

REPORT NUMBER: NCAP-KAR-11-023

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

**TOYOTA MOTOR MANUFACTURING DE BAJA CALIFORNIA
2011 TOYOTA TACOMA DOUBLE CAB 4X4 4-DOOR TRUCK**

NHTSA NUMBER: MB5123

**PREPARED BY:
KARCO ENGINEERING, LLC.
9270 HOLLY ROAD
ADELANTO, CA 92301**



OCTOBER 4, 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**

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. NCAP-KAR-11-023		2. Government Accession No.		3. Recipient's Catalog No.																																																					
4. Title and Subtitle Final Report of New Car Assessment Program Testing of a 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No. MB5123				5. Report Date October 18, 2010																																																					
				6. Performing Organization Code KAR																																																					
7. Authors Mr. Kelsey A. Chiu, Engineering Department Supervisor, KARCO Mr. Frank Richardson, Program Manager, KARCO				8. Performing Organization Report No. TR-P30001-08-NC																																																					
9. Performing Organization Name and Address KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA, 92301				10. Work Unit No.																																																					
				11. Contract or Grant No. DTNH22-06-D-00027																																																					
12. Sponsoring Agency Name and Address U. S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards 1200 New Jersey Ave., SE, Room W43-410 Washington, D.C 20590				13. Type of Report and Period Covered Final Test Report, October 2010																																																					
				14. Sponsoring Agency Code NPS-10																																																					
15. Supplementary Notes																																																									
16. Abstract A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck 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 October 4, 2010. The impact velocity of the vehicle was 56.68 km/h and the ambient temperature at the barrier face at the time of impact was 21.7 deg. C. The target vehicle's post-test maximum crush was 499 mm at DPD 3, to the left of the 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>251.4</td> <td>700.0</td> <td>388.7</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>-30</td> <td>52</td> <td>-19</td> </tr> <tr> <td>Nij</td> <td>N/A</td> <td>1</td> <td>0.36</td> <td>1</td> <td>0.85</td> </tr> <tr> <td>Neck Tension</td> <td>N</td> <td>4170</td> <td>1466.1</td> <td>2620</td> <td>1552.3</td> </tr> <tr> <td>Neck Compression</td> <td>N</td> <td>4000</td> <td>-588.8</td> <td>2520</td> <td>-734.2</td> </tr> <tr> <td>Left Femur Force</td> <td>N</td> <td>10008</td> <td>-4064.8</td> <td>6805</td> <td>-2185.3</td> </tr> <tr> <td>Right Femur Force</td> <td>N</td> <td>10008</td> <td>-4111.5</td> <td>6805</td> <td>-872.3</td> </tr> </tbody> </table>						Measurement Description	Units	Driver ATD		Passenger ATD		Threshold	Result	Threshold	Result	Head Injury Criteria (HIC ₁₅)	N/A	700.0	251.4	700.0	388.7	Maximum Chest Compression	mm	63	-30	52	-19	Nij	N/A	1	0.36	1	0.85	Neck Tension	N	4170	1466.1	2620	1552.3	Neck Compression	N	4000	-588.8	2520	-734.2	Left Femur Force	N	10008	-4064.8	6805	-2185.3	Right Femur Force	N	10008	-4111.5	6805	-872.3
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17. Key Words 35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP)				18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Admin. Technical Reference Division 1200 New Jersey Ave., SE Washington, DC 20590																																																					
19. Security Classification of this report UNCLASSIFIED		20. Security Classification of this page UNCLASSIFIED		21. No. of Pages 123	22. Price																																																				

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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 Tacoma Double Cab 4x4 4-Door Truck at a velocity of 56.68 km/h. The test was performed at KARCO Engineering, LLC. on October 4, 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. 141) 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 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 499 mm located at DPD 3, to the left of 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 headrest. The upper torso contacted the airbag. Both the left and right knees contacted the knee bolster and steering wheel. The right knee also contacted the steering column.

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)	251.4	68.8	83.8	-30	0.36	1466.1	-588.8	-4064.8	-4111.5
Passenger (5th)	388.7	62.4	77.4	-19	0.85	1552.3	-734.2	-2185.3	-872.3

SECTION 2
DATA SHEETS

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

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 Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MB5123
Make	Toyota
Model	Tacoma Double Cab 4x4
Body Style	4-Door Truck
VIN	3TMLU4EN9BM057181
Body Color	Silver Streak Mica
Delivery Date	9/1/2010
Odometer Reading (mi)	62
Odometer Reading (km)	100
Dealer	Crown Toyota
Transmission	5-Speed Automatic
Final Drive	4WD
Type / No. of Cylinders	V6
Engine Displacement (L)	4.0
Engine Placement	Longitudinal
Roof Rack	No
Sunroof / T-Top	No
Tinted Glass	Yes
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	No

Anti-Lock Brakes	Yes
All Wheel Drive	Yes
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	No
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	No
Tilt Steering	Yes
Other	

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

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Manufacturing de Baja California
Date of Manufacture	Jul-10

GVWR (kg)	2472
GAWR Front (kg)	1249
GAWR Rear (kg)	1410

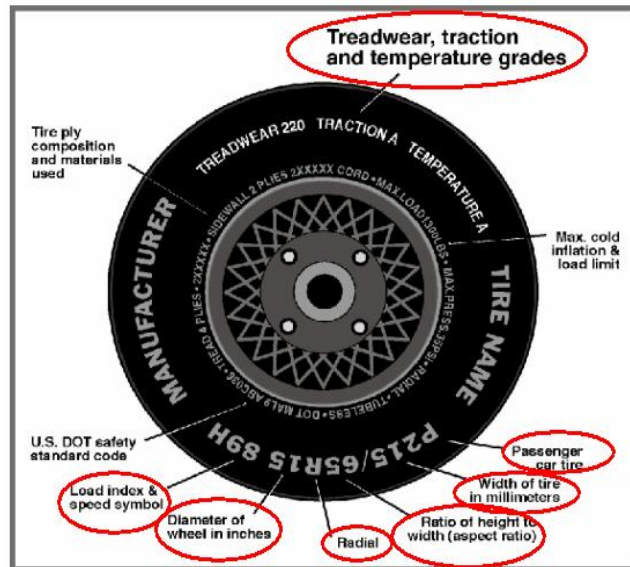
VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench		
Number of Occupants	2	3		5
Capacity Weight (VCW) (kg)				529.0
Cargo Weight (RCLW) (kg)				136.0

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2011 Toyota Tacoma Double Cab 4x4 4-Door Truck	NHTSA No.:	MB5123
Test Program:	56 km/h Frontal Impact NCAP Test	Test Date:	10/04/10



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	200	200
Recommended Tire Size	P265/65R17	P265/65R17
Tire Size on Vehicle	P265/65R17	P265/65R17
Tire Manufacturer	Dunlop	Dunlop
Tire Model	Grand Trek AT20	Grand Trek AT20
Treadwear	300	300
Traction	B	B
Temperature Grades	B	B
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 2 Steel	2 Polyester, 2 Steel
Load Index / Speed Symbol	110S	110S
Tire Material	Polyester, Steel	Polyester, Steel
DOT Safety Code Left	DAAH C8ER 1810	DAAH C8ER 1810
DOT Safety Code Right	DAAH C8ER 1810	DAAH C8ER 1810

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

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	545.0	439.0		583.5	542.5	
Right	kg	517.0	420.0		537.5	526.5	
Ratio	%	55.3%	44.7%	100.0%	51.2%	48.8%	100.0%
Total	kg	1062.0	859.0	1921.0	1121.0	1069.0	2190.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1921.0	A
Weight of 1 P572E ATD & 1 P572O ATD	kg	141.0	B
Rated Cargo/Luggage Weight (RCLW)	kg	136.0	C
Calculated Vehicle Target Weightt (TVTW)	kg	2198.0	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	887	890	929	934	1453
As Tested	mm	870	878	890	897	1586
Post-Test	mm	848	802	890	902	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	3250
Total Vehicle Length at Left Side	mm	4655
Total Vehicle Length at Centerline	mm	5300
Total Vehicle Length at Right Side	mm	4655
Weight of Ballast in Cargo Area	kg	133
Weight of Vehicle Components Removed	kg	14.0
Amount of Stoddard Solvent in Fuel Tank	L	74.26

VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

Bed liner (10.0 kg), Spare tire and tools (4.0 kg)

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

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

TARGET VEHICLE STRUCTURAL MEASUREMENTS

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length	5300	4843	457
2	Total Width	1892	2194	-302
3	Bumper Top Height	791	826	-35
4	Bumper Bottom Height	420	372	48
5	Longitudinal Member Top Height	560	972	-412
6	Distance Between Longitudinal Members	810	930	-120
7	Longitudinal Member Width	70	85	-15
8	Engine Top Height	1127	1139	-12
9	Engine Bottom Height	295	313	-18
10	Engine and Gearbox Width	650	650	0
11	Front Bumper to Engine Distance	636	267	369
12	Front Shock Absorber Fixing Height	802	855	-53
13	Bonnet Leading Edge Height	1127	1113	14
14	Front Shock Absorber Fixing Width	940	890	50
15	Front Bumper to Front Axle Distance	843	392	451
16	Front Axle to A-Pillar Distance	611	517	94
17	A-Pillar to B-Pillar Distance	973	974	-1
18	B-Pillar to Rear Axle Distance	1572	1604	-32
19	B-Pillar to C-Pillar Distance	848	848	0
20	Roof Sill Bottom Height	1591	1541	50
21	Roof Sill Top Height	1706	1661	45
22	Floor Sill Bottom Height	444	401	43
23	Floor Sill Top Height	553	552	1

All measurements in millimeters.

DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck

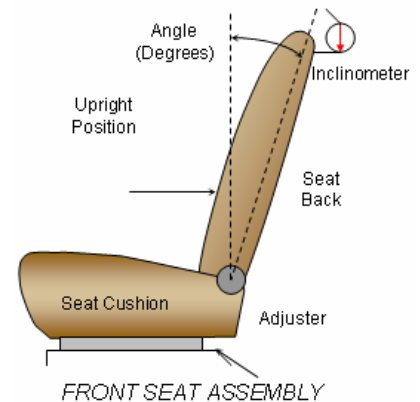
NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 10/04/10

NOMINAL DESIGN RIDING POSITION

The procedure for the driver is as follows: the seat back is set to the manufacturer's designated angle. 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.

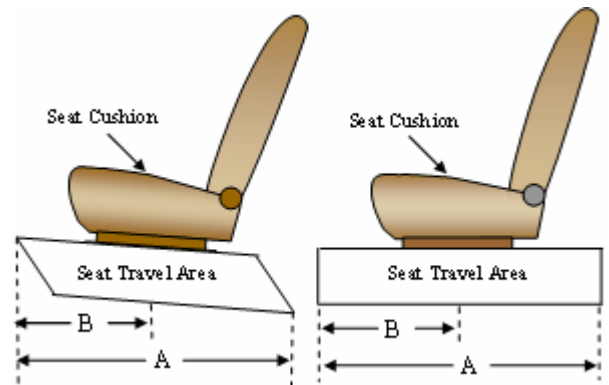


SEAT BACK ANGLE

Seating Position	Degrees
Driver Seat Back Angle	1.1
Passenger Seat Back Angle	1.3

SEAT FORE / AFT POSITIONING

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. The passenger's seat is set to the forward most position where the ATD will not contact any interior panels, full forward for this test.



SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position
Driver Seat	240 mm	120 mm
Passenger Seat	242 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 zero (0) is the uppermost position.

SEAT BELT UPPER ANCHORAGES

Seating Position	Total No. of Positions	Placed in Position
Driver Seat	4	0
Passenger Seat	4	0

DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck

NHTSA No.: MB5123

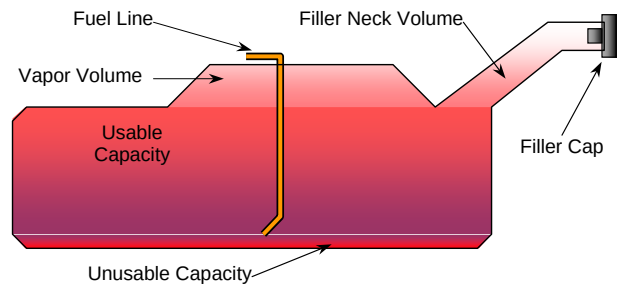
Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 10/04/10

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	79.86
Usable Capacity of "Optional Tank"	
92 - 94% of Usable Capacity	73.47 to 75.07
Actual Amount of Stoddard Solvent Used	74.26
1/3 of Usable Capacity	26.62

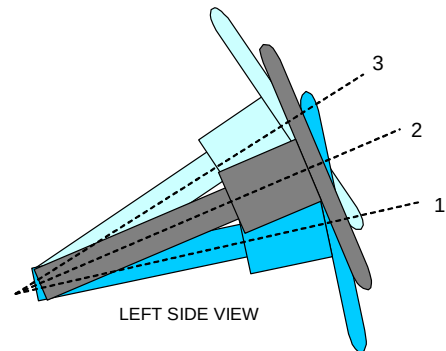
The test vehicle is equipped with an electric fuel pump. The fuel pump is activated when the ignition is turned on. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat and truck bed on the right side of the vehicle.



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	23.6	0
Geometric Center Position, No. 2	25.2	12
Uppermost Position, No. 3	26.8	24
Telescoping Steering Wheel Travel		24
Test Position	25.1	12

DATA SHEET NO. 3

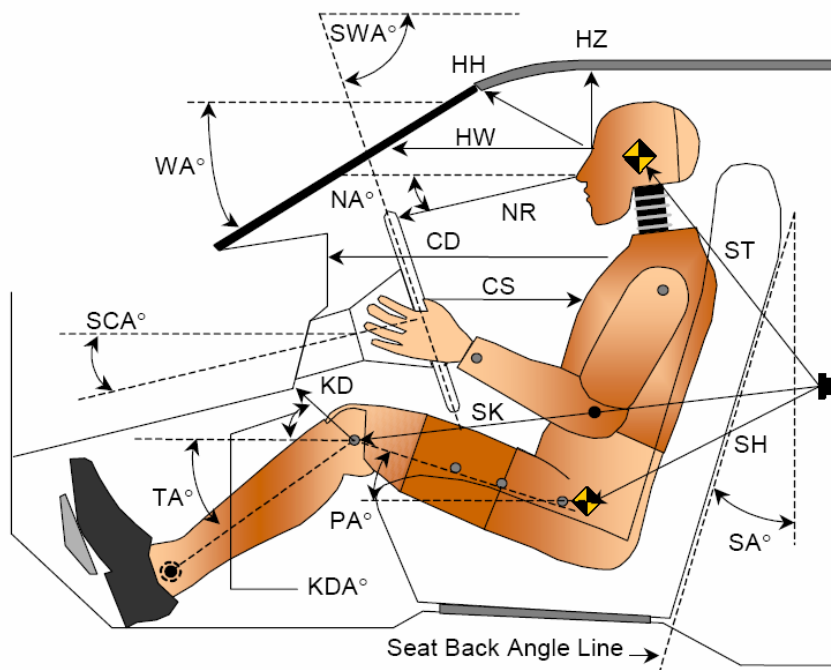
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck

NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test

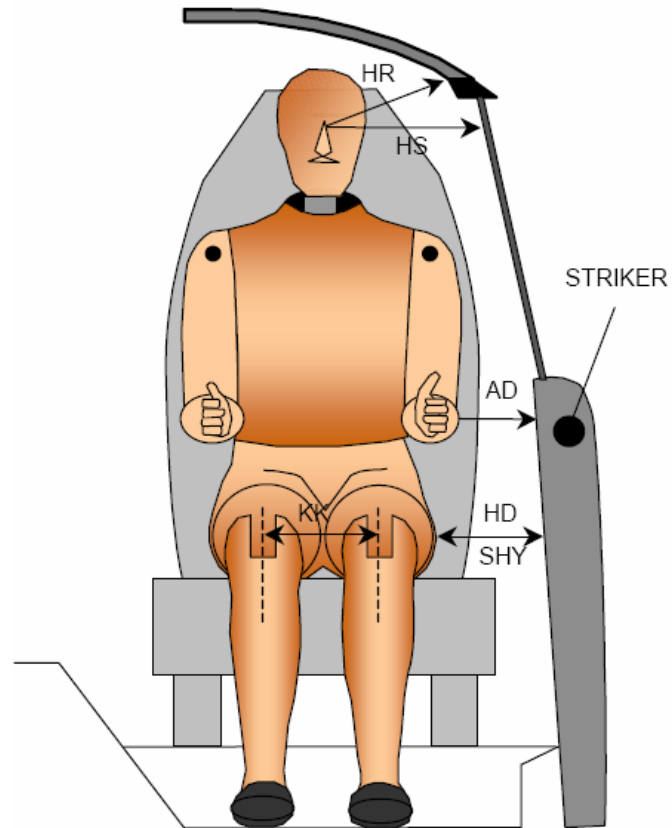
Test Date: 10/04/10



Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		33.0		
SWA°	Steering Wheel Angle		65.3		
SCA°	Steering Column Angle		24.7		
SA°	Seat Back Angle (On Headrest Post)		1.1		0.5
HZ	Head to Roof	215	90.0	271	90.0
HH	Head to Header	413	20.2	351	37.0
HW	Head to Windshield	623	0.0	605	0.0
HR	Head to Side Header	266	26.7	333	37.4
NR	Nose to Rim	417	11.7	458	25.2
CD	Chest to Dash	537	13.0	416	6.6
CS	Chest to Steering Hub	337	5.4		
RA	Rim to Abdomen	206	0.0		
KDL	Left Knee to Dash	189	31.4	128	44.5
KDR	Right Knee to Dash	161	20.4	113	50.0
PA°	Pelvic Angle		23.9		21.7
TA°	Tibia Angle		38.2		47.5
SK	Striker to Knee	570	7.3	676	8.6
ST	Striker to Head	521	81.8	455	62.2
SH	Striker to H-Point	241	39.5	275	23.9

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Date: 10/04/10



Code	Description	Driver (mm)	Passenger (mm)
AD	Arm to Door	133	80
HD	H-Point to Door	136	166
HR	Head to Side Header	266	333
HS	Head to Side Window	328	357
KK	Knee to Knee	307	240
SHY	Striker to H-Point (Y-Direction)	252	275
AA	Ankle to Ankle	310	170

DATA SHEET NO. 5

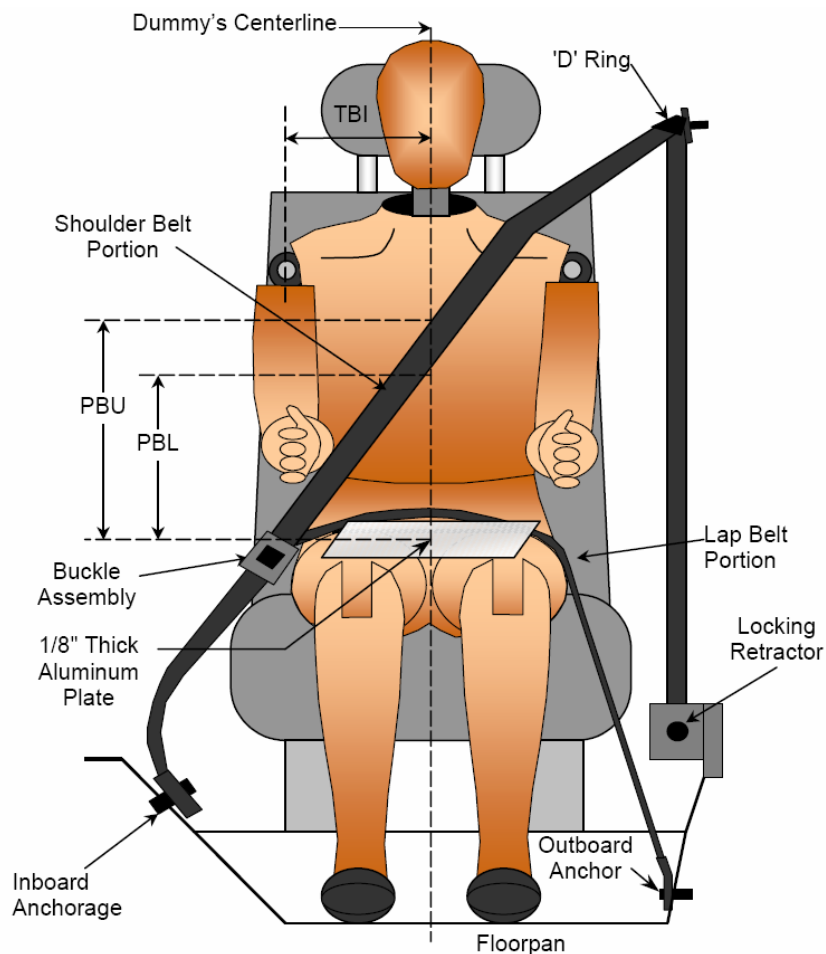
SEAT BELT POSITIONING DATA

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck

NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 10/04/10



FRONT VIEW OF DUMMY

SEAT BELT POSITIONING MEASUREMENTS

Code	Measurement Description	Units	Driver	Passenger
PBU	Top Surface of Aluminum Plate to Belt Upper Edge	mm	370	290
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	295	205

BELT LENGTH DATA

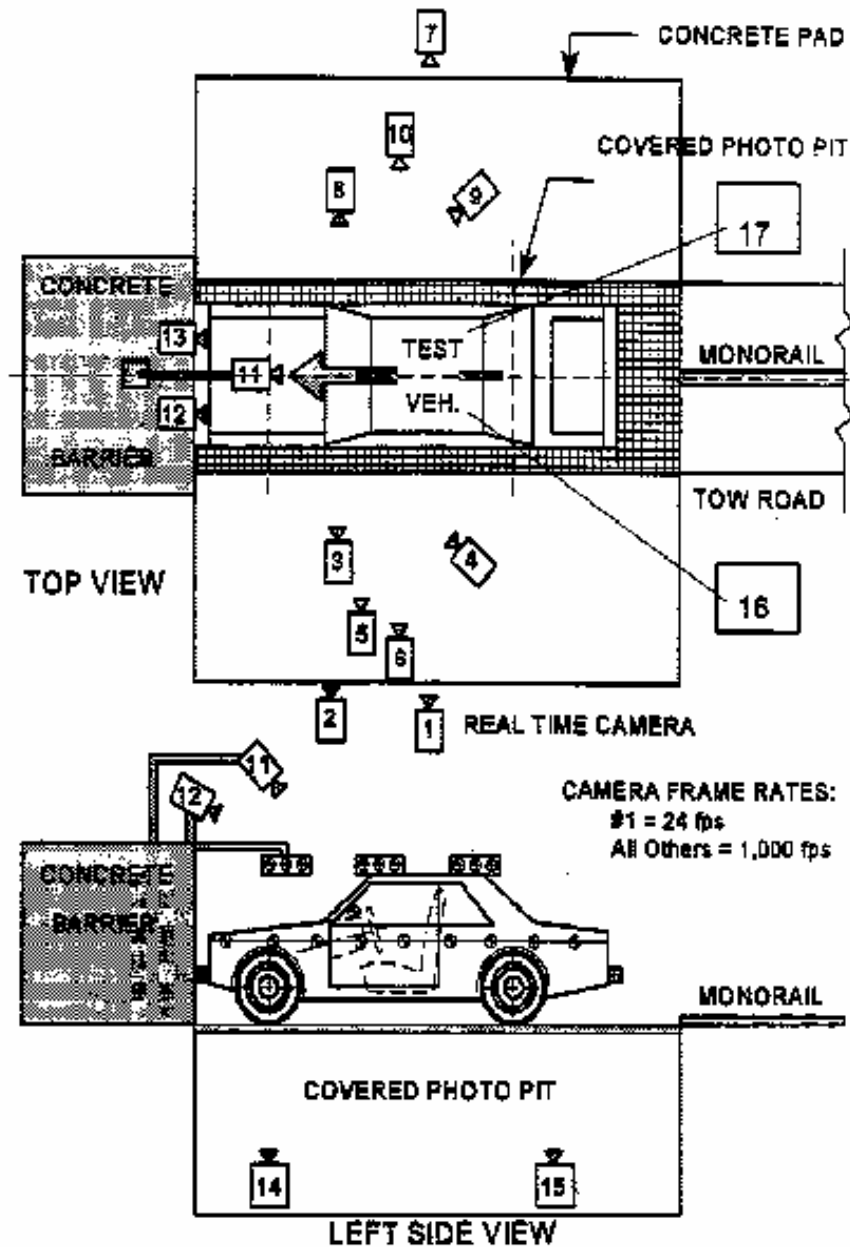
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	910	986
Lap Belt Length as Measured on ATD	mm	795	851
Remainder of Belt on Reel	mm	791	699
Total Belt Length for Continuous Webbing Systems	mm	2496	2536

