REPORT NUMBER: 214-CAL-09-03

SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT

HONDA OF AMERICA, MFG.
2009 ACURA TL
4-DOOR SEDAN

NHTSA NUMBER: C95309

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

Test Date: March 12, 2009

FINAL REPORT

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

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-07-D-00064.

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by: ] Date: April 4, 2009

Vincent M. Paolini, Project Engineer

Reviewed by:  Date: April 4, 2009

David J. Travale, Program Manager
Transportation Sciences Center

Technical Report Documentation Page

1. Report No. 214-CAL-09-03	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of FMVSS 214 Compliance Side Impact Testing of a 2009 Acura TL 4-Door Sedan NHTSA No.: C95309		*5. Report Date* March 12, 2009 *6. Performing Organization Code* CAL
7. Author(s) Vincent M. Paolini, Project Engineer		*8. Performing Organization Report No.* 8867-F214-03
9. Performing Organization Name and Address Calspan Corporation Transportation Sciences Center P.O. Box 400 Buffalo, New York 14225		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-07-D-00064
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance 1200 New Jersey Avenue, SE Washington, DC 20590		*13. Type of Report and Period Covered: Final Report* March 2009 *14. Sponsoring Agency Code* NVS-220

15. *Supplementary Notes*

16. Abstract

A 55/28 km/h 90° Moving Deformable Barrier FMVSS 214 Indicant side impact was conducted on the subject 2009 Acura TL 4-Door Sedan to obtain new car assessment and research data indicant of FMVSS No. 214D performance. The test was conducted at the Calspan Corporation Transportation Sciences Center in Buffalo, New York, on March 12, 2009. The impact velocity of the Moving Deformable Barrier (MDB) was 62.5 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 240 mm at level 3. The test vehicle's occupant performance is as follows:

	DRIVER	PASS.
Left Upper Rib (LUR) Accel., g	47.02	44.51
Left Lower Rib (LLR) Accel., g	50.16	47.87
Lower Spine (T_{12}) Accel., g	61.24	50.96
Thoracic Trauma Index (TTI)	56	49
Pelvis (PEV) Accel., g	67	56
HIC	256.6	436.7

The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.

17. Key Words Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID)	*18. Distribution Statement* Copies of this report are available from: NHTSA Technical Information Services National Highway Traffic Safety Admin. 1200 New Jersey Avenue, SE Washington, DC 20590

19. Security Class. (of this report) Unclassified	*20. Security Class. (of this page)* Unclassified	*21. No. of Pages* 121	*22. Price*

Form DOT F1700.7 (8-72)

TABLE OF CONTENTS

SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

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

SECTION 2

SUMMARY OF FMVSS 214 INDICANT SIDE IMPACT TEST

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

A model year 2009 Acura TL 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 62.5 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 1888.0 kg and the test weight of the MDB was 1362.5 kg. The test was conducted at the Calspan Corporation Transportation Sciences Center on March 12, 2009.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/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 240 mm at level 3, 1650 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 270 and 269 respectively, were calibrated just prior to this test.

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

The occupant data is summarized below:

ATD position	HIC(36)	T_1	T_2	TTI (G's)	Peak Pelvis (G's)
Driver	256.6	38.5	66.7	56	67
Passenger	436.7	49.5	65.8	49	56

SUPPLEMENTAL RESTRAINT INFORMATION

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

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

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

TEST VEHICLE INFORMATION AND VEHICLE OPTIONS

Make	Honda of America Mfg.	Driver Front Airbag	Yes
Model	TL	Driver Side Curtain Airbag	Yes
Body Style	4-Door Sedan	Driver Side Torso Airbag	Yes
NHTSA No.	C95309	Driver Pretensioners	Yes
VIN	19UUA86289A002321	Driver Load Limiters	Yes
Color	Black	Driver Power Seats	Yes
Engine Disp.(L)	3.5	Rear Pass. Side Curtain Airbag	Yes
Engine Cylinders	6	Rear Pass. Side Torso Airbag	No
Engine Placement	Lateral	Rear Pass. Pretensioners	No
Transmission Type	Automatic	Rear Pass. Load Limiters	No
Transmission Speeds	5	Rear Pass. Power Seats	NA
Final Drive	Front	Tilt Wheel	Yes
Air Conditioning	Yes	Anti-lock Brakes	Yes
Power Steering	Yes	Traction Control	Yes
Power Brakes	Yes	Power Windows	Yes
Delivery Date	2/10/09	Power Door Locks	Yes
Odometer Reading (km)	21	Automatic Door Locks (ADL)	Yes
Dealer	Ray Laks Acura Williamsville, NY 14221	Owner's Manual Details Instructions on Disabling ADLs	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda of America Mfg.	GVWR (kg)	2130
		GAWR Front (kg)	1165
Date of Manufacture	9/08	GAWR Rear (kg)	975

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:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			Fully Loaded (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	522.5	329.0		573.5	422.5		555.5	415.0	
Right	kg	509.0	326.5		519.0	385.5		534.5	383.0	
Ratio	%	61.1	38.9		57.5	42.5		57.7	42.3	
Totals	kg	1031.5	655.5	1687.0	1092.5	808.0	1900.5	1090.0	798.0	1888.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1687.0
Weight of 2 P572M ATDs (81.2 kg each)	kg	162.4
Rated Cargo/Luggage Weight (RCLW)	kg	44.8
Calculated Vehicle Target Weight (TVTW)	kg	1894.2

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

Weight of Ballast (including instrumentation package and cameras): 38.6 kg

TEST VEHICLE ATTITUDES

	Units	LF	RF	LR	RR
As Delivered	mm	720	720	720	725
Fully Loaded	mm	708	716	691	705
As Tested	mm	711	716	699	705

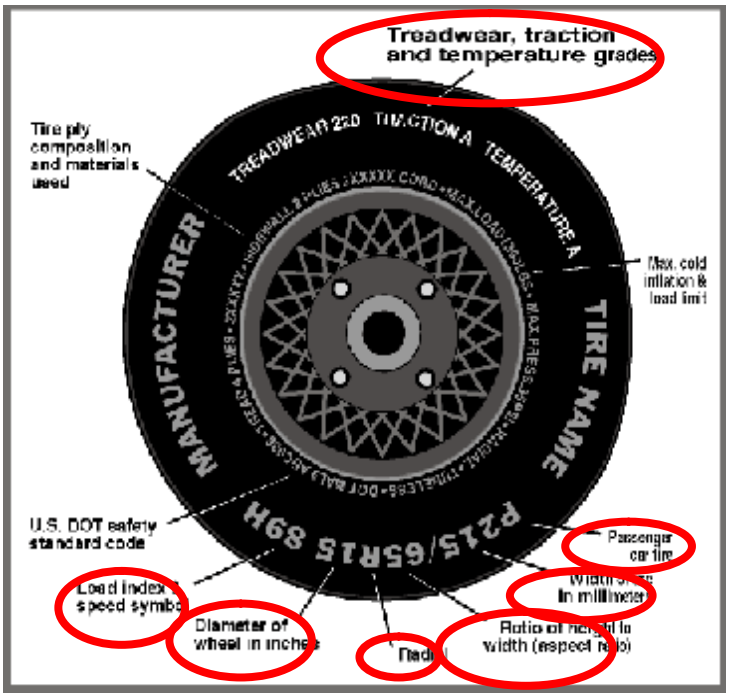
TEST VEHICLE VERTICAL IMPACT LINE AND CG

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2777
Target Impact Point Aft of Front Axle	mm	449
Actual Impact Point Aft of Front Axle	mm	462
As Tested CG (aft of front axle)	mm	1174

DATA SHEET NO. 2

TEST VEHICLE TIRE INFORMATION

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	275	275
Cold / Test Pressure (kPa)	220	220
Recommended Tire Size	P245/50R17	P245/50R17
Tire Size on Vehicle	P245/50R17	P245/50R17
Tire Manufacturer	Bridgestone	Bridgestone
Tire Name	Turanza EL400	Turanza EL400
Tire Type	Passenger	Passenger
Tire Width (mm)	245	245
Ratio of Height to Width (aspect ratio)	50	50
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index & Speed Symbol	98V	98V
Treadwear	260	260
Traction Grade	A	A
Temperature Grade	A	A

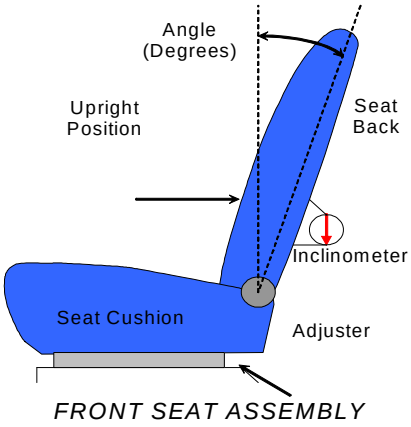
DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

NORMAL DESIGN RIDING POSITION

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



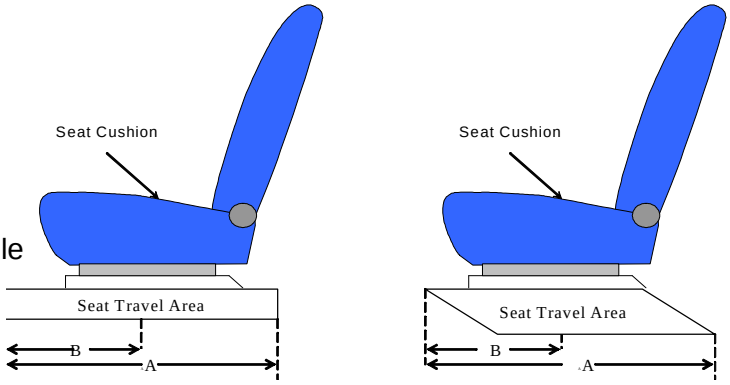
FRONT SEAT ASSEMBLY

SEAT BACK POSITION

	Driver Seat	Rear Seat
Test Detent (forward-most detent defined as 0)	Not Applicable (Power)	Not Adjustable
Angle (deg. from forward-most locking position)	Not Applicable	Not Adjustable
Alternative Measurements to Verify Test Position	Sunvisor post to head restraint post = 630 mm	Not Adjustable

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.



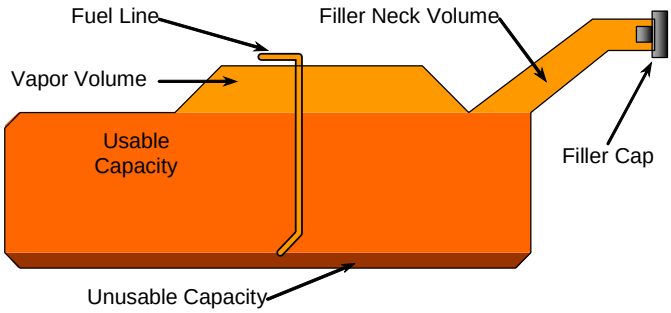
SEAT FORE/AFT POSITION

	Driver Seat	Rear Seat
Total Fore/Aft Travel (A) (mm)	292	Not Applicable
Test Position (B) (mm)	146	Not Applicable
Test Detent (forward-most detent defined as 0)	Not Applicable (Power)	Not Applicable
Total Number of Detents (including 0)	Not Applicable (Power)	Not Applicable

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

FUEL SYSTEM INFORMATION

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



VEHICLE FUEL TANK ASSEMBLY

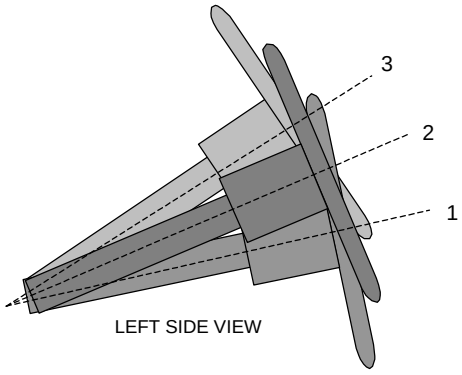
FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard" Fuel Tank	70.0
Usable Capacity of "Optional" Fuel Tank	--
Stoddard Used For Test (92%-94% of Fuel Tank Usable Capacity)	64.7

STEERING COLUMN ADJUSTMENT

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

`



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITION

	Fore/Aft Position (mm)	Tilt (degrees)	Tilt (detent)
Lowermost Position No. 1	0	17.5	Not Applicable
Geometric Center Position No. 2 *	20	20.2	Not Applicable
Uppermost Position No. 3	40	22.9	Not Applicable

DATA SHEET NO. 4

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

MDB SPECIFICATIONS

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

MDB WEIGHTS

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

MDB SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.5
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.5
Impact angle with respect to impactor	º	88.5º to 91.5º	90.7

POST TEST OBSERVATIONS

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	13 mm rearward
Vertical Offset	mm	+/-20	12 mm above

DATA SHEET NO. 5

POST TEST OBSERVATIONS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

TEST DUMMY INFORMATION AND CONTACT POINTS

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

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

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

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	Minor cracks in Upper left portion of windshield
Window Damage	Left Front Window Shattered
Other Notable Effects	None

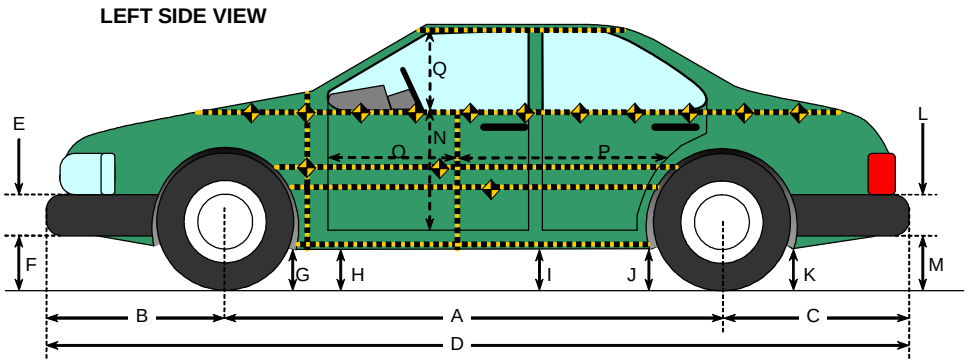
SUPPLEMENTAL RESTRAINT INFORMATION

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

DATA SHEET NO. 6

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



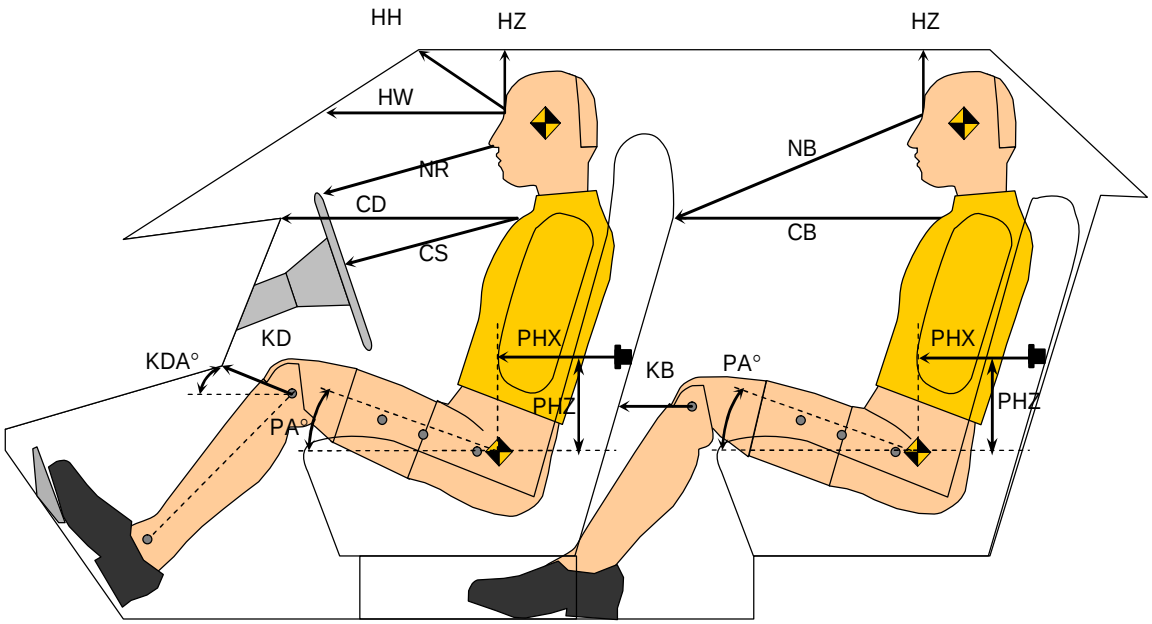
All Measurements in mm

Code	Measurement Description	Pre-Test (delivered)	Pre-Test (as tested)	Post-Test (as tested)	Difference
A	Wheelbase	2777	2777	2774	3
B	Front Axle to FSOV	1049	1049	1057	-8
C	Rear Axle to RSOV	1143	1143	1137	6
D	Total Length at Centerline	4969	4969	4968	1
E	Front Bumper Thickness	175	175	175	0
F	Front Bumper Bottom to Ground	330	328	329	-1
G	Sill Height at Front Wheel Well	178	164	180	-16
H	Sill Height at Front Door Leading Edge	177	163	190	-27
I	Sill Height at "B" Pillar	179	157	199	-42
J1	Sill Height at Rear Wheel Well	178	152	164	-12
J2	Pinch Weld Height at Rear Wheel Well	182	156	170	-14
K	Sill Height Aft of Rear Wheel Well	248	217	250	-33
L	Rear Bumper Thickness	210	210	210	0
M	Rear Bumper Bottom to Ground	318	285	340	-55
N	Sill Height to Window Bottom Sill	706	706	633	73
O	Front Door Leading Edge to Impact CL	811	811	790	21
P	Rear Door Trailing Edge to Impact CL	1162	1162	1114	48
Q	Front Window Opening	423	423	397	26
R	Right Side Length	4746	4746	4749	-3
S	Left Side Length	4744	4744	4740	4
T	Vehicle Width at "B" Post	1859	1859	1664	195

DATA SHEET NO. 7

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

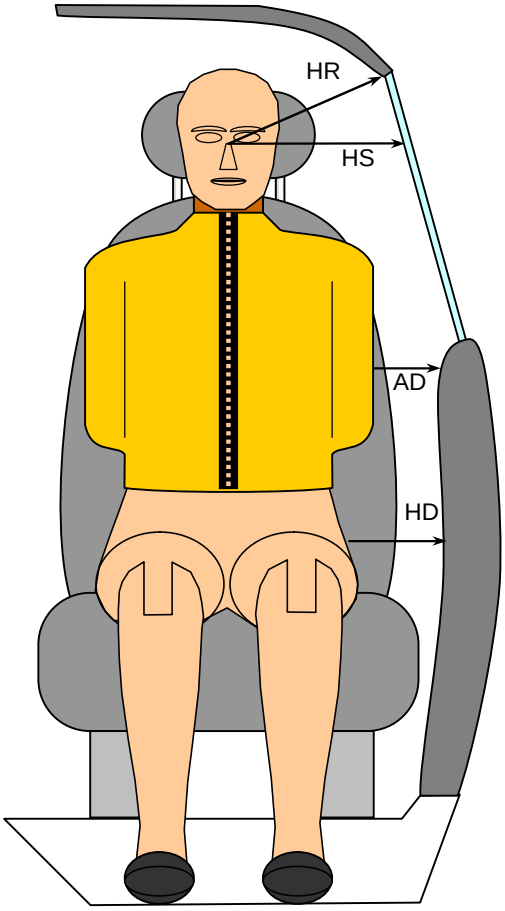


Driver Code	Pass. Code	Measurement Description	Driver S/N 270		Passenger S/N 269	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	366			
HW		Head to Windshield	650			
HZ	HZ	Head to Roof	192		144	
NR	NB	Nose to Rim/Nose to Seatback	424		631	
CD	CB	Chest to Dash or Seatback	532		553	
CS		Chest to Steering Wheel	353			
KDL	KBL	Left Knee to Dash or Seatback	192	28	232	20
KDR	KBR	Right Knee to Dash or Seatback	171	25	230	22
PA	PA	Pelvic Angle		23.3		24.2
PHX	PHX	H-Point to Striker (X-Axis)	189		170	
PHZ	PHZ	H-Point to Striker (Z-Axis)	218		242	

DATA SHEET NO. 8

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



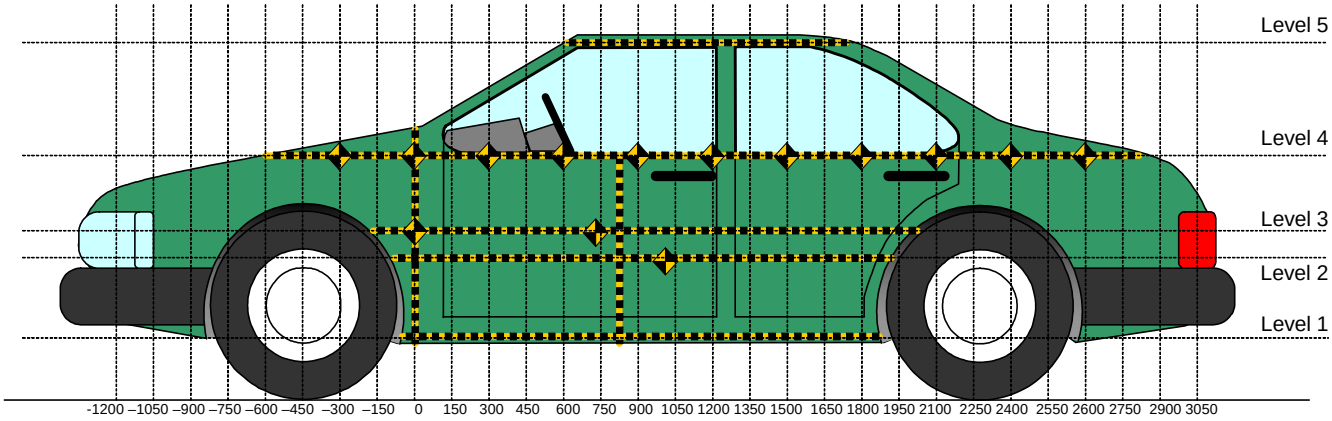
FRONT VIEW OF DUMMY

Code	Measurement Description	Units	Driver S/N 270	Passenger S/N 269
HR	Head to Side Header	mm	207	192
HS	Head to Side Window	mm	323	331
AD_1	Arm to Door (at upper rib level)	mm	124	115
AD_2	Arm to Door (at lower rib level)	mm	133	112
HD	H-Point to Door	mm	180	181

DATA SHEET NO. 9

VEHICLE SIDE MEASUREMENTS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



All Measurements Shown in mm

LEFT SIDE VIEW

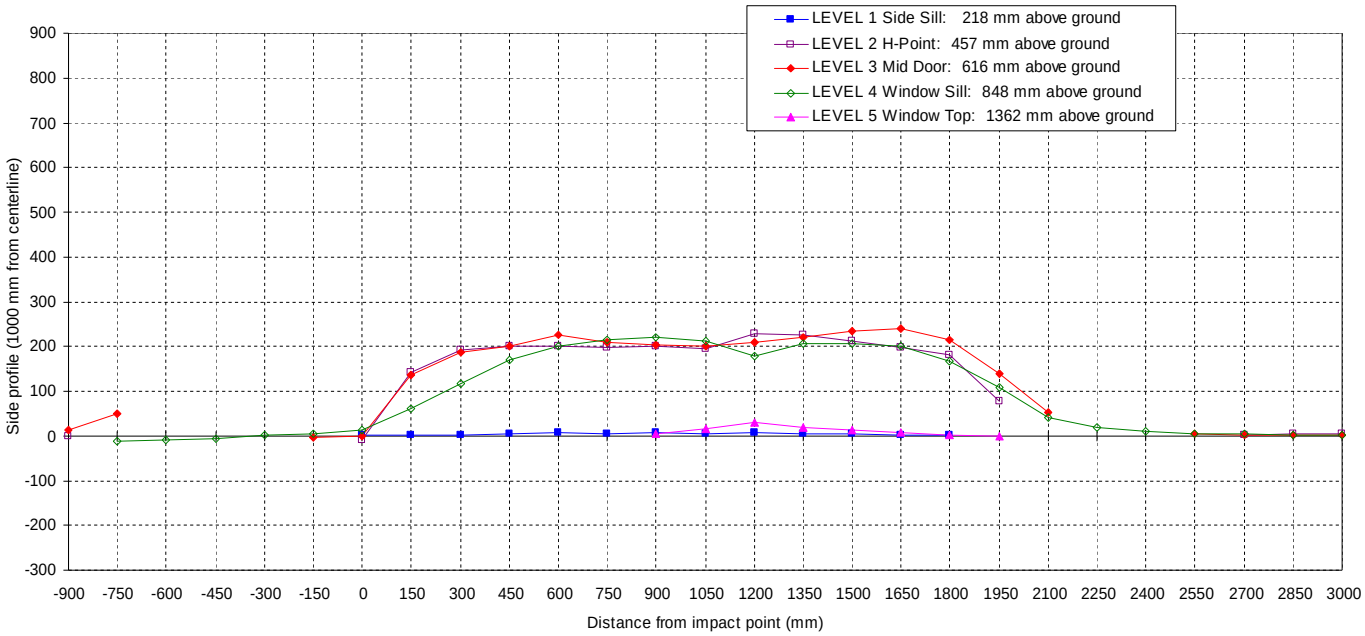
Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 750 mm.
All measurements below in mm.

