

REPORT NUMBER: SPNCAP-CAL-13-012

**NEW CAR ASSESSMENT PROGRAM (NCAP)
SIDE IMPACT POLE TEST**

**Toyota Motor Manufacturing, Texas, Inc
2013 Toyota Tacoma 4x2
Access Cab Pickup**

NHTSA No: MD5119

**PREPARED BY:
CALSPAN CORPORATION
P.O. BOX 400
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December 20, 2012

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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Date: December 20, 2012

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Date: December 20, 2012

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

COTR, New Car Assessment Program
NHTSA, Office of Crashworthiness Standards

Date: _____

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16. Abstract A 32.20 km/h (20 mph), 75° oblique impact Side NCAP Test was conducted on the subject 2013 Toyota Tacoma 4x2 Access Cab Pickup in accordance with the specifications of the Office of Crashworthiness Standards Side NCAP Pole Laboratory Test Procedure for the generation of consumer information on vehicle side pole crash protection. This test was conducted at Calspan Corporation's Transportation Test Operations facility in Buffalo, New York on November 6, 2012. The impact velocity of the vehicle was 32.37 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle was 2°C. The target vehicle's maximum post-test static crush was 438 mm located at level 2. The test vehicle's occupant performance data is as follows: <table border="1"> <thead> <tr> <th rowspan="2">Measurement Description</th> <th colspan="3">Driver ATD (SID-IIs) (Serial No. 8012)</th> </tr> <tr> <th>Units</th> <th>Threshold</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td></td> <td>1000</td> <td>391.22</td> </tr> <tr> <td>Resultant Lower Spine Acceleration</td> <td>G</td> <td>82</td> <td>56.76</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td>N</td> <td>5525</td> <td>4,547.51</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td>mm</td> <td>38</td> <td>23.08</td> </tr> <tr> <td>Maximum Abdomen Rib Deflection</td> <td>mm</td> <td>45</td> <td>35.50</td> </tr> </tbody> </table> Neither door on the struck side of the vehicle remained closed and the opposite doors did not open during the side impact event.				Measurement Description	Driver ATD (SID-IIs) (Serial No. 8012)			Units	Threshold	Result	Head Injury Criteria (HIC ₃₆)		1000	391.22	Resultant Lower Spine Acceleration	G	82	56.76	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4,547.51	Maximum Thoracic Rib Deflection	mm	38	23.08	Maximum Abdomen Rib Deflection	mm	45	35.50
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17. Key Words New Car Assessment Program (NCAP) Side Impact Pole Part 572V SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave. SE Washington, D.C. 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																												
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SECTION 1

TEST PURPOSE AND PROCEDURE

This side impact test was conducted as part of the MY 2013 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-09-D-00126. The purpose of this test is to generate comparative side impact performance in a 2013 Toyota Tacoma 4x2 Access Cab Pickup. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Pole Laboratory Test Procedure, dated September 2012.

SECTION 2

SUMMARY OF TEST RESULTS

A rigid pole side impact test was conducted on a 2013 Toyota Tacoma 4x2 Access Cab Pickup. The subject vehicle was towed into the rigid pole at an angle of 75° and a velocity of 32.37 km/h. The test was conducted by Calspan Corporation's Transportation Test Operations facility in Buffalo, New York on November 6, 2012. Pre-test and post-test photographs of the test vehicle and side impact dummy (SID-IIs) are included in Appendix A of this report.

One Part 572V (SID-IIs) dummy was placed in the driver designated seating position according to instructions specified in the OCWS Side NCAP Pole Laboratory Test Procedure, dated September 2012. Camera locations and other pertinent camera information are included on page 3-11 in this report.

The Part 572V (SID-IIs) dummy was instrumented accordingly:

Head CG tri-axial accelerometers

Thorax upper, middle, and lower rib displacement potentiometers

Abdomen upper and lower rib displacement potentiometers

Lower spine tri-axial accelerometers

Iliac load cell

Acetabulum load cell

Appendix B contains the dummy response data. Dummy configuration and performance verification data can be found in Appendix C of this report. Appendix D identifies all serial numbers, manufacturers, and calibration dates for test equipment, dummy sensors, potentiometers, and load cells used to collect data during the test.

Injury readings for the SID-IIs dummy were recorded as follows:

INJURY READINGS

Measurement Description	Driver ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HIC ₃₆)		1000	391.22
Lower Spine Resultant Acceleration	g	82	56.76
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4,547.51
Maximum Thoracic Rib Deflection	mm	38*	23.08
Maximum Abdominal Rib Deflection	mm	45*	35.50

*Proposed IARV

Supplemental restraint information was recorded as follows:

SUPPLEMENTAL RESTRAINT INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 1		Left Rear (Passenger) Occupant Location 4	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No	NA		
Side Airbag 1 - Curtain	Yes	Yes	Yes	Yes
Side Airbag 2 - Torso Airbag	Yes	Yes	No	NA
Seat Belt Pretensioner	Yes	Yes	No	NA
Seat Belt Load Limiter	Yes	Yes	No	NA
Other				

GENERAL COMMENTS:

1. P1 serial number - 8012

Data Anomalies:

- DRIVER SEAT TRACK AY saturated spikes 39 & 44 ms
- LOAD CELL POLE #4 FY questionable data

SECTION 3

OCCUPANT AND VEHICLE INFORMATION

This section contains information reporting for the following Data Sheets:

Data Sheet No. 1 – General Test and Vehicle Parameter Data

Data Sheet No. 2 – Seat, Seat Belt, Steering Wheel Adjustment and Fuel Systems Data

Data Sheet No. 3 – Dummy Longitudinal Clearance Dimensions

Data Sheet No. 4 – Dummy Lateral Clearance Dimensions

Data Sheet No. 5 – Camera and instrumentation Data

Data Sheet No. 6 – Vehicle Accelerometer Data

Data Sheet No. 7 – Rigid Pole Load Cell Data

Data Sheet No. 8 – Post-Test Observations

Data Sheet No. 9 – Test Vehicle Profile Measurements

Data Sheet No. 10 – Test Vehicle Exterior Crush Measurements

Data Sheet No. 11 – FMVSS No. 301 Static Rollover Results

Data Sheet No. 12 – Dummy / Vehicle Temperature and Humidity Stabilization Data

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	MD5119
Model Year	2013
Make	Toyota
Model	Tacoma 4x2
Body Style	Access Cab Pickup
VIN	5TFTX4CN5DX022614
Body Color	Light gray/silver
Odometer Reading (km/mi)	309 / 192
Engine Displacement (L)	2.7
Type / No. Cylinders	I4
Engine Placement	Inline
Transmission Type	Automatic
Transmission Speeds	4-Speed
Overdrive	Yes
Final Drive	Rear Wheel Drive
Roof Rack	No
Sunroof / T-Top	No
Running Boards	No
Tilt Steering Wheel	Yes
Power Seats	No
Anti-Lock Brakes (ABS)	Yes

Traction Control System (TCS)	Yes
Auto-Leveling System	No
Automatic Door Locks (ADL)	No
Power Window Auto-Reverse	No
Other Optional Feature	--
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head / Torso Airbag	No
Driver Torso Airbag	Yes
Driver Torso / Pelvis Airbag	No
Driver Pelvis Airbag	No
Driver Knee Airbag	No
Rear Pass. Curtain Airbag	Yes
Rear Pass. Head / Torso Airbag	No
Rear Pass. Torso Airbag	No
Rear Pass. Torso / Pelvis Airbag	No
Rear Pass. Pelvis Airbag	No
Driver Seat Belt Pretensioner	Yes
Rear Pass. Seat Belt Pretensioner	No
Driver Load Limiter	Yes
Rear Pass. Load Limiter	No
Other Safety Restraint	--

Does owner's manual provide instructions to turn off automatic door locks?

No

DATA FROM CERTIFICATION LABEL

Manufactured By	Toyota Motor Manufacturing, Texas, Inc
Date of Manufacture	08/12
Vehicle Type	Passenger

GVWR (kg)	2,220
GAWR Front (kg)	1,075
GAWR Rear (kg)	1,200

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	2	0	4	
Capacity Weight (VCW) (kg)				475.0	(A)
DSC X 68.04 kg				272.2	(B)
Cargo Weight (RCLW) (kg)				202.8	(A-B)

VEHICLE SEAT TYPE

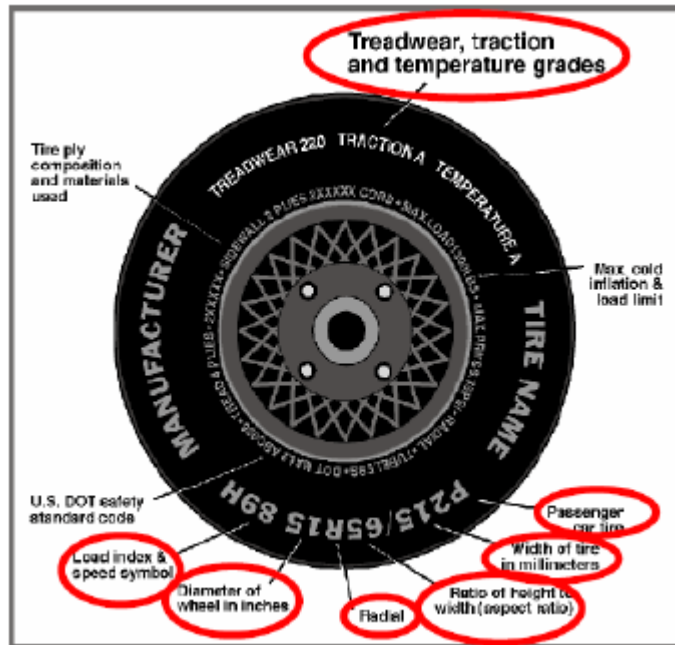
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						W/ Lever	W/ Knob
Front Seat	X					X	
Rear or Second Row Seat			Jump Seat		X		
Third Row seat							

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

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012

Collected for year, make, model, & VIN, all items circled in red, tire manufacturer and tire name.



VEHICLE TIRE INFORMATION

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	350	350
Cold Pressure (kPa)	210	230
Recommended Tire Size	P215/70R15	P215/70R15
Tire Size on Vehicle	P215/70R15	P215/70R15
Tire Manufacturer	Dunlop	Dunlop
Tire Model	Grand Trek	Grand Trek
Treadwear	300	300
Traction	B	B
Temperature Grades	B	B
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	1 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	97S	97S
Tire Material	RUBBER	RUBBER
DOT Safety Code Left	DAM3C8ER3112	DAM3C8ER2912
DOT Safety Code Right	DAM3C8ER3112	DAM3C8ER2912

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

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	206	216	222	218
Tire Placard	kPa	210	210	230	230
Owner's Manual	kPa	210	210	230	230
As Tested	kPa	210	210	230	230

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	460.5	382.0		469.0	468.5		463.0	454.5	
Right	kg	442.5	360.5		443.5	437.0		450.0	426.5	
Ratio	%	55	45		50	50		51	49	
Totals	kg	903.0	742.5	1,645.5	912.5	905.5	1,818.0	913.0	881.0	1,794.0

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total As Delivered Weight (UVW)	kg	1,645.5	(A)
Actual Weight of 1 P572V (SID-IIs) ATD Used	kg	44.1	(B)
Rated Cargo / Luggage Weight (RCLW)*	kg	136.0	(C)
Calculated Vehicle Target Weight (TVTW)	kg	1,825.6	(A+B+C)

* The maximum for RCLW per test procedure is 136.0kg

**Does the measured As Test Vehicle Weight lie within the required weight range
 (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to – 9 kg)?** ☒ Yes ☐ No

TEST VEHICLE ATTITUDES AND CG

Measurement Description	Units	As Delivered	As Tested	Fully Loaded	Meets Rqmt***
Driver Door Sill Angle (front-to-rear)*	Deg	-0.5	-0.2	-0.1	Yes
Front Passenger Sill Angle (front-to-rear)*	Deg	-0.8	-0.5	-0.4	Yes
Front Bumper-Line Angle (left-to-right)**	Deg	-0.3	-0.4	-0.4	Yes
Rear Bumper-Line Angle (left-to-right)**	Deg	-0.3	-0.3	-0.3	Yes
Vehicle CG (Aft of Front Axle)	mm	1,458	1,609	1,587	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	-19	-25	-18	

* ND = Nose Down (-), NU = Nose Up (+)

** LD = Left Down (-), LU = Left Up (+)

*** The "As Tested" vehicle attitude measurements must be equal to or between the "As Delivered" and "Fully Loaded" vehicle attitude measurements. Indicate "Yes" or "No" for Meets Requirement

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

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
Test Date: 11/6/2012

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
None	0.0
Ballast / Equipment Added	63.6

DATA SHEET NO. 2
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012

SEAT POSITIONING

The driver's seat, front center seat (if applicable), and right front passenger's seat should be set to the forward-most, mid-height, mid-angle position. The struck-side rear passenger's seat, rear center seat, and non-struck side rear passenger's seats should be set to the rear-most, lowest, mid-angle position.

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	12.5	12.5	12.5
Front Passenger Seat	10.9	10.9	10.9
Front Center Seat	N/A	N/A	N/A
Struck Side Rear Seat	6.2	Fixed	Fixed
Non-Struck Side Rear Seat	7.6	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid-Fore / Aft	Forward-Most
Driver Seat	Not Adjustable	Not Adjustable	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Front Passenger Seat	Not Adjustable	Not Adjustable	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Front Center Seat	N/A	N/A	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Non-Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Rear Center Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-

DATA SHEET NO. 2 ... (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

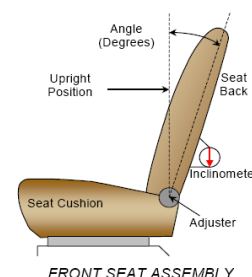
NHTSA No.: MD5119
 Test Date: 11/6/2012

SEAT FORE / AFT POSITION

Seat	Total Fore / Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detents*
Driver Seat	240	17 (0-16)	0	0
Front Passenger Seat	240	17 (0-16)	0	0
Front Center Seat	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned such that the dummy's head is level. The front center and front passenger's seat backs are positioned in a similar manner as the driver's seat back. The struck-side rear passenger seat back is positioned in accordance with the information provided by the manufacturer on Form No. 1 for the 5th percentile female dummy in a Side NCAP MDB test. The rear center and non-struck side rear passenger's seat back are set to match the struck-side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degrees	Detents*
Driver Seat w/Seated Dummy	-7.0 to 42.3	N/A	-4.3	N/A
Front Passenger Seat	-7.0 to 43.1	N/A	-4.5	N/A
Front Center Seat	N/A	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed	Fixed

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1.

Seat	Total # of Positions	Placed in Position #
Driver Seat	4	0 - Uppermost

HEAD RESTRAINT ADJUSTMENT

The driver's head restraint is adjusted to the lowest and most full forward in-use position.

Seat	Total # of Positions	Placed in Position #
Driver Seat	3	0-Lowest

DATA SHEET NO. 2 ... (CONTINUED)
SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

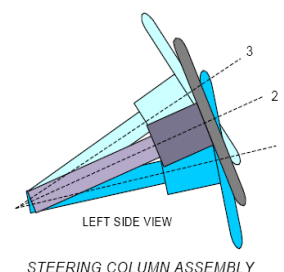
Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012

STEERING COLUMN ADJUSTMENT

Steering wheel and column adjustments are made so that the steering wheel hub is at the center of its geometric locus it describes when it moves through its full range of motion.

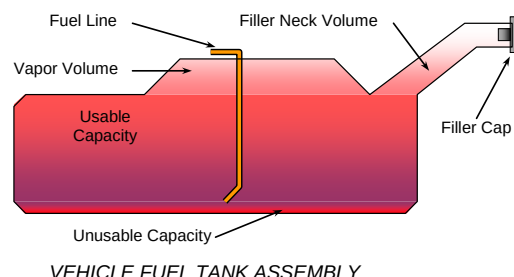
		Degrees	Fore / Aft Position (mm)
Lowermost	– Position 1	23.7	0
Geometric Center	– Position 2	25.3	12
Uppermost	– Position 3	26.9	24
Telescoping Steering Wheel Travel			24
Test Position		25.3	12



FUEL PUMP

Describe the fuel pump type, details about how it operates, and the location of the fuel filler neck.

The vehicle is equipped with an electric fuel pump.
The fuel filler neck is on the left side of the vehicle.
The pump creates positive pressure in the fuel lines, pushing the gasoline to the engine. See form 1 for more information.



FUEL TANK CAPACITY DATA

Description	Liters
Usable Capacity of "Standard Tank" - see Form No. 1	79.9
Usable Capacity of "Optional Tank" - see Form No. 1	N/A
Usable Capacity of "Standard Tank" - see Owner's Manual	79.9
Usable Capacity of "Optional Tank" - see Owner's Manual	N/A
93% of Usable Capacity	74.3
Actual Amount of Solvent Used in Test	74.2
1/3 of Usable Capacity	26.6

Is the Actual Amount of Solvent Used in the test equal to 93% $\pm$ 1% of the Usable Capacity stated in Form No. 1?



Yes

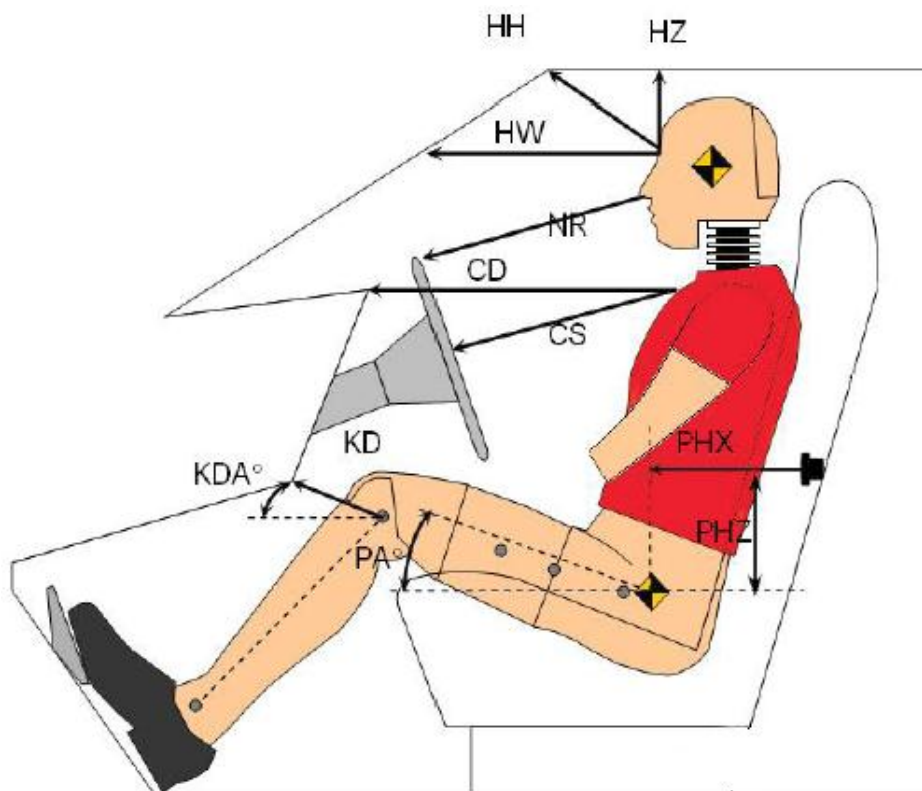


No

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012



Left Side View

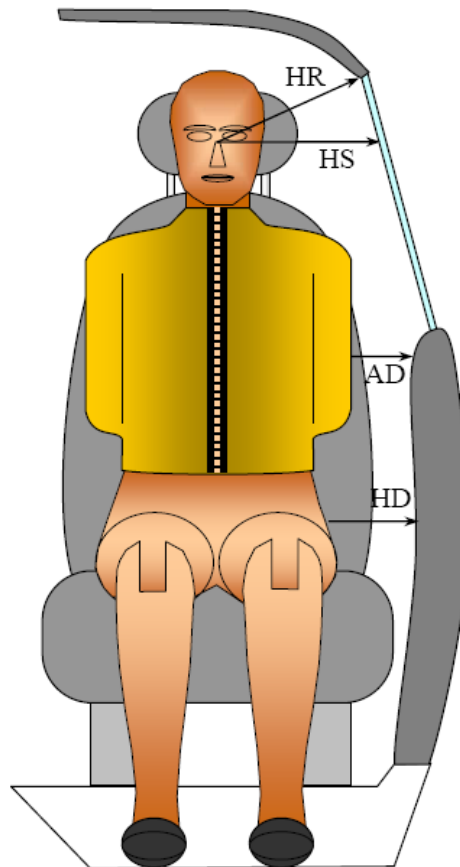
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Description	Driver (Serial No. 8012)	
		Length (mm)	Angle (°)
HH	Head to Header	323	
HW	Head to Windshield	539	
HZ	Head to Roof Liner	220	
NR	Nose to Rim	275	
CD	Chest to Dash	427	
CS	Chest to Steering Wheel	211	
KD(L) / KDA(L)°	Left Knee to Dash	117	42.9
KD(R) / KDA(R)°	Right Knee to Dash	110	32.9
PAX°	Pelvic Tilt Angle (X-Axis)		21.8
PAY°	Pelvic Tilt Angle (Y-Axis)		0.4
PHX	Hip Point to Striker (X-Axis)	336	
PHZ	Hip Point to Striker (Z-Axis)	149	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
Test Date: 11/6/2012



FRONT VIEW OF DUMMY

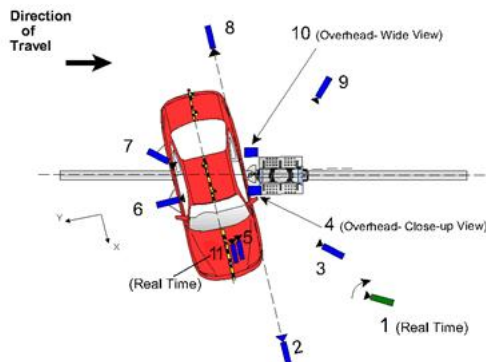
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver - Length (Serial No. 8012)
HR	Head To Side Header	mm	272
HS	Head to Side Window	mm	378
AD	Arm to Door	mm	166
HD	Hip Point to Door	mm	142

DATA SHEET NO. 5 CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Real-time (24 - 30 fps) pan view of impact				Zoom	30
2	Front ground level - impact view	7043	-258	1096	24	1000
3	Impact side 45° - forward pole view	2423	-2981	1591	28	1000
4	Overhead Close-up view of impact	0	-110	-5291	24	1000
5	Onboard - dummy front view				12.5	1000
6	Onboard - dummy side view				6.5	1000
7	Onboard - dummy rear oblique view				6.5	1000
8	Rear ground level - impact view	-7710	356	995	28	1000
9	Impact side 45° - rearward pole view	3183	3694	1288	24	1000
10	Overhead wide - view of impact	0	-410	-5291	14.5	1000
11	Real-time (24 - 30 fps) - dummy front view				Zoom	30

Notes: Reference - From Point of Impact for X and Y; from Ground for Z
 +X = Forward of vehicle, +Y = Right of vehicle, +Z = Down
 * All measurements accurate to ± 6 mm. Vehicle is at a 75° angle to the rigid pole.

Comments: All cameras operated normally.

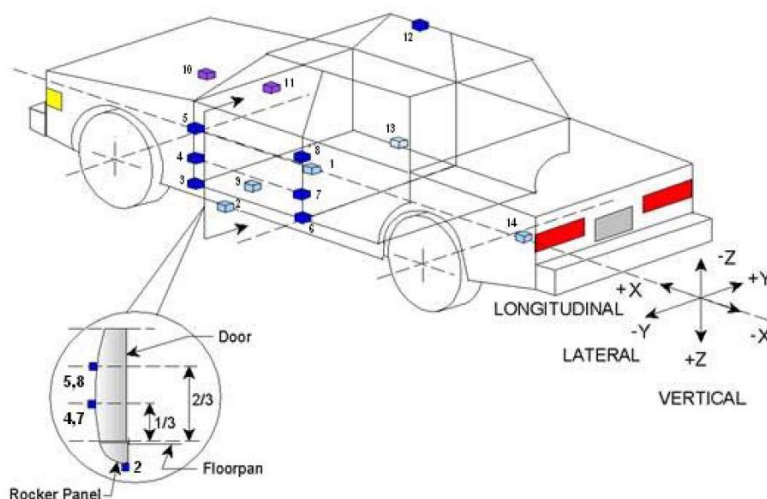
INSTRUMENTATION

Description	Number of Channels
Driver Dummy Channels	16
Vehicle Structure Accelerometers	18
Pole Load Cells	8
Total	42

DATA SHEET NO. 6 VEHICLE ACCELEROMETER DATA

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012



TEST VEHICLE ACCELEROMETER LOCATIONS

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	3,534	39	653
2	Left Floor Sill	3,417	-674	456
3	A-Pillar Sill	3,821	-673	492
4	A-Pillar Low	3,845	-666	702
5	A-Pillar Mid	3,769	-687	1,181
6	B-Pillar Sill	2,808	-707	505
7	B-Pillar Low	2,766	-703	803
8	B-Pillar Mid	2,740	-702	1,102
9	Driver Seat Track	2,886	-561	492
10	Engine Top	4,618	47	945
11	Firewall	4,078	-23	912
12	Right Roof	2,758	645	1,605
13	Right Floor Sill	3,410	675	461
14	Rear Floorpan	1,485	8	693

Reference: *X – Rear surface of vehicle (+ forward)*
Y – Vehicle centerline (+ to right)
Z – Ground plane (+ down)

**DATA SHEET NO. 7
RIGID POLE LOAD CELL DATA**

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
Test Date: 11/6/2012

POLE BARRIER



RIGID POLE LOAD CELL LOCATIONS

ID	Units	Height From Ground
1	mm	200
2	mm	590
3	mm	750
4	mm	1075
5	mm	1260
6	mm	1740
7	mm	1920
8	mm	2300

**DATA SHEET NO. 8
POST-TEST OBSERVATIONS**

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
Test Date: 11/6/2012

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Driver Seat Dummy (SID-IIs)
Face	Curtain Airbag
Top of Head	Curtain Airbag
Left Side of Head	Curtain Airbag
Back of Head	Head rest
Left Shoulder	Torso Airbag
Upper Torso	Torso Airbag & Seatback
Lower Torso	Torso Airbag & Seatback & Driver's Door
Left Hip	Driver's Seat Pan and Door
Left Knee	Driver's Door

POST-TEST DOOR PERFORMANCE

Description	Struck Side		Non-Struck Side		Rear Hatch/ Other
	Front	Rear	Front	Rear	
Remained Closed and Operational	No	No	Yes	Yes	Yes
Total Separation from Vehicle at Hinges or Latches	No	No	No	No	NA
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	NA
Disengaged from Latched Position	No	No	No	No	NA
Latch Separated from Striker	No	No	No	No	NA
Jammed Shut	Yes	Yes	No	No	NA
If Door Opened at Striker, Width of Opening at Striker (mm)	NA	NA	NA	NA	NA

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	NA	No	No	No
Seat Disengagement from Floor Pan	No	No	No	No
Seat Back Movement from Initial Position	No	No	No	No
Seat Back Collapse	No	No	No	No

DATA SHEET NO. 8 ... (CONTINUED)
POST-TEST OBSERVATIONS

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
Test Date: 11/6/2012

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Deformed inward at top of A pillar
Sill Separation	Deformed inwards but remained attached
Windshield Damage	Small separation along driver-side A-pillar
Side Window Damage	Driver's window shattered on impact
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	No	NA		
Side Airbag 1 - Curtain	Yes	Yes	Yes	Yes
Side Airbag 2 - Torso Airbag	Yes	Yes	No	NA
Seat Belt Pretensioner	Yes	Yes	No	NA
Seat Belt Load Limiter	Yes	Yes	No	NA
Other				

VEHICLE SPEED, VEHICLE ANGLE AT IMPACT AND IMPACT POINT LOCATION DATA

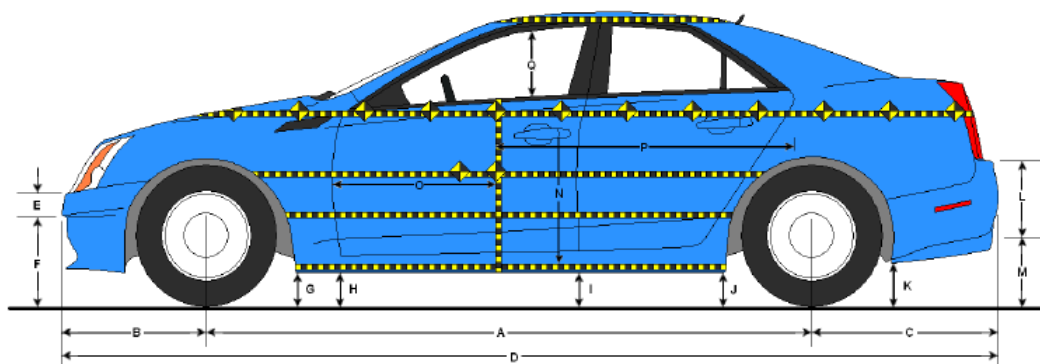
Measured Parameter	Units	Tolerance	Value
Vertical Impact Ref Line - Aft of Front Axle, Intended Impact Pt	mm		1197
Actual Impact Point - Aft of Front Axle	mm		1203
Horizontal Offset (+ forward / - rearward)	mm	+/- 38 *	-6
Angle Between Vehicle's Longitudinal Centerline and Line of Forward Motion	deg	75 +/- 3	75.0
Trap No. 1 Velocity - Primary	kph	31.4 to 33.0	32.37
Trap No. 2 Velocity - Redundant	kph	31.4 to 33.0	32.36

* Of Intended Impact Point

DATA SHEET NO. 9 **TEST VEHICLE PROFILE MEASUREMENTS**

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012



LEFT SIDE VIEW

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

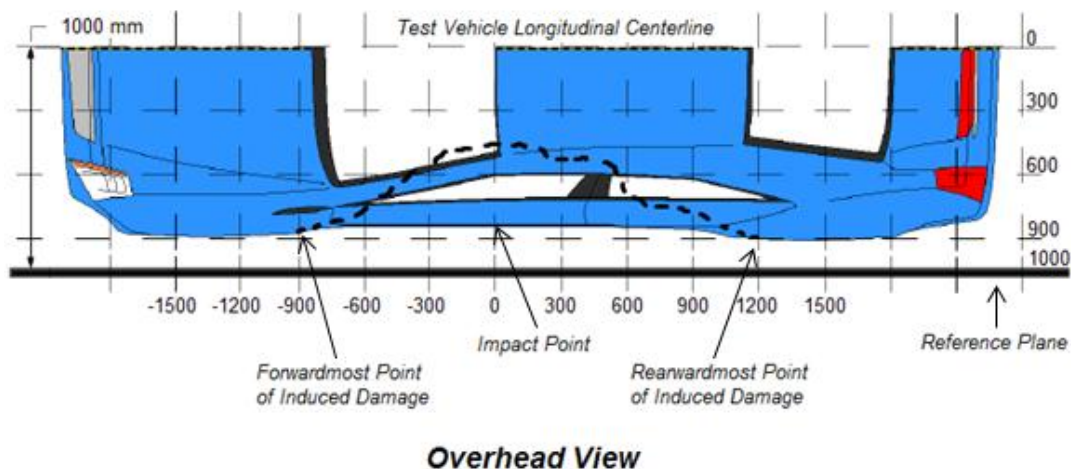
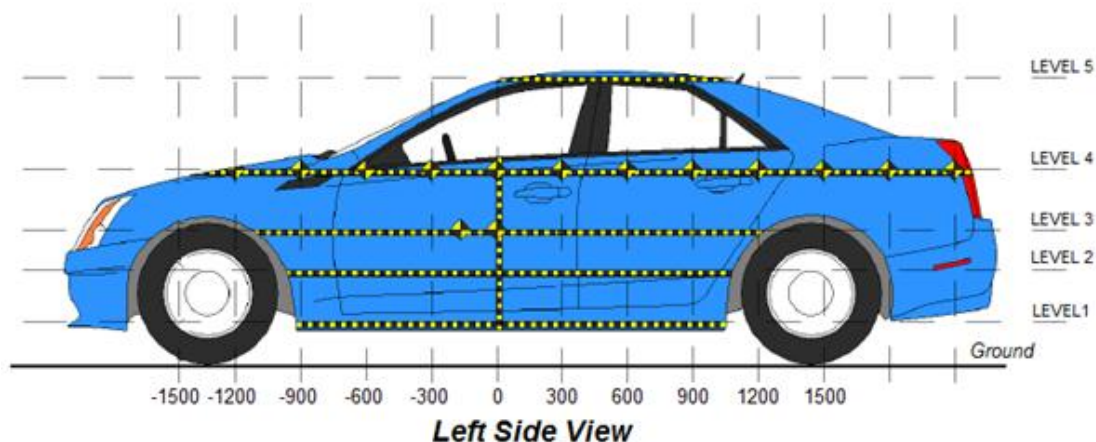
Code	Description	Pre-Test	Post-Test	Difference
A	Vehicle Wheelbase	3,231	3,202	-29
B	Front Axle to FSOV	846	868	22
C	Rear Axle to RSOV	1,210	1,159	-51
D	Total Length at Centerline	5,286	5,229	-57
E	Front Bumper Thickness	100	100	0
F	Front Bumper Bottom to Ground	382	396	14
G	Sill Height at Front Wheel Well	331	331	0
H	Sill Height at Front Door Leading Edge	336	323	-13
I	Sill Height at B-Pillar	346	333	-13
J1	Sill Height at Rear Wheel Well	352	377	25
J2	Pinch Weld Height at Rear Wheel Well	243	242	-1
K	Sill Height Aft of Rear Wheel Well	359	413	54
L	Rear Bumper Thickness	220	220	0
M	Rear Bumper Bottom to Ground	382	389	7
N	Sill Height to Bottom of Front Window Sill	726	728	2
O	Front Door Leading Edge to Impact CL	625	500	-125
P	Rear Door Trailing Edge to Impact CL	1,132	1,026	-106
Q	Front Window Opening	440	445	5
R	Right Side Length	5,267	5,227	-40
S	Left Side Length	5,266	5,199	-67
T	Vehicle Width at B-Pillars	1,811	1,662	-149

* All measurements in mm with tolerance of $\pm 3\text{mm}$

DATA SHEET NO. 10
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012



MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Units	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	mm	461	430	0
2	Occupant Hip Point	mm	627	438	0
3	Mid - Door	mm	763	436	0
4	Window Sill	mm	1,041	398	0
5	Window Top	mm	1,614	159	0

NOTE: The above measurements should be taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

DATA SHEET NO. 10 ... (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
 Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
 Test Date: 11/6/2012

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1500															
-1350															
-1200															
-1050															
-900				847					849					-2	
-750		917	916	853			861	872	839			56	44	14	
-600	894	907	897	858		781	817	816	837		113	90	81	21	
-450	884	888	895	862		698	709	731	759		186	179	164	103	
-300	885	890	896	866		619	622	643	665		266	268	253	201	
-150	885	892	898	869		534	535	546	564		351	357	352	305	
0	886	894	899	872	595	456	456	463	474	436	430	438	436	398	159
150	884	895	899	874	615	508	504	500	513	475	376	391	399	361	140
300	884	897	899	876	625	634	617	623	635	507	250	280	276	241	118
450	882	895	899	876	632	708	724	733	725	540	174	171	166	151	92
600	880	894	898	878	633	742	755	765	758	567	138	139	133	120	66
750	878	894	897	877	633	770	787	796	790	590	108	107	101	87	43
900	876	892	895	876	628	798	817	826	820	611	78	75	69	56	17
1050	869	888	891	872		822	845	854	848		47	43	37	24	
1200	846	866	868	854		912	940	948	947		-66	-74	-80	-93	
1350	859	872	867	854		924	944	945	944		-65	-72	-78	-90	
1500	880	900	896	854		943	971	972	942		-63	-71	-76	-88	

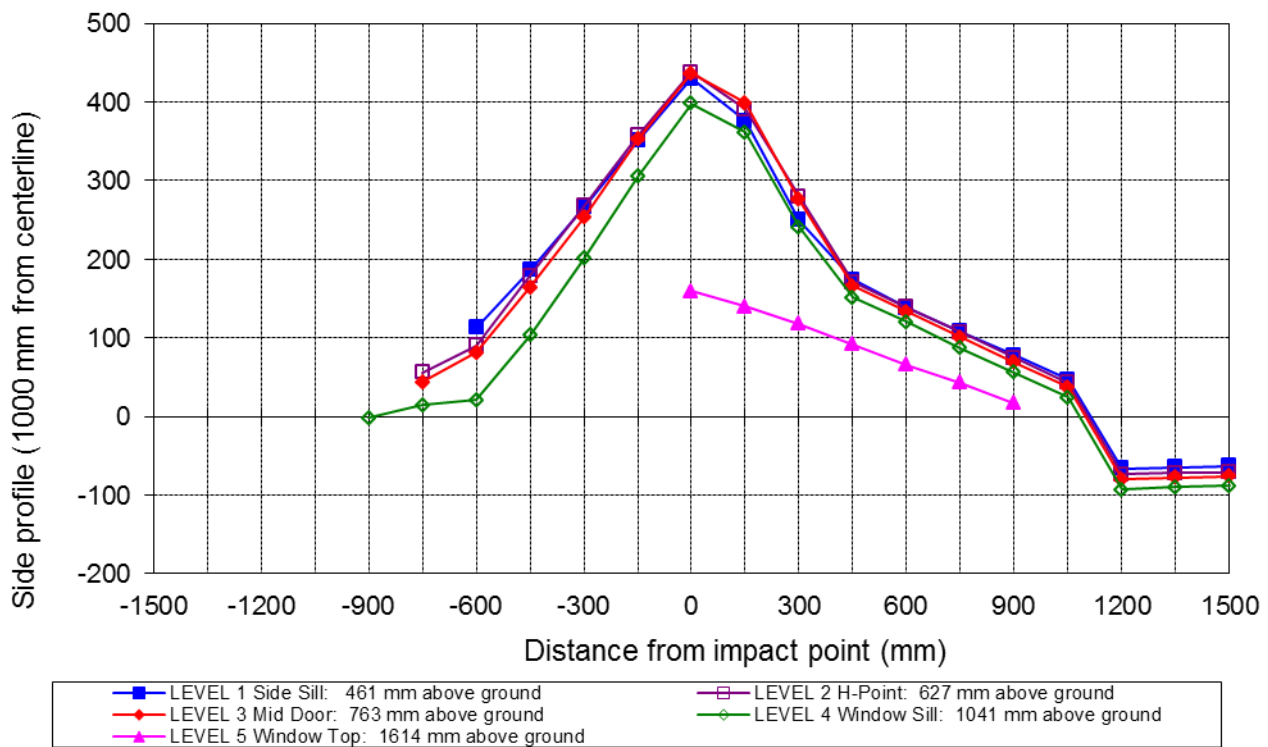
NOTE: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point. The final distance from impact is determined after the final dummy positioning and the pole is aligned with the center of gravity of the dummy's head.

