

REPORT NUMBER: NCAP-KAR-11-001

**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

**TOYOTA MOTOR MANUFACTURING, NORTHERN KENTUCKY, INC.
2011 TOYOTA CAMRY LE 4-DOOR SEDAN**

NHTSA NUMBER: MB5100

**PREPARED BY:
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9270 HOLLY ROAD
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JULY 7, 2010

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY PERFORMANCE STANDARDS
OFFICE OF CRASHWORTHINESS STANDARDS
1200 NEW JERSEY AVE, SE
ROOM W43-410
WASHINGTON, DC 20590**

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Approval Date: July 7, 2010

FINAL REPORT ACCEPTANCE BY OCWS:

Division Chief, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

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16. Abstract A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2011 Toyota Camry LE 4-door sedan in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301 and foot well intrusion performance. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on June 24, 2010. The impact velocity of the vehicle was 56.00 km/h and the ambient temperature at the barrier face at the time of impact was 33.3 deg. C. The target vehicle's maximum post-test maximum crush was 507 mm at the vehicle centerline. The test vehicle's performance is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th rowspan="2">Units</th> <th colspan="2">Driver ATD</th> <th colspan="2">Passenger ATD</th> </tr> <tr> <th>Threshold</th> <th>Result</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td> <td>N/A</td> <td>700.0</td> <td>404.5</td> <td>700.0</td> <td>378.0</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>24</td> <td>52</td> <td>25</td> </tr> <tr> <td>Nij</td> <td>N/A</td> <td>1</td> <td>0.40</td> <td>1</td> <td>0.65</td> </tr> <tr> <td>Neck Tension</td> <td>N</td> <td>4170</td> <td>1714.1</td> <td>2620</td> <td>952.7</td> </tr> <tr> <td>Neck Compression</td> <td>N</td> <td>4000</td> <td>718.4</td> <td>2520</td> <td>381.0</td> </tr> <tr> <td>Left Femur Force</td> <td>N</td> <td>10008</td> <td>1923.1</td> <td>6805</td> <td>2260.7</td> </tr> <tr> <td>Right Femur Force</td> <td>N</td> <td>10008</td> <td>2519.5</td> <td>6805</td> <td>2274.4</td> </tr> </tbody> </table>				Measurement Description	Units	Driver ATD		Passenger ATD		Threshold	Result	Threshold	Result	Head Injury Criteria (HIC ₁₅)	N/A	700.0	404.5	700.0	378.0	Maximum Chest Compression	mm	63	24	52	25	Nij	N/A	1	0.40	1	0.65	Neck Tension	N	4170	1714.1	2620	952.7	Neck Compression	N	4000	718.4	2520	381.0	Left Femur Force	N	10008	1923.1	6805	2260.7	Right Femur Force	N	10008	2519.5	6805	2274.4
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SECTION 1

PURPOSE AND SUMMARY OF TEST

PURPOSE

This 56.3 km/h frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program, sponsored by the National Highway Traffic Safety Administration (NHTSA) under contract number DTNH22-06-D-00027. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

The 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure, dated January, 2010.

SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2011 Toyota Camry LE 4-door sedan at a velocity of 56.0 km/h. The test was performed at KARCO Engineering, LLC. on June 24, 2010. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

Three (3) real-time camera and sixteen (16) high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in Data Sheet 6 of this report.

One Part 572E 50th percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O 5th percentile female ATD was placed in the right-front passenger seating position according to dummy placement instructions specified in the Frontal NCAP Laboratory Test Procedure.

Both ATDs were fully instrumented with head, chest and pelvis tri-axial accelerometers, chest displacement potentiometers, upper neck force transducers, right / left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure the dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 035) and the right-front passenger (position 2) ATD (Serial No. 635) were calibrated prior to this test. Certification details, along with instrumentation calibration data, are found in Appendix C of this report.

The 128 channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces.

There was 100% windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum static crush of the test vehicle was 507 mm located at the vehicle centerline. Both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: The driver ATD's head contacted the airbag and the headrest. The upper torso contacted the airbag. Both the left and right knees contacted the knee airbag, with the left knee also contacting the knee bolster.

The passenger's visible contact points were as follows: The passenger ATD's head contacted the airbag and headrest. The upper torso contacted the airbag. Both the left and right knees contacted the glovebox.

The occupant data is summarized below:

ATD Position	HIC ₁₅	T^1	T^2	Chest Disp. (mm)	Nij	Neck Tension (N)	Neck Comp. (N)	Left Femur (N)	Right Femur (N)
Driver (50th)	404.5	64.3	79.3	-24	0.40	1714.1	-718.4	-1923.1	-2519.5
Passenger (5th)	378.0	64.5	79.5	-25	0.65	952.7	-381.0	-2260.7	-2274.4

SECTION 2
DATA SHEETS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

CONVERSION FACTORS

Quantity	Typical Application	Std Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	miles/hr	km/hr	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	N•m	1.355

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2011 Toyota Camry LE 4-Door Sedan	NHTSA No.:	MB5100
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	06/24/10

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MB5100
Make	Toyota
Model	Camry LE
Body Style	4-Door Sedan
VIN	4T4BF3EKXBR112045
Body Color	Spruce Mica
Delivery Date	5/26/2010
Odometer Reading (mi)	78
Odometer Reading (km)	125.5
Dealer	Crown Toyota
Transmission	6-Speed Automatic
Final Drive	Front
Type / No. of Cylinders	Inline 4
Engine Displacement (L)	2.5
Engine Placement	Transverse
Roof Rack	No
Sunroof / T-Top	No
Tinted Glass	No
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 Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	Yes
Driver Torso/Pelvis Airbag	No
Driver Pelvis Airbag	No
Driver Knee Airbag	Yes
Pass. Front Airbag	Yes
Pass. Curtain Airbag	Yes
Pass. Head/Torso Airbag	No
Pass. Torso Airbag	Yes
Pass. Torso/Pelvis Airbag	No
Pass. Pelvis Airbag	No
Pass. Knee Airbag	No
Pre-Tensioners	Yes
Load Limiters	Yes
Automatic Door Locks	Yes
Tilt Steering	Yes
Other	n/a

Does Owner's Manual provide instructions to turn off automatic door locks?

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Manufacturing, Kentucky, Inc.
Date of Manufacture	May-10

GVWR (kg)	1970
GAWR Front (kg)	1210
GAWR Rear (kg)	1070

VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				406.0
Cargo Weight (RCLW) (kg)				65.8

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

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	459.0	298.5		491.0	377.0	
Right	kg	446.0	290.5		467.5	357.5	
Ratio	%	60.6%	39.4%	100.0%	56.6%	43.4%	100.0%
Total	kg	905.0	589.0	1494.0	958.5	734.5	1693.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1494.0	A
Weight of 1 P572E ATD & 1 P572O ATD	kg	141.0	B
Rated Cargo/Luggage Weight (RCLW)	kg	65.8	C
Calculated Vehicle Target Weightt (TVTW)	kg	1700.8	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	722	727	726	727	1093
As Tested	mm	707	709	690	698	1203
Post-Test	mm	712	709	690	686	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	2773
Total Vehicle Length at Left Side	mm	4062
Total Vehicle Length at Centerline	mm	4810
Total Vehicle Length at Right Side	mm	4057
Weight of Ballast in Cargo Area	kg	0
Weight of Vehicle Components Removed	kg	0
Amount of Stoddard Solvent in Fuel Tank	L	65.12

VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

None

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

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

TARGET VEHICLE STRUCTURAL MEASUREMENTS

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length	4810	4303	-507
2	Total Width	1820	1900	80
3	Bumper Top Height	575	657	82
4	Bumper Bottom Height	218	266	48
5	Longitudinal Member Top Height	530	590	60
6	Distance Between Longitudinal Members	920	1000	80
7	Longitudinal Member Width	90	90	0
8	Engine Top Height	845	872	27
9	Engine Bottom Height	148	179	31
10	Engine and Gearbox Width	570	570	0
11	Front Bumper to Engine Distance	657	384	-273
12	Front Shock Absorber Fixing Height	893	915	22
13	Bonnet Leading Edge Height	793	834	41
14	Front Shock Absorber Fixing Width	1195	1155	-40
15	Front Bumper to Front Axle Distance	942	555	-387
16	Front Axle to A-Pillar Distance	460	380	-80
17	A-Pillar to B-Pillar Distance	1080	1081	1
18	B-Pillar to Rear Axle Distance	1165	1160	-5
19	B-Pillar to C-Pillar Distance	1003	1001	-2
20	Roof Sill Bottom Height	1308	1310	2
21	Roof Sill Top Height	1415	1424	9
22	Floor Sill Bottom Height	178	181	3
23	Floor Sill Top Height	355	357	2

All measurements in millimeters.

DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan

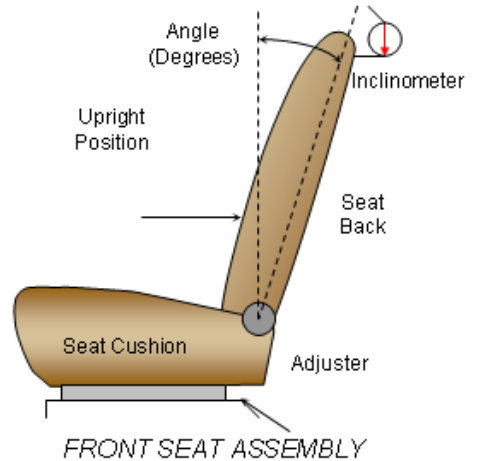
NHTSA No.: MB5100

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 06/24/10

NOMINAL DESIGN RIDING POSITION

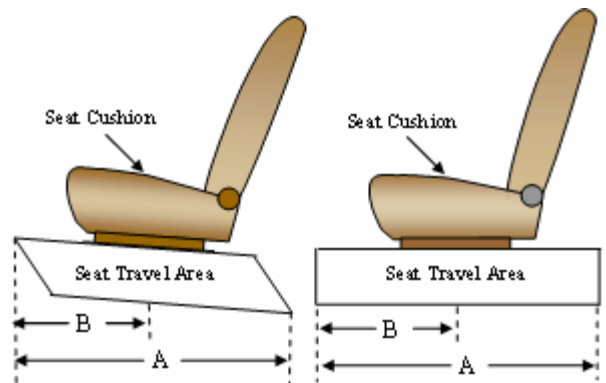
The procedure for the driver is as follows: the seat back is set to the manufacturer's designated angle; seat back angle is measured at the headrest post using a digital inclinometer. The procedure for the passenger is as follows: the seat back is set to position the transverse instrumentation platform of the dummy's head at $0^\circ \pm 0.5^\circ$; seat back angle is measured at the headrest post using a digital inclinometer.



Seating Position	Degrees
Driver Seat Back Angle	3.0
Passenger Seat Back Angle	3.0

SEAT FORE / AFT POSITIONS

The total seat travel is measured from the forward most possible position to the rearmost possible position. The driver's seat is set to the mid travel longitudinal position with the seat in the full down height position at the manufacturer's designated cushion angle, full down for this test. The passenger's seat is set to the forward most position where the ATD will not contact any interior panels. The passenger's seat was not height adjustable, and there was no cushion angle adjustment.



Seating Position	Total Fore-Aft Travel	Placed in Position
Driver Seat	284 mm	148 mm
Passenger Seat	253 mm	0 mm

SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer's design position for a 50th percentile adult male ATD for the driver, and a 5th percentile adult female ATD for the passenger. Position one (1) is the uppermost position.

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	4	2
Passenger Seat	4	4

DATA SHEET NO. 2 ... (CONTINUED)

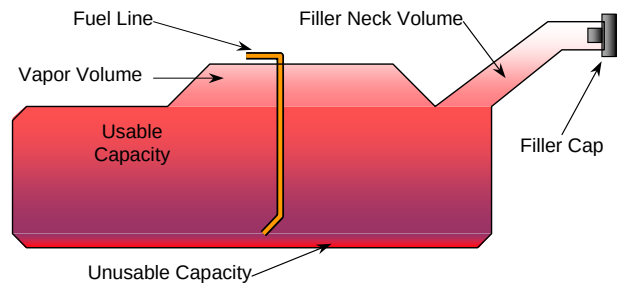
SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	70.02
Usable Capacity of "Optional Tank"	
92 - 94% of Usable Capacity	64.42 to 65.82
Actual Amount of Stoddard Solvent Used	56.12
1/3 of Usable Capacity	23.34

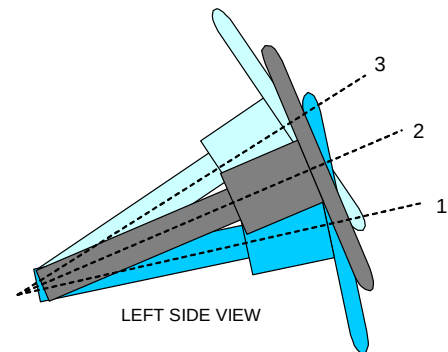
The test vehicle is equipped with an electric fuel pump. The fuel pump will operate for approximately when the ignition is turned on. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat.



VEHICLE FUEL TANK ASSEMBLY

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. A digital inclinometer is used to measure a plate which is placed across the rim of the steering wheel for angular measurements. A tape measure is used with a reference mark on the steering column to measure telescoping travel.



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONING

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	23.9	94
Geometric Center Position, No. 2	25.5	113
Uppermost Position, No. 3	27.0	132
Telescoping Steering Wheel Travel		38
Test Position	25.5	113

DATA SHEET NO. 3

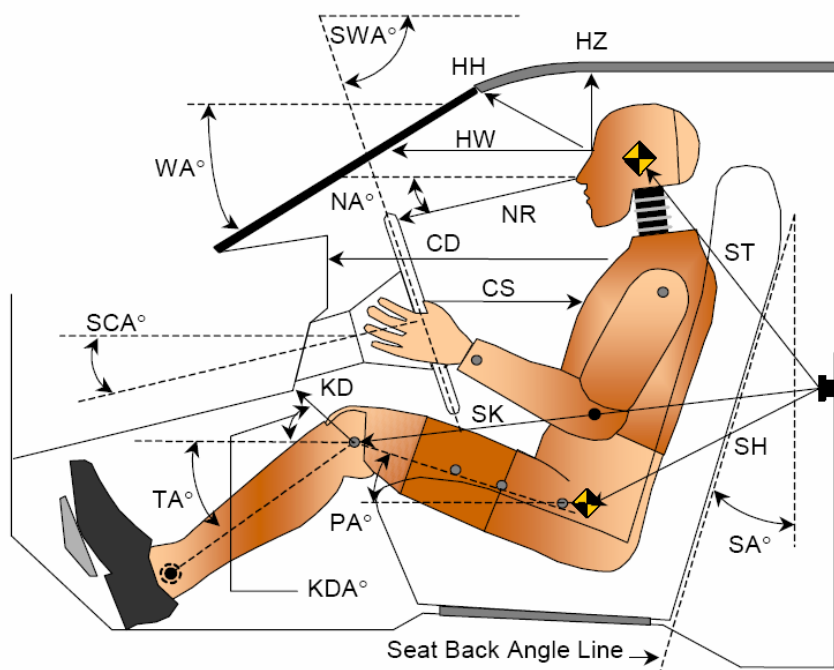
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan

NHTSA No.: MB5100

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 06/24/10

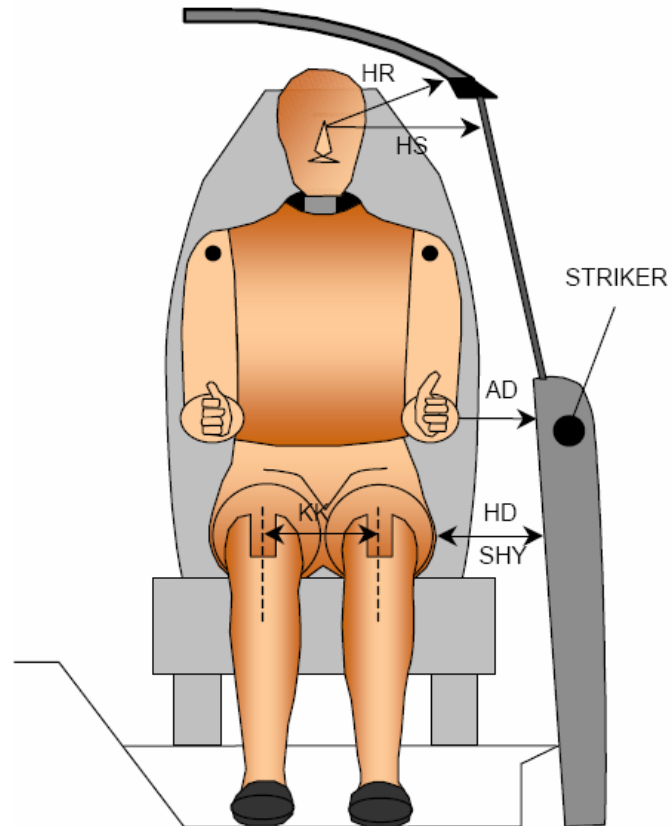


Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		26.3		
SWA°	Steering Wheel Angle		64.4		
SCA°	Steering Column Angle		25.6		
SA°	Seat Back Angle (On Headrest Post)		3.0		3.7
HZ	Head to Roof	196	90.0	203	90.0
HH	Head to Header	357	23.4	291	50.4
HW	Head to Windshield	631	0.0	622	0.0
HR	Head to Side Header	231		210	
NR	Nose to Rim	417	11.6	478	31.5
CD	Chest to Dash	543	11.6	459	
CS	Chest to Steering Hub	335	4.1		
RA	Rim to Abdomen	199	0.0		
KDL	Left Knee to Dash	188	25.9	102	41.7
KDR	Right Knee to Dash	152	23.4	106	40.2
PA°	Pelvic Angle		24.6		24.0
TA°	Tibia Angle		43.2		49.3
SK	Striker to Knee	616	14.8	744	13.8
ST	Striker to Head	396	79.3	415	54.5
SH	Striker to H-Point	337	47.7	449	30.4

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2011 Toyota Camry LE 4-Door Sedan	NHTSA No.:	MB5100
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	06/24/10



Code	Description	Driver (mm)	Passenger (mm)
AD	Arm to Door	57	94
HD	H-Point to Door	35	171
HR	Head to Side Header	231	270
HS	Head to Side Window	322	325
KK	Knee to Knee	319	237
SHY	Striker to H-Point (Y-Direction)	145	147
AA	Ankle to Ankle	337	192

DATA SHEET NO. 5

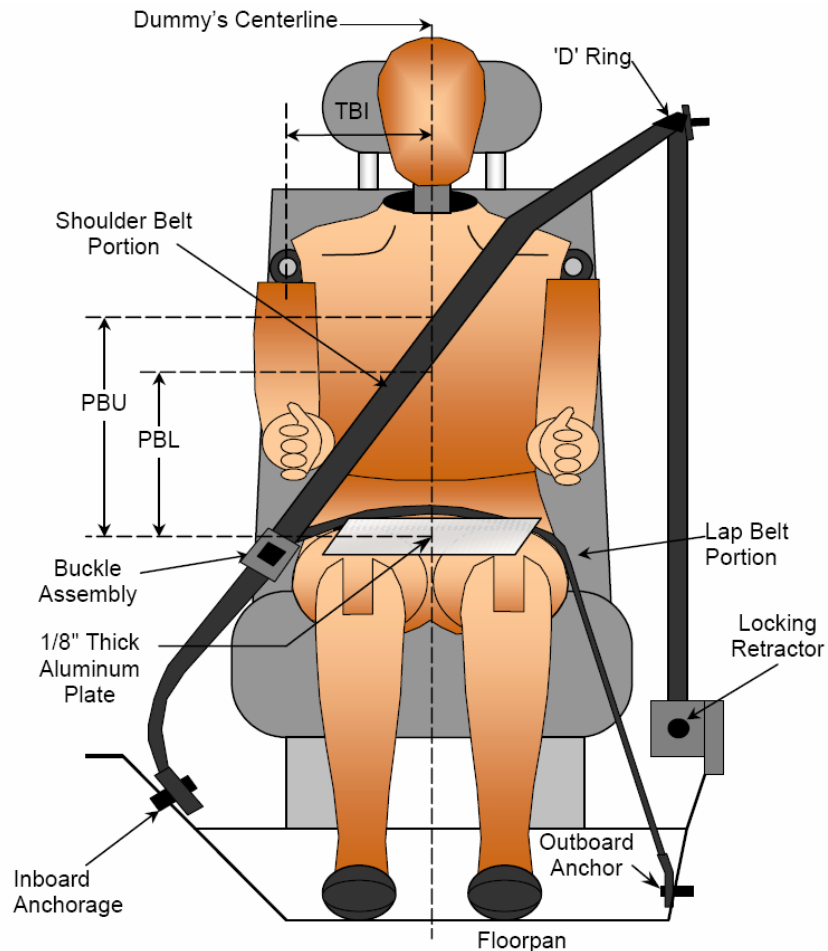
SEAT BELT POSITIONING DATA

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan

NHTSA No.: MB5100

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 06/24/10



SEAT BELT POSITIONING MEASUREMENTS

Code	Measurement Description	Units	Driver	Passenger
PBU	Top Surface of Aluminum Plate to Belt Upper Edge	mm	365	280
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	291	200

BELT LENGTH DATA

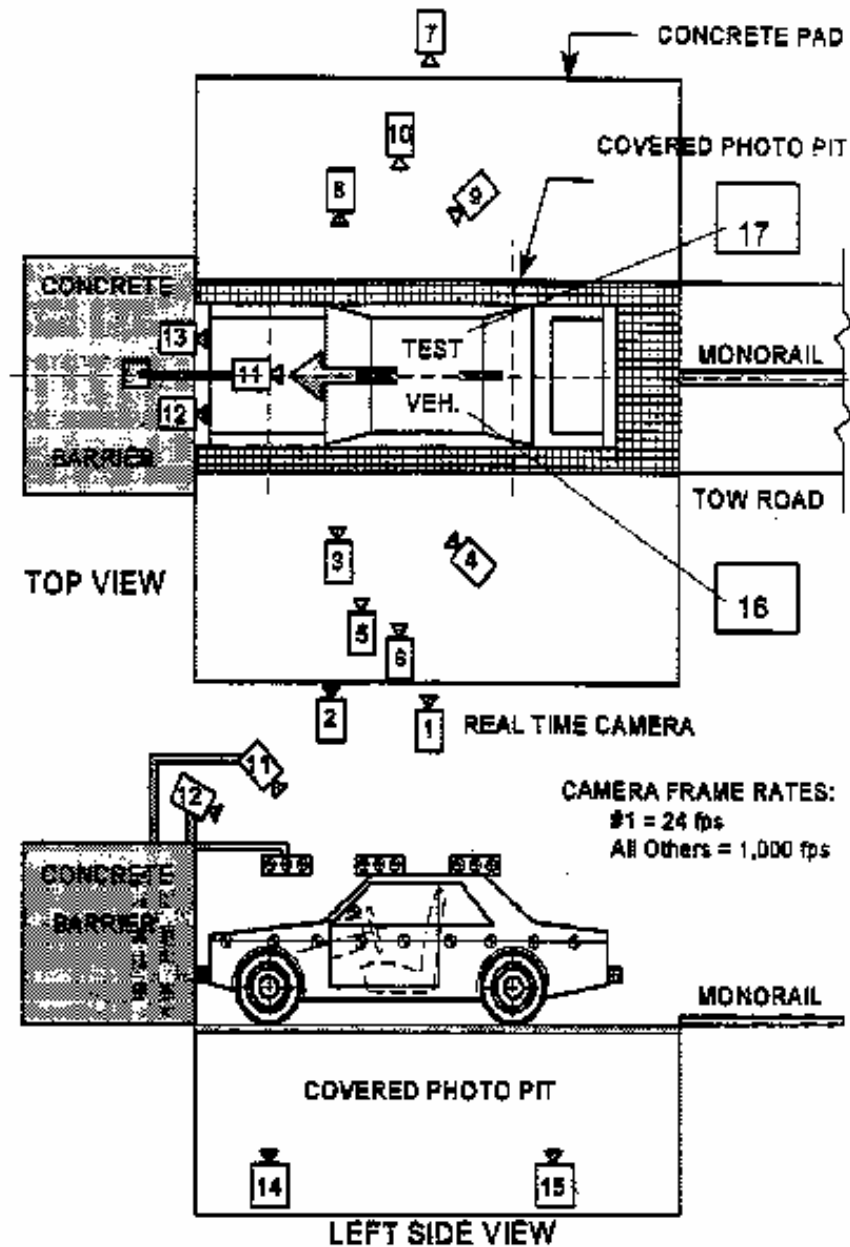
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	887	919
Lap Belt Length as Measured on ATD	mm	861	934
Remainder of Belt on Reel	mm	895	781
Total Belt Length for Continuous Webbing Systems	mm	2643	2634

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET NO. 6 ... (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan

NHTSA No.: MB5100

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 06/24/10

No.	Description	Location			Angle (°)	Film Plane to Head Target	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real-Time Camera	11412	-8150	-1484				30
2	Overall Left Side	-2590	-7950	-1371	0	9881	24	1000
3	Left Side A-Pillar	-1701	-6197	-1701	0	7921	85	1000
4	Left Side B-Pillar	-6696	-5987	-1071	-17	11281	ZOOM	1000
5	Steering Column Upper	-1966	-8141	-3258	-13	9887	35	1000
6	Steering Column Lower	-1972	-8184	-2879	-13	9870	35	1000
7	Driver's Seat Belt	-2715	275	1555			12	1000
8	Overall Right Side	-2336	7569	-1168	0	9417	24	1000
9	Right Side A-Pillar	-1600	6121	-1651	0	7789	70	1000
10	Passenger IP View	-5136	9516	-2460	0	7795	ZOOM	1000
11	Right Side B-Pillar	-5136	9516	-2460	-10	12626	ZOOM	1000
12	Passenger's Seat Belt	-2715	-210	1555			12	1000
13	Overhead Passenger View	381	445	-2548	-34		12	1000
14	Overhead Driver View	363	-543	-2548	-34		12	1000
15	Overhead Windshield View	354	0	-5749	-90		24	1000
16	Pit View of Engine Compartment	-756	0	1495	90		12	1000
17	Pit View of Fuel Tank	-3398	0	1495	90		8	1000

