

REPORT NUMBER: SINCAP-CAL-15-002

**NEW CAR ASSESSMENT PROGRAM (NCAP)
MOVING DEFORMABLE BARRIER SIDE IMPACT TEST**

**MFD in Canada by Honda of Canada MFG.,
A Division of Honda Canada INC.
2015 Honda CR-V
SUV**

NHTSA No: M20155317

**PREPARED BY:
CALSPAN CORPORATION
P.O. BOX 400
BUFFALO, NEW YORK 14225**



June 22, 2015

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
MAIL CODE: NVS-111
1200 NEW JERSEY AVE SE, ROOM W43-410
WASHINGTON, D.C. 20590**

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Date: June 22, 2015

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Edward Dutton, Test Engineer
Transportation Test Operations

Date: June 22, 2015

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: _____

TECHNICAL REPORT DOCUMENTATION PAGE

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15. Supplementary Notes																																																					
16. Abstract A 55/28, (61.90 kph / 38.5 mph), 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2015 Honda CR-V SUV in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at Calspan Corporation's Transportation Test Operations facility in Buffalo, New York on December 11, 2014. The impact velocity of the Moving Deformable Barrier (MDB) was 61.7 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21°C. The target vehicle's maximum post-test static crush was 191 mm located at level 3. The test vehicle's occupant performance data is as follows: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Measurement Description</th> <th colspan="3" style="text-align: center;">Driver ATD (ES-2re)</th> </tr> <tr> <th style="text-align: center;">Units</th> <th style="text-align: center;">IARV</th> <th style="text-align: center;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">75.434</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">44</td> <td style="text-align: center;">13.914</td> </tr> <tr> <td>Total Abdominal Force</td> <td style="text-align: center;">N</td> <td style="text-align: center;">2500</td> <td style="text-align: center;">784.790</td> </tr> <tr> <td>Pubic Symphysis Force</td> <td style="text-align: center;">N</td> <td style="text-align: center;">6000</td> <td style="text-align: center;">-1359.010</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Measurement Description</th> <th colspan="3" style="text-align: center;">Passenger ATD (SID-IIs)</th> </tr> <tr> <th style="text-align: center;">Units</th> <th style="text-align: center;">IARV</th> <th style="text-align: center;">Result</th> </tr> </thead> <tbody> <tr> <td>Head Injury Criteria (HIC₃₆)</td> <td style="text-align: center;">N/A</td> <td style="text-align: center;">1000</td> <td style="text-align: center;">203.623</td> </tr> <tr> <td>Lower Spine Resultant Acceleration</td> <td style="text-align: center;">G</td> <td style="text-align: center;">82</td> <td style="text-align: center;">60.795</td> </tr> <tr> <td>Total Pelvic Force (sum of acetabular and iliac forces)</td> <td style="text-align: center;">N</td> <td style="text-align: center;">5525</td> <td style="text-align: center;">3230.788</td> </tr> <tr> <td>Maximum Thoracic Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">38*</td> <td style="text-align: center;">12.425</td> </tr> <tr> <td>Maximum Abdominal Rib Deflection</td> <td style="text-align: center;">mm</td> <td style="text-align: center;">45*</td> <td style="text-align: center;">22.787</td> </tr> </tbody> </table> * Proposed IARV The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.				Measurement Description	Driver ATD (ES-2re)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	75.434	Maximum Thoracic Rib Deflection	mm	44	13.914	Total Abdominal Force	N	2500	784.790	Pubic Symphysis Force	N	6000	-1359.010	Measurement Description	Passenger ATD (SID-IIs)			Units	IARV	Result	Head Injury Criteria (HIC ₃₆)	N/A	1000	203.623	Lower Spine Resultant Acceleration	G	82	60.795	Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3230.788	Maximum Thoracic Rib Deflection	mm	38*	12.425	Maximum Abdominal Rib Deflection	mm	45*	22.787
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SECTION 1

TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY 2015 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under contract number DTNH22-14-D-00352. The purpose of this test is to generate comparative side impact performance in a 2015 Honda CR-V SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated August 2013.

SECTION 2

SUMMARY OF TEST RESULTS

A 2015 Honda CR-V SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.7 km/h. The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Calspan Corporation's Transportation Test Operations Center in Buffalo, New York on December 11, 2015. Pre-test and post-test photographs of the test vehicle, the MDB and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated August 2013. The side impact event was documented by 9 high-speed and 2 real-time cameras. Camera locations are included in this report.

The Dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib, and lower rib y-axis displacement potentiometers

Abdomen forward, middle, and rear y-axis load cells

Lower spine (T12) tri-axial accelerometers

Public symphysis y-axis load cell

PASSENGER ATD (SID-IIs)

Primary and redundant head CG tri-axial accelerometers

Chest upper rib, middle rib, and lower rib y-axis displacement potentiometers

Abdomen upper rib and lower rib y-axis displacement potentiometers

Lower spine (T12) tri-axial accelerometers

Acetabulum and iliac wing y-axis load cells

Appendix B contains the vehicle and dummy response data. Dummy configuration and performance verification data can be found in APPENDIX C of this report. Appendix D of this report contains the test equipment and instrumentation calibration data.

DUMMY INJURY VALUES

Measurement Description	Driver ATD (ES-2re)		
	Units	Threshold	Result
Head Injury Criteria (HIC36)		1000	75.434
Maximum Thorax Rib Deflection	mm	44	13.914
Combined Abdominal Force	N	2500	784.790
Pubic Symphysis Force	N	6000	-1359.010

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC36)		1000	203.623
Lower Spine (T12) Resultant Acceleration	G	82	60.795
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	3230.788
Maximum Thoracic Rib Deflection	mm	38*	12.425
Maximum Abdominal Rib Deflection	mm	45*	22.787

*Proposed IARV

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	N/A		
Side Airbag 1 - Curtain	Yes	Yes	Yes	Yes
Side Airbag 2 – Torso/Pelvis Airbag	Yes	Yes	No	N/A
Seat Belt Pretensioner	Yes	Yes	No	N/A
Seat Belt Load Limiter	Yes	Yes	No	N/A
Other				

GENERAL COMMENTS:

1. P1 serial number - F034
2. P4 serial number - 300

Data Anomalies:

- Based on NHTSA's discretion the calculated speed was 61.7 KPH. Due to an equipment malfunction, only the calculated speed was available.

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 System 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 – Test Vehicle Accelerometer Locations

Data Sheet No. 7 – MDB Accelerometer Locations

Data Sheet No. 8 – Post-Test Observations

Data Sheet No. 9 – MDB Summary of Results

Data Sheet No. 10 – Test Vehicle Profile Measurements

Data Sheet No. 11 – Test Vehicle Exterior Crush Measurements

Data Sheet No. 12 – MDB Exterior Static Crush Measurements

Data Sheet No. 13 – Vehicle and MDB Damage Profile Distances

Data Sheet No. 14 – FMVSS No. 301 Static Rollover Results

Data Sheet No. 15 – Dummy/Vehicle Temperature and Humidity Stabilization Data

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2015 Honda CR-V SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
Test Date: 12/11/2014

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20155317
Model Year	2015
Make	Honda
Model	CR-V
Body Style	SUV
VIN	2HKRM3H35FH502462
Body Color	Red
Odometer Reading (km/mi)	119.1 km / 74 mi
Engine Displacement (L)	2.4
Type/No. Cylinders	I4
Engine Placement	Transverse
Transmission Type	Automatic
Transmission Speeds	CVT
Overdrive	Yes
Final Drive	Front 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)	Yes
Power Window Auto-Reverse	No
Other Optional Feature	-
Driver Front Airbag	Yes
Driver Curtain Airbag	Yes
Driver Head/Torso Airbag	No
Driver Torso Airbag	No
Driver Torso/Pelvis Airbag	Yes
Driver Pelvis Airbag	No
Driver Knee Airbag	No
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 Pretensioners	Yes
Rear Pass. Seat Belt Pretensioners	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?

Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Honda of Canada MFG.
Date of Manufacture	10/14
Vehicle Type	Passenger

GVWR (kg)	2025
GAWR Front (kg)	1030
GAWR Rear (kg)	1015

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total
Designated Seating Capacity (DSC)	2	3	-	5
Capacity Weight (VCW) (kg)				385
DSC X 68.04 kg				340.2
Cargo Weight (RCLW) (kg)				44.8

(A)

(B)

(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			X		X		
Third Row seat							

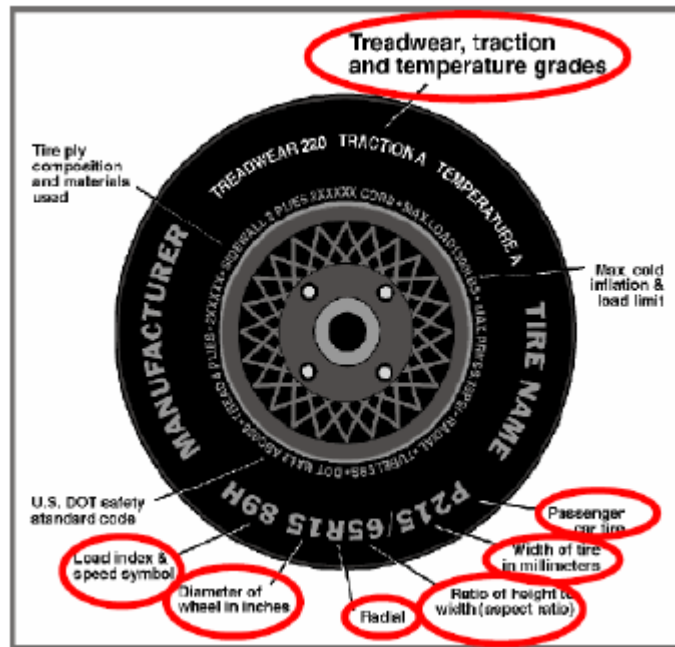
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GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2015 Honda CR-V SUV
Test Program:	NCAP Side MDB Impact Test

NHTSA No.: M20155317
Test Date: 12/11/2014

VEHICLE TIRE INFORMATION

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



TIRE SIDEWALL INFORMATION

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	220	220
Recommended Tire Size	P215/70R16	P215/70R16
Tire Size on Vehicle	P215/70R16	P215/70R16
Tire Manufacturer	Continental	Continental
Tire Model	Cross Contact LX	Cross Contact LX
Treadwear	680	680
Traction	A	A
Temperature Grade	B	B
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Polyamide	1 Polyester, 2 Steel, 1 Polyamide
Load Index/Speed Symbol	100S	100S
Tire Material	Rubber	Rubber
DOT Safety Code Left	AF093WM3514	AF093WM3514
DOT Safety Code Right	AF093WM3514	AF093WM3514

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

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	242	242	242	242
Tire Placard	kPa	220	220	220	220
Owner's Manual	kPa	220	220	220	220
As Tested	kPa	220	220	220	220

MDB TIRE SPECIFICATIONS

	Units	Requirement	LF	RF	LR	RR
Tire Size		P205/75R15	P205/75R15	P205/75R15	P205/75R15	P205/75R15
Tire Pressure	kPa	200 ± 21	207	207	207	207

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	456	324		505	376		498	377	
Right	kg	451	302		456	360		480	352	
Ratio	%	59%	41%		57%	43%		57%	43%	
Totals	kg	907	626	1533	961	736	1697	978	729	1707

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1533	(A)
Sum of Actual Weight of 2 P572 ATDS Used	kg	127	(B)
Rated Cargo / Luggage Weight (RCLW)	kg	44.8	(C)
Calculated Target Vehicle Test Weight (TVTW)	kg	1704.8	(A+B+C)

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	Fully Loaded	As Tested	Meets Requirement**
LF	mm	780	779	Yes
RF	mm	788	791	Yes
RR	mm	778	775	Yes
LR	mm	770	766	Yes
Vehicle CG (Aft of Front Axle)	mm	1121	1138	
Vehicle CG (Left(+)/Right(-) from Longitudinal Centerline)	mm	+20	+30	

*** The "As Tested" vehicle attitude measurements must be equal to or within ± 10mm of the "Fully Loaded" vehicle attitude measurements at each wheel well. Indicate "Yes" or "No" for "Meets Requirements".

Test height adjustable suspension setting, if applicable: N/A

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

Test Vehicle:	<u>2015 Honda CR-V SUV</u>	NHTSA No.:	<u>M20155317</u>
Test Program:	<u>NCAP Side MDB Impact Test</u>	Test Date:	<u>12/11/2014</u>

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Trunk Carpeting	8
Spare Tire & Jack	19
Tail Light	3
Hatch Plastic	3
Passenger Side Windows	4
Ballast / Equipment Added	10

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

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

SEAT POSITIONING

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

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	15.0	13.7	14.4
Front Passenger Seat	-	Not Adjustable	-
Front Center Seat*			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed

**if applicable*

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRП Height (mm)	SCRП Height Position	SCRП Height (mm)		
				Rearmost	Mid- Fore/Aft	Forward- Most
Driver Seat	14.4	39	Max	47	63	85
			Mid	23	39	52
			Min	0	16	29
Front Passenger Seat	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	-	-	-

**if applicable*

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

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

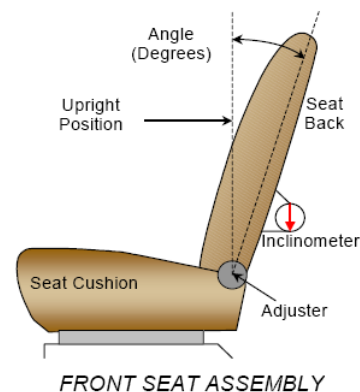
SEAT FORE / AFT POSITION

Seat	Total Fore / Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	240	25	120	12
Front Passenger Seat	240	25	120	12
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

**if applicable*

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated design angle. 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 seat back is positioned such that the dummy's head is level. The rear center and non-struck side rear outboard seat backs are positioned in a similar manner as 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	57.6	N/A	10.3	N/A
Front Passenger Seat	54.7	N/A	10.1	N/A
Front Center Seat*	N/A	N/A	N/A	N/A
Struck Side Rear Seat w/ Seated Dummy	Fixed	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed	Fixed
Rear Center Seat*	Fixed	Fixed	Fixed	Fixed

**if applicable*

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

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

SEAT BELT ANCHORAGE ADJUSTMENT

Seat belt anchorages are adjusted in accordance with the information provided by the manufacturer on Form No. 1. For this test zero is defined as the uppermost position.

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

HEAD RESTRAINT ADJUSTMENT

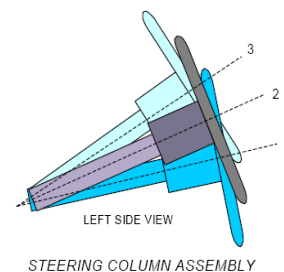
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	6	6 - Uppermost
Rear Seat	Fixed	Fixed

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.

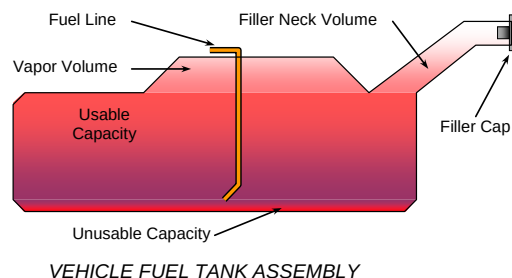
	Degrees	Fore/Aft Position (mm)
Lowermost – Position 1	24.5	
Geometric Center – Position 2	27.0	
Uppermost – Position 3	29.6	
Telescoping Steering Wheel Travel		40
Test Position	27.0	20



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.



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

Test Vehicle: <u>2015 Honda CR-V SUV</u>	NHTSA No.: <u>M20155317</u>
Test Program: <u>NCAP Side MDB Impact Test</u>	Test Date: <u>12/11/2014</u>

FUEL TANK CAPACITY

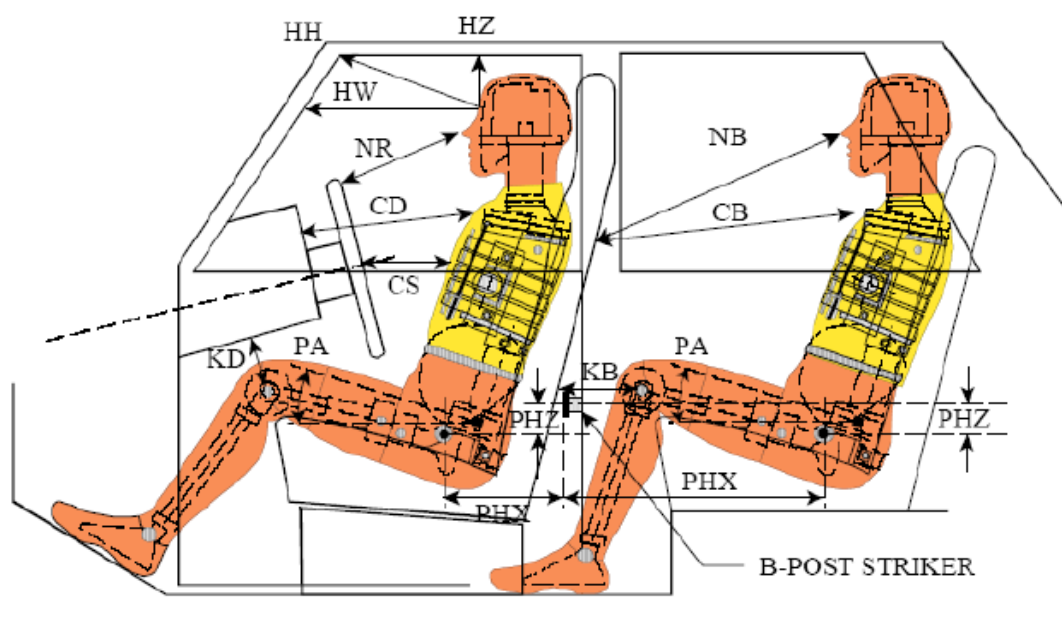
	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	58
Usable Capacity of "Optional Tank" (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	58
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	53.95
Actual Amount of Solvent Used in Test	53.95
1/3 of Usable Capacity	19.33

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: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
 REAR DUMMY PHX & PHZ
 MEASUREMENTS FOR A 4-DOOR
 VEHICLE WOULD USE THE C-POST
 STRIKER AS A REFERENCE POINT

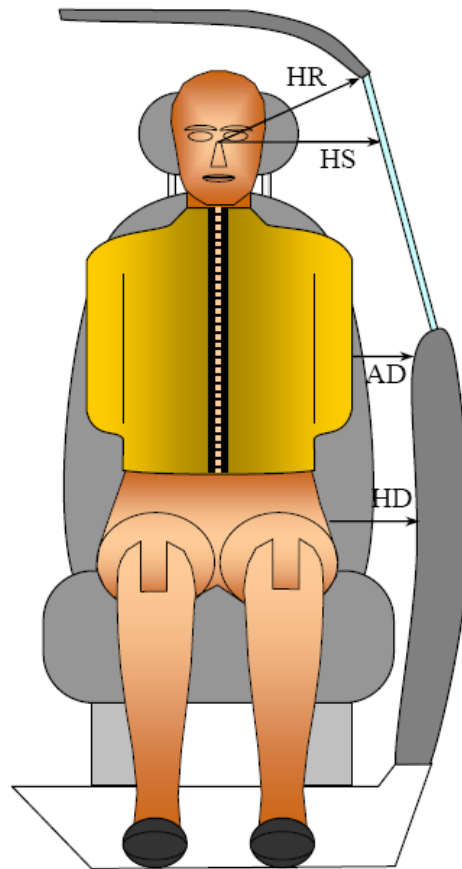
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Description	Driver (Serial No. F034)		Passenger (Serial No. 300)	
			Length (mm)	Angle	Length (mm)	Angle
HH		Header to Header	420			
HW		Header to Windshield	683			
HZ	HZ	Head to Roof Liner	189		285	
NR	NB	Nose to Rim/Seat Back	463		575	
CD	CB	Chest to Dash/Seat Back	646		563	
CS		Chest to Steering Wheel	391			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	150	31.8	325	10.6
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	112	34.3	327	9.9
PAX°	PAX°	Pelvic Tilt Angle X		21.0		18.8
	PAY°	Pelvic Tilt Angle Y				0.4
PHX	PHX	Hip Point to Striker (X-Axis)	234		723	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	205		166	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014



FRONT VIEW OF DUMMY

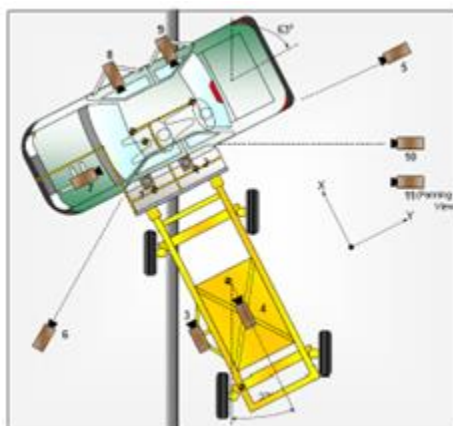
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver (Serial No. F034)	Passenger (Serial No. 300)
HR	Head to Side Header	mm	193	243
HS	Head to Side Window	mm	322	364
AD	Arm to Door	mm	97	152
HD	Hip Point to Door	mm	155	149

DATA SHEET NO. 5 CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2015 Honda CR-V SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
Test Date: 12/11/2014



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	899	839	5344	14	1000
2	Overhead Close-up	593	839	5344	24	1000
3	Left Impact Point (MDB)	-1470	0	-847	25	1000
4	Side Overall (MDB)	-1140	838	-1587	12.5	1000
5	Rear	0	8551	1154	24	1000
6	Left Front	-2001	-2950	1198	24	1000
7	Driver Front (OB)				25	1000
8	Driver Side (OB)				12.5	1000
9	Passenger Side (OB)				12.5	1000
10	Real-time Left Rear				Zoom	30
11	Real-time In run				Zoom	30

Notes: *Reference: Impact Point projected to Ground*
+X = To Front of MDB, +Y = To Right of MDB, +Z = Down
**All measurements accurate to ± 6 mm.*

If applicable, explain why camera(s) did not operate as intended: All cameras operated normally

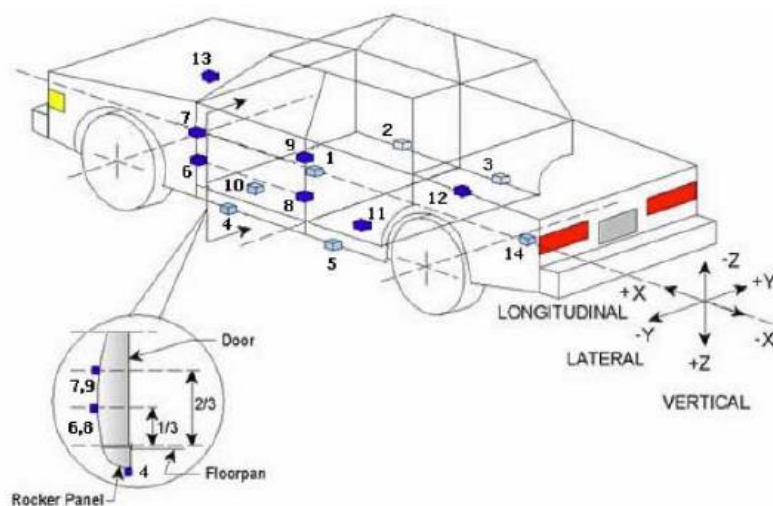
INSTRUMENTATION

Driver Dummy Channels	16
Passenger Dummy Channels	16
Vehicle Structure Accelerometers	23
MDB Accelerometers	7
Total	62

DATA SHEET NO. 6 **TEST VEHICLE ACCELEROMETER LOCATIONS**

Test Vehicle: 2015 Honda CR-V SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
Test Date: 12/11/2014



TEST VEHICLE ACCELEROMETER LOCATIONS

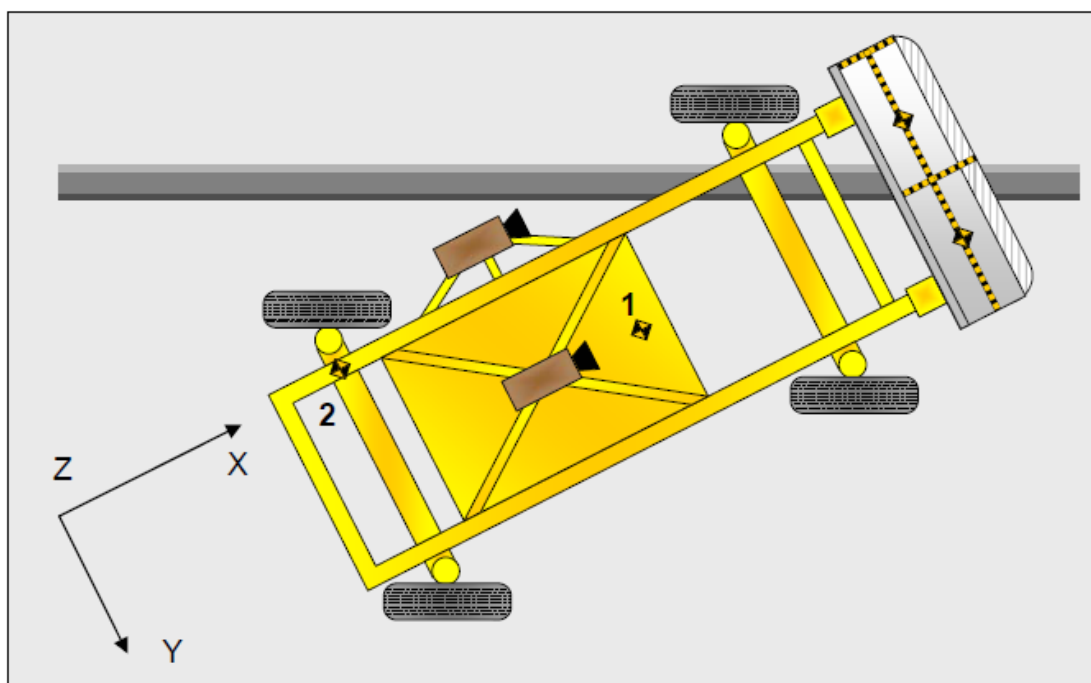
No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2390	34	-106
2	Right Sill at Front Seat	2685	640	101
3	Right Sill at Rear Seat	1887	643	88
4	Left Sill at Front Door	2696	-647	92
5	Left Sill at Rear Door	1845	-645	98
6	A-Post Lower	3105	-643	-125
7	A-Post Middle	3089	-691	-592
8	B-Post Lower	2086	-679	-143
9	B-Post Middle	2065	-689	-388
10	Front Seat Track	2282	-562	-11
11	Rear Seat Structure	1206	-428	-94
12	Rt. Rear Occ. Compartment	1993	434	122
13	Engine Block	3785	-15	-358
14	Rear Above Axle	1099	59	-89

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

DATA SHEET NO. 7
MDB ACCELEROMETER LOCATIONS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014



MDB ACCELEROMETER LOCATIONS

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	MDB CG	1859	0	-330
2	MDB Rear	386	-660	-660

Reference: X – Face of MDB (+ forward)
 Y – MDB centerline (+ to right)
 Z – Ground plane (+ down)

DATA SHEET NO. 8
POST-TEST OBSERVATIONS

Test Vehicle: 2015 Honda CR-V SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
Test Date: 12/11/2014

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	None	Curtain Airbag
Top of Head	Side Headliner	Curtain Airbag
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Headrest & Curtain Airbag	Curtain Airbag, Headrest, & Center Headrest
Left Shoulder	Torso/Pelvis Airbag	Passenger Door
Upper Torso	Seatback & Torso/Pelvis Airbag	Passenger Door
Lower Torso	Seatback	Passenger Door
Left Hip	Seatback & Torso/Pelvis Airbag	Passenger Door
Left Knee	Driver's Door	Passenger 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	No
Latch or Hinge Systems Pulled Out of Their Anchorages	No	No	No	No	No
Disengaged from Latched Position	No	No	No	No	No
Latch Separated from Striker	No	No	No	No	No
Jammed Shut	Yes	Yes	No	No	No
If Door Opened at Striker, Width of Opening at Striker (mm)	0	0	0	0	0

POST-TEST SEAT PERFORMANCE

Description	Struck Side		Non-Struck Side	
	Front	Rear	Front	Rear
Seat Movement Along Seat Track	No	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

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	B-Pillar Buckled
Sill Separation	None
Windshield Damage	None
Side Window Damage	Left Side Rear Passenger Window Shattered
Other Notable Effects	None

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

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

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

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2624
Vertical Impact Reference Line (Aft of Front Axle - Intended Impact Point)	mm		374
Actual Impact Point (Aft of Frontal Axle)	mm		364
Horizontal Offset (+ forward / - rearward)	mm	+/- 50 of Intended Impact Point	+10
Vertical Offset (+ down / - up)	mm	+/- 20 of Intended Impact Point	-2

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2015 Honda CR-V SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
Test Date: 12/11/2014

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1,250
Overall Length Including Honeycomb Frame	4,120
Wheelbase of Framework Carriage	2,600
CG Location of Front Axle	1,120

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	392.5	297.5	690.0
Right	kg	386.0	291.5	677.5
Ratio	%	57.4%	42.6%	100.0%
Totals	kg	778.5	589.0	1367.5

SPEED AND ANGLE AT IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.10 to 62.70	61.7
Trap No. 2 Velocity (Redundant)	km/h	61.10 to 62.70	61.7
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.5
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.0
MDB Crabbed angle to MDB Forward Line of Motion	degrees	26.0 to 28.0	27.0

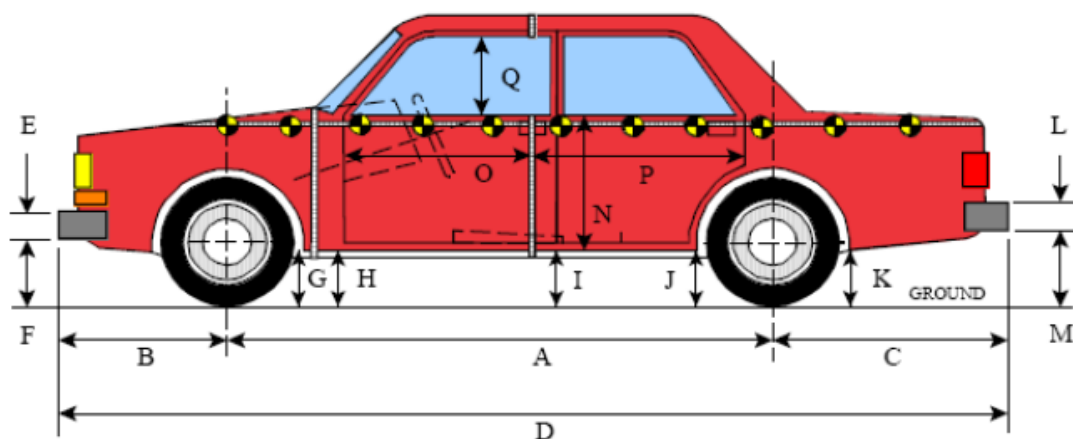
MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush (mm)
Row	Description	Height (mm)	Distance (mm)	Direction	
A	Center of Bumper	432	800	Left	251
B	Top of Bumper	533	800	Left	160
C	Mid-Level	686	800	Left	136
D	Top of Stack	813	800	Left	181

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014



LEFT SIDE VIEW

All MEASUREMENTS IN (mm) WITH TOLERANCE OF $\pm 3\text{mm}$

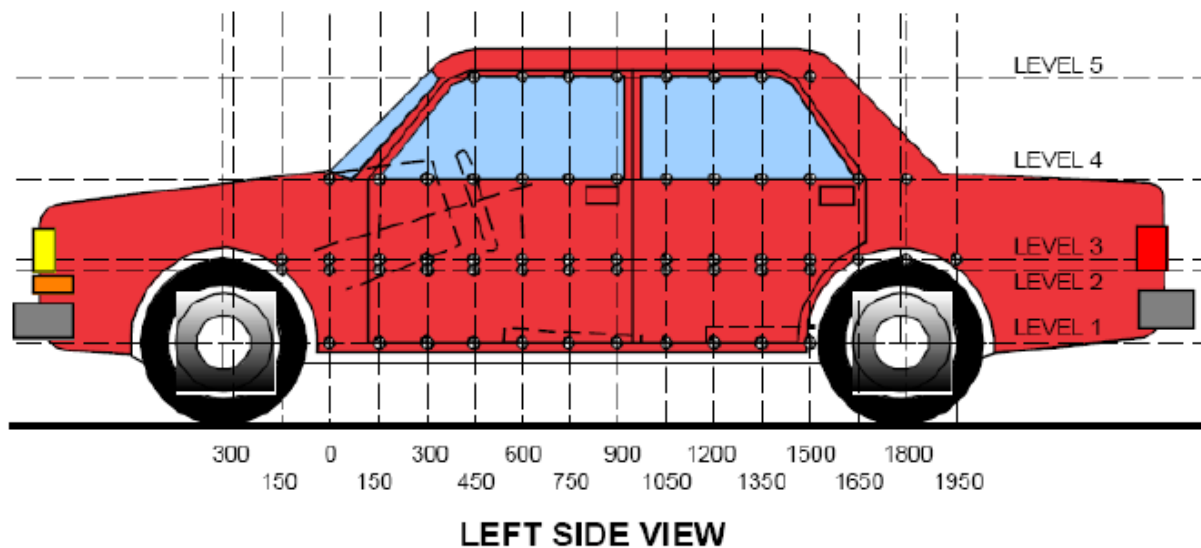
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2624	2616	-8
B	Front Axle to FSOV	916	927	11
C	Rear Axle to RSOV	1014	1011	-3
D	Total Length at Centerline	4551	4553	2
E	Front Bumper Thickness	145	145	0
F	Front Bumper Bottom to Ground	466	472	6
G	Sill Height at Front Wheel Well	256	249	-7
H	Sill Height at Front Door Leading Edge	256	252	-4
I	Sill Height at B Pillar	242	257	15
J1	Sill Height at Rear Wheel Well	250	256	6
J2	Pinch Weld Height at Rear Wheel Well	275	276	1
K	Sill Height Aft of Rear Wheel Well	277	270	-7
L	Rear Bumper Thickness	120	120	0
M	Rear Bumper Bottom to Ground	416	396	-20
N	Sill Height to Window Bottom of Front Window Sill	816	762	-53
O	Front Door Leading Edge to Impact CL	734	722	-12
P	Rear Door Trailing Edge to Impact CL	1354	1335	-18
Q	Front Window Opening	474	493	19
R	Right Side Length	4427	4400	-26
S	Left Side Length	4433	4417	-16
T	Maximum Vehicle Width	1820	1666	-154

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014



MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Units	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	mm	323	33	1200
2	Driver Hip Point	mm	662	185	900
3	Mid-Door	mm	701	191	900
4	Window Sill	mm	1045	55	1650
5	Window Top	mm	1560	-11*	900

*window top level bent outward from original position

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. 11 ... (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

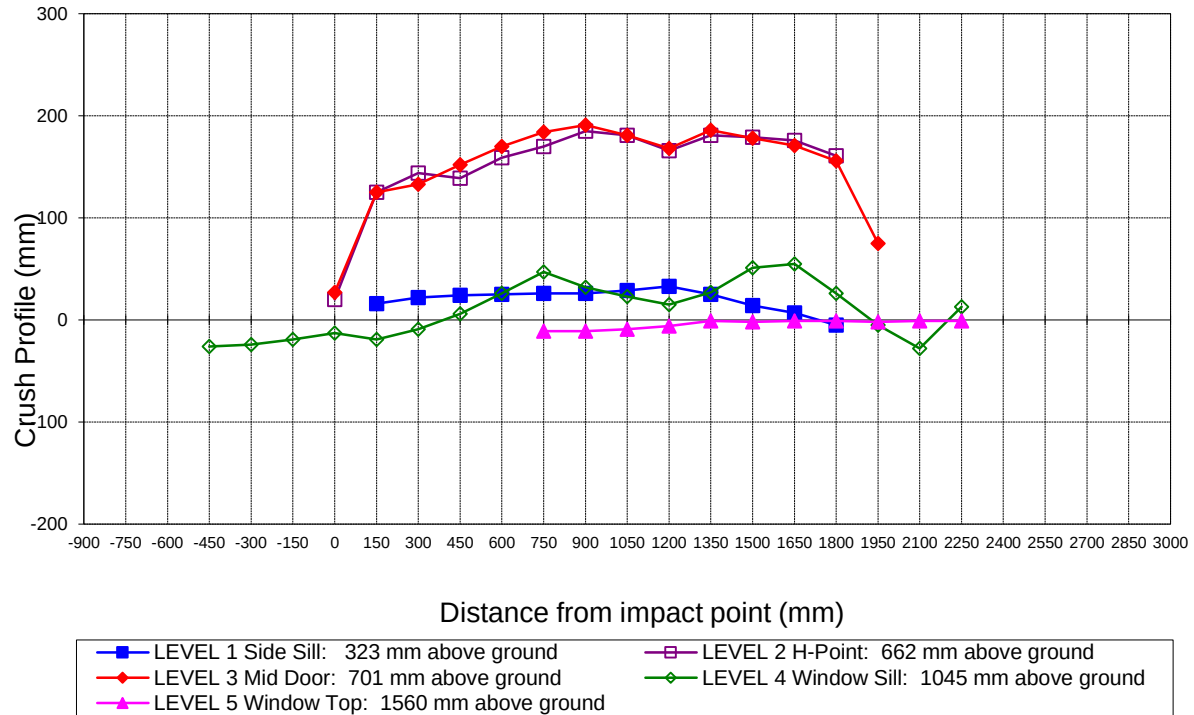
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450				736					762					-26	
-300				766					790					-24	
-150				791					810					-19	
0		909	909	805			889	882	818			20	27	-13	
150	899	905	904	810		883	780	779	829		16	125	125	-19	
300	898	901	901	822		876	757	768	831		22	144	133	-9	
450	892	902	902	832		868	763	750	826		24	139	152	6	
600	886	903	903	838		861	744	733	812		25	159	170	26	
750	884	903	904	843	542	858	733	720	796	553	26	170	184	47	-11
900	883	903	904	847	604	857	718	713	815	615	26	185	191	32	-11
1050	884	902	903	850	617	855	721	722	827	626	29	181	181	23	-9
1200	891	900	901	851	622	858	734	733	836	628	33	166	168	15	-6
1350	896	899	901	853	623	871	718	715	826	624	25	181	186	27	-1
1500	899	900	901	853	622	885	721	723	802	624	14	179	178	51	-2
1650	900	904	904	852	620	893	728	733	797	621	7	176	171	55	-1
1800	901	909	909	850	615	906	748	753	824	616	-5	161	156	26	-1
1950			911	852	606			836	857	608			75	-5	-2
2100				863	596				891	597				-28	-1
2250				838	581				825	582				13	-1
2400															
2550															
2700															
2850															
3000															

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 test based on an estimated impact point.

DATA SHEET NO. 11 (CONTINUED)
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

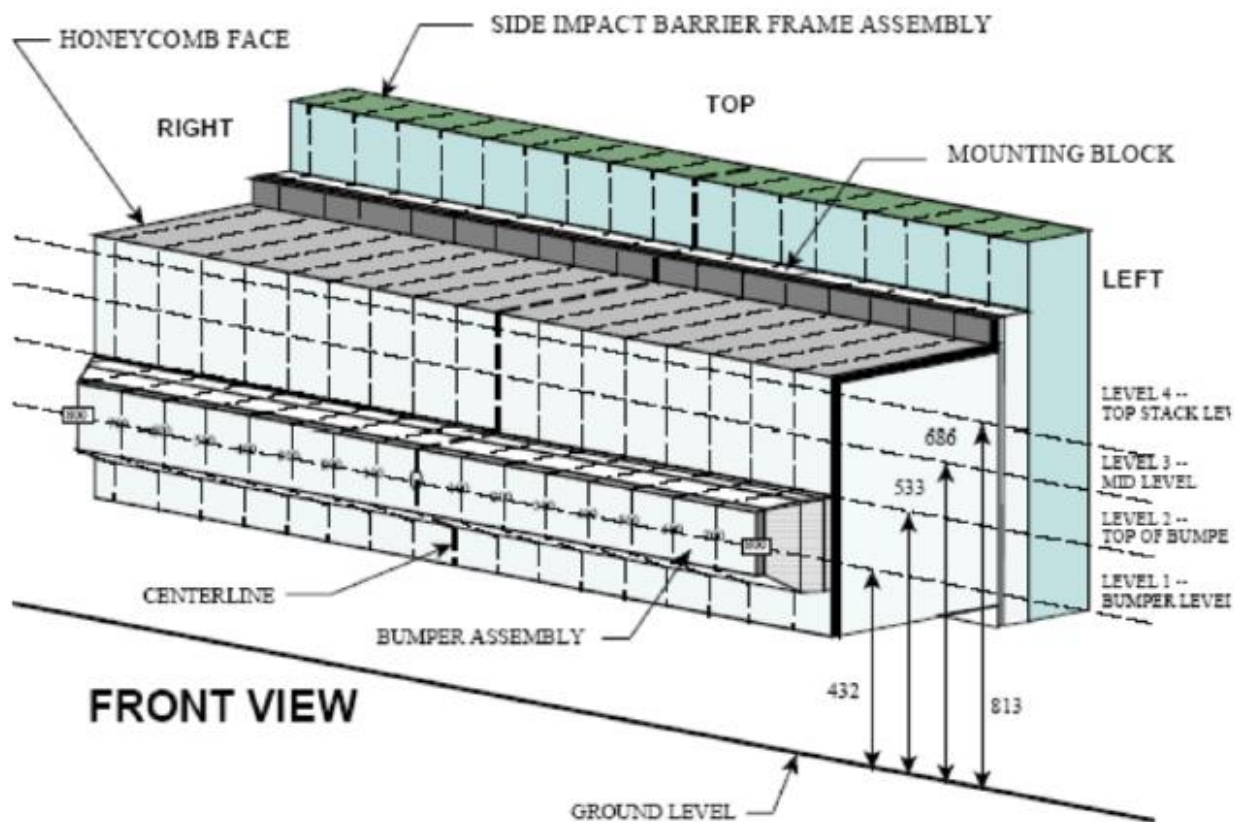


Vehicle Exterior Crush Measurements - Visual Representation

DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

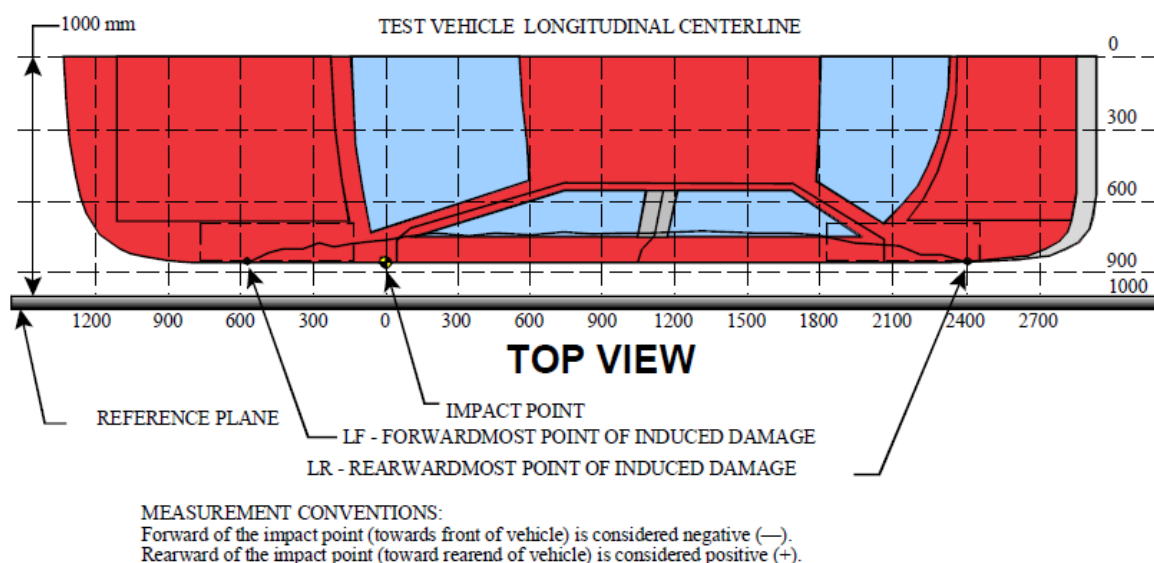
Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	217	222	223	223	224	226	224	225	225	225	226	227	228	228	233	246	251
2	106	110	112	113	113	113	111	111	112	112	112	113	113	114	117	128	160
3	68	55	51	48	50	65	82	53	44	40	43	49	60	73	90	104	136
4	103	84	67	61	76	103	103	77	64	59	64	67	73	91	105	139	181

DATA SHEET NO. 13
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014

For guidance regarding damage profile distance measurements, please refer to the latest version of the *NHTSA Test Reference Guide, Volume 1: Vehicle Tests*.



VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	0	3	118	91	27
2	390	3	243	98	145
3	780	3	281	96	185
4	1170	3	269	99	170
5	1560	3	273	98	175
6	1950	3	164	89	75

MDB DAMAGE PROFILE DISTANCES

DPD	Distance From Center of MDB	Level	Post-Test (mm)*
1	80 mm left of center	1	251
2	480 mm left of center	1	228
3	160 mm left of center	1	225
4	160 mm right of center	1	225
5	480 mm right of center	1	224
6	800 mm right of center	1	217

DATA SHEET NO. 14
FMVSS NO. 301 STATIC ROLLOVER RESULTS

Test Vehicle: <u>2015 Honda CR-V SUV</u>	NHTSA No.: <u>M20155317</u>
Test Program: <u>NCAP Side MDB Impact Test</u>	Test Date: <u>12/11/2014</u>

Test Time: <u>1:55 PM</u>	Temperature: <u>21°C</u>
---------------------------	--------------------------

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

FMVSS NO. 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	75	300	375
90° to 180°	68	300	368
180° to 270°	65	300	365
270° to 360°	69	300	369

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	

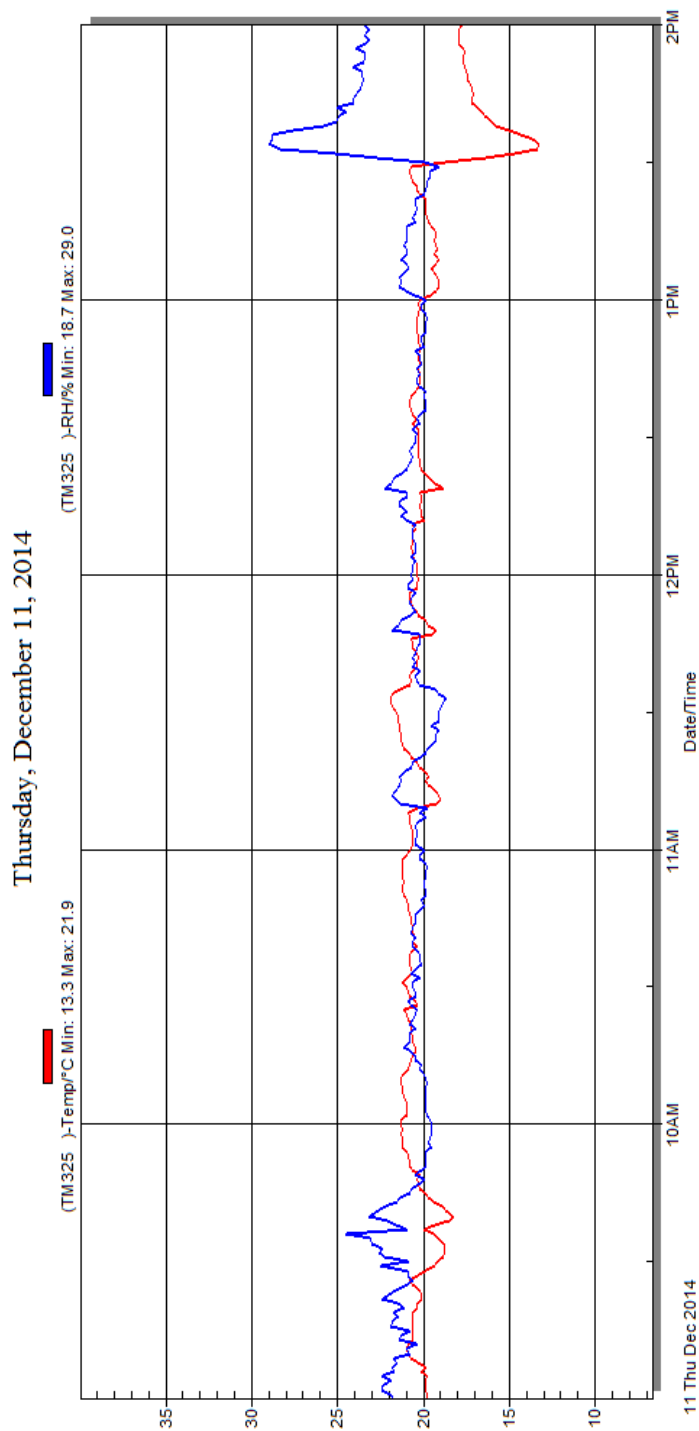
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 15
DUMMY/VEHICLE TEMPERATURE AND HUMIDITY STABILIZATION DATA

Test Vehicle: 2015 Honda CR-V SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No.: M20155317
 Test Date: 12/11/2014



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

APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

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2	As-Delivered Left Rear 3/4 View of Test Vehicle	A-5
3	Pre-Test Frontal View of Test Vehicle	A-6
4	Post-Test Frontal View of Test Vehicle	A-6
5	Pre-Test Left Front 3/4 View of Test Vehicle	A-7
6	Post-Test Left Front 3/4 View of Test Vehicle	A-7
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8	Post-Test Left Side View of Test Vehicle	A-8
9	Pre-Test Left Rear 3/4 View of Test Vehicle	A-9
10	Post-Test Left Rear 3/4 View of Test Vehicle	A-9
11	Pre-Test Rear View of Test Vehicle	A-10
12	Post-Test Rear Side View of Test Vehicle	A-10
13	Pre-Test Right Side View of Test Vehicle	A-11
14	Post-Test Right Side View of Test Vehicle	A-11
15	Pre-Test Overhead View of Test Area	A-12
16	Post-Test Overhead View of Test Area	A-12
17	Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle	A-13
18	Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle	A-13
19	Pre-Test Close-Up View of Impact Point Target	A-14
20	Post-Test Close-up View of Impact Point Target	A-14
21	Pre-Test Left Front Door Latch Close-Up	A-15
22	Post-Test Left Front Door Latch Close-Up	A-15
23	Pre-Test Left Rear Door Latch Close-Up	A-16
24	Post-Test Left Rear Door Latch Close-Up	A-16
25	Pre-Test Front Close-up View of Driver Dummy	A-17
26	Post-Test Front Close-up View of Driver Dummy	A-17
27	Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking	A-18
28	Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View	A-18
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30	Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning	A-19
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Figure A-1: As-Delivered Right Front 3/4 View of Test Vehicle



