

REPORT NUMBER: NCAP-KAR-12-058

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

**CHRYSLER GROUP LLC
2012 RAM 2500 ST CREW CAB 4X4 4-DOOR TRUCK**

NHTSA NUMBER: MC0313

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



MARCH 19, 2012

FINAL REPORT

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

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15. Supplementary Notes Shortly after the frontal crash test, smoke and flames were observed from the engine compartment. Based on currently available information, the agency does not see a safety defect trend of related post-crash smoke/fire incidents in model years 2006-2012 RAM 1500/2500/3500 series.																																																						
16. Abstract A 56.3 km/h NCAP Frontal Impact Test was conducted on a 2012 RAM 2500 ST Crew Cab 4x4 4-door truck in accordance with the specifications of the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure. This test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and footwell intrusion performance. The test was conducted at the KARCO Engineering, LLC. facility in Adelanto, California on March 5, 2012. The impact velocity of the vehicle was 55.76 km/h and the ambient temperature at the barrier face at the time of impact was 23.3 deg. C. The target vehicle's post-test maximum crush was 775 mm at DPD 4, to the right of the vehicle's centerline. The test vehicle's performance is as follows:																																																						
<table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th><th rowspan="2">Units</th><th colspan="2">Driver ATD</th><th colspan="2">Passenger ATD</th></tr> <tr> <th>Threshold</th><th>Result</th><th>Threshold</th><th>Result</th></tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₁₅)</td><td>N/A</td><td>700.0</td><td>293.5</td><td>700.0</td><td>418.7</td></tr> <tr> <td>Maximum Chest Compression</td><td>mm</td><td>63</td><td>-46</td><td>52</td><td>-13</td></tr> <tr> <td>Nij</td><td>N/A</td><td>1</td><td>0.35</td><td>1</td><td>0.52</td></tr> <tr> <td>Neck Tension</td><td>N</td><td>4170</td><td>2123.4</td><td>2620</td><td>1102.4</td></tr> <tr> <td>Neck Compression</td><td>N</td><td>4000</td><td>-313.5</td><td>2520</td><td>-115.6</td></tr> <tr> <td>Left Femur Force</td><td>N</td><td>10008</td><td>-3586.4</td><td>6805</td><td>-3038.6</td></tr> <tr> <td>Right Femur Force</td><td>N</td><td>10008</td><td>-2354.2</td><td>6805</td><td>-4206.2</td></tr> </tbody> </table>			Measurement Description	Units	Driver ATD		Passenger ATD		Threshold	Result	Threshold	Result	Head Injury Criteria (HIC ₁₅)	N/A	700.0	293.5	700.0	418.7	Maximum Chest Compression	mm	63	-46	52	-13	Nij	N/A	1	0.35	1	0.52	Neck Tension	N	4170	2123.4	2620	1102.4	Neck Compression	N	4000	-313.5	2520	-115.6	Left Femur Force	N	10008	-3586.4	6805	-3038.6	Right Femur Force	N	10008	-2354.2	6805	-4206.2
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SECTION 1

PURPOSE AND SUMMARY OF TEST

PURPOSE

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

The 56.3 km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Frontal NCAP Laboratory Test Procedure, dated August, 2011.

SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2012 RAM 2500 ST Crew Cab 4x4 4-door truck at a velocity of 55.76 km/h. The test was performed at KARCO Engineering, LLC. on March 5, 2012. 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 50th percentile male anthropomorphic test device (ATD) was placed in the driver seating position and one Part 572O 5th percentile female ATD was placed in the right-front passenger seating position according to dummy placement instructions specified in the Frontal NCAP Laboratory Test Procedure.

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

The 136 channels of data were recorded on an on-board data acquisition system. Appendix B contains the dummy response data traces.

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

The maximum static crush of the test vehicle was 775 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 front airbag and headrest. The upper torso contacted the airbag. Both the left and right knees contacted the knee bolster.

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

The occupant data is summarized below:

ATD Position	HIC ₁₅	T ¹	T ²	Chest Disp. (mm)	Nij	Neck Tension (N)	Neck Comp. (N)	Left Femur (N)	Right Femur (N)
Driver (50th)	293.5	79.4	94.4	-46	0.35	2123.4	-313.5	-3586.4	-2354.2
Passenger (5th)	418.7	71.2	86.2	-13	0.52	1102.4	-115.6	-3038.6	-4206.2

Shortly after the frontal crash test, smoke and flames were observed from the engine compartment. Based on currently available information, the agency does not see a safety defect trend of related post-crash smoke/fire incidents in model years 2006-2012 RAM 1500/2500/3500 series.

SECTION 2
DATA SHEETS

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

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 ²	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: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA Number	MC0313
Model Year	2012
Make	RAM
Model	2500 ST Crew Cab 4x4
Body Style	4-Door Truck
VIN	3C6TD5HTXCG147494
Body Color	Bright Silver
Odometer Reading (km / mi)	174 / 108
Engine Displacement (L)	5.7
Type / No. of Cylinders	V8
Engine Placement	Longitudinal
Transmission Type	Automatic
Transmission Speeds	6
Overdrive	Yes
Final Drive	4x4
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes
All Wheel Drive (AWD)	No
Traction Control System	Yes

Auto-Leveling System	No
Automatic Door Locks	No
Power Window Auto-Reverse	Yes
Other Optional Feature	None
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	No
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Pass. Front Airbag	Yes
Pass. Curtain Airbag	Yes
Pass. Head/Torso Airbag	No
Pass. Torso Airbag	No
Pass. Torso/Pelvis Airbag	No
Pass. Pelvis Airbag	No
Pass. Knee Airbag	No
Driver Seat Belt Pretensioner	Yes
Pass. Seat Belt Pretensioner	Yes
Driver Load Limiter	Yes
Pass. Load Limiter	Yes
Other Safety Restraint	None

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

DATA FROM CERTIFICATION LABEL

Manufactured By	Chrysler Group LLC
Date of Manufacture	Nov-11

GVWR (kg)	3992
GAWR Front (kg)	2359
GAWR Rear (kg)	2722

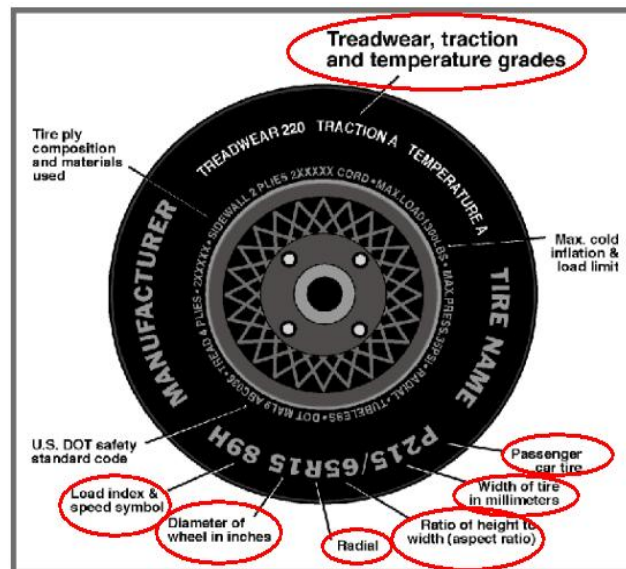
VEHICLE SEATING AND CAPACITY WEIGHT INFORMATION

Measured Parameter	Front	Rear	Third	Total	
Type of Seats	Bucket	Bench			
Designated Seating Capacity	3	3		6	
Capacity Weight (VCW) (kg)				1051.0	A
DSC x 68.04 (kg)				408.2	B
Cargo Weight (RCLW) (kg)				136.0	A-B

DATA SHEET NO. 1 ... (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	550	550
Cold Pressure (kPa)	520	520
Recommended Tire Size	LT245/70R17	LT245/70R17
Tire Size on Vehicle	LT245/70R17	LT245/70R17
Tire Manufacturer	BFGoodrich	BFGoodrich
Tire Model	Rugged Trail	Rugged Trail
Treadwear		
Traction		
Temperature Grades		
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Polyester, 3 Steel	2 Polyester, 3 Steel
Load Index / Speed Symbol	119/116R	119/116R
Tire Material	Polyester, Steel	Polyester, Steel
DOT Safety Code Left	B7P8 0P11 4011	B7P8 0P11 4011
DOT Safety Code Right	B7P8 0P11 4011	B7P8 0P11 4011

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

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

TEST VEHICLE WEIGHTS

	Units	As Delivered Weights (UVW)			As Tested Weights (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	914.0	650.5		965.5	736.5	
Right	kg	811.0	615.5		857.5	701.0	
Ratio	%	57.7%	42.3%	100.0%	55.9%	44.1%	100.0%
Total	kg	1725.0	1266.0	2991.0	1823.0	1437.5	3260.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	2991.0	A
Weight of 1 P572E ATD & 1 P572O ATD	kg	141.0	B
Rated Cargo/Luggage Weight (RCLW)	kg	136.0	C
Calculated Vehicle Target Weight (TVTW)	kg	3268.0	A+B+C

TEST VEHICLE ATTITUDES

Condition	Units	LF	RF	LR	RR	CG Aft of Front Axle
As Delivered	mm	1005	1005	1055	1065	1822
As Tested	mm	991	990	1044	1049	1898
Post-Test	mm	1087	1052	1060	1026	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	4305
Total Vehicle Length at Left Side	mm	5985
Total Vehicle Length at Centerline	mm	6585
Total Vehicle Length at Right Side	mm	5999
Weight of Ballast in Cargo Area	kg	123.6
Weight of Vehicle Components Removed	kg	5.0
Amount of Stoddard Solvent in Fuel Tank	L	123.20

VEHICLE COMPONENTS REMOVED TO MEET TEST WEIGHT:

Hub Caps (1.5 kg), Tire Jack (3.5 kg)

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

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

TARGET VEHICLE STRUCTURAL MEASUREMENTS

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length	6585	5830	-755
2	Total Width	2005	2454	449
3	Bumper Top Height	765	819	54
4	Bumper Bottom Height	420	460	40
5	Longitudinal Member Top Height	660	798	138
6	Distance Between Longitudinal Members	920	791	-129
7	Longitudinal Member Width	60	76	16
8	Engine Top Height	1197	1388	191
9	Engine Bottom Height	441	532	91
10	Engine and Gearbox Width	650	650	0
11	Front Bumper to Engine Distance	745	206	-539
12	Front Shock Absorber Fixing Height	945	904	-41
13	Bonnet Leading Edge Height	1230	1369	139
14	Front Shock Absorber Fixing Width	1080	1313	233
15	Front Bumper to Front Axle Distance	1003	374	-629
16	Front Axle to A-Pillar Distance	600	488	-112
17	A-Pillar to B-Pillar Distance	978	968	-10
18	B-Pillar to Rear Axle Distance	2620	2616	-4
19	B-Pillar to C-Pillar Distance	918	907	-11
20	Roof Sill Bottom Height	1804	1826	22
21	Roof Sill Top Height	1897	1925	28
22	Floor Sill Bottom Height	419	406	-13
23	Floor Sill Top Height	570	584	14

All measurements in millimeters.

DATA SHEET NO. 2

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

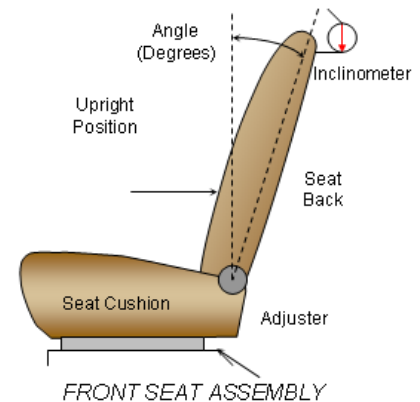
Test Date: 3/5/12

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 seat back using a digital inclinometer.

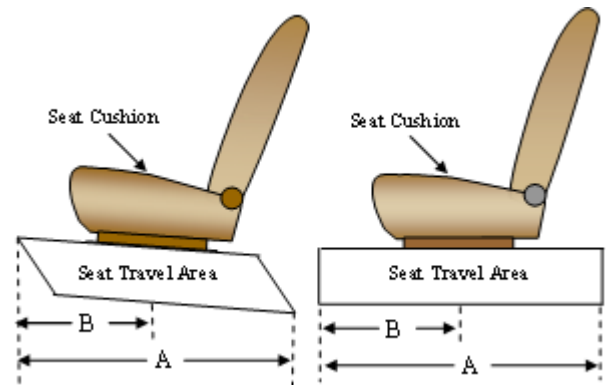
SEAT BACK ANGLE

Seating Position	Degrees
Driver Seat Back Angle	4.4
Passenger Seat Back Angle	4.4



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	230 mm [24 detents]	120 mm [12th detent]
Passenger Seat	230 mm [24 detents]	0 mm [1st detent]

SEAT BELT UPPER ANCHORAGE

The seat belt upper anchorage is positioned to the manufacturer's design position for a 50th percentile adult male ATD for the driver, and a 5th percentile adult female ATD for the passenger. Position "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	5	H
Passenger Seat	5	H

DATA SHEET NO. 2 ... (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEMS, AND STEERING WHEEL DATA

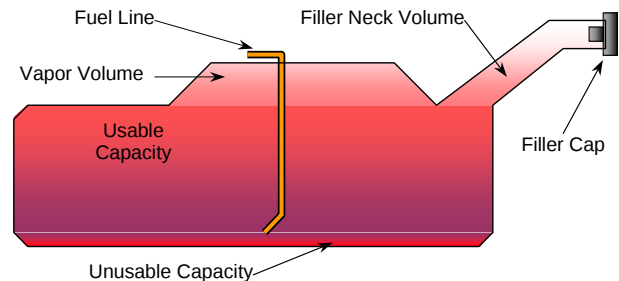
Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

FUEL TANK CAPACITY

Description	Liters
Usable Capacity of "Standard Tank"	128.69
Usable Capacity of "Optional Tank"	132.48
92 - 94% of Usable Capacity	121.88 to 124.53
Actual Amount of Stoddard Solvent Used	123.20
1/3 of Usable Capacity	44.16

FUEL PUMP

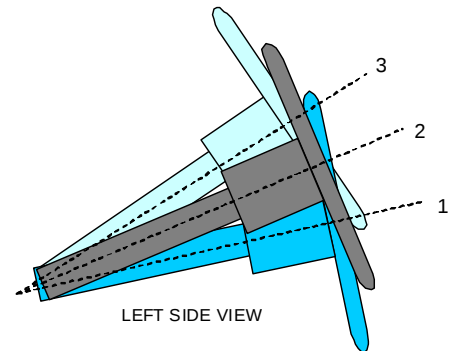
The vehicle is equipped with an electric fuel pump.
The fuel pump is activated when the key is in and the ignition is turned to the "run" position.



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	14.4	
Geometric Center Position, No. 2	22.7	
Uppermost Position, No. 3	31.0	
Telescoping Steering Wheel Travel		
Test Position	22.7	

DATA SHEET NO. 3

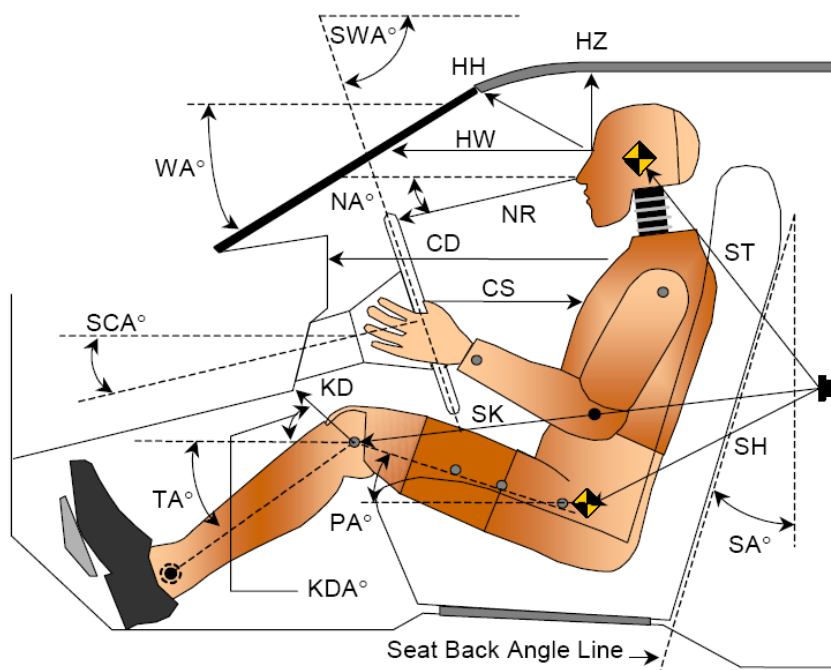
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 3/5/12



LEFT SIDE VIEW

Code	Measurement Description	Driver		Passenger	
		Length (mm)	Angle (°)	Length (mm)	Angle (°)
WA°	Windshield Angle		30.5		
SWA°	Steering Wheel Angle		67.3		
SCA°	Steering Column Angle		22.7		
SA°	Seat Back Angle (On Headrest Post)		4.4		4.4
HZ	Head to Roof	268	90.0	291	90.0
HH	Head to Header	624	22.4	397	39.3
HW	Head to Windshield	725	0.0	735	0.0
NR	Nose to Rim	393	13.8	545	16.5
CD	Chest to Dash	571	13.5	460	18.5
CS	Chest to Steering Hub	298	0.0		
RA	Rim to Abdomen	210	0.0		
KDL	Left Knee to Dash	183	24.5	76	37.1
KDR	Right Knee to Dash	125	33.4	98	27.0
PA°	Pelvic Angle		22.2		21.6
TA°	Tibia Angle		49.9		63.2
SK	Striker to Knee	579	6.5	657	5.9
ST	Striker to Head	669	78.9	593	75.3
SH	Striker to H-Point	187	5.2	316	2.7

DATA SHEET NO. 5

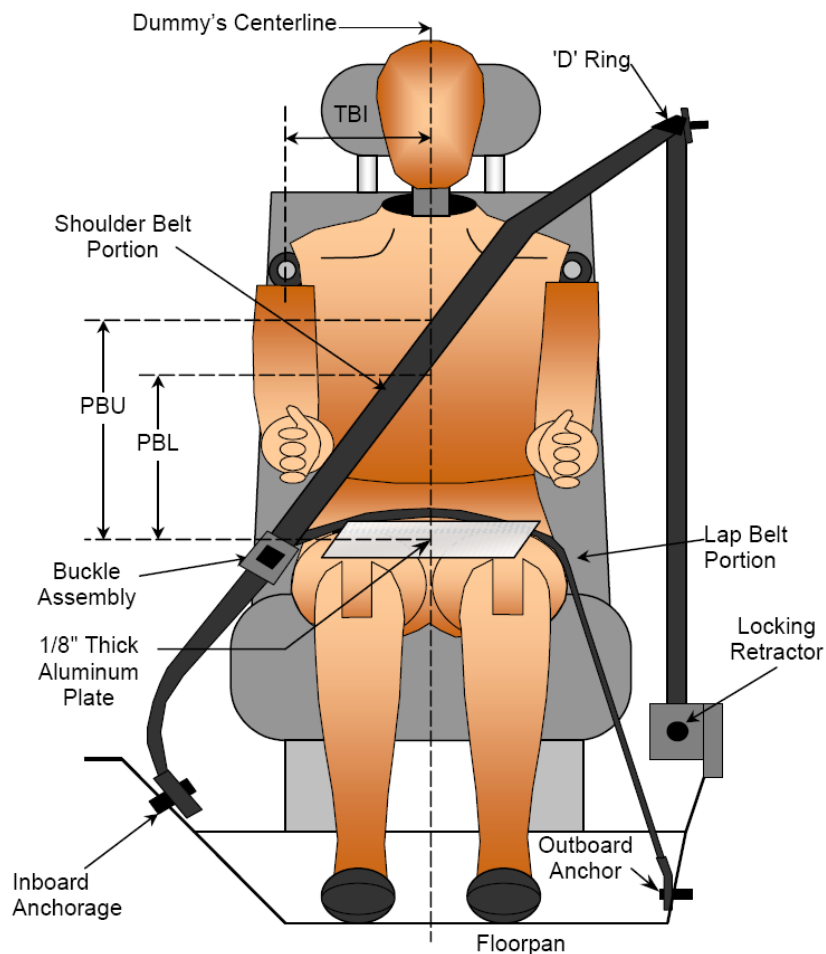
SEAT BELT POSITIONING DATA

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 3/5/12



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	300	310
PBL	Top Surface of Aluminum Plate to Belt Lower Edge	mm	225	220

BELT LENGTH DATA

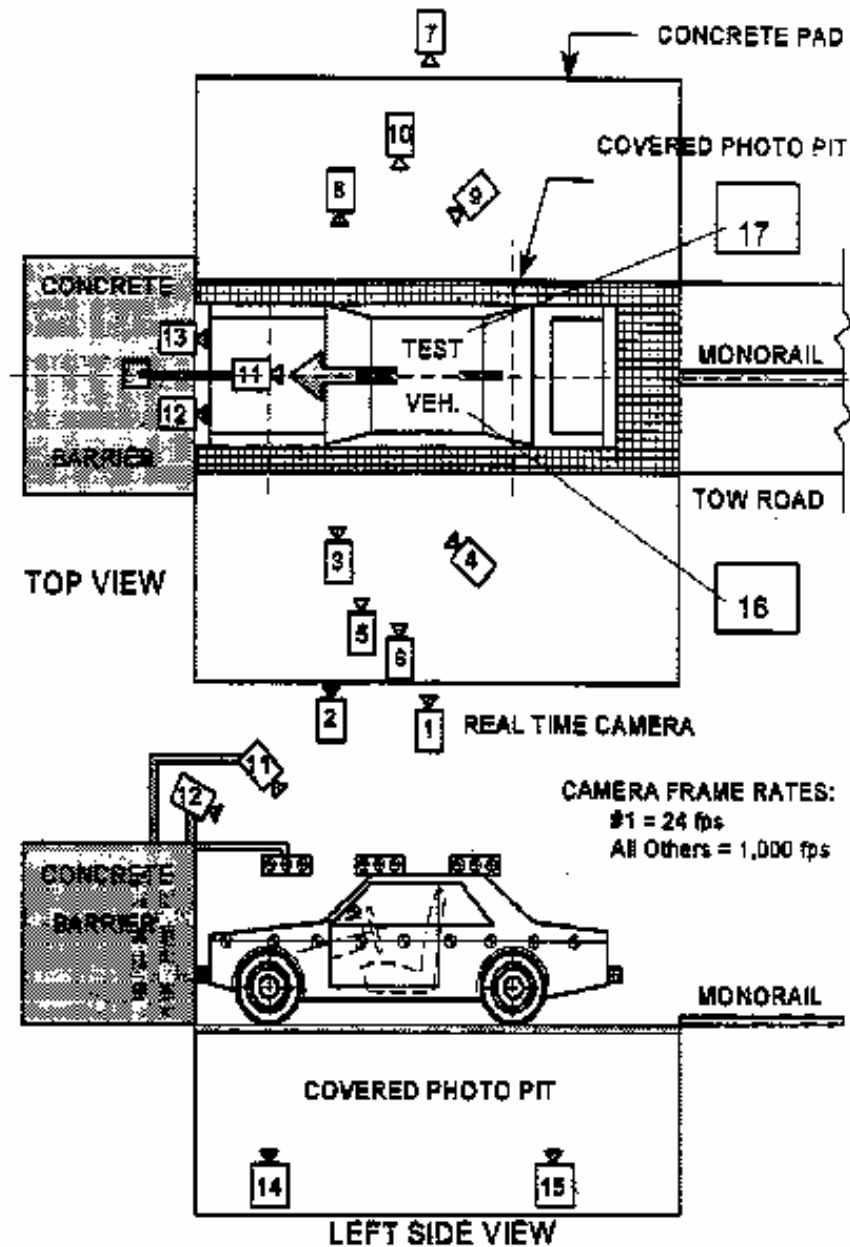
Measurement Description	Units	Driver	Passenger
Shoulder Belt Length as Measured on ATD	mm	865	881
Lap Belt Length as Measured on ATD	mm	854	889
Remainder of Belt on Reel	mm	1022	1002
Total Belt Length for Continuous Webbing Systems	mm	2741	2772

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

CAMERA POSITIONS FOR FRONTAL IMPACTS



DATA SHEET NO. 6 ... (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

CAMERA LOCATIONS

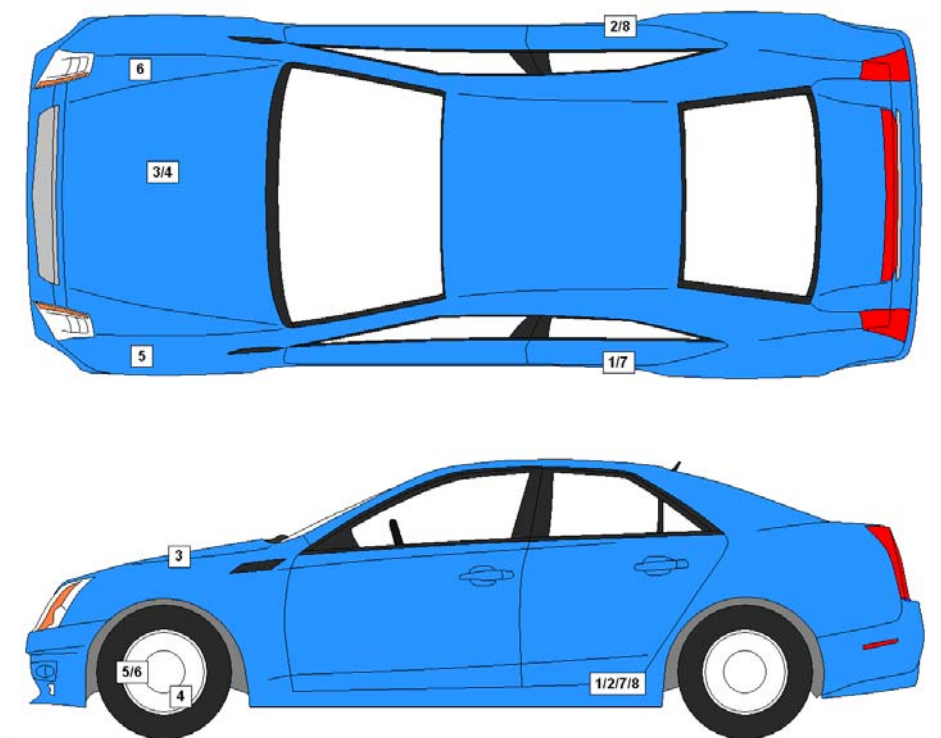
No.	Description	Location (mm)			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Real-Time Left Overall	-11412	-8150	-1484		30
2	Driver Close-Up	-2590	-7950	-1371	24	1000
3	Left Front Half	-1701	-6197	-1701	50	1000
4	Left Angle	-6696	-10308	-3211	ZOOM	1000
5	Steering Column - Top	-1966	-10412	-3688	50	1000
6	Steering 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)	-3350	650	-1840	13	1000
17	Onboard Passenger Airbag (Optional)	-3350	-650	-1840	13	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: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12



VEHICLE ACCELEROMETER PRE-TEST LOCATIONS

No.	Description	Location		
		X	Y	Z
1	Left Rear Accelerometer X-Direction	3405	-799	-658
2	Right Rear Accelerometer X-Direction	3405	799	-658
3	Engine Top X	5782	-215	-890
4	Engine Bottom X	5505	219	-382
5	Left Brake Caliper X	5428	-715	-220
6	Right Brake Caliper X	5428	715	-220
7	Left Rear Accelerometer Z-Direction	3405	-799	-658
8	Right Rear Accelerometer Z-Direction	3405	799	-658

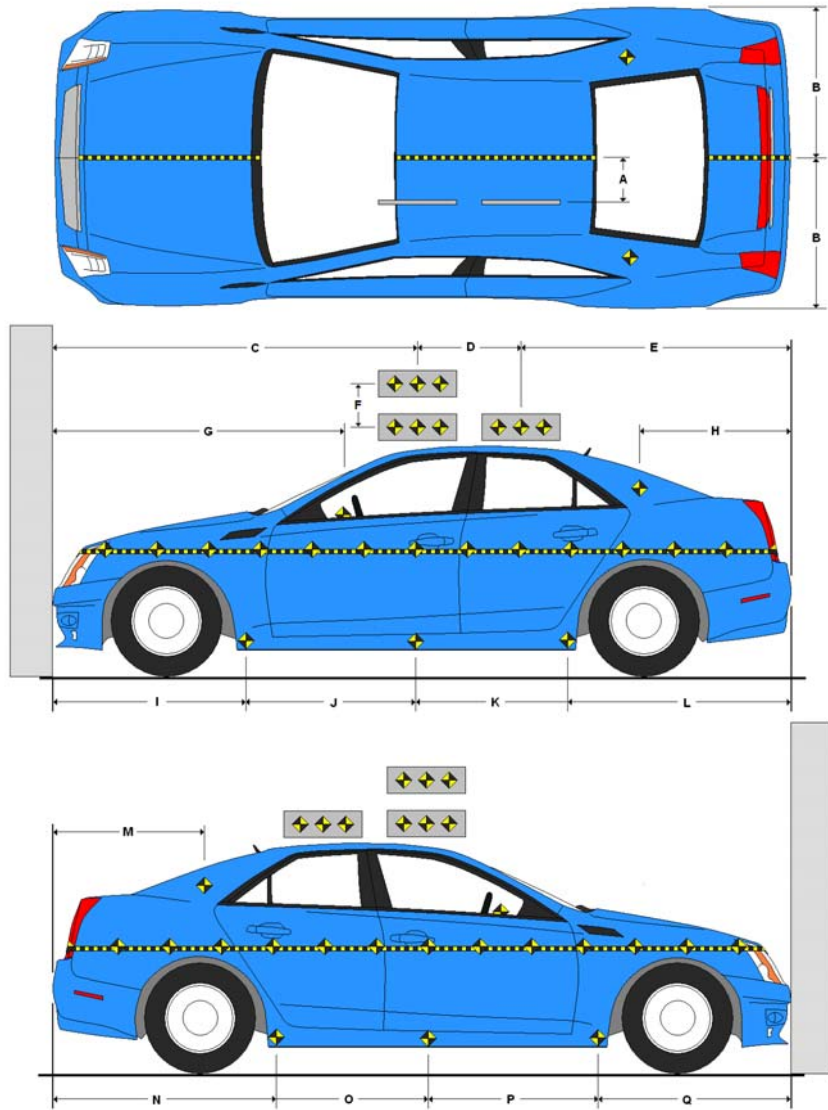
Reference Points: X – Rear Surface of Vehicle (+ forward)
Y – Vehicle Centerline (+ to right)
Z – Ground Plane (+ down)

DATA SHEET NO. 8

PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

Item	Value
A	498
B	1003
C	2400
D	610
E	3560
F	305
G	1890
H	2856
I	1609
J	1564
K	1564
L	1860
M	2874
N	1855
O	1564
P	1564
Q	1600



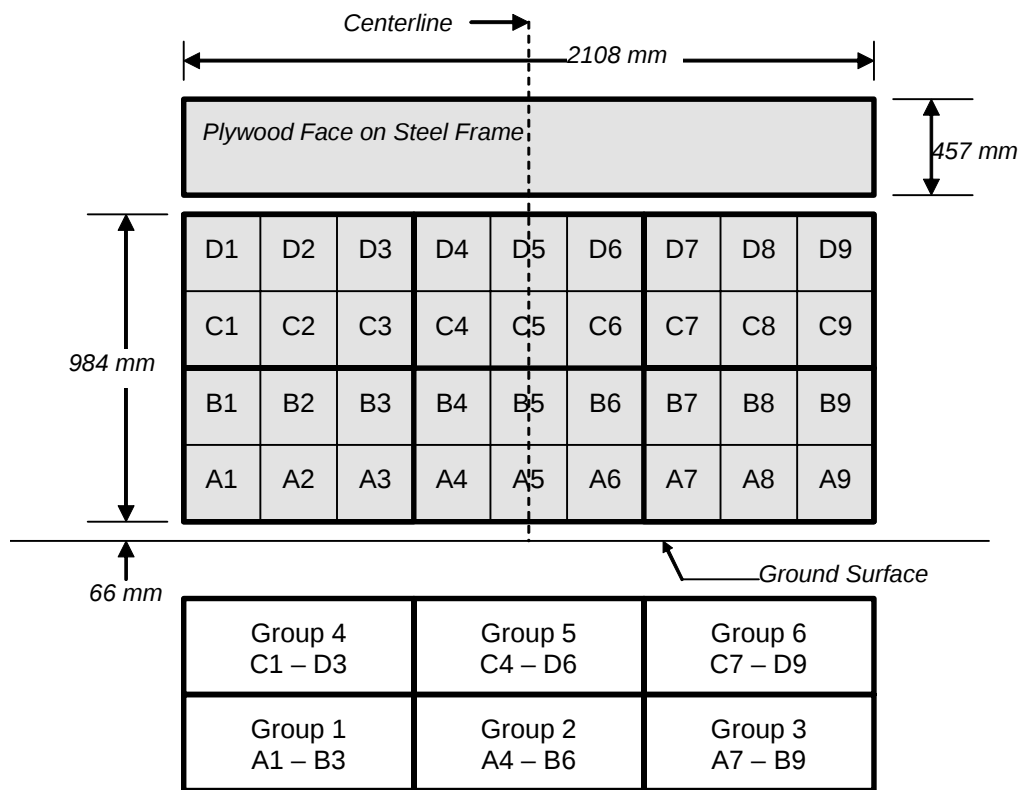
All measurements in millimeters.