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET NO. 6 ... (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

CAMERA LOCATIONS

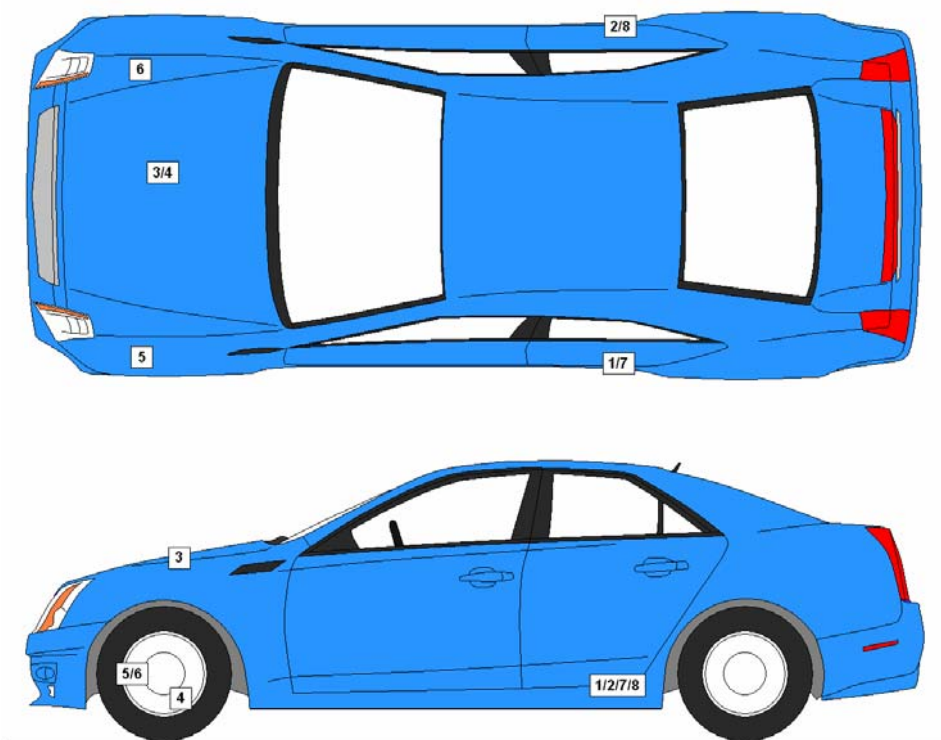
No.	Description	Location			Angle (°)	Film Plane to Head Target	Lens (mm)	Speed (fps)
		X	Y	Z				
1	Real-Time Camera	-11412	-8150	-1484				30
2	Overall Left Side	-2590	-7950	-1371	0	9881	24	1000
3	Left Side A-Pillar	-1701	-6197	-1701	0	7921	85	1000
4	Left Side B-Pillar	-6696	-10308	-3211	-17	11281	ZOOM	1000
5	Steering Column Upper	-1966	-10412	-3688	-13	9887	35	1000
6	Steering Column Lower	-1972	-10412	-3379	-13	9870	35	1000
7	Overall Right Side	-2336	7569	-1012	0	9417	24	1000
8	Right Side A-Pillar	-1733	7581	-1408	0	7789	70	1000
9	Passenger IP View	-1600	8214	-1811	0	7795	ZOOM	1000
10	Right Side B-Pillar	-6217	9516	-4830	-10	12626	ZOOM	1000
11	Overhead Windshield View	297	366	-2460	-34		12	1000
12	Overhead Driver View	297	-366	-2460	-34		12	1000
13	Overhead Passenger View	-354	0	-5749	-90		24	1000
14	Pit View of Engine Compartment	-756	0	1495	90		12	1000
15	Pit View of Fuel Tank	-3398	0	1495	90		8	1000
16	Driver's On Board View	-3000	210	1615	-22		12	1000
17	Passenger's On Board View	-3000	-210	1615	-22		12	1000

Coordinates: +X = forward impact plane
 +Y = right of monorail center
 +Z = into ground

DATA SHEET NO. 7

VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Description	Location		
		X	Y	Z
1	Left Rear Cross Member X	2363	-700	-550
2	Right Rear Cross Member X	2357	701	-555
3	Engine Top X	4593	342	-1013
4	Engine Bottom X	4344	80	-269
5	Left Brake Caliper X	4312	-760	-340
6	Right Brake Caliper X	4312	760	-340
7	Left Rear Cross Member Z	2363	-700	-550
8	Right Rear Cross Member Z	2357	701	-555

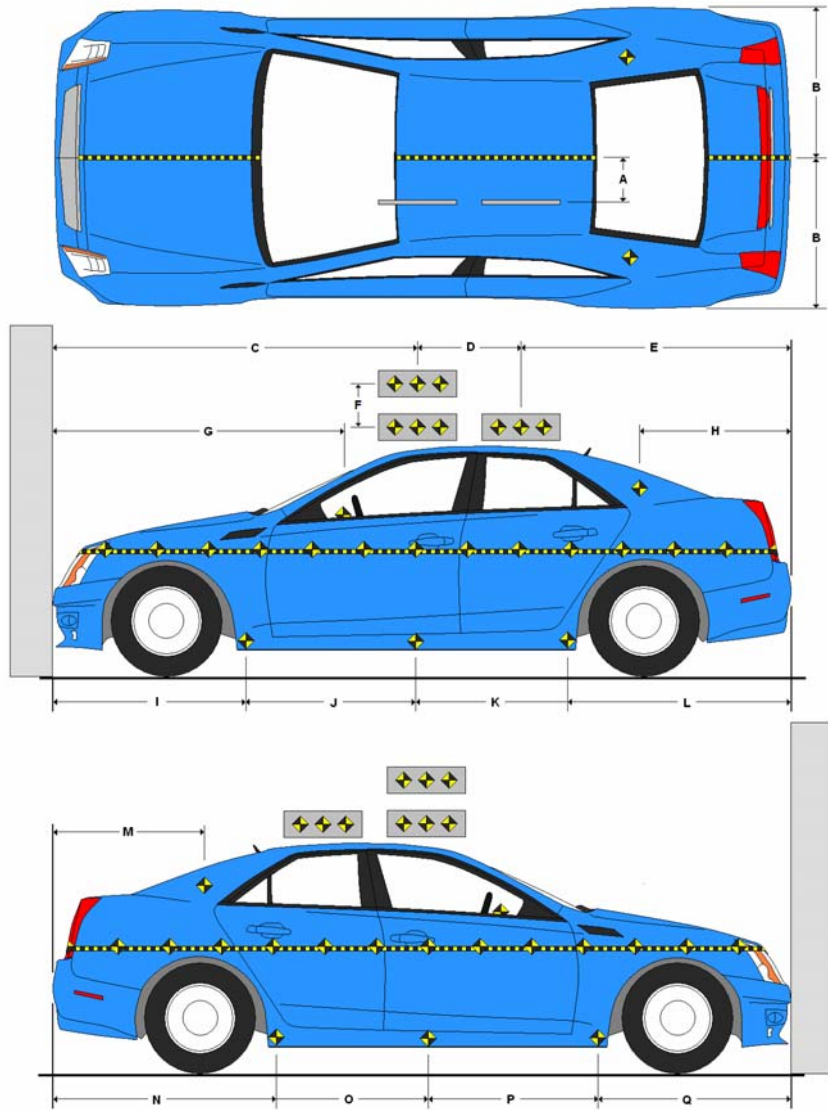
Reference Points: X – Rear Surface of Vehicle (+ forward)
Y – Vehicle Centerline (+ to right)
Z – Ground Plane (+ down)

DATA SHEET NO. 8

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

Item	Value
A	400
B	946
C	2163
D	607
E	2524
F	
G	1723
H	1823
I	1363
J	1040
K	1040
L	1850
M	1821
N	1853
O	1030
P	1030
Q	1362



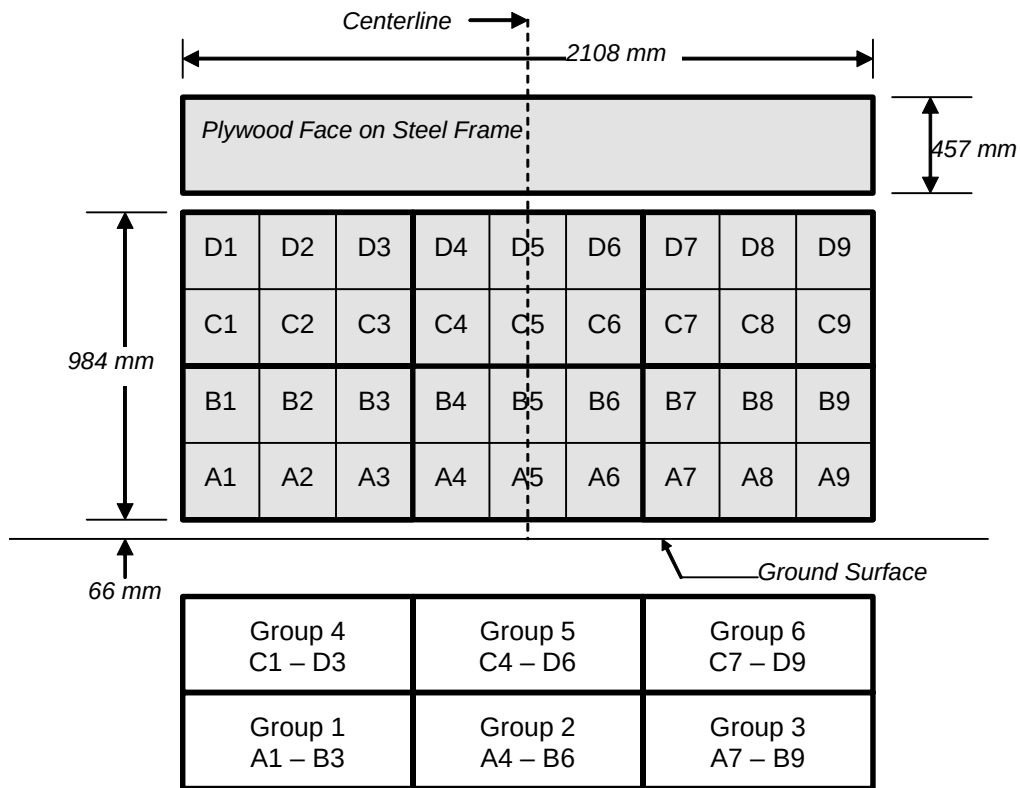
All measurements in millimeters.

DATA SHEET NO. 9

LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

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 Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

INSTRUMENTATION

Driver Dummy Accelerometers	44
Passenger Dummy Accelerometers	44
Vehicle Structure Accelerometers	8
Load Cell Barrier	36
Total	132

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 Tacoma Double Cab 4x4 4-Door Truck

NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 10/04/10

TEST DUMMY INFORMATION AND CONTACT

Description	Driver	Passenger
Dummy Type/Serial No.	P572E 50th Percentile Male ATD / 035	P572O 5th Percentile Female ATD / 141
Head Contact	Airbag, Headrest	Airbag, Headrest
Upper Torso Contact	Airbag	Airbag
Lower Torso Contact	None	None
Left Knee Contact	Knee Bolster, Steering Wheel	Glovebox
Right Knee Contact	Knee Bolster, Steering Wheel, Steering Column	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)	0	0
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	None

VEHICLE REBOUND FROM BARRIER

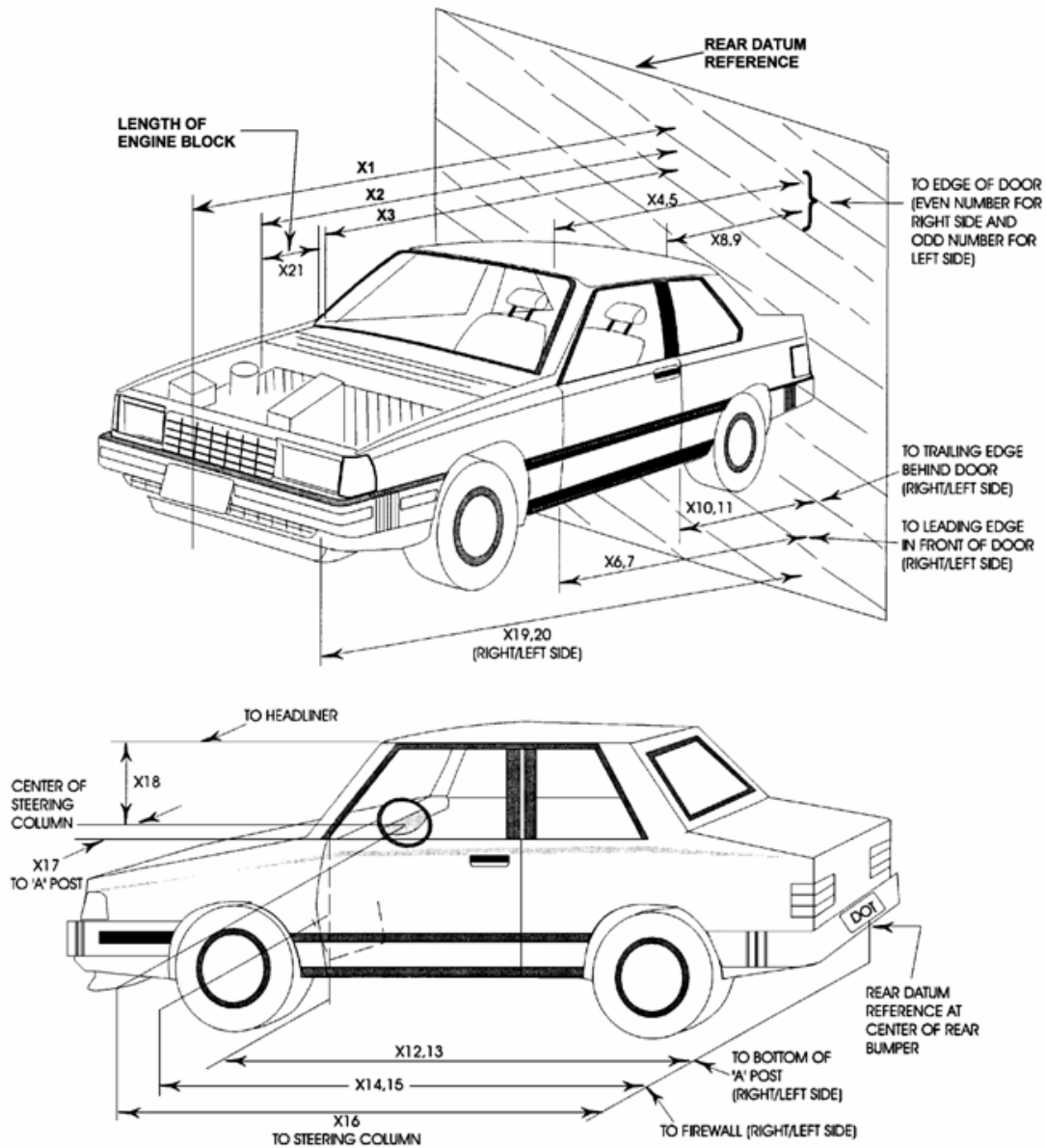
Measured Parameter	Units	Value
Left Side	mm	1211
Center	mm	1248
Right Side	mm	1216
Average	mm	1225

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	No		No	
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Other				

DATA SHEET NO. 12 **VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

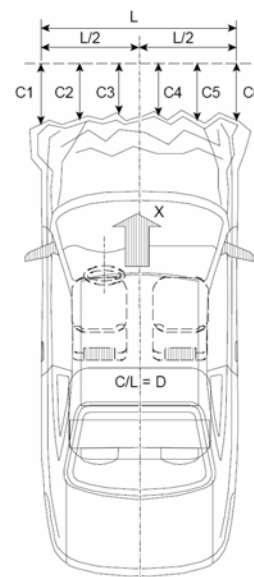


DATA SHEET NO. 12 ... (CONTINUED)**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	5300	4843	457
2	Rear Surface of Vehicle to Front of Engine	4664	4576	88
3	RSOV to Firewall	4143	1165	2978
4	RSOV to Upper Leading Edge of Right Door	3873	3905	-32
5	RSOV to Upper Leading Edge of Left Door	3864	3924	-60
6	RSOV to Lower Leading Edge of Right Door	3868	3884	-16
7	RSOV to Lower Leading Edge of Left Door	3857	3923	-66
8	RSOV to Upper Trailing Edge of Right Door	2804	2853	-49
9	RSOV to Upper Trailing Edge of Left Door	2796	2868	-72
10	RSOV to Lower Trailing Edge of Right Door	2787	2796	-9
11	RSOV to Lower Trailing Edge of Left Door	2778	2808	-30
12	RSOV to Bottom of A-Pillar of Right Side	3826	3871	-45
13	RSOV to Bottom of A-Pillar Left Side	3820	3885	-65
14	RSOV to Firewall, Right Side	4180	1103	3077
15	RSOV to Firewall, Left Side	4137	1136	3001
16	RSOV to Steering Column	3400	3498	-98
17	Center of Steering Column to A-Pillar	420	399	21
18	Center of Steering Column to Headliner	425	422	3
19	RSOV to Right Side of Front Bumper	4655	4622	33
20	RSOV to Left Side of Front Bumper	4655	4540	115
21	Length of Engine Block	647	647	0
RD	RSOV to Right Side of Dash Panel	3607	3648	-41
CD	RSOV to Center of Dash Panel	3562	3591	-29
LD	RSOV to Left Side of Dash Panel	3600	3667	-67

All measurements in millimeters.

DATA SHEET NO. 13**ACCIDENT INVESTIGATION DATA**Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door TruckNHTSA No.: MB5123Test Program: 56 km/h Frontal Impact NCAP TestTest Date: 10/04/10**VEHICLE INFORMATION**VIN: 3TMLU4EN9BM057181Wheelbase (mm): 3250Vehicle Size Category: 4-Door TruckTest Weight (kg): 2190.0**ACCELEROMETER DATA**Accelerometer Locations: Left Rear CrossmemberCal. Procedure/Interval: Drop Test / 6 monthsIntegration Algorithm: NHTSA StandardImpact Velocity (km/h): 56.68Velocity Change (km/h): 62.0Time of Separation (msec): 66.4Linearity: Good**CRUSH PROFILE**Collision Deformation Classification: 12FCEW2Midpoint of Damage: Vehicle CenterlineDamage Region Length (mm): 1893Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	643	761	-118
C2	Crush Zone 2 at Left Side	mm	48	497	-449
C3	Crush Zone 3 at Left Side	mm	11	510	-499
C4	Crush Zone 4 at Right Side	mm	10	506	-496
C5	Crush Zone 5 at Right Side	mm	47	495	-448
C6	Crush Zone 6 at Right Side	mm	643	676	-33
L	C1 to C6	mm	1893		

DATA SHEET NO. 14

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck

NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test

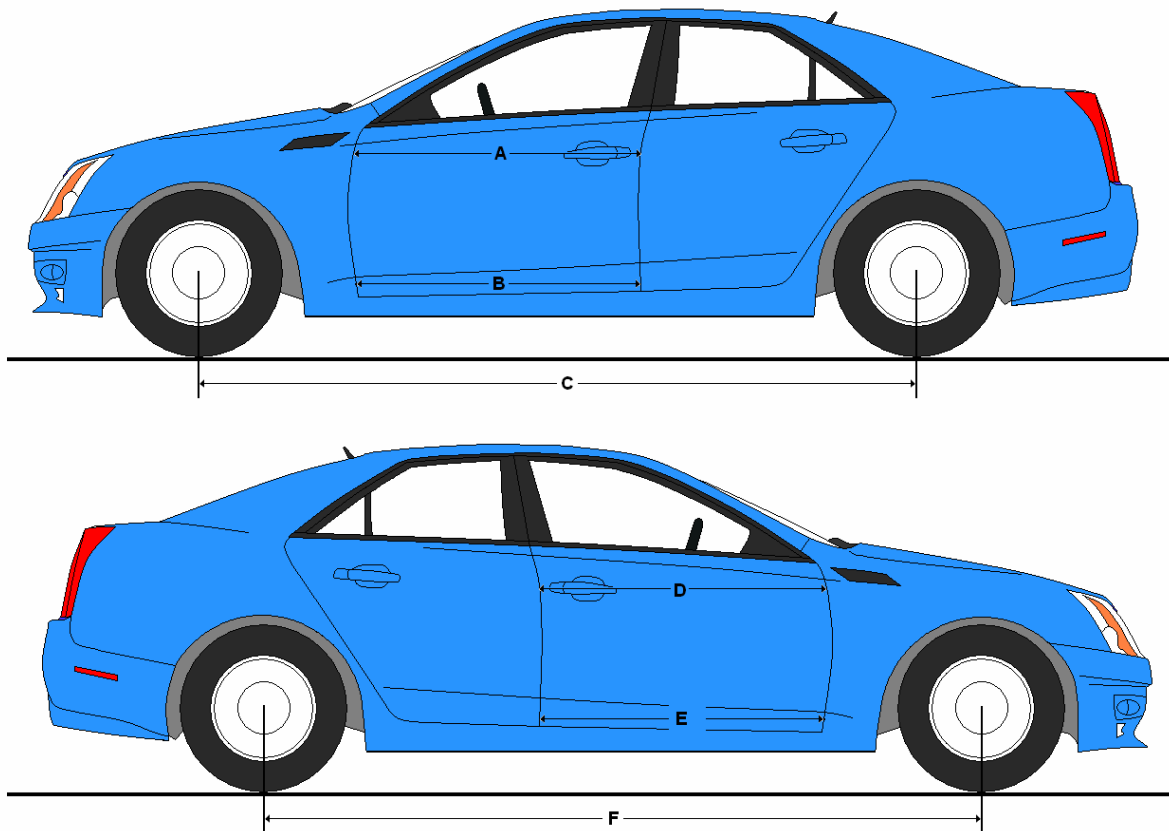
Test Date: 10/04/10

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	973	974	-1
B	Left Side Lower	mm	888	888	0
D	Right Side Upper	mm	978	976	2
E	Right Side Lower	mm	863	850	13

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	3250	3210	40
F	Right Side Wheelbase	mm	3251	3181	70



