

**REPORT NUMBER: NCAP-KAR-13-058**

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

**NISSAN MOTOR CO., LTD.  
2014 NISSAN VERSA NOTE S 5-DOOR HATCHBACK**

**NHTSA NUMBER: M20145203**

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



**AUGUST 28, 2013**

**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

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<b>9. Performing Organization Name and Address</b> KARCO Engineering, LLC. 9270 Holly Rd. Adelanto, CA 92301	<b>11. Contract or Grant No.</b> DTNH22-12-D-00259																																																						
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<b>12. Sponsoring Agency Name and Address</b> 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	<b>14. Sponsoring Agency Code</b> NVS-111																																																						
	<b>15. Supplementary Notes</b>																																																						
<b>16. Abstract</b> A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2014 Nissan Versa Note S 5-Door Hatchback 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 footwell intrusion performance. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on August 14, 2013.  The impact velocity of the vehicle was 56.38 km/h and the ambient temperature at the barrier face at the time of impact was 38.3 deg. C. The target vehicle's post-test maximum crush was 371 mm at DPD 4 to the right of the vehicle's centerline. The test vehicle's performance is as follows:																																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <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 (HIC<sub>15</sub>)</td> <td>N/A</td> <td>700.0</td> <td>332.9</td> <td>700.0</td> <td>404.0</td> </tr> <tr> <td>Maximum Chest Compression</td> <td>mm</td> <td>63</td> <td>-27</td> <td>52</td> <td>-14</td> </tr> <tr> <td>Nij</td> <td>N/A</td> <td>1</td> <td>0.47</td> <td>1</td> <td>0.68</td> </tr> <tr> <td>Neck Tension</td> <td>N</td> <td>4170</td> <td>1615.0</td> <td>2620</td> <td>1104.0</td> </tr> <tr> <td>Neck Compression</td> <td>N</td> <td>4000</td> <td>-623.8</td> <td>2520</td> <td>-625.9</td> </tr> <tr> <td>Left Femur Force</td> <td>N</td> <td>10008</td> <td>-3590.7</td> <td>6805</td> <td>-1903.1</td> </tr> <tr> <td>Right Femur Force</td> <td>N</td> <td>10008</td> <td>-4538.5</td> <td>6805</td> <td>-3763.3</td> </tr> </tbody> </table>				Measurement Description	Units	Driver ATD		Passenger ATD		Threshold	Result	Threshold	Result	Head Injury Criteria (HIC <sub>15</sub> )	N/A	700.0	332.9	700.0	404.0	Maximum Chest Compression	mm	63	-27	52	-14	Nij	N/A	1	0.47	1	0.68	Neck Tension	N	4170	1615.0	2620	1104.0	Neck Compression	N	4000	-623.8	2520	-625.9	Left Femur Force	N	10008	-3590.7	6805	-1903.1	Right Femur Force	N	10008	-4538.5	6805	-3763.3
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<b>17. Key Words</b> 35 mph Frontal Barrier Impact Test New Car Assessment Program (NCAP)		<b>18. Distribution Statement</b> Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave., SE Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																																																					
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## TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	Purpose and Summary of the Test	1
2	Occupant and Vehicle Information / Data Sheets	3
<u>Data Sheet No.</u>		<u>Page No.</u>
1	General Test and Vehicle Parameter Data	4
2	Seat Adjustment, Fuel Systems, and Steering Wheel Data	8
3	Dummy Longitudinal Clearance Dimensions	10
4	Dummy Lateral Clearance Dimensions	11
5	Seat Belt Positioning Data	12
6	High-Speed Camera Locations and Data	13
7	Vehicle Accelerometer Locations	15
8	Photographic Reference Target Locations	16
9	Load Cell Locations on Fixed Barrier	17
10	Test Vehicle Camera and Instrumentation Summary	18
11	Post-Test Observations	19
12	Vehicle Profile Measurements	20
13	Accident Investigation Division Data	22
14	Vehicle Intrusion Measurements	23
15	Summary of FMVSS 212, 219 (Partial), and FMVSS 301 Data	25
16	FMVSS 301 Fuel Static Rollover Data	27
17	Dummy / Vehicle Temperature Stabilization	28
<u>Appendix</u>		<u>Page No.</u>
A	Photographs	A
B	Dummy Response Data Traces	B
C	Dummy Calibration and Performance Verification Data	C

## **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 DTNH22-12-D-00259. 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 September 2012.

#### **SUMMARY**

A load cell barrier consisting of 176 load cells was impacted by a 2014 Nissan Versa Note S 5-door hatchback at a velocity of 56.38 km/h. The test was performed at KARCO Engineering, LLC. on August 14, 2013. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A of this report.

Three (3) real-time cameras 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 50<sup>th</sup> percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O 5<sup>th</sup> 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 placed on the driver and passenger's shoulder and lap 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 110 channels of dummy and vehicle response 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.

The maximum static crush of the test vehicle was 371 mm located at DPD 4 to the right of the vehicle's centerline. Both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

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

The passenger's visible contact points were as follows: The passenger ATD's head contacted the airbag and the 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 <sub>15</sub>	T <sup>1</sup>	T <sup>2</sup>	Chest Disp. (mm)	Nij	Neck Tension (N)	Neck Comp. (N)	Left Femur (N)	Right Femur (N)
Driver (50th)	332.9	72.3	87.3	-27	0.47	1615.0	-623.8	-3590.7	-4538.5
Passenger (5th)	404.0	65.5	80.5	-14	0.68	1104.0	-625.9	-1903.1	-3763.3

Photographs 47, 47b, 66, 66a on pages A-24, A-25, A-34, A-35 are displaying incorrect NHTSA number and date on the placard.

## SECTION 2

### OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

#### 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	29.574
Pressure	Tire Pressures	lbf/in <sup>2</sup>	kPa	6.895
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: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

**TEST VEHICLE INFORMATION AND OPTIONS**

NHTSA Number	M20145203
Model Year	2014
Make	Nissan
Model	Versa Note S
Body Style	5-Door Hatchback
VIN	3N1CE2CP6EL357733
Body Color	Brilliant Silver
Odometer Reading (km / mi)	97 / 60
Engine Displacement (L)	1.6
Type / No. of Cylinders	Inline 4
Engine Placement	Transverse
Transmission Type	Manual
Transmission Speeds	5
Overdrive	Yes
Final Drive	Front
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes
Automatic Door Locks (ADLs)	No

Traction Control System	Yes
Power Steering	Yes
Power Window Auto-Reverse	Yes
Driver Frontal Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Front Pass. Frontal Airbag	Yes
Front Pass. Curtain Airbag	Yes
Front Pass. Head/Torso Airbag	No
Front Pass. Torso Airbag	No
Front Pass. Torso/Pelvis Airbag	Yes
Front Pass. Pelvis Airbag	No
Front Pass. Knee Airbag	No
Driver Seat Belt Pretensioner	Yes
Driver Load Limiter	Yes
Front Pass. Seat Belt Pretensioner	Yes
Front Pass. Load Limiter	Yes
Other	No

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

**DATA FROM CERTIFICATION LABEL**

Manufactured By	Nissan Motor Co., Ltd.
Date of Manufacture	Jun-13

GVWR (kg)	1574
GAWR Front (kg)	847
GAWR Rear (kg)	755

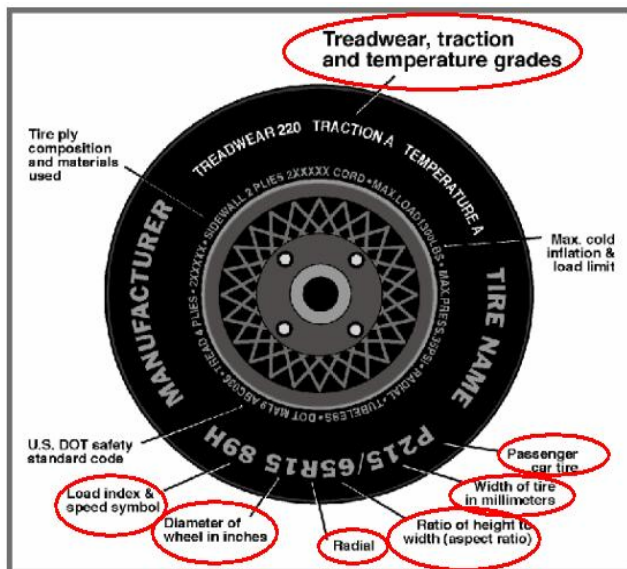
**VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION**

Measured Parameter	Front	Rear	Third	Total	
Type of Seats	Bucket	Bench			
Designated Seating Capacity	2	3		5	
Capacity Weight (VCW) (kg)				385.0	A
DSC x 68.04 (kg)				340.2	B
Cargo Weight (RCLW) (kg)				44.8	A-B

## DATA SHEET NO. 1 ... (CONTINUED)

### GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback      NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test      Test Date: 08/14/13



### VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	250	250
Recommended Tire Size	P185/65R15	P185/65R15
Tire Size on Vehicle	P185/65R15	P185/65R15
Tire Manufacturer	Continental	Continental
Tire Model	ContiPro Contact	ContiPro Contact
Treadwear	500	500
Traction	AA	AA
Temperature Grades	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Polyamide	1 Polyester, 2 Steel, 1 Polyamide
Load Index / Speed Symbol	86H	86H
Tire Material	Polyester, Steel, Polyamide	Polyester, Steel, Polyamide
DOT Safety Code Left	P5FP 3YP 2213	P5FP 3YP 2213
DOT Safety Code Right	P5FP 3YP 2213	P5FP 3YP 2213

**DATA SHEET NO. 1 ... (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

**TEST VEHICLE WEIGHTS**

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	340.0	225.5		378.5	280.0	
Right	kg	305.0	216.0		338.0	269.5	
Ratio	%	59.4%	40.6%	100.0%	56.6%	43.4%	100.0%
Total	kg	645.0	441.5	1086.5	716.5	549.5	1266.0

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1086.5	A
Weight of 1 P572E ATD & 1 P572O ATD	kg	141.0	B
Rated Cargo/Luggage Weight (RCLW)	kg	44.8	C
Calculated Vehicle Target Weight (TVTW)	kg	1272.3	A+B+C

**TEST VEHICLE ATTITUDES**

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	688	695	677	680	1052
As Tested	mm	674	679	657	662	1124
Post-Test	mm	661	662	659	651	

**GENERAL TEST VEHICLE DATA**

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	2591
Total Vehicle Length at Left Side	mm	3475
Total Vehicle Length at Centerline	mm	4132
Total Vehicle Length at Right Side	mm	3482
Weight of Ballast in Cargo Area	kg	82.5
Weight of Vehicle Components Removed	kg	40.0
Amount of Stoddard Solvent in Fuel Tank	L	38.02

**VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:**

Rear door panels (3.0 kg), Rear side trim panels (2.0 kg), Spare tire and tools (14.0 kg), Rear bumper fascia (3.0 kg), Rear seat cushion (4.0 kg), Rear bumper beam (6.0 kg), Rear windows (5.0 kg), Rear headrests (1.0 kg), Tail lights (2.0 kg)

**DATA SHEET NO. 1 ... (CONTINUED)**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

**TARGET VEHICLE STRUCTURAL MEASUREMENTS**

No.	Description	Pre-Test
1	Total Length	4132
2	Total Width	1690
3	Bumper Top Height	585
4	Bumper Bottom Height	295
5	Longitudinal Member Top Height	550
6	Distance Between Longitudinal Members	870
7	Longitudinal Member Width	60
8	Engine Top Height	840
9	Engine Bottom Height	886
10	Engine and Gearbox Width	460
11	Front Bumper to Engine Distance	480
12	Front Shock Absorber Fixing Height	850
13	Bonnet Leading Edge Height	810
14	Front Shock Absorber Fixing Width	1120
15	Front Bumper to Front Axle Distance	823
16	Front Axle to A-Pillar Distance	438
17	A-Pillar to B-Pillar Distance	956
18	B-Pillar to Rear Axle Distance	1058
19	B-Pillar to C-Pillar Distance	826
20	Roof Sill Bottom Height	1383
21	Roof Sill Top Height	1488
22	Floor Sill Bottom Height	189
23	Floor Sill Top Height	310

All measurements in millimeters.

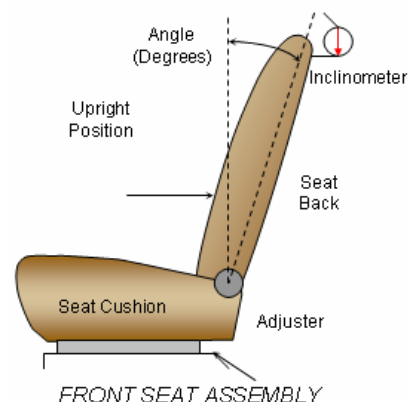
## DATA SHEET NO. 2

### SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback      NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test      Test Date: 08/14/13

#### 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.

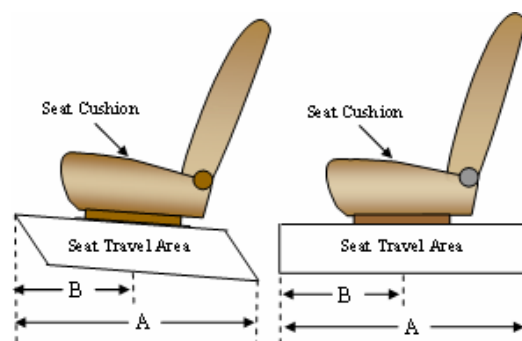


#### SEAT BACK ANGLE

Seating Position	Degrees
Driver Seat Back Angle	0.4
Passenger Seat Back Angle	0.6

#### SEAT FORE / AFT POSITIONING

The total seat travel is measured from the forward most possible position to the rear most possible position. The driver’s seat is set to the middle of the fore-aft travel. The passenger’s seat is set to the forward most position where the ATD will not contact any interior panels.



#### SEAT FORE/AFT POSITIONS

Seating Position	Total Fore-Aft Travel	Placed in Position
Driver Seat	240 mm	120 mm
Passenger Seat	240 mm	0 mm

#### SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer’s design position for a 50<sup>th</sup> percentile adult male ATD for the driver, and a 5<sup>th</sup> percentile adult female ATD for the passenger. Position “H” is the uppermost position, followed by position “M1”. Position “L” is the lowermost position.

#### SEAT BELT UPPER ANCHORAGES

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

## DATA SHEET NO. 2 ... (CONTINUED)

### SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

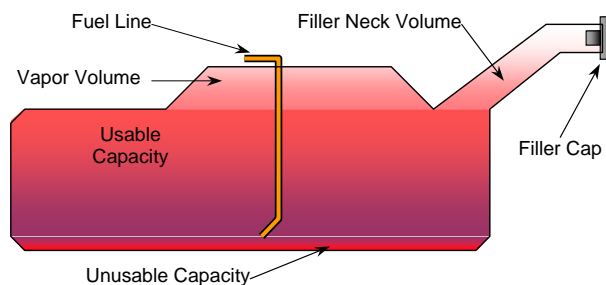
Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

#### FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	40.88
Usable Capacity of "Optional Tank"	
92 - 94% of Usable Capacity	37.61 to 38.43
Actual Amount of Stoddard Solvent Used	38.02
1/3 of Usable Capacity	13.63

#### FUEL PUMP

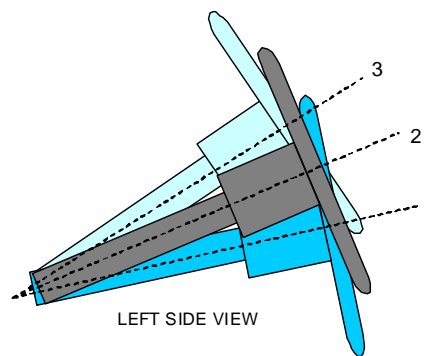
The vehicle is equipped with an electric fuel pump. The fuel pump will pump fuel for 1.0 second after the ignition is switched to the "ON" position and while the engine is running.



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 to measure telescoping steering wheel travel.



STEERING COLUMN ASSEMBLY

#### STEERING COLUMN POSITIONING

	Degrees	Fore-Aft Position (mm)
Lowermost Position, No. 1	24.0	Fixed
Geometric Center Position, No. 2	26.1	Fixed
Uppermost Position, No. 3	28.3	Fixed
Telescoping Steering Wheel Travel		
Test Position	26.1	Fixed

### DATA SHEET NO. 3

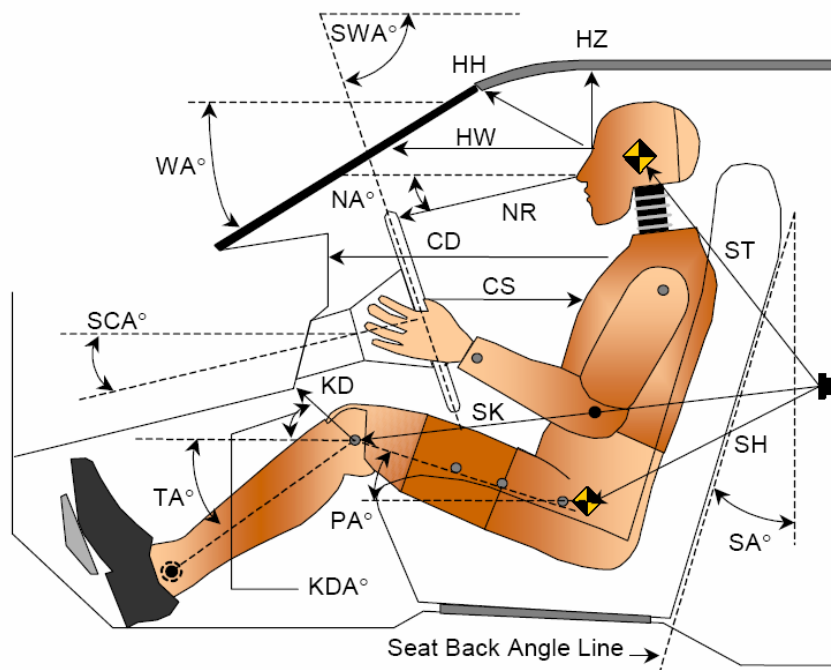
#### DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback

NHTSA No.: M20145203

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 08/14/13



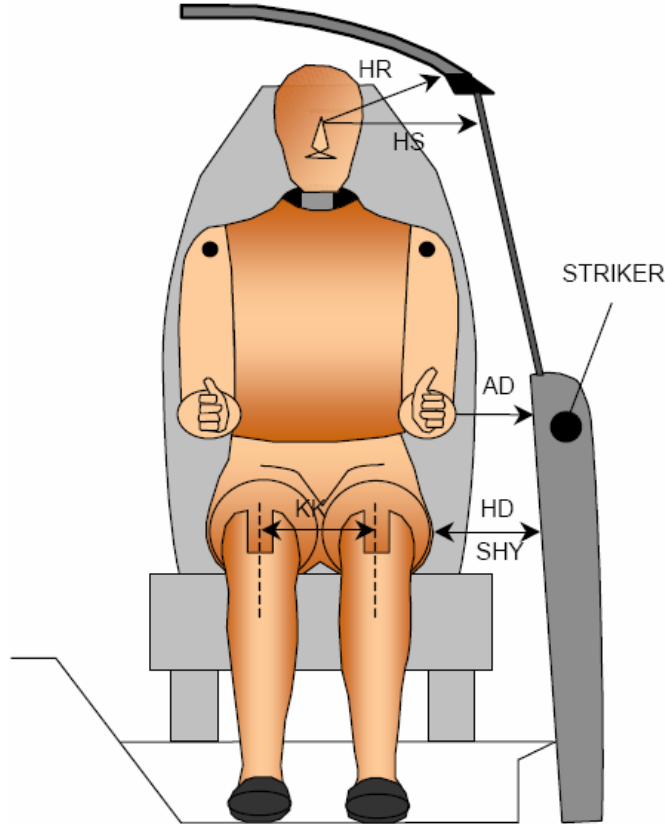
**LEFT SIDE VIEW**

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		24.2		
SWA°	Steering Wheel Angle		63.9		
SCA°	Steering Column Angle		26.1		
SA°	Seat Back Angle (On Headrest Post)		0.4		0.6
HZ	Head to Roof	194	90.0	247	90.0
HH	Head to Header	345	26.7	329	50.0
HW	Head to Windshield	688	0.0	739	0.0
NR	Nose to Rim	410	13.8	458	25.3
CD	Chest to Dash	545	8.8	406	16.8
CS	Chest to Steering Hub	297	0.0		
RA	Rim to Abdomen	207	0.0		
KDL	Left Knee to Dash	149	26.0	68	31.3
KDR	Right Knee to Dash	132	28.0	83	36.4
PA°	Pelvic Angle		23.2		22.0
TA°	Tibia Angle		47.7		56.4
SK	Striker to Knee	609	0.6	718	3.0
ST	Striker to Head	566	76.3	509	62.7
SH	Striker to H-Point	273	23.7	416	14.0

## DATA SHEET NO. 4

### DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback      NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test      Test Date: 08/14/13



Code	Description	Driver (mm)	Passenger (mm)
AD	Arm to Door	72	57
HD	H-Point to Door	129	197
HR	Head to Side Header	240	287
HS	Head to Side Window	332	348
KK	Knee to Knee	350	222
SHY	Striker to H-Point (Y-Direction)	244	290
AA	Ankle to Ankle	330	160

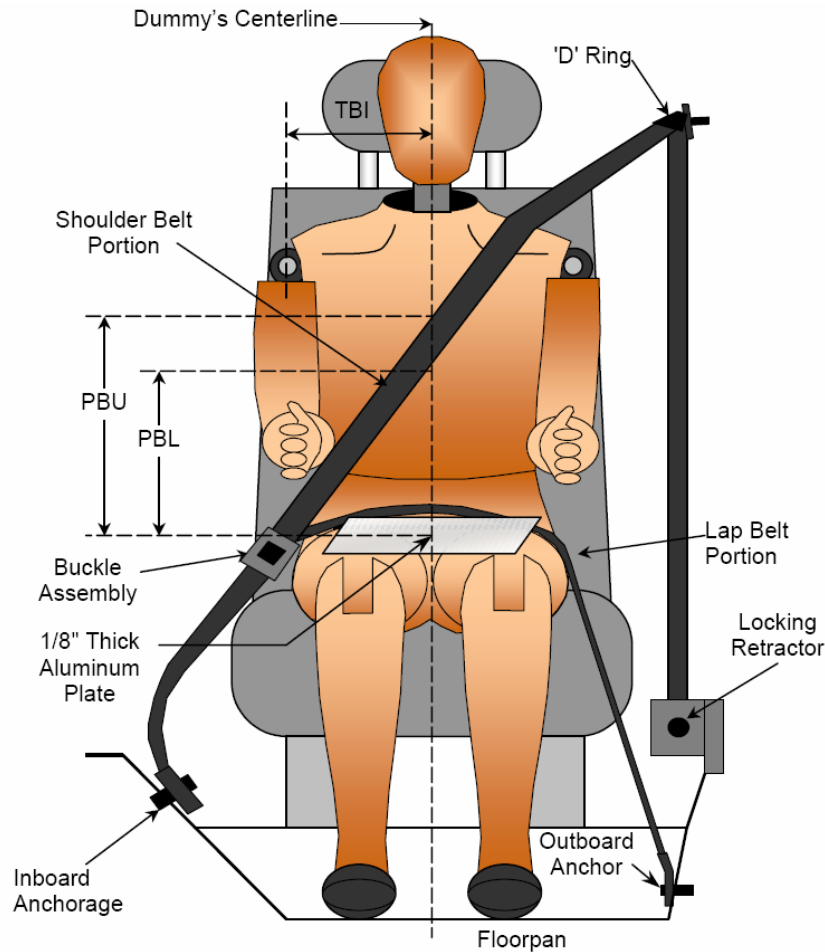
**DATA SHEET NO. 5**  
**SEAT BELT POSITIONING DATA**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback

NHTSA No.: M20145203

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 08/14/13



**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	412	338
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	330	250

**BELT LENGTH DATA**

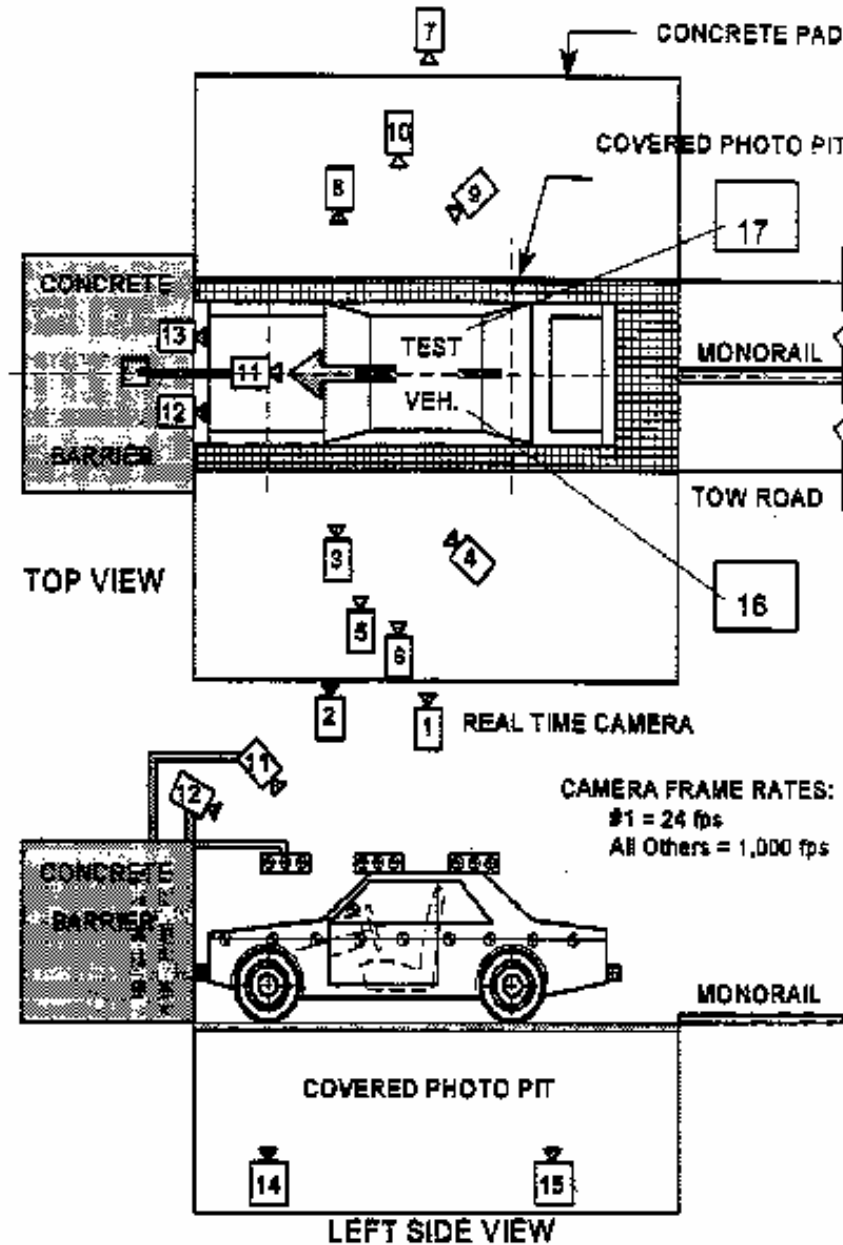
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	935	1000
Lap Belt Length as Measured on ATD	mm	888	964
Remainder of Belt on Reel	mm	928	811
Total Belt Length for Continuous Webbing Systems	mm	2751	2775

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

CAMERA POSITIONS FOR FRONTAL IMPACTS



**DATA SHEET NO. 6 ... (CONTINUED)**

**HIGH-SPEED CAMERA LOCATIONS AND DATA**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback      NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test      Test Date: 08/14/13

**CAMERA LOCATIONS**

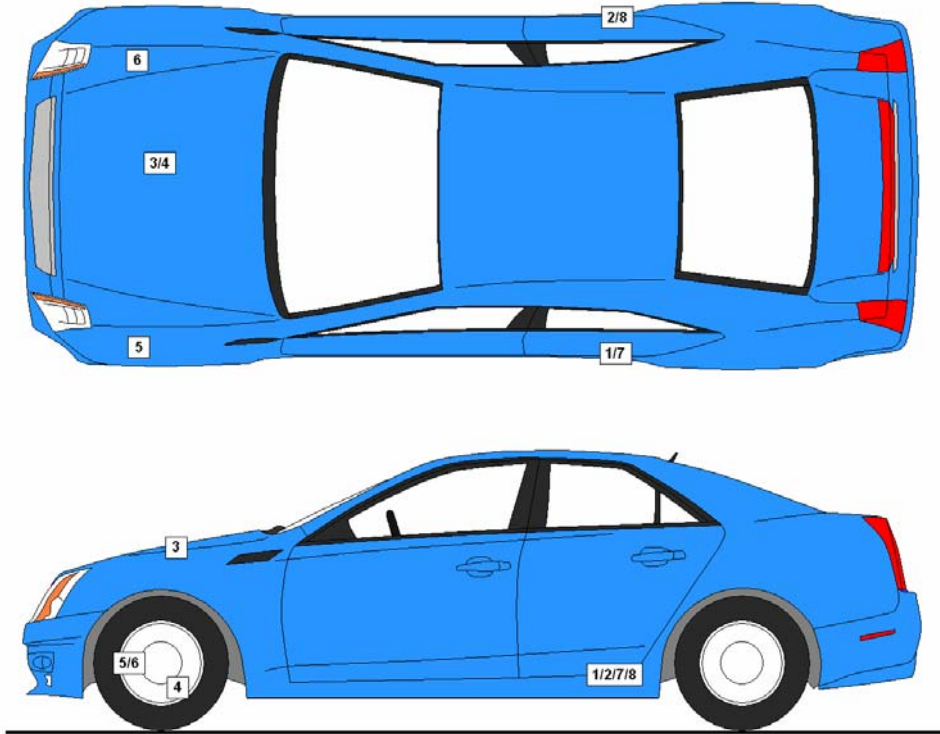
No.	Description	Location (mm)			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Real-Time Left Overall	-11412	-8150	-1484		30
2	Driver Close-Up	-2590	-7950	-1371	24	1000
3	Left Front Half	-1701	-6197	-1701	50	1000
4	Left Angle	-6696	-10308	-3211	ZOOM	1000
5	Steering Column - Top	-1966	-10412	-3688	50	1000
6	Steering Column - Bottom	-1972	-10412	-3379	50	1000
7	Right Overall	-2336	7569	-1012	24	1000
8	Passenger Close-Up	-1733	7581	-1408	50	1000
9	Right Front Half	-1600	8214	-1811	ZOOM	1000
10	Right Angle	-6217	9516	-4830	ZOOM	1000
11	Windshield	-354	0	-5749	12	1000
12	Driver Windshield	297	-366	-2460	12	1000
13	Passenger Windshield	297	366	-2460	24	1000
14	Pit Front	-756	0	1495	12	1000
15	Pit Rear	-3398	0	1495	8	1000
16	Onboard Driver Airbag (Optional)	-2932	250	-1320	12	1000
17	Onboard Passenger Airbag (Optional)	-2932	-250	-1320	12	1000
18	Real-Time Left View of Impact					
19	Real-Time Right View of Impact					

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

**DATA SHEET NO. 7**

**VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13



**VEHICLE ACCELEROMETER PRE-TEST LOCATIONS**

No.	Description	Location		
		X	Y	Z
1	Left Rear Accelerometer X-Direction	1556	-670	-335
2	Right Rear Accelerometer X-Direction	1556	670	-335
3	Engine Top X	3477	368	-796
4	Engine Bottom X	3520	345	-192
5	Left Rear Accelerometer Z-Direction	1556	-670	-335
6	Right Rear Accelerometer Z-Direction	1556	670	-335

