REPORT NUMBER: R&D-CAL-11-012

MOVING BARRIER TO VEHICLE CRASH TEST IN SUPPORT OF NHTSA'S FRONTAL OBLIQUE OFFSET PROGRAM
REASEARCH MOVING DEFORMABLE BARRIER INTO LEFT FRONT OF A

2011 FORD FIESTA
56 MPH, 15 DEGREE ANGLE, 35% OVERLAP

TEST DATE: July 27, 2011
NHTSA NO: RB0225

PREPARED BY;
CALSPAN CORPORATION
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FINAL REPORT SUBMITTED:

FEBRUARY 15, 2012

PREPARED FOR:
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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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Prepared by:  Date: February 15, 2012

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Approved by:  Date: February 15, 2012

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FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

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

Date: _____

TECHNICAL REPORT DOCUMENT PAGE

1. Report No. NCAP-CAL-11-012	**2. Government Accession No.**	**3. Recipient's Catalog No.**
4. Title and Subtitle Report for Frontal Oblique Offset Program Testing of a 2011 Ford Fiesta NHTSA No. RB0225		**5. Report Date** 08/08/11 **6. Performing Organization Code** CAL
7. Author(s) Edward Dutton and Vanessa Walsh – Project engineers David Travale – Program Manager		**8. Performing Organization Report No.** TR2529
9. Performing Organization Name and Address Calspan Corporation 4455 Genesee Street Buffalo, NY 14225		**10. Work Unit No.** **11. Contract or Grant No.** DTNH22-10-D-00155
12. Sponsoring Agency Name and Address US Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Research 1200 New Jersey Ave SE Room W46-446 Washington, DC 20590		**13. Type of Report and Period Covered** Draft Report, 8/08/11-1/11/12 **14. Sponsoring Agency Code** NPO-390
15. Supplementary Notes		

16. Abstract

A test was conducted in accordance with Task Order 0001 of Contract DTNH22-10-D-00155. The Test consisted of a research moving deformable barrier (RMDB) traveling at a target speed of 90.12 kph into a stationary 2011 Ford Fiesta four door sedan. The struck vehicle was positioned 15 degrees relative to the moving barrier, and impacted 35% of the left side of the vehicle. The test was conducted to obtain data indicant of FMVSS 208, 212, 219 (partial), 301, and foot well intrusion performance. The test was conducted at the Calspan Corporation's crash test facility in Buffalo, New York on July 27, 2011.

The impact velocity of the vehicle was 89.77 km/h, and the ambient temperature at the barrier face at the time of impact was 28.3°C. The target vehicle post-test maximum crush was 690 mm of Vehicle. The test vehicle's performance is as follows:

Measurement Description	Driver ATD			Pass. ATD		
	Units	Threshold	Result	Units	Threshold	Result
Head Injury Criteria (HIC_{15})	N/A	700	144.77	N/A	700	871.77
Maximum Chest Compression	mm	63	-45.50	mm	52	-45.39
Nij	N/A	1	2.37	N/A	1	1.32
Neck Tension	N	4,170	1814.77	N	2,620	4702.20
Neck Compression	N	4,000	-198.87	N	2,520	-139.74
Left Femur Force	N	10,008	-1969.46	N	6,805	-40.37
Right Femur Force	N	10,008	-2675.37	N	6,805	-130.71

17. Key Words THOR Oblique Small overlap Offset		**18. Distribution Statement** Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, 1200 New Jersey Ave, SE Washington, D.C. 20590	
19. Security Classif. (of this report) Unclassified	**20. Security Classif. (of this page)** Unclassified	**21. No. of Pages** 241	**22. Price**

TABLE OF CONTENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

SECTION 1

PURPOSE

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

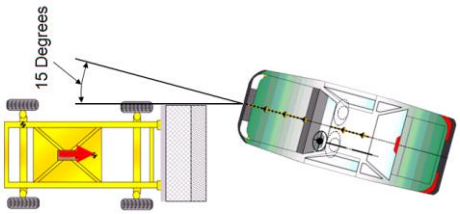
This 90.12 km/h (56 mph) Moving Barrier into a vehicle test is part of Frontal Offset Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-10-D-00155. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for consumer information purposes.

This test was conducted in accordance with the instructions set forth by NHTSA for a 15^{o} angle, 35% offset moving barrier to vehicle impact, outlined in Task Order (TO) DTNH22-10-D-00155. Data was obtained indicant of Federal Motor Vehicle Safety Standard (FMVSS) 208-Occupant Crash Protection, FMVSS 212-Windshield Mounting, FMVSS 219 (partial)-Windshield Zone Intrusion, and FMVSS 301-Fuel System Integrity, in addition to the requirements of TO DTNH22-10-D-00155.

SECTION 2
SUMMARY OF TEST

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

A 2011 Ford Fiesta 4-door sedan was impacted on the left front corner by a Research Moving Deformable Barrier. This test vehicle was stationary and positioned at a target angle of 15° and at a target offset of 35% to the forward line of motion of the MDB. The MDB was towed down the test track in a full forward direction, without any crabbing, and the targeted impact velocity of 90.12 km/h (56 mph) into the test vehicle. The test vehicle mass was 1370.5 kg (3021 lbs), and the MDB mass was 2486.2 kg (5481 lbs). The test was conducted by Calspan Corporation on July 27, 2011.



The test was documented by one (1) real time and fourteen (14) high-speed video cameras. Camera locations and other pertinent data are located in Data Sheet No. 06 of this report. Pre- and post-test photographs of the test vehicle, the MDB and the test setup were taken using a digital still camera. Photographic documentation of the test is presented in Appendix A of this report.

One 50% adult male THOR MK (Mod Kit) anthropomorphic test device (ATD) (Serial No.: 007) was seated in the left front (driver's) seating position and one Part 572O 5% adult female (HIII 5th) ATD (Serial No. 070) was seated in the left rear seating position. The THOR MK driver was positioned according to instructions specified in Laboratory Test Procedure for FMVSS No. 208, "Occupant Crash Protection", TP208 13, July 27, 2005. The HIII 5th% left rear seat occupant was positioned using a modified procedure of the Laboratory Test Procedure for FMVSS No. 214, "Side Impact Protection – Dynamic", TP214D-08, December 15, 2006.

The driver was restrained with a 3-point seat belt, a dual stage frontal airbag, a curtain airbag, a seat mounted torso airbag, and a bolster mounted knee airbag. The left rear passenger was restrained with a 3-point seat belt, and a curtain airbag.

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

One hundred and ninety eight (198) channels of data from the two ATD's, test vehicle and MDB were collected using Kayser-Threde and Slice data acquisition systems. Appendix B contains dummy data plots, as well as vehicle and MDB response data plots.

There was 92.5% total windshield retention, with 85% and 100% retention on the left and right sides respectively. There appeared to be no intrusion into the protected zone of the windshield during any portion of the impact test. The maximum static crush of the vehicle was 690 mm at C1 to the left of the vehicle's centerline. The maximum crush of the lower bumper beam was 674 mm at C2 of the lower bumper beam, to the left of vehicle's centerline. Full vehicle measurements are presented in Section 3 of this report.

All four vehicle doors remained closed and latched during the test. The left front door was jammed shut, but was able to be opened. The left rear, right front, and right rear doors all remained operational after the test.

Structure observations include the following:

- The Driver's side A-Pillar and the door sill buckled, causing some separation at the top of the door from the vehicle.
- The hood also opened as a result of the crash.

The driver ATD's visible contact points are as follows:

- Head contacted the steering wheel airbag, interior A-pillar and the B-Pillar of the window frame, and the door.
- Torso contacted the front airbag, bottom of the steering wheel, and the door.
- Knees contacted the knee airbag.

The left rear passenger ATD's visible contact points are as follows:

- Head contacted the headrest on the back of the head and the passenger's side door
- Knees contacted the driver's seatback.

CRASH VEHICLE SUMMARY

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

PRIMARY IMPACT DATA

Measured Parameter	Units	Value
MDB Velocity at Impact	km/h	89.8
MDB Test Weight	kg	2491
MDB Maximum Static Crush	mm	252
Vehicle Test Weight	kg	1670.5
Actual Vehicle Angle	°	15
Vehicle Maximum Static Crush	mm	694 mm to left centerline
Vertical Offset from Target Point	mm	25 Below
Lateral Offset from Target Point	mm	25 Left
Number of Data Channels		198
Number of Real-Time Cameras		1
Number of High-Speed Cameras		14

DUMMY CONTACTS

	Driver	Picture Ref.	Passenger	Picture Ref.
Dummy Type	50% Male, Thor 007	N/A	5% HIII Female, 070	N/A
Head Contact	Front airbag, A Pillar, Side Curtain Airbag, door	A-37 A-48	Head rest on ball of head	A-49 A-52 A-58
Upper Torso Contact	Front airbag, steering wheel, side door	-	None	-
Lower Torso Contact	Seat bolster airbag, front airbag, steering wheel rim	A-46 A-47	None	-
Left Knee Contact	Knee Airbag	A-45	Driver seatback	A-59
Right Knee Contact	Knee Airbag	A-44	Driver seatback	A-59

Data Anamolies:

V2P1 NECK UPPER MY	->	Questionable after 72 ms
V2P1 NECK LOWER MZ	->	Questionable 41 to 94 ms - satur
V2P1 ABDOMEN LEFT RZ	->	Noise spikes on data
V2P1 PELVIS ASIS LEFT FX	->	Questionable after 49 ms
V2P1 RIGHT ILIAC FX	->	Questionable after 140 ms
V2P1 RIGHT ILIAC MY	->	Channel Failed
V2P1 TIBIA LEFT LOWER MX	->	Questionable 33-50 & 143-166 ms
V2P1 TIBIA LEFT LOWER MY	->	Channel failed
V2P1 ANKLE LEFT POT z	->	Questionable 139-146 & 272-283 ms
V2P1 FEMUR RIGHT Fy	->	Questionable data
V2P1 FEMUR RIGHT Fz	->	Noise spikes on data
V2P4 8 STRING POD - LR MID	->	Questionable after 59 ms
V2P4 8 STRING POD - LL BOTTOM	->	Questionable after 86-100 ms

SECTION 2 (CONTINUED)
PRELIMINARY INJURY SUMMARY: Driver

Test Vehicle: 2011 Ford Fiesta 4-Door Sedan NHTSA No.: RB0225
Test Program: Research and Development Narrow Offset Test Date: 7/26/2011

Driver: Thor Serial No. 007 Injury Summary

	Nomenclature	Units	Source	Max	Min
Head	Head Rotational Acceleration X	rad/s^2	SIMon	121525.81	-103544.19
	Head Rotational Acceleration Y	rad/s^2	SIMon	169751.37	-253778.63
	Head Rotational Acceleration Z	rad/s^2	SIMon	178135.57	-189734.43
	Head Rotational Acceleration Resultant	rad/s^2	Compute	318598.39	
	Head Rotational Velocity X	rad/s	SIMon	16.36	-44.45
	Head Rotational Velocity Y	rad/s	SIMon	44.33	-34.91
	Head Rotational Velocity Z	rad/s	SIMon	47.70	-36.99
	Head Rotational Velocity Resultant	rad/s	Compute	65.48	
	36 ms HIC		Compute	226.13	
	15 ms HIC		Compute	144.77	
	Head Resultant CG Acceleration, 3 ms Clip	g	Compute	56.22	
	Skull fracture correlate	-	SIMon	39.25	
	Cumulative strain (Tolerance = 0.05)	-	SIMon	1.00	0.00
	Cumulative strain (Tolerance = 0.10)	-	SIMon	0.95	0.00
	Cumulative strain (Tolerance = 0.15)	-	SIMon	0.74	0.00
Neck	UNLC Transferred to OC, Neck System, FX	N	1000	389.62	-84.92
	UNLC Neck System Tension, FZ	N	1000	1814.77	
	UNLC Neck System Compression, FZ	N	1000		-198.87
	UNLC Transferred to OC, Neck System Flexion, MY	N-m	Thortest	123.14	
	UNLC Transferred to OC, Neck System Extension, MY	N-m	Thortest		-290.88
	NIJ		Compute	2.37	
	On head acting through total neck section, FX	N	Thortest	475.72	-124.64
	On head acting through total neck section, FY	N	Thortest	1063.03	-162.62
	On head acting through total neck section, FZ	N	Thortest	1990.30	-100.58
	On head acting through total neck section, MX	N-m	Thortest	108.79	-36.66
	On head acting through total neck section, MY	N-m	Thortest	133.71[(1)]	-286.93[(1)]
	On head acting through total neck section, MZ	N-m	Thortest	15.01	-28.48
	On head acting through O.C. joint only, FX	N	Thortest	328.76	-184.11
	On head acting through O.C. joint only, FZ	N	Thortest	1808.85	-196.24
	On head acting through O.C. joint only, MY	N-m	Thortest	123.14	-290.88
Chest	Upper Left Crux X – deflection	mm	Thortest	0.75	-24.95
	Upper Left Crux Y – deflection	mm	Thortest	7.05	-7.37
	Upper Left Crux Z – deflection	mm	Thortest	14.38	-13.65
	Upper Left Crux D – deflection	mm	Thortest	0.74	-22.05
	Upper Right Crux X – deflection	mm	Thortest	0.03	-51.19
	Upper Right Crux Y – deflection	mm	Thortest	7.19	-6.02
	Upper Right Crux Z – deflection	mm	Thortest	30.64	-0.01
	Upper Right Crux D – deflection	mm	Thortest	0.03	-45.50

SECTION 2 (CONTINUED)
PRELIMINARY INJURY SUMMARY: Driver

Test Vehicle: 2011 Ford Fiesta 4-Door Sedan NHTSA No.: RB0225
Test Program: Research and Development Narrow Offset Test Date: 7/26/2011

Driver: Thor Serial No. 007 Injury Summary

	Nomenclature	Units	Source	Max	Min
Chest (Con't)	Lower Left Crux X – deflection	mm	Thortest	4.77	-7.63
	Lower Left Crux Y – deflection	mm	Thortest	4.85	-31.52
	Lower Left Crux Z – deflection	mm	Thortest	12.91	-4.50
	Lower Left Crux D – deflection	mm	Thortest	4.07	-8.55
	Lower Right Crux X – deflection	mm	Thortest	2.97	-41.78
	Lower Right Crux Y – deflection	mm	Thortest	9.94	-32.14
	Lower Right Crux Z – deflection	mm	Thortest	18.84	-3.40
	Lower Right Crux D – deflection	mm	Thortest	2.86	-40.66
	Chest CG Acceleration, 3 ms clip	g	Compute	45.00	
Abdomen	Lower Left X – deflection	mm	Thortest	0.19	-46.67
	Lower Left Y – deflection	mm	Thortest	12.55	-1.50
	Lower Left Z – deflection	mm	Thortest	20.39(2)	-2.44(2)
	Left Viscous Criterion Based on X - deflection		Compute	0.47(2)	
	Lower Right X – deflection	mm	Thortest	0.31	-64.58
	Lower Right Y – deflection	mm	Thortest	5.41	-19.76
	Lower Right Z – deflection	mm	Thortest	15.25	-0.48
	Right Viscous Criterion Based on X - deflection		Compute	0.55	
Spine	Upper Spine (T1) AX	g	180	13.90	-45.79
	Upper Spine (T1) AY	g	180	26.09	-4.26
	Upper Spine (T1) AZ	g	180	26.03	-7.00
	Upper Spine (T1) Resultant	g	Compute	49.60	
	Middle Spine (T6) AX	g	180	11.95	-47.30
	Middle Spine (T6) AY	g	180	31.60	-6.71
	Middle Spine (T6) AZ	g	180	8.24	-2.09
	Middle Spine (T6) Resultant	g	Compute	47.55	
Pelvis	Pelvis CG Resultant Acceleration	g	Compute	52.70	
Acetabulum	Left FX force	N	600	23007.82(3)	-714.73(3)
	Left FY force	N	600	1418.44	-1154.53
	Left FZ force	N	600	341.31	-3273.91
	Left Acetabulum Resultant	N	Compute	23017.17(3)	
	Right FX force	N	600	845.06	-989.70
	Right FY force	N	600	629.14	-1305.45
	Right FZ force	N	600	668.68	-340.14
	Right Acetabulum Resultant	N	Compute	1538.82	

SECTION 2 (CONTINUED)
PRELIMINARY INJURY SUMMARY: Driver Legs

Test Vehicle: 2011 Ford Fiesta 4-Door Sedan NHTSA No.: RB0225
Test Program: Research and Development Narrow Offset Test Date: 7/26/2011

Driver: Thor Serial No. 007 Injury Summary

	Nomenclature	Units	Source	Max	Min
Knee	Left Knee Displacement, DX	mm	180	6.30	-0.50
	Right Knee Displacement, DX	mm	180	8.73	-0.03
Femur	Left Femur Force, FZ	N	600	408.42	-1969.46
	Left Femur Moment, MX	N-m	600	102.59	-117.47
	Left Femur Moment, MY	N-m	600	25.76	-54.74
	Left Femur Res (MX / MY only, not MZ)	N-m	Compute	117.63	
	Right Femur Force, FZ	N	600	900.48(4)	-2675.37(4)
	Right Femur Moment, MX	N-m	600	100.55	-87.74
	Right Femur Moment, MY	N-m	600	93.53	-29.66
	Right Femur Res (MX / MY only, not MZ)	N-m	Compute	126.41	
Tibia	Left Upper Tibia, FZ	N	600	714.75	-1475.85
	Left Upper Tibia, MY	N-m	600	76.36	-98.24
	Left Upper Tibia, Index		Compute	0.48	
	Right Upper Tibia, FZ	N	600	349.92	-1867.78
	Right Upper Tibia, MY	N-m	600	80.56	-76.63
	Right Upper Tibia, Index		Compute	0.58	
	Left Lower Tibia, FZ	N	600	101.01	-2077.07
	Left Lower Tibia, MY	N-m	600	0.18(5)	-0.12(5)
	Left Lower Tibia, Index		Compute	1.62(5)	
	Right Lower Tibia, FZ	N	600	90.38	-3015.69
	Right Lower Tibia, MY	N-m	600	69.78	-103.03
	Right Lower Tibia, Index		Compute	0.87	
Ankle	Left Ankle Rotation, RX	Deg	180	30.04	-0.02
	Left Ankle Rotation, RY	Deg	180	28.95	-3.53
	Right Ankle Rotation, RX	Deg	180	0.99	-38.77
	Right Ankle Rotation, RY	Deg	180	3.31(6)	-0.38(6)

Anomalies

(1) Questionable data after 72 ms
(2) Noise spikes on data
(3) Questionable data after 49 ms
(4) Noise spikes on data
(5) Channel failed
(6) Questionable Magnitude throughout

SECTION 2 (CONTINUED)
PRELIMINARY INJURY SUMMARY

Test Vehicle: 2011 Ford Fiesta 4-Door Sedan NHTSA No.: RB0225
Test Program: Research and Development Narrow Offset Test Date: 7/26/2011

Left Rear Passenger: H3 Serial No. 070 Injury Summary

	Nomenclature	Source	Max	Min
Head	Angular acceleration (rad/sec^2) - X	SIMon	1343.10	-1491.50
	Angular acceleration (rad/sec^2) - Y	SIMon	1098.70	-2561.00
	Angular acceleration (rad/sec^2) - Z	SIMon	281.02	-2493.80
	Angular acceleration - resultant (rad/sec^2)	SIMon	3047.45	
	Angular velocity (rad/sec) - X	SIMon	0.36	-43.78
	Angular velocity (rad/sec) - Y	SIMon	13.48	-55.37
	Angular velocity (rad/sec) - Z	SIMon	0.03	-96.03
	Angular velocity - resultant (rad/sec)	SIMon	110.84	
	36 ms HIC	Compute	1754.85	
	15 ms HIC	Compute	871.77	
	Skull fracture correlate	SIMon	80.49	
	Cumulative strain (Tolerance = 0.05)	SIMon	1.00	
	Cumulative strain (Tolerance = 0.10)	SIMon	0.97	
	Cumulative strain (Tolerance = 0.15)	SIMon	0.82	
	Head resultant CG acceleration, 3 ms clip (g's)	Compute	97.92	
Neck	Upper Neck Tension (N) Fz	1000	4702.20	
	Upper Neck Compression (N) Fz	1000		-139.74
	Upper Neck NTF	Compute	1.32	
	Upper Neck NTE	Compute	1.14	
	Upper Neck NCF	Compute	0.01	
	Upper Neck NCE	Compute	0.34	
Chest	Chest Deflection (mm)	600	0.02	-45.39
	Upper Left Chest X (mm)	Compute	0.03	-31.10
	Upper Left Chest Y (mm)	Compute	13.29	-4.18
	Upper Right Chest X (mm)	Compute	1.42	-7.99
	Upper Right Chest Y (mm)	Compute	0.91	-33.68
	Lower Left Chest X (mm)	Compute	0.08(7)	-27.16(7)
	Lower Left Chest Y (mm)	Compute	11.39(7)	-1.32(7)
	Lower Right Chest X (mm)	Compute	10.74(8)	-40.76(8)
	Lower Right Chest Y (mm)	Compute	16.74(8)	-112.97(8)
	Chest CG acceleration, 3 ms clip, (G's)	Compute	67.79	
Femur	Right Fz Force (N)	600	1845.08	-130.71
	Left Fz Force (N)	600	2347.32	-40.37

Anomalies
(7) Questionable after 86-100 ms
(8) Questionable after 59 ms

SECTION 3

DATA SHEETS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

TEST VEHICLE INFORMATION

NHTSA No.	RB0225
Make	Ford
Model	Fiesta
Body Style	4-Door Sedan
Year	2011
VIN	3FADP4AJ3BM227914
Color	Silver
Delivery Date	7/6/2011
Odometer Reading (mi)	15
Odometer Reading (km)	24
Dealer	Koons Ford of Baltimore
Transmission	5 speed manual
Final Drive	FWD
Type/No. Cyl	I4
Engine Disp. (L)	1.6L
Engine Placement	Lateral
Roof Rack	No
Sunroof/T-Top	No
Tinted Glass	No
Traction Control	Yes
Power Brakes	Yes
Front Disc	Yes
Rear Disc	No

TEST VEHICLE OPTIONS

Anti-Lock Brakes	Yes
All-Wheel Drive	No
Power Steering	Yes
Driver Front Airbag	Yes
Driver Side Airbag	Yes
Driver Head Airbag	No
Driver Curtain Airbag	Yes
Driver Knee Airbag	Yes
Pass. Front Airbag	Yes
Pass. Side Airbag	Yes
Pass. Head Airbag	No
Pass. Curtain Airbag	Yes
Pretensioners	Yes
Load Limiters	Yes
Bucket Seats	Yes
Air Cond.	Yes
AM/FM CD	Yes
Tilt Steering	Yes
Automatic Door Locks	No
Power Windows	No
Power Seats	No
Other	-
Other	-

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

DATA FROM CERTIFICATION LABEL

Manufactured By	Ford Motor Co
Date of Manufacture	6/11

GVWR (kg)	1642
GAWR Front (kg)	839
GAWR Rear (kg)	816

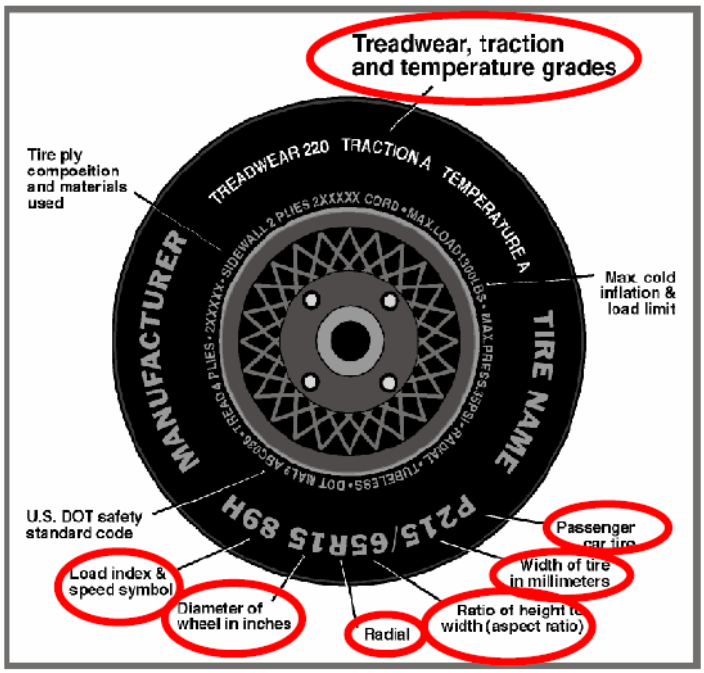
VEHICLE SEATING AND WEIGHT CAPACITY

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Bench	-	
Number of Occupants	2	3	-	5
Capacity Wt. (VCW) (kg)				375
Cargo Wt. (RCLW) (kg)				35

DATA SHEET NO. 1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Measured Parameter	Front	Rear
Maximum Tire Pressure	300	300
Cold Pressure (kPa)	220	220
Recommended Tire Size	P185/60R15	P185/60R15
Tire Size on Vehicle	P185/60R15	P185/60R15
Tire Manufacturer	Kumho	Kumho
Tire Model	Solus KH25	Solus KH25
Treadwear	480	480
Traction	A	A
Temperature Grades	A	A
Tire Plies Sidewall	1 Polyester	1 Polyester
Tire Plies Body	2 Steel, 1 Polyester, 1 Nylon	2 Steel, 1 Polyester, 1 Nylon
Load Index/Speed Symbol	84H	84H
Tire Material	Rubber	Rubber
DOT Safety Code Right	COR9YPL80711	COR9YPL80711
DOT Safety Code Left	COR9YPL80711	COR9YPL80711

DATA SHEET NO. 1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	350	243.5		392.5	341.0	
Right	kg	326.5	239.5		330.0	307.0	
Ratio	%	58	42		53	47	
Totals	kg	676.5	483	1159.5	722.5	648	1370.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1159.5
Weight of 1 P572E ATD & 1 P572O ATD	kg	153.5
Rated Cargo/Luggage Weight (RCLW)	kg	35
Calculated Vehicle Target Weight (TVTW)	kg	1348

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
As Delivered	mm	659	664	666	664	1038.5
As Tested	mm	650	657	610	617	1178.7
Post Test	mm	-	-	-	-	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Total Vehicle Wheel Base	mm	2493
Total Vehicle Length at Left Side	mm	4252
Total Vehicle Length at Centerline	mm	4416
Total Vehicle Length at Right Side	mm	4252
Weight of Ballast in Cargo Area	kg	-
Weight of Vehicle Components Removed	kg	-
Amount of Stoddard Solvent in Fuel Tank	L	43.5

LIST OF COMPONENTS REMOVED TO MEET TEST WEIGHT:

Vehicle was tested in overweight condition per James Saunders

MASS OF BALLAST ADDED (KG) _____

DATA SHEET NO.1 (CONTINUED)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

TARGET VEHICLE STRUCTURAL MEASUREMENT

	Elements	Pre-Test (mm)
1	Total Length	4416
2	Total Width	1686
3	Bumper Top Height	38
4	Bumper Bottom Height	154
5	Longitudinal Member Top Height	107
6	Distance Between Longitudinal Members	990
7	Longitudinal Member Width	47
8	Engine Top Height	-125
9	Engine Bottom Height	436
10	Engine and Gearbox Width	593
11	Front Bumper-Engine Distance	445
12	Front Shock Absorber Fixing Height	-172
13	Bonnet Leading Edge Height	-88
14	Front Shock Absorber Fixing Width	1060
15	Front Bumper – Front Axle Distance	860
16	Front Axle – A Pillar Distance	429
17	A- Pillar – B-Pillar Distance	1084
18	B-Pillar – Rear Axle Distance	980
19	B-Pillar – C-Pillar Distance	908
20	Roof Sill Bottom Height	-732
21	Roof Sill Top Height	-773
22	Floor Sill Bottom Height	377
23	Floor Sill Top Height	273

DATA SHEET NO. 2

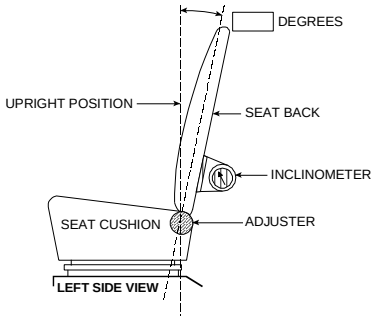
SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

NOMINAL DESIGN RIDING POSITION

Inclinometer was zeroed on the door sill, then placed on the head rest post to measure the set angle, according to form 1.

	Deg.
Driver seat back angle:	12.6
Passenger seat back angle:	Fixed



FRONT SEAT ASSEMBLY

SEAT FORE/AFT POSITIONS

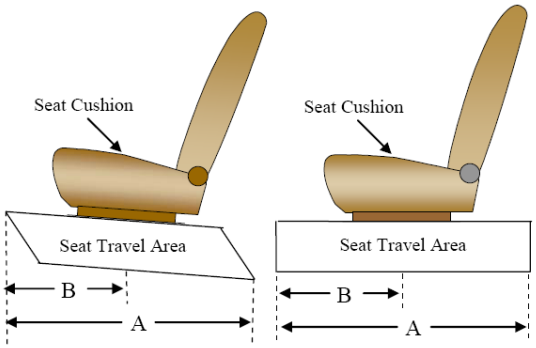
Seat was set to full forward, full up and marked. Then moved to the full rear, full down position, and marked. Mid point was measured, and seat was set to full down, mid position, as per form 1.

	Total Fore/Aft Travel	Placed in Position #
Driver Seat	310mm (25 detents)	155mm (9th detent)
Passenger Seat	Fixed	Fixed

SEAT BELT UPPER ANCHORAGE

Belt anchorages were moved along the full range of motion, and marked on the B-pillar to their respective possible positions. Photographic evidence can be found in appendix A of this report.

	Total # of Positions	Placed in Position #
Driver Seat	4	0 (Uppermost)
Passenger Seat	Fixed	Fixed

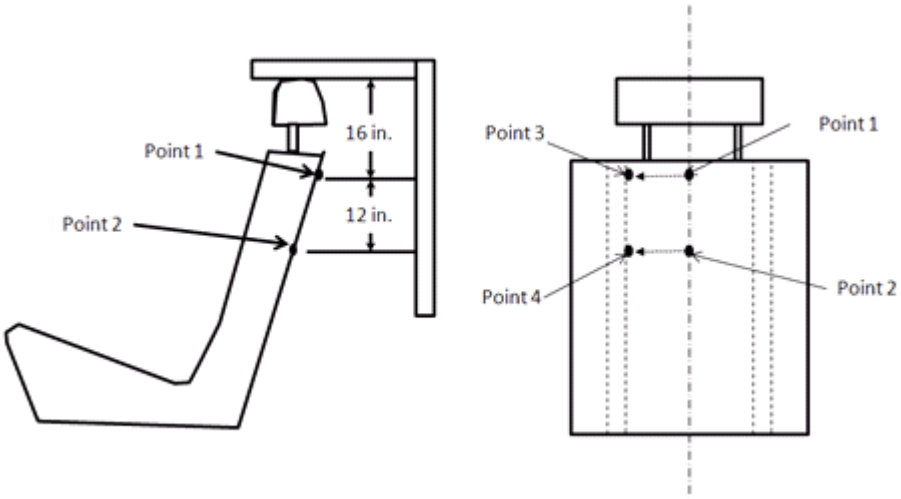


DATA SHEET NO. 2 (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

SEAT BACK MEASUREMENT POINTS



Reference point: Rear most center of the top of rear bumper beam
+X - From the rear of the vehicle to the front of the vehicle
+Y - From left side of the vehicle to the right side of the vehicle
+Z - From the top of the vehicle to the bottom of the vehicle

	X	Y	Z
Point 3	1930.8	-461.4	-248.9
Point 4	2073.4	-499.0	47.9

See Appendix F.1 for detailed description of the CMM measurement procedure

DATA SHEET NO. 2 (CONTINUED)

SEAT ADJUSTMENT, FUEL SYSTEM, AND STEERING WHEEL DATA

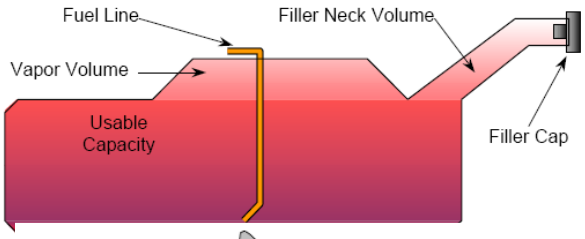
Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	46.9
Usable Capacity of "Optional Tank"	
92%-94% of Usable Capacity	43.5
Actual Amount of Solvent Used	43.5
1/3 of Usable Capacity	15.6

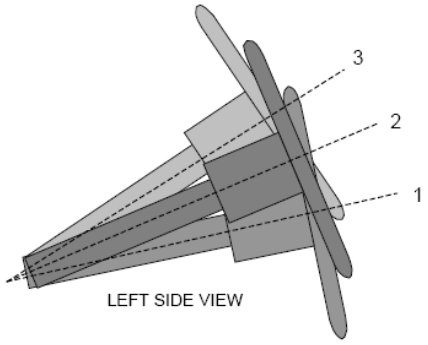
FUEL PUMP

Electric fuel pump is located under the rear seat. Electric Fuel pump operates with the ignition in the 'on' position and the engine running. The fuel filler neck is located above the left rear wheel.



STEERING COLUMN ADJUSTMENT

A level line was drawn on the steering wheel and an inclinometer was used to determine the angle of adjustment. The steering column was then moved full in and full out. Positions were marked and the steering wheel was set to the geometric center of its possible movement.



STEERING COLUMN ASSEMBLY

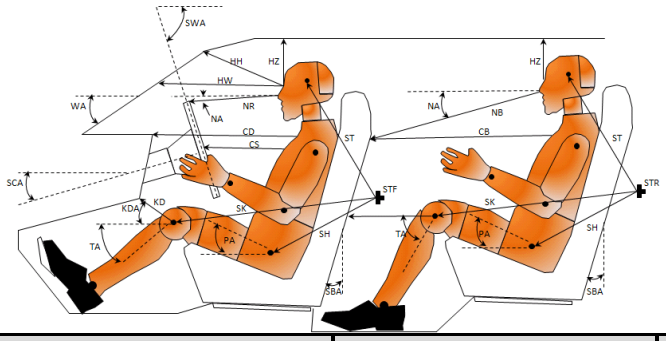
STEERING COLUMN POSITIONS

	Degrees	Fore/Aft Position (mm)
Lowermost position No. 1	69.9	
Geometric center position No. 2	67.7	
Uppermost position No. 3	65.5	
Telescoping Steering Wheel Travel		44
Test Position	67.7	22

DATA SHEET NO. 3

DUMMY LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Code	Measurement Description	Driver		Left Rear Passenger	
		Length (mm)	Angle(°)	Length (mm)	Angle (°)
WAº	Windshield Angle		-24.2		
SWAº	Steering Wheel Angle		22.3		
SCAº	Steering Column Angle		-16.9		
SAº	Seat Back Angle (on headrest post)		12.6		7.7
HZ	Head to Roof (Z)	161	90	273	90
HH	Head to Header	324	17.9		
HW	Head to Windshield	667	0		
NR/NB	Nose to Rim/Seat Back	412	-13.2	467	-17.4
CD/CB	Chest to Dash/Seat Back	654		453	
CS	Chest to Steering Hub	359	-11		
RA	Rim to Abdomen	177	0		
KDL/KBL	Left Knee to Dash/Seat Back	147	23.1	187	17.6
KDR/KBR	Right Knee to Dash/Seat Back	137	24.2	196	20.0
PAº	Pelvic Angle		-23.7	0	20.1
TAº	Tibia Angle		-51.9		69.1
SK	Striker to Knee	572	-2.1	680	-25.8
ST	Striker to Head	507	82.2	230	42.2
SH	Striker to H-Point	227	-43.9	342	-55.6
HAXº	Head Angle X		0		
HAYº	Head Angle Y		5.4		
NAXº	Neck Angle X		-0.7		
NAYº	Neck Angle Y		0		
TAXº	T6 Angle X		14.5		
TAYº	T6 Angle Y		.2		
LAXº	Lumbar Angle (X)		21.3		
LAYº	Lumbar Angle (Y)		0		

DATA SHEET NO. 3 (CONTINUED)

DUMMY CMM MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

Description	Units	Driver			Left Rear Passenger		
		X	Y	Z	X	Y	Z
Striker (Driver/Passenger)	mm	2122.68	-731.3	-59.16	1183.2	-685.8	-284.9
Head CG	mm	2167.1	-415.7	-578.9	1350.8	-385.4	-483.2
Bridge of Nose	mm	2262.9	-334.5	-585.7	1436.6	-308.5	-492.6
Tip of Nose	mm	2261.4	-334.9	-533.1	1458.2	-305.1	-461.1
Shoulder Bolt	mm	2220.7	-527.1	-325.9	1335.0	-468.2	-259.4
Tip of Chin	mm	2255.4	-333.2	-453.1	1441.3	-308.6	-390.1
H-point	mm	2339.1	-531.5	114.5	1414.6	-442.2	39.0
Left Knee	mm	2718.9	-526.9	-48.1	1832.8	-410.0	10.6
Right Knee	mm	2719.3	-255.7	-65.0	1831.1	-256.6	10.6
Left Ankle	mm	3018.2	-520.1	245.4	1956.3	-427.1	321.5
Right Ankle	mm	3023.0	-229.3	230.9	1970.9	-287.1	311.0
Left Heel	mm	3028.9	-497.7	359.7	1890.2	-396.6	408.1
Right Heel	mm	3036.5	-201.9	356.1	1895.8	-274.6	409.6
Driver's Outboard Seat Anchor Bolt	mm	2602.51	-540.073	318.5			
Outboard Head Restraint Post	mm	1942.5	-416.0	-393.8	1099.7	-385.1	-405.8
Top of Head Restraint*	mm	1998.6	-336.1	-648.7	1161.7	-335.7	-624.5
Center of Steering Wheel	mm	2613.1	-337.1	-292.4			

Reference point: Rear most center of the top of rear bumper beam

+X - From the rear of the vehicle to the front of the vehicle

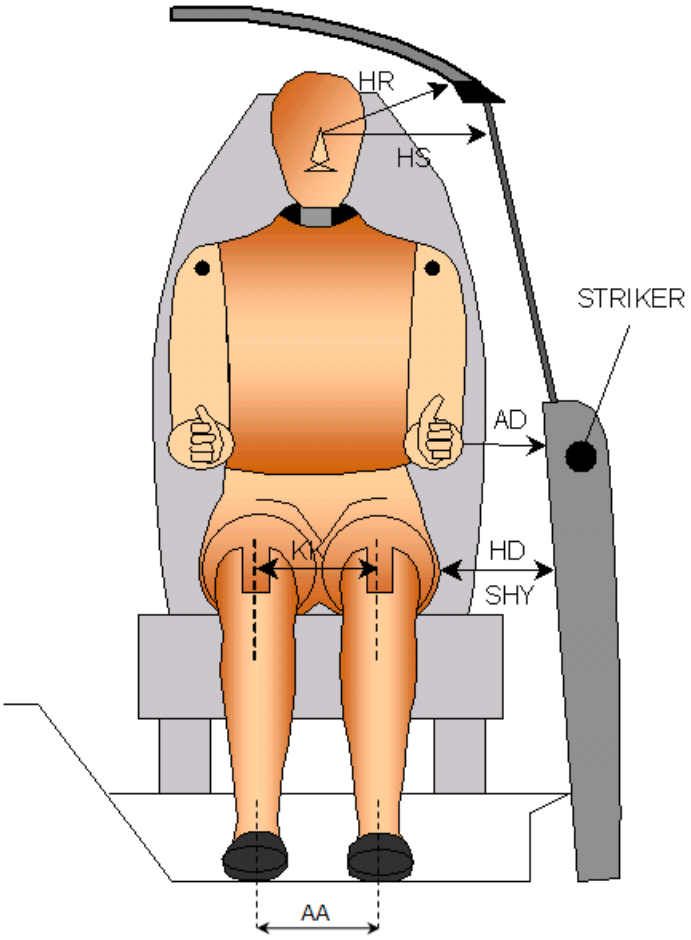
+Y - From left side of the vehicle to the right side of the vehicle

+Z - From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO. 4

DUMMY LATERAL CLEARANCE DIMENSIONS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

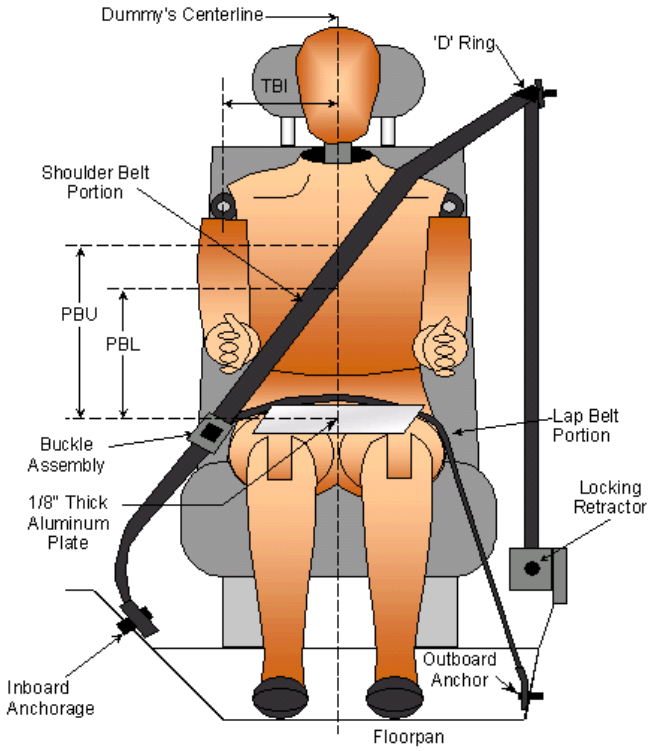


Code	Description	Units	Driver (P1)	Passenger (P4)
AD	Arm to Door	mm	118	87
HD	H-Point to Door	mm	122	170
HR	Head to Side Header	mm	193	248
HS	Head to Side Window	mm	330	350
KK	Knee to Knee	mm	268	168
SHY	Striker to H-Point (Y Direction)	mm	210	250
AA	Ankle to Ankle	mm	285	162

DATA SHEET NO. 5

SEAT BELT POSITIONING DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



SEAT BELT POSITIONING MEASUREMENTS

Measurement Description	Units	Driver	Passenger
PBU — Top surface of aluminum plate to belt upper edge	mm	357	274
PBL — Top surface of aluminum plate to belt lower edge	mm	279	196

BELT LENGTH DATA

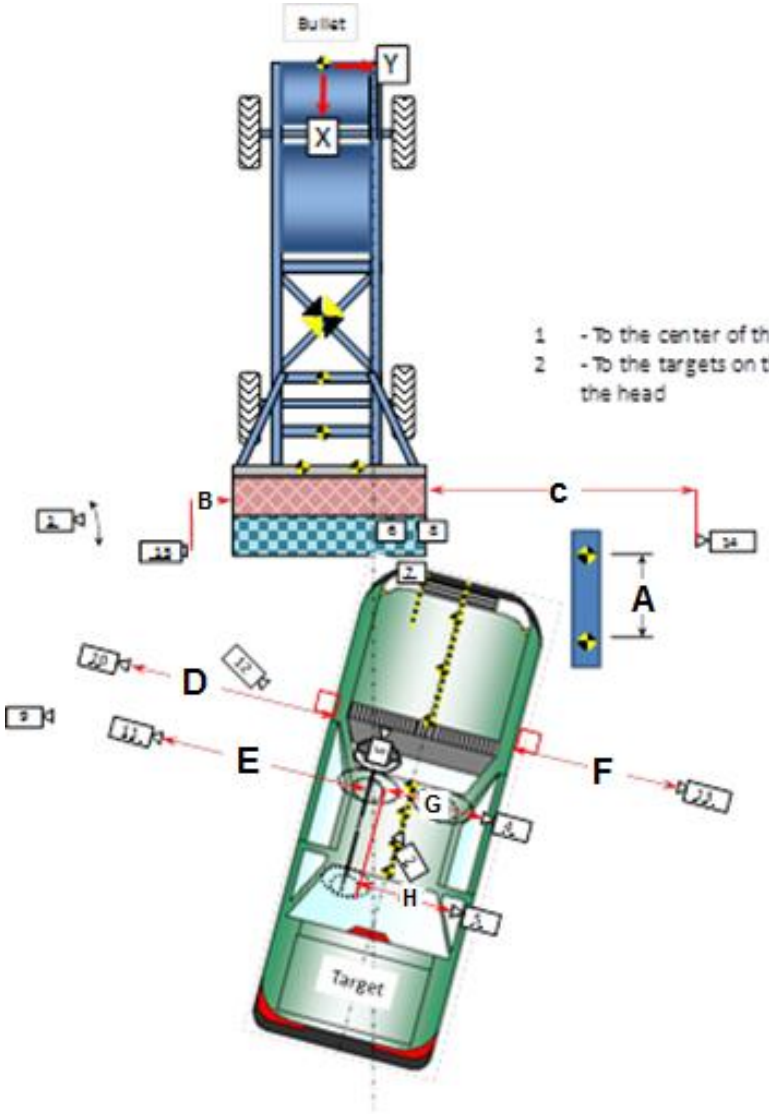
Measurement Description	Units	Driver	Passenger
Shoulder belt length as measured on ATD	mm	840	910
Lap Belt Length as measured on ATD	mm	860	540
Remainder of belt on reel	mm	850	950
Total belt length for continuous webbing systems	mm	2550	2400

DATA SHEET NO. 6

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

Horizontal Location



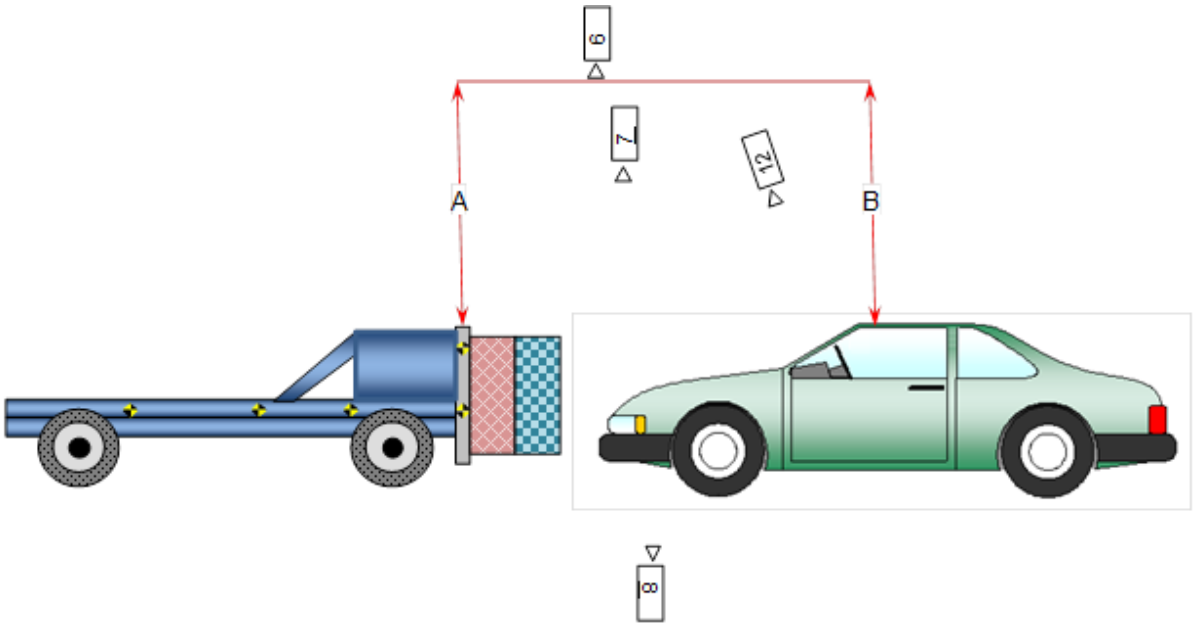
A	mm	915
B	mm	7715
C	mm	N/A
D	mm	9388
E	mm	9479
F	mm	8130
G	mm	753
H	mm	675

DATA SHEET NO. 6 (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

Horizontal Location



	Units	Value
A	mm	4310
B	mm	3596

DATA SHEET NO. 6 (CONTINUED)

HIGH-SPEED CAMERA LOCATIONS AND DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

CAMERA LOCATIONS

No.	Camera View	Location (mm)			Lens (mm)	Speed (fps)
		X	Y	Z		
1	Real-Time Left Side View	-	-	-	-	-
2	Onboard Driver Over Shoulder	7407	-690	1262	12.5	500
3	Onboard Driver Lower Leg	6111	684	381	12.5	500
4	Onboard Driver Perpendicular	6613	-1403	900	12.5	500
5	Onboard Left Rear Passenger Perpendicular	7466	-1157	967	12.5	500
6	Overall Top View	6486	-735	5141	14	500
7	Zoomed Top View	4558	-1161	3841	28	1000
8	Pit Front	-	-	-	-	-
9	Overall Left Side	6625	9232	1373	24	1000
10	Target Vehicle Left Side	5958	9080	1295	24	1000
11	Driver's Motion	6202	9191	1398	50	1000
12	Look Down Driver's Motion	7525	2186	3357	24	1000
13	Target Vehicle Right Side	9027	-9379	1360	28	1000
14	Bullet Vehicle Left Side	-	-	-	-	-
15	Bullet Vehicle Right Side	4558	8937	1330	28	1000
16	Onboard MDB	4195	-867	1929	13	1000

Reference point: center most rearward point of the MDB when in contact with the Target Vehicle):

+X = from back of MDB to front of MDB

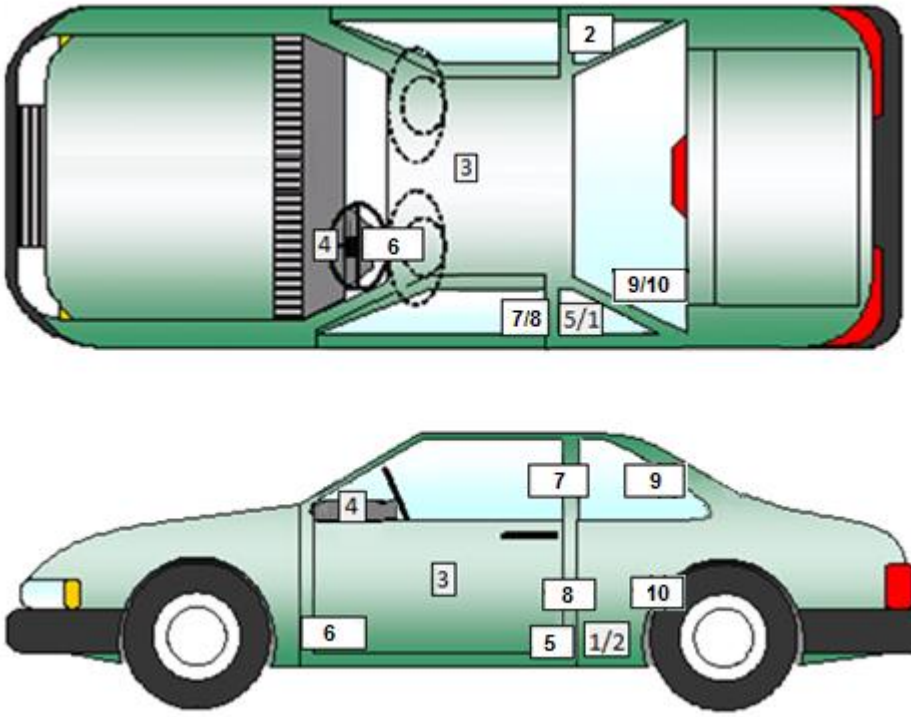
+Y = right of monorail center

+Z = up from ground

DATA SHEET NO. 7

VEHICLE INSTRUMENTATION LOCATIONS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Accelerometer Location	Axes	Units	Location		
			X	Y	Z
Left Rear Sill	X,Y	mm	1879.1	-610.1	367.2
Right Rear Sill	X,Y	mm	1903.4	621.6	371.1
Vehicle CG	X, Y, Z	mm	2824.1	102.9	158.8
Driver Seat Track	X	mm	2021.1	-264.5	404.7
Instrument Panel	X, Y, Z	mm	2783.6	11.0	-16.7
Behind Brake Pedal	X, Y, Z	mm	3336.1	-336.8	183.9

Reference point: Rear most center of the top of rear bumper beam

+X - From the rear of the vehicle to the front of the vehicle

+Y - From left side of the vehicle to the right side of the vehicle

+Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO. 7 (CONTINUED)

VEHICLE INSTRUMENTATION DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

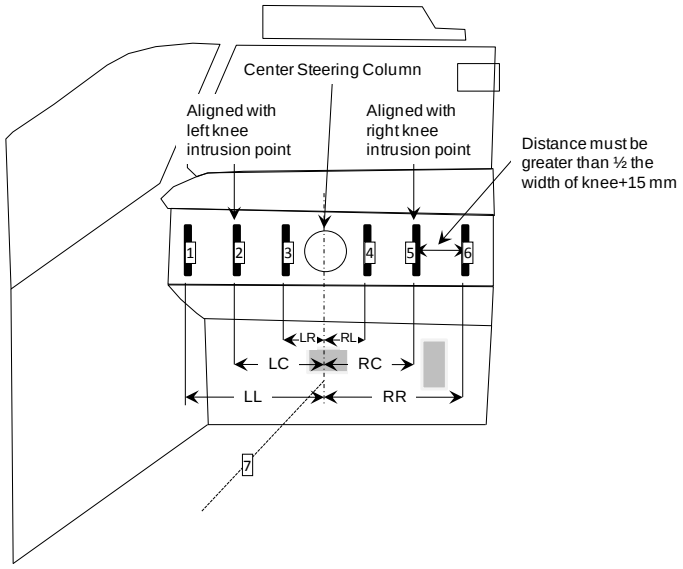
VEHICLE INSTRUMENTION DATA

Loc.	Description	Axes	Units	Positive Direction		Negative Direction	
				Max	Time (ms)	Max	Time (ms)
1	Left Rear Cross Member	X	G	1.97	143.70	-37.57	36.20
		Y	G	18.91	48.10	-2.12	17.05
2	Right Rear Cross Member	X	G	2.10	98.15	-39.65	41.00
		Y	G	20.50	55.95	-2.84	7.10
3	Vehicle CG	X	G	14.83	65.05	-68.16	41.95
		Y	G	51.24	55.80	-21.66	67.65
		Z	G	30.54	51.10	-19.67	57.00
4	Instrument Panel	X	G	150.74	45.00	-27.10	65.40
5	Driver Seat Track	X	G	1.95	138.25	-41.52	37.45
		Y	G	11.51	37.15	-1.21	16.55
		Z	G	18.69	49.20	-17.10	37.95
6	Behind Brake Pedal	X	G	40.19	42.15	-212.37	34.35
		Y	G	94.44	35.20	-27.48	44.20
		Z	G	31.60	47.65	-35.74	32.25
7	Driver Shoulder Belt		N	5528.74	59.20	-55.31	151.95
8	Driver Lap Belt		N	4642.67	62.50	-0.50	-8.95
9	Passenger Shoulder Belt		N	7612.49	67.85	-0.76	-24.30
10	Passenger Lap Belt		N	7789.31	60.30	-0.71	-25.20

DATA SHEET NO. 7 (CONTINUED)

VEHICLE INSTRUMENTATION DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Location	Distance (mm)	Location	Distance (mm)
LL	200	RL	100
LC	150	RC	150
LR	100	RR	200

VEHICLE INSTRUMENTION DATA

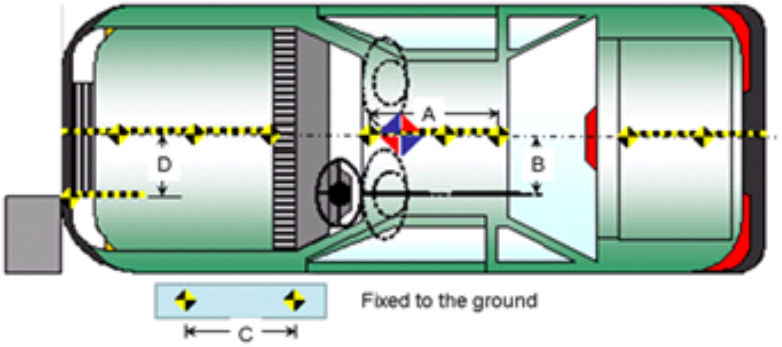
Loc.	Description		Positive Direction		Negative Direction	
			Max	Time (ms)	Max	Time (ms)
1	Left knee contact switch (LL) (ms)	*	0	-50	-1	18.75
2	Left knee contact switch (LC) (ms)	*	0	-50	-1	9.75
3	Left knee contact switch (LR) (ms)	*	0	-50	-1	9.25
4	Right knee contact switch (RL) (ms)	*	0	-50	-1	10.55
5	Right knee contact switch (RC) (ms)	*	0	-50	-1	9.35
6	Right knee contact switch (RR) (ms)	*	0	-50	-1	12.20
7	Toepan string pot (mm)		10.14	31.45	163.62	87.40

* The measurement indicates the initial time the voltage changed

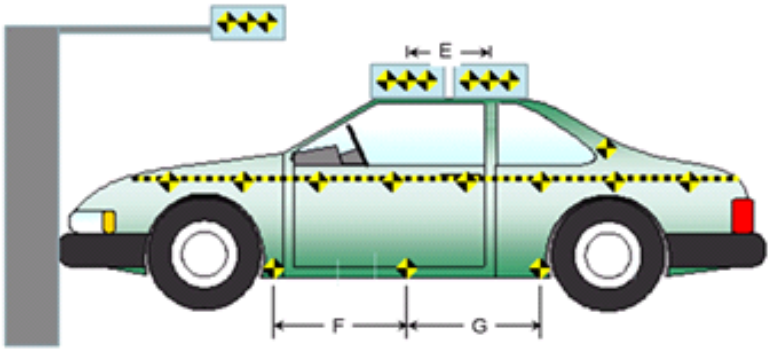
DATA SHEET NO. 8

VEHICLE PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

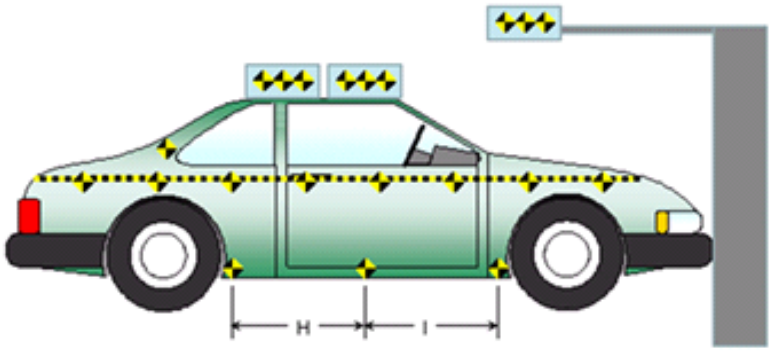
Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Top View



Left Side View



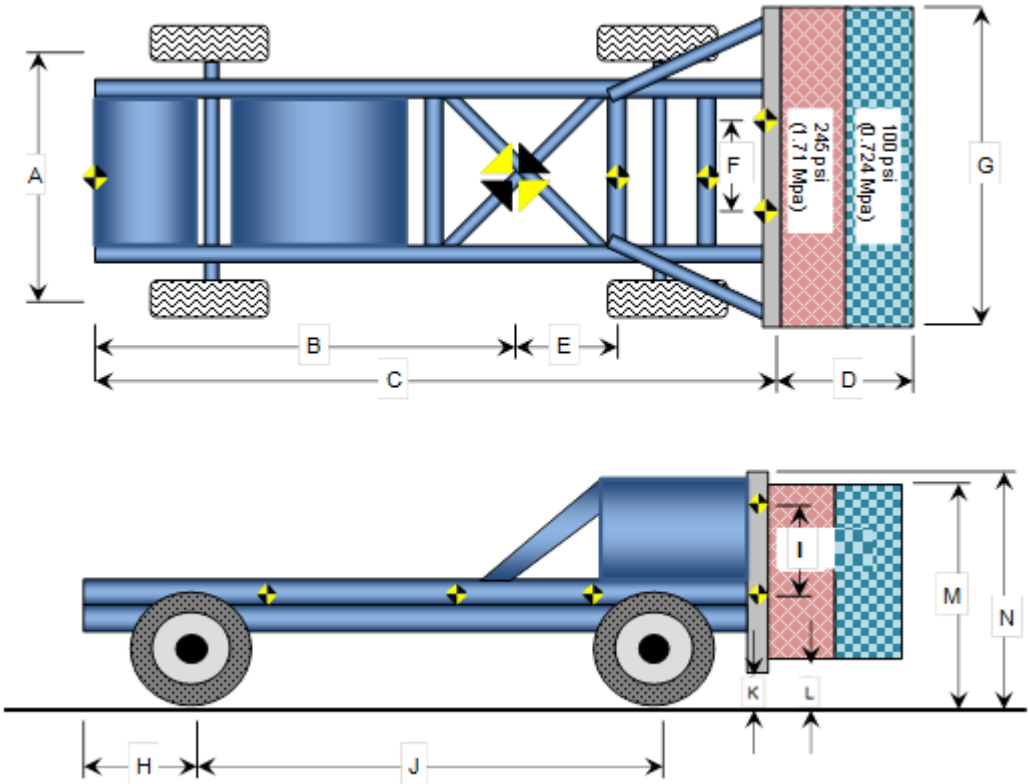
Right Side View

Item	Units	Value
A	mm	610
B	mm	370
C	mm	915
D	mm	254
E	mm	1221
F	mm	849
G	mm	848
H	mm	847
I	mm	847

DATA SHEET NO. 8 (CONTINUED)

MDB PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



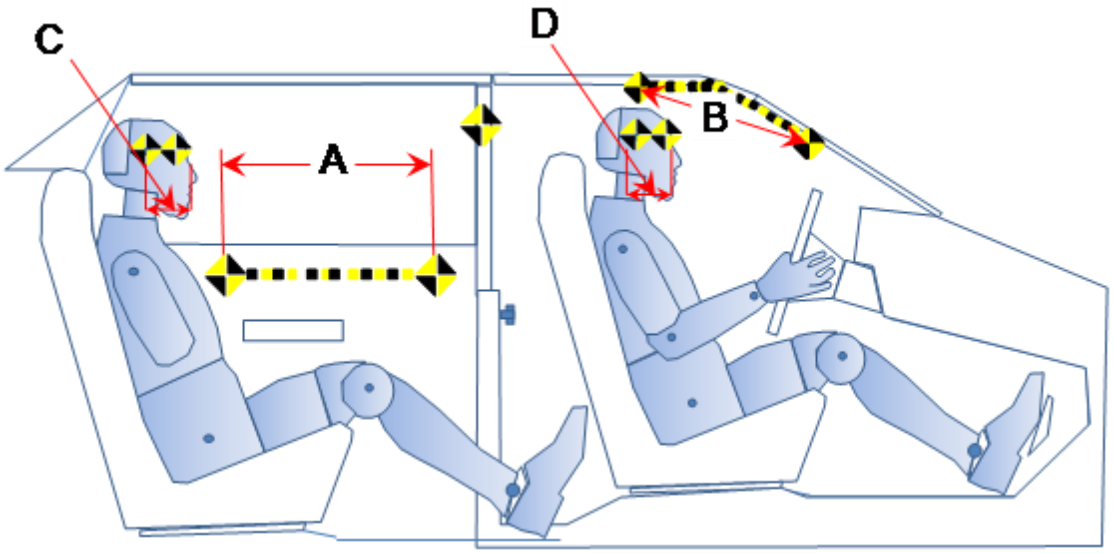
Item	Units	Value
A	mm	1550
B	mm	2215
C	mm	3940
D	mm	606
E	mm	1185
F	mm	1130
G	mm	2210
H	mm	795
I	mm	500
J	mm	2585
K	mm	90
L	mm	98
M	mm	1055
N	mm	1190

	Units	Front Axle	Rear Axle	Total
Left	kg	779.3	470.4	1249.7
Right	kg	749.3	487.2	1236.5
Ratio	%	61.5%	38.5%	100%
Total	kg	1528.6	957.6	2486.2
CG After of Front Axle	mm			1286

DATA SHEET NO. 8 (CONTINUED)

DUMMY PHOTOGRAPHIC REFERENCE TARGET LOCATIONS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Item	Units	Value
A	mm	305
B	mm	305
C	mm	50
D	mm	50

DATA SHEET NO. 9

TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

INSTRUMENTATION

Driver Dummy Accelerometers	119
Passenger Dummy Accelerometers	34
Vehicle Structure Accelerometers	16
Total	169

CAMERA COVERAGE

High-Speed Vehicle Onboard	4
High-Speed Off board	9
Real-Time Panning	1
Total	14

DATA SHEET NO. 10

POST TEST OBSERVATIONS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

TEST DUMMY INFORMATION AND CONTACT

Description	Driver	Picture Ref.	Passenger	Picture Ref.
Dummy Type	THOR 50th Male	N/A	HIII 5th Female	N/A
Dummy Serial No.	0007	N/A	070	N/A
Lower Leg Type	THOR-FLX Lower Leg	N/A	HIII Lower Leg	N/A
Lower Leg Serial No.	LX103/104	N/A	-	N/A
Head Contact	Steering wheel airbag, interior A-Pillar and B-Pillar of window frame and the door.	A-37 A-48	Headrest and the Passenger's side door	A-49 A-52 A-58
Upper Torso Contact	Steering wheel airbag and Driver's door	-	Torso Airbag	-
Lower Torso Contact	Bottom of steering wheel	A-46 A-47	Torso Airbag	-
Left Knee Contact	Knee Airbag	A-45	Driver Seatback	A-59
Right Knee Contact	Knee Airbag	A-44	Driver Seatback	A-59

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Driver	Passenger
Locked/Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Closed, Operational	Closed, operational
Rear Door Opening	Closed, Operational	Closed, Operational
Seat Track Shift (mm)	None	None
Seat Back Failure	None	None
Glazing Damage	No Separation	No Separation

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions	Picture Ref
Windshield Damage	Shattered, no separation	A-21
Window Damage	Shattered, but rolled down	A-36 / A-51
Other Notable Effects	None	-

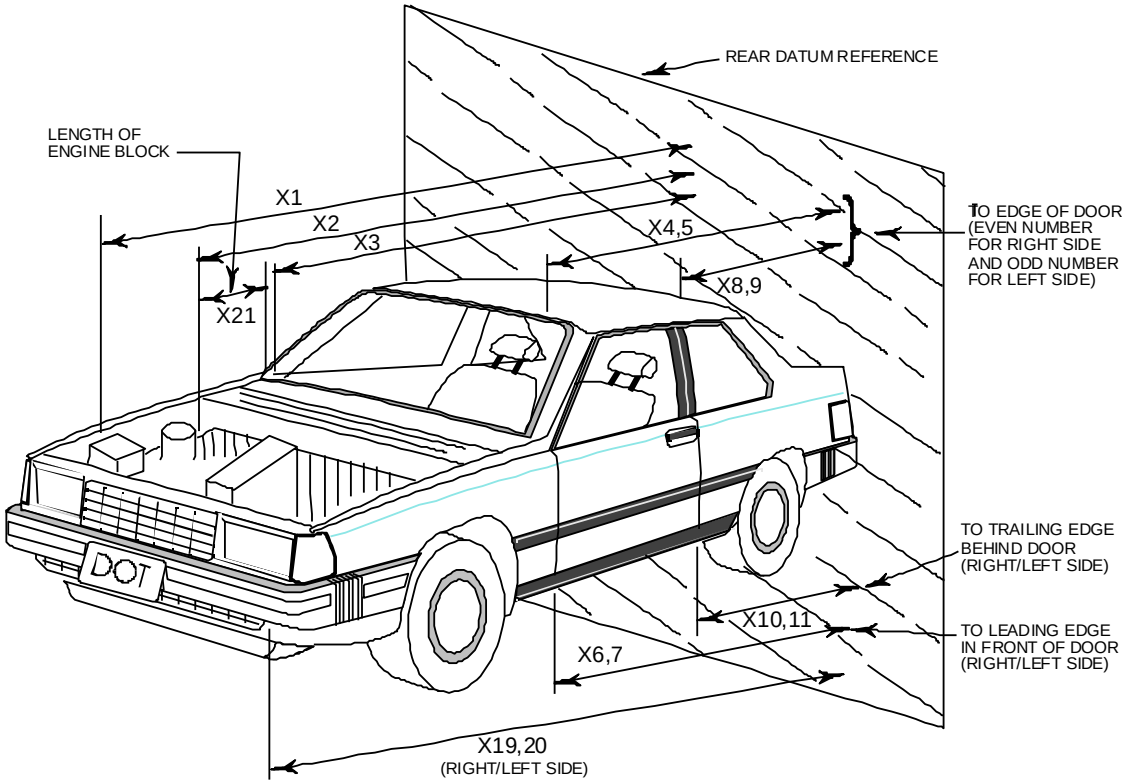
SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

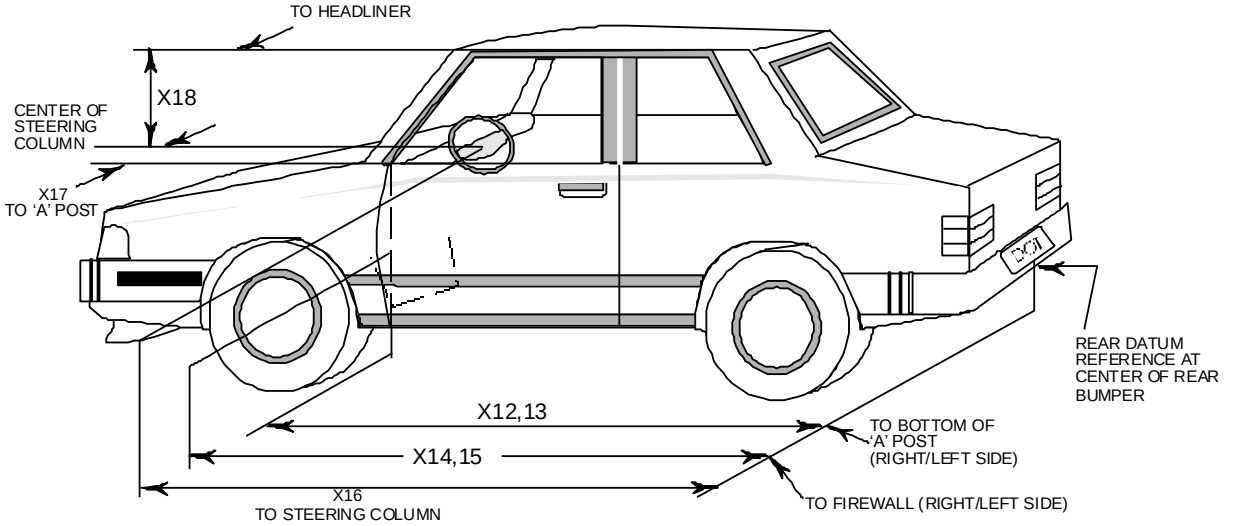
Restraint Type	Driver (Occupant 1)		Passenger (Occupant 2)	
	Installed	Operated	Installed	Operated
Front Airbag	Yes	Yes		
Torso Airbag	Yes	Yes		
Curtain Airbag	Yes	Yes	Yes	Yes
Knee Airbag	Yes	Yes	No	No
Seat Belt Pretensioner	Yes	Yes	No	No
Seat Belt Load Limiter	Yes	Yes	No	No

DATA SHEET NO. 11

VEHICLE PROFILE MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11





DATA SHEET NO. 11 (CONTINUED)

VEHICLE PROFILE MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

No.	Measurement Description	Pre-Test	Post-Test	Difference
1	Total Length of Vehicle at Centerline	4416	4010	406
2	Rear Surface of Vehicle (RSOV) to Front of Engine	3971	3782	189
3	RSOV to Firewall	3524	3369	155
4	RSOV to Upper Leading Edge of Right Door	3118	3116	2
5	RSOV to Upper Leading Edge of Left Door	3121	3063	58
6	RSOV to Lower Leading Edge of Right Door	3113	3110	3
7	RSOV to Lower Leading Edge of Left Door	3115	3097	18
8	RSOV to Upper Trailing Edge of Right Door	2051	2052	0
9	RSOV to Upper Trailing Edge of Left Door	2052	2054	-2
10	RSOV to Lower Trailing Edge of Right Door	2080	2079	1
11	RSOV to Lower Trailing Edge of Left Door	2082	2068	14
12	RSOV to Bottom of “A” Post of Right Side	3280	3275	6
13	RSOV to Bottom of “A” Post of Left Side	3281	3203	79
14	RSOV to Firewall, Right Side	3582	3562	20
15	RSOV to Firewall, Left Side	3572	3319	253
16	RSOV to Steering Column	2613	2542	71
17	Center of Steering Column to “A” Post	290	349	-59
18	Center of Steering Column to Headliner	399	436	-37
19	RSOV to Right Side of Front Bumper	4317	4089	228
20	RSOV to Left Side of Front Bumper	4318	3676	642
21	Length of Engine Block	0	385	-385
RD	RSOV to Right Side of Dash Panel	2829	2807	22
CD	RSOV to Center of Dash Panel	2863	2776	87
LD	RSOV to Left Side of Dash Panel	2830	2700	130

All Dimensions in mm

DATA SHEET NO. 12

ACCIDENT INVESTIGATION DIVISION DATA

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

VEHICLE INFORMATION

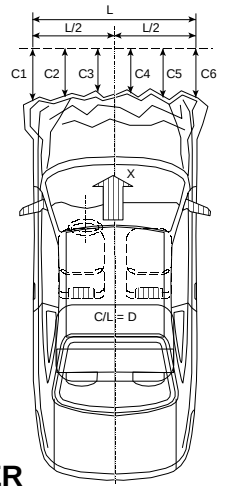
VIN:	3FADP4AJ3BM227914	Wheelbase:	2493
Vehicle Size Category:	Passenger - Sedan	Test Weight (kg):	1370.5

ACCELEROMETER DATA

Accelerometer Locations:	Data Sheet No.7	Linearity:	>99%
Cal. Procedure/Interval:	Shaker table 180 days		
Integration Algorithm:	Trapezoidal		
Impact Velocity (km/h):	89.77		
Velocity Change (km/h):	89.77		

CRUSH PROFILE

Collision Deformation Classification :	12FYEW4
Midpoint of Damage:	C2
Damage Region Length (mm):	1320
Impact Mode:	35% Offset, 15º Angle



CRUSH MEASUREMENTS: WITH BUMPER COVER

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	4134	3444	690
C2	Crush zone 2 at left side	mm	4334	3746	588
C3	Crush zone 3 at left side	mm	4409	3939	470
C4	Crush zone 4 at right side	mm	4408	4069	339
C5	Crush zone 5 at right side	mm	4334	4135	199
C6	Crush zone 6 at right side	mm	4139	4088	51
L	C1 to C6	mm	1320	982	338