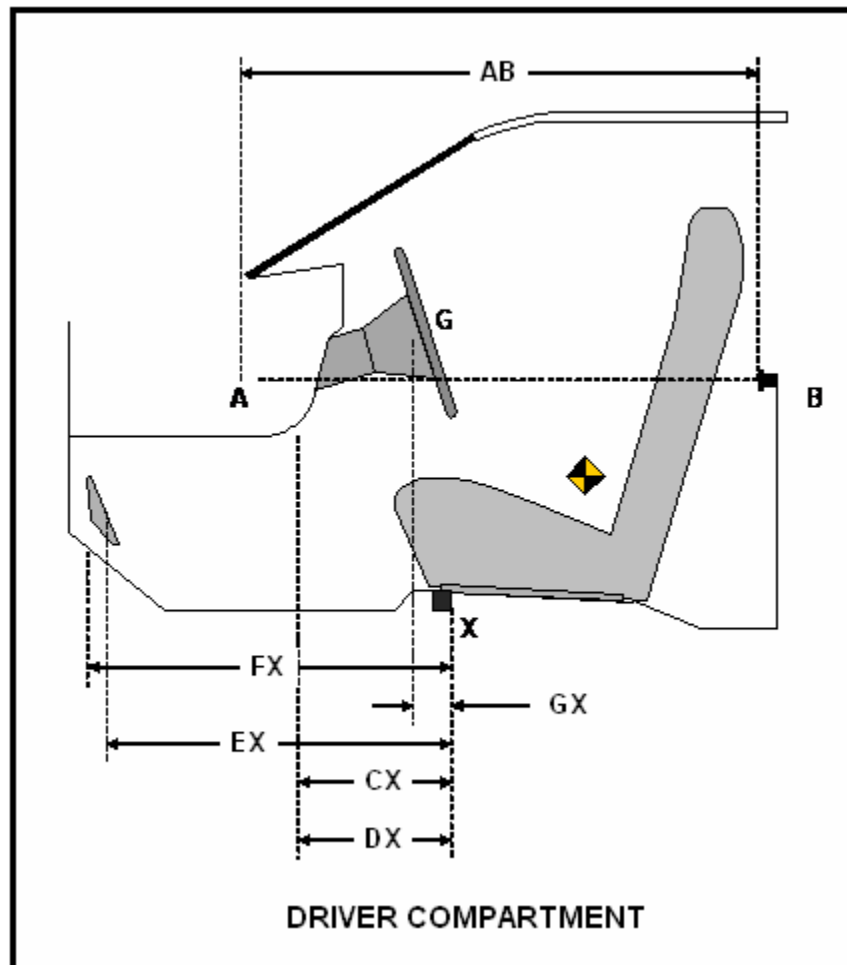
DATA SHEET NO. 14 ... (CONTINUED)
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

DRIVER COMPARTMENT INTRUSION

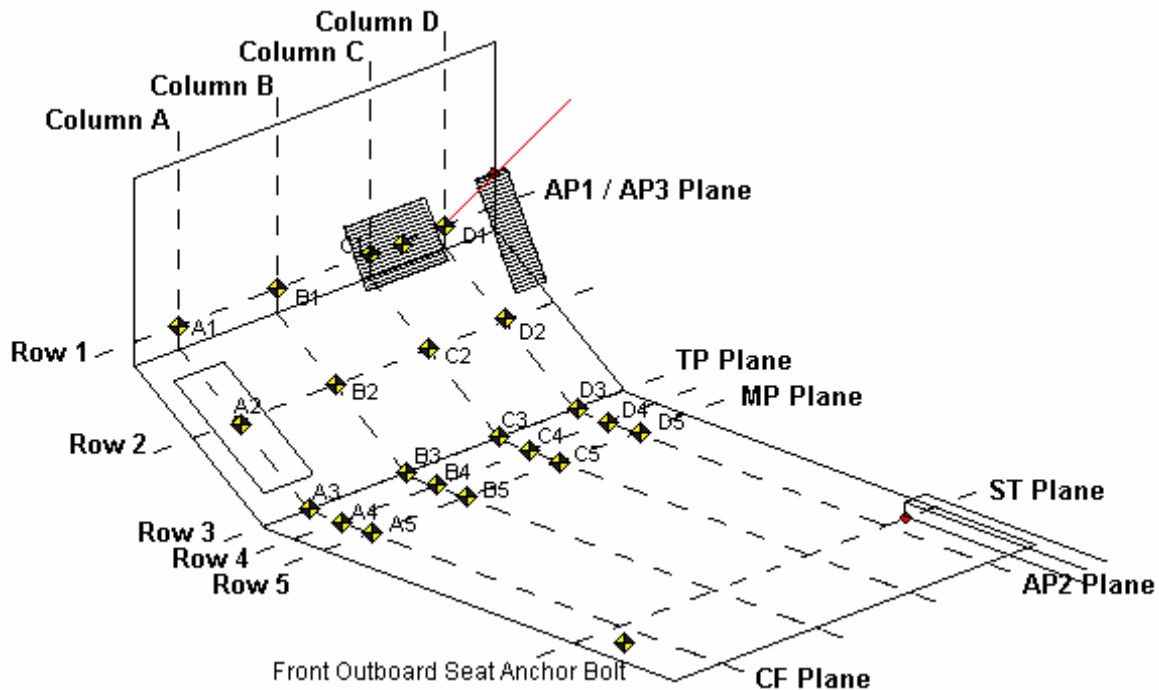
Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	973	974	-1
CX	Left Knee Bolster to X	mm	260	267	-7
DX	Right Knee Bolster to X	mm	255	255	0
EX	Brake Pedal to X	mm	545	517	28
FX	Foot Rest to X	mm	570	541	29
GX	Center of Steering Wheel Hub to X	mm	60	77	-17

X = Front of Seat Track (Stationary)



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

Test Vehicle:	<u>2011 Toyota Tacoma Double Cab 4x4 4-Door Truck</u>	NHTSA No.:	<u>MB5123</u>
Test Program:	<u>56 km/h Frontal Impact NCAP Test</u>	Test Date:	<u>10/04/10</u>



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 Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

DRIVER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	677	698	702	668	679	685	674	631	2	-13	-28	-37
2	616	619	615	611	619	611	598	573	3	-8	-17	-38
3	533	522	519	514	529	517	513	511	-4	-5	-6	-3
4	420	419	416	412	415	413	410	408	-5	-6	-6	-4
5	307	308	309	311	302	303	304	306	-5	-5	-5	-5

DRIVER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-16	-111	-213	-404	-19	-117	-218	-392	-3	-6	-5	12
2	-16	-113	-209	-401	-14	-112	-207	-388	2	1	2	13
3	-15	-108	-207	-394	-10	-103	-201	-389	5	5	6	5
4	-10	-103	-201	-388	-5	-99	-195	-385	5	4	6	3
5	-9	-99	-196	-381	-5	-95	-191	-379	4	4	5	2

DRIVER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	95	73	69	94	52	36	35	64	-43	-37	-34	-30
2	13	7	11	21	-31	-37	-26	-9	-44	-44	-37	-30
3	-44	-27	-23	-22	-81	-67	-61	-60	-37	-40	-38	-38
4	-62	-63	-60	-55	-89	-95	-93	-86	-27	-32	-33	-31
5	-63	-62	-61	-58	-82	-84	-85	-83	-19	-22	-24	-25

All measurements in millimeters

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

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

PASSENGER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	682	712	705	685	647	690	688	669	-35	-22	-17	-16
2	617	626	628	625	586	610	618	624	-31	-16	-10	-1
3	516	527	530	542	506	517	522	535	-10	-10	-8	-7
4	420	423	424	423	413	415	416	415	-7	-8	-8	-8
5	313	313	312	315	305	305	304	307	-8	-8	-8	-8

PASSENGER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	366	205	109	18	375	218	218	33	9	13	109	15
2	375	205	110	17	379	215	215	25	4	10	105	8
3	388	208	113	20	392	214	214	27	4	6	101	7
4	394	208	112	17	395	213	213	22	1	5	101	5
5	395	211	114	21	398	216	216	26	3	5	102	5

PASSENGER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	107	75	73	88	86	50	43	56	-21	-25	-30	-32
2	36	6	3	3	21	-22	-34	-36	-15	-28	-37	-39
3	-14	-29	-29	-45	-40	-59	-64	-80	-26	-30	-35	-35
4	-37	-65	-65	-66	-59	-91	-92	-91	-22	-26	-27	-25
5	-44	-65	-66	-69	-58	-84	-84	-88	-14	-19	-18	-19

All measurements in millimeters

DATA SHEET NO. 15

SUMMARY OF FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

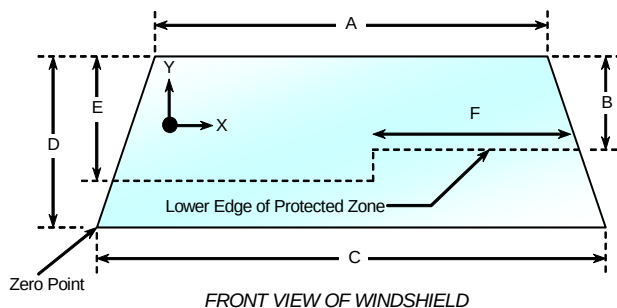
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with rubber plastic and rubber molding sealed with rubber cement.

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: 21.1° C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2046.5	2046.5	
Right Side	2046.5	2046.5	
Total	4093	4093	100%



Item	Units	Value
A	mm	1230
B	mm	304
C	mm	1467
D	mm	698
E	mm	418
F	mm	535

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 Tacoma Double Cab 4x4 4-Door Truck NHTSA No.: MB5123
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 10/04/10

FMVSS 301 FUEL SYSTEM INTEGRITY DATA

Temperature at Time of Impact: 21.7° Test Time: 12:53 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

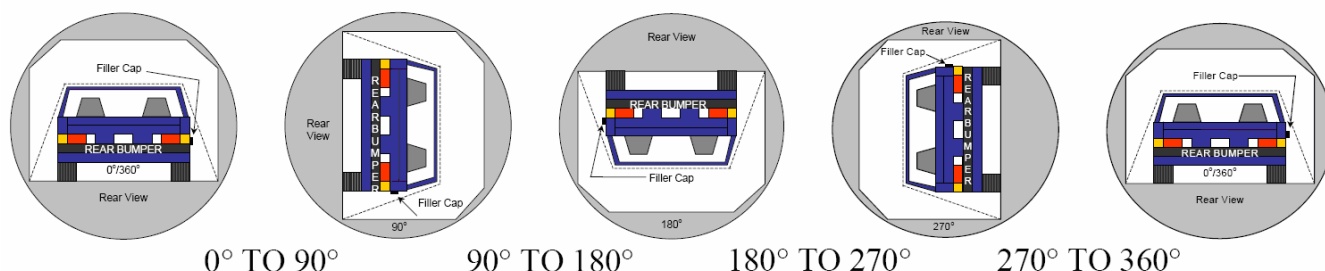
FMVSS 301 STATIC ROLLOVER

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck

NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 10/04/10



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	306	390
90° To 180°	82	300	382
180° To 270°	74	300	374
270° To 360°	80	300	380

FMVSS 301 SPILLAGE TABLE

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

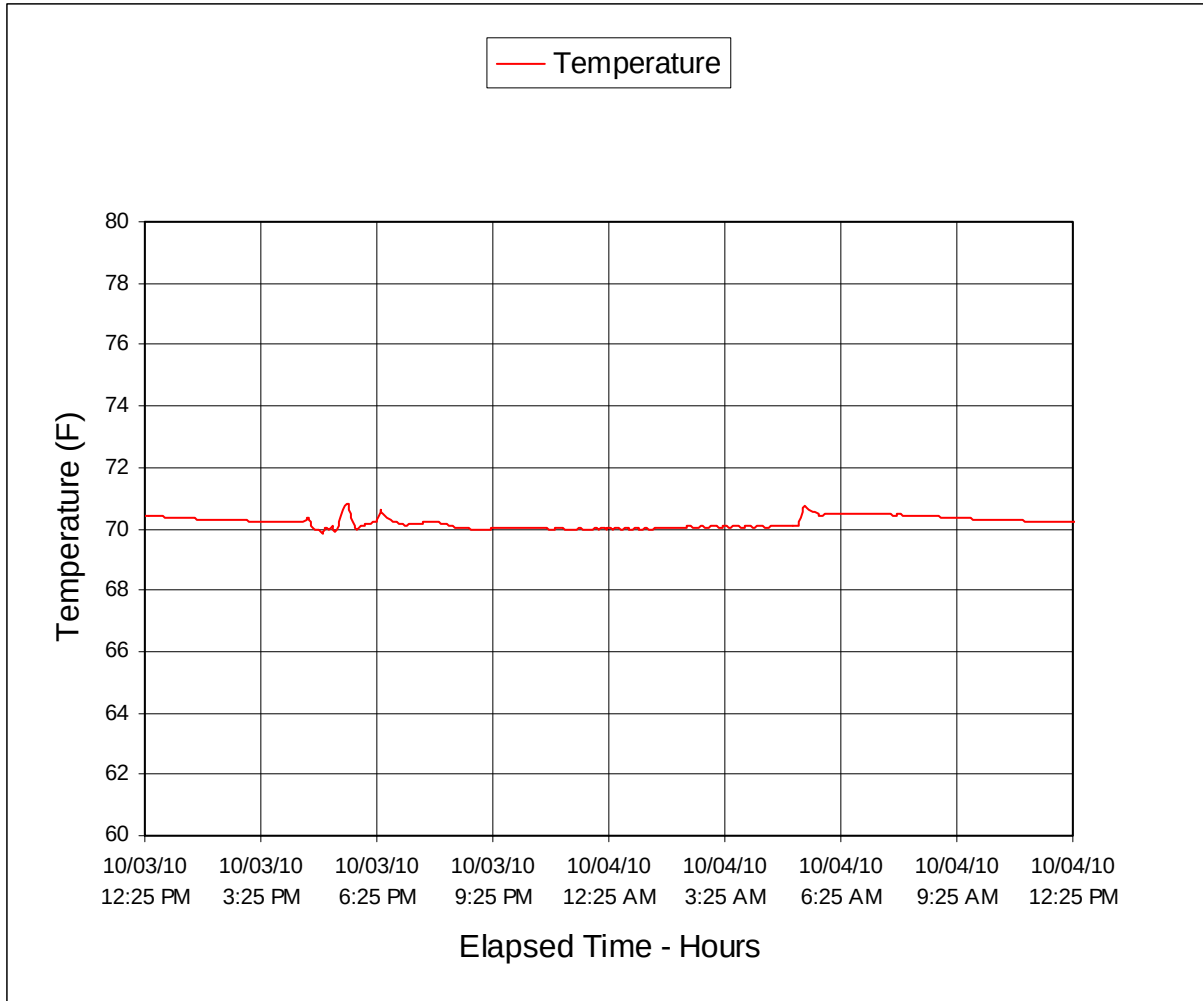
DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2011 Toyota Tacoma Double Cab 4x4 4-Door Truck

NHTSA No.: MB5123

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 10/04/10



APPENDIX A
PHOTOGRAPHS

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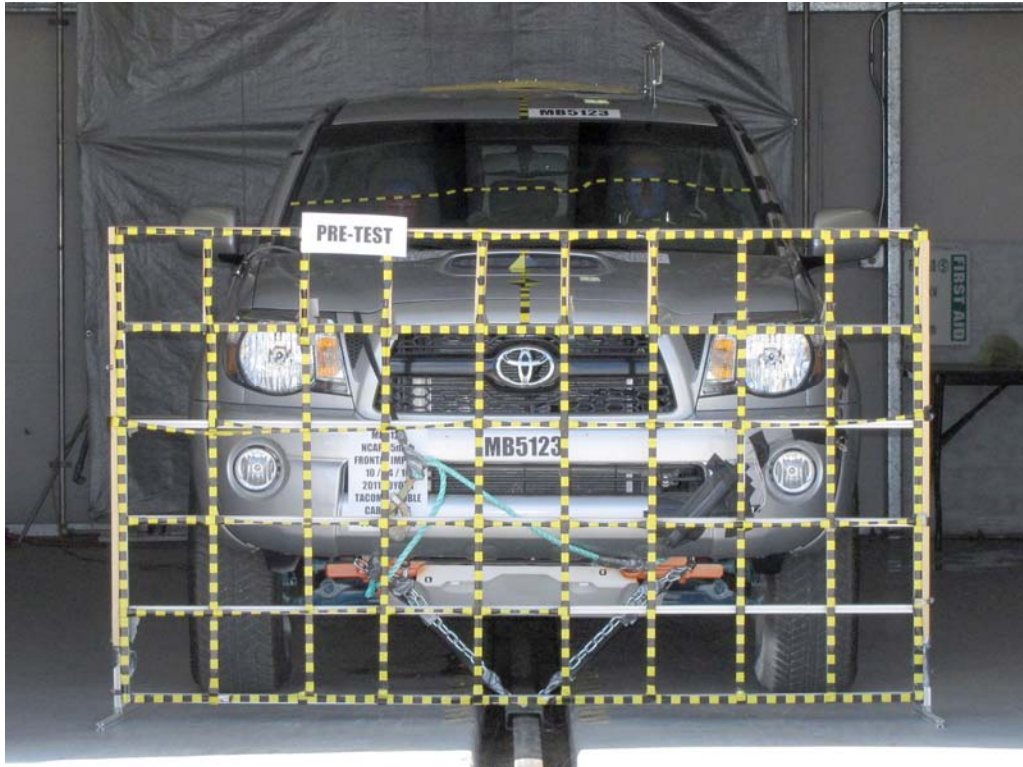


