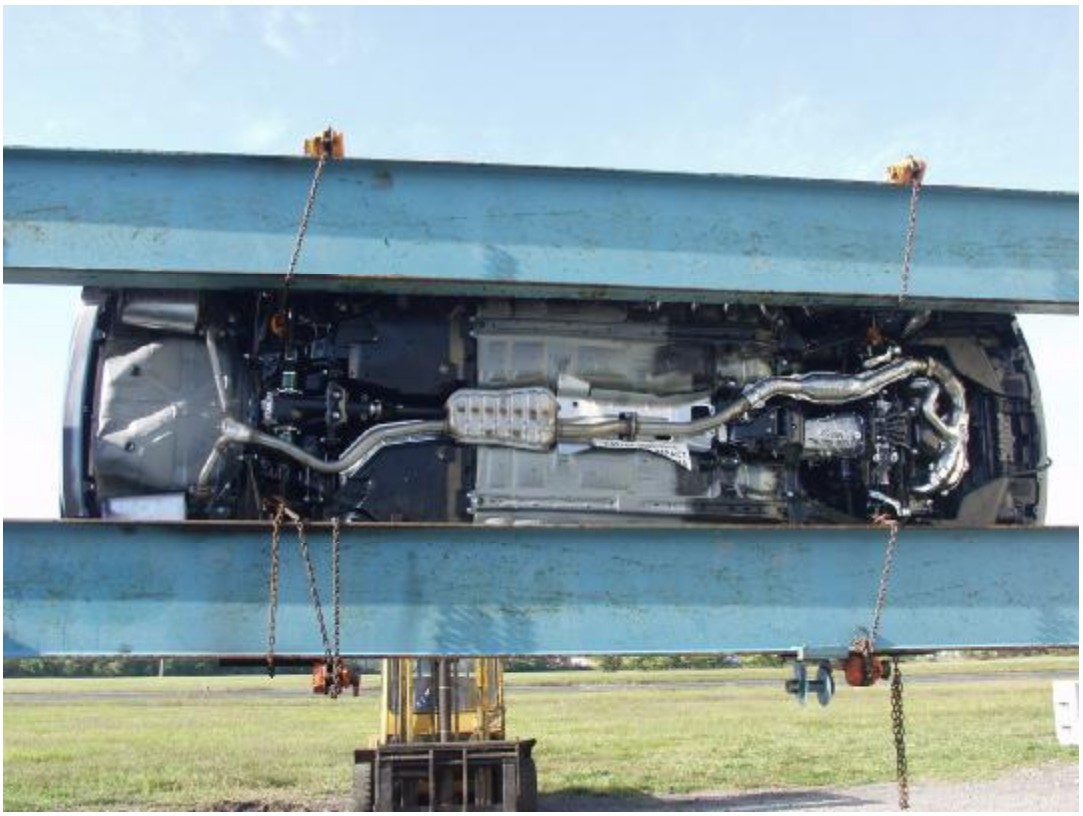


Figure A-53: Rollover 270 Degrees

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

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
V2P1 Head Ay
V2P1 Head Az
V2P1 Upper Neck Fx
V2P1 Upper Neck Fy
V2P1 Upper Neck Fz
V2P1 Upper Neck Mx
V2P1 Upper Neck My
V2P1 Upper Neck Mz
V2P1 Upper Rib Ay
V2P1 Upper Rib Redundant Ay
V2P1 Lower Rib Ay
V2P1 Lower Rib Redundant Ay
V2P1 Lower Spine Ay
V2P1 Lower Spine Redundant Ay
V2P1 Pelvic Ay
V2P1 Pelvic Redundant Ay
V2P4 Head Ax
V2P4 Head Ay
V2P4 Head Az
V2P4 Upper Neck Fx
V2P4 Upper Neck Fy
V2P4 Upper Neck Fz
V2P4 Upper Neck Mx
V2P4 Upper Neck My
V2P4 Upper Neck Mz
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

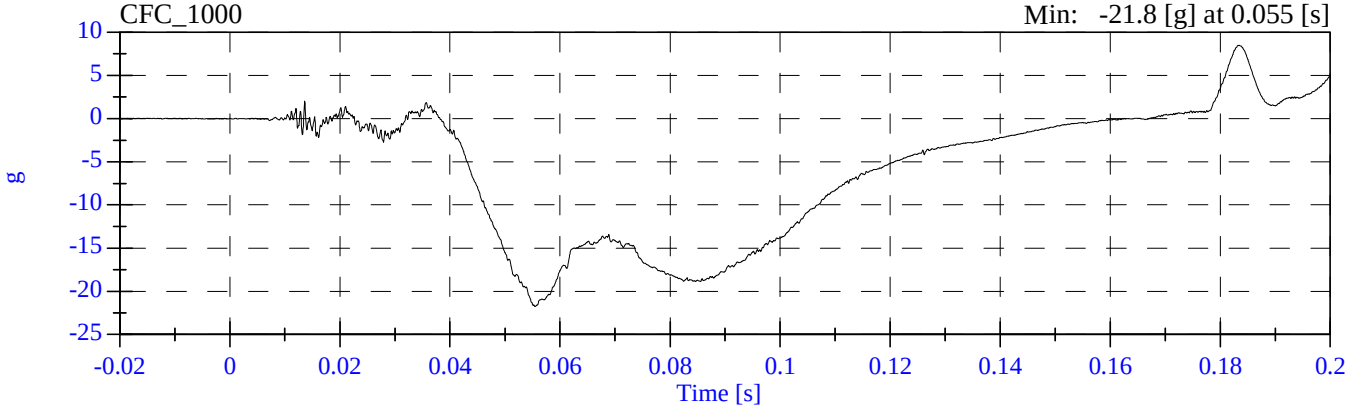
V2A1 Right Front Sill Ax
V2A1 Right Front Sill Ay
V2A1 Right Front Sill Az
V2A2 Right Rear Sill Ax
V2A2 Right Rear Sill Ay
V2A2 Right Rear Sill Az
V2A3 Rear Floorpan Ax
V2A3 Rear Floorpan Ay
V2A3 Rear Floorplan Az
V2A4 Left Rear Sill Ay
V2A5 Left Front Sill Ay
V2A6 Left Front Door C/L Ay
V2A7 Right Rear Compartment Ay
V2A8 Left Front Door Midrear Ay
V2A9 Left Front Door Upper C/L Ay
V2A10 Left Rear Door Midrear Ay
V2A11 Left Rear Door Upper C/L Ay
V2A12 Left Lower B Post Ay
V2A13 Left Mid B Post Ay
V2A14 Left Lower A Post Ay
V2A15 Left Mid A Post Ay
V2A16 Front Seat Track Ay
V2A17 Rear Seat Track Ay
V2A18 Target CG Ax
V2A18 Target CG Ay
V2A18 Target CG Az
V1 Moving Barrier CG Ax
V1 Moving Barrier CG Ay
V1 Moving Barrier CG Az
V1 Moving Barrier Left Rail Ax
V1 Moving Barrier Left Rail Ay

TEST NOTES

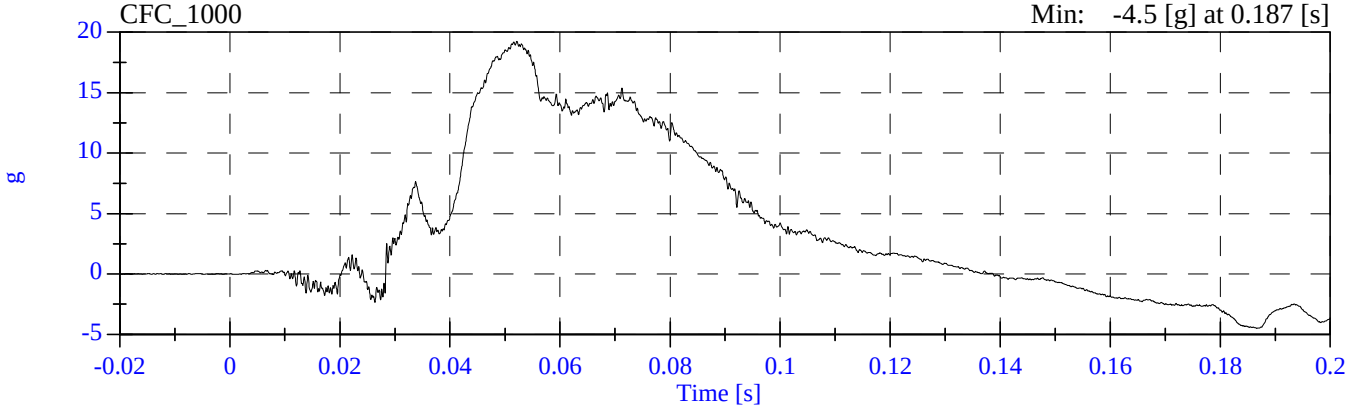
The following data anomalies occurred: None

2008 SNCAP Test 1 2008 Subaru Imperza
M85501 - September 13, 2007

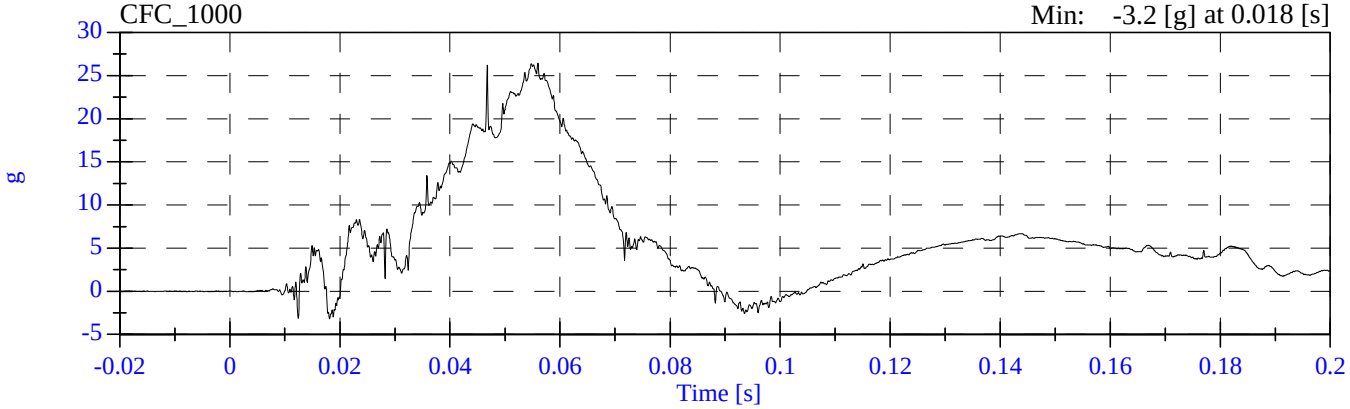
V2P1 Head x
CFC_1000
Max: 8.5 [g] at 0.183 [s]
Min: -21.8 [g] at 0.055 [s]



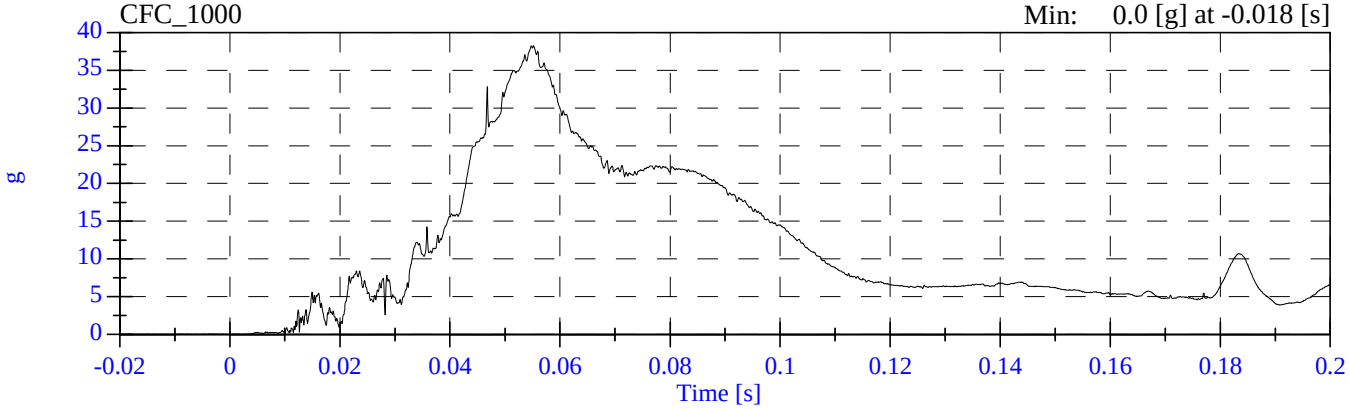
V2P1 Head y
CFC_1000
Max: 19.3 [g] at 0.052 [s]
Min: -4.5 [g] at 0.187 [s]



V2P1 Head z
CFC_1000
Max: 26.4 [g] at 0.056 [s]
Min: -3.2 [g] at 0.018 [s]

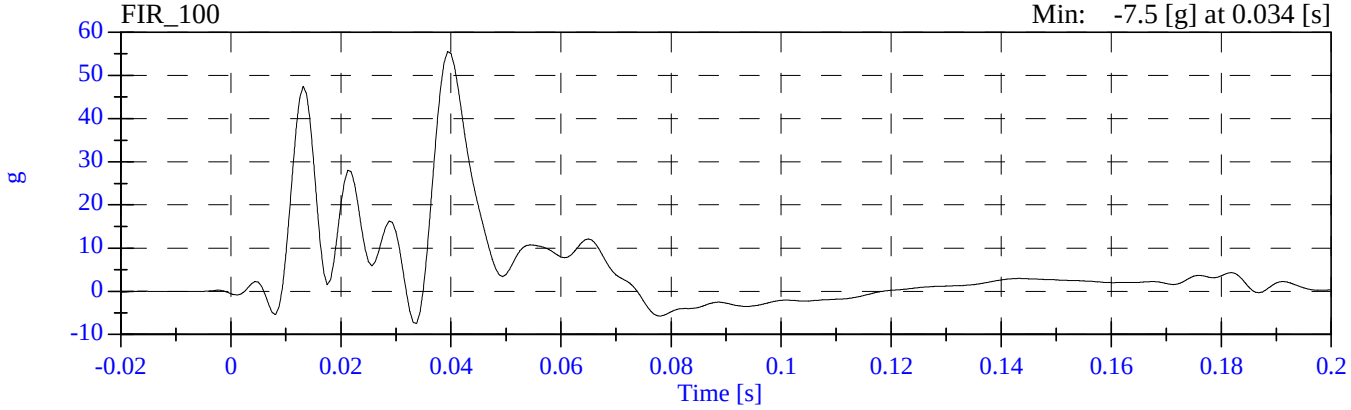


V2P1 Head Resultant
CFC_1000
Max: 38.2 [g] at 0.055 [s]
Min: 0.0 [g] at -0.018 [s]

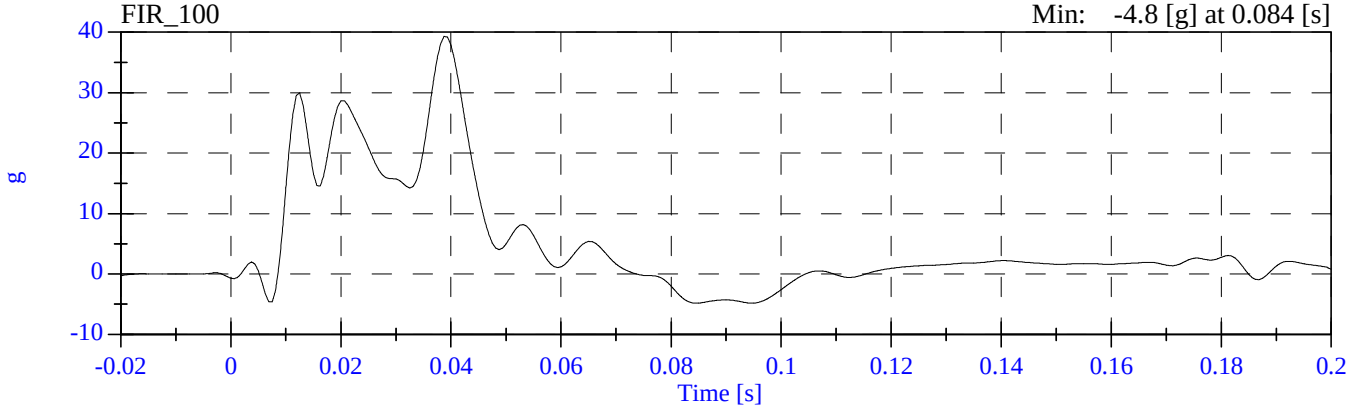


2008 SNCAP Test 1 2008 Subaru Imperza
M85501 - September 13, 2007

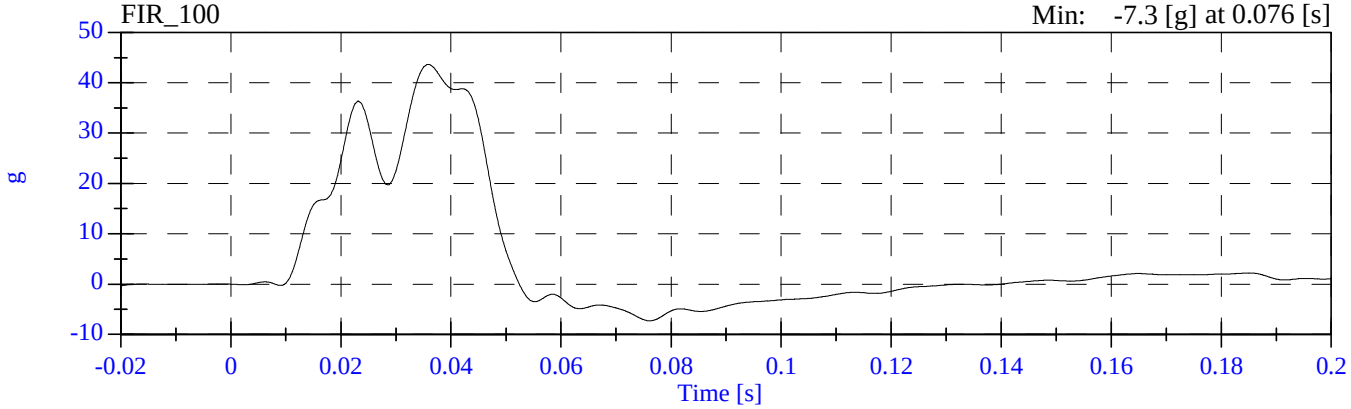
V2P1 Upper Rib y
FIR_100
Max: 55.5 [g] at 0.039 [s]
Min: -7.5 [g] at 0.034 [s]



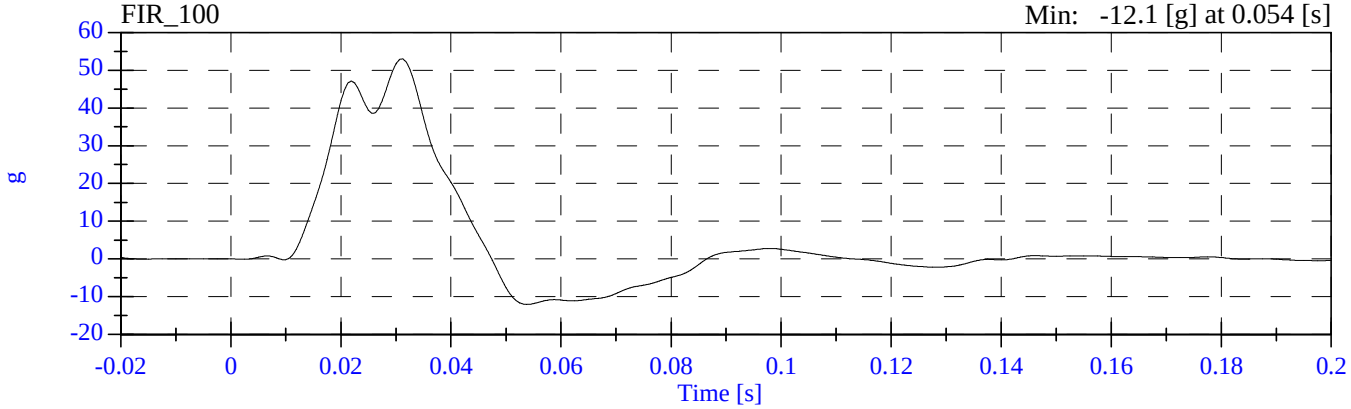
V2P1 Lower Rib y
FIR_100
Max: 39.3 [g] at 0.039 [s]
Min: -4.8 [g] at 0.084 [s]



V2P1 Lower Spine y
FIR_100
Max: 43.7 [g] at 0.036 [s]
Min: -7.3 [g] at 0.076 [s]

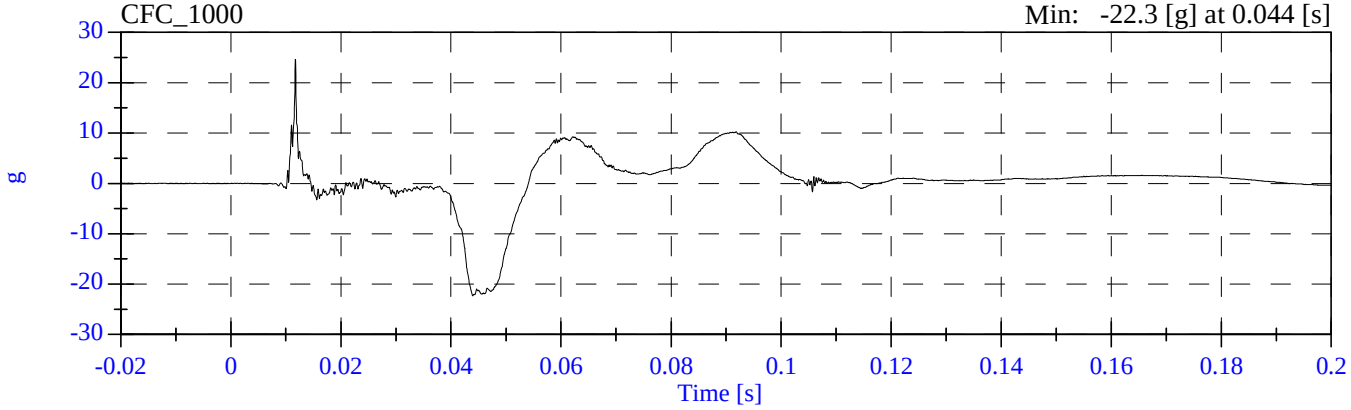


V2P1 Pelvic y
FIR_100
Max: 53.0 [g] at 0.031 [s]
Min: -12.1 [g] at 0.054 [s]