Figure A-2: As-Delivered Left Rear 3/4 View of Test Vehicle

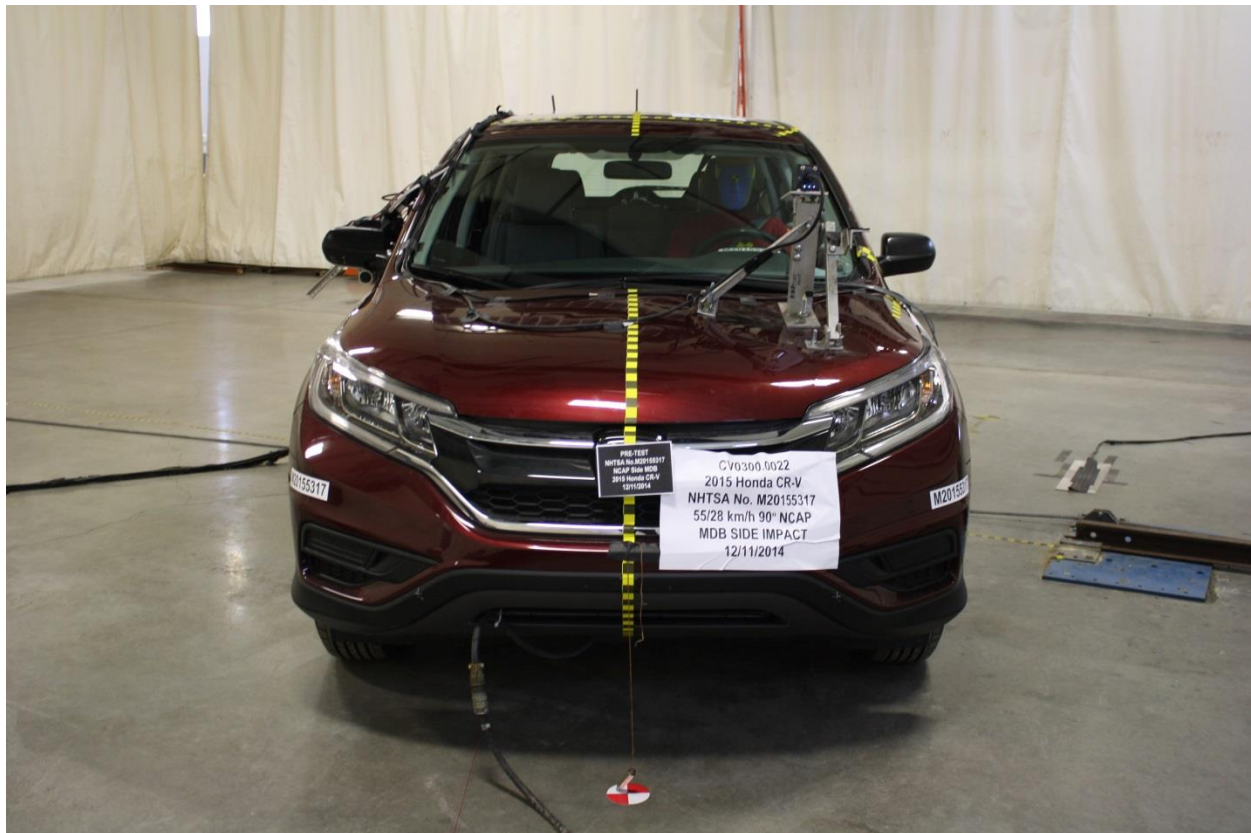


Figure A-3: Pre-Test Frontal View of Test Vehicle



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

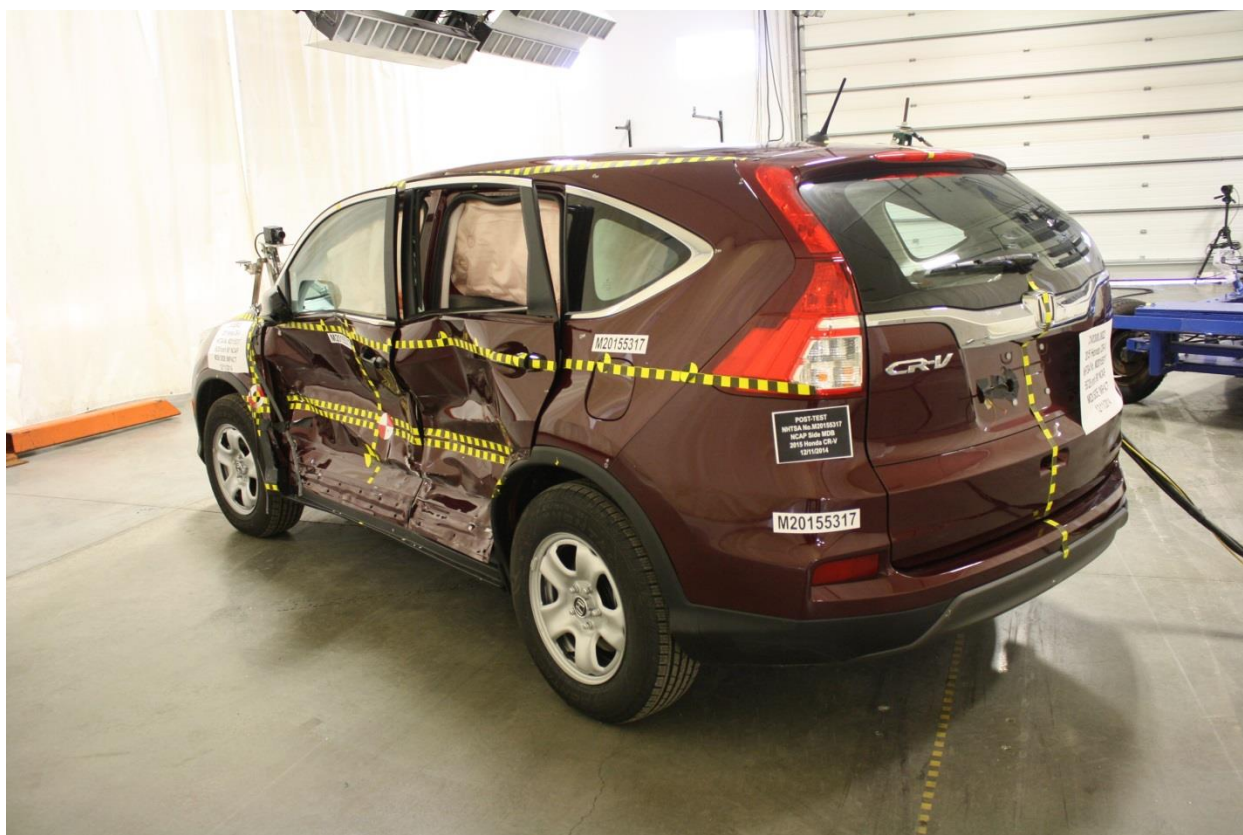


Figure A-10: Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



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

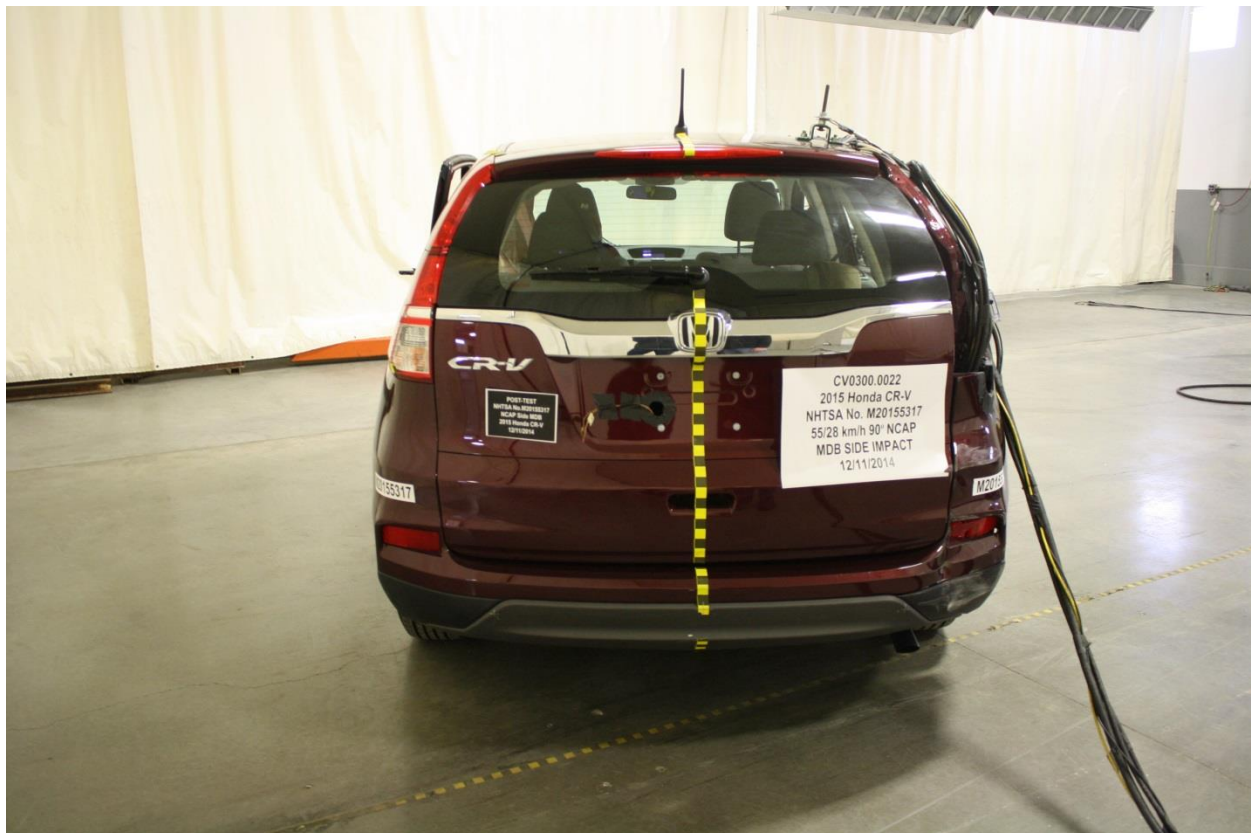


Figure A-12: Post-Test Rear Side View of Test Vehicle



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



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

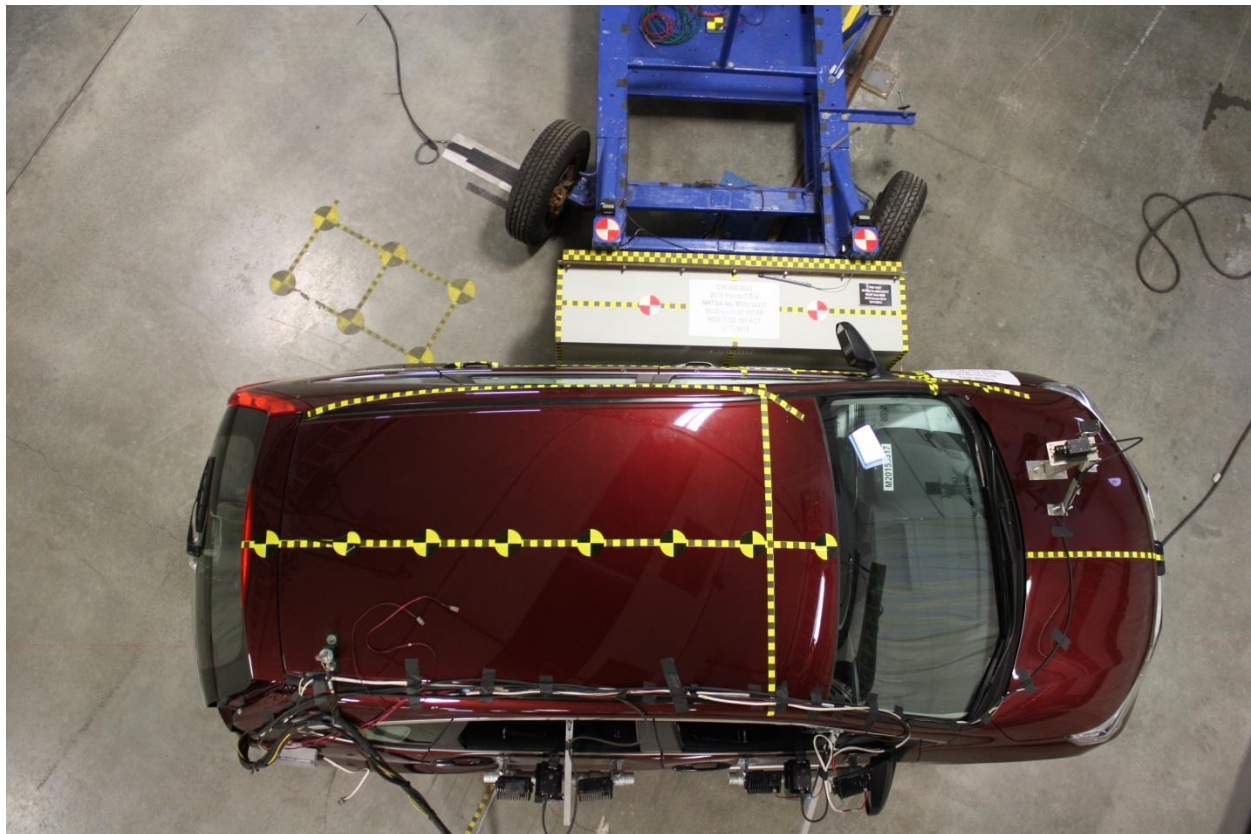


Figure A-15: Pre-Test Overhead View of the Test Area

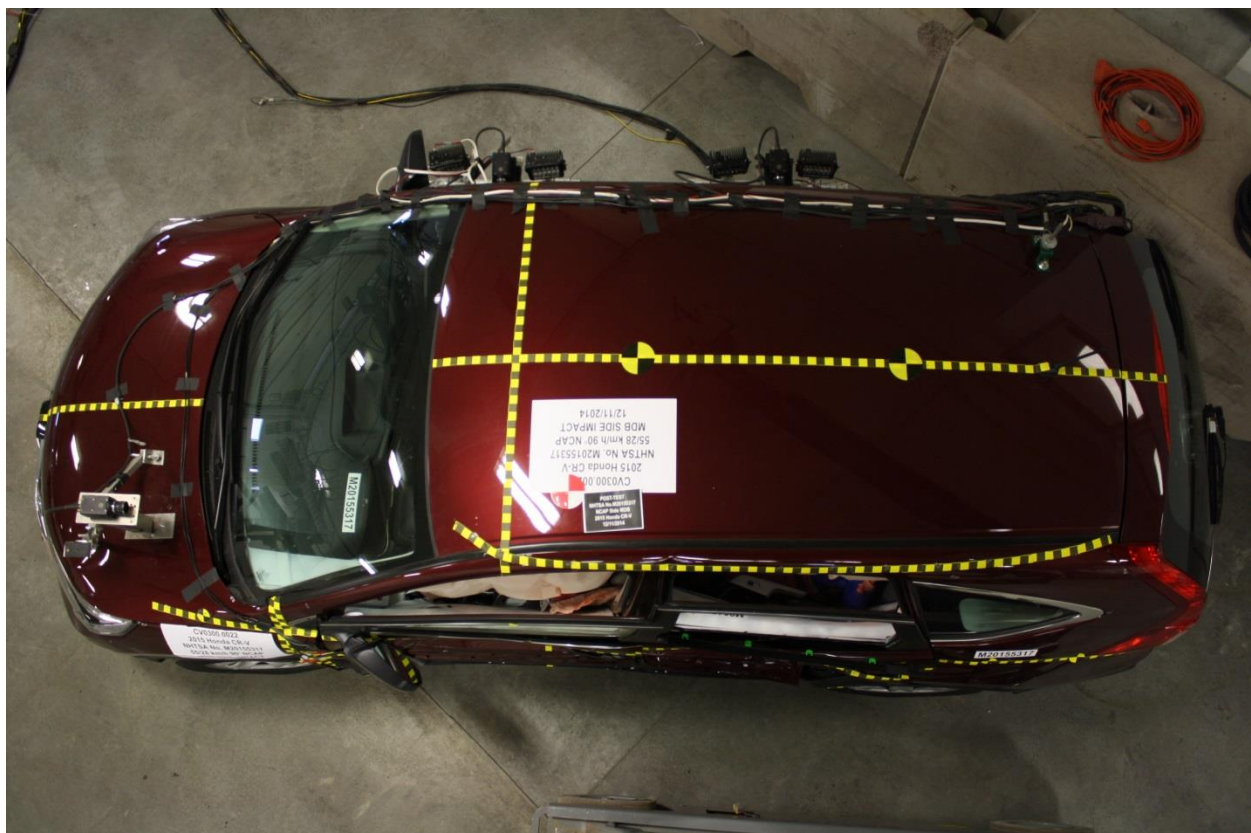


Figure A-16: Post-Test Overhead View of Test Area

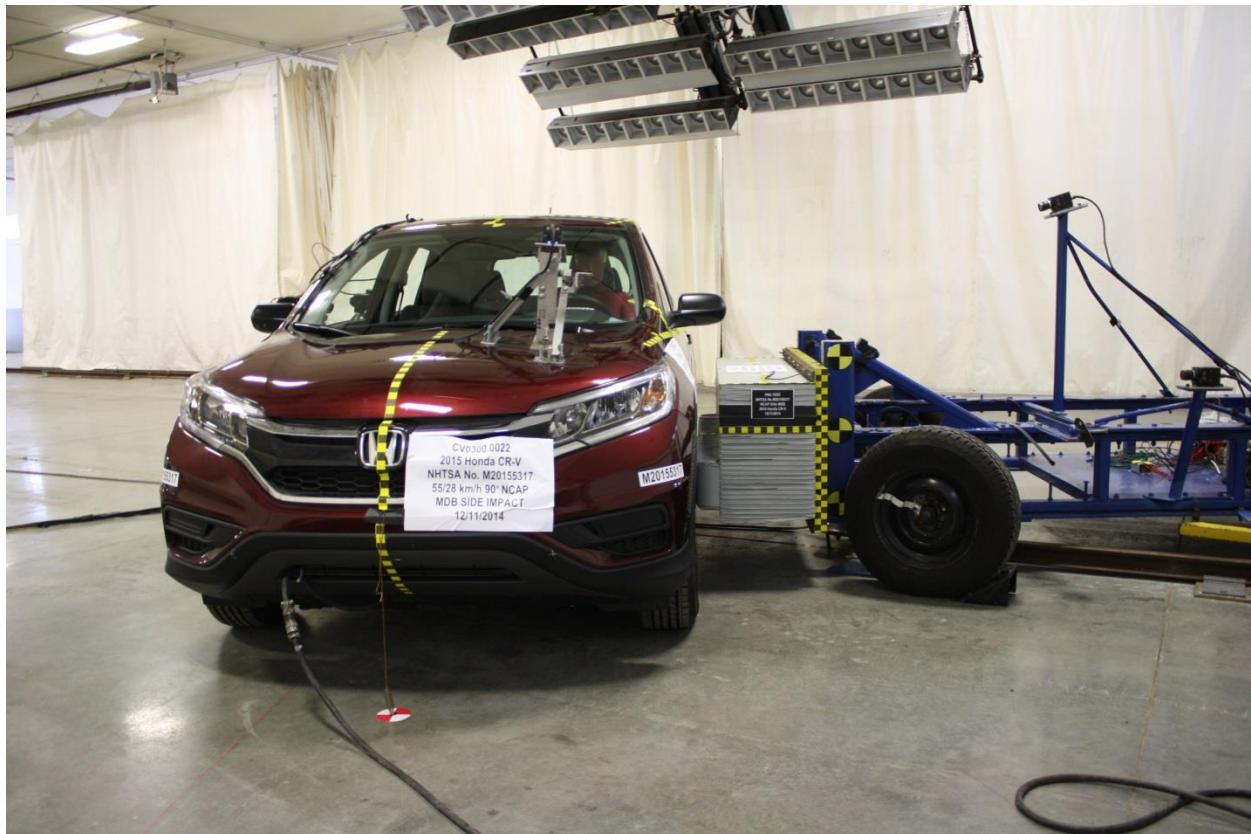


Figure A-17: Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle



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



Figure A-21: Pre-Test Left Front Door Latch Close-Up

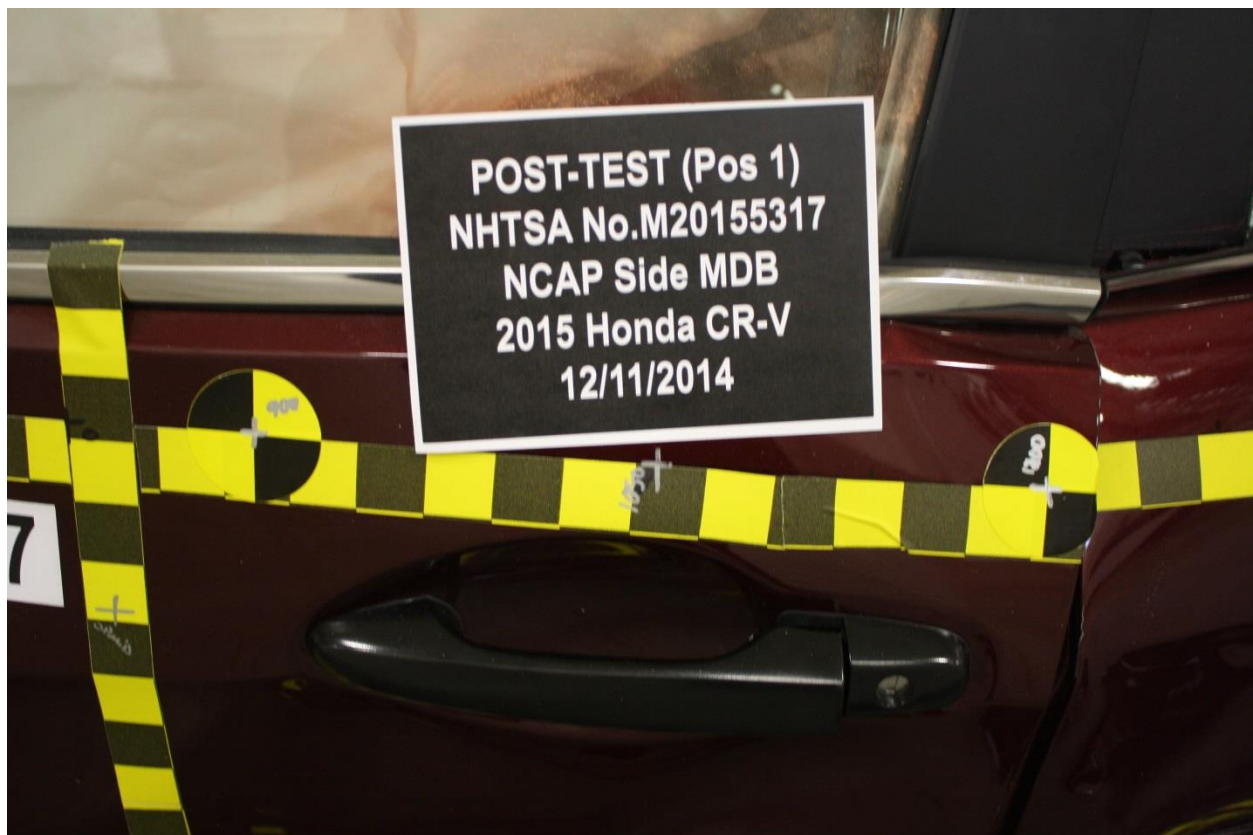


Figure A-22: Post-Test Left Front Door Latch Close-Up

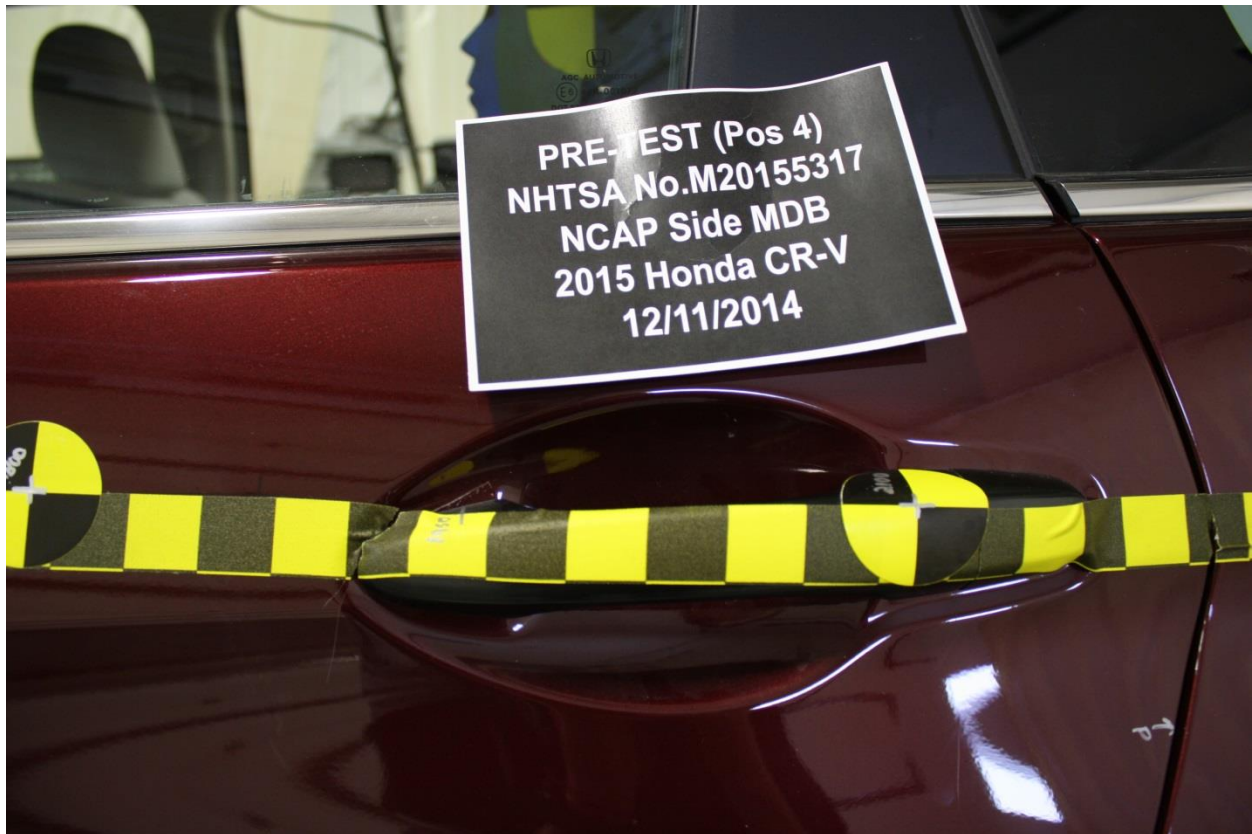


Figure A-23: Pre-Test Left Rear Door Latch Close-Up

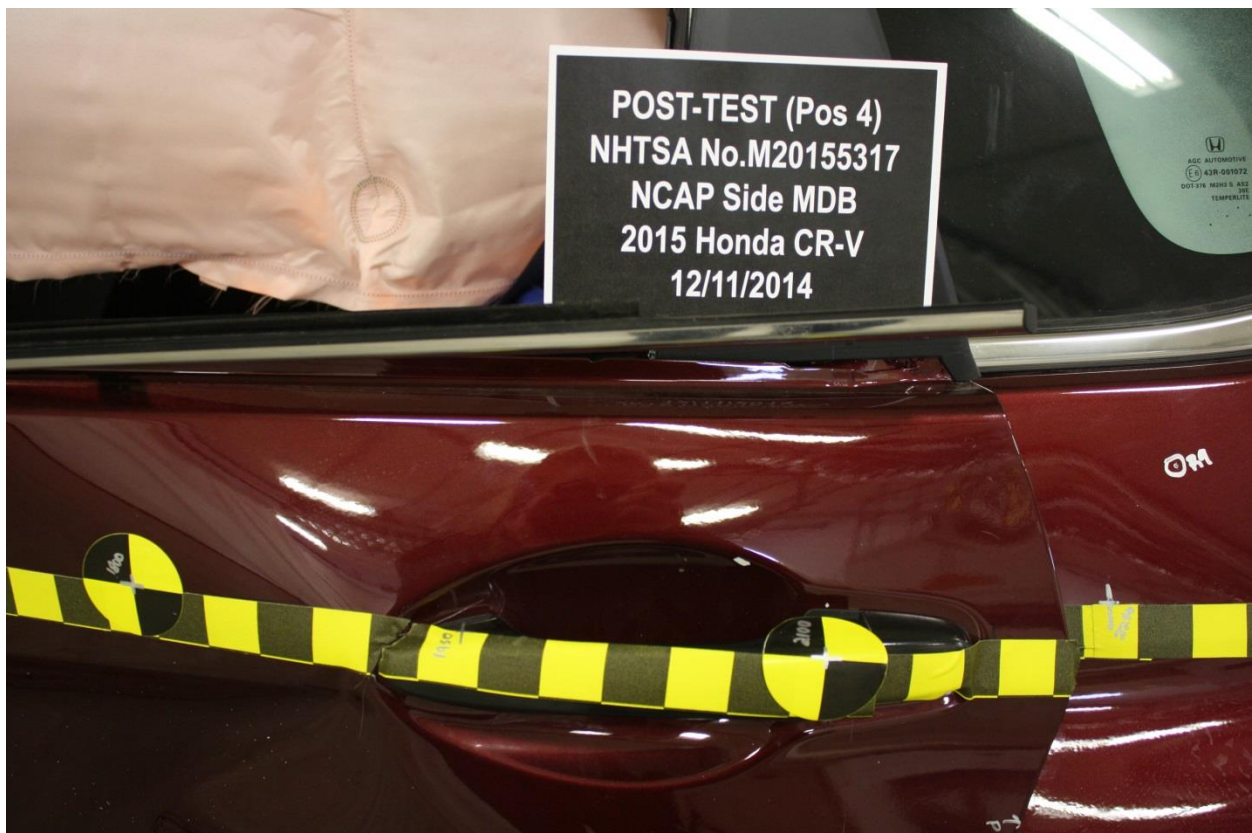


Figure A-24: Post-Test Left Rear Door Latch Close-Up



Figure A-25: Pre-Test Front Close-up View of Driver Dummy



Figure A-26: Post-Test Front Close-up View of Driver Dummy



Figure A-27: Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking



Figure A-28: Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View



Figure A-29: Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



Figure A-30: Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning

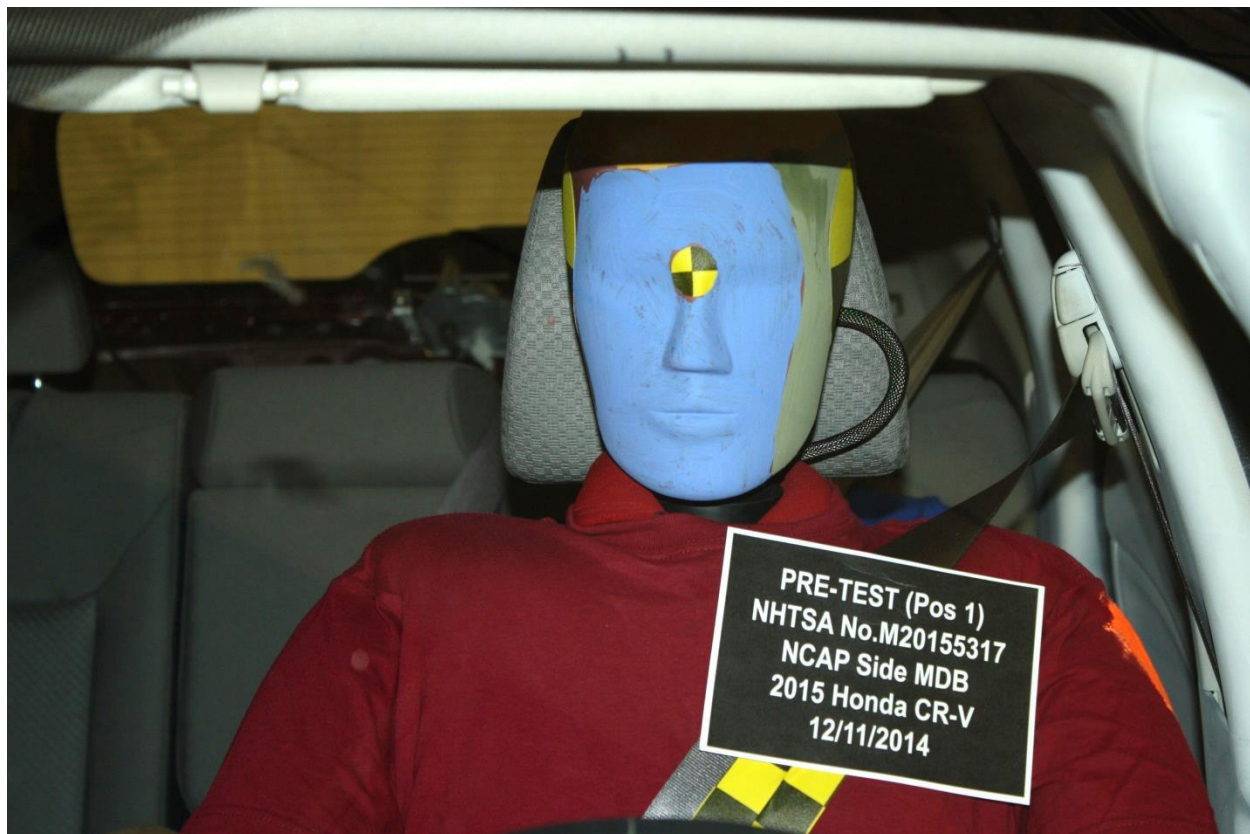


Figure A-31: Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



Figure A-32: Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning



Figure A-33: Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



Figure A-34: Pre-Test Placement of Driver Dummy's Feet



Figure A-35: Pre-Test View of Belt Anchorage for Driver Dummy



Figure A-36: Pre-Test Left Side View of Steering Wheel



Figure A-37: View of Disengaged Parking Brake



Figure A-38: Pre-Test View of Parking Brake



Figure A-39: Pre-test Close-Up Left Side View of Driver Seat Track



Figure A-40: Pre-Test Close-Up Left Side View of Driver Seat Back



Figure A-41: Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Figure A-42: Pre-Test Driver Dummy and Door Clearance View

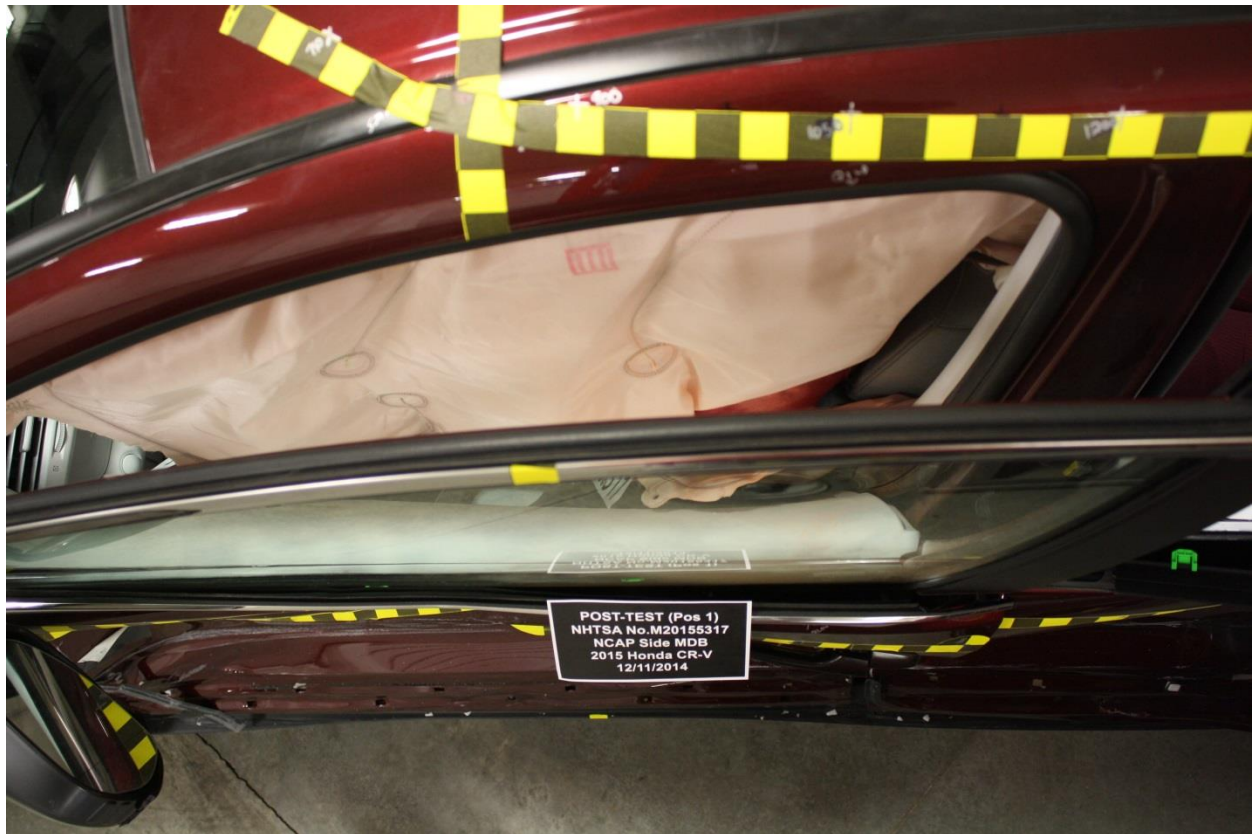


Figure A-43: Post-Test Driver Dummy and Door Clearance View



Figure A-44: Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



Figure A-45: Post-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



Figure A-46: Pre-Test Driver Inner Door Panel View



Figure A-47: Post-Test Driver Inner Door Panel View



Figure A-48: Post-Test Driver Dummy Close-Up Head Contact with Vehicle View



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



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



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



Figure A-52: Post-Test Driver Dummy Close-Up Pelvis Contact View



Figure A-53: Post-Test Driver Dummy Close-Up Pelvis Contact with Side Airbag View



Figure A-54: Post-Test Driver Dummy Close-Up Knee Contact View



Figure A-55: Pre-Test Left Side View of Passenger Dummy Showing Belt and Chalking



Figure A-56: Pre-Test Left Side View of Passenger Dummy Shoulder and Door Top View



Figure A-57: Post-Test Left Side View of Passenger Dummy Shoulder and Door Top View



Figure A-58: Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning



Figure A-59: Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint



Figure A-60: Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



Figure A-61: Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



Figure A-62: Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck Bracket



Figure A-63: Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level



Figure A-64: Pre-Test Placement of Rear Passenger Dummy's Feet



Figure A-65: Pre-Test View of Belt Anchorage for Rear Passenger Dummy



Figure A-66: Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



Figure A-67: Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



Figure A-68: Pre-Test Close-Up View of Rear Passenger Seat Back or Head Restraint



Figure A-69: Pre-Test Passenger Dummy and Door Clearance View



Figure A-70: Post-Test Passenger Dummy and Door Clearance View



Figure A-71: Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



Figure A-72: Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



Figure A-73: Pre-Test Passenger Inner Door Panel View



Figure A-74: Post-Test Passenger Inner Door Panel View



Figure A-75: Post-Test Rear Passenger Dummy Close-Up Head Contact with Vehicle View



Figure A-76: Post-Test Rear Passenger Dummy Close-Up Head Contact with Side Airbag View



Figure A-77: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Vehicle Interior View

Photo Not Applicable

Figure A-78: Post-Test Rear Passenger Dummy Close-Up Torso Contact with Side Airbag View



Figure A-79: Post-Test Rear Passenger Dummy Close-Up Pelvis Contact View

Photo Not Applicable

Figure A-80: Post-Test Rear Passenger Dummy Close-Up Pelvis Contact with Side Airbag View

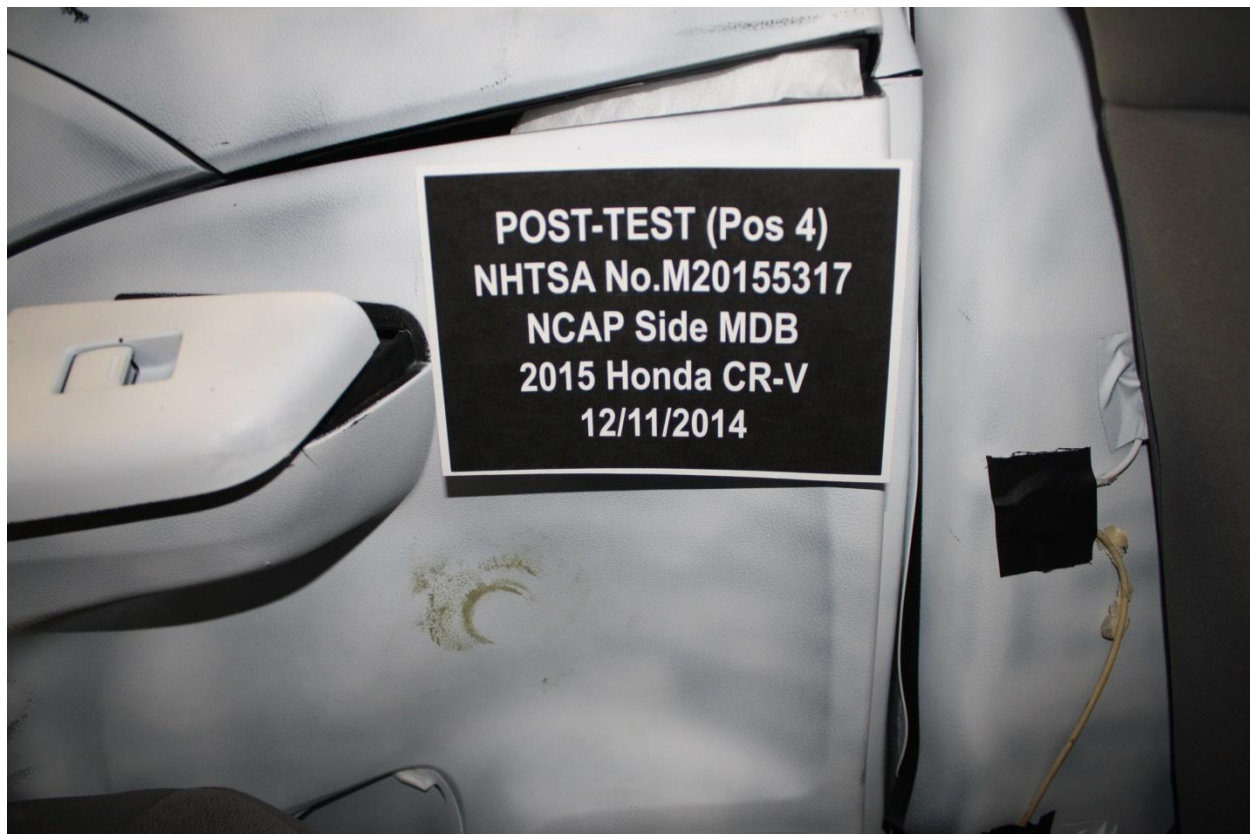


Figure A-81: Post-Test Rear Passenger Dummy Close-Up Knee Contact View



Figure A-82: Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Figure A-83: Post-Test View of Fuel Filler Cap or Fuel Filler Neck



Figure A-84: Pre-Test Front View of MDB Impactor Face



Figure A-85: Post-Test Front View of MDB Impactor Face

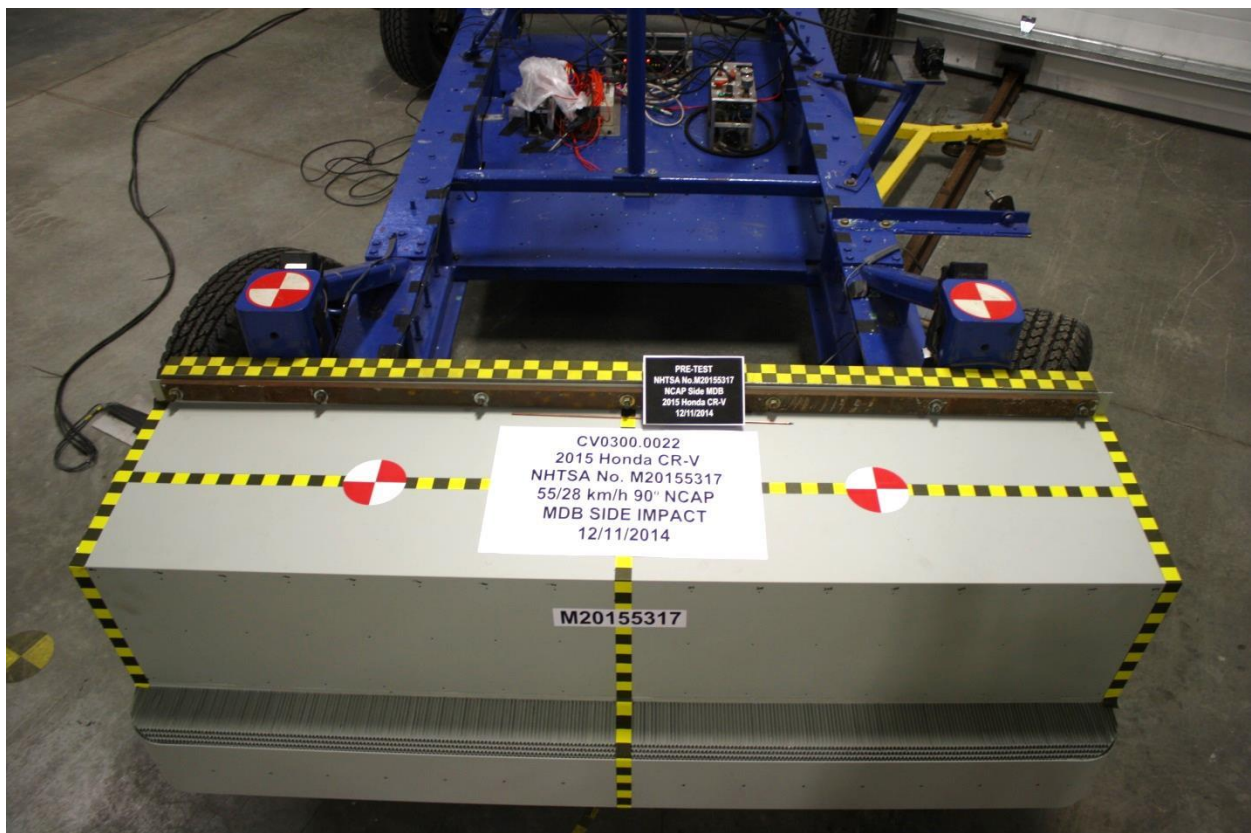


Figure A-86: Pre-Test Top View of MDB Impactor Face



Figure A-87: Post-Test Top View of MDB Impactor Face



Figure A-88: Pre-Test Left Side View of MDB Impactor Face



Figure A-89: Post-Test Left Side View of MDB Impactor Face

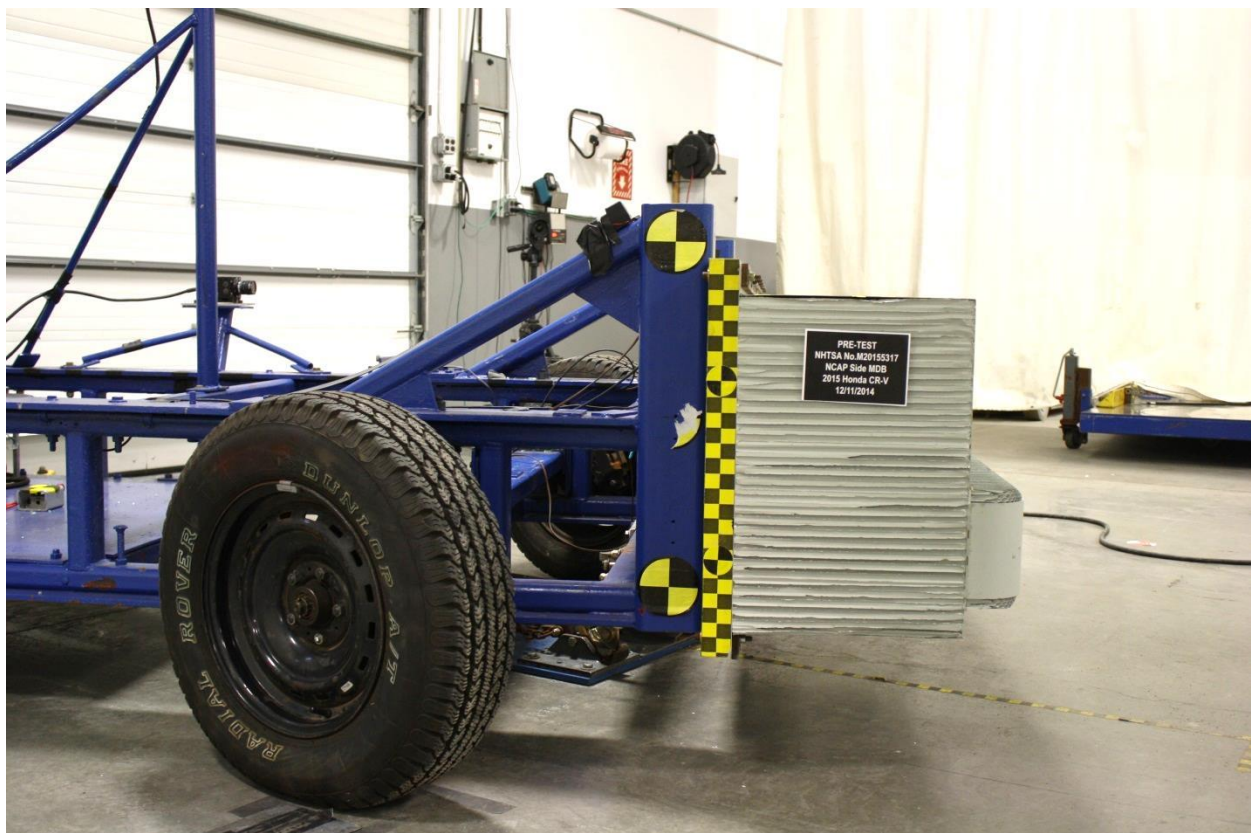


Figure A-90: Pre-Test Right Side View of MDB Impactor Face

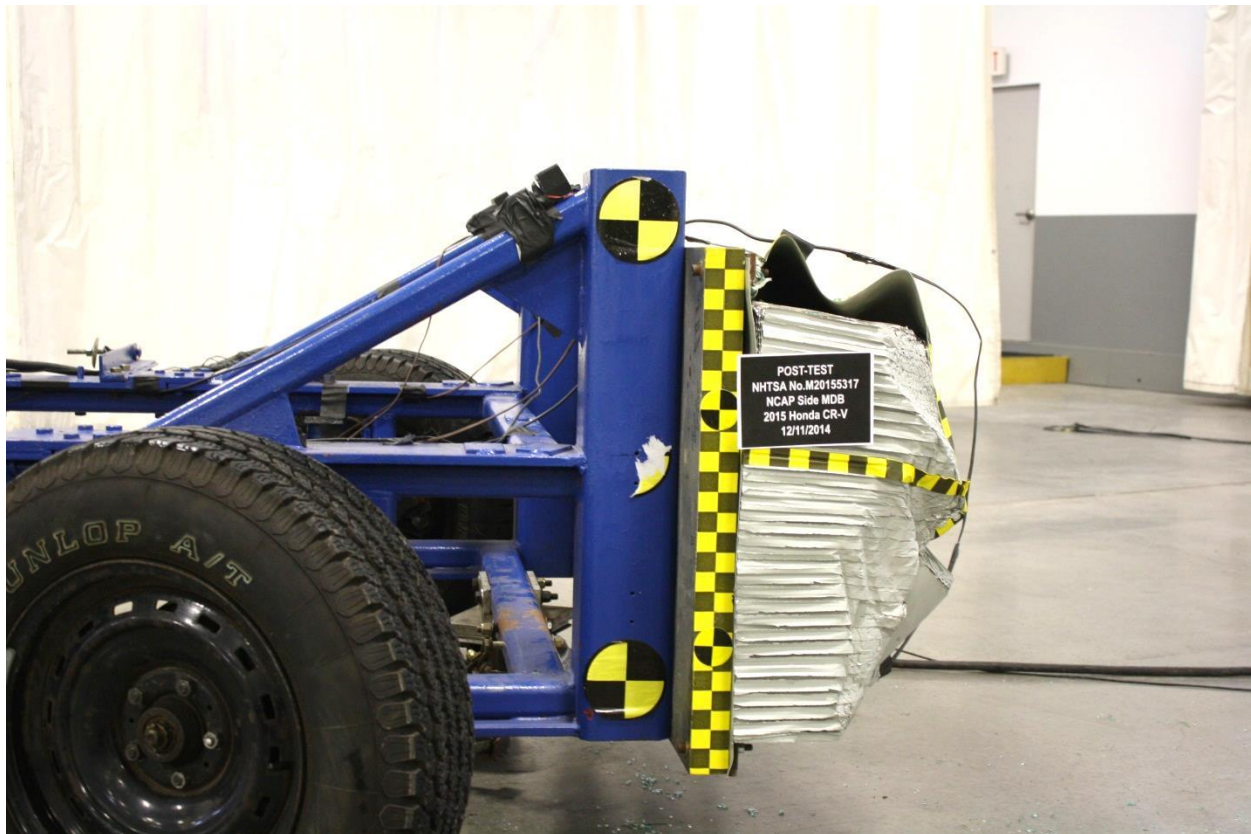


Figure A-91: Post-Test Right Side View of MDB Impactor Face



Figure A-92: Close-Up View of Vehicle's Certification Label



Figure A-93: Close-Up View of Vehicle's Tire Information Placard or Label



Figure A-94: Pre-Test Ballast View

Photo Not Available

Figure A-95: Post-Test Primary and Redundant Speed Trap Read-Out
Based on NHTSA's discretion the calculated speed was 61.7 KPH. Due to an equipment malfunction, only the calculated speed was available.