DATA SHEET NO. 10 ... (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
Test Date: 11/6/2012

Vehicle Exterior Crush Measurements - Visual Representation



DATA SHEET NO. 11
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: <u>2013 Toyota Tacoma 4x2 Access Cab Pickup</u>	NHTSA No.: <u>MD5119</u>
Test Program: <u>NCAP Side MDB Impact Test</u>	Test Date: <u>11/6/2012</u>
Test Time: <u>12:45PM</u>	Temperature: <u>2° C</u>

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

FMVSS NO. 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	70	300	370
90° to 180°	64	300	364
180° to 270°	62	300	362
270° to 360°	70	300	370

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

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

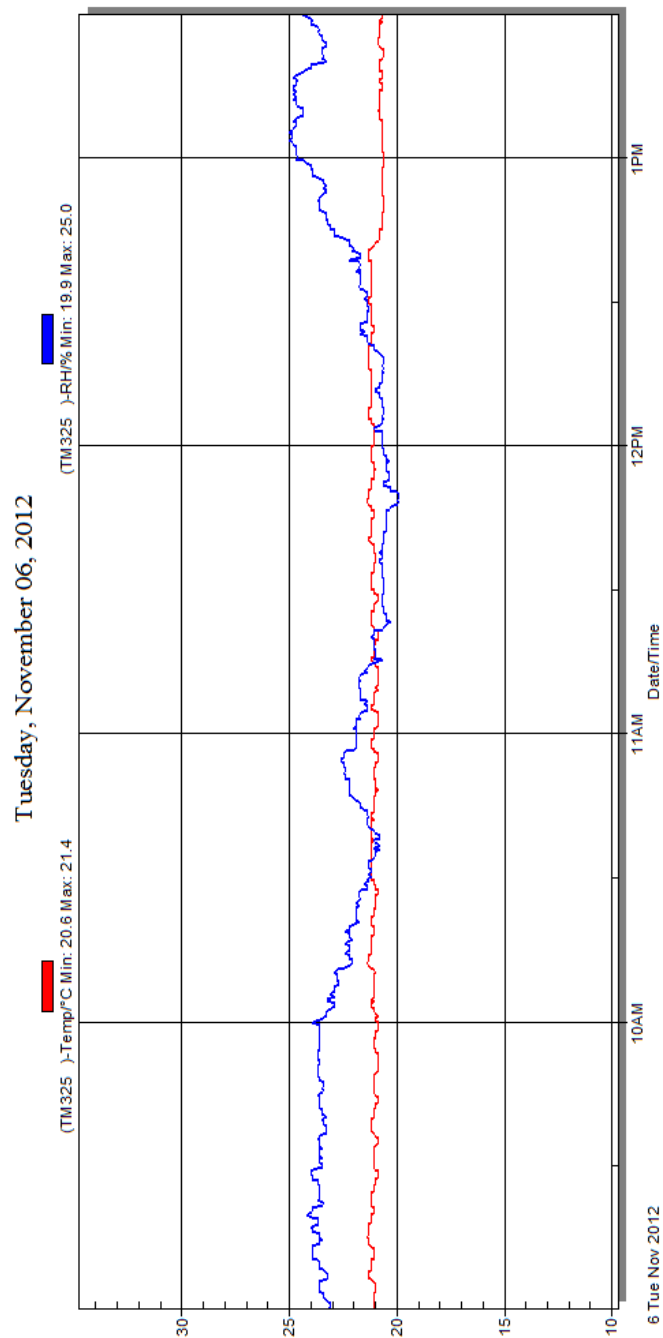
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	No Spillage Occurred
90° to 180°	No Spillage Occurred
180° to 270°	No Spillage Occurred
270° to 360°	No Spillage Occurred

DATA SHEET NO. 12
DUMMY / VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2013 Toyota Tacoma 4x2 Access Cab Pickup
Test Program: NCAP Side Pole Impact Test

NHTSA No.: MD5119
Test Date: 11/6/2012



Temperature and Humidity Stabilization Chart / Data for Dummies and Test Vehicle

APPENDIX A
PHOTOGRAPHS

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Figure A-1: As Delivered Right Front $\frac{3}{4}$ View of Test Vehicle



Figure A-2: As Delivered Left Rear $\frac{3}{4}$ View of Test Vehicle



Figure A-3: Pre-Test Frontal View of Test Vehicle



Figure A-4: Post-Test Frontal View of Test Vehicle



Figure A-5: Pre-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Figure A-6: Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle



Figure A-7: Pre-Test Left Side View of Test Vehicle



Figure A-8: Post-Test Left Side View of Test Vehicle



Figure A-9: Pre-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



Figure A-10: Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle

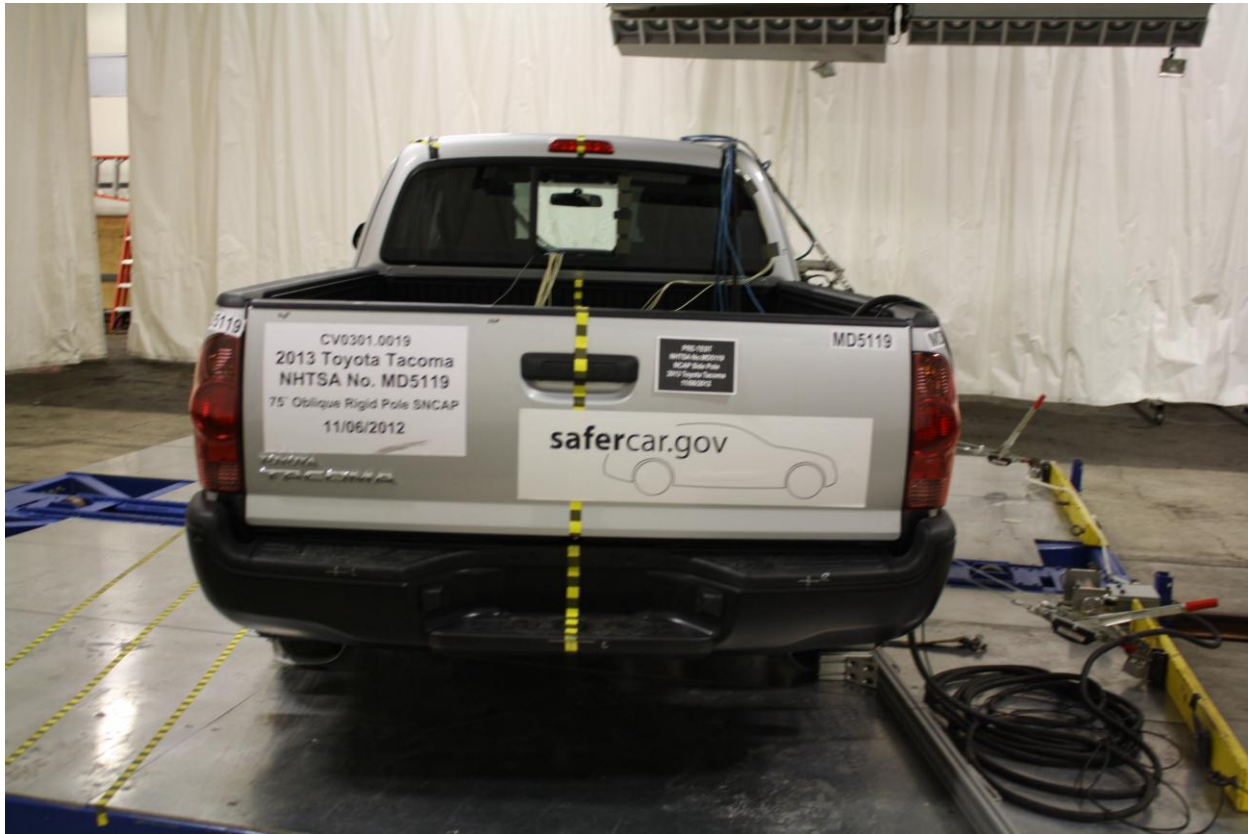


Figure A-11: Pre-Test Rear View of Test Vehicle



Figure A-12: Post-Test Rear View of Test Vehicle



Figure A-13: Pre-Test Right Side View of Test Vehicle



Figure A-14: Post-Test Right Side View of Test Vehicle

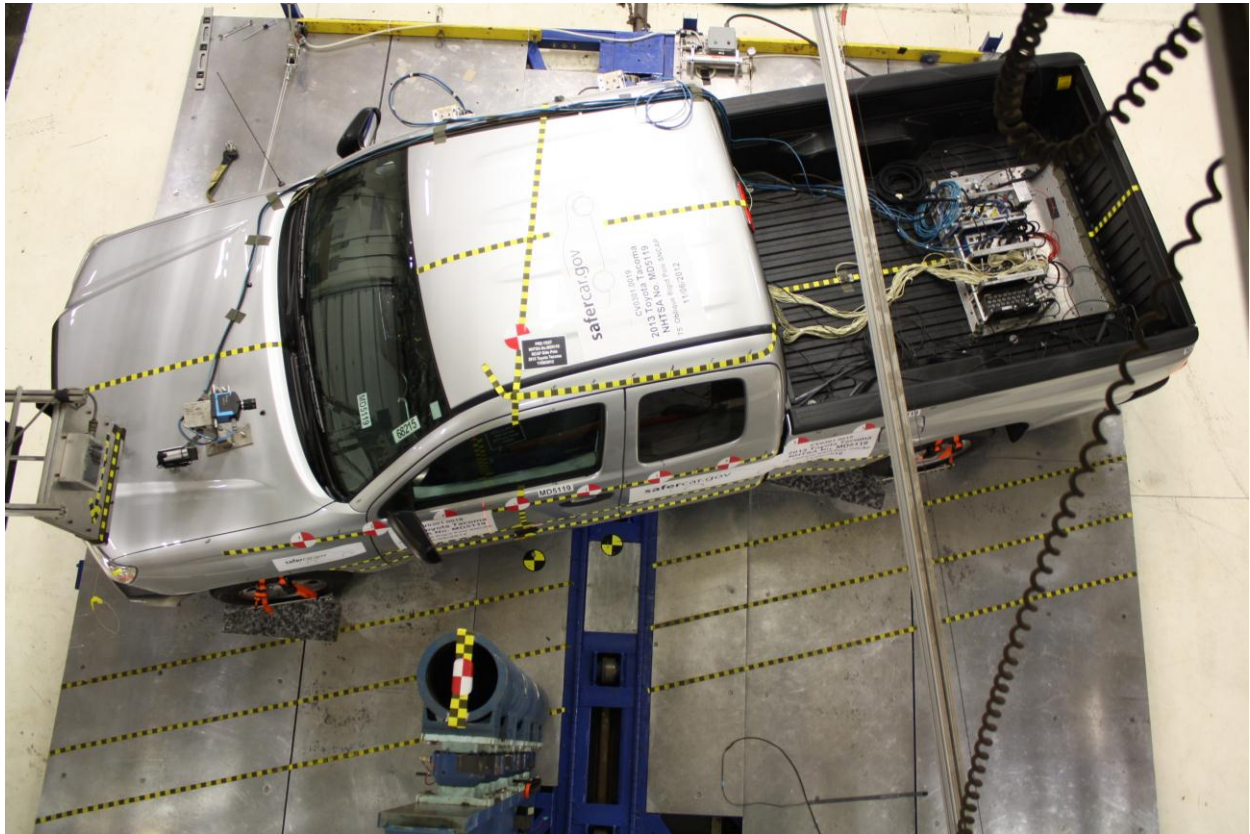


Figure A-15: Pre-Test Overhead View of Test Area



Figure A-16: Post-Test Overhead View of Test Area



Figure A-17: Pre-Test Left Side View of Pole Positioned Against Side of Vehicle



Figure A-18: Pre-Test Right Side View of Pole Positioned Against Side of Vehicle



Figure A-19: Pre-Test Close-Up View of Impact Point Target



Figure A-20: Post-Test Close-Up View of Impact Point Target Showing Impact Location

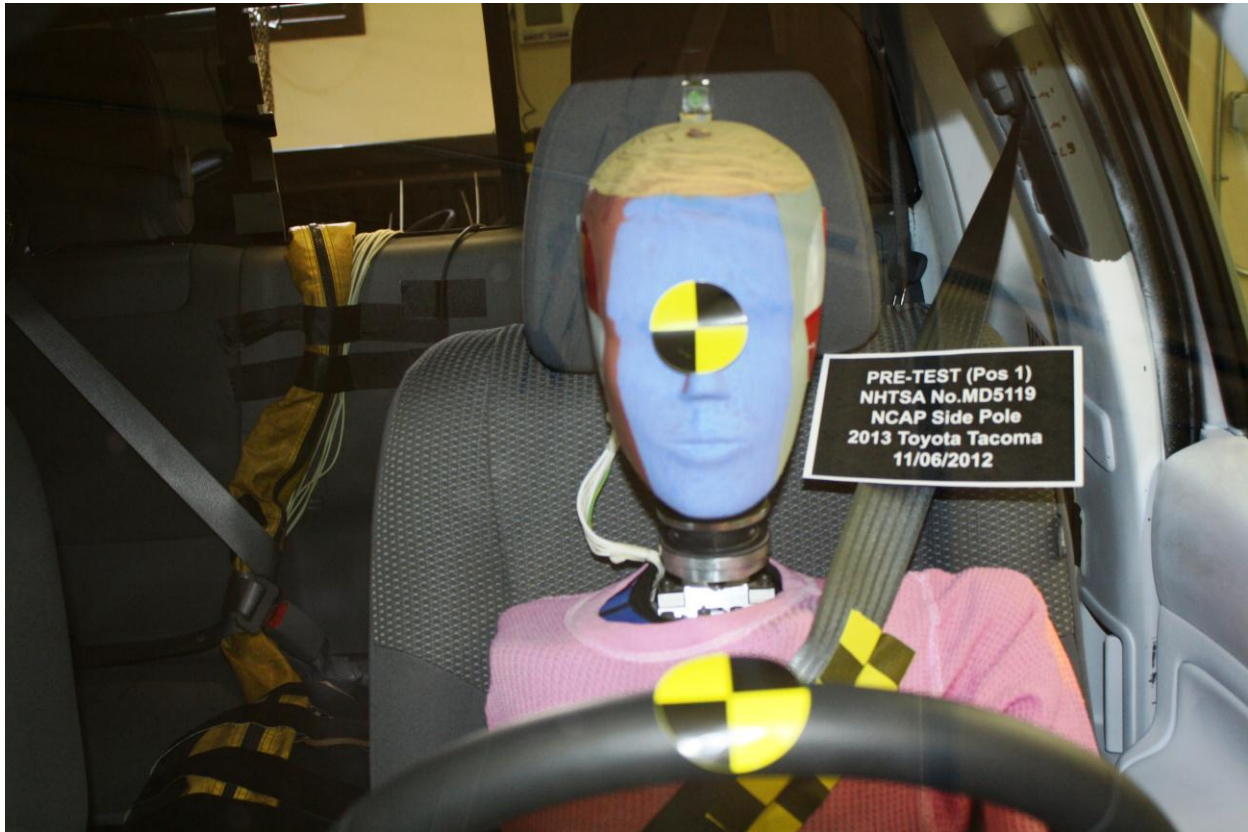


Figure A-21: Pre-Test Front Close-Up View of Dummy Head and Chest



Figure A-22: Post-Test Front Close-Up View of Dummy



Figure A-23: Pre-Test Left Side View of Dummy Showing Belt and Chalking



Figure A-24: Pre-Test Left Side View of Dummy Shoulder and Door Top View



Figure A-25: Post-Test Left Side View of Dummy Shoulder and Door Top View



Figure A-26: Pre-Test Frontal View of Seat Back Prior to Dummy Positioning

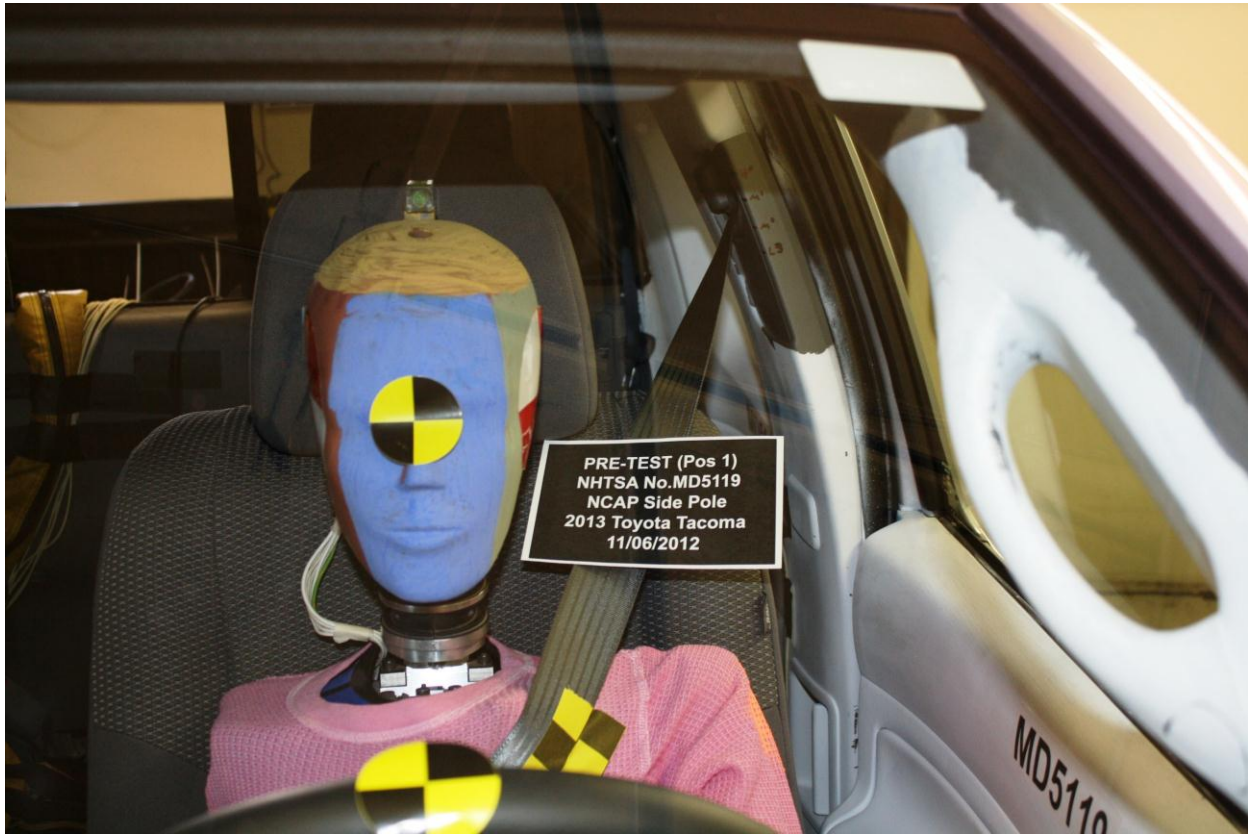


Figure A-27: Pre-Test Frontal Close-Up View of Dummy Head / Shoulders in Relation to Head Restraint



Figure A-28: Pre-Test Frontal View of Seat Pan Prior to Dummy Positioning



Figure A-29: Pre-Test Overhead View of Dummy Thighs on Seat Pan

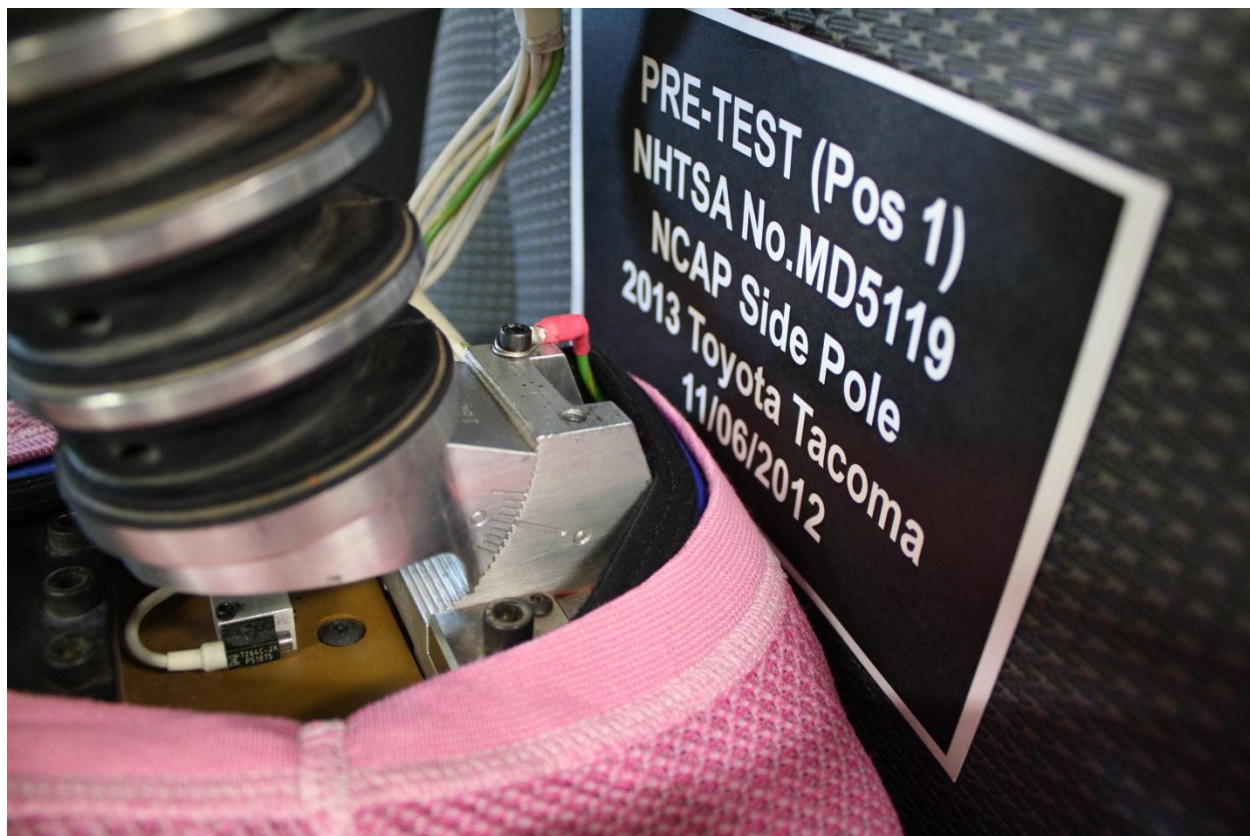


Figure A-30: Pre-Test Left Side View of Dummy's Neck Showing Position of Adjustable Neck Bracket



Figure A-31: Pre-Test Left Side View of Dummy's Head Showing Dummy's Head is Level



Figure A-32: Pre-Test Placement of Dummy's Feet



Figure A-33: Pre-Test View of Belt Anchorage for Dummy



Figure A-34: Pre-Test Left Side View of Steering Wheel



Figure A-35: Pre-Test View of Disengaged Parking Brake



Figure A-36: Pre-Test View of Parking Brake



Figure A-37: Pre-Test Close-Up Left Side View of Driver Seat Track

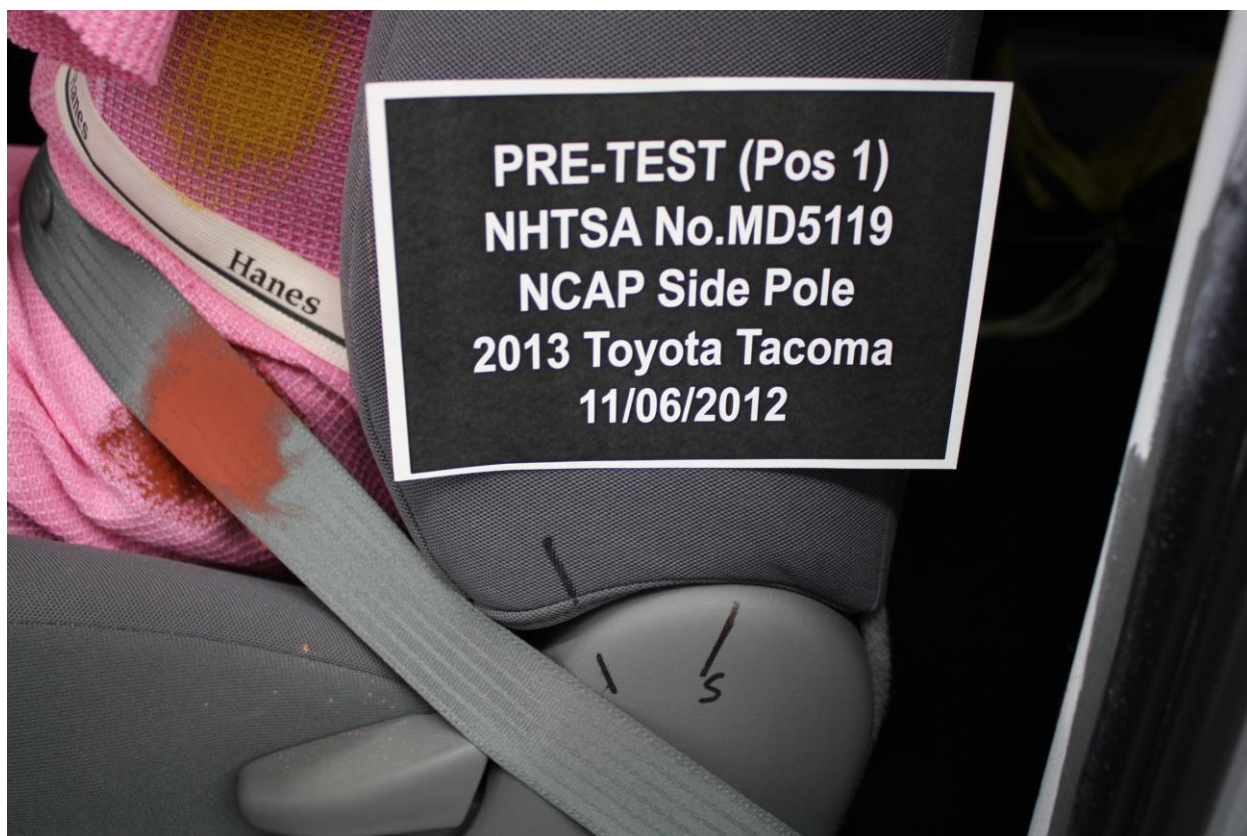


Figure A-38: Pre-Test Close-Up Left Side View of Driver Seat Back

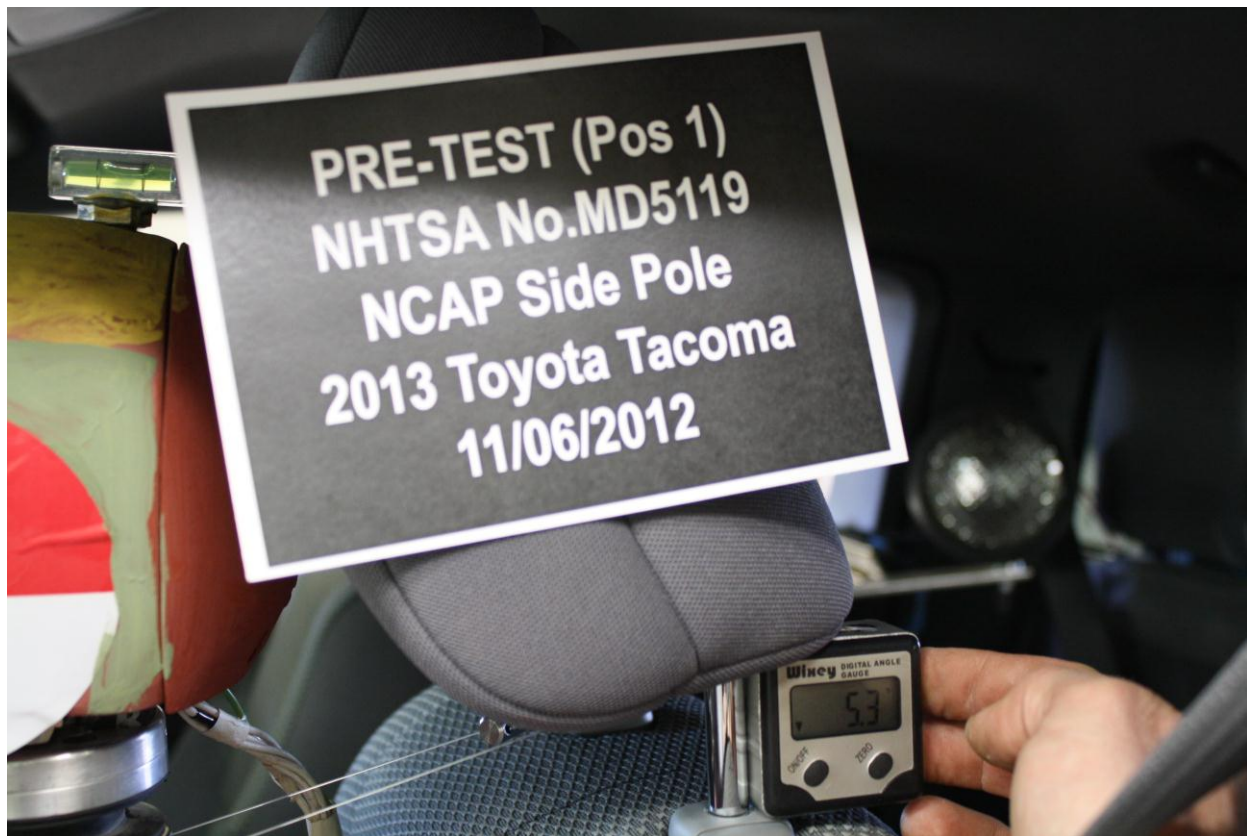


Figure A-39: Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Figure A-40: Pre-Test Dummy and Door Clearance View



Figure A-41: Post-Test Dummy and Door Clearance View



Figure A-42: Pre-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Figure A-43: Post-Test Right Side View of Dummy and Front Seat of Occupant Compartment