Level	Measurement Description	Maximum Exterior Static Crush	Height Above Ground	Distance From Impact
1	Sill Top	8	218	900
2	Occupant H-Point	229	457	1200
3	Mid Door	240	616	1650
4	Window Sill	221	848	900
5	Window	29	1362	1200
	Maximum Penetration	240		

DATA SHEET NO. 10

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



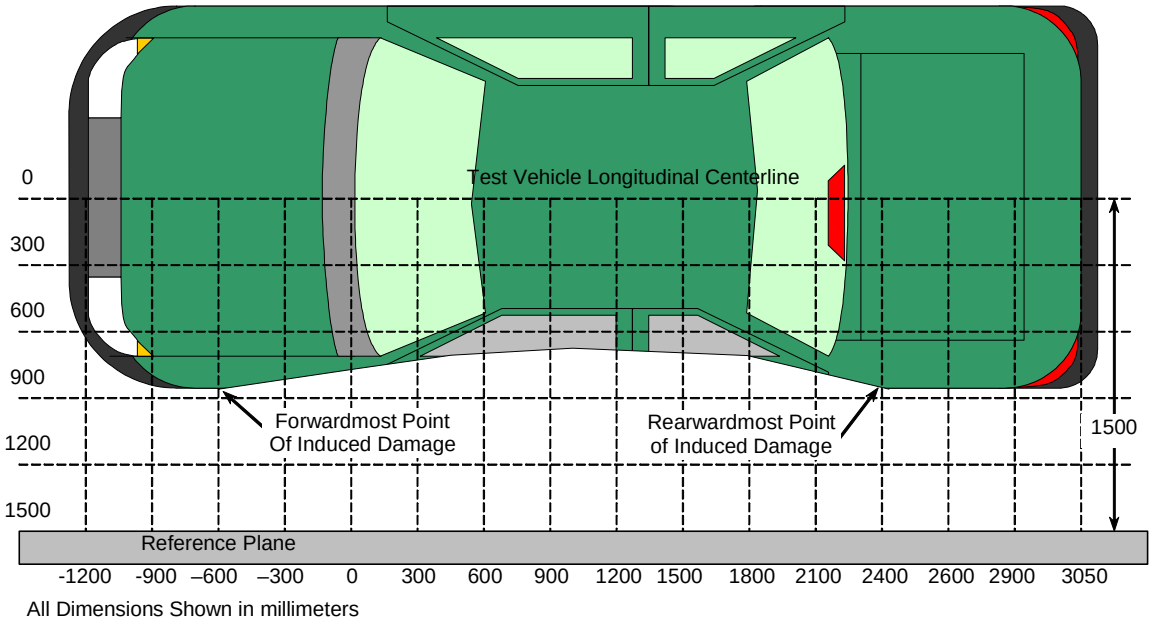
NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

			DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																										
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
LEVEL 1	218	PRE	–	--	--	--	–	--	87	110	113	112	112	113	113	115	113	115	118	117	110	--	--	--	--	--	--	--	--
SIDE		POST	–	--	--	--	–	--	89	112	115	116	119	118	121	121	120	121	122	120	112	--	--	--	--	--	--	--	--
SILL		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	2	2	2	4	7	5	**8**	6	7	6	4	3	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2	457	PRE	109	--	--	--	–	--	73	83	80	78	76	75	74	75	76	77	79	81	80	65	--	--	--	--	76	122	144
H		POST	107	--	--	--	–	--	64	224	273	278	278	274	274	270	305	302	292	278	262	142	--	--	--	--	79	127	148
POINT		CRUSH	-2	N/A	N/A	N/A	N/A	N/A	-9	141	193	200	202	199	200	195	**229**	225	213	197	182	77	N/A	N/A	N/A	N/A	3	5	4
LEVEL 3	616	PRE	129	78	--	--	–	62	80	79	76	73	72	71	71	70	72	74	76	79	81	73	59	--	--	63	101	130	152
MID		POST	143	128	--	--	–	58	80	216	263	274	297	280	274	272	282	294	311	319	296	211	112	--	--	68	104	132	153
DOOR		CRUSH	14	50	N/A	N/A	N/A	-4	0	137	187	201	225	209	203	202	210	220	235	**240**	215	138	53	N/A	N/A	5	3	2	1
LEVEL 4	848	PRE	–	235	202	173	167	162	151	140	131	118	108	102	73	74	97	97	99	101	105	111	112	116	123	135	148	165	188
WINDOW		POST	–	223	193	168	169	168	163	202	247	289	310	318	294	285	275	302	305	303	272	218	154	136	133	140	152	168	189
SILL		CRUSH	N/A	-12	-9	-5	2	6	12	62	116	171	202	216	**221**	211	178	205	206	202	167	107	42	20	10	5	4	3	1
LEVEL 5	1362	PRE	–	--	--	--	–	--	--	--	--	--	--	--	390	382	377	374	373	376	382	398	--	--	--	--	--	--	--
WINDOW		POST	–	--	--	--	–	--	--	--	--	--	--	--	396	397	406	394	387	384	385	396	--	--	--	--	--	--	--
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	6	15	**29**	20	14	8	3	-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET NO. 11

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



TOP VIEW

DAMAGE PROFILE DISTANCES

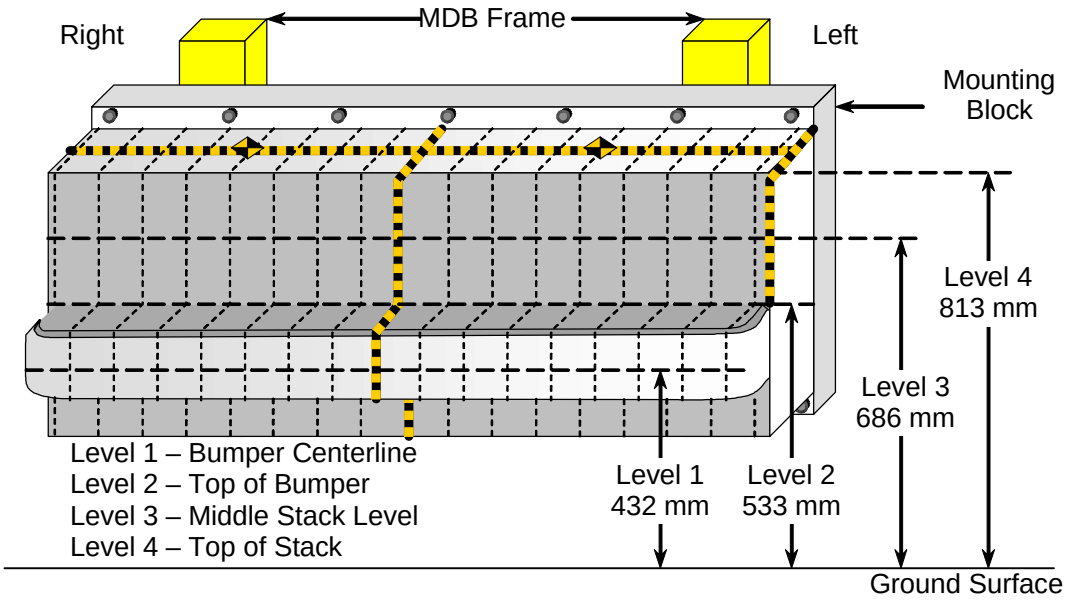
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1 (LR)	2400	4	123	133	10
2	1920	3	75	228	153
3	1440	3	75	304	229
4	960	4	73	290	217
5	480	3	73	279	206
6 (LF)	0	4	151	163	12

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

DATA SHEET NO. 12

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



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

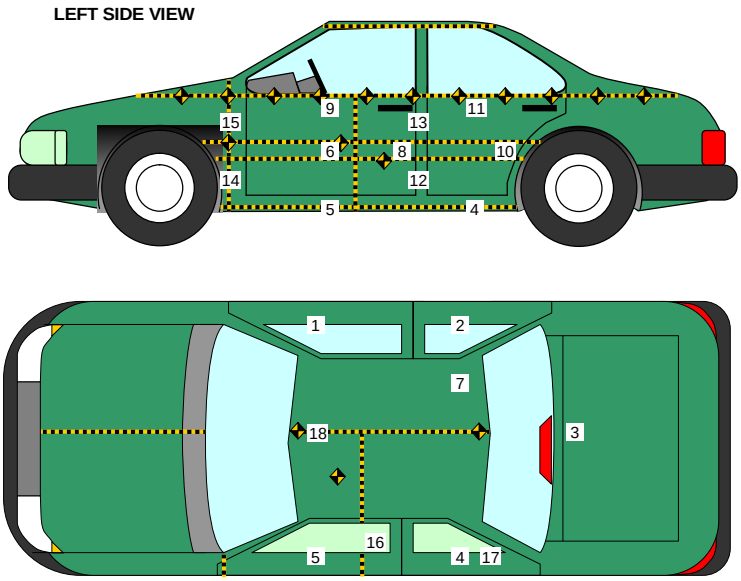
			DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)							
LEVEL	HEIGHT AT CL (mm)*		-800	-700	-600	-500	-400	-300	-200	-100	0	100	200	300	400	500	600	700	800
LEVEL 4		PRE	411	412	412	412	412	412	413	413	413	413	413	413	413	413	413	413	412
TOP	811	POST	325	360	382	391	392	387	363	352	368	383	401	400	400	395	377	334	281
STACK		CRUSH	86	52	30	21	20	25	50	61	45	30	12	13	13	18	36	79	**131**
LEVEL 3		PRE	411	411	412	412	412	412	412	412	413	412	412	412	412	412	412	412	412
MID	682	POST	324	356	382	396	397	393	374	386	399	404	407	408	404	400	392	367	322
LEVEL		CRUSH	87	55	30	16	15	19	38	26	14	8	5	4	8	12	20	45	**90**
LEVEL 2		PRE	411	412	412	412	412	412	412	412	413	412	412	412	412	412	412	412	412
TOP	542	POST	307	321	331	341	350	356	365	355	359	361	365	361	366	368	372	366	332
BUMPER		CRUSH	**104**	91	81	71	62	56	47	57	54	51	47	51	46	44	40	46	80
LEVEL 1		PRE	501	513	513	513	513	513	513	514	514	514	514	514	514	514	514	514	505
MID	430	POST	317	337	352	365	371	374	381	386	390	394	397	401	404	407	411	409	391
BUMPER		CRUSH	**184**	176	161	148	142	139	132	128	124	120	117	113	110	107	103	105	114

*Heights measured above ground level.

DATA SHEET NO. 13

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	3045	689	280
2	Right Sill at Rear Seat	2152	691	275
3	Rear Floorpan Above Axle	1349	24	513
4	Left Sill at Rear Door	2217	-687	263
5	Left Sill at Front Door	3182	-685	265
6	Left Front Door C/L**	-	-	-
7	Rear Occupant Compartment	2235	392	172
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	2366	-699	398
13	Left Middle B-Post	2265	-698	861
14	Left Lower A-Post	3454	-681	448
15	Left Middle A-Post	3288	-681	947
16	Front Seat Track	2393	-562	233
17	Rear Seat Track or Structure	1137	-486	616
18	Vehicle CG	2625	3	416

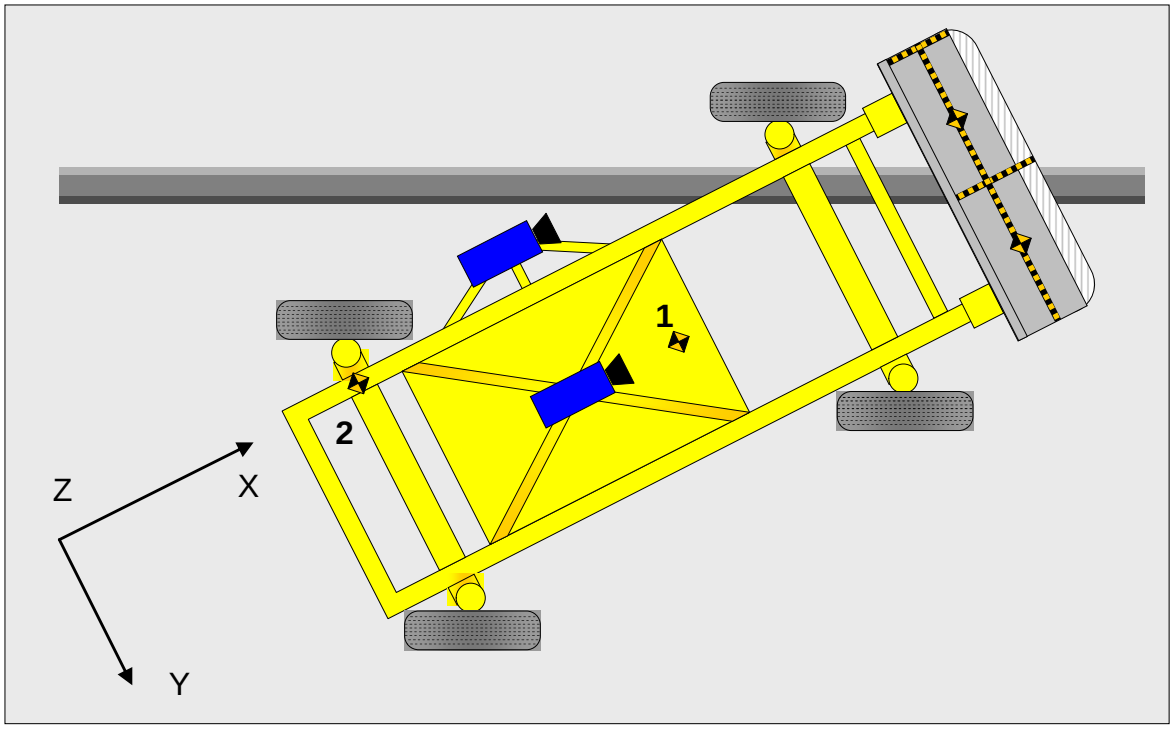
Reference Points X - Test Vehicle Rear Bumper (+ forward)
Y - Test Vehicle Centerline (+ to right)
Z - Ground Plane (+ down)

** Accelerometer was not requested by the COTR.

DATA SHEET NO. 14

MDB ACCELEROMETER LOCATIONS

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



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

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

DATA SHEET NO. 15

VEHICLE STRUCTURAL MEASUREMENTS

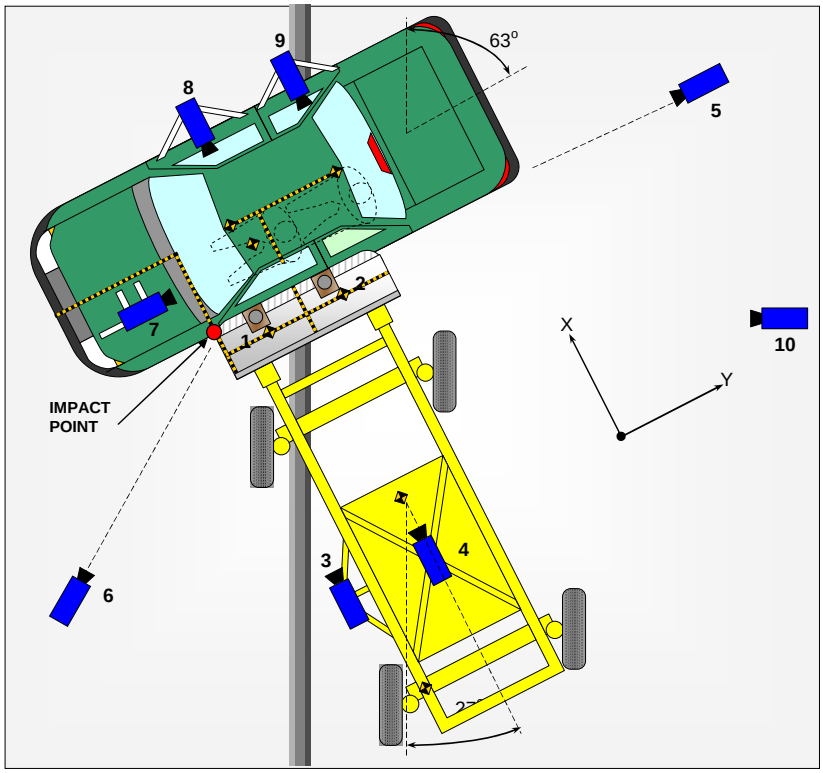
Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

	Elements	Pre-Test (mm)
1	Total Length	4969
2	Total Width	1859
3	Bumper Top Height	503
4	Bumper Bottom Height	325
5	Longitudinal Member Top Height	530
6	Distance between Longitudinal Members	1142
7	Longitudinal Member Width	100
8	Engine Top Height	843
9	Engine Bottom Height	169
10	Engine and gearbox width	539
11	Front bumper-engine distance	528
12	Front shock absorber fixing height	830
13	Bonnet leading edge height	788
14	Front shock absorber fixing width	974
15	Front bumper – front axle distance	1049
16	Front axle – a pillar distance	472
17	A-pillar – B-pillar distance	1174
18	B-Pillar – rear axle distance	1129
19	B-pillar – C-pillar distance	970
20	Roof sill bottom height	1324
21	Roof sill top height	1423
22	Floor sill bottom height	252
23	Floor sill top height	361

DATA SHEET NO. 16

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009



No.	Camera View	Location (mm)			Angle (deg)	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead Close-up	72	812	-4880	-90	8	1000
2	Overhead Overall	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	260	10400	975	-3	50	1000
6	Left Side, Ground Level, Overall	-2130	-1710	938	-6	28	1000
7	Vehicle Onboard Front SID/HIII, Front	-520	460	1270	-6	25	500
8	Vehicle Onboard Front SID/HIII, Side	1750	775	1045	-3	12.5	500
9	Vehicle Onboard Rear SID/HIII, Side	1740	1675	1065	-7	12.5	500
10	Real Time Coverage						30

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

DATA SHEET NO. 17
SUMMARY OF FMVSS 301 DATA

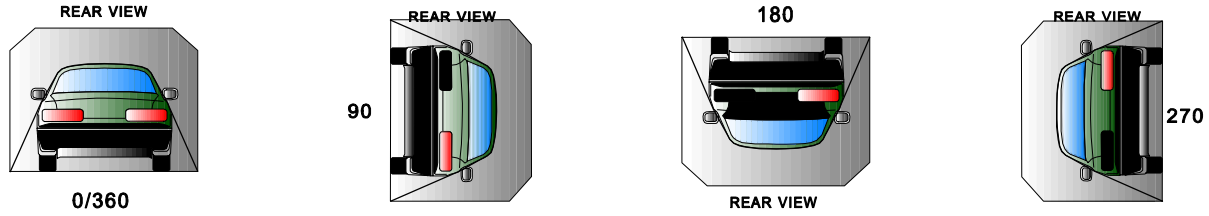
Test Vehicle:	2009 Acura TL	NHTSA No.	C95309
Test Program:	FMVSS 214 Indicant Side Impact	Test Date:	March 12, 2009

FUEL SYSTEM INTEGRITY POST IMPACT DATA

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

Spillage Location(s)	None

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	08	seconds	5	minutes	6	minutes	8	seconds	7	minutes
90º - 180º	1	minutes	03	seconds	5	minutes	6	minutes	3	seconds	7	minutes
180º-270º	0	minutes	59	seconds	5	minutes	5	minutes	59	seconds	6	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	6th min.	7th min.	8th 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

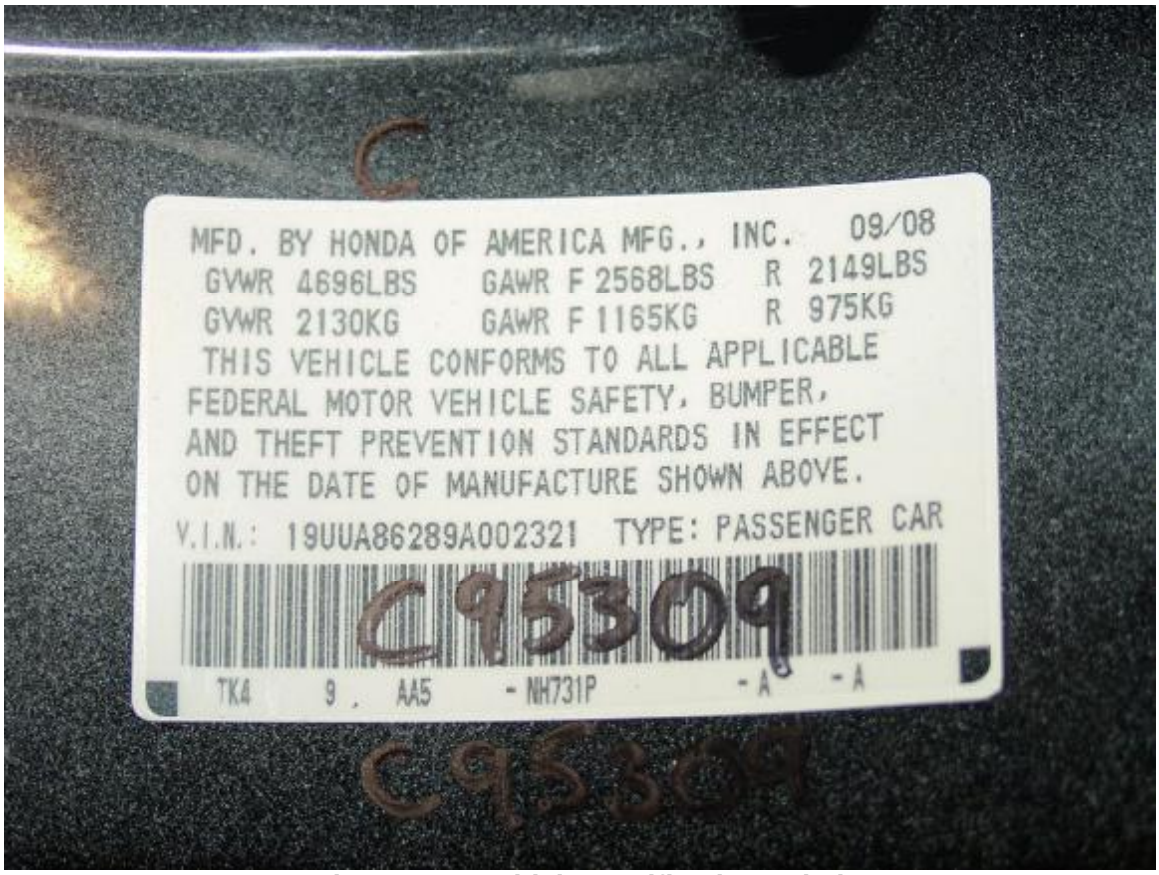


Figure A-3: Vehicle Certification Label

Figure A-4: Vehicle Tire Placard Label

Figure A-5: Pre-Test Front View

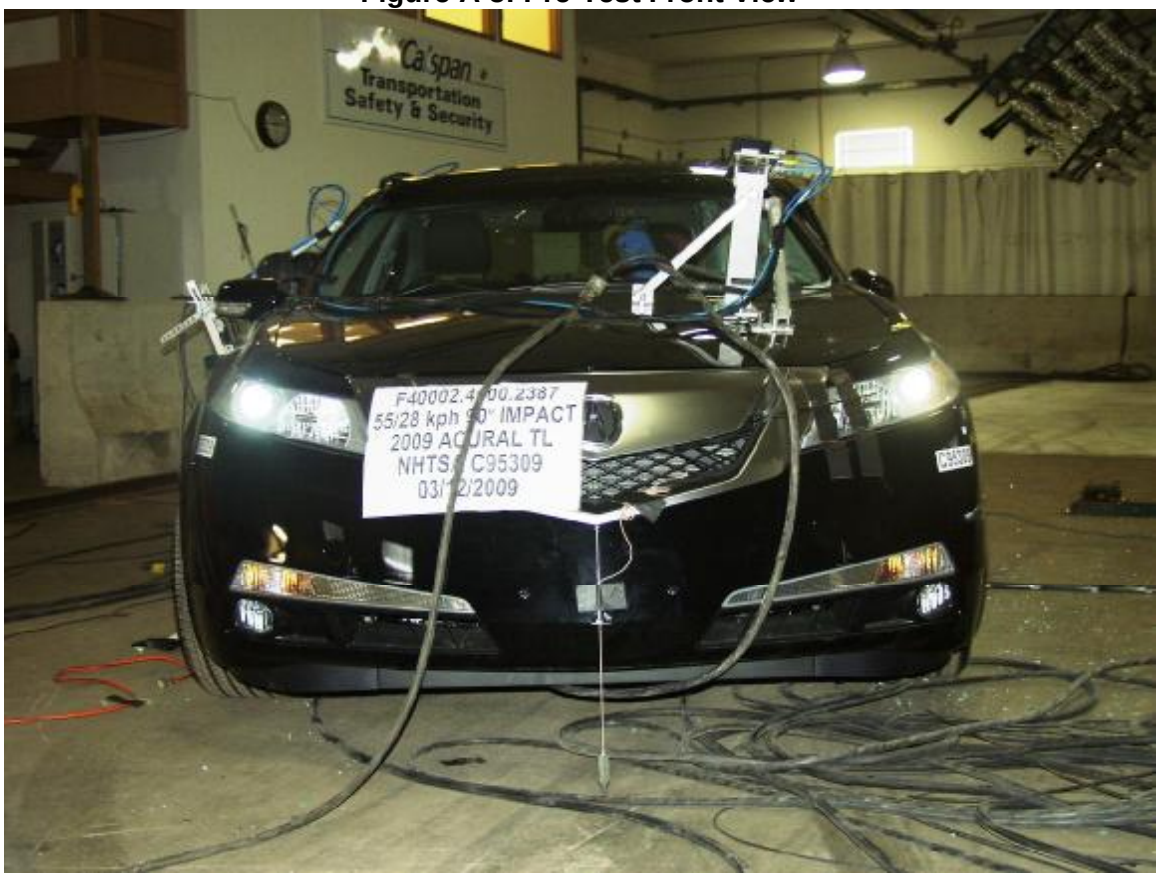


Figure A-6: Post-Test Front View

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

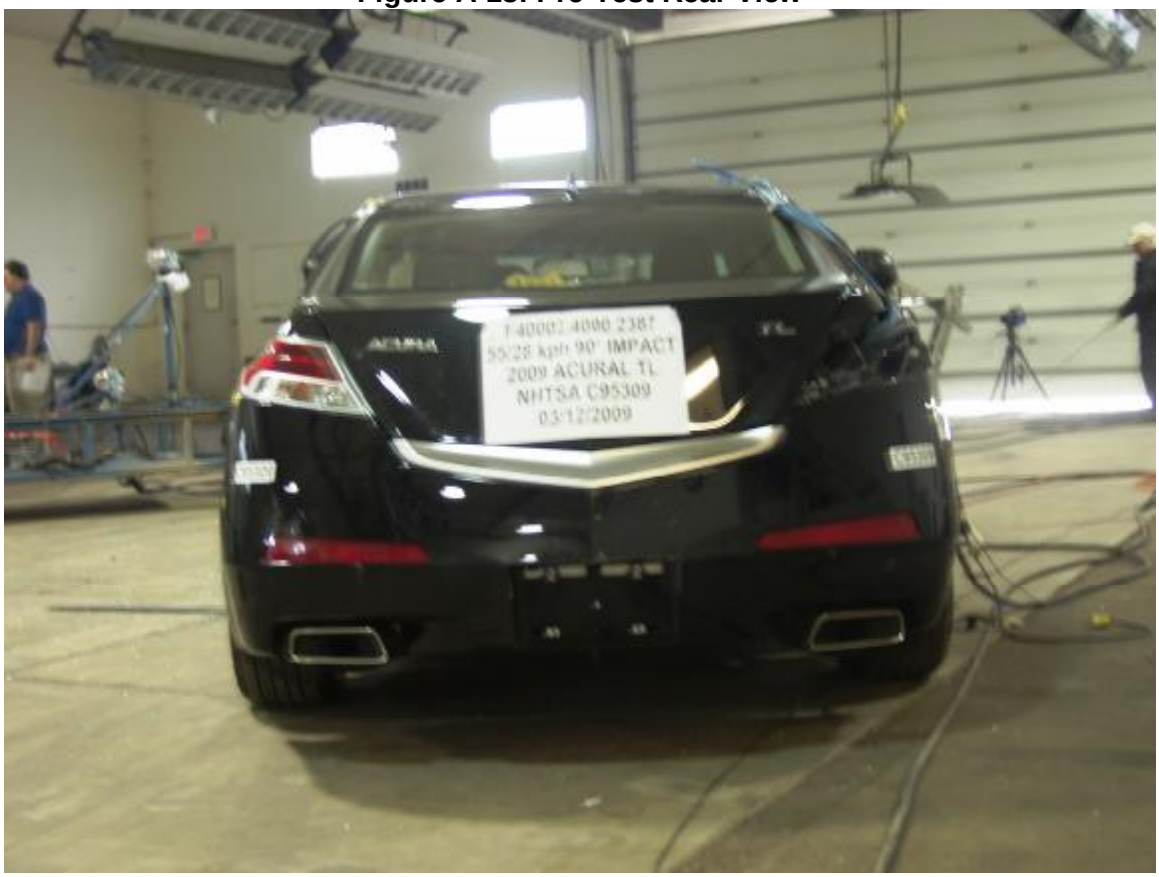


Figure A-14: Post-Test Rear View

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

Not Available

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

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

Not Available

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 Head Ax Redundant
V2P1 Head Ay Redundant
V2P1 Head Az Redundant
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 Head Ax Redundant
V2P4 Head Ay Redundant
V2P4 Head Az Redundant
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

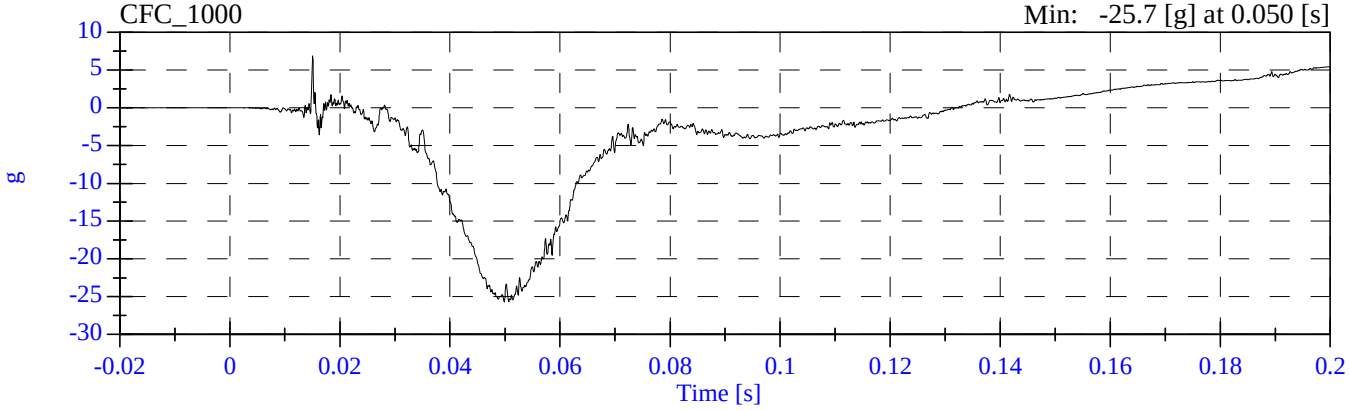
V2A1 Right Front Sill Ax
V2A1 Right Front Sill Ay
V2A1 Right Front Sill Az
V2A2 Right Rear Sill Ax
V2A2 Right Rear Sill Ay
V2A2 Right Rear Sill Az
V2A3 Rear Floorpan Ax
V2A3 Rear Floorpan Ay
V2A3 Rear Floorplan Az
V2A4 Left Rear Sill Ay
V2A5 Left Front Sill Ay
V2A7 Right Rear Compartment Ay
V2A12 Left 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

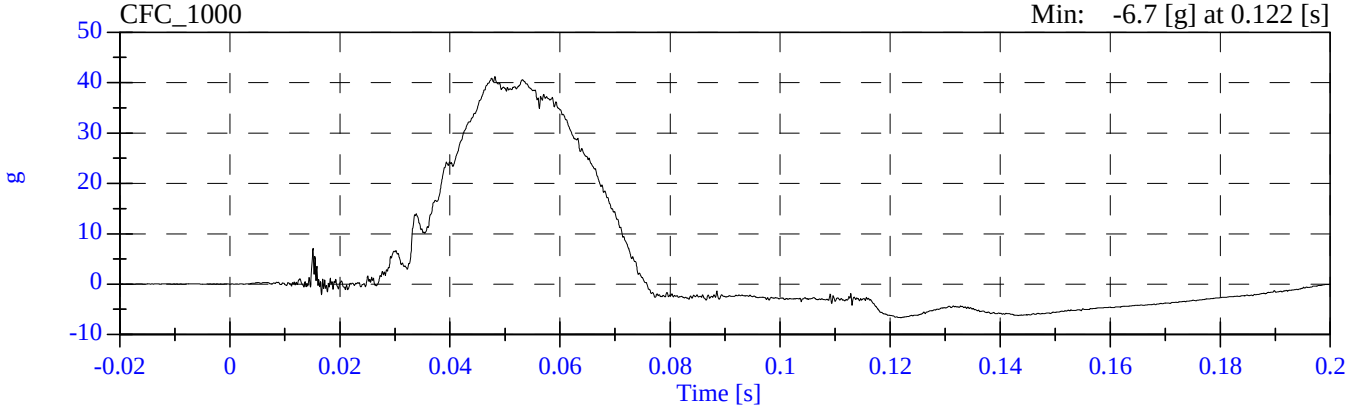
The following channel anomalies occurred: None