Figure A-96: FMVSS No. 301 Static Rollover 0 Degrees



Figure A-97: FMVSS No. 301 Static Rollover 90 Degrees



Figure A-98: FMVSS No. 301 Static Rollover 180 Degrees



Figure A-99: FMVSS No. 301 Static Rollover 270 Degrees



Figure A-100: FMVSS No. 301 Static Rollover 360 Degrees



Figure A-101: Impact Event

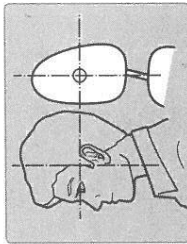
HONDA		2015 CR-V 5DR 2WD LX EXT: BASQUE RED P. II ENGINE NUMBER: K24V1-1026707 INT: GRAY																						
STANDARD EQUIPMENT AT NO EXTRA COST		Manufacturer's Suggested Retail Price \$23,320.00 Full Tank of Fuel No Charge																						
* TECHNICAL FEATURES * 188hp 2.4-Liter DOHC 16-Valve i-VTEC 4-Cyl. Earth Dreams Direct-Injection Engine - Continuously Variable Transmission (CVT) 4-Wheel Disc Brakes - Front MacPherson Strut Suspension - Rear Multi-Link Suspension - Drive-by-Wire Throttle System - Electric Power-Assisted Rack-and-Pinion Steering - Front and Rear Stabilizer Bars		* INTERIOR FEATURES * - AM/FM/CD Audio System with 4 Speakers - Intelligent Multi-Information Display (i-MID) w/ Rearview Camera - Steering Wheel-Mounted Controls - Bluetooth Audio - Bluetooth HandsFreeLink - Pandora Internet Radio Interface - USB Audio Interface - Smart Text Messaging Functionality - Air Conditioning with Air Filtration System - Rear Console Vents 60/40 Split Fold-Down Rear Seatback - Power Windows and Door Locks - Driver's Auto Up/Down Window - Exterior Temperature Display 12-Volt Power Outlets - Cruise Control - Floor Mats - Front Center Console with Conversation Mirror																						
* SAFETY FEATURES * - Driver's and Front Passenger's Dual-Stage Airbags (SRS) - Driver's and Front Passenger's Side Airbags - Side Curtain Airbags with Rollover Sensor - Vehicle Stability Assist (VSA) - Anti-Lock Braking System (ABS) - Electronic Brake Distribution (EBD) - Brake Assist - Tire Pressure Monitoring System - ACE Body Structure - LATCH System for Child Seats		* EXTERIOR FEATURES * 16" x 6.5" Steel Wheels - P215/70 R16 All-Season Tires - Intermittent Windshield Wipers - Power Door Mirrors - Remote Entry System																						
Destination and Handling 830.00 TOTAL VEHICLE PRICE (Includes Pre-Delivery Service) \$24,150.00 License and title fees, state and local taxes and dealer options and accessories are not included in the manufacturer's suggested retail price.		EPA DOT Fuel Economy and Environment Gasoline Vehicle Fuel Economy 29 MPG combined city/hwy 27 city 34 highway 3.4 gallons per 100 miles Small SUVs range from 16 to 31 MPG. The best vehicle rates 119 MPG. You save \$2,000 in fuel costs over 5 years compared to the average new vehicle. Annual fuel cost \$1,800 Fuel Economy & Greenhouse Gas Rating (tailpipe only) Smog Rating (tailpipe only) 1 7 10 1 5 10 Best Best Actual results will vary for many reasons, including driving conditions and how you drive and maintain your vehicle. The average new vehicle gets 24 MPG and costs \$11,000 to fuel over 5 years. Cost estimates are based on 15,000 miles per year at \$3.50 per gallon. MPG is miles per gallon gasoline equivalent. Vehicle emissions are a significant cause of climate change and smog. fuel economy.gov Calculate personalized estimates and compare vehicles																						
PARTS CONTENT INFORMATION FOR VEHICLES IN THIS CARLINE U.S./Canadian Parts Content: 70 % Major Sources of Foreign Parts Content: JAPAN 15 % NOTE: Parts content does not include final assembly, distribution or other non-parts costs.		GOVERNMENT 5-STAR SAFETY RATING 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. <table border="1"> <tr> <td>Frontal Crash</td> <td>Driver Passenger</td> <td>Not Rated</td> </tr> <tr> <td colspan="3">Based on the risk of injury in a frontal impact. Should ONLY be compared to other vehicles of similar size and weight.</td> </tr> <tr> <td>Side Crash</td> <td>Front seat</td> <td>Not Rated</td> </tr> <tr> <td></td> <td>Rear seat</td> <td>Not Rated</td> </tr> <tr> <td colspan="3">Based on the risk of injury in a side impact.</td> </tr> <tr> <td>Rollover</td> <td></td> <td>★★★★</td> </tr> <tr> <td colspan="3">Based on the risk of rollover in a single vehicle crash.</td> </tr> </table>		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		Rear 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.		
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																						
	Rear 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.																								
FOR THIS VEHICLE Final Assembly Point: ALLISTON, ONTARIO CANADA Country of Origin: Engine: U.S.A. Transmission: U.S.A.		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																						
H43297 73 Miles 10/14		NAPLETON'S HONDA 6600 E.RIVERSIDE BLVD. LOVES PARK, IL 61111 PORT OF ENTRY: BUFFALO DELIVERY POINT: SCHAUMBURG SHIP#: 116-045 ROW/SPACE: N50 ELWOOD TRANS.METHOD: N50 ELWOOD VIN: 2HKRM3H35FH502462 ORIG. DLR: 208125 REF. NO: 40646 HN CODE: HN-3125 EMISSION: 50 STATE CONTROL NO: 106084 DEALER: 208125																						

Figure A-102: Monroney Label

■ Adjusting the Head Restraints

Your vehicle is equipped with head restraints in all seating positions. Head restraints are most effective for protection against whiplash and other rear-impact crash injuries.

The center of the back of the occupant's head should rest against the center of the restraint. The tops of the occupant's ears should be level with the center height of the restraint.



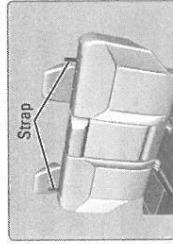
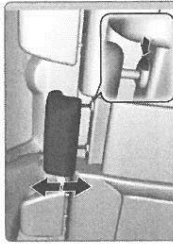
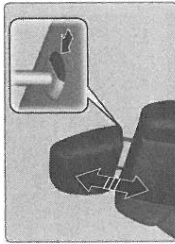
Front and rear center seat head restraints

To raise the head restraint: Pull it upward.

To lower the head restraint: Push it down while pressing the release button.

To remove the head restraint: Pull the restraint up as far as it will go. Then push the release button, and pull the restraint up and out.

To reinstall a head restraint: Insert the legs back in place, then adjust the head restraint to an appropriate height while pressing the release button. Pull up on the restraint to make sure it is locked in position.



Rear outer seat head restraints

To fold down the head restraint: Pull up on the strap.

To return the head restraint to its upright position: Pull up the head restraint and push it back until it latches into place.

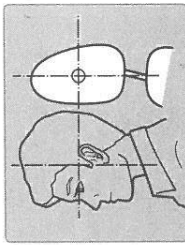
In order for the head restraint system to work properly:

- Do not hang any items on the head restraints, or from the restraint legs.
- Do not place any object between an occupant and the seat-back.
- Install each restraint in its proper location.

■ Adjusting the Head Restraints

Your vehicle is equipped with head restraints in all seating positions. Head restraints are most effective for protection against whiplash and other rear-impact crash injuries.

The center of the back of the occupant's head should rest against the center of the restraint. The tops of the occupant's ears should be level with the center height of the restraint.



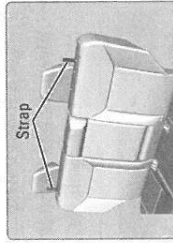
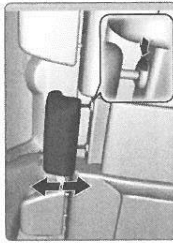
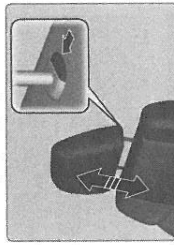
Front and rear center seat head restraints

To raise the head restraint: Pull it upward.

To lower the head restraint: Push it down while pressing the release button.

To remove the head restraint: Pull the restraint up as far as it will go. Then push the release button, and pull the restraint up and out.

To reinstall a head restraint: Insert the legs back in place, then adjust the head restraint to an appropriate height while pressing the release button. Pull up on the restraint to make sure it is locked in position.



Rear outer seat head restraints

To fold down the head restraint: Pull up on the strap.

To return the head restraint to its upright position: Pull up the head restraint and push it back until it latches into place.

In order for the head restraint system to work properly:

- Do not hang any items on the head restraints, or from the restraint legs.
- Do not place any object between an occupant and the seat-back.
- Install each restraint in its proper location.

Figure A-103: Driver Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

Figure A-104: Left Rear Passenger Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B

VEHICLE AND DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS

Driver & Passenger Dummy Instrumentation Plots

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7	Driver Lower Thorax Rib Deflection (Y) vs. Time	B-6
8	Driver Thorax Rib Deflection Maximum vs. Time	B-6
9	Driver Anterior Abdominal Force (Y) vs. Time	B-7
10	Driver Middle Abdominal Force (Y) vs. Time	B-7
11	Driver Posterior Abdominal Force (Y) vs. Time	B-7
12	Driver Total Abdominal Force (Y) vs. Time	B-7
13	Driver Pubic Symphysis Force (Y) vs. Time	B-8
14	Passenger Head Acceleration (X) vs. Time Primary	B-8
15	Passenger Head Acceleration (Y) vs. Time Primary	B-8
16	Passenger Head Acceleration (Z) vs. Time Primary	B-8
17	Passenger Head Resultant Acceleration Primary vs. Time	B-9
18	Passenger Lower Spine T12 Acceleration (X) vs. Time	B-9
19	Passenger Lower Spine T12 Acceleration (Y) vs. Time	B-9
20	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-9
21	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-10
22	Passenger Iliac Force on Impact Side (Y) vs. Time	B-10
23	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-10
24	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-10

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 & Passenger Dummy Instrumentation Data

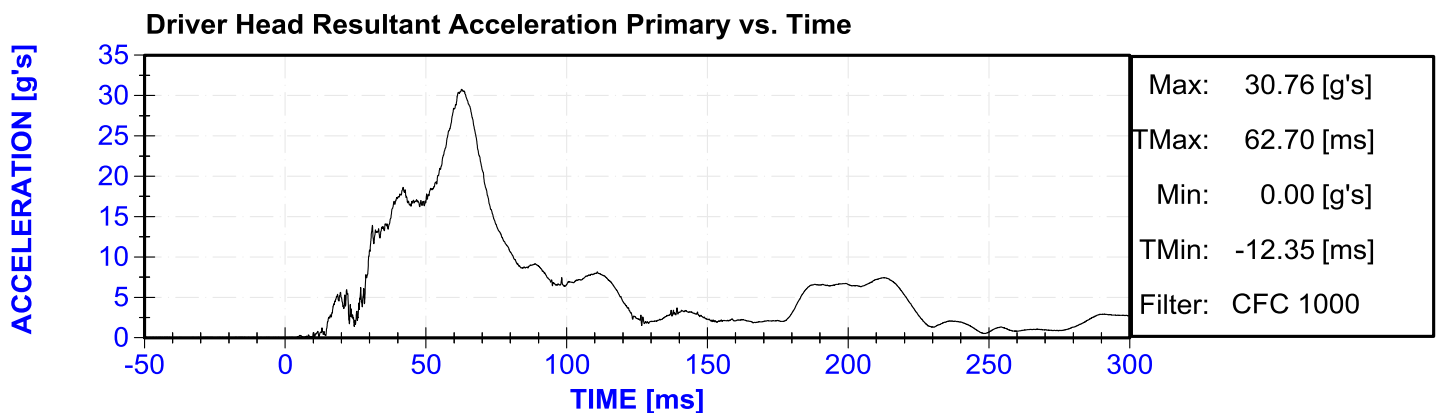
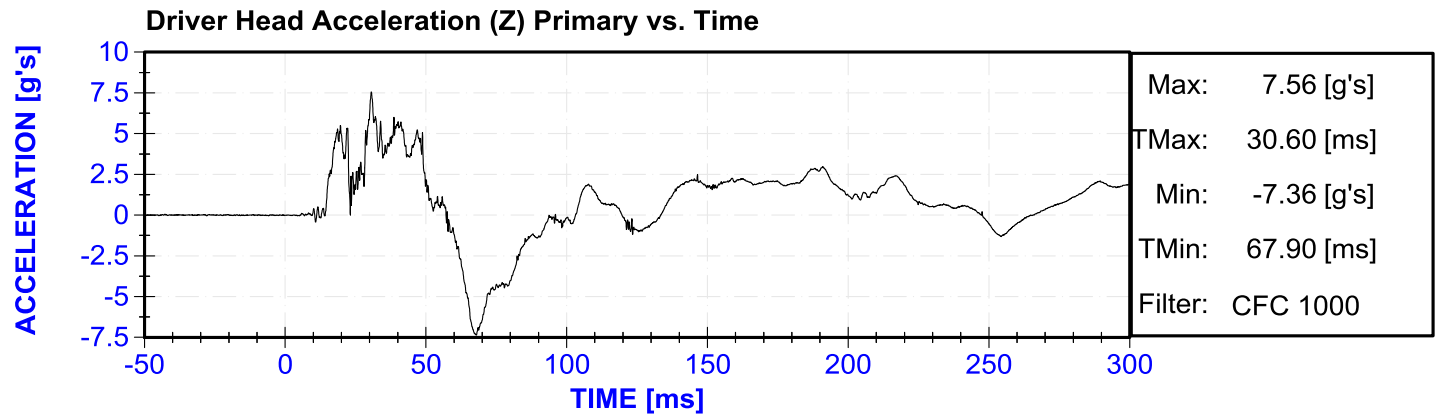
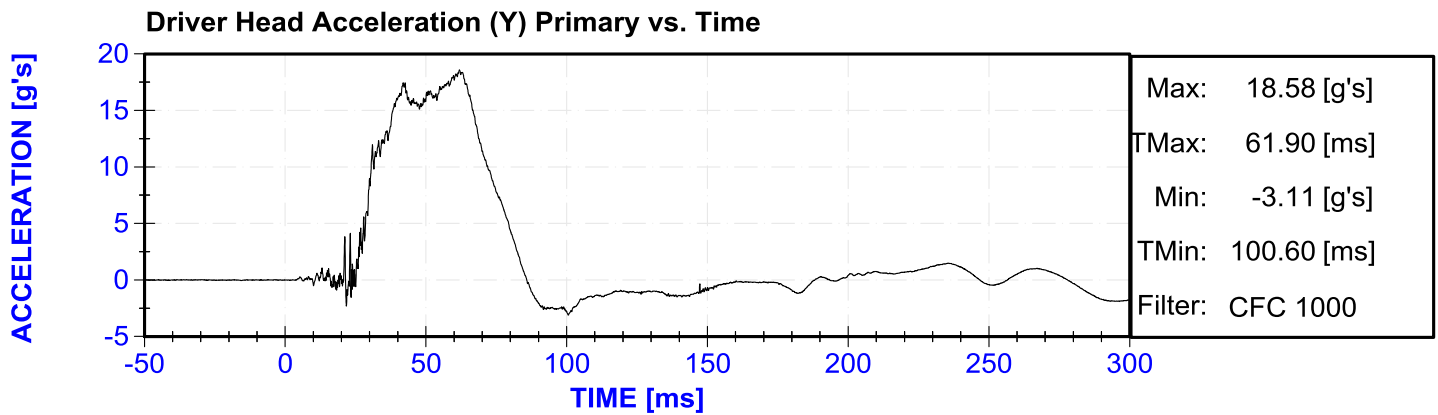
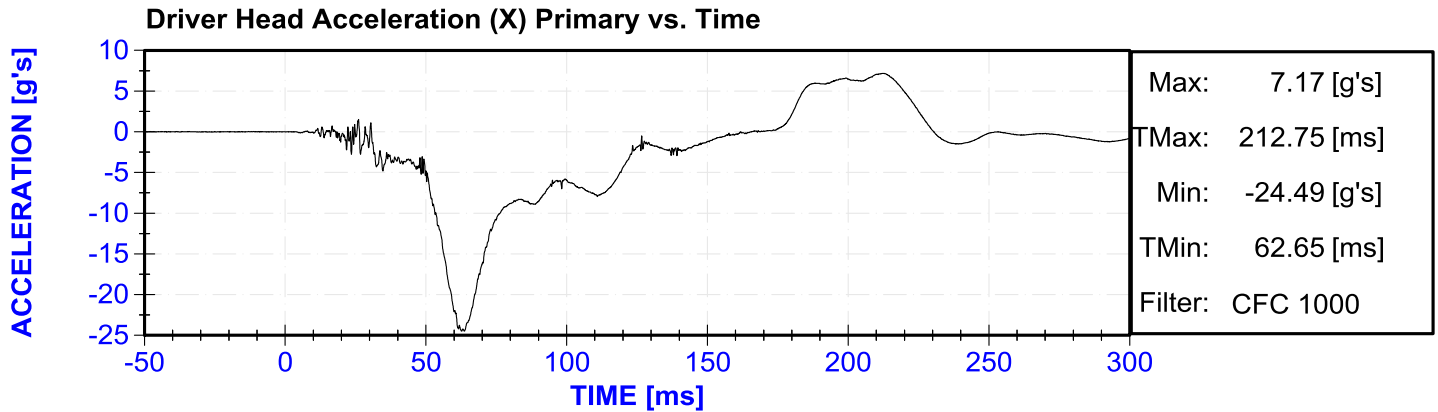
Driver Lower Spine T12 Acceleration (X)
Driver Lower Spine T12 Acceleration (Y)
Driver Lower Spine T12 Acceleration (Z)
Passenger Upper Thorax Rib Deflection (Y)
Passenger Middle Thorax Rib Deflection (Y)
Passenger Lower Thorax Rib Deflection (Y)
Passenger Upper Abdomen Rib Deflection (Y)
Passenger Lower Abdomen Rib Deflection (Y)
Driver Head Acceleration Redundant (X)
Driver Head Acceleration Redundant (Y)
Driver Head Acceleration Redundant (Z)
Passenger Head Acceleration Redundant (X)
Passenger Head Acceleration Redundant (Y)
Passenger Head Acceleration Redundant (Z)

Vehicle Instrumentation Data

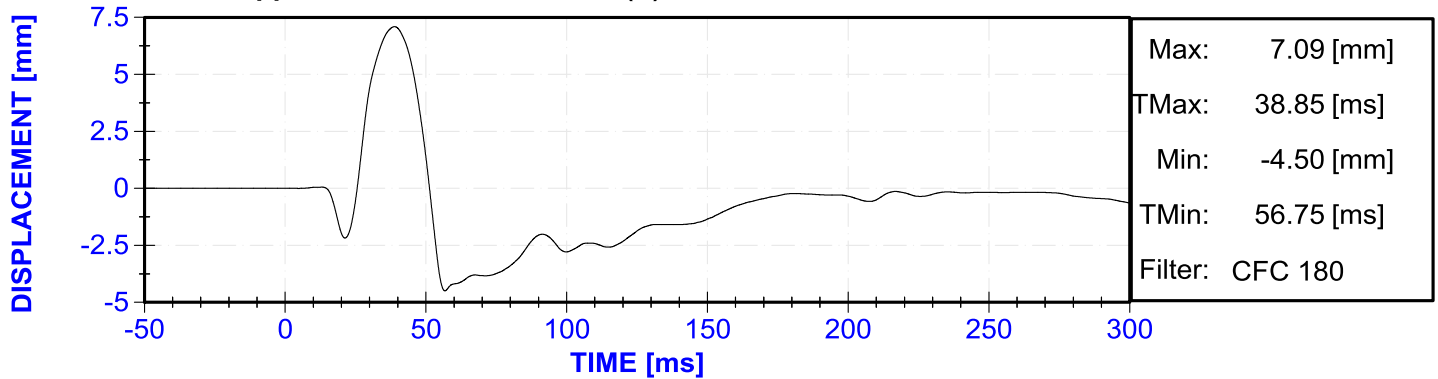
Vehicle Center of Gravity Acceleration (X)
Vehicle Center of Gravity Acceleration (Y)
Vehicle Center of Gravity Acceleration (Z)
Right Side Sill at Front Seat Acceleration (X)
Right Side Sill at Front Seat Acceleration (Y)
Right Side Sill at Front Seat Acceleration (Z)
Right Side Sill at Rear Seat Acceleration (X)
Right Side Sill at Rear Seat Acceleration (Y)
Right Side Sill at Rear Seat Acceleration (Z)
Left Side Sill at Front Seat Acceleration (Y)
Left Side Sill at Rear Seat Acceleration (Y)
Lower A-Post Acceleration (Y)
Middle A-Post Acceleration (Y)
Lower B-Post Acceleration (Y)
Middle B-Post Acceleration (Y)
Front Seat Track Acceleration (Y)
Rear Seat Structure Acceleration (Y)
Right Rear Occupant Compartment Acceleration (Y)
Engine Block (X)
Engine Block (Y)
Rear Floorpan Above Axle Acceleration (X)
Rear Floorpan Above Axle Acceleration (Y)
Rear Floorpan Above Axle Acceleration (Z)

MDB Instrumentation Data

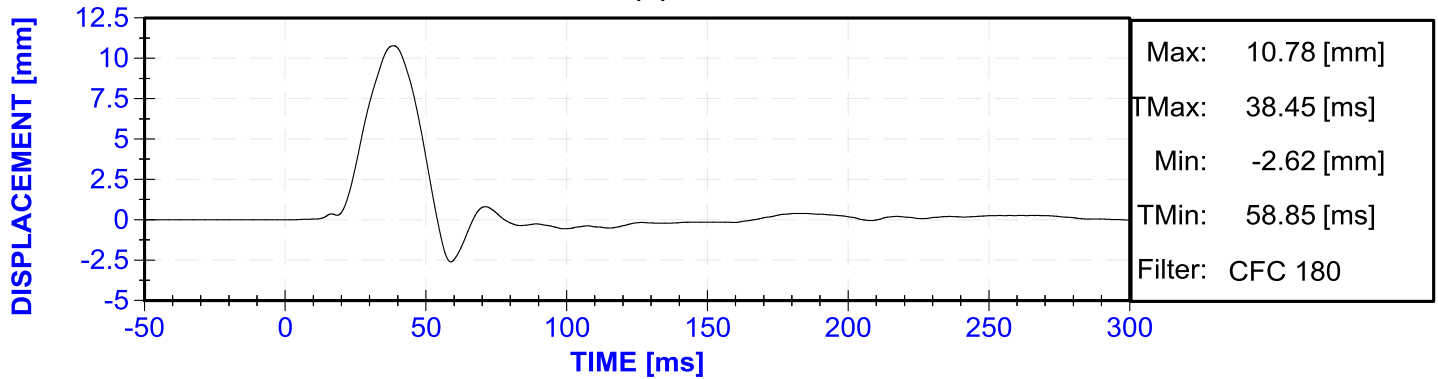
MDB Center of Gravity Acceleration (X)
MDB Center of Gravity Acceleration (Y)
MDB Center of Gravity Acceleration (Z)
MDB Rear Acceleration (X)
MDB Rear Acceleration (Y)
Left MDB Contact Switch
Right MDB Contact Switch



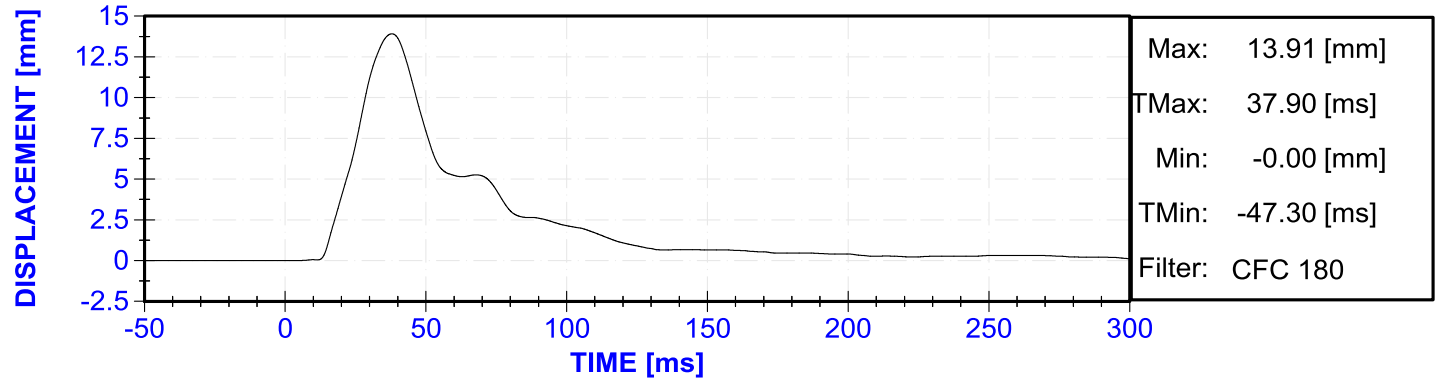
Driver Upper Thorax Rib Deflection (Y) vs. Time



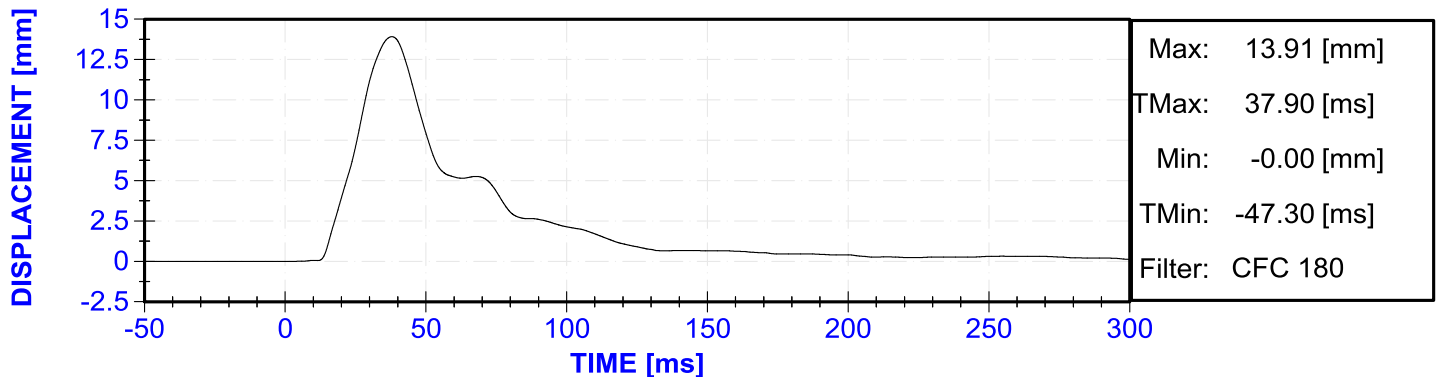
Driver Middle Thorax Rib Deflection (Y) vs. Time



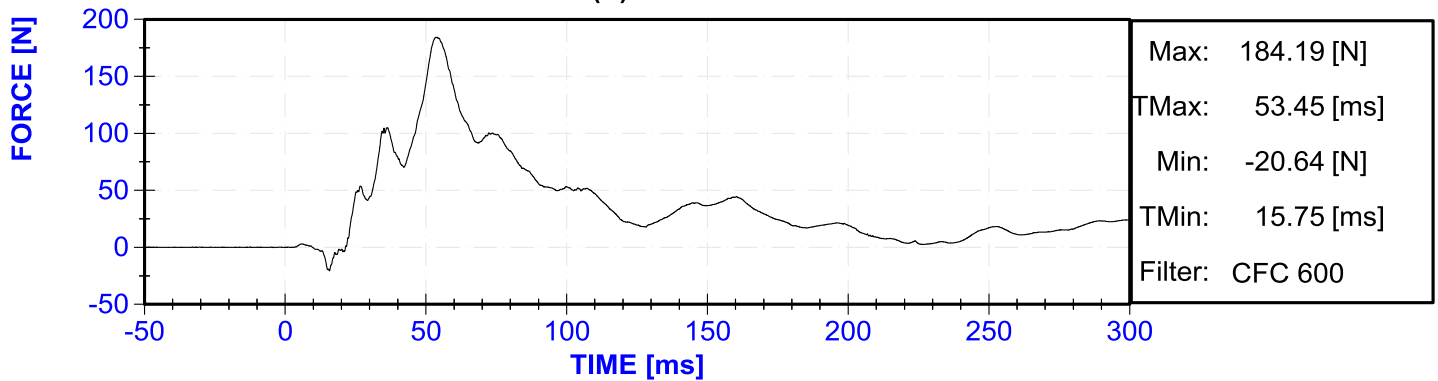
Driver Lower Thorax Rib Deflection (Y) vs. Time



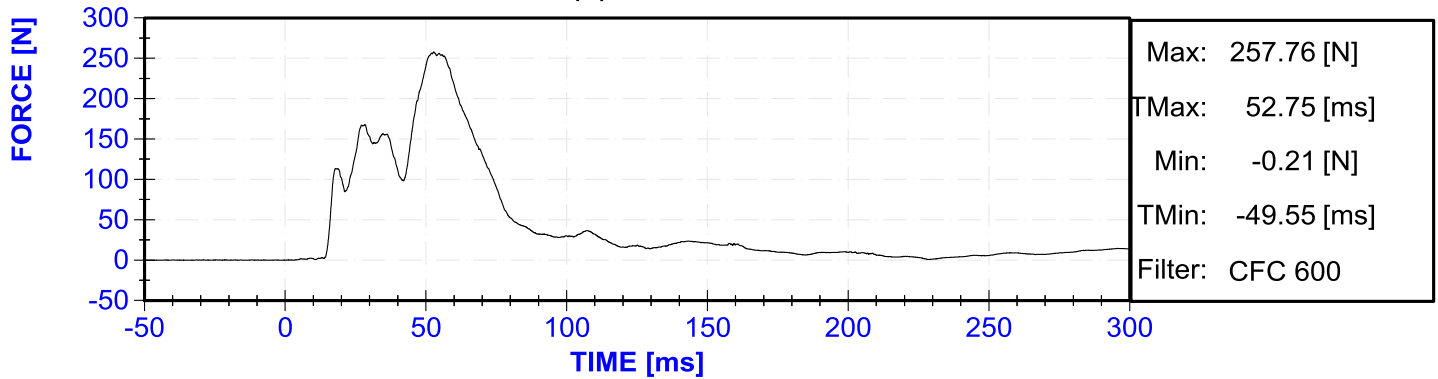
Driver Thorax Rib Deflection Maximum vs. Time



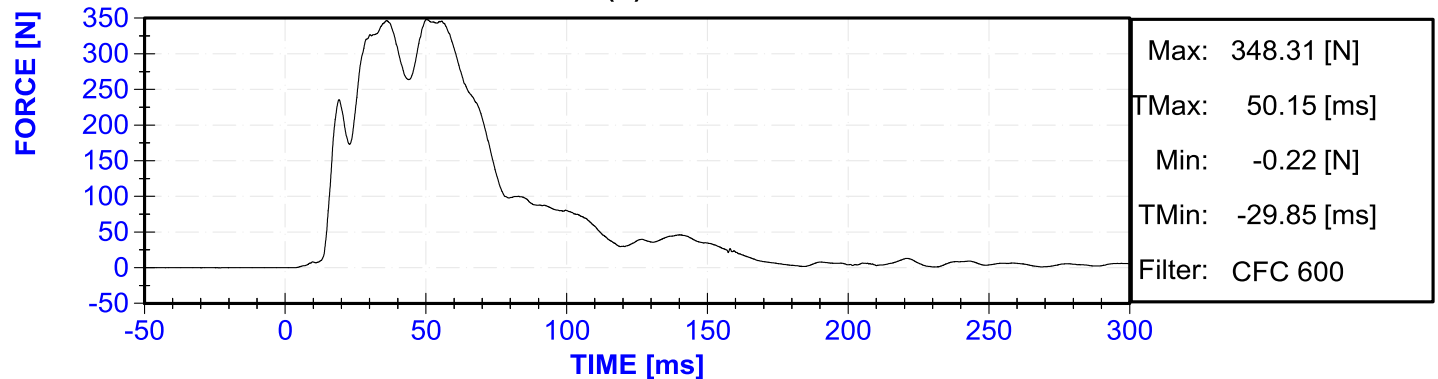
Driver Anterior Abdominal Force (Y) vs. Time



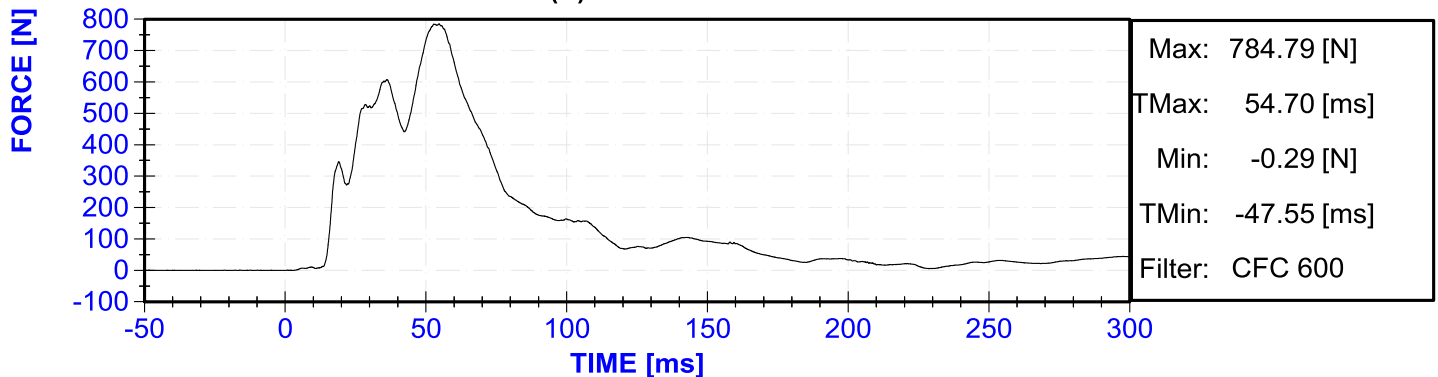
Driver Middle Abdominal Force (Y) vs. Time



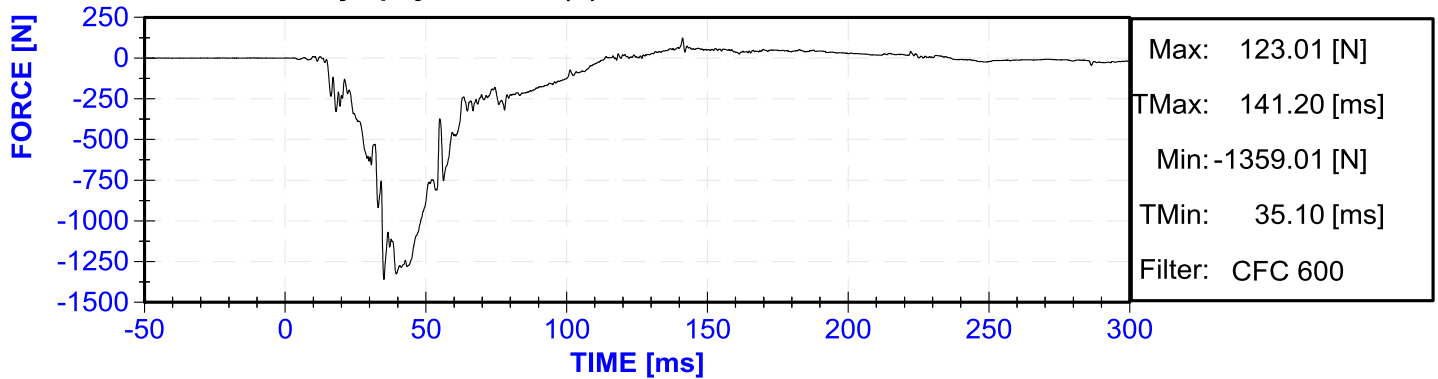
Driver Posterior Abdominal Force (Y) vs. Time



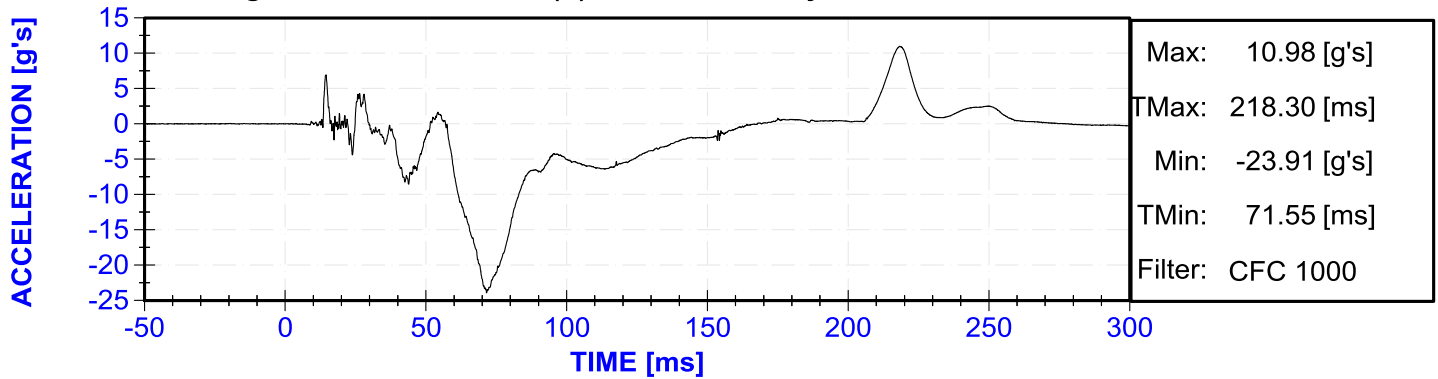
Driver Total Abdominal Force (Y) vs. Time



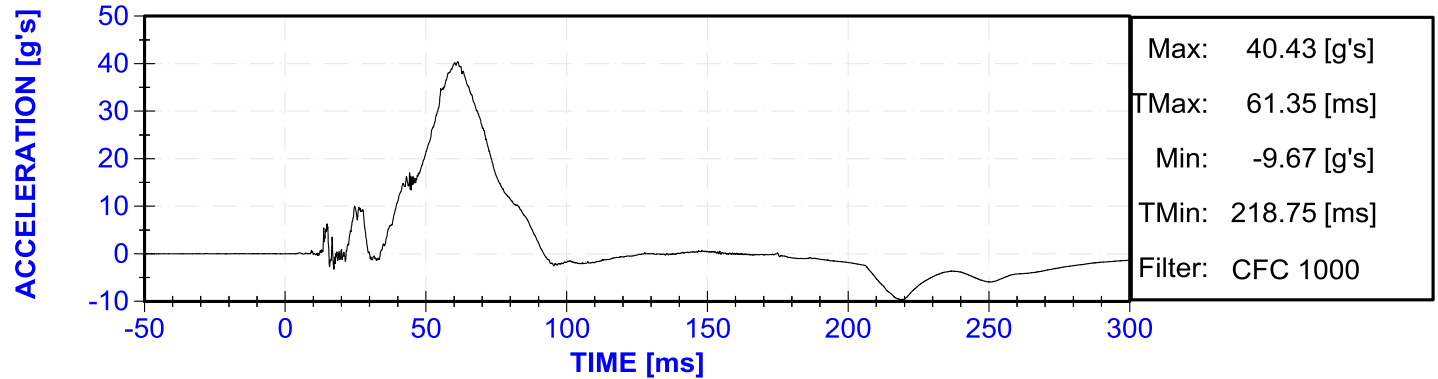
Driver Pubic Symphysis Force (Y) vs. Time



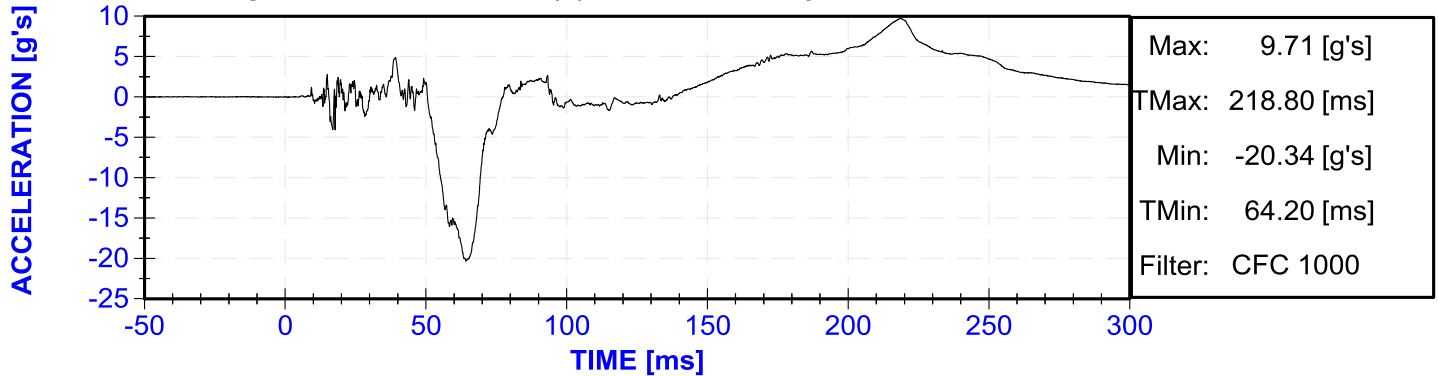
Passenger Head Acceleration (X) vs. Time Primary



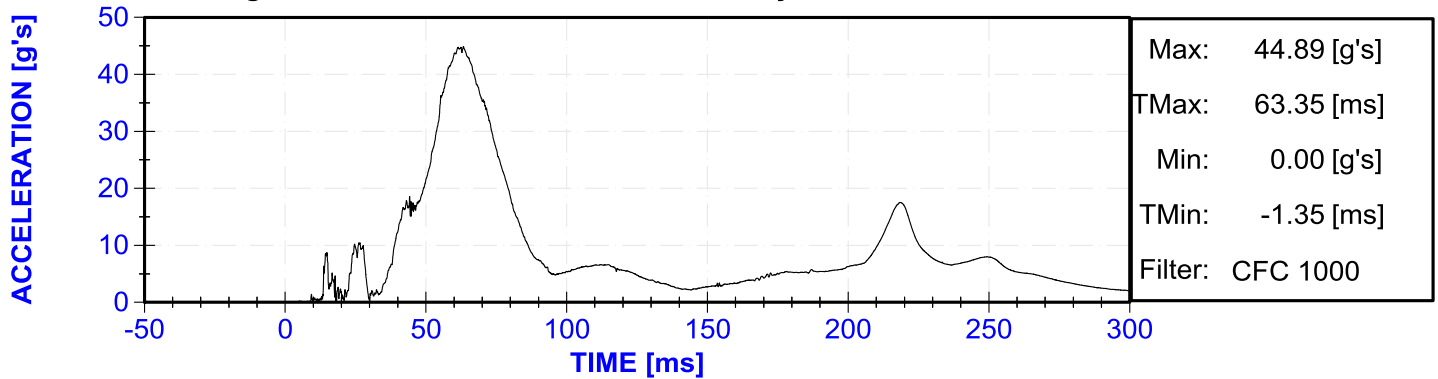
Passenger Head Acceleration (Y) vs. Time Primary



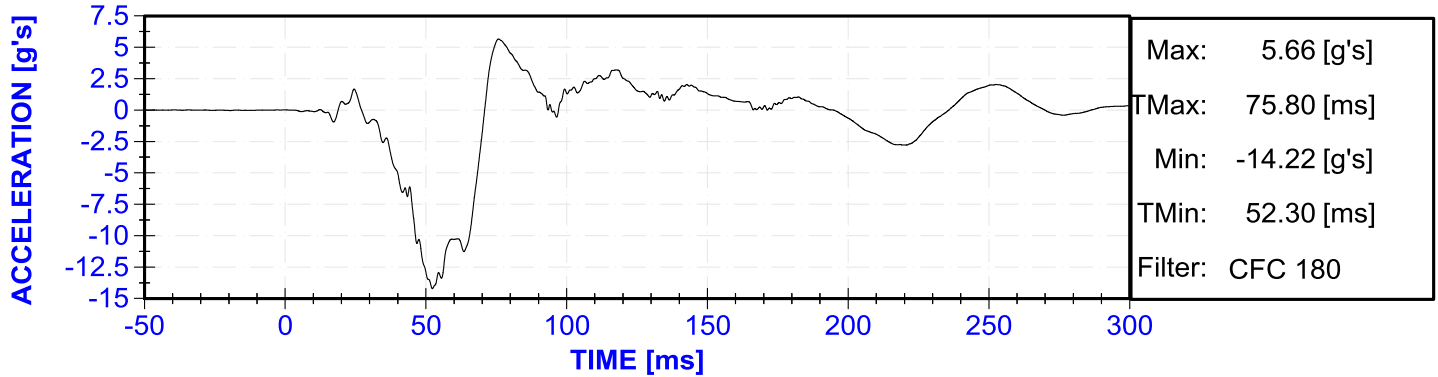
Passenger Head Acceleration (Z) vs. Time Primary



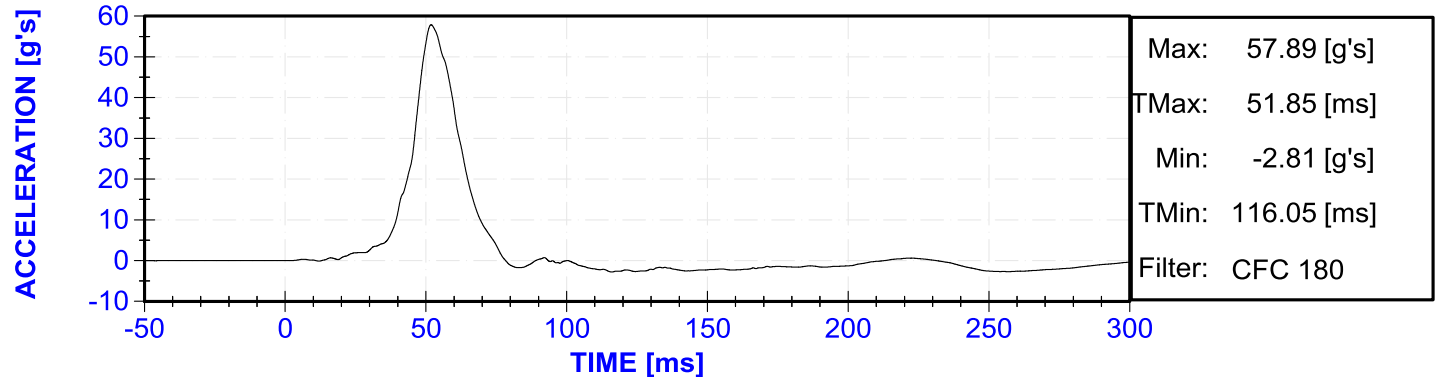
Passenger Head Resultant Acceleration Primary vs. Time



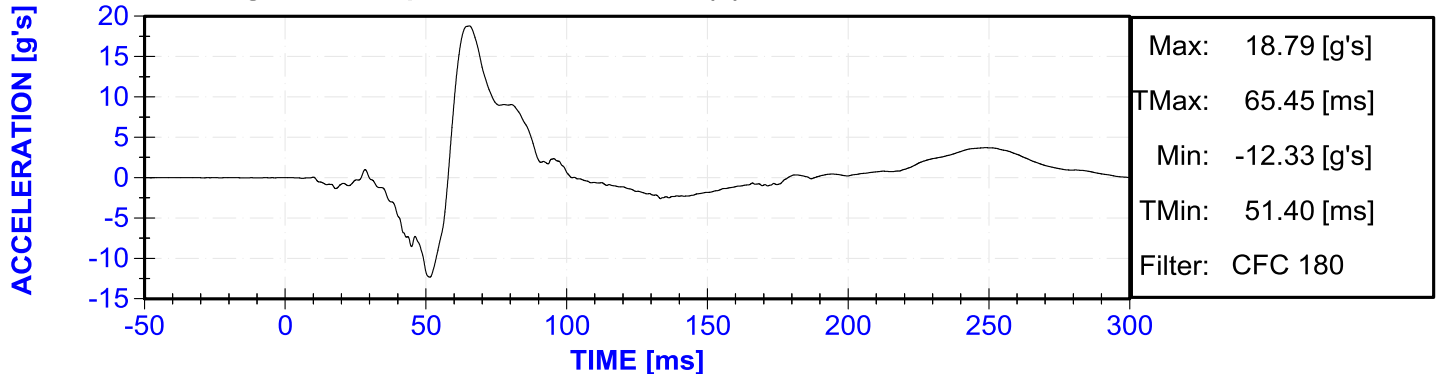
Passenger Lower Spine T12 Acceleration (X) vs. Time



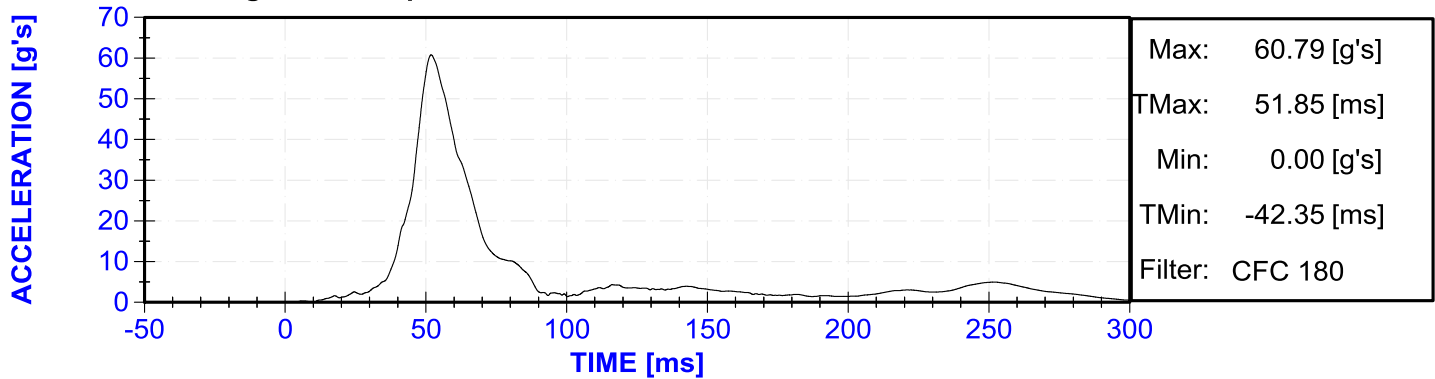
Passenger Lower Spine T12 Acceleration (Y) vs. Time



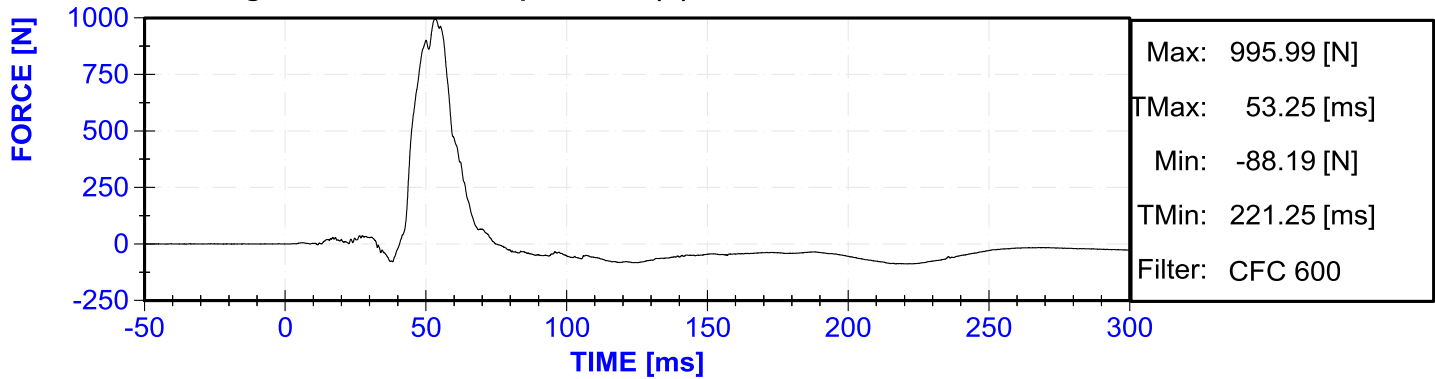
Passenger Lower Spine T12 Acceleration (Z) vs. Time



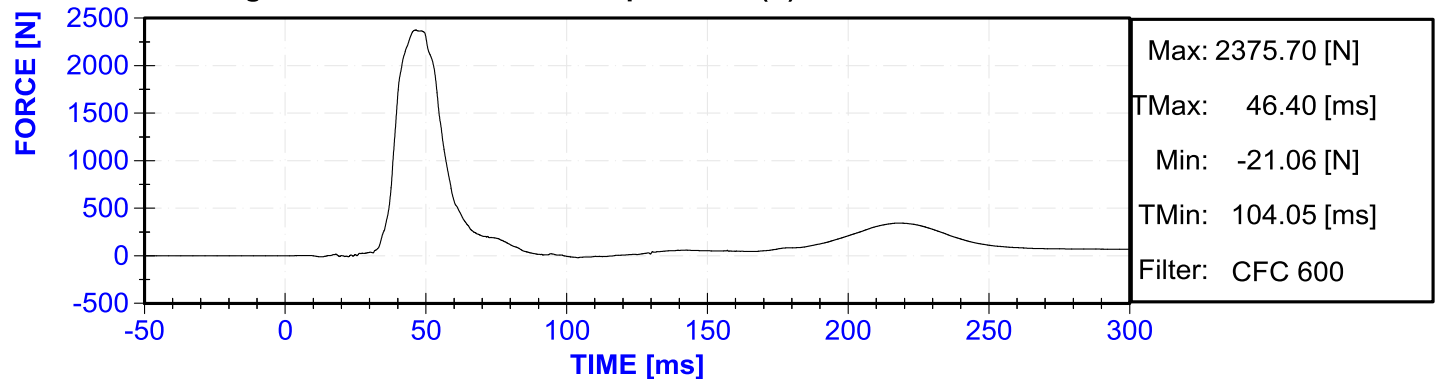
Passenger Lower Spine T12 Resultant Acceleration vs. Time