DATA SHEET NO. 9

LOAD CELL LOCATIONS ON FIXED BARRIER

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

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



6 Groups of 6 Load Cells Each

DATA SHEET NO. 10

TEST VEHICLE CAMERA AND INSTRUMENTATION SUMMARY

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

INSTRUMENTATION

Driver Dummy Accelerometers	44
Passenger Dummy Accelerometers	44
Vehicle Structure Accelerometers	8
Seat Belt Load Cells	4
Load Cell Barrier	36
Total	136

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: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 3/5/12

Description	Driver	Passenger
Dummy Type/Serial No.	P572E 50th Percentile Male ATD / 035	P572O 5th Percentile Female ATD / 635
Head Contact	Airbag, Headrest	Airbag, Headrest
Upper Torso Contact	Airbag	Airbag
Lower Torso Contact	None	None
Left Knee Contact	Knee Bolster	Glovebox
Right Knee Contact	Knee Bolster	Glovebox

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Locked / Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Rear Door Opening	Remained closed and latched, operational	Remained closed and latched, operational
Seat Track Shift (mm)	4	0
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	None
Other Notable Effects	Electrical fire located at the fuse block

VEHICLE REBOUND FROM BARRIER

Measured Parameter	Units	Value
Left Side	mm	518
Center	mm	553
Right Side	mm	526
Average	mm	532

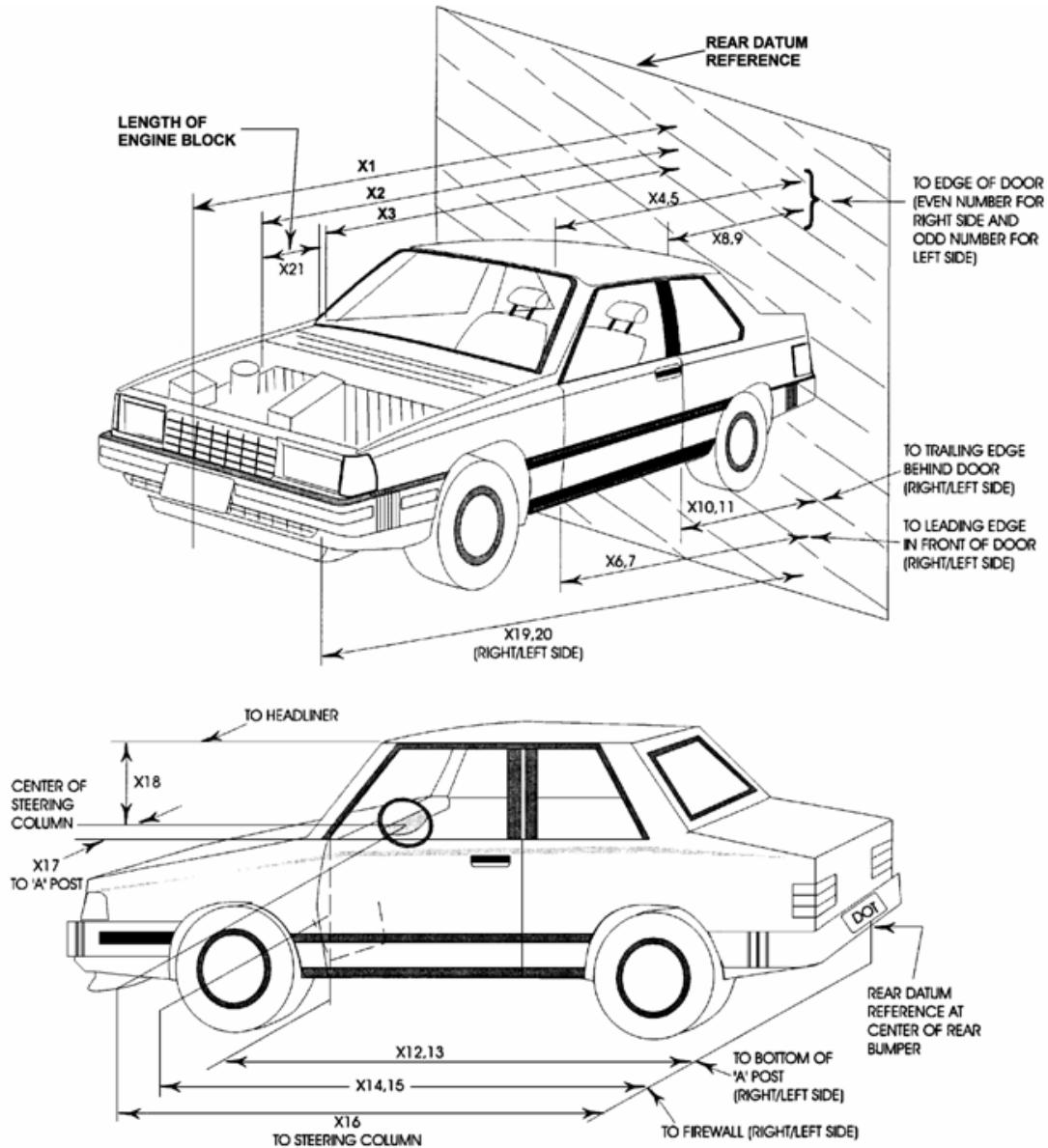
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

DATA SHEET NO. 12

VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

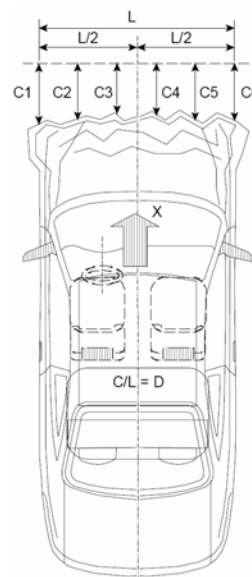


DATA SHEET NO. 12 ... (CONTINUED)**VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

No.	Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	6585	5830	-755
2	Rear Surface of Vehicle to Front of Engine	5840	5629	-211
3	RSOV to Firewall	5210	5313	103
4	RSOV to Upper Leading Edge of Right Door	5040	5023	-17
5	RSOV to Upper Leading Edge of Left Door	5028	5025	-3
6	RSOV to Lower Leading Edge of Right Door	5009	5000	-9
7	RSOV to Lower Leading Edge of Left Door	4972	4969	-3
8	RSOV to Upper Trailing Edge of Right Door	3917	3898	-19
9	RSOV to Upper Trailing Edge of Left Door	3893	3882	-11
10	RSOV to Lower Trailing Edge of Right Door	3916	3908	-8
11	RSOV to Lower Trailing Edge of Left Door	3896	3892	-4
12	RSOV to Bottom of A-Pillar, Right Side	4953	4932	-21
13	RSOV to Bottom of A-Pillar, Left Side	4938	4921	-17
14	RSOV to Firewall, Right Side	5215	5307	92
15	RSOV to Firewall, Left Side	5307	5197	-110
16	RSOV to Steering Column	4493	4444	-49
17	Center of Steering Column to A-Pillar	415	381	-34
18	Center of Steering Column to Headliner	490	485	-5
19	RSOV to Right Side of Front Bumper	5999	5575	-424
20	RSOV to Left Side of Front Bumper	5985	5550	-435
21	Length of Engine Block	610	610	0
RD	RSOV to Right Side of Dash Panel	4751	4731	-20
CD	RSOV to Center of Dash Panel	4695	4655	-40
LD	RSOV to Left Side of Dash Panel	4725	4727	2

All measurements in millimeters.

DATA SHEET NO. 13**ACCIDENT INVESTIGATION DATA**Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door TruckNHTSA No.: MC0313Test Program: 56 km/h Frontal Impact NCAP TestTest Date: 3/5/12**VEHICLE INFORMATION**VIN: 3C6TD5HTXCG147494Wheelbase (mm): 4305Vehicle Size Category: 4-Door TruckTest Weight (kg): 3260.5**ACCELEROMETER DATA**Accelerometer Locations: Left Rear CrossmemberCal. Procedure/Interval: Drop Test / 6 monthsIntegration Algorithm: NHTSA StandardImpact Velocity (km/h): 55.76Velocity Change (km/h): 64.2Time of Separation (msec): 98.0Linearity: Good**CRUSH PROFILE**Collision Deformation Classification: 12FDEW2Midpoint of Damage: Vehicle CenterlineDamage Region Length (mm): 1815Impact Mode: Full Frontal

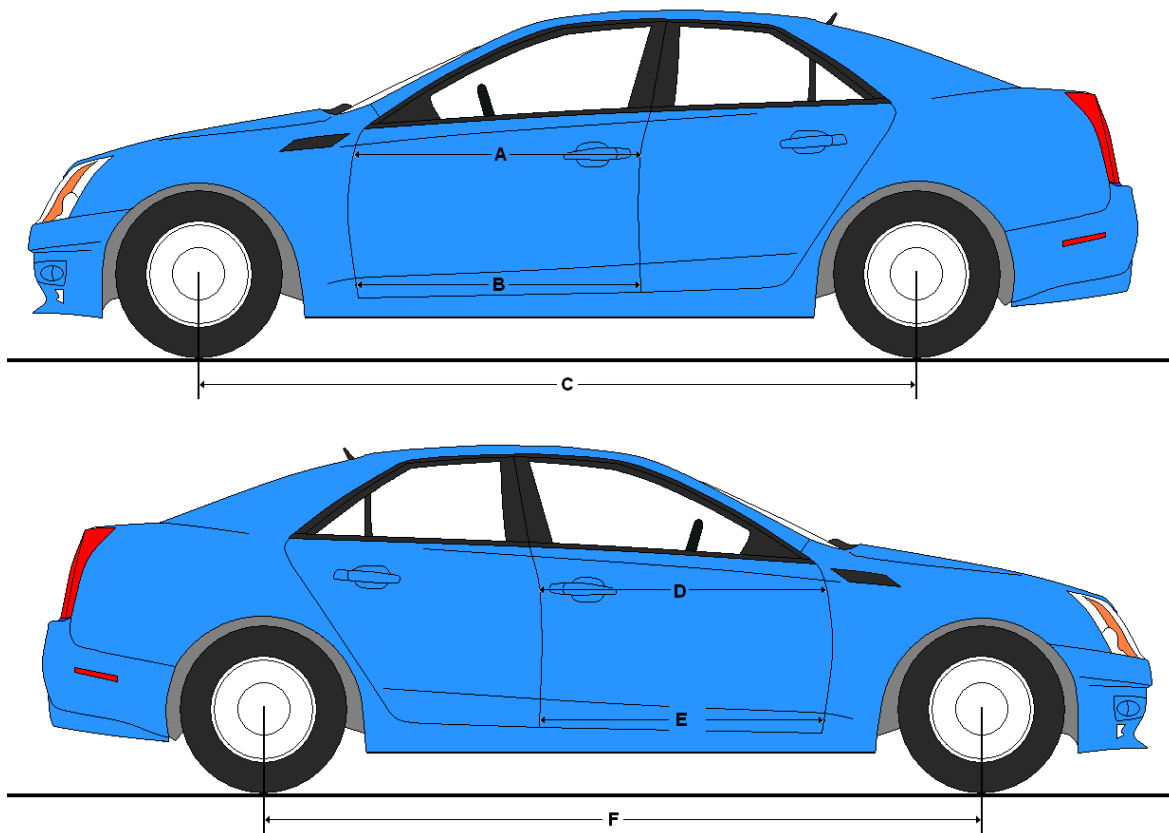
No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush Zone 1 at Left Side	mm	308	794	486
C2	Crush Zone 2 at Left Side	mm	66	753	687
C3	Crush Zone 3 at Left Side	mm	9	780	771
C4	Crush Zone 4 at Right Side	mm	8	783	775
C5	Crush Zone 5 at Right Side	mm	66	775	709
C6	Crush Zone 6 at Right Side	mm	308	775	467
L	C1 to C6	mm	1815		

DATA SHEET NO. 14**VEHICLE INTRUSION MEASUREMENTS**Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door TruckNHTSA No.: MC0313Test Program: 56 km/h Frontal Impact NCAP TestTest Date: 3/5/12**DOOR OPENING WIDTH**

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	978	966	12
B	Left Side Lower	mm	932	929	3
D	Right Side Upper	mm	981	976	5
E	Right Side Lower	mm	929	930	-1

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	4305	4185	120
F	Right Side Wheelbase	mm	4307	4124	183



DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

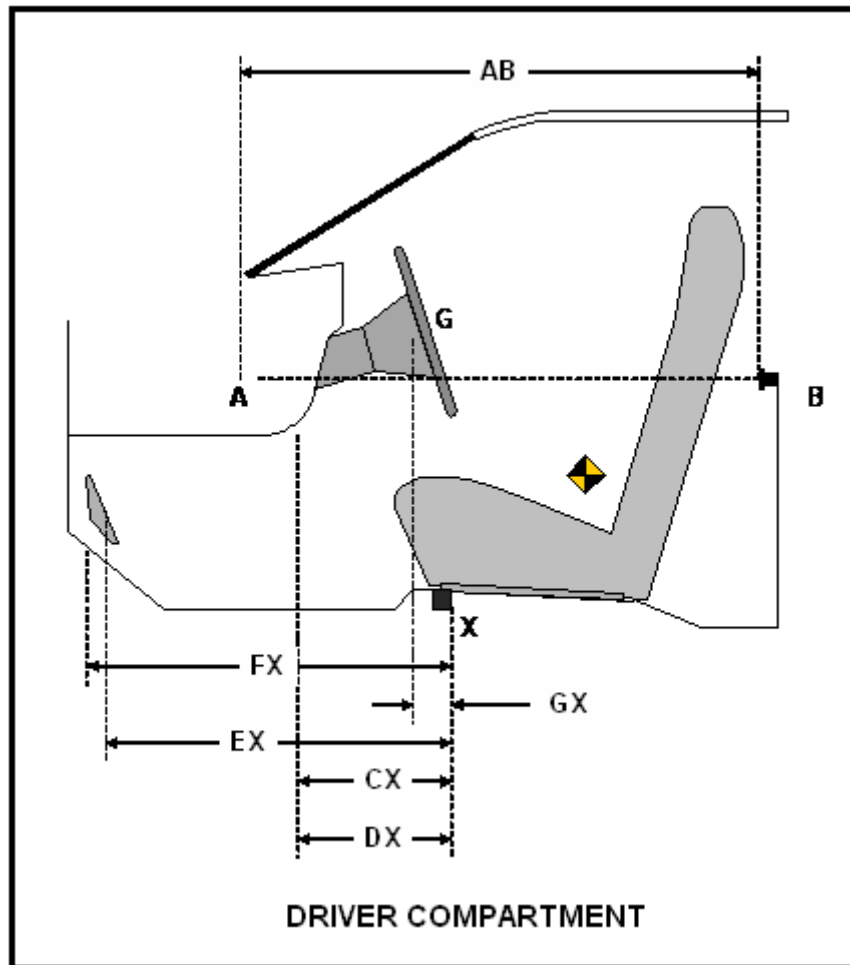
Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 3/5/12

DRIVER COMPARTMENT INTRUSION

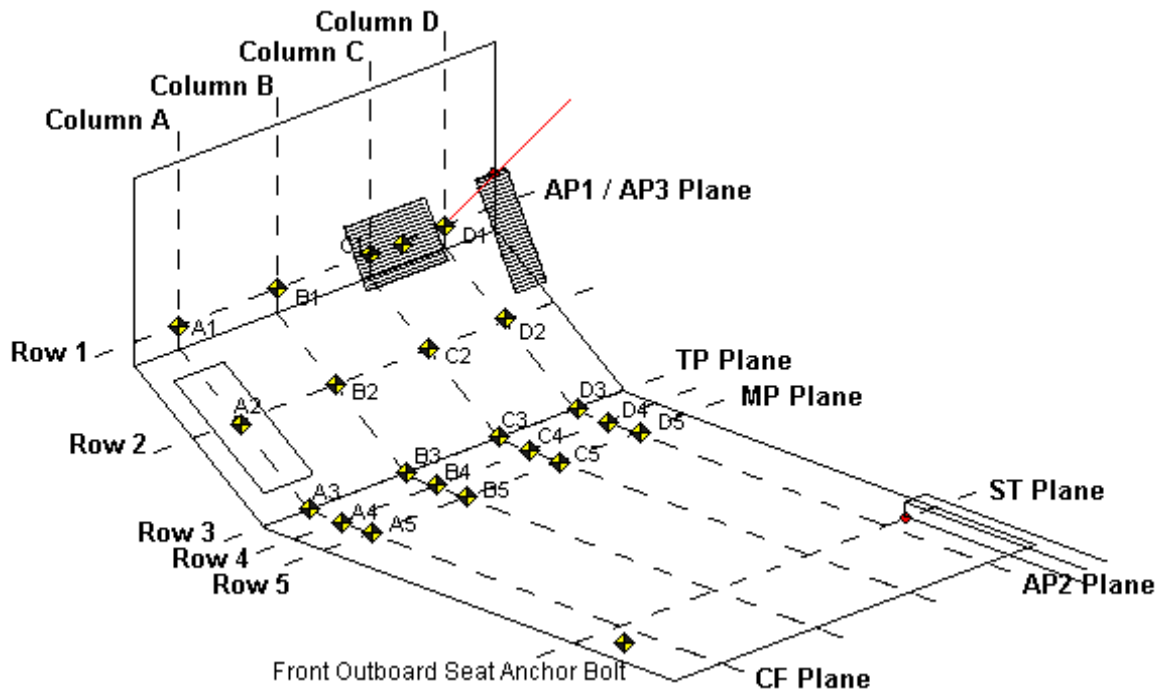
Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	869	858	11
CX	Left Knee Bolster to X	mm	327	355	-28
DX	Right Knee Bolster to X	mm	300	249	51
EX	Brake Pedal to X	mm	530	421	109
FX	Foot Rest to X	mm	645	575	70
GX	Center of Steering Wheel Hub to X	mm	75	68	7

X = Front of Seat Track (Stationary)



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

Test Vehicle:	<u>2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck</u>	NHTSA No.:	<u>MC0313</u>
Test Program:	<u>56 km/h Frontal Impact NCAP Test</u>	Test Date:	<u>3/5/12</u>



AP1: Y-Z Plane passing through D1

AP2: X-Z Plane passing through D1

AP3: X-Y plane passing through D1

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

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

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

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

Column A: intersection of vehicle and CF plane

Column D: Intersection of vehicle and AP2 plane

Row 1: intersection of the vehicle and the AP3 Plane

Row 3: intersection of the vehicle and TP plane

Row 5: intersection of the vehicle and MP plane

Row 2: evenly spaced between row 1 and 3

Row 4: evenly spaced between row 3 and 5

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
 Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

DRIVER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	644	660	656	640	670	665	622	571	-26	-5	34	69
2	570	566	564	566	607	582	543	568	-37	-16	21	-2
3	473	471	475	475	515	487	481	502	-42	-16	-6	-27
4	353	357	355	357	399	396	392	395	-46	-39	-37	-38
5	228	232	233	235	274	276	276	276	-46	-44	-43	-41

DRIVER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	71	-61	-203	-330	16	-117	-249	-369	55	56	46	39
2	72	-64	-200	-328	23	-106	-235	-360	49	42	35	32
3	72	-64	-206	-333	34	-97	-236	-362	38	33	30	29
4	72	-62	-210	-341	41	-93	-239	-371	31	31	29	30
5	73	-65	-212	-352	44	-94	-240	-377	29	29	28	25

DRIVER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	60	24	23	28	14	-16	-1	31	46	40	24	-3
2	-20	-21	-21	-28	-76	-64	-24	-45	56	43	3	17
3	-67	-68	-69	-70	-133	-111	-105	-123	66	43	36	53
4	-71	-71	-72	-73	-150	-157	-161	-167	79	86	89	94
5	-76	-73	-75	-77	-167	-170	-179	-180	91	97	104	103

All measurements in millimeters

DATA SHEET NO. 14 ... (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 3/5/12

PASSENGER FLOORPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	622	666	662	638	452	516	575	610	170	150	87	28
2	543	573	569	564	410	457	506	546	133	116	63	18
3	453	481	473	469	347	379	424	464	106	102	49	5
4	350	354	347	345	322	333	338	347	28	21	9	-2
5	229	226	228	223	220	222	226	224	9	4	2	-1

PASSENGER FLOORPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	278	188	59	-76	283	204	94	-42	-5	-16	-35	-34
2	285	193	61	-80	275	186	74	-57	10	7	-13	-23
3	297	201	60	-81	287	183	59	-67	10	18	1	-14
4	327	203	60	-78	329	203	68	-73	-2	0	-8	-5
5	330	201	61	-78	330	205	67	-74	0	-4	-6	-4

PASSENGER FLOORPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	129	42	27	50	209	121	80	79	-80	-79	-53	-29
2	83	-6	-20	-22	163	94	39	5	-80	-100	-59	-27
3	25	-64	-70	-68	94	28	-21	-58	-69	-92	-49	-10
4	-62	-77	-74	-75	-21	-49	-69	-62	-41	-28	-5	-13
5	-80	-74	-74	-74	-81	-83	-78	-68	1	9	4	-6

All measurements in millimeters

DATA SHEET NO. 15

SUMMARY OF FMVSS 212 AND 219 (PARTIAL) DATA

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

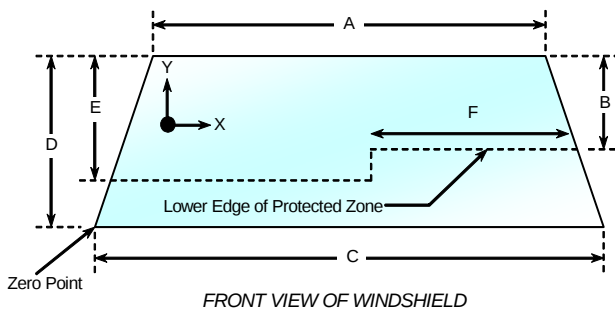
Windshield Mounting Details: Windshield glass is secured to the vehicle frame with rubber cement.

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

Temperature of windshield molding during test: 21.0 ° C

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2332	2332	100.0%
Right Side	2332	2332	100.0%
Total	4664	4664	100.0%



Item	Units	Value
A	mm	1400
B	mm	415
C	mm	1633
D	mm	815
E	mm	495
F	mm	520

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 AND 219 (PARTIAL) DATA

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck NHTSA No.: MC0313
Test Program: 56 km/h Frontal Impact NCAP Test Test Date: 3/5/12

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 23.3° C Test Time: 12:44 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

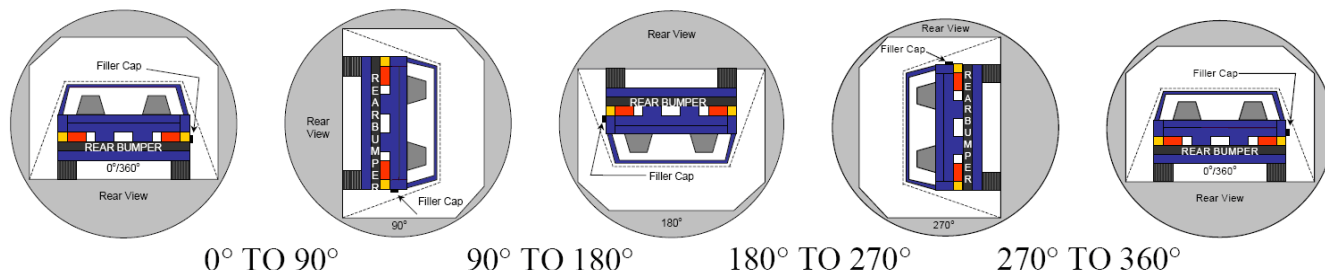
FMVSS 301 STATIC ROLLOVER

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 3/5/12



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°	83	300	383
90° To 180°	81	300	381
180° To 270°	81	300	381
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

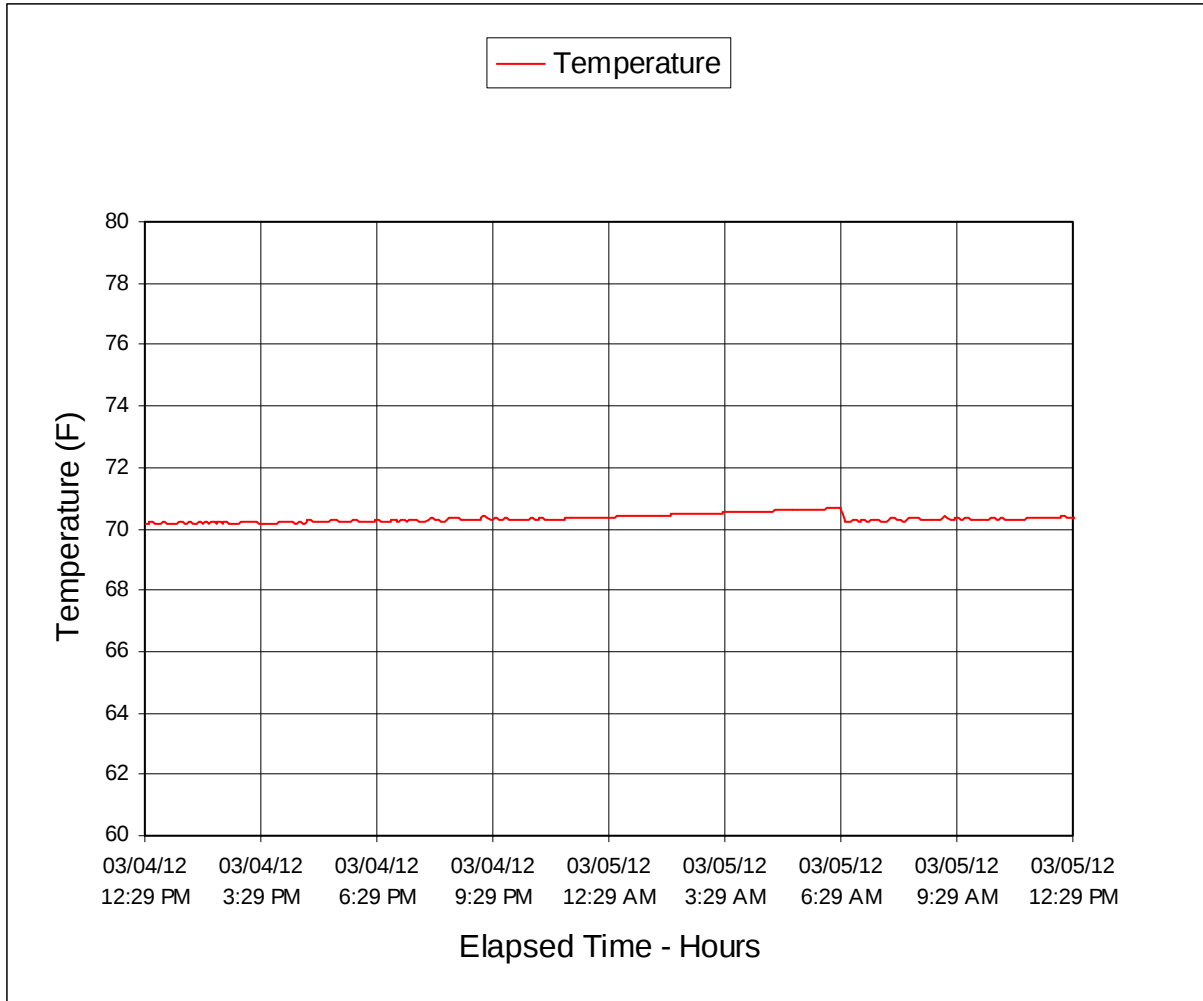
DUMMY / VEHICLE TEMPERATURE STABILIZATION CHART

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4x4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