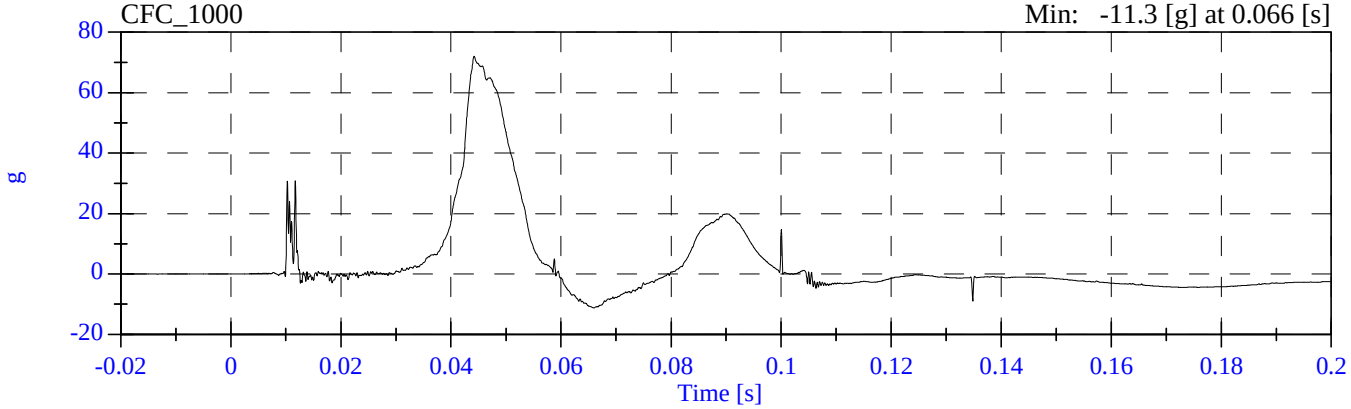


2008 SNCAP Test 1 2008 Subaru Imperza
M85501 - September 13, 2007

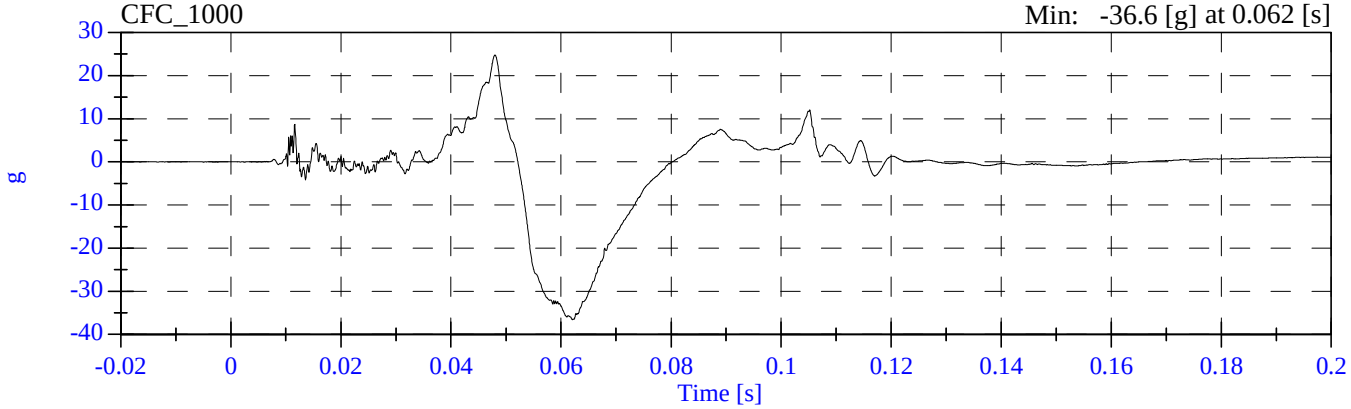
V2P4 Head x
CFC_1000
Max: 24.6 [g] at 0.012 [s]
Min: -22.3 [g] at 0.044 [s]



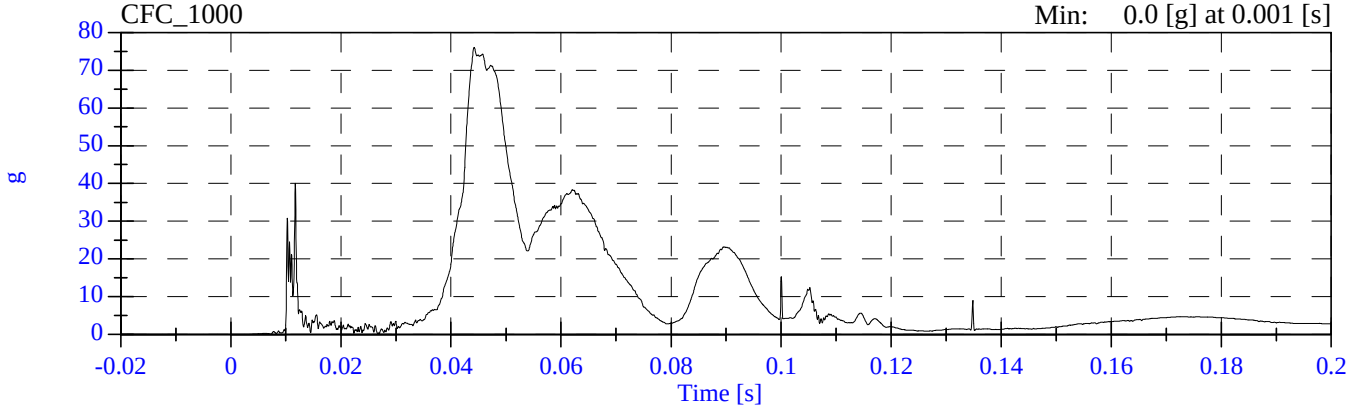
V2P4 Head y
CFC_1000
Max: 72.1 [g] at 0.044 [s]
Min: -11.3 [g] at 0.066 [s]



V2P4 Head z
CFC_1000
Max: 24.8 [g] at 0.048 [s]
Min: -36.6 [g] at 0.062 [s]

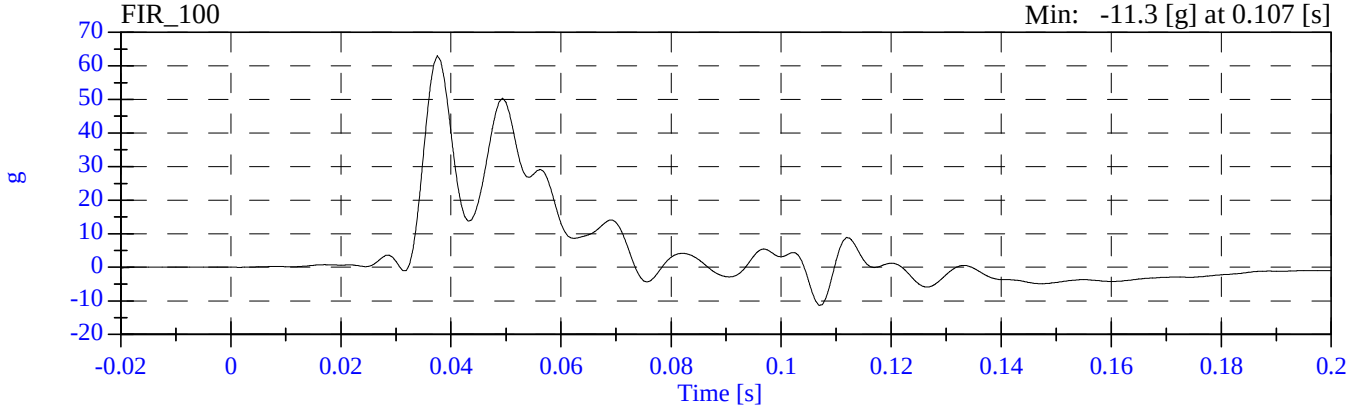


V2P4 Head Resultant
CFC_1000
Max: 76.1 [g] at 0.044 [s]
Min: 0.0 [g] at 0.001 [s]

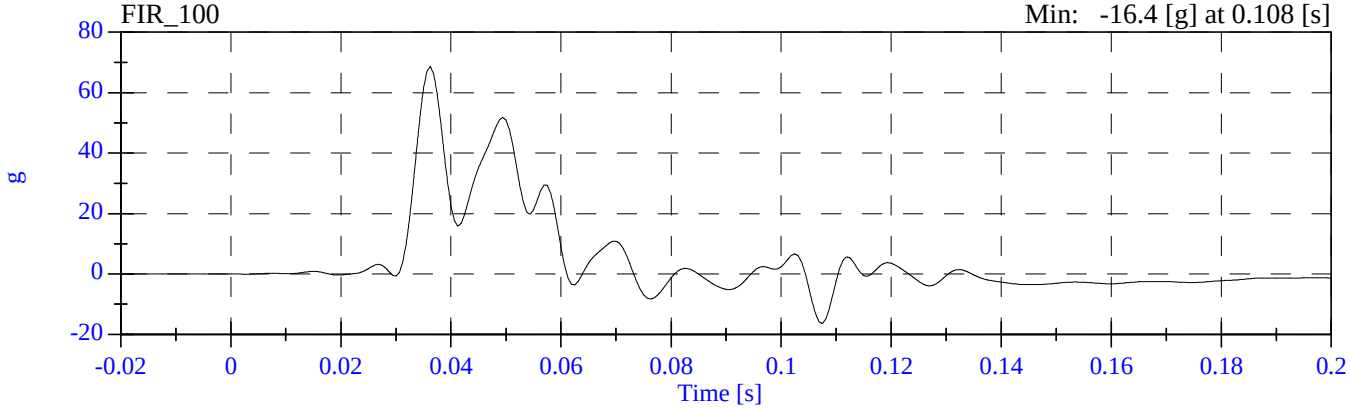


2008 SNCAP Test 1 2008 Subaru Imperza
M85501 - September 13, 2007

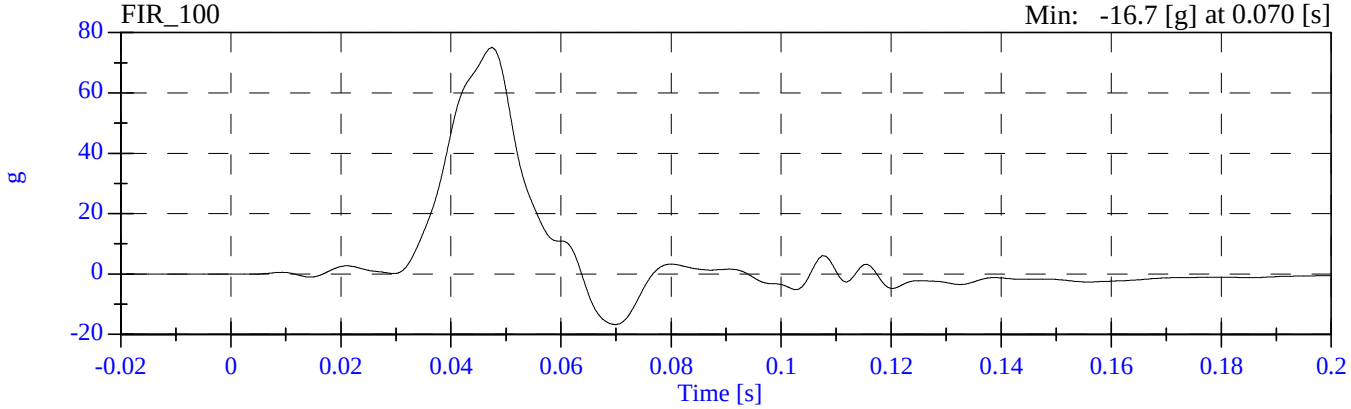
V2P4 Upper Rib y
FIR_100
Max: 63.0 [g] at 0.037 [s]
Min: -11.3 [g] at 0.107 [s]



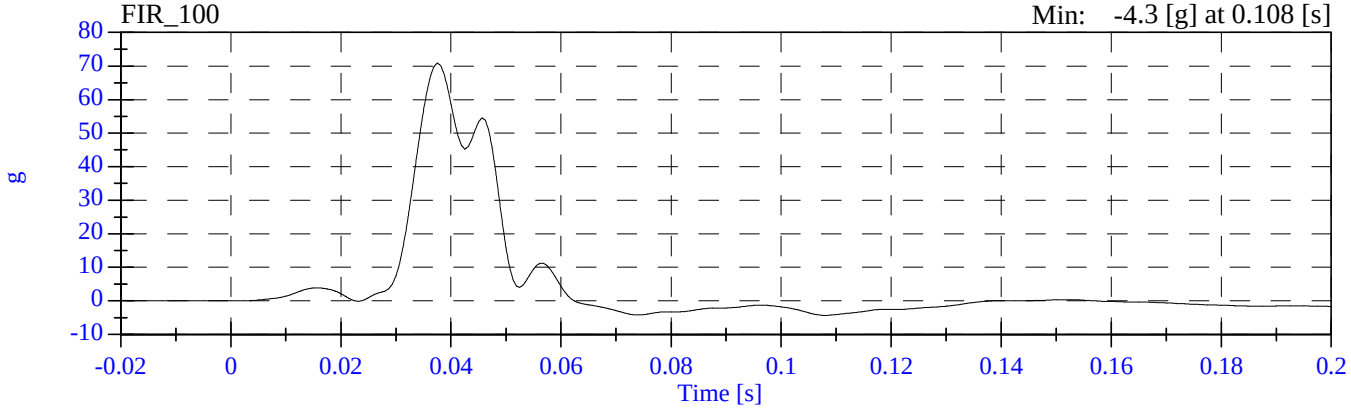
V2P4 Lower Rib y
FIR_100
Max: 68.7 [g] at 0.036 [s]
Min: -16.4 [g] at 0.108 [s]



V2P4 Lower Spine y
FIR_100
Max: 75.1 [g] at 0.047 [s]
Min: -16.7 [g] at 0.070 [s]



V2P4 Pelvic y
FIR_100
Max: 70.9 [g] at 0.037 [s]
Min: -4.3 [g] at 0.108 [s]



APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: 8/30/07, 9/25/07 Sequential Test Number: 1
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID H3 NO.: 269		SID H3 NO.: 270	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	899	899	899	899
RH- Rib Height (mm)	501 - 521	508	505	505	505
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	234	234	234	234
KH- Knee Pivot from Back Line (mm)	511 - 526	518	518	518	518
KV- Knee Pivot to Floor (mm)	490 - 505	493	493	495	493
HW- Hip Width (mm)	356 - 391	384	384	384	386
THORAX IMPACTS					
TEMPERATURE (• C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE. HUMIDITY (%)	10 -70	34	35	34	35
PROBE SPEED (m/s)	4.27 - 4.33	4.27	4.30	4.28	4.28
UPPER RIB (g's)	37 - 46	40.0	40.4	39.3	38.8
LOWER RIB (g's)	37 - 46	40.5	40.3	40.7	40.2
LOWER SPINE (g's)	15 -22	18.1	18.0	21.7	20.9
PELVIS IMPACT					
TEMPERATURE (• C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	35	35.0	34	36
PROBE SPEED (m/s)	4.27 - 4.33	4.28	4.33	4.29	4.29
PELVIS (g's)	40 -60	55.4	49.5	44.3	43.1

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 269

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 8/24/07 - 8/30/07 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.: 269 Sequential Test Number: 1
Date: 8/31/07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	899
RH- Rib Height (mm)	502 – 520	508
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	234
KH- Knee Pivot from Back Line (mm)	511 – 526	518
KV- Knee Pivot to Floor (mm)	490 – 505	493
HW- Hip Width (mm)	356 - 391	384

REMARKS: None

Shock Low (3.05 m/s)

PRE TEST

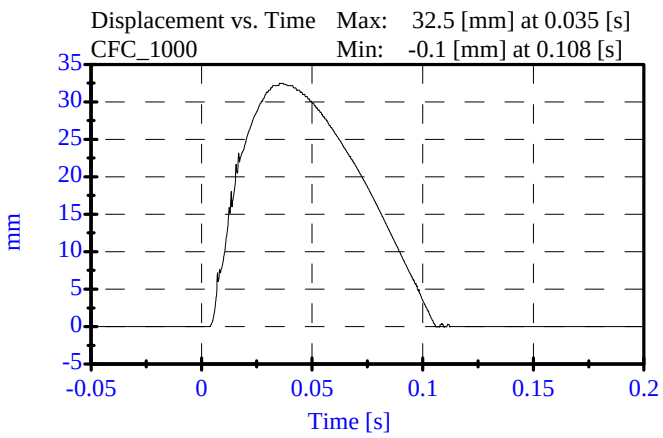
CONFIGURED FOR LEFT SIDE IMPACT

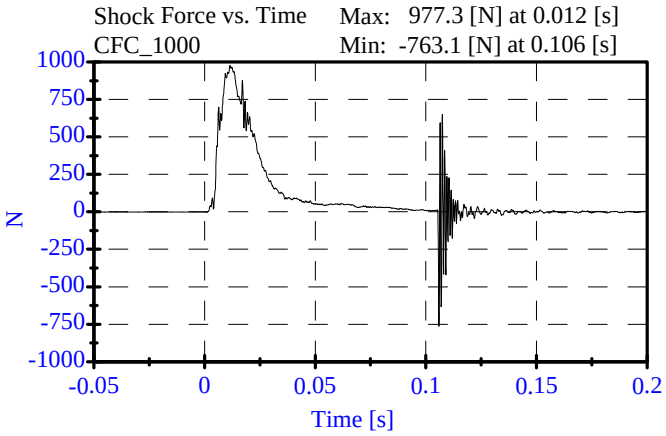
ATD Serial No: 269 Sequential Test Number: 1 File: 269-10 07-19-07

Date: 07-19-07 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	32.51 mm	Passed
Maximum Force:	836.00-1125.00 N	977.33 N	Passed

Impact Test Velocity: 3.05 m/s
Damper Identification: 269
Damper Setting: 5





Shock Med (4.27 m/s)

PRE TEST

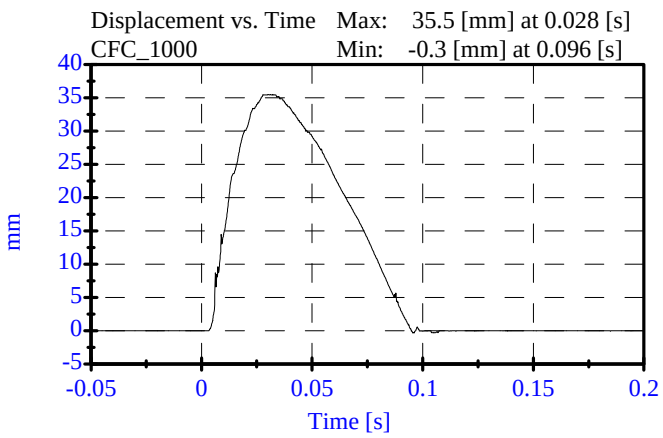
CONFIGURED FOR LEFT SIDE IMPACT

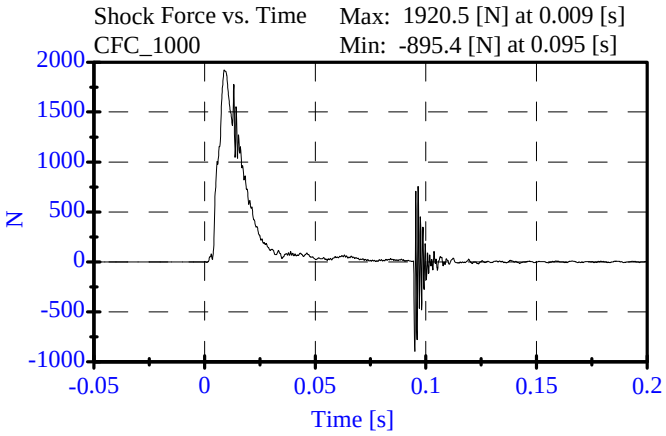
ATD Serial No: 269 Sequential Test Number: 1 File: 269-14 07-19-07

Date: 07-19-07 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	35.46 mm	Passed
Maximum Force:	1730.00-2099.00 N	1920.51 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 269
Damper Setting: 5





Shock High (6.10 m/s)

PRE TEST

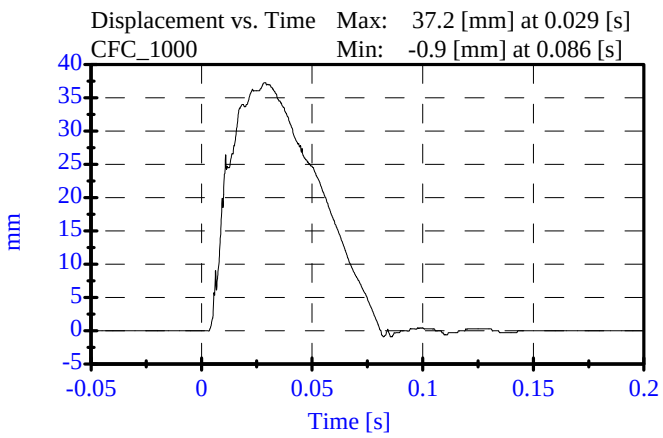
CONFIGURED FOR LEFT SIDE IMPACT

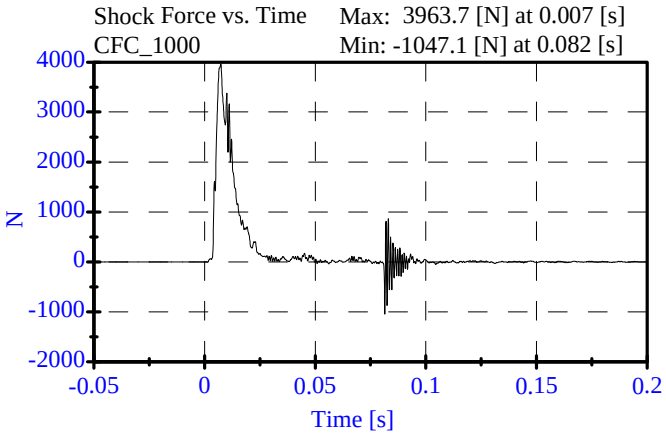
ATD Serial No: 269 Sequential Test Number: 1 File: 269-20 07-19-07

Date: 07-19-07 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	37.23 mm	Passed
Maximum Force:	3741.00-4448.00 N	3963.68 N	Passed