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

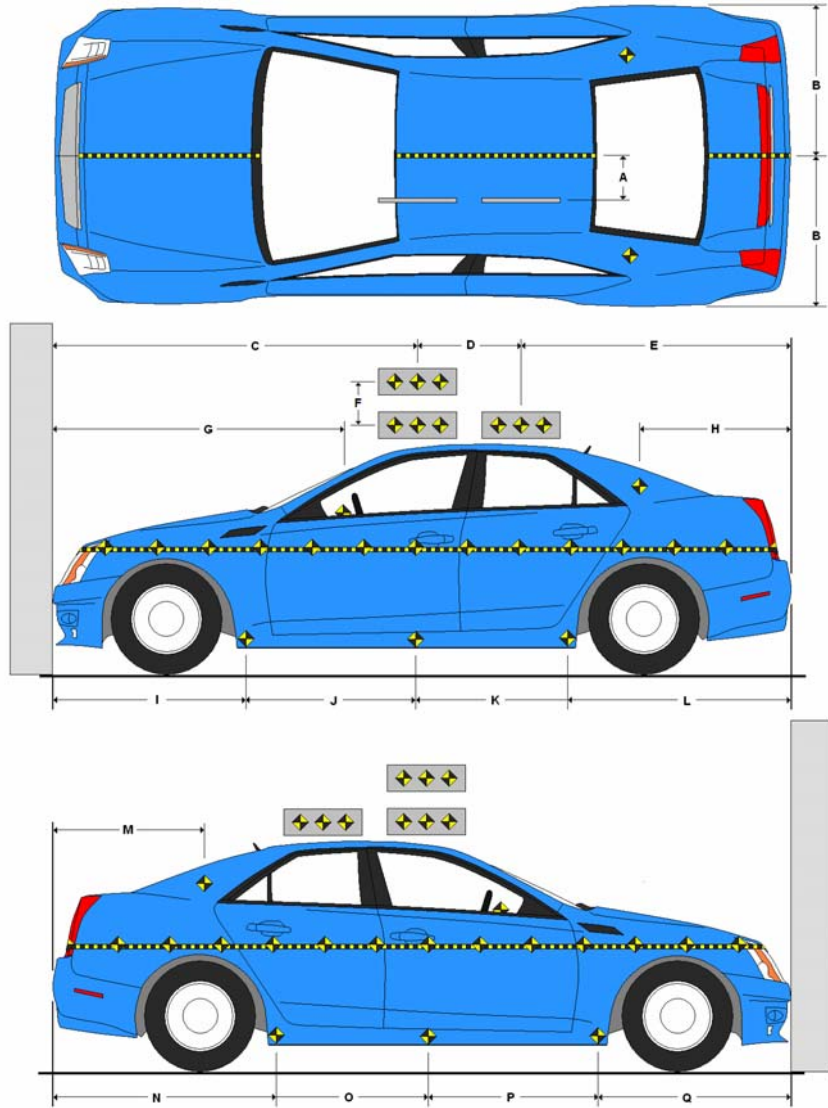
**DATA SHEET NO. 8**

**PHOTOGRAPHIC REFERENCE TARGET LOCATIONS**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

Item	Value
A	
B	845
C	1970
D	610
E	1555
F	305
G	1525
H	538
I	1245
J	880
K	880
L	1119
M	545
N	1122
O	882
P	882
Q	1232



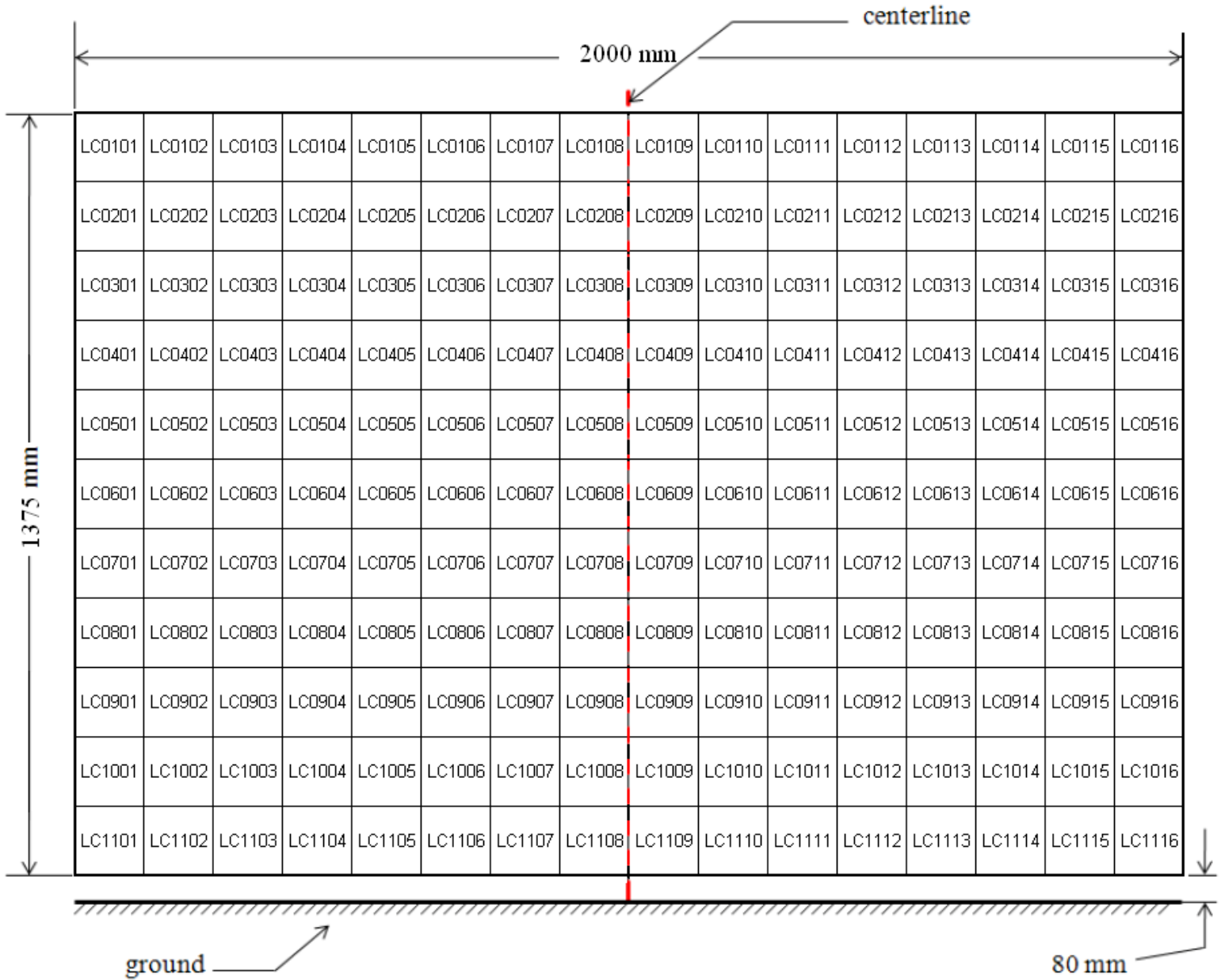
All measurements in millimeters.

**DATA SHEET NO. 9**

**LOAD CELL LOCATIONS ON FIXED BARRIER**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13



## DATA SHEET NO. 10

### TEST VEHICLE CAMERA AND INSTRUMENTATION SUMMARY

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

#### INSTRUMENTATION

Driver Dummy Accelerometers	50
Passenger Dummy Accelerometers	50
Vehicle Structure Accelerometers	8
Seat Belt Load Cells	4
Load Cell Barrier	528
Total	640

#### CAMERA COVERAGE

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

**DATA SHEET NO. 11**  
**POST-TEST OBSERVATIONS**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

**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 Column	Glovebox
Right Knee Contact	Knee Bolster, 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)	2	2
Seat Back Failure	None	None
Glazing Damage	None	None

**POST TEST STRUCTURAL OBSERVATIONS**

Critical Areas of Performance	Observations and Conclusions
Windshield Damage	Broken
Window Damage	Right front quarter window broken
Other Notable Effects	Passenger side Torso/Pelvis and Curtain Airbags deployed

**VEHICLE REBOUND FROM BARRIER**

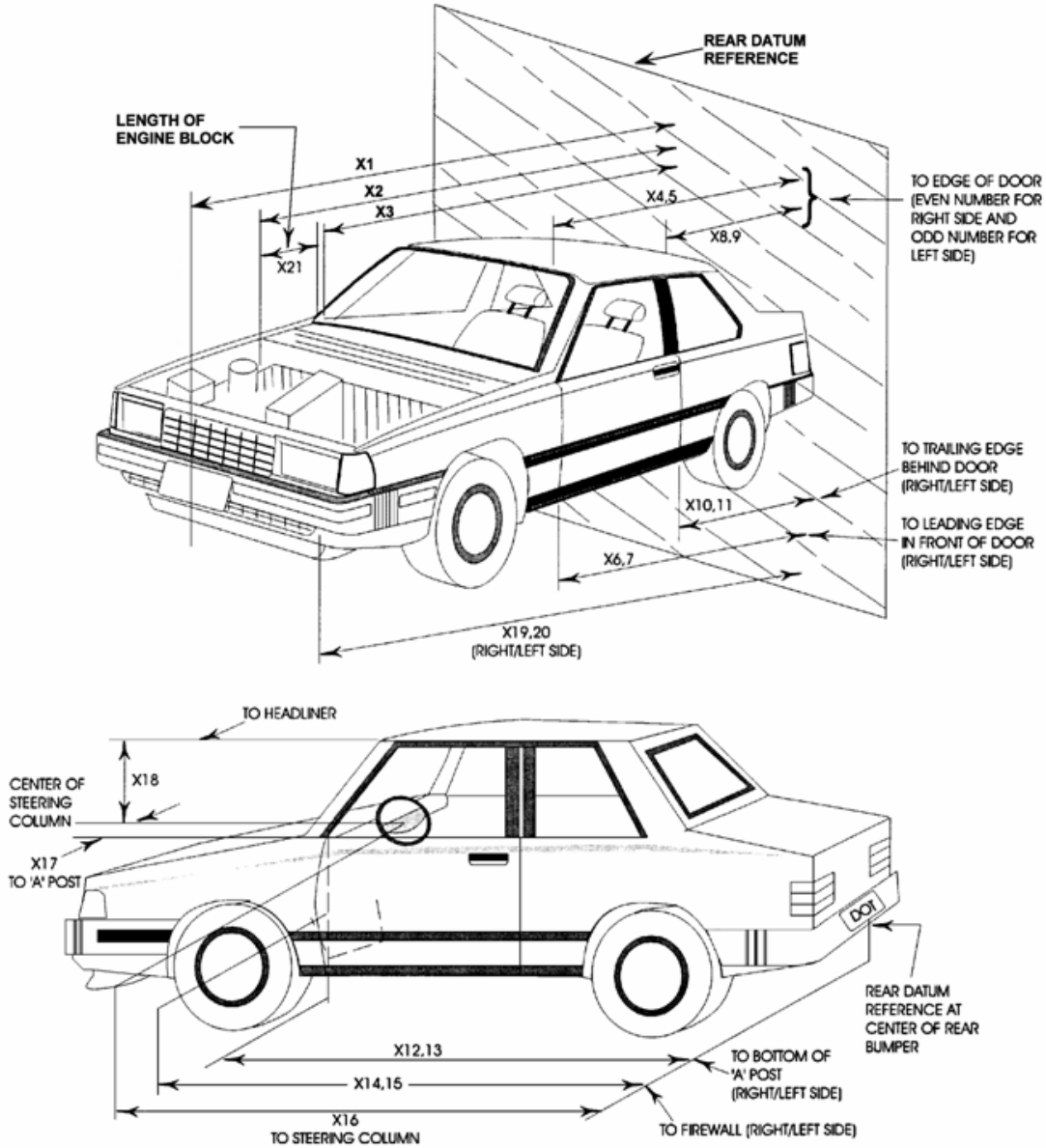
Measured Parameter	Units	Value
Left Side	mm	1961
Center	mm	1861
Right Side	mm	2116
Average	mm	1979

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Driver		Passenger	
	Installed	Operated	Installed	Operated
Front Airbag	Yes	Yes	Yes	Yes
Side Airbag 1 (Curtain)	Yes	No	Yes	Yes
Side Airbag 2 (Torso/Pelvis)	Yes	No	Yes	Yes
Knee Airbag	No		No	
Seat Belt Pretensioner	Yes	Yes	Yes	Yes
Seat Belt Load Limiter	Yes	Yes	Yes	Yes
Other	No		No	

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

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback      NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test      Test Date: 08/14/13



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

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	4132	3770	-362
2	Rear Surface of Vehicle to Front of Engine	3282	3342	60
3	RSOV to Firewall	3252	3122	-130
4	RSOV to Upper Leading Edge of Right Door	2900	2890	-10
5	RSOV to Upper Leading Edge of Left Door	2879	2894	15
6	RSOV to Lower Leading Edge of Right Door	2882	2862	-20
7	RSOV to Lower Leading Edge of Left Door	2874	2873	-1
8	RSOV to Upper Trailing Edge of Right Door	1760	1755	-5
9	RSOV to Upper Trailing Edge of Left Door	1750	1776	26
10	RSOV to Lower Trailing Edge of Right Door	1755	1741	-14
11	RSOV to Lower Trailing Edge of Left Door	1749	1749	0
12	RSOV to Bottom of A-Pillar, Right Side	2780	2788	8
13	RSOV to Bottom of A-Pillar, Left Side	2776	2793	17
14	RSOV to Firewall, Right Side	3227	3129	-98
15	RSOV to Firewall, Left Side	3212	3177	-35
16	RSOV to Steering Column	2395	2460	65
17	Center of Steering Column to A-Pillar	410	410	0
18	Center of Steering Column to Headliner	415	410	-5
19	RSOV to Right Side of Front Bumper	3482	3376	-106
20	RSOV to Left Side of Front Bumper	3475	3410	-65
21	Length of Engine Block	620	620	0
RD	RSOV to Right Side of Dash Panel	2640	2590	-50
CD	RSOV to Center of Dash Panel	2550	2485	-65
LD	RSOV to Left Side of Dash Panel	2580	2615	35

All measurements in millimeters.

**DATA SHEET NO. 13**  
**ACCIDENT INVESTIGATION DATA**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

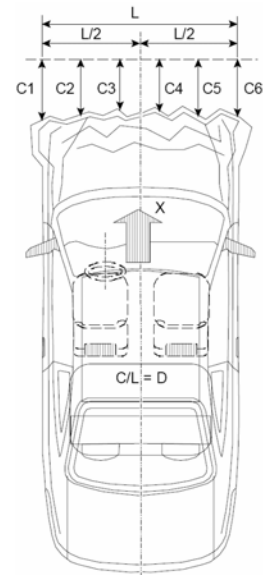
**VEHICLE INFORMATION**

VIN: 3N1CE2CP6EL357733 Wheelbase (mm): 2590  
 Vehicle Size Category: 5-Door Hatchback Test Weight (kg): 1266.0

**ACCELEROMETER DATA**

Accelerometer Locations: Left Rear Crossmember  
 Cal. Procedure/Interval: Drop Test / 6 months  
 Integration Algorithm: NHTSA Standard  
 Impact Velocity (km/h): 56.38  
 Velocity Change (km/h): 63.9  
 Time of Separation (msec): 71.6

Linearity: Good



**CRUSH PROFILE**

Collision Deformation Classification: 12FDEW2  
 Midpoint of Damage: Vehicle Centerline  
 Damage Region Length (mm): 1376  
 Impact Mode: Full Frontal

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	270	520	250
C2	Crush Zone 2 at Left Side	mm	65	390	325
C3	Crush Zone 3 at Left Side	mm	15	370	355
C4	Crush Zone 4 at Right Side	mm	15	386	371
C5	Crush Zone 5 at Right Side	mm	65	430	365
C6	Crush Zone 6 at Right Side	mm	270	552	282
L	C1 to C6	mm	1376		

**DATA SHEET NO. 14**

**VEHICLE INTRUSION MEASUREMENTS**

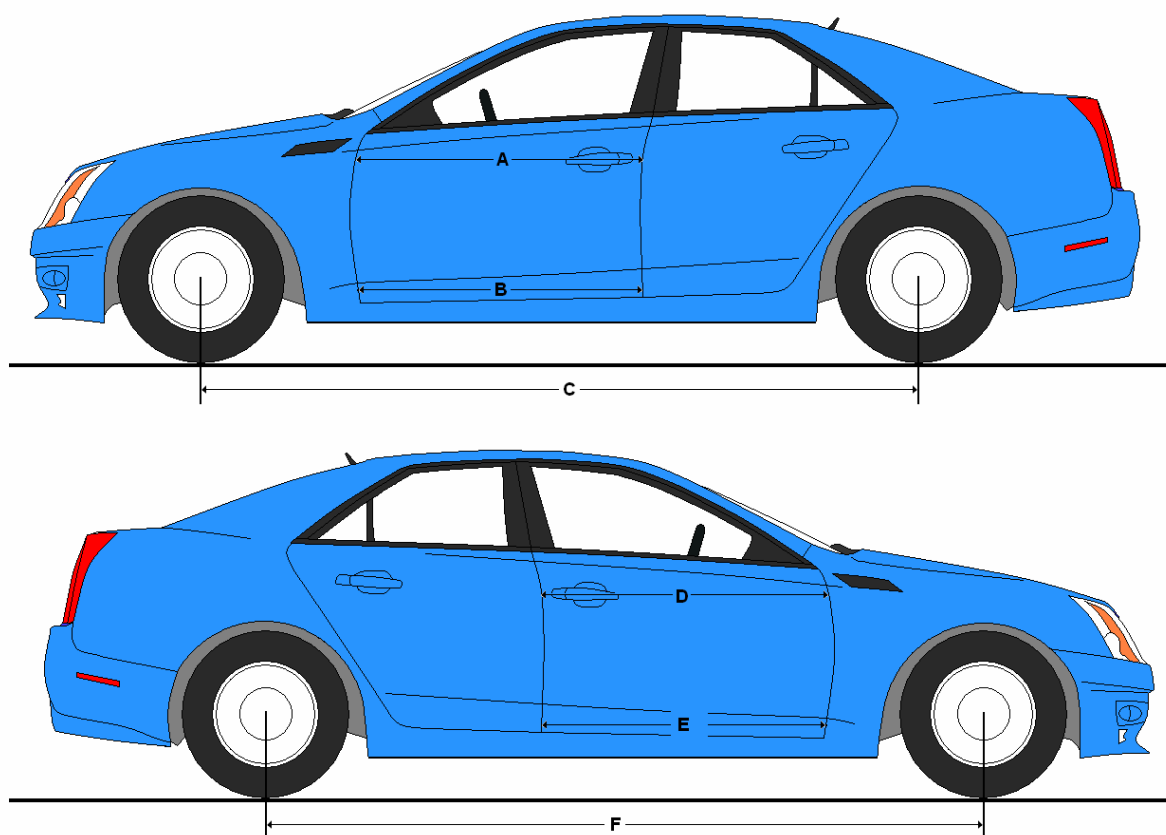
Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

**DOOR OPENING WIDTH**

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	956	953	3
B	Left Side Lower	mm	976	973	3
D	Right Side Upper	mm	956	946	10
E	Right Side Lower	mm	1006	993	13

**WHEELBASE MEASUREMENTS**

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2591	2525	66
F	Right Side Wheelbase	mm	2591	2535	56



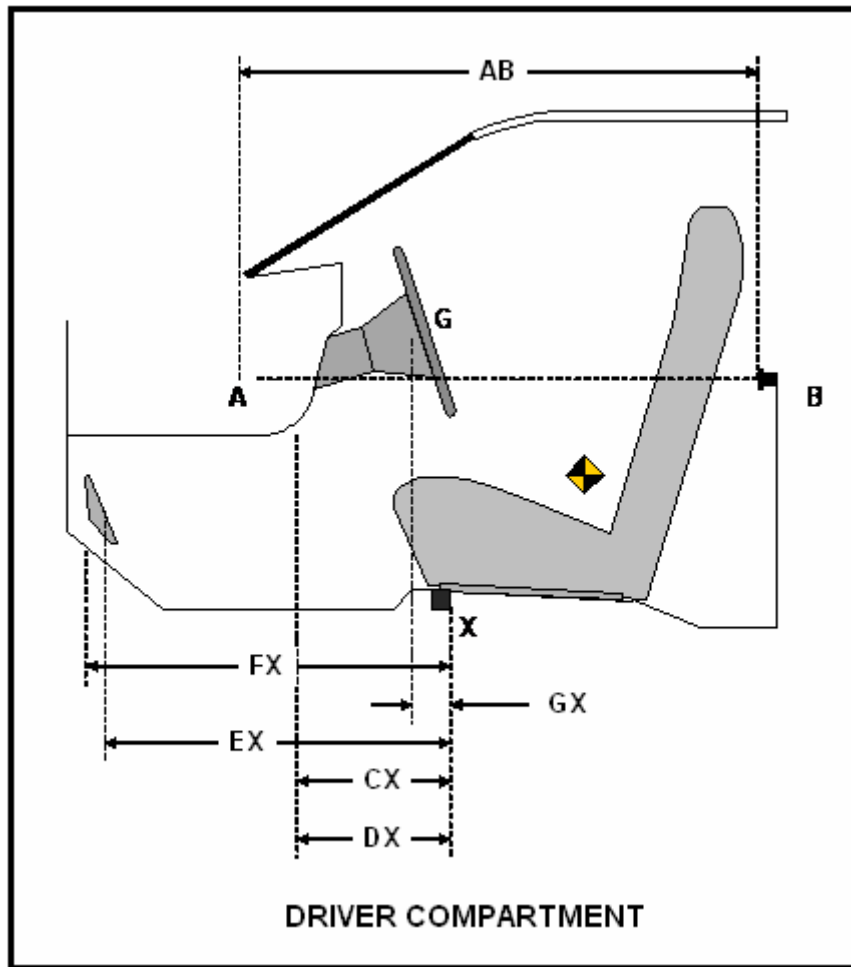
**DATA SHEET NO. 14 ... (CONTINUED)**  
**VEHICLE INTRUSION MEASUREMENTS**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback      NHTSA No.: M20145203  
 Test Program: 56 km/h Frontal Impact NCAP Test      Test Date: 08/14/13

**DRIVER COMPARTMENT INTRUSION**

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	901	893	8
CX	Left Knee Bolster to X	mm	290	270	20
DX	Right Knee Bolster to X	mm	290	245	45
EX	Brake Pedal to X	mm	525	405	120
FX	Foot Rest to X	mm	540	575	-35
GX	Center of Steering Wheel Hub to X	mm	50	90	-40

X = Front of Seat Track (Stationary)



**DATA SHEET NO. 15**

**SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

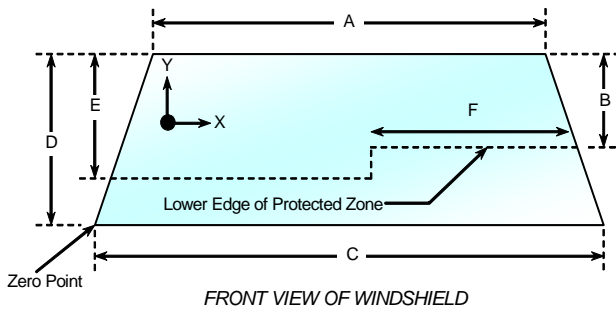
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with plastic molding and rubber cement.

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	2174	2174	100.0%
Right Side	2174	2174	100.0%
Total	4348	4348	100.0%



Item	Units	Value
A	mm	1113
B	mm	442
C	mm	1320
D	mm	957
E	mm	586
F	mm	480

**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. 15 ... (CONTINUED)**

**SUMMARY OF FMVSS 212, 219 (PARTIAL), AND 301 DATA**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203  
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13

**FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA**

Temperature at Time of Impact: 38.3° C Test Time: 1:36 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: There was no Stoddard solvent spillage.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

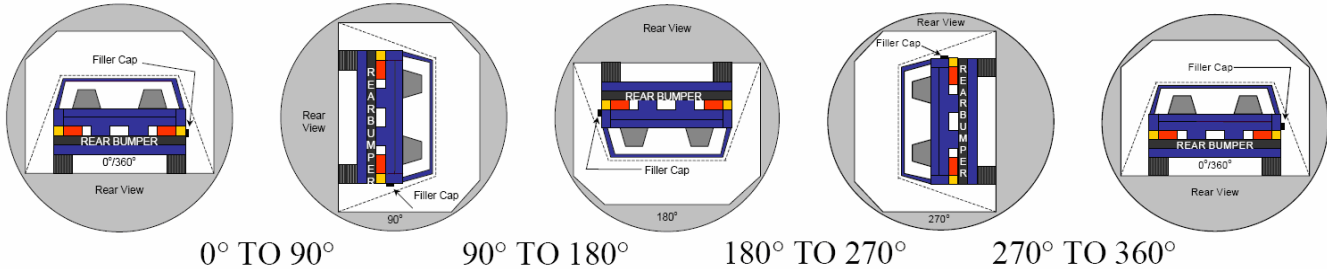
**DATA SHEET NO. 16**  
**FMVSS 301 STATIC ROLLOVER**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback

NHTSA No.: M20145203

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 08/14/13



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: There was no Stoddard solvent spillage.

**SOLVENT COLLECTION TIME TABLE IN SECONDS**

Test Phase	Rotation Time	Hold Time	Total Time
0° To 90°	84	309	393
90° To 180°	83	300	383
180° To 270°	79	300	379
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			
90° To 180°	0			
180° To 270°	0			
270° To 360°	0			

**SOLVENT SPILLAGE LOCATION TABLE**

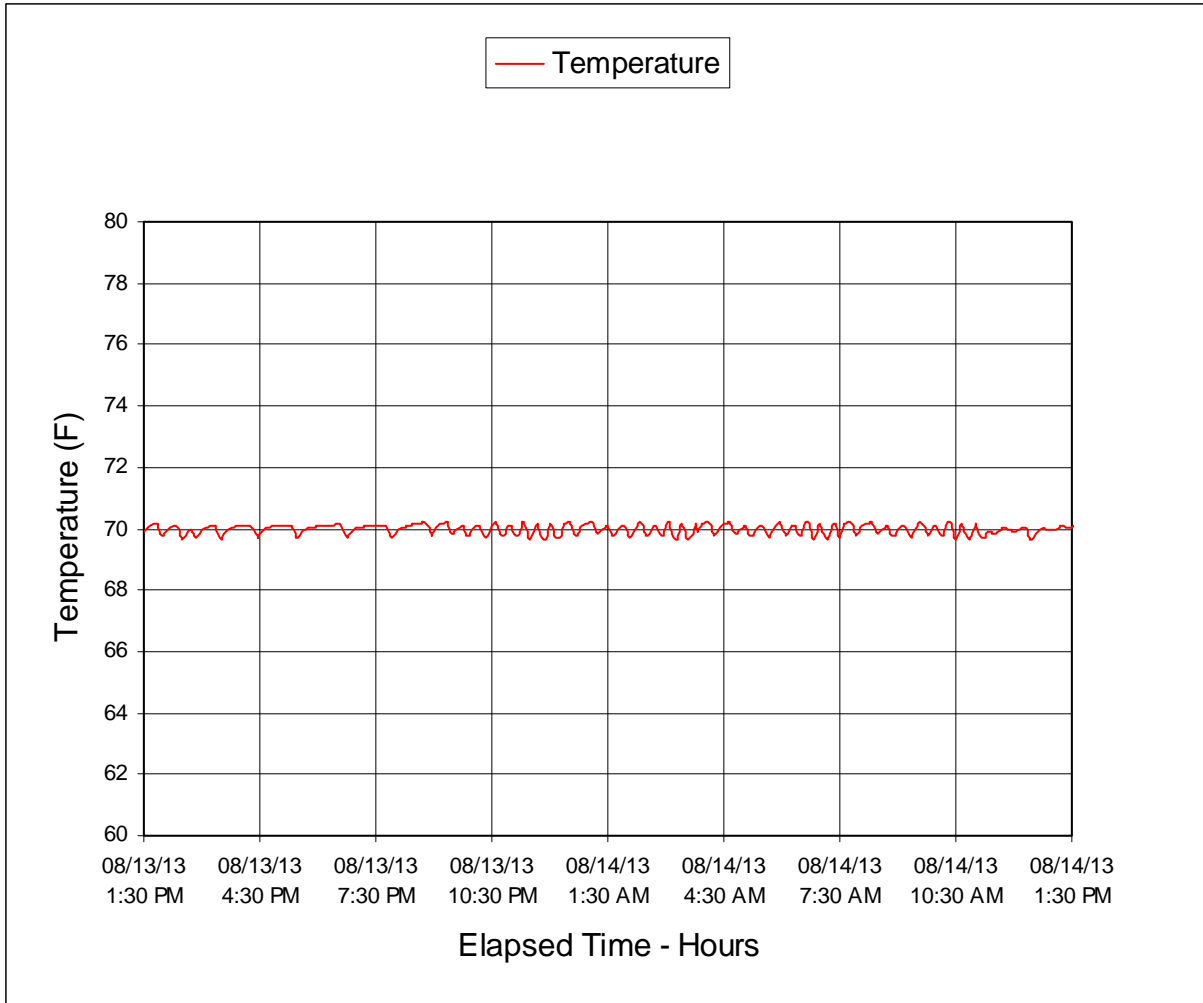
Test Phase	Spillage Location
0° To 90°	
90° To 180°	
180° To 270°	
270° To 360°	

**DATA SHEET NO. 17**

**DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART**

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback NHTSA No.: M20145203

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 08/14/13



**APPENDIX A  
PHOTOGRAPHS**

## TABLE OF PHOTOGRAPHS

Figure		Page
1	Load Cell Location	A-1
2	Load Cell Wall	A-1
3	Manufacturer's Label	A-2
4	Tire Placard	A-2
5	2014 Nissan Versa Note Frontal as Delivered	A-3
6	Left Rear $\frac{3}{4}$ View, as Received	A-3
7	Pre-Test Front View of Test Vehicle	A-4
8	Post-Test Front View of Test Vehicle	A-4
9	Pre-Test Left View of Test Vehicle	A-5
10	Post-Test Left View of Test Vehicle	A-5
11	Pre-Test Right View of Test Vehicle	A-6
12	Post-Test Right View of Test Vehicle	A-6
13	Pre-Test Right Front $\frac{3}{4}$ View	A-7
14	Post-Test Right Front $\frac{3}{4}$ View	A-7
15	Pre-Test Left Rear $\frac{3}{4}$ View	A-8
16	Post-Test Left Rear $\frac{3}{4}$ View	A-8
17	Pre-Test Windshield View	A-9
18	Post-Test Windshield View	A-9
19	Pre-Test Engine Compartment View	A-10
20	Post-Test Engine Compartment View	A-10
21	Pre-Test Fuel Filler Cap View	A-11
22	Post-Test Fuel Filler Cap View	A-11
23	Pre-Test Front Underbody View	A-12
24	Post-Test Front Underbody View	A-12
25	Pre-Test Rear Underbody View	A-13
26	Post-Test Rear Underbody View	A-13
27	Pre-Test Dummy Cable Routing	A-14
28	Post-Test Dummy Cable Routing	A-14
29	Pre-Test Driver Dummy Front View	A-15
30	Post-Test Driver Dummy Front View	A-15
31	Pre-Test Driver Dummy Window View	A-16
32	Post-Test Driver Dummy Window View	A-16
33	Pre-Test Driver Dummy and Vehicle Interior View	A-17
34	Post-Test Driver Dummy and Vehicle Interior View	A-17
35	Pre-Test Driver's Seat Fore-Aft Markings	A-18

## TABLE OF PHOTOGRAPHS ... (CONTINUED)

<u>Figure</u>		<u>Page</u>
36	Post-Test Driver's Seat Fore-Aft Markings	A-18
37	Pre-Test View of Belt Anchorage for Driver Dummy	A-19
38	Post-Test View of Belt Anchorage for Driver Dummy	A-19
39	Pre-Test Driver Dummy Feet	A-20
40	Post-Test Driver Dummy Feet	A-20
41	Pre-Test Driver's Side Knee Bolster	A-21
42	Post-Test Driver's Side Knee Bolster	A-21
43	Pre-Test Driver's Side Floorpan	A-22
44	Post-Test Driver's Side Floorpan	A-22
45	Post-Test Driver Dummy Face	A-23
46	Post-Test Driver Dummy Contact With Airbag	A-23
47	Post-Test Driver Dummy Contact With Headrest	A-24
47a	Post-Test Driver Dummy Contact With Knee Bolster	A-24
47b	Post-Test Driver Dummy Contact with Steering Column	A-25
48	Pre-Test View of the Steering Wheel	A-25
49	Post-Test View of the Steering Wheel	A-26
50	Pre-Test Passenger Dummy Front View	A-26
51	Post-Test Passenger Dummy Front View	A-27
52	Pre-Test Passenger Dummy Window View	A-27
53	Post-Test Passenger Dummy Window View	A-28
54	Pre-Test Passenger Dummy and Vehicle Interior View	A-28
55	Post-Test Passenger Dummy and Vehicle Interior View	A-29
56	Pre-Test Passenger's Seat Fore-Aft Markings	A-29
57	Post-Test Passenger's Seat Fore-Aft Markings	A-30
58	Pre-Test View of Belt Anchorage for Passenger Dummy	A-30
59	Post-Test View of Belt Anchorage for Passenger Dummy	A-31
60	Pre-Test Passenger Dummy Feet	A-31
61	Post-Test Passenger Dummy Feet	A-32
62	Pre-Test Passenger's Side Knee Bolster	A-32
63	Post-Test Passenger's Side Knee Bolster	A-33
64	Pre-Test Passenger's Side Floorpan	A-33
65	Post-Test Passenger's Side Floorpan	A-34
66	Post-Test Passenger Dummy Contact With Airbag	A-34
66a	Post-Test Passenger Dummy Contact With Headrest	A-35
66b	Post-Test Passenger Dummy Contact With Glovebox	A-35

## TABLE OF PHOTOGRAPHS ... (CONTINUED)

<u>Figure</u>		<u>Page</u>
67	Photograph of Ballast Installed in Vehicle	A-36
68	Post-Test Stoddard Solvent Spillage Location View	A-36
69	Post-Test Speed Trap Read-Out	A-37
70	Vehicle at 0° on Static Rollover Device	A-37
71	Vehicle at 90° on Static Rollover Device	A-38
72	Vehicle at 180° on Static Rollover Device	A-38
73	Vehicle at 270° on Static Rollover Device	A-39
74	Vehicle at 360° on Static Rollover Device	A-39
75	2014 Nissan Versa Note Frontal Impact Event	A-40
76	Monroney Label Photograph	A-40

Photographs 47, 47b, 66, 66a on pages A-24, A-25, A-34, A-35 are displaying incorrect NHTSA number and date on the placard.