2009 FMVSS 214I 2009 Acura TL
C95309 - March 12, 2009

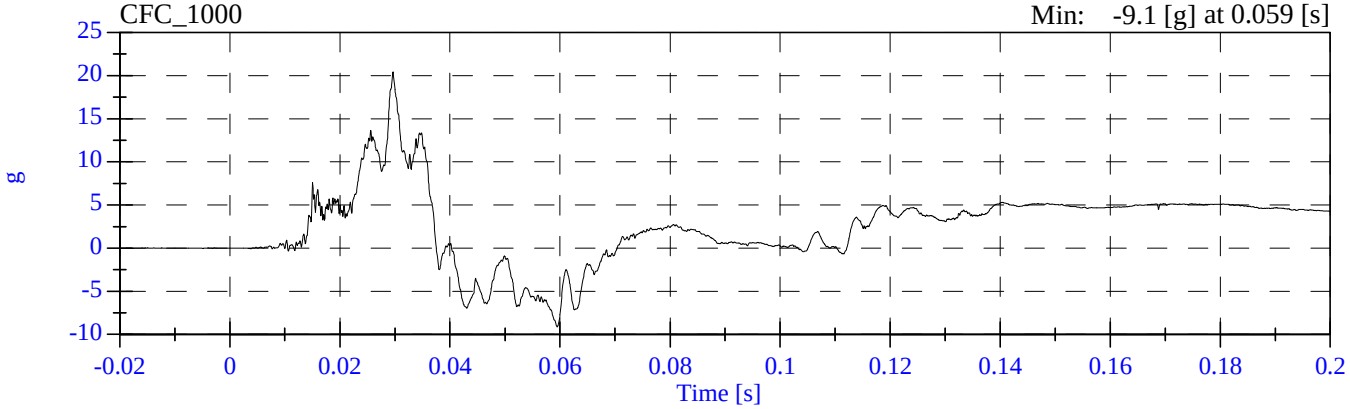
V2P1 Head x
CFC_1000
Max: 6.8 [g] at 0.015 [s]
Min: -25.7 [g] at 0.050 [s]



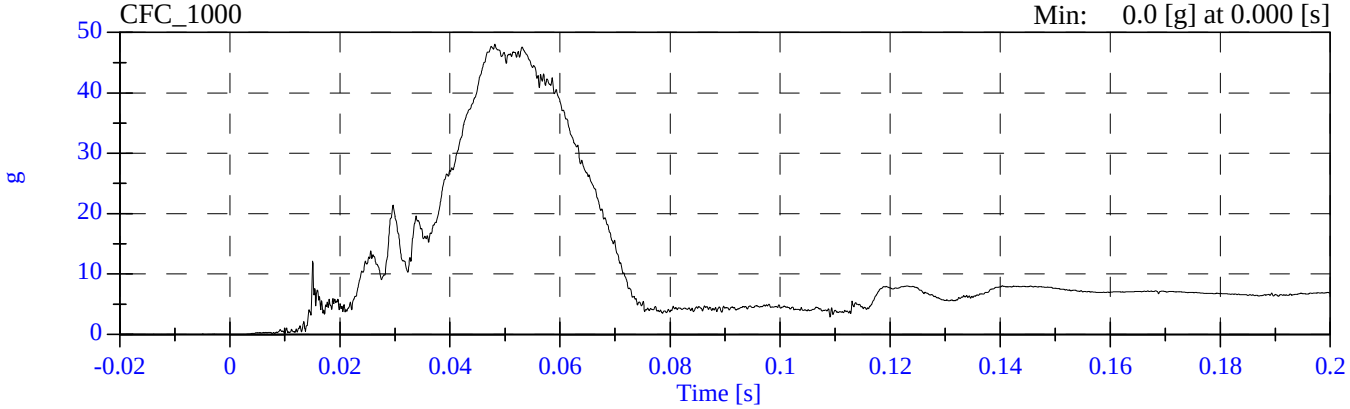
V2P1 Head y
CFC_1000
Max: 41.2 [g] at 0.048 [s]
Min: -6.7 [g] at 0.122 [s]



V2P1 Head z
CFC_1000
Max: 20.4 [g] at 0.030 [s]
Min: -9.1 [g] at 0.059 [s]

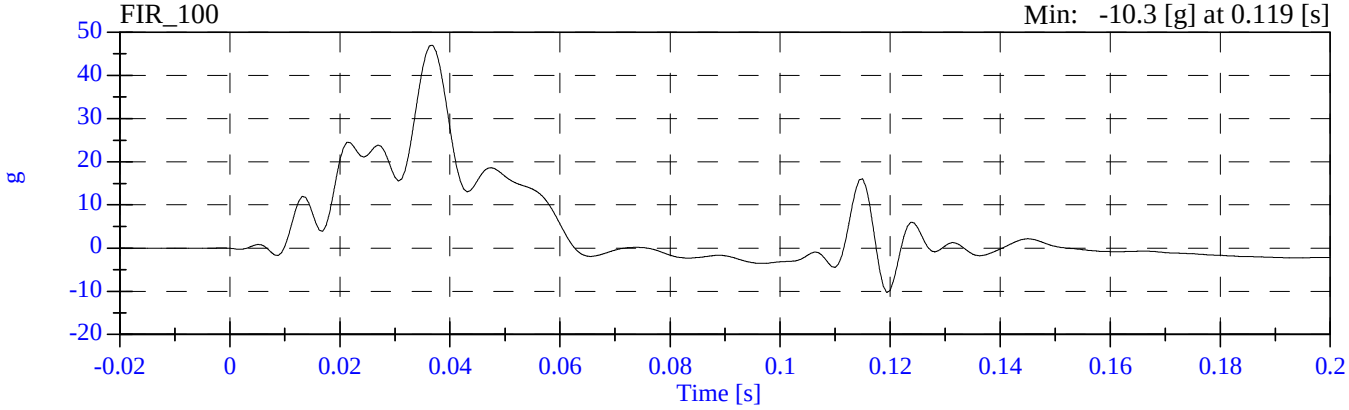


V2P1 Head Resultant
CFC_1000
Max: 48.1 [g] at 0.048 [s]
Min: 0.0 [g] at 0.000 [s]

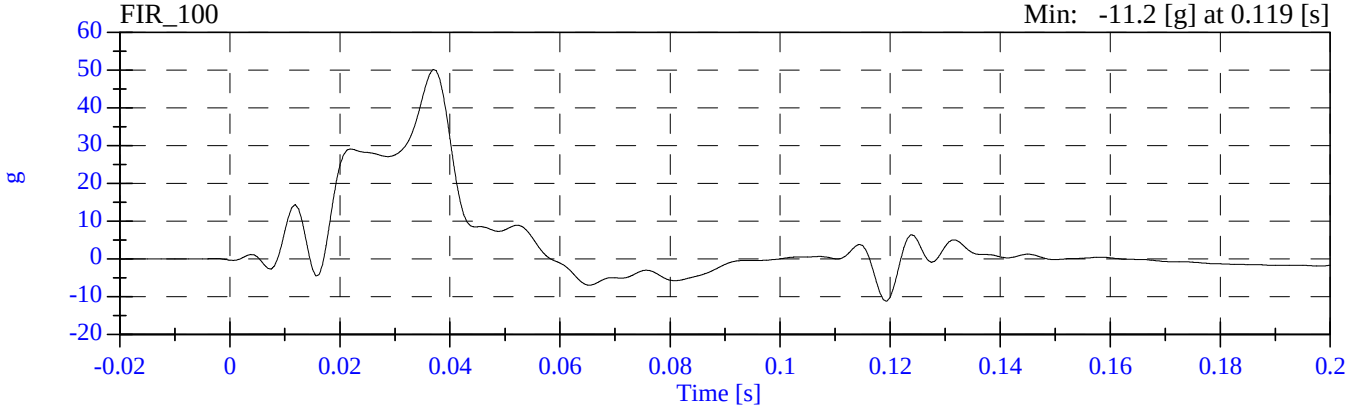


2009 FMVSS 214I 2009 Acura TL
C95309 - March 12, 2009

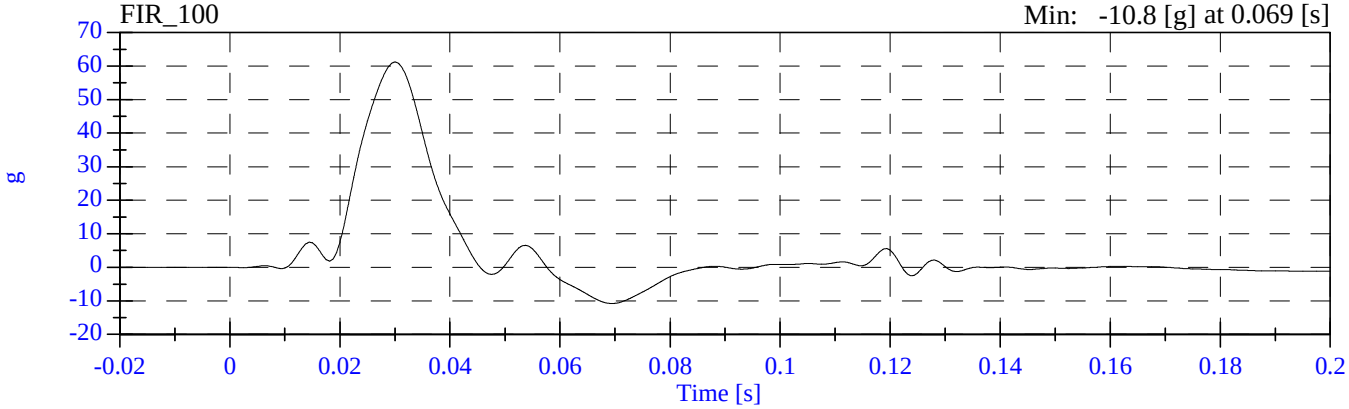
V2P1 Upper Rib y
FIR_100
Max: 47.0 [g] at 0.037 [s]
Min: -10.3 [g] at 0.119 [s]



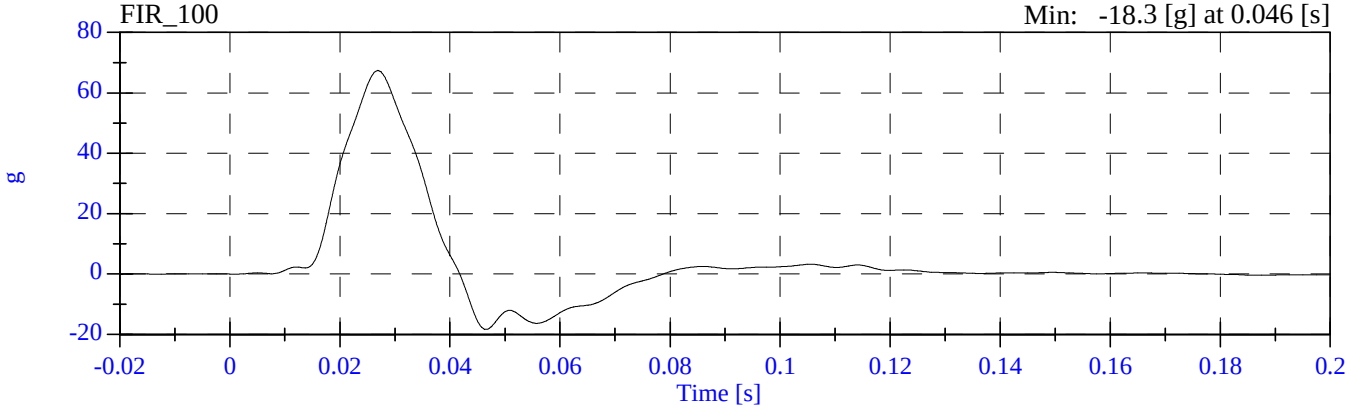
V2P1 Lower Rib y
FIR_100
Max: 50.2 [g] at 0.037 [s]
Min: -11.2 [g] at 0.119 [s]



V2P1 Lower Spine y
FIR_100
Max: 61.2 [g] at 0.030 [s]
Min: -10.8 [g] at 0.069 [s]

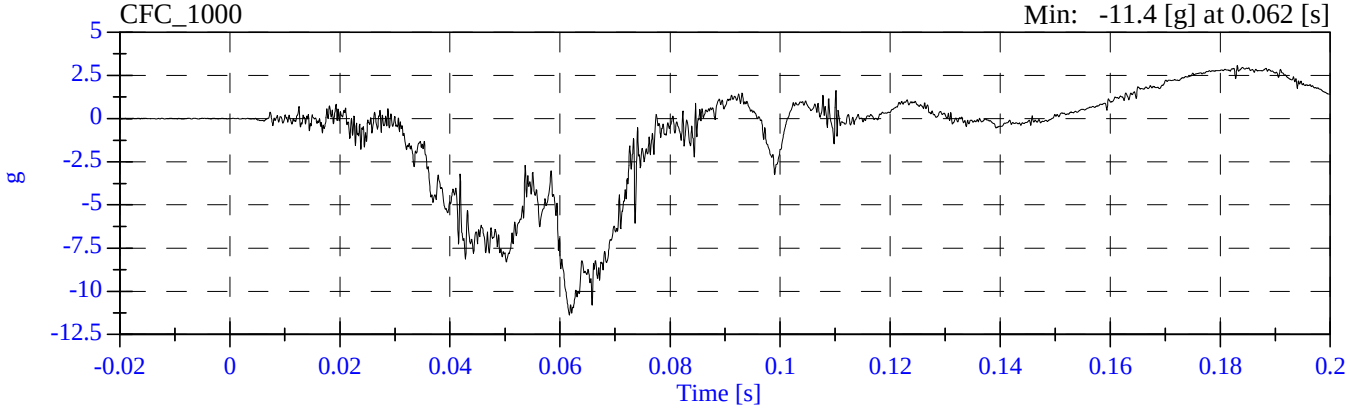


V2P1 Pelvic y
FIR_100
Max: 67.4 [g] at 0.027 [s]
Min: -18.3 [g] at 0.046 [s]

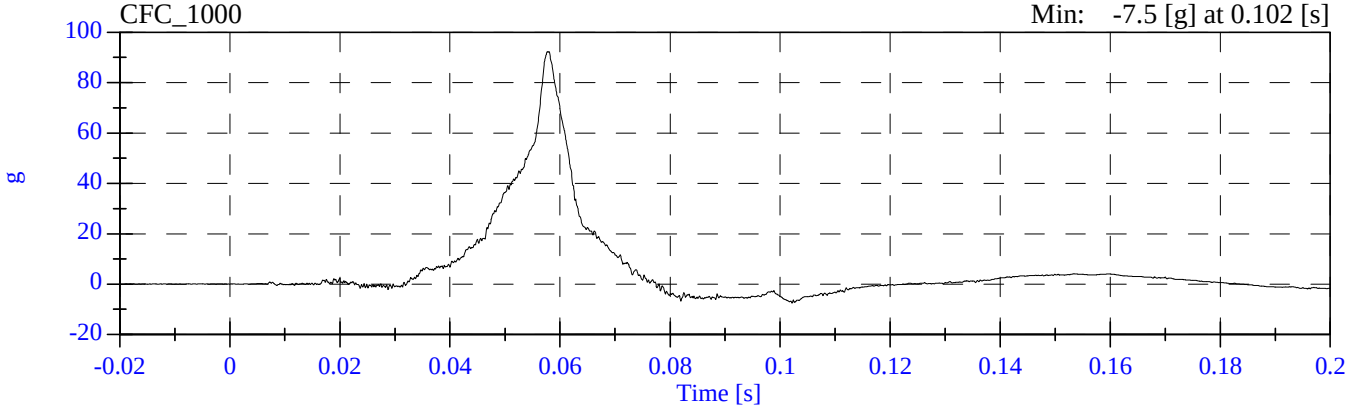


2009 FMVSS 214I 2009 Acura TL
C95309 - March 12, 2009

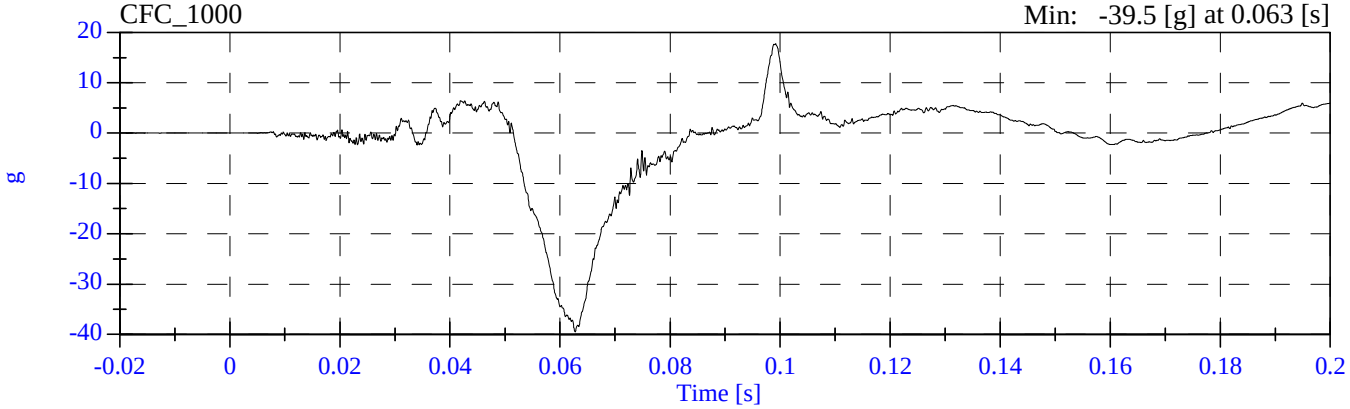
V2P4 Head x
CFC_1000
Max: 3.1 [g] at 0.183 [s]
Min: -11.4 [g] at 0.062 [s]



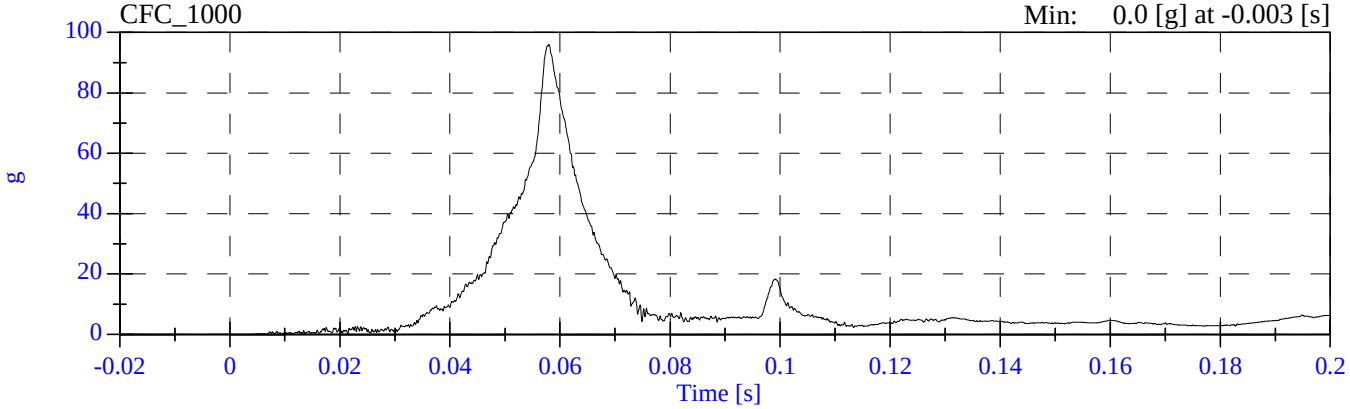
V2P4 Head y
CFC_1000
Max: 92.3 [g] at 0.058 [s]
Min: -7.5 [g] at 0.102 [s]



V2P4 Head z
CFC_1000
Max: 17.7 [g] at 0.099 [s]
Min: -39.5 [g] at 0.063 [s]

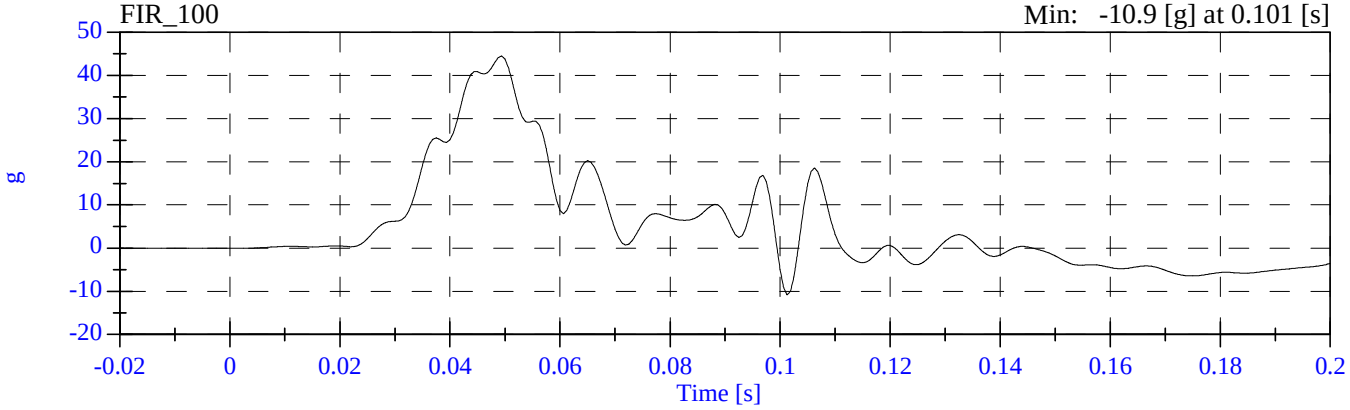


V2P4 Head Resultant
CFC_1000
Max: 96.0 [g] at 0.058 [s]
Min: 0.0 [g] at -0.003 [s]

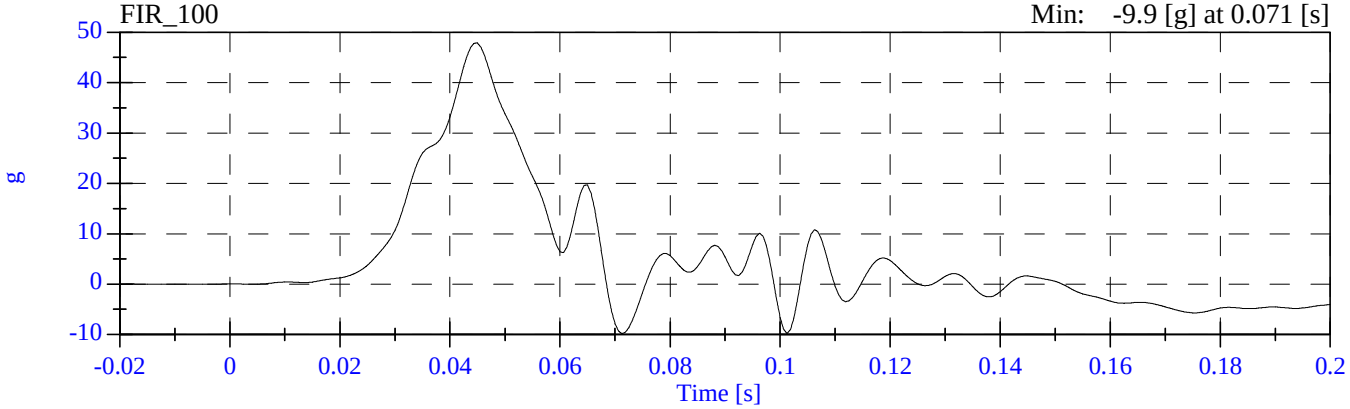


2009 FMVSS 214I 2009 Acura TL
C95309 - March 12, 2009

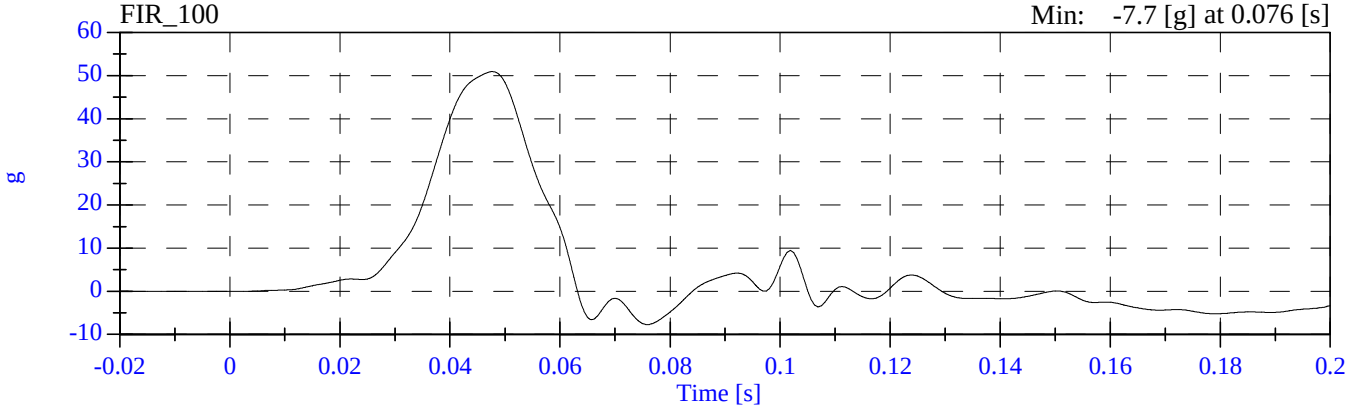
V2P4 Upper Rib y
FIR_100
Max: 44.5 [g] at 0.049 [s]
Min: -10.9 [g] at 0.101 [s]



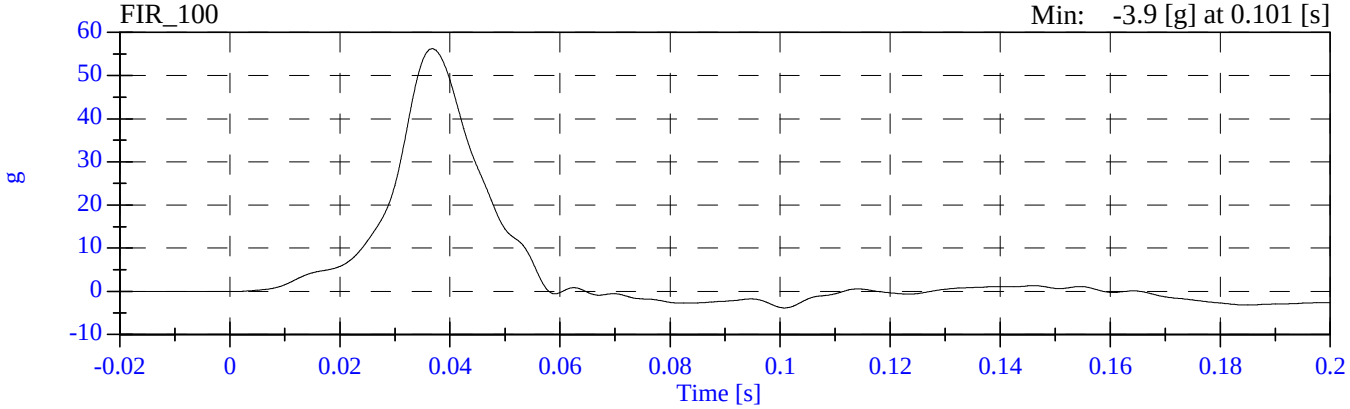
V2P4 Lower Rib y
FIR_100
Max: 47.9 [g] at 0.045 [s]
Min: -9.9 [g] at 0.071 [s]



V2P4 Lower Spine y
FIR_100
Max: 50.9 [g] at 0.047 [s]
Min: -7.7 [g] at 0.076 [s]



V2P4 Pelvic y
FIR_100
Max: 56.3 [g] at 0.037 [s]
Min: -3.9 [g] at 0.101 [s]



APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION

CONFIGURED FOR LEFT SIDE IMPACT

Date: 12/3/08; 12/3/08; 4/7/09; 4/7/09 Sequential Test Number: 1
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	SID H3 NO.: 270		SID H3 NO.: 269	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	899	899	899	899
RH- Rib Height (mm)	501 - 521	505	505	505	505
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	234	234	234	234
KV- Knee Pivot from Back Line (mm)	511 - 526	518	518	516	516
SW- Knee Pivot to Floor (mm)	490 - 505	495	495	495	495
HW- Hip Width (mm)	356 - 391	384	384	381	381
THORAX IMPACTS					
TEMPERATURE (• C)	18.9 - 25.5	21.7	22.2	21.7	21.7
RELATIVE. HUMIDITY (%)	10 -70	21	28	21	22
PROBE SPEED (m/s)	4.27 - 4.33	4.31	4.31	4.30	4.31
UPPER RIB (g's)	37 - 46	37.94	41.27	40.99	39.26
LOWER RIB (g's)	37 - 46	38.23	41.60	39.62	39.33
LOWER SPINE (g's)	15 -22	19.05	21.78	18.69	17.48
PELVIS IMPACT					
TEMPERATURE (• C)	18.9 - 25.5	21.7	22.2	21.7	21.7
RELATIVE HUMIDITY (%)	10 - 70	21	28.0	23	21
PROBE SPEED (m/s)	4.27 - 4.33	4.32	4.31	4.30	4.31
PELVIS (g's)	40 -60	48.54	49.39	47.21	54.58

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: 12/1/08 Laboratory Technician: A. Rudniski

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

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 12/1/08 Laboratory Technician: A. Rudniski

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

REMARKS: None

Shock Test Low (3.05 m/s)