Impact Test Velocity: 6.10 m/s
Damper Identification: 269
Damper Setting: 5





Thorax Impact

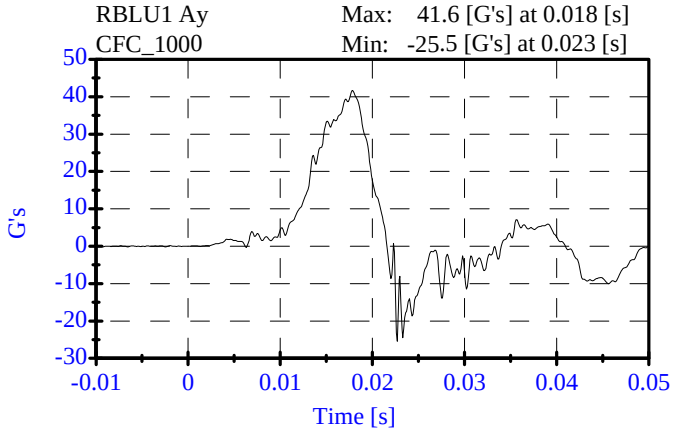
Pre-Test

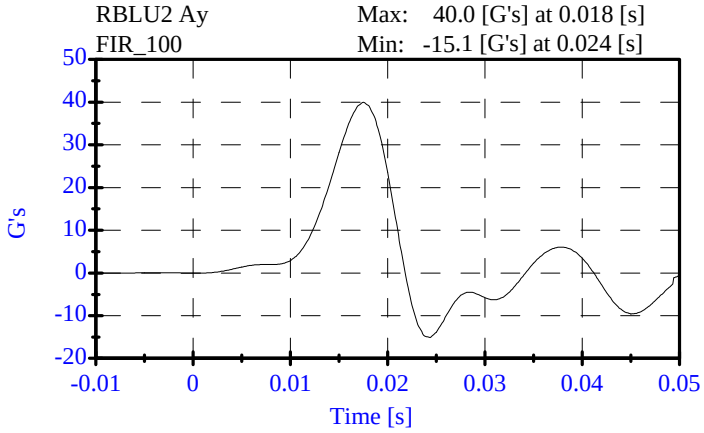
CONFIGURED FOR LEFT SIDE IMPACT

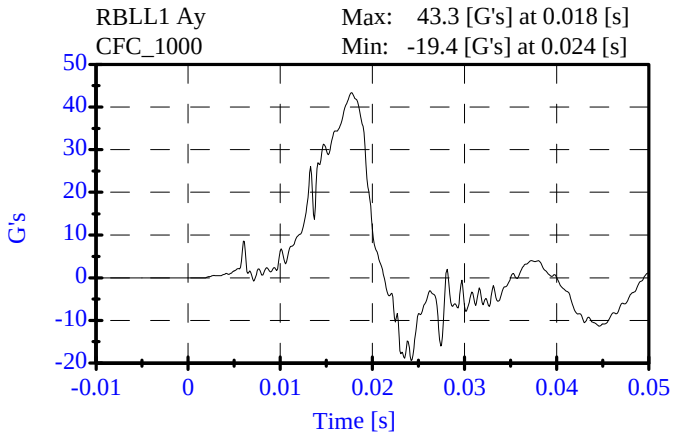
ATD Serial No: 269 Sequential Test Number: 1 File: 269T 08-28-07

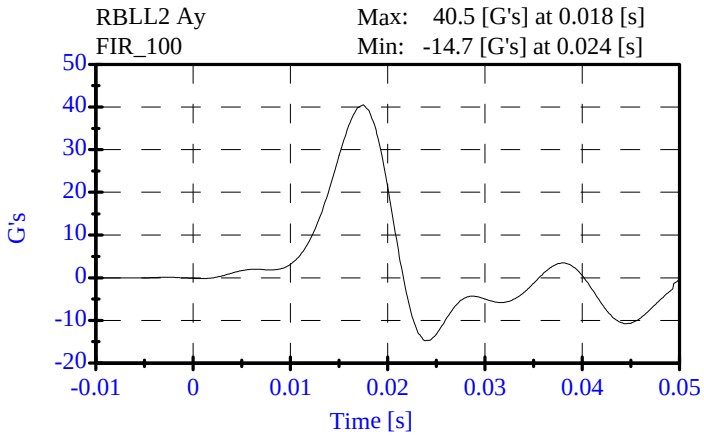
Date: 08-28-07 Laboratory Technician: B. Swiecicki

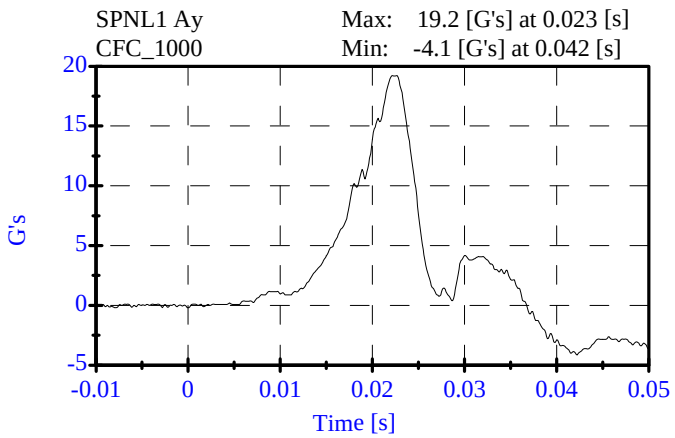
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	34.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	40.02 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	40.51 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	18.07 G's	Passed

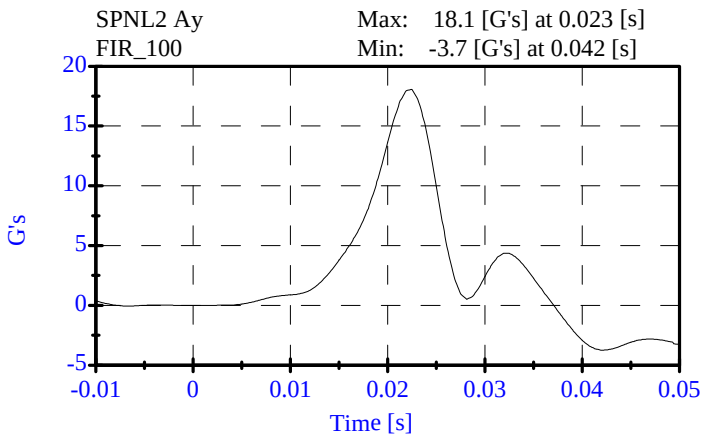












Pelvic Impact

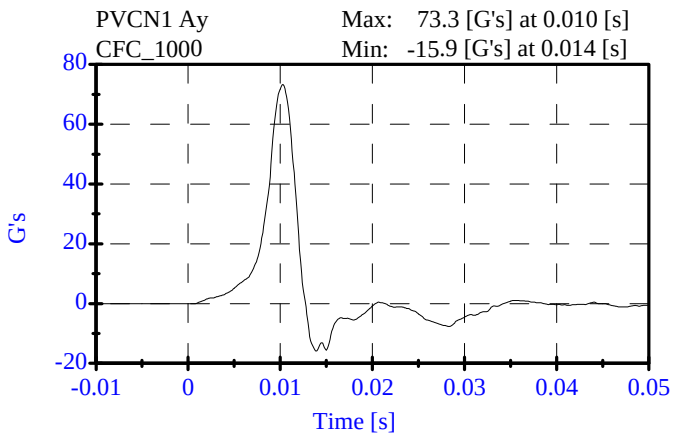
Pre-Test

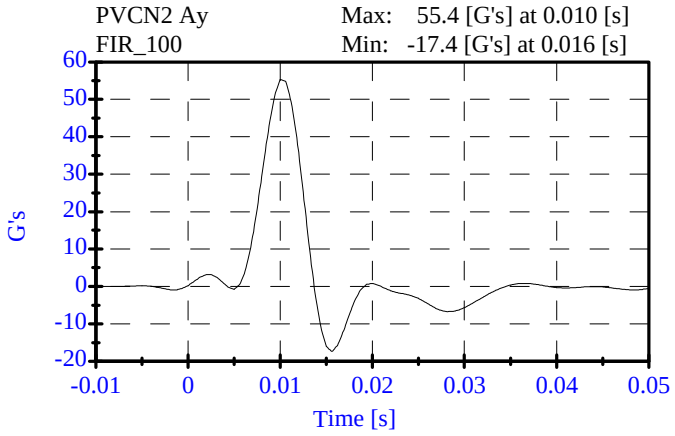
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269P 08-28-07

Date: 08-28-07 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	4.28 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	55.35 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.3 ms	Passed





Head Drop

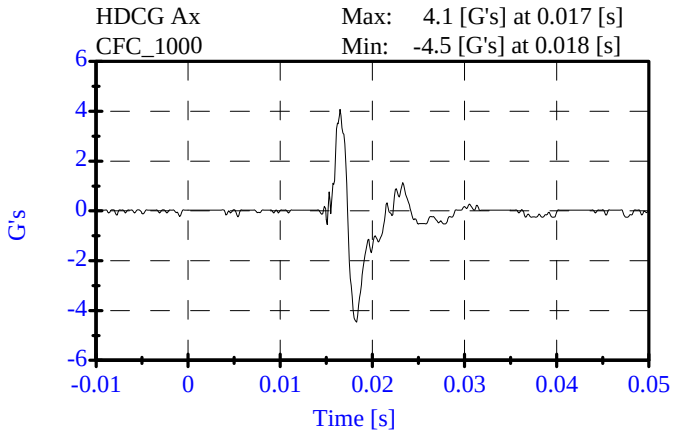
Pre-Test

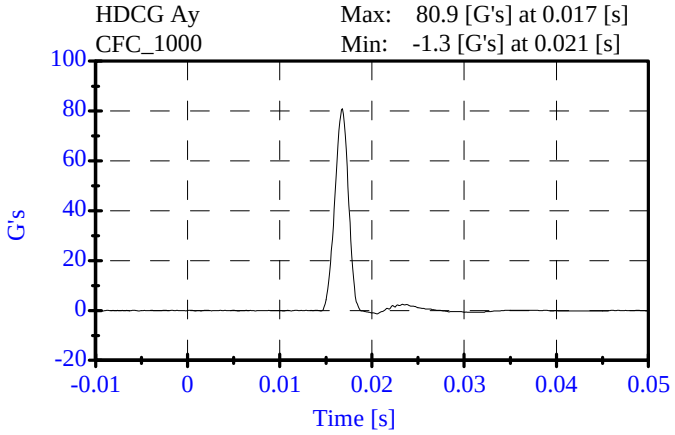
CONFIGURED FOR LEFT SIDE IMPACT

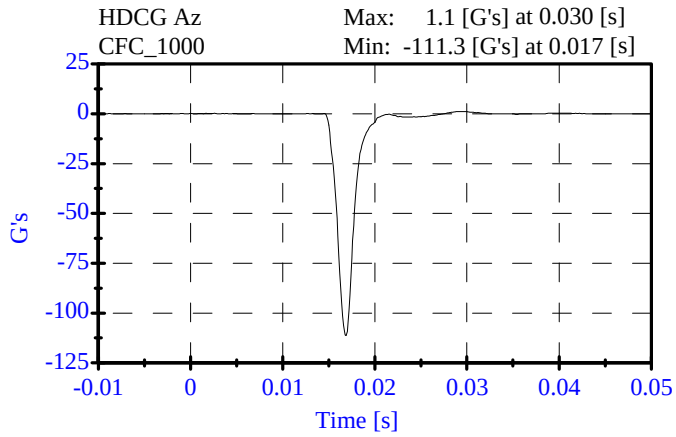
ATD Serial No: 269 Sequential Test Number: 1 File: 269HD1 08-24-07

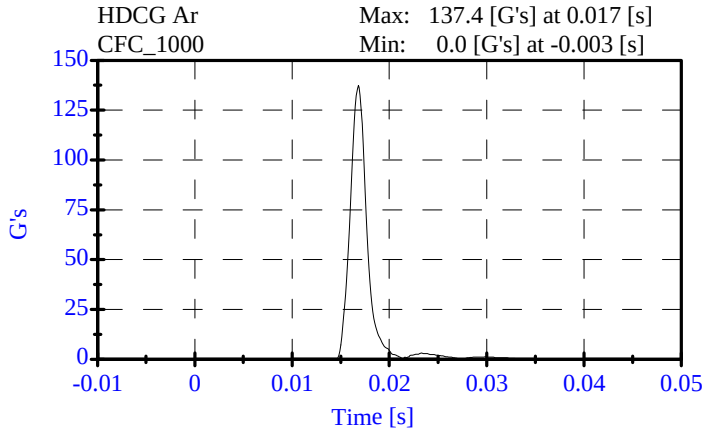
Date: 08-24-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	137.39 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	4.08 Gs	Passed
Curve PerCent NonModal:	< 15%	2.31 %	Passed









Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269Neck 08-27-07

Date: 08-27-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.99 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	2.15 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.44 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.42 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.14 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.31 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	86.92 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	56.40 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.00 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

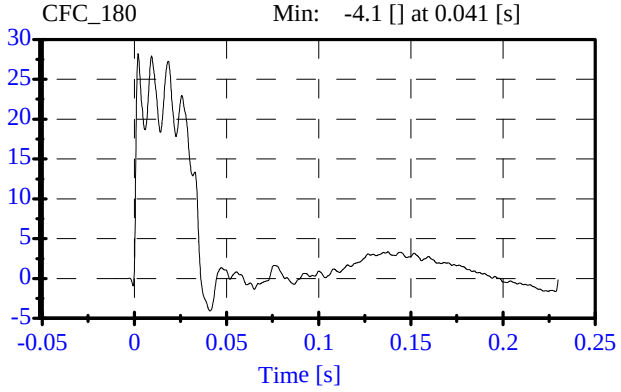
ATD Serial No: 269

Sequential Test Number: 1 File: 269Neck 08-27-07

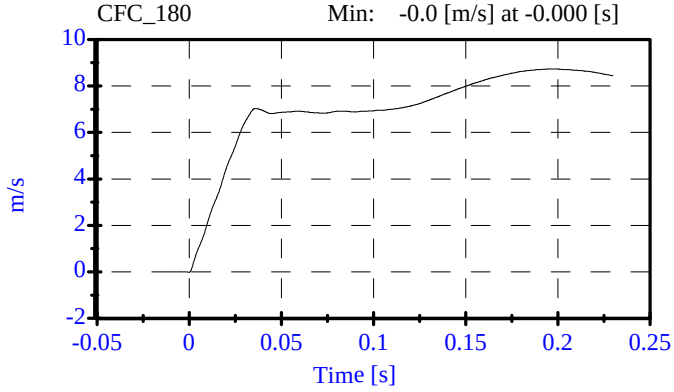
Date: 08-27-07

Laboratory Technician: B. Swiecicki

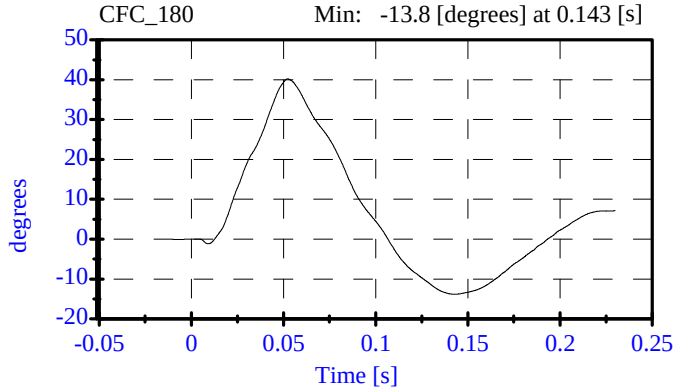
Pend Ax
CFC_180
Max: 28.2 [] at 0.002 [s]
Min: -4.1 [] at 0.041 [s]



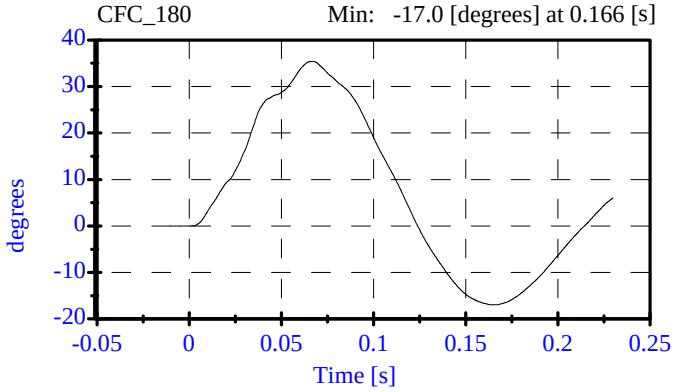
Pend Vx
CFC_180
Max: 8.7 [m/s] at 0.199 [s]
Min: -0.0 [m/s] at -0.000 [s]



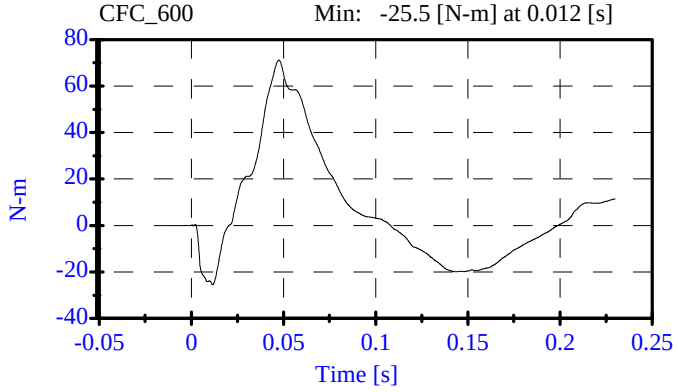
Head Rot
CFC_180
Max: 40.2 [degrees] at 0.052 [s]
Min: -13.8 [degrees] at 0.143 [s]



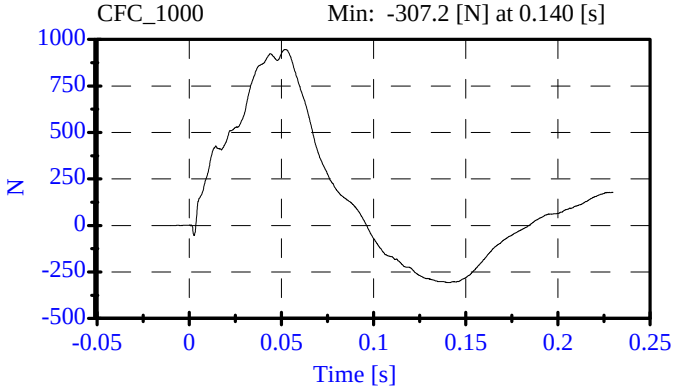
Arm Rot
CFC_180
Max: 35.4 [degrees] at 0.067 [s]
Min: -17.0 [degrees] at 0.166 [s]



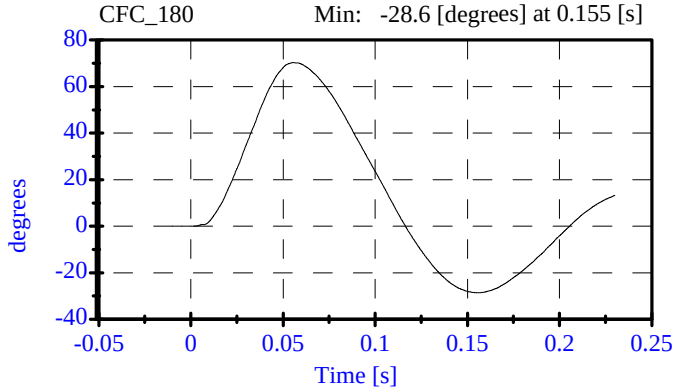
Neck Mx
CFC_600
Max: 71.1 [N-m] at 0.048 [s]
Min: -25.5 [N-m] at 0.012 [s]



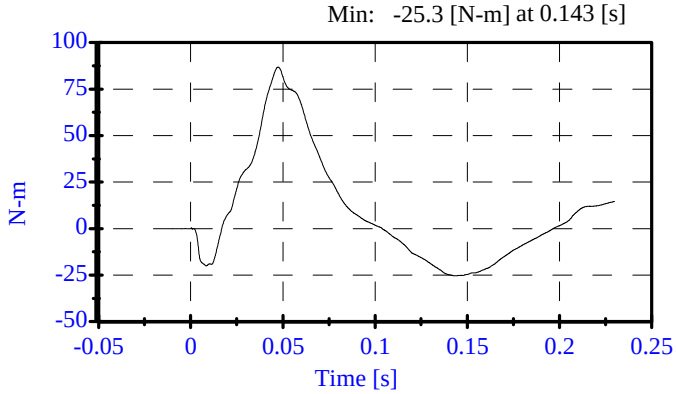
Neck Fy
CFC_1000
Max: 945.7 [N] at 0.052 [s]
Min: -307.2 [N] at 0.140 [s]



Tot Rot
CFC_180
Max: 70.3 [degrees] at 0.055 [s]
Min: -28.6 [degrees] at 0.155 [s]



MOCX
Max: 86.9 [N-m] at 0.048 [s]
Min: -25.3 [N-m] at 0.143 [s]



Abdomen Test

Pre-Test

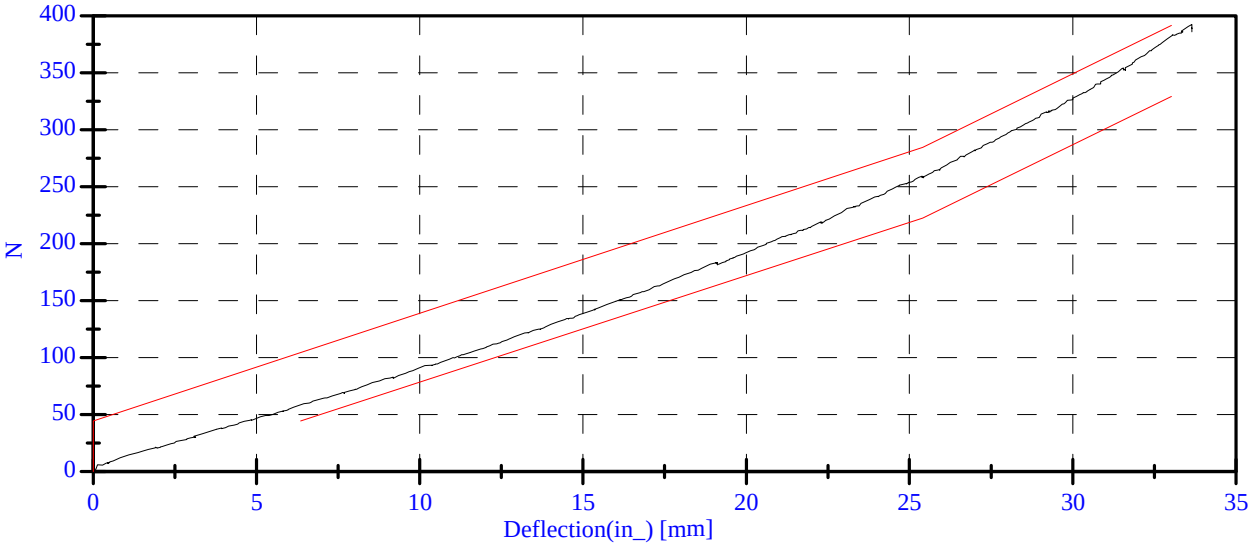
CONFIGURED FOR LEFT SIDE IMPACT

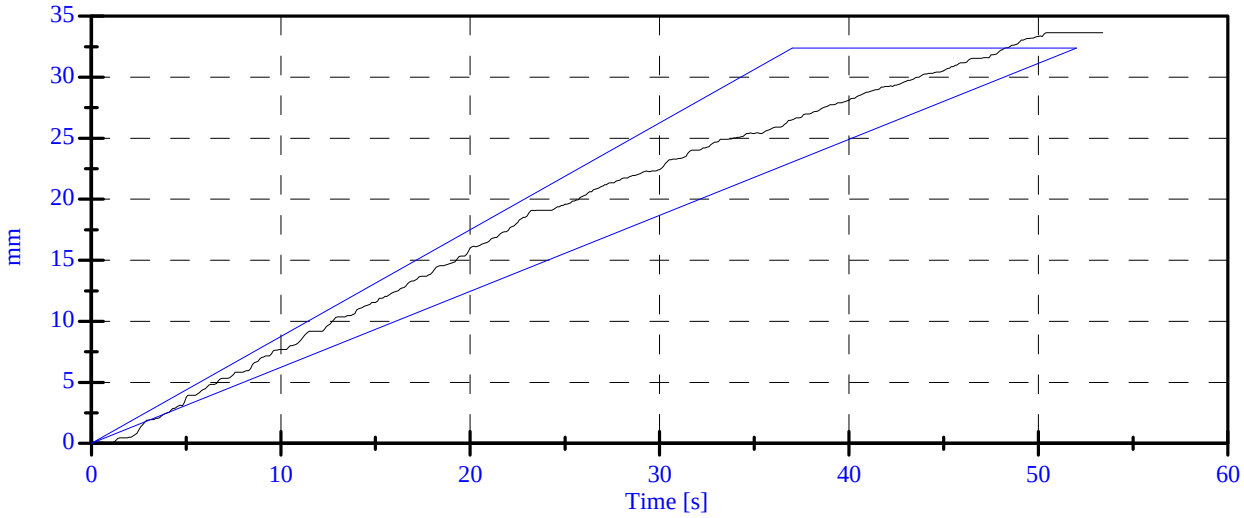
ATD Serial No: 269 Sequential Test Number: 1 File: 269AB 08-30-07