Figure A-44: Pre-Test Inner Door Panel View



Figure A-45: Post-Test Inner Door Panel View Showing Dummy Contact Location



Figure A-46: Post-Test Dummy Close-Up Head Contact with Vehicle Interior View

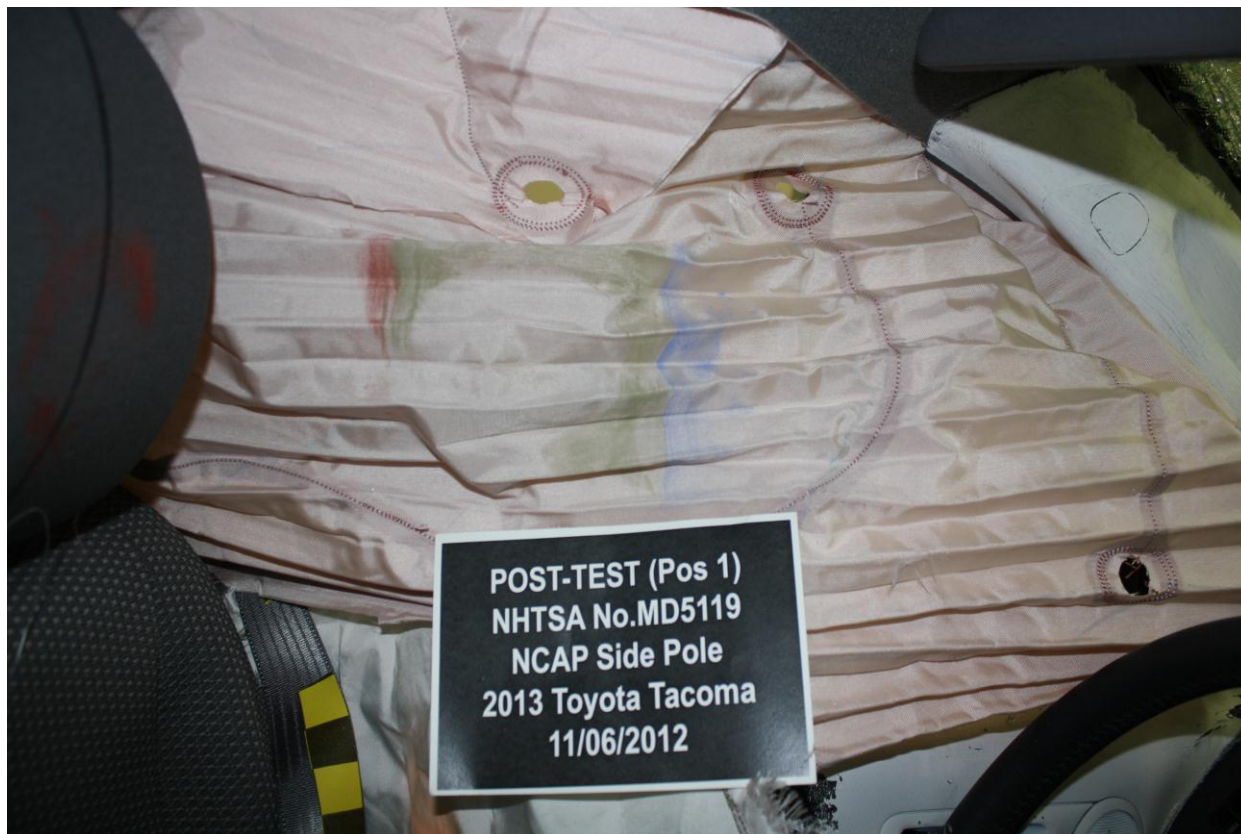


Figure A-47: Post-Test Dummy Close-Up Head Contact with Side Airbag View



Figure A-48: Post-Test Dummy Close-Up Torso Contact with Vehicle Interior View



Figure A-49: Post-Test Dummy Close-Up Torso Contact with Side Airbag View



Figure A-50: Post-Test Dummy Close-Up Pelvis Contact with Vehicle Interior View

Photo Not Applicable

Figure A-51: Post-Test Dummy Close-Up Pelvis Contact with Side Airbag View



Figure A-52: Post-Test Dummy Close-Up Knee Contact with Vehicle Interior View



Figure A-53: Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Figure A-54: Post-Test View of Fuel Filler Cap or Fuel Filler Neck

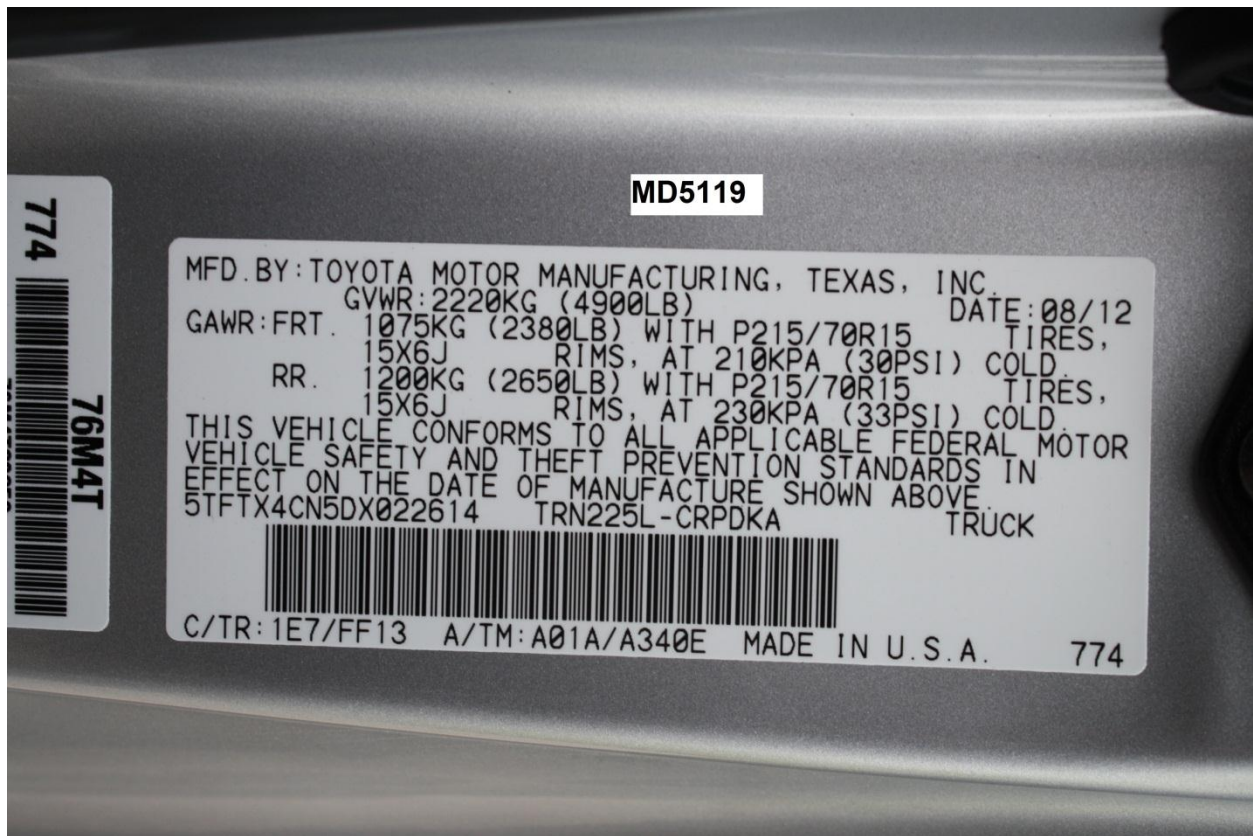


Figure A-55: Close-Up View of Vehicle's Certification Label

Photo Not Applicable

Figure A-55a: Close-Up View of Reduced Load Capacity Label



Figure A-56: Close-Up View of Vehicle's Tire Information Placard or Label

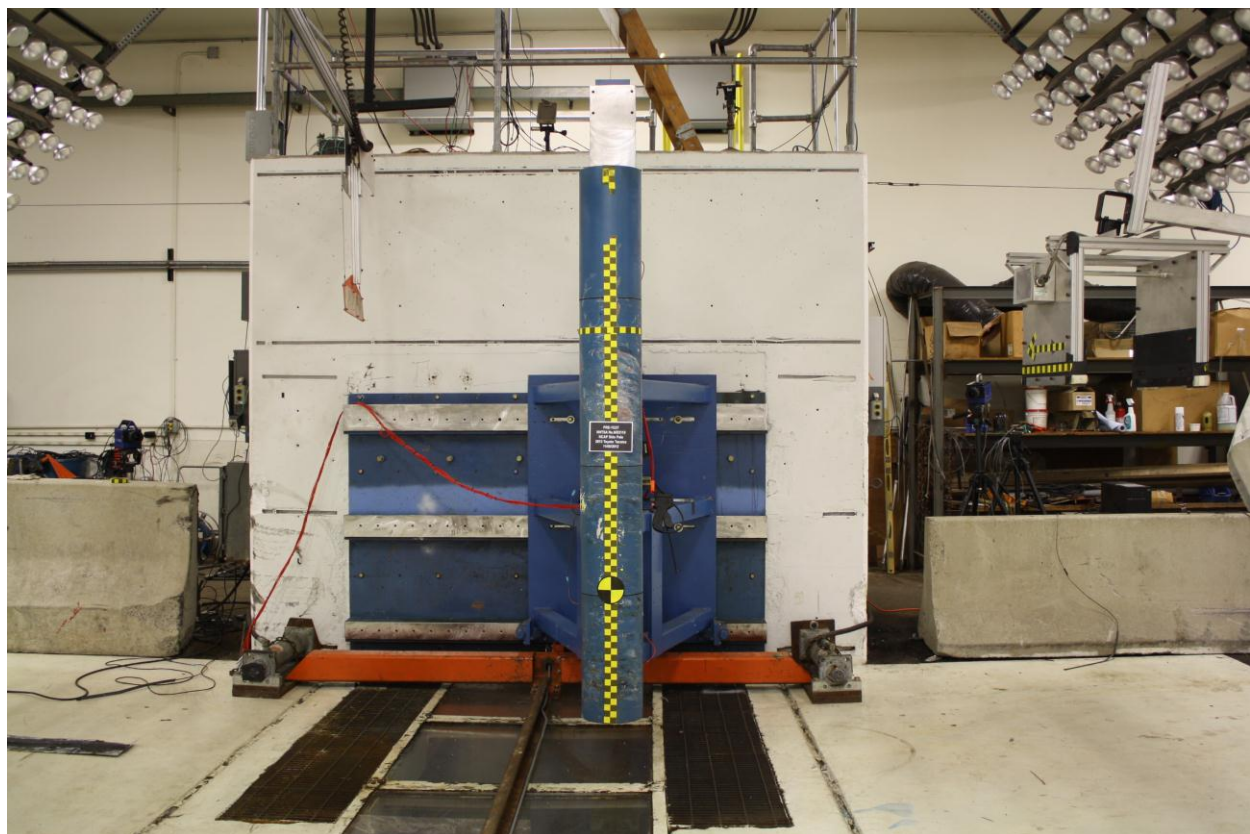


Figure A-57: Pre-Test Pole Barrier Front View

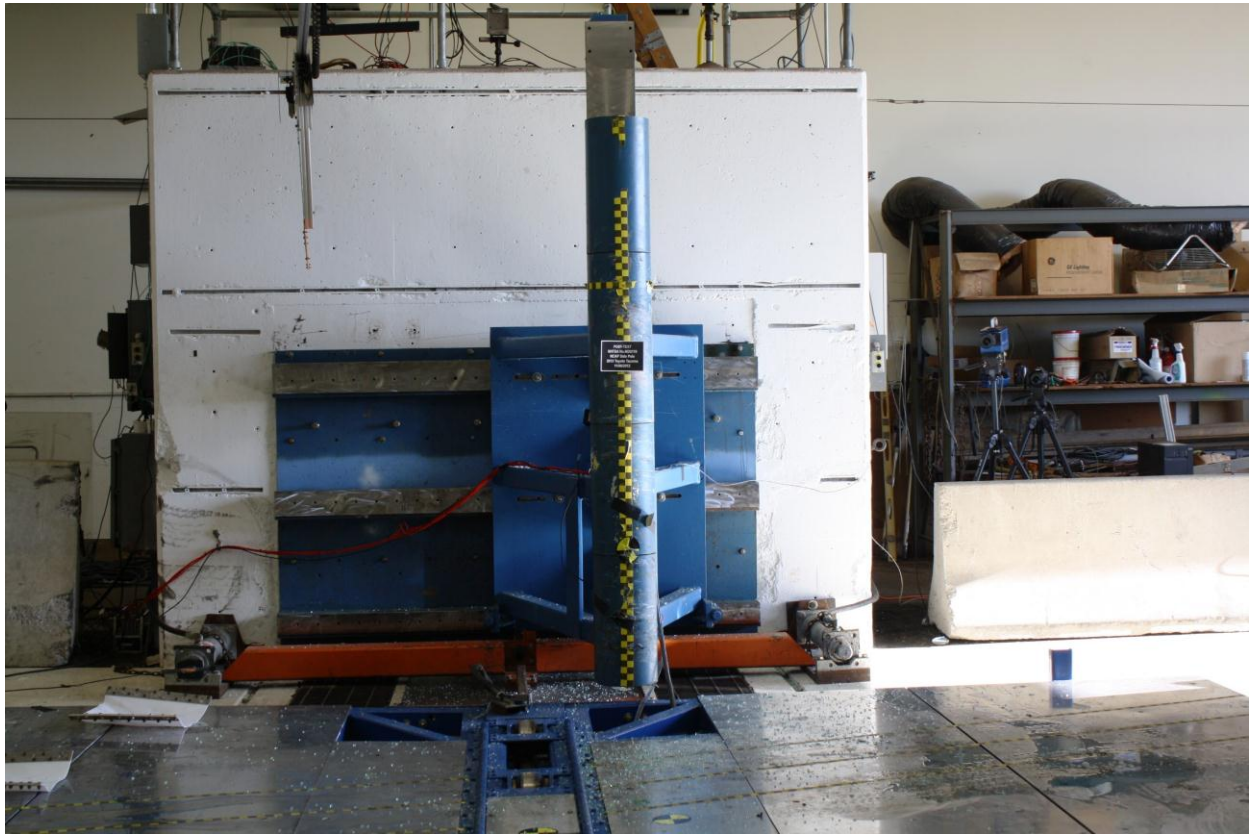


Figure A-58: Post-Test Pole Barrier Front View



Figure A-59: Pre-Test Pole Barrier Side View



Figure A-60: Post-Test Pole Barrier Side View

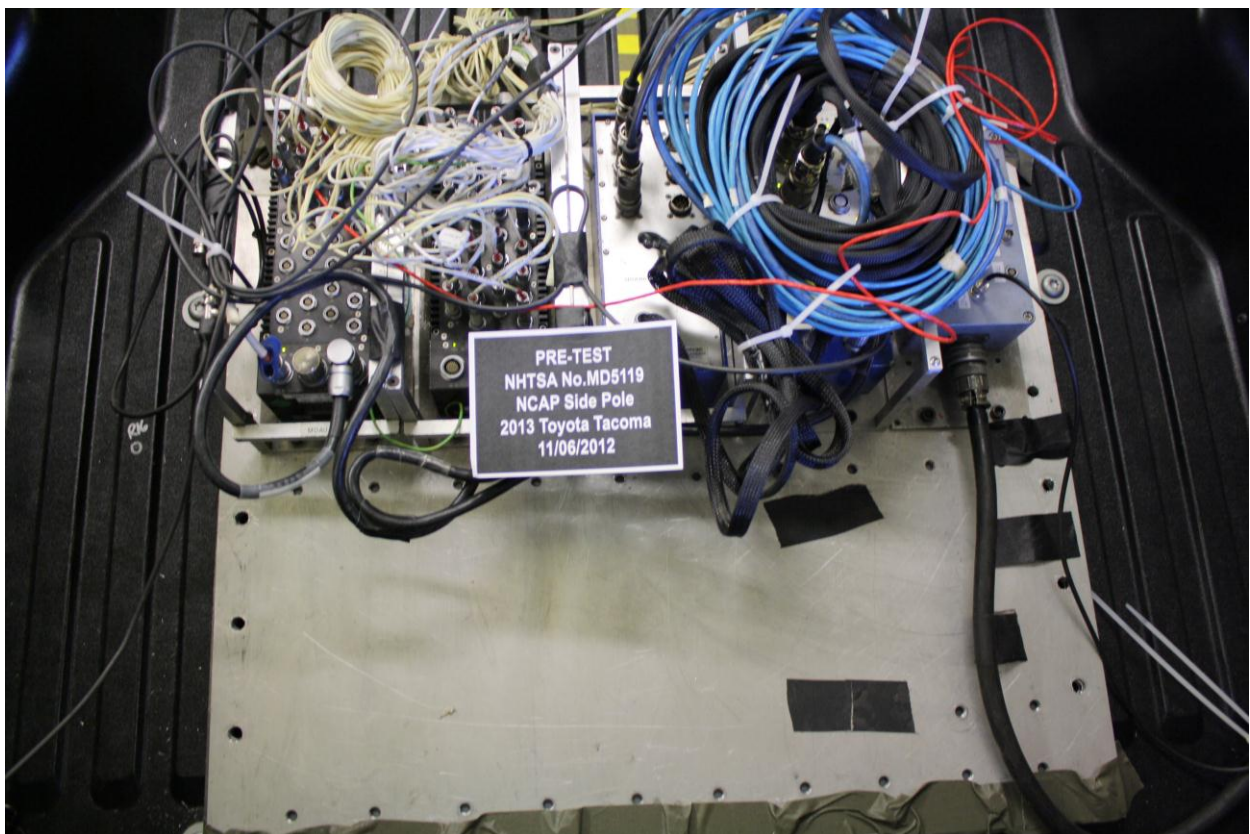


Figure A-61: Pre-Test Ballast View



Figure A-62: Post-Test Primary and Redundant Speed Trap Read-Out



Figure A-63: FMVSS No. 301 Static Rollover 0 Degrees



Figure A-64: FMVSS No. 301 Static Rollover 90 Degrees



Figure A-65: FMVSS No. 301 Static Rollover 180 Degrees



Figure A-66: FMVSS No. 301 Static Rollover 270 Degrees



Figure A-67: FMVSS No. 301 Static Rollover 360 Degrees



Figure A-68: Impact Event

TOYOTA
moving forward

DESC.: **TACOMA 4X2** ACCESS CAB
VIN: **5TFTX4CN5DX022614**
YR/M/DL: 2013/11/14A
CLR: SILVER STREAK MICA/FF13 (01E7/13)
PORT/PLANT: San Antonio, TX/TMMTX RAILHEAD:

GOVERNMENT 5-STAR SAFETY RATINGS

Overall Vehicle Score **Not Rated**
Based on the combined ratings of frontal, side and rollover.
Should Only be compared to other vehicles of similar size and weight.

Frontal Crash	Driver Passenger	Not Rated
Based on the risk of injury in a frontal impact. Should Only be compared to other vehicles of similar size and weight.		

Side Crash	Front seat	Not Rated
Based on the risk of injury in a side impact.		

Rollover **★★★★**
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

STANDARD EQUIPMENT

MECHANICAL & PERFORMANCE

- 2.7L D4CH 18V 4cy VVT-i 158HP Engine
- 4-Speed EC-i Automatic Transmission
- Automatic Limited-Slip Differential
- Coil-Spring Double Wishbone Front Susp
- Rear Leaf Spring Susp with Staggered
- Outboard-Mounted Gas Shock Absorbers
- Front Stabilizer Bar
- Var-Assist Power Rack-&-Pinion Steering
- Power-Assisted Fr Disc/Rr Drum Brakes
- 16" Alloy Steel Wheels, P195/70R15 Tires

SAFETY & CONVENIENCE

- Star Safety System, Includes Vehicle Stability Control, Traction Control, Anti-lock Brake System (ABS), Electronic Brake Force Distribution, Brake Assist, & Smart Stop Technology (SST)
- Daytime Running Lights (DRL)
- Dr & Fr Pass Advanced Airbag System
- Seat-Mounted Side & Side Curtain Airbags
- 3-Point Seatbelts for All Seating Positions; Driver-Side ELR & AL/ELR on All Pass Sbs, Dr & Fr Pass Active Headrest
- Side-Impact Door Beams
- Tire Pressure Monitor System (TPMS)

EXTERIOR

- Black Grille Insert, Bk Door Handles, Mirrors, Front/Rear Bumpers
- SMC Inner Bed w/Steel Outer Panels, Storage, Rail Caps & Removable Tailgate
- Deck Rail System w/4 Adj Tie-Down Cleats
- Rear Mudguards

INTERIOR

- Air Conditioning
- Power Windows & Door Locks
- Cloth Bucket Fr Seat w/ Pass Fold-Flat
- 6.1" Touch-Screen, AM/FM CD, 6 Spkr, BT
- USB, Aux Jack, Hands-Free Phone Capable
- Tilt/Telescoping Steering Wheel
- 2-Speed Windshield Wipers
- Dual 12V Aux Power Outlets
- LED-Illuminated Gauges & Digital Clock
- Three Front Cup Holders
- ***Full Tank of Gas***

MANUFACTURER'S SUGGESTED RETAIL PRICE \$21,215.00

OPTIONAL EQUIPMENT

FE	50 State Emissions	
CP	Convenience Package	1,005.00
	Power Mirrors, Remote Keyless Entry System, Cruise Control, Sliding Rear Window w/ Privacy Glass, Steering Wheel with Audio Controls	
CF	Carpet Floor Mats & Door Sill Protector	195.00
V5	VIP-RS200 Plus Security System	359.00

DELIVERY PROCESSING AND HANDLING FEE 845.00

TOTAL \$23,619.00

The New Vehicle Limited Warranty provides 3-year/36,000 mile basic coverage, 5-year/50,000 mile powertrain coverage, and 3-year/unlimited mile corrosion protection coverage. See Warranty and Maintenance Guide for details. An extended service contract may be available for the vehicle. Manufacturer's suggested retail price includes manufacturer's recommended pre-delivery service. Gasoline, license and title fees, applicable federal, state and local taxes and dealer and distributor installed options and accessories are not included in the manufacturer's suggested retail price.

Toyota Care, which covers normal factory scheduled maintenance for two years or 25,000 miles, whichever occurs first, is included as part of the sales price of the vehicle for qualifying buyers. See participating dealer for eligibility and coverage details.

Gasoline Vehicle

Fuel Economy

21 MPG Small Pickup range from 18 to 23 MPG. The best vehicle rates 112 MPG.

19 24
combined city/hwy city highway

4.8 gallons per 100 miles

You spend \$1,150 more in fuel costs over 5 years compared to the average new vehicle.

Annual fuel Cost \$2,550

Fuel Economy & Greenhouse Gas Rating (Subject to 100% Smog Rating) (Subject to 100% Smog Rating)

1 5 10 (Best) (Worst)

Smog Rating (Subject to 100% Smog Rating) (Subject to 100% Smog Rating)

1 5 10 (Best) (Worst)

fuel economy.gov
Calculate personalized estimates and compare vehicles

SAFERCARS

Get more info on this Toyota. Just snap and text this tag.

TOYOTA OF SANTA CRUZ, INC.
4200 AUTO PLAZA DRIVE
CAPITOLA CA95010

Ship to:

4345
1844
27205

Figure A-69: Monroney Label

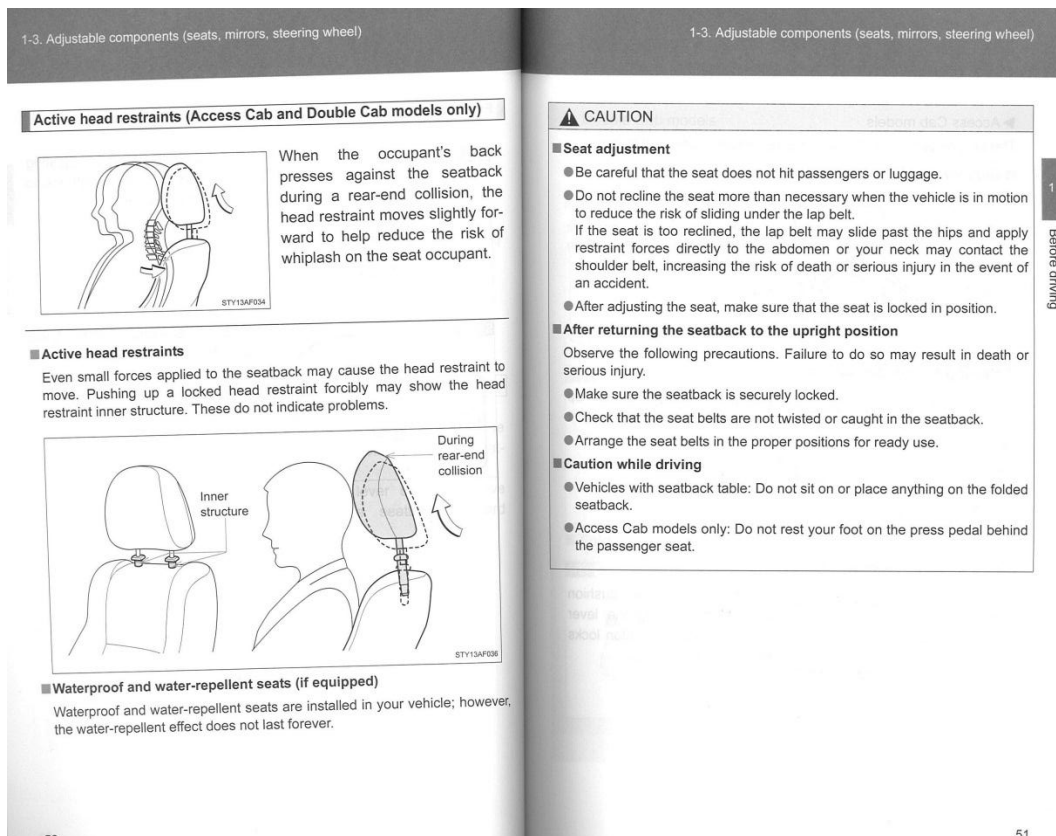


Figure A-70: Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

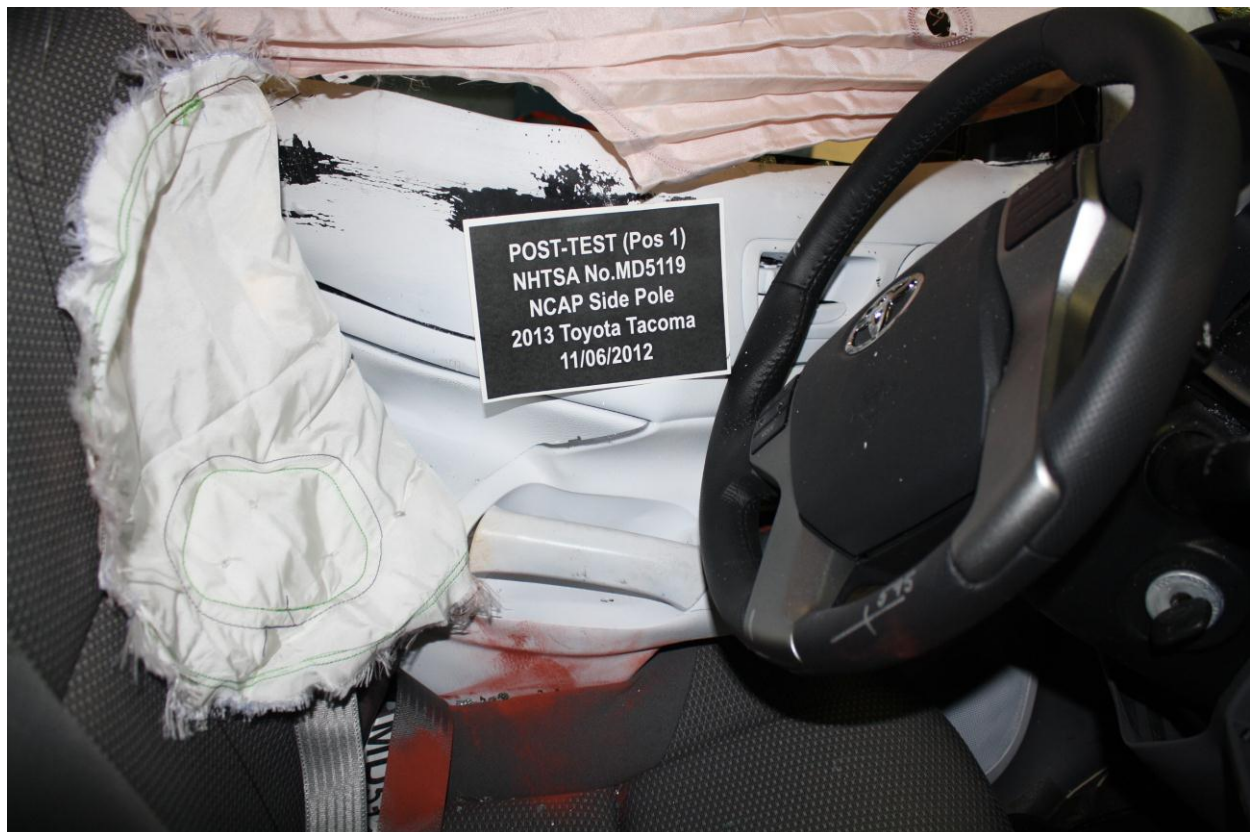


Figure A-71: Post-Test View of Shattered Vehicle Inner Door Panel (if applicable)

APPENDIX B

VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Driver Dummy Instrumentation Plots

Fig.	Description	Page
1	Driver Head Acceleration (X) Primary vs. Time	B-4
2	Driver Head Acceleration (Y) Primary vs. Time	B-4
3	Driver Head Acceleration (Z) Primary vs. Time	B-5
4	Driver Head Resultant Acceleration Primary vs. Time	B-5
5	Driver Lower Spine T12 Acceleration (X) vs. Time	B-6
6	Driver Lower Spine T12 Acceleration (Y) vs. Time	B-6
7	Driver Lower Spine T12 Acceleration (Z) vs. Time	B-7
8	Driver Lower Spine T12 Resultant Acceleration vs. Time	B-7
9	Driver Iliac Wing Force on Impact Side (Y) vs. Time	B-8
10	Driver Acetabulum Force on Impact Side (Y) vs. Time	B-8
11	Driver Total Pelvis Force on Impact Side (Y) vs. Time	B-9

The following additional data for this test can be obtained from the Research and Development section of the NHTSA website. The website can be found at www.NHTSA.dot.gov.

Additional Driver Dummy Instrumentation Data

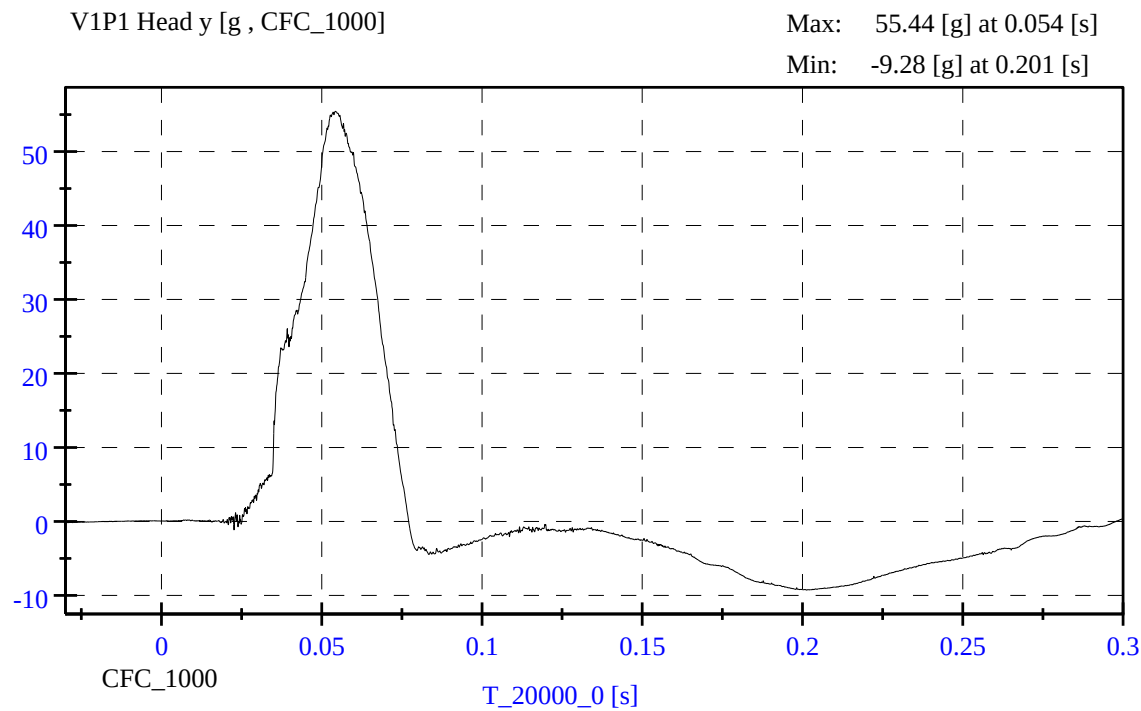
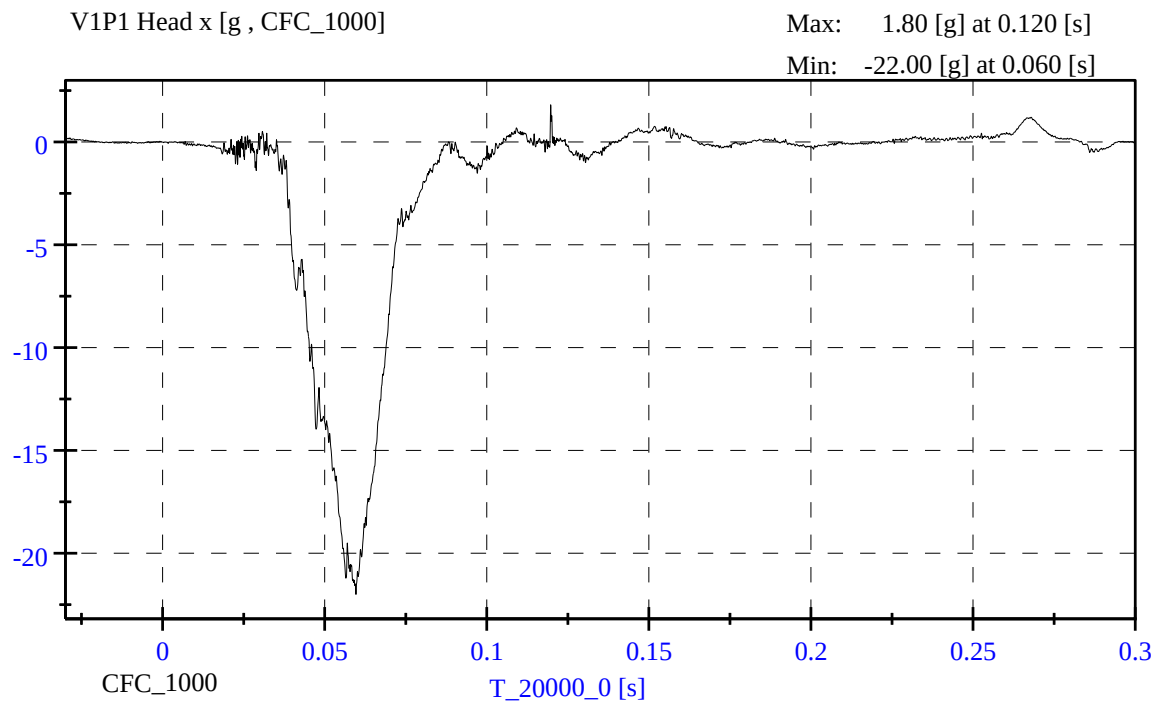
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Driver Upper Thorax Rib Deflection (Y)
Driver Middle Thorax Rib Deflection (Y)
Driver Lower Thorax Rib Deflection (Y)
Driver Upper Abdomen Rib Deflection (Y)
Driver Lower Abdomen Rib Deflection (Y)