PRE TEST

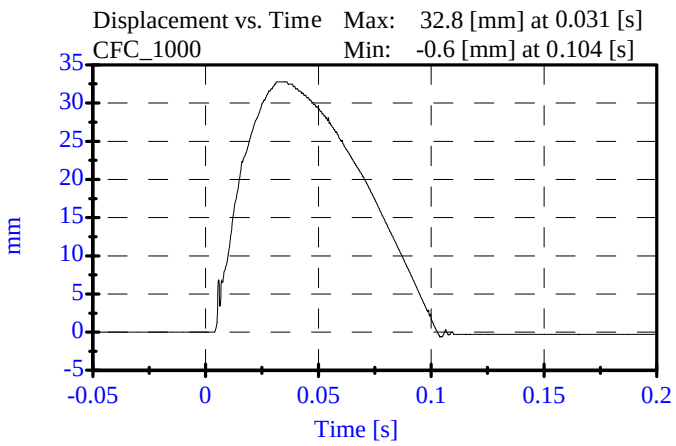
CONFIGURED FOR LEFT SIDE IMPACT

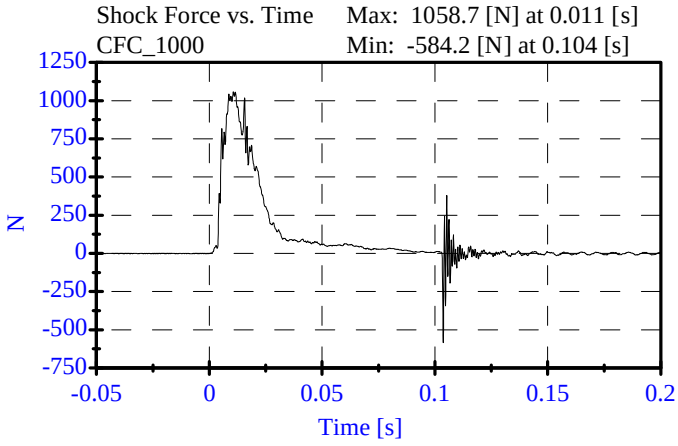
ATD Serial No: 270 Sequential Test Number: 1 File: 270 Shock10 07-25-08

Date: 07-25-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	63.00 %	Passed
Displacement:	30.00-35.00 mm	32.78 mm	Passed
Maximum Force:	836.00-1125.00 N	1058.75 N	Passed

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





Shock Test Medium (4.27 m/s)

PRE TEST

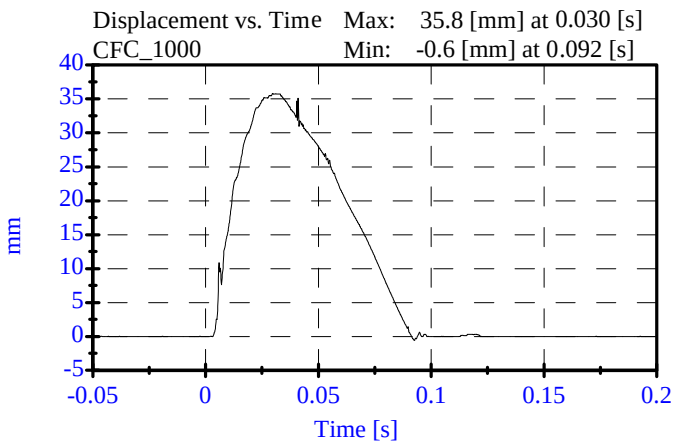
CONFIGURED FOR LEFT SIDE IMPACT

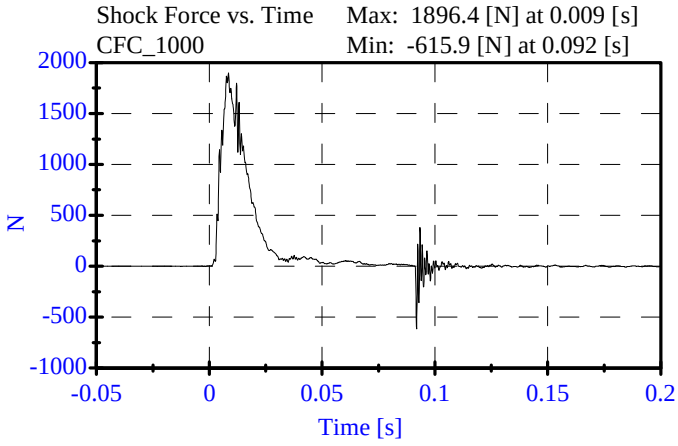
ATD Serial No: 270 Sequential Test Number: 1 File: 270 Shock14 07-25-08

Date: 07-25-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	63.00 %	Passed
Displacement:	32.00-37.00 mm	35.79 mm	Passed
Maximum Force:	1730.00-2099.00 N	1896.42 N	Passed

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





Shock Test High (6.10 m/s)

PRE TEST

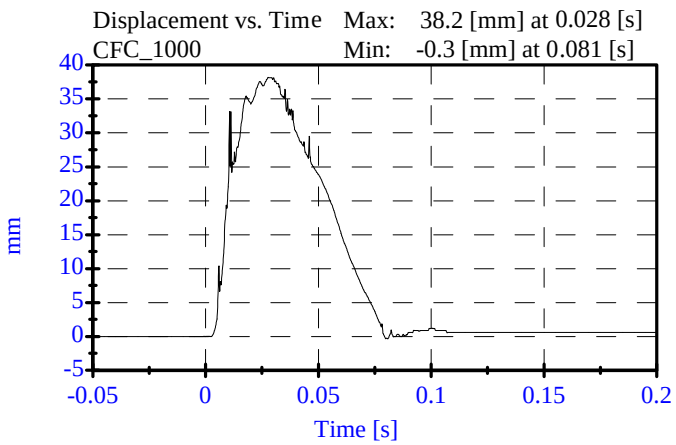
CONFIGURED FOR LEFT SIDE IMPACT

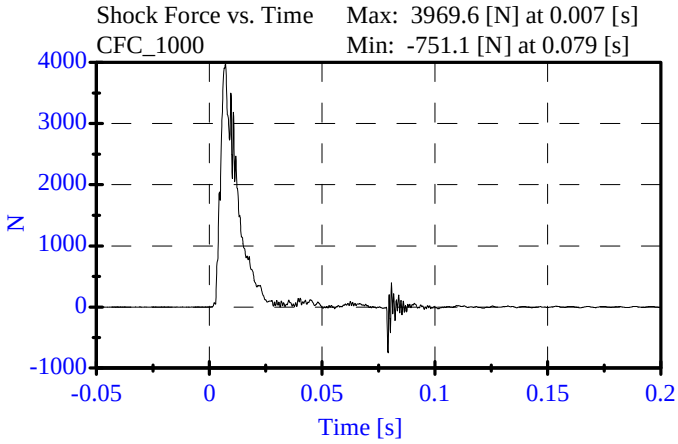
ATD Serial No: 270 Sequential Test Number: 1 File: 270 Shock20 07-25-08

Date: 07-25-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	63.00 %	Passed
Displacement:	33.00-40.00 mm	38.17 mm	Passed
Maximum Force:	3741.00-4448.00 N	3969.63 N	Passed

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





Thorax Impact

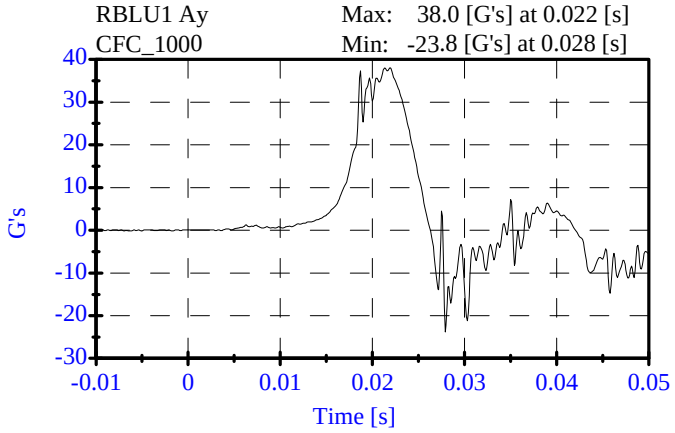
Pre-Test

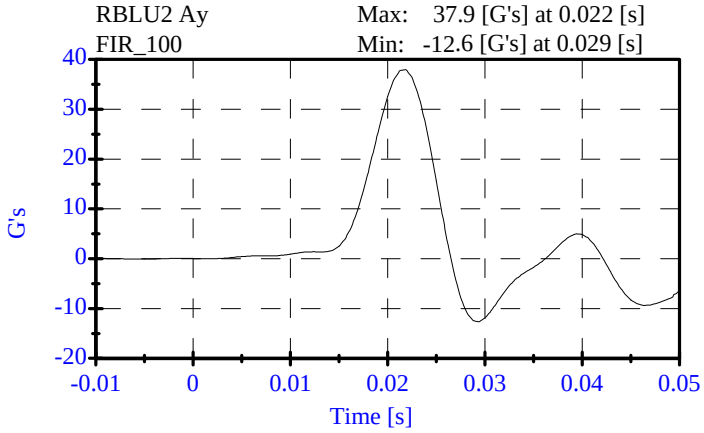
CONFIGURED FOR LEFT SIDE IMPACT

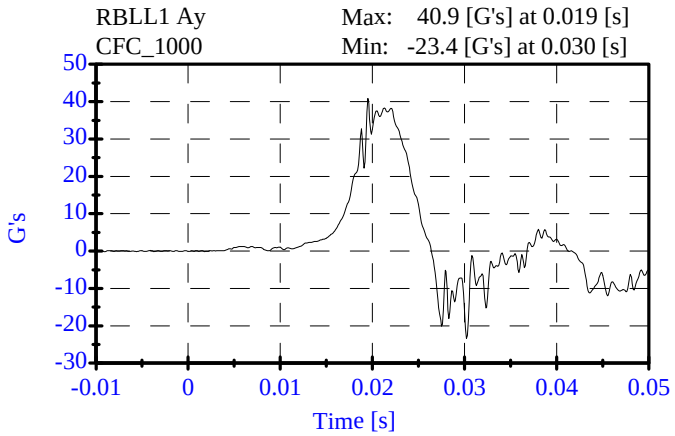
ATD Serial No: 270 Sequential Test Number: 1 File: 270T 11-26-08

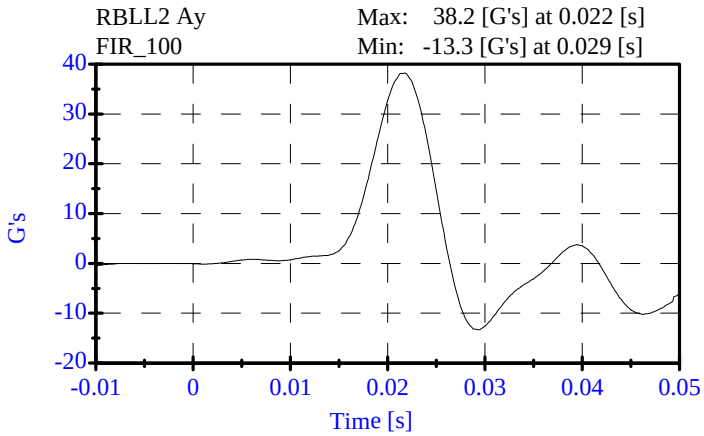
Date: 11-26-08 Laboratory Technician: A. Rudniski

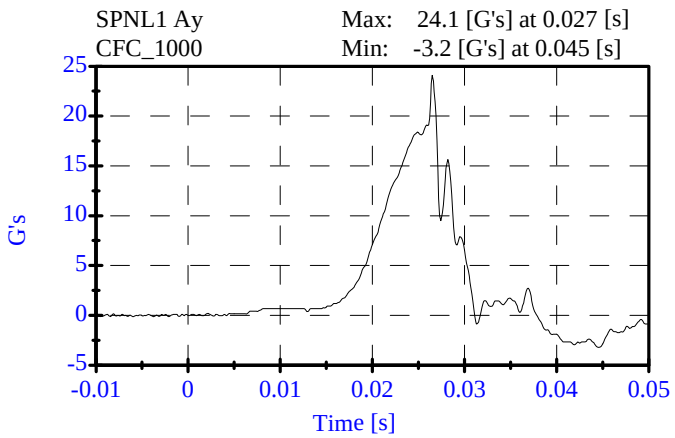
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	37.94 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	38.23 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	19.05 G's	Passed

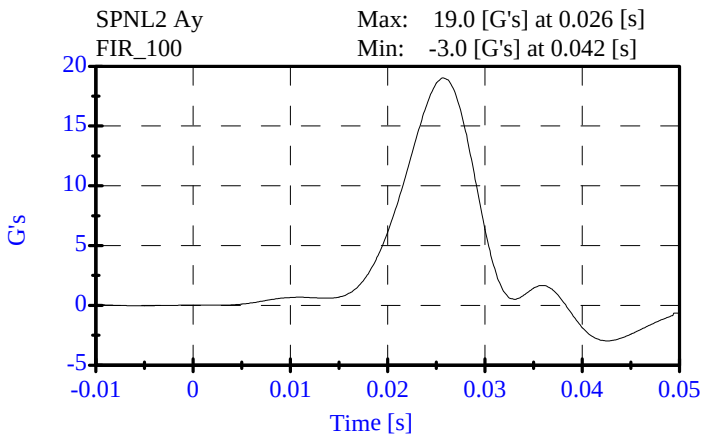












Pelvis Impact test

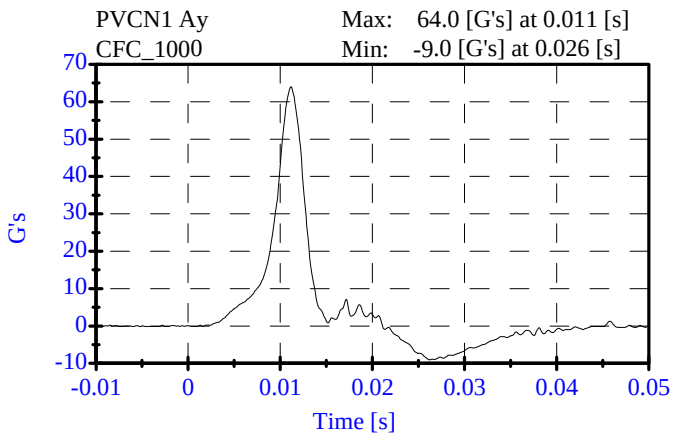
Pre-Test

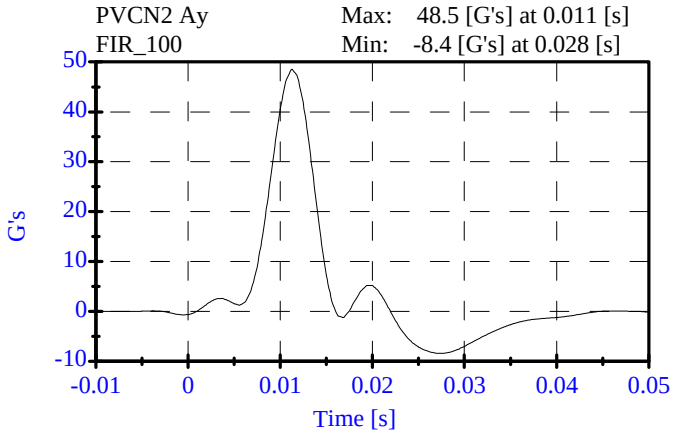
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270P 11-26-08

Date: 11-26-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.32 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	48.54 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.6 ms	Passed





Head Drop Test

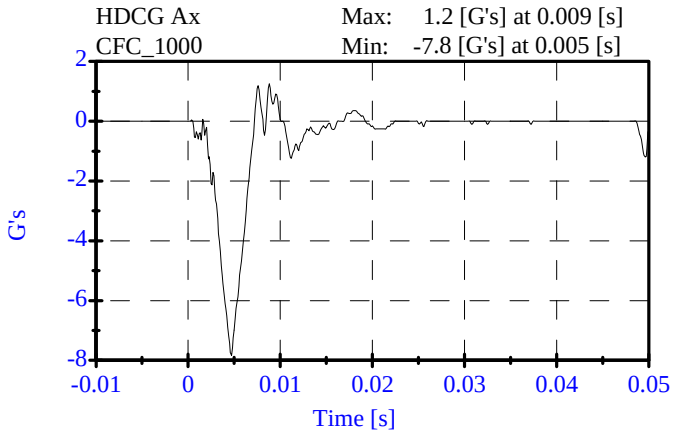
Pre-Test

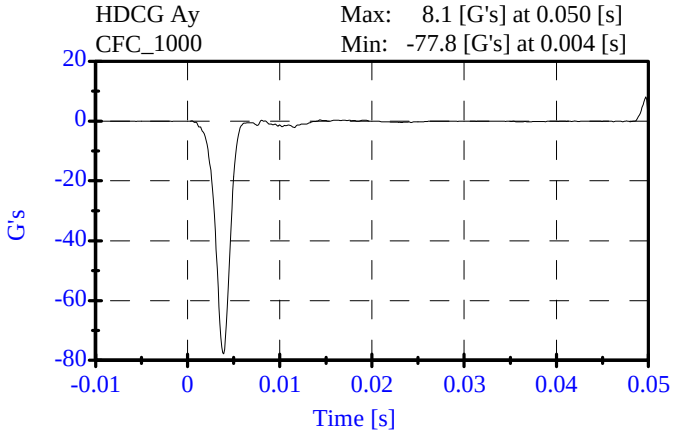
CONFIGURED FOR LEFT SIDE IMPACT

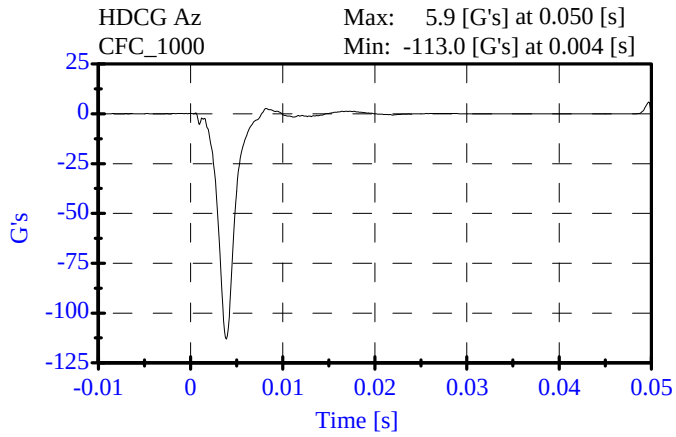
ATD Serial No: 270 Sequential Test Number: 1 File: 270H 11-24-08

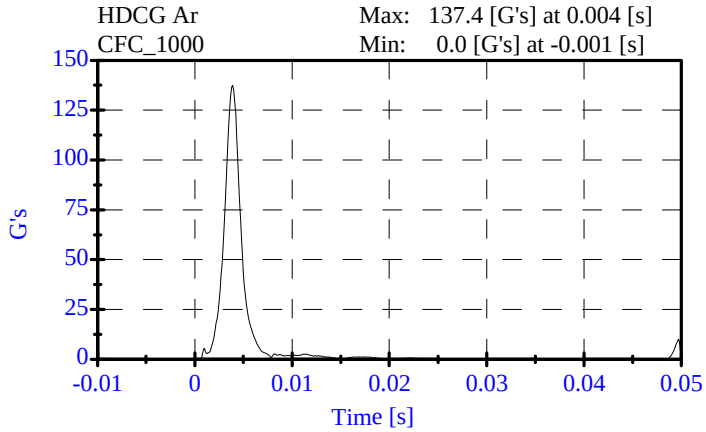
Date: 11-24-08 Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.7 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	137.37 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.25 Gs	Passed
Curve PerCent NonModal:	< 15%	7.32 %	Passed









Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270N 11-25-08

Date: 11-25-08 Laboratory Technician: A. Rudnski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	20.00 %	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	2.34 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.70 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.60 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.57 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	71.45 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.70 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	76.32 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	55.40 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	11.70 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

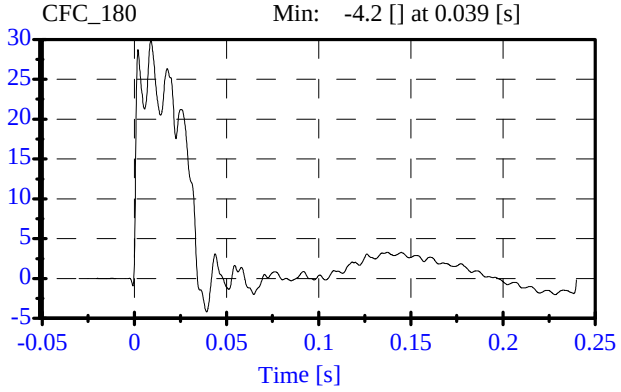
ATD Serial No: 270

Sequential Test Number: 1 File: 270N 11-25-08

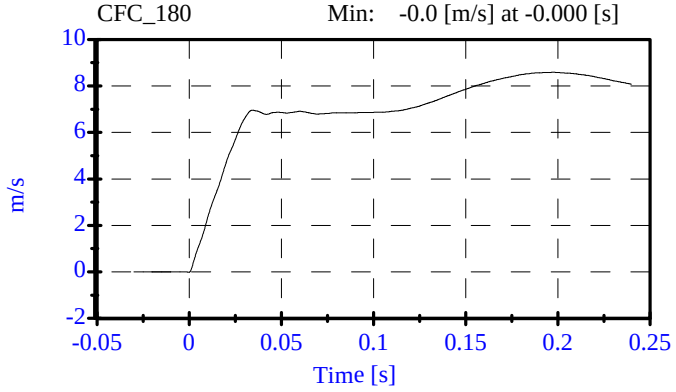
Date: 11-25-08

Laboratory Technician: A. Rudniski

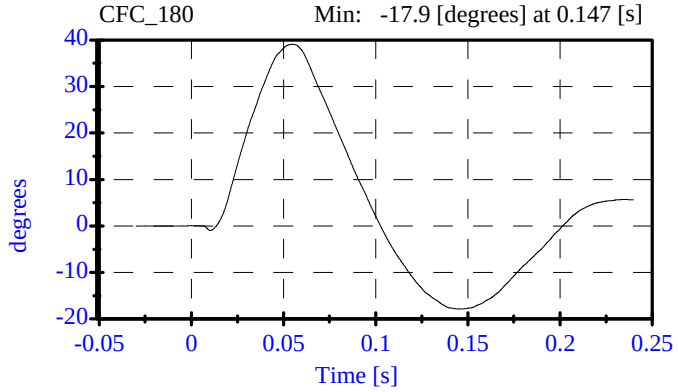
Pend Ax
CFC_180
Max: 29.8 [] at 0.009 [s]
Min: -4.2 [] at 0.039 [s]



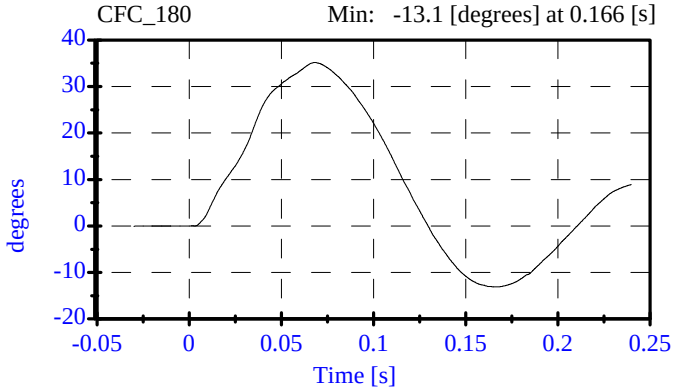
Pend Vx
CFC_180
Max: 8.6 [m/s] at 0.198 [s]
Min: -0.0 [m/s] at -0.000 [s]



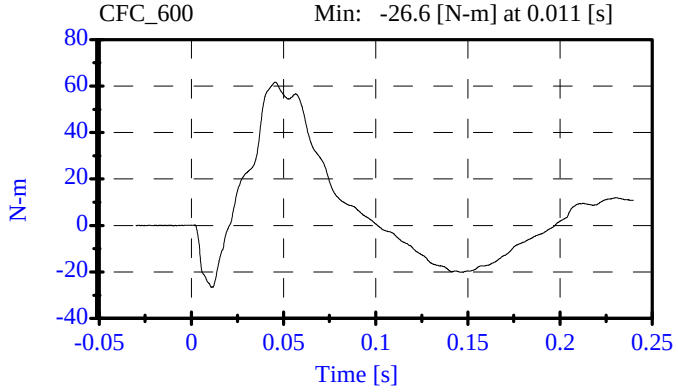
Head Rot
CFC_180
Max: 39.1 [degrees] at 0.055 [s]
Min: -17.9 [degrees] at 0.147 [s]



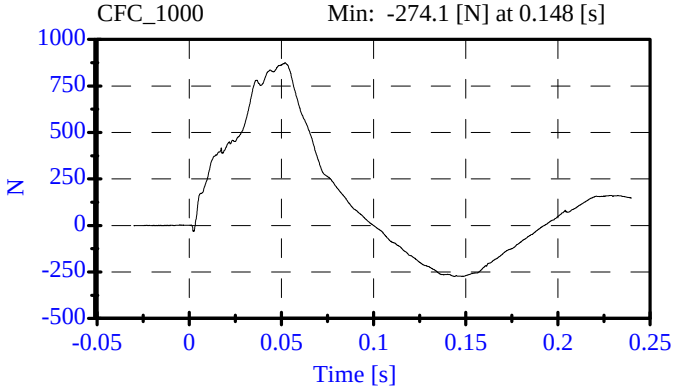
Arm Rot
CFC_180
Max: 35.1 [degrees] at 0.068 [s]
Min: -13.1 [degrees] at 0.166 [s]



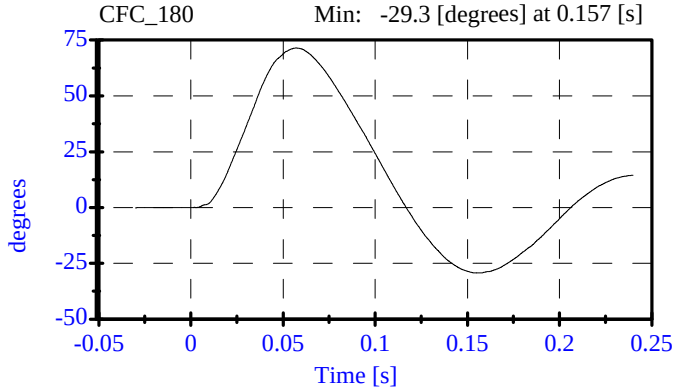
Neck Mx
CFC_600
Max: 61.6 [N-m] at 0.046 [s]
Min: -26.6 [N-m] at 0.011 [s]



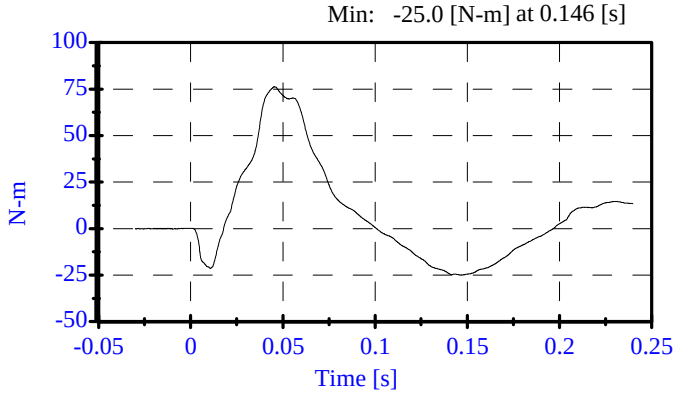
Neck Fy
CFC_1000
Max: 875.5 [N] at 0.052 [s]
Min: -274.1 [N] at 0.148 [s]



Tot Rot
CFC_180
Max: 71.4 [degrees] at 0.057 [s]
Min: -29.3 [degrees] at 0.157 [s]



MOCX
Max: 76.3 [N-m] at 0.045 [s]
Min: -25.0 [N-m] at 0.146 [s]



Abdominal Compression Test

Pre-Test

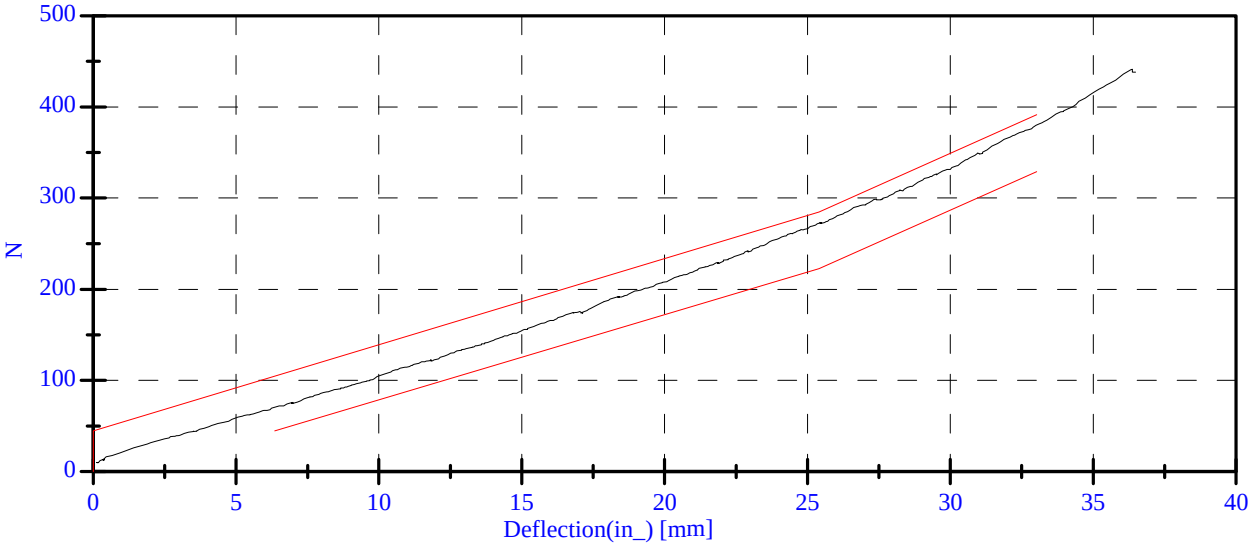
CONFIGURED FOR LEFT SIDE IMPACT

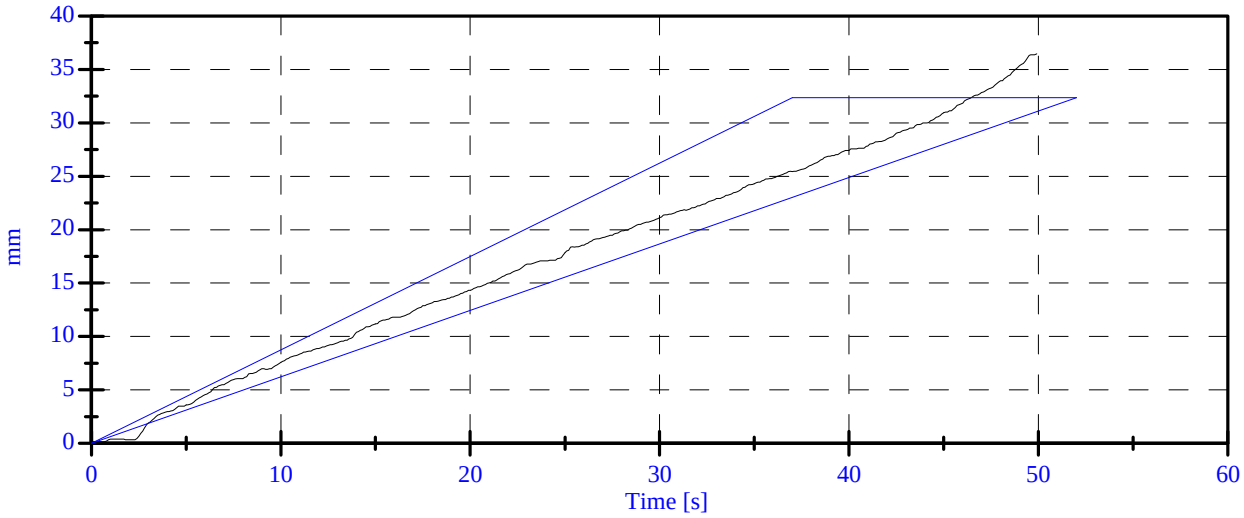
ATD Serial No: 270 Sequential Test Number: 1 File: 270 Ab 12-01-08

