REPORT NUMBER TR-P26175-01-NC

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

HONDA OF AMERICA MFG., INC.
2007 ACURA RDX
5-DOOR MPV

NHTSA NUMBER: H75302

Prepared By:
KARCO ENGINEERING, LLC
9270 HOLLY ROAD
ADELANTO, CALIFORNIA 92301

SEPTEMBER 29, 2006

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
RULEMAKING
MAIL CODE: NVS-111
400 SEVENTH STREET, SW, ROOM 5311
WASHINGTON, D.C. 20590

This final test report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, in response to Contract Number DTNH22-03-D-32005.

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: September 29, 2006
Mr. Rupesh B. Patel, Project Engineer
KARCO Engineering, LLC

Reviewed by: _____ Date: September 29, 2006
Mr. Michael L. Dunlap, T&E Manager
KARCO Engineering, LLC

Approved by: _____ Date: September 29, 2006
Mr. Frank D. Richardson, Program Manager
KARCO Engineering, LLC

FINAL REPORT ACCEPTED BY:

_____
Manager, Side Impact NCAP

_____
Date of Acceptance

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipients Catalog No.
TR-26175-01-NC		

4. Title and Subtitle	5. Report Date
Final Report of Side Impact New Car Assessment Program Testing of a 2007 Acura RDX 5-Door MPV NHTSA No. H75302	September 29, 2006
	6. Performing Organization Code KAR
7. Authors Mr. Rupesh B. Patel, Project Engineer, Karco Mr. Frank Richardson, Project Manager, Karco	**8. Performing Organization Report No.** TR-26175-01-NC
9. Performing Organization Name and Address Karco Engineering, LLC 9270 Holly Rd. Adelanto, CA, 92301	**10. Work Unit No.**
	11. Contract or Grant No. DTNH22-03-D-32005
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Rulemaking Office of Crashworthiness Standards Mail Code NVS-111 400 Seventh Street, SW, Room 5311 Washington, D.C 20590	**13. Type of Report and Period Covered** Final Test Report
	14. Sponsoring Agency Code DOT/NHTSA/NRM/OCS

15. Supplementary Notes

16. Abstract

A 55/28 km/h 90 deg. Moving Deformable Barrier Side Impact NCAP Test was conducted on the subject 2007 Acura RDX 5-Door MPV in accordance with the specifications of the Office of Crash Worthiness Standards Test Procedures for the generation of consumer information on vehicle side crash protection. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on September 29, 2006. The impact velocity of the Moving Deformable Barrier was 61.98 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 31.1 deg. C. The target vehicle's maximum post-test static crush was 229 mm located at level 2 and level 3. The test vehicle's occupant performance data is as follows:

Measurement Description	Driver SID/HIII	Pass. SID/HIII
Left Upper Rib (LUR) G's	49.6	47.1
Left Lower Rib (LLR) G's	53.3	42.6
Lower Spine (T_{12}) G's	39.0	41.3
Thoracic Trauma Index (TTI) G's	46.0	44.0
Pelvis (PEV) G's	47.0	54.0

17. Key Words	18. Distribution Statement
New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) Side Impact Dummy (SID/HIII)	Copies of this report are available from: National Highway Traffic Safety Admin. NHTSA Technical Reference Division 400 Seventh St., SW, Room 5108 Washington, DC 20590

19. Security Classification of this report	20. Security Classification of this page	21. No. of Pages	22. Price
UNCLASSIFIED	UNCLASSIFIED	133	

Form DOT F1700.7 (8-72)

TABLE OF CONTENTS

SECTION 1
PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This Side Impact NCAP test is conducted as part of the FY' 2007 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-03-D-32005. The purpose of this test is to generate comparative side impact data on a 2007 Acura RDX 5-Door MPV manufactured by Honda of America Mfg., INC.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the current National Highway Traffic Safety Administration (NHTSA), Office of Crashworthiness Standards (OCS), laboratory test procedure NCAP Side Impact Testing, dated November 2002. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

SECTION 2
SUMMARY OF SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT NCAP TEST

A model year 2007 Acura RDX 5-Door MPV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.98 km/h. The specified impact velocity range is from 61.14 to 62.75 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 1974 kg and the test weight of the MDB was 1361 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on September 29, 2006.

Two (2) real-time cameras and eleven (11) high-speed video cameras were used to document the impact event. Camera locations and pertinent camera information is documented in the data sheets. Pre- and post-test photographs of the vehicle and SID/HIIIs can be found in Appendix A. Two 50th percentile adult male Side Impact Dummies, Hybrid III (SID/HIIIs) were placed in the driver's and left rear passenger designated seating positions according to the test procedure. Each SID/HIII is instrumented with contact switches on the pelvis, thorax and six-axis neck load cells, and fourteen accelerometers 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)

SUPPLEMENTAL RESTRAINT INFORMATION

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

The test vehicle was instrumented with twenty-one (21) structural accelerometers and the MDB was instrumented with five (5) accelerometers and one (1) contact switch on the right bumper to compare left side to right side bumper impact timing. All data channels were recorded with the fully self contained on-board Data Acquisition System (DAS). The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The driver and passenger doors remained closed during impact. The test vehicle sustained a maximum static crush of 229 mm at level 2, 1650 mm rearward of the left vertical impact point and 229 mm at level 3, 1350 mm rearward of the left vertical impact point. The driver SID/Hybrid III, Serial No. 275 and the passenger SID/Hybrid III, Serial No. 274 were calibrated prior to this test. The SID/Hybrid III injury criteria is summarized as follows:

Measurement	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	46.0	44.0
Peak Pelvic G's (PEV)	G's	47.0	54.0

Tests summaries and post-test observations are presented in Section 3. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIIIs, vehicle, and MDB response data traces. Appendix C contains the SID Configuration and performance verification data.

SECTION 3

OCCUPANT AND VEHICLE INFORMATION SHEETS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressures	lbf/in^2	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	^oF	^oC	=(tf -32)/1.8
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

* Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	H75302	Anti-Lock Brakes	Yes
Make	Acura	All Wheel Drive	Yes
Model	RDX	Power Steering	Yes
Body Style	5-Door MPV	Driver Front Airbag	Yes
Vin No.	5J8TB18287A003611	Driver Side Torso Airbag	Yes
Color	Silver	Driver Side Head Airbag	No
Delivery Date	9/25/2006	Driver Curtain/Airbag	Yes
Odometer (Miles)	34.2	Rear Pass. Airbag	No
Dealer	Acura Of Riverside	Rear Pass. Side Airbag	No
Transmission	Automatic	Rear Pass. Head Airbag	No
Final Drive	Awd	Rear Pass. Curtain/Airbag	Yes
Type/No. Cyl.	In-line 4	Pre-Tensioners	Yes
Engine Disp. (L)	2.3	Load Limiters	Yes
Engine Placement	Transverse	Bucket Seats	Yes
Roof Rack	No	Air Cond.	Yes
Sunroof/T-Top	Yes	AM/FM CD	Yes
Tinted Glass	Yes	Tilt Steering	Yes
Traction Control	Yes	Automatic Door Locks	Yes
Power Brakes	Yes	Power Windows	Yes
Front Disc	Yes	Power Seats	Yes
Rear Disc	Yes	Other	None

Does Owners Manual provide instructions to turn off automatic door locks.	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda of America Mfg., INC	GVWR (kg)	2220
		GAWR Front (kg)	1155
Date of Manufacture	Aug-06	GAWR Rear (kg)	1080

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	None	
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				395
Cargo Weight (RCLW) (kg)				54

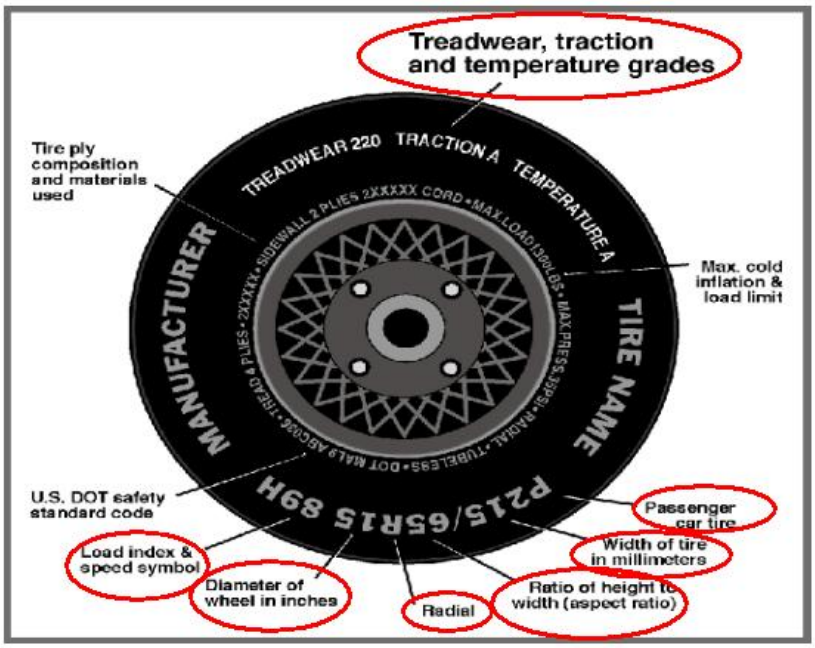
DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

Collect year, make, model, VIN, items circled in red, and tire manufacturer and tire name.



TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kpa)	300	300
Cold Pressure (kpa)	220	220
Recommended Tire Size	P235/55R18	P235/55R18
Tire Size on Vehicle	P235/55R18	P235/55R18
Tire Manufacturer	Michelin	Michelin
Treadwear	300	300
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	2 Ply Polyester	2 Ply Polyester
Tire Plies Body	1 Polyester + 2 Steel + 1 Polyamide	1 Polyester + 2 Steel + 1 Polyamide
Load Index/Speed Symbol	99V	99V
Tire Material	Polyester + Steel + Polyamide	Polyester + Steel + Polyamide
DOT Safety Code Right	DOT B93J PHFX 3806	DOT B93J PHFX 3806
DOT Safety Code Left	DOT B93J PHFX 3806	DOT B93J PHFX 3806

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

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	505	385		565	452	
Right	kg	502	372		540	417	
Ratio	%	57.0	43.0		56.0	44.0	
Totals	kg	1007	757	1764	1105	869	1974

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1764
Weight of 2 P572 ATD's	kg	162
Rated Cargo/Luggage Wt. (RCLW)	kg	54
Calculated Vehicle Target Wt. (TVTW)	kg	1980

TEST VEHICLE ATTITUDE AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	794	794	790	795	1144
As Tested	mm	784	794	779	787	1170
Fully Loaded	mm	784	790	777	764	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2660
Total Vehicle Length at Left Side	mm	3062
Total Vehicle Length at Centerline	mm	4593
Total Vehicle Length at Right Side	mm	3062
Weight of Ballast In Cargo Area	kg	0
Amount of Stoddard Solvent in Fuel Tank	liters	63.36

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2660
Target Impact Point Aft of Front Axle	mm	390
Actual Impact Point Aft of Front Axle	mm	492

DATA SHEET NO. 1...(CONTINUED)

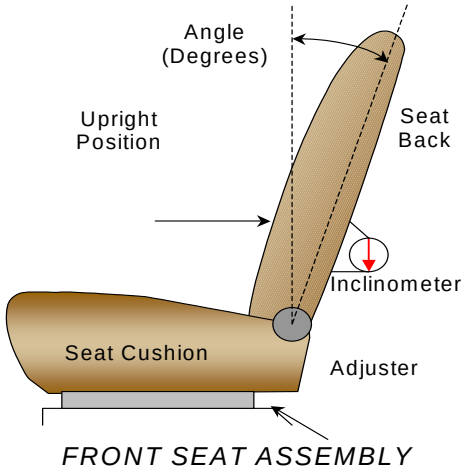
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

NOMINAL DESIGN RIDING POSITION

The driver and passenger seat backs are positioned to the manufacturer's designated angle. The procedure is as follows: Seat back angle was measured at the headrest using a digital inclinometer.



FRONT SEAT ASSEMBLY

SEAT BACK ANGLES

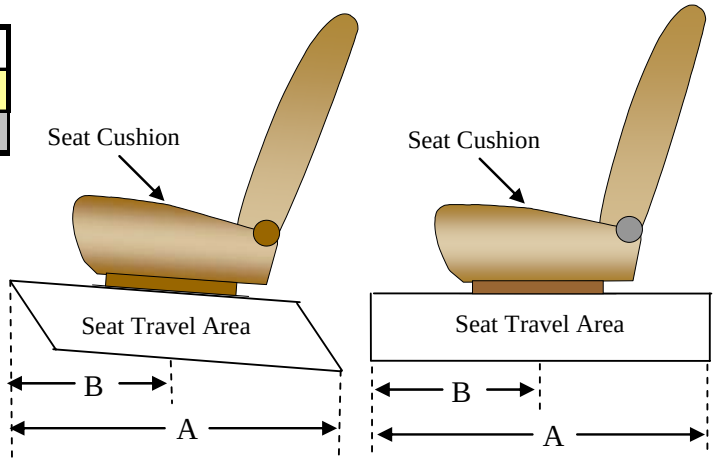
	Deg.
Driver Seat Back Angle	9.0 @ headrest
Rear Seat Back Angle	Fixed

SEAT FORE/AFT POSITIONS

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

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	285 mm	142 mm
Rear Seat		



SEAT BELT UPPER ANCHORAGE

Position number one (1) is the uppermost position

SEAT BELT UPPER ANCHORAGE

	Total # of Positions	Placed in Position #
Driver Seat	4	1
Rear Seat	Fixed	Fixed

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

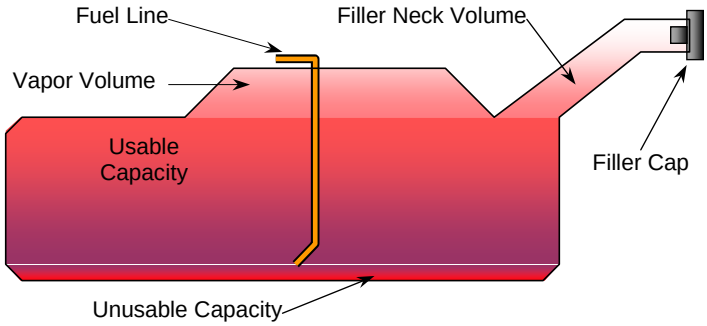
Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

.

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	68.13
Usable Capacity of "Optional" Tank	
Usable Capacity used for FMVSS 301	62.68 to 64.04
Actual Amount of Solvent used	63.36

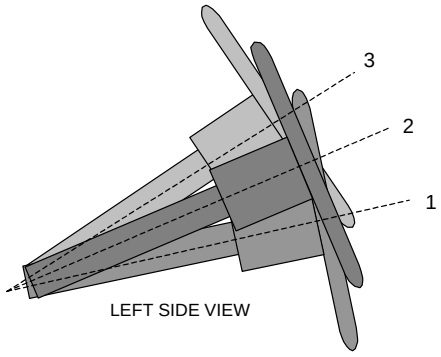
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately three (3) seconds with the ignition in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender.