CRUSH MEASUREMENTS: WITH BUMPER COVER REMOVED

No.	Measurement Description	Units	Pre-Test	Post-Test	Difference
C1	Crush zone 1 at left side	mm	4230	3714	-517
C2	Crush zone 2 at left side	mm	4327	3653	-674
C3	Crush zone 3 at left side	mm	4358	3762	-596
C4	Crush zone 4 at right side	mm	4358	3909	-449
C5	Crush zone 5 at right side	mm	4325	4009	-316
C6	Crush zone 6 at right side	mm	4227	4045	-182
L	C1 to C6	mm	1090	917	173

DATA SHEET NO. 13

VEHICLE INTRUSION MEASUREMENTS

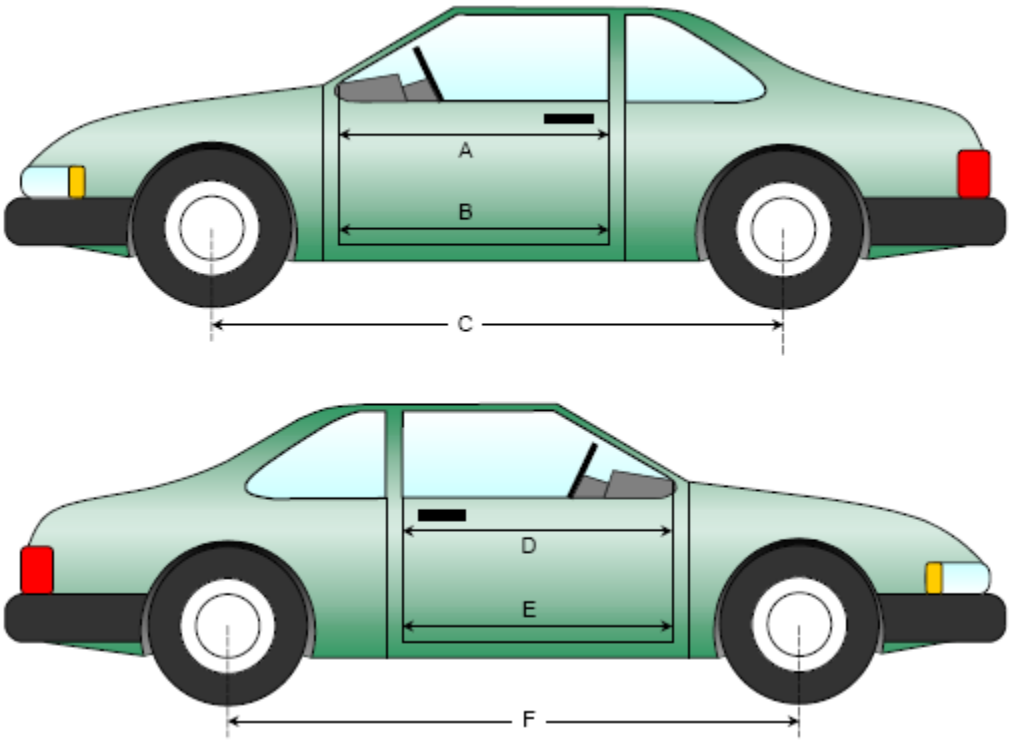
Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

DOOR OPENING WIDTH

Item	Description	Units	Pre-Test	Post-Test	Difference
A	Left Side Upper	mm	889	820	-70
B	Left Side Lower	mm	863	816	-48
D	Right Side Upper	mm	877	874	-4
E	Right Side Lower	mm	860	858	-2

WHEELBASE MEASUREMENTS

Item	Description	Units	Pre-Test	Post-Test	Difference
C	Left Side Wheelbase	mm	2494	2306	-188
F	Right Side Wheelbase	mm	2492	2596	104



DATA SHEET NO.13 (CONTINUED)

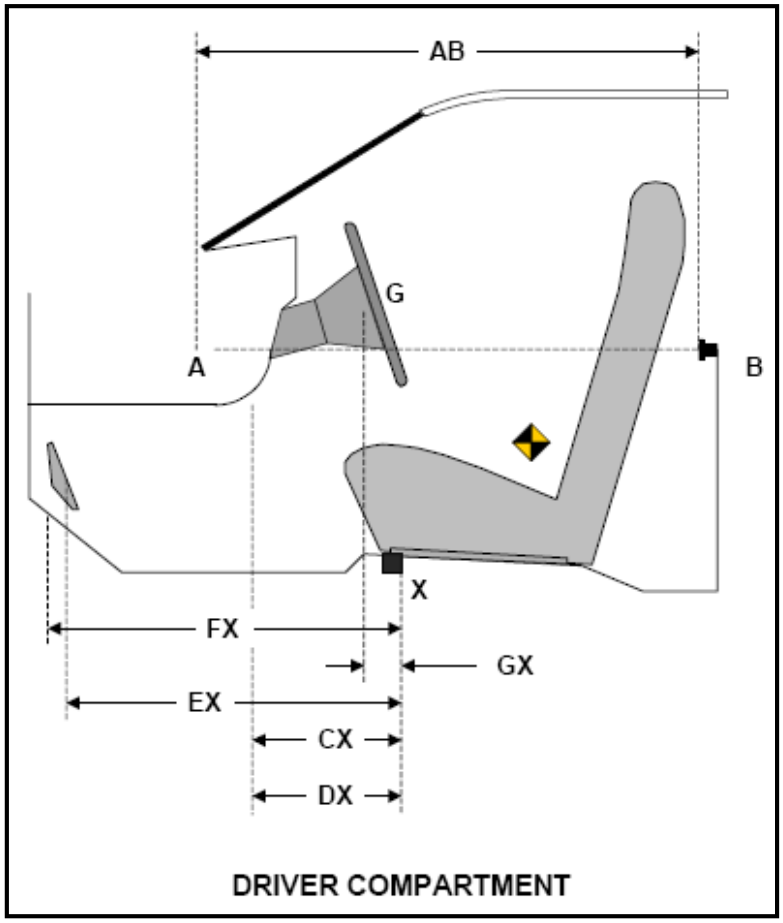
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

DRIVER COMPARTMENT INTRUSION

Item	Description	Units	Pre-Test	Post-Test	Difference
AB	Door Opening (Inside Window Jam)	mm	811	753	-58
CX	Left Knee Bolster to X	mm	284	172	-112
DX	Right Knee Bolster to X	mm	253	185	-68
EX	Brake Pedal to X	mm	510	484	-26
FX	Foot Rest to X	mm	606	95	-511
GX	Center of Steering Column Wheel Hub to X	mm	11	-63	-73

X = Front of Seat Track (Stationary)

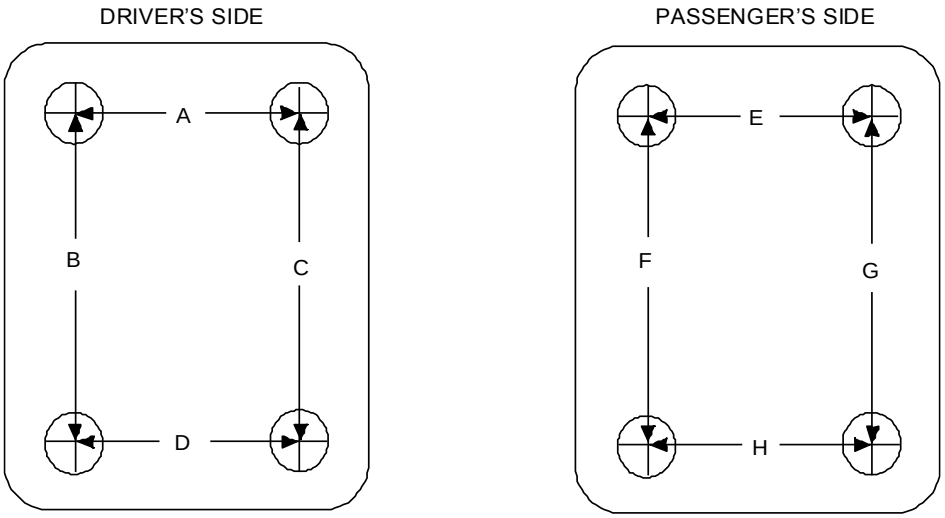


DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

TOP VIEW THROUGH FLOOR PAN



UNDERBODY FLOORBOARD DEFORMATION

Measurement	Pre-Test	Post-Test	Difference
A	437	412	25
B	336	305	31
C	320	319	1
D	412	408	4
E	410	406	4
F	366	368	-2
G	348	346	2
H	397	398	-1

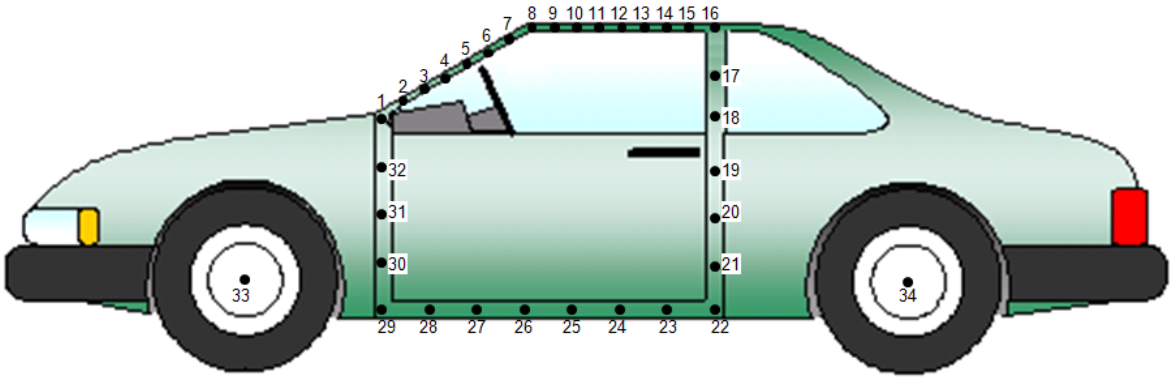
All units in millimeters

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

DRIVER SIDE DOOR SILL INTRUSIONS



Left Side View

Reference point: Rear most center of the top of rear bumper beam
+X – From the rear of the vehicle to the front of the vehicle
+Y – From left side of the vehicle to the right side of the vehicle
+Z – From the top of the vehicle to the bottom of the vehicle

Note: See appendix F.2 for detailed procedure to measure required Door sill intrusion**.**

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

DRIVER SIDE DOOR SILL INTRUSIONS

Pt.	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2970.4	-706.1	-265.4	2909.8	-742.2	-273.2	-61	-36	-8
2	2955.7	-697.1	-343.1	2904.4	-724.6	-349.8	-51	-28	-7
3	2939.8	-677.8	-418.1	2909.3	-698.2	-426.0	-30	-20	-8
4	2926.8	-656.4	-493.0	2918.9	-670.5	-498.8	-8	-14	-6
5	2853.5	-644.1	-540.5	2853.3	-651.5	-546.0	0	-7	-6
6	2784.5	-635.3	-575.4	2784.8	-638.6	-579.4	0	-3	-4
7	2709.5	-624.7	-606.7	2708.4	-626.9	-610.3	-1	-2	-4
8	2636.7	-614.9	-634.4	2635.8	-616.6	-636.0	-1	-2	-2
9	2558.8	-604.2	-659.0	2559.0	-605.4	-659.5	0	-1	-1
10	2482.4	-595.0	-679.9	2482.4	-595.6	-680.1	0	-1	0
11	2403.9	-587.4	-697.8	2403.2	-587.7	-698.6	-1	0	-1
12	2325.3	-579.9	-710.1	2324.4	-579.9	-711.0	-1	0	-1
13	2246.8	-574.9	-722.3	2247.3	-574.4	-721.9	0	1	0
14	2169.9	-570.5	-730.3	2168.2	-569.0	-728.9	-2	1	1
15	2093.1	-567.1	-735.6	2092.0	-567.3	-735.7	-1	0	0
16	2013.7	-564.8	-733.2	2013.5	-564.5	-730.7	0	0	2
17	2038.4	-642.8	-577.8	2036.9	-642.5	-575.6	-1	0	2
18	2069.7	-703.5	-412.5	2067.6	-703.7	-409.7	-2	0	3
19	2111.0	-746.2	-242.1	2109.9	-745.3	-241.2	-1	1	1
20	2103.3	-766.2	-80.4	2101.5	-765.9	-78.6	-2	0	2
21	2148.8	-767.7	113.9	2146.0	-767.3	115.6	-3	0	2
22	2145.4	-757.2	297.1	2144.7	-756.0	297.8	-1	1	1
23	2250.2	-761.6	296.2	2246.5	-761.2	296.0	-4	0	0
24	2391.9	-761.2	305.8	2390.3	-761.6	309.1	-2	0	3
25	2516.4	-761.0	303.4	2514.9	-761.8	304.7	-2	-1	1
26	2644.0	-760.9	309.6	2640.5	-762.9	308.6	-4	-2	-1
27	2768.0	-760.7	310.9	2766.6	-764.1	307.5	-1	-3	-3
28	2891.1	-743.8	298.0	2888.8	-746.7	294.5	-2	-3	-3
29	3008.9	-732.4	259.9	2996.2	-736.3	261.7	-13	-4	2
30	3064.7	-725.6	129.1	3014.1	-749.7	119.4	-51	-24	-10
31	3060.5	-710.1	6.6	2990.2	-750.1	-0.2	-70	-40	-7
32	2999.4	-711.6	-161.0	2926.8	-750.0	-165.6	-73	-38	-5

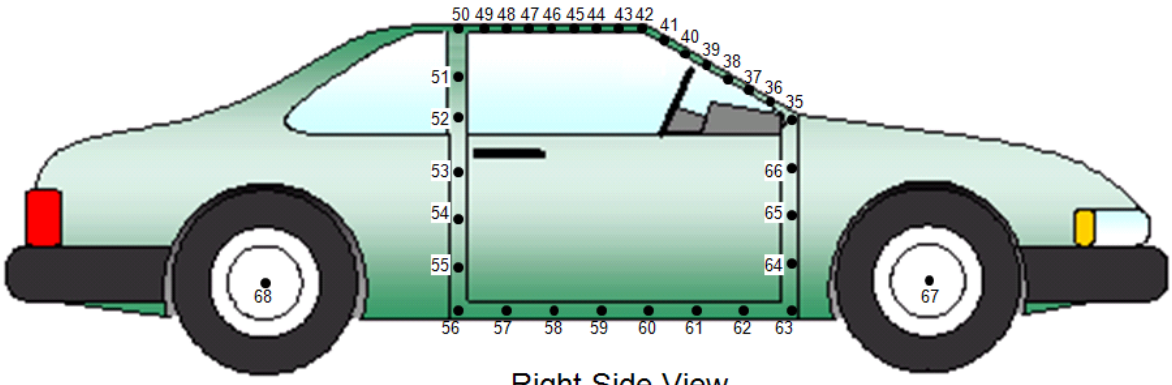
Note: See appendix F.2 for detailed procedure to measure required Door sill intrusion

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

PASSENGER SIDE DOOR SILL INTRUSIONS



Right Side View

Reference point: Rear most center of the top of rear bumper beam
+X – From the rear of the vehicle to the front of the vehicle
+Y – From left side of the vehicle to the right side of the vehicle
+Z – From the top of the vehicle to the bottom of the vehicle

Note: See appendix F.2 for detailed procedure to measure required Door sill intrusion**.**

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

PASSENGER SIDE DOOR SILL INTRUSION

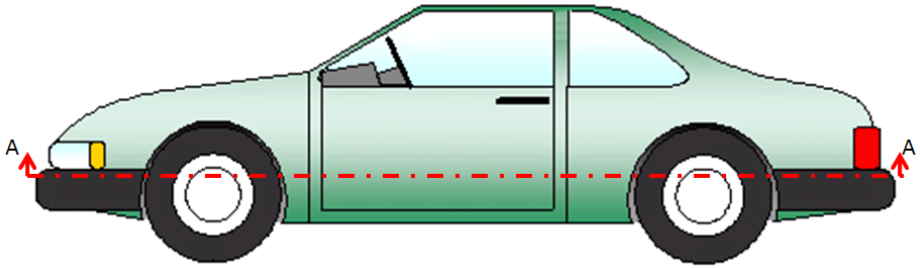
Pt.	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
35	2973.3	715.4	-223.2	2969.5	741.5	-228.3	-4	26	-5
36	2961.3	710.4	-306.5	2956.8	734.5	-307.1	-4	24	-1
37	2945.6	693.2	-380.0	2941.6	713.4	-377.7	-4	20	2
38	2929.5	671.9	-455.6	2925.6	687.7	-453.4	-4	16	2
39	2890.7	656.7	-521.2	2887.5	668.3	-519.9	-3	12	1
40	2818.5	647.2	-557.8	2814.9	653.6	-556.1	-4	6	2
41	2745.5	636.5	-589.6	2742.7	638.3	-589.2	-3	2	0
42	2670.2	625.6	-618.8	2670.6	619.5	-617.8	0	-6	1
43	2597.1	615.8	-644.9	2597.1	611.3	-641.4	0	-4	3
44	2520.6	605.5	-667.2	2520.9	600.6	-663.4	0	-5	4
45	2442.7	597.1	-687.2	2442.8	592.3	-683.4	0	-5	4
46	2367.0	589.1	-701.1	2365.5	584.6	-697.9	-2	-4	3
47	2286.1	581.8	-712.6	2286.7	578.3	-710.9	1	-3	2
48	2207.9	576.8	-723.0	2209.2	573.0	-720.4	1	-4	3
49	2120.0	572.1	-730.8	2120.8	568.8	-729.3	1	-3	2
50	2016.0	568.5	-734.8	2017.6	566.0	-731.0	2	-3	4
51	2035.5	646.9	-580.2	2034.9	646.1	-577.1	-1	-1	3
52	2069.9	706.3	-420.3	2070.4	705.3	-419.6	1	-1	1
53	2099.6	753.7	-253.1	2097.1	754.2	-253.8	-2	0	-1
54	2103.0	773.0	-76.8	2105.0	776.0	-75.8	2	3	1
55	2133.6	774.9	99.0	2132.6	777.7	97.7	-1	3	-1
56	2134.2	763.9	267.7	2131.8	767.3	266.9	-2	3	-1
57	2236.5	769.5	282.4	2235.0	774.0	281.0	-1	4	-1
58	2370.3	769.4	302.6	2368.5	775.5	303.0	-2	6	0
59	2494.4	769.6	308.3	2491.0	776.7	306.6	-3	7	-2
60	2619.8	769.7	309.4	2617.2	777.9	306.8	-3	8	-3
61	2742.5	769.6	306.9	2738.8	778.9	306.4	-4	9	-1
62	2866.4	755.8	299.1	2863.6	765.8	300.0	-3	10	1
63	2986.2	733.2	274.2	2986.2	748.0	273.6	0	15	-1
64	3062.6	730.2	131.9	3060.2	749.0	129.5	-2	19	-2
65	3059.3	718.3	12.5	3055.8	740.1	9.7	-4	22	-3
66	3020.4	721.6	-123.4	3016.4	747.1	-124.4	-4	26	-1

Note: See appendix F.2 for detailed procedure to measure required Door sill intrusion

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Reference point: Rear most center of the top of rear bumper beam
+X - From the rear of the vehicle to the front of the vehicle
+Y - From left side of the vehicle to the right side of the vehicle
+Z – From the top of the vehicle to the bottom of the vehicle

VEHICLE EXTERIOR CRUSH PROFILE
SECTION A-A

Pt.	Pre-Test			Pt.	Post-Test		
	X	Y	Z		X	Y	Z
1	795.7	-819.2	112.6	1	797.4	-819.5	103.5
2	576.2	-778.3	114.5	2	606.9	-785.0	101.8
3	341.1	-722.3	111.6	3	378.5	-735.1	101.2
4	223.1	-667.5	115.5	4	259.1	-690.9	97.4
5	149.1	-605.4	108.4	5	183.2	-640.0	94.7
6	90.3	-519.6	112.0	6	114.5	-565.0	93.0
7	53.7	-418.5	109.9	7	71.4	-482.9	91.3
8	25.2	-202.8	114.5	8	36.2	-342.0	89.5
9	19.4	-0.5	118.1	9	20.9	-189.9	89.5
10	22.2	160.5	113.3	10	13.7	-3.5	88.8
11	43.9	366.3	114.9	11	28.9	260.1	101.3
12	73.6	480.9	114.9	12	87.4	516.7	98.7
13	113.2	559.1	116.0	13	154.7	611.1	98.6
14	162.3	618.6	116.6	14	229.0	670.5	102.6
15	259.9	689.4	114.2	15	346.0	723.6	104.1
16	406.0	742.6	110.0	16	486.8	762.6	105.9
17	613.8	791.6	116.4	17	654.3	799.0	114.4
18	789.6	824.7	117.2	18	789.0	824.6	114.1

Note: See appendix F.3 for a detailed procedure on how to measure vehicle exterior crush profile**.**

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

VEHICLE EXTERIOR CRUSH PROFILE
SECTION A-A (Continued)

Pt.	Pre-Test			Pt.	Post-Test		
	X	Y	Z		X	Y	Z
19	1331.8	844.4	113.2	19	1330.4	844.0	109.2
20	1388.5	839.5	109.4	20	1484.1	831.4	110.7
21	1540.7	824.7	112.3	21	1720.5	831.0	114.4
22	1758.3	830.4	111.6	22	1969.6	838.5	121.5
25	1954.7	837.4	110.5	25	2138.2	845.0	124.0
26	2075.2	840.9	111.4	26	2309.2	853.9	126.9
27	2268.6	843.1	114.5	27	2458.5	855.6	129.1
28	2472.5	844.6	109.7	28	2688.3	856.4	134.8
29	2647.7	844.3	107.8	29	2992.5	855.8	142.9
30	2833.6	842.6	105.8	30	3130.5	859.3	144.9
31	3044.6	838.4	109.5	31	3284.4	862.2	147.0
32	3145.4	843.1	109.2	32	3911.4	727.4	153.9
33	3297.3	851.6	101.7	33	3997.1	593.4	158.4
34	3818.3	831.8	105.5	34	3987.1	531.4	155.4
35	3952.9	779.9	100.1	35	4078.9	435.0	159.0
36	4139.8	662.7	101.5	36	4114.2	321.6	159.2
37	4300.6	487.9	104.2	37	4136.9	127.3	158.8
38	4384.1	287.6	105.7	38	4105.0	90.9	157.0
39	4404.0	110.0	104.0	39	4092.5	-33.3	158.5
40	4408.2	-1.4	108.5	40	4045.4	-154.9	156.5
41	4402.9	-130.9	107.1	41	3980.6	-301.4	155.8
42	4381.6	-296.7	109.0	42	3703.5	-667.2	151.6
43	4280.4	-518.0	112.1	43	3612.3	-675.5	149.6
44	4134.2	-663.8	104.9	44	3553.7	-622.8	142.3
45	3960.5	-773.4	110.3	45	3576.0	-686.8	150.8
46	3830.0	-827.2	113.4	46	3510.3	-672.7	148.2
47	3289.1	-844.3	113.1	47	3454.9	-677.0	145.9
48	3150.1	-836.1	110.1	48	3342.0	-715.7	146.1
49	2958.7	-833.4	107.7	49	3268.8	-732.9	145.5
50	2749.0	-836.9	106.9	50	3228.1	-789.3	144.0
51	2473.1	-838.1	109.1	51	3133.3	-850.7	140.8
52	2244.6	-836.8	112.3	52	3132.4	-875.9	143.8
53	2074.8	-834.1	118.0	53	3111.3	-857.8	141.8
54	1841.7	-827.7	113.8	54	3086.2	-858.1	141.6

Note: See appendix F.3 for a detailed procedure on how to measure vehicle exterior crush profile.

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

VEHICLE EXTERIOR CRUSH PROFILE
SECTION A-A (Continued)

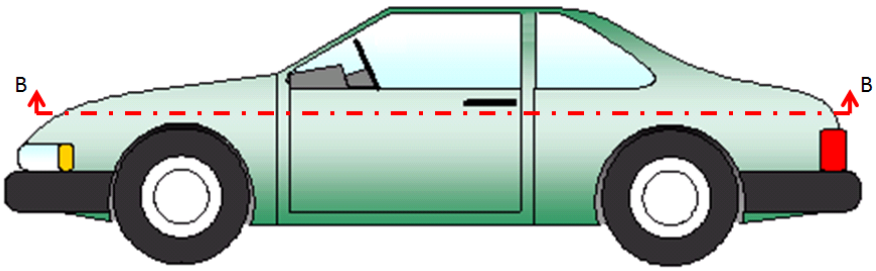
Pt.	Pre-Test			Pt.	Post-Test		
	X	Y	Z		X	Y	Z
55	1636.5	-820.7	109.8	55	2827.4	-878.9	136.1
56	1446.0	-829.3	113.1	56	2798.1	-875.1	137.6
57	1339.4	-840.4	112.4	57	2641.6	-883.0	132.7
58	795.7	-819.2	112.6	58	2503.3	-886.6	133.0
				59	2305.9	-881.2	126.3
				60	2071.8	-848.8	116.6
				61	2068.7	-831.8	118.6
				62	1840.5	-825.7	118.5
				63	1618.3	-819.0	113.2
				64	1389.0	-835.0	107.7
				65	1331.1	-839.1	108.0
				66	797.4	-819.5	103.5

Note: See appendix F.3 for a detailed procedure on how to measure vehicle exterior crush profile**.**

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



Reference point: Rear most center of the top of rear bumper beam
+X - From the rear of the vehicle to the front of the vehicle
+Y - From left side of the vehicle to the right side of the vehicle
+Z – From the top of the vehicle to the bottom of the vehicle

VEHICLE EXTERIOR CRUSH PROFILE
SECTION B-B

Pt.	Pre-Test			Pt.	Post-Test		
	X	Y	Z		X	Y	Z
1	1116.5	-843.3	-11.3	1	1117.5	-842.8	-13.0
2	1018.0	-840.5	-13.1	2	835.4	-819.2	-21.5
3	713.5	-793.4	-11.4	3	754.7	-803.2	-18.9
4	413.2	-735.9	-12.5	4	526.0	-755.9	-24.8
5	207.6	-650.9	-16.3	5	282.3	-691.4	-27.4
6	129.0	-585.8	-17.1	6	102.7	-538.0	-33.5
7	69.4	-495.9	-18.6	7	52.8	-393.4	-36.0
8	33.3	-367.9	-18.0	8	20.6	-121.0	-28.9
9	10.3	-186.6	-13.0	9	21.9	21.4	-32.3
10	6.0	-1.2	-15.4	10	27.0	191.9	-32.5
11	7.2	115.3	-14.1	11	57.8	433.7	-31.9
12	17.4	264.0	-14.5	12	99.1	533.9	-30.9
13	63.7	484.4	-17.3	13	188.8	633.4	-30.8
14	121.1	577.5	-15.9	14	314.6	704.1	-26.8
15	204.7	649.2	-15.3	15	444.7	743.1	-20.2
16	332.2	713.3	-15.9	16	571.6	767.5	-21.7
17	444.0	744.9	-13.8	17	743.0	806.2	-16.5
18	742.4	806.6	-11.3	18	949.8	841.5	-10.8

Note: See appendix F.3 for a detailed procedure on how to measure vehicle exterior crush profile

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

VEHICLE EXTERIOR CRUSH PROFILE
SECTION B-B (Continued)

Pt.	Pre-Test			Pt.	Post-Test		
	X	Y	Z		X	Y	Z
19	1045.6	845.3	-10.6	19	1110.9	848.0	-8.4
20	1110.4	846.8	-14.3	20	1135.2	847.8	-15.0
21	1135.9	847.9	-9.5	21	1281.0	842.9	-13.1
22	1284.8	843.9	-8.1	22	1485.4	829.6	-8.8
23	1352.7	837.3	-10.8	23	1657.8	835.2	-5.7
24	1656.6	833.2	-7.4	24	1909.8	843.3	-0.3
25	1961.9	843.3	-16.2	25	2109.8	848.8	2.5
26	2264.4	847.8	-15.5	26	2263.3	836.6	8.0
27	2570.9	846.8	-14.8	27	2537.7	840.9	10.7
28	2874.9	840.5	-15.0	28	2681.2	848.3	16.5
29	3178.9	831.5	-18.6	29	2876.5	853.4	16.9
30	3483.6	854.8	-24.1	30	3024.1	855.1	20.6
31	3635.7	852.5	-18.7	31	3229.5	866.8	26.1
32	3691.1	842.9	-21.8	32	3382.1	859.6	28.9
33	3789.7	821.5	-21.3	33	3443.9	857.7	30.0
34	3946.0	744.9	-25.7	34	3661.0	801.3	35.6
35	4099.3	642.0	-30.1	35	3745.1	818.2	37.3
36	4198.7	505.8	-23.0	36	3846.9	799.7	37.3
37	4284.7	383.0	-26.6	37	3911.3	733.6	33.5
38	4328.3	11.9	-27.7	38	3951.3	683.2	38.9
39	4294.7	-334.1	-23.5	39	4050.3	515.2	41.6
40	4139.2	-587.3	-25.6	40	4105.4	377.0	43.6
41	4049.9	-677.7	-24.3	41	4122.9	225.6	41.6
42	3853.7	-791.2	-23.3	42	4124.7	76.8	43.9
43	3638.3	-841.2	-21.2	43	4100.1	-62.2	43.5
44	3459.2	-847.1	-17.9	44	4040.4	-225.2	42.4
45	3386.8	-844.6	-18.6	45	3877.7	-492.9	42.8
46	3349.3	-842.4	-18.7	46	3761.7	-634.0	39.6
47	3155.8	-824.5	-10.7	47	3696.8	-783.8	39.7
48	2847.8	-834.4	-13.2	48	3617.8	-727.5	36.5
49	2543.8	-840.4	-12.6	49	3553.3	-745.5	38.5
50	2236.7	-841.6	-11.3	50	3476.7	-695.3	34.5
51	1932.1	-837.3	-10.0	51	3461.7	-769.1	33.5

Note: See appendix F.3 for a detailed procedure on how to measure vehicle exterior crush profile

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

VEHICLE EXTERIOR CRUSH PROFILE
SECTION B-B (Continued)

Pt.	Pre-Test			Pt.	Post-Test		
	X	Y	Z		X	Y	Z
52	1625.8	-827.5	-9.3	52	3401.3	-694.9	37.6
53	1323.0	-836.3	-10.6	53	3344.2	-709.1	32.9
54	1170.0	-844.2	-11.3	54	3237.5	-760.9	29.9
55	1116.5	-843.3	-11.3	55	3173.1	-731.5	27.7
				56	3195.2	-803.5	30.6
				57	3148.5	-833.2	29.2
				58	3130.0	-878.1	28.3
				59	3081.3	-863.6	26.1
				60	2825.6	-904.9	23.5
				61	2800.7	-903.0	20.1
				62	2675.4	-911.6	21.4
				63	2436.9	-906.3	15.3
				64	2175.6	-873.9	10.0
				65	2072.5	-857.0	9.9
				66	2071.7	-838.1	5.2
				67	1934.1	-835.3	5.1
				68	1672.0	-828.2	-2.0
				69	1379.2	-829.8	-10.2
				70	1207.2	-842.5	-12.0
				71	1169.1	-843.5	-9.1
				72	1117.5	-842.8	-13.0

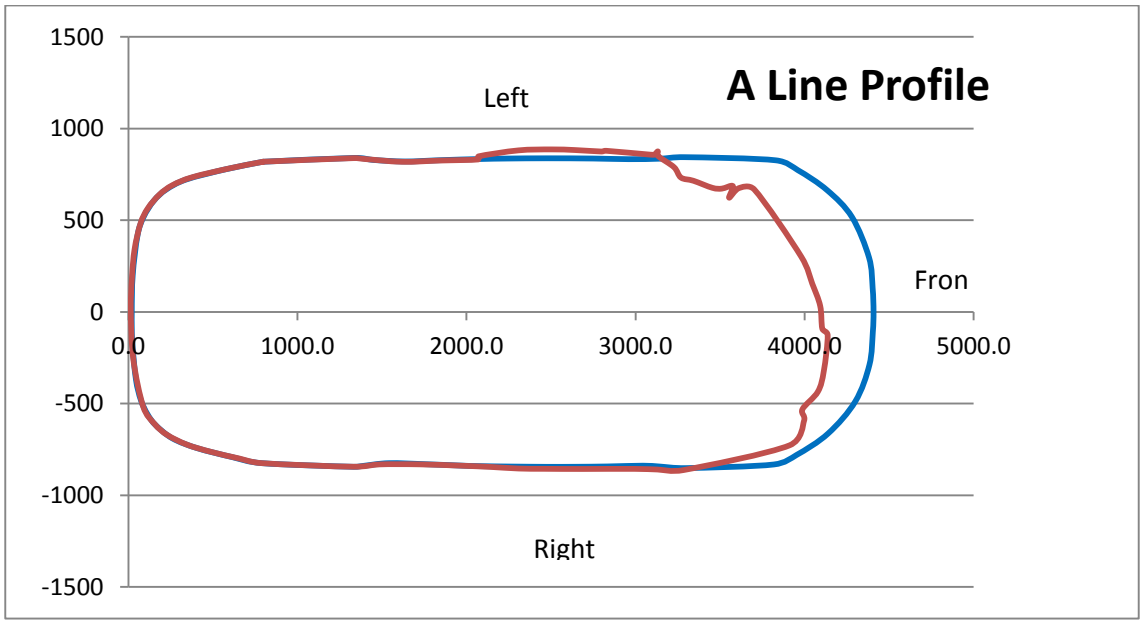
Note: See appendix F.3 for a detailed procedure on how to measure vehicle exterior crush profile

DATA SHEET NO.13 (CONTINUED)

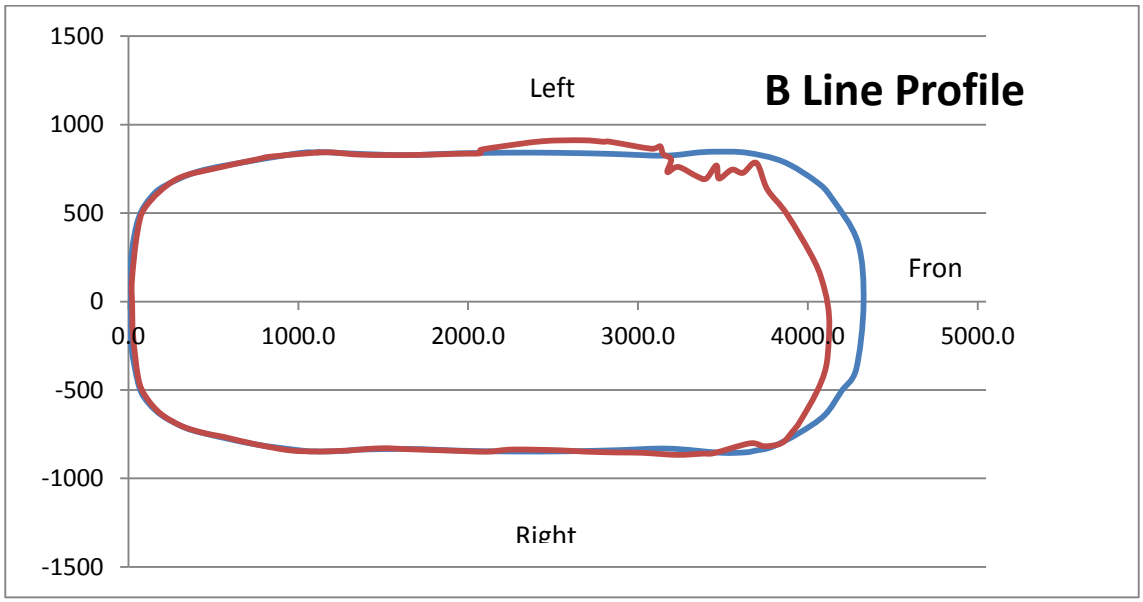
VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

SECTION A-A



SECTION B-B



DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

LEFT PROFILE OF THE DASH

Points	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
LB3	2986.5	-482.8	3.8	2866.2	-394.8	-64.2	-120.2	88.0	-68.0
LB2	2956.9	-481.9	-38.2	2851.0	-427.0	-111.1	-105.9	54.8	-72.9
LB1	2923.5	-481.2	-80.8	2840.0	-440.4	-160.7	-83.5	40.8	-79.9
DIPL	2885.0	-480.8	-109.5	2795.3	-440.6	-219.8	-89.7	40.3	-110.2
LT1	2841.2	-480.8	-132.1	2755.4	-413.8	-225.6	-85.7	67.0	-93.5
LT2	2822.1	-482.6	-178.9	2716.3	-407.2	-236.5	-105.8	75.4	-57.6
LT3	2837.9	-481.4	-220.8	2701.2	-400.3	-286.5	-136.7	81.1	-65.7
LT4	2850.5	-483.5	-267.8	2703.1	-396.1	-348.9	-147.4	87.4	-81.1
LT5	2884.9	-484.3	-306.3	2733.8	-402.8	-387.8	-151.1	81.5	-81.6
LT6	2923.6	-488.4	-335.6	2766.0	-410.9	-419.0	-157.6	77.5	-83.4
LT7	2973.0	-483.3	-351.1	2818.2	-412.6	-437.7	-154.9	70.7	-86.6
LT8	3020.2	-483.8	-361.8	2867.3	-417.6	-448.9	-152.9	66.2	-87.0

Reference point: Rear most center of the top of rear bumper beam
+X - From the rear of the vehicle to the front of the vehicle
+Y - From left side of the vehicle to the right side of the vehicle
+Z – From the top of the vehicle to the bottom of the vehicle

Note: See Appendix F.4 for a detailed procedure on how to measure the required profile dash.

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

RIGHT PROFILE OF THE DASH

Points	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
RB3	2959.4	-184.8	-0.5	2896.5	-98.3	-95.9	-62.9	86.5	-95.4
RB2	2928.4	-184.6	-42.8	2862.0	-98.6	-132.3	-66.4	86.0	-89.5
RB1	2895.6	-184.8	-76.9	2822.4	-100.8	-163.9	-73.1	84.0	-86.9
DIPR	2854.8	-188.1	-106.1	2777.6	-105.5	-190.8	-77.2	82.6	-84.7
RT1	2811.9	-187.4	-132.3	2732.9	-106.4	-210.6	-79.1	81.0	-78.3
RT2	2801.4	-186.8	-176.1	2715.7	-106.4	-248.5	-85.7	80.3	-72.4
RT3	2834.5	-181.6	-214.5	2738.0	-100.2	-294.5	-96.5	81.4	-79.9
RT4	2833.3	-187.9	-259.6	2731.5	-104.8	-340.5	-101.8	83.1	-81.0
RT5	2869.3	-187.1	-294.7	2762.2	-106.2	-378.0	-107.0	80.8	-83.3
RT6	2900.7	-177.0	-332.7	2797.4	-98.9	-415.8	-103.3	78.2	-83.1
RT7	2951.8	-183.9	-347.0	2835.3	-111.2	-444.0	-116.5	72.7	-97.0
RT8	2998.9	-185.6	-363.9	2879.1	-116.2	-468.1	-119.9	69.4	-104.2

Reference point: Rear most center of the top of rear bumper beam
+X - From the rear of the vehicle to the front of the vehicle
+Y - From left side of the vehicle to the right side of the vehicle
+Z – From the top of the vehicle to the bottom of the vehicle

Note: See Appendix F.4 for a detailed procedure on how to measure the required profile dash.

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

	Points	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
		X	Y	Z	X	Y	Z	X	Y	Z
Lower Bumper Beam	1	4120.0	-401.7	-75.0	*	*	*	*	*	*
	2	4115.2	-242.3	-121.8	*	*	*	*	*	*
	3	4109.7	-81.0	-84.0	*	*	*	*	*	*
	4	4110.1	82.4	-99.0	*	*	*	*	*	*
	5	4108.1	242.8	-102.9	*	*	*	*	*	*
	6	4116.0	406.6	-75.8	3940.2	329.7	-198.4	-176	-77	-123
Upper Bumper Beam	1	4229.8	-541.1	126.7	3677.0	-712.8	-86.8	-553	-172	-213
	2	4328.0	-336.1	129.2	3650.4	-514.5	-41.8	-678	-178	-171
	3	4360.2	-110.1	125.0	3764.8	-371.7	-56.6	-595	-262	-182
	4	4359.3	117.5	125.6	3902.0	-190.9	-41.3	-457	-308	-167
	5	4326.3	342.4	126.1	4004.6	12.2	-21.1	-322	-330	-147
	6	4226.6	545.9	123.7	4043.3	234.1	-5.6	-183	-312	-129
Upper Radiator Support	1	4230.3	-542.7	219.9	3713.5	-693.7	9.7	-517	-151	-210
	2	4327.3	-336.7	224.5	3653.4	-533.0	21.4	-674	-196	-203
	3	4358.4	-111.4	225.5	3762.4	-378.8	40.8	-596	-267	-185
	4	4357.5	117.0	226.3	3908.5	-202.5	43.2	-449	-320	-183
	5	4324.8	341.1	225.8	4008.9	1.0	71.4	-316	-340	-154
	6	4227.4	546.6	221.6	4045.4	223.4	84.1	-182	-323	-138

*Points unrecoverable, support beam was destroyed in crash

Reference point: Rear most center of the top of rear bumper beam

+X - From the rear of the vehicle to the front of the vehicle

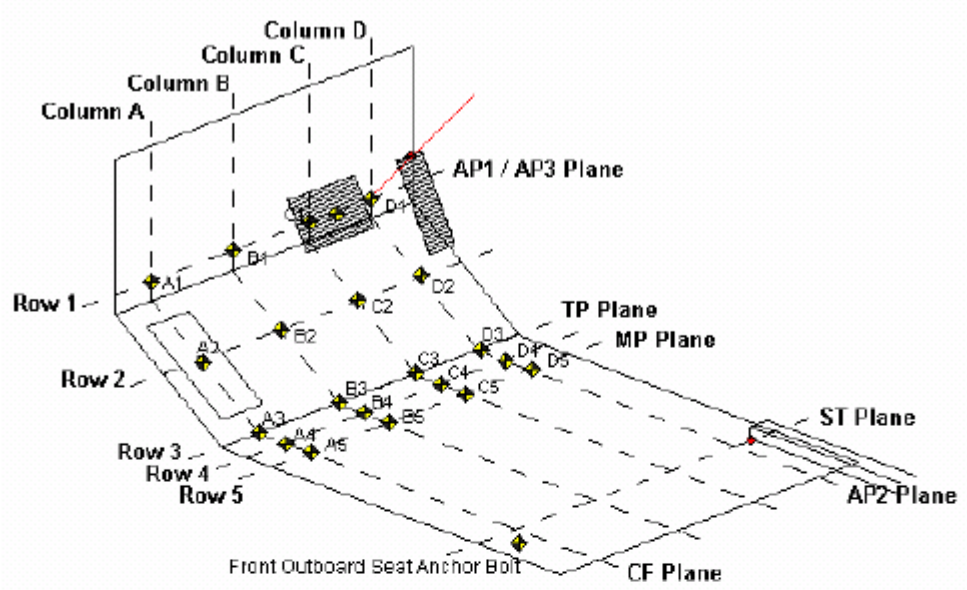
+Y - From left side of the vehicle to the right side of the vehicle

+Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



AP1: Y-Z Plane passing through D1

AP2: X-Z Plane passing through D1

AP3: X-Y plane passing through D1

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

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

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

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

Column A: intersection of vehicle and CF plane

Column D: Intersection of vehicle and AP2 plane

Row 1: intersection of the vehicle and the AP3 Plane

Row 3: intersection of the vehicle and TP plane

Row 5: intersection of the vehicle and MP plane

Row 2: evenly spaced between row 1 and 3

Row 4: evenly spaced between row 3 and 5

DATA SHEET NO.13 (CONTINUED)

VEHICLE INTRUSION MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

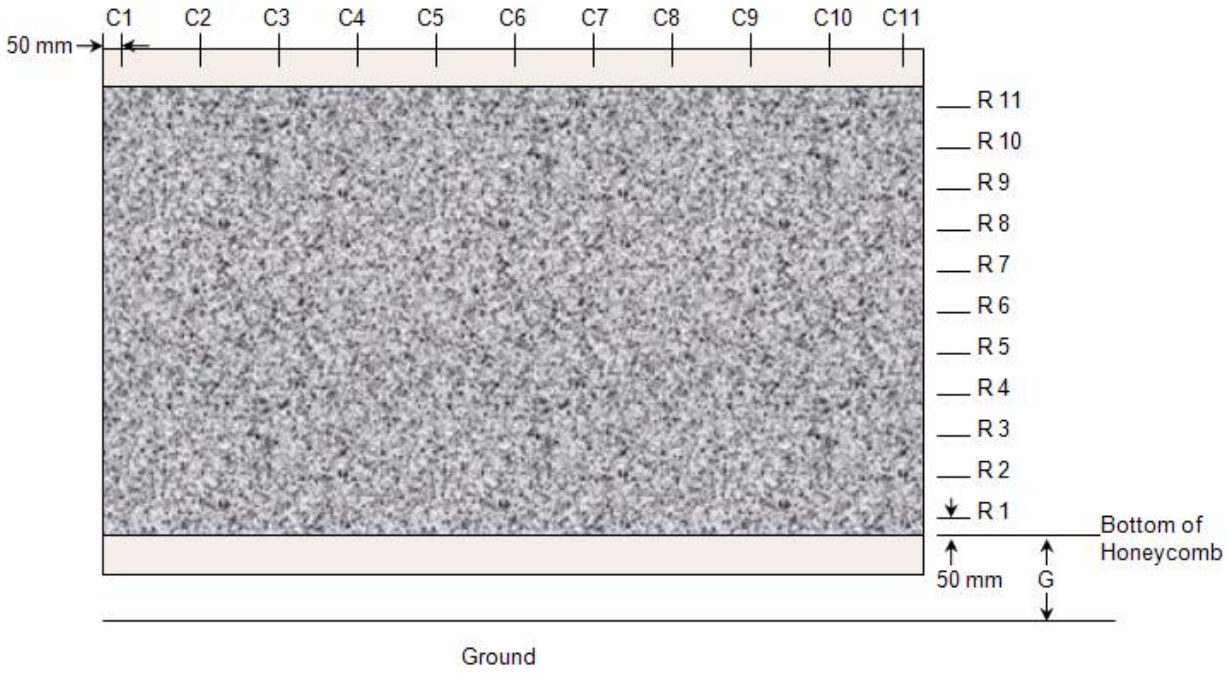
Intrusion Location	Pre-Test (mm)			Post-Test (mm)			Difference (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3215.5	-546.8	252.2	3124.9	-501.8	228.7	-90.6	45.1	-23.5
B1	3287.0	-423.4	250.2	3163.5	-368.2	219.7	-123.6	55.2	-30.5
C1	3289.0	-292.1	248.6	3137.5	-252.5	218.9	-151.4	39.7	-29.6
D1	3290.9	-164.8	249.9	3180.7	-131.4	218.4	-110.2	33.4	-31.4
A2	3208.4	-544.7	308.8	3143.0	-510.3	283.5	-65.4	34.4	-25.3
B2	3208.8	-423.8	309.5	3121.9	-395.5	304.7	-86.9	28.3	-4.7
C2	3211.8	-292.4	316.4	3103.7	-252.3	308.5	-108.1	40.1	-7.9
D2	3224.6	-168.3	316.9	3181.5	-170.9	289.4	-43.1	-2.6	-27.5
A3	3118.4	-544.5	365.6	3090.1	-536.2	369.5	-28.3	8.2	3.9
B3	3117.1	-426.4	365.6	3063.2	-426.2	384.3	-53.9	0.2	18.7
C3	3114.9	-297.3	371.2	3095.8	-291.8	377.3	-19.1	5.6	6.0
D3	3113.2	-169.9	379.1	3114.9	-177.0	391.1	1.7	-7.1	12.0
A4	3023.8	-550.7	370.3	3020.0	-548.3	371.7	-3.8	2.4	1.4
B4	3022.4	-423.8	368.5	3022.5	-424.5	386.9	0.1	-0.7	18.4
C4	3020.1	-299.9	371.9	3021.5	-304.8	406.1	1.4	-4.9	34.2
D4	3018.5	-174.3	370.7	3021.9	-179.9	389.1	3.4	-5.6	18.4
A5	2929.0	-553.6	370.0	2929.0	-549.8	378.8	0.0	3.9	8.7
B5	2927.0	-427.4	370.0	2928.4	-425.7	389.1	1.4	1.7	19.0
C5	2928.4	-300.2	371.4	2928.7	-303.3	405.8	0.3	-3.0	34.4
D5	2926.8	-174.6	372.2	2927.9	-178.2	391.5	1.1	-3.7	19.2
Brake Pedal	3112.6	-270.5	193.4	3088.3	-218.6	219.4	-24.3	51.9	26.0
IP Left	2886.5	-484.5	-92.9	2776.2	-457.2	-86.5	-110.3	27.3	6.4
IP Right	2855.4	-189.5	-91.0	2790.0	-141.4	-70.7	-65.4	48.0	20.3
Steering Column	2613.1	-337.1	-292.4	2541.9	-315.3	-251.6	-71.2	21.8	40.8
Front Outboard Bolt	2602.5	-540.1	318.5	2604.7	-537.4	327.7	2.1	2.7	9.1

Reference point: Rear most center of the top of rear bumper beam
+X - From the rear of the vehicle to the front of the vehicle
+Y - From left side of the vehicle to the right side of the vehicle
+Z – From the top of the vehicle to the bottom of the vehicle

DATA SHEET NO.14

MDB CRUSH MEASUREMENTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



BARRIER X-CRUSH

		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
		50 mm	260 mm	470 mm	680 mm	890 mm	1100 mm	1310 mm	1520 mm	1730 mm	1940 mm	2150 mm
R11	910mm	3.6	5.3	4.0	4.7	4.9	5.0	4.8	5.0	8.3	5.0	6.5
R10	824mm	3.2	3.0	2.7	2.2	2.3	2.4	11.7	4.6	4.0	4.7	17.4
R9	738mm	2.8	2.3	2.0	1.7	1.6	1.7	6.7	13.8	9.1	6.5	39.6
R8	652mm	2.5	1.7	1.4	1.3	1.1	1.2	2.6	24.2	27.7	13.4	73.4
R7	566mm	1.1	0.6	0.5	0.3	0.7	0.8	1.0	14.4	34.4	23.9	106.7
R6	480mm	0.8	0.1	0.1	0.1	0.3	0.4	0.7	9.9	61.9	76.6	139.5
R5	384mm	-0.4	-0.8	-0.6	-0.4	0.1	0.1	0.6	40.4	53.8	203.4	252.0
R4	308mm	-1.0	-1.0	-1.1	-0.7	-0.4	-0.1	0.8	79.3	37.9	201.7	243.4
R3	222mm	-1.6	-1.2	-1.1	-0.8	-0.6	-0.4	1.2	119.6	16.8	139.9	205.0
R2	136mm	-2.1	-1.7	-1.2	-0.8	-0.6	-0.3	20.1	142.1	15.0	87.6	155.8
R1	50mm	-2.2	-1.9	-1.1	-0.6	*	*	31.8	165.6	30.0	31.3	111.8

*Barrier was cut to clear rail and defined points were unmeasureable

DATA SHEET NO. 15

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

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

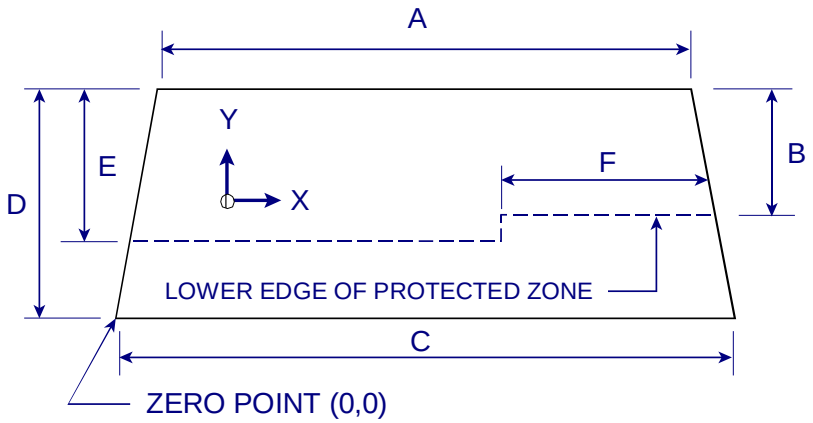
Please provide windshield mounting details. The windshield is connected on the left and right sides by a rubber gasket and glued with urethane adhesive.

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

Temperature of windshield molding during test: 21.3 ºC

WINDSHIELD PERIPHERY MEASUREMENTS

Measurement	Pre-Test (mm)	Post-Test (mm)	% Retention
Left Side	2058	1748	85.0%
Right Side	2058	2058	100.0%
Total	4115	3806	92.5%



Item	Units	Value
A	mm	1145
B	mm	558
C	mm	1340
D	mm	815
E	mm	555
F	mm	530

AREAS OF PROTECTED ZONE FAILURES

A. Provide coordinates of the area that the protected zone was penetrated more than .25 inches by a vehicle component other than one that is normally in contact with the windshield.

X	Y

B. Provide coordinates of the area beneath the protected zone that the inner surface of the windshield was penetrated by a vehicle component.

X	Y

DATA SHEET NO. 15 (CONTINUED)

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

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Temperature at Time of Impact: 26.67ºC Test Time: 6:10 PM

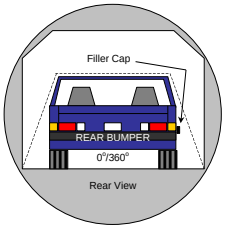
Stoddard Solvent Spillage Measurements

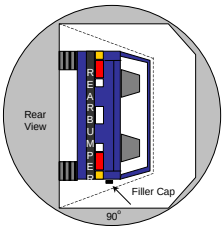
A.	From impact until vehicle motion ceases: (maximum allowable = 1 oz.)	0 oz.
B.	For the 5-minute period after motion ceases: (maximum allowable = 5 oz.)	0 oz.
C.	For the following 25 minutes: (maximum allowable = 1 oz./minute)	0 oz..
D.	Spillage:	0 oz.

DATA SHEET NO. 16

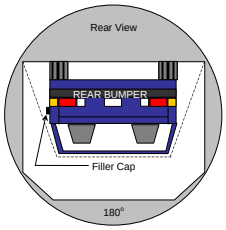
FMVSS 301 STATIC ROLLOVER RESULTS

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11



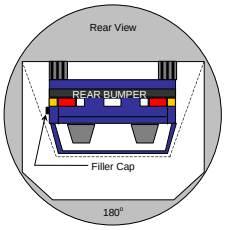


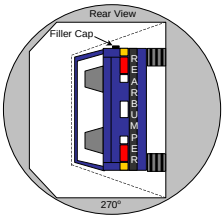
0° TO 90°



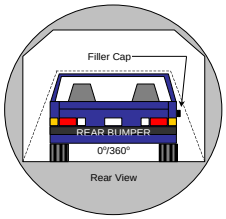
90° TO 180°

1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
2. Details of Stoddard Solvent spillage: _____





180° TO 270°



270° TO 360°

SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	71	300	371
90° to 180°	71	300	371
180° to 270°	55	300	355
270° to 360°	70	300	370

FMVSS 301 SPILLAGE TABLE

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

SOLVENT SPILLAGE LOCATION TABLE

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

DATA SHEET NO. 17

DUMMY/VEHICLE TEMPERATURE STABILIZATION

Test Vehicle:	2011 Ford Fiesta	NHTSA No:	RB0225
Test Program:	R&D 56mph, 15° angle, 35% offset	Test Date	7/27/11

Picture Not Available.

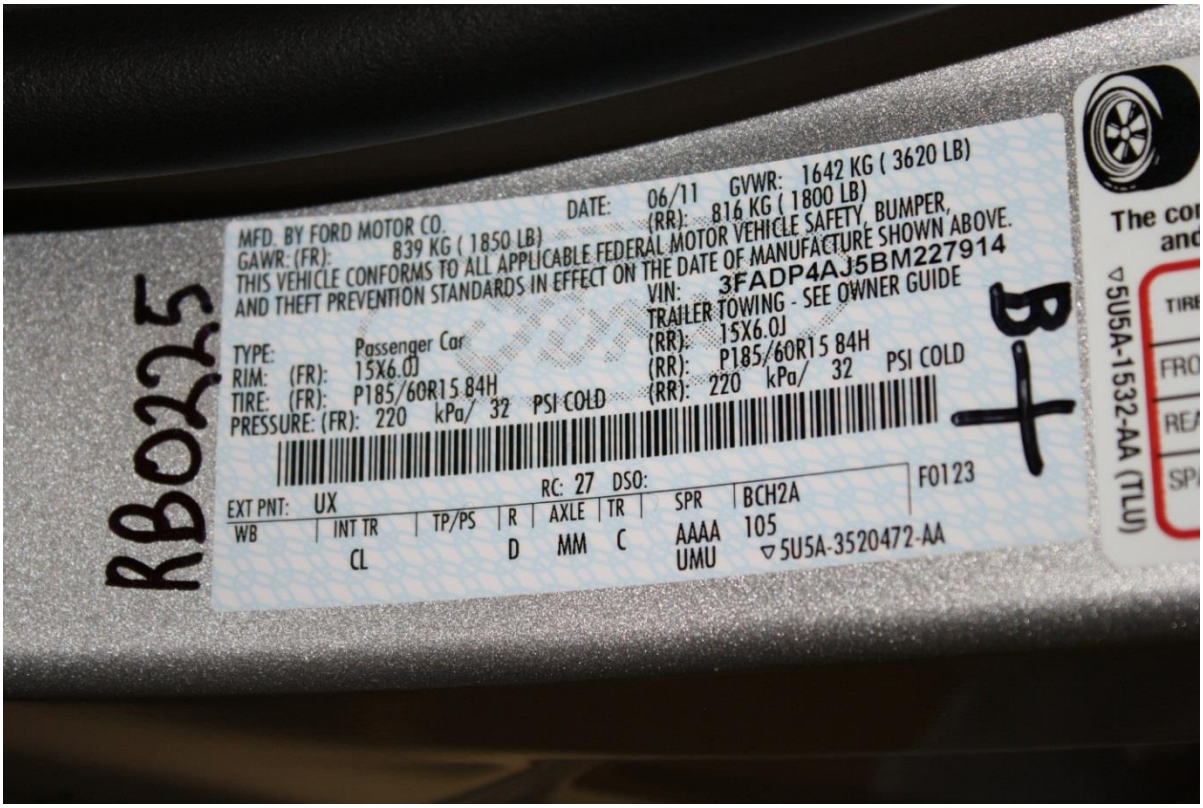
APPENDIX A

PHOTOGRAPHS

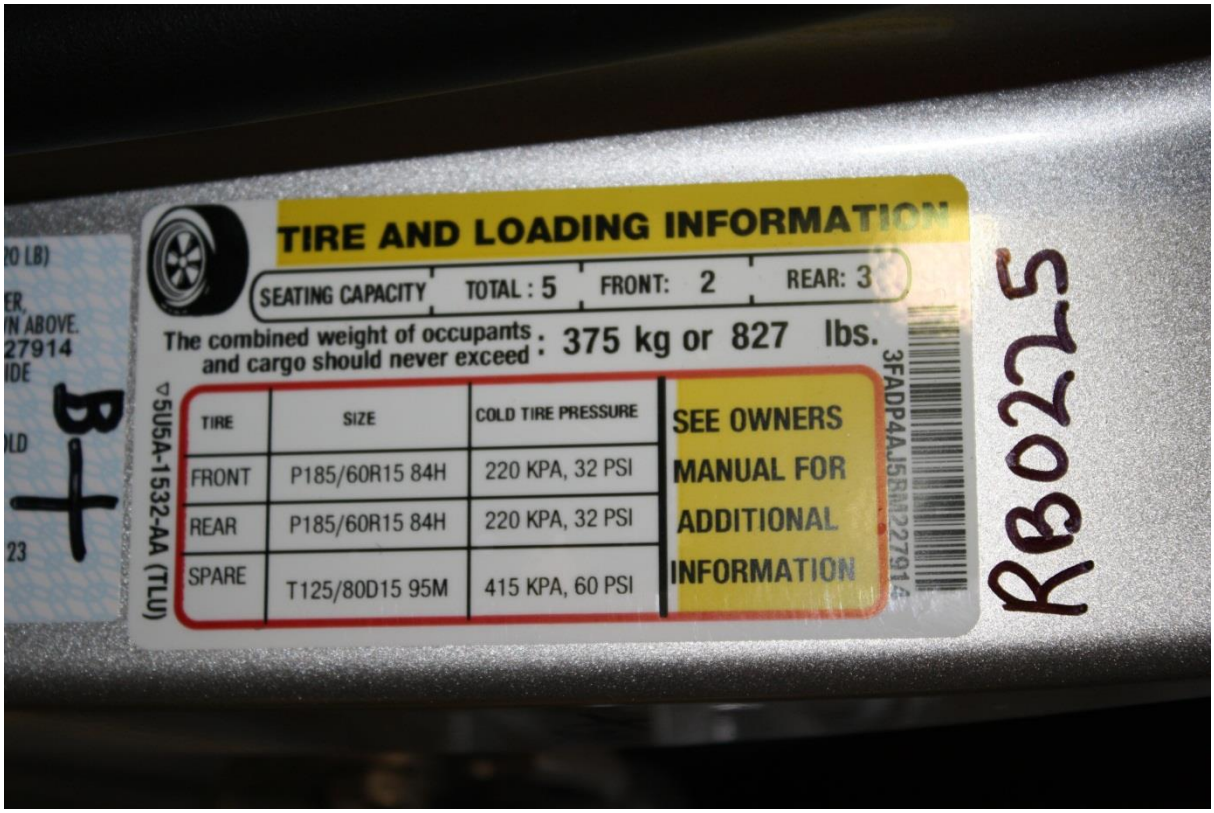
TABLE OF PHOTOGRAPHS		
No.		Page

No. 001 As Delivered Right Front 3-4 View of Test Vehicle

No. 002 As Delivered Left Rear 3-4 View of Test Vehicle

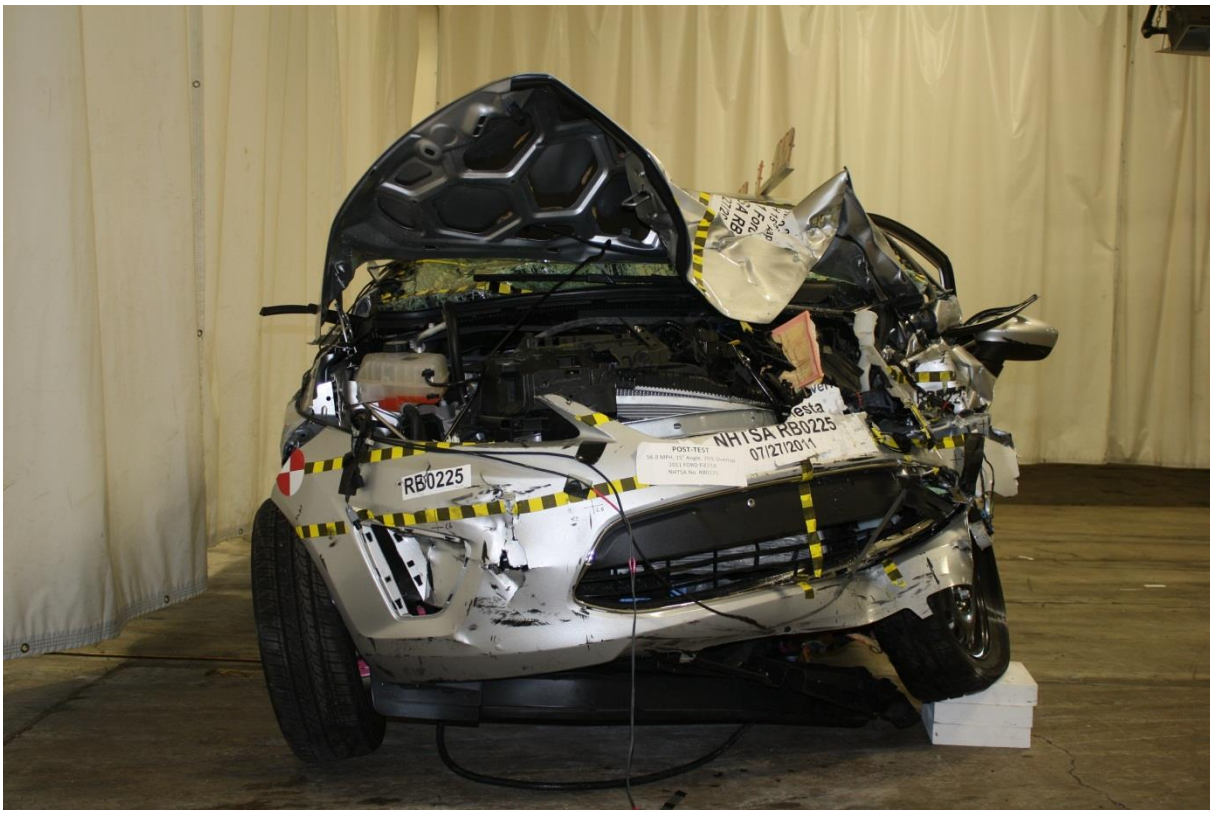


No. 003 Test Vehicle Certification Label

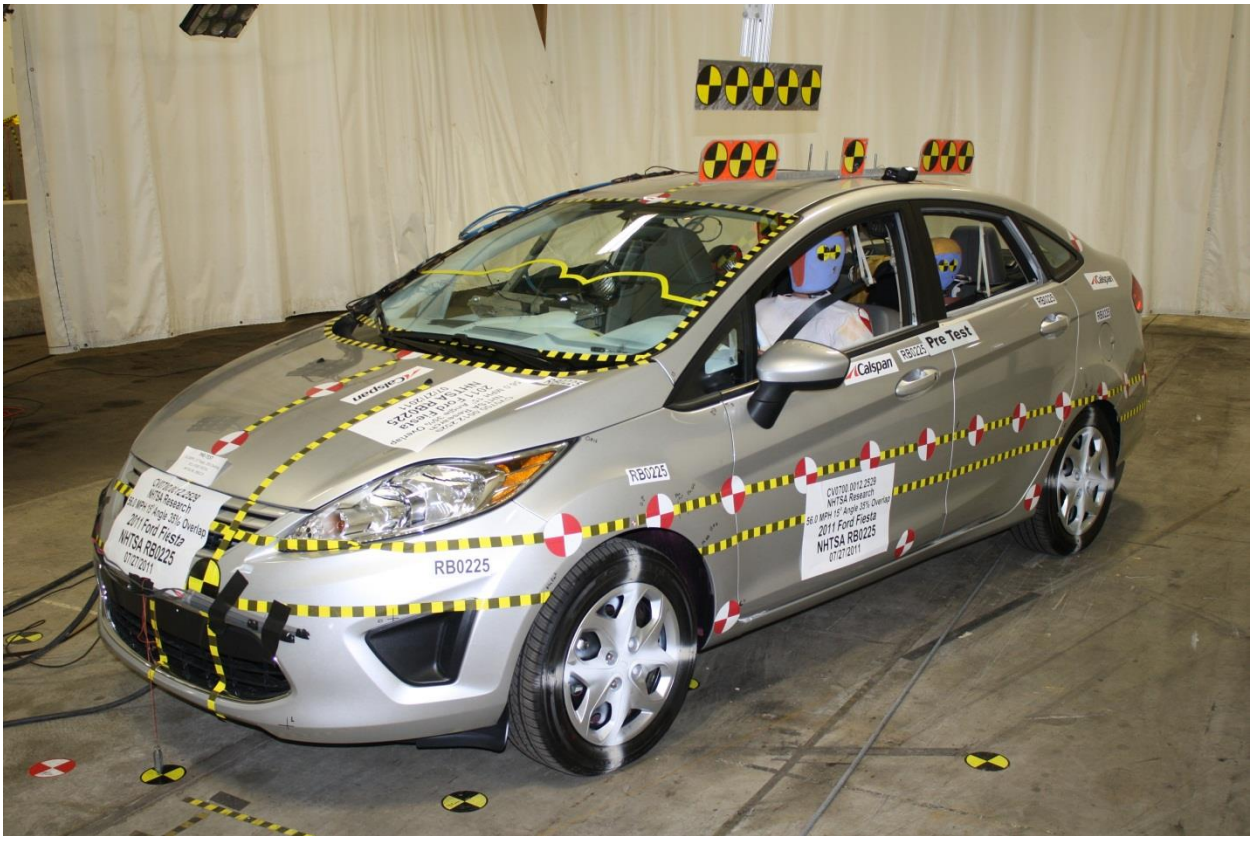


No. 004 Test Vehicle Tire Placard

No. 005 Pre-Test Front View of Test Vehicle



No. 006 Post-Test Front View of Test Vehicle



No. 007 Pre-Test Left Front 3-4 View of Test Vehicle

No. 008 Post-Test Left Front 3-4 View of Test Vehicle

No. 009 Pre-Test Left Side View of Test Vehicle

No. 010 Post-Test Left Side View of Test Vehicle

No. 011 Pre-Test Left Rear 3-4 View of Test Vehicle

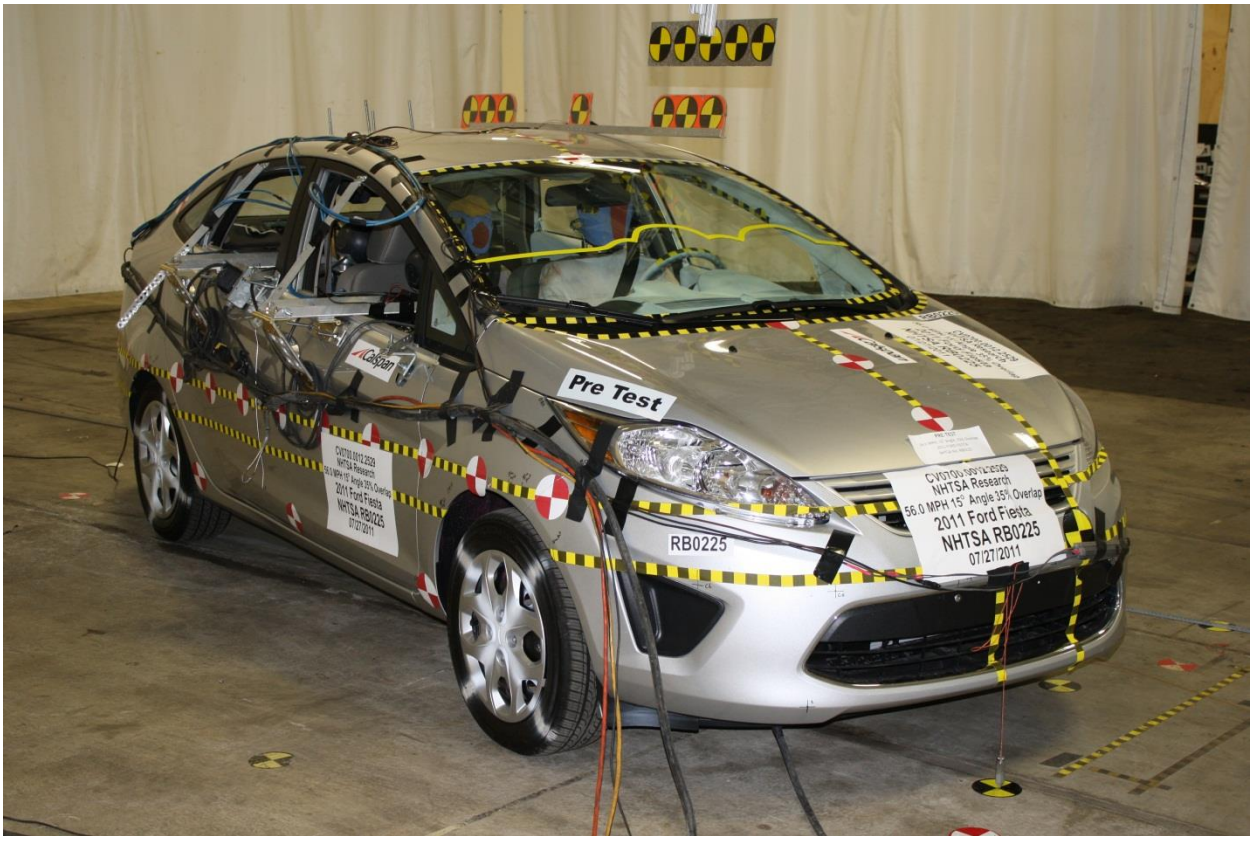
No. 012 Post-Test Left Rear 3-4 View of Test Vehicle

No. 013 Pre-Test Rear View of Test Vehicle

No. 014 Post-Test Rear View of Test Vehicle

No. 015 Pre-Test Right Side View of Test Vehicle

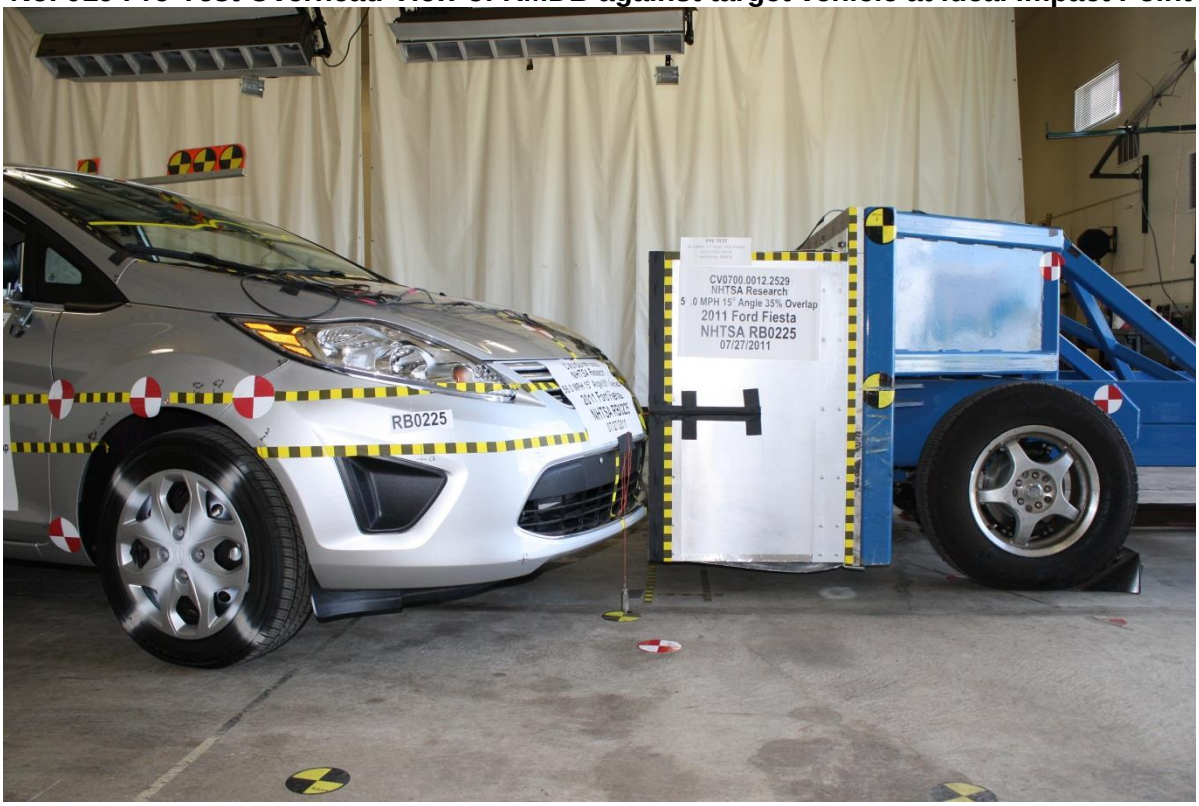
No. 016 Post-Test Right Side View of Test Vehicle