Date: 08-30-07 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	118.33 N	Passed
Force at 19.05 mm :	162.98-220.99 N	183.22 N	Passed
Force at 25.40 mm :	221.97-280.02 N	259.34 N	Passed
Force at 33.02 mm :	324.99-391.00 N	382.95 N	Passed

ABDOMINAL COMPRESSION TEST





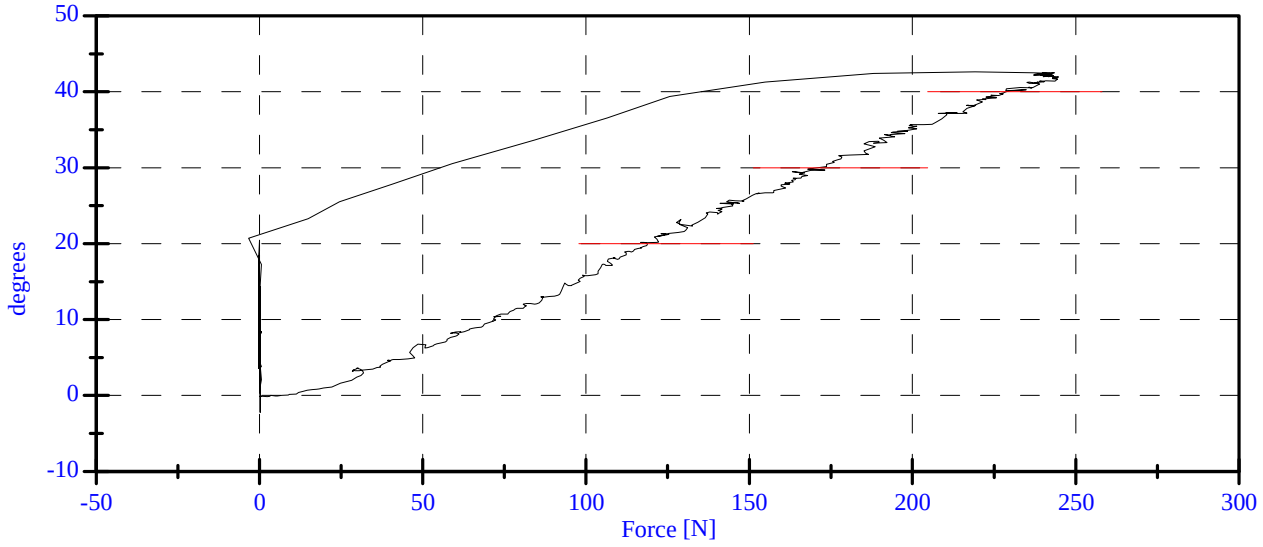
Spine Test
Pre-Test

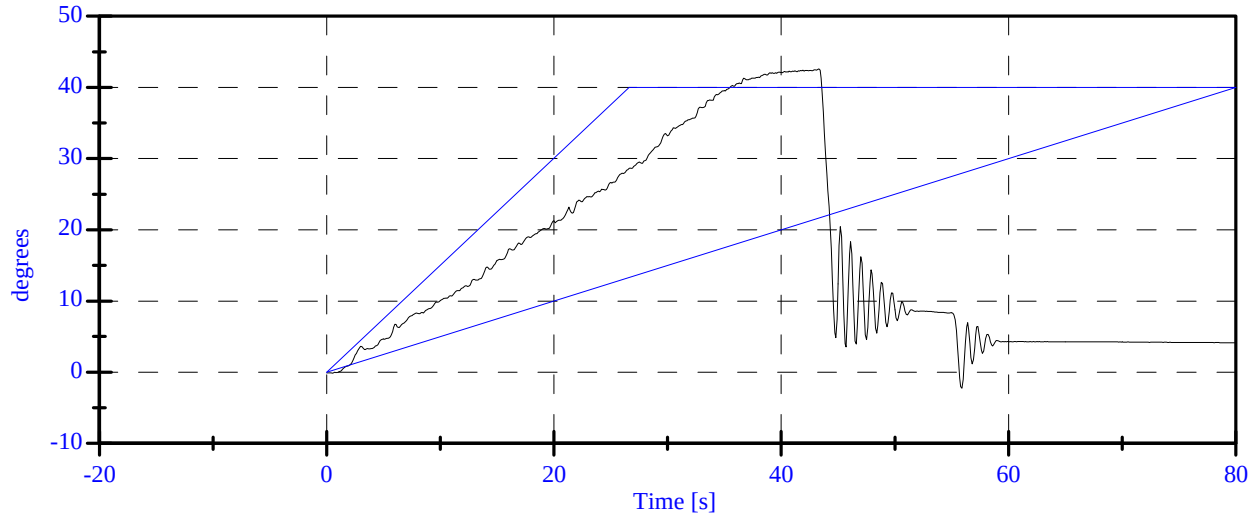
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269SP 08-30-07
Date: 08-30-07 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 %	36.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	3.39 N	Passed
Force at 20 Deg:	97.86-151.24 N	118.82 N	Passed
Force at 30 Deg	151.24-204.62 N	173.67 N	Passed
Force at 40 Deg	204.62-258.00 N	228.77 N	Passed
Return Angle	12 Deg Max	4.09 deg	Passed

LUMBAR SPINE FLEXION TEST





PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 8/23/07 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.: 270

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 8/30/07, 9/25/07 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.: 270 Sequential Test Number: 1
Date: 8/31/07 Laboratory Technician: B. Swiecicki

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

REMARKS: None

Shock Low (3.05 m/s)

PRE TEST

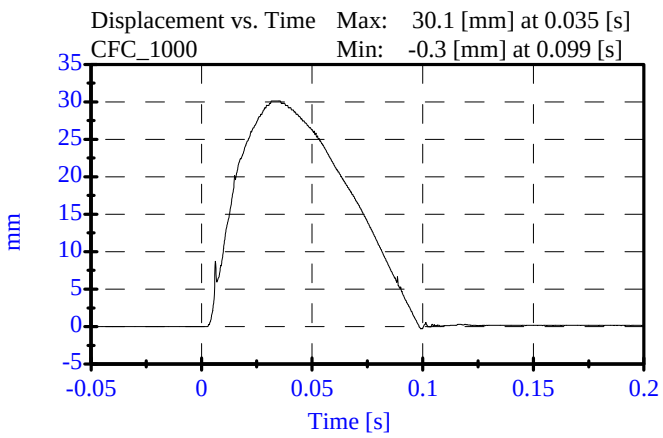
CONFIGURED FOR LEFT SIDE IMPACT

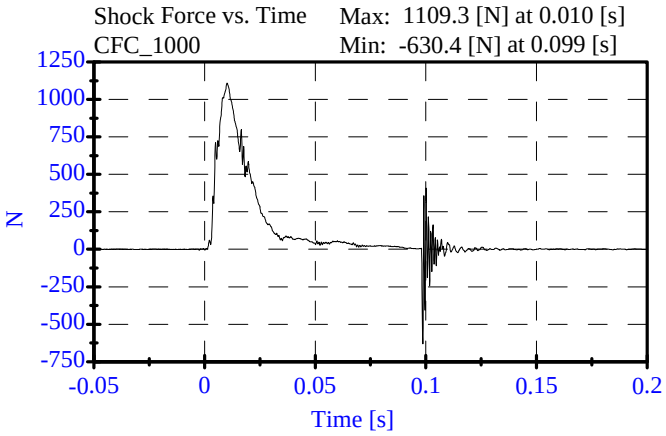
ATD Serial No: 270 Sequential Test Number: 1 File: 270-10 07-18-07

Date: 07-18-07 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 %	38.00 %	Passed
Displacement:	30.00-35.00 mm	30.14 mm	Passed
Maximum Force:	836.00-1125.00 N	1109.32 N	Passed

Impact Test Velocity: 3.05 m/s
Damper Identification: 270
Damper Setting: 5





Shock Med (4.27 m/s)

PRE TEST

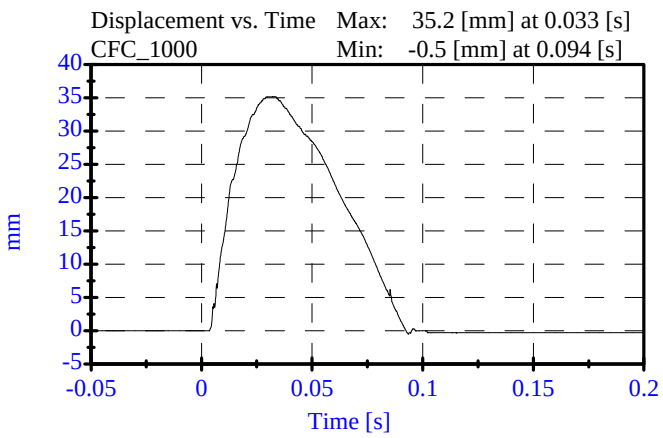
CONFIGURED FOR LEFT SIDE IMPACT

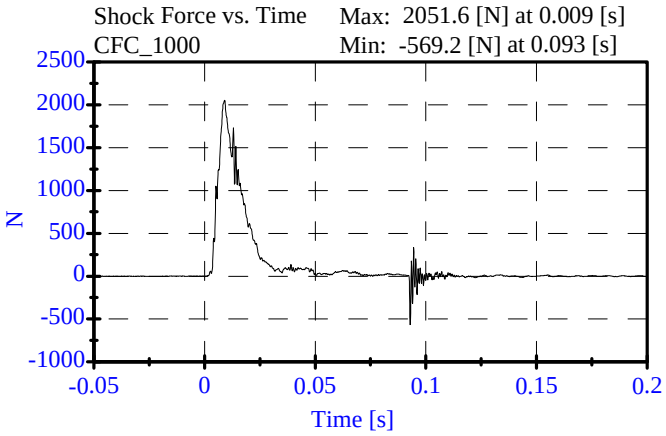
ATD Serial No: 270 Sequential Test Number: 1 File: 270-14a 07-18-07

Date: 07-18-07 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 %	38.00 %	Passed
Displacement:	32.00-37.00 mm	35.15 mm	Passed
Maximum Force:	1730.00-2099.00 N	2051.64 N	Passed

Impact Test Velocity: 4.27 m/s
Damper Identification: 270
Damper Setting: 5





Shock High (6.10 m/s)

PRE TEST

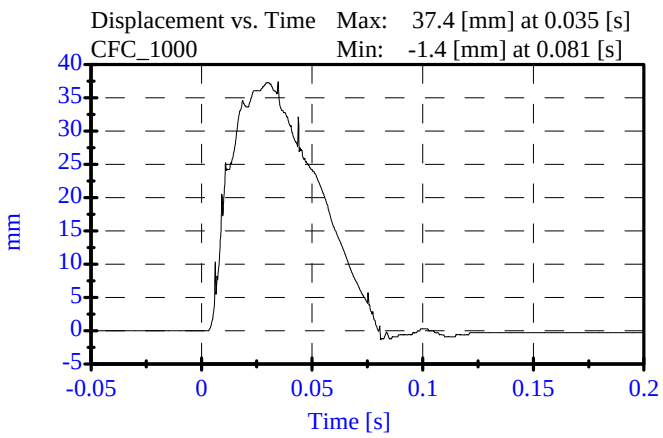
CONFIGURED FOR LEFT SIDE IMPACT

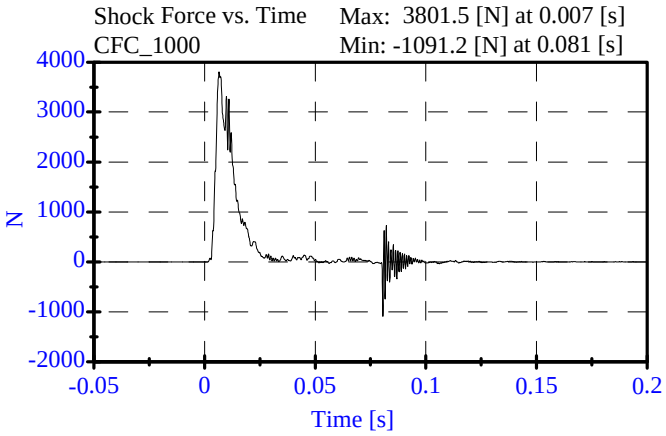
ATD Serial No: 270 Sequential Test Number: 1 File: 270-20a 07-19-07

Date: 07-19-07 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	37.41 mm	Passed
Maximum Force:	3741.00-4448.00 N	3801.46 N	Passed

Impact Test Velocity: 6.10 m/s
Damper Identification: 270
Damper Setting: 5





Thorax Impact

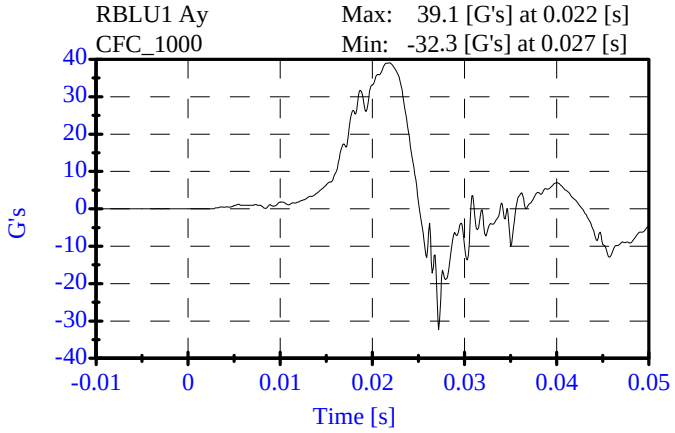
Pre-Test

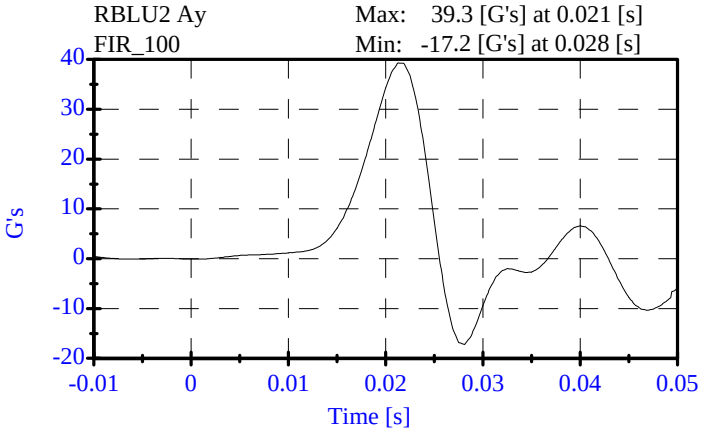
CONFIGURED FOR LEFT SIDE IMPACT

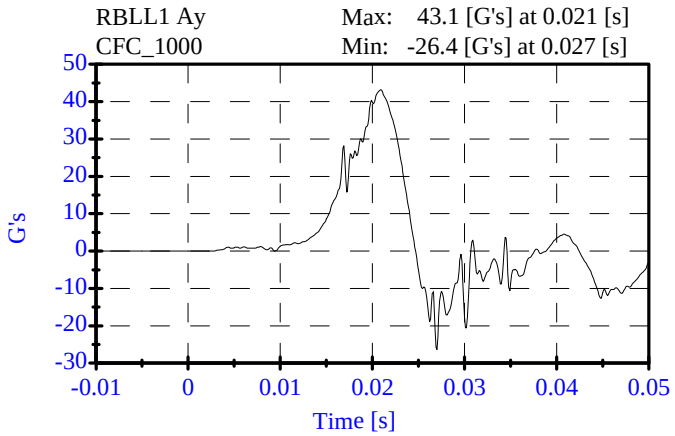
ATD Serial No: 270 Sequential Test Number: 1 File: 270T 08-28-07

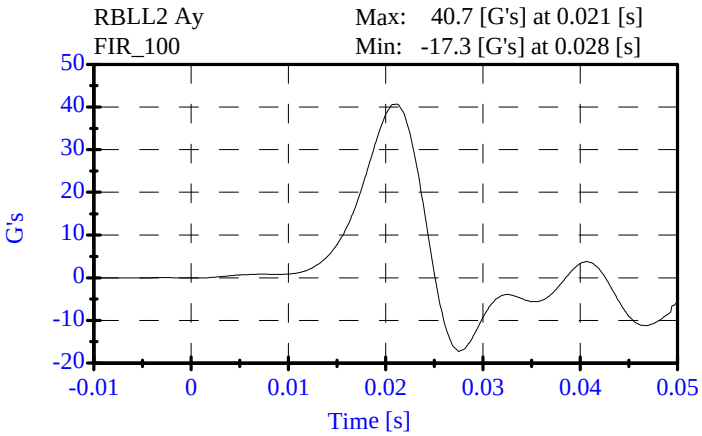
Date: 08-28-07 Laboratory Technician: B. Swiecicki

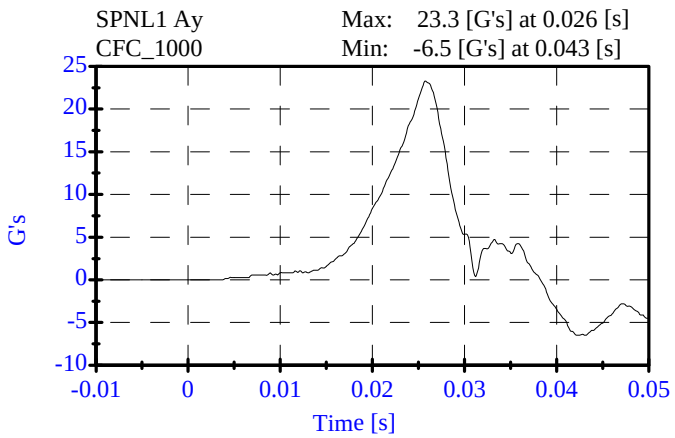
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	34.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	39.29 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	40.70 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.71 G's	Passed

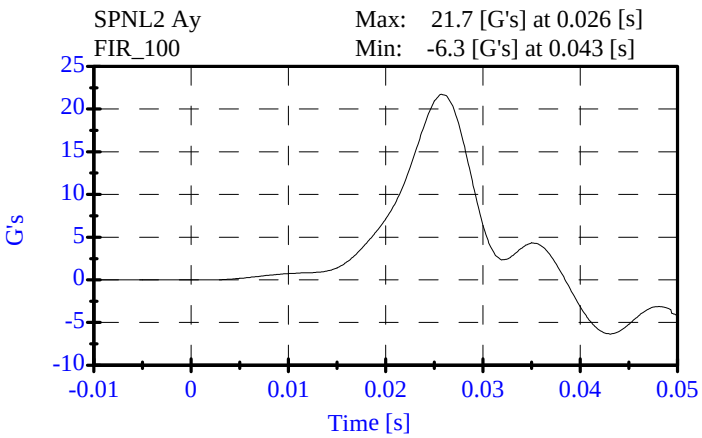












Pelvic Impact

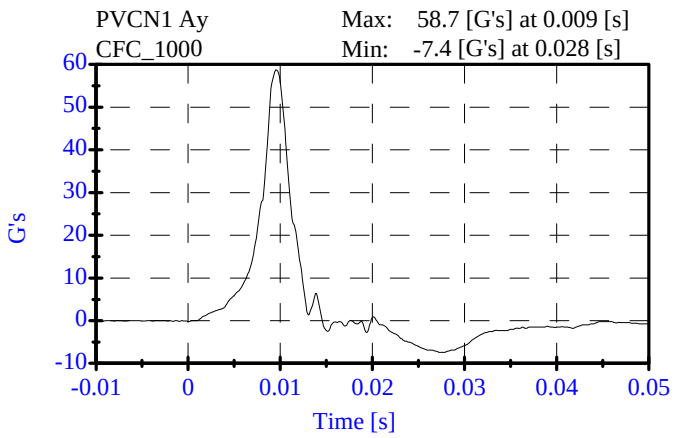
Pre-Test

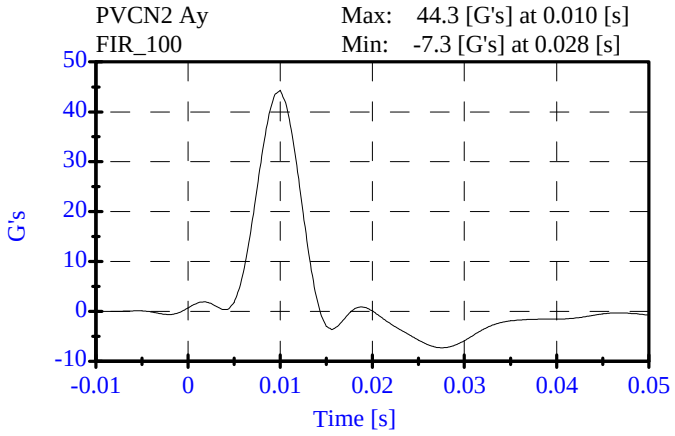
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270P 08-28-07

Date: 07-28-07 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 %	34.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	44.31 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.3 ms	Passed