Test Date: 3/5/12



APPENDIX A
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FIGURE 1. Load Cell Location



FIGURE 2. Load Cell Wall



FIGURE 3. Manufacturer's Label

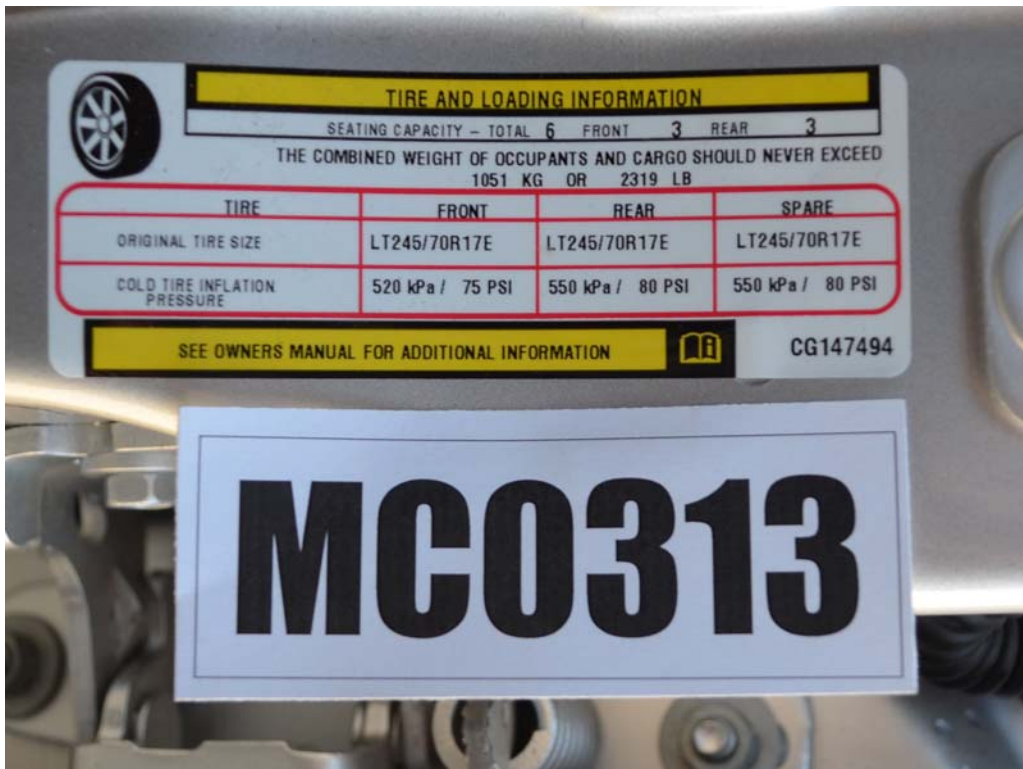


FIGURE 4. Tire Placard



FIGURE 5. 2012 Ram 2500 Frontal, As Delivered



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



FIGURE 7. Pre-Test Front View of Test Vehicle

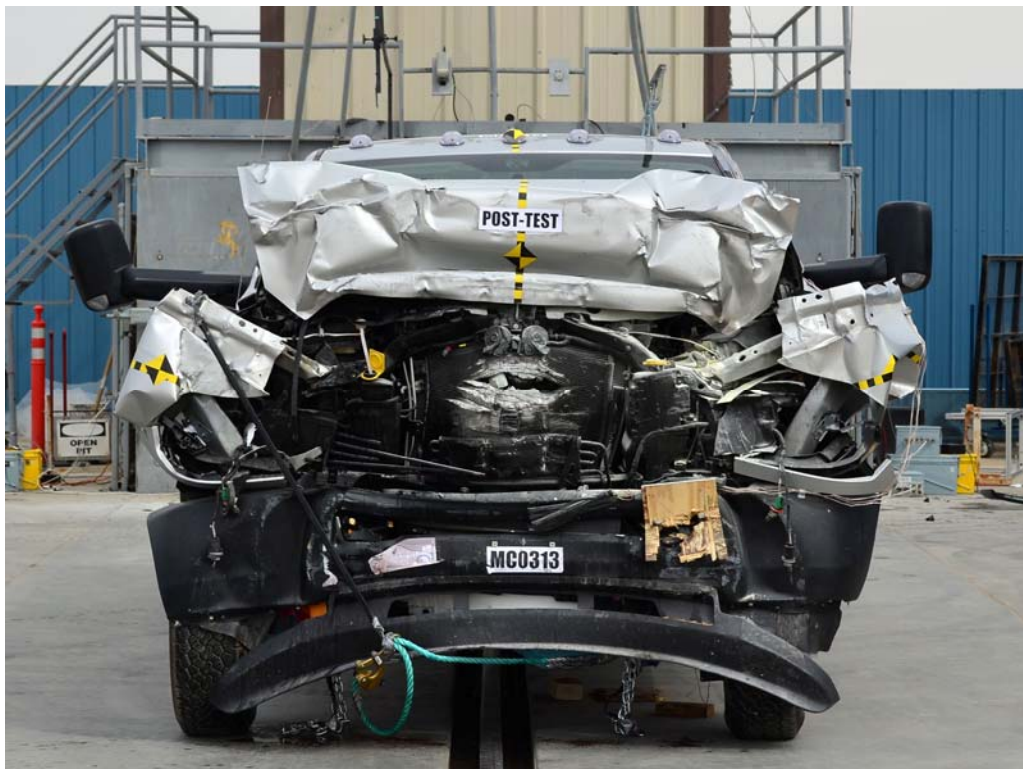


FIGURE 8. Post-Test Front View of Test Vehicle



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

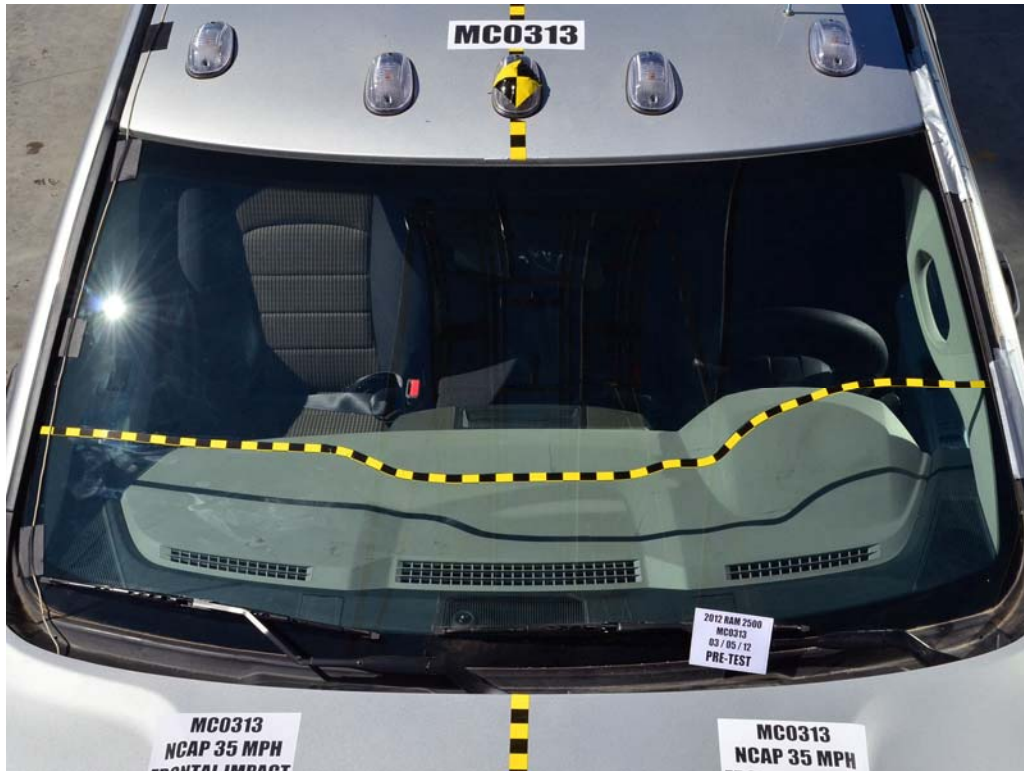


FIGURE 17. Pre-Test Windshield View

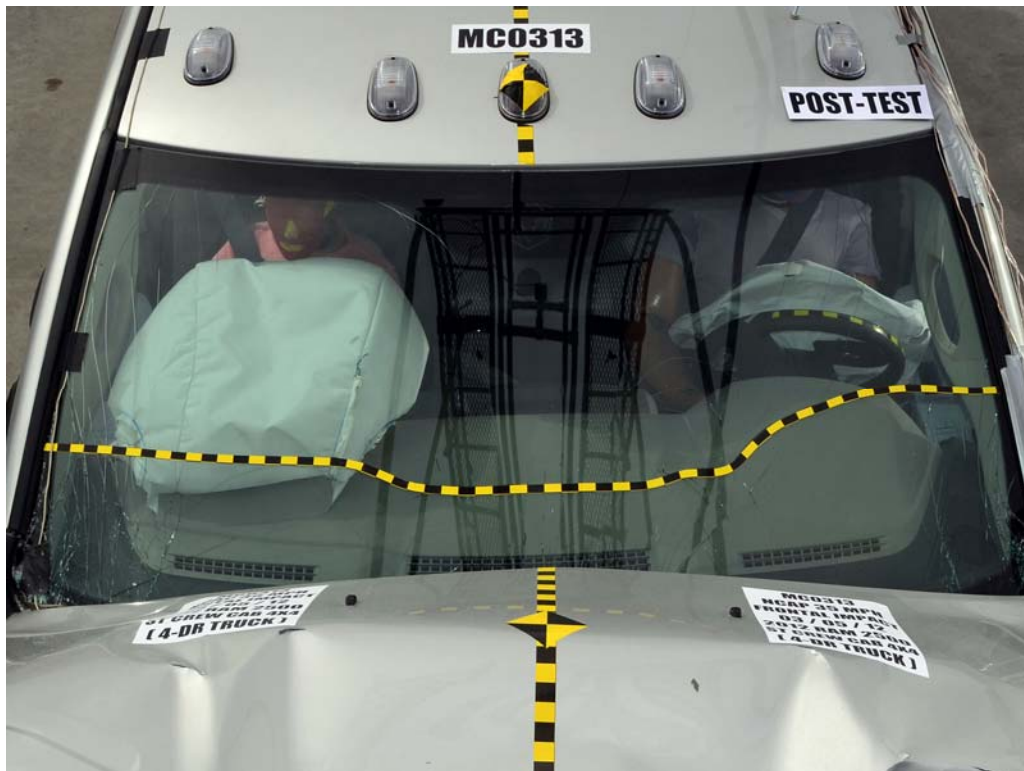


FIGURE 18. Post-Test Windshield View



FIGURE 19. Pre-Test Engine Compartment View

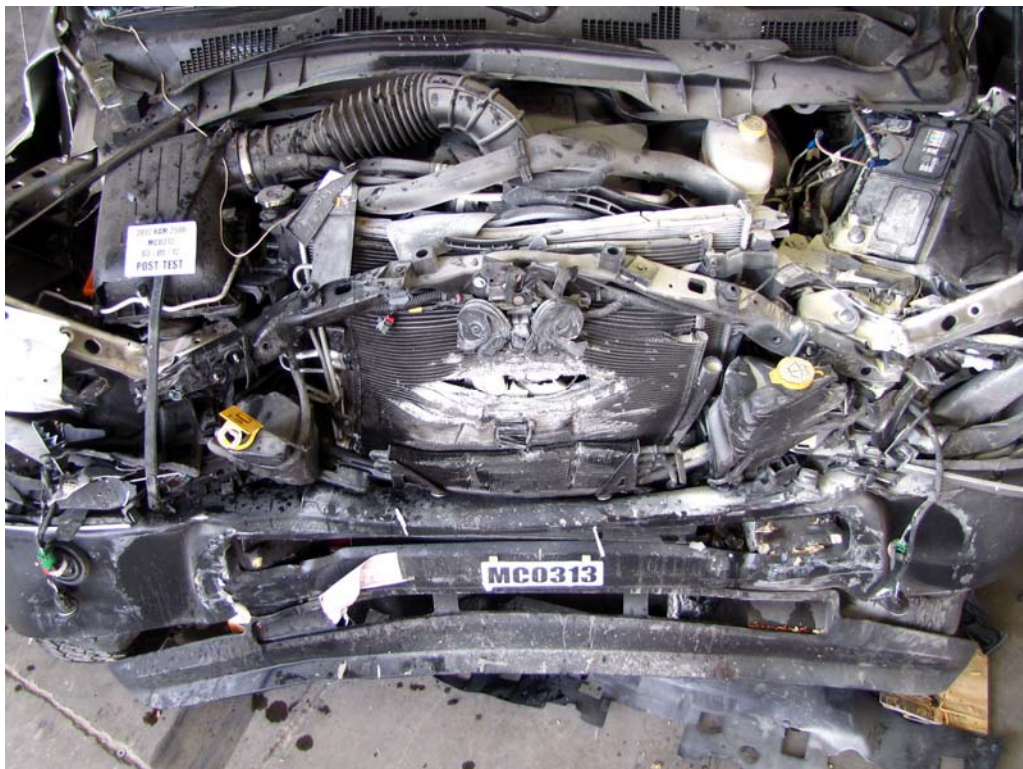


FIGURE 20. Post-Test Engine Compartment View



FIGURE 21. Pre-Test Fuel Filler Cap View



FIGURE 22. Post-Test Fuel Filler Cap View

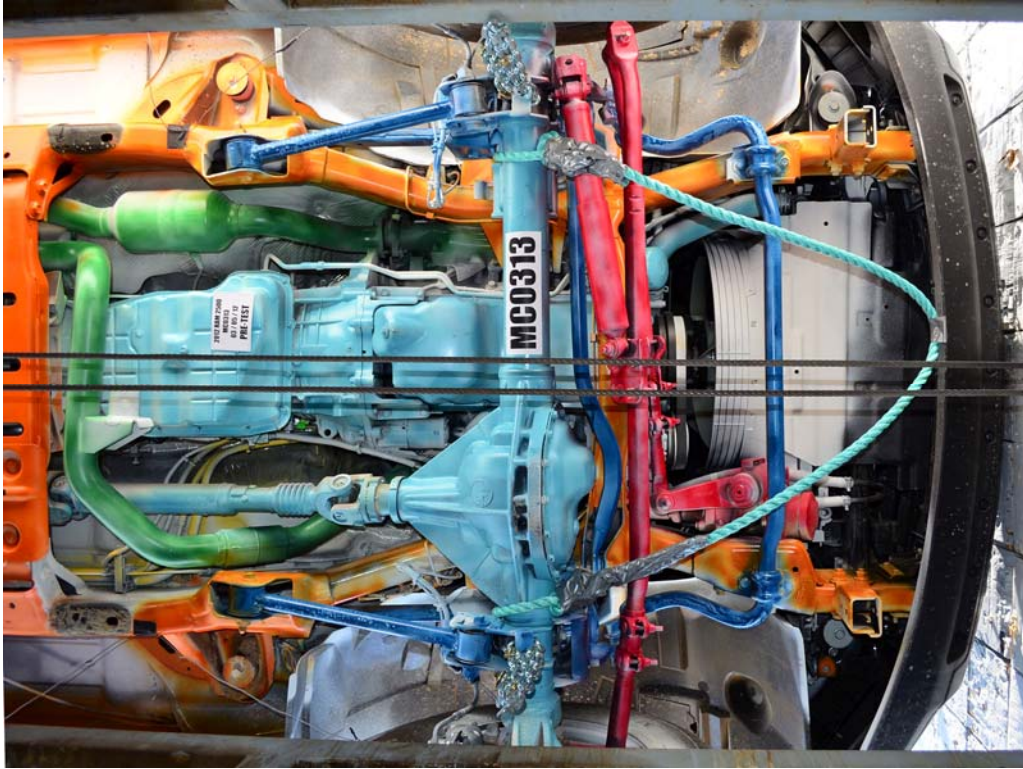


FIGURE 23. Pre-Test Front Underbody View

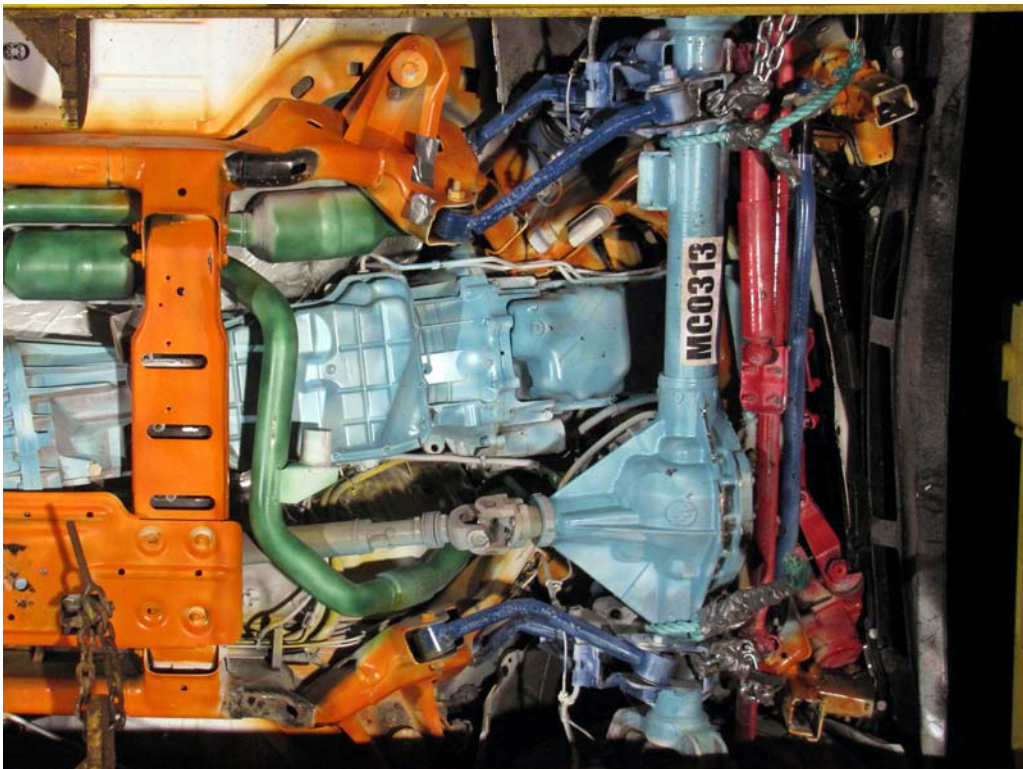


FIGURE 24. Post-Test Front Underbody View



FIGURE 25. Pre-Test Rear Underbody View



FIGURE 26. Post-Test Rear Underbody View



FIGURE 27. Pre-Test Dummy Cable Routing

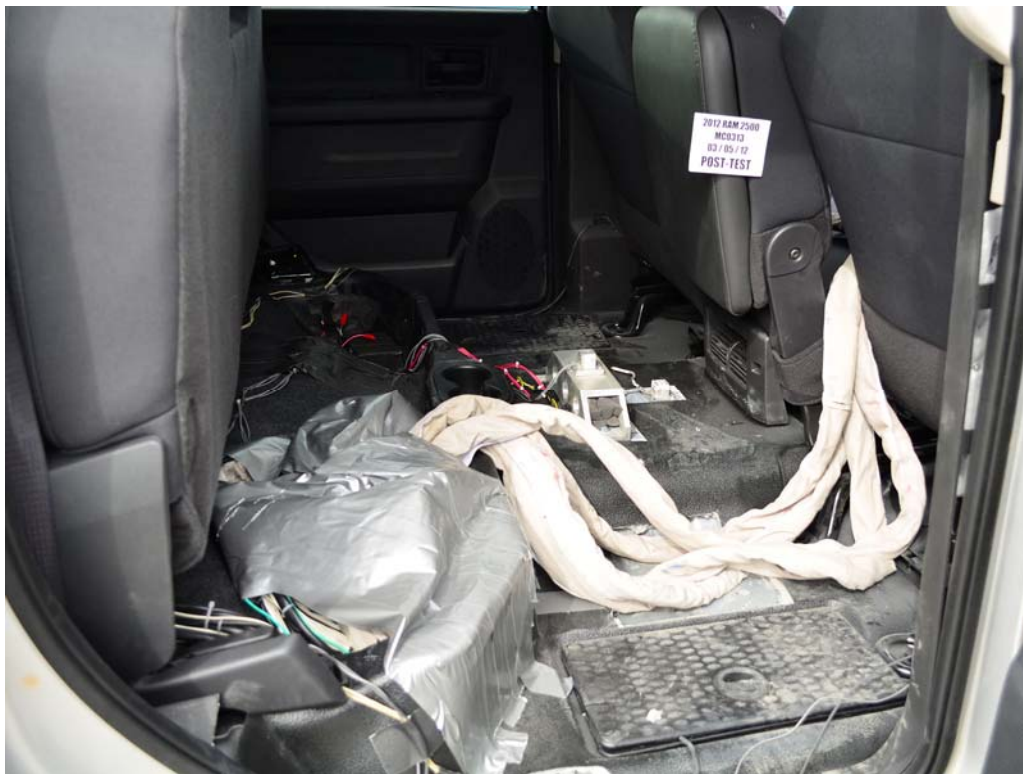


FIGURE 28. Post-Test Dummy Cable Routing



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 Driver Dummy Feet



FIGURE 38. Post-Test Driver Dummy Feet



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



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



FIGURE 41. Pre-Test Driver's Side Floorpan



FIGURE 42. Post-Test Driver's Side Floorpan



FIGURE 43. Post-Test Driver Dummy Face

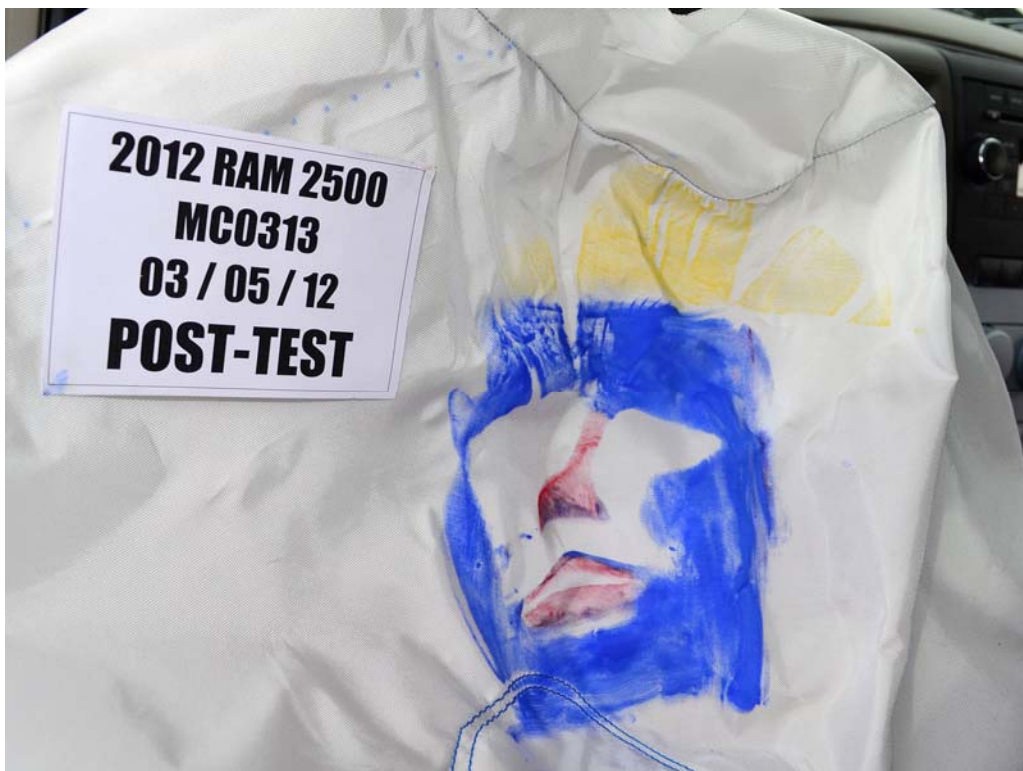


FIGURE 44. Post-Test Driver Dummy Contact With Airbag



FIGURE 45. Post-Test Driver Dummy Contact With Headrest

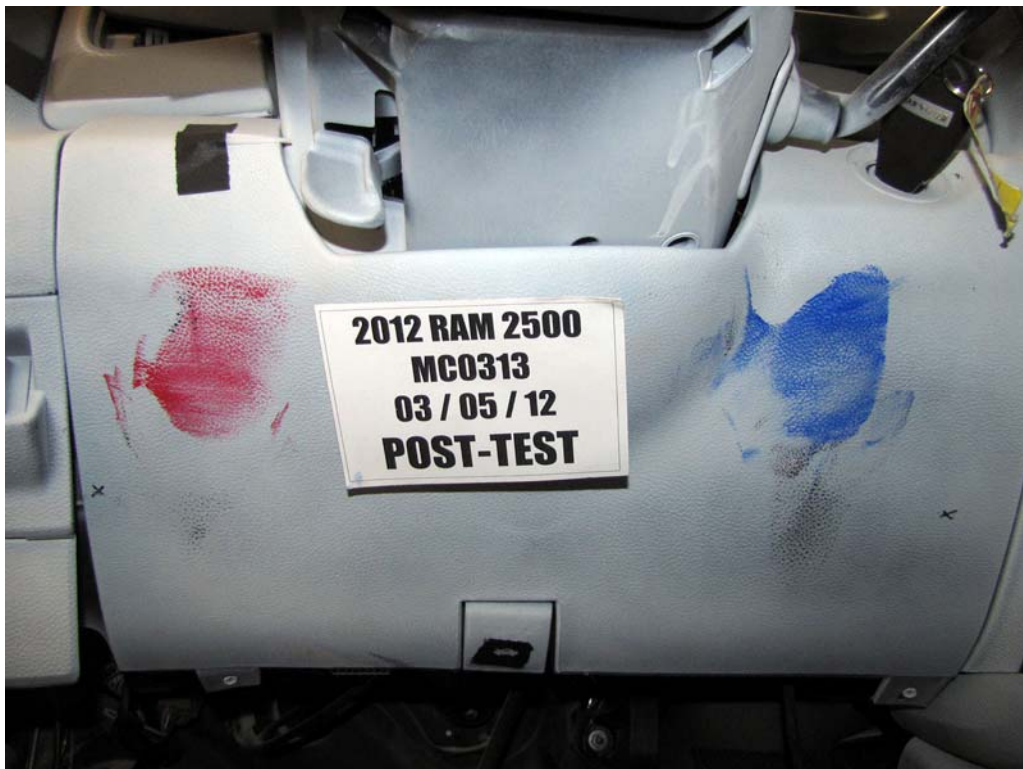


FIGURE 45a. Post-Test Driver Dummy Contact With Knee Bolster

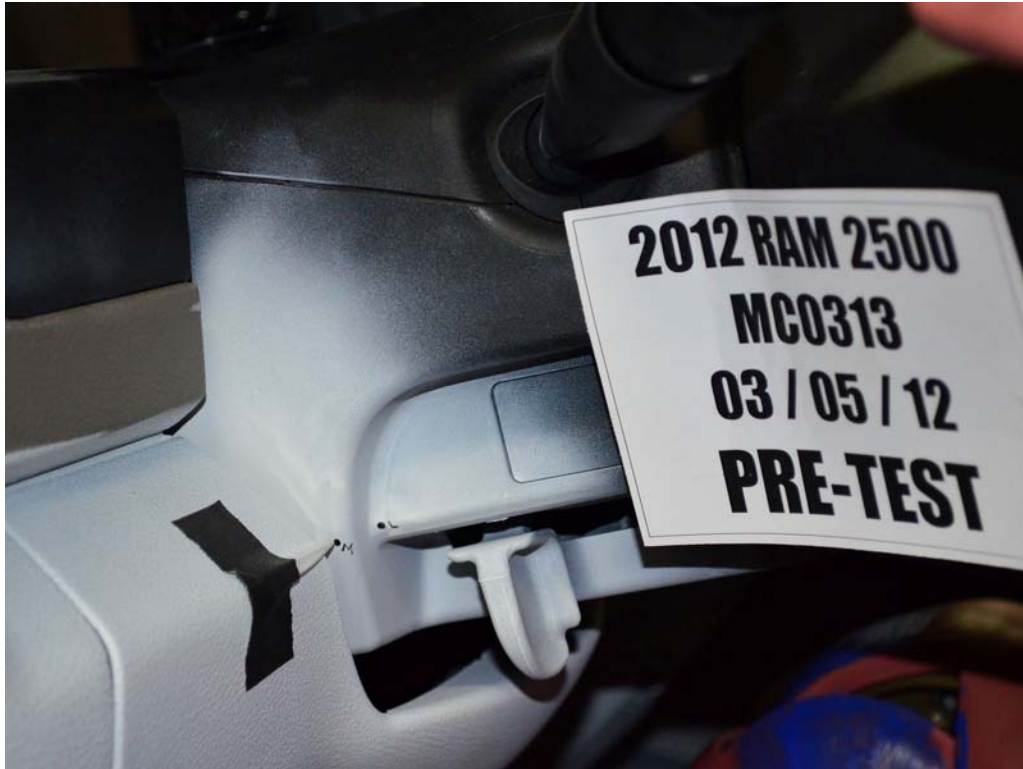


FIGURE 46. Pre-Test View Of Steering Wheel



FIGURE 47. Post-Test View Of Steering Wheel



FIGURE 48. Pre-Test Passenger Dummy Front View



FIGURE 49. Post-Test Passenger Dummy Front View



FIGURE 50. Pre-Test Passenger Dummy Window View



FIGURE 51. Post-Test Passenger Dummy Window View



FIGURE 52. Pre-Test Passenger Dummy and Vehicle Interior View



FIGURE 53. Post-Test Passenger Dummy and Vehicle Interior View



FIGURE 54. Pre-Test Passenger's Seat Fore-Aft Markings



FIGURE 55. Post-Test Passenger's Seat Fore-Aft Markings



FIGURE 56. Pre-Test Passenger Dummy Feet



FIGURE 57. Post-Test Passenger Dummy Feet



FIGURE 58. Pre-Test Passenger's Side Knee Bolster



FIGURE 59. Post-Test Passenger's Side Knee Bolster



FIGURE 60. Pre-Test Passenger's Side Floorpan



FIGURE 61. Post-Test Passenger's Side Floorpan



FIGURE 62. Post-Test Passenger Dummy Contact With Airbag

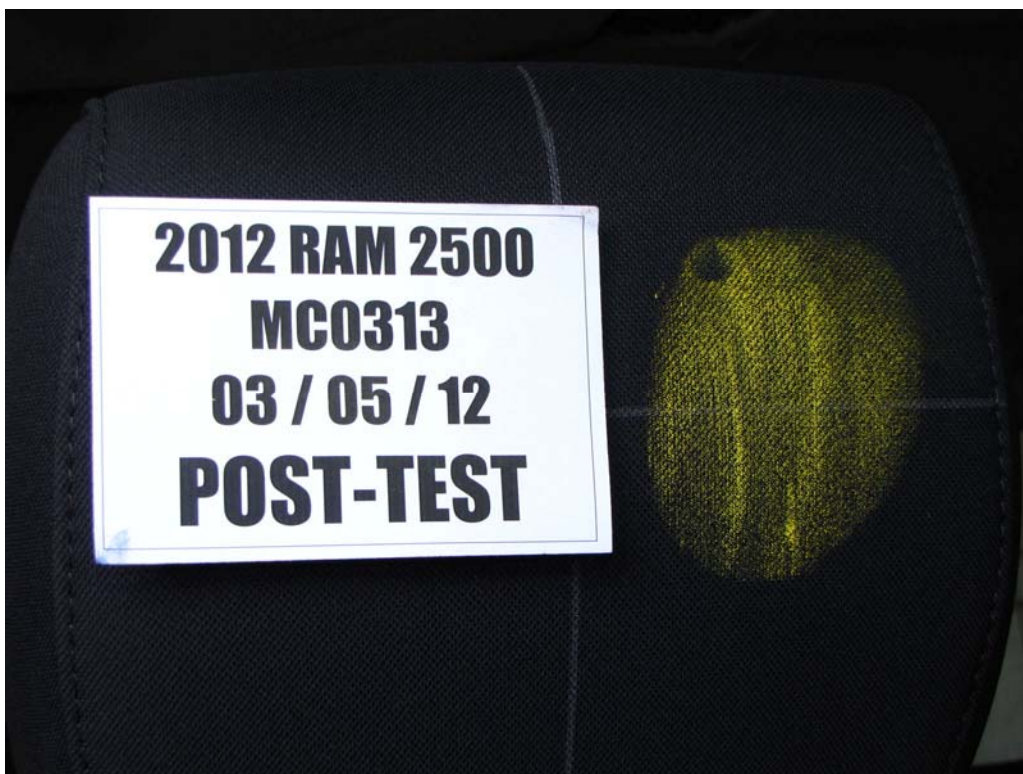


FIGURE 62a. Post-Test Passenger Dummy Contact With Headrest



FIGURE 62b. Post-Test Passenger Dummy Contact With Glovebox

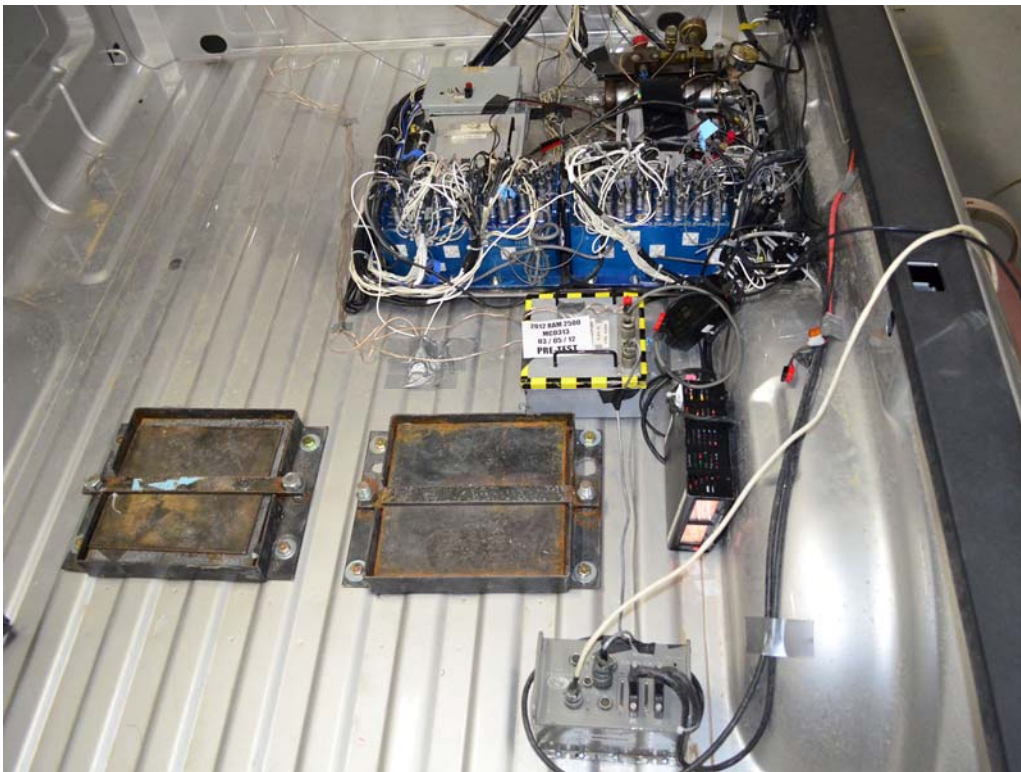


FIGURE 63. Pre-Test of Ballast Installed in Vehicle

Photograph Not Applicable No Stoddard Solvent Spillage

FIGURE 64. Post-Test Stoddard Solvent Spillage Location



FIGURE 65. Post-Test Speed Trap Read Out



FIGURE 66. Vehicle at 0°on Static Rollover Device



FIGURE 67. Vehicle at 90°on Static Rollover Device



FIGURE 68. Vehicle at 180°on Static Rollover Device

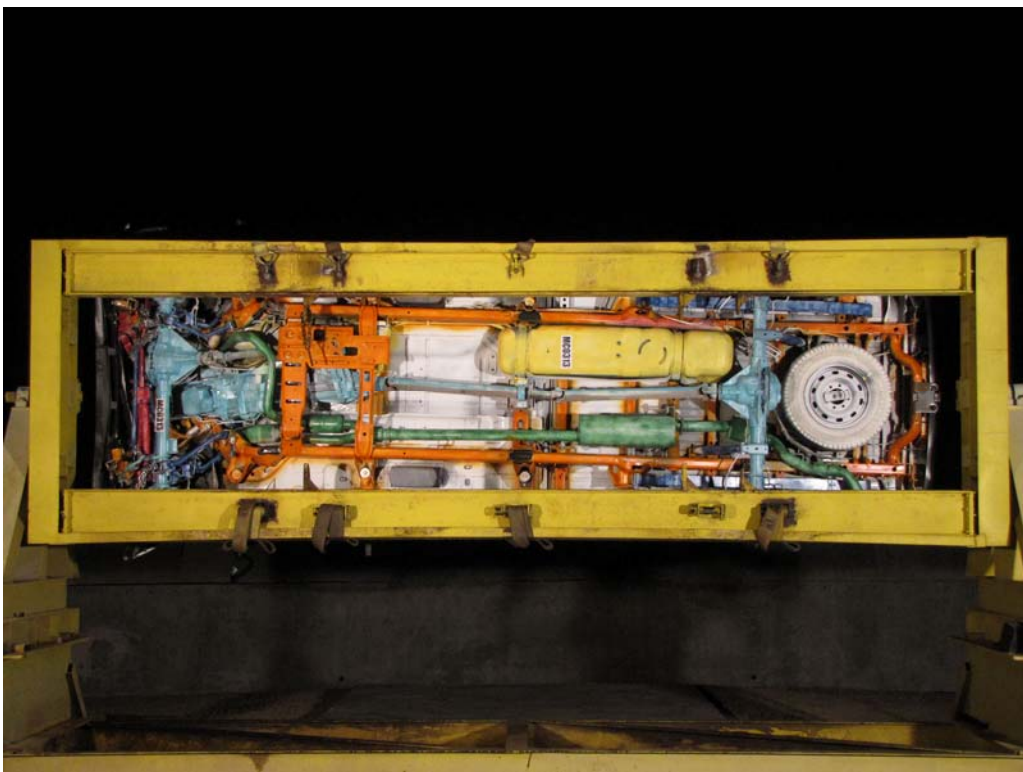


FIGURE 69. Vehicle at 270°on Static Rollover Device



FIGURE 70. Vehicle at 360° on Static Rollover Device



FIGURE 71. 2012 Ram 2500 Frontal Impact Event

2012 MODEL YEAR
RAM 2500 ST CREW CAB 4X4

For more information visit: www.ramtrucks.com
or call 1-866-RAMINFO

Chrysler Group LLC

THIS VEHICLE IS MANUFACTURED TO MEET SPECIFIC UNITED STATES REQUIREMENTS. THIS VEHICLE IS NOT MANUFACTURED FOR SALE OR REGISTRATION OUTSIDE OF THE UNITED STATES.

MANUFACTURER'S SUGGESTED RETAIL PRICE OF THIS MODEL INCLUDING DEALER PREPARATION

Base Price: \$35,275

2012 RAM 2500 ST CREW CAB 4X4
Exterior Color: Bright Silver Metallic, Clear Coat Exterior Paint
Interior Color: Dark Slate / Medium Gray/Dark Interior Colors
Interior Premium Cloth 40 / 20 / 40 Bench Seat
Engine: 5.7-Liter V8 HEMI VVT Engine
Transmission: 6-Speed Automatic 1885TE Transmission

STANDARD EQUIPMENT (LATEST REPLACED BY OPTIONAL EQUIPMENT)
FUNCTIONAL/SAFETY FEATURES
36-Cubic-Foot Tons
Advanced Multistage Front Airbags
Supplemental Side-Curtain Front and Rear Airbags
Tire Pressure Monitor w/ 4-Wheel Pressure Display
Electronic Stability Control
Heavy Duty Engine Cooling
Transmission Oil Cooler
AirDocker 4-Wheel Disc Brakes
720-Amp Maintenance-Free Batteries
Surround View Camera System
Power Windows w/ Front One-Touch Up & Down Feature
Automatic Headlamps
Power Mirrors w/ Manual Fold-Away
Front Touchpad Bar
Manual Shift-on-the-Fly Transfer Case

INTERIOR FEATURES
Air Conditioning
Media Center 130 CD/Mp3
6 Speakers
Second Row w/ Floor Storage Bins
Instrument Cluster with Vehicle Information Display
Height Adjustable Front Shoulder Belts
40 / 20 / 40 Split Bench Seat
12-Volt Auxiliary Power Outlet
Tilt Steering Column
Rear Under Seat Storage Compartment
Variable Intermittent Wiper Blades

EXTERIOR FEATURES
17-inch x 7.5-inch Steel Argent-Blasted Wheels
LT245/70R17E 85W All Season Tires
Locking Tailgate
Trailer Tow Wiring with 7-Pin Connector
Trailer Tow Wiring with 4-Pin Connector
Tinted Glass Windows
Cargo Lamp
Full-Size Spare Tire
160-Amp Alternator
Tip Start - Single Turn Starting

OPTIONAL EQUIPMENT
Customer Preferred Package 26A
Protection Group
Transfer Case Gold Plate
Heavy Duty Snow Prep Package
190-Amp Alternator
ST Popular Equipment Group
SiriusXM Satellite Radio w/ 1-Yr Radio Subscription
For More Information, Call 1-888-539-7474
Premium Cloth 40 / 20 / 40 Bench Seat
Remote Keyless Entry
Carpeted Floor Covering
Front and Rear Floor Mats
Delete Carpet