Date: 12-01-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	23.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	134.13 N	Passed
Force at 19.05 mm :	162.98-220.99 N	198.38 N	Passed
Force at 25.40 mm :	221.97-280.02 N	272.85 N	Passed
Force at 33.02 mm :	324.99-391.00 N	379.81 N	Passed

ABDOMINAL COMPRESSION TEST





Lumbar Spine Test
Pre-Test

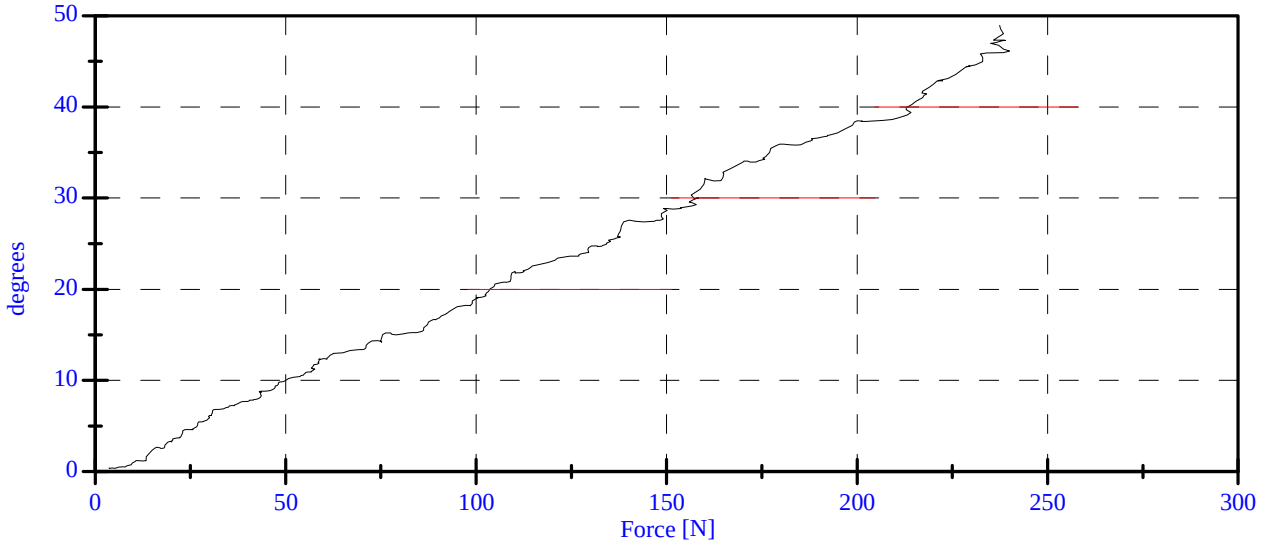
CONFIGURED FOR LEFT SIDE IMPACT

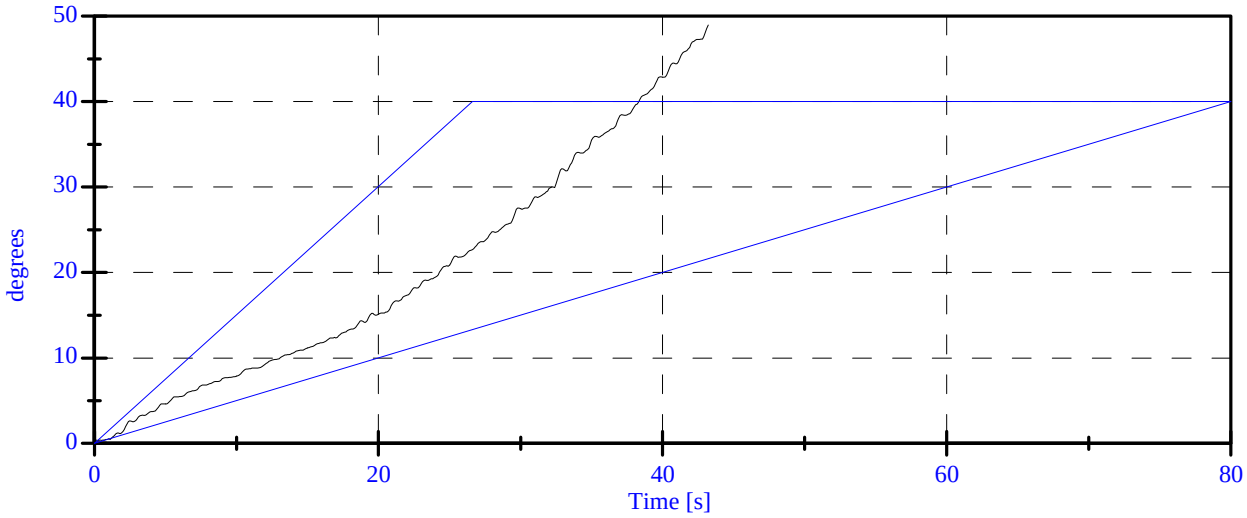
ATD Serial No: 270
Date: 12-01-08

Sequential Test Number: 1 File: 270 Spine 12-01-08
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	23.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	3.65 N	Passed
Force at 20 Deg:	97.86-151.24 N	103.68 N	Passed
Force at 30 Deg	151.24-204.62 N	157.74 N	Passed
Force at 40 Deg	204.62-258.00 N	212.84 N	Passed
Return Angle	12 Deg Max	8.36 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: 11/23/08 Laboratory Technician: A. Rudniski

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

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 269

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 12/3/08 Laboratory Technician: A. Rudniski

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

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
PRE-TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 12/1/08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	516
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	381

REMARKS: None

Shock Test Low (3.05 m/s)

PRE TEST

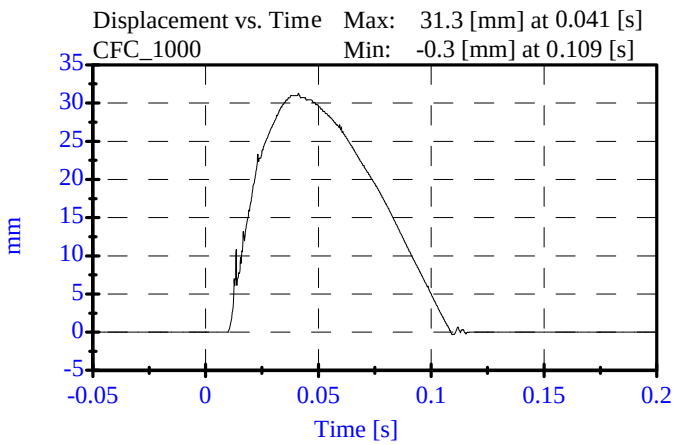
CONFIGURED FOR LEFT SIDE IMPACT

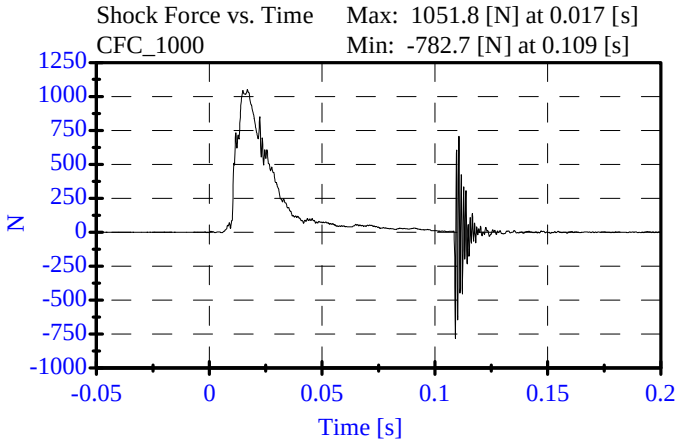
ATD Serial No: 269 Sequential Test Number: 1 File: 269SL 12-02-08

Date: 12-02-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Displacement:	30.00-35.00 mm	31.26 mm	Passed
Maximum Force:	836.00-1125.00 N	1051.76 N	Passed

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





Shock Test Medium (4.27 m/s)

PRE TEST

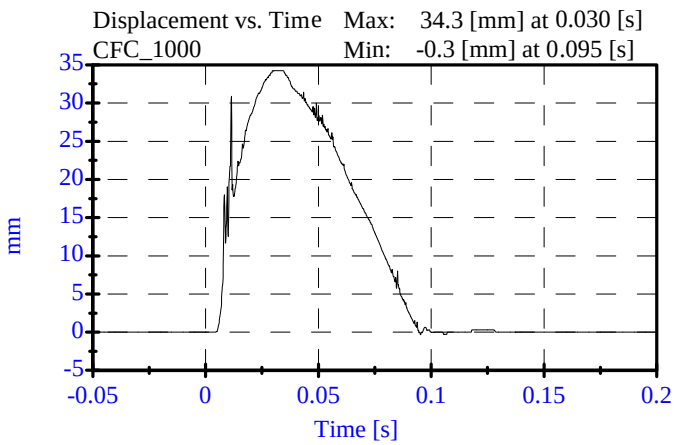
CONFIGURED FOR LEFT SIDE IMPACT

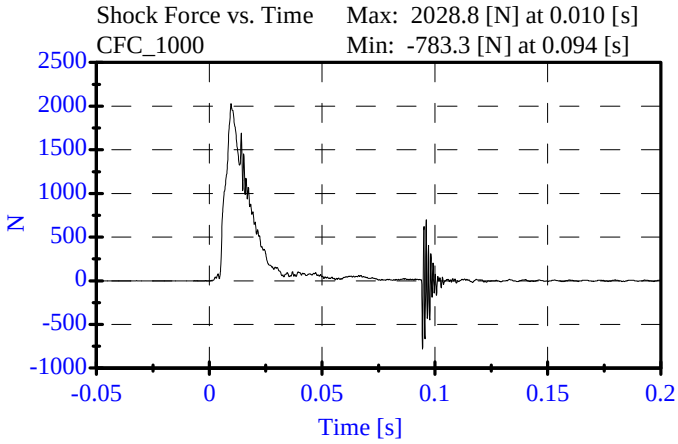
ATD Serial No: 269 Sequential Test Number: 1 File: 269SM 12-03-08

Date: 12-03-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Displacement:	32.00-37.00 mm	34.27 mm	Passed
Maximum Force:	1730.00-2099.00 N	2028.77 N	Passed

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





Shock Test High (6.10 m/s)

PRE TEST

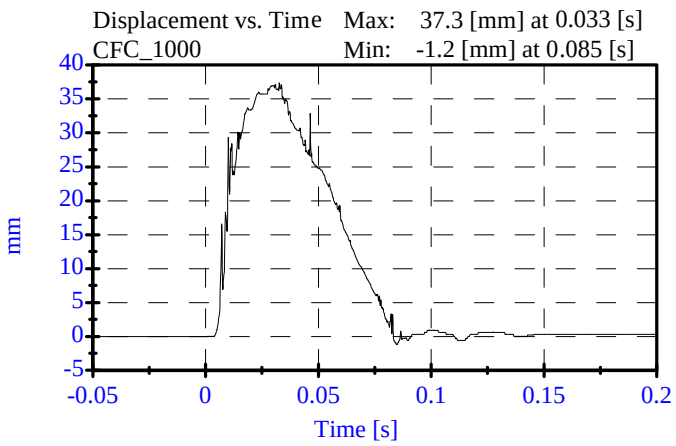
CONFIGURED FOR LEFT SIDE IMPACT

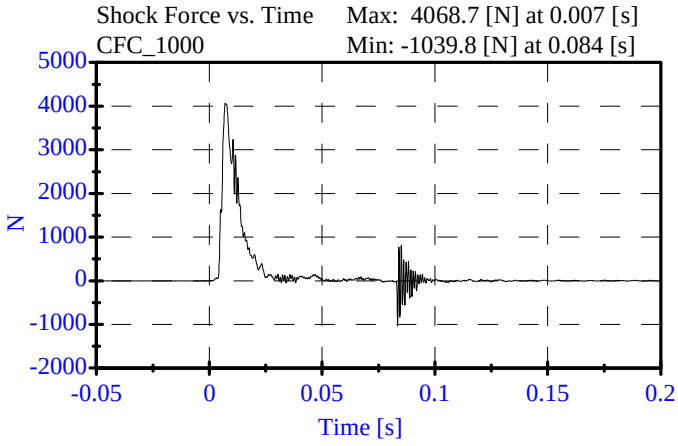
ATD Serial No: 269 Sequential Test Number: 1 File: 269SH 12-03-08

Date: 12-03-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	18.00 %	Passed
Displacement:	33.00-40.00 mm	37.34 mm	Passed
Maximum Force:	3741.00-4448.00 N	4068.74 N	Passed

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





Thorax Impact

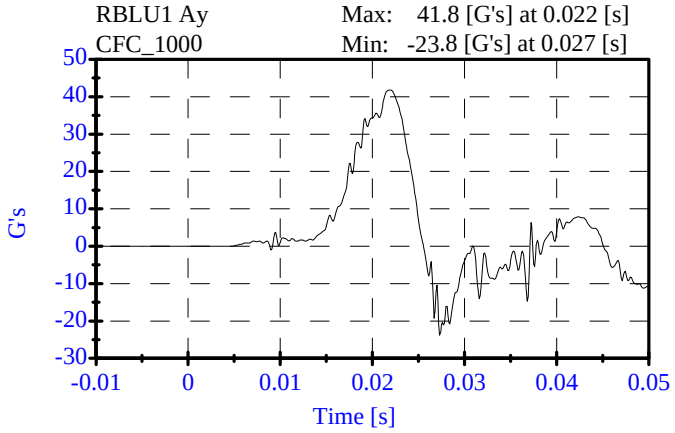
Pre-Test

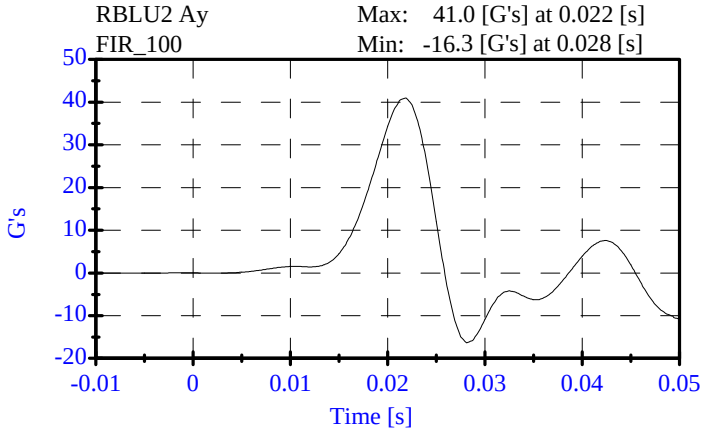
CONFIGURED FOR LEFT SIDE IMPACT

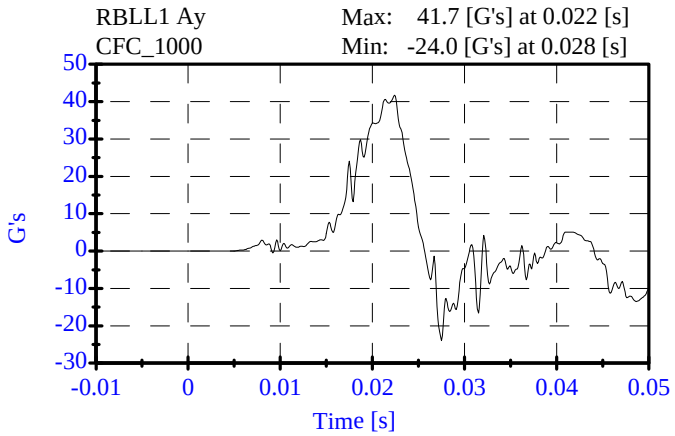
ATD Serial No: 269 Sequential Test Number: 1 File: 269T1 11-26-08

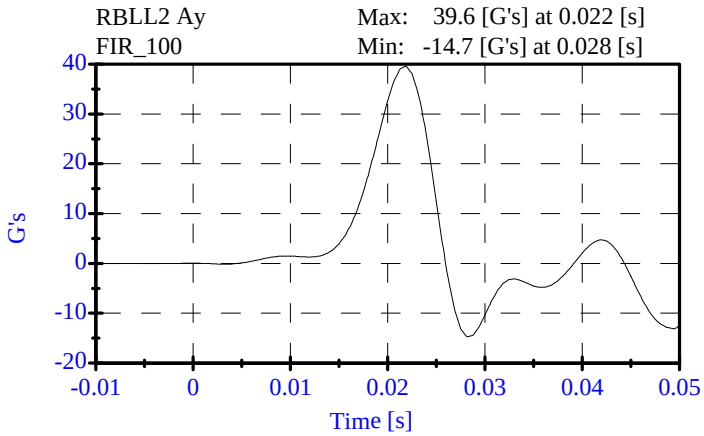
Date: 11-26-08 Laboratory Technician: A. Rudniski

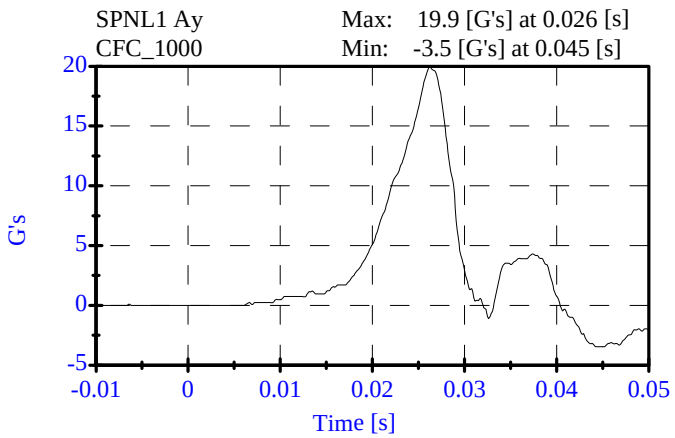
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	40.99 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	39.62 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	18.69 G's	Passed

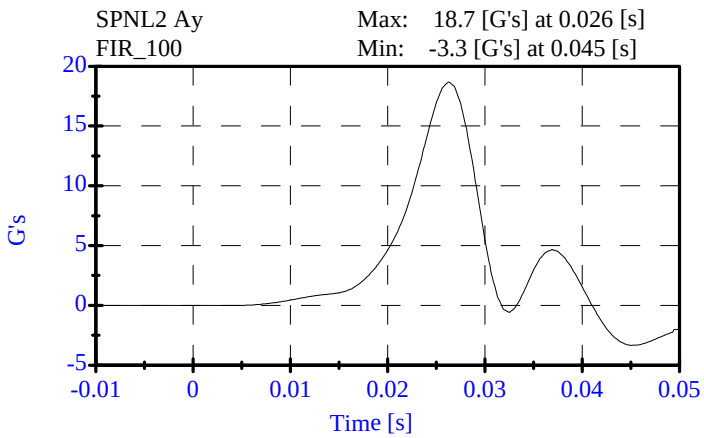












Pelvic Impact Test

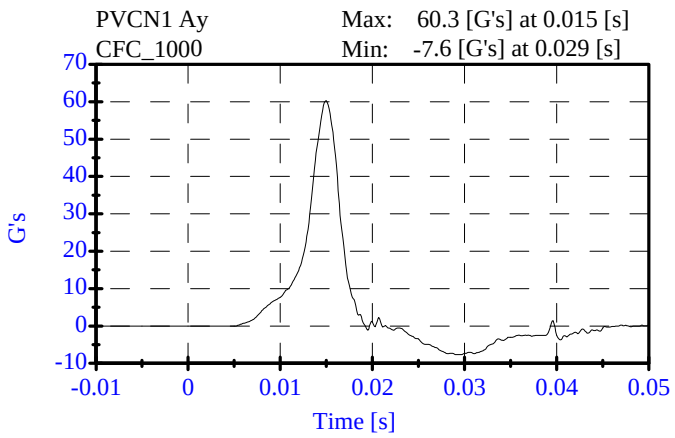
Pre-Test

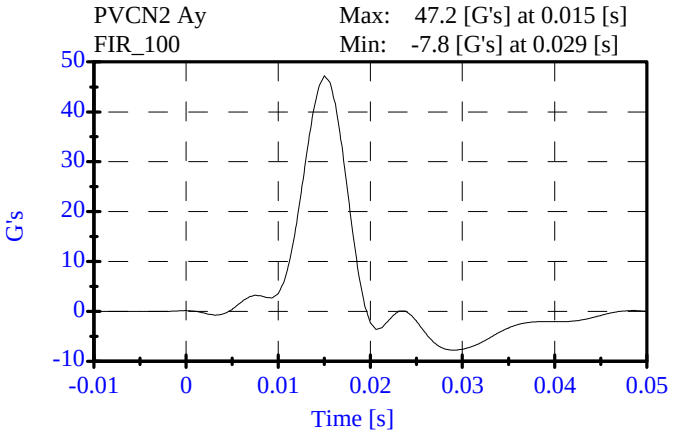
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269P 12-01-08

Date: 12-01-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	23.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.30 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	47.21 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.6 ms	Passed





Head Drop Test

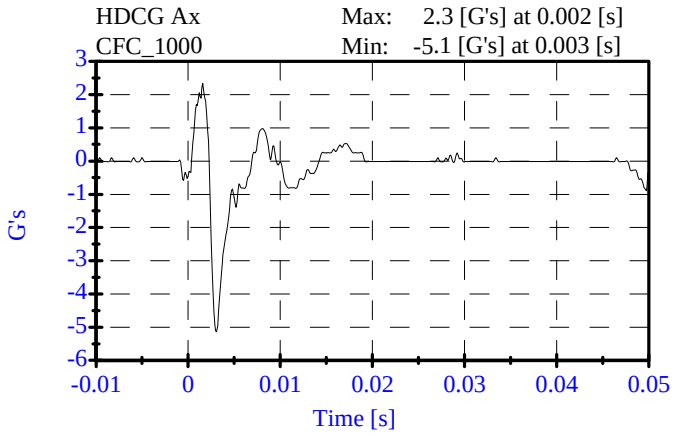
Pre-Test

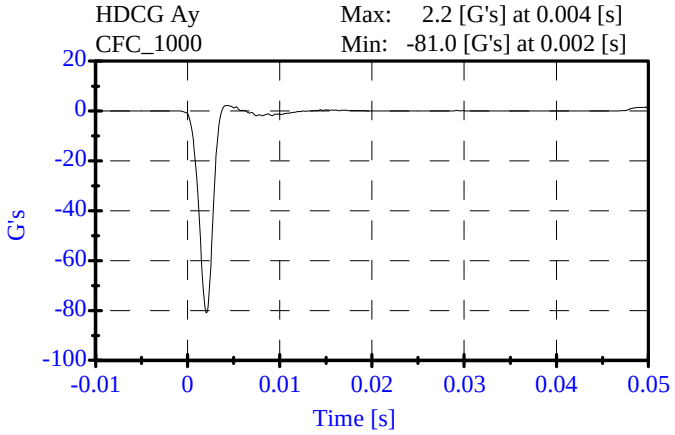
CONFIGURED FOR LEFT SIDE IMPACT

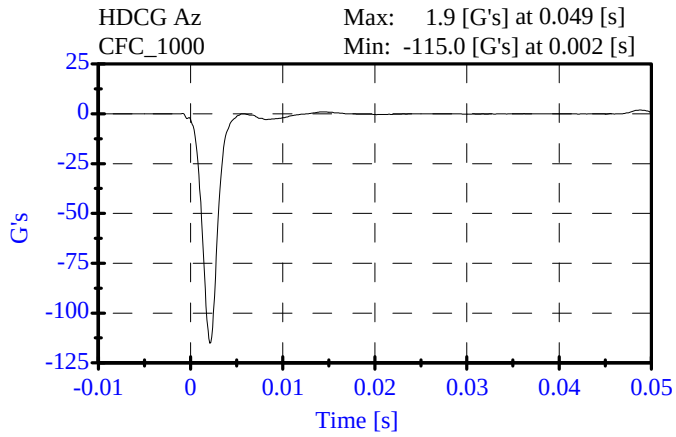
ATD Serial No: 269 Sequential Test Number: 1 File: 269H 11-24-08

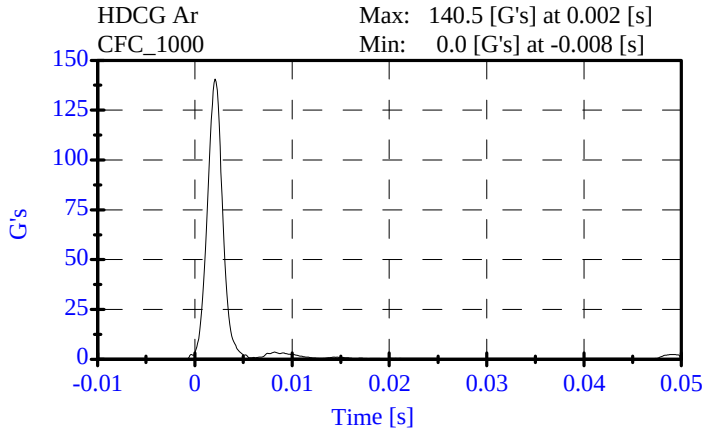
Date: 11-24-08 Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.7 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	140.53 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	2.34 Gs	Passed
Curve PerCent NonModal:	< 15%	2.56 %	Passed









Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269N1 11-25-08

Date: 11-25-08 Laboratory Technician: A. Rudnski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	20.00 %	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	4.33 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.08 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.57 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	71.66 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	60.80 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	77.73 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	54.50 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	9.40 ms	Passed

Neck Test

Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

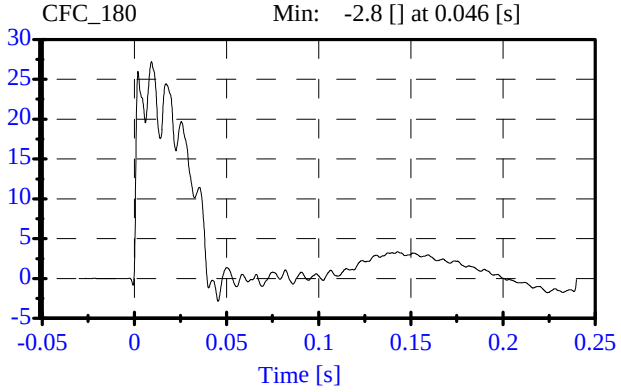
ATD Serial No: 269

Sequential Test Number: 1 File: 269N1 11-25-08

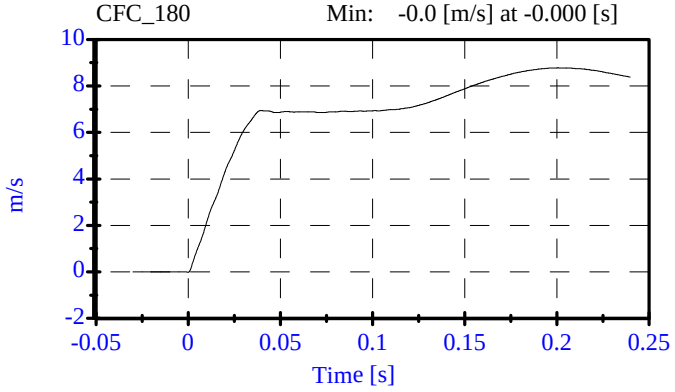
Date: 11-25-08

Laboratory Technician: A. Rudniski

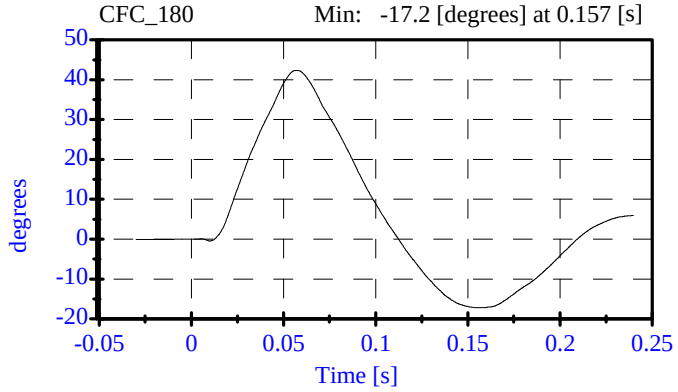
Pend Ax
CFC_180
Max: 27.2 [] at 0.009 [s]
Min: -2.8 [] at 0.046 [s]