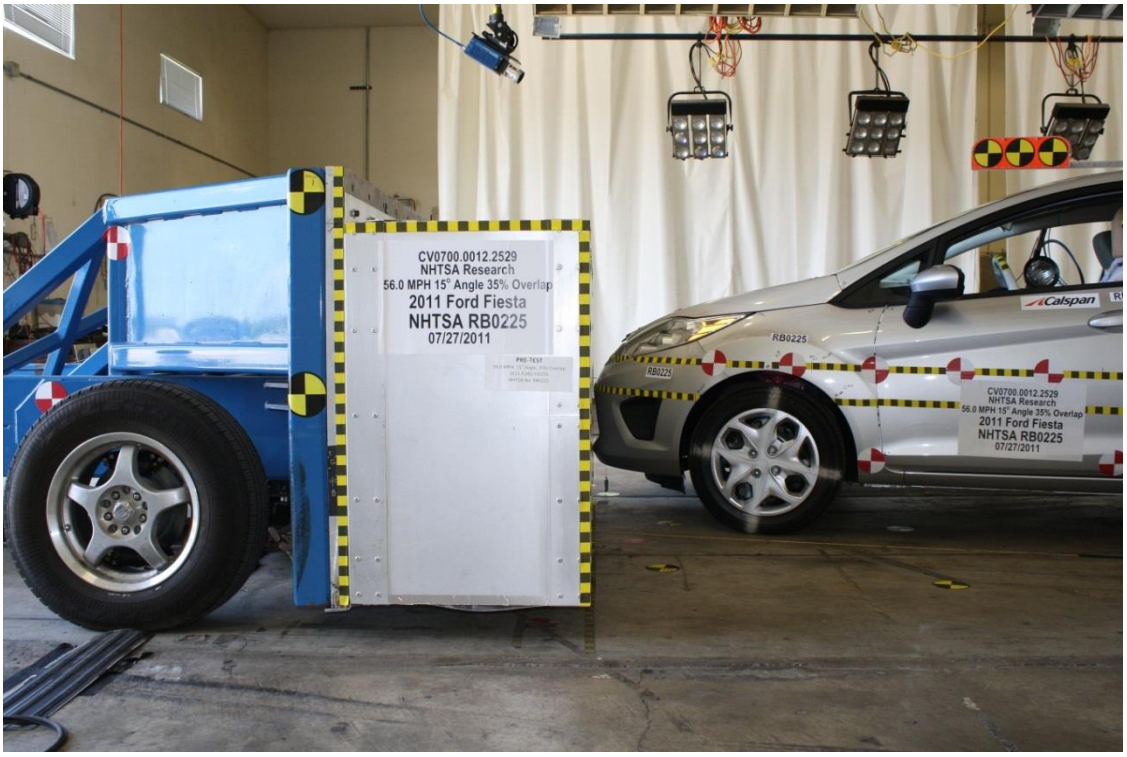
No. 017 Pre-Test Right Front 3-4 View of Test Vehicle

No. 018 Post-Test Right Front 3-4 View of Test Vehicle

No. 019 Pre-Test Overhead View of RMDB against target vehicle at ideal Impact Point

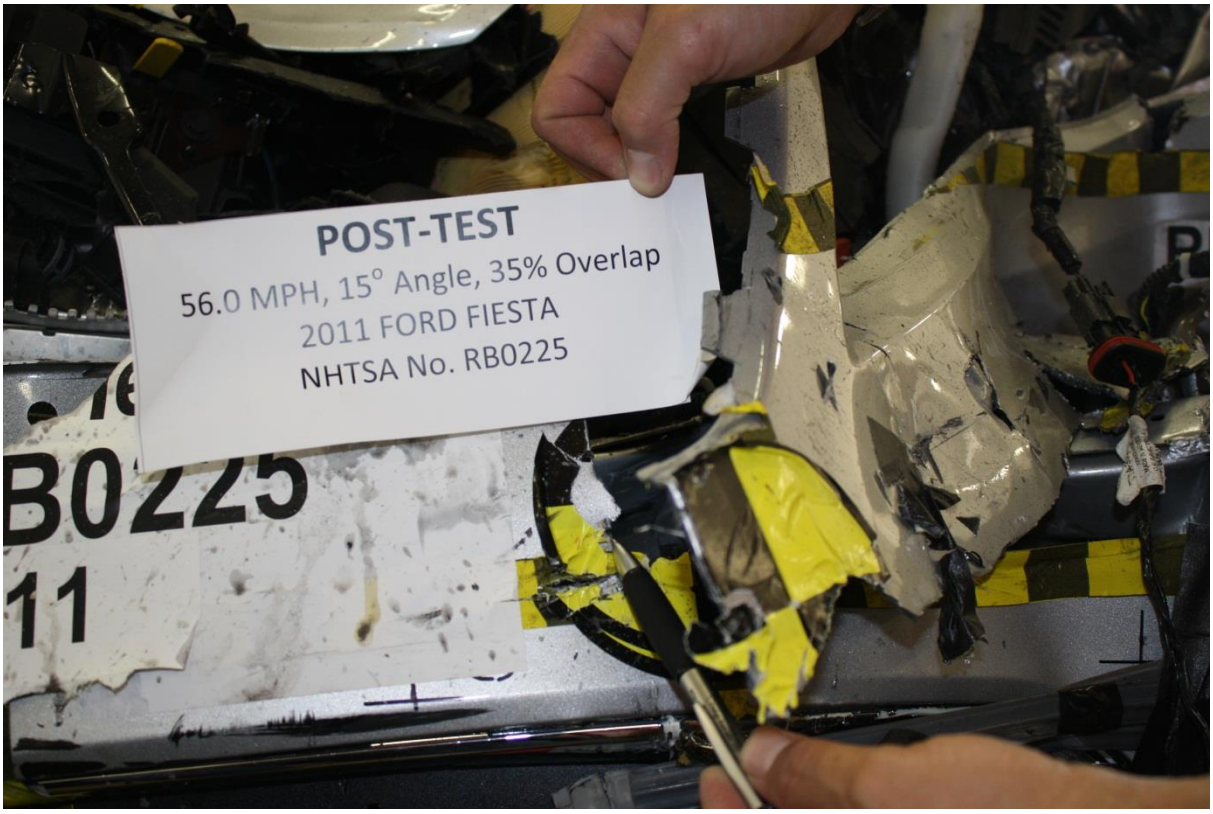


No. 020 Pre-Test Left Side View of RMDB against target vehicle at ideal Impact Point



No. 021 Pre-Test Right Side View of RMDB against target vehicle at ideal Impact Point

No. 022 Pre-Test Close-up View of Impact Point

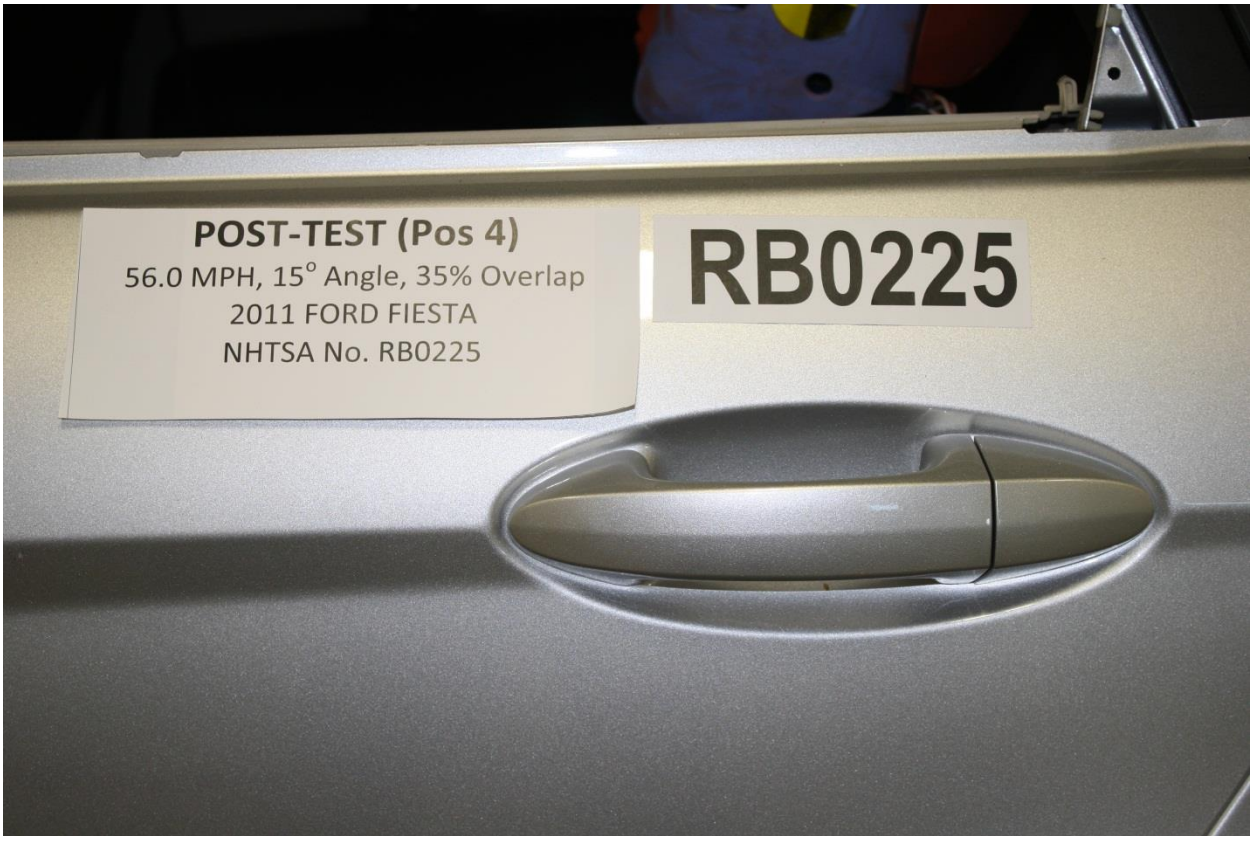


No. 023 Post-Test Close-up View of Impact Point

No. 024 Pre-Test Close-up View of Left Front Door Latch

No. 025 Post-Test Close-up View of Left Front Door Latch

No. 026 Pre-Test Close-up View of Left Rear Door Latch



No. 027 Post-Test Close-up View of Left Rear Door Latch

No. 028 Pre-Test Windshield View

No. 029 Post-Test Windshield View

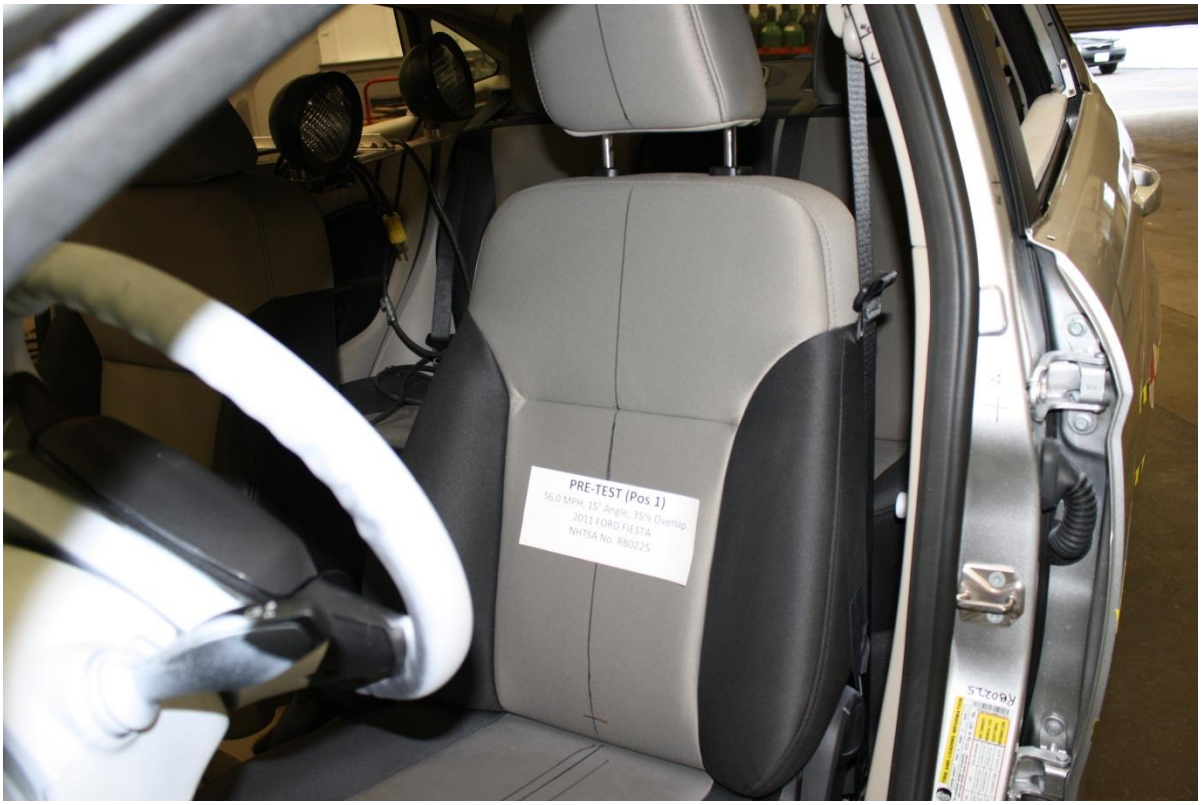
No. 030 Pre-Test View of Driver Inner Door Panel

No. 031 Post-Test View of Driver Inner Door Panel

No. 032 Pre-Test View of Passenger Inner Door Panel

No. 033 Post-Test View of Passenger Inner Door Panel

No. 034 Pre-Test Frontal View of Driver Seat pan



No. 035 Pre-Test Frontal View of Driver Seat back

No. 036 Pre-Test Frontal View of Left Rear Seat pan

No. 037 Pre-Test Frontal View of Left Rear Seat back

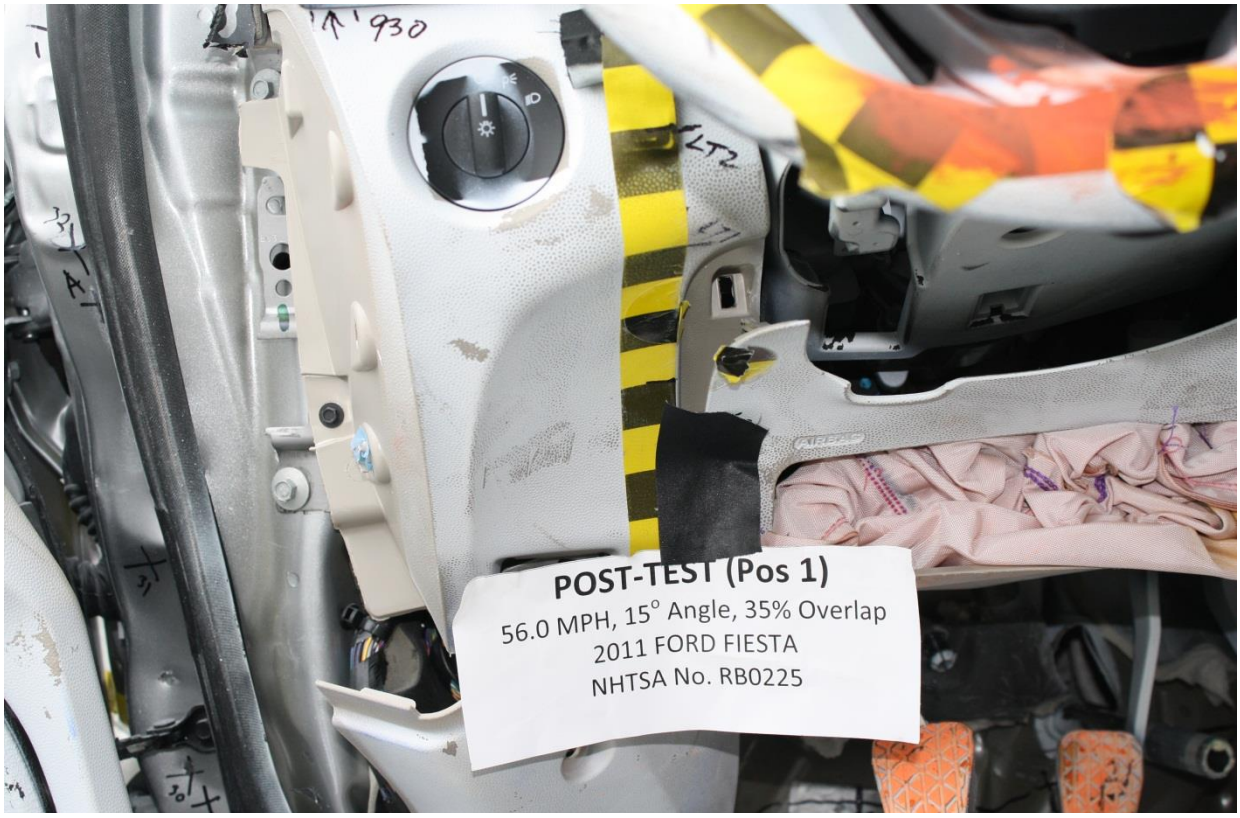
No. 038 Pre-Test Overall View of Driver Knee Bolsters

No. 039 Post-Test Overall View of Driver Knee Bolsters

No. 040 Pre-Test Overall View of Driver Knee Bolsters with panel removed

No. 041 Post-Test Overall View of Driver Knee Bolsters with panel removed

No. 042 Pre-Test Left Side View of Driver Knee Bolsters



No. 043 Post-Test Left Side View of Driver Knee Bolsters

No. 044 Pre-Test Left Side View of Driver Knee Bolsters with panel removed

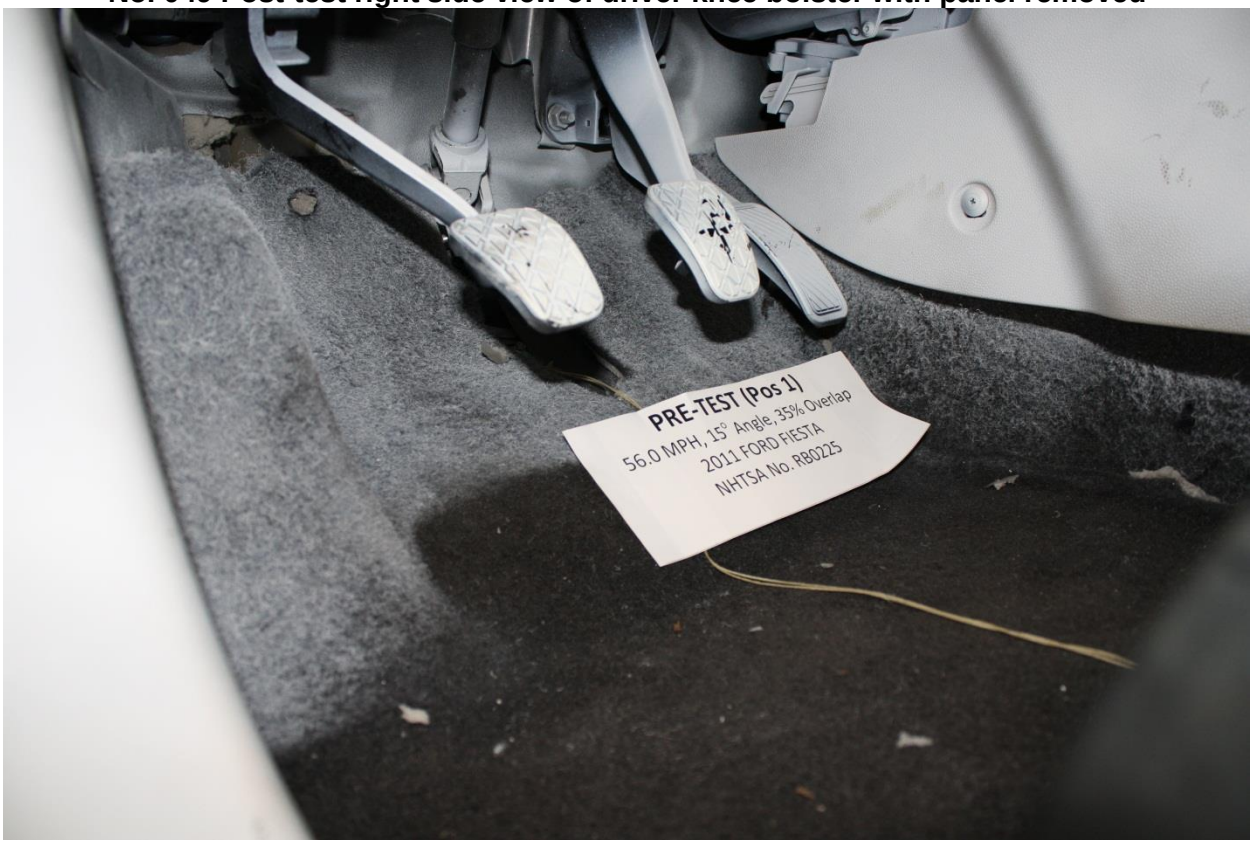
No. 045 Post-Test Left Side View of Driver Knee Bolsters with panel removed

No. 046 Pre-Test Right Side View of Driver Knee Bolsters

No. 047 Post-Test Right Side View of Driver Knee Bolsters

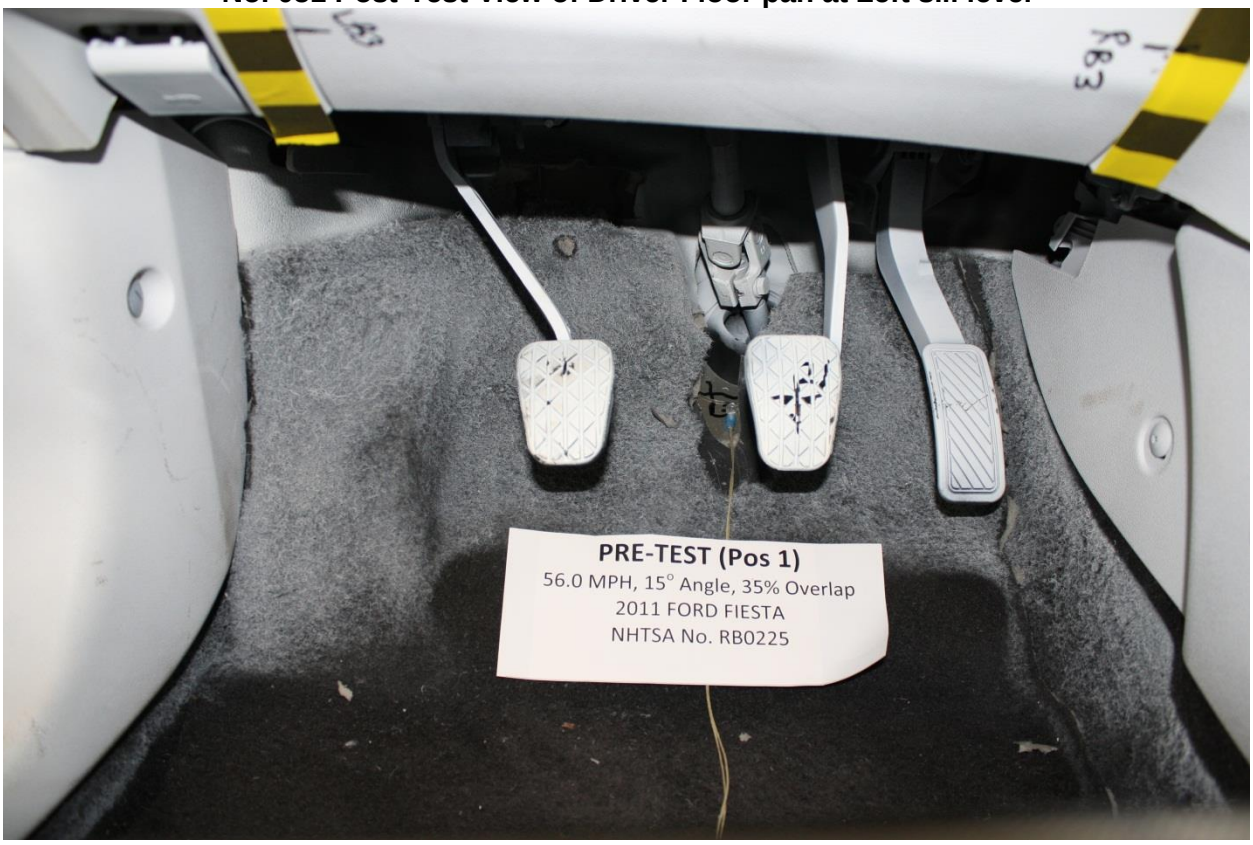
No. 048 Pre-Test Right Side View of Driver Knee Bolster with panel removed

No. 049 Post-test right side view of driver knee bolster with panel removed

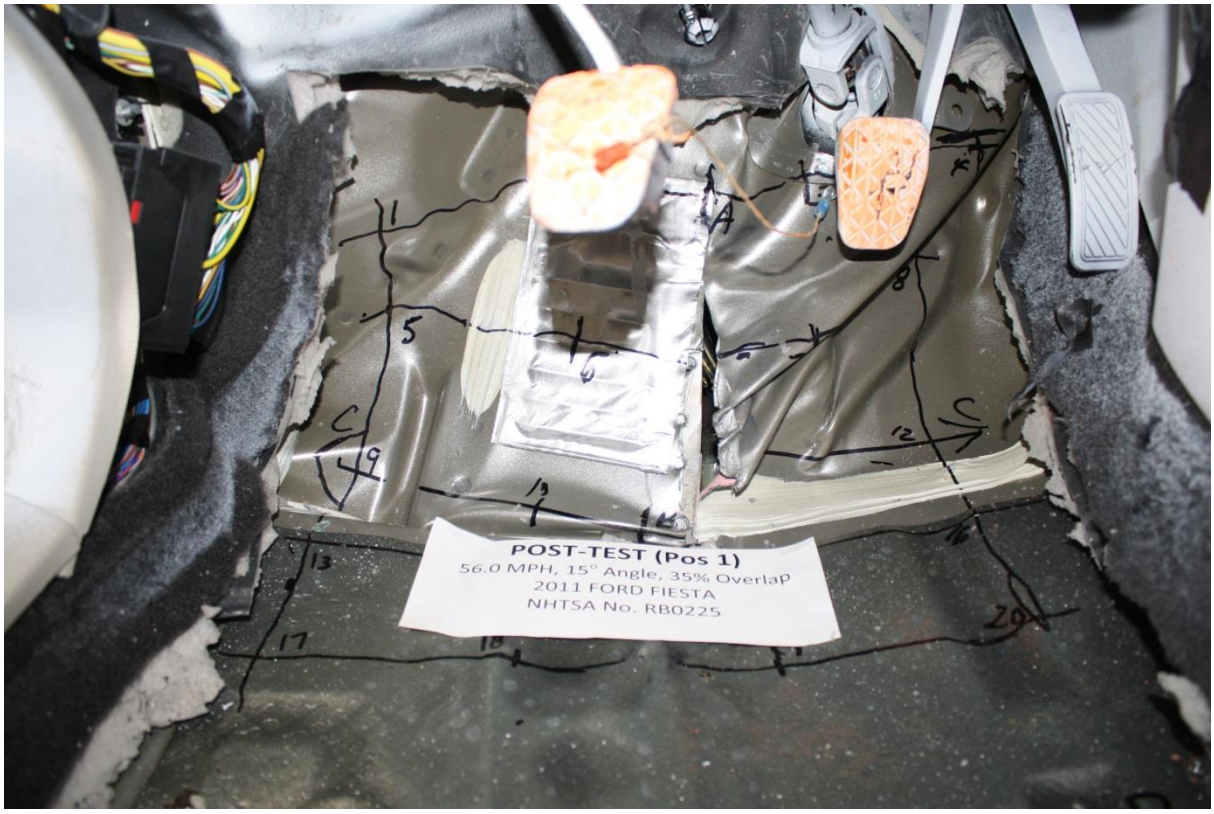


No. 050 Pre-Test View of Driver Floor pan at Left sill level

No. 051 Post-Test View of Driver Floor pan at Left sill level



No. 052 Pre-Test View of Driver Floor pan at Mid seat level



No. 053 Post-Test view of Driver Floor pan at Mid seat level

No. 054 Pre-Test Driver Dummy Front Windshield View

No. 055 Post-Test Driver Dummy Front Windshield View

No. 056 Pre-Test Left Side View of Driver Dummy and Interior

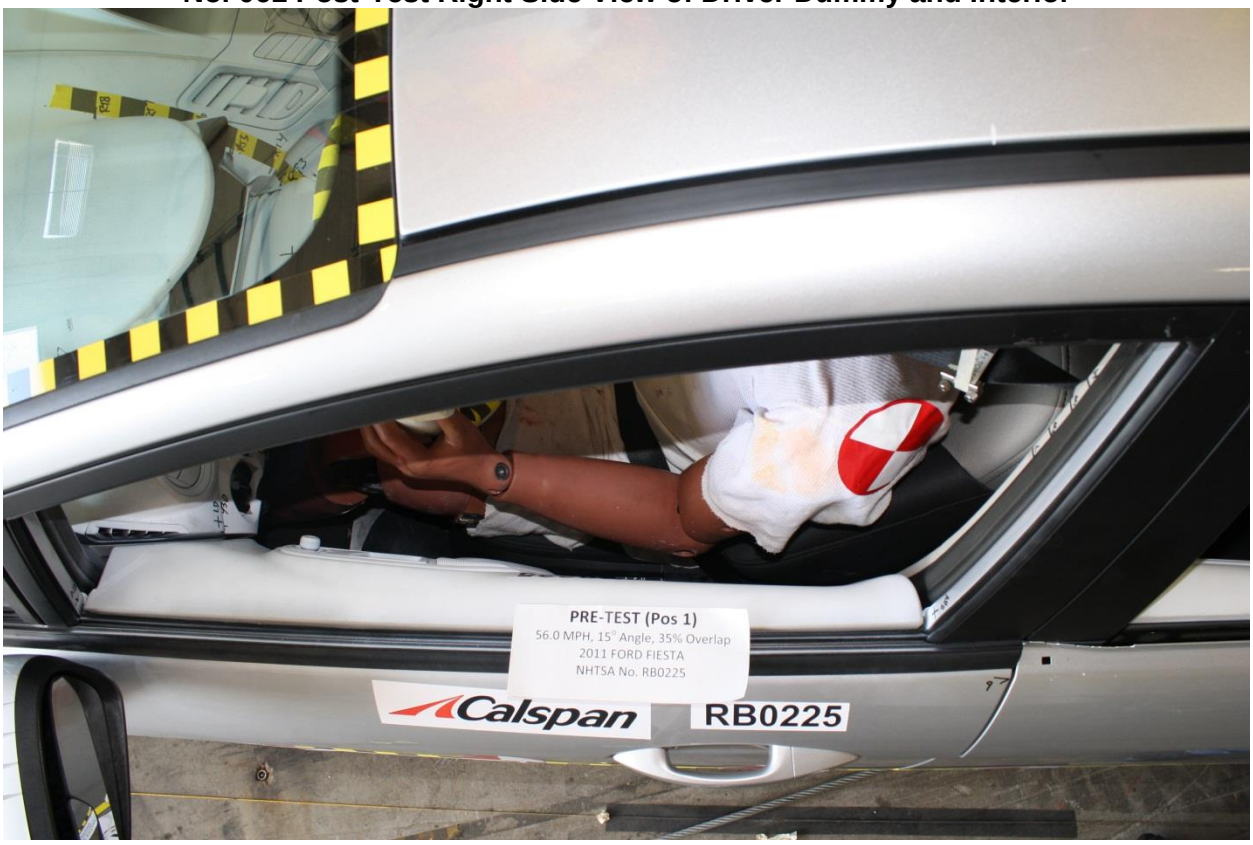
No. 057 Post-Test Left Side View of Driver Dummy and Interior

No. 058 Pre-Test Left Side Driver Dummy Window View

No. 059 Post-Test Left Side Driver Dummy Window View

No. 060 Pre-Test Right Side View of Driver Dummy and Interior

No. 061 Post-Test Right Side View of Driver Dummy and Interior



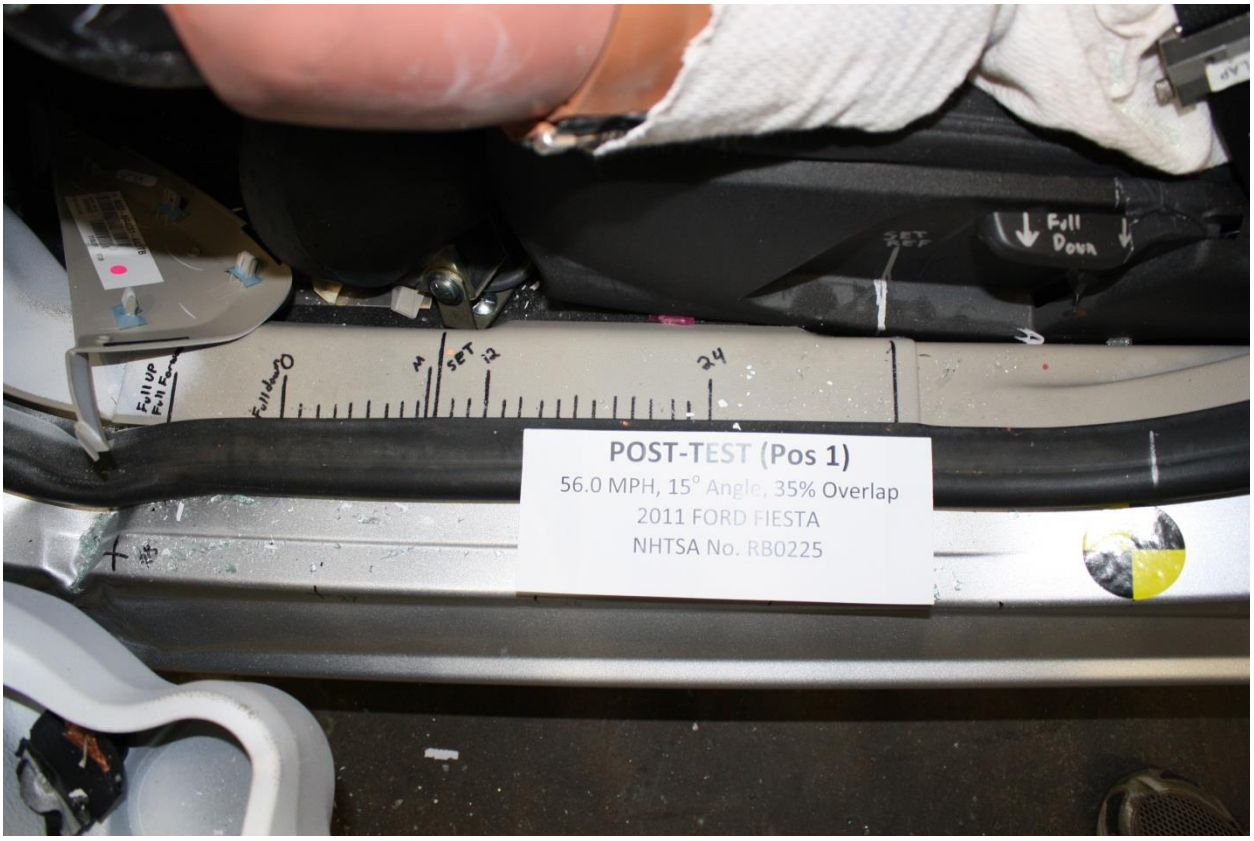
No. 062 Pre-Test View of Driver Dummy Door Clearance

No. 063 Post-Test View of Driver Dummy Door Clearance

No. 064 Pre-Test Driver Seat Back Position markings

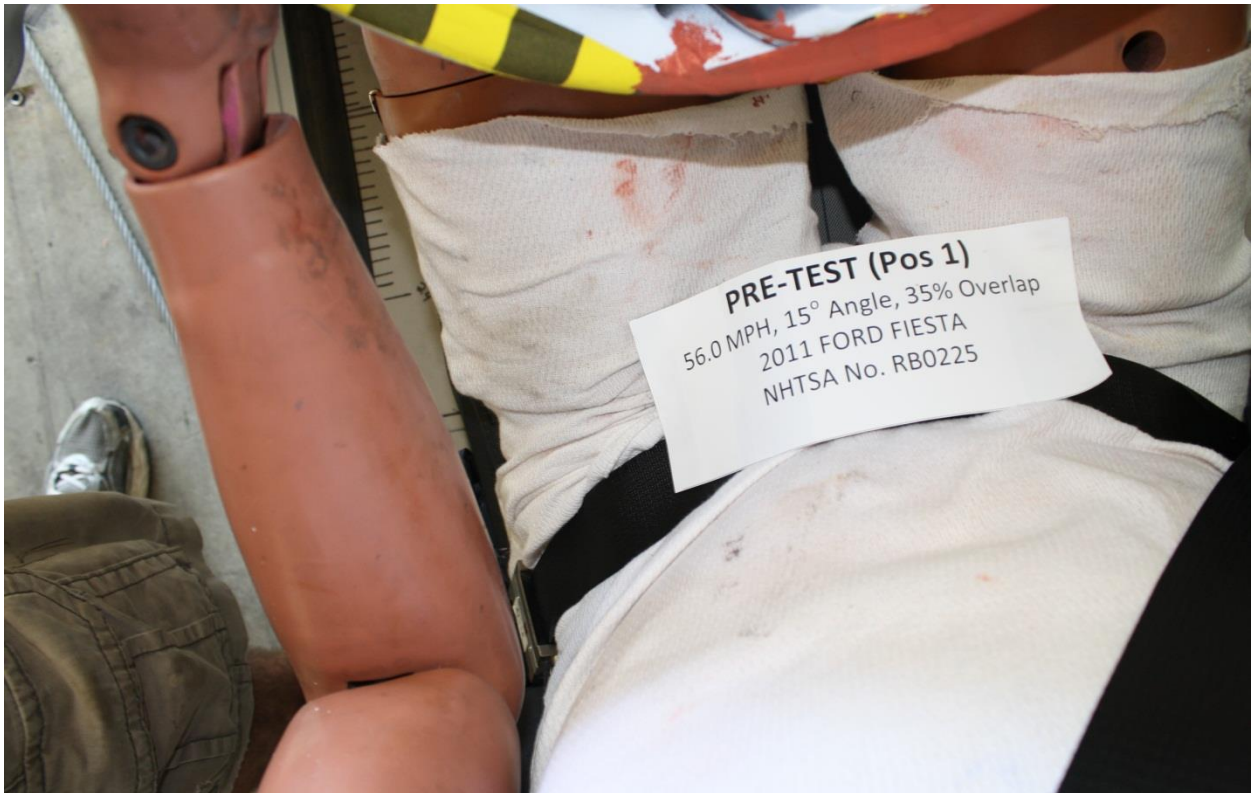
No. 065 Pre-Test Driver Seat Back Position with Level or Inclinometer

No. 066 Pre-Test Driver Seat Fore Aft Markings

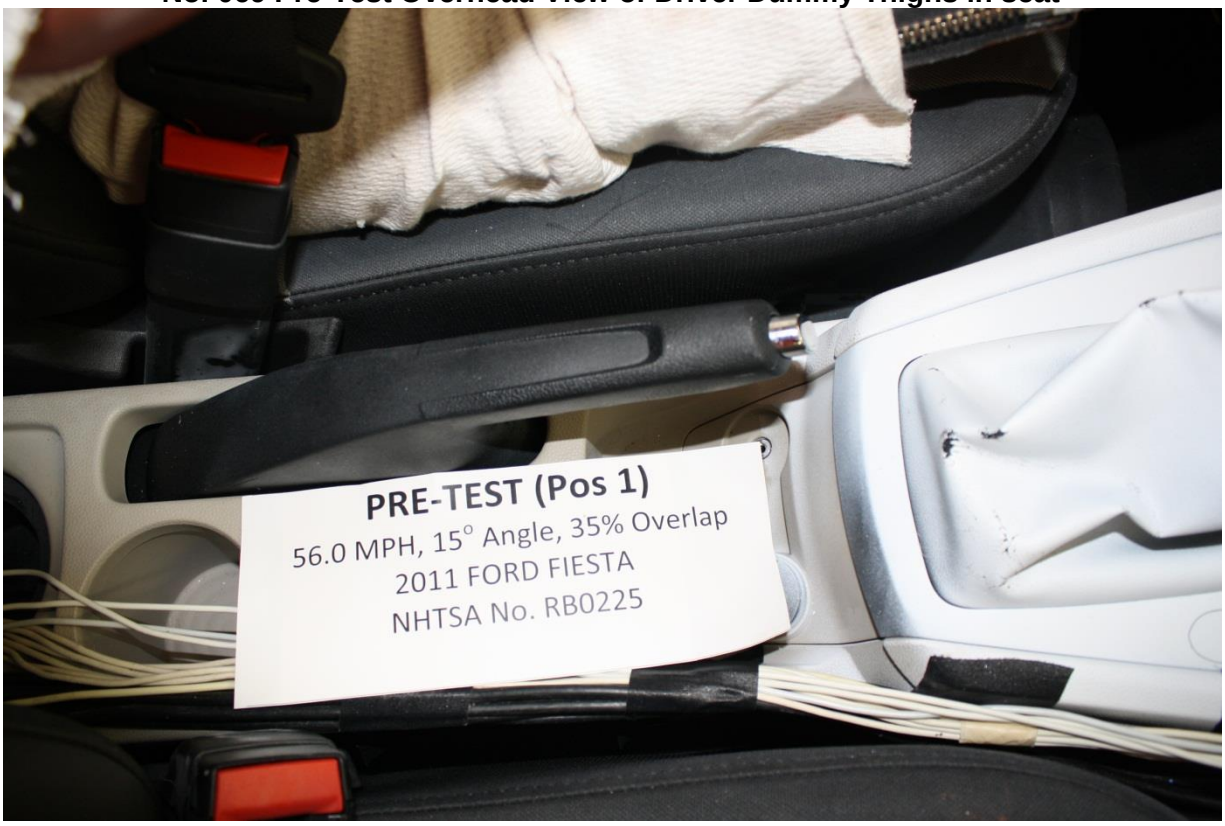


No. 067 Post-Test Driver Seat Fore Aft Markings

No. 068 Pre-Test Driver Adjustable D-ring



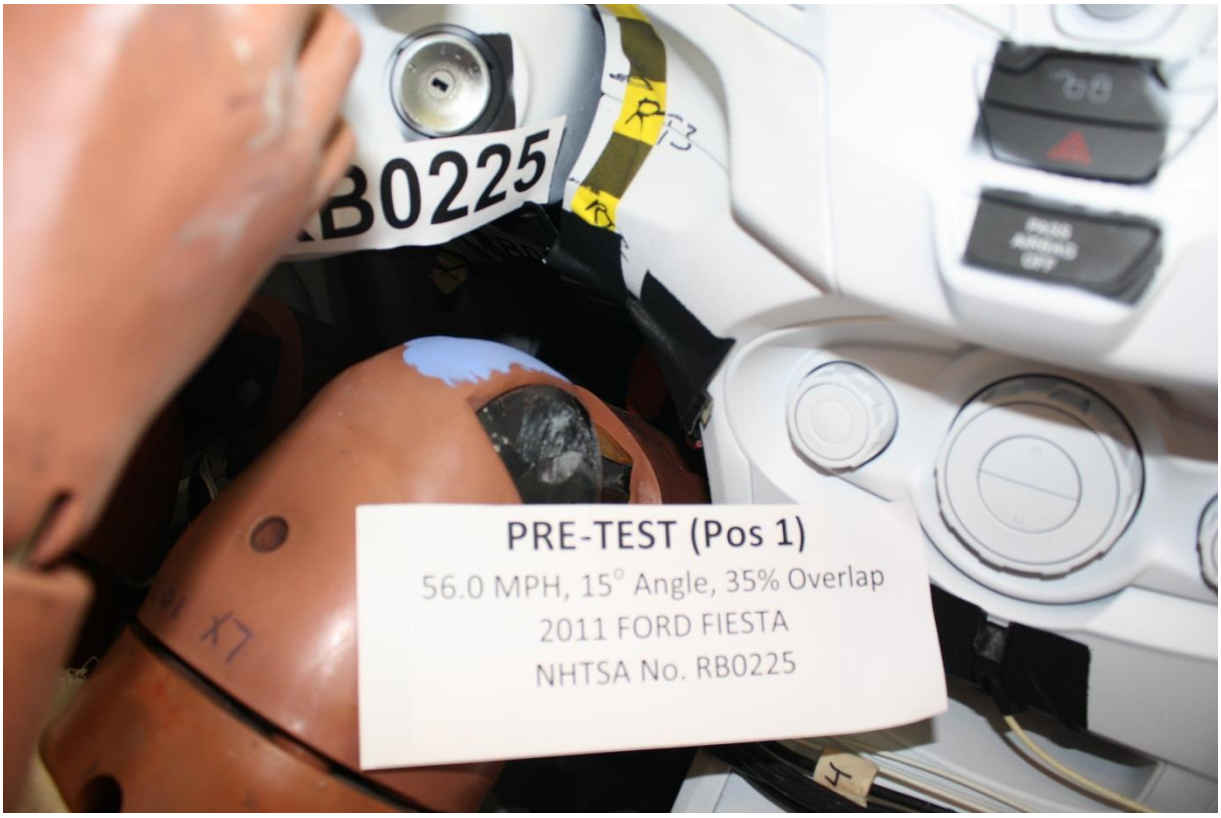
No. 069 Pre-Test Overhead View of Driver Dummy Thighs in seat



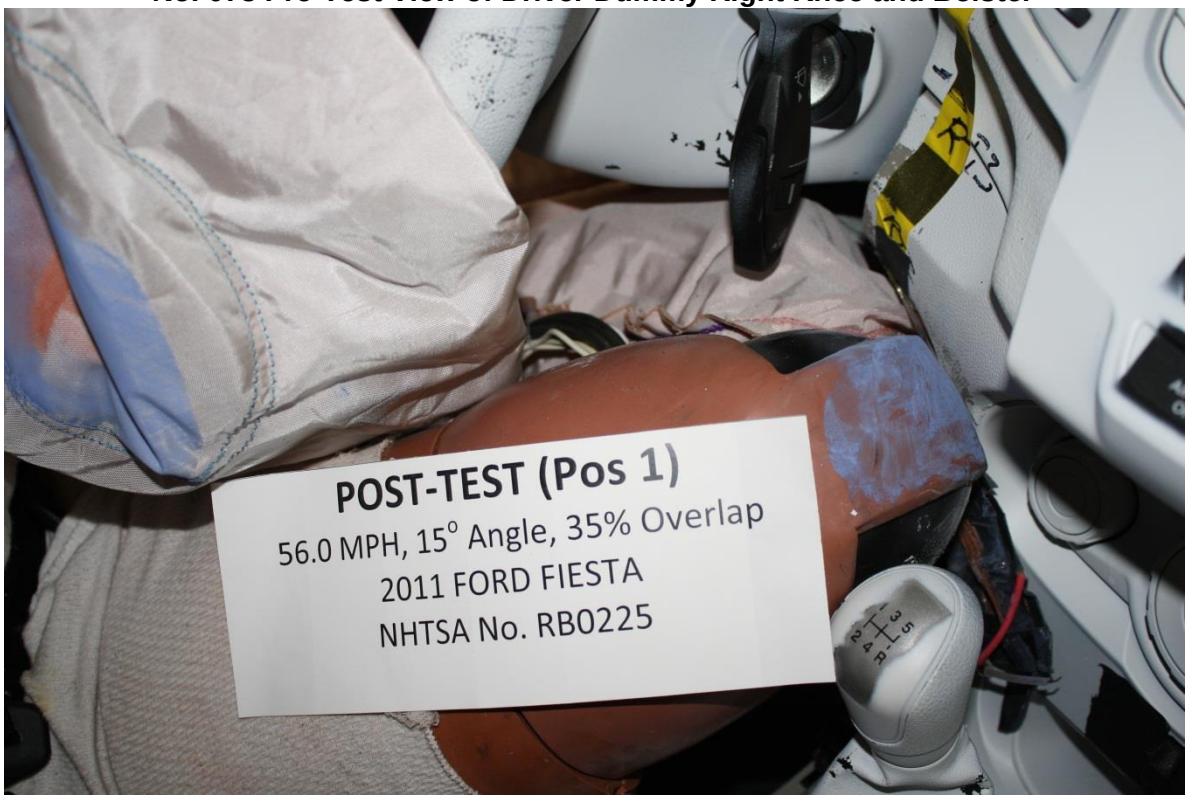
No. 070 Pre-Test View of Parking Brake

No. 071 Pre-Test Driver Dummy Feet

No. 072 Post-Test Driver Dummy Feet

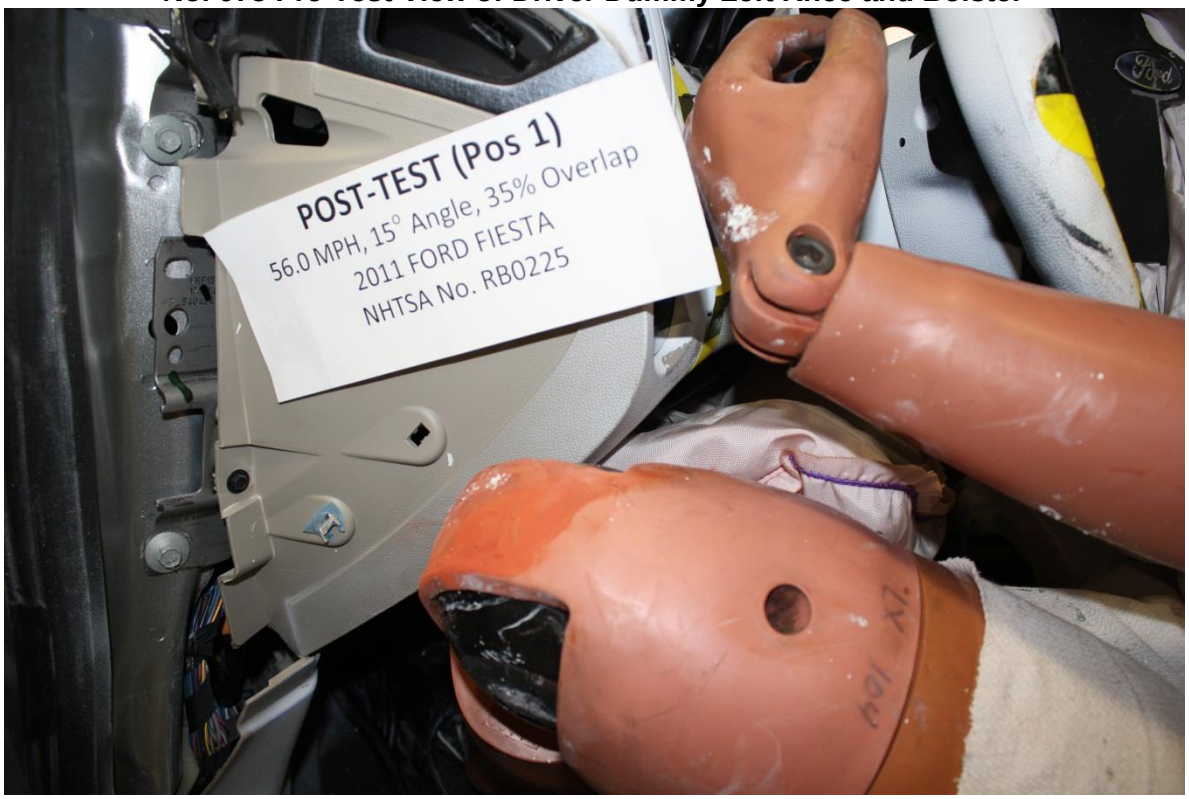


No. 073 Pre-Test View of Driver Dummy Right Knee and Bolster



No. 074 Post-Test View of Driver Dummy Right Knee and Bolster

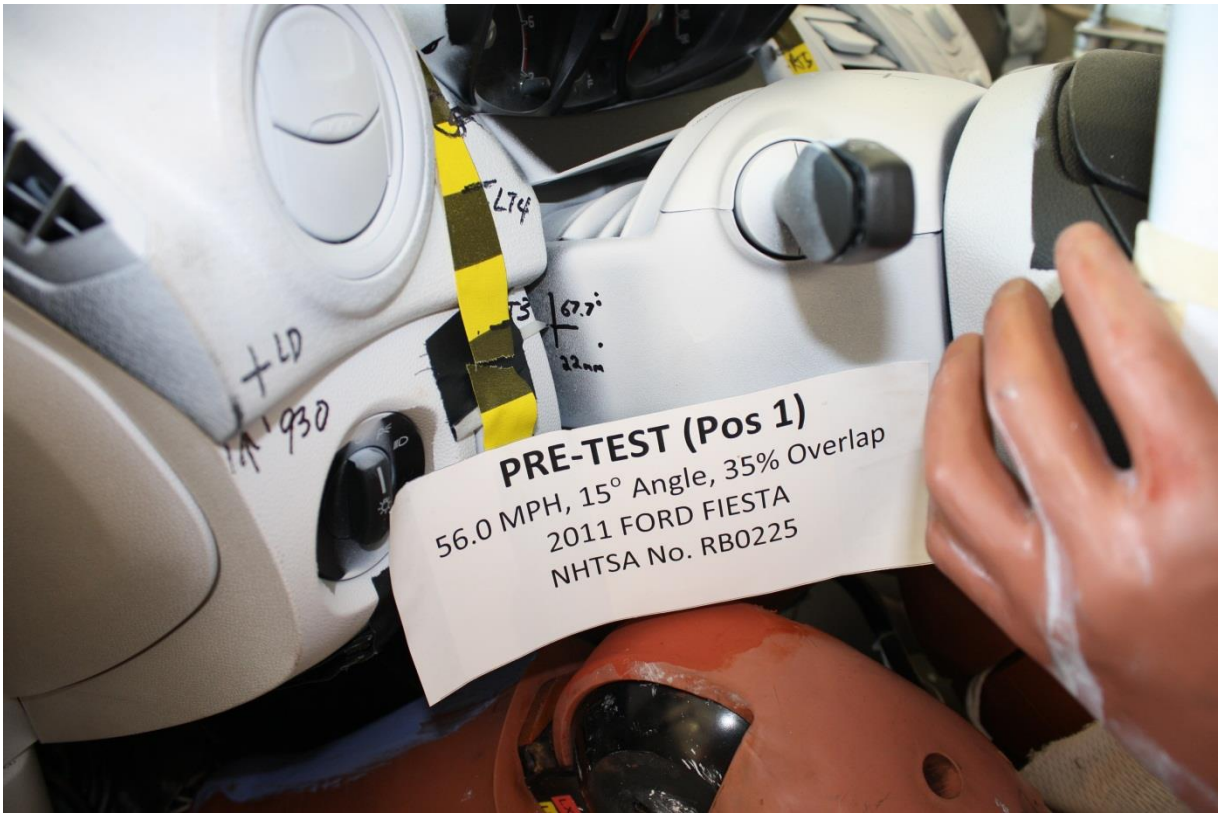
No. 075 Pre-Test View of Driver Dummy Left Knee and Bolster



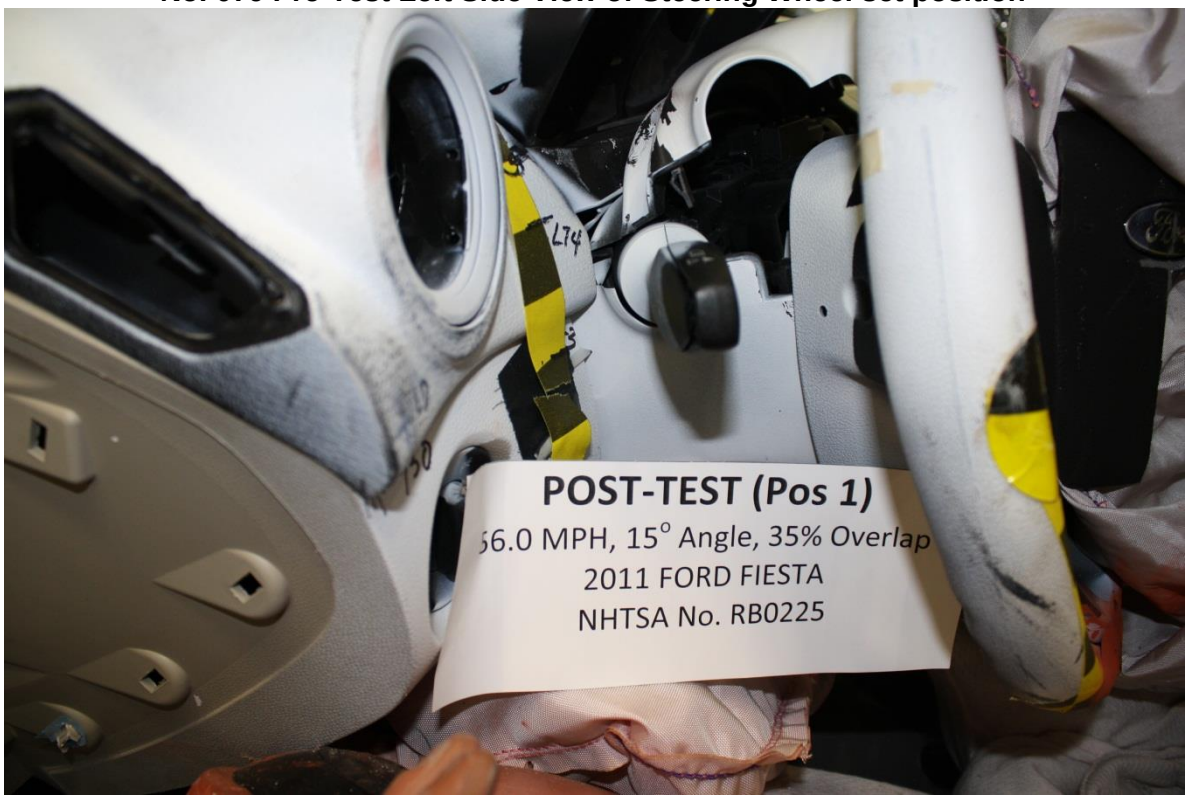
No. 076 Post-Test View of Driver Dummy Left Knee and Bolster

No. 077 Pre-Test View of Driver Dummy Abdomen

No. 078 Post-Test View of Driver Dummy Abdomen

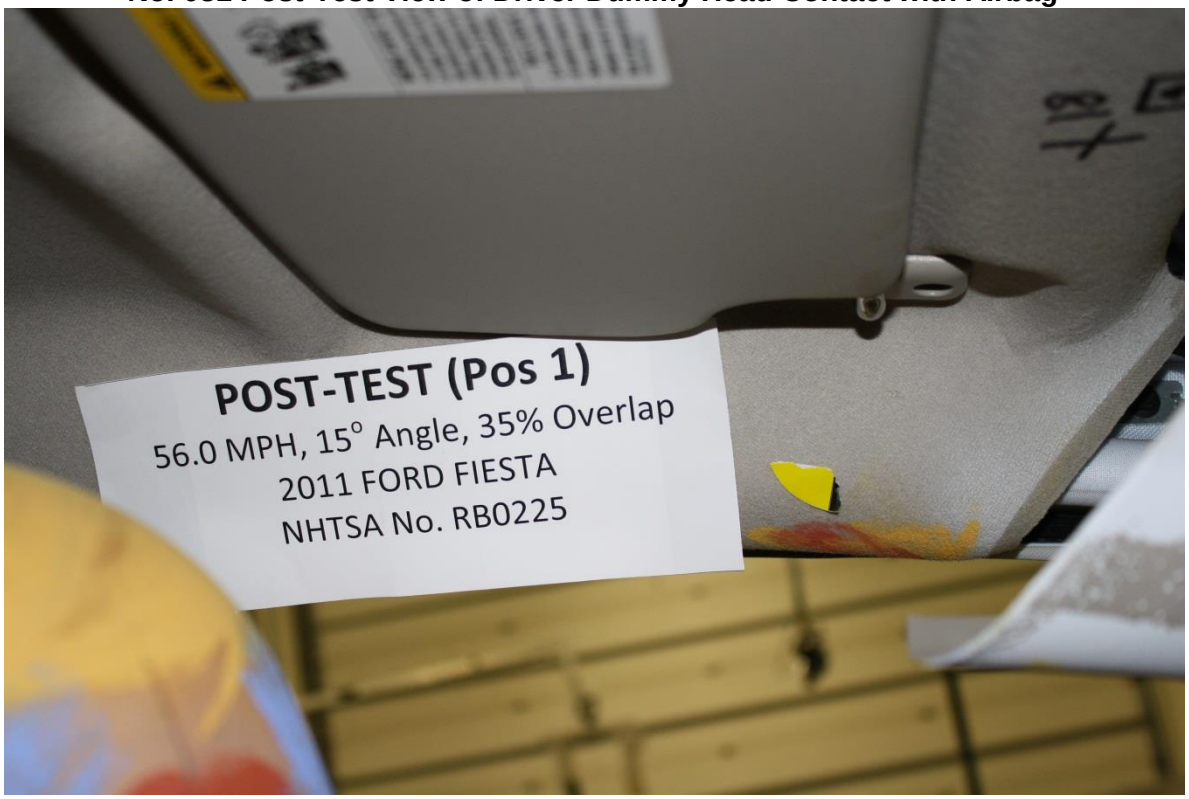


No. 079 Pre-Test Left Side View of Steering Wheel set position

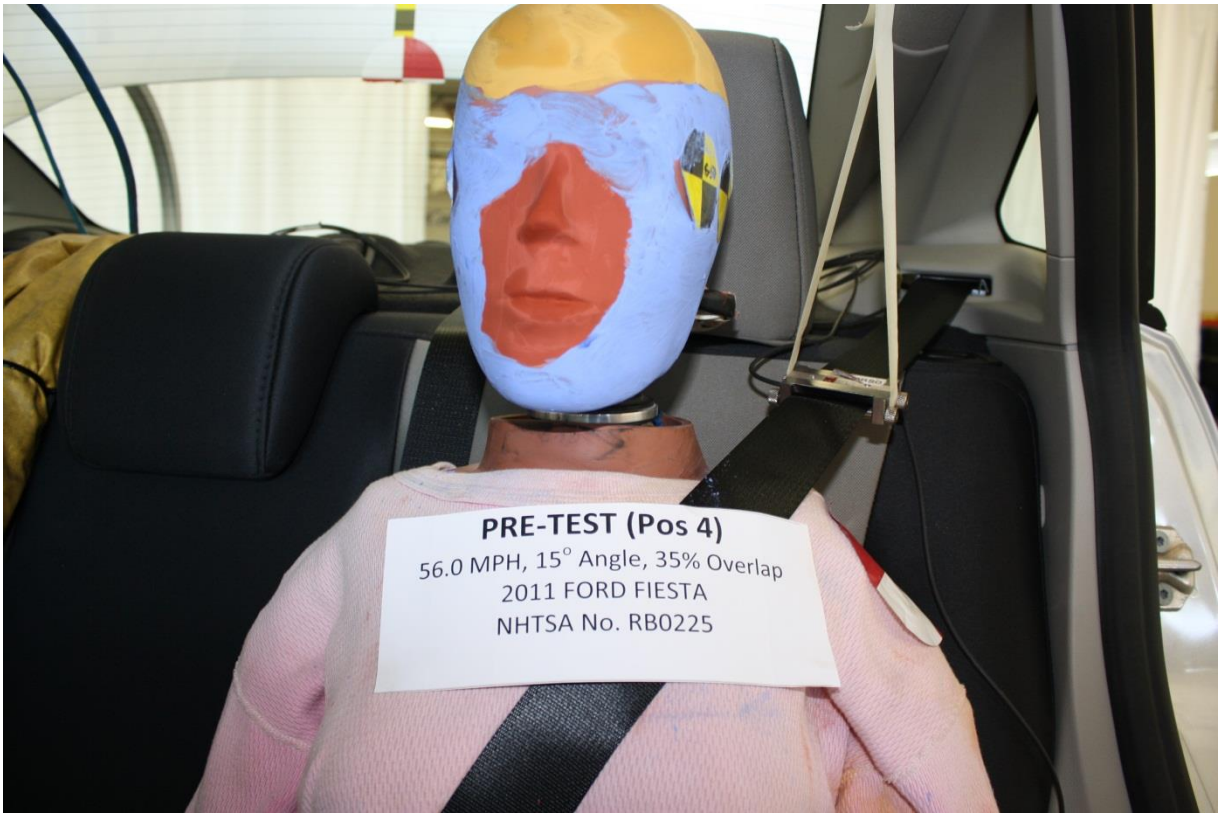


No. 080 Post-Test Left Side View of Steering Wheel set position

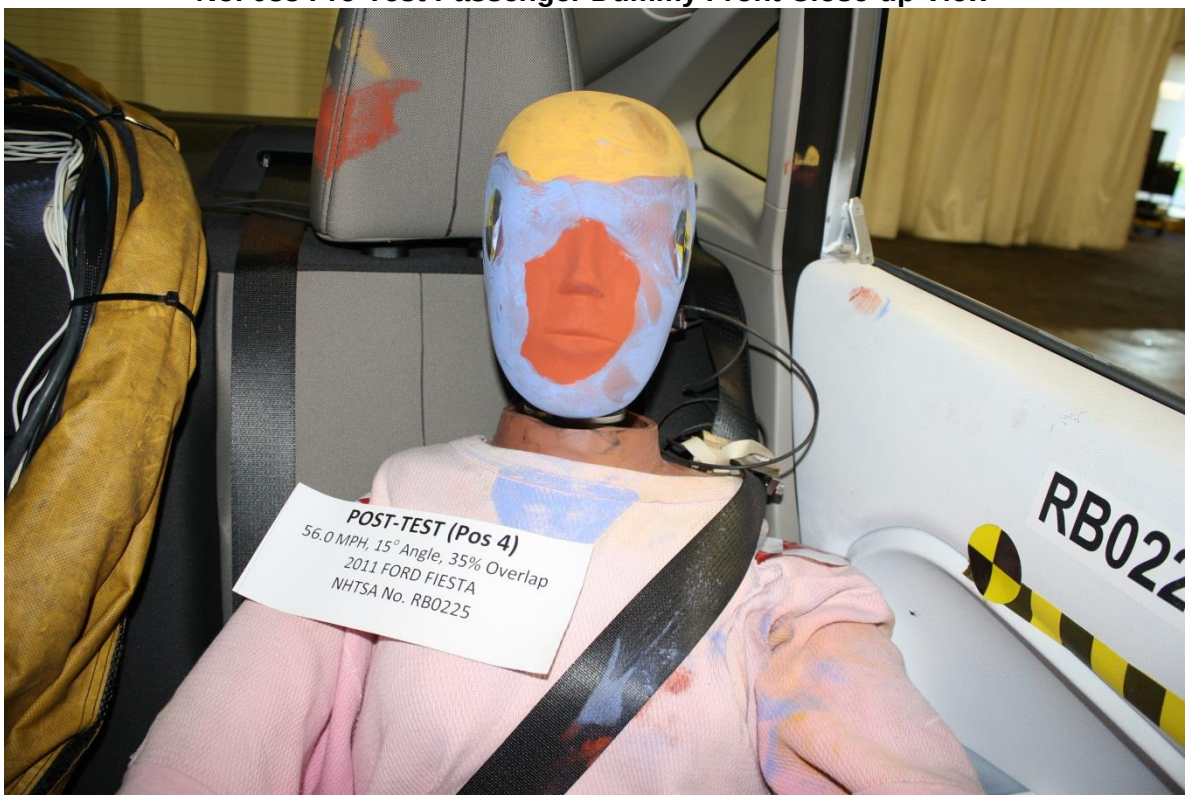
No. 081 Post-Test View of Driver Dummy Head Contact with Airbag



No. 082 Post-Test View of Driver Dummy Head Contact with Vehicle Interior (a, b, c, etc)



No. 083 Pre-Test Passenger Dummy Front Close-up View



No. 084 Post-Test Passenger Dummy Front Close-up View

No. 085 Pre-Test Left Side Passenger Dummy and Interior View

No. 086 Post-Test Left Side Passenger Dummy and Interior View

No. 087 Pre-Test Left Side Passenger Dummy Window View

No. 088 Post-Test Left Side Passenger Dummy Window View

No. 089 Pre-Test Right Side View of Passenger Dummy and Interior

No. 090 Post-Test Right Side View of Passenger Dummy and Interior

No. 091 Pre-Test View of Passenger Dummy Door Clearance

No. 092 Post-Test View of Passenger Dummy Door Clearance

No. 093 Pre-Test Passenger View Showing Head Level

Photo Not Applicable

P4 seat not adjustable fore/aft

No. 094 Pre-Test Passenger Seat Fore-Aft Markings

Photo Not Applicable

P4 Seat back angle not adjustable

No. 095 Pre-Test Passenger Seat Back Angle

No. 096 Pre-Test Overhead View of Passenger Dummy Thighs on seat

Photo Not Applicable

P4 D-ring not adjustable

No. 097 Pre-Test Passenger Adjustable D-ring

No. 098 Pre-Test View of Passenger Dummy Feet

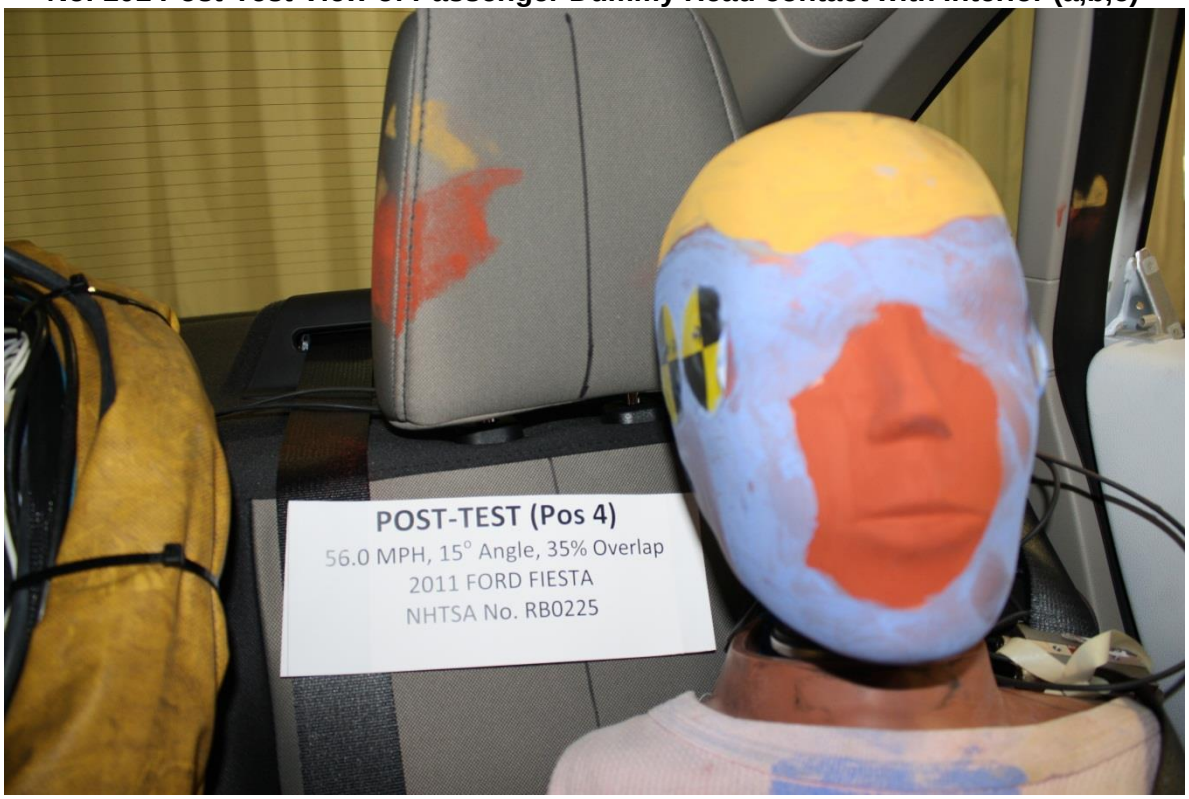
No. 099 Post-Test View of Passenger Dummy Feet

Photo Not Applicable

No contact with airbag

No. 100 Post-Test View of Passenger Dummy Head contact with Airbag

No. 101 Post-Test View of Passenger Dummy Head contact with Interior (a,b,c)