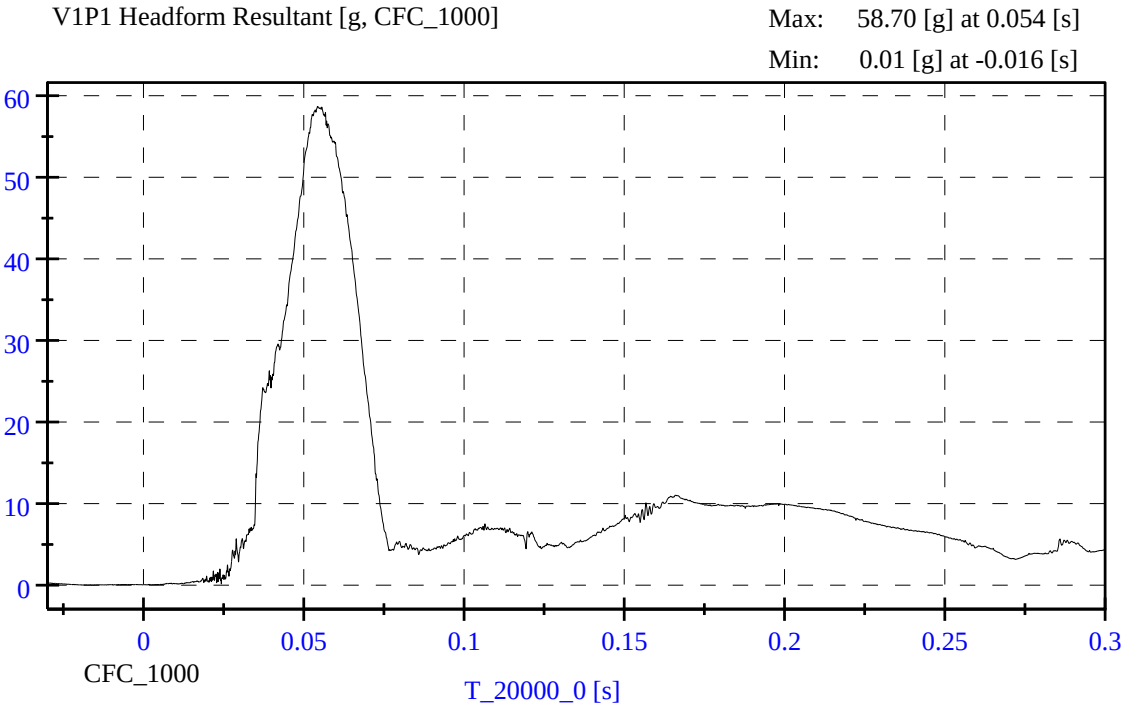
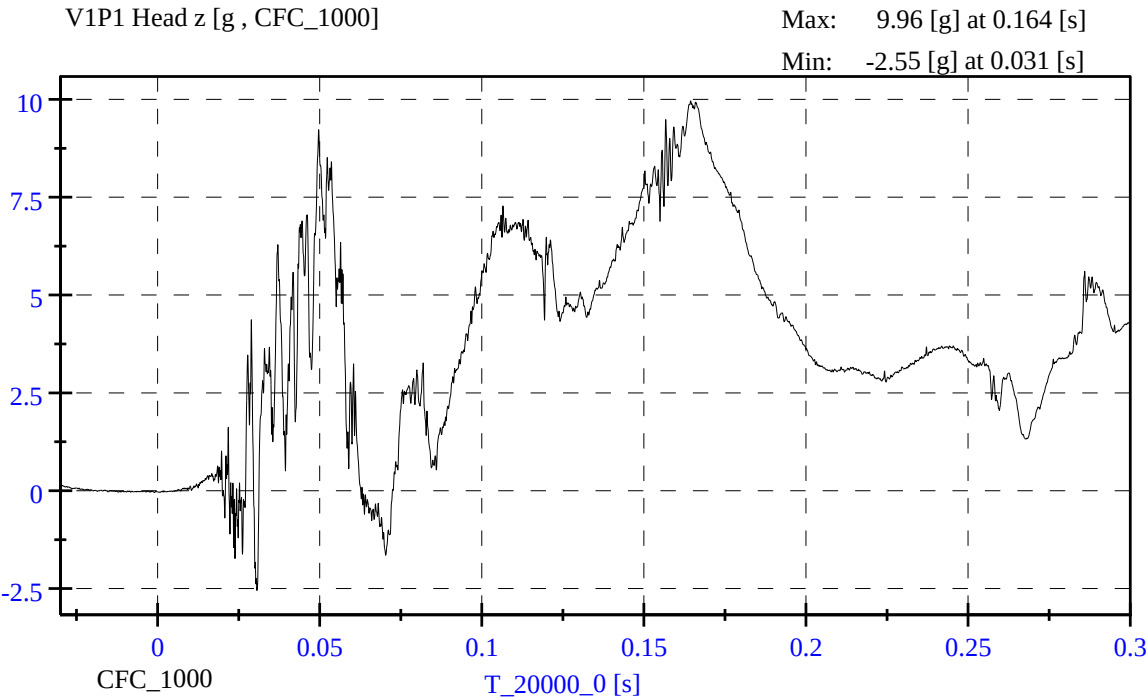
Vehicle Instrumentation Data

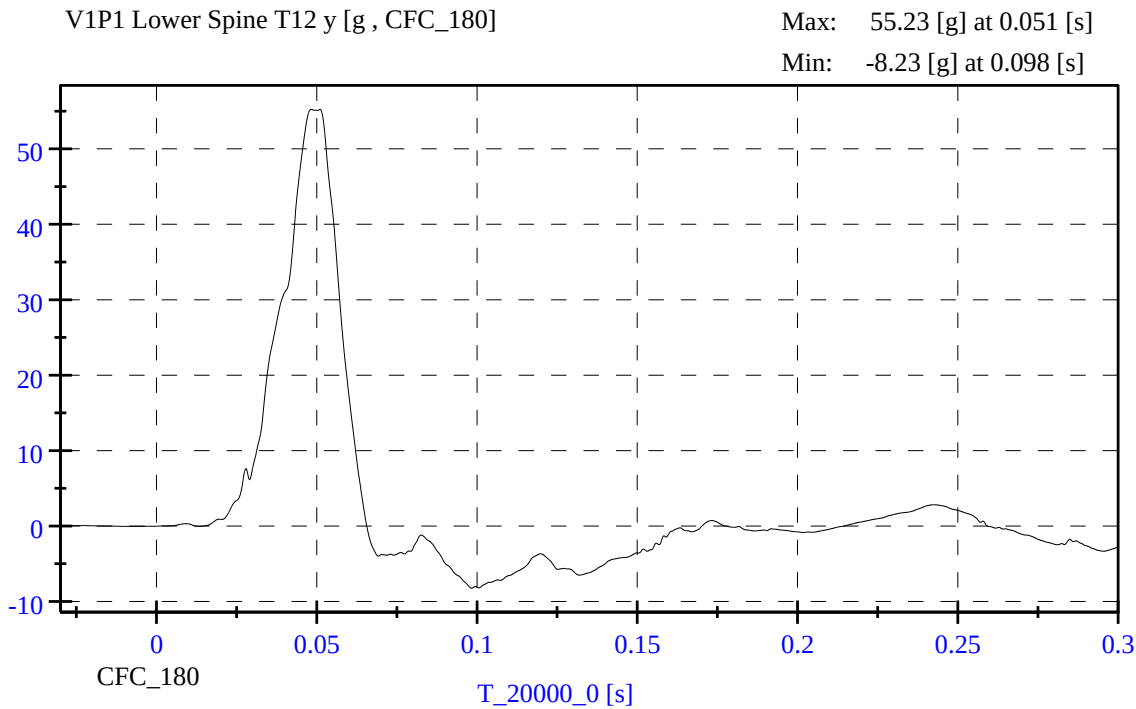
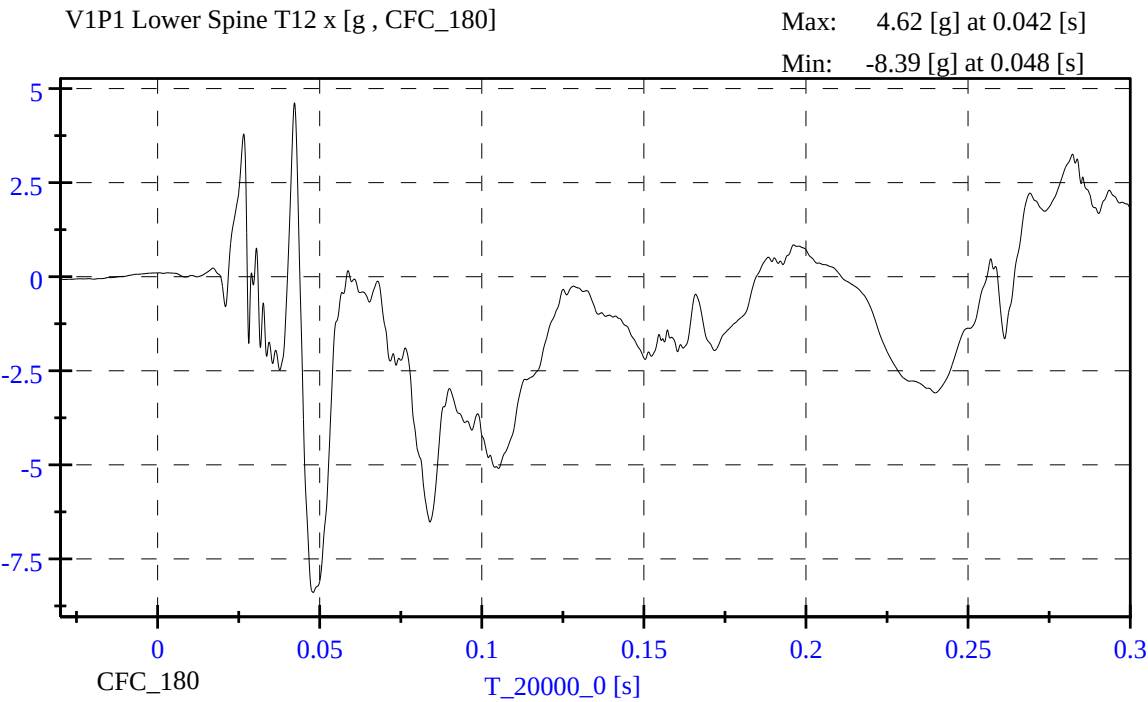
Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Left Floor Sill Acceleration (Y)
Left A-Pillar Sill Acceleration (Y)
Left Lower A-Pillar Acceleration (Y)
Left Mid A-Pillar Acceleration (Y)
Left B-Pillar Sill Acceleration (Y)
Left Lower B-Pillar Acceleration (Y)
Left Mid B-Pillar Acceleration (Y)
Driver Seat Track at Dummy Hip Point Acceleration (Y)
Engine Top Acceleration (X)
Engine Top Acceleration (Y)
Firewall Center Acceleration (Y)
Right Roof at Vertical Impact Reference Line Acceleration (Y)
Right Sill at Vertical Impact Reference Line Acceleration (Y)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (X)
Rear Floorpan Behind Rear Axle at Centerline Acceleration (Y)

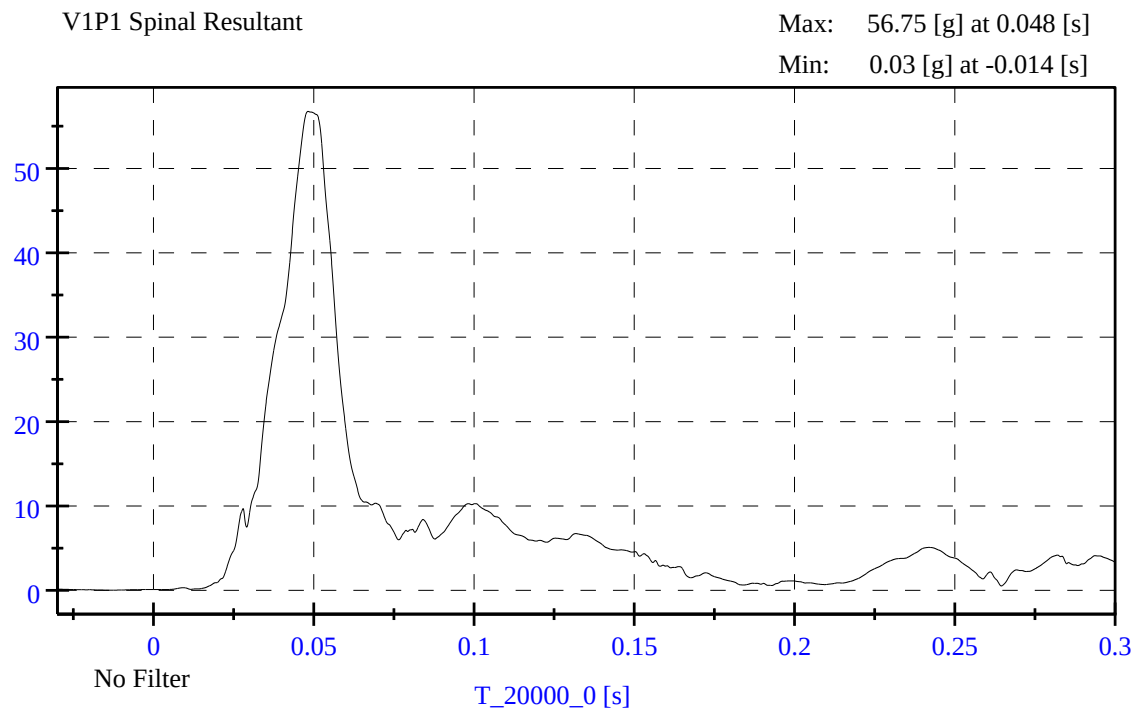
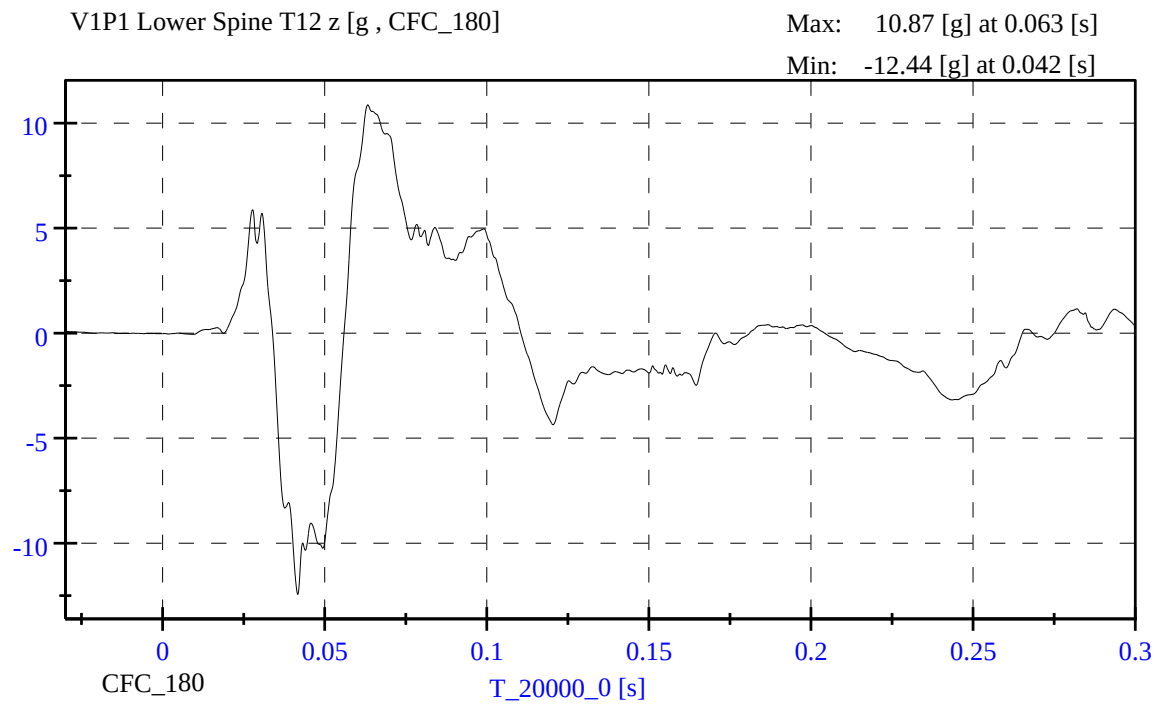
Pole Instrumentation Data

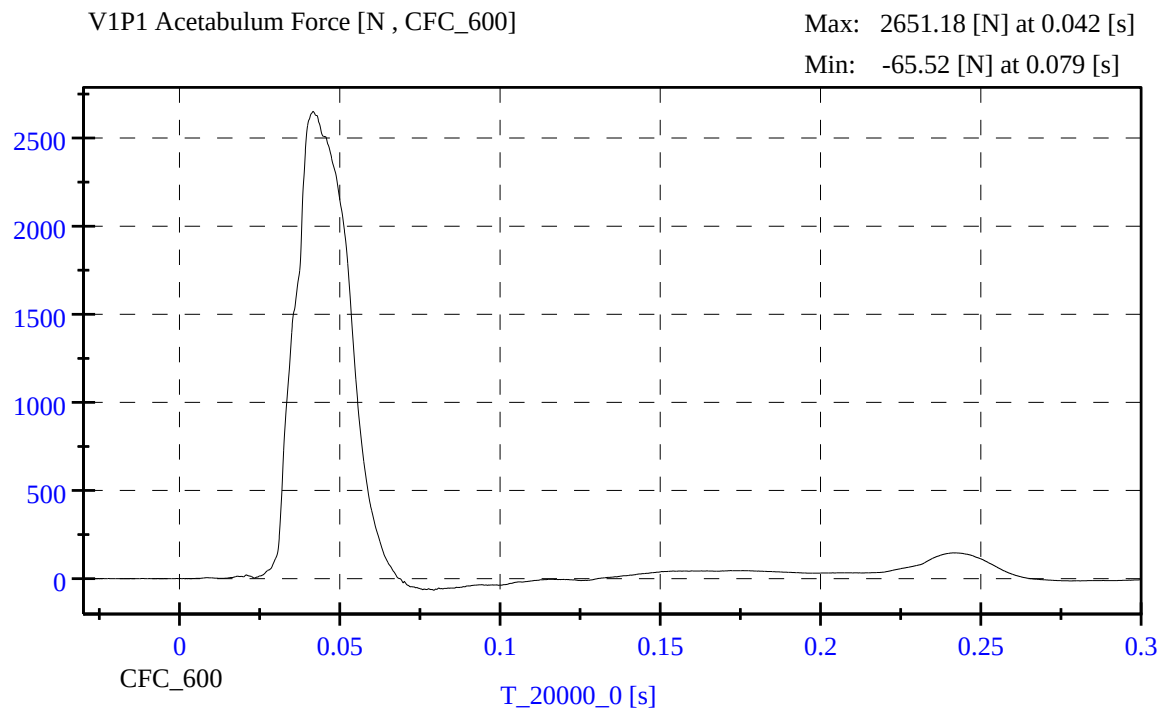
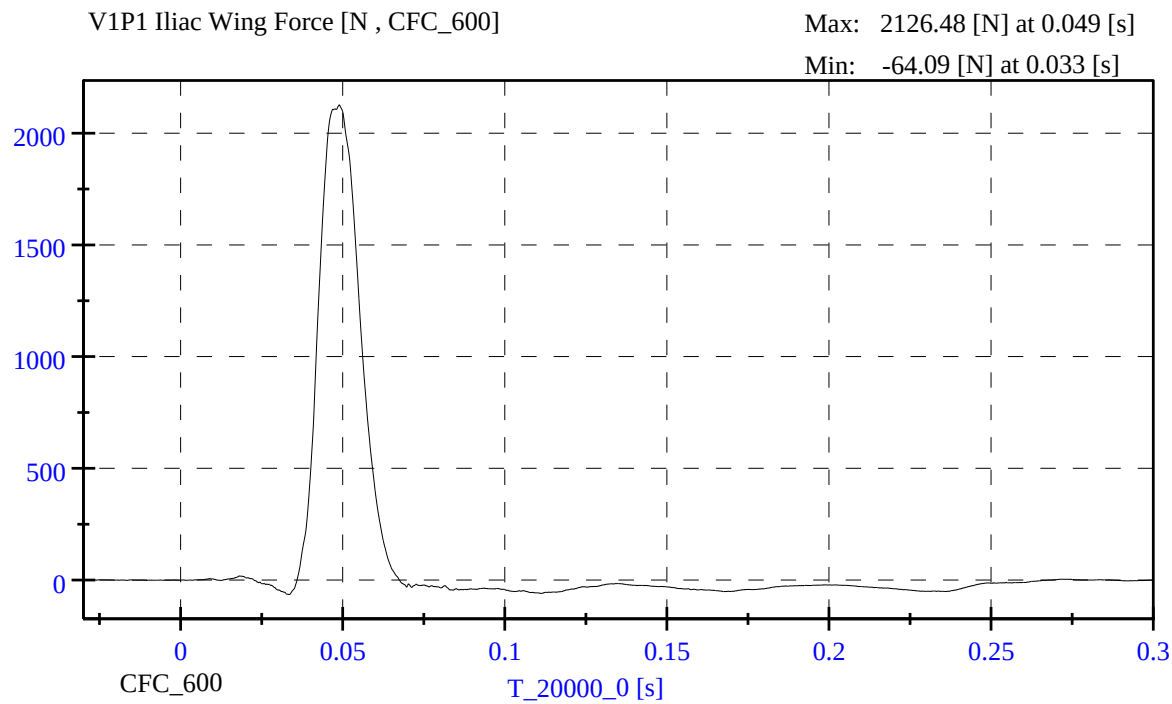
Load Cell Pole Barrier #1 Force (Y)
Load Cell Pole Barrier #2 Force (Y)
Load Cell Pole Barrier #3 Force (Y)
Load Cell Pole Barrier #4 Force (Y)
Load Cell Pole Barrier #5 Force (Y)
Load Cell Pole Barrier #6 Force (Y)
Load Cell Pole Barrier #7 Force (Y)
Load Cell Pole Barrier #8 Force (Y)

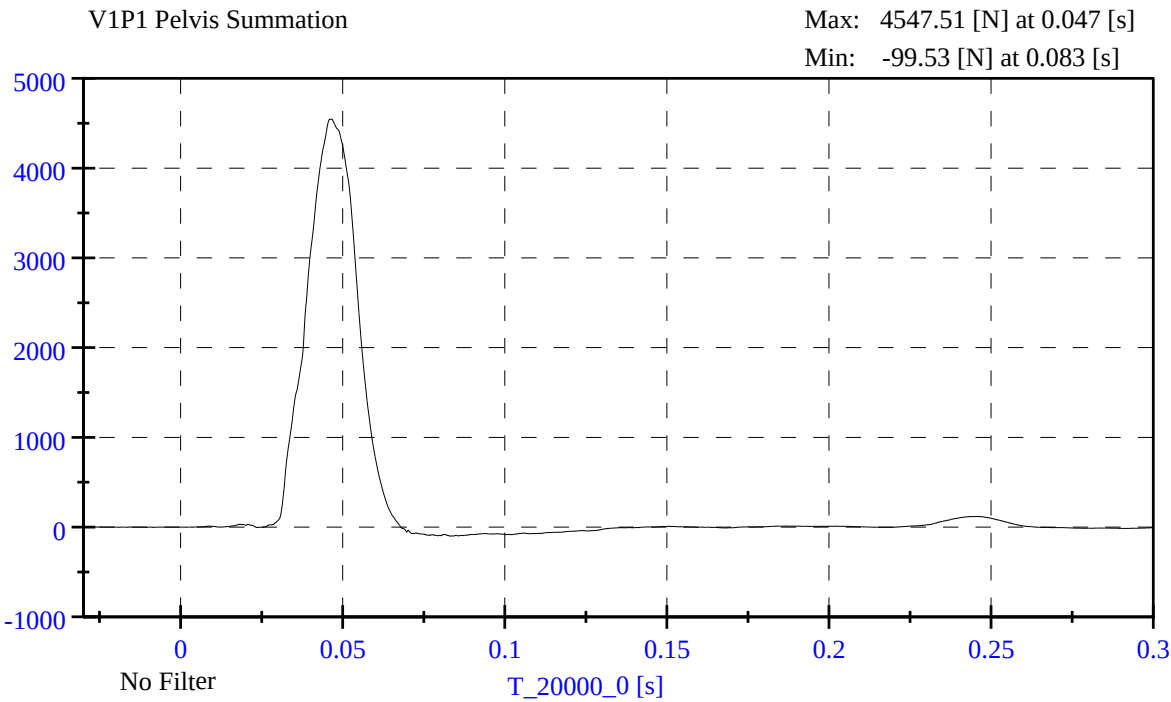












APPENDIX C

DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

CALIBRATION TEST RESULTS

PRE-TEST

SID-IIS 5TH PERCENTILE FEMALE - DRIVER ATD

SERIAL NO: 8012

(CONFIGURED FOR LEFT SIDE IMPACT)



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SID-IIsD External Measurements

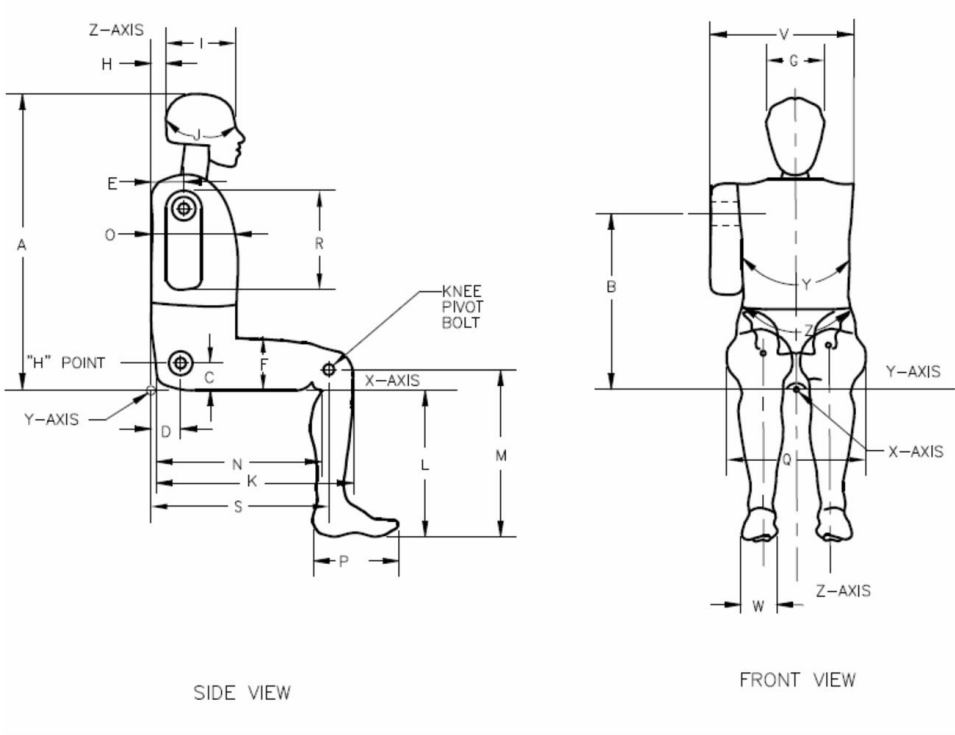
NHTSA ATD S/N DG8012

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	784	Yes
B	Shoulder Pivot Height	437.0 - 453.0	445	Yes
C	H-Point Height	79.0 - 89.0	86	Yes
D	H-Point from Seat Back	141.0 - 151.0	148	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	101	Yes
F	Thigh Clearance	119.0 - 135.0	128	Yes
G	Head Breadth	140.0 - 148.0	144	Yes
H	Head Back from Backline	40.0 - 46.0	43	Yes
I	Head Depth	178.0 - 188.0	183	Yes
J	Head Circumference	541.0 - 551.0	543	Yes
K	Buttock to Knee Length	514.0 - 540.0	524	Yes
L	Popliteal Height	343.0 - 369.0	358	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	404	Yes
N	Buttock Popliteal Length	416.0 - 442.0	424	Yes
O	Chest Depth without Jacket	195.0 - 211.0	202	Yes
P	Foot Length (right)	216.0 - 232.0	225	Yes
P	Foot Length (left)	216.0 - 232.0	225	Yes
Q	Hip Breadth	313.0 - 323.0	318	Yes
R	Arm Length	249.0 - 259.0	255	Yes
S	Knee Joint to Seat back	478.0 - 493.0	480	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	352	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
W	Foot Width (left)	78.0 - 94.0	86	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	865	Yes
Z	Waist Circumference	761.0 - 791.0	783	Yes

Technician : M. Goehle

Date: 11/1/2012

SID-IIsD External Dimension Reference Diagram



VERIFICATION REPORT

Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Head Drop	Test Date:	10/30/2012
Test Number:	1	Test Time:	2:10:27 PM

Component Part Number	Component Serial Number
Head Skin - 180-1002	1362

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.6 deg C P
Humidity	10 -- 70	44 %RH P
Resultant Acceleration	115.0 -- 137.0	120.1 g P
Oscillation	0.0 -- 15.0	1.8 % P
Fore-Aft Acceleration	-15.0 -- 15.0	-4.3 g P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **2:10:27 PM**

Test Date: **10/30/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Endevco	7264-2000	P49185	5/18/2012
Endevco	7264-2000	P51949	5/17/2012
Endevco	7264-2000	P51991	5/18/2012

Test Time: 2:10:27 PM

Test Date: 10/30/2012

Copyright 2006 Denton ATD, Inc. LabPac II Version: 1.8.5.0

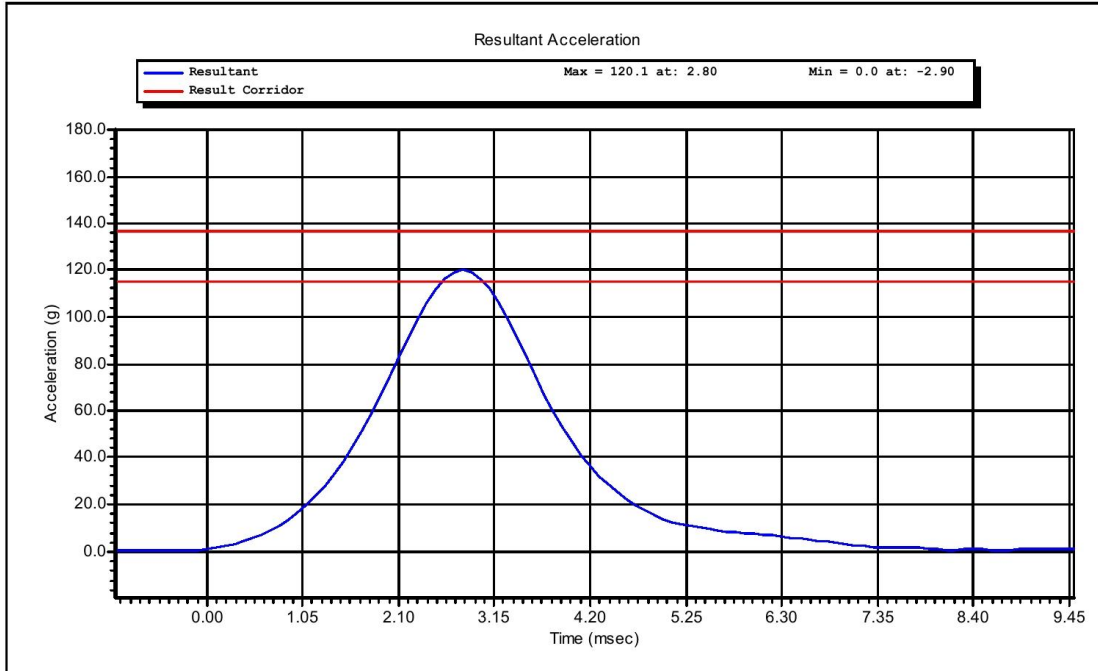


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Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Head Drop	Test Date:	10/30/2012
Test Number:	1	Test Time:	2:10:27 PM



Test Time: 2:10:27 PM

Test Date: 10/30/2012

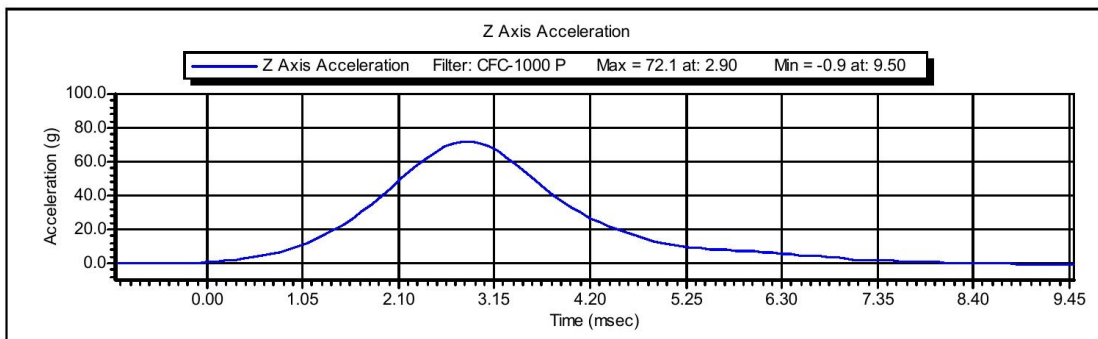
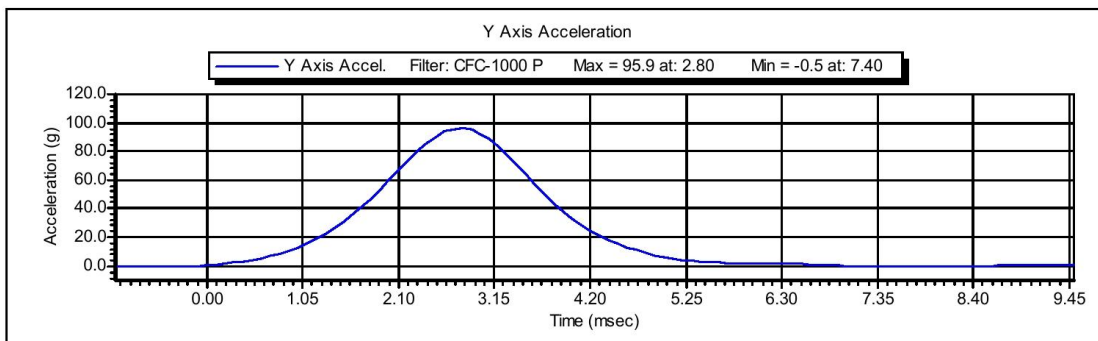
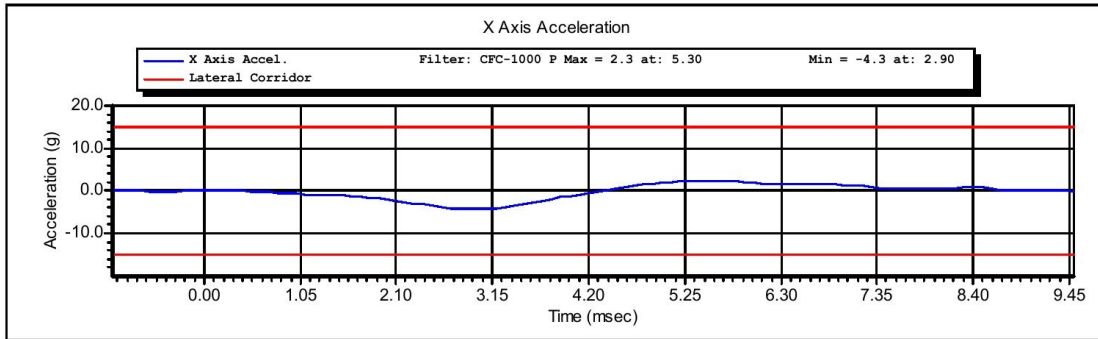
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Test Time: 2:10:27 PM

Test Date: 10/30/2012

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VERIFICATION REPORT

Test Name:	Neck Pendulum	Revision:	8/24/2009
Sub Test Name:	Left Side	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Neck Flexion	Test Date:	10/30/2012
Test Number:	1	Test Time:	3:41:57 PM

Component Part Number	Component Serial Number
Neck - 180-2000	DG7061

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.5 deg C P
Humidity	10 -- 70	42 %RH P
Velocity	5.51 -- 5.63	5.60 m/s P
Pendulum Impulse at 10 ms	2.20 -- 2.80	2.23 m/s P
Pendulum Impulse at 15 ms	3.30 -- 4.10	3.31 m/s P
Pendulum Impulse at 20 ms	4.40 -- 5.40	4.56 m/s P
Pendulum Impulse at 25 ms	5.40 -- 6.10	5.48 m/s P
Pendulum Impulse between 25 and 100 ms	5.50 -- 6.20	5.66 m/s P
Max D Plane Rotation	71.0 -- 81.0	73.4 degrees P
Time at Max Rotation	50.0 -- 70.0	61.6 ms P
Moment about OC	-44.0 -- -36.0	-39.8 Nm P
Moment Decay to Zero	102.0 -- 126.0	114.9 ms P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **3:41:57 PM**