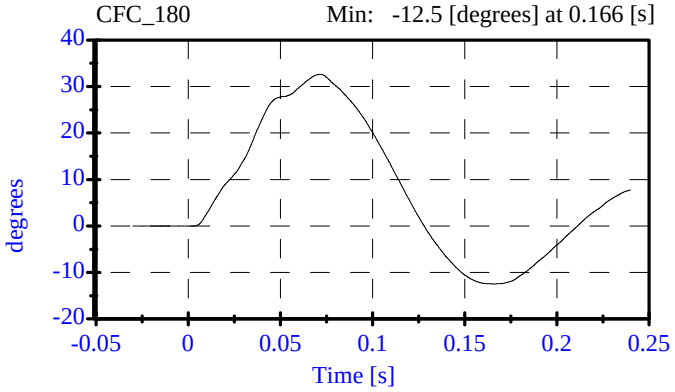
Pend Vx
CFC_180
Max: 8.8 [m/s] at 0.201 [s]
Min: -0.0 [m/s] at -0.000 [s]



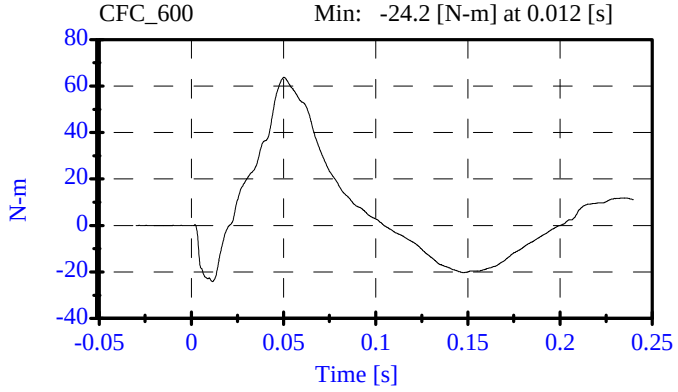
Head Rot
CFC_180
Max: 42.4 [degrees] at 0.057 [s]
Min: -17.2 [degrees] at 0.157 [s]



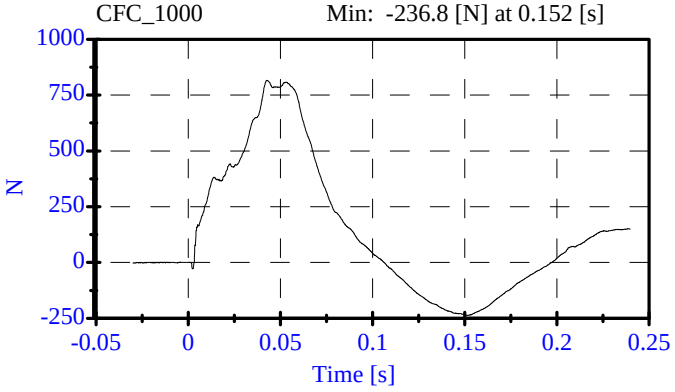
Arm Rot
CFC_180
Max: 32.6 [degrees] at 0.072 [s]
Min: -12.5 [degrees] at 0.166 [s]



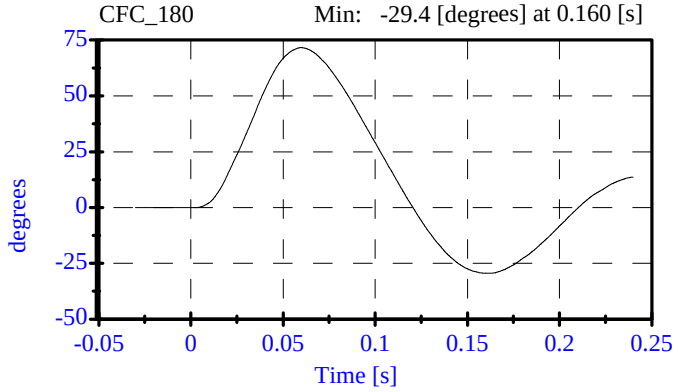
Neck Mx
CFC_600
Max: 63.7 [N-m] at 0.050 [s]
Min: -24.2 [N-m] at 0.012 [s]



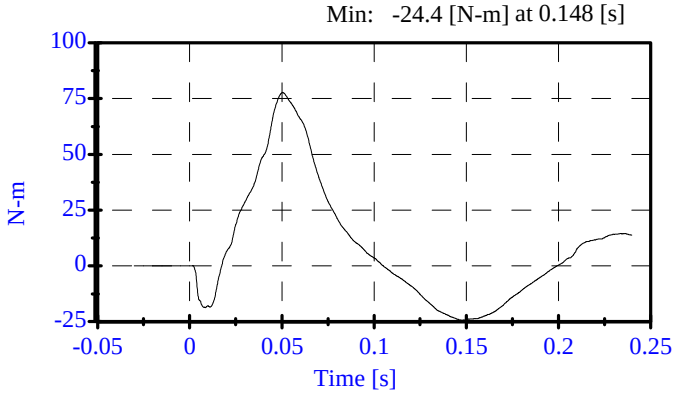
Neck Fy
CFC_1000
Max: 816.1 [N] at 0.043 [s]
Min: -236.8 [N] at 0.152 [s]



Tot Rot
CFC_180
Max: 71.7 [degrees] at 0.060 [s]
Min: -29.4 [degrees] at 0.160 [s]



MOCX
Max: 77.7 [N-m] at 0.050 [s]
Min: -24.4 [N-m] at 0.148 [s]



Abdominal Compression Test

Pre-Test

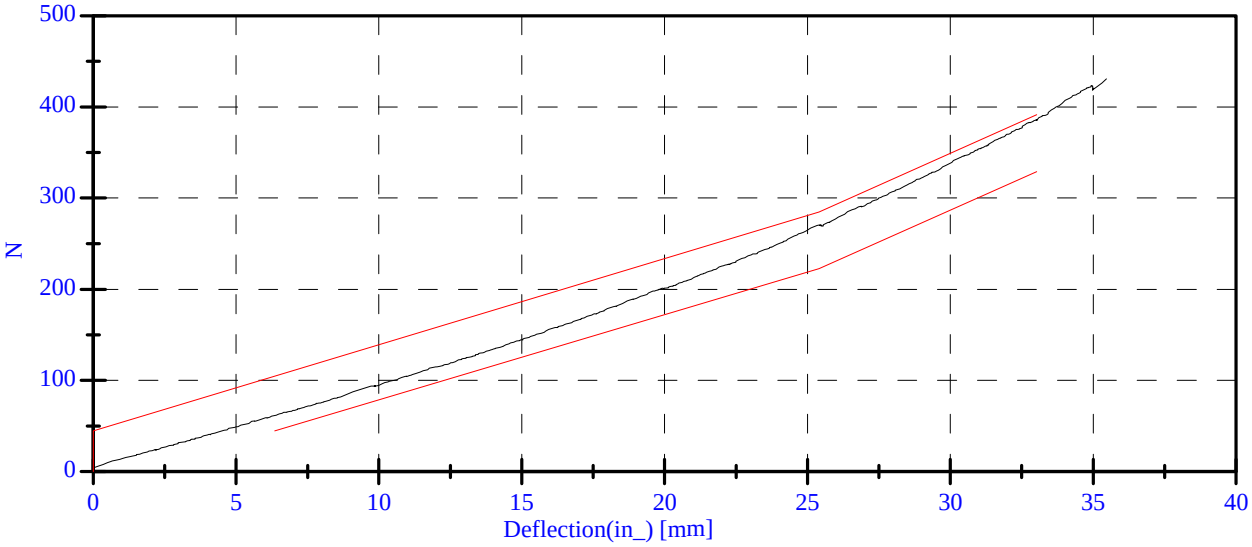
CONFIGURED FOR LEFT SIDE IMPACT

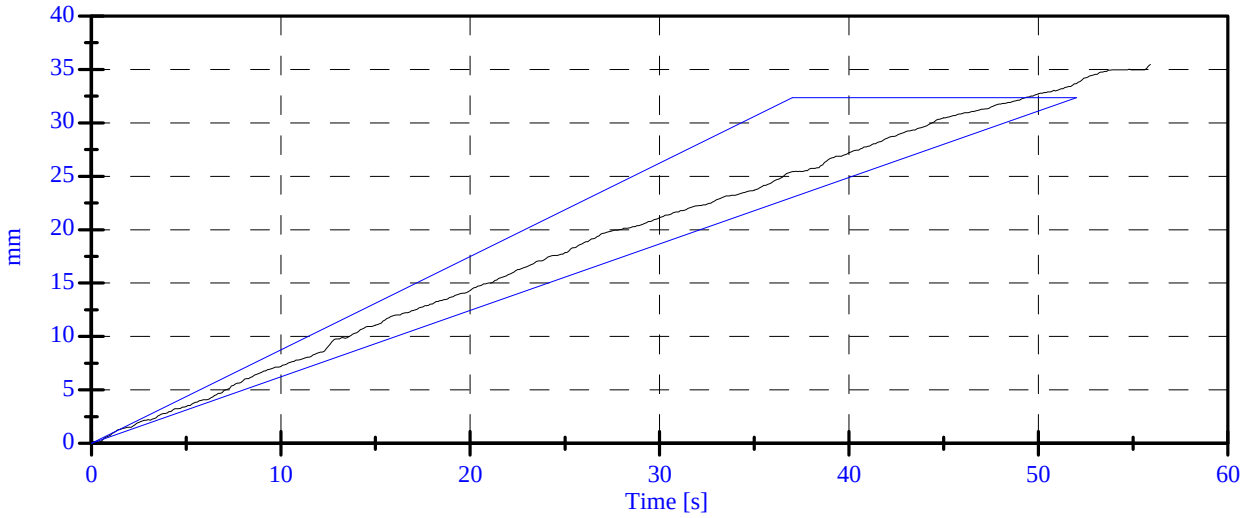
ATD Serial No: 269 Sequential Test Number: 1 File: 269 Ab 12-01-08

Date: 12-01-08 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	23.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	123.91 N	Passed
Force at 19.05 mm :	162.98-220.99 N	189.99 N	Passed
Force at 25.40 mm :	221.97-280.02 N	270.29 N	Passed
Force at 33.02 mm :	324.99-391.00 N	386.01 N	Passed

ABDOMINAL COMPRESSION TEST





Lumbar Spine Test
Pre-Test

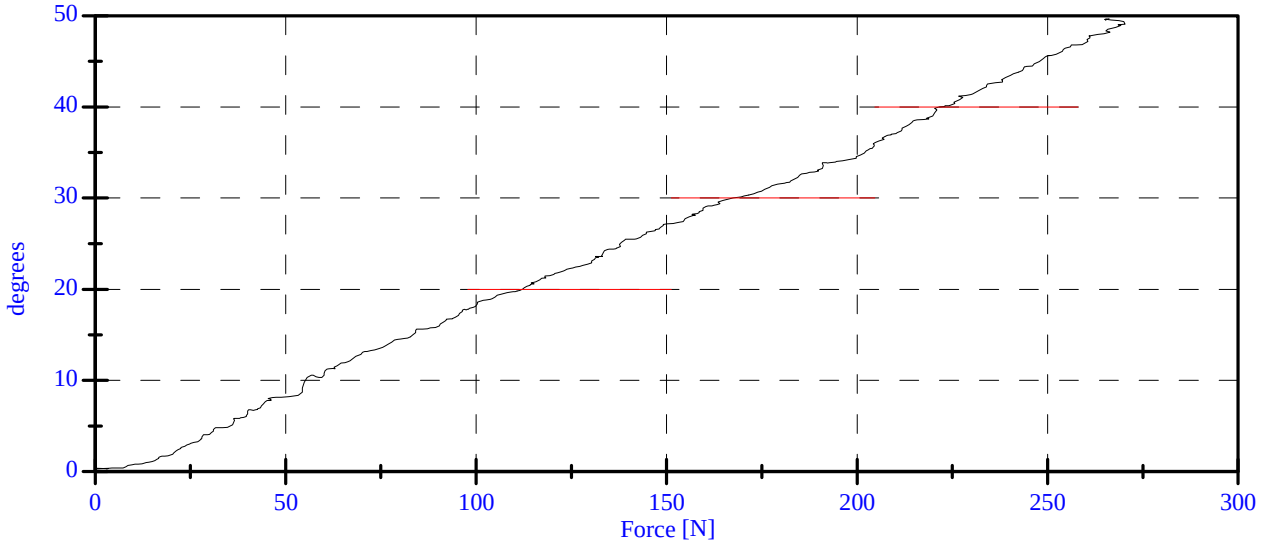
CONFIGURED FOR LEFT SIDE IMPACT

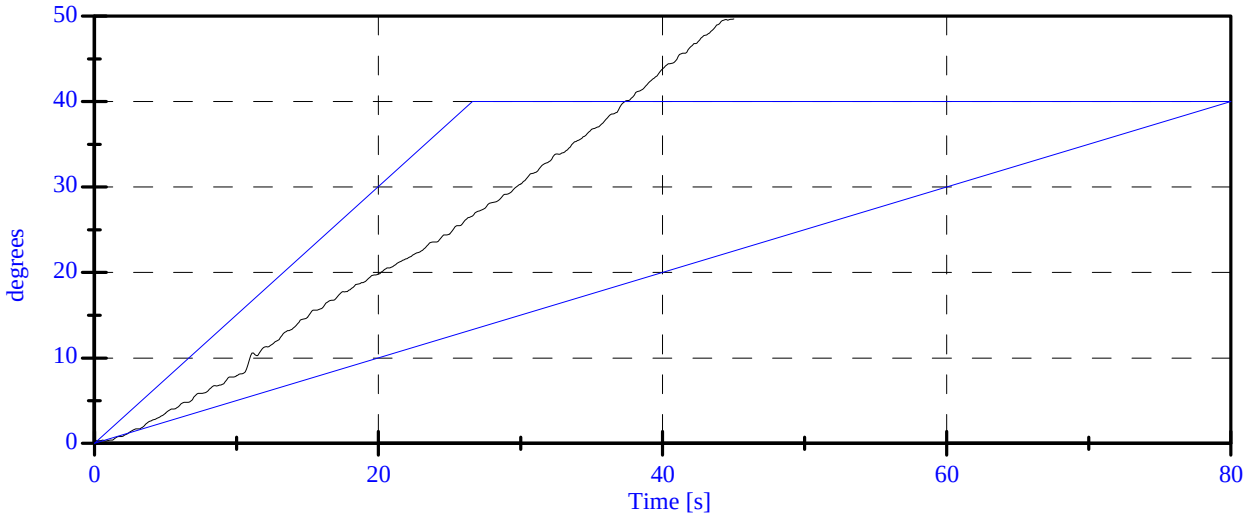
ATD Serial No: 269
Date: 12-01-08

Sequential Test Number: 1 File: 269 Spine 12-01-08
Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	23.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	0.26 N	Passed
Force at 20 Deg:	97.86-151.24 N	112.29 N	Passed
Force at 30 Deg	151.24-204.62 N	167.40 N	Passed
Force at 40 Deg	204.62-258.00 N	221.46 N	Passed
Return Angle	12 Deg Max	6.41 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: 11/24/08 Laboratory Technician: A. Rudniski

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

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 270

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 4/7/09 Laboratory Technician: A. Rudniski

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

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 270 Sequential Test Number: 1
Date: 4/2/09 Laboratory Technician: A. Rudniski

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

REMARKS: None

Thorax Impact

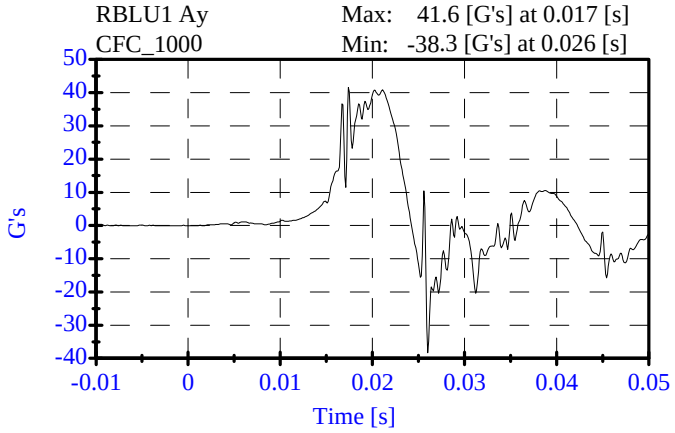
Post-Test

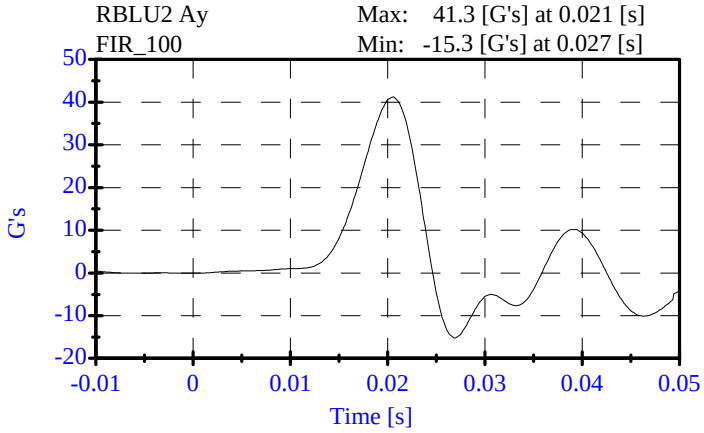
CONFIGURED FOR LEFT SIDE IMPACT

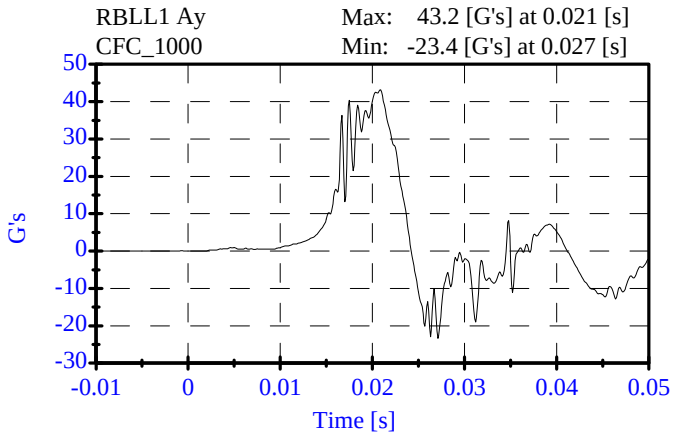
ATD Serial No: 270 Sequential Test Number: 1 File: 270T2 04-06-09

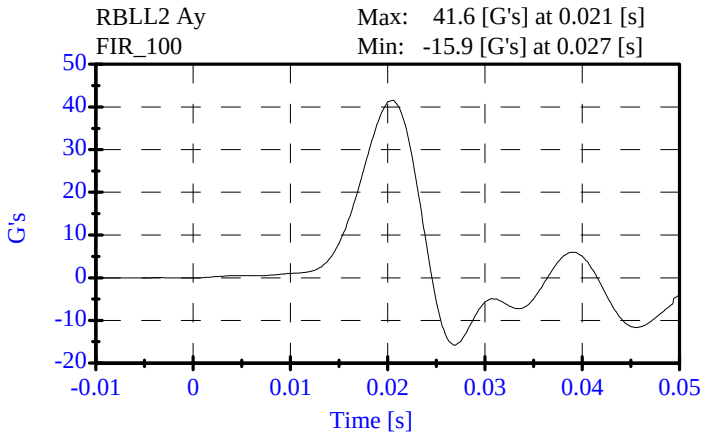
Date: 04-06-09 Laboratory Technician: A. Rudniski

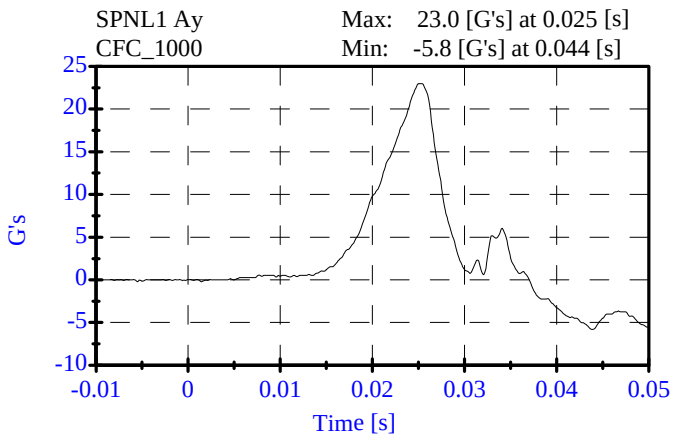
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	41.27 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	41.60 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.78 G's	Passed

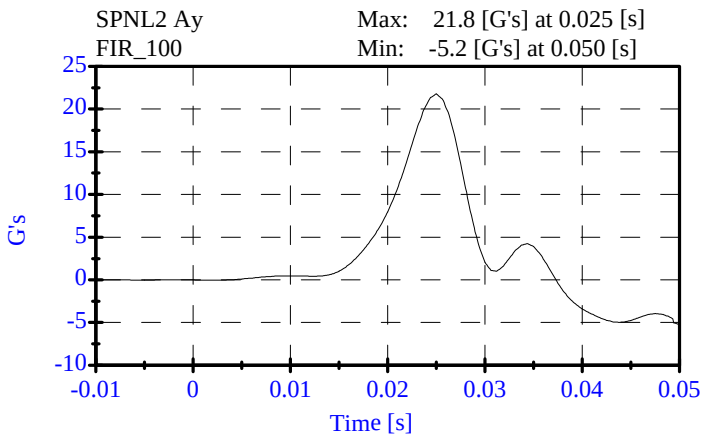












Pelvis Impact

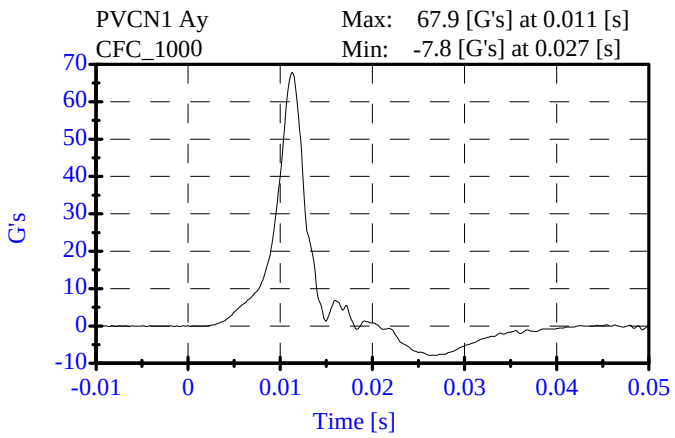
Post-Test

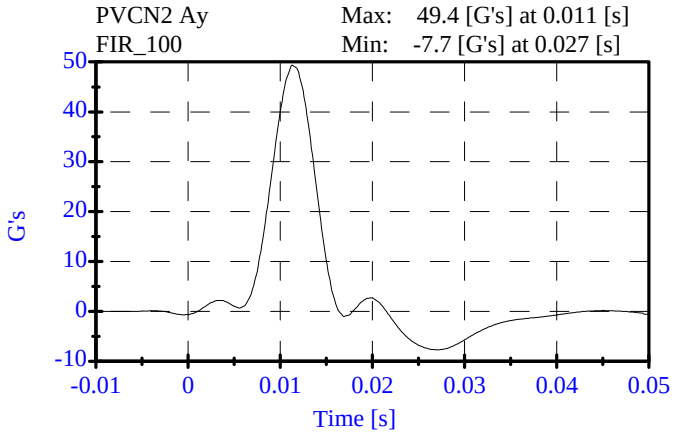
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270P 04-06-09

Date: 04-06-09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	22.2 C	Passed
Lab Humidity:	10-70 %	28.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	49.39 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.7 ms	Passed





Head Drop Test

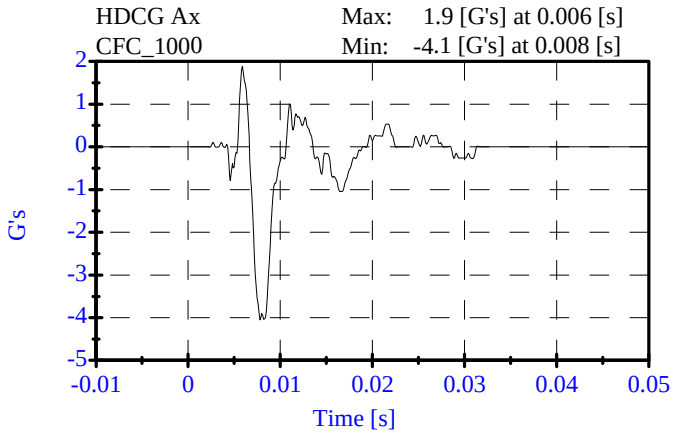
Post-Test

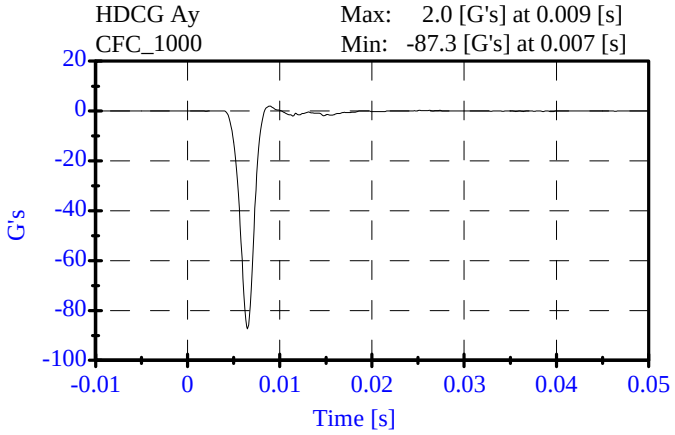
CONFIGURED FOR LEFT SIDE IMPACT

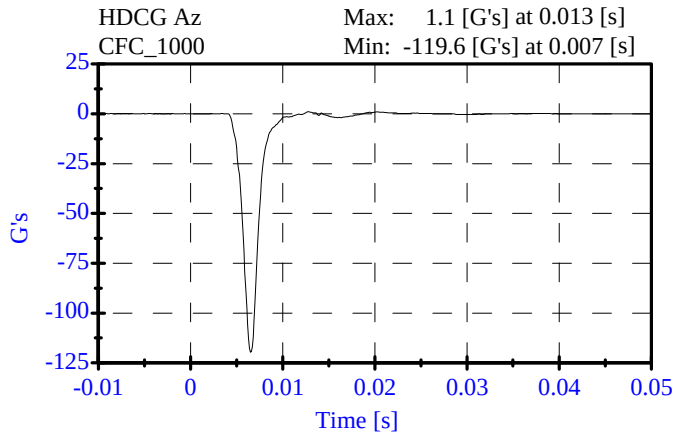
ATD Serial No: 270 Sequential Test Number: 1 File: 270H1 04-02-09

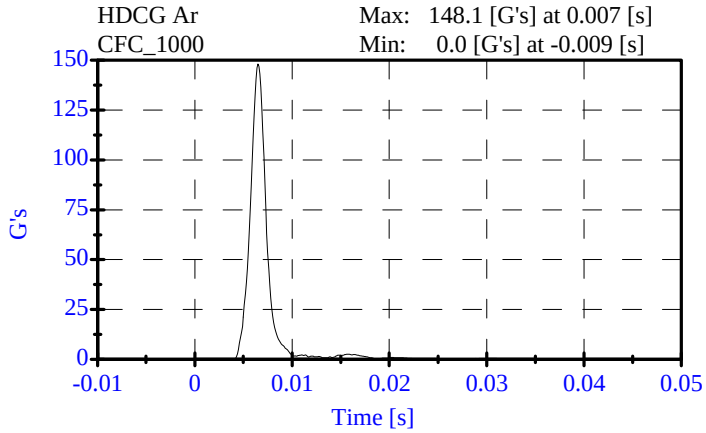
Date: 04-02-09 Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	25.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	148.08 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.89 Gs	Passed
Curve PerCent NonModal:	< 15%	1.75 %	Passed









Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270 Sequential Test Number: 1 File: 270N1 04-02-09

Date: 04-02-09 Laboratory Technician: A. Rudnski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	24.00 %	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	2.31 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.67 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.57 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.50 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.66 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.50 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	82.06 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	55.30 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	12.10 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