VEHICLE FUEL TANK ASSEMBLY

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 POSITIONS

	Degrees	Fore/Aft Position (mm)
Lowermost positon No. 1	24.5	0
Geometric center position No. 2	27.1	25
Uppermost position No. 3	29.6	50

DATA SHEET NO. 2

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	505	385		565	452	
Right	kg	502	372		540	417	
Ratio	%	57.0	43.0		56.0	44.0	
Totals	kg	1007	757	1764	1105	869	1974

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	195	456
Level 2	Occupant H-Point	mm	229	650
Level 3	Mid Door	mm	229	698
Level 4	Window Sill	mm	108	1024
Level 5	Window top	mm	43	1540
N/A	Maximum Penetration	mm	229	

INSTRUMENTATION

Driver SID/Hybrid III Accelerometers	20
Passenger SID/Hybrid III Accelerometers	20
Vehicle Structure Accelerometers	21
MDB Accelerometers	5
Total No. of Contact Switches	5
Total	71

CAMERA COVERAGE

High Speed, Vehicle On-Board	3
High Speed, Off-Board	4
High Speed, MDB On-Board	3
Real Time, Panning	2
Total	12

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

MDB SPECIFICATIONS (mm)

Measurement Description	Length
Overall Width of Framework Carriage	1252
Overall Length including Honeycomb Face	4115
Wheel Base of Framework Carriage	2590
C.G. location aft of Front Axle	1127

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	384	308	
Right	kg	385	284	
Ratio	%	56.5	43.5	
Totals	kg	769	592	1361

SPEED AND IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.98
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.92
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.5

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE (mm)

Vertical Location			From Centerline		Max. Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	800	Right	726
B	Top of Bumper	533	700	Right	747
C	Mid Level	686	800	Right	712
D	Top of Stack	813	800	Left	792

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	1
High Speed Cameras	2

DATA SHEET NO. 4

POST-TEST OBSERVATIONS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/Hybrid III	Rear Seat SID/Hybrid III
Dummy Type / Serial No.	P572F, SID / No. 275	P572F, SID / No. 274
Head Contact	Curtain Airbag	Curtain Airbag & Side Header
Upper Torso Contact	Side Airbag	Door Panel
Lower Torso Contact	Side Airbag	Door Panel
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	None	None

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Door remained Closed and Latched, Jammed	Door remained Closed and Latched, Jammed
Right Side Door Opening	Remained Closed and Latched, Operational	Remained Closed and Latched, Operational
Seat Movement	None	None
Seat Back Failure	None	None

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	Front & Rear Passenger Side Sill Separated
Windshield Damage	None
Window Damage	None
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 01		Left Rear (Passenger) Occupant Location 04	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No	No	
Side Torso Airbag	Yes	Yes	No	
Head Airbag	No		No	
Curtain Airbag	Yes	Yes	Yes	Yes
Seat Belt Pretensioner	Yes		No	
Seat Belt Load Limiter	Yes		No	

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	-10 (Left)
Vertical Offset	mm	+/- 20	+4 (Above)

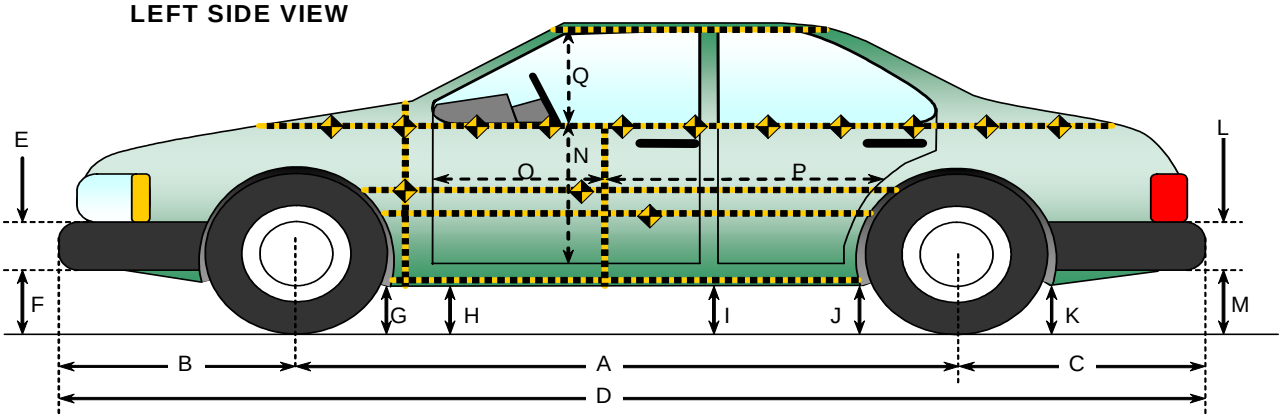
DATA SHEET NO. 5

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

LEFT SIDE VIEW



VEHICLE PRE AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2660	2630	-30
B	Front Axle to FSOV	963	982	19
C	Rear Axle to RSOV	983	993	10
D	Total Length at Centerline	4593	4595	2
E	Front Bumper Thickness	370	372	2
F	Front Bumper Bottom to Ground	279	288	9
G	Sill Height at Front Wheel Well	271	322	51
H	Sill Height at Front Door Leading Edge	271	322	51
I	Sill Height at "B" Pillar	296	314	18
J1	Sill Height at Rear Wheel Well	252	305	53
J2	Pinch Weld Height at Rear Wheel Well	282	306	24
K	Sill Height aft of Rear Wheel Well	322	381	59
L	Rear Bumper Thickness	230	225	-5
M	Rear Bumper Bottom to Ground	344	316	-28
N	Sill Height to Window Bottom Sill	810	790	-20
O	Front Door Leading Edge to Impact CL	767	735	-32
P	Rear Door Trailing Edge to Impact CL	1290	1270	-20
Q	Front Window Opening	390	440	50
R	Right Side Length	3062	3045	-17
S	Left Side Length	3062	3070	8
T	Vehicle Width at "B" Post	1845	1700	-145

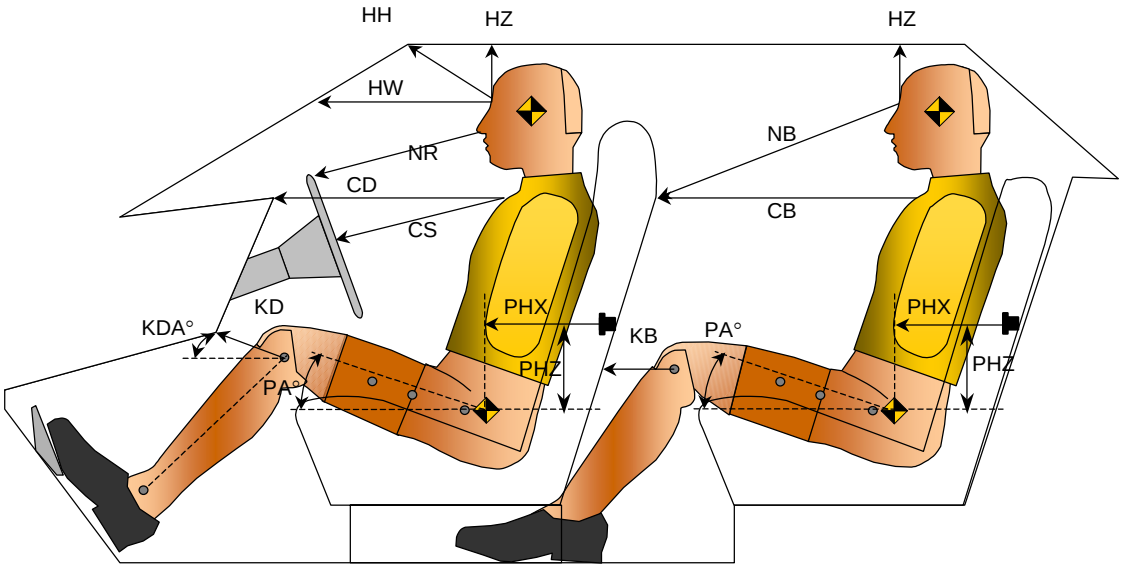
All Dimensions Shown in millimeters

DATA SHEET NO. 6

SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06



LONGITUDINAL CLEARANCE DIMENSION INFORMATION

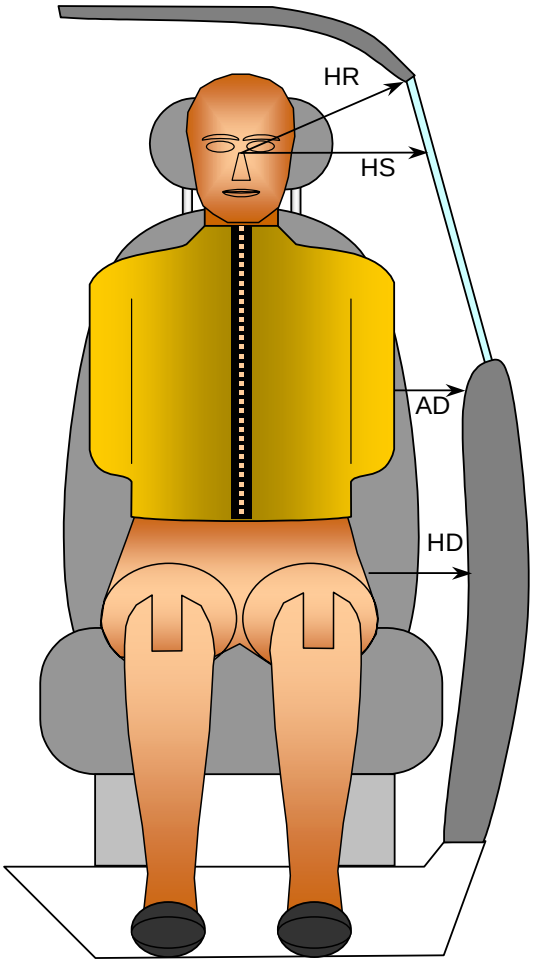
Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length(mm)	Angle	Length(mm)	Angle
HH		Head to Header	356	22.0		
HW		Head to Windshield	527	0.0		
HZ	HZ	Head to Roof	178	90.0	190	90.0
NR	NB	Nose to Rim/Nose to Seat Back	412	14.3	710	22.7
CD	CB	Chest to Dash or Seat Back	601	1.0	635	6.0
CS		Chest to Steering Wheel	322	0.0		
KDL	KBL	Left Knee to Dash or Seat Back	138	22.2	260	0.0
KDR	KBR	Right Knee to Dash or Seat Back	110		256	
PA	PA	Pelvic Angle		23.0		23.0
PHX	PHX	H-Point to Striker (X-Axis)	265		330	
PHZ	PHZ	H-Point to Striker (Z-Axis)	128		240	

DATA SHEET NO. 7

SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06



FRONT VIEW OF DUMMY

LATERAL CLEARANCE DIMENSION INFORMATION

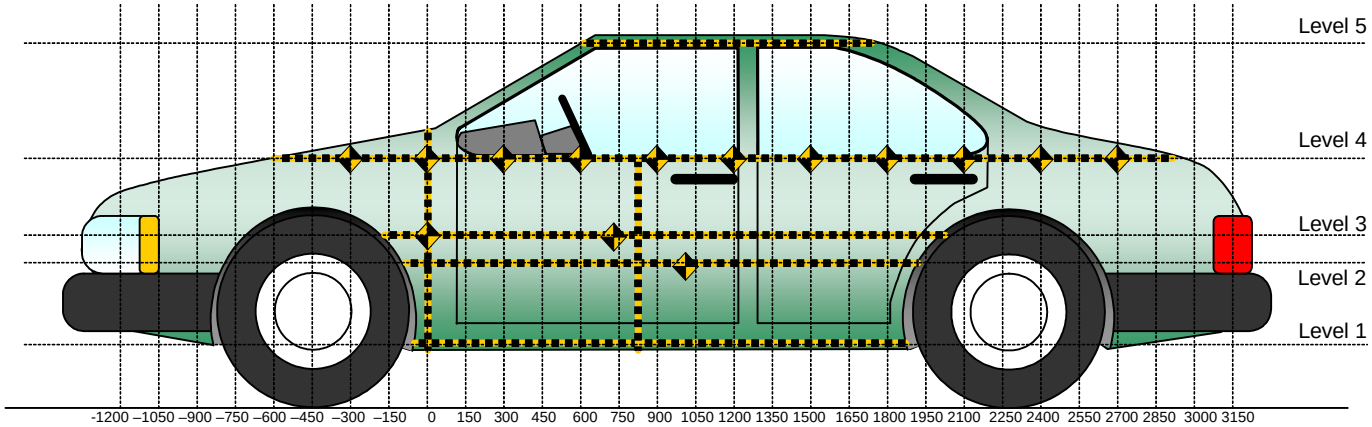
Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	170	200
HS	Head to Side Window	mm	330	310
AD	Arm to Door	mm	106	86
HD	H-Point to Door	mm	230	135

DATA SHEET NO. 8

VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06



All Measurements Shown in mm

LEFT SIDE VIEW

Level	Measurement Description	Height Above Ground
1	Sill Top	456
2	Occupant H-Point	650
3	Mid Door	698
4	Window Sill	1024
5	Window Top	1540

All Dimensions Shown in millimeters

DATA SHEET NO. 9

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450															
-300				676					687					11	
-150				655					679					24	
0	577	567	569	654		644	612	609	667		67	45	40	13	
150	586	580	589	648		726	746	754	670		140	166	165	22	
300	586	580	590	641		752	790	781	624		166	210	191	-17	
450	584	575	589	639		766	785	786	692		182	210	197	53	
600	584	572	588	640		771	784	792	706		187	212	204	66	
750	581	571	586	632	860	776	787	792	722	877	195	216	206	90	17
900	581	571	589	636	859	775	782	792	732	872	194	211	203	96	13
1050	583	572	586	630	851	775	778	788	733	877	192	206	202	103	26
1200	584	571	589	632	852	765	783	806	740	883	181	212	217	108	31
1350	585	571	585	633	856	768	773	814	734	886	183	202	229	101	30
1500	586	575	587	633	861	771	800	806	729	896	185	225	219	96	35
1650	586	576	587	634	861	779	805	786	739	903	193	229	199	105	42
1800	573	581	584	639	868	664	638	746	704	906	91	57	162	65	38
1950			576	643	871			624	676	906			48	33	35
2100				648	881				661	908				13	27
2250				650	891				670	934				20	43
2400				659	908				674	948				15	40
2550															
2700															
2850															
3000															

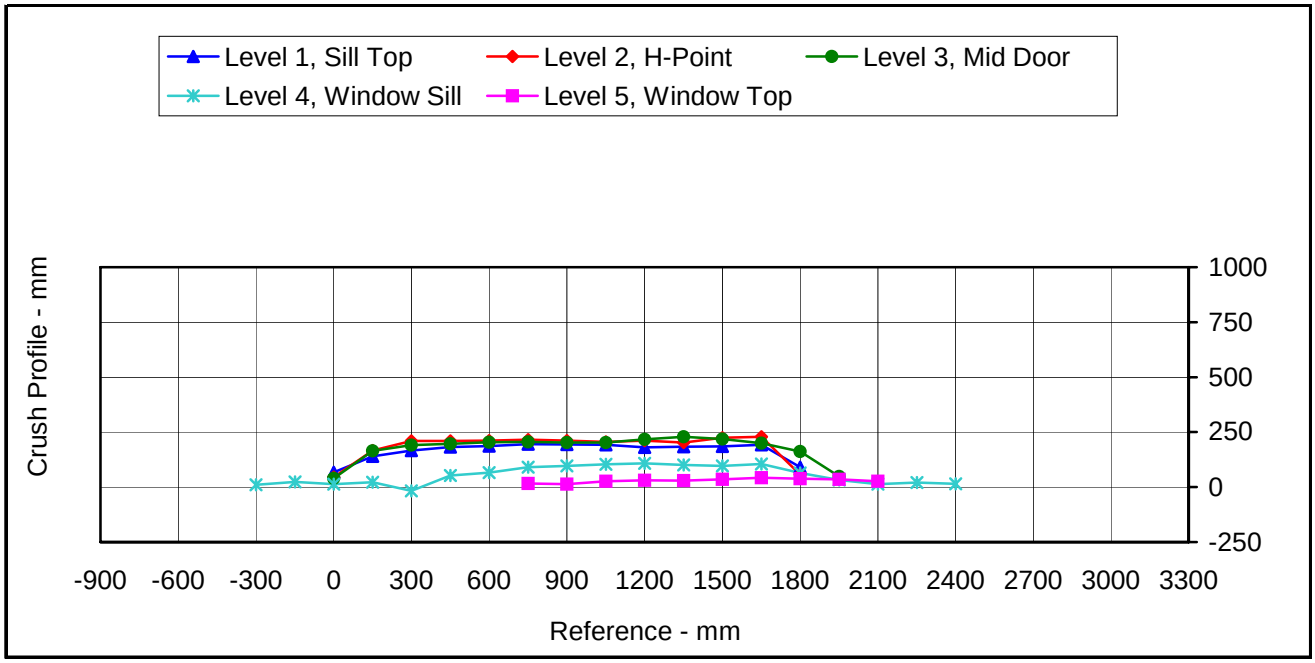
All Dimensions Shown in millimeters

DATA SHEET NO. 9…(CONTINUED)