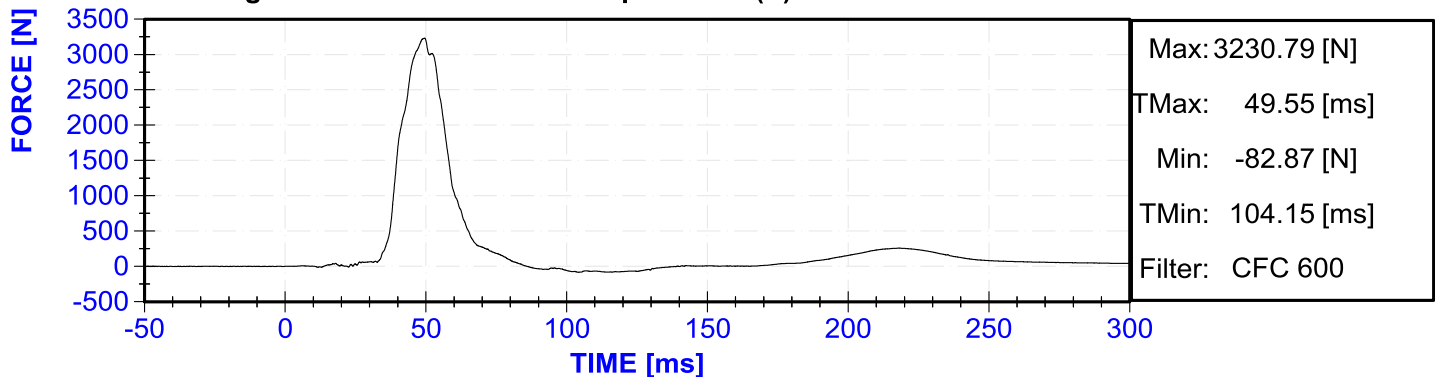
Passenger Iliac Force on Impact Side (Y) vs. Time



Passenger Acetabulum Force on Impact Side (Y) vs. Time



Passenger Total Pelvic Force on Impact Side (Y) vs. Time



APPENDIX C

DUMMY PERFORMANCE CALIBRATION TEST DATA

CALIBRATION TEST RESULTS

PRE-TEST

EUROSID 2 (ES-2RE) MALE – DRIVER ATD

SERIAL NO: F034

(CONFIGURED FOR LEFT SIDE IMPACT)

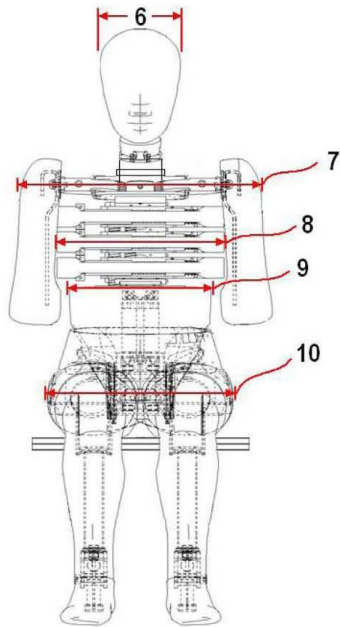


External Measurements - EuroSID-2re

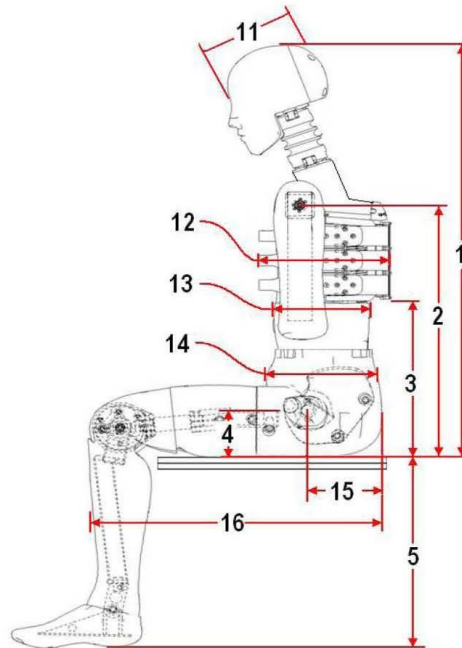
Technician: R. Weil

Date: 12/8/2014

Dummy Serial Number: F034



FRONT VIEW



SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	911	Pass
2	Seat to Shoulder Joint	558	572	562	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	347	Pass
4	Seat to Hip Joint (center of bolt)	97	103	99	Pass
5	Sole to Seat, Sitting	333	451	415	Pass
6	Head Width	152	158	153	Pass
7	Shoulder/Arm Width	461	479	475	Pass
8	Thorax Width	322	332	326	Pass
9	Abdomen Width	273	287	283	Pass
10	Pelvis Lap Width	359	373	368	Pass
11	Head Depth	196	206	198	Pass
12	Thorax Depth	262	272	269	Pass
13	Abdomen Depth	194	204	200	Pass
14	Pelvis Depth	235	245	236	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	153	Pass
16	Back of Buttocks to Front Knee	597	615	604	Pass



VERIFICATION REPORT

Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Head Drop	Test Date:	12/10/2014
		Test Time:	7:41:28 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.50 deg C	P
Humidity	10	--	70	23.70 %RH	P
Resultant Acceleration	125	--	155	126.3 G's	P
Oscillation	0	--	15	3.8 %	P
Fore-Aft Accelerometer	-15	--	15	13.5 G's	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



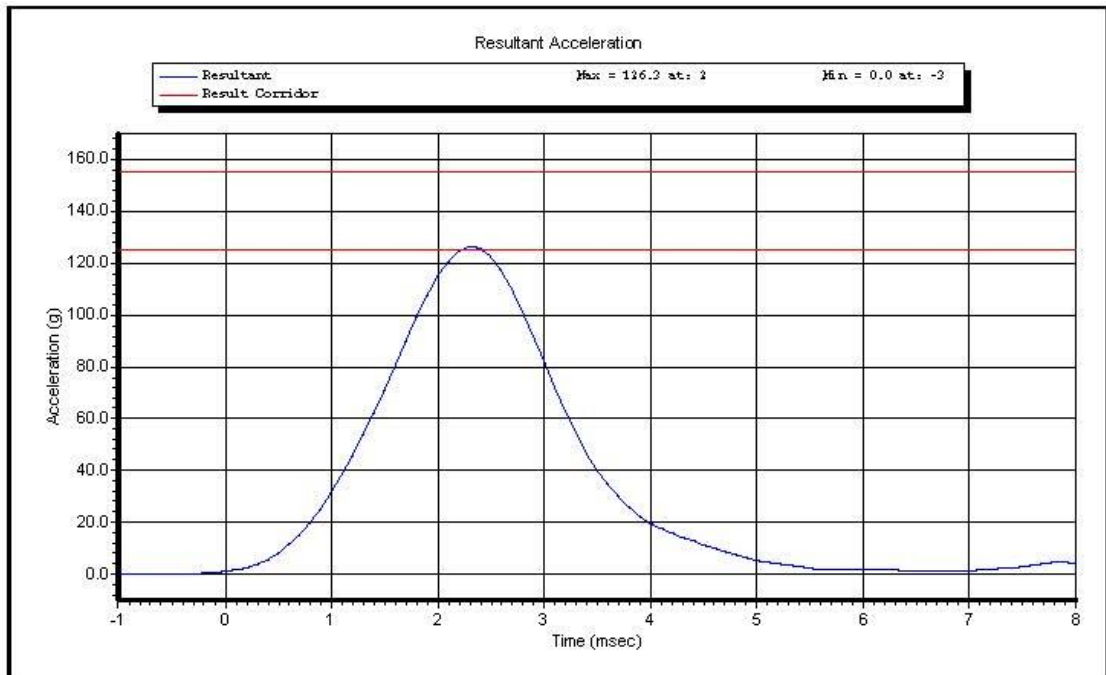
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Endevco	7264-2000	P58904	8/29/2014
Endevco	7264-2000	P58911	8/29/2014
Endevco	7264-2000	P58776	8/29/2014



Test Name:	Head Drop
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034

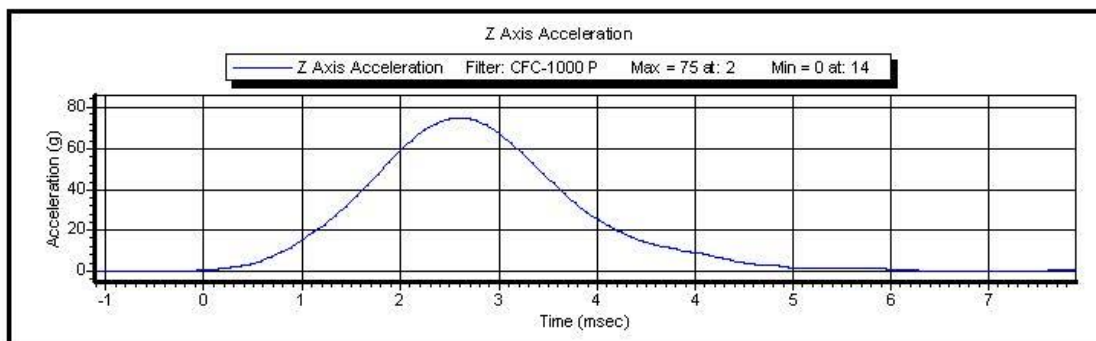
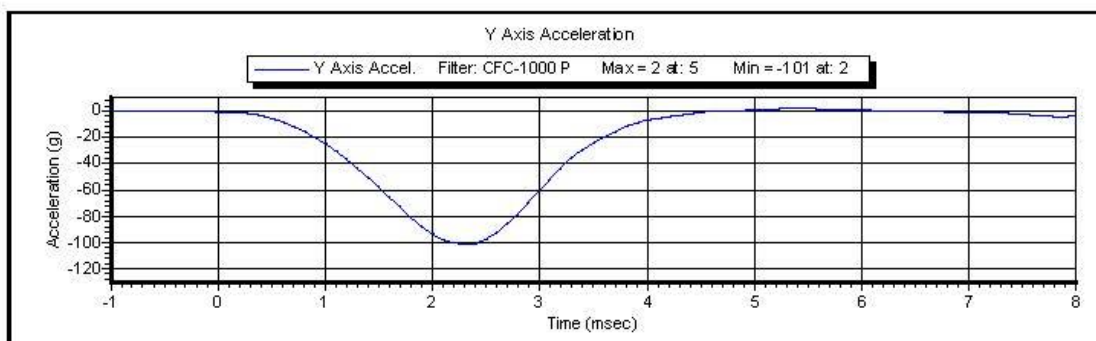
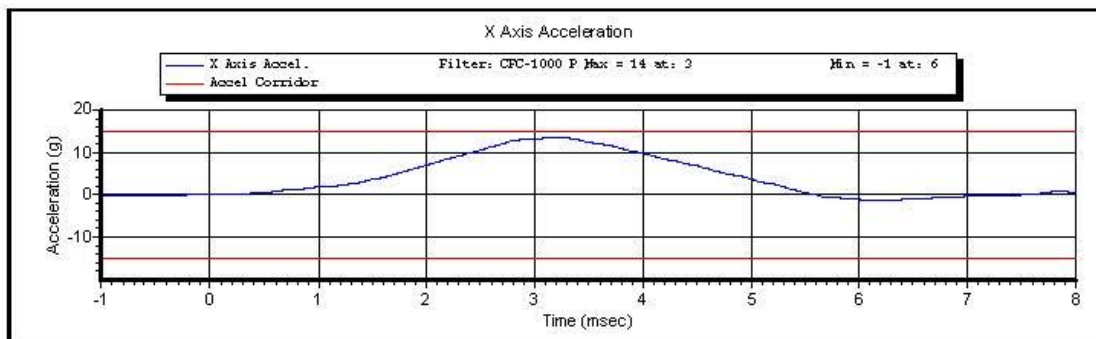


Test ID: **Head Drop**

Test Time: **7:41:28 AM**

Test Date: **12/10/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Head Drop**

Test Time: **7:41:28 AM**

Test Date: **12/10/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Neck Flexion	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Neck Flexion	Test Date:	12/8/2014
		Test Time:	1:29:57 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.40 deg C	P
Humidity	10	--	70	15.40 %RH	P
Velocity	3.3	--	3.5	3.35 m/s	P
Maximum Neck Flexion Angle	49	--	59	49.6 degrees	P
Time At Maximum Neck Flexion	54	--	66	58.2 ms	P
Decay Time to Zero Degrees	53	--	88	55.3 ms	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



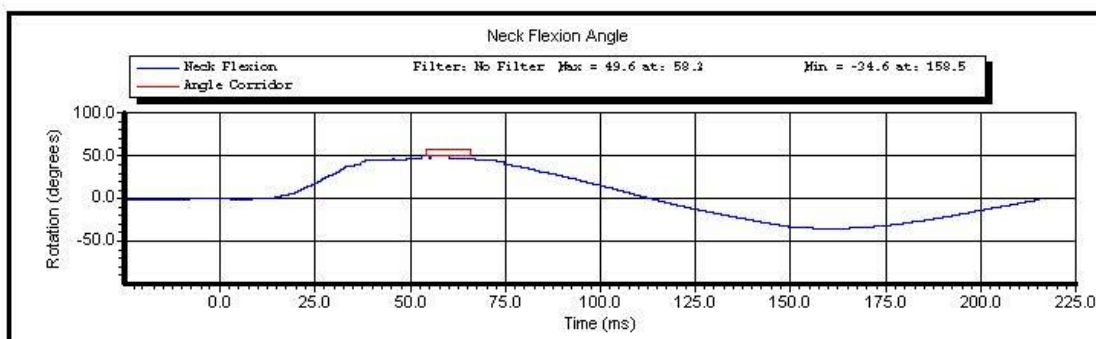
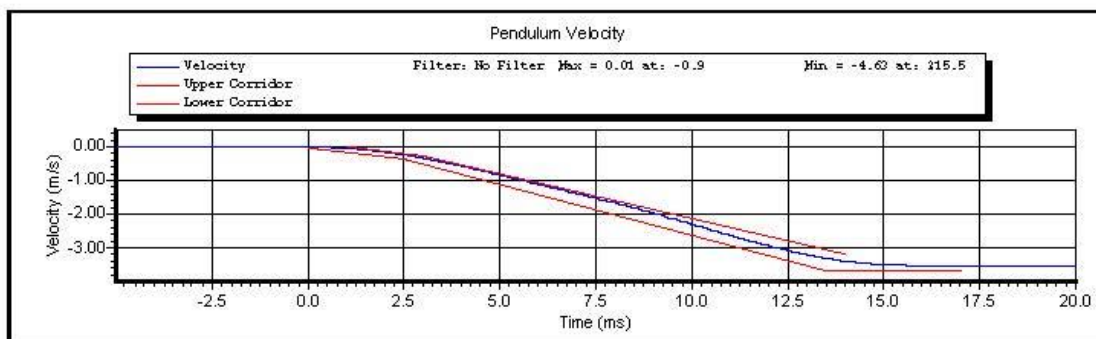
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	AH5F3	11/6/2014
DentonATD	156ESDT-102	094	11/13/2014
DentonATD	156ESDT-102	095	11/13/2014



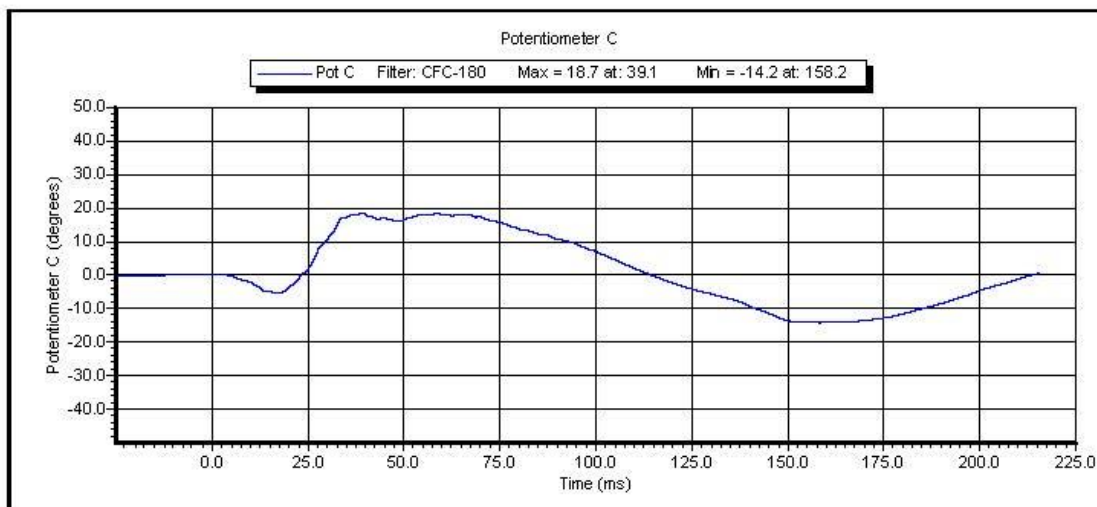
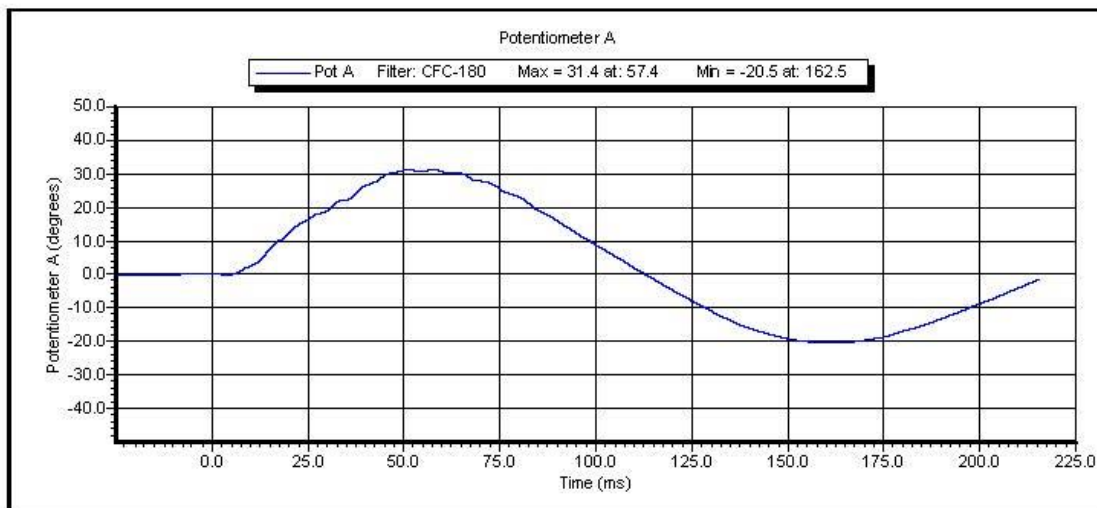
Test Name:	Neck Flexion
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Neck Flexion** Test Time: **1:29:57 PM**

Test Date: **12/8/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Neck Flexion** Test Time: **1:29:57 PM**

Test Date: **12/8/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Shoulder Impact	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Shoulder Impact	Test Date:	12/10/2014
		Test Time:	10:33:56 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.90 deg C	P
Humidity	10	--	70	24.00 %RH	P
Velocity	4.2	--	4.4	4.26 m/s	P
Pendulum Acceleration	-10.5	--	-7.5	-10.13 G's	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



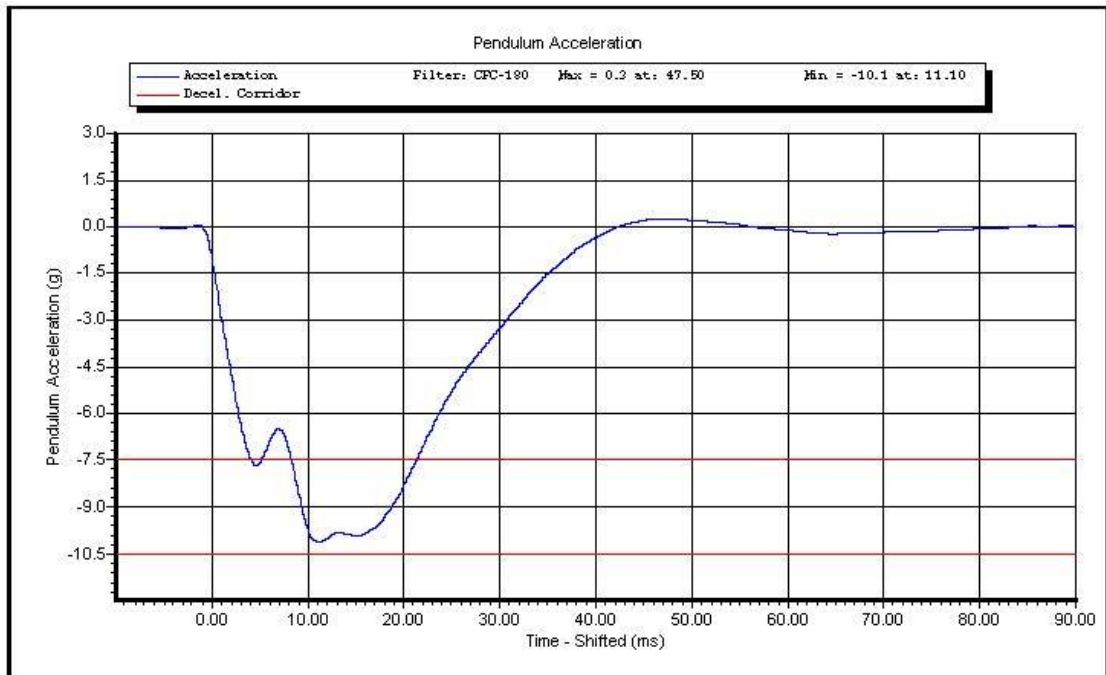
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD Endevco	Velocity Trap 7231CT	1 C14953	1/11/2014 7/30/2014



Test Name:	Shoulder Impact
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Shoulder Impact** Test Time: **10:33:56 AM** Test Date: **12/10/2014**
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	3.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Rib Drop Upper 3m/s	Test Date:	12/9/2014
		Test Time:	3:54:09 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	26.10 %RH P
Rib Displacement	-40 -- -36	-36.3 mm P

All test parameters are within specifications

Technician: R. Weil
Supervisor: M. Goehle



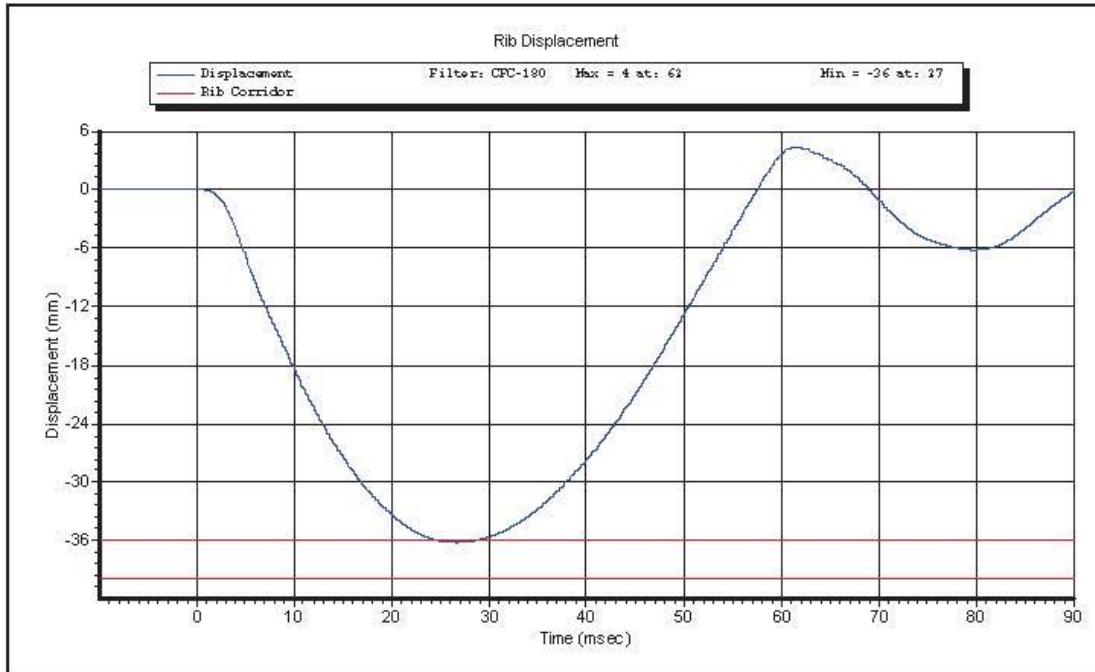
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-183GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	3.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Rib Drop Upper 3m/s Test Time: 3:54:09 PM

Test Date: 12/9/2014

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VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	4.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Rib Drop Upper	Test Date:	12/9/2014
		Test Time:	12:20:57 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	26.10 %RH P
Rib Displacement	-51 -- -46	-46.3 mm P

All test parameters are within specifications

Technician: R. Weil
Supervisor: M. Goehle



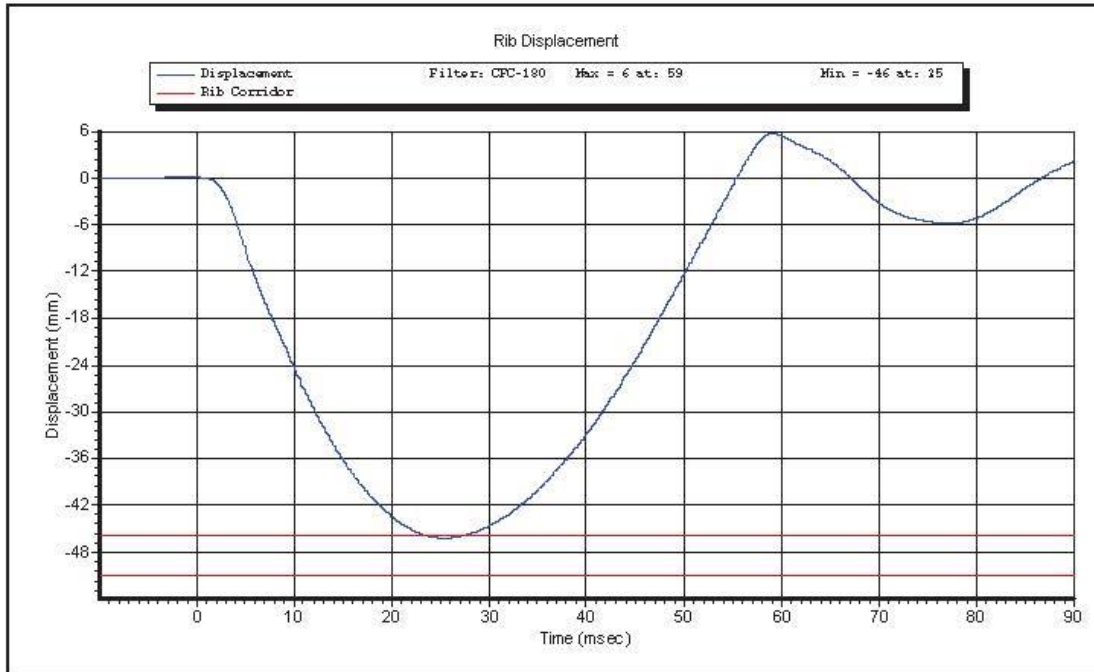
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-183GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	4.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Rib Drop Upper Test Time: 12:20:57 PM

Test Date: 12/9/2014

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VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	3.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Rib Drop Middle 3m/s	Test Date:	12/9/2014
		Test Time:	1:53:31 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	26.10 %RH P
Rib Displacement	-40 -- -36	-36.6 mm P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



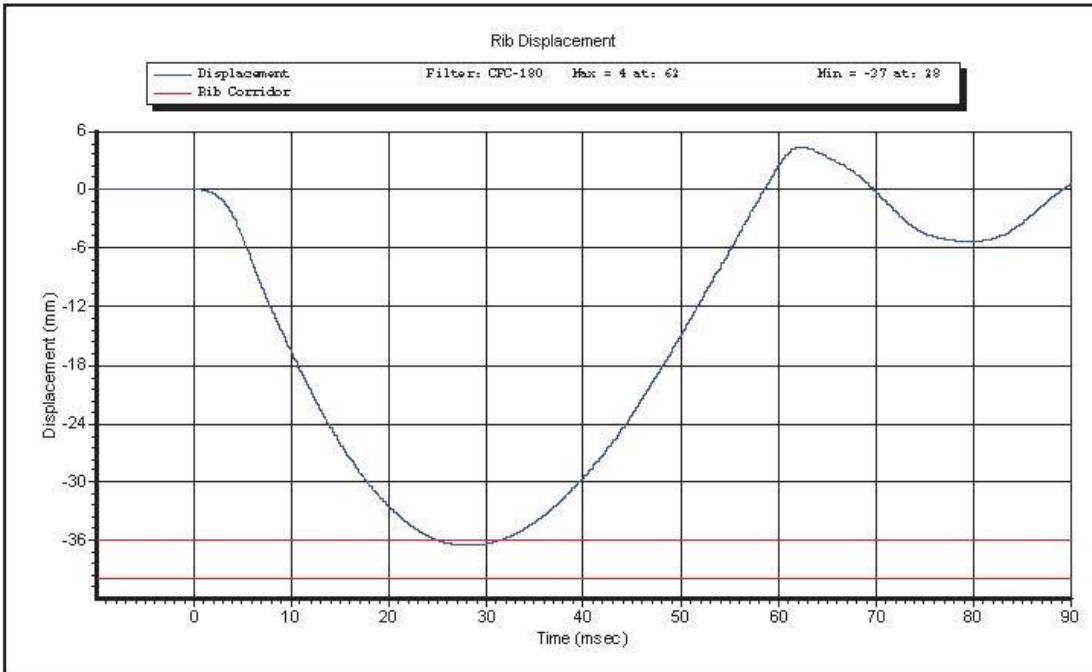
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-184 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	3.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Rib Drop Middle 3m/s Test Time: 1:53:31 PM

Test Date: 12/9/2014

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VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	4.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Rib Drop Middle	Test Date:	12/9/2014
		Test Time:	12:36:13 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	26.10 %RH P
Rib Displacement	-51 -- -46	-47.5 mm P

All test parameters are within specifications

Technician: R. Weil
Supervisor: M. Goehle



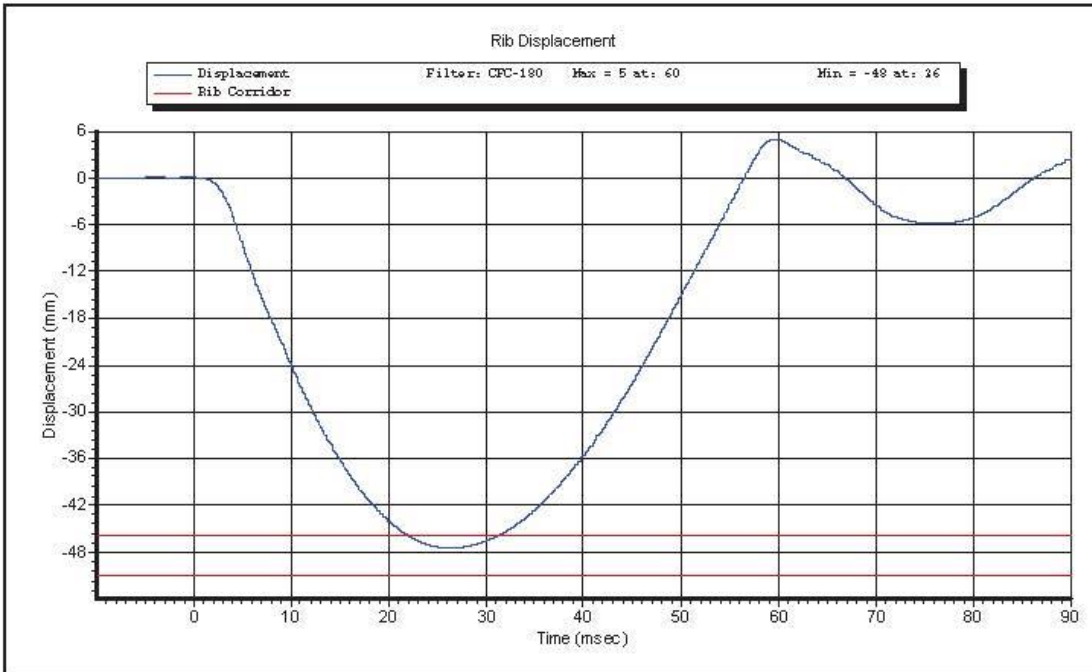
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-184 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	4.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Rib Drop Middle Test Time: 12:36:13 PM

Test Date: 12/9/2014

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VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	3.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Rib Drop Lower	Test Date:	12/9/2014
		Test Time:	1:34:07 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	26.10 %RH P
Rib Displacement	-40 -- -36	-36.7 mm P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



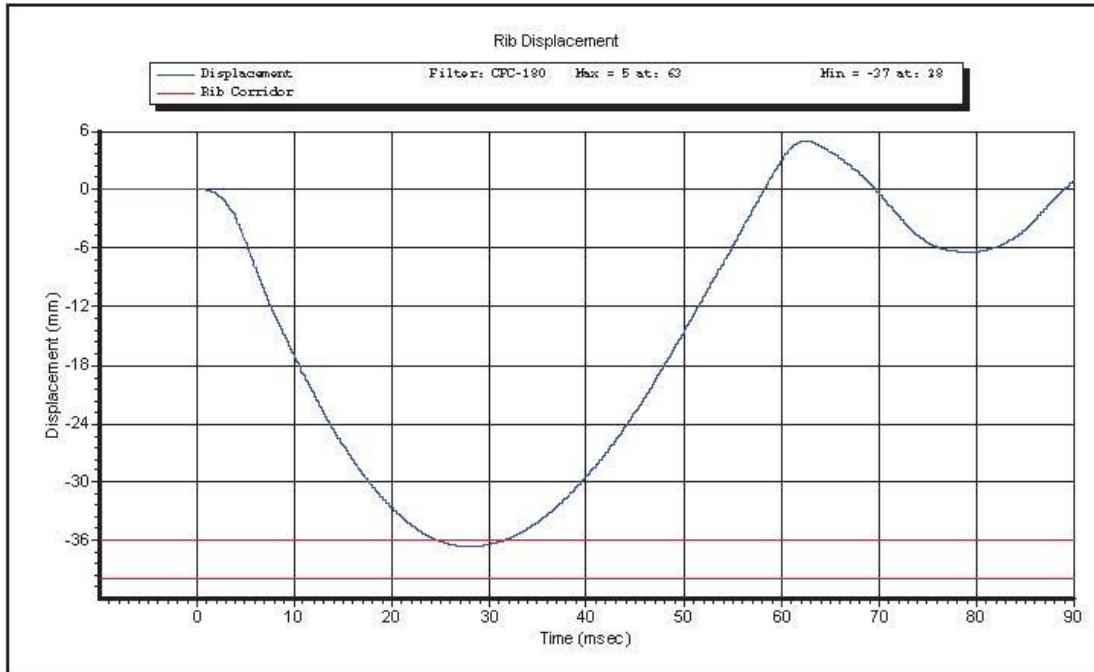
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-182 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	3.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Rib Drop Lower** Test Time: **1:34:07 PM**

Test Date: **12/9/2014**

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VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	4.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Rib Drop Lower	Test Date:	12/9/2014
		Test Time:	12:45:22 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	26.10 %RH P
Rib Displacement	-51 -- -46	-47.8 mm P

All test parameters are within specifications

Technician: R. Weil
Supervisor: M. Goehle



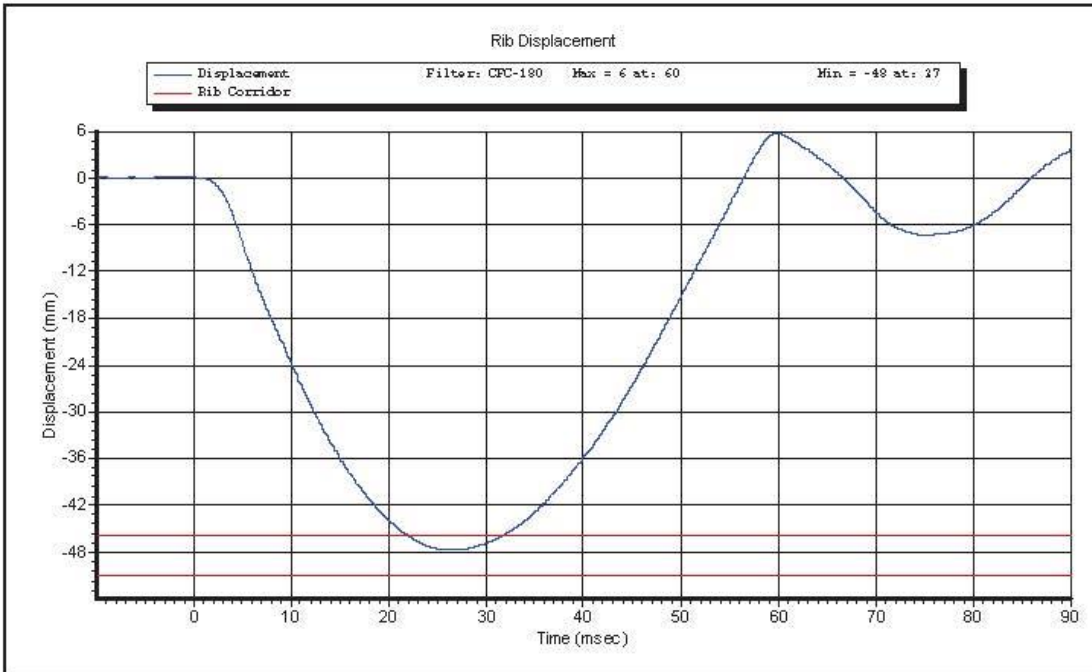
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-182 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	4.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Rib Drop Lower Test Time: 12:45:22 PM

Test Date: 12/9/2014

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VERIFICATION REPORT

Test Name:	Thorax Impact	Revision:	8/15/2008
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Thorax Impact	Test Date:	12/10/2014
		Test Time:	9:41:06 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.9 deg C	P
Humidity	10	--	70	24.9 %RH	P
Velocity	5.4	--	5.6	5.48 m/s	P
Upper Rib Displacement	34	--	41	37.9 mm	P
Middle Rib Displacement	37	--	45	41.9 mm	P
Lower Rib Displacement	37	--	44	40.5 mm	P
Impactor Force	5100	--	6200	5508.3 N	P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



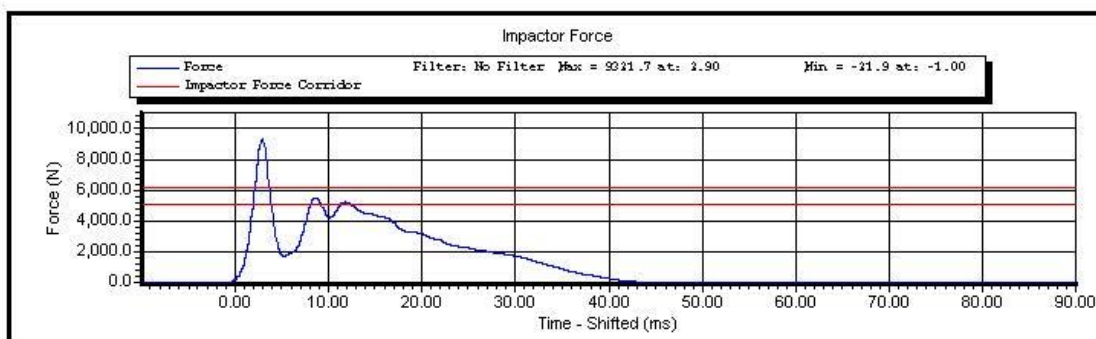
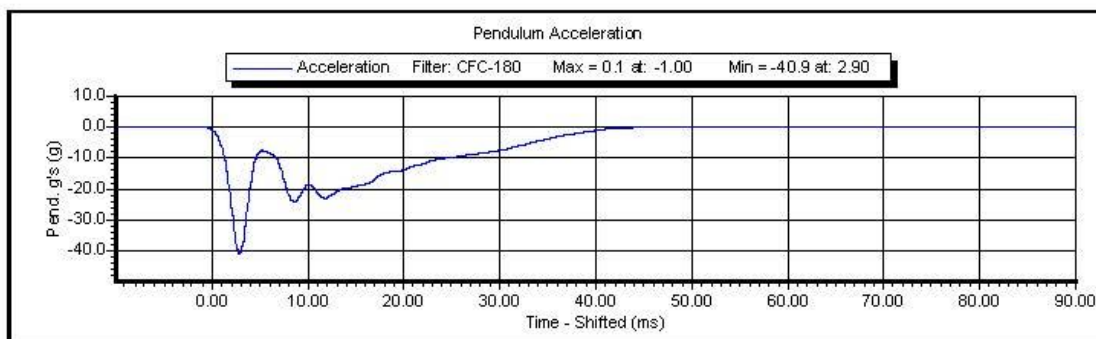
VERIFICATION REPORT

REFERENCE EQUIPMENT

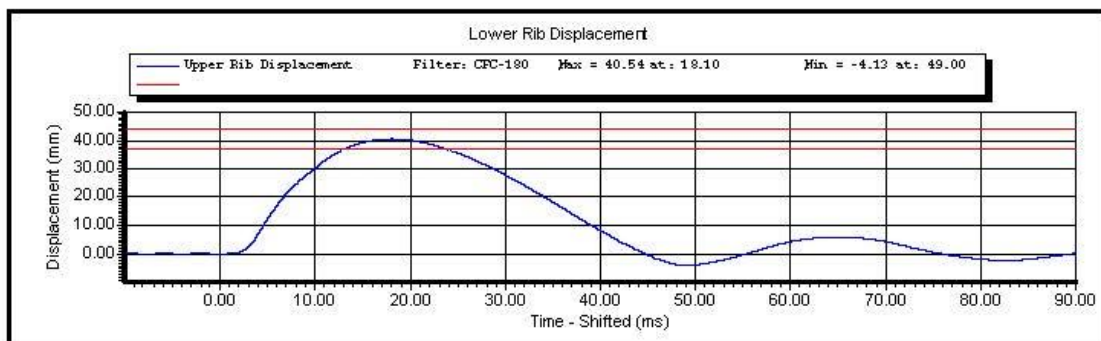
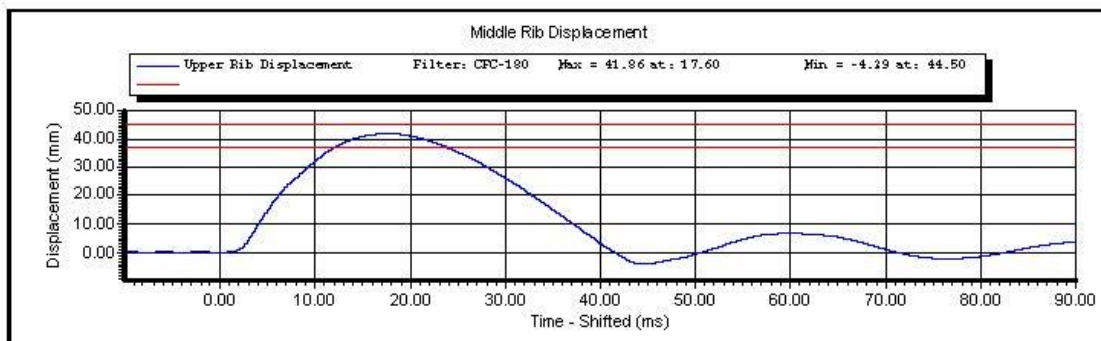
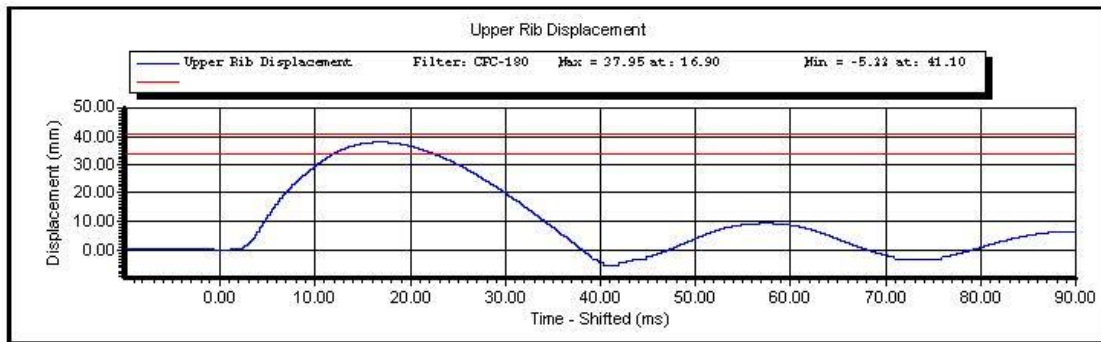
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DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Honeywell	MLT 38000	DS-183GFE	8/4/2014
Honeywell	MLT 38000	DS-184GFE	8/4/2014
Honeywell	MLT 38000	DS-182GFE	8/4/2014



Test Name:	Thorax Impact
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID:	Thorax Impact	Test Time:	9:41:06 AM	Test Date:	12/10/2014
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Test ID: **Thorax Impact** Test Time: **9:41:06 AM**

Test Date: **12/10/2014**

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VERIFICATION REPORT

Test Name:	Abdomen Impact	Revision:	12/14/2006
Sub Test Name:	Left Side		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Abdomen Impact	Test Date:	12/10/2014
		Test Time:	9:56:17 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.90 deg C	P
Humidity	10	--	70	24.90 %RH	P
Velocity	3.9	--	4.1	4.03 m/s	P
Peak Abdominal Force	-2.7	--	-2.2	-2.38 kN	P
Time At Peak Abdominal Force	10.0	--	12.3	10.11 ms	P
Maximum Pendulum Force	-4.8	--	-4.0	-4.63 kN	P
Time At Peak Pendulum Force	10.6	--	13.0	10.91 ms	P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



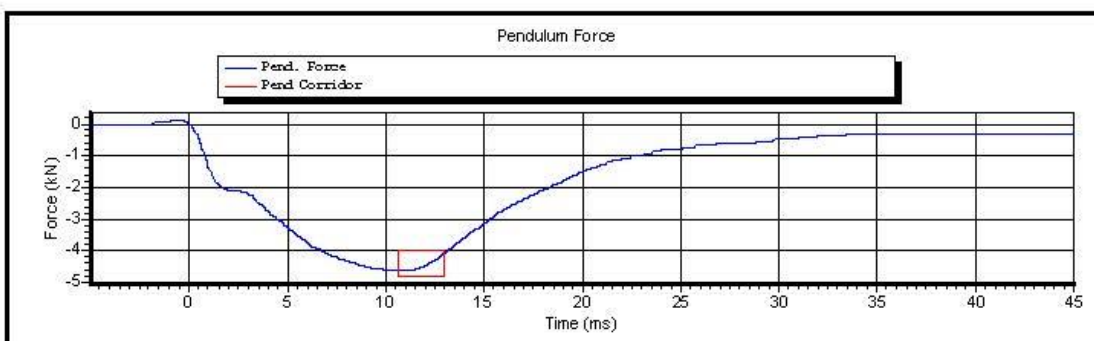
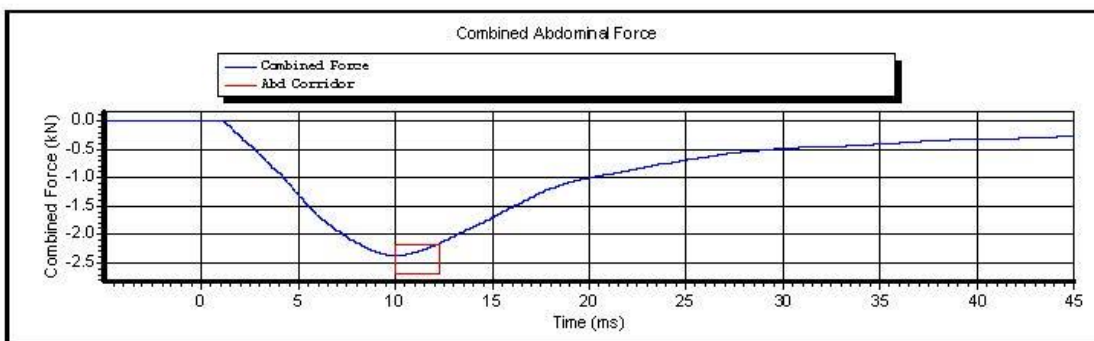
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Denton	2631	LC-1512	5/13/2014
Denton	2631	LC-1526	5/13/2014
Denton	2631	LC-1516	5/13/2014



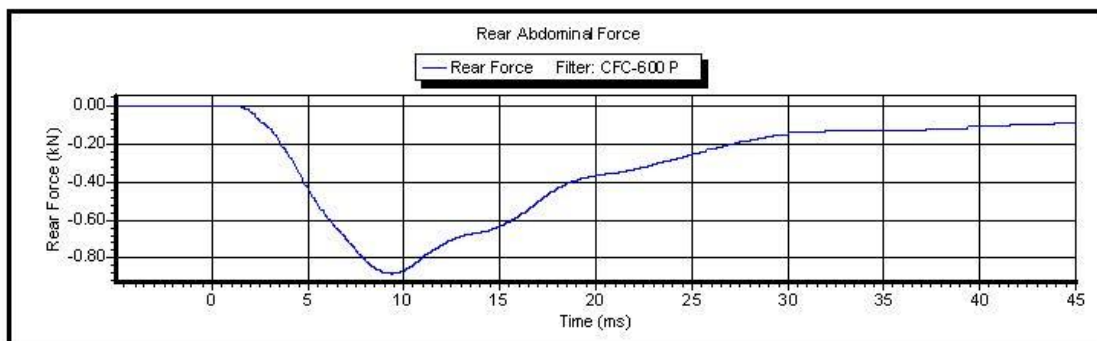
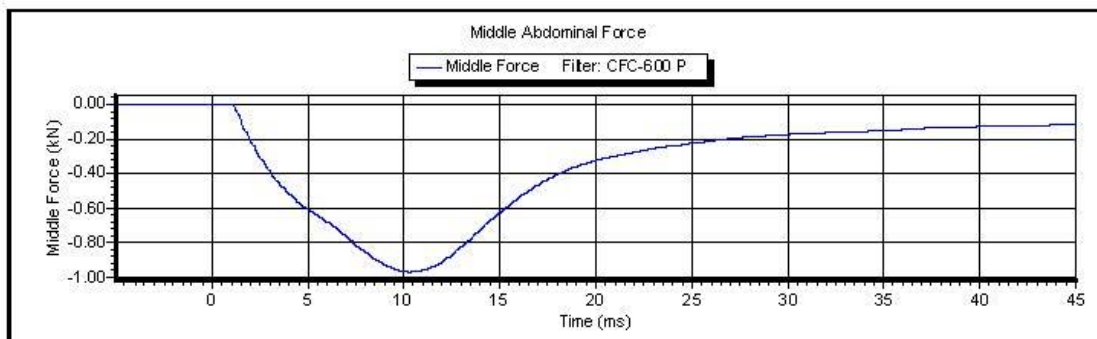
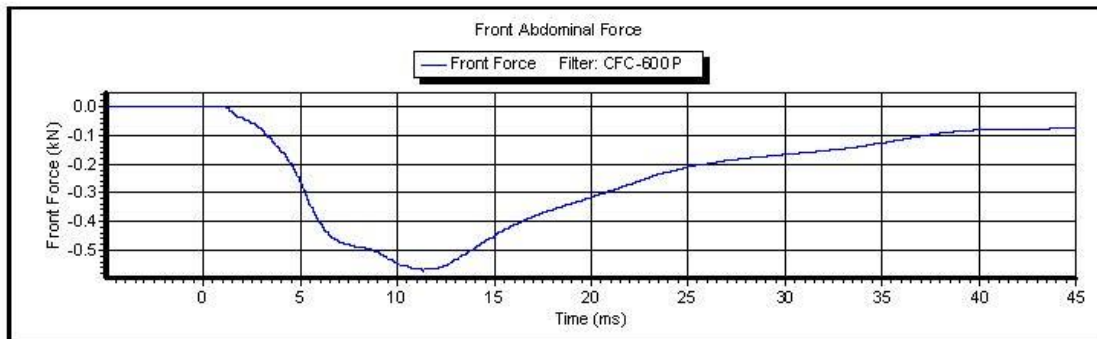
Test Name:	Abdomen Impact
Sub Test Name:	Left Side
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Abdomen Impact** Test Time: **9:56:17 AM**

Test Date: **12/10/2014**

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Test ID: **Abdomen Impact** Test Time: **9:56:17 AM**
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0

Test Date: **12/10/2014**



VERIFICATION REPORT

Test Name:	Lumbar Spine	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Lumbar Spine	Test Date:	12/8/2014
		Test Time:	2:54:51 PM