No. 102 Post-Test View of Passenger Dummy Knee Contact with Seatback

Photo Not Applicable

No ballast added

No. 103 Pre-Test Ballast Locations

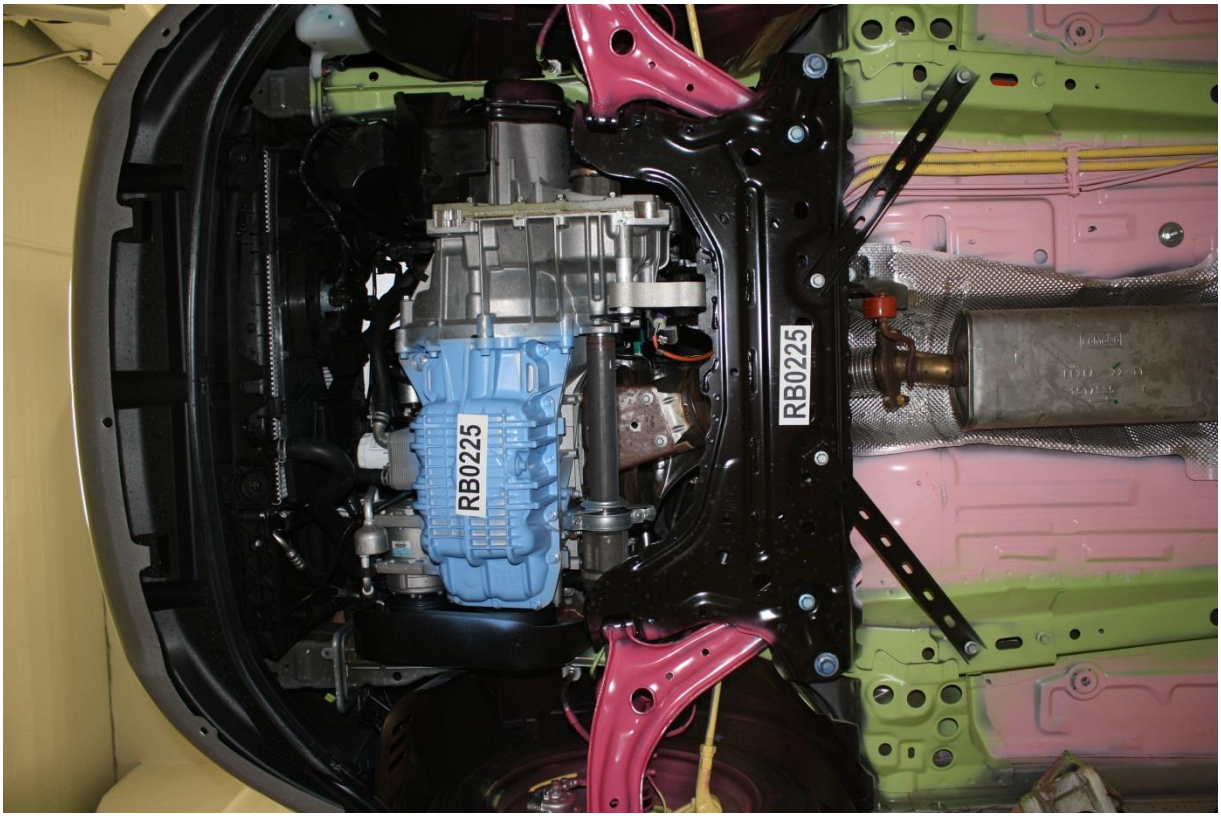
No. 104 Post-Test Speed Trap Readout

No. 105 Pre-Test View of Fuel Filler Cap

No. 106 Post-Test View of Fuel Filler Cap

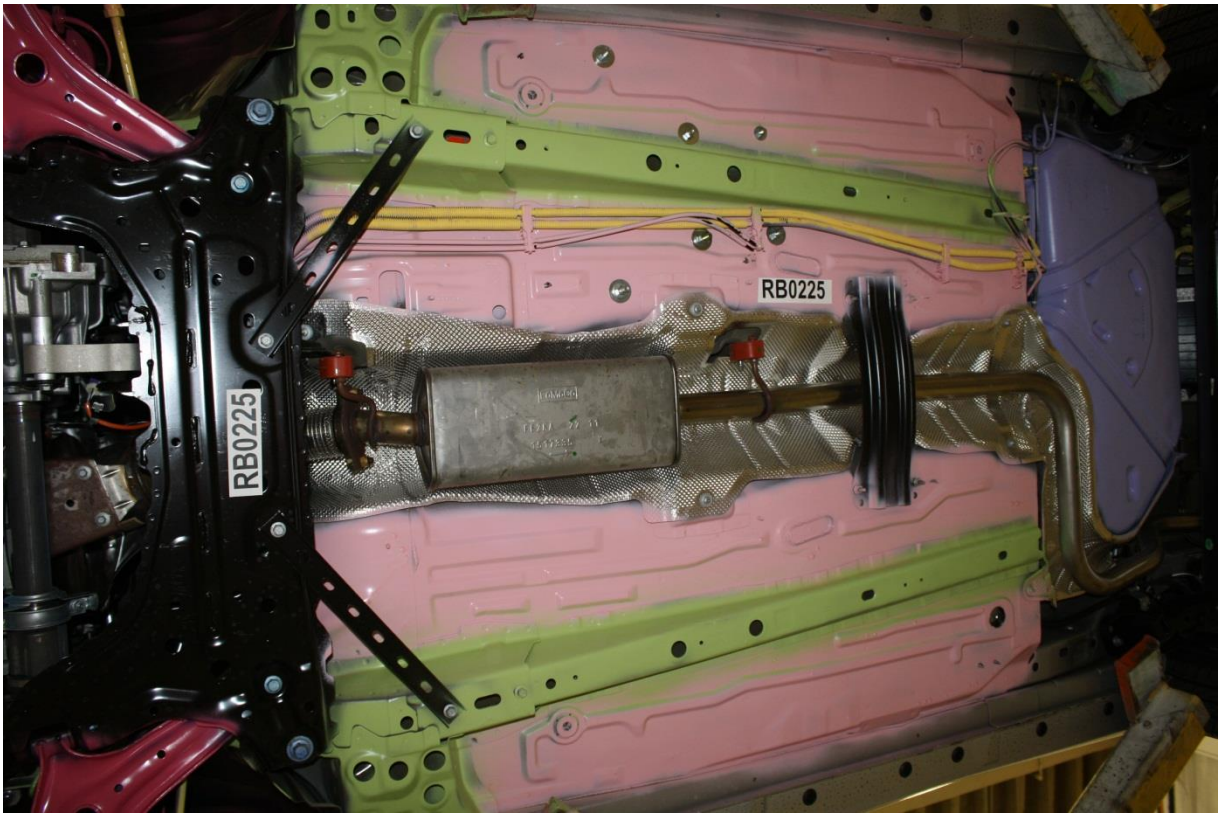
No. 107 Pre-Test Engine Compartment View

No. 108 Post-Test Engine Compartment View

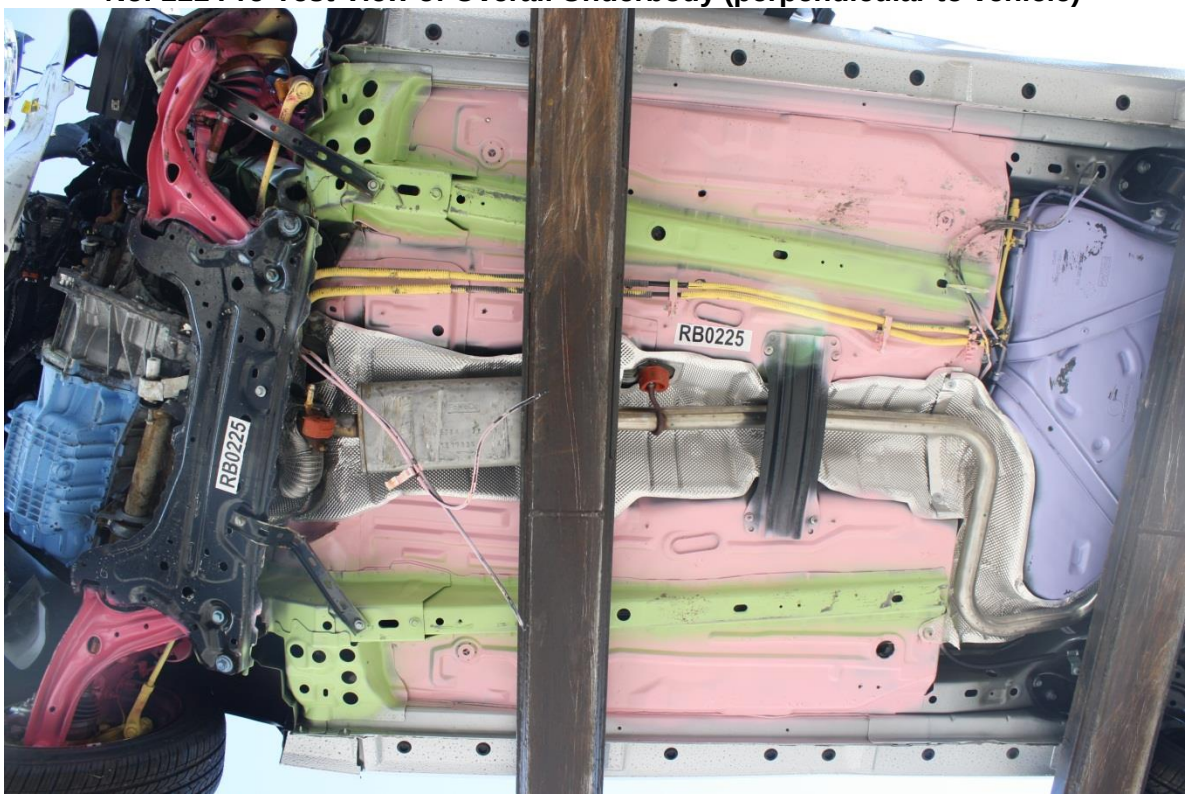


No. 109 Pre-Test View of Front Underbody (perpendicular to vehicle)

No. 110 Post-Test View of Front Underbody (perpendicular to vehicle)



No. 111 Pre-Test View of Overall Underbody (perpendicular to vehicle)

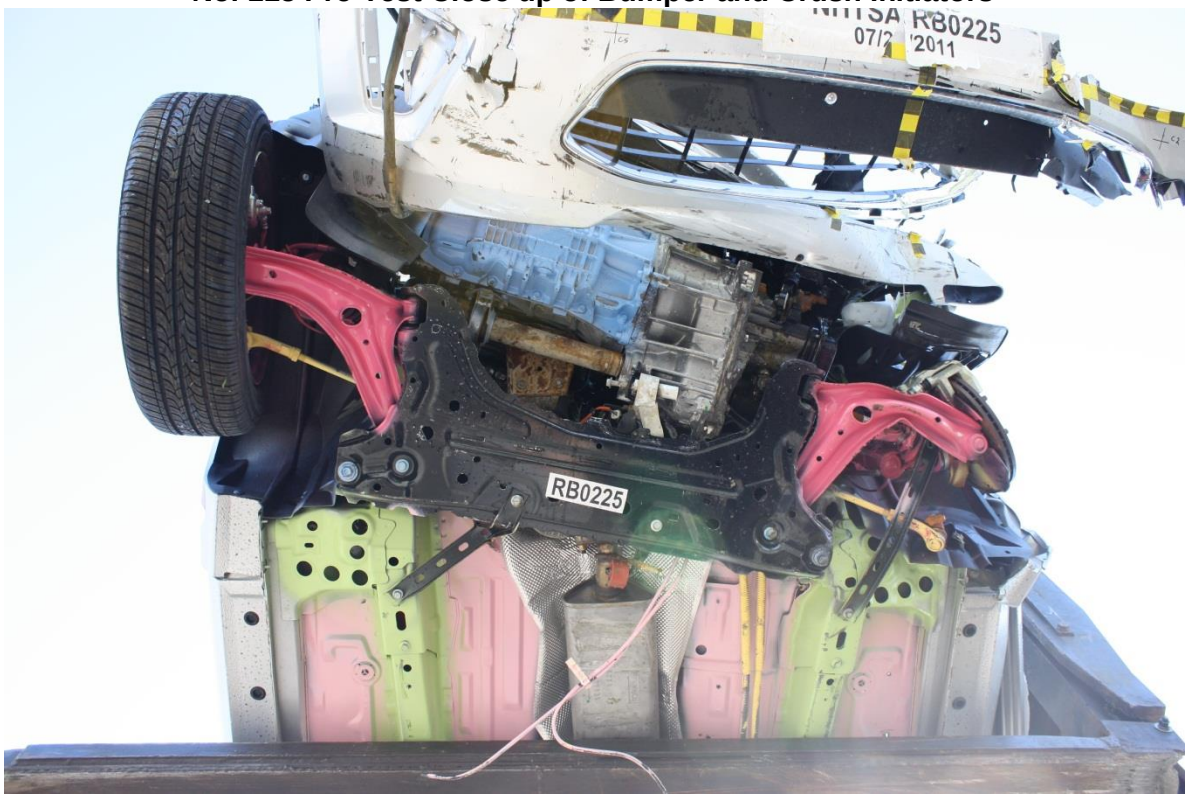


No. 112 Post-Test View of Overall Underbody (perpendicular to vehicle)

No. 113 Pre-Test View of Steering rack and or sway bar

No. 114 Post-Test View of Steering rack and or sway bar

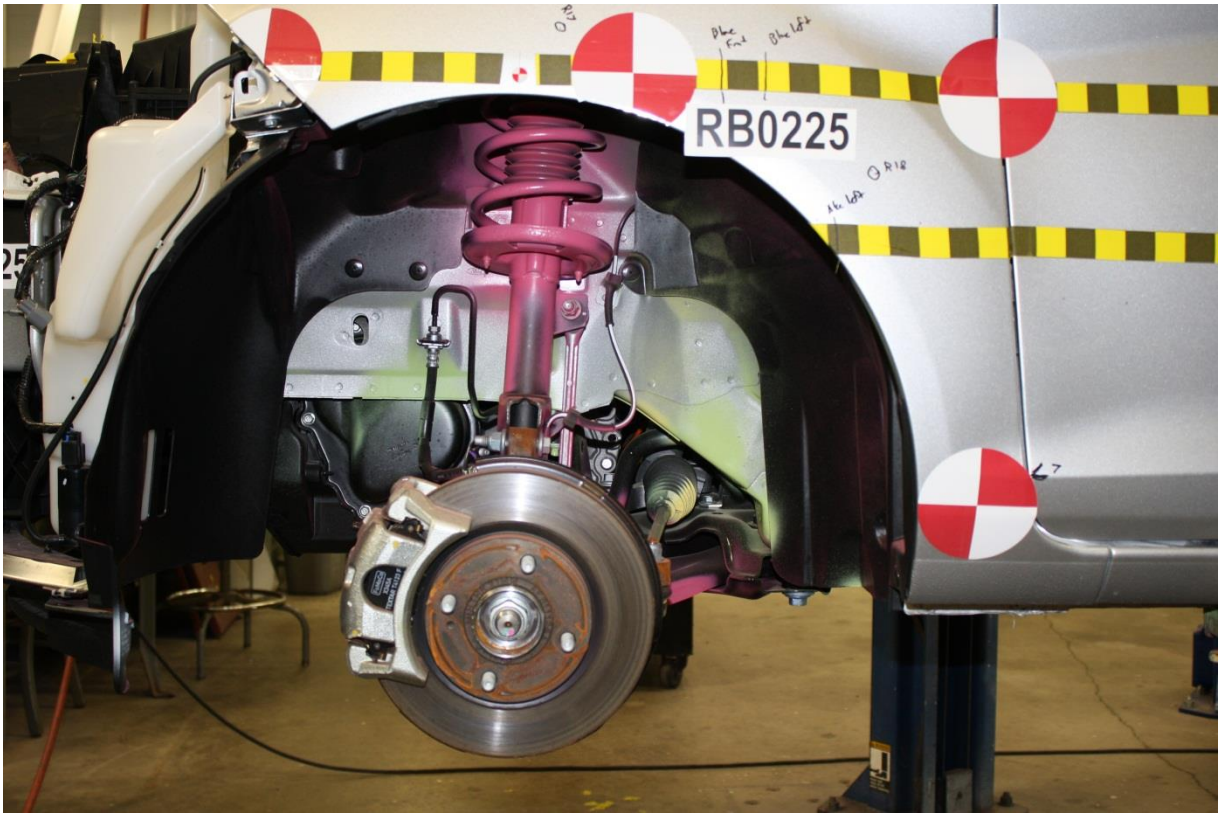
No. 115 Pre-Test Close up of Bumper and Crush Initiators



No. 116 Post-Test View of Front Sub-Frame Deformation

No. 117 Pre-Test Frame Rail with tire removed

No. 118 Post-Test Frame Rail with tire removed

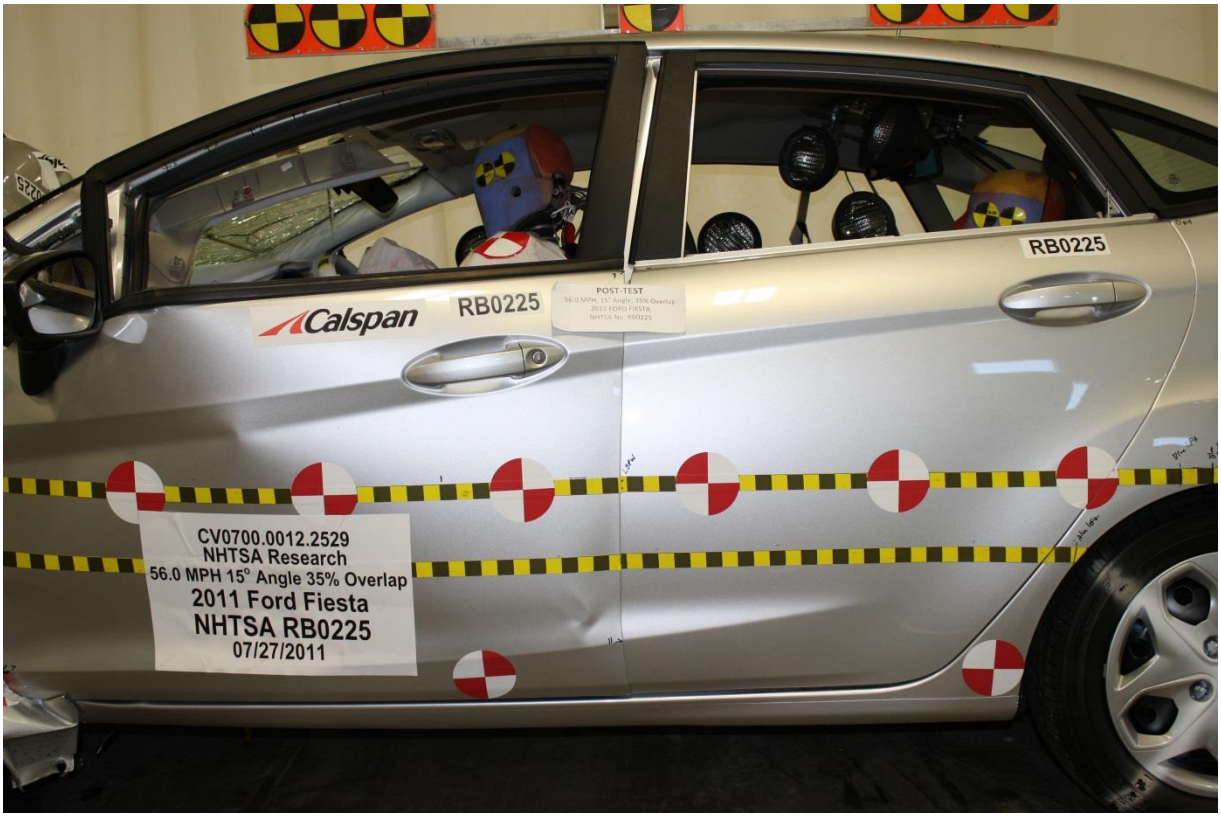


No. 119 Pre-Test View of Wheel Well with tire removed

No. 120 Post-Test View of Wheel Well with tire removed

No. 121 Post-Test View of Door Sill with door open

No. 122 Post-Test View of Deformation of A pillar



No. 123 Post-Test View of Deformation of B pillar

No. 124 Post-Test View of Deformation of C pillar

No. 125 Post-Test View of Wheel and or Tire Deformation

No. 126 Post-Test View of Deformation of Rocker or Post

No. 127 Post-Test View of Windshield Separation

No. 128 Pre-Test Left Side View of RMDB

No. 129 Post-Test Left Side View of RMDB

No. 130 Pre-Test Right Side View of RMDB

No. 131 Post-Test Right Side View of RMDB

No. 132 Pre-Test Top View of RMDB

No. 133 Post-Test Top View of RMDB

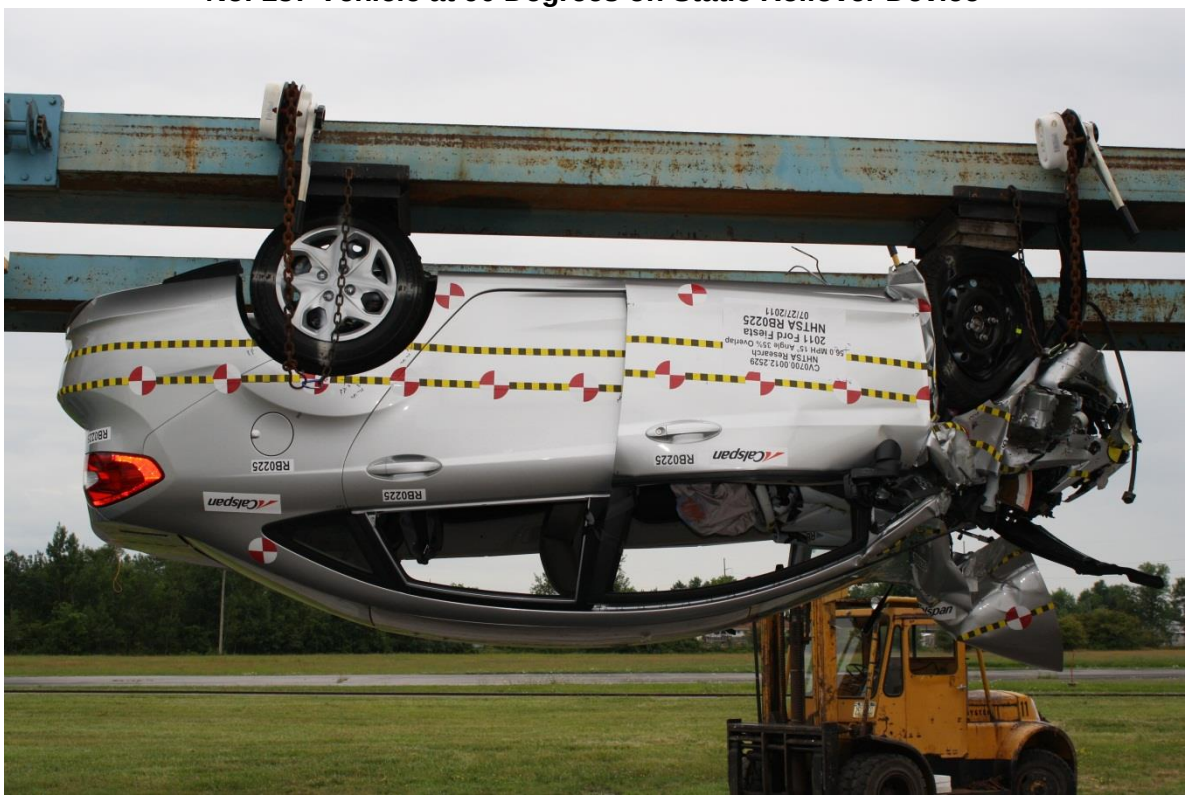
No. 134 Pre-Test Front View of RMDB

No. 135 Post-Test Front View of RMDB

No. 136 Vehicle at 0 Degrees on Static Rollover Device

Photo Not Available

No. 137 Vehicle at 90 Degrees on Static Rollover Device



No. 138 Vehicle at 180 Degrees on Static Rollover Device

Photo Not Available

No. 139 Vehicle at 270 Degrees on Static Rollover Device

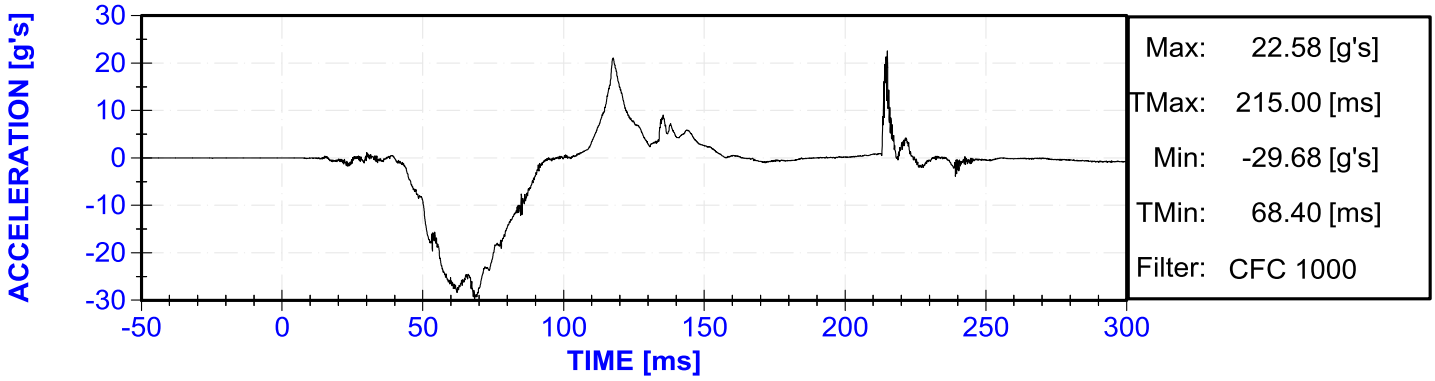
No. 140 Vehicle at 360 Degrees on Static Rollover Device

APPENDIX B

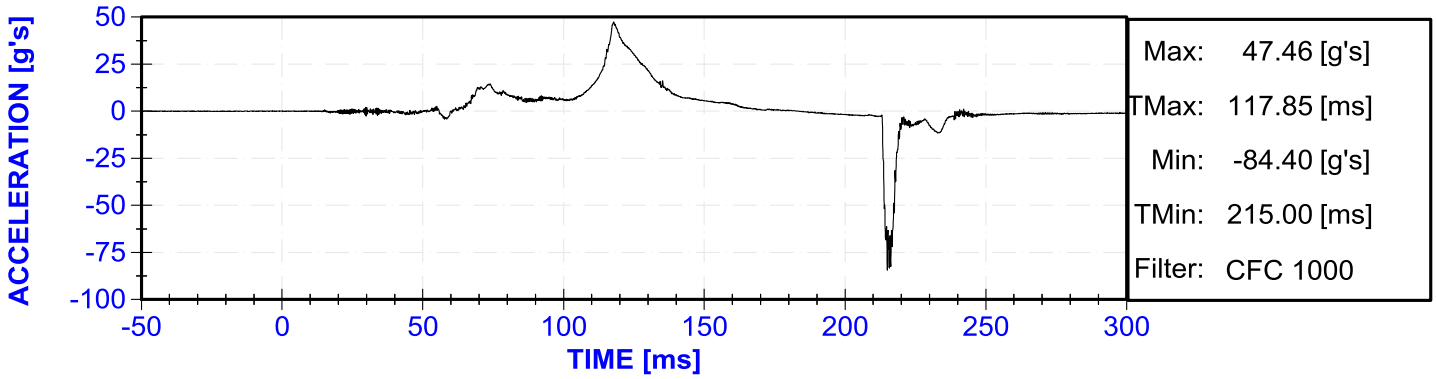
VEHICLE & DUMMY RESPONSE DATA TRACES

Table of Data Plots

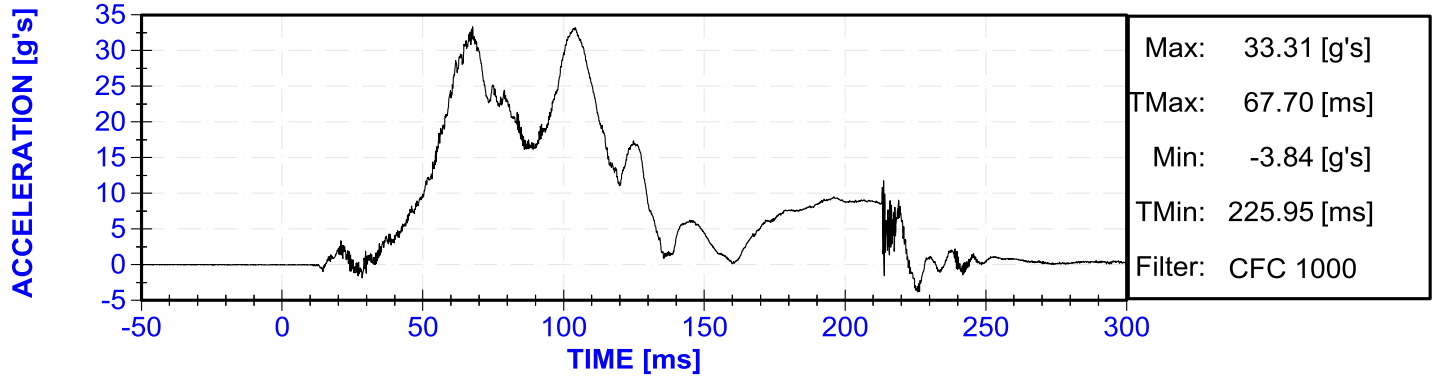
V2P1 Head CG X Acceleration



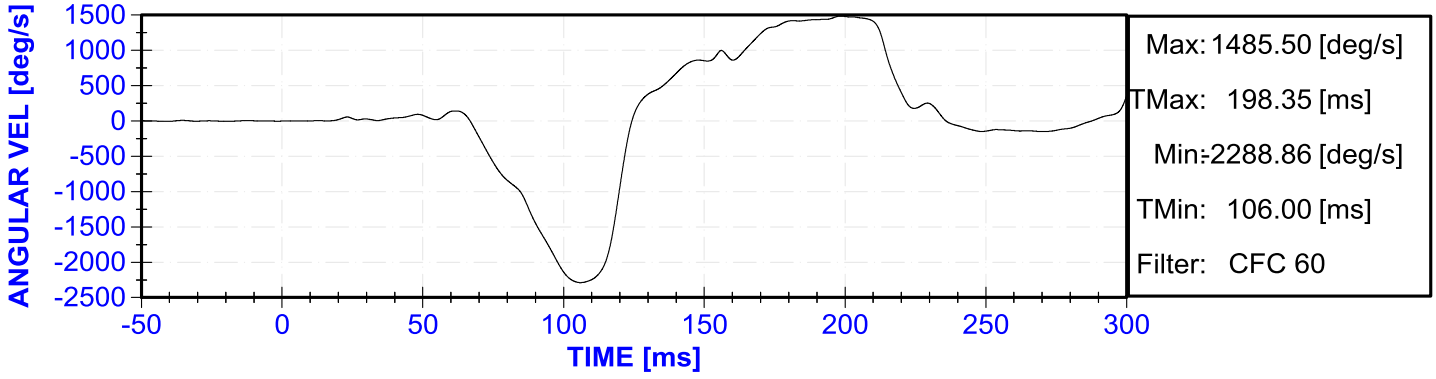
V2P1 Head CG Y Acceleration



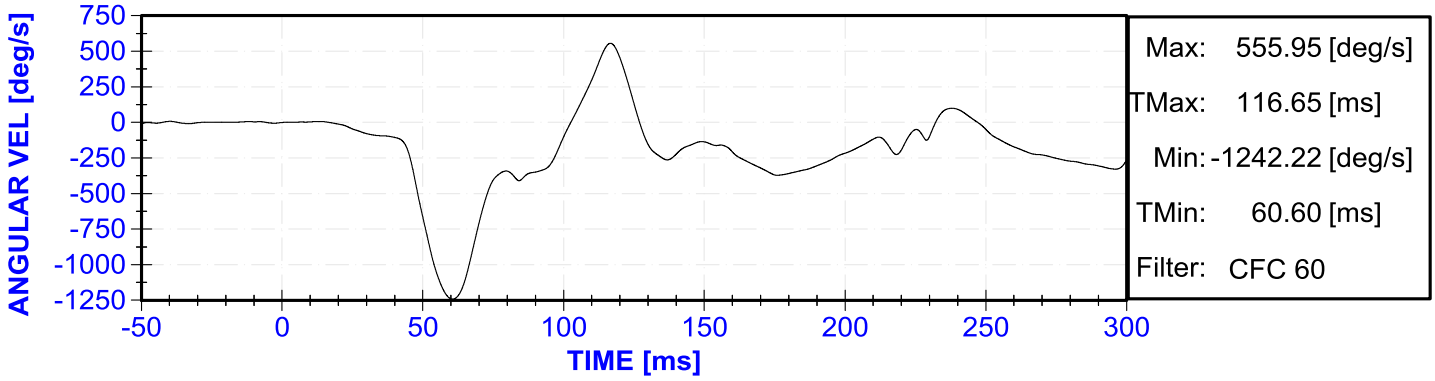
V2P1 Head CG Z Acceleration



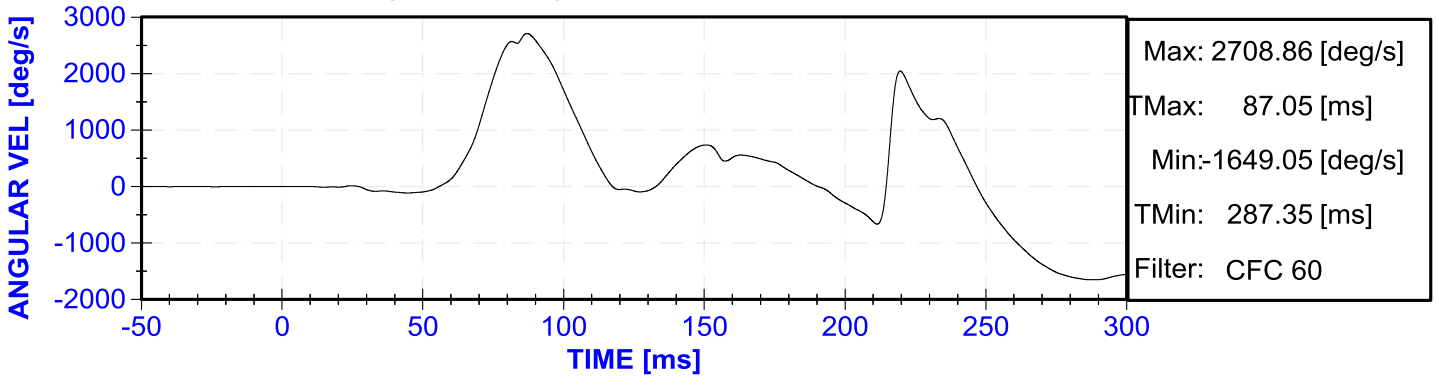
V2P1 Head CG Angular Velocity About X



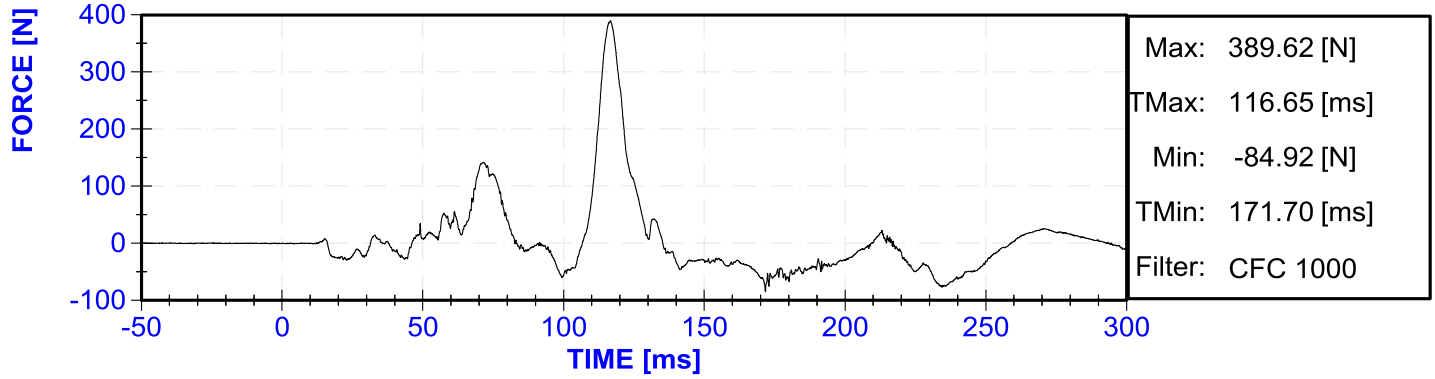
V2P1 Head CG Angular Velocity About Y



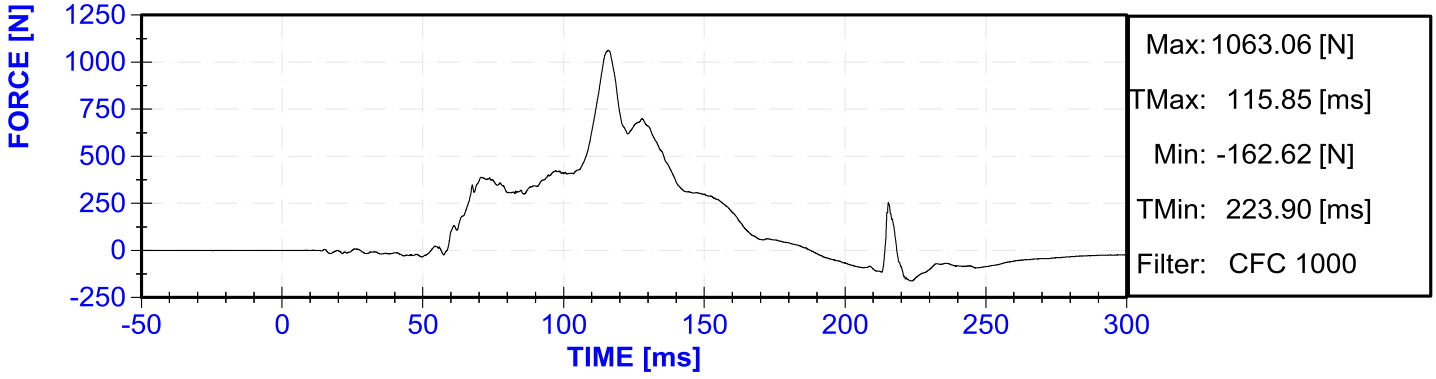
V2P1 Head CG Angular Velocity About Z



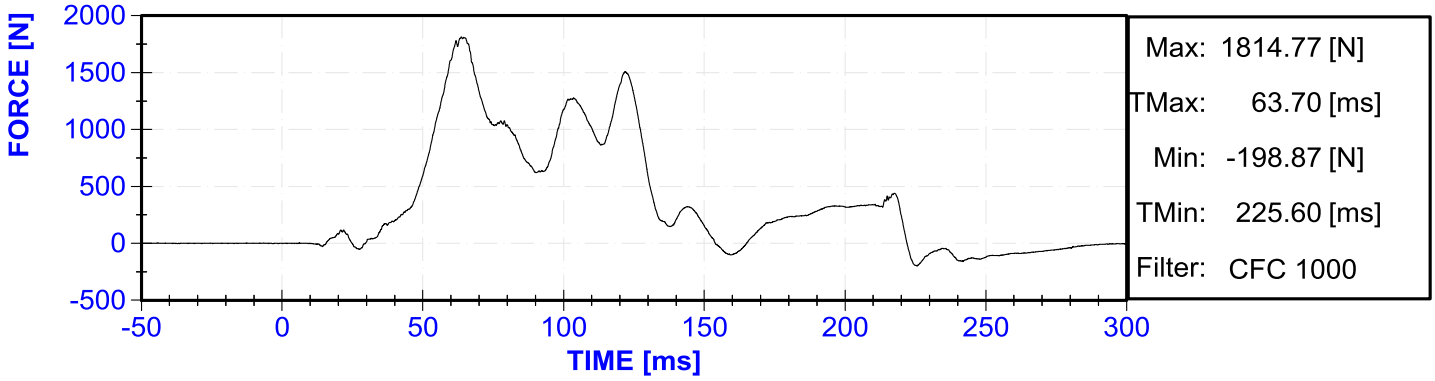
V2P1 Upper Neck X Force



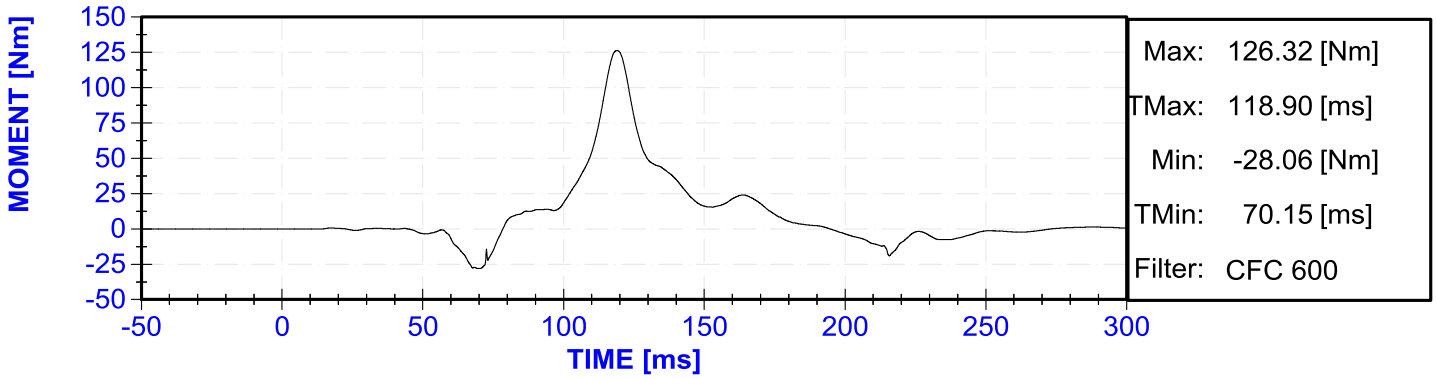
V2P1 Upper Neck Y Force



V2P1 Upper Neck Z Force

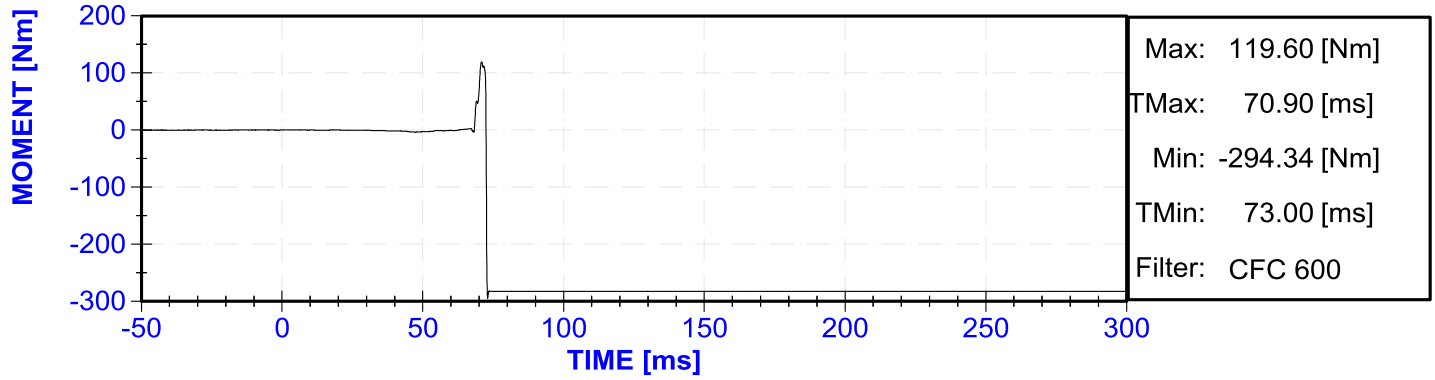


V2P1 Upper Neck X Moment

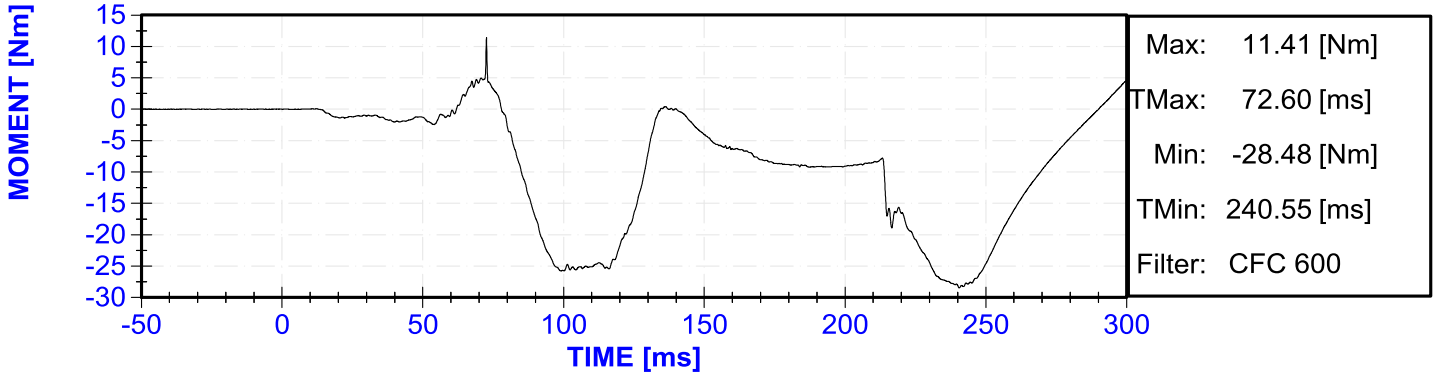


V2P1 Upper Neck Y Moment

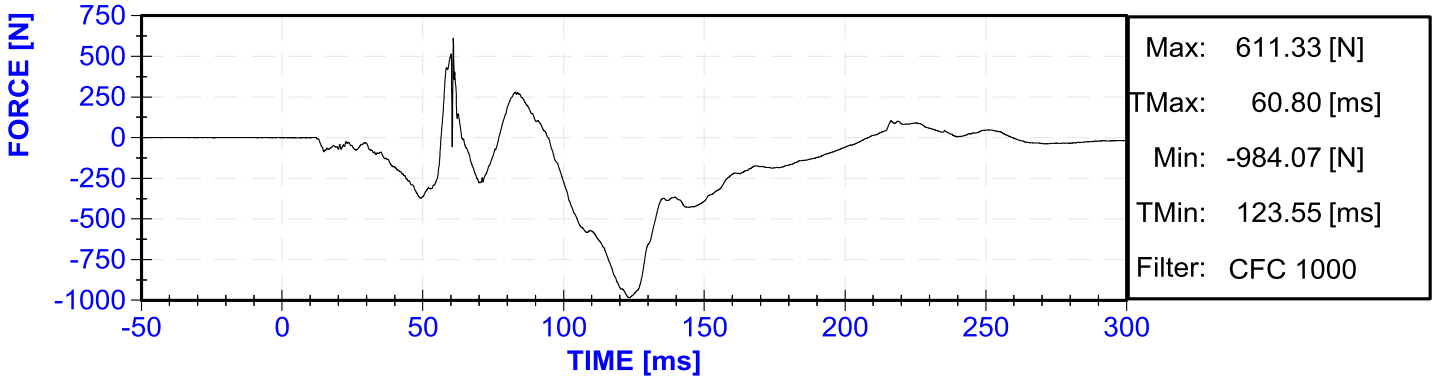
QUESTIONABLE AFTER 72 MS



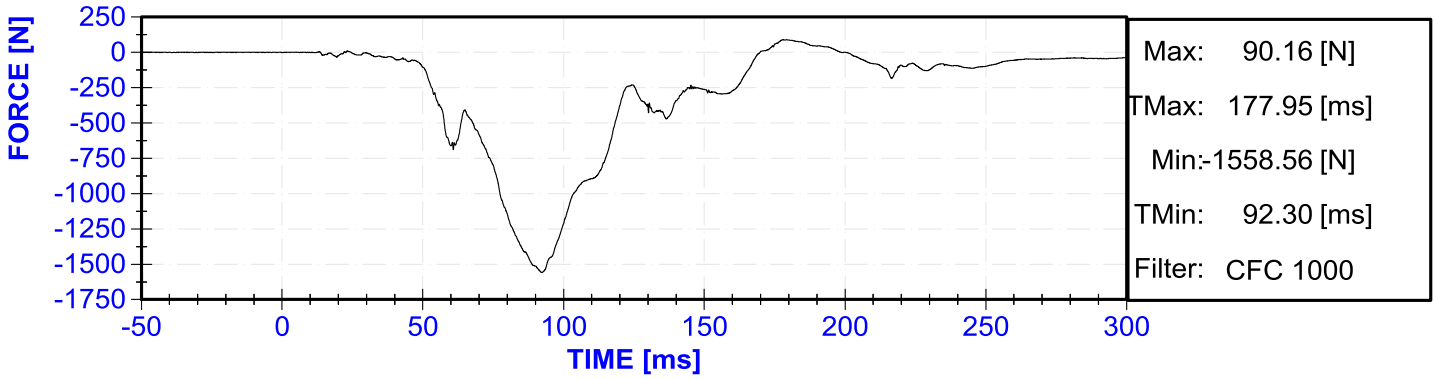
V2P1 Upper Neck Z Moment



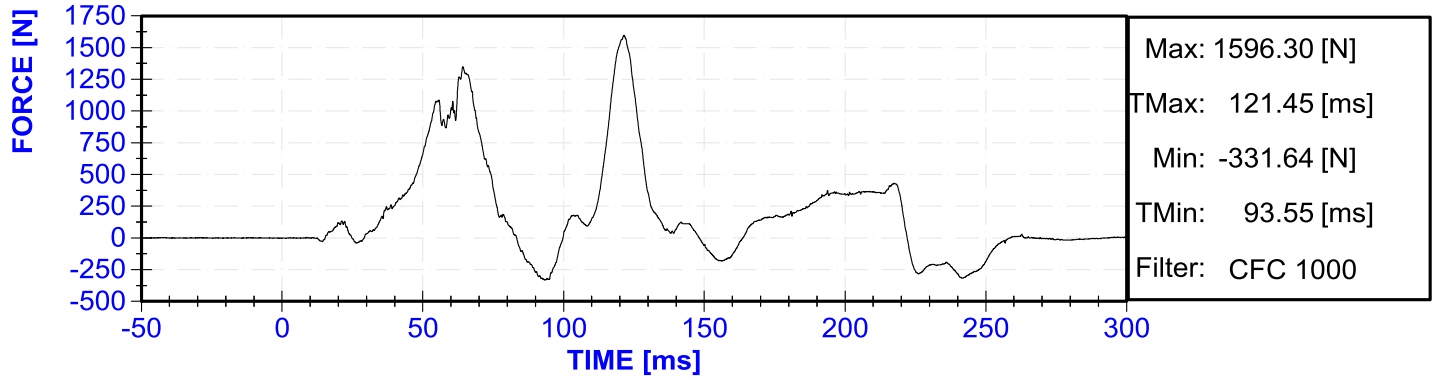
V2P1 Lower Neck X Force



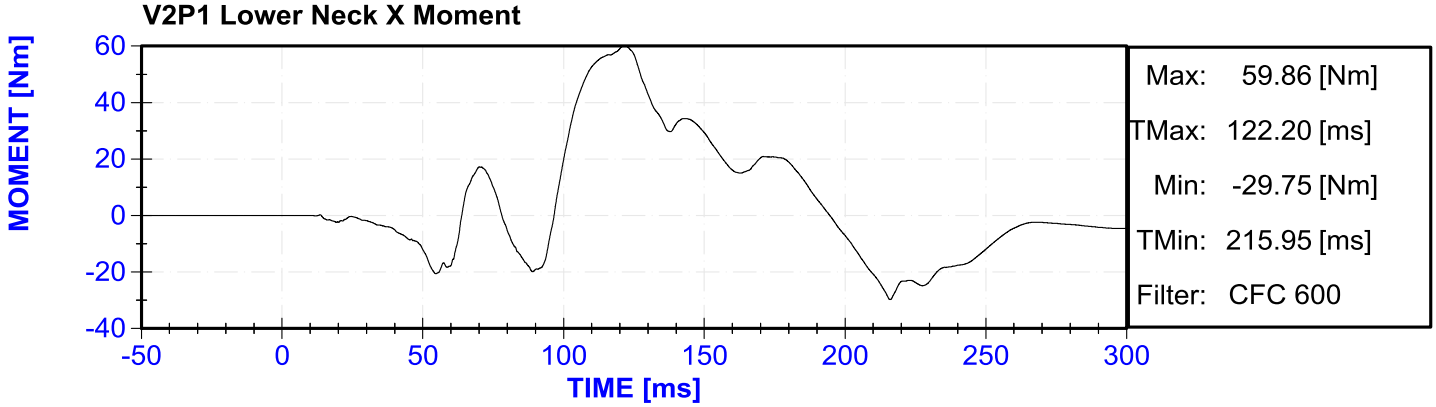
V2P1 Lower Neck Y Force



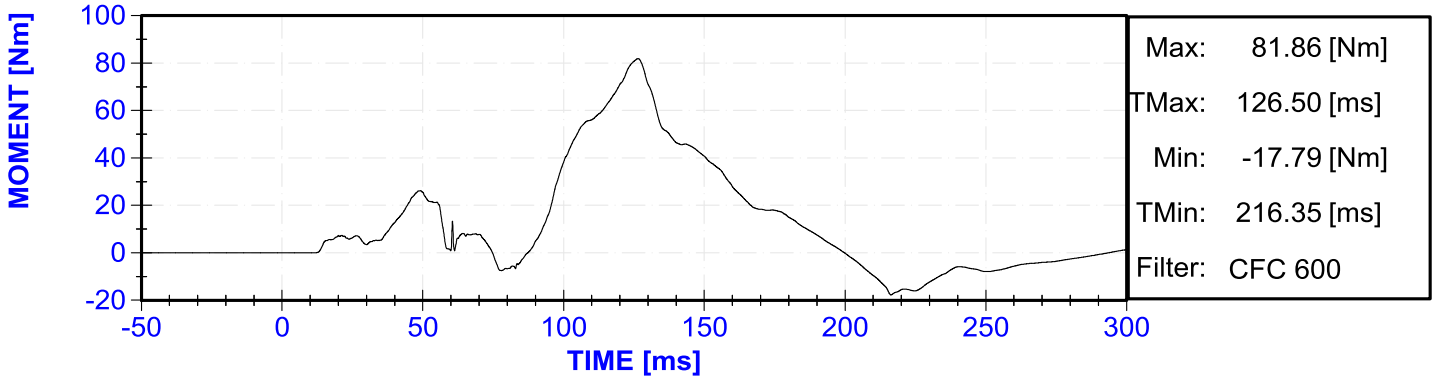
V2P1 Lower Neck Z Force



V2P1 Lower Neck X Moment

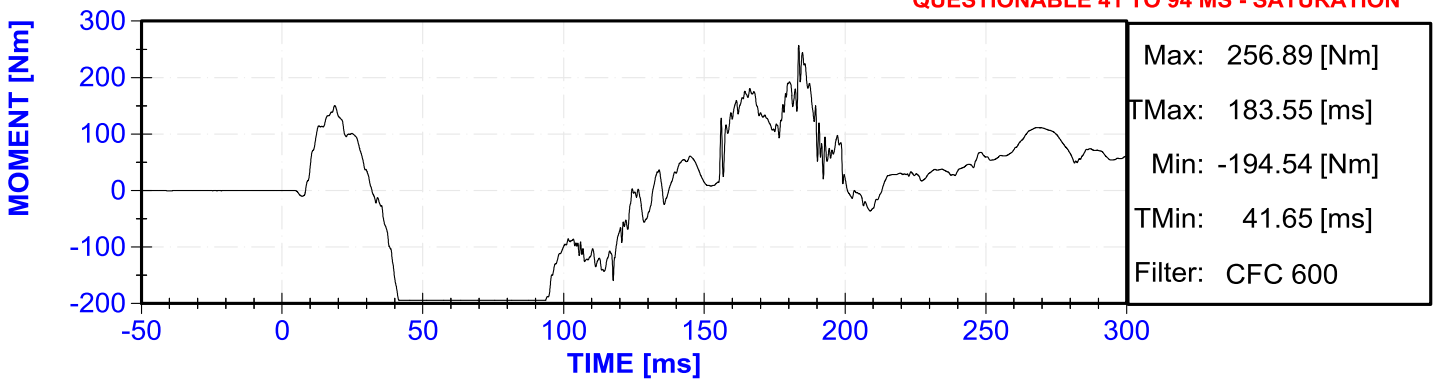


V2P1 Lower Neck Y Moment

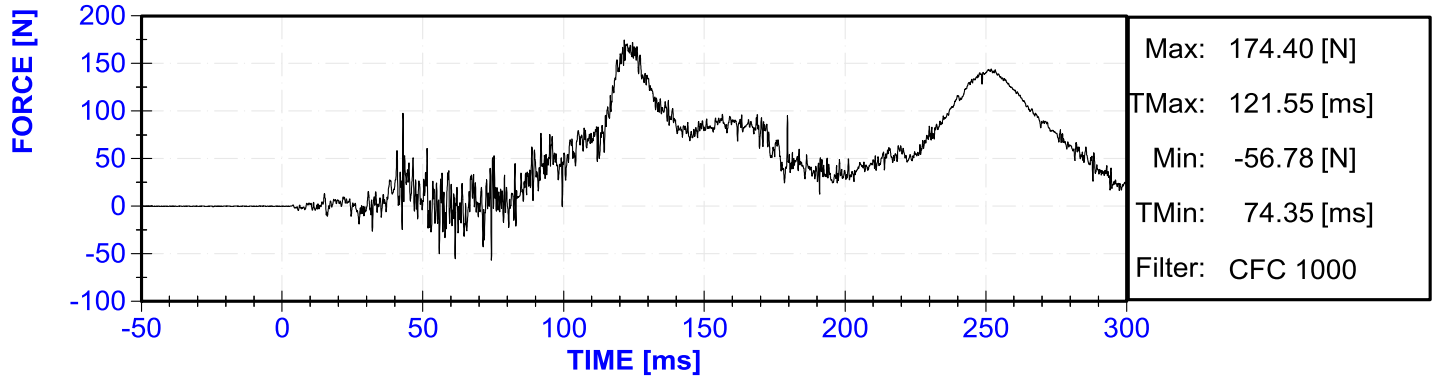


V2P1 Lower Neck Z Moment

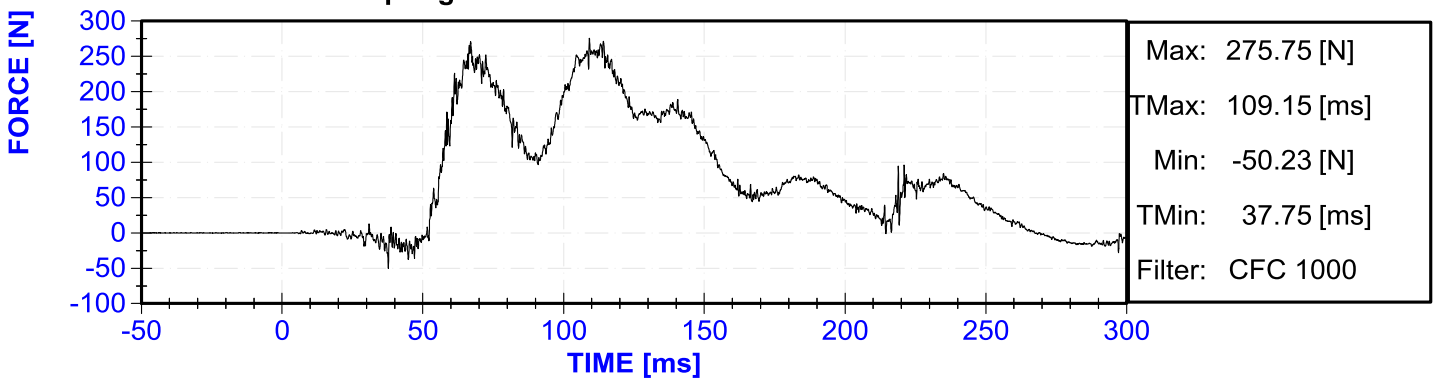
QUESTIONABLE 41 TO 94 MS - SATURATION



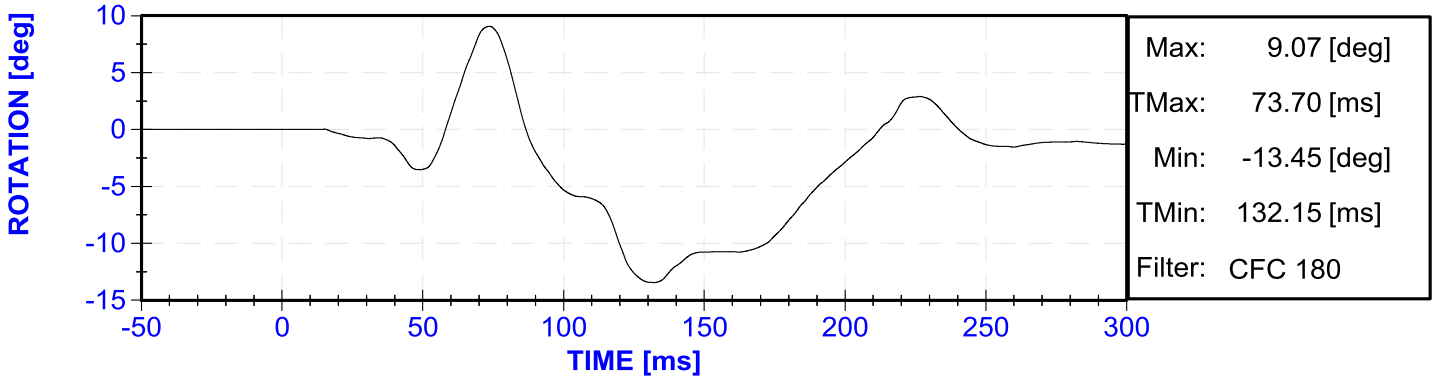
V2P1 Front Neck Spring Tower Load Cell



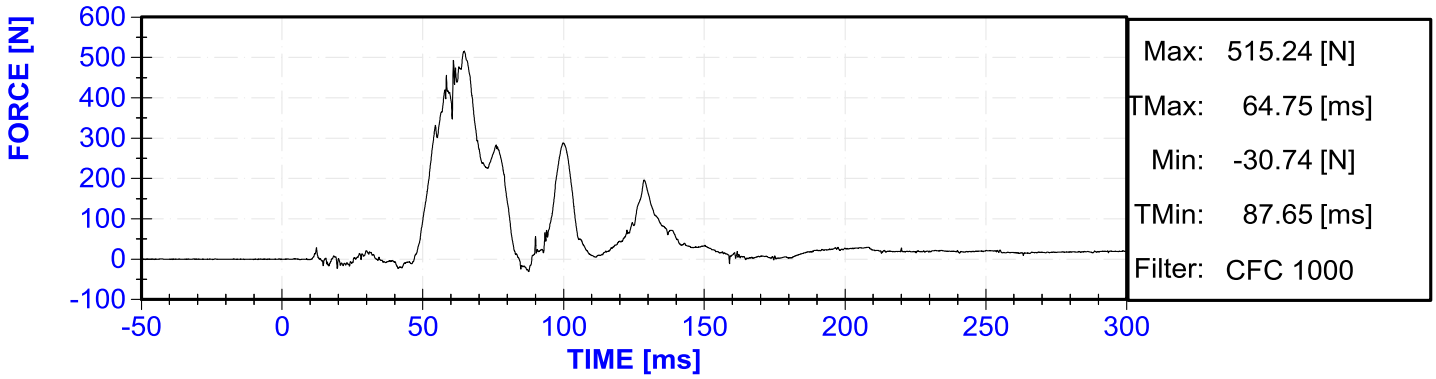
V2P1 Rear Neck Spring Tower Load Cell



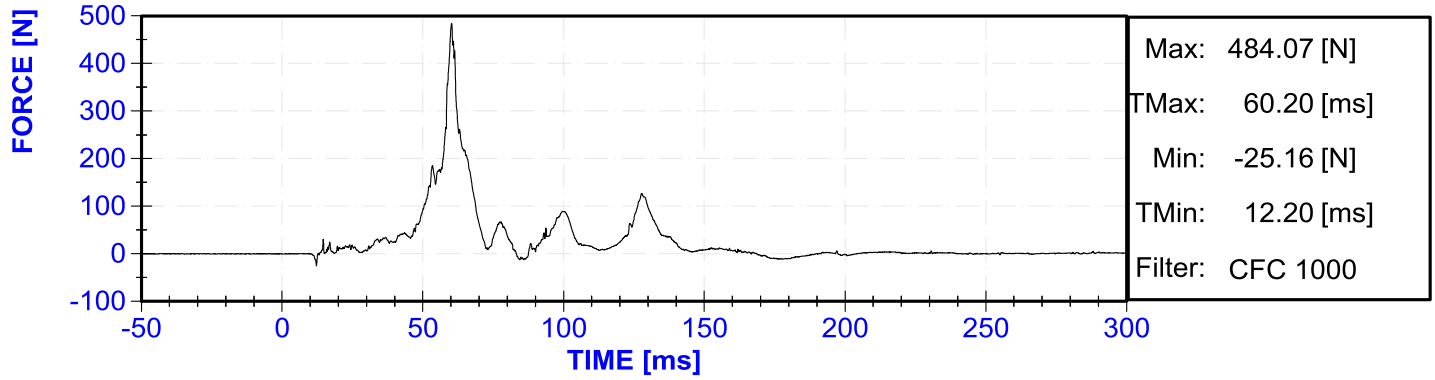
V2P1 Occipital Condyle Rotation Potentiometer