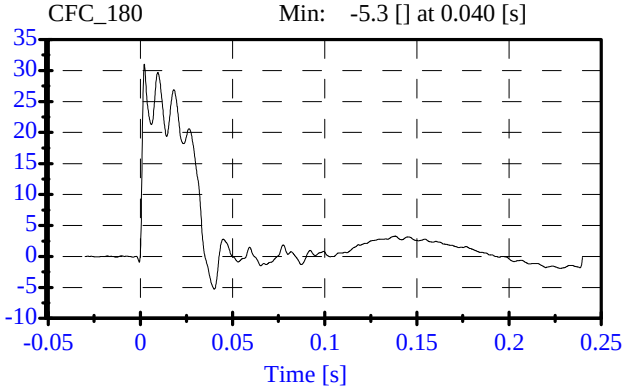
ATD Serial No: 270

Sequential Test Number: 1 File: 270N1 04-02-09

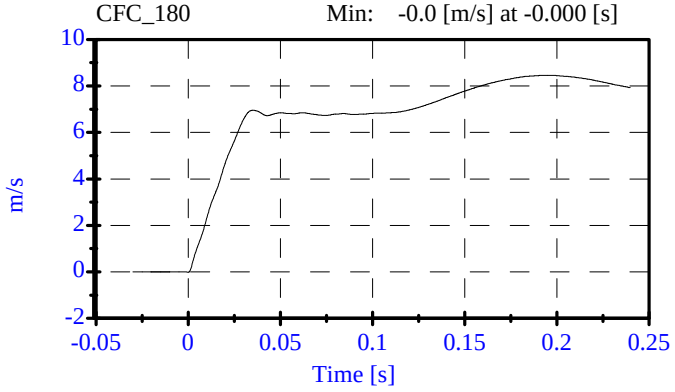
Date: 04-02-09

Laboratory Technician: A. Rudniski

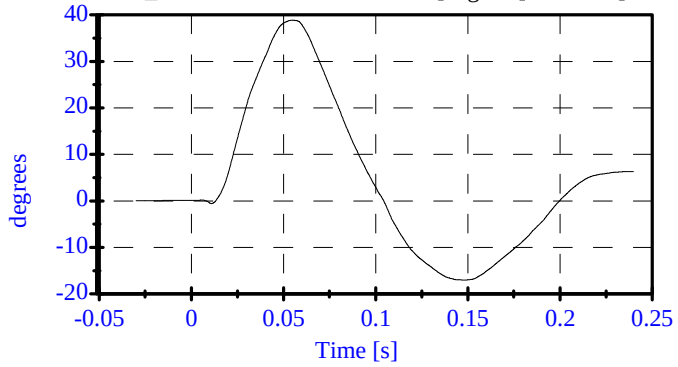
Pend Ax
CFC_180
Max: 31.0 [] at 0.002 [s]
Min: -5.3 [] at 0.040 [s]



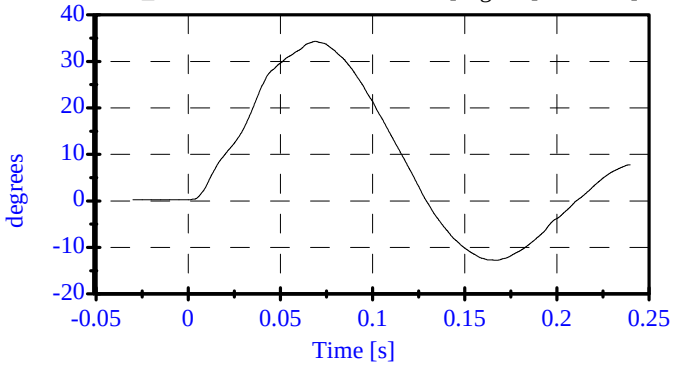
Pend Vx
CFC_180
Max: 8.5 [m/s] at 0.193 [s]
Min: -0.0 [m/s] at -0.000 [s]



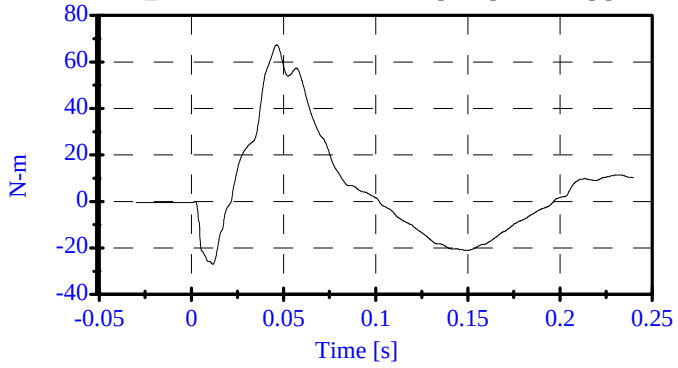
Head Rot
CFC_180
Max: 38.9 [degrees] at 0.054 [s]
Min: -17.0 [degrees] at 0.148 [s]



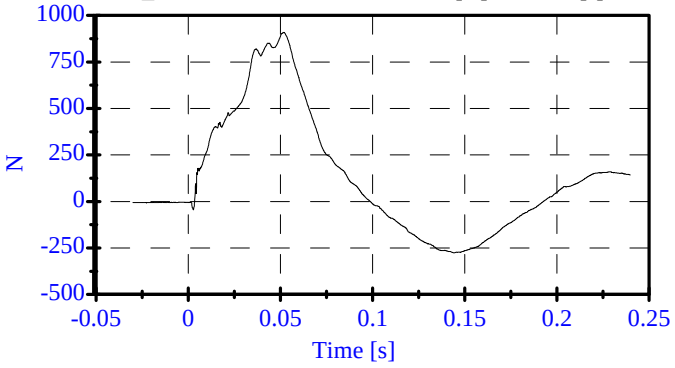
Arm Rot
CFC_180
Max: 34.3 [degrees] at 0.069 [s]
Min: -12.7 [degrees] at 0.167 [s]



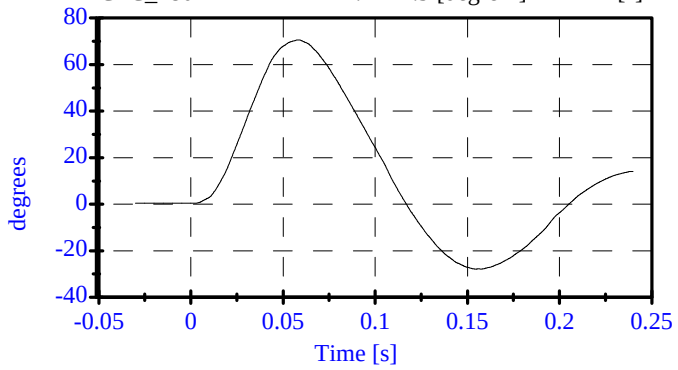
Neck Mx
CFC_600
Max: 67.4 [N-m] at 0.046 [s]
Min: -27.0 [N-m] at 0.012 [s]



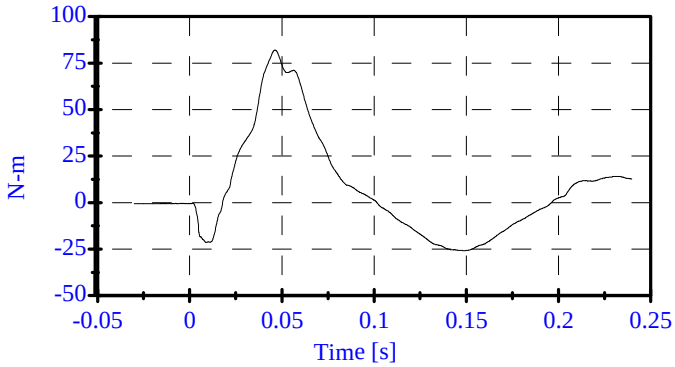
Neck Fy
CFC_1000
Max: 909.0 [N] at 0.052 [s]
Min: -275.7 [N] at 0.144 [s]



Tot Rot
CFC_180
Max: 70.7 [degrees] at 0.058 [s]
Min: -27.9 [degrees] at 0.154 [s]



MOCX
Max: 82.1 [N-m] at 0.046 [s]
Min: -25.9 [N-m] at 0.148 [s]



Abdominal Compression Test

Post-Test

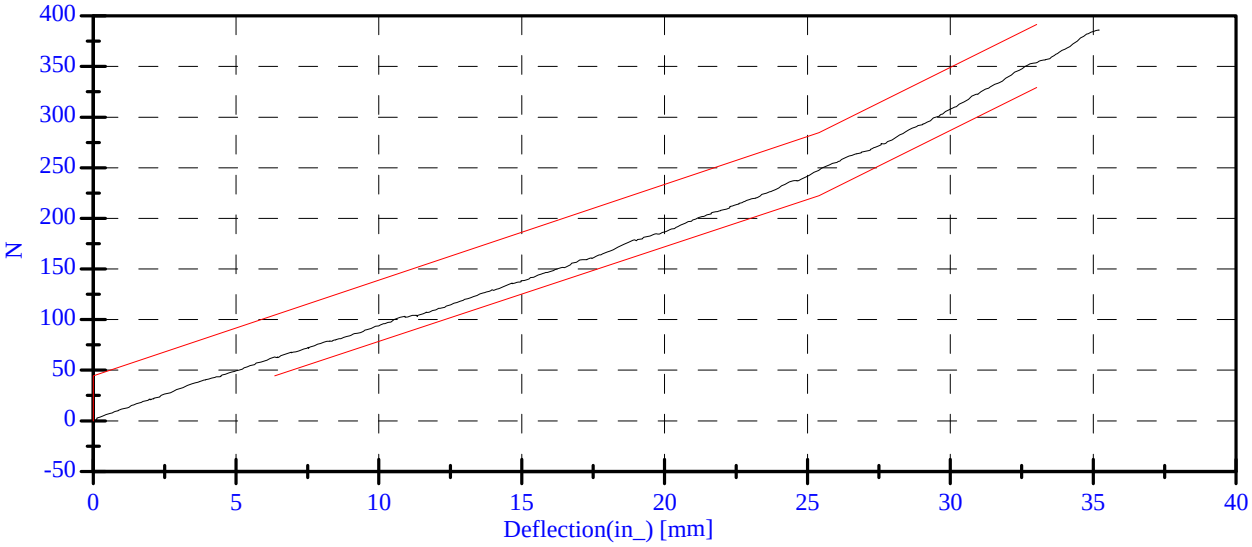
CONFIGURED FOR LEFT SIDE IMPACT

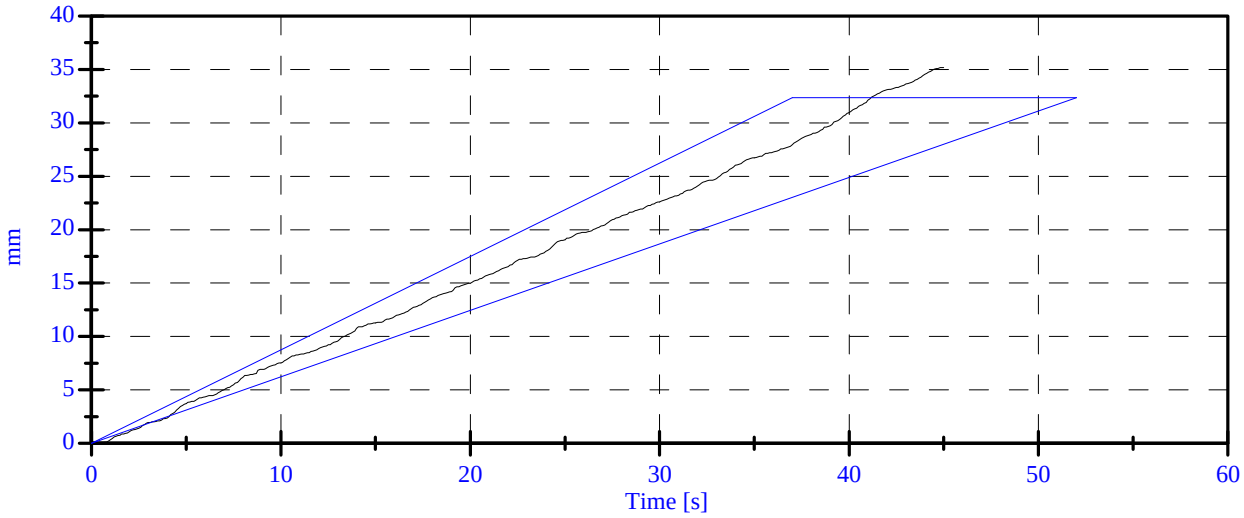
ATD Serial No: 270 Sequential Test Number: 1 File: 270Ab 04-02-09

Date: 04-02-09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	23.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	119.17 N	Passed
Force at 19.05 mm :	162.98-220.99 N	179.03 N	Passed
Force at 25.40 mm :	221.97-280.02 N	247.30 N	Passed
Force at 33.02 mm :	324.99-391.00 N	353.52 N	Passed

ABDOMINAL COMPRESSION TEST





Lumbar Spine Test

Post-Test

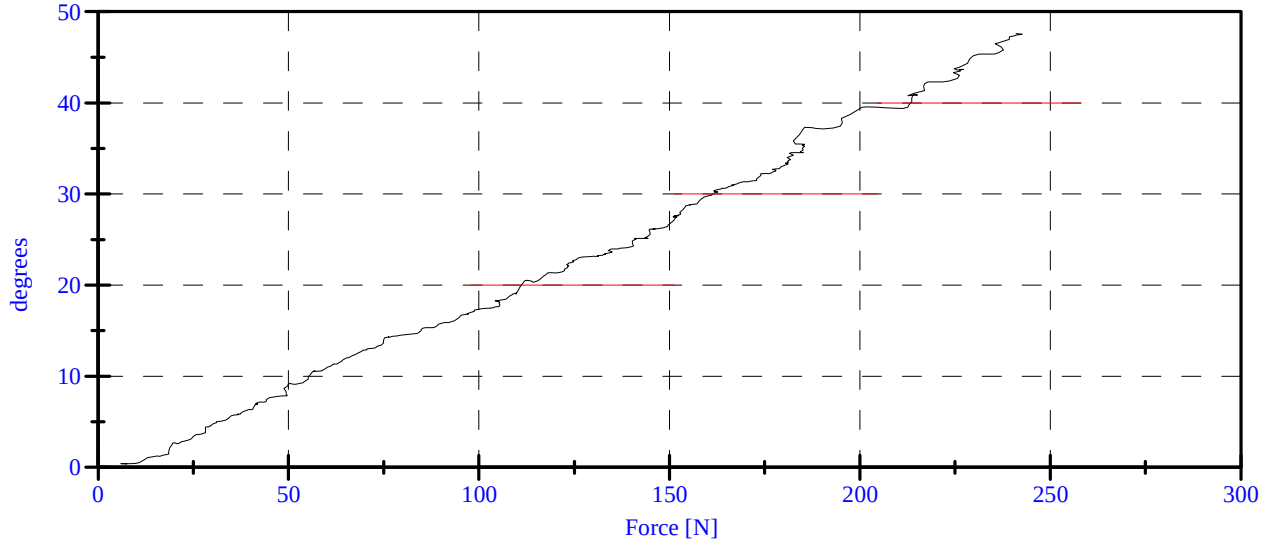
CONFIGURED FOR LEFT SIDE IMPACT

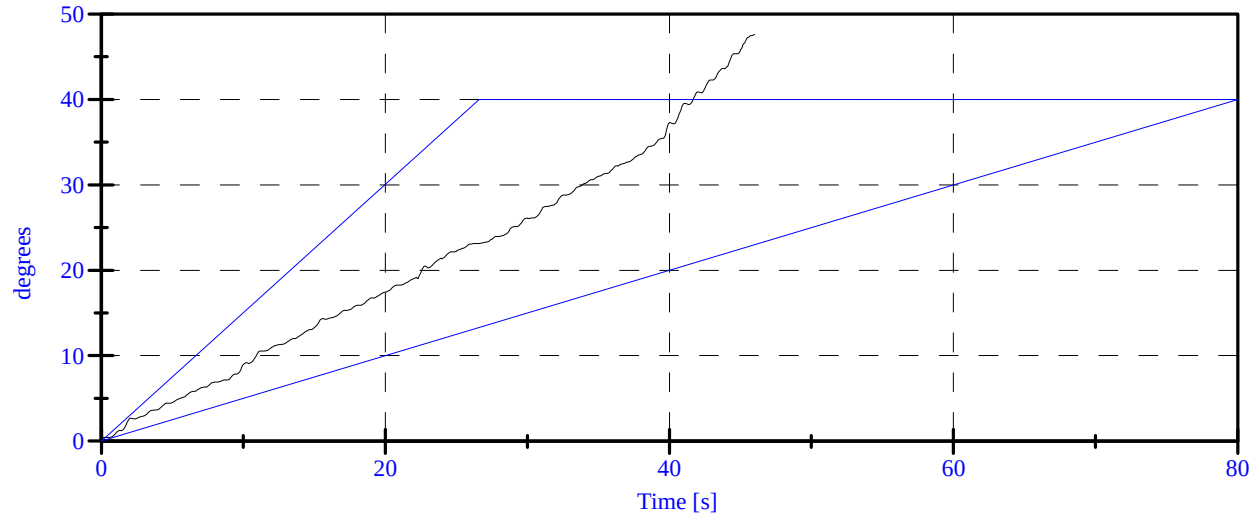
ATD Serial No: 270 Sequential Test Number: 1 File: 270Spine 04-03-09

Date: 04-03-09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	44.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	7.57 N	Passed
Force at 20 Deg:	97.86-151.24 N	111.51 N	Passed
Force at 30 Deg	151.24-204.62 N	161.65 N	Passed
Force at 40 Deg	204.62-258.00 N	213.62 N	Passed
Return Angle	12 Deg Max	7.52 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: 4/2/09 Laboratory Technician: A. Rudniski

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

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 269

CONFIGURED FOR LEFT SIDE IMPACT

CALIBRATION TEST RESULTS SUMMARY
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 4/7/09 Laboratory Technician: A. Rudniski

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

* Test not required for SID certification.

REMARKS: None

EXTERNAL DIMENSIONS
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 4/2/09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	505
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	516
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	381

REMARKS: None

Thorax Impact Test

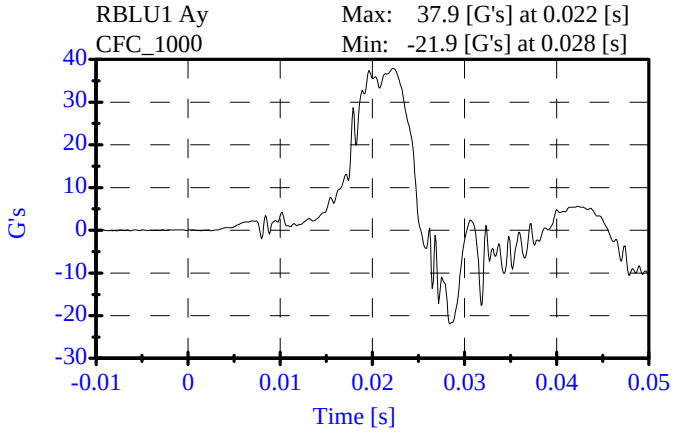
Post-Test

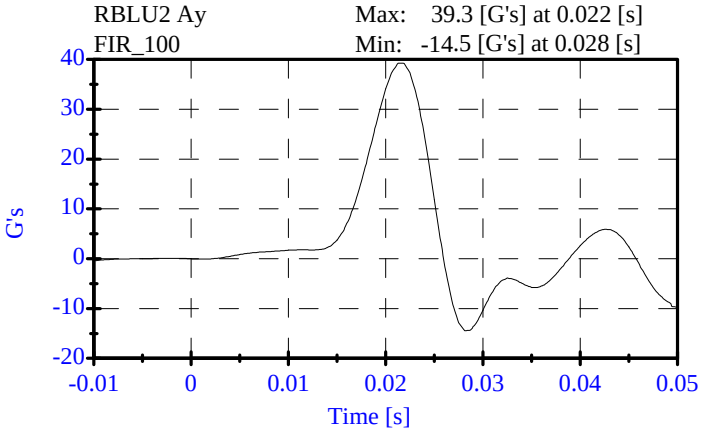
CONFIGURED FOR LEFT SIDE IMPACT

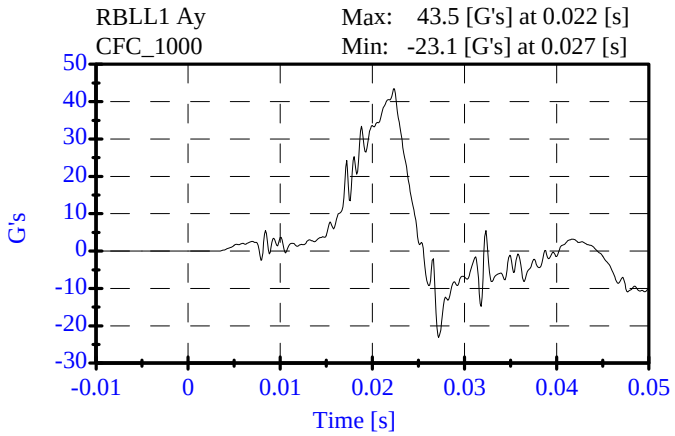
ATD Serial No: 269 Sequential Test Number: 1 File: 269T 04-07-09

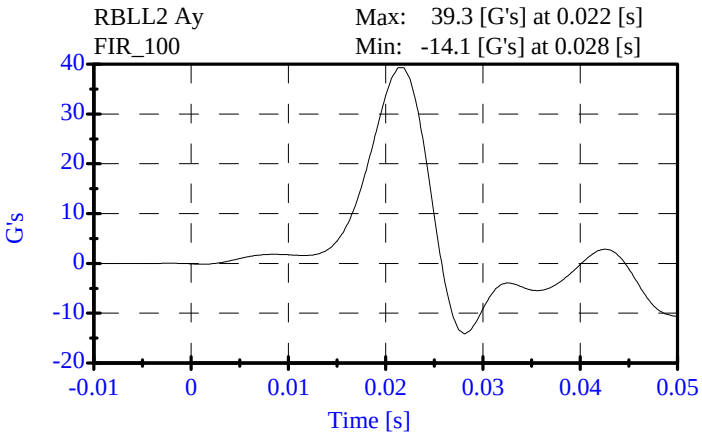
Date: 04-07-09 Laboratory Technician: A. Rudniski

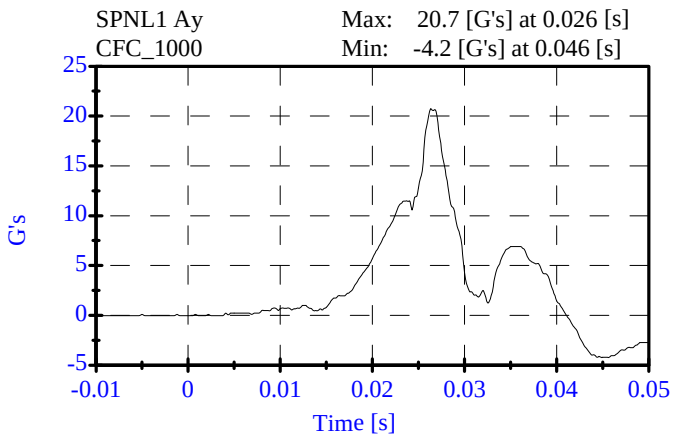
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	22.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	39.26 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	39.33 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	17.48 G's	Passed

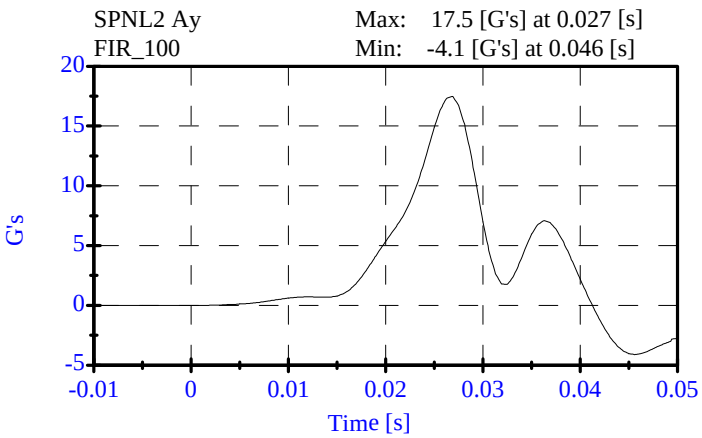












Pelvis Impact Test

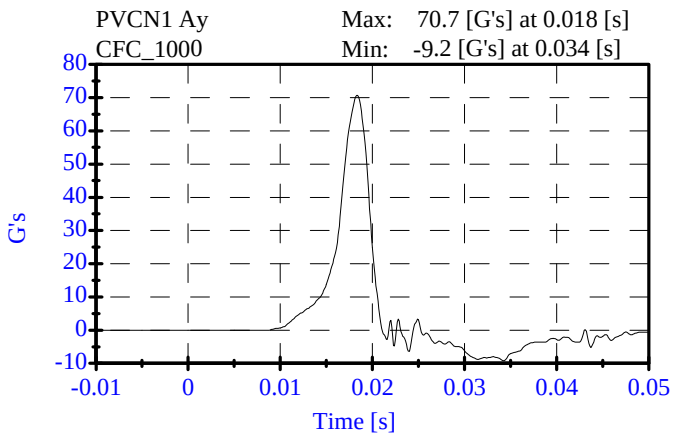
Post-Test

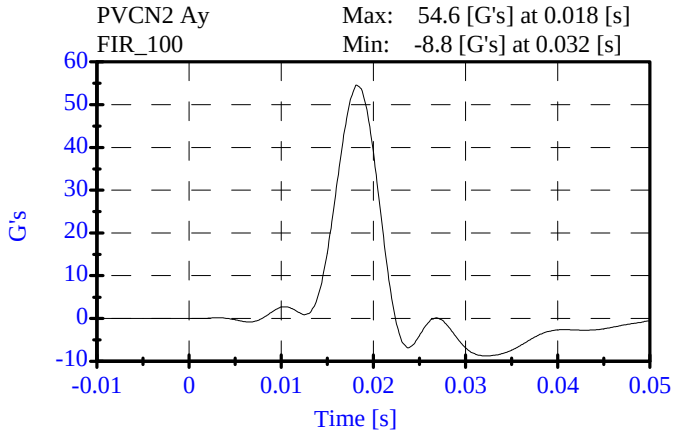
CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269P1 04-07-09

Date: 04-07-09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	21.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	54.58 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.7 ms	Passed





Head Drop Test

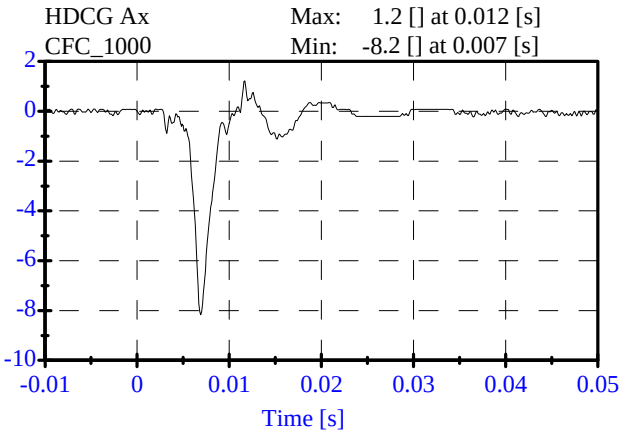
Post-Test

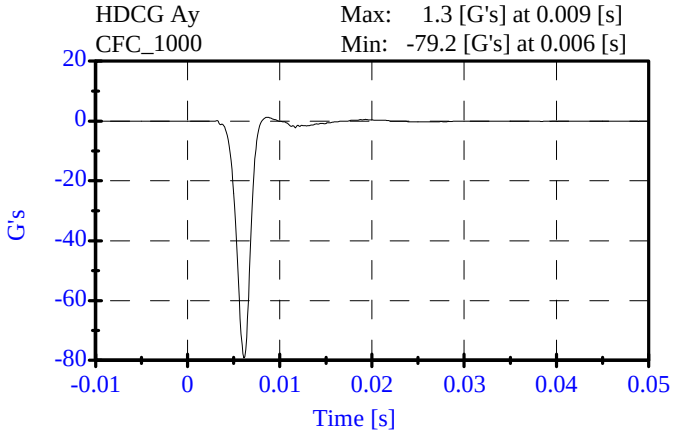
CONFIGURED FOR LEFT SIDE IMPACT

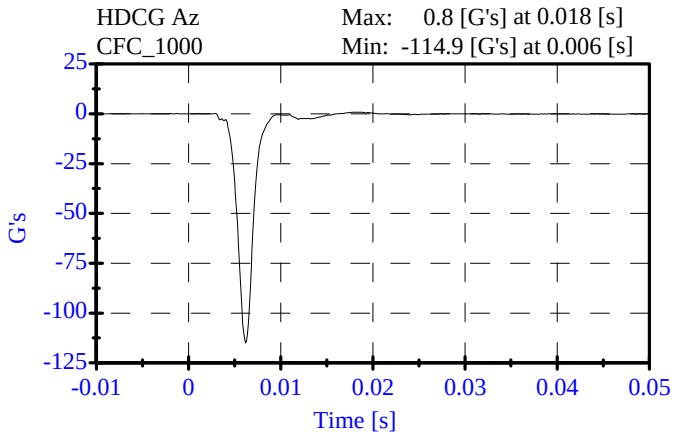
ATD Serial No: 269 Sequential Test Number: 1 File: 269H 04-01-09

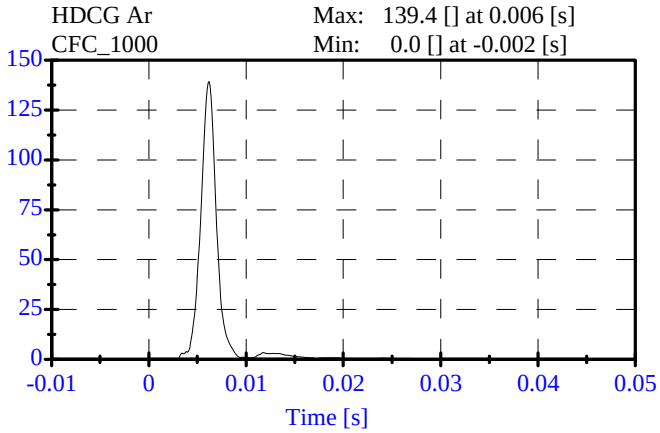
Date: 04-01-09 Laboratory Technician: A.Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.6 C	21.7 C	Passed
Lab Humidity:	10-70 %	34.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	139.35 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	1.21 Gs	Passed
Curve PerCent NonModal:	< 15%	2.42 %	Passed









Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269 Sequential Test Number: 1 File: 269N 04-02-09