Head Drop

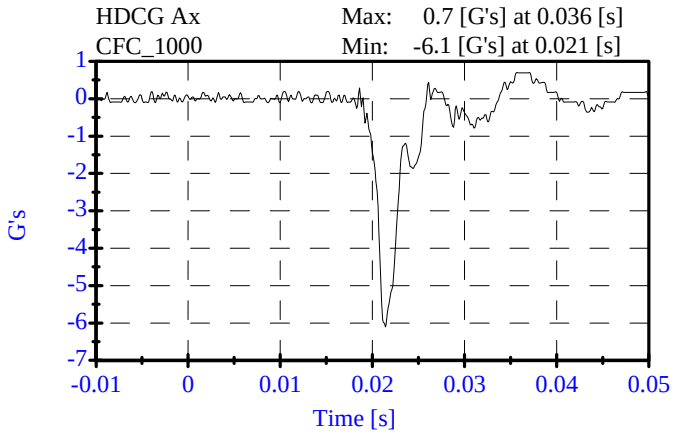
Pre-Test

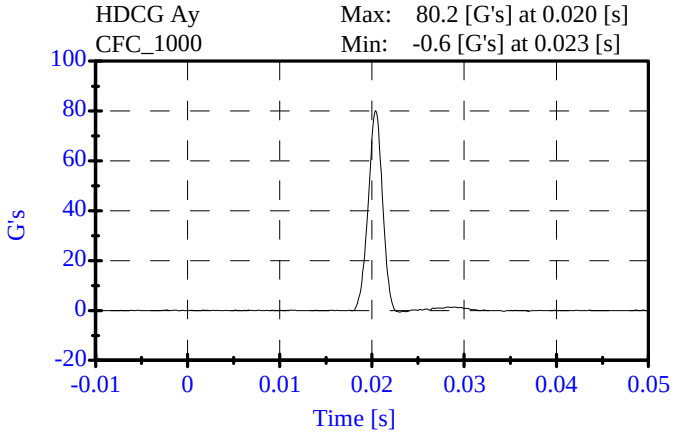
CONFIGURED FOR LEFT SIDE IMPACT

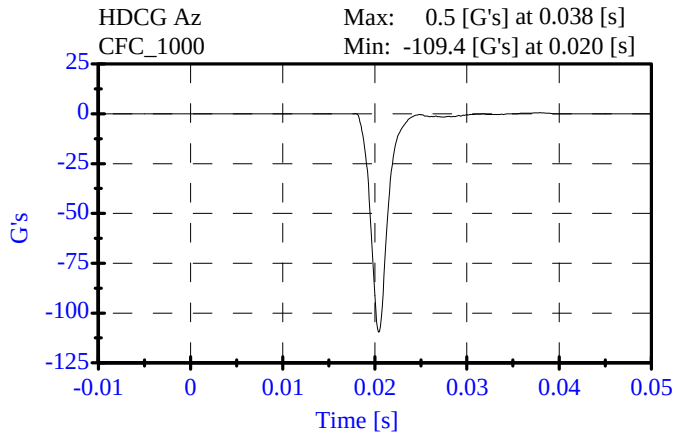
ATD Serial No: 270 Sequential Test Number: 1 File: 270HD1 08-24-07

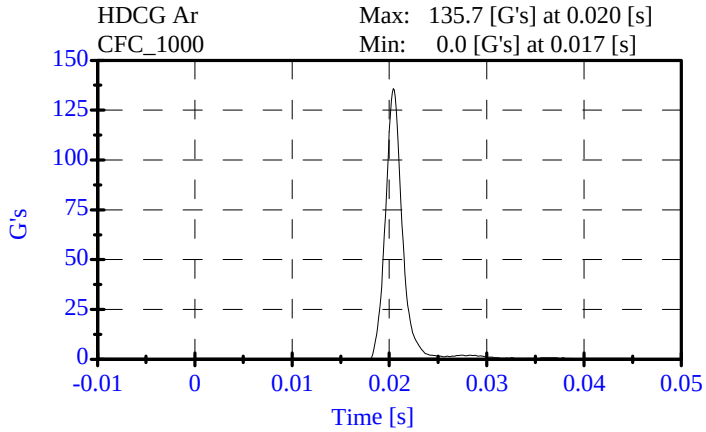
Date: 08-24-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	135.72 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	0.70 Gs	Passed
Curve PerCent NonModal:	< 15%	1.54 %	Passed









Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270Neck 08-27-07

Date: 08-27-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	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	2.14 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.44 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.51 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.23 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	68.63 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.90 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	86.82 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	52.40 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	7.90 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

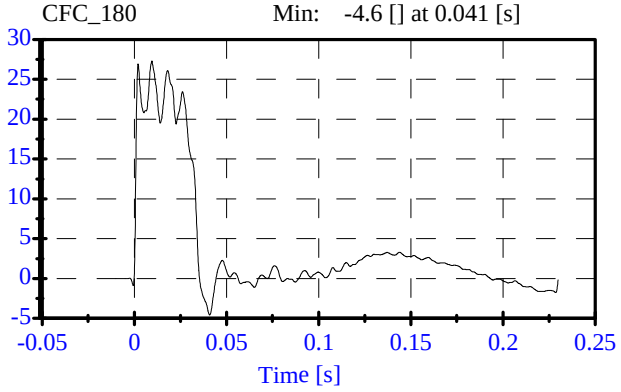
ATD Serial No: 270

Sequential Test Number: 1 File: 270Neck 08-27-07

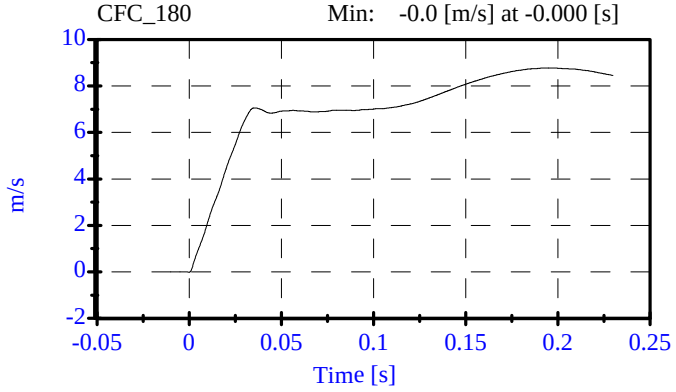
Date: 08-27-07

Laboratory Technician: B. Swiecicki

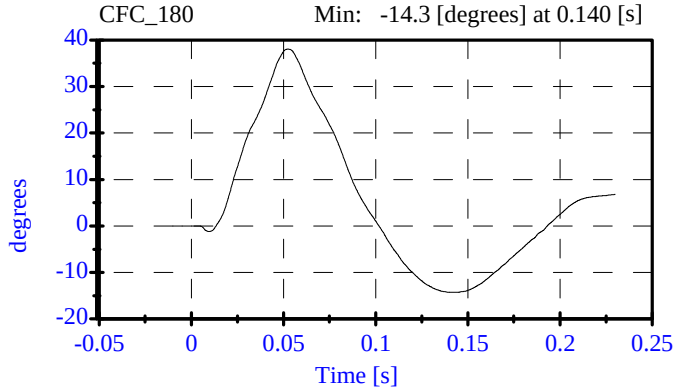
Pend Ax
CFC_180
Max: 27.3 [] at 0.009 [s]
Min: -4.6 [] at 0.041 [s]



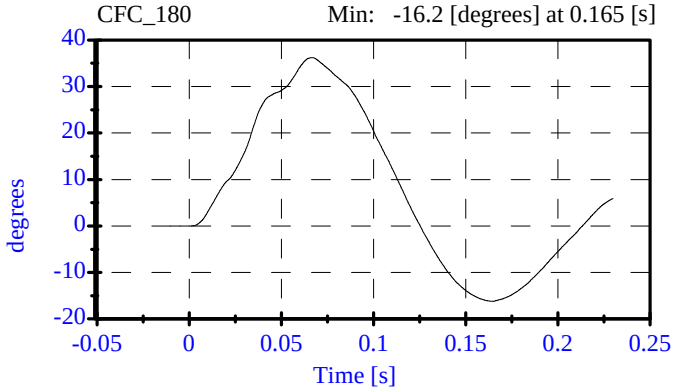
Pend Vx
CFC_180
Max: 8.8 [m/s] at 0.193 [s]
Min: -0.0 [m/s] at -0.000 [s]



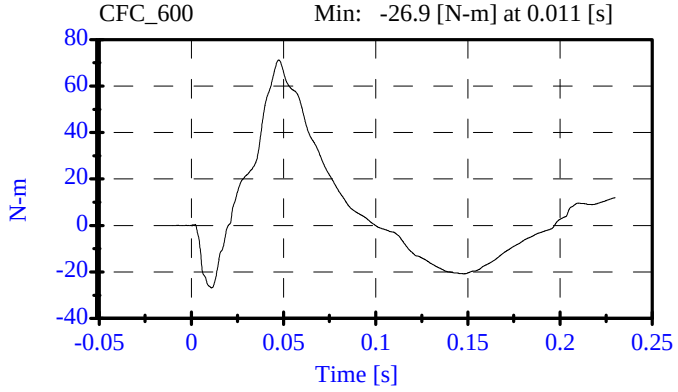
Head Rot
CFC_180
Max: 38.0 [degrees] at 0.052 [s]
Min: -14.3 [degrees] at 0.140 [s]



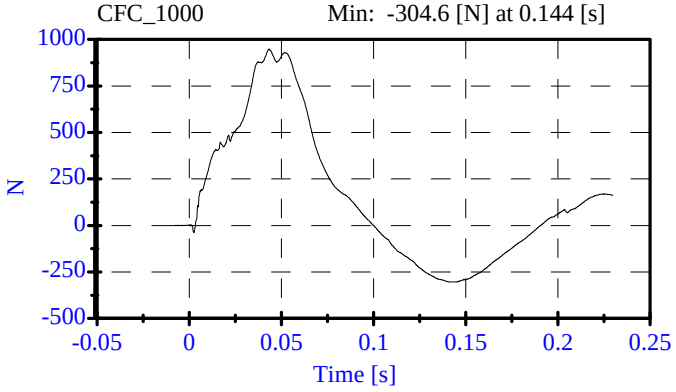
Arm Rot
CFC_180
Max: 36.2 [degrees] at 0.067 [s]
Min: -16.2 [degrees] at 0.165 [s]



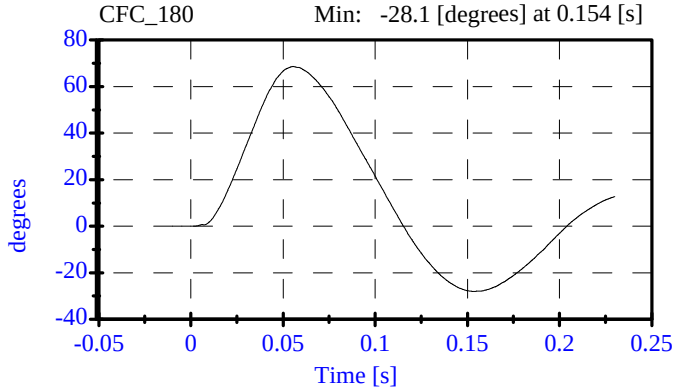
Neck Mx
CFC_600
Max: 71.2 [N-m] at 0.047 [s]
Min: -26.9 [N-m] at 0.011 [s]



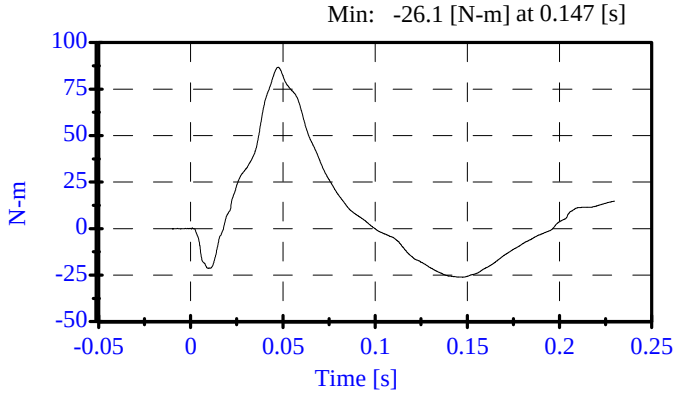
Neck Fy
CFC_1000
Max: 947.8 [N] at 0.043 [s]
Min: -304.6 [N] at 0.144 [s]



Tot Rot
CFC_180
Max: 68.6 [degrees] at 0.055 [s]
Min: -28.1 [degrees] at 0.154 [s]



MOCX
Max: 86.8 [N-m] at 0.048 [s]
Min: -26.1 [N-m] at 0.147 [s]



Abdomen Test

Pre-Test

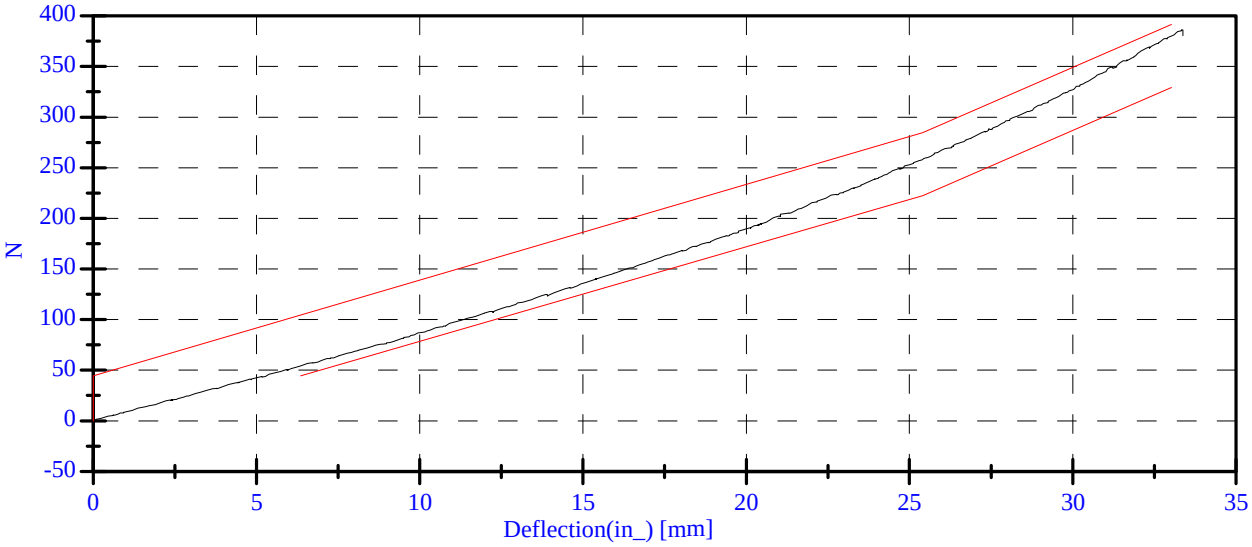
CONFIGURED FOR LEFT SIDE IMPACT

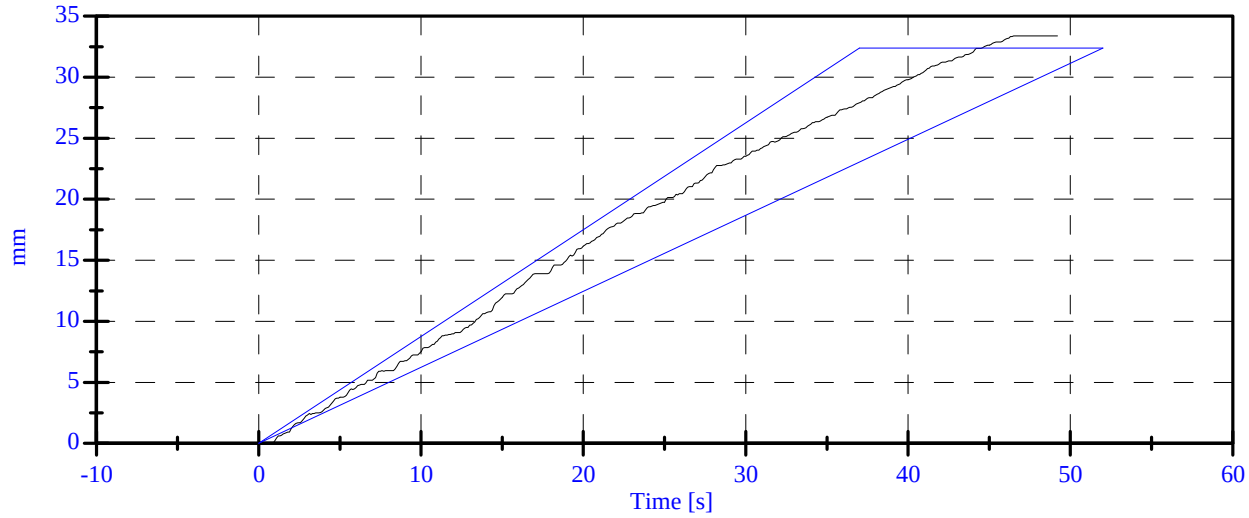
ATD Serial No: 270 Sequential Test Number: 1 File: 270AB 08-30-07

Date: 08-30-07 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	115.07 N	Passed
Force at 19.05 mm :	162.98-220.99 N	179.23 N	Passed
Force at 25.40 mm :	221.97-280.02 N	257.89 N	Passed
Force at 33.02 mm :	324.99-391.00 N	380.41 N	Passed

ABDOMINAL COMPRESSION TEST





Spine Test
Pre-Test

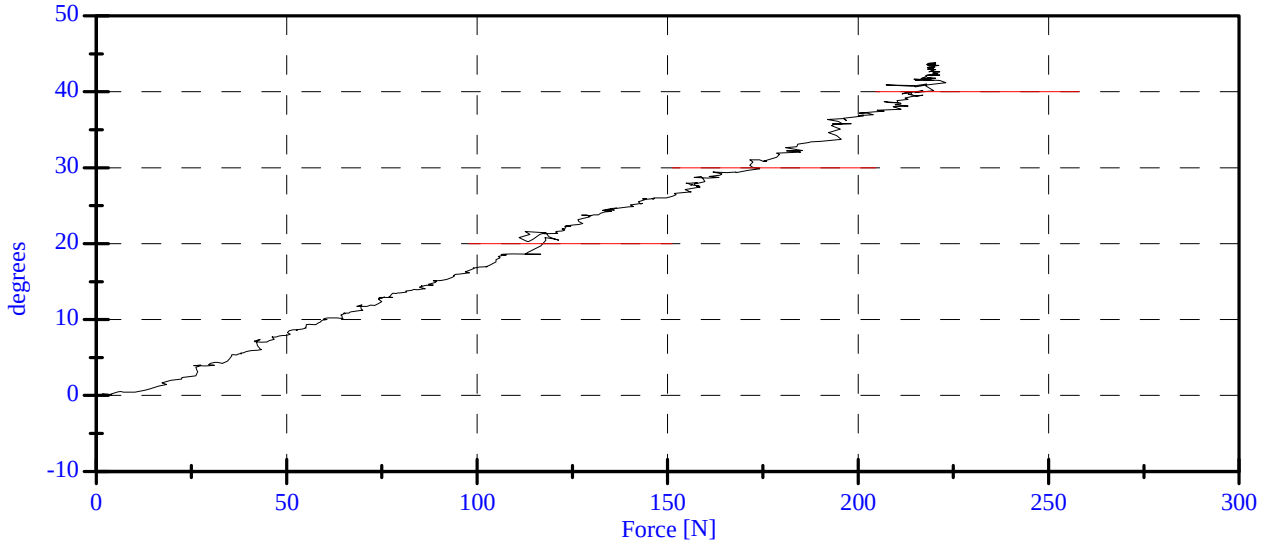
CONFIGURED FOR LEFT SIDE IMPACT

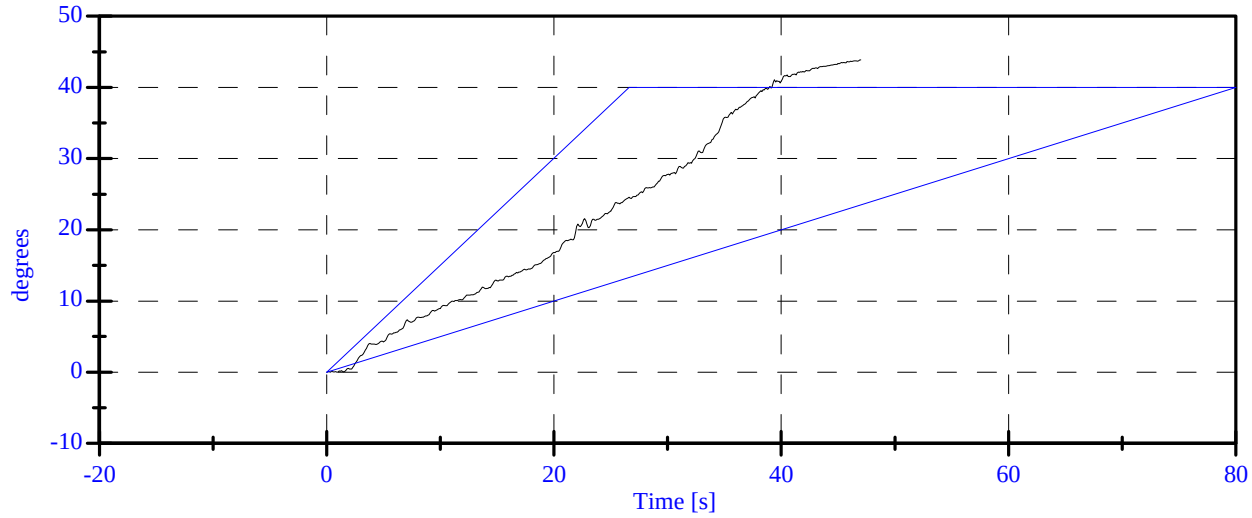
ATD Serial No: 270
Date: 08-30-07

Sequential Test Number: 1 File: 270SP 08-30-07
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 %	36.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	1.30 N	Passed
Force at 20 Deg:	97.86-151.24 N	116.73 N	Passed
Force at 30 Deg	151.24-204.62 N	172.36 N	Passed
Force at 40 Deg	204.62-258.00 N	214.93 N	Passed
Return Angle	12 Deg Max	1.73 deg	Passed

LUMBAR SPINE FLEXION TEST





PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 8/23/07 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.: 269

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 9/25/07 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.: 269 Sequential Test Number: 1
Date: 9/25/07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	384

REMARKS: None

Thorax Impact

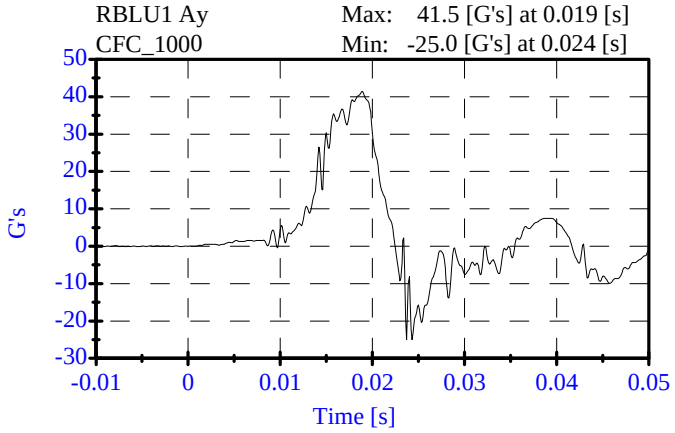
Post-Test

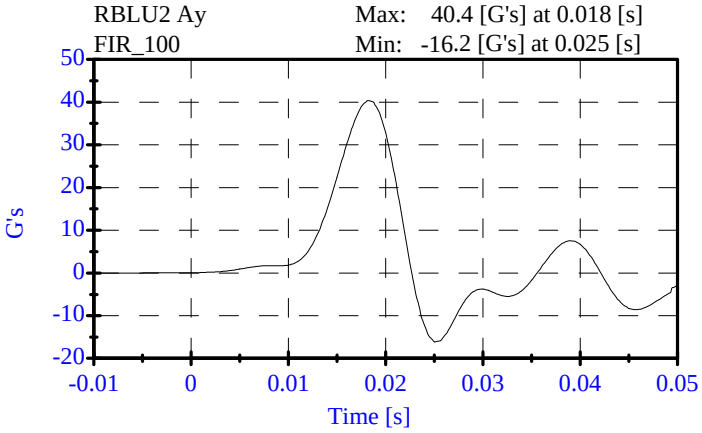
CONFIGURED FOR LEFT SIDE IMPACT

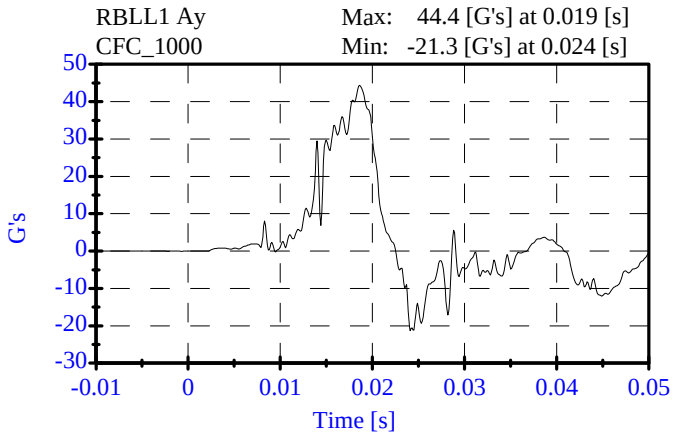
ATD Serial No: 269 Sequential Test Number: 1 File: 269T 09-24-07