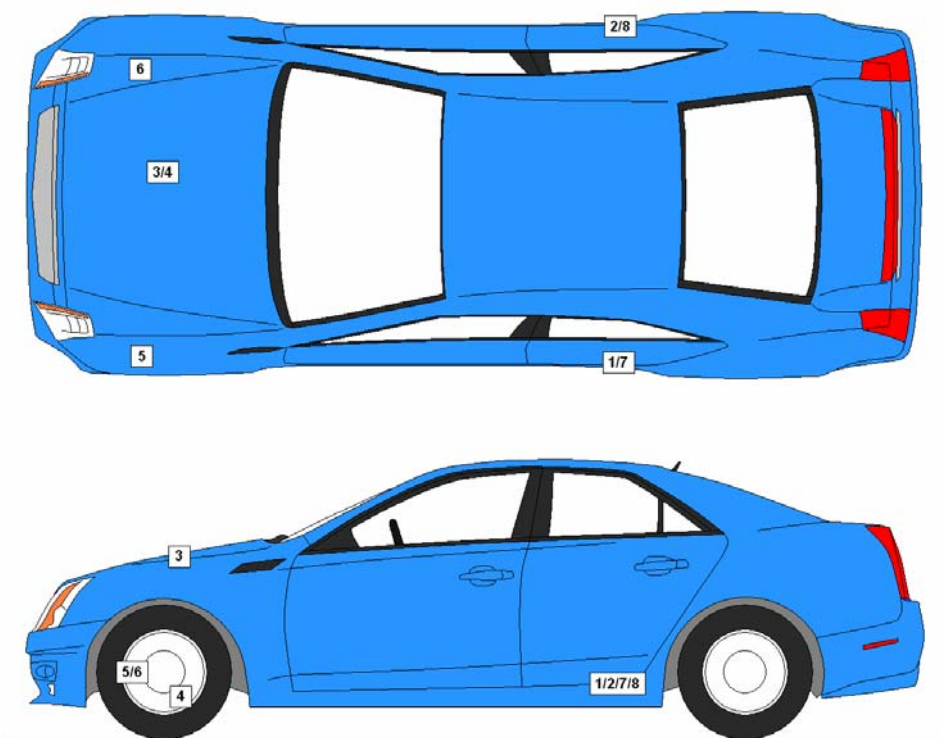
Reference Points:

- X – Front Surface of Vehicle (+ Forward)
- Y – Vehicle Centerline (+ Passenger Side)
- Z – Ground Plane (+ Down)

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Description	Location		
		X	Y	Z
1	Left Rear Cross Member X	1940	-740	345
2	Right Rear Cross Member X	1940	740	345
3	Engine Top X	3880	50	855
4	Engine Bottom X	4010	165	140
5	Left Brake Caliper X	3670	-760	235
6	Right Brake Caliper X	3670	760	235
7	Left Rear Cross Member Z	1940	-740	345
8	Right Rear Cross Member Z	1940	-740	345

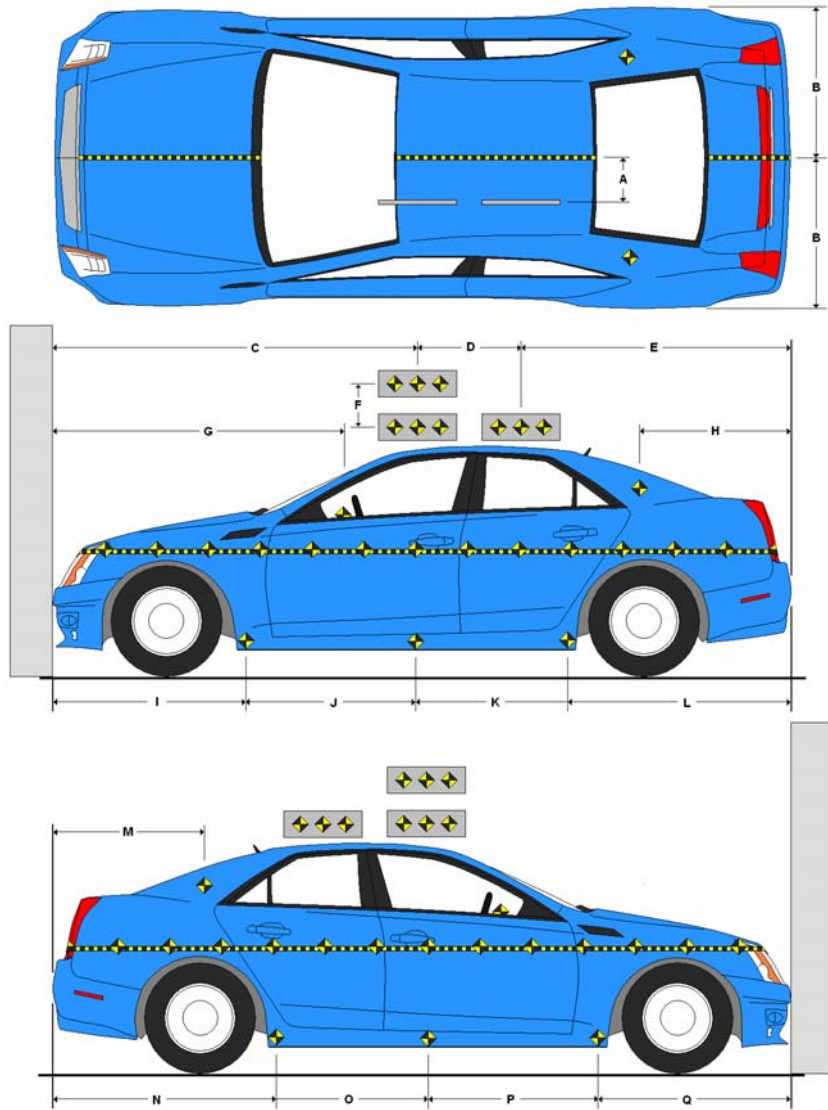
Reference Points: X – Rear Surface of Vehicle (+ Forward)
Y – Vehicle Centerline (+ Passenger Side)
Z – Ground Plane (+ Up)

DATA SHEET NO. 8

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

Item	Value
A	383
B	910
C	2215
D	610
E	1998
F	392
G	1730
H	1236
I	1382
J	945
K	945
L	1527
M	1215
N	1524
O	945
P	945
Q	1388



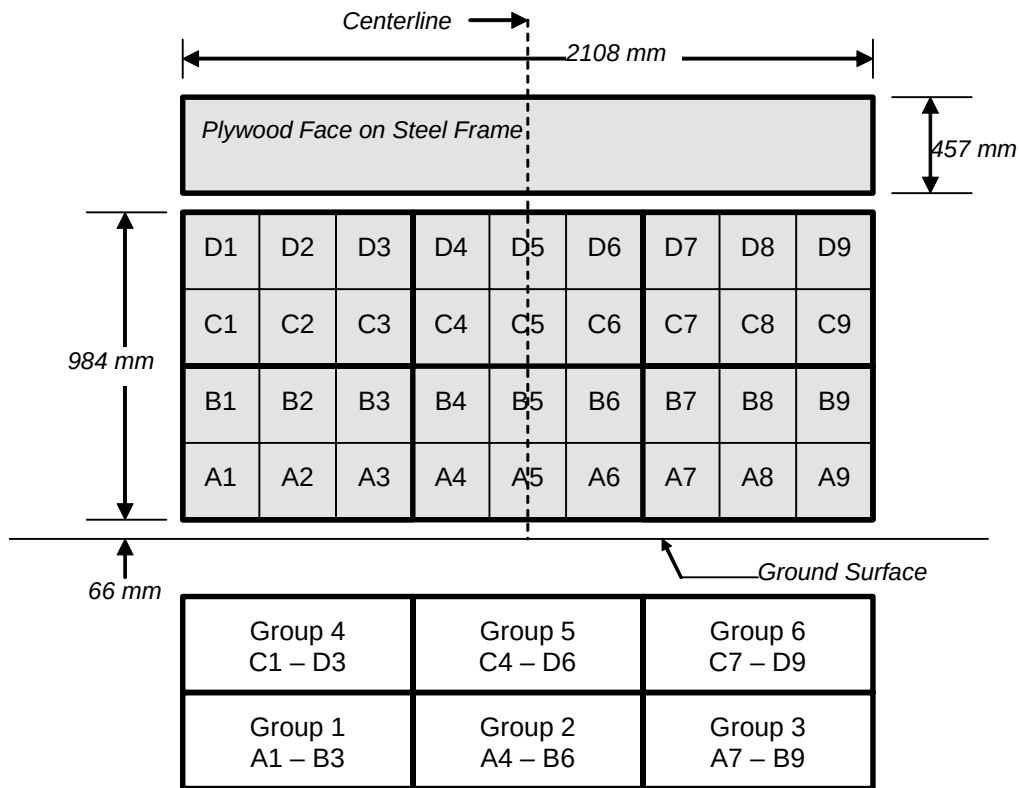
All measurements in millimeters.

DATA SHEET NO. 9

LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

36 Load Cell Rigid Barrier (NHTSA Standard) Load Cell Locations on Fixed Barrier



6 Groups of 6 Load Cells Each

DATA SHEET NO. 10

TEST VEHICLE CAMERA AND INSTRUMENTATION SUMMARY

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

INSTRUMENTATION

Driver Dummy Accelerometers	42
Passenger Dummy Accelerometers	42
Vehicle Structure Accelerometers	8
Load Cell Barrier	36
Total	128

CAMERA COVERAGE

High-Speed Vehicle On-Board	2
High-Speed Offboard	14
Real Time	3
Total	19

DATA SHEET NO. 11

POST-TEST OBSERVATIONS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan

NHTSA No.: MB5100

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 06/24/10

TEST DUMMY INFORMATION AND CONTACT

Description	Driver	Passenger
Dummy Type/Serial No.	P572E 50th Percentile Male ATD / 034	P572O 5th Percentile Female ATD / 635
Head Contact	Airbag, Headrest	Airbag, Headrest, Seat Back
Upper Torso Contact	Airbag	Airbag
Lower Torso Contact	None	None
Left Knee Contact	Bolster, Steering Column	Glovebox
Right Knee Contact	Bolster	Glovebox

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Locked / Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Rear Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Seat Track Shift (mm)	10 mm	12 mm
Seat Back Failure	None	None
Glazing Damage	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Windshield Damage	Cracked
Window Damage	None
Other Notable Effects	Hood became unlatched during impact event

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	1500
Center	mm	1495
Right Side	mm	1535
Average	mm	1510

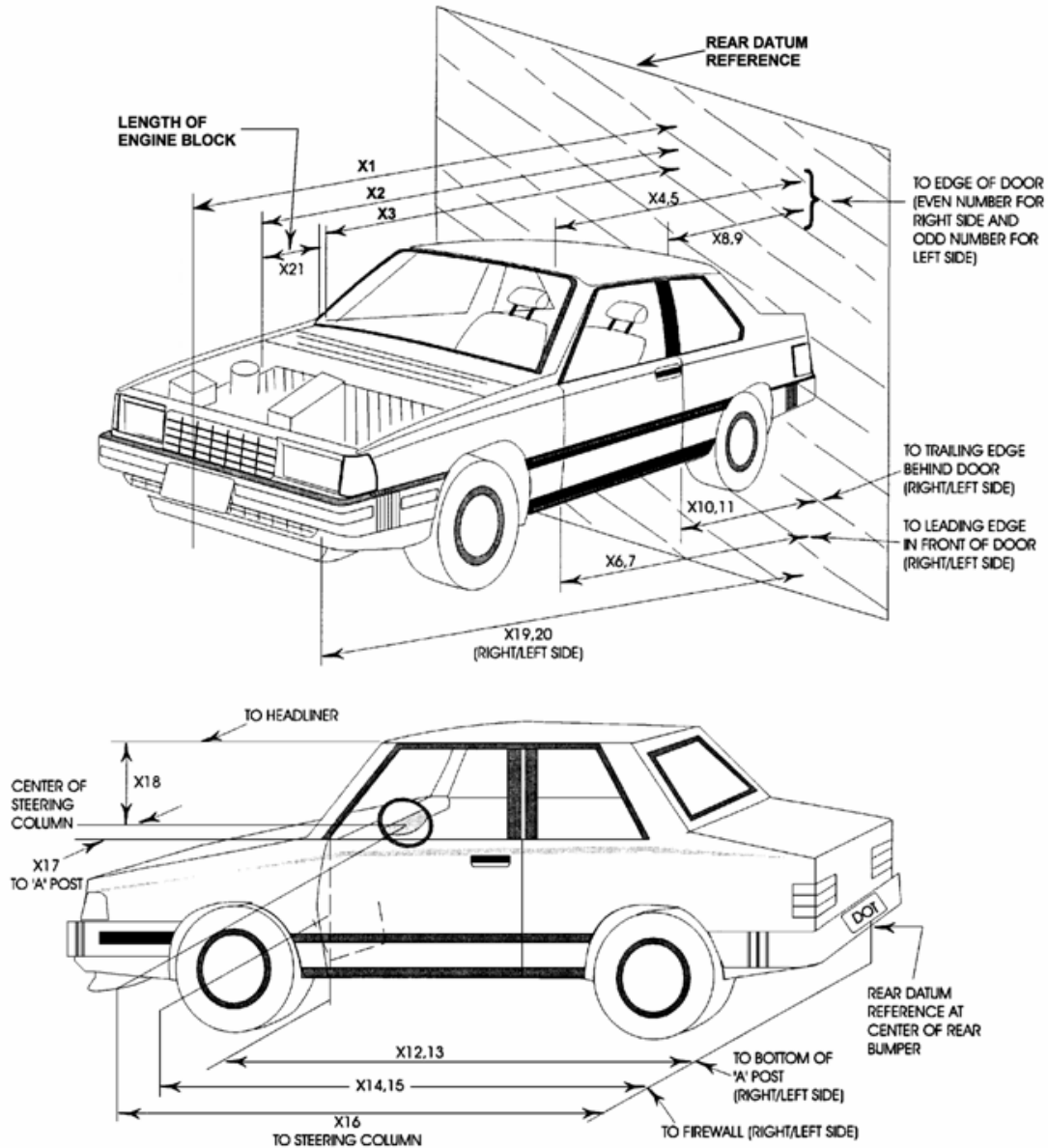
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Driver		Passenger	
	Installed	Operated	Installed	Operated
Front Airbag	Yes	Yes	Yes	Yes
Curtain Airbag	Yes	No	Yes	No
Torso Airbag	Yes	No	Yes	No
Knee Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	Yes	No
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Other				

DATA SHEET NO. 12

VEHICLE PROFILE MEASUREMENTS

Test Vehicle:	2011 Toyota Camry LE 4-Door Sedan	NHTSA No.:	MB5100
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	06/24/10

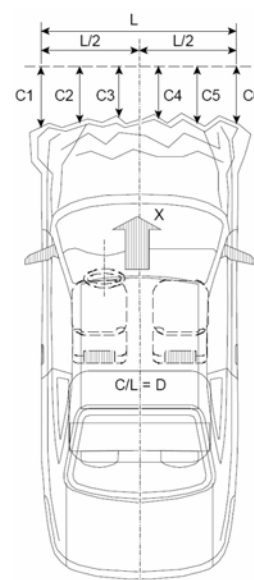


DATA SHEET NO. 12 ... (CONTINUED)**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	4810	4303	-507
2	Rear Surface of Vehicle to Front of Engine	4153	3919	-234
3	RSOV to Firewall	3780	3730	-50
4	RSOV to Upper Leading Edge of Right Door	3425	3441	16
5	RSOV to Upper Leading Edge of Left Door	3435	3441	6
6	RSOV to Lower Leading Edge of Right Door	3385	3388	3
7	RSOV to Lower Leading Edge of Left Door	3380	3371	-9
8	RSOV to Upper Trailing Edge of Right Door	2250	2268	18
9	RSOV to Upper Trailing Edge of Left Door	2255	2260	5
10	RSOV to Lower Trailing Edge of Right Door	2245	2250	5
11	RSOV to Lower Trailing Edge of Left Door	2255	2246	-9
12	RSOV to Bottom of A-Pillar of Right Side	3383	3414	31
13	RSOV to Bottom of A-Pillar Left Side	3393	3416	23
14	RSOV to Firewall, Right Side	3780	3678	-102
15	RSOV to Firewall, Left Side	3815	3718	-97
16	RSOV to Steering Column	2897	2895	-2
17	Center of Steering Column to A-Pillar	410	400	-10
18	Center of Steering Column to Headliner	410	400	-10
19	RSOV to Right Side of Front Bumper	4057	4000	-57
20	RSOV to Left Side of Front Bumper	4062	3995	-67
21	Length of Engine Block	550	550	0
RD	RSOV to Right Side of Dash Panel	3117	3141	24
CD	RSOV to Center of Dash Panel	3085	3041	-44
LD	RSOV to Left Side of Dash Panel	3124	3115	-9

All measurements in millimeters.

DATA SHEET NO. 13**ACCIDENT INVESTIGATION DATA**Test Vehicle: 2011 Toyota Camry LE 4-Door SedanNHTSA No.: MB5100Test Program: 56 km/h Frontal Impact NCAP TestTest Date: 06/24/10**VEHICLE INFORMATION**VIN: 4T4BF3EKXBR112045Wheelbase (mm): 2773Vehicle Size Category: 4-Door SedanTest Weight (kg): 1693.0**ACCELEROMETER DATA**Accelerometer Locations: Left Rear CrossmemberCal. Procedure/Interval: Drop Test / 6 monthsIntegration Algorithm: NHTSA StandardImpact Velocity (km/h): 56.00Velocity Change (km/h): 63.0Time of Separation (msec): 69.0Linearity: Good**CRUSH PROFILE**Collision Deformation Classification: 12FCEW2Midpoint of Damage: Vehicle CenterlineDamage Region Length (mm): 1808Impact Mode: Full Frontal

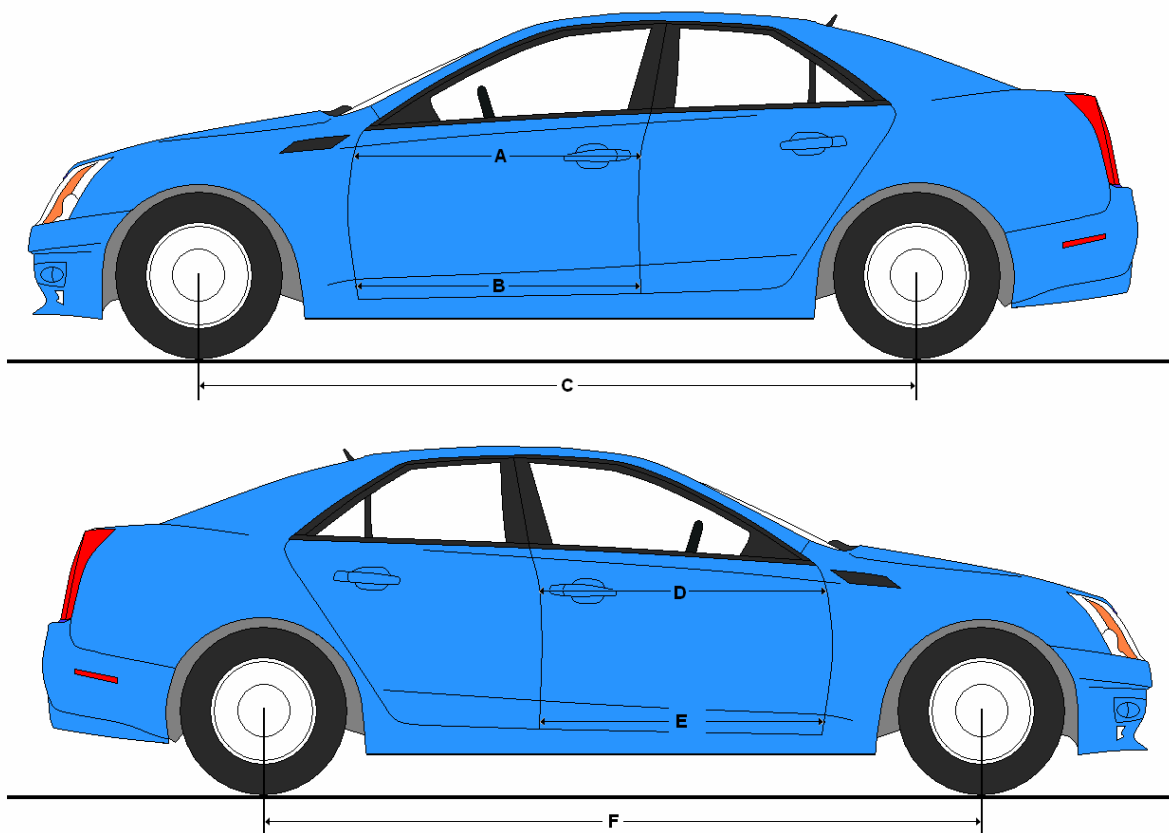
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	755	820	-65
C2	Crush Zone 2 at Left Side	mm	120	530	-410
C3	Crush Zone 3 at Left Side	mm	25	520	-495
C4	Crush Zone 4 at Right Side	mm	25	530	-505
C5	Crush Zone 5 at Right Side	mm	120	510	-390
C6	Crush Zone 6 at Right Side	mm	753	787	-34
L	C1 to C6	mm	1808		

DATA SHEET NO. 14**VEHICLE INTRUSION MEASUREMENTS**Test Vehicle: 2011 Toyota Camry LE 4-Door SedanNHTSA No.: MB5100Test Program: 56 km/h Frontal Impact NCAP TestTest Date: 06/24/10**DOOR OPENING WIDTH**

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	1083	1081	-2
B	Left Side Lower	mm	833	808	-25
D	Right Side Upper	mm	1078	1078	0
E	Right Side Lower	mm	838	844	6

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2773	2704	-69
F	Right Side Wheelbase	mm	2774	2724	-50



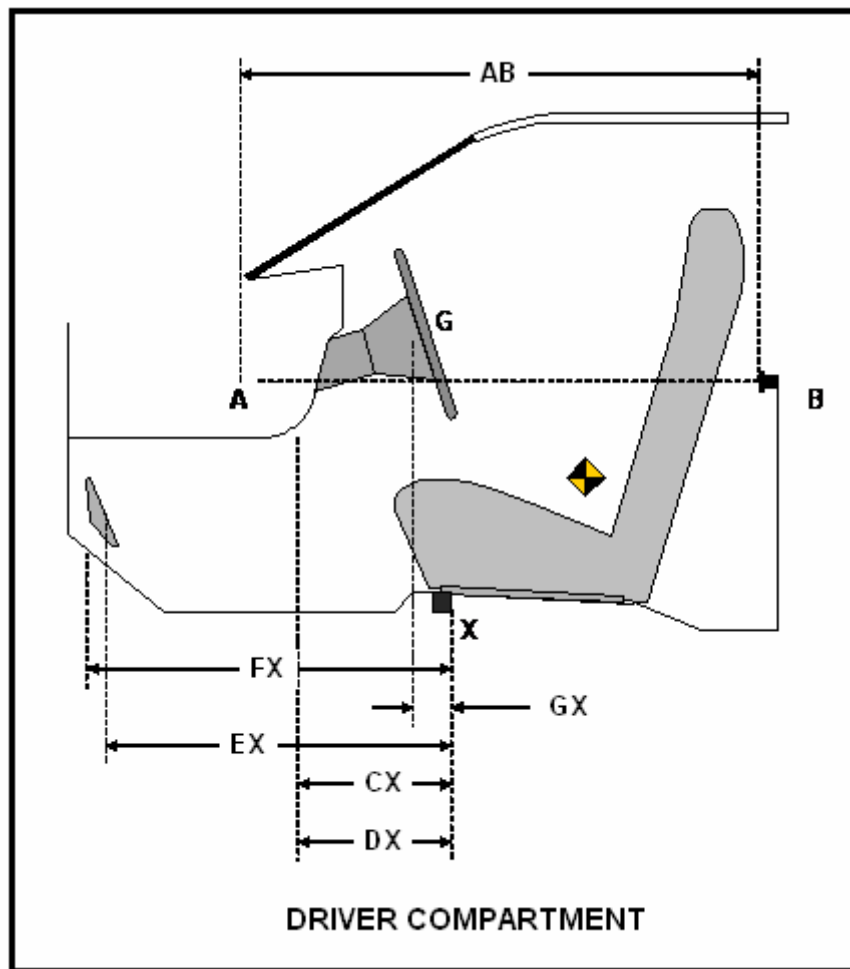
DATA SHEET NO. 14 ... (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

DRIVER COMPARTMENT INTRUSION

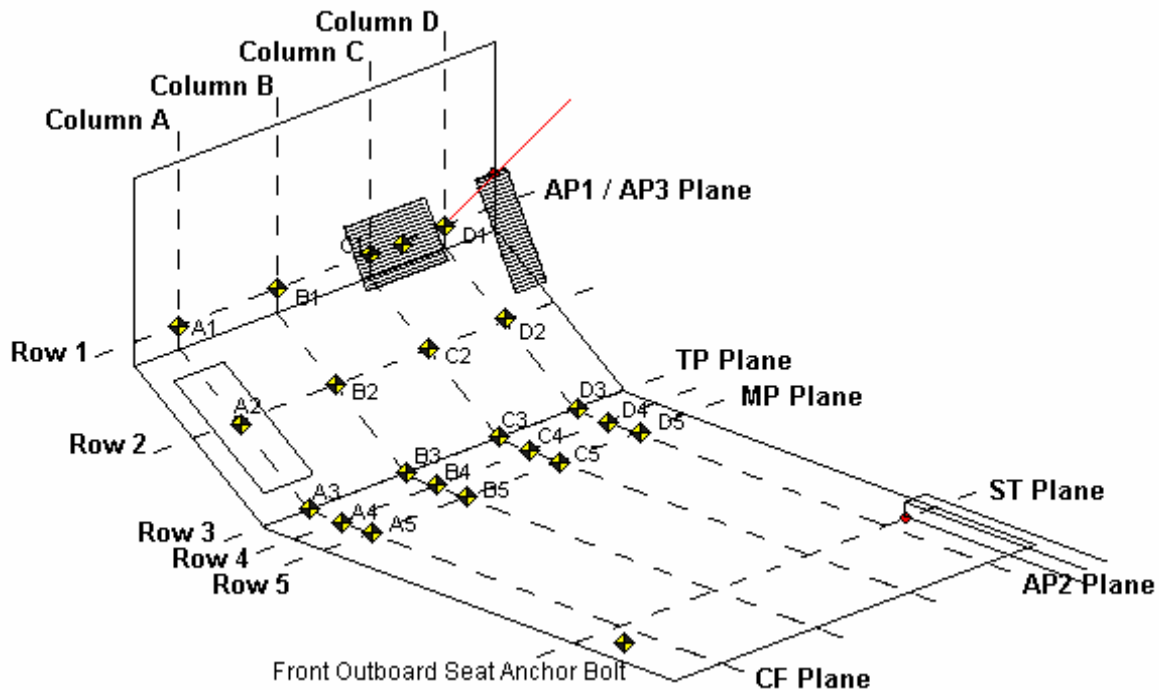
Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	1083	1081	-2
CX	Left Knee Bolster to X	mm	278	265	-13
DX	Right Knee Bolster to X	mm	245	260	15
EX	Brake Pedal to X	mm	565	510	-55
FX	Foot Rest to X	mm	590	630	40
GX	Center of Steering Wheel Hub to X	mm	83	45	-38

X = Front of Seat Track (Stationary)



DATA SHEET NO. 14 ... (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Toyota Camry LE 4-Door Sedan	NHTSA No.:	MB5100
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	06/24/10



AP1: Y-Z Plane passing through D1

AP2: X-Z Plane passing through D1

AP3: X-Y plane passing through D1

MP: Y-Z plane, halfway between the ST plane and AP1 plane

CF Plane: X-Z plane passes through center of footrest.