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06



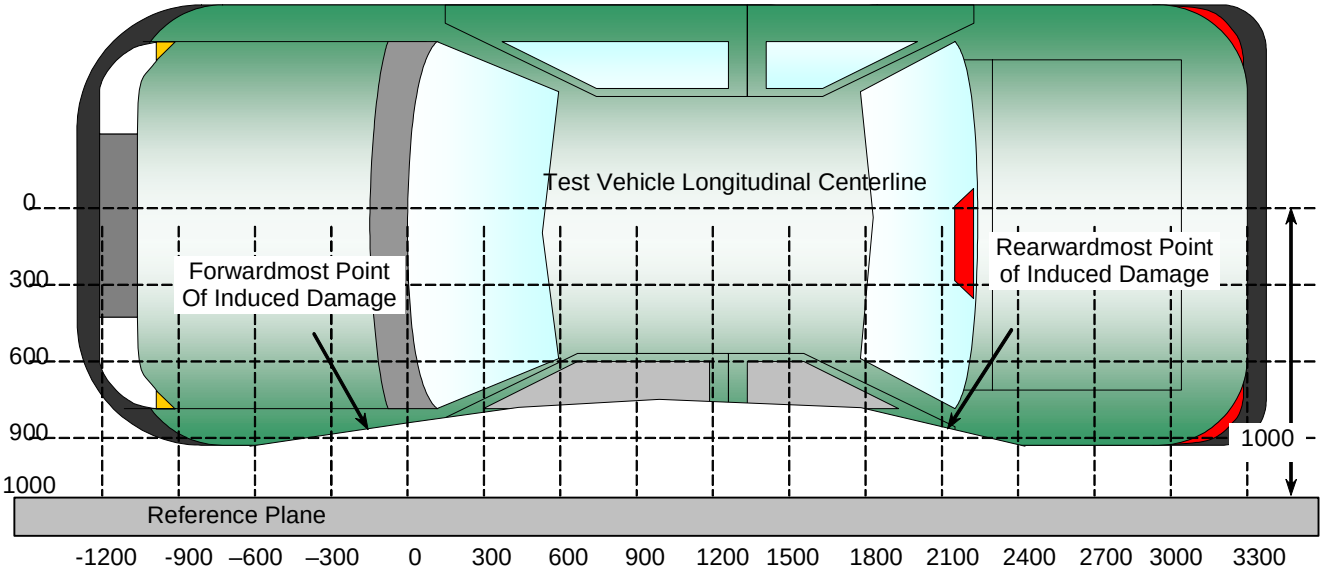
	Units	Level 1	Level 2	Level 3	Level 4	Level 5
Maximum Crush	mm	195	229	229	108	43
Distance from Impact	mm	750	1650	1350	1050	2250

DATA SHEET NO. 10

VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06



All Dimensions Shown in millimeters

TOP VIEW

DAMAGE PROFILE DISTANCES

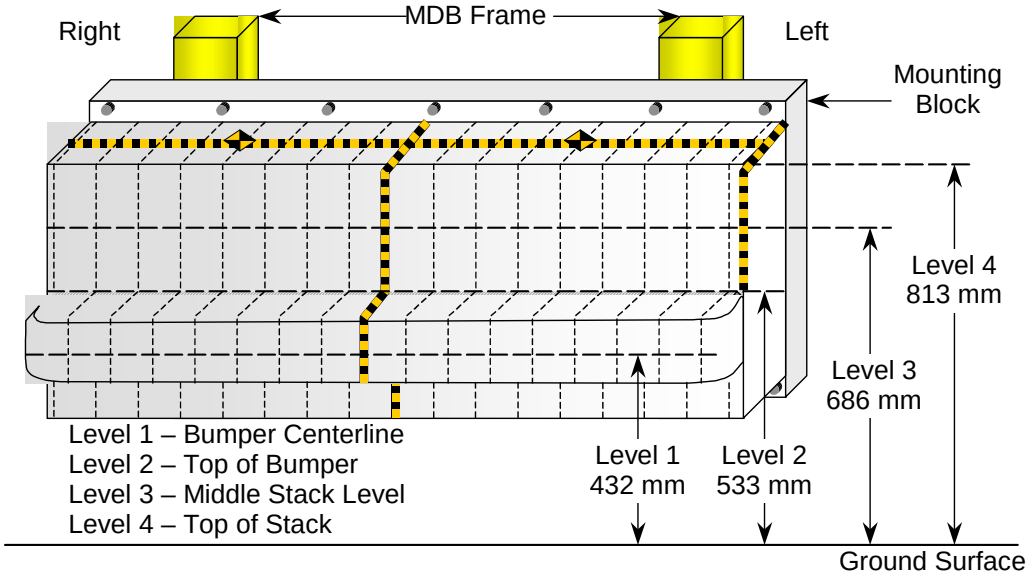
DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	1800	2	581	638	57
2	1500	2	575	800	225
3	1200	2	571	783	212
4	900	2	571	782	211
5	450	2	575	785	210
6	0	2	567	612	45

DATA SHEET NO. 11

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800
1	726	706	701	691	687	687	684	679	680	674	673	672	668	666	671	687	712
2	746	747	729	717	712	702	695	694	696	695	695	691	690	696	706	720	736
3	712	680	660	641	642	648	652	646	644	626	636	636	646	652	665	676	711
4	674	656	636	634	640	655	660	638	629	629	642	654	671	683	712	749	792

All Dimensions in mm

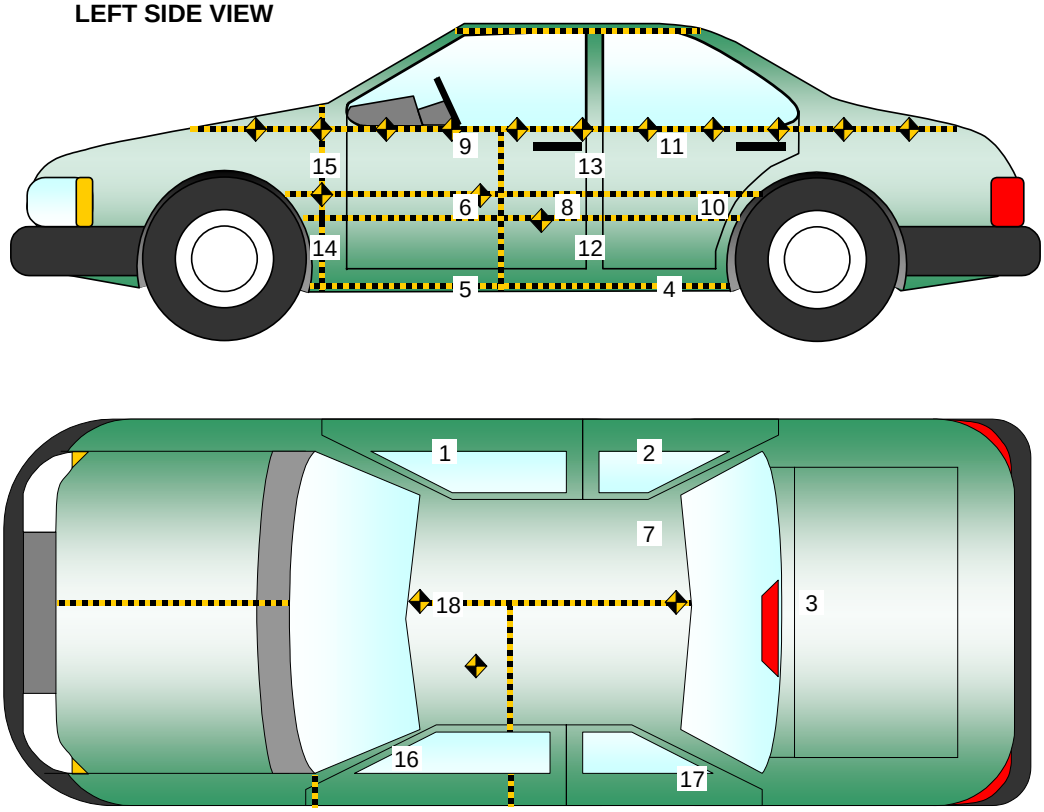
DATA SHEET NO. 12

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

LEFT SIDE VIEW



No.	Location
1	Right Sill at Front Seat
2	Right Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Sill at Rear Door
5	Left Sill at Front Door
6	Left Front Door Centerline
7	Right Rear Occupant Compartment
8	Left Front Door Mid-Rear
9	Left Front Door Upper Centerline

No.	Location
10	Left Rear Door Mid-Rear
11	Left Rear Door Upper Centerline
12	Left Lower B-Post
13	Left Middle B-Post
14	Left Lower A-Post
15	Left Middle A-Post
16	Front Seat Track
17	Rear Seat Track or Structure
18	Vehicle CG

DATA SHEET NO. 12…(CONTINUED)
VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			
		X	Y	Z	
1	Right Sill at Front Seat	2536	726	474	
2	Right Sill at Rear Seat	1713	726	474	
3	Rear Floorpan Above Axle	983	0	736	
4	Left Sill at Rear Door	1770	-665	280	
5	Left Sill at Front Door	2374	-665	280	
6	Front Door Centerline				1
7	Rt. Rear Occ. Compartment	1946	305	413	
8	Front Door Mid-Rear				1
9	Front Door Upper Centerline				1
10	Rear Door Mid-Rear				1
11	Rear Door Upper Centerline				1
12	B-Post Lower	2065	-728	715	
13	B-Post Middle	2065	-728	940	
14	A-Post Lower	3156	-830	606	
15	A-Post Middle	3156	-830	825	
16	Front Seat Track	2488	-625	513	
17	Rear Seat Structure				1
18	Vehicle CG	2857	215	413	

Reference Planes: X=From Rear Surface of Vehicle, Y=Vehicle Centerline, Z=Ground Plane

1.) Not installed

DATA SHEET NO. 13
MDB ACCELEROMETER LOCATIONS

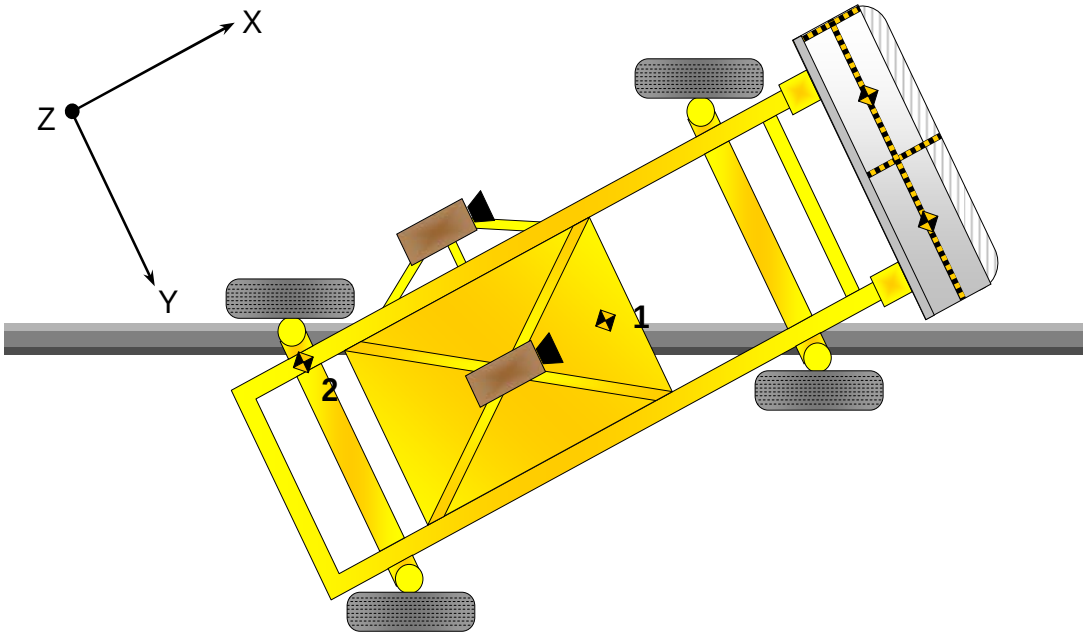
Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

MDB ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Locations	Measurements (mm)		
		X	Y	Z
1	MDB CG	-1195	0	430
2	MDB Rear	-2642	-593	608

Reference Points: X - MDB Front Axle
Y - MDB Centerline
Z - Ground Plane

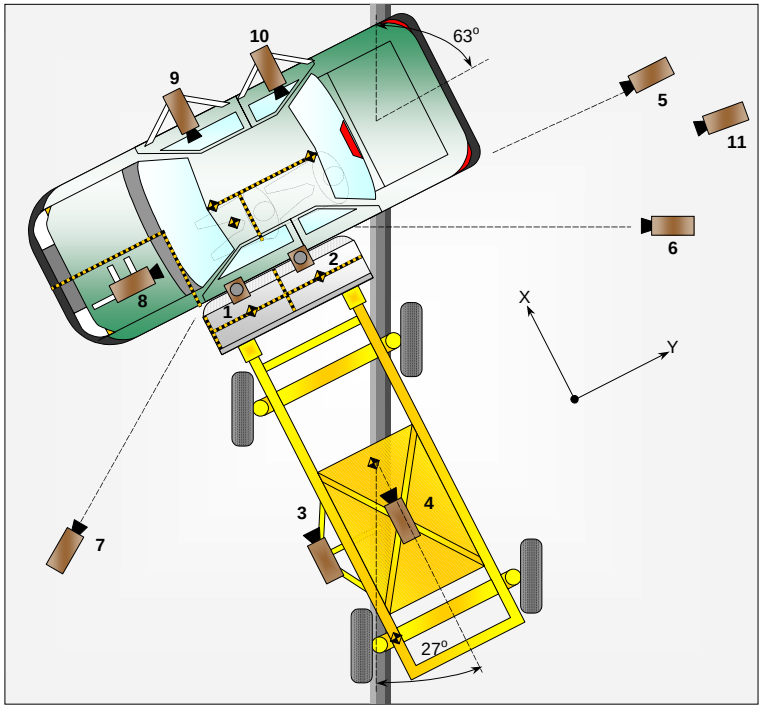


DATA SHEET NO. 14

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06



No.	Camera View	Location			Angle (Deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
DOC	REAL TIME DIGITAL	-7678	14524	-1854	-2	N/A	30
1	OVERHEAD OVERALL	1109	2023	-2546	-90	14mm	1000
2	OVERHEAD CLOSE UP	989	2139	-6565	-90	ZOOM	1000
3	LEFT IMPACT POINT (MDB)	-2276	2	-1187	-7	25mm	1000
4	SIDE OVERALL (MDB)	-4872	642	-1987	-11	12mm	1000
5	REAR	-289	13883	-1198	0	ZOOM	1000
6	LEFT REAR	-4667	16746	-946	0	ZOOM	1000
7	LEFT FRONT	-4696	4059	-6883	-4	24mm	1000
8	DRIVER FRONT (O.B.)	889	-456	-1474	-15	35mm	1000
9	DRIVER SIDE (O.B.)	2154	756	-1226	-2	20mm	1000
10	PASSENGER SIDE (O.B.)	2140	989	-1466	-2	20mm	1000
11	INLINE	50013	24245	-1305	0	85mm	1000
AV 1	LEFT REAR (MDB)	-2245	1348	-995	-4	25mm	1000
DOC	REAL TIME DIGITAL	375	16585	-1364	0	N/A	30

All camera measurements were made relative to the point of impact.

DATA SHEET NO. 15

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

Test Time: 12:01 PM Temperature: 33.1 Deg. C.

