

NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST

TOYOTA MOTOR CORPORATION
2010 TOYOTA 4RUNNER SR5 4X2
5-DOOR MPV

NHTSA NUMBER: MA5124

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FINAL REPORT

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Technical Report Documentation Page

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16. Abstract A 55/28 km/h 90 deg. Moving Deformable Barrier Side Impact NCAP Test was conducted on the subject 2010 Toyota 4Runner SR5 4X2 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, CA, on January 14, 2010. The impact velocity of the Moving Deformable Barrier was 62.28 km/h and the outside ambient temperature at the struck (driver's) side of the vehicle was 13.3 deg. C. The target vehicle's maximum post-test static crush was 172 mm located at level 1. The test vehicle's occupant performance data is as follows:																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Measurement Description</th> <th style="width: 33%;">Driver SID/HIII</th> <th style="width: 33%;">Pass. SID/HIII</th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) G's</td> <td style="text-align: center;">17.6</td> <td style="text-align: center;">20.9</td> </tr> <tr> <td>Left Lower Rib (LLR) G's</td> <td style="text-align: center;">21.0</td> <td style="text-align: center;">23.5</td> </tr> <tr> <td>Lower Spine (T₁₂) G's</td> <td style="text-align: center;">26.7</td> <td style="text-align: center;">27.2</td> </tr> <tr> <td>Thoracic Trauma Index (TTI) G's</td> <td style="text-align: center;">24</td> <td style="text-align: center;">25</td> </tr> <tr> <td>Pelvis (PEV) G's</td> <td style="text-align: center;">56.6</td> <td style="text-align: center;">18.1</td> </tr> </tbody> </table>		Measurement Description	Driver SID/HIII	Pass. SID/HIII	Left Upper Rib (LUR) G's	17.6	20.9	Left Lower Rib (LLR) G's	21.0	23.5	Lower Spine (T ₁₂) G's	26.7	27.2	Thoracic Trauma Index (TTI) G's	24	25	Pelvis (PEV) G's	56.6	18.1		
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17. Key Words New Car Assessment Program (NCAP) Side Impact Moving Deformable Barrier (MDB) Side Impact Dummy (SID/HIII)																					
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SECTION 1

PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This Side Impact NCAP test is conducted as part of the FY' 2009 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract No. DTNH22-09-R-00201. The purpose of this test is to generate comparative side impact data on a 2010 Toyota 4Runner SR5 4X2 5-Door MPV manufactured by Toyota Motor Corporation.

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 2010 Toyota 4Runner SR5 4X2 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 62.28 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 2237.5 kg and the test weight of the MDB was 1361.0 kg. The test was conducted at KARCO Engineering, LLC in Adelanto, California, on January 14, 2010.

Two (2) real-time cameras and ten (10) 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)

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

SECTION 2...(CONTINUED)

The test vehicle was instrumented with twelve (12) 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

Both the driver and passenger doors remained closed during the impact. The test vehicle sustained a maximum static crush of 172 mm at level 1, 1050 mm rearward of the left vertical impact point. The driver SID/Hybrid III, Serial No. 274 and the passenger SID/Hybrid III, Serial No. 275 were calibrated prior to this test. The SID/Hybrid III injury criteria are summarized as follows:

Measurement	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	24	25
Peak Pelvic G's (PEV)	G's	57	18

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: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

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	1.609344
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	°F	°C	$=(t_f - 32)/1.8$
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: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MA5124
Make	Toyota
Model	4Runner
Body Style	5-Door MPV
Vin No.	JTEZU5JR8A5000317
Color	Magnetic Grey Metallic
Delivery Date	12/18/2009
Odometer (Miles)	110
Dealer	Glendora Toyota
Transmission	5-Speed Automatic
Final Drive	Rear
Type/No. Cyl.	V6
Engine Disp. (L)	4.0
Engine Placement	Longitudinal
Roof Rack	Yes
Sunroof/T-Top	Yes
Tinted Glass	Yes
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	Yes
Anti-Lock Brakes	Yes

All Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Knee Airbag	Yes
Driver Side Pelvis Airbag	No
Driver Side Torso Airbag	Yes
Driver Side Head Airbag	No
Driver Curtain/Airbag	Yes
Rear Pass. Front Airbag	No
Rear Pass. Side Pelvis Airbag	No
Rear Pass. Side Torso Airbag	No
Rear Pass. Head Airbag	No
Rear Pass. Curtain Airbag	Yes
Pre-Tensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
AM/FM CD	Yes
Tilt Steering	Yes
Automatic Door Locks	Yes
Power Windows	Yes
Power Seats	Yes
Other	See Below

Other: Tire Pressure Monitoring System, 3rd Row Curtain Airbags, Keyless Entry, Tow Hitch, XM Radio

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

Yes (Page 52)

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Corporation
Date of Manufacture	Sep-09

GVWR (kg)	2765
GAWR Front (kg)	1270
GAWR Rear (kg)	1515

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	Split Bench	
Number of Occupants	2	3	2	7
Capacity Weight (VCW) (kg)				520.0
Cargo Weight (RCLW) (kg)				43.7

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

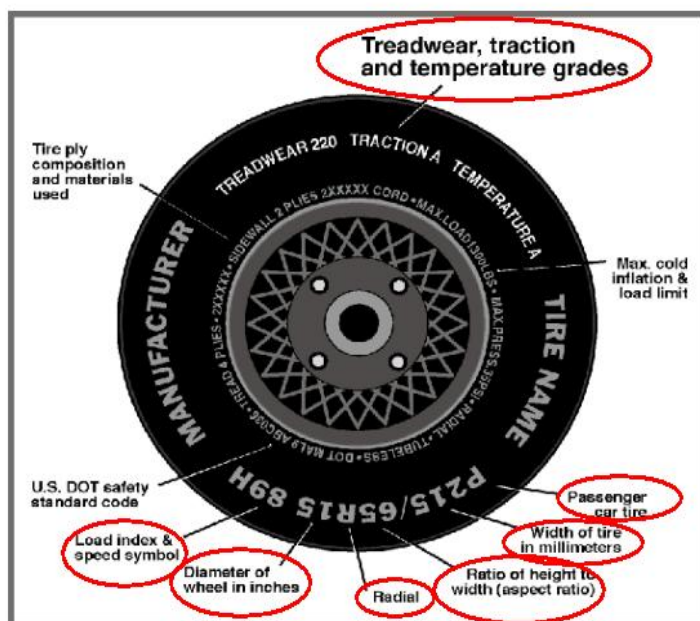
Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

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	P265/70/R17	P265/70/R17
Tire Size on Vehicle	P265/70/R17	P265/70/R17
Tire Manufacturer	Bridgestone	Bridgestone
Tire Model	Dueler H/T	Dueler H/T
Treadwear	360	360
Traction	B	B
Temperature Grades	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Steel, 2 Polyester, 1 Nylon	2 Steel, 2 Polyester, 1 Nylon
Load Index/Speed Symbol	113 S	113 S
Tire Material	Polyester, Steel, Nylon	Polyester, Steel, Nylon
DOT Safety Code Right	EL70 DDL 3409	EL70 DDL 3309
DOT Safety Code Left	EL70 DDL 3409	EL70 DDL 3409

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	536.5	499.5	1036.0	594.0	580.5	1174.5
Right	kg	488.0	514.5	1002.5	507.0	556.0	1063.0
Ratio	%	50.3	49.7	100.0	49.2	50.8	100.0
Total	kg	1024.5	1014.0	2038.5	1101.0	1136.5	2237.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	2038.5
Weight of 2 P572 ATDs	kg	163.0
Rated Cargo/Luggage Wt (RCLW)	kg	43.7
Calculated Vehicle Target Wt (TVTW)	kg	2245.2

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	877	876	932	939	1393
As Tested	mm	862	865	910	918	1422
Fully Loaded	mm	860	866	901	919	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2800
Total Vehicle Length at Left Side	mm	3363
Total Vehicle Length at Centerline	mm	4850
Total Vehicle Length at Right Side	mm	3367
Weight of Ballast in Cargo Area	kg	0
Amount of Stoddard Solvent Added	L	81.0

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2800
Target Impact Point Aft of Front Axle	mm	465
Actual Impact Point Aft of Front Axle	mm	473

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

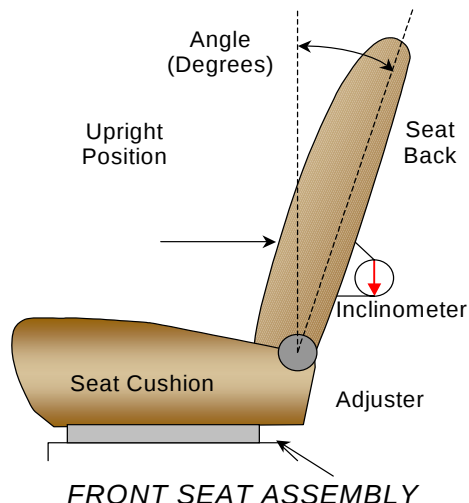
Test Date: 01/14/10

NOMINAL DESIGN RIDING POSITION

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

SEAT BACK ANGLES

	Deg.
Driver w/seated Dummy	4.2° @ Headrest Post
Passenger w/seated Dummy	13.6° @ Headrest Post

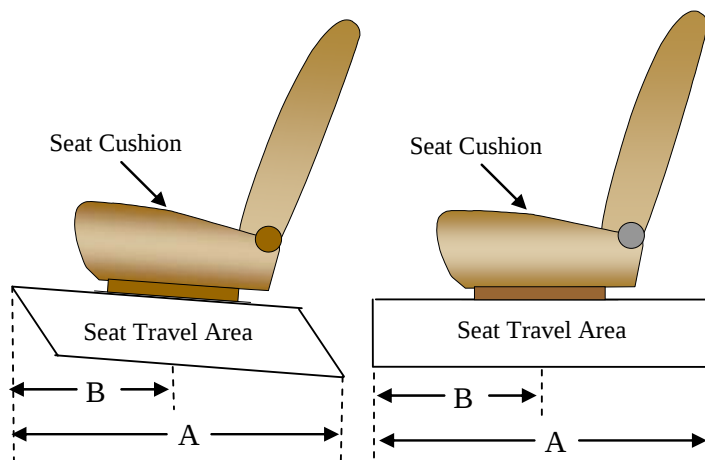


SEAT FORE/AFT POSITIONS

Total seat travel was measured from forward most position to rearmost position possible. The driver seat was set at the longitudinal mid position. The passenger seat was fixed. There were vertical adjustments on the driver seat that was equipped with the vehicle. There were no vertical adjustments on the passenger seat. The driver seat was placed at the lowermost position.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	264 mm	132 mm
Rear Seat	132 mm	66 mm



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

DATA SHEET NO. 1...(CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

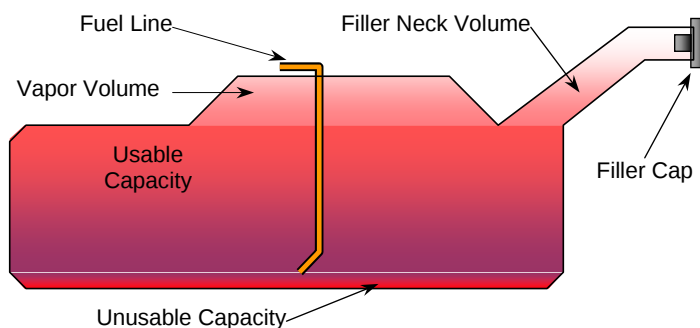
Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	87.10
Usable Capacity of "Optional" Tank	
Allowable Capacity used for FMVSS 301	80.13 to 81.87
Actual Amount of Solvent used	81.00

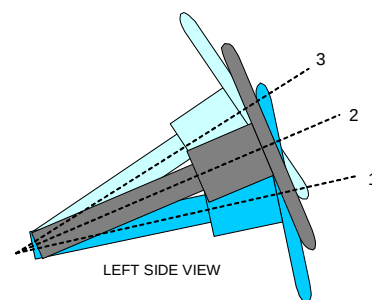
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate when the key is in the start position or when the engine is activated. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the left rear seat.



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. The vehicle's steering column was placed in the mid-telescoping position.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

Description	Tilt Angle (°)	Fore/Aft Position (mm)
Lowermost position No. 1	24.4	160
Geometric center position No. 2	26.2	180
Uppermost position No. 3	28.0	200

DATA SHEET NO. 2**TEST VEHICLE SUMMARY OF RESULTS**Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPVNHTSA No.: MA5124Test Program: 55/28 km/h Side Impact NCAPTest Date: 01/14/10**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	536.5	499.5	1036.0	594.0	580.5	1174.5
Right	kg	488.0	514.5	1002.5	507.0	556.0	1063.0
Ratio	%	50.3	49.7	100.0	49.2	50.8	100.0
Total	kg	1024.5	1014.0	2038.5	1101.0	1136.5	2237.5

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	172	397
Level 2	Occupant H-Point	mm	167	797
Level 3	Mid Door	mm	160	835
Level 4	Window Sill	mm	72	1166
Level 5	Window top	mm	7	1695
N/A	Maximum Penetration	mm	172	

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	5
High Speed, MDB On-Board	2
Real Time, Panning	1
Total	11

DATA SHEET NO. 3**MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS**Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPVNHTSA No.: MA5124Test Program: 55/28 km/h Side Impact NCAPTest Date: 01/14/10**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	62.28
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	
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	733
B	Top of Bumper	533	800	Right	816
C	Mid Level	686	800	Right	802
D	Top of Stack	813	800	Right	820

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	5
Contact Switches	2
High Speed Cameras	2

DATA SHEET NO. 4
POST-TEST OBSERVATIONS

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

TEST DUMMY INFORMATION AND CONTACT POINTS

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

POST-TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Left Side Door Opening	Remained closed and latched, jammed.	Remained closed and latched, jammed.
Right Side Door Opening	Remained closed and latched, operational.	Remained closed and latched, operational.
Seat Movement	None	None
Seatback Failure	None	None

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No separation occurred.
Sill Separation	No separation occurred.
Windshield Damage	None
Window Damage	Left rear window broken
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 2	
	Installed	Deployed	Installed	Deployed
Front Airbag	Yes	Yes	No	
Knee Airbag	Yes	Yes	No	
Side Torso Airbag	Yes	Yes	No	
Side Pelvis Airbag	No		No	
Head Airbag	No		No	
Curtain Airbag	Yes	Yes	Yes	Yes
Pre-Tensioners	Yes	Yes	No	
Load Limiters	Yes	Yes	No	

MDB LEFT EDGE IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	+8 (Right)
Vertical Offset	mm	+/-20	-3 (Down)

DATA SHEET NO. 5

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

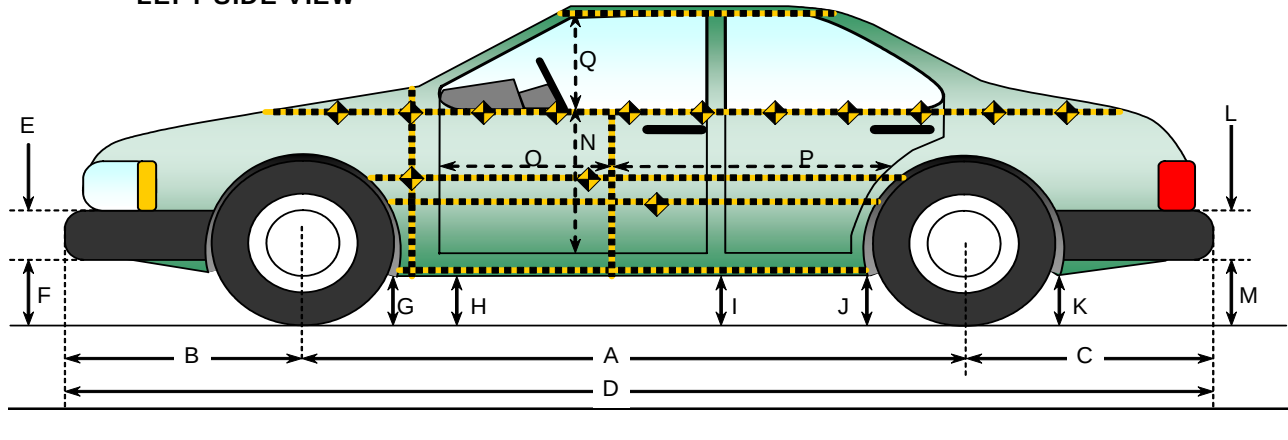
Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

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Test Date: 01/14/10

LEFT SIDE VIEW



VEHICLE PRE AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2800	2794	-6
B	Front Axle to FSOV	909	914	5
C	Rear Axle to RSOV	1141	1165	24
D	Total Length at Centerline	4850	4873	23
E	Front Bumper Thickness	146	145	-1
F	Front Bumper Bottom to Ground	412	433	21
G	Sill Height at Front Wheel Well	314	292	-22
H	Sill Height at Front Door Leading Edge	308	289	-19
I	Sill Height at "B" Pillar	340	329	-11
J1	Sill Height at Rear Wheel Well	316	299	-17
J2	Pinch Weld Height at Rear Wheel Well	406	274	-132
K	Sill Height aft of Rear Wheel Well	392	396	4
L	Rear Bumper Thickness	90	90	0
M	Rear Bumper Bottom to Ground	544	542	-2
N	Sill Height to Window Bottom Sill	708	641	-67
O	Front Door Leading Edge to Impact CL	86	111	25
P	Rear Door Trailing Edge to Impact CL	2204	2177	-27
Q	Front Window Opening	437	457	20
R	Right Side Length	3367	3335	-32
S	Left Side Length	3363	3385	22
T	Vehicle Width at "B" Post	1823	1739	-84