BP Plane: X-Z plane passes through center of brake pedal

TP Plane: Y-Z plane, intersection of BP Plane and the intersection of the toe pan and floorboard

Column A: intersection of vehicle and CF plane

Column D: Intersection of vehicle and AP2 plane

Row 1: intersection of the vehicle and the AP3 Plane

Row 3: intersection of the vehicle and TP plane

Row 5: intersection of the vehicle and MP plane

Row 2: evenly spaced between row 1 and 3

Row 4: evenly spaced between row 3 and 5

DATA SHEET NO. 14 ... (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

DRIVER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	669	717	718	716	636	663	669	650	-33	-54	-49	-66
2	647	646	643	652	622	616	606	616	-25	-30	-37	-36
3	564	563	565	565	554	543	540	529	-10	-20	-25	-36
4	483	482	481	481	473	475	473	444	-10	-7	-8	-37
5	404	402	399	392	396	395	392	374	-8	-7	-7	-18

DRIVER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-10	-96	-204	-385	-10	-106	-211	-390	0	-10	-7	-5
2	-10	-98	-199	-389	-12	-101	-203	-391	-2	-3	-4	-2
3	-7	-101	-198	-394	-8	-100	-196	-392	-1	1	2	2
4	-5	-101	-197	-391	-3	-94	-193	-383	2	7	4	8
5	-2	-99	-199	-391	5	-92	-190	-377	7	7	9	14

DRIVER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	120	97	93	101	128	113	112	113	8	16	19	12
2	19	22	30	25	24	29	35	24	5	7	5	-1
3	-33	-32	-29	-30	-33	-36	-33	-31	0	-4	-4	-1
4	-66	-55	-55	-60	-69	-64	-62	-51	-3	-9	-7	9
5	-70	-62	-62	-68	-73	-75	-76	-45	-3	-13	-14	23

All measurements in millimeters

DATA SHEET NO. 14 ... (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

PASSENGER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	718	744	725	674	645	690	669	636	-73	-54	-56	-38
2	648	655	657	659	611	618	623	629	-37	-37	-34	-30
3	567	576	576	583	527	547	552	557	-40	-29	-24	-26
4	493	504	511	512	454	480	492	488	-39	-24	-19	-24
5	397	407	412	414	379	397	401	407	-18	-10	-11	-7

PASSENGER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	389	190	96	7	390	196	100	4	1	6	4	-3
2	389	187	94	-2	389	188	94	-3	0	1	0	-1
3	385	187	90	-6	382	184	87	-7	-3	-3	-3	-1
4	382	185	90	-9	373	178	84	-13	-9	-7	-6	-4
5	385	179	90	-10	366	167	83	-18	-19	-12	-7	-8

PASSENGER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	89	88	92	114	104	106	108	119	15	18	16	5
2	17	23	26	34	17	31	32	39	0	8	6	5
3	-43	-33	-33	-24	-41	-38	-38	-20	2	-5	-5	4
4	-62	-61	-59	-64	-53	-78	-73	-65	9	-17	-14	-1
5	-76	-66	-65	-70	-42	-91	-85	-79	34	-25	-20	-9

All measurements in millimeters

DATA SHEET NO. 15

SUMMARY OF FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

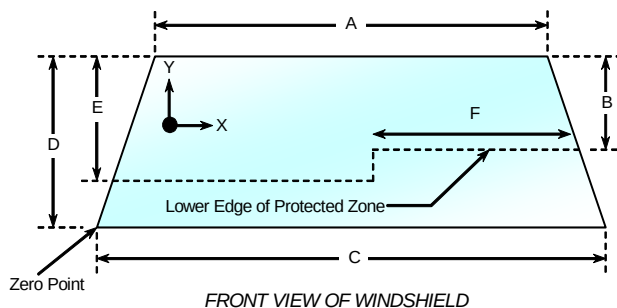
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with rubber cement type adhesive and plastic molding.

The standard requires that the post-test retention measurement be a minimum of 75% of the pre-test total periphery measurement for vehicles not equipped with occupant passive restraints and 50% for each side of the windshield for vehicles which are equipped with occupant passive restraints.

Temperature of windshield molding during test: 22.2° C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2197	2197	
Right Side	2197	2197	
Total	4394	4394	100%



Item	Units	Value
A	mm	1188
B	mm	354
C	mm	1495
D	mm	855
E	mm	552
F	mm	515

AREAS OF PROTECTED ZONE FAILURES

- A. Provide Coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one that is normally in contact with the windshield.

X	Y

- B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y

DATA SHEET NO. 16

FMVSS 301 FUEL SYSTEM INTEGRITY POST-IMPACT DATA

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10

FMVSS 301 FUEL SYSTEM INTEGRITY DATA

Temperature at Time of Impact: 33.3° Test Time: 2:31 PM

Stoddard Solvent Spillage Measurements

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable = 1 oz.)
- B. For the 5 minute period after motion ceases: 0 oz.
(Maximum allowable = 5 oz.)
- C. For the following 25 minutes: 0 oz.
(Maximum allowable = 1 oz./minute)
- D. Spillage: No spillage occurred

DATA SHEET NO. 17

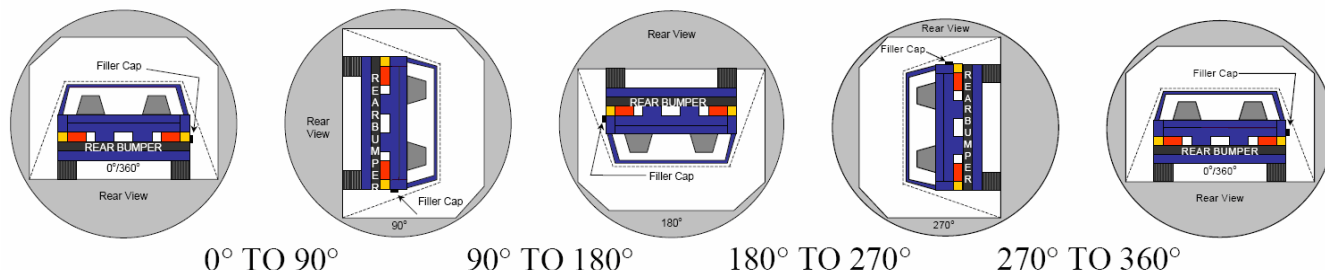
FMVSS 301 STATIC ROLLOVER

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan

NHTSA No.: MB5100

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 06/24/10



1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard solvent spillage: No spillage occurred

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	84	300	384
90° To 180°	80	300	380
180° To 270°	77	300	377
270° To 360°	78	300	378

FMVSS 301 SPILLAGE TABLE

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

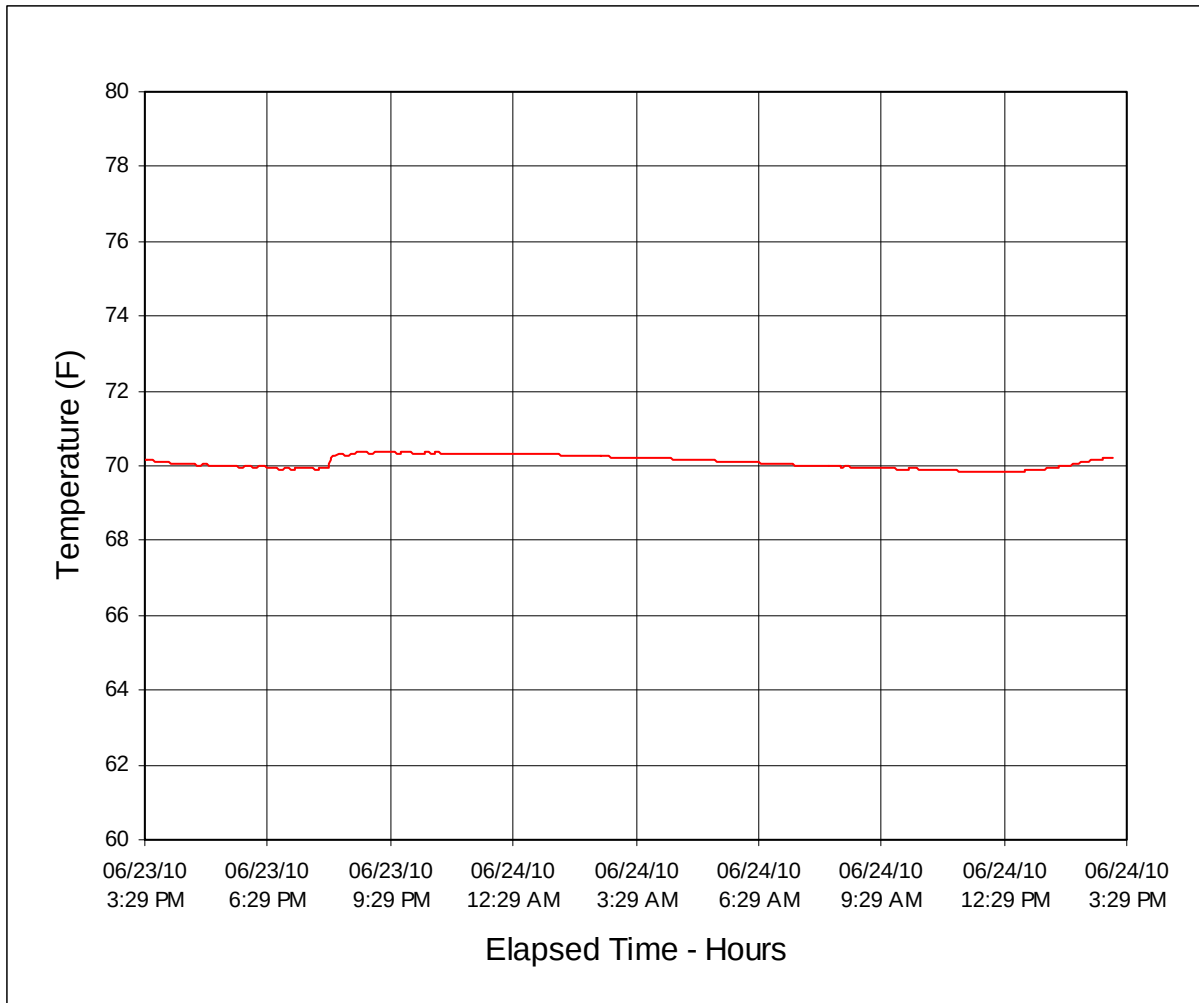
SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 18

DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan NHTSA No.: MB5100
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 06/24/10



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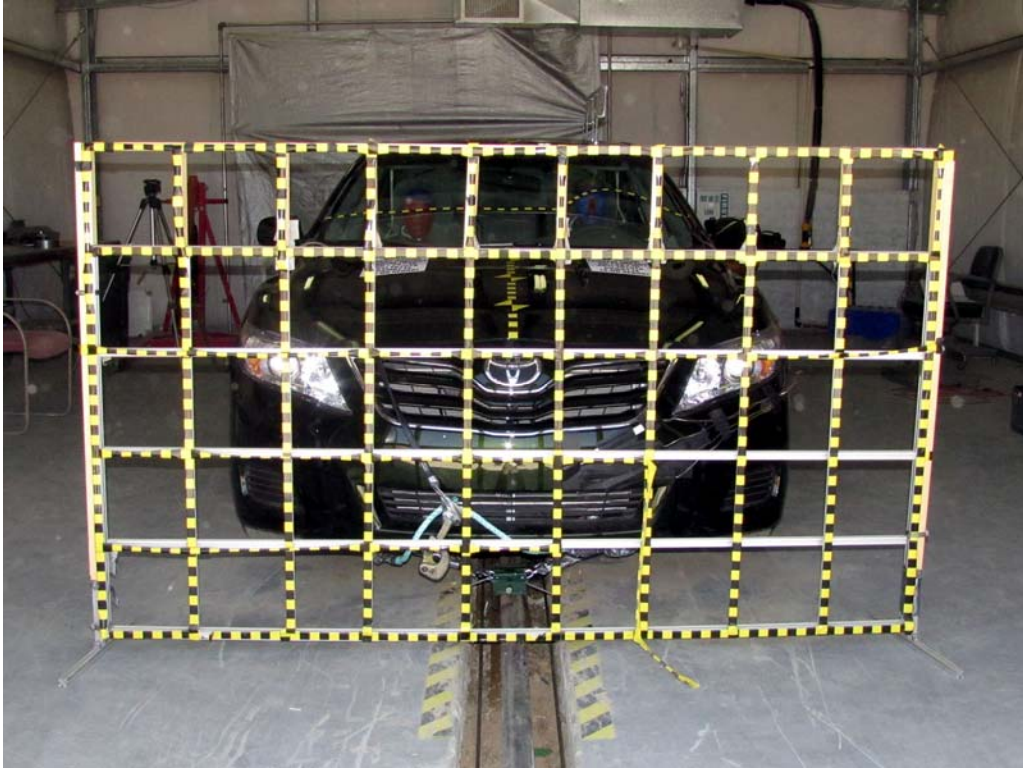