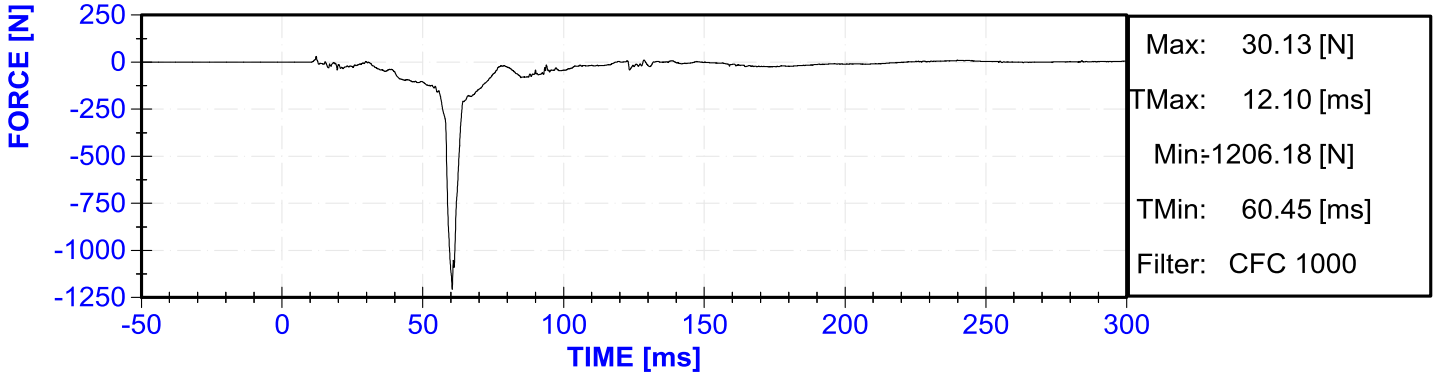
V2P1 CLAVICLE - LEFT OUTER LC FX



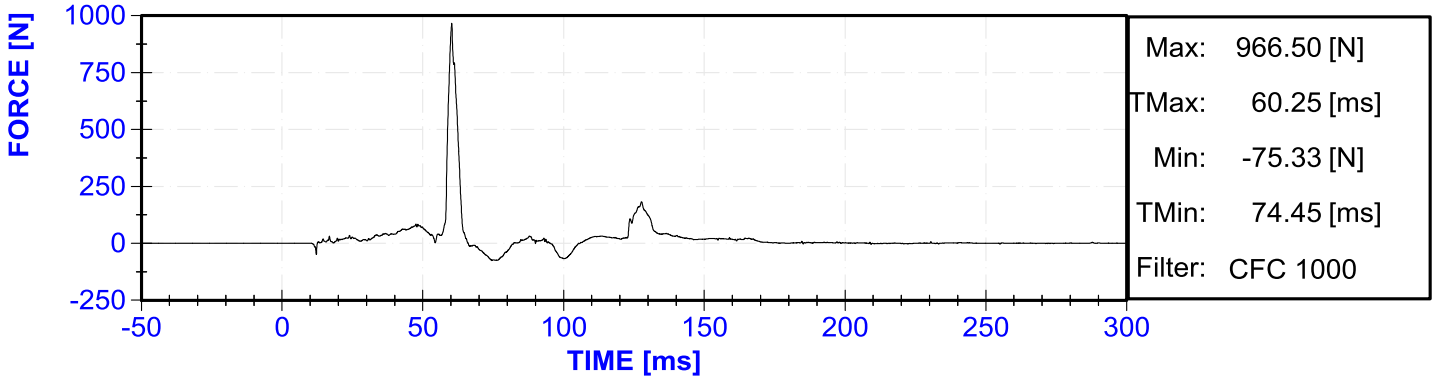
V2P1 CLAVICLE - LEFT OUTER LC FZ



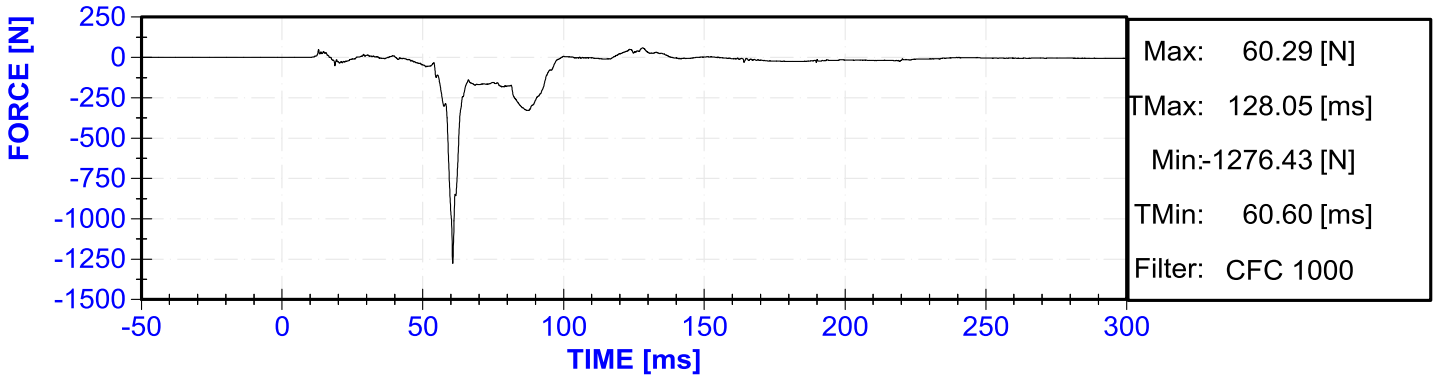
V2P1 CLAVICLE - LEFT INNER LC FX



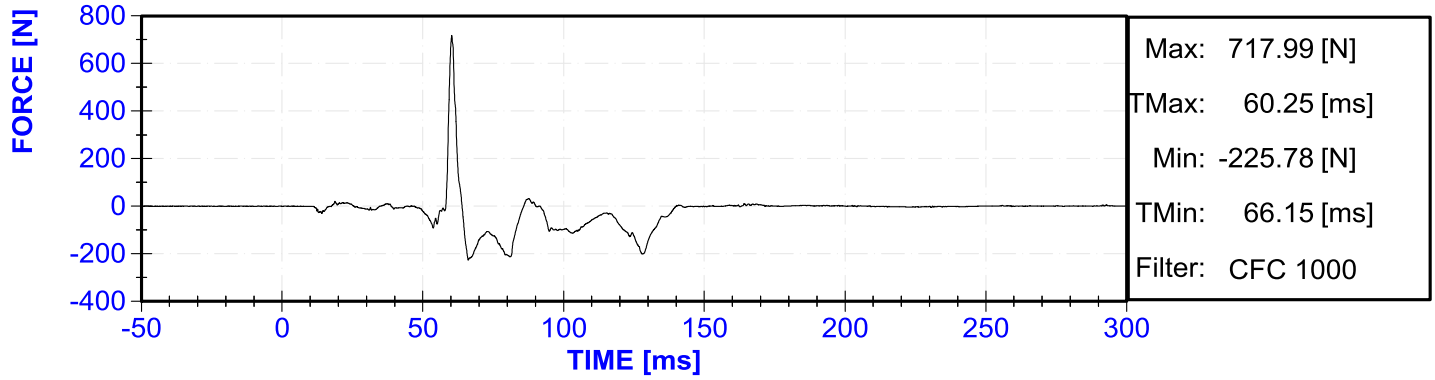
V2P1 CLAVICLE - LEFT INNER LC FZ



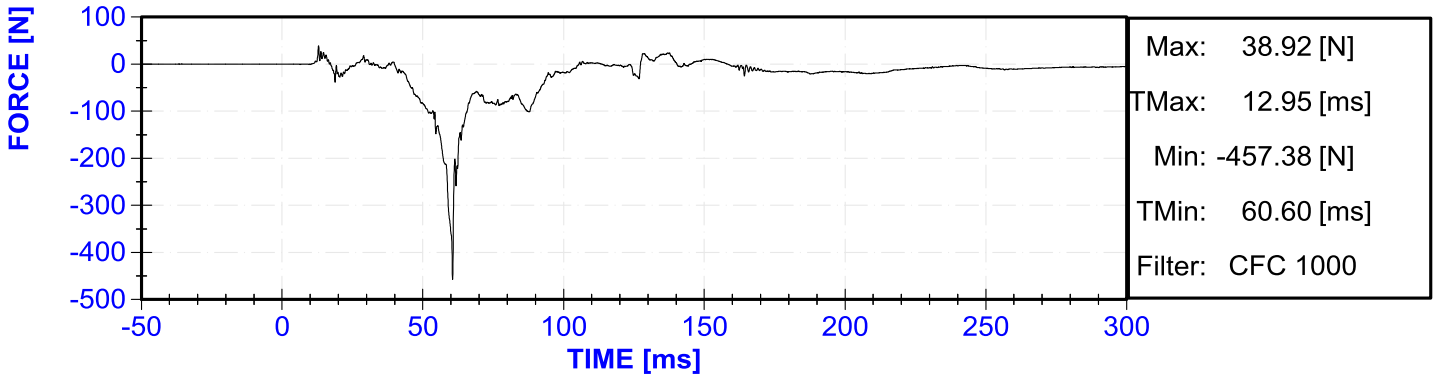
V2P1 CLAVICLE - RIGHT OUTER LC FX



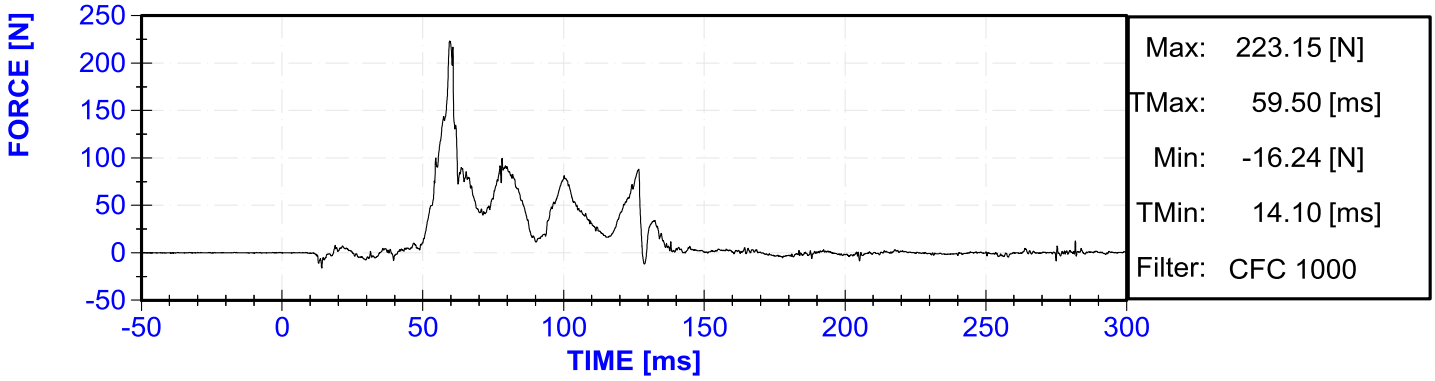
V2P1 CLAVICLE - RIGHT OUTER LC FZ



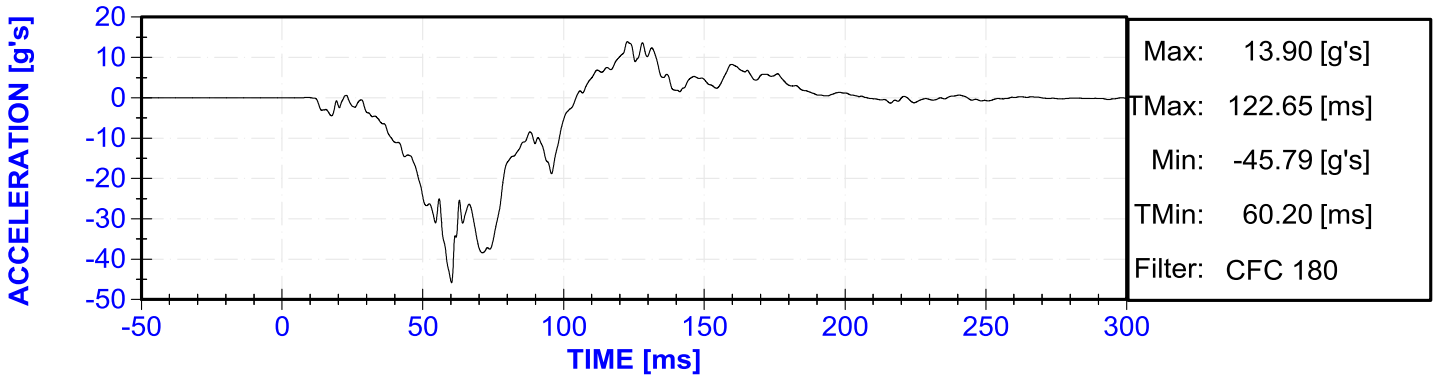
V2P1 CLAVICLE - RIGHT INNER LC FX



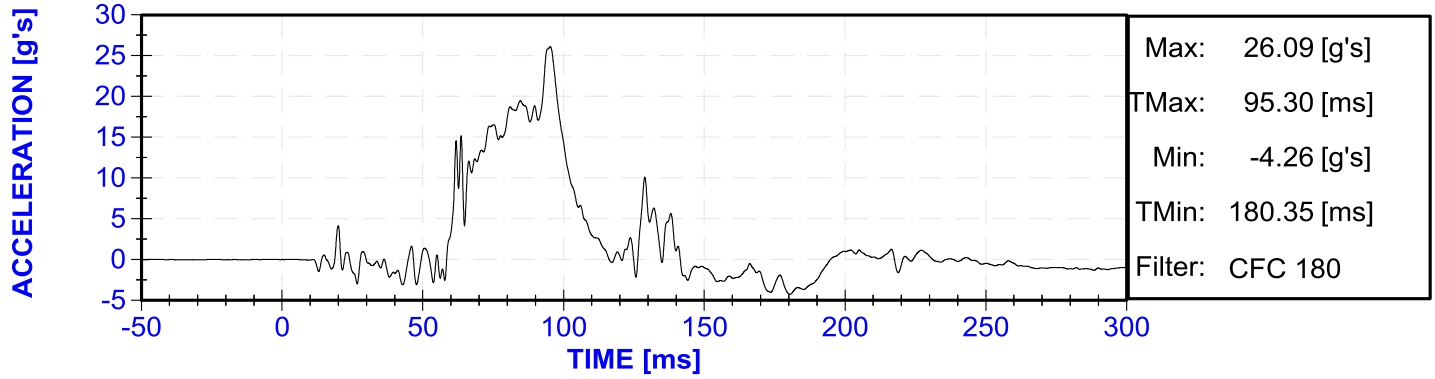
V2P1 CLAVICLE - RIGHT INNER LC FZ



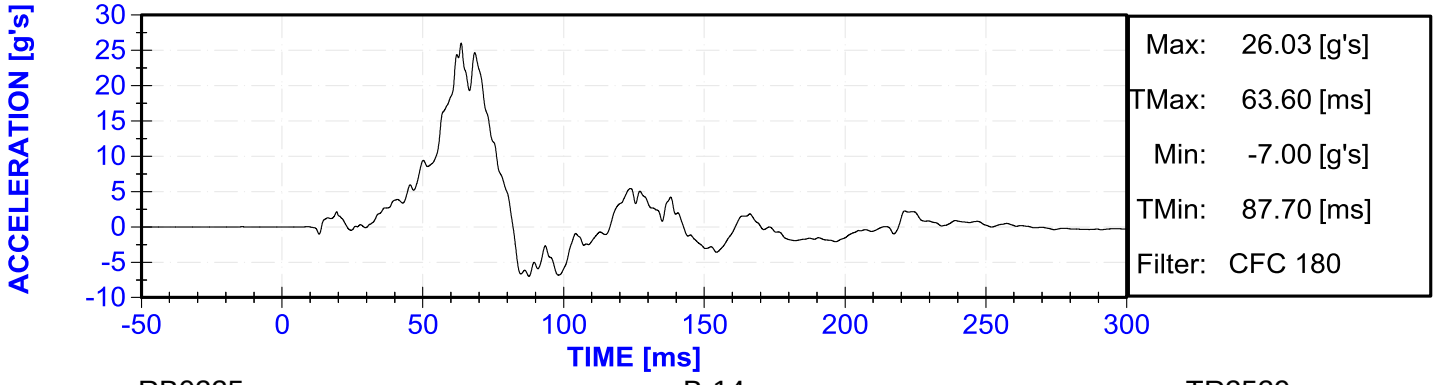
V2P1 T1 X Acceleration



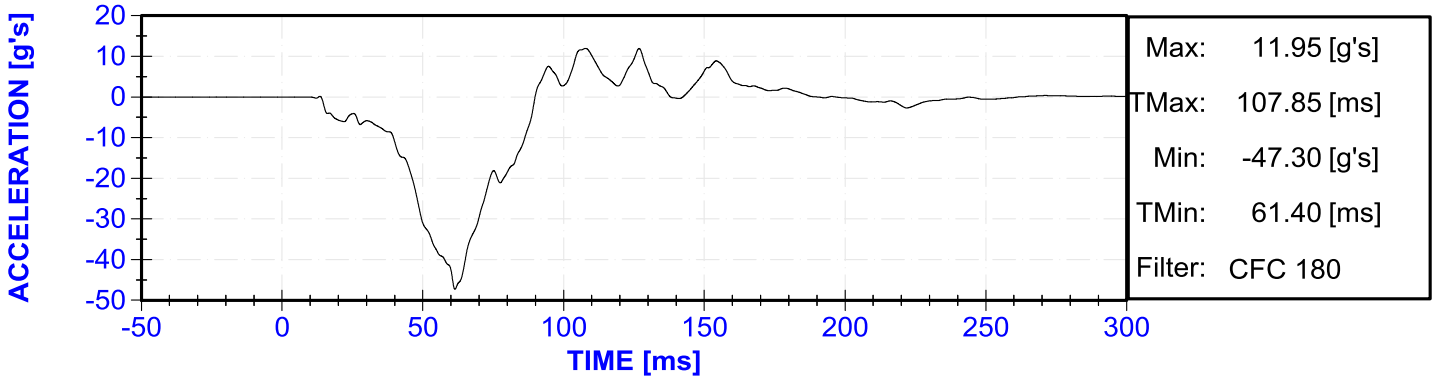
V2P1 T1 Y Acceleration



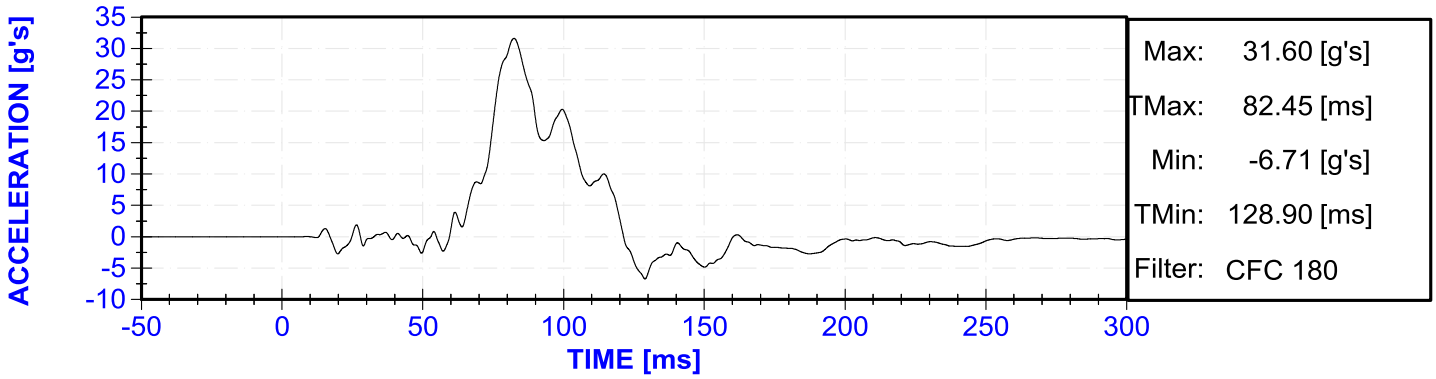
V2P1 T1 Z Acceleration



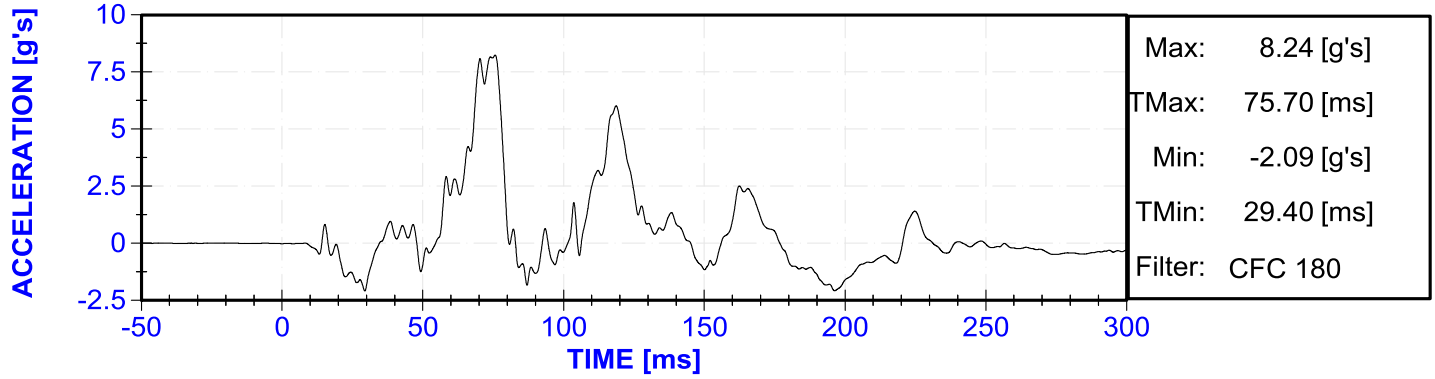
V2P1 T6 X Acceleration



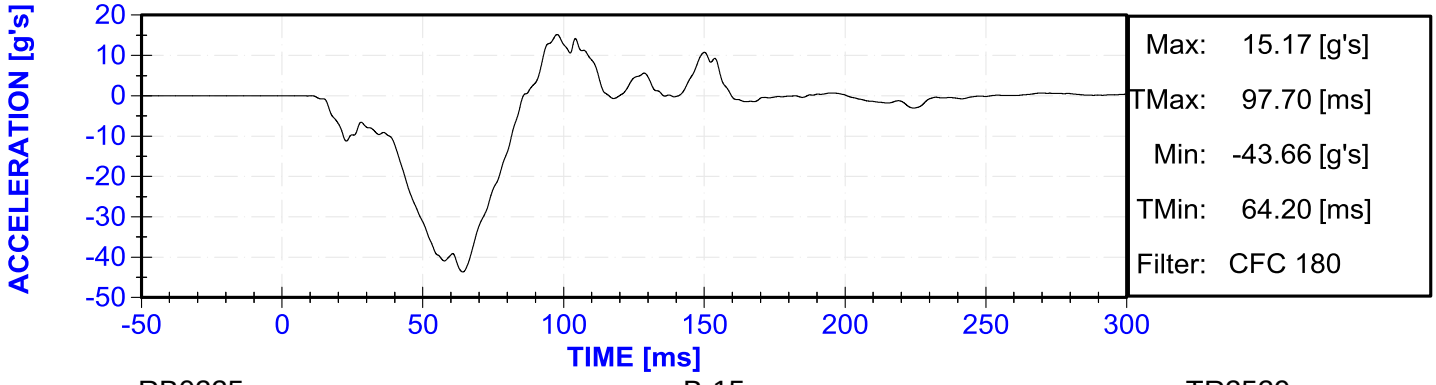
V2P1 T6 Y Acceleration



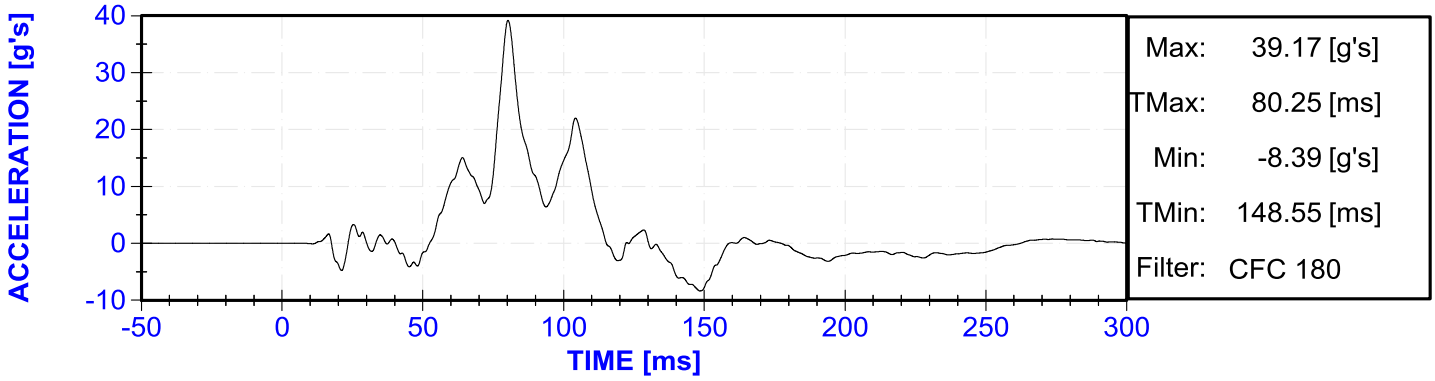
V2P1 T6 Z Acceleration



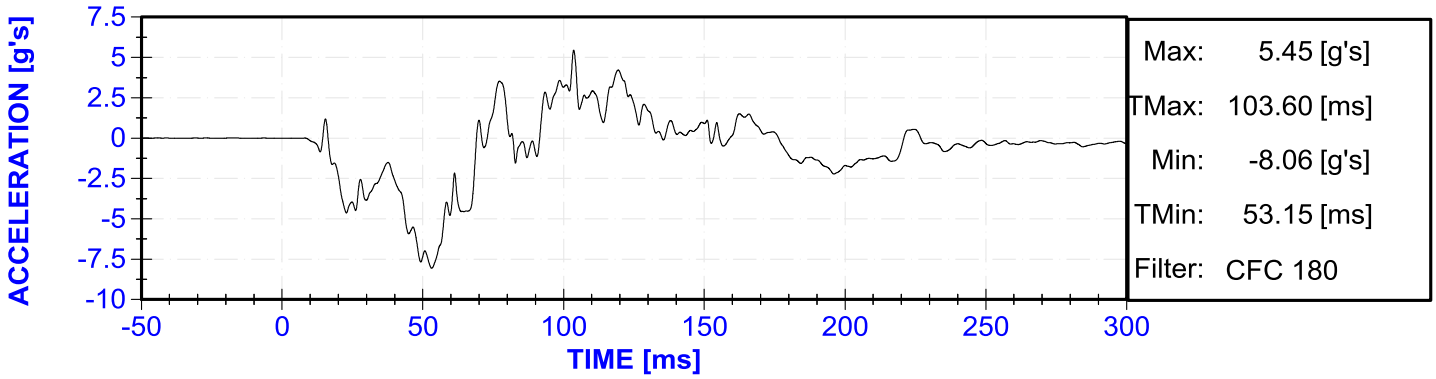
V2P1 T12 X Acceleration



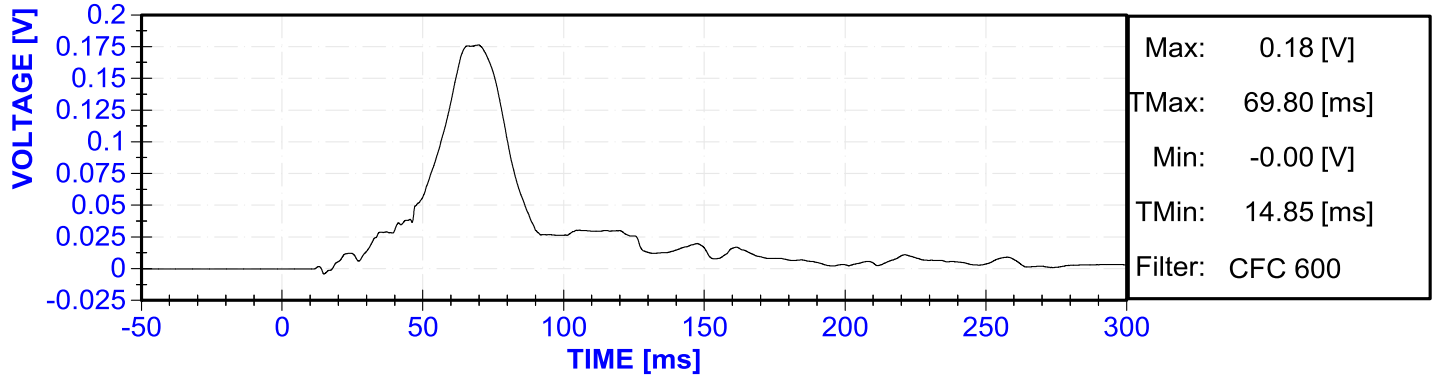
V2P1 T12 Y Acceleration



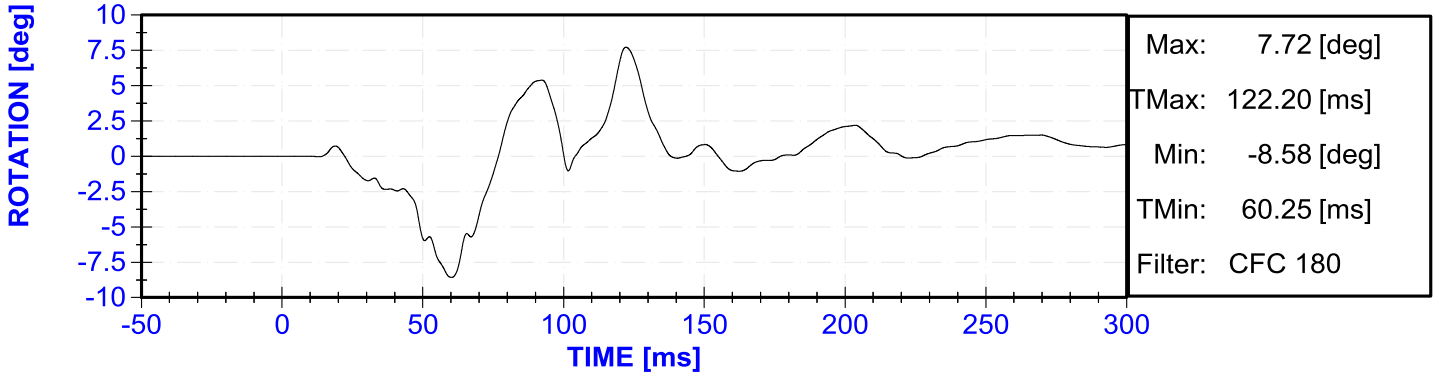
V2P1 T12 Z Acceleration



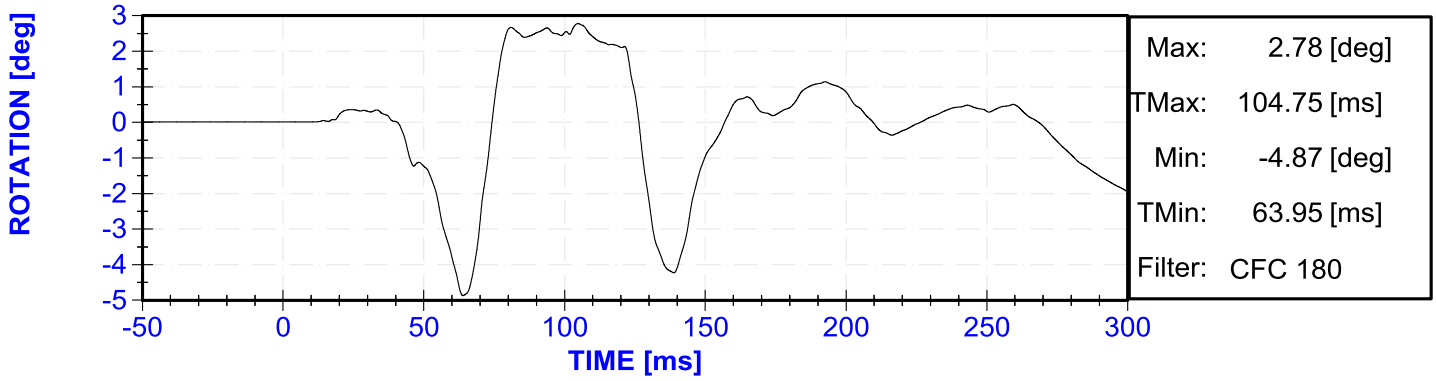
V2P1 Upper Left DGIR X Displacement



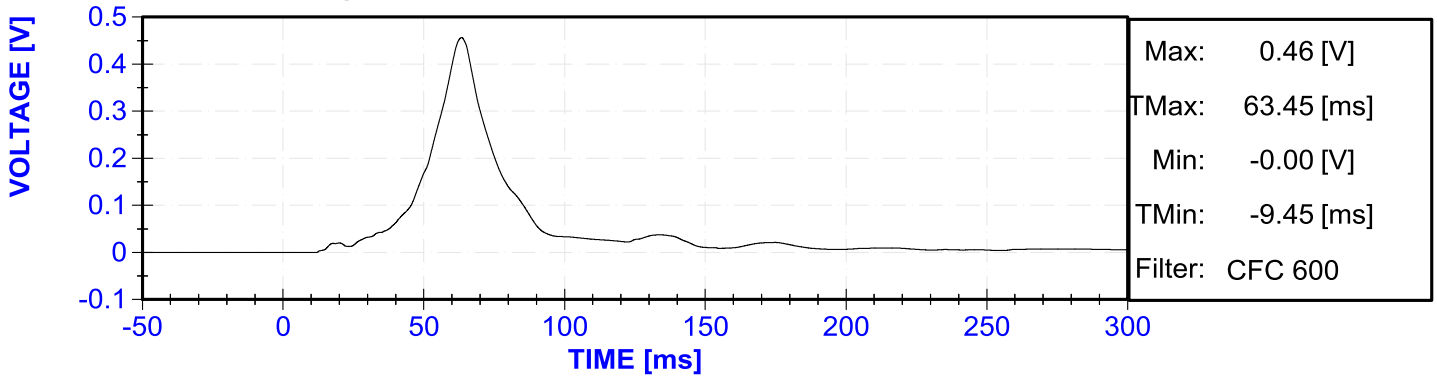
V2P1 Upper Left DGIR Y Rotation



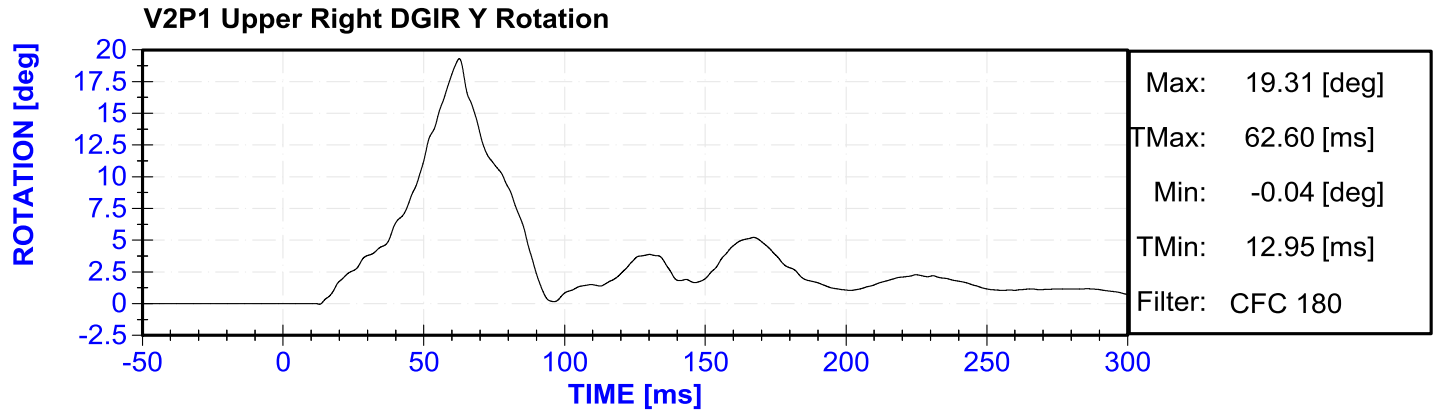
V2P1 Upper Left DGIR Z Rotation



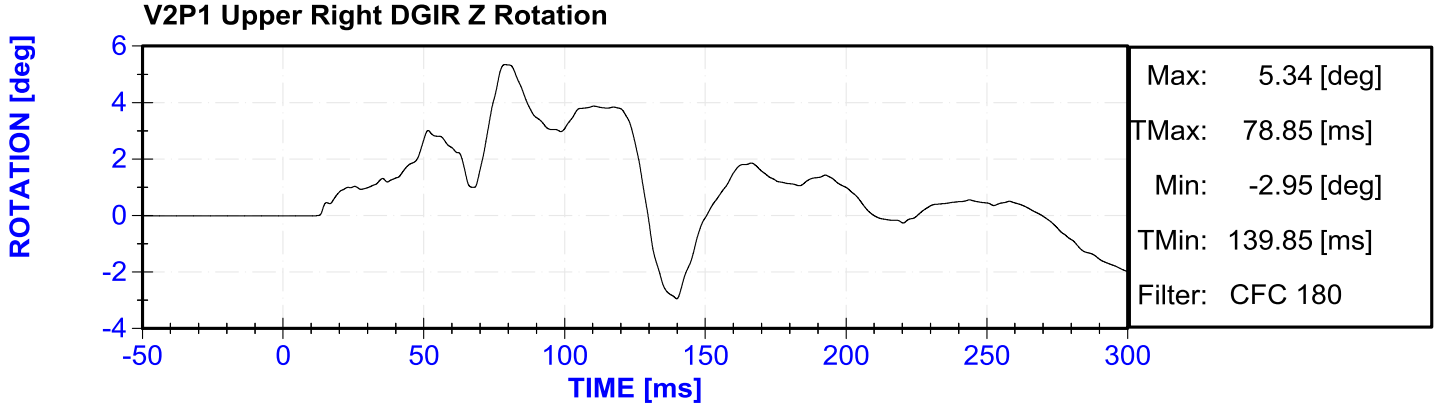
V2P1 Upper Right DGIR X Displacement



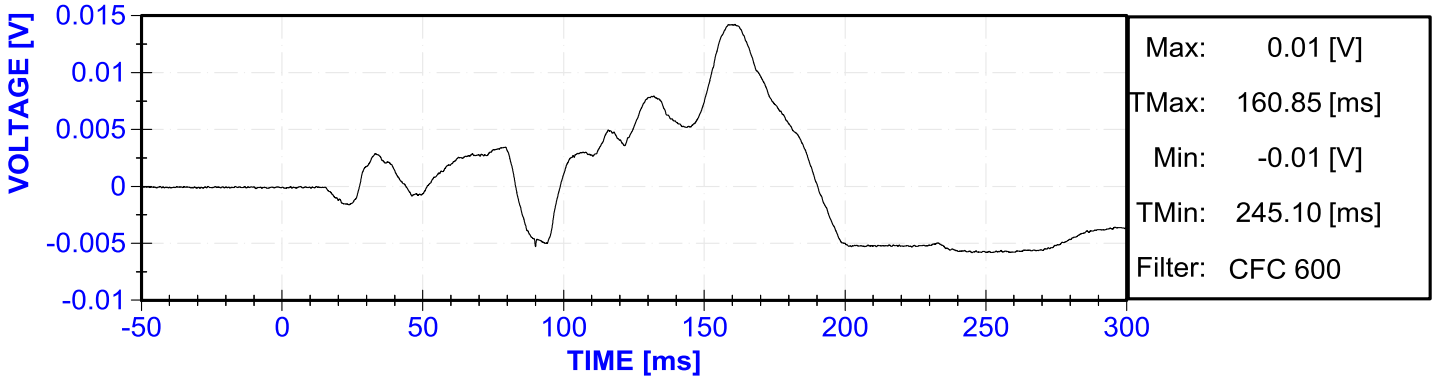
V2P1 Upper Right DGIR Y Rotation



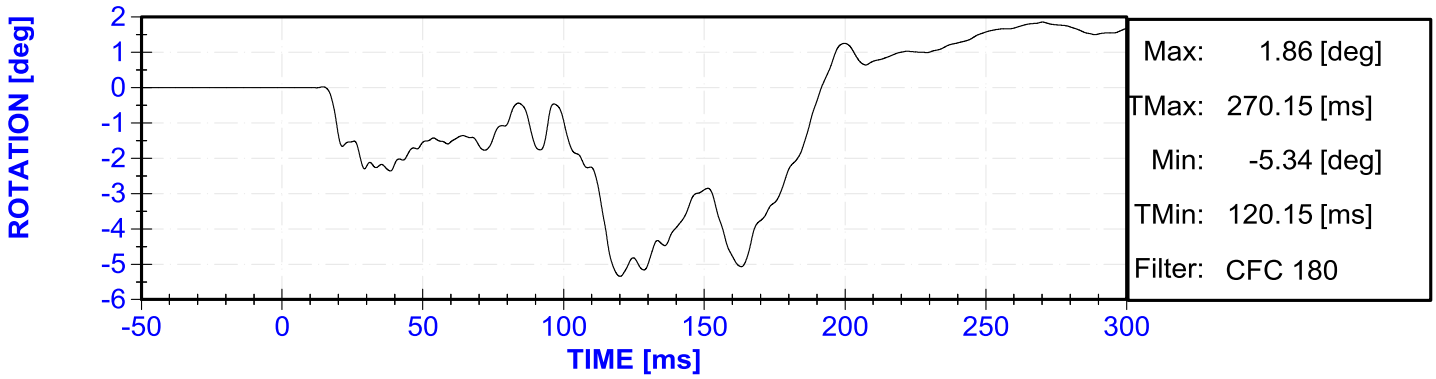
V2P1 Upper Right DGIR Z Rotation



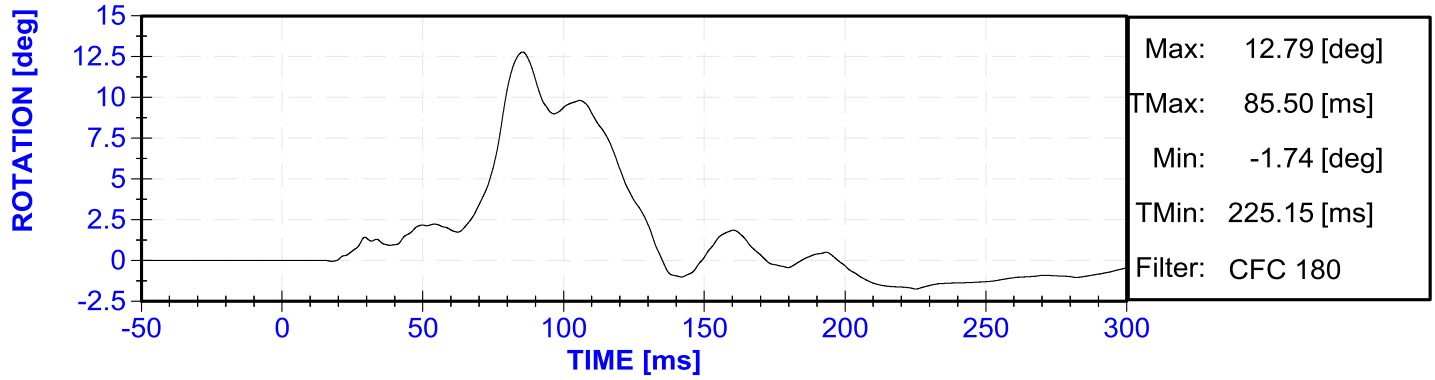
V2P1 Lower Left DGIR X Displacement



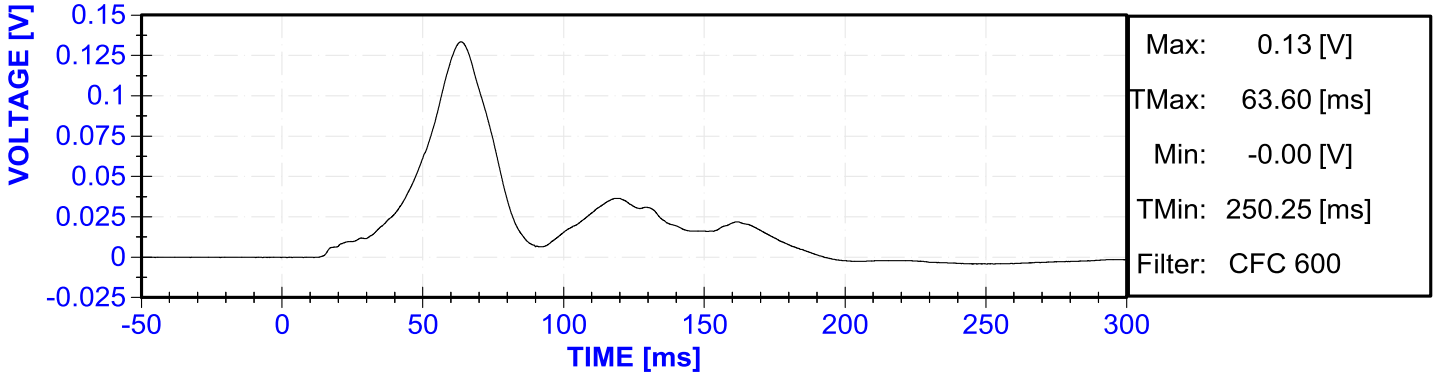
V2P1 Lower Left DGIR Y Rotation



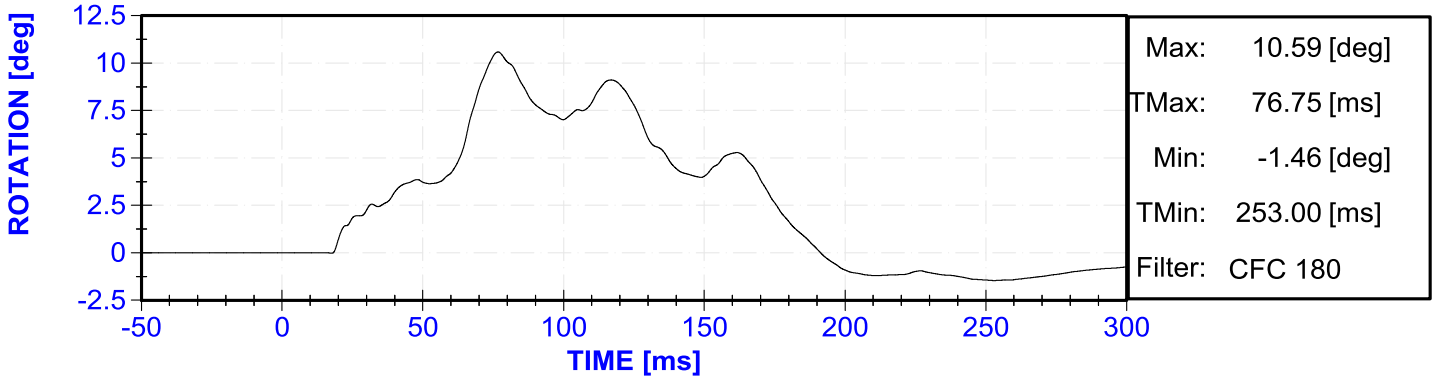
V2P1 Lower Left DGIR Z Rotation



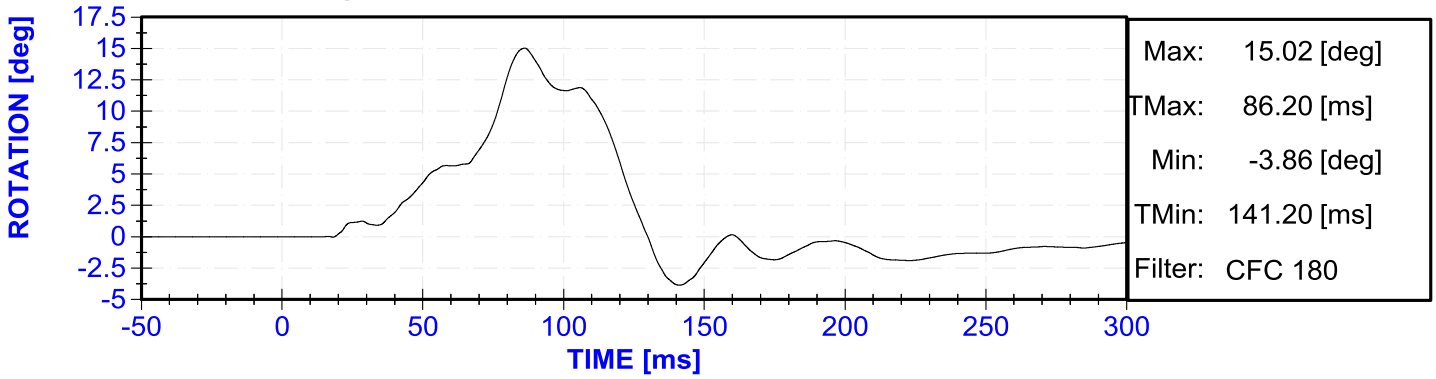
V2P1 Lower Right DGIR X Displacement



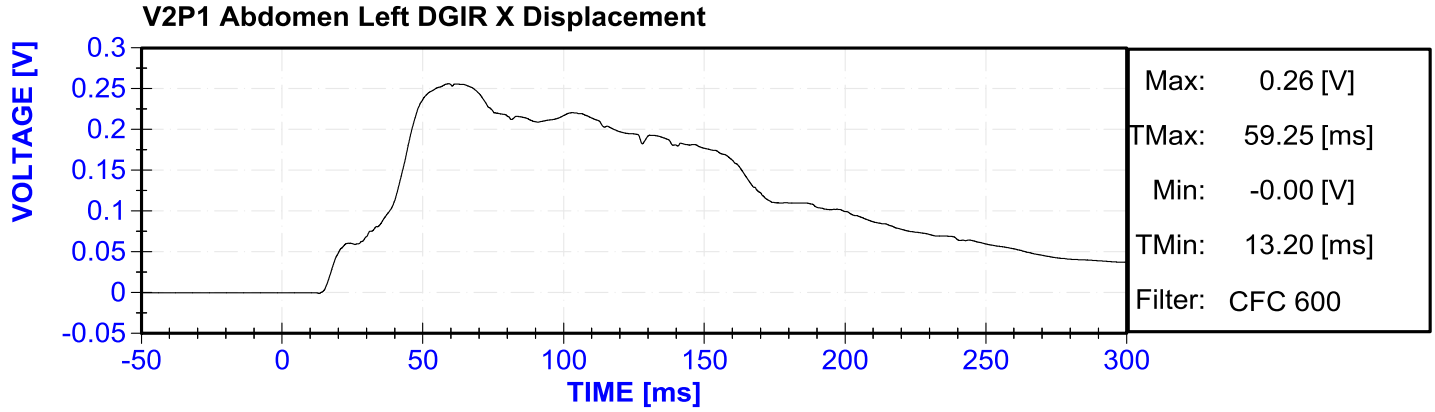
V2P1 Lower Right DGIR Y Rotation



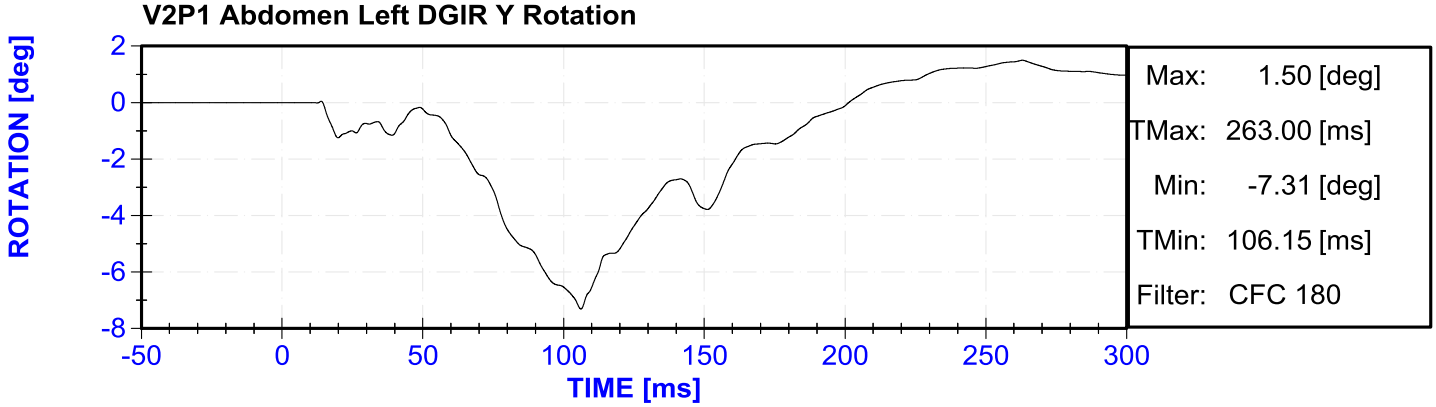
V2P1 Lower Right DGIR Z Rotation



V2P1 Abdomen Left DGIR X Displacement

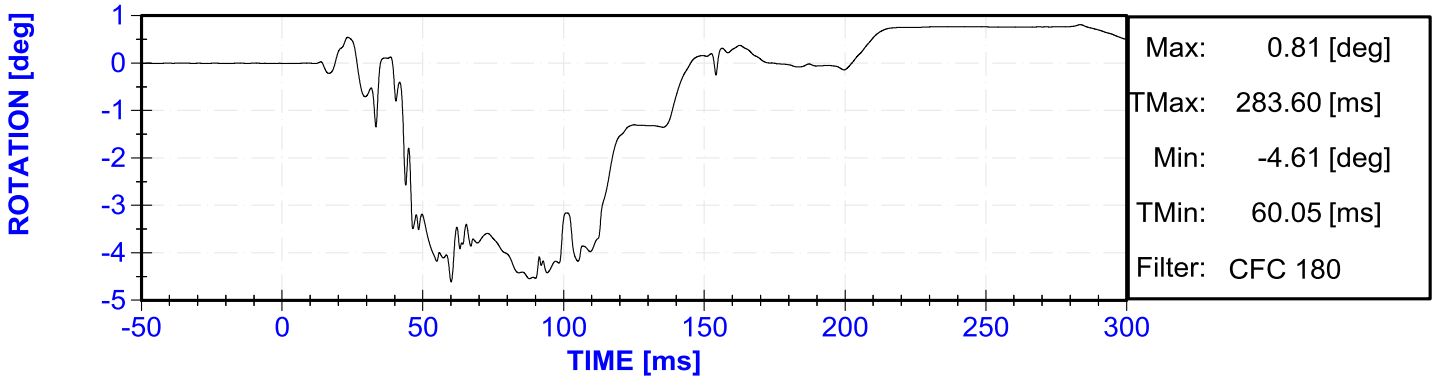


V2P1 Abdomen Left DGIR Y Rotation



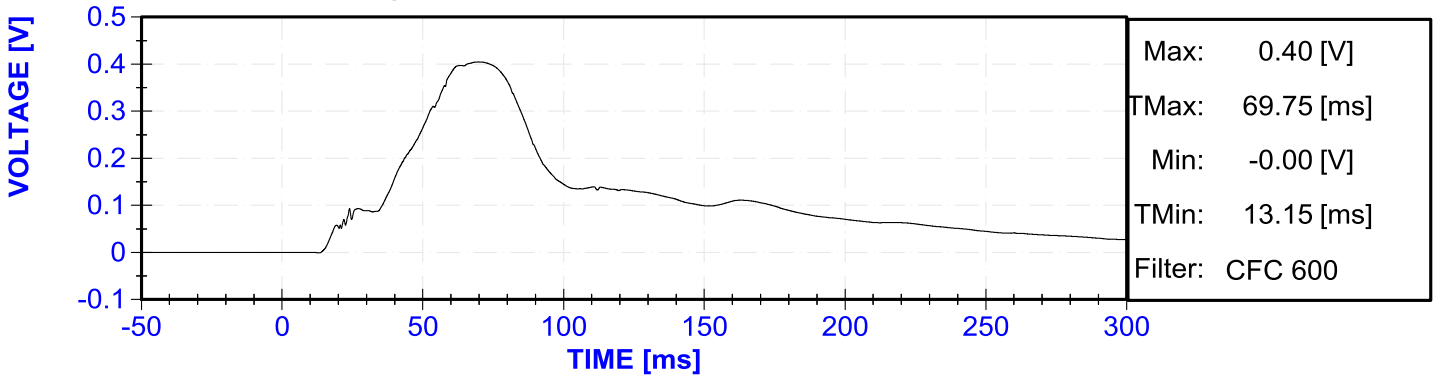
V2P1 Abdomen Left DGIR Z Rotation

NOISE SPIKES ON DATA



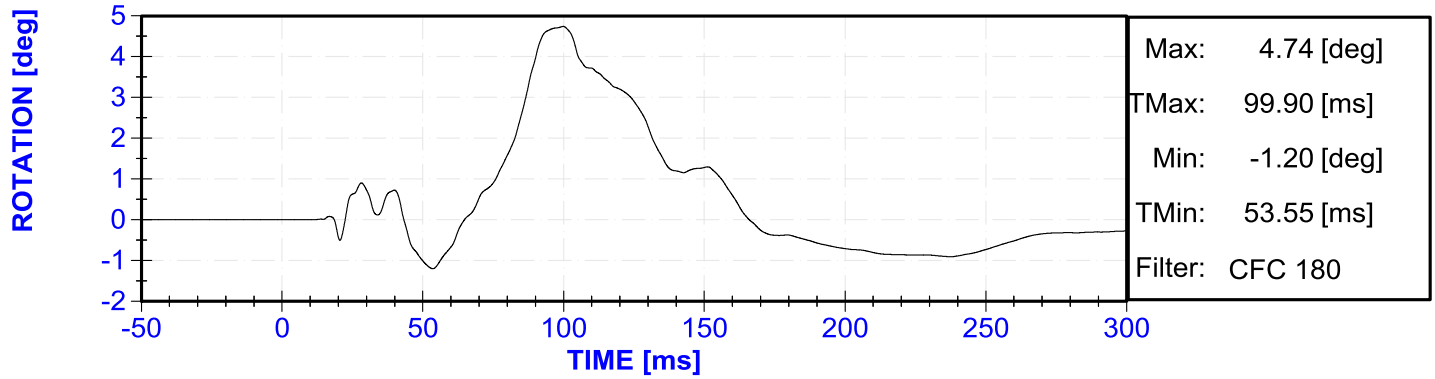
Max:	0.81 [deg]
TMax:	283.60 [ms]
Min:	-4.61 [deg]
TMin:	60.05 [ms]
Filter:	CFC 180

V2P1 Abdomen Right DGIR X Displacement



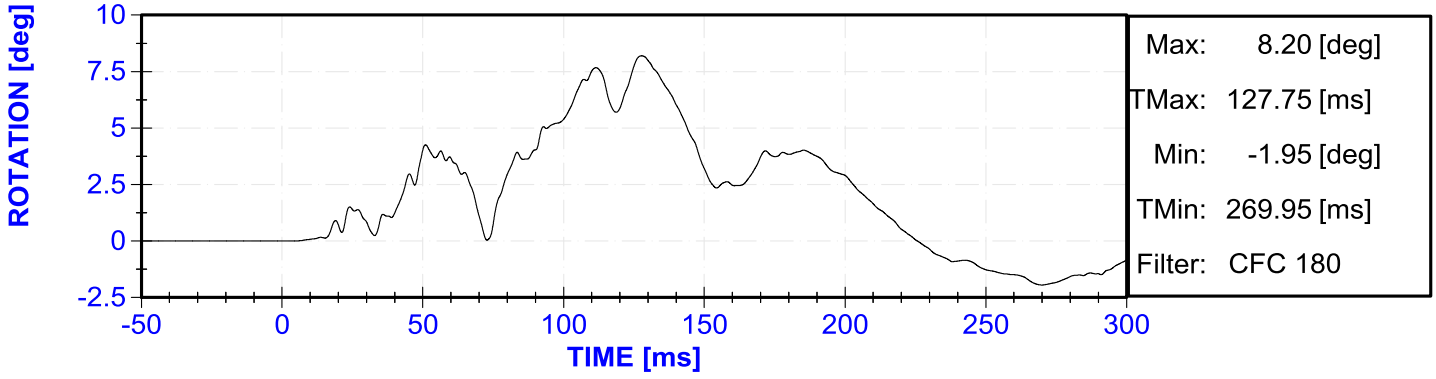
Max:	0.40 [V]
TMax:	69.75 [ms]
Min:	-0.00 [V]
TMin:	13.15 [ms]
Filter:	CFC 600

V2P1 Abdomen Right DGIR Y Rotation



Max:	4.74 [deg]
TMax:	99.90 [ms]
Min:	-1.20 [deg]
TMin:	53.55 [ms]
Filter:	CFC 180

V2P1 Abdomen Right DGIR Z Rotation

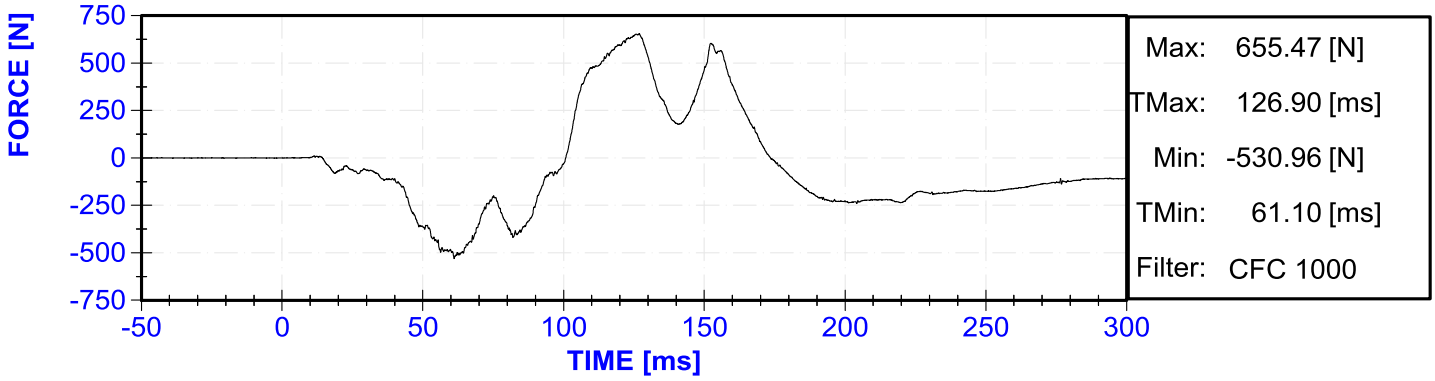


Max:	8.20 [deg]
TMax:	127.75 [ms]
Min:	-1.95 [deg]
TMin:	269.95 [ms]
Filter:	CFC 180

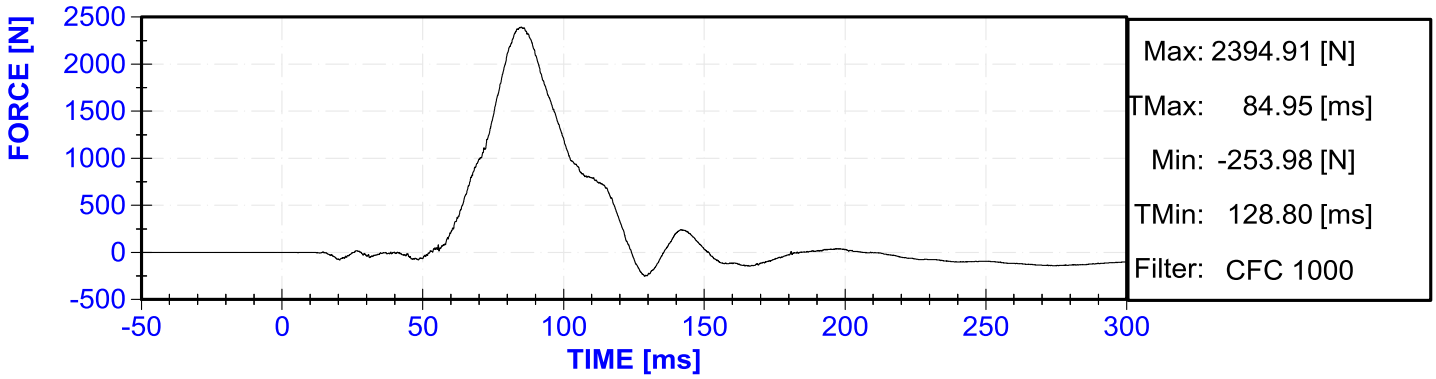
**R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP -
RB0225 2011 FORD FIESTA**

**Test Date:
July 26,2011**

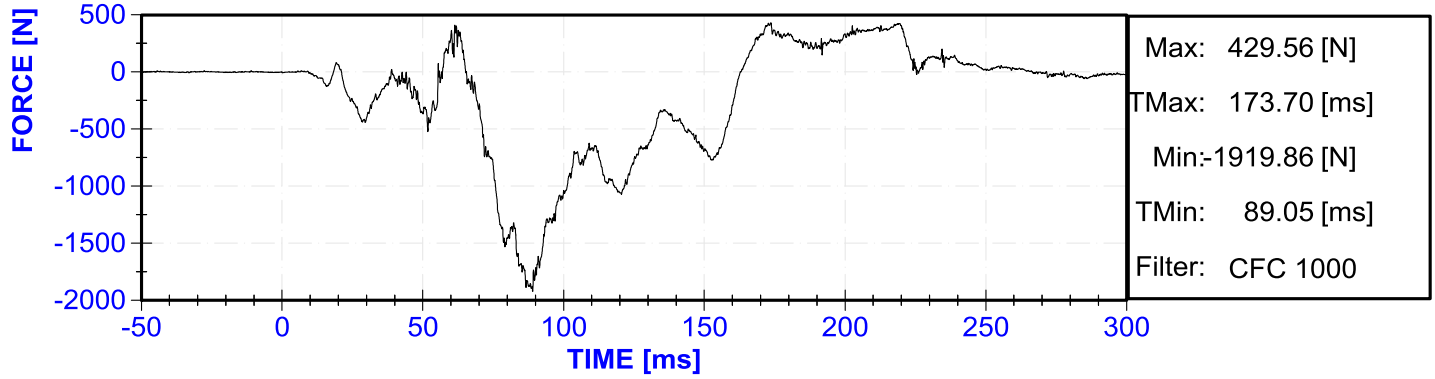
V2P1 Spine Force X



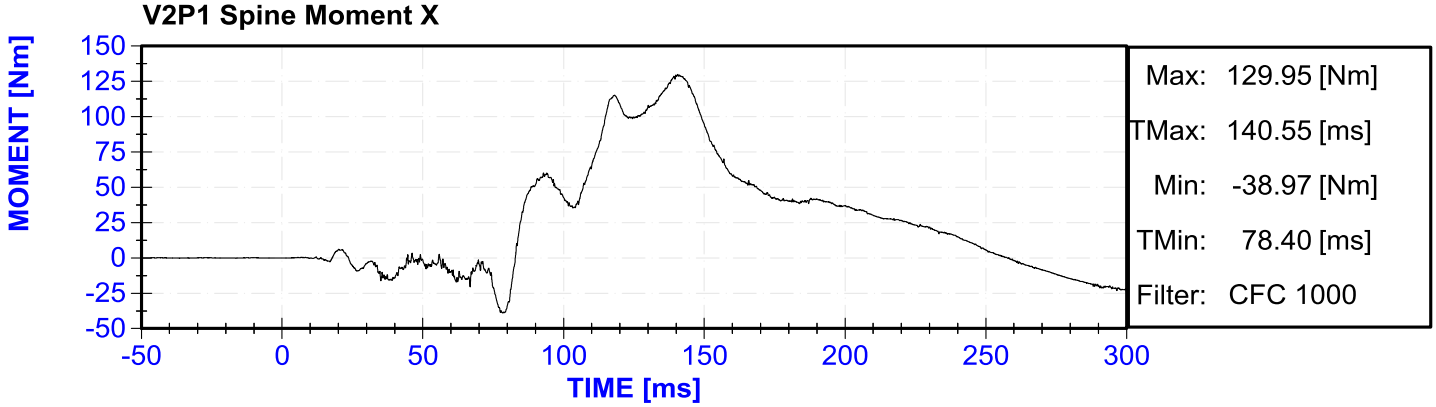
V2P1 Spine Force Y



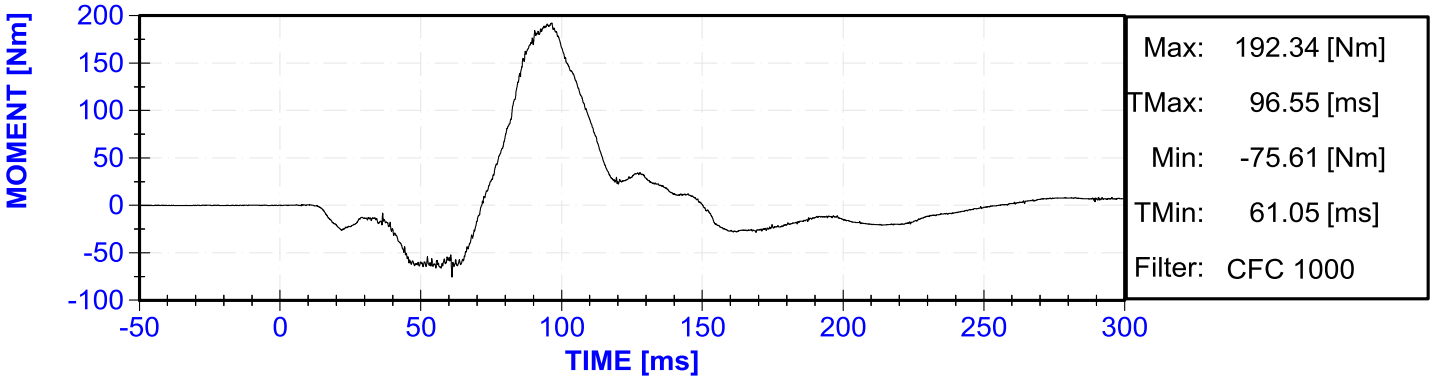
V2P1 Spine Force Z



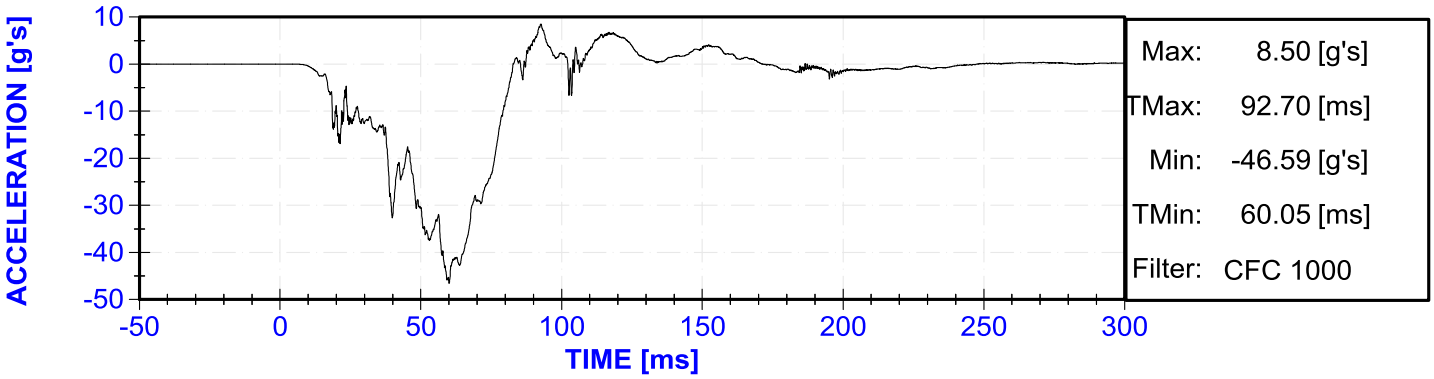
V2P1 Spine Moment X



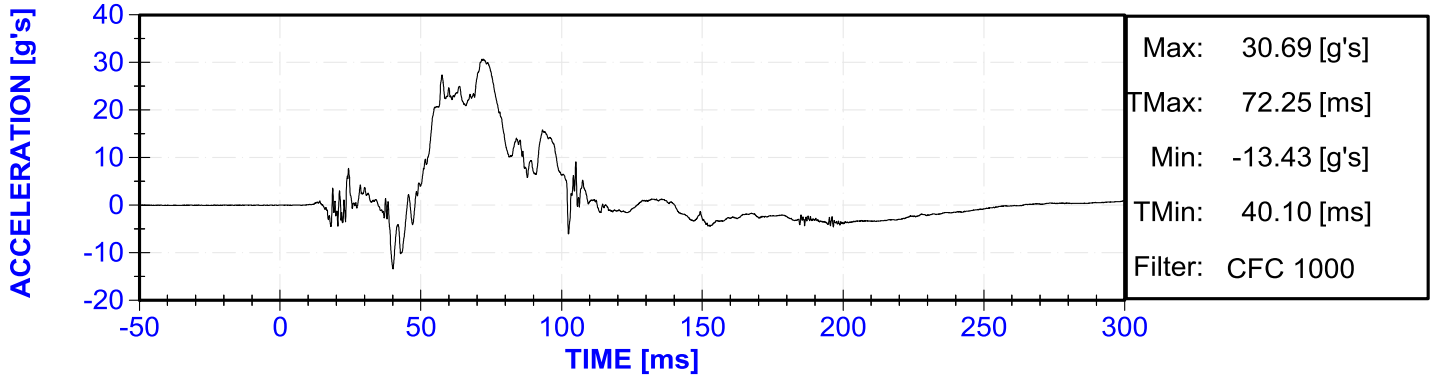
V2P1 Spine Moment Y



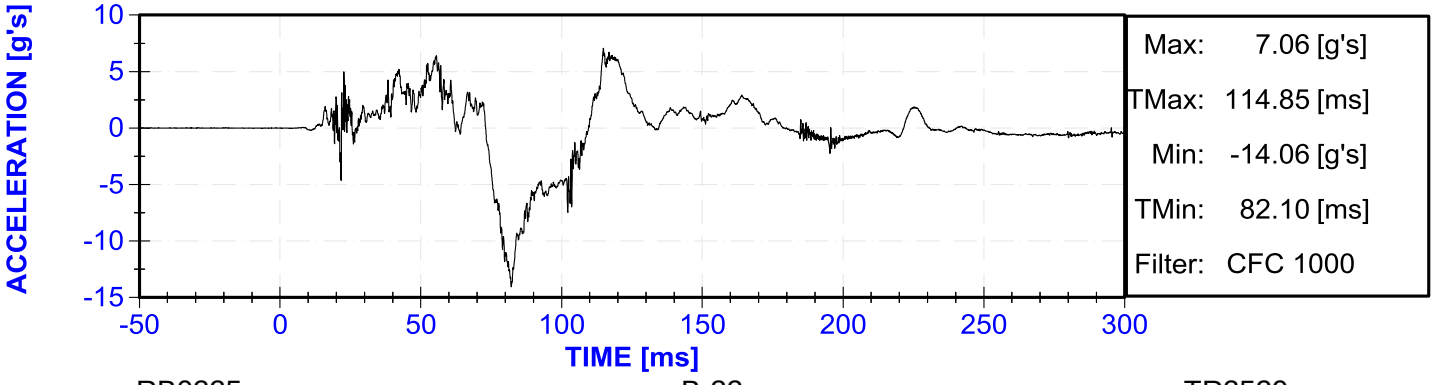
V2P1 Pelvis X Acceleration



V2P1 Pelvis Y Acceleration



V2P1 Pelvis Z Acceleration

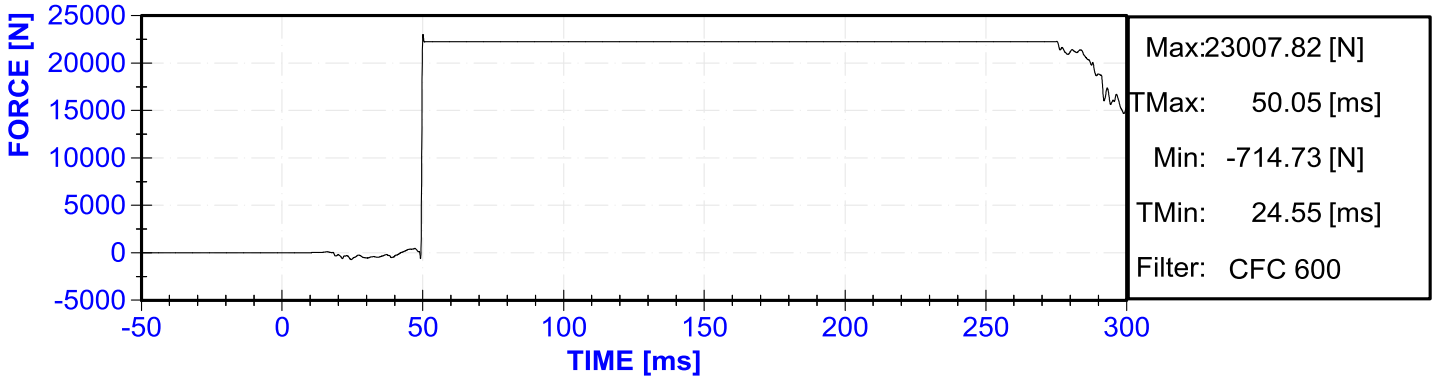


R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

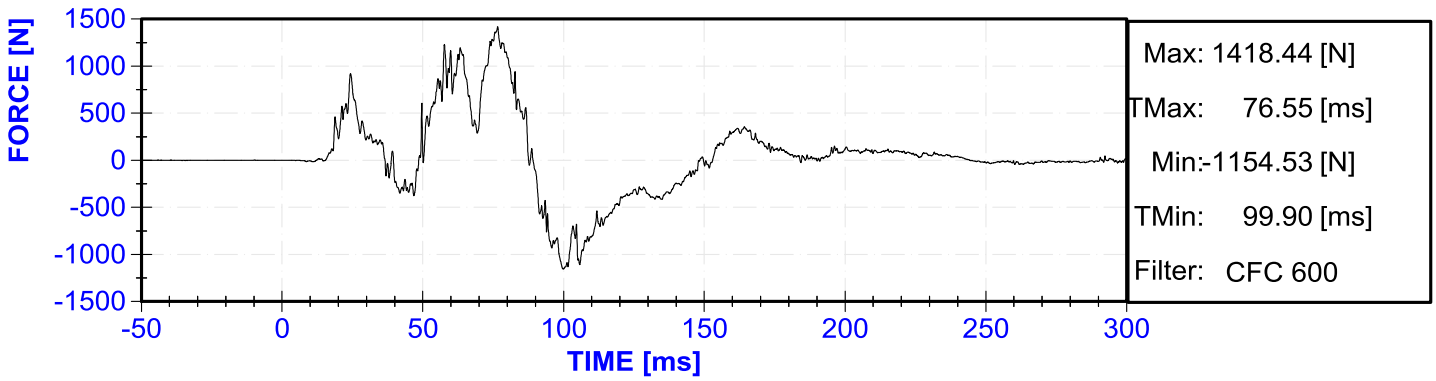
Test Date: July 26,2011

V2P1 Acetabulam Left X Force

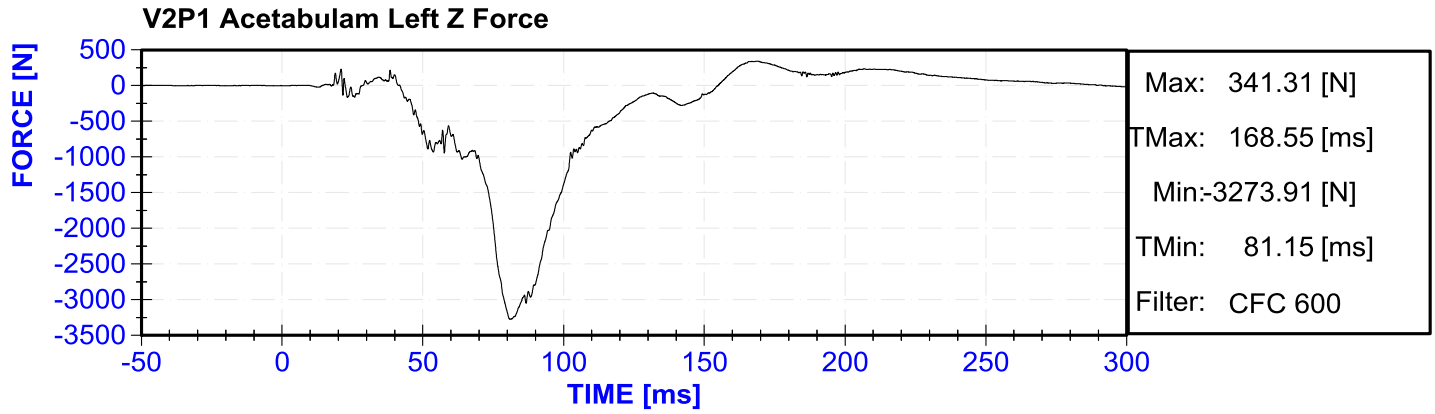
QUESTIONABLE AFTER 49 MS



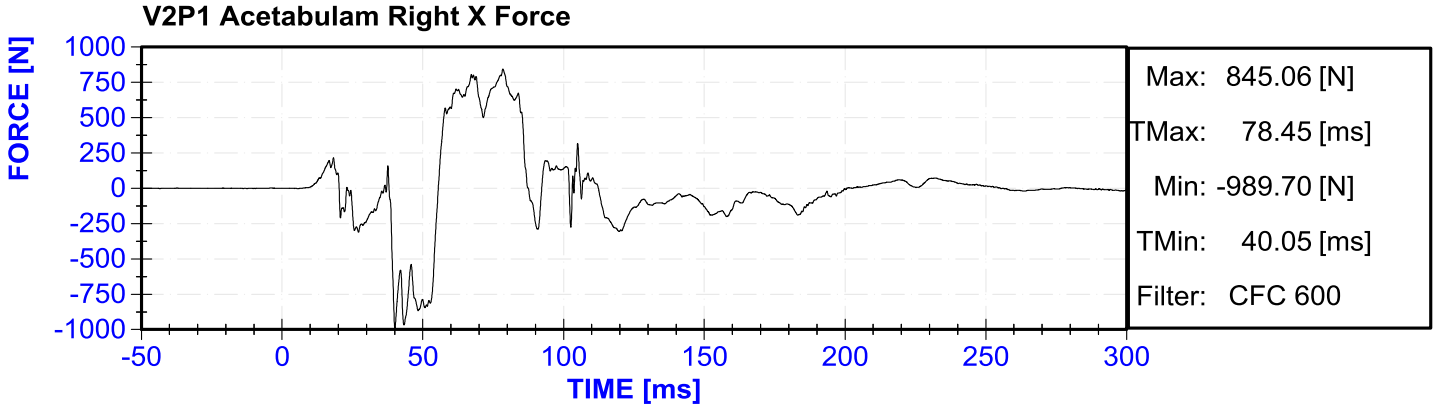
V2P1 Acetabulam Left Y Force



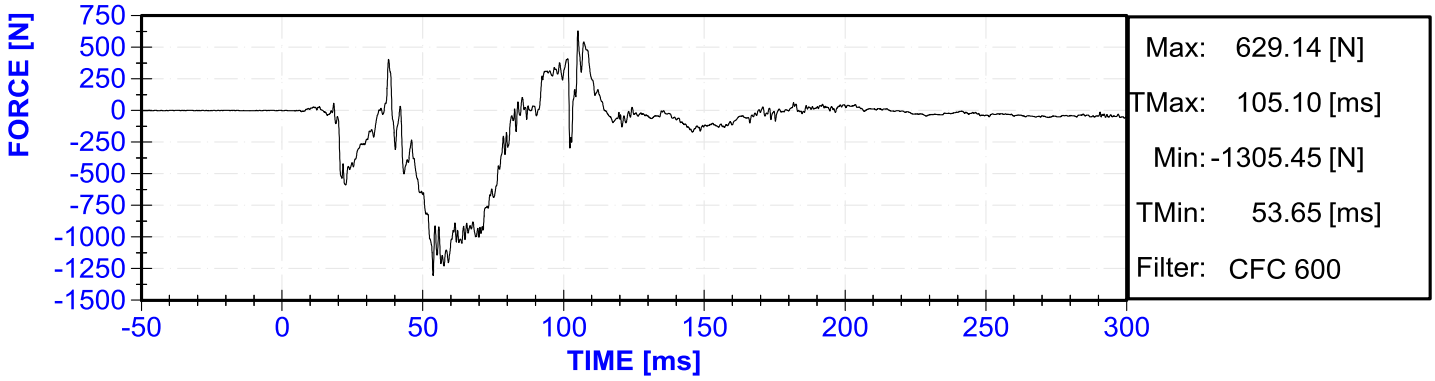
V2P1 Acetabulam Left Z Force



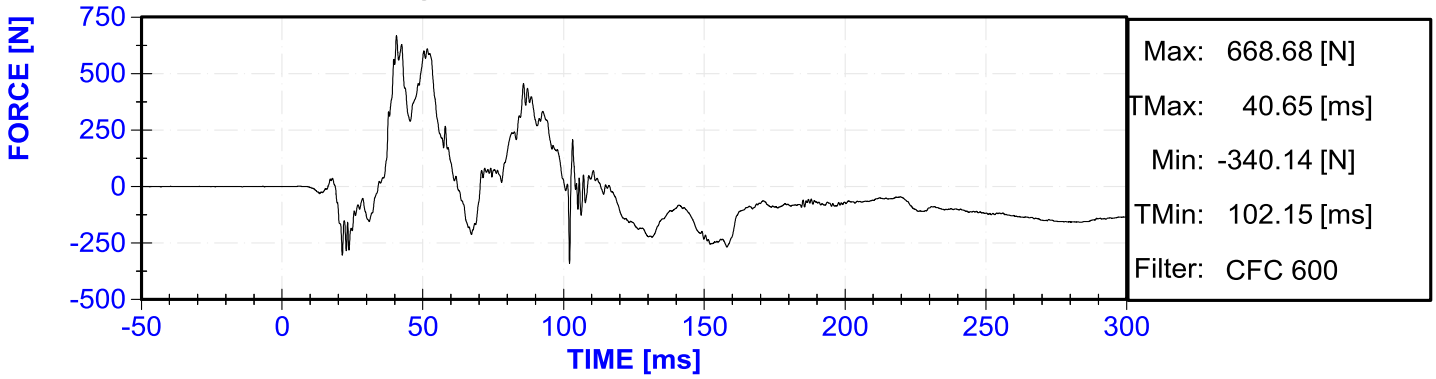
V2P1 Acetabulam Right X Force



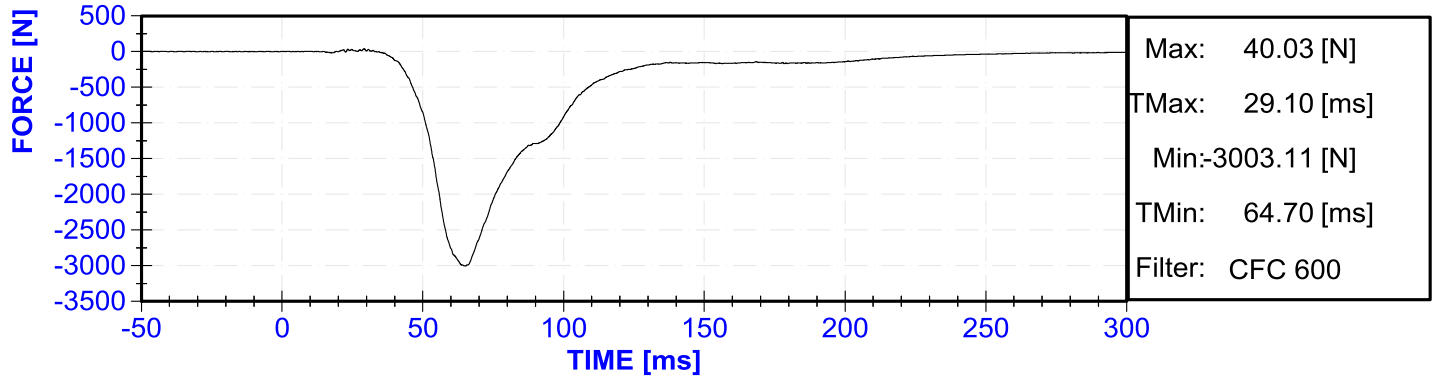
V2P1 Acetabulam Right Y Force



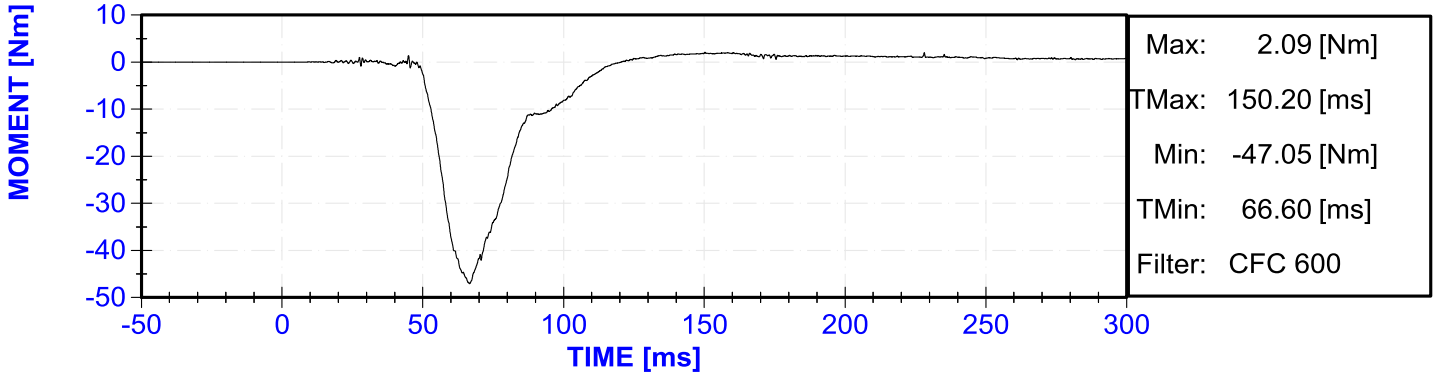
V2P1 Acetabulam Right Z Force



V2P1 ASIS Left X Force



V2P1 ASIS Left Y Moment

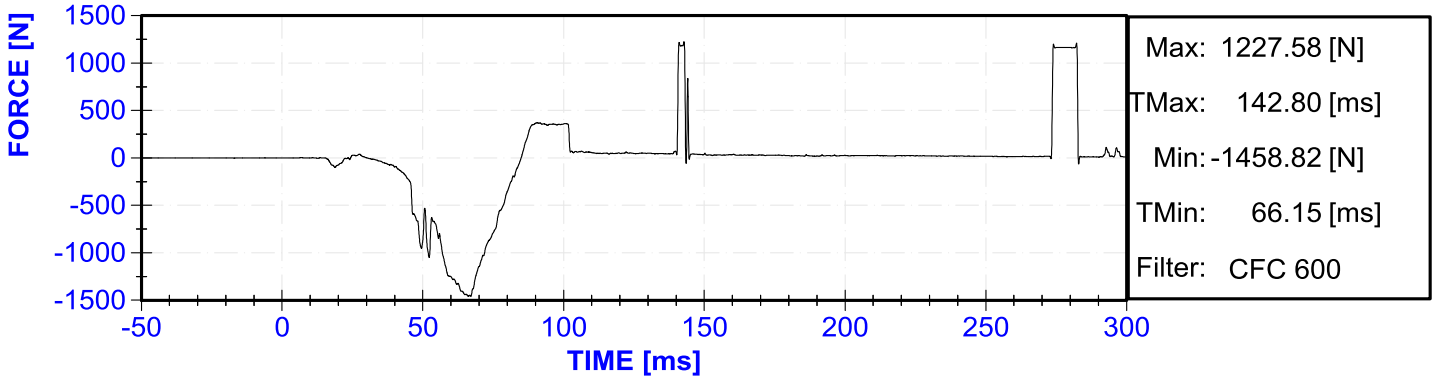


**R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP -
RB0225 2011 FORD FIESTA**

**Test Date:
July 26,2011**

V2P1 ASIS Right X Force

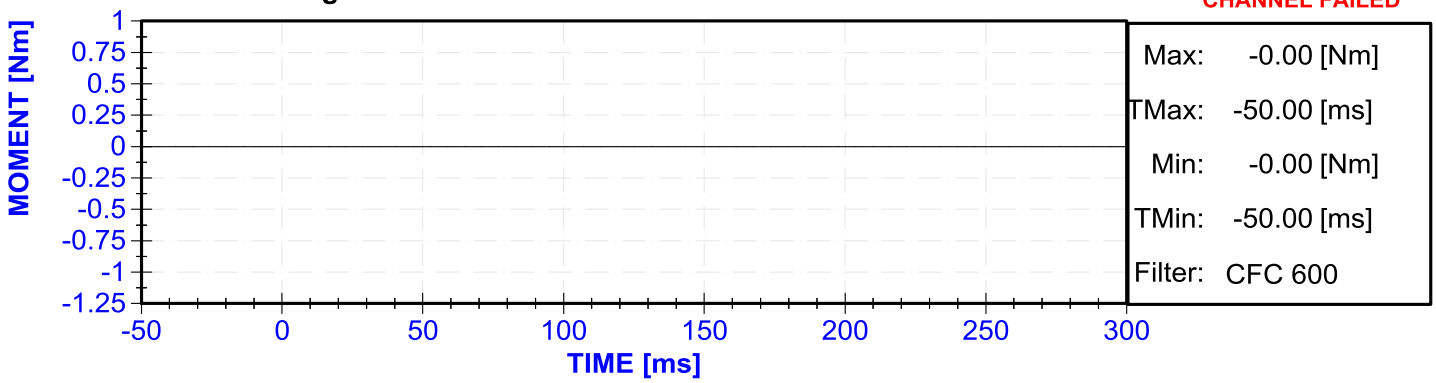
QUESTIONABLE AFTER 100 MS



Max:	1227.58 [N]
TMax:	142.80 [ms]
Min:	-1458.82 [N]
TMin:	66.15 [ms]
Filter:	CFC 600