Stoddard Solvent Spillage Measurements

A. From impact until vehicle motion ceases: 0.0 oz.
(Maximum Allowable = 1 ounce)

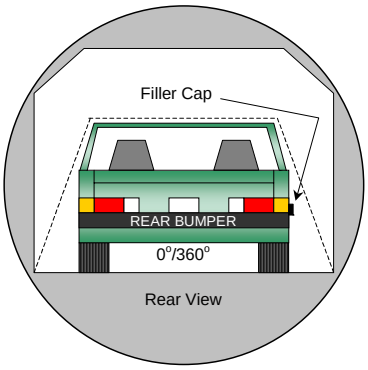
B. For the 5 minute period after motion ceases: 0.0 oz.
(Maximum Allowable = 5 ounces)

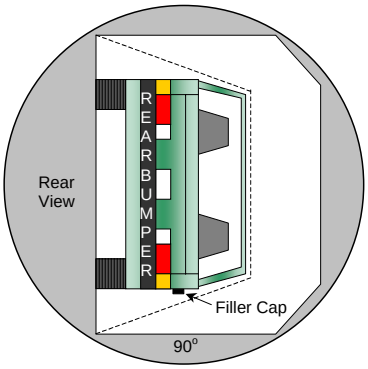
C. For the following 25 minutes: 0.0 oz.
(Maximum Allowable = 1 oz./minute)

D. Spillage Details: No leakage occurred

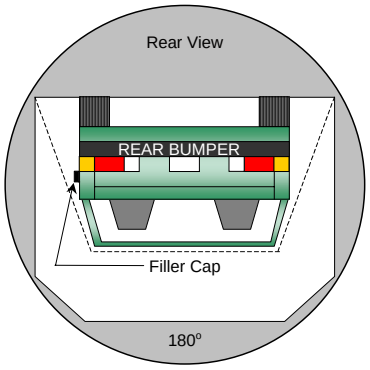
DATA SHEET NO. 16
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302
Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

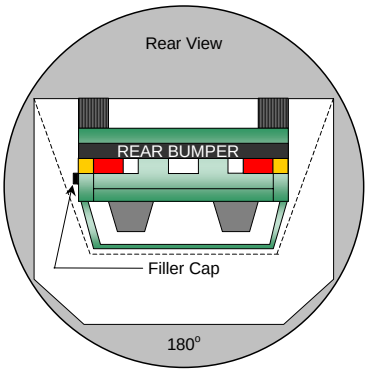




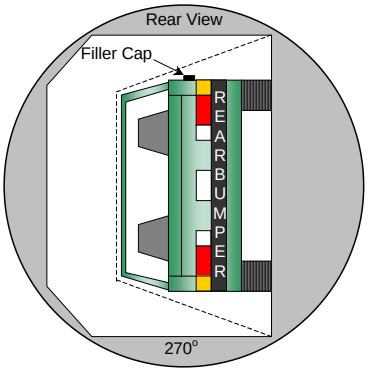
0° to 90°



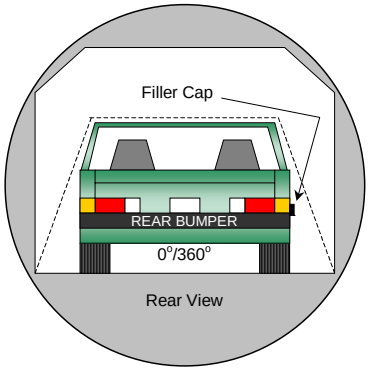
90° to 180°



180° to 270°



270° to 360°



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent spillage locations.

   No solvent leakage occurred during static rollover testing.

DATA SHEET NO. 16…(CONTINUED)

FMVSS 301 STATIC ROLLOVER DATA SHEET

Test Vehicle: 2007 Acura RDX 5-Door MPV NHTSA No.: H75302

Test Program: 55/28 km/h Side Impact NCAP Test Date: 9/29/06

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	82	300	382
90° to 180°	81	300	381
180° to 270°	80	300	380
270° to 360°	76	300	376

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

First 5 Minutes	5.0
Sixth Minute	1.0
Seventh Minute	1.0
Eighth Minute	1.0

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	0
90° to 180°	0	0	0	0
180° to 270°	0	0	0	0
270° to 360°	0	0	0	0

SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	None
90° to 180°	None
180° to 270°	None
270° to 360°	None

APPENDIX A
PHOTOGRAPHS

LIST OF PHOTOGRAPHS

Figure A-1: Left Front ¾ View, as Received

Figure A-2: Right Rear ¾ View, as Received

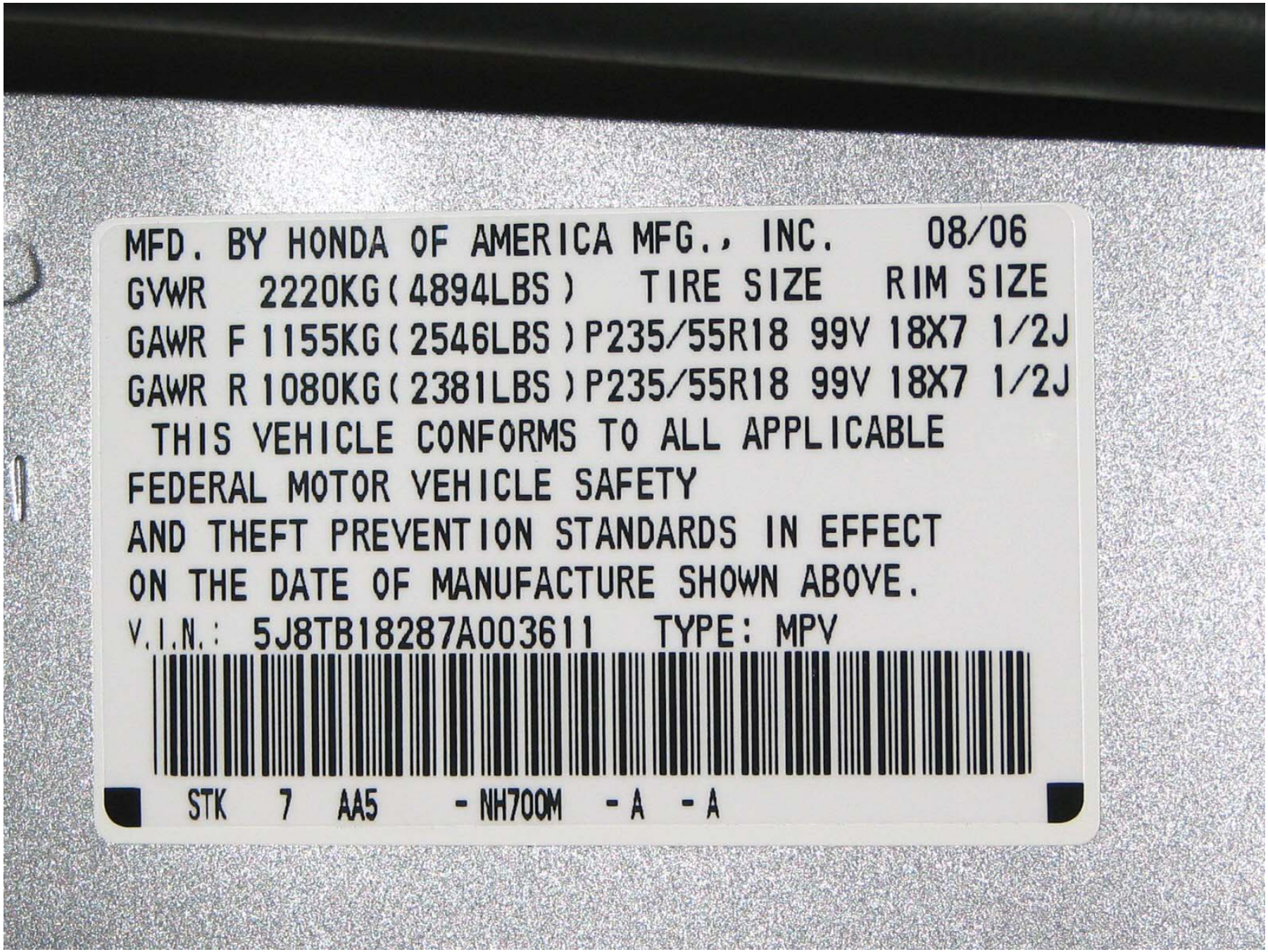


Figure A-3: Manufacturer's Label

Figure A-4: Tire Placard

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 Overhead View

Figure A-22: Post-Test Overhead View

Figure A-23: Pre-Test Overhead Close-up View

Figure A-24: Post-Test Overhead Close-up View

Figure A-25: Pre-Test Left Impact Point

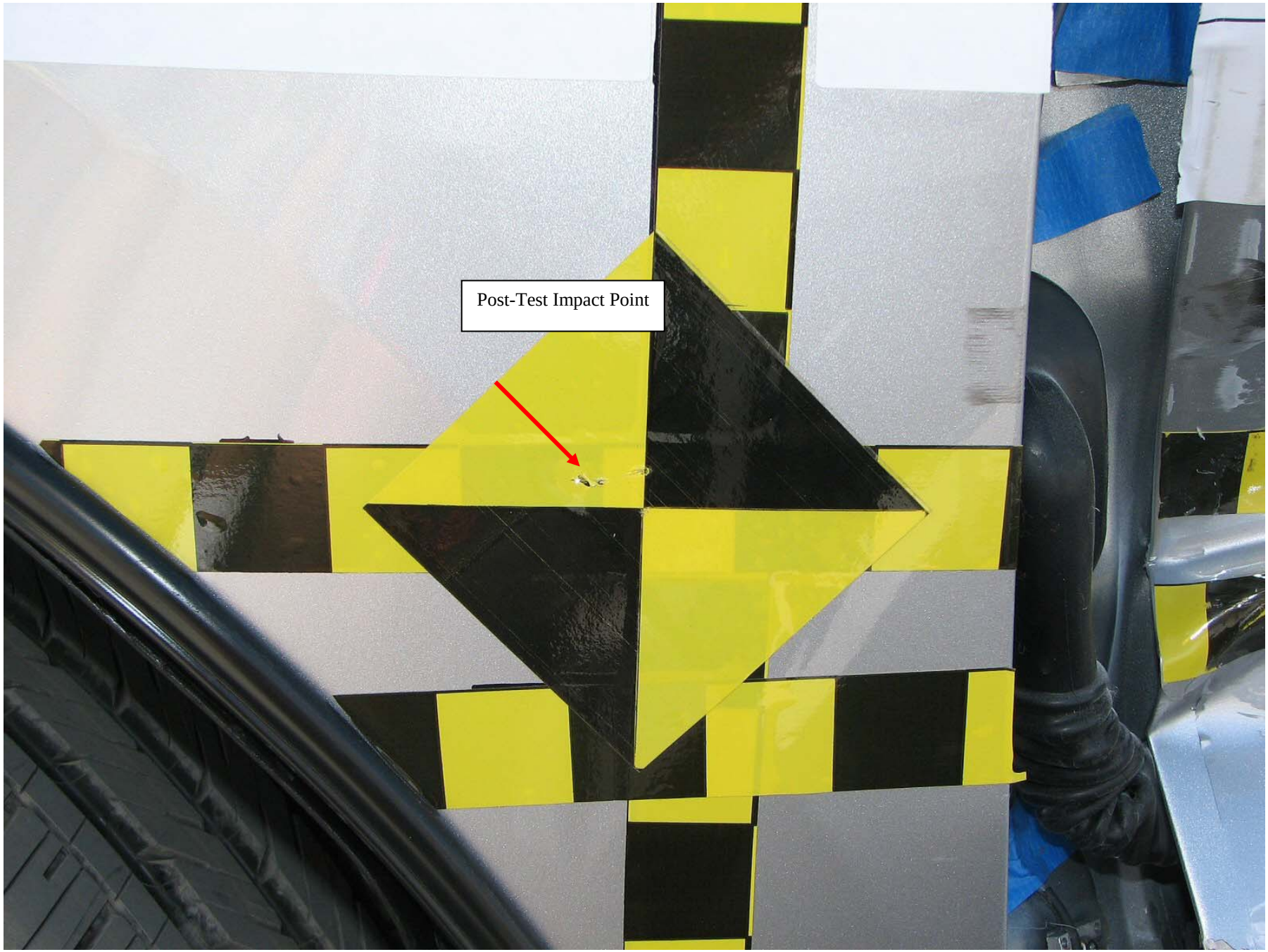


Figure A-26: Post-Test Left Impact Point

Figure A-27: Pre-Test Front ¾ View of Left Side Door

Figure A-28: Post-Test Front ¾ View of Left Side Door

Figure A-29: Pre-Test Rear ¾ View of Left Side Door

Figure A-30: Post-Test Rear ¾ View of Left Side Door

Figure A-31: Pre-Test Left Front Door

Figure A-32: Post-Test Left Front Door

Figure A-33: Pre-Test Left Rear Door

Figure A-34: Post-Test Left Rear Door

Figure A-35: Pre-Test Driver Dummy (Door Open)

This Space Left Blank Intentionally

Figure A-36: Pre-Test Driver Dummy (Through Window)

Figure A-37: Post-Test Driver Dummy (Through Window)

Figure A-38: Pre-Test Driver Dummy Clearance From Door

Figure A-39: Post-Test Driver Dummy Clearance From Door

Figure A-40: Pre-Test Driver Dummy Right Side View

Figure A-41: Post-Test Driver Dummy Right Side View

Figure A-42: Pre-Test Front Door Panel (Interior)

Figure A-43: Post-Test Front Door Panel (Interior)

Figure A-44: Pre-Test Passenger Dummy Left Side (Door Open)

This Space Left Blank Intentionally

Figure A-45: Pre-Test Passenger Dummy Left Side (Through Window)

Figure A-46: Post-Test Passenger Dummy Left Side (Through Window)

Figure A-47: Pre-Test Passenger Dummy Clearance From Door

Figure A-48: Post-Test Passenger Dummy Clearance From Door

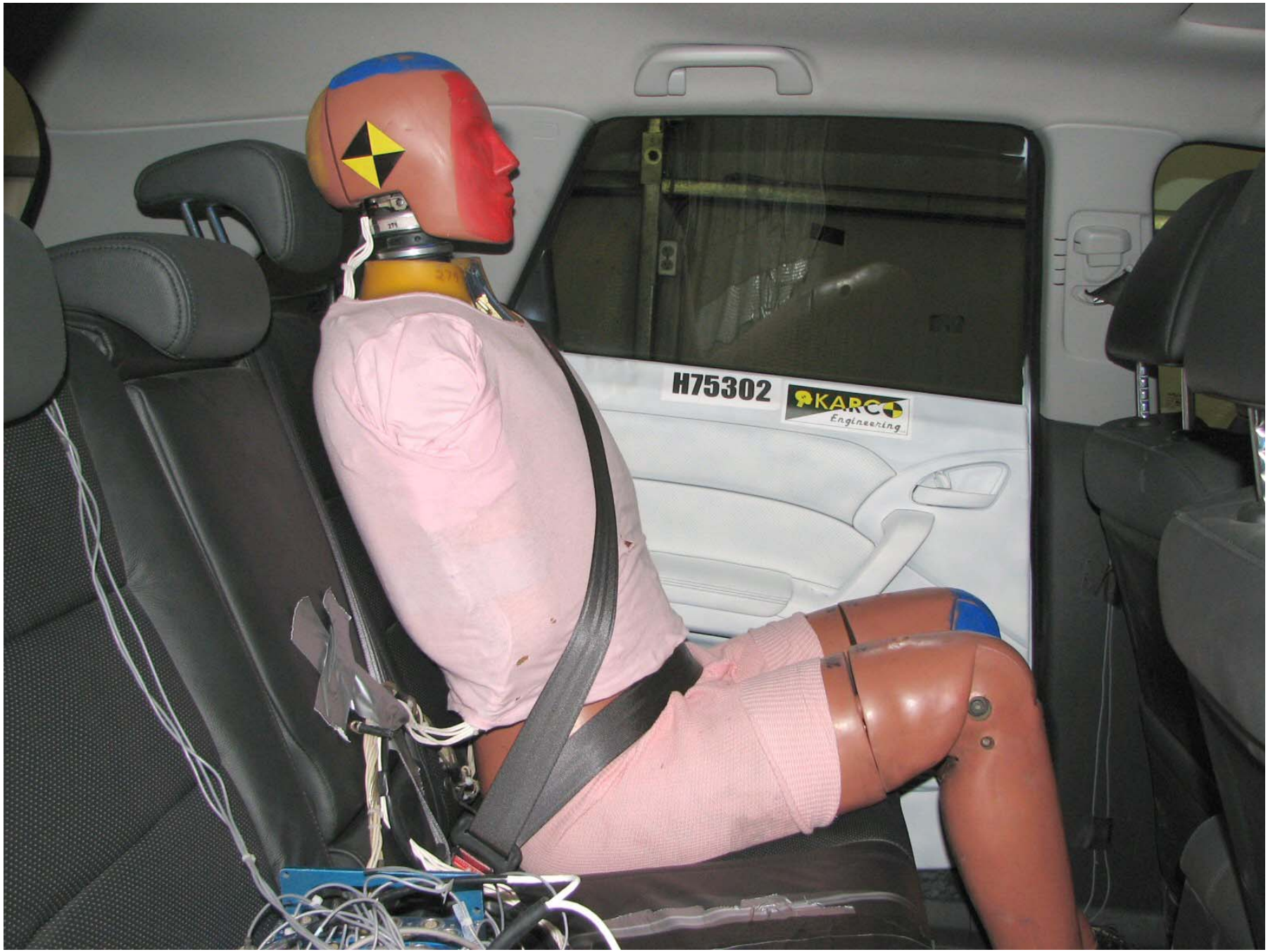


Figure A-49: Pre-Test Passenger Dummy Right Side View

Figure A-50: Post-Test Passenger Dummy Right Side View

Figure A-51: Pre-Test Rear Door Panel (Interior)