Test Parameters	Test Specifications			Test Results	
Temperature	21	--	22	21.30 deg C	P
Humidity	10	--	70	14.70 %RH	P
Velocity	5.95	--	6.15	6.039 m/s	P
Maximum Headform Flexion Angle	45	--	55	45.2 degrees	P
Time At Maximum Neck Flexion	39	--	53	41.0 ms	P
Decay Time to Zero Degrees	37	--	57	38.2 ms	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



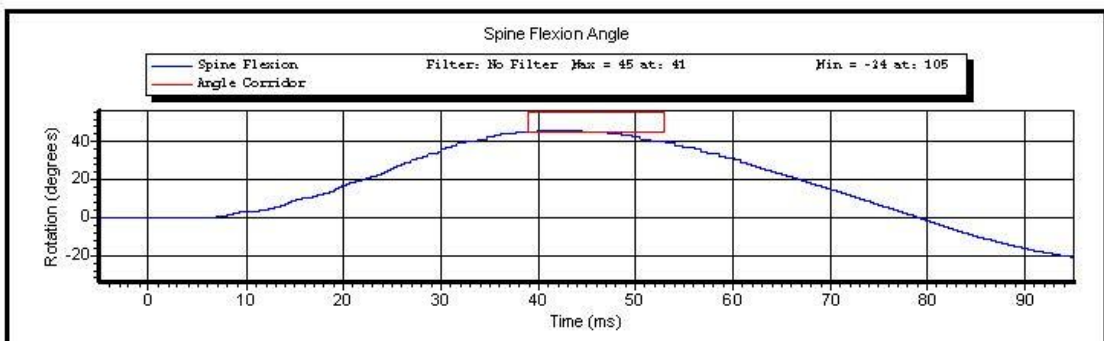
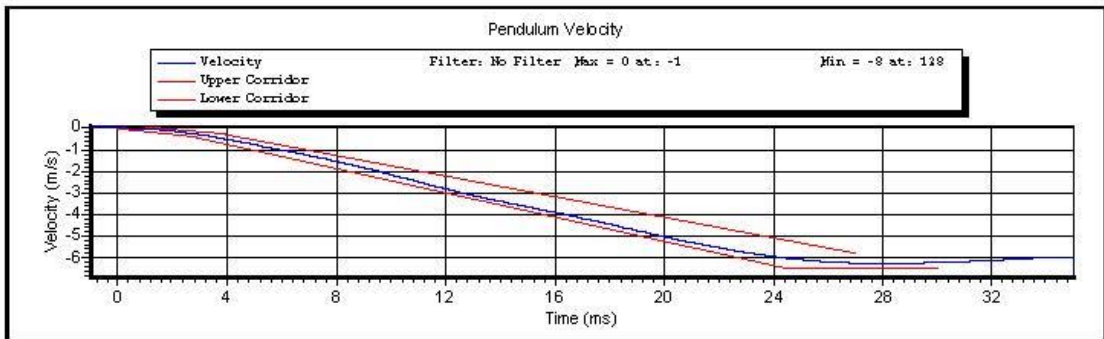
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	AH5F3	11/6/2014
DentonATD	156ESDT-102	094	11/13/2014
DentonATD	156ESDT-102	095	11/13/2014

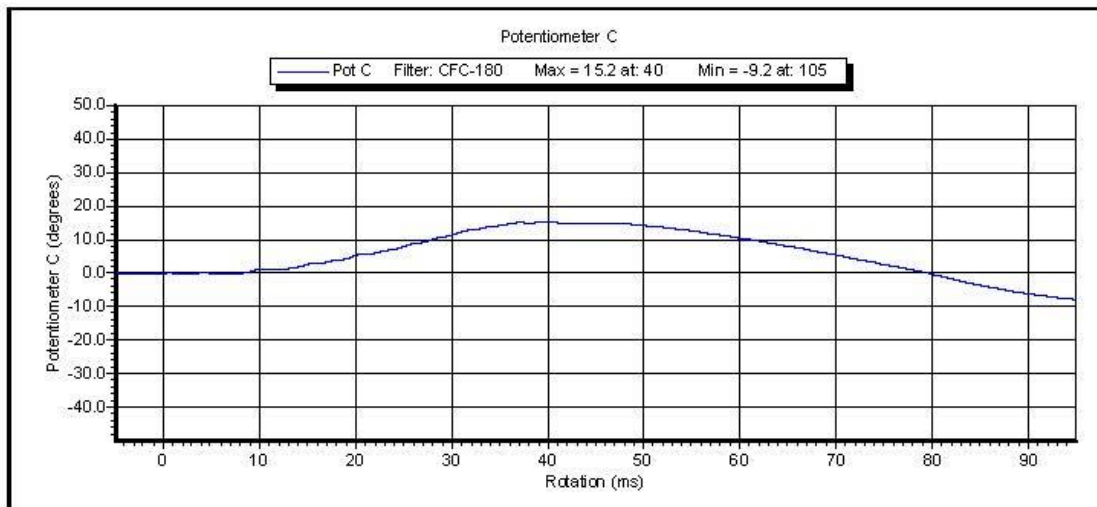
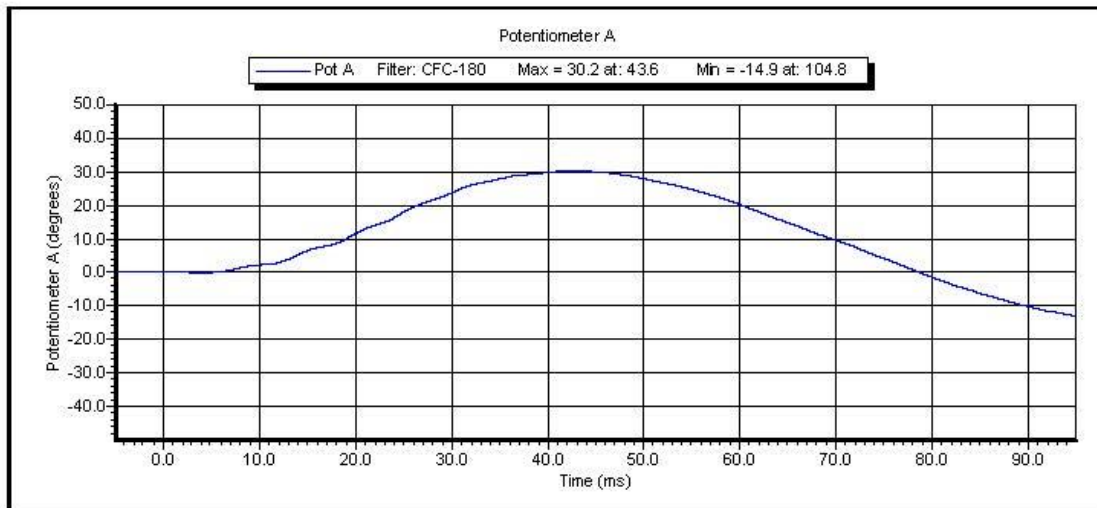


Test Name:	Lumbar Spine
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Lumbar Spine** Test Time: **2:54:51 PM** Test Date: **12/8/2014**

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Test ID: **Lumbar Spine** Test Time: **2:54:51 PM**
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Test Date: **12/8/2014**



VERIFICATION REPORT

Test Name:	Pelvis Impact	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Pelvis Impact	Test Date:	12/10/2014
		Test Time:	10:19:56 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.70 deg C	P
Humidity	10	--	70	24.60 %RH	P
Velocity	4.2	--	4.4	4.33 m/s	P
Peak Pendulum Force	-5.4	--	-4.7	-4.88 kN	P
Time at Peak Pendulum Force	11.8	--	16.1	12.84 ms	P
Peak Pubic Symphysis Force	-1.59	--	-1.23	-1.576 kN	P
Time at Peak Pubic Symphysis Force	12.2	--	17.0	13.84 ms	P

All test parameters are within specifications

Technician: **R. weil**
Supervisor: **M. Goehle**



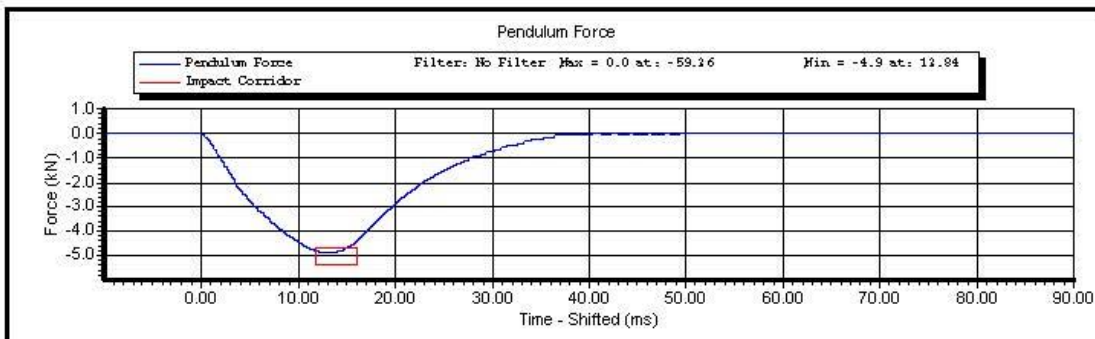
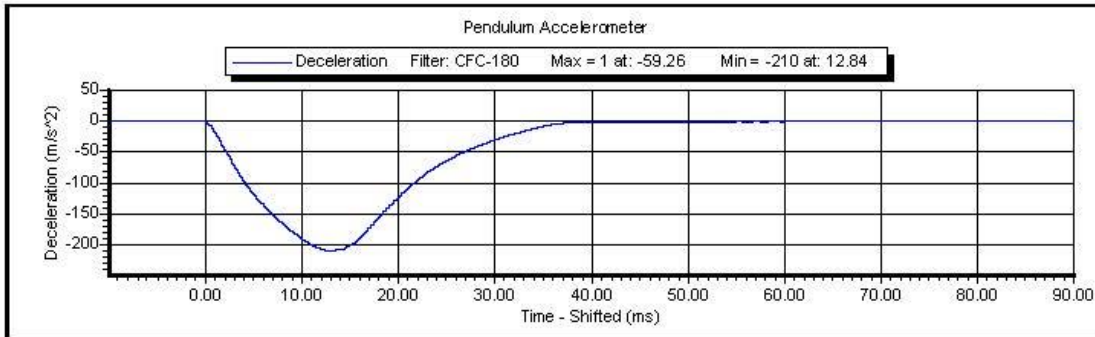
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Denton	3096	LC-465Fy	5/13/2014

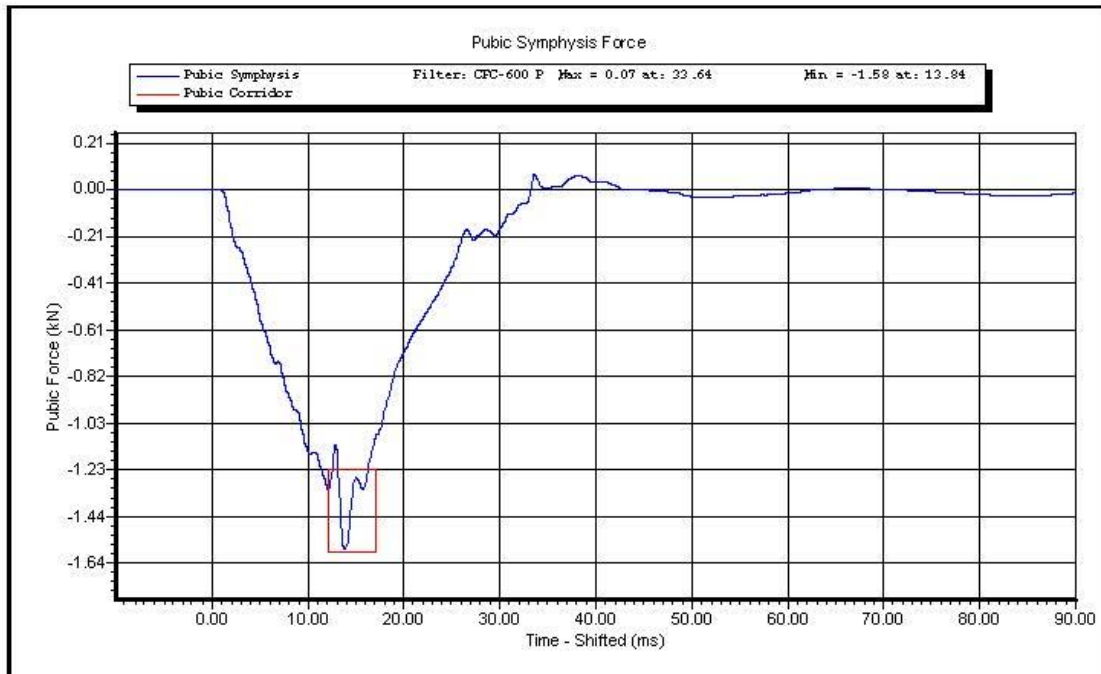


Test Name:	Pelvis Impact
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Pelvis Impact Test Time: 10:19:56 AM Test Date: 12/10/2014

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Test ID: **Pelvis Impact**

Test Time: **10:19:56 AM**

Test Date: **12/10/2014**

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CALIBRATION TEST RESULTS

PRE-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

SERIAL No: 300

(CONFIGURED FOR LEFT SIDE IMPACT)

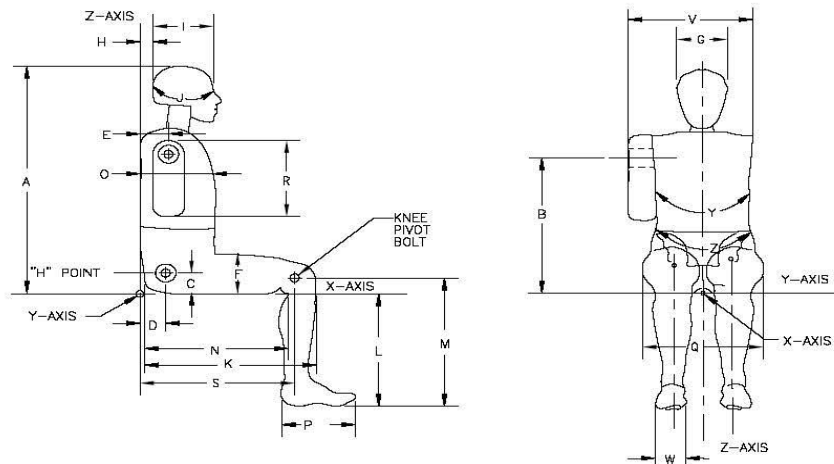


External Measurements - SID-IIs

Technician: M. Geesey

Date: 12/9/2014

Dummy Serial Number: 300



Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
A	Sitting Height	772	788	781	Pass
B	Shoulder Pivot Height	437	453	449	Pass
C	H-point Height	79	89	86	Pass
D	H-point from seatback	141	151	147	Pass
E	Shoulder Pivot from Backline	97	107	105	Pass
F	Thigh Clearance	119	135	122	Pass
G	Head Breadth	140	148	144	Pass
H	Head Back from Backline	40	46	43	Pass
I	Head Depth	178	188	183	Pass
J	Head Circumference	541	551	547	Pass
K	Buttock to Knee Length	514	540	538	Pass
L	Popliteal Height	343	369	358	Pass
M	Knee Pivot to floor height	392	409	404	Pass
N	Buttock Popliteal Length	416	442	437	Pass
O	Chest Depth w/o jacket	195	211	204	Pass
P	Foot Length	216	232	218	Pass
Q	Hip Breadth (w/pelvic plugs)	313	323	317	Pass
R	Arm Length	249	259	250	Pass
S	Knee Joint to seatback	477	493	487	Pass
V	Shoulder Width	341	357	349	Pass
W	Foot Width	78	94	82	Pass
Y	Chest Circumference w/jacket	851	881	871	Pass
Z	Waist Circumference	761	791	770	Pass



VERIFICATION REPORT

Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Head Drop	Test Date:	12/9/2014
		Test Time:	1:08:26 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.6 deg C	P
Humidity	10	--	70	25 %RH	P
Resultant Acceleration	115.0	--	137.0	132.3 g	P
Oscillation	0.0	--	15.0	2.4 %	P
Fore-Aft Acceleration	-15.0	--	15.0	5.1 g	P

All test parameters are within specifications

Technician: **M. Geesey**
Supervisor: **M. Goehle**



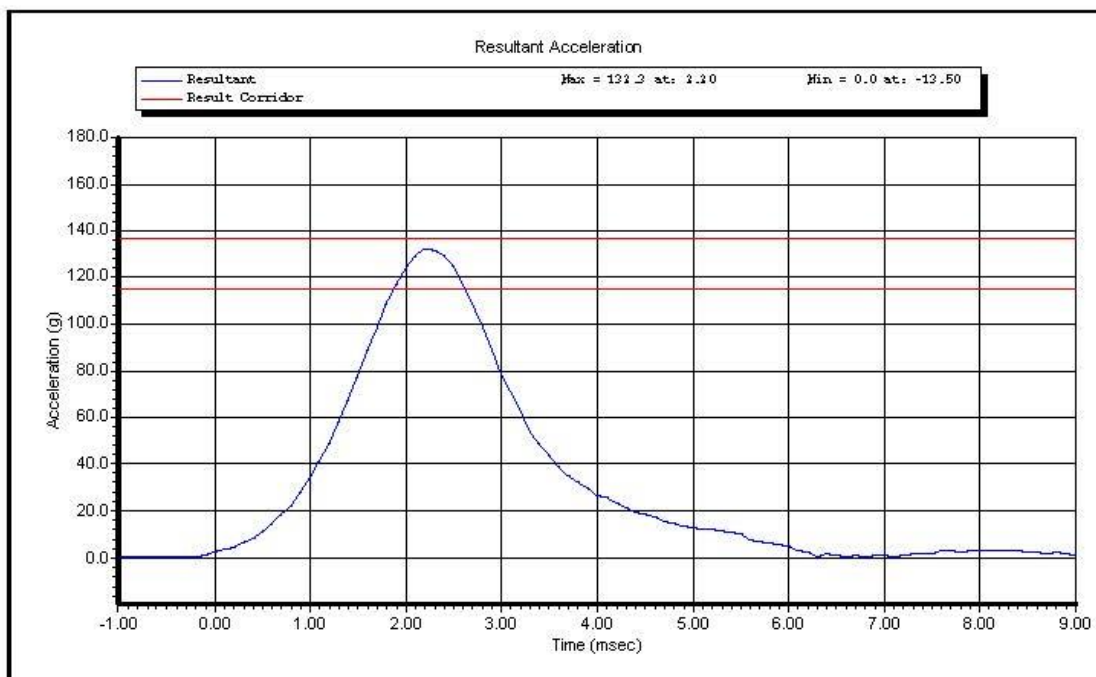
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Endevco	7264-2000	P58777	8/28/2014
Endevco	7264-2000	P59018	8/28/2014
Endevco	7264-2000	P68608	8/28/2014



Test Name:	Head Drop
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300

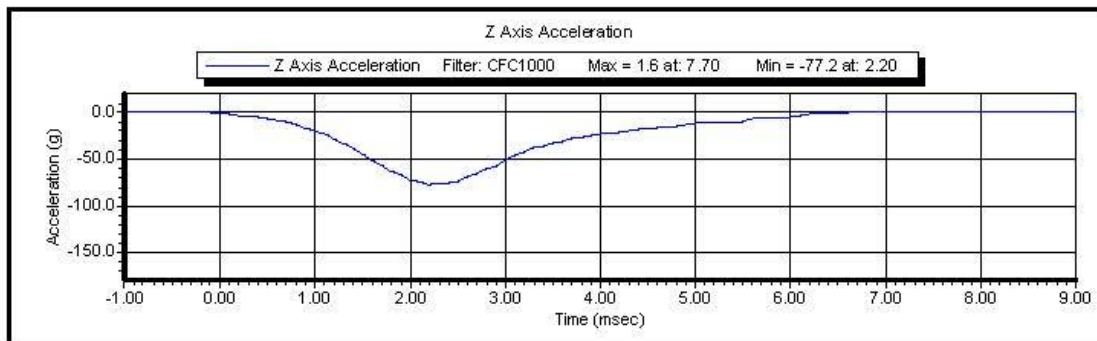
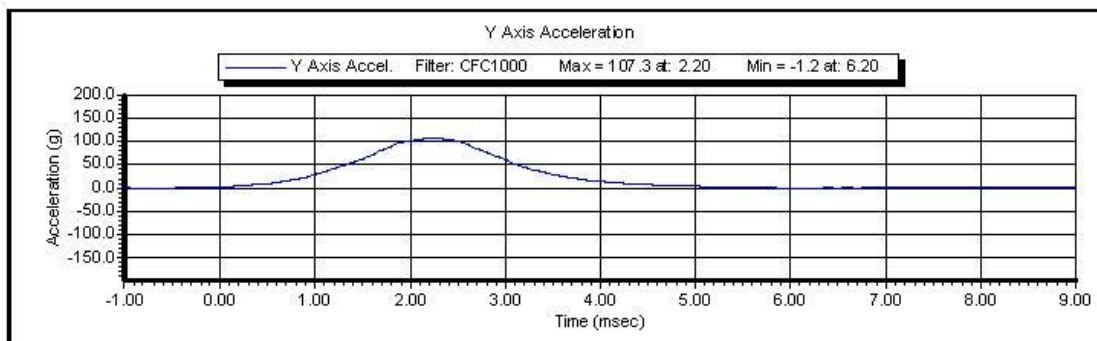
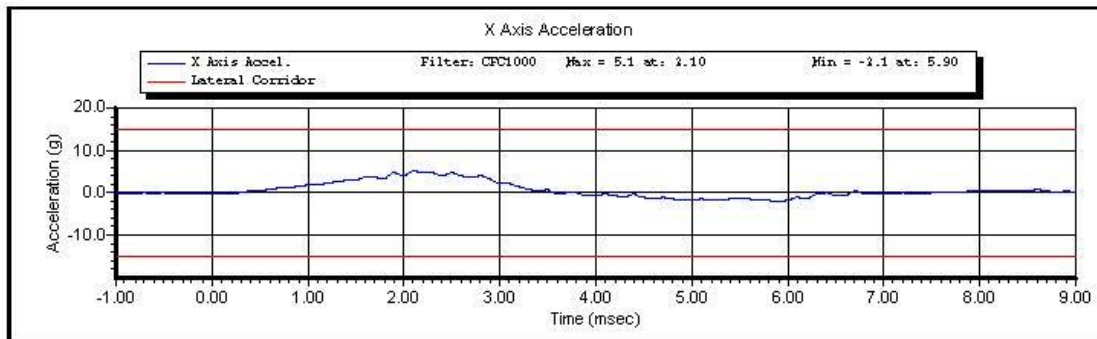


Test ID: **Head Drop**

Test Time: **1:08:26 PM**

Test Date: **12/9/2014**

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Test ID: **Head Drop**

Test Time: **1:08:26 PM**

Test Date: **12/9/2014**

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VERIFICATION REPORT

Test Name:	Neck Pendulum	Revision:	8/24/2009
Sub Test Name:	Left Side		
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Neck Flexion	Test Date:	12/9/2014
		Test Time:	10:20:15 AM

Test Parameters		Test Specifications		Test Results	
Temperature		20.6	-- 22.2	21.5	deg C P
Humidity		10	-- 70	24.3	%RH P
Velocity		5.51	-- 5.63	5.561	m/s P
Pendulum Impulse at	10 ms	2.2	-- 2.8	2.24	m/s P
Pendulum Impulse at	15 ms	3.3	-- 4.1	3.32	m/s P
Pendulum Impulse at	20 ms	4.4	-- 5.4	4.58	m/s P
Pendulum Impulse at	25 ms	5.4	-- 6.1	5.59	m/s P
Pendulum Impulse between 25 and	100 ms	5.5	-- 6.2	5.87	m/s P
Max D Plane Rotation		71	-- 81	74.8	degrees P
Time at Max Rotation		50	-- 70	60.2	ms P
Moment about OC		36	-- 44	41.0	Nm P
Moment Decay to Zero		102	-- 126	116.4	ms P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**



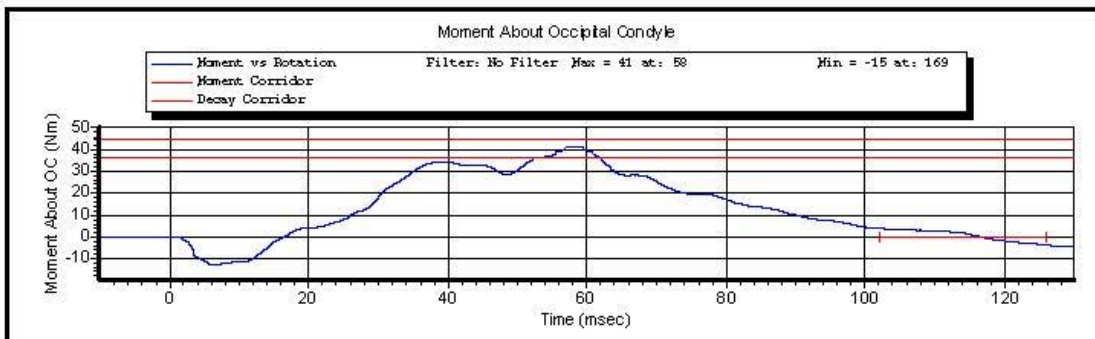
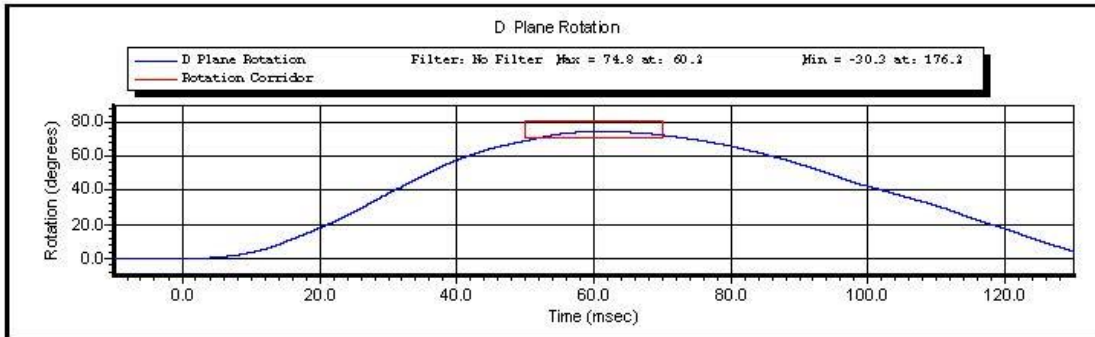
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	AH5F3	11/6/2014
Denton	1716A	LC-440 Fy	5/19/2014
Denton	1716A	LC-440 Mx	5/19/2014
DentonATD	78051-342	184	11/13/2014
DentonATD	78051-342	174	11/13/2014
DentonATD	78051-342	185	11/13/2014

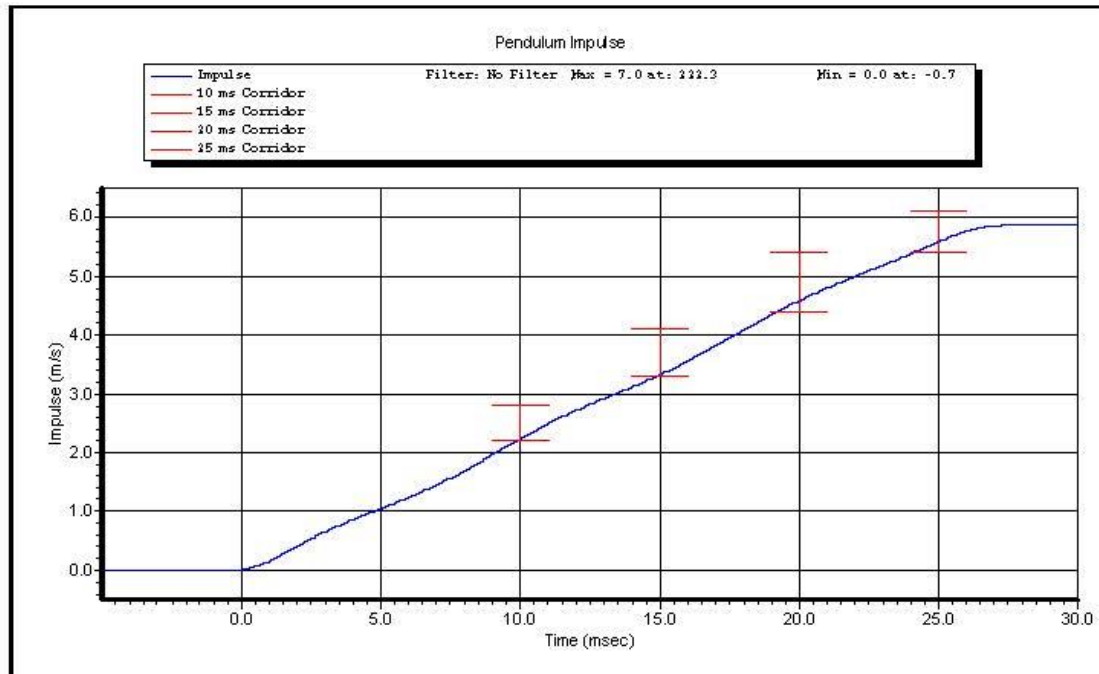


Test Name:	Neck Pendulum
Sub Test Name:	Left Side
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: Neck Flexion Test Time: 10:20:15 AM Test Date: 12/9/2014

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Test ID:

Neck Flexion

Test Time:

10:20:15 AM

Test Date:

12/9/2014

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VERIFICATION REPORT

Test Name:	Shoulder Impact	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Shoulder Impact	Test Date:	12/8/2014
		Test Time:	2:44:20 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.70 deg C	P
Humidity	10	--	70	14.2 %RH	P
Velocity	4.2	--	4.4	4.33 m/s	P
Probe Acceleration	13	--	18	15.2 g	P
Shoulder Deflection	28	--	37	29.6 mm	P
T1 Acceleration	17	--	22	19.7 g	P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **M. Goehle**



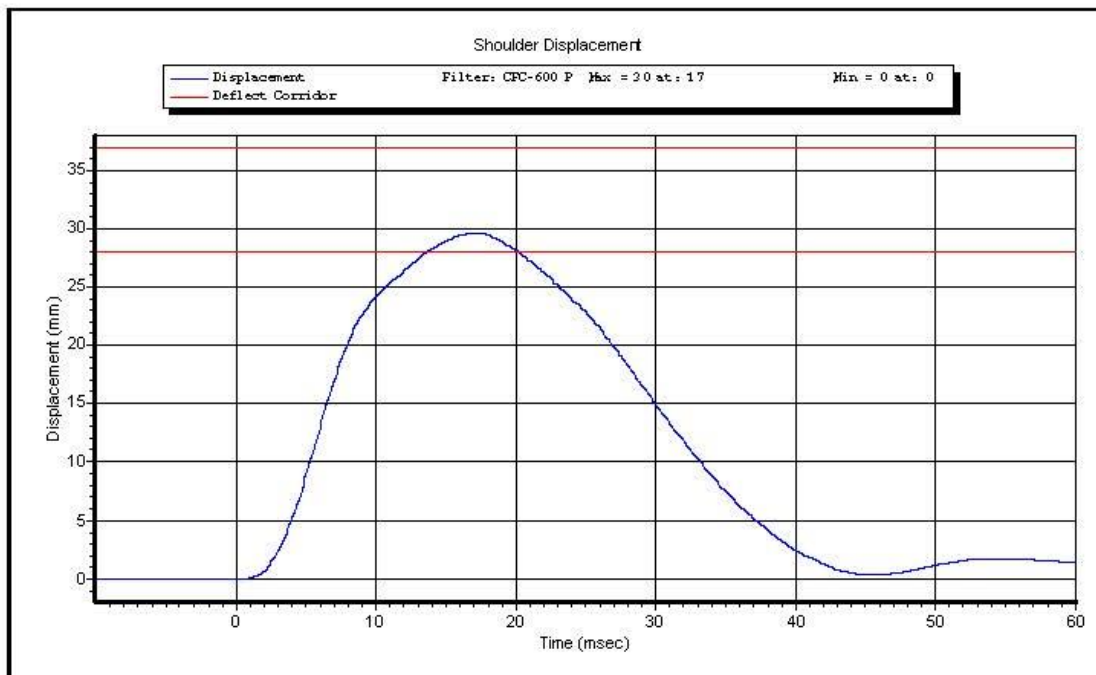
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-1063GFE	8/7/2014
Endevco	7264-2000	P51915	8/28/2014



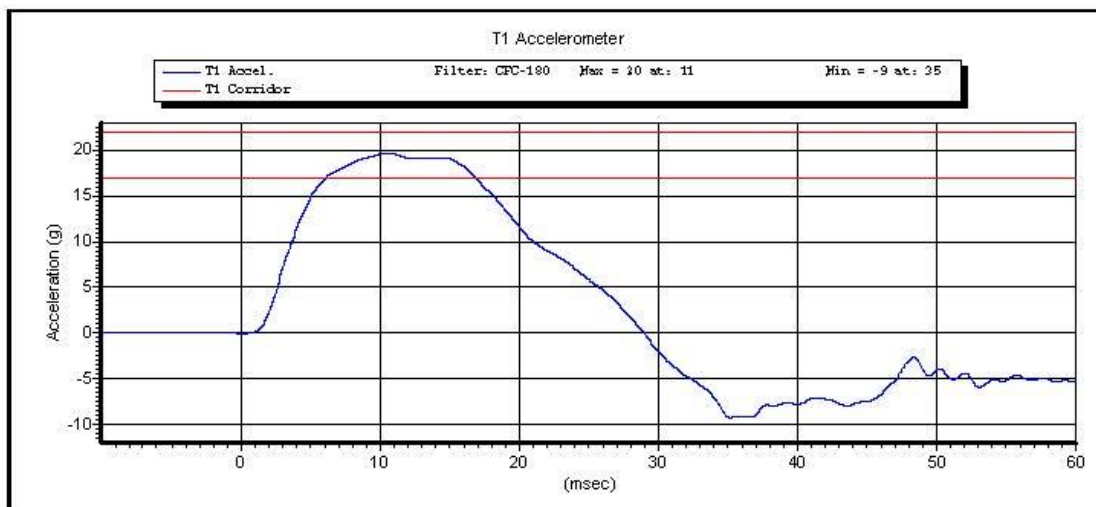
Test Name:	Shoulder Impact
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: **Shoulder Impact** Test Time: **2:44:20 PM**

Test Date: **12/8/2014**

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Test ID: **Shoulder Impact** Test Time: **2:44:20 PM**

Test Date: **12/8/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Thorax Impact with Arm	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Thorax With Arm	Test Date:	12/8/2014
		Test Time:	4:07:52 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.1 deg C	P
Humidity	10	--	70	14.9 %RH	P
Velocity	6.6	--	6.8	6.66 m/s	P
Probe Acceleration after 5ms	30	--	36	33.0 g	P
Upper Thorax Rib Deflection	25	--	32	27.9 mm	P
Mid Thorax Rib Deflection	30	--	36	32.5 mm	P
Lower Thorax Rib Deflection	32	--	38	33.6 mm	P
Upper Spine Acceleration ("y")	34	--	43	36.2 g	P
Lower Spine Acceleration ("y")	29	--	37	35.2 g	P
Shoulder Deflection	31	--	40	35.5 mm	P

All test parameters are within specifications

Technician: **M. Goehle**
Supervisor: **M. Goehle**



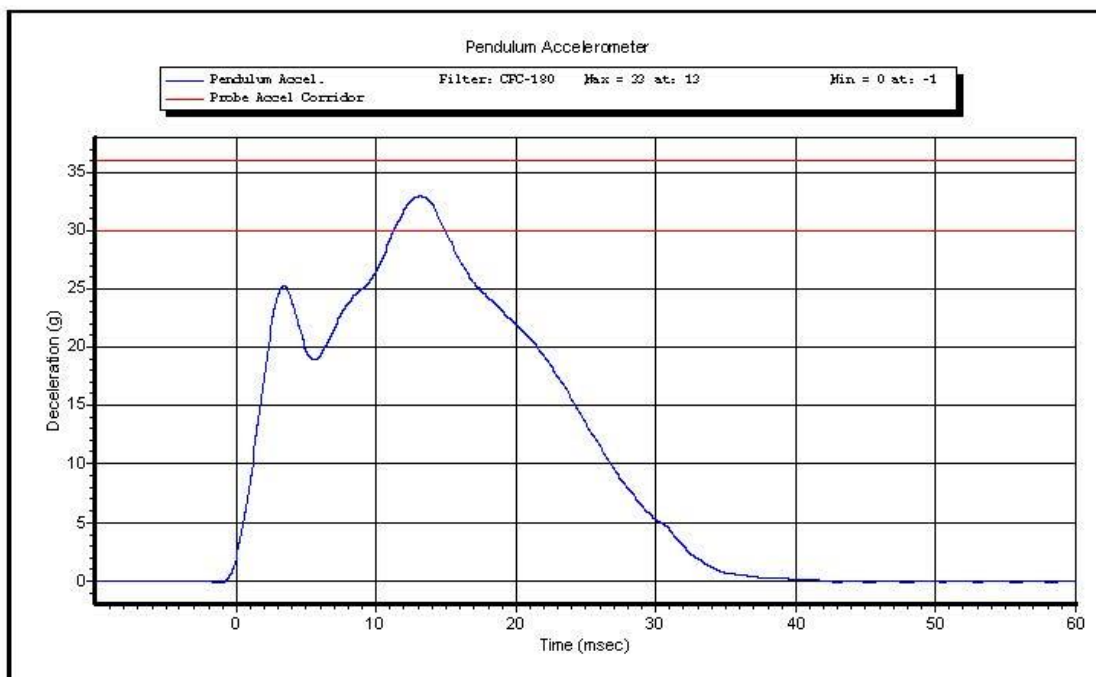
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-451GFE	8/12/2014
Servo	180-3885	DS-1151GFE	8/12/2014
Servo	180-3885	DS-1156GFE	8/12/2014
Endevco	7264-2000	P51915	8/28/2014
Endevco	7264-2000	P64147	8/28/2014
Servo	180-3885	DS-1063GFE	8/7/2014



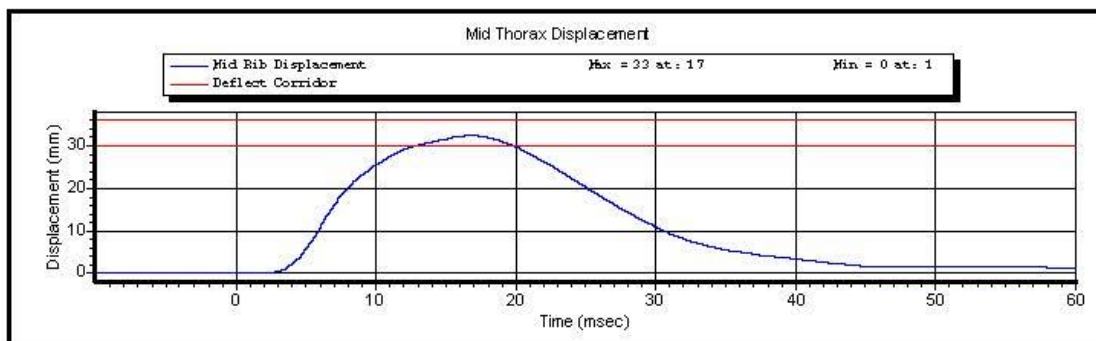
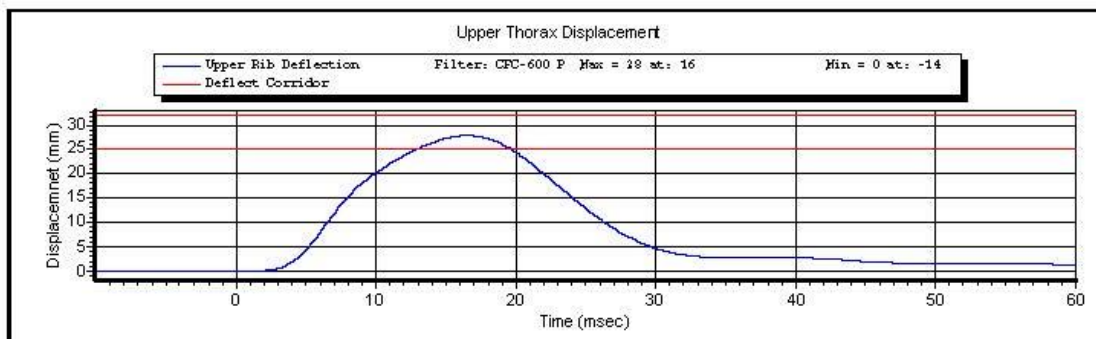
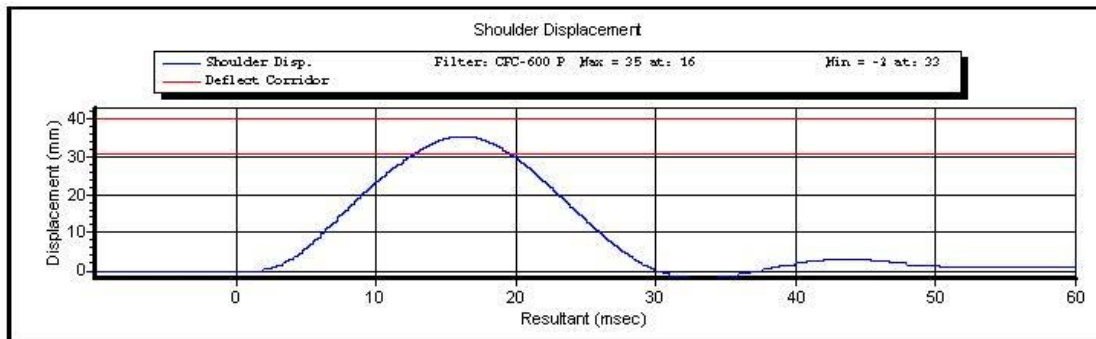
Test Name:	Thorax Impact with Arm
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: **Thorax With Arm** Test Time: **4:07:52 PM**

Test Date: **12/8/2014**

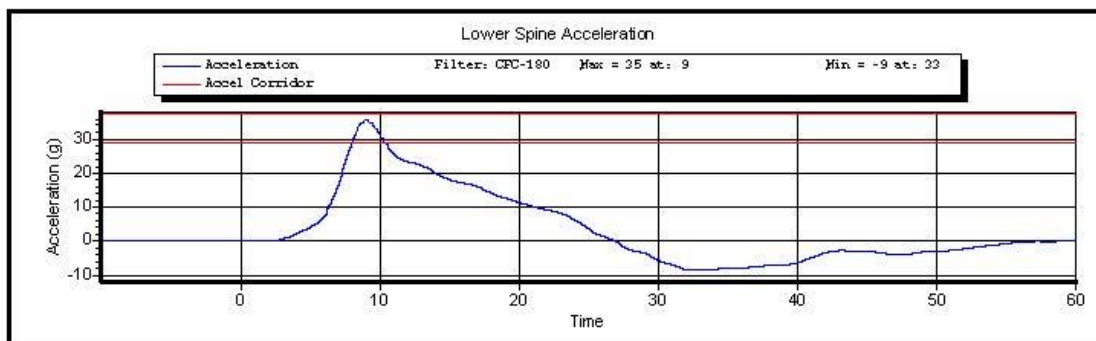
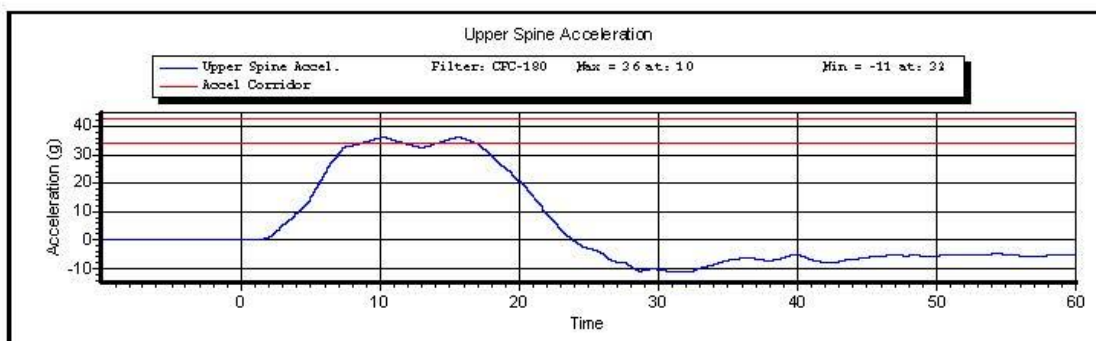
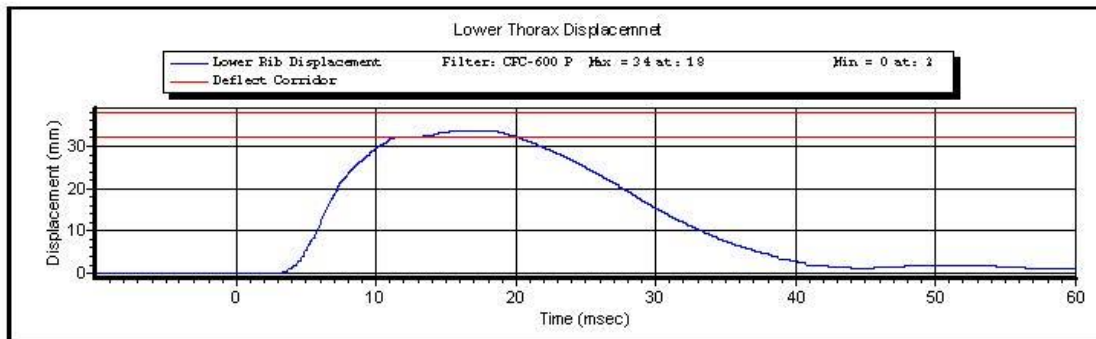
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Thorax With Arm** Test Time: **4:07:52 PM**

Test Date: **12/8/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: Thorax With Arm Test Time: 4:07:52 PM

Test Date: 12/8/2014

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VERIFICATION REPORT

Test Name:	Thorax Impact without Arm	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Thorax w/o Arm	Test Date:	12/8/2014
		Test Time:	2:18:08 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.3 deg C	P
Humidity	10	--	70	14.5 %RH	P
Velocity	4.2	--	4.4	4.33 m/s	P
Probe Acceleration	14	--	18	16.9 g	P
Upper Thorax Rib Deflection	32	--	40	33.2 mm	P
Mid Thorax Rib Deflection	39	--	45	39.7 mm	P
Lower Thorax Rib Deflection	35	--	43	37.7 mm	P
Upper Spine Acceleration T1	13	--	17	16.9 g	P
Lower Spine Acceleration T12	7	--	11	10.6 g	P

All test parameters are within specifications

Technician: **M. Geesey**
Supervisor: **M. Goehle**



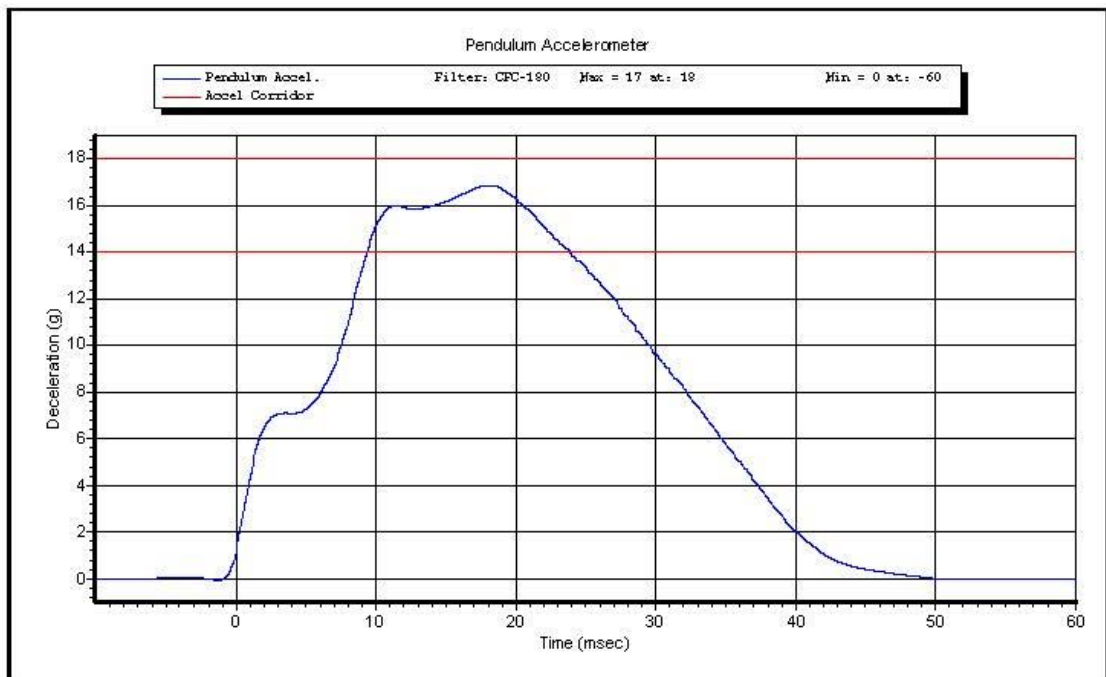
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-451GFE	8/12/2014
Servo	180-3885	DS-1151GFE	8/12/2014
Servo	180-3885	DS-1156GFE	8/12/2014
Endevco	7264-2000	P51915	8/28/2014
Endevco	7264-2000	P64147	8/28/2014



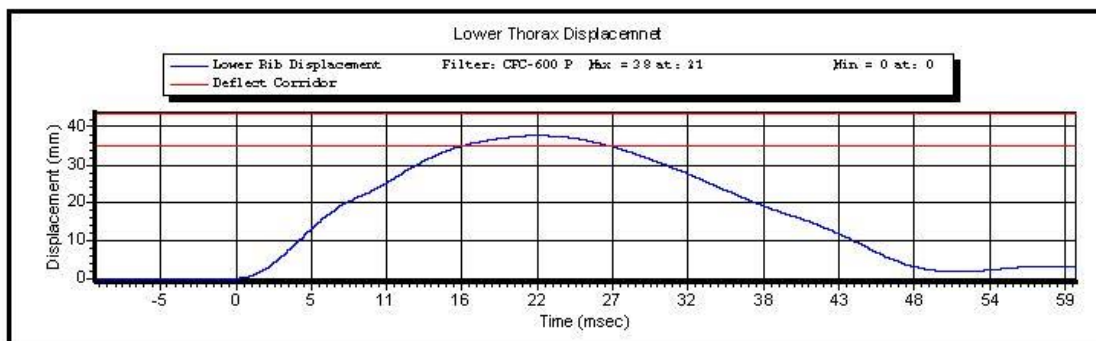
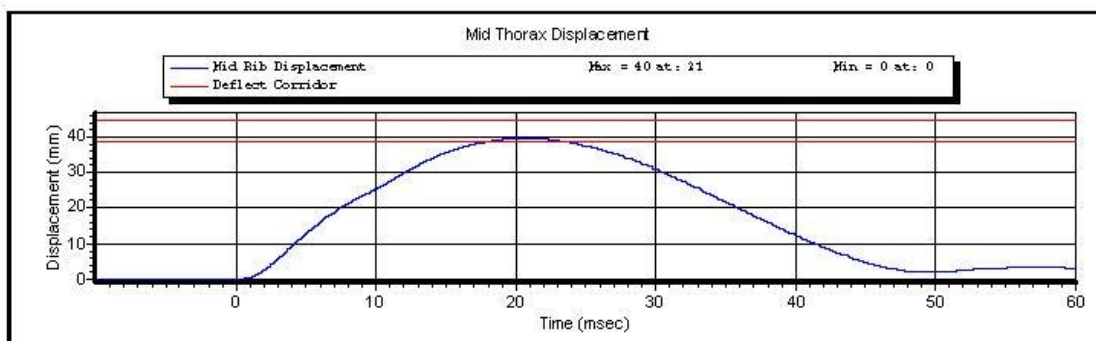
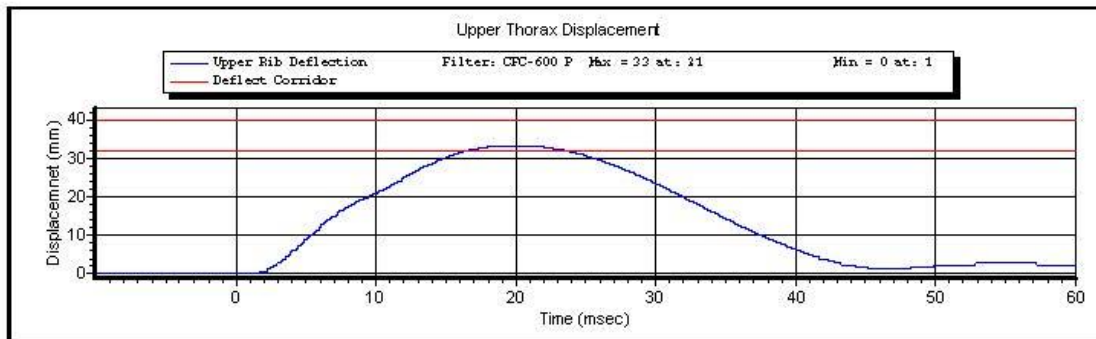
Test Name:	Thorax Impact without Arm
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: Thorax w/o Arm Test Time: 2:18:08 PM