Test Date: **10/30/2012**

VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C15016	8/15/2012
Denton	1716A	LC-440 Fy	5/21/2012
Denton	1716A	LC-440 Mx	5/21/2012
DentonATD	78051-342	184	5/30/2012
DentonATD	78051-342	174	5/30/2012
DentonATD	78051-342	185	5/30/2012

Test Time: **3:41:57 PM**Test Date: **10/30/2012**

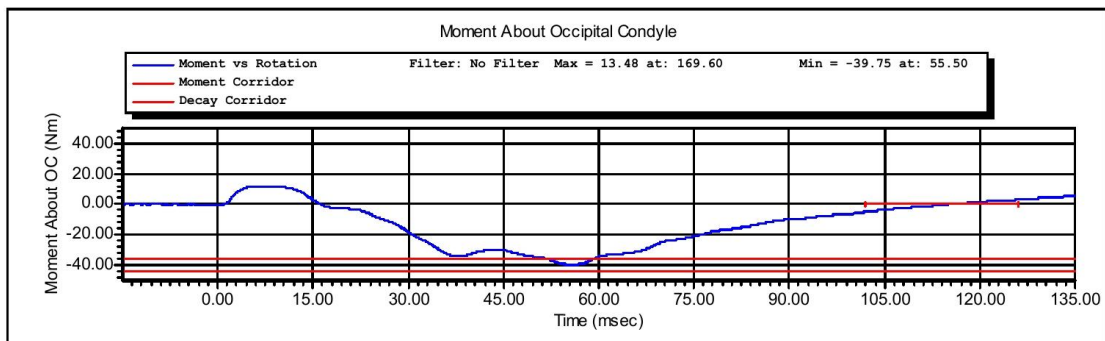
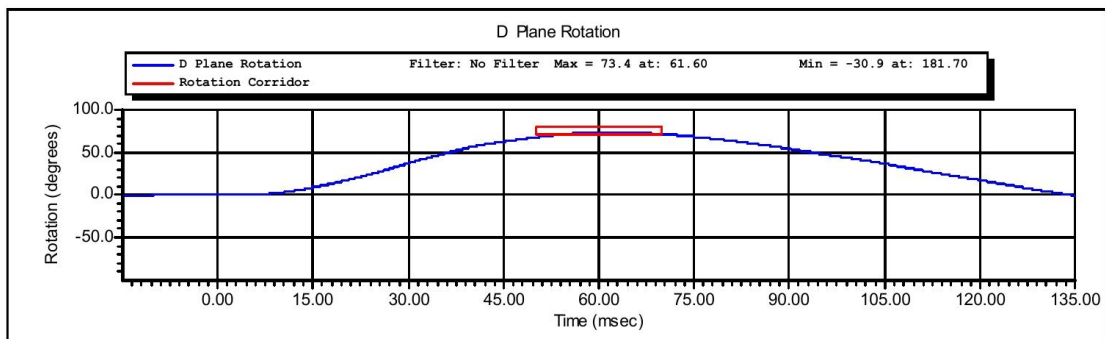


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Test Name:	Neck Pendulum	Revision:	8/24/2009
Sub Test Name:	Left Side	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Neck Flexion	Test Date:	10/30/2012
Test Number:	1	Test Time:	3:41:57 PM



Test Time: 3:41:57 PM

Test Date: 10/30/2012

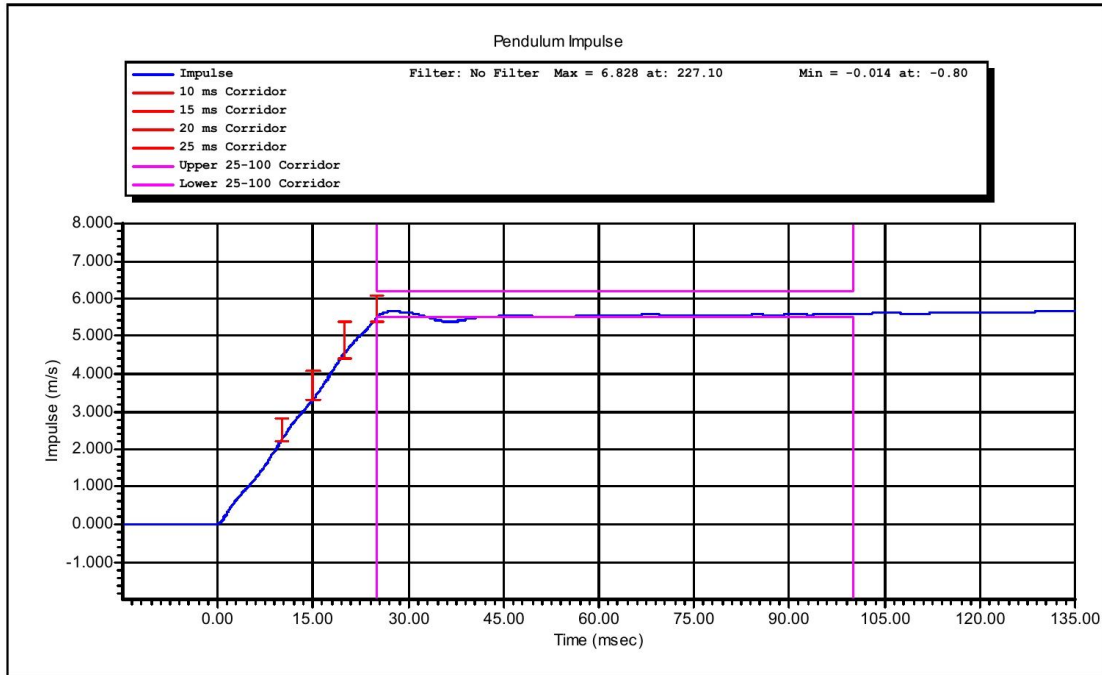
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Test Time: 3:41:57 PM

Test Date: 10/30/2012

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VERIFICATION REPORT

Test Name:	Shoulder Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Shoulder	Test Date:	11/1/2012
Test Number:	1	Test Time:	7:57:35 AM

Component Part Number	Component Serial Number
Left Arm 180-6011-1	1012
Shoulder Rib 180-3355	286

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	22.10 deg C P
Humidity	10.0 -- 70.0	34.2 %RH P
Velocity	4.20 -- 4.40	4.38 m/s P
Probe Acceleration	13.0 -- 18.0	15.3 g P
Shoulder Deflection	28.0 -- 37.0	29.95 mm P
T1 Acceleration	17.0 -- 22.0	20.3 g P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **7:57:35 AM**

Test Date: **11/1/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
FTSS	180-3881-1	DS-1845	5/17/2012
Endevco	7264-2000	P51875	5/17/2012

Test Time: 7:57:35 AM

Test Date: 11/1/2012

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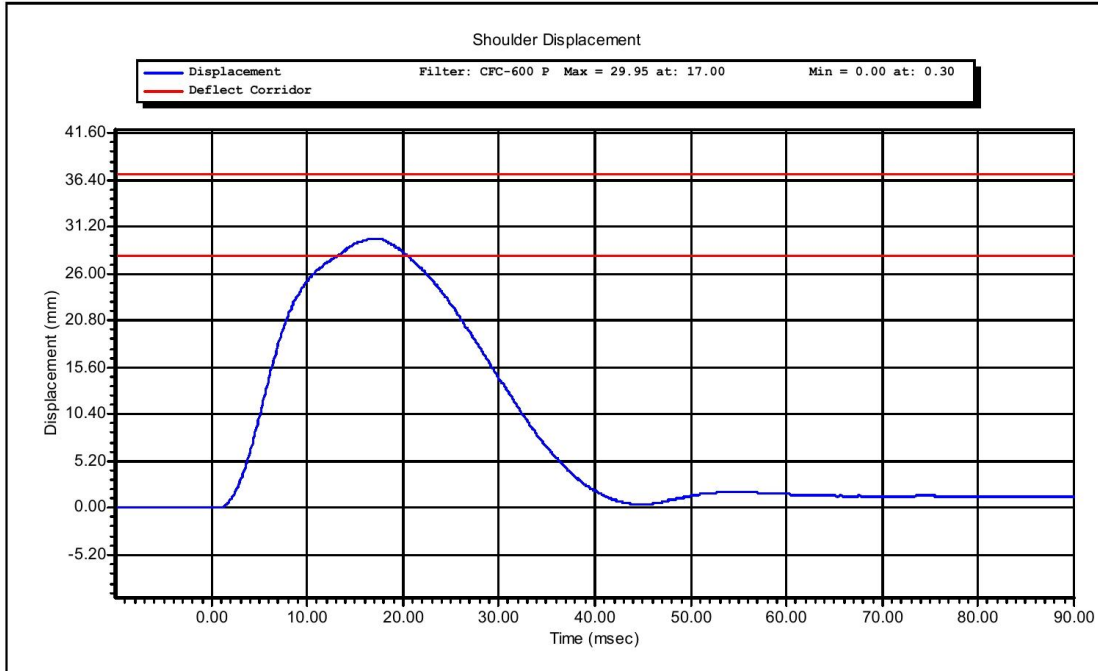


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Test Name:	Shoulder Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Shoulder	Test Date:	11/1/2012
Test Number:	1	Test Time:	7:57:35 AM



Test Time: 7:57:35 AM

Test Date: 11/1/2012

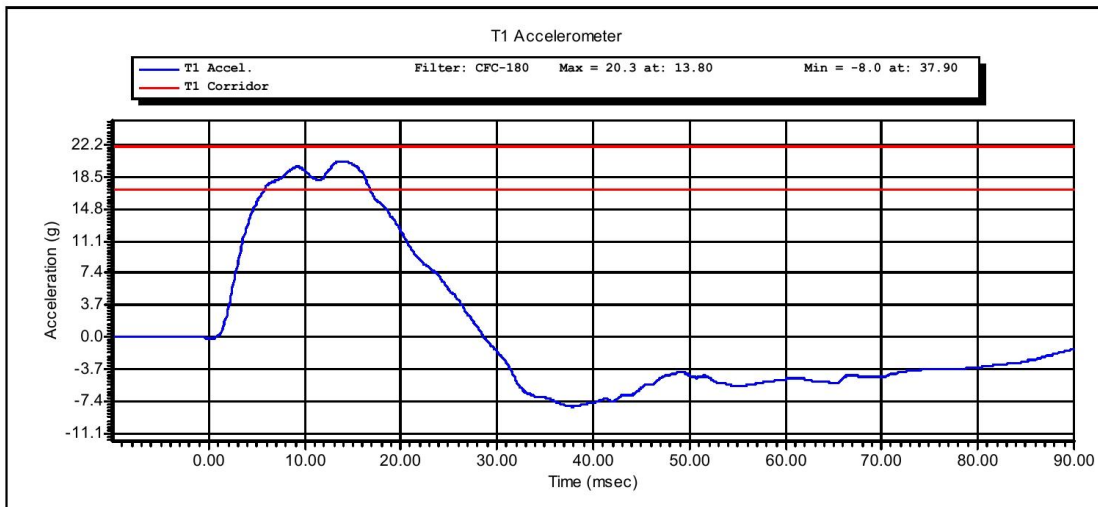
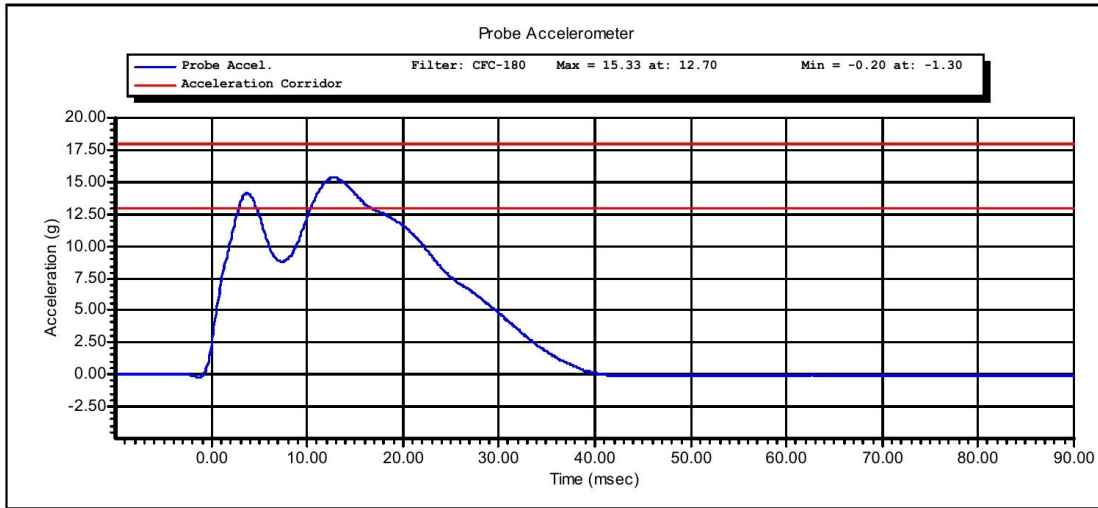
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Test Time: 7:57:35 AM

Test Date: 11/1/2012

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VERIFICATION REPORT

Test Name:	Thorax Impact without Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Thorax Without Arm	Test Date:	10/31/2012
Test Number:	1	Test Time:	3:13:53 PM

Component Part Number	Component Serial Number
Thorax Ribs 1, 2, 3 180-3362	DG6080, DG6081, DG7543

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.4 deg C P
Humidity	10 -- 70	31 %RH P
Velocity	4.20 -- 4.40	4.33 m/s P
Probe Acceleration	14.0 -- 18.0	16.1 g P
Upper Thorax Rib Deflection	32.0 -- 40.0	37.3 mm P
Mid Thorax Rib Deflection	39.0 -- 45.0	41.9 mm P
Lower Thorax Rib Deflection	35.0 -- 43.0	38.3 mm P
Upper Spine Acceleration T1	13.0 -- 17.0	15.9 g P
Lower Spine Acceleration T12	7.0 -- 11.0	9.7 g P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **3:13:53 PM**

Test Date: **10/31/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Servo	180-3881-1	DS-808	10/23/2012
Servo	180-3881-1	DS-1514	5/16/2012
Servo	180-3881-1	DS-011	10/23/2012
Endevco	7264-2000	P51875	5/17/2012
Endevco	7264-2000	P58796	5/17/2012

Test Time: 3:13:53 PM

Test Date: 10/31/2012

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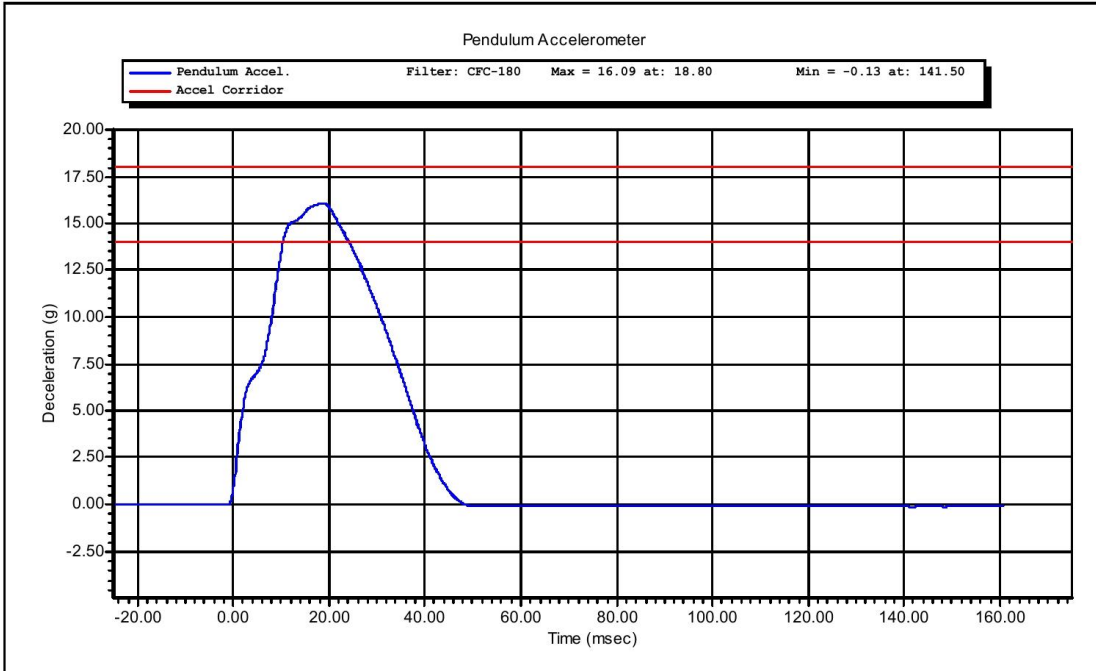


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Test Name:	Thorax Impact without Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Thorax Without Arm	Test Date:	10/31/2012
Test Number:	1	Test Time:	3:13:53 PM



Test Time: 3:13:53 PM

Test Date: 10/31/2012

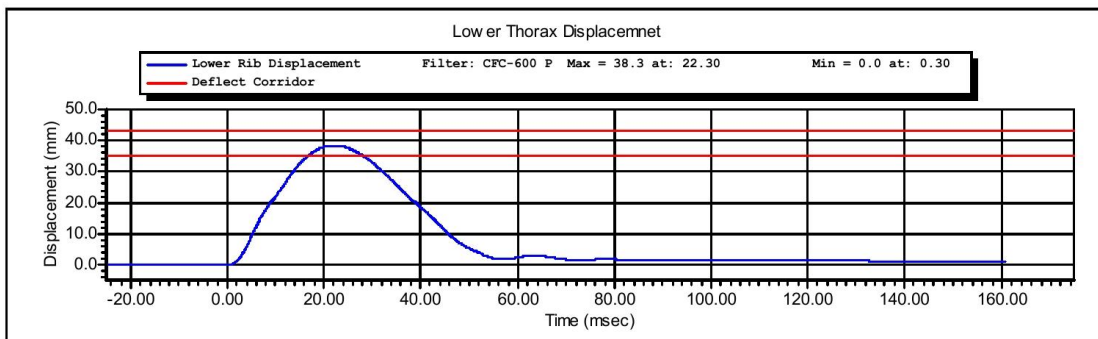
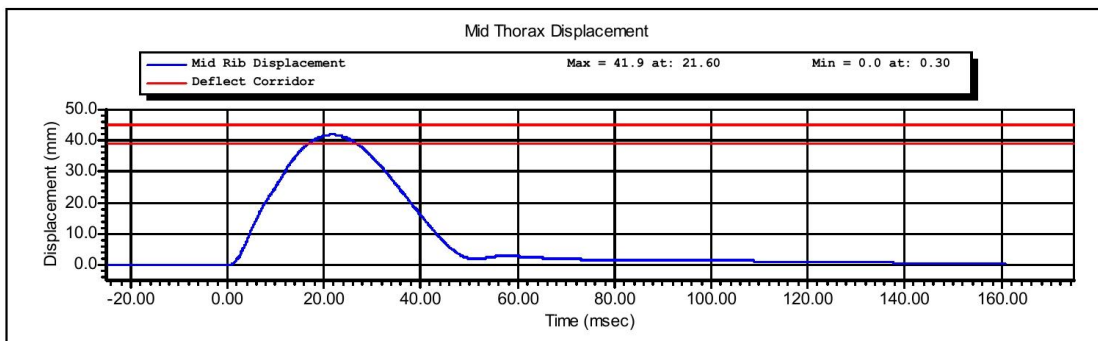
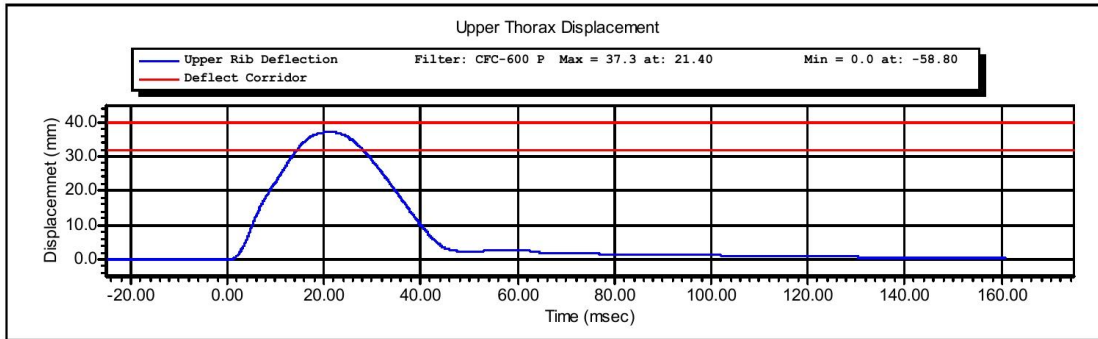
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Test Time: 3:13:53 PM

Test Date: 10/31/2012

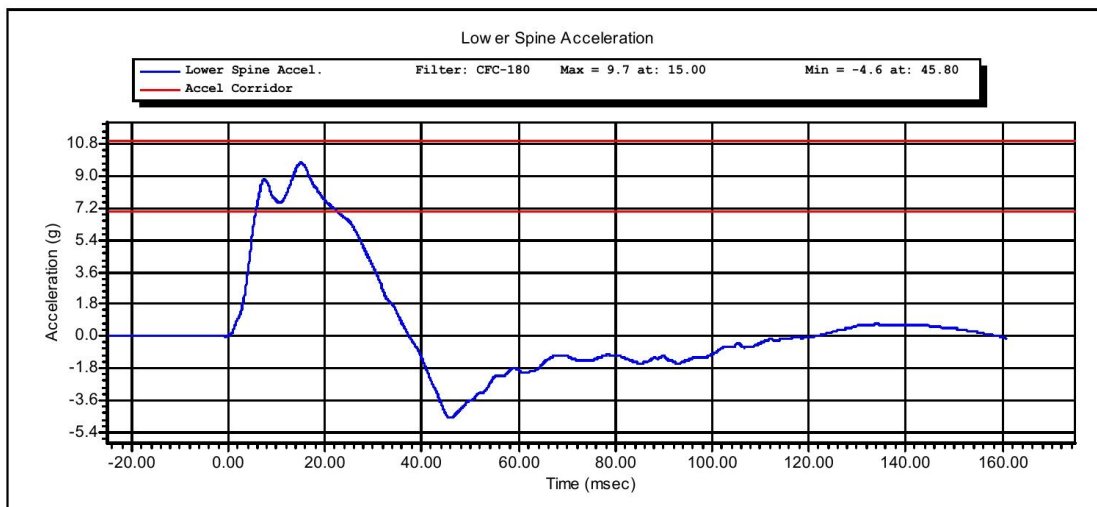
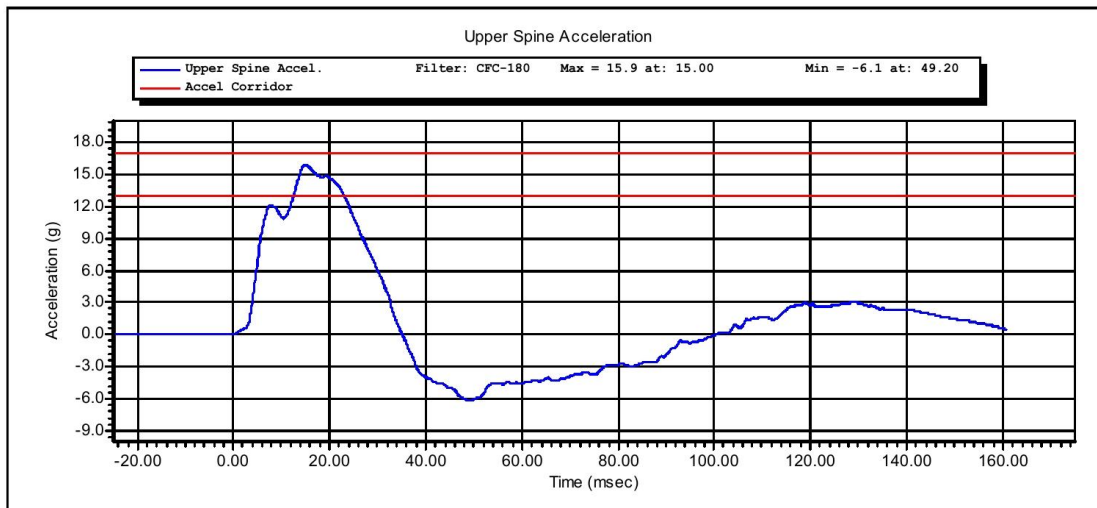
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Test Time: 3:13:53 PM

Test Date: 10/31/2012

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VERIFICATION REPORT

Test Name:	Thorax Impact with Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:		Test Date:	11/1/2012
Test Number:	1	Test Time:	9:40:35 AM

Component Part Number	Component Serial Number
Thorax Ribs 1, 2, 3 180-3362	DG6080, DG6081, DG7543
Shoulder Rib 180-3355	286
Left Arm 180-6011-1	1012

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.5 deg C P
Humidity	10 -- 70	35 %RH P
Velocity	6.60 -- 6.80	6.78 m/s P
Probe Acceleration after 5ms	30.0 -- 36.0	31.6 g P
Upper Thorax Rib Deflection	25.0 -- 32.0	27.3 mm P
Mid Thorax Rib Deflection	30.0 -- 36.0	32.4 mm P
Lower Thorax Rib Deflection	32.0 -- 38.0	35.2 mm P
Upper Spine Acceleration ("y")	34.0 -- 43.0	41.0 g P
Lower Spine Acceleration ("y")	29.0 -- 37.0	32.1 g P
Shoulder Deflection	31.0 -- 40.0	32.8 mm P

All test parameters are within specifications

 Technician: **M. Goehle**
 Supervisor: **D. Travale**

 Test Time: **9:40:35 AM**

 Test Date: **11/1/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Servo	180-3881-1	DS-808	10/23/2012
Servo	180-3881-1	DS-1514	5/16/2012
Servo	180-3881-1	DS-011	10/23/2012
Endevco	7264-2000	P51875	5/17/2012
Endevco	7264-2000	P58796	5/17/2012
FTSS	180-3881-1	DS-1845	5/17/2012

Test Time: 9:40:35 AM

Test Date: 11/1/2012

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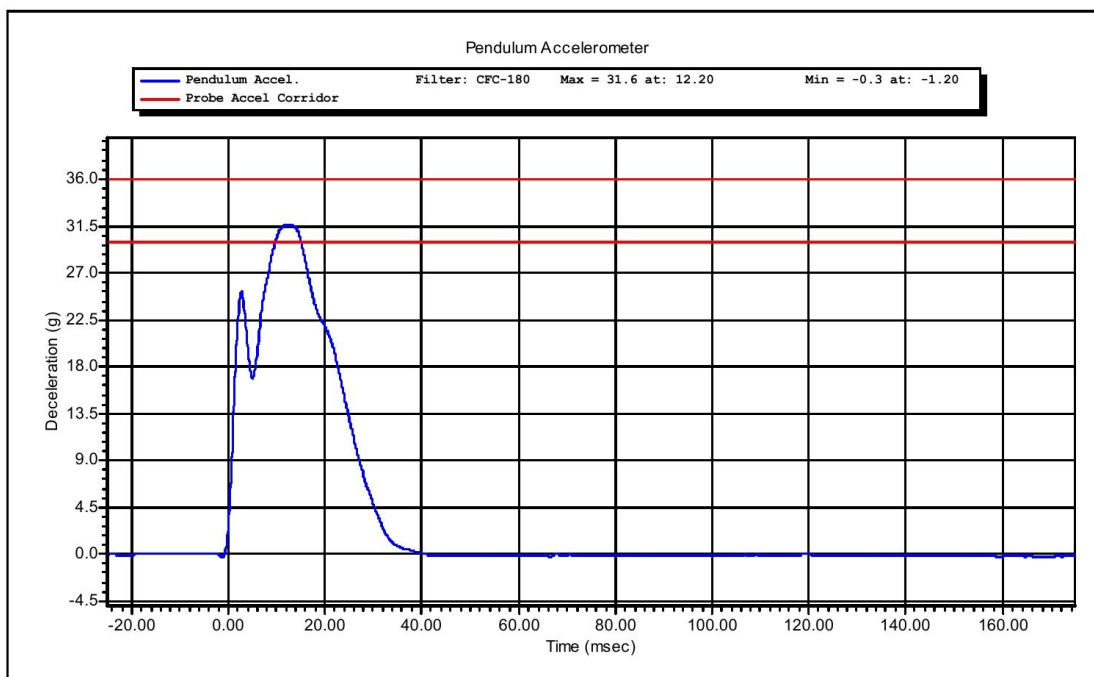


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Test Name:	Thorax Impact with Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:		Test Date:	11/1/2012
Test Number:	1	Test Time:	9:40:35 AM



Test Time: 9:40:35 AM

Test Date: 11/1/2012

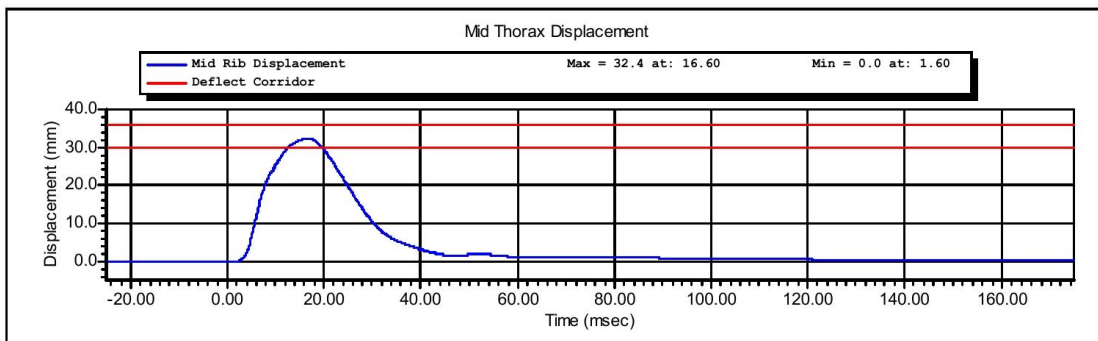
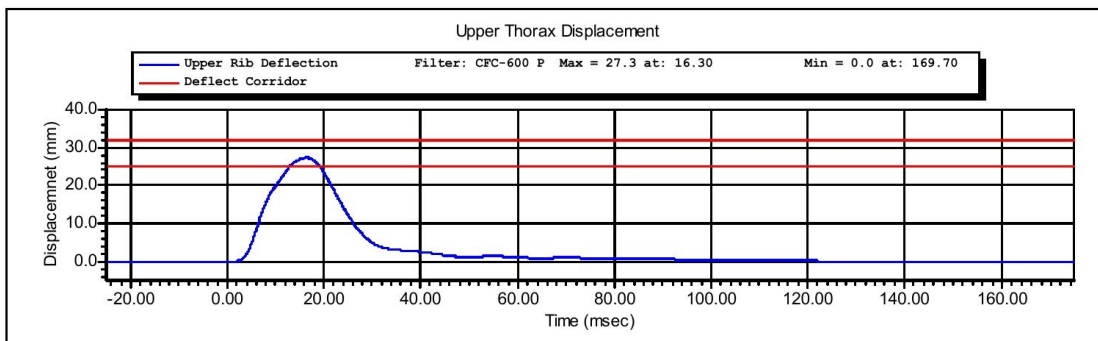
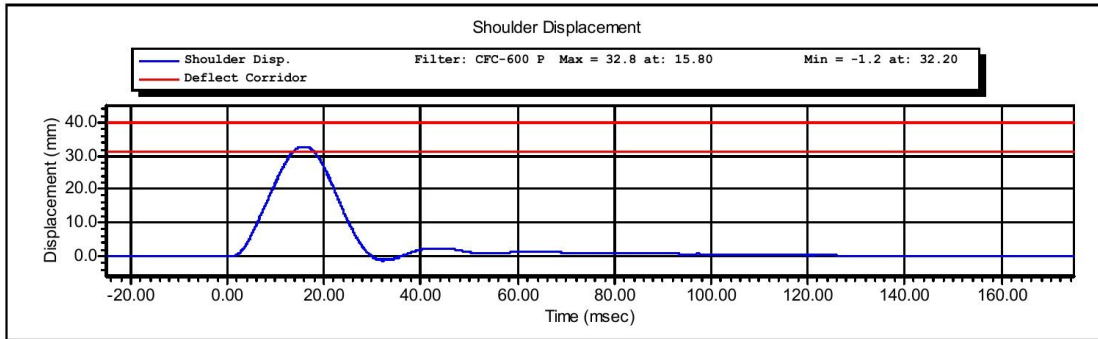
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Test Time: 9:40:35 AM

Test Date: 11/1/2012

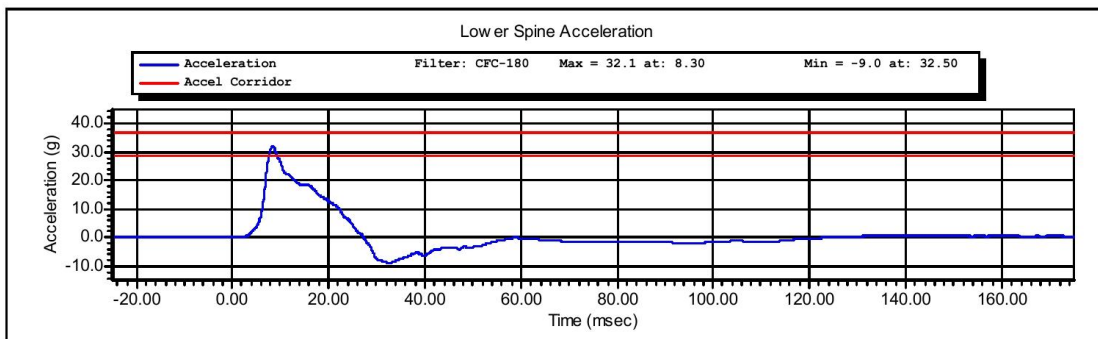
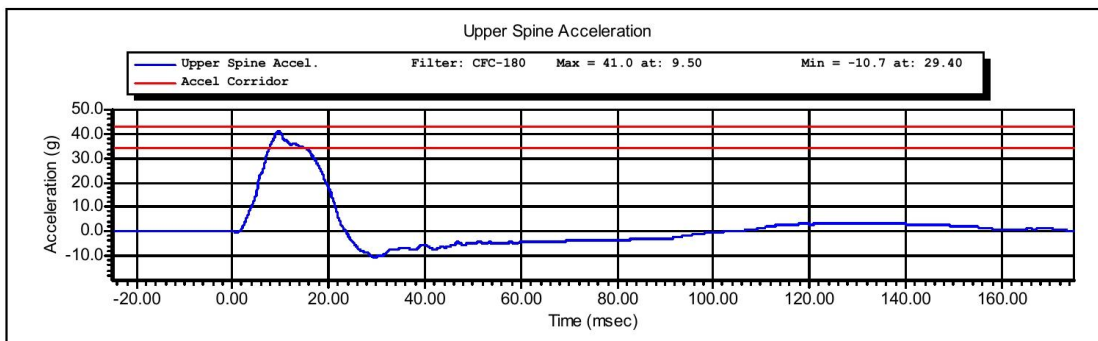
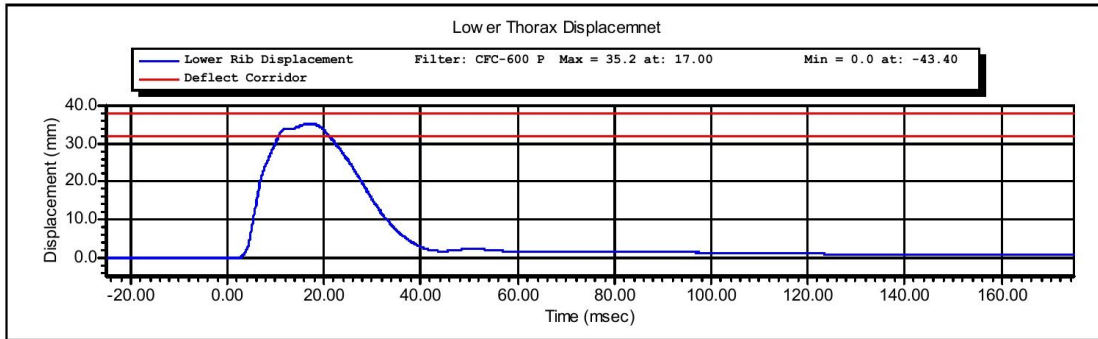
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Test Time: 9:40:35 AM