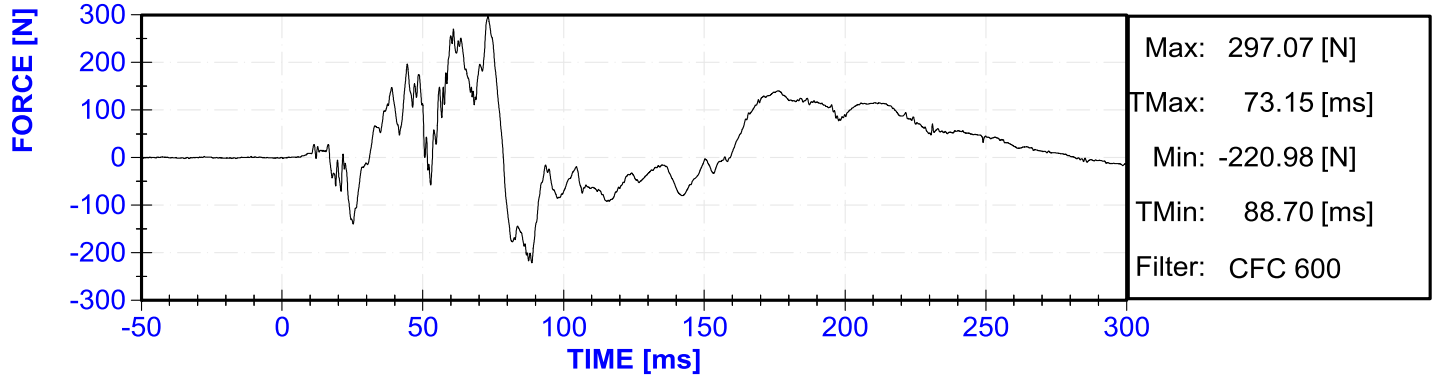
V2P1 ASIS Right Y Moment

CHANNEL FAILED



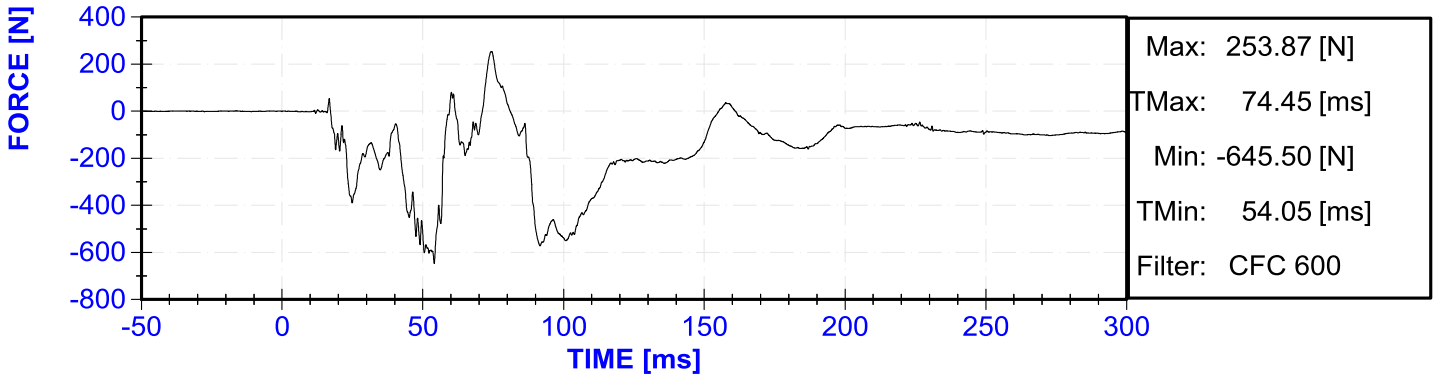
Max:	-0.00 [Nm]
TMax:	-50.00 [ms]
Min:	-0.00 [Nm]
TMin:	-50.00 [ms]
Filter:	CFC 600

V2P1 Femur Left X Force



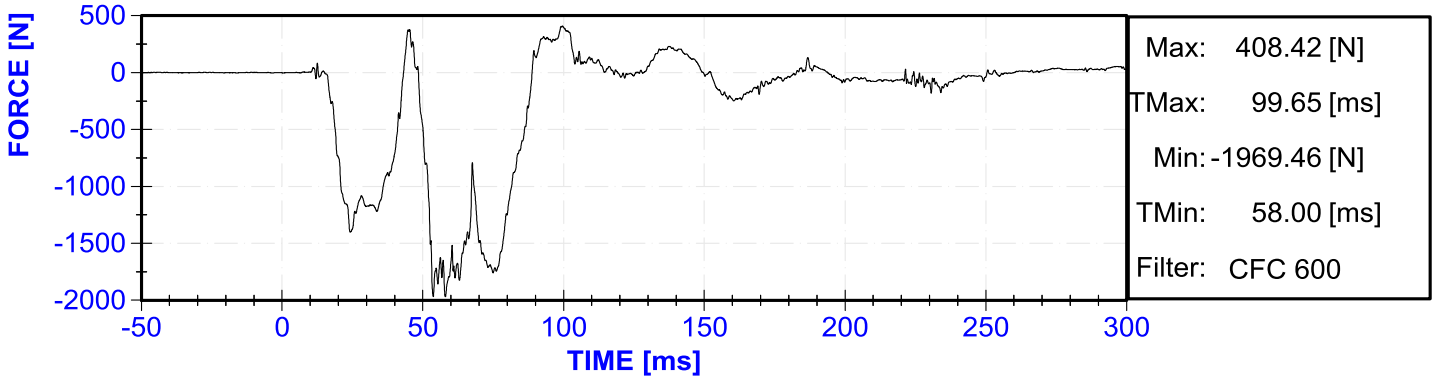
Max:	297.07 [N]
TMax:	73.15 [ms]
Min:	-220.98 [N]
TMin:	88.70 [ms]
Filter:	CFC 600

V2P1 Femur Left Y Force

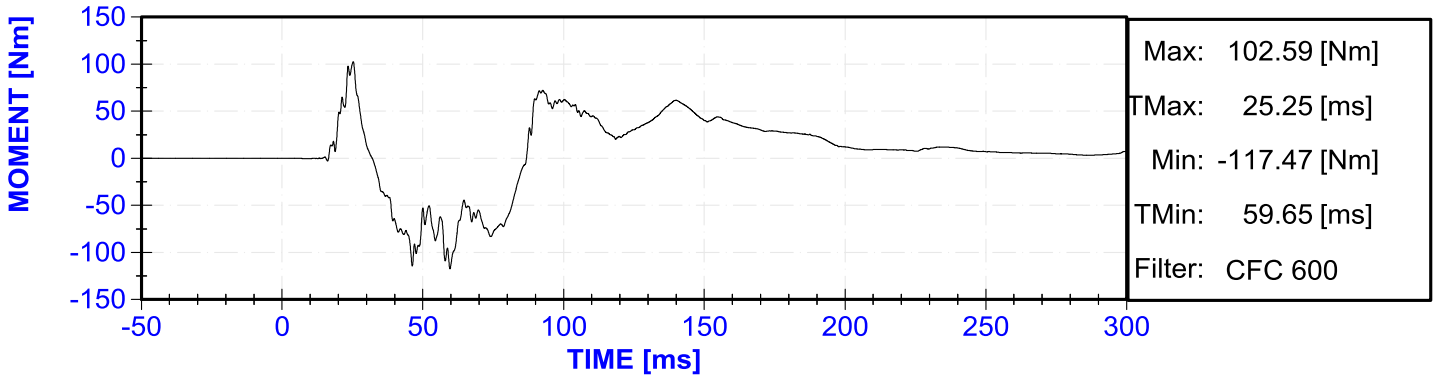


Max:	253.87 [N]
TMax:	74.45 [ms]
Min:	-645.50 [N]
TMin:	54.05 [ms]
Filter:	CFC 600

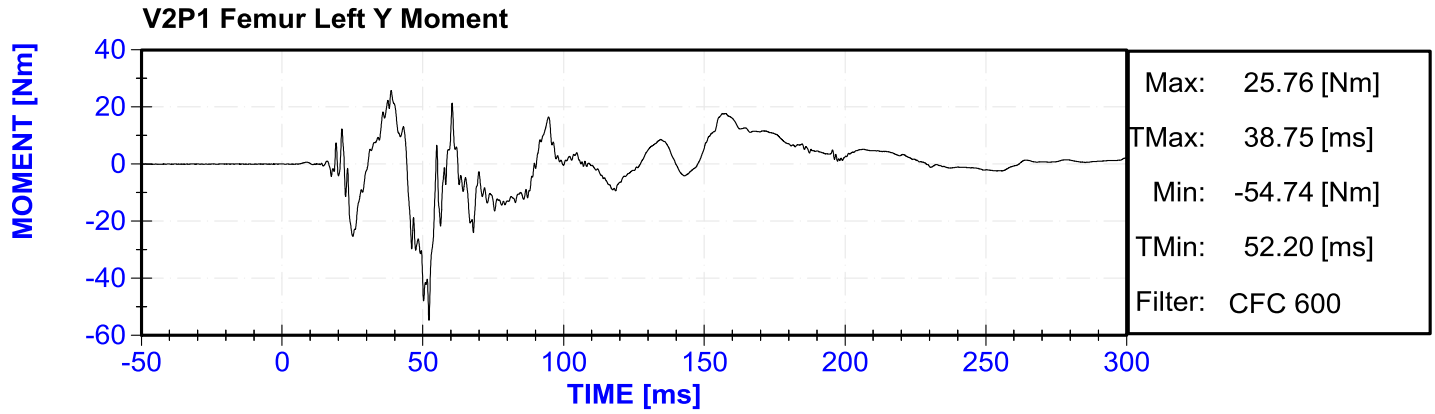
V2P1 Femur Left Z Force



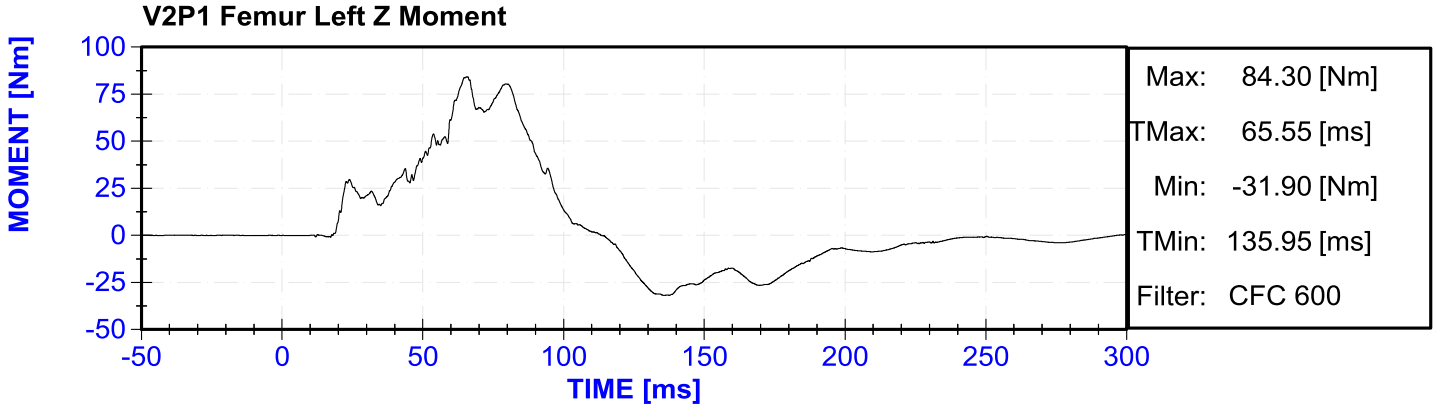
V2P1 Femur Left X Moment



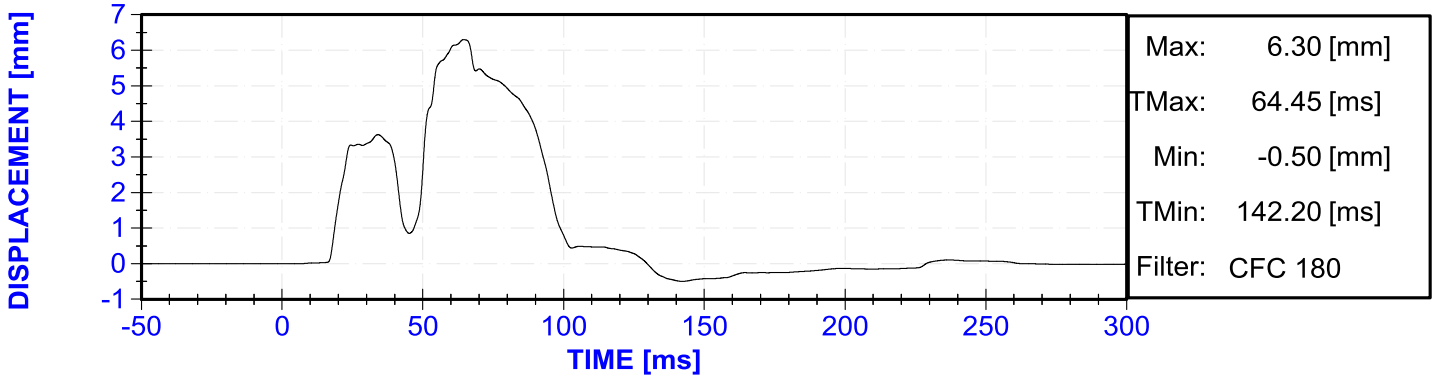
V2P1 Femur Left Y Moment



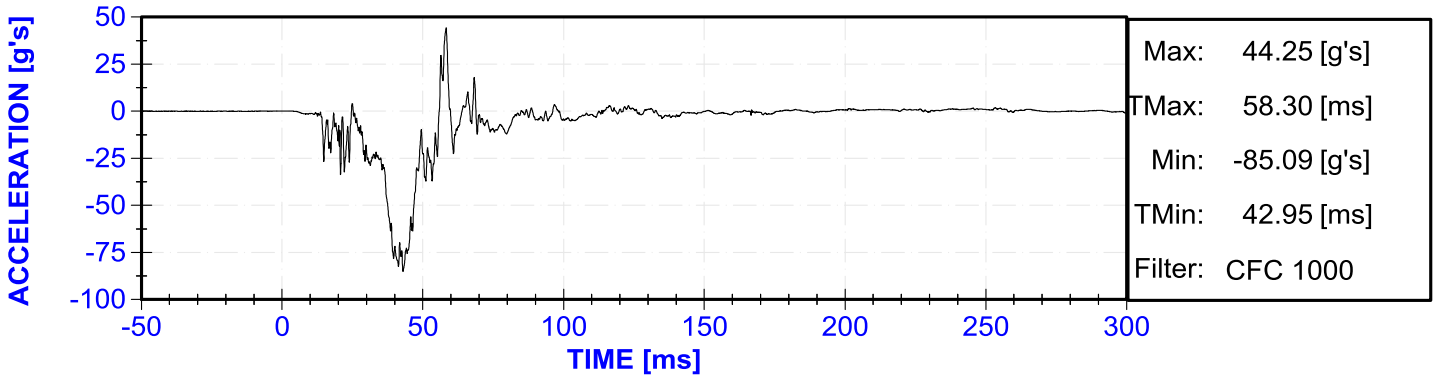
V2P1 Femur Left Z Moment



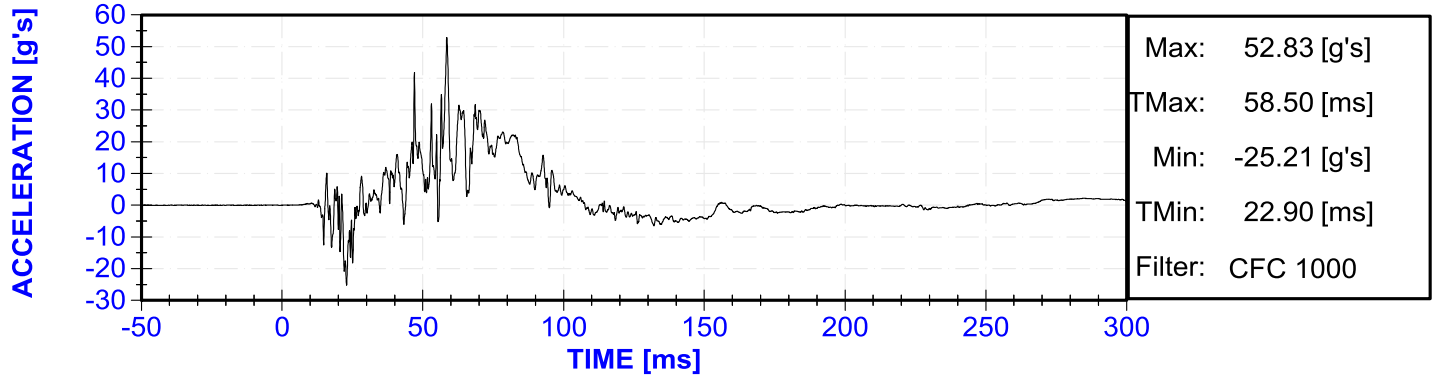
V2P1 Knee Left X Displacement



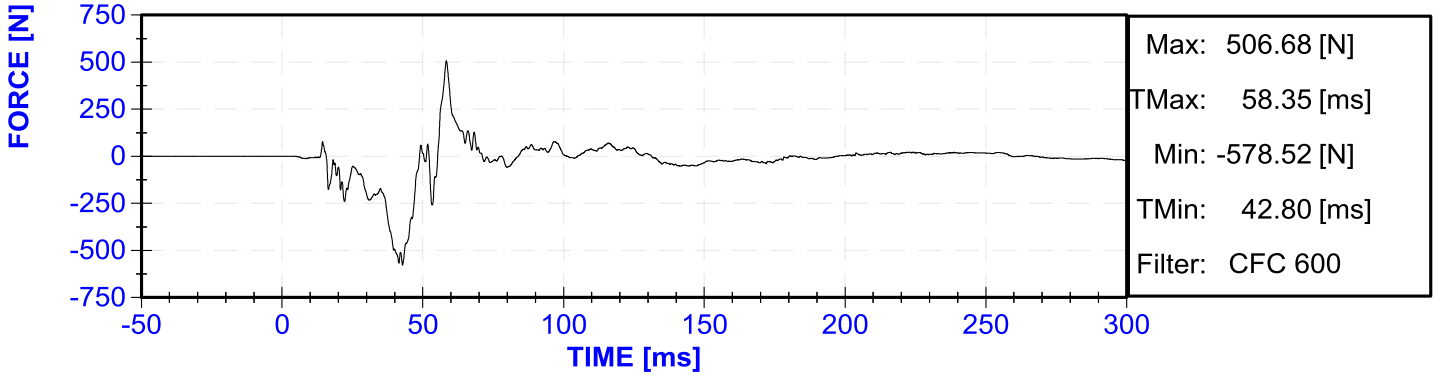
V2P1 Tibia Left X Acceleration



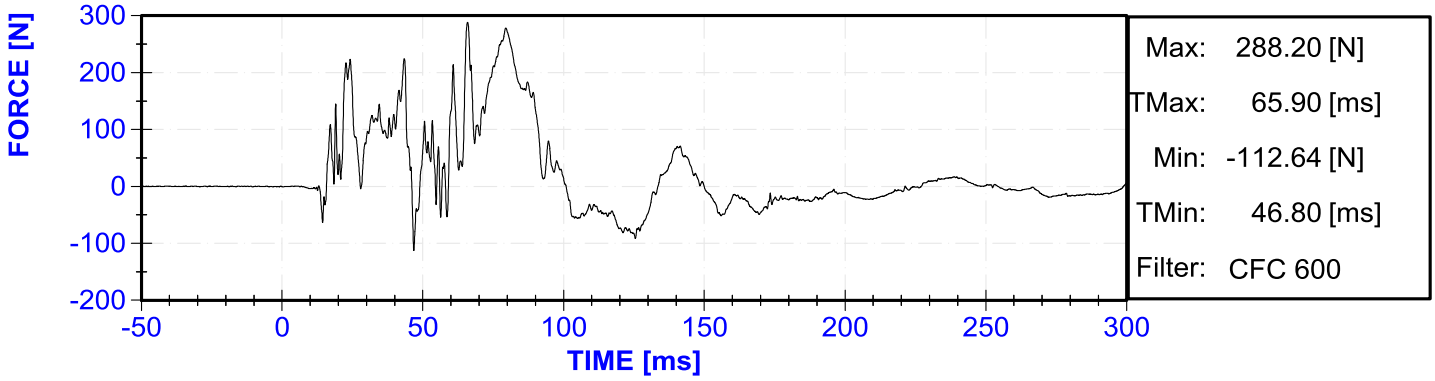
V2P1 Tibia Left Y Acceleration



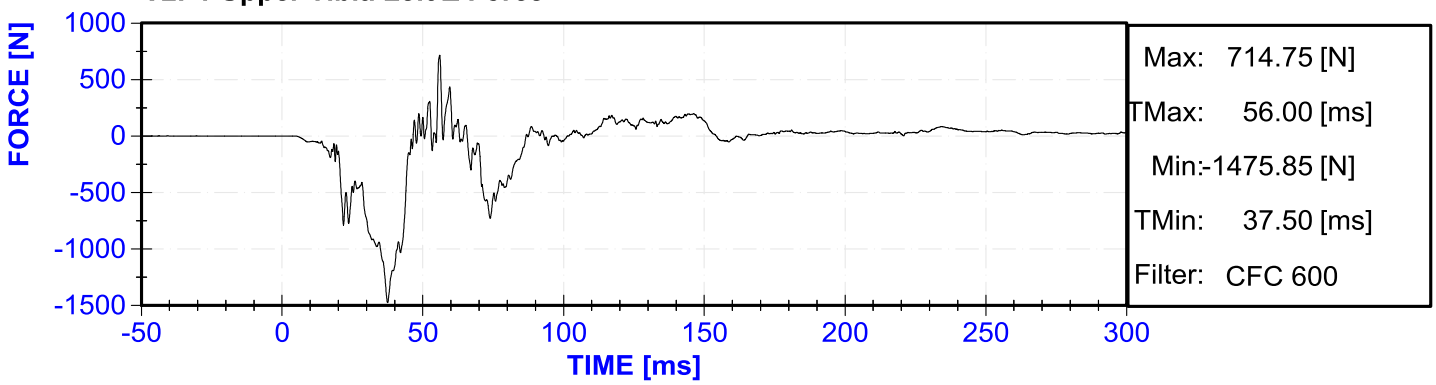
V2P1 Upper Tibia Left X Force



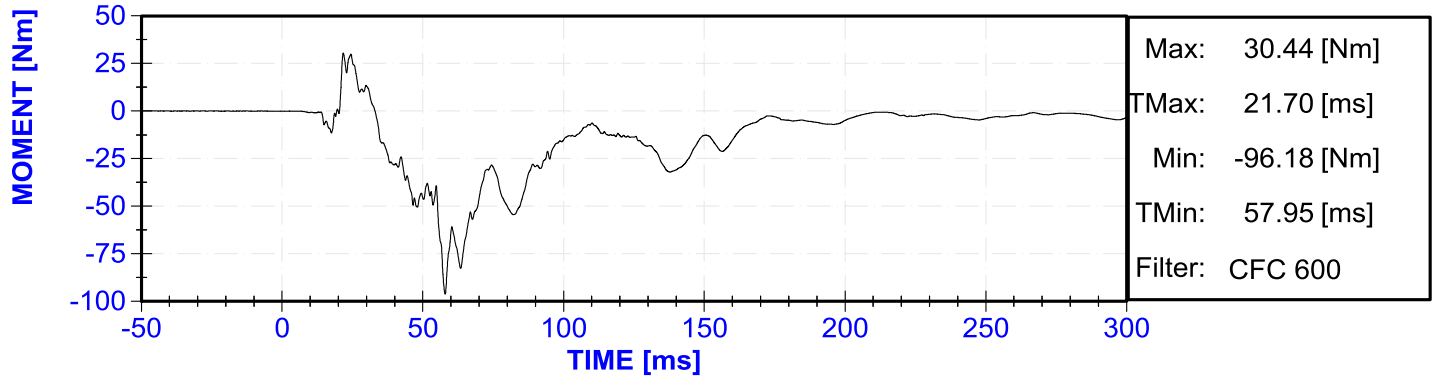
V2P1 Upper Tibia Left Y Force



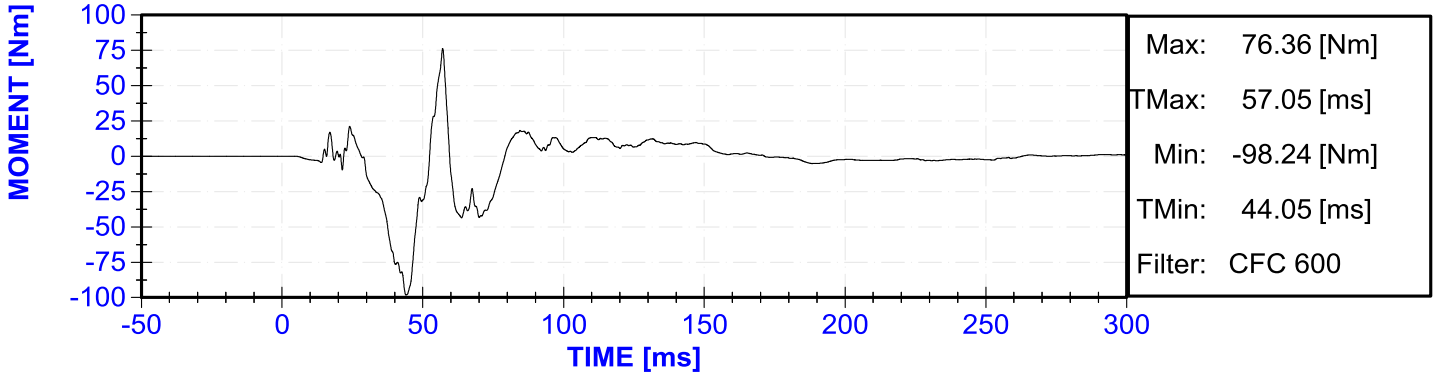
V2P1 Upper Tibia Left Z Force



V2P1 Upper Tibia Left X Moment



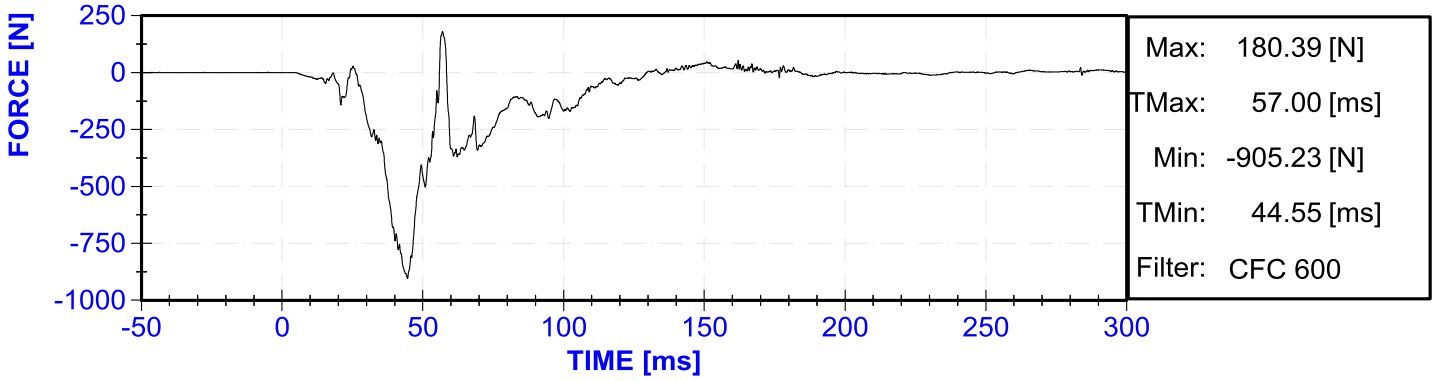
V2P1 Upper Tibia Left Y Moment



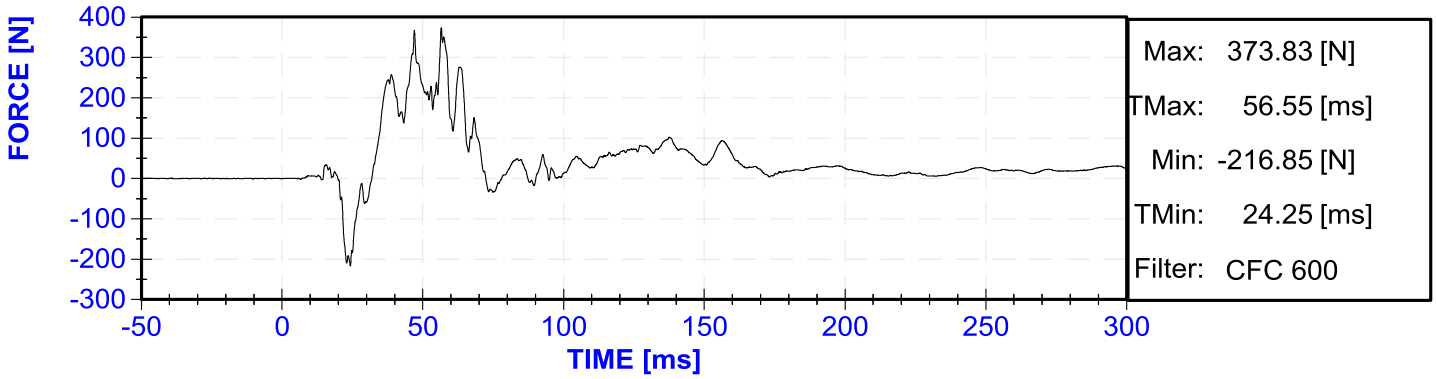
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

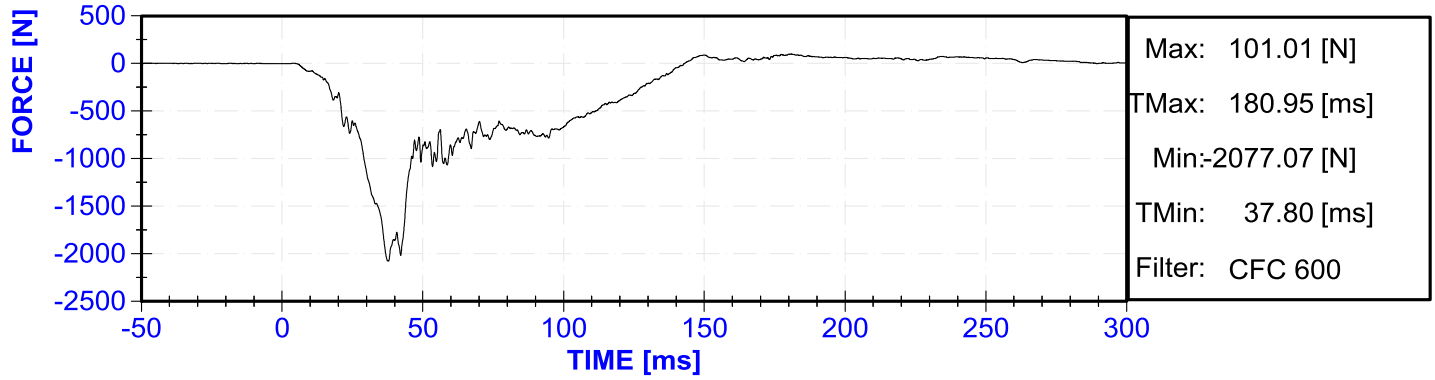
V2P1 Lower Tibia Left X Force



V2P1 Lower Tibia Left Y Force

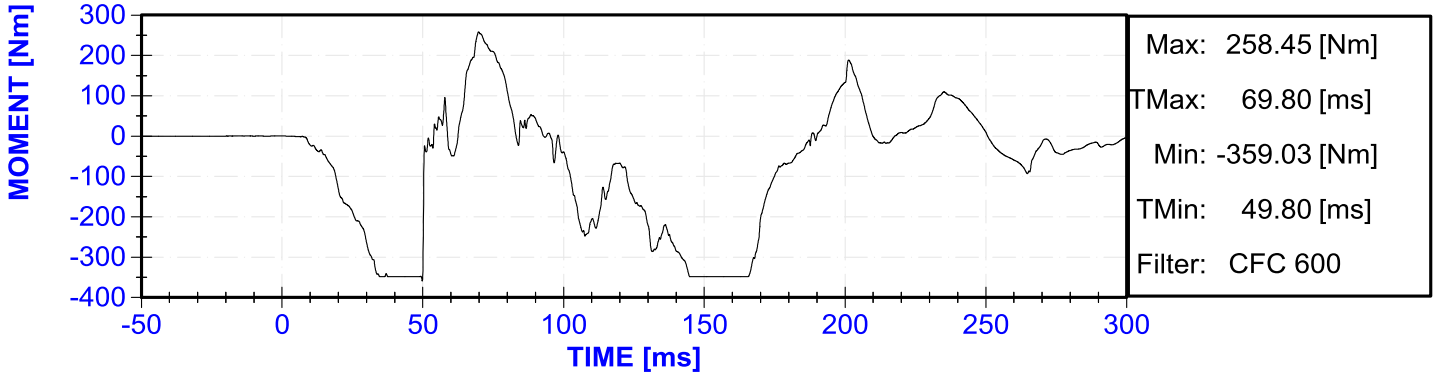


V2P1 Lower Tibia Left Z Force



V2P1 Lower Tibia Left X Moment

QUESTIONABLE DATA 33-50 & 143-166 MS

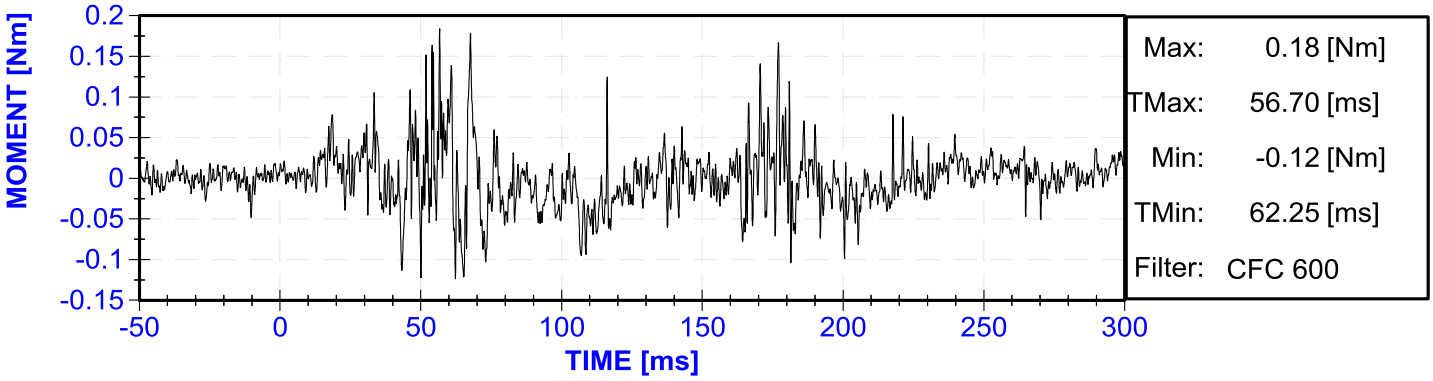


R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

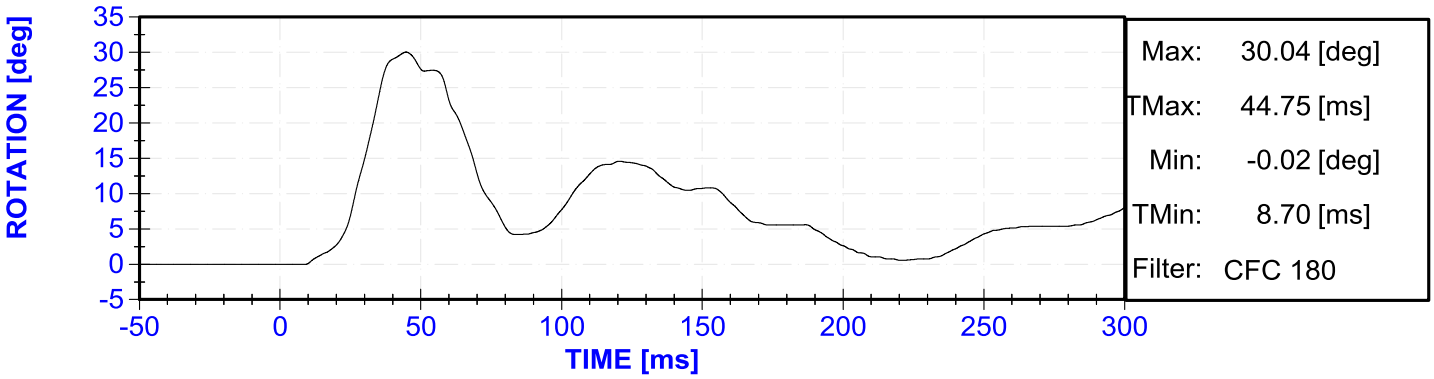
V2P1 Lower Tibia Left Y Moment

CHANNEL FAILED



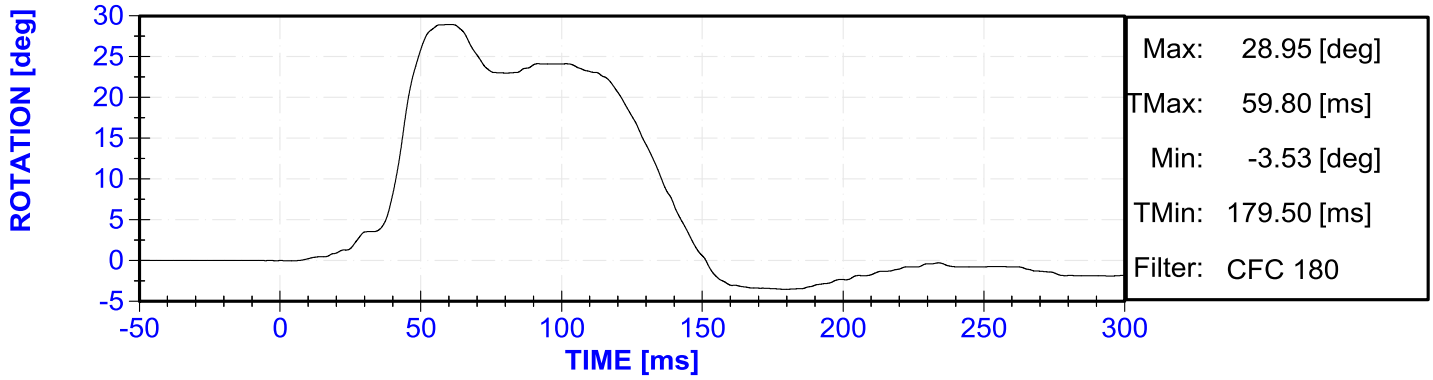
Max:	0.18 [Nm]
TMax:	56.70 [ms]
Min:	-0.12 [Nm]
TMin:	62.25 [ms]
Filter:	CFC 600

V2P1 Ankle Left X Rotation



Max:	30.04 [deg]
TMax:	44.75 [ms]
Min:	-0.02 [deg]
TMin:	8.70 [ms]
Filter:	CFC 180

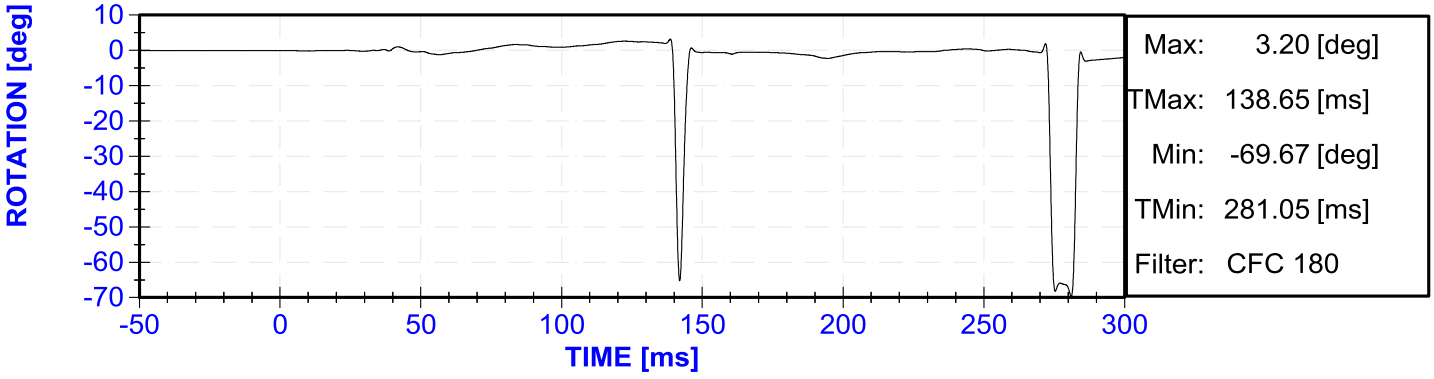
V2P1 Ankle Left Y Rotation



Max:	28.95 [deg]
TMax:	59.80 [ms]
Min:	-3.53 [deg]
TMin:	179.50 [ms]
Filter:	CFC 180

V2P1 Ankle Left Z Rotation

QUESTIONABLE MAG & 139-146 & 272-283 MS

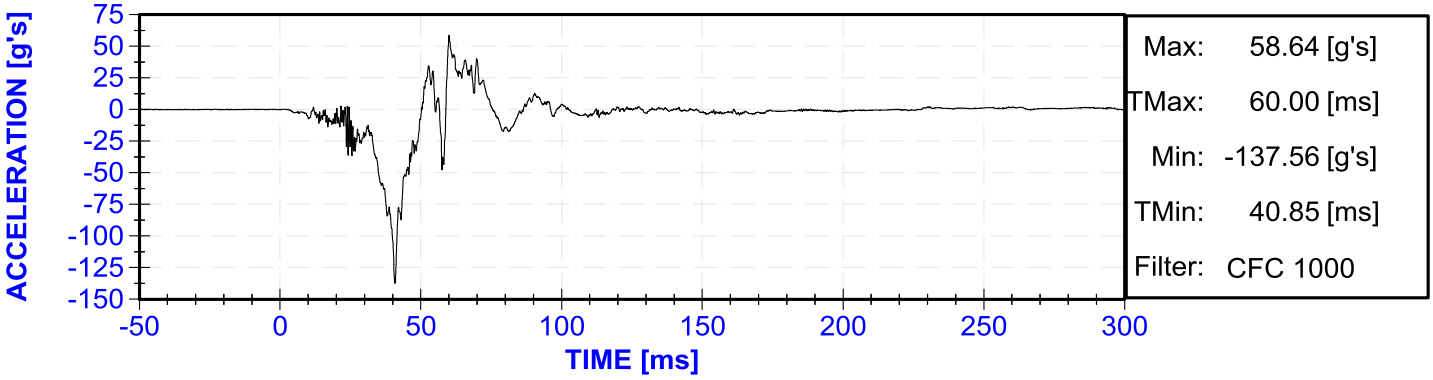


Max:	3.20 [deg]
TMax:	138.65 [ms]
Min:	-69.67 [deg]
TMin:	281.05 [ms]
Filter:	CFC 180

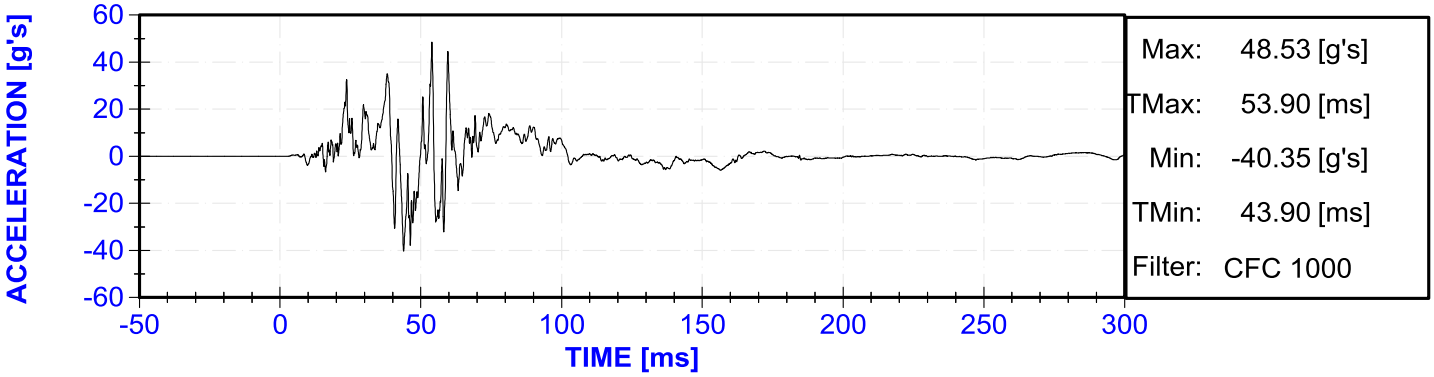
**R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP -
RB0225 2011 FORD FIESTA**

**Test Date:
July 26,2011**

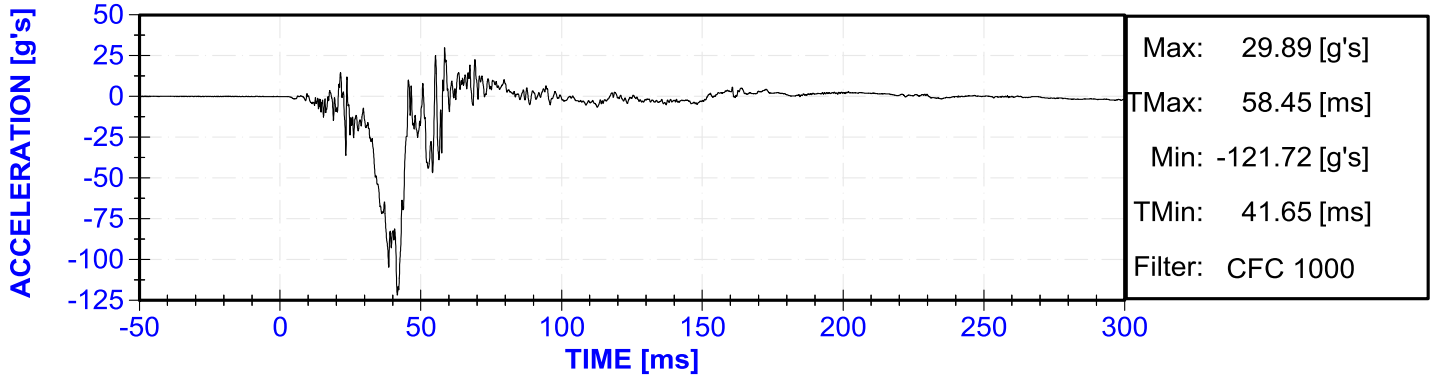
V2P1 Foot Left X Acceleration



V2P1 Foot Left Y Acceleration

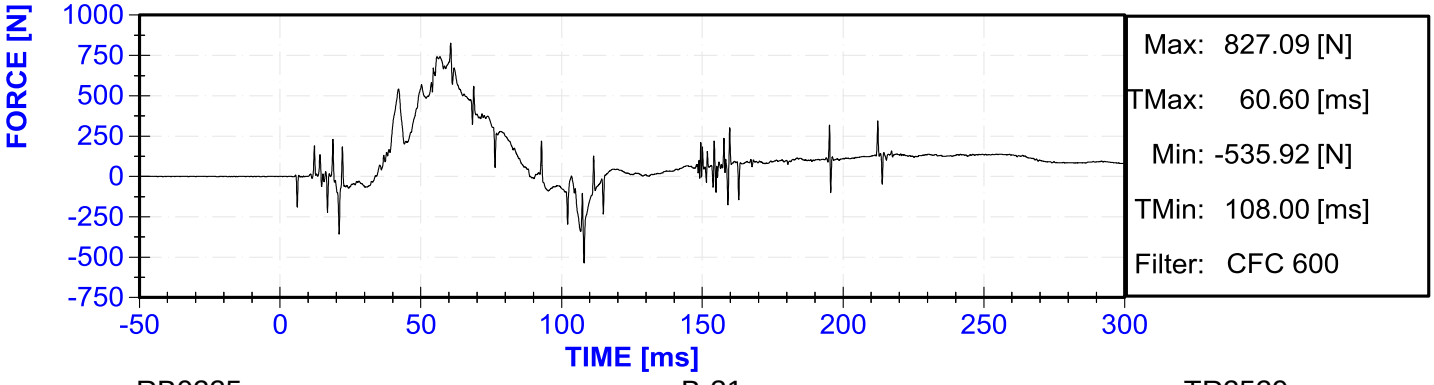


V2P1 Foot Left Z Acceleration



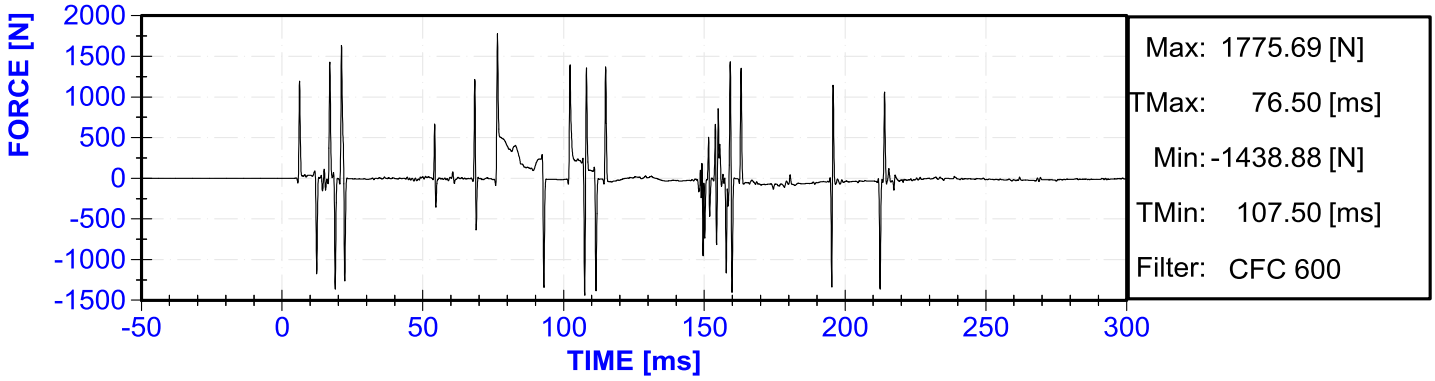
V2P1 Femur Right X Force

NOISE SPIKES ON DATA



V2P1 Femur Right Y Force

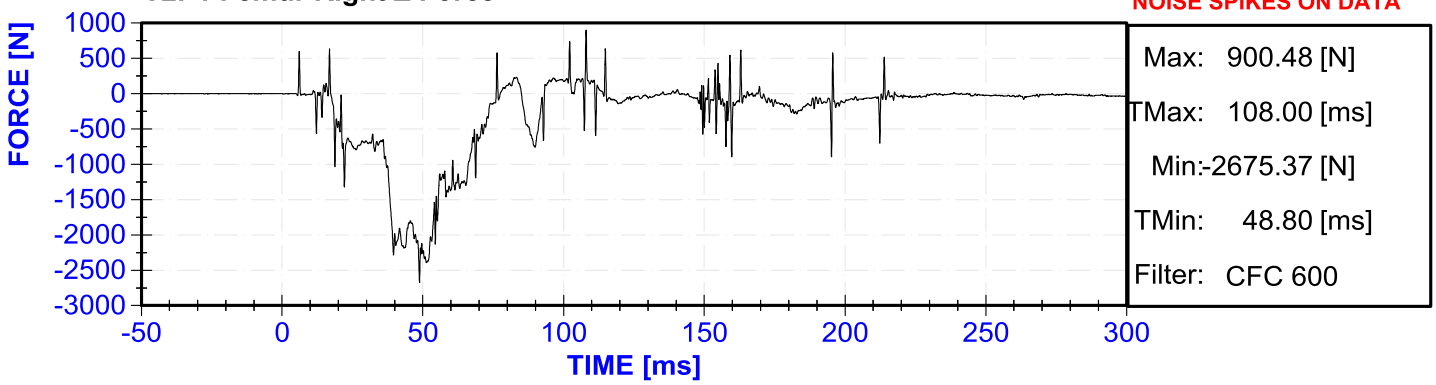
QUESTIONABLE DATA



Max: 1775.69 [N]
TMax: 76.50 [ms]
Min: -1438.88 [N]
TMin: 107.50 [ms]
Filter: CFC 600

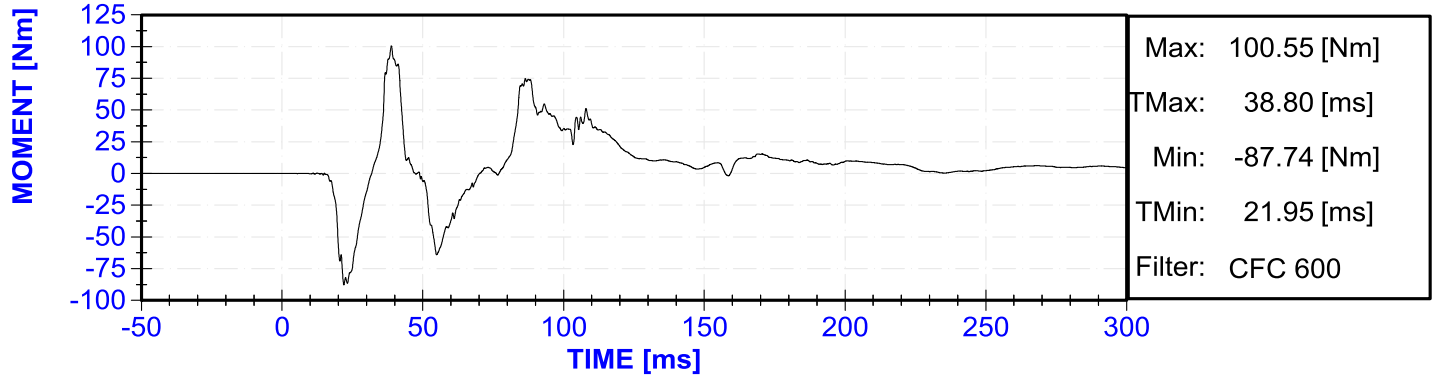
V2P1 Femur Right Z Force

NOISE SPIKES ON DATA



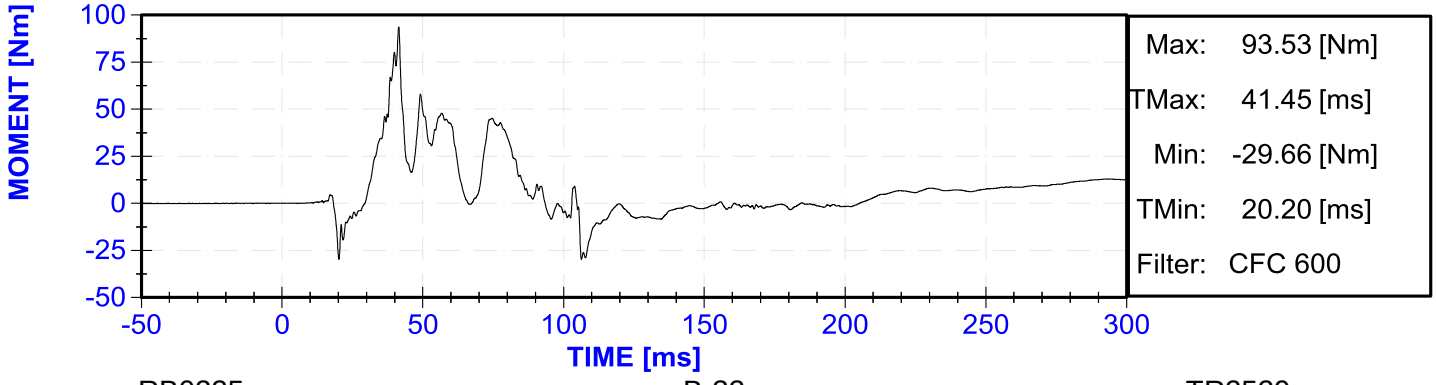
Max: 900.48 [N]
TMax: 108.00 [ms]
Min: -2675.37 [N]
TMin: 48.80 [ms]
Filter: CFC 600

V2P1 Femur Right X Moment



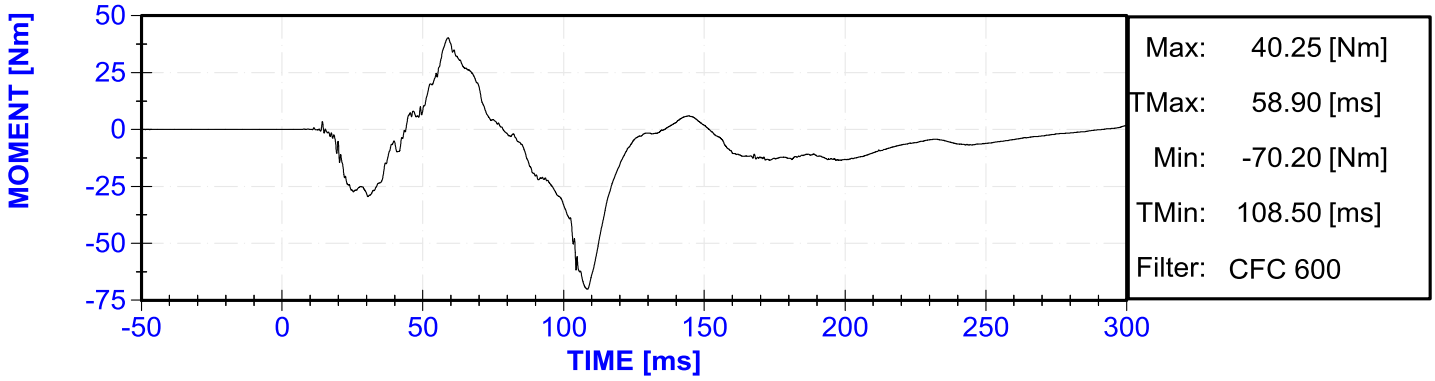
Max: 100.55 [Nm]
TMax: 38.80 [ms]
Min: -87.74 [Nm]
TMin: 21.95 [ms]
Filter: CFC 600

V2P1 Femur Right Y Moment

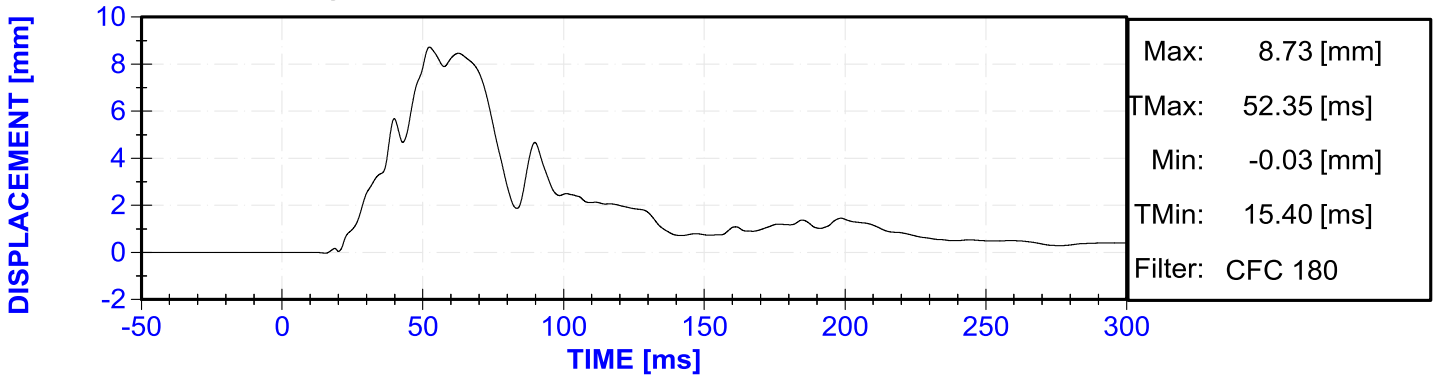


Max: 93.53 [Nm]
TMax: 41.45 [ms]
Min: -29.66 [Nm]
TMin: 20.20 [ms]
Filter: CFC 600