Delete Floor Mats
Power Heated T-Tow Mirrors w/ Puddle & Signal Lamps
Exterior Mirrors with Turn Signals
Exterior Mirrors with Puddle Lamps
Rear Mounted Clearance Lamps
LT245/70R17E 85W All-Season Tires
Integrated Trailer Brake Controller with Display

DESTINATION CHARGE \$995

TOTAL PRICE: * \$37,595

WARRANTY COVERAGE
5-year or 100,000-mile Powertrain Limited Warranty
5-year or 36,000-mile Basic Limited Warranty
24-hour towing assistance; certain restrictions apply.
Ask Dealer for a copy of the limited warranties or see your dealer's manual for details.

5 YEAR / 100,000 MILE POWERTRAIN WARRANTY

EPA Fuel Economy Estimates

These estimates reflect new EPA methods beginning with 2008 models.

CITY MPG	Estimated Annual Fuel Cost	HIGHWAY MPG
N/A	Based on 15,000 miles at pre-gallon	N/A

Expected range for most drivers to vary

Expected range for most drivers to vary

Combined Fuel Economy

Heavy duty vehicle, no label required.

Your actual mileage will vary depending on how you drive and maintain your vehicle.

See the FREE Fuel Economy Guide at dealers or www.fueleconomy.gov

GOVERNMENT SAFETY RATINGS

Frontal Crash	Driver Passenger	Not Rated
Not Rated	Not Rated	Not Rated

Star ratings based on the risk of injury in a frontal impact.
Frontal ratings should ONLY be compared to other vehicles of similar size and weight.

Side Crash	Front seat Rear seat	Not Rated
Not Rated	Not Rated	Not Rated

Star ratings based on the risk of injury in a side impact.

Rollover

Star ratings based on the risk of rollover in a single vehicle crash.

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

The safety ratings shown are based on federal government tests of particular vehicles equipped with certain features and options. The performance of this vehicle may differ.

FIGURE 72. Monroney Label Photograph

APPENDIX B
DUMMY RESPONSE DATA TRACES

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

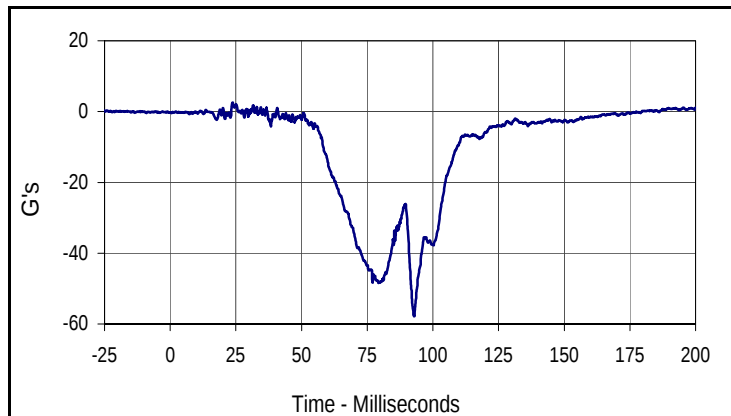
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Driver Head Y Acceleration Redundant
Driver Head Z Acceleration Redundant
Driver Upper Neck Force Y
Driver Upper Neck Moment X
Driver Upper Neck Moment Z
Driver Chest X Acceleration Redundant
Driver Chest Y Acceleration Redundant
Driver Chest Z Acceleration Redundant
Driver Pelvis X
Driver Pelvis Y
Driver Pelvis Z
Driver 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 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
Passenger Right Upper Tibia Moment Y
Passenger Right Upper Tibia Force Z
Passenger Right Lower Tibia Moment X
Passenger Right Lower Tibia Moment Y
Passenger Right Lower Tibia Force Z
Passenger Left Foot Fore Z
Passenger Left Foot Aft X
Passenger Left Foot Aft Z
Passenger Right Foot Fore Z
Passenger Right Foot Aft X
Passenger Right Foot Aft Z
Left Rear Seat Crossmember X

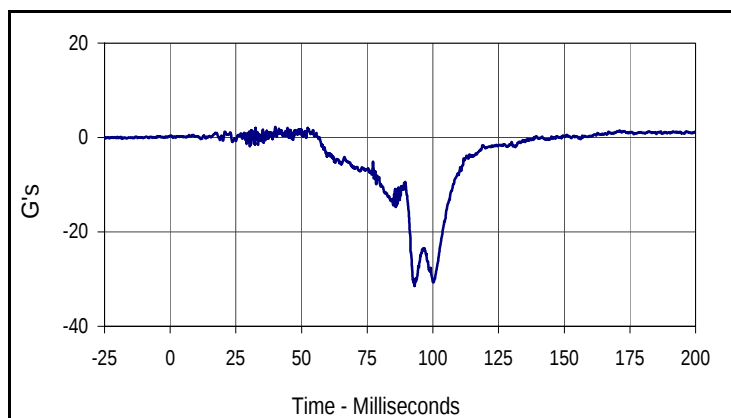
Left Rear Seat Crossmember Z
Right Rear Seat Crossmember X
Right Rear Seat Crossmember Z
Vehicle Engine Top X
Vehicle Engine Bottom X
Vehicle Left Brake Caliper X
Vehicle Right Brake Caliper X
Load Cell Barrier A1-A9
Load Cell Barrier B1-B9
Load Cell Barrier C1-C9
Load Cell Barrier D1-D9

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

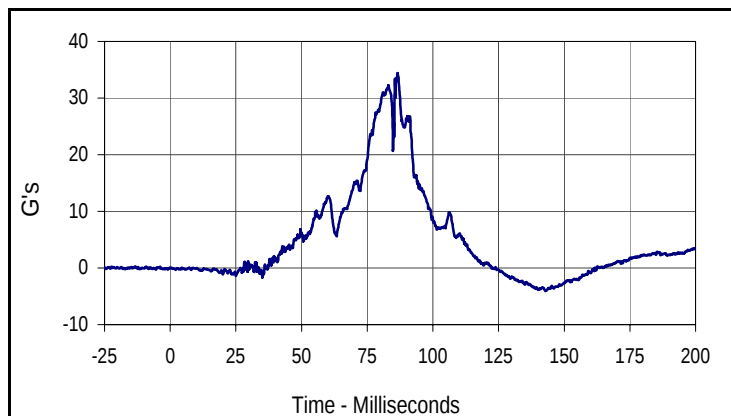
NHTSA No.: MC0313
 Test Date: 3/5/12



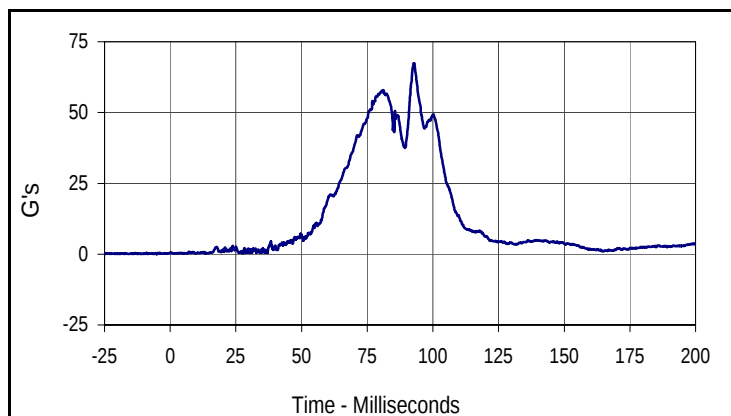
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Plot No.	Type	SAE Class	Units
001	FIL	1000	G's
Max	Time	Min	Time
2.6	23.7	-57.8	92.9



Curve Description			
Driver Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.2	39.9	-31.4	93.1



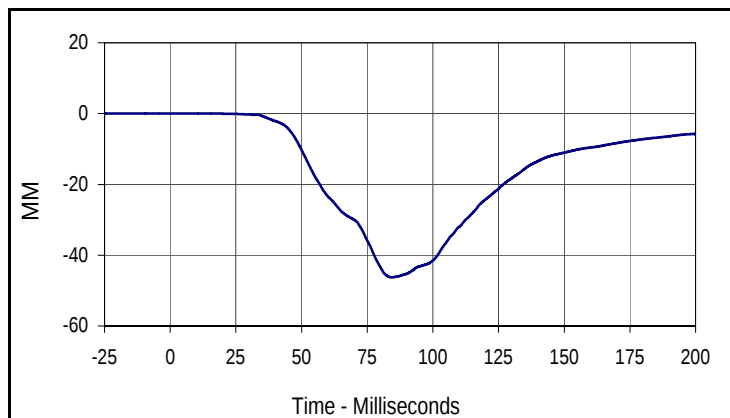
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Curve Description			
Driver Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
004	RES	1000	G's
Max	Time	Min	Time
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Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

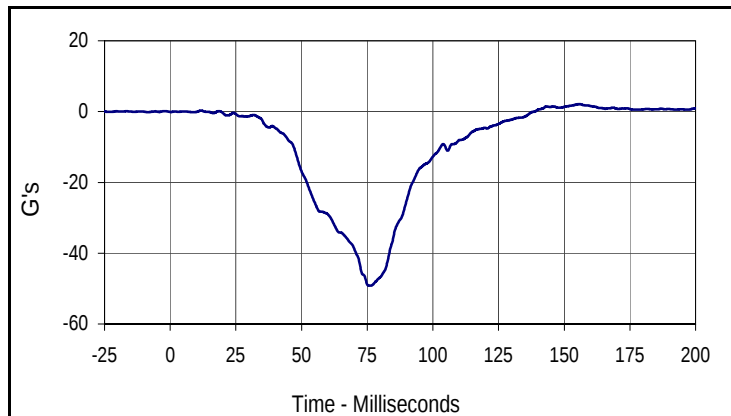
NHTSA No.: MC0313
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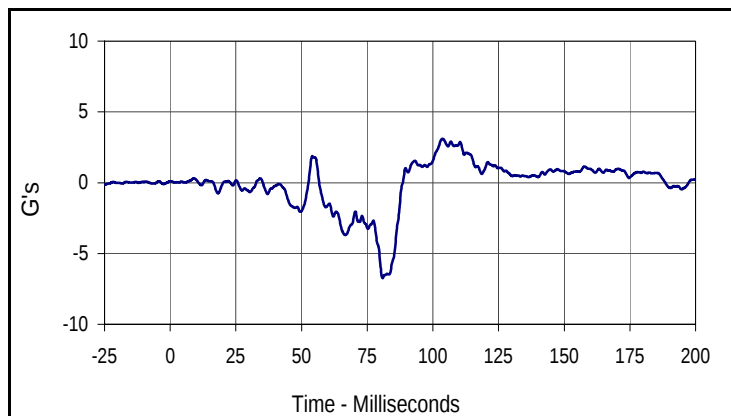
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Driver Chest Deflection			
Plot No.	Type	SAE Class	Units
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Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

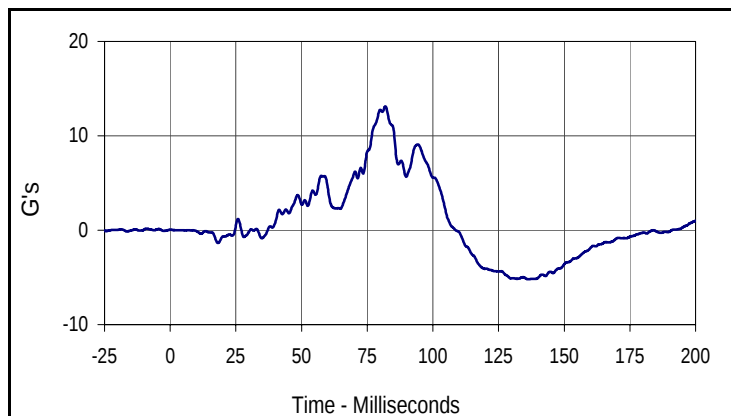
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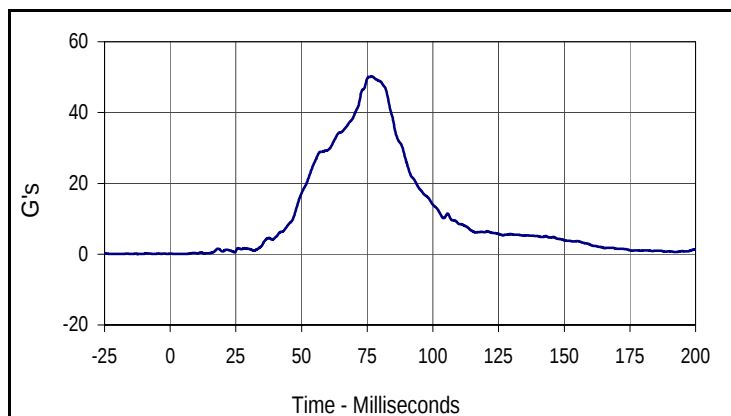
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Driver Chest Acceleration X Primary			
Plot No.	Type	SAE Class	Units
006	FIL	180	G's
Max	Time	Min	Time
2.1	155.7	-49.2	75.6



Curve Description			
Driver Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
007	FIL	180	G's
Max	Time	Min	Time
3.1	103.7	-6.7	80.9



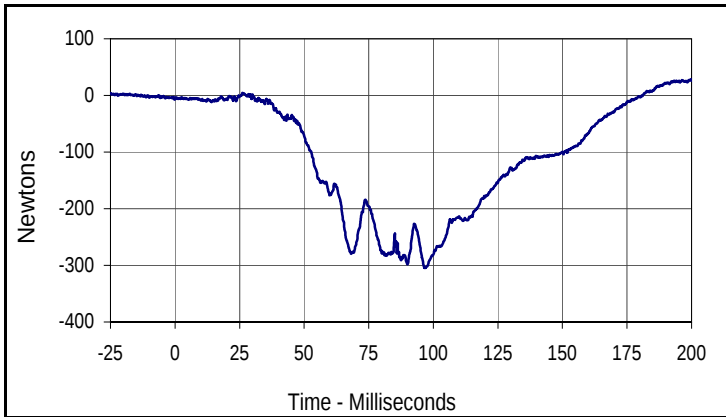
Curve Description			
Driver Chest Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
008	FIL	180	G's
Max	Time	Min	Time
13.1	81.9	-5.2	136.3



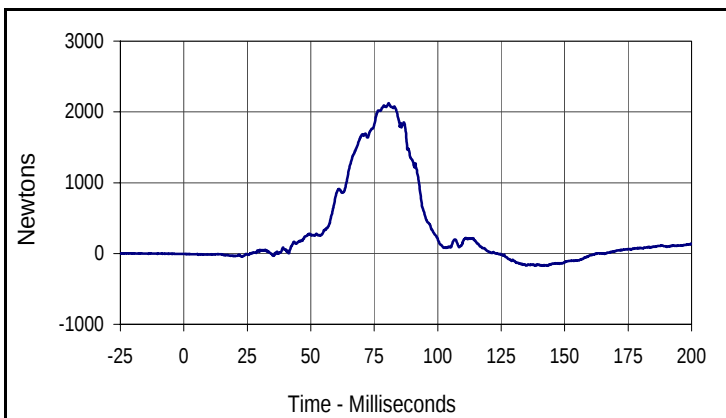
Curve Description			
Driver Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
009	RES	180	G's
Max	Time	Min	Time
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Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

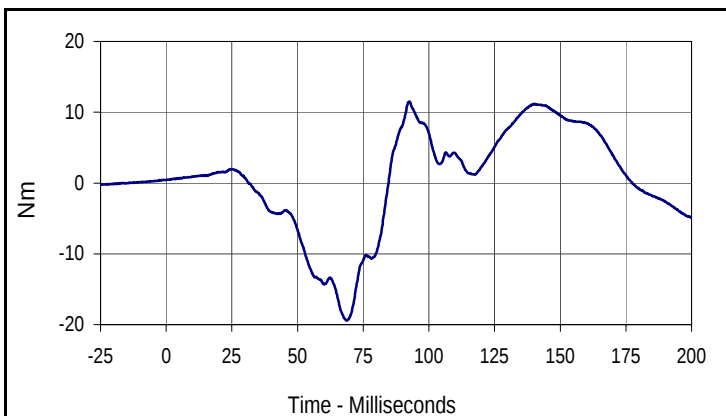
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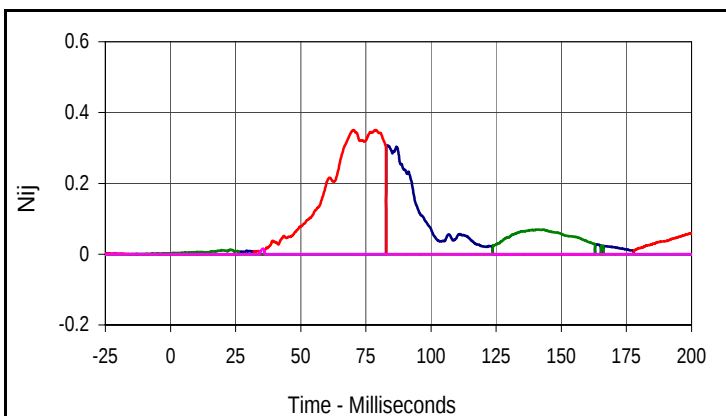
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Driver Upper Neck Force X			
Plot No.	Type	SAE Class	Units
010	FIL	1000	Newtons
Max	Time	Min	Time
27.9	199.7	-304.8	96.6



Curve Description			
Driver Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
011	FIL	1000	Newtons
Max	Time	Min	Time
2123.4	80.7	-173.3	143.1



Curve Description			
Driver Upper Neck Moment Y			
Plot No.	Type	SAE Class	Units
012	FIL	600	Nm
Max	Time	Min	Time
11.5	92.6	-19.4	68.7



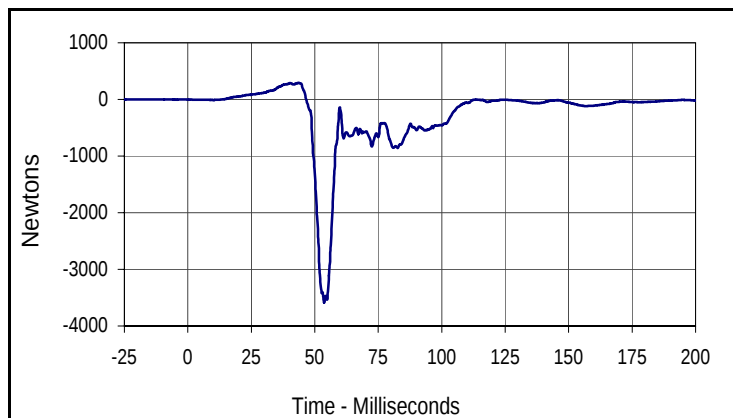
Curve Description			
Driver Nij			
Units	Type	Max	Time
Ntf	FIL	0.31	83.3
Units	Type	Max	Time
Nte	FIL	0.35	70.3
Units	Type	Max	Time
Ncf	FIL	0.07	141.4
Units	Type	Max	Time
Nce	FIL	0.17	290.9