Test Date: 11/1/2012

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VERIFICATION REPORT

Test Name:	Abdominal Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Abdomen	Test Date:	10/31/2012
Test Number:	2	Test Time:	3:42:33 PM

Component Part Number	Component Serial Number
Upper Abdomen Rib	1581
Lower Abdomen Rib	1518

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.4 deg C P
Humidity	10 -- 70	32 %RH P
Velocity	4.20 -- 4.40	4.34 m/s P
Probe Acceleration	12.0 -- 16.0	13.7 g P
Upper Abdominal Rib Deflection	36.0 -- 47.0	44.4 mm P
Lower Abdominal Rib Deflection	33.0 -- 44.0	41.3 mm P
Lower Spine Acceleration - T12	9.0 -- 14.0	11.0 g P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **3:42:33 PM**

Test Date: **10/31/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Servo	180-3881-1	DS-015	10/23/2012
Servo	180-3881-1	DS-1774	10/23/2012
Endevco	7264-2000	P58796	5/17/2012

Test Time: 3:42:33 PM

Test Date: 10/31/2012

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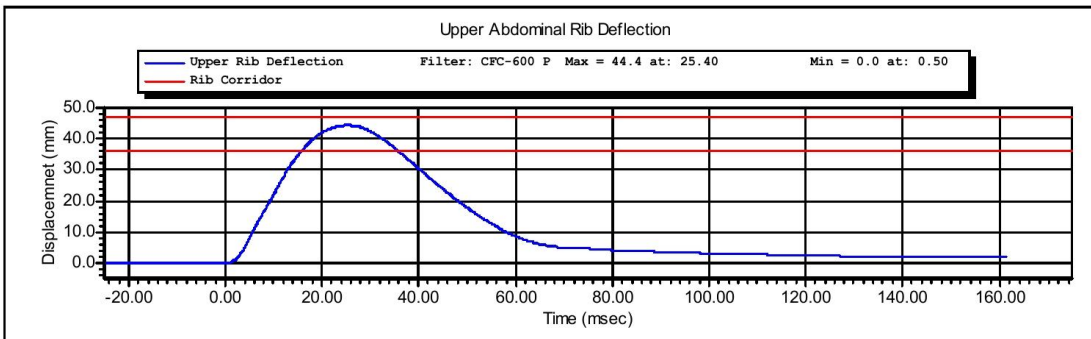
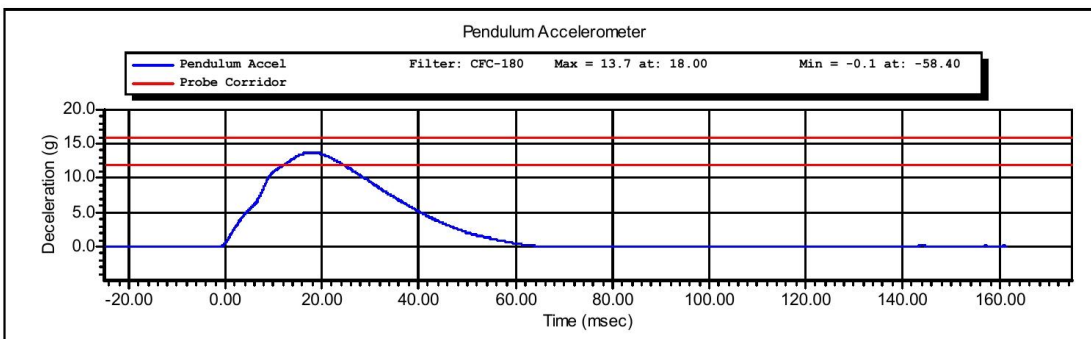


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Test Name:	Abdominal Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Abdomen	Test Date:	10/31/2012
Test Number:	2	Test Time:	3:42:33 PM



Test Time: 3:42:33 PM

Test Date: 10/31/2012

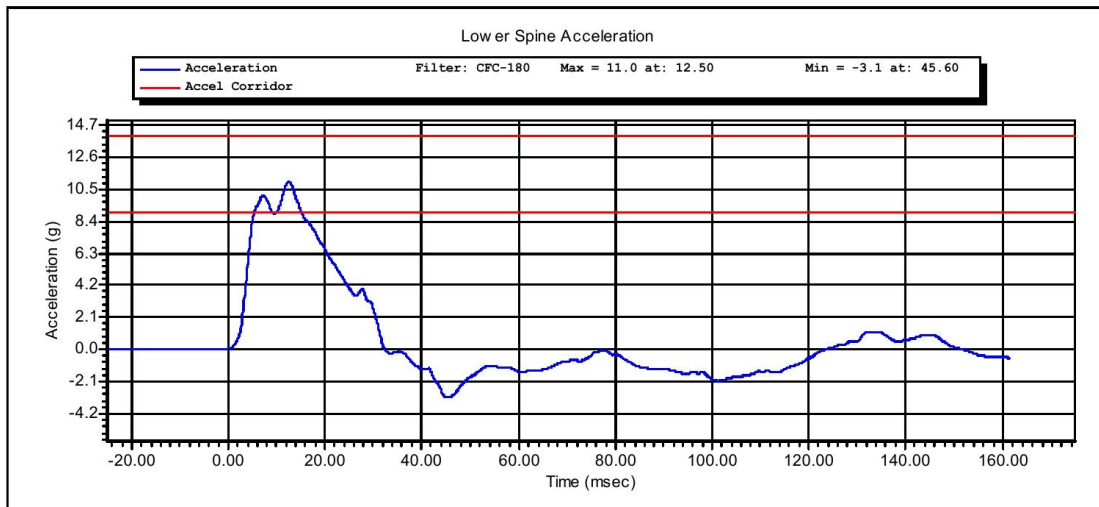
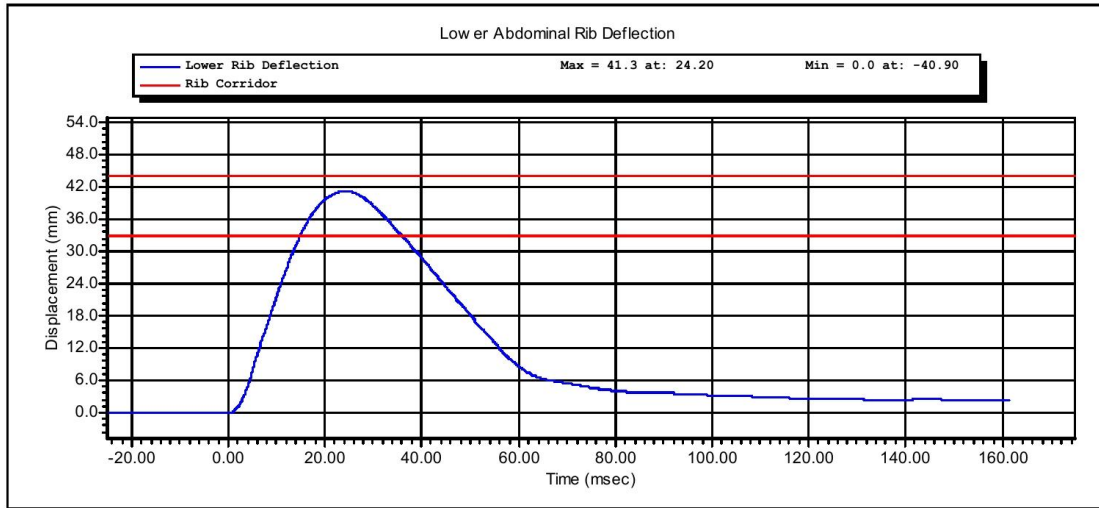
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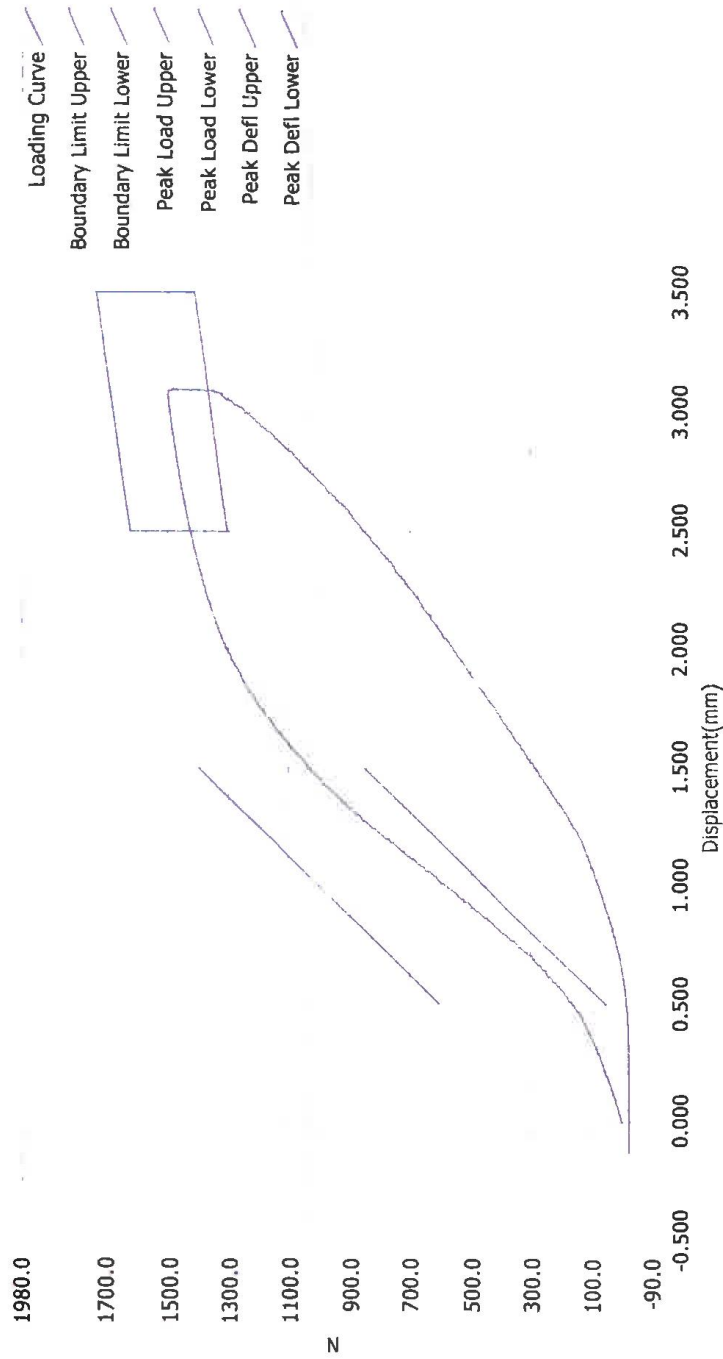


Test Time: 3:42:33 PM

Test Date: 10/31/2012

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Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Part Serial Number
46452

ATD Serial Number
N/A

Test ID
Cert ID

Test Date
9/22/2011

ATD Type
SIDIIs

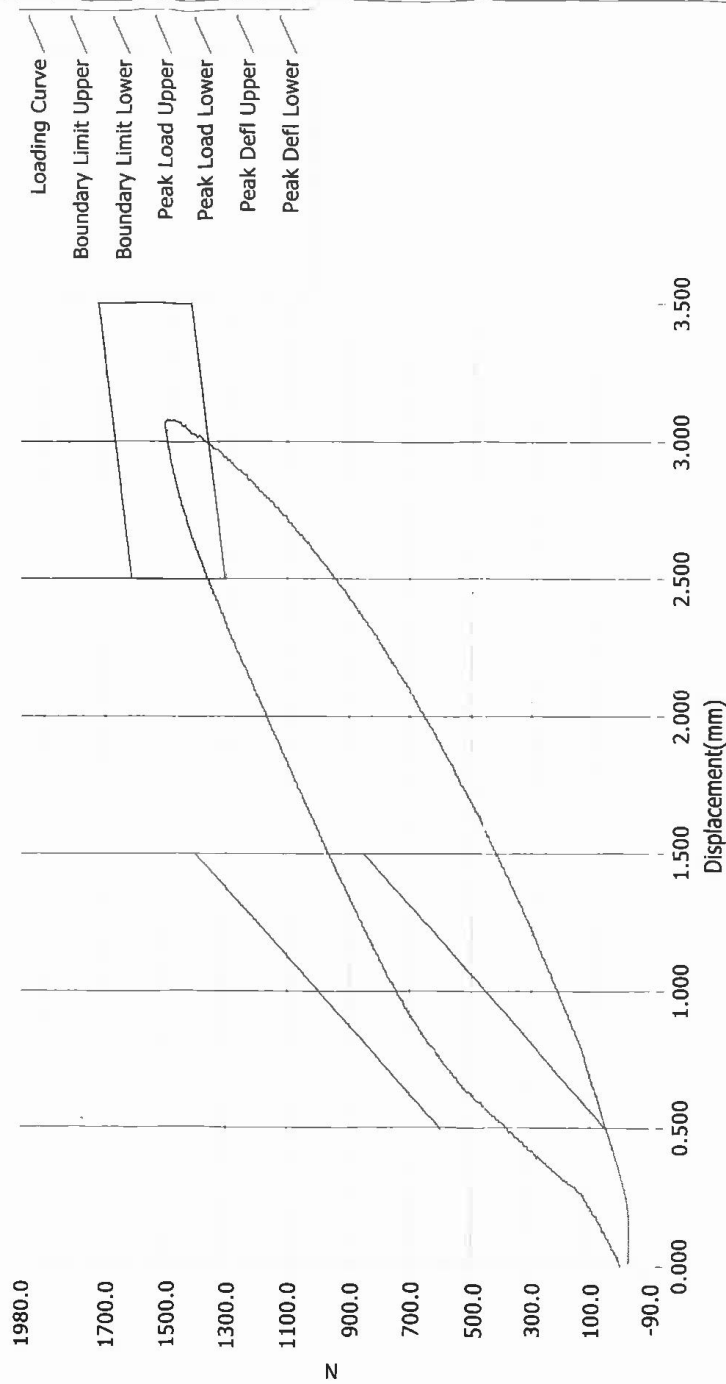
Test Time
8:20 PM

DG-8012-Pre Cert for 6/11/12

Current Date : 9/22/2011

Current Time : 20:21:01

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab
 DG-8612-Crash 6/11/12
 Part Serial Number
 ATD Serial Number
 SIDIIs
 Test Date
 9/24/2010
 ATD Type
 SIDIIs
 Test Time
 6:35 AM

Current Date : 9/24/2010 Current Time : 06:36:03

VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Acetabulum Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Pelvis Acetabulum	Test Date:	10/31/2012
Test Number:	1	Test Time:	2:05:56 PM

Component Part Number	Component Serial Number
180-4343 Pelvis Flesh	DJ0959
Humanetics Cert Plug - 1492N	46452
FTSS Test Plug -1499N	36544

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.4 deg C P
Humidity	10 -- 70	30 %RH P
Velocity	6.60 -- 6.80	6.64 m/s P
Peak Probe Acceleration	38.0 -- 47.0	45.0 g P
Peak Pelvis Acceleration	34.0 -- 42.0	39.0 g P
Peak Acetabulum Force	3.60 -- 4.30	3.84 kN P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **2:05:56 PM**

Test Date: **10/31/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Endevco	7264-2000	P63561	5/17/2012
DentonATD	3249J	LC-267Fy	5/21/2012

Test Time: 2:05:56 PM

Test Date: 10/31/2012

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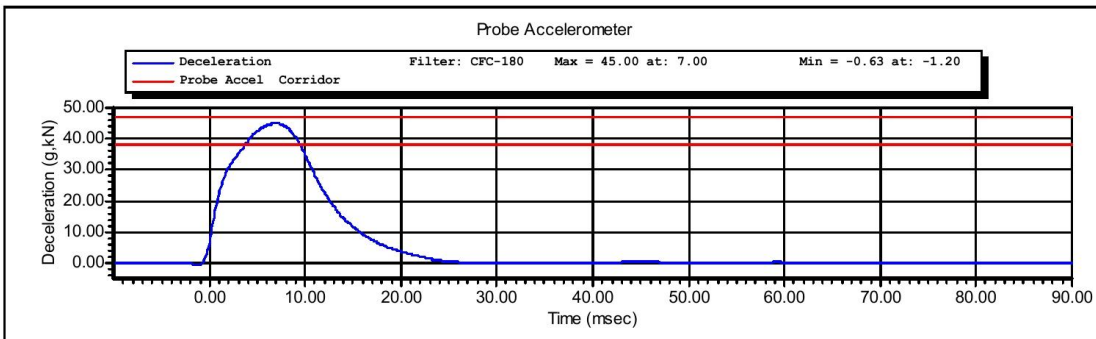
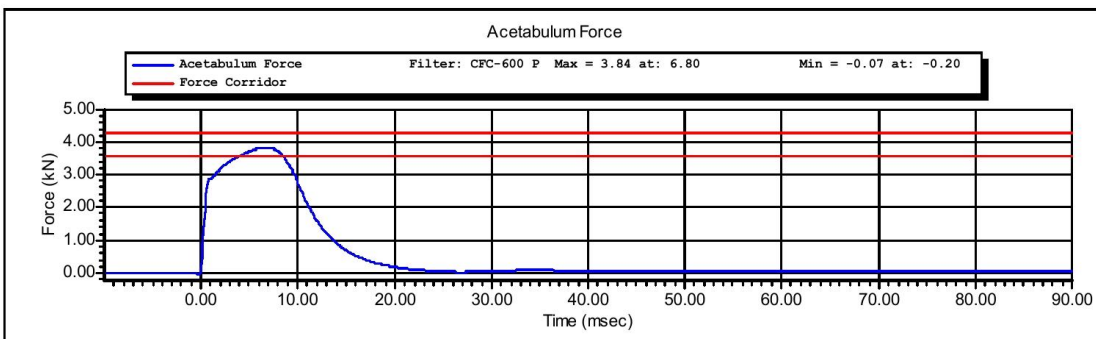


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Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Acetabulum Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Pelvis Acetabulum	Test Date:	10/31/2012
Test Number:	1	Test Time:	2:05:56 PM



Test Time: **2:05:56 PM**

Test Date: **10/31/2012**

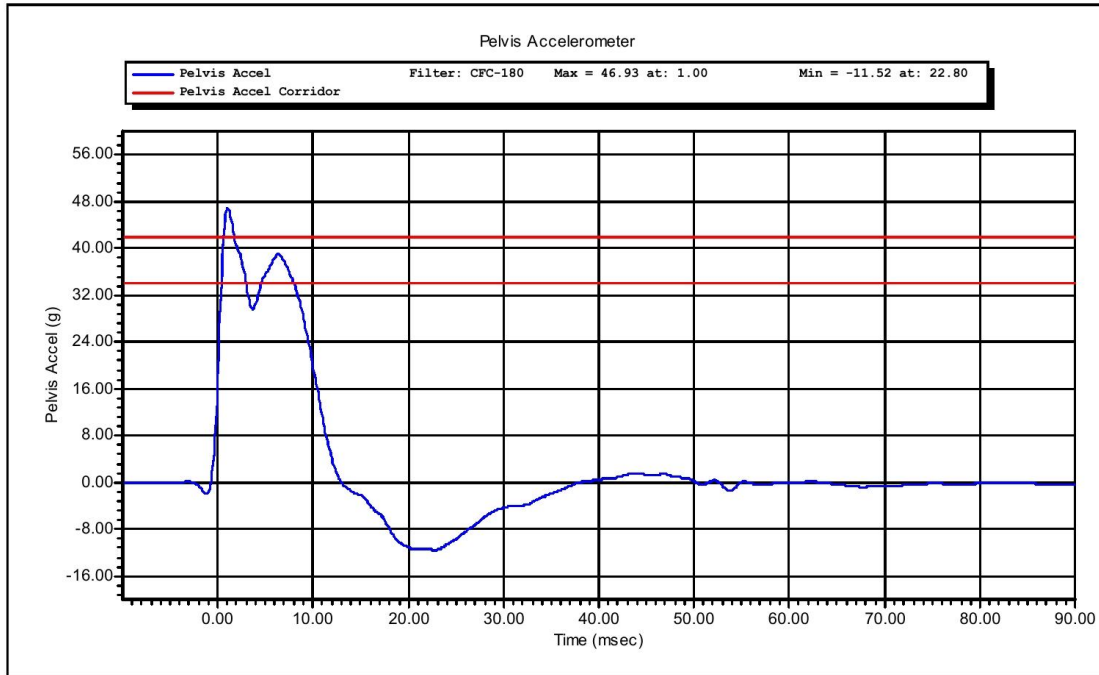
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Test Time: 2:05:56 PM

Test Date: 10/31/2012

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VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Iliac Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Pelvis Iliac Impact	Test Date:	10/31/2012
Test Number:	1	Test Time:	11:44:03 AM

Component Part Number	Component Serial Number
180-4343 Pelvis Flesh	DJ0959

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	22.0 deg C P
Humidity	10 -- 70	30 %RH P
Velocity	4.20 -- 4.40	4.33 m/s P
Peak Probe Acceleration	36.0 -- 45.0	39.4 g P
Peak Pelvis Acceleration	28.0 -- 39.0	33.1 g P
Peak Iliac Force	4.10 -- 5.10	4.40 kN P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **11:44:03 AM**

Test Date: **10/31/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Endevco	7264-2000	P63561	5/17/2012
DentonATD	3228J	LC-281Fy	5/21/2012

Test Time: 11:44:03 AM

Test Date: 10/31/2012

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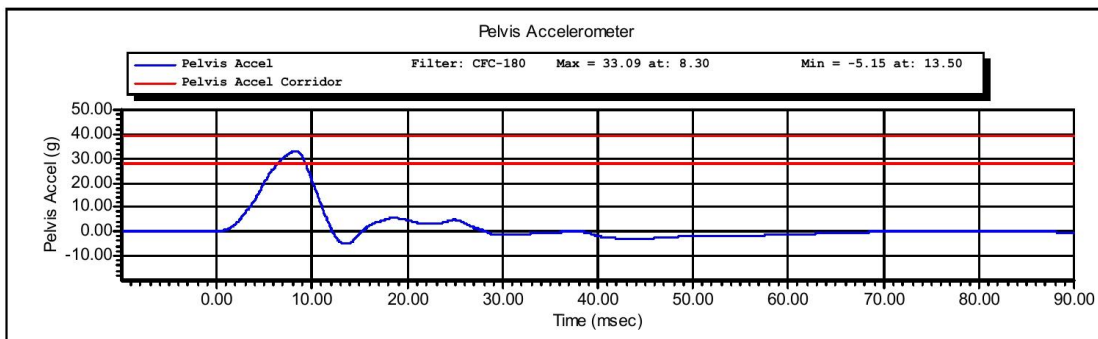
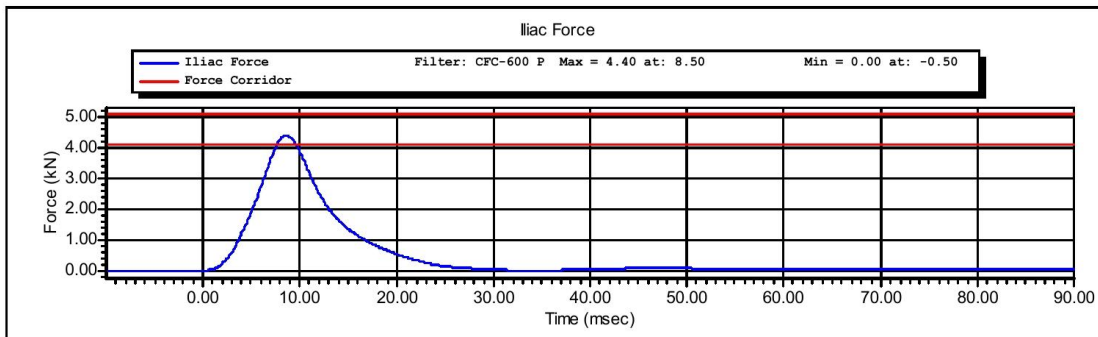


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Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Iliac Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Pelvis Iliac Impact	Test Date:	10/31/2012
Test Number:	1	Test Time:	11:44:03 AM



Test Time: **11:44:03 AM**

Test Date: **10/31/2012**

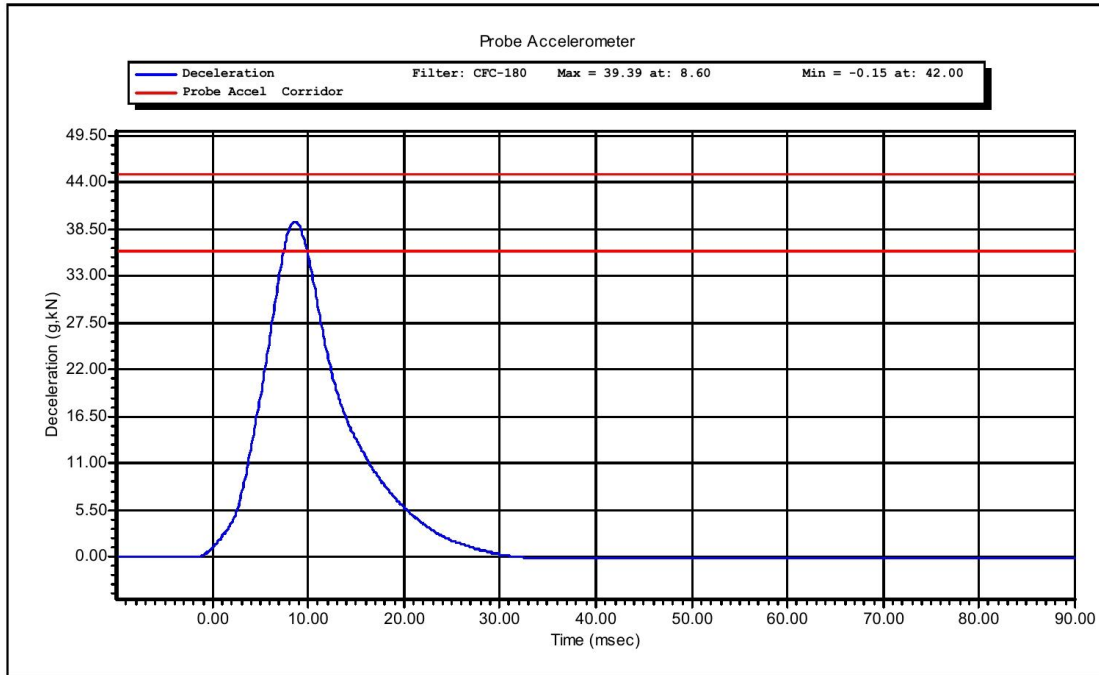
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Test Time: 11:44:03 AM

Test Date: 10/31/2012

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CALIBRATION TEST RESULTS

POST-TEST

SID-IIS 5TH PERCENTILE FEMALE - DRIVER ATD

SERIAL NO: 8012

(CONFIGURED FOR LEFT SIDE IMPACT)



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SID-IIsD External Measurements

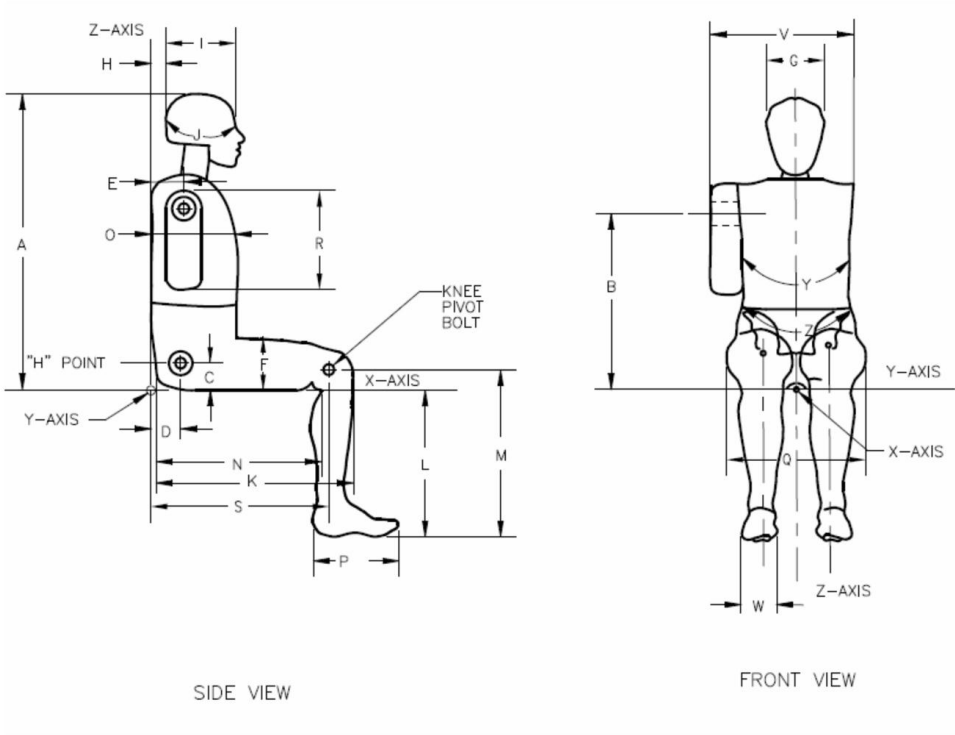
NHTSA ATD S/N DG8012

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Sitting Height	772.0 - 788.0	781	Yes
B	Shoulder Pivot Height	437.0 - 453.0	444	Yes
C	H-Point Height	79.0 - 89.0	85	Yes
D	H-Point from Seat Back	141.0 - 151.0	145	Yes
E	Shoulder Pivot from Backline	97.0 - 107.0	101	Yes
F	Thigh Clearance	119.0 - 135.0	128	Yes
G	Head Breadth	140.0 - 148.0	145	Yes
H	Head Back from Backline	40.0 - 46.0	43	Yes
I	Head Depth	178.0 - 188.0	183	Yes
J	Head Circumference	541.0 - 551.0	545	Yes
K	Buttock to Knee Length	514.0 - 540.0	529	Yes
L	Popliteal Height	343.0 - 369.0	348	Yes
M	Knee Pivot to Floor Height	393.0 - 409.0	398	Yes
N	Buttock Popliteal Length	416.0 - 442.0	431	Yes
O	Chest Depth without Jacket	195.0 - 211.0	205	Yes
P	Foot Length (right)	216.0 - 232.0	222	Yes
Q	Hip Breadth	313.0 - 323.0	320	Yes
R	Arm Length	249.0 - 259.0	251	Yes
S	Knee Joint to Seat back	478.0 - 493.0	481	Yes
V	Shoulder Width (only one arm installed)	341.0 - 357.0	350	Yes
W	Foot Width (right)	78.0 - 94.0	84	Yes
Y	Chest Circumference with Jacket	851.0 - 881.0	864	Yes
Z	Waist Circumference	761.0 - 791.0	767	Yes

Technician: M. Goehle

11/12/2012

SID-IIsD External Dimension Reference Diagram



VERIFICATION REPORT

Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Head Drop	Test Date:	11/9/2012
Test Number:	1	Test Time:	9:00:05 AM

Component Part Number	Component Serial Number
Head Skin - 180-1002	1362

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.4 deg C P
Humidity	10 -- 70	26 %RH P
Resultant Acceleration	115.0 -- 137.0	121.6 g P
Oscillation	0.0 -- 15.0	0.0 % P
Fore-Aft Acceleration	-15.0 -- 15.0	-3.3 g P

All test parameters are within specifications

Technician: **M.Goehle**Supervisor: **D. Travale**Test Time: **9:00:05 AM**Test Date: **11/9/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Endevco	7264-2000	P49185	5/18/2012
Endevco	7264-2000	P51949	5/17/2012
Endevco	7264-2000	P51991	5/18/2012

Test Time: 9:00:05 AM

Test Date: 11/9/2012

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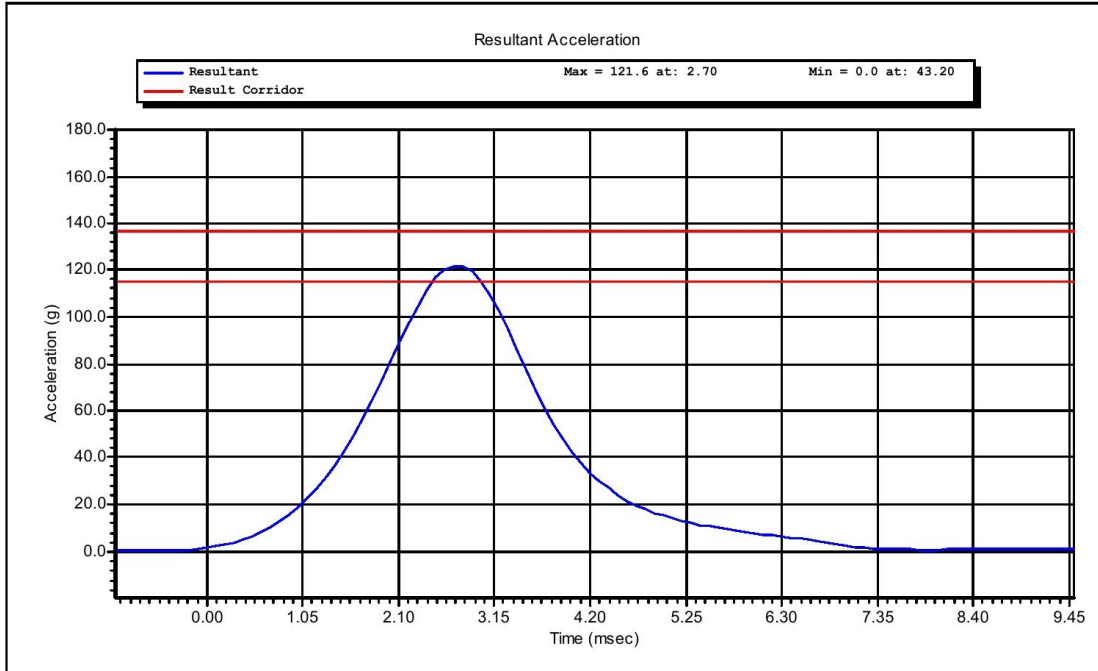


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Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Head Drop	Test Date:	11/9/2012
Test Number:	1	Test Time:	9:00:05 AM