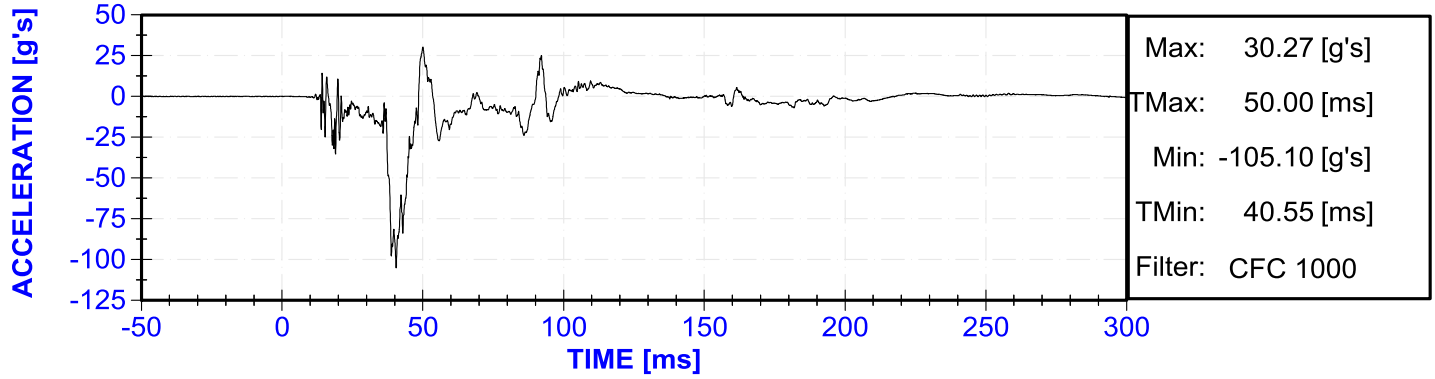
V2P1 Femur Right Z Moment



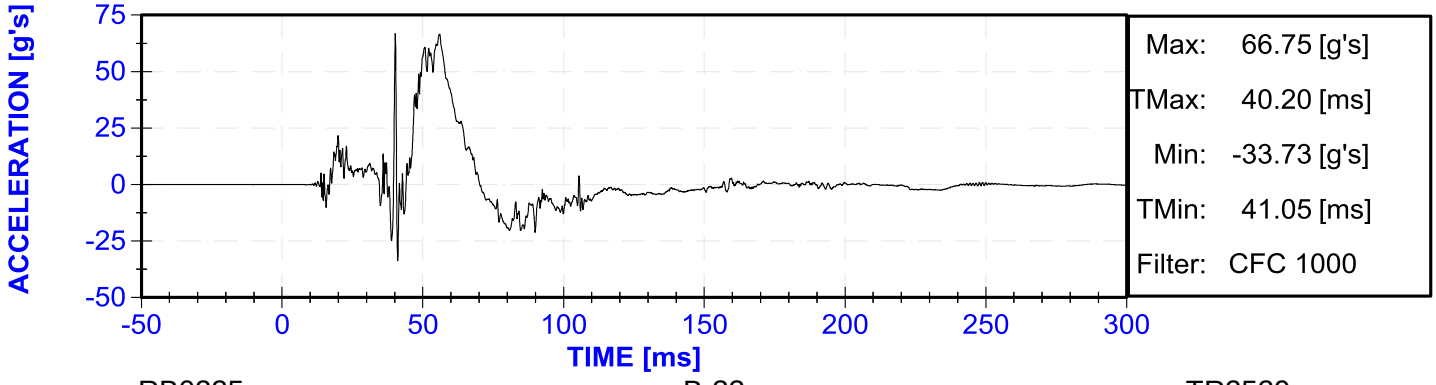
V2P1 Knee Right X Displacement



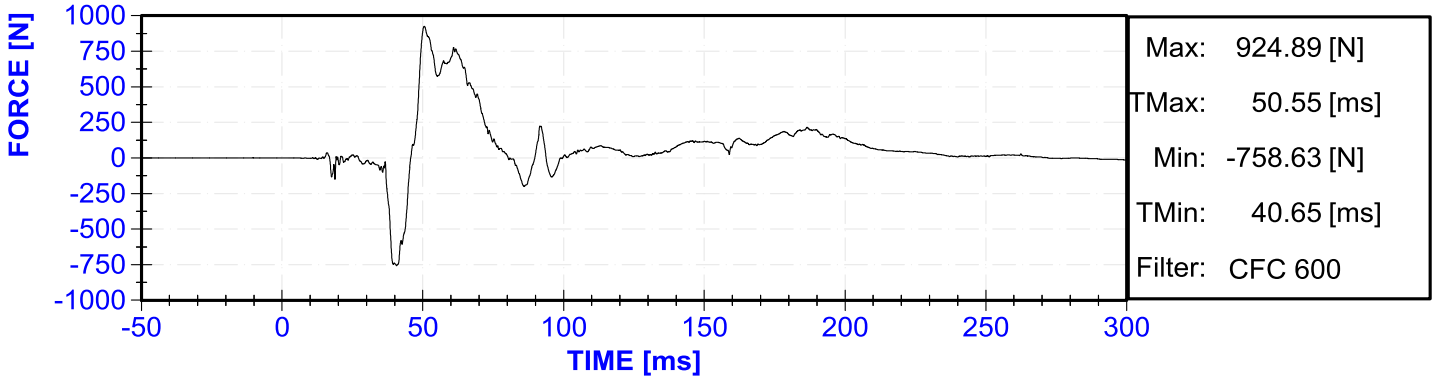
V2P1 Tibia Right X Acceleration



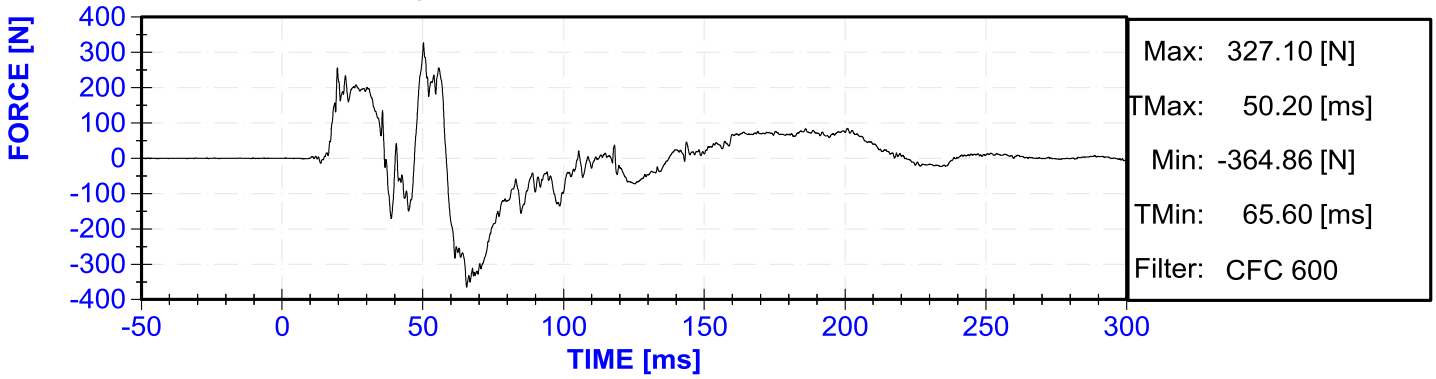
V2P1 Tibia Right Y Acceleration



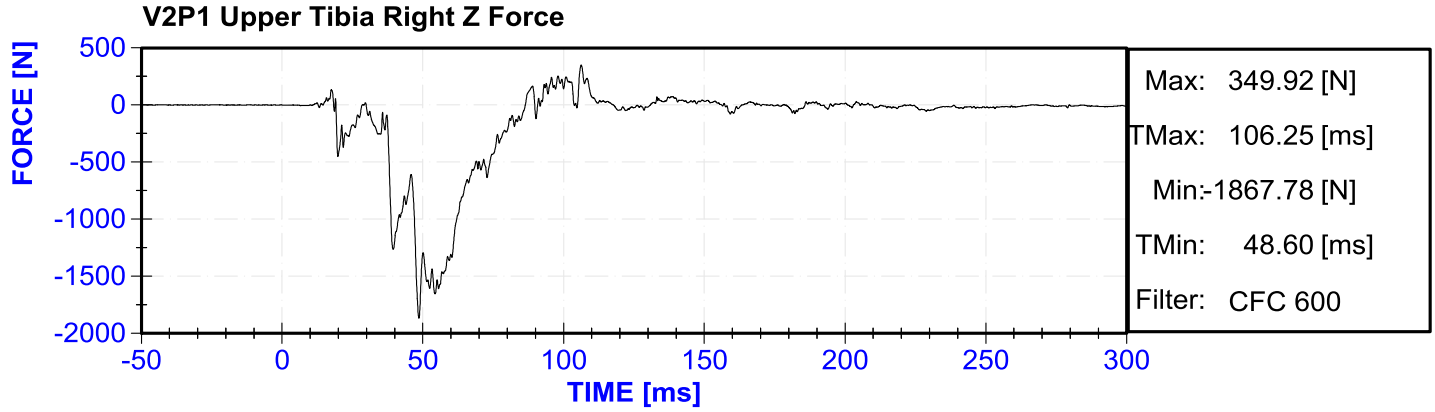
V2P1 Upper Tibia Right X Force



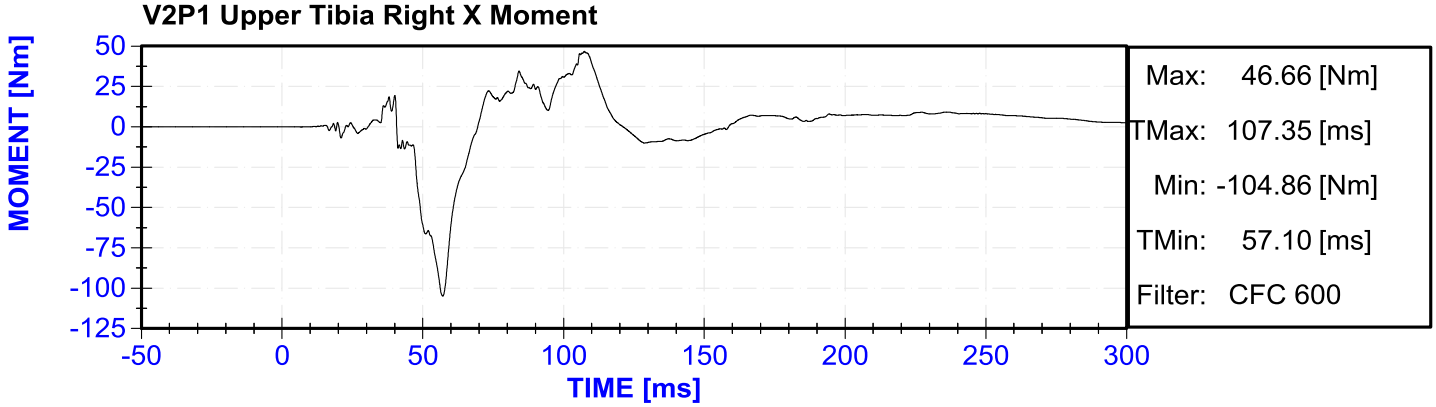
V2P1 Upper Tibia Right Y Force



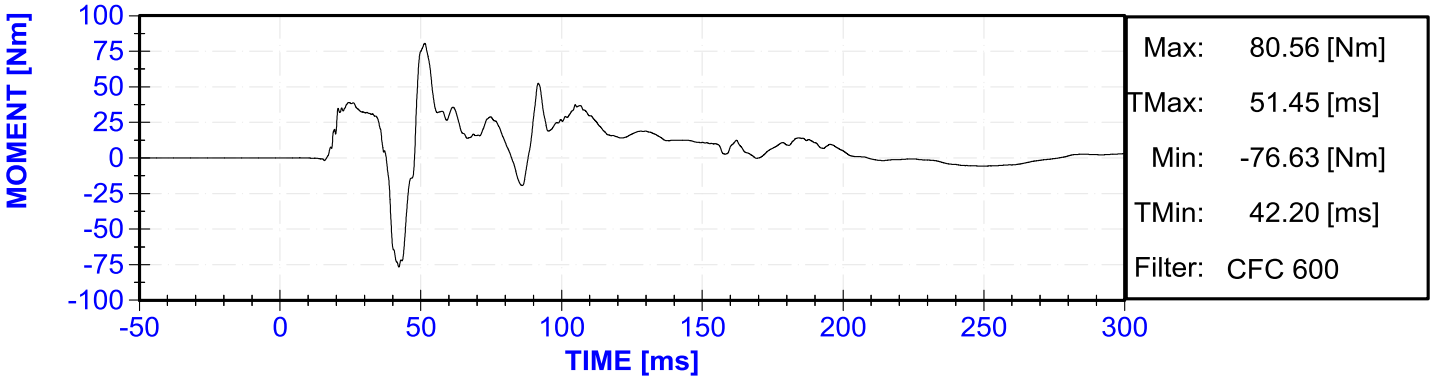
V2P1 Upper Tibia Right Z Force



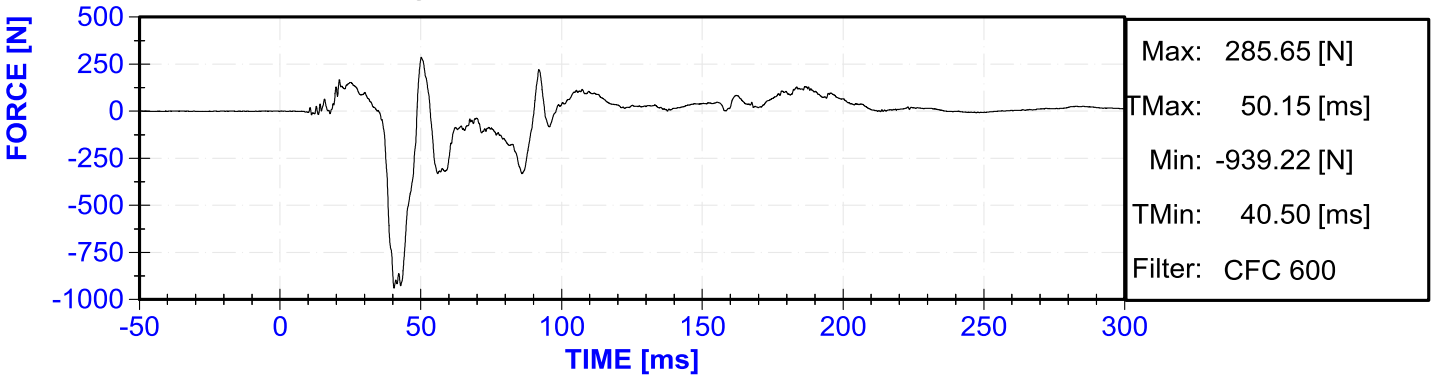
V2P1 Upper Tibia Right X Moment



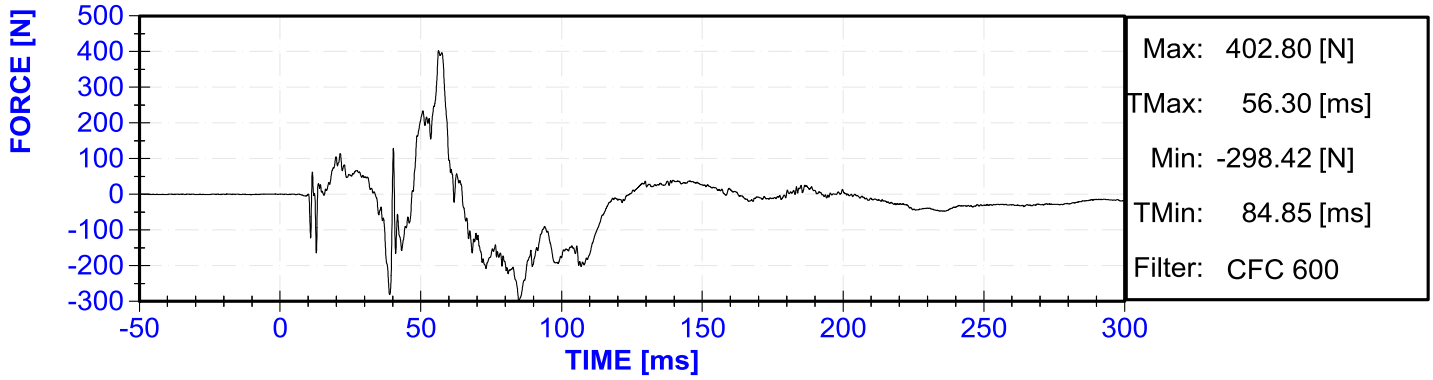
V2P1 Upper Tibia Right Y Moment



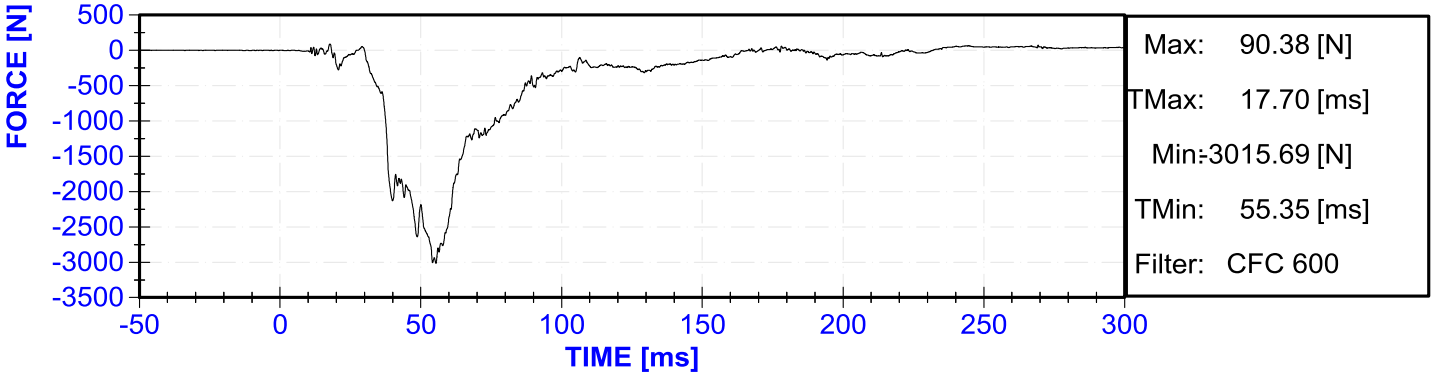
V2P1 Lower Tibia Right X Force



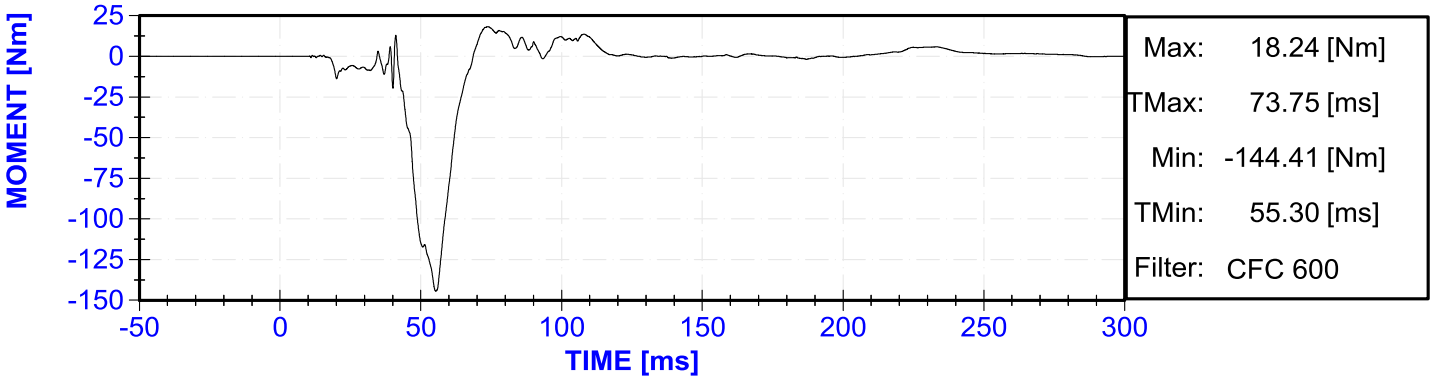
V2P1 Lower Tibia Right Y Force



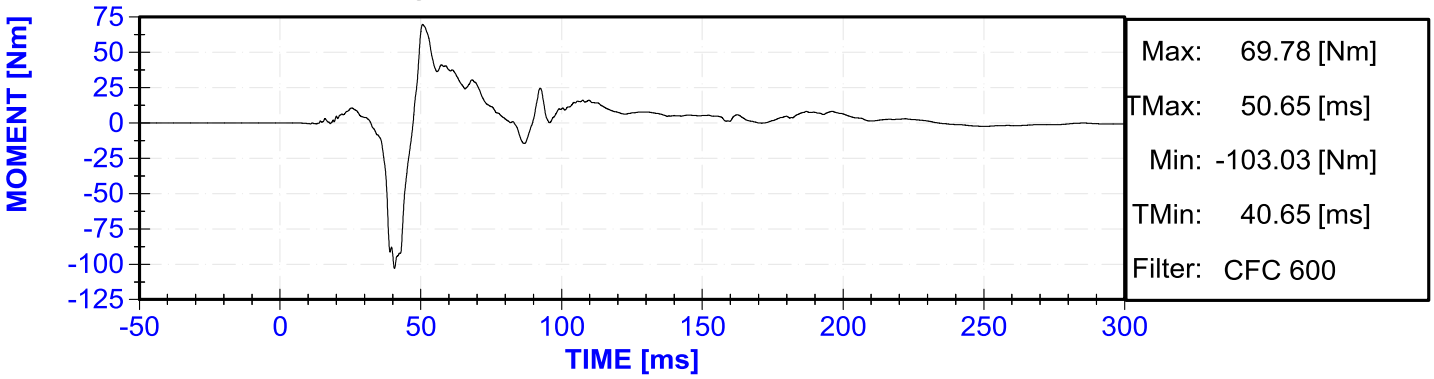
V2P1 Lower Tibia Right Z Force



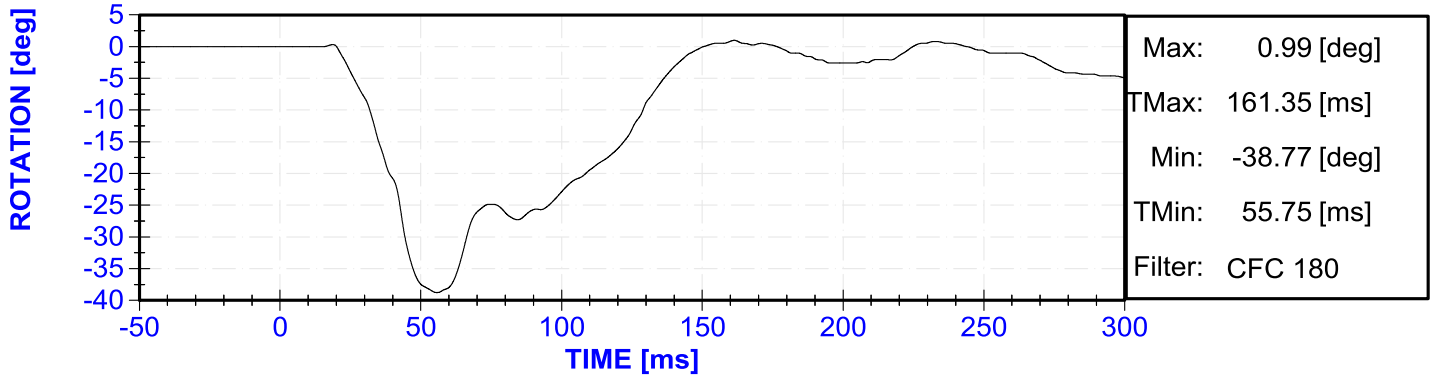
V2P1 Lower Tibia Right X Moment



V2P1 Lower Tibia Right Y Moment

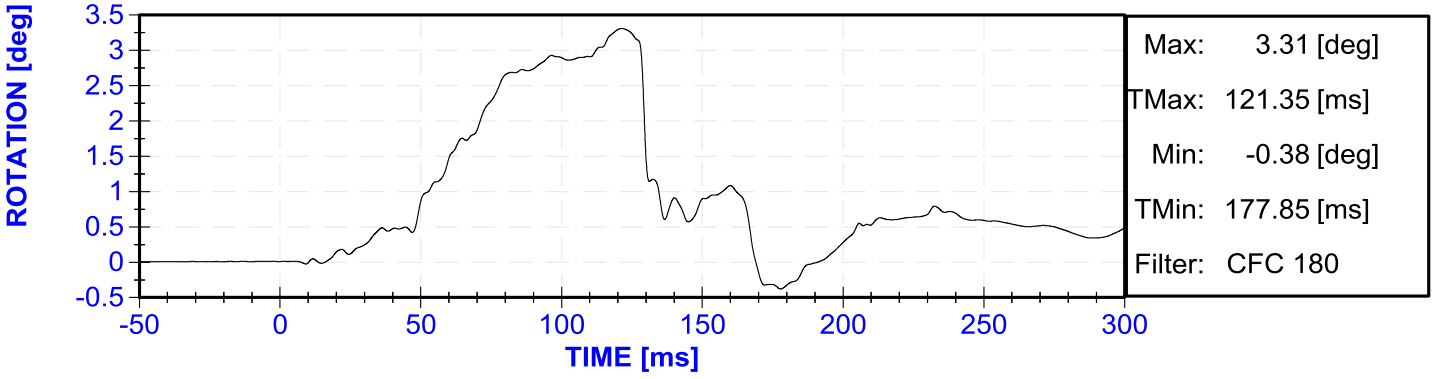


V2P1 Ankle Right X Rotation

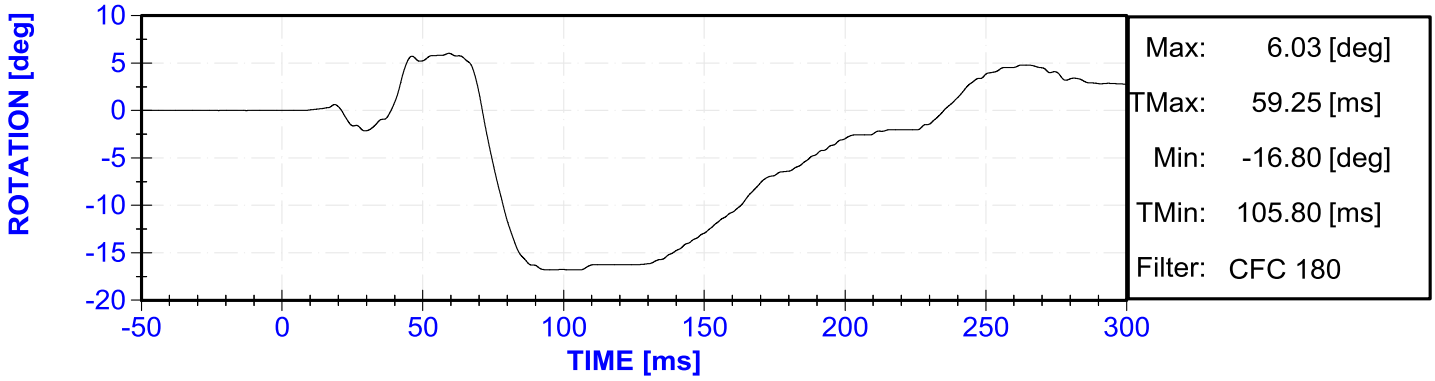


V2P1 Ankle Right Y Rotation

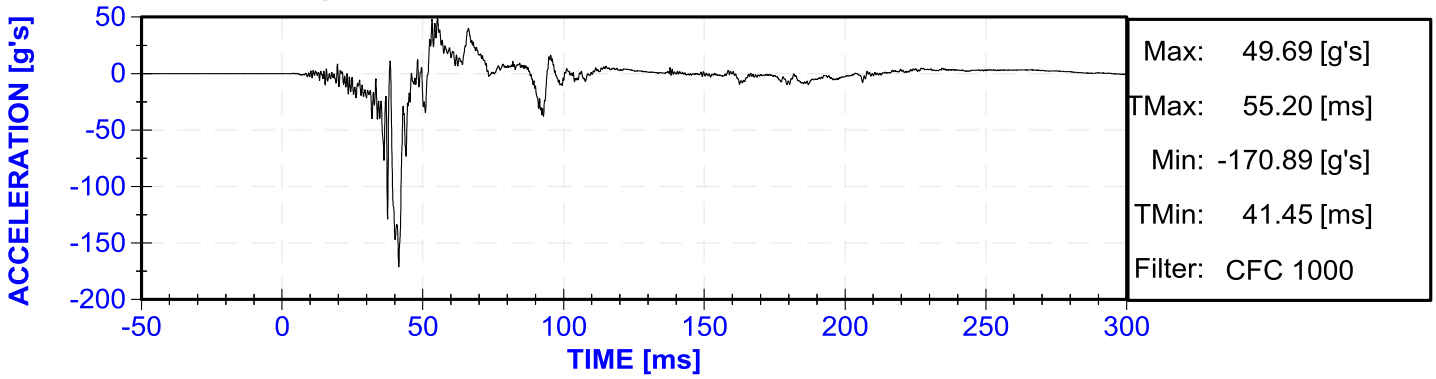
QUESTIONABLE MAGNITUDE THROUGHOUT



V2P1 Ankle Right Z Rotation

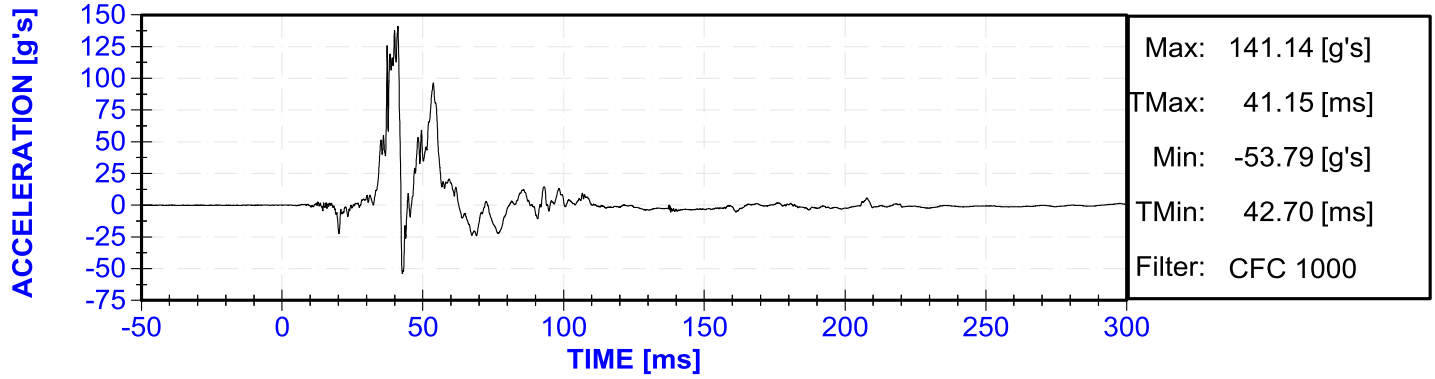


V2P1 Foot Right X Acceleration

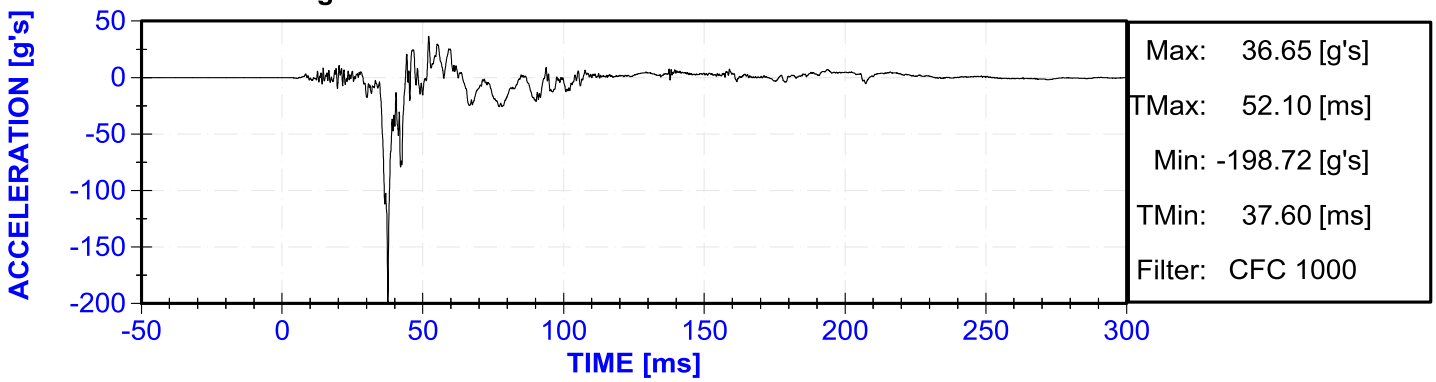


V2P1 Foot Right Y Acceleration

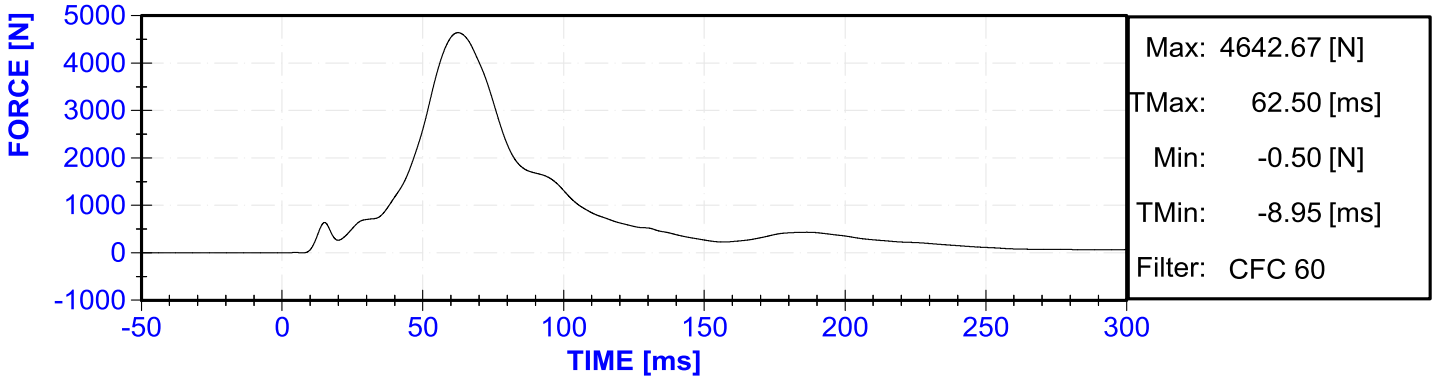
QUESTIONABLE MAGNITUDE



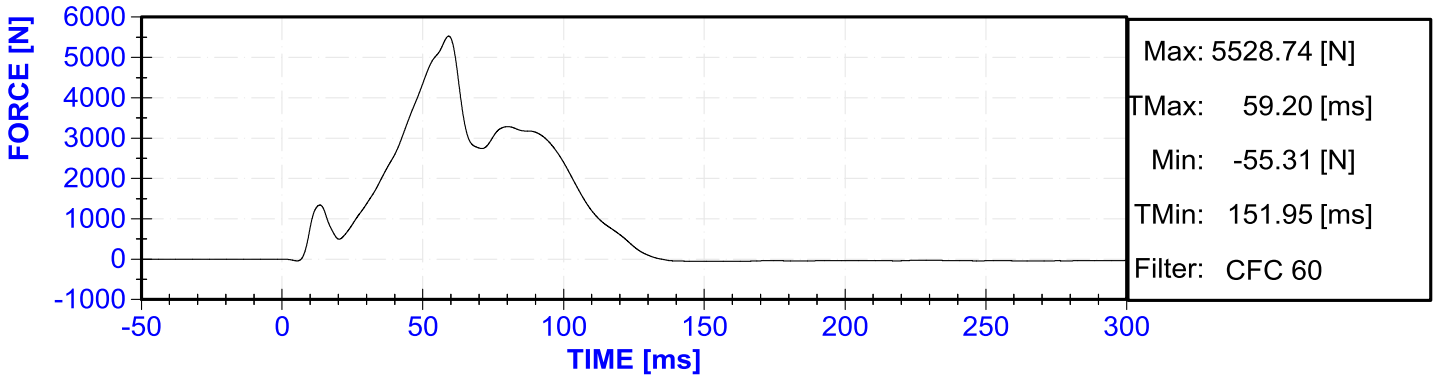
V2P1 Foot Right Z Acceleration



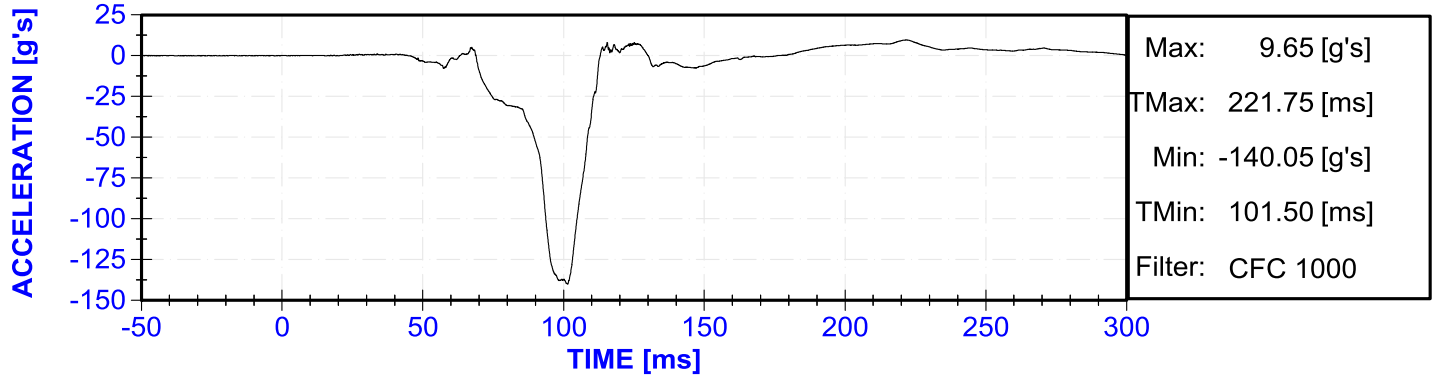
V2 Driver Lap Belt Force



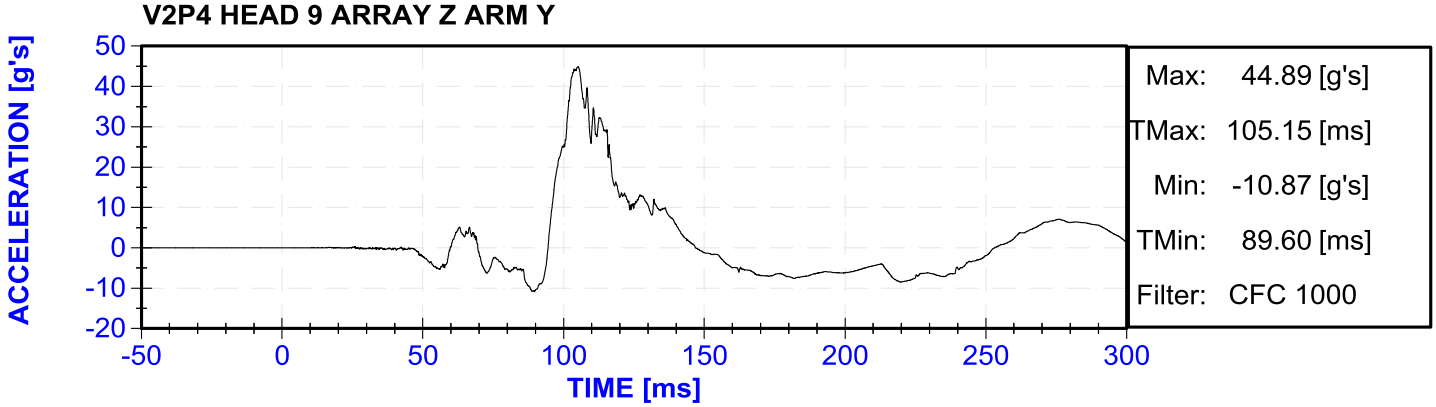
V2 Driver Shoulder Belt Upper Force



V2P4 HEAD 9 ARRAY Z ARM X



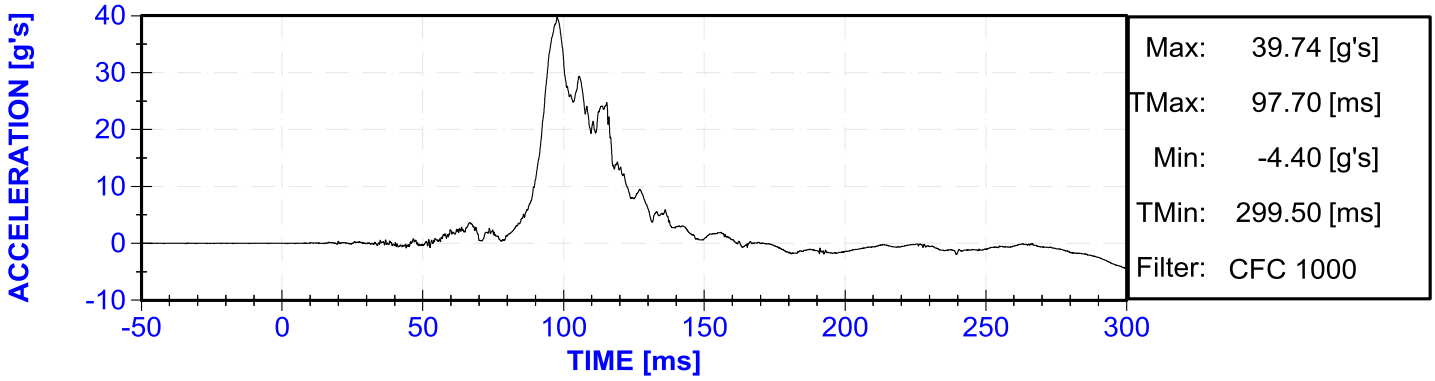
V2P4 HEAD 9 ARRAY Z ARM Y



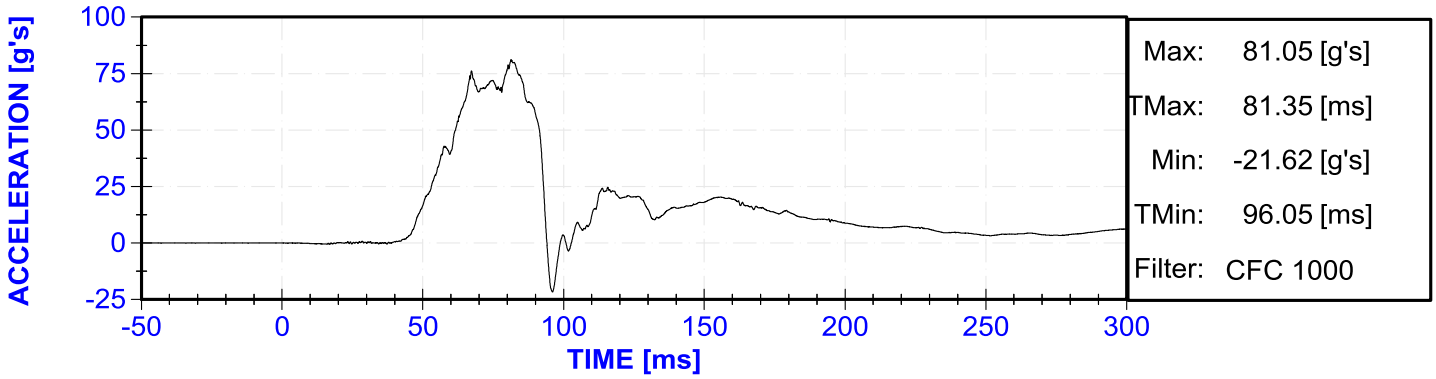
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

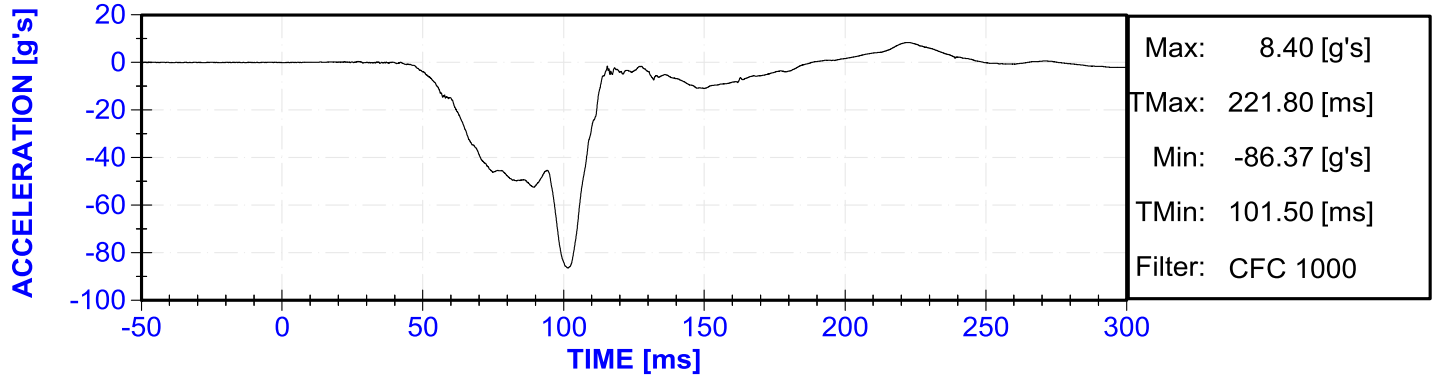
V2P4 HEAD 9 ARRAY X ARM Y



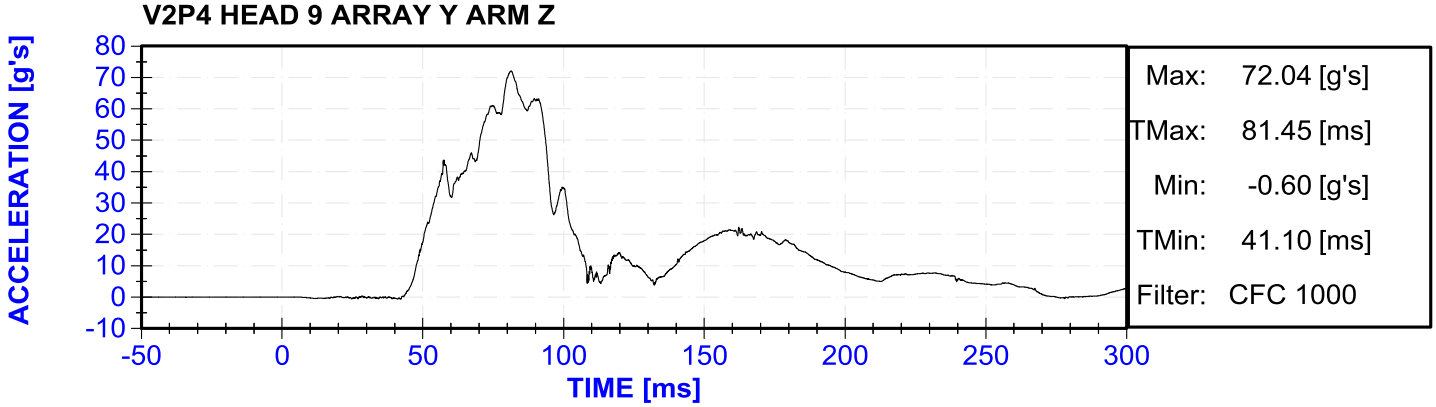
V2P4 HEAD 9 ARRAY X ARM Z



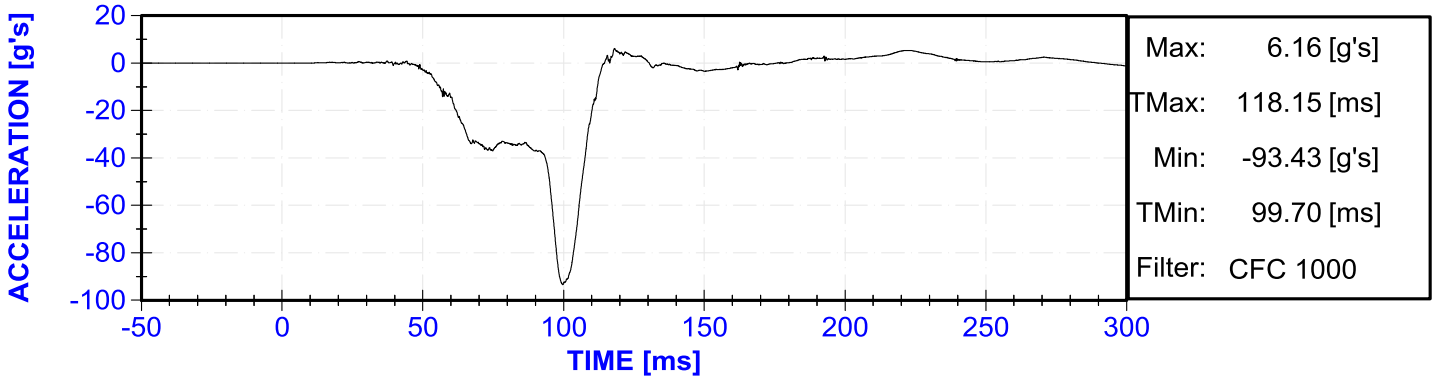
V2P4 HEAD 9 ARRAY Y ARM X



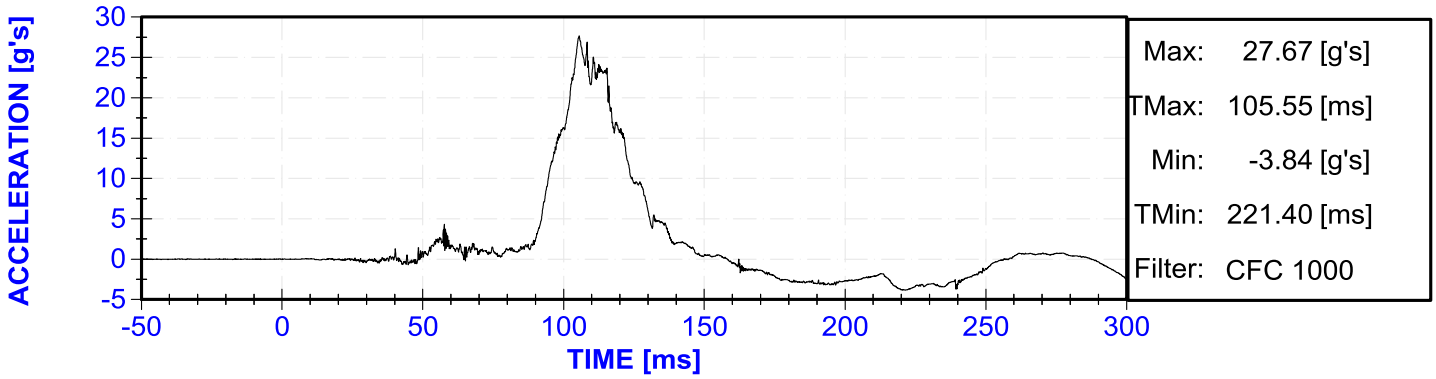
V2P4 HEAD 9 ARRAY Y ARM Z



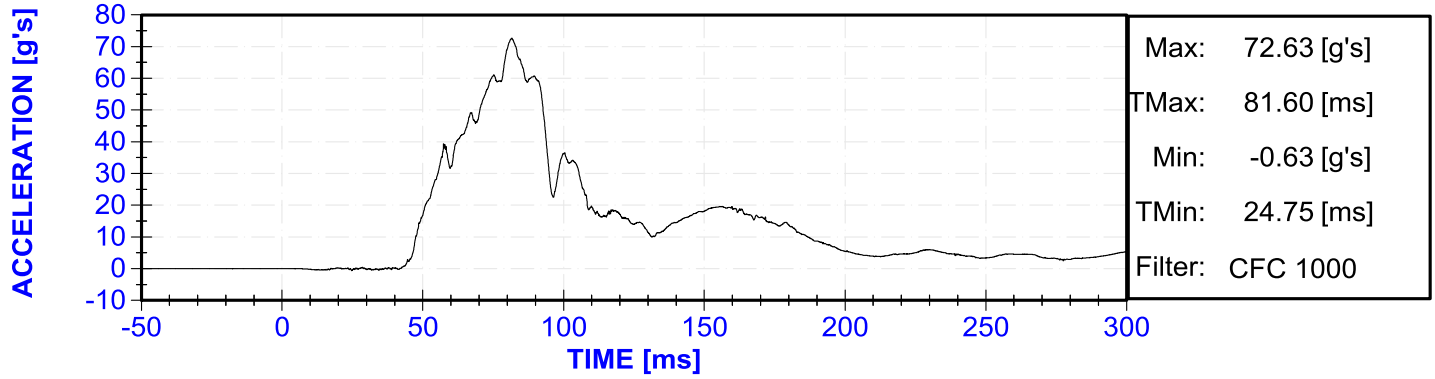
V2P4 HEAD CG X



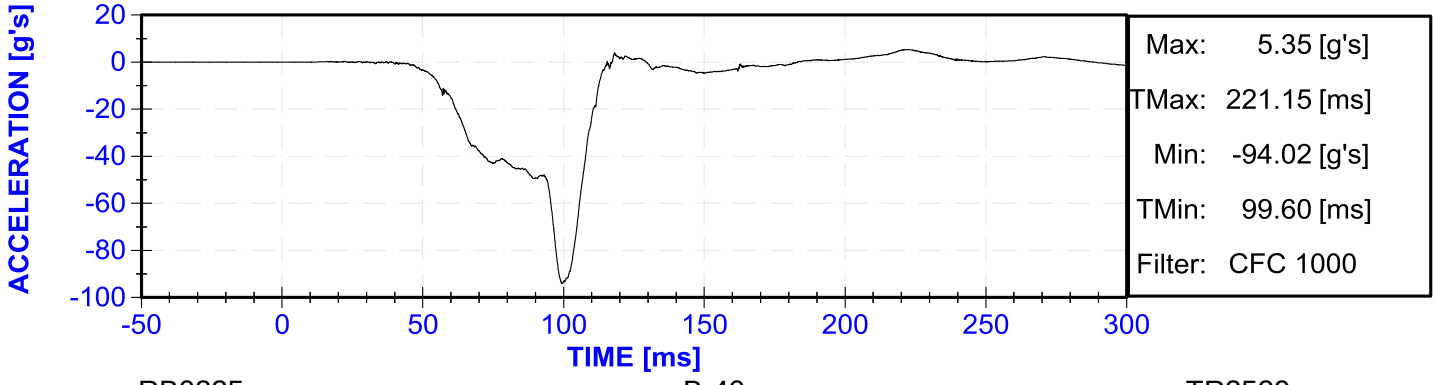
V2P4 HEAD CG Y



V2P4 HEAD CG Z



V2P4 HEAD 9 ARRAY CENTER X

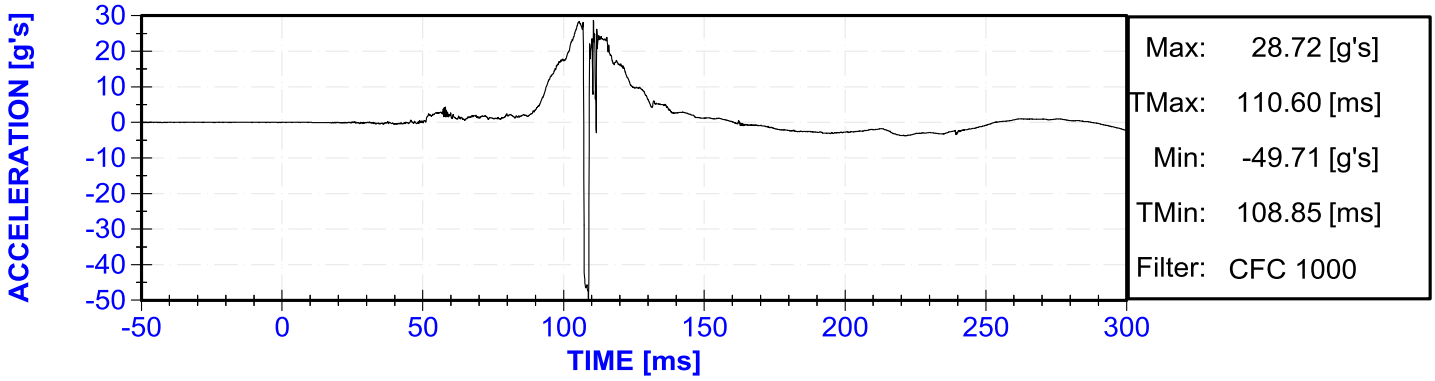


**R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP -
RB0225 2011 FORD FIESTA**

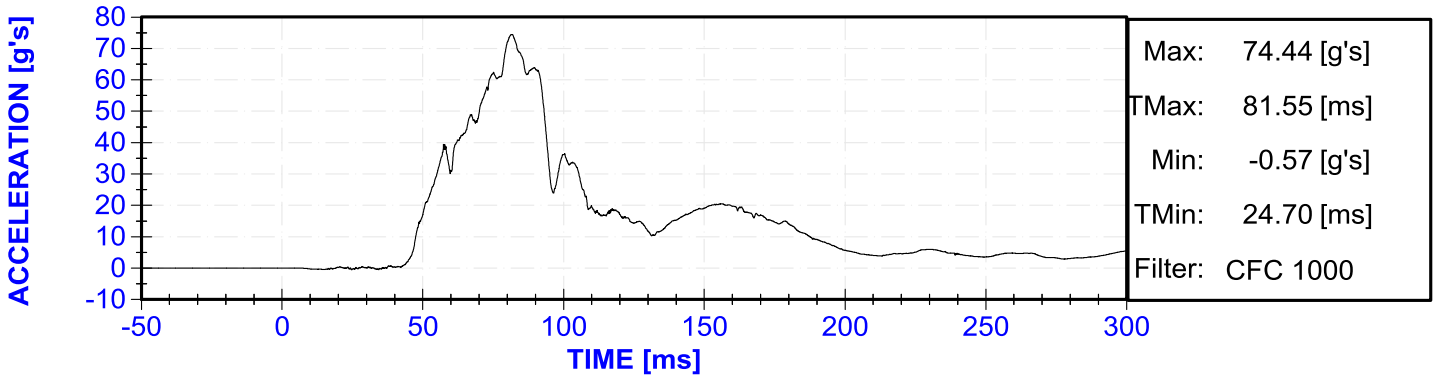
**Test Date:
July 26,2011**

V2P4 HEAD 9 ARRAY CENTER Y

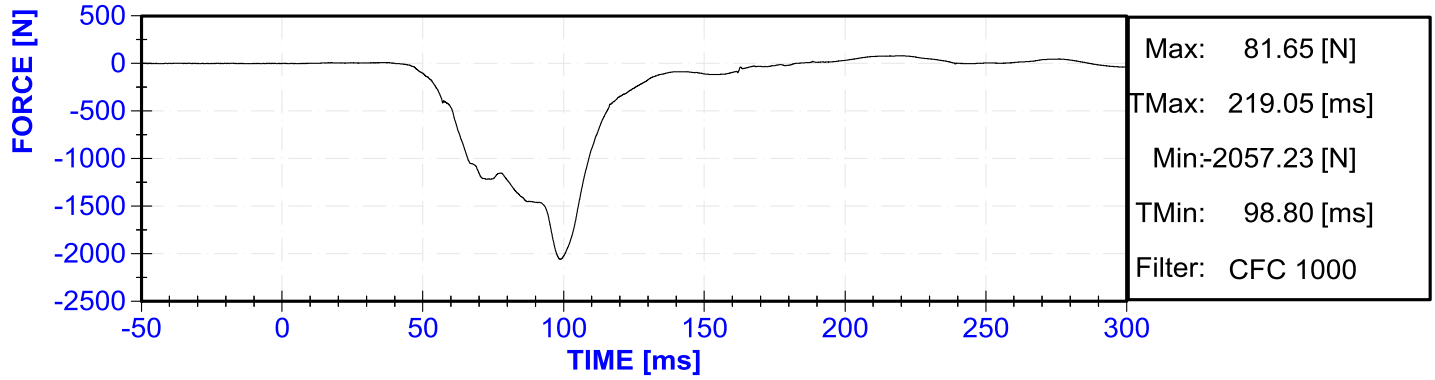
QUESTIONABLE DATA FROM 110 TO 115MS



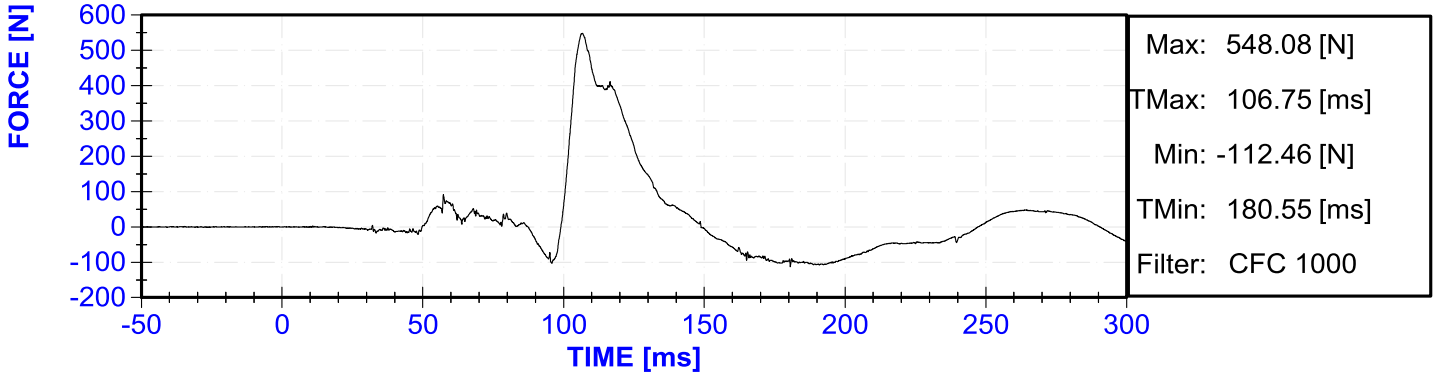
V2P4 HEAD 9 ARRAY CENTER Z



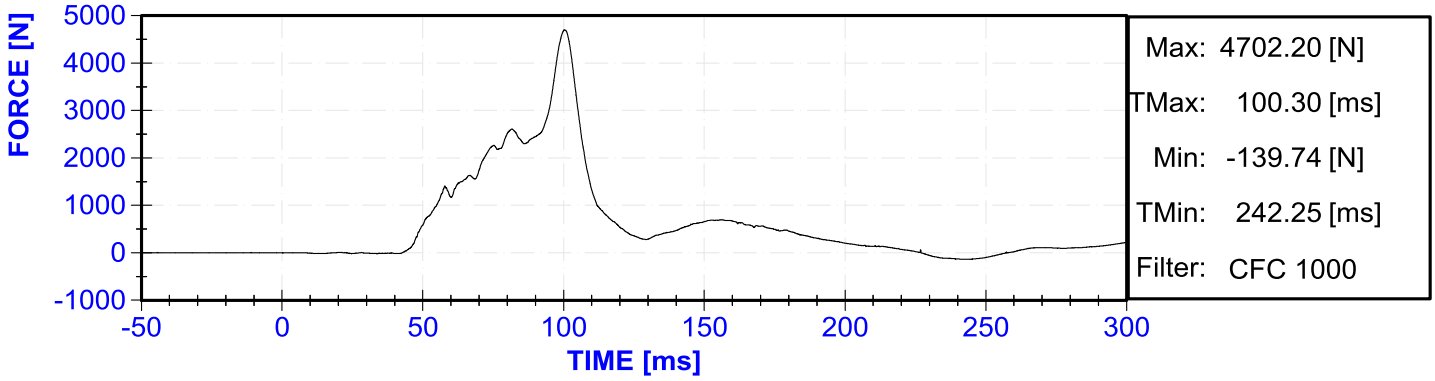
V2P4 UPPER NECK FX



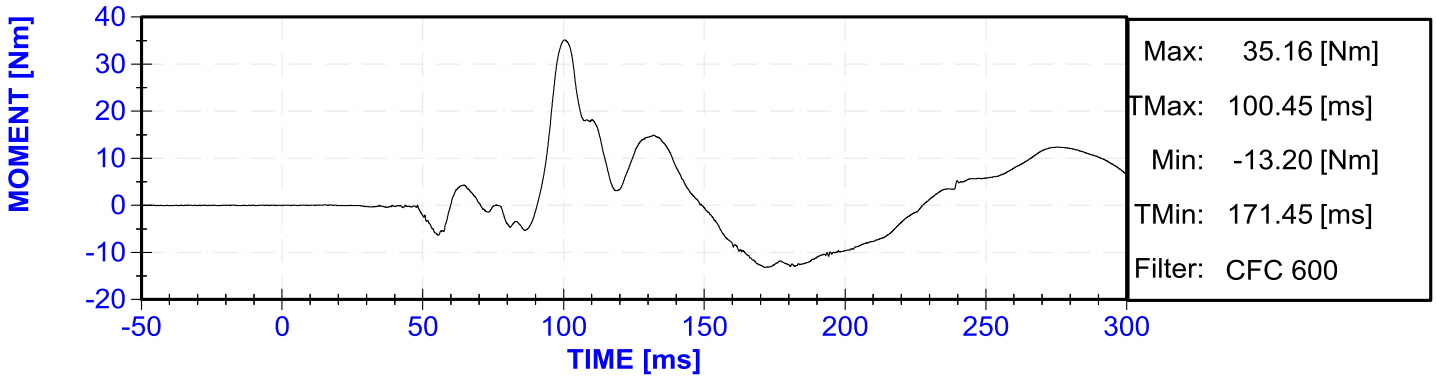
V2P4 UPPER NECK FY



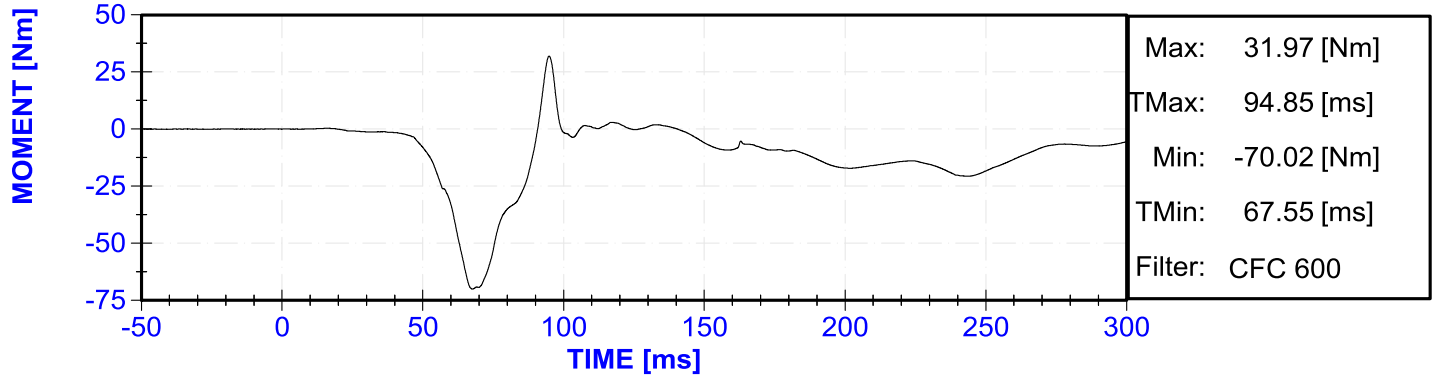
V2P4 UPPER NECK FZ



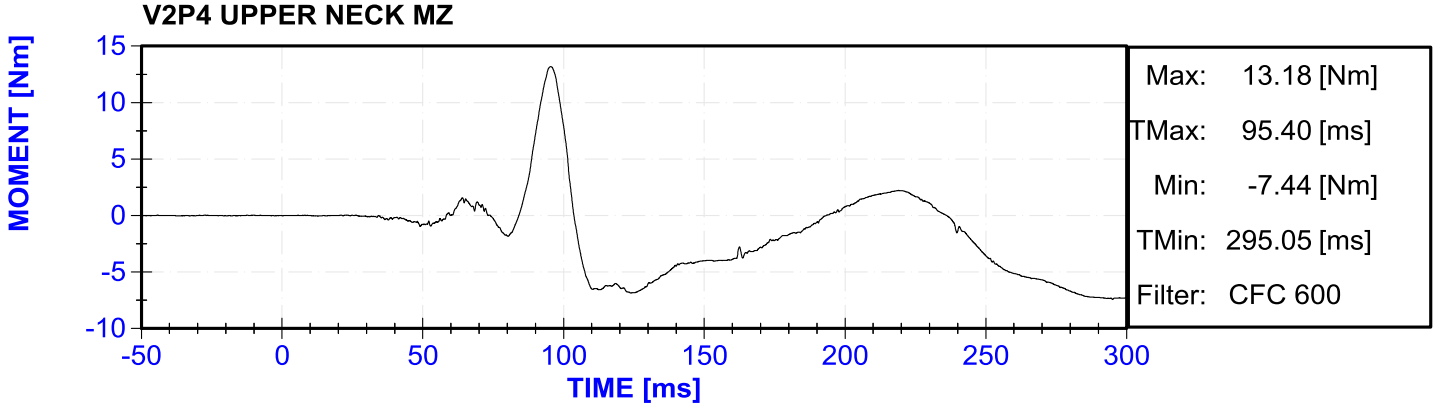
V2P4 UPPER NECK MX



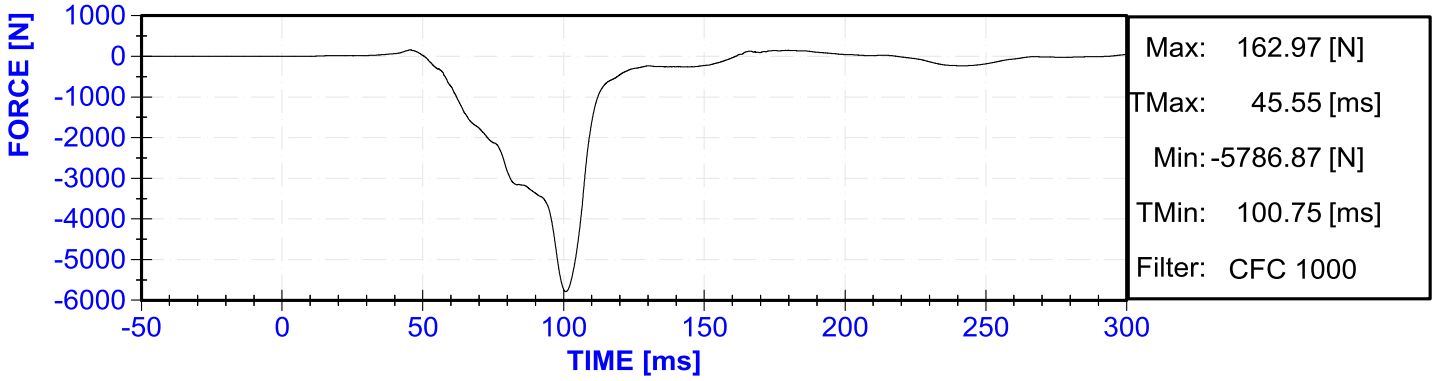
V2P4 UPPER NECK MY



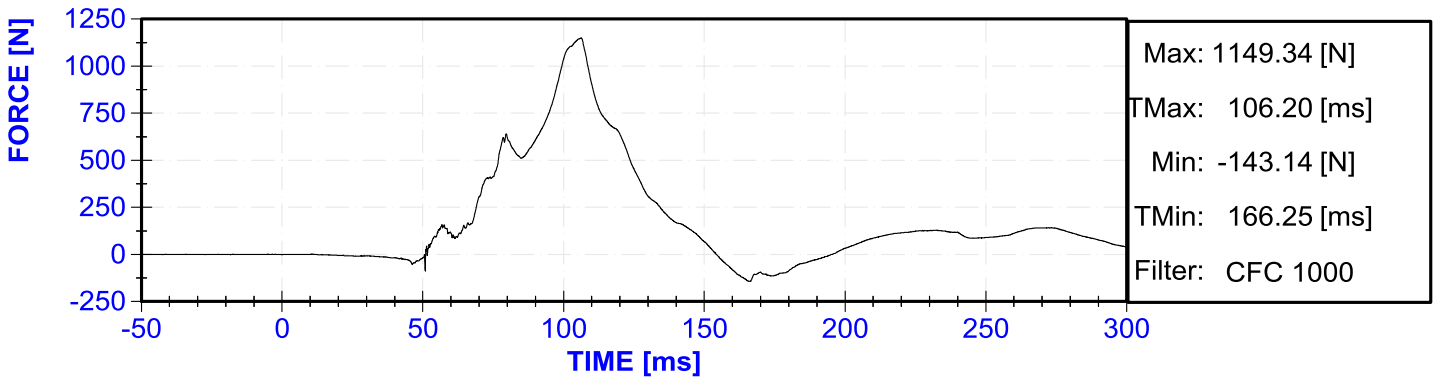
V2P4 UPPER NECK MZ



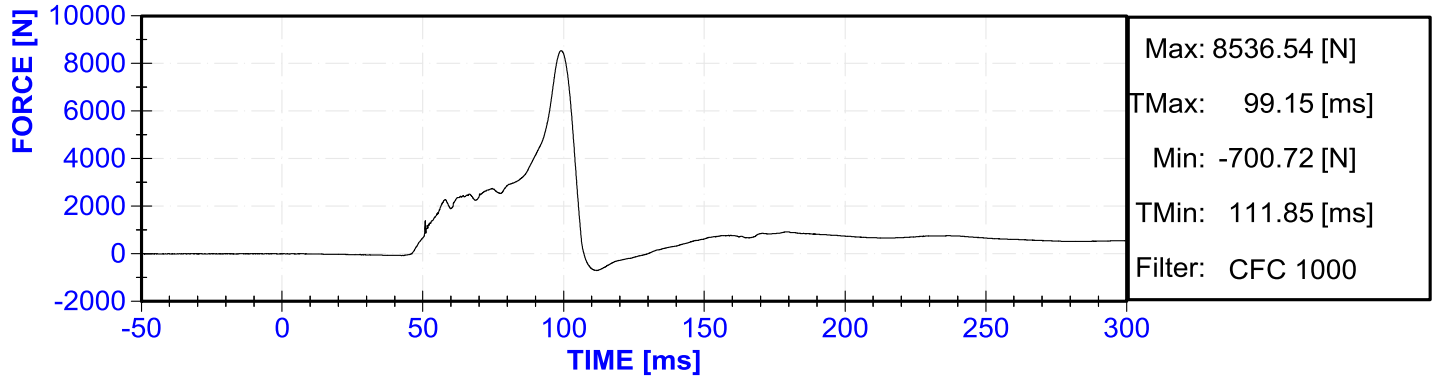
V2P4 LOWER NECK FX



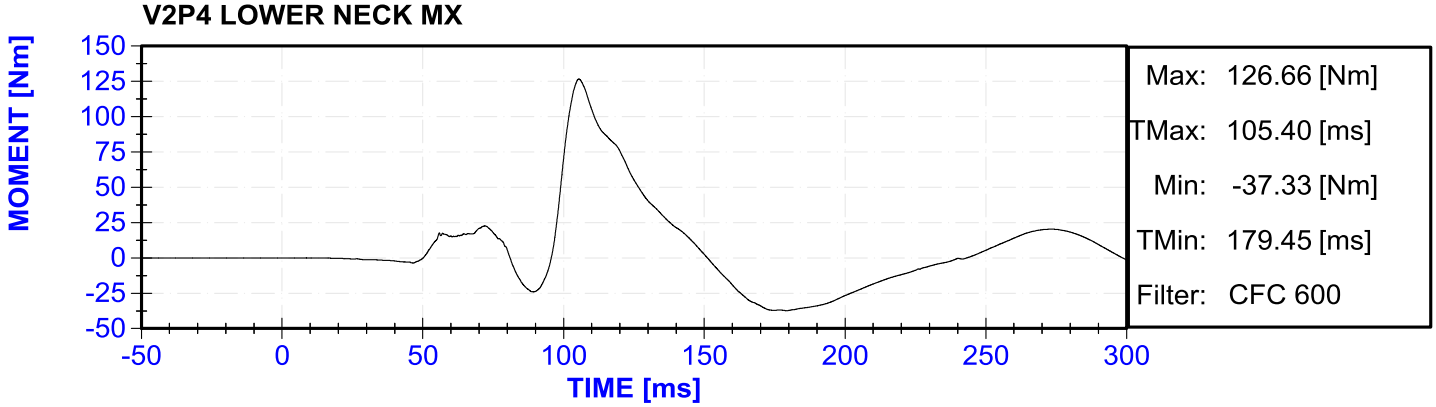
V2P4 LOWER NECK FY



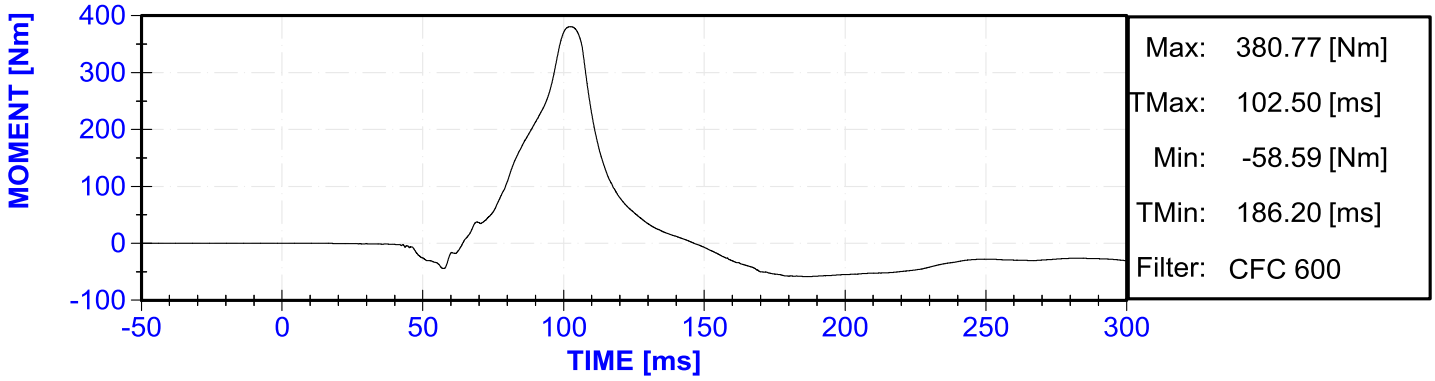
V2P4 LOWER NECK FZ



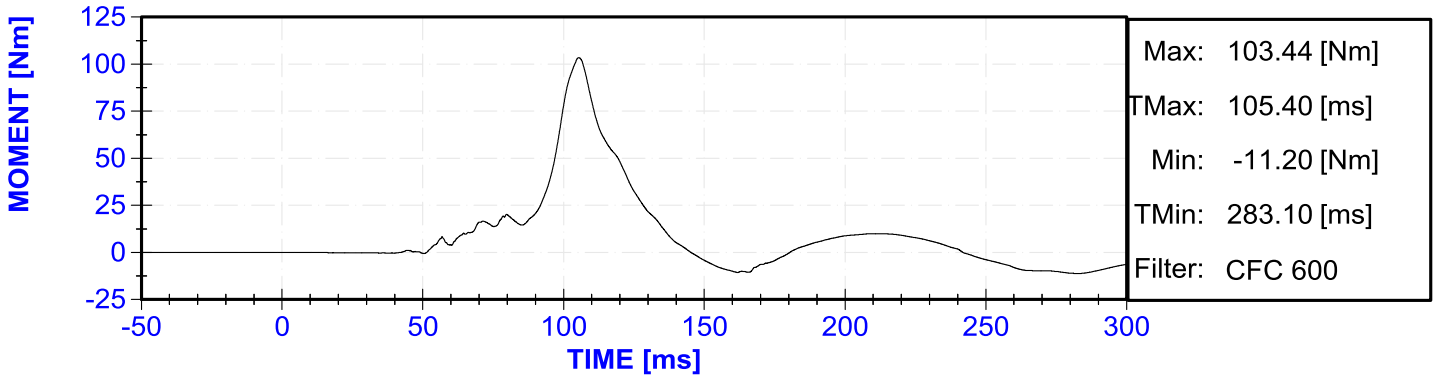
V2P4 LOWER NECK MX



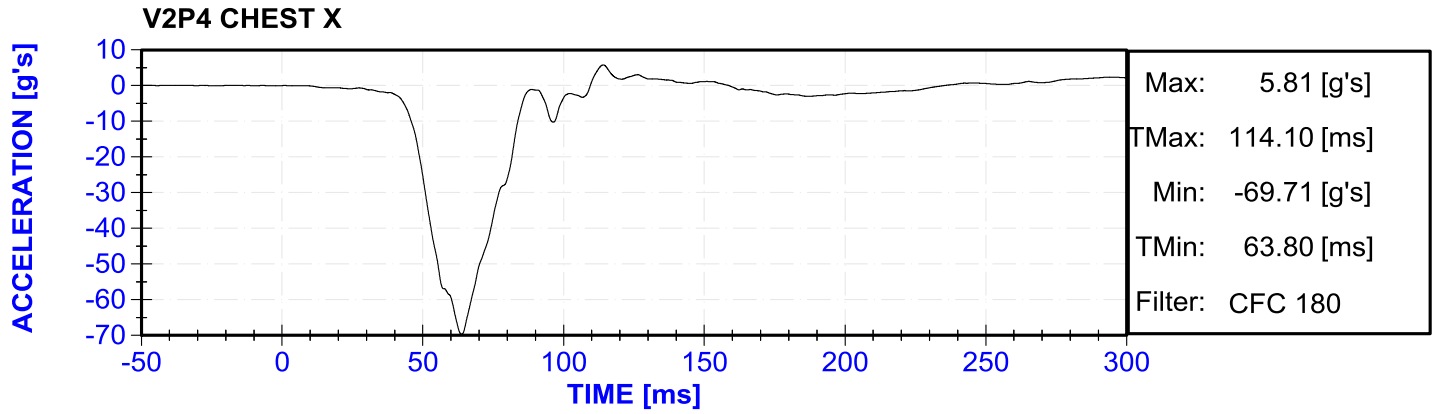
V2P4 LOWER NECK MY



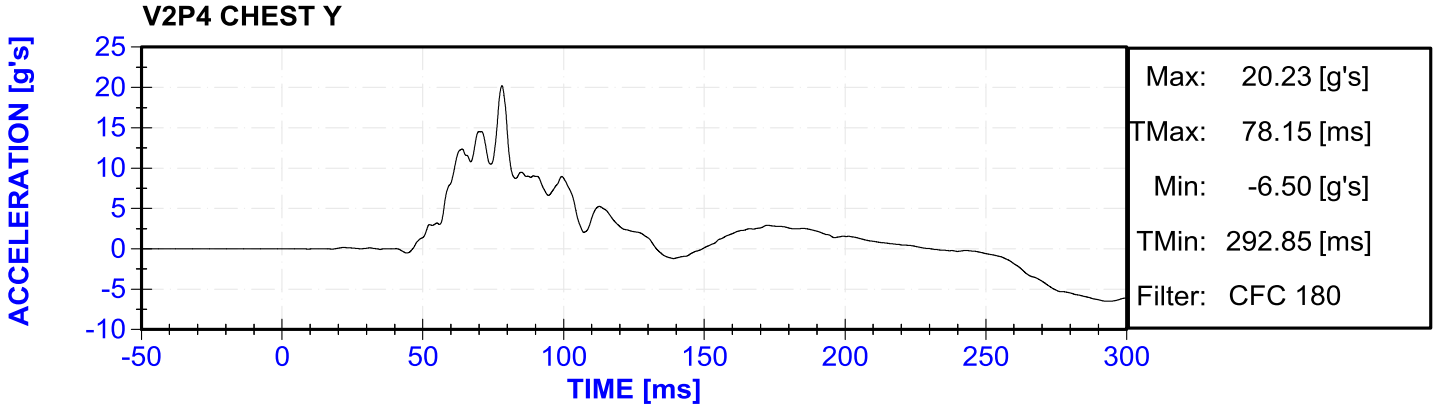
V2P4 LOWER NECK MZ



V2P4 CHEST X



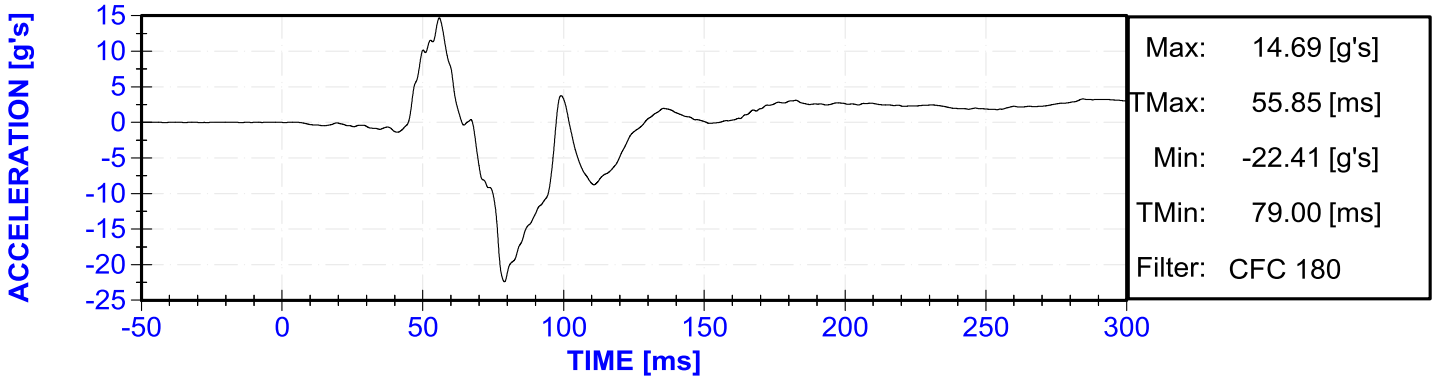
V2P4 CHEST Y



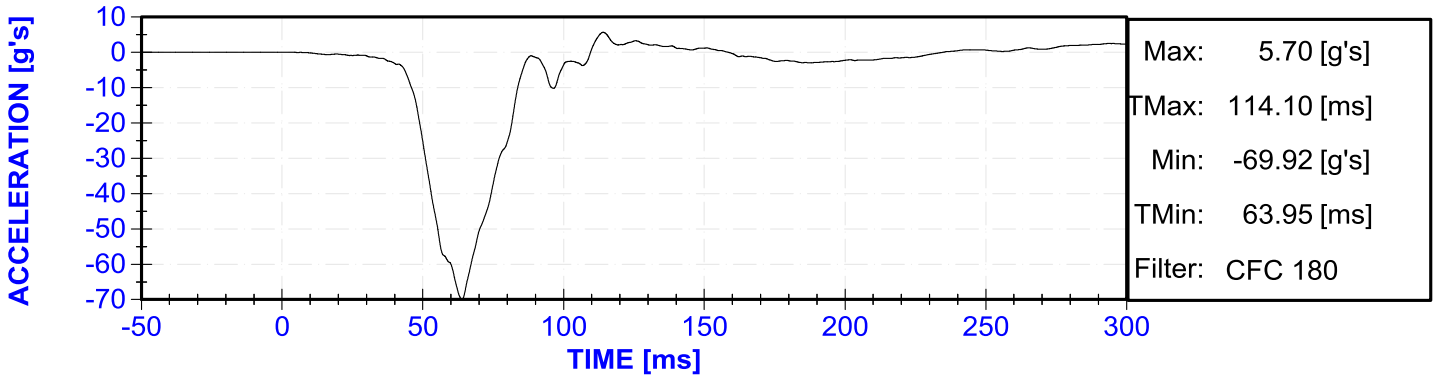
**R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP -
RB0225 2011 FORD FIESTA**