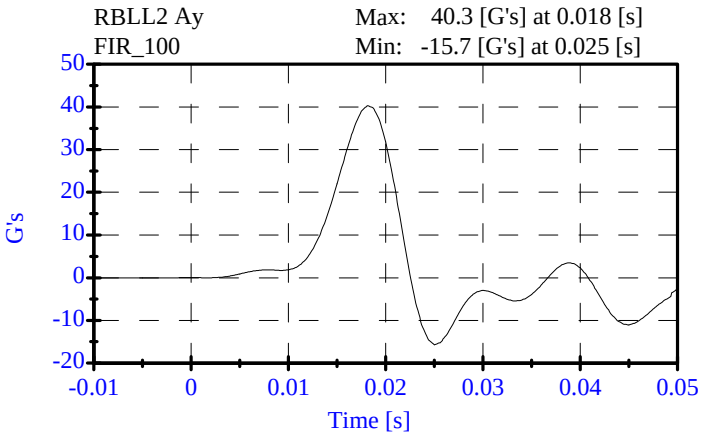
Date: 09-24-07 Laboratory Technician: B. Swiecicki

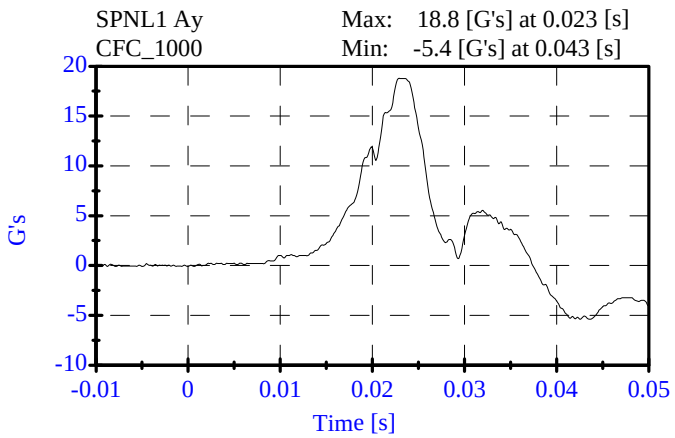
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	40.38 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	40.33 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	17.96 G's	Passed

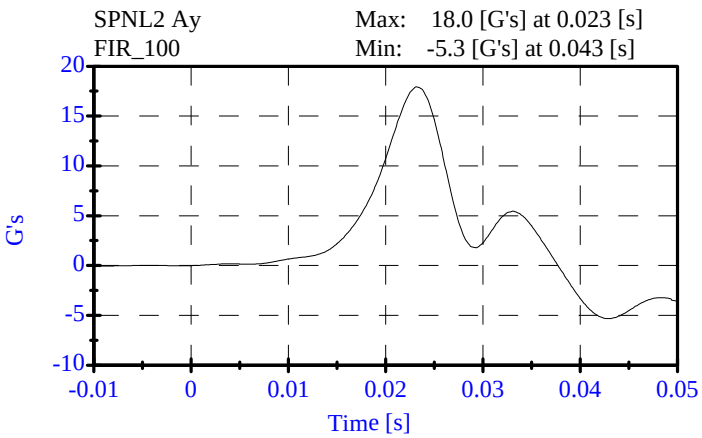












Pelvic Impact

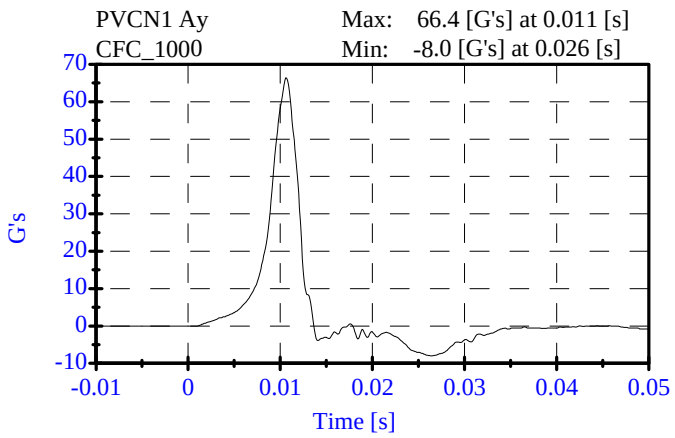
Post-Test

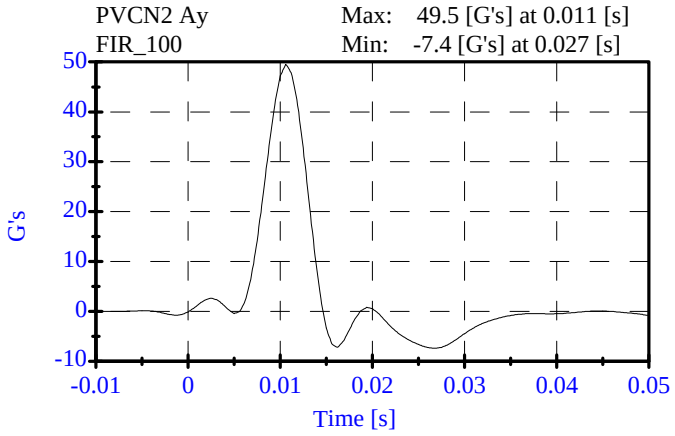
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269P 09-25-07

Date: 09-25-07 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	49.49 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.3 ms	Passed





Head Drop

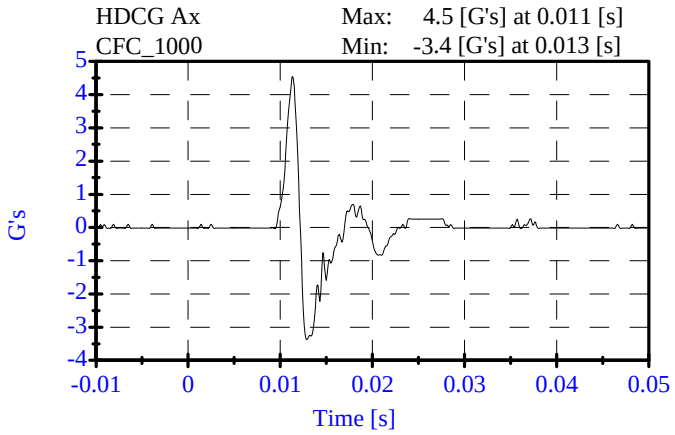
Post-Test

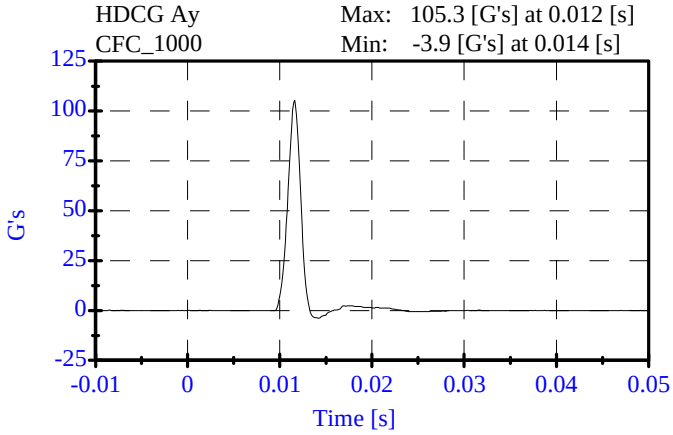
CONFIGURED FOR LEFT SIDE IMPACT

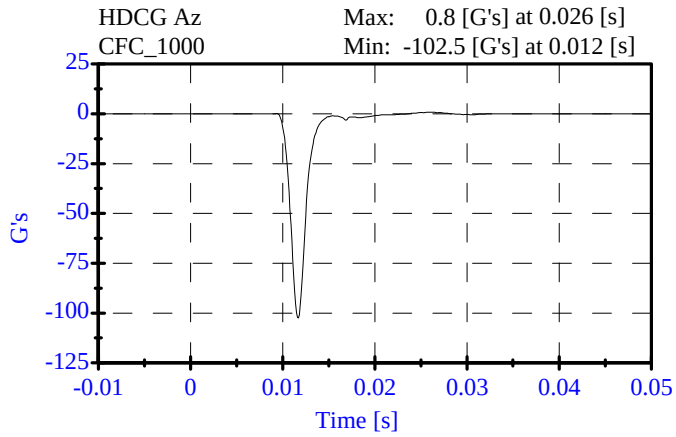
ATD Serial No: 269 Sequential Test Number: 1 File: 269HD 09-20-07

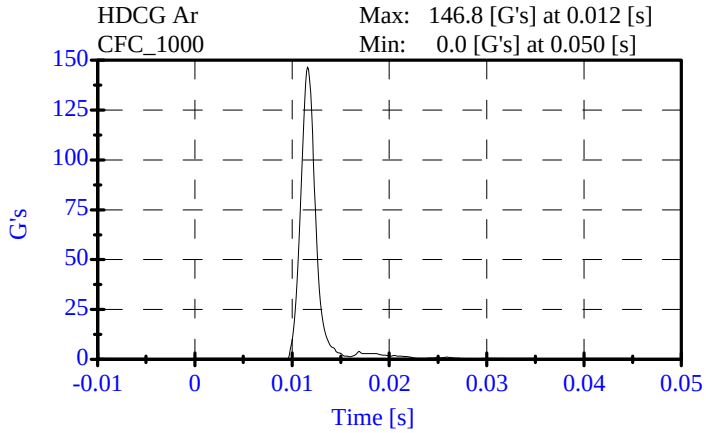
Date: 09-20-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	146.77 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	4.53 Gs	Passed
Curve PerCent NonModal:	< 15%	2.71 %	Passed









Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269N2 09-21-07

Date: 09-21-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
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	2.04 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.16 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	5.88 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	6.44 m/s	Failed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	71.44 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	60.40 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	86.10 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	56.50 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	8.70 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

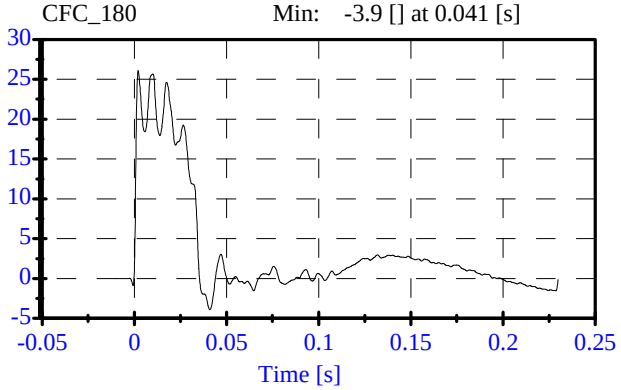
ATD Serial No: 269

Sequential Test Number: 1 File: 269N2 09-21-07

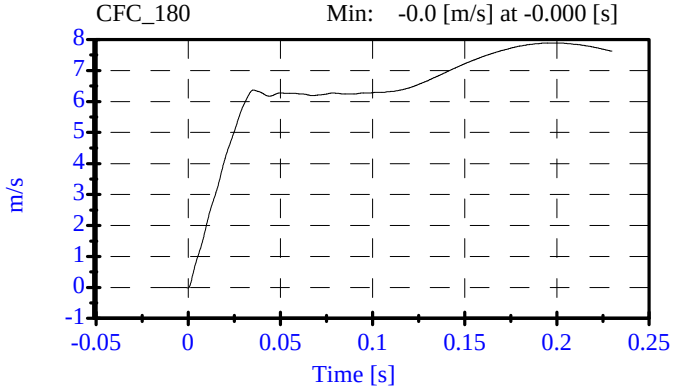
Date: 09-21-07

Laboratory Technician: B. Swiecicki

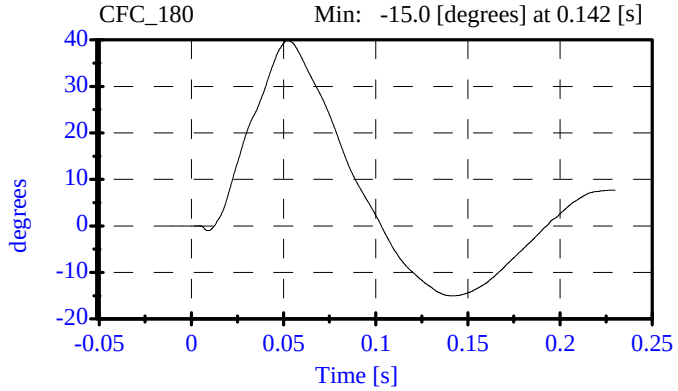
Pend Ax
CFC_180
Max: 26.1 [] at 0.002 [s]
Min: -3.9 [] at 0.041 [s]



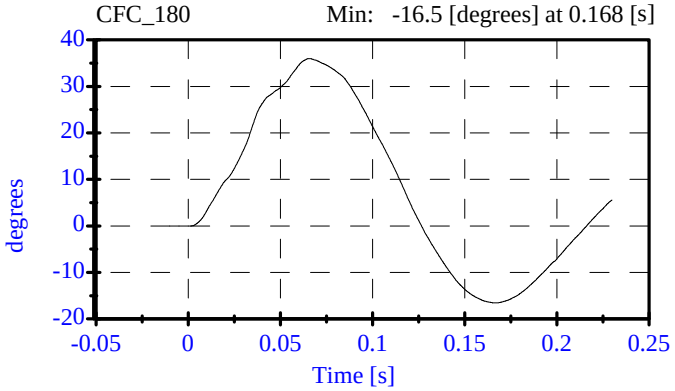
Pend Vx
CFC_180
Max: 7.9 [m/s] at 0.199 [s]
Min: -0.0 [m/s] at -0.000 [s]



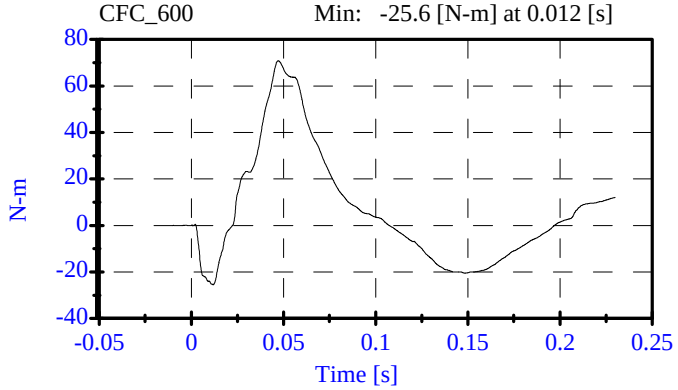
Head Rot
CFC_180
Max: 39.8 [degrees] at 0.052 [s]
Min: -15.0 [degrees] at 0.142 [s]



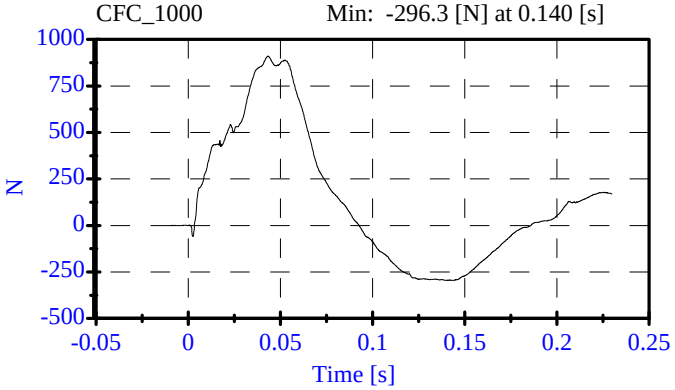
Arm Rot
CFC_180
Max: 36.0 [degrees] at 0.066 [s]
Min: -16.5 [degrees] at 0.168 [s]



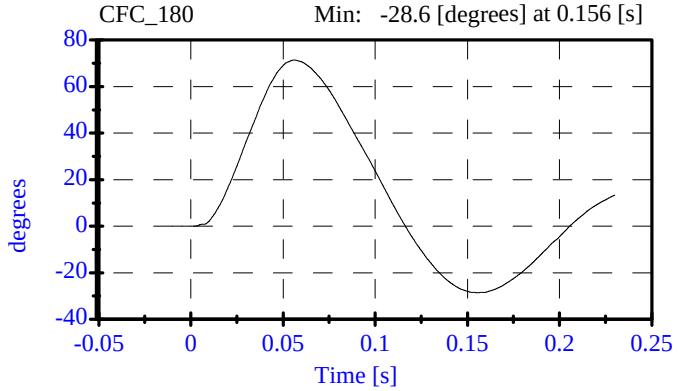
Neck Mx
CFC_600
Max: 70.8 [N-m] at 0.047 [s]
Min: -25.6 [N-m] at 0.012 [s]



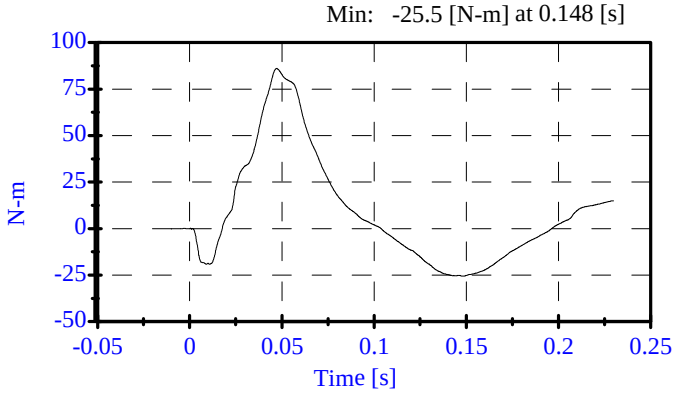
Neck Fy
CFC_1000
Max: 910.1 [N] at 0.043 [s]
Min: -296.3 [N] at 0.140 [s]



Tot Rot
CFC_180
Max: 71.4 [degrees] at 0.056 [s]
Min: -28.6 [degrees] at 0.156 [s]



MOCX
Max: 86.1 [N-m] at 0.047 [s]
Min: -25.5 [N-m] at 0.148 [s]



Abdomen Test

Post-Test

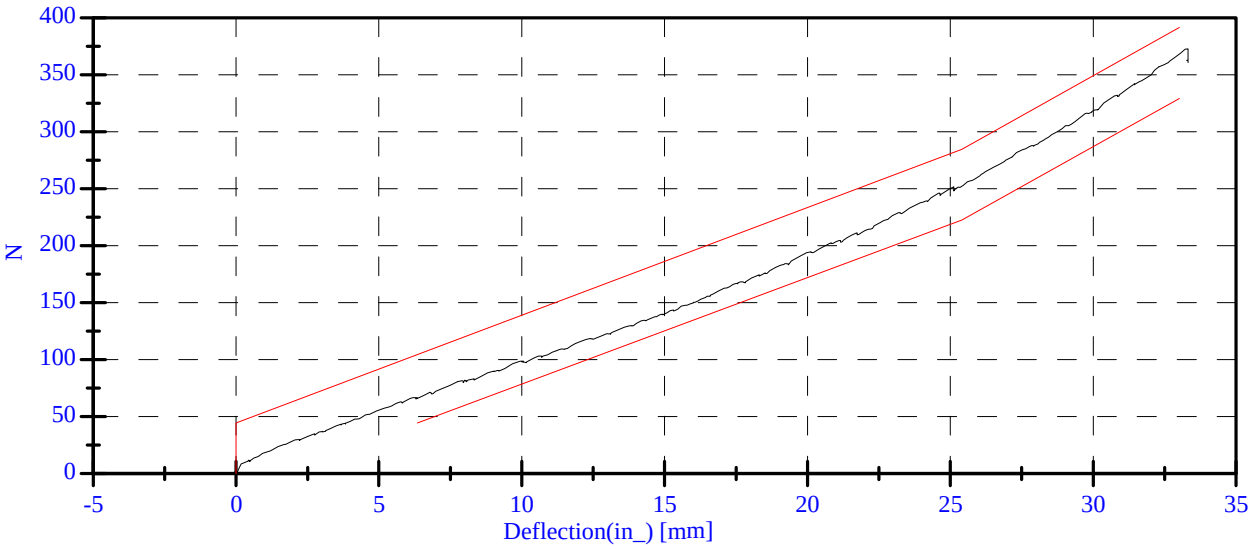
CONFIGURED FOR LEFT SIDE IMPACT

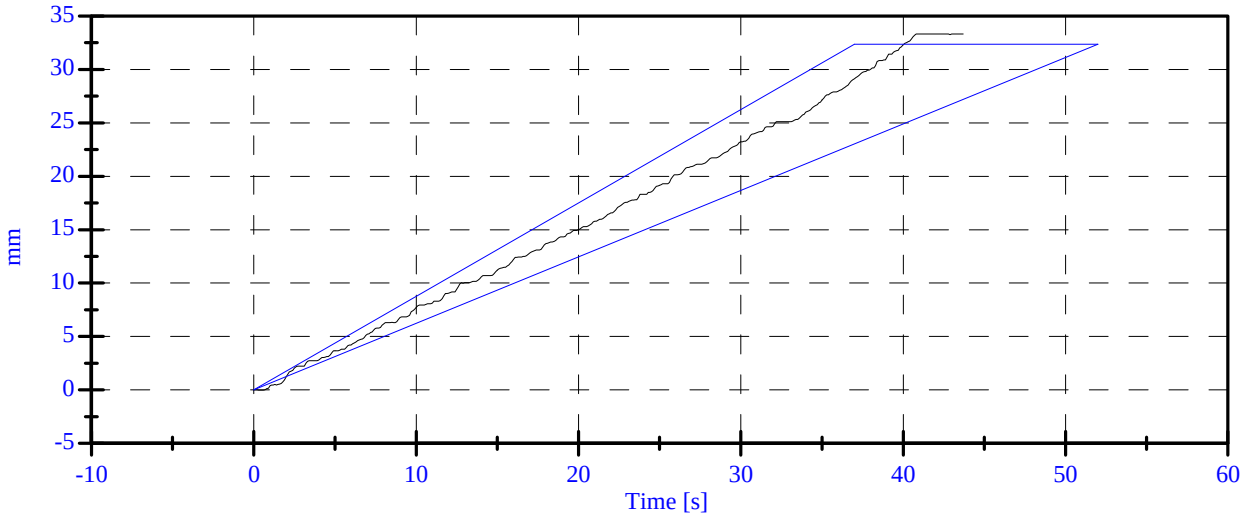
ATD Serial No: 269 Sequential Test Number: 1 File: 269ab 09-25-07