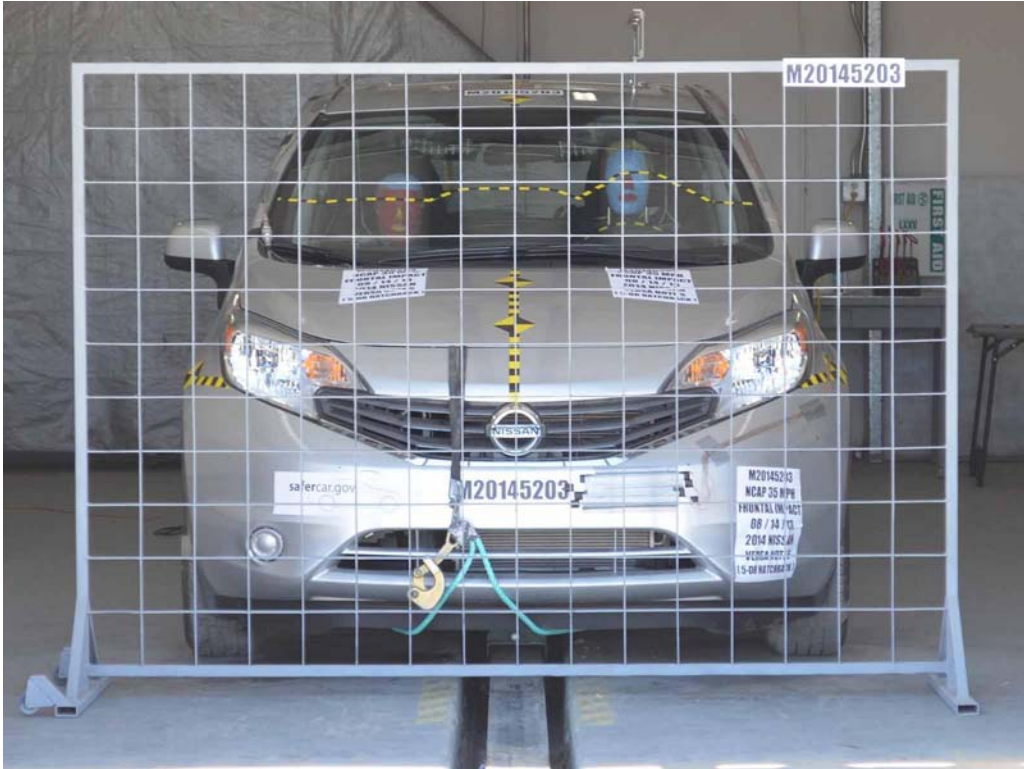


FIGURE 1. Load Cell Location

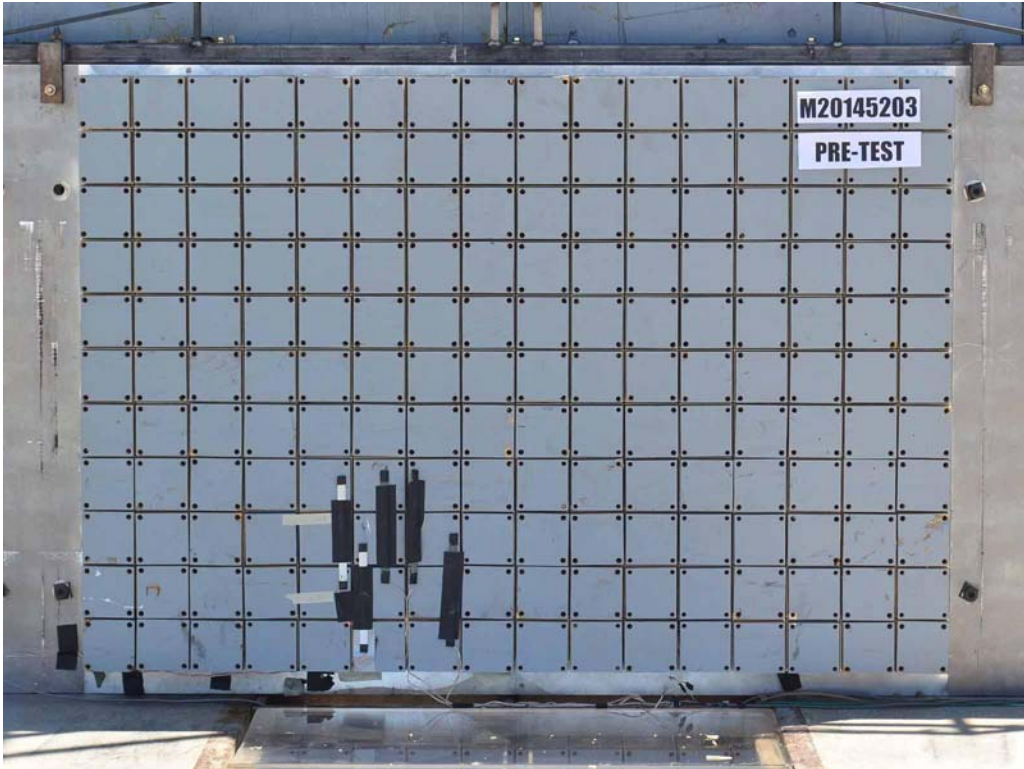


FIGURE 2. Load Cell Wall



FIGURE 3. Manufacturer's Label



FIGURE 4. Tire Placard



FIGURE 5. 2014 Nissan Versa Note Frontal As Delivered



FIGURE 6. Left Rear ¾ View, As Received



FIGURE 7. Pre-Test Front View of Test Vehicle

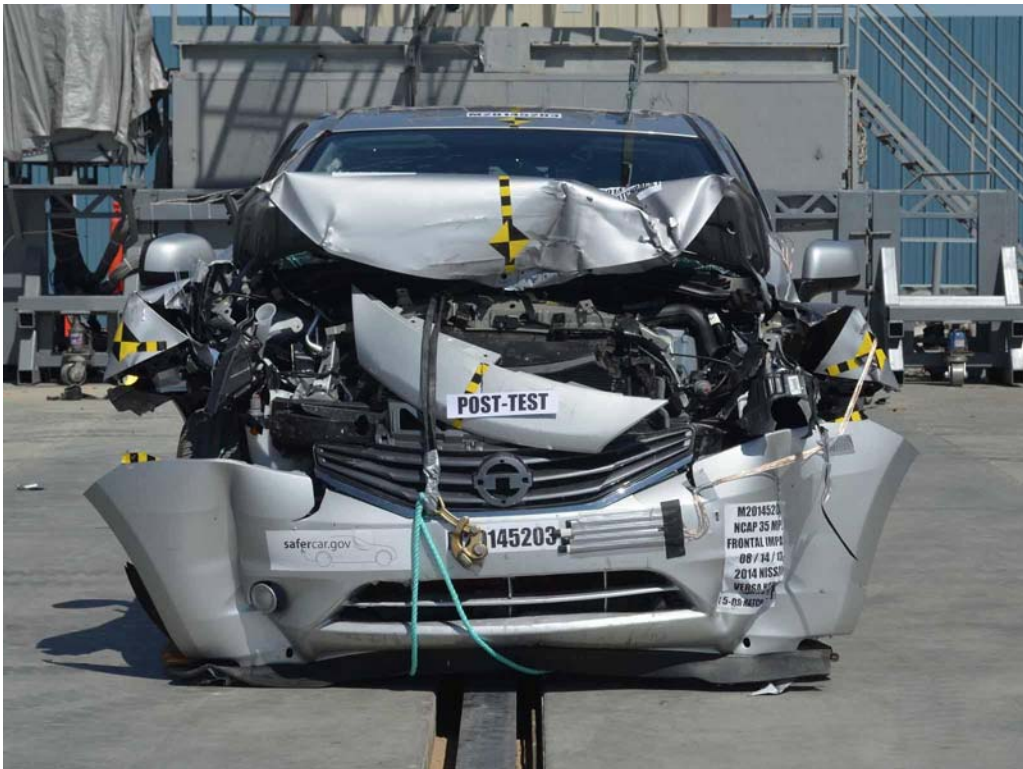


FIGURE 8. Post-Test Front View of Test Vehicle



FIGURE 9. Pre-Test Left View of Test Vehicle



FIGURE 10. Post-Test Left View of Test Vehicle



FIGURE 11. Pre-Test Right View of Test Vehicle



FIGURE 12. Post-Test Right View of Test Vehicle



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

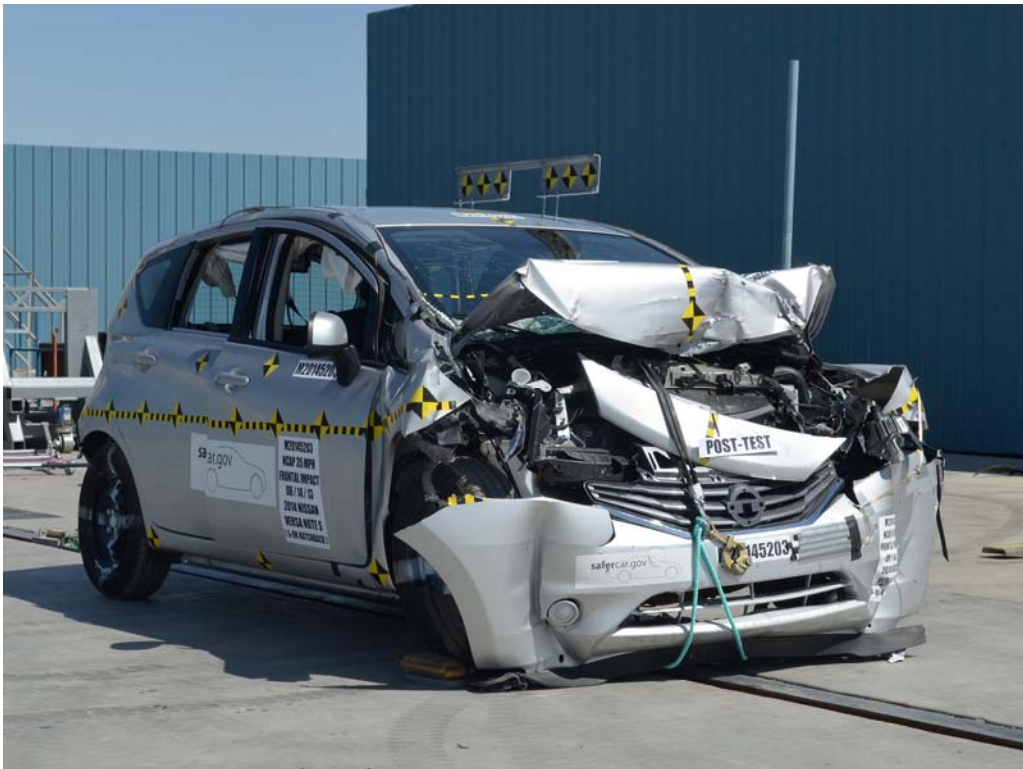


FIGURE 14. Post-Test Right Front  $\frac{3}{4}$  View



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



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

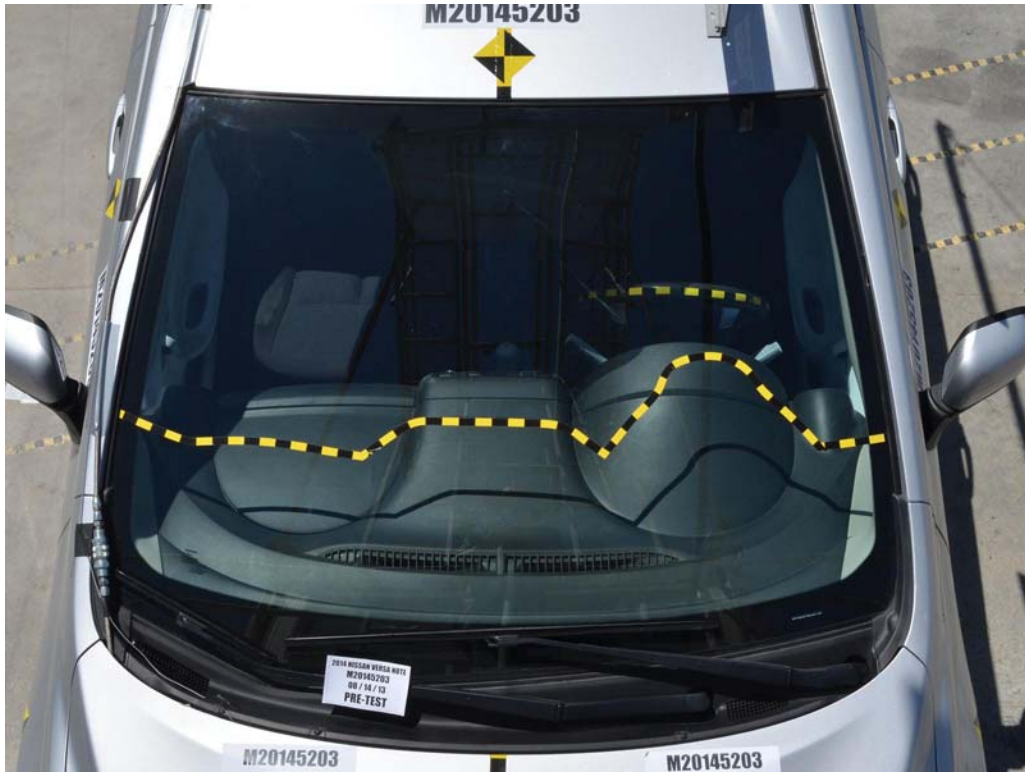


FIGURE 17. Pre-Test Windshield View



FIGURE 18. Post-Test Windshield View



FIGURE 19. Pre-Test Engine Compartment View



FIGURE 20. Post-Test Engine Compartment View



FIGURE 21. Pre-Test Fuel Filler Cap View



FIGURE 22. Post-Test Fuel Filler Cap View

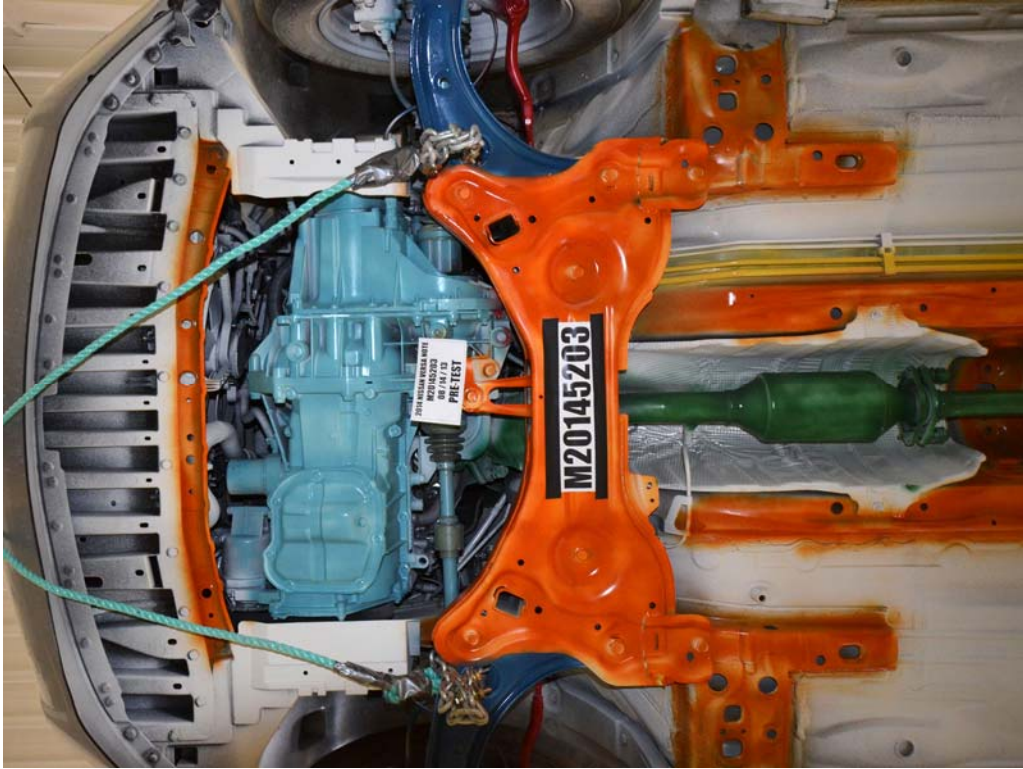


FIGURE 23. Pre-Test Front Underbody View

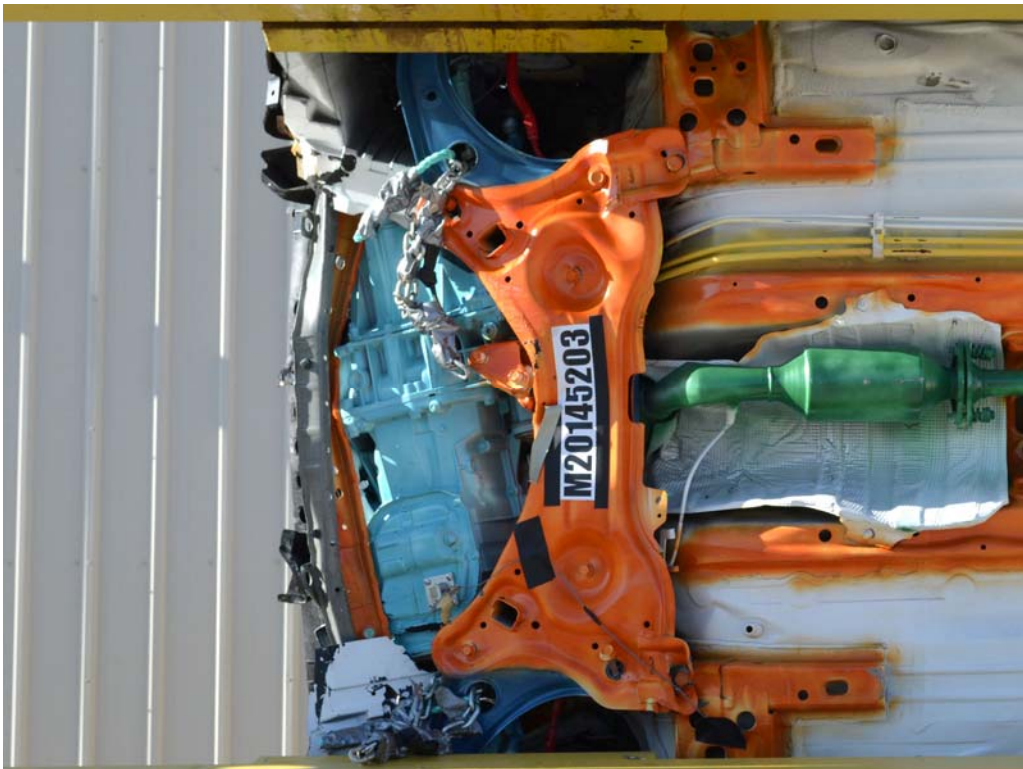


FIGURE 24. Post-Test Front Underbody View

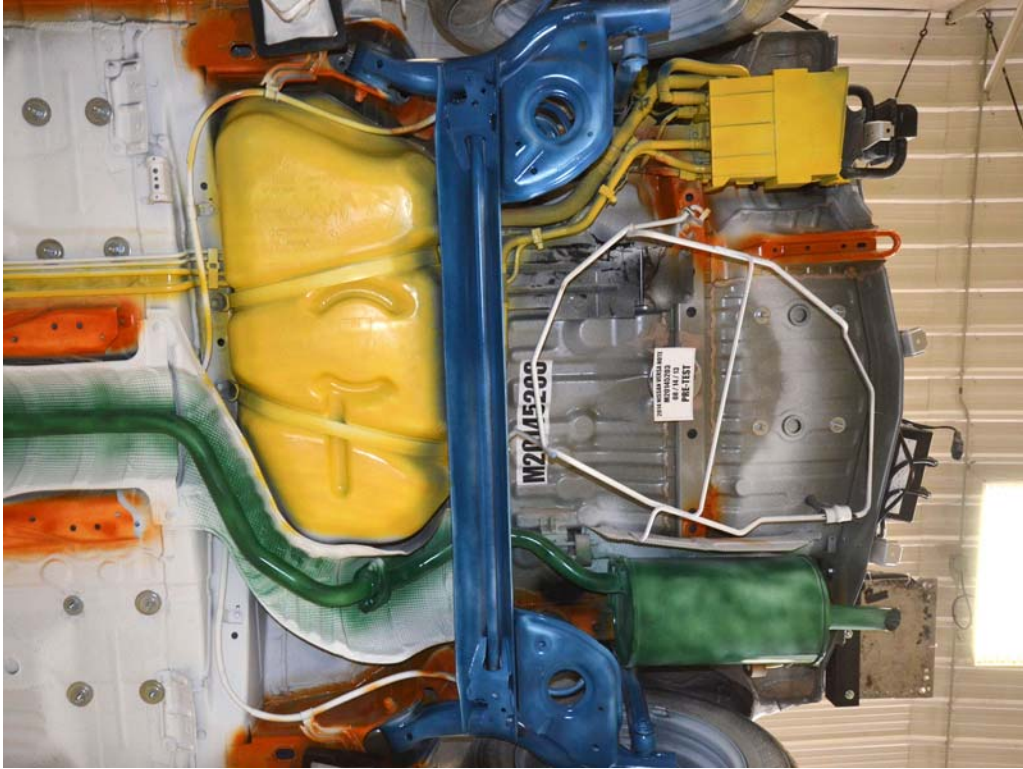


FIGURE 25. Pre-Test Rear Underbody View

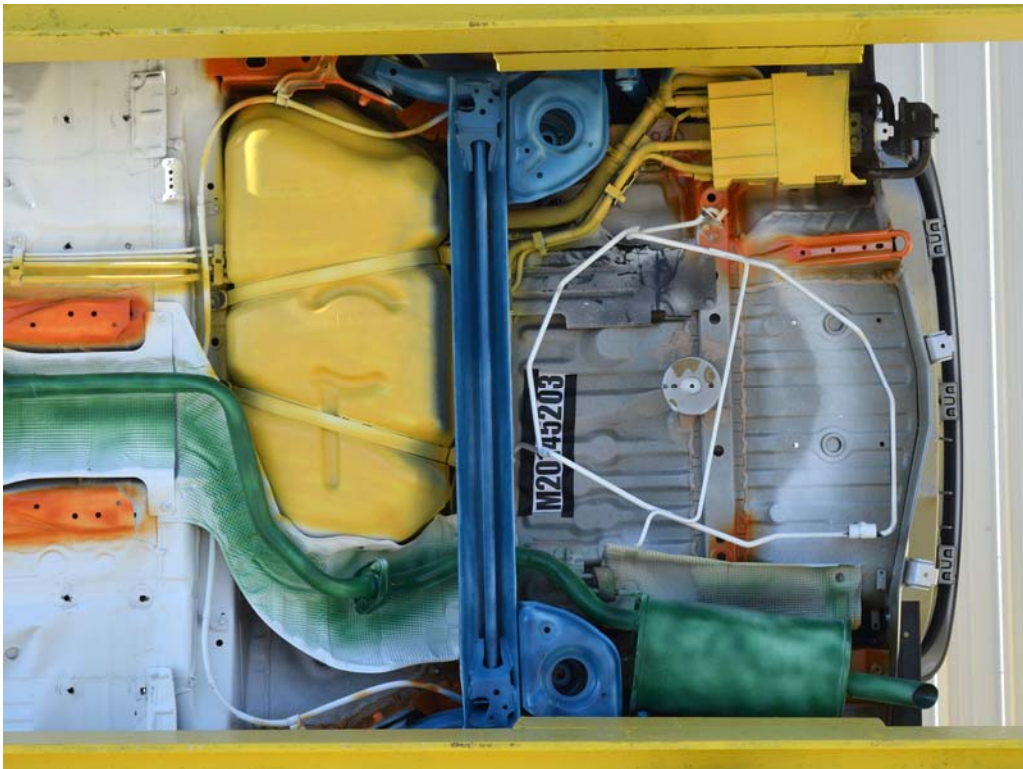


FIGURE 26. Post-Test Rear Underbody View



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 View of Belt Anchorage for Driver Dummy

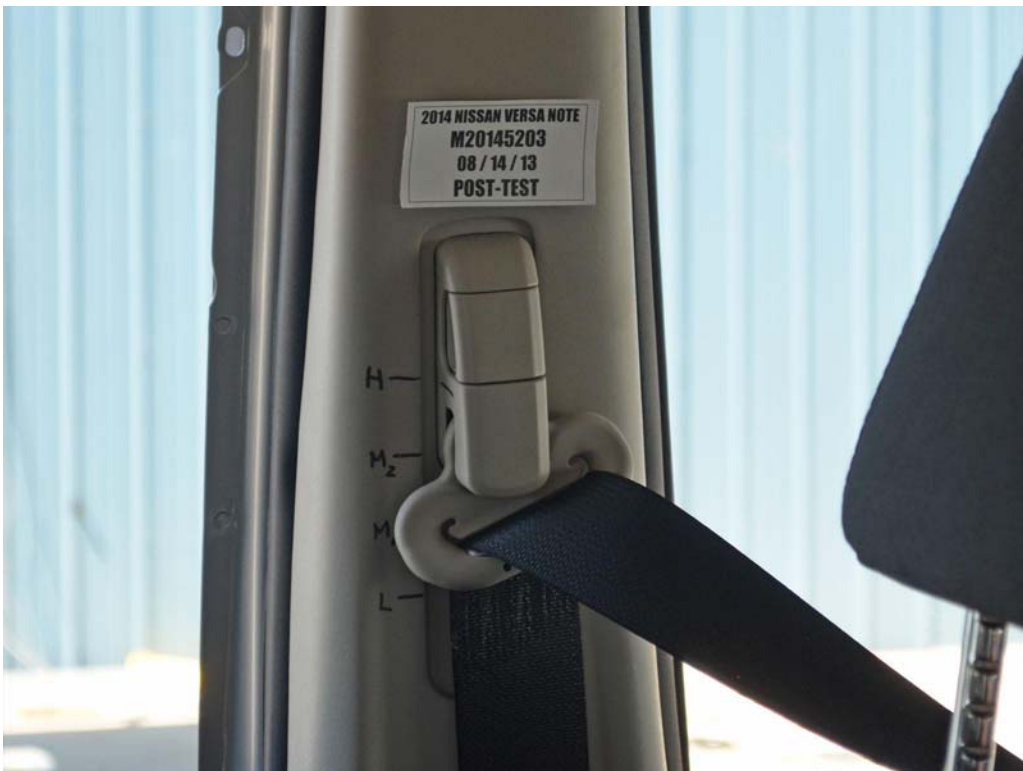


FIGURE 38. Post-Test View of Belt Anchorage for Driver Dummy



FIGURE 39. Pre-Test Driver Dummy Feet



FIGURE 40. Post-Test Driver Dummy Feet



FIGURE 41. Pre-Test Driver's Side Knee Bolster



FIGURE 42. Post-Test Driver's Side Knee Bolster



FIGURE 43. Pre-Test Driver's Side Floorpan



FIGURE 44. Post-Test Driver's Side Floorpan



FIGURE 45. Post-Test Driver Dummy Face



FIGURE 46. Post-Test Driver Dummy Contact With Airbag



FIGURE 47. Post-Test Driver Dummy Contact With Headrest

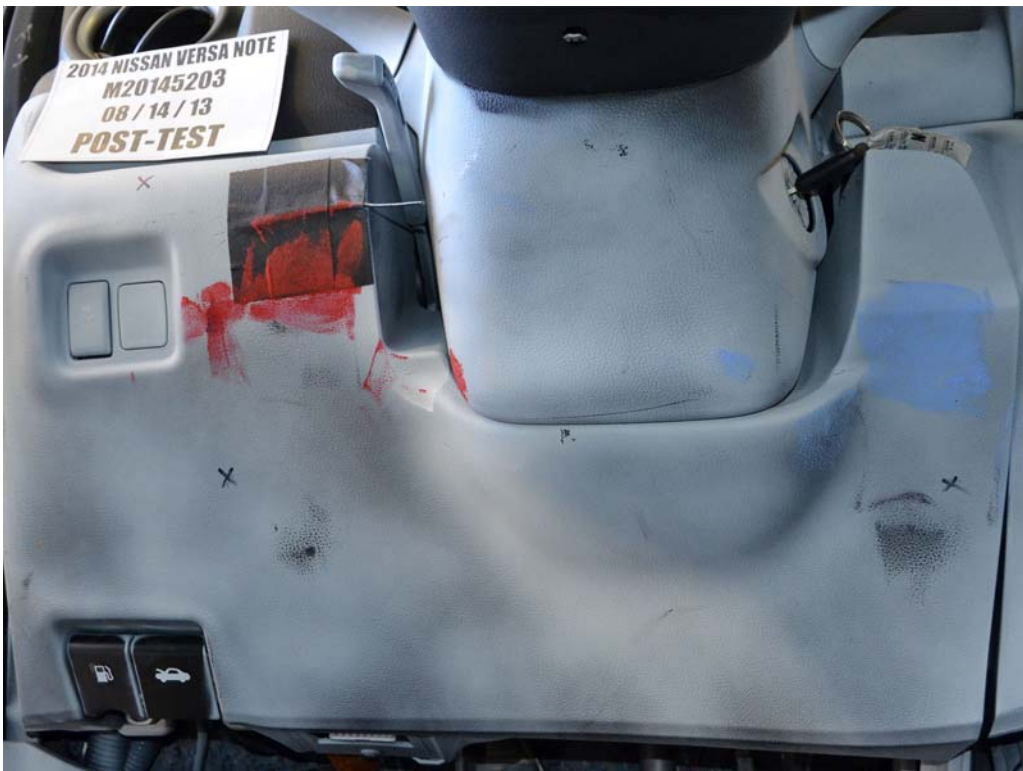


FIGURE 47a. Post-Test Driver Dummy Contact With Knee Bolster



FIGURE 47b. Post-Test Driver Dummy Contact With Steering Column

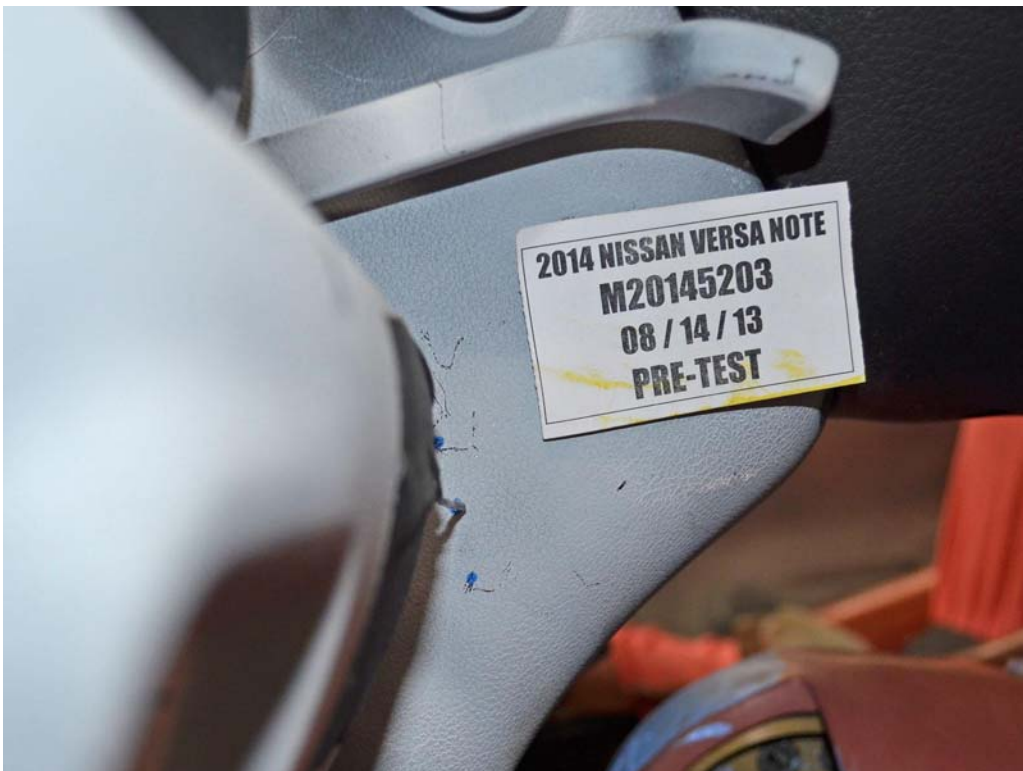


FIGURE 48. Pre-Test View of the Steering Wheel



FIGURE 49. Post-Test View of the Steering Wheel



FIGURE 50. Pre-Test Passenger Dummy Front View



FIGURE 51. Post-Test Passenger Dummy Front View



FIGURE 52. Pre-Test Passenger Dummy Window View



FIGURE 53. Post-Test Passenger Dummy Window View



FIGURE 54. Pre-Test Passenger Dummy and Vehicle Interior View



FIGURE 55. Post-Test Passenger Dummy and Vehicle Interior View



FIGURE 56. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 57. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 58. Pre-Test View of Belt Anchorage for Passenger Dummy