Figure A-52: Post-Test Rear Door Panel (Interior)

Figure A-53: Pre-Test Front View of Deformable Barrier

Figure A-54: Post-Test Front View of Deformable Barrier

Figure A-55: Pre-Test Top View of Deformable Barrier

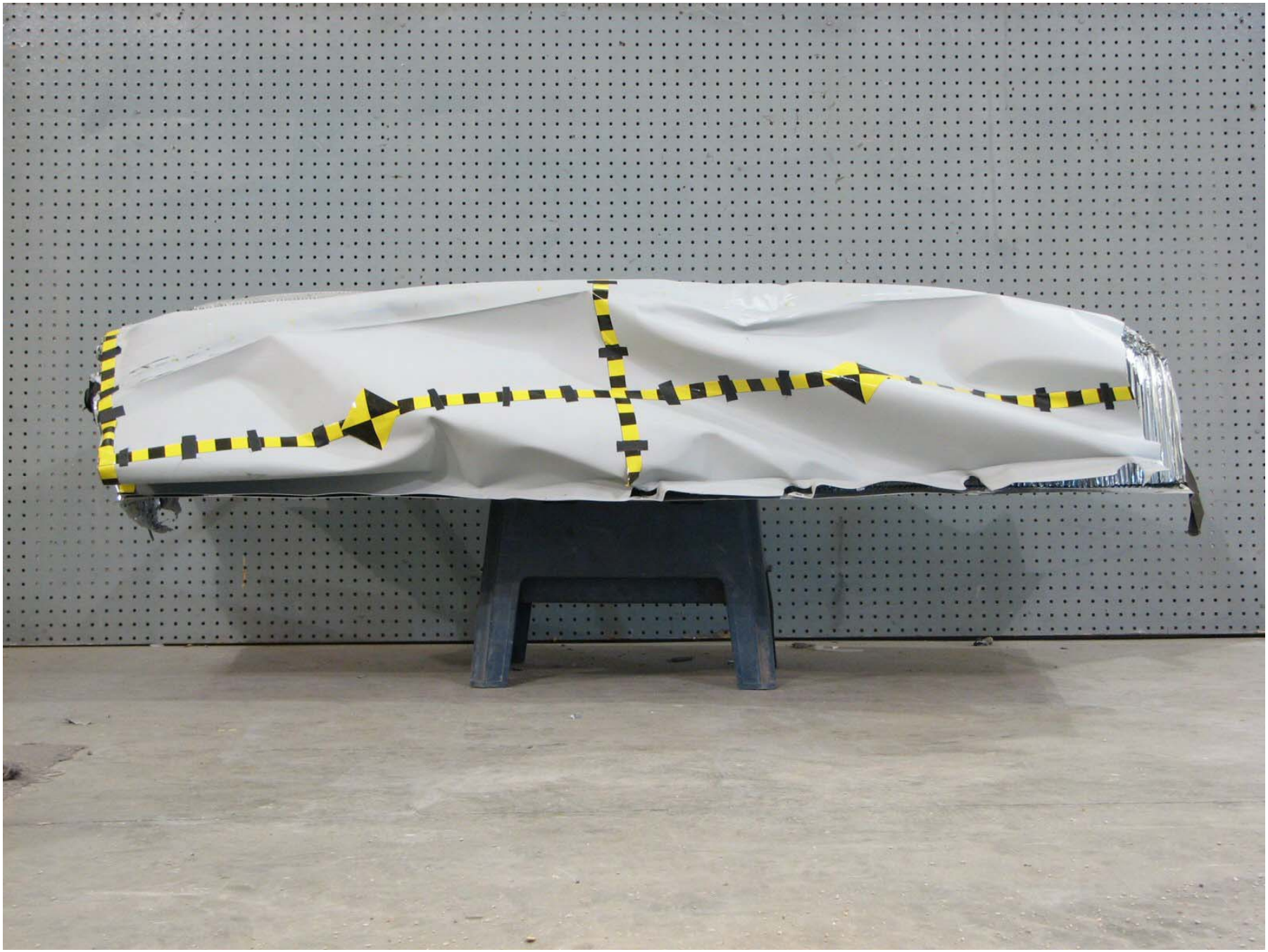


Figure A-56: Post-Test Top View of Deformable Barrier

Figure A-57: Pre-Test Right Side View of Deformable Barrier

Figure A-58: Post-Test Right Side View of Deformable Barrier

Figure A-59: Pre-Test Left Side View of Deformable Barrier

Figure A-60: Post-Test Left Side View of Deformable Barrier

Figure A-61: Vehicle on Rollover Device (0°)

Figure A-62: Vehicle on Rollover Device (90°)

Figure A-63: Vehicle on Rollover Device (180°)

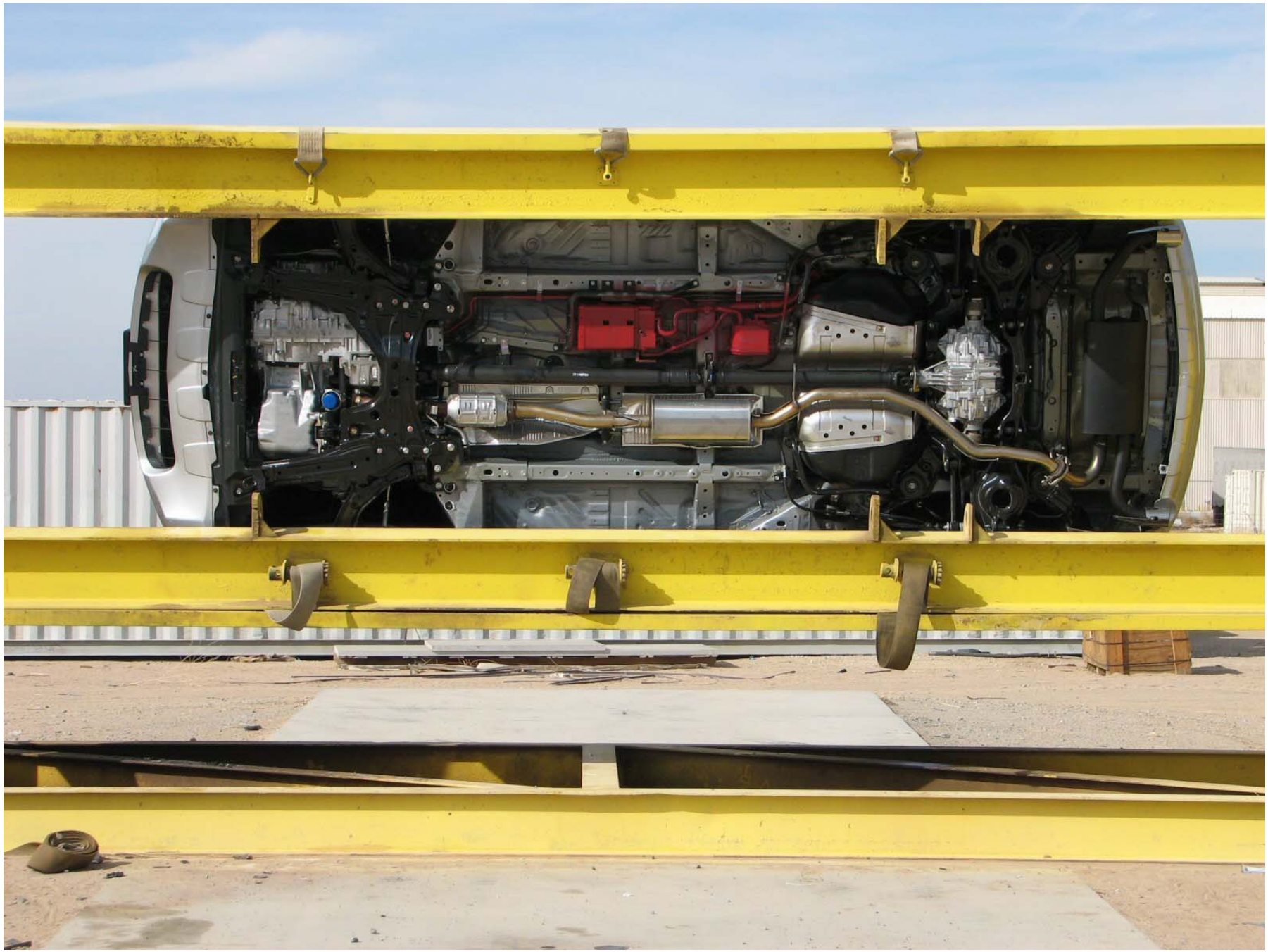


Figure A-64: Vehicle on Rollover Device (270°)

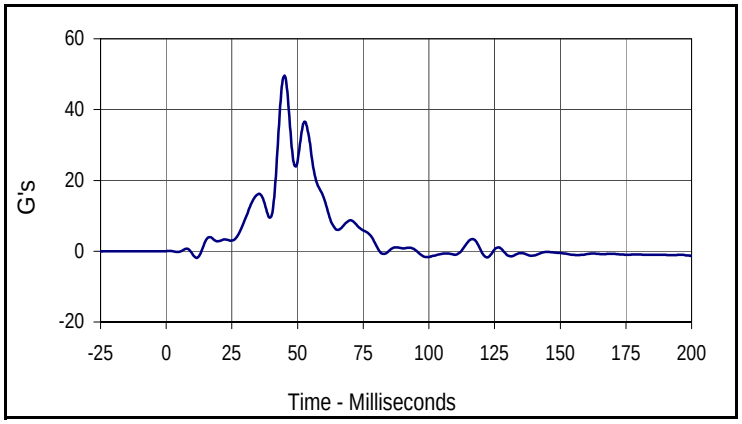
Figure A-65: Vehicle Impact

APPENDIX B

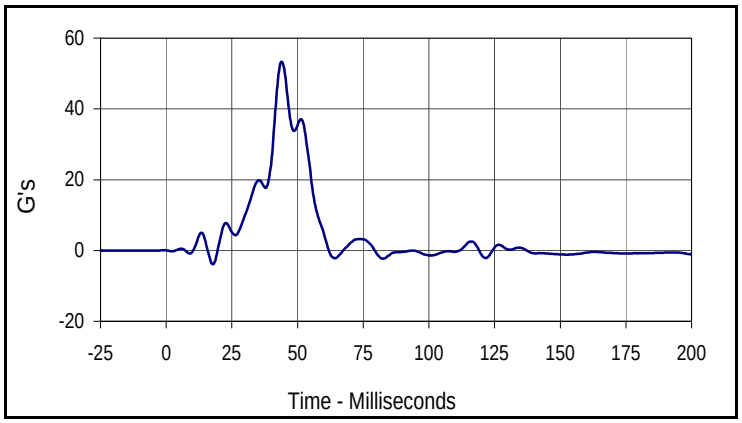
SID/HIII, VEHICLE AND MDB RESPONSE DATA

LIST OF DATA PLOTS

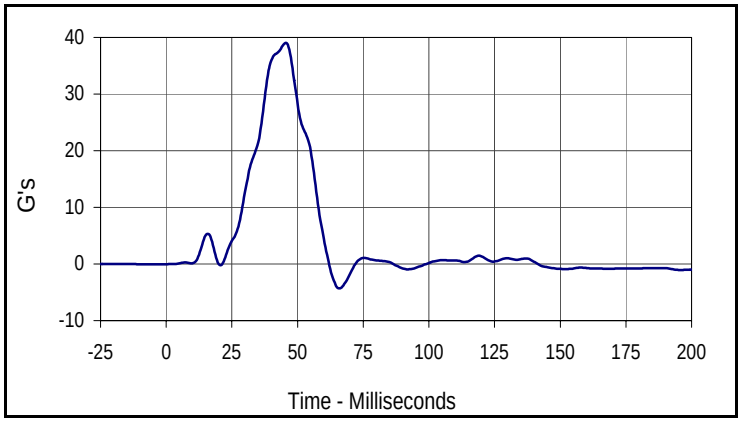
Test Vehicle:	2007 Acura RDX 5-Door MPV	Test Date:	9/29/06
Test Program:	55/28 km/h Side Impact NCAP	NHTSA No.:	H75302



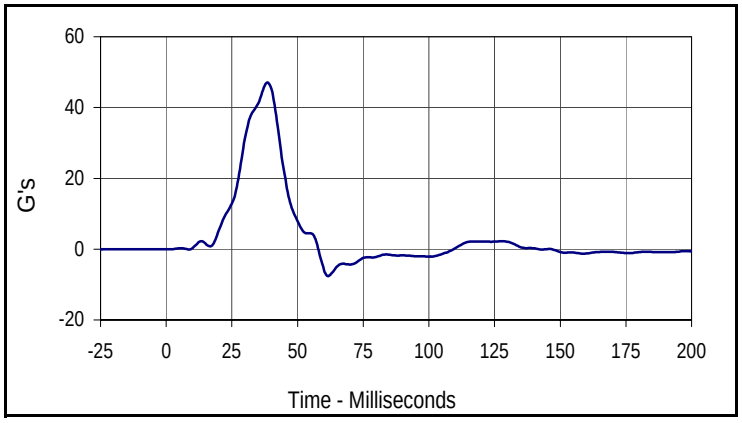
Curve Description			
Driver Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIR	FIR100	G's
Max	Time	Min	Time
49.6	45.0	-1.8	11.9



Curve Description			
Driver Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIR	FIR100	G's
Max	Time	Min	Time
53.3	43.8	-3.9	17.5

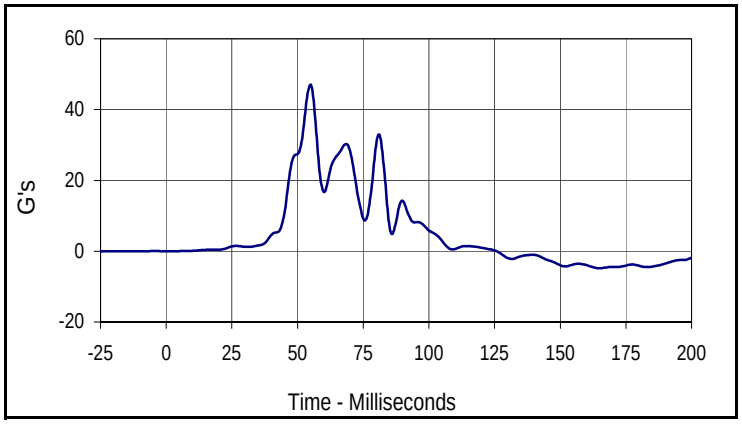


Curve Description			
Driver Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIR	FIR100	G's
Max	Time	Min	Time
39.0	45.6	-4.3	65.6

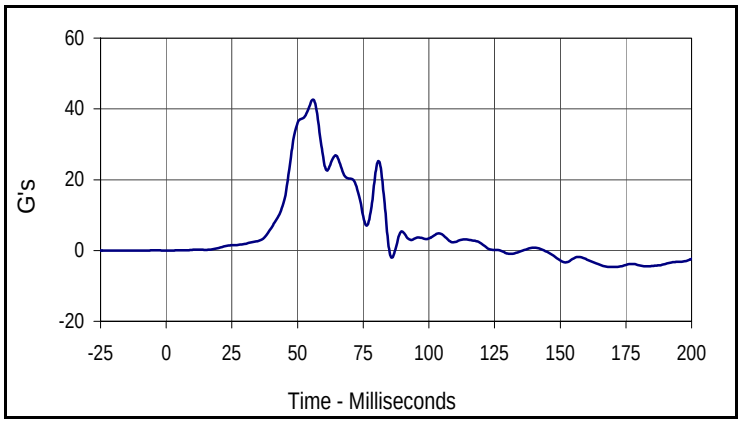


Curve Description			
Driver Pelvis Primary Y			
CURNO	Type	SAE Class	Units
004	FIR	FIR100	G's
Max	Time	Min	Time
47.1	38.8	-7.6	61.9