All dimensions shown in millimeters

DATA SHEET NO. 6

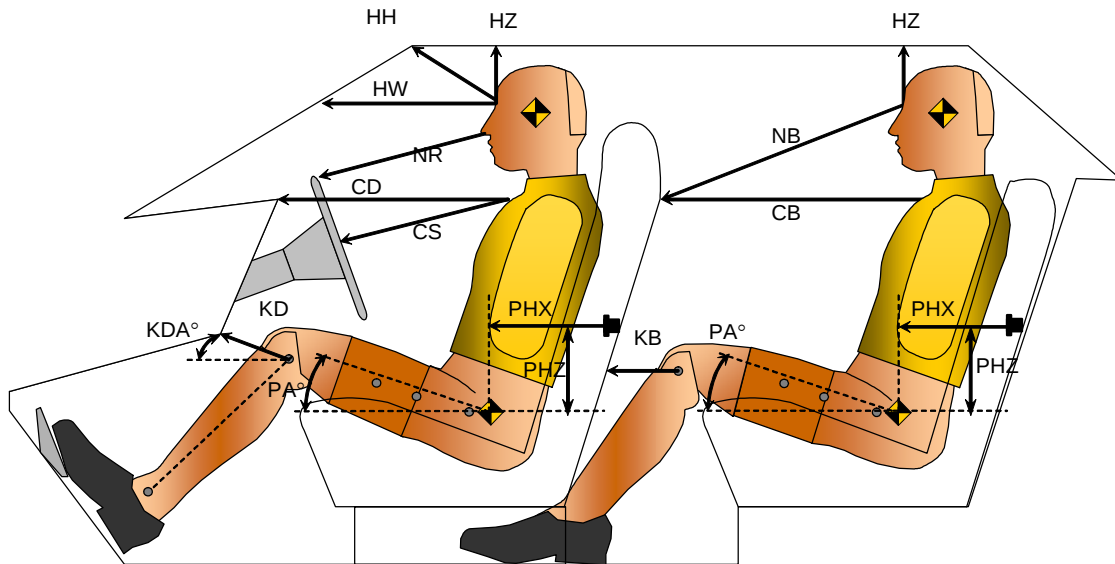
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	605	11.7		
HW		Head to Windshield	746	0.0		
HZ	HZ	Head to Roof	214	90.0	175	90.0
NR	NB	Nose to Rim/Nose to Seat Back	514	12.6	624	23.1
CD	CB	Chest to Dash or Seat Back	600	6.9	537	9.5
CS		Chest to Steering Wheel	364	5.7		
KDL	KBL	Left Knee to Dash or Seat Back	199	27.0	193	26.7
KDR	KBR	Right Knee to Dash or Seat Back	192	28.1	186	23.3
PA	PA	Pelvic Angle		24.5		24.8
PHX	PHX	H-Point to Striker (X-Axis)	230		296	
PHZ	PHZ	H-Point to Striker (Z-Axis)	182		219	

All dimensions shown in millimeters

DATA SHEET NO. 7

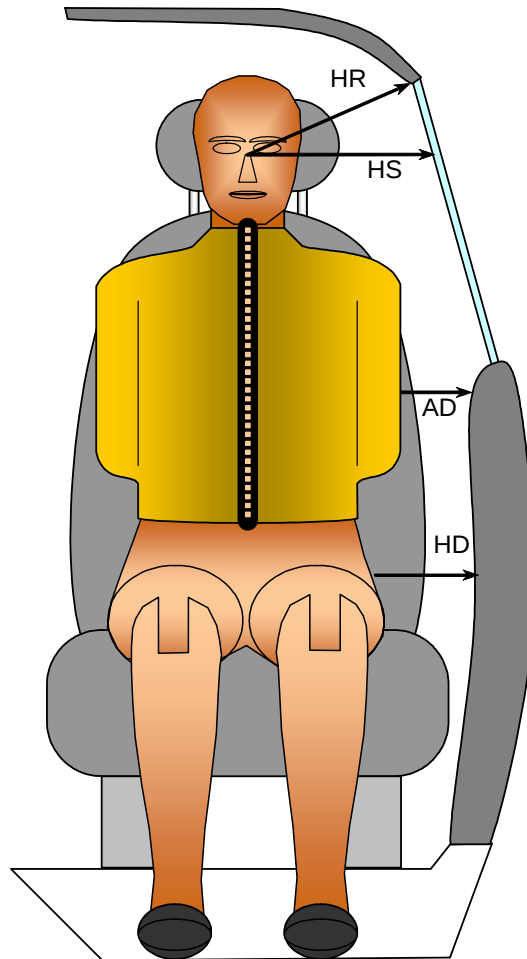
SID/HII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



FRONT VIEW OF DUMMY

LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	266	244
HS	Head to Side Window	mm	339	326
AD	Arm to Door	mm	101	113
HD	H-Point to Door	mm	147	149

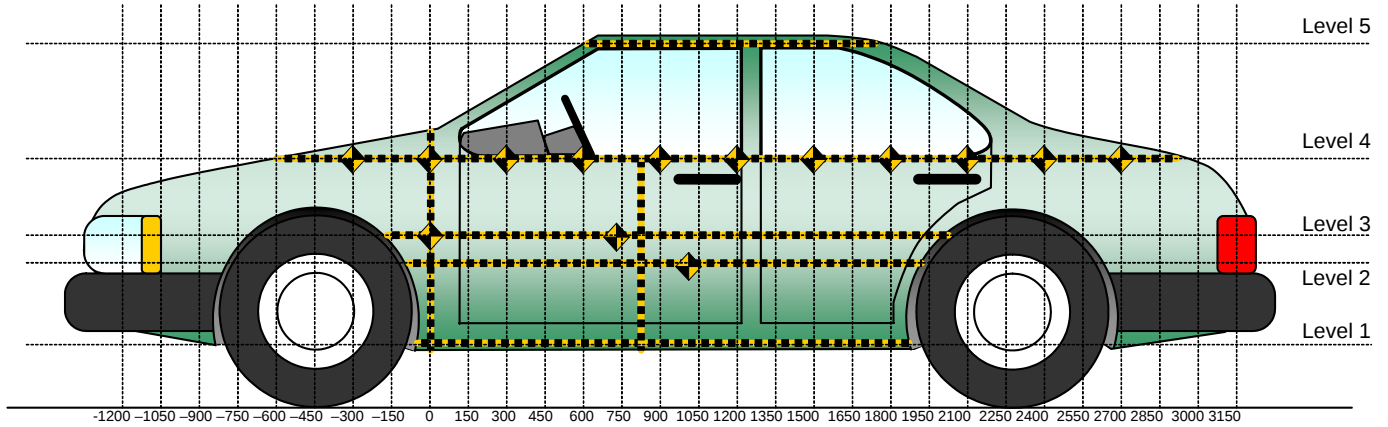
DATA SHEET NO. 8 **VEHICLE SIDE MEASUREMENTS**

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

Measurements taken 900 mm right of impact reference.

All measurements below in mm.

Level	Measurement Description	Height Above Ground
1	Sill Top	397
2	Occupant H-Point	797
3	Mid Door	835
4	Window Sill	1166
5	Window Top	1695

All dimensions shown in millimeters

DATA SHEET NO. 9

VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

	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				720					722					2	
-150		571	572	704			601	596	710			30	24	6	
0		594	594	692			629	624	699			35	30	7	
150	663	612	612	683		815	702	695	700		152	90	83	17	
300	670	614	612	673		831	770	758	693		161	156	146	20	
450	671	613	611	666		836	780	767	692		165	167	156	26	
600	671	612	610	661		838	776	761	691		167	164	151	30	
750	670	612	609	655		840	775	758	693		170	163	149	38	
900	670	612	609	651	876	841	776	752	694	882	171	164	143	43	6
1050	669	613	610	648	866	841	773	746	696	869	172	160	136	48	3
1200	668	614	611	646	860	840	777	748	699	863	172	163	137	53	3
1350	667	616	613	644	855	837	782	763	710	859	170	166	150	66	4
1500	666	619	616	643	853	833	785	775	709	856	167	166	159	66	3
1650	663	622	619	643	851	824	784	779	711	855	161	162	160	68	4
1800	652	602	601	642	851	803	752	745	714	855	151	150	144	72	4
1950				639	849				667	851				28	2
2100				634	848				644	852				10	4
2250				631	848				647	855				16	7
2400				630	851				642	854				12	3
2550				629	852				639	856				10	4
2700				630	852				640	857				10	5
2850				642	852				649	856				7	4
3000															

All dimensions shown in millimeters.

DATA SHEET NO. 9...(CONTINUED)

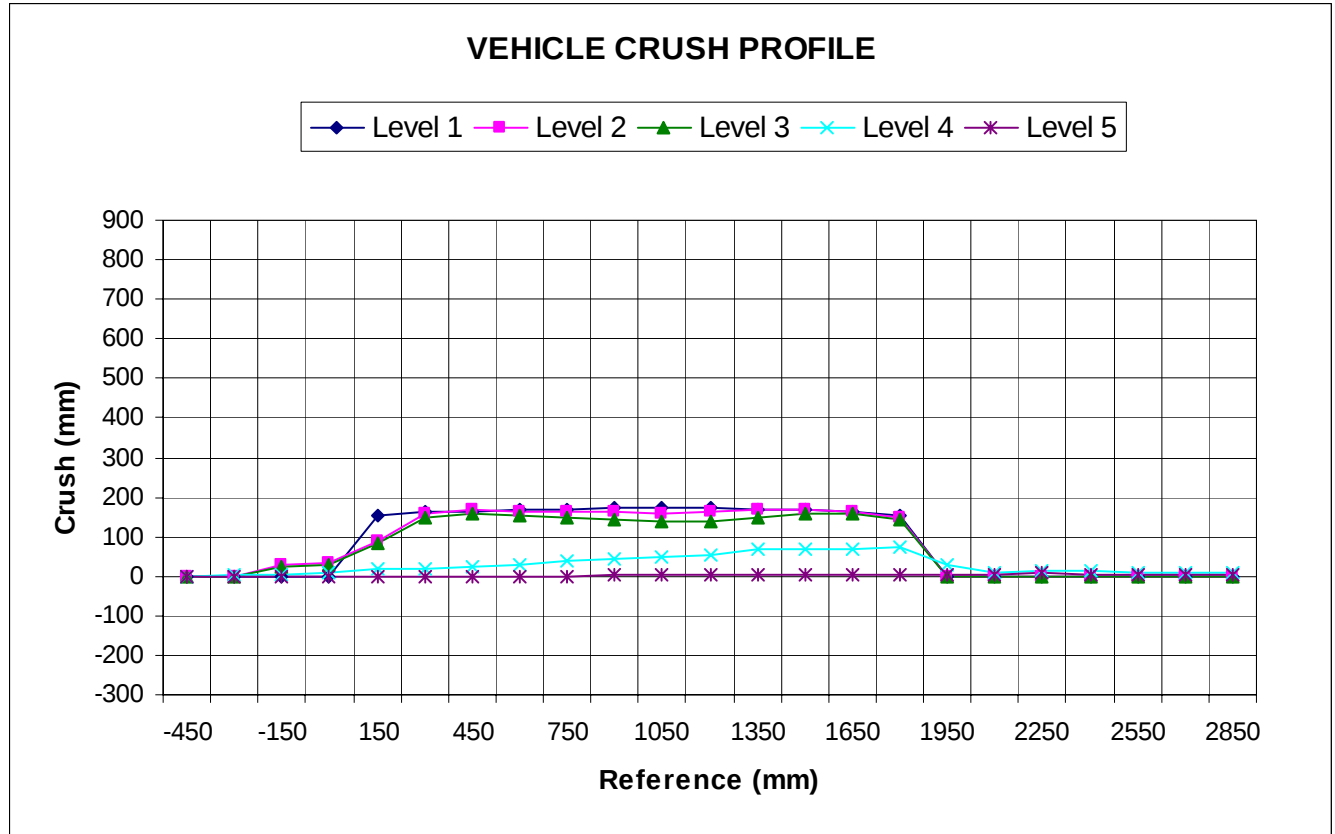
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



DATA SHEET NO. 10

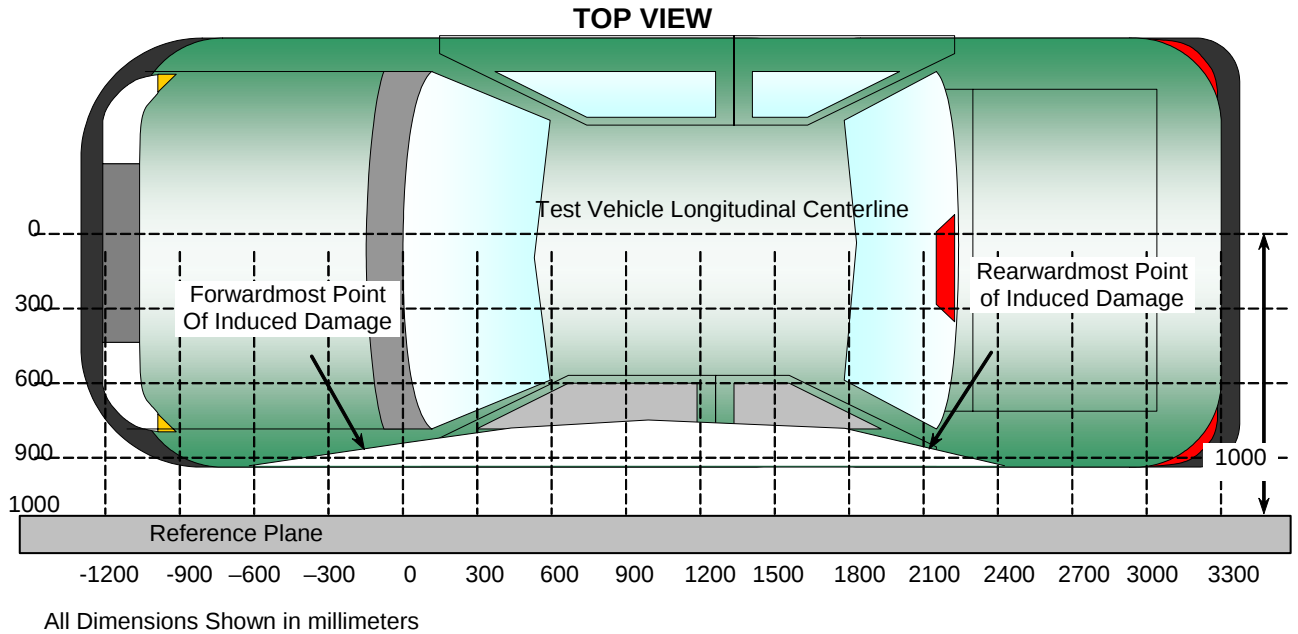
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	1950	4	639	667	28
2	1500	1	666	833	167
3	1050	1	669	841	172
4	600	1	671	838	167
5	150	1	663	815	152
6	-300	4	720	722	2

DATA SHEET NO. 11

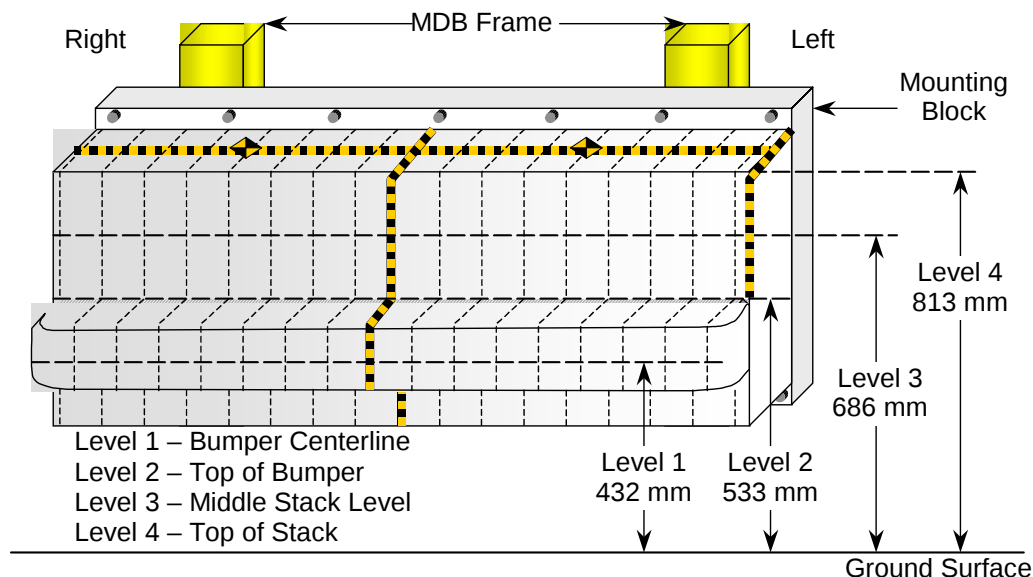
DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
1	733	706	688	684	678	673	669	667	666	662	658	657	656	655	648	653	663
2	816	807	793	772	752	736	736	737	740	743	749	755	758	756	754	758	758
3	802	776	750	735	728	740	736	718	708	698	692	688	690	697	708	728	778
4	820	789	763	743	738	753	763	758	738	723	716	718	713	716	733	751	790