FIGURE 1. Load Cell Location

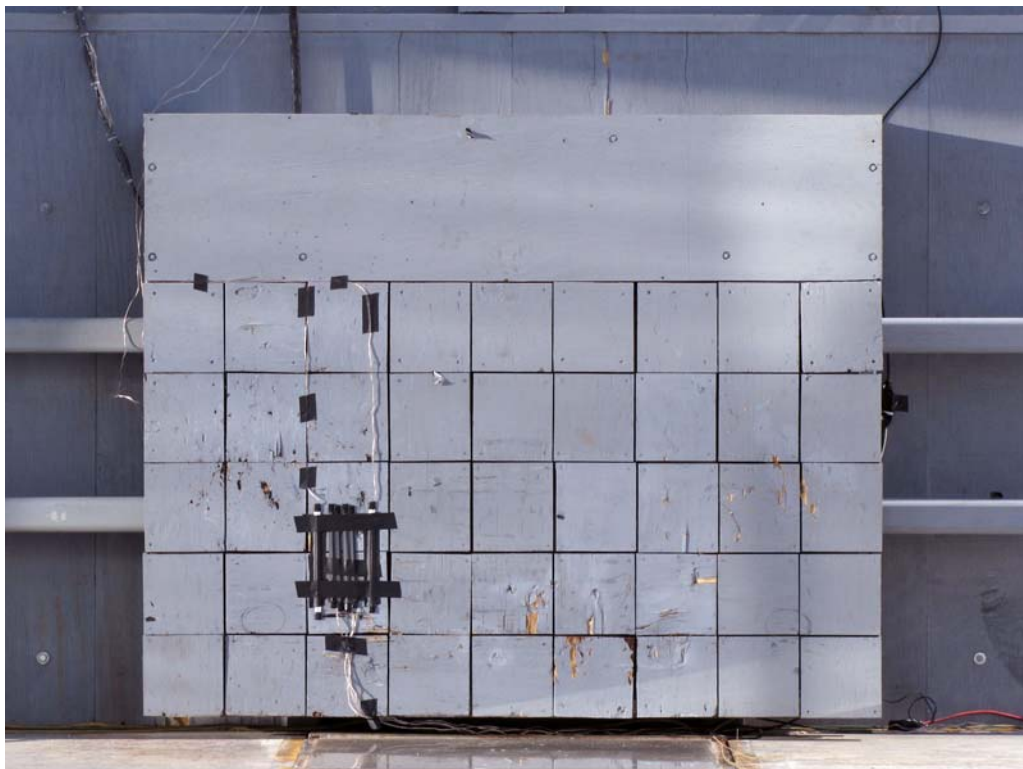


FIGURE 2. Load Cell Wall



FIGURE 3. Manufacturer's Label



FIGURE 4. Tire Placard



FIGURE 5. Right Front 3-4 View as Delivered



FIGURE 6. Left Rear 3-4 View as Delivered



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

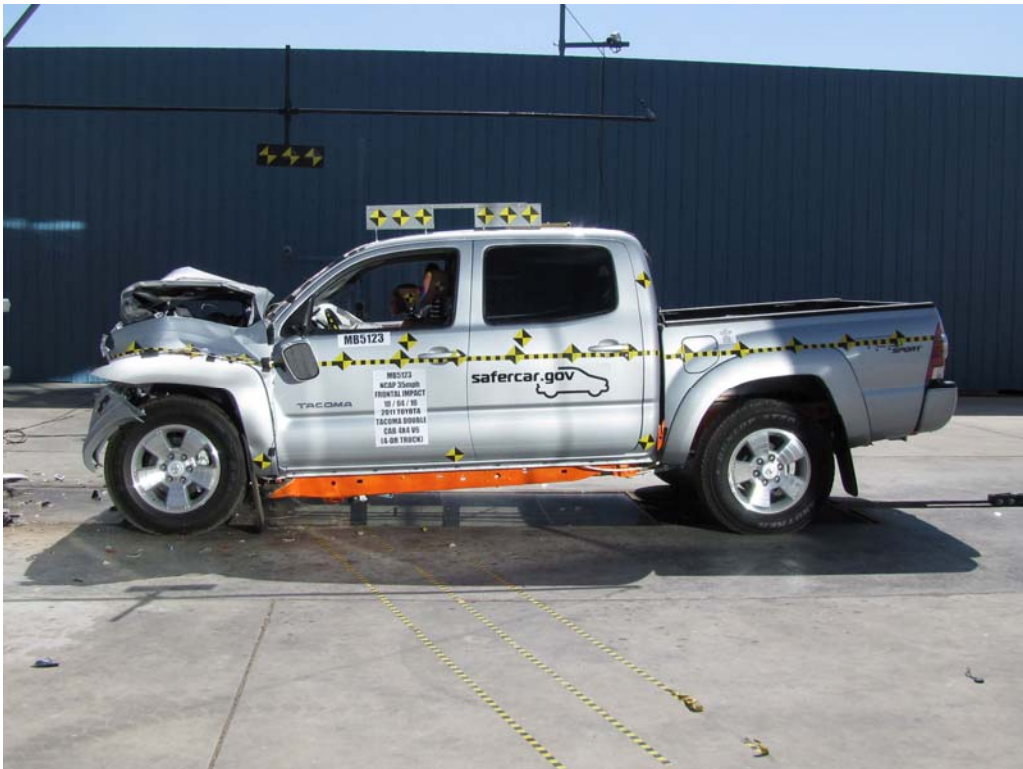


FIGURE 10. Post-Test Left View of Test Vehicle



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

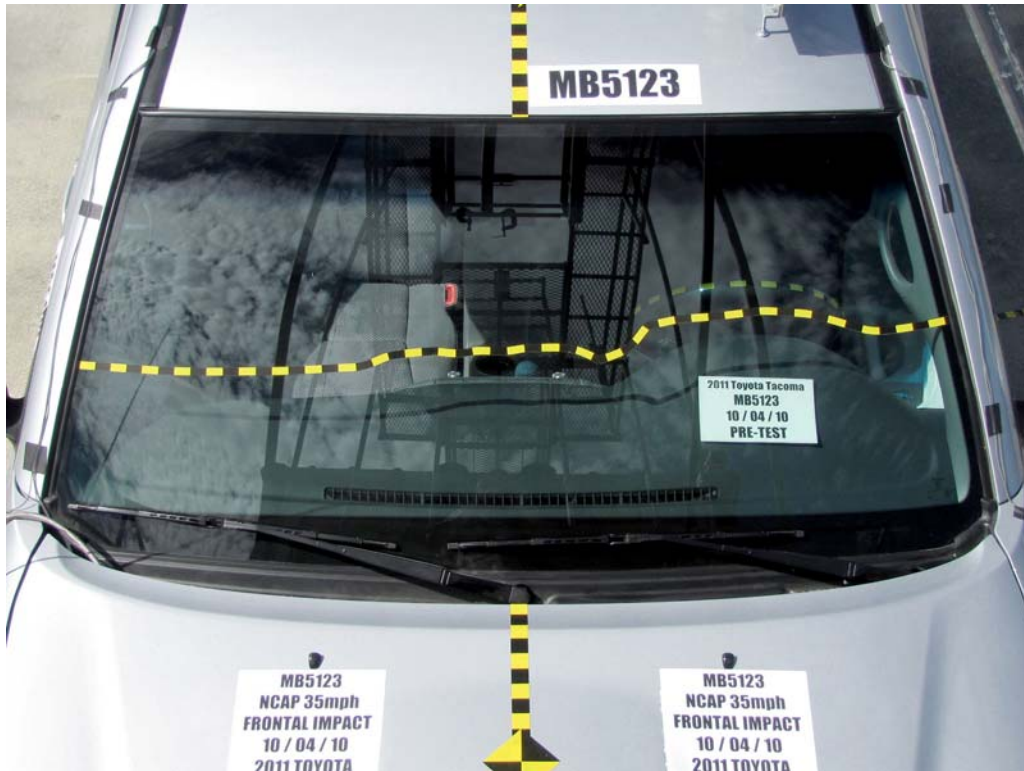


FIGURE 17. Pre-Test Windshield View



FIGURE 18. Post-Test Windshield View



FIGURE 19. Pre-Test Engine Compartment View

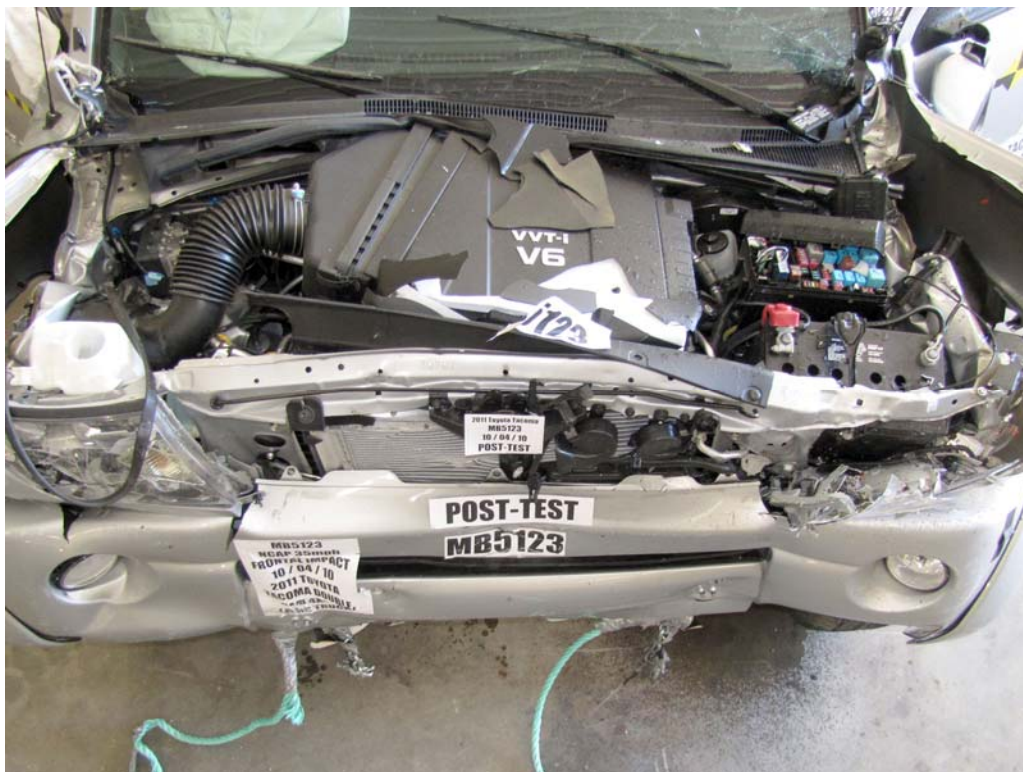


FIGURE 20. Post-Test Engine Compartment View



FIGURE 21. Pre-Test Fuel Filler Cap View



FIGURE 22. Post-Test Fuel Filler Cap View

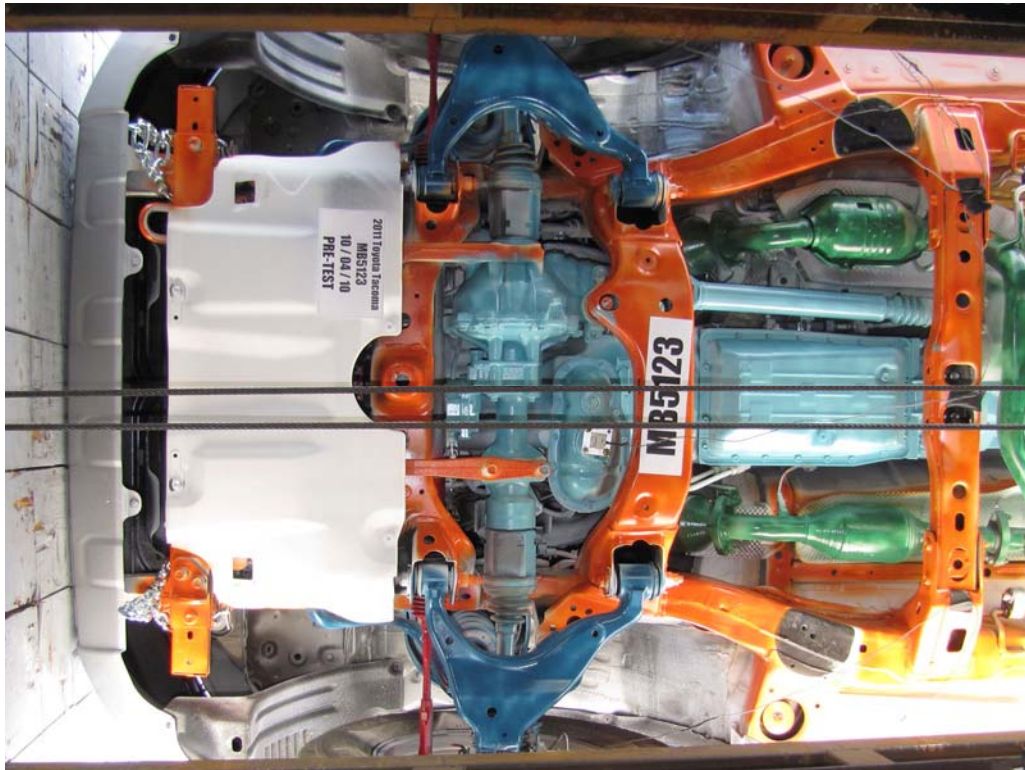


FIGURE 23. Pre-Test Front Underbody View



FIGURE 24. Post-Test Front Underbody View

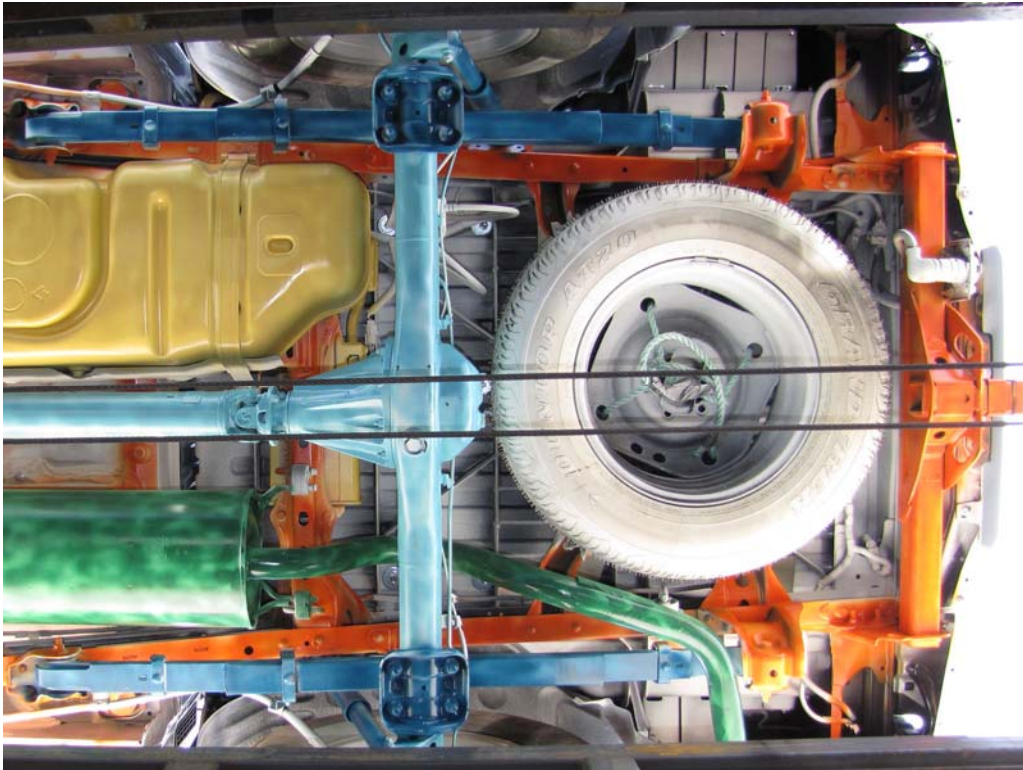


FIGURE 25. Pre-Test Rear Underbody View

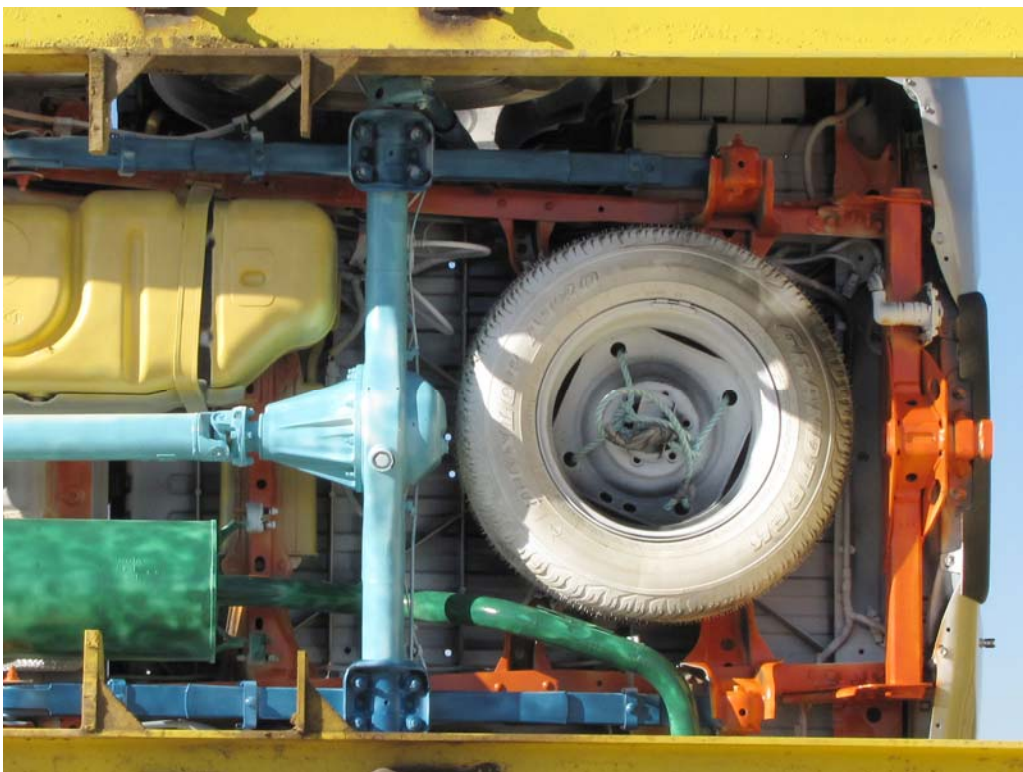


FIGURE 26. Post-Test Rear Underbody View



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

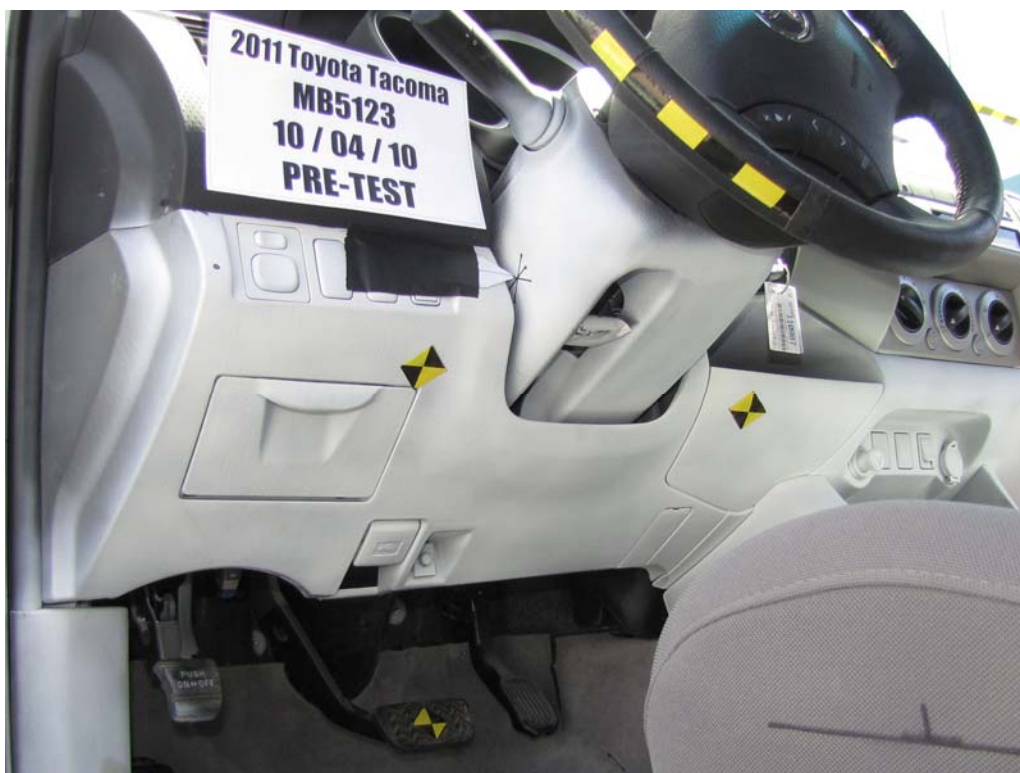


FIGURE 39. Pre-Test Driver's Side Knee Bolster



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 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