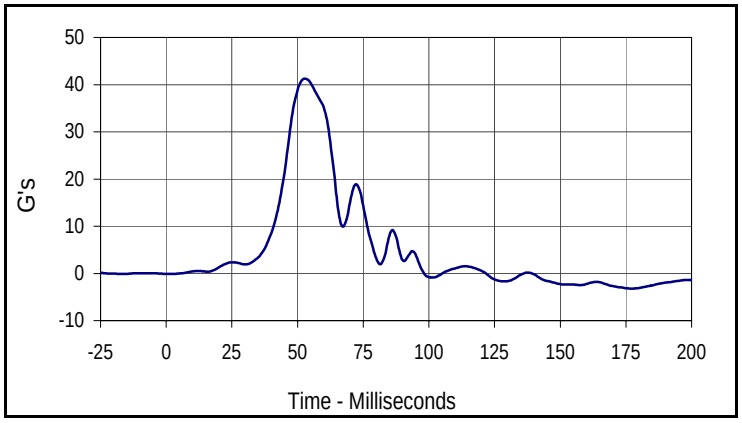
Test Vehicle:	2007 Acura RDX 5-Door MPV	Test Date:	9/29/06
Test Program:	55/28 km/h Side Impact NCAP	NHTSA No.:	H75302



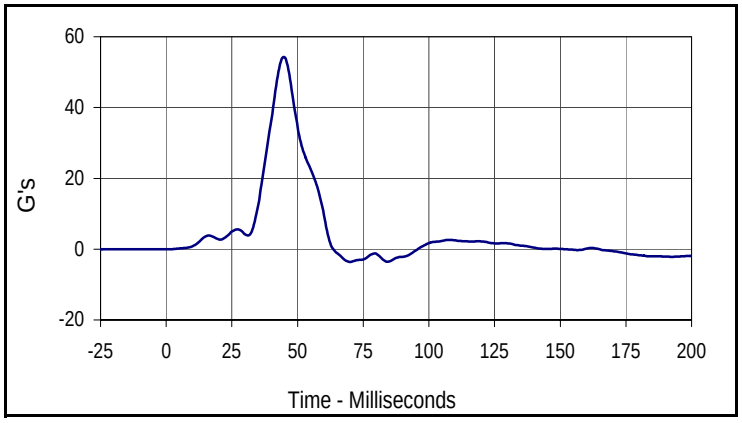
Curve Description			
Passenger Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
005	FIR	FIR100	G's
Max	Time	Min	Time
47.1	55.0	-4.8	165.0



Curve Description			
Passenger Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
006	FIR	FIR100	G's
Max	Time	Min	Time
42.6	55.6	-4.7	169.4



Curve Description			
Passenger Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
007	FIR	FIR100	G's
Max	Time	Min	Time
41.3	53.1	-3.2	176.9



Curve Description			
Passenger Pelvis Primary Y			
CURNO	Type	SAE Class	Units
008	FIR	FIR100	G's
Max	Time	Min	Time
54.2	45.0	-3.6	70.0

The following additional data plots for this test can be obtained from the research and development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov

LIST OF DATA PLOTS…(CONTINUED)

Driver Head X Primary
Driver Head Y Primary
Driver Head Z Primary
Driver Head Resultant Primary
Driver Head Primary X Velocity
Driver Head Primary Y Velocity
Driver Head Primary Z Velocity
Driver Head X Redundant
Driver Head Y Redundant
Driver Head Z Redundant
Driver Head Resultant Redundant
Driver Head Redundant X Velocity
Driver Head Redundant Y Velocity
Driver Head Redundant Z Velocity
Driver Upper Neck Force X
Driver Upper Neck Force Y
Driver Upper Neck Force Z
Driver Upper Neck Force Resultant
Driver Upper Neck Moment X
Driver Upper Neck Moment Y
Driver Upper Neck Moment Z
Driver Upper Neck Moment Resultant
Driver Upper Rib Primary Y Velocity
Driver Lower Rib Primary Y Velocity
Driver Lower Spine Primary Y Velocity
Driver Pelvis Primary Y Velocity
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y

APPENDIX C

SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

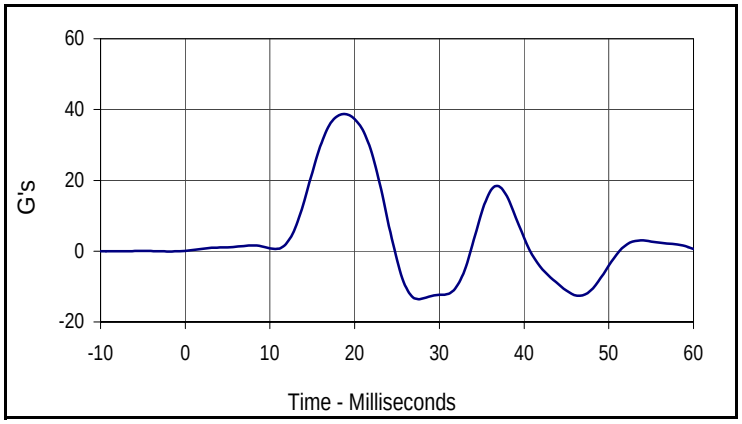
APPENDIX C
PRE-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program:	SID / HIII External Measurements	Test Date:	9/28/06
ATD Serial No.:	275	Test I.D.:	N/A

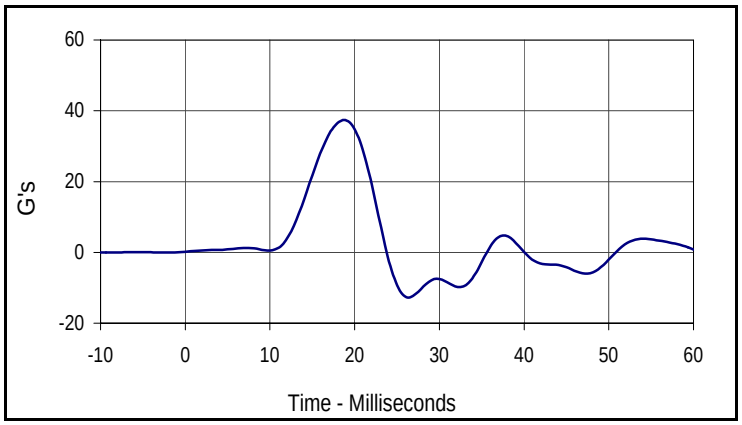
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	33	Pass
SH- Seated Height	mm	889 to 909	900	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	503	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	512	Pass
KV- Knee Pivot From Floor	mm	490 to 505	494	Pass
HW- Hip Width	mm	356 to 391	360	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	9/28/06
ATD Serial No.:	275	Test I.D.:	TH09D

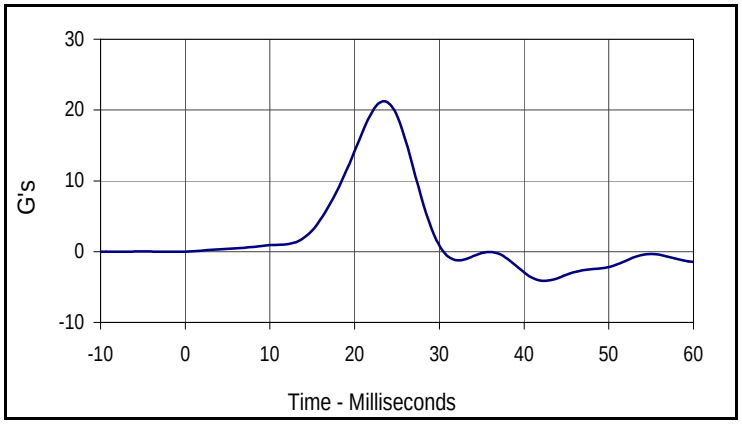
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	38.7	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	37.4	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	21.2	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
38.7	18.8	-13.6	27.5



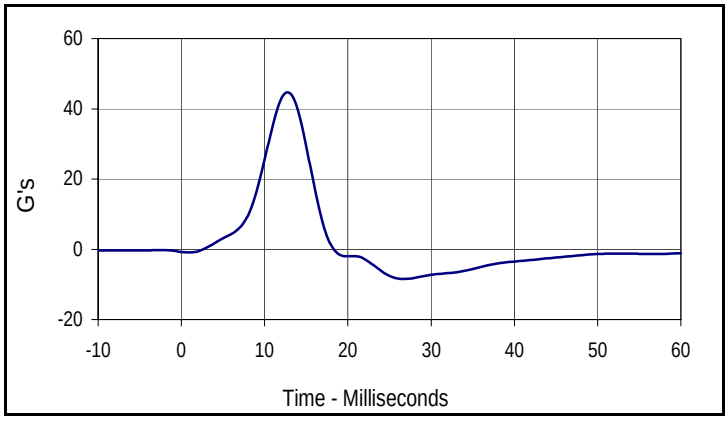
Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
37.4	18.8	-12.7	26.3



Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
21.2	23.8	-4.1	42.5

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	9/28/06
ATD Serial No.:	275	Test I.D.:	PL09E

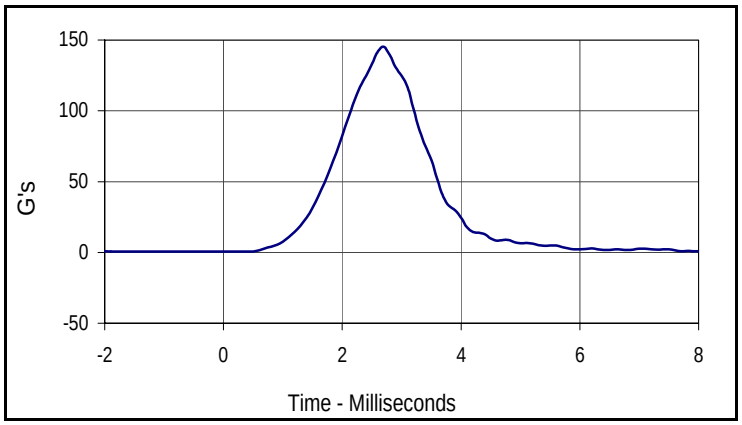
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.31	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	44.5	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.88	Pass
		Overall Test Results		Pass



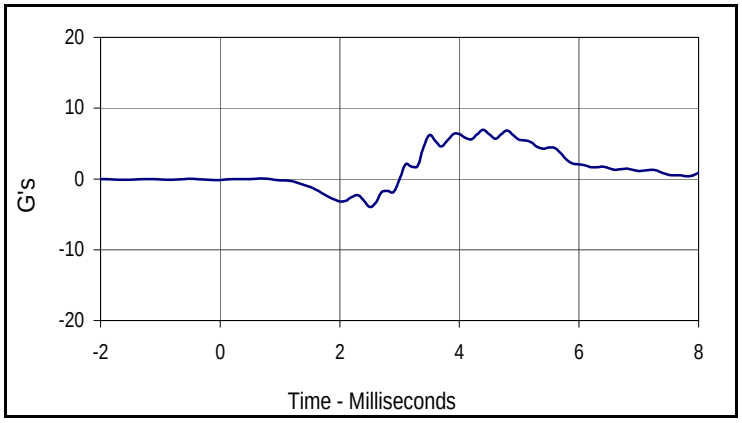
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.5	12.5	-8.5	26.9

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	9/28/06
ATD Serial No.:	275	Test I.D.:	HD09A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	145.2	Pass
Peak Longitudinal Acceleration	G's	≤15.0	6.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	4.6	Pass
		Overall Test Results		Pass



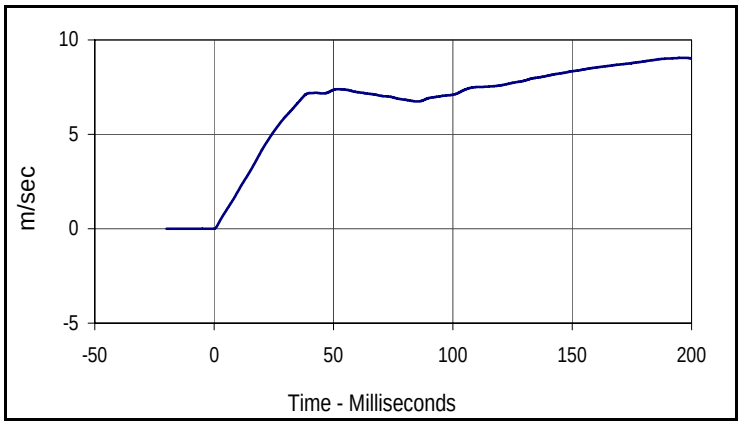
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
145.2	2.7	0.5	0.4



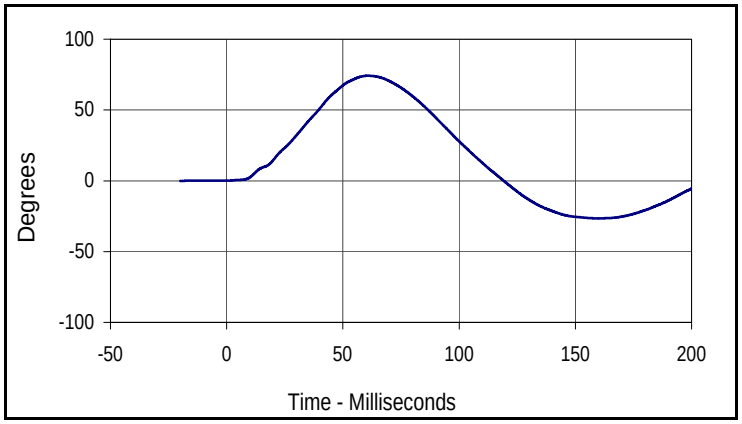
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.9	4.4	-3.9	2.5

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	9/28/06
ATD Serial No.:	275	Test I.D.:	NB09A

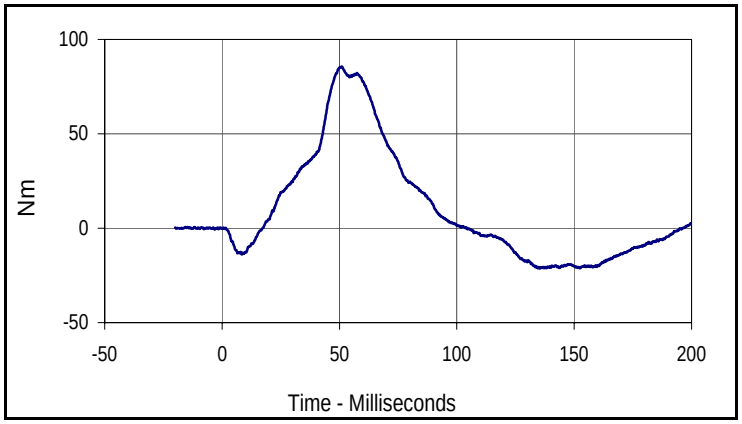
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.13	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	1.99	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.17	Pass
	30 Msec.	m/sec	5.73 to 7.01	5.96	Pass
	40 to 70	m/sec	6.27 to 7.64	7.39	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	74.2	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.7	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	58.4	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	85.6	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	52.6	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.1	196.2	0.0	-0.4



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
74.2	60.8	-26.5	159.3



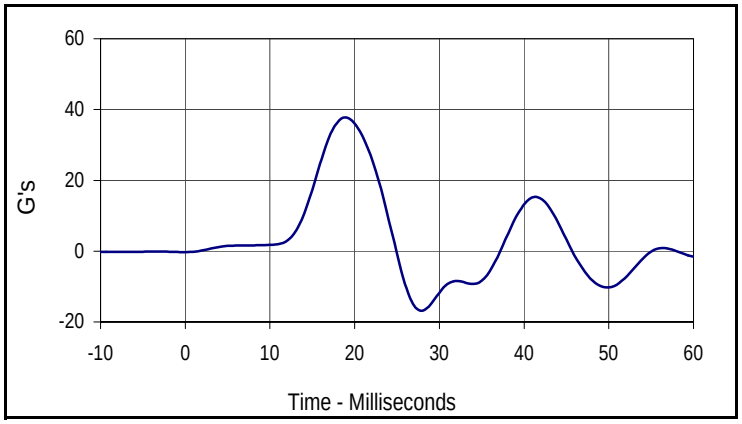
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
85.6	51.1	-21.3	135.4