FIGURE 59. Post-Test View of Belt Anchorage for Passenger Dummy



FIGURE 60. Pre-Test Passenger Dummy Feet



FIGURE 61. Post-Test Passenger Dummy Feet



FIGURE 62. Pre-Test Passenger's Side Knee Bolster



FIGURE 63. Post-Test Passenger's Side Knee Bolster



FIGURE 64. Pre-Test Passenger's Side Floorpan



FIGURE 65. Post-Test Passenger's Side Floorpan



FIGURE 66. Post-Test Passenger Dummy Contact With Airbag

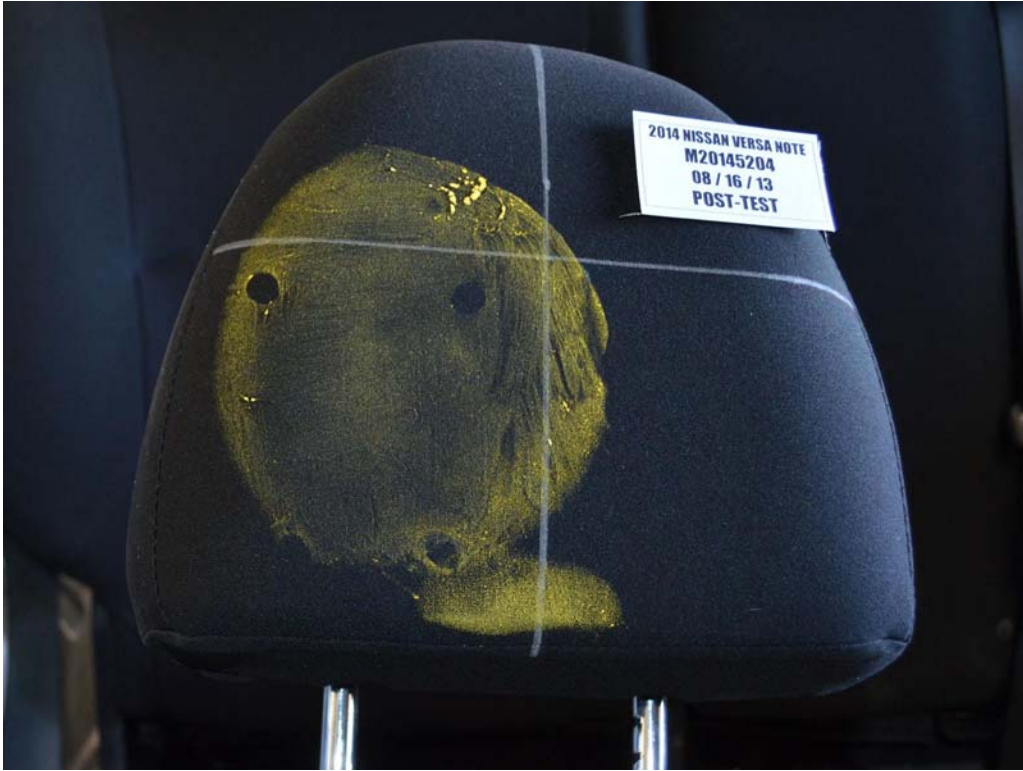


FIGURE 66a. Post-Test Passenger Dummy Contact With Headrest



FIGURE 66b. Post-Test Passenger Dummy Contact With Glovebox

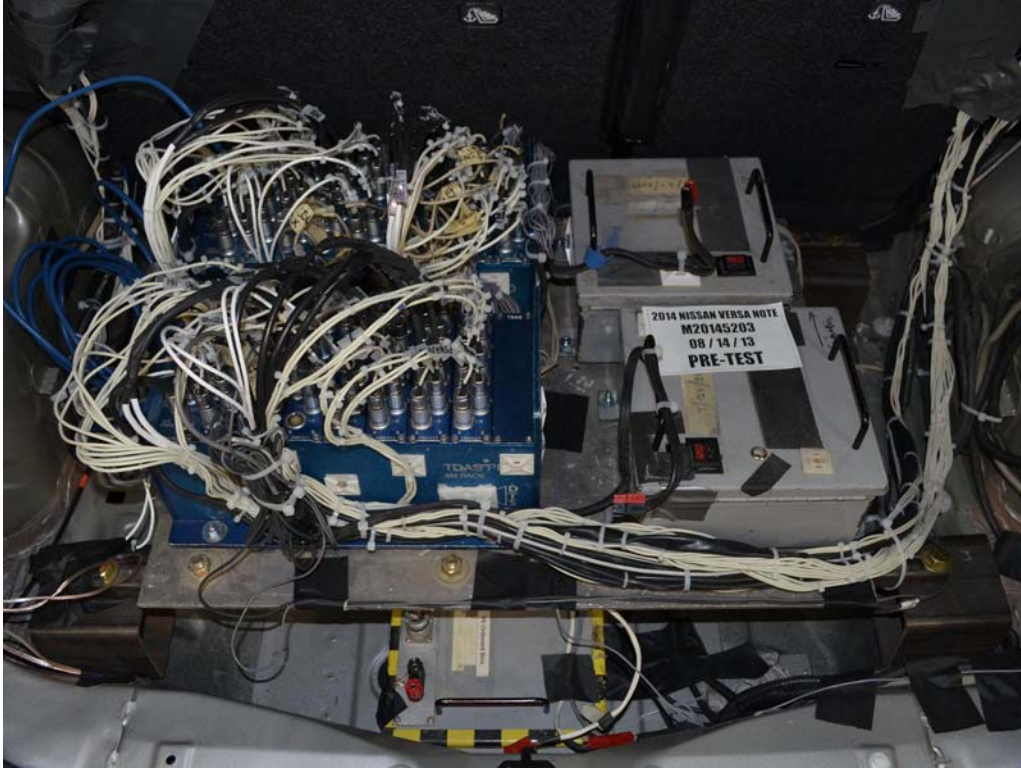


FIGURE 67. Photograph of Ballast Installed In Vehicle

**Photograph Not Applicable**

**No Stoddard  
Solvent Spillage**

FIGURE 68. Post-Test Stoddard Solvent Spillage Location View



FIGURE 69. Post-Test Speed Trap Read-Out



FIGURE 70. Vehicle at 0° on Static Rollover Device



FIGURE 71. Vehicle at 90° on Static Rollover Device



FIGURE 72. Vehicle at 180° on Static Rollover Device



FIGURE 73. Vehicle at 270° on Static Rollover Device

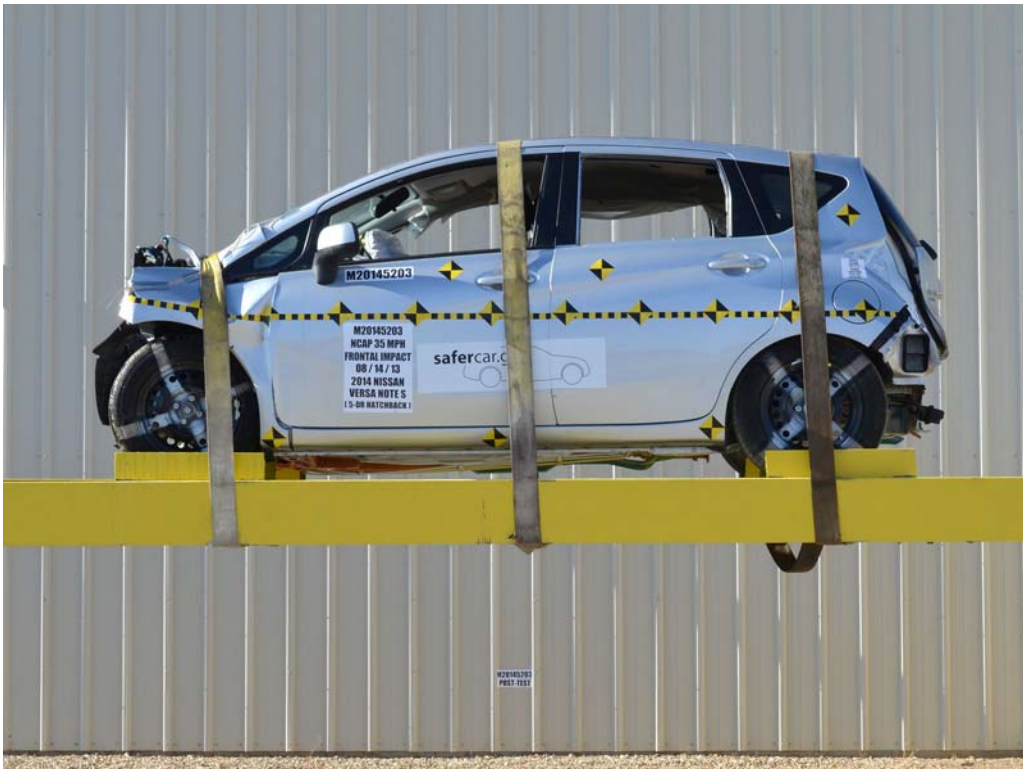


FIGURE 74. Vehicle at 360° on Static Rollover Device



FIGURE 75. 2014 Nissan Versa Note Frontal Impact Event

<b>2014 VERSA NOTE S</b>		<b>EPA Fuel Economy and Environment</b> Gasoline Vehicle	
<b>AMERICA'S BEST SELLING ENTRY HATCH+</b>		<b>Fuel Economy</b> MID-SIZE CAR range from 13 to 58 MPG. The best vehicle wins 121 MPG.	
Standard Equipment Included at No Extra Charge		<b>You save \$2,750</b> in fuel costs over 5 years compared to the average new vehicle.	
<b>MECHANICAL &amp; PERFORMANCE</b> 1.6L I4 D4iCR 16-Valve 4-Cylinder Engine 5-speed Manual Transmission Front and Rear Stabilizer Bars Power-Assisted Vented Front Disc / Rear Drum Brakes 17" Steel Wheels w/ Full Wheel Covers		<b>30 MPG</b> combined city/hwy <b>27</b> city <b>36</b> highway <b>3.3</b> gallons per 100 miles	
<b>COMFORT &amp; CONVENIENCE</b> 4-Way Adjustable Front Seats AM/FM/CD/Aux-in Audio System		<b>Annual fuel Cost \$1,750</b>	
<b>EXTERIOR</b> Chrome-Accented Multi-Reflector Halogen Headlights Chrome-Accented Front Grille		<b>Fuel Economy &amp; Greenhouse Gas Rating</b> (EPA only) Smog Rating (EPA only)	
<b>SAFETY &amp; SECURITY</b> Driver and Front Passenger, Side Impact and Curtain Air Bags Lateral Anchors and Tethers for Children (LATCH) Anti-Lock Braking System (ABS) Traction Control System (TCS) Vehicle Dynamic Control (VDC) Electronic Brake Force Distribution (EBD) and Brake Assist Tire Pressure Monitoring System (TPMS)		<b>8</b> (EPA only) <b>5</b> (EPA only)	
<b>SAFETY &amp; SECURITY</b> (continued) +According to Polk U.S. New Vehicle Registrations, for the entry level segment, hatch only, January-December 2012.		<b>Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 22 MPG and costs \$1,500 to fuel over 5 years. Cost estimates are based on 18,000 miles per year at \$2.50 per gallon. EPA's miles per gallon estimates. Vehicle emissions are a significant cause of climate change and smog.</b>	
<b>Manufacturer's Suggested Retail Base Price</b> \$13,990.00 <b>Options Included by Manufacturer</b> \$1,100.00 <b>DESTINATION CHARGES</b> 700.00 <b>Total</b> \$14,790.00		<b>GOVERNMENT 5-STAR SAFETY RATINGS</b>	
<b>AMERICA'S BEST SELLING ENTRY HATCH+</b>		<b>DELIVERY</b>	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>Overall Vehicle Score</b> To Be Rated <small>Based on the combined ratings of frontal, side and rollover. Should ONLY be compared to other vehicles of similar size and weight.</small>	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>Frontal Crash</b> Driver To Be Rated <small>Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</small>	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>Side Crash</b> Front seat To Be Rated <small>Based on the risk of injury in a side impact.</small>	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>Rollover</b> To Be Rated <small>Based on the risk of rollover in a single-vehicle crash.</small>	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>Star ratings range from 1 to 5 stars (*****) with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236</b>	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>VEHICLE COLORS:</b> EXT: BRILLIANT SILVER INT: CHARCOAL	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>FINAL ASSEMBLY POINT:</b> AGLIAS/AV JMEK	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>TRANSPORT METHOD:</b> TRUCK	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>DEALER:</b> AL PIEMONTE NISSAN INC 1600 W. NORTH AVENUE MEL ROSE PARK IL 60150	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>Security+Plus Vehicle Protection Plan</b> The only service agreement backed by Nissan! Ask your dealer for details, or call 1-800-NISSAN-1 for more information.	
<b>SAFETY &amp; SECURITY</b> (continued)		<b>VIN:</b> 3N1CE2PHEL3R7733 <b>EMS:</b> 30 21416 68030042 <b>MDL:</b> 11454-257733 K23-G <b>OPT:</b> C-033	
<small>*Does not include dealer installed options and accessories, local taxes or license fees. This label has been applied pursuant to federal law. Do not remove prior to delivery to the ultimate purchaser.</small>		<small>20130819234413A523881</small>	

FIGURE 76. Monroney Label Photograph

**APPENDIX B**  
**DUMMY RESPONSE DATA TRACES**

## TABLE OF DATA PLOTS

<u>Plot</u>		<u>Page</u>
1	Driver Head X Acceleration vs. Time Primary	B-1
2	Driver Head Y Acceleration vs. Time Primary	B-1
3	Driver Head Z Acceleration vs. Time Primary	B-1
4	Driver Head Resultant Acceleration vs. Time Primary	B-1
5	Driver Chest X Deflection vs. Time	B-2
6	Driver Chest X Acceleration vs. Time Primary	B-3
7	Driver Chest Y Acceleration vs. Time Primary	B-3
8	Driver Chest Z Acceleration vs. Time Primary	B-3
9	Driver Chest Resultant Acceleration vs. Time Primary	B-3
10	Driver Upper Neck Force X vs. Time Primary	B-4
11	Driver Upper Neck Force Z vs. Time Primary	B-4
12	Driver Upper Neck Moment Y vs. Time Primary	B-4
13	Driver Nij vs. Time Primary	B-4
14	Driver Left Femur Force vs. Time	B-5
15	Driver Right Femur Force vs. Time	B-5
16	Passenger Head X Acceleration vs. Time Primary	B-6
17	Passenger Head Y Acceleration vs. Time Primary	B-6
18	Passenger Head Z Acceleration vs. Time Primary	B-6
19	Passenger Head Resultant Acceleration vs. Time Primary	B-6
20	Passenger Chest X Deflection vs. Time	B-7
21	Passenger Chest X Acceleration vs. Time Primary	B-8
22	Passenger Chest Y Acceleration vs. Time Primary	B-8
23	Passenger Chest Z Acceleration vs. Time Primary	B-8
24	Passenger Chest Resultant Acceleration vs. Time Primary	B-8
25	Passenger Upper Neck Force X vs. Time Primary	B-9
26	Passenger Upper Neck Force Z vs. Time Primary	B-9
27	Passenger Upper Neck Moment Y vs. Time Primary	B-9
28	Passenger Nij vs. Time Primary	B-9
29	Passenger Left Femur Force vs. Time	B-10
30	Passenger Right Femur Force vs. Time	B-10

The following additional dummy and vehicle response data can be found in the R&D section of the NHTSA website at [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov)

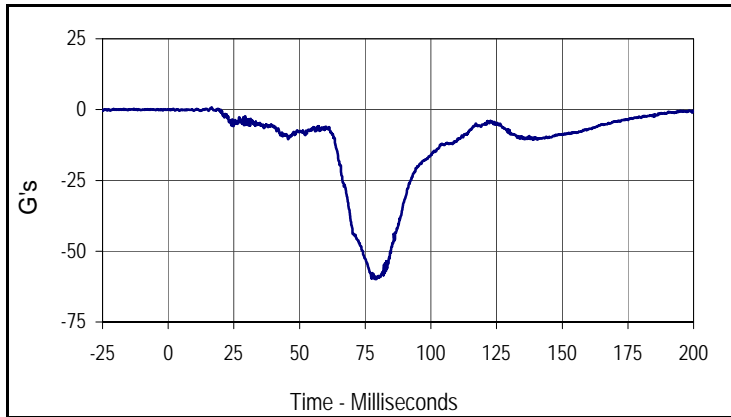
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Driver Head Y Acceleration Redundant  
Driver Head Z Acceleration Redundant  
Driver Head Front Y Acceleration  
Driver Head Front Z Acceleration  
Driver Head Top X Acceleration  
Driver Head Top Y Acceleration  
Driver Head Left X Acceleration  
Driver Head Left Z Acceleration  
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 Left Femur Force Z Redundant  
Driver Right Femur Force Z Redundant  
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 Head Front Y Acceleration  
Passenger Head Front Z Acceleration  
Passenger Head Top X Acceleration  
Passenger Head Top Y Acceleration  
Passenger Head Left X Acceleration  
Passenger Head Left Z Acceleration  
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 Left Femur Force Z Redundant  
Passenger Right Femur Force Z Redundant  
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

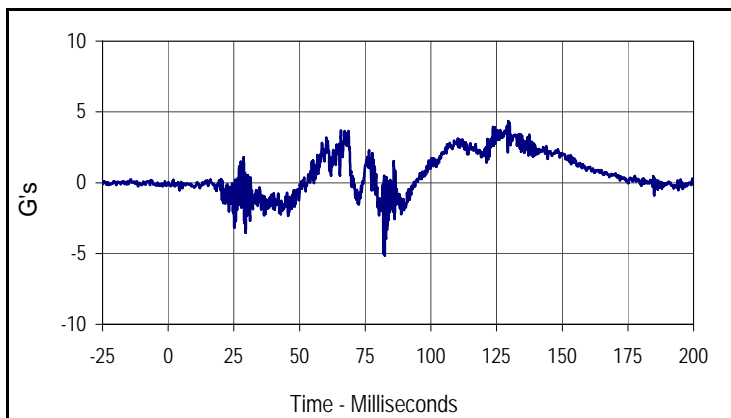
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Passenger Right Upper Tibia Force Z  
Passenger Right Lower Tibia Moment X  
Passenger Right Lower Tibia Moment Y  
Passenger Right Lower Tibia Force Z  
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Passenger Left Foot Aft X  
Passenger Left 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 Rear Z  
Vehicle Right Rear Z  
Load Cell Barrier LC0101 – LC 1116

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

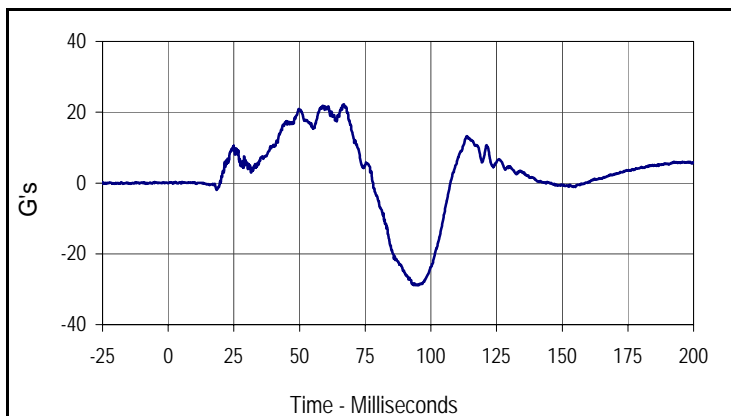
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 Test Date: 8/14/13



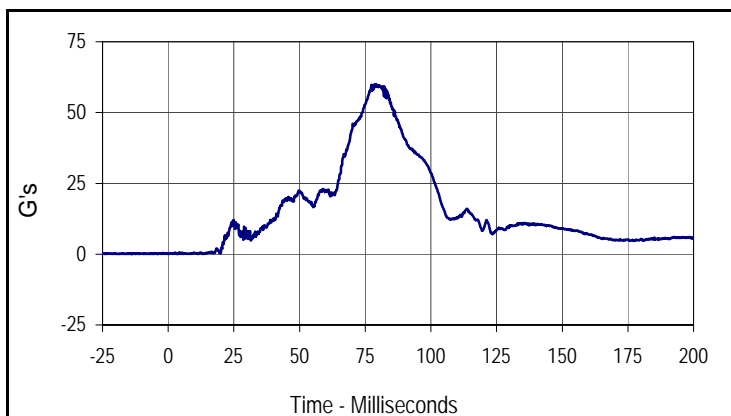
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001	FIL	1000	G's
Max	Time	Min	Time
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Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
4.4	129.5	-5.1	82.4



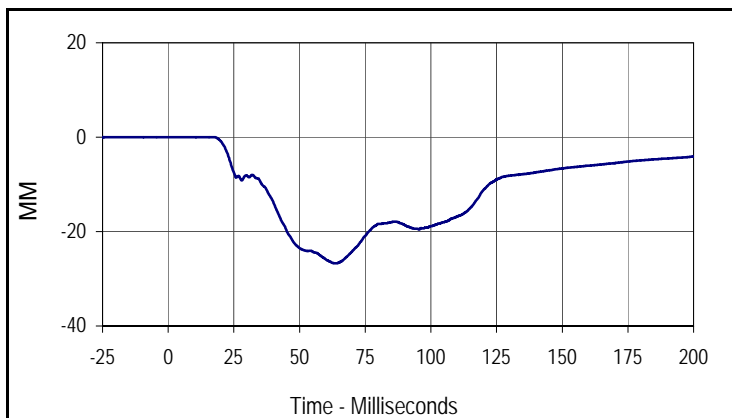
Curve Description			
Driver Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
22.3	66.8	-28.9	93.5



Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
59.9	78.9	0.0	0.2

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

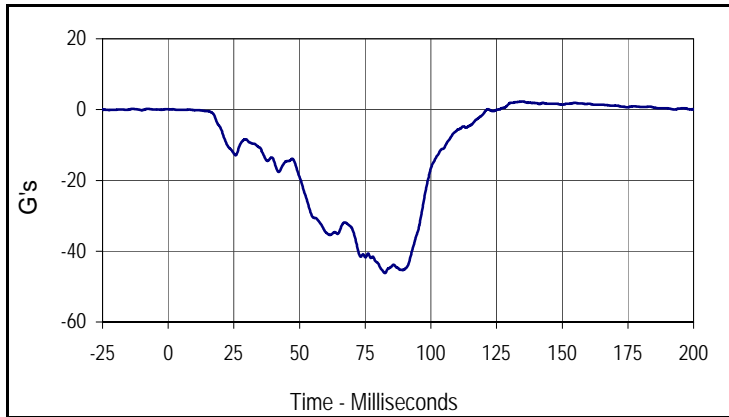
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 Test Date: 8/14/13



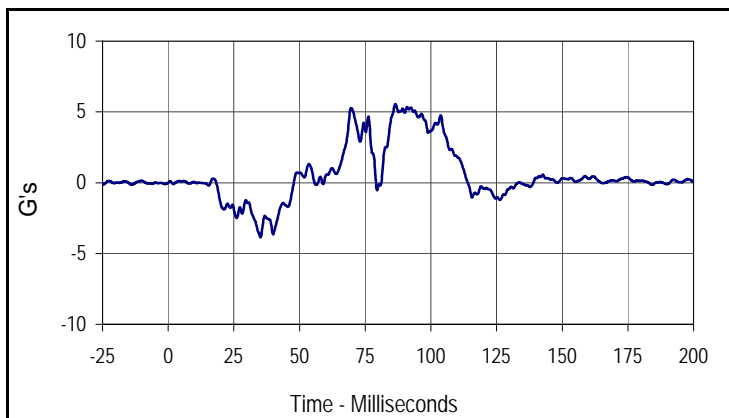
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Plot No.	Type	SAE Class	Units
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Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

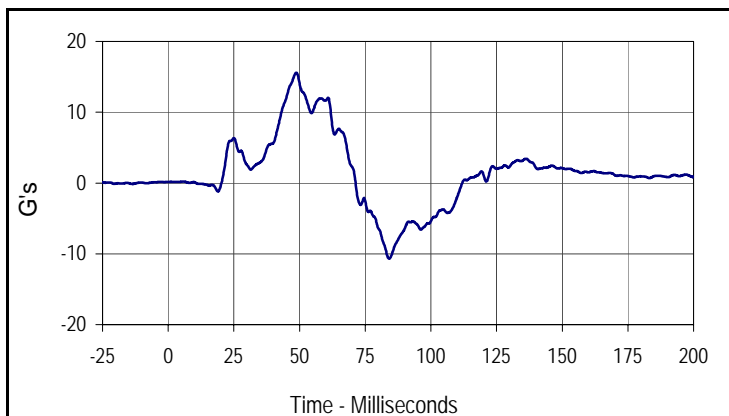
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 Test Date: 8/14/13



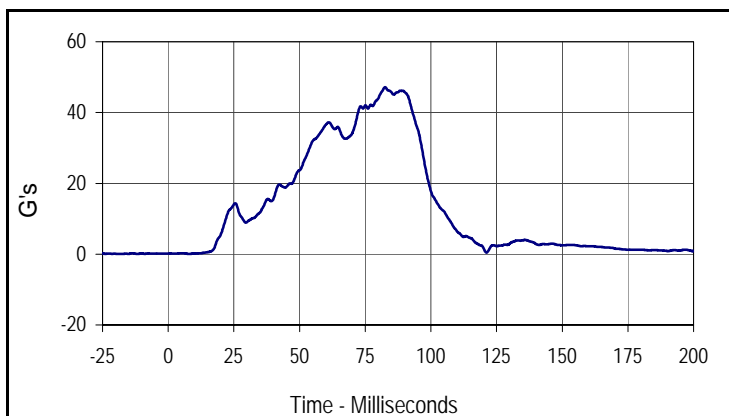
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Driver Chest Acceleration X Primary			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
2.3	134.9	-46.2	82.5



Curve Description			
Driver Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
5.6	86.4	-3.9	35.1



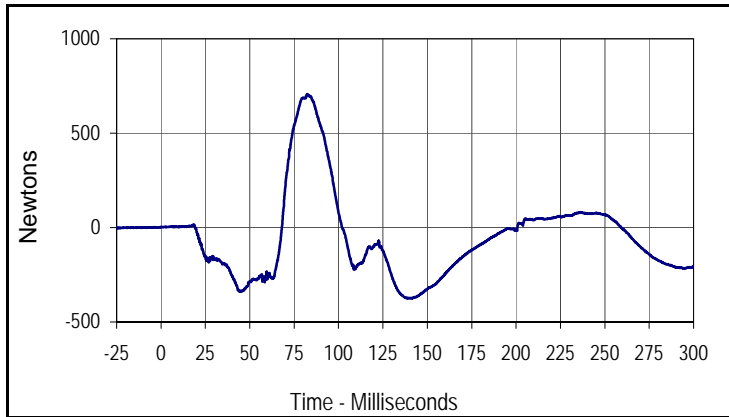
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008	FIL	180	G's
Max	Time	Min	Time
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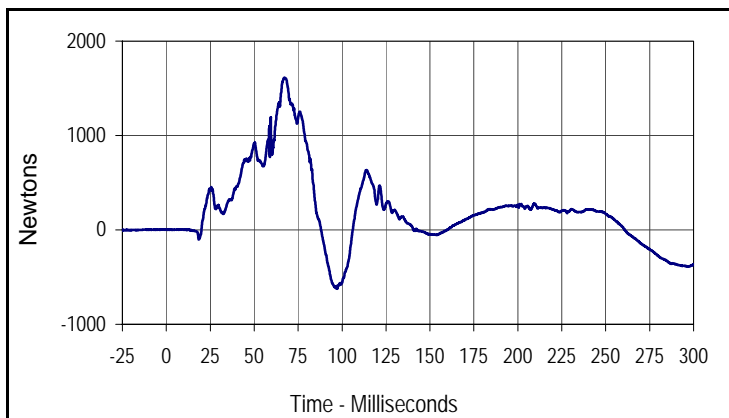
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Driver Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
009	RES	180	G's
Max	Time	Min	Time
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Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

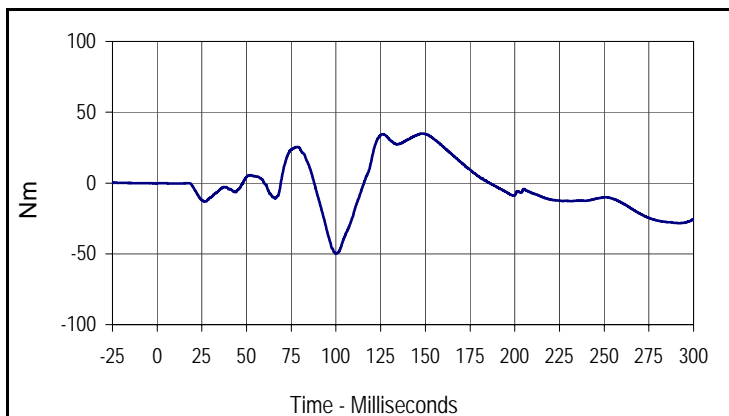
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 Test Date: 8/14/13