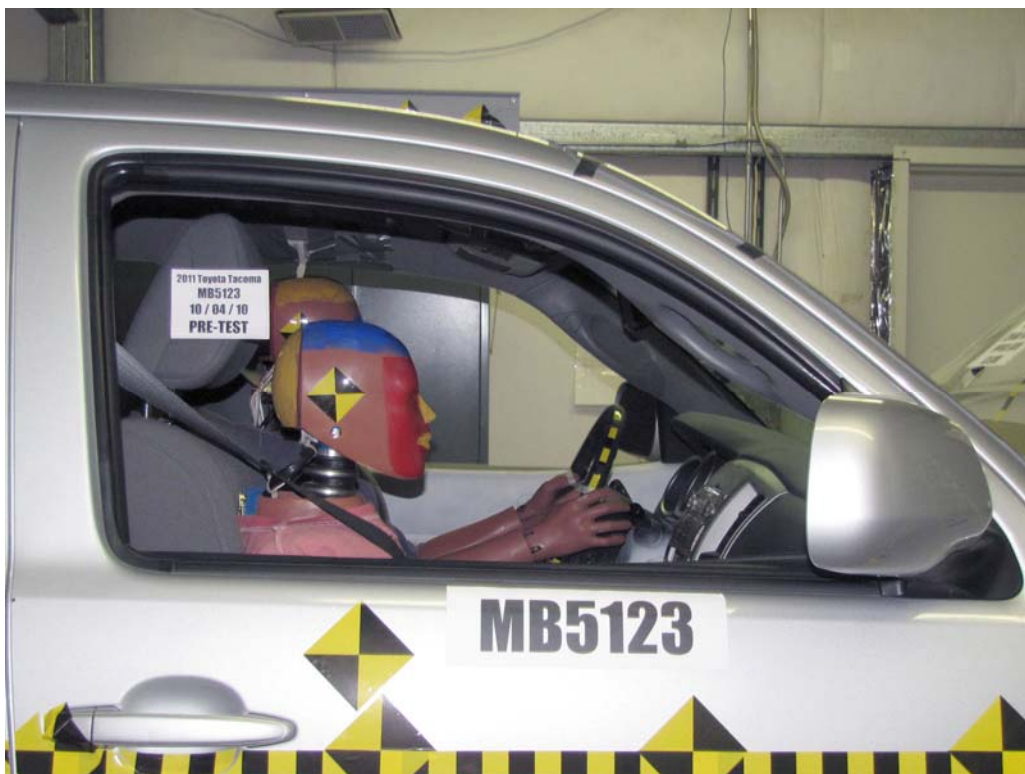


FIGURE 48. Pre-Test Passenger Dummy Window View



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

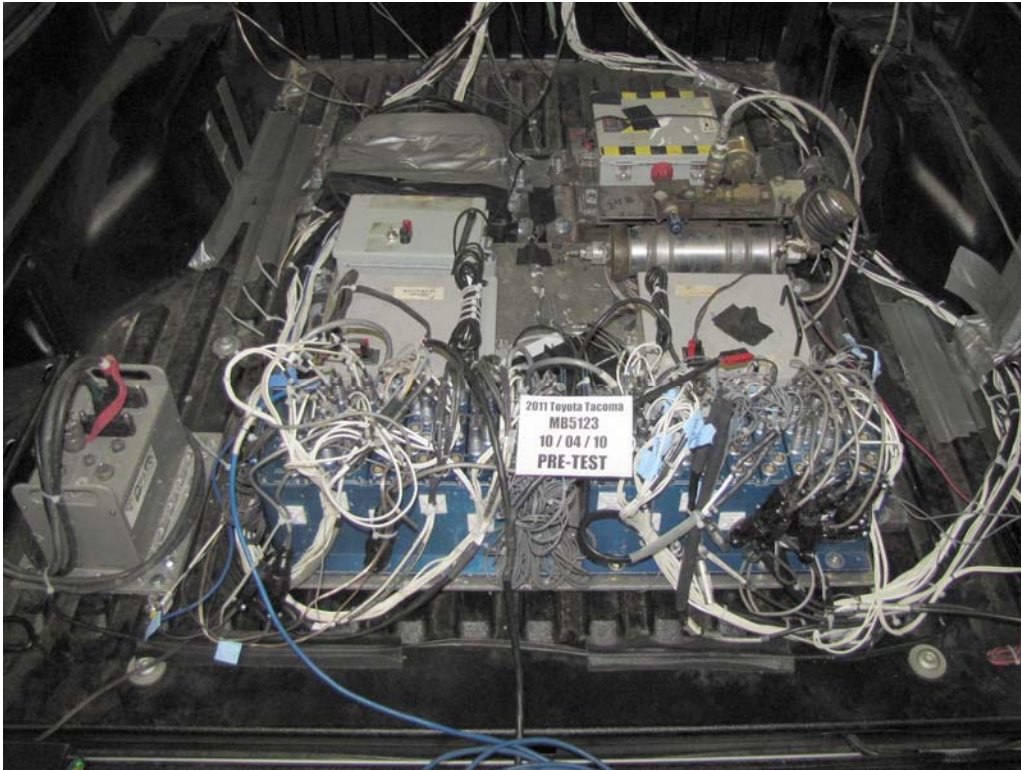


FIGURE 61. Pre-Test of Ballast Installed in Vehicle

Photograph Not Applicable
No Stoddard
Solvent Spillage

FIGURE 62. Post-Test Stoddard Solvent Spillage Location



FIGURE 63. Post-Test Speed Trap Read Out



FIGURE 64. Vehicle at 0 Degrees on Static Rollover Device

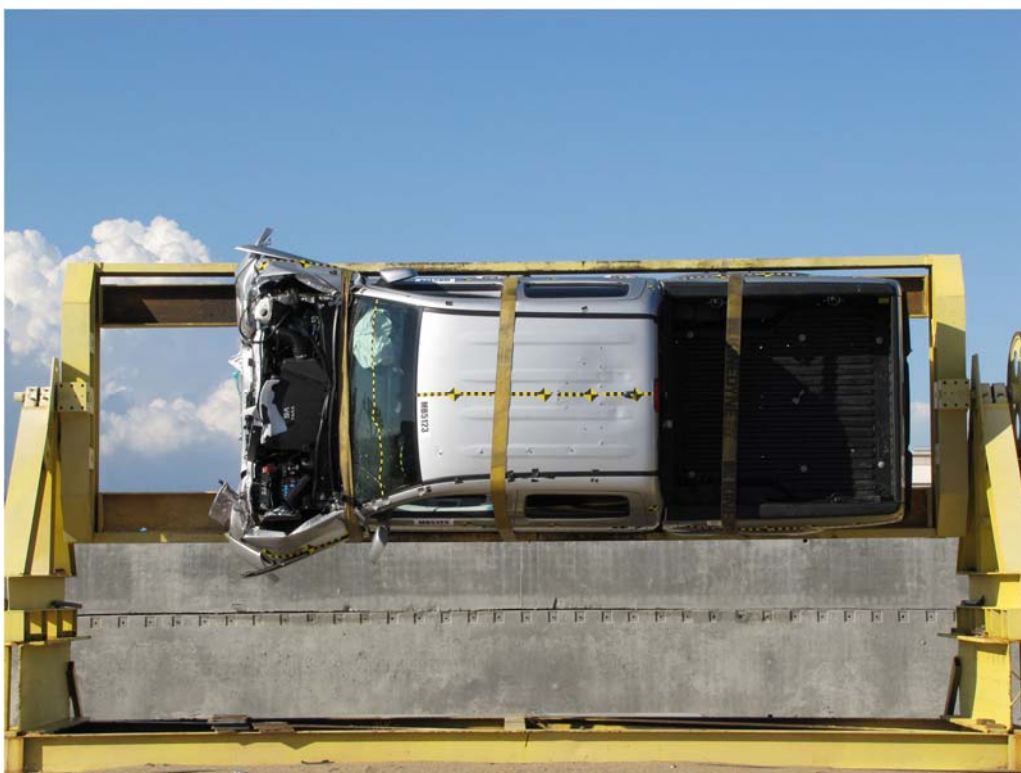


FIGURE 65. Vehicle at 90 Degrees on Static Rollover Device



FIGURE 66. Vehicle at 180 Degrees on Static Rollover Device

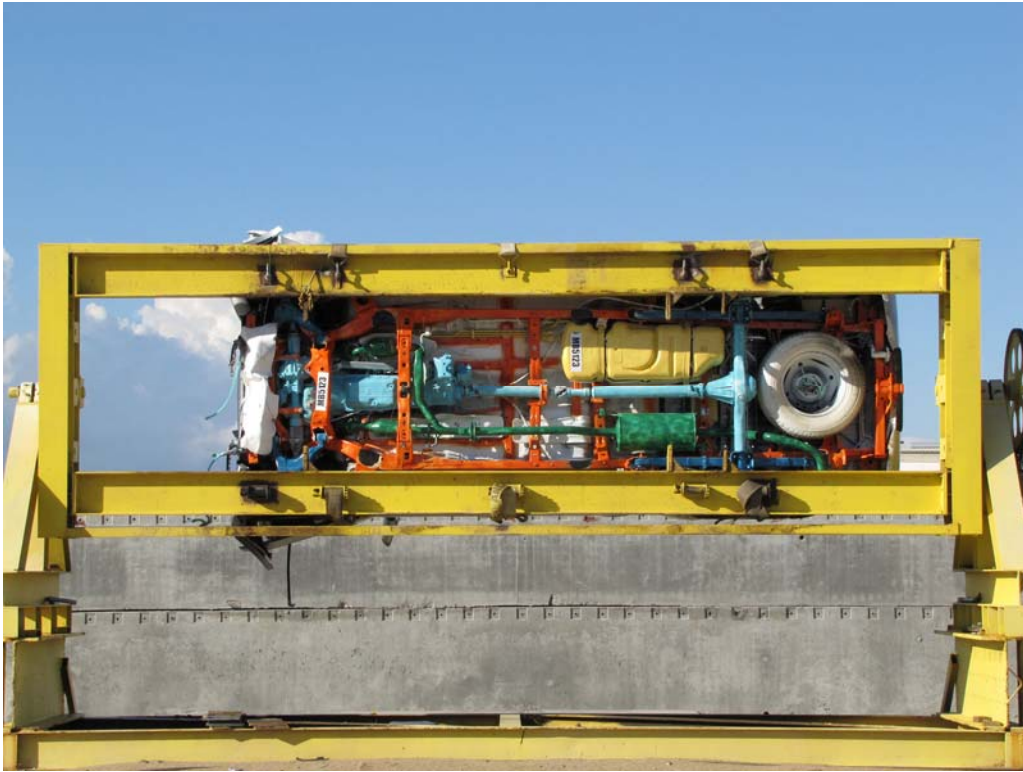


FIGURE 67. Vehicle at 270 Degrees on Static Rollover Device

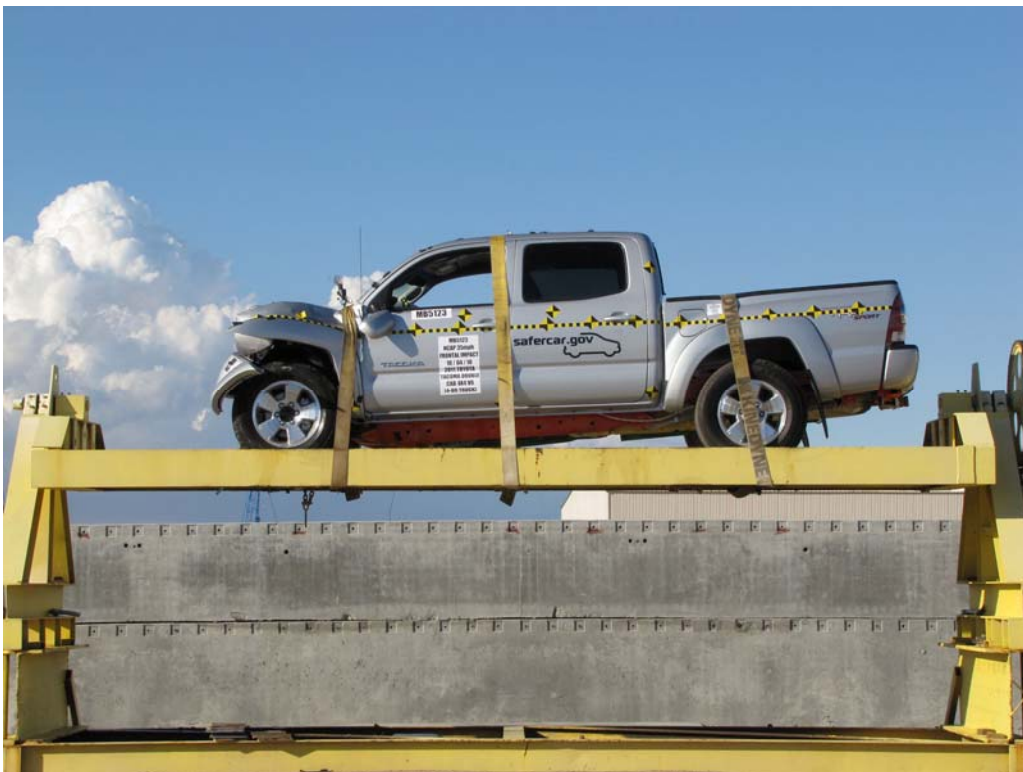


FIGURE 68. Vehicle at 360 Degrees on Static Rollover Device



FIGURE 69. Impact Event

[illegible]

FIGURE 70. Monroney Label Photograph

APPENDIX B
DUMMY RESPONSE DATA TRACES

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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

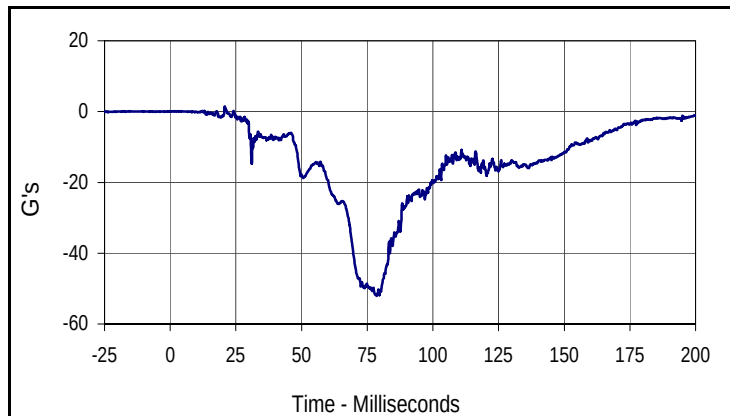
Driver Head X Acceleration Redundant
Driver Head Y Acceleration Redundant
Driver Head Z Acceleration Redundant
Driver Upper Neck Force Y
Driver Upper Neck Moment X
Driver Upper Neck Moment Z
Driver Chest X Acceleration Redundant
Driver Chest Y Acceleration Redundant
Driver Chest Z Acceleration Redundant
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
Left Rear Seat Crossmember X
Left Rear Seat Crossmember Z
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Vehicle Engine Top X

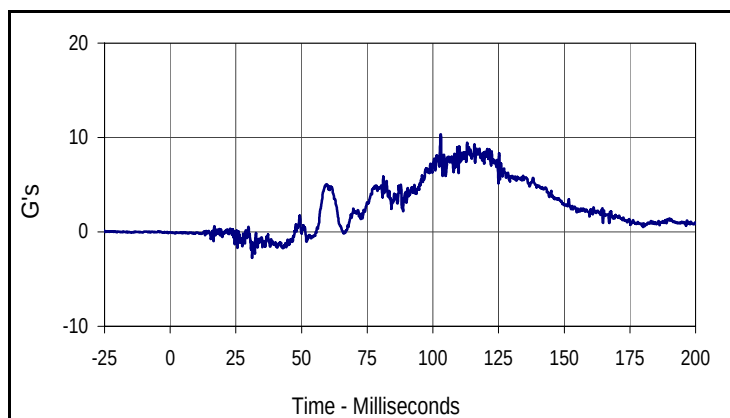
Vehicle Engine Bottom X
Vehicle Left Brake Caliper X
Vehicle Right Brake Caliper X
Load Cell Barrier A1-A9
Load Cell Barrier B1-A9
Load Cell Barrier C1-A9
Load Cell Barrier D1-A9

Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

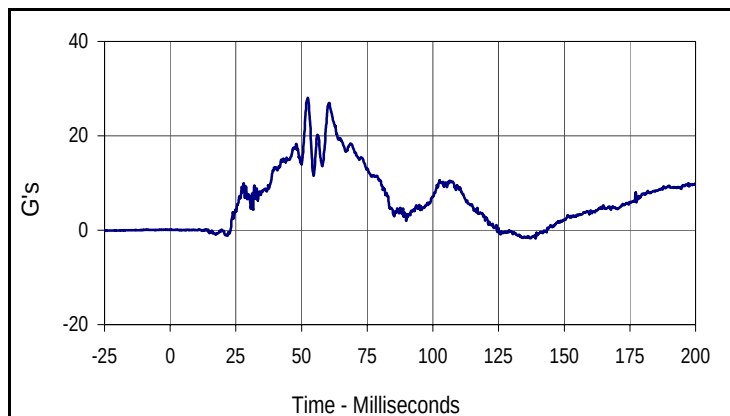
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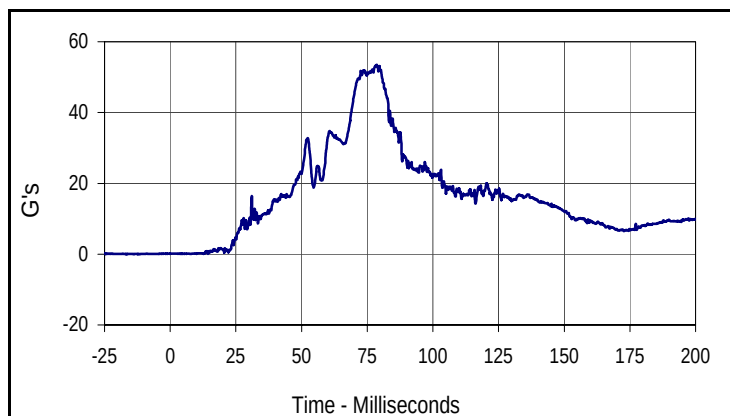
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001	FIL	1000	G's
Max	Time	Min	Time
1.5	20.8	-52.1	78.6



Curve Description			
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CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
10.3	103.0	-2.7	31.2



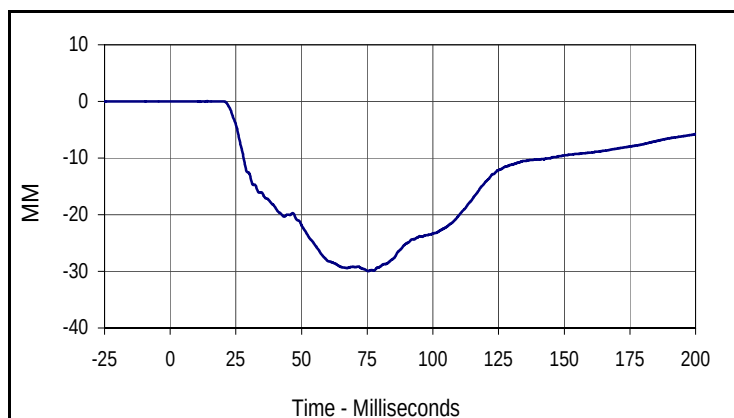
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28.1	52.4	-1.8	139.1



Curve Description			
Driver Head Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
53.5	78.6	0.1	12.8

Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

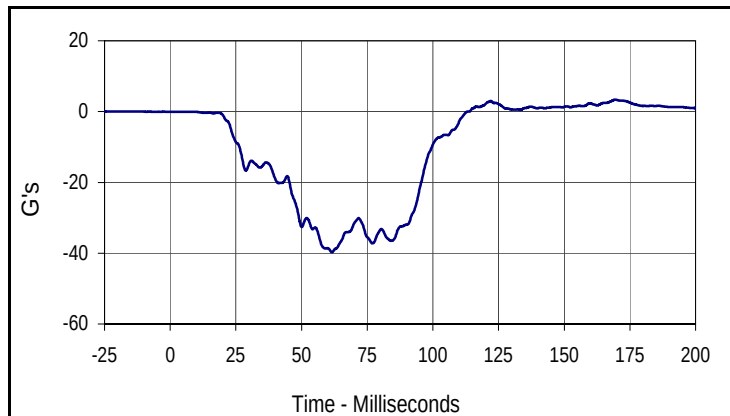
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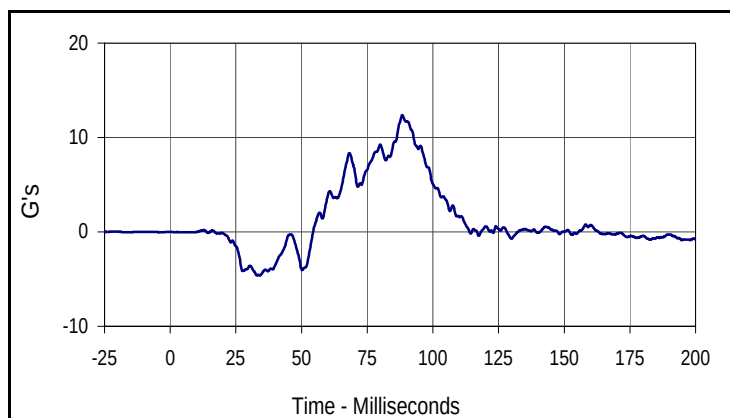
Curve Description			
Driver Chest Deflection			
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Max	Time	Min	Time
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Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

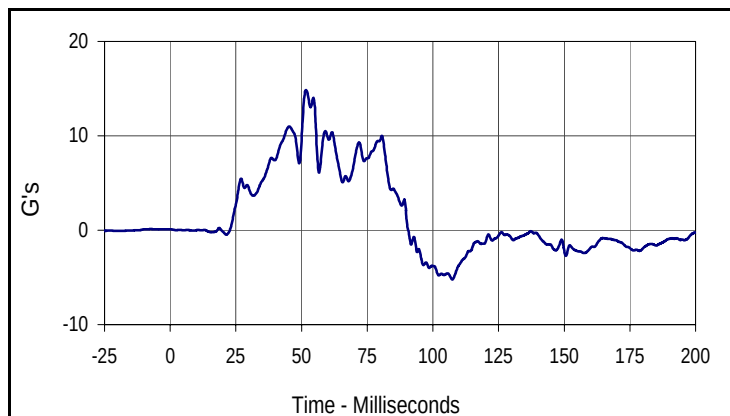
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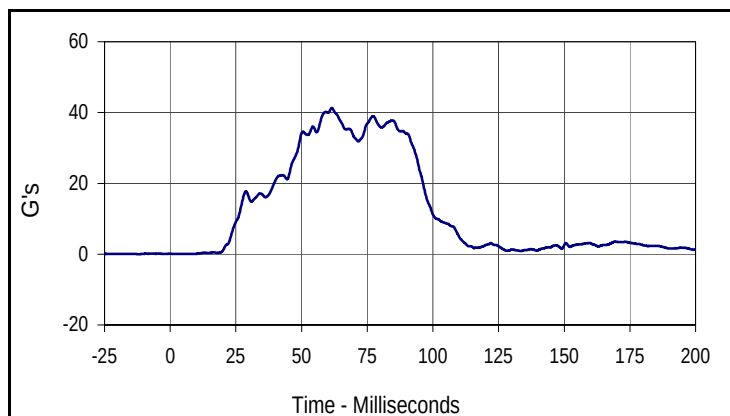
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CURNO	Type	SAE Class	Units
013	FIL	180	G's
Max	Time	Min	Time
3.4	169.4	-39.8	61.5



Curve Description			
Driver Chest Acceleration Y Primary			
CURNO	Type	SAE Class	Units
014	FIL	180	G's
Max	Time	Min	Time
12.4	88.3	-4.6	34.1



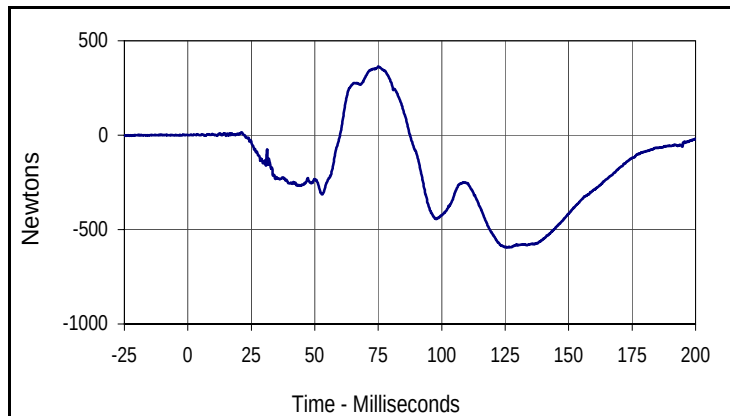
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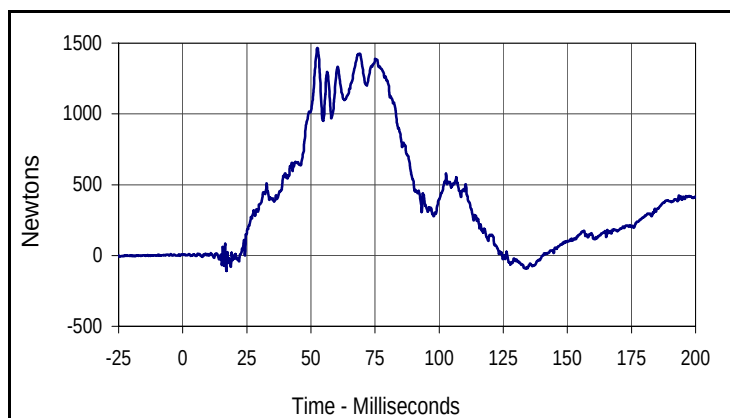
Curve Description			
Driver Chest Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
013	RES	180	G's
Max	Time	Min	Time
41.3	61.5	0.0	2.4

Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

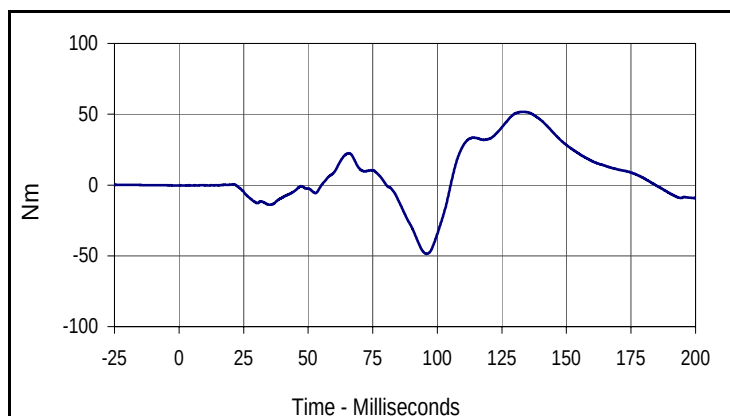
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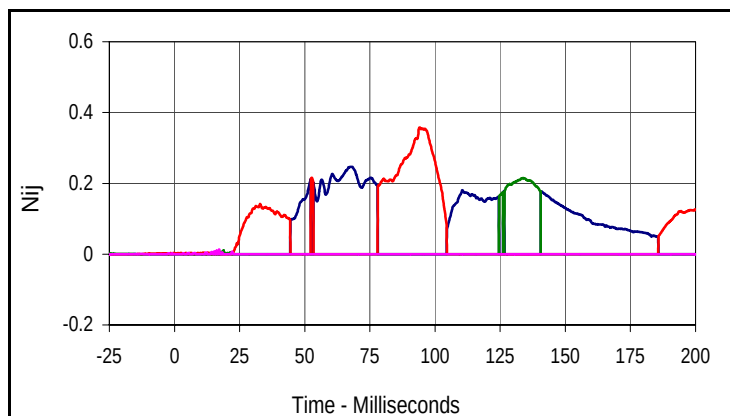
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Driver Upper Neck Force X			
CURNO	Type	SAE Class	Units
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Curve Description			
Driver Upper Neck Force Z			
CURNO	Type	SAE Class	Units
009	FIL	1000	Newtons
Max	Time	Min	Time
1466.1	52.5	-109.1	17.0



Curve Description			
Driver Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
011	FIL	600	Nm
Max	Time	Min	Time
51.6	133.8	-48.6	95.8



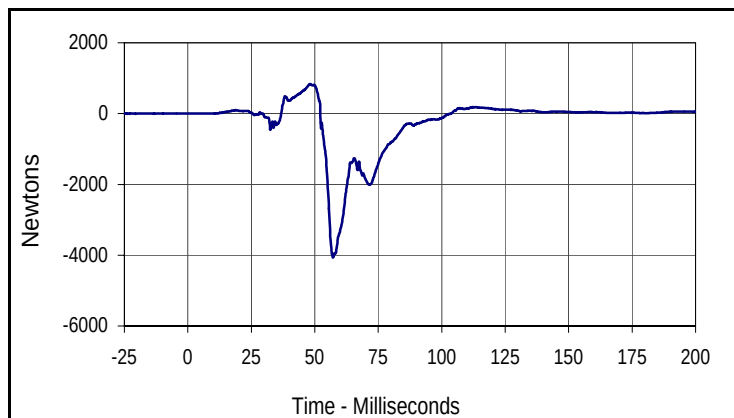
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Driver Nij			
Units	Type	Max	Time
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Units	Type	Max	Time
Nte	FIL	0.36	94.1
Units	Type	Max	Time
Ncf	FIL	0.21	133.8
Units	Type	Max	Time
Nce	FIL	0.14	269.0

Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck

Test Date: 10/4/10

Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

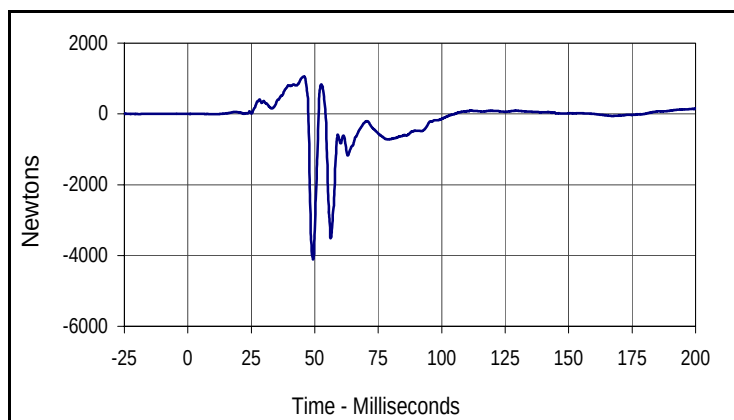
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Curve Description

Driver Left Femur Force Z

CURNO	Type	SAE Class	Units
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836.3	48.1	-4064.8	57.2



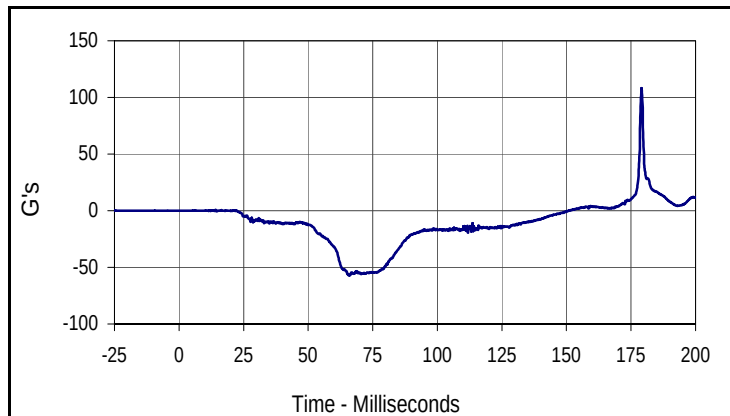
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Driver Right Femur Force Z