Test Program:	SID / HIII External Measurements	Test Date:	9/28/06
ATD Serial No.:	274	Test I.D.:	N/A

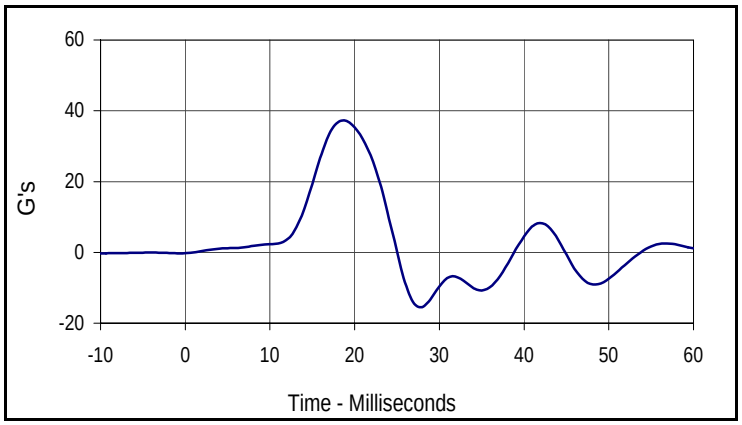
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
SH- Seated Height	mm	889 to 909	903	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	504	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	496	Pass
HW- Hip Width	mm	356 to 391	360	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	9/28/06
ATD Serial No.:	274	Test I.D.:	TH09E

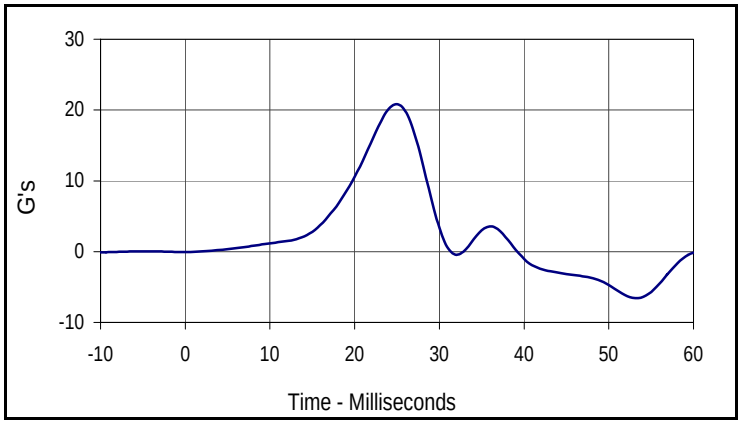
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.31	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	37.7	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	37.3	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	20.8	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
37.7	18.8	-16.7	28.1



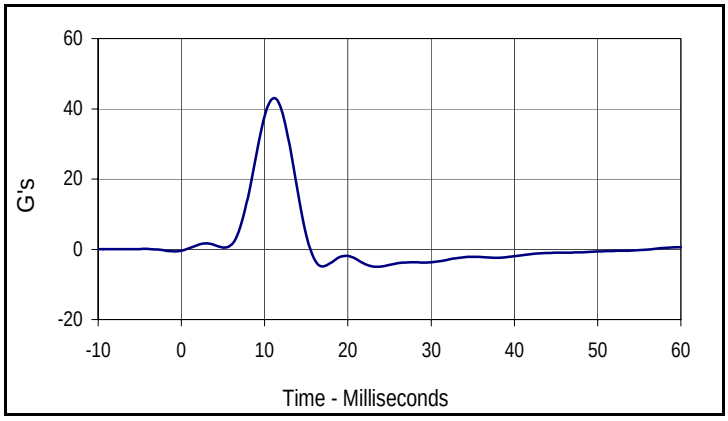
Curve Description			
Lower Rib Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
37.3	18.8	-15.4	27.5



Curve Description			
Lower Spine Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
20.8	25.0	-6.6	53.1

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	9/28/06
ATD Serial No.:	274	Test I.D.:	PL09J

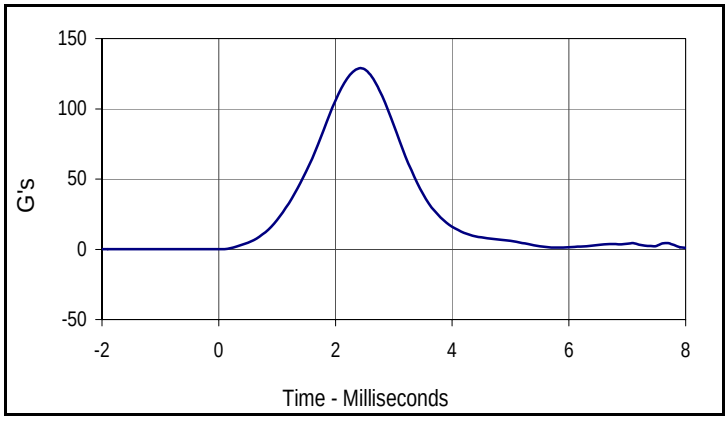
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.29	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	43.1	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	5.00	Pass
		Overall Test Results		Pass



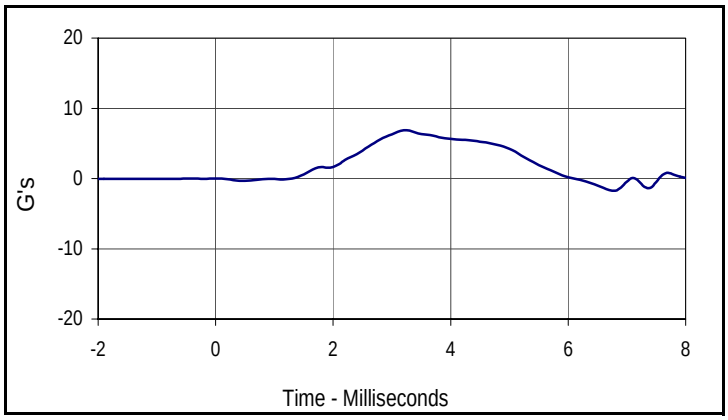
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
43.1	11.3	-5.0	23.8

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	9/28/06
ATD Serial No.:	274	Test I.D.:	HD09D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	128.7	Pass
Peak Longitudinal Acceleration	G's	≤15.0	6.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	4.6	Pass
		Overall Test Results		Pass



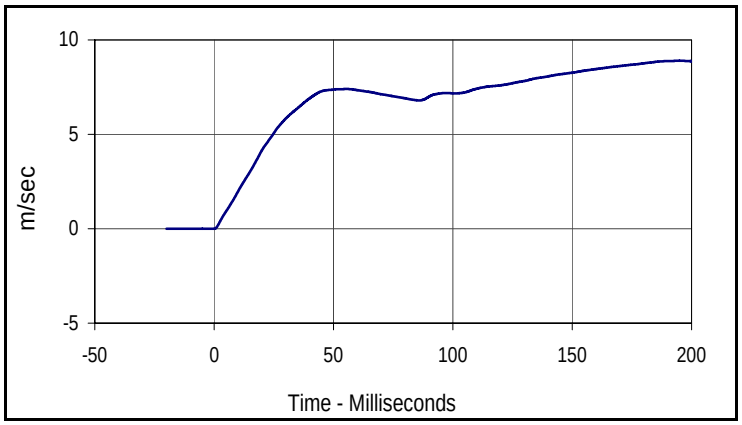
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
128.7	2.4	0.0	-0.2



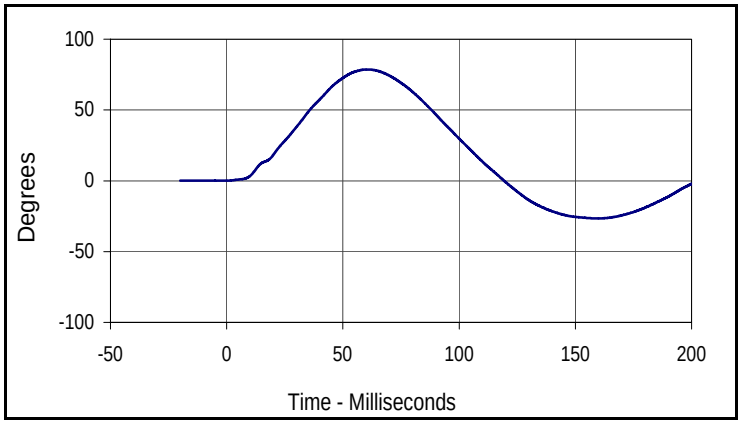
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.9	3.2	-0.3	0.4

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	9/28/06
ATD Serial No.:	274	Test I.D.:	NB09G

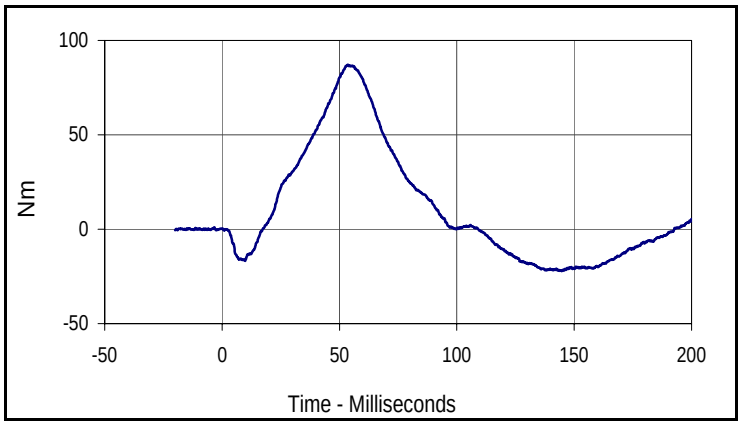
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	1.98	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.15	Pass
	30 Msec.	m/sec	5.73 to 7.01	5.84	Pass
	40 to 70	m/sec	6.27 to 7.64	7.40	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	78.6	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	6.9	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	58.9	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	87.1	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	55.5	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
8.9	195.0	0.0	-0.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
78.6	60.5	-26.5	159.9



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
87.1	53.6	-22.1	144.6

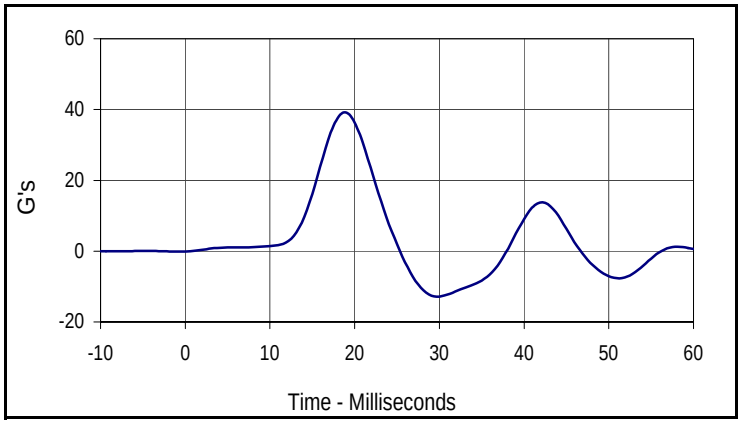
APPENDIX C
POST-TEST SID / HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

Test Program:	SID / HIII External Measurements	Test Date:	9/29/06
ATD Serial No.:	275	Test I.D.:	N/A

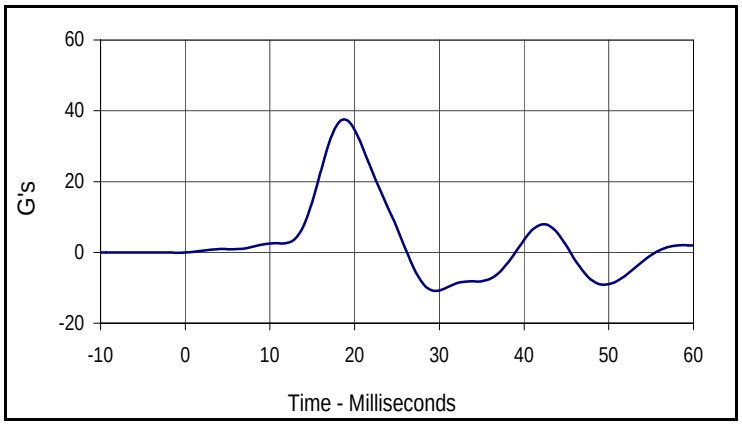
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
SH- Seated Height	mm	889 to 909	901	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	502	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	513	Pass
KV- Knee Pivot From Floor	mm	490 to 505	494	Pass
HW- Hip Width	mm	356 to 391	362	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	9/29/06
ATD Serial No.:	275	Test I.D.:	TH91C

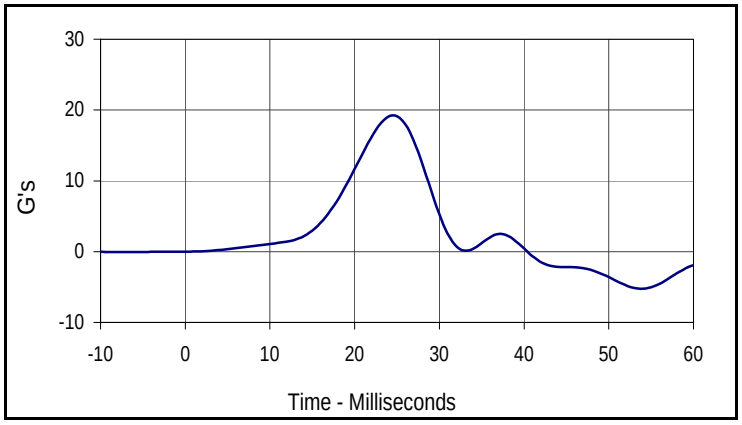
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	39.2	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	37.6	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	19.2	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
39.2	18.8	-12.8	30.0



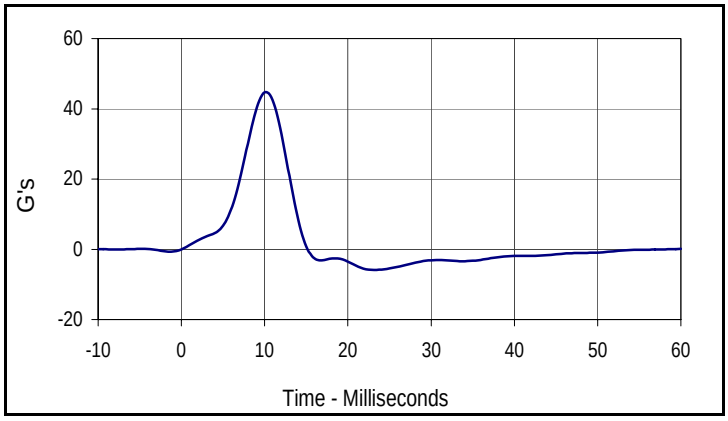
Curve Description			
Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
37.6	18.8	-10.9	29.4



Curve Description			
Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
19.2	24.4	-5.3	53.8

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	9/29/06
ATD Serial No.:	275	Test I.D.:	PL91A

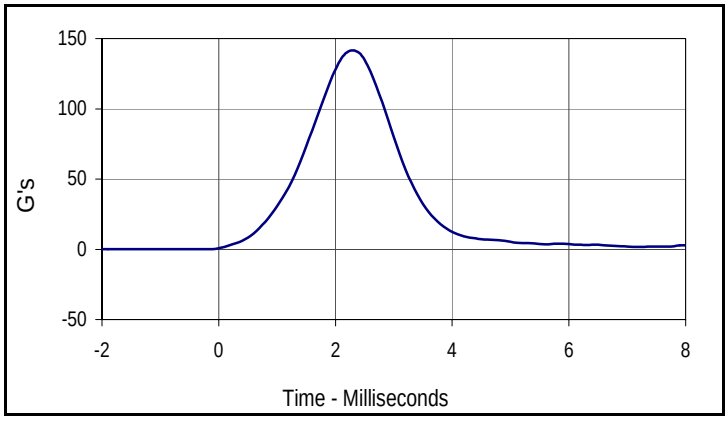
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.33	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	44.7	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	5.63	Pass
		Overall Test Results		Pass