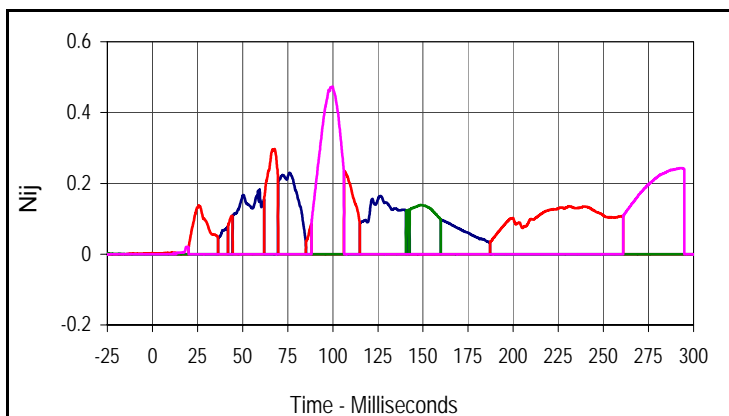
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Driver Upper Neck Force X			
Plot No.	Type	SAE Class	Units
010	FIL	1000	Newtons
Max	Time	Min	Time
706.3	82.6	-374.8	140.0



Curve Description			
Driver Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
011	FIL	1000	Newtons
Max	Time	Min	Time
1615.0	67.3	-623.8	97.2



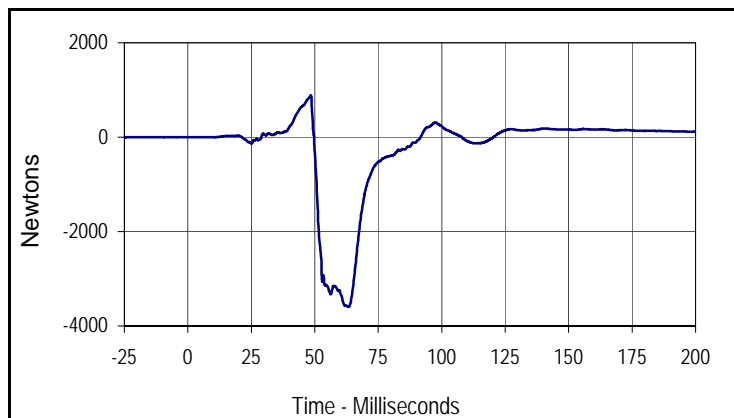
Curve Description			
Driver Upper Neck Moment Y			
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012	FIL	600	Nm
Max	Time	Min	Time
35.0	148.2	-50.0	99.9



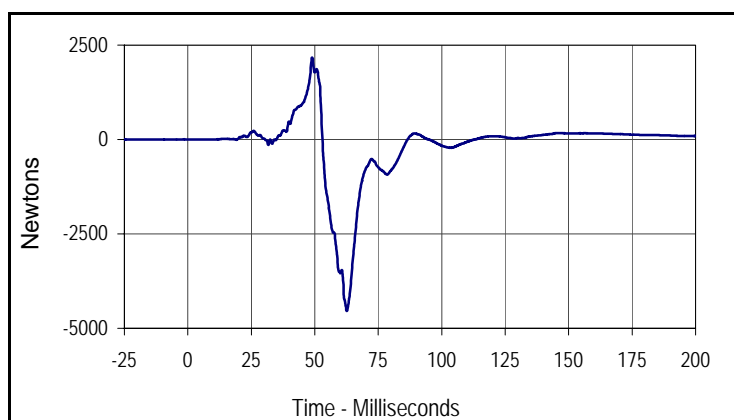
Curve Description			
Driver Nij			
Units	Type	Max	Time
Ntf	FIL	0.23	76.1
Units	Type	Max	Time
Nte	FIL	0.30	67.7
Units	Type	Max	Time
Ncf	FIL	0.14	148.9
Units	Type	Max	Time
Nce	FIL	0.47	99.8

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: M20145203  
 Test Date: 8/14/13



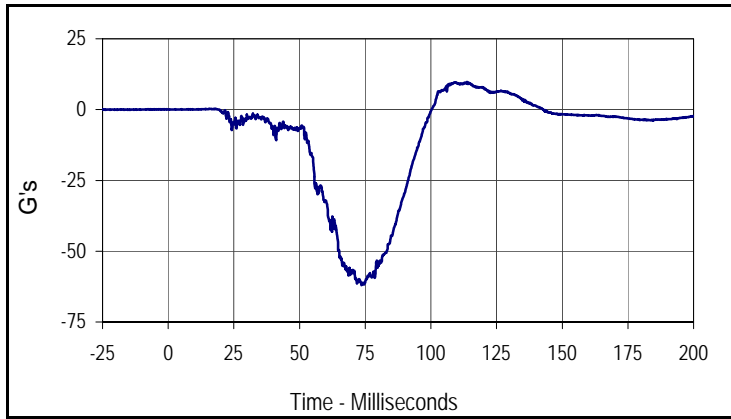
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Max	Time	Min	Time
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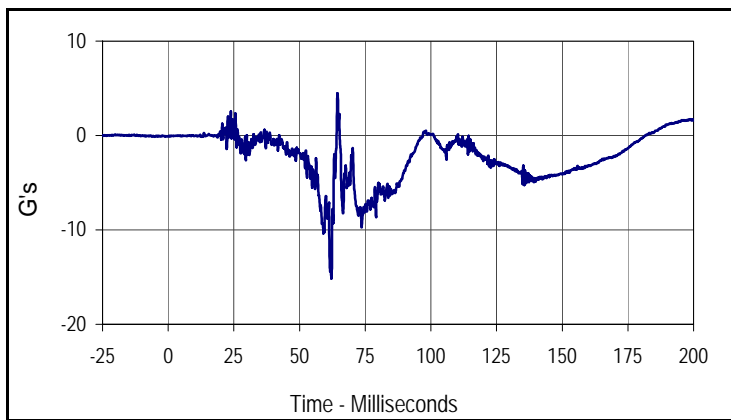
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Driver Right Femur Force Z			
Plot No.	Type	SAE Class	Units
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Max	Time	Min	Time
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Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

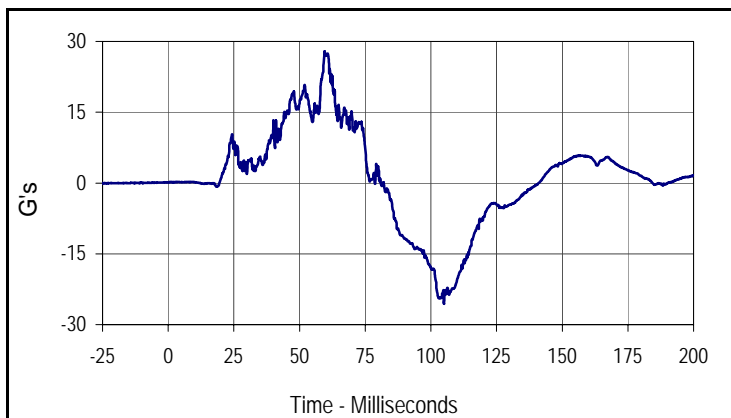
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 Test Date: 8/14/13



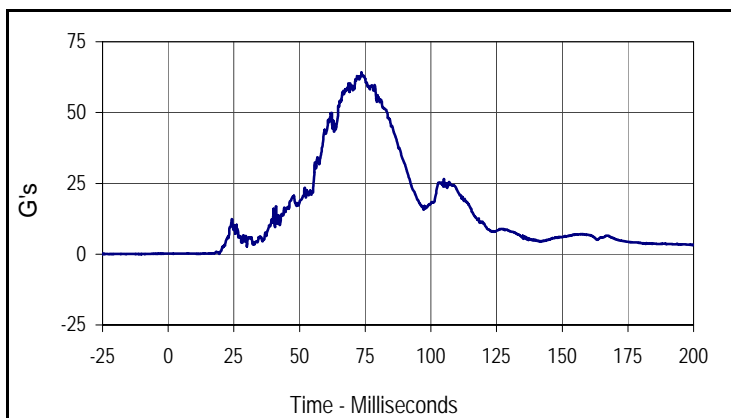
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
9.7	113.7	-62.0	73.6



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
4.5	64.4	-15.2	62.1



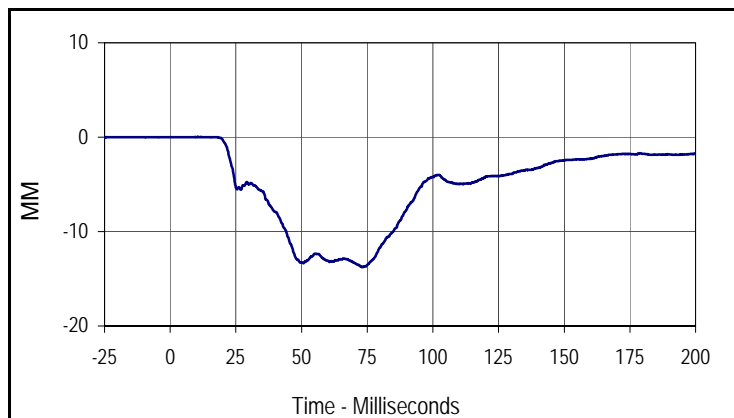
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
017	FIL	1000	G's
Max	Time	Min	Time
27.9	59.6	-25.6	105.0



Curve Description			
Passenger Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
018	RES	1000	G's
Max	Time	Min	Time
64.1	73.6	0.1	12.0

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

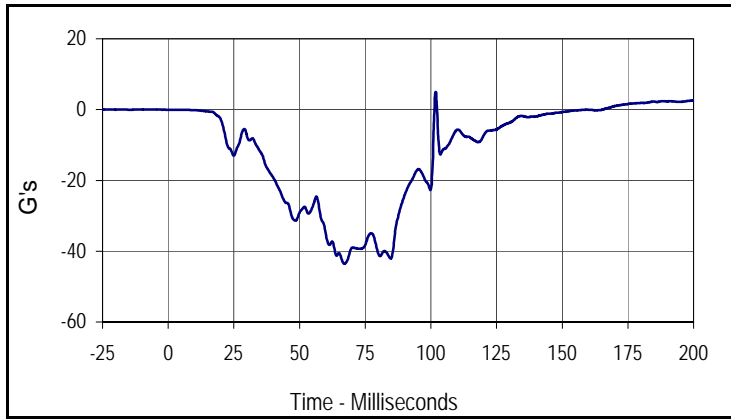
NHTSA No.: M20145203  
 Test Date: 8/14/13



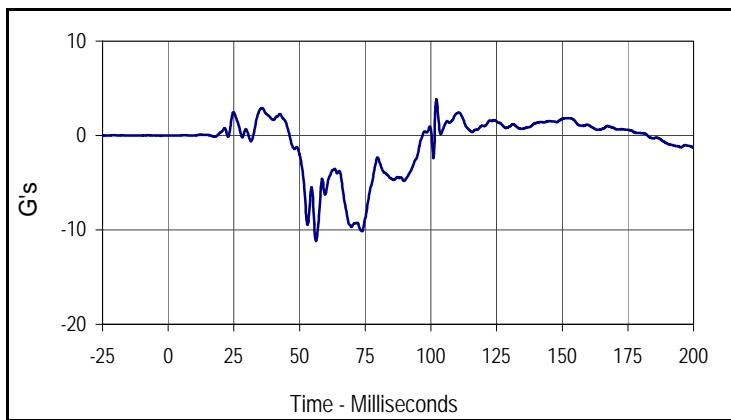
Curve Description			
Passenger Chest Deflection			
Plot No.	Type	SAE Class	Units
019	FIL	600	MM
Max	Time	Min	Time
0.0	11.6	-13.8	73.3

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

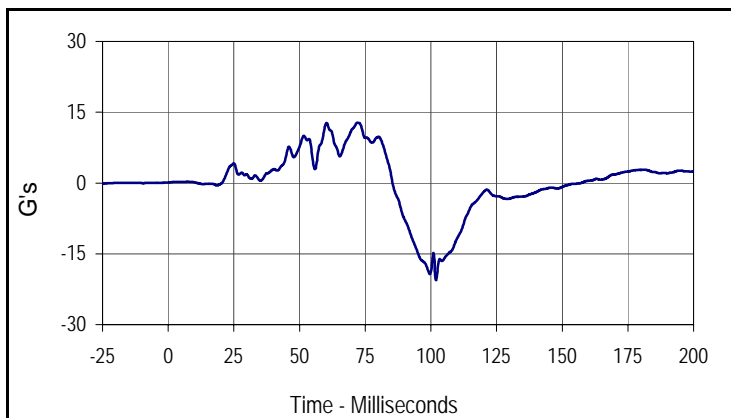
NHTSA No.: M20145203  
 Test Date: 8/14/13



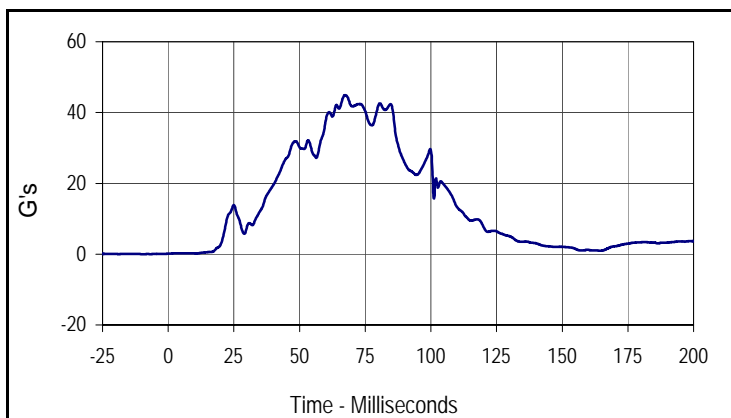
Curve Description			
Passenger Chest Acceleration X Primary			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
5.0	101.8	-43.5	67.1



Curve Description			
Passenger Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
3.8	102.1	-11.2	56.3



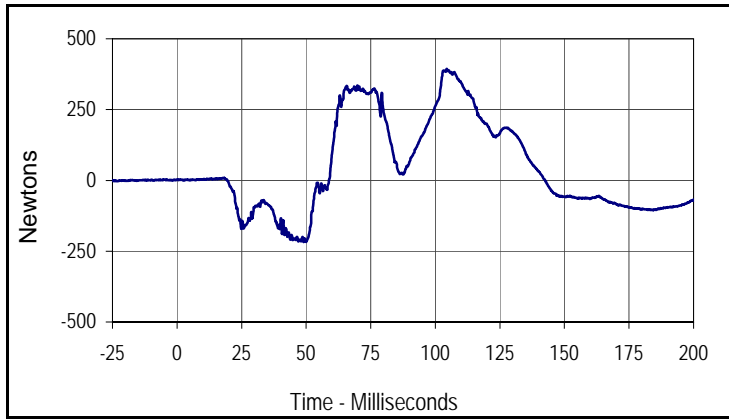
Curve Description			
Passenger Chest Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
022	FIL	180	G's
Max	Time	Min	Time
12.8	72.0	-20.6	102.0



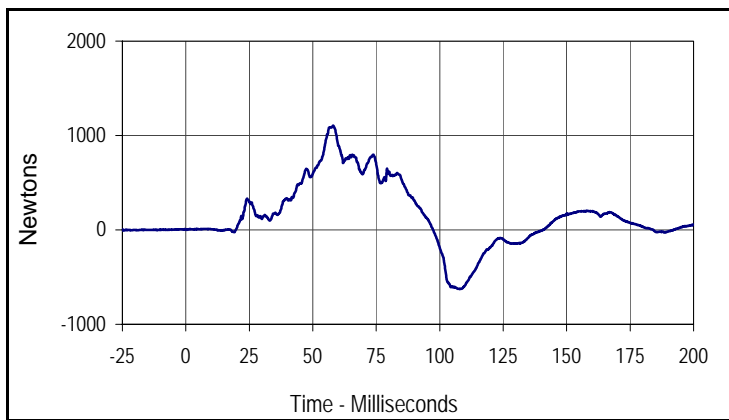
Curve Description			
Passenger Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
023	RES	180	G's
Max	Time	Min	Time
44.9	67.4	0.1	0.0

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

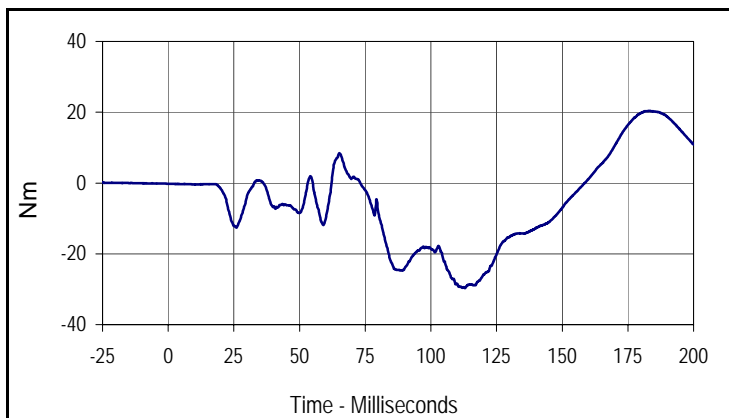
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 Test Date: 8/14/13



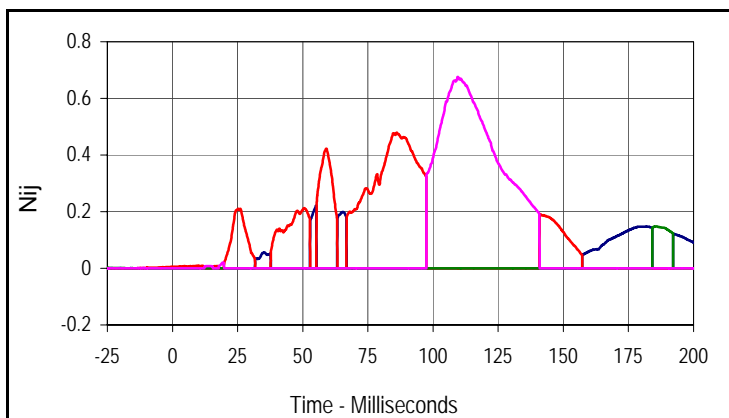
Curve Description			
Passenger Upper Neck Force X			
Plot No.	Type	SAE Class	Units
024	FIL	1000	Newtons
Max	Time	Min	Time
394.2	104.4	-217.4	49.1



Curve Description			
Passenger Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
025	FIL	1000	Newtons
Max	Time	Min	Time
1104.0	58.1	-625.9	108.0



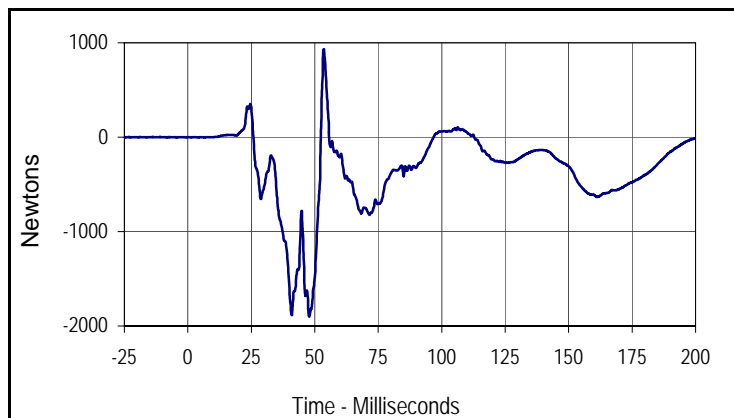
Curve Description			
Passenger Upper Neck Moment Y			
Plot No.	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
20.4	182.9	-29.7	113.0



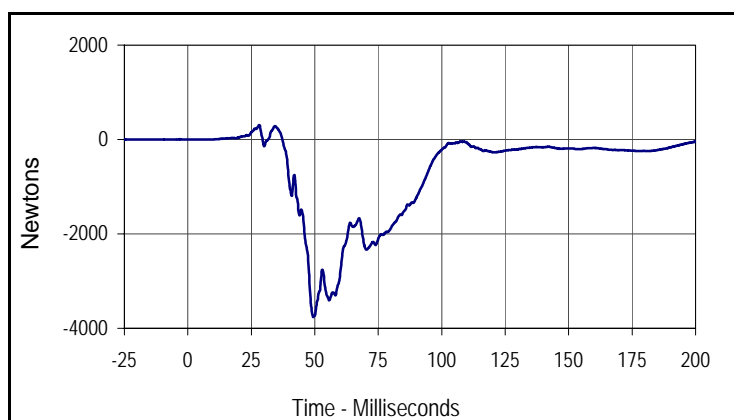
Curve Description			
Passenger Nij			
Units	Type	Max	Time
Ntf	FIL	0.22	55.2
Nte	FIL	0.48	86.0
Ncf	FIL	0.15	185.7
Nce	FIL	0.68	109.5

Test Vehicle: 2014 Nissan Versa Note S 5-Door Hatchback  
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: M20145203  
 Test Date: 8/14/13



Curve Description			
Passenger Left Femur Force Z			
Plot No.	Type	SAE Class	Units
027	FIL	600	Newtons
Max	Time	Min	Time
933.9	53.5	-1903.1	47.8



Curve Description			
Passenger Right Femur Force Z			
Plot No.	Type	SAE Class	Units
028	FIL	600	Newtons
Max	Time	Min	Time
307.3	28.1	-3763.3	49.4

**APPENDIX C**  
**DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA**

**APPENDIX C**  
**PRE-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

Test Program: Hybrid III 50th Percentile Male Dummy Damage Checklist

Test Date: 8/7/13



ATD Serial No.: 035

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

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Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 8/7/13

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.36	Pass
Laboratory Relative Humidity	%	10 to 70	32.2	Pass
A - Total sitting height	mm	879 to 889	884	Pass
B - Shoulder pivot height	mm	505 to 521	512	Pass
C - H point height	mm	84 to 89	85	Pass
D - H point location from backline	mm	135 to 140	137	Pass
E - Shoulder pivot from backline	mm	84 to 94	89	Pass
F - Thigh clearance	mm	140 to 155	146	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	297	Pass
H - Head back to backline	mm	41 to 46	43	Pass
I - Shoulder to elbow length	mm	330 to 345	336	Pass
J - Elbow rest height	mm	190 to 211	201	Pass
K - Buttock to knee length	mm	579 to 604	586	Pass
L - Popliteal length	mm	429 to 455	438	Pass
M - Knee pivot height	mm	485 to 500	493	Pass
N - Buttock popliteal length	mm	452 to 477	472	Pass
O - Chest depth without jacket	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	433	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference (with chest jacket)	mm	970 to 1001	981	Pass
Z - Waist circumference	mm	836 to 866	864	Pass
AA - Location for chest circumference	mm	429 to 434	429	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

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

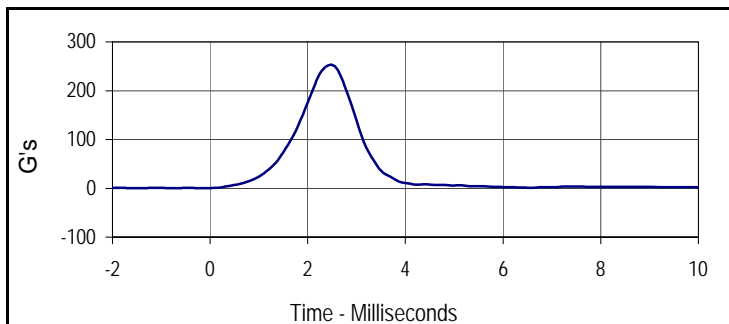
Test Date: 8/7/13



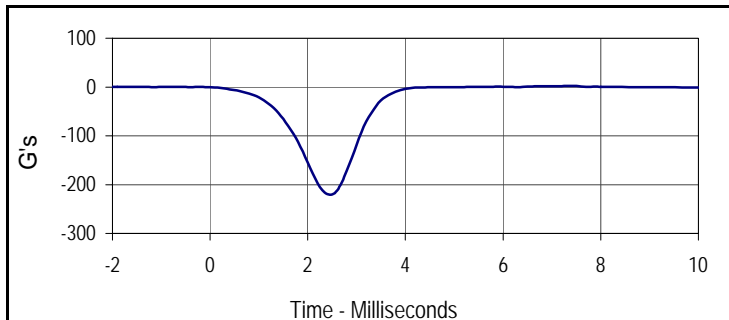
ATD Serial No.: 035

Test I.D.: M035HD053

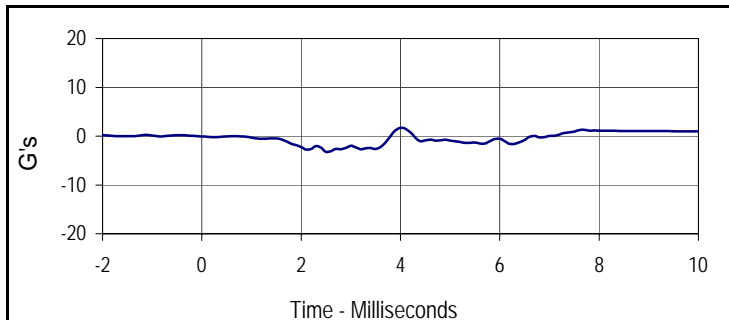
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	255	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.2	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	252.6	Pass
Peak Lateral Acceleration	G's	≤15.0	3.2	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	4.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
<b>Overall Test Results</b>				<b>Pass</b>



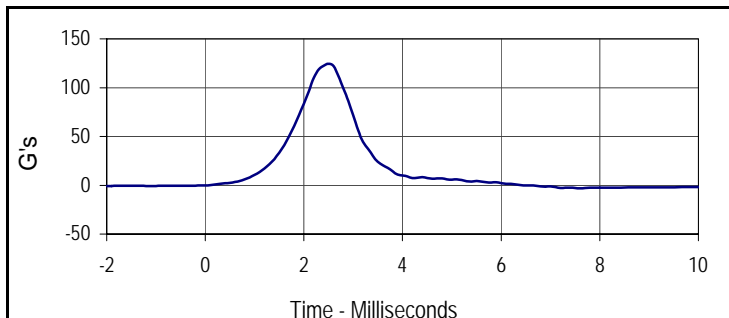
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
252.6	2.5	0.3	0.0



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.7	5.9	-219.8	2.5



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
1.7	4.0	-3.2	2.5



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
124.4	2.5	-0.8	-1.1

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

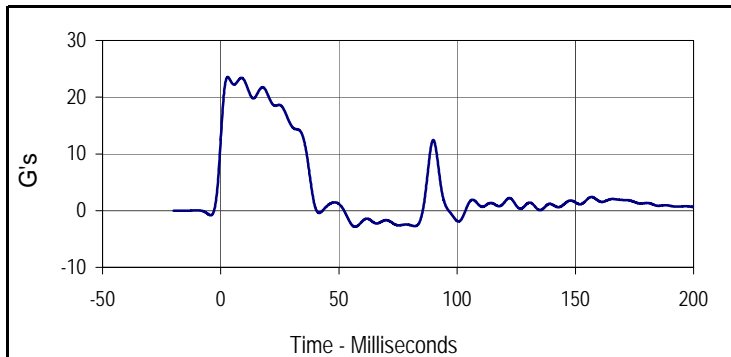
Test Date: 8/7/13



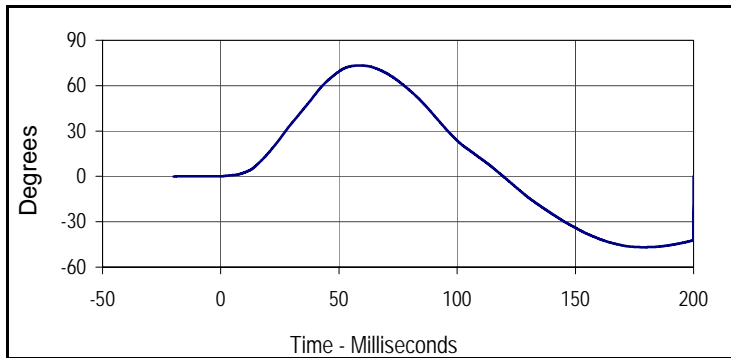
ATD Serial No.: 035

Test I.D.: M035NF053

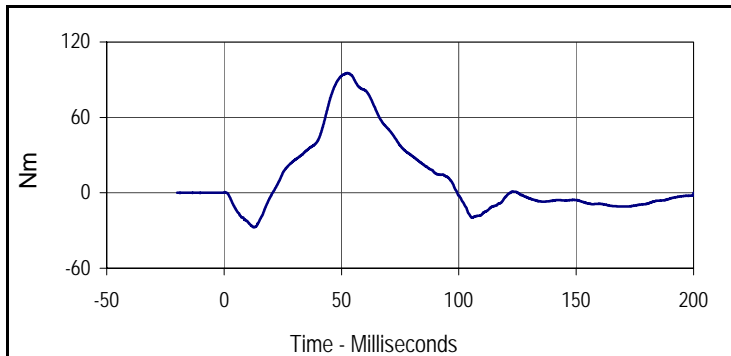
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	320	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass	
	Min		21.3	Pass	
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass	
	Min		29.6	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	32.2	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	6.97	Pass	
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	22.9	Pass
	20 Msec.	G's	17.6 to 22.6	20.3	Pass
	30 Msec.	G's	12.5 to 18.5	14.9	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	14.9	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	38.1	Pass	
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	73.3	Pass
	Time	Msec.	57.0 to 64.0	58.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	119.5	Pass	
Moment About Occ. Condyle	Max	Nm	88.1 to 108.5	95.2	Pass
	Time	Msec.	47.0 to 58.0	52.7	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	99.4	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
23.6	2.9	-2.9	56.8



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
73.3	58.7	-46.8	178.9



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
95.2	52.7	-27.3	12.7

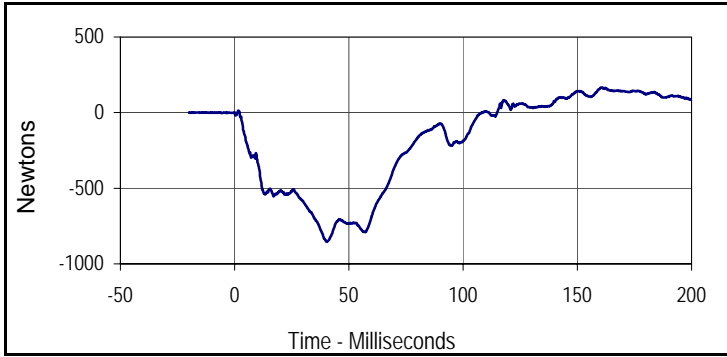
Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