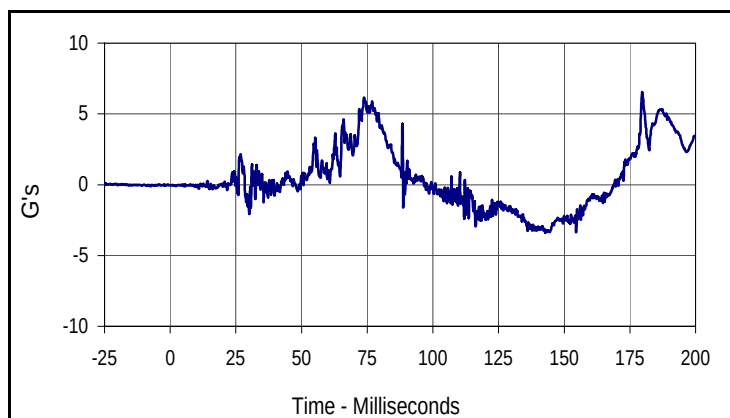
CURNO	Type	SAE Class	Units
024	FIL	600	Newtons
Max	Time	Min	Time
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Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

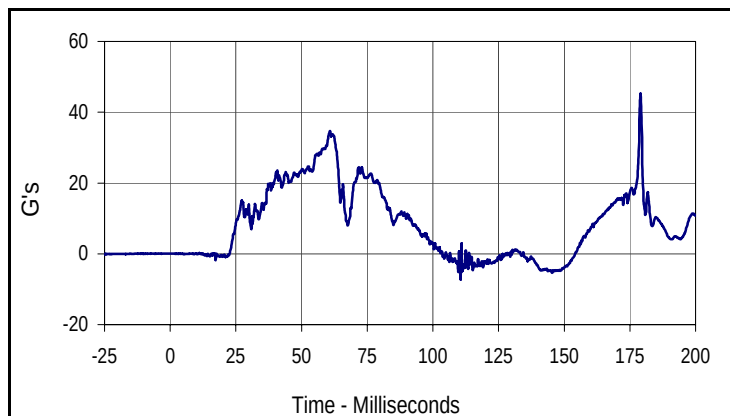
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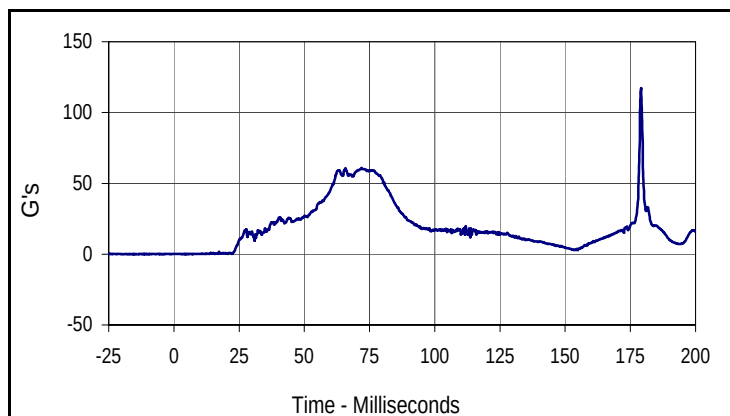
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CURNO	Type	SAE Class	Units
045	FIL	1000	G's
Max	Time	Min	Time
108.1	179.1	-57.2	65.8



Curve Description			
Passenger Head Acceleration Y Primary			
CURNO	Type	SAE Class	Units
046	FIL	1000	G's
Max	Time	Min	Time
6.6	179.7	-3.4	142.7



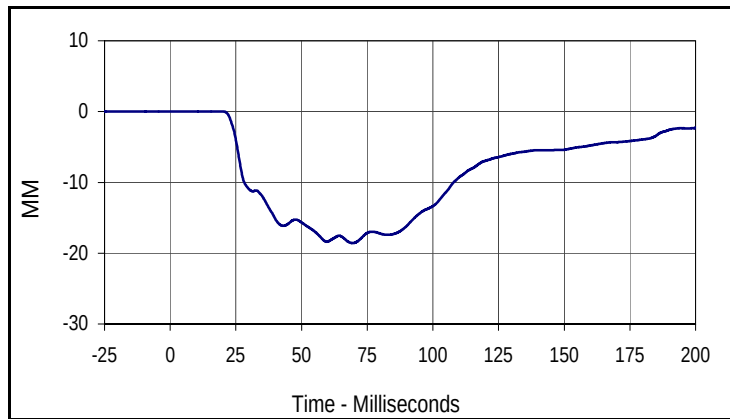
Curve Description			
Passenger Head Acceleration Z Primary			
CURNO	Type	SAE Class	Units
047	FIL	1000	G's
Max	Time	Min	Time
45.3	179.0	-7.3	110.6



Curve Description			
Passenger Head Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
045	RES	1000	G's
Max	Time	Min	Time
117.2	179.1	0.0	5.0

Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

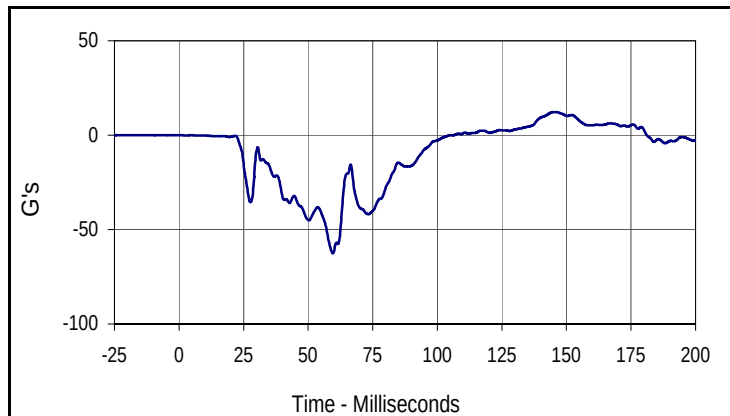
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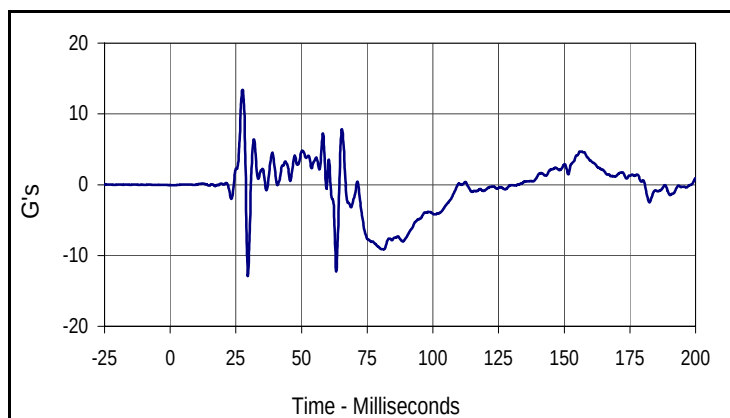
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Passenger Chest Deflection			
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063	FIL	180	MM
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Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

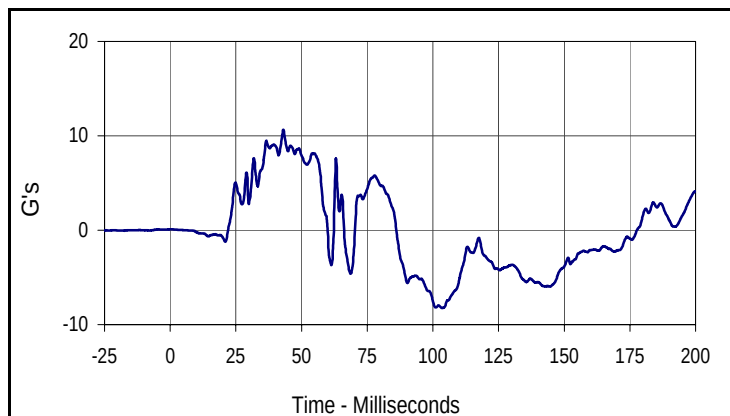
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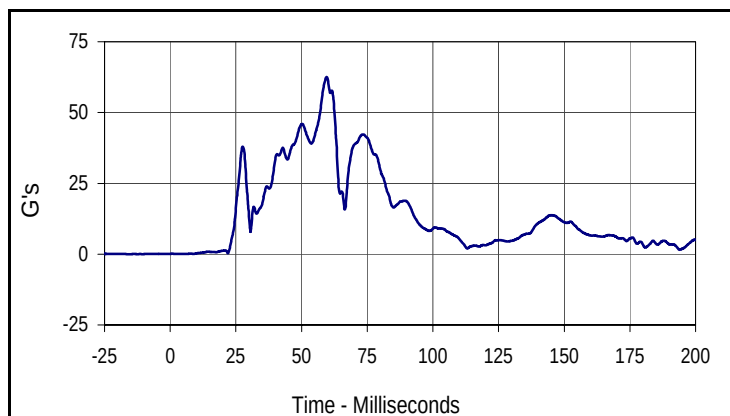
Curve Description			
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CURNO	Type	SAE Class	Units
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Max	Time	Min	Time
12.3	145.3	-62.6	59.6



Curve Description			
Passenger Chest Acceleration Y Primary			
CURNO	Type	SAE Class	Units
058	FIL	180	G's
Max	Time	Min	Time
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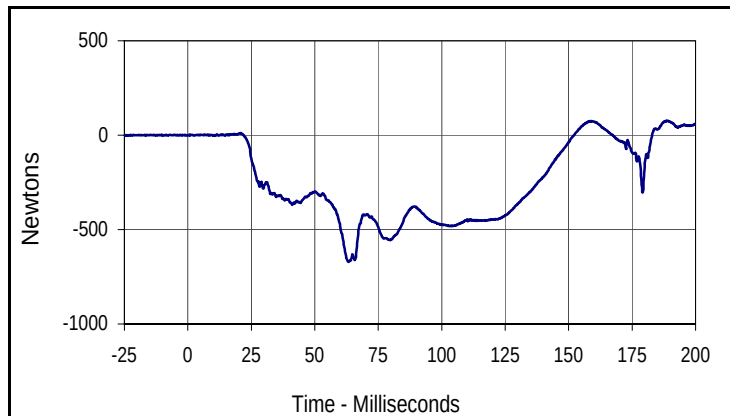
Curve Description			
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CURNO	Type	SAE Class	Units
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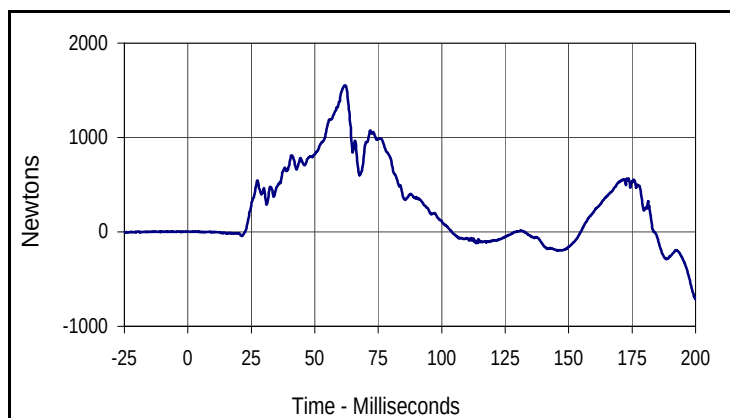
Curve Description			
Passenger Chest Resultant Acceleration Primary			
CURNO	Type	SAE Class	Units
057	RES	180	G's
Max	Time	Min	Time
62.6	59.6	0.1	4.9

Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

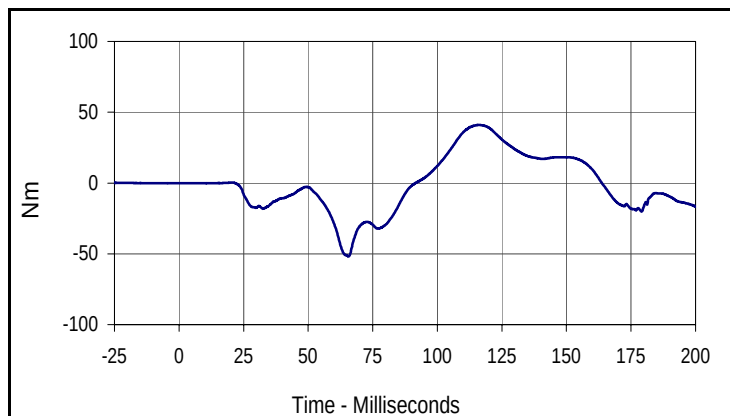
Test Date: 10/4/10
 NHTSA No.: MB5123



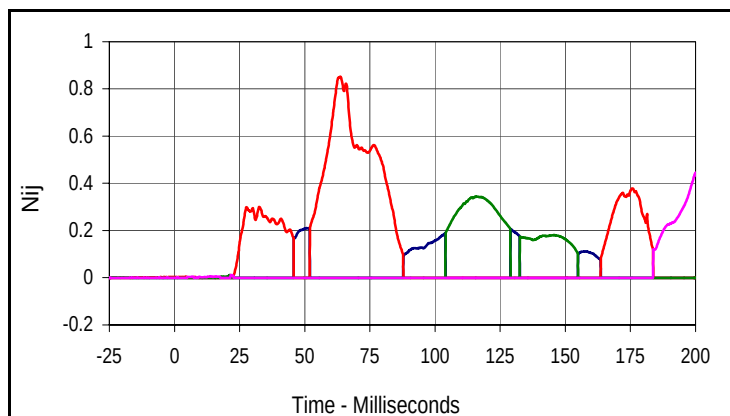
Curve Description			
Passenger Upper Neck Force X			
CURNO	Type	SAE Class	Units
051	FIL	1000	Newtons
Max	Time	Min	Time
76.7	189.0	-671.8	63.3



Curve Description			
Passenger Upper Neck Force Z			
CURNO	Type	SAE Class	Units
053	FIL	1000	Newtons
Max	Time	Min	Time
1552.3	61.8	-714.8	200.0



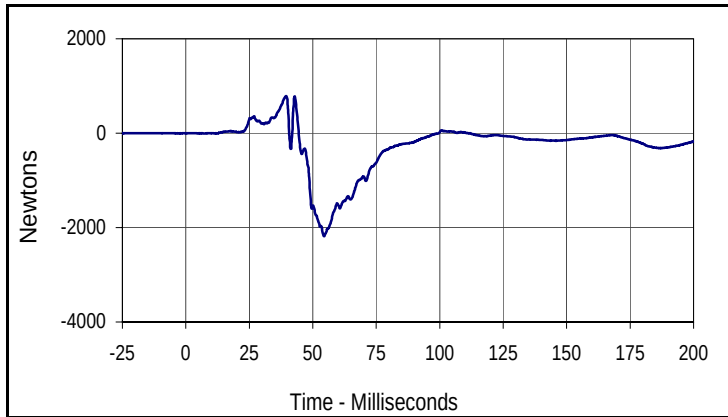
Curve Description			
Passenger Upper Neck Moment Y			
CURNO	Type	SAE Class	Units
055	FIL	600	Nm
Max	Time	Min	Time
41.0	116.1	-51.8	65.6



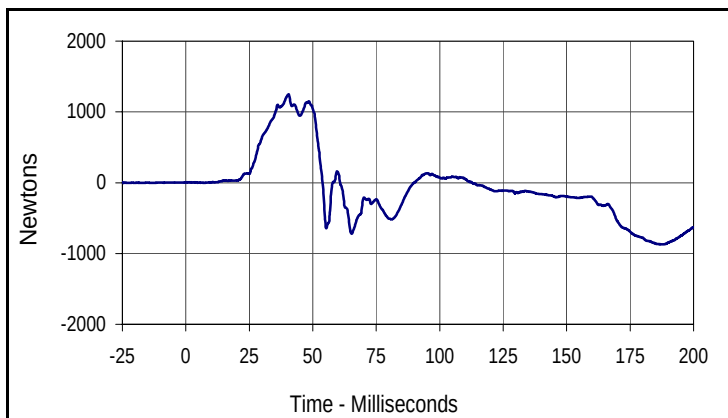
Curve Description			
Passenger Nij			
Units	Type	Max	Time
Ntf	FIL	0.21	51.9
Units	Type	Max	Time
Nte	FIL	0.85	63.7
Units	Type	Max	Time
Ncf	FIL	0.34	116.2
Units	Type	Max	Time
Nce	FIL	0.54	208.4

Test Vehicle: 2011 Toyota Tacoma Double Cab 4X4 4-Door Truck
 Test Program: 56 km/h (35 mph) Frontal Impact NCAP Rigid Barrier Test

Test Date: 10/4/10
 NHTSA No.: MB5123



Curve Description			
Passenger Left Femur Force Z			
CURNO	Type	SAE Class	Units
067	FIL	600	Newtons
Max	Time	Min	Time
788.9	39.5	-2185.3	54.4



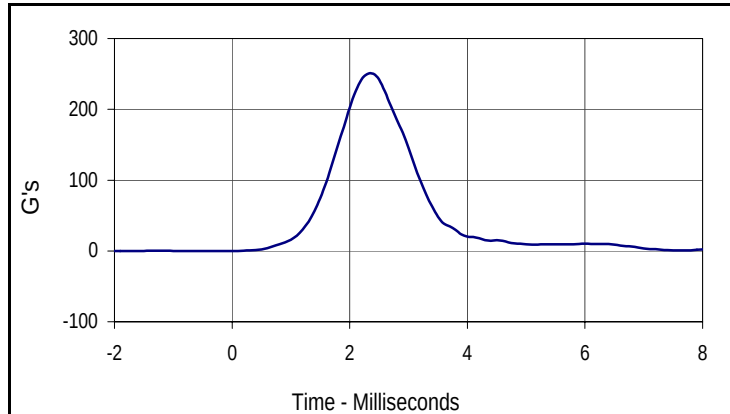
Curve Description			
Passenger Right Femur Force Z			
CURNO	Type	SAE Class	Units
068	FIL	600	Newtons
Max	Time	Min	Time
1247.9	40.5	-872.3	187.4

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 TestTest Date: 9/29/10ATD Serial No.: 035Test I.D.: HDM09C

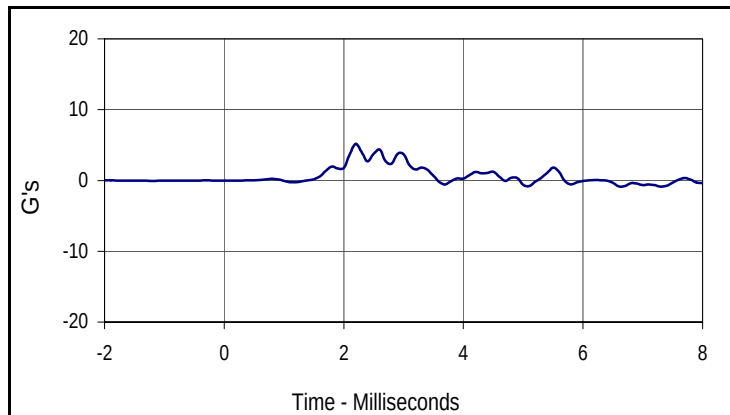
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	250.1	Pass
Peak Lateral Acceleration	G's	≤15.0	5.2	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
250.1	2.4	0.0	-1.7



Curve Description

Head Y

CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.2	2.2	-0.8	5.1

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

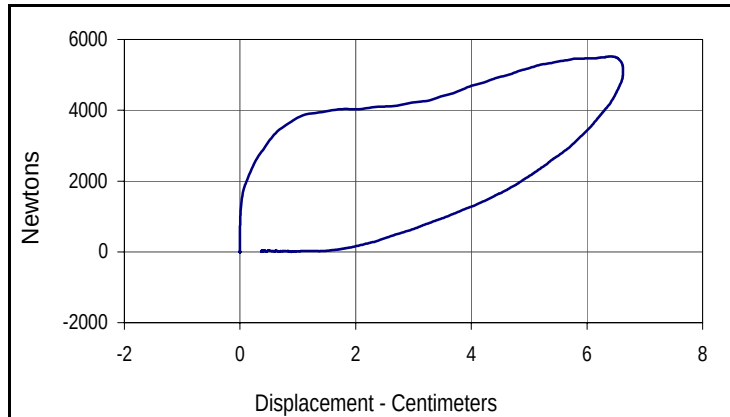
Test Date: 9/29/10

ATD Serial No.: 035

Test I.D.: CHM09C



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	6.61	Pass
Peak Probe Force	Newtons	5159 to 5893	5518	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.62	Pass
Internal Hysteresis	%	69 to 85	71.3	Pass
Overall Test Results			Pass	



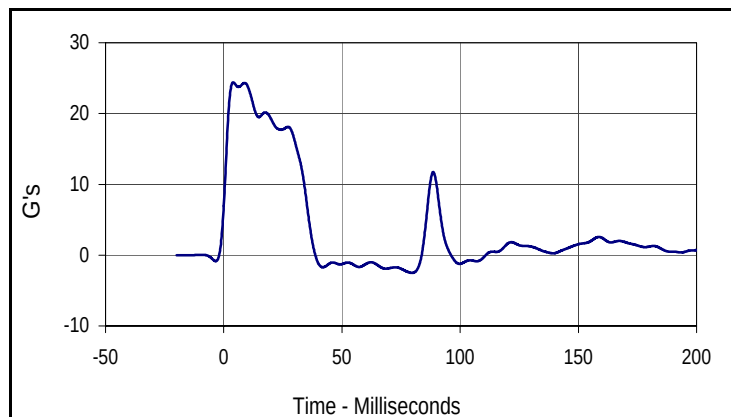
Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	71.3
Peak Probe Force		Peak Chest Deflection	
5518		6.62	

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

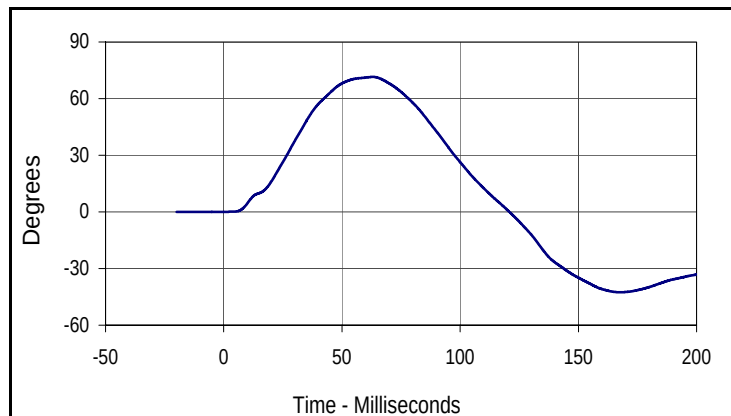
Test Date: 9/29/10
 Test I.D.: NFM09C



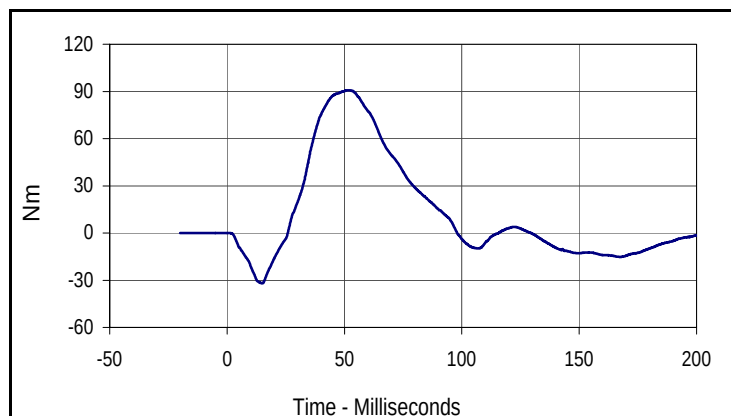
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.00	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.9	Pass
	20 Msec.	G's	17.6 to 22.6	19.2	Pass
	30 Msec.	G's	12.5 to 18.5	16.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	16.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	71.5	Pass
	Time	Msec.	57.0 to 64.0	63.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	120.9	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	90.8	Pass
	Time	Msec.	47.0 to 58.0	52.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	98.1	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Deceleration			
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
24.4	4.0	-2.5	79.6