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck

NHTSA No.: MC0313

Test Program: 56 km/h Frontal Impact NCAP Test

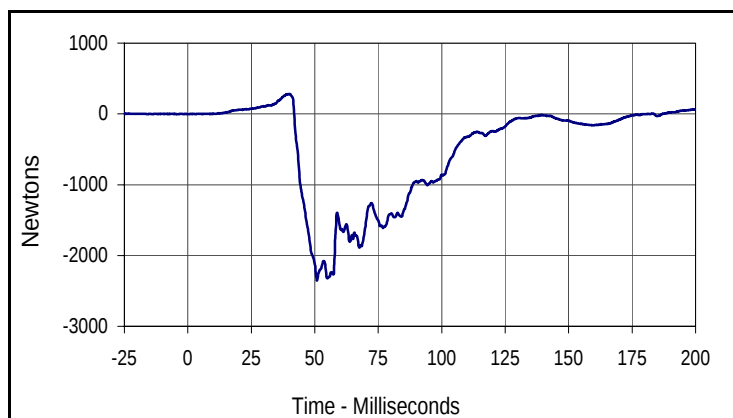
Test Date: 3/5/12



Curve Description

Driver Left Femur Force Z

Plot No.	Type	SAE Class	Units
013	FIL	600	Newtons
Max	Time	Min	Time
296.3	43.7	-3586.4	53.7



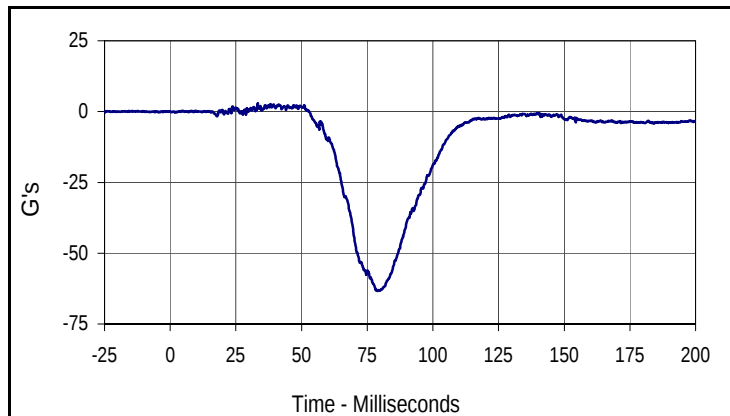
Curve Description

Driver Right Femur Force Z

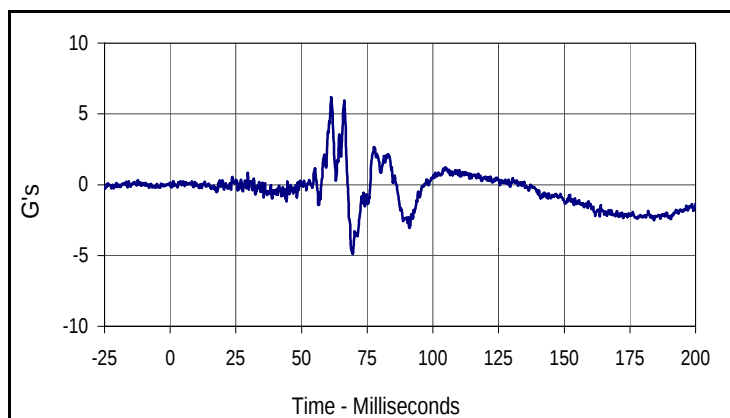
Plot No.	Type	SAE Class	Units
014	FIL	600	Newtons
Max	Time	Min	Time
282.6	40.1	-2354.2	50.8

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

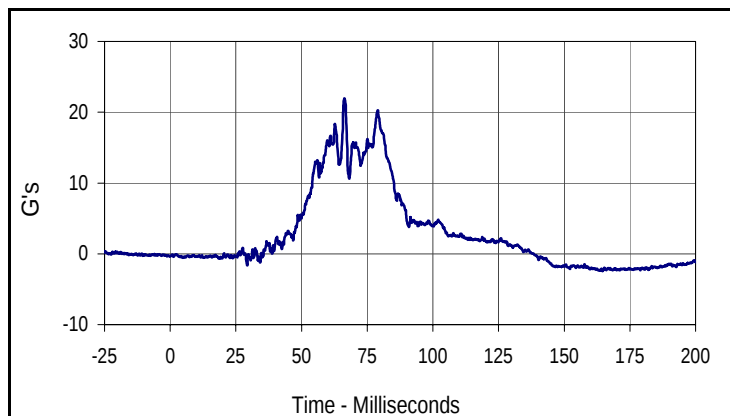
NHTSA No.: MC0313
 Test Date: 3/5/12



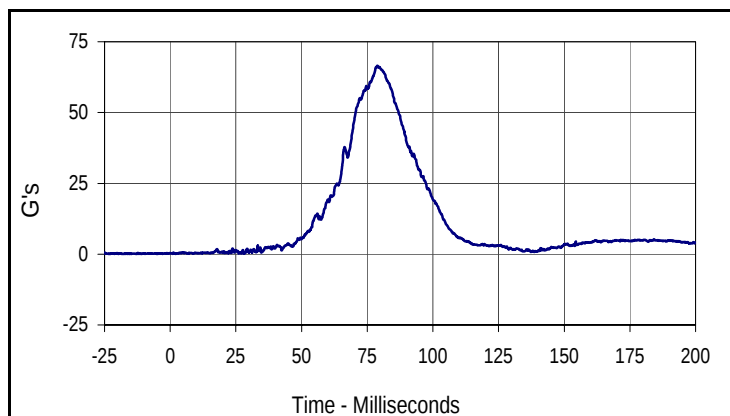
Curve Description			
Passenger Head Acceleration X Primary			
Plot No.	Type	SAE Class	Units
015	FIL	1000	G's
Max	Time	Min	Time
2.9	33.3	-63.3	78.8



Curve Description			
Passenger Head Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
016	FIL	1000	G's
Max	Time	Min	Time
6.2	61.3	-4.9	69.4



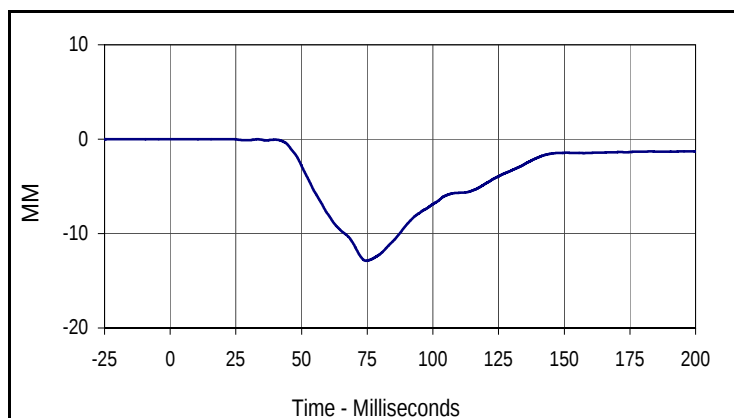
Curve Description			
Passenger Head Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
017	FIL	1000	G's
Max	Time	Min	Time
22.0	66.4	-2.4	164.6



Curve Description			
Passenger Head Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
018	RES	1000	G's
Max	Time	Min	Time
66.5	78.8	0.1	2.2

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

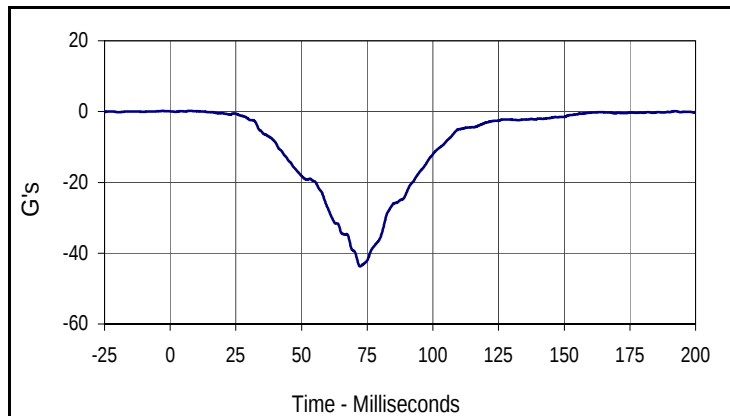
NHTSA No.: MC0313
 Test Date: 3/5/12



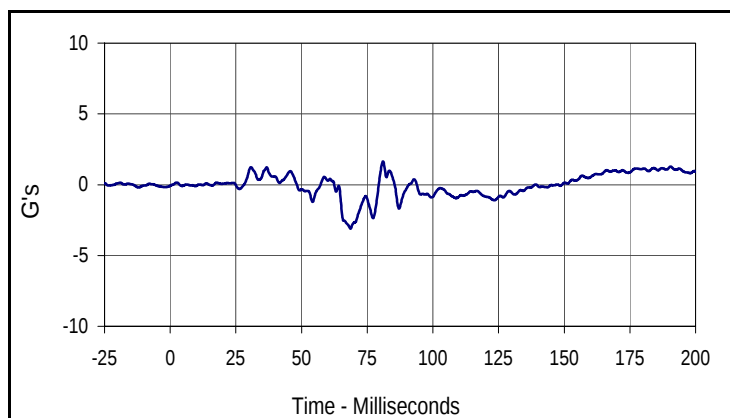
Curve Description			
Passenger Chest Deflection			
Plot No.	Type	SAE Class	Units
019	FIL	180	MM
Max	Time	Min	Time
0.0	7.5	-12.9	74.6

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

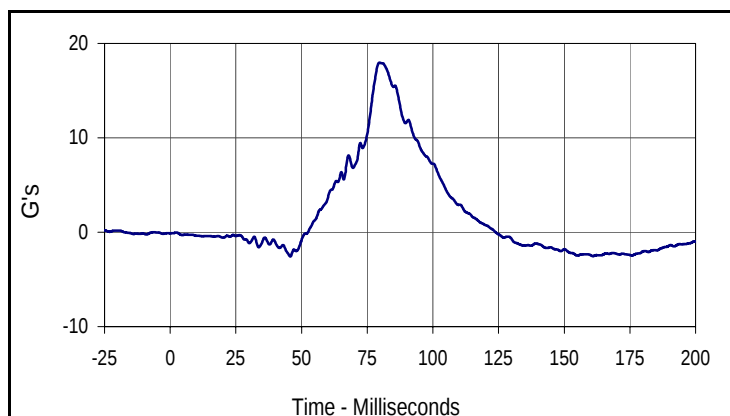
NHTSA No.: MC0313
 Test Date: 3/5/12



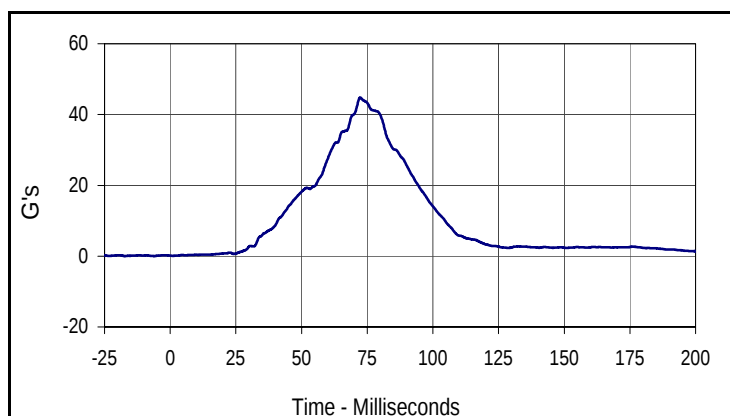
Curve Description			
Passenger Chest Acceleration X Primary			
Plot No.	Type	SAE Class	Units
020	FIL	180	G's
Max	Time	Min	Time
0.2	7.4	-43.7	72.3



Curve Description			
Passenger Chest Acceleration Y Primary			
Plot No.	Type	SAE Class	Units
021	FIL	180	G's
Max	Time	Min	Time
1.6	81.0	-3.1	68.6



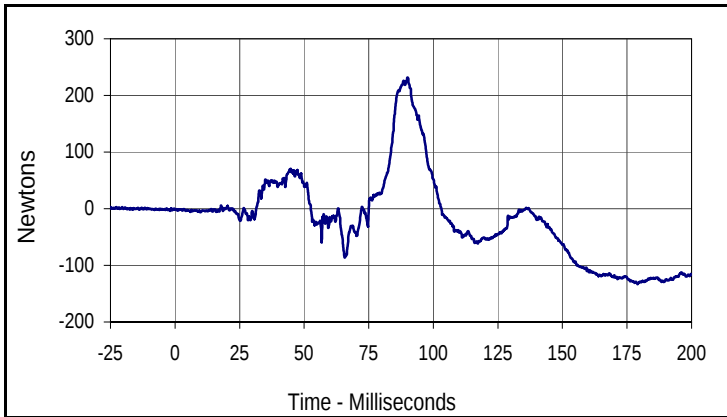
Curve Description			
Passenger Chest Acceleration Z Primary			
Plot No.	Type	SAE Class	Units
022	FIL	180	G's
Max	Time	Min	Time
18.0	79.6	-2.6	45.7



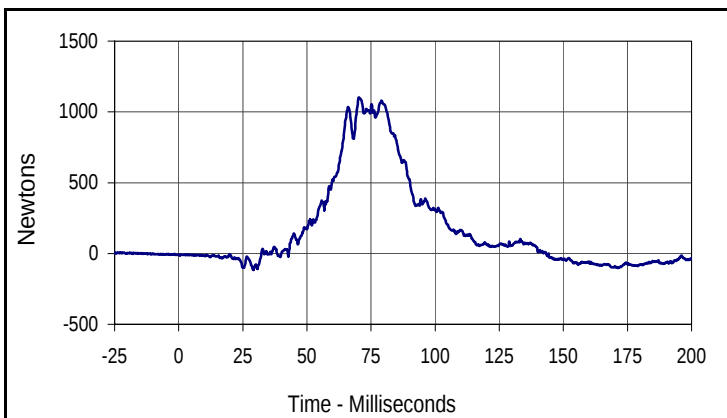
Curve Description			
Passenger Chest Resultant Acceleration Primary			
Plot No.	Type	SAE Class	Units
023	RES	180	G's
Max	Time	Min	Time
44.8	72.3	0.1	1.4

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

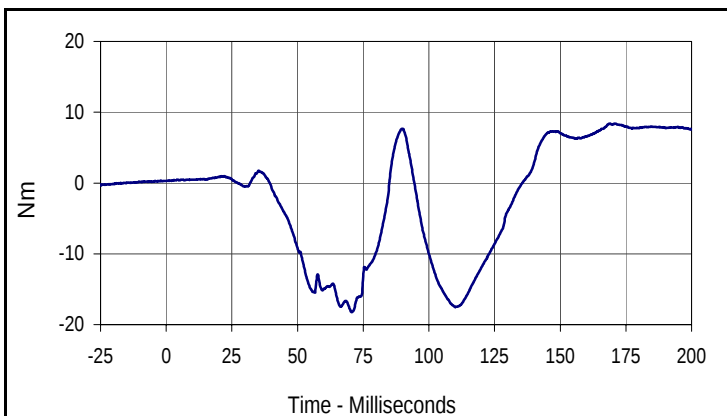
NHTSA No.: MC0313
 Test Date: 3/5/12



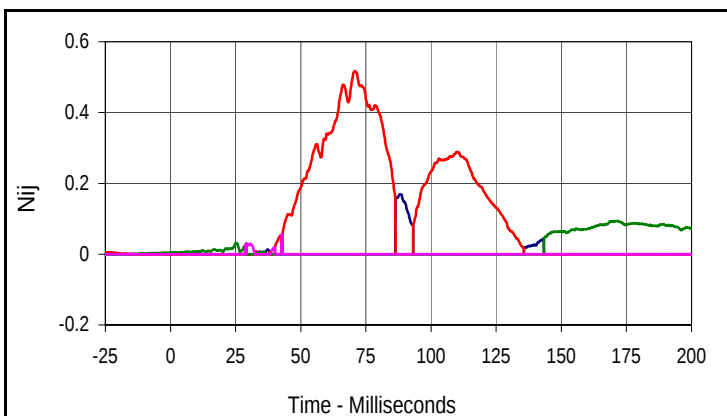
Curve Description			
Passenger Upper Neck Force X			
Plot No.	Type	SAE Class	Units
024	FIL	1000	Newtons
Max	Time	Min	Time
231.8	90.1	-133.2	179.1



Curve Description			
Passenger Upper Neck Force Z			
Plot No.	Type	SAE Class	Units
025	FIL	1000	Newtons
Max	Time	Min	Time
1102.4	70.3	-115.6	29.1



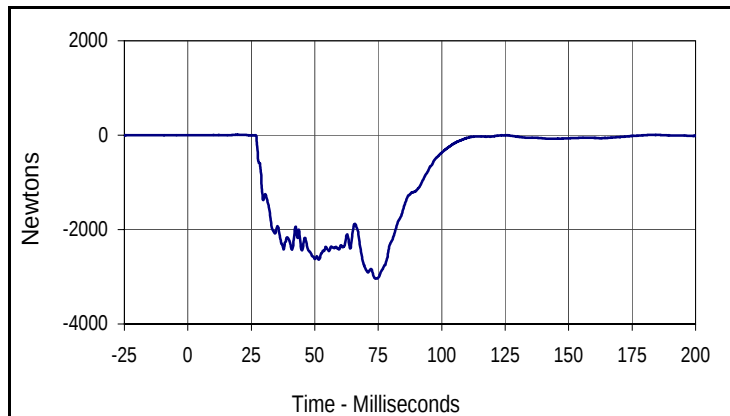
Curve Description			
Passenger Upper Neck Moment Y			
Plot No.	Type	SAE Class	Units
026	FIL	600	Nm
Max	Time	Min	Time
8.4	171.1	-18.3	70.6



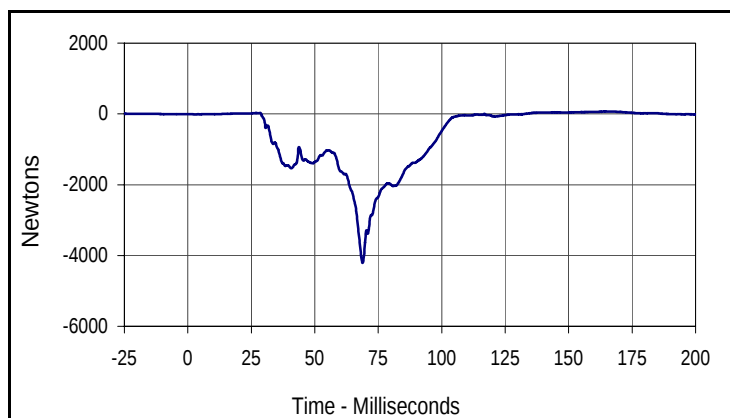
Curve Description			
Passenger Nij			
Units	Type	Max	Time
Ntf	FIL	0.17	88.5
Units	Type	Max	Time
Nte	FIL	0.52	70.8
Units	Type	Max	Time
Ncf	FIL	0.09	171.4
Units	Type	Max	Time
Nce	FIL	0.06	42.9

Test Vehicle: 2012 RAM 2500 ST Crew Cab 4X4 4-Door Truck
 Test Program: 56 km/h Frontal Impact NCAP Test

NHTSA No.: MC0313
 Test Date: 3/5/12



Curve Description			
Passenger Left Femur Force Z			
Plot No.	Type	SAE Class	Units
027	FIL	600	Newtons
Max	Time	Min	Time
10.4	19.9	-3038.6	74.5



Curve Description			
Passenger Right Femur Force Z			
Plot No.	Type	SAE Class	Units
028	FIL	600	Newtons
Max	Time	Min	Time
71.4	164.1	-4206.2	68.8

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: 3/3/12

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:

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 3/3/12

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.17	Pass
Laboratory Relative Humidity	%	10 to 70	30.0	Pass
A - Total sitting height	mm	879 to 889	884	Pass
B - Shoulder pivot height	mm	505 to 521	515	Pass
C - H point height	mm	84 to 89	88	Pass
D - H point location from backline	mm	135 to 140	138	Pass
E - Shoulder pivot from backline	mm	84 to 94	87	Pass
F - Thigh clearance	mm	140 to 155	148	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	298	Pass
H - Head back to backline	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	202	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	490	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	986	Pass
Z - Waist circumference	mm	836 to 866	865	Pass
AA - Location for chest circumference	mm	429 to 434	431	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

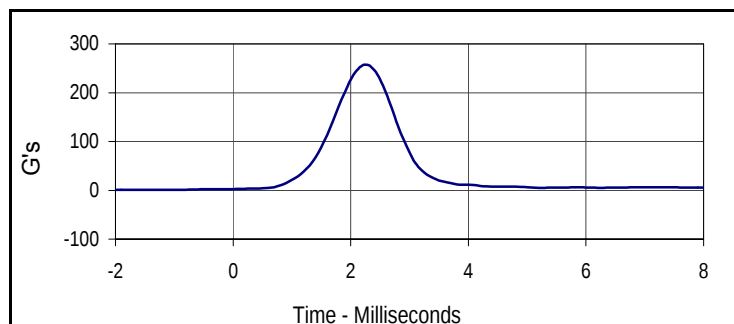
Test Date: 3/3/12

ATD Serial No.: 035

Test I.D.: M035HD034



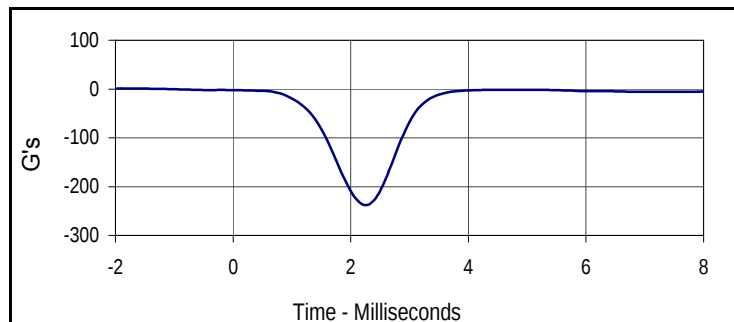
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	240	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.4	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.2	Pass
Peak Resultant Acceleration		G's	225.0 to 275.0	256.4	Pass
Peak Lateral Acceleration		G's	≤15.0	6.3	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	4.4	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

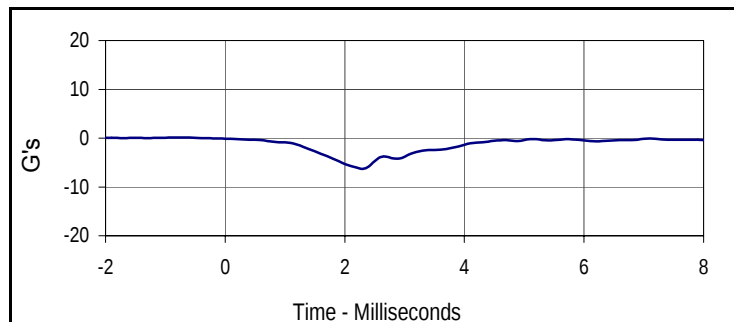
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
256.4	2.3	0.7	-1.1



Curve Description

Head X

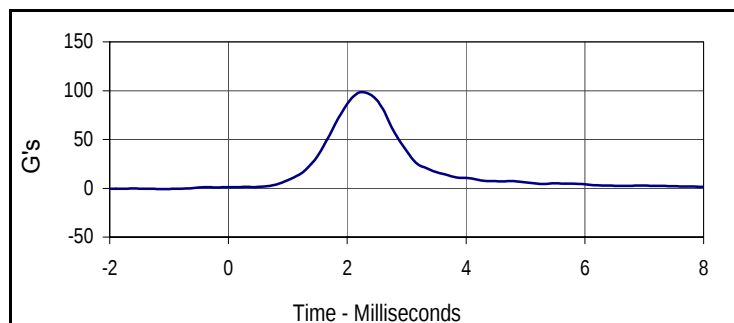
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
0.9	-2.0	-236.8	2.3



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
0.2	-0.8	-6.3	2.3



Curve Description

Head Z

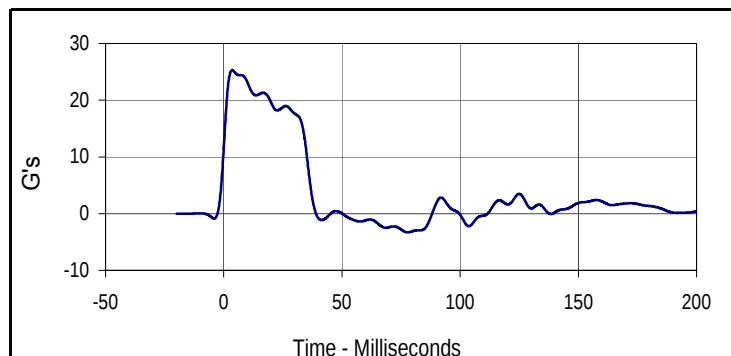
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
98.2	2.3	-0.7	-1.1

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

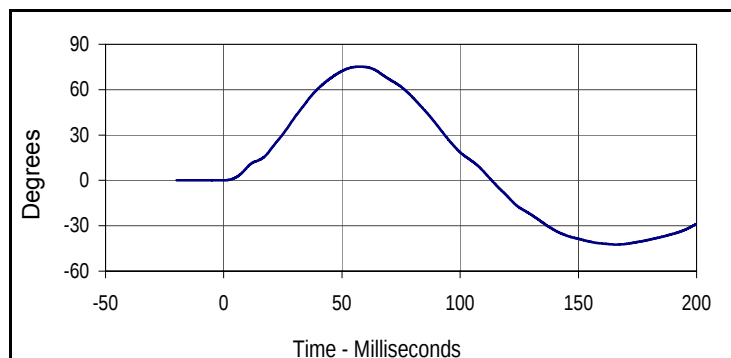
Test Date: 3/3/12
 Test I.D.: M035NF034



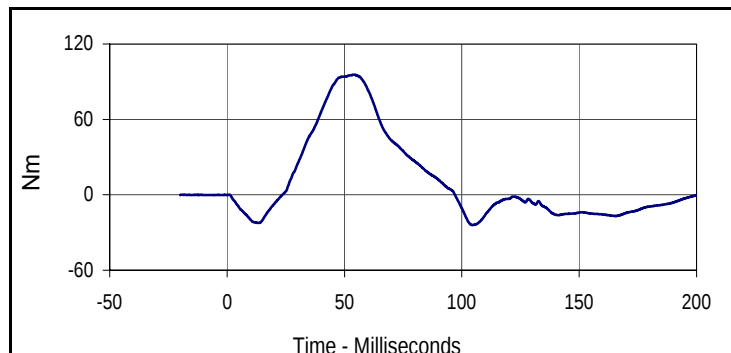
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	275	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.2	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.08	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	23.2	Pass
	20 Msec.	G's	17.6 to 22.6	19.6	Pass
	30 Msec.	G's	12.5 to 18.5	17.6	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.6	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	36.7	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	75.2	Pass
	Time	Msec.	57.0 to 64.0	57.5	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	113.4	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	95.5	Pass
	Time	Msec.	47.0 to 58.0	54.2	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.1	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
25.3	3.6	-3.3	77.8



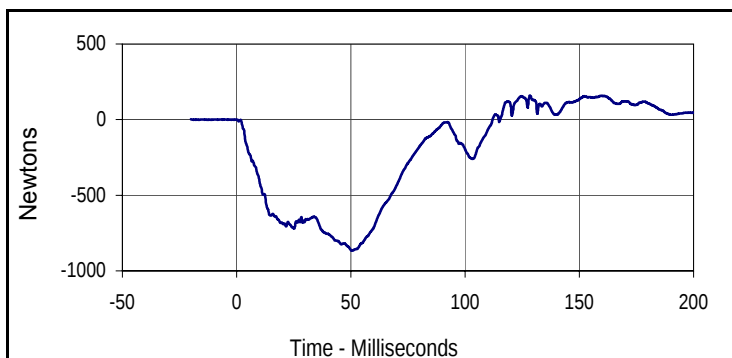
Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
75.2	57.5	-42.4	166.0



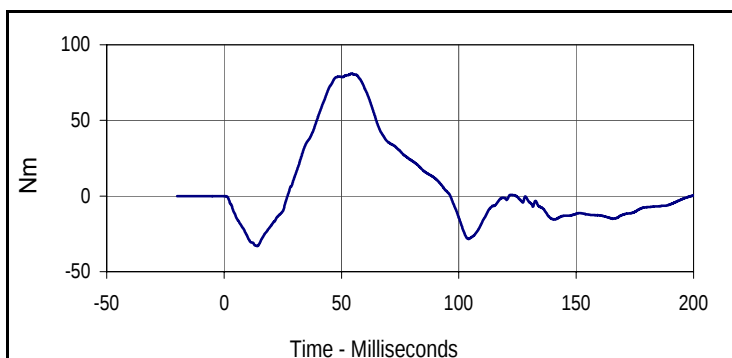
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
95.5	54.2	-24.0	104.5

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

Test Date: 3/3/12
 Test I.D.: M035NF034



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
159.3	128.4	-867.5	50.4



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
80.9	54.3	-33.1	14.1

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

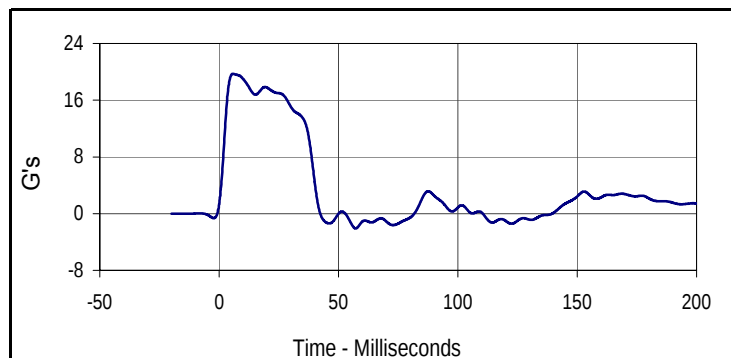
Test Date: 3/3/12

ATD Serial No.: 035

Test I.D.: M035NE034



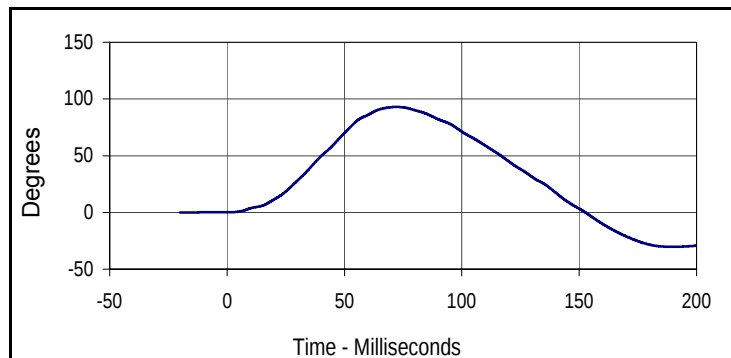
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	305	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.2	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.09	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.0	Pass
	20 Msec.	G's	14.0 to 19.0	17.8	Pass
	30 Msec.	G's	11.0 to 16.0	15.1	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	15.1	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	39.9	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	93.0	Pass
	Time	Msec.	72.0 to 82.0	72.1	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	152.7	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-76.8	Pass
	Time	Msec.	65.0 to 79.0	68.1	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	145.2	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