Test Date: 8/7/13

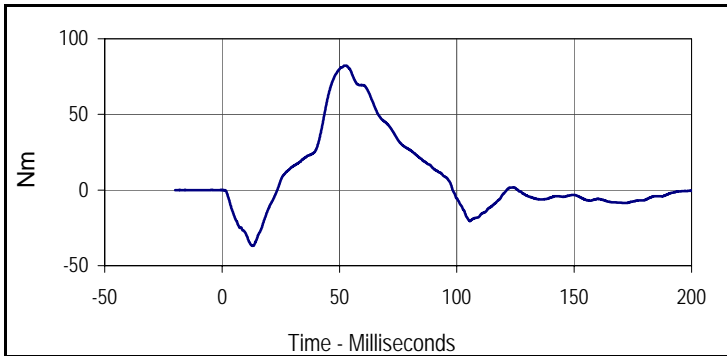


ATD Serial No.: 035

Test I.D.: M035NF053



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
166.6	160.4	-853.6	40.2



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
82.2	52.2	-36.9	13.0

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

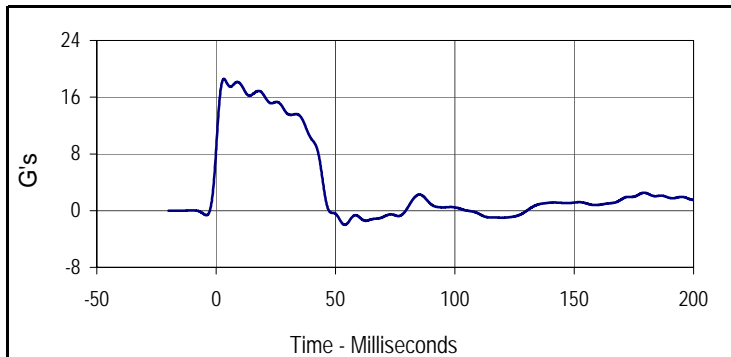
Test Date: 8/7/13



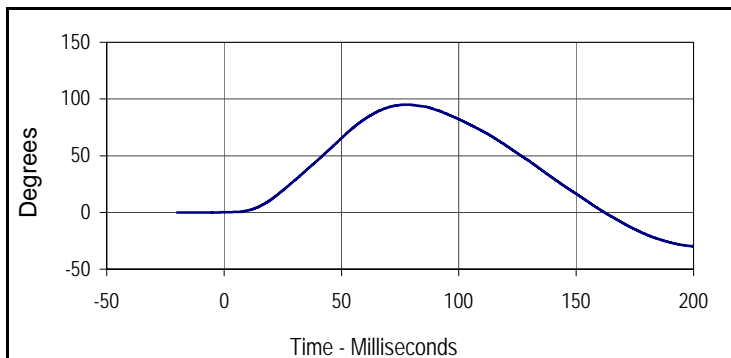
ATD Serial No.: 035

Test I.D.: M035NE053

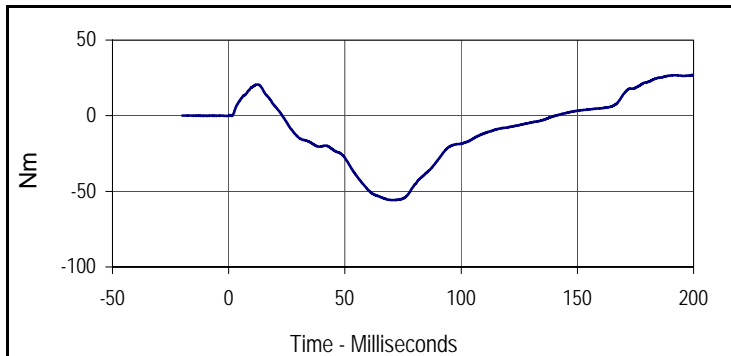
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	365	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass	
	Min		21.3	Pass	
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass	
	Min		29.6	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	32.2	Pass	
Pendulum Velocity	m/s	5.94 to 6.19	6.00	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	17.9	Pass
	20 Msec.	G's	14.0 to 19.0	16.3	Pass
	30 Msec.	G's	11.0 to 16.0	13.6	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	13.6	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	44.4	Pass	
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	95.1	Pass
	Time	Msec.	72.0 to 82.0	77.7	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	162	Pass	
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-55.8	Pass
	Time	Msec.	65.0 to 79.0	71.0	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	140.7	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.6	3.2	-2.0	53.9



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
95.1	77.7	-29.9	200.0



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
26.9	199.2	-55.8	71.0

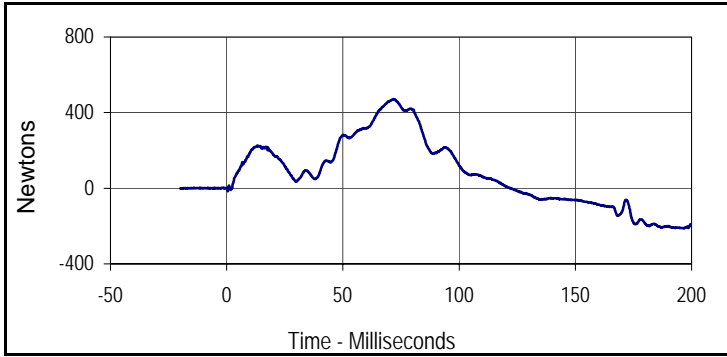
Test Program: Hybrid III 50th Percentile Male Neck Extension Test

Test Date: 8/7/13

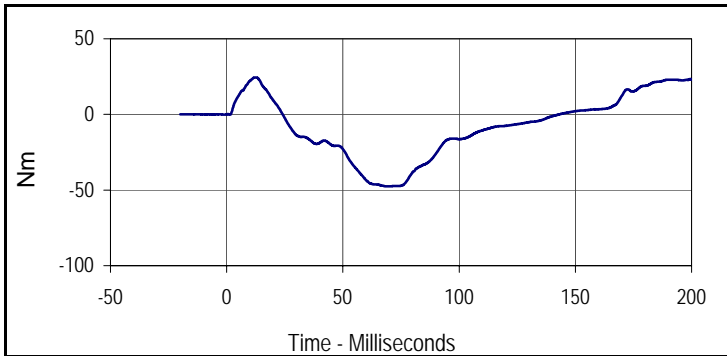


ATD Serial No.: 035

Test I.D.: M035NE053



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
471.2	71.8	-211.7	196.6



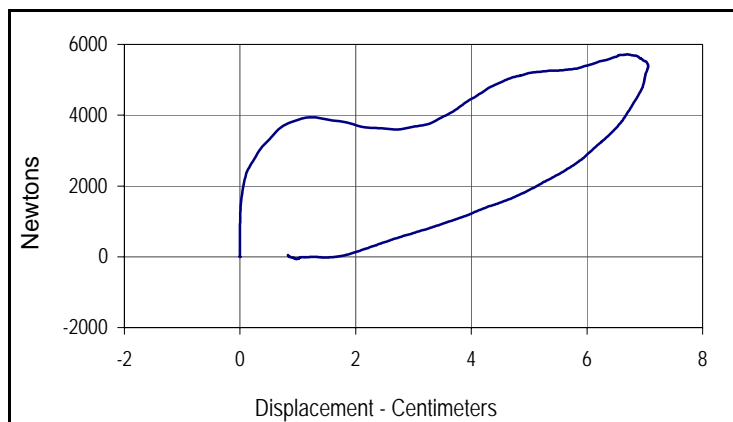
Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
24.5	12.3	-47.6	69.7

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

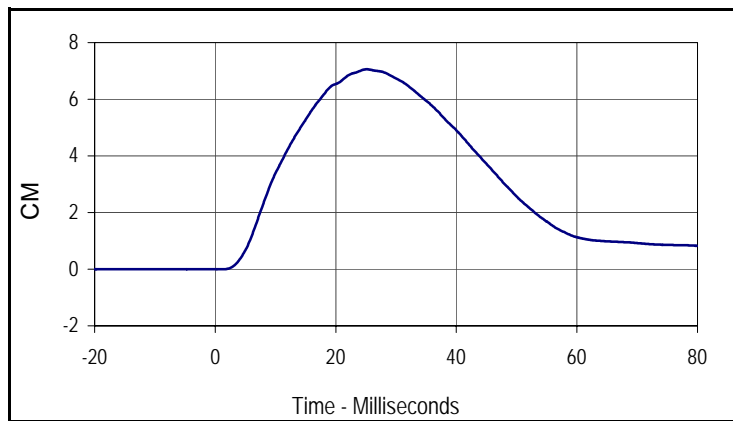
Test Date: 8/7/13  
 Test I.D.: M035CH053



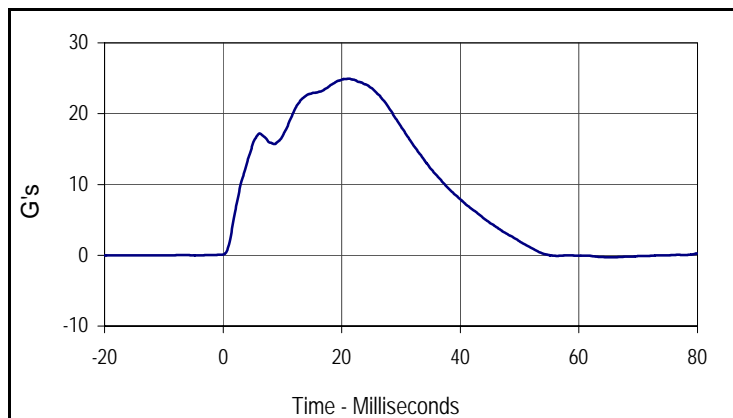
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	440	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.1	Pass
Probe Velocity	m/s	6.58 to 6.82	6.78	Pass
Peak Probe Force	Newtons	5159 to 5893	5715	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	7.06	Pass
Internal Hysteresis	%	69 to 85	69.7	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	69.7
Peak Probe Force		Peak Chest Deflection	
5715		7.06	



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
7.1	25.1	0.0	1.1



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
24.9	21.2	-0.3	65.4

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

Test Date: 8/7/13



ATD Serial No.: 035

Test I.D.: M035LK053, M035RK053

**Left Knee**

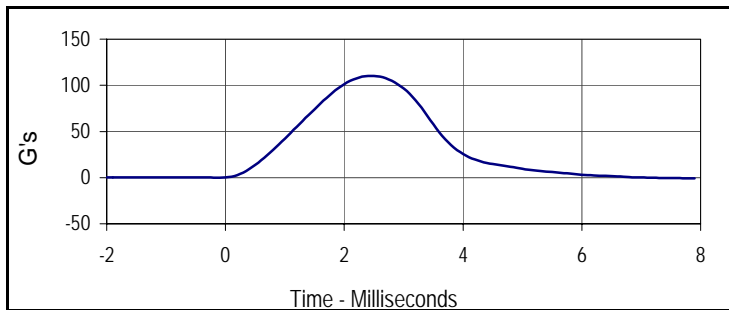
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	495	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.1	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force	Newtons	4715 to 5782	5390	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

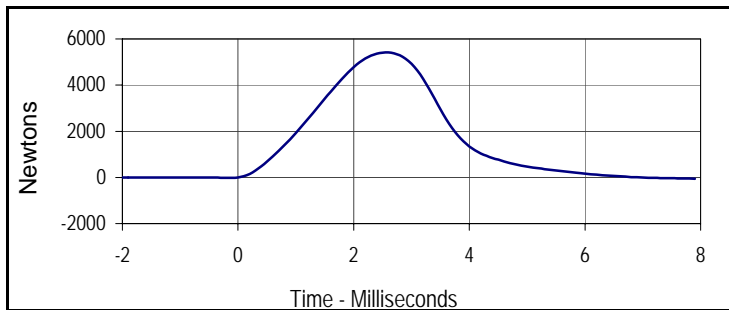
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5417	Pass
<b>Overall Test Results</b>				<b>Pass</b>



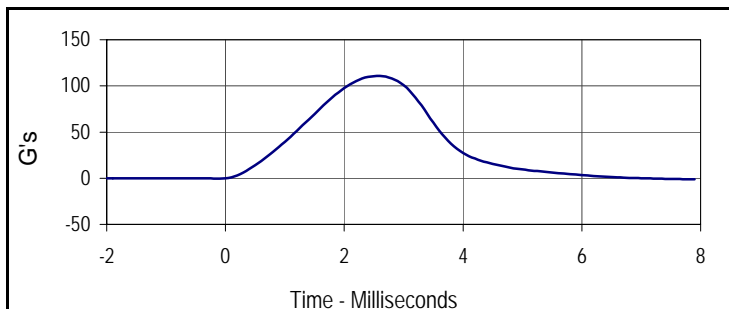
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5390.2	2.5	-37.0	7.9



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
110.2	2.5	-0.8	7.9



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
5416.9	2.6	-52.3	7.9



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
110.7	2.6	-1.1	7.9

Test Program: Hybrid III 50th Percentile Male Hip Joint-Femur Flexion Test  
 ATD Serial No.: 035

Test Date: 8/7/13  
 Test I.D.: M035LF053, M035RF053

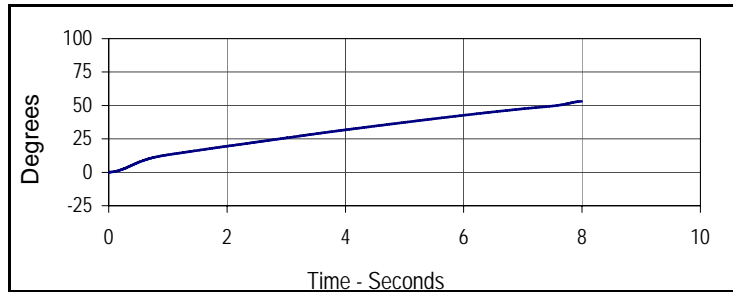


**Left Hip Joint-Femur Results**

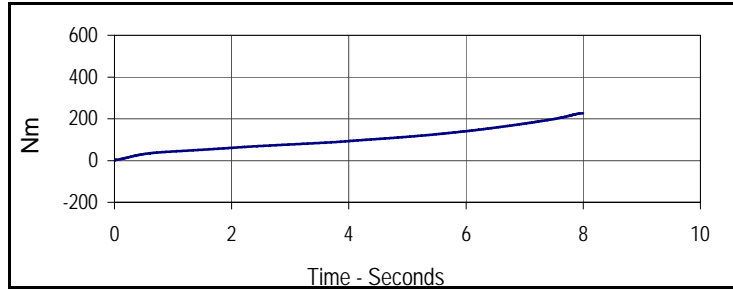
Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	570	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.1	Pass
Rotation Rate	deg/sec	5 to 10	6.6	Pass
Femur Torque at 30°	Nm	≤ 95	86.1	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	49.6	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Hip Joint-Femur Results**

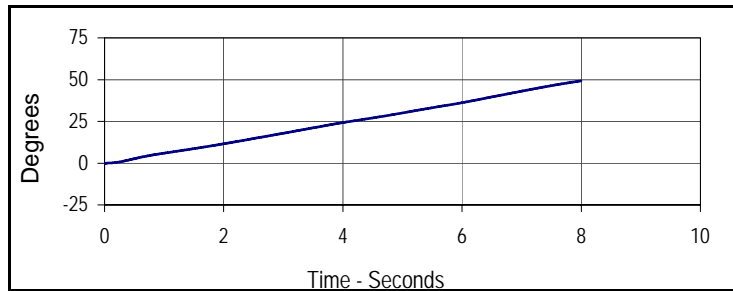
Rotation Rate	deg/sec	5 to 10	6.2	Pass
Femur Torque at 30°	Nm	≤ 95	84.3	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	47.6	Pass
<b>Overall Test Results</b>				<b>Pass</b>



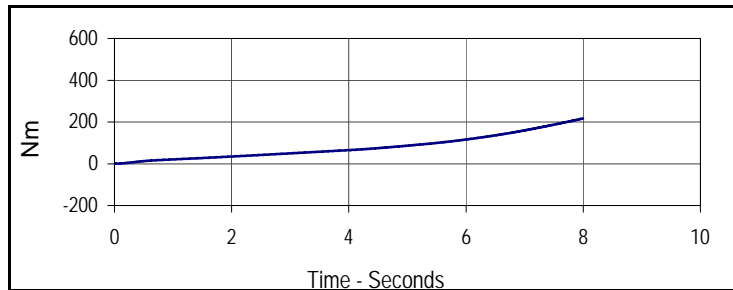
Curve Description			
Left Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
53.0	8.0	0.0	0.0



Curve Description			
Left Femur Torque			
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
226.8	8.0	0.0	0.0



Curve Description			
Right Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
49.2	8.0	0.0	0.0



Curve Description			
Right Femur Torque			
Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
216.7	8.0	0.0	0.0

Test Program: Hybrid III 5th Percentile Female Dummy Damage Checklist

Test Date: 7/25/13



ATD Serial No.: 141

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

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Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 7/25/13



ATD Serial No.: 141

Test I.D.: N/A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	33.6	Pass
A - Total sitting height	mm	774.7 to 800.1	784	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	450	Pass
C - H point height	mm	81.3 to 86.3	85	Pass
D - H point location from backline	mm	144.8 to 149.8	146	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	77	Pass
F - Thigh clearance	mm	119.4 to 134.6	126	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	250	Pass
H - Head back to backline	mm	40.7 to 45.7	44	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	285	Pass
J - Elbow rest height	mm	182.8 to 203.2	197	Pass
K - Buttock to knee length	mm	520.7 to 546.1	531	Pass
L - Popliteal length	mm	355.6 to 376.0	371	Pass
M - Knee pivot height	mm	393.7 to 419.1	401	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	185	Pass
P - Foot length	mm	218.5 to 233.7	221	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	473	Pass
S - Head Breadth	mm	137.1 to 147.3	144	Pass
T - Head Depth	mm	177.8 to 188.0	180	Pass
U - Hip Breadth	mm	299.7 to 314.9	302	Pass
V - Shoulder breadth	mm	350.5 to 365.7	359	Pass
W - Foot breadth	mm	78.8 to 94.0	90	Pass
X - Head circumference	mm	528.3 to 548.7	541	Pass
Y - Chest circumference (with chest jacket)	mm	850.8 to 881.3	864	Pass
Z - Waist circumference	mm	759.5 to 789.9	768	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	300	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	165	Pass
Overall Test Results				Pass

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

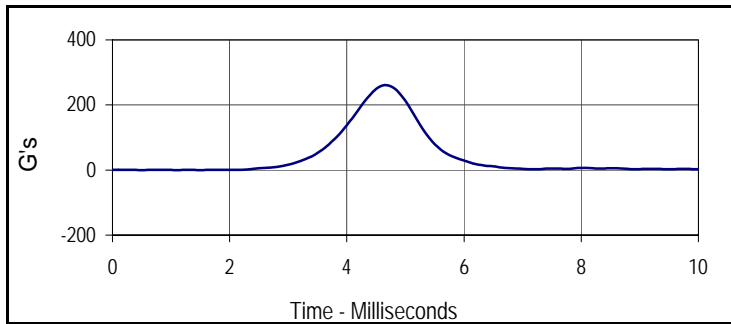
Test Date: 7/25/13



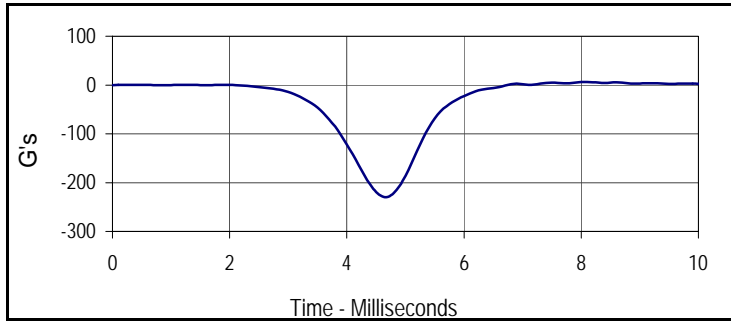
ATD Serial No.: 141

Test I.D.: F141HD056

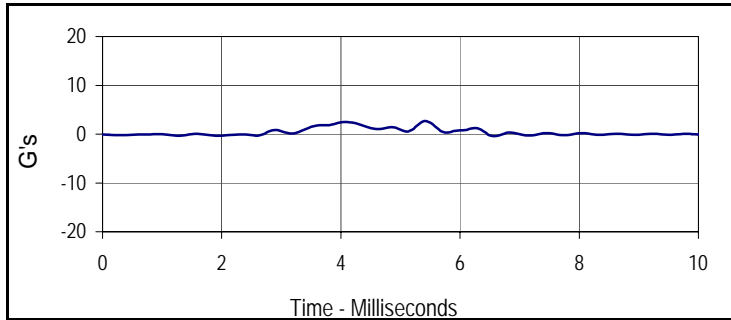
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	245	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.6	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	260.3	Pass
Peak Lateral Acceleration	G's	≤15.0	2.7	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	2.5	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
<b>Overall Test Results</b>				<b>Pass</b>



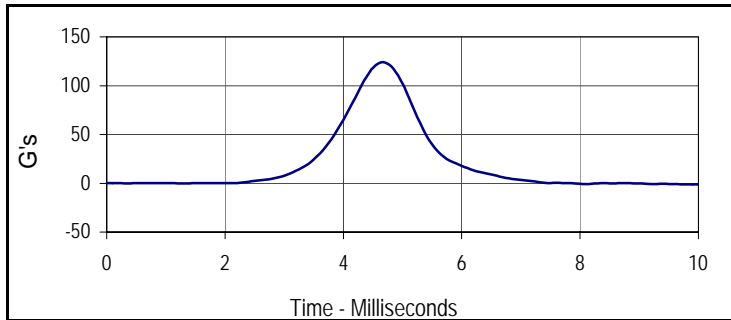
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
260.3	4.7	0.1	1.5



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
6.4	8.0	-228.9	4.7



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
2.7	5.4	-0.4	6.6



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
123.8	4.7	-0.5	8.0

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

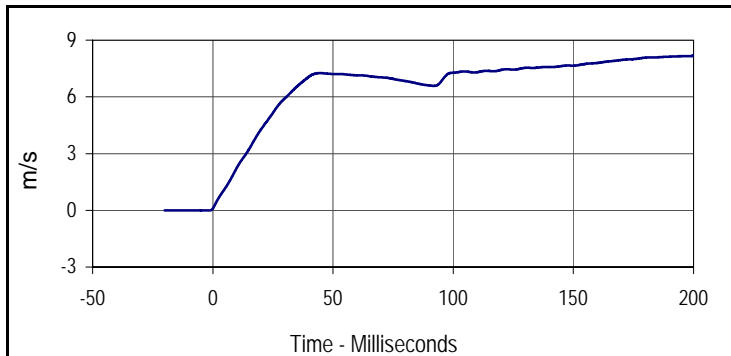
Test Date: 7/25/13



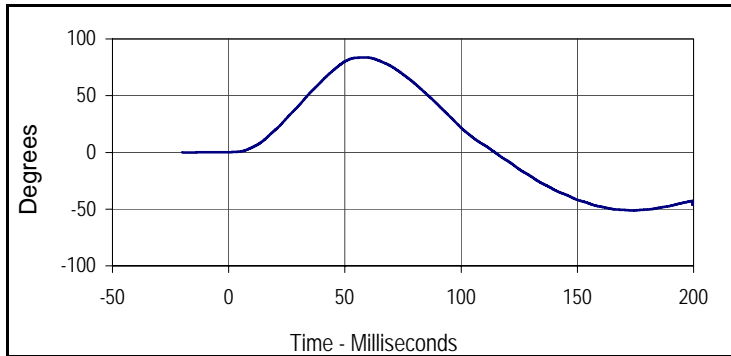
ATD Serial No.: 141

Test I.D.: F141NF056

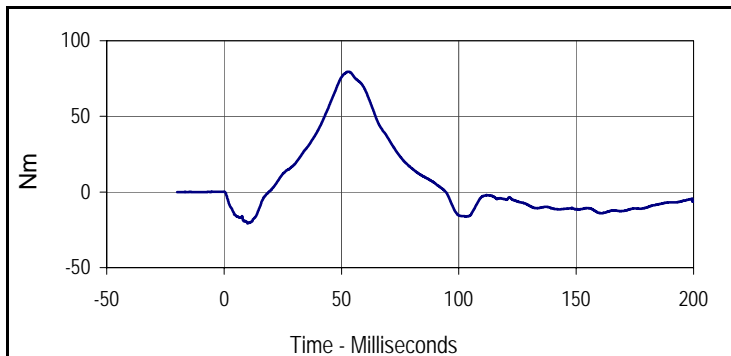
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	300	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass	
	Min		31.3	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	33.5	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	6.97	Pass	
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.3	Pass
	20 Msec.	m/s	4.0 to 5.0	4.3	Pass
	30 Msec.	m/s	5.8 to 7.0	5.9	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	83.7	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	79.5	Pass
Positive Moment Decay, Time To 10 Nm	Msec.	80.0 to 100.0	82.9	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
8.2	200.0	0.0	-1.4



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
83.7	58.9	-51.2	173.7



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
79.5	52.9	-20.8	10.0

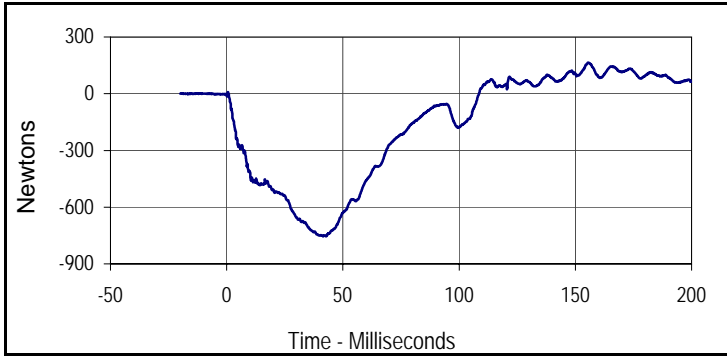
Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

Test Date: 7/25/13

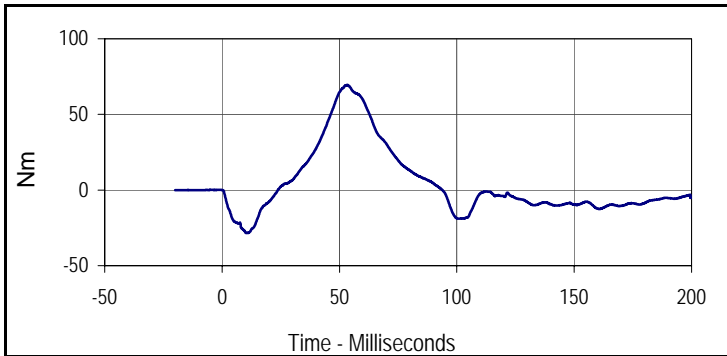


ATD Serial No.: 141

Test I.D.: F141NF056



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
165.2	155.5	-754.3	41.6



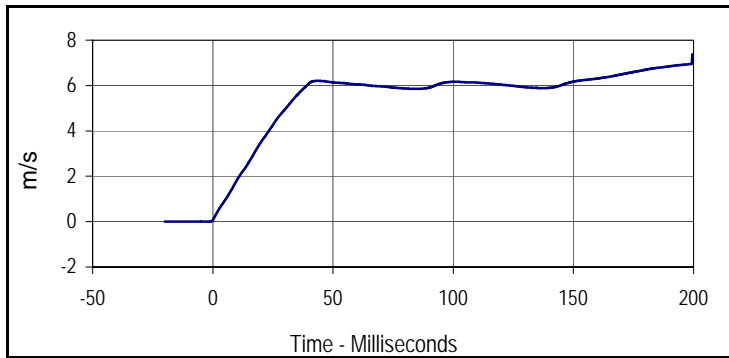
Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
69.4	53.4	-28.4	10.2

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

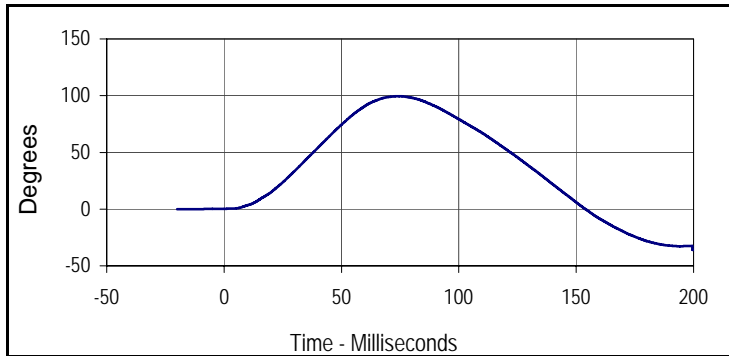
Test Date: 7/25/13  
 Test I.D.: F141NE056



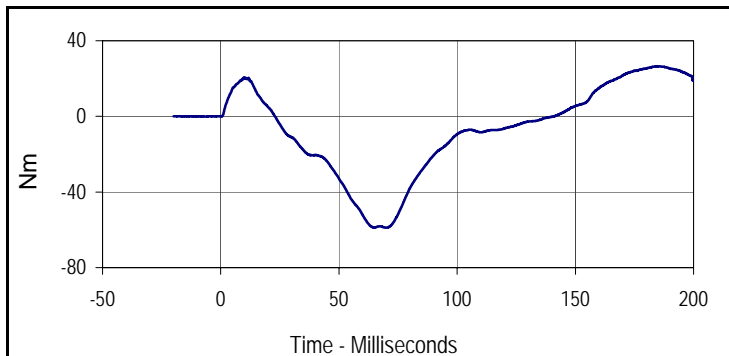
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	335	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass	
	Min		31.3	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	33.6	Pass	
Pendulum Velocity	m/s	5.95 to 6.19	6.03	Pass	
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.8	Pass
	20 Msec.	m/s	3.1 to 3.9	3.5	Pass
	30 Msec.	m/s	4.6 to 5.6	4.9	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	99.5	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-58.8	Pass
Positive Moment Decay, Time To -10 Nm	Msec.	94.0 to 114.0	99.4	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
7.4	200.0	0.0	-1.3



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
99.5	74.4	-36.0	199.5



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
26.5	185.5	-58.9	70.1

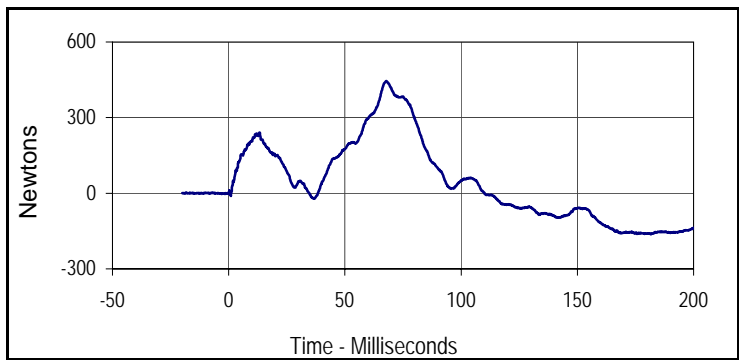
Test Program: Hybrid III 5th Percentile Female Neck Extension Test

Test Date: 7/25/13

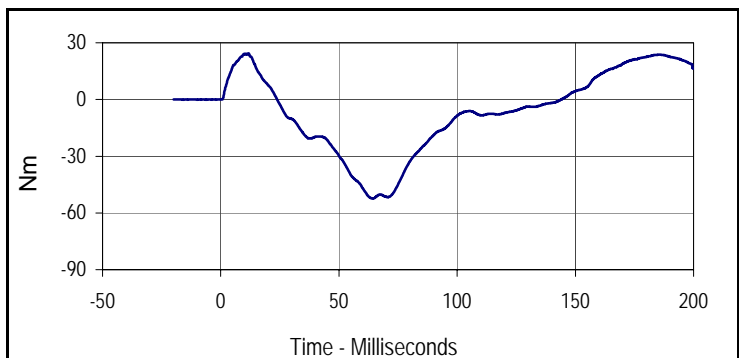


ATD Serial No.: 141

Test I.D.: F141NE056



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
445.0	67.7	-162.9	181.6



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
24.5	11.7	-52.4	64.2

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test

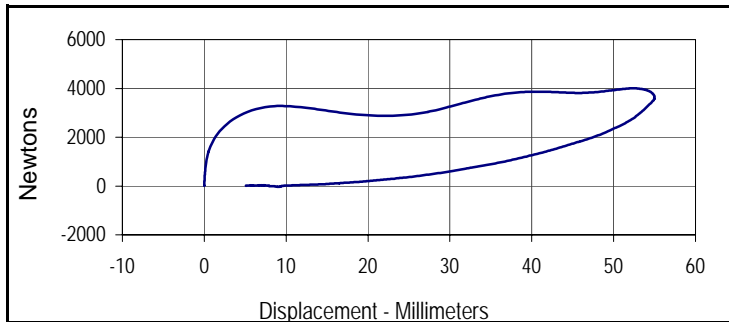
Test Date: 7/25/13



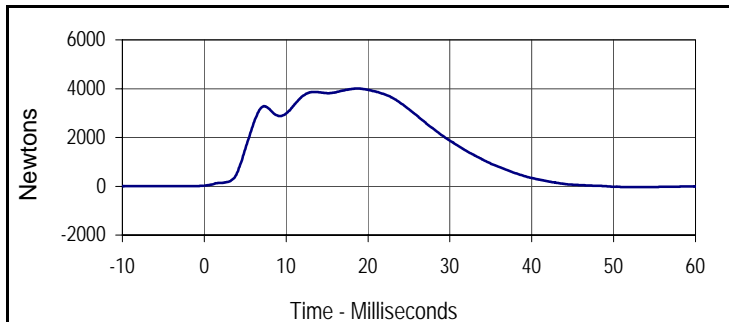
ATD Serial No.: 141

Test I.D.: F141CH056

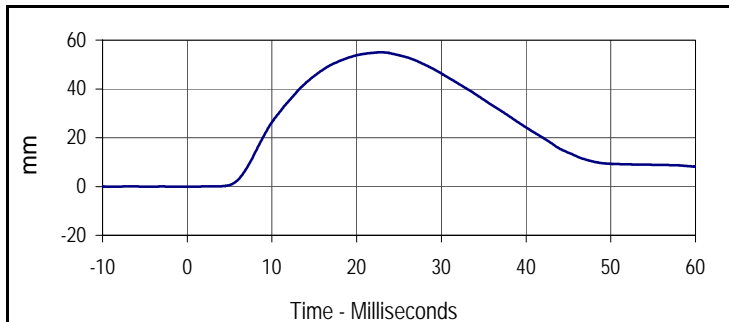
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	385	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.6	Pass
Probe Velocity	m/s	6.59 to 6.83	6.61	Pass
Peak Chest Deflection	mm	50.0 to 58.0	55.0	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	3933	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	4003	Pass
Internal Hysteresis	%	69 to 85	75.0	Pass
Overall Test Results				Pass