Test Time: 9:00:05 AM

Test Date: 11/9/2012

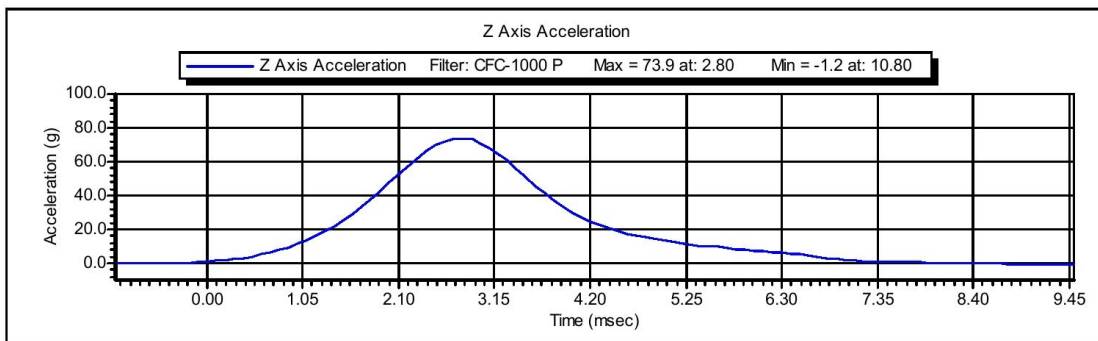
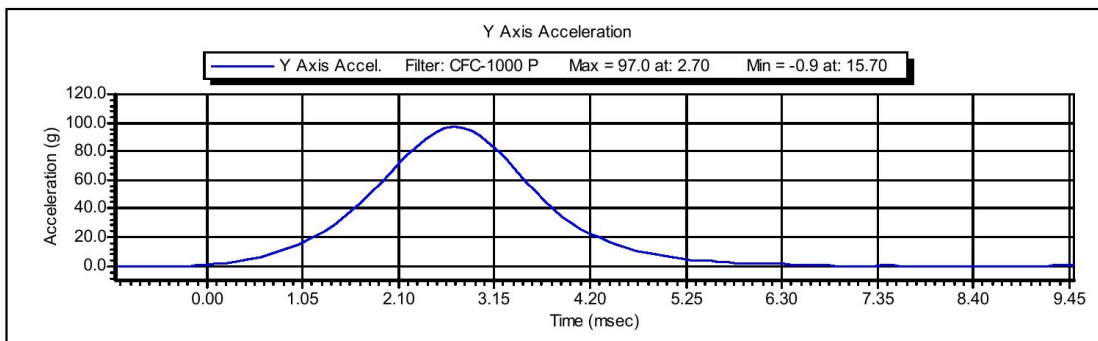
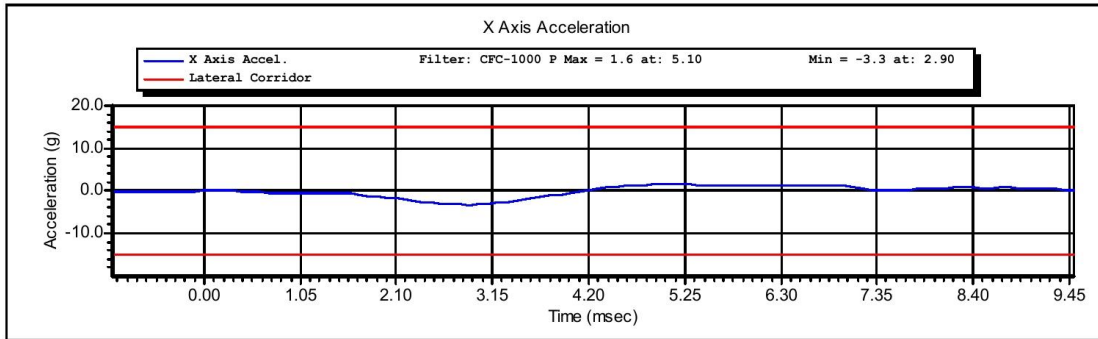
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Test Time: 9:00:05 AM

Test Date: 11/9/2012

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VERIFICATION REPORT

Test Name:	Neck Pendulum	Revision:	8/24/2009
Sub Test Name:	Left Side	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Neck Flexion	Test Date:	11/9/2012
Test Number:	1	Test Time:	9:30:45 AM

Component Part Number	Component Serial Number
Neck - 180-2000	DG7061

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.4 deg C P
Humidity	10 -- 70	26 %RH P
Velocity	5.51 -- 5.63	5.60 m/s P
Pendulum Impulse at 10 ms	2.20 -- 2.80	2.22 m/s P
Pendulum Impulse at 15 ms	3.30 -- 4.10	3.37 m/s P
Pendulum Impulse at 20 ms	4.40 -- 5.40	4.59 m/s P
Pendulum Impulse at 25 ms	5.40 -- 6.10	5.54 m/s P
Pendulum Impulse between 25 and 100 ms	5.50 -- 6.20	5.65 m/s P
Max D Plane Rotation	71.0 -- 81.0	72.3 degrees P
Time at Max Rotation	50.0 -- 70.0	60.2 ms P
Moment about OC	-44.0 -- -36.0	-41.7 Nm P
Moment Decay to Zero	102.0 -- 126.0	114.4 ms P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **9:30:45 AM**

Test Date: **11/9/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C15016	8/15/2012
Denton	1716A	LC-440 Fy	5/21/2012
Denton	1716A	LC-440 Mx	5/21/2012
DentonATD	78051-342	184	5/30/2012
DentonATD	78051-342	174	5/30/2012
DentonATD	78051-342	185	5/30/2012

Test Time: 9:30:45 AM

Test Date: 11/9/2012

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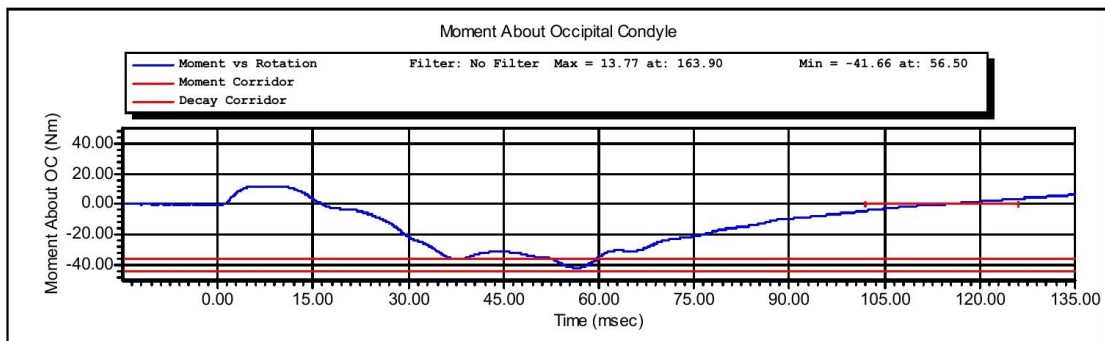
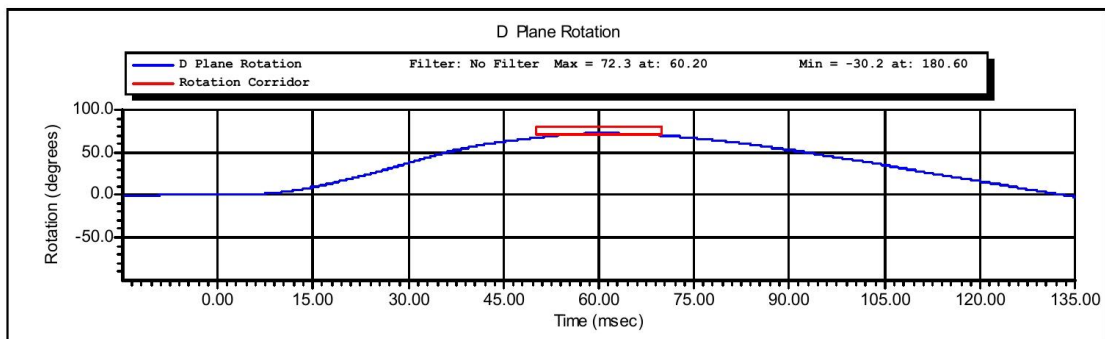


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Test Name:	Neck Pendulum	Revision:	8/24/2009
Sub Test Name:	Left Side	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Neck Flexion	Test Date:	11/9/2012
Test Number:	1	Test Time:	9:30:45 AM



Test Time: 9:30:45 AM

Test Date: 11/9/2012

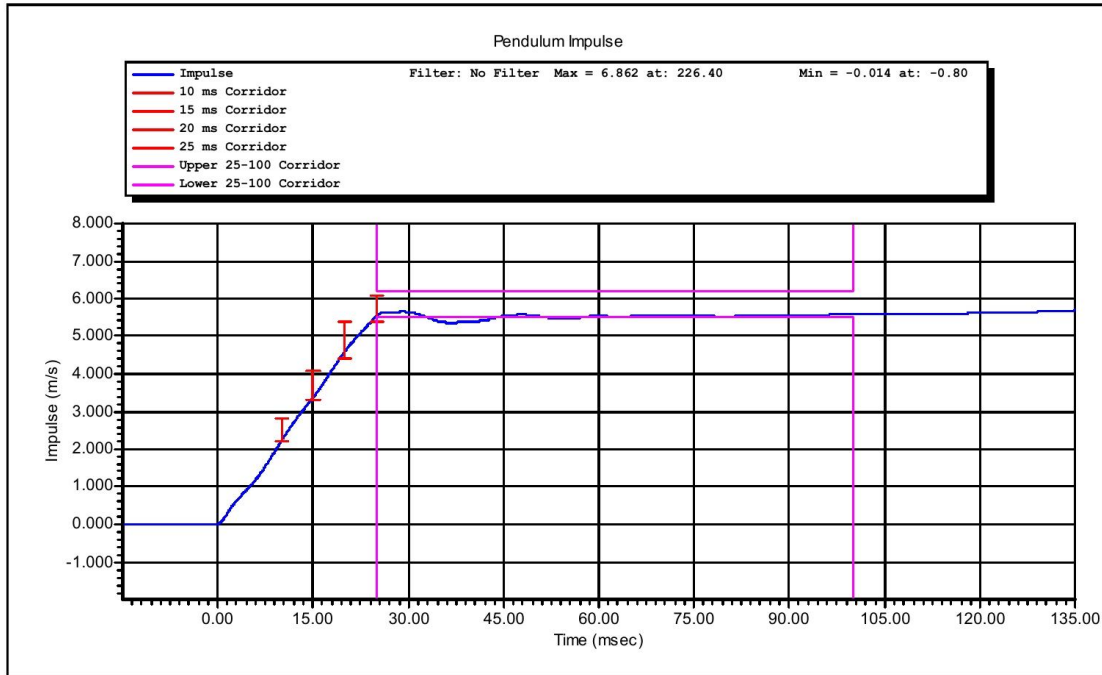
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Test Time: 9:30:45 AM

Test Date: 11/9/2012

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VERIFICATION REPORT

Test Name:	Shoulder Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Shoulder	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:06:57 PM

Component Part Number	Component Serial Number
Left Arm 180-6011-1	1012
Shoulder Rib 180-3355	286

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.60 deg C P
Humidity	10.0 -- 70.0	31.1 %RH P
Velocity	4.20 -- 4.40	4.35 m/s P
Probe Acceleration	13.0 -- 18.0	15.3 g P
Shoulder Deflection	28.0 -- 37.0	28.86 mm P
T1 Acceleration	17.0 -- 22.0	19.9 g P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **3:06:57 PM**

Test Date: **11/9/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
FTSS	180-3881-1	DS-1845	5/17/2012
Endevco	7264-2000	P51875	5/17/2012

Test Time: 3:06:57 PM

Test Date: 11/9/2012

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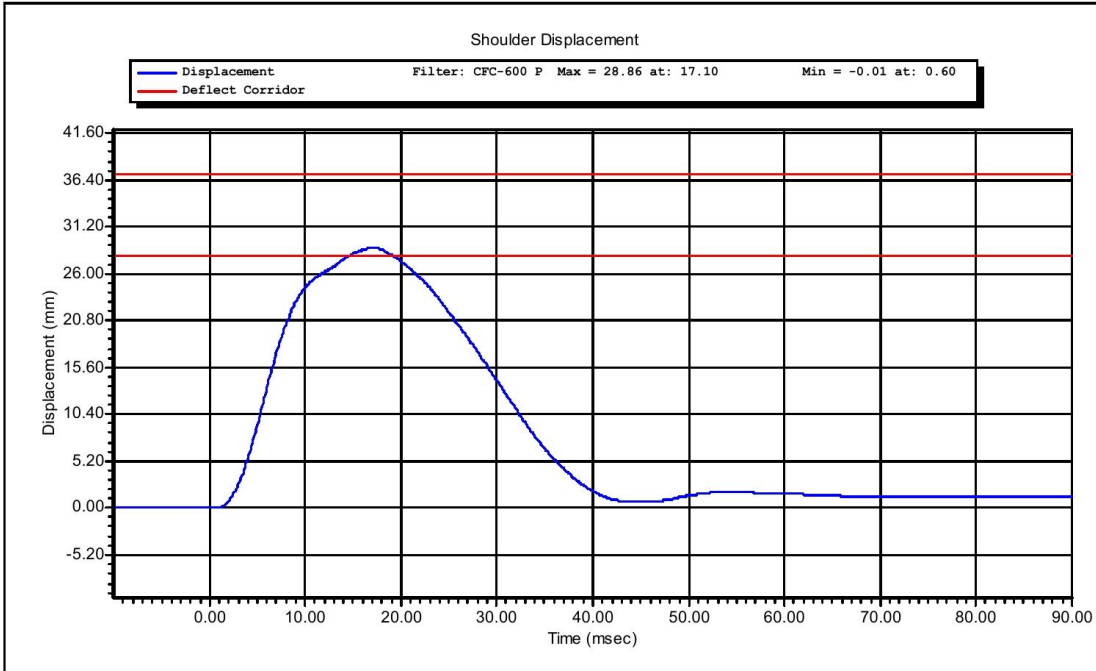


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Test Name:	Shoulder Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Shoulder	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:06:57 PM



Test Time: 3:06:57 PM

Test Date: 11/9/2012

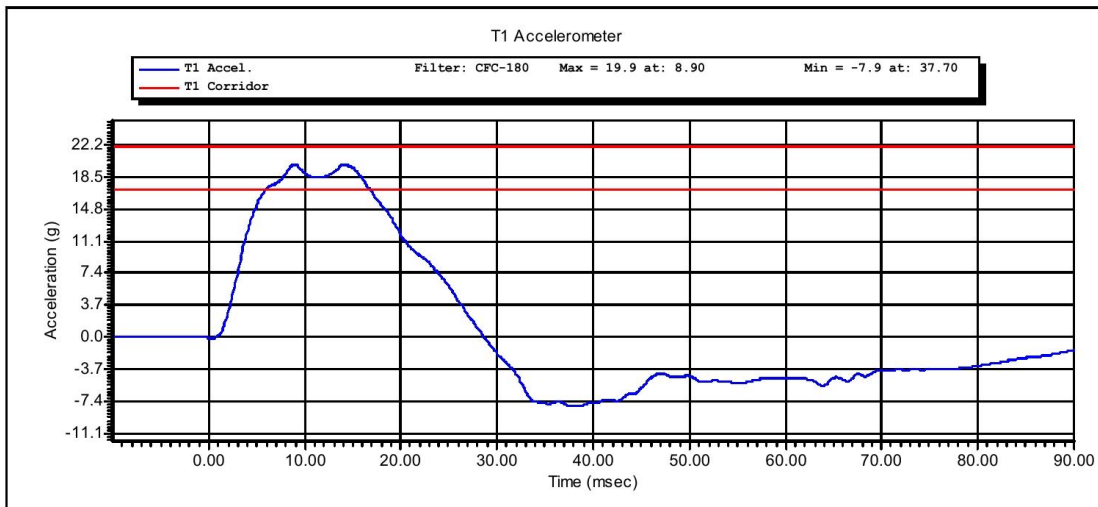
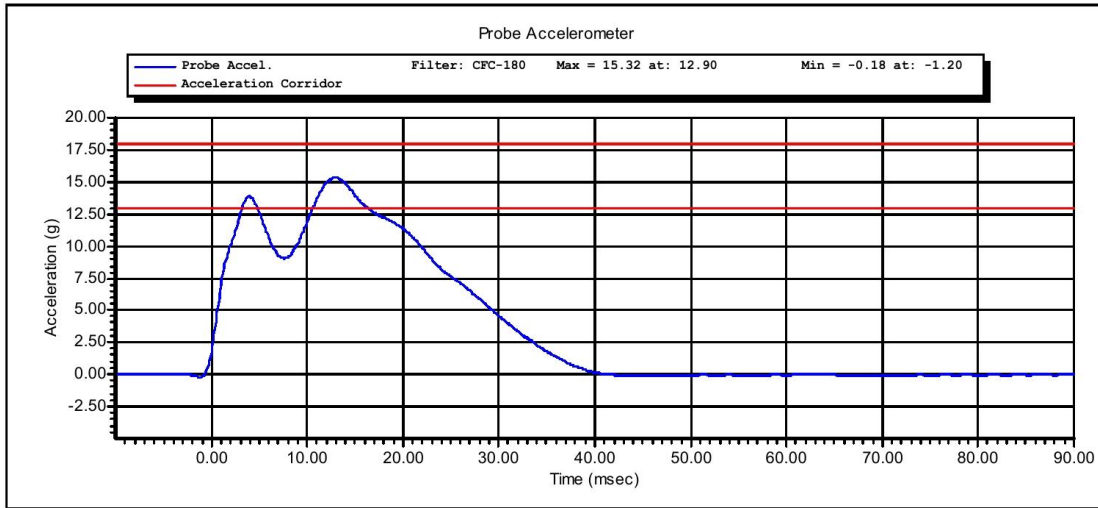
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Test Time: 3:06:57 PM

Test Date: 11/9/2012

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VERIFICATION REPORT

Test Name:	Thorax Impact without Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Thorax With Arm	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:18:42 PM

Component Part Number	Component Serial Number
Thorax Ribs 1, 2, 3 180-3362	DG6080, DG6081, DG7543

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.6 deg C P
Humidity	10 -- 70	31 %RH P
Velocity	4.20 -- 4.40	4.36 m/s P
Probe Acceleration	14.0 -- 18.0	16.3 g P
Upper Thorax Rib Deflection	32.0 -- 40.0	36.9 mm P
Mid Thorax Rib Deflection	39.0 -- 45.0	42.5 mm P
Lower Thorax Rib Deflection	35.0 -- 43.0	39.8 mm P
Upper Spine Acceleration T1	13.0 -- 17.0	15.9 g P
Lower Spine Acceleration T12	7.0 -- 11.0	9.5 g P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **3:18:42 PM**

Test Date: **11/9/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Servo	180-3881-1	DS-808	10/23/2012
Servo	180-3881-1	DS-1514	5/16/2012
Servo	180-3881-1	DS-011	10/23/2012
Endevco	7264-2000	P51875	5/17/2012
Endevco	7264-2000	P58796	5/17/2012

Test Time: 3:18:42 PM

Test Date: 11/9/2012

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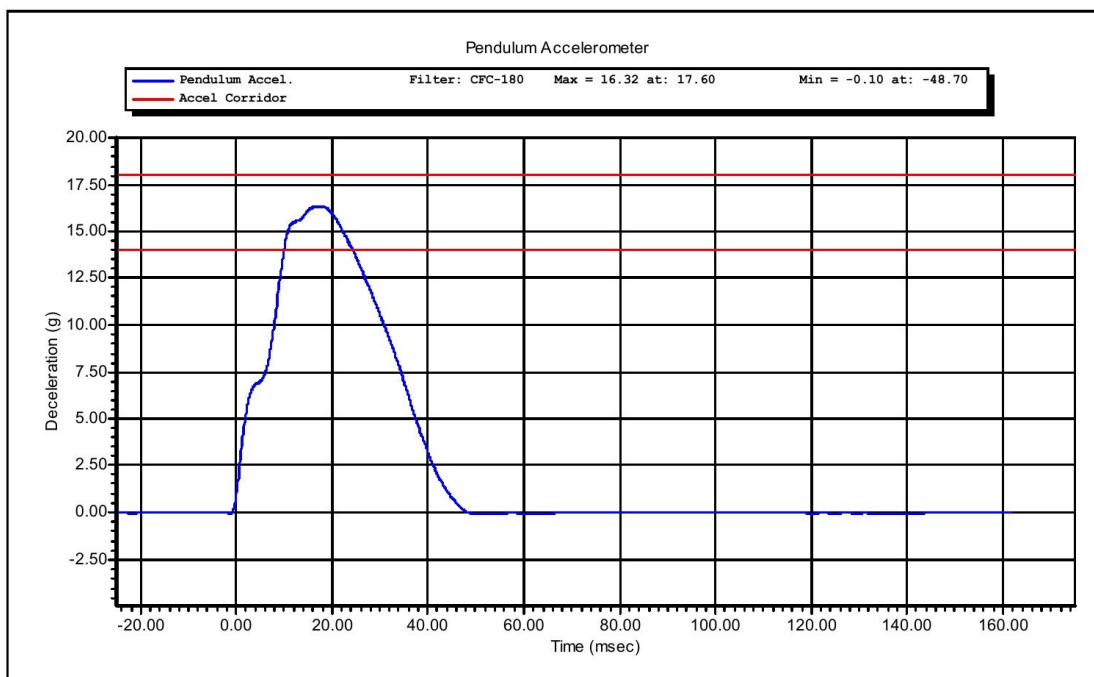


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Test Name:	Thorax Impact without Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Thorax With Arm	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:18:42 PM



Test Time: 3:18:42 PM

Test Date: 11/9/2012

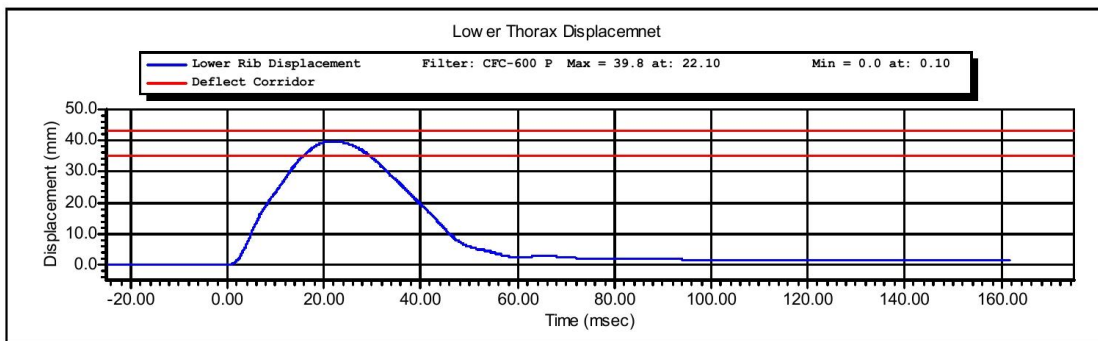
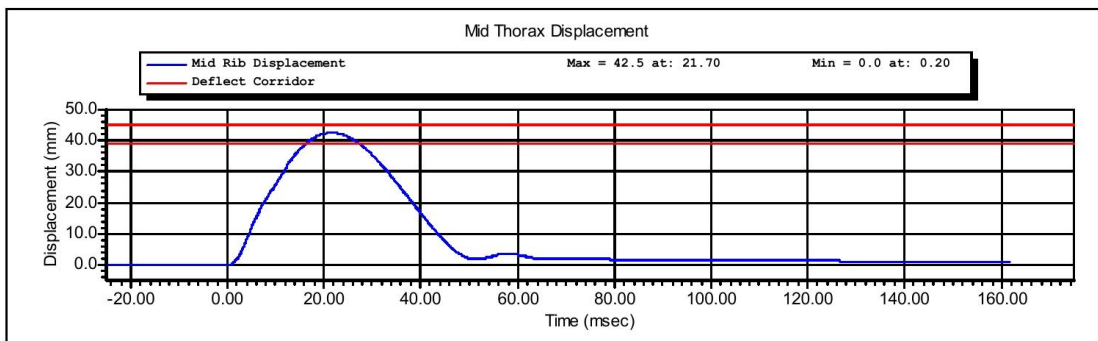
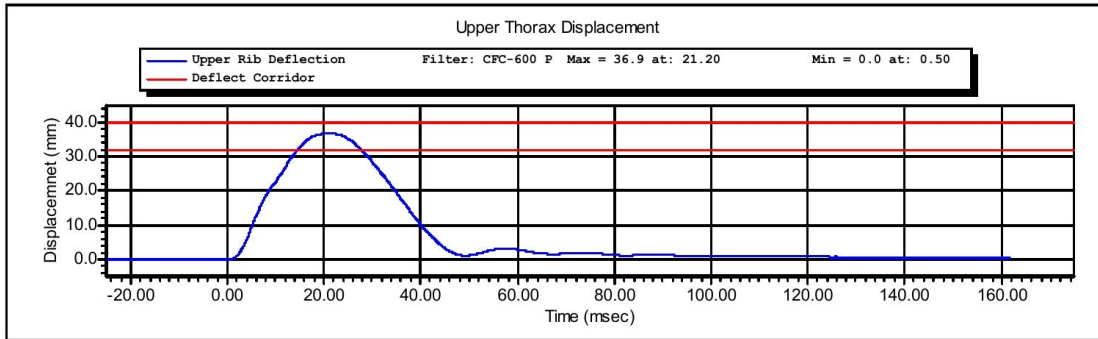
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Test Time: 3:18:42 PM

Test Date: 11/9/2012

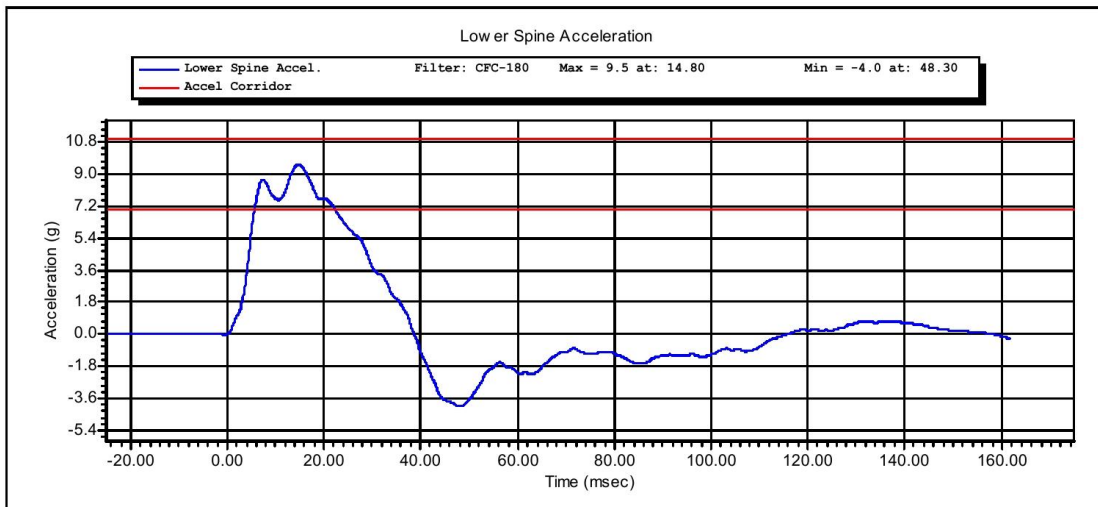
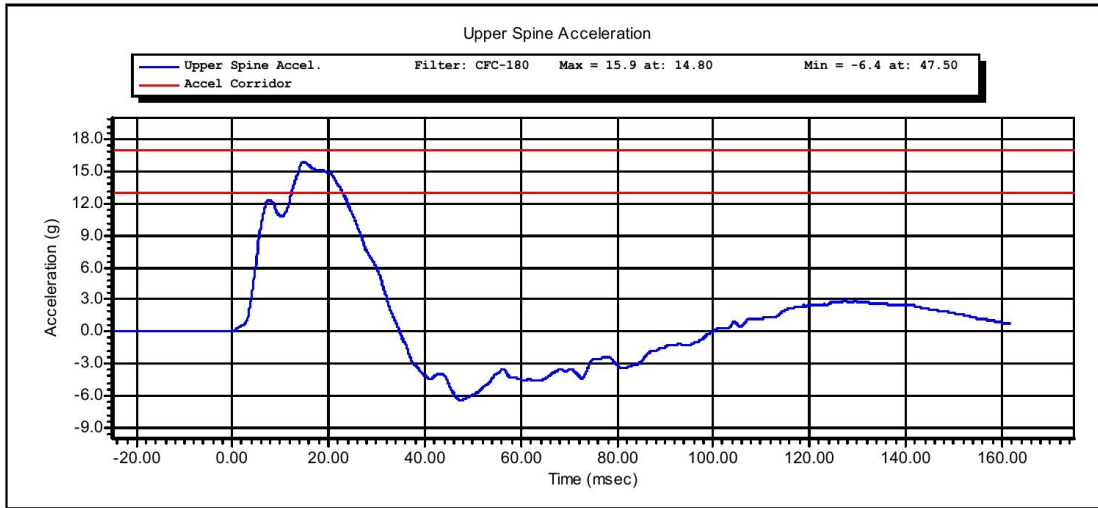
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Test Time: 3:18:42 PM

Test Date: 11/9/2012

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VERIFICATION REPORT

Test Name:	Thorax Impact with Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Thorax With Arm	Test Date:	11/9/2012
Test Number:	1	Test Time:	2:32:53 PM

Component Part Number	Component Serial Number
Thorax Ribs 1, 2, 3 180-3362	DG6080, DG6081, DG7543
Shoulder Rib 180-3355	286
Left Arm 180-6011-1	1012

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.5 deg C P
Humidity	10 -- 70	31 %RH P
Velocity	6.60 -- 6.80	6.77 m/s P
Probe Acceleration after 5ms	30.0 -- 36.0	33.2 g P
Upper Thorax Rib Deflection	25.0 -- 32.0	27.5 mm P
Mid Thorax Rib Deflection	30.0 -- 36.0	32.5 mm P
Lower Thorax Rib Deflection	32.0 -- 38.0	35.2 mm P
Upper Spine Acceleration ("y")	34.0 -- 43.0	41.2 g P
Lower Spine Acceleration ("y")	29.0 -- 37.0	34.1 g P
Shoulder Deflection	31.0 -- 40.0	32.9 mm P

All test parameters are within specifications

Technician: **M. Goehle**
 Supervisor: **D. Travale**

Test Time: **2:32:53 PM**

Test Date: **11/9/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Servo	180-3881-1	DS-808	10/23/2012
Servo	180-3881-1	DS-1514	5/16/2012
Servo	180-3881-1	DS-011	10/23/2012
Endevco	7264-2000	P51875	5/17/2012
Endevco	7264-2000	P58796	5/17/2012
FTSS	180-3881-1	DS-1845	5/17/2012

Test Time: 2:32:53 PM

Test Date: 11/9/2012

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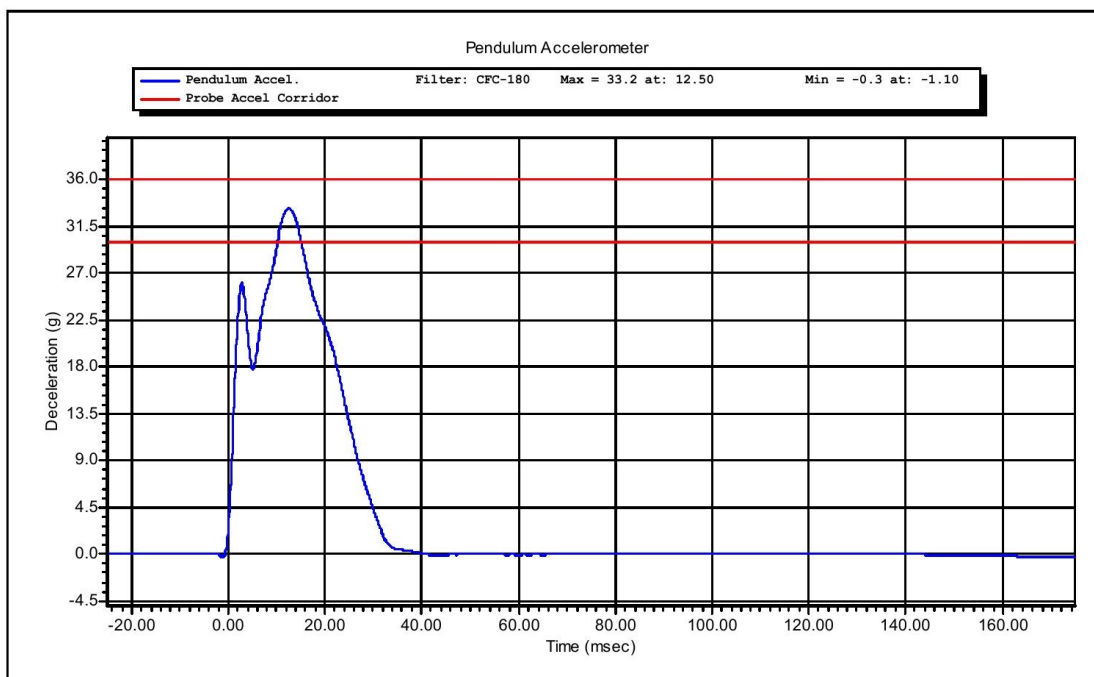


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Test Name:	Thorax Impact with Arm	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Thorax With Arm	Test Date:	11/9/2012
Test Number:	1	Test Time:	2:32:53 PM