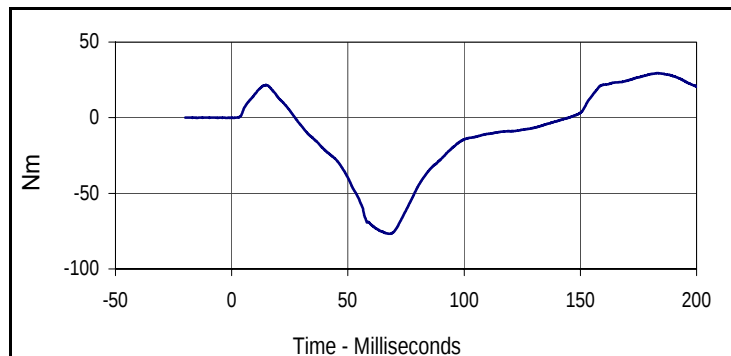
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
19.7	5.8	-2.1	57.2



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
93.0	72.1	-30.4	190.4



Curve Description

Moment About Occipital Condyle

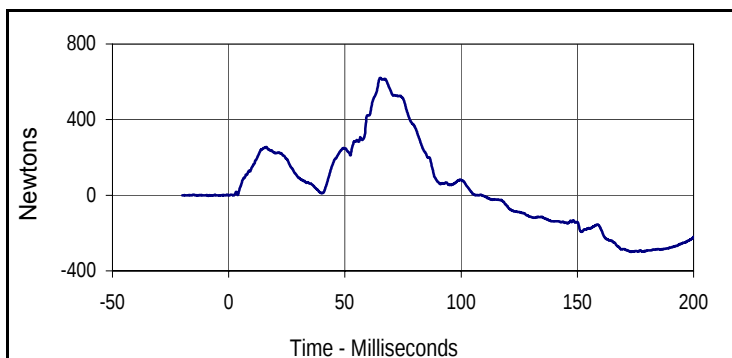
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
29.5	183.3	-76.8	68.1

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

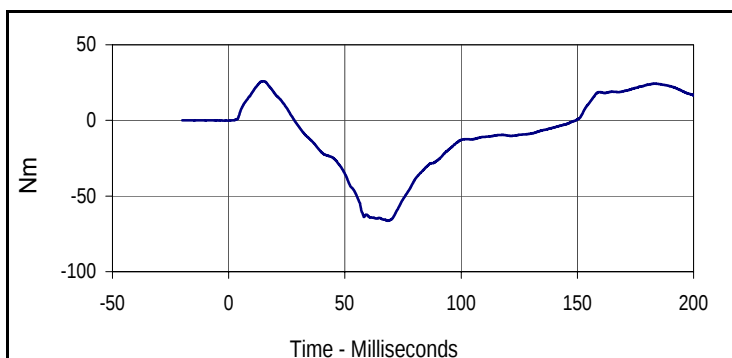
Test Date: 3/3/12

ATD Serial No.: 035

Test I.D.: M035NE034



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
620.1	65.2	-299.5	173.1



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
26.0	14.8	-66.3	68.5

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

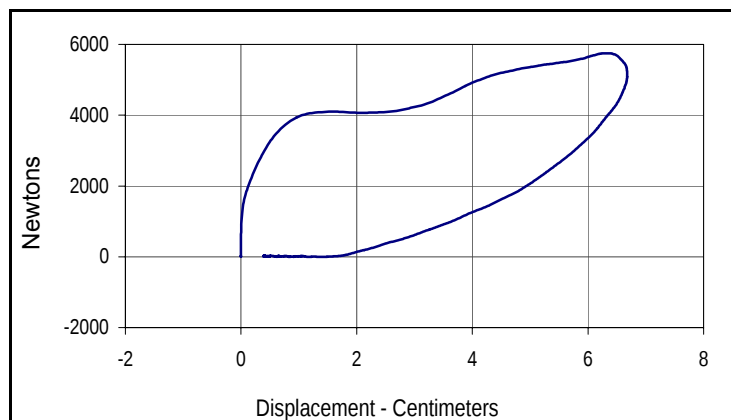
Test Date: 3/3/12

ATD Serial No.: 035

Test I.D.: M035CH034



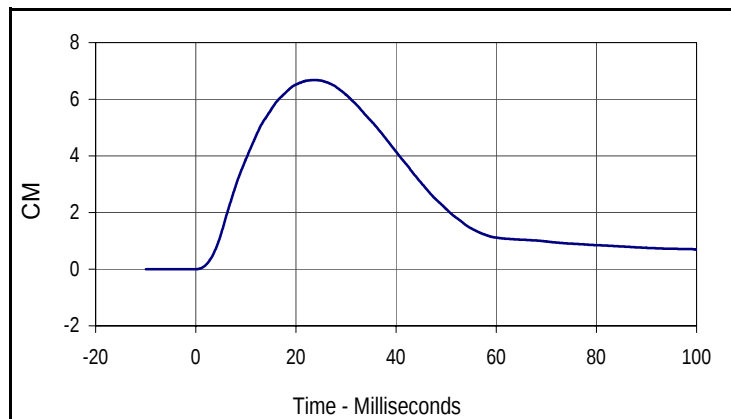
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	360	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	20.8	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.1	Pass
Probe Velocity		m/s	6.58 to 6.82	6.74	Pass
Peak Probe Force		Newtons	5159 to 5893	5748	Pass
Peak Sternum Deflection		CM	6.35 to 7.26	6.68	Pass
Internal Hysteresis		%	69 to 85	72.4	Pass
Overall Test Results				Pass	



Curve Description

Probe Force vs. Chest Deflection

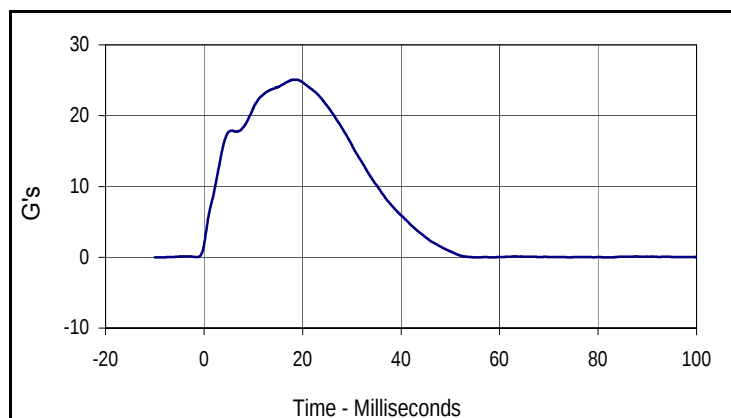
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	72.4
Peak Probe Force		Peak Chest Deflection	
5748		6.68	



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
6.7	23.8	0.0	-0.2



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
25.1	18.6	0.0	55.4

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

Test Date: 3/3/12
 Test I.D.: M035LK034 , M035RK034

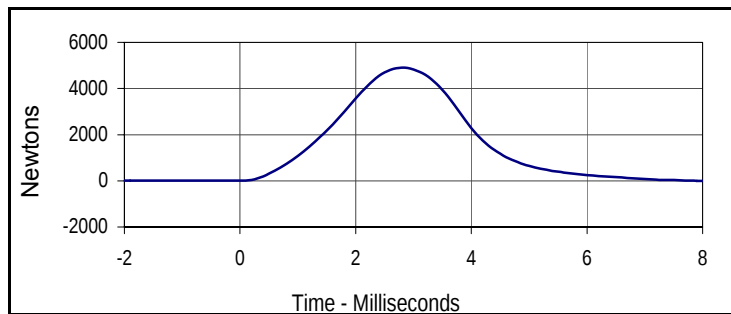


Left Knee

Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	320	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.0	Pass
	Min	%		29.0	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	20.9	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.2	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force		Newtons	4715 to 5782	4906	Pass
Overall Test Results				Pass	

Right Knee

Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force		Newtons	4715 to 5782	4967	Pass
Overall Test Results				Pass	



Curve Description

Left Knee Probe Force

Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
4905.8	2.8	-12.9	8.7



Curve Description

Left Knee Acceleration

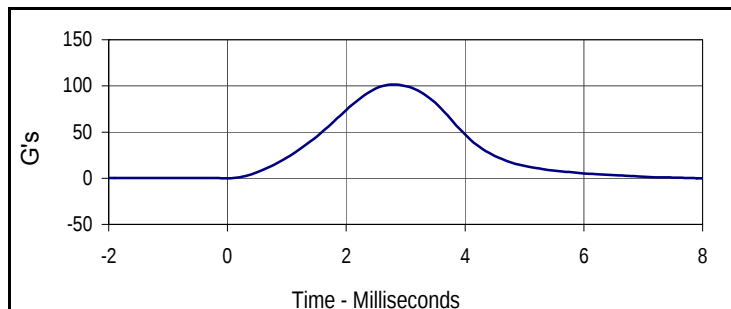
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
100.3	2.8	-0.3	8.7



Curve Description

Right Knee Probe Force

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
4966.6	2.8	-12.8	8.7



Curve Description

Right Knee Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
101.5	2.8	-0.3	8.7

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

Test Date: 3/3/12
 Test I.D.: M035LF034, M035RF034

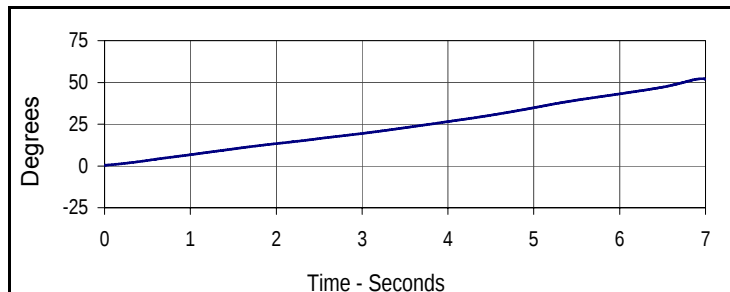


Left Hip Joint-Femur Results

Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	395	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	32.0	Pass
	Min		29.0	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.0	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	29.2	Pass
Rotation Rate	deg/sec	5 to 10	7.5	Pass
Femur Torque at 30°	Nm	≤ 95	87.1	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	48.8	Pass
Overall Test Results				Pass

Right Hip Joint-Femur Results

Rotation Rate	deg/sec	5 to 10	7.3	Pass
Femur Torque at 30°	Nm	≤ 95	88.1	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	47.6	Pass
Overall Test Results				Pass



Curve Description

Left Hip-Femur Rotation

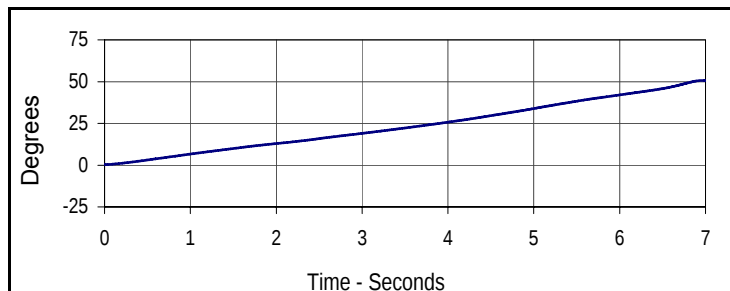
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
52.2	7.0	0.4	0.0



Curve Description

Left Femur Torque

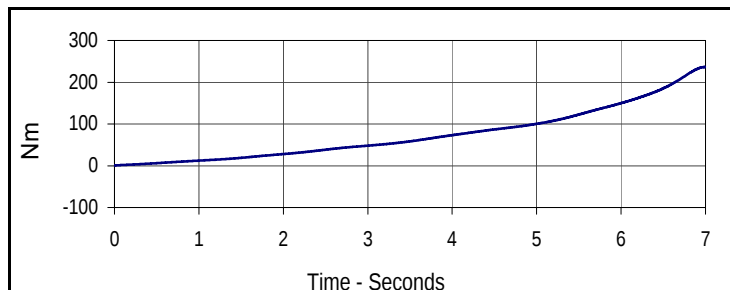
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
239.1	7.0	1.0	0.0



Curve Description

Right Hip-Femur Rotation

Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
50.7	7.0	0.2	0.0



Curve Description

Right Femur Torque

Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
236.4	7.0	1.0	0.0

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

Test Date: 3/1/12

ATD Serial No.: 635

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:

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 3/1/12

ATD Serial No.: 635

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.22	Pass
Laboratory Relative Humidity	%	10 to 70	30.7	Pass
A - Total sitting height	mm	774.7 to 800.1	787	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	452	Pass
C - H point height	mm	81.3 to 86.3	84	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	79	Pass
F - Thigh clearance	mm	119.4 to 134.6	125	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	195	Pass
K - Buttock to knee length	mm	520.7 to 546.1	530	Pass
L - Popliteal length	mm	355.6 to 376.0	372	Pass
M - Knee pivot height	mm	393.7 to 419.1	400	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	186	Pass
P - Foot length	mm	218.5 to 233.7	221	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	475	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	862	Pass
Z - Waist circumference	mm	759.5 to 789.9	766	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	164	Pass
Overall Test Results				Pass

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

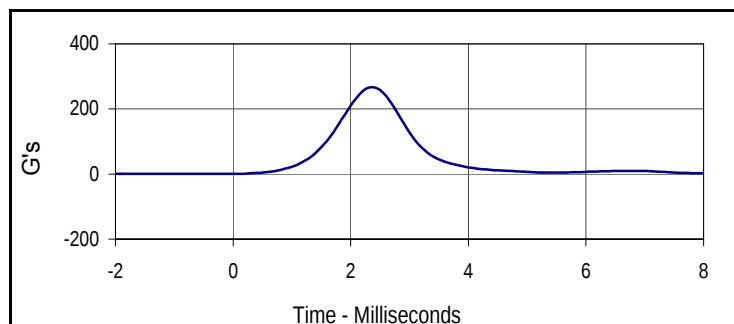
Test Date: 3/1/12

ATD Serial No.: 635

Test I.D.: F635HD029



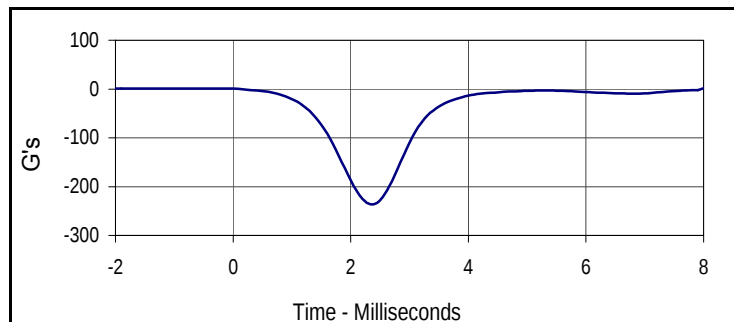
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	260	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.5	Pass
	Min	%		28.9	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.7	Pass
Peak Resultant Acceleration		G's	250.0 to 300.0	266.5	Pass
Peak Lateral Acceleration		G's	≤15.0	6.0	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	3.7	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

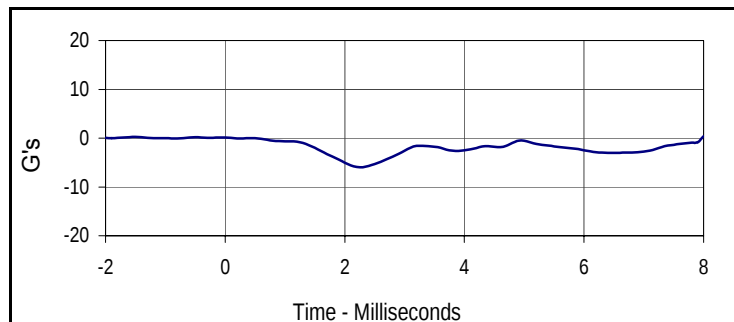
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
266.5	2.4	0.3	0.1



Curve Description

Head X

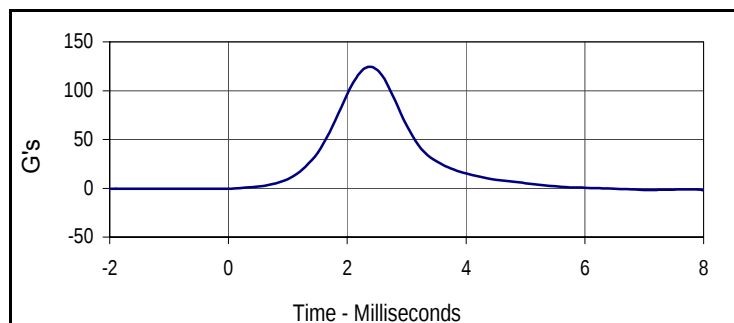
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
1.0	-1.5	-235.6	2.4



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
0.2	-1.5	-6.0	2.3



Curve Description

Head Z

Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
124.5	2.4	-0.6	-2.0

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

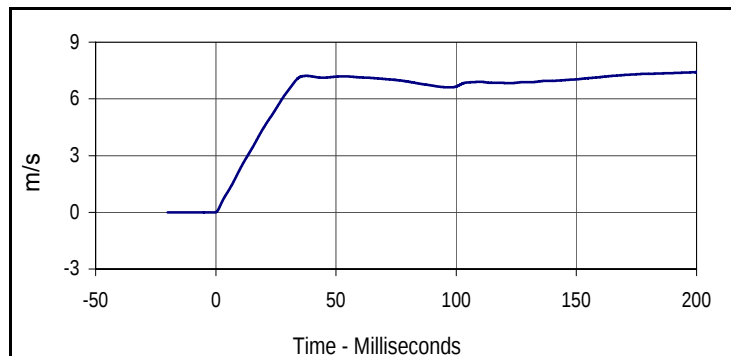
Test Date: 3/1/12

ATD Serial No.: 635

Test I.D.: F635NF029



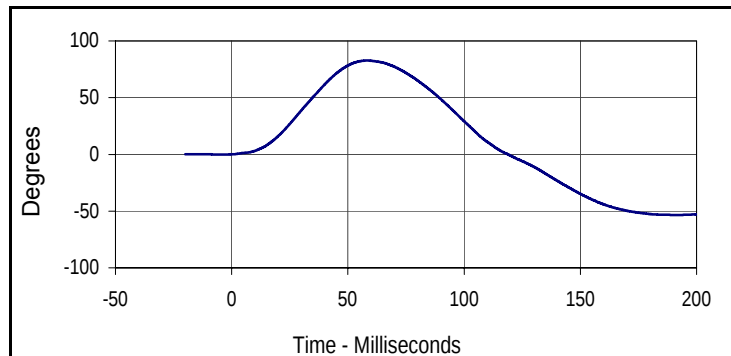
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	280	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.5	Pass
	Min	%		28.9	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	20.8	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.8	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.02	Pass
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.3	Pass
	20 Msec.	m/s	4.0 to 5.0	4.5	Pass
	30 Msec.	m/s	5.8 to 7.0	6.4	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	82.8	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	79.8	Pass
Positive Moment Decay, Time To 10 Nm		Msec.	80.0 to 100.0	87.4	Pass
Overall Test Results				Pass	



Curve Description

Pendulum Velocity

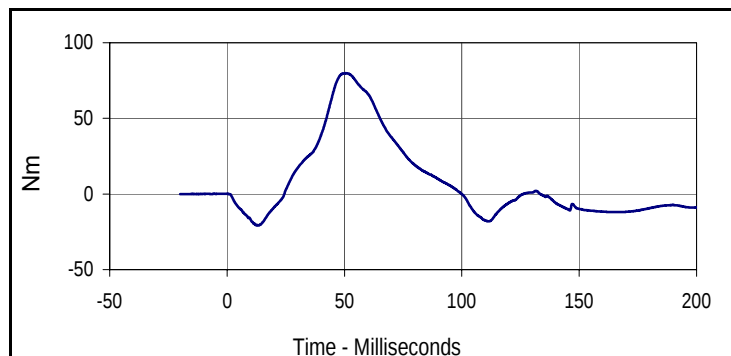
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
7.4	200.0	0.0	-0.6



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
82.8	58.1	-53.4	191.5



Curve Description

Moment About Occipital Condyle

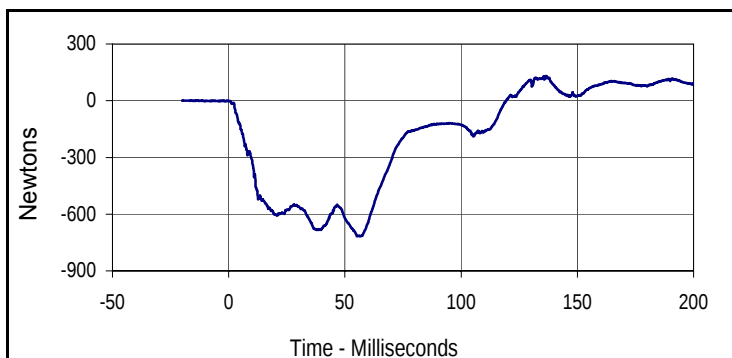
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
79.8	50.5	-20.8	13.5

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

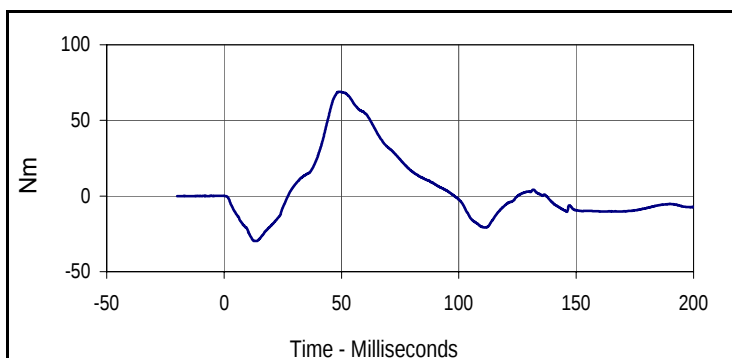
Test Date: 3/1/12

ATD Serial No.: 635

Test I.D.: F635NF029



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
131.2	136.5	-716.4	55.2



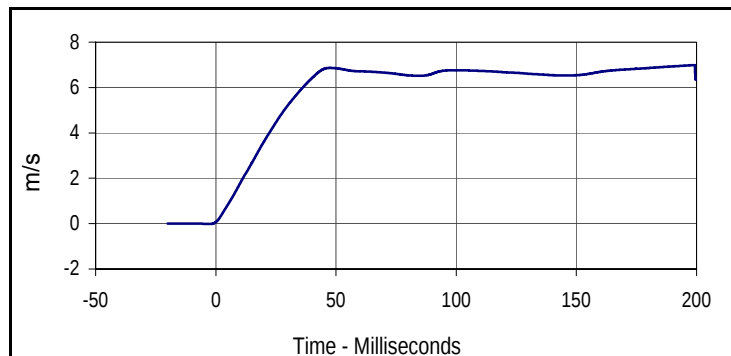
Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
68.9	49.2	-29.8	12.8

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

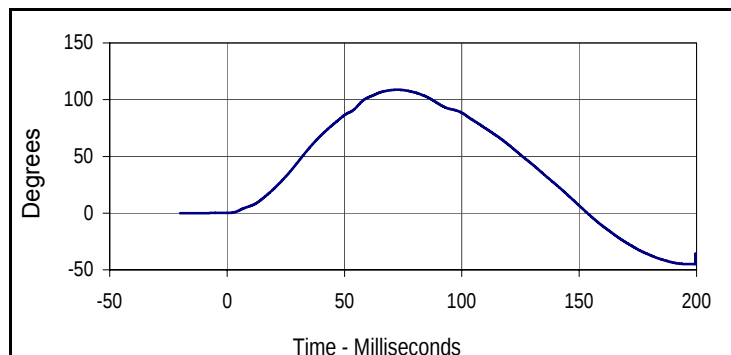
Test Date: 3/1/12
 Test I.D.: F635NE029



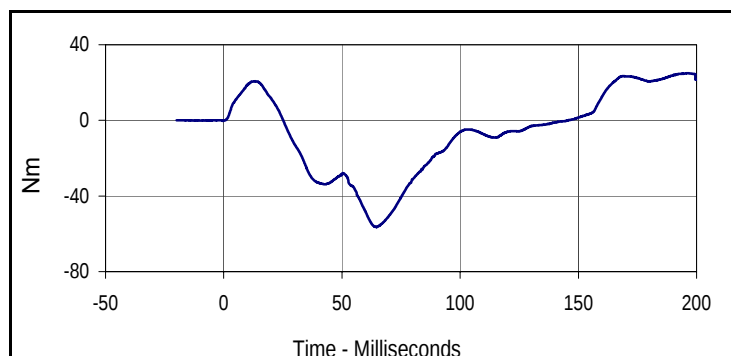
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	325	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.5	Pass
	Min	%		28.9	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.4	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.11	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.8	Pass
	20 Msec.	m/s	3.1 to 3.9	3.6	Pass
	30 Msec.	m/s	4.6 to 5.6	5.2	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	108.8	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-56.4	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	96.8	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
7.0	199.4	0.0	-2.7



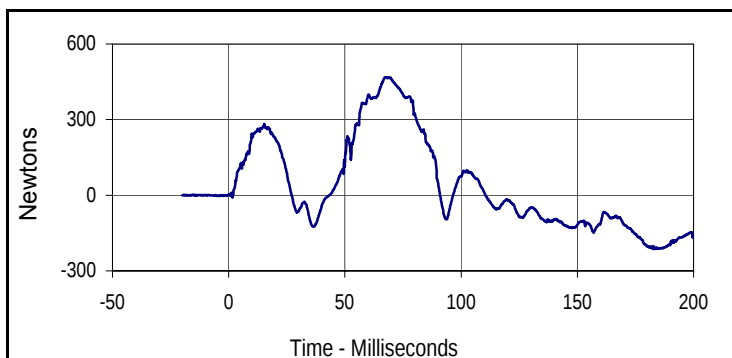
Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
108.8	72.6	-45.1	196.6



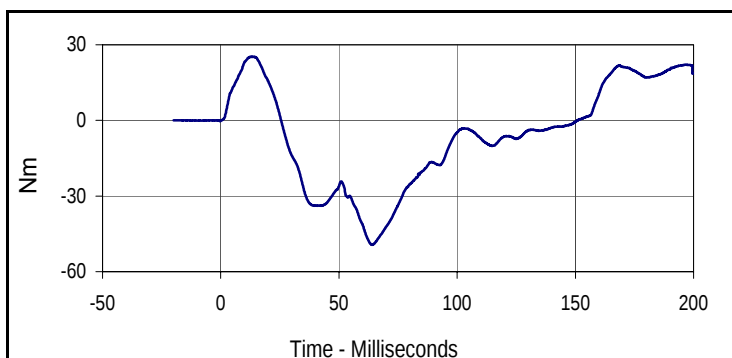
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
25.0	196.4	-56.4	64.7

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

Test Date: 3/1/12
 Test I.D.: F635NE029



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
467.8	67.9	-213.3	183.2



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
25.3	13.7	-49.3	64.0

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

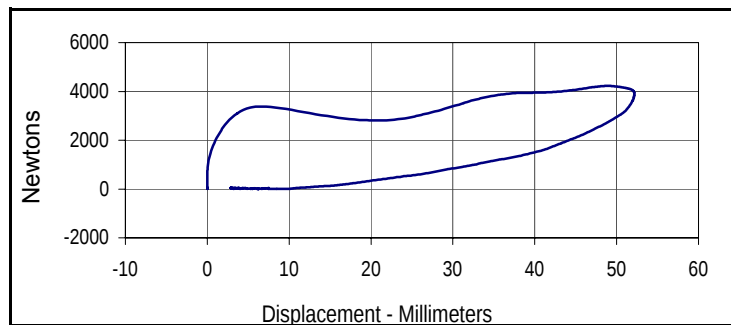
Test Date: 3/1/12

ATD Serial No.: 635

Test I.D.: F635CH029



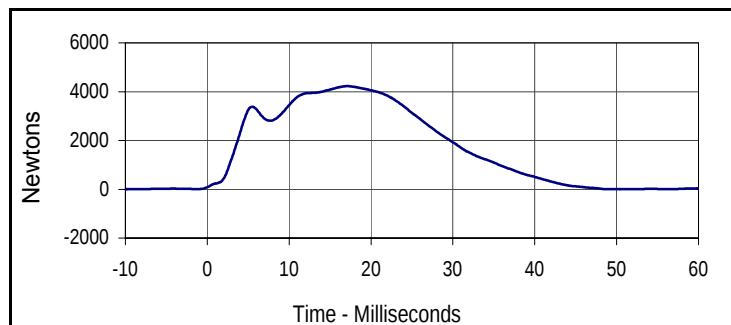
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	425	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.5	Pass
	Min	%		28.9	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	20.9	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	32.1	Pass
Probe Velocity		m/s	6.59 to 6.83	6.74	Pass
Peak Chest Deflection		mm	50.0 to 58.0	52.2	Pass
Peak Force Between 50 and 58 MM		Newtons	3900 to 4400	4224	Pass
Peak Force Between 18 and 50 MM		Newtons	≤4600	4198	Pass
Internal Hysteresis		%	69 to 85	73.2	Pass
Overall Test Results					Pass



Curve Description

Probe Force vs. Chest Deflection

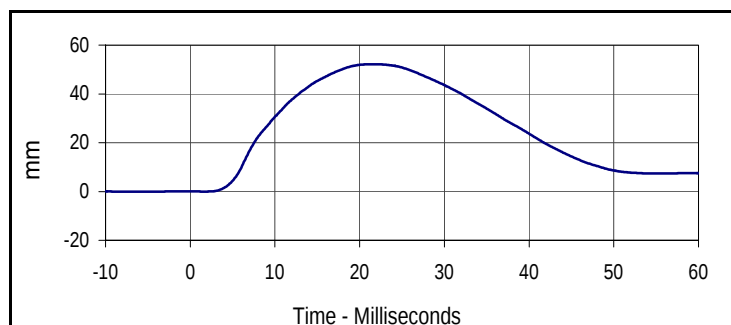
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	73.2
Peak Probe Force		Peak Chest Deflection	
4224.2		52.2	