Test Date: 12/8/2014

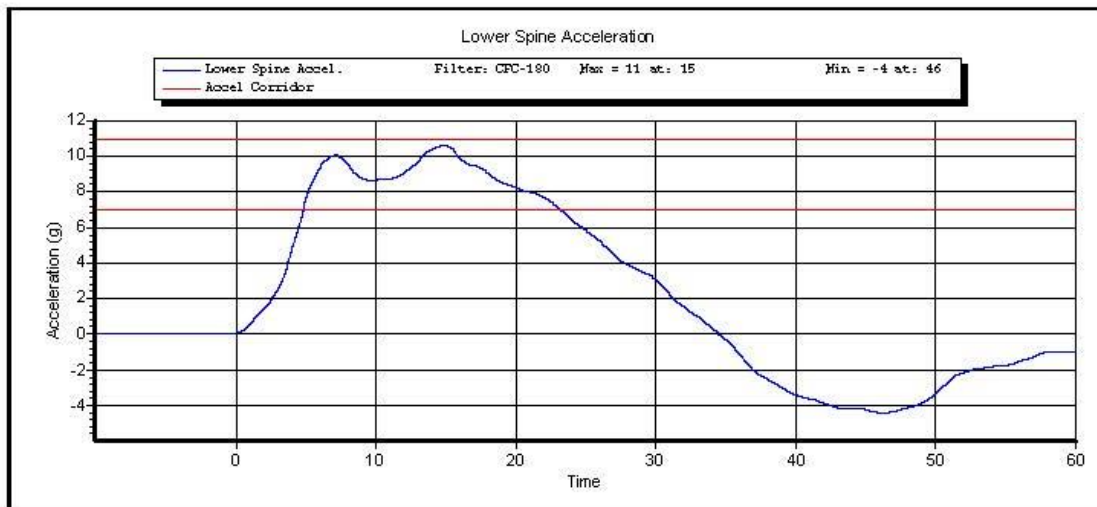
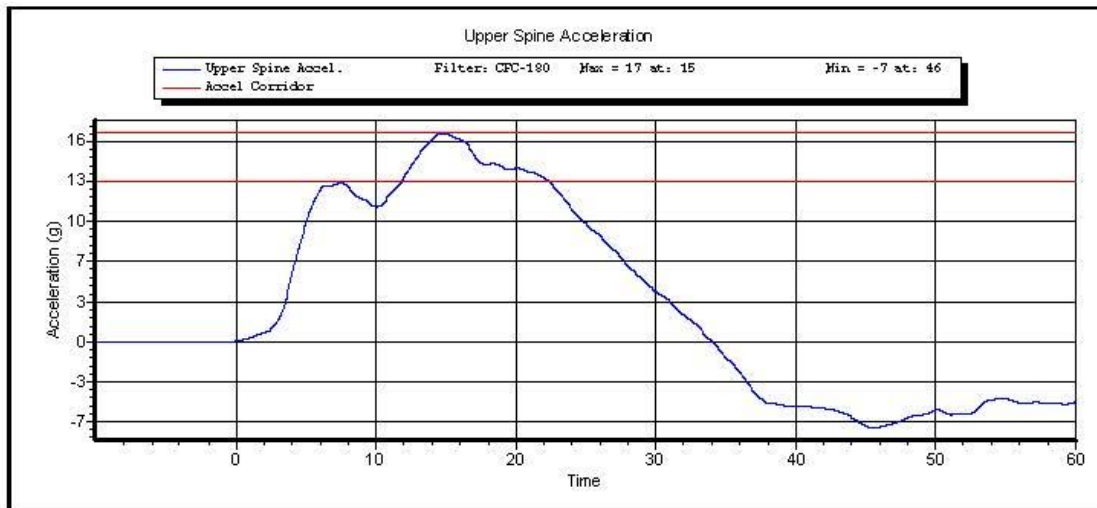
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: Thorax w/o Arm Test Time: 2:18:08 PM

Test Date: 12/8/2014

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: Thorax w/o Arm Test Time: 2:18:08 PM

Test Date: 12/8/2014

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Abdominal Impact	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Abdomen Impact	Test Date:	12/8/2014
		Test Time:	1:51:09 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.30 deg C	P
Humidity	10	--	70	14.30 %RH	P
Velocity	4.2	--	4.4	4.33 m/s	P
Probe Deceleration	12	--	16	15.6 G's	P
Upper Abdominal Rib Deflection	36	--	47	40.1 mm	P
Lower Abdominal Rib Deflection	33	--	44	35.2 mm	P
Lower Spine Acceleration - T12	9	--	14	12.1 G's	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**



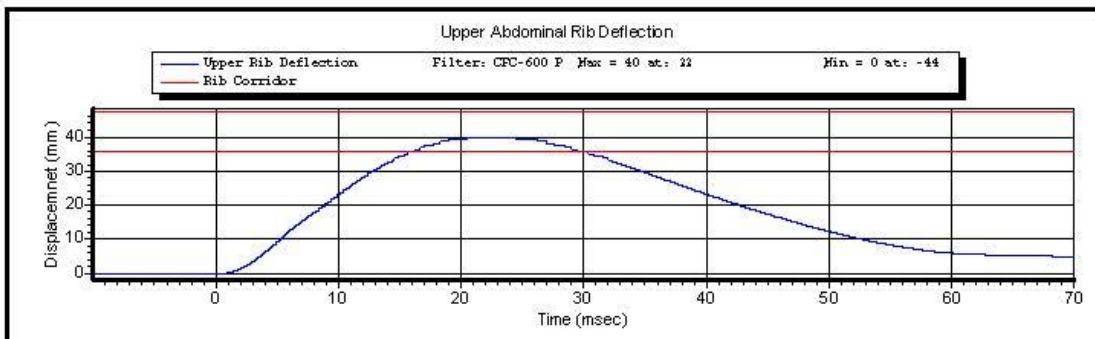
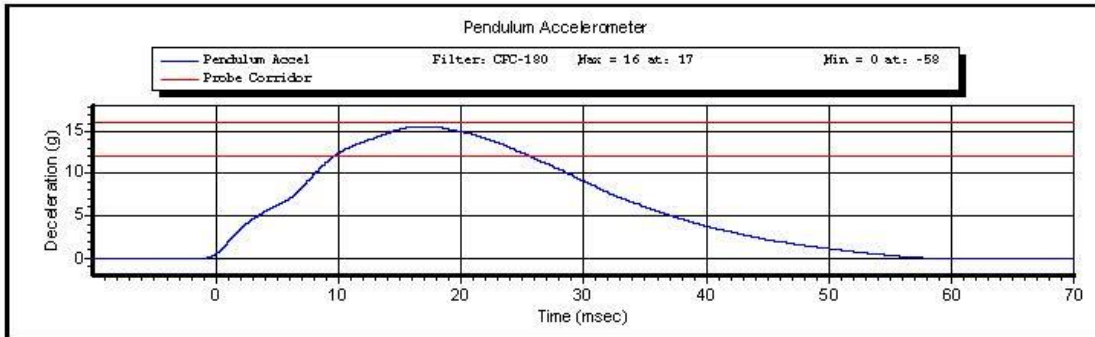
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-308GFE	8/12/2014
Servo	180-3885	DS-307GFE	8/7/2014
Endevco	7264-2000	P64147	8/28/2014



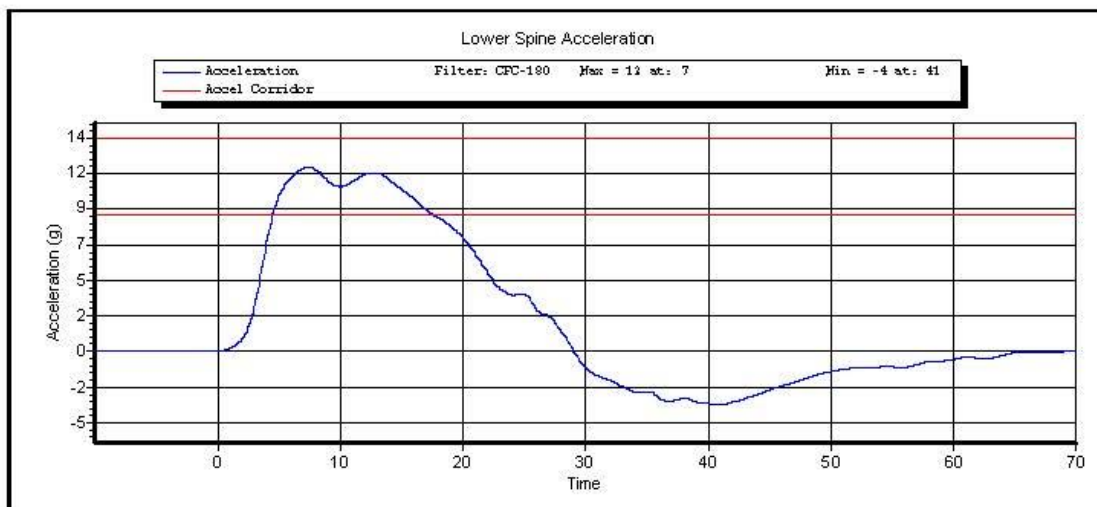
Test Name:	Abdominal Impact
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: **Abdomen Impact** Test Time: **1:51:09 PM**

Test Date: **12/8/2014**

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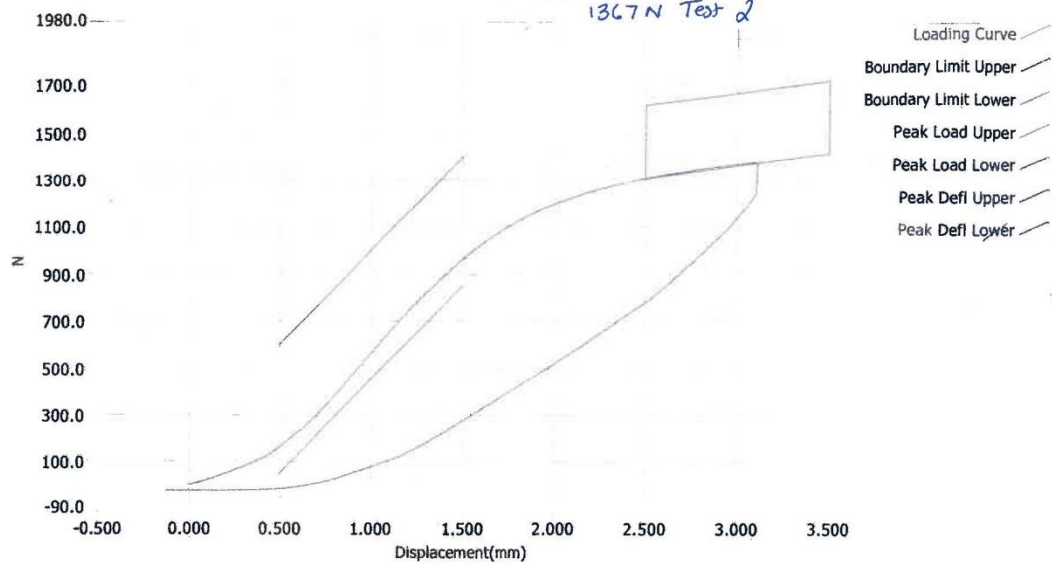


Test ID: **Abdomen Impact** Test Time: **1:51:09 PM**

Test Date: **12/8/2014**

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Resultant Data - SIDIIs Plug Compression -- CERTIFICATION 1367N Test 2



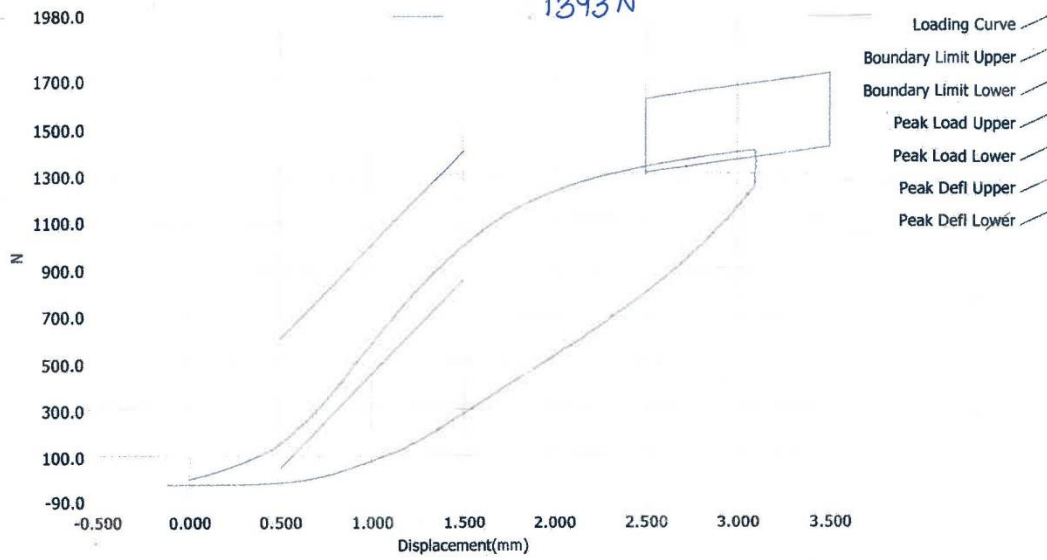
ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	46444	9/22/2011	8:08 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 9/22/2011

Current Time : 20:09:11

Resultant Data - SIDIIs Plug Compression - CRASH
1393 N



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	46463	9/22/2011	8:38 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 9/22/2011

Current Time : 20:39:05



VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Acetabulum Impact		
ATD Type:	SID-11s		
ATD Serial Number:	300		
Test ID:	Left Acetabulum	Test Date:	12/10/2014
		Test Time:	11:28:46 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.7 deg C	P
Humidity	10	--	70	23.1 %RH	P
Velocity	6.6	--	6.8	6.64 m/s	P
Peak Probe Acceleration	38	--	47	43.4 g	P
Peak Pelvis Acceleration	34	--	42	39.0 g	P
Peak Acetabulum Force	3.6	--	4.3	3.94 kN	P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **M. Goehle**



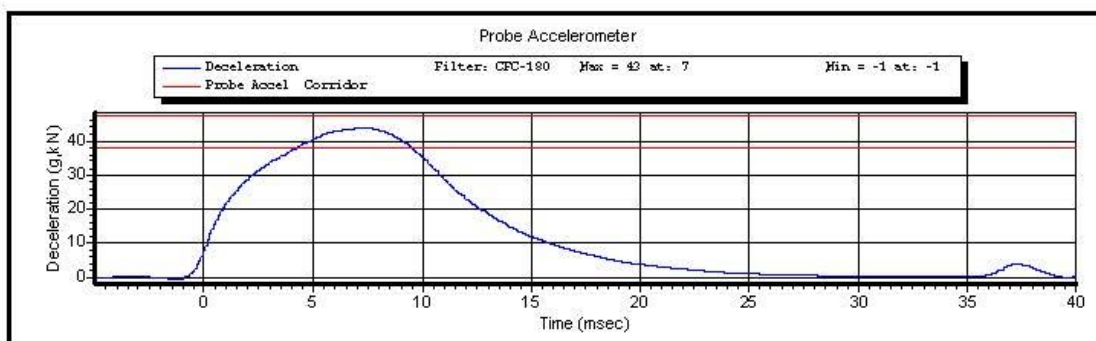
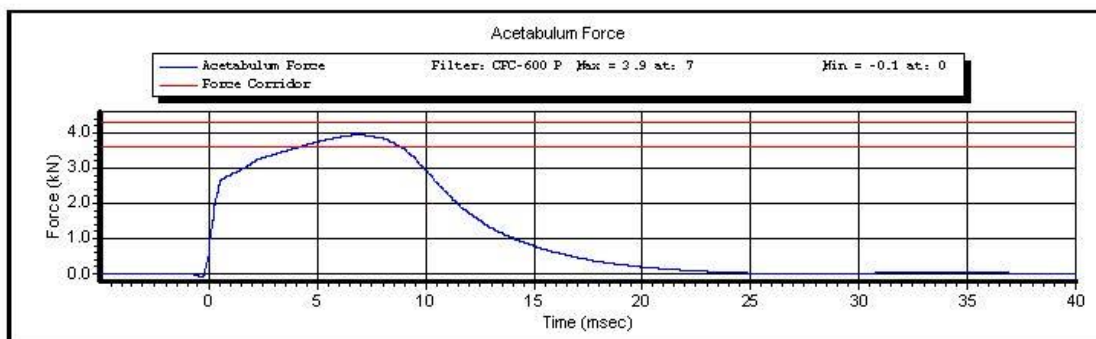
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Endevco	7264-2000	P16517	8/28/2014
DentonATD	3249J	LC-275 Fy	5/13/2014
Endevco	7264-2000	P32139	12/10/2014



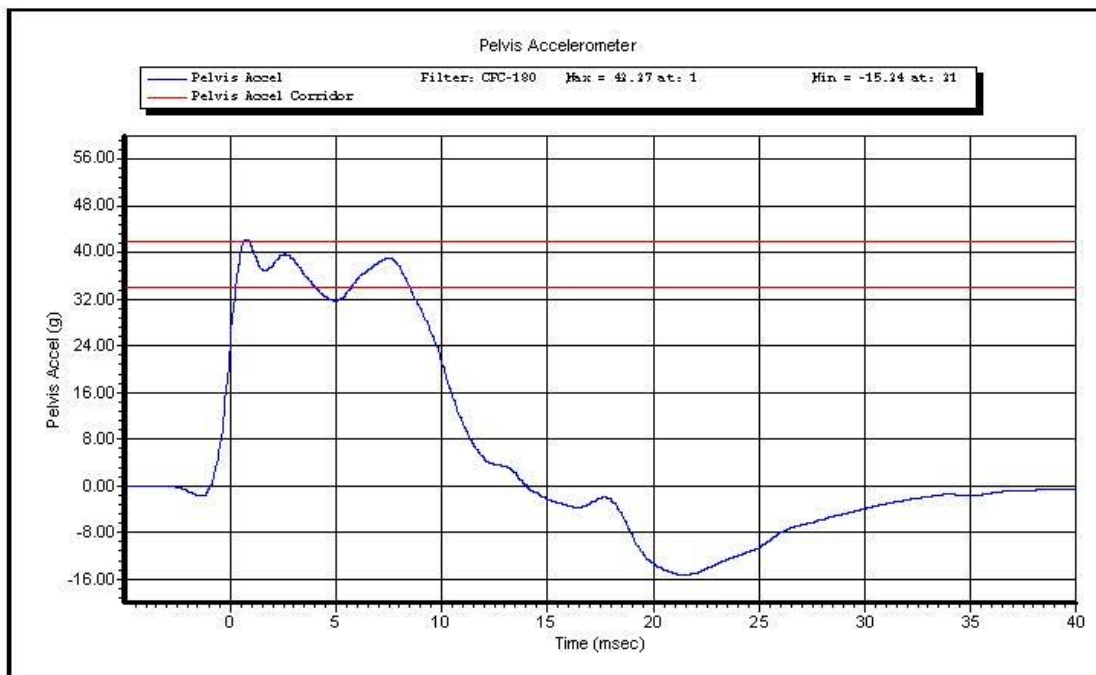
Test Name:	Pelvis
Sub Test Name:	Acetabulum Impact
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: **Left Acetabulum** Test Time: **11:28:46 AM**

Test Date: **12/10/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Left Acetabulum** Test Time: **11:28:46 AM**

Test Date: **12/10/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Iliac Impact		
ATD Type:	SID-Ils		
ATD Serial Number:	300		
Test ID:	Iliac Impact	Test Date:	12/8/2014
		Test Time:	4:45:17 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.8 deg C	P
Humidity	10	--	70	15.6 %RH	P
Velocity	4.2	--	4.4	4.34 m/s	P
Peak Probe Acceleration	36	--	45	39.3 g	P
Peak Pelvis Acceleration	28	--	39	34.9 g	P
Peak Iliac Force	4.1	--	5.1	4.34 kN	P

All test parameters are within specifications

Technician: **M. Goehle**

Supervisor: **M. Goehle**



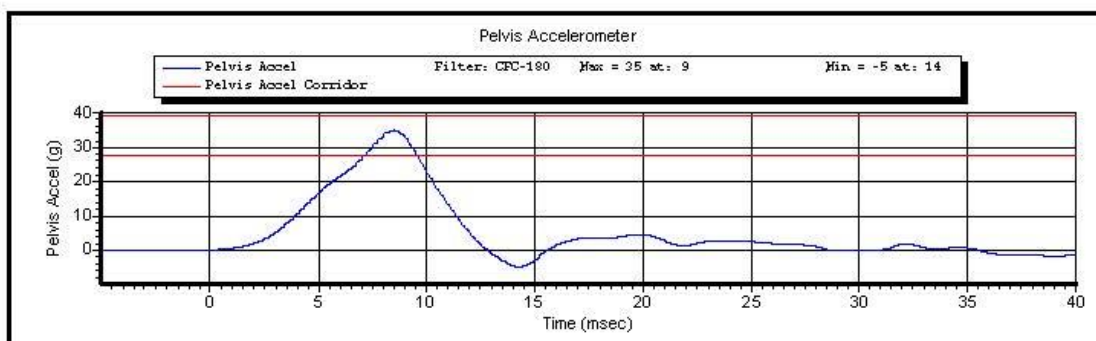
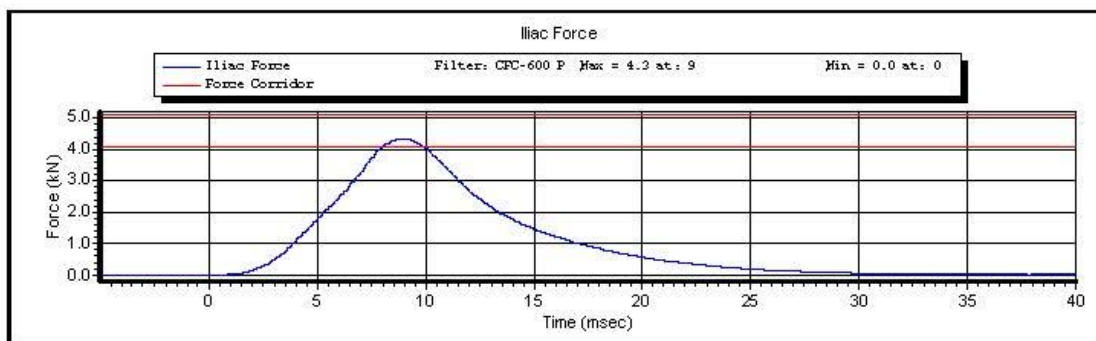
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Endevco	7264-2000	P16517	8/28/2014
DentonATD	3228J	LC-279 Fy	5/14/2014



Test Name:	Pelvis
Sub Test Name:	Iliac Impact
ATD Type:	SID-Ils
ATD Serial Number:	300

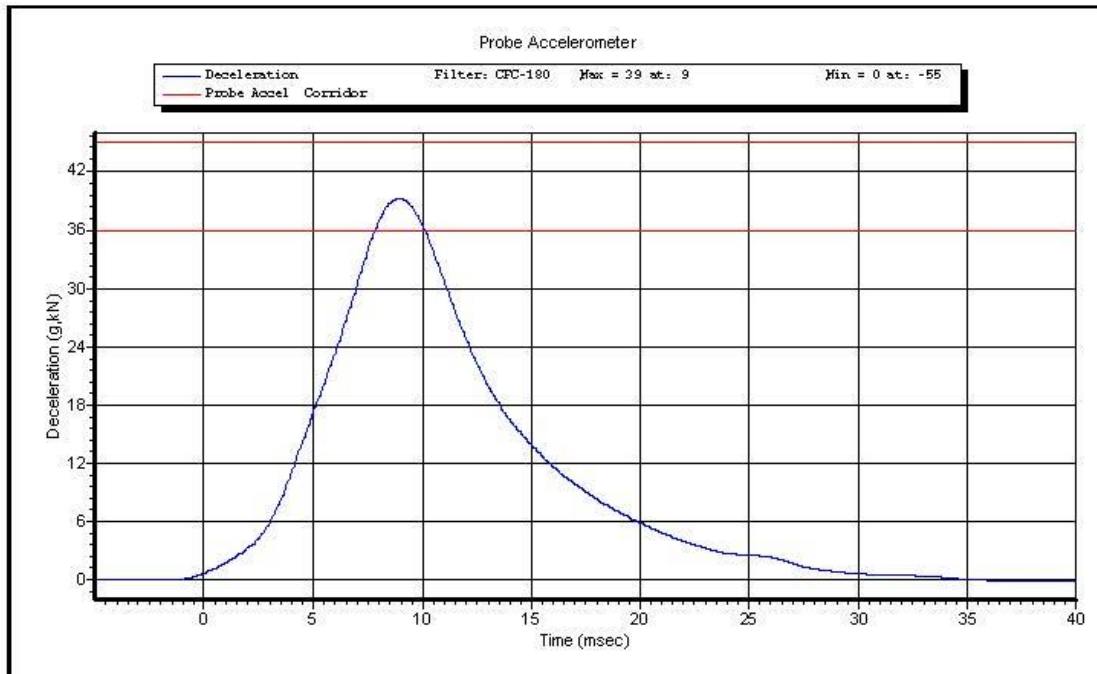


Test ID: Iliac Impact

Test Time: 4:45:17 PM

Test Date: 12/8/2014

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Iliac Impact**

Test Time: **4:45:17 PM**

Test Date: **12/8/2014**

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CALIBRATION TEST RESULTS

POST-TEST

EUROSID 2 (ES-2RE) MALE – DRIVER ATD

SERIAL NO: F034

(CONFIGURED FOR LEFT SIDE IMPACT)

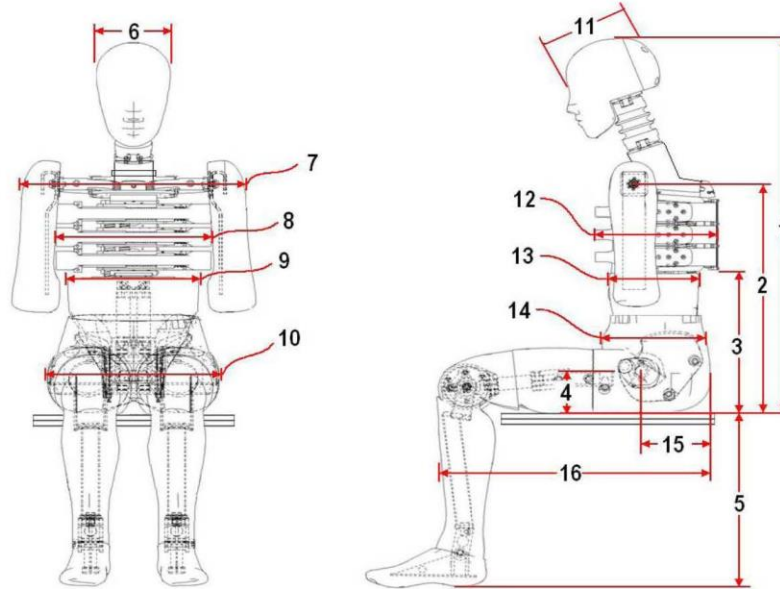


External Measurements - EuroSID-2re

Technician: Rick Weil

Date: 12/16/2014

Dummy Serial Number: F034



FRONT VIEW

SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	911	Pass
2	Seat to Shoulder Joint	558	572	561	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	347	Pass
4	Seat to Hip Joint (center of bolt)	97	103	99	Pass
5	Sole to Seat, Sitting	333	451	416	Pass
6	Head Width	152	158	153	Pass
7	Shoulder/Arm Width	461	479	475	Pass
8	Thorax Width	322	332	327	Pass
9	Abdomen Width	273	287	282	Pass
10	Pelvis Lap Width	359	373	368	Pass
11	Head Depth	196	206	198	Pass
12	Thorax Depth	262	272	269	Pass
13	Abdomen Depth	194	204	200	Pass
14	Pelvis Depth	235	245	237	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150	160	152	Pass
16	Back of Buttocks to Front Knee	597	615	604	Pass



VERIFICATION REPORT

Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Head Drop	Test Date:	12/16/2014
		Test Time:	9:35:16 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.40 deg C	P
Humidity	10	--	70	29.00 %RH	P
Resultant Acceleration	125	--	155	132.1 G's	P
Oscillation	0	--	15	2.3 %	P
Fore-Aft Accelerometer	-15	--	15	9.1 G's	P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



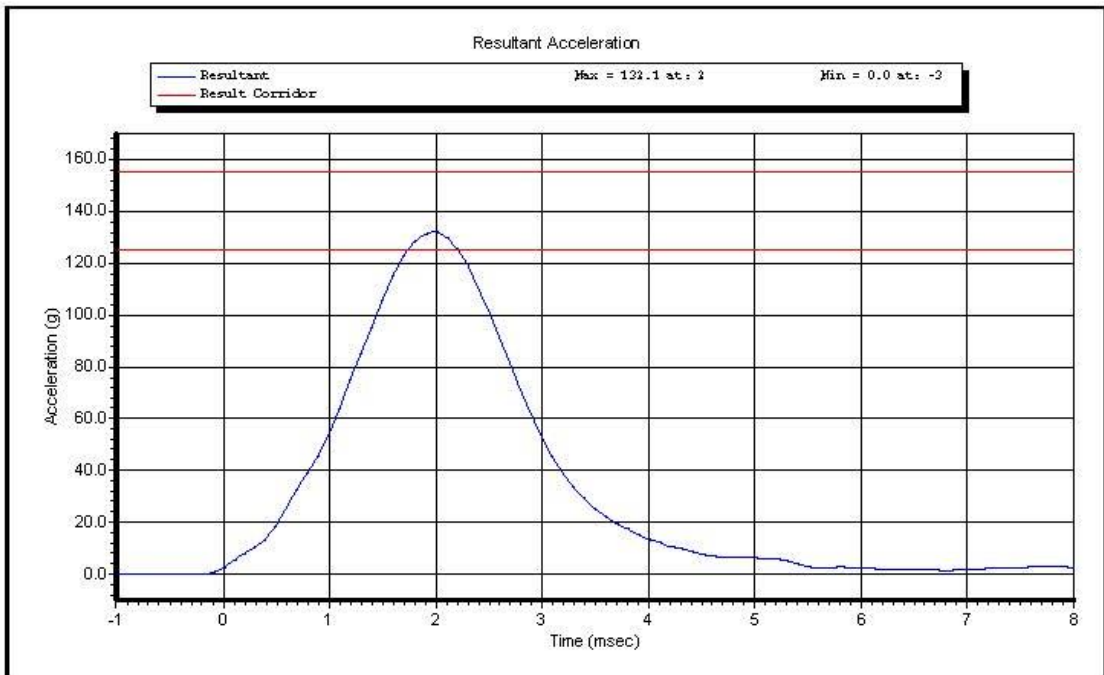
VERIFICATION REPORT

REFERENCE EQUIPMENT

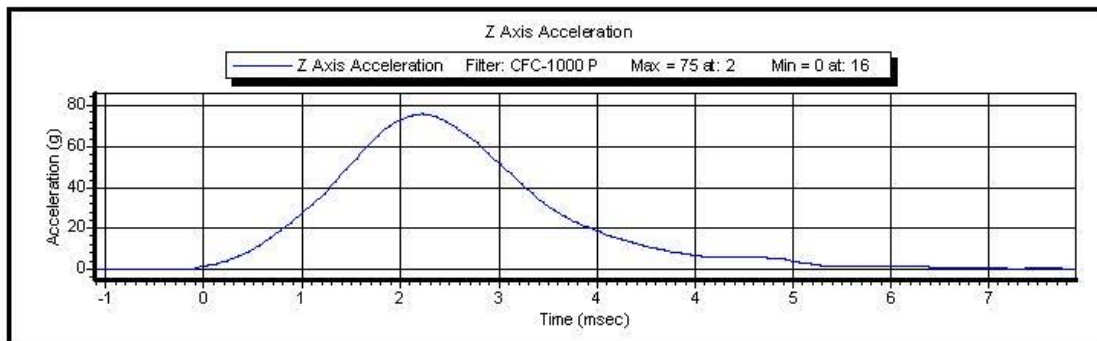
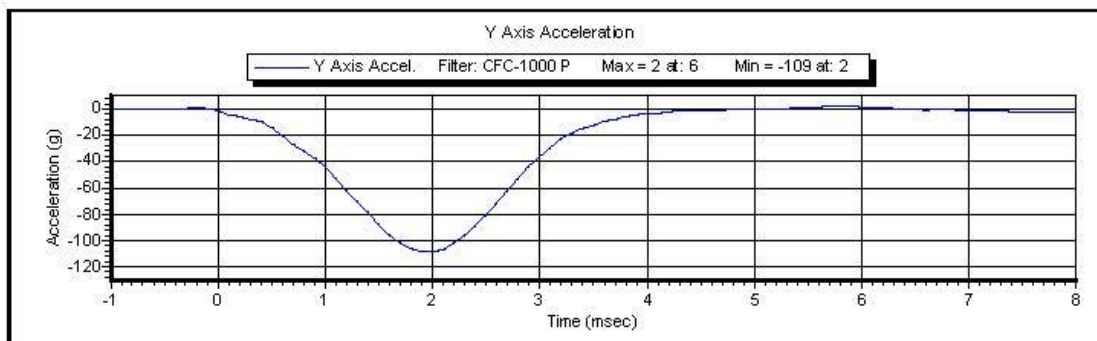
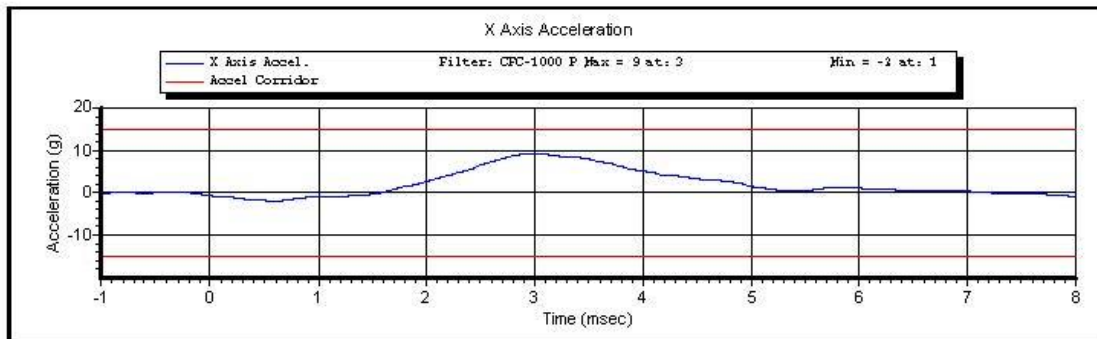
<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Endevco	7264-2000	P58904	8/29/2014
Endevco	7264-2000	P58911	8/29/2014
Endevco	7264-2000	P58776	8/29/2014



Test Name:	Head Drop
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Head Drop** Test Time: **9:35:16 AM** Test Date: **12/16/2014**
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Test ID: **Head Drop**

Test Time: **9:35:16 AM**

Test Date: **12/16/2014**

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VERIFICATION REPORT

Test Name:	Neck Flexion	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Neck Flexion	Test Date:	12/16/2014
		Test Time:	11:46:19 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.70 deg C	P
Humidity	10	--	70	31.30 %RH	P
Velocity	3.3	--	3.5	3.35 m/s	P
Maximum Neck Flexion Angle	49	--	59	51.7 degrees	P
Time At Maximum Neck Flexion	54	--	66	59.2 ms	P
Decay Time to Zero Degrees	53	--	88	55.7 ms	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



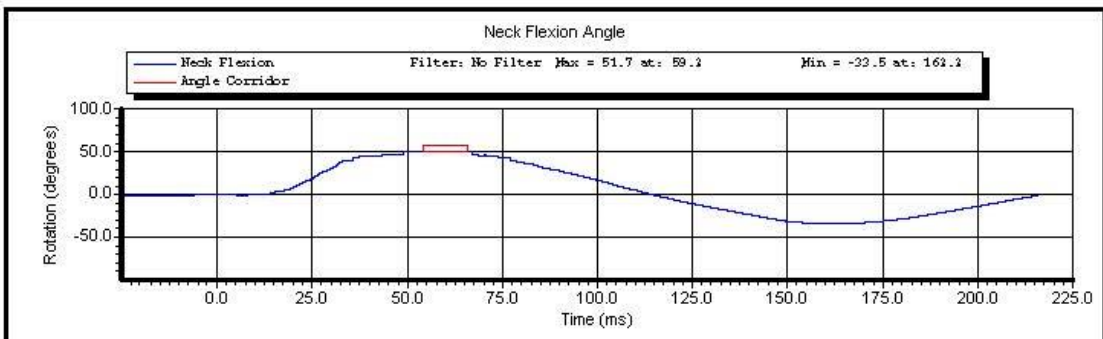
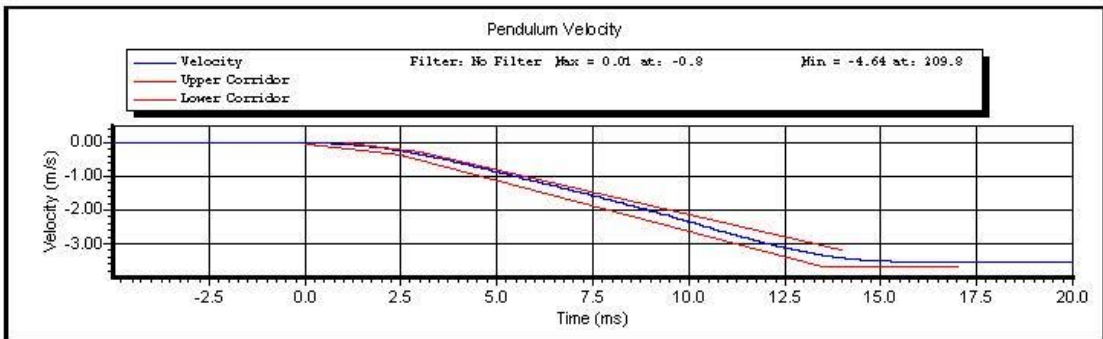
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	AH5F3	11/6/2014
DentonATD	156ESDT-102	094	11/13/2014
DentonATD	156ESDT-102	095	11/13/2014

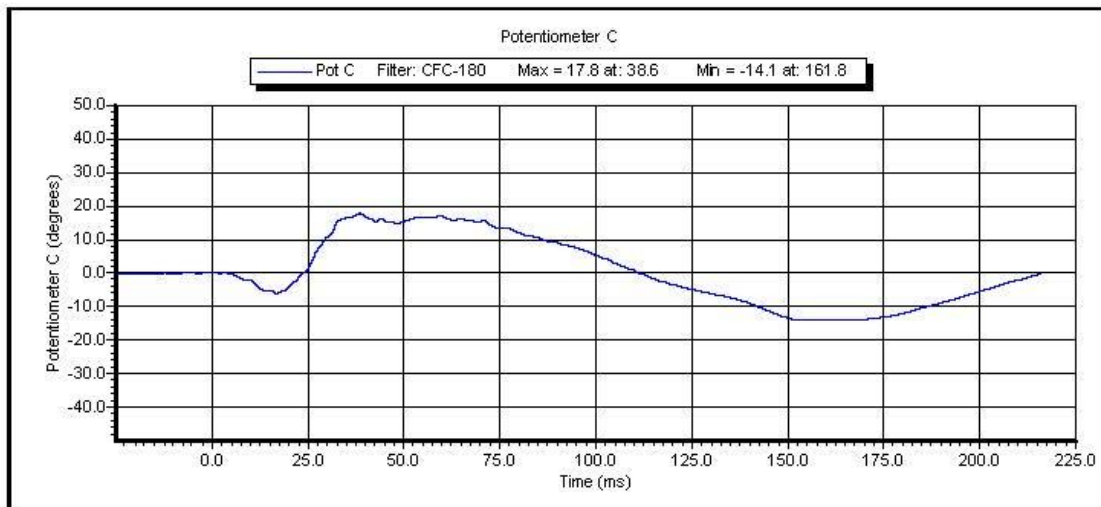
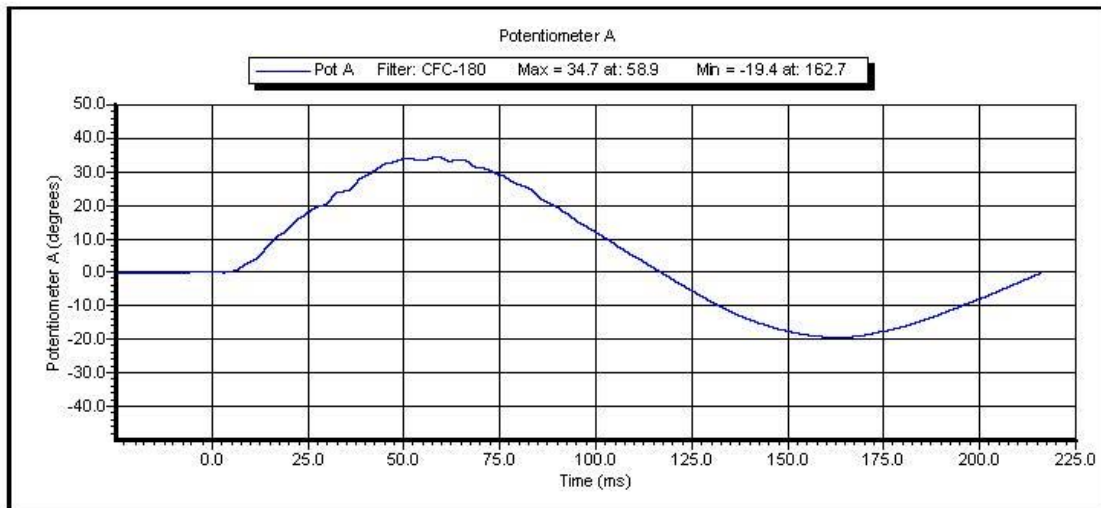


Test Name:	Neck Flexion
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Neck Flexion Test Time: 11:46:19 AM Test Date: 12/16/2014

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Neck Flexion** Test Time: **11:46:19 AM** Test Date: **12/16/2014**
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Shoulder Impact	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Shoulder Impact	Test Date:	12/15/2014
		Test Time:	11:16:29 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.20 deg C	P
Humidity	10	--	70	29.70 %RH	P
Velocity	4.2	--	4.4	4.26 m/s	P
Pendulum Acceleration	-10.5	--	-7.5	-10.32 G's	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



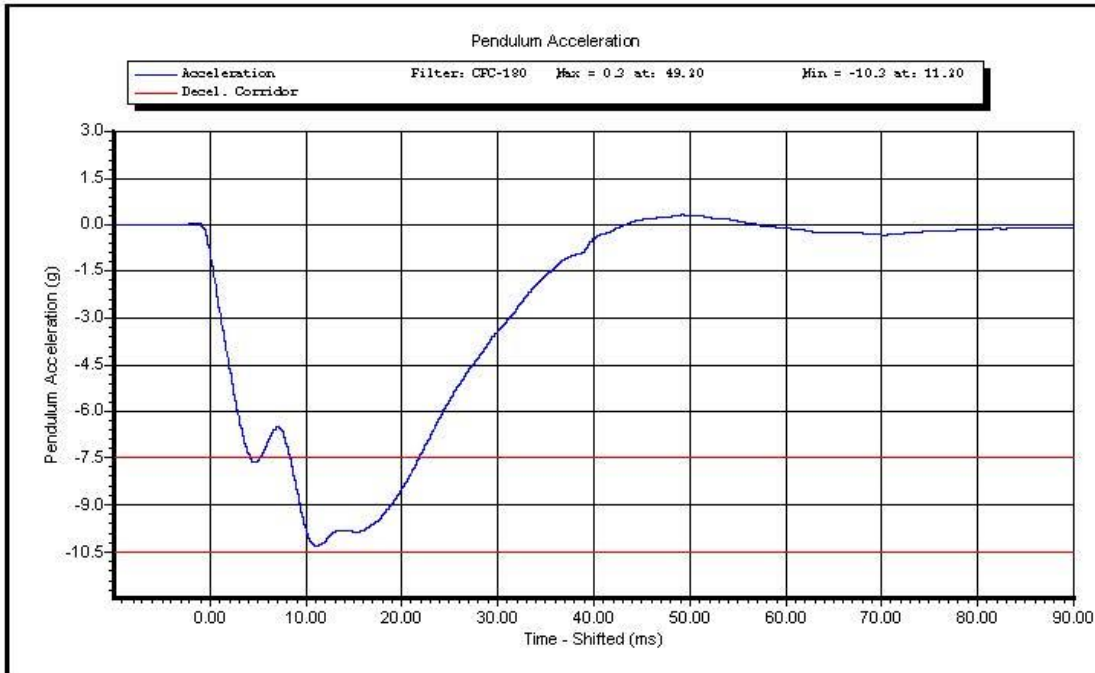
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD Endevco	Velocity Trap 7231CT	1 C14953	1/11/2014 7/30/2014



Test Name:	Shoulder Impact
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Shoulder Impact** Test Time: **11:16:29 AM** Test Date: **12/15/2014**
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	3.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Upper Rib 3 m/s	Test Date:	12/15/2014
		Test Time:	2:33:44 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	31.80 %RH P
Rib Displacement	-40 -- -36	-36.0 mm P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-183GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	3.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Upper Rib 3 m/s Test Time: 2:33:44 PM
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0

Test Date: 12/15/2014



VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	4.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Upper Rib 4 m/s	Test Date:	12/15/2014
		Test Time:	2:44:19 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.90 deg C P
Humidity	10 -- 70	31.80 %RH P
Rib Displacement	-51 -- -46	-46.2 mm P

All test parameters are within specifications

Technician: R. Weil
Supervisor: . Goehle



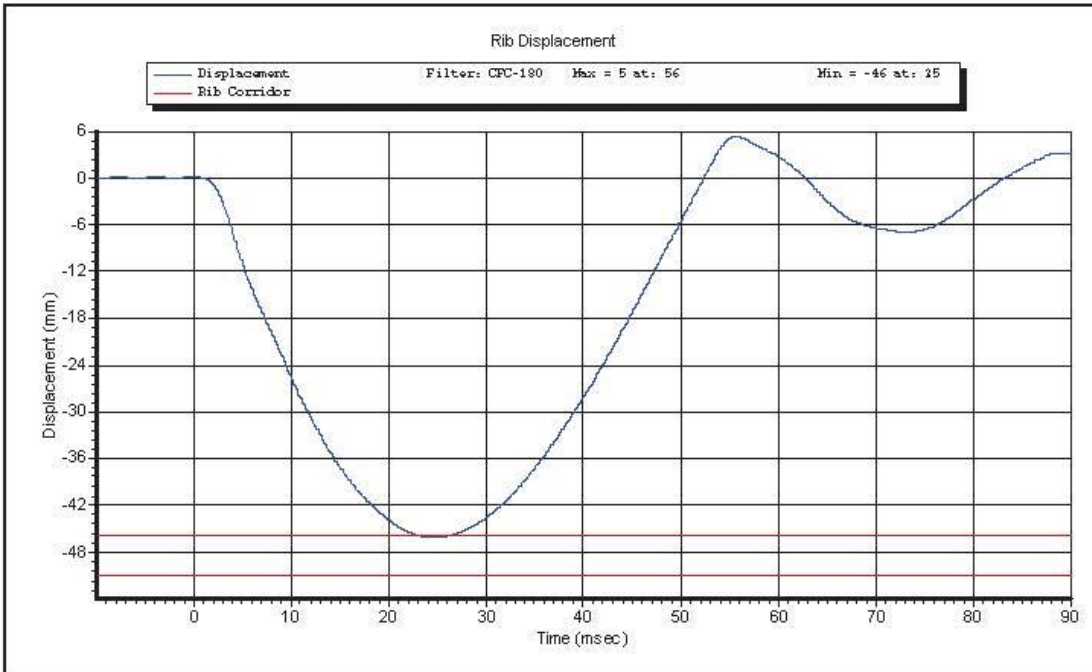
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-183GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	4.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Upper Rib 4 m/s** Test Time: **2:44:19 PM**
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Test Date: **12/15/2014**



VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	3.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Middle Rib 3m/s	Test Date:	12/15/2014
		Test Time:	2:57:09 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.80 deg C	P
Humidity	10	--	70	32.30 %RH	P
Rib Displacement	-40	--	-36	-37.3 mm	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



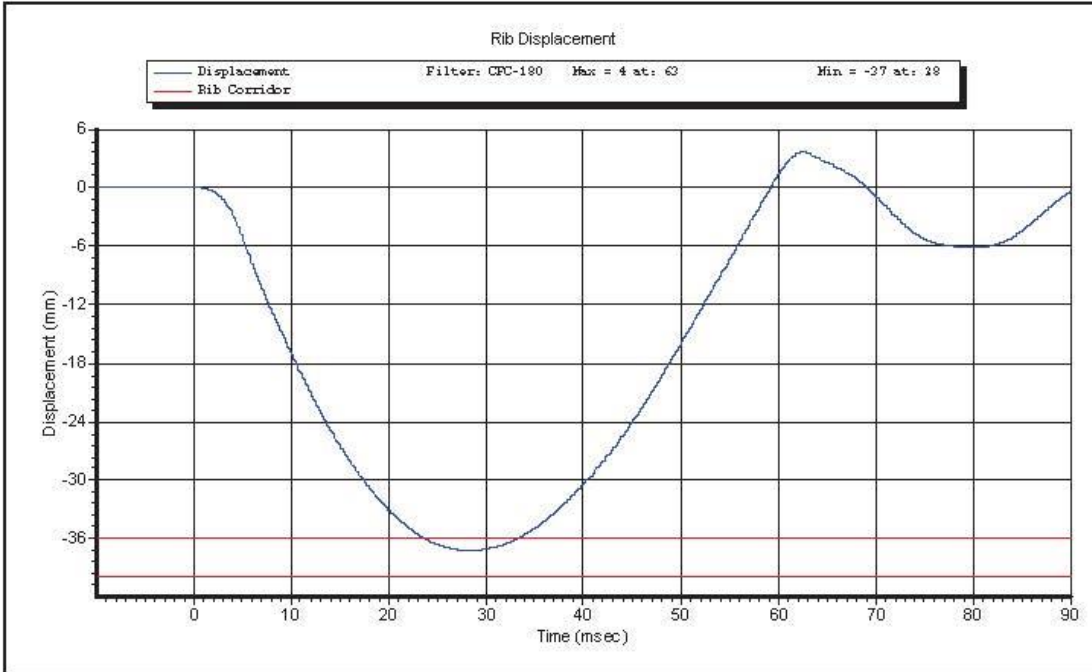
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-184 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	3.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Middle Rib 3m/s** Test Time: **2:57:09 PM**

Test Date: **12/15/2014**

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VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	4.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Middle Rib 4 m/s	Test Date:	12/15/2014
		Test Time:	3:04:02 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.80 deg C P
Humidity	10 -- 70	32.30 %RH P
Rib Displacement	-51 -- -46	-47.7 mm P

All test parameters are within specifications

Technician: **R. weil**
Supervisor: **M. Goehle**



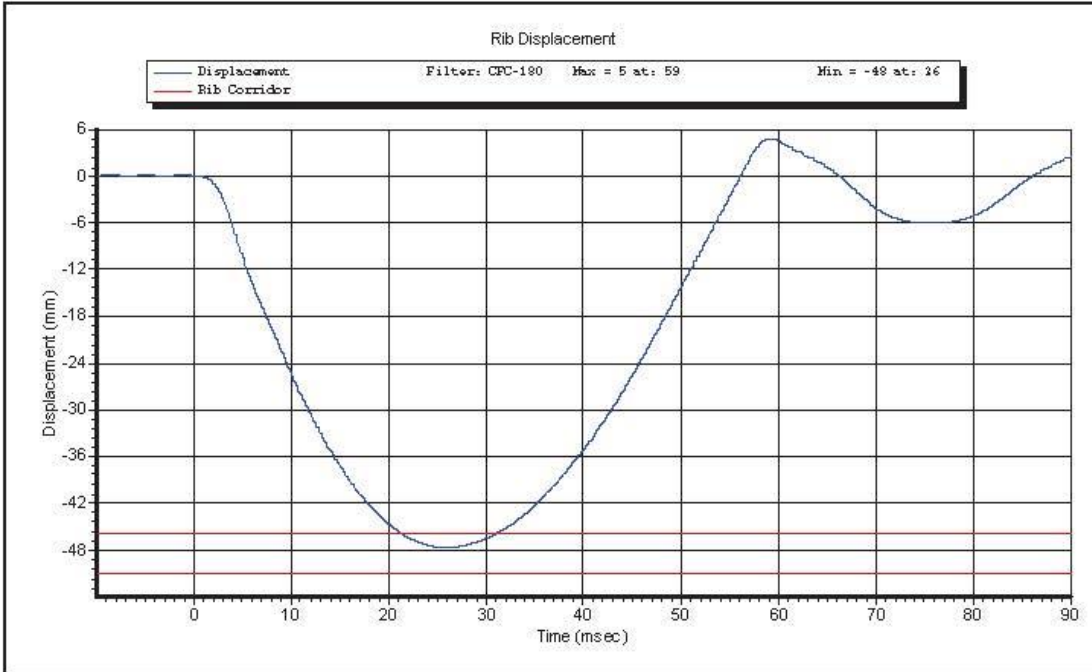
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REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-184 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	4.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Middle Rib 4 m/s** Test Time: **3:04:02 PM**