Date: 09-25-07 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 %	36.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	122.32 N	Passed
Force at 19.05 mm :	162.98-220.99 N	182.86 N	Passed
Force at 25.40 mm :	221.97-280.02 N	252.82 N	Passed
Force at 33.02 mm :	324.99-391.00 N	368.81 N	Passed

ABDOMINAL COMPRESSION TEST





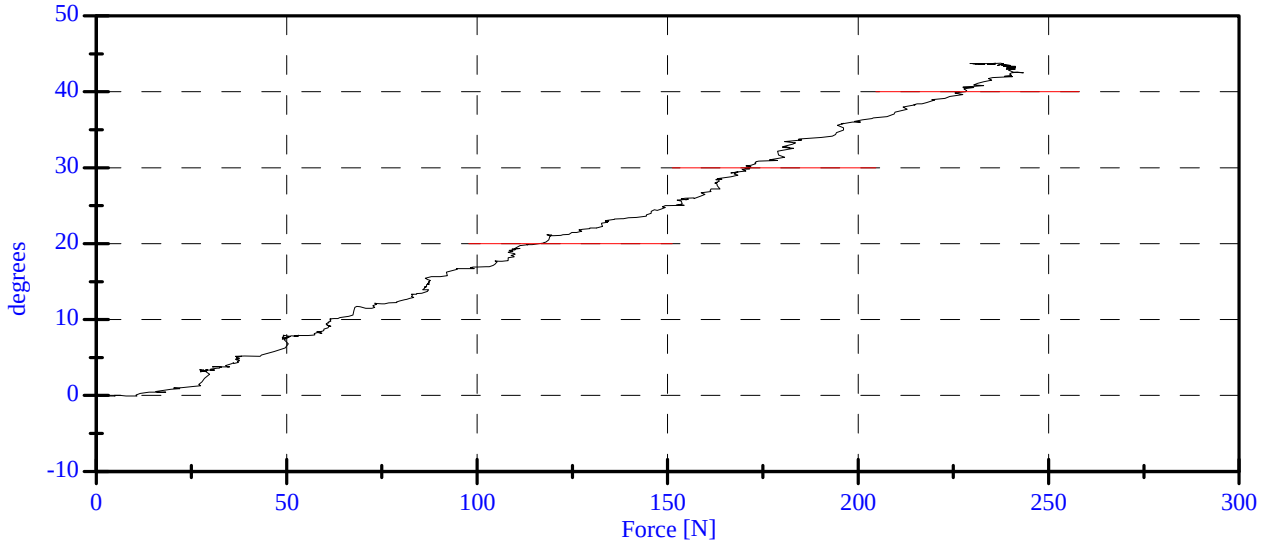
Lumbar Spine
Post-Test

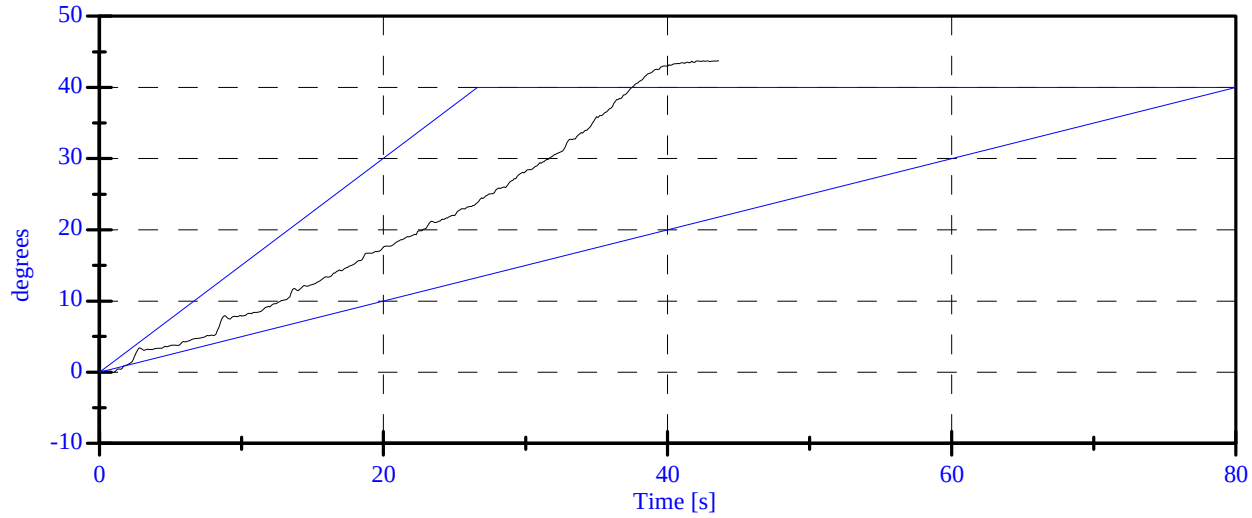
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269sp 09-19-07
Date: 09-19-07 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	4.70 N	Passed
Force at 20 Deg:	97.86-151.24 N	117.52 N	Passed
Force at 30 Deg	151.24-204.62 N	170.27 N	Passed
Force at 40 Deg	204.62-258.00 N	228.25 N	Passed
Return Angle	12 Deg Max	5.91 deg	Passed

LUMBAR SPINE FLEXION TEST





POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 9/19/07 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.: 270

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 9/25/07 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.: 270 Sequential Test Number: 1
Date: 9/25/07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	386

REMARKS: None

Thorax Impact

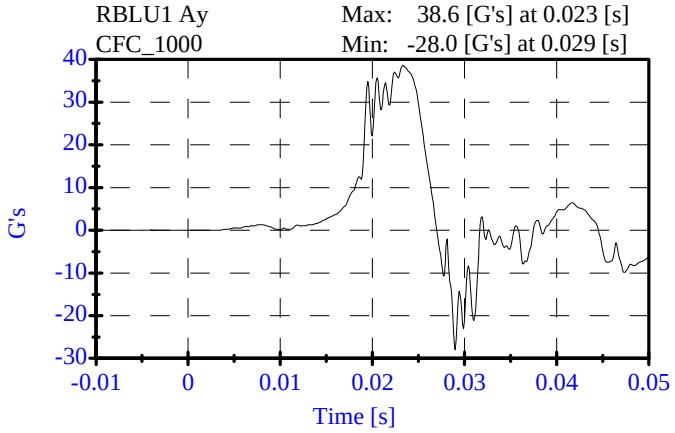
Post-Test

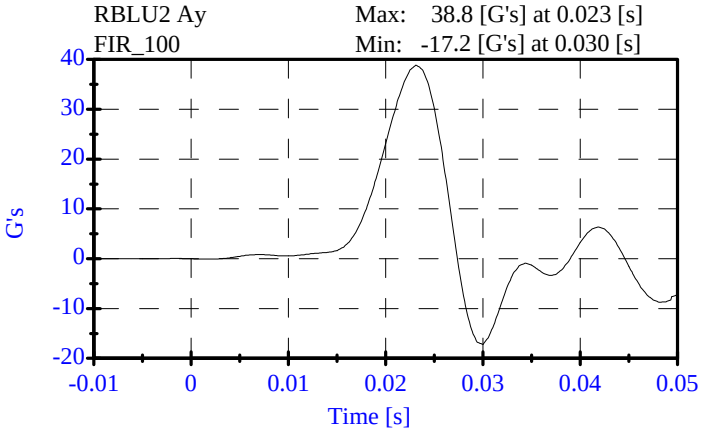
CONFIGURED FOR LEFT SIDE IMPACT

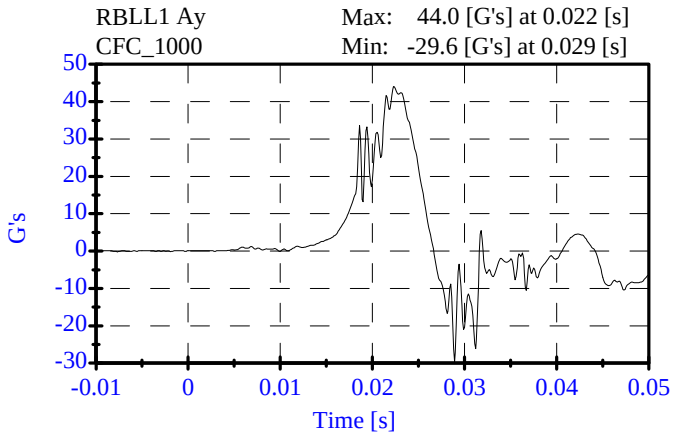
ATD Serial No: 270 Sequential Test Number: 1 File: 270T1 09-25-07

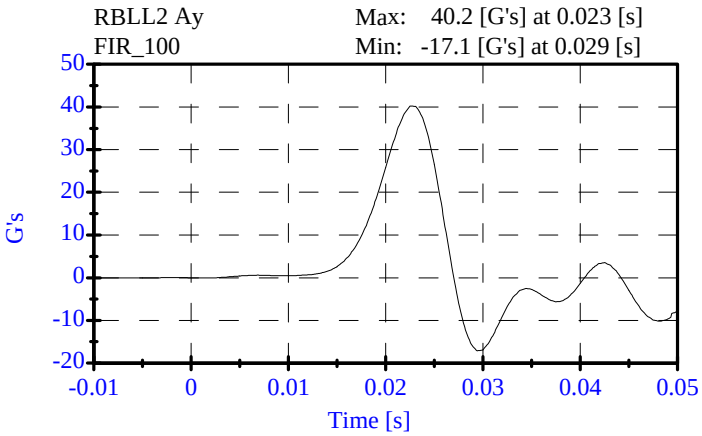
Date: 09-25-07 Laboratory Technician: B. Swiecicki

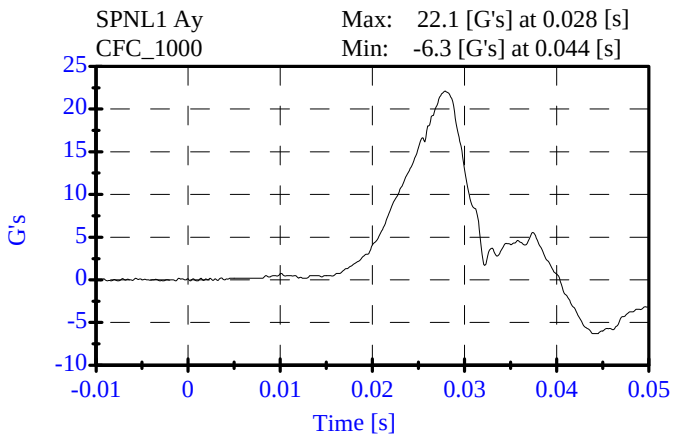
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	38.83 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	40.21 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	20.91 G's	Passed

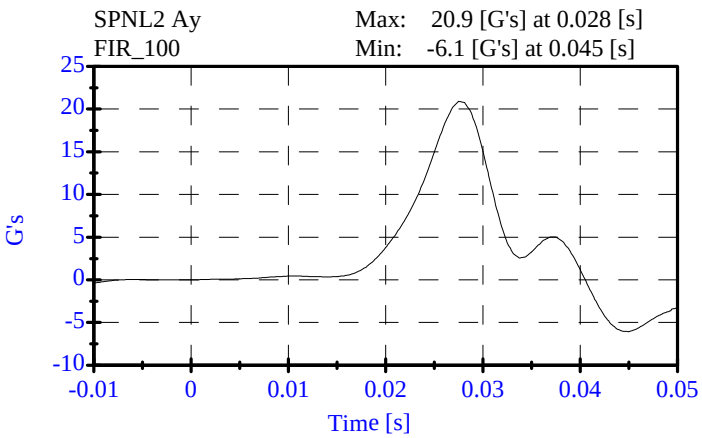












Pelvic Impact

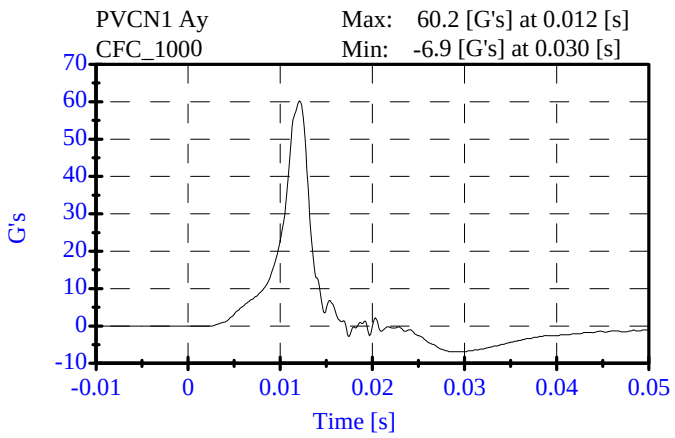
Post-Test

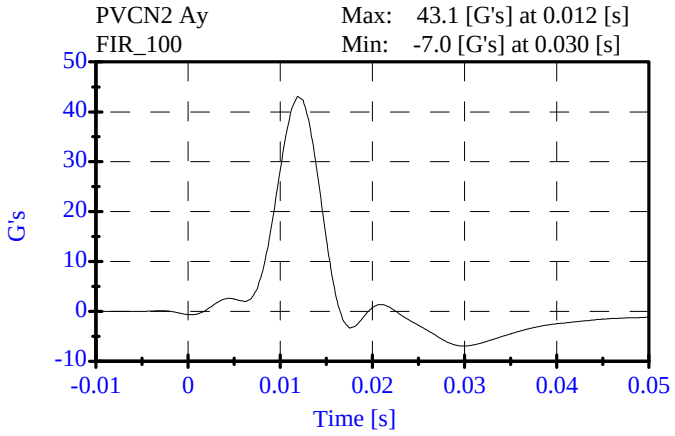
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270P2 09-25-07

Date: 09-25-07 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 %	36.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	43.12 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.3 ms	Passed





Head Drop

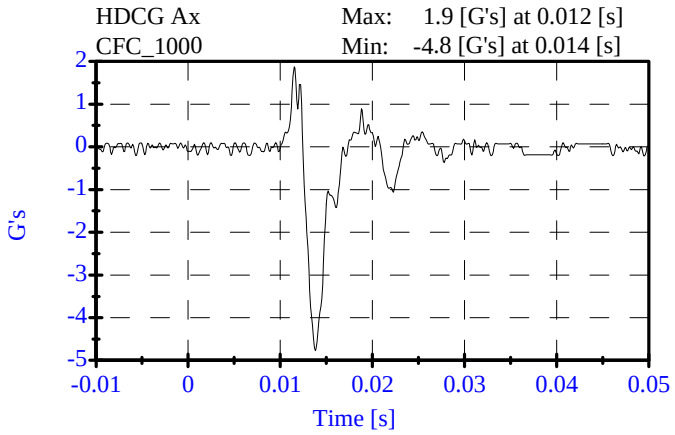
Post-Test

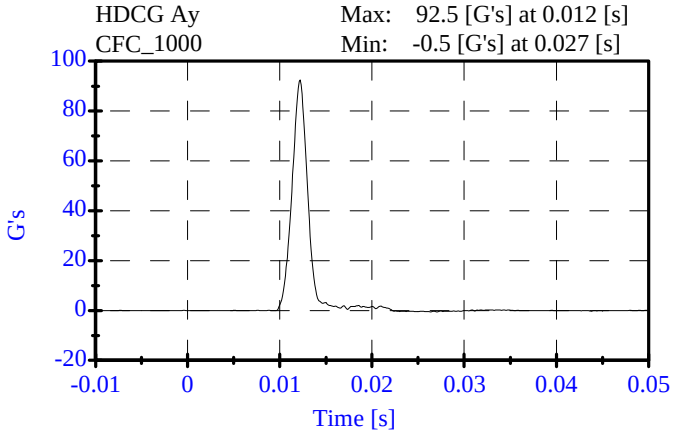
CONFIGURED FOR LEFT SIDE IMPACT

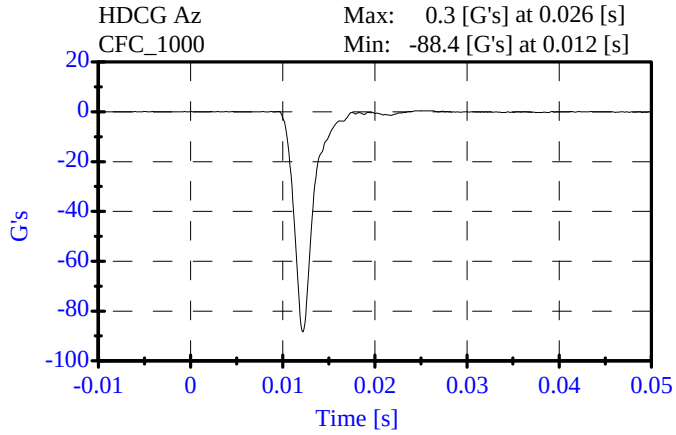
ATD Serial No: 270 Sequential Test Number: 1 File: 270HD1 09-20-07

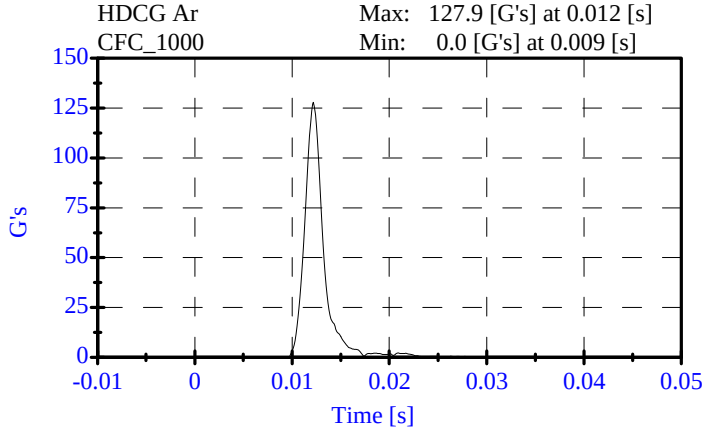
Date: 09-20-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	127.91 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.87 Gs	Passed
Curve PerCent NonModal:	< 15%	1.72 %	Passed









Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270N2 09-24-07

Date: 09-24-07 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	35.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.95 m/s	Passed
PENDULUM DELTA V			
Delta V at 10 ms:	1.96- 2.55 m/s	1.98 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.15 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.11 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.28 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.01 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.90 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	85.86 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	55.80 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	9.30 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

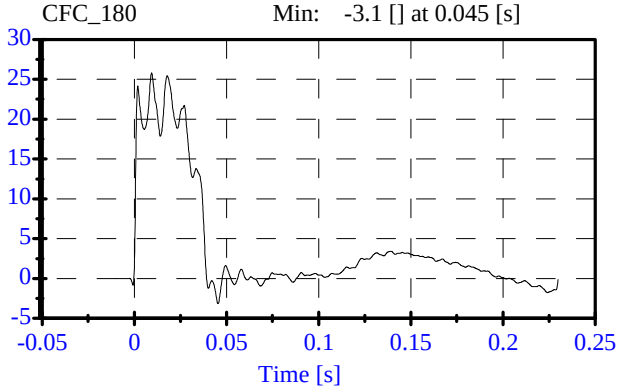
ATD Serial No: 270

Sequential Test Number: 1 File: 270N2 09-24-07

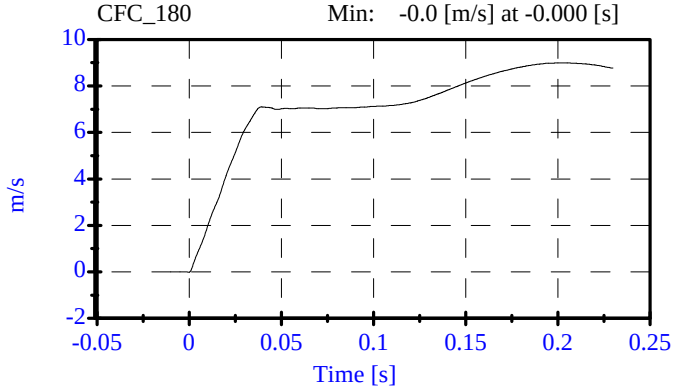
Date: 09-24-07

Laboratory Technician: B. Swiecicki

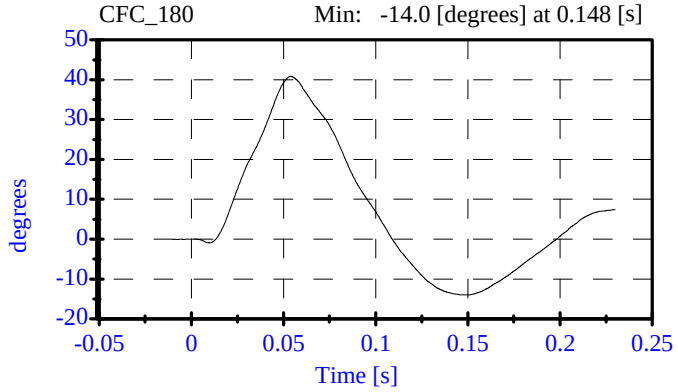
Pend Ax Max: 25.8 [] at 0.009 [s]
CFC_180 Min: -3.1 [] at 0.045 [s]



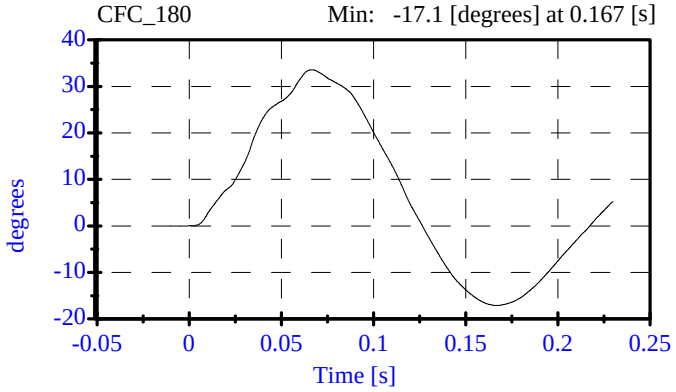
Pend Vx Max: 9.0 [m/s] at 0.201 [s]
CFC_180 Min: -0.0 [m/s] at -0.000 [s]



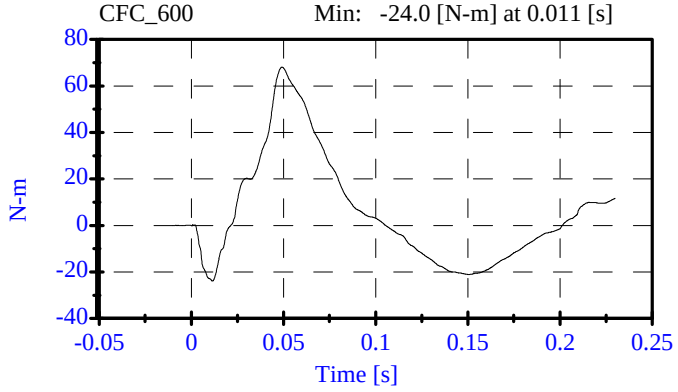
Head Rot Max: 40.9 [degrees] at 0.054 [s]
CFC_180 Min: -14.0 [degrees] at 0.148 [s]