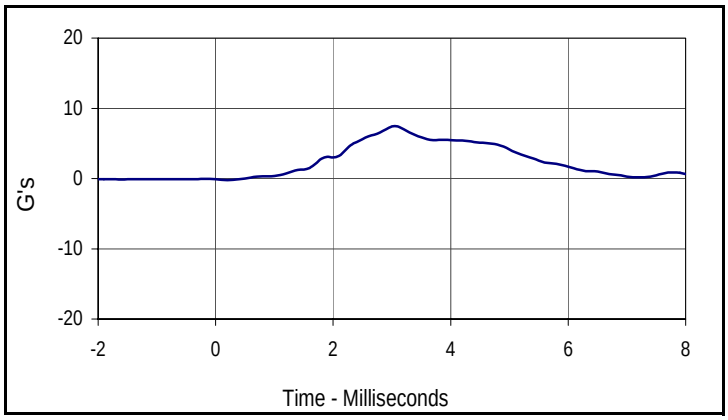
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.7	10.0	-5.9	23.1

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	9/29/06
ATD Serial No.:	275	Test I.D.:	HD91C

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	141.6	Pass
Peak Longitudinal Acceleration	G's	≤15.0	7.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.7	Pass
		Overall Test Results		Pass



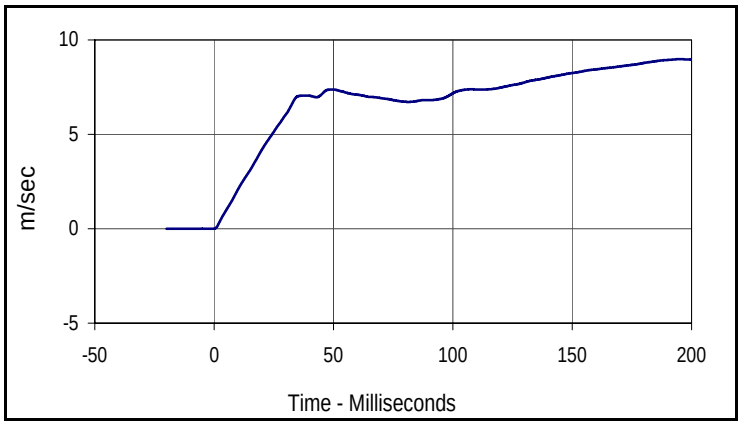
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
141.6	2.3	0.1	-0.2



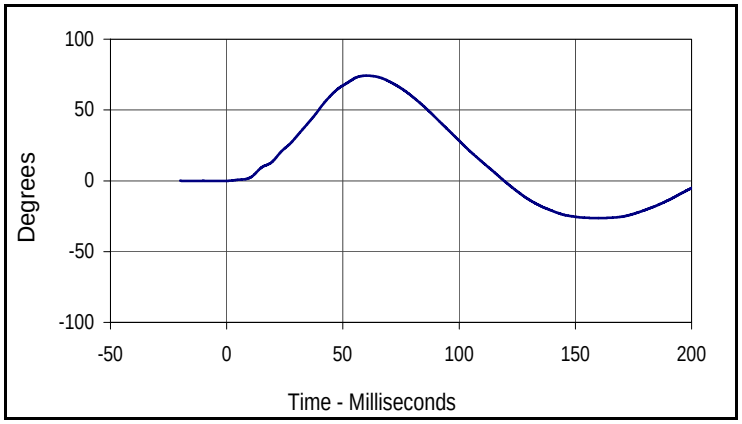
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.4	3.0	-0.2	0.2

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	9/29/06
ATD Serial No.:	275	Test I.D.:	NB91A

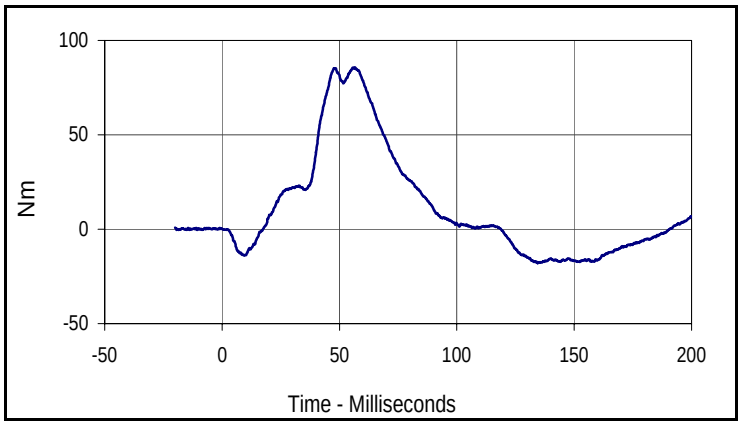
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	31	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.12	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.09	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.19	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.04	Pass
	40 to 70	m/sec	6.27 to 7.64	7.38	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	74.2	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	3.7	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	59.2	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	85.8	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	62.4	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.0	194.7	0.0	-0.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
74.2	60.2	-26.3	159.3



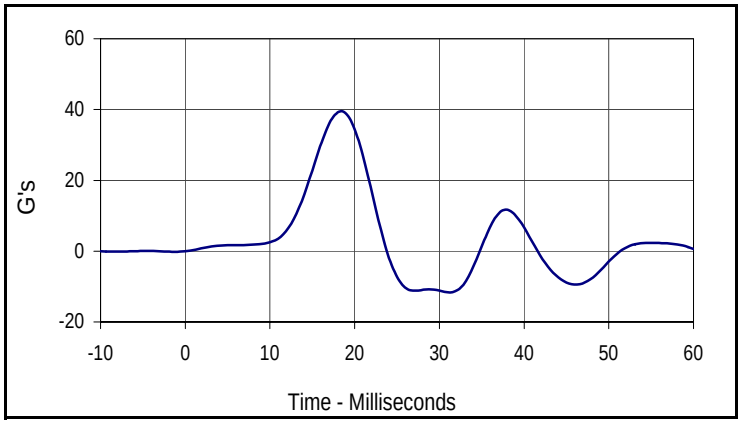
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
85.8	56.5	-18.0	134.5

Test Program:	SID / HIII External Measurements	Test Date:	9/29/06
ATD Serial No.:	274	Test I.D.:	N/A

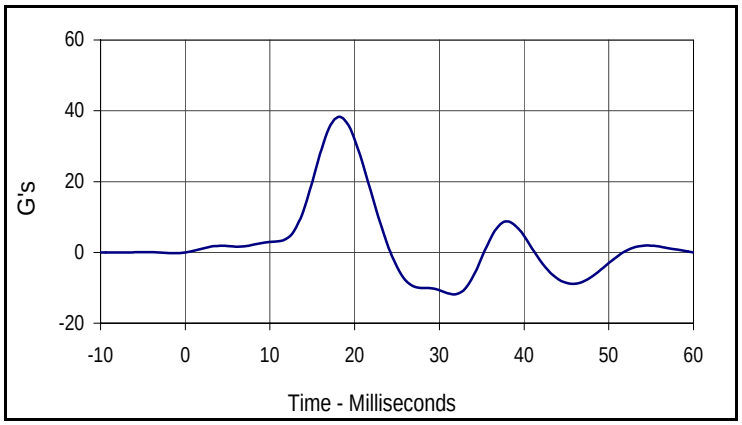
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
SH- Seated Height	mm	889 to 909	902	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	503	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	514	Pass
KV- Knee Pivot From Floor	mm	490 to 505	496	Pass
HW- Hip Width	mm	356 to 391	361	Pass
		Overall Test Results		Pass

Test Program:	SID / HIII Thorax Lateral Impact	Test Date:	9/29/06
ATD Serial No.:	274	Test I.D.:	TH91D

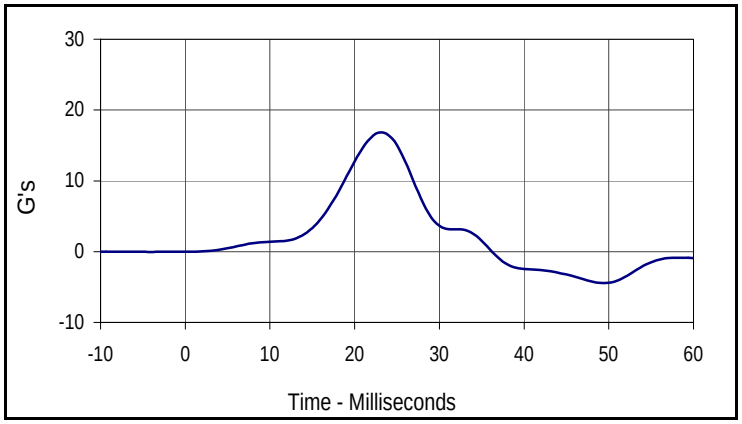
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	22.2	Pass
Laboratory Relative Humidity	%	10 to 70	31	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	39.4	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	38.3	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	16.9	Pass
		Overall Test Results		Pass



Curve Description			
Upper Rib Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
39.4	18.1	-11.7	31.3



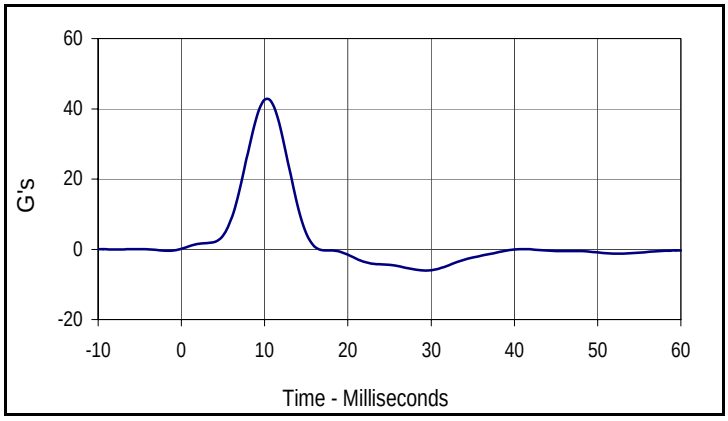
Curve Description			
Lower Rib Primary Y			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
38.3	18.1	-11.8	31.9



Curve Description			
Lower Spine Primary Y			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
16.9	23.1	-4.5	49.4

Test Program:	SID / HIII Pelvis Lateral Impact	Test Date:	9/29/06
ATD Serial No.:	274	Test I.D.:	PL91D

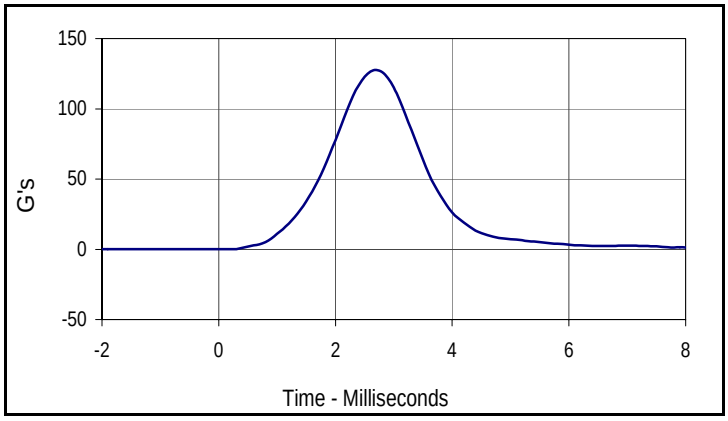
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.29	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	42.6	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	6.25	Pass
		Overall Test Results		Pass



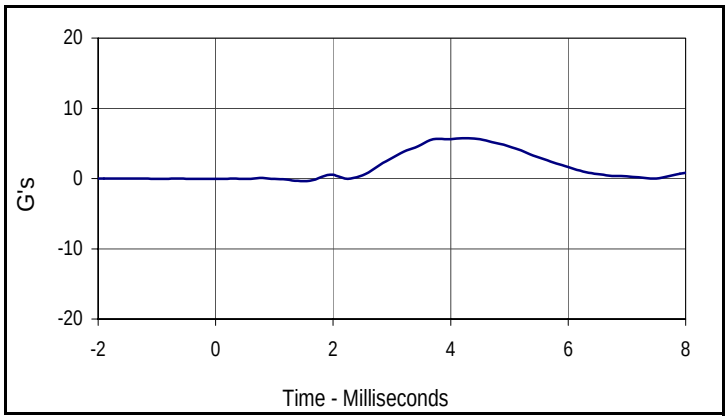
Curve Description			
Pelvis Primary Y			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
42.6	10.0	-6.1	29.4

Test Program:	SID / HIII Head Drop Lateral Impact Test	Test Date:	9/29/06
ATD Serial No.:	274	Test I.D.:	HD91D

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	22.2	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	120.0 to 150.0	127.8	Pass
Peak Longitudinal Acceleration	G's	≤15.0	5.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	5.7	Pass
		Overall Test Results		Pass



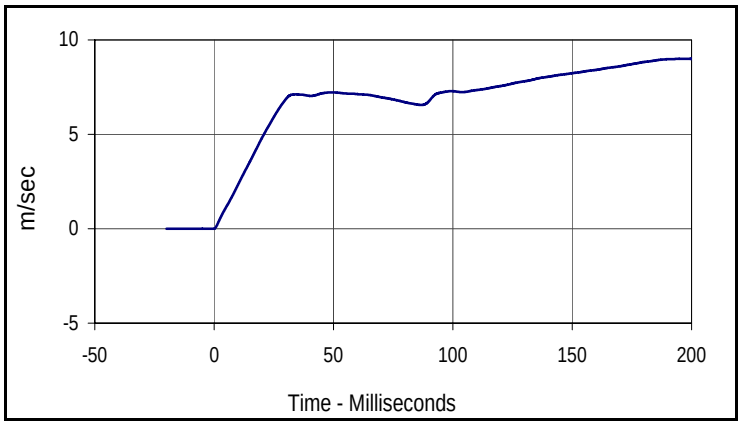
Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
127.8	2.7	0.0	-1.2



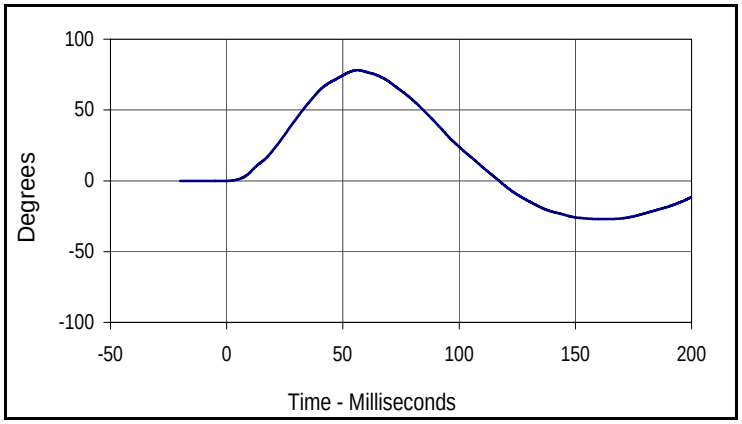
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.8	4.2	-0.4	1.5

Test Program:	SID / HIII Neck Pendulum Lateral Test	Test Date:	9/29/06
ATD Serial No.:	274	Test I.D.:	NB91A

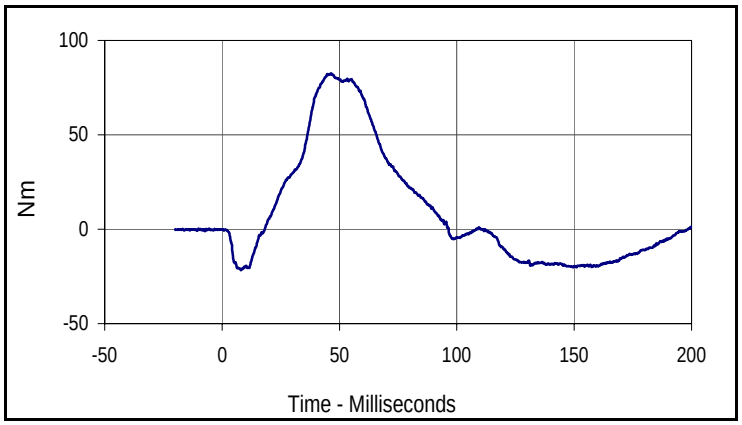
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	31	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	7.08	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.34	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.80	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.86	Pass
	40 to 70	m/sec	6.27 to 7.64	7.22	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	78.1	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.8	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	61.0	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	82.5	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	50.1	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	180	m/sec
Max	Time	Min	Time
9.0	196.0	0.0	-0.5



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
78.1	56.2	-27.0	163.5



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
82.5	46.4	-21.7	8.1