Curve Description

Probe Force

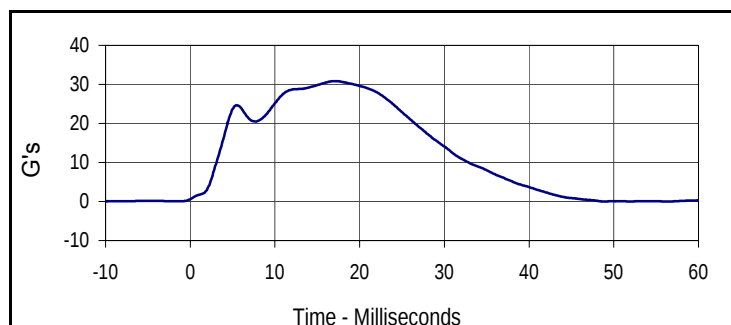
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4224.2	17.1	-10.5	76.1



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
003	FIL	600	mm
Max	Time	Min	Time
52.2	21.6	0.0	1.8



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	180	G's
Max	Time	Min	Time
30.8	17.1	-0.1	76.1

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

Test Date: 3/1/12
 Test I.D.: F635LK029, F635RK029

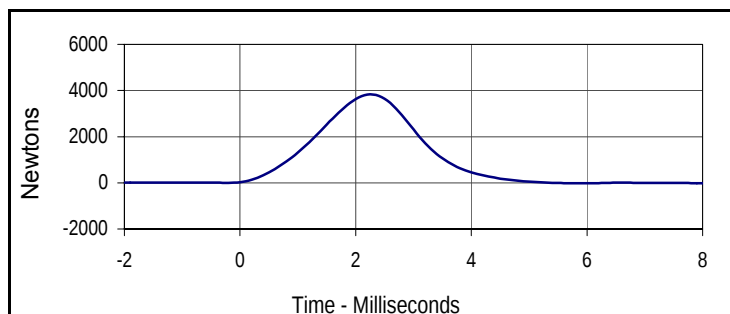


Left Knee

Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	460	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.5	Pass
	Min	%		28.9	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.9	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force		Newtons	3450 to 4060	3828	Pass
Overall Test Results					Pass

Right Knee

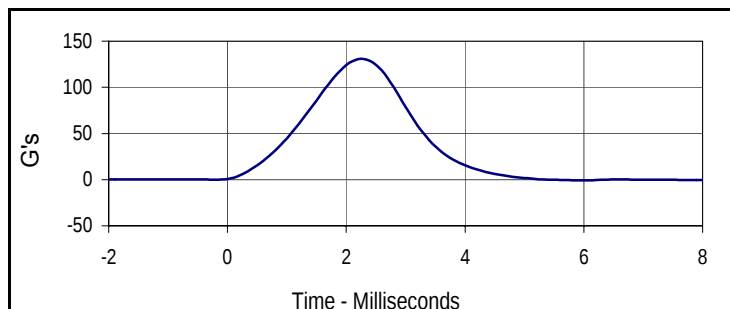
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.11	Pass
Peak Probe Force		Newtons	3450 to 4060	3840	Pass
Overall Test Results					Pass



Curve Description

Left Knee Probe Force

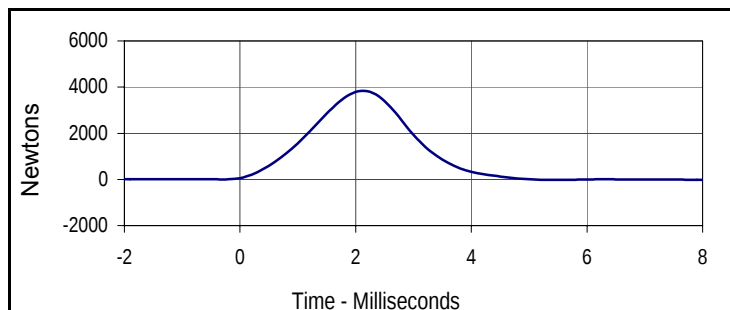
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3828.1	2.3	-21.9	6.0



Curve Description

Left Knee Acceleration

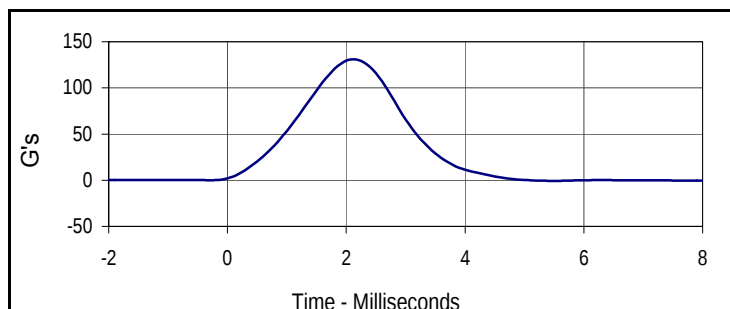
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
130.6	2.3	-0.7	6.0



Curve Description

Right Knee Probe Force

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3839.7	2.1	-21.6	5.5



Curve Description

Right Knee Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
131.0	2.1	-0.7	5.5

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

Test Date: 3/1/12

ATD Serial No.: 635

Test I.D.: F635TF029

**Left Hip Joint-Femur Results**

Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	490	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.5	Pass
	Min	%		28.9	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.0	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.0	Pass
Initial Reference Plane Angle		Degrees	≤ 20	8.3	Pass
Peak Force at 45° +/-0.5°		Newtons	320.0 to 390.0	368.2	Pass
Torso Rotation Rate		deg/sec	0.5 to 1.5	1.3	Pass
Final Reference Plane Angle		Degrees	+/-8	3.1	Pass
Overall Test Results					Pass

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

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

Test Date: 3/7/12

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:

Test Program: Hybrid III 50th Percentile Male External Measurements

Test Date: 3/7/12

ATD Serial No.: 035

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.11	Pass
Laboratory Relative Humidity	%	10 to 70	31.0	Pass
A - Total sitting height	mm	879 to 889	885	Pass
B - Shoulder pivot height	mm	505 to 521	514	Pass
C - H point height	mm	84 to 89	87	Pass
D - H point location from backline	mm	135 to 140	138	Pass
E - Shoulder pivot from backline	mm	84 to 94	87	Pass
F - Thigh clearance	mm	140 to 155	148	Pass
G - Back of elbow to wrist pivot	mm	290 to 305	298	Pass
H - Head back to backline	mm	41 to 46	44	Pass
I - Shoulder to elbow length	mm	330 to 345	335	Pass
J - Elbow rest height	mm	190 to 211	202	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	491	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	985	Pass
Z - Waist circumference	mm	836 to 866	865	Pass
AA - Location for chest circumference	mm	429 to 434	431	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

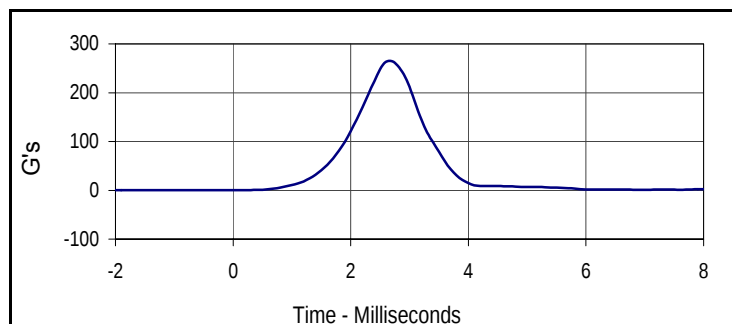
Test Date: 3/7/12

ATD Serial No.: 035

Test I.D.: M035HD035



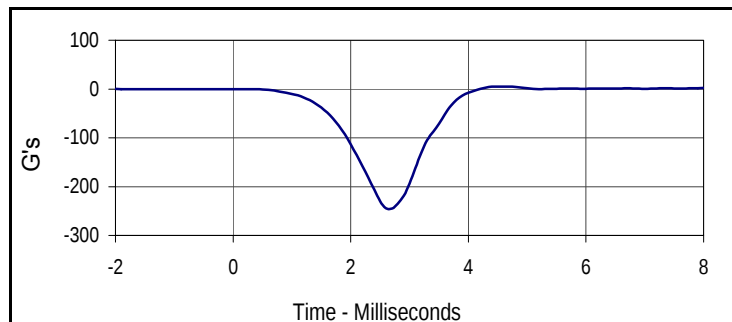
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	240	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.7	Pass
Peak Resultant Acceleration		G's	225.0 to 275.0	264.4	Pass
Peak Lateral Acceleration		G's	≤15.0	4.4	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	5.5	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

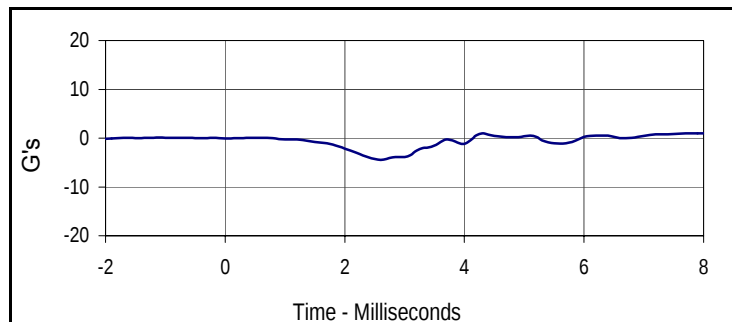
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
264.4	2.7	0.1	-2.0



Curve Description

Head X

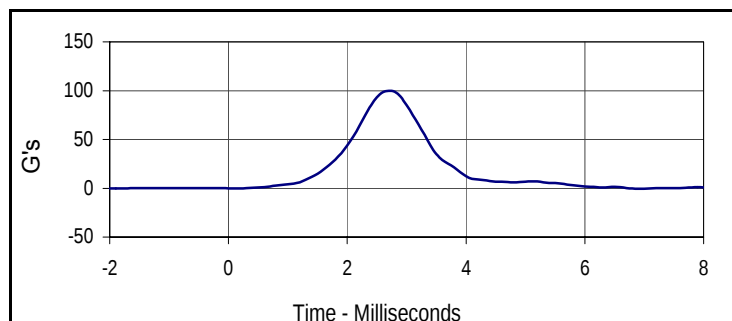
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
5.2	4.5	-244.7	2.7



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
1.0	4.3	-4.4	2.6



Curve Description

Head Z

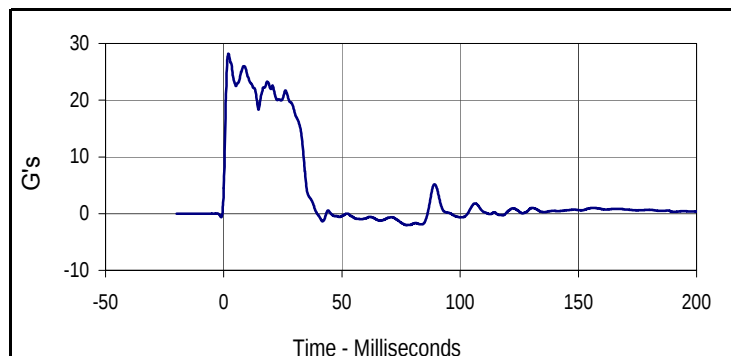
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
100.0	2.7	-0.2	0.1

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

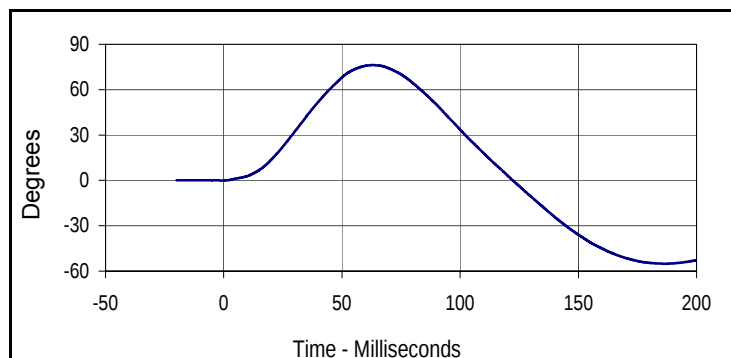
Test Date: 3/7/12
 Test I.D.: M035NF035



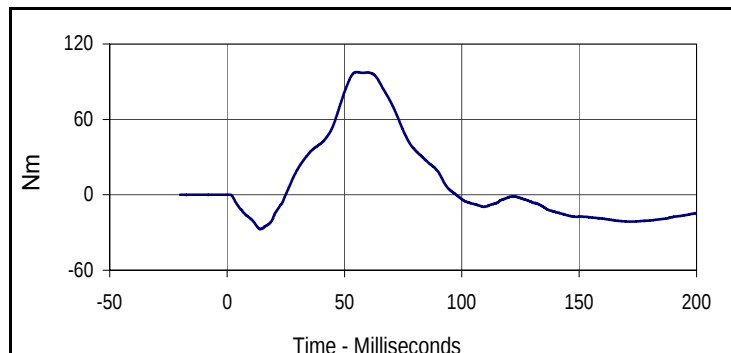
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	275	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	28.7	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.06	Pass
Pendulum Deceleration	10 Msec.	G's	22.5 to 27.5	24.3	Pass
	20 Msec.	G's	17.6 to 22.6	22.0	Pass
	30 Msec.	G's	12.5 to 18.5	17.8	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 29.0	17.8	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	34.0 to 42.0	34.9	Pass
Maximum "D" Plane Rotation	Max	Degrees	64.0 to 78.0	76.2	Pass
	Time	Msec.	57.0 to 64.0	63.0	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	113.0 to 128.0	122.3	Pass
Moment About Occ. Condyle	Max	Nm	84.1 to 108.5	97.7	Pass
	Time	Msec.	47.0 to 58.0	55.4	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	97.0 to 107.0	97.7	Pass
Overall Test Results					Pass



Curve Description			
Pendulum Deceleration			
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
28.2	2.0	-2.0	77.3



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
76.2	63.0	-55.1	186.8



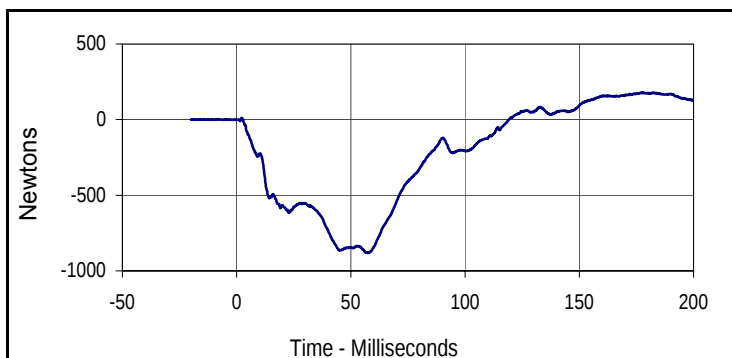
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
97.7	55.4	-27.3	14.1

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

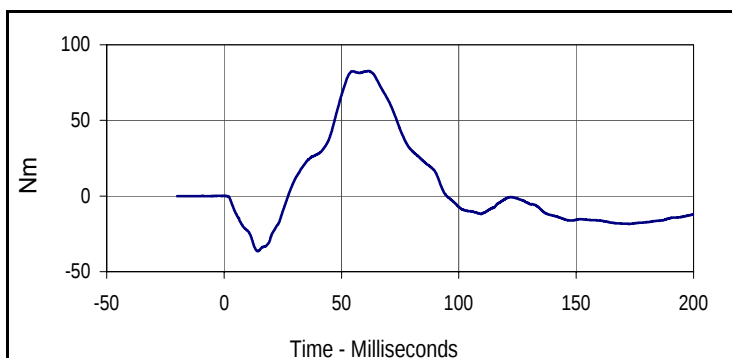
ATD Serial No.: 035

Test Date: 3/7/12

Test I.D.: M035NF035



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
179.6	177.9	-881.9	57.7



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
82.6	61.7	-36.5	14.2

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

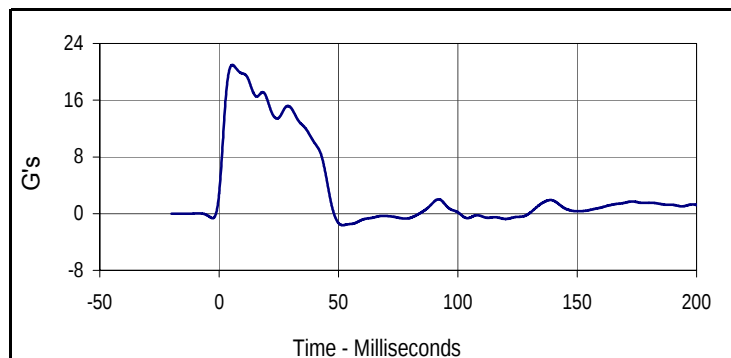
Test Date: 3/7/12

ATD Serial No.: 035

Test I.D.: M035NE035



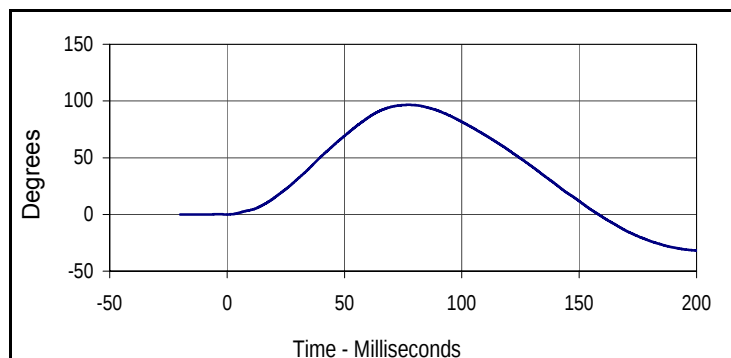
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	305	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.2	Pass
Pendulum Velocity		m/s	5.94 to 6.19	6.12	Pass
Pendulum Deceleration	10 Msec.	G's	17.2 to 21.2	19.8	Pass
	20 Msec.	G's	14.0 to 19.0	16.3	Pass
	30 Msec.	G's	11.0 to 16.0	14.9	Pass
Peak Pendulum Decel. after 30 Msec.		G's	≤ 22.0	14.9	Pass
Deceleration Decay, Time to Cross 5 G's		Msec.	38.0 to 46.0	45.0	Pass
Maximum "D" Plane Rotation	Max	Degrees	81.0 to 106.0	96.6	Pass
	Time	Msec.	72.0 to 82.0	77.4	Pass
"D" Plane Rotation Decay, Time To Zero Crossing		Msec.	147.0 to 174.0	158.3	Pass
Moment About Occ. Condyle	Max	Nm	-52.9 to -79.9	-72.2	Pass
	Time	Msec.	65.0 to 79.0	67.6	Pass
Positive Moment Decay, Time To Zero Crossing		Msec.	120.0 to 148.0	138.8	Pass
Overall Test Results					Pass



Curve Description

Pendulum Deceleration

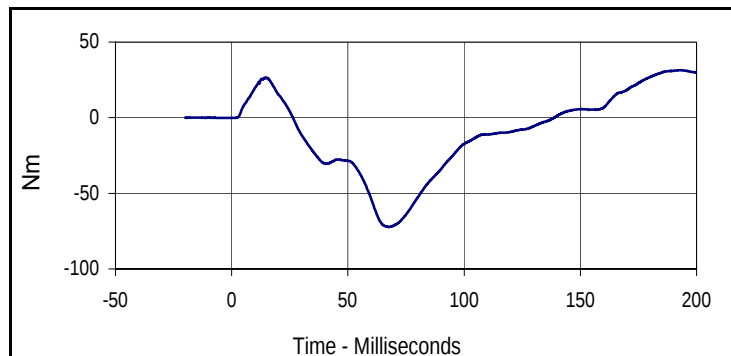
Plot No.	Type	SAE Class	Units
001	FIL	60	G's
Max	Time	Min	Time
21.0	5.5	-1.6	51.8



Curve Description

"D" Plane Rotation

Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
96.6	77.4	-31.8	200.0



Curve Description

Moment About Occipital Condyle

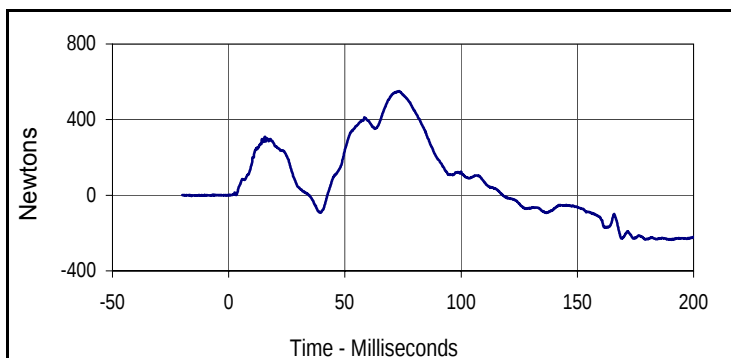
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
31.4	192.9	-72.2	67.6

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

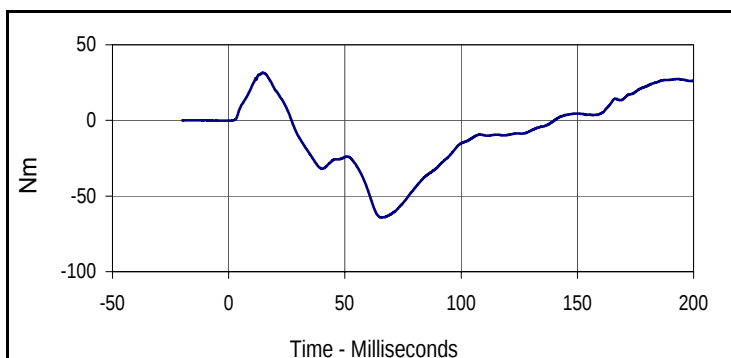
Test Date: 3/7/12

ATD Serial No.: 035

Test I.D.: M035NE035



Curve Description			
Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
550.4	73.3	-235.7	190.5



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
31.5	14.8	-64.2	65.7

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

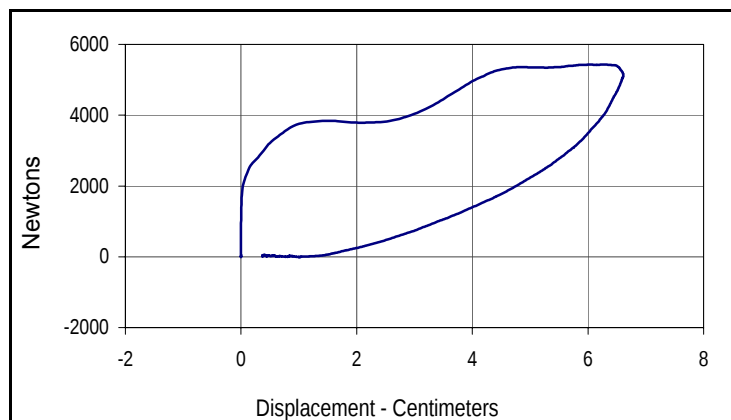
Test Date: 3/7/12

ATD Serial No.: 035

Test I.D.: M035CH035



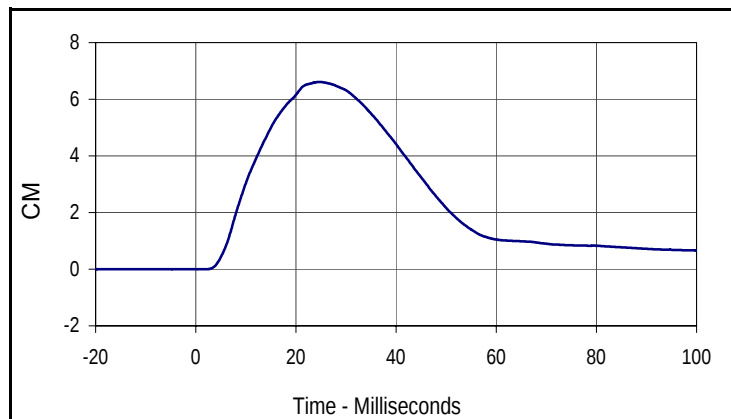
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	360	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.0	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	28.7	Pass
Probe Velocity		m/s	6.58 to 6.82	6.79	Pass
Peak Probe Force		Newtons	5159 to 5893	5432	Pass
Peak Sternum Deflection		CM	6.35 to 7.26	6.61	Pass
Internal Hysteresis		%	69 to 85	69.9	Pass
Overall Test Results				Pass	



Curve Description

Probe Force vs. Chest Deflection

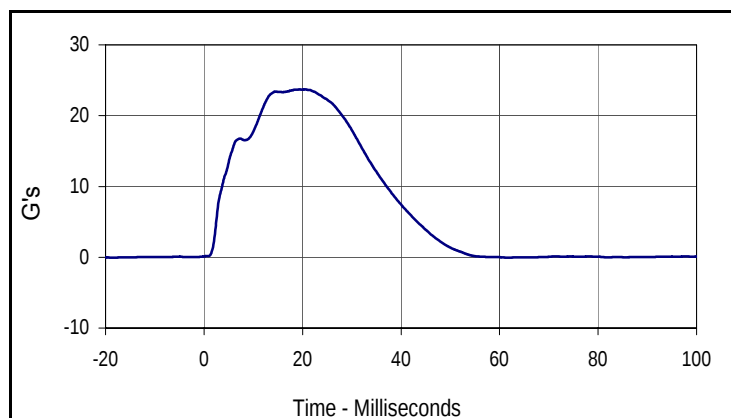
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	69.9
Peak Probe Force		Peak Chest Deflection	
5432		6.61	



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
002	FIL	180	CM
Max	Time	Min	Time
6.6	24.7	0.0	2.0



Curve Description

Impactor Acceleration

Plot No.	Type	SAE Class	Units
003	FIL	180	G's
Max	Time	Min	Time
23.7	20.5	-0.1	61.5

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

Test Date: 3/7/12
 Test I.D.: M035LK035, M035RK035

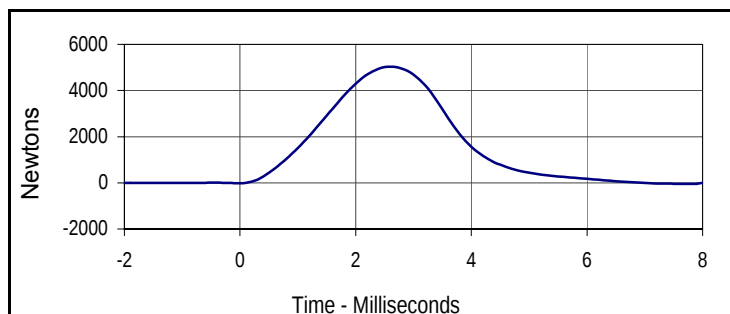


Left Knee

Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	320	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.2	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force		Newtons	4715 to 5782	5036	Pass
Overall Test Results				Pass	

Right Knee

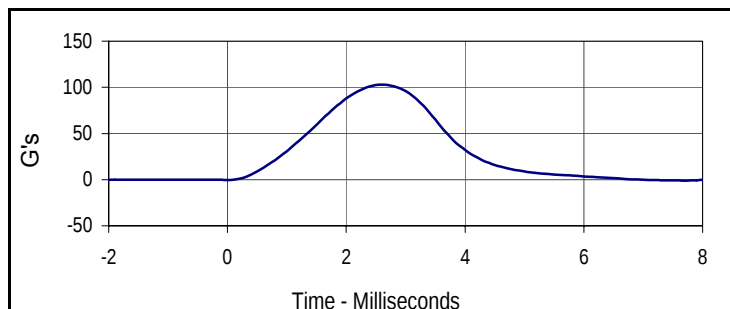
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force		Newtons	4715 to 5782	5023	Pass
Overall Test Results				Pass	



Curve Description

Left Knee Probe Force

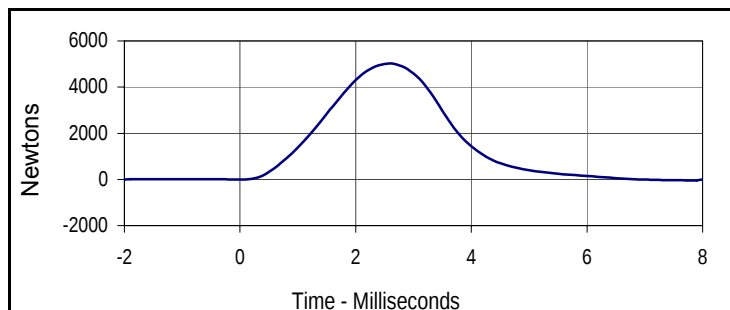
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
5036.1	2.6	-47.1	7.7



Curve Description

Left Knee Acceleration

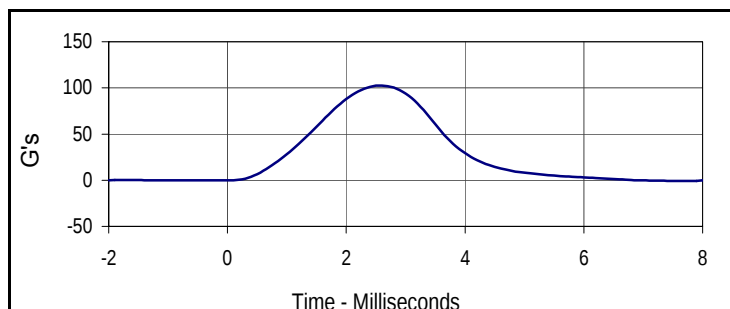
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
102.9	2.6	-1.0	7.7



Curve Description

Right Knee Probe Force

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
5022.6	2.6	-39.0	7.8



Curve Description

Right Knee Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
102.7	2.6	-0.8	7.8