**Test Date:
July 26,2011**

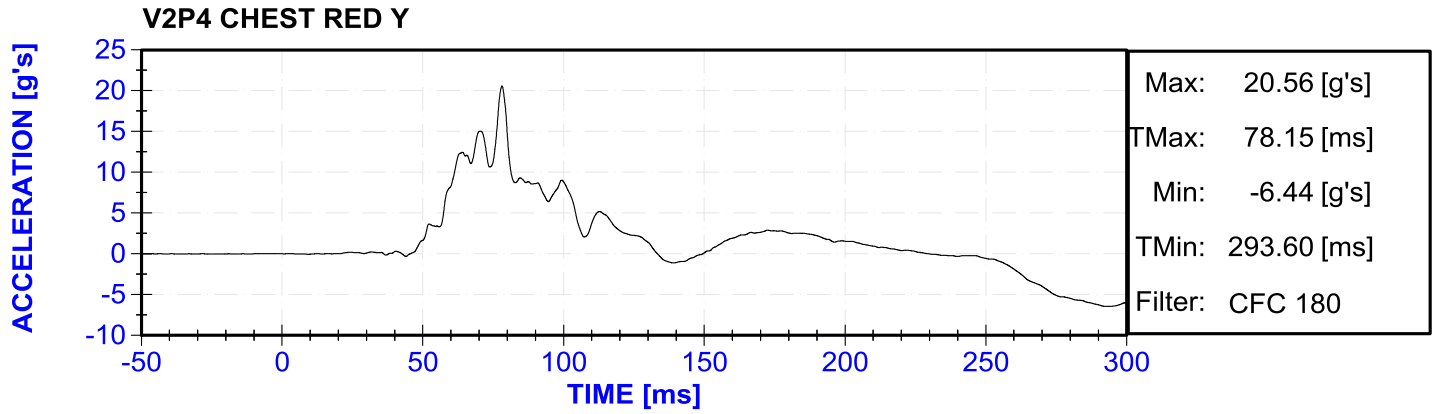
V2P4 CHEST Z



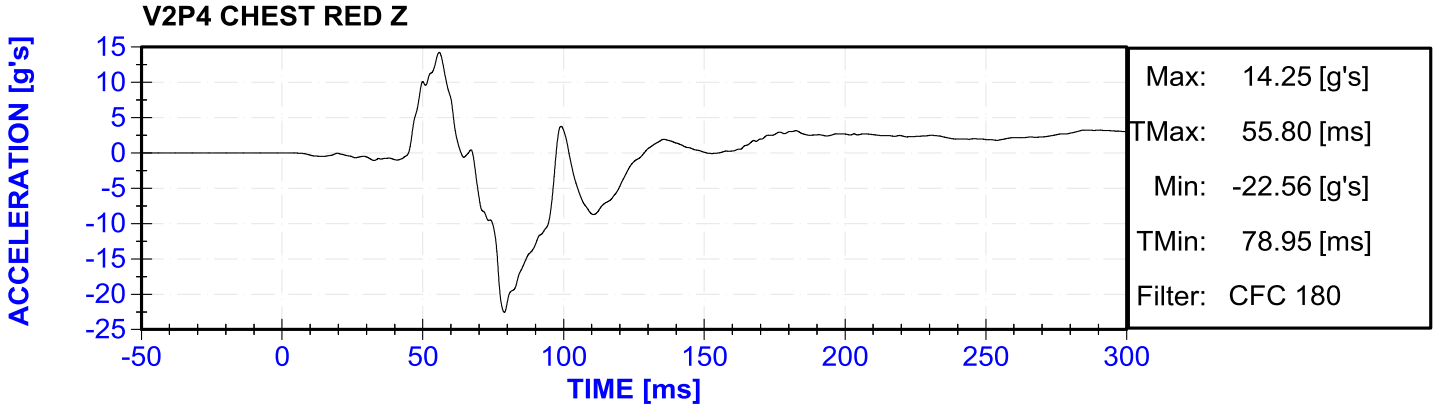
V2P4 CHEST RED X



V2P4 CHEST RED Y



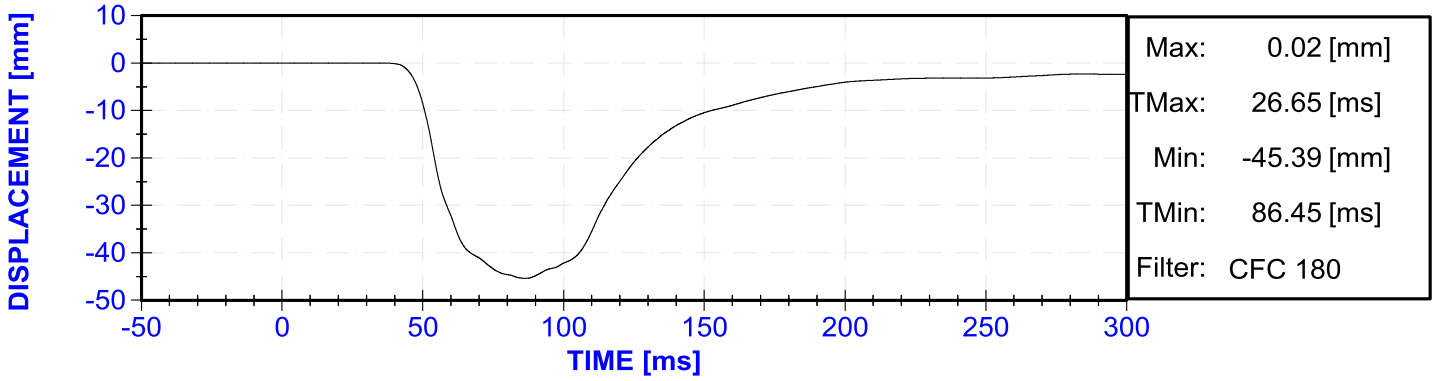
V2P4 CHEST RED Z



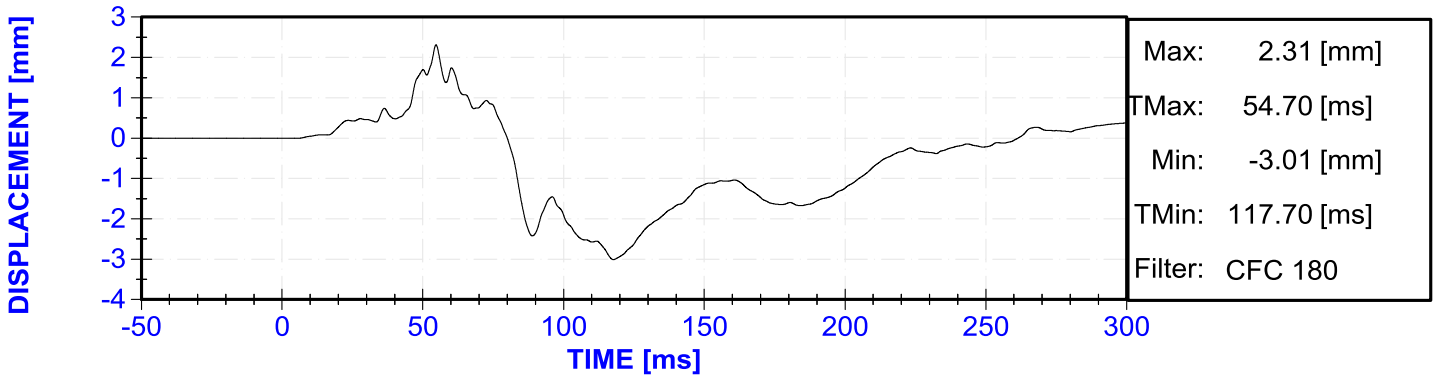
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

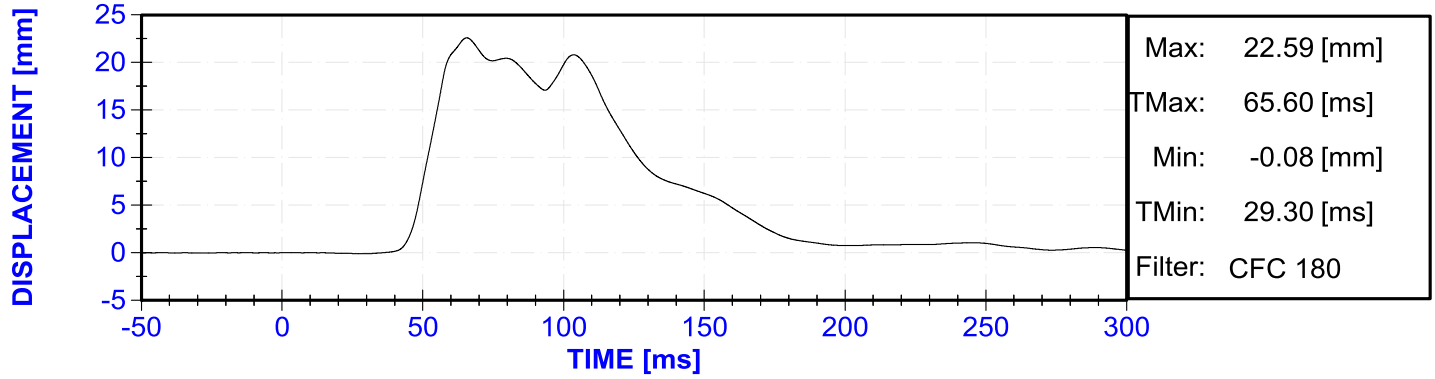
V2P4 CHEST DISPLACEMENT



V2P4 8 STRING POD - UR TOP

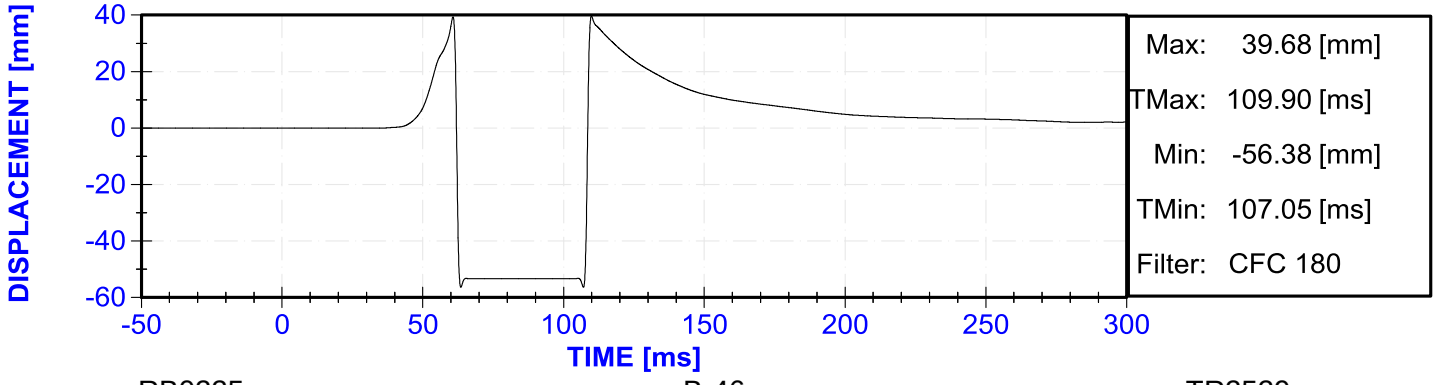


V2P4 8 STRING POD - UR MID

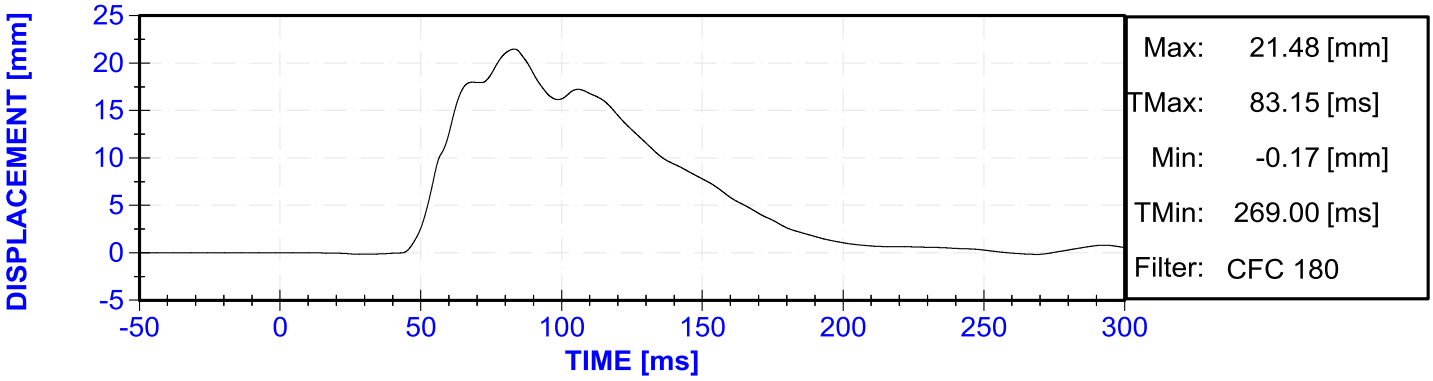


V2P4 8 STRING POD - LR MID

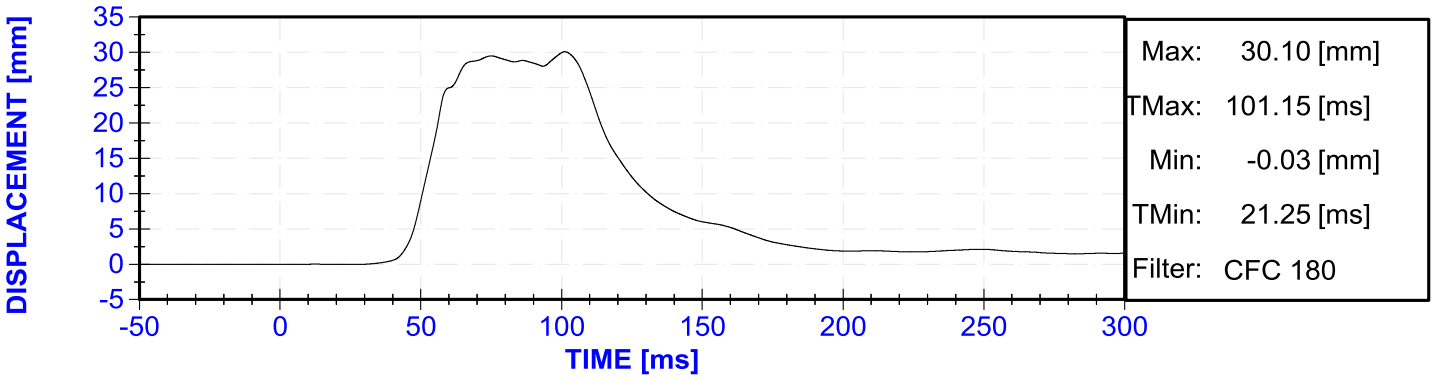
QUESTIONABLE AFTER 59 MS



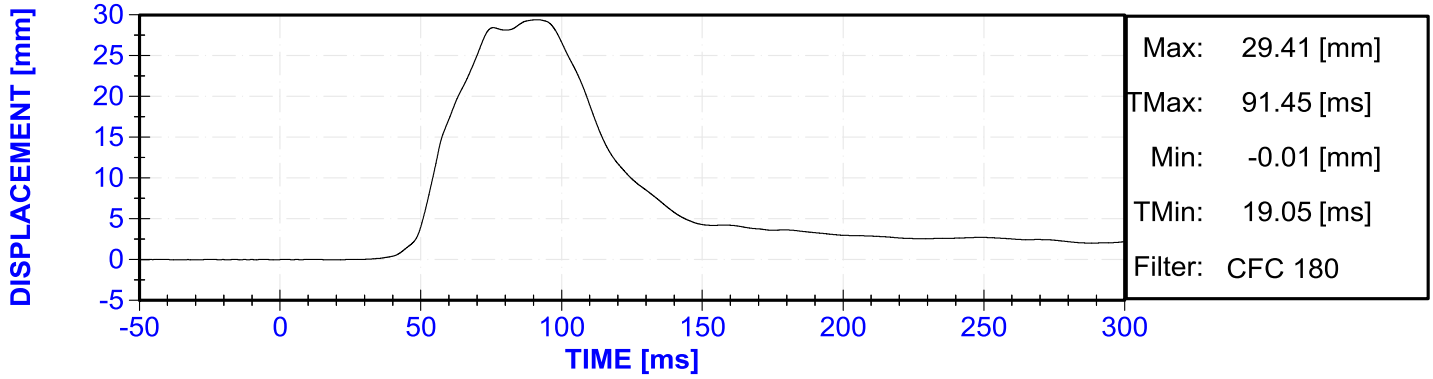
V2P4 8 STRING POD - LR BOTTOM



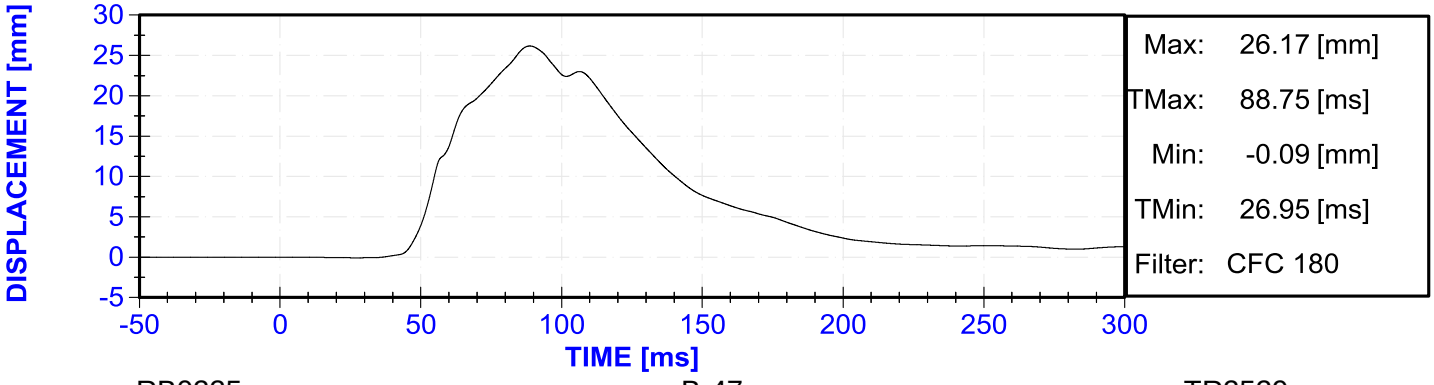
V2P4 8 STRING POD - UL TOP



V2P4 8 STRING POD - UL MID



V2P4 8 STRING POD - LL MID

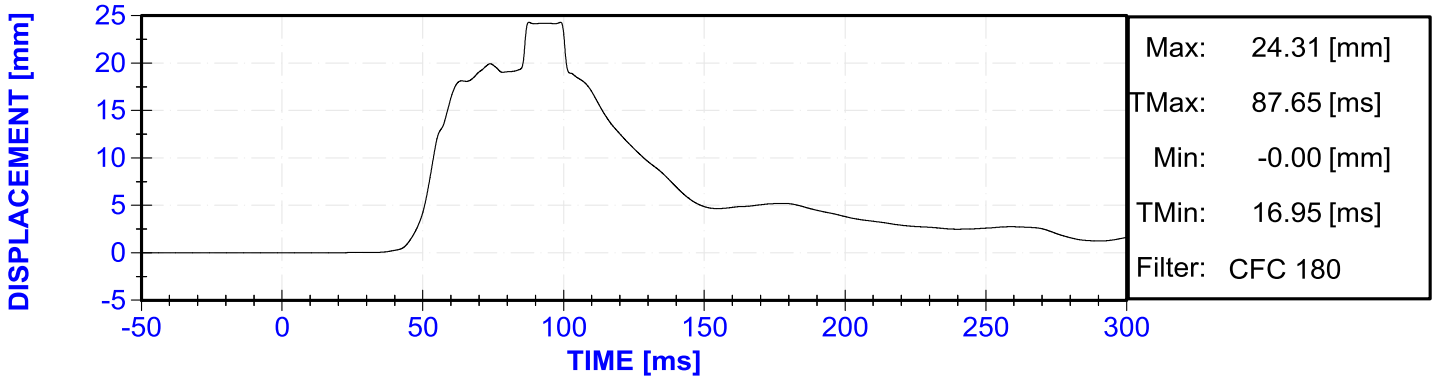


R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date:
July 26,2011

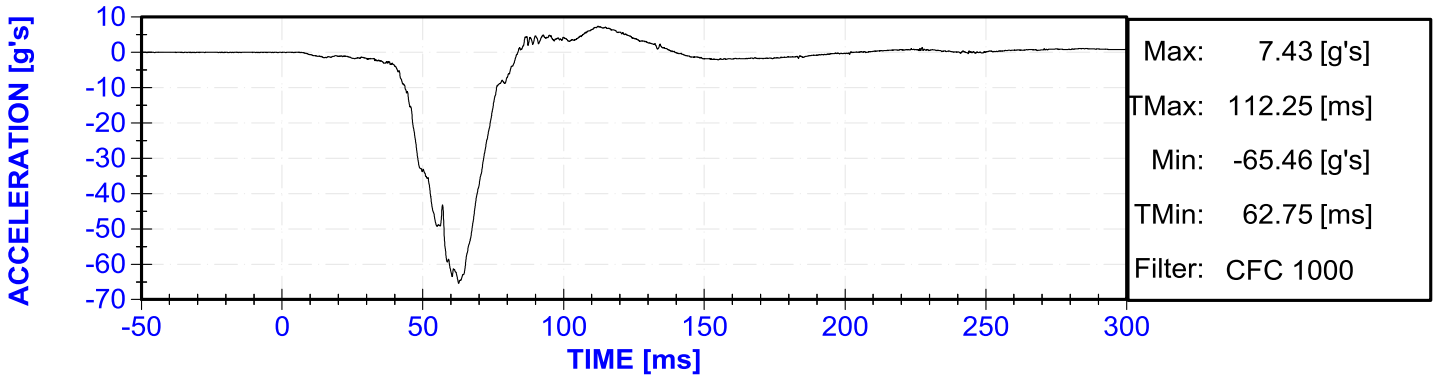
V2P4 8 STRING POD - LL BOTTOM

QUESTIONABLE AFTER 86-100 MS



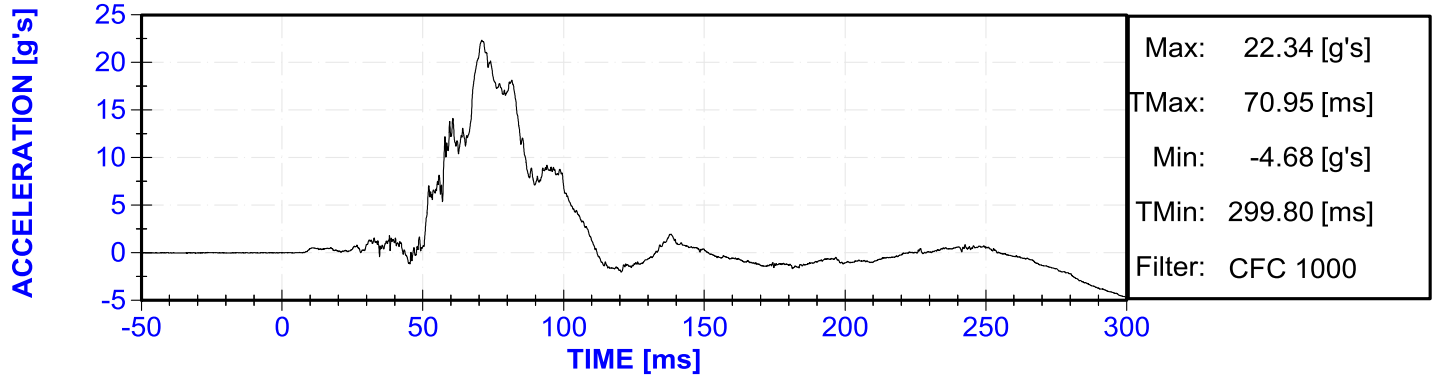
Max:	24.31 [mm]
TMax:	87.65 [ms]
Min:	-0.00 [mm]
TMin:	16.95 [ms]
Filter:	CFC 180

V2P4 PELVIC X



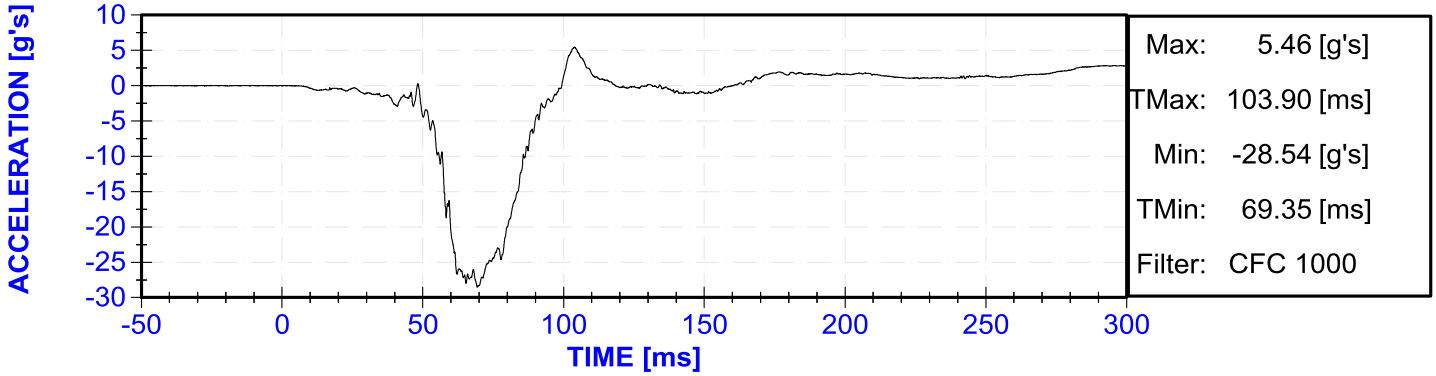
Max:	7.43 [g's]
TMax:	112.25 [ms]
Min:	-65.46 [g's]
TMin:	62.75 [ms]
Filter:	CFC 1000

V2P4 PELVIC Y



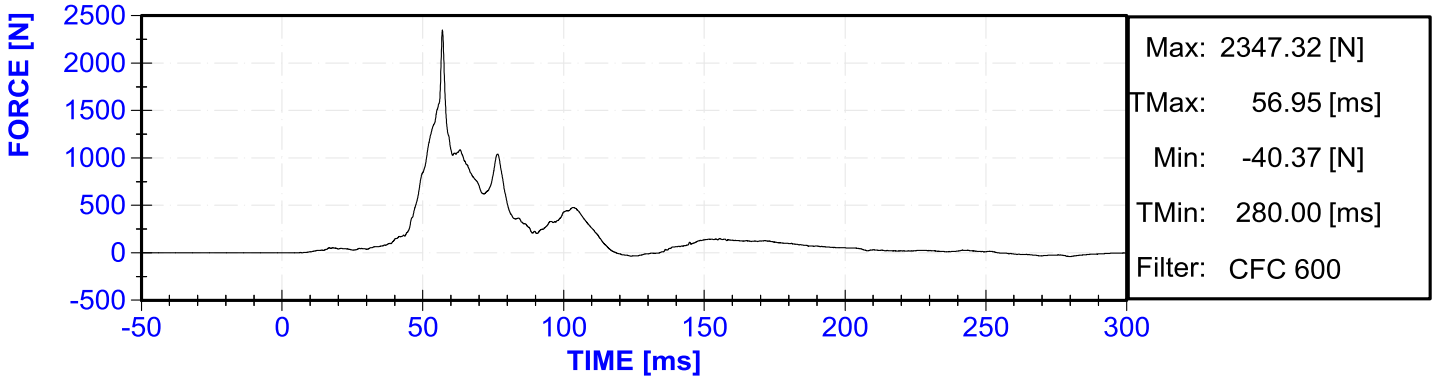
Max:	22.34 [g's]
TMax:	70.95 [ms]
Min:	-4.68 [g's]
TMin:	299.80 [ms]
Filter:	CFC 1000

V2P4 PELVIC Z

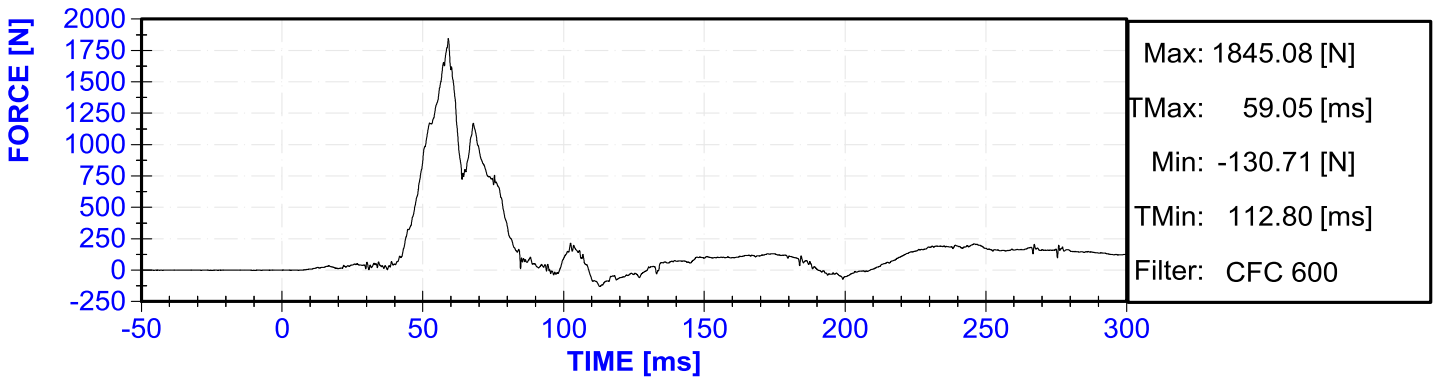


Max:	5.46 [g's]
TMax:	103.90 [ms]
Min:	-28.54 [g's]
TMin:	69.35 [ms]
Filter:	CFC 1000

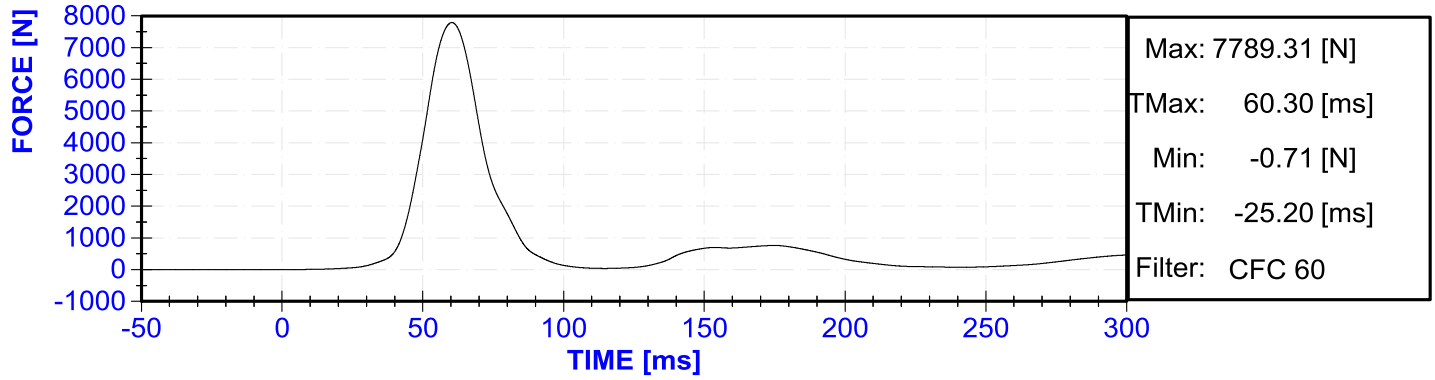
V2P4 LEFT FEMUR FZ



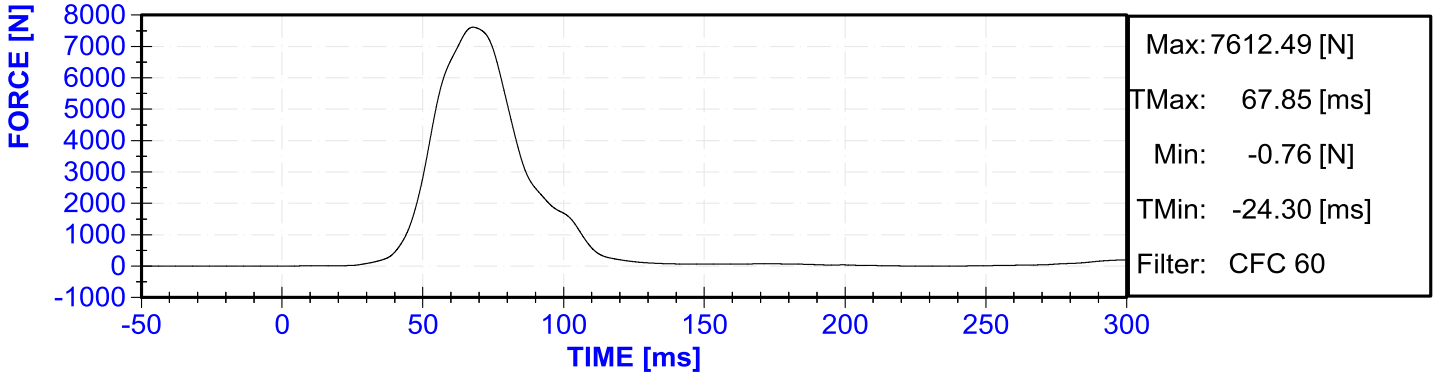
V2P4 RIGHT FEMUR FZ



V2 Passenger Lap Belt Force



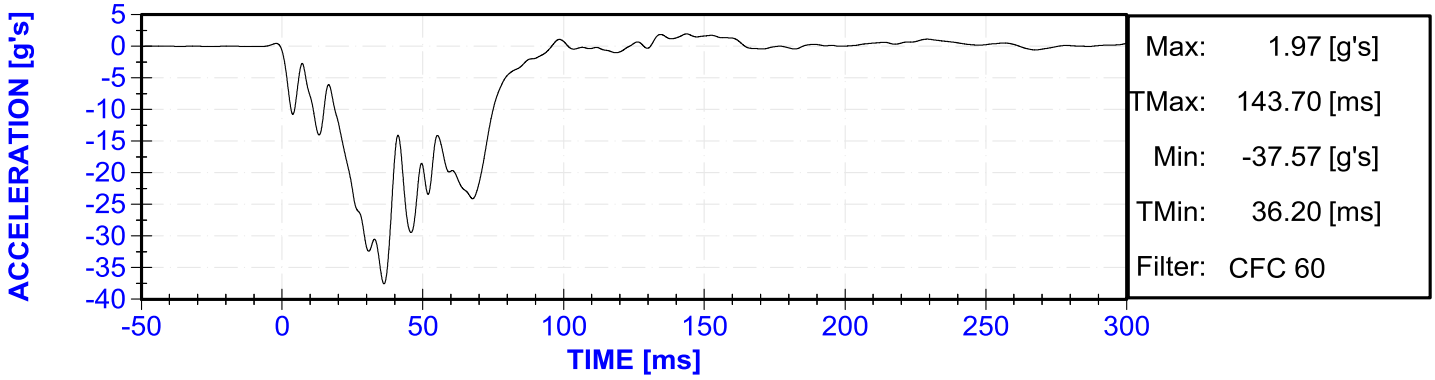
V2 Passenger Shoulder Belt Upper Force



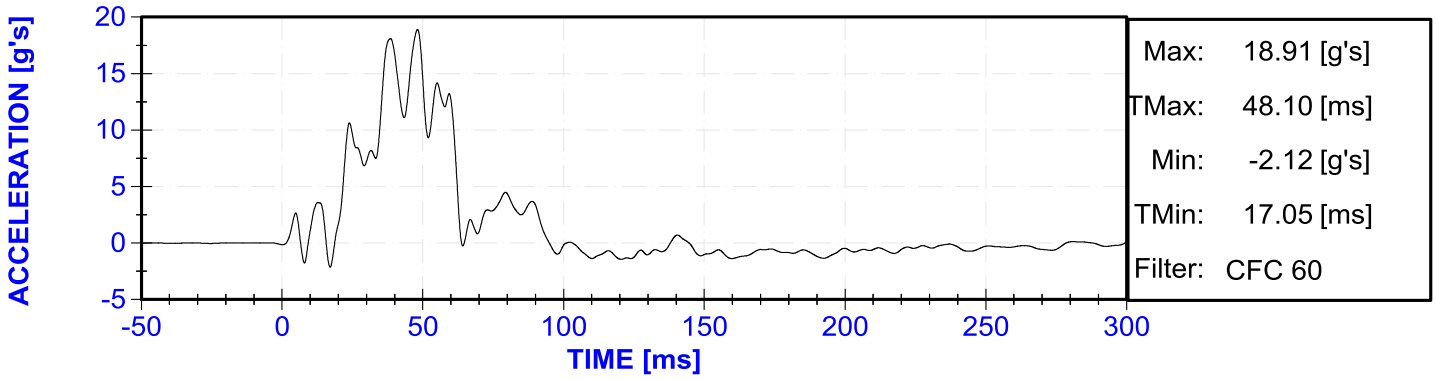
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

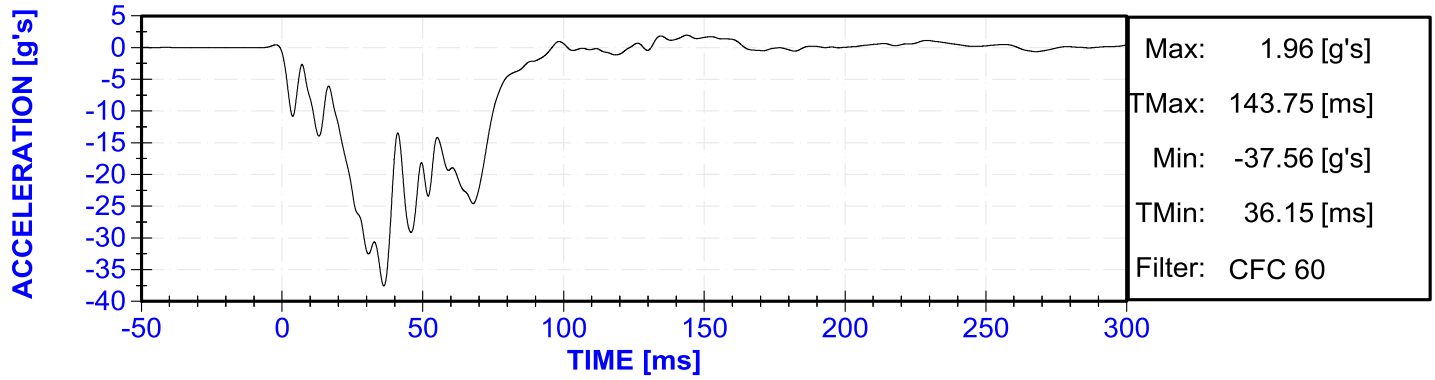
V2 Left Rear Sill X Acceleration



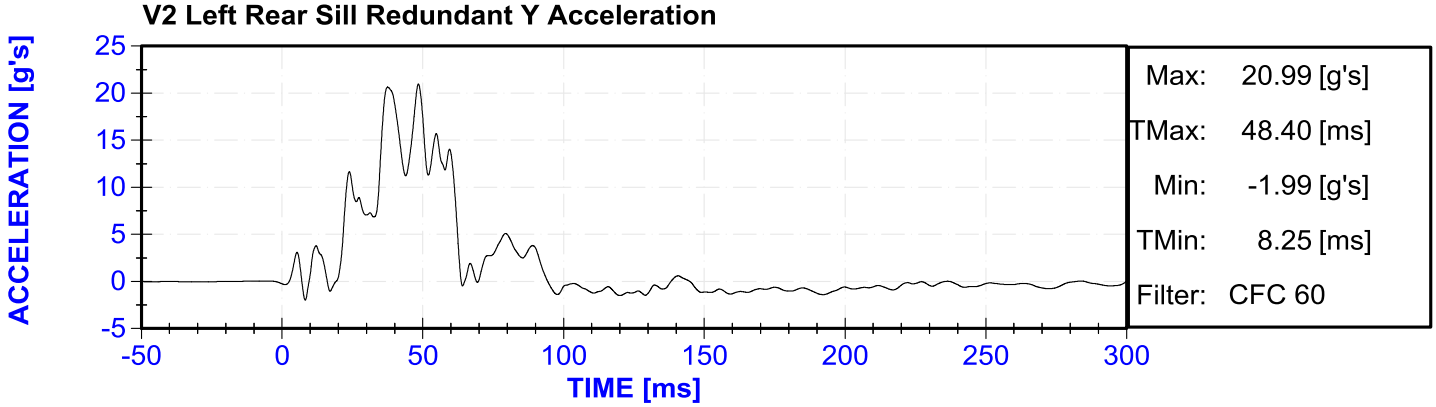
V2 Left Rear Sill Y Acceleration



V2 Left Rear Sill Redundant X Acceleration



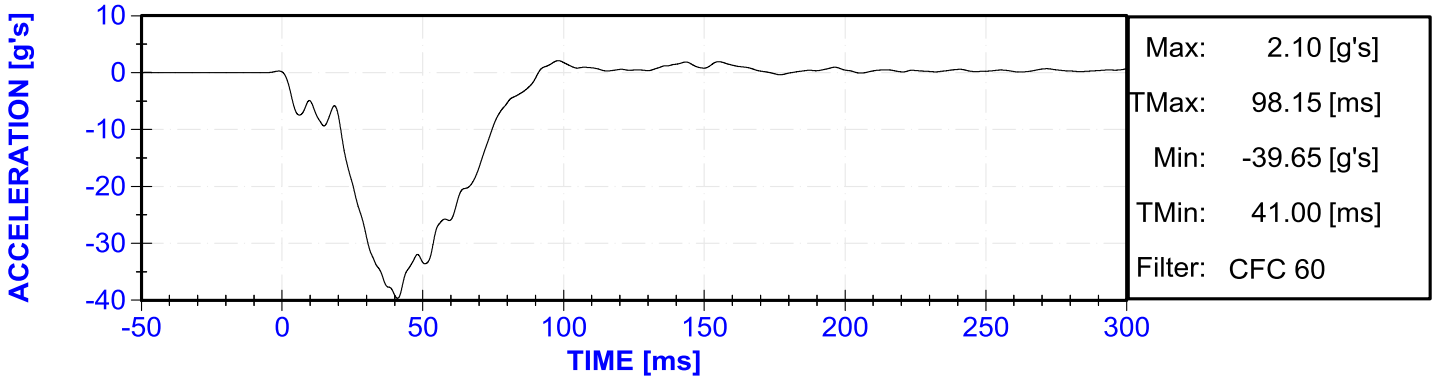
V2 Left Rear Sill Redundant Y Acceleration



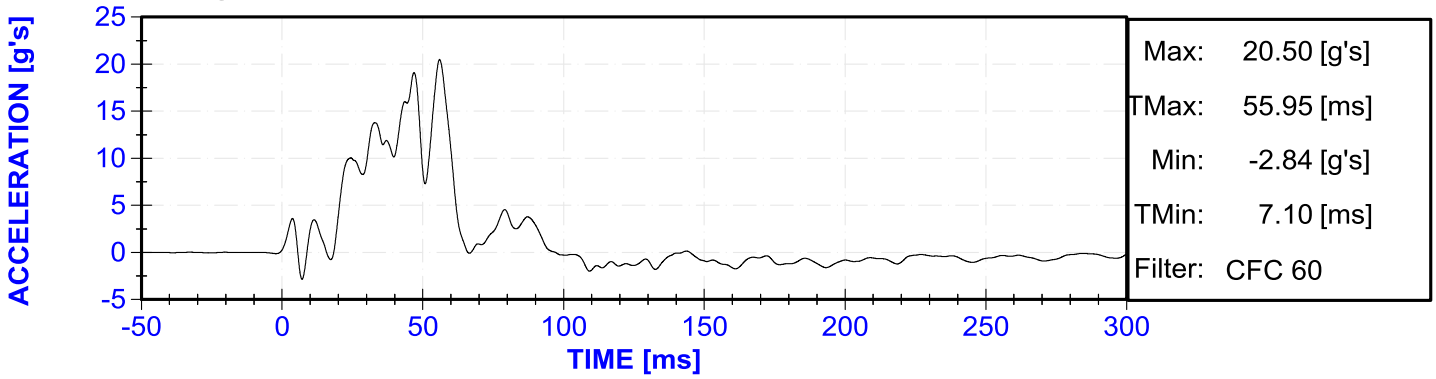
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

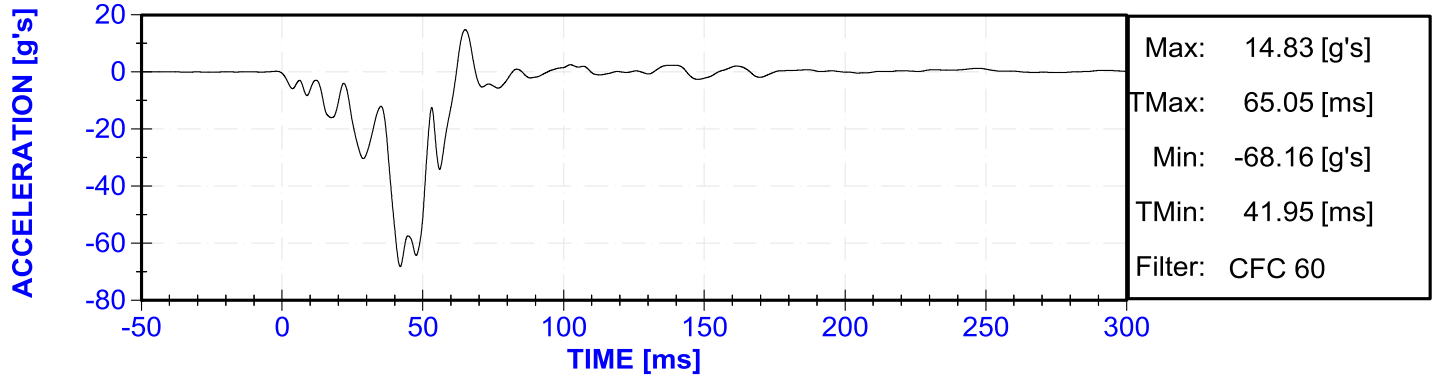
V2 Right Rear Sill X Acceleration



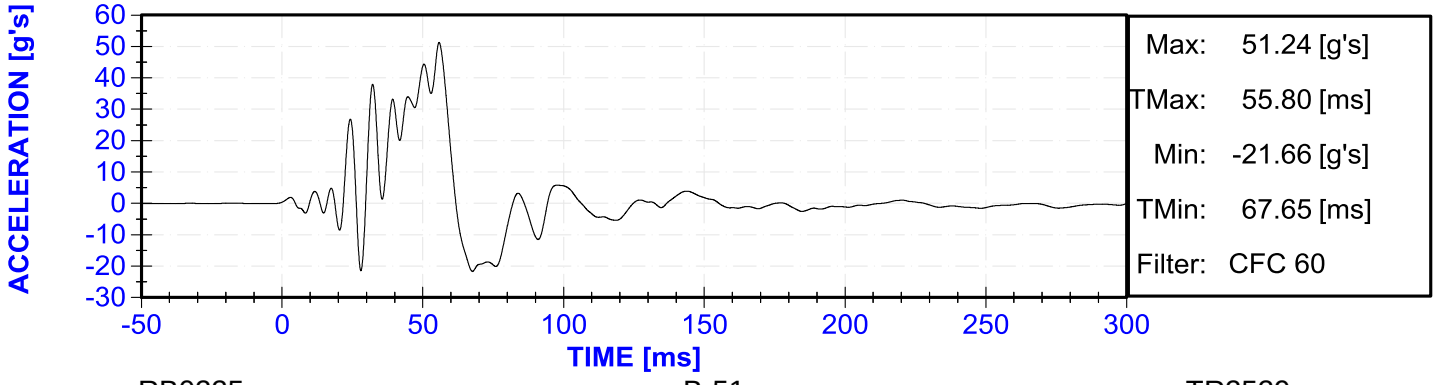
V2 Right Rear Sill Y Acceleration



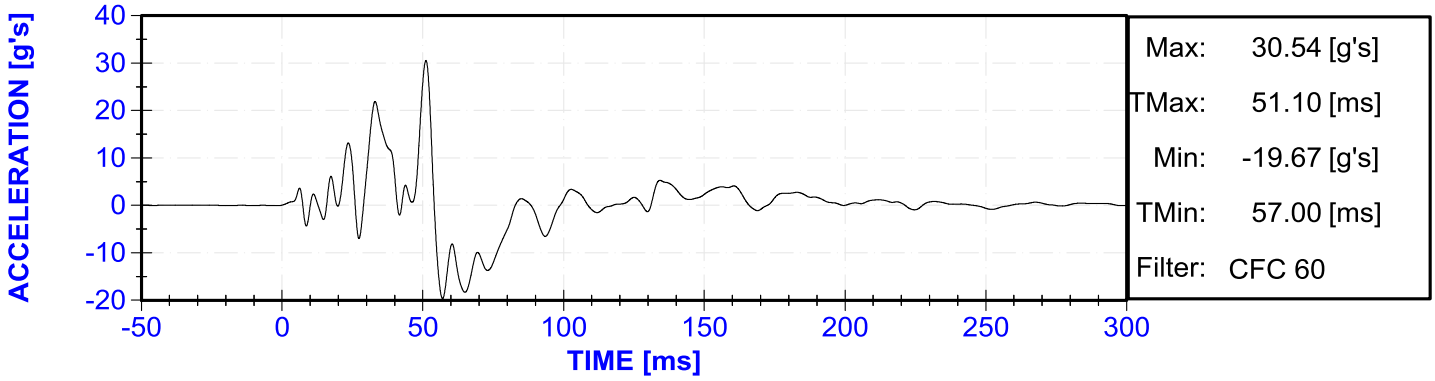
V2 Vehicle CG X Acceleration



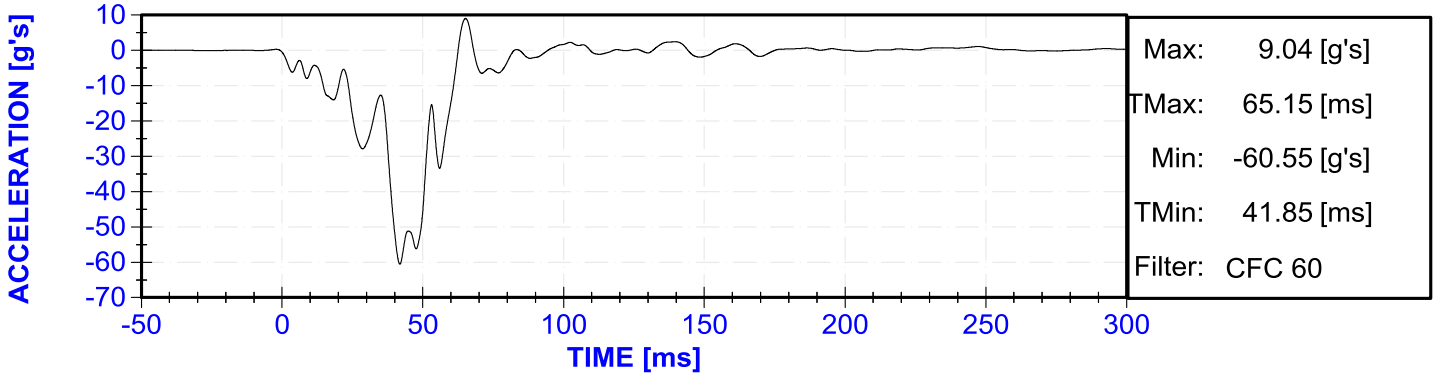
V2 Vehicle CG Y Acceleration



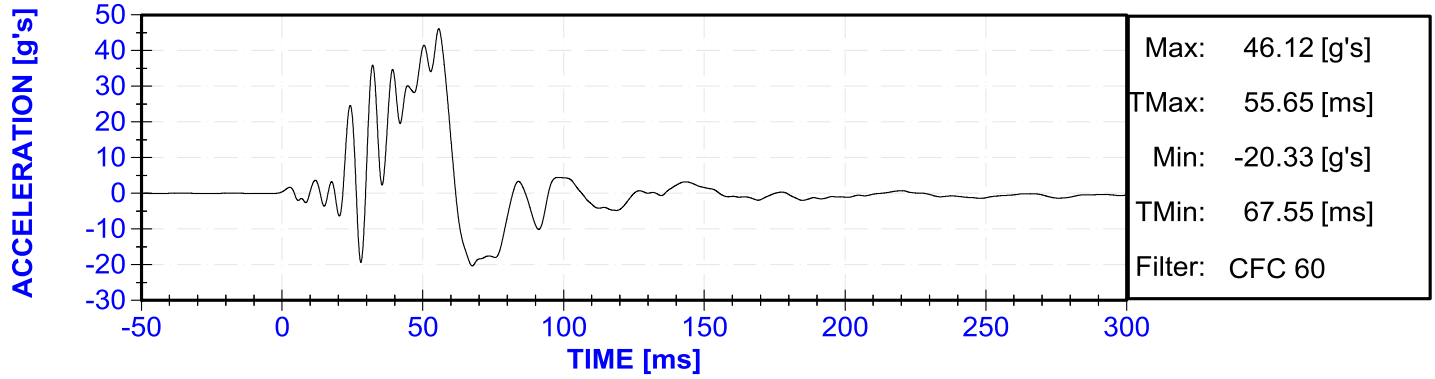
V2 Vehicle CG Z Acceleration



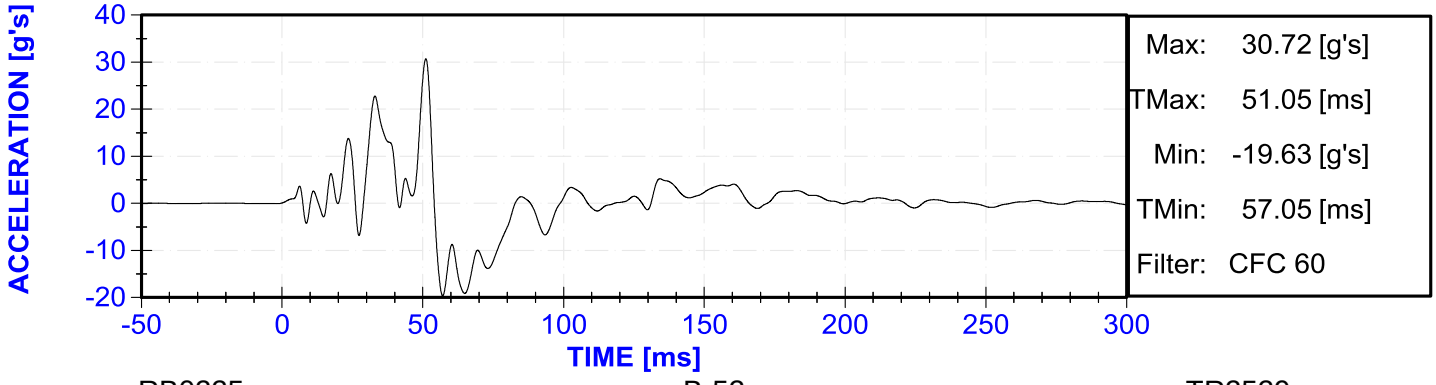
V2 Vehicle CG Redundant X Acceleration



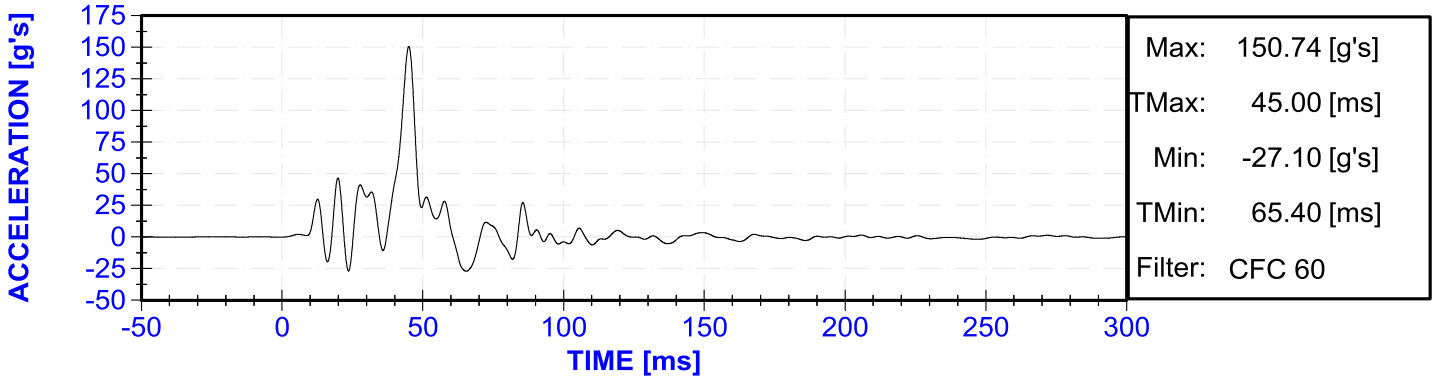
V2 Vehicle CG Redundant Y Acceleration



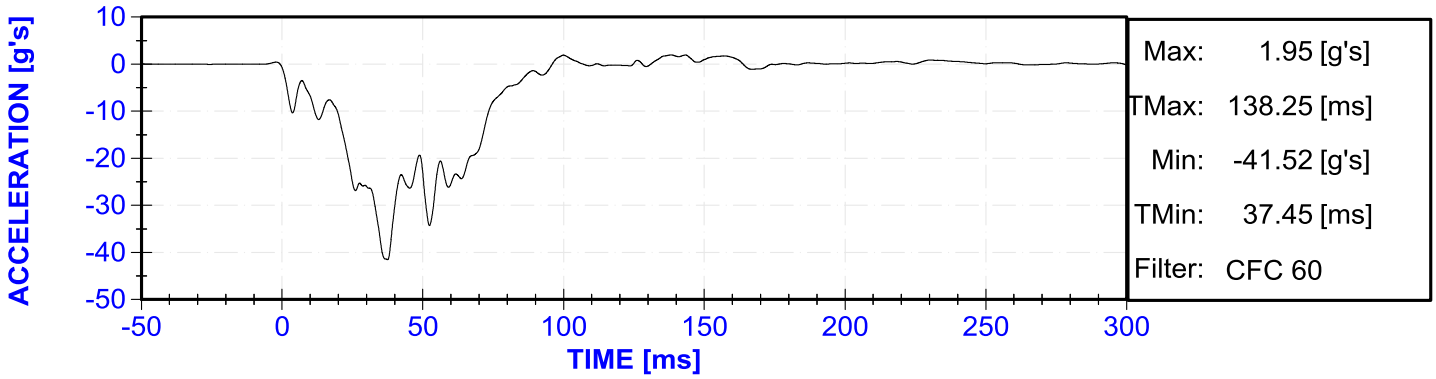
V2 Vehicle CG Redundant Z Acceleration



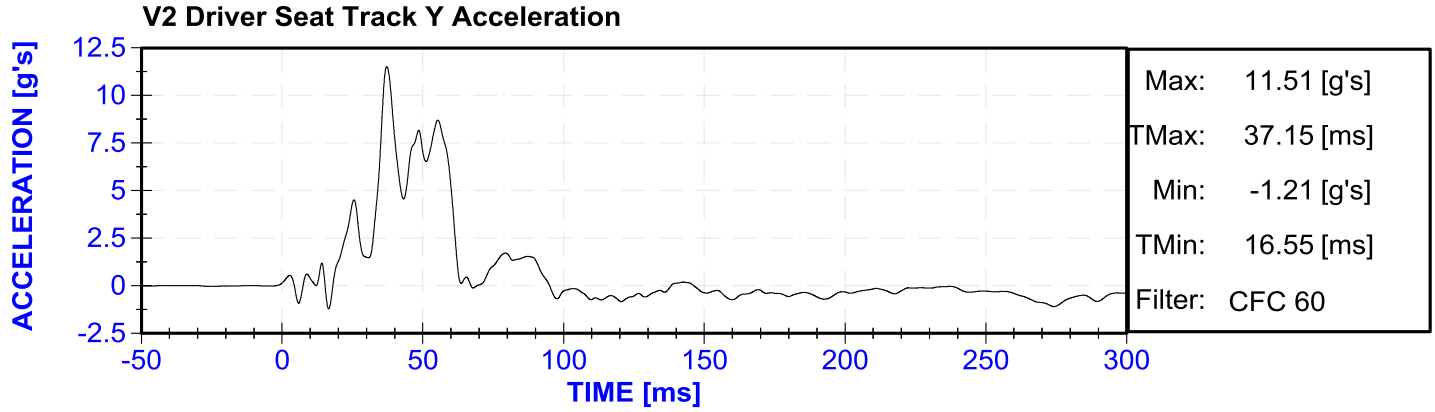
V2 Instrument Panel X Acceleration



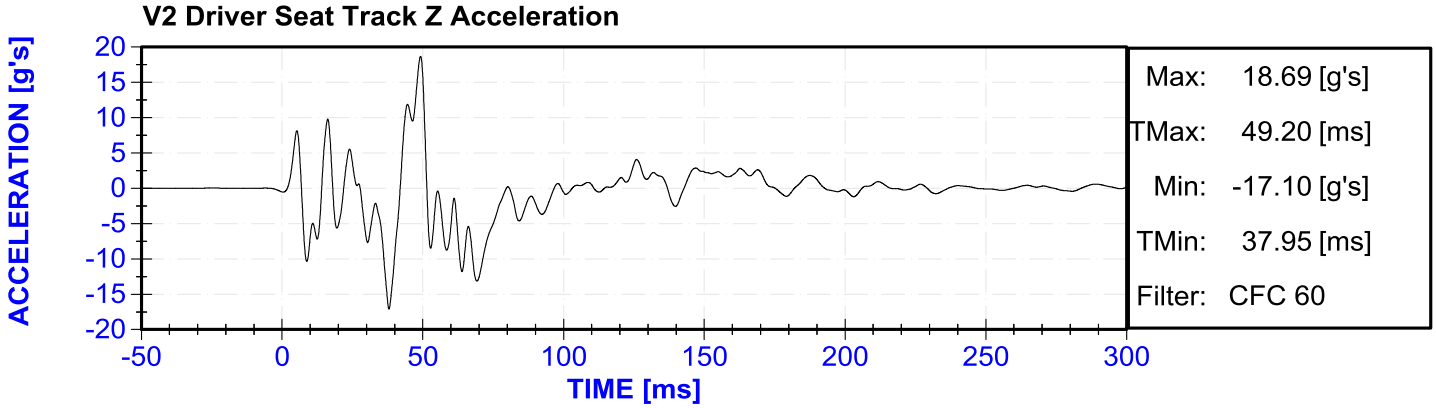
V2 Driver Seat Track X Acceleration



V2 Driver Seat Track Y Acceleration



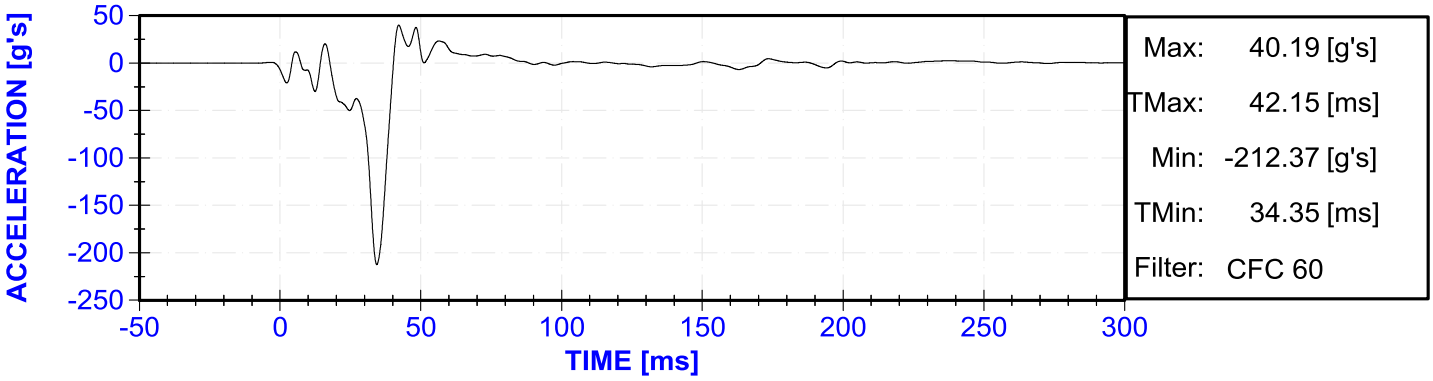
V2 Driver Seat Track Z Acceleration



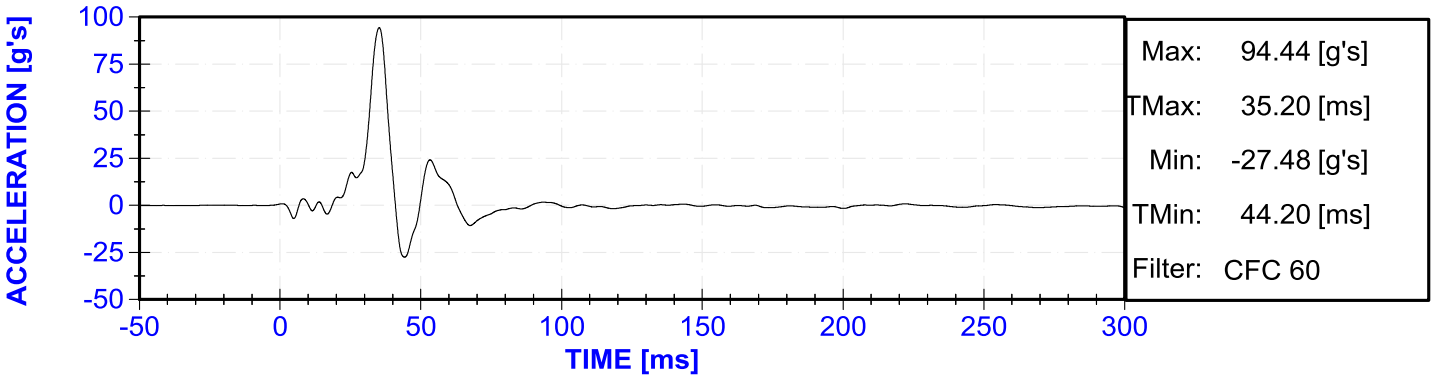
**R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP -
RB0225 2011 FORD FIESTA**

**Test Date:
July 26,2011**

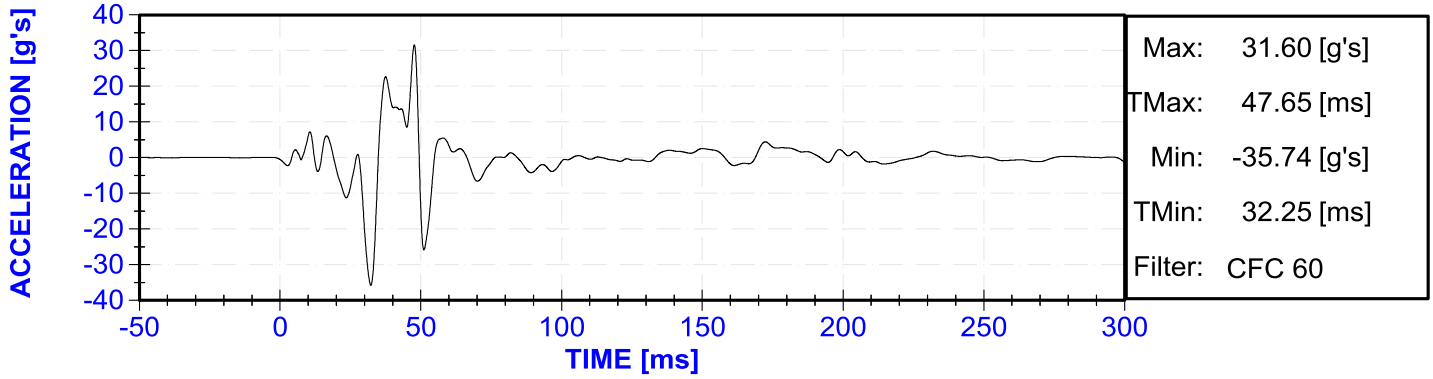