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
71.5	63.1	-42.5	167.7



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
90.8	52.3	-31.9	15.0

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

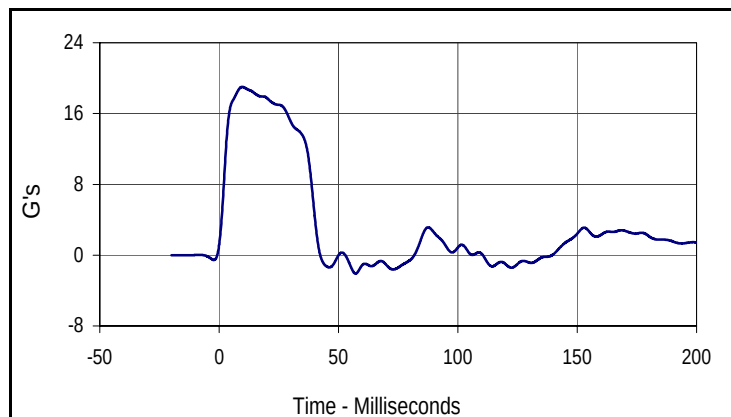
Test Date: 9/29/10

ATD Serial No.: 035

Test I.D.: NEM09C



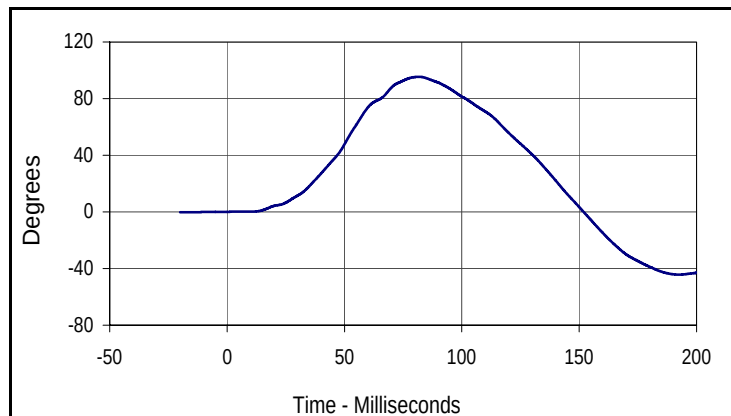
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.13	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.0	Pass
	20 Msec.	G's	14.0 to 19.0	17.8	Pass
	30 Msec.	G's	11.0 to 16.0	15.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.9	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	95.4	Pass
	Time	Msec.	72.0 to 82.0	81.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.9	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-77.0	Pass
	Time	Msec.	65.0 to 79.0	68.2	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

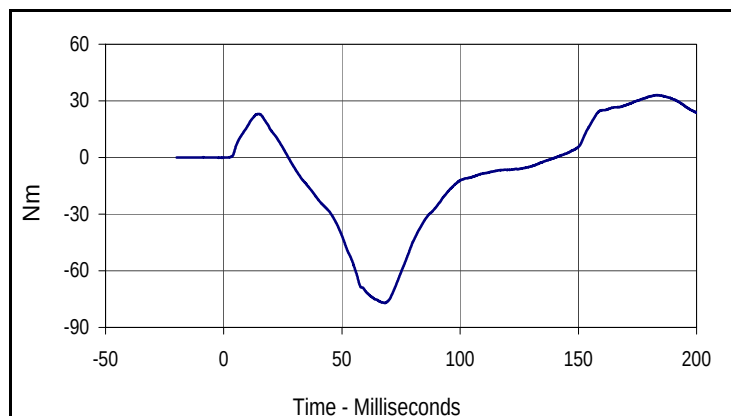
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.0	9.6	-2.1	57.2



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
95.4	81.7	-44.3	192.3



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
33.1	183.3	-77.0	68.2

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

Test Date: 9/29/10
 Test I.D.: LKM09C , RKM09C

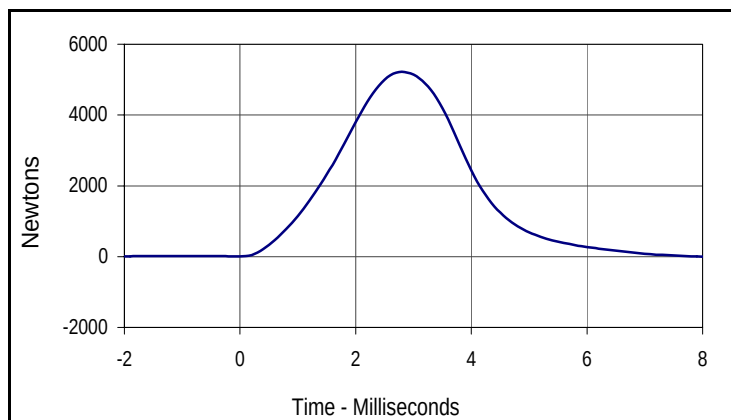


Left Knee

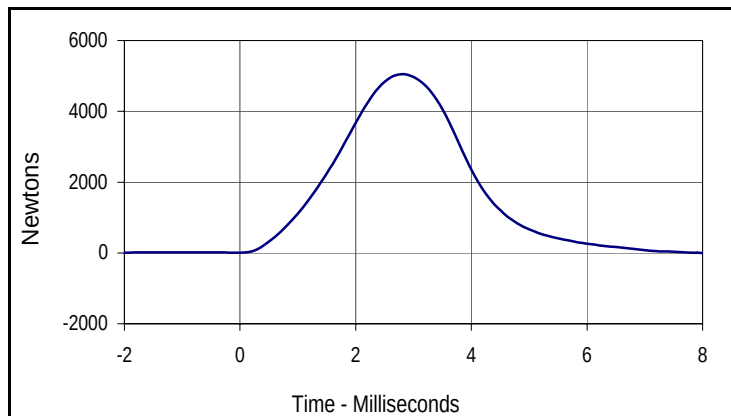
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	4715 to 5782	5220	Pass
Overall Test Results				Pass

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5052	Pass
Overall Test Results				Pass



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5219.7	2.8	-13.6	8.7



Curve Description			
Right Knee Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5052.1	2.8	-13.1	8.7

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 9/29/10

ATD Serial No.: 035

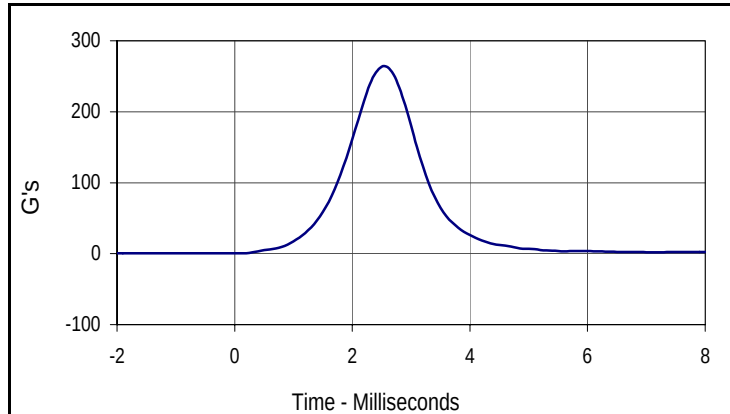
Test I.D.: N/A



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	881	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	138	Pass
E - Shoulder pivot from back	mm	84 to 94	85	Pass
F - Thigh clearance	mm	140 to 155	147	Pass
G - Elbow back to wrist pivot	mm	290 to 305	296	Pass
H - Skull cap to back line	mm	41 to 46	43	Pass
I - Shoulder to elbow length	mm	330 to 345	333	Pass
J - Elbow rest height	mm	190 to 211	206	Pass
K - Buttock to knee length	mm	579 to 604	587	Pass
L - Popliteal length	mm	429 to 455	432	Pass
M - Knee pivot height	mm	485 to 500	486	Pass
N - Buttock popliteal length	mm	452 to 477	468	Pass
O - Chest depth	mm	213 to 229	215	Pass
P - Foot length	mm	251 to 267	259	Pass
V - Shoulder breadth	mm	422 to 437	431	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference	mm	970 to 1001	986	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: 9/3/10ATD Serial No.: 141Test I.D.: HDF09B

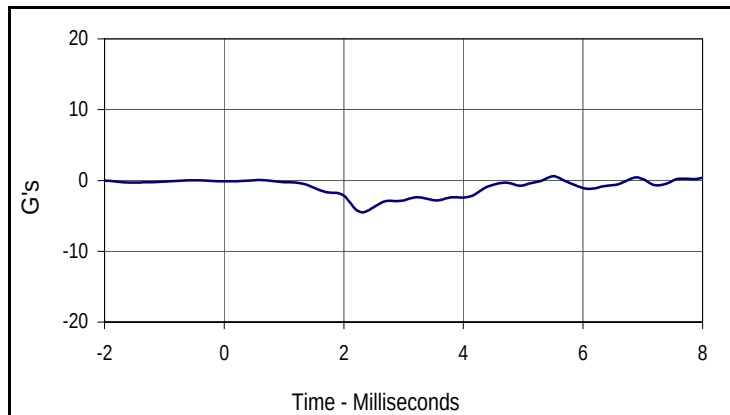
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	263.6	Pass
Peak Lateral Acceleration	G's	≤15.0	4.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
263.6	2.5	0.4	-1.3



Curve Description

Head Y

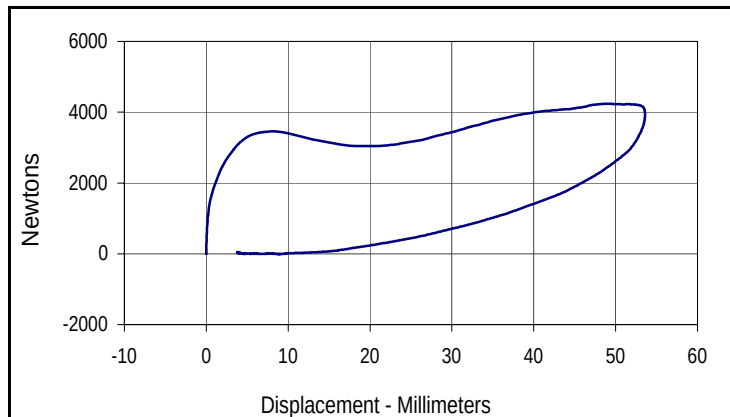
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.6	5.5	-4.5	2.3

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test
 ATD Serial No.: 141

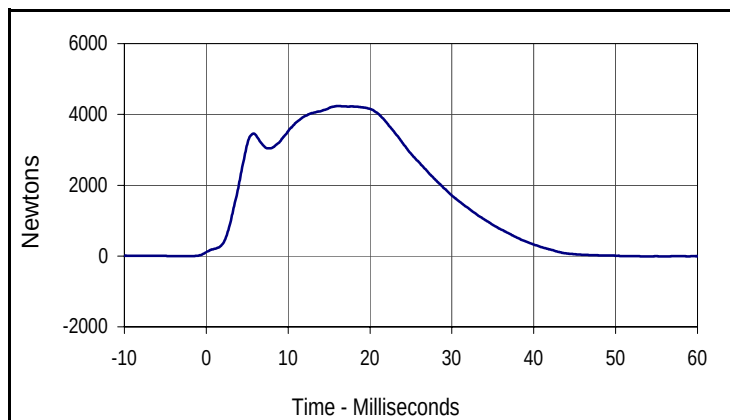
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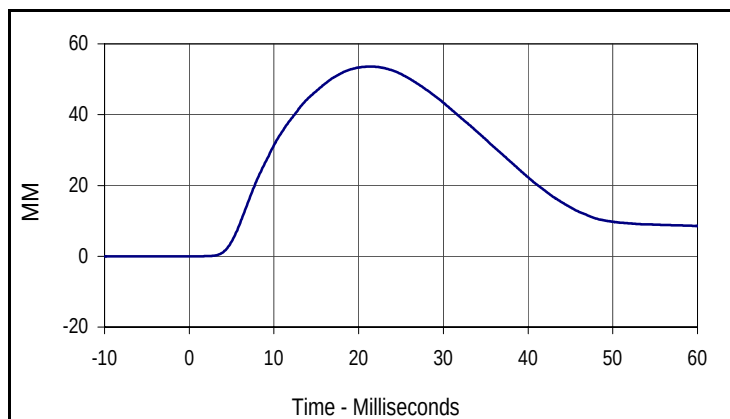
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.59 to 6.83	6.81	Pass
Peak Chest Deflection	MM	50.0 to 58.0	53.6	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	4242	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	4230	Pass
Internal Hysteresis	%	69 to 85	75.4	Pass
Overall Test Results			Pass	



Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
003	FIL	180	75.4
Peak Probe Force		Peak Chest Displ.	
4241.6		53.6	



Curve Description			
Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4241.6	16.1	-8.9	56.2



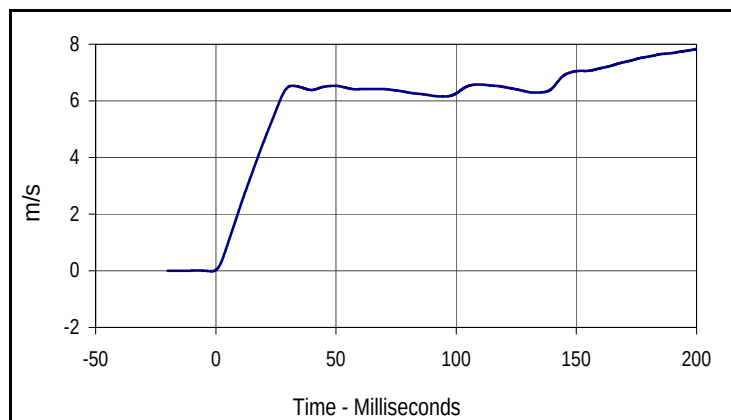
Curve Description			
Chest Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
53.6	21.4	0.0	-10.0

Test Program: Hybrid III 5th Percentile Female Neck Flexion Test
 ATD Serial No.: 141

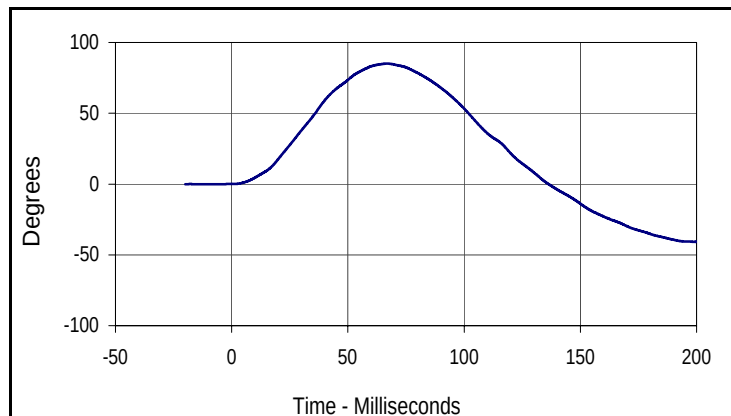
Test Date: 9/3/10
 Test I.D.: NF09B



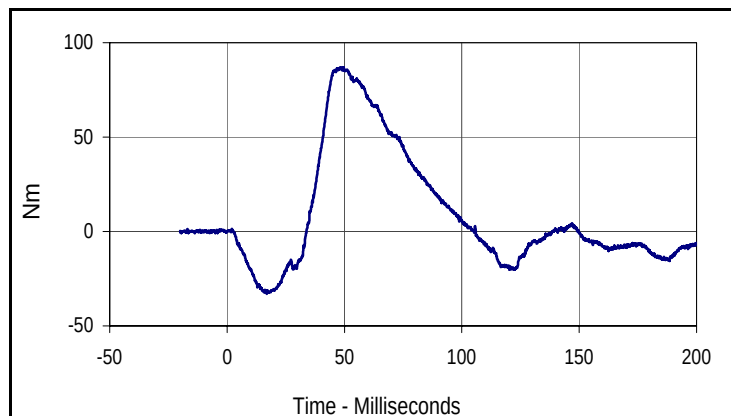
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.03	Pass
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.2	Pass
	20 Msec.	m/s	4.0 to 5.0	4.6	Pass
	30 Msec.	m/s	5.8 to 7.0	6.5	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	85.1	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	81.8	Pass
Positive Moment Decay, Time To 10 Nm		Msec.	80.0 to 100.0	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
7.8	200.0	0.0	-1.8



Curve Description			
"D" Plane Rotation			
CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
85.1	66.8	-40.7	200.0



Curve Description			
Moment About Occipital Condyle			
CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
87.0	49.6	-33.0	16.9

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

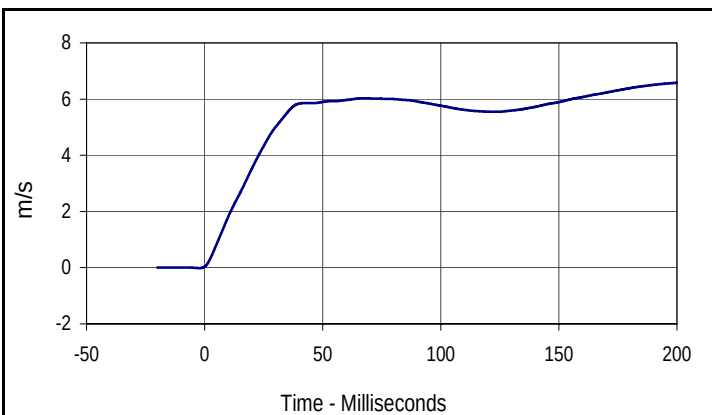
Test Date: 9/3/10



ATD Serial No.: 141

Test I.D.: NE09B

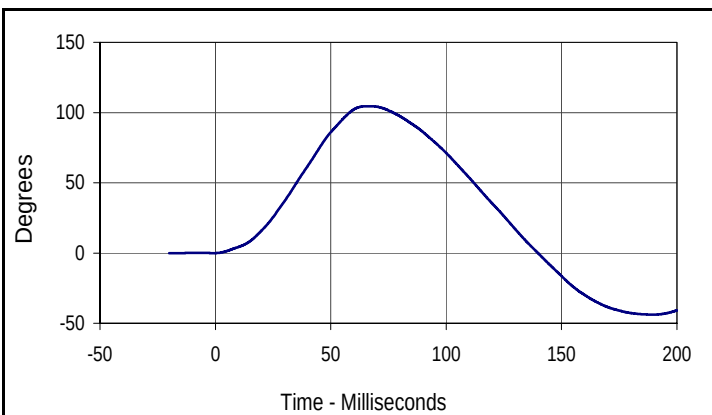
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.00	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.8	Pass
	20 Msec.	m/s	3.1 to 3.9	3.5	Pass
	30 Msec.	m/s	4.6 to 5.6	5.0	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	104.5	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-64.4	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	95.2	Pass
			Overall Test Results		Pass



Curve Description

Pendulum Velocity

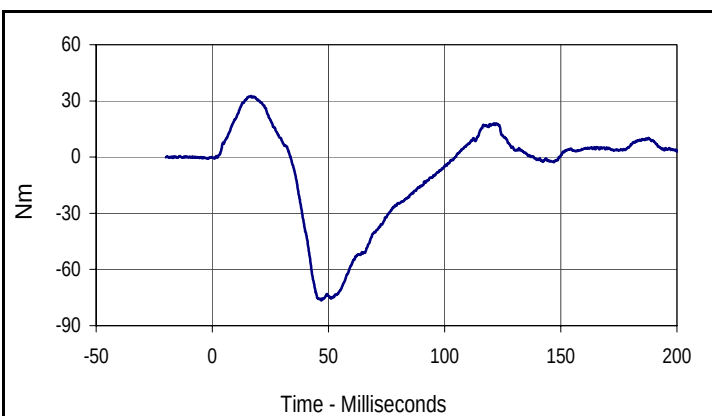
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
6.6	200.0	0.0	-2.2



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
104.5	65.4	-43.9	189.5



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
32.6	16.7	-76.5	46.9

Test Program: Hybrid III 5th Percentile Female Knee Impact Test
 ATD Serial No.: 141

Test Date: 9/3/10
 Test I.D.: LKF09B , RKB09B



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	2.09	Pass
Peak Probe Force	Newtons	3450 to 4060	3540	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	3450 to 4060	3578	Pass
Overall Test Results			Pass	



Curve Description			
Left Knee Probe Force			
CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3539.7	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
3578.5	4.3	-2.8	-0.4

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

Test Date: 9/3/10

ATD Serial No.: 141

Test I.D.: TF08B



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	1.7	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	320.0 to 390.0	323.7	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	1.3	Pass
Final reference plane angle	Degrees	+/-8	3.0	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 9/3/10

ATD Serial No.: 141

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	785	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	442	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	81	Pass
F - Thigh clearance	mm	119.4 to 134.6	128	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	251	Pass
H - Head to back line	mm	40.7 to 45.7	42	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	286	Pass
J - Elbow rest height	mm	182.8 to 203.2	202	Pass
K - Buttock to knee length	mm	520.7 to 546.1	539	Pass
L - Popliteal height	mm	355.6 to 376.0	360	Pass
M - Knee pivot height	mm	393.7 to 419.1	413	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	418	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	183	Pass
P - Foot length	mm	218.5 to 233.7	230	Pass
R - Buttock to knee pivot length	mm	457.2 to 482.6	469	Pass
S - Head breadth	mm	137.1 to 147.3	145	Pass
T - Head depth	mm	177.8 to 188.0	185	Pass
U - Hip breadth	mm	299.7 to 314.9	309	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	540	Pass
Y - Chest circumference with jacket	mm	850.8 to 881.3	853	Pass
Z - Waist circumference	mm	759.5 to 789.9	778	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	303	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	165	Pass
Overall Test Results				Pass

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

Test Date: 9/30/10
 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.: 141

Test Date: 9/3/10
 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 Test

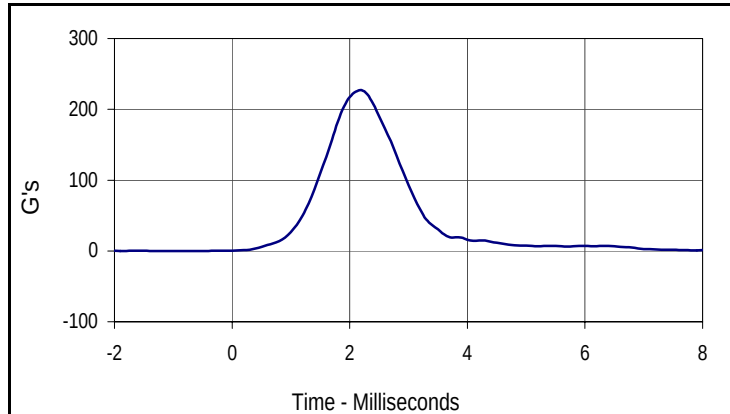
Test Date: 10/7/10

ATD Serial No.: 035

Test I.D.: HDM10A



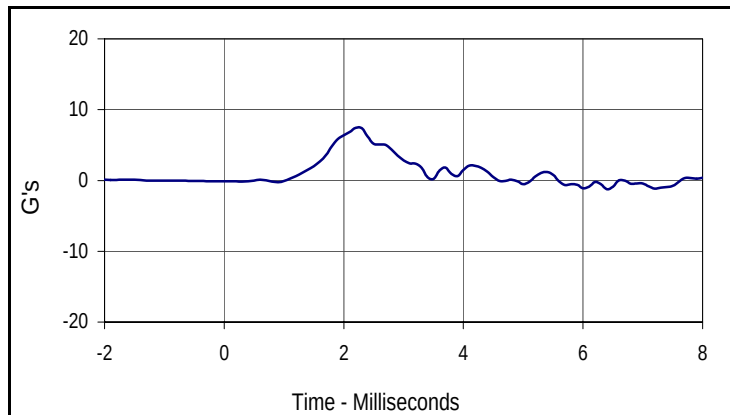
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	227.3	Pass
Peak Lateral Acceleration	G's	≤15.0	7.4	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
227.3	2.2	0.1	-1.3