Test Date: **12/15/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	3.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Lower Rib 3 m/s	Test Date:	12/15/2014
		Test Time:	3:11:54 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.70 deg C P
Humidity	10 -- 70	36.20 %RH P
Rib Displacement	-40 -- -36	-37.2 mm P

All test parameters are within specifications

Technician: R. Weil
Supervisor: M. Goehle



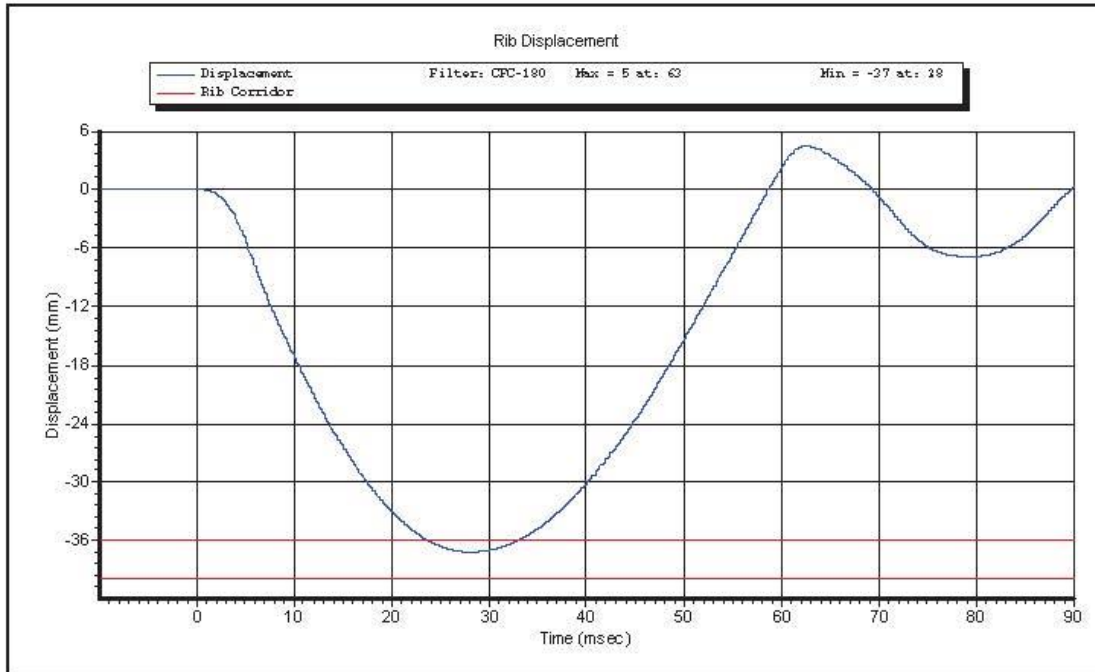
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-182 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	3.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Lower Rib 3 m/s Test Time: 3:11:54 PM

Test Date: 12/15/2014

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VERIFICATION REPORT

Test Name:	Full Rib Module Impact	Revision:	12/14/2006
Sub Test Name:	4.0 Meters/Second		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Lower Rib 4 m/s	Test Date:	12/15/2014
		Test Time:	3:17:11 PM

Test Parameters	Test Specifications	Test Results
Temperature	20.6 -- 22.2	20.70 deg C P
Humidity	10 -- 70	32.60 %RH P
Rib Displacement	-51 -- -46	-48.0 mm P

All test parameters are within specifications

Technician: R. Weil
Supervisor: M. Goehle



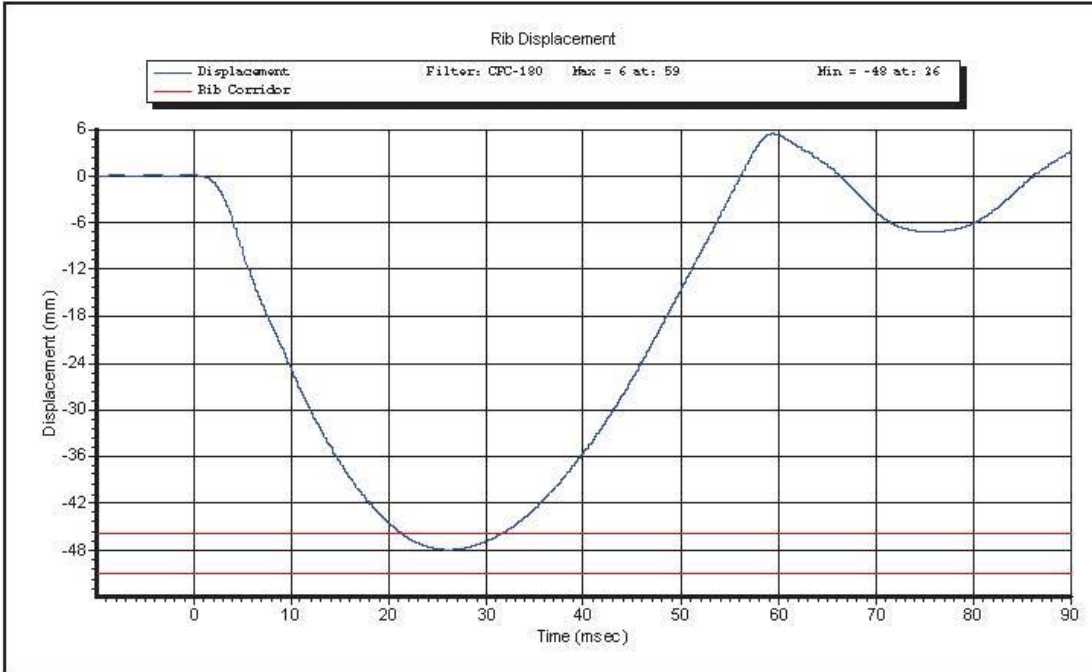
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REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Honeywell	MLT-38000	DS-182 GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P17283	9/19/2014



Test Name:	Full Rib Module Impact
Sub Test Name:	4.0 Meters/Second
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Lower Rib 4 m/s Test Time: 3:17:11 PM

Test Date: 12/15/2014

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VERIFICATION REPORT

Test Name:	Thorax Impact	Revision:	8/15/2008
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Thorax Impact	Test Date:	12/15/2014
		Test Time:	11:53:13 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.3 deg C	P
Humidity	10	--	70	29.8 %RH	P
Velocity	5.4	--	5.6	5.48 m/s	P
Upper Rib Displacement	34	--	41	36.9 mm	P
Middle Rib Displacement	37	--	45	40.7 mm	P
Lower Rib Displacement	37	--	44	39.9 mm	P
Impactor Force	5100	--	6200	5946.2 N	P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



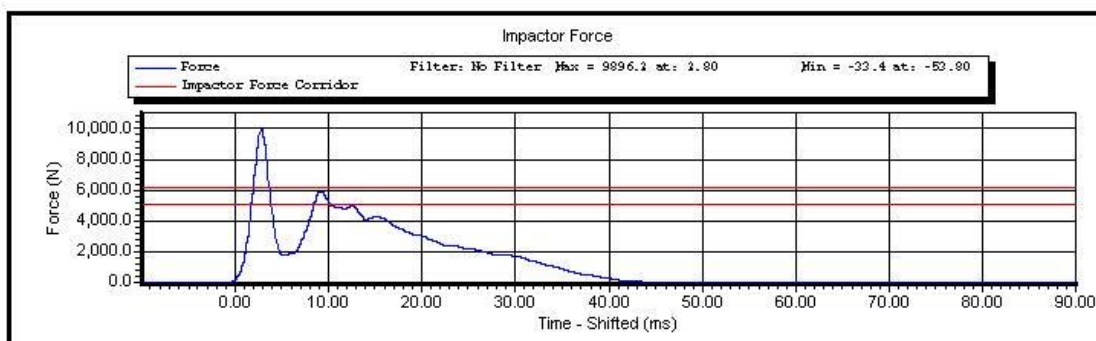
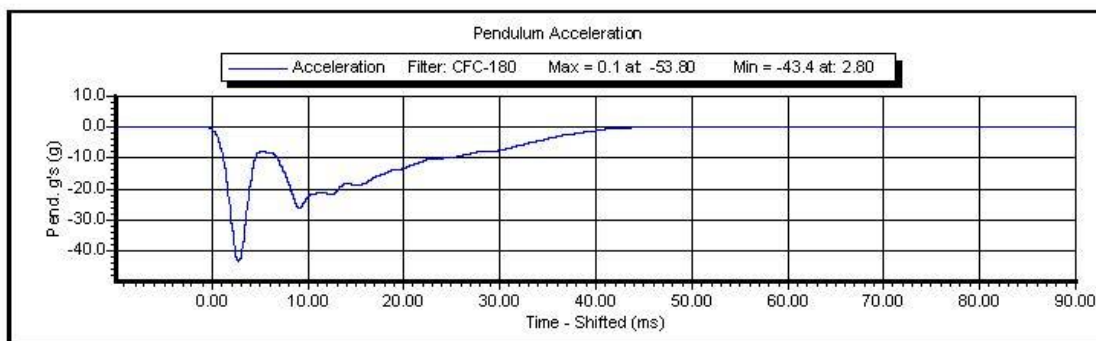
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Honeywell	MLT-38000	DS-183GFE	8/4/2014
Honeywell	MLT-38000	DS-184GFE	8/4/2014
Honeywell	MLT-38000	DS-182GFE	8/4/2014

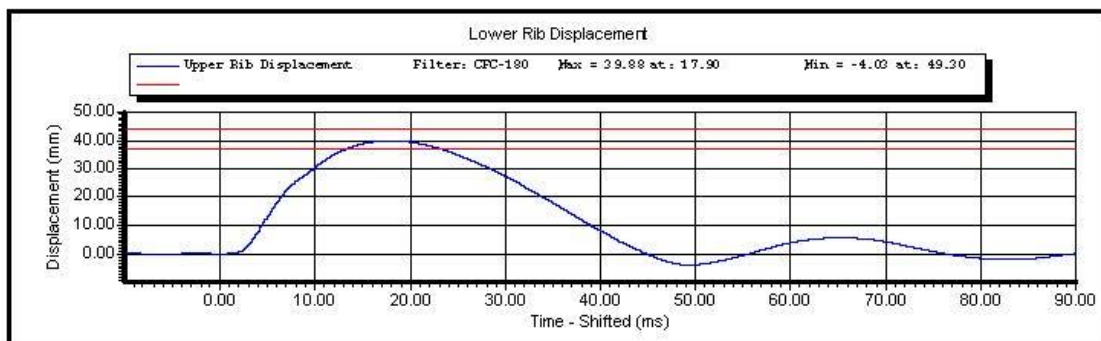
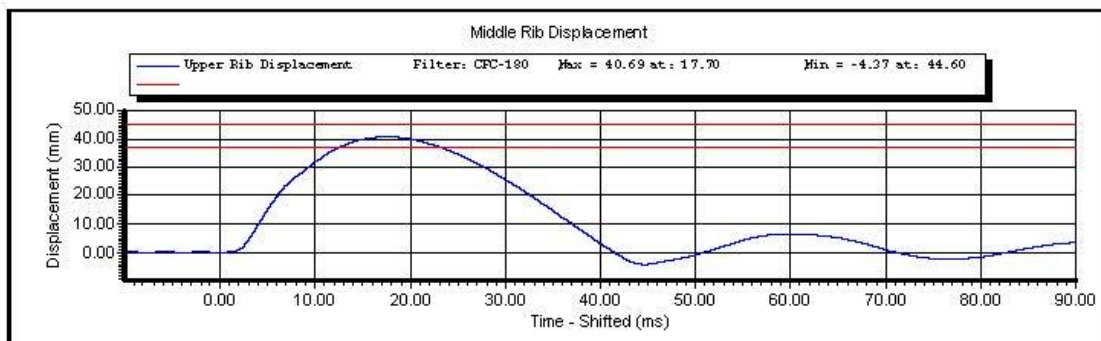
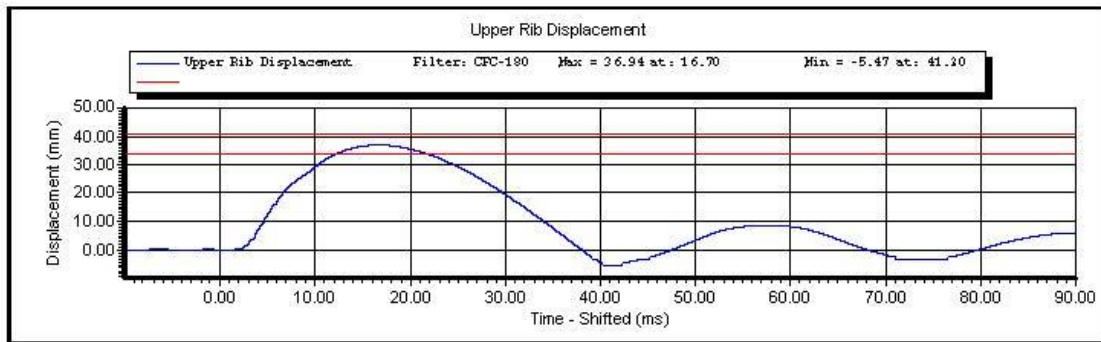


Test Name:	Thorax Impact
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Thorax Impact Test Time: 11:53:13 AM Test Date: 12/15/2014

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Test ID: **Thorax Impact** Test Time: **11:53:13 AM** Test Date: **12/15/2014**
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VERIFICATION REPORT

Test Name:	Abdomen Impact	Revision:	12/14/2006
Sub Test Name:	Left Side		
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Abdomen Impact	Test Date:	12/15/2014
		Test Time:	12:20:51 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.00 deg C	P
Humidity	10	--	70	35.00 %RH	P
Velocity	3.9	--	4.1	4.05 m/s	P
Peak Abdominal Force	-2.7	--	-2.2	-2.41 kN	P
Time At Peak Abdominal Force	10.0	--	12.3	10.09 ms	P
Maximum Pendulum Force	-4.8	--	-4.0	-4.64 kN	P
Time At Peak Pendulum Force	10.6	--	13.0	10.99 ms	P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



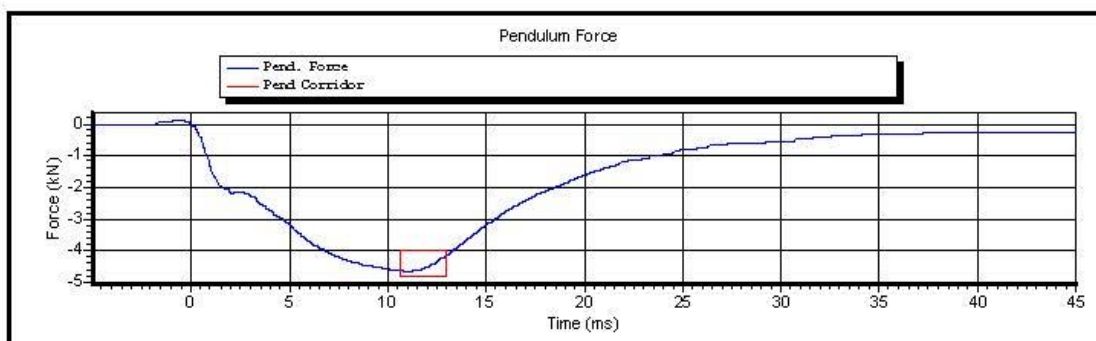
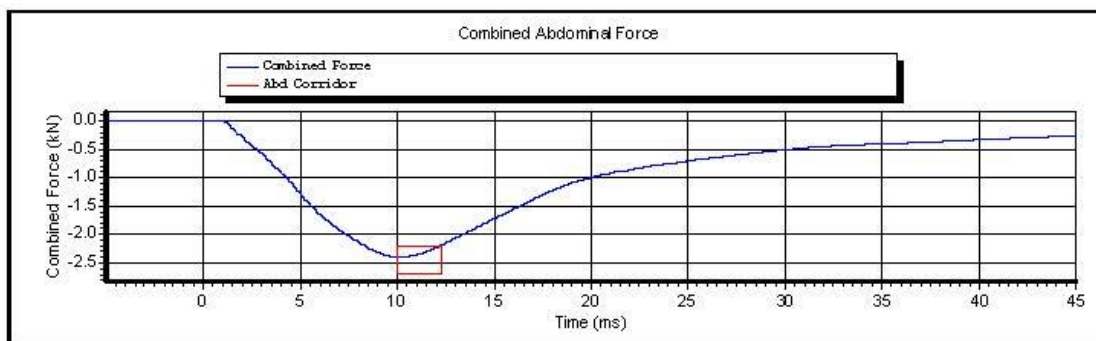
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Denton	2631	LC-1512	5/13/2014
Denton	2631	LC-1526	5/13/2014
Denton	2631	LC-1516	5/13/2014



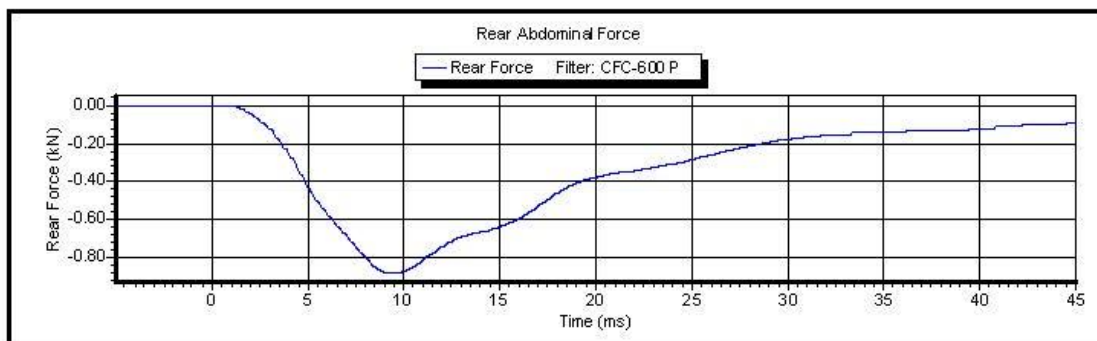
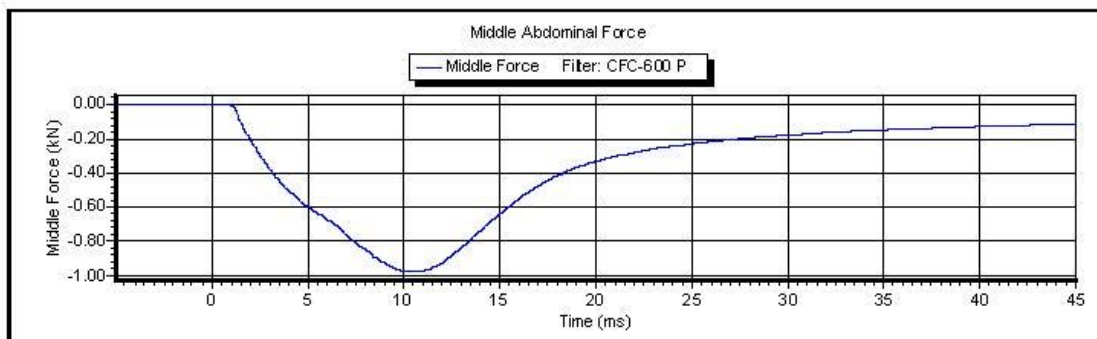
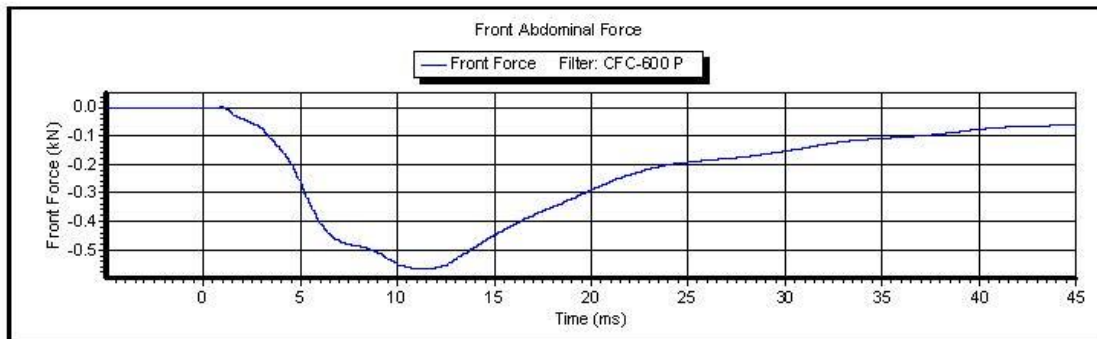
Test Name:	Abdomen Impact
Sub Test Name:	Left Side
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: **Abdomen Impact** Test Time: **12:20:51 PM**

Test Date: **12/15/2014**

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Test ID: **Abdomen Impact** Test Time: **12:20:51 PM**

Test Date: **12/15/2014**

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VERIFICATION REPORT

Test Name:	Lumbar Spine	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Lumbar Flexion	Test Date:	12/17/2014
		Test Time:	2:03:48 PM

Test Parameters	Test Specifications			Test Results	
Temperature	21	--	22	21.70 deg C	P
Humidity	10	--	70	30.80 %RH	P
Velocity	5.95	--	6.15	6.030 m/s	P
Maximum Headform Flexion Angle	45	--	55	48.3 degrees	P
Time At Maximum Neck Flexion	39	--	53	43.2 ms	P
Decay Time to Zero Degrees	37	--	57	38.0 ms	P

All test parameters are within specifications

Technician: **R. Weil**

Supervisor: **M. Goehle**



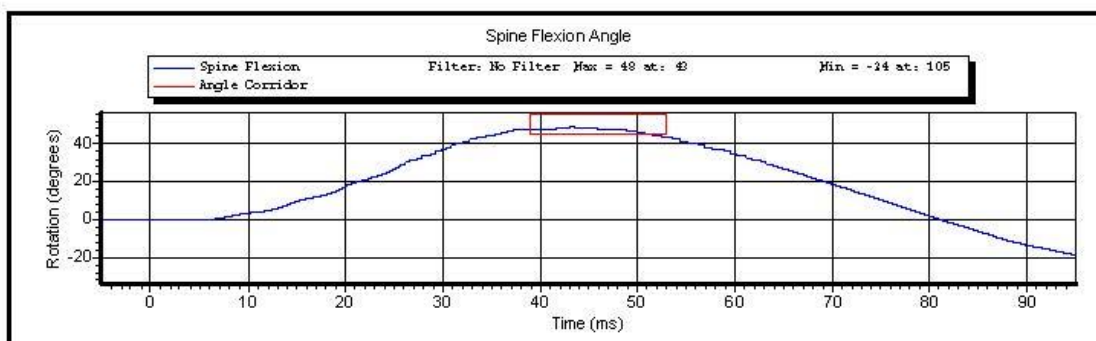
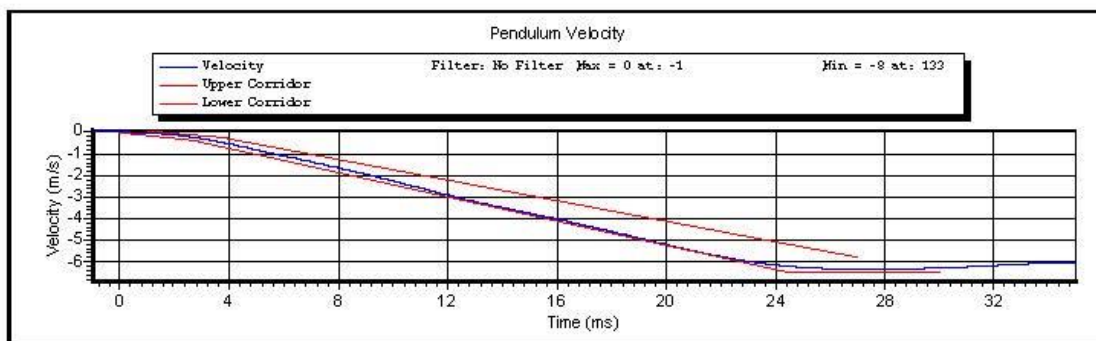
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	AH5F3	11/6/2014
DentonATD	156ESDT-102	094	11/13/2014
DentonATD	156ESDT-102	095	11/13/2014



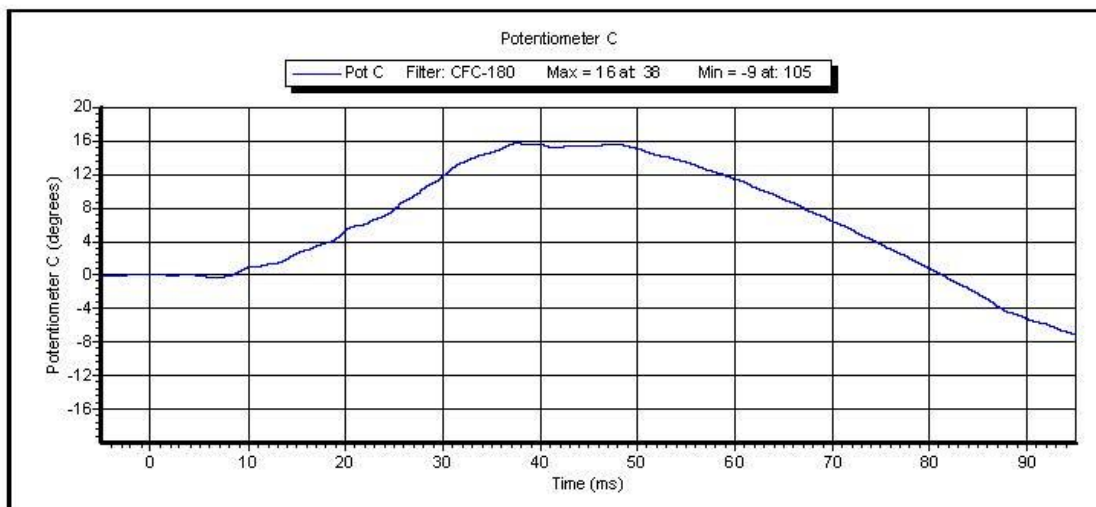
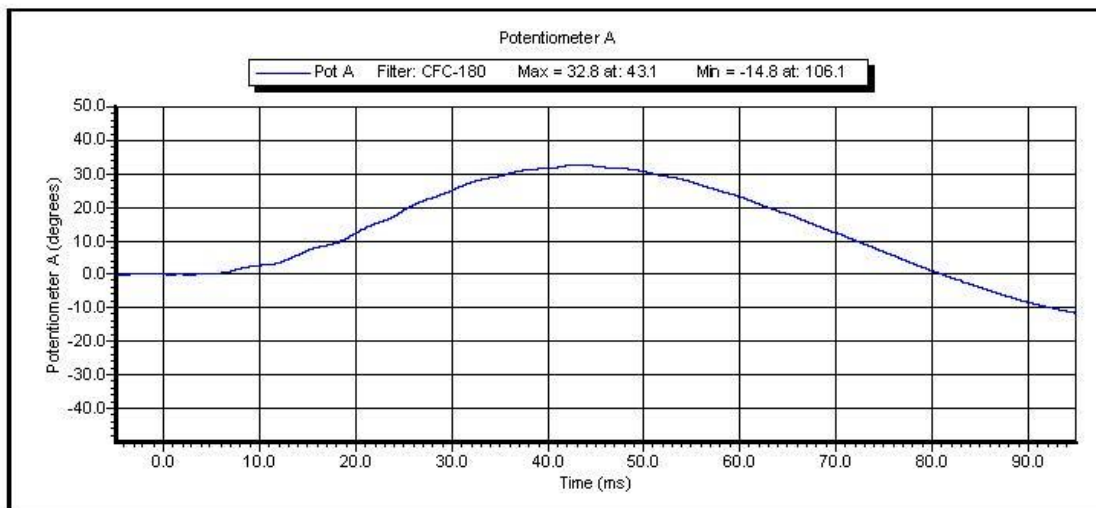
Test Name:	Lumbar Spine
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID: Lumbar Flexion Test Time: 2:03:48 PM

Test Date: 12/17/2014

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Test ID: **Lumbar Flexion** Test Time: **2:03:48 PM**

Test Date: **12/17/2014**

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VERIFICATION REPORT

Test Name:	Pelvis Impact	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	ES-2re		
ATD Serial Number:	F034		
Test ID:	Pelvis Impact	Test Date:	12/15/2014
		Test Time:	1:42:40 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.00 deg C	P
Humidity	10	--	70	31.00 %RH	P
Velocity	4.2	--	4.4	4.34 m/s	P
Peak Pendulum Force	-5.4	--	-4.7	-4.95 kN	P
Time at Peak Pendulum Force	11.8	--	16.1	13.64 ms	P
Peak Pubic Symphysis Force	-1.59	--	-1.23	-1.407 kN	P
Time at Peak Pubic Symphysis Force	12.2	--	17.0	14.64 ms	P

All test parameters are within specifications

Technician: **R. Weil**
Supervisor: **M. Goehle**



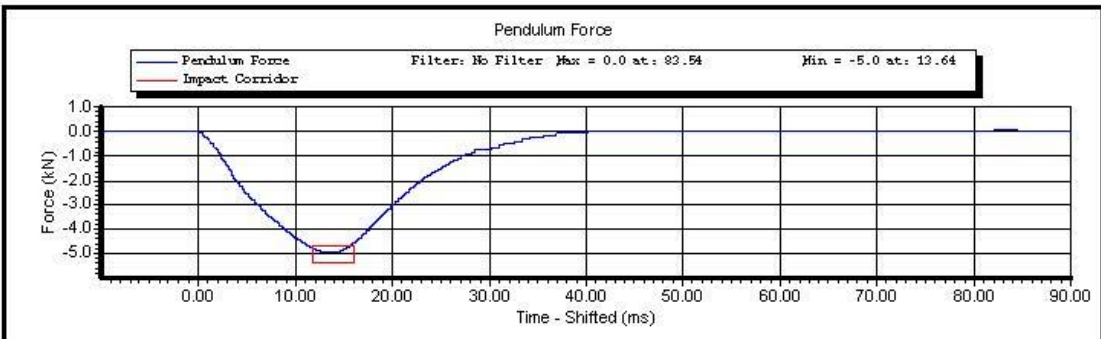
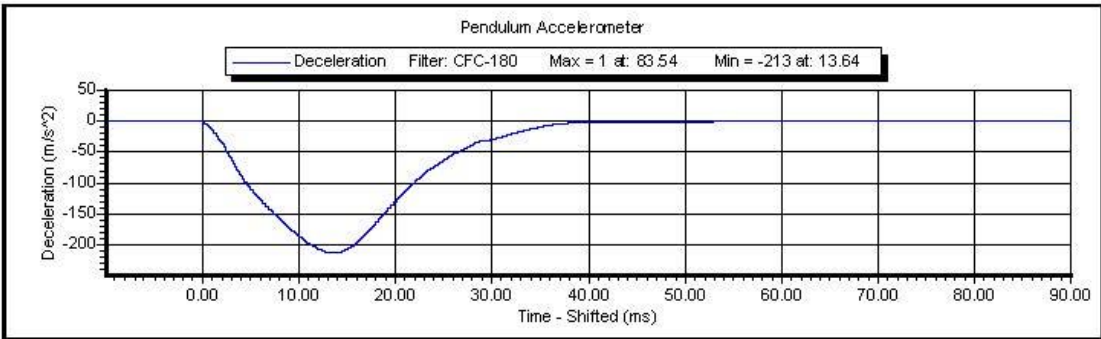
VERIFICATION REPORT

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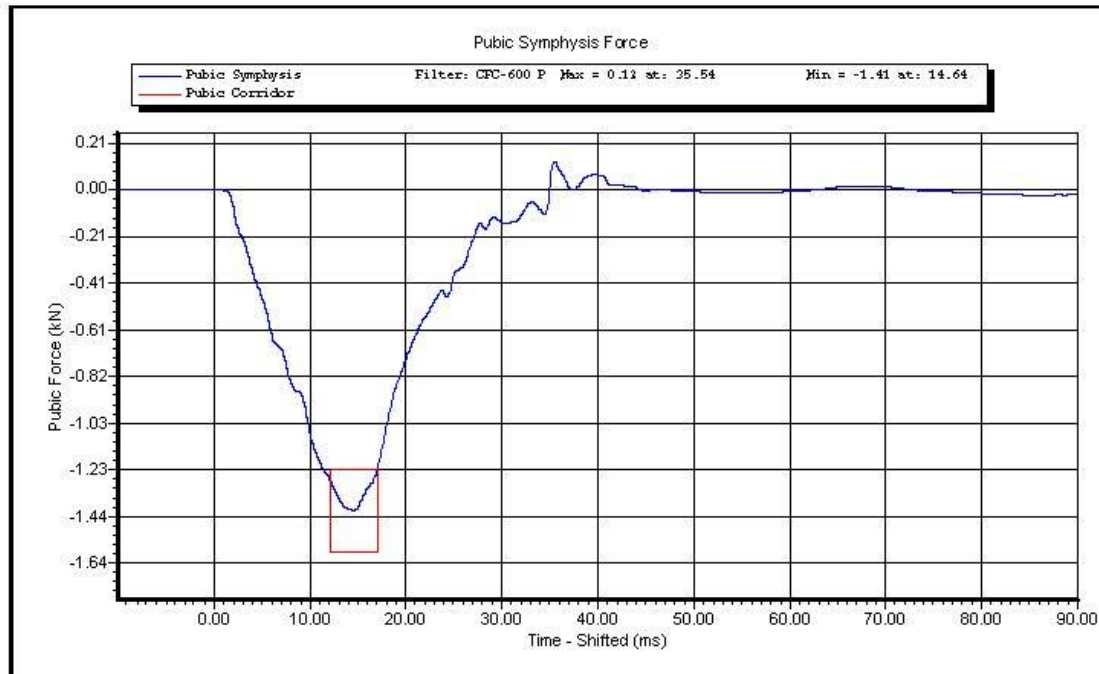
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DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Denton	3096	LC-465Fy	5/13/2014



Test Name:	Pelvis Impact
Sub Test Name:	
ATD Type:	ES-2re
ATD Serial Number:	F034



Test ID:	Pelvis Impact	Test Time:	1:42:40 PM	Test Date:	12/15/2014
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Test ID: **Pelvis Impact**

Test Time: **1:42:40 PM**

Test Date: **12/15/2014**

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CALIBRATION TEST RESULTS

POST-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

SERIAL No: 300

(CONFIGURED FOR LEFT SIDE IMPACT)

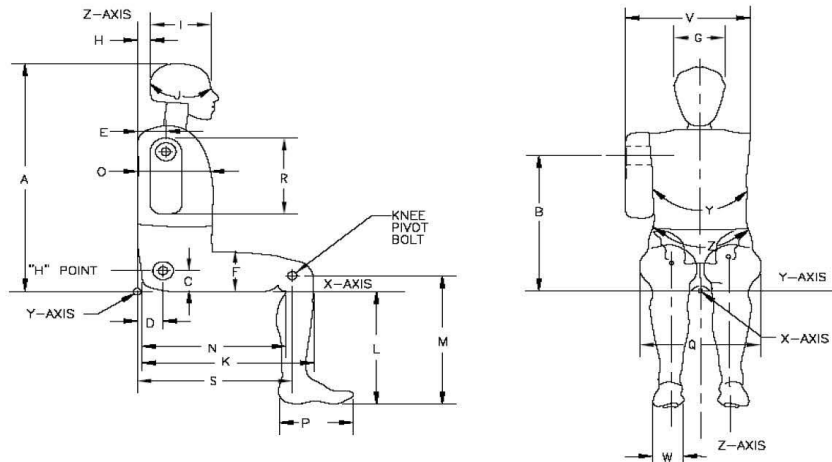


External Measurements - SID-IIs

Technician: M. Geesey

Date: 12/17/2014

Dummy Serial Number: 300



Symbol	Description	Specification (mm)		Result (mm)	Pass/Fail
A	Sitting Height	772	788	782	Pass
B	Shoulder Pivot Height	437	453	448	Pass
C	H-point Height	79	89	86	Pass
D	H-point from seatback	141	151	147	Pass
E	Shoulder Pivot from Backline	97	107	105	Pass
F	Thigh Clearance	119	135	123	Pass
G	Head Breadth	140	148	143	Pass
H	Head Back from Backline	40	46	43	Pass
I	Head Depth	178	188	183	Pass
J	Head Circumference	541	551	549	Pass
K	Buttock to Knee Length	514	540	538	Pass
L	Popliteal Height	343	369	358	Pass
M	Knee Pivot to floor height	392	409	403	Pass
N	Buttock Popliteal Length	416	442	437	Pass
O	Chest Depth w/o jacket	195	211	204	Pass
P	Foot Length	216	232	218	Pass
Q	Hip Breadth (w/pelvic plugs)	313	323	317	Pass
R	Arm Length	249	259	250	Pass
S	Knee Joint to seatback	477	493	487	Pass
V	Shoulder Width	341	357	348	Pass
W	Foot Width	78	94	82	Pass
Y	Chest Circumference w/jacket	851	881	870	Pass
Z	Waist Circumference	761	791	770	Pass



VERIFICATION REPORT

Test Name:	Head Drop	Revision:	12/14/2006
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Head Drop	Test Date:	12/16/2014
		Test Time:	8:13:05 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.3 deg C	P
Humidity	10	--	70	28 %RH	P
Resultant Acceleration	115.0	--	137.0	132.5 g	P
Oscillation	0.0	--	15.0	2.7 %	P
Fore-Aft Acceleration	-15.0	--	15.0	-6.5 g	P

All test parameters are within specifications

Technician: **M. Geesey**
Supervisor: **M. Goehle**



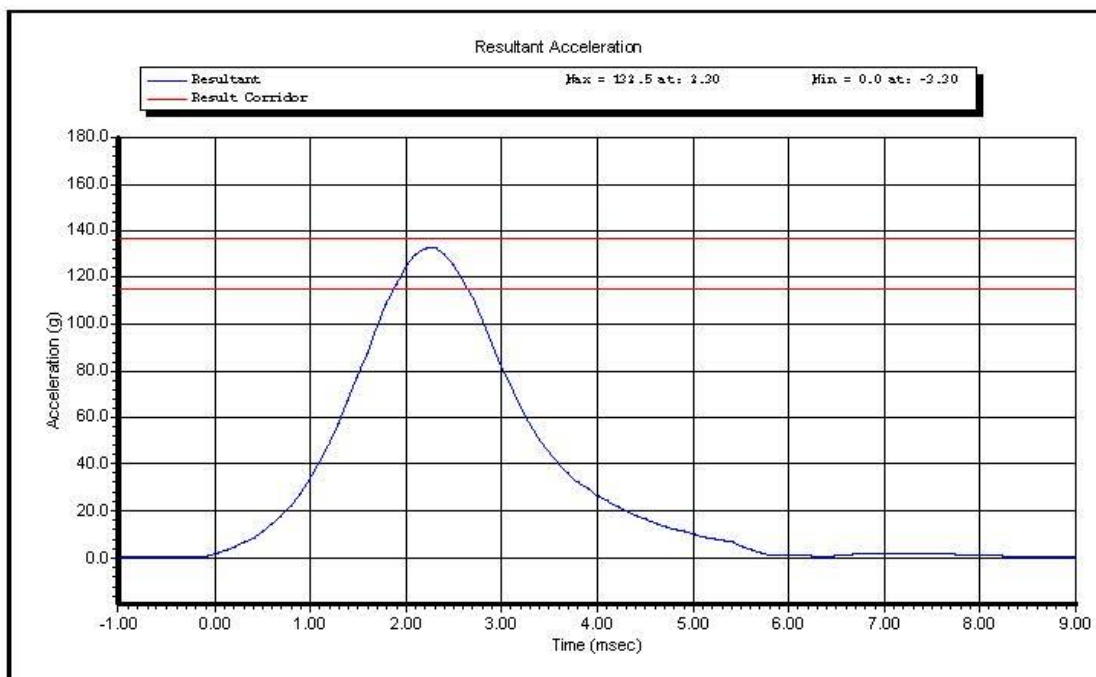
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
Endevco	7264-2000	P58777	8/28/2014
Endevco	7264-2000	P59018	8/28/2014
Endevco	7264-2000	P68608	8/28/2014



Test Name:	Head Drop
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300

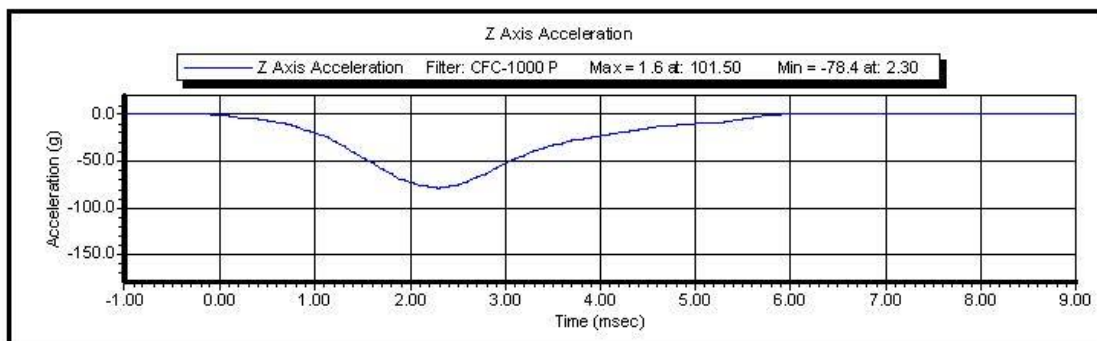
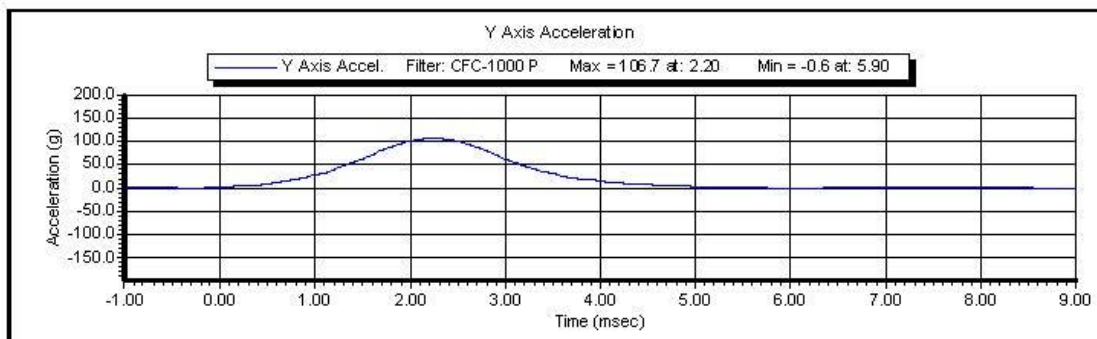
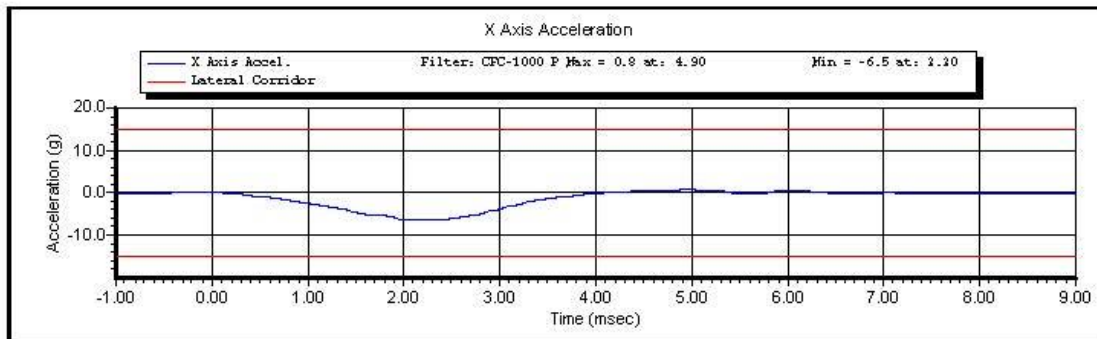


Test ID: **Head Drop**

Test Time: **8:13:05 AM**

Test Date: **12/16/2014**

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Test ID: **Head Drop**

Test Time: **8:13:05 AM**

Test Date: **12/16/2014**

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VERIFICATION REPORT

Test Name:	Neck Pendulum	Revision:	8/24/2009
Sub Test Name:	Left Side		
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Neck Flexion	Test Date:	12/16/2014
		Test Time:	9:59:48 AM

Test Parameters		Test Specifications		Test Results	
Temperature		20.6	-- 22.2	21.3	deg C P
Humidity		10	-- 70	29.4	%RH P
Velocity		5.51	-- 5.63	5.562	m/s P
Pendulum Impulse at	10 ms	2.2	-- 2.8	2.33	m/s P
Pendulum Impulse at	15 ms	3.3	-- 4.1	3.44	m/s P
Pendulum Impulse at	20 ms	4.4	-- 5.4	4.66	m/s P
Pendulum Impulse at	25 ms	5.4	-- 6.1	5.66	m/s P
Pendulum Impulse between 25 and	100 ms	5.5	-- 6.2	5.88	m/s P
Max D Plane Rotation		71	-- 81	73.5	degrees P
Time at Max Rotation		50	-- 70	60.4	ms P
Moment about OC		36	-- 44	39.6	Nm P
Moment Decay to Zero		102	-- 126	113.5	ms P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**



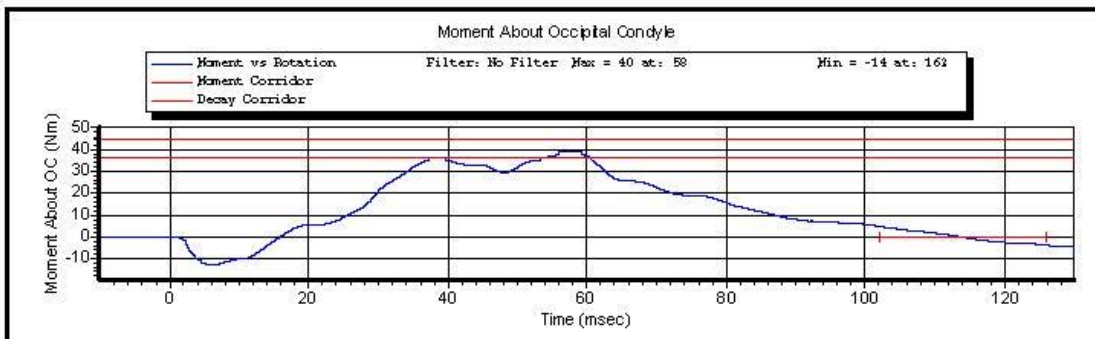
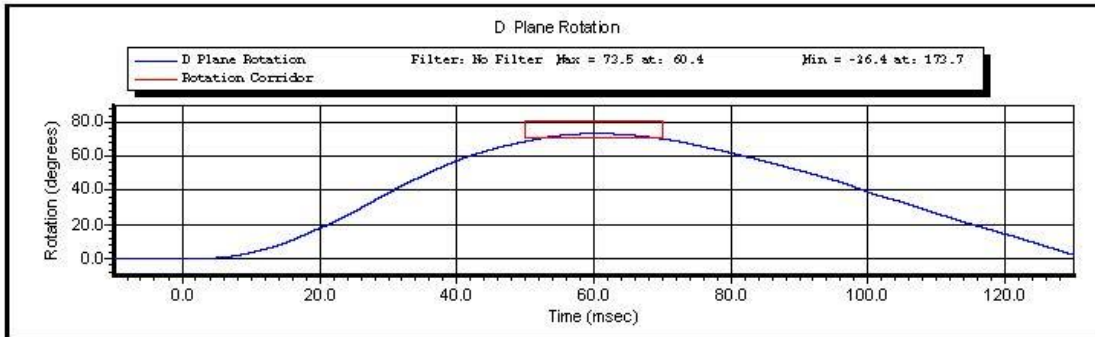
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	AH5F3	11/6/2014
Denton	1716A	LC-440 Fy	5/19/2014
Denton	1716A	LC-440 Mx	5/19/2014
DentonATD	78051-342	184	11/13/2014
DentonATD	78051-342	174	11/13/2014
DentonATD	78051-342	185	11/13/2014

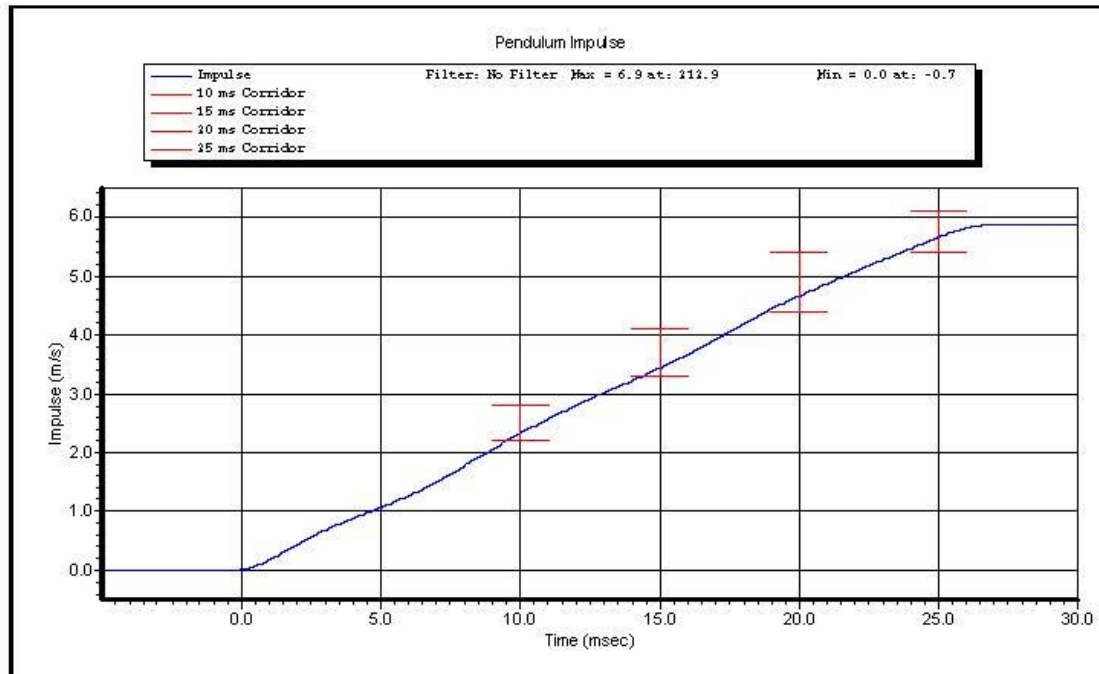


Test Name:	Neck Pendulum
Sub Test Name:	Left Side
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: Neck Flexion Test Time: 9:59:48 AM Test Date: 12/16/2014

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Test ID: **Neck Flexion** Test Time: **9:59:48 AM**

Test Date: **12/16/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Shoulder Impact	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Shoulder Impact	Test Date:	12/16/2014
		Test Time:	3:33:59 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.40 deg C	P
Humidity	10	--	70	36.0 %RH	P
Velocity	4.2	--	4.4	4.32 m/s	P
Probe Acceleration	13	--	18	15.0 g	P
Shoulder Deflection	28	--	37	28.4 mm	P
T1 Acceleration	17	--	22	19.4 g	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**



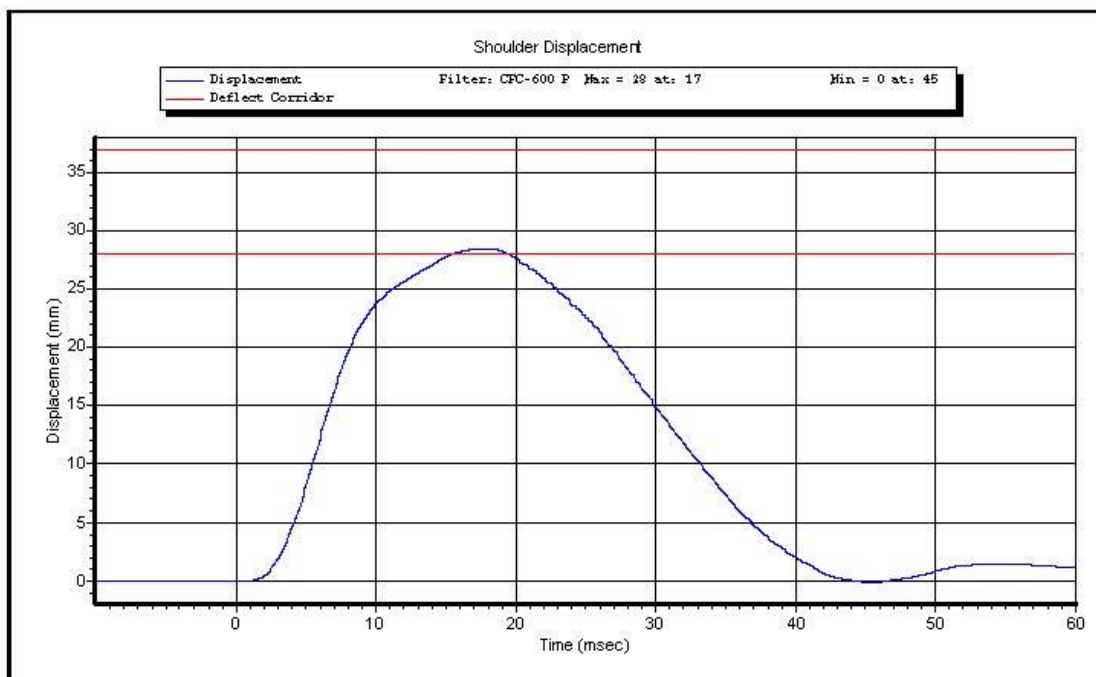
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-1063GFE	8/7/2014
Endevco	7264-2000	P51915	8/28/2014