Date: 04-02-09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	20.6-22.2 C	21.7 C	Passed
Lab Humidity:	10-70 %	24.00 %	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	2.30 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.65 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.57 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.59 m/s	Passed
D PLANE ROTATION			
Maximum Rotation:	66.0-82.0 Deg	70.79 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.40 ms	Passed
MOMENT ABOUT THE OCCIPITAL CONDYLE			
Max Occipital Moment:	73.00- 88.00 N-m	78.12 N-m	Passed
Occiptal Moment Decay:	49.0-64.0 ms	53.90 ms	Passed
HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT			
Moment to Rotation Peak:	2.0-16.0 ms	12.00 ms	Passed

Neck Test

Post-Test

CONFIGURED FOR LEFT SIDE IMPACT

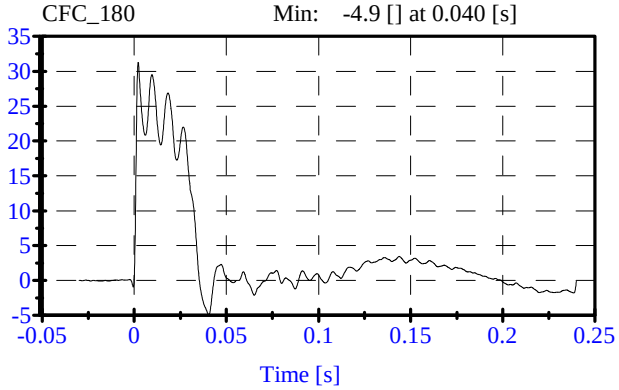
ATD Serial No: 269

Sequential Test Number: 1 File: 269N 04-02-09

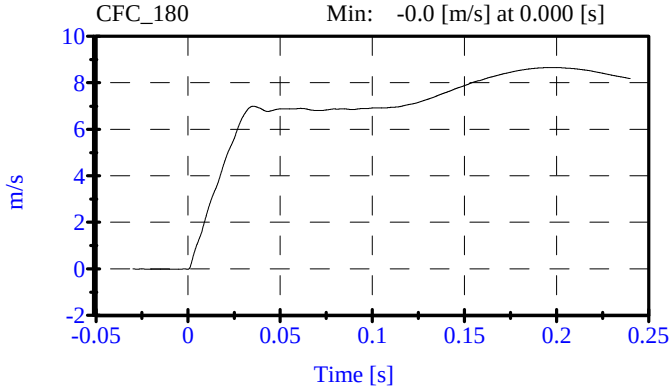
Date: 04-02-09

Laboratory Technician: A. Rudniski

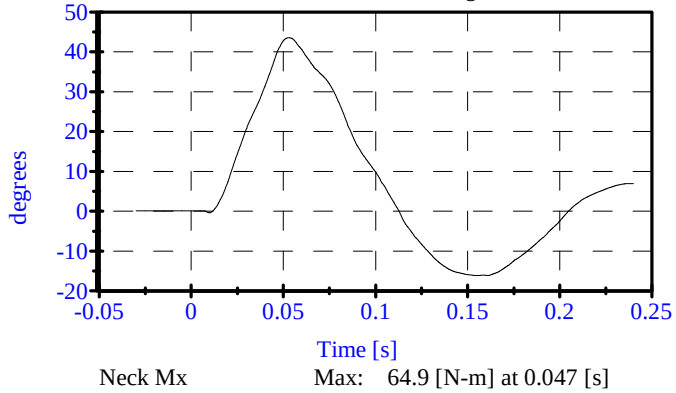
Pend Ax Max: 31.3 [] at 0.002 [s]
CFC_180 Min: -4.9 [] at 0.040 [s]



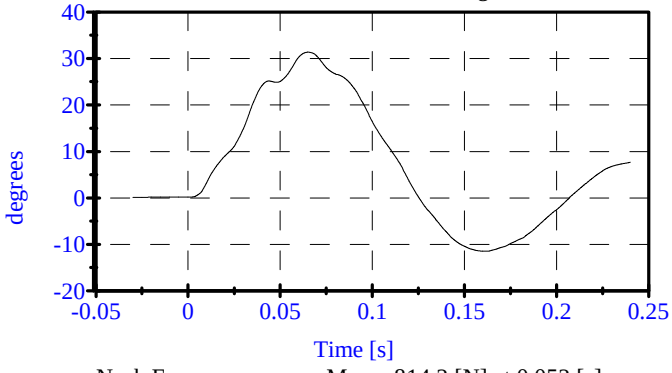
Pend Vx Max: 8.7 [m/s] at 0.199 [s]
CFC_180 Min: -0.0 [m/s] at 0.000 [s]



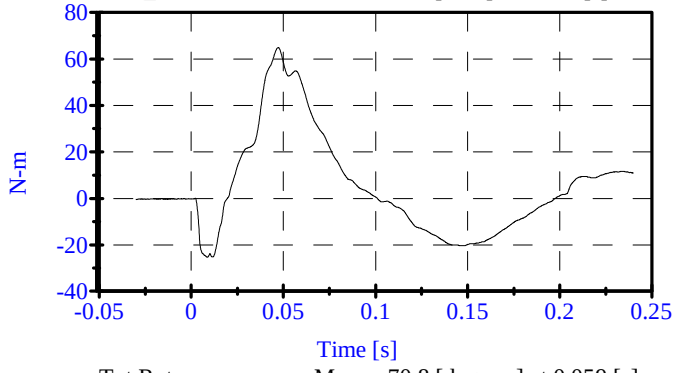
Head Rot Max: 43.5 [degrees] at 0.053 [s]
CFC_180 Min: -16.2 [degrees] at 0.161 [s]



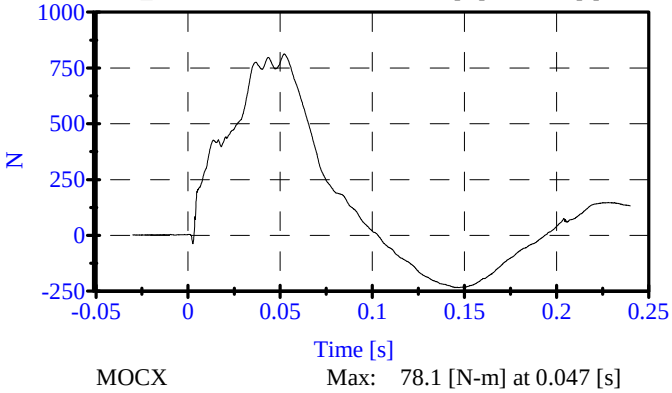
Arm Rot Max: 31.3 [degrees] at 0.065 [s]
CFC_180 Min: -11.5 [degrees] at 0.162 [s]



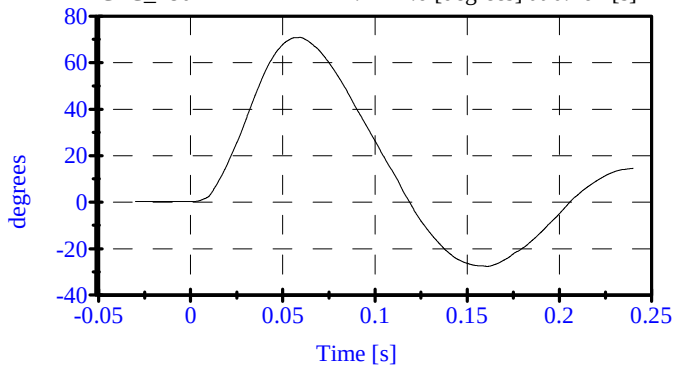
Neck Mx Max: 64.9 [N-m] at 0.047 [s]
CFC_600 Min: -25.3 [N-m] at 0.009 [s]



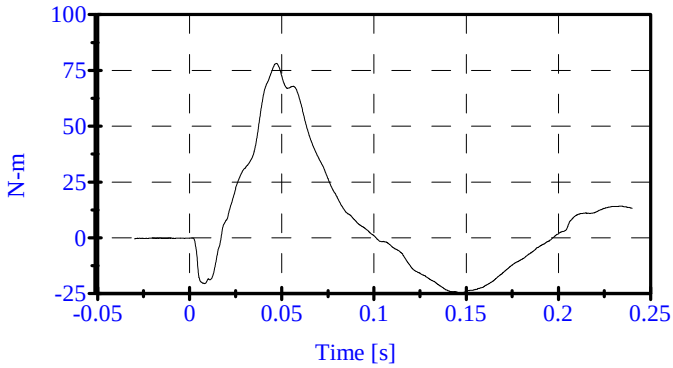
Neck Fy Max: 814.2 [N] at 0.052 [s]
CFC_1000 Min: -233.7 [N] at 0.145 [s]



Tot Rot Max: 70.8 [degrees] at 0.059 [s]
CFC_180 Min: -27.6 [degrees] at 0.161 [s]



MOCX Max: 78.1 [N-m] at 0.047 [s]
Min: -24.5 [N-m] at 0.146 [s]



Abdominal Compression Test

Post-Test

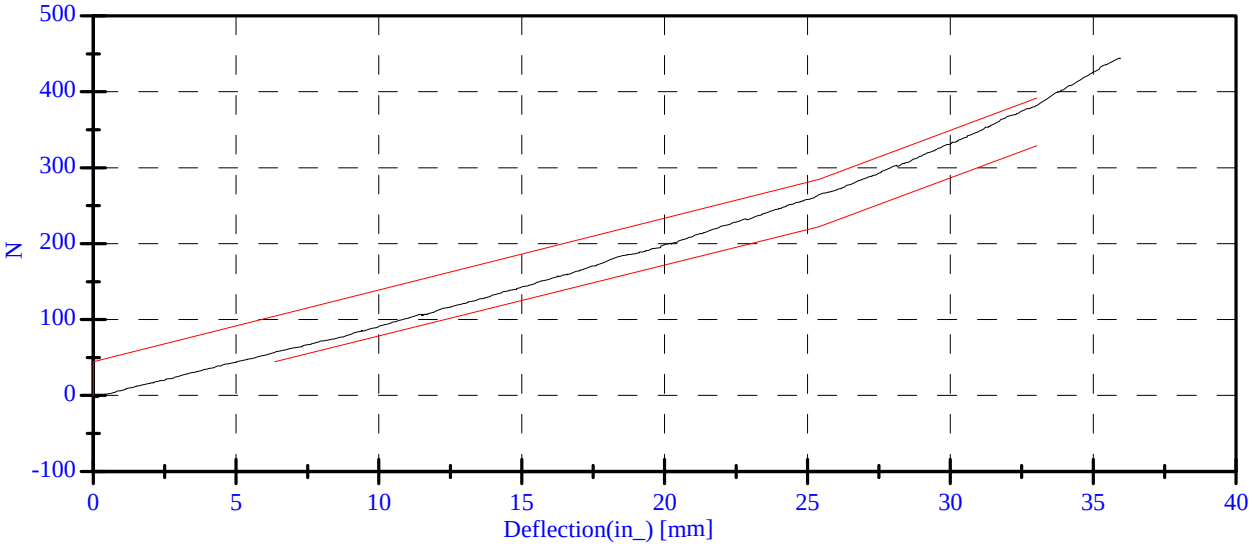
CONFIGURED FOR LEFT SIDE IMPACT

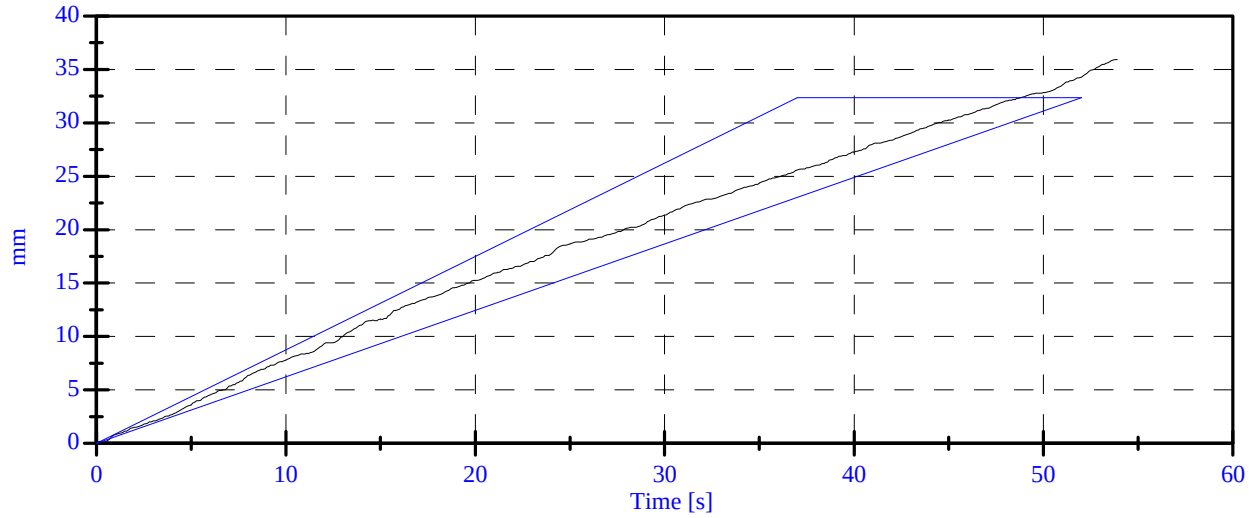
ATD Serial No: 269 Sequential Test Number: 1 File: 269Ab 04-02-09

Date: 04-02-09 Laboratory Technician: A. Rudniski

TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	24.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	120.99 N	Passed
Force at 19.05 mm :	162.98-220.99 N	187.43 N	Passed
Force at 25.40 mm :	221.97-280.02 N	264.45 N	Passed
Force at 33.02 mm :	324.99-391.00 N	381.63 N	Passed

ABDOMINAL COMPRESSION TEST





Thorax Impact Test

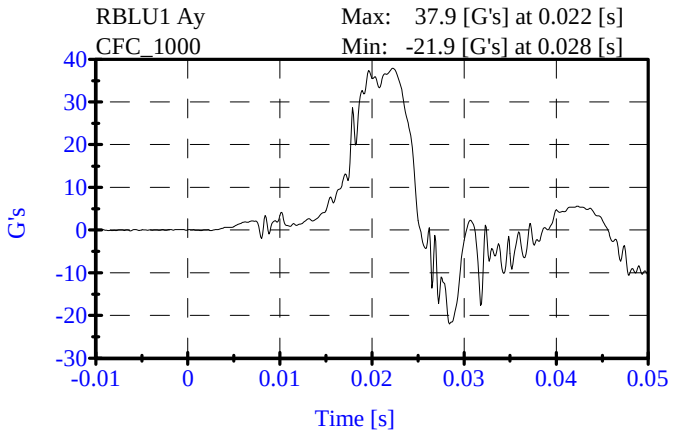
Post-Test

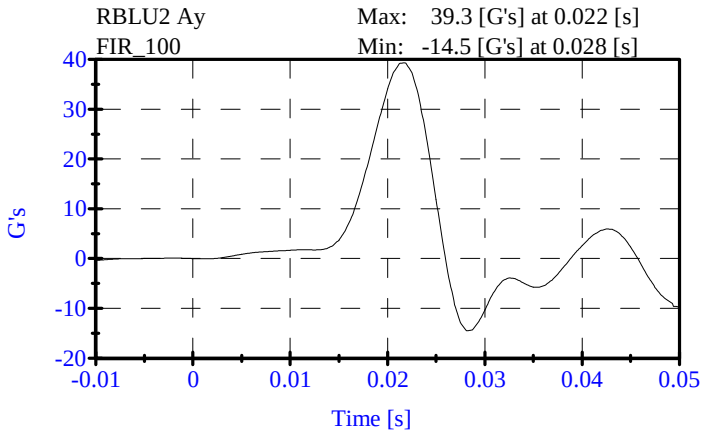
CONFIGURED FOR LEFT SIDE IMPACT

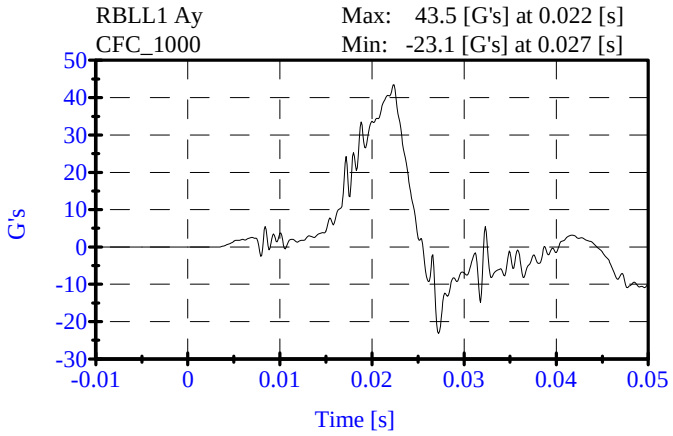
ATD Serial No: 269 Sequential Test Number: 1 File: 269T 04-07-09

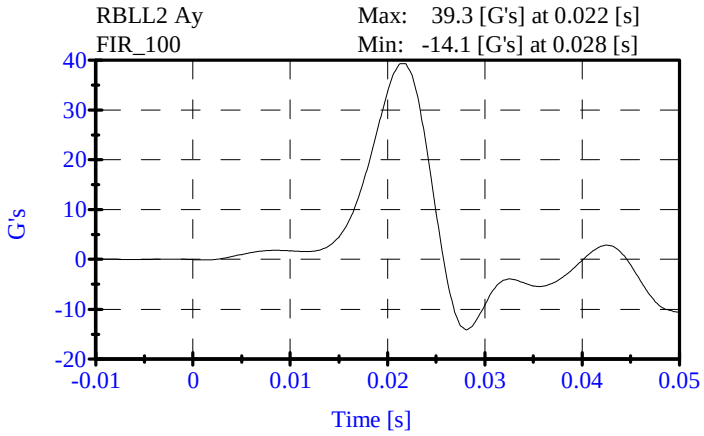
Date: 04-07-09 Laboratory Technician: A. Rudniski

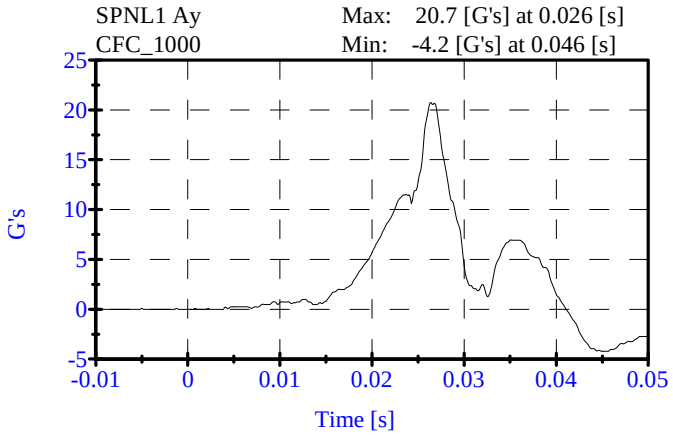
TEST PARAMETER	SPECIFICATION	TEST RESULTS	STATUS
Lab Temperature:	18.9-25.5 C	21.7 C	Passed
Lab Humidity:	10-70 %	22.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	39.26 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	39.33 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	17.48 G's	Passed

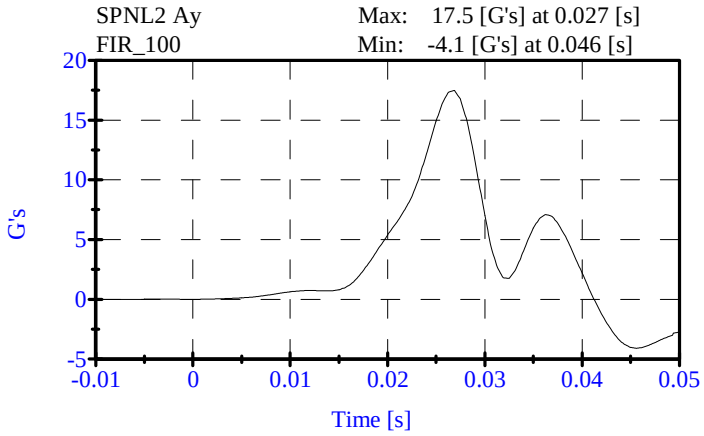












POST TEST DUMMY INSPECTION LIST

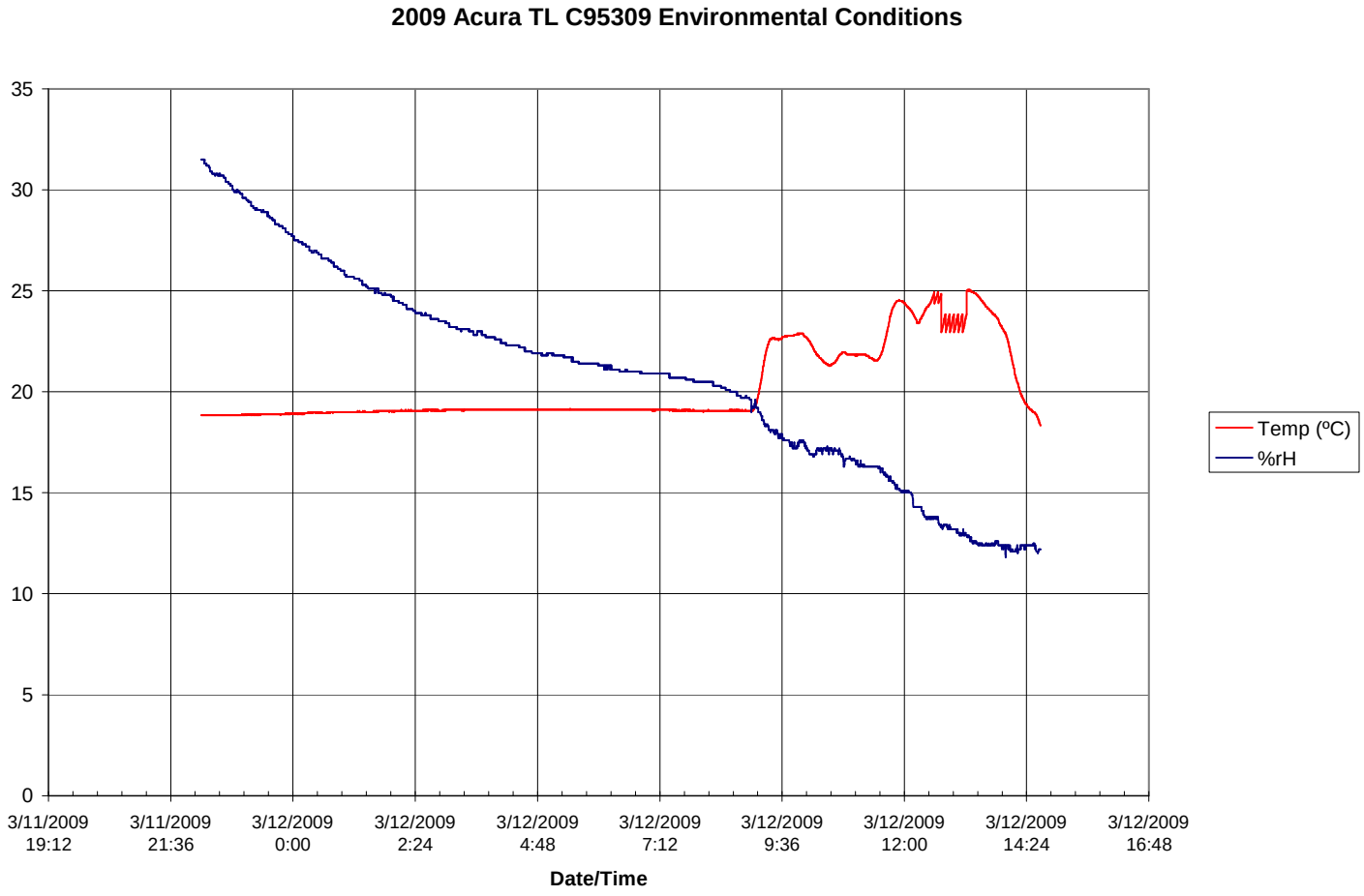
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 269 Sequential Test Number: 1
Date: 4/2/09 Laboratory Technician: A. Rudniski

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

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID/HIII INSTRUMENTATION

	FRONT SID/HIII NO.: 270		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P58998	ENDEVCO	24-Feb-09
HEAD AY	AC-P58909	ENDEVCO	24-Feb-09
HEAD AZ	AC-P51279	ENDEVCO	24-Feb-09
HEAD AX (REDUNDANT)	AC-P58780	ENDEVCO	20-Feb-09
HEAD AY (REDUNDANT)	AC-P58997	ENDEVCO	20-Feb-09
HEAD AZ (REDUNDANT)	AC-P58912	ENDEVCO	19-Feb-09
UPPER NECK FX	LC-498Fx	DENTON	03-Apr-08
UPPER NECK FY	LC-498Fy	DENTON	03-Apr-08
UPPER NECK FZ	LC-498Fz	DENTON	03-Apr-08
UPPER NECK MX	LC-498Mx	DENTON	03-Apr-08
UPPER NECK MY	LC-498My	DENTON	03-Apr-08
UPPER NECK MZ	LC-498Mz	DENTON	03-Apr-08
UPPER RIB	AC-P51969	ENDEVCO	24-Feb-09
LOWER RIB	AC-P51950	ENDEVCO	24-Feb-09
LOWER SPINE	AC-P51970	ENDEVCO	24-Feb-09
PELVIS	AC-P51946	ENDEVCO	24-Feb-09
UPPER RIB REDUNDANT	AC-P51948	ENDEVCO	24-Feb-09
LOWER RIB REDUNDANT	AC-P51974	ENDEVCO	24-Feb-09
LOWER SPINE REDUNDANT	AC-P51965	ENDEVCO	24-Feb-09
PELVIS REDUNDANT	AC-P51945	ENDEVCO	24-Feb-09

	REAR SID/HIII NO.: 269		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P52088	ENDEVCO	20-Feb-09
HEAD AY	AC-P52095	ENDEVCO	20-Feb-09
HEAD AZ	AC-P58986	ENDEVCO	19-Feb-09
HEAD AX (REDUNDANT)	AC-P58908	ENDEVCO	20-Feb-09
HEAD AY (REDUNDANT)	AC-P59021	ENDEVCO	20-Feb-09
HEAD AZ (REDUNDANT)	AC-P58794	ENDEVCO	19-Feb-09
UPPER NECK FX	LC-810Fx	DENTON	08-Dec-08
UPPER NECK FY	LC-810Fy	DENTON	08-Dec-08
UPPER NECK FZ	LC-810Fz	DENTON	08-Dec-08
UPPER NECK MX	LC-810Mx	DENTON	08-Dec-08
UPPER NECK MY	LC-810My	DENTON	08-Dec-08
UPPER NECK MZ	LC-810Mz	DENTON	08-Dec-08
UPPER RIB	AC-P49192	ENDEVCO	19-Feb-09
LOWER RIB	AC-P51734	ENDEVCO	19-Feb-09
LOWER SPINE	AC-P51689	ENDEVCO	19-Feb-09
PELVIS	AC-P58762	ENDEVCO	19-Feb-09
UPPER RIB REDUNDANT	AC-P51713	ENDEVCO	19-Feb-09
LOWER RIB REDUNDANT	AC-P59020	ENDEVCO	19-Feb-09
LOWER SPINE REDUNDANT	AC-P58776	ENDEVCO	19-Feb-09
PELVIS REDUNDANT	AC-P58905	ENDEVCO	19-Feb-09

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-P32464	ENDEVCO	02-Mar-09
RIGHT FRONT SILL (Y)	AC-P32139	ENDEVCO	02-Mar-09
RIGHT FRONT SILL (Z)	AC-P32455	ENDEVCO	02-Mar-09
RIGHT REAR SILL (X)	AC-P23164	ENDEVCO	03-Mar-09
RIGHT REAR SILL (Y)	AC-P23939	ENDEVCO	03-Mar-09
RIGHT REAR SILL (Z)	AC-P23993	ENDEVCO	03-Mar-09
REAR FLOORPAN ABOVE AXLE (X)	AC-P23885	ENDEVCO	02-Mar-09
REAR FLOORPAN ABOVE AXLE (Y)	AC-P16671	ENDEVCO	02-Mar-09
REAR FLOORPAN ABOVE AXLE (Z)	AC-P32288	ENDEVCO	02-Mar-09
LEFT REAR SILL (Y)	AC-P23139	ENDEVCO	02-Mar-09
LEFT FRONT SILL (Y)	AC-P21399	ENDEVCO	03-Mar-09
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-P24145	ENDEVCO	03-Mar-09
LOWER LEFT B- PILLAR (Y)	AC-P17283	ENDEVCO	03-Mar-09
MIDDLE LEFT B-PILLAR (Y)	AC-P18531	ENDEVCO	03-Mar-09
LOWER LEFT A-PILLAR (Y)	AC-P17285	ENDEVCO	03-Mar-09
UPPER LEFT A-PILLAR (Y)	AC-P16286	ENDEVCO	03-Mar-09
FRONT SEAT TRACK (Y)	AC-P17539	ENDEVCO	03-Mar-09
REAR SEAT TRACK (Y)	AC-P23788	ENDEVCO	03-Mar-09
VEHICLE CG (X)	AC-P35803	ENDEVCO	02-Mar-09
VEHICLE CG (Y)	AC-P35811	ENDEVCO	02-Mar-09
VEHICLE CG (Z)	AC-P35789	ENDEVCO	02-Mar-09
MDB CG (X)	AC-C15007	ENDEVCO	05-Mar-09
MDB CG (Y)	AC-GE16	ENDEVCO	05-Mar-09
MDB CG (Z)	AC-C16499	ENDEVCO	05-Mar-09
MDB REAR FRAME MEMBER (X)	AC-C14948	ENDEVCO	05-Mar-09
MDB REAR FRAME MEMBER (Y)	AC-C16680	ENDEVCO	05-Mar-09

REMARKS: None