Curve Description

Head Y

CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
7.4	2.2	-1.1	6.0

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

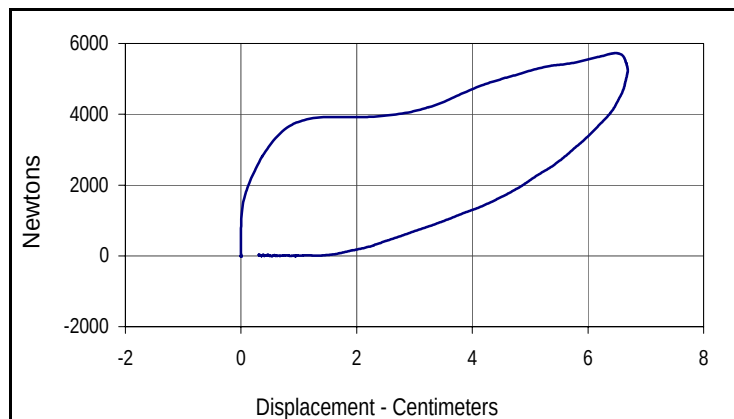
Test Date: 10/7/10

ATD Serial No.: 035

Test I.D.: CHM10A



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	6.68	Pass
Peak Probe Force	Newtons	5159 to 5893	5729	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.69	Pass
Internal Hysteresis	%	69 to 85	70.7	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
001	FIL	180	70.7
Peak Probe Force		Peak Chest Deflection	
5729		6.69	

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

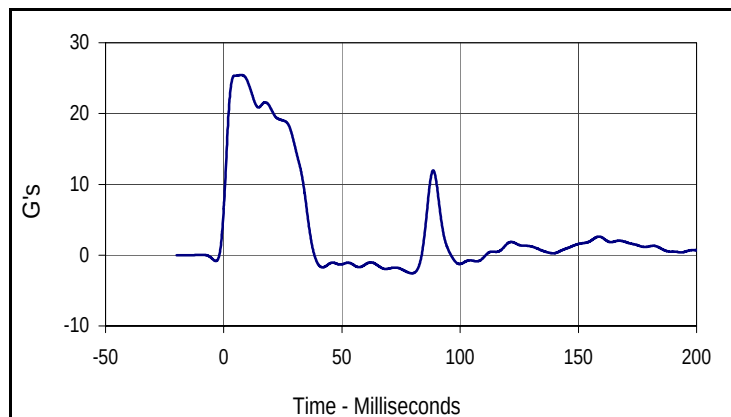
Test Date: 10/7/10

ATD Serial No.: 035

Test I.D.: NFM10A



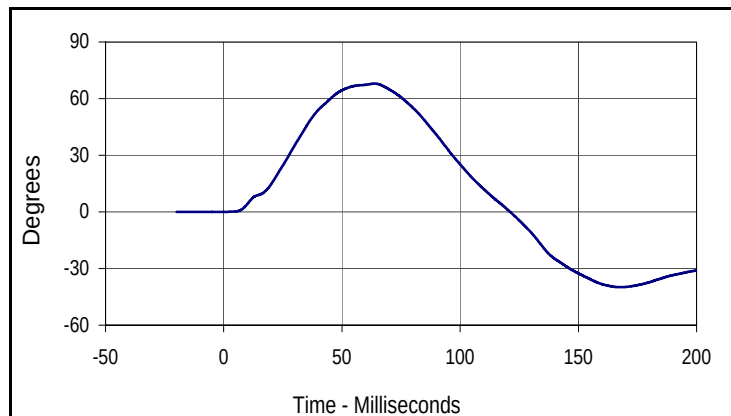
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	6.89 to 7.13	6.92	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	24.6	Pass
	20 Msec.	G's	17.6 to 22.6	20.7	Pass
	30 Msec.	G's	12.5 to 18.5	15.5	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	15.5	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	35.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	68.0	Pass
	Time	Msec.	57.0 to 64.0	63.8	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	121.2	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	93.1	Pass
	Time	Msec.	47.0 to 58.0	52.3	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.4	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

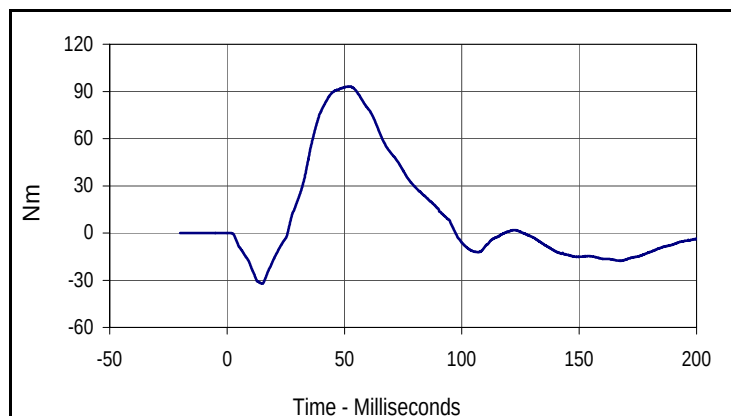
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
25.4	7.3	-2.6	79.6



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
68.0	63.8	-39.8	167.7



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
93.1	52.3	-32.0	15.0

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

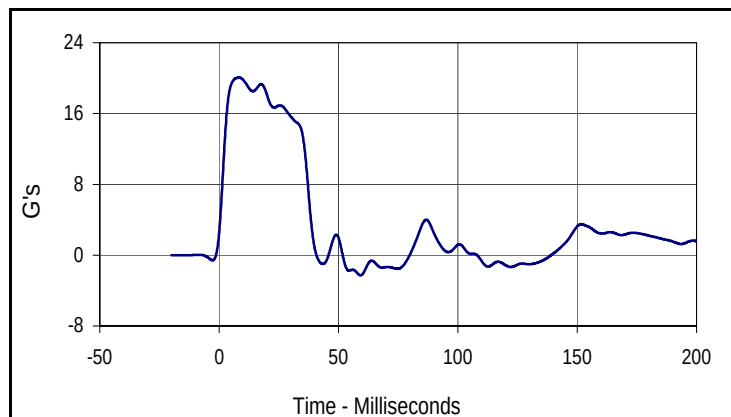
Test Date: 10/7/10

ATD Serial No.: 035

Test I.D.: NEM10A



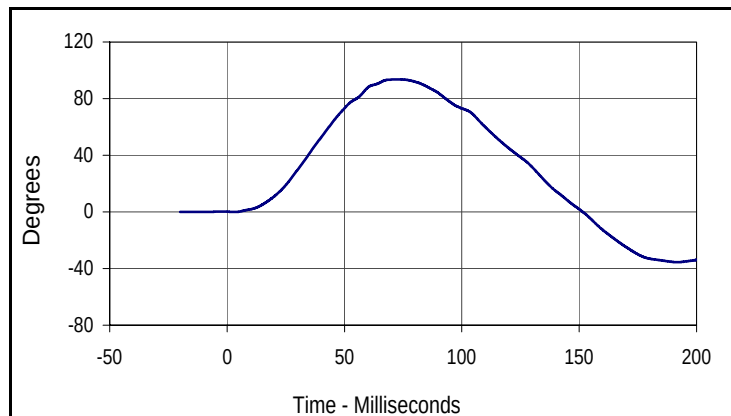
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.17	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.8	Pass
	20 Msec.	G's	14.0 to 19.0	18.1	Pass
	30 Msec.	G's	11.0 to 16.0	15.7	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.7	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	38.1	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	93.5	Pass
	Time	Msec.	72.0 to 82.0	73.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	151.6	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to- 79.9	-69.4	Pass
	Time	Msec.	65.0 to 79.0	70.1	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	141.6	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

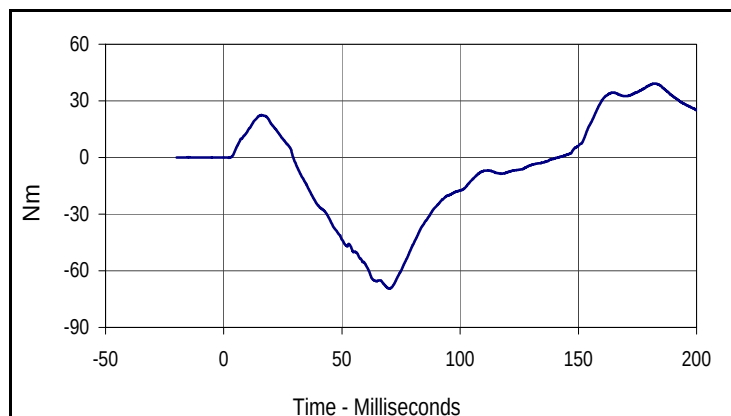
CURNO	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
20.1	8.2	-2.3	59.2



Curve Description

"D" Plane Rotation

CURNO	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
93.5	73.9	-35.5	191.8



Curve Description

Moment About Occipital Condyle

CURNO	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
39.2	182.6	-69.4	70.1

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

Test Date: 10/7/10
 Test I.D.: LKM10A , RKM10A

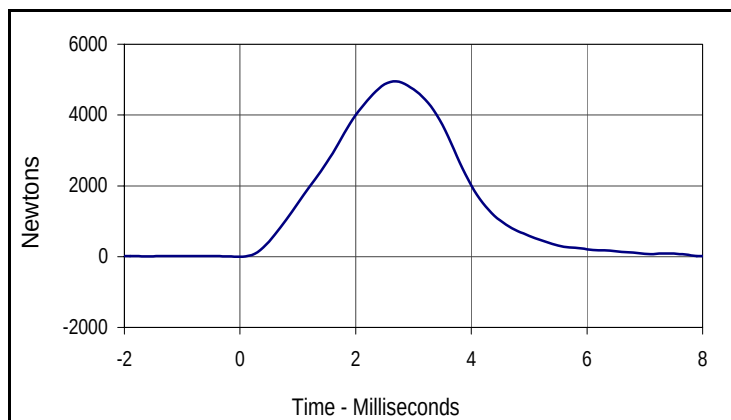


Left Knee

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	4715 to 5782	4950	Pass
Overall Test Results				Pass

Right Knee

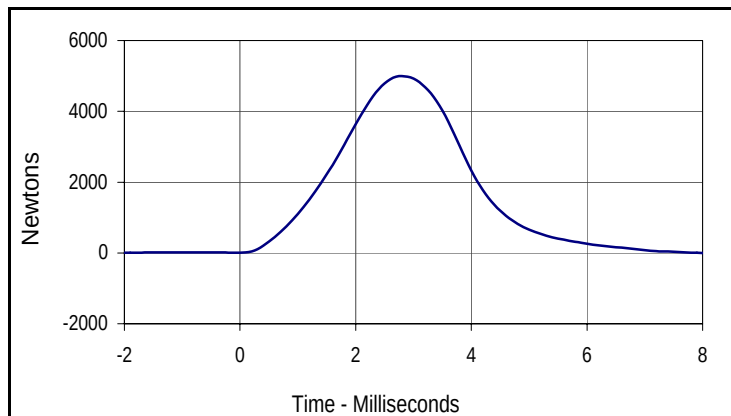
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force	Newtons	4715 to 5782	5000	Pass
Overall Test Results				Pass



Curve Description

Left Knee Probe Force

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4950.1	2.7	-45.7	9.0



Curve Description

Right Knee Probe Force

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
5000.3	2.8	-12.8	8.7

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 10/7/10

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	514	Pass
C - "H" point height	mm	84 to 89	85	Pass
D - "H" point from seat back	mm	135 to 140	135	Pass
E - Shoulder pivot from back	mm	84 to 94	84	Pass
F - Thigh clearance	mm	140 to 155	146	Pass
G - Elbow back to wrist pivot	mm	290 to 305	299	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	205	Pass
K - Buttock to knee length	mm	579 to 604	585	Pass
L - Popliteal length	mm	429 to 455	431	Pass
M - Knee pivot height	mm	485 to 500	485	Pass
N - Buttock popliteal length	mm	452 to 477	467	Pass
O - Chest depth	mm	213 to 229	214	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	430	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference	mm	970 to 1001	987	Pass
Z - Waist circumference	mm	836 to 866	865	Pass
AA - Location for chest circumference	mm	429 to 434	430	Pass
BB - Location for waist circumference	mm	226 to 231	229	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female Head Drop Test

Test Date: 10/7/10

ATD Serial No.: 141

Test I.D.: HDF10A



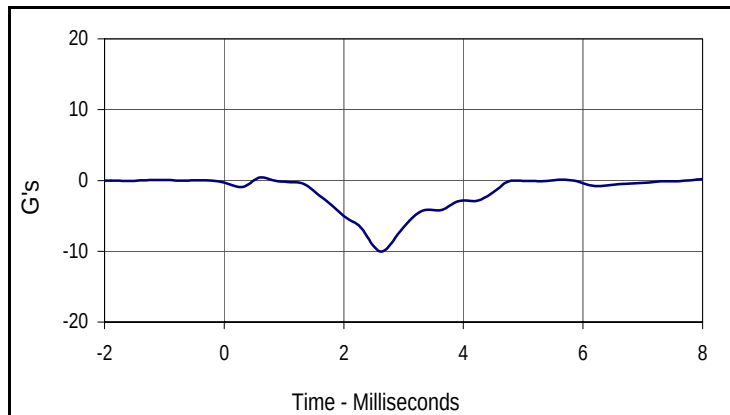
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	18.9 to 25.6	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	269.2	Pass
Peak Lateral Acceleration	G's	≤15.0	10.0	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
Overall Test Results				Pass



Curve Description

Head Resultant

CURNO	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
269.2	2.6	0.0	-1.9



Curve Description

Head Y

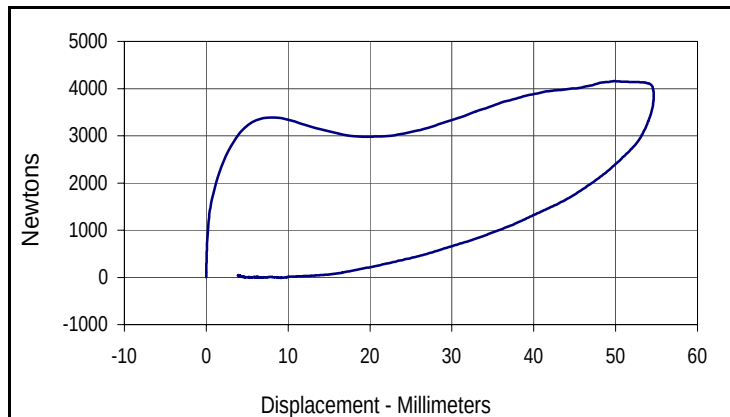
CURNO	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.4	0.6	-10.0	2.6

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test
 ATD Serial No.: 141

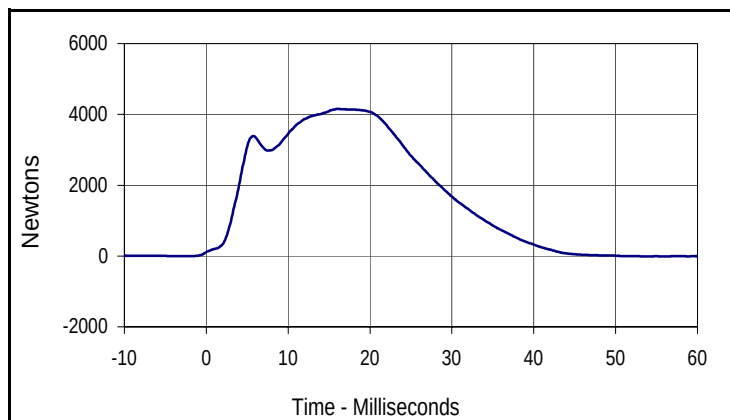
Test Date: 10/7/10
 Test I.D.: CHF10A



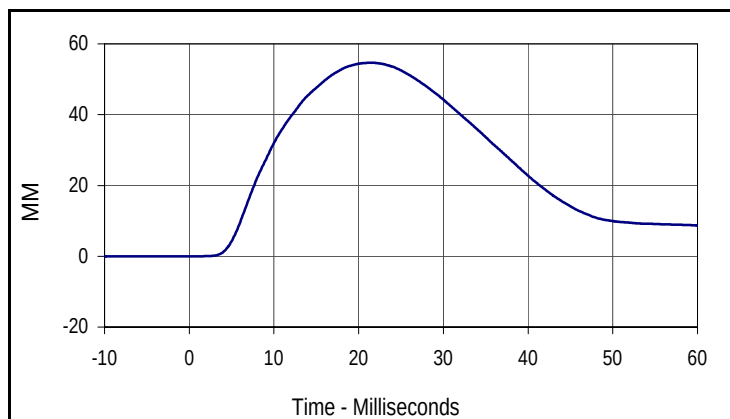
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity	%	10 to 70	30	Pass
Probe Velocity	m/s	6.59 to 6.83	6.78	Pass
Peak Chest Deflection	MM	50.0 to 58.0	54.7	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	4157	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	4156	Pass
Internal Hysteresis	%	69 to 85	75.4	Pass
Overall Test Results			Pass	



Curve Description			
Probe Force vs. Chest Deflection			
CURNO	Type	SAE Class	Hysteresis
003	FIL	180	75.4
Peak Probe Force		Peak Chest Displ.	
4156.9		54.7	



Curve Description			
Probe Force			
CURNO	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4156.9	16.1	-8.9	56.2



Curve Description			
Chest Deflection			
CURNO	Type	SAE Class	Units
001	FIL	180	MM
Max	Time	Min	Time
54.7	21.4	0.0	-10.0

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

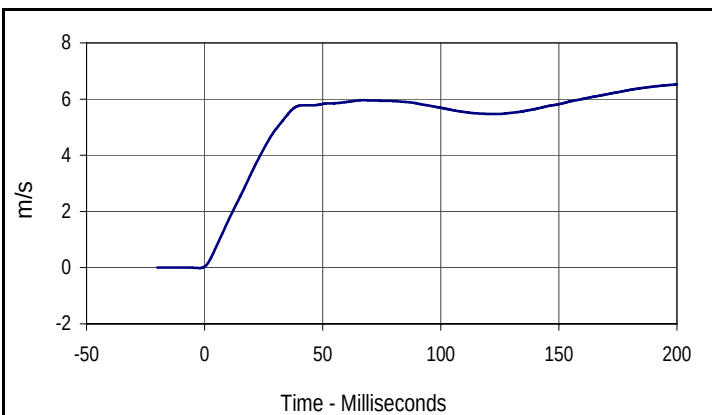
Test Date: 10/8/10



ATD Serial No.: 141

Test I.D.: NE10A

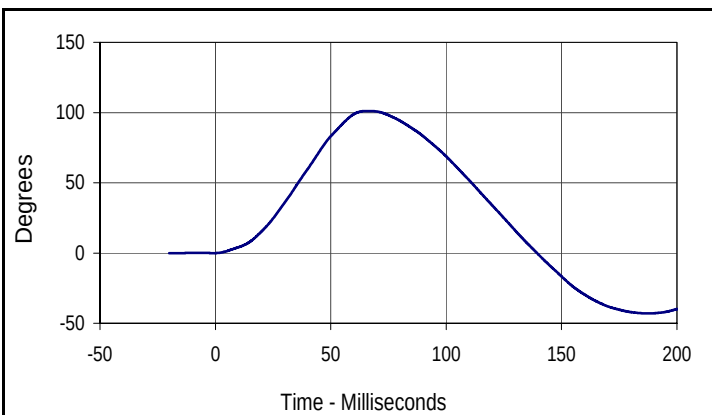
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		°C	20.6 to 22.2	21.1	Pass
Laboratory Relative Humidity		%	10 to 70	30	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.00	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.7	Pass
	20 Msec.	m/s	3.1 to 3.9	3.4	Pass
	30 Msec.	m/s	4.6 to 5.6	4.9	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	-56.4	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	96.5	Pass
			Overall Test Results		Pass



Curve Description

Pendulum Velocity

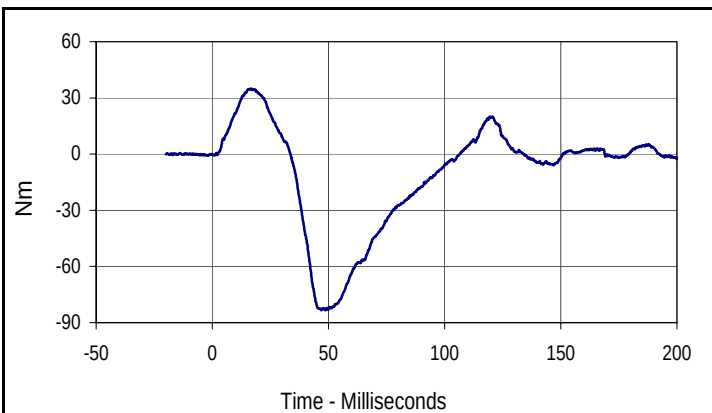
CURNO	Type	SAE Class	Units
001	FIL	60	m/s
Max	Time	Min	Time
6.5	200.0	0.0	-2.2



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
35.0	16.7	-83.4	46.9

Test Program: Hybrid III 5th Percentile Female Knee Impact Test
 ATD Serial No.: 141

Test Date: 10/8/10
 Test I.D.: LKF10A , RKB10A



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	2.11	Pass
Peak Probe Force	Newtons	3450 to 4060	3907	Pass
Overall Test Results			Pass	

Right Knee

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force	Newtons	3450 to 4060	3843	Pass
Overall Test Results			Pass	



Curve Description

Left Knee Probe Force

CURNO	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3906.9	4.3	4.4	-0.4



Curve Description

Right Knee Probe Force

CURNO	Type	SAE Class	Units
002	FIL	600	Newtons
Max	Time	Min	Time
3843.1	4.3	-2.6	-0.4

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

Test Date: 10/8/10

ATD Serial No.: 141

Test I.D.: TF10A



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	0.9	Pass
Peak Force at 45 +/-0.5 degrees	Newtons	320.0 to 390.0	321.0	Pass
Torso rotation rate	deg/sec	0.5 to 1.5	1.0	Pass
Final reference plane angle	Degrees	+/-8	1.7	Pass
Overall Test Results				Pass

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 10/8/10

ATD Serial No.: 141

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	784	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	440	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	82	Pass
F - Thigh clearance	mm	119.4 to 134.6	130	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	253	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	285	Pass
J - Elbow rest height	mm	182.8 to 203.2	201	Pass
K - Buttock to knee length	mm	520.7 to 546.1	538	Pass
L - Popliteal height	mm	355.6 to 376.0	361	Pass
M - Knee pivot height	mm	393.7 to 419.1	415	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	183	Pass
P - Foot length	mm	218.5 to 233.7	230	Pass
R - Buttock to knee pivot length	mm	457.2 to 482.6	467	Pass
S - Head breadth	mm	137.1 to 147.3	145	Pass
T - Head depth	mm	177.8 to 188.0	183	Pass
U - Hip breadth	mm	299.7 to 314.9	310	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	542	Pass
Y - Chest circumference with jacket	mm	850.8 to 881.3	853	Pass
Z - Waist circumference	mm	759.5 to 789.9	778	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	165	Pass
Overall Test Results				Pass

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

Test Date: 10/7/10
 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.: 141

Test Date: 10/8/10
 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:
