REPORT NUMBER: SINCAP-CAL-15-001

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

Honda De Mexico S.A. De C.V
2015 Honda Fit
Five Door Hatchback

NHTSA No: M20155320

PREPARED BY:
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February 20, 2015

FINAL REPORT

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
OFFICE OF CRASHWORTHINESS STANDARDS
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Prepared by: Date: February 20, 2015

Vanessa Walsh, Project Engineer

Approved by: Date: February 20, 2015

Edward Dutton, Test Engineer
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FINAL REPORT ACCEPTANCE BY OCWS:

_____

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

Date: _____

_____

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

Date: _____

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Vanessa Walsh, Test Engineer Edward Dutton , Senior Test Engineer	**8. Performing Organization Report No.** CAL-DOT-2015-001
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15. *Supplementary Notes*

16. Abstract

A 55/28, (61.90 kph / 38.5 mph), 90^0 Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2015 Honda Fit five door hatchback 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 5, 2014.

The impact velocity of the Moving Deformable Barrier (MDB) was 62.25 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 170 mm located at level 3. The test vehicle's occupant performance data is as follows:

Measurement Description	Driver ATD (ES-2re)		
	Units	IARV	Result
Head Injury Criteria (HIC_{36})	N/A	1000	206.220
Maximum Thoracic Rib Deflection	mm	44	25.398
Total Abdominal Force	N	2500	964.967
Pubic Symphysis Force	N	6000	1737.646

Measurement Description	Passenger ATD (SID-IIs)		
	Units	IARV	Result
Head Injury Criteria (HIC_{36})	N/A	1000	237.426
Lower Spine Resultant Acceleration	G	82	80.565
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2644.077
Maximum Thoracic Rib Deflection	mm	38*	35.065
Maximum Abdominal Rib Deflection	mm	45*	33.639

** 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.

17. Key Words	18. Distribution Statement
New Car Assessment Program (NCAP) Side Impact MDB ES-2re SID-IIs	Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave. SE Washington, D.C. 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833

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SECTION 1

TEST PURPOSE AND PROCEDURE

This 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 DTNH22-14-00352. The purpose of this test is to generate comparative side impact performance in a 2015 Honda Fit five door hatchback.

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 Fit five door hatchback 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 62.25 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 5, 2014. 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	206.220
Maximum Thorax Rib Deflection	mm	44	25.398
Combined Abdominal Force	N	2500	964.967
Pubic Symphysis Force	N	6000	1737.646

Measurement Description	Passenger ATD (SID-IIs)		
	Units	Threshold	Result
Head Injury Criteria (HIC36)		1000	237.426
Lower Spine (T12) Resultant Acceleration	G	82	80.565
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	2644.077
Maximum Thoracic Rib Deflection	mm	38*	35.065
Maximum Abdominal Rib Deflection	mm	45*	33.639

*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:

- None

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 Fit five door hatchback
NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test
Test Date: 12/5/2014

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20155320
Model Year	2015
Make	Honda
Model	Fit
Body Style	Five Door Hatchback
VIN	3HGGK5G53FM732265
Body Color	Red
Odometer Reading (km/mi)	74 km / 46 mi
Engine Displacement (L)	1.5
Type/No. Cylinders	I4
Engine Placement	Transverse
Transmission Type	Manual
Transmission Speeds	6-Speed
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 De Mexico S.A. De C.V
Date of Manufacture	09/14
Vehicle Type	Passenger

GVWR (kg)	1525
GAWR Front (kg)	803
GAWR Rear (kg)	722

VEHICLE SEATING AND WEIGHT CAPACITY DATA

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

VEHICLE SEAT TYPE

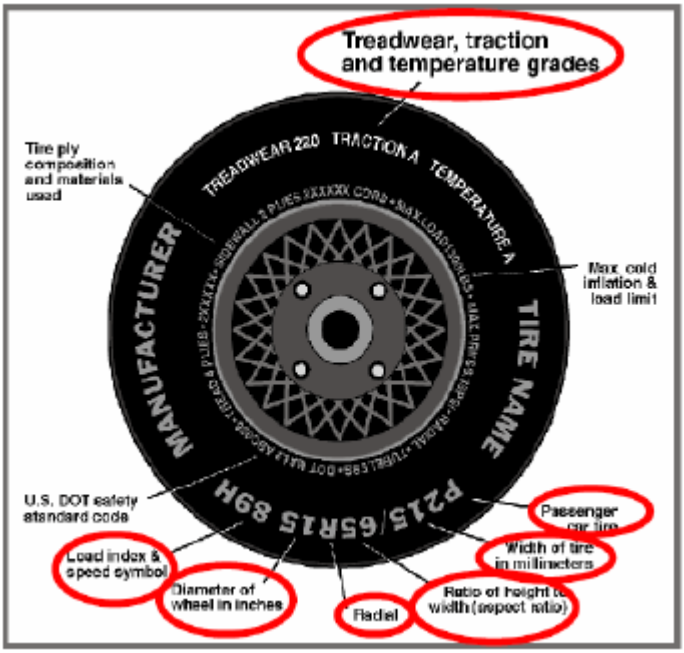
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable W/ Lever	Adjustable W/ Knob
Front Seat	X					X	
Rear or Second Row Seat		X			X		
Third Row seat							

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

Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014

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)	230	230
Recommended Tire Size	P185/60R15	P185/60R15
Tire Size on Vehicle	P185/60R15	P185/60R15
Tire Manufacturer	Firestone	Firestone
Tire Model	FR740	FR740
Treadwear	400	400
Traction	A	A
Temperature Grade	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	1 Polyester, 2 Steel, 1 Nylon	1 Polyester, 2 Steel, 1 Nylon
Load Index/Speed Symbol	84T	84T
Tire Material	Rubber	Rubber
DOT Safety Code Left	ELCACJJ1914	ELCACJJ2014
DOT Safety Code Right	ELCACJJ1914	ELCACJJ1914

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

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

TIRE PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	232	232	228	230
Tire Placard	kPa	230	230	230	230
Owner's Manual	kPa	230	230	230	230
As Tested	kPa	230	230	230	230

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	339	228		377	307		419	284	
Right	kg	366	208		379	242		341	274	
Ratio	%	62%	38%		58%	42%		58%	42%	
Totals	kg	705	436	1141	756	549	1305	760	558	1318

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1141	(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	1312.8	(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)? [X] **Yes** [ ] **No**

TEST VEHICLE ATTITUDES AND CG

Measurement Description	Units	Fully Loaded	As Tested	Meets Requirement**
LF	mm	635	633	Yes
RF	mm	648	643	Yes
RR	mm	646	643	Yes
LR	mm	630	632	Yes
Vehicle CG (Aft of Front Axle)	mm	1071	1064	
Vehicle CG (Left(+)/Right(-) from Longitudinal Centerline)	mm	49.5	20.5	

**** 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:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Spare Tire & Jack	14
Trunk Carpeting	3
Tail Light	3
Ballast / Equipment Added	0

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

Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014

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	13.1	11.2	12.15
Front Passenger Seat	-	Not Adjustable	-
Front Center Seat*	N/A	N/A	N/A
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	N/A	N/A	N/A
Rear Center Seat*	Fixed	Fixed	Fixed

**if applicable*

SEAT HEIGHT AND ANGLE

Seat	As Tested SCRL Angle (Mid) (°)	As Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rearmost	Mid-Fore/Aft	Forward-Most
Driver Seat	12.15	41	Max	55	67	84
			Mid	26	41	58
			Min	0	14	30
Front Passenger Seat	Not Adjustable	Not Adjustable	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Front Center Seat*	N/A	N/A	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Non-Struck Side Rear Seat	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-
Rear Center Seat*	Fixed	Fixed	Max	-	-	-
			Mid	-	-	-
			Min	-	-	-

**if applicable*

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

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

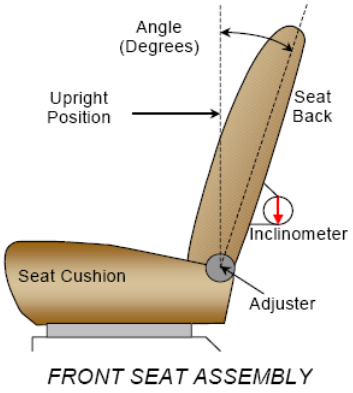
SEAT FORE / AFT POSITION

Seat	Total Fore / Aft Travel		Test Position from Forwardmost Position	
	mm	Detents*	mm	Detent*
Driver Seat	235	35 (0-34)	117	17
Front Passenger Seat	234	35 (0-34)	117	17
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.



FRONT SEAT ASSEMBLY

Seat	Total Seat Back Angle Range		Test Position from Most Upright	
	Degrees	Detents*	Degrees	Detents*
Driver Seat w/ Seated Dummy	-8.5 – (55.3)	N/A	1.0	N/A
Front Passenger Seat	-10.5 – (52.0)	N/A	0.6	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 Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

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
Rear Seat	Fixed	Fixed

HEAD RESTRAINT ADJUSTMENT

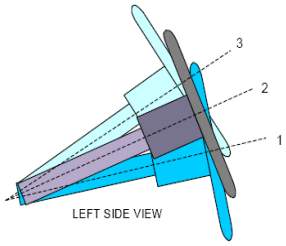
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	6 (0-5)	0
Rear Seat	1	1

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	25.1	
Geometric Center – Position 2	27.6	
Uppermost – Position 3	30.1	
Telescoping Steering Wheel Travel		40
Test Position	27.6	20

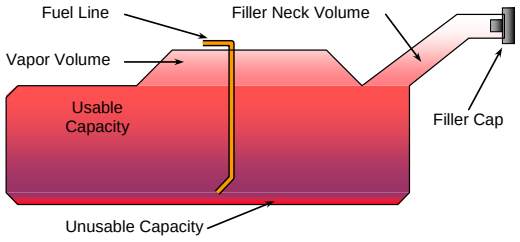


STEERING COLUMN ASSEMBLY

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.



VEHICLE FUEL TANK ASSEMBLY

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

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

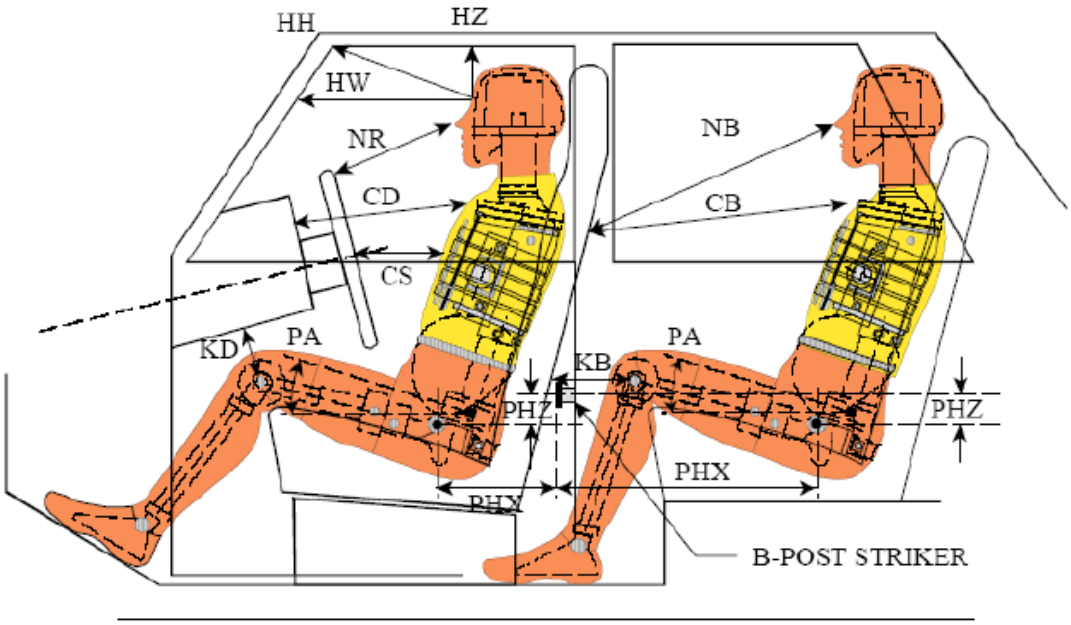
FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank" (see Form No. 1)	40
Usable Capacity of "Optional Tank" (see Form No. 1)	N/A
Usable Capacity of Standard Tank (see Owner's Manual)	40
Usable Capacity of Optional Tank (see Owner's Manual)	N/A
93% of Usable Capacity	37.2
Actual Amount of Solvent Used in Test	37.2
1/3 of Usable Capacity	13.3

Is the Actual Amount of Solvent Used in the test equal to 93% ± 1% of the Usable Capacity stated in Form No. 1? [X] **Yes** [ ] **No**

DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014



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

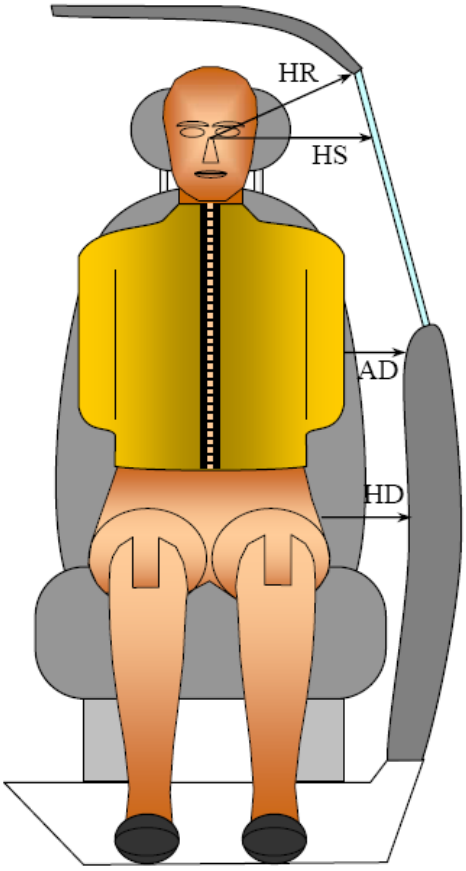
LEFT SIDE VIEW

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	383			
HW		Header to Windshield	683			
HZ	HZ	Head to Roof Liner	172		250	
NR	NB	Nose to Rim/Seat Back	471		583	
CD	CB	Chest to Dash/Seat Back	598		565	
CS		Chest to Steering Wheel	415			
KD(L)/KDA(L)°	KB(L)/KBA(L)°	Left Knee to Dash/Seat Back	127	14.6	347	17.4
KD(R)/KDA(R)°	KB(R)/KBA(R)°	Right Knee to Dash/Seat Back	127	20.5	340	15.9
PAX°	PAX°	Pelvic Tilt Angle X		23.1		18.9
	PAY°	Pelvic Tilt Angle Y				0.4
PHX	PHX	Hip Point to Striker (X-Axis)	228		723	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	95		50	

DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014



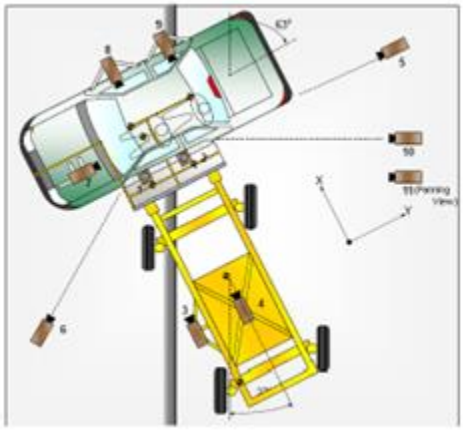
FRONT VIEW OF DUMMY

DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver (Serial No. F034)	Passenger (Serial No. 300)
HR	Head to Side Header	mm	182	229
HS	Head to Side Window	mm	307	340
AD	Arm to Door	mm	93	140
HD	Hip Point to Door	mm	153	163

DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X	Y	Z		
1	Overhead Overall	538	1021	5350	14	1000
2	Overhead Close-up	213	1021	5350	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	8382	1045	28	1000
6	Left Front	-2477	-1941	1134	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.*

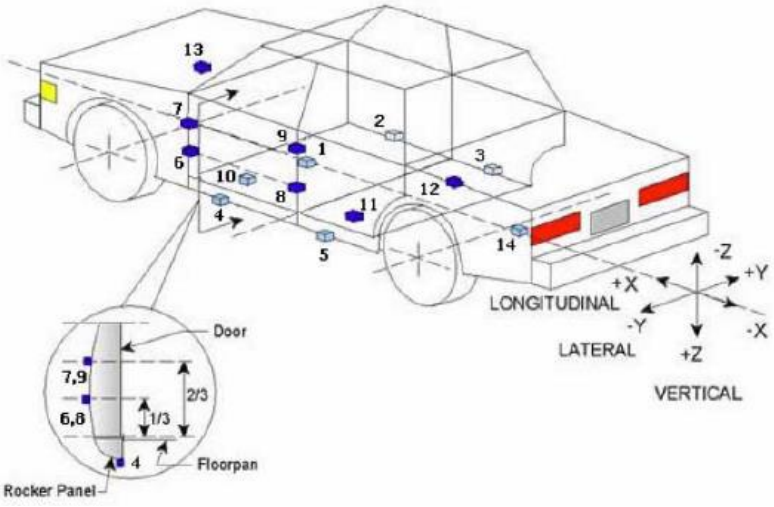
If applicable, explain why camera(s) did not operate as intended: All cameras operated normally

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 Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014



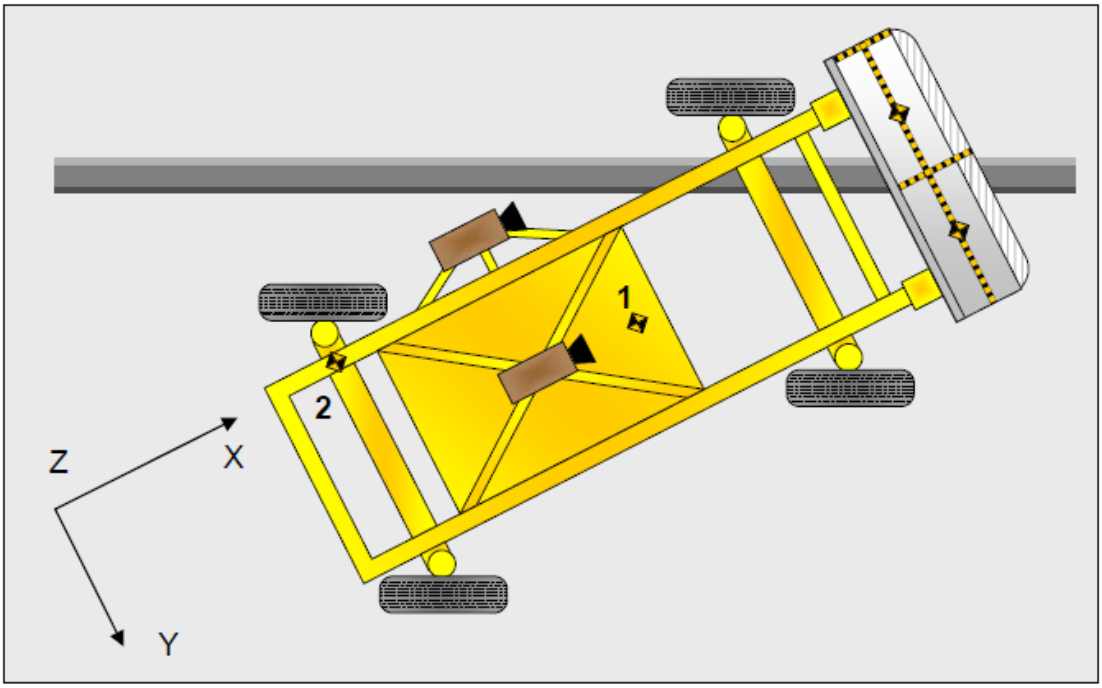
TEST VEHICLE ACCELEROMETER LOCATIONS

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2194	36	27
2	Right Sill at Front Seat	2540	629	212
3	Right Sill at Rear Seat	1515	635	204
4	Left Sill at Front Door	2448	-616	207
5	Left Sill at Rear Door	1917	-525	150
6	A-Post Lower	2804	-615	-32
7	A-Post Middle	2632	-664	-466
8	B-Post Lower	1792	-630	-117
9	B-Post Middle	1759	-649	-420
10	Front Seat Track	1421	-621	218
11	Rear Seat Structure	966	-338	53
12	Rt. Rear Occ. Compartment	1596	354	310
13	Engine Block	760	-351	-242
14	Rear Above Axle	934	37	58

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 Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014



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 Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

TEST DUMMY INFORMATION AND CONTACT POINTS

Dummy Body Part	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-IIs)
Face	Curtain Airbag	Curtain Airbag
Top of Head	Curtain Airbag	Curtain Airbag
Left Side of Head	Curtain Airbag	Curtain Airbag
Back of Head	Curtain Airbag & Headrest	Curtain Airbag & Center Seat Headrest
Left Shoulder	None	Passenger Door
Upper Torso	Seatback & Torso/Pelvis Airbag	Passenger Door
Lower Torso	Seatback & Torso/Pelvis Airbag	Passenger Door
Left Hip	Driver's Door	Passenger Door
Left Knee	Seatback & Torso/Pelvis Airbag	Passenger Door & Seatback

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	0	0	0	0	0
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	Windows shattered during impact event
Other Notable Effects	None

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

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

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		2531
Vertical Impact Reference Line (Aft of Front Axle - Intended Impact Point)	mm		325
Actual Impact Point (Aft of Frontal Axle)	mm		341
Horizontal Offset (+ forward / - rearward)	mm	+/- 50 of Intended Impact Point	-16
Vertical Offset (+ down / - up)	mm	+/- 20 of Intended Impact Point	+11

DATA SHEET NO. 9
MDB SUMMARY OF RESULTS

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

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

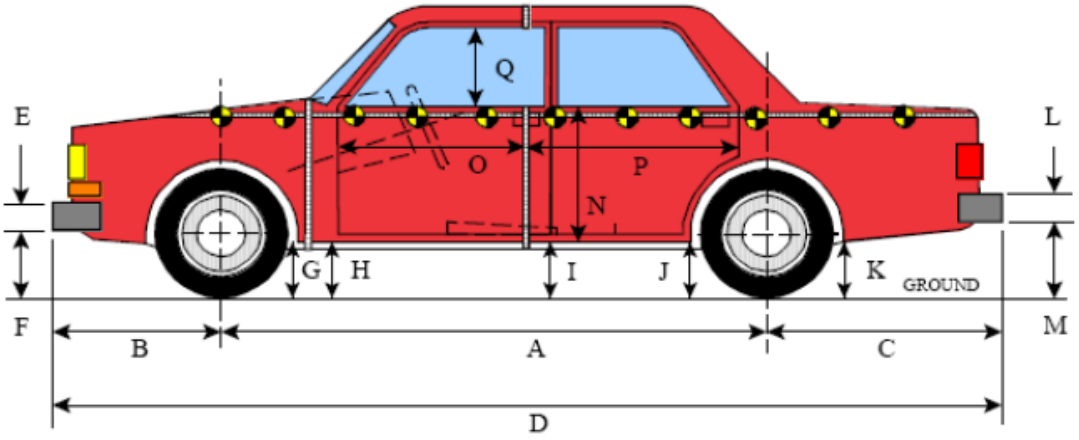
Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.10 to 62.70	62.25
Trap No. 2 Velocity (Redundant)	km/h	61.10 to 62.70	62.26
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.5
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.0
MDB Crabbed angle 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	210
B	Top of Bumper	533	700	Left	104
C	Mid-Level	686	800	Left	126
D	Top of Stack	813	800	Left	152

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014



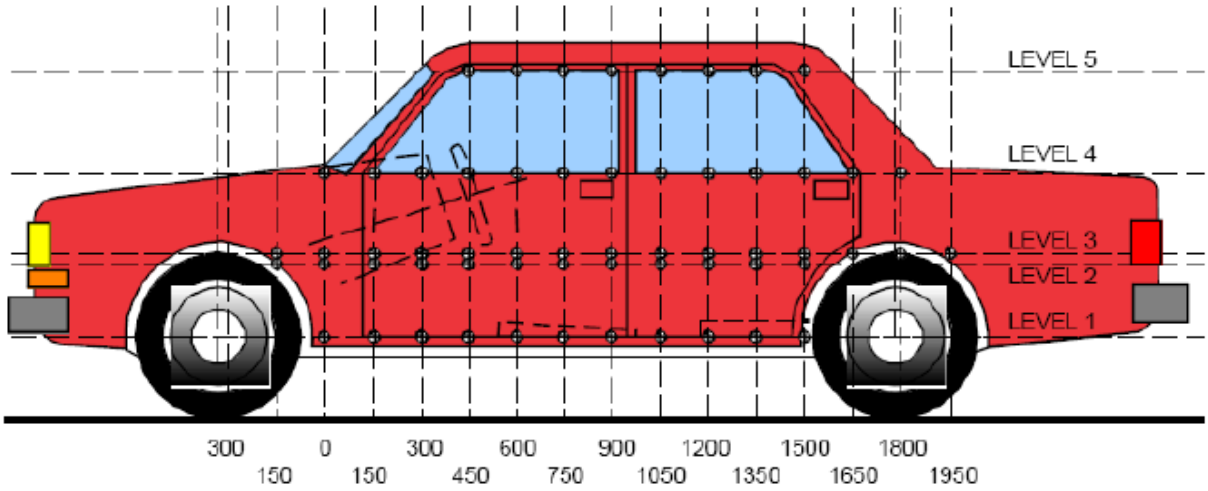
LEFT SIDE VIEW
All MEASUREMENTS IN (mm) WITH TOLERANCE OF ± 3mm

VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2531	2532	1
B	Front Axle to FSOV	811	817	6
C	Rear Axle to RSOV	727	716	-10
D	Total Length at Centerline	4069	4065	-3
E	Front Bumper Thickness	150	150	0
F	Front Bumper Bottom to Ground	551	552	1
G	Sill Height at Front Wheel Well	208	217	9
H	Sill Height at Front Door Leading Edge	282	290	8
I	Sill Height at B Pillar	303	305	2
J1	Sill Height at Rear Wheel Well	307	321	14
J2	Pinch Weld Height at Rear Wheel Well	306	315	9
K	Sill Height Aft of Rear Wheel Well	269	281	12
L	Rear Bumper Thickness	190	190	0
M	Rear Bumper Bottom to Ground	466	479	13
N	Sill Height to Window Bottom of Front Window Sill	752	671	-82
O	Front Door Leading Edge to Impact CL	728	722	-6
P	Rear Door Trailing Edge to Impact CL	1294	1265	-28
Q	Front Window Opening	460	463	3
R	Right Side Length	3992	3994	1
S	Left Side Length	3990	3988	-3
T	Maximum Vehicle Width	1695	1562	-133

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2015 Honda Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014



LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Units	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	mm	297	43	900
2	Driver Hip Point	mm	558	164	1350
3	Mid-Door	mm	656	170	1800
4	Window Sill	mm	914	109	1500
5	Window Top	mm	1446	2	1650

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 Fit five door hatchback NHTSA No.: M20155320
Test Program: NCAP Side MDB Impact Test Test Date: 12/5/2014

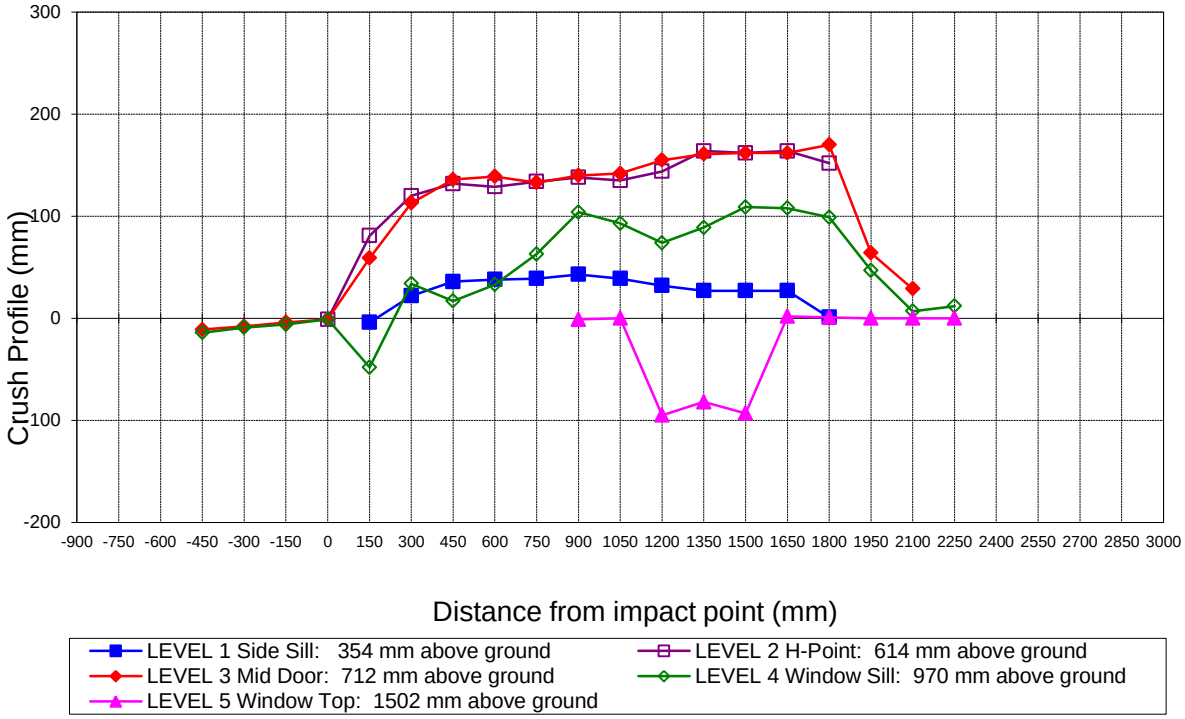
EXTERIOR CRUSH MEASUREMENTS AT EACH LEVEL

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900															
-750															
-600															
-450			848	706				859	720				-11	-14	
-300			851	759				859	768				-8	-9	
-150			852	779				856	785				-4	-6	
0		851	851	787			852	850	788			-1	1	-1	
150	832	845	843	787		836	764	784	835		-4	81	59	-48	
300	834	841	841	852		812	721	728	818		22	120	113	34	
450	835	840	841	799		799	708	705	782		36	132	136	17	
600	835	841	843	807		797	712	704	774		38	129	139	33	
750	835	841	845	812		796	707	712	749		39	134	133	63	
900	835	842	848	817	580	792	704	708	713	581	43	138	140	104	-1
1050	832	842	849	819	595	793	707	707	726	595	39	135	142	93	0
1200	830	842	849	822	595	798	698	694	748	690	32	144	155	74	-95
1350	828	840	848	823	592	801	676	687	734	674	27	164	161	89	-82
1500	829	838	846	811	586	802	676	684	702	679	27	162	162	109	-93
1650	831	839	845	804	579	804	675	683	696	577	27	164	162	108	2
1800	835	845	846	805	569	834	693	676	706	568	1	152	170	99	1
1950			849	810	551			785	763	551			64	47	0
2100			850	813	520			821	806	520			29	7	0
2250				811	478				799	478				12	0
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

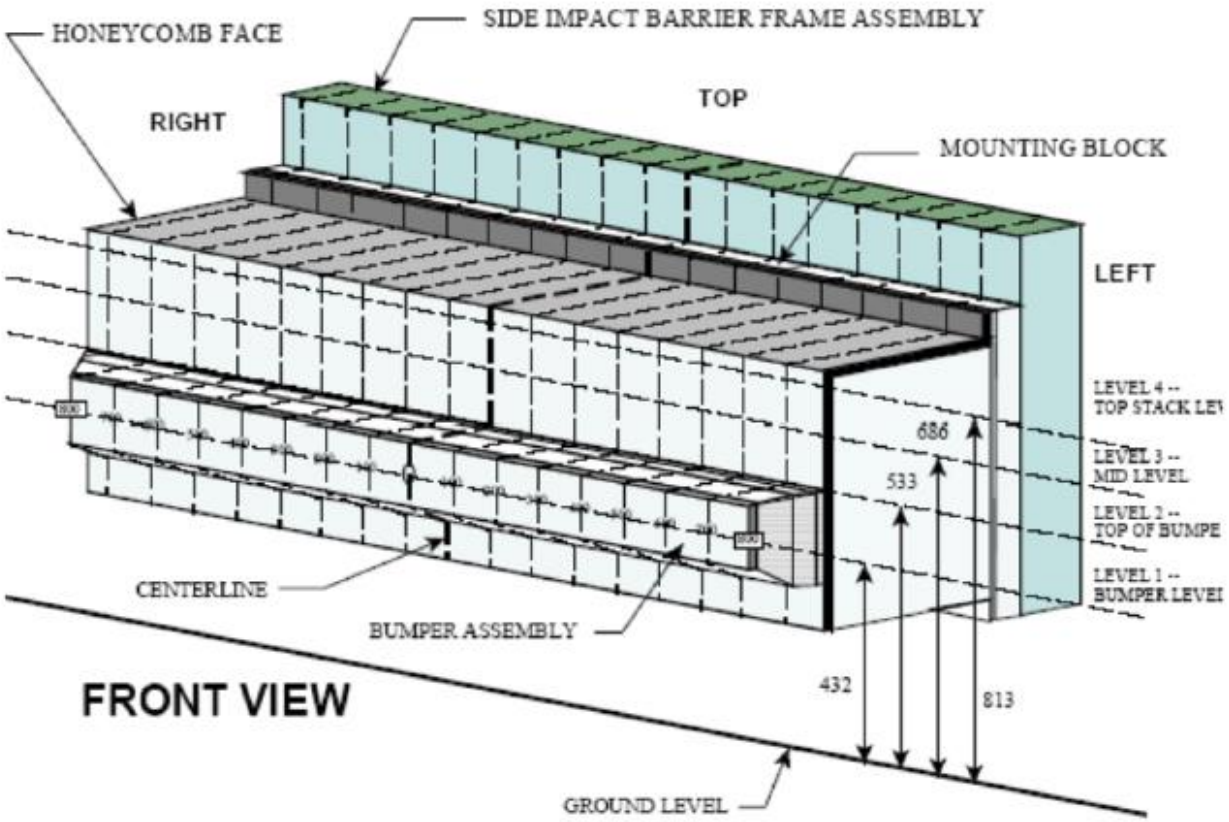
Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014



Vehicle Exterior Crush Measurements - Visual Representation

DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014



NOTE: Dimensions are shown in millimeters, mm

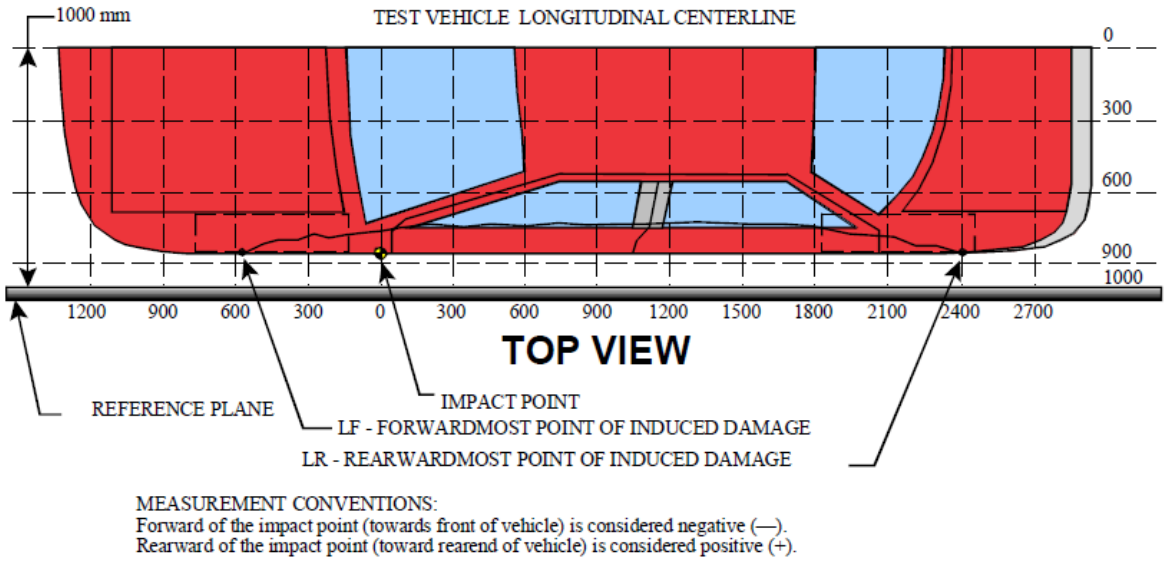
DEFORMABLE BARRIER STATIC CRUSH

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	800
1	158	155	148	146	146	146	145	147	146	145	145	146	146	147	155	176	210
2	71	71	68	66	59	58	59	59	58	61	61	63	64	64	70	84	104
3	26	13	10	10	12	18	36	61	36	16	12	13	15	20	31	70	126
4	39	20	8	6	16	42	86	62	44	31	10	8	14	23	55	106	152

DATA SHEET NO. 13
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014

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



MEASUREMENT CONVENTIONS:
Forward of the impact point (towards front of vehicle) is considered negative (—).
Rearward of the impact point (toward rearend of vehicle) is considered positive (+).

VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance From Impact Point (mm)	Level	Post-Test (mm)	Pre-Test (mm)	Crush (mm)
1	-450	3	141	152	-11
2	60	3	176	153	23
3	570	3	296	157	139
4	1080	3	296	151	145
5	1590	3	317	155	162
6	2100	3	179	150	29

MDB DAMAGE PROFILE DISTANCES

DPD	Distance From Center of MDB	Level	Post-Test (mm)*
1	800 mm left of center	1	210
2	480 mm left of center	1	147
3	160 mm left of center	1	145
4	160 mm right of center	1	146
5	480 mm right of center	1	146
6	800 mm right of center	1	158

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

Test Vehicle:	2015 Honda Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014
Test Time:	3:00 PM	Temperature:	21˚C

A. From impact until vehicle motion ceases: 0 oz.
(Maximum allowable is 1 oz.)

B. For the 5-minute period after motion ceases: 0 oz.
(Maximum allowable is 5 oz.)

C. For the following 25 minutes: 0 oz.
(Maximum allowable is 1 oz./minute)

D. Spillage Details: No Spillage Occurred

FMVSS NO. 301 STATIC ROLLOVER DATA

ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	74	300	374
90° to 180°	64	300	364
180° to 270°	63	300	363
270° to 360°	70	300	370

FMVSS NO. 301 ROLLOVER SPILLAGE TABLE

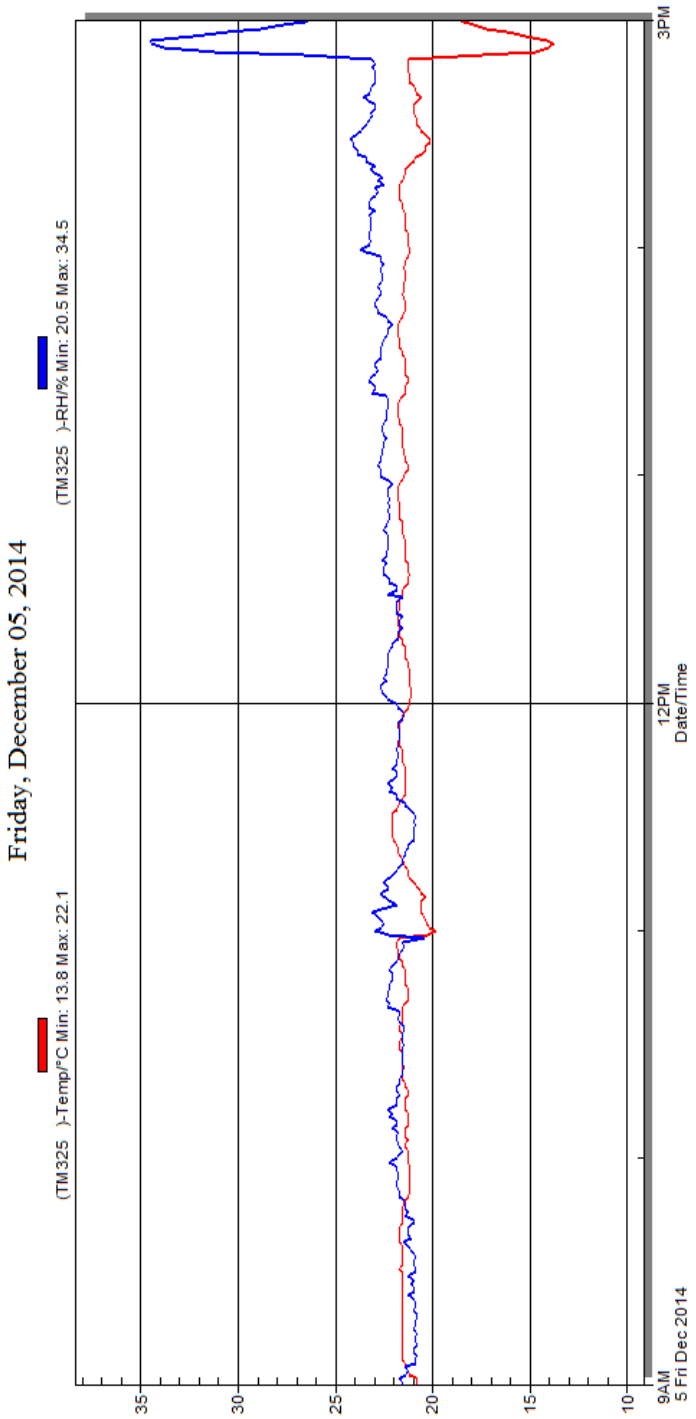
Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0	0	0	
90° to 180°	0	0	0	
180° to 270°	0	0	0	
270° to 360°	0	0	0	

ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

Test Phase	Spillage Location
0° to 90°	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 Fit five door hatchback	NHTSA No.:	M20155320
Test Program:	NCAP Side MDB Impact Test	Test Date:	12/5/2014



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

APPENDIX A

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Figure A-1: As-Delivered Right Front 3/4 View of Test Vehicle

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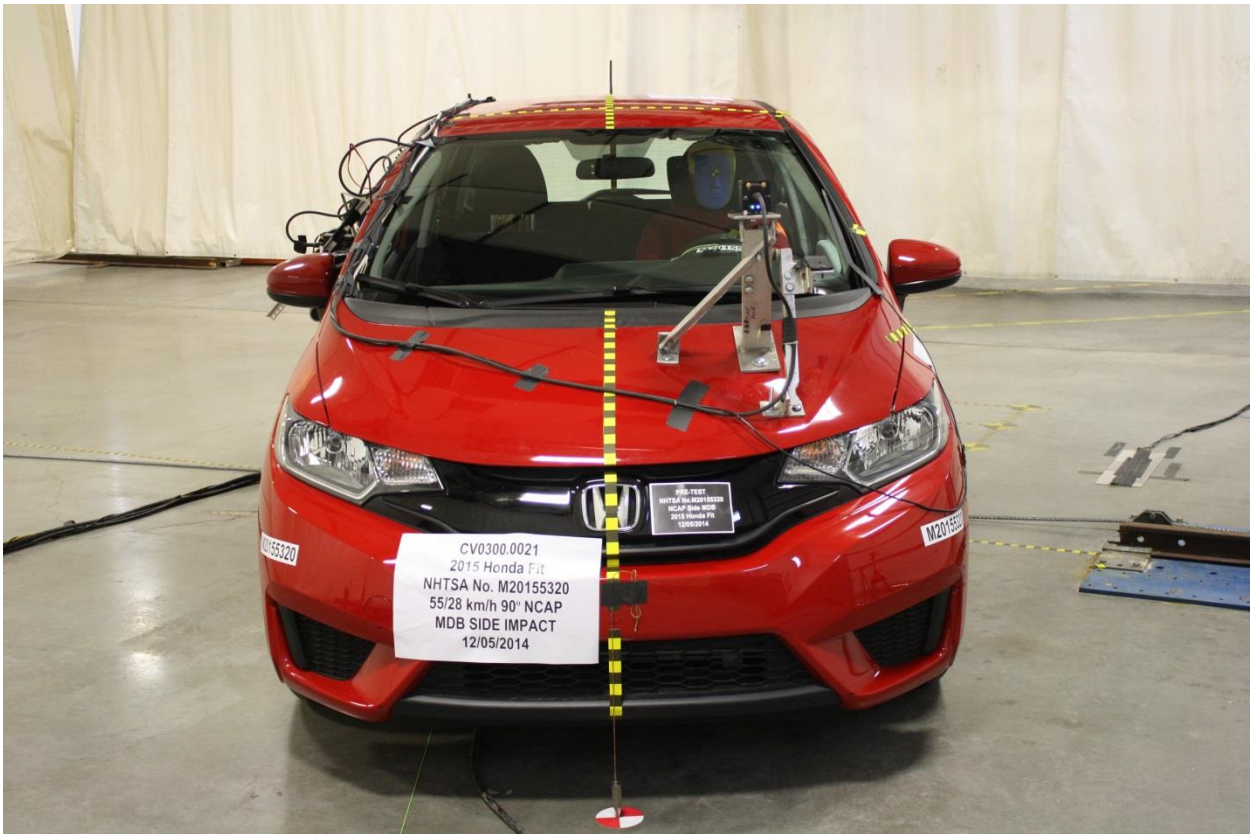

Figure A-3: Pre-Test Frontal View of Test Vehicle

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

Figure A-5: Pre-Test Left Front ¾ View of Test Vehicle

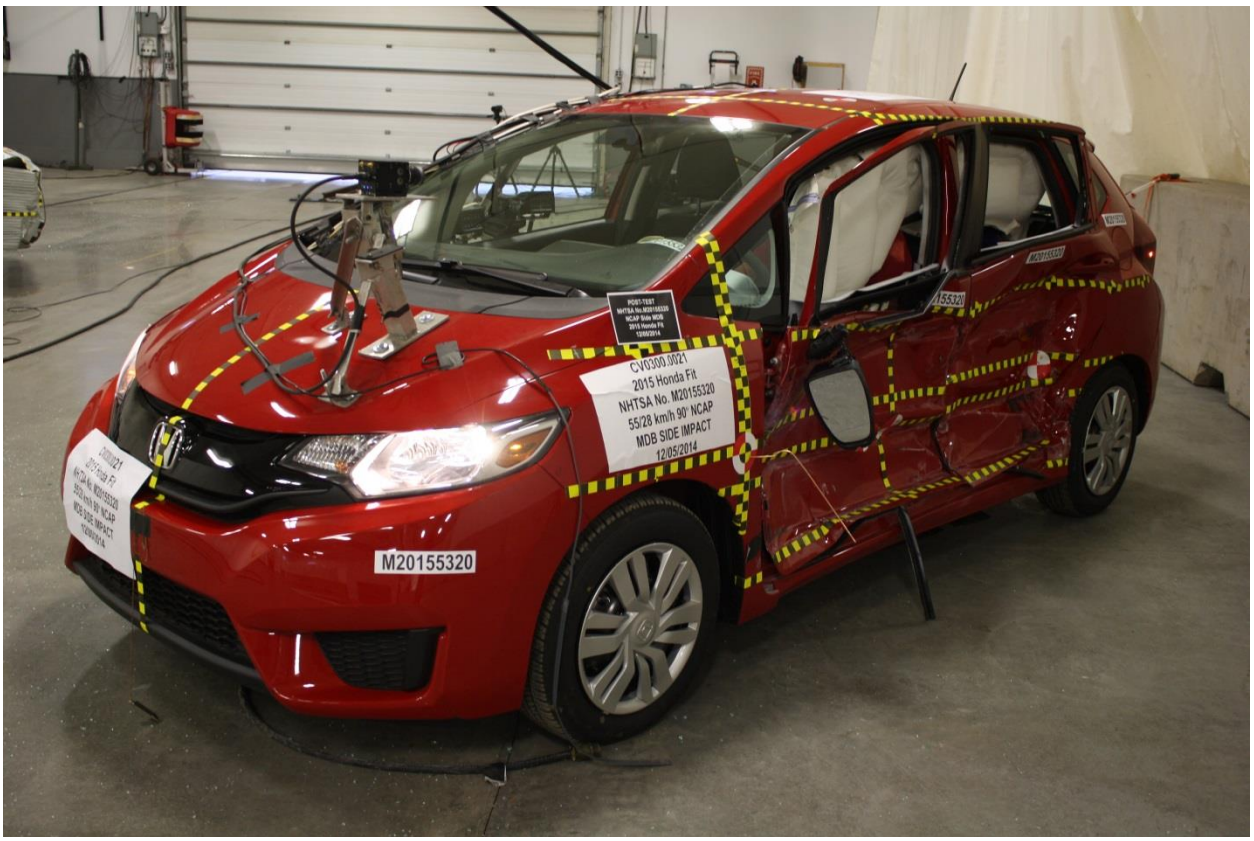

Figure A-6: Post-Test Left Front ¾ View of Test Vehicle

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 ¾ View of Test Vehicle

Figure A-10: Post-Test Left Rear ¾ View of Test Vehicle

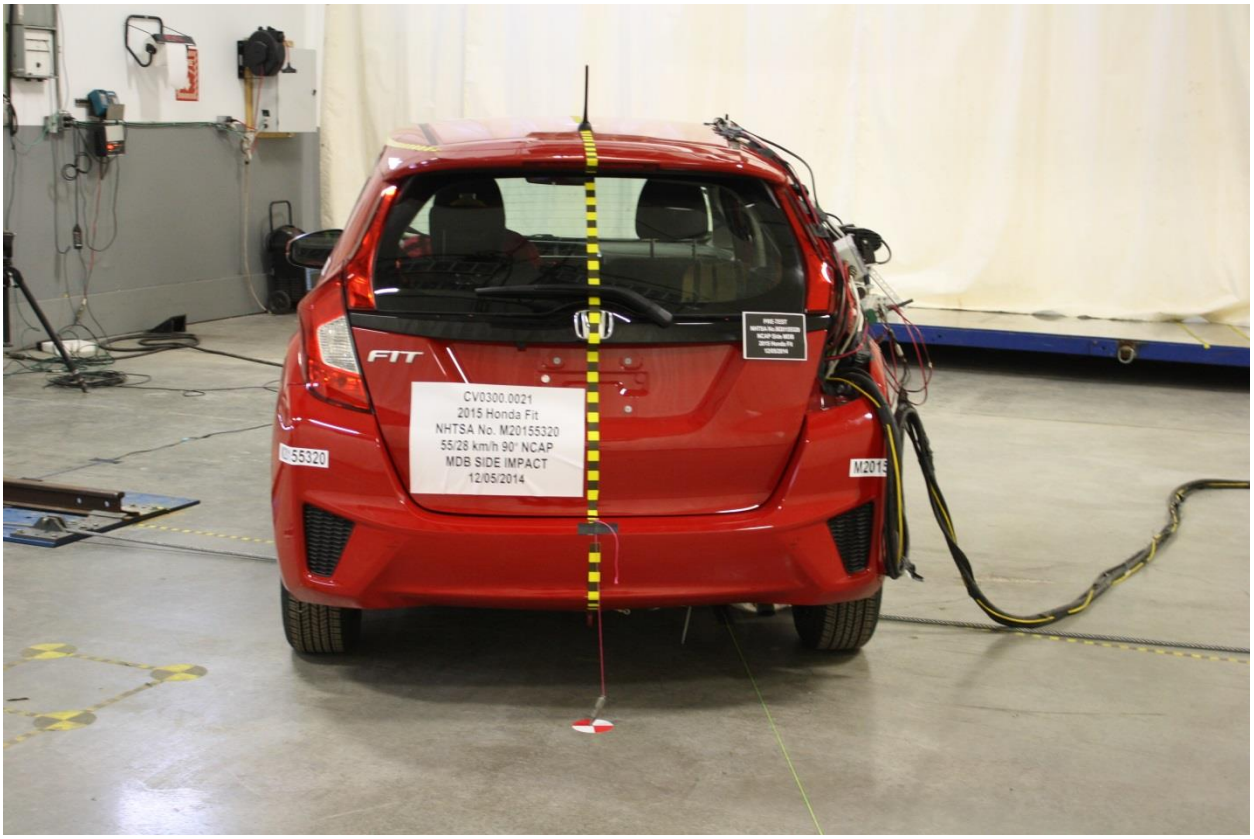

Figure A-11: Pre-Test Rear View of Test Vehicle

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

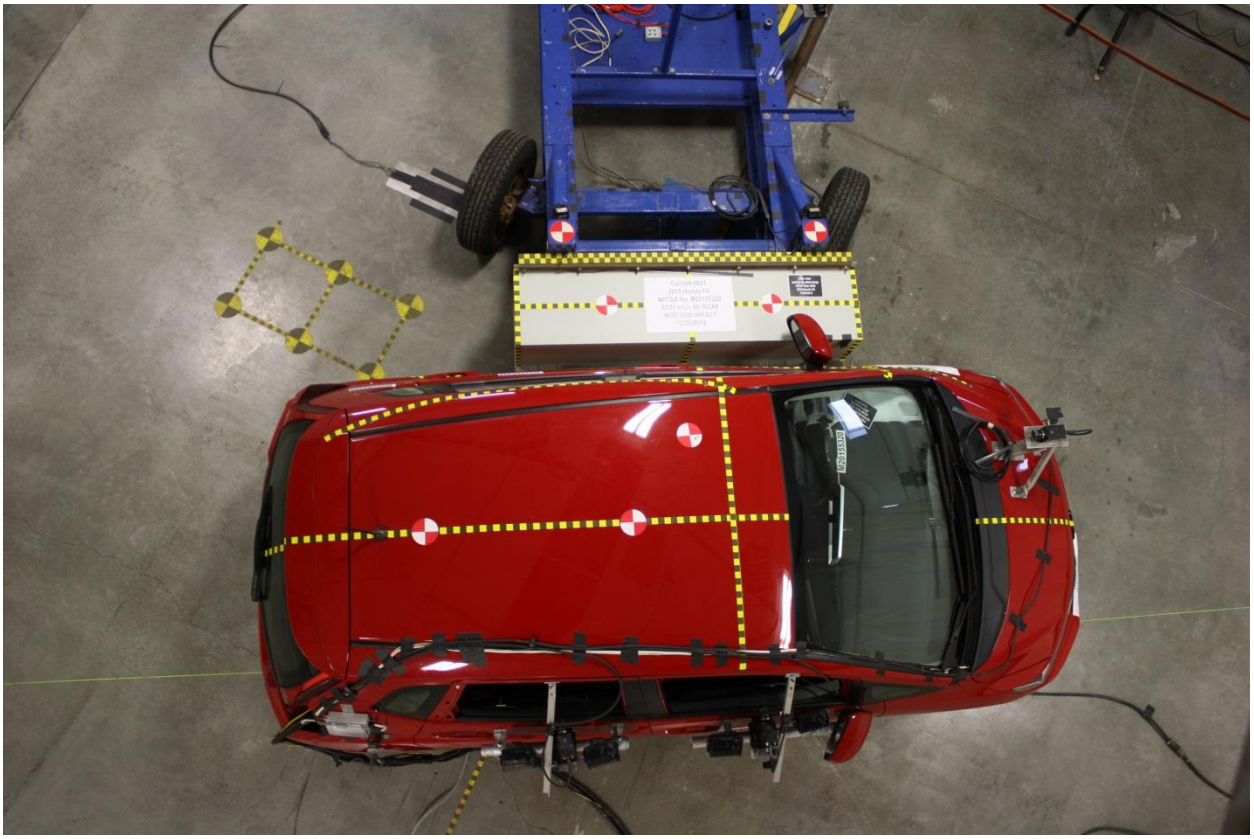

Figure A-15: Pre-Test Overhead View of the Test Area

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

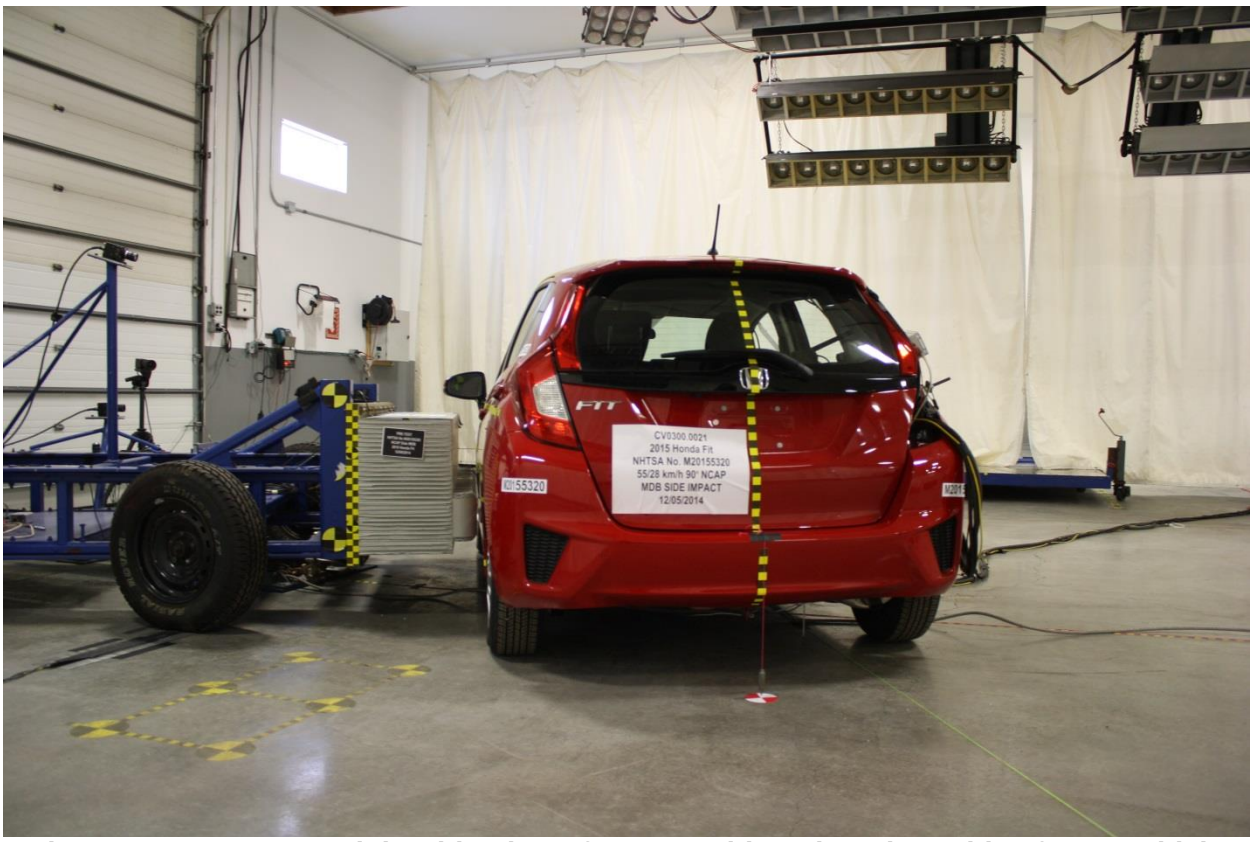

Figure A-18: Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle

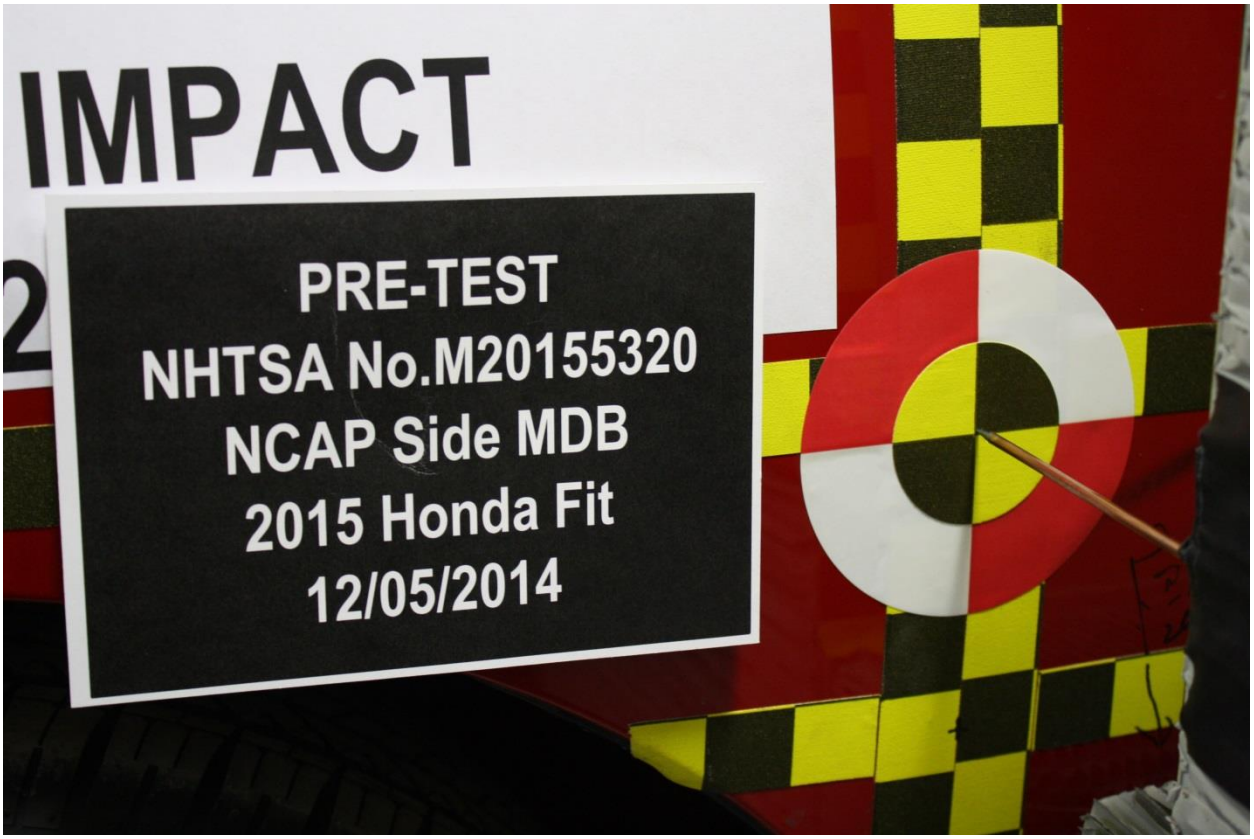

Figure A-19: Pre-Test Close-up View of Impact Point Target

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

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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

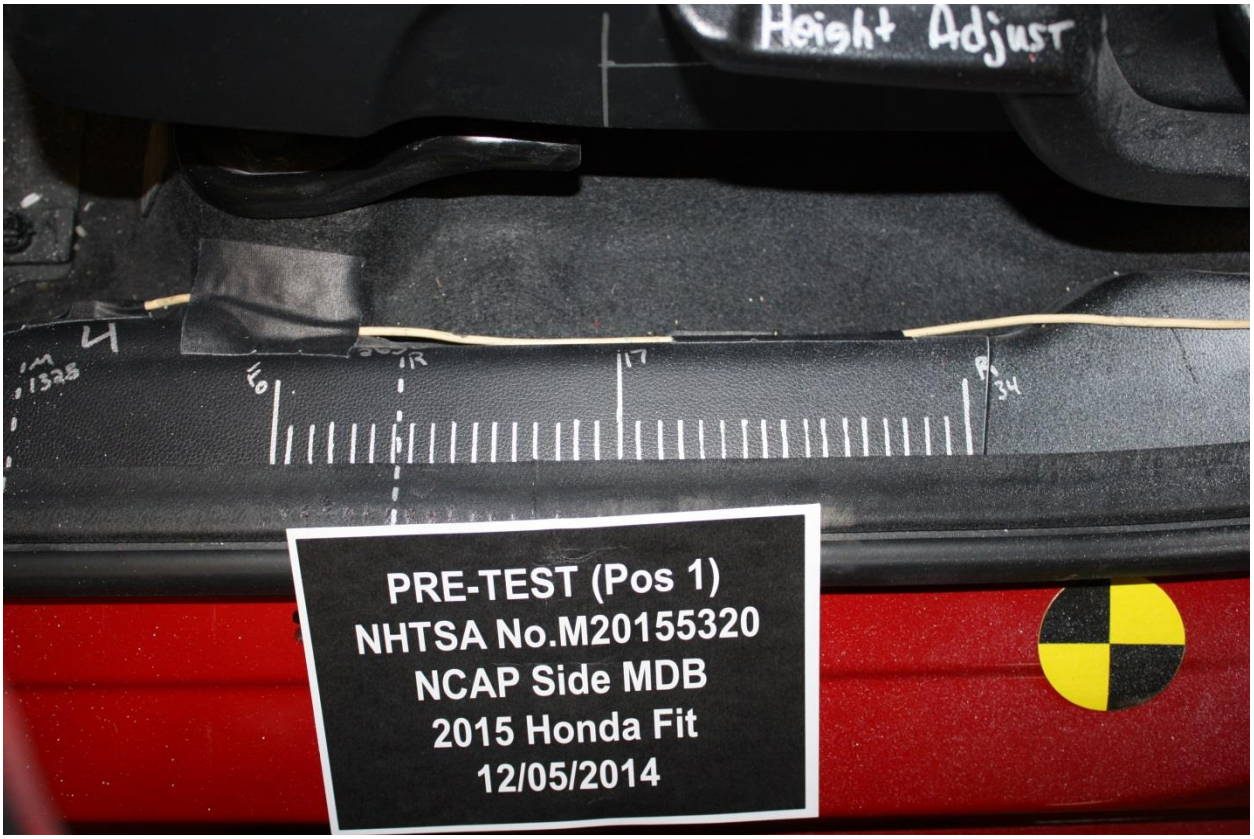

Figure A-39: Pre-test Close-Up Left Side View of Driver Seat Track

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

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

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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

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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

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

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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

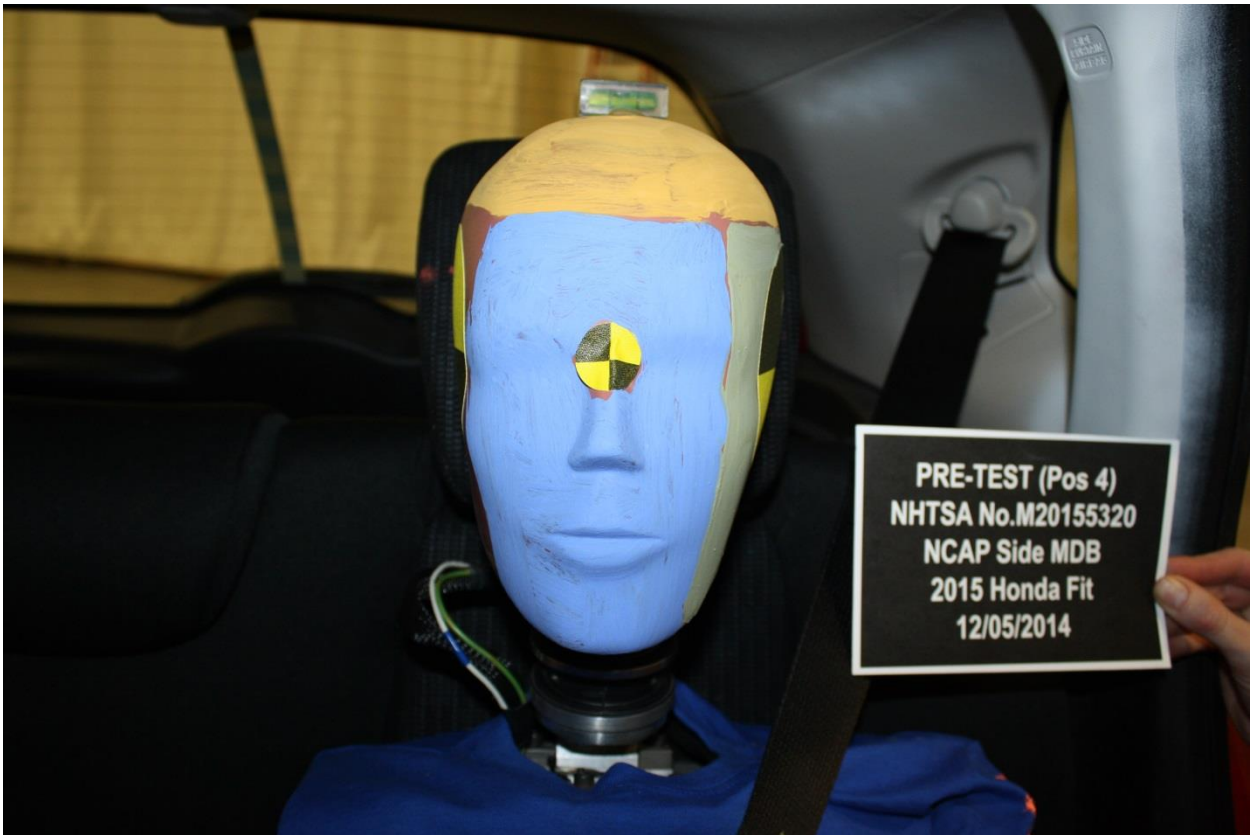

Figure A-59: Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head Restraint

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

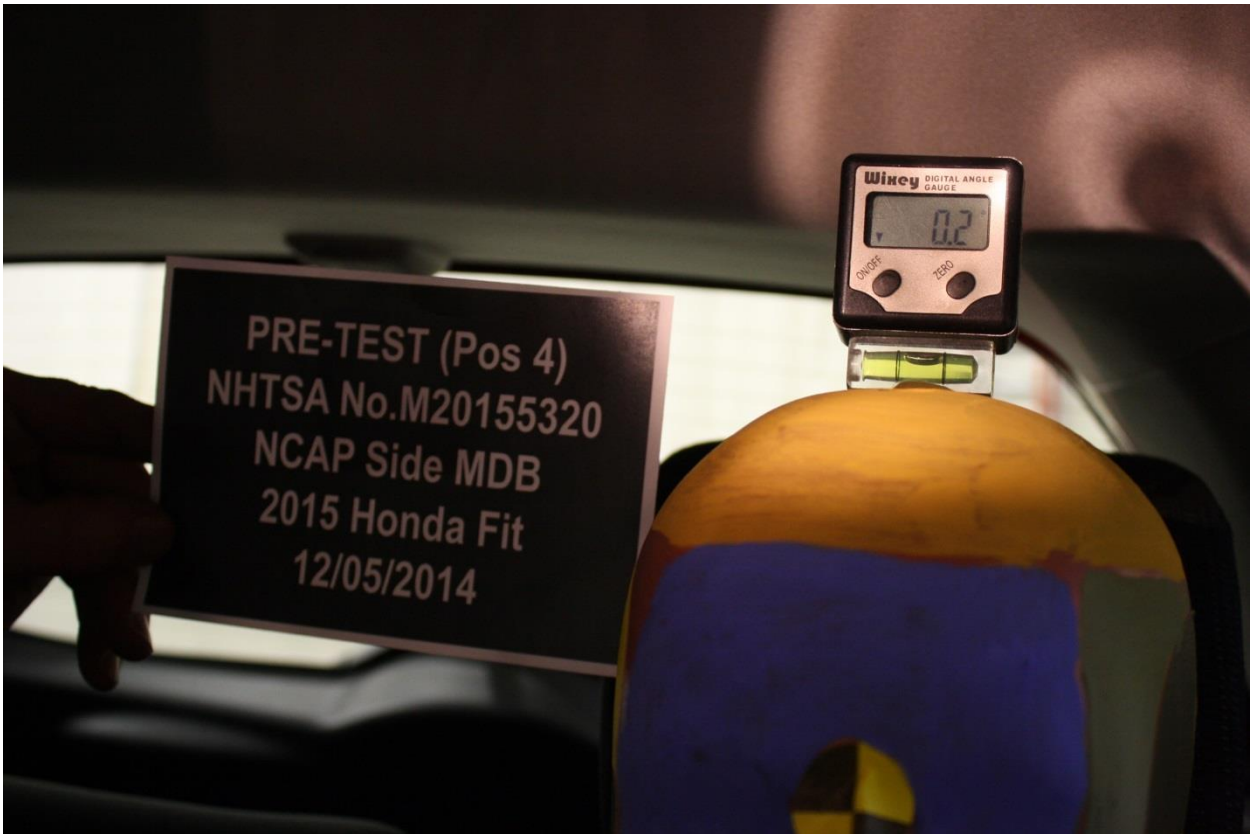

Figure A-63: Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level

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

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

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

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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

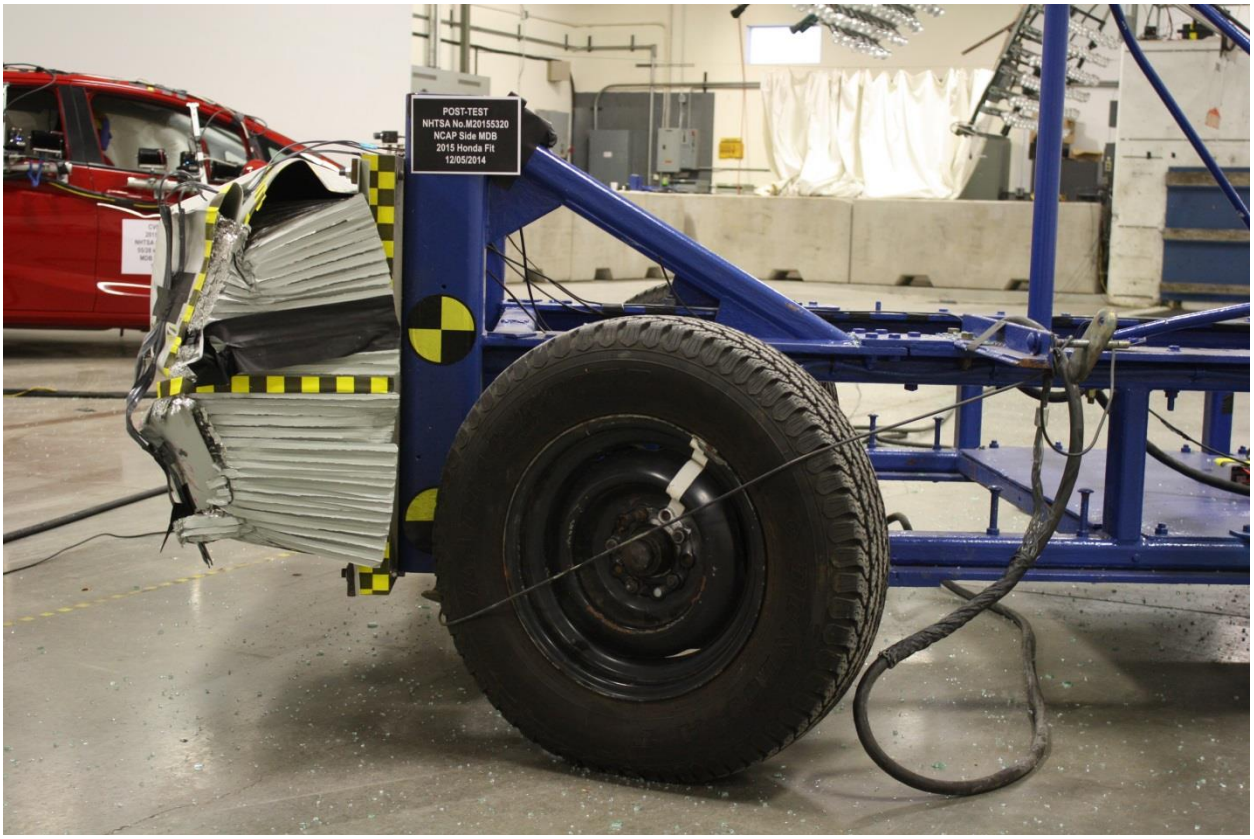


Figure A-89: Post-Test Left Side View of MDB Impactor Face

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

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

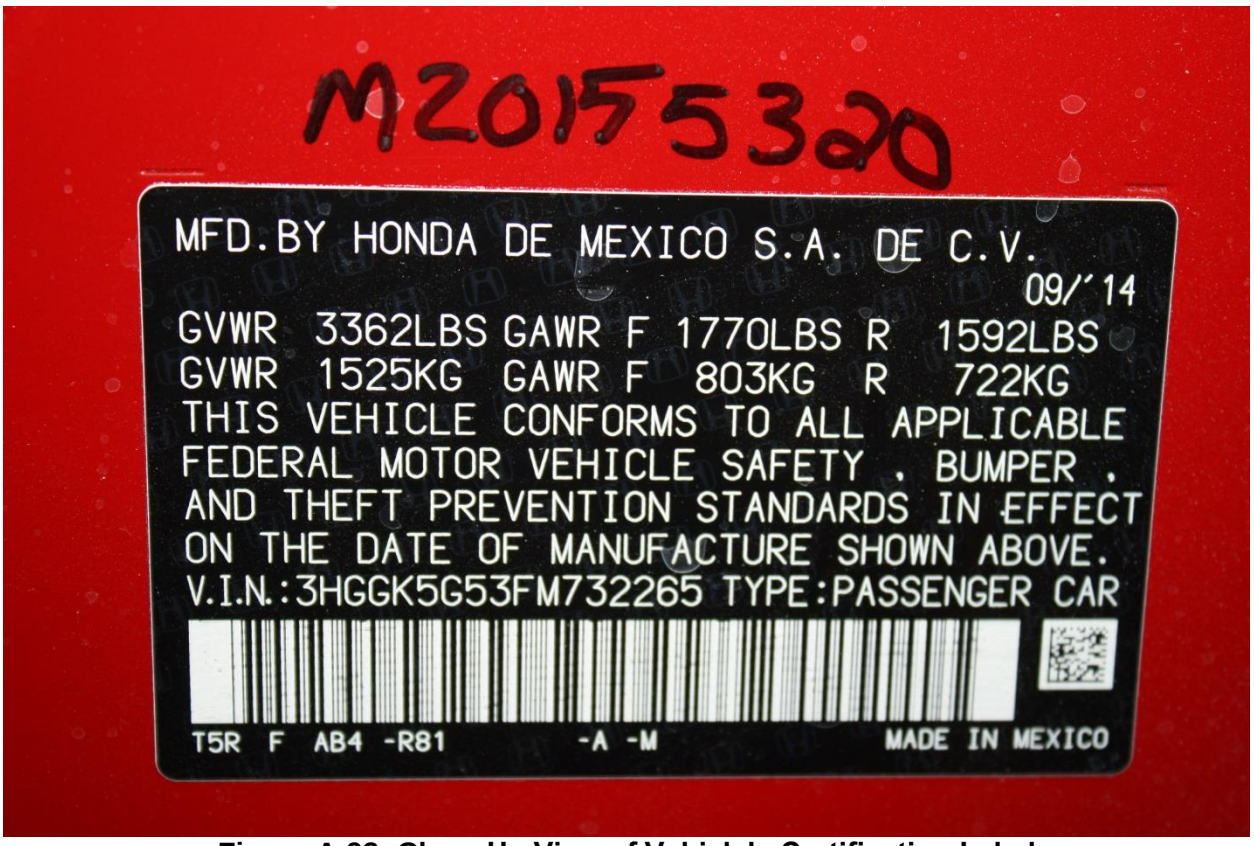


Figure A-92: Close-Up View of Vehicle's Certification Label

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

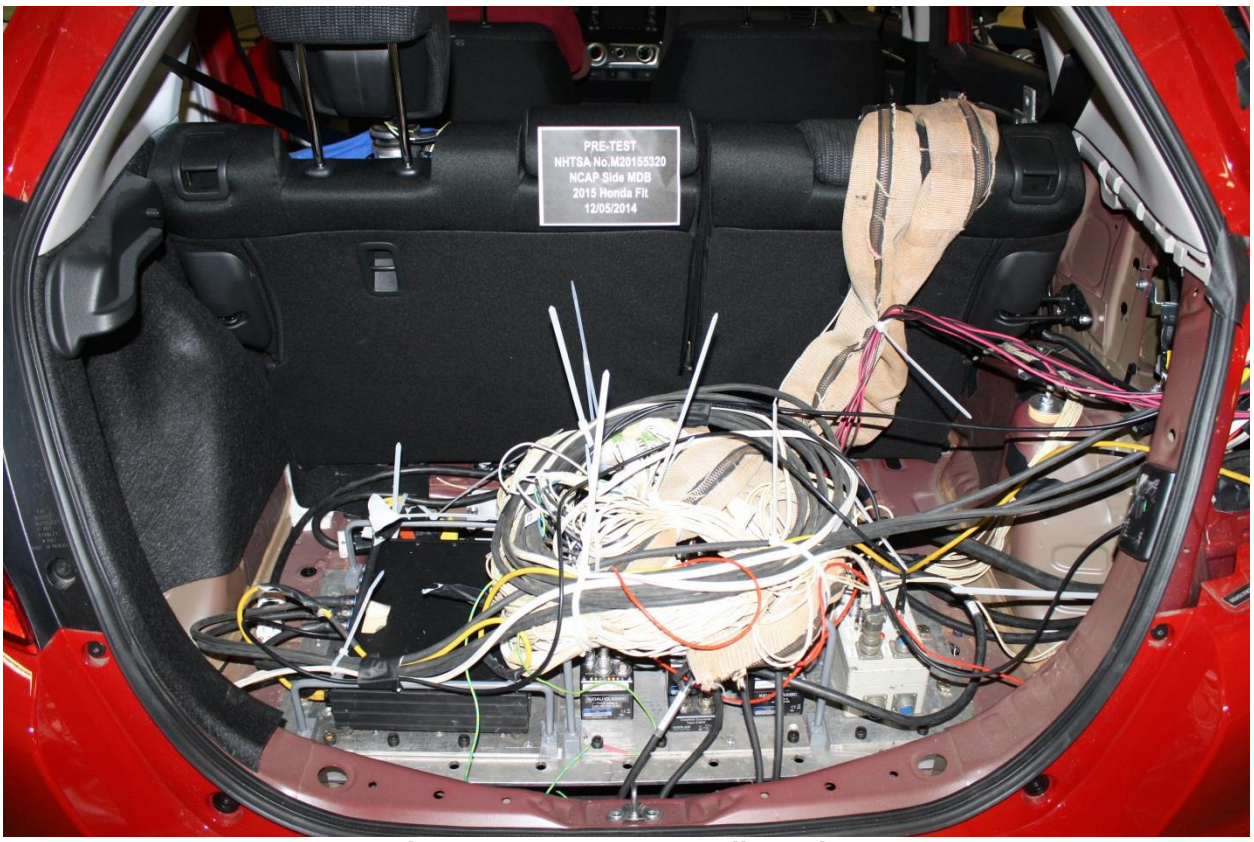


Figure A-94: Pre-Test Ballast View

Figure A-95: Post-Test Primary and Redundant Speed Trap Read-Out

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

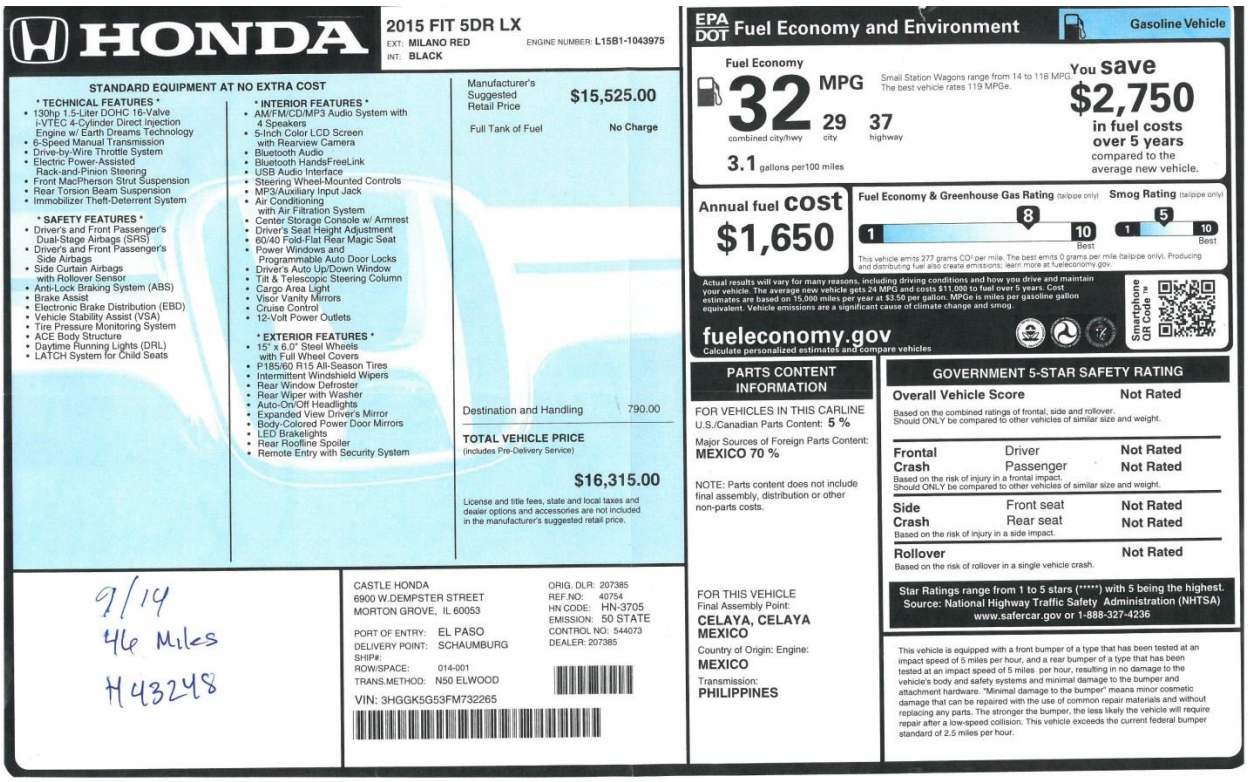
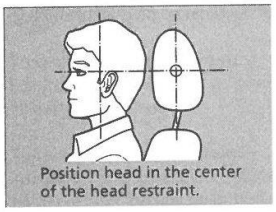


Figure A-102: Monroney Label

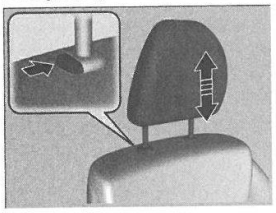
Adjusting the Head Restraints



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

Adjusting the front head restraint positions



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

Adjusting the Head Restraints

⚠WARNING

Improperly positioning head restraints reduces their effectiveness and increases the likelihood of serious injury in a crash.

Make sure head restraints are in place and positioned properly before driving.

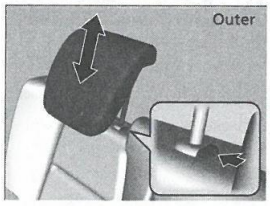
In order for the head restraint system to work properly:

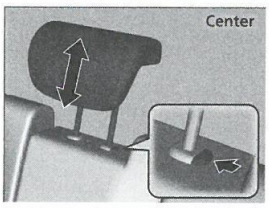
- Do not hang any items on the head restraints, or from the restraint legs.
- Do not place any objects between an occupant and the seat-back.
- Install each restraint in its proper location.

Continued

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

Changing the Rear Seat Head Restraint Positions





A passenger sitting in a back seating position should adjust the height of their head restraint to an appropriate position before the vehicle begins moving.

To raise the head restraint:
Pull it upward.

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

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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2	Driver Head Acceleration (Y) Primary vs. Time	B-5
3	Driver Head Acceleration (Z) Primary vs. Time	B-5
4	Driver Head Resultant Acceleration Primary vs. Time	B-5
5	Driver Upper Thorax Rib Deflection (Y) vs. Time	B-6
6	Driver Middle Thorax Rib Deflection (Y) vs. Time	B-6
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
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14	Passenger Head Acceleration (X) vs. Time Primary	B-8
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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)

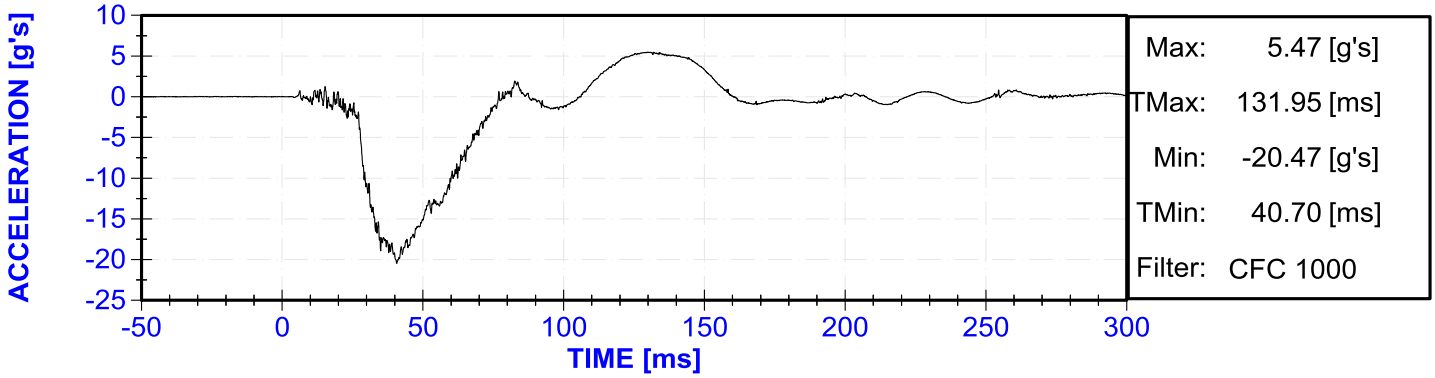
Vehicle Instrumentation Data

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)

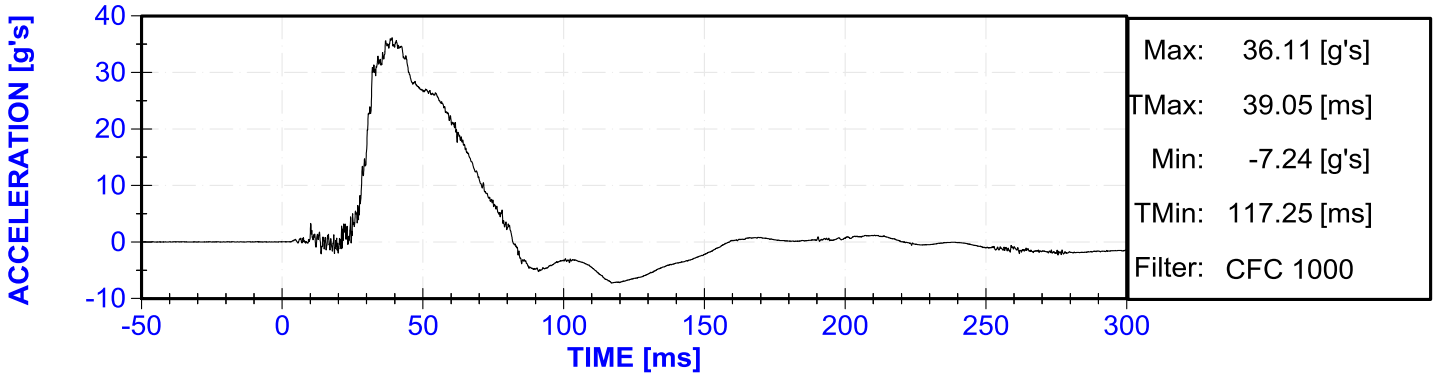
MDB Instrumentation Data

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

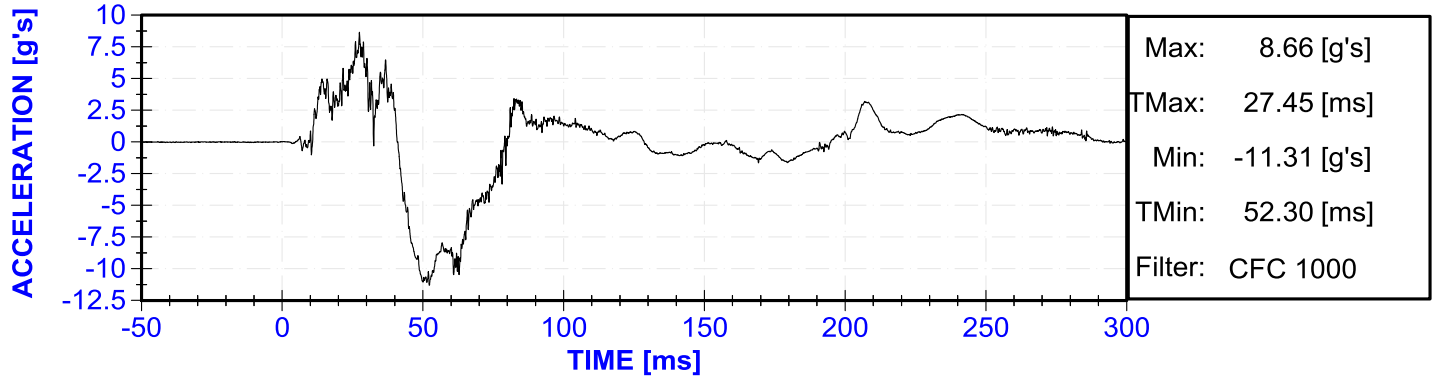
Driver Head Acceleration (X) Primary vs. Time



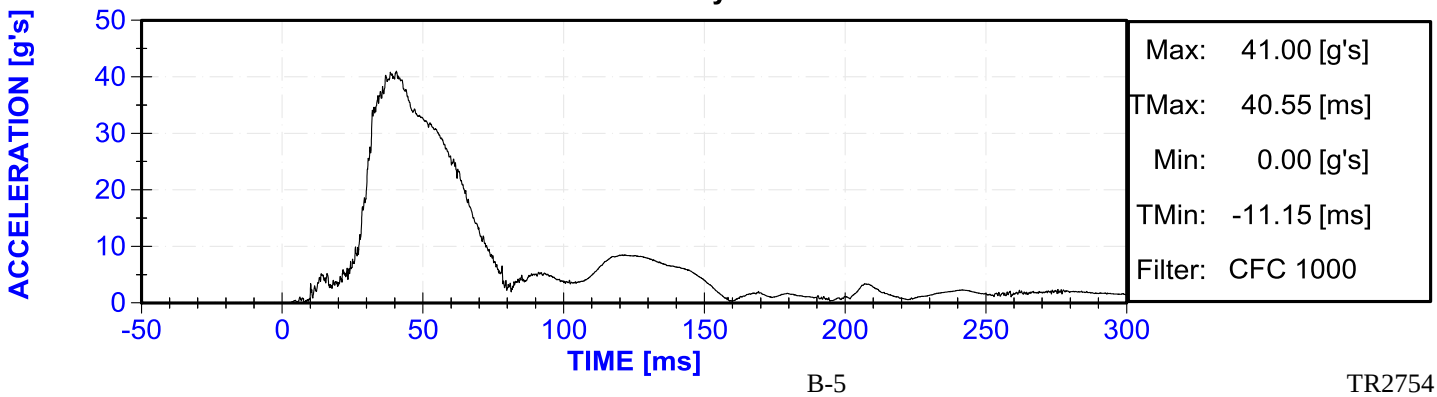
Driver Head Acceleration (Y) Primary vs. Time



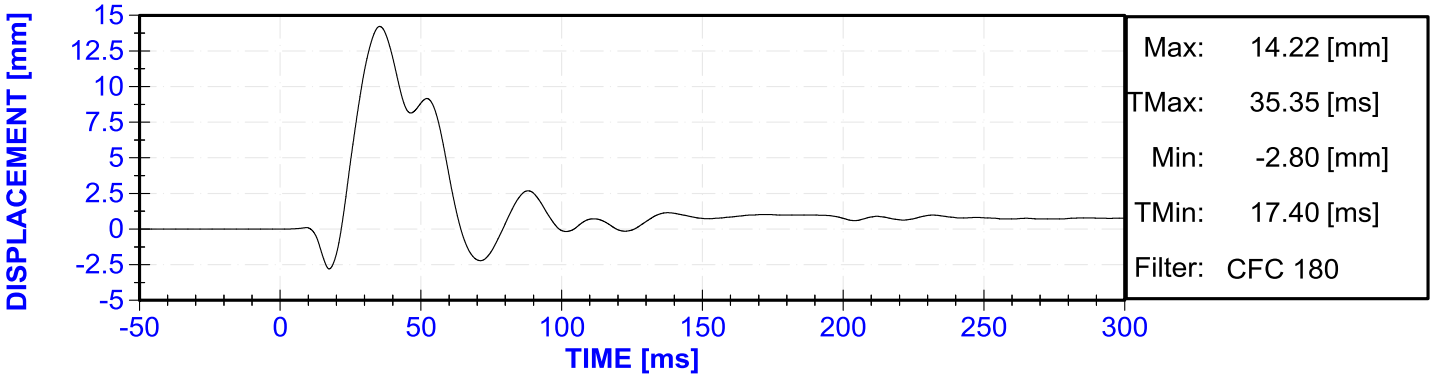
Driver Head Acceleration (Z) Primary vs. Time



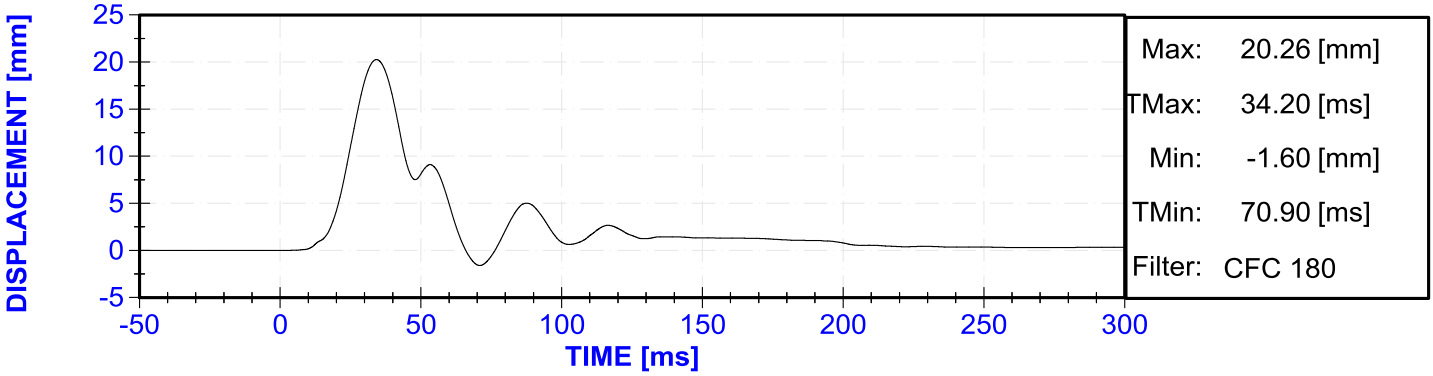
Driver Head Resultant Acceleration Primary vs. Time



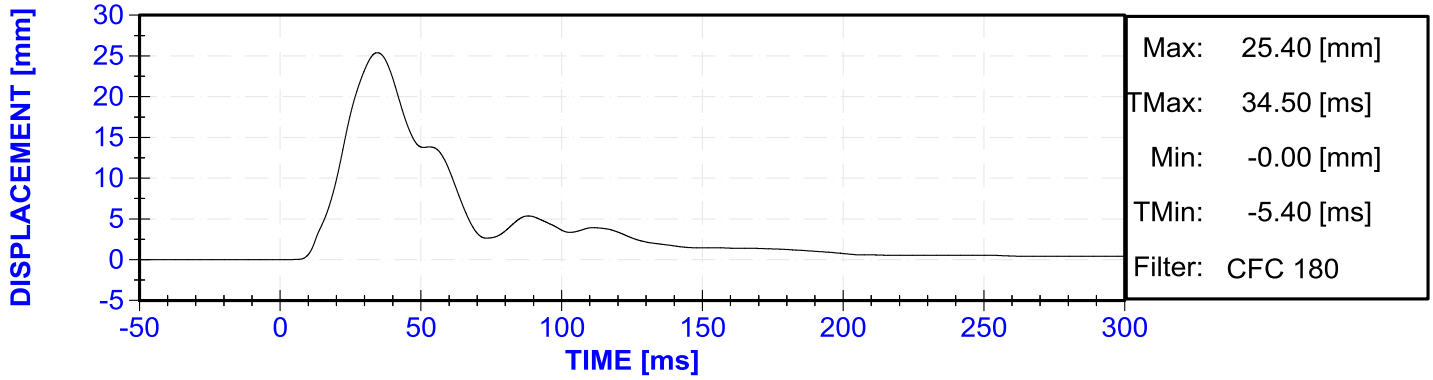
Driver Upper Thorax Rib Deflection (Y) vs. Time



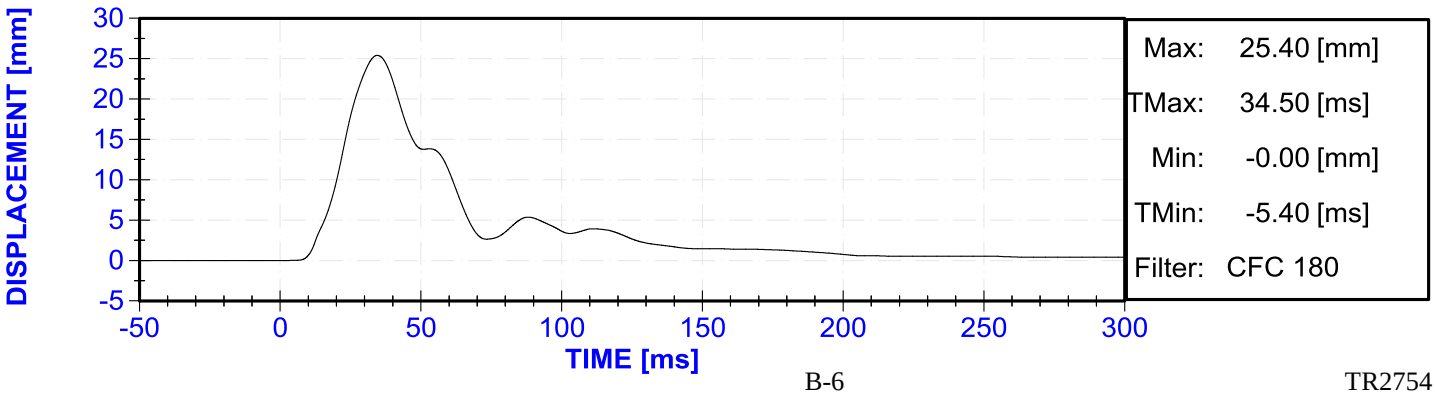
Driver Middle Thorax Rib Deflection (Y) vs. Time



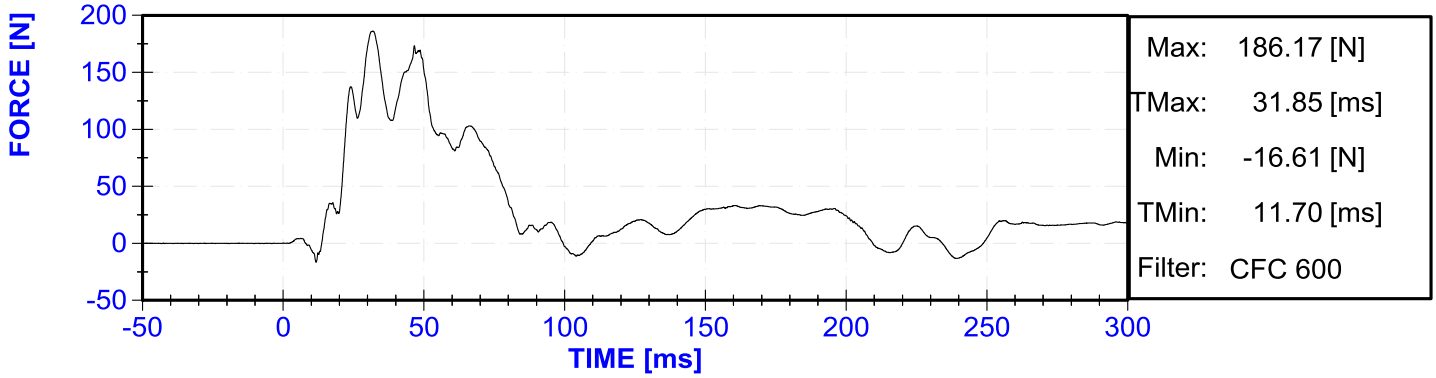
Driver Lower Thorax Rib Deflection (Y) vs. Time



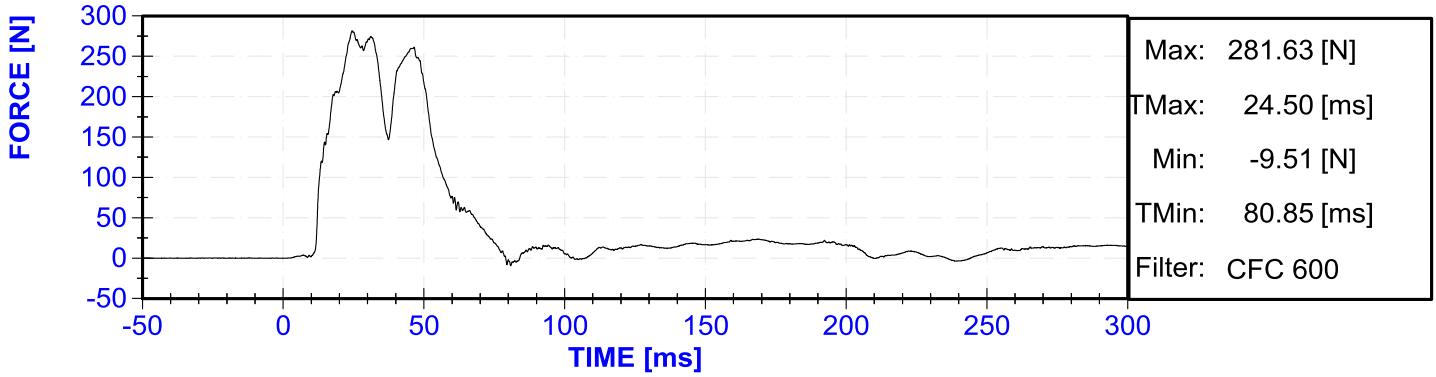
Driver Thorax Rib Deflection Maximum vs. Time



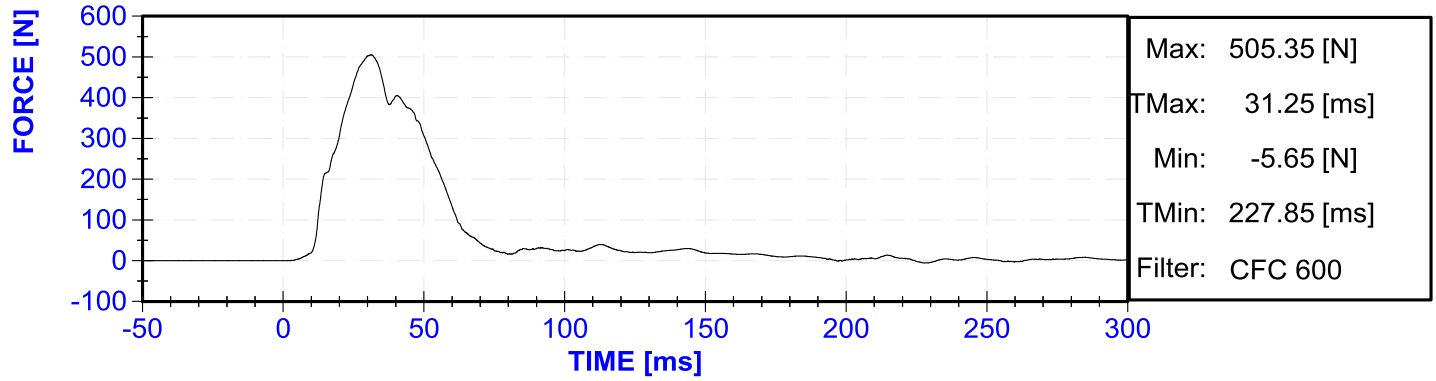
Driver Anterior Abdominal Force (Y) vs. Time



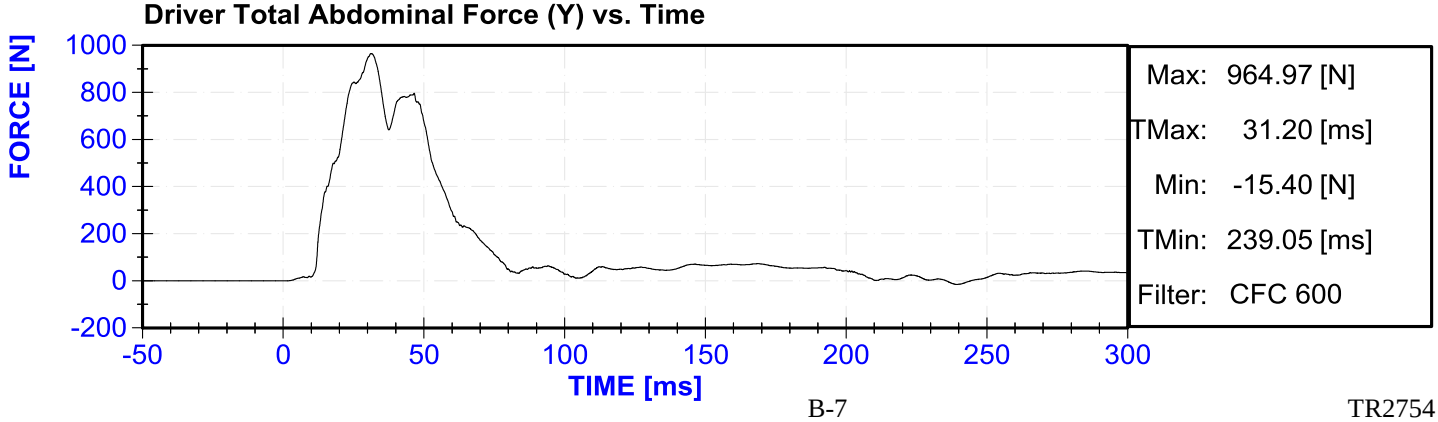
Driver Middle Abdominal Force (Y) vs. Time



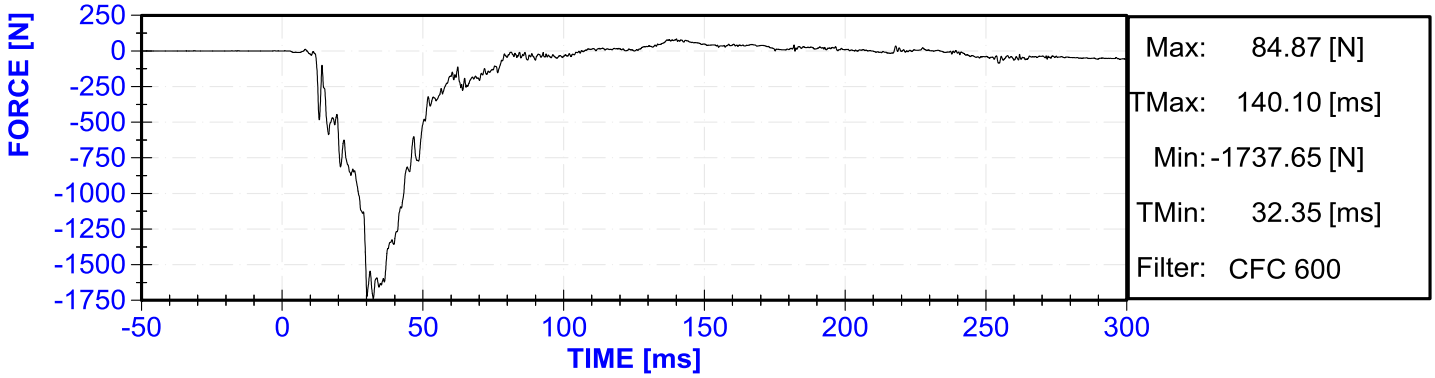
Driver Posterior Abdominal Force (Y) vs. Time



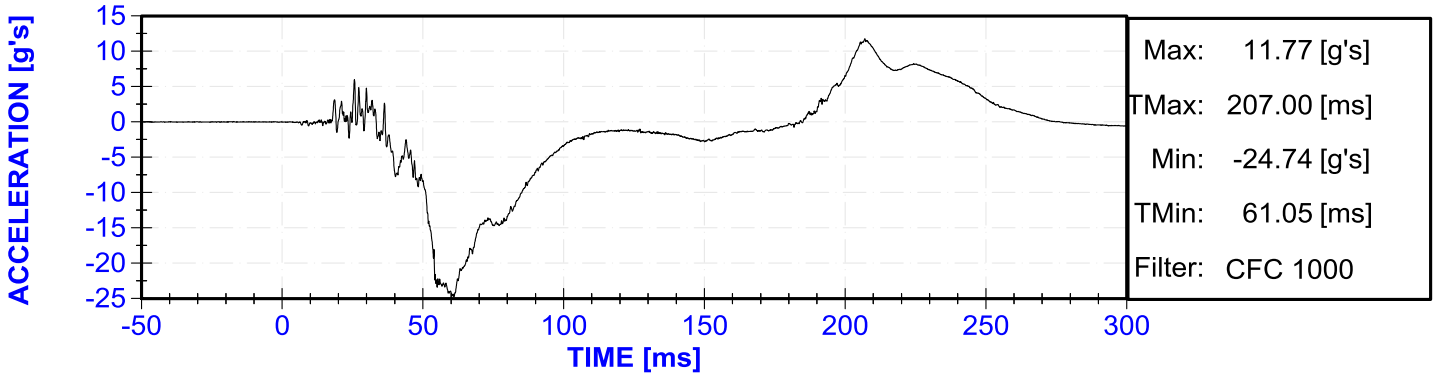
Driver Total Abdominal Force (Y) vs. Time



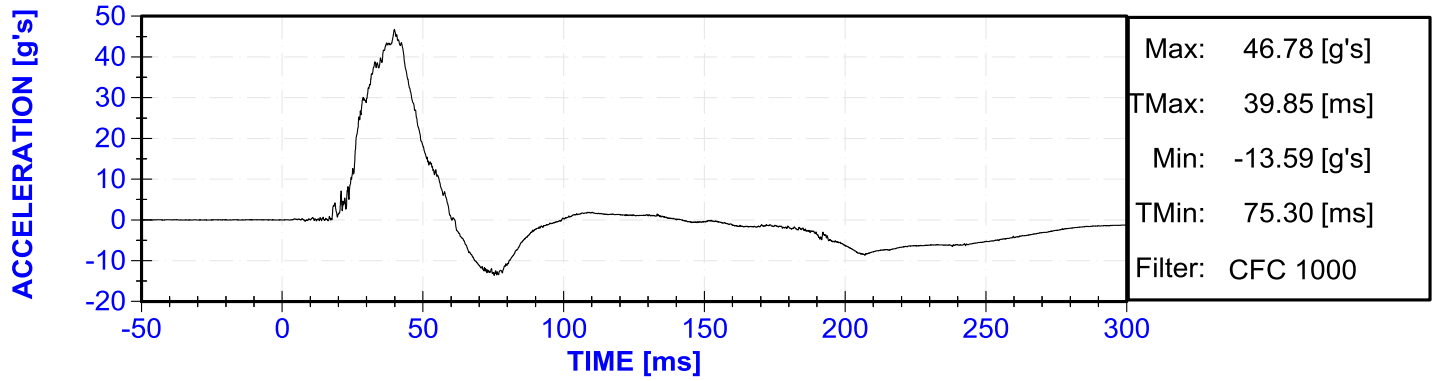
Driver Pubic Symphysis Force (Y) vs. Time



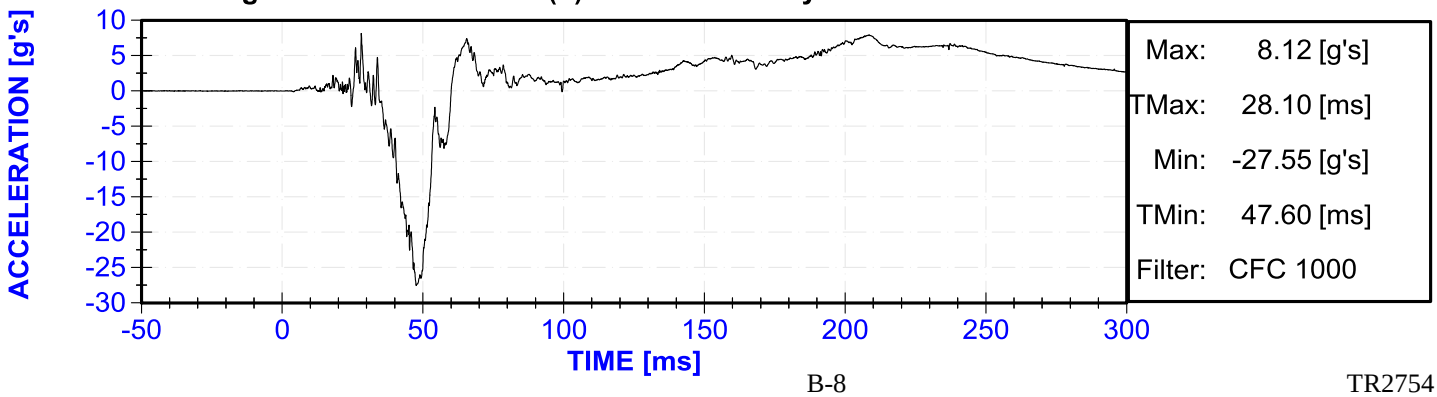
Passenger Head Acceleration (X) vs. Time Primary



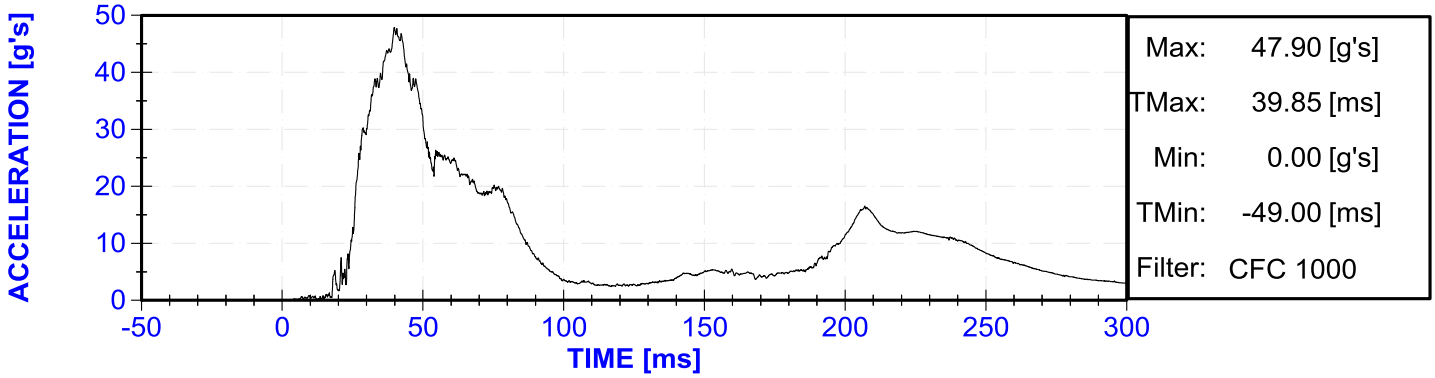
Passenger Head Acceleration (Y) vs. Time Primary



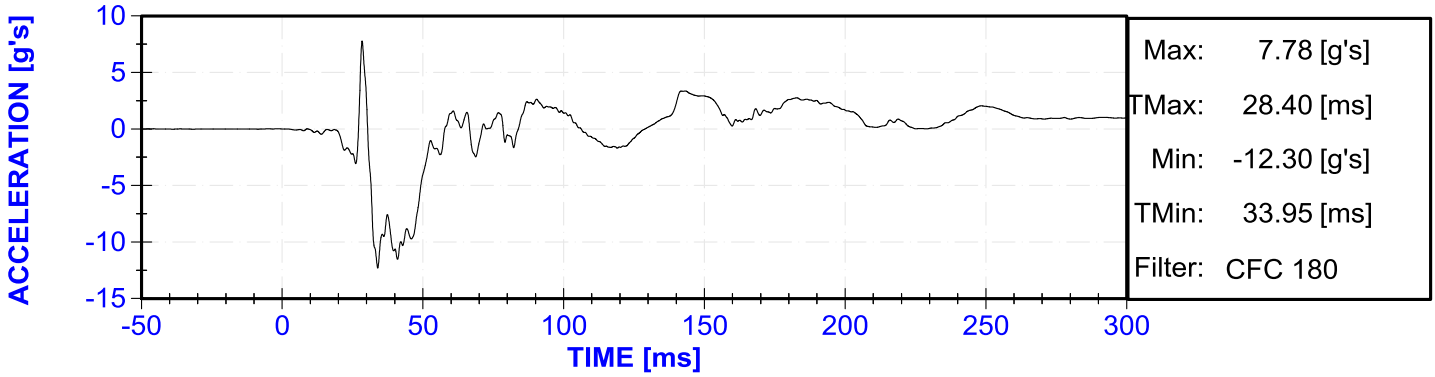
Passenger Head Acceleration (Z) vs. Time Primary



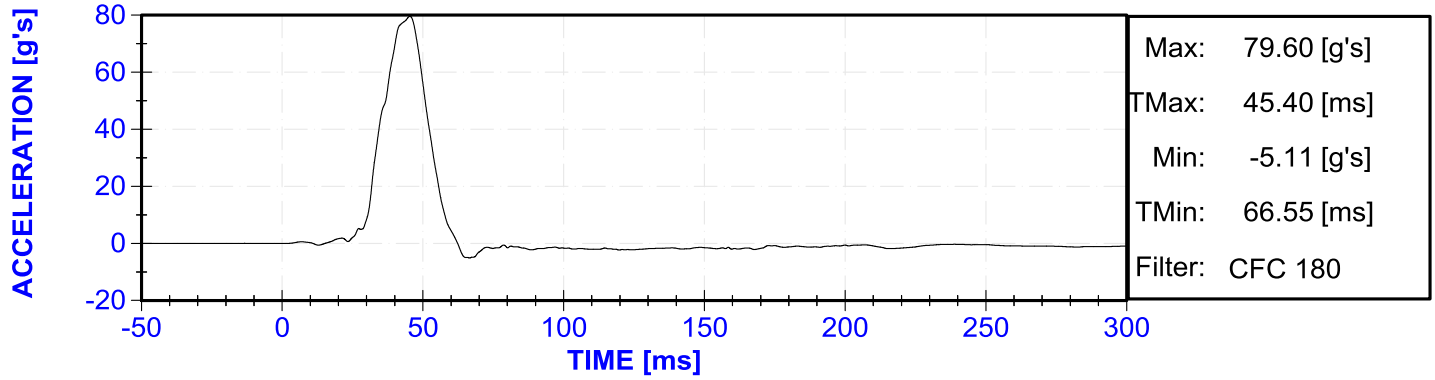
Passenger Head Resultant Acceleration Primary vs. Time



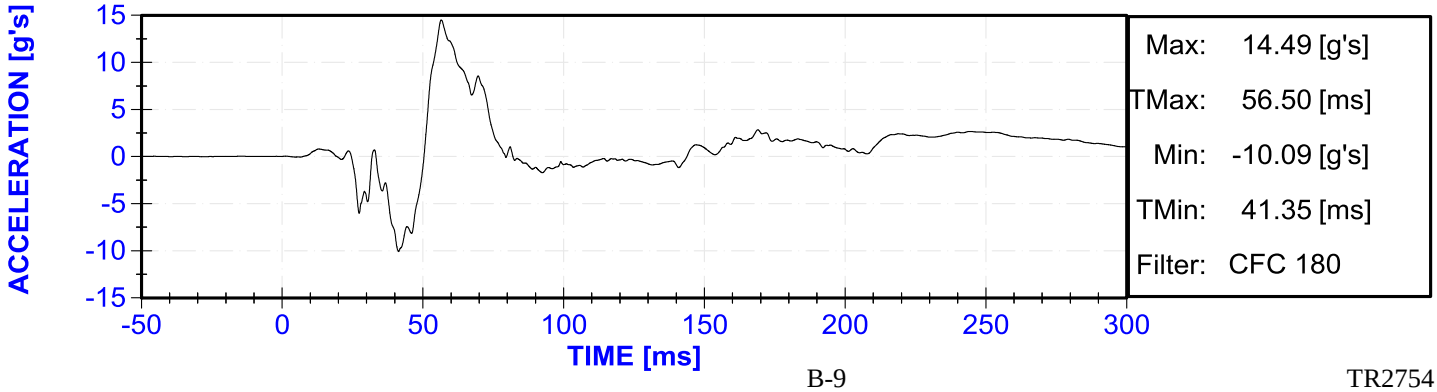
Passenger Lower Spine T12 Acceleration (X) vs. Time



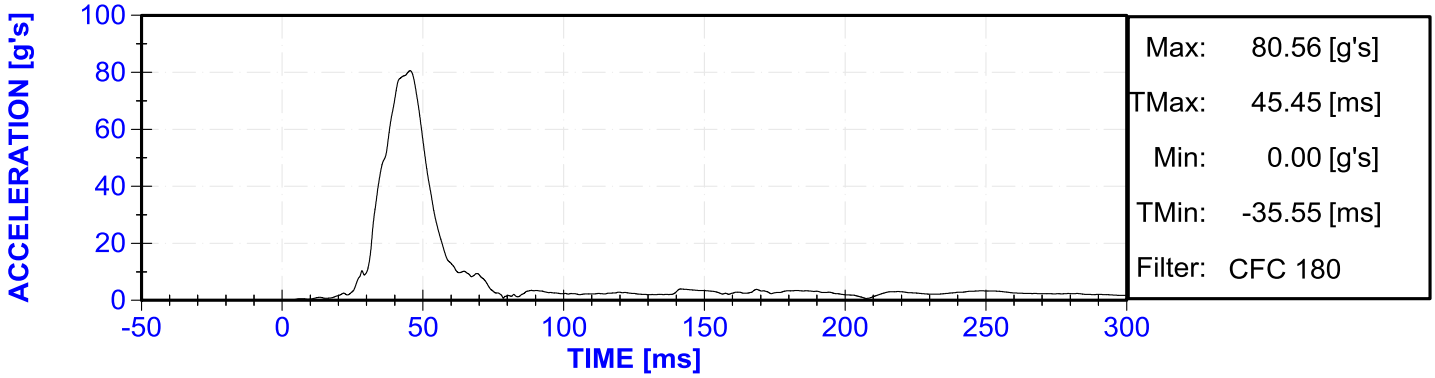
Passenger Lower Spine T12 Acceleration (Y) vs. Time



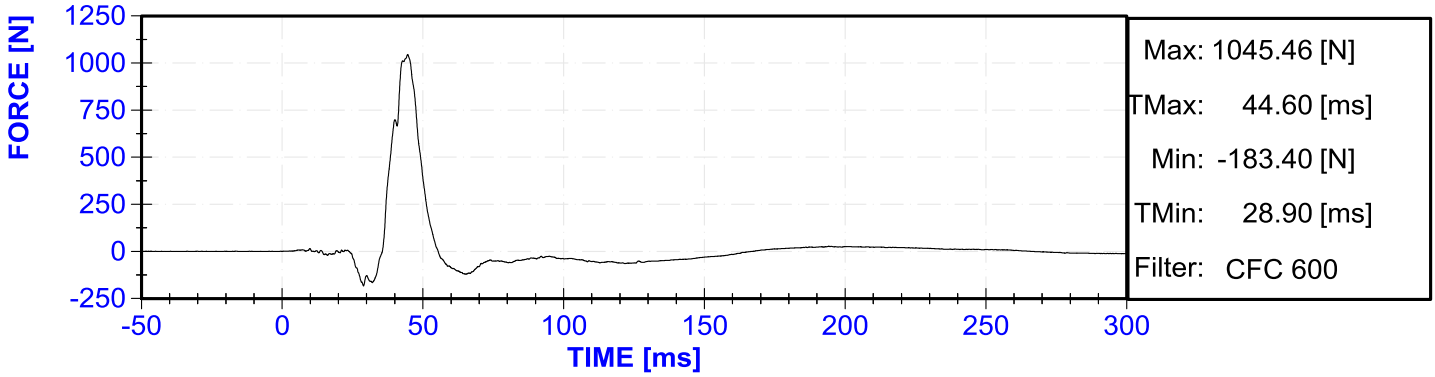
Passenger Lower Spine T12 Acceleration (Z) vs. Time



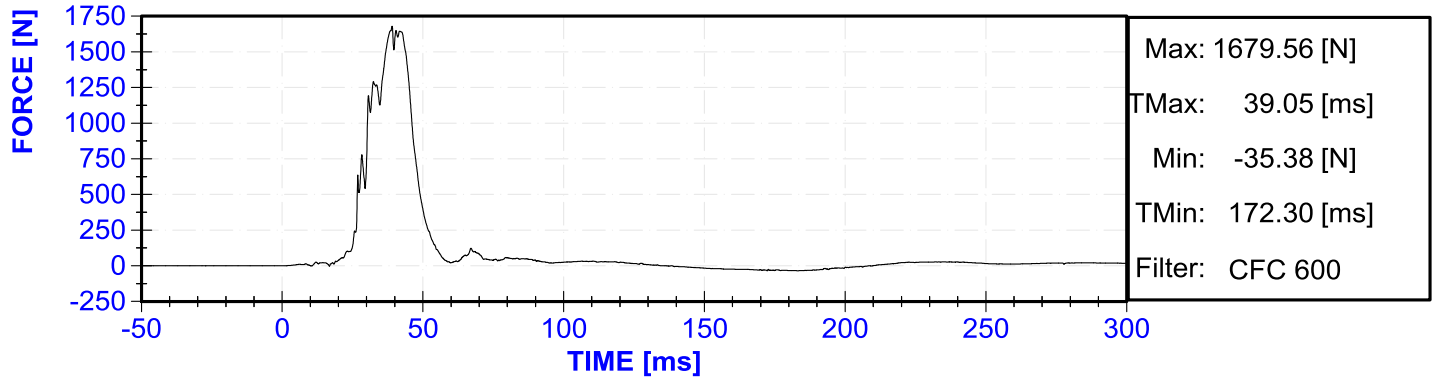
Passenger Lower Spine T12 Resultant Acceleration vs. Time



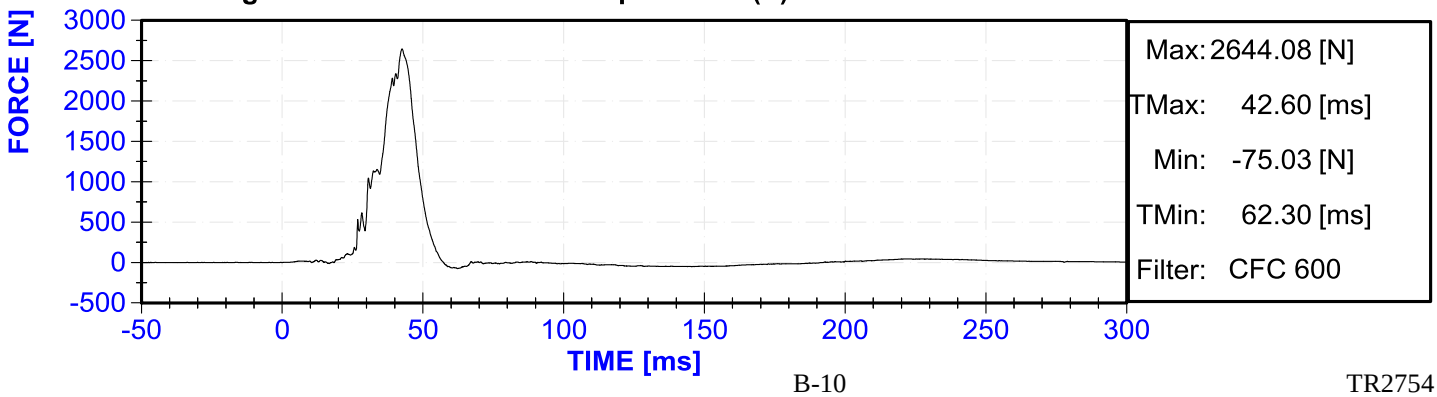
Passenger Iliac Force on Impact Side (Y) vs. Time



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

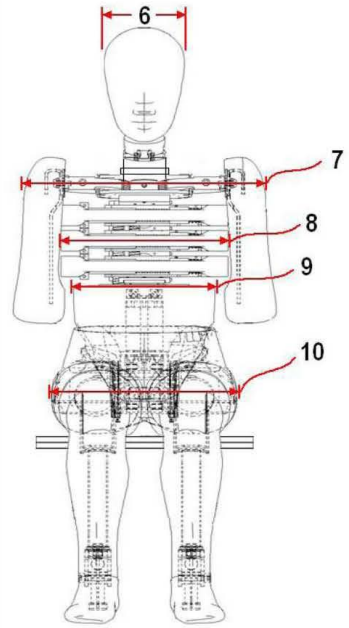
SERIAL NO: F034

(CONFIGURED FOR LEFT SIDE IMPACT)

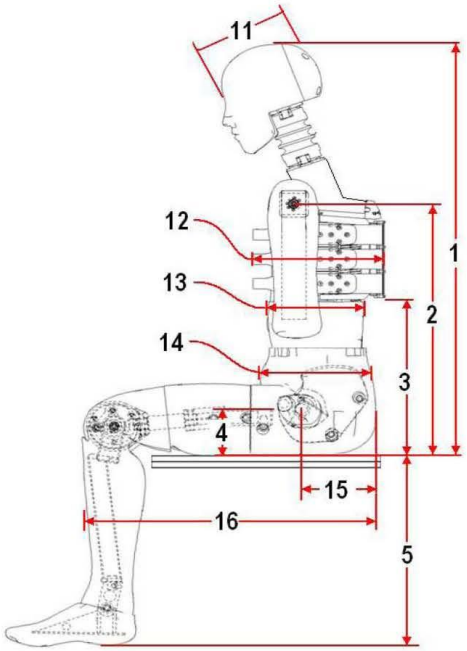
External Measurements - EuroSID-2re

Technician: M. Geesey Date: 11/21/2014

Dummy Serial Number: F034



FRONT VIEW



SIDE VIEW

Dim. No.	Description	Specification (mm)		Result (mm)	Pass/Fail
1	Sitting Height	900	918	910	Pass
2	Seat to Shoulder Joint	558	572	562	Pass
3	Seat to Lower Face of Thoracic Spine Box	346	356	348	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	154	Pass
7	Shoulder/Arm Width	461	479	478	Pass
8	Thorax Width	322	332	326	Pass
9	Abdomen Width	273	287	283	Pass
10	Pelvis Lap Width	359	373	367	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	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 Left**	Test Date:	**11/20/2014**
		Test Time:	**10:32:07 AM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**22.10**	deg C	P
Humidity	10	--	70	**17.00**	%RH	P
Resultant Acceleration	125	--	155	**128.9**	G's	P
Oscillation	0	--	15	**2.0**	%	P
Fore-Aft Accelerometer	-15	--	15	**-14.4**	G's	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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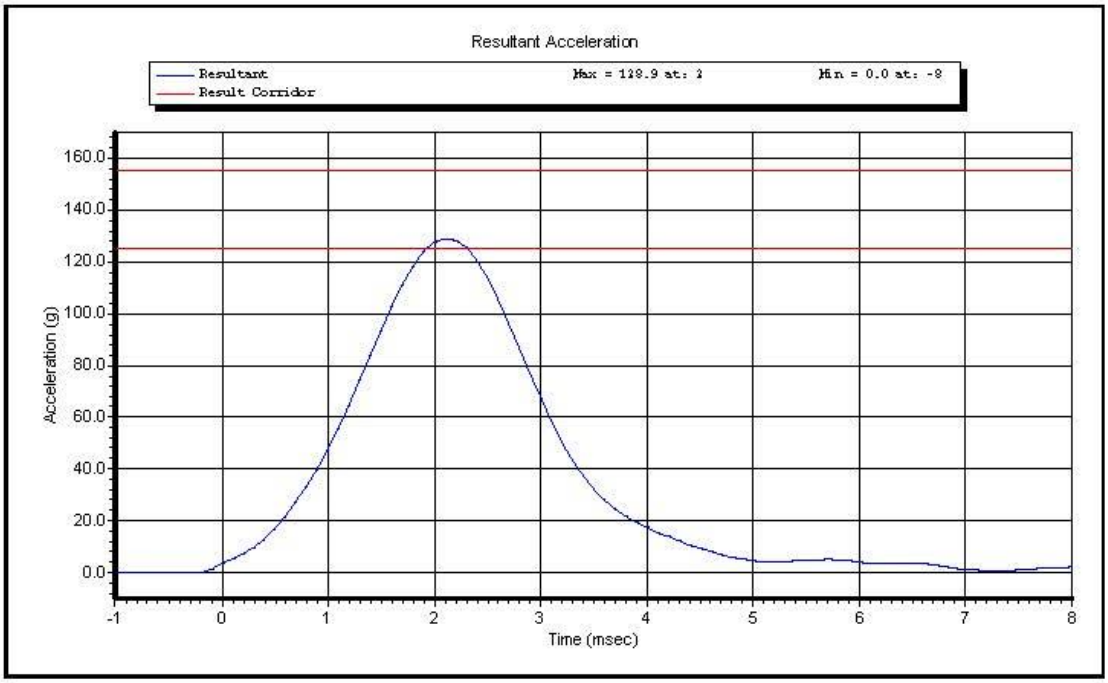
Test Name:	**Head Drop**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Head Drop Left** Test Time: **10:32:07 AM** Test Date: **11/20/2014**

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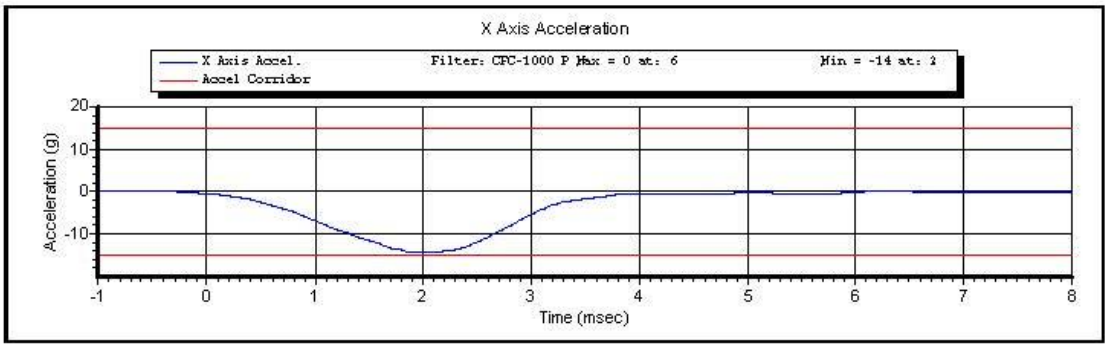

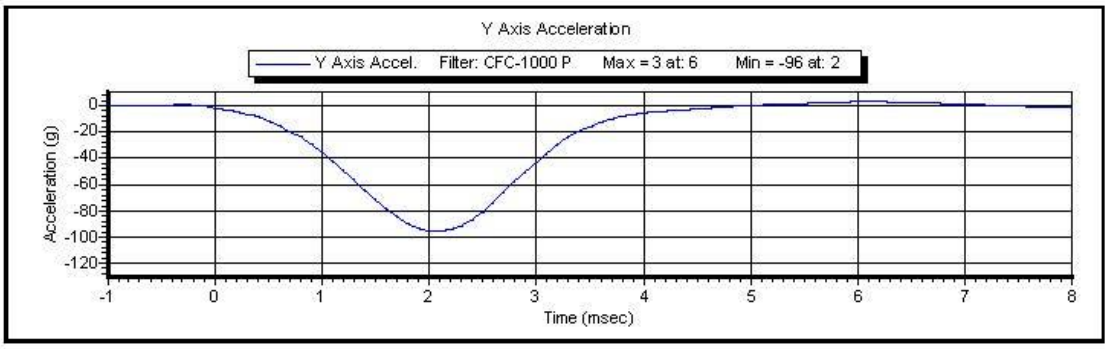

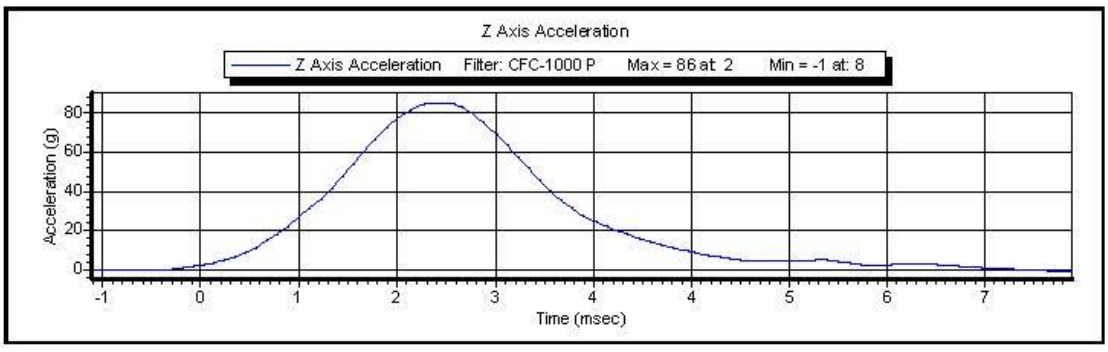

Test ID: **Head Drop Left** Test Time: **10:32:07 AM** Test Date: **11/20/2014**

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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:	**11/20/2014**
		Test Time:	**11:37:17 AM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**22.10**	deg C	P
Humidity	10	--	70	**17.00**	%RH	P
Velocity	3.3	--	3.5	**3.35**	m/s	P
Maximum Neck Flexion Angle	49	--	59	**50.7**	degrees	P
Time At Maximum Neck Flexion	54	--	66	**59.5**	ms	P
Decay Time to Zero Degrees	53	--	88	**54.9**	ms	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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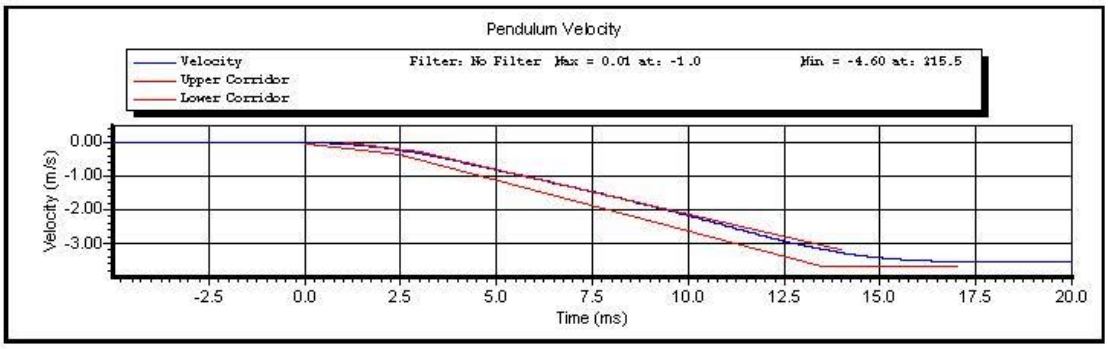
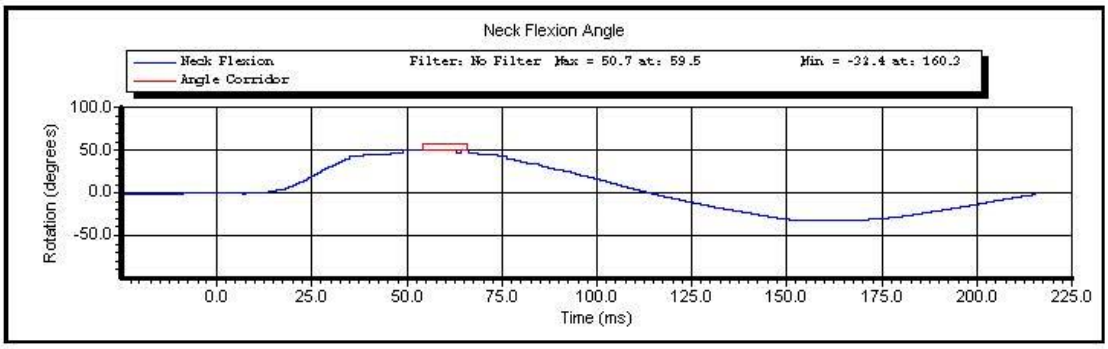
Test Name:	**Neck Flexion**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





Test ID: **Neck Flexion** Test Time: **11:37:17 AM** Test Date: **11/20/2014**

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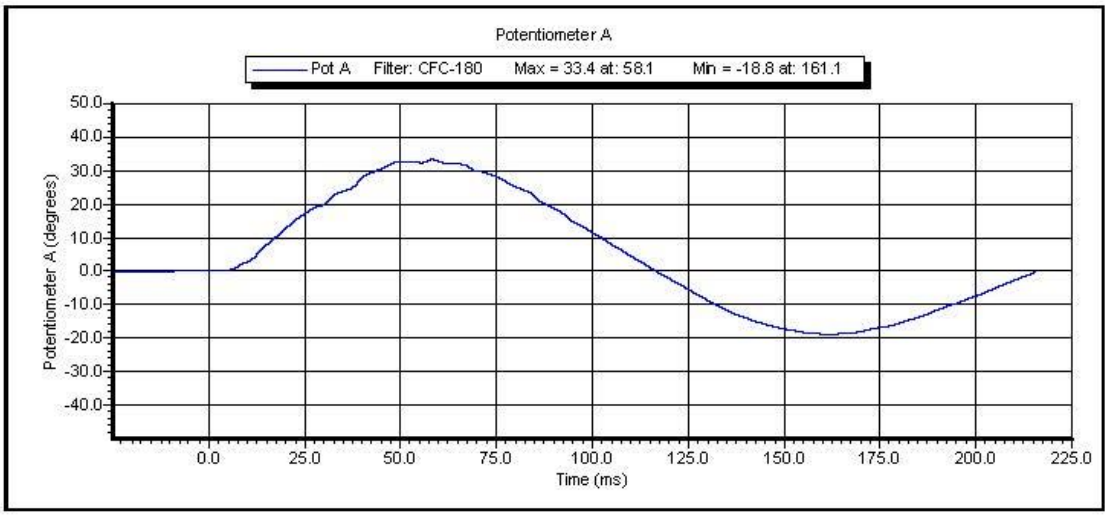

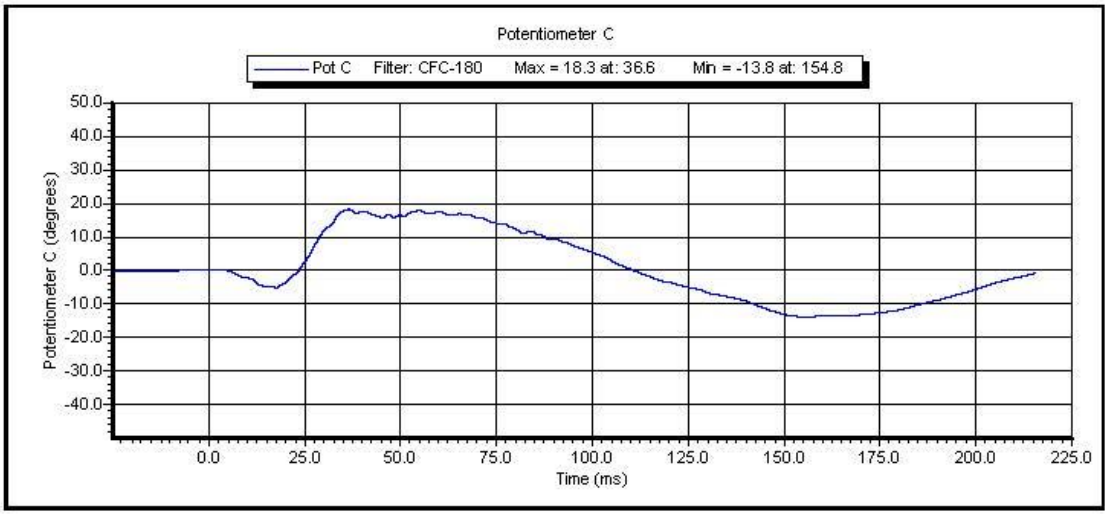

Test ID: **Neck Flexion** Test Time: **11:37:17 AM** Test Date: **11/20/2014**

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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:	**11/21/2014**
		Test Time:	**7:23:37 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.60**	deg C	P
Humidity	10	--	70	**17.40**	%RH	P
Velocity	4.2	--	4.4	**4.25**	m/s	P
Pendulum Acceleration	-10.5	--	-7.5	**-9.86**	G's	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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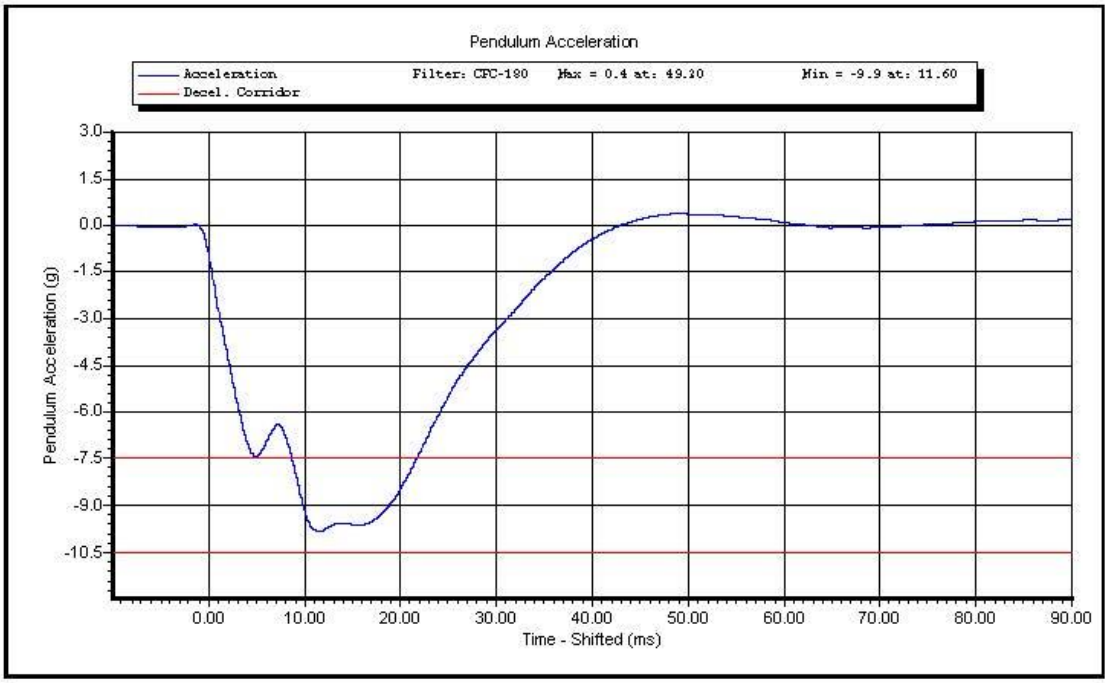
Test Name:	**Shoulder Impact**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Shoulder Impact** Test Time: **7:23:37 PM** Test Date: **11/21/2014**

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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:	**11/20/2014**
		Test Time:	**1:56:01 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.60**	deg C	P
Humidity	10	--	70	**17.70**	%RH	P
Rib Displacement	-51	--	-46	**-46.3**	mm	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
Honeywell	MLT-38000	DS-183GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P32139	5/13/2014

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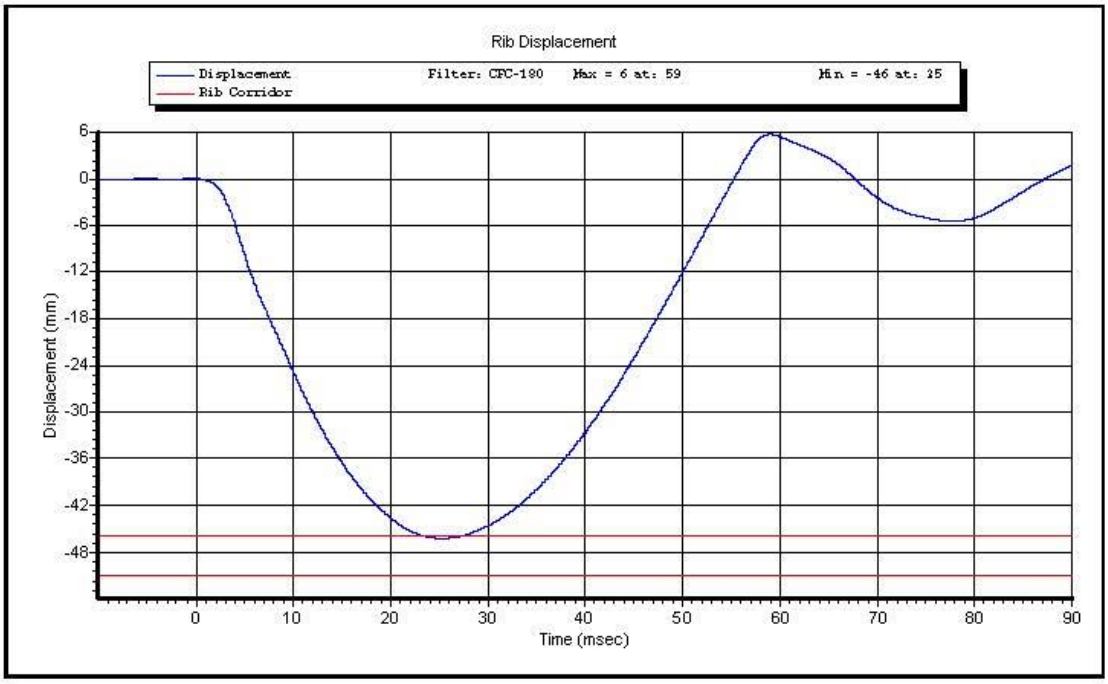
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**4.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Rib Drop Upper** Test Time: **1:56:01 PM** Test Date: **11/20/2014**

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Calspan

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**	Test Date:	**11/20/2014**
		Test Time:	**2:06:37 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.60**	deg C	P
Humidity	10	--	70	**17.80**	%RH	P
Rib Displacement	-40	--	-36	**-36.9**	mm	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
Honeywell	MLT-38000	DS-183GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P32139	5/13/2014

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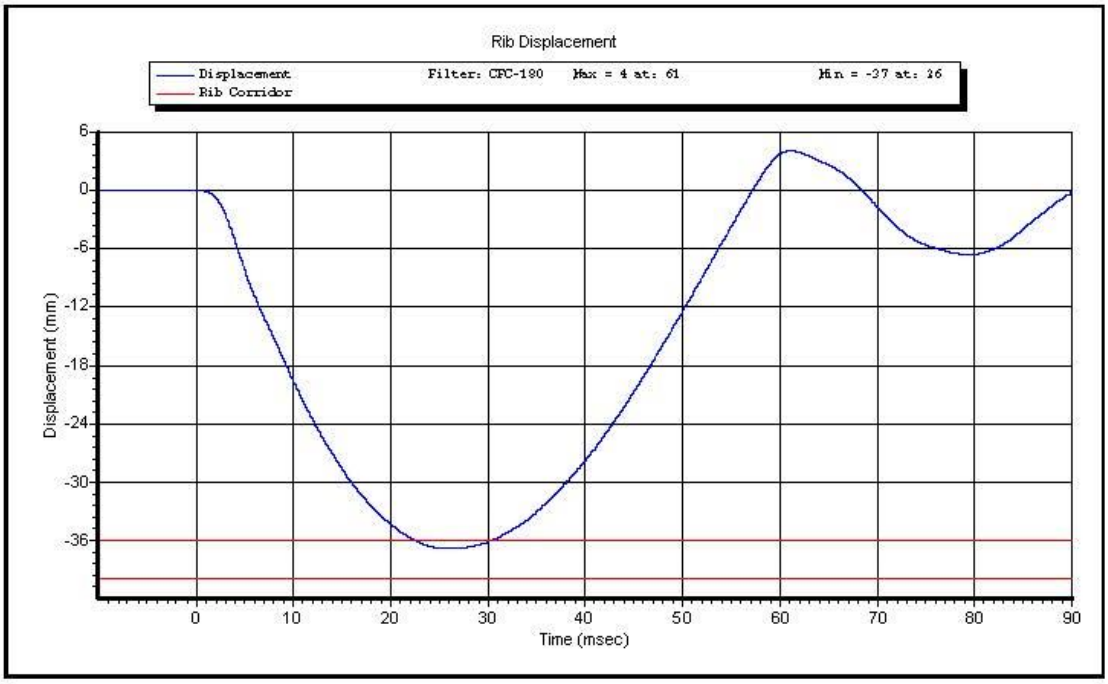
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**3.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Rib Drop Upper** Test Time: **2:06:37 PM** Test Date: **11/20/2014**

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Calspan

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**	Test Date:	**11/20/2014**
		Test Time:	**1:22:52 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.90**	deg C	P
Humidity	10	--	70	**17.60**	%RH	P
Rib Displacement	-40	--	-36	**-36.1**	mm	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
Honeywell	MLT-38000	DS-184GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P32139	5/13/2014

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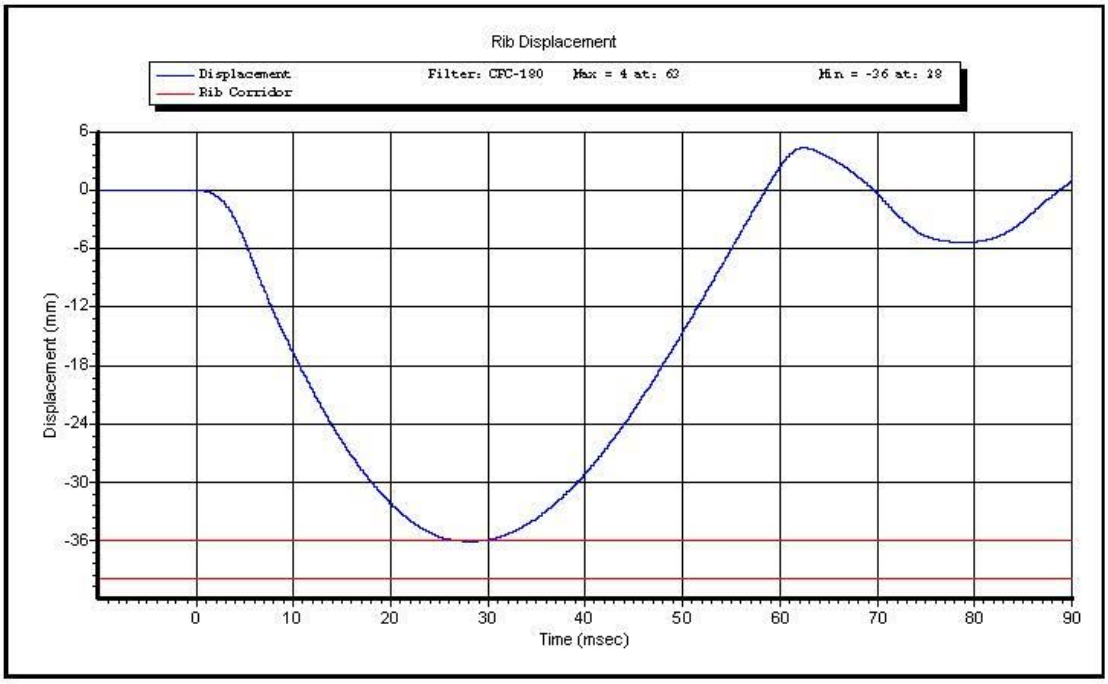
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**3.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Rib Drop Middle** Test Time: **1:22:52 PM** Test Date: **11/20/2014**

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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:	**11/20/2014**
		Test Time:	**1:30:03 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.90**	deg C	P
Humidity	10	--	70	**17.70**	%RH	P
Rib Displacement	-51	--	-46	**-47.5**	mm	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
Honeywell	MLT-38000	DS-184GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P32139	5/13/2014

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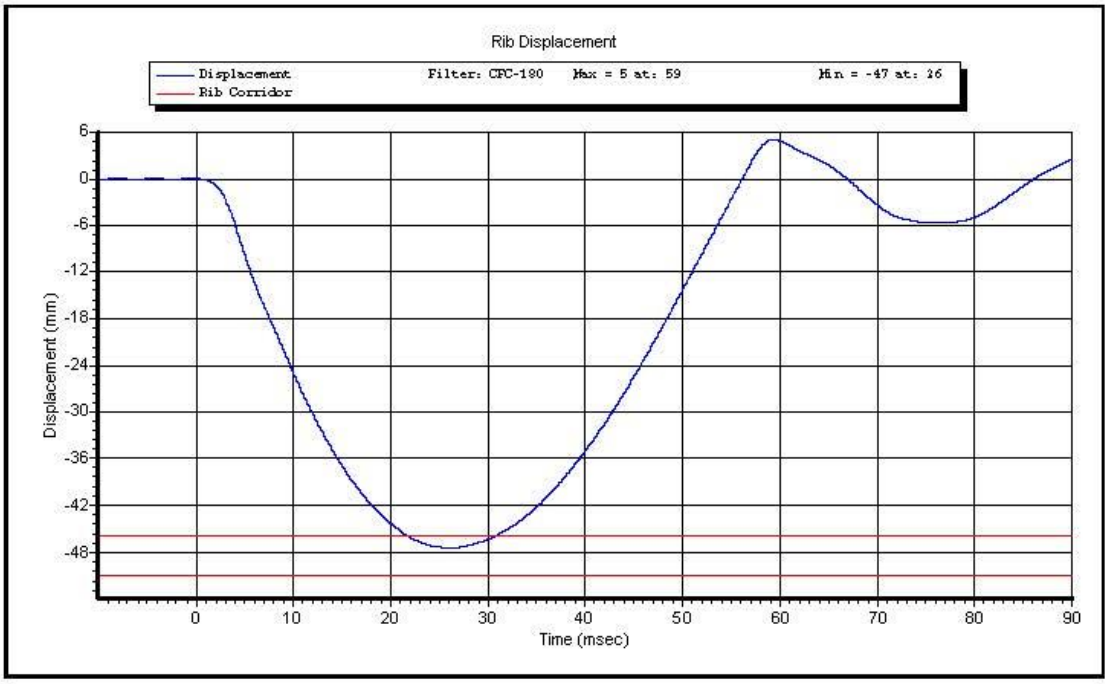
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**4.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Rib Drop Middle** Test Time: **1:30:03 PM** Test Date: **11/20/2014**

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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:	**11/20/2014**
		Test Time:	**1:05:26 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.00**	deg C	P
Humidity	10	--	70	**17.50**	%RH	P
Rib Displacement	-40	--	-36	**-36.4**	mm	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
Honeywell	MLT-38000	DS-182GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P32139	5/13/2014

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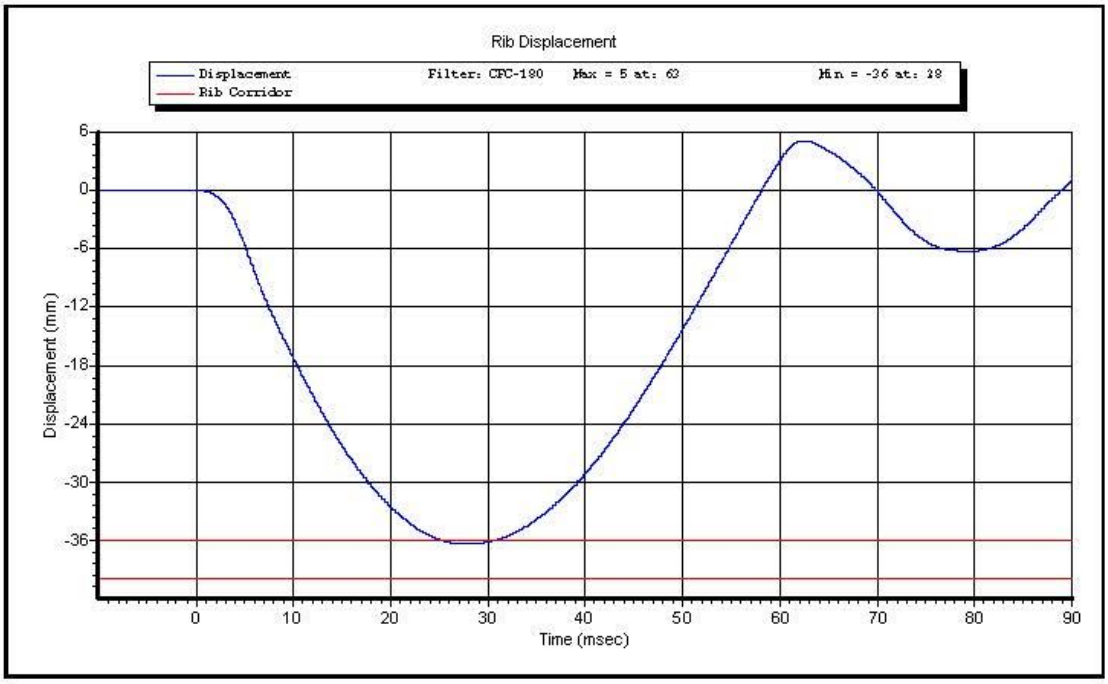
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**3.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Rib Drop Lower** Test Time: **1:05:26 PM** Test Date: **11/20/2014**

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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:	**11/20/2014**
		Test Time:	**1:11:04 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.00**	deg C	P
Humidity	10	--	70	**17.50**	%RH	P
Rib Displacement	-51	--	-46	**-47.7**	mm	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
Honeywell	MLT-38000	DS-182GFE	8/4/2014
DentonATD	Velocity Trap	1	1/11/2014
Endevco	7264-2000	P32139	5/13/2014

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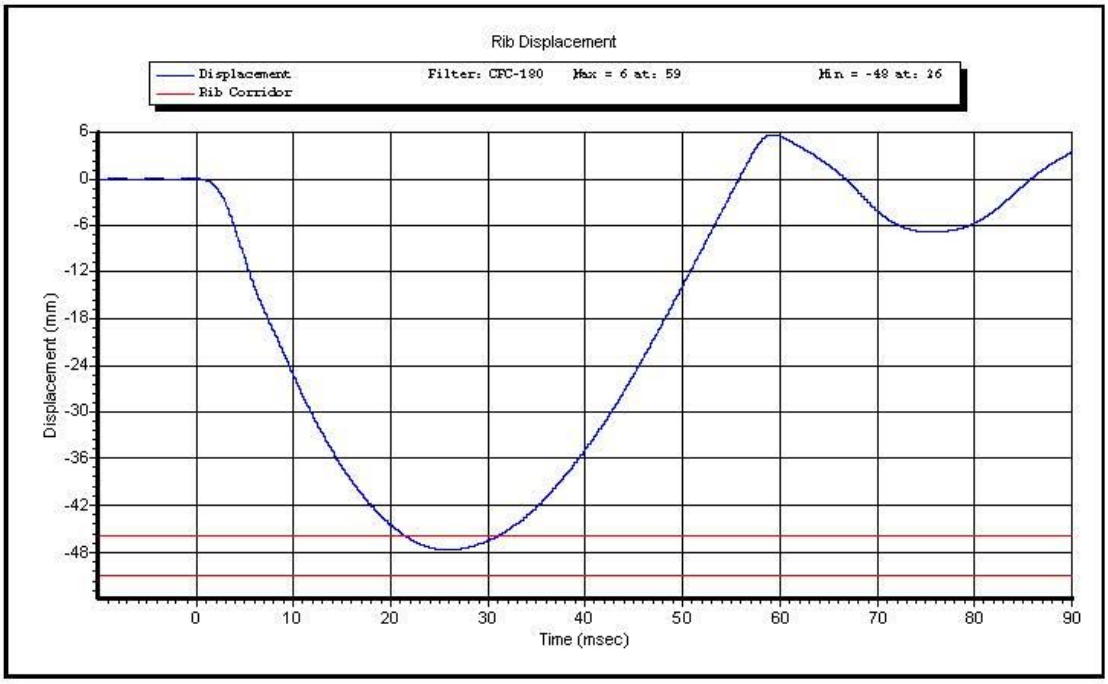
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**4.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Rib Drop Lower** Test Time: **1:11:04 PM** Test Date: **11/20/2014**

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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:	**11/21/2014**
		Test Time:	**3:00:52 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.2**	deg C	P
Humidity	10	--	70	**17.0**	%RH	P
Velocity	5.4	--	5.6	**5.52**	m/s	P
Upper Rib Displacement	34	--	41	**39.7**	mm	P
Middle Rib Displacement	37	--	45	**42.5**	mm	P
Lower Rib Displacement	37	--	44	**40.7**	mm	P
Impactor Force	5100	--	6200	**5599.8**	N	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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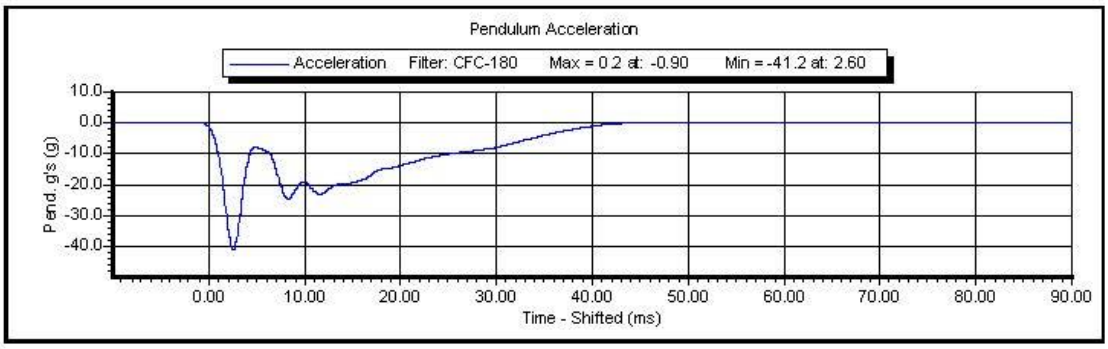
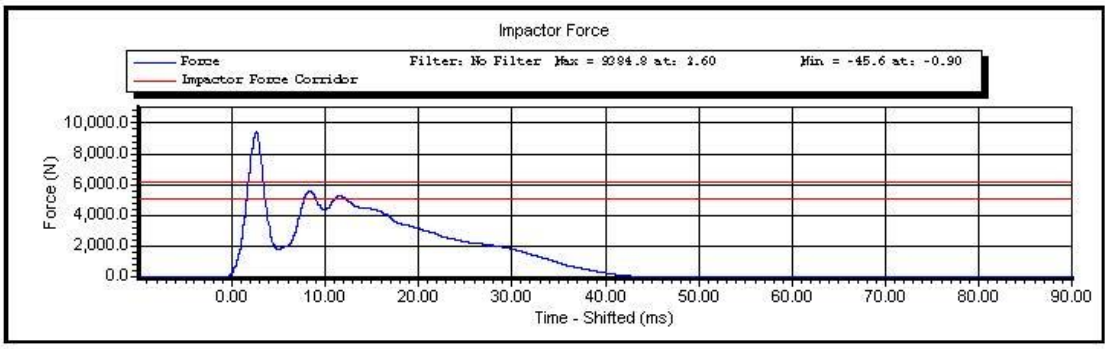
Test Name:	**Thorax Impact**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





Test ID: **Thorax Impact** Test Time: **3:00:52 PM** Test Date: **11/21/2014**

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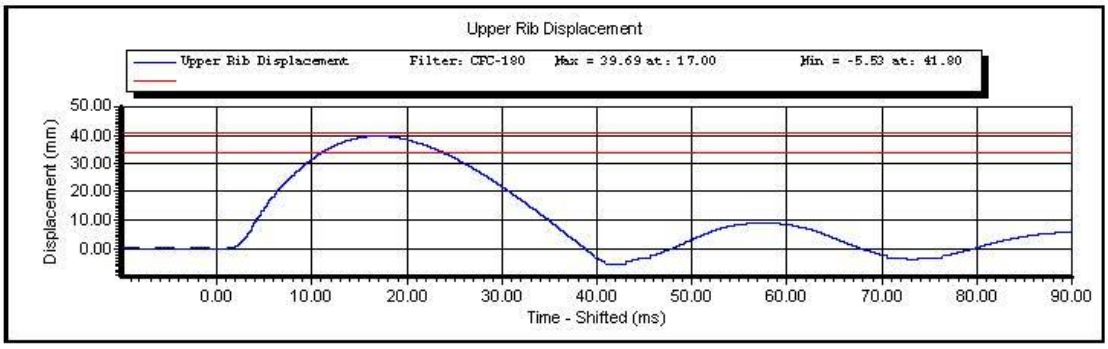

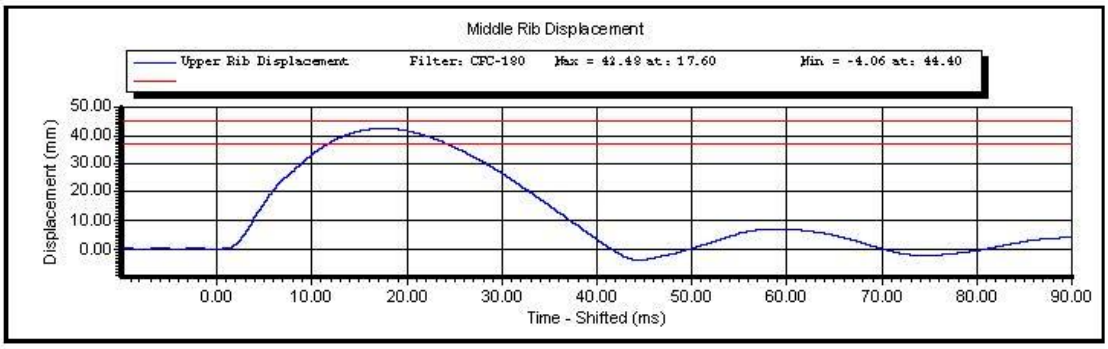

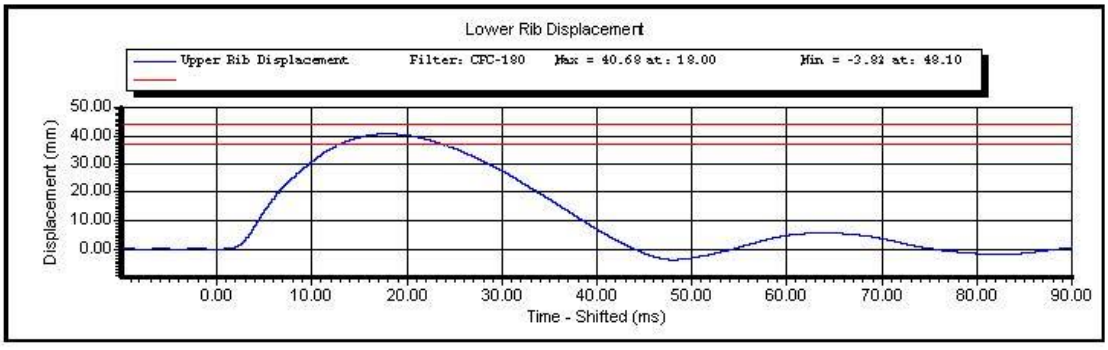

Test ID: **Thorax Impact** Test Time: **3:00:52 PM** Test Date: **11/21/2014**

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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:	**11/21/2014**
		Test Time:	**1:37:46 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.10**	deg C	P
Humidity	10	--	70	**17.40**	%RH	P
Velocity	3.9	--	4.1	**4.02**	m/s	P
Peak Abdominal Force	-2.7	--	-2.2	**-2.32**	kN	P
Time At Peak Abdominal Force	10.0	--	12.3	**10.01**	ms	P
Maximum Pendulum Force	-4.8	--	-4.0	**-4.70**	kN	P
Time At Peak Pendulum Force	10.6	--	13.0	**10.71**	ms	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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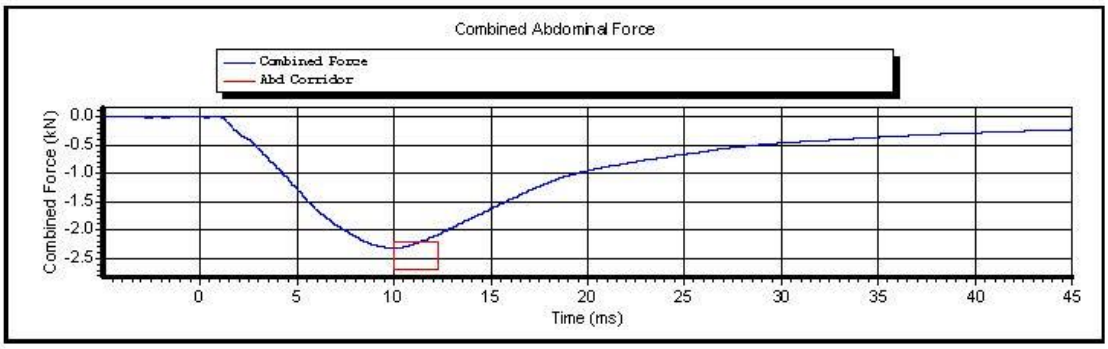
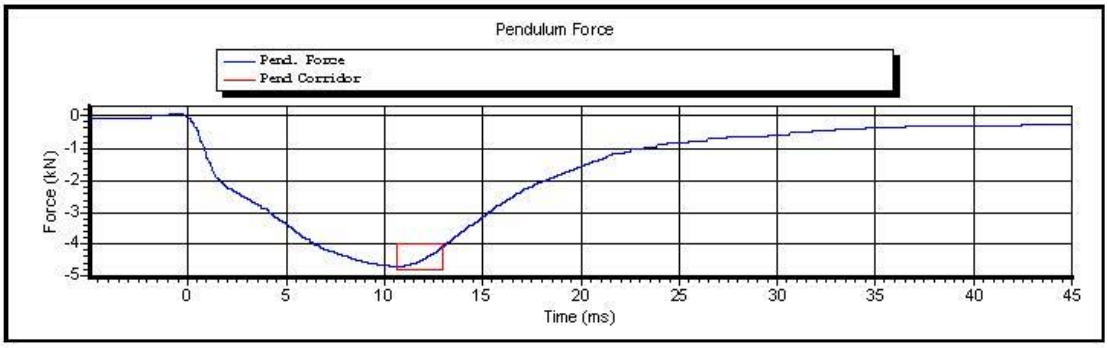
Test Name:	**Abdomen Impact**
Sub Test Name:	**Left Side**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





Test ID: **Abdomen Impact** Test Time: **1:37:46 PM** Test Date: **11/21/2014**

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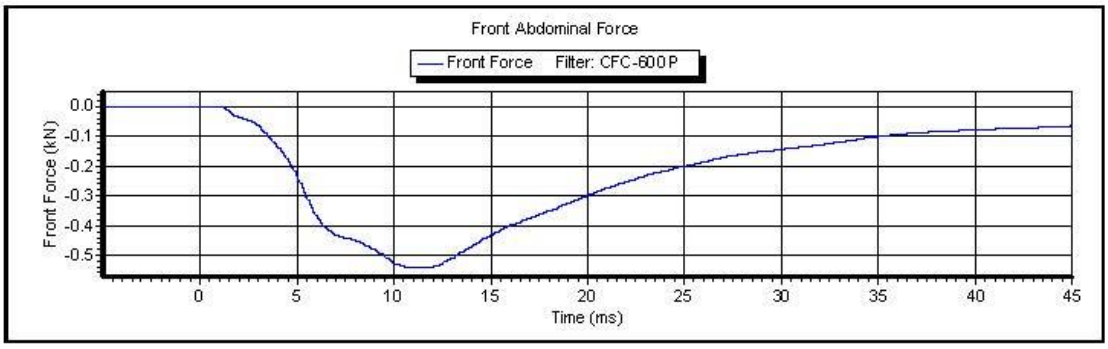

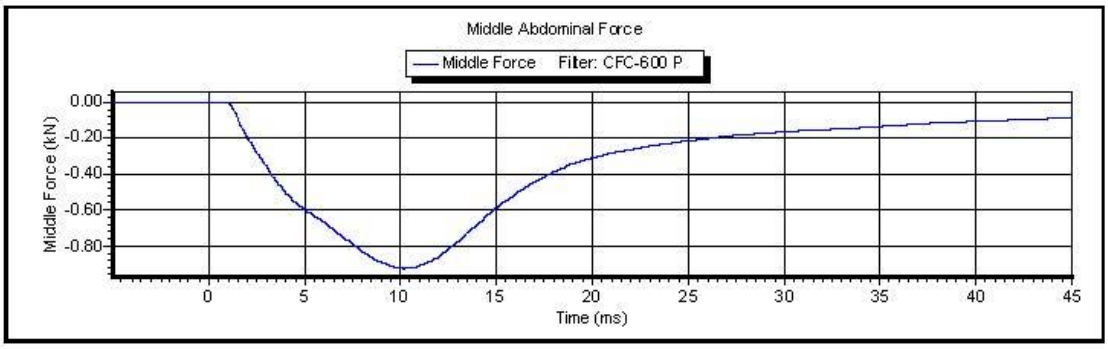

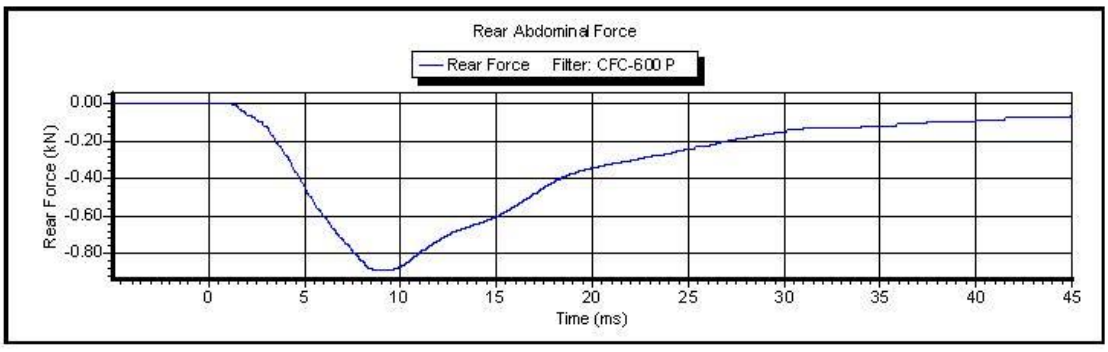

Test ID: **Abdomen Impact** Test Time: **1:37:46 PM** Test Date: **11/21/2014**

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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 Spine**	Test Date:	**11/20/2014**
		Test Time:	**3:47:48 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	21	--	22	**21.70**	deg C	P
Humidity	10	--	70	**16.70**	%RH	P
Velocity	5.95	--	6.15	**6.033**	m/s	P
Maximum Headform Flexion Angle	45	--	55	**45.0**	degrees	P
Time At Maximum Neck Flexion	39	--	53	**43.2**	ms	P
Decay Time to Zero Degrees	37	--	57	**39.0**	ms	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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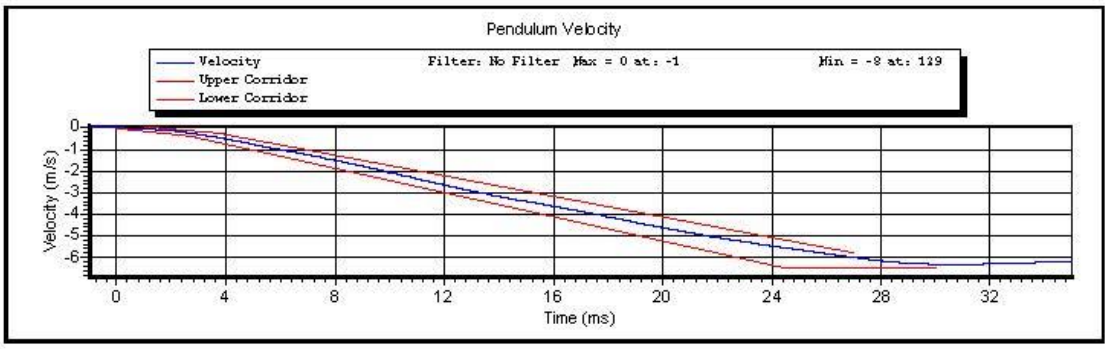
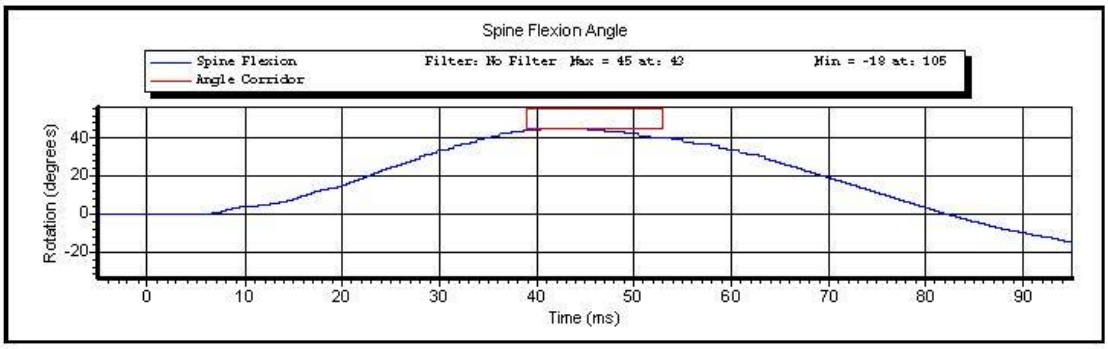
Test Name:	**Lumbar Spine**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





Test ID: **Lumbar Spine** Test Time: **3:47:48 PM** Test Date: **11/20/2014**

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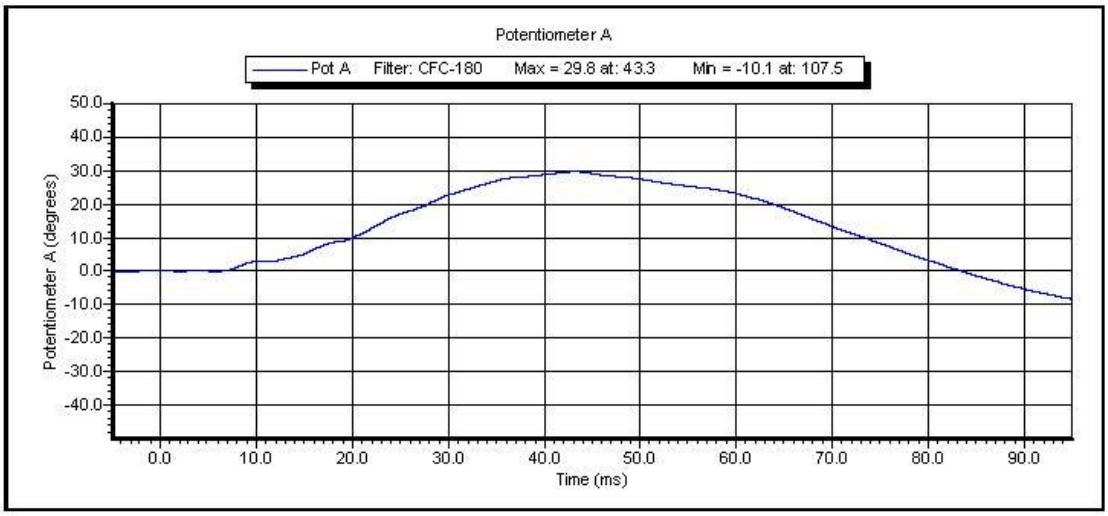

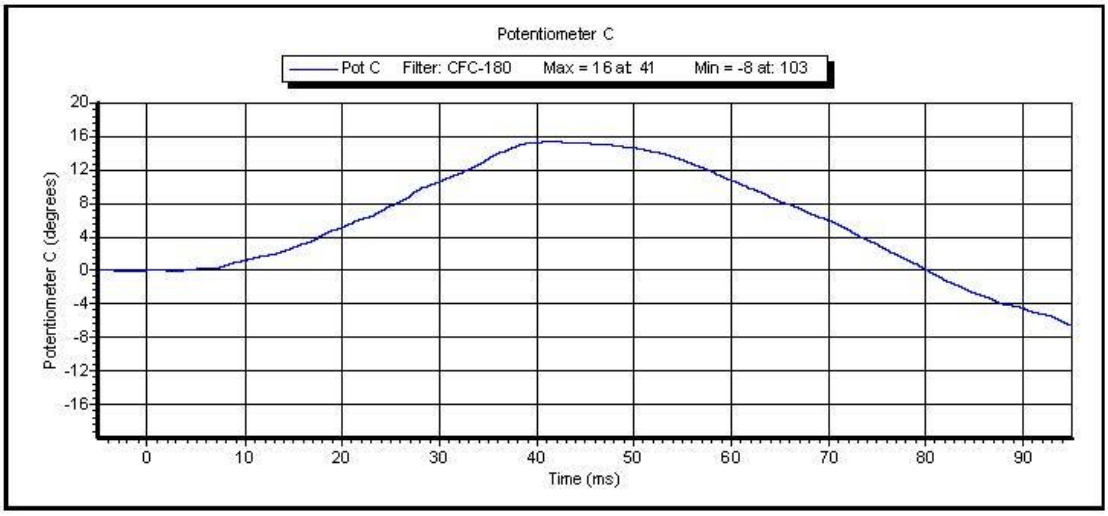

Test ID: **Lumbar Spine** Test Time: **3:47:48 PM** Test Date: **11/20/2014**

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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:	**11/21/2014**
		Test Time:	**2:25:55 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.20**	deg C	P
Humidity	10	--	70	**17.20**	%RH	P
Velocity	4.2	--	4.4	**4.32**	m/s	P
Peak Pendulum Force	-5.4	--	-4.7	**-4.99**	kN	P
Time at Peak Pendulum Force	11.8	--	16.1	**13.44**	ms	P
Peak Pubic Symphysis Force	-1.59	--	-1.23	**-1.436**	kN	P
Time at Peak Pubic Symphysis Force	12.2	--	17.0	**14.04**	ms	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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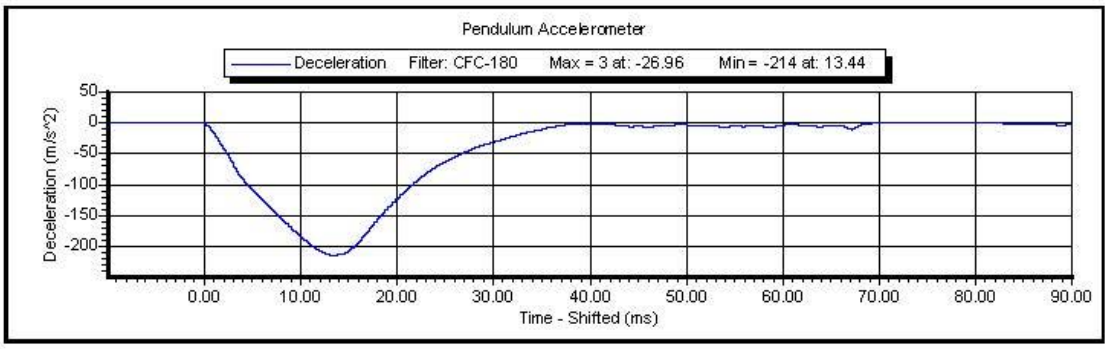
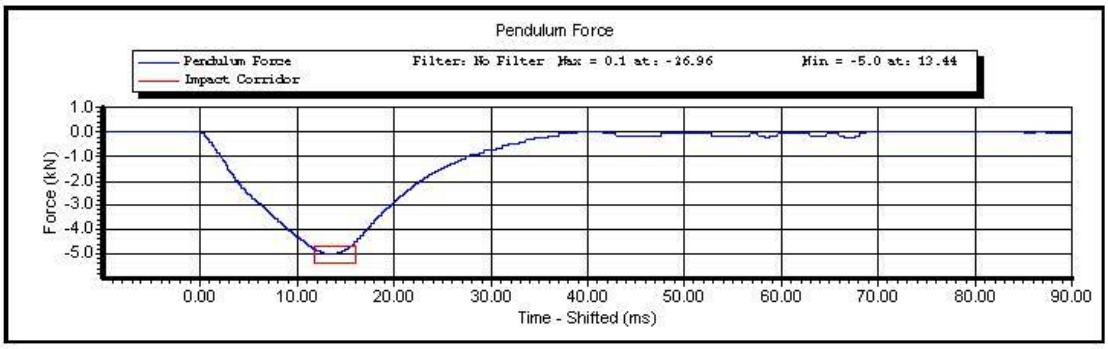
Test Name:	**Pelvis Impact**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





Test ID: **Pelvis Impact** Test Time: **2:25:55 PM** Test Date: **11/21/2014**

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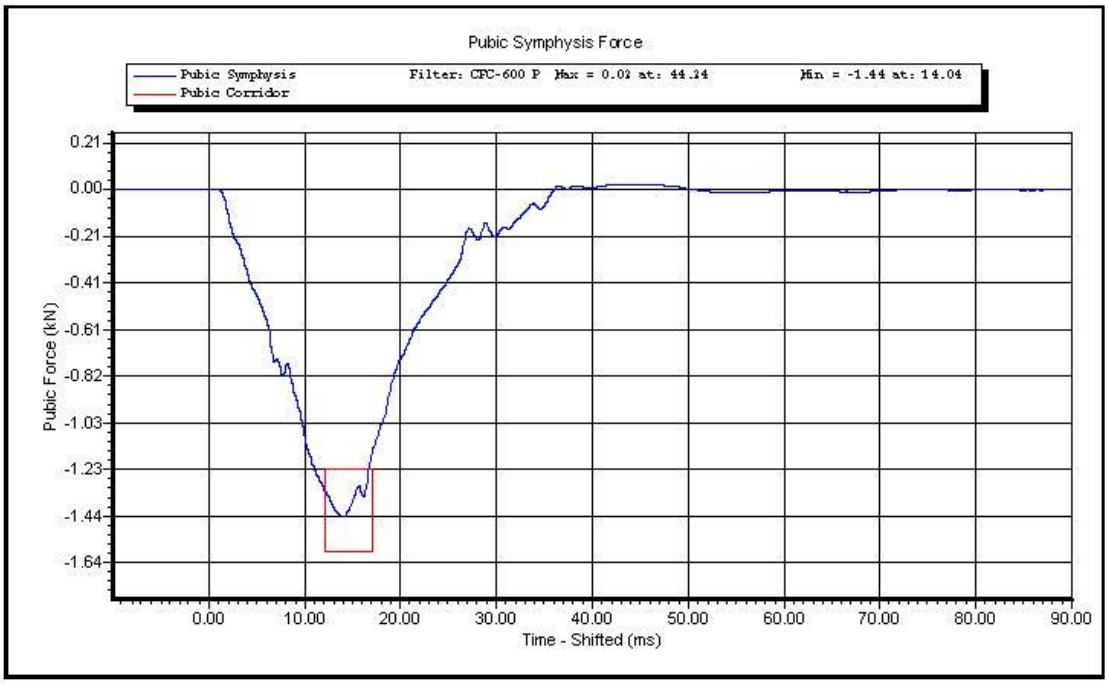

Test ID: **Pelvis Impact** Test Time: **2:25:55 PM** Test Date: **11/21/2014**

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CALIBRATION TEST RESULTS

PRE-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

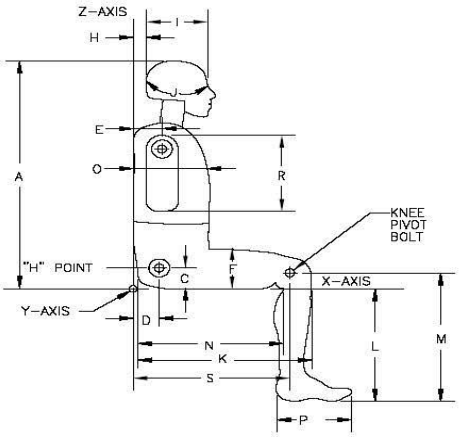
SERIAL No: 300

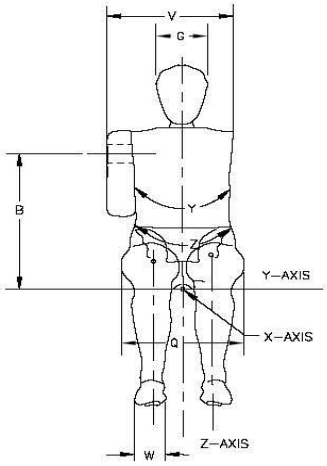
(CONFIGURED FOR LEFT SIDE IMPACT)

External Measurements - SID-IIs

Technician: M. Geesey Date: 11/14/2014

Dummy Serial Number: 300





Dim. No.	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	122	Pass
G	Head Breadth	140	148	143	Pass
H	Head Back from Backline	40	46	43	Pass
I	Head Depth	178	188	182	Pass
J	Head Circumference	541	551	548	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	316	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

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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 Left**	Test Date:	**11/13/2014**
		Test Time:	**4:56:05 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.7**	deg C	P
Humidity	10	--	70	**24**	%RH	P
Resultant Acceleration	115.0	--	137.0	**130.8**	g	P
Oscillation	0.0	--	15.0	**3.0**	%	P
Fore-Aft Acceleration	-15.0	--	15.0	**-3.4**	g	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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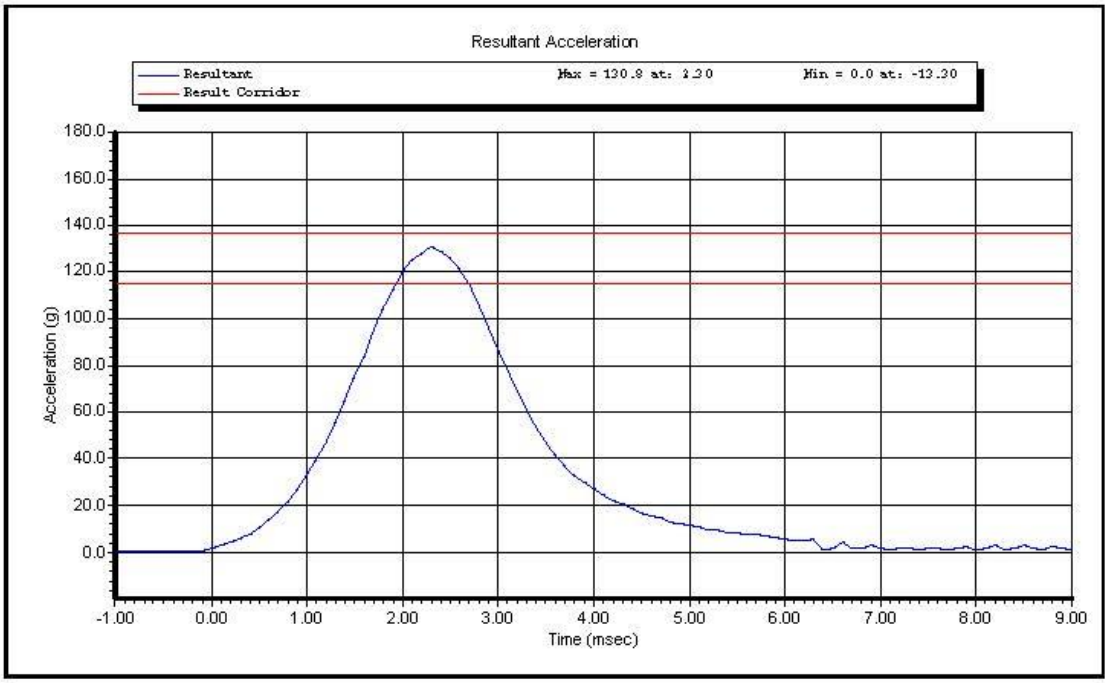
Test Name:	**Head Drop**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Head Drop Left** Test Time: **4:56:05 PM** Test Date: **11/13/2014**

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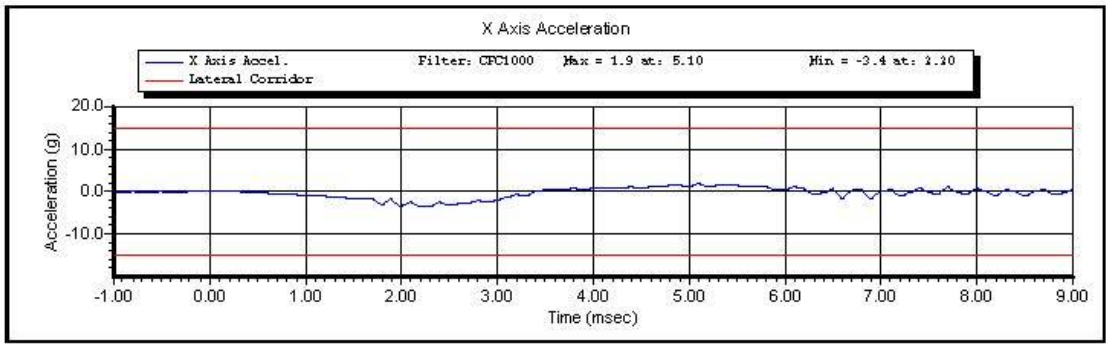

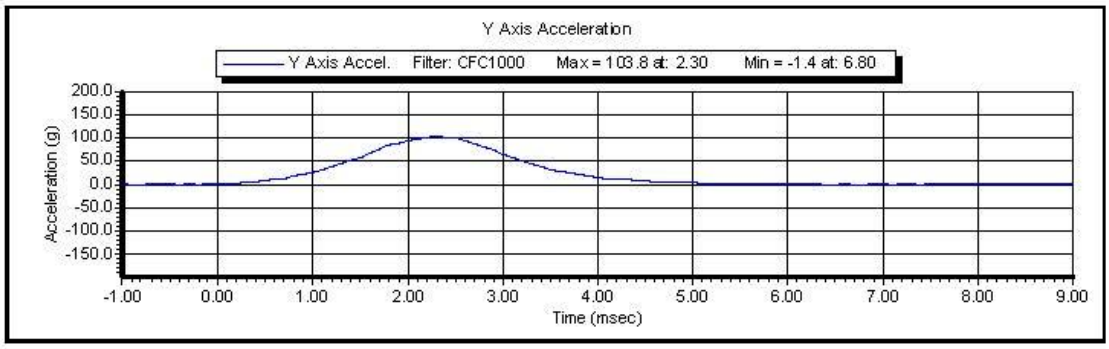

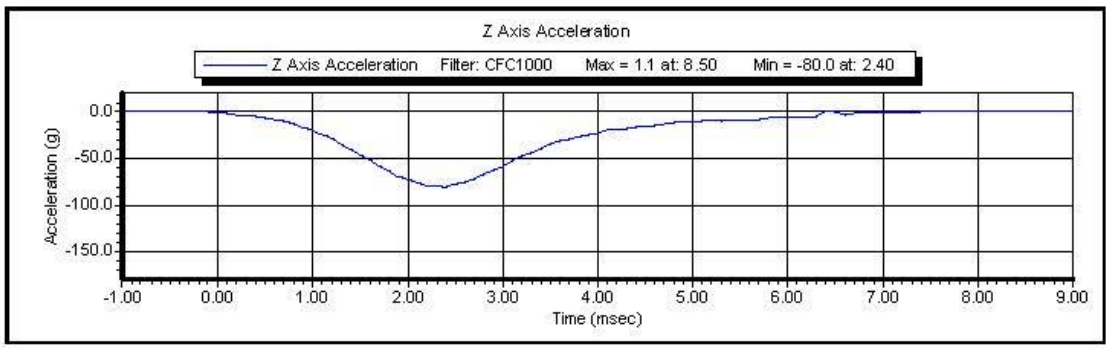

Test ID: **Head Drop Left** Test Time: **4:56:05 PM** Test Date: **11/13/2014**

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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 Left**	Test Date:	**11/13/2014**
		Test Time:	**5:45:37 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.8**	deg C	P
Humidity	10	--	70	**23.4**	%RH	P
Velocity	5.51	--	5.63	**5.564**	m/s	P
Pendulum Impulse at 10 ms	2.2	--	2.8	**2.25**	m/s	P
Pendulum Impulse at 15 ms	3.3	--	4.1	**3.30**	m/s	P
Pendulum Impulse at 20 ms	4.4	--	5.4	**4.52**	m/s	P
Pendulum Impulse at 25 ms	5.4	--	6.1	**5.49**	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	**72.4**	degrees	P
Time at Max Rotation	50	--	70	**61.0**	ms	P
Moment about OC	36	--	44	**39.0**	Nm	P
Moment Decay to Zero	102	--	126	**115.7**	ms	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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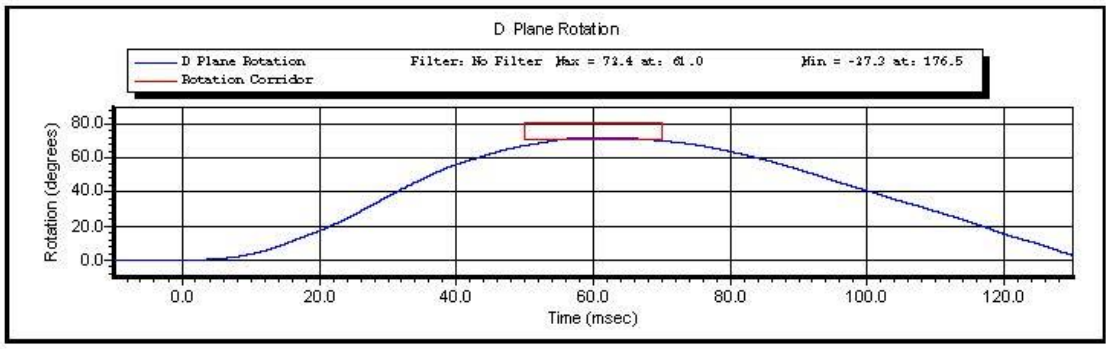
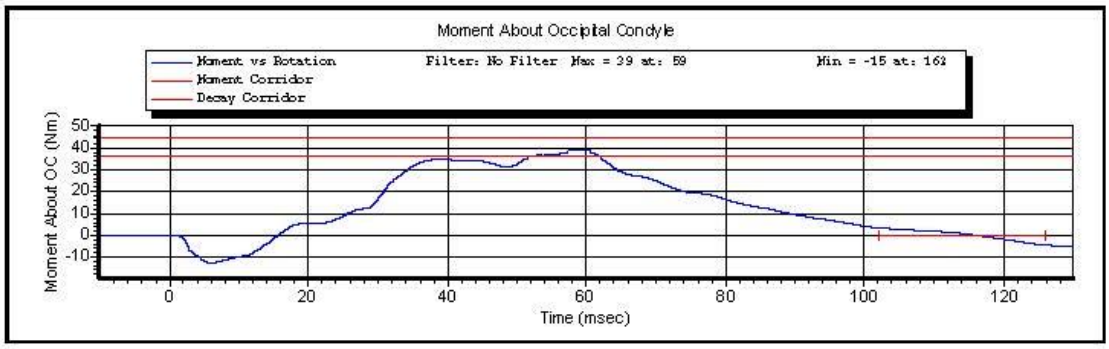
Test Name:	**Neck Pendulum**
Sub Test Name:	**Left Side**
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





Test ID: **Neck Flexion Left** Test Time: **5:45:37 PM** Test Date: **11/13/2014**

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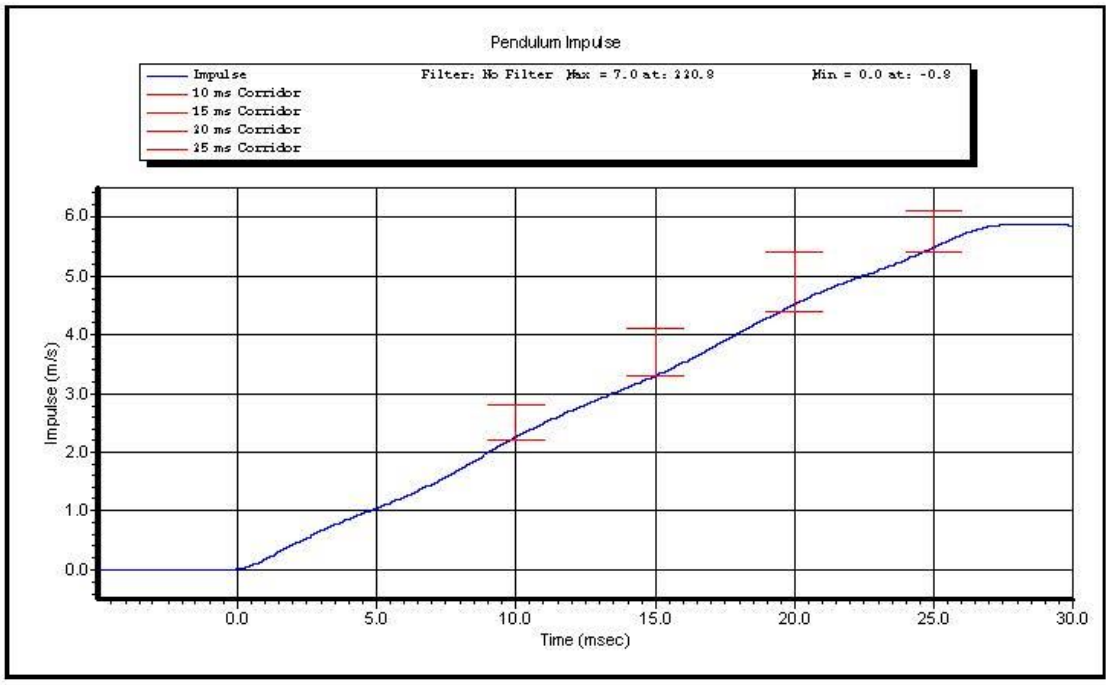

Test ID: **Neck Flexion Left** Test Time: **5:45:37 PM** Test Date: **11/13/2014**

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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:	**11/14/2014**
		Test Time:	**1:19:46 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.80**	deg C	P
Humidity	10	--	70	**21.5**	%RH	P
Velocity	4.2	--	4.4	**4.33**	m/s	P
Probe Acceleration	13	--	18	**15.2**	g	P
Shoulder Deflection	28	--	37	**29.1**	mm	P
T1 Acceleration	17	--	22	**19.6**	g	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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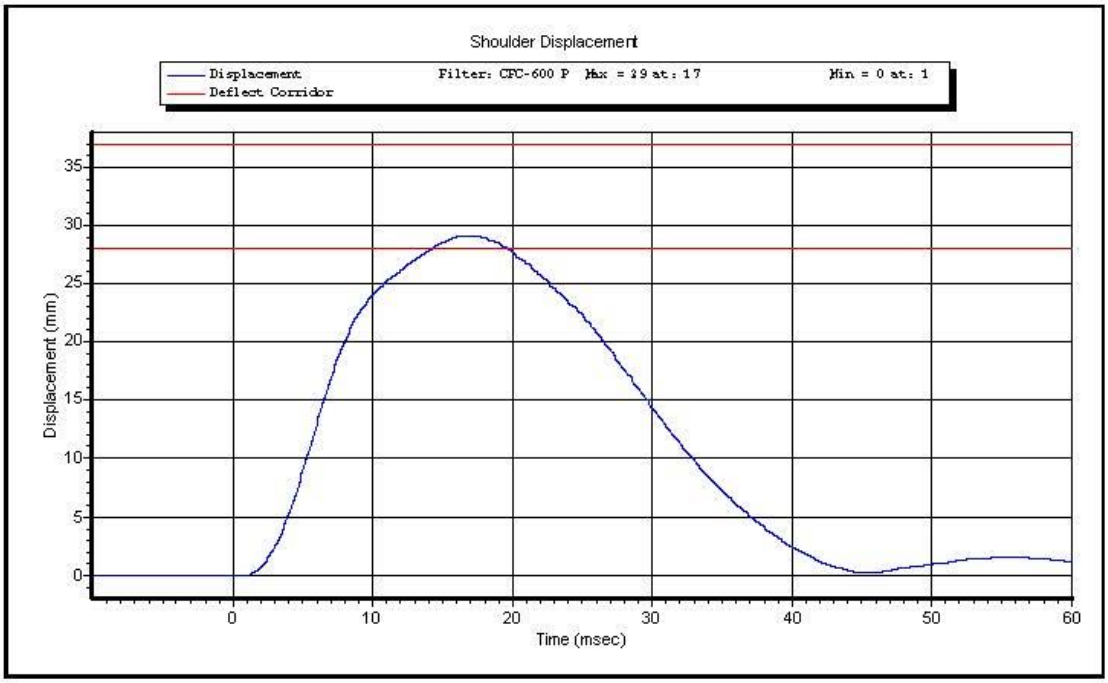
Test Name:	**Shoulder Impact**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Shoulder Impact** Test Time: **1:19:46 PM** Test Date: **11/14/2014**

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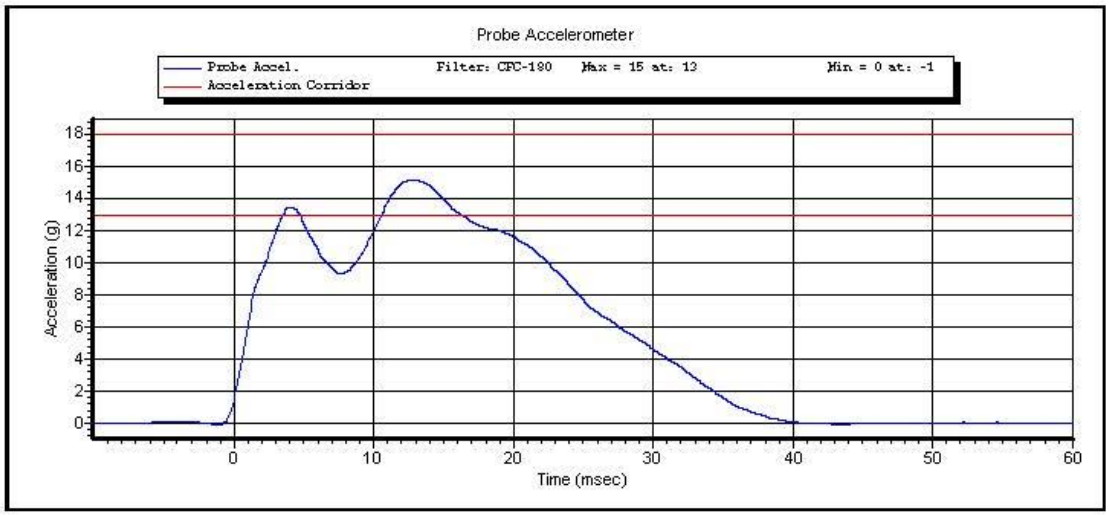

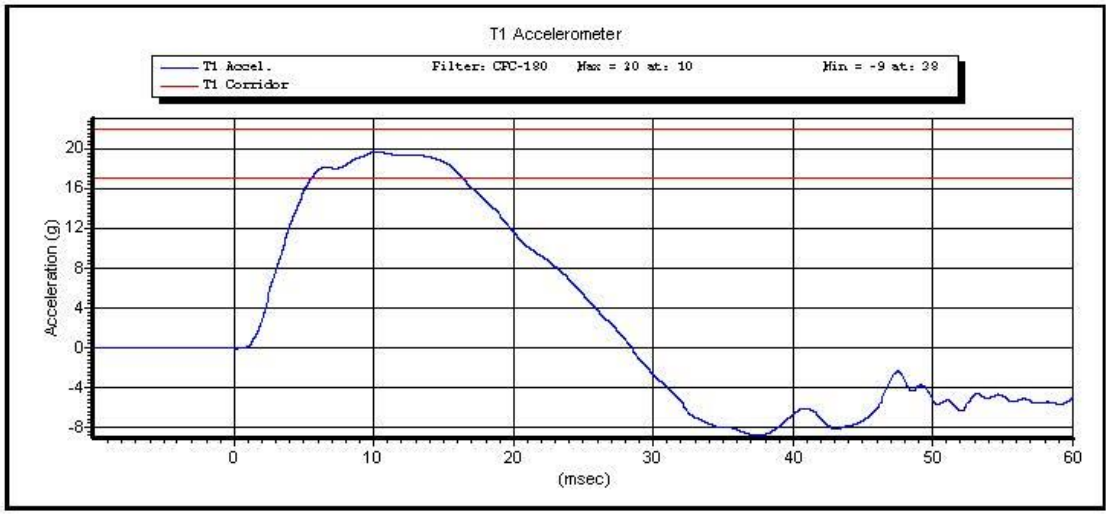

Test ID: **Shoulder Impact** Test Time: **1:19:46 PM** Test Date: **11/14/2014**

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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:	**11/14/2014**
		Test Time:	**1:45:50 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.4**	deg C	P
Humidity	10	--	70	**21.2**	%RH	P
Velocity	6.6	--	6.8	**6.72**	m/s	P
Probe Acceleration after 5ms	30	--	36	**34.6**	g	P
Upper Thorax Rib Deflection	25	--	32	**25.3**	mm	P
Mid Thorax Rib Deflection	30	--	36	**30.6**	mm	P
Lower Thorax Rib Deflection	32	--	38	**32.9**	mm	P
Upper Spine Acceleration ("y")	34	--	43	**38.4**	g	P
Lower Spine Acceleration ("y")	29	--	37	**35.5**	g	P
Shoulder Deflection	31	--	40	**31.8**	mm	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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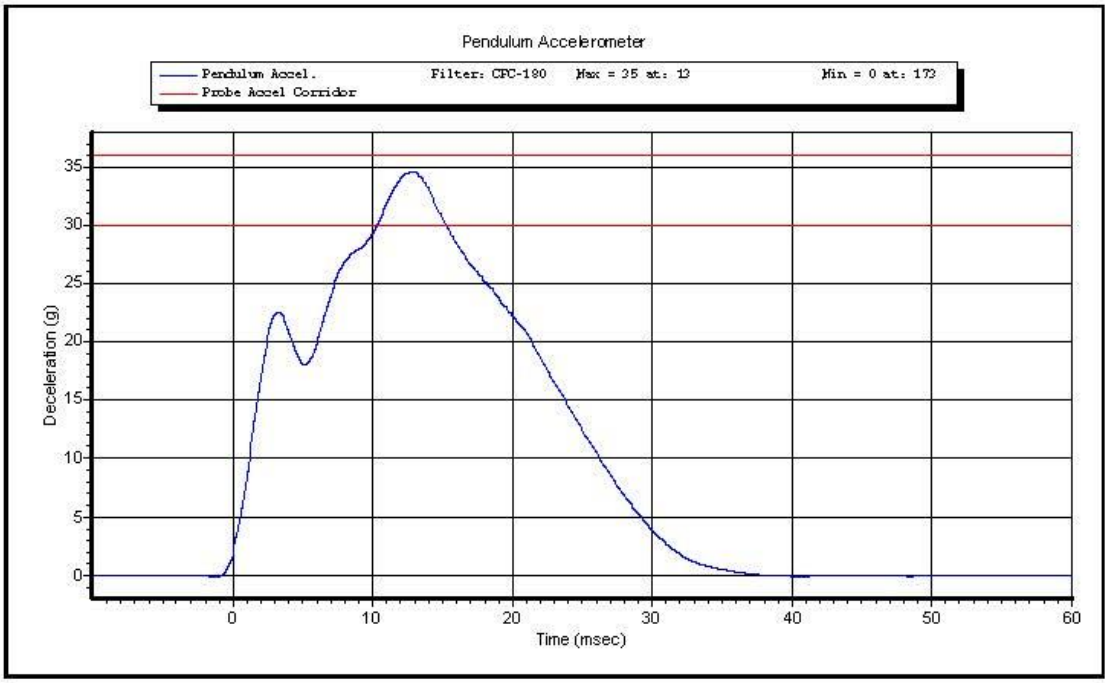
Test Name:	**Thorax Impact with Arm**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Thorax w/Arm Impact** Test Time: **1:45:50 PM** Test Date: **11/14/2014**

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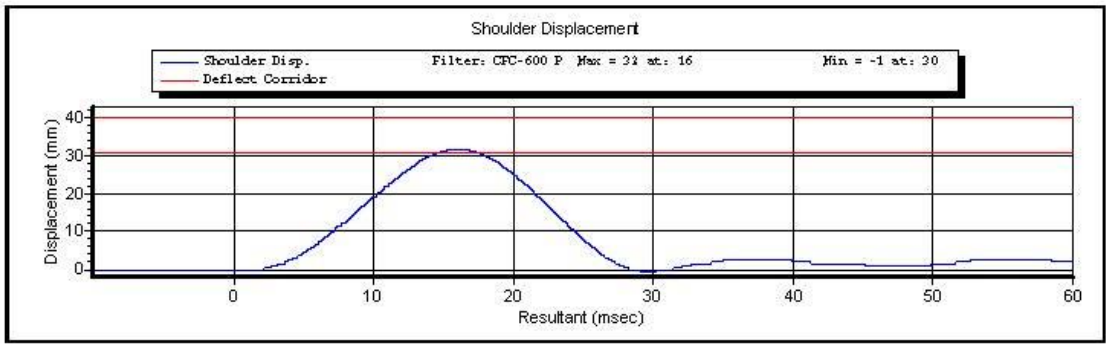

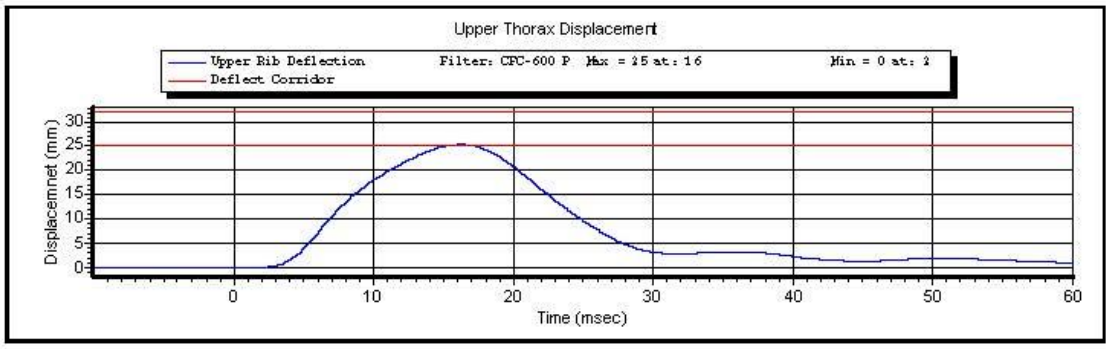

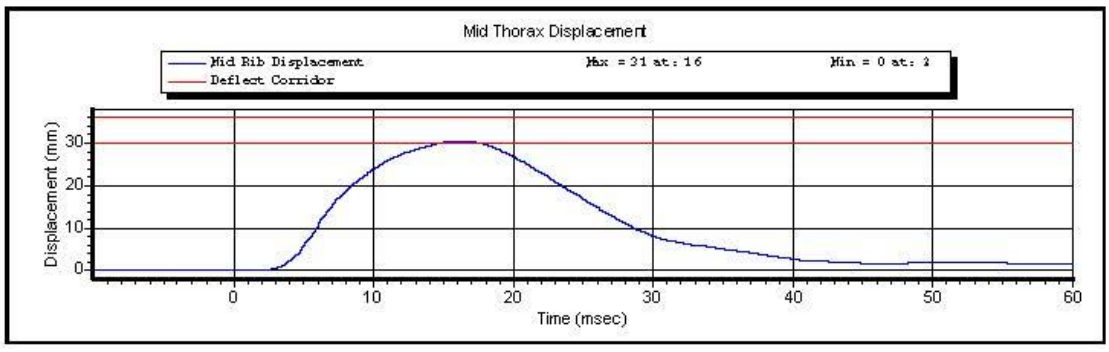

Test ID: **Thorax w/Arm Impact** Test Time: **1:45:50 PM** Test Date: **11/14/2014**

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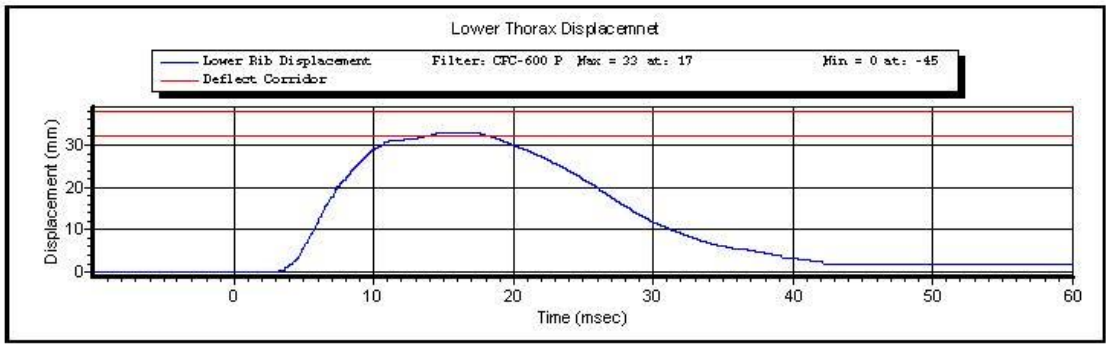

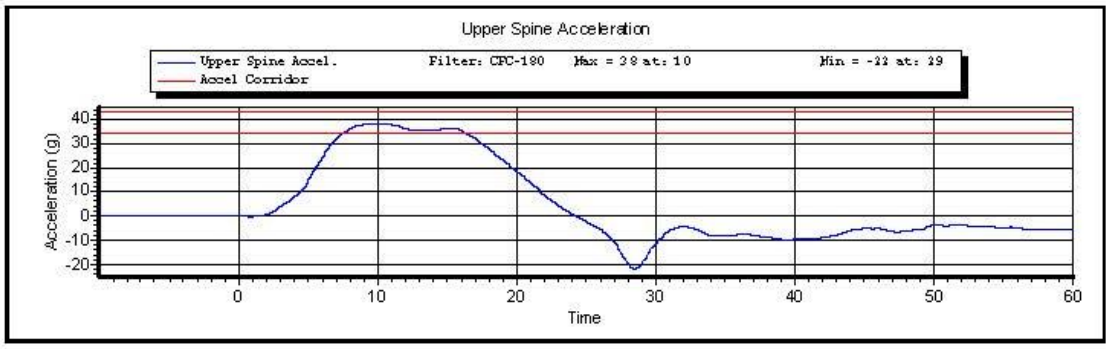

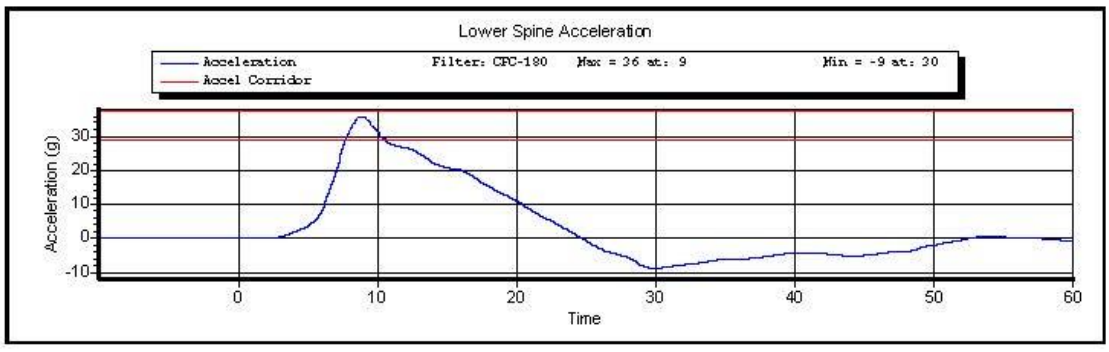

Test ID: **Thorax w/Arm Impact** Test Time: **1:45:50 PM** Test Date: **11/14/2014**

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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:	**11/14/2014**
		Test Time:	**3:35:14 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.6**	deg C	P
Humidity	10	--	70	**21.1**	%RH	P
Velocity	4.2	--	4.4	**4.34**	m/s	P
Probe Acceleration	14	--	18	**16.6**	g	P
Upper Thorax Rib Deflection	32	--	40	**34.3**	mm	P
Mid Thorax Rib Deflection	39	--	45	**39.7**	mm	P
Lower Thorax Rib Deflection	35	--	43	**36.2**	mm	P
Upper Spine Acceleration T1	13	--	17	**16.5**	g	P
Lower Spine Acceleration T12	7	--	11	**10.0**	g	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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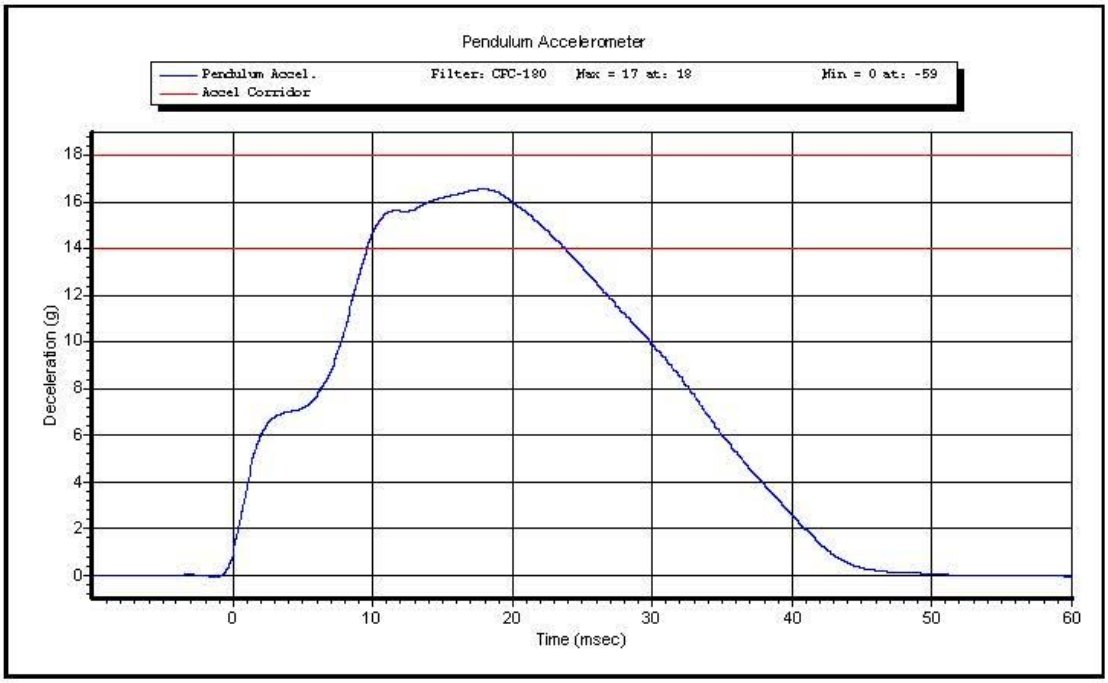
Test Name:	**Thorax Impact without Arm**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Thorax W/O Arm** Test Time: **3:35:14 PM** Test Date: **11/14/2014**

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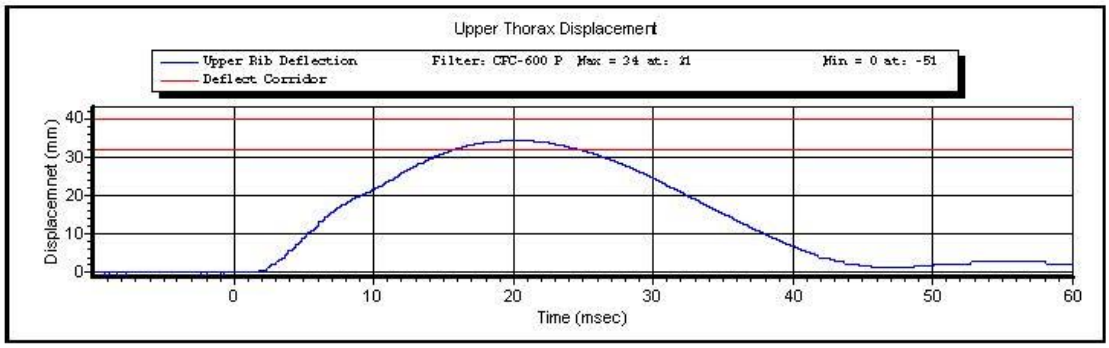

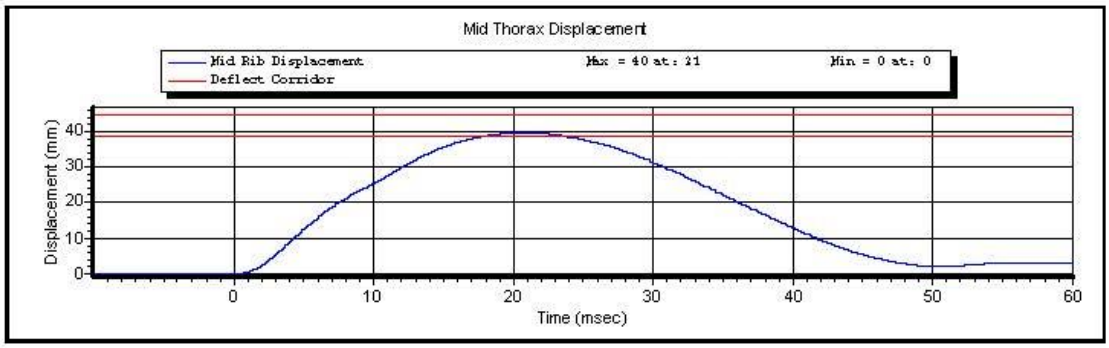

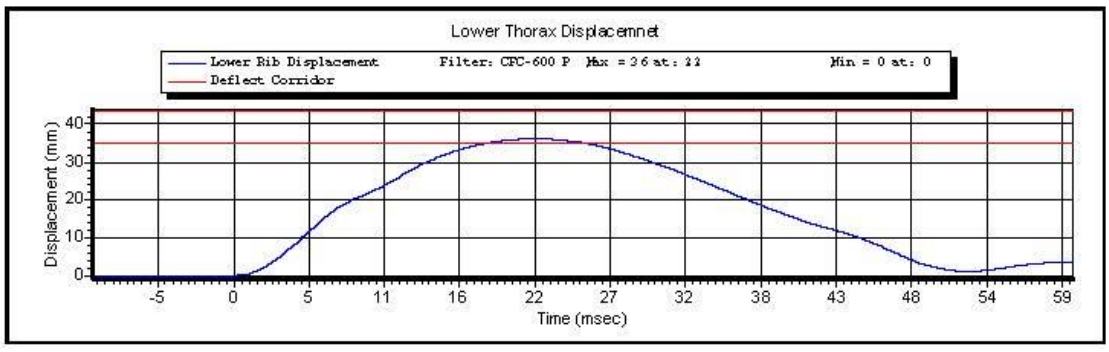

Test ID: **Thorax W/O Arm** Test Time: **3:35:14 PM** Test Date: **11/14/2014**

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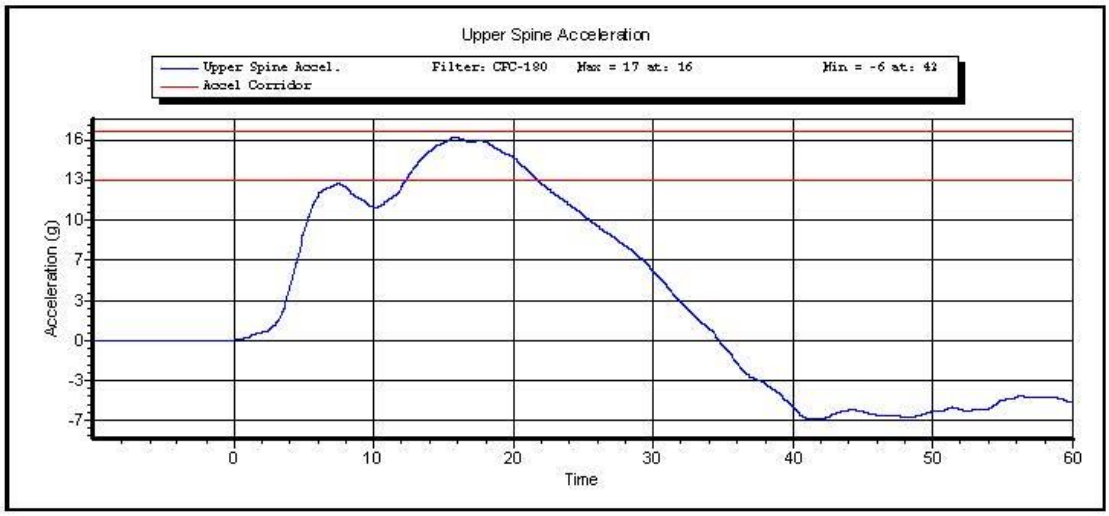

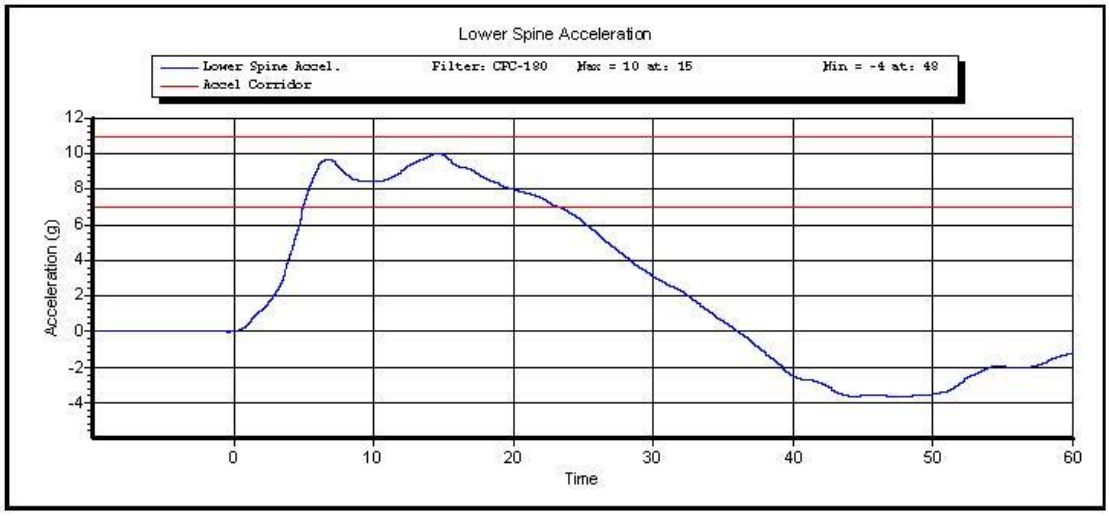

Test ID: **Thorax W/O Arm** Test Time: **3:35:14 PM** Test Date: **11/14/2014**

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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:	**11/14/2014**
		Test Time:	**2:30:51 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.30**	deg C	P
Humidity	10	--	70	**21.50**	%RH	P
Velocity	4.2	--	4.4	**4.34**	m/s	P
Probe Deceleration	12	--	16	**15.6**	G's	P
Upper Abdominal Rib Deflection	36	--	47	**37.6**	mm	P
Lower Abdominal Rib Deflection	33	--	44	**34.3**	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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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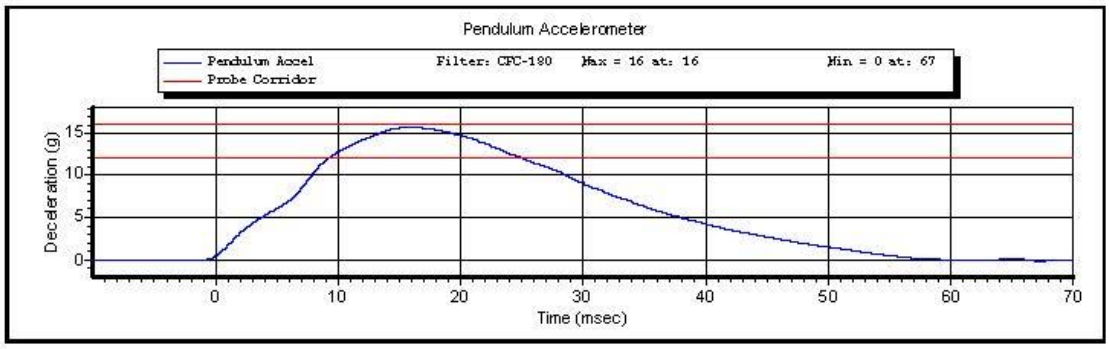
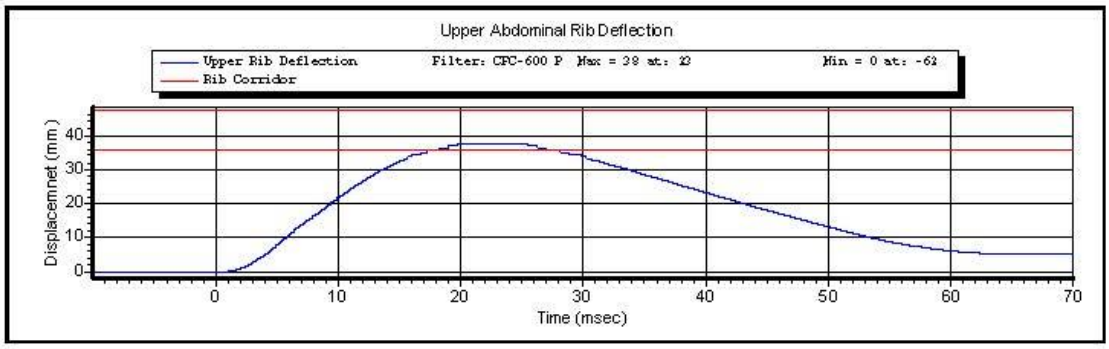
Test Name:	**Abdominal Impact**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





Test ID: **Abdomen Impact** Test Time: **2:30:51 PM** Test Date: **11/14/2014**

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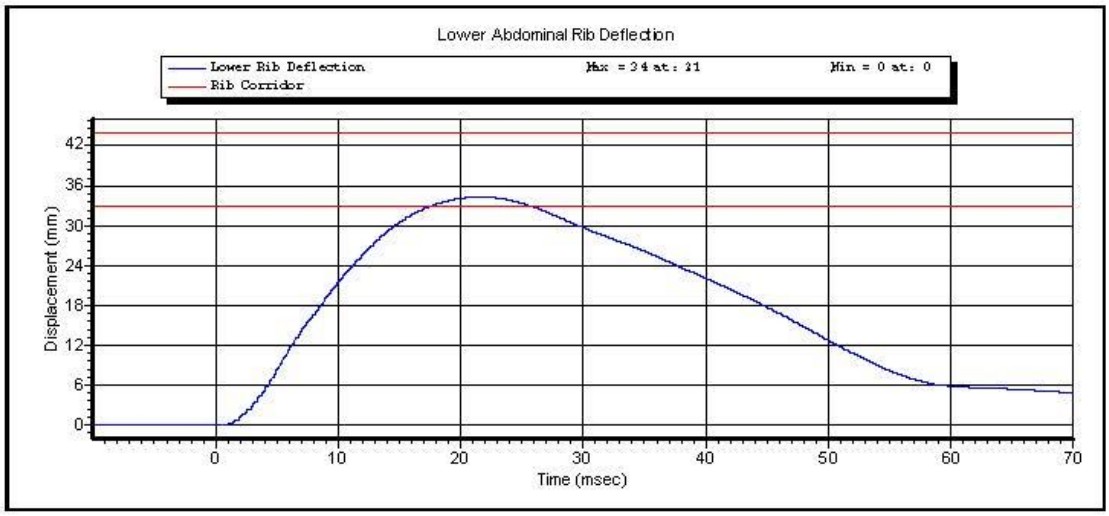

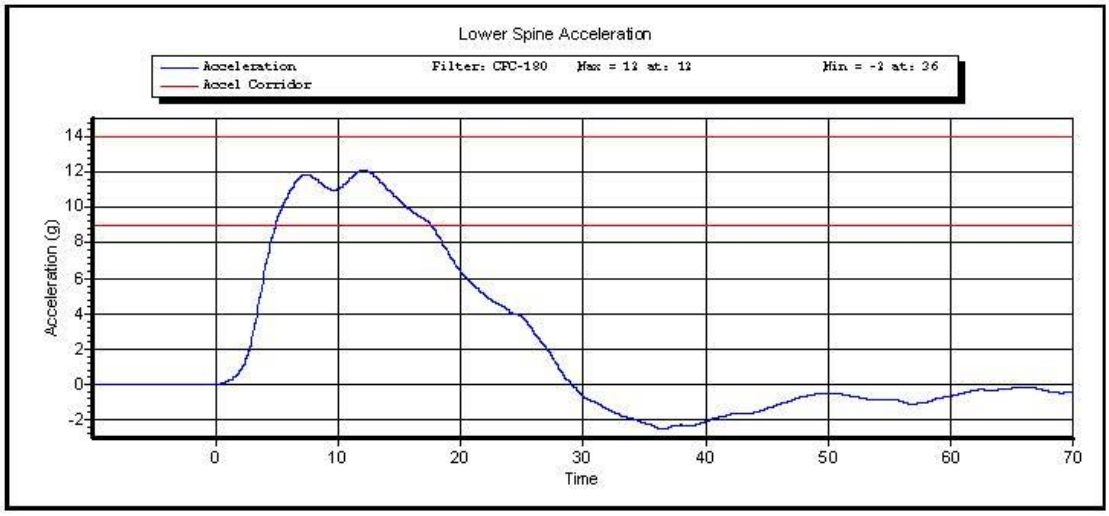

Test ID: **Abdomen Impact** Test Time: **2:30:51 PM** Test Date: **11/14/2014**

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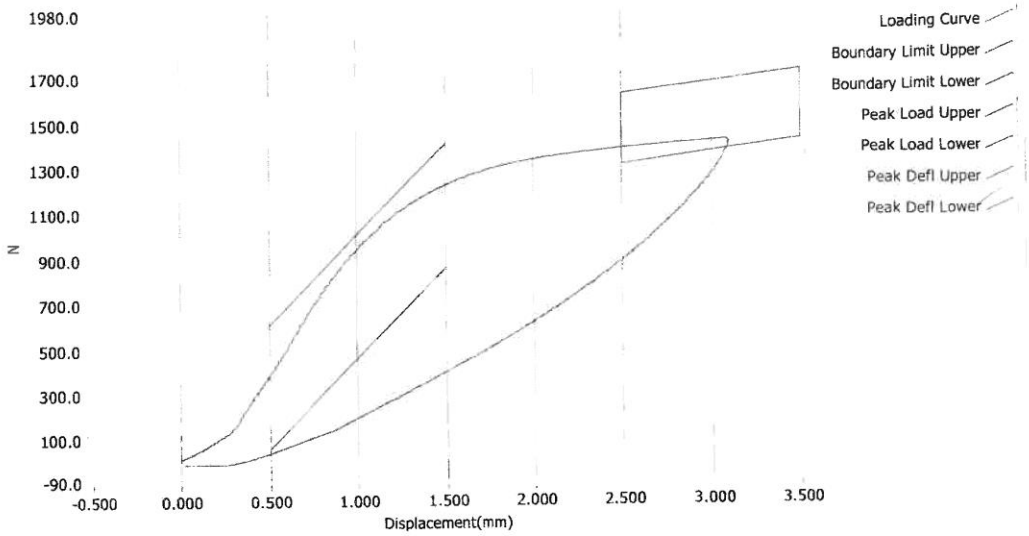
Resultant Data - SIDIIs Plug Compression Certification



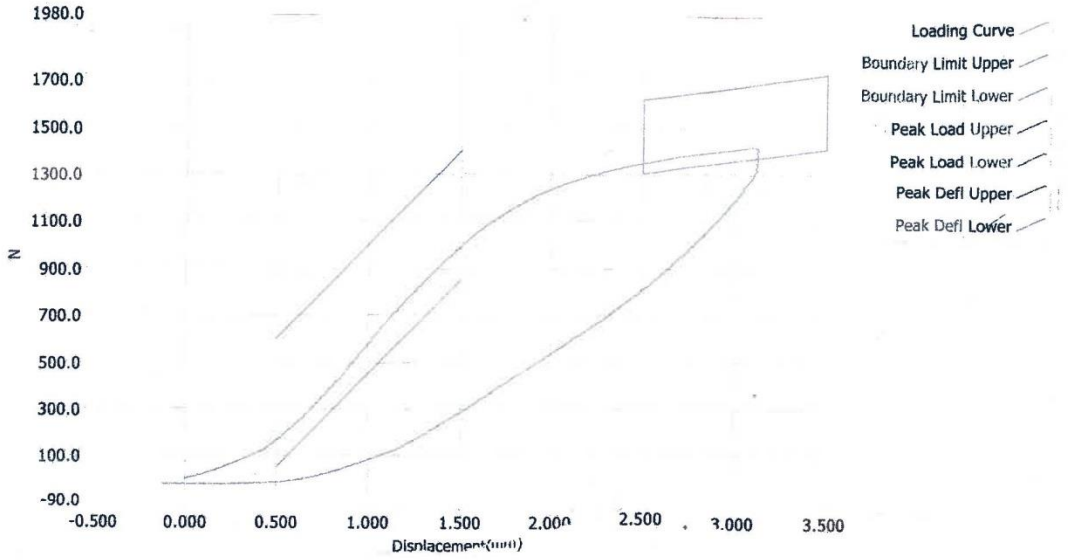
ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
		9/23/2010	7:56 AM

Cert ID	ATD Serial Number	ATD Type
	36410	SIDIIs

Current Date : 9/23/2010 Current Time : 07:57:23

Resultant Data - SIDIIs Plug Compression CRASH



ATD Calibration Lab

Test ID	Part Serial Number	Test Date	Test Time
	46435	9/22/2011	7:12 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

Current Date : 9/22/2011 Current Time : 19:13:34

Calspan

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:	**11/14/2014**
		Test Time:	**12:36:35 PM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**21.2**	deg C	P
Humidity	10	--	70	**21.4**	%RH	P
Velocity	6.6	--	6.8	**6.67**	m/s	P
Peak Probe Acceleration	38	--	47	**43.8**	g	P
Peak Pelvis Acceleration	34	--	42	**39.8**	g	P
Peak Acetabulum Force	3.6	--	4.3	**3.86**	kN	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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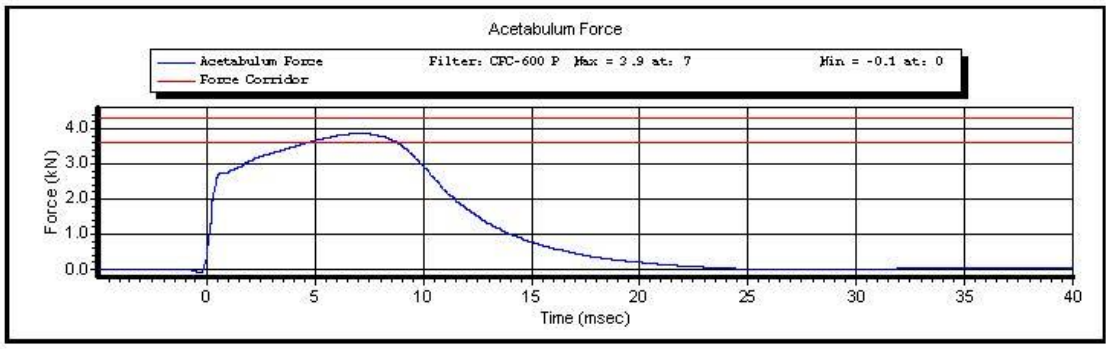
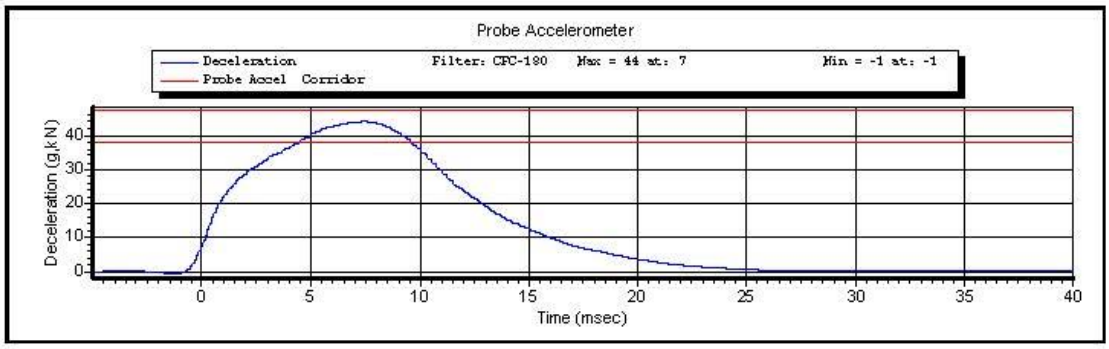
Test Name:	**Pelvis**
Sub Test Name:	**Acetabulum Impact**
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





Test ID: **Acetabulum Impact** Test Time: **12:36:35 PM** Test Date: **11/14/2014**

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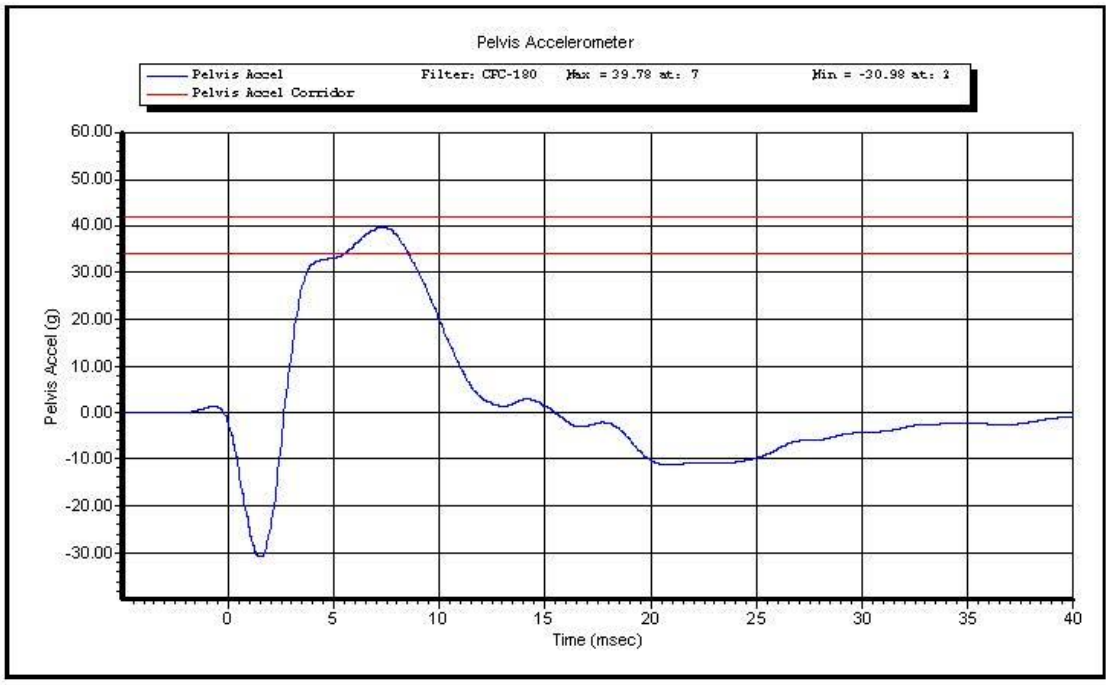

Test ID: **Acetabulum Impact** Test Time: **12:36:35 PM** Test Date: **11/14/2014**

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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:	**11/14/2014**
		Test Time:	**11:25:59 AM**

Test Parameters	Test Specifications			Test Results		
Temperature	20.6	--	22.2	**20.6**	deg C	P
Humidity	10	--	70	**21.7**	%RH	P
Velocity	4.2	--	4.4	**4.37**	m/s	P
Peak Probe Acceleration	36	--	45	**39.3**	g	P
Peak Pelvis Acceleration	28	--	39	**31.2**	g	P
Peak Iliac Force	4.1	--	5.1	**4.33**	kN	P

All test parameters are within specifications

Technician: **M. Geesey**

Supervisor: **M. Goehle**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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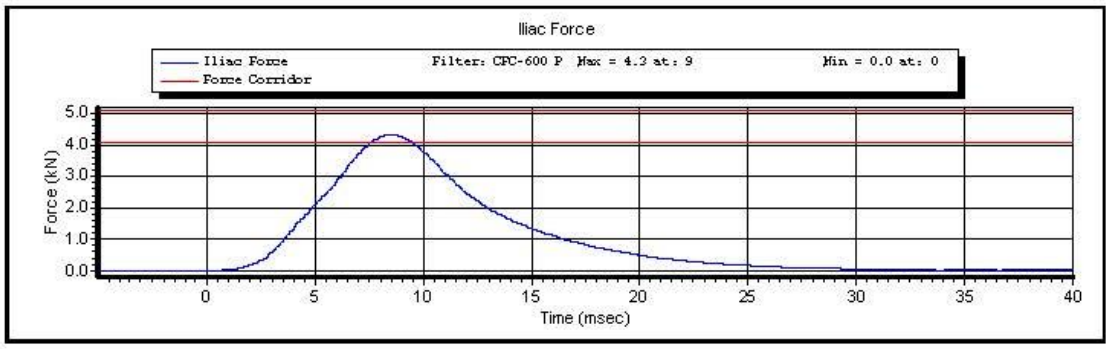
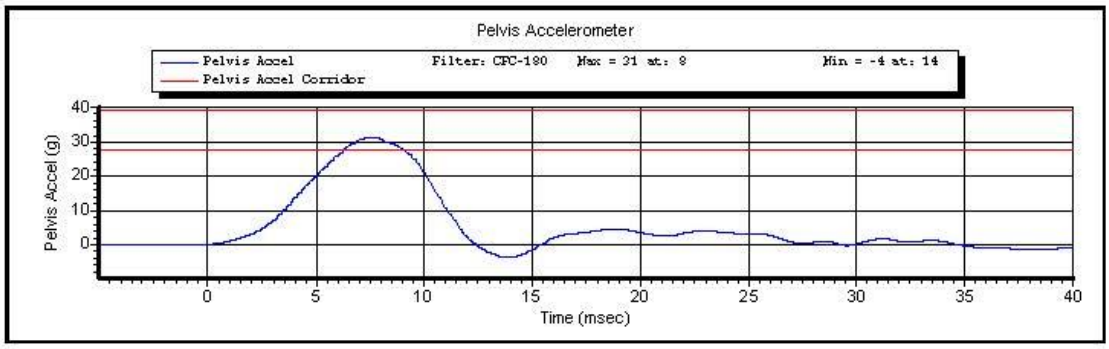
Test Name:	**Pelvis**
Sub Test Name:	**Iliac Impact**
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





Test ID: **Pelvis Iliac Impact** Test Time: **11:25:59 AM** Test Date: **11/14/2014**

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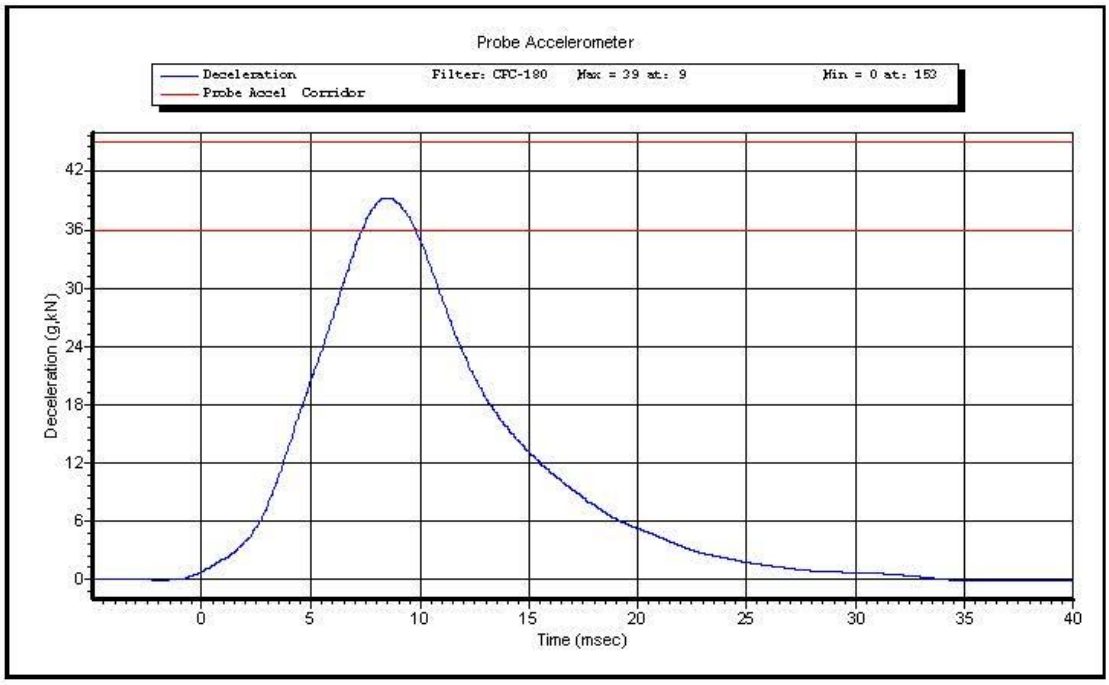

Test ID: **Pelvis Iliac Impact** Test Time: **11:25:59 AM** Test Date: **11/14/2014**

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CALIBRATION TEST RESULTS

POST-TEST

EUROSID 2 (ES-2RE) MALE – DRIVER ATD

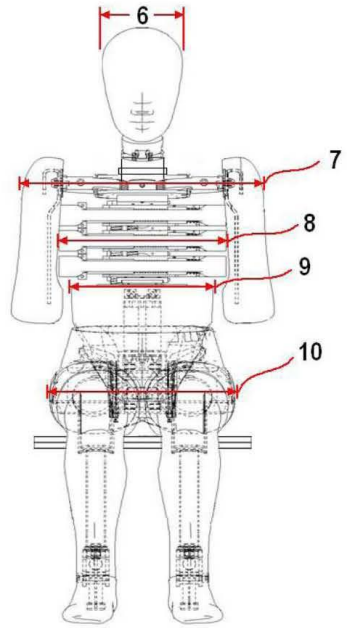
SERIAL NO: F034

(CONFIGURED FOR LEFT SIDE IMPACT)

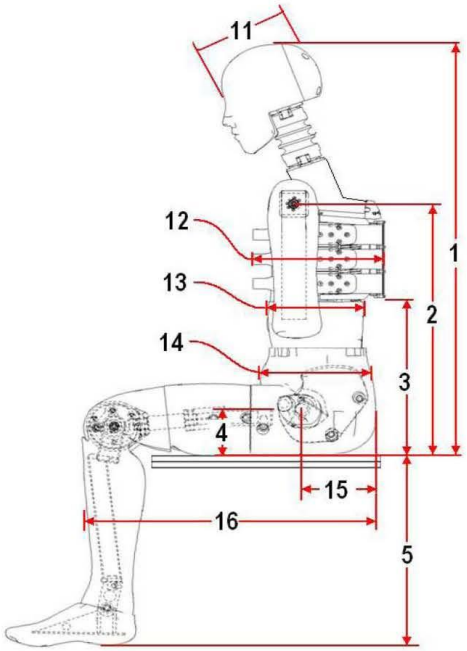
External Measurements - EuroSID-2re

Technician: 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

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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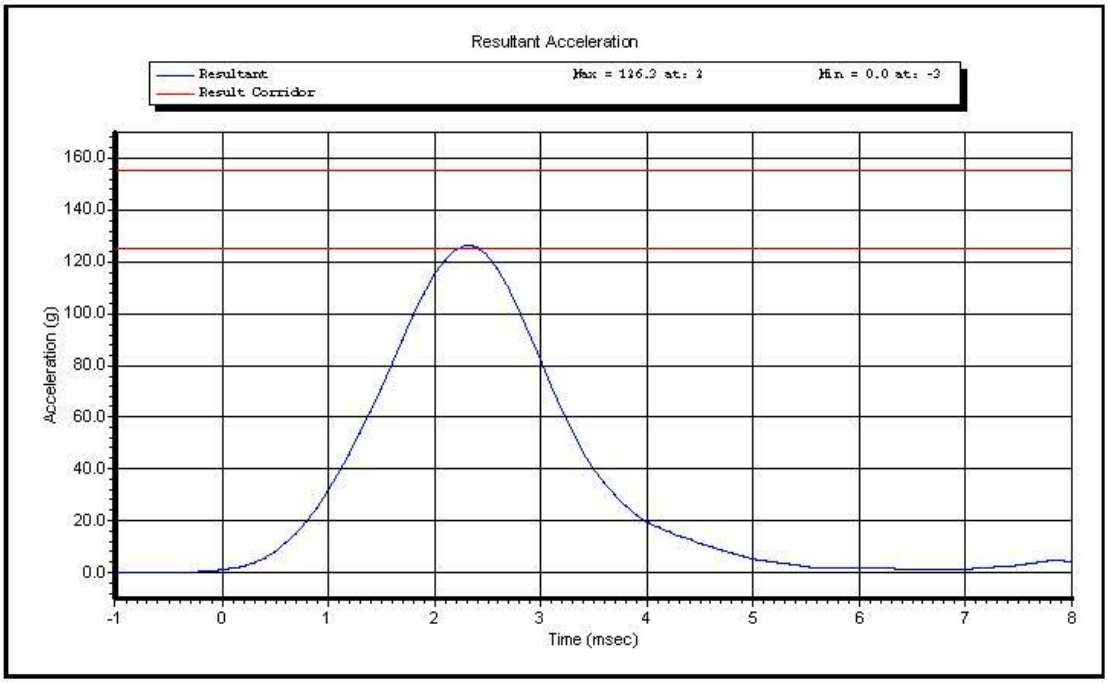
Test Name:	**Head Drop**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Head Drop** Test Time: **7:41:28 AM** Test Date: **12/10/2014**

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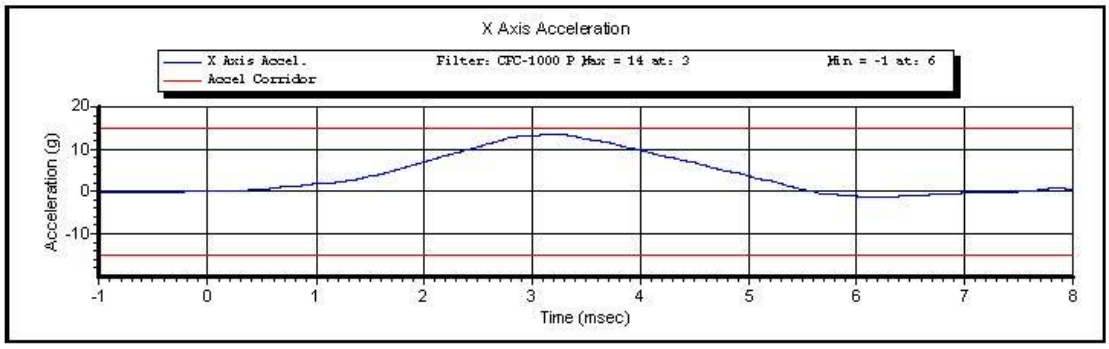

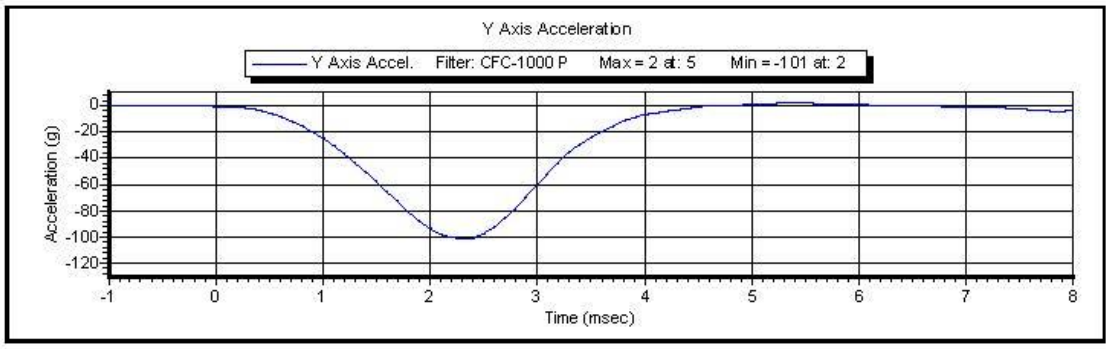

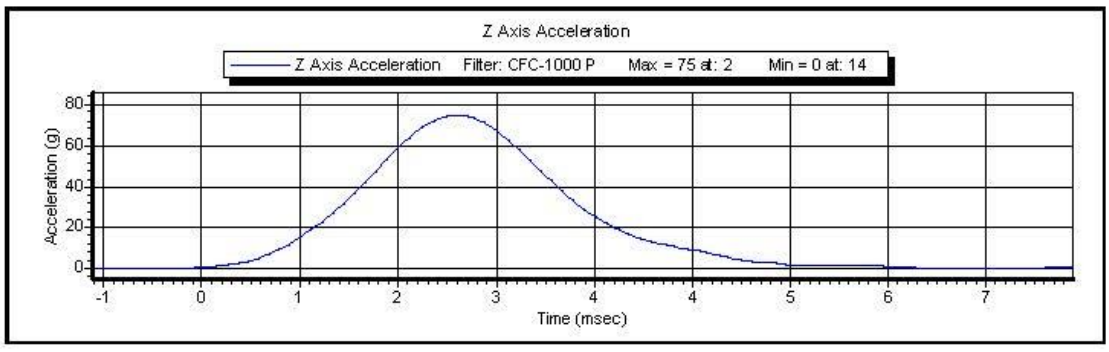

Test ID: **Head Drop** Test Time: **7:41:28 AM** Test Date: **12/10/2014**

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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:	**12/8/2014**
		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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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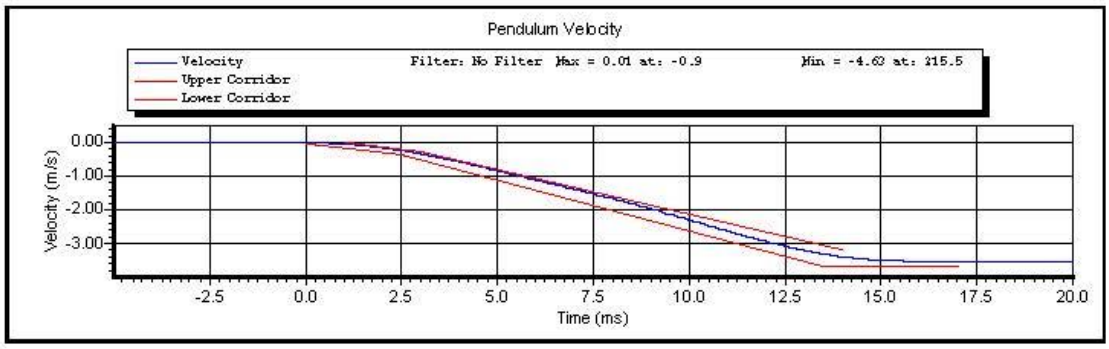
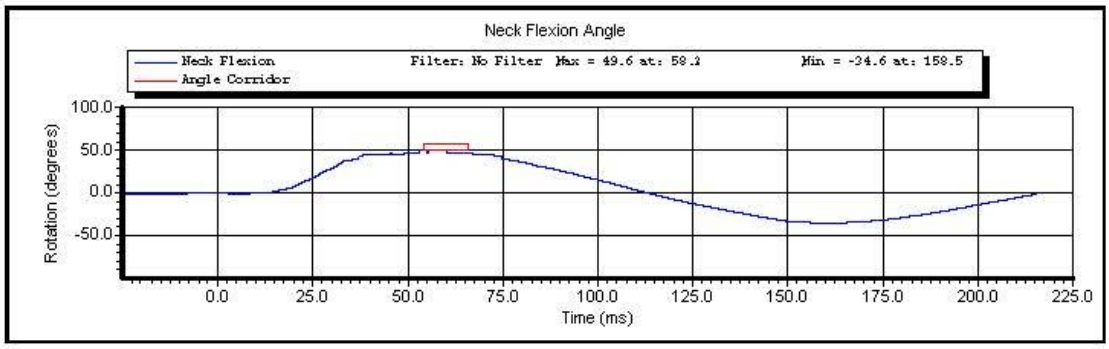
Test Name:	**Neck Flexion**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





Test ID: **Neck Flexion** Test Time: **1:29:57 PM** Test Date: **12/8/2014**

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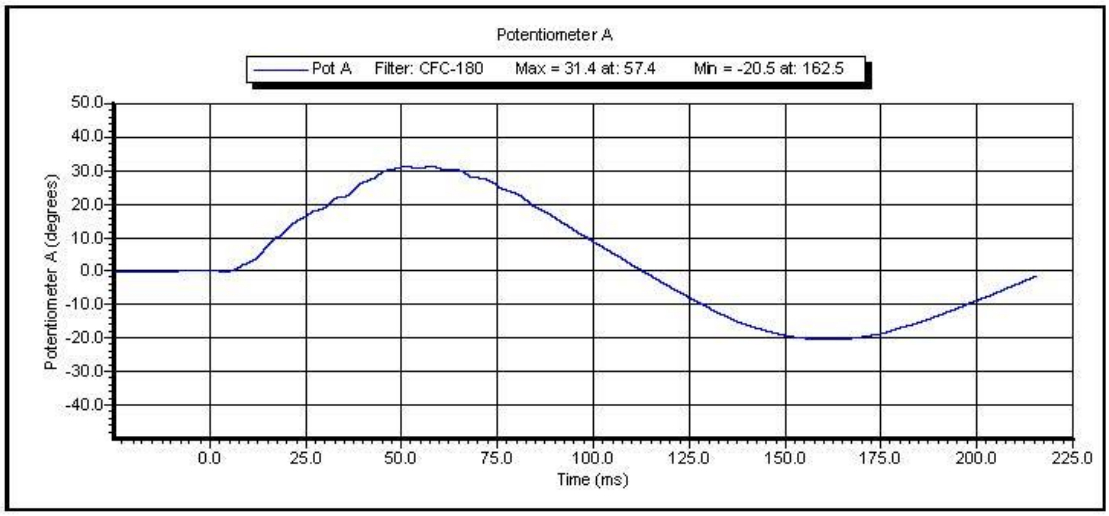

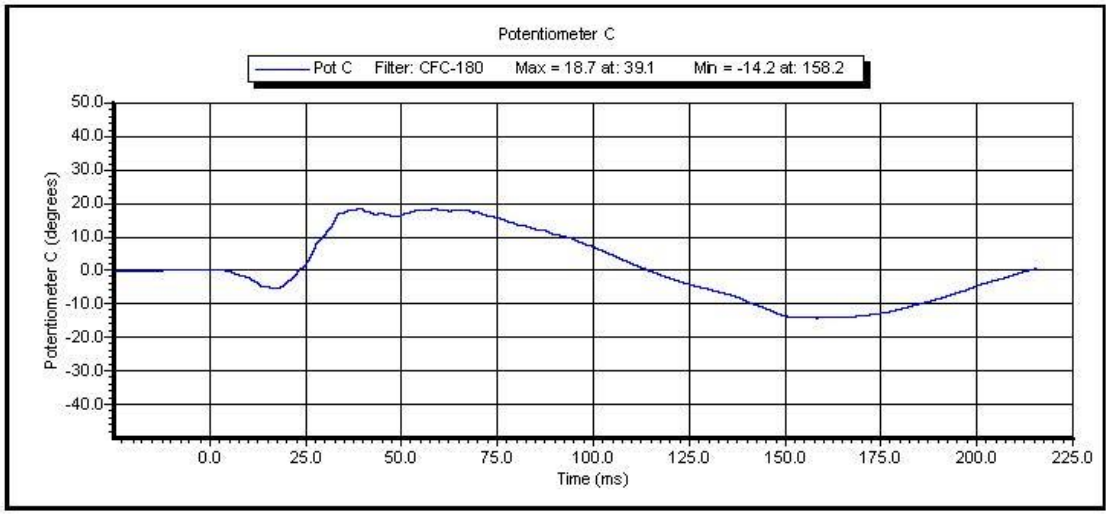

Test ID: **Neck Flexion** Test Time: **1:29:57 PM** Test Date: **12/8/2014**

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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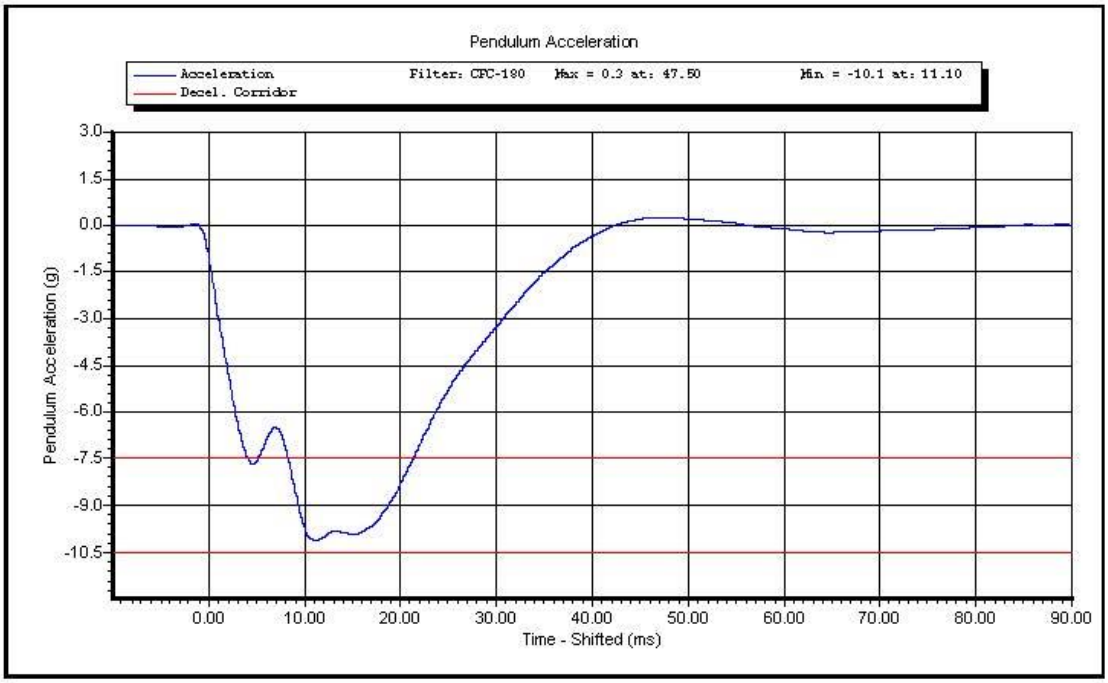
Test Name:	**Shoulder Impact**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



Test ID: **Shoulder Impact** Test Time: **10:33:56 AM** Test Date: **12/10/2014**

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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 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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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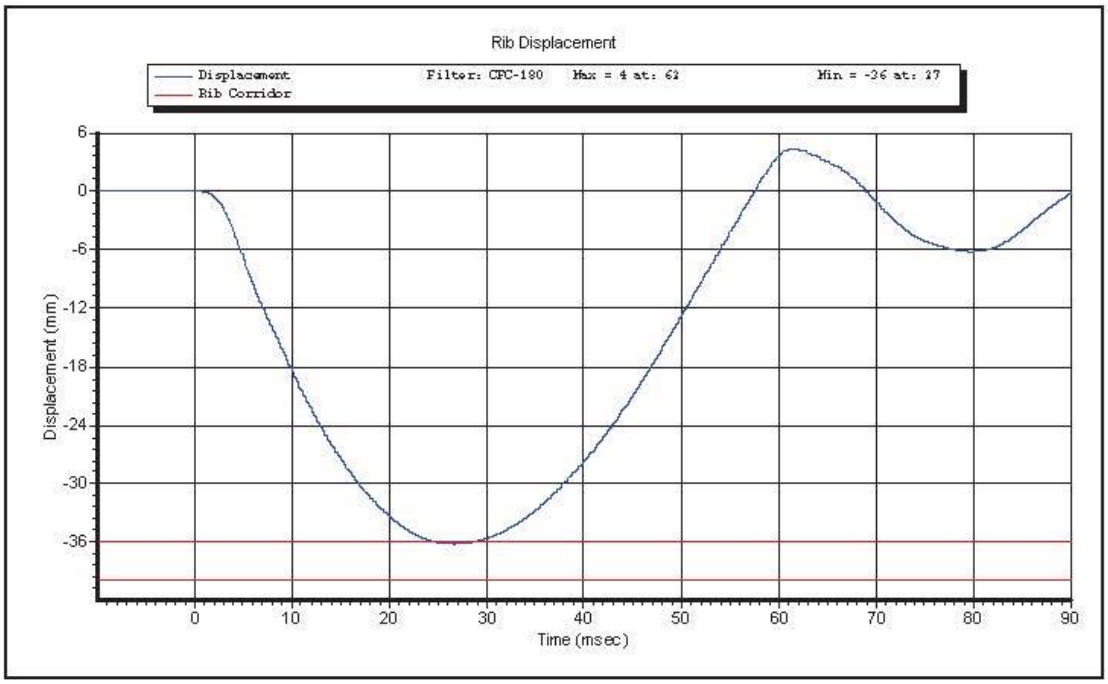
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**3.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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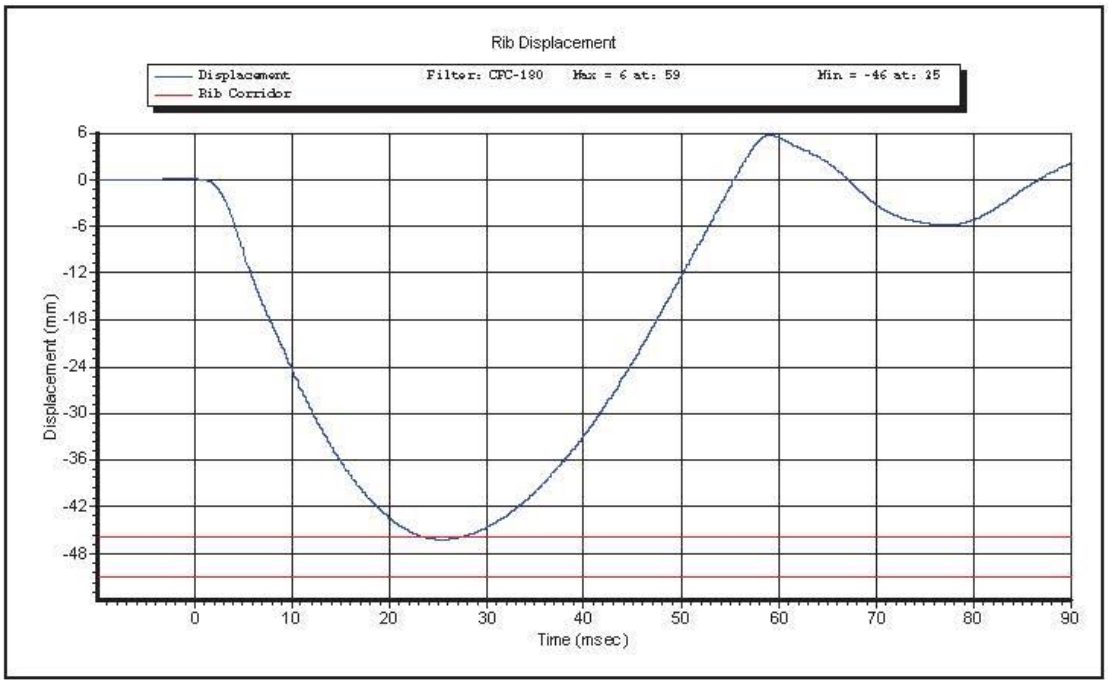
Test Name:	**Full Rib Module Impact**
Sub Test Name:	**4.0 Meters/Second**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**



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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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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**

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:	**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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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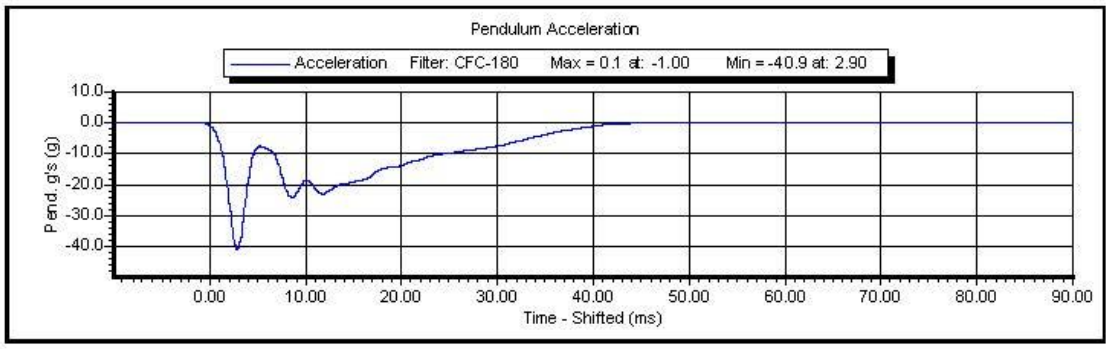
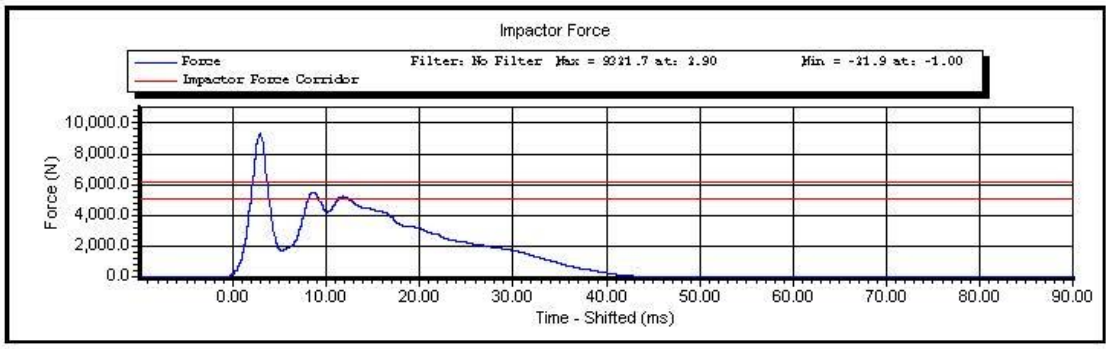
Test Name:	**Thorax Impact**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





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

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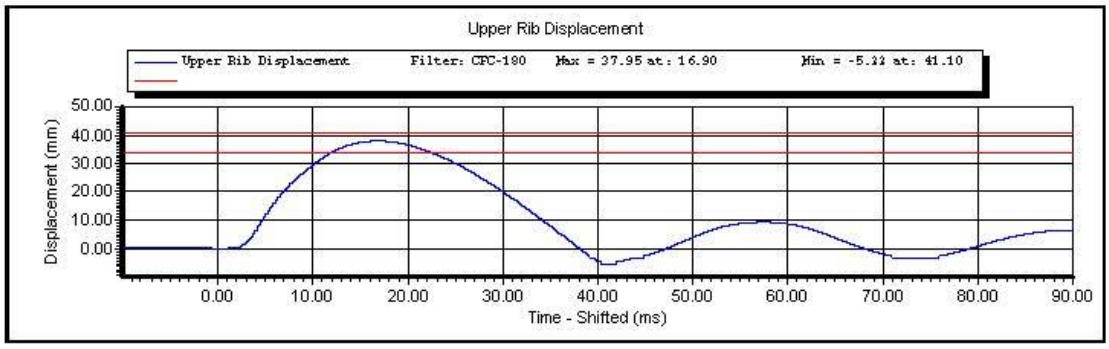

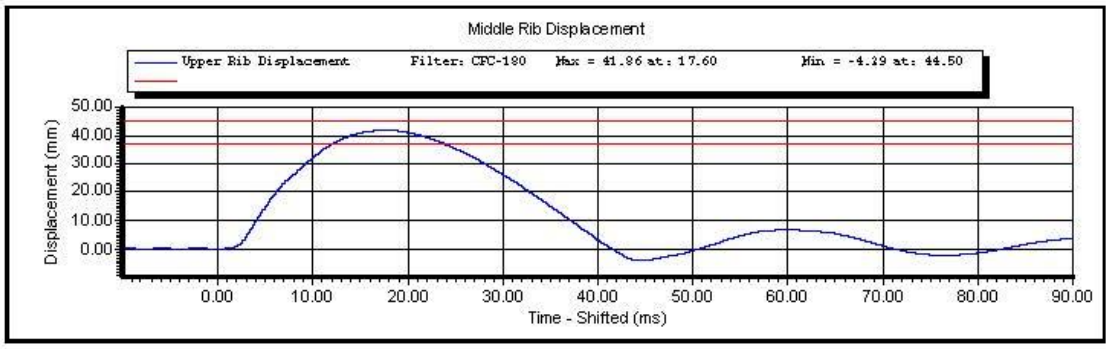

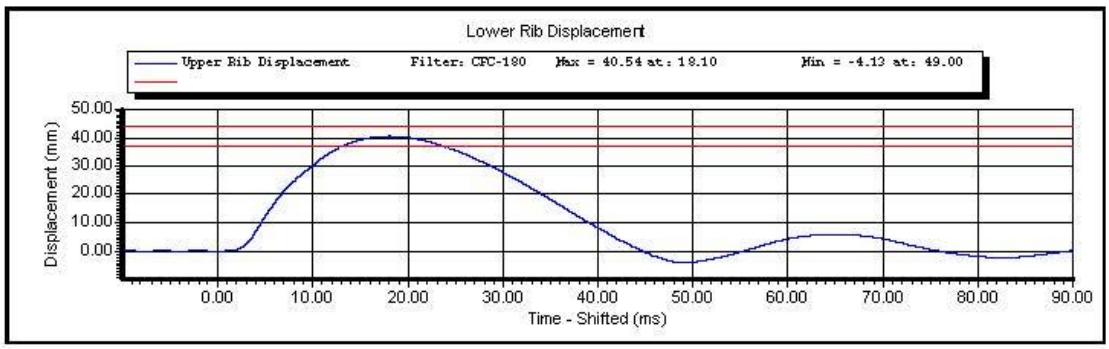

Test ID: **Thorax Impact** Test Time: **9:41:06 AM** Test Date: **12/10/2014**

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Calspan

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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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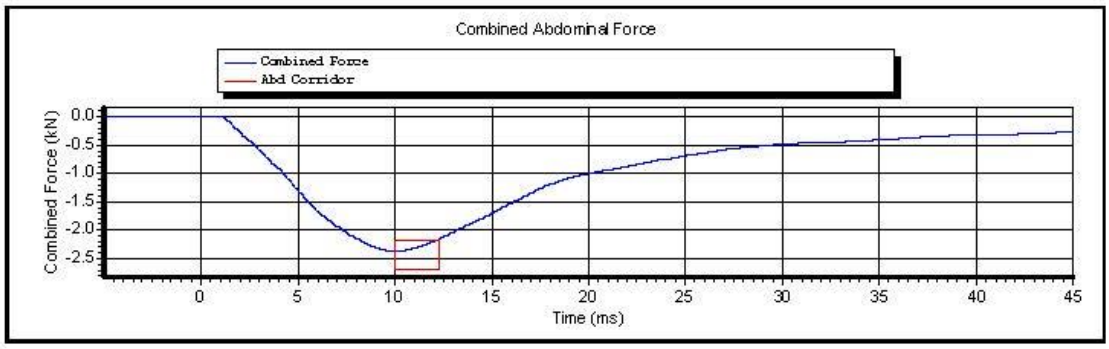
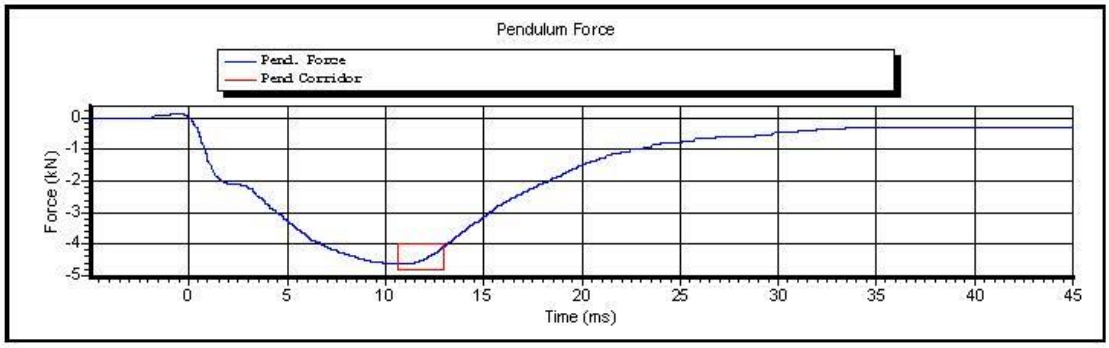
Test Name:	**Abdomen Impact**
Sub Test Name:	**Left Side**
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





Test ID: **Abdomen Impact** Test Time: **9:56:17 AM** Test Date: **12/10/2014**

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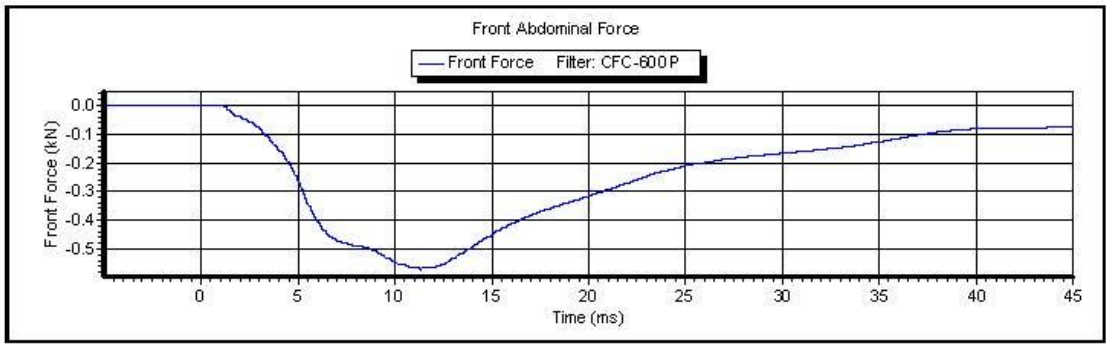

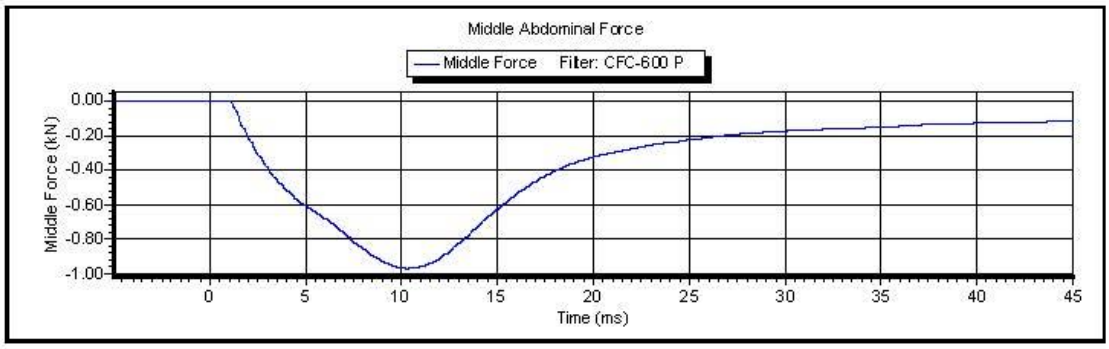

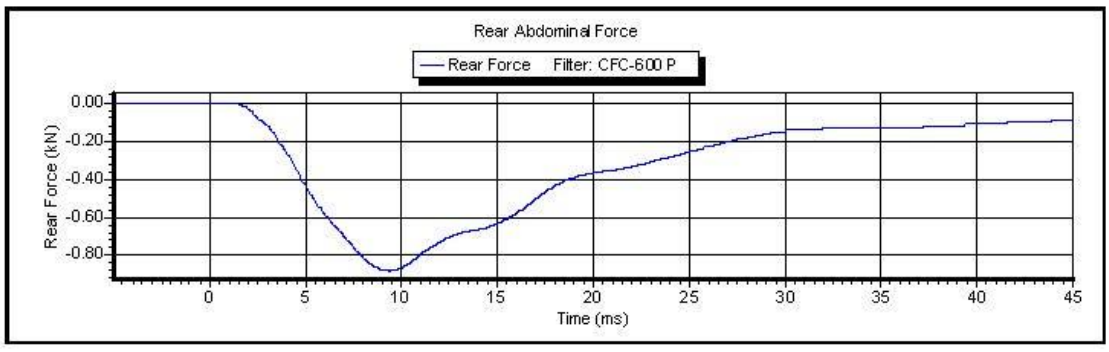

Test ID: **Abdomen Impact** Test Time: **9:56:17 AM** Test Date: **12/10/2014**

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Calspan

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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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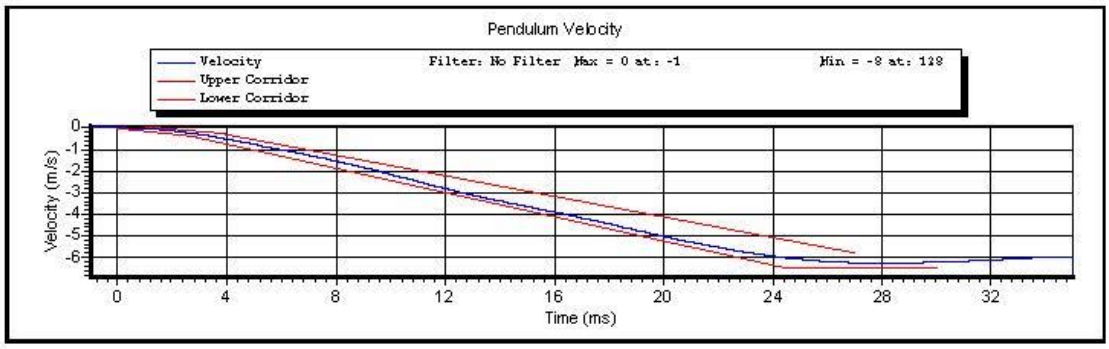
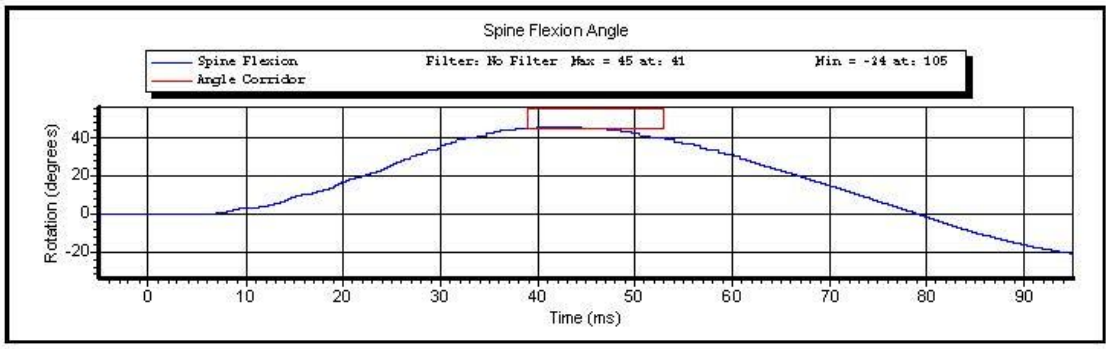
Test Name:	**Lumbar Spine**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





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

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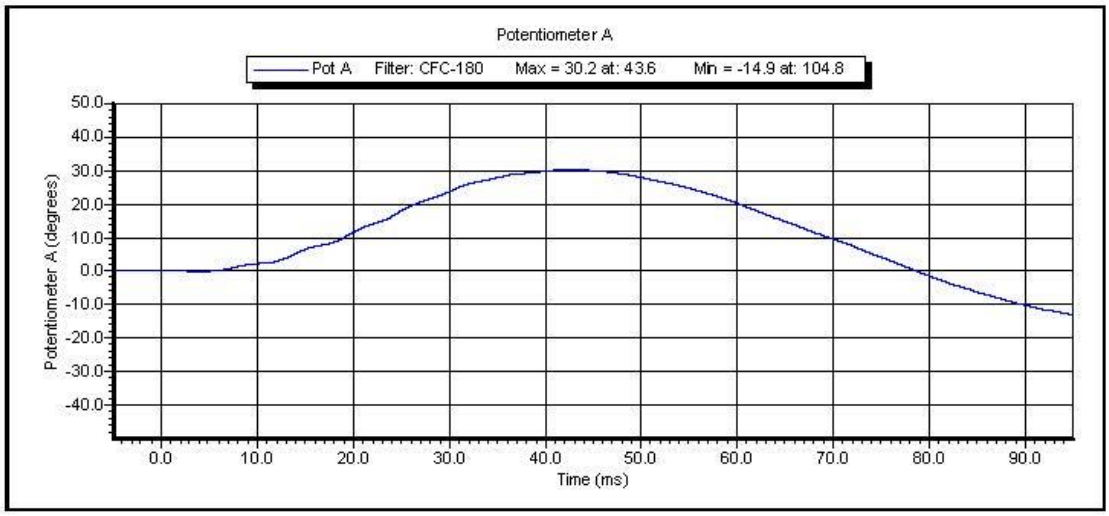

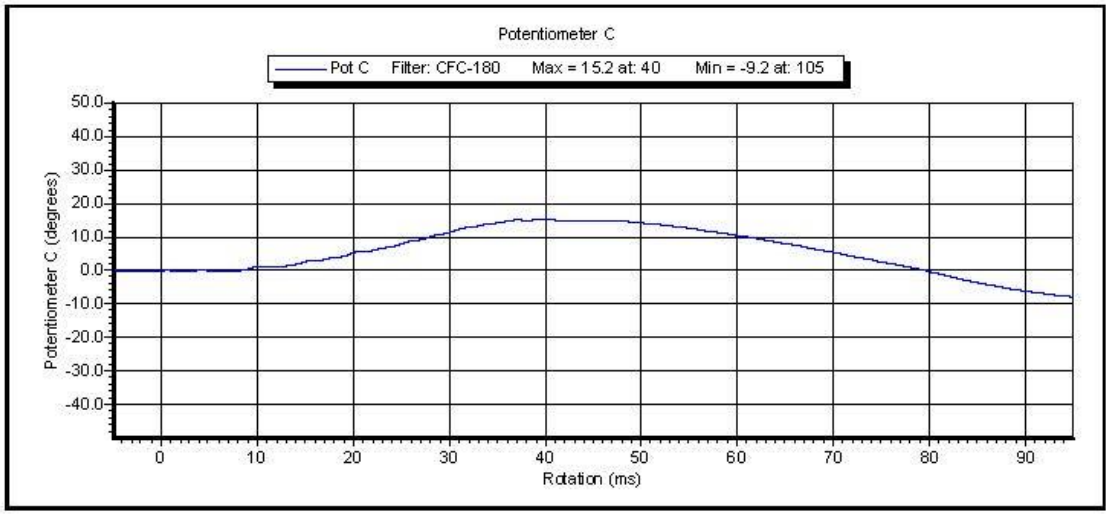

Test ID: **Lumbar Spine** Test Time: **2:54:51 PM** Test Date: **12/8/2014**

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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:	**12/10/2014**
		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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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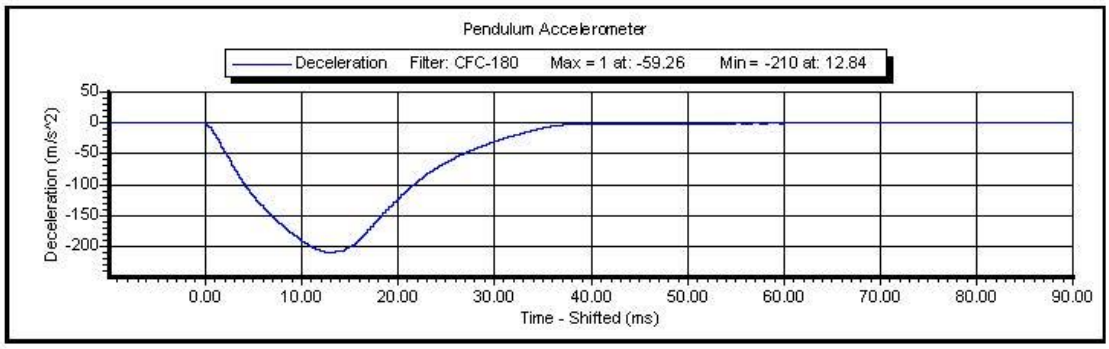
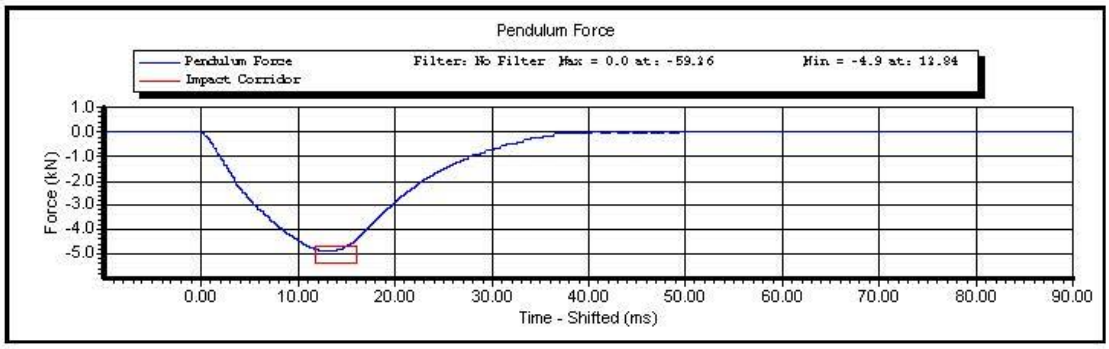
Test Name:	**Pelvis Impact**
Sub Test Name:	
ATD Type:	**ES-2re**
ATD Serial Number:	**F034**





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

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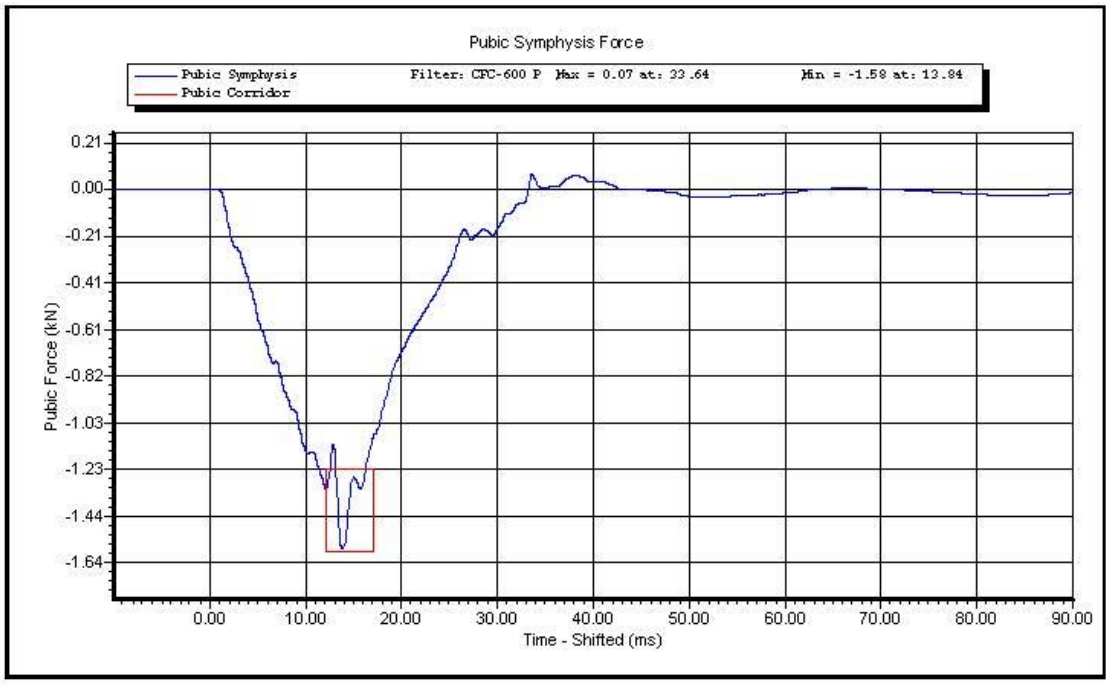

Test ID: **Pelvis Impact** Test Time: **10:19:56 AM** Test Date: **12/10/2014**

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CALIBRATION TEST RESULTS

POST-TEST

SID-IIS 5TH PERCENTILE FEMALE - PASSENGER ATD

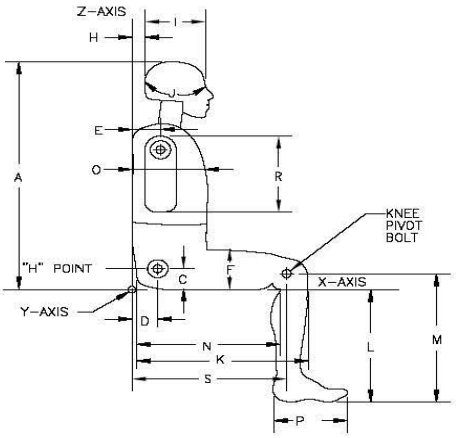
SERIAL No: 300

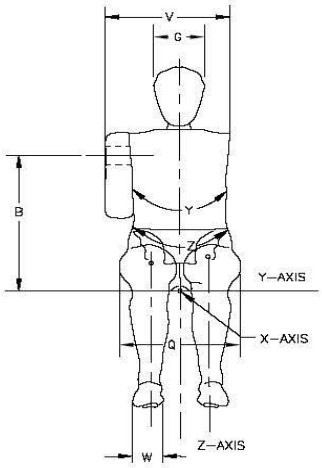
(CONFIGURED FOR LEFT SIDE IMPACT)

External Measurements - SID-IIs

Technician: M. Geesey Date: 12/9/2014

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

Calspan

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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

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

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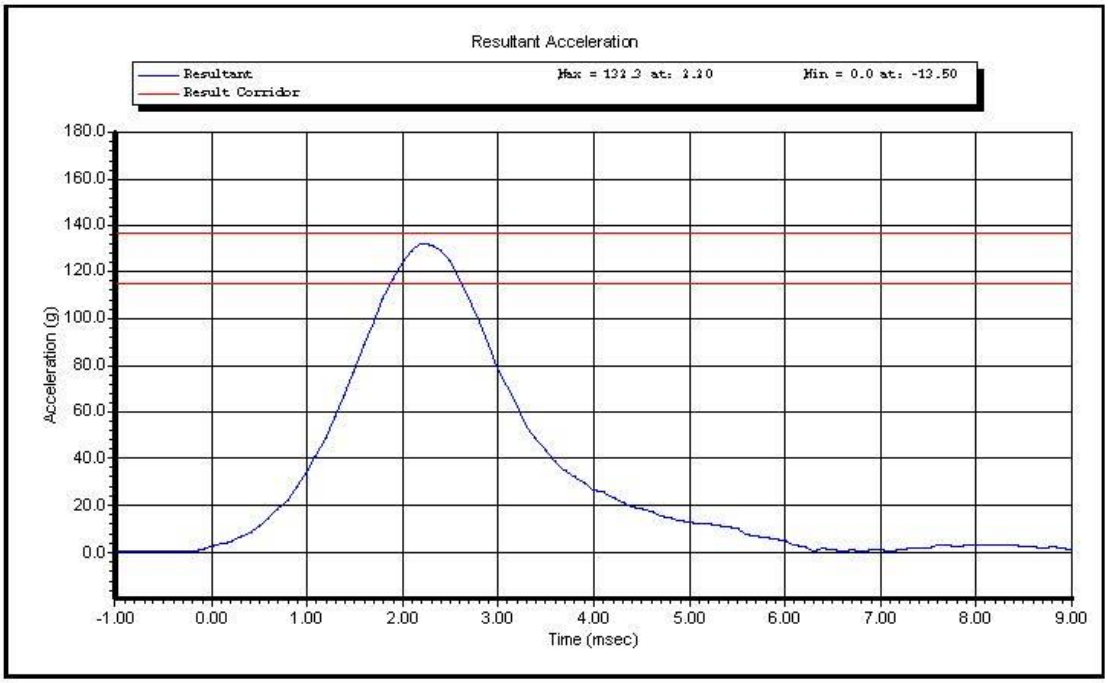
Test Name:	**Head Drop**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Head Drop** Test Time: **1:08:26 PM** Test Date: **12/9/2014**

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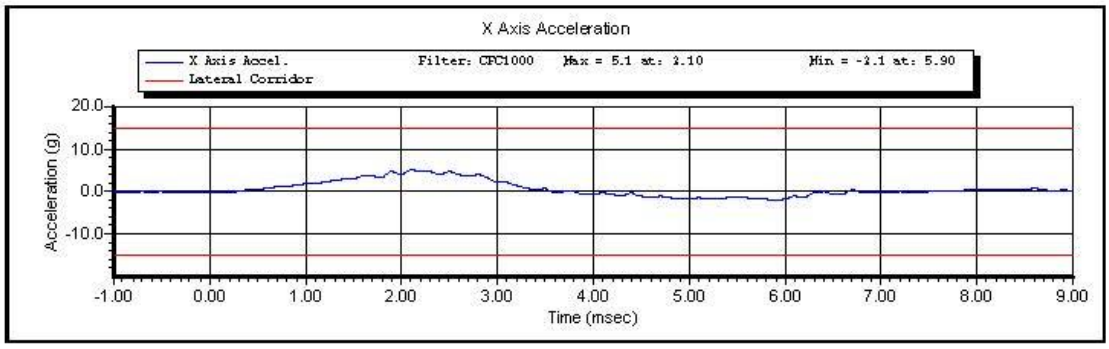

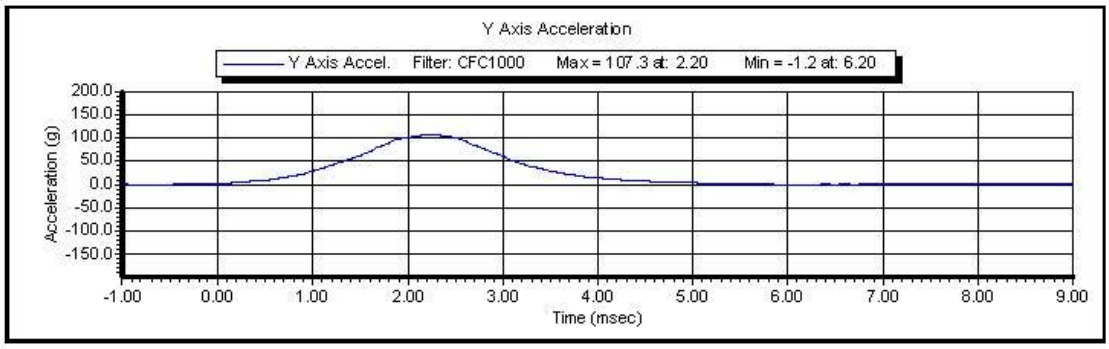

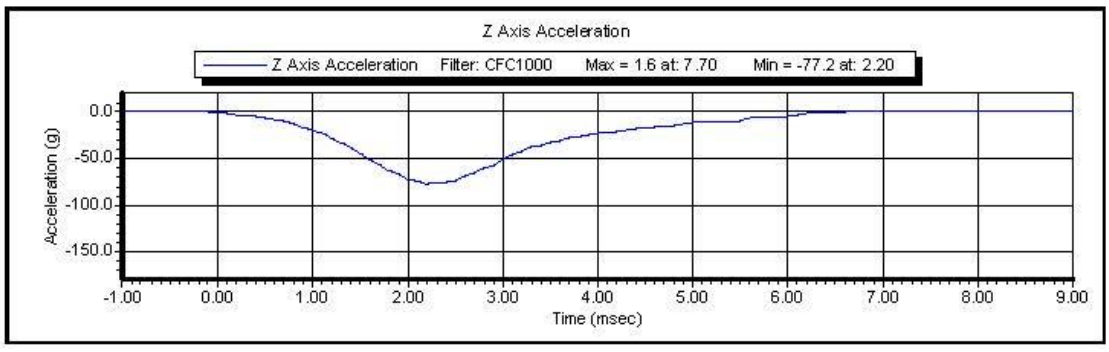

Test ID: **Head Drop** Test Time: **1:08:26 PM** Test Date: **12/9/2014**

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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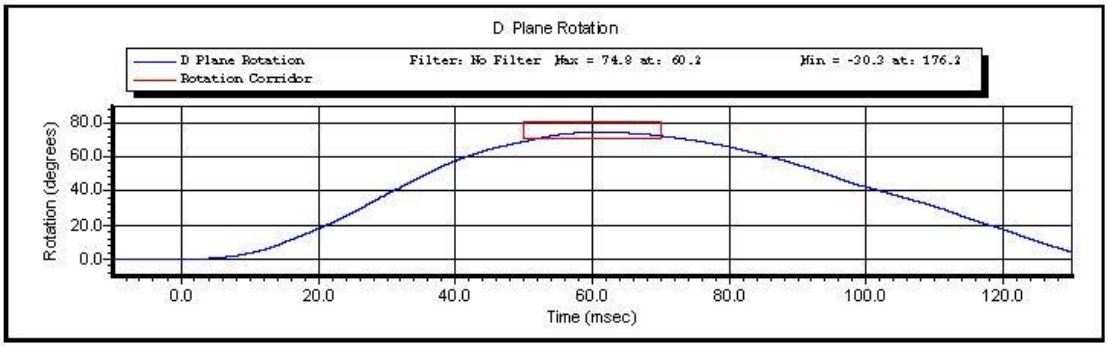
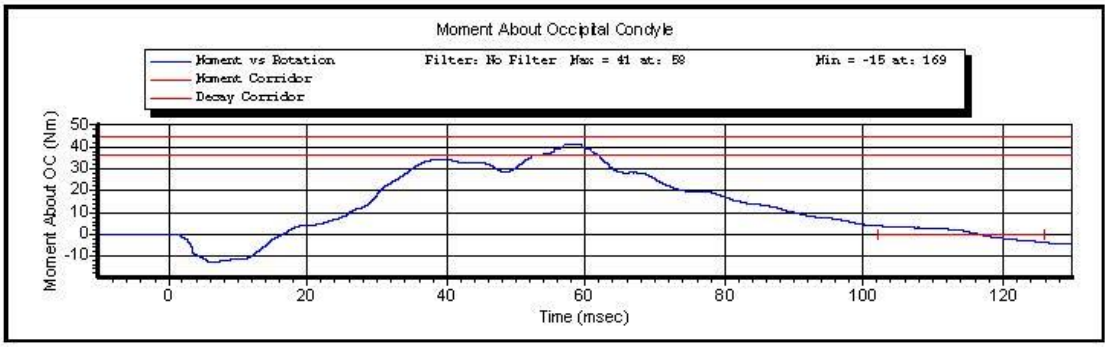
Test Name:	**Neck Pendulum**
Sub Test Name:	**Left Side**
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





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

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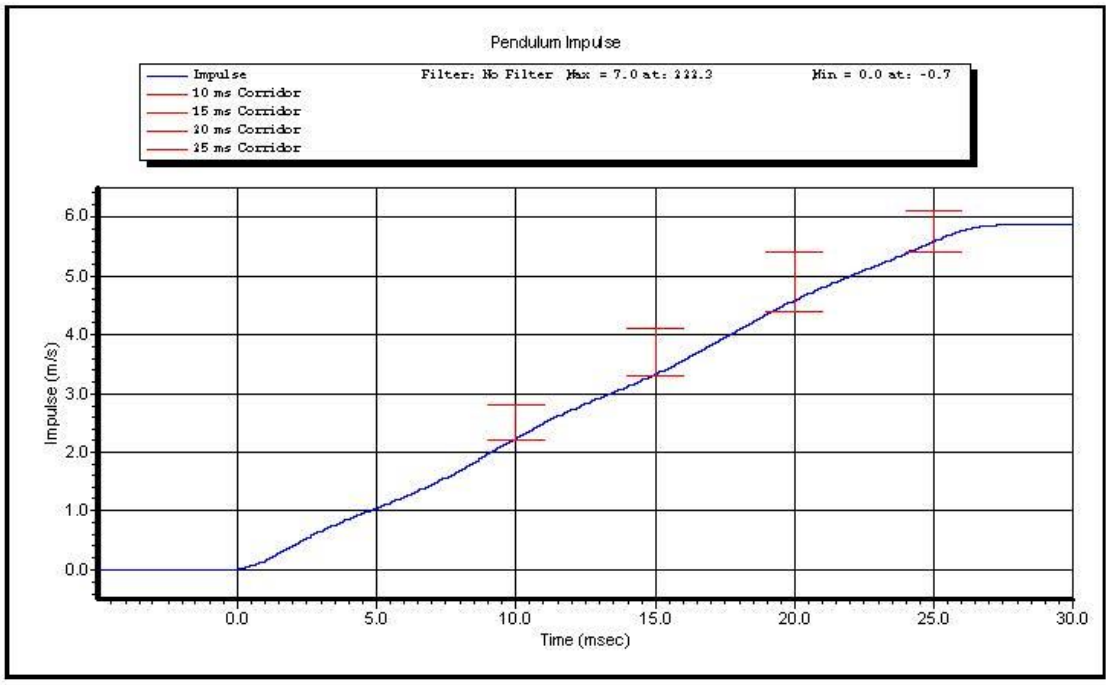

Test ID: **Neck Flexion** Test Time: **10:20:15 AM** Test Date: **12/9/2014**

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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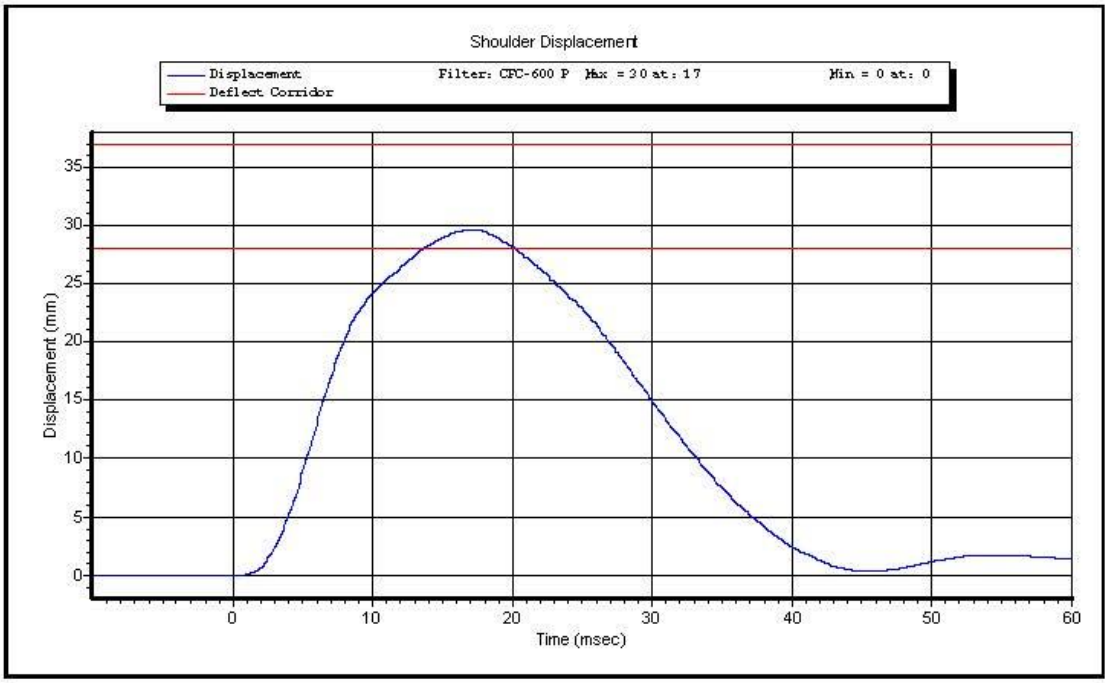
Test Name:	**Shoulder Impact**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Shoulder Impact** Test Time: **2:44:20 PM** Test Date: **12/8/2014**

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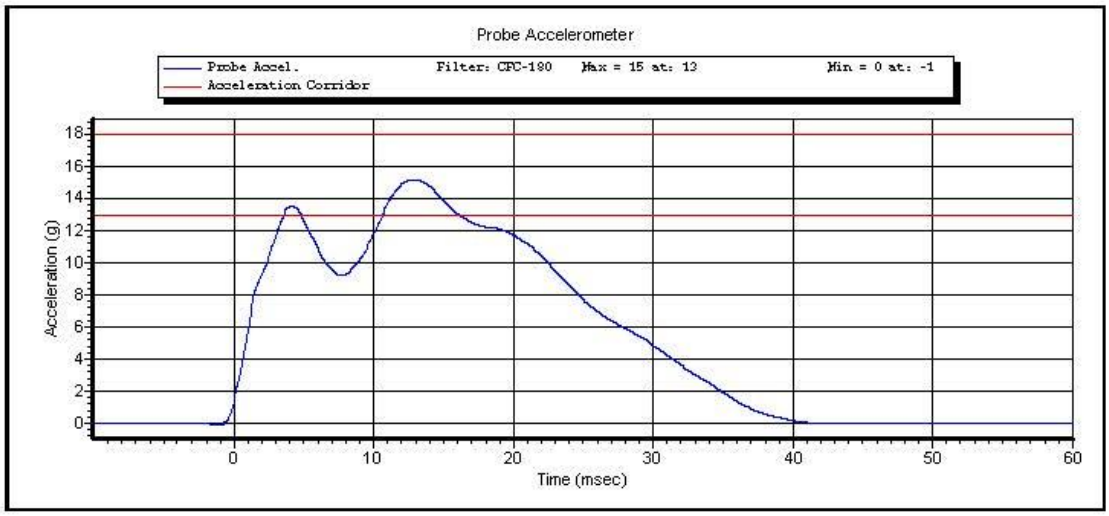

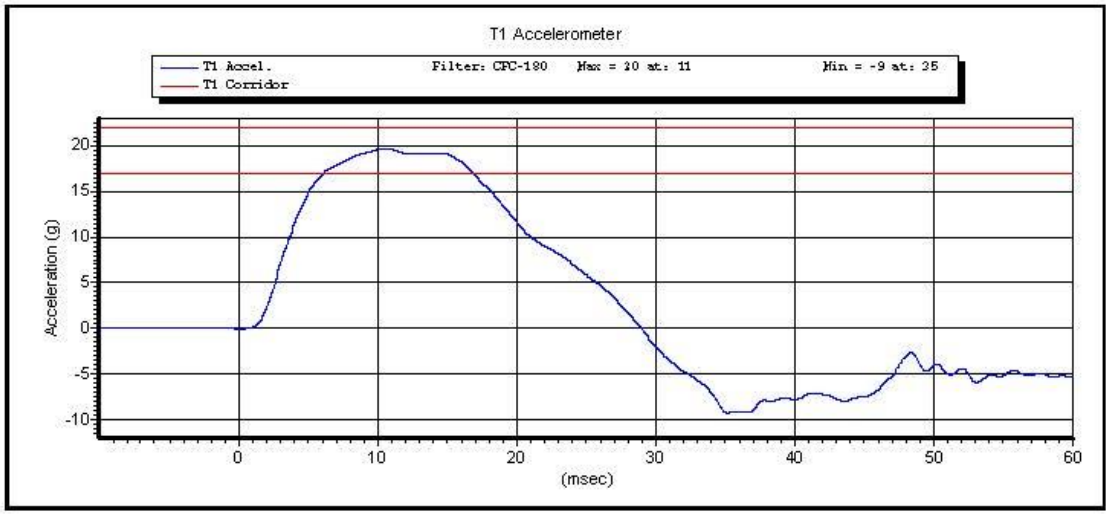

Test ID: **Shoulder Impact** Test Time: **2:44:20 PM** Test Date: **12/8/2014**

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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 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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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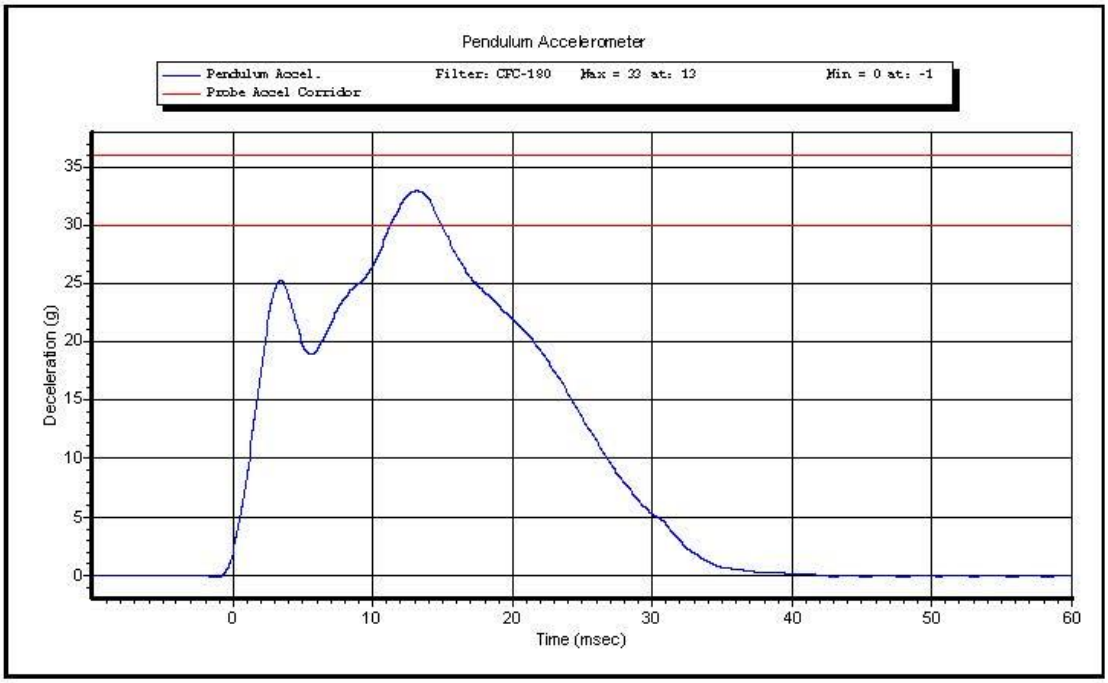
Test Name:	**Thorax Impact with Arm**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Thorax With Arm** Test Time: **4:07:52 PM** Test Date: **12/8/2014**

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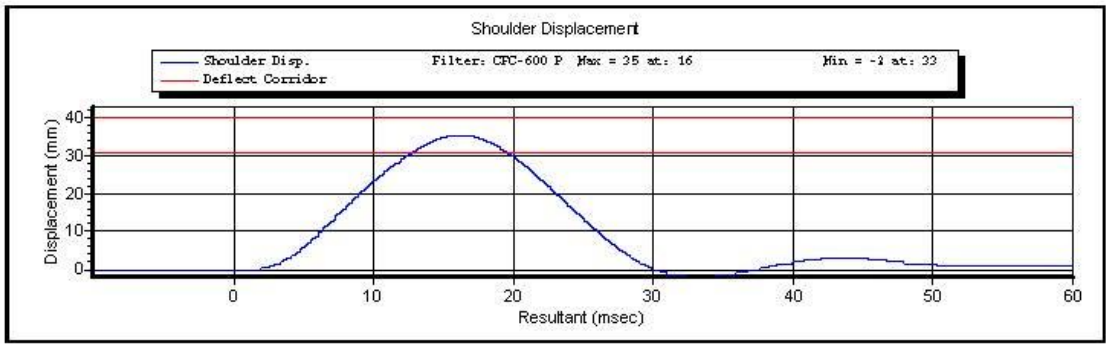

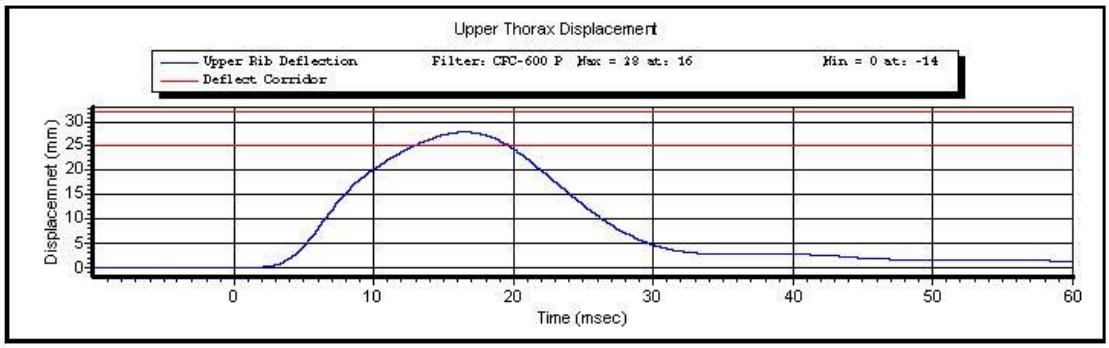

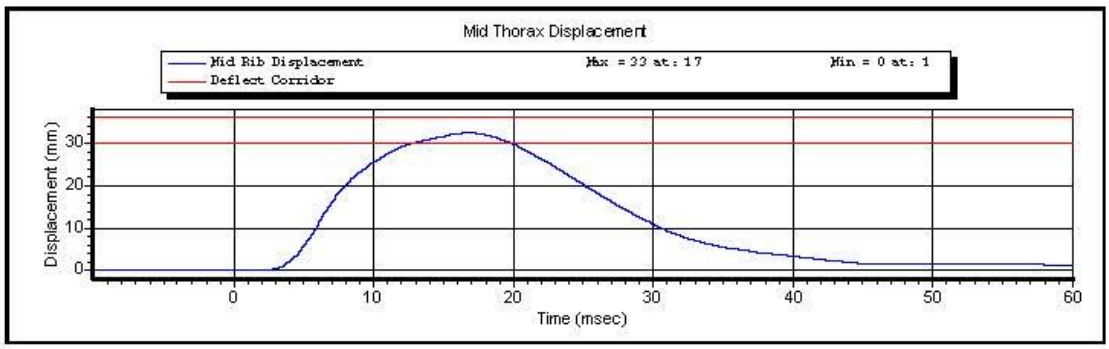

Test ID: **Thorax With Arm** Test Time: **4:07:52 PM** Test Date: **12/8/2014**

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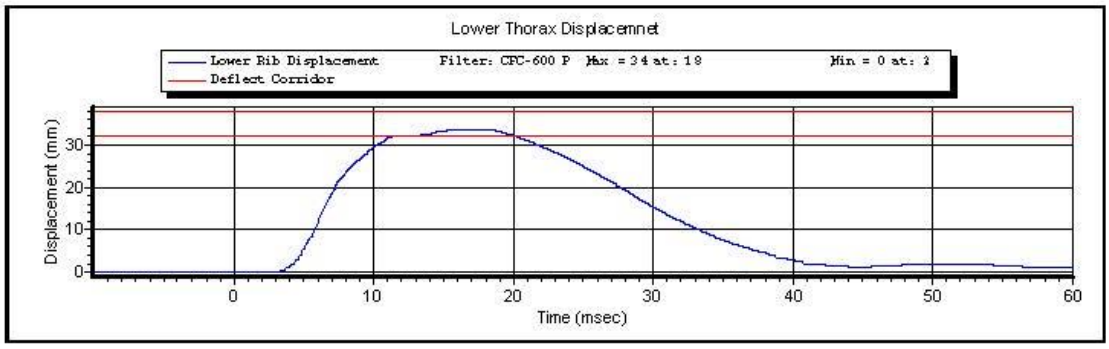

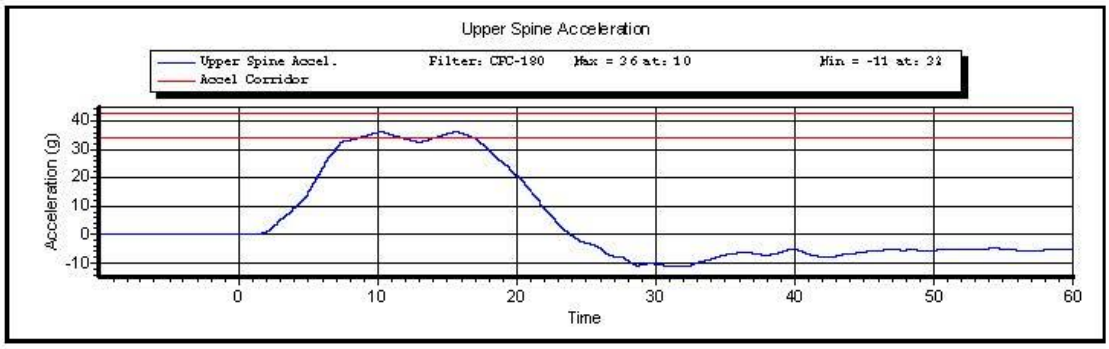

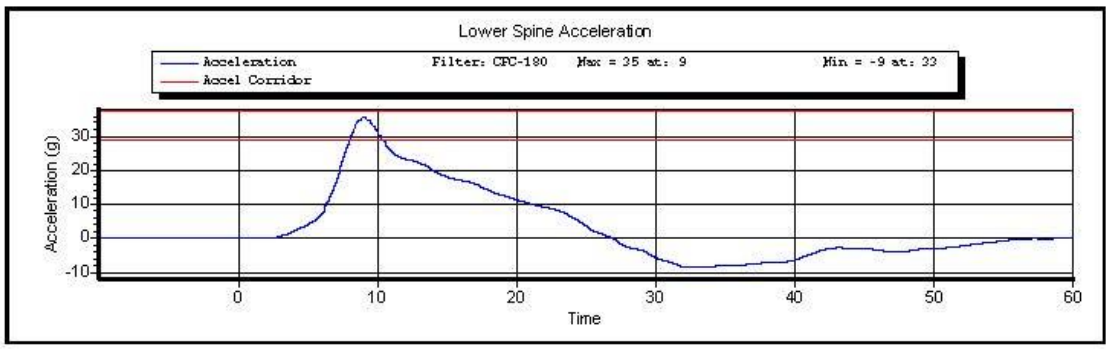

Test ID: **Thorax With Arm** Test Time: **4:07:52 PM** Test Date: **12/8/2014**

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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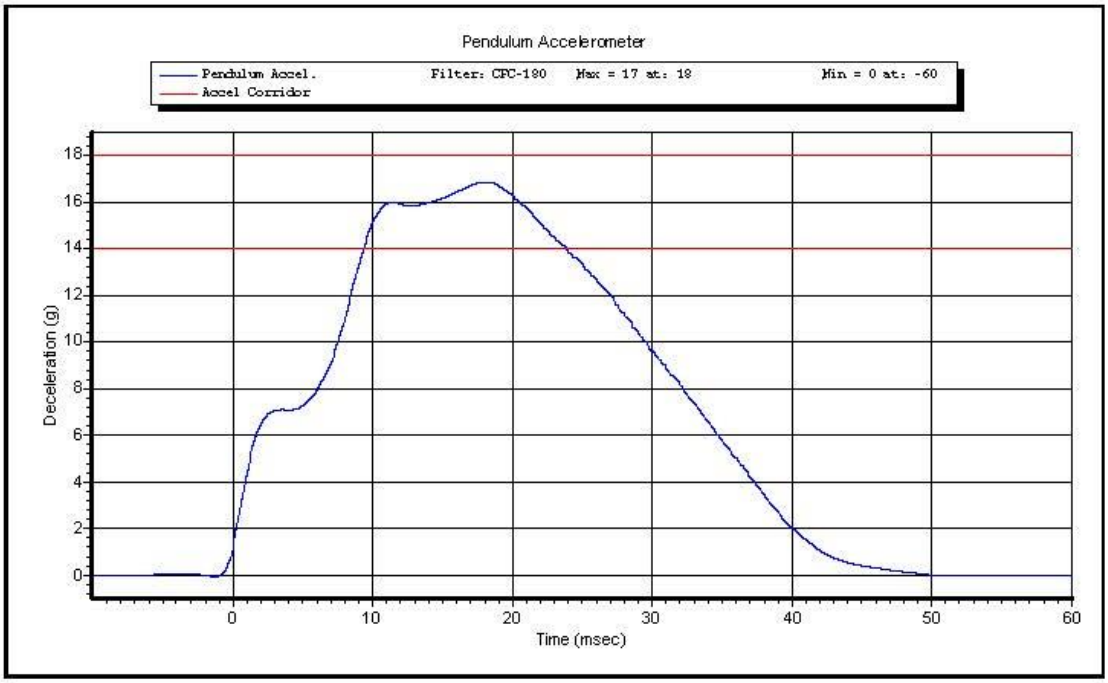
Test Name:	**Thorax Impact without Arm**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**



Test ID: **Thorax w/o Arm** Test Time: **2:18:08 PM** Test Date: **12/8/2014**

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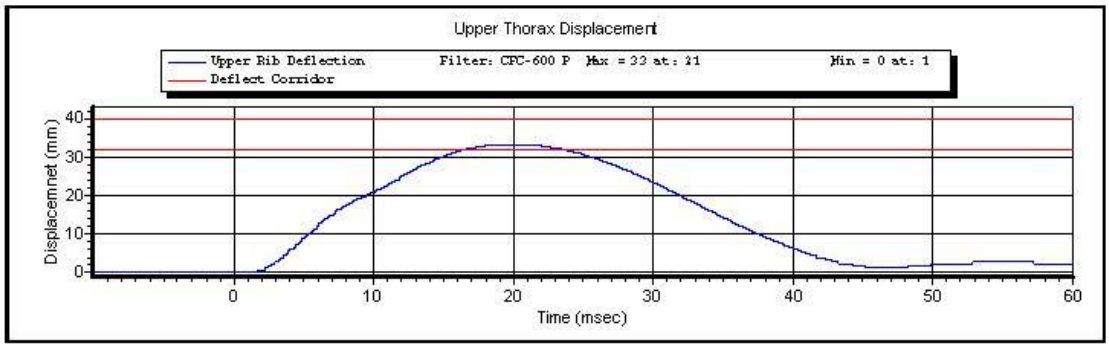

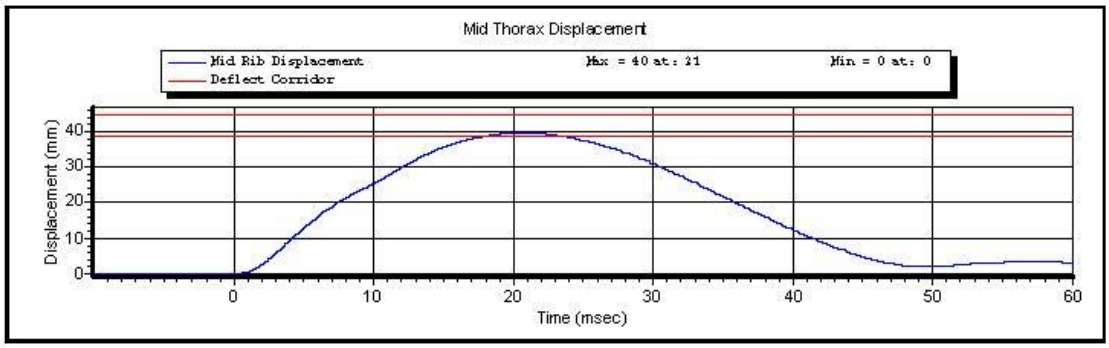

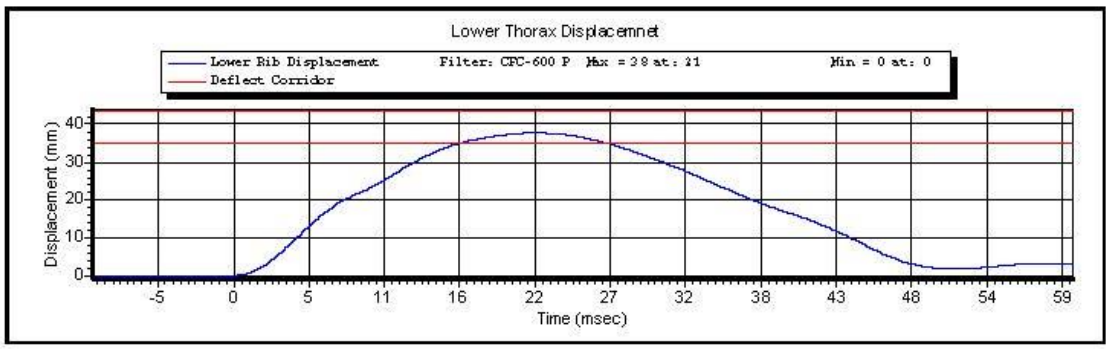

Test ID: **Thorax w/o Arm** Test Time: **2:18:08 PM** Test Date: **12/8/2014**

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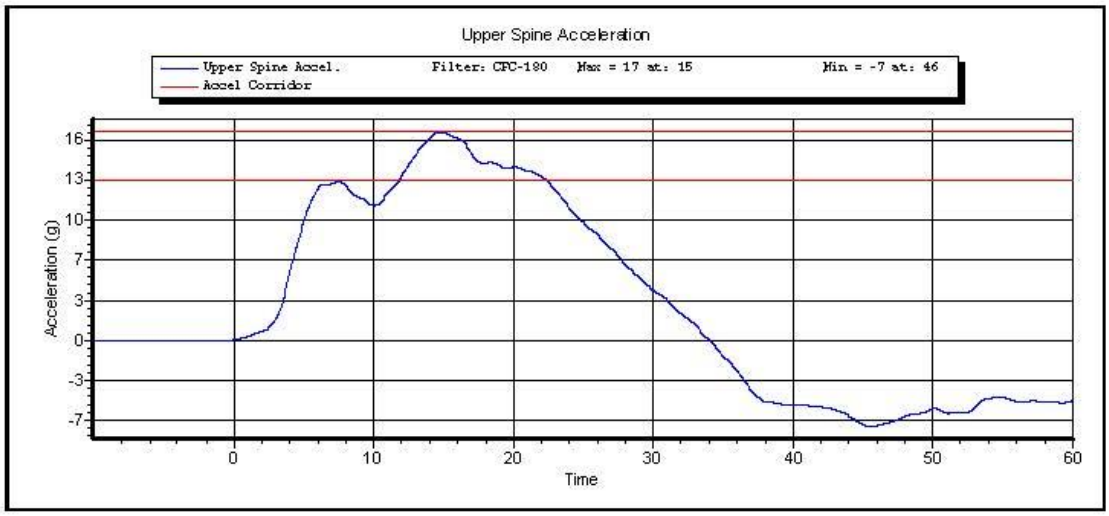

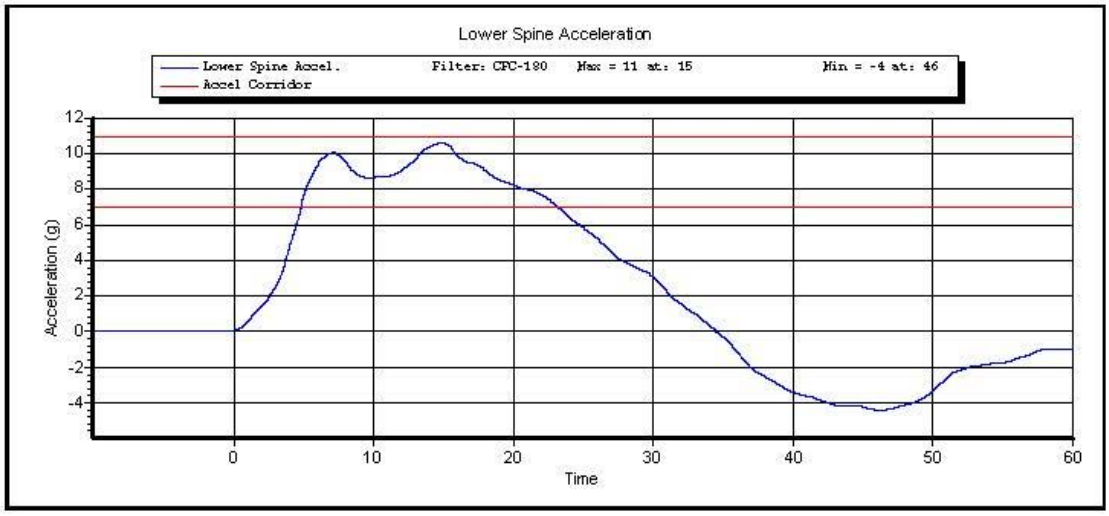

Test ID: **Thorax w/o Arm** Test Time: **2:18:08 PM** Test Date: **12/8/2014**

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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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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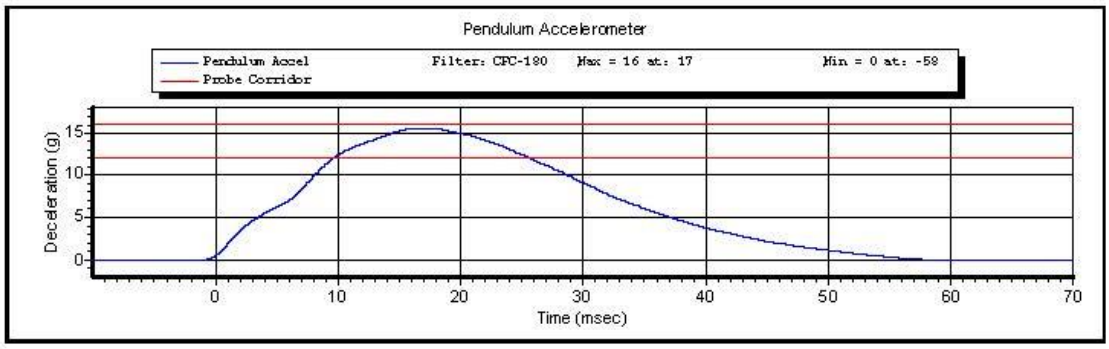
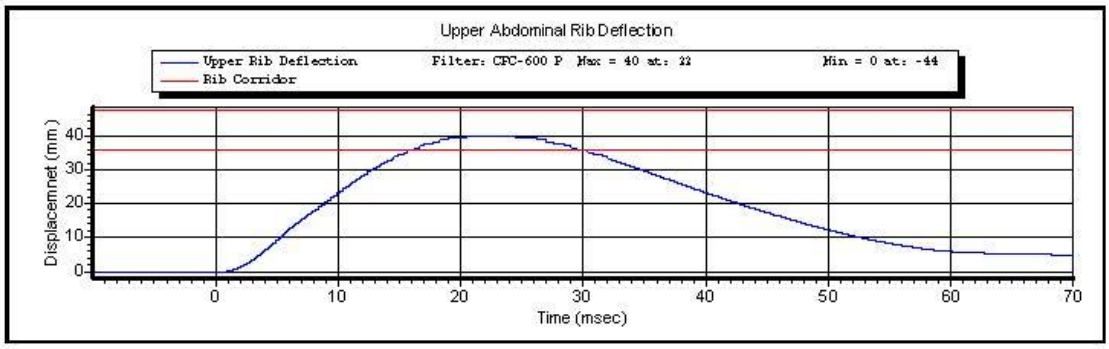
Test Name:	**Abdominal Impact**
Sub Test Name:	
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





Test ID: **Abdomen Impact** Test Time: **1:51:09 PM** Test Date: **12/8/2014**

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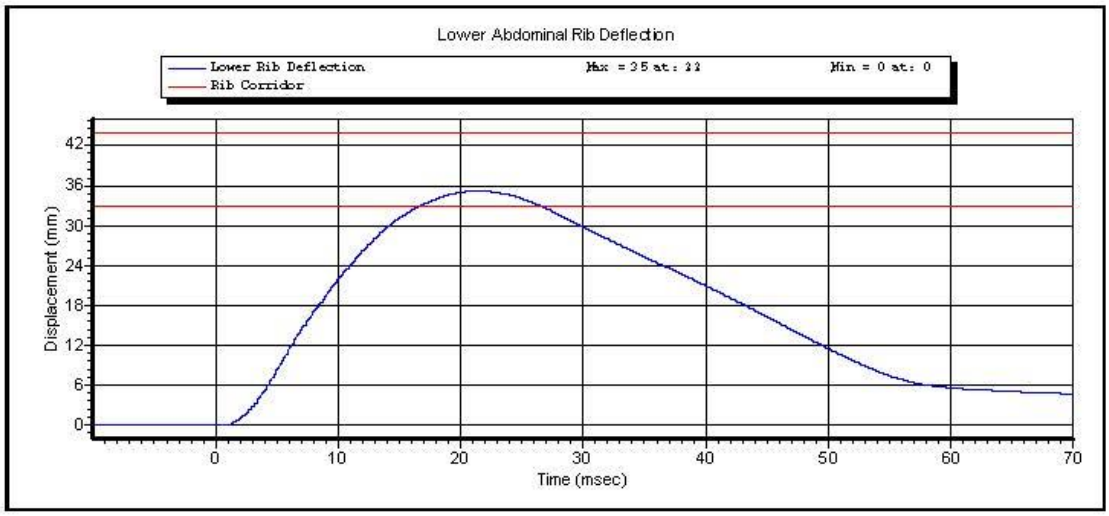

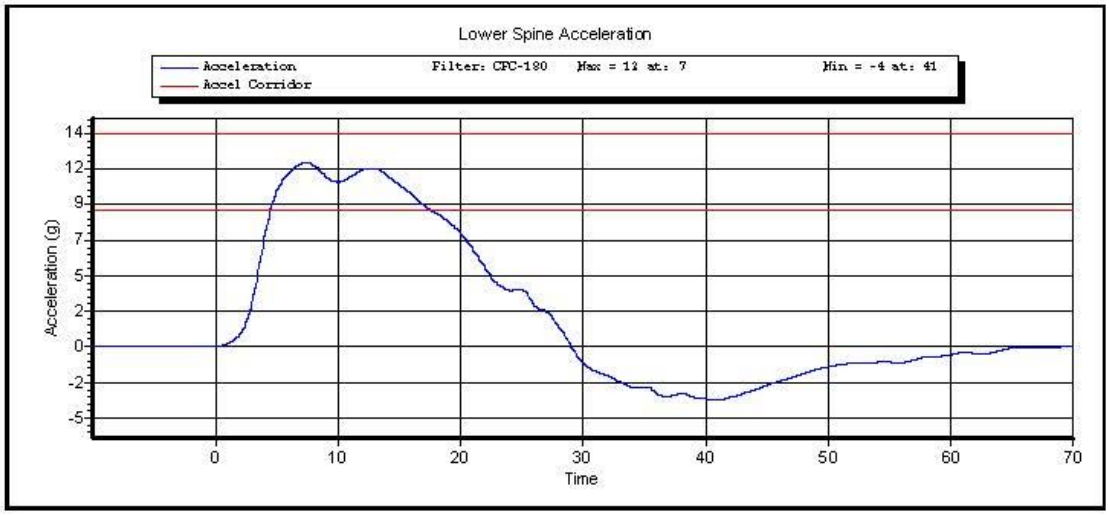

Test ID: **Abdomen Impact** Test Time: **1:51:09 PM** Test Date: **12/8/2014**

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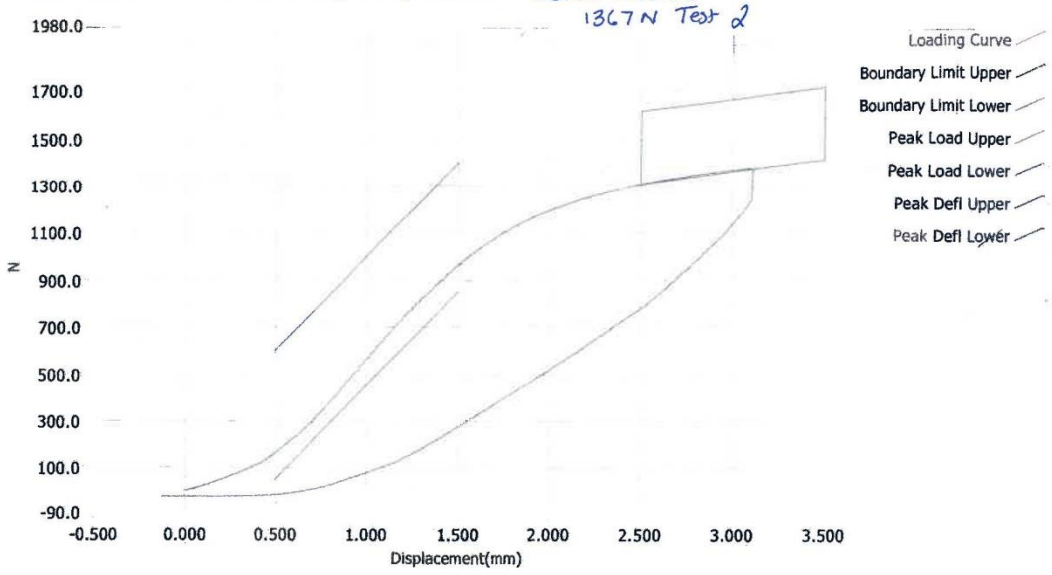
Resultant Data - SIDIIs Plug Compression -- CERTIFICATION 1367 N Test 2

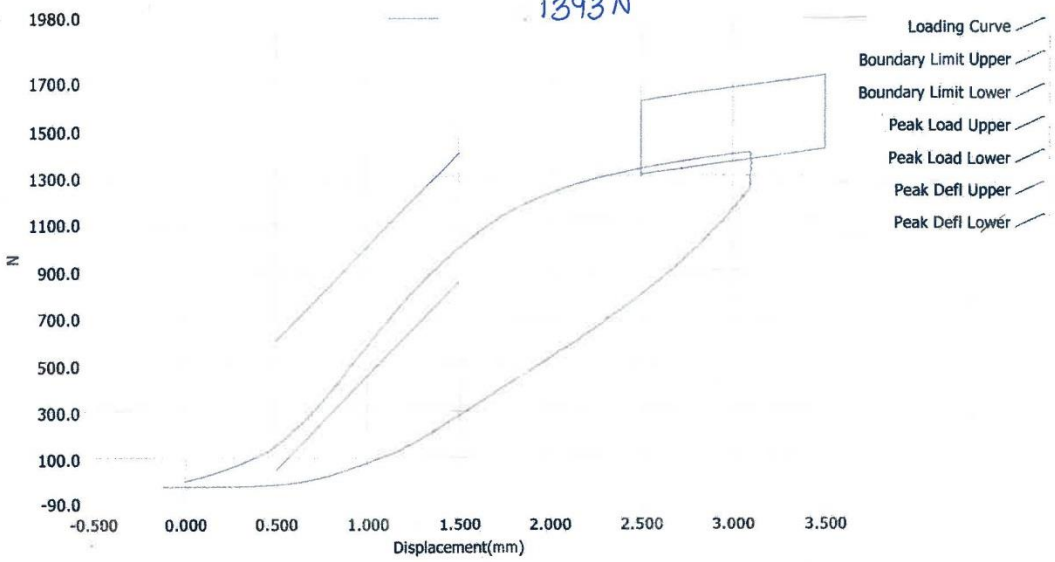


ATD Calibration Lab

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

Calspan

VERIFICATION REPORT

Test Name:	**Pelvis**	Revision:	**8/24/2009**
Sub Test Name:	**Acetabulum Impact**		
ATD Type:	**SID-IIs**		
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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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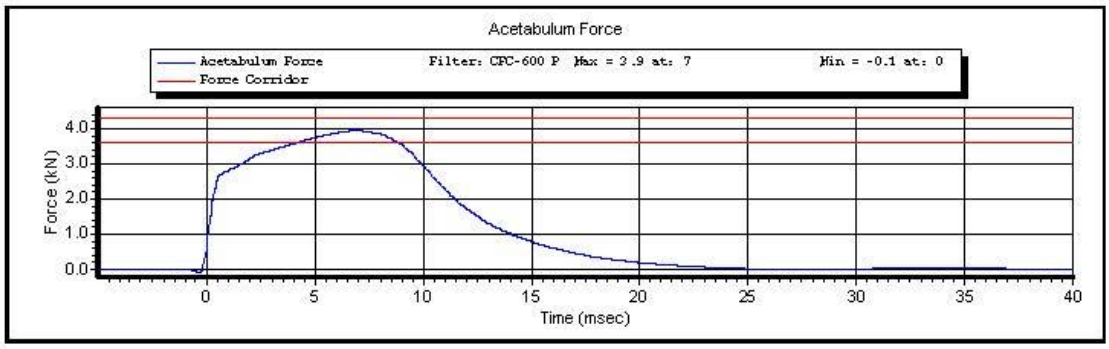
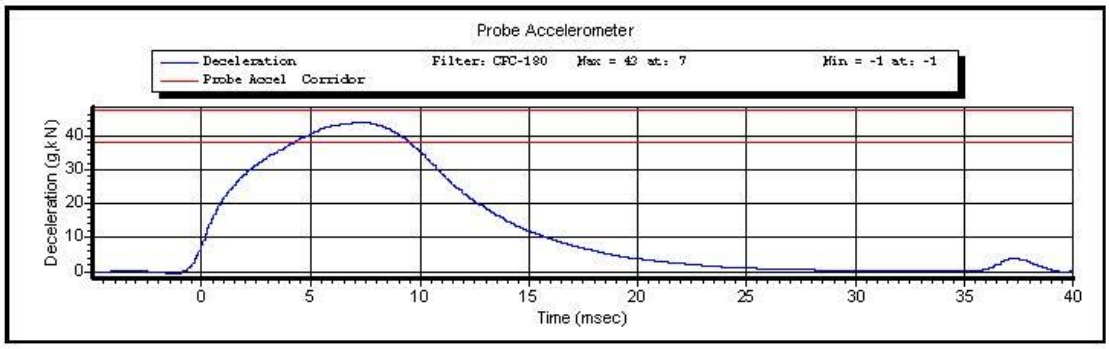
Test Name:	**Pelvis**
Sub Test Name:	**Acetabulum Impact**
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





Test ID: **Left Acetabulum** Test Time: **11:28:46 AM** Test Date: **12/10/2014**

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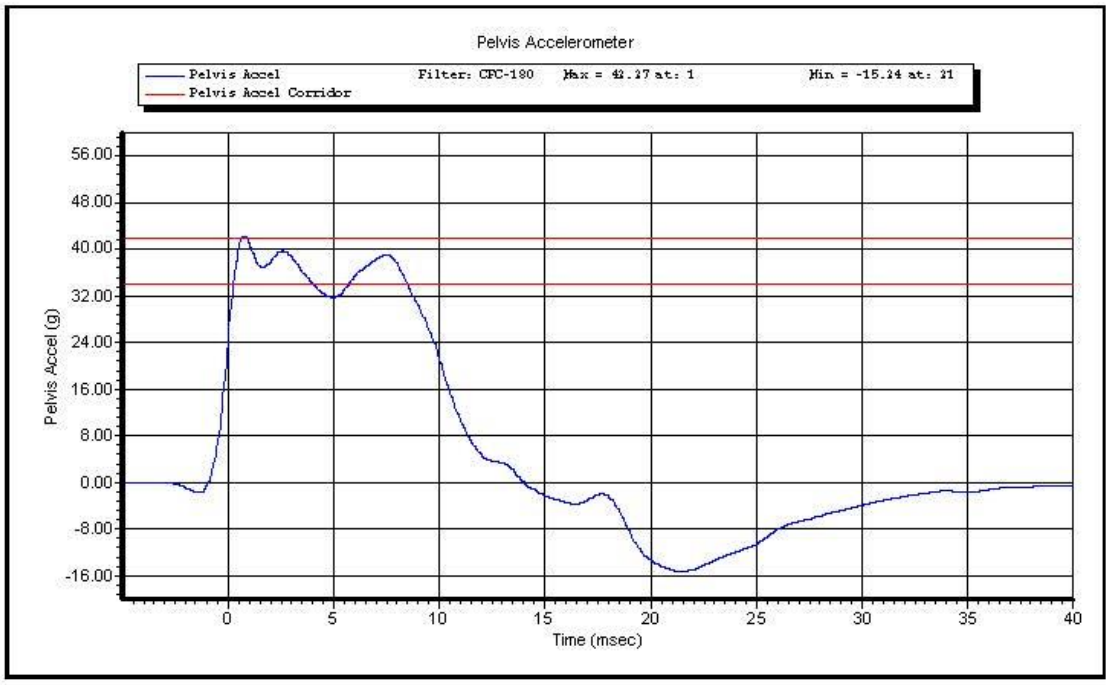

Test ID: **Left Acetabulum** Test Time: **11:28:46 AM** Test Date: **12/10/2014**

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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:	**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**

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VERIFICATION REPORT

REFERENCE EQUIPMENT

Manufacturer	Model	Serial Number	Calibration Date
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

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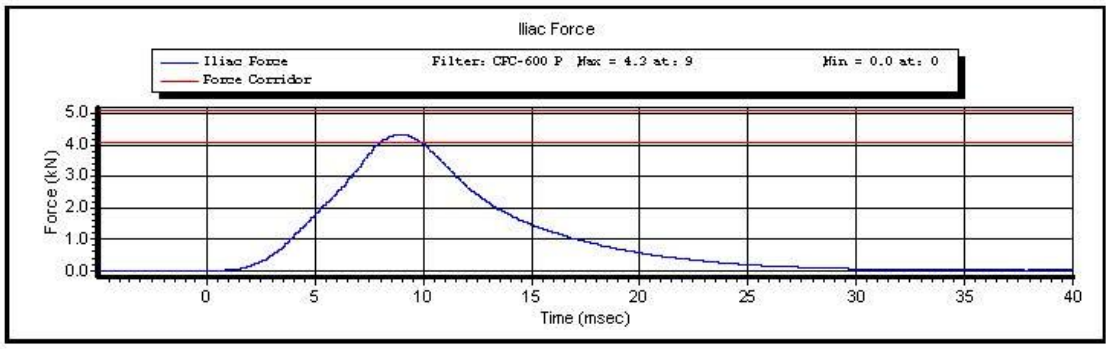
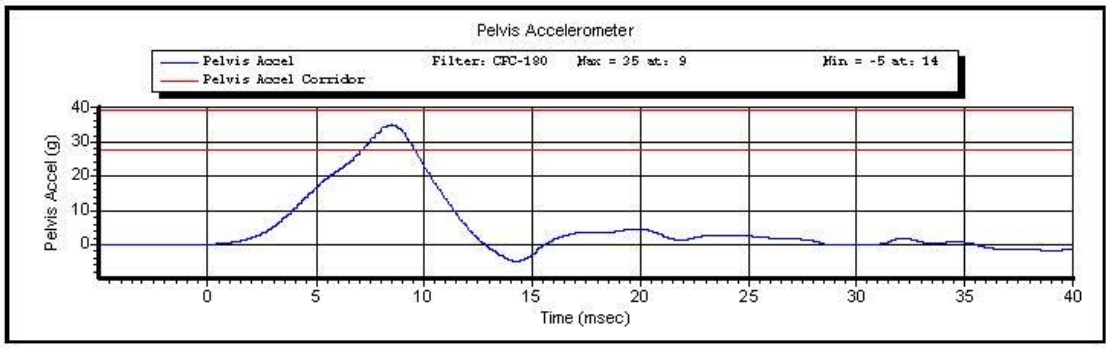
Test Name:	**Pelvis**
Sub Test Name:	**Iliac Impact**
ATD Type:	**SID-IIs**
ATD Serial Number:	**300**





Test ID: **Iliac Impact** Test Time: **4:45:17 PM** Test Date: **12/8/2014**

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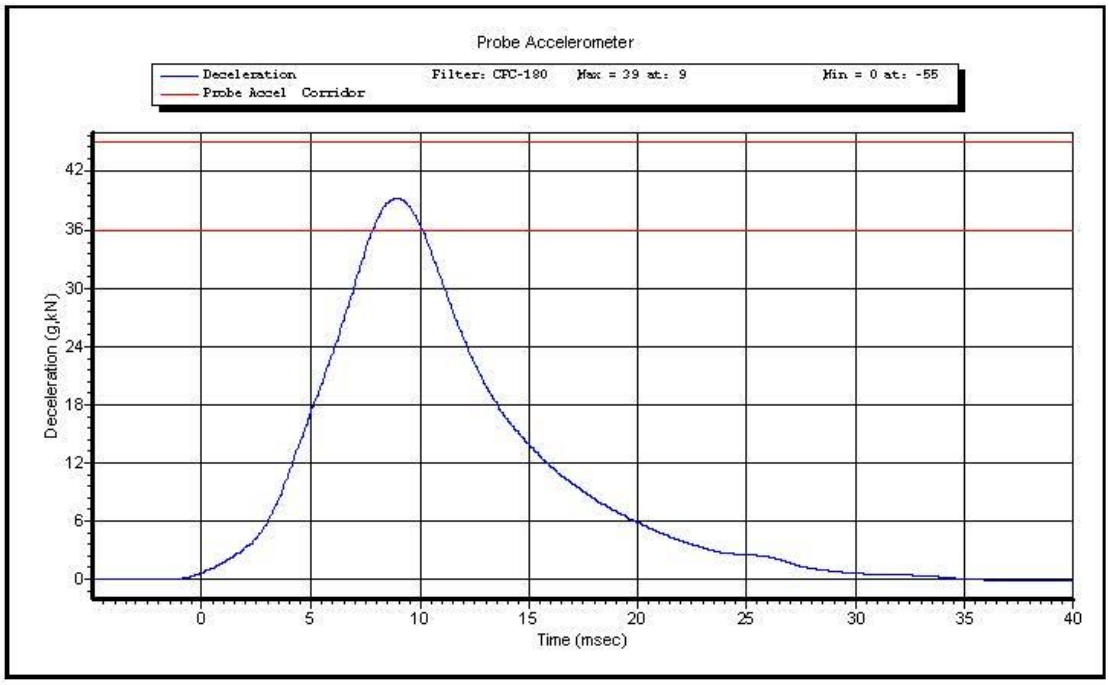

Test ID: **Iliac Impact** Test Time: **4:45:17 PM** Test Date: **12/8/2014**

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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)				46435	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-A126789	MSI 1201	9/18/2014
	Vehicle Center of Gravity	Y	AC-A127675	MSI 1201	9/18/2014
	Vehicle Center of Gravity	Z	AC-A127660	MSI 1201	9/18/2014
2	Right Sill at Front Seat	X	AC-A120607	MSI 1201	9/18/2014
	Right Sill at Front Seat	Y	AC-A120605	MSI 1201	9/18/2014
	Right Sill at Front Seat	Z	AC-A002415	MSI 1201	9/18/2014
3	Right Sill at Rear Seat	X	AC-A127663	MSI 1201	9/18/2014
	Right Sill at Rear Seat	Y	AC-A112910	MSI 1201	9/18/2014
	Right Sill at Rear Seat	Z	AC-A127674	MSI 1201	9/18/2014
4	Left Sill at Front Door	Y	AC-A112912	MSI 1201	9/18/2014
5	Left Sill at Rear Door	Y	AC-A035006	MSI 1201	9/19/2014
6	Left A-Post Lower	Y	AC-A127671	MSI 1201	9/19/2014
7	Left A-Post Middle	Y	AC-A112918	MSI 1201	9/19/2014
8	Left B-Post Lower	Y	AC-A127672	MSI 1201	11/5/2014
9	Left B-Post Middle	Y	AC-A127665	MSI 1201	9/18/2014
10	Front Seat Track	Y	AC-A081413	MSI 1201	9/26/2014
11	Rear Seat Track or Structure	Y	AC-A127658	MSI 1201	9/25/2014
12	Right Rear Occ. Compartment	Y	AC-A120612	MSI 1201	9/26/2014
13	Engine Block	X	AC-A126786	MSI 1201	11/5/2014
	Engine Block	Y	AC-A081439	MSI 1201	11/5/2014
14	Rear Floorpan Above Axle	X	AC-A120623	MSI 1201	9/19/2014
	Rear Floorpan Above Axle	Y	AC-A120608	MSI 1201	9/18/2014
	Rear Floorpan Above Axle	Z	AC-A126828	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