All Dimensions in mm

DATA SHEET NO. 12

VEHICLE ACCELEROMETER LOCATIONS

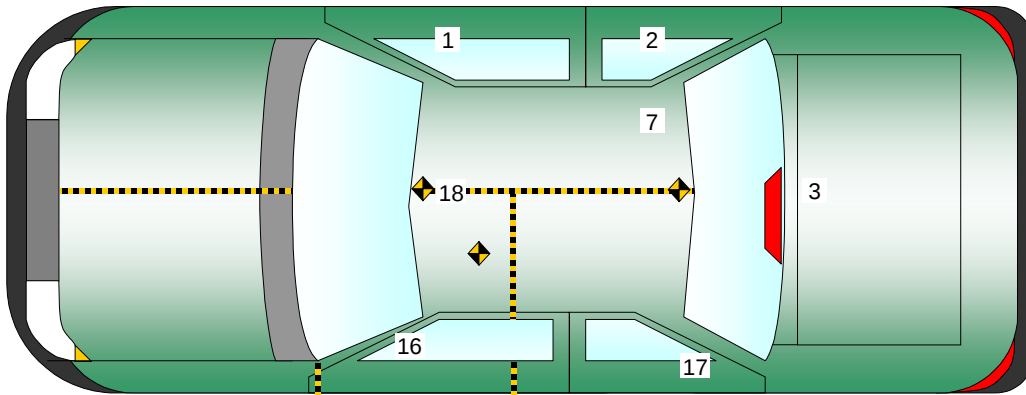
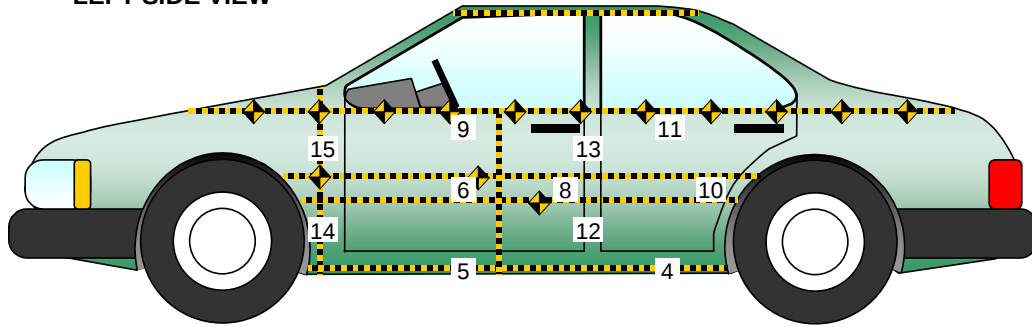
Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

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 LOCATION AND DATA SUMMARY

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

VEHICLE ACCELEROMETER LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)		
		X	Y	Z
1	Right Sill at Front Seat	2490	700	-530
2	Right Sill at Rear Seat	1970	700	-540
3	Rear Floorpan Above Axle	1140	0	-770
4	Left Sill at Rear Door	2070	-610	-305
5	Left Sill at Front Door	2800	-610	-310
6	Front Door Centerline			
7	Rt. Rear Occ. Compartment	2130	420	-510
8	Front Door Mid-Rear			
9	Front Door Upper Centerline			
10	Rear Door Mid-Rear			
11	Rear Door Upper Centerline			
12	B-Post Lower	2200	-750	-800
13	B-Post Middle	2200	-750	-1060
14	A-Post Lower	3295	-755	-730
15	A-Post Middle	3295	-755	-960
16	Front Seat Track	2660	-590	-650
17	Rear Seat Structure	1670		-700
18	Vehicle CG	2020	0	-550

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

DATA SHEET NO. 13

MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

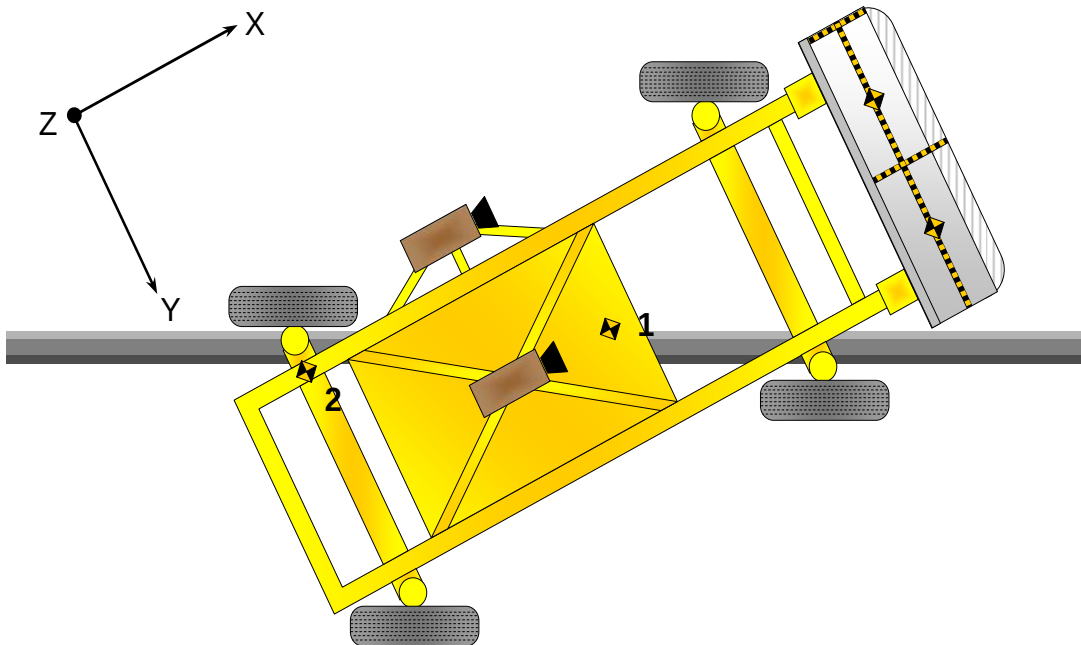
NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10

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

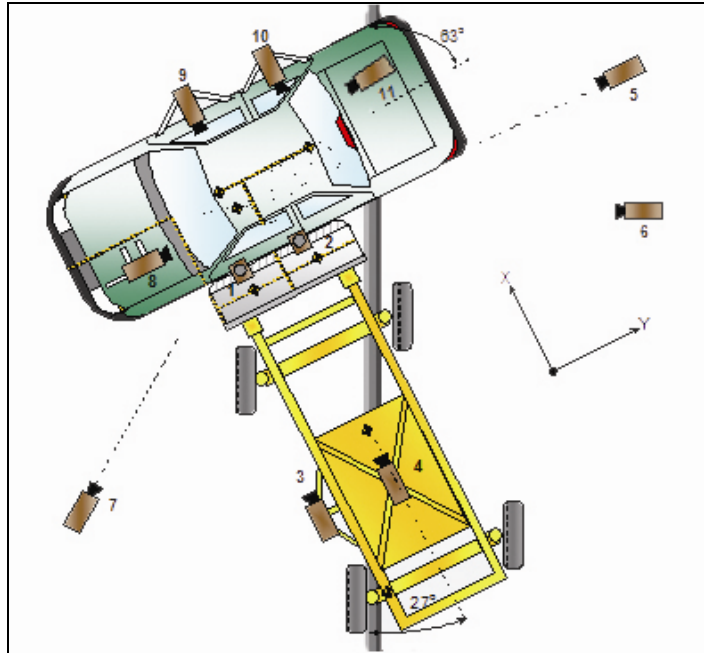
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



No.	Camera View	Location			Angle (deg)	Lens (mm)	Film Speed
		x	y	z			
Doc	Real Time Inrun	-2484	-3958	-1506	0		30
Doc	Real Time Left Front	-2266	3549	-1475	-2		30
1	Overhead Overall	1220	2287	-5486	-90	14	1000
2	Overhead Close-Up	609	2287	-5102	-90	Zoom	1000
3	Left Impact Point (MDB)	-2134	0	-1143	-2	12	1000
4	Side Overall (MDB)	-3912	838	-1829	-4	15	1000
5	Rear	-64	20485	-1348	0	105	1000
6	Left Rear (MDB)	-2137	-1302	-339	-4	85	1000
7	Left Front	-2266	-3564	-1475	-2	24	1000
8	Driver Front (O.B.)	566	-546	-1482	-7	35	1000
9	Driver Side (O.B.)	-778	-1853	-1325	-6	20	1000
10	Passenger Side (O.B.)	-1617	-1860	-1353	-5	20	1000

All measurements are made relative to the point of impact.

DATA SHEET NO. 15

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP Test Date: 01/14/10

Test Time: 11:55 AM

Temperature: 13.3 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

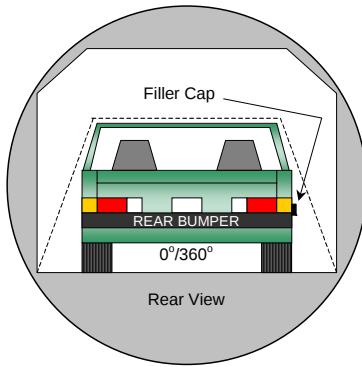
FMVSS 301 STATIC ROLLOVER DATA

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

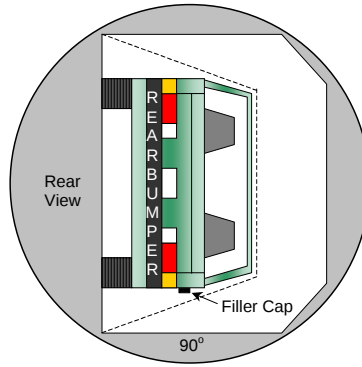
NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

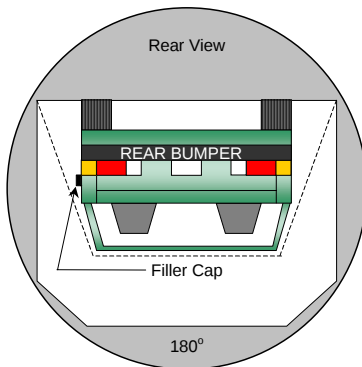
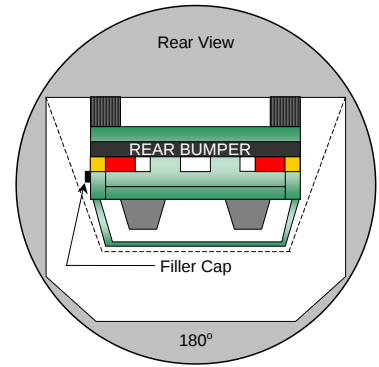
Test Date: 01/14/10



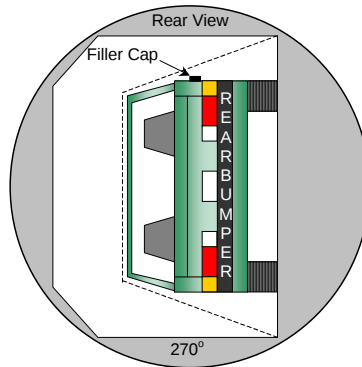
0° to 90°



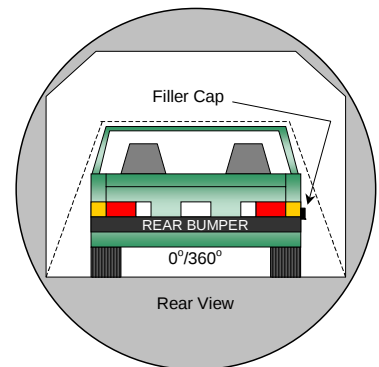
90° to 180°



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: 2010 Toyota 4Runner SR5 4X2 5-Door MPVNHTSA No.: MA5124Test Program: 55/28 km/h Side Impact NCAPTest Date: 01/14/10**FMVSS 301 ROLLOVER TIME TABLE (SECONDS)**

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	86	300	386
90° to 180°	83	314	397
180° to 270°	79	300	379
270° to 360°	85	300	385

FMVSS 301 SPILLAGE TABLE REQUIREMENT (oz.)

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

FMVSS 301 SOLVENT COLLECTED

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

DATA SHEET NO. 17

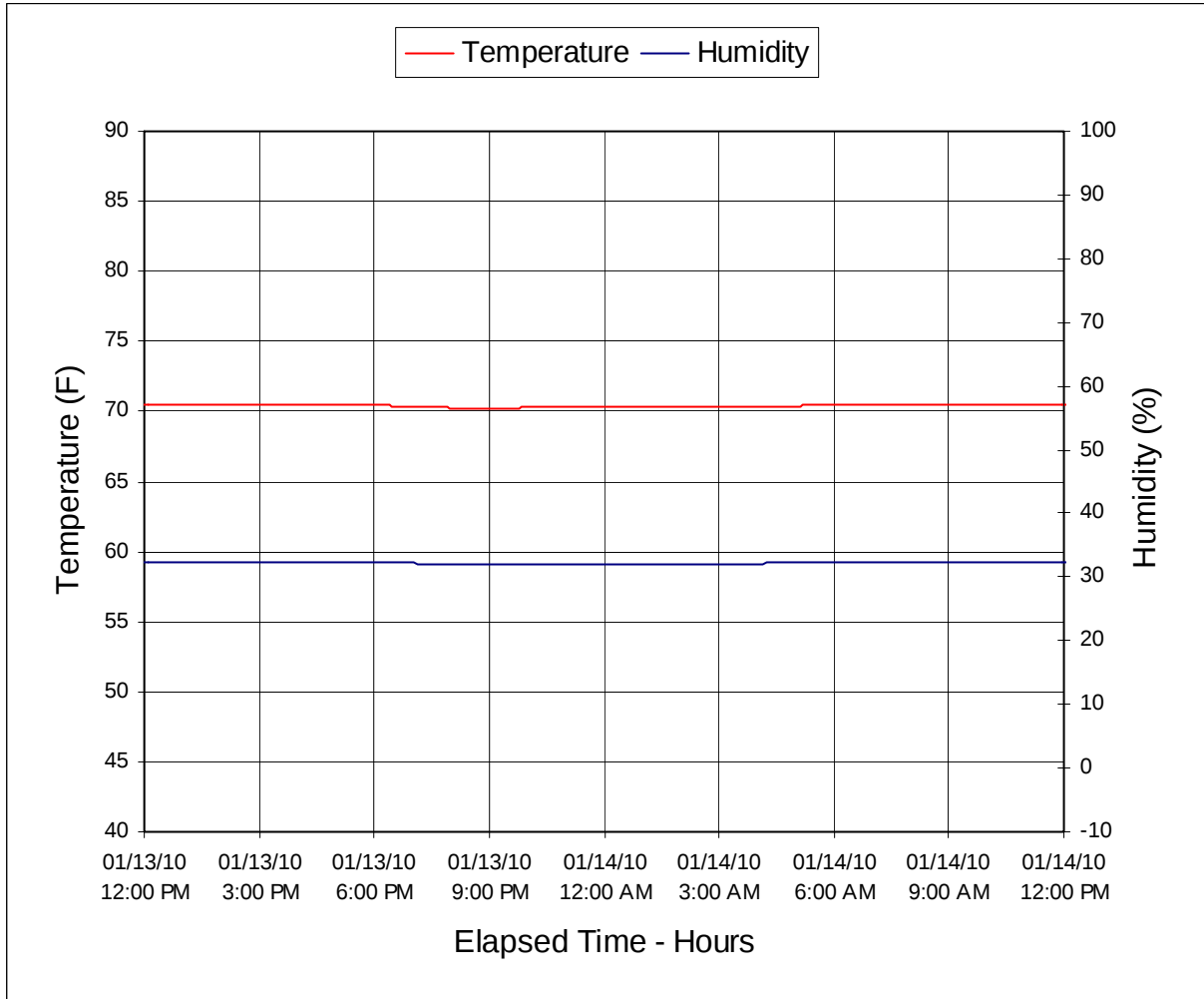
DUMMY / VEHICLE TEMPERATURE STABILIZATION

Test Vehicle: 2010 Toyota 4Runner SR5 4X2 5-Door MPV

NHTSA No.: MA5124

Test Program: 55/28 km/h Side Impact NCAP

Test Date: 01/14/10



APPENDIX A
PHOTOGRAPHS

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Figure A-1: Right Front $\frac{3}{4}$ View, as Received



Figure A-2: Left Rear $\frac{3}{4}$ View, as Received

MFD. BY: TOYOTA MOTOR CORPORATION

09/09

GVWR: 2765KG (6100LB)

GAWR: FRT. 1270KG (2800LB) WITH P265/70R17 TIRES.
17X7J RIMS, AT 220KPA (32PSI) COLD.

RR. 1515KG (3350LB) WITH P265/70R17 TIRES.
17X7J RIMS, AT 220KPA (32PSI) COLD.

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

JTEZU5JR8A5000317 MPV



C/TR: 1G3/FK13

GRN280L - GKAGKA

A/TM: A01A/A750E

MADE IN JAPAN

506

A

Figure A-3: Manufacturer's Label



TIRE AND LOADING INFORMATION

SEATING CAPACITY: TOTAL 7
FRONT 2: REAR 5

The combined weight of occupants
and cargo should never exceed 520 kg or 1155 lbs.

TIRE	SIZE	COLD TIRE PRESSURE
FRONT	P265/70R17	220kPa, 32PSI
REAR	P265/70R17	220kPa, 32PSI
SPARE	P265/70R17	220kPa, 32PSI

SEE OWNER'S MANUAL FOR
ADDITIONAL INFORMATION

RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

NOMBRE DE PLACES : TOTAL 7
AVANT 2: ARRIÈRE 5

Le poids total des occupants et du chargement ne
doit jamais dépasser 520 kg ou 1155 lb.