Test Time: 2:32:53 PM

Test Date: 11/9/2012

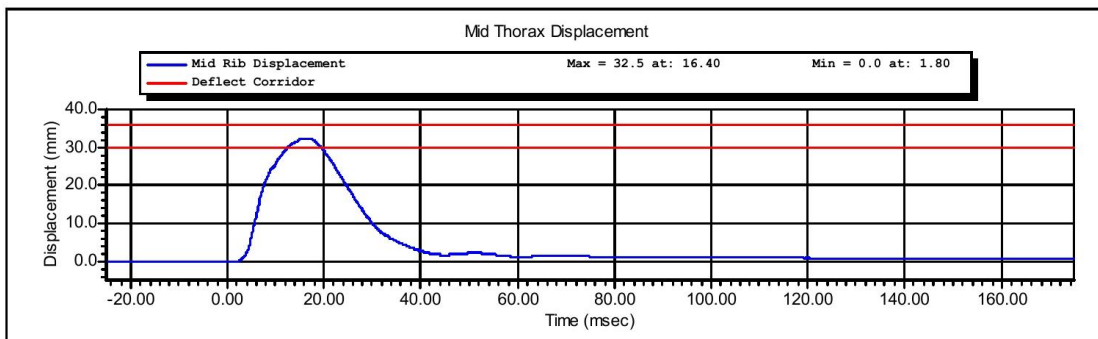
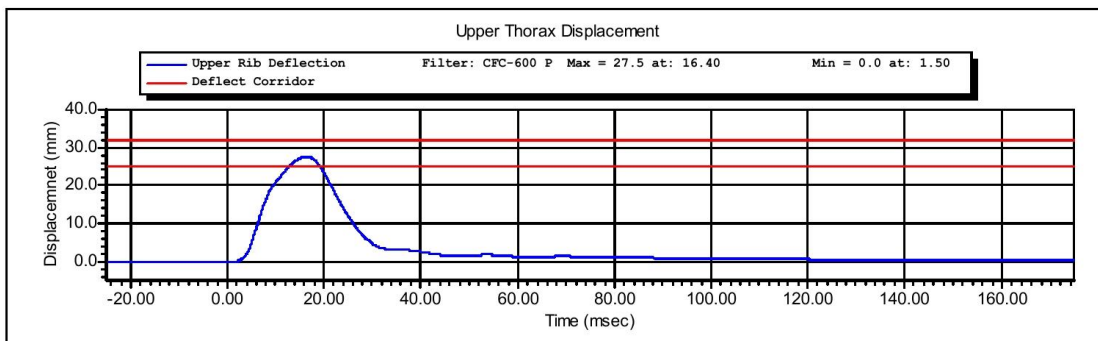
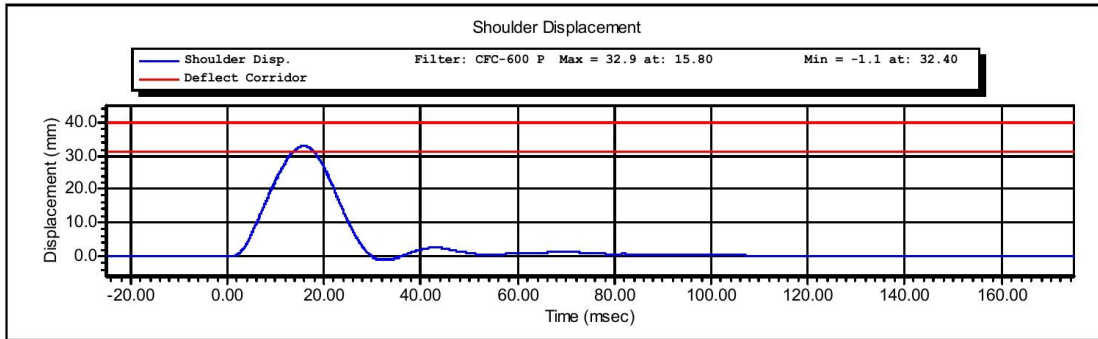
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Test Time: 2:32:53 PM

Test Date: 11/9/2012

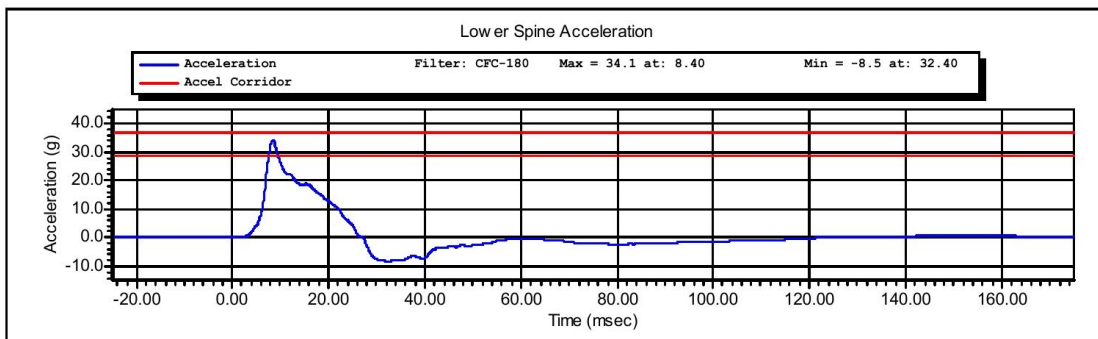
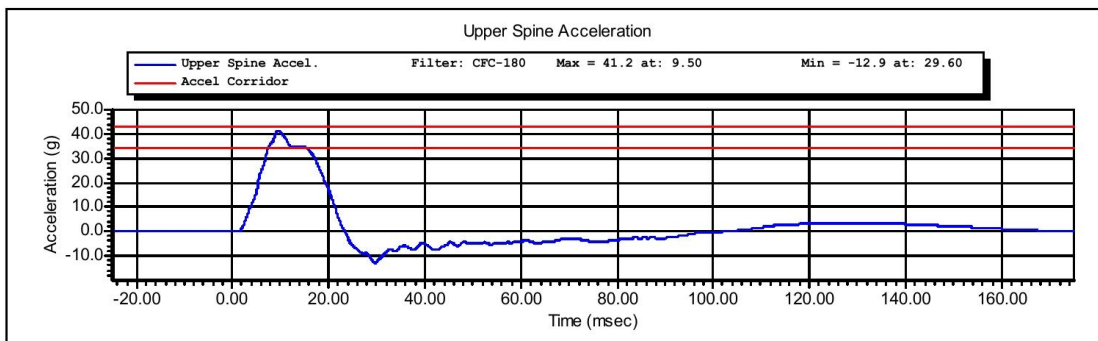
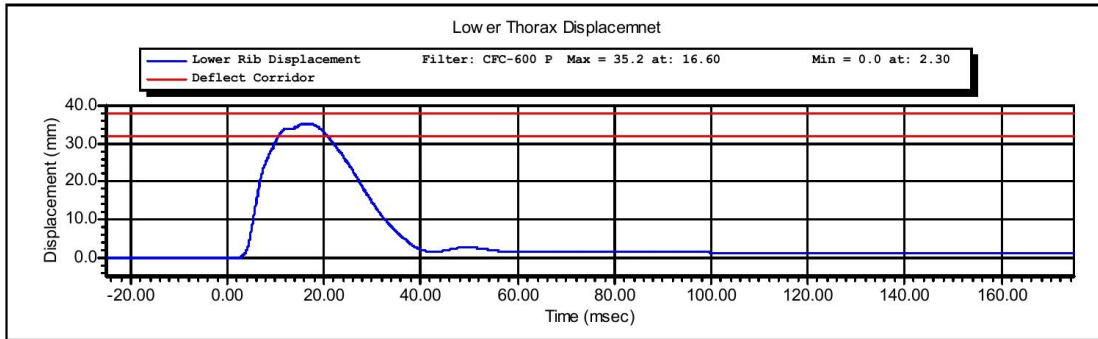
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Test Time: 2:32:53 PM

Test Date: 11/9/2012

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VERIFICATION REPORT

Test Name:	Abdominal Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Abdomen	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:32:01 PM

Component Part Number	Component Serial Number
Upper Abdomen Rib	1581
Lower Abdomen Rib	1518

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.7 deg C P
Humidity	10 -- 70	30 %RH P
Velocity	4.20 -- 4.40	4.36 m/s P
Probe Acceleration	12.0 -- 16.0	14.0 g P
Upper Abdominal Rib Deflection	36.0 -- 47.0	43.4 mm P
Lower Abdominal Rib Deflection	33.0 -- 44.0	42.7 mm P
Lower Spine Acceleration - T12	9.0 -- 14.0	10.7 g P

All test parameters are within specifications

Technician: **M. Goehle**
 Supervisor: **D. Travale**

Test Time: **3:32:01 PM**

Test Date: **11/9/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Servo	180-3881-1	DS-015	10/23/2012
Servo	180-3881-1	DS-1774	10/23/2012
Endevco	7264-2000	P58796	5/17/2012

Test Time: 3:32:01 PM

Test Date: 11/9/2012

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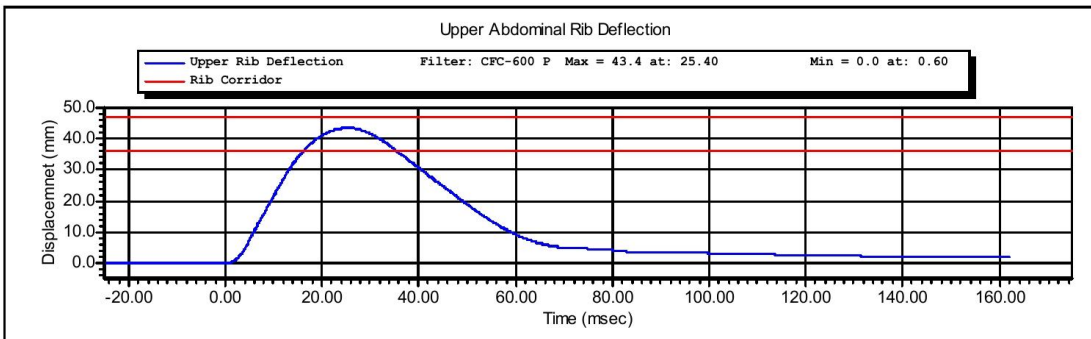
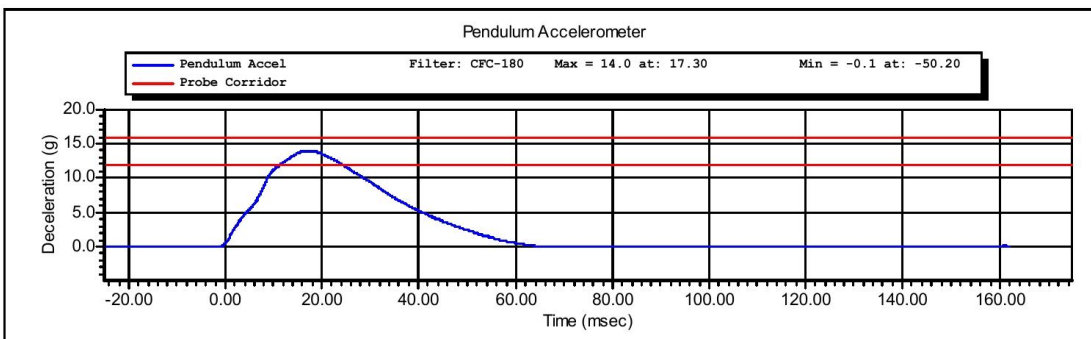


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Test Name:	Abdominal Impact	Revision:	8/24/2009
Sub Test Name:		Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Abdomen	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:32:01 PM



Test Time: 3:32:01 PM

Test Date: 11/9/2012

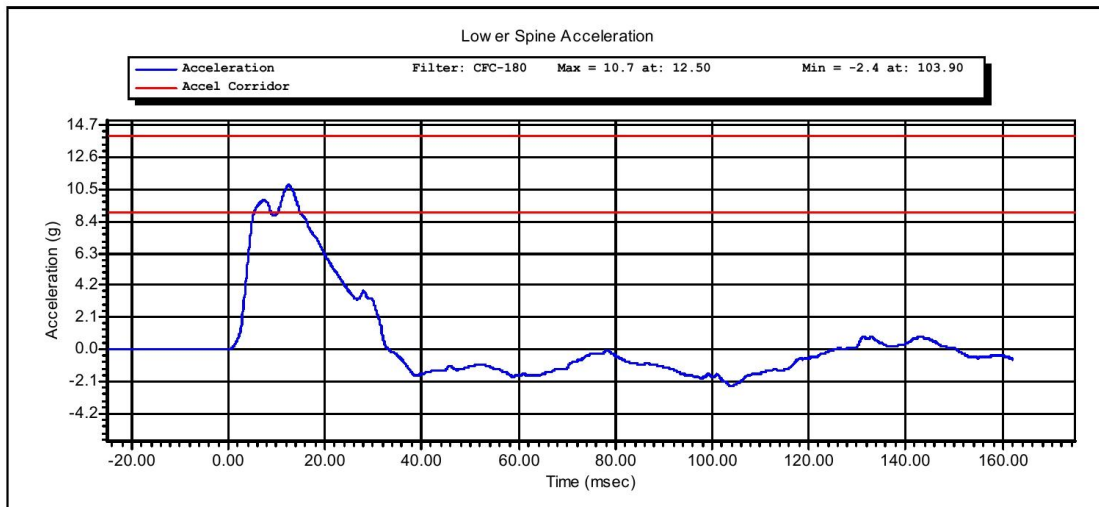
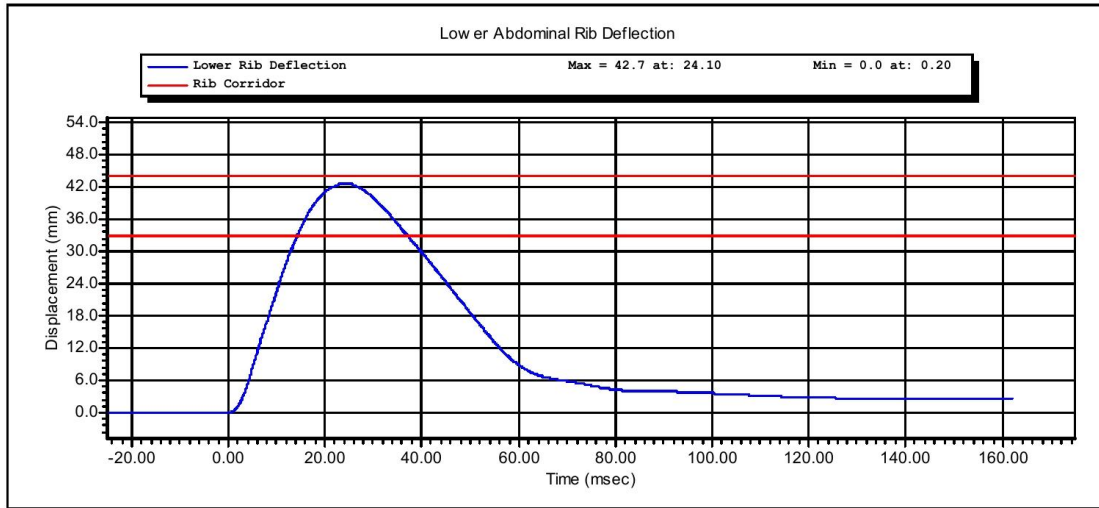
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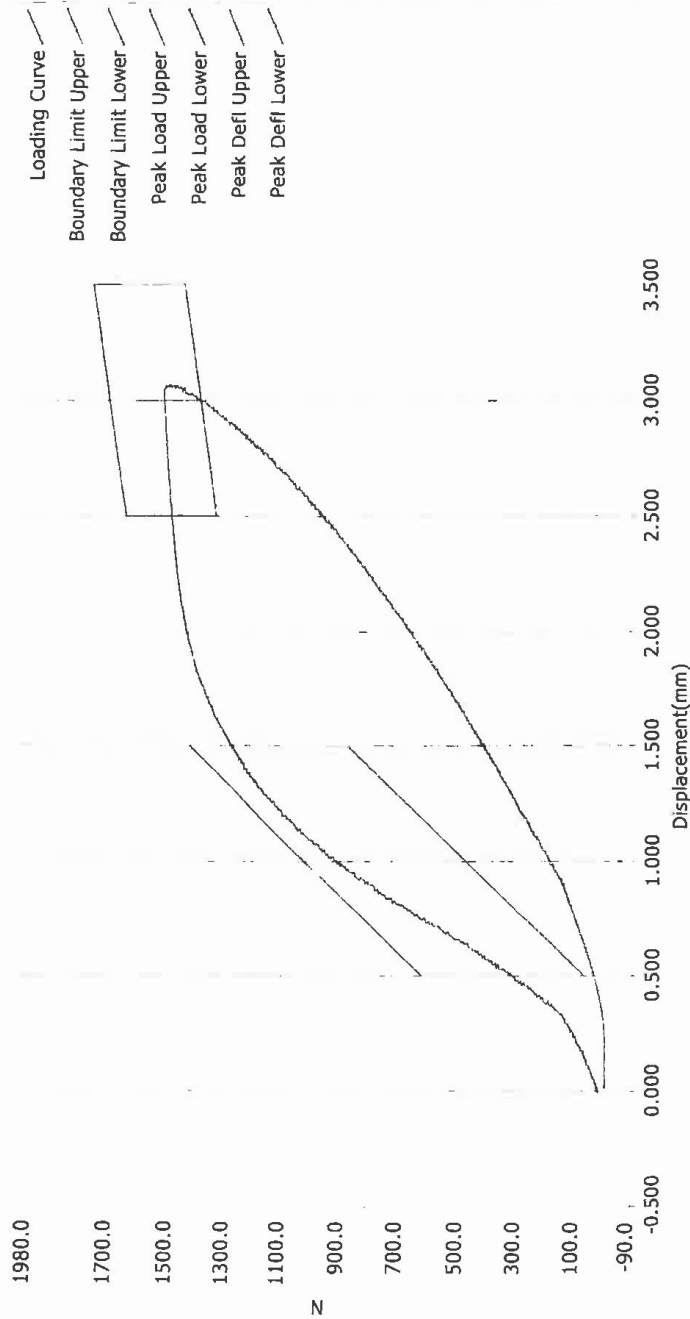


Test Time: 3:32:01 PM

Test Date: 11/9/2012

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Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

DG 8012 - Cert - Plug

11/9/12

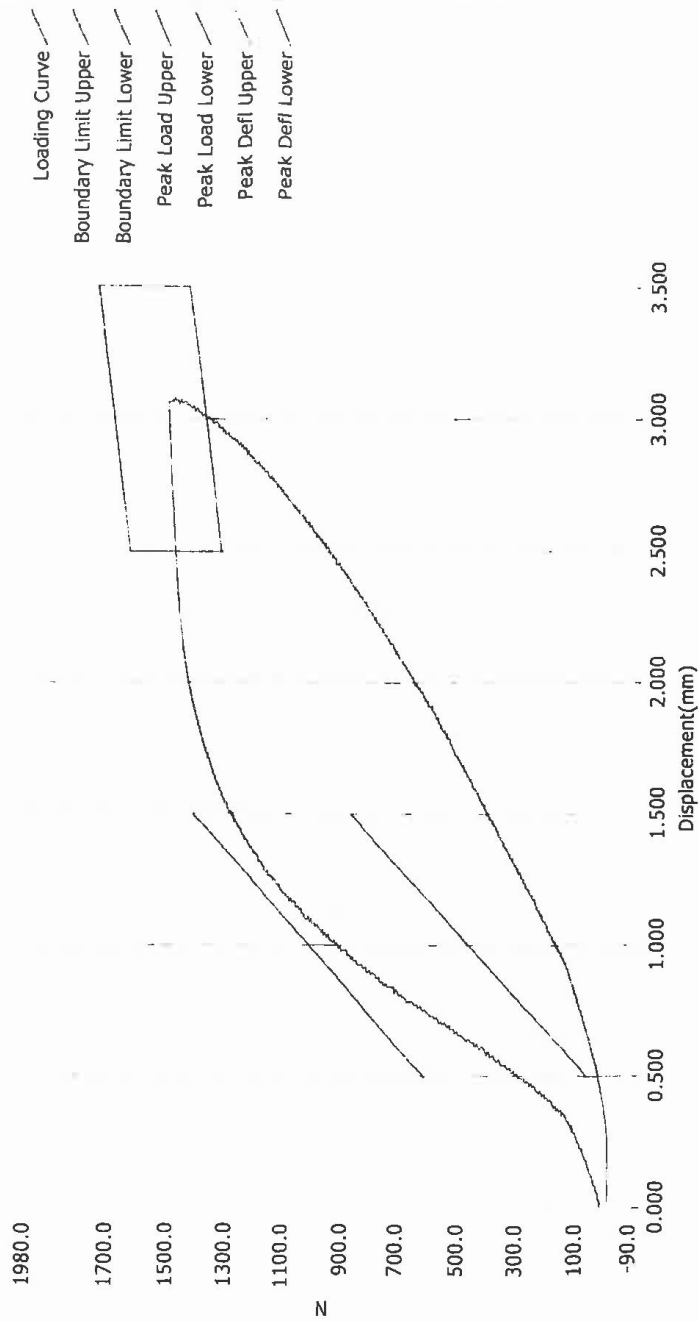
Pre-cert for 11/26/12

Test ID
Cert ID
Part Serial Number
ATD Serial Number
ATD Type
SIDIIs

Test Date
9/22/2010
2:49 PM

Current Date : 9/22/2010
Current Time : 14:50:40

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

DG-8012 - Crash plug
11/26/12

Test ID	Part Serial Number	Test Date	Test Time
Cert ID	ATD Serial Number	9/22/2010	10:08 AM
	36261	ATD Type	SIDIIs

Current Date : 9/22/2010 Current Time : 10:09:42



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VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Acetabulum Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Acetabulum	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:53:41 PM

Component Part Number	Component Serial Number
180-4343 Pelvis Flesh	DJ0959
Humanetics Cert Plug - 1492N	46452
FTSS Test Plug -1499N	36544

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	21.6 deg C P
Humidity	10 -- 70	31 %RH P
Velocity	6.60 -- 6.80	6.64 m/s P
Peak Probe Acceleration	38.0 -- 47.0	44.8 g P
Peak Pelvis Acceleration	34.0 -- 42.0	40.9 g P
Peak Acetabulum Force	3.60 -- 4.30	3.76 kN P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **D. Travale**

Test Time: **3:53:41 PM**

Test Date: **11/9/2012**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Endevco	7264-2000	P63561	5/17/2012
DentonATD	3249J	LC-267Fy	5/21/2012

Test Time: 3:53:41 PM

Test Date: 11/9/2012

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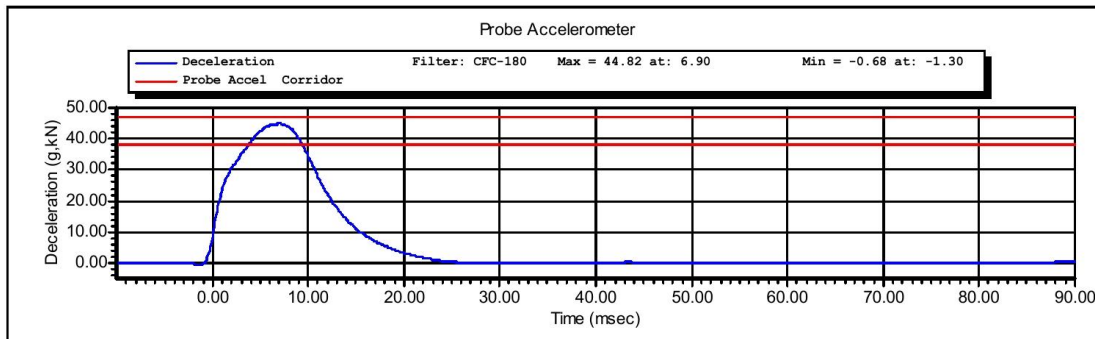
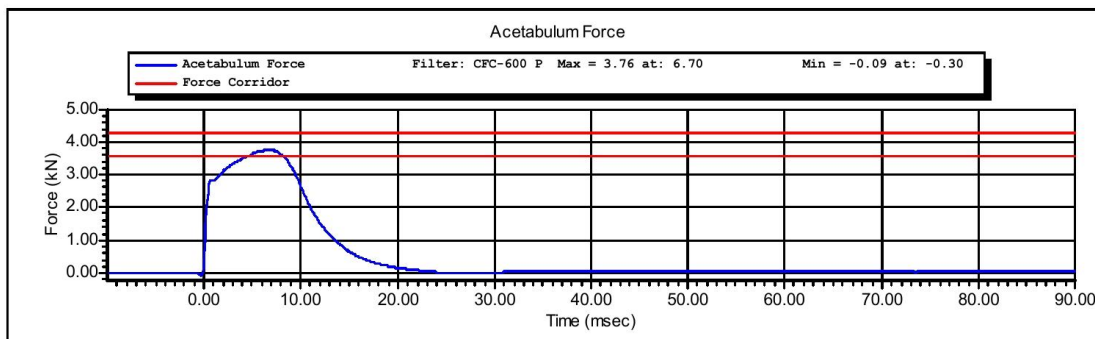


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Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Acetabulum Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Acetabulum	Test Date:	11/9/2012
Test Number:	1	Test Time:	3:53:41 PM



Test Time: **3:53:41 PM**

Test Date: **11/9/2012**

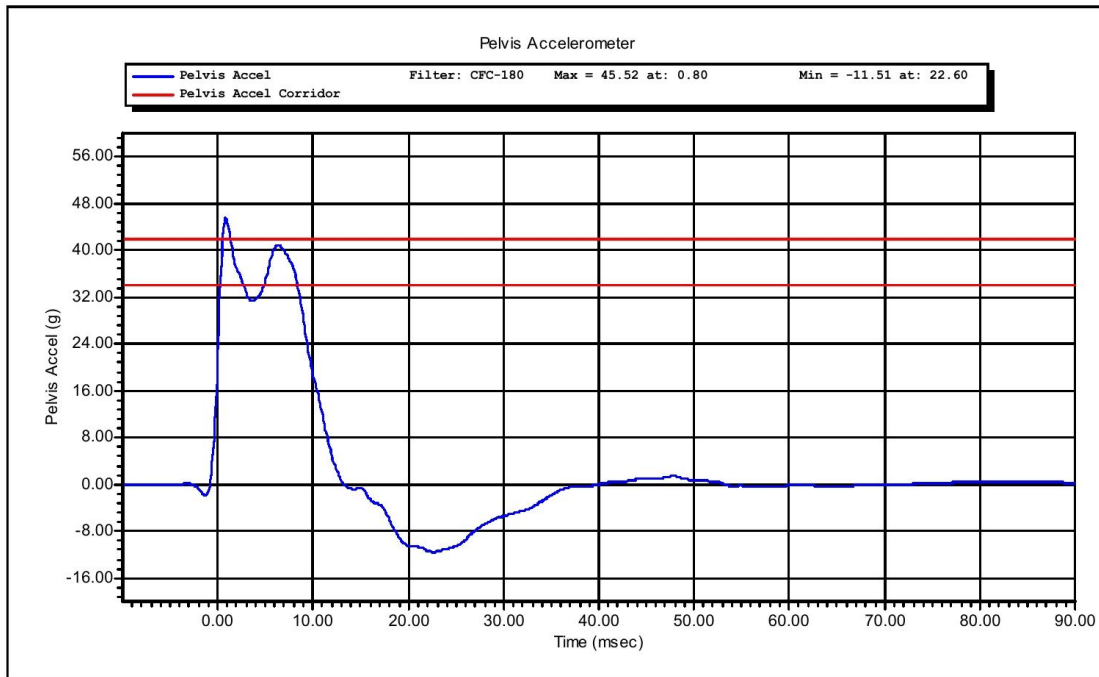
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Test Time: 3:53:41 PM

Test Date: 11/9/2012

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VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Iliac Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Iliac	Test Date:	11/12/2012
Test Number:	1	Test Time:	8:49:59 AM

Component Part Number	Component Serial Number
180-4343 Pelvis Flesh	DJ0959

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	22.1 deg C P
Humidity	10 -- 70	29 %RH P
Velocity	4.20 -- 4.40	4.33 m/s P
Peak Probe Acceleration	36.0 -- 45.0	39.6 g P
Peak Pelvis Acceleration	28.0 -- 39.0	34.2 g P
Peak Iliac Force	4.10 -- 5.10	4.37 kN P

All test parameters are within specifications

Technician: **M. Goehle**Supervisor: **D. Travale**Test Time: **8:49:59 AM**Test Date: **11/12/2012**



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VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2012
Endevco	7231CT	C14953	5/25/2012
Endevco	7264-2000	P63561	5/17/2012
DentonATD	3228J	LC-281Fy	5/21/2012

Test Time: 8:49:59 AM

Test Date: 11/12/2012

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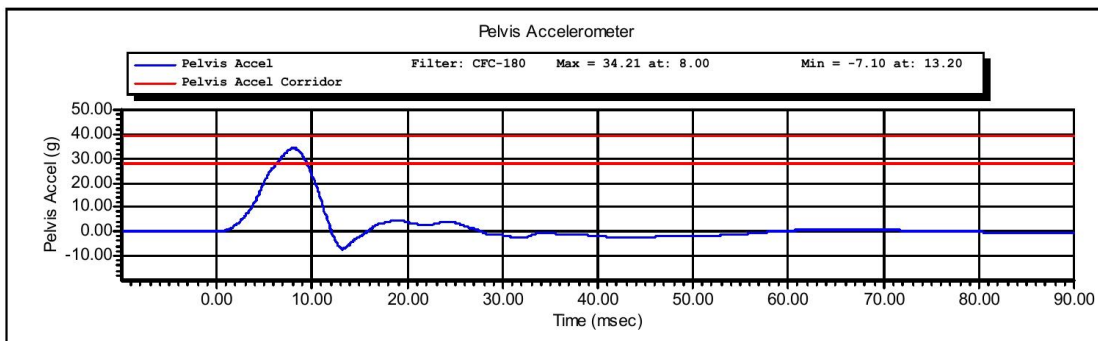
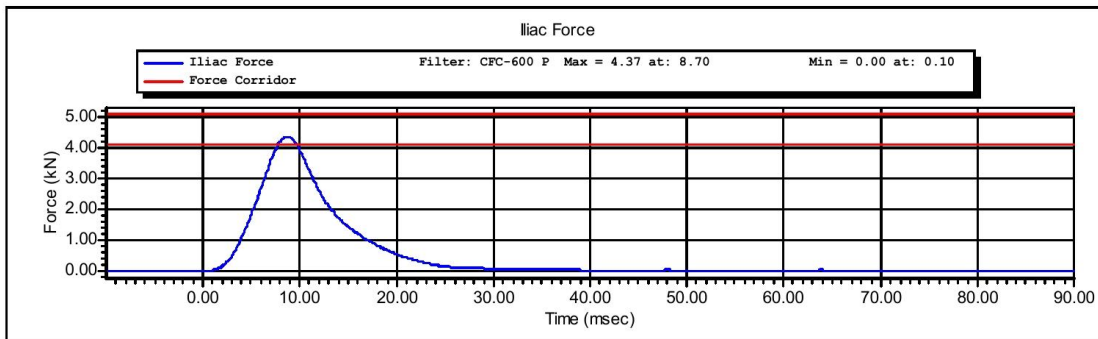


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Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Iliac Impact	Spec Type:	NHTSA
ATD Type:	SID-IIs		
ATD Serial Number:	DG8012		
Test ID:	Iliac	Test Date:	11/12/2012
Test Number:	1	Test Time:	8:49:59 AM



Test Time: **8:49:59 AM**

Test Date: **11/12/2012**

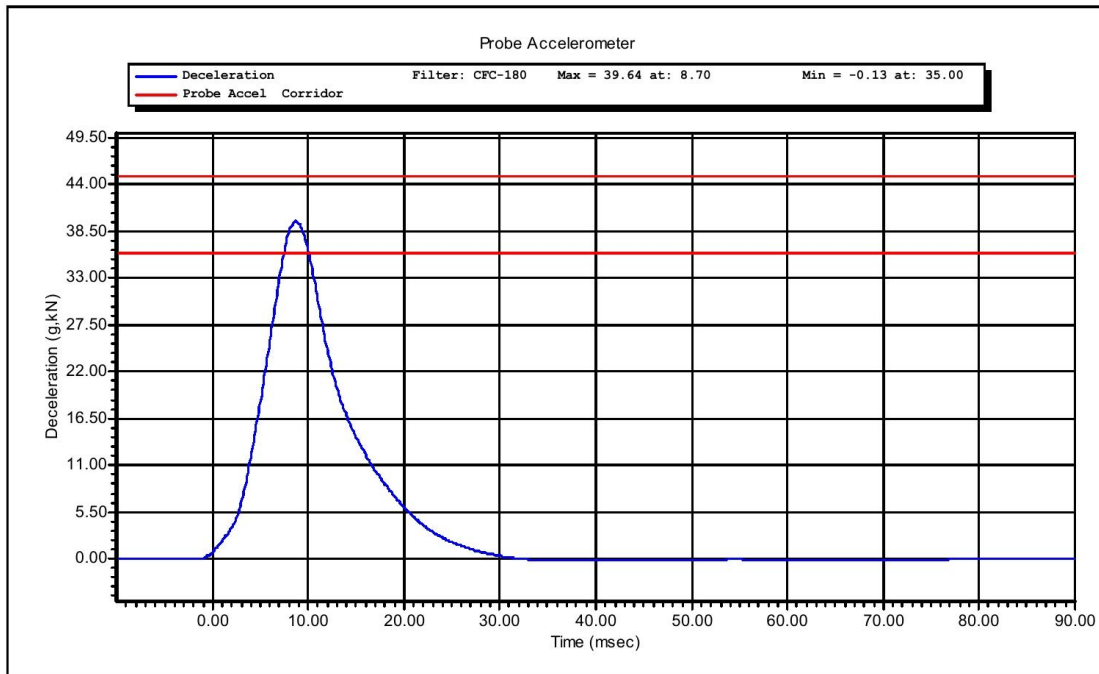
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Test Time: 8:49:59 AM

Test Date: 11/12/2012

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APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation (SID-IIs)

			SID-IIs S/N: 8012			
			Serial Number	Manufacturer	Calibration Date	
Head Accelerometers			X	P49185	ENDEVCO	5/17/2012
			Y	P51949	ENDEVCO	5/17/2012
			Z	P51991	ENDEVCO	5/17/2012
Head Accelerometers - Redundant			X	P68058	ENDEVCO	5/17/2012
			Y	P51885	ENDEVCO	5/17/2012
			Z	P68059	ENDEVCO	5/17/2012
Displacement Potentiometer	Shoulder		Y			
	Thoracic Rib	Upper	Y	808	DENTON	10/23/2012
		Middle	Y	1514	SERVO	5/16/2012
		Lower	Y	011	DENTON	10/23/2012
	Abdominal Rib	Upper	Y	015	DENTON	10/23/2012
		Lower	Y	1774	DENTON	10/23/2012
Lower Spine Accelerometers (T12)			X	P52100	ENDEVCO	5/17/2012
			Y	P58796	ENDEVCO	5/17/2012
			Z	P50098	ENDEVCO	5/17/2012
Acetabulum Load Cell			Y	267FY	DENTON	5/21/2012
Lilac Wing Load Cell			Y	281FY	DENTON	5/21/2012
Pelvis Plug (Struck Side)				36544	HUMANETICS	9/24/2010
Pelvis Plug (Non-Struck Side)						

Table 2 – Vehicle Instrumentation

Vehicle Instrumentation		Serial Number	Manufacturer	Calibration Date
Vehicle Center of Gravity	X	A070858	MS	8/13/2012
Vehicle Center of Gravity	Y	A081459	MS	8/13/2012
Vehicle Center of Gravity	Z	A081427	MS	8/13/2012
Left Floor Sill	Y	A081421	MS	9/5/2012
A-Pillar Sill	Y	A005825	MS	9/5/2012
A-Pillar Low	Y	A081428	MS	9/5/2012
A-Pillar Mid	Y	A035517	MS	9/5/2012
B-Pillar Sill	Y	A081430	MS	9/5/2012
B-Pillar Low	Y	A081410	MS	9/5/2012
B-Pillar Mid	Y	A081412	MS	9/5/2012
Driver Seat	Y	A081462	MS	8/13/2012
Engine Top	X	A081460	MS	8/13/2012
Engine Top	Y	A005824	ENDEVCO	8/10/2012
Firewall	Y	A081426	MS	9/5/2012
Right Roof	Y	A081423	MS	9/5/2012
Right Floor Sill	Y	A070867	MS	9/5/2012
Rear Floorpan	X	A005892	MS	8/13/2012
Rear Floorpan	Y	A002422	MS	8/13/2012

Table 3 – Pole Instrumentation

Pole Instrumentation	Serial Number	Manufacturer	Calibration Date
Load Cell 1	18867	INTERFACE	10/5/2012
Load Cell 2	18850	INTERFACE	6/27/2012
Load Cell 3	46979	INTERFACE	6/27/2012
Load Cell 4	18857	INTERFACE	6/27/2012
Load Cell 5	18844	INTERFACE	6/27/2012
Load Cell 6	46933	INTERFACE	6/27/2012
Load Cell 7	18866	INTERFACE	6/27/2012
Load Cell 8	46949	INTERFACE	6/27/2012