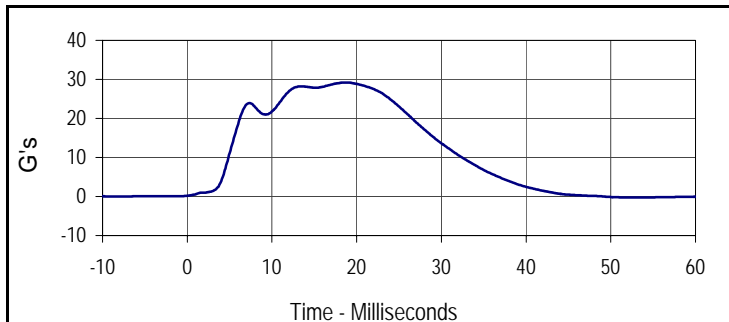
Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	75.0
Peak Probe Force		Peak Chest Deflection	
4003.2		55.0	



Curve Description			
Probe Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4003.2	18.8	-38.5	53.0



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
003	FIL	180	mm
Max	Time	Min	Time
55.0	22.9	0.0	-1.2



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
29.2	18.8	-0.3	53.0

Test Program: Hybrid III 5th Percentile Female Knee Impact Test

Test Date: 7/25/13



ATD Serial No.: 141

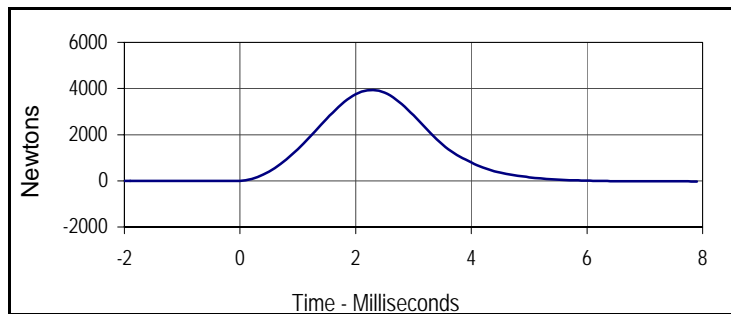
Test I.D.: F141LK056, F141RK056

**Left Knee**

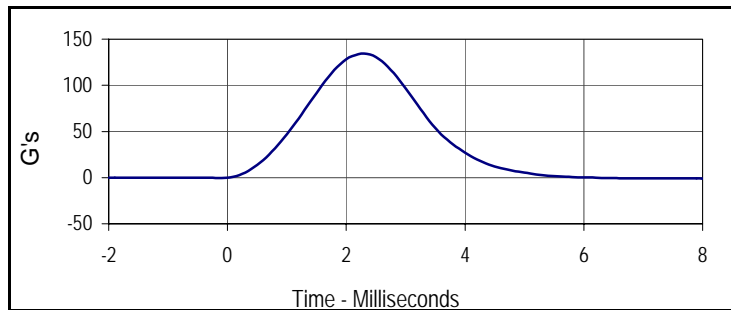
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	415	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.5	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	3450 to 4060	3939	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

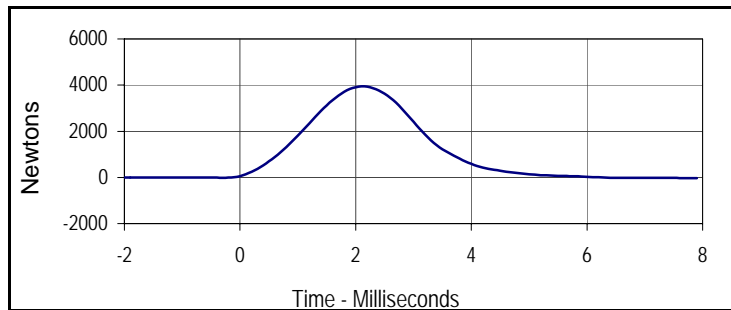
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	3450 to 4060	3943	Pass
<b>Overall Test Results</b>				<b>Pass</b>



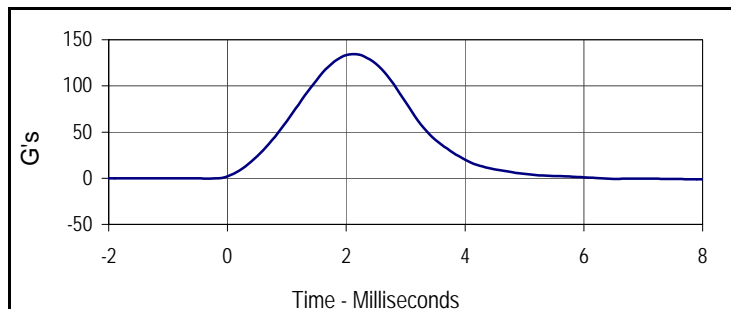
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3939.1	2.3	-26.1	7.9



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
134.4	2.3	-1.3	8.5



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3942.5	2.1	-33.0	7.9



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
134.5	2.1	-1.3	9.0

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

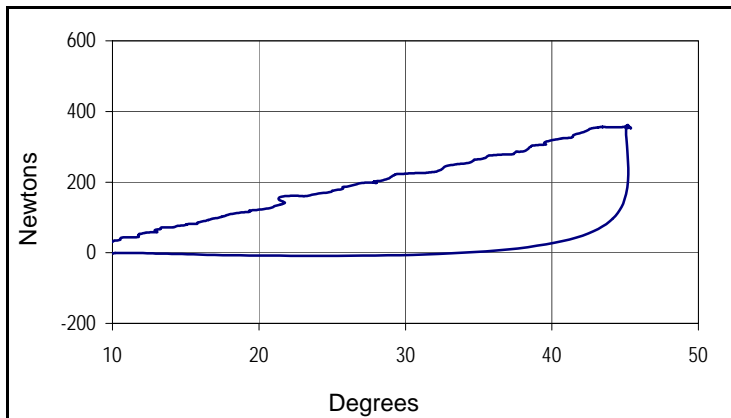
Test Date: 7/25/13



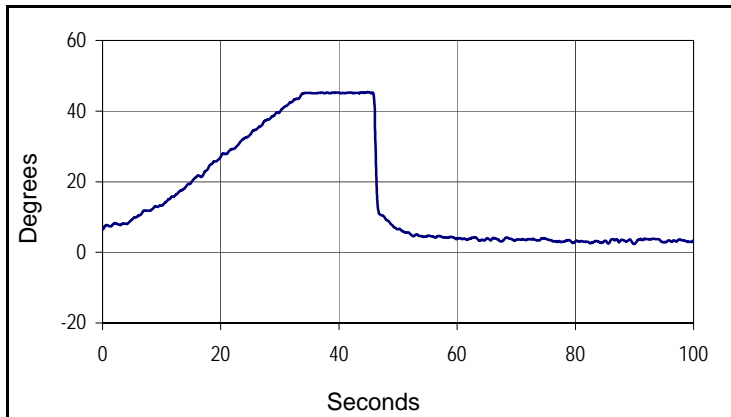
ATD Serial No.: 141

Test I.D.: TF056

Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	440	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.5	Pass
Initial Reference Plane Angle	Degrees	≤ 20	6.4	Pass
Peak Force at 45° +/-0.5°	Newtons	320.0 to 390.0	361.9	Pass
Torso Rotation Rate	deg/sec	0.5 to 1.5	1.0	Pass
Final Reference Plane Angle	Degrees	+/-8	3.4	Pass
Overall Test Results				Pass



Curve Description		
Force vs Torso Rotation		
Plot No.	Type	Filter Freq
001	FIL	1 Hz
Peak Force		Peak Rotation
361.9		45.4



Curve Description			
Torso Rotation			
Plot No.	Type	Filter Freq	Units
002	FIL	1 Hz	Degrees
Max	Time	Min	Time
45.4	44.9	2.4	89.9

**APPENDIX C**  
**POST-TEST / ATD CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

Test Program: Hybrid III 50th Percentile Male Dummy Damage Checklist

Test Date: 8/15/13



ATD Serial No.: 035

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

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Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 8/15/13



ATD Serial No.: 035

Test I.D.: N/A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.36	Pass
Laboratory Relative Humidity	%	10 to 70	32.2	Pass
A - Total sitting height	mm	879 to 889	884	Pass
B - Shoulder pivot height	mm	505 to 521	512	Pass
C - H point height	mm	84 to 89	85	Pass
D - H point location from backline	mm	135 to 140	137	Pass
E - Shoulder pivot from backline	mm	84 to 94	89	Pass
F - Thigh clearance	mm	140 to 155	146	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	297	Pass
H - Head back to backline	mm	41 to 46	43	Pass
I - Shoulder to elbow length	mm	330 to 345	336	Pass
J - Elbow rest height	mm	190 to 211	201	Pass
K - Buttock to knee length	mm	579 to 604	586	Pass
L - Popliteal length	mm	429 to 455	438	Pass
M - Knee pivot height	mm	485 to 500	493	Pass
N - Buttock popliteal length	mm	452 to 477	472	Pass
O - Chest depth without jacket	mm	213 to 229	225	Pass
P - Foot length	mm	251 to 267	260	Pass
V - Shoulder breadth	mm	422 to 437	433	Pass
W - Foot breadth	mm	91 to 107	99	Pass
Y - Chest circumference (with chest jacket)	mm	970 to 1001	981	Pass
Z - Waist circumference	mm	836 to 866	864	Pass
AA - Location for chest circumference	mm	429 to 434	429	Pass
BB - Location for waist circumference	mm	226 to 231	230	Pass
Overall Test Results				Pass

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

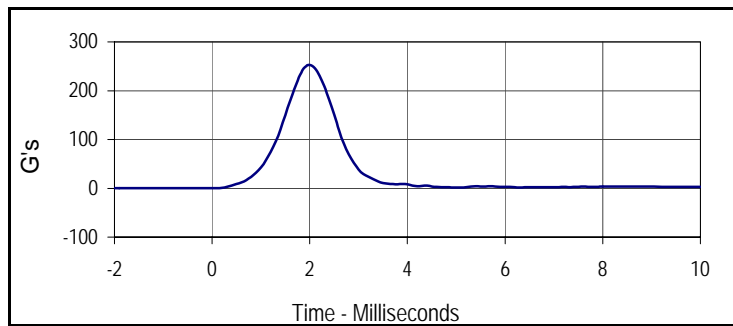
Test Date: 8/15/13



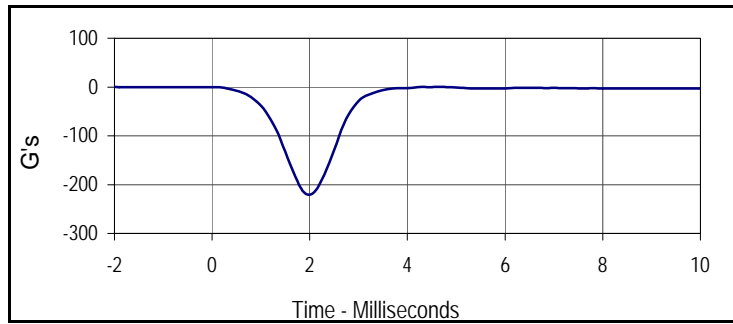
ATD Serial No.: 035

Test I.D.: M035HD054

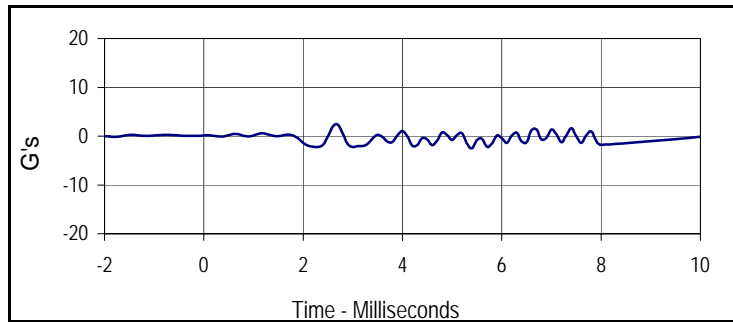
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	310	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.2	Pass
Peak Resultant Acceleration	G's	225.0 to 275.0	253.0	Pass
Peak Lateral Acceleration	G's	≤15.0	2.5	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	3.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
<b>Overall Test Results</b>				<b>Pass</b>



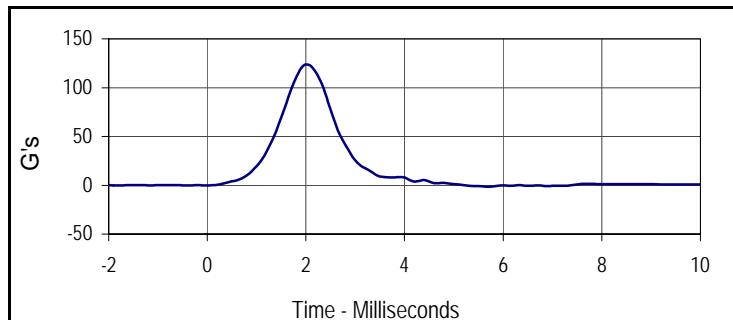
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
253.0	2.0	0.0	-2.0



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.1	4.6	-220.7	2.0



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
2.4	2.7	-2.5	5.4



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
123.7	2.0	-1.5	5.7

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

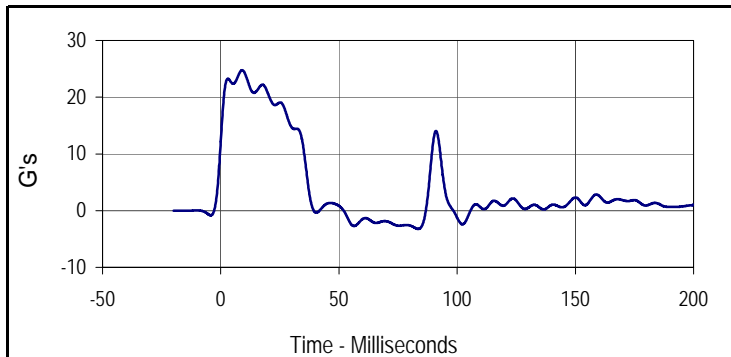
Test Date: 8/15/13



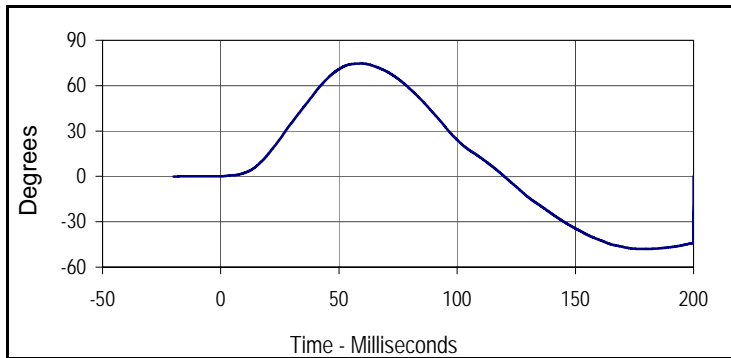
ATD Serial No.: 035

Test I.D.: M035NF054

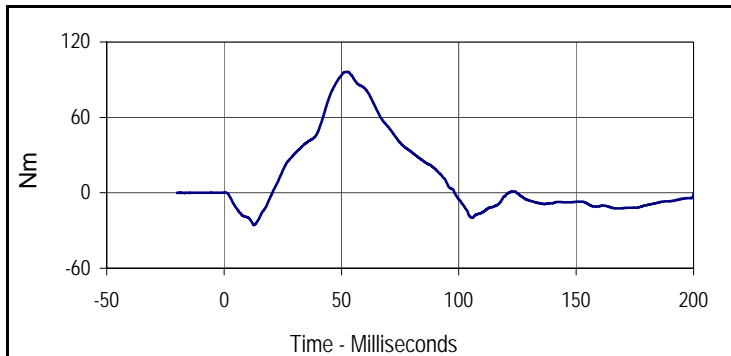
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	375	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass	
	Min		21.3	Pass	
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass	
	Min		29.6	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.4	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	32.2	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	7.03	Pass	
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	24.4	Pass
	20 Msec.	G's	17.6 to 22.6	20.6	Pass
	30 Msec.	G's	12.5 to 18.5	14.7	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 29.0	14.7	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	34.0 to 42.0	36.8	Pass	
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	74.7	Pass
	Time	Msec.	57.0 to 64.0	59.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	113.0 to 128.0	120	Pass	
Moment About Occ. Condyle	Max	Nm	88.1 to 108.5	96.2	Pass
	Time	Msec.	47.0 to 58.0	52.5	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	97.0 to 107.0	98.2	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
24.8	9.0	-3.2	83.5



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
74.7	59.4	-48.0	179.1



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
96.2	52.5	-25.8	12.6

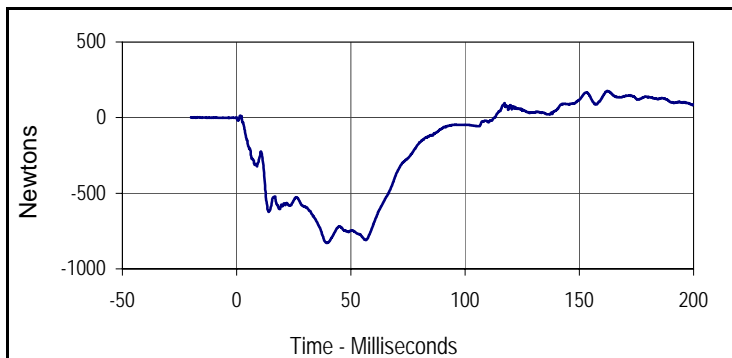
Test Program: Hybrid III 50th Percentile Male Neck Flexion Test

Test Date: 8/15/13

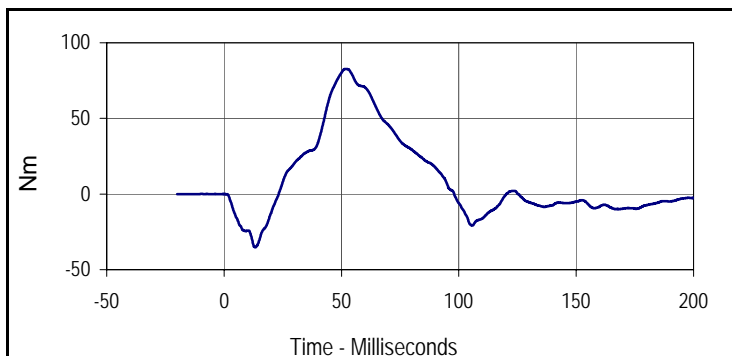


ATD Serial No.: 035

Test I.D.: M035NF054



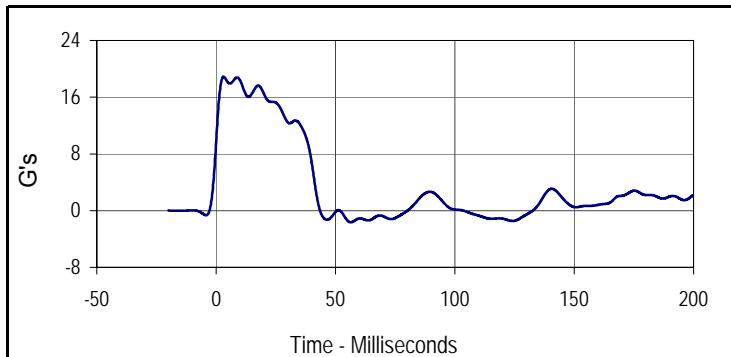
Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
176.4	162.3	-828.7	39.3



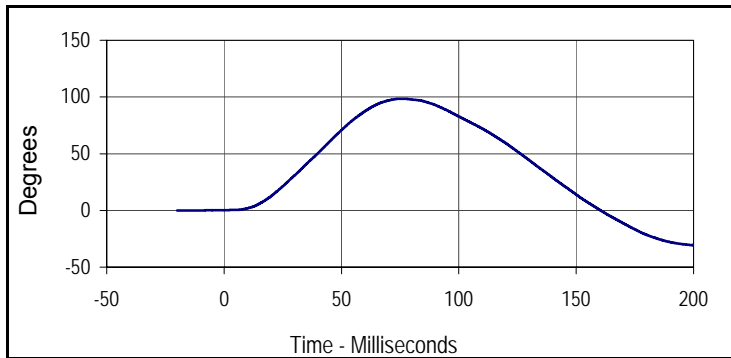
Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
82.7	51.8	-35.2	13.3



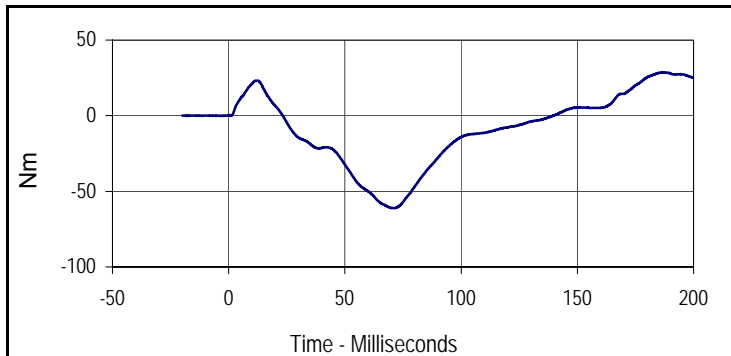
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	420	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass	
	Min		21.3	Pass	
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass	
	Min		29.6	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	32.2	Pass	
Pendulum Velocity	m/s	5.94 to 6.19	5.98	Pass	
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	18.4	Pass
	20 Msec.	G's	14.0 to 19.0	16.5	Pass
	30 Msec.	G's	11.0 to 16.0	12.5	Pass
Peak Pendulum Decel. after 30 Msec.	G's	≤ 22.0	12.7	Pass	
Deceleration Decay, Time to Cross 5 G's	Msec.	38.0 to 46.0	40.9	Pass	
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	98.5	Pass
	Time	Msec.	72.0 to 82.0	75.9	Pass
"D" Plane Rotation Decay, Time To Zero Crossing	Msec.	147.0 to 174.0	160.4	Pass	
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-61.2	Pass
	Time	Msec.	65.0 to 79.0	70.9	Pass
Positive Moment Decay, Time To Zero Crossing	Msec.	120.0 to 148.0	139.6	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
18.9	3.1	-1.7	56.4



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
98.5	75.9	-30.7	200.0



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
28.6	187.3	-61.2	70.9

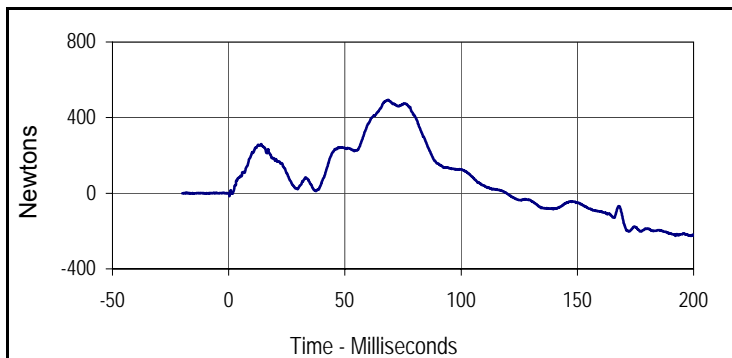
Test Program: Hybrid III 50th Percentile Male Neck Extension Test

Test Date: 8/15/13

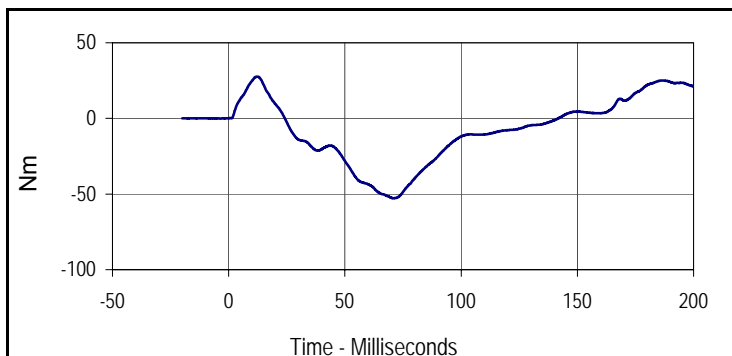


ATD Serial No.: 035

Test I.D.: M035NE054



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
493.7	68.7	-226.1	199.0



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
27.6	12.4	-52.7	71.1

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

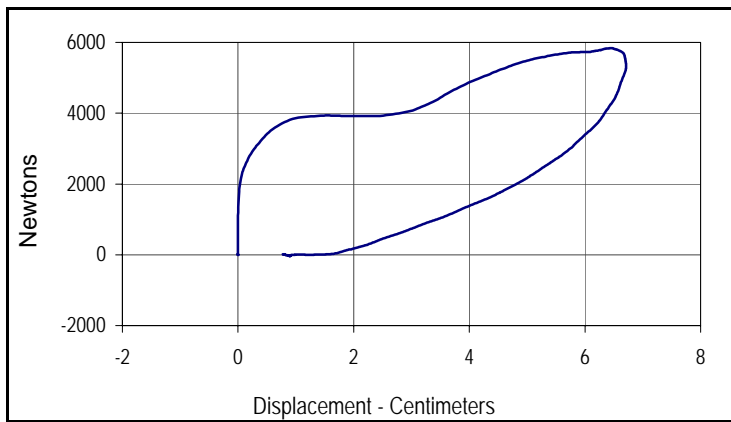
Test Date: 8/15/13



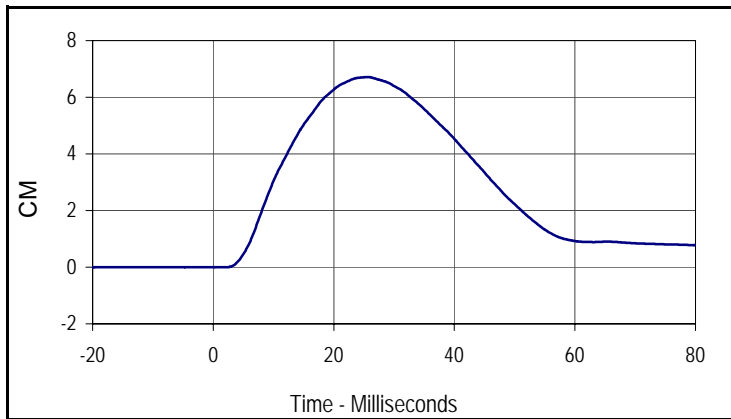
ATD Serial No.: 035

Test I.D.: M035CH054

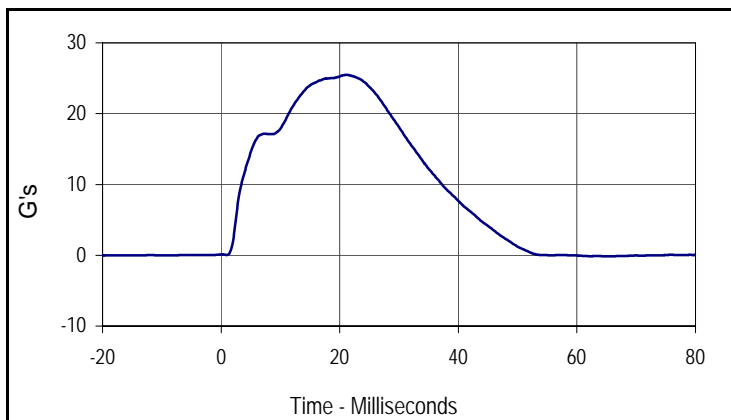
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	495	Pass
Temperature During Soak	Max	20.6 to 22.2	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.1	Pass
Probe Velocity	m/s	6.58 to 6.82	6.78	Pass
Peak Probe Force	Newtons	5159 to 5893	5836	Pass
Peak Sternum Deflection	CM	6.35 to 7.26	6.71	Pass
Internal Hysteresis	%	69 to 85	70.7	Pass
Overall Test Results				Pass



Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	70.7
Peak Probe Force		Peak Chest Deflection	
5836		6.71	



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
6.7	25.6	0.0	1.9



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
25.5	21.2	-0.2	65.3

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

Test Date: 8/15/13



ATD Serial No.: 035

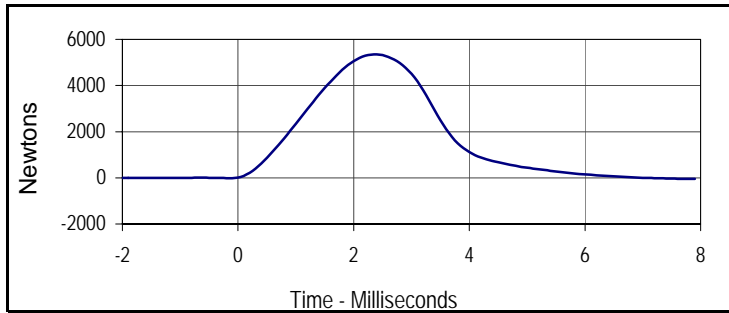
Test I.D.: M035LK054, M035RK054

**Left Knee**

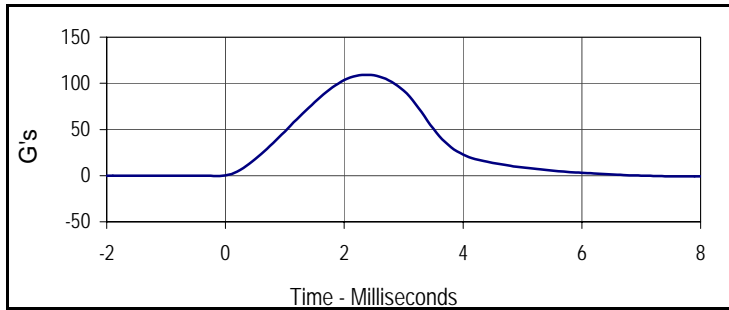
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	550	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.1	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5346	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

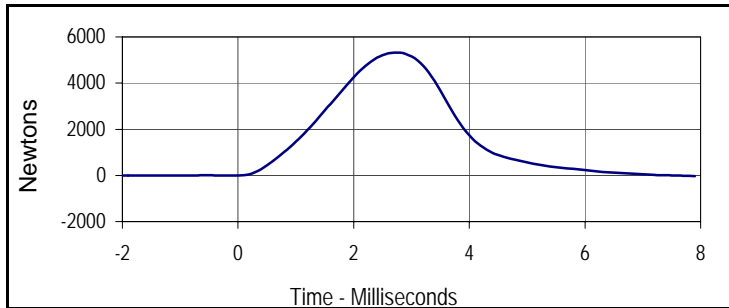
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.09	Pass
Peak Probe Force	Newtons	4715 to 5782	5327	Pass
<b>Overall Test Results</b>				<b>Pass</b>



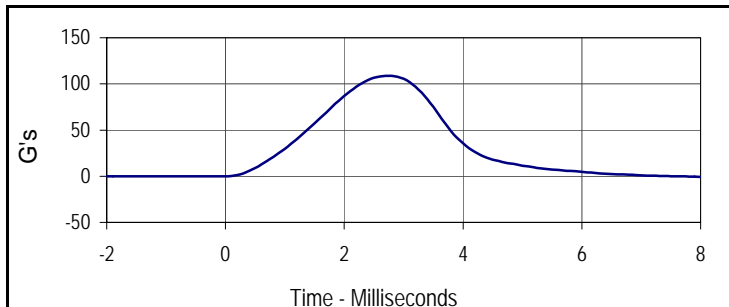
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5346.0	2.4	-42.2	7.9



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
109.3	2.4	-0.9	7.9



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
5327.2	2.7	-26.7	7.9



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
108.9	2.7	-1.2	0.0

Test Program: Hybrid III 50th Percentile Male Hip Joint-Femur Flexion Test  
 ATD Serial No.: 035