PNEU	DIMENSIONS	PRESSION DES PNEUS À FROID
AVANT	P265/70R17	220kPa, 32PSI
ARRIÈRE	P265/70R17	220kPa, 32PSI
DE SECOURS	P265/70R17	220kPa, 32PSI

VOIR LE MANUEL DE L'USAGER
POUR PLUS DE RENSEIGNEMENTS

40 35830

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 $\frac{3}{4}$ 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 (Vehicle Moved)



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



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



Figure A-13: Pre-Test Rear View



Figure A-14: Post-Test Rear View



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



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



Figure A-17: Pre-Test Right Side View



Figure A-18: Post-Test Right Side View



Figure A-19: Pre-Test Right Front 3/4 View



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



Figure A-21: Pre-Test Overhead View



Figure A-22: Post-Test Overhead View

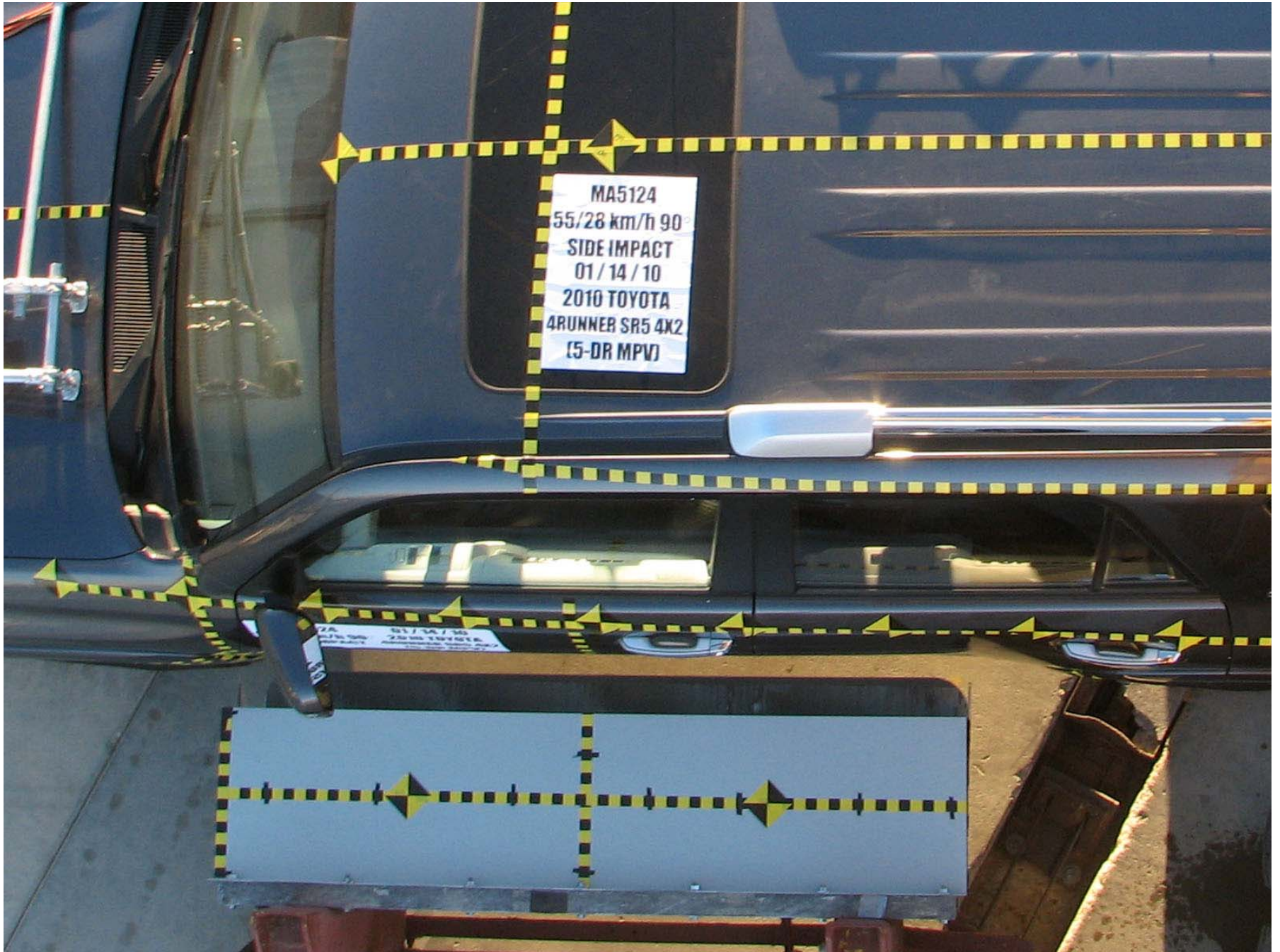


Figure A-23: Pre-Test Overhead Close-up View



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 $\frac{3}{4}$ View of Left Side Door



Figure A-28: Post-Test Front $\frac{3}{4}$ View of Left Side Door



Figure A-29: Pre-Test Rear $\frac{3}{4}$ View of Left Side Door



Figure A-30: Post-Test Rear $\frac{3}{4}$ 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)



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)



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

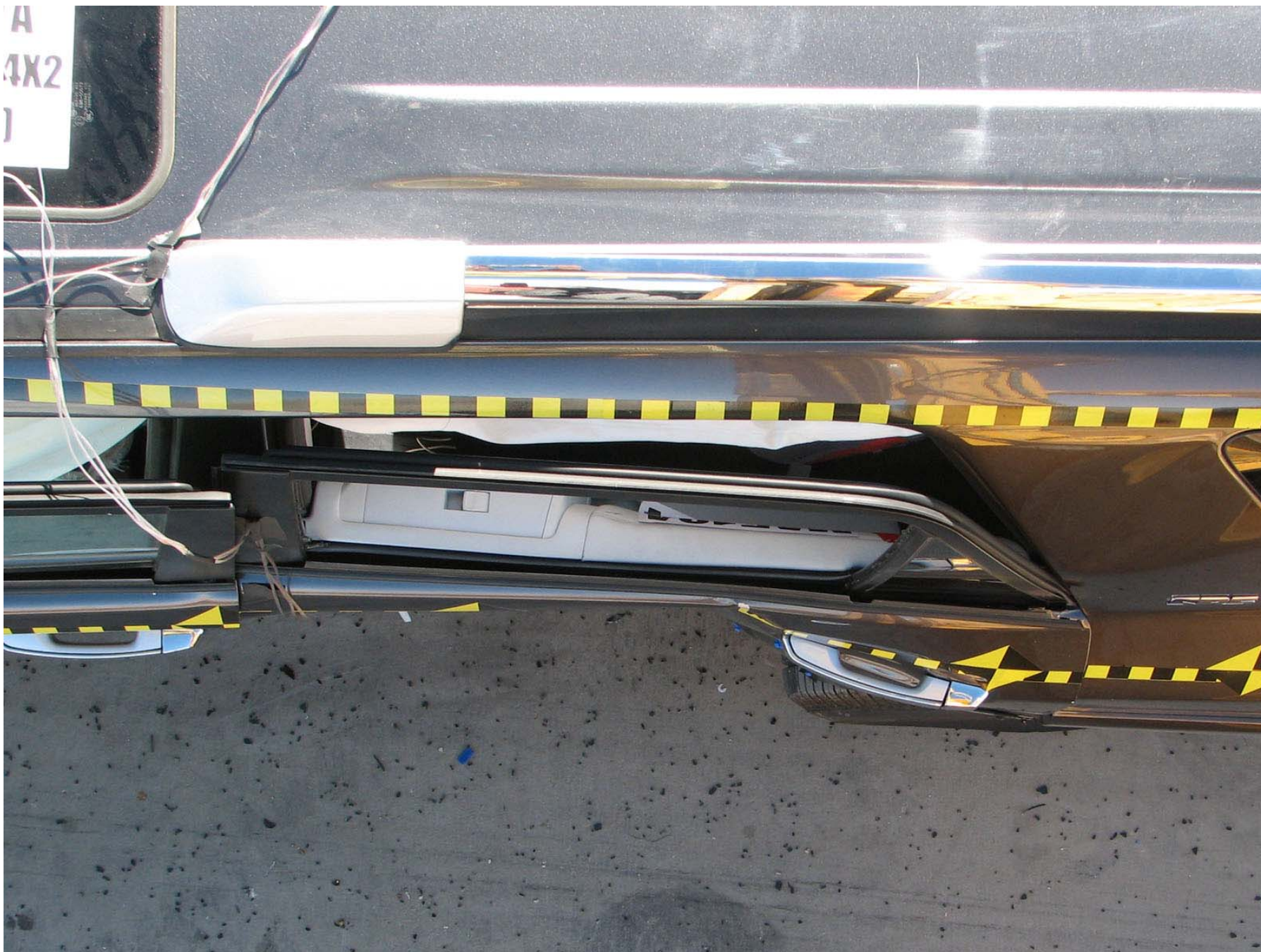


Figure A-48: Post-Test Passenger Dummy Clearance From Door



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

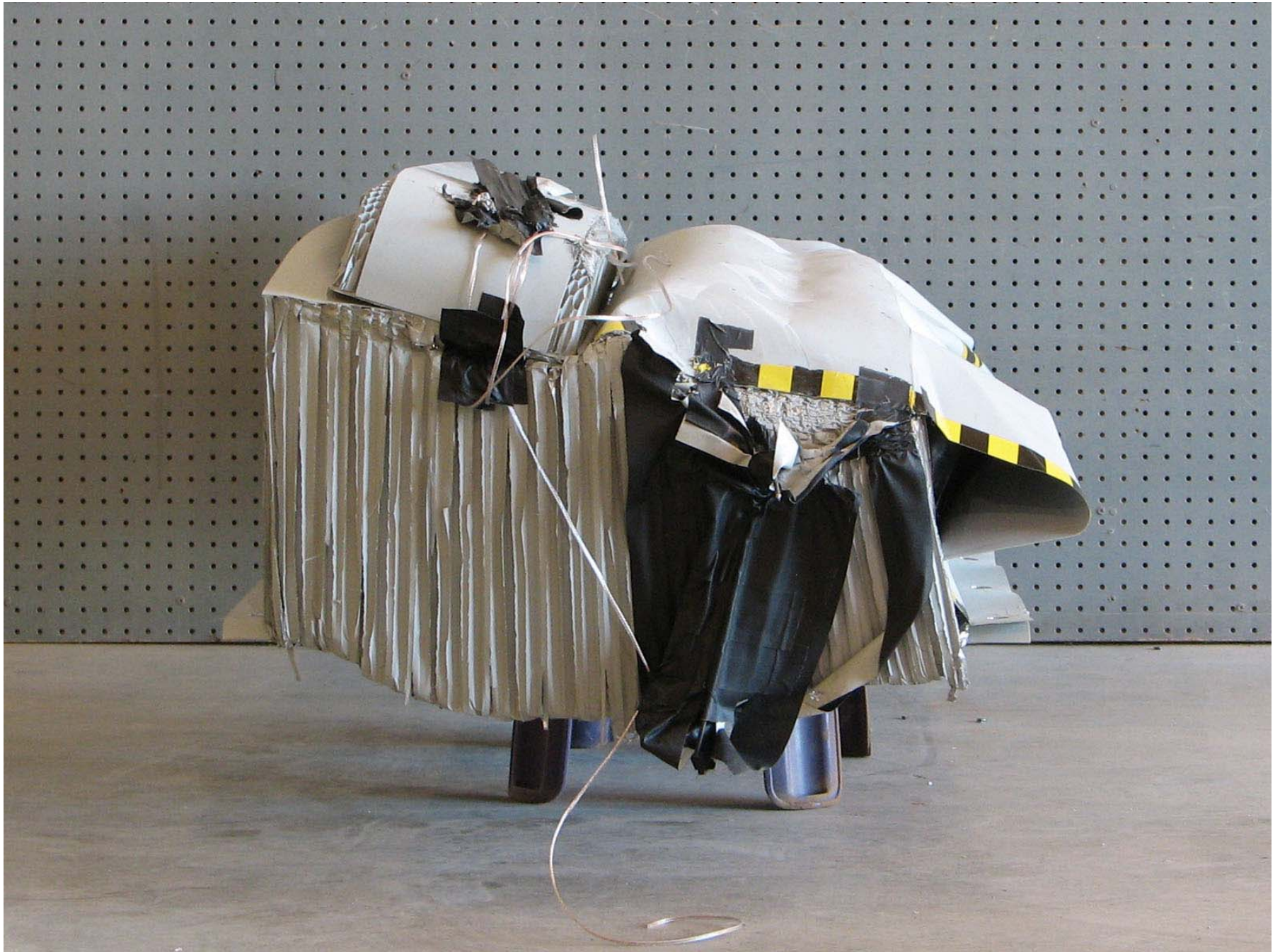


Figure A-60: Post-Test Left Side View of Deformable Barrier

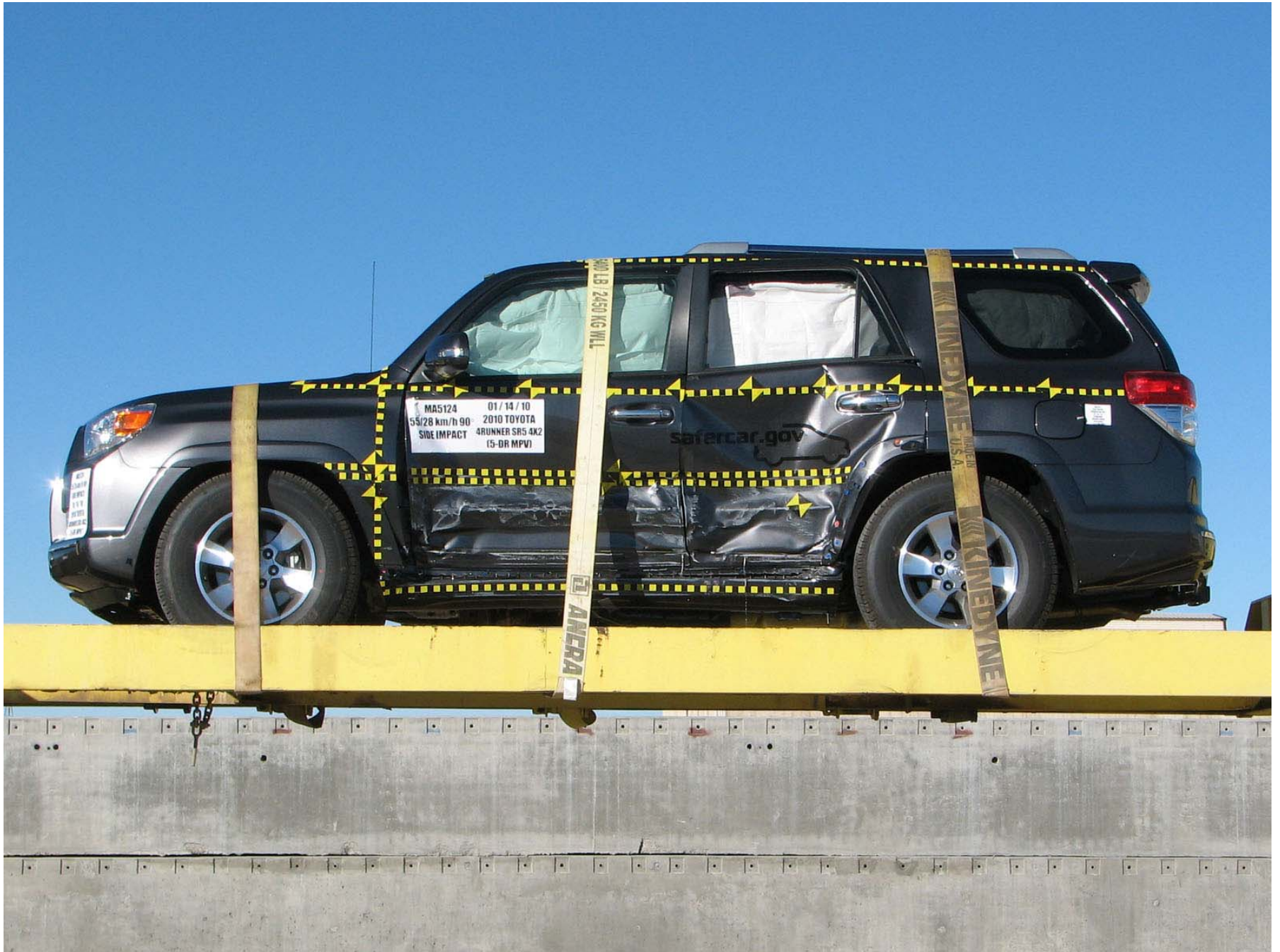


Figure A-61: Vehicle on Rollover Device (0°)