FIGURE 1. Load Cell Location

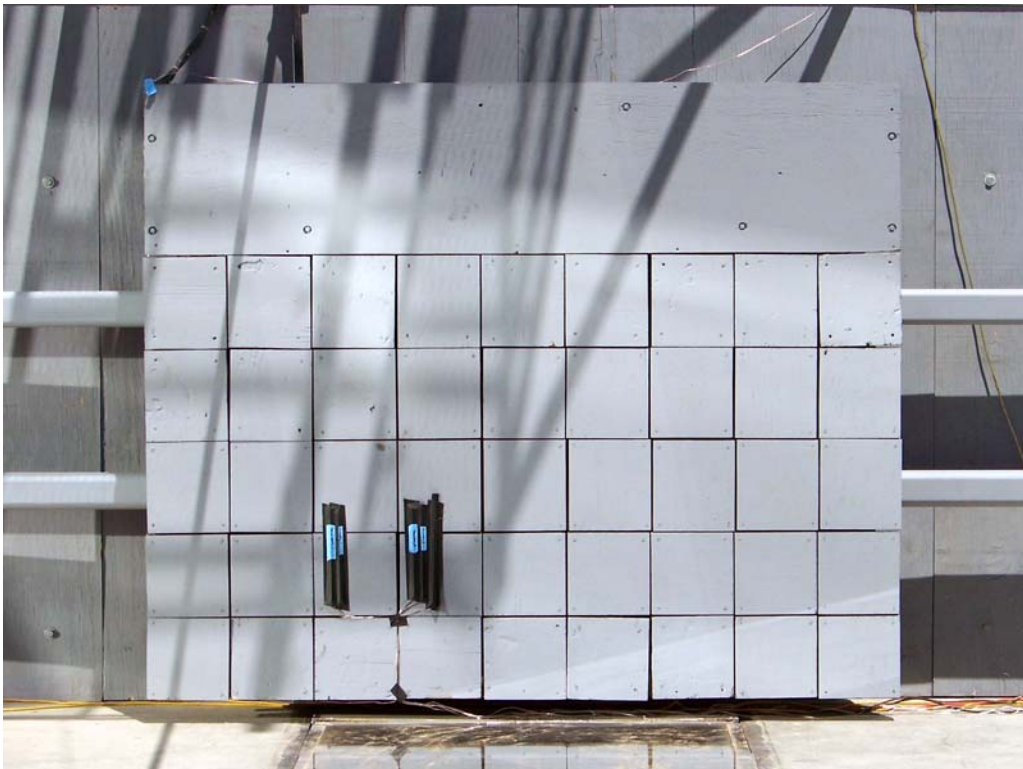


FIGURE 2. Load Cell Wall

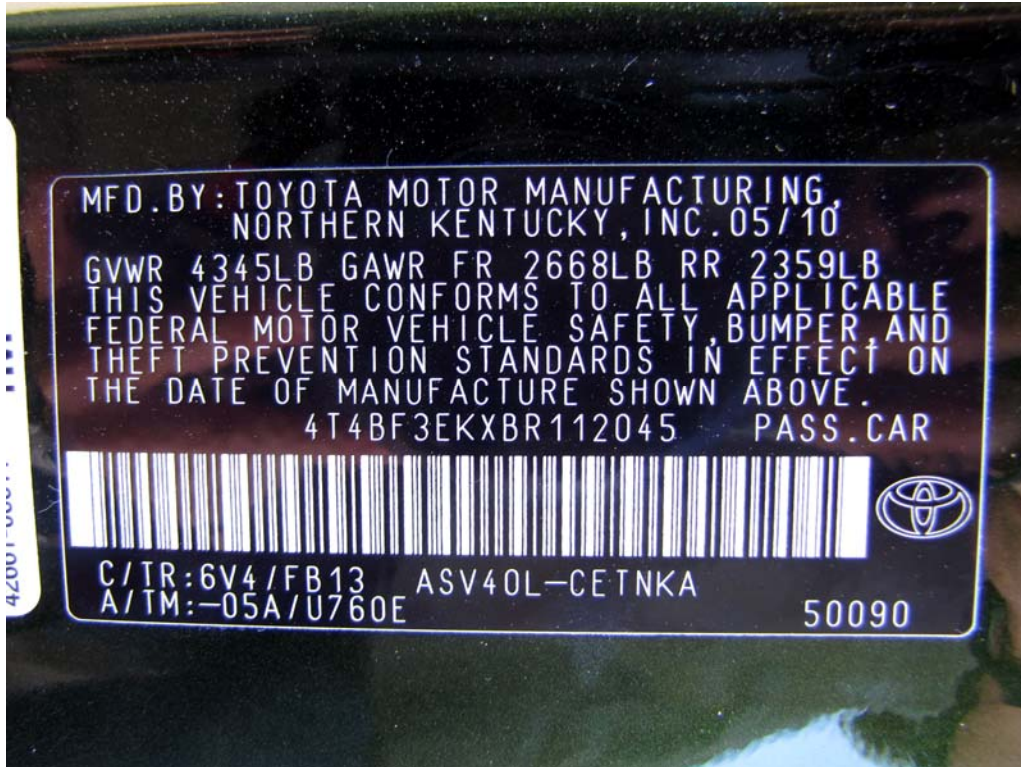


FIGURE 3. Manufacturer's Label



FIGURE 4. Tire Placard



FIGURE 5. Right Front $\frac{3}{4}$ View, As Received



FIGURE 6. Left Rear $\frac{3}{4}$ View of Vehicle, As Received



FIGURE 7. Pre-Test Front View of Test Vehicle

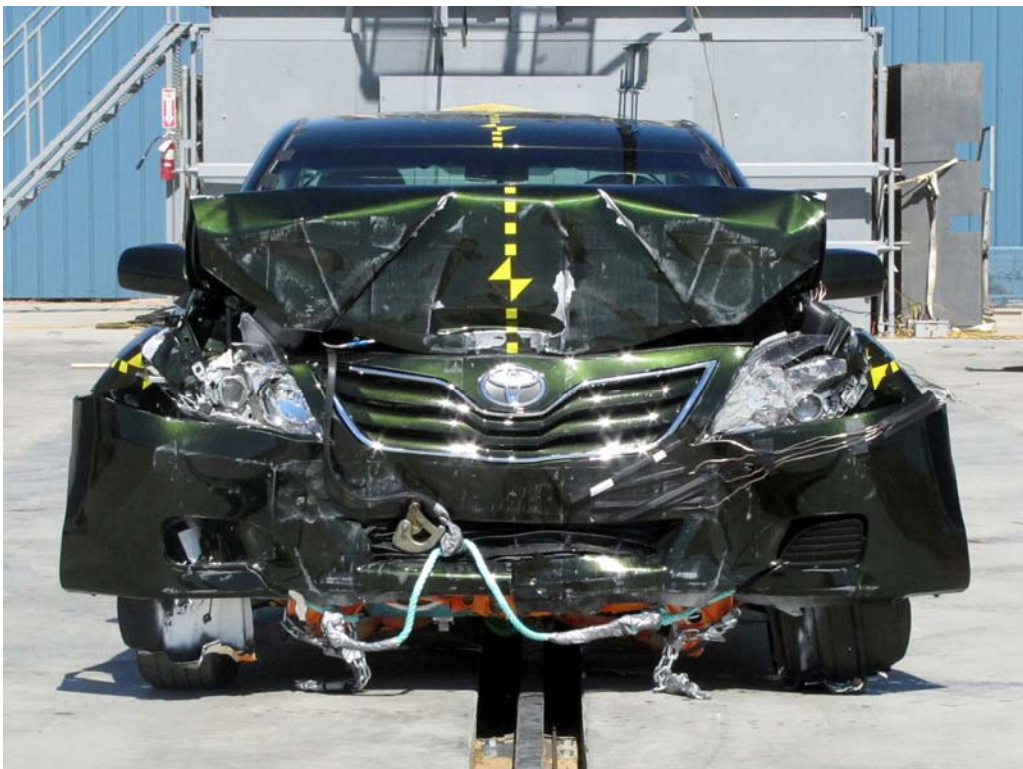


FIGURE 8. Post-Test Front View of Test Vehicle



FIGURE 9. Pre-Test Left View of Test Vehicle



FIGURE 10. Post-Test Left View of Test Vehicle



FIGURE 11. Pre-Test Right View of Test Vehicle

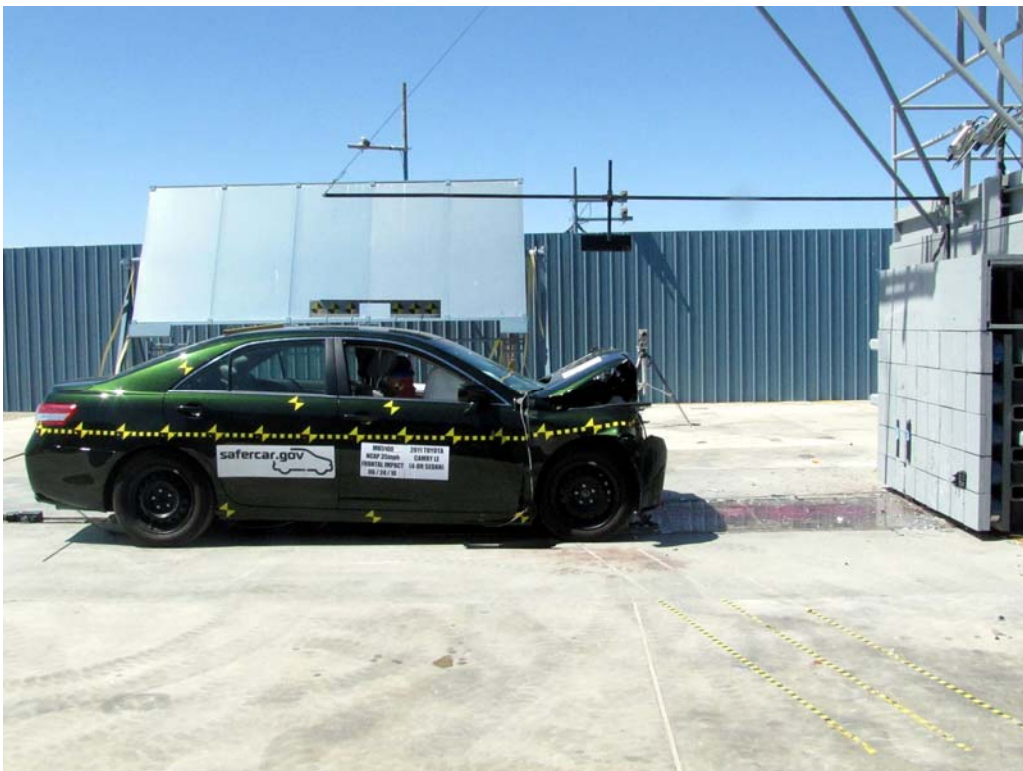


FIGURE 12. Post-Test Right View of Test Vehicle



FIGURE 13. Pre-Test Right Front $\frac{3}{4}$ View



FIGURE 14. Post-Test Right Front $\frac{3}{4}$ View



FIGURE 15. Pre-Test Left Rear $\frac{3}{4}$ View



FIGURE 16. Post-Test Left Rear $\frac{3}{4}$ View

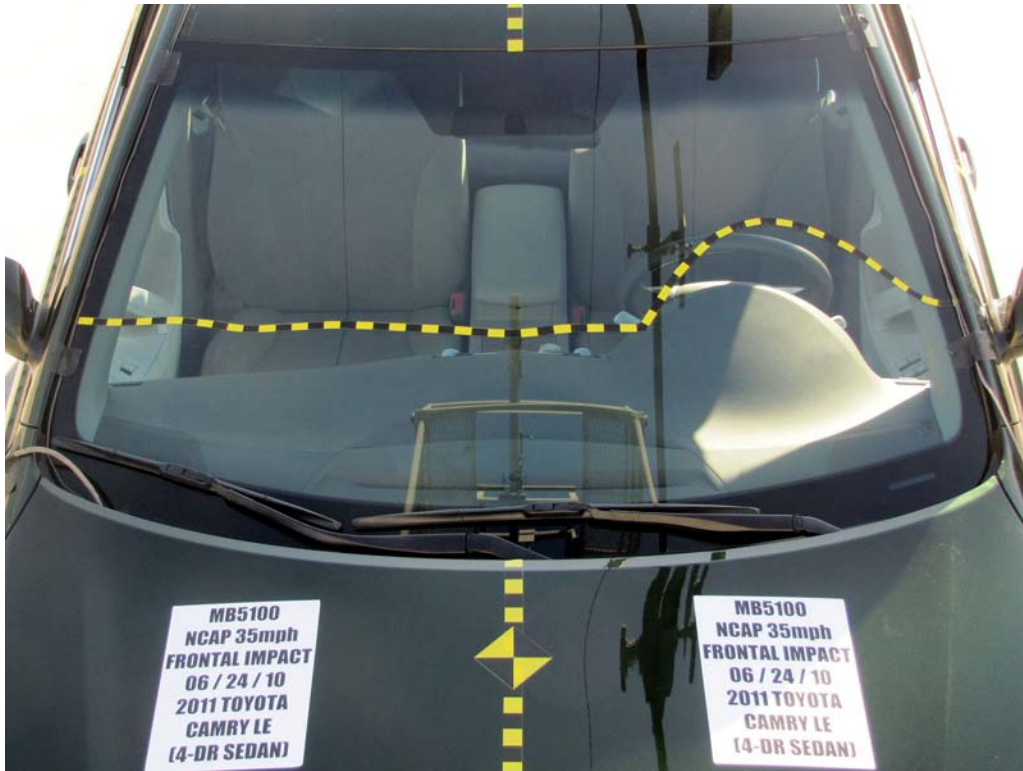


FIGURE 17. Pre-Test Windshield View



FIGURE 18. Post-Test Windshield View

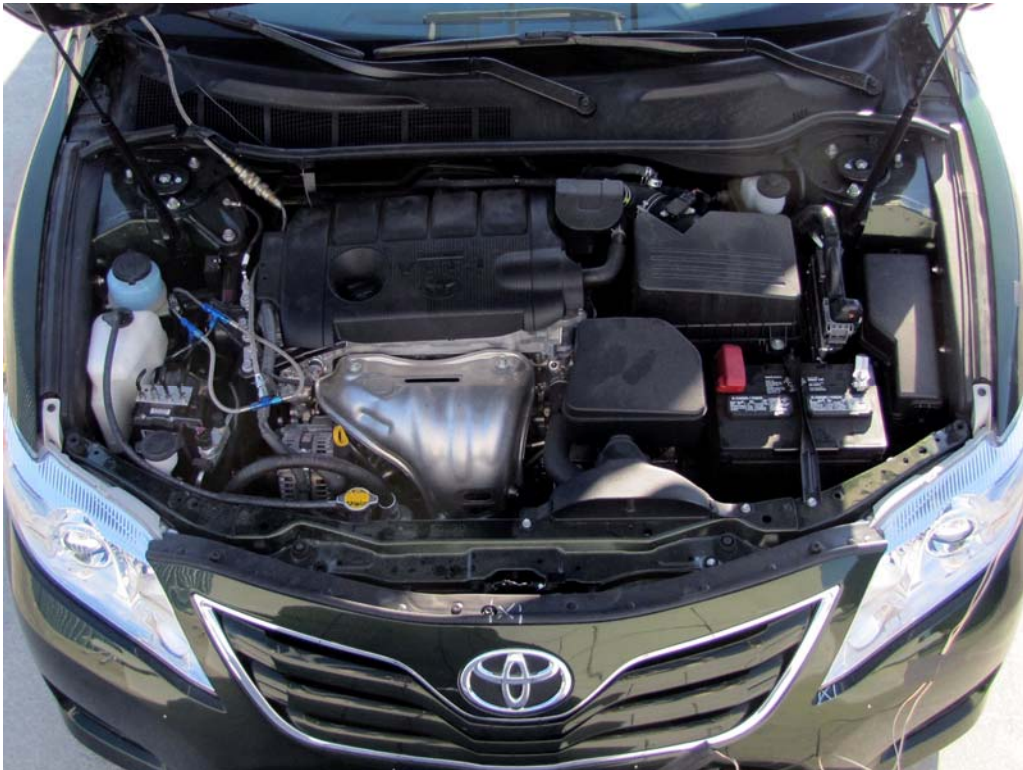


FIGURE 19. Pre-Test Engine Compartment View

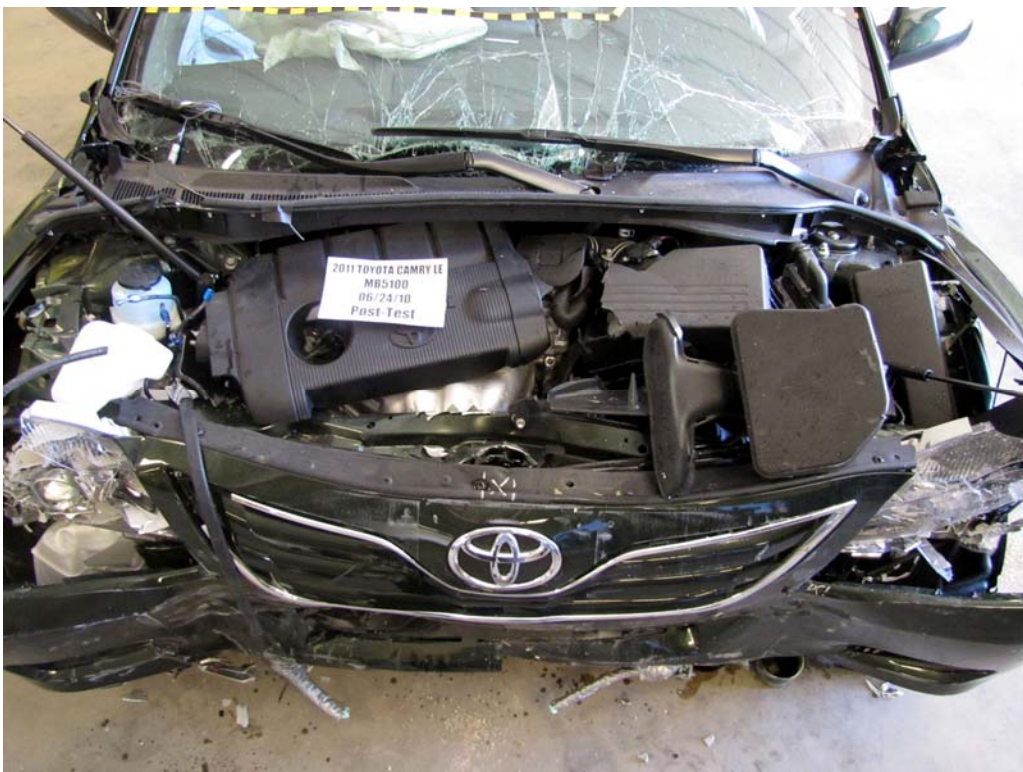


FIGURE 20. Post-Test Engine Compartment View

**Photograph Not
Available**

FIGURE 21. Pre-Test Fuel Filler Cap View

**Photograph Not
Available**

FIGURE 22. Post-Test Fuel Filler Cap View

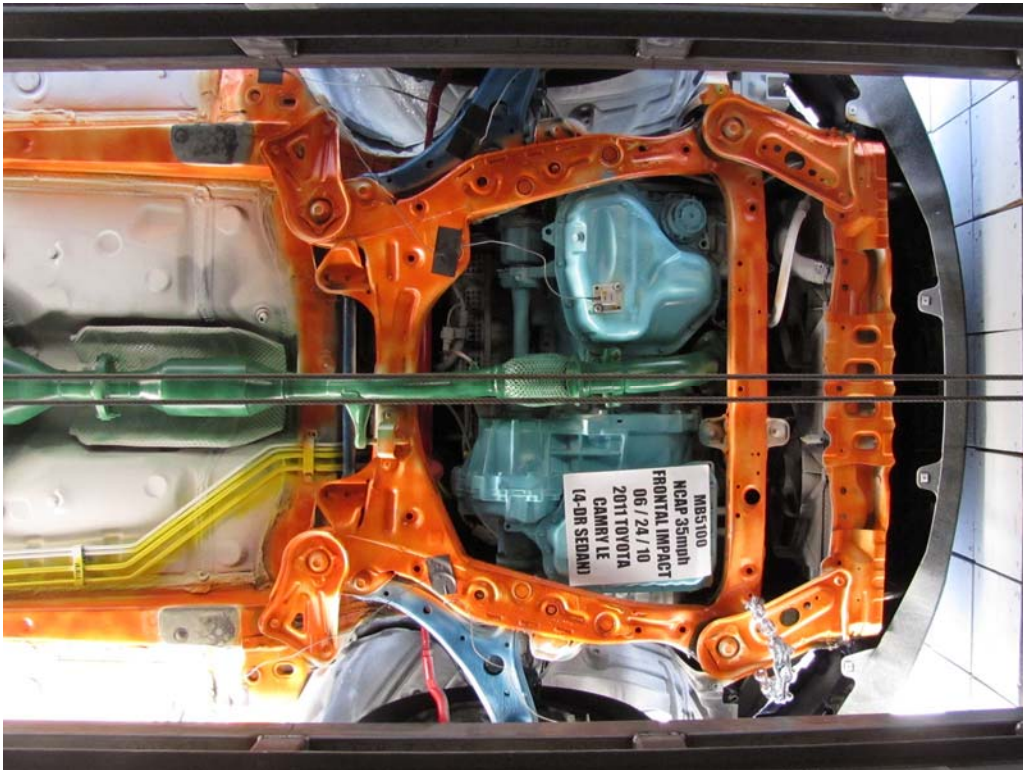


FIGURE 23. Pre-Test Front Underbody View

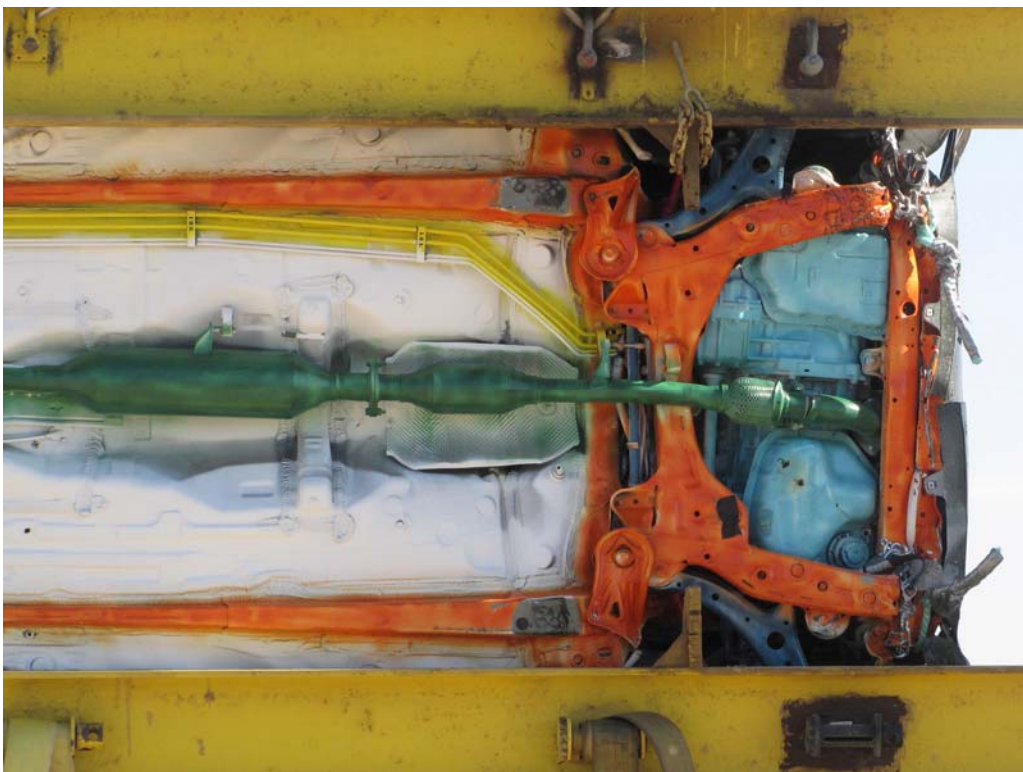


FIGURE 24. Post-Test Front Underbody View

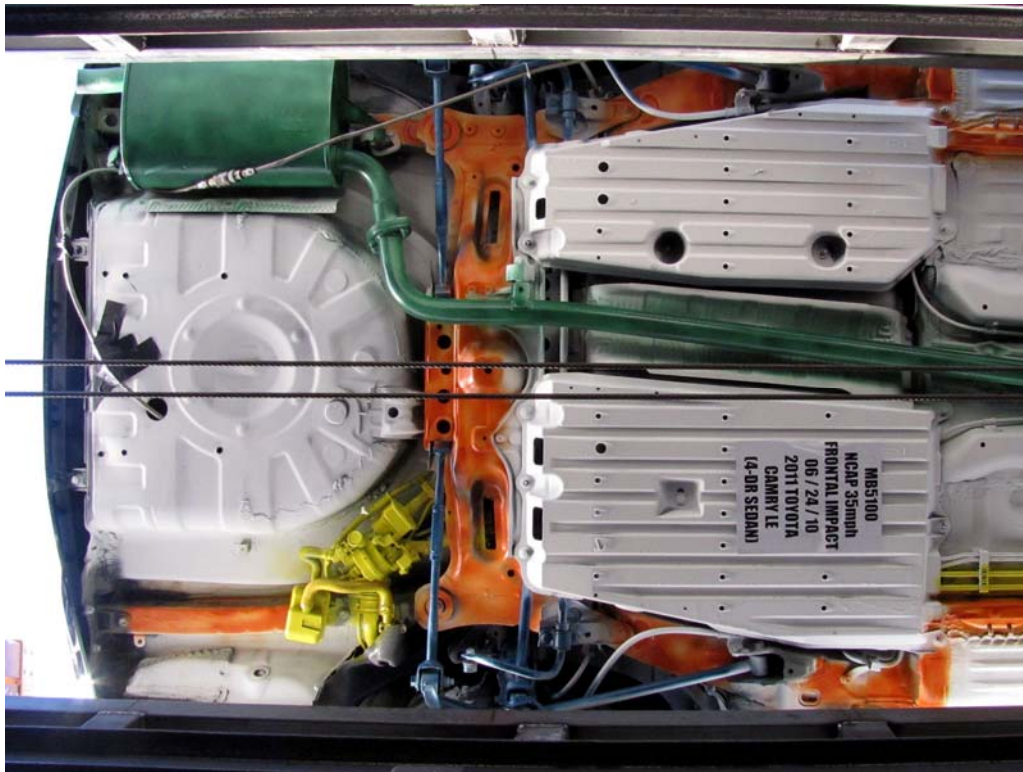


FIGURE 25. Pre-Test Rear Underbody View

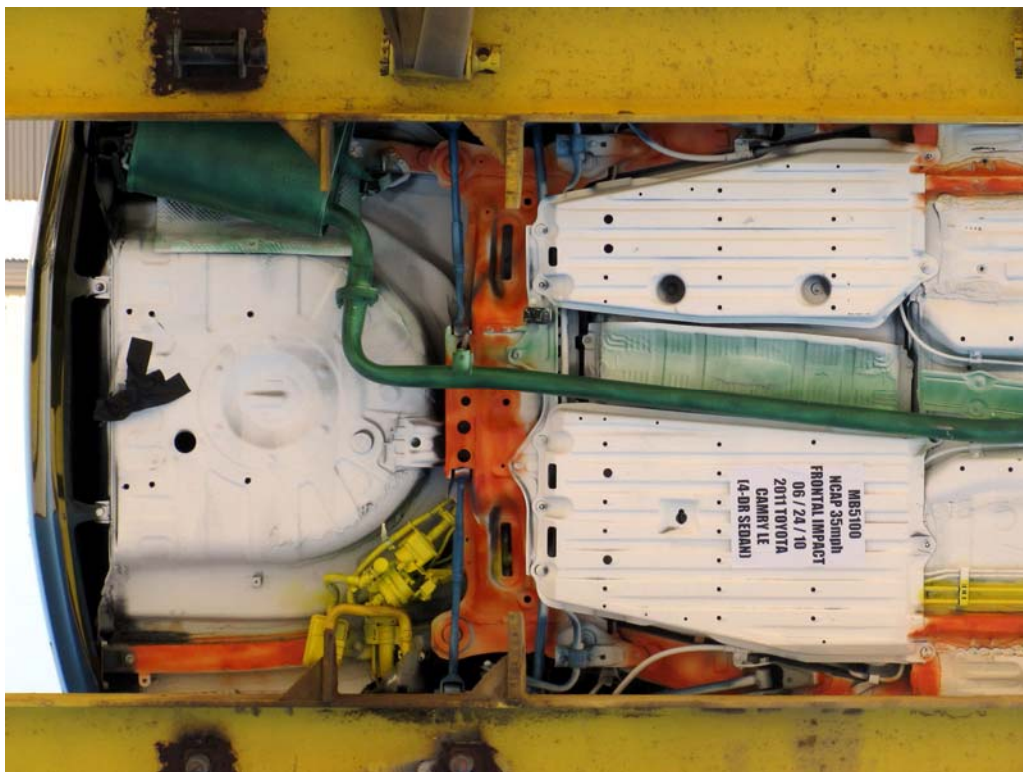


FIGURE 26. Post-Test Rear Underbody View

Photograph Not Available

FIGURE 27. Pre-Test Dummy Cable Routing



FIGURE 28. Post-Test Dummy Cable Routing



FIGURE 29. Pre-Test Driver Dummy Front View



FIGURE 30. Post-Test Driver Dummy Front View



FIGURE 31. Pre-Test Driver Dummy Window View



FIGURE 32. Post-Test Driver Dummy Window View



FIGURE 33. Pre-Test Driver Dummy and Vehicle Interior View



FIGURE 34. Post-Test Driver Dummy and Vehicle Interior View



FIGURE 35. Pre-Test Driver's Seat Fore-Aft Markings



FIGURE 36. Post-Test Driver's Seat Fore-Aft Markings



FIGURE 37. Pre-Test Driver Dummy Feet



FIGURE 38. Post-Test Driver Dummy Feet



FIGURE 39. Pre-Test Driver's Side Knee Bolster



FIGURE 40. Post-Test Driver's Side Knee Bolster



FIGURE 41. Pre-Test Driver's Side Floorpan



FIGURE 42. Post-Test Driver's Side Floorpan



FIGURE 43. Post-Test Driver Dummy Contact With Airbag



FIGURE 43a. Post-Test Driver Dummy Contact With Headrest



FIGURE 43b. Post-Test Driver Dummy Contact With Knee Bolster



FIGURE 43c. Post-Test Driver Dummy Contact With Airbag



FIGURE 44. Pre-Test View of Steering Column Shear Capsule



FIGURE 45. Post-Test View of Steering Column Shear Capsule



FIGURE 46. Pre-Test Passenger Dummy Front View



FIGURE 47. Post-Test Passenger Dummy Front View



FIGURE 48. Pre-Test Passenger Dummy Window View

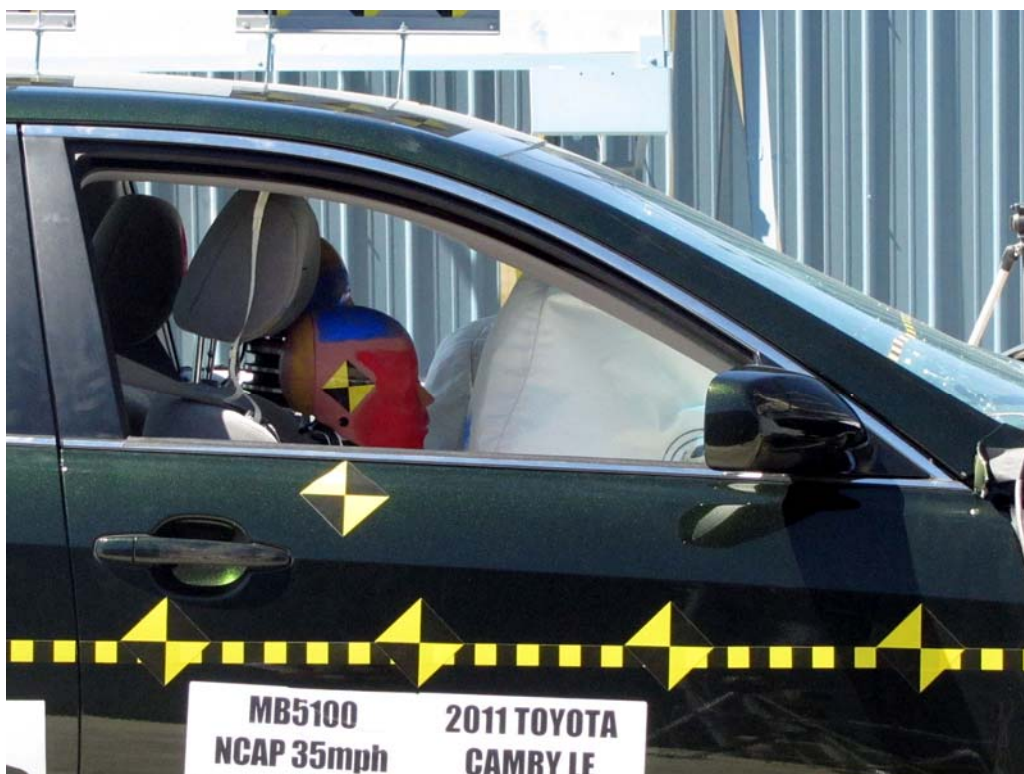


FIGURE 49. Post-Test Passenger Dummy Window View



FIGURE 50. Pre-Test Passenger Dummy and Vehicle Interior View



FIGURE 51. Post-Test Passenger Dummy and Vehicle Interior View



FIGURE 52. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 53. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 54. Pre-Test Passenger Dummy Feet