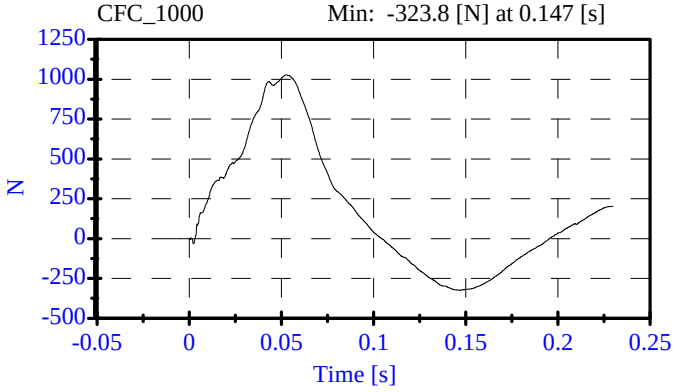
Arm Rot Max: 33.6 [degrees] at 0.067 [s]
CFC_180 Min: -17.1 [degrees] at 0.167 [s]



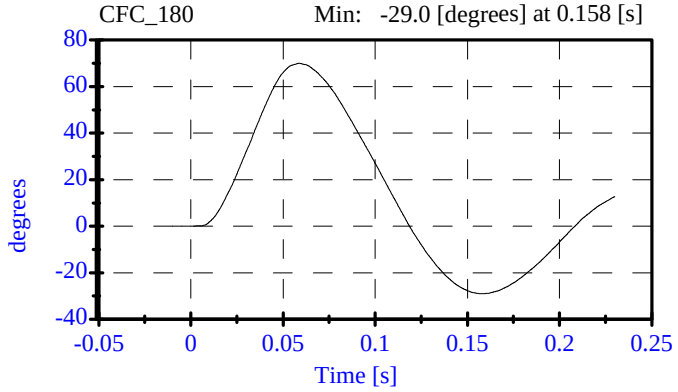
Neck Mx Max: 68.1 [N-m] at 0.049 [s]
CFC_600 Min: -24.0 [N-m] at 0.011 [s]



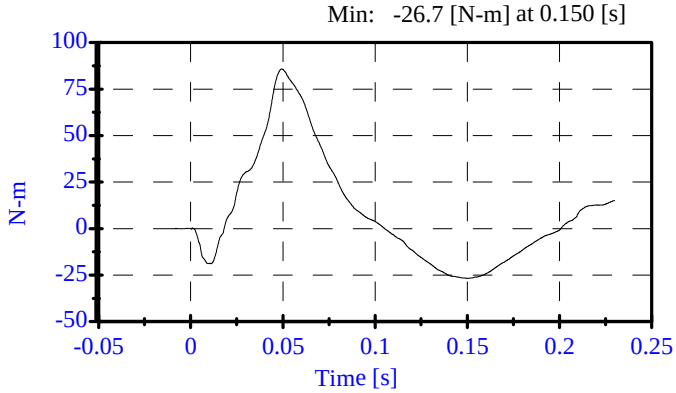
Neck Fy Max: 1027.4 [N] at 0.053 [s]
CFC_1000 Min: -323.8 [N] at 0.147 [s]



Tot Rot Max: 70.0 [degrees] at 0.059 [s]
CFC_180 Min: -29.0 [degrees] at 0.158 [s]



MOCX Max: 85.9 [N-m] at 0.049 [s]
Min: -26.7 [N-m] at 0.150 [s]



Abdomen Test

Post-Test

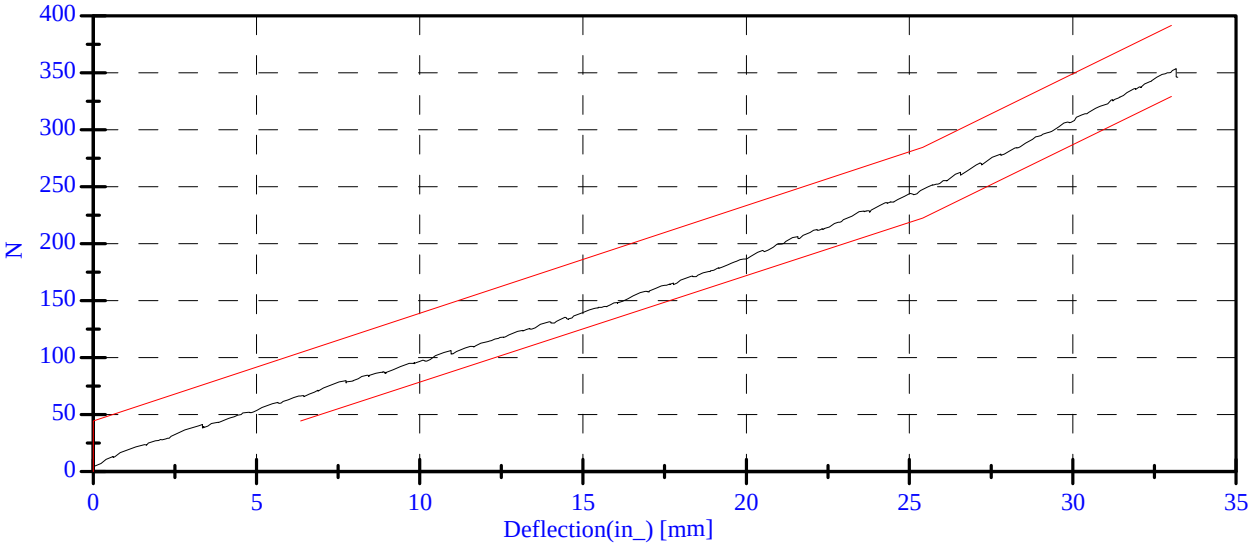
CONFIGURED FOR LEFT SIDE IMPACT

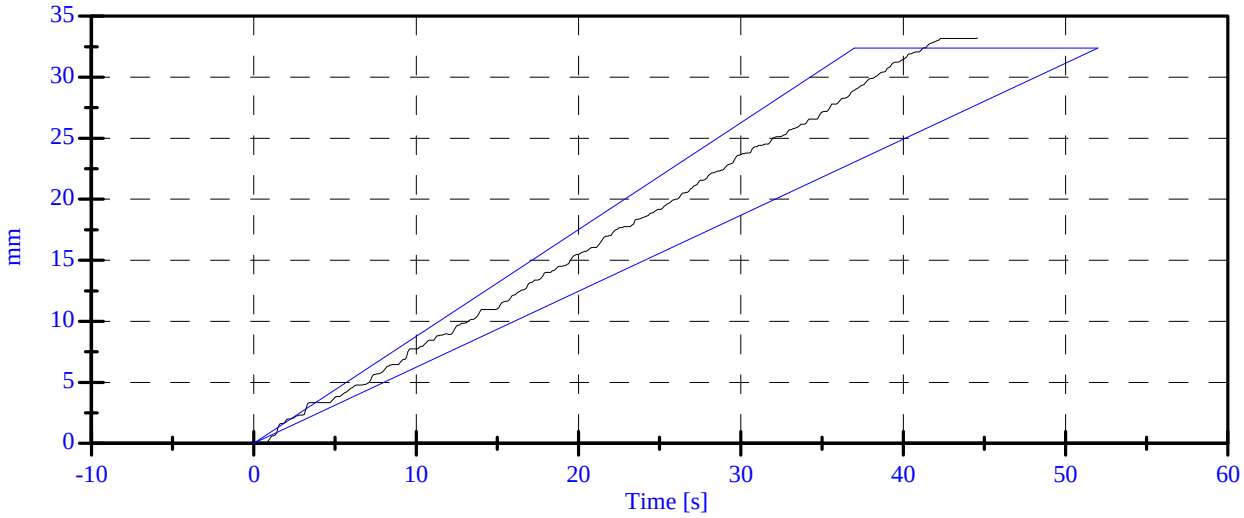
ATD Serial No: 270 Sequential Test Number: 1 File: 270ab 09-25-07

Date: 09-25-07 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 %	36.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	123.05 N	Passed
Force at 19.05 mm :	162.98-220.99 N	176.69 N	Passed
Force at 25.40 mm :	221.97-280.02 N	246.65 N	Passed
Force at 33.02 mm :	324.99-391.00 N	350.32 N	Passed

ABDOMINAL COMPRESSION TEST





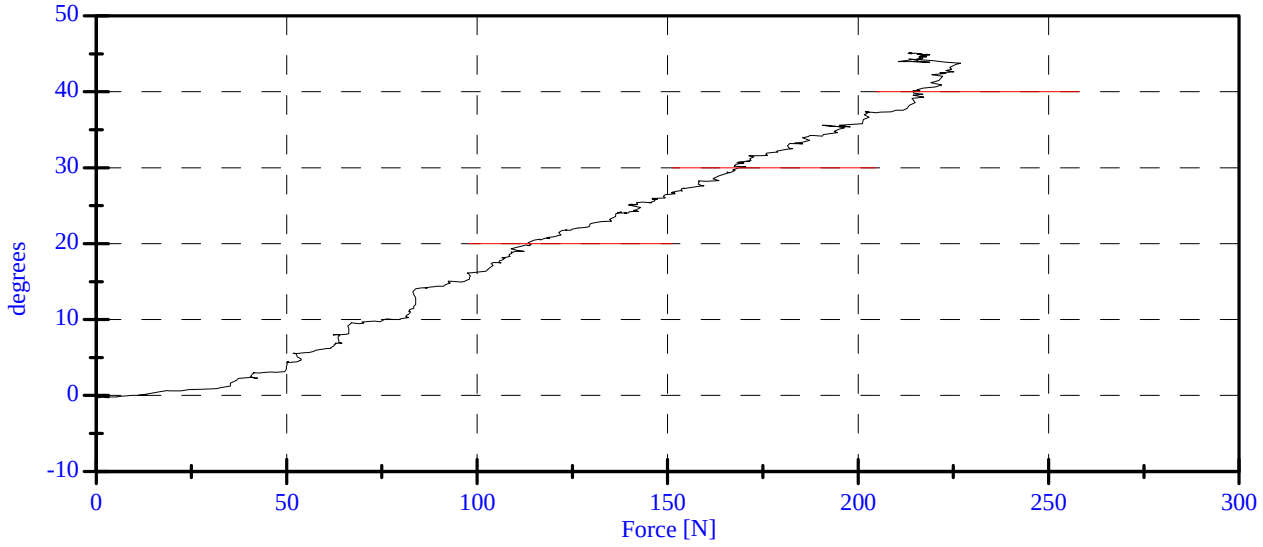
Lumbar Spine
Post-Test

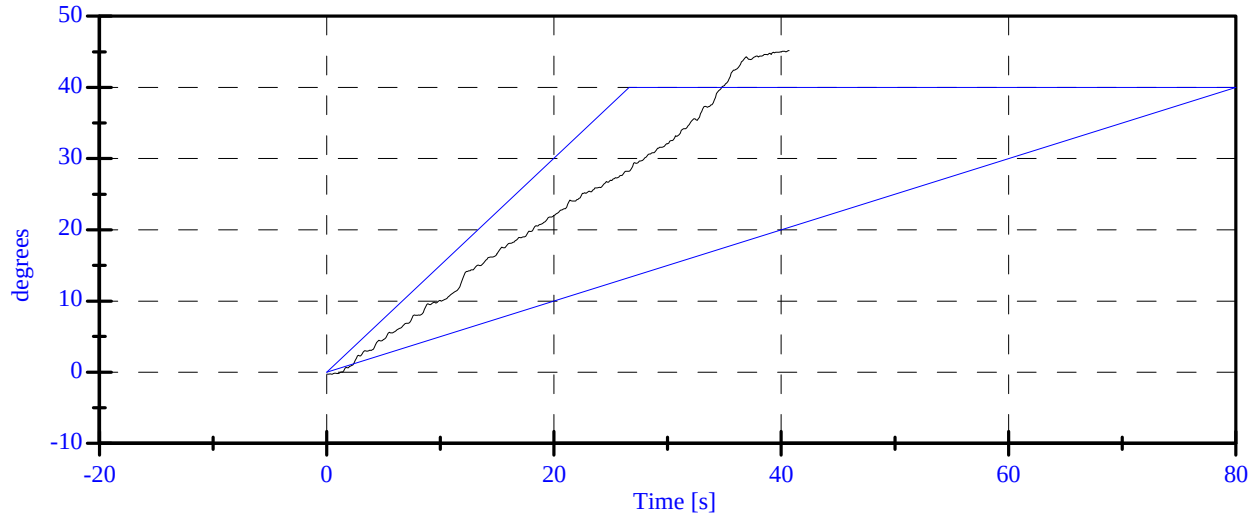
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270sp 09-19-07
Date: 09-19-07 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	9.40 N	Passed
Force at 20 Deg:	97.86-151.24 N	113.34 N	Passed
Force at 30 Deg	151.24-204.62 N	168.44 N	Passed
Force at 40 Deg	204.62-258.00 N	214.41 N	Passed
Return Angle	12 Deg Max	4.35 deg	Passed

LUMBAR SPINE FLEXION TEST





POST TEST DUMMY INSPECTION LIST

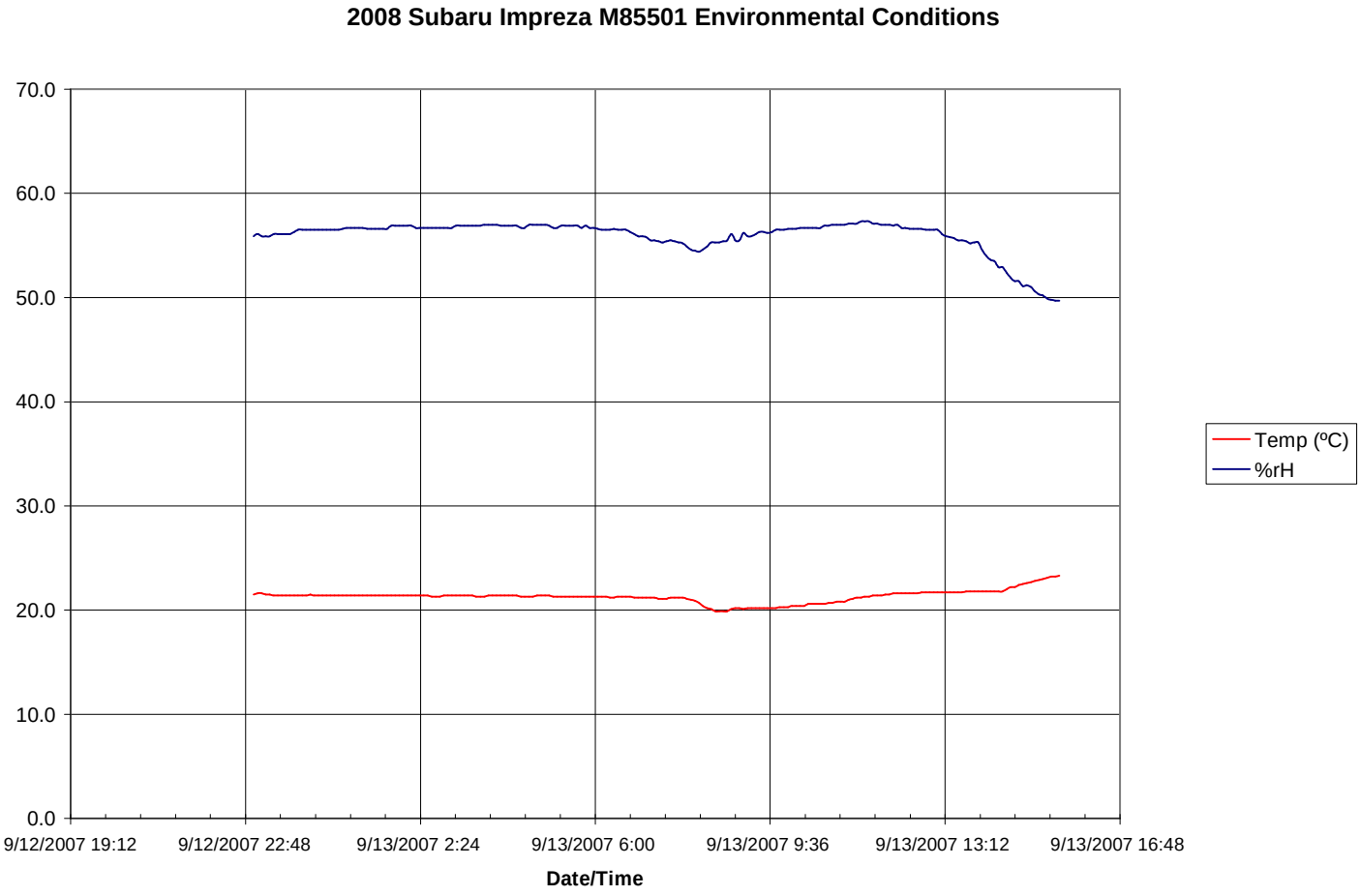
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 9/19/07 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



APPENDIX D

TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID/HIII INSTRUMENTATION

	FRONT SID/HIII NO.: 269		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P22943	ENDEVCO	11-Jul-07
HEAD AY	AC-P35789	ENDEVCO	11-Jul-07
HEAD AZ	AC-P13323	ENDEVCO	11-Jul-07
UPPER NECK FX	LC-442Fx	DENTON	08-Nov-06
UPPER NECK FY	LC-442Fy	DENTON	08-Nov-06
UPPER NECK FZ	LC-442Fz	DENTON	08-Nov-06
UPPER NECK MX	LC-442Mx	DENTON	08-Nov-06
UPPER NECK MY	LC-442My	DENTON	08-Nov-06
UPPER NECK MZ	LC-442Mz	DENTON	08-Nov-06
UPPER RIB	AC-P39731	ENDEVCO	11-Jul-07
LOWER RIB	AC-P38896	ENDEVCO	11-Jul-07
LOWER SPINE	AC-P38188	ENDEVCO	11-Jul-07
PELVIS	AC-P38132	ENDEVCO	11-Jul-07
UPPER RIB REDUNDANT	AC-P39740	ENDEVCO	11-Jul-07
LOWER RIB REDUNDANT	AC-P35786	ENDEVCO	11-Jul-07
LOWER SPINE REDUNDANT	AC-P38216	ENDEVCO	11-Jul-07
PELVIS REDUNDANT	AC-P35757	ENDEVCO	11-Jul-07

	REAR SID/HIII NO.: 270		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P35812	ENDEVCO	11-Jul-07
HEAD AY	AC-P18739	ENDEVCO	11-Jul-07
HEAD AZ	AC-P19212	ENDEVCO	11-Jul-07
UPPER NECK FX	LC-1629Fx	DENTON	08-Nov-06
UPPER NECK FY	LC-1629Fy	DENTON	08-Nov-06
UPPER NECK FZ	LC-1629Fz	DENTON	08-Nov-06
UPPER NECK MX	LC-1629Mx	DENTON	08-Nov-06
UPPER NECK MY	LC-1629My	DENTON	08-Nov-06
UPPER NECK MZ	LC-1629Mz	DENTON	08-Nov-06
UPPER RIB	AC-P18558	ENDEVCO	11-Jul-07
LOWER RIB	AC-P18537	ENDEVCO	12-Jul-07
LOWER SPINE	AC-P18639	ENDEVCO	11-Jul-07
PELVIS	AC-P21171	ENDEVCO	11-Jul-07
UPPER RIB REDUNDANT	AC-P35818	ENDEVCO	11-Jul-07
LOWER RIB REDUNDANT	AC-P19222	ENDEVCO	12-Jul-07
LOWER SPINE REDUNDANT	AC-P16576	ENDEVCO	11-Jul-07
PELVIS REDUNDANT	AC-P22639	ENDEVCO	12-Jul-07

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-P18785	ENDEVCO	09-Aug-07
RIGHT FRONT SILL (Y)	AC-P23926	ENDEVCO	09-Aug-07
RIGHT FRONT SILL (Z)	AC-P32218	ENDEVCO	09-Aug-07
RIGHT REAR SILL (X)	AC-P23939	ENDEVCO	09-Aug-07
RIGHT REAR SILL (Y)	AC-P23999	ENDEVCO	09-Aug-07
RIGHT REAR SILL (Z)	AC-P23993	ENDEVCO	09-Aug-07
REAR FLOORPAN ABOVE AXLE (X)	AC-P17237	ENDEVCO	09-Aug-07
REAR FLOORPAN ABOVE AXLE (Y)	AC-P16625	ENDEVCO	09-Aug-07
REAR FLOORPAN ABOVE AXLE (Z)	AC-J32838	ENDEVCO	09-Aug-07
LEFT REAR SILL (Y)	AC-P16845	ENDEVCO	24-Apr-07
LEFT FRONT SILL (Y)	AC-P26266	ENDEVCO	10-Aug-07
LEFT FRONT DOOR CENTERLINE (Y)	AC-FA2486	ICS	09-Jul-07
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-P23288	ENDEVCO	24-Apr-07
MID REAR OF LEFT FRONT DOOR (Y)	AC-P21393	ENDEVCO	24-Apr-07
LEFT FRONT DOOR UPPER C\L (Y)	AC-J37854	ENDEVCO	10-Aug-07
MID REAR OF LEFT REAR DOOR (Y)	AC-P23136	ENDEVCO	10-Aug-07
LEFT REAR DOOR UPPER C\L (Y)	AC-P23164	ENDEVCO	11-Jul-07
LOWER LEFT B- PILLAR (Y)	AC-P18728	ENDEVCO	10-Aug-07
MIDDLE LEFT B-PILLAR (Y)	AC-P23134	ENDEVCO	30-Jun-07
LOWER LEFT A-PILLAR (Y)	AC-P18792	ENDEVCO	23-Mar-07
UPPER LEFT A-PILLAR (Y)	AC-P17535	ENDEVCO	22-Mar-07
FRONT SEAT TRACK (Y)	AC-C15007	ENDEVCO	12-Sep-07
REAR SEAT TRACK (Y)	AC-C16416	ENDEVCO	12-Sep-07
VEHICLE CG (X)	AC-C16499	ENDEVCO	12-Sep-07
VEHICLE CG (Y)	AC-C14948	ENDEVCO	12-Sep-07
VEHICLE CG (Z)	AC-C16680	ENDEVCO	12-Sep-07
MDB CG (X)	AC-P18785	ENDEVCO	09-Aug-07
MDB CG (Y)	AC-P23926	ENDEVCO	09-Aug-07
MDB CG (Z)	AC-P32218	ENDEVCO	09-Aug-07
MDB REAR FRAME MEMBER (X)	AC-P23939	ENDEVCO	09-Aug-07
MDB REAR FRAME MEMBER (Y)	AC-P23999	ENDEVCO	09-Aug-07

REMARKS: None