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



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

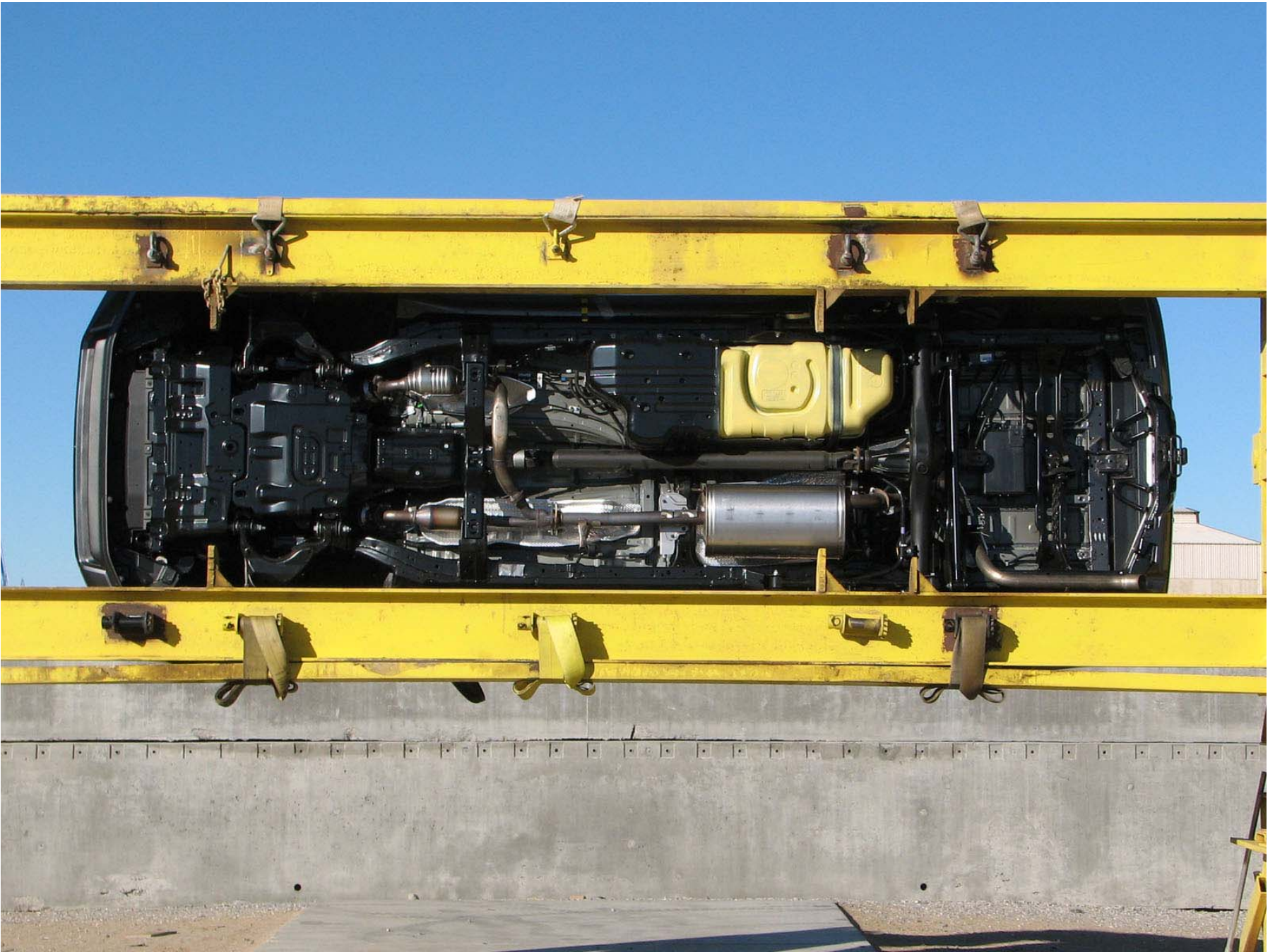


Figure A-64: Vehicle on Rollover Device (270°)

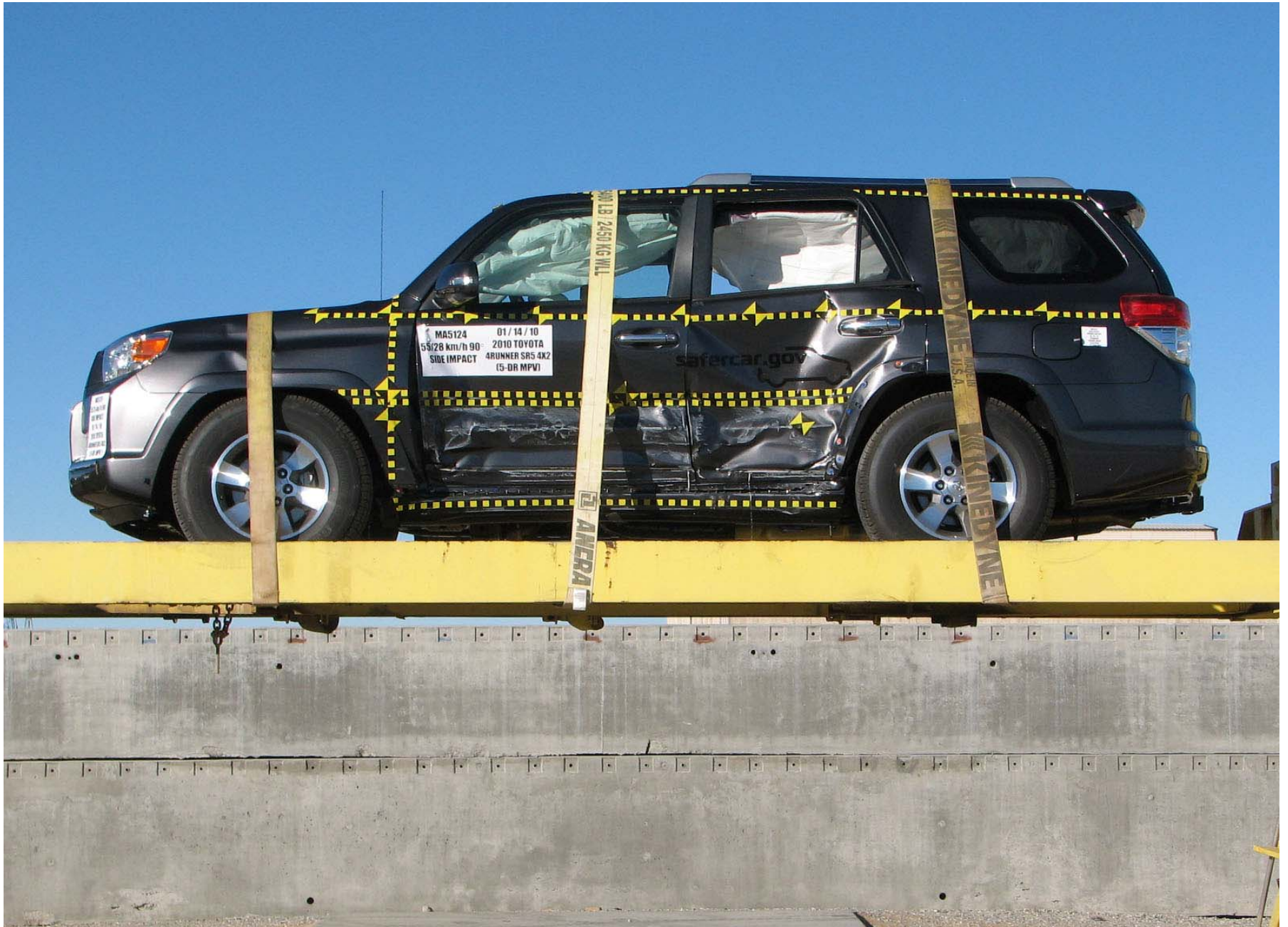
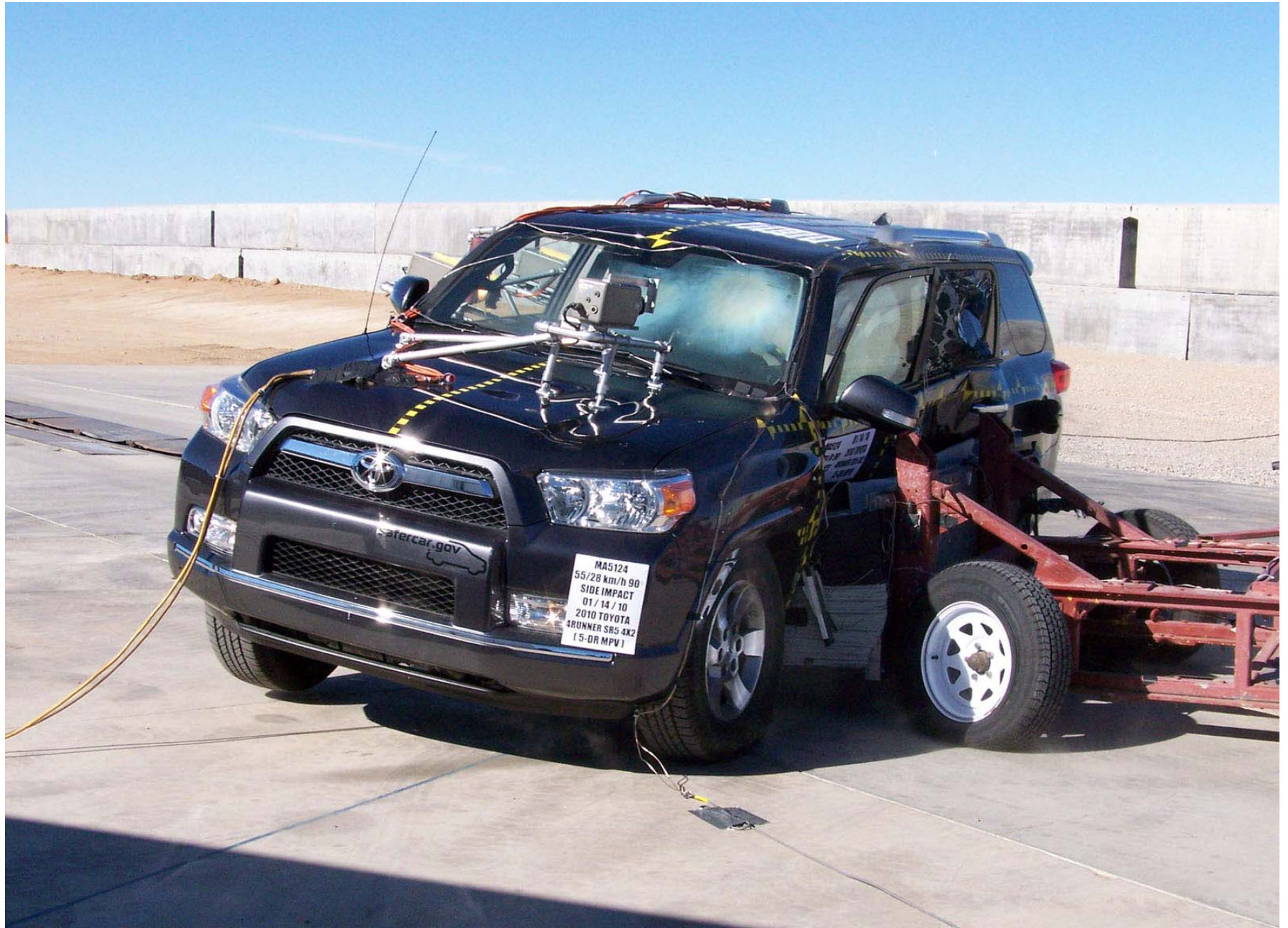


Figure A-65: Vehicle on Rollover Device (360°)



Figure A-66: Timers



A-67

TR-P30003-04-NC

Figure A-67: Vehicle Impact

APPENDIX B
SID/HIII, VEHICLE AND MDB RESPONSE DATA

LIST OF DATA PLOTS

Data Plot		Page
B-1	Driver Upper Rib Y Primary	B-1
	Driver Lower Rib Y Primary	B-1
	Driver Lower Spine Y Primary	B-1
	Driver Pelvis Primary Y	B-1
B-2	Passenger Upper Rib Y Primary	B-2
	Passenger Lower Rib Y Primary	B-2
	Passenger Lower Spine Y Primary	B-2
	Passenger Pelvis Y Primary	B-2

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

LIST OF DATA PLOTS...(CONTINUED)

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

LIST OF DATA PLOTS...(CONTINUED)

Passenger Upper Rib Primary Y Velocity
Passenger Lower Rib Primary Y Velocity
Passenger Lower Spine Primary Y Velocity
Passenger Pelvis Primary Y Velocity
Passenger Upper Rib Redundant Y
Passenger Lower Rib Redundant Y
Passenger Lower Spine Redundant Y
Passenger Pelvis Redundant Y
Passenger Upper Rib Redundant Y Velocity
Passenger Lower Rib Redundant Y Velocity
Passenger Lower Spine Redundant Y Velocity
Passenger Pelvis Redundant Y Velocity
Passenger Thorax Contact
Passenger Pelvis Contact
Vehicle Right Sill at Front Seat X
Vehicle Right Sill at Front Seat Y
Vehicle Right Sill at Front Seat Z
Vehicle Right Sill Front Seat Resultant
Vehicle Right Sill at Front Seat X Velocity
Vehicle Right Sill at Front Seat Y Velocity
Vehicle Right Sill at Front Seat Z Velocity
Vehicle Right Sill at Rear Seat X
Vehicle Right Sill at Rear Seat Y
Vehicle Right Sill at Rear Seat Z
Vehicle Right Sill Rear Seat Resultant
Vehicle Right Sill at Rear Seat X Velocity
Vehicle Right Sill at Rear Seat Y Velocity
Vehicle Right Sill at Rear Seat Z Velocity
Vehicle Rear Floor Above Axle X
Vehicle Rear Floor Above Axle Y
Vehicle Rear Floor Above Axle Z
Vehicle Rear Floor Above Axle Resultant
Vehicle Rear Floor Above Axle X Velocity
Vehicle Rear Floor Above Axle Y Velocity
Vehicle Rear Floor Above Axle Z Velocity

LIST OF DATA PLOTS...(CONTINUED)

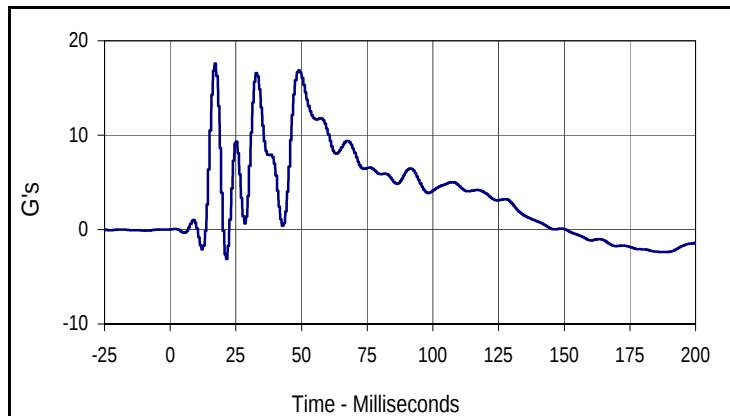
Vehicle Left Sill at Rear Door Y
Vehicle Left Sill at Front Door Y
Vehicle Left Sill at Rear Door Y Velocity
Vehicle Left Sill at Front Door Y Velocity
Vehicle Left Front Door C/L Y
Vehicle Right Rear Occupant Compartment
Vehicle Left Front Door Mid Rear Y
Vehicle Left Front Door Upper CL Y
Vehicle Left Front Door CL Y Velocity
Vehicle Right Rear Occupant Compartment Y Velocity
Vehicle Left Front Door Mid Rear Y Velocity
Vehicle Left Rear Door Upper CL Y Velocity
Vehicle Left Rear Door Mid Rear Y
Vehicle Left Rear Door Upper C/L Y
Vehicle Left Rear Door Mid Rear Y Velocity
Vehicle Left Rear Door Upper CL Y Velocity
Vehicle B-Post Lower Y
Vehicle B-Post Middle Y
Vehicle B-Post Lower Y Velocity
Vehicle B-Post Middle Y Velocity
Vehicle A-Post Lower Y
Vehicle A-Post Middle Y
Vehicle A-Post Lower Y Velocity
Vehicle A-Post Middle Y Velocity
Vehicle Left Front Seat Track
Vehicle Rear Seat Structure
Vehicle Left Front Seat Track Y Velocity
Vehicle Rear Seat Structure Y Velocity
Vehicle CG X
Vehicle CG Y
Vehicle CG Z
Vehicle CG Resultant
Vehicle CG X Velocity
Vehicle CG Y Velocity
Vehicle CG Z Velocity

LIST OF DATA PLOTS...(CONTINUED)

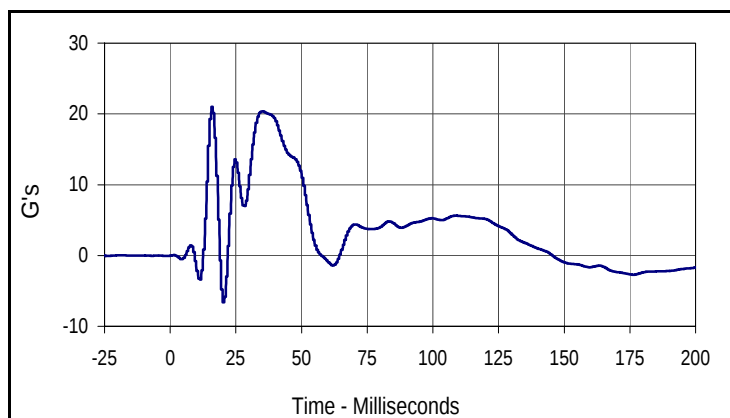
Driver Upper Rib Primary Y
Driver Lower Rib Primary Y
Driver Lower Spine Primary Y
Driver Pelvis Primary Y
Driver Upper Rib Redundant Y
Driver Lower Rib Redundant Y
Driver Lower Spine Redundant Y
Driver Pelvis Redundant Y
Passenger Upper Rib Primary Y
Passenger Lower Rib Primary Y
Passenger Lower Spine Primary Y
Passenger Pelvis Primary Y
Passenger Upper Rib Redundant Y
Passenger Lower Rib Redundant Y
Passenger Lower Spine Redundant Y
Passenger Pelvis Redundant Y
MDB CG X
MDB CG Y
MDB CG Z
MDB CG Resultant
MDB CG X Velocity
MDB CG Y Velocity
MDB CG Z Velocity
MDB Rear X
MDB Rear Y
MDB Rear X Velocity
MDB Rear Y Velocity
MDB Right Bumper Contact