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

Test Date: 3/7/12
 Test I.D.: M035LF035, M035RF035

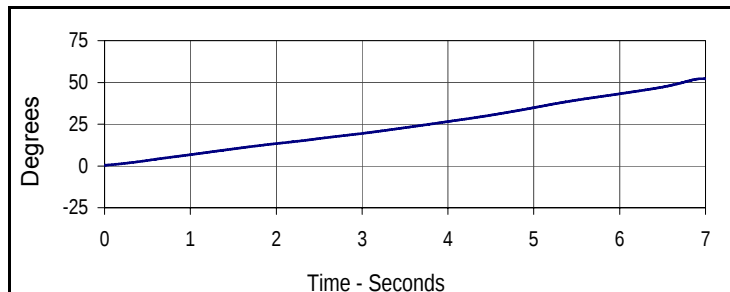


Left Hip Joint-Femur Results

Tested Parameter	Units	Specification	Result	Pass/Fail
Hip Joint-Femur Assembly Soak Time	Minutes	≥240	395	Pass
Temperature During Soak	Max	18.9 to 25.6	21.7	Pass
	Min		20.7	Pass
Humidity During Soak	Max	10.0 to 70.0	32.3	Pass
	Min		28.5	Pass
Laboratory Temperature During Test	°C	18.9 to 25.6	21.2	Pass
Laboratory Humidity During Test	%	10.0 to 70.0	28.9	Pass
Rotation Rate	deg/sec	5 to 10	7.5	Pass
Femur Torque at 30°	Nm	≤ 95	87.4	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	48.7	Pass
Overall Test Results				Pass

Right Hip Joint-Femur Results

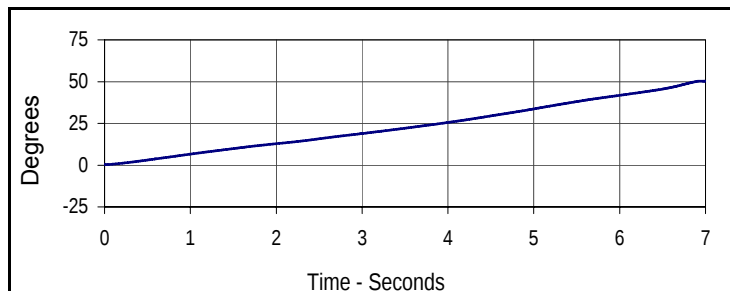
Rotation Rate	deg/sec	5 to 10	7.2	Pass
Femur Torque at 30°	Nm	≤ 95	87.3	Pass
Rotation at 203 Nm	Degrees	40.0 to 50.0	47.6	Pass
Overall Test Results				Pass



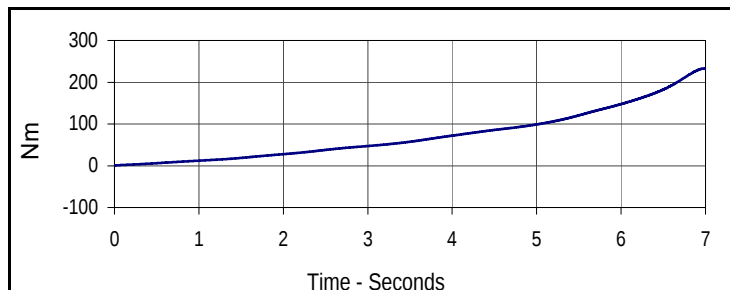
Curve Description			
Left Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
001	FIL	60	Degrees
Max	Time	Min	Time
52.2	7.0	0.4	0.0



Curve Description			
Left Femur Torque			
Plot No.	Type	SAE Class	Units
002	FIL	600	Nm
Max	Time	Min	Time
240.3	7.0	1.0	0.0



Curve Description			
Right Hip-Femur Rotation			
Plot No.	Type	SAE Class	Units
003	FIL	60	Degrees
Max	Time	Min	Time
50.4	7.0	0.2	0.0



Curve Description			
Right Femur Torque			
Plot No.	Type	SAE Class	Units
004	FIL	600	Nm
Max	Time	Min	Time
232.9	7.0	1.0	0.0

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

Test Date: 3/7/12

ATD Serial No.: 635

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:

Test Program: Hybrid III 5th Percentile Female External Measurements

Test Date: 3/7/12

ATD Serial No.: 635

Test I.D.: N/A



Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	°C	20.6 to 22.2	21.33	Pass
Laboratory Relative Humidity	%	10 to 70	31.8	Pass
A - Total sitting height	mm	774.7 to 800.1	788	Pass
B - Shoulder pivot height	mm	431.8 to 457.2	452	Pass
C - H point height	mm	81.3 to 86.3	84	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	79	Pass
F - Thigh clearance	mm	119.4 to 134.6	125	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	195	Pass
K - Buttock to knee length	mm	520.7 to 546.1	530	Pass
L - Popliteal length	mm	355.6 to 376.0	372	Pass
M - Knee pivot height	mm	393.7 to 419.1	400	Pass
N - Buttock popliteal length	mm	414.0 to 439.4	420	Pass
O - Chest depth without jacket	mm	175.3 to 190.5	186	Pass
P - Foot length	mm	218.5 to 233.7	221	Pass
R - Buttock to Knee Pivot Length	mm	457.2 to 482.6	475	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	863	Pass
Z - Waist circumference	mm	759.5 to 789.9	766	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	164	Pass
Overall Test Results				Pass

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

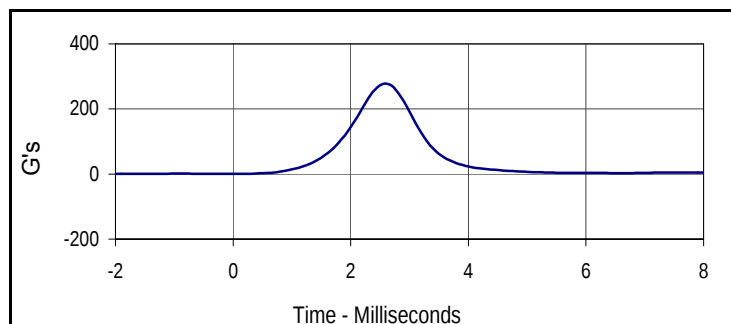
Test Date: 3/7/12

ATD Serial No.: 635

Test I.D.: F635HD030



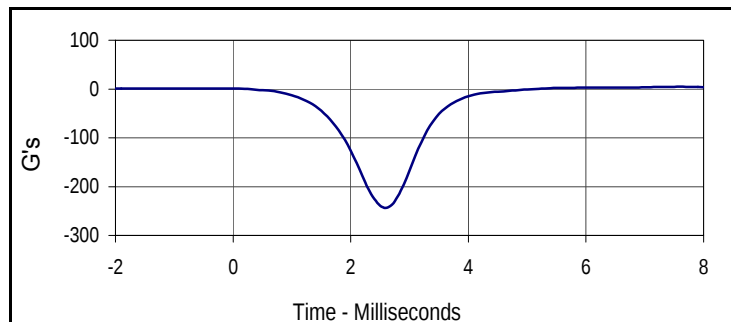
Tested Parameter		Units	Specification	Result	Pass/Fail
Head Assembly Soak Time		Minutes	≥240	260	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.2	Pass
Peak Resultant Acceleration		G's	250.0 to 300.0	278.3	Pass
Peak Lateral Acceleration		G's	≤15.0	4.2	Pass
Oscillations After Main Pulse		%	<10% of peak Res. Acceleration	1.8	Pass
Is Acceleration Unimodal?		Yes/No	Yes	Yes	Pass
Overall Test Results				Pass	



Curve Description

Head Resultant

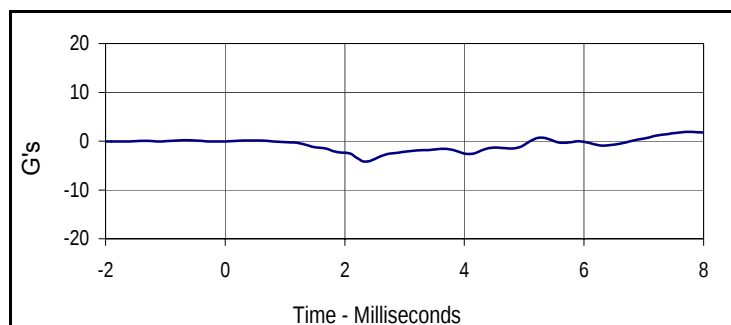
Plot No.	Type	SAE Class	Units
001	RES	1000	G's
Max	Time	Min	Time
278.3	2.6	0.3	0.2



Curve Description

Head X

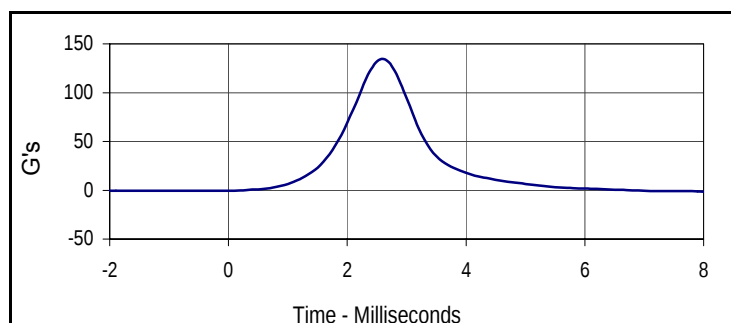
Plot No.	Type	SAE Class	Units
002	FIL	1000	G's
Max	Time	Min	Time
2.8	6.0	-243.5	2.6



Curve Description

Head Y

Plot No.	Type	SAE Class	Units
003	FIL	1000	G's
Max	Time	Min	Time
0.7	5.3	-4.2	2.4



Curve Description

Head Z

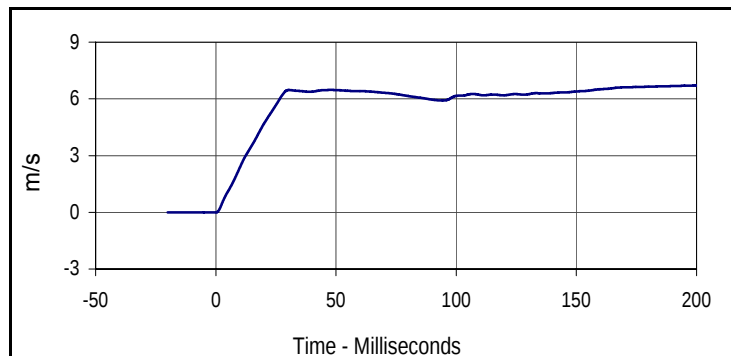
Plot No.	Type	SAE Class	Units
004	FIL	1000	G's
Max	Time	Min	Time
134.7	2.6	-0.6	-0.4

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

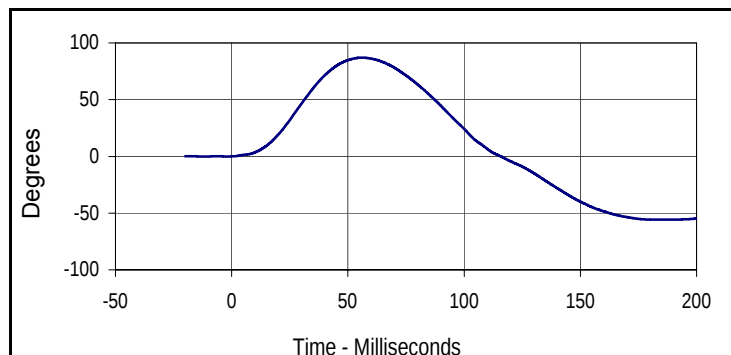
Test Date: 3/7/12
 Test I.D.: F635NF030



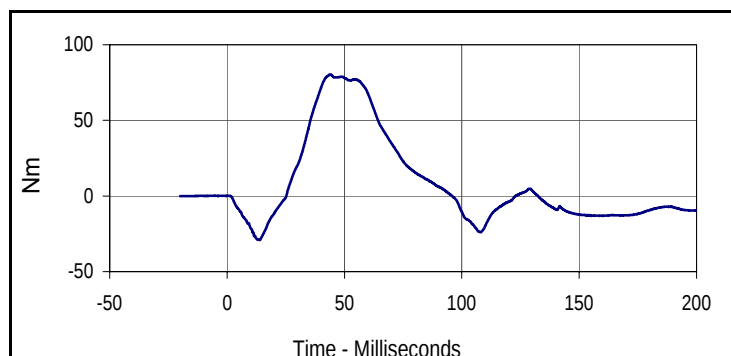
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	280	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.2	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	30.3	Pass
Pendulum Velocity		m/s	6.89 to 7.13	7.07	Pass
Pendulum Deceleration	10 Msec.	m/s	2.1 to 2.5	2.4	Pass
	20 Msec.	m/s	4.0 to 5.0	4.7	Pass
	30 Msec.	m/s	5.8 to 7.0	6.5	Pass
"D" Plane Rotation	Max	Degrees	77.0 to 91.0	87.1	Pass
Peak Moment in Rotation	Max	Nm	69.0 to 83.0	80.2	Pass
Positive Moment Decay, Time To 10 Nm		Msec.	80.0 to 100.0	84.6	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
6.7	200.0	0.0	-0.2



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
87.1	56.1	-55.7	187.3



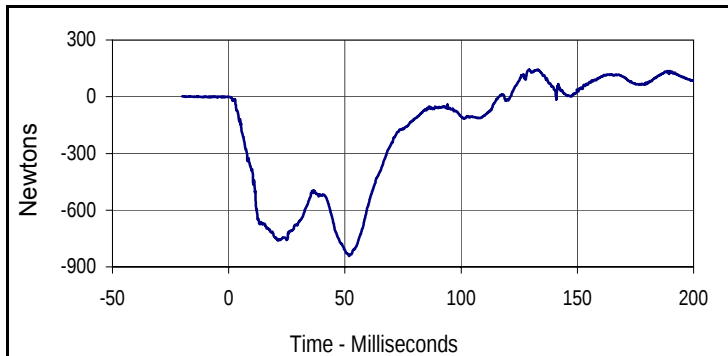
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
80.2	43.9	-29.0	13.9

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

ATD Serial No.: 635

Test Date: 3/7/12

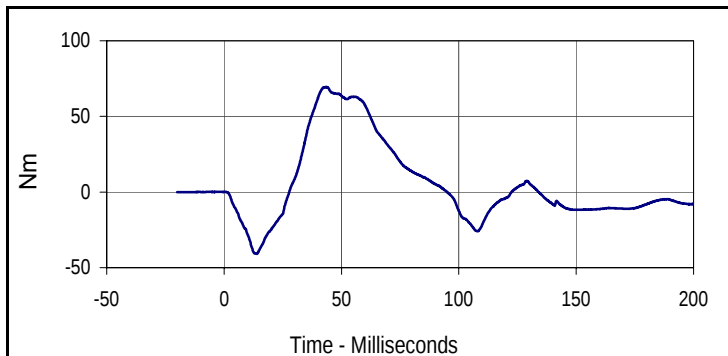
Test I.D.: F635NF030



Curve Description

Upper Neck Force X

Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
143.8	129.2	-841.9	51.9



Curve Description

Neck Moment Y

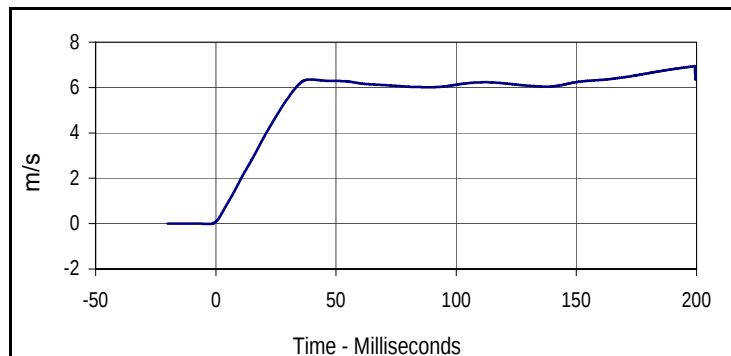
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
69.5	43.6	-40.8	13.9

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

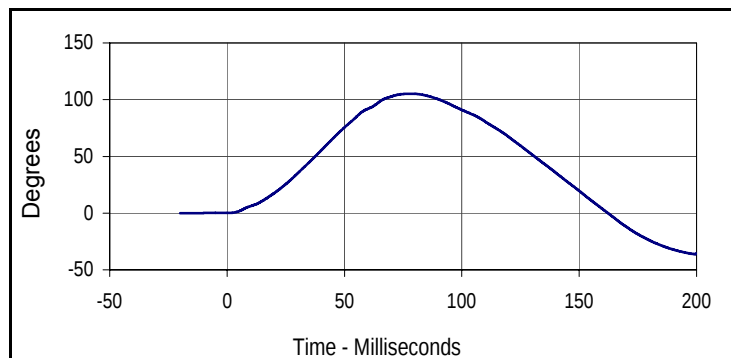
Test Date: 3/7/12
 Test I.D.: F635NE030



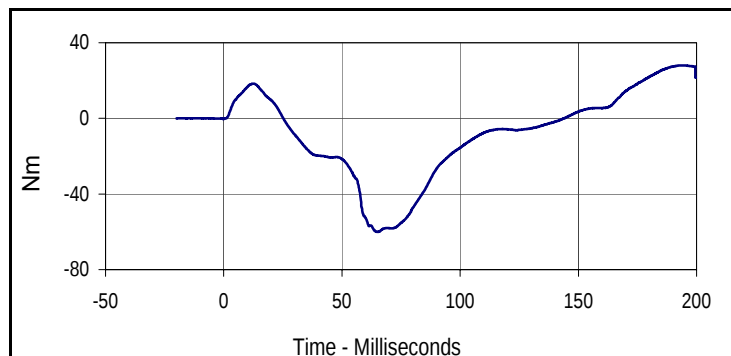
Tested Parameter		Units	Specification	Result	Pass/Fail
Neck Assembly Soak Time		Minutes	≥240	325	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	21.5	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	29.9	Pass
Pendulum Velocity		m/s	5.95 to 6.19	6.13	Pass
Pendulum Deceleration	10 Msec.	m/s	1.5 to 1.9	1.9	Pass
	20 Msec.	m/s	3.1 to 3.9	3.8	Pass
	30 Msec.	m/s	4.6 to 5.6	5.5	Pass
"D" Plane Rotation	Max	Degrees	99.0 to 114.0	105.2	Pass
Peak Moment in Rotation	Max	Nm	-53.0 to -65.0	-60.0	Pass
Positive Moment Decay, Time To -10 Nm		Msec.	94.0 to 114.0	106.6	Pass
Overall Test Results				Pass	



Curve Description			
Pendulum Velocity			
Plot No.	Type	SAE Class	Units
001	FIL	180	m/s
Max	Time	Min	Time
6.9	199.4	0.0	-2.8



Curve Description			
"D" Plane Rotation			
Plot No.	Type	SAE Class	Units
002	FIL	60	Degrees
Max	Time	Min	Time
105.2	78.5	-36.2	199.4



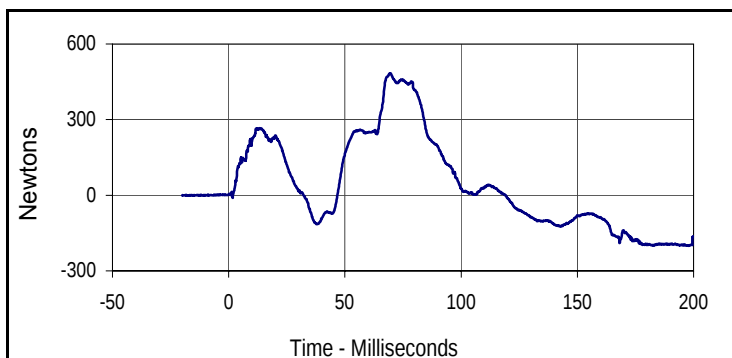
Curve Description			
Moment About Occipital Condyle			
Plot No.	Type	SAE Class	Units
003	FIL	600	Nm
Max	Time	Min	Time
28.1	193.8	-60.1	65.4

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

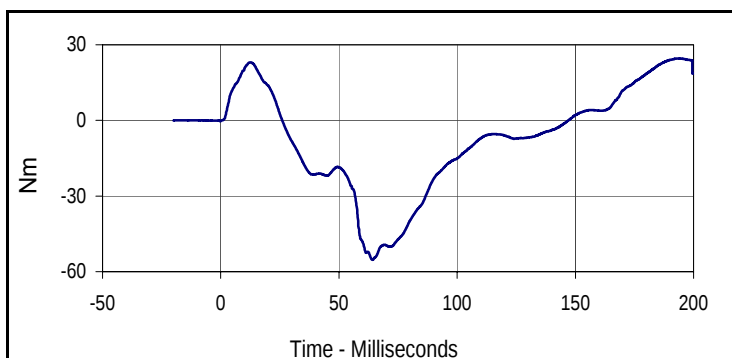
ATD Serial No.: 635

Test Date: 3/7/12

Test I.D.: F635NE030



Curve Description			
Upper Neck Force X			
Plot No.	Type	SAE Class	Units
004	FIL	1000	Newtons
Max	Time	Min	Time
483.7	69.2	-201.0	197.9



Curve Description			
Neck Moment Y			
Plot No.	Type	SAE Class	Units
005	FIL	600	Nm
Max	Time	Min	Time
24.5	19.2	-55.3	64.2

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

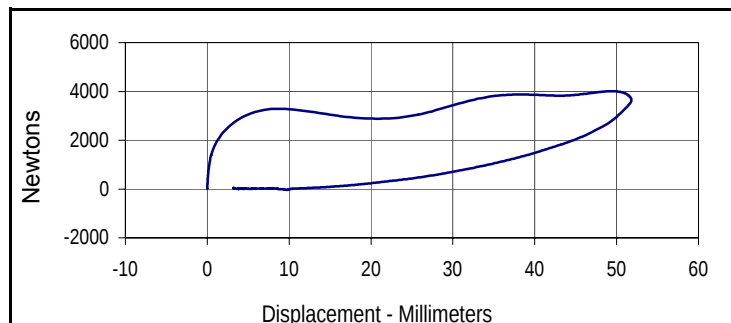
Test Date: 3/7/12

ATD Serial No.: 635

Test I.D.: F635CH030



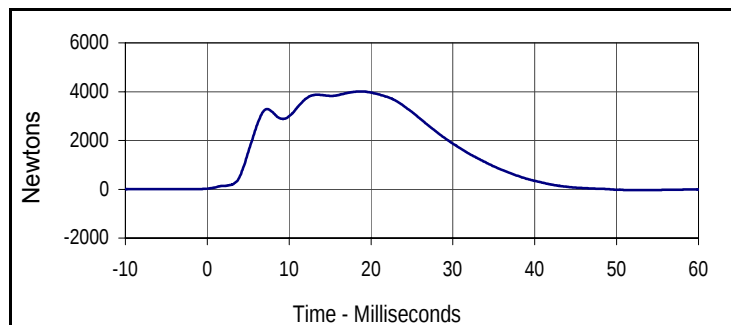
Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	425	Pass
Temperature During Soak	Max	°C	20.6 to 22.2	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	20.6 to 22.2	20.8	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	31.2	Pass
Probe Velocity		m/s	6.59 to 6.83	6.68	Pass
Peak Chest Deflection		mm	50.0 to 58.0	51.8	Pass
Peak Force Between 50 and 58 MM		Newtons	3900 to 4400	4012	Pass
Peak Force Between 18 and 50 MM		Newtons	≤4600	4001	Pass
Internal Hysteresis		%	69 to 85	75.0	Pass
Overall Test Results					Pass



Curve Description

Probe Force vs. Chest Deflection

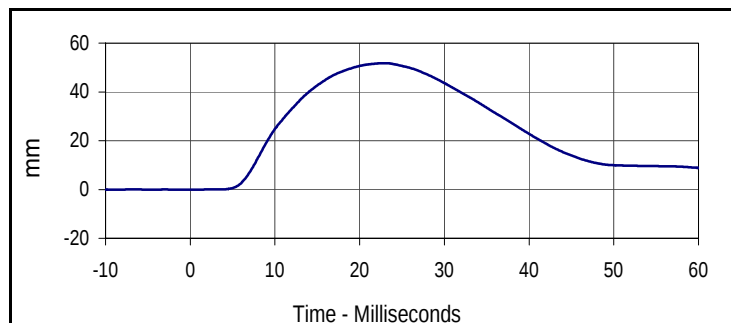
Plot No.	Type	SAE Class	Hysteresis
001	FIL	180	75.0
Peak Probe Force		Peak Chest Deflection	
4012.4		51.8	



Curve Description

Probe Force

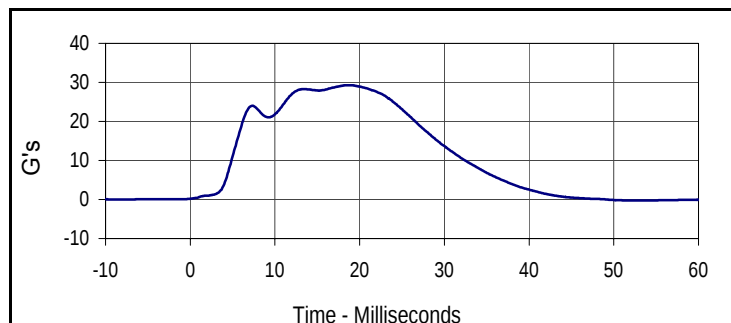
Plot No.	Type	SAE Class	Units
002	FIL	180	Newtons
Max	Time	Min	Time
4012.4	18.8	-38.5	53.0



Curve Description

Chest Deflection

Plot No.	Type	SAE Class	Units
003	FIL	600	mm
Max	Time	Min	Time
51.8	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
29.3	18.8	-0.3	53.0

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

Test Date: 3/7/12
 Test I.D.: F635LK030 , F635RK030

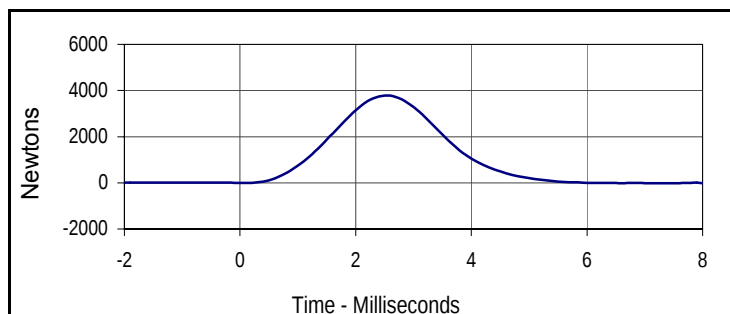


Left Knee

Tested Parameter		Units	Specification	Result	Pass/Fail
Knee Assembly Soak Time		Minutes	≥240	460	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	20.7	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	28.7	Pass
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.10	Pass
Peak Probe Force		Newtons	3450 to 4060	3786	Pass
Overall Test Results					Pass

Right Knee

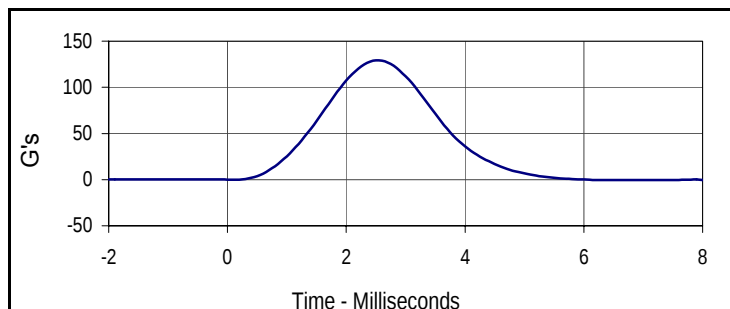
Pendulum Velocity at T=0		m/sec	2.07 to 2.13	2.12	Pass
Peak Probe Force		Newtons	3450 to 4060	3795	Pass
Overall Test Results					Pass



Curve Description

Left Knee Probe Force

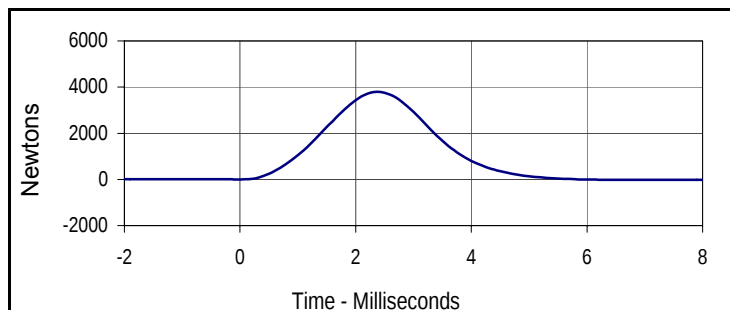
Plot No.	Type	SAE Class	Units
001	FIL	600	Newtons
Max	Time	Min	Time
3785.6	2.5	-17.6	9.6



Curve Description

Left Knee Acceleration

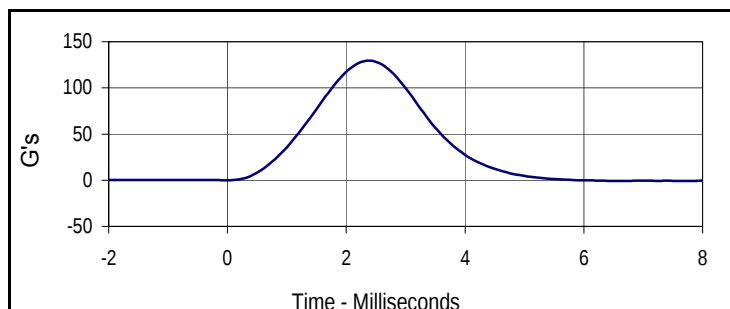
Plot No.	Type	SAE Class	Units
002	FIL	600	G's
Max	Time	Min	Time
129.1	2.5	-0.6	9.6



Curve Description

Right Knee Probe Force

Plot No.	Type	SAE Class	Units
003	FIL	600	Newtons
Max	Time	Min	Time
3795.2	2.4	-20.8	7.7



Curve Description

Right Knee Acceleration

Plot No.	Type	SAE Class	Units
004	FIL	600	G's
Max	Time	Min	Time
129.5	2.4	-0.7	7.7

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

Test Date: 3/7/12

ATD Serial No.: 635

Test I.D.: F635TF030

**Left Hip Joint-Femur Results**

Tested Parameter		Units	Specification	Result	Pass/Fail
Dummy Soak Time		Minutes	≥240	490	Pass
Temperature During Soak	Max	°C	18.9 to 25.6	21.7	Pass
	Min	°C		20.7	Pass
Humidity During Soak	Max	%	10.0 to 70.0	32.3	Pass
	Min	%		28.5	Pass
Laboratory Temperature During Test		°C	18.9 to 25.6	21.3	Pass
Laboratory Humidity During Test		%	10.0 to 70.0	28.7	Pass
Initial Reference Plane Angle		Degrees	≤ 20	7.4	Pass
Peak Force at 45° +/-0.5°		Newtons	320.0 to 390.0	349.3	Pass
Torso Rotation Rate		deg/sec	0.5 to 1.5	1.3	Pass
Final Reference Plane Angle		Degrees	+/-8	1.0	Pass
Overall Test Results					Pass