Test Date: 8/15/13  
 Test I.D.: M035LF054, M035RF054

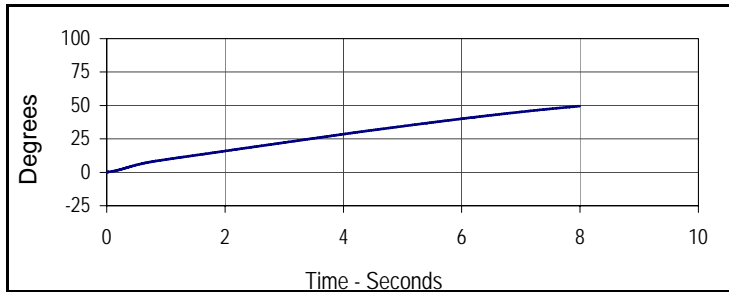


**Left Hip Joint-Femur Results**

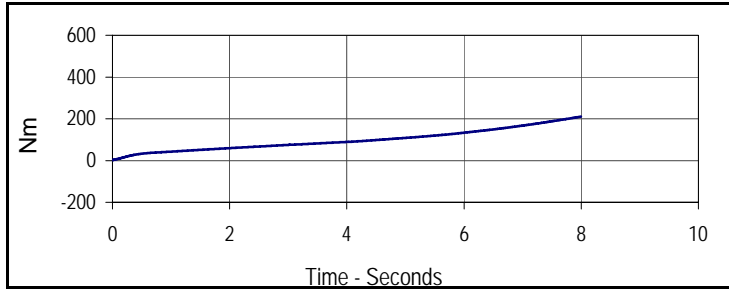
Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	625	Pass
Temperature During Soak	Max	18.9 to 25.6	21.6	Pass
	Min		21.3	Pass
Humidity During Soak	Max	10.0 to 70.0	32.5	Pass
	Min		29.6	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	32.1	Pass
Rotation Rate	deg/sec	5 to 10	6.2	Pass
Femur Torque at 30°	Nm	≤ 95	91.6	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	48.6	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Hip Joint-Femur Results**

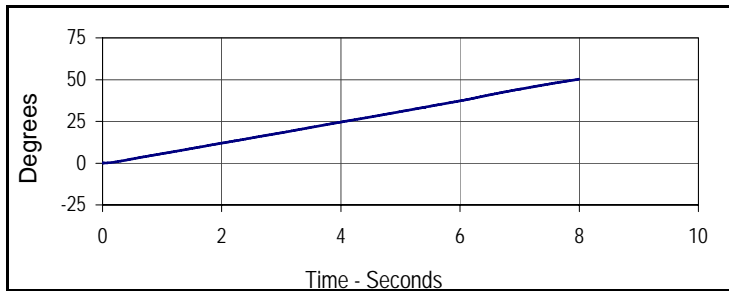
Rotation Rate	deg/sec	5 to 10	6.3	Pass
Femur Torque at 30°	Nm	≤ 95	88.6	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	46.7	Pass
<b>Overall Test Results</b>				<b>Pass</b>



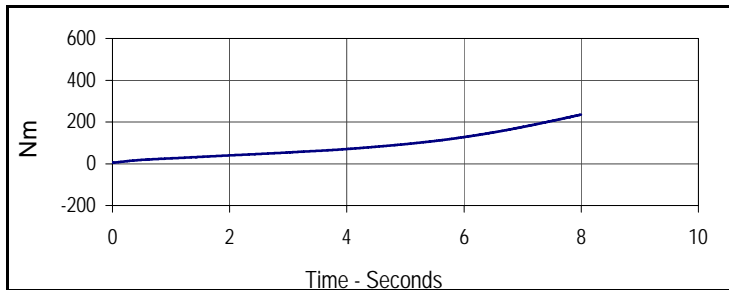
Curve Description			
Left Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
49.5	8.0	0.2	0.0



Curve Description			
Left Femur Torque			
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
210.5	8.0	0.2	0.0



Curve Description			
Right Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
50.2	8.0	0.2	0.0



Curve Description			
Right Femur Torque			
Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
235.4	8.0	0.2	0.0

Test Program: Hybrid III 5th Percentile Female Dummy Damage Checklist

Test Date: 8/16/13



ATD Serial No.: 141

Test I.D.: N/A

Dummy Item	Inspect for	Comments	Damaged	OK
Entire Dummy	Perform general cleaning			X
Outer Skin	Gashes, rips, cracks			X
Head	Ballast secure			X
	General appearance			X
Neck	Broken or cracked rubber			X
	Upper neck bracket firmly attached to the lower neck bracket			X
	Looseness at the condyle joint			X
	Nodding blocks cracked or out of position			X
Spine	Broken or cracks in rubber			X
Ribs	Broken or bent ribs			X
	Broken or bent rib supports			X
	Damping material separated or cracked			X
	Rubber bumpers in place			X
Chest Displacement Assembly	Bent shaft			X
	Slider arm riding in track			X
Transducer Leads	Torn cables			X
Accelerometer Mountings	Head mounting secure			X
	Chest mounting secure			X
Knees	Skin condition			X
	Insert (do not remove)			X
	Casting			X
Limbs	Normal movement and adjustment			X
Knee Sliders	Wires intact			X
	Rubber returned to "at rest" position			X
Pelvis	Broken			X
Other				X

Describe the repair on repair or replacement of parts:

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Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 8/16/13



ATD Serial No.: 141

Test I.D.: N/A

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	33.6	Pass
A - Total sitting height	mm	774.7 to 800.1	784	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	450	Pass
C - H point height	mm	81.3 to 86.3	85	Pass
D - H point location from backline	mm	144.8 to 149.8	146	Pass
E - Shoulder pivot from backline	mm	68.6 to 83.8	77	Pass
F - Thigh clearance	mm	119.4 to 134.6	126	Pass
G - Back of elbow to wrist pivot	mm	243.9 to 259.1	250	Pass
H - Head back to backline	mm	40.7 to 45.7	44	Pass
I - Shoulder to elbow length	mm	276.8 to 297.2	285	Pass
J - Elbow rest height	mm	182.8 to 203.2	197	Pass
K - Buttock to knee length	mm	520.7 to 546.1	531	Pass
L - Popliteal length	mm	355.6 to 376.0	371	Pass
M - Knee pivot height	mm	393.7 to 419.1	401	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	185	Pass
P - Foot length	mm	218.5 to 233.7	221	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	473	Pass
S - Head Breadth	mm	137.1 to 147.3	144	Pass
T - Head Depth	mm	177.8 to 188.0	180	Pass
U - Hip Breadth	mm	299.7 to 314.9	302	Pass
V - Shoulder breadth	mm	350.5 to 365.7	359	Pass
W - Foot breadth	mm	78.8 to 94.0	90	Pass
X - Head circumference	mm	528.3 to 548.7	541	Pass
Y - Chest circumference (with chest jacket)	mm	850.8 to 881.3	864	Pass
Z - Waist circumference	mm	759.5 to 789.9	768	Pass
AA - Location for chest circumference	mm	299.7 to 309.9	300	Pass
BB - Location for waist circumference	mm	160.1 to 170.2	165	Pass
Overall Test Results				Pass

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

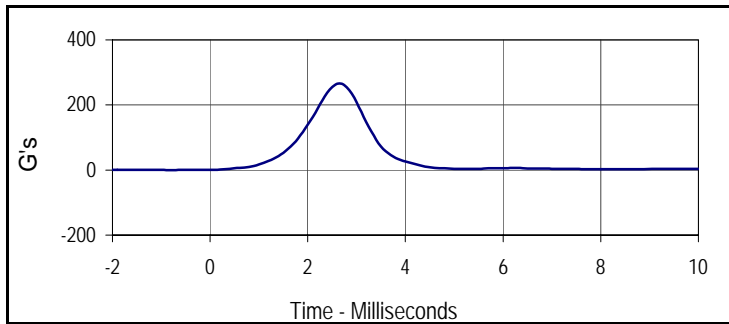
Test Date: 8/16/13



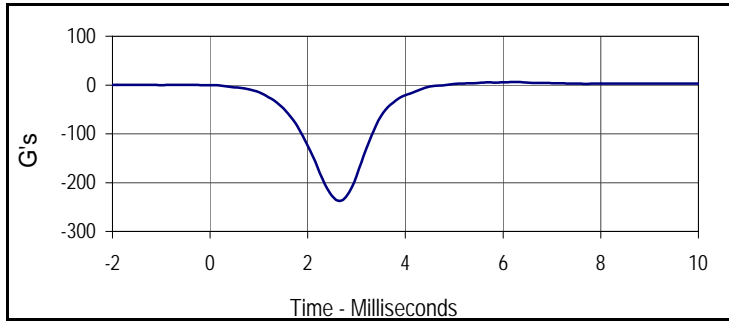
ATD Serial No.: 141

Test I.D.: F141HD057

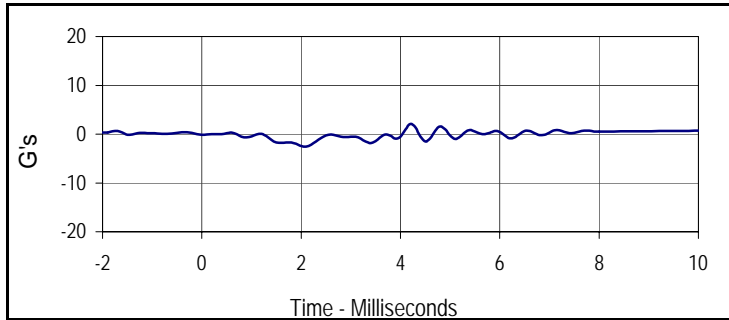
Tested Parameter	Units	Specification	Result	Pass/Fail
Head Assembly Soak Time	Minutes	≥240	245	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.6	Pass
Peak Resultant Acceleration	G's	250.0 to 300.0	265.2	Pass
Peak Lateral Acceleration	G's	≤15.0	2.5	Pass
Oscillations After Main Pulse	%	<10% of peak Res. Acceleration	2.3	Pass
Is Acceleration Unimodal?	Yes/No	Yes	Yes	Pass
<b>Overall Test Results</b>				<b>Pass</b>



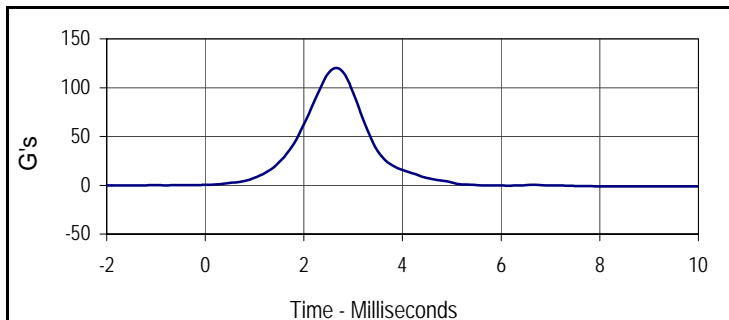
Curve Description			
Head Resultant			
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
265.2	2.6	0.1	-0.8



Curve Description			
Head X			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.4	6.0	-236.7	2.6



Curve Description			
Head Y			
Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
2.1	4.2	-2.5	2.1



Curve Description			
Head Z			
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
119.7	2.7	-0.2	5.8

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

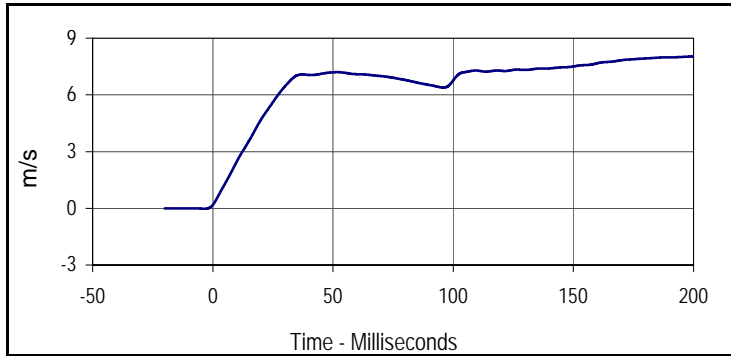
Test Date: 8/16/13



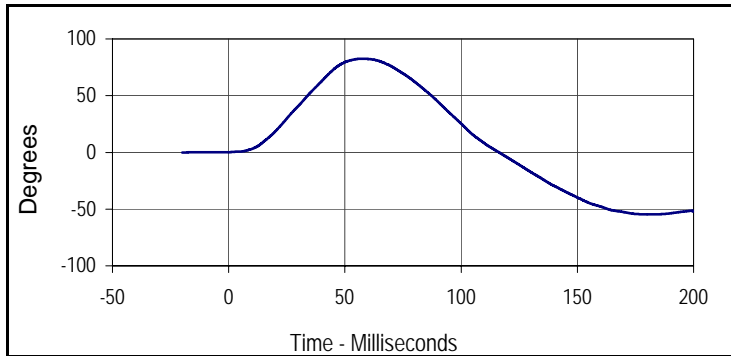
ATD Serial No.: 141

Test I.D.: F141NF057

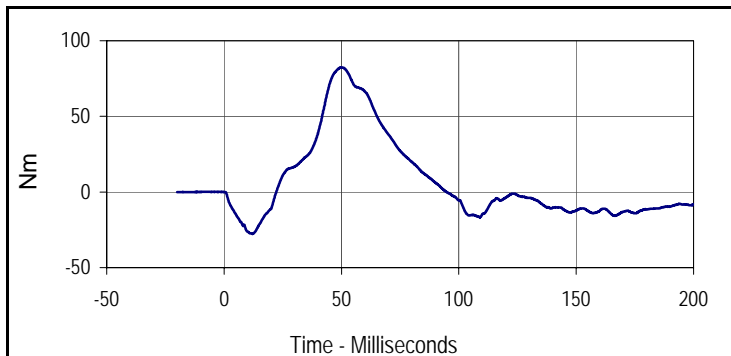
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	300	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass	
	Min		31.3	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	33.5	Pass	
Pendulum Velocity	m/s	6.89 to 7.13	7.01	Pass	
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.5	Pass
	20 Msec.	m/s	4.0 to 5.0	4.7	Pass
	30 Msec.	m/s	5.8 to 7.0	6.4	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	82.6	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	82.5	Pass
Positive Moment Decay, Time To 10 Nm	Msec.	80.0 to 100.0	85.5	Pass	
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
8.0	199.4	0.0	-3.3



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
82.6	57.4	-54.6	183.0



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
82.5	49.9	-27.7	12.1

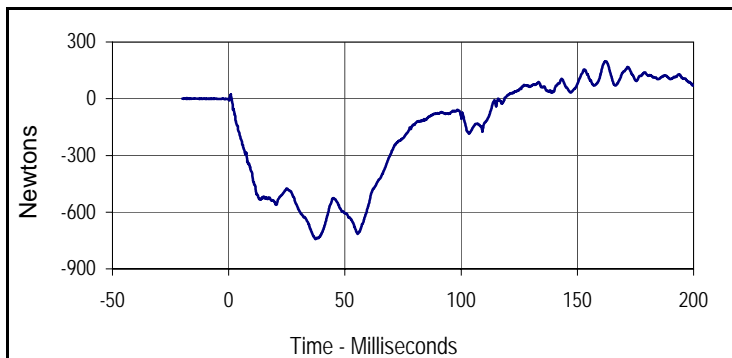
Test Program: Hybrid III 5th Percentile Female Neck Flexion Test

Test Date: 8/16/13

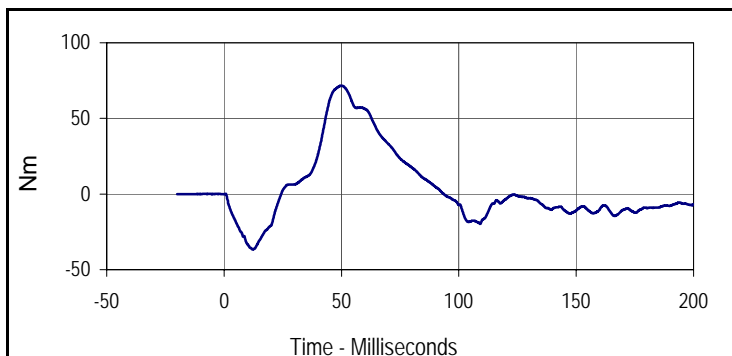


ATD Serial No.: 141

Test I.D.: F141NF057



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
197.6	162.2	-742.1	37.4



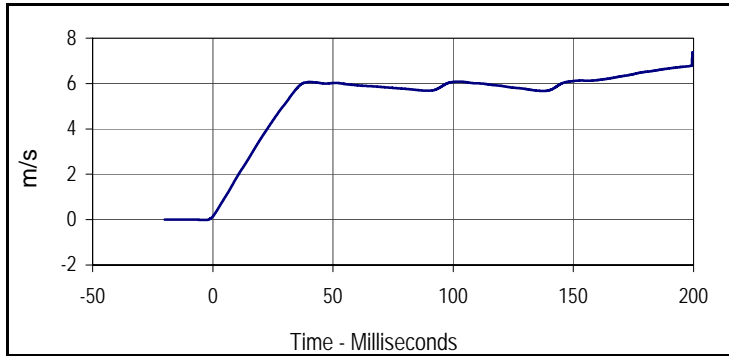
Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
71.7	49.8	-36.7	12.1

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

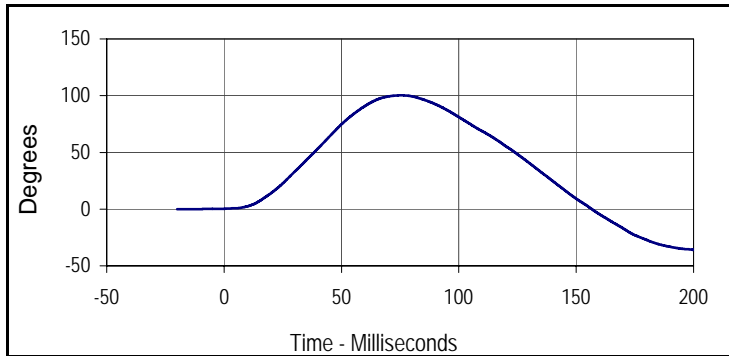
Test Date: 8/16/13  
 Test I.D.: F141NE057



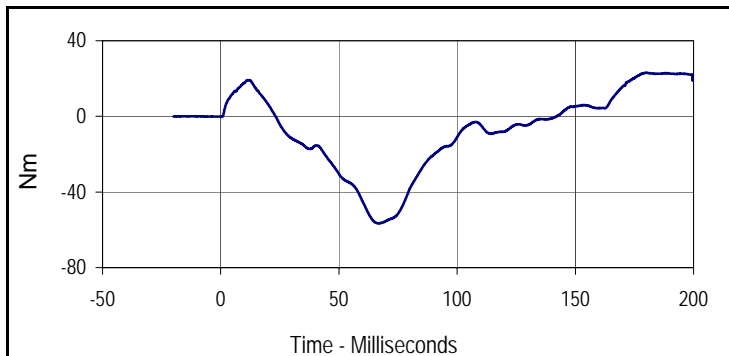
Tested Parameter	Units	Specification	Result	Pass/Fail	
Neck Assembly Soak Time	Minutes	≥240	335	Pass	
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass	
	Min		21.2	Pass	
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass	
	Min		31.3	Pass	
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass	
Laboratory Humidity During Test	%	10.0 to 70.0	33.6	Pass	
Pendulum Velocity	m/s	5.95 to 6.19	6.05	Pass	
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.9	Pass
	20 Msec.	m/s	3.1 to 3.9	3.6	Pass
	30 Msec.	m/s	4.6 to 5.6	5.1	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	100.3	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-55.8	Pass
Positive Moment Decay, Time To -10 Nm	Msec.	94.0 to 114.0	100.5	Pass	
<b>Overall Test Results</b>				<b>Pass</b>	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
7.4	200.0	0.0	-3.3



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
100.3	75.4	-36.0	199.5



Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
23.0	180.2	-56.6	66.8

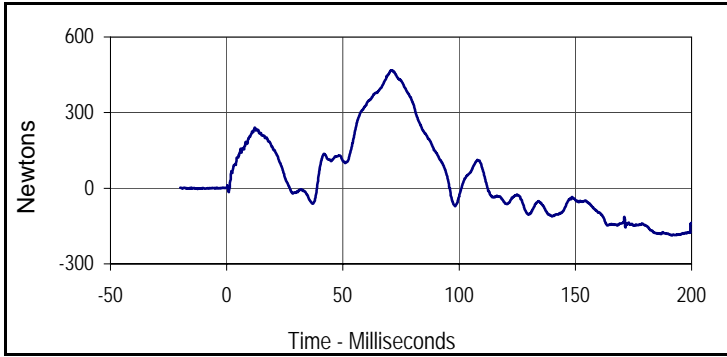
Test Program: Hybrid III 5th Percentile Female Neck Extension Test

Test Date: 8/16/13

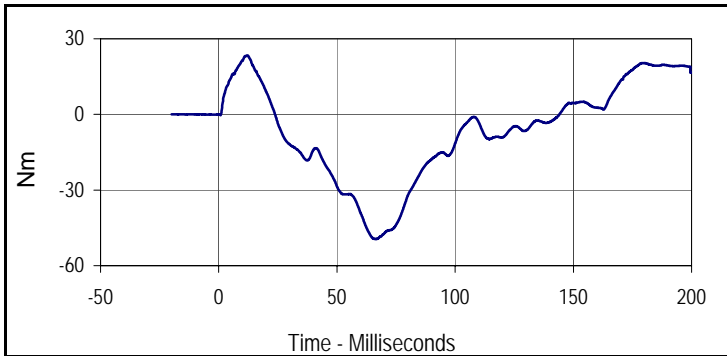


ATD Serial No.: 141

Test I.D.: F141NE057



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
467.8	71.0	-186.6	191.4



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
23.4	12.0	-49.5	66.5

Test Program: Hybrid III 5th Percentile Female Thorax Impact Test

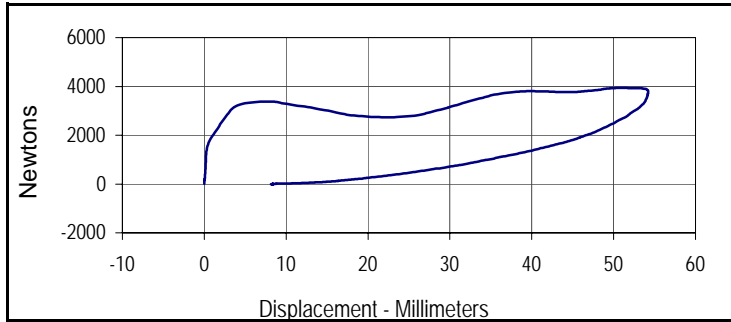
Test Date: 8/16/13



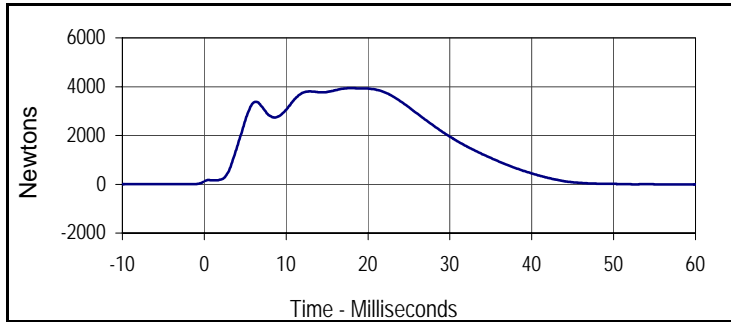
ATD Serial No.: 141

Test I.D.: F141CH057

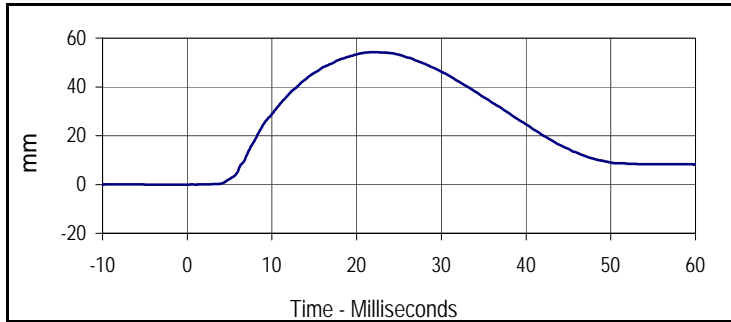
Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	385	Pass
Temperature During Soak	Max	20.6 to 22.2	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.6	Pass
Probe Velocity	m/s	6.59 to 6.83	6.72	Pass
Peak Chest Deflection	mm	50.0 to 58.0	54.2	Pass
Peak Force Between 50 and 58 MM	Newtons	3900 to 4400	3934	Pass
Peak Force Between 18 and 50 MM	Newtons	≤4600	3937	Pass
Internal Hysteresis	%	69 to 85	73.6	Pass
Overall Test Results				Pass



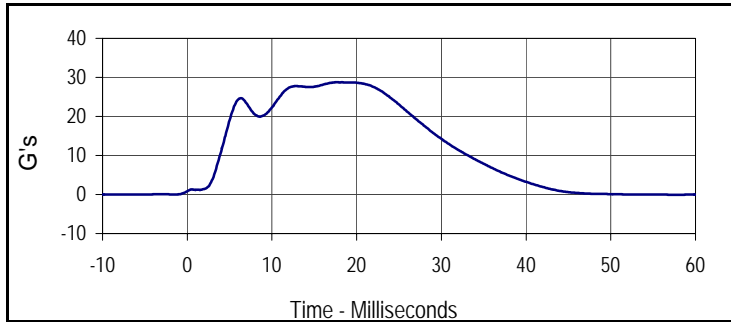
Curve Description			
Probe Force vs. Chest Deflection			
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	73.6
Peak Probe Force		Peak Chest Deflection	
3937.3		54.2	



Curve Description			
Probe Force			
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
3937.3	17.6	-8.7	57.7



Curve Description			
Chest Deflection			
Plot No.	Type	SAE Class	Units
003	FIL	600	mm
Max	Time	Min	Time
54.2	22.1	0.0	-3.0



Curve Description			
Impactor Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
28.7	17.6	-0.1	57.7

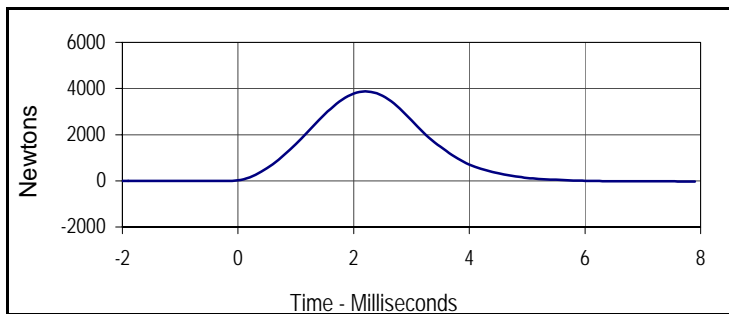


**Left Knee**

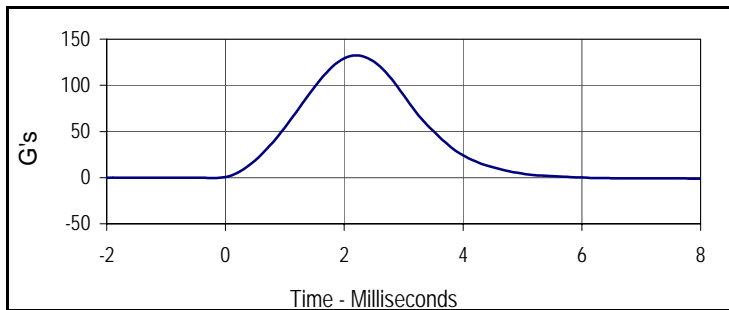
Tested Parameter	Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time	Minutes	≥240	415	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.5	Pass
Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	3450 to 4060	3878	Pass
<b>Overall Test Results</b>				<b>Pass</b>

**Right Knee**

Pendulum Velocity at T=0	m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force	Newtons	3450 to 4060	3806	Pass
<b>Overall Test Results</b>				<b>Pass</b>



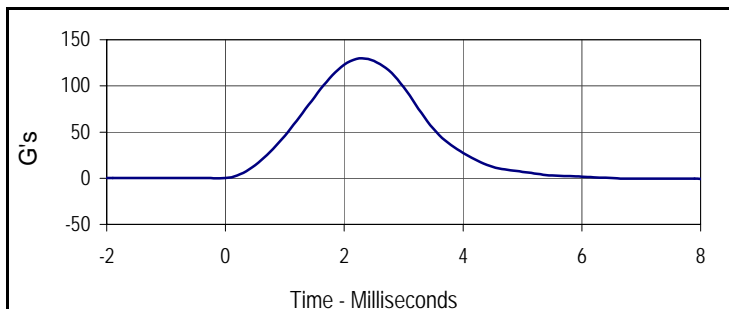
Curve Description			
Left Knee Probe Force			
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3878.4	2.2	-30.5	7.9



Curve Description			
Left Knee Acceleration			
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
132.3	2.2	-1.3	8.5



Curve Description			
Right Knee Probe Force			
Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3805.8	2.3	-17.5	7.9



Curve Description			
Right Knee Acceleration			
Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
129.8	2.3	-1.0	9.4

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

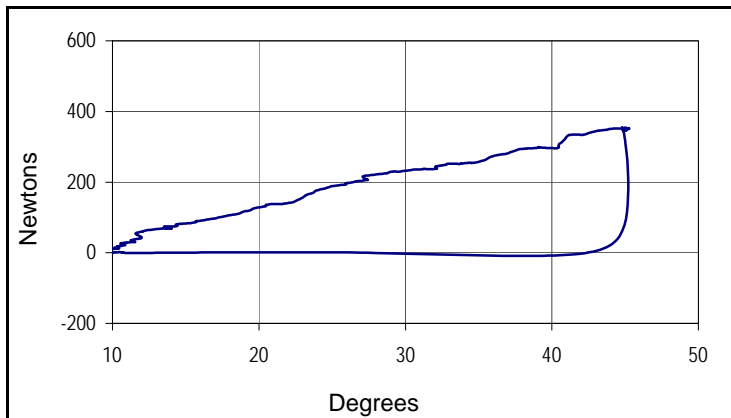
Test Date: 8/16/13



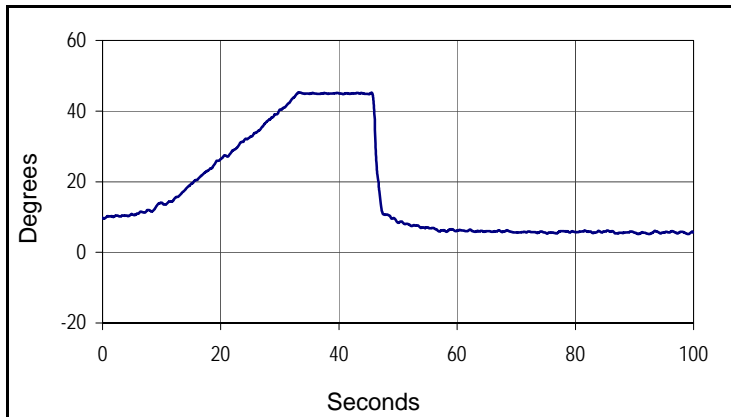
ATD Serial No.: 141

Test I.D.: TF057

Tested Parameter	Units	Specification	Result	Pass/Fail
Dummy Soak Time	Minutes	≥240	440	Pass
Temperature During Soak	Max	18.9 to 25.6	21.5	Pass
	Min		21.2	Pass
Humidity During Soak	Max	10.0 to 70.0	36.5	Pass
	Min		31.3	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	33.5	Pass
Initial Reference Plane Angle	Degrees	≤ 20	9.8	Pass
Peak Force at 45° +/-0.5°	Newtons	320.0 to 390.0	354.9	Pass
Torso Rotation Rate	deg/sec	0.5 to 1.5	1.4	Pass
Final Reference Plane Angle	Degrees	+/-8	5.6	Pass
Overall Test Results				Pass



Curve Description		
Force vs Torso Rotation		
Plot No.	Type	Filter Freq
001	FIL	1 Hz
Peak Force		Peak Rotation
354.9		45.3



Curve Description			
Torso Rotation			
Plot No.	Type	Filter Freq	Units
002	FIL	1 Hz	Degrees
Max	Time	Min	Time
45.3	33.3	5.1	99.1