Test Vehicle: 2010 Toyota 4-Runner SR5 4X2 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

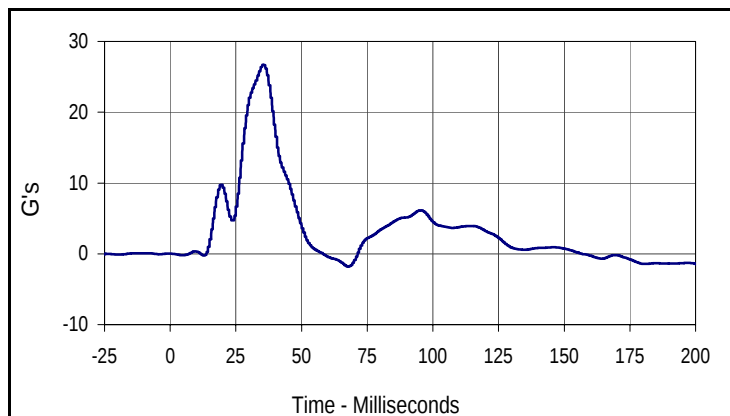
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 NHTSA No.: MA5124



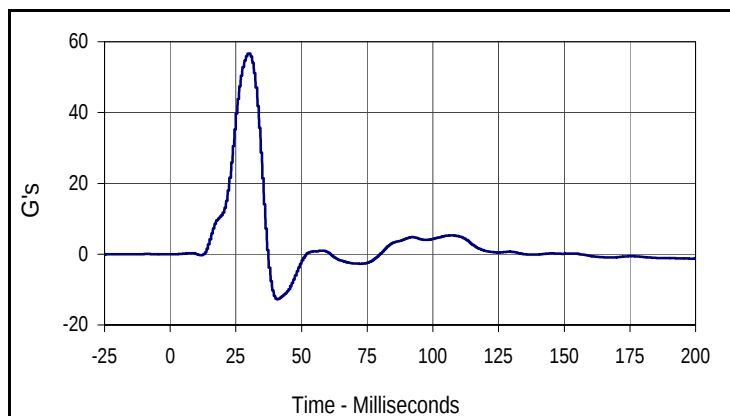
Curve Description			
Driver Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIR	FIR100	G's
Max	Time	Min	Time
17.6	16.9	-3.1	21.3



Curve Description			
Driver Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIR	FIR100	G's
Max	Time	Min	Time
21.0	15.7	-6.6	20.0



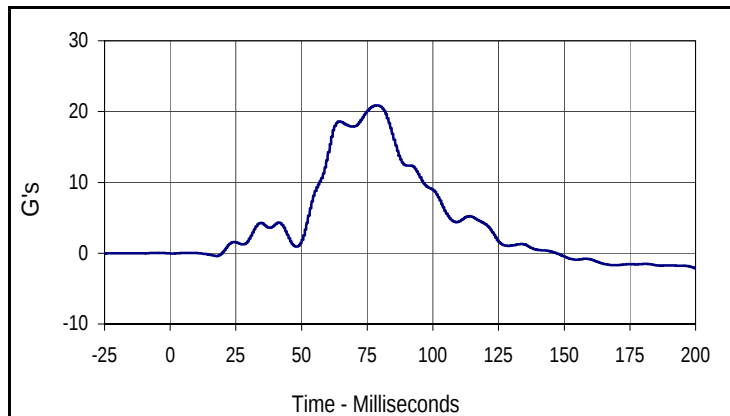
Curve Description			
Driver Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIR	FIR100	G's
Max	Time	Min	Time
26.7	35.0	-1.8	67.5



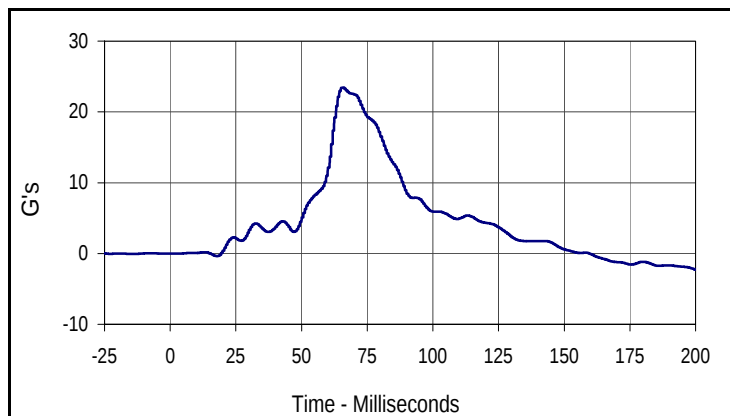
Curve Description			
Driver Pelvis Y Primary			
CURNO	Type	SAE Class	Units
004	FIR	FIR100	G's
Max	Time	Min	Time
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Test Vehicle: 2010 Toyota 4-Runner SR5 4X2 5-Door MPV
 Test Program: 55/28 km/h Side Impact NCAP

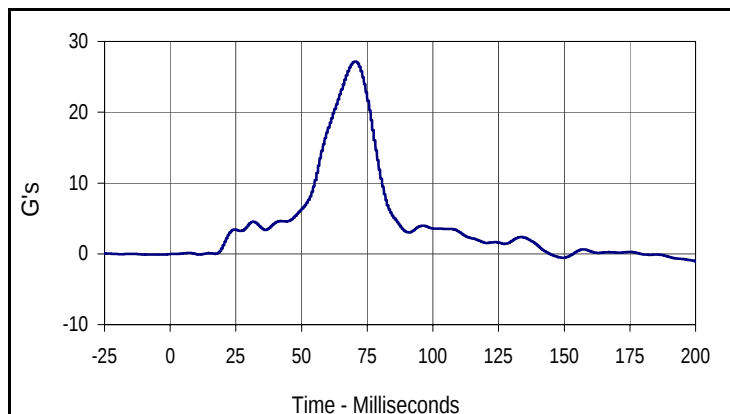
Test Date: 1/14/10
 NHTSA No.: MA5124



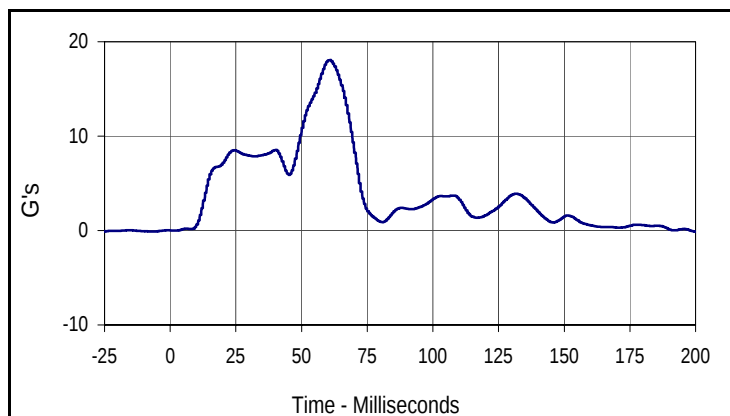
Curve Description			
Passenger Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
005	FIR	FIR100	G's
Max	Time	Min	Time
20.9	78.8	-2.5	213.8



Curve Description			
Passenger Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
006	FIR	FIR100	G's
Max	Time	Min	Time
23.5	65.7	-2.4	233.8



Curve Description			
Passenger Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
007	FIR	FIR100	G's
Max	Time	Min	Time
27.2	70.0	-2.0	237.5



Curve Description			
Passenger Pelvis Y Primary			
CURNO	Type	SAE Class	Units
008	FIR	FIR100	G's
Max	Time	Min	Time
18.1	60.7	-1.0	233.8

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
 ATD Serial No.: 274

Test Date: 1/5/10
 Test I.D.: N/A



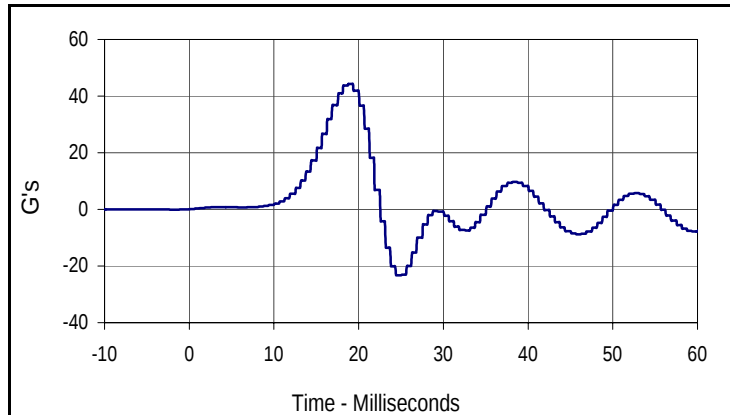
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	892	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	513	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	494	Pass
HW- Hip Width	mm	356 to 391	365	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 274

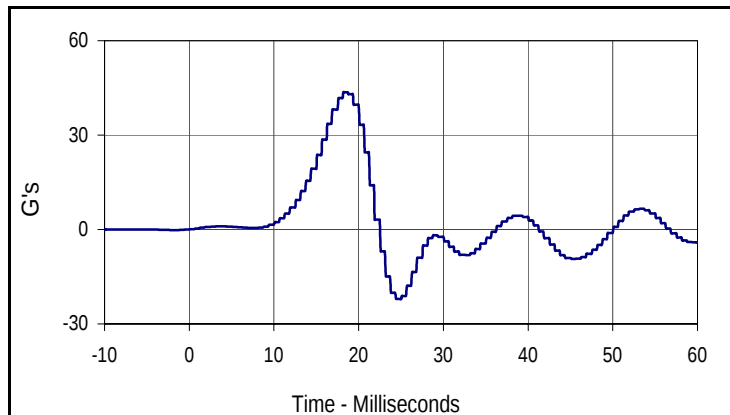
Test Date: 1/5/10
 Test I.D.: TH01A



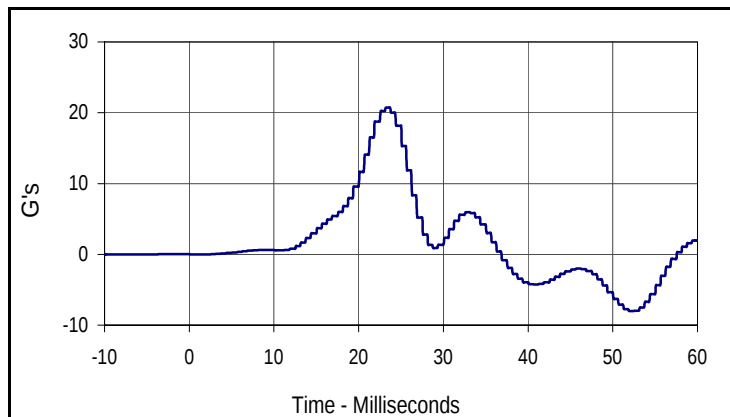
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.28	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	44.2	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	43.6	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	20.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.2	18.8	-23.2	24.4



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
43.6	18.2	-22.1	24.4



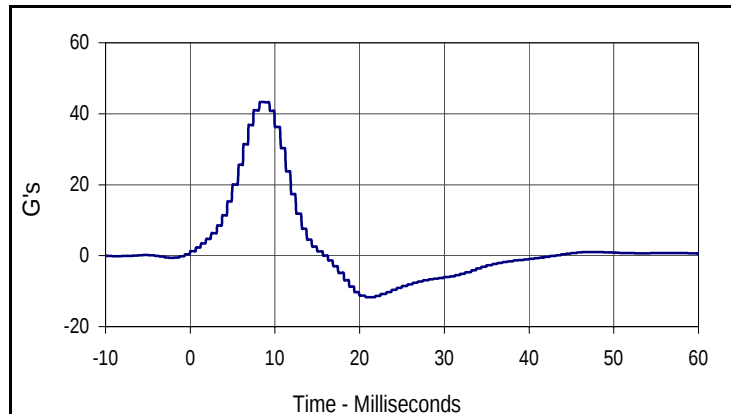
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
20.7	23.2	-8.0	51.9

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 274

Test Date: 1/5/10
 Test I.D.: PL01A



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
Peak Pelvis Acceleration	G's	40.0 to 60.0	43.3	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	4.90	Pass
Overall Test Results				Pass



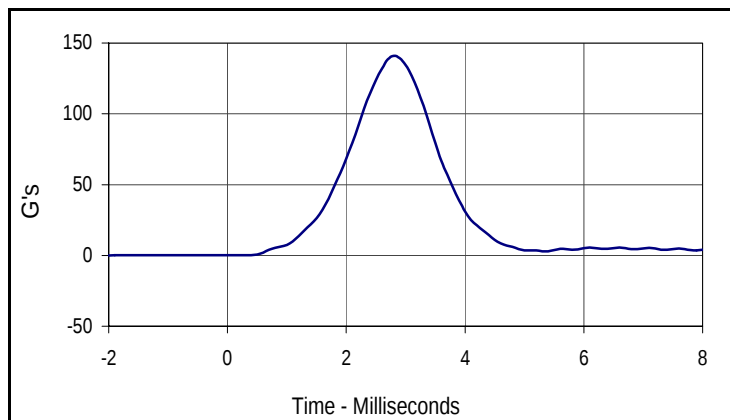
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
43.3	8.2	-11.7	21.3

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 274

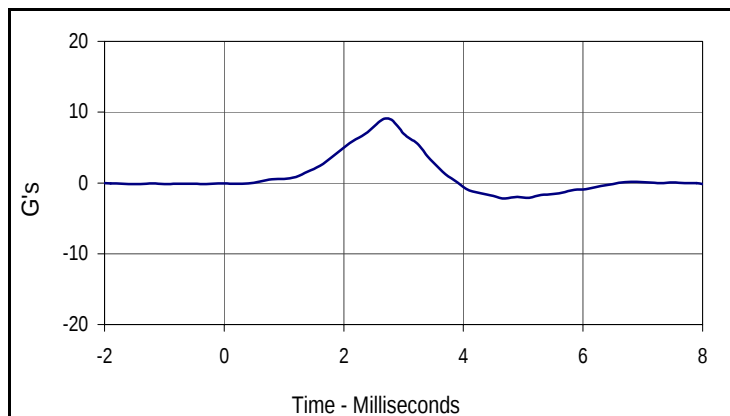
Test Date: 01/05/10
 Test I.D.: HD01A



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	141.0	Pass
Peak Longitudinal Acceleration	G's	≤15.0	9.1	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.9	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
141.0	2.8	0.0	-2.0



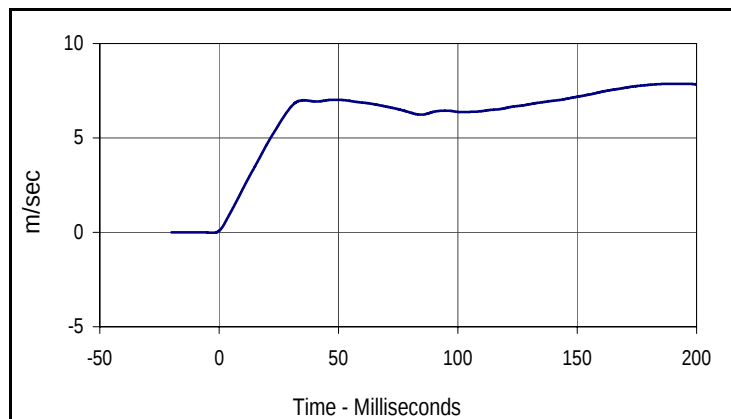
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
9.1	2.7	-2.2	4.7

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 274

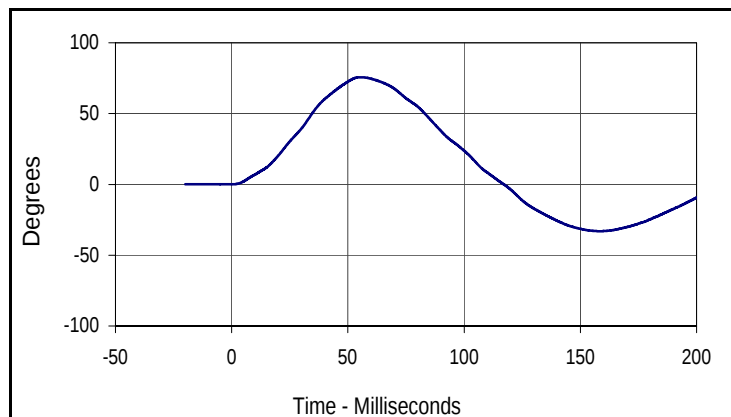
Test Date: 01/05/10
 Test I.D.: NB01A



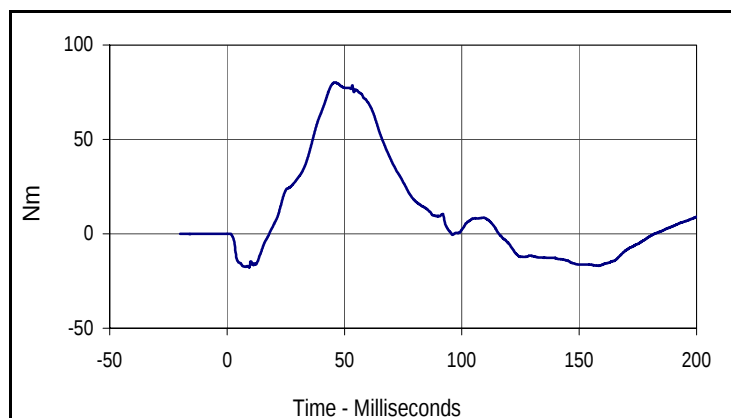
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	6.90	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.32	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.66	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.64	Pass
	40 to 70	m/sec	6.27 to 7.64	7.02	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	75.7	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.4	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	61.7	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	80.2	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	49.6	Pass
Overall Test Results					Pass



Curve Description			
ion			
CURNO	Type	SAE Class	Units
001	FIL	none	m/sec
Max	Time	Min	Time
7.9	189.1	0.0	-2.6



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	none	Degrees
Max	Time	Min	Time
75.7	55.4	-33.0	158.4



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	none	Nm
Max	Time	Min	Time
80.2	46.0	-17.8	9.5

Test Program: SID / HIII External Measurements
 ATD Serial No.: 275

Test Date: 01/05/10
 Test I.D.: N/A



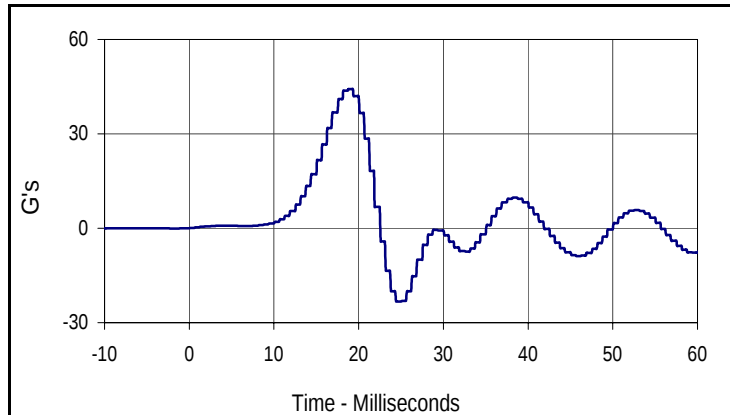
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	895	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	514	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	517	Pass
KV- Knee Pivot From Floor	mm	490 to 505	505	Pass
HW- Hip Width	mm	356 to 391	363	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 275

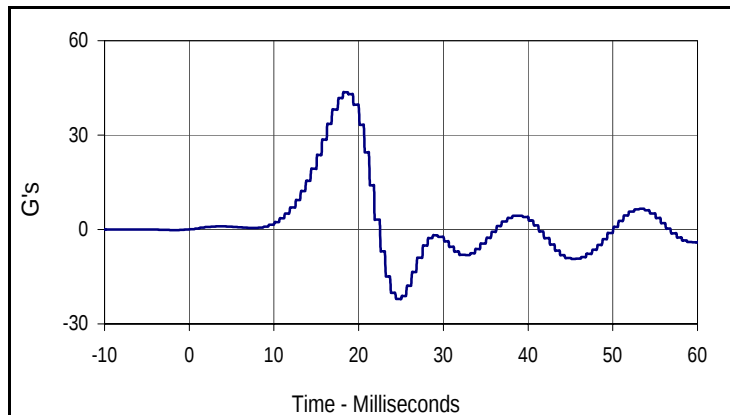
Test Date: 01/05/10
 Test I.D.: TH01B



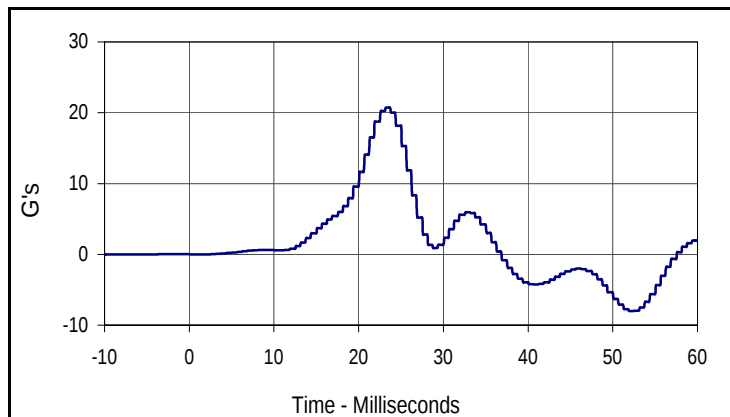
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.27	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	44.2	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	43.6	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	20.7	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
44.2	18.8	-23.2	24.4



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
43.6	18.2	-22.1	24.4



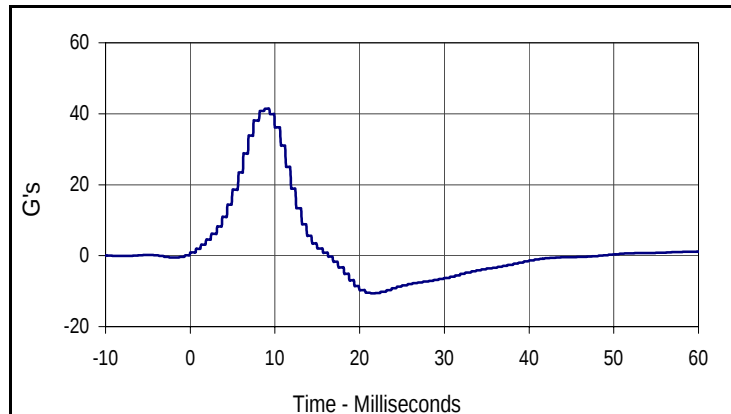
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
20.7	23.2	-8.0	51.9

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 275

Test Date: 01/05/10
 Test I.D.: PL01B



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	4.26	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	41.4	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	4.90	Pass
Overall Test Results				Pass



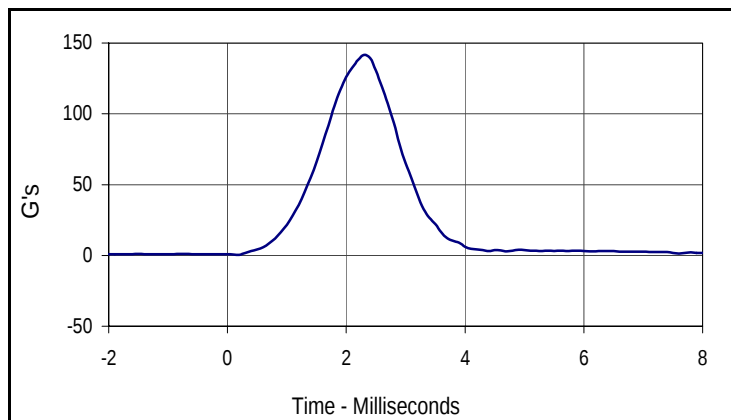
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
41.4	8.8	-10.7	21.3

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 275

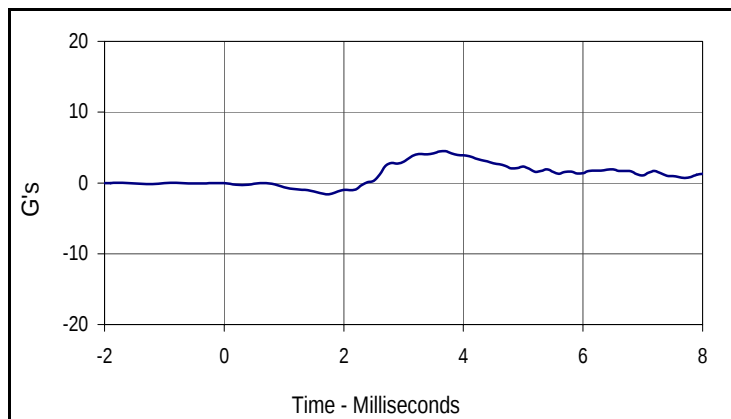
Test Date: 01/05/10
 Test I.D.: HD01B



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	141.8	Pass
Peak Longitudinal Acceleration	G's	≤15.0	4.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.7	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
141.8	2.3	0.4	0.2



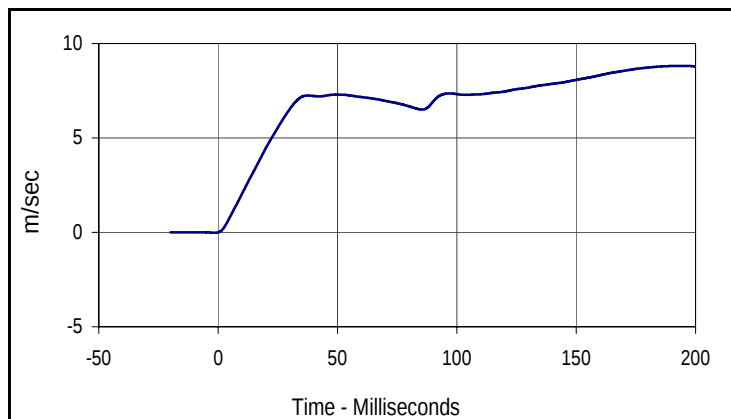
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.5	3.7	-1.6	1.7

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 275

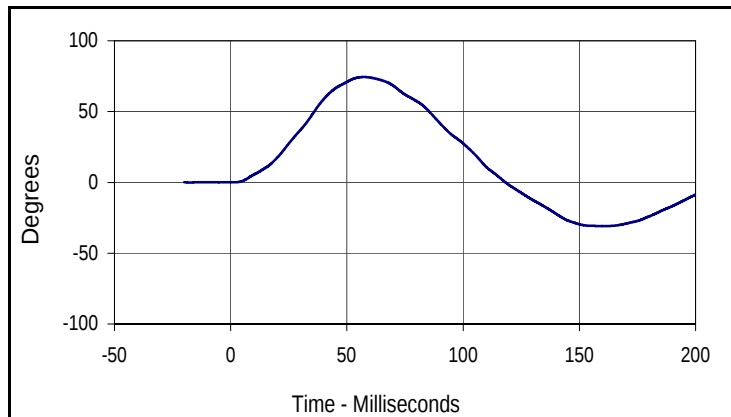
Test Date: 01/05/10
 Test I.D.: NB01B



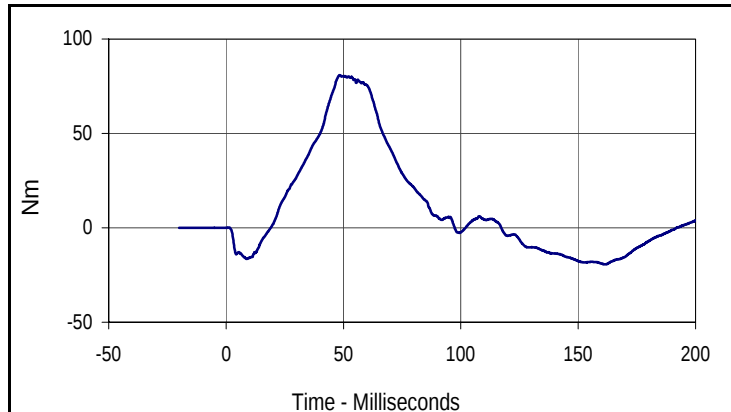
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	6.93	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.04	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.47	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.53	Pass
	40 to 70	m/sec	6.27 to 7.64	7.30	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	74.4	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	9.1	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	60.8	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	80.8	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	49.1	Pass
Overall Test Results				Pass	



Curve Description			
ion			
CURNO	Type	SAE Class	Units
001	FIL	none	m/sec
Max	Time	Min	Time
8.8	191.5	0.0	-1.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	none	Degrees
Max	Time	Min	Time
74.4	57.4	-30.9	160.6



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	none	Nm
Max	Time	Min	Time
80.8	48.3	-19.4	161.5

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

Test Program: SID / HIII External Measurements
 ATD Serial No.: 275

Test Date: 01/15/10
 Test I.D.: N/A



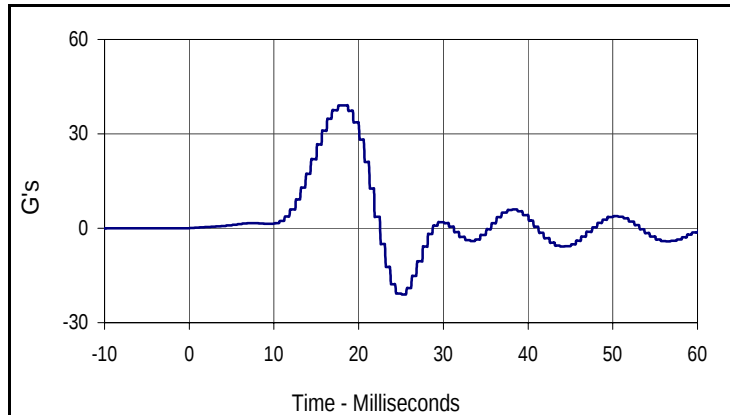
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	890	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	513	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	516	Pass
KV- Knee Pivot From Floor	mm	490 to 505	504	Pass
HW- Hip Width	mm	356 to 391	364	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 275

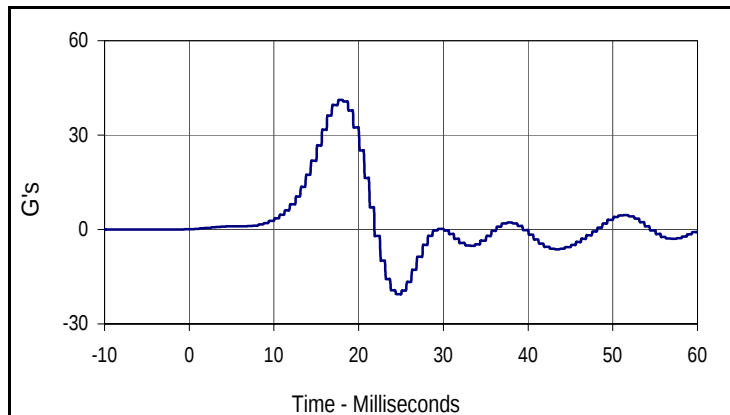
Test Date: 1/15/10
 Test I.D.: TH01C



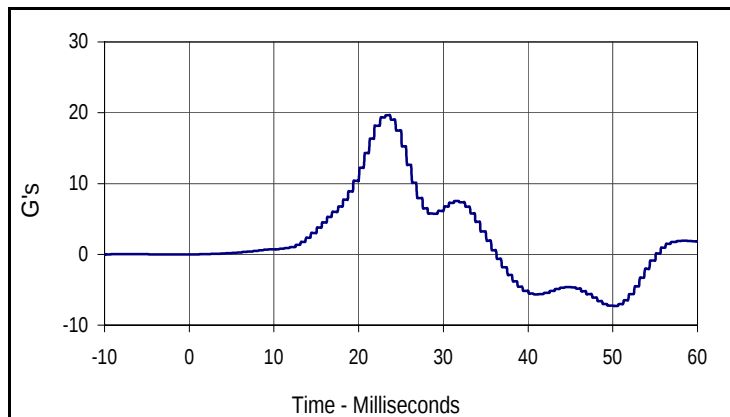
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.22	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	39.1	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	41.2	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	19.6	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
39.1	18.2	-21.0	25.1



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
41.2	17.6	-20.5	24.4



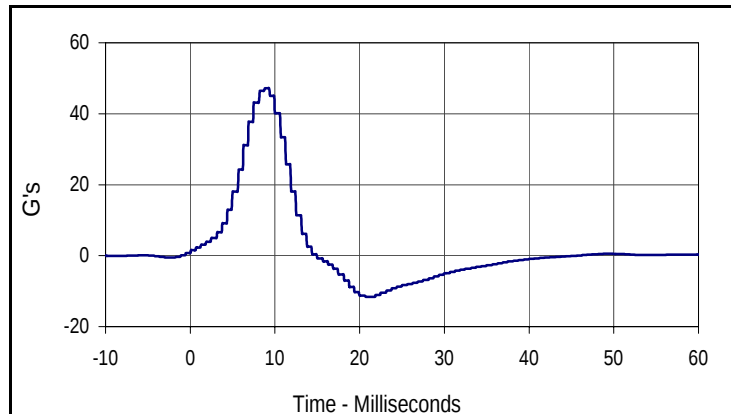
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
19.6	23.2	-7.3	50.1

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 275

Test Date: 1/15/10
 Test I.D.: PL01C



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	4.23	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	47.2	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	4.90	Pass
Overall Test Results				Pass



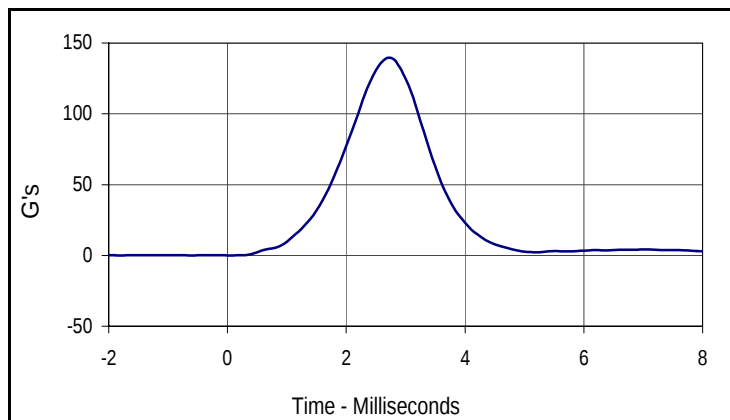
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
47.2	8.8	-11.7	20.7

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 275

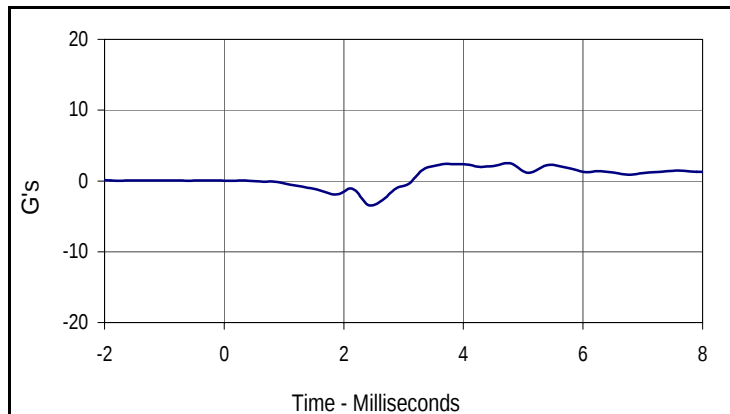
Test Date: 01/15/10
 Test I.D.: HD01C



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	139.6	Pass
Peak Longitudinal Acceleration	G's	≤15.0	3.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	3.0	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
139.6	2.7	0.0	-0.6



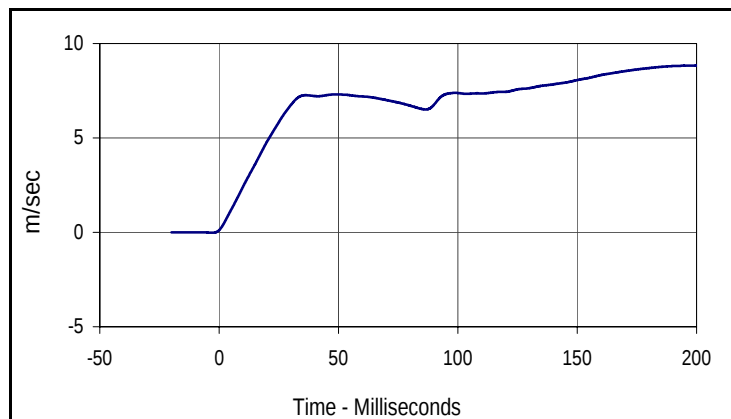
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.5	4.7	-3.4	2.5

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 275

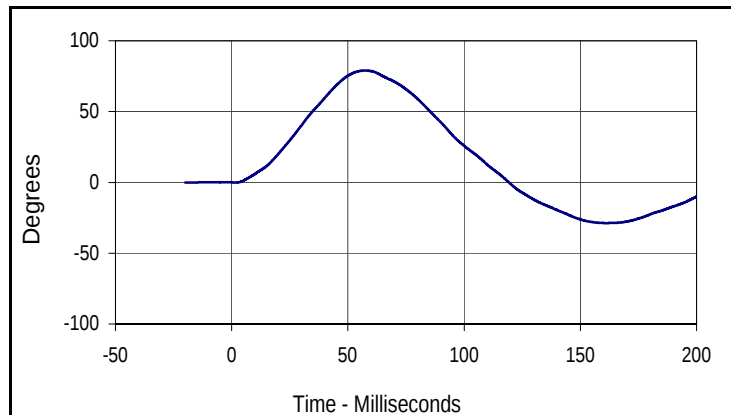
Test Date: 01/15/10
 Test I.D.: NB01C



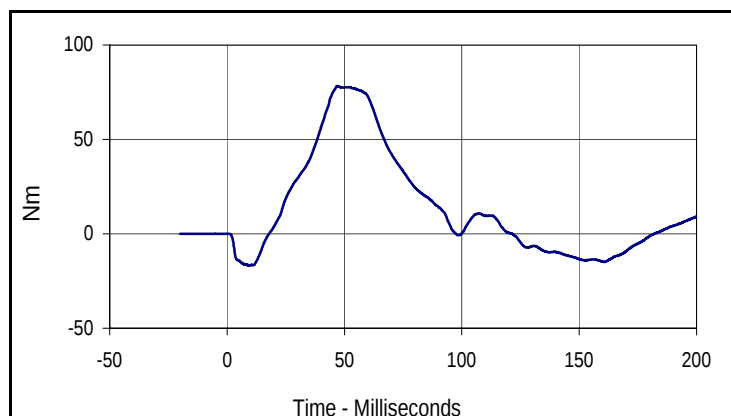
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	6.98	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.42	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.79	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.74	Pass
	40 to 70	m/sec	6.27 to 7.64	7.30	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	79.0	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	10.3	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	62.0	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	78.3	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	50.6	Pass
Overall Test Results					Pass



Curve Description			
ion			
CURNO	Type	SAE Class	Units
001	FIL	none	m/sec
Max	Time	Min	Time
8.8	200.0	0.0	-2.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	none	Degrees
Max	Time	Min	Time
79.0	57.3	-28.7	161.0



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	none	Nm
Max	Time	Min	Time
78.3	47.0	-17.0	9.1

Test Program: SID / HIII External Measurements
ATD Serial No.: 274

Test Date: 1/15/10
Test I.D.: N/A



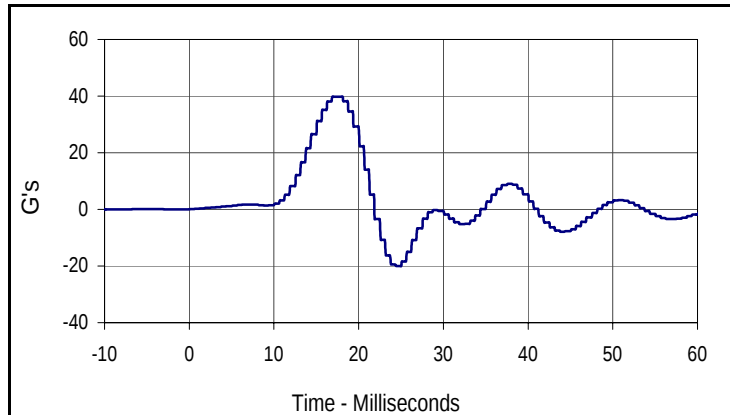
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
SH- Seated Height	mm	889 to 909	893	Pass
HP- Hip Point Height	mm	99 (reference)	99	Pass
RH- Rib Height	mm	502 to 520	514	Pass
KH- Knee Pivot From Back Line	mm	511 to 526	515	Pass
KV- Knee Pivot From Floor	mm	490 to 505	495	Pass
HW- Hip Width	mm	356 to 391	363	Pass
Overall Test Results				Pass

Test Program: SID / HIII Thorax Lateral Impact
 ATD Serial No.: 274

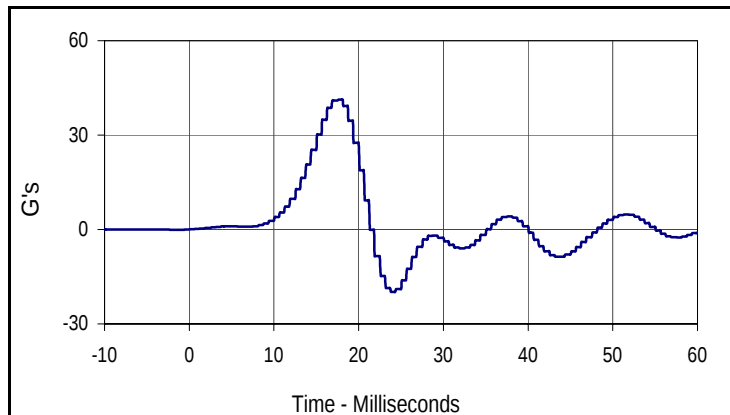
Test Date: 1/15/10
 Test I.D.: TH01D



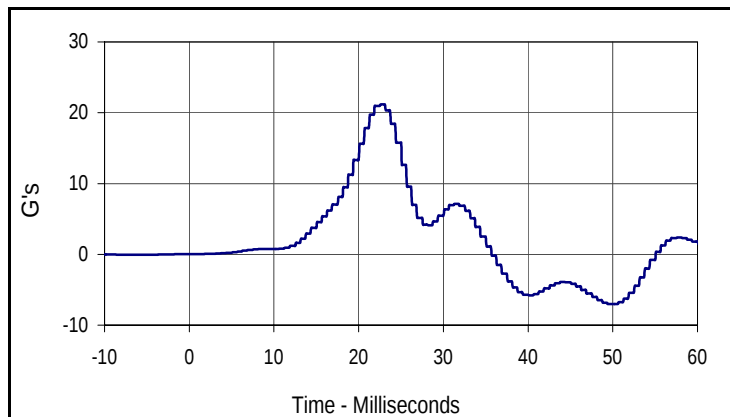
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	4.21 to 4.33	4.22	Pass
Upper Rib Acceleration	G's	37.0 to 46.0	39.8	Pass
Lower Rib Acceleration	G's	37.0 to 46.0	41.3	Pass
Thoracic Spine Acceleration	G's	15.0 to 22.0	21.2	Pass
Overall Test Results			Pass	



Curve Description			
Upper Rib Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
39.8	17.6	-20.1	24.4



Curve Description			
Lower Rib Y Primary			
CURNO	Type	SAE Class	Units
002	FIL	FIR100	G's
Max	Time	Min	Time
41.3	17.6	-19.9	23.8



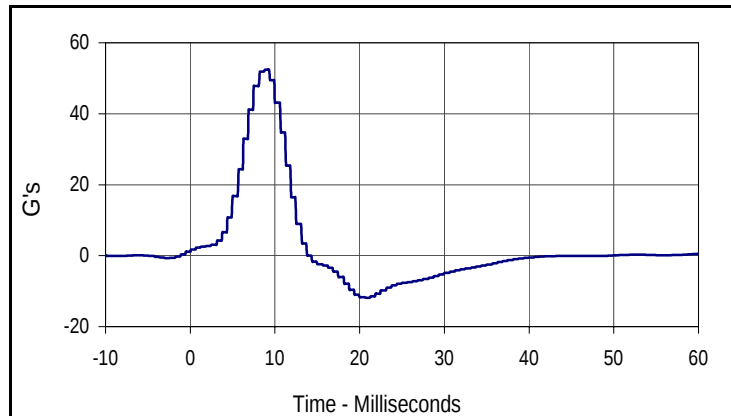
Curve Description			
Lower Spine Y Primary			
CURNO	Type	SAE Class	Units
003	FIL	FIR100	G's
Max	Time	Min	Time
21.2	22.6	-7.0	49.4

Test Program: SID / HIII Pelvis Lateral Impact
 ATD Serial No.: 274

Test Date: 1/15/10
 Test I.D.: PL01D



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	4.30	Pass
Peak Pelvis Acceleration	G's	40.0 to 60.0	52.5	Pass
Acceleration Time Above 20 G's	Msec.	3.0 to 7.0	4.90	Pass
Overall Test Results				Pass



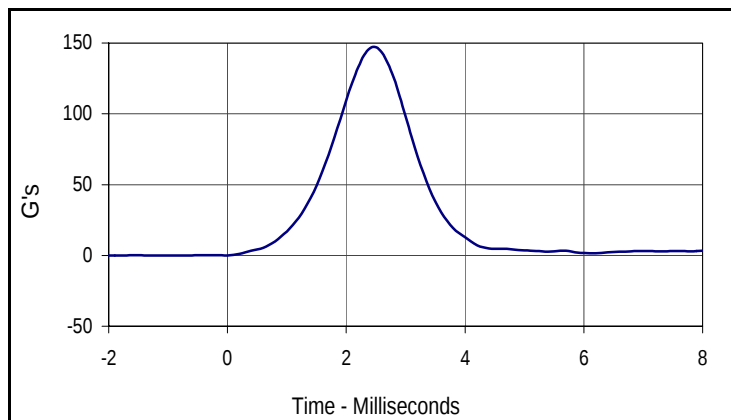
Curve Description			
Pelvis Y Primary			
CURNO	Type	SAE Class	Units
001	FIL	FIR100	G's
Max	Time	Min	Time
52.5	8.8	-11.9	20.7

Test Program: SID / HIII Head Drop Lateral Impact Test
 ATD Serial No.: 274

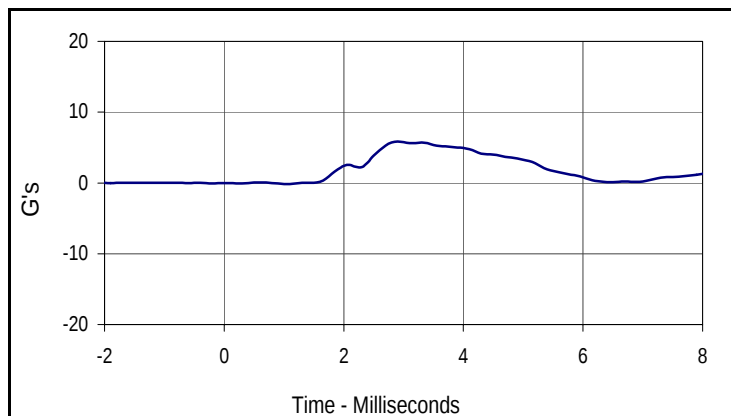
Test Date: 1/15/10
 Test I.D.: HD01D



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	147.0	Pass
Peak Longitudinal Acceleration	G's	≤15.0	5.8	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Oscillations After Main Pulse	%	<15	2.4	Pass
Overall Test Results			Pass	



Curve Description			
Head Resultant			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
147.0	2.5	0.0	-1.4



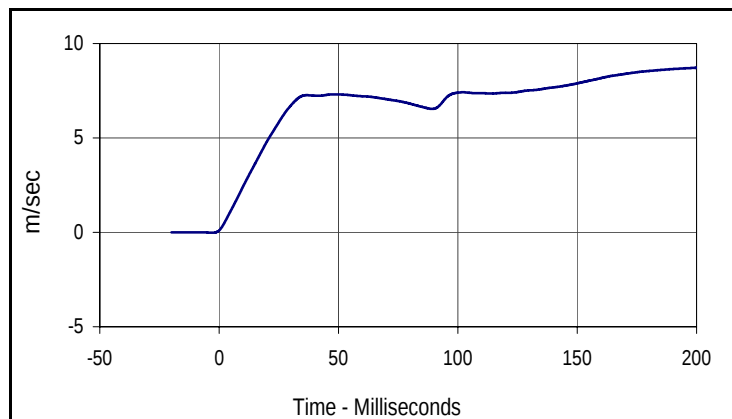
Curve Description			
Head X			
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.8	2.9	-0.2	1.0

Test Program: SID / HIII Neck Pendulum Lateral Test
 ATD Serial No.: 274

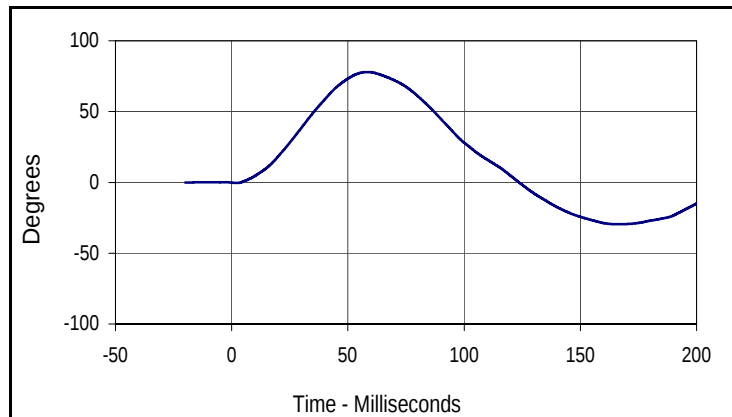
Test Date: 1/15/10
 Test I.D.: NB01D



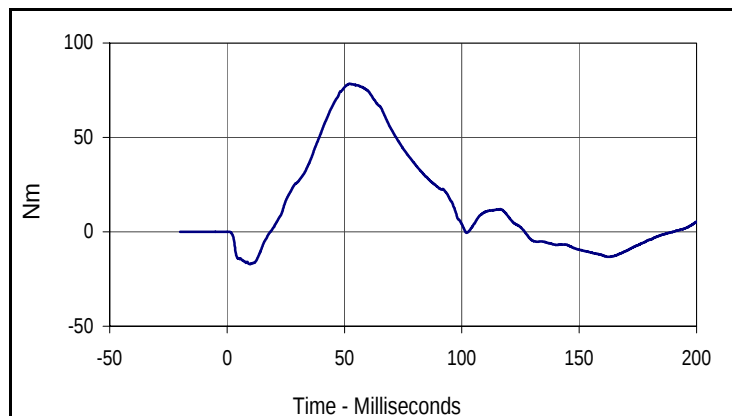
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/sec	6.89 to 7.13	6.93	Pass
Pendulum Deceleration	10 Msec.	m/sec	1.96 to 2.55	2.42	Pass
	20 Msec.	m/sec	4.12 to 5.10	4.80	Pass
	30 Msec.	m/sec	5.73 to 7.01	6.72	Pass
	40 to 70	m/sec	6.27 to 7.64	7.31	Pass
"D" Plane Rotation	Max	Degrees	66.0 to 82.0	77.9	Pass
Max Rotation Time After Peak Moment		Msec.	2.0 to 16.0	6.3	Pass
Rotation Time From Peak to Zero Angle		Msec.	58.0 to 67.0	65.3	Pass
Moment About Occipital Condyle		Nm	73.0 to 88.0	78.5	Pass
Positive Moment Decay, Time To 0 Nm		Msec.	49.0 to 64.0	49.5	Pass
Overall Test Results				Pass	



Curve Description			
ion			
CURNO	Type	SAE Class	Units
001	FIL	none	m/sec
Max	Time	Min	Time
8.7	200.0	0.0	-2.7



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	none	Degrees
Max	Time	Min	Time
77.9	58.4	-29.6	165.9



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	none	Nm
Max	Time	Min	Time
78.5	52.1	-17.1	9.8