FIGURE 55. Post-Test Passenger Dummy Feet



FIGURE 56. Pre-Test Passenger's Side Knee Bolster



FIGURE 57. Post-Test Passenger's Side Knee Bolster



FIGURE 58. Pre-Test Passenger's Side Floorpan



FIGURE 59. Post-Test Passenger's Side Floorpan



FIGURE 60. Post-Test Passenger Dummy Contact With Airbag



FIGURE 60a. Post-Test Passenger Dummy Contact With Headrest



FIGURE 60b. Post-Test Passenger Dummy Contact With Knee Bolster

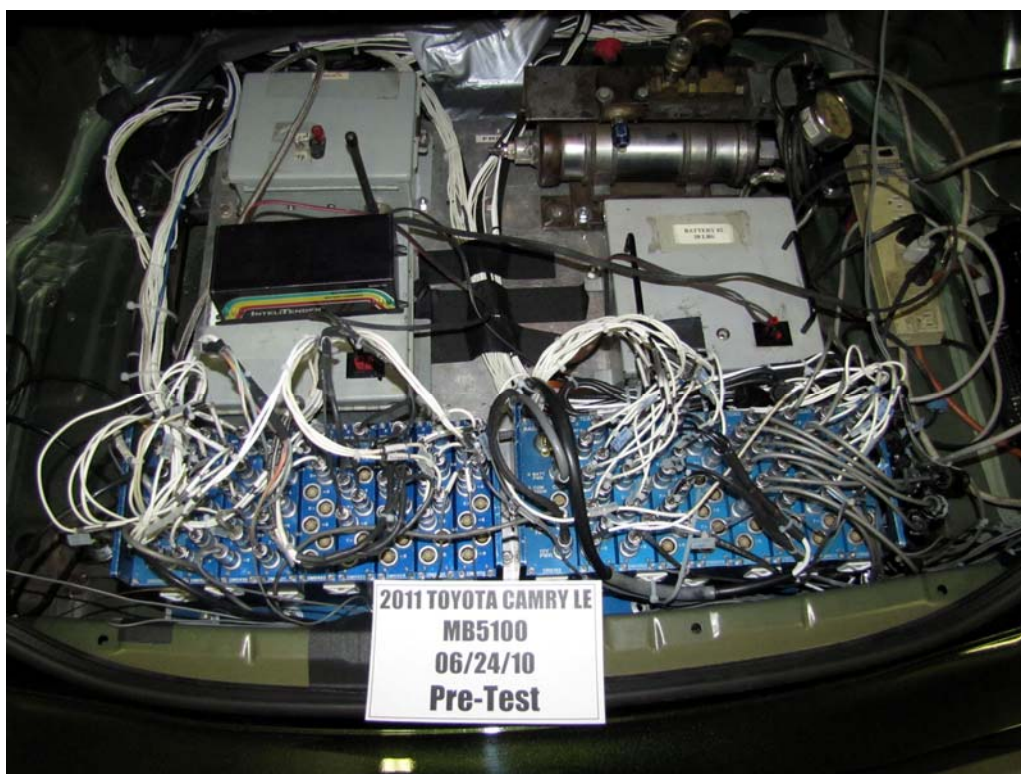


FIGURE 61. Pre-Test of Ballast Installed in Vehicle

Photograph Not Applicable

FIGURE 62. Post-Test Stoddard Solvent Spillage Location

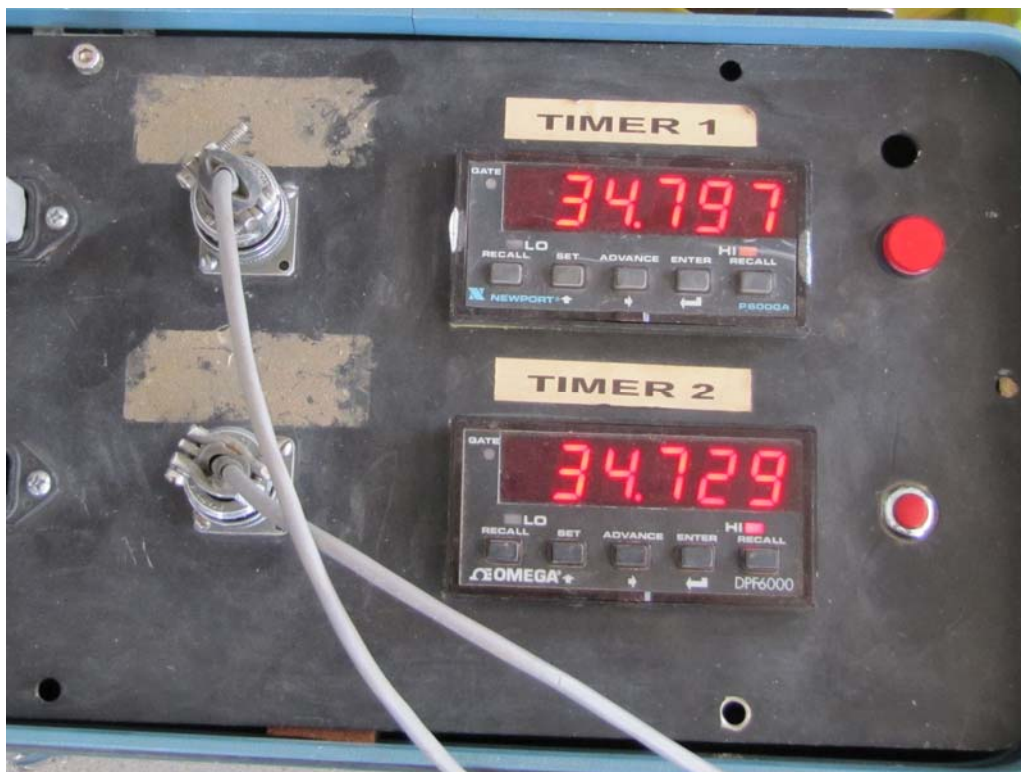


FIGURE 63. Post-Test Speed Trap Read Out

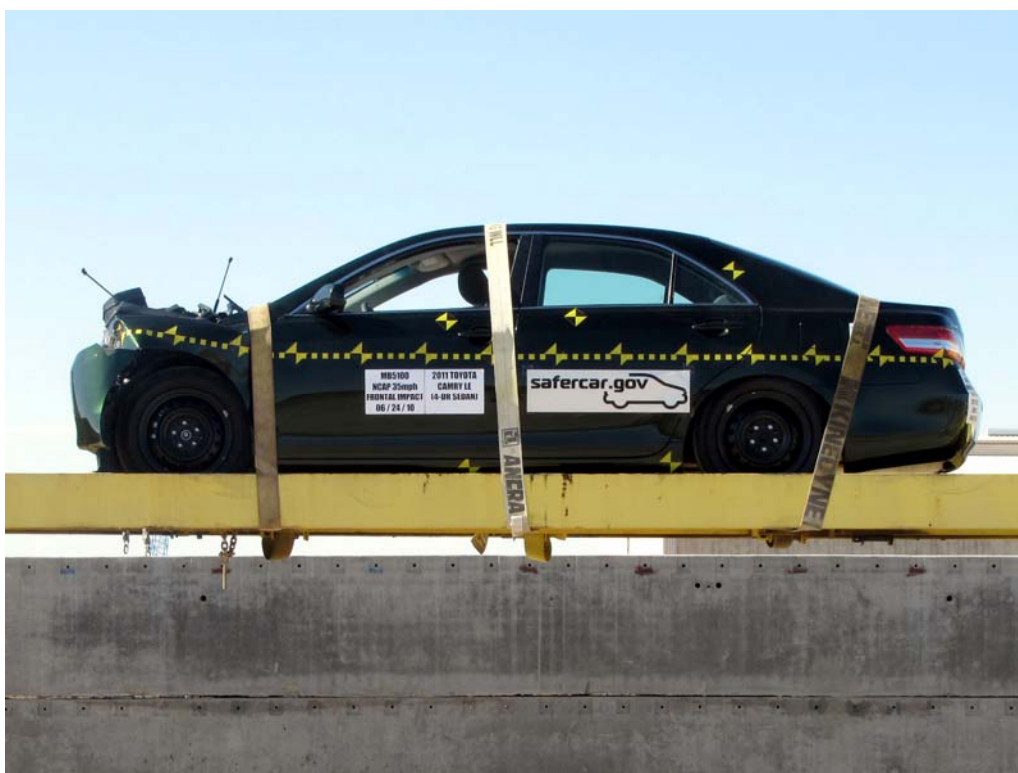


FIGURE 64. Vehicle at 0°on Static Rollover Device

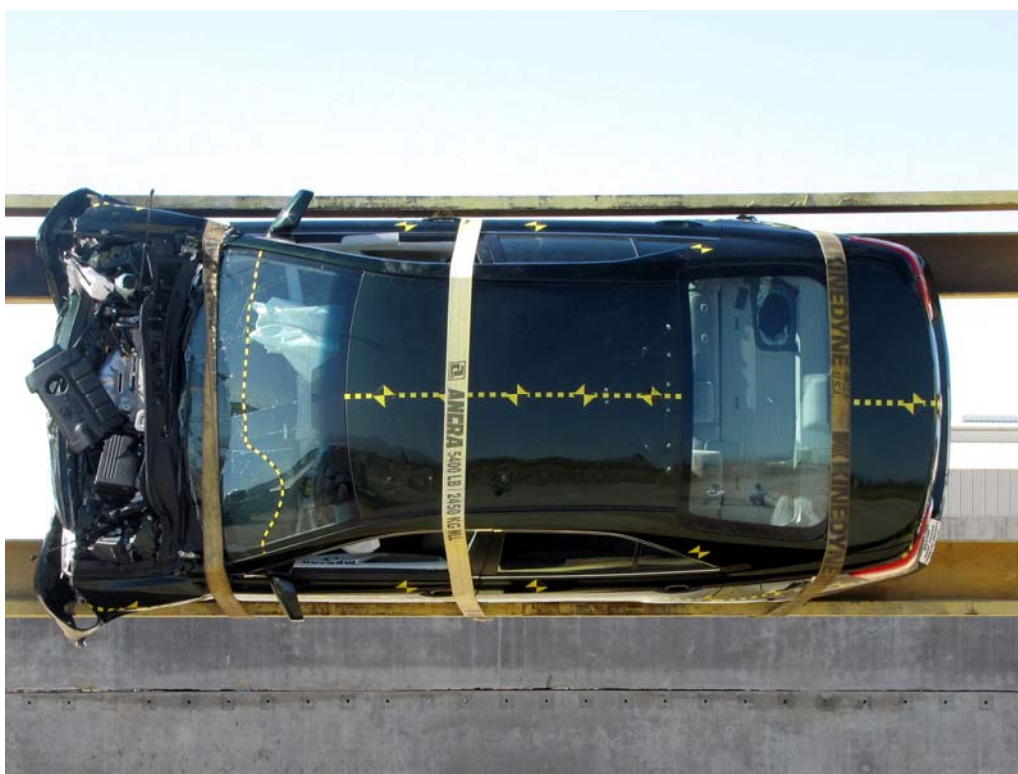


FIGURE 65. Vehicle at 90°on Static Rollover Device



FIGURE 66. Vehicle at 180°on Static Rollover Device

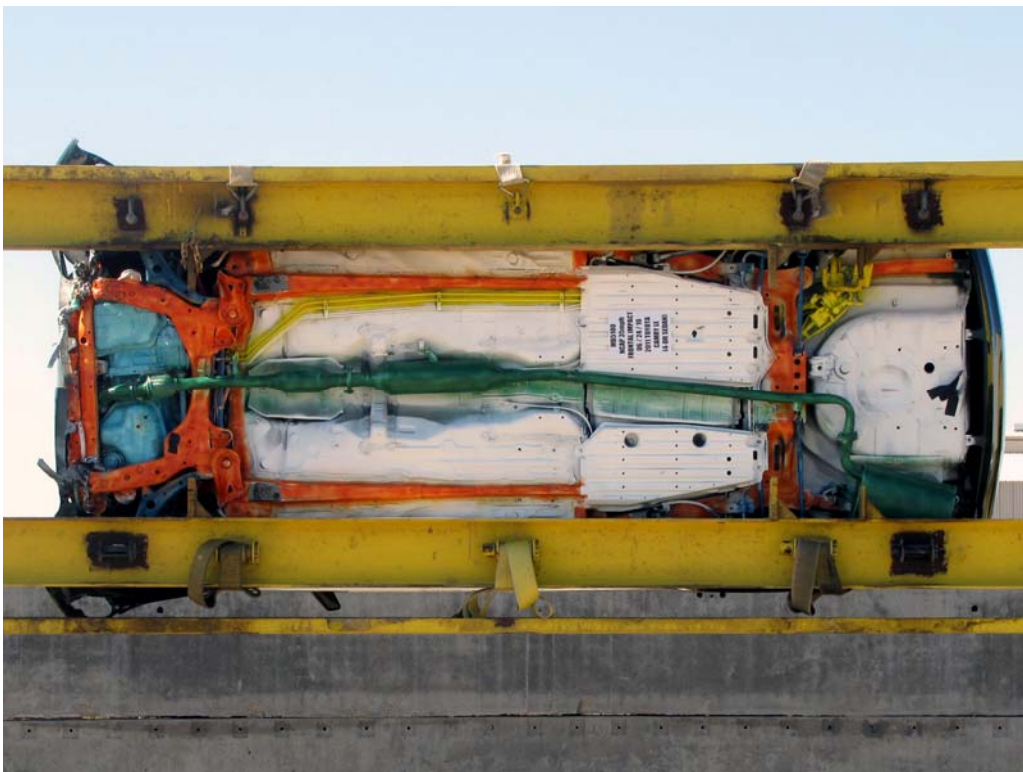


FIGURE 67. Vehicle at 270°on Static Rollover Device

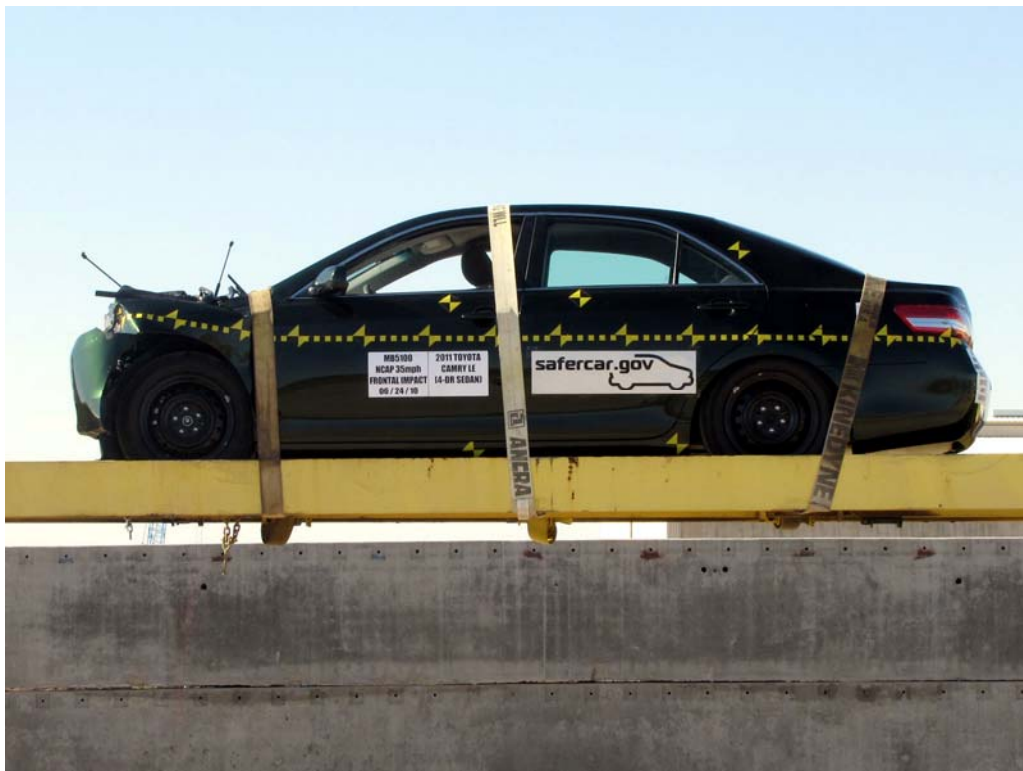


FIGURE 68. Vehicle at 360° on Static Rollover Device



FIGURE 69. Impact Photograph

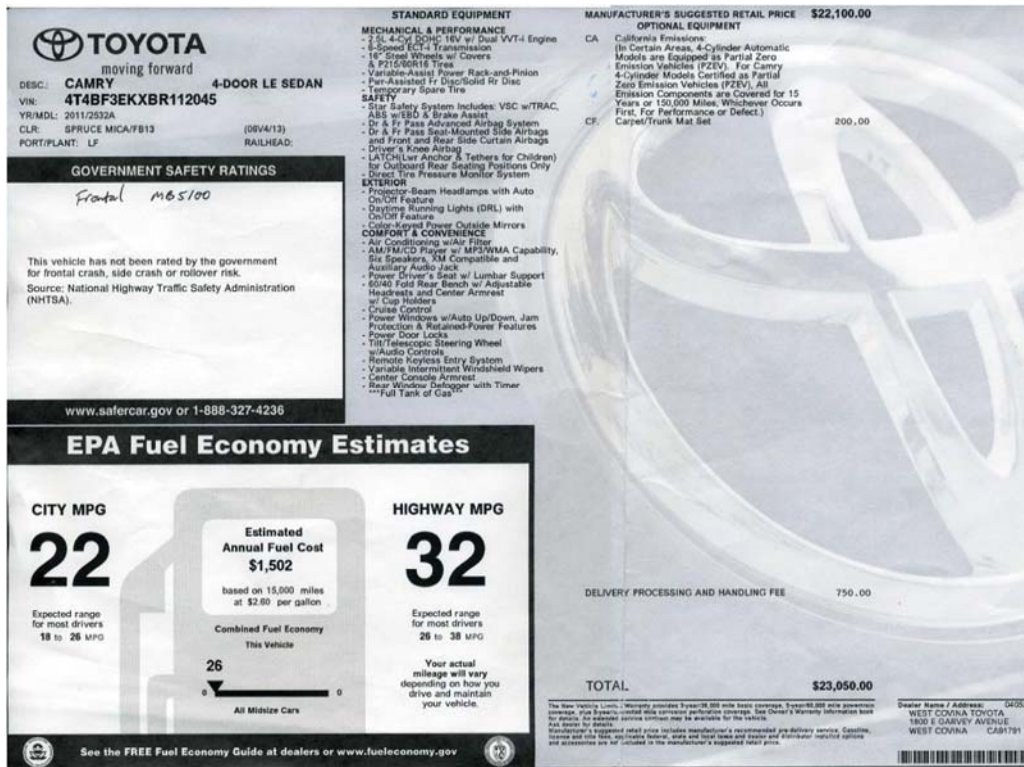


FIGURE 70. Monroney Label Photograph

APPENDIX B
DUMMY RESPONSE DATA TRACES

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10	Driver Upper Neck Force X vs. Time Primary	B-4
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13	Driver Nij vs. Time Primary	B-4
14	Driver Left Femur Force vs. Time	B-5
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16	Passenger Head X Acceleration vs. Time Primary	B-6
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18	Passenger Head Z Acceleration vs. Time Primary	B-6
19	Passenger Head Resultant Acceleration vs. Time Primary	B-6
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22	Passenger Chest Y Acceleration vs. Time Primary	B-8
23	Passenger Chest Z Acceleration vs. Time Primary	B-8
24	Passenger Chest Resultant Acceleration vs. Time Primary	B-8
25	Passenger Upper Neck Force X vs. Time Primary	B-9
26	Passenger Upper Neck Force Z vs. Time Primary	B-9
27	Passenger Upper Neck Moment Y vs. Time Primary	B-9
28	Passenger Nij vs. Time Primary	B-9
29	Passenger Left Femur Force vs. Time	B-10
30	Passenger Right Femur Force vs. Time	B-10

The following additional dummy and vehicle response data can be found in the R&D section of the NHTSA website at www.nhtsa.dot.gov

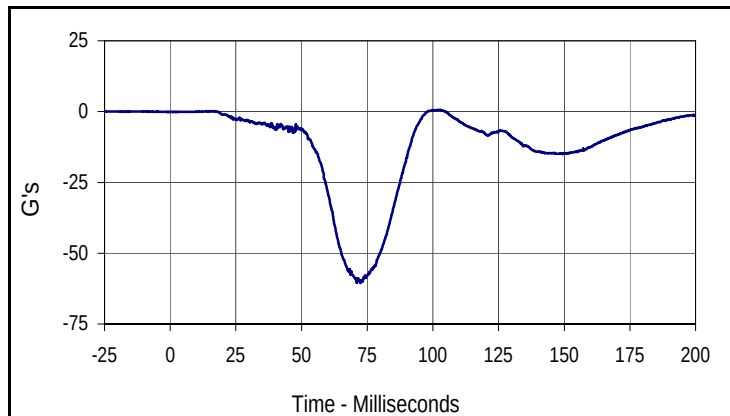
Driver Head X Acceleration Redundant
Driver Head Y Acceleration Redundant
Driver Head Z Acceleration Redundant
Driver Upper Neck Force Y
Driver Upper Neck Moment X
Driver Upper Neck Moment Z
Driver Chest X Acceleration Redundant
Driver Chest Y Acceleration Redundant
Driver Chest Z Acceleration Redundant
Driver Pelvis X
Driver Pelvis Y
Driver Pelvis Z
Driver Shoulder Belt Force
Driver Lap Belt Force
Driver Left Upper Tibia Moment X
Driver Left Upper Tibia Moment Y
Driver Left Upper Tibia Force Z
Driver Left Lower Tibia Moment X
Driver Left Lower Tibia Moment Y
Driver Left Lower Tibia Force Z
Driver Right Upper Tibia Moment X
Driver Right Upper Tibia Moment Y
Driver Right Upper Tibia Force Z
Driver Right Lower Tibia Moment X
Driver Right Lower Tibia Moment Y
Driver Right Lower Tibia Force Z
Driver Left Foot Fore Z
Driver Left Foot Aft X
Driver Left Foot Aft Z
Driver Right Foot Fore Z
Driver Right Foot Aft X
Driver Right Foot Aft Z
Passenger Head X Acceleration Redundant

Passenger Head Y Acceleration Redundant
Passenger Head Z Acceleration Redundant
Passenger Upper Neck Force X
Passenger Upper Neck Force Z
Passenger Upper Neck Moment Y
Passenger Chest X Acceleration Redundant
Passenger Chest Y Acceleration Redundant
Passenger Chest Z Acceleration Redundant
Passenger Pelvis X
Passenger Pelvis Y
Passenger Pelvis Z
Passenger Shoulder Belt Force
Passenger Lap Belt Force
Passenger Left Upper Tibia Moment X
Passenger Left Upper Tibia Moment Y
Passenger Left Upper Tibia Force Z
Passenger Left Lower Tibia Moment X
Passenger Left Lower Tibia Moment Y
Passenger Left Lower Tibia Force Z
Passenger Right Upper Tibia Moment X
Passenger Right Upper Tibia Moment Y
Passenger Right Upper Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Fore Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Right Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
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Left Rear Seat Crossmember Z
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Vehicle Engine Top X

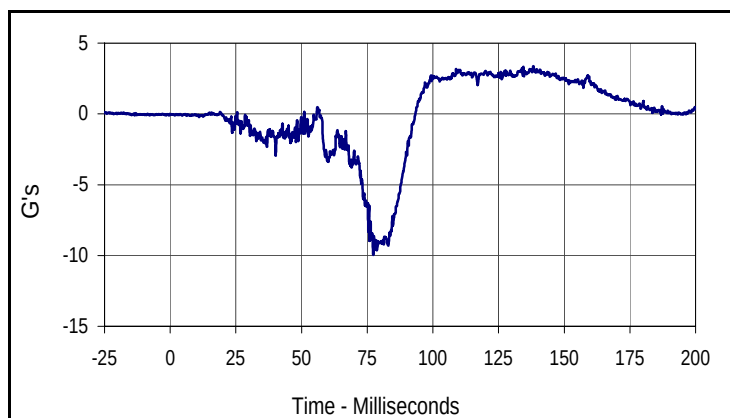
Vehicle Engine Bottom X
Vehicle Left Brake Caliper X
Vehicle Right Brake Caliper X
Load Cell Barrier A1-A9
Load Cell Barrier B1-A9
Load Cell Barrier C1-A9
Load Cell Barrier D1-A9

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

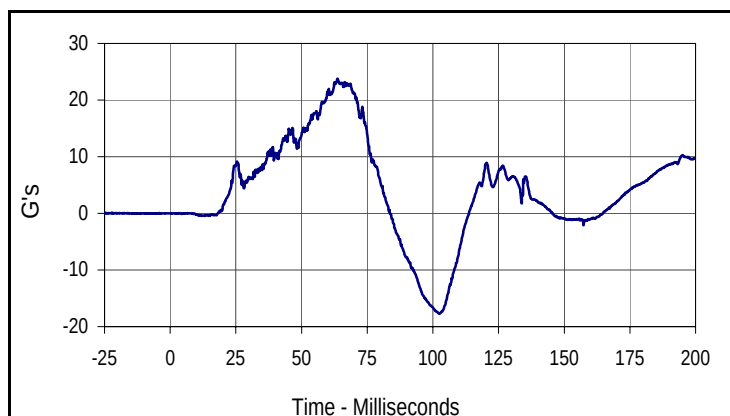
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 NHTSA No.: MB5100



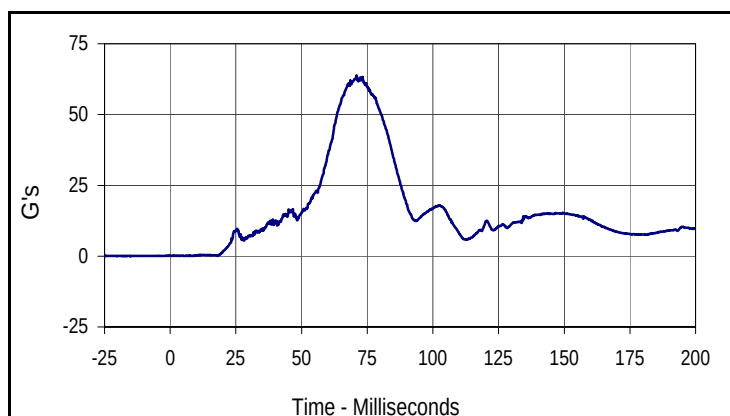
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Curve Description			
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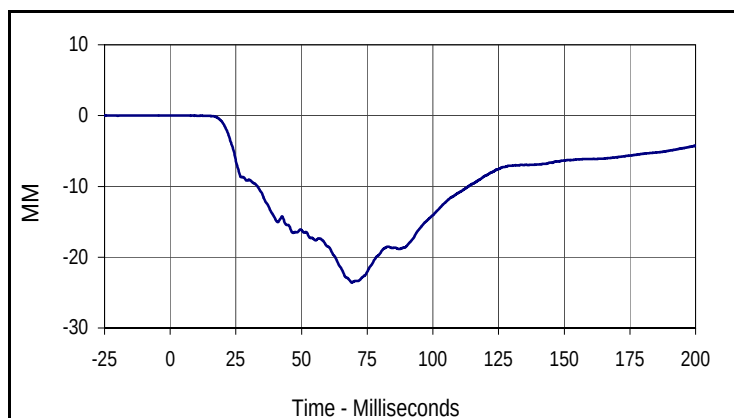
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23.8	63.7	-17.7	102.5



Curve Description			
Driver Head Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
63.8	71.0	0.1	6.0

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

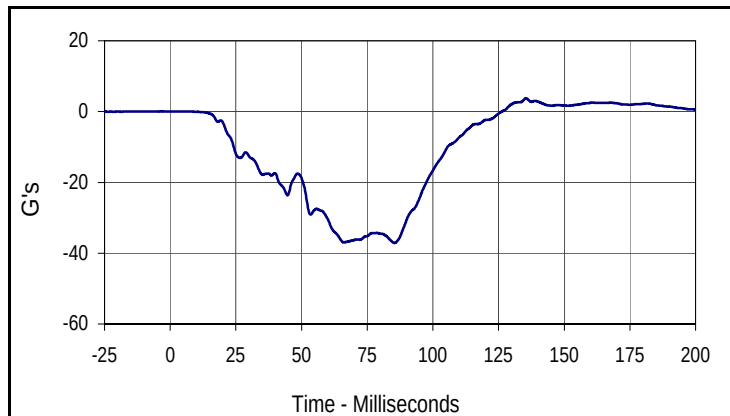
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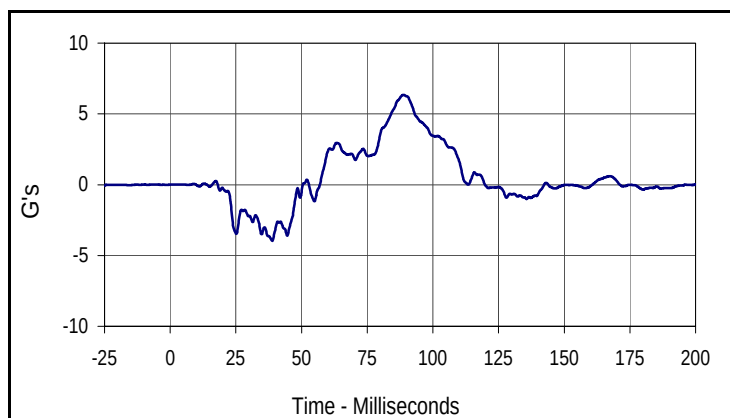
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Driver Chest Deflection			
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Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

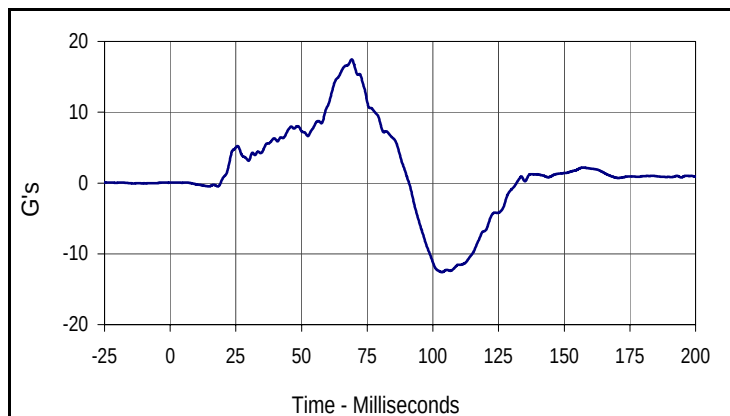
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 NHTSA No.: MB5100



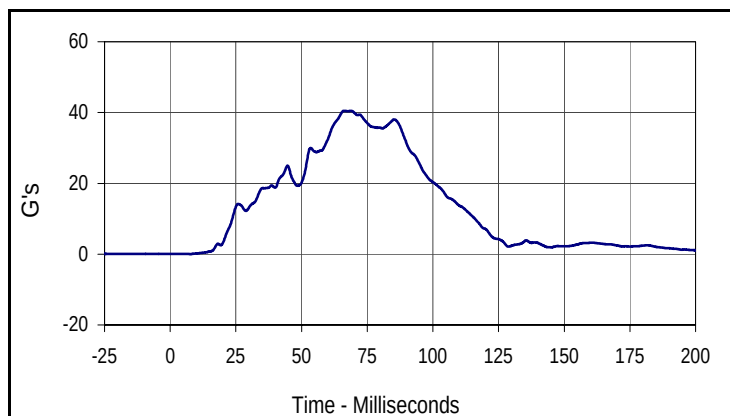
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Curve Description			
Driver Chest Acceleration Y Primary			
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014	FIL	180	G's
Max	Time	Min	Time
6.3	88.8	-4.0	38.9



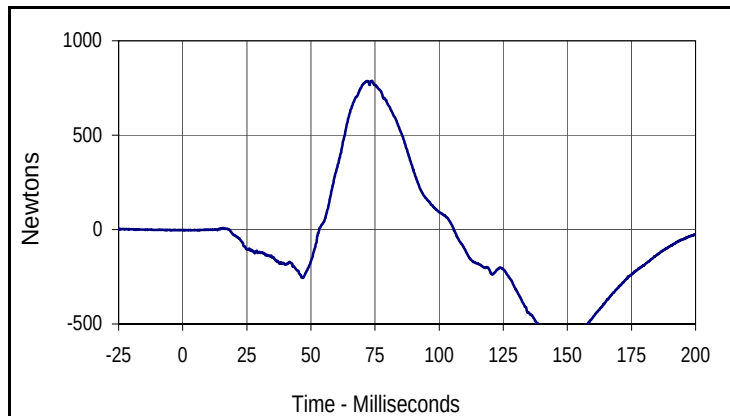
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Max	Time	Min	Time
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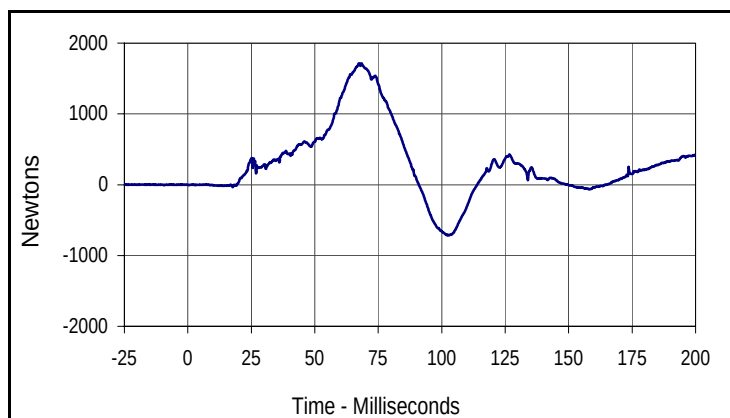
Curve Description			
Driver Chest Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
013	RES	180	G's
Max	Time	Min	Time
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Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

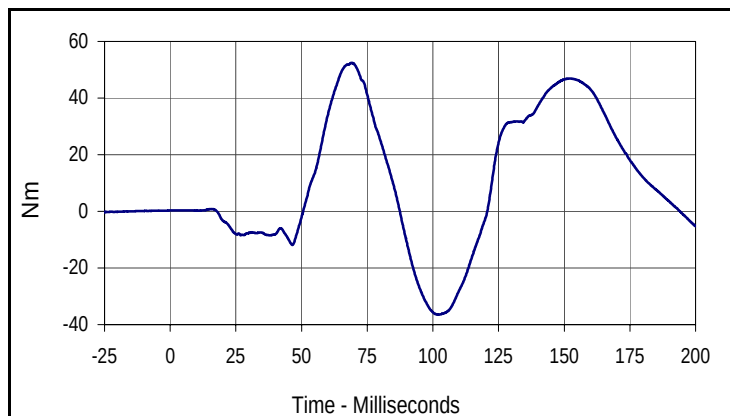
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 NHTSA No.: MB5100



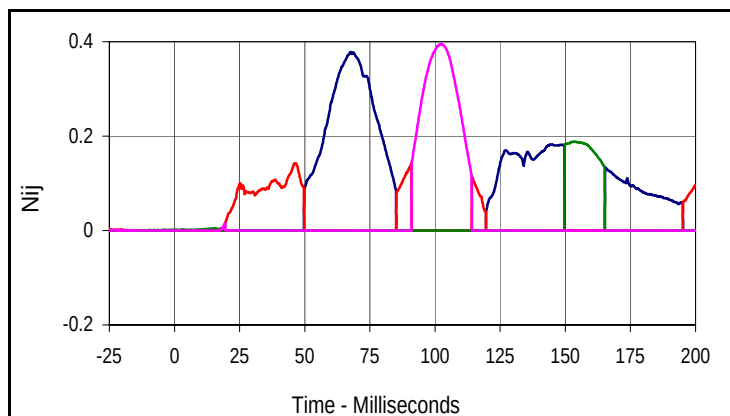
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Driver Upper Neck Force X			
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788.3	73.7	-555.7	147.5