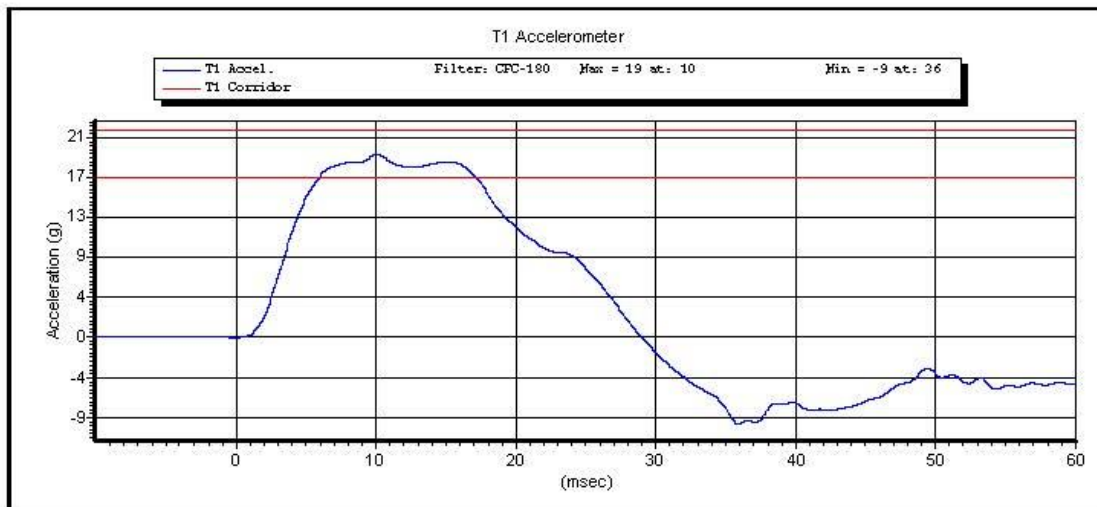
Test Name:	Shoulder Impact
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: **Shoulder Impact** Test Time: **3:33:59 PM**

Test Date: **12/16/2014**

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Test ID: **Shoulder Impact** Test Time: **3:33:59 PM**

Test Date: **12/16/2014**

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VERIFICATION REPORT

Test Name:	Thorax Impact with Arm	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Thorax w/Arm Impact	Test Date:	12/17/2014
		Test Time:	9:25:30 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.2 deg C	P
Humidity	10	--	70	31.6 %RH	P
Velocity	6.6	--	6.8	6.69 m/s	P
Probe Acceleration after 5ms	30	--	36	34.0 g	P
Upper Thorax Rib Deflection	25	--	32	26.7 mm	P
Mid Thorax Rib Deflection	30	--	36	31.0 mm	P
Lower Thorax Rib Deflection	32	--	38	32.3 mm	P
Upper Spine Acceleration ("y")	34	--	43	37.8 g	P
Lower Spine Acceleration ("y")	29	--	37	36.4 g	P
Shoulder Deflection	31	--	40	33.6 mm	P

All test parameters are within specifications

Technician: **M. Geesey**
Supervisor: **M. Goehle**



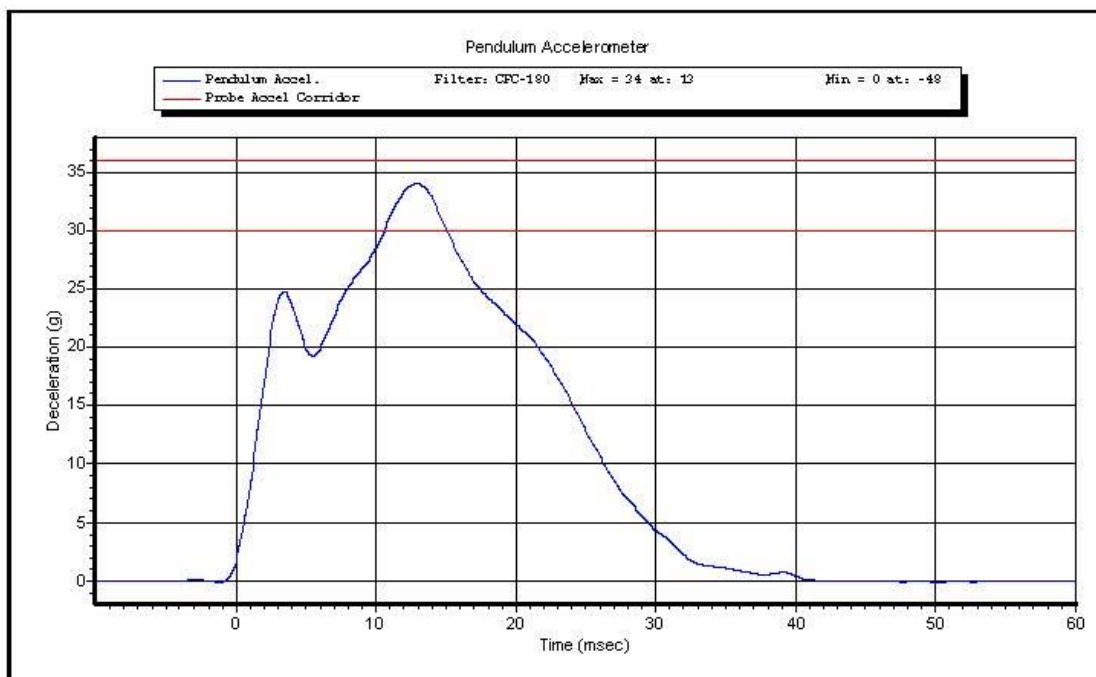
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-451GFE	8/12/2014
Servo	180-3885	DS-1151GFE	8/12/2014
Servo	180-3885	DS-1156GFE	8/12/2014
Endevco	7264-2000	P51915	8/28/2014
Endevco	7264-2000	P64147	8/28/2014
Servo	180-3885	DS-1063GFE	8/7/2014



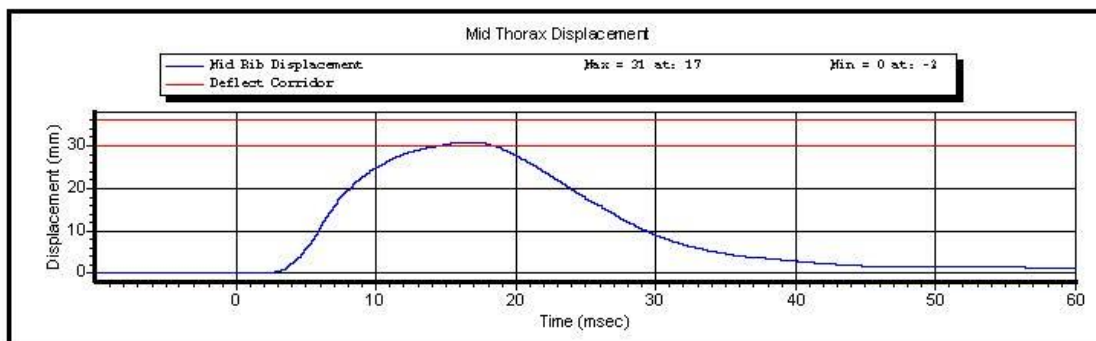
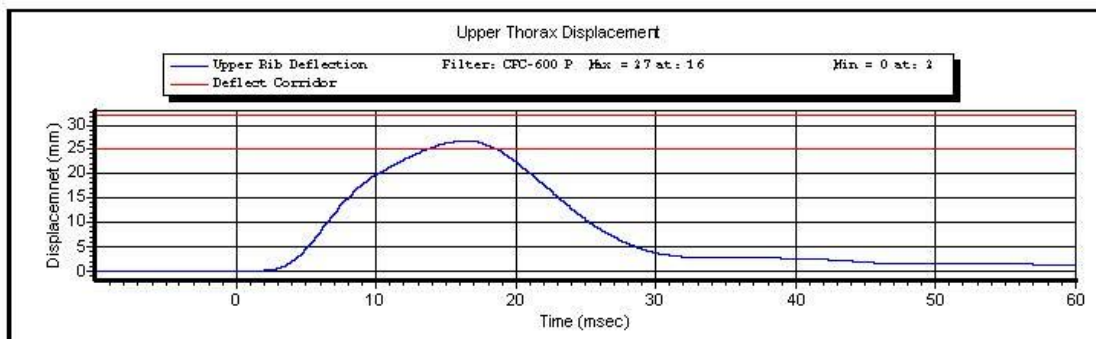
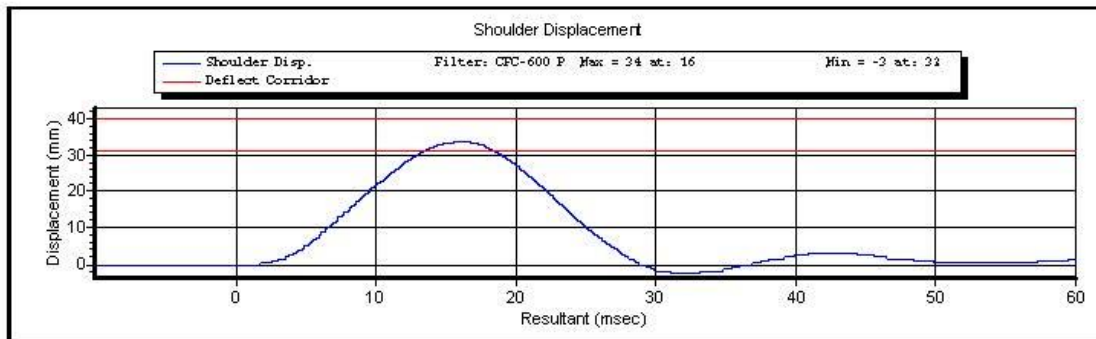
Test Name:	Thorax Impact with Arm
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: Thorax w/Arm Impact Test Time: 9:25:30 AM

Test Date: 12/17/2014

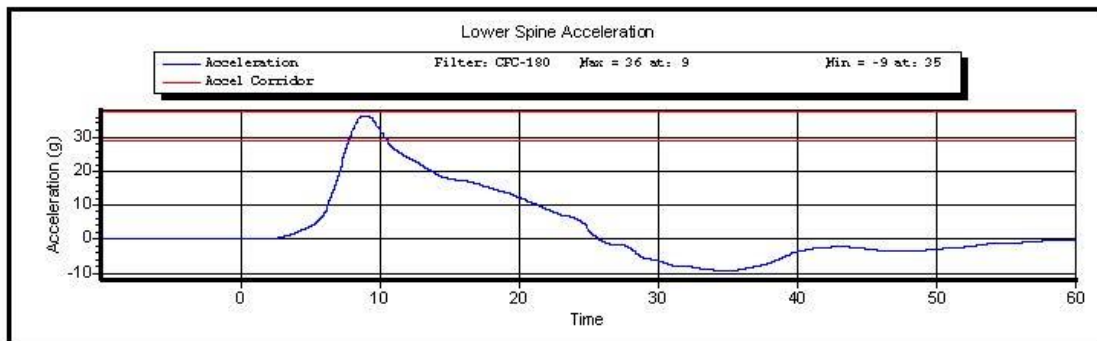
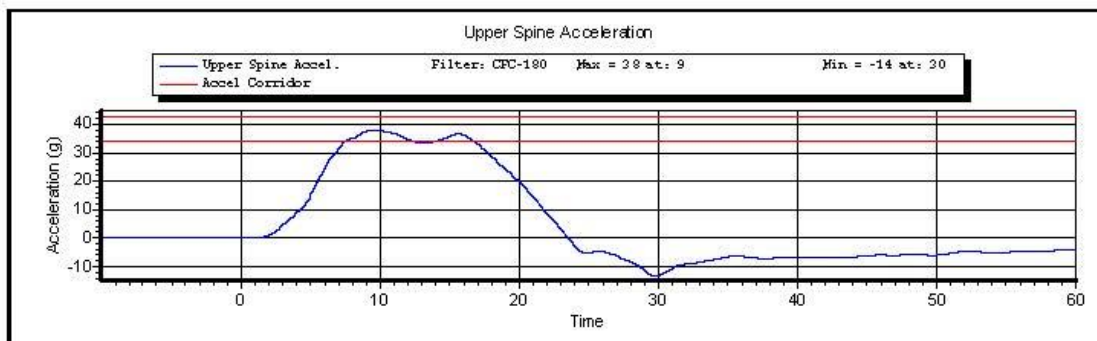
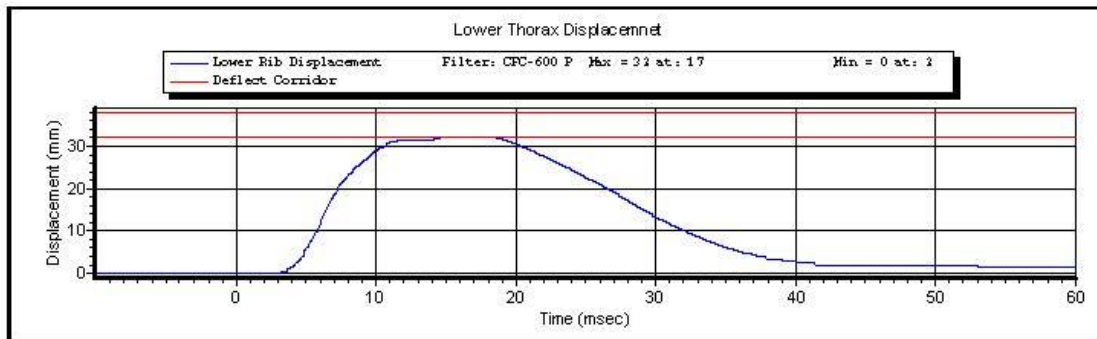
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: Thorax w/Arm Impact Test Time: 9:25:30 AM

Test Date: 12/17/2014

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Thorax w/Arm Impact** Test Time: **9:25:30 AM**
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0

Test Date: **12/17/2014**



VERIFICATION REPORT

Test Name:	Thorax Impact without Arm	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Thorax w/o Arm	Test Date:	12/16/2014
		Test Time:	3:17:11 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.4 deg C	P
Humidity	10	--	70	35.9 %RH	P
Velocity	4.2	--	4.4	4.31 m/s	P
Probe Acceleration	14	--	18	16.4 g	P
Upper Thorax Rib Deflection	32	--	40	35.1 mm	P
Mid Thorax Rib Deflection	39	--	45	40.1 mm	P
Lower Thorax Rib Deflection	35	--	43	35.8 mm	P
Upper Spine Acceleration T1	13	--	17	16.1 g	P
Lower Spine Acceleration T12	7	--	11	9.9 g	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Geesey**



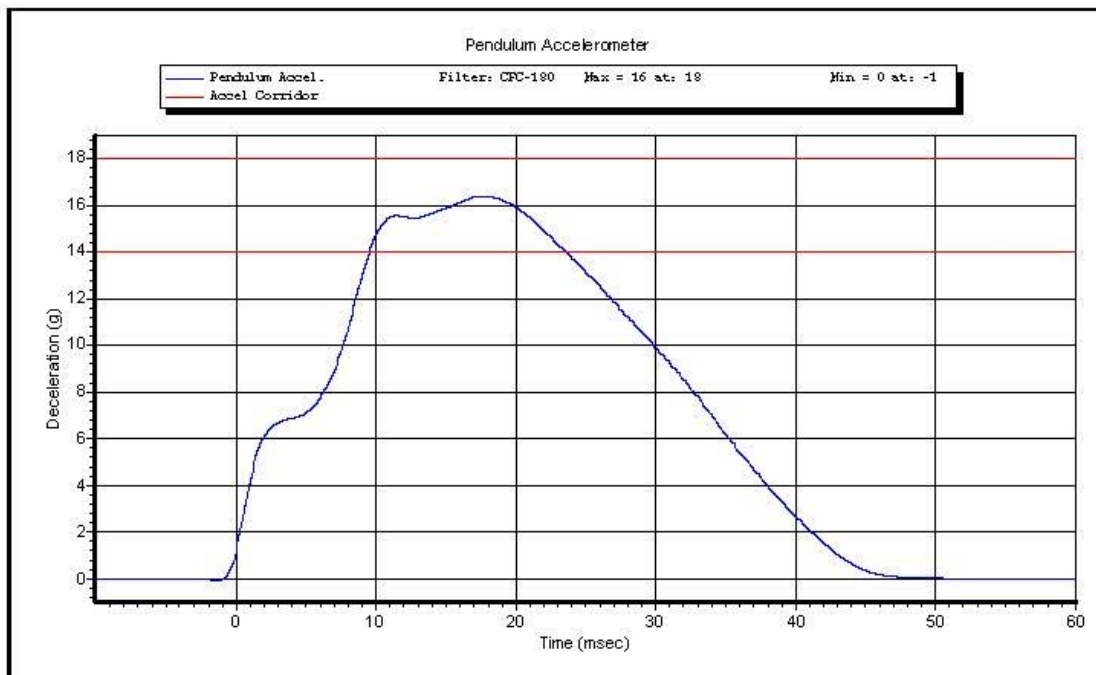
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-451GFE	8/12/2014
Servo	180-3885	DS-1151GFE	8/12/2014
Servo	180-3885	DS-1156GFE	8/12/2014
Endevco	7264-2000	P51915	8/28/2014
Endevco	7264-2000	P64147	8/28/2014



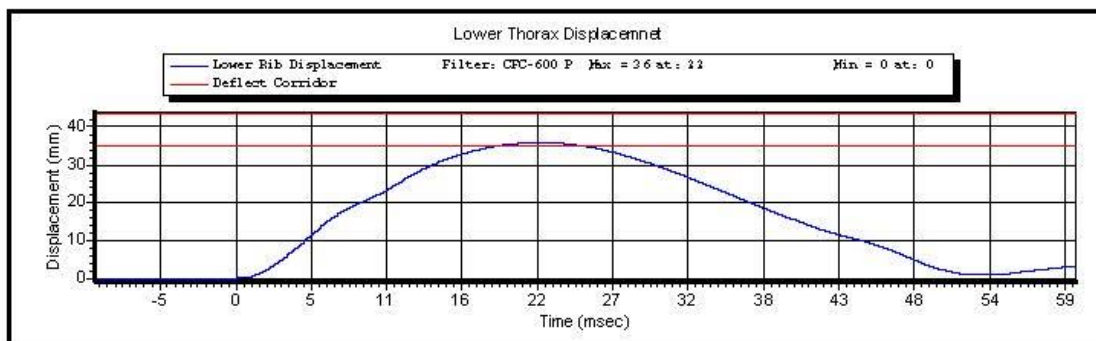
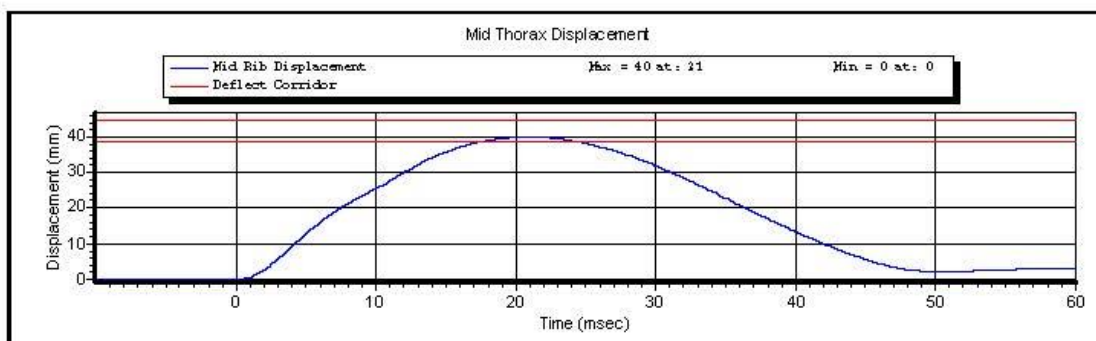
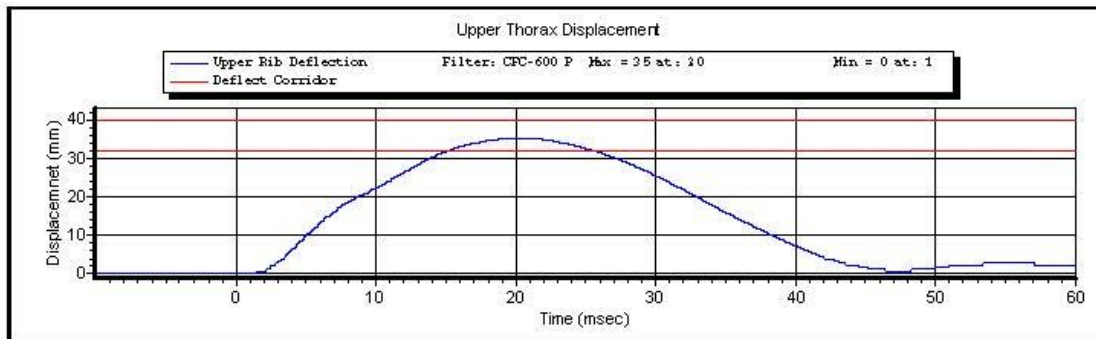
Test Name:	Thorax Impact without Arm
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: Thorax w/o Arm Test Time: 3:17:11 PM

Test Date: 12/16/2014

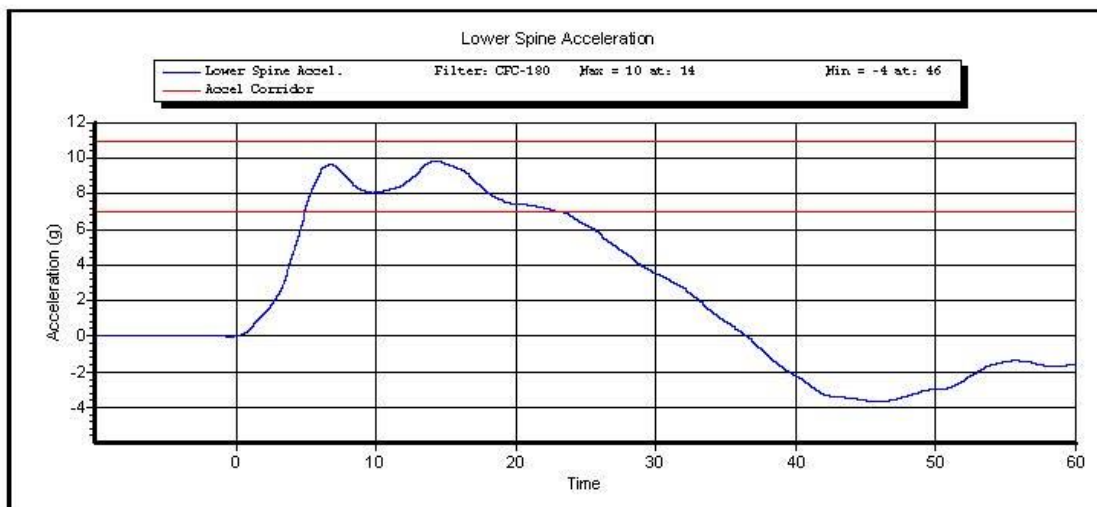
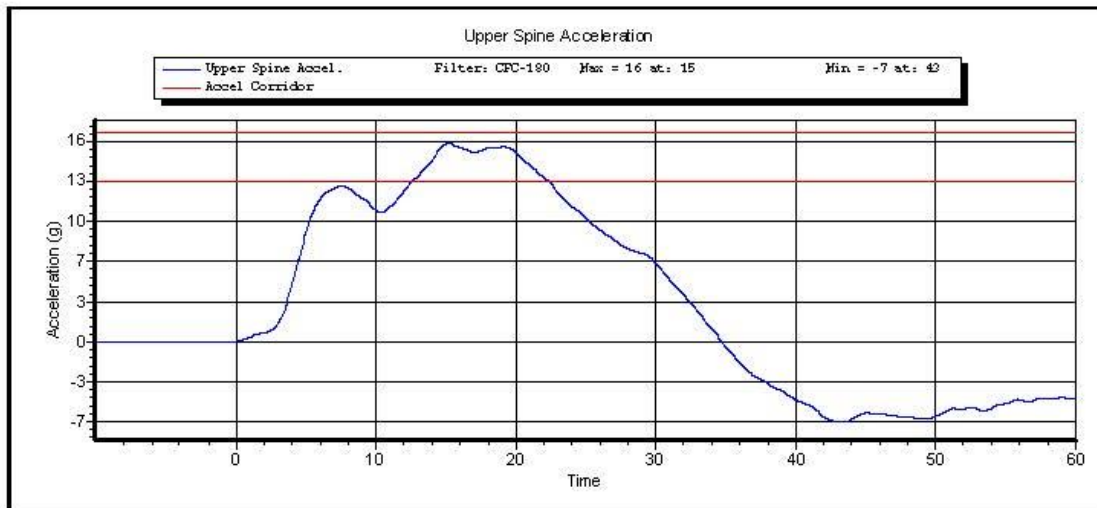
Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: Thorax w/o Arm Test Time: 3:17:11 PM

Test Date: 12/16/2014

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



Test ID: **Thorax w/o Arm** Test Time: **3:17:11 PM**

Test Date: **12/16/2014**

Copyright 2003 Denton ATD, Inc. LabPaqII Version: 1.8.5.0



VERIFICATION REPORT

Test Name:	Abdominal Impact	Revision:	8/24/2009
Sub Test Name:			
ATD Type:	SID-11s		
ATD Serial Number:	300		
Test ID:	Abdomen Impact	Test Date:	12/17/2014
		Test Time:	9:50:30 AM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.90 deg C	P
Humidity	10	--	70	32.20 %RH	P
Velocity	4.2	--	4.4	4.33 m/s	P
Probe Deceleration	12	--	16	15.5 G's	P
Upper Abdominal Rib Deflection	36	--	47	39.5 mm	P
Lower Abdominal Rib Deflection	33	--	44	33.9 mm	P
Lower Spine Acceleration - T12	9	--	14	12.0 G's	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**



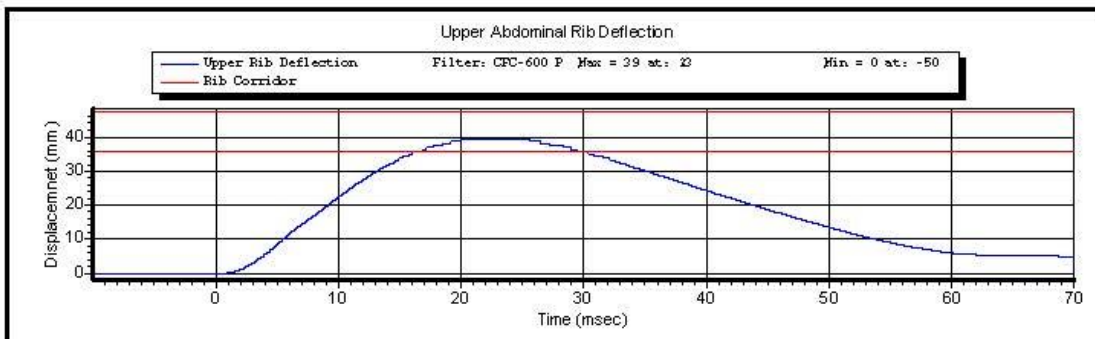
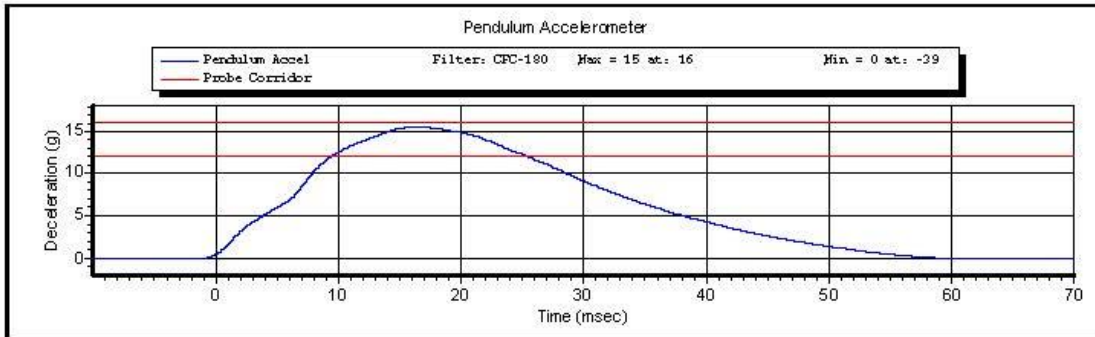
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Servo	180-3885	DS-308GFE	8/12/2014
Servo	180-3885	DS-307GFE	8/7/2014
Endevco	7264-2000	P64147	8/28/2014

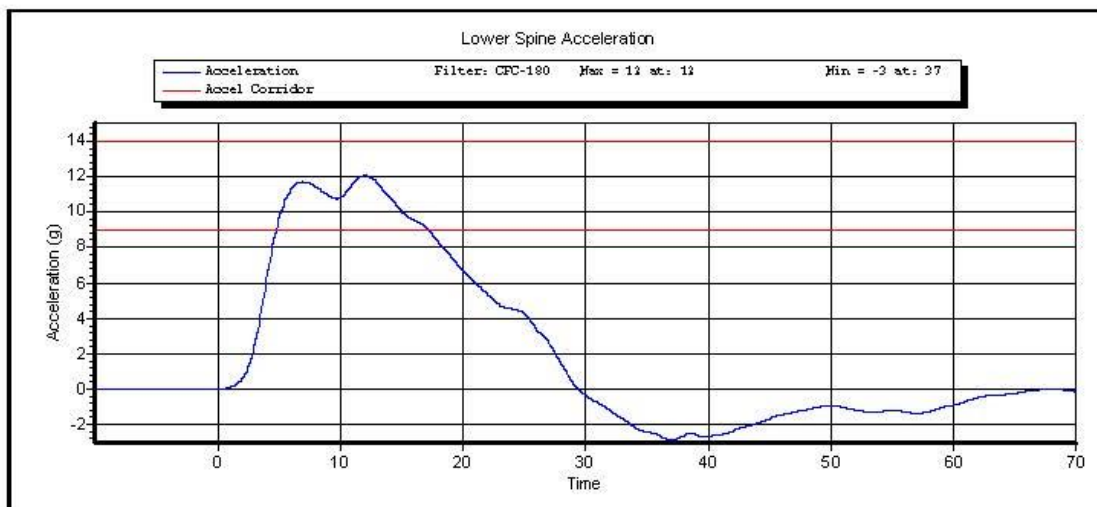


Test Name:	Abdominal Impact
Sub Test Name:	
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: **Abdomen Impact** Test Time: **9:50:30 AM** Test Date: **12/17/2014**

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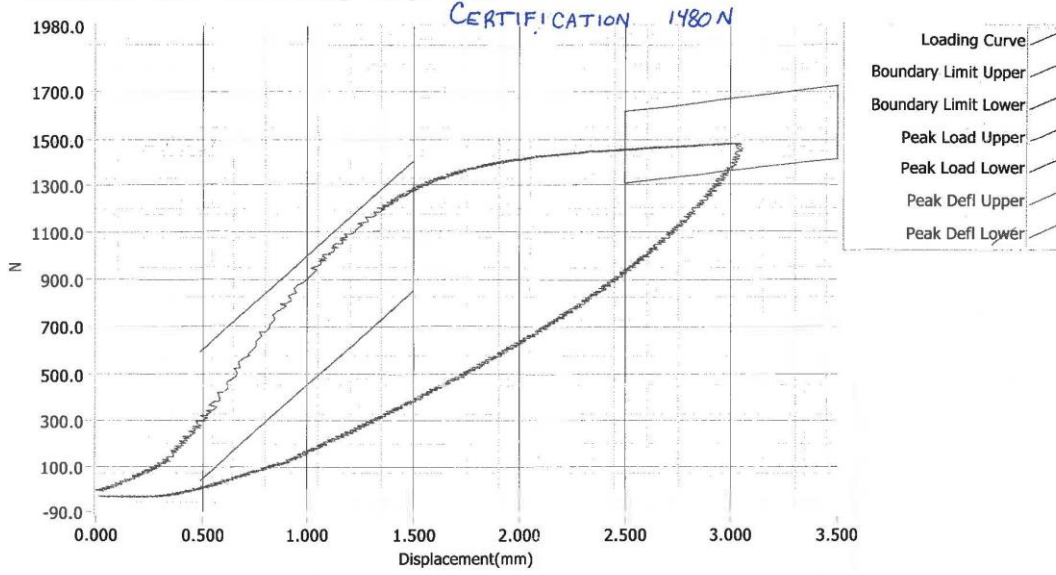


Test ID: **Abdomen Impact** Test Time: **9:50:30 AM**

Test Date: **12/17/2014**

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Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

Test ID

Part Serial Number

Test Date

Test Time

9/27/2010

6:45 PM

Cert ID

ATD Serial Number

ATD Type

36645

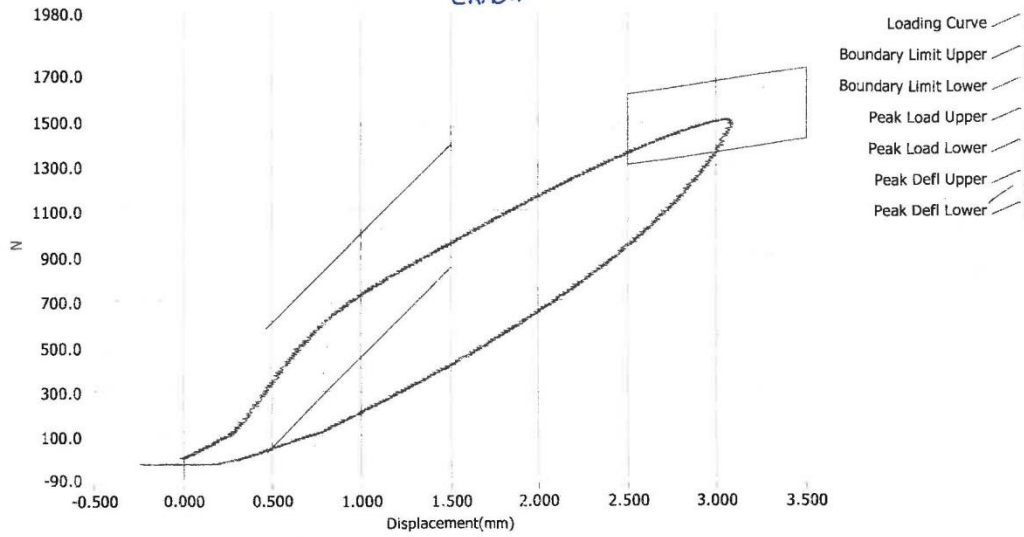
SIDIIs

Current Date : 9/27/2010

Current Time : 18:46:32

Resultant Data - SIDIIs Plug Compression

CRASH 1496N



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
		10/6/2010	7:47 PM
Cert ID	ATD Serial Number	ATD Type	
	36924	SIDIIs	

Current Date : 10/6/2010

Current Time : 19:47:54



VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Acetabulum Impact		
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Acetabulum Impact	Test Date:	12/17/2014
		Test Time:	2:28:29 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	21.8 deg C	P
Humidity	10	--	70	30.0 %RH	P
Velocity	6.6	--	6.8	6.67 m/s	P
Peak Probe Acceleration	38	--	47	42.0 g	P
Peak Pelvis Acceleration	34	--	42	34.8 g	P
Peak Acetabulum Force	3.6	--	4.3	3.70 kN	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**



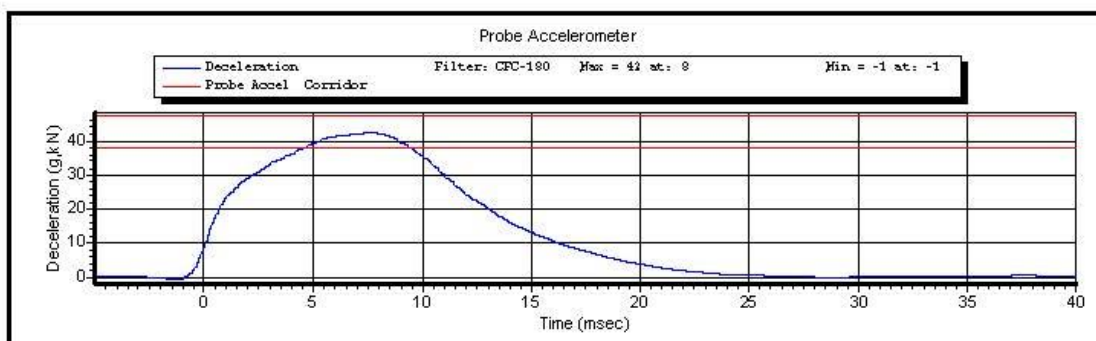
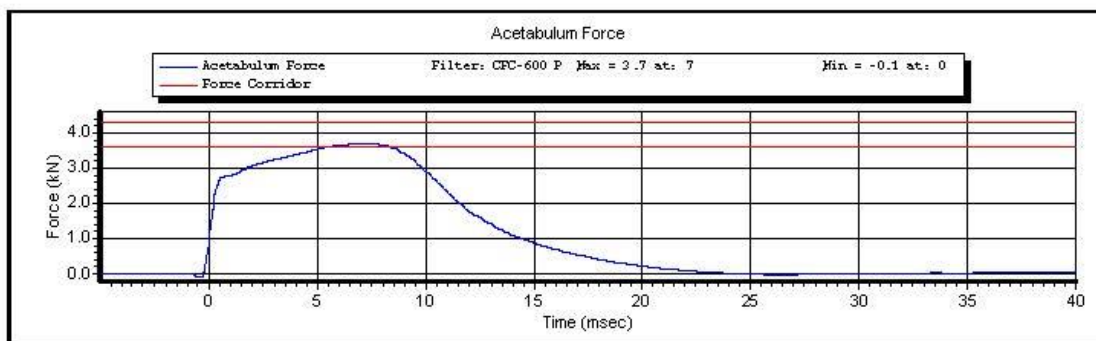
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Endevco	7264-2000	P51740	12/17/2014
DentonATD	3249J	LC-275 Fy	5/13/2014



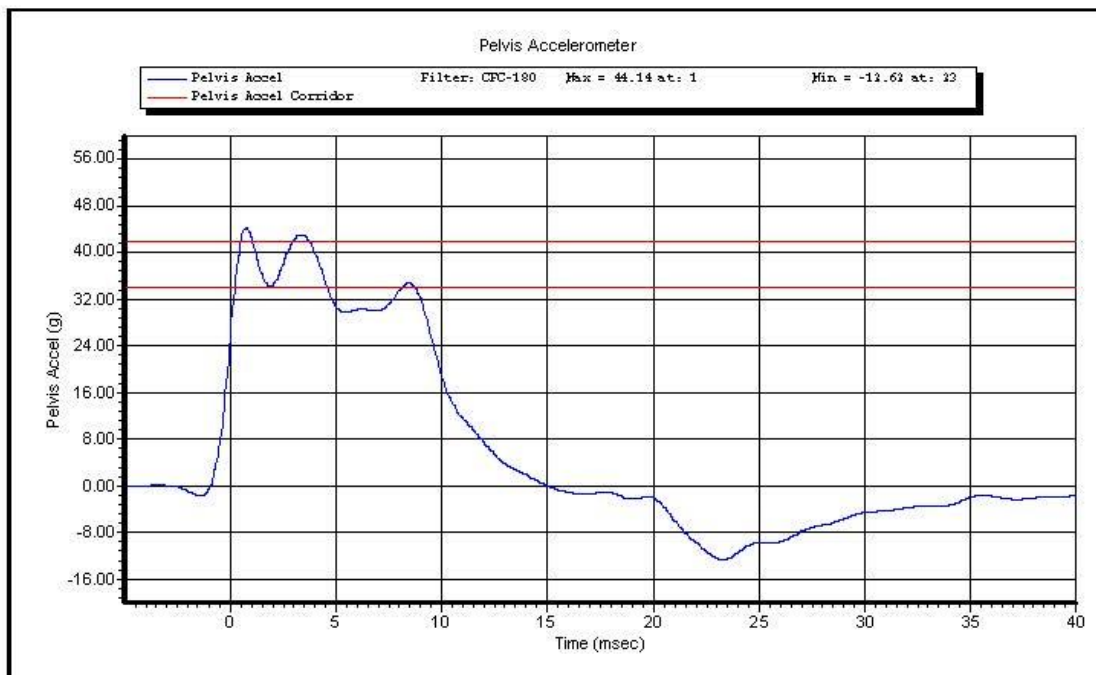
Test Name:	Pelvis
Sub Test Name:	Acetabulum Impact
ATD Type:	SID-IIs
ATD Serial Number:	300



Test ID: **Acetabulum Impact** Test Time: **2:28:29 PM**

Test Date: **12/17/2014**

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Test ID: **Acetabulum Impact** Test Time: **2:28:29 PM**

Test Date: **12/17/2014**

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VERIFICATION REPORT

Test Name:	Pelvis	Revision:	8/24/2009
Sub Test Name:	Iliac Impact		
ATD Type:	SID-IIs		
ATD Serial Number:	300		
Test ID:	Pelvis Iliac Impact	Test Date:	12/16/2014
		Test Time:	12:26:25 PM

Test Parameters	Test Specifications			Test Results	
Temperature	20.6	--	22.2	20.6 deg C	P
Humidity	10	--	70	35.0 %RH	P
Velocity	4.2	--	4.4	4.36 m/s	P
Peak Probe Acceleration	36	--	45	39.8 g	P
Peak Pelvis Acceleration	28	--	39	34.3 g	P
Peak Iliac Force	4.1	--	5.1	4.39 kN	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**



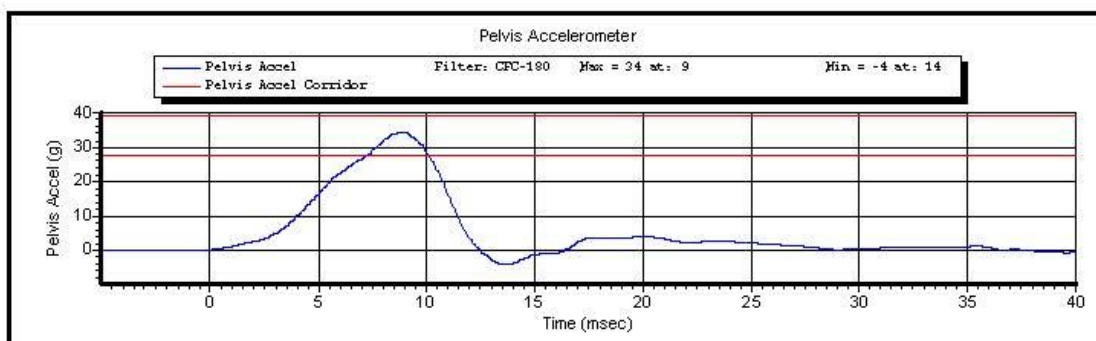
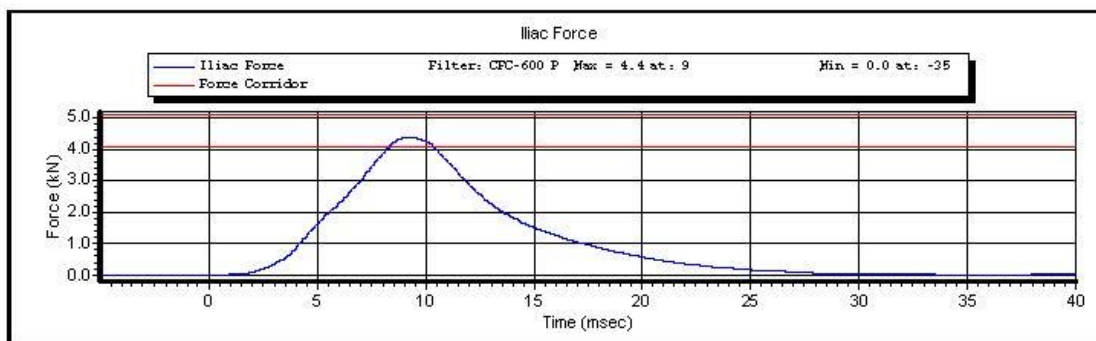
VERIFICATION REPORT

REFERENCE EQUIPMENT

<u>Manufacturer</u>	<u>Model</u>	<u>Serial Number</u>	<u>Calibration Date</u>
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7231CT	C14953	7/30/2014
Endevco	7264-2000	P32139	12/15/2014
DentonATD	3228J	LC-279 Fy	5/14/2014



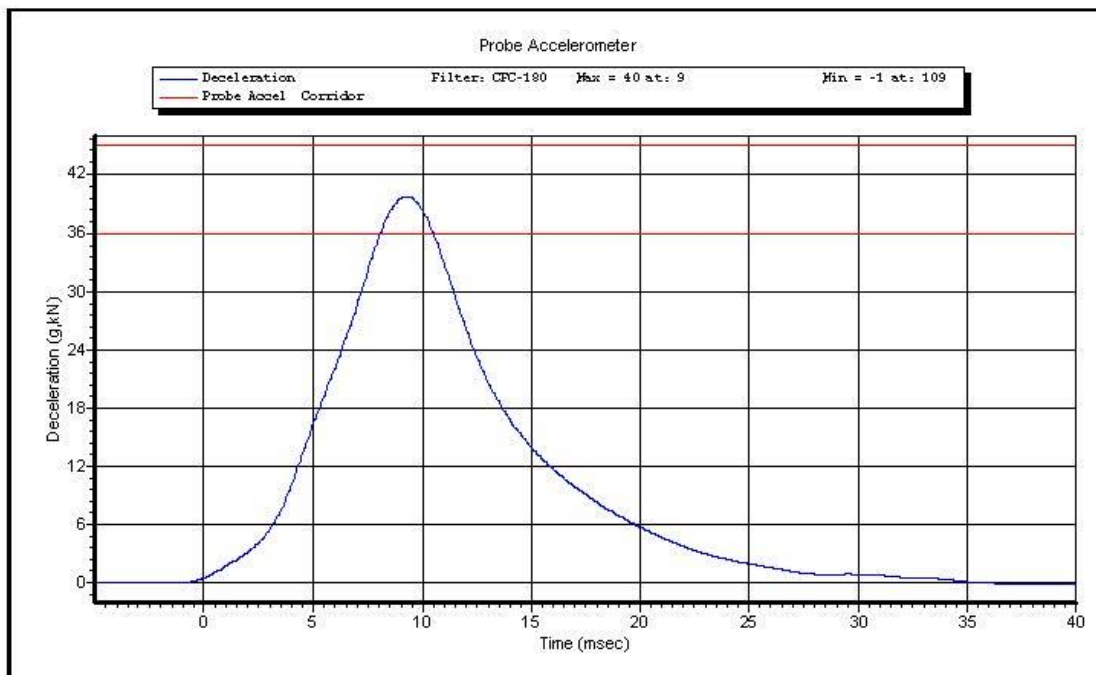
Test Name:	Pelvis
Sub Test Name:	Iliac Impact
ATD Type:	SID-Ils
ATD Serial Number:	300



Test ID: Pelvis Iliac Impact Test Time: 12:26:25 PM

Test Date: 12/16/2014

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Test ID: **Pelvis Iliac Impact** Test Time: **12:26:25 PM**

Test Date: **12/16/2014**

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APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation (ES-2re)

			ES-2re S/N: F034		
			Serial Number	Manufacturer	Calibration Date
Head Accelerometers		X	AC-P58904	ENDEVCO	8/29/2014
		Y	AC-P58911	ENDEVCO	8/29/2014
		Z	AC-P58776	ENDEVCO	8/29/2014
Thorax Rib Displacement Potentiometers	Upper	Y	DS-183GFE	HONEYWELL	8/4/2014
	Middle	Y	DS-184GFE	HONEYWELL	8/4/2014
	Lower	Y	DS-182GFE	HONEYWELL	8/4/2014
Abdomen Load Cells	Forward	Y	LC-1512	DENTON	5/13/2014
	Middle	Y	LC-1526	DENTON	5/13/2014
	Rear	Y	LC-1516	DENTON	5/13/2014
Lower Spine Accelerometers (T12)		X	AC-P52079	ENDEVCO	8/29/2014
		Y	AC-P51948	ENDEVCO	8/29/2014
		Z	AC-P51269	ENDEVCO	8/29/2014
Pubic Symphysis Load Cell		Y	LC-465Fy	DENTON	5/13/2014

Table 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N: 300		
				Serial Number	Manufacturer	Calibration Date
Head Accelerometers			X	AC-P58777	ENDEVCO	8/28/2014
			Y	AC-P59018	ENDEVCO	8/28/2014
			Z	AC-P68608	ENDEVCO	8/28/2014
Displacement Potentiometers	Shoulder		Y			
	Thoracic Rib	Upper	Y	DS-451GFE	SERVO	8/12/2014
		Middle	Y	DS-1151GFE	SERVO	8/12/2014
		Lower	Y	DS-1156GFE	SERVO	8/12/2014
	Abdominal Rib	Upper	Y	DS-308GFE	SERVO	8/12/2014
		Lower	Y	DS-307GFE	SERVO	8/7/2014
Lower Spine Accelerometers (T12)			X	AC-P58883	ENDEVCO	8/28/2014
			Y	AC-P64147	ENDEVCO	8/28/2014
			Z	AC-P58786	ENDEVCO	8/28/2014
Acetabulum Load Cell			Y	LC-275Fy	DENTON	5/13/2014
Iliac Wing Load Cell			Y	LC-279Fy	DENTON	5/14/2014
Pelvis Plug (struck side)				46463	HUMANETICS	9/22/2011
Pelvis Plug (non-struck side)						

Table 3 – Vehicle Instrumentation

Vehicle Instrumentation			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	AC-A127677	MSI 1201	9/16/2014
	Vehicle Center of Gravity	Y	AC-A120631	MSI 1201	9/16/2014
	Vehicle Center of Gravity	Z	AC-A126814	MSI 1201	9/16/2014
2	Right Sill at Front Seat	X	AC-A126795	MSI 1201	9/18/2014
	Right Sill at Front Seat	Y	AC-A127666	MSI 1201	9/18/2014
	Right Sill at Front Seat	Z	AC-A120620	MSI 1201	9/18/2014
3	Right Sill at Rear Seat	X	AC-A120605	MSI 1201	9/18/2014
	Right Sill at Rear Seat	Y	AC-A120607	MSI 1201	9/18/2014
	Right Sill at Rear Seat	Z	AC-A002415	MSI 1201	9/18/2014
4	Left Sill at Front Door	Y	AC-A112910	MSI 1201	9/18/2014
5	Left Sill at Rear Door	Y	AC-A120612	MSI 1201	9/26/2014
6	Left A-Post Lower	Y	AC-A127674	MSI 1201	9/18/2014
7	Left A-Post Middle	Y	AC-A127663	MSI 1201	9/18/2014
8	Left B-Post Lower	Y	AC-A127671	MSI 1201	9/19/2014
9	Left B-Post Middle	Y	AC-A112918	MSI 1201	9/19/2014
10	Front Seat Track	Y	AC-A127665	MSI 1201	9/18/2014
11	Rear Seat Track or Structure	Y	AC-A120610	MSI 1201	9/18/2014
12	Right Rear Occ. Compartment	Y	AC-A120627	MSI 1201	9/16/2014
13	Engine Block	X	AC-A081439	MSI 1201	11/5/2014
	Engine Block	Y	AC-A126786	MSI 1201	11/5/2014
14	Rear Floorpan Above Axle	X	AC-A127660	MSI 1201	9/18/2014
	Rear Floorpan Above Axle	Y	AC-A126789	MSI 1201	9/18/2014
	Rear Floorpan Above Axle	Z	AC-A127675	MSI 1201	9/18/2014

TABLE 4 – MDB Instrumentation

MDB Instrumentation		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	AC-C14901	ENDEVCO	10/14/2014
MDB Center of Gravity	Y	AC-CP30	ENDEVCO	10/14/2014
MDB Center of Gravity	Z	AC-C16680	ENDEVCO	10/14/2014
Left Frame at Rear Axle Centerline	X	AC-AH5M8	ENDEVCO	10/14/2014
Left Frame at Rear Axle Centerline	Y	AC-C16499	ENDEVCO	10/14/2014