Curve Description			
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Max	Time	Min	Time
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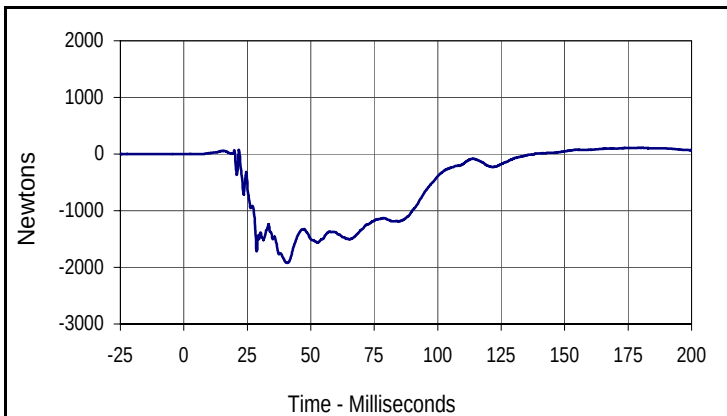
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Driver Upper Neck Moment Y			
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Max	Time	Min	Time
52.4	69.1	-36.4	101.9



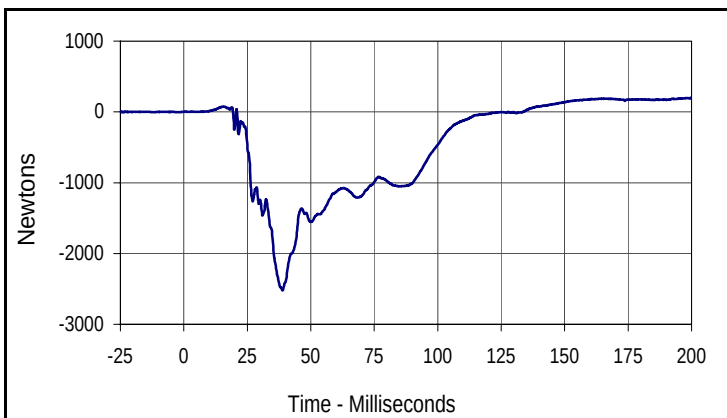
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Driver Nij			
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Units	Type	Max	Time
Nte	FIL	0.19	232.9
Units	Type	Max	Time
Ncf	FIL	0.19	153.7
Units	Type	Max	Time
Nce	FIL	0.40	102.1

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

Test Date: 6/24/10
 NHTSA No.: MB5100



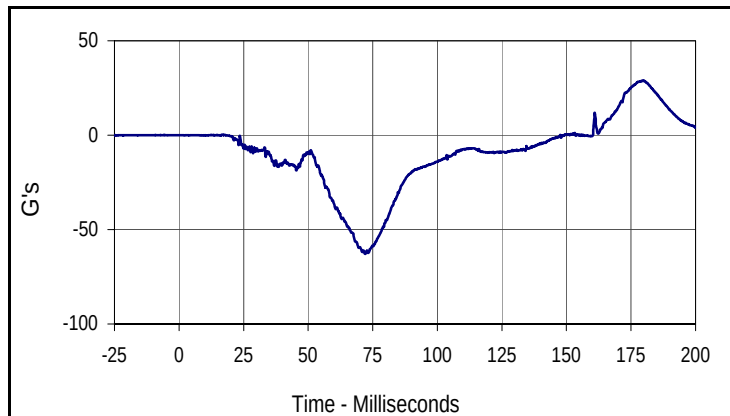
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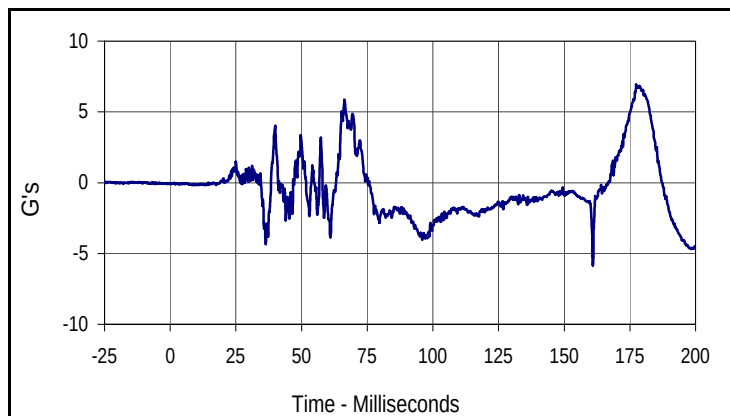
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Driver Right Femur Force Z			
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024	FIL	600	Newtons
Max	Time	Min	Time
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Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

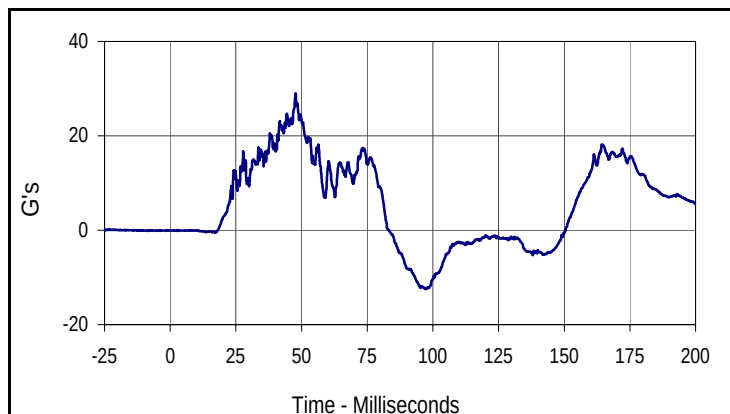
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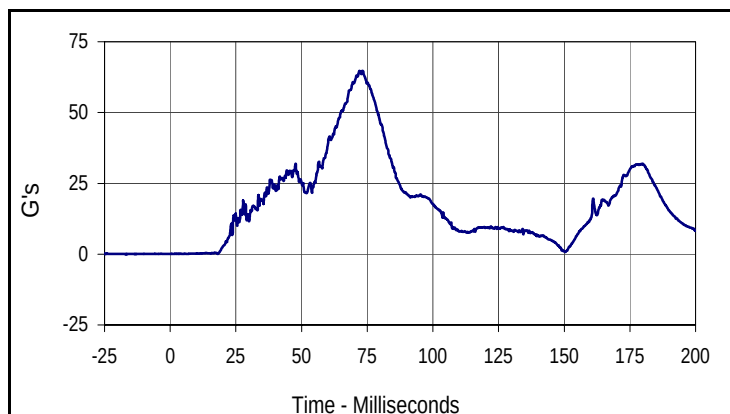
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CURNO	Type	SAE Class	Units
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Curve Description			
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Max	Time	Min	Time
6.9	177.4	-5.8	160.9



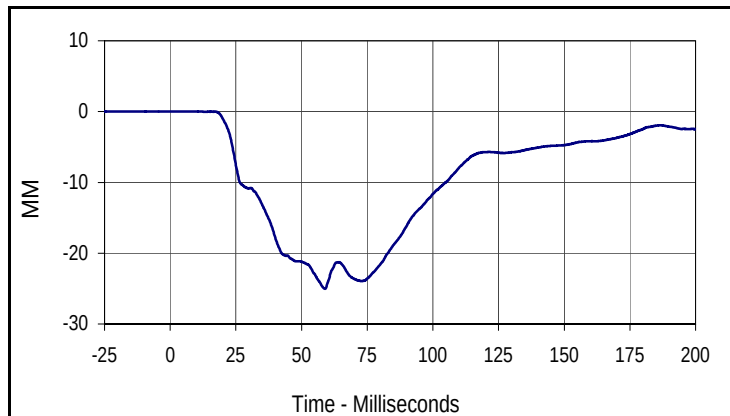
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047	FIL	1000	G's
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Curve Description			
Passenger Head Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
045	RES	1000	G's
Max	Time	Min	Time
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Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

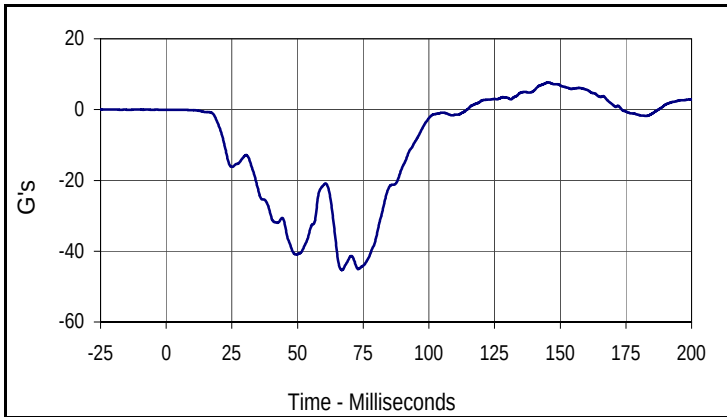
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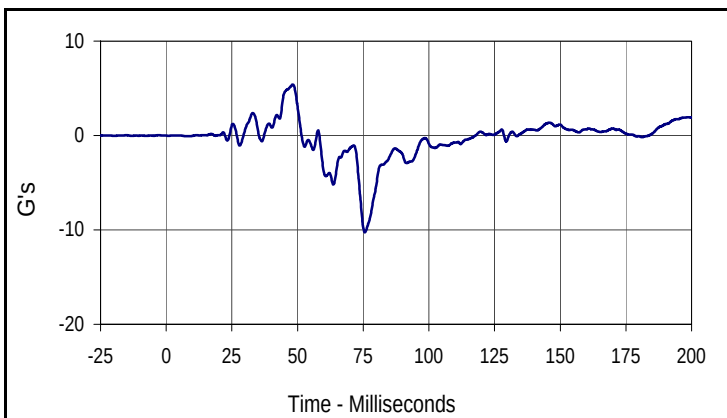
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Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

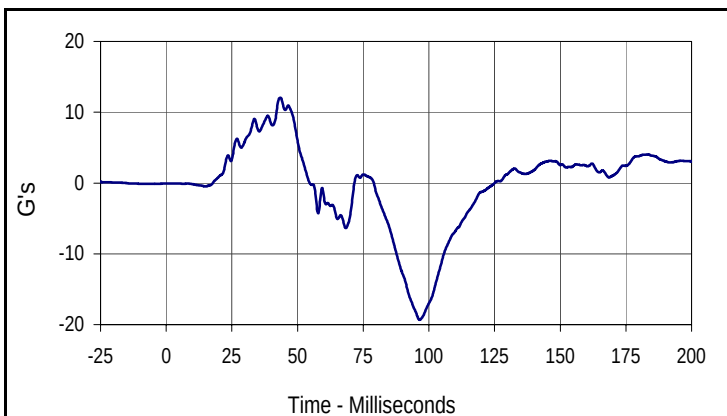
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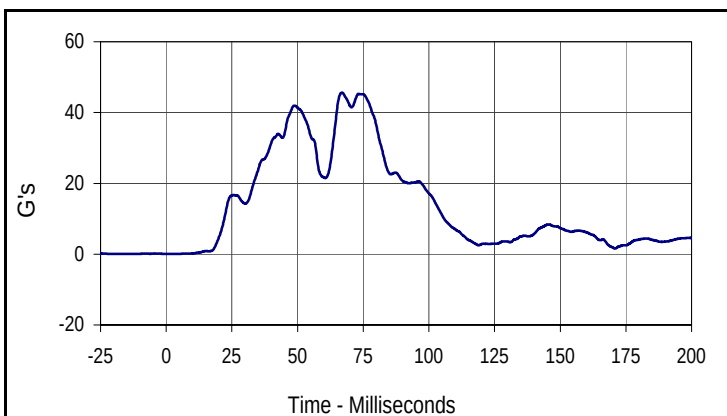
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CURNO	Type	SAE Class	Units
057	FIL	180	G's
Max	Time	Min	Time
7.7	145.5	-45.3	66.9



Curve Description			
Passenger Chest Acceleration Y Primary			
CURNO	Type	SAE Class	Units
058	FIL	180	G's
Max	Time	Min	Time
5.4	48.2	-10.3	75.6



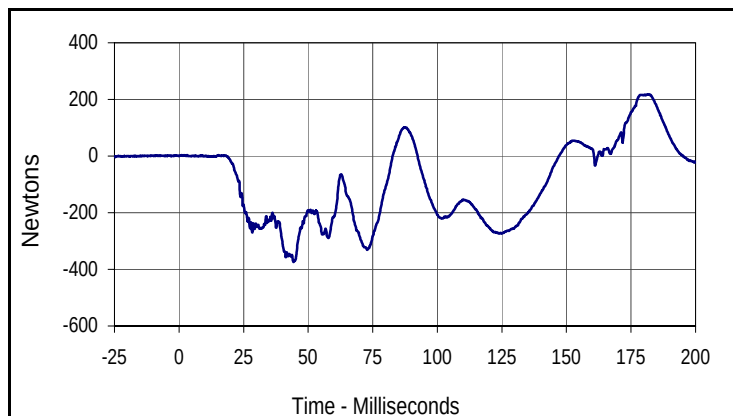
Curve Description			
Passenger Chest Acceleration Z Primary			
CURNO	Type	SAE Class	Units
059	FIL	180	G's
Max	Time	Min	Time
12.0	43.5	-19.3	96.5



Curve Description			
Passenger Chest Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
057	RES	180	G's
Max	Time	Min	Time
45.6	66.9	0.1	0.2

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

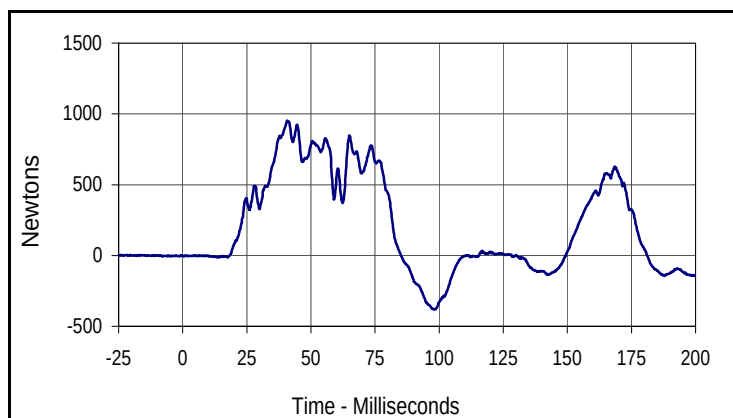
Test Date: 6/24/10
 NHTSA No.: MB5100



Curve Description

Passenger Upper Neck Force X

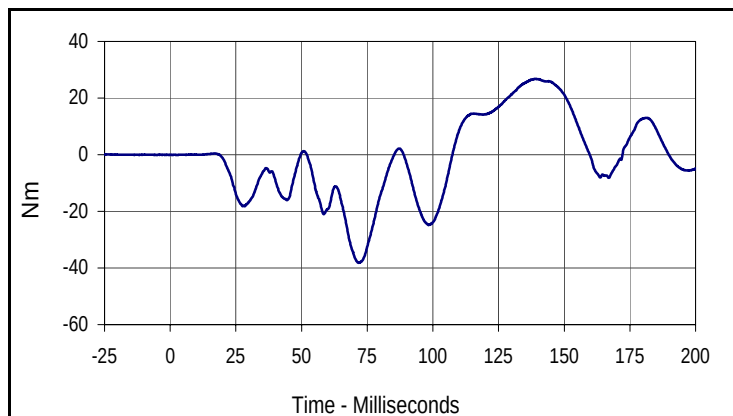
CURNO	Type	SAE Class	Units
051	FIL	1000	Newtons
Max	Time	Min	Time
218.5	181.7	-373.7	44.4



Curve Description

Passenger Upper Neck Force Z

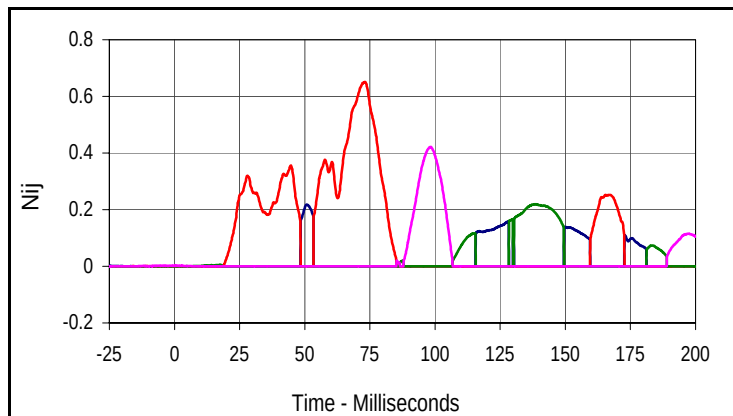
CURNO	Type	SAE Class	Units
053	FIL	1000	Newtons
Max	Time	Min	Time
952.7	40.7	-381.0	98.4



Curve Description

Passenger Upper Neck Moment Y

CURNO	Type	SAE Class	Units
055	FIL	600	Nm
Max	Time	Min	Time
26.8	139.1	-38.1	71.8



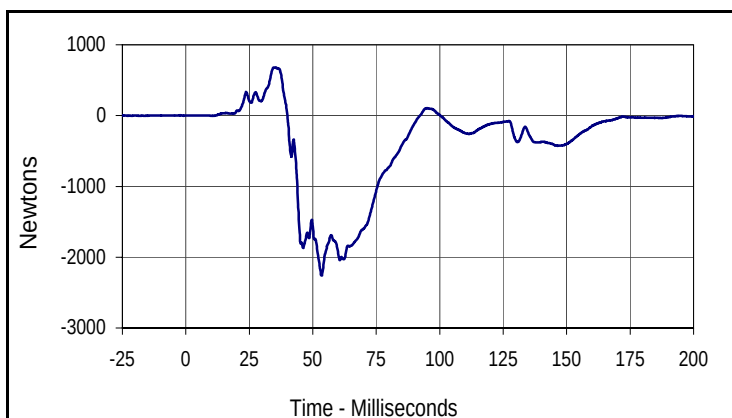
Curve Description

Passenger Nij

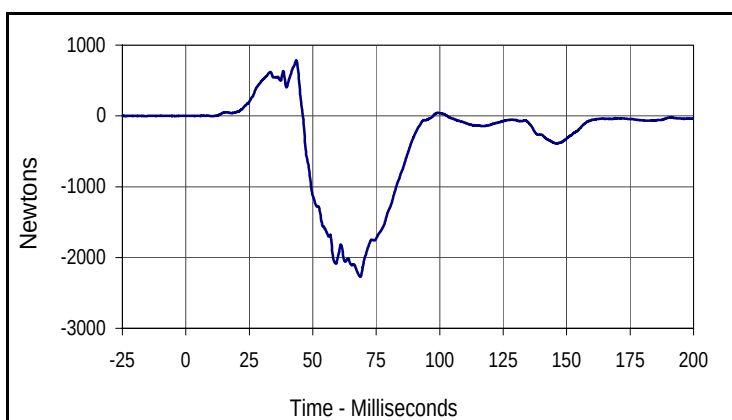
Units	Type	Max	Time
Ntf	FIL	0.22	50.7
Units	Type	Max	Time
Nte	FIL	0.65	73.1
Units	Type	Max	Time
Ncf	FIL	0.22	138.5
Units	Type	Max	Time
Nce	FIL	0.42	98.4

Test Vehicle: 2011 Toyota Camry LE 4-Door Sedan
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

Test Date: 6/24/10
 NHTSA No.: MB5100



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
067	FIL	600	Newtons
Max	Time	Min	Time
680.1	34.7	-2260.7	53.4



Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
068	FIL	600	Newtons
Max	Time	Min	Time
788.4	43.5	-2274.4	68.7

APPENDIX C
DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA

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

Test Program: Hybrid III 50th Percentile Male Head Drop Test

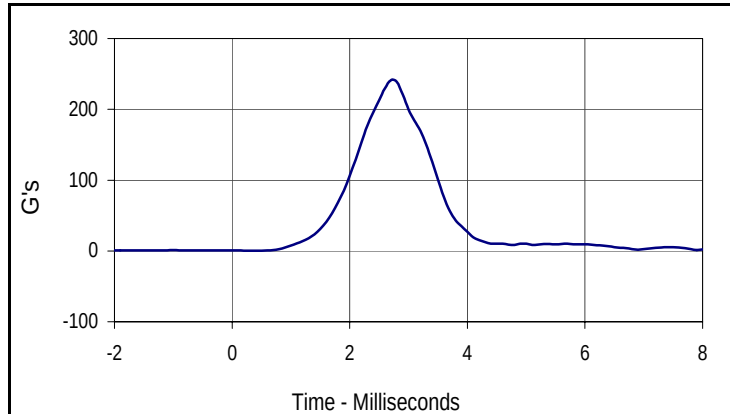
Test Date: 6/14/10

ATD Serial No.: 035

Test I.D.: HD06A



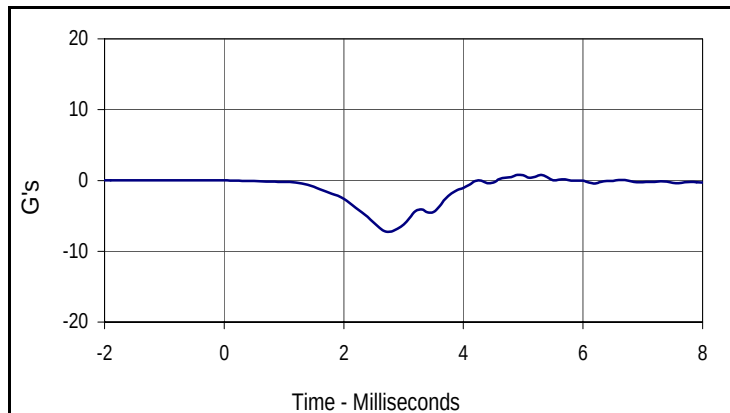
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	241.3	Pass
Peak Lateral Acceleration	G's	≤15.0	7.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
241.3	2.7	0.3	0.4



Curve Description

Head Y

CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.8	5.3	-7.2	2.7

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

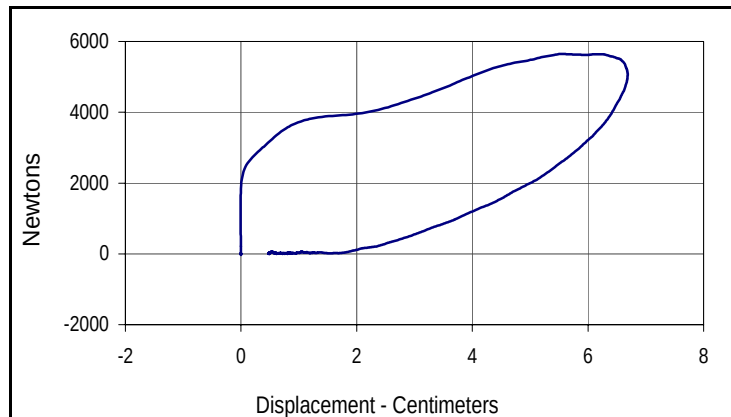
Test Date: 6/14/10

ATD Serial No.: 035

Test I.D.: CH06A



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
Probe Velocity	m/s	6.58 to 6.82	6.70	Pass
Peak Probe Force	Newtons	5159 to 5893	5647	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.69	Pass
Internal Hysteresis	%	69 to 85	73.7	Pass
Overall Test Results				Pass



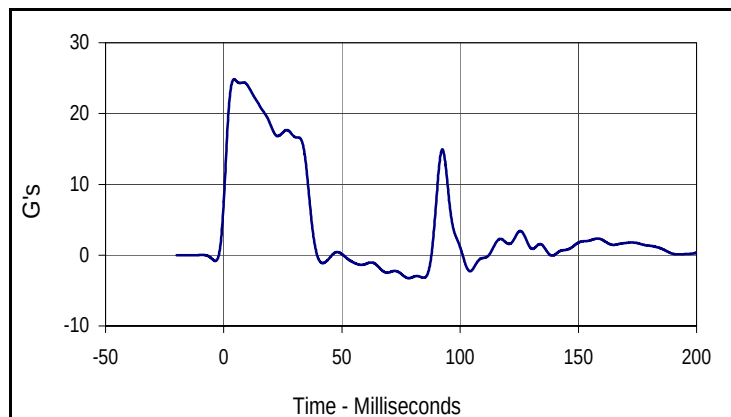
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	73.7
Peak Probe Force		Peak Chest Deflection	
5647		6.69	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 035

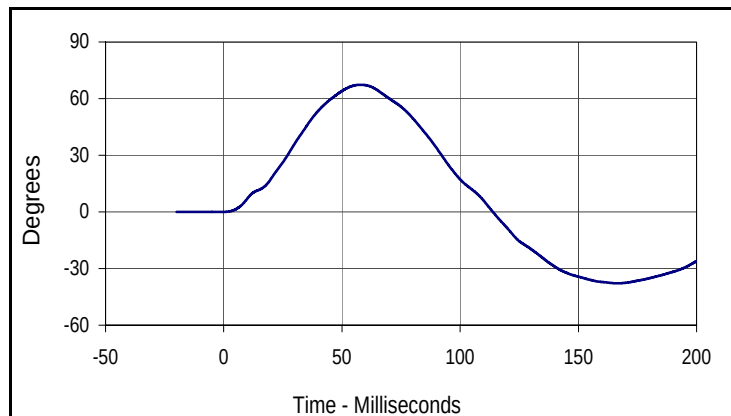
Test Date: 6/14/10
 Test I.D.: NF06A



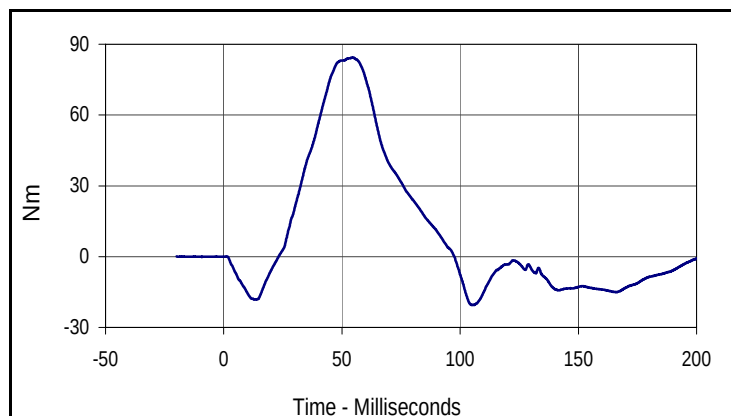
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.04	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	24.0	Pass
	20 Msec.	G's	17.6 to 22.6	18.2	Pass
	30 Msec.	G's	12.5 to 18.5	16.7	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	16.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	37.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	67.3	Pass
	Time	Msec.	57.0 to 64.0	57.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	113.9	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	84.3	Pass
	Time	Msec.	47.0 to 58.0	54.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.6	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
24.8	4.4	-3.3	78.3



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
67.3	57.9	-37.8	166.5



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
84.3	54.3	-20.5	105.1

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

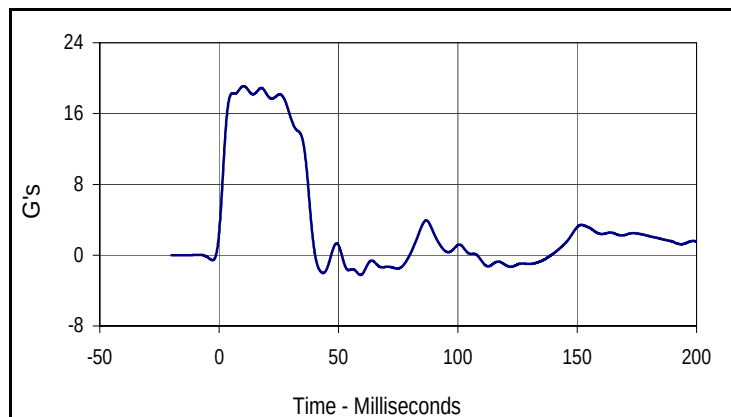
Test Date: 6/14/10

ATD Serial No.: 035

Test I.D.: NE06A



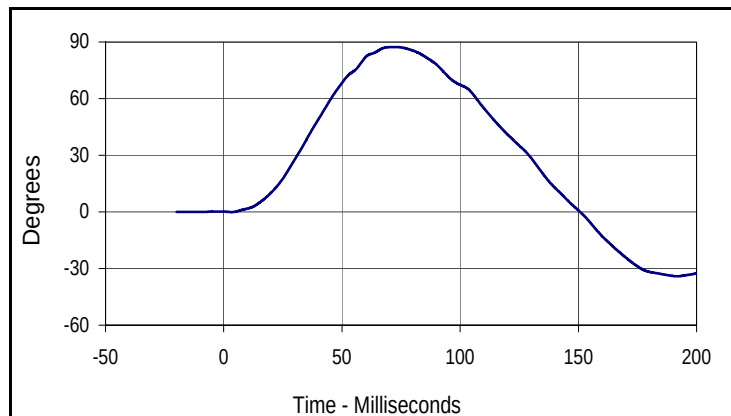
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.12	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.1	Pass
	20 Msec.	G's	14.0 to 19.0	18.2	Pass
	30 Msec.	G's	11.0 to 16.0	15.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	38.2	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	87.3	Pass
	Time	Msec.	72.0 to 82.0	73.0	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	150.8	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-73.1	Pass
	Time	Msec.	65.0 to 79.0	66.7	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	134.9	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

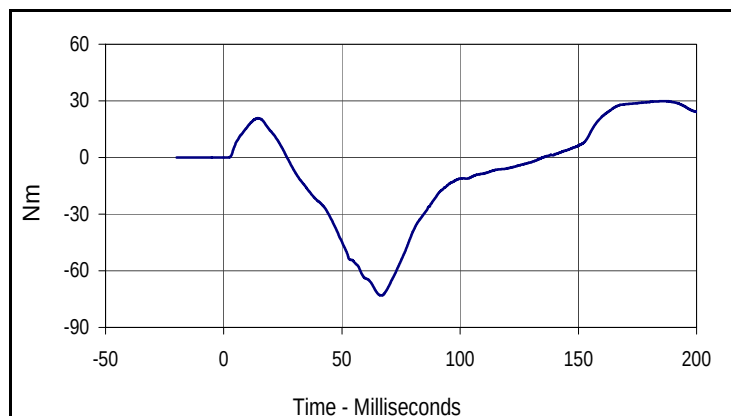
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.1	10.3	-2.2	59.2



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
87.3	73.0	-34.1	191.8



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
29.9	186.5	-73.1	66.7

Test Program: Hybrid III 50th Percentile Male Knee Impact Test

Test Date: 6/14/10

ATD Serial No.: 035

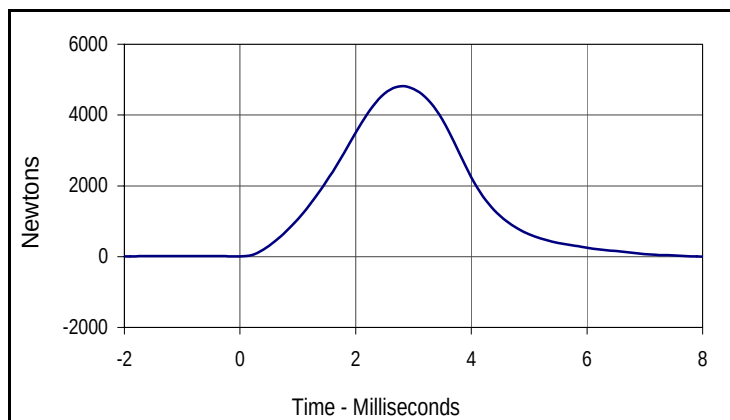
Test I.D.: LK06A , RK06A

**Left Knee**

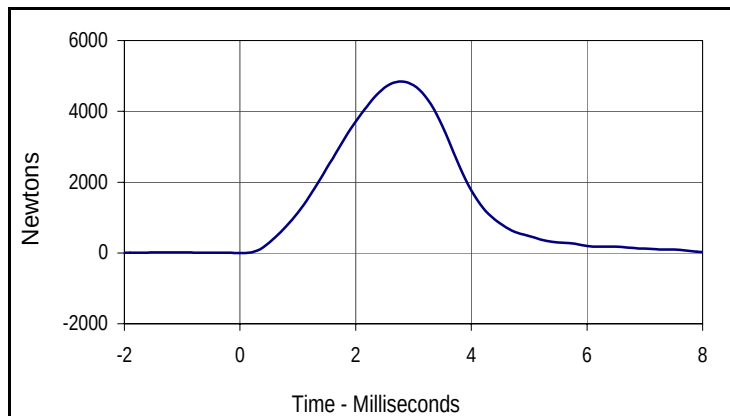
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	4812	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	4842	Pass
Overall Test Results				Pass

**Curve Description****Left Knee Probe Force**

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4811.5	2.8	-12.6	8.7

**Curve Description****Right Knee Probe Force**

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
4841.8	2.8	-43.3	10.0

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 6/14/10

ATD Serial No.: 035

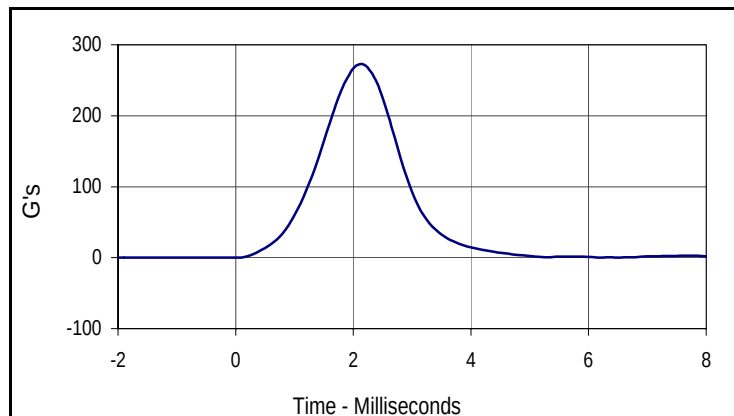
Test I.D.: N/A



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
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	510	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	136	Pass
E - Shoulder pivot from back	mm	84 to 94	85	Pass
F - Thigh clearance	mm	140 to 155	150	Pass
G - Elbow back to wrist pivot	mm	290 to 305	301	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	334	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	595	Pass
L - Popliteal length	mm	429 to 455	446	Pass
M - Knee pivot height	mm	485 to 500	500	Pass
N - Buttock popliteal length	mm	452 to 477	475	Pass
O - Chest depth	mm	213 to 229	216	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	425	Pass
W - Foot breadth	mm	91 to 107	105	Pass
Y - Chest circumference	mm	970 to 1001	994	Pass
Z - Waist circumference	mm	836 to 866	860	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female Head Drop TestTest Date: 6/15/10ATD Serial No.: 635Test I.D.: HD06A

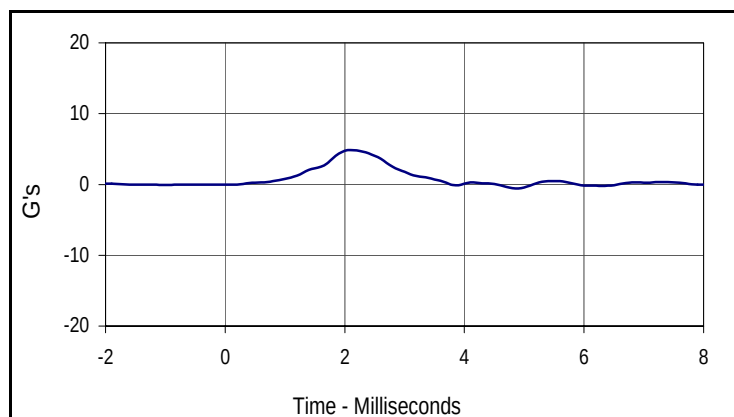
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	272.5	Pass
Peak Lateral Acceleration	G's	≤15.0	4.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
272.5	2.1	0.0	-1.7



Curve Description

Head Y

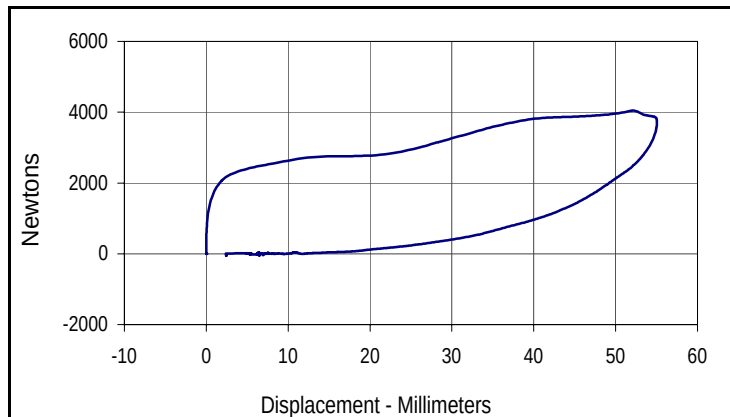
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.9	2.1	-0.6	4.9

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test
 ATD Serial No.: 635

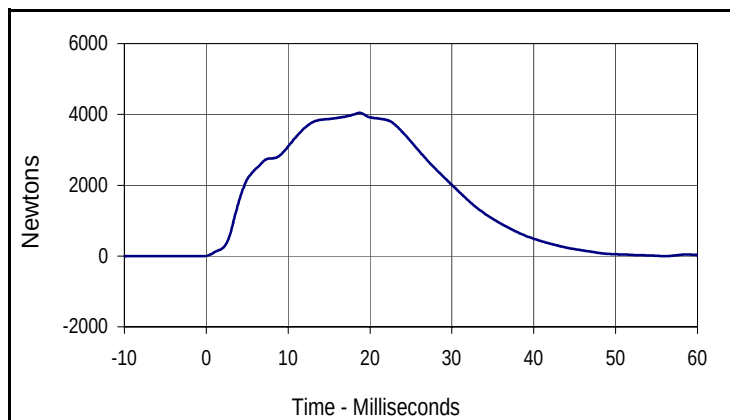
Test Date: 6/15/10
 Test I.D.: CH06A



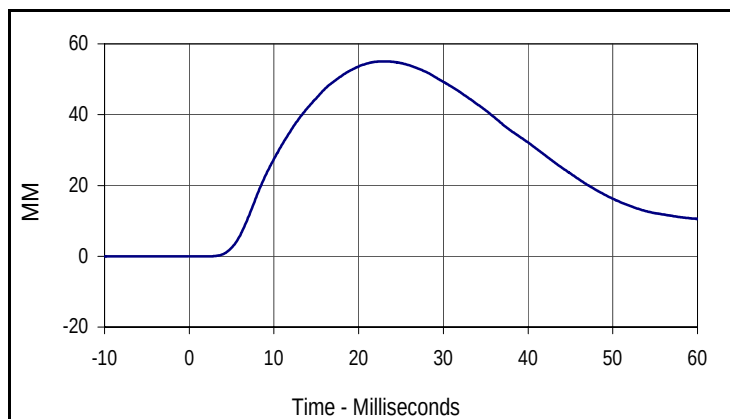
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.59 to 6.83	6.66	Pass
Peak Chest Deflection	MM	50.0 to 58.0	55.0	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	3964	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	4043	Pass
Internal Hysteresis	%	69 to 85	78.5	Pass
Overall Test Results			Pass	



Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
003	FIL	180	78.5
Peak Probe Force		Peak Chest Displ.	
4043.4		55.0	



Curve Description			
Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4043.4	18.8	-58.3	132.4



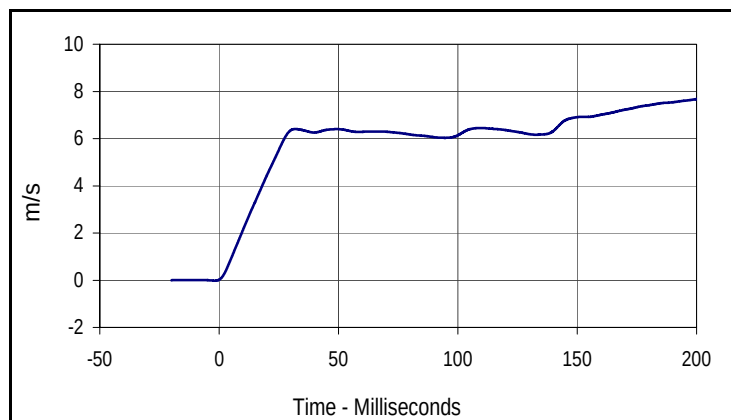
Curve Description			
Chest Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
55.0	23.0	0.0	2.2

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test
 ATD Serial No.: 635

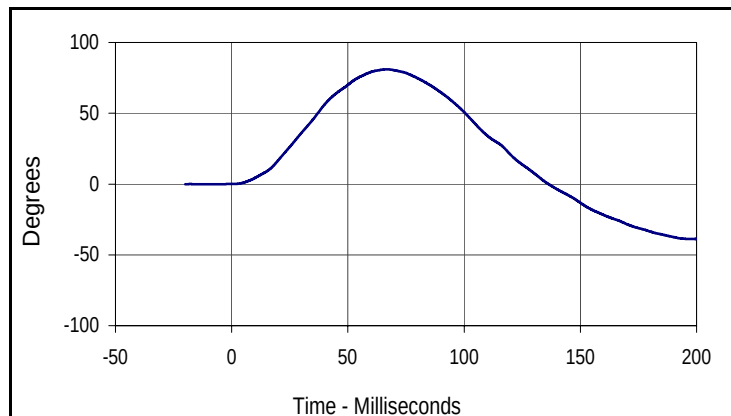
Test Date: 6/15/10
 Test I.D.: NF06A



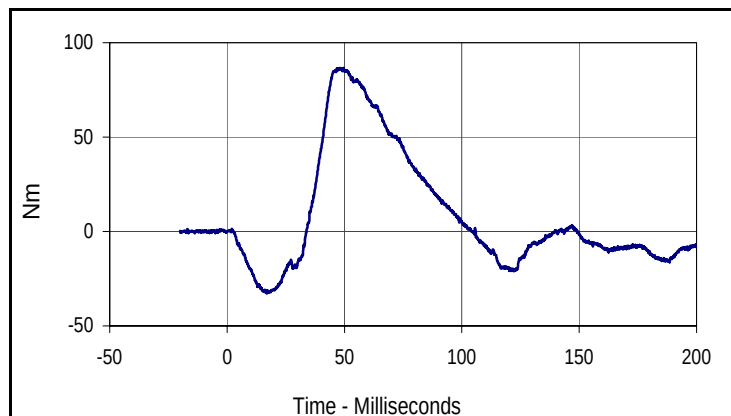
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.91	Pass
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.1	Pass
	20 Msec.	m/s	4.0 to 5.0	4.4	Pass
	30 Msec.	m/s	5.8 to 7.0	6.4	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	81.0	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	77.8	Pass
Positive Moment Decay, Time To 10 Nm		Msec.	80.0 to 100.0	95.9	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
7.7	200.0	0.0	-1.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
81.0	66.8	-38.8	200.0



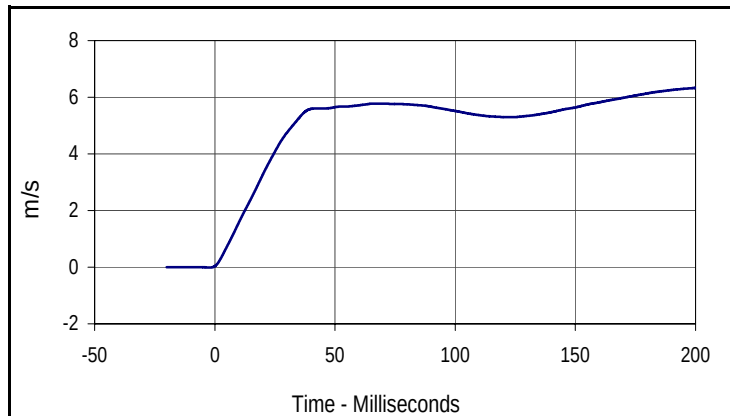
Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
86.6	48.0	-32.9	16.9

Test Program: Hybrid III 5th Percentile Female Neck Extension Test
 ATD Serial No.: 635

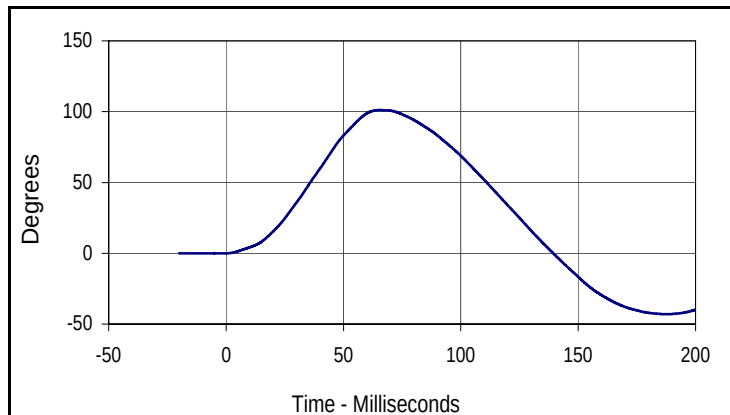
Test Date: 6/15/10
 Test I.D.: NE06A



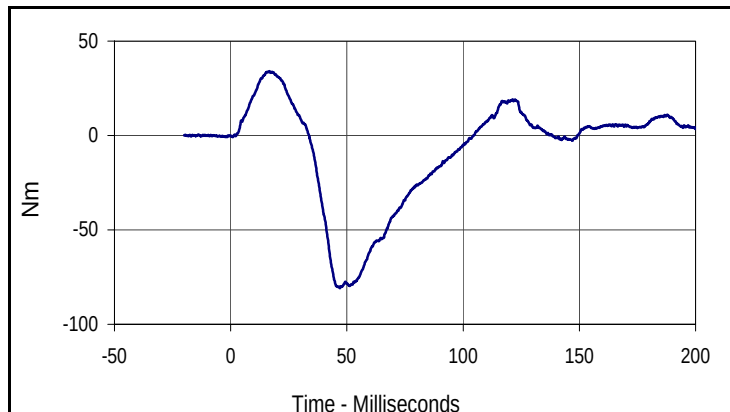
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.03	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.6	Pass
	20 Msec.	m/s	3.1 to 3.9	3.3	Pass
	30 Msec.	m/s	4.6 to 5.6	4.8	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	101.1	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-54.4	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	96.0	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
6.3	200.0	0.0	-2.2



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
101.1	65.4	-43.0	187.9



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
34.1	16.7	-80.9	46.9

Test Program: Hybrid III 5th Percentile Female Knee Impact Test
 ATD Serial No.: 635

Test Date: 6/15/10
 Test I.D.: LK06A , RK06B

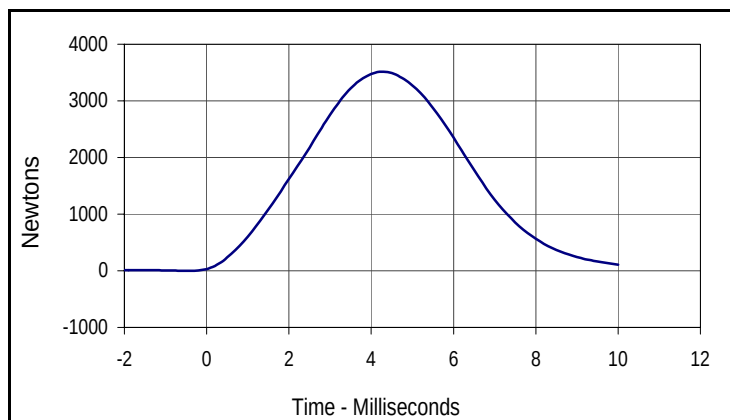


Left Knee

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
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	3450 to 4060	3515	Pass
Overall Test Results			Pass	

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	3450 to 4060	3515	Pass
Overall Test Results			Pass	



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3514.6	4.3	-1.8	-0.4



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
3514.6	4.3	-1.8	-0.4

Test Program: Hybrid III 5th Percentile Female Torso Flexion Test

Test Date: 6/15/10

ATD Serial No.: 635

Test I.D.: TF06A



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
Initial reference plane angle	Degrees	≤20.0	3.1	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	320.0 to 390.0	329.1	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	1.3	Pass
Final reference plane angle	Degrees	+/-8	2.5	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 6/15/10

ATD Serial No.: 635

Test I.D.: N/A



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
A - Total sitting height	mm	774.7 to 800.1	778	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	443	Pass
C - "H" point height (Reference)	mm	81.3 to 86.3	85	Pass
D - "H" point from seat back (Ref.)	mm	144.8 to 149.8	146	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	83	Pass
F - Thigh clearance	mm	119.4 to 134.6	132	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	256	Pass
H - Head to back line	mm	40.7 to 45.7	45	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	291	Pass
J - Elbow rest height	mm	182.8 to 203.2	201	Pass
K - Buttock to knee length	mm	520.7 to 546.1	543	Pass
L - Popliteal height	mm	355.6 to 376.0	364	Pass
M - Knee pivot height	mm	393.7 to 419.1	416	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	421	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	186	Pass
P - Foot length	mm	218.5 to 233.7	231	Pass
R - Buttock to knee pivot length	mm	457.2 to 482.6	473	Pass
S - Head breadth	mm	137.1 to 147.3	143	Pass
T - Head depth	mm	177.8 to 188.0	181	Pass
U - Hip breadth	mm	299.7 to 314.9	313	Pass
V - Shoulder breadth	mm	350.5 to 365.7	362	Pass
W - Foot breadth	mm	78.8 to 94.0	90	Pass
X - Head circumference	mm	528.3 to 548.7	541	Pass
Y - Chest circumference with jacket	mm	850.8 to 881.3	881	Pass
Z - Waist circumference	mm	759.5 to 789.9	776	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	301	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	163	Pass
Overall Test Results				Pass

Test Program: Dummy Damage Checklist
 ATD Serial No.: 034

Test Date: 6/14/10
 Test I.D.: N/A



GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:

Test Program: Dummy Damage Checklist
 ATD Serial No.: 635

Test Date: 6/15/10
 Test I.D.: N/A



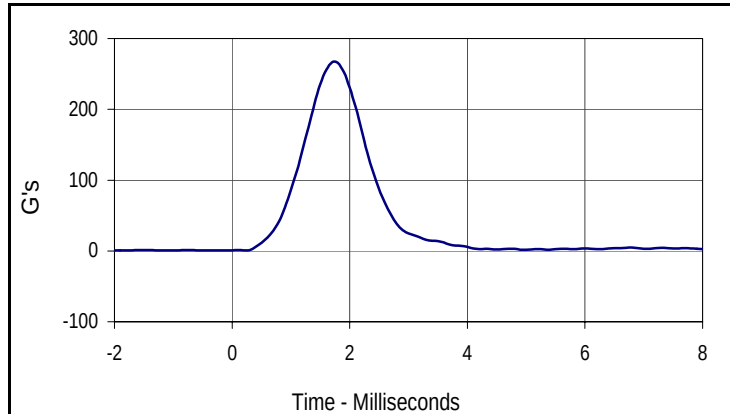
GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:

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

Test Program: Hybrid III 50th Percentile Male Head Drop TestTest Date: 6/28/10ATD Serial No.: 035Test I.D.: HD06B

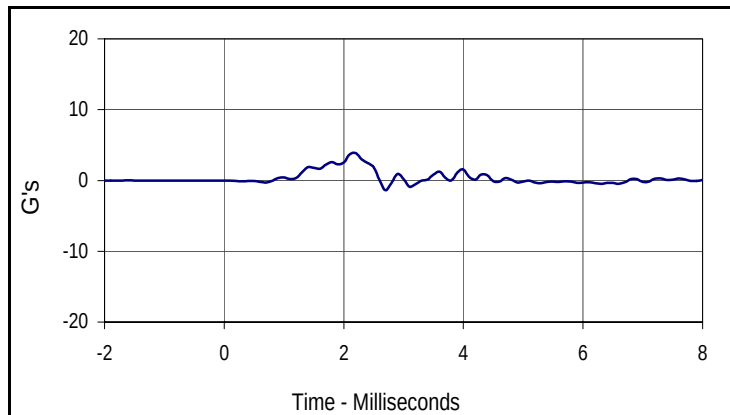
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	266.4	Pass
Peak Lateral Acceleration	G's	≤15.0	3.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
266.4	1.7	0.8	0.2



Curve Description

Head Y

CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
3.9	2.2	-1.4	2.7

Test Program: Hybrid III 50th Percentile Male Thorax Impact Test

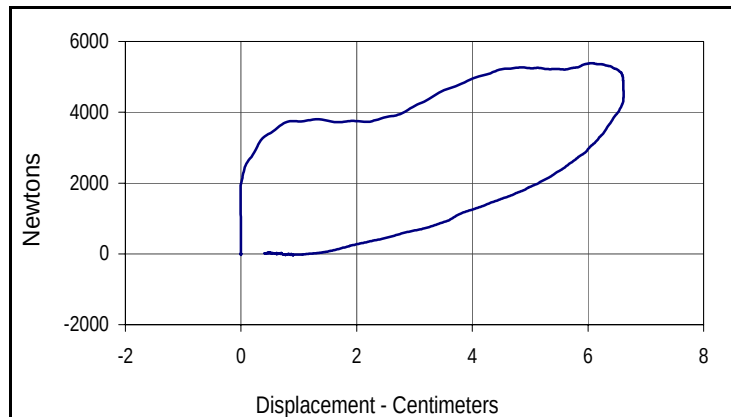
Test Date: 6/28/10

ATD Serial No.: 035

Test I.D.: CH06B



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
Probe Velocity	m/s	6.58 to 6.82	6.63	Pass
Peak Probe Force	Newtons	5159 to 5893	5387	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.61	Pass
Internal Hysteresis	%	69 to 85	74.0	Pass
Overall Test Results			Pass	



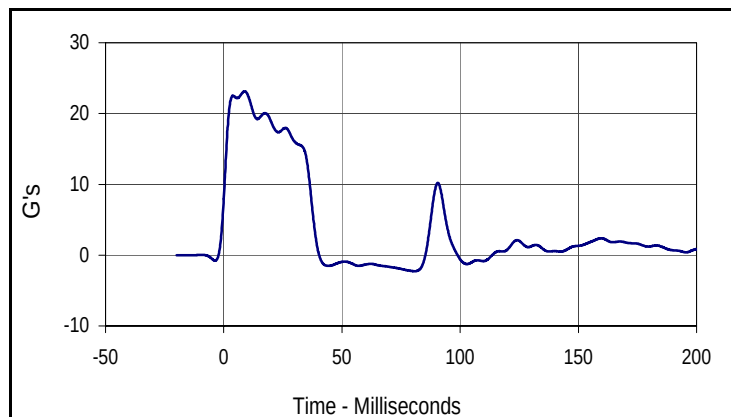
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	74.0
Peak Probe Force		Peak Chest Deflection	
5387		6.61	

Test Program: Hybrid III 50th Percentile Male Neck Flexion Test
 ATD Serial No.: 035

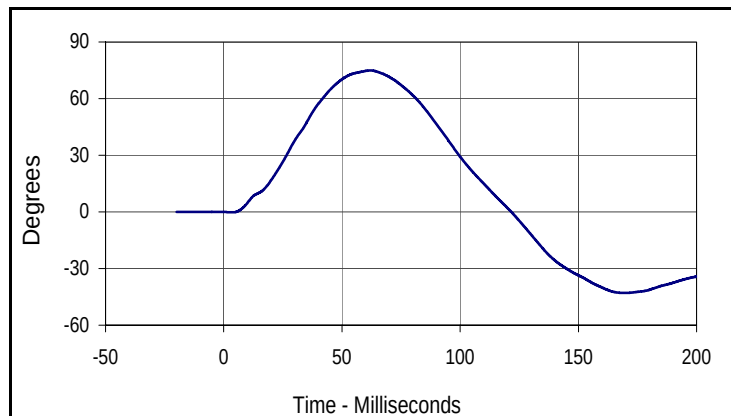
Test Date: 6/28/10
 Test I.D.: NF06B



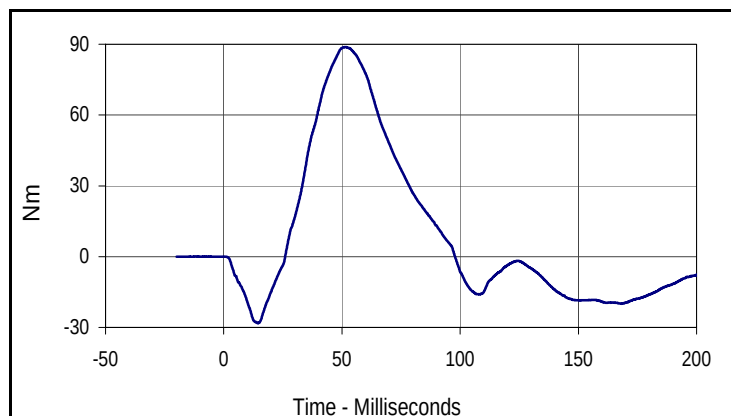
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.01	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.7	Pass
	20 Msec.	G's	17.6 to 22.6	18.9	Pass
	30 Msec.	G's	12.5 to 18.5	16.0	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	16.0	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	38	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	74.9	Pass
	Time	Msec.	57.0 to 64.0	62.0	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	121.7	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	88.8	Pass
	Time	Msec.	47.0 to 58.0	51.5	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.9	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.1	8.8	-2.3	80.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
74.9	62.0	-42.9	169.4



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
88.8	51.5	-28.2	14.4

Test Program: Hybrid III 50th Percentile Male Neck Extension Test

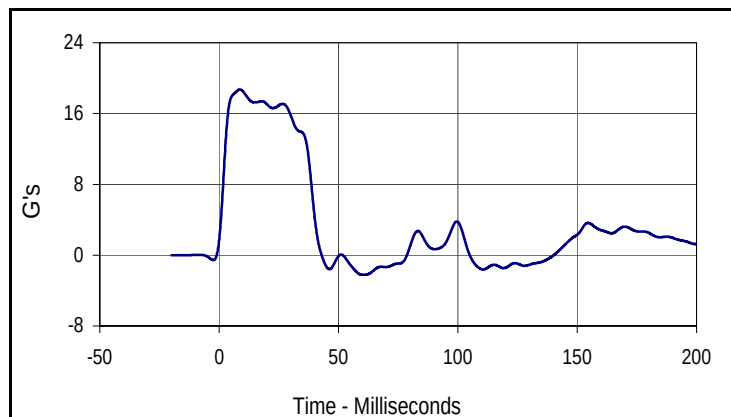
Test Date: 6/28/10

ATD Serial No.: 035

Test I.D.: NE06B



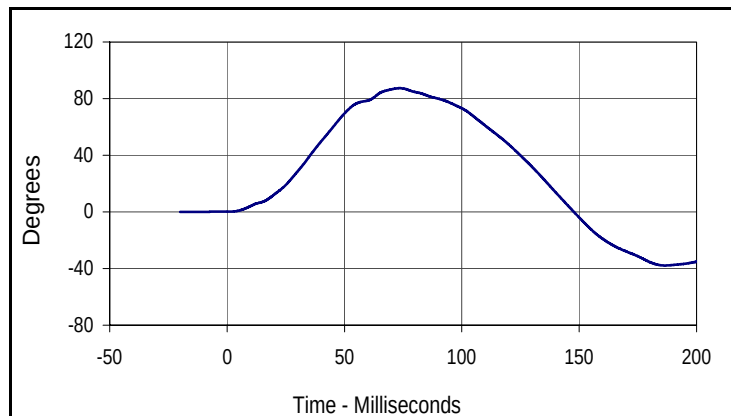
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.07	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.5	Pass
	20 Msec.	G's	14.0 to 19.0	17.1	Pass
	30 Msec.	G's	11.0 to 16.0	15.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.8	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	87.4	Pass
	Time	Msec.	72.0 to 82.0	73.5	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	147.8	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-65.3	Pass
	Time	Msec.	65.0 to 79.0	69.9	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	140.5	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

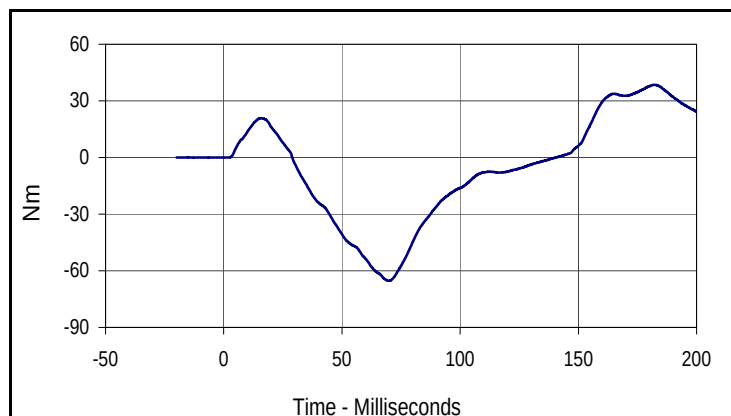
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.7	8.7	-2.2	60.2



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
87.4	73.5	-37.9	186.5



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
38.5	181.7	-65.3	69.9

Test Program: Hybrid III 50th Percentile Male Knee Impact Test
 ATD Serial No.: 035

Test Date: 6/28/10
 Test I.D.: LK06B , RK06B

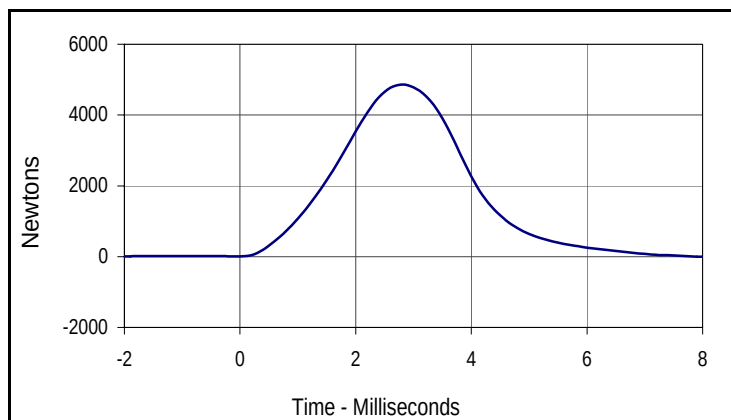


Left Knee

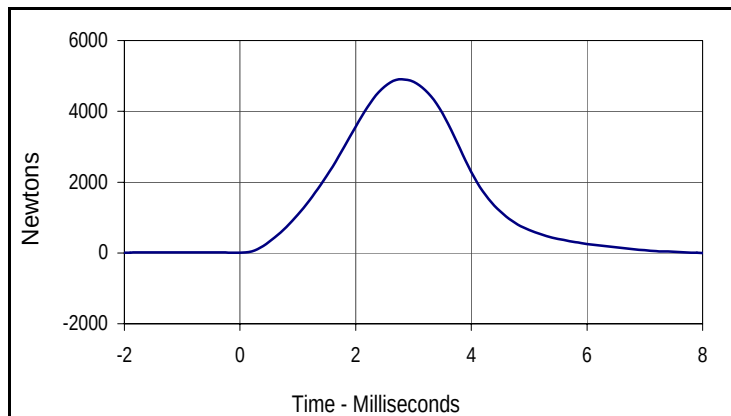
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.08	Pass
Peak Probe Force	Newtons	4715 to 5782	4861	Pass
Overall Test Results			Pass	

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	4909	Pass
Overall Test Results			Pass	



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4860.9	2.8	-12.9	8.7



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
4909.1	2.8	-13.2	8.7

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 6/28/10

ATD Serial No.: 035

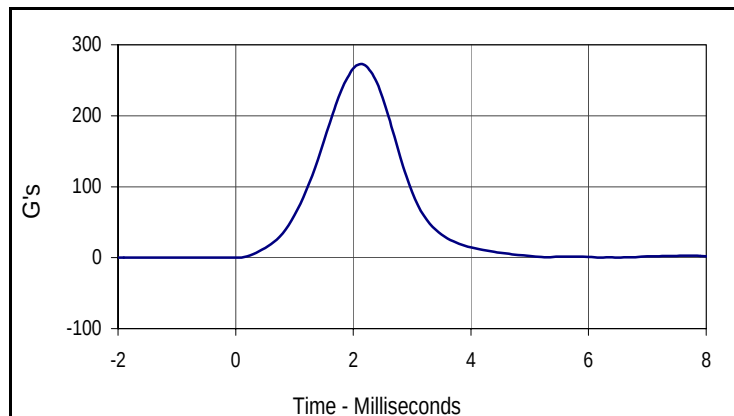
Test I.D.: N/A



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
A - Total sitting height	mm	879 to 889	882	Pass
B - Shoulder pivot height	mm	505 to 521	518	Pass
C - "H" point height	mm	84 to 89	87	Pass
D - "H" point from seat back	mm	135 to 140	139	Pass
E - Shoulder pivot from back	mm	84 to 94	85	Pass
F - Thigh clearance	mm	140 to 155	149	Pass
G - Elbow back to wrist pivot	mm	290 to 305	300	Pass
H - Skull cap to back line	mm	41 to 46	45	Pass
I - Shoulder to elbow length	mm	330 to 345	332	Pass
J - Elbow rest height	mm	190 to 211	210	Pass
K - Buttock to knee length	mm	579 to 604	593	Pass
L - Popliteal length	mm	429 to 455	445	Pass
M - Knee pivot height	mm	485 to 500	500	Pass
N - Buttock popliteal length	mm	452 to 477	473	Pass
O - Chest depth	mm	213 to 229	215	Pass
P - Foot length	mm	251 to 267	263	Pass
V - Shoulder breadth	mm	422 to 437	423	Pass
W - Foot breadth	mm	91 to 107	106	Pass
Y - Chest circumference	mm	970 to 1001	990	Pass
Z - Waist circumference	mm	836 to 866	862	Pass
AA - Location for chest circumference	mm	429 to 434	431	Pass
BB - Location for waist circumference	mm	226 to 231	231	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female Head Drop TestTest Date: 6/29/10ATD Serial No.: 635Test I.D.: HD06C

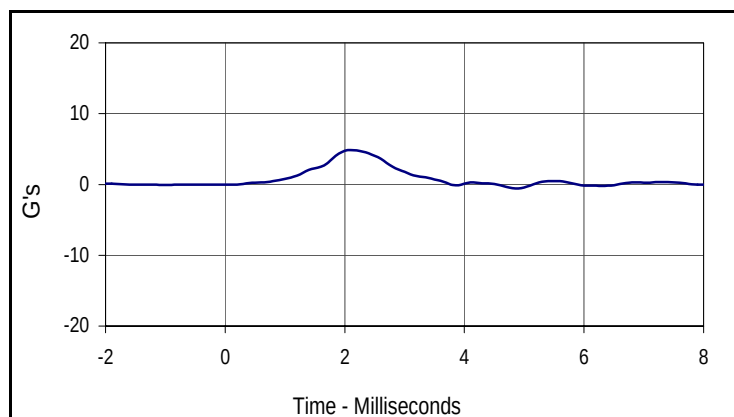
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	272.5	Pass
Peak Lateral Acceleration	G's	≤15.0	4.9	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
272.5	2.1	0.0	-1.7



Curve Description

Head Y

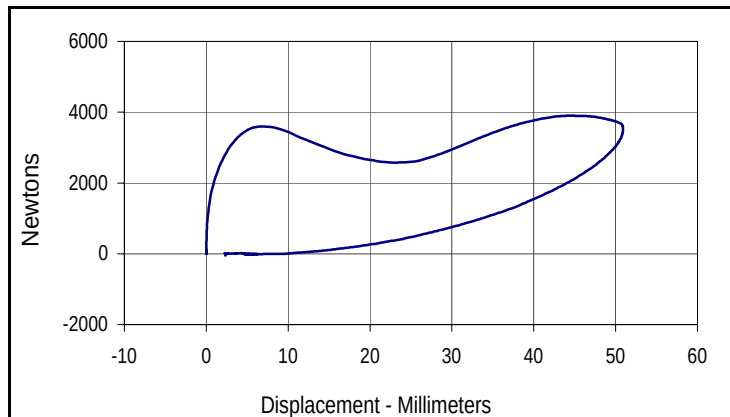
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.9	2.1	-0.6	4.9

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test
 ATD Serial No.: 635

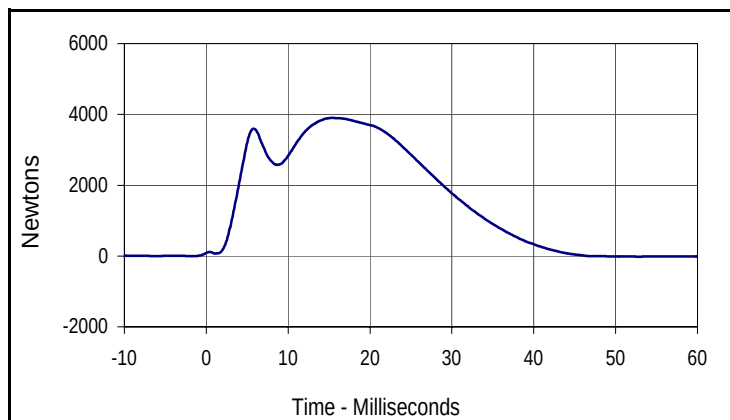
Test Date: 6/29/10
 Test I.D.: CH06C



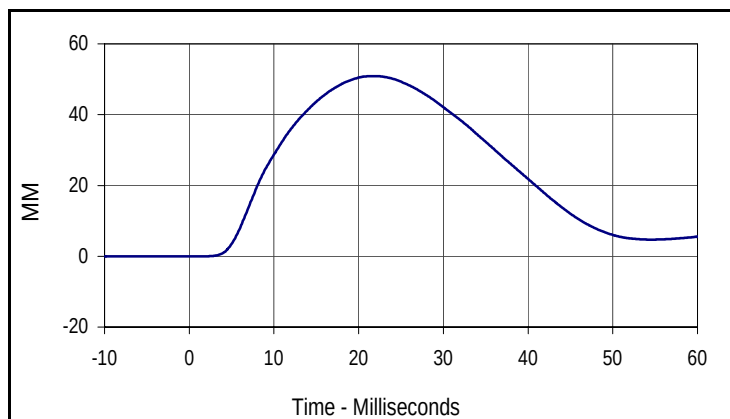
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.59 to 6.83	6.64	Pass
Peak Chest Deflection	MM	50.0 to 58.0	50.9	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	3902	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	3735	Pass
Internal Hysteresis	%	69 to 85	74.4	Pass
Overall Test Results			Pass	



Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
003	FIL	180	74.4
Peak Probe Force		Peak Chest Displ.	
3901.9		50.9	



Curve Description			
Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
3901.9	15.4	-49.5	187.8



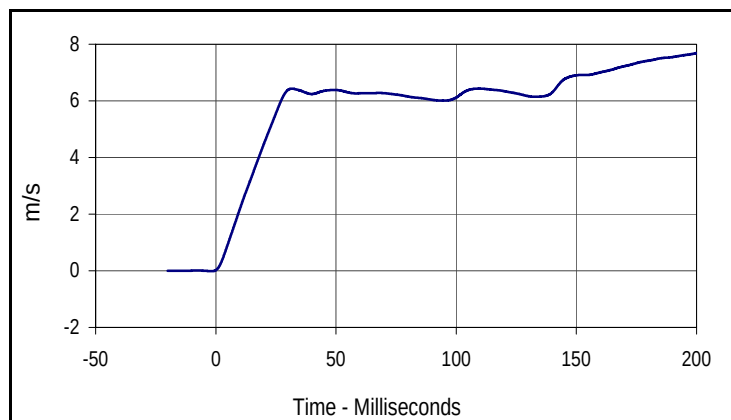
Curve Description			
Chest Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
50.9	21.7	0.0	-10.0

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test
 ATD Serial No.: 635

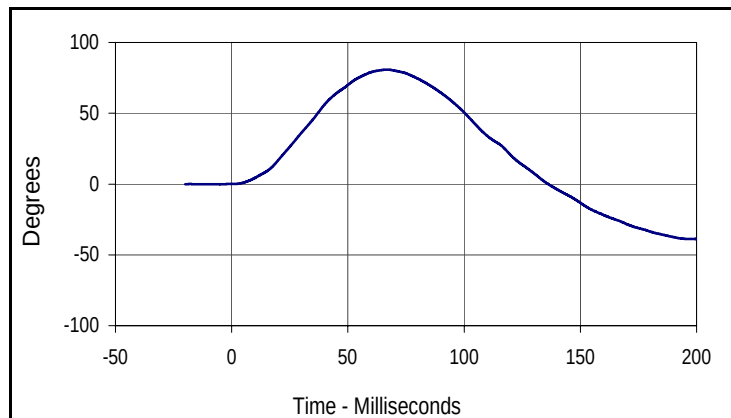
Test Date: 6/29/10
 Test I.D.: NF06B



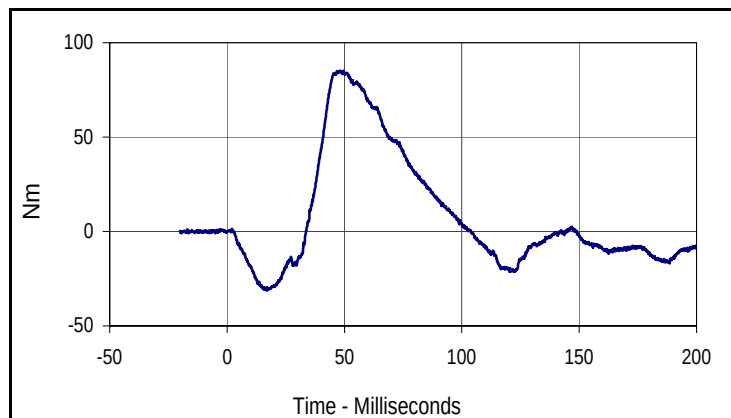
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.92	Pass
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.2	Pass
	20 Msec.	m/s	4.0 to 5.0	4.5	Pass
	30 Msec.	m/s	5.8 to 7.0	6.4	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	80.8	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	76.3	Pass
Positive Moment Decay, Time To 10 Nm		Msec.	80.0 to 100.0	93.5	Pass
			Overall Test Results		Pass



Curve Description			
Pendulum Velocity			
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
7.7	200.0	0.0	-1.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
80.8	66.8	-38.8	200.0



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
85.1	49.6	-31.4	16.9

Test Program: Hybrid III 5th Percentile Female Neck Extension Test

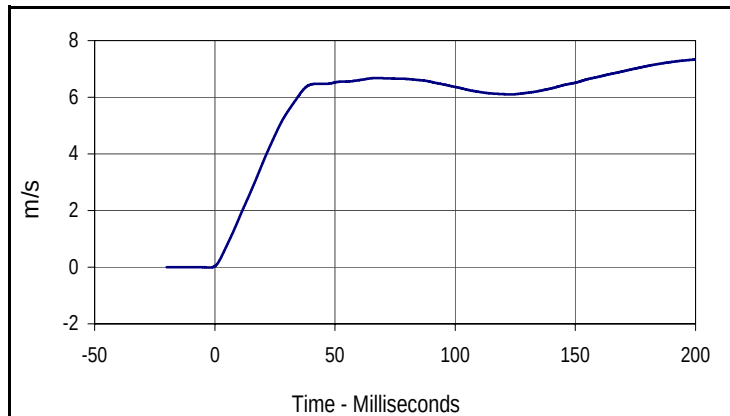
Test Date: 6/29/10

ATD Serial No.: 635

Test I.D.: NE06C



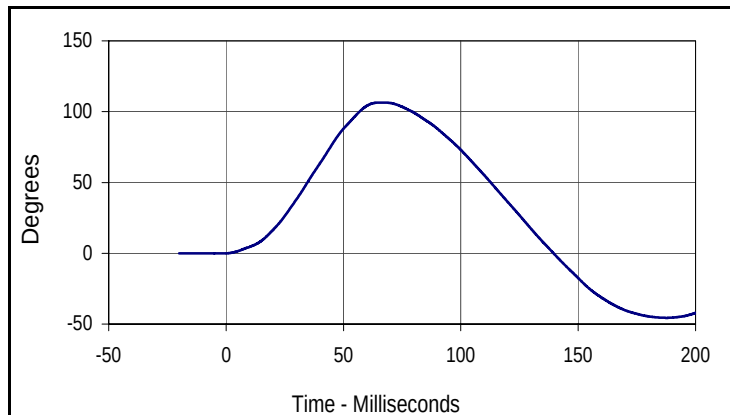
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.02	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.7	Pass
	20 Msec.	m/s	3.1 to 3.9	3.7	Pass
	30 Msec.	m/s	4.6 to 5.6	5.5	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	106.5	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-55.4	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	95.9	Pass
			Overall Test Results		Pass



Curve Description

Pendulum Velocity

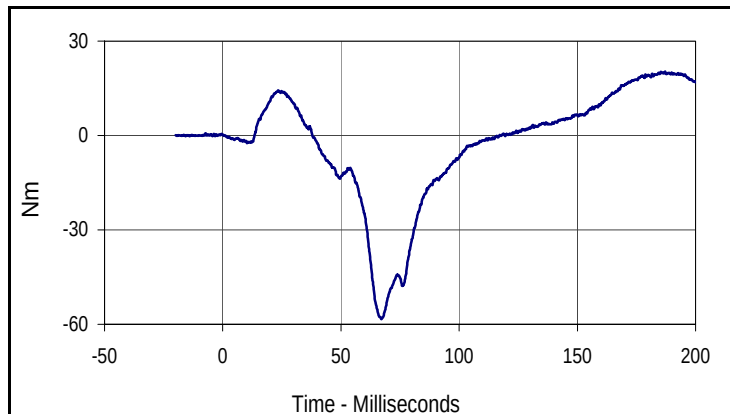
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
7.3	200.0	0.0	-2.2



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
106.5	65.3	-45.6	187.8



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
20.3	187.1	-58.4	67.1

Test Program: Hybrid III 5th Percentile Female Knee Impact Test
 ATD Serial No.: 635

Test Date: 6/29/10
 Test I.D.: LK06C , RK06C



Left Knee

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
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	3450 to 4060	3684	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	3450 to 4060	3796	Pass
Overall Test Results				Pass



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3684.0	4.3	3.1	-0.4



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
3796.0	4.3	-1.9	-0.4

Test Program: Hybrid III 5th Percentile Female Torso Flexion Test

Test Date: 6/29/10

ATD Serial No.: 635

Test I.D.: TF06B



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
Initial reference plane angle	Degrees	≤20.0	2.4	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	320.0 to 390.0	325.0	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	1.2	Pass
Final reference plane angle	Degrees	+/-8	3.2	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 6/29/10

ATD Serial No.: 635

Test I.D.: N/A



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
A - Total sitting height	mm	774.7 to 800.1	780	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	443	Pass
C - "H" point height (Reference)	mm	81.3 to 86.3	85	Pass
D - "H" point from seat back (Ref.)	mm	144.8 to 149.8	145	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	83	Pass
F - Thigh clearance	mm	119.4 to 134.6	132	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	257	Pass
H - Head to back line	mm	40.7 to 45.7	45	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	287	Pass
J - Elbow rest height	mm	182.8 to 203.2	201	Pass
K - Buttock to knee length	mm	520.7 to 546.1	543	Pass
L - Popliteal height	mm	355.6 to 376.0	362	Pass
M - Knee pivot height	mm	393.7 to 419.1	413	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	419	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	183	Pass
P - Foot length	mm	218.5 to 233.7	231	Pass
R - Buttock to knee pivot length	mm	457.2 to 482.6	473	Pass
S - Head breadth	mm	137.1 to 147.3	143	Pass
T - Head depth	mm	177.8 to 188.0	181	Pass
U - Hip breadth	mm	299.7 to 314.9	310	Pass
V - Shoulder breadth	mm	350.5 to 365.7	363	Pass
W - Foot breadth	mm	78.8 to 94.0	90	Pass
X - Head circumference	mm	528.3 to 548.7	541	Pass
Y - Chest circumference with jacket	mm	850.8 to 881.3	857	Pass
Z - Waist circumference	mm	759.5 to 789.9	772	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	302	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	162	Pass
Overall Test Results				Pass

Test Program: Dummy Damage Checklist
 ATD Serial No.: 035

Test Date: 6/28/10
 Test I.D.: N/A



GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:

Test Program: Dummy Damage Checklist
 ATD Serial No.: 635

Test Date: 6/29/10
 Test I.D.: N/A



GENERAL	DAMAGED	OK
Outer skin on entire dummy		X
Head ballast secure		X
Gashes, rips, general appearance, etc.		X
Neck-Broken or cracks in rubber		X
Check that upper neck bracket is firmly attached to lwr neck bracket		X
Three rubber bumpers in place		X
Spine- Broken or cracks in rubber		X
Check for looseness at the condyle joint		X
Nodding blocks- cracked or out of position		X
Ribs- Check all ribs and rib supports for damage (bent or broken)		X
Check damping material or separation or cracks		X
OTHER		
CHEST DISPLACEMENT ASSEMBLY		
Bent shaft		X
Slider arm riding correctly, in track		X
TRANSDUCER LEADS		
Torn cables		X
ACCELEROMETER MOUNTINGS		
Check for secure mounting		X
KNEES		
Check outer skin, insert and casting (without removing insert)		X
Knee sliders - Wires intact		X
Knee sliders- Rubber returned to "at rest position"		X
LIMBS		
Check for normal movement and adjustment		X
PELVIS		
Inspect for breakage, especially at iliac crest		X

Comments on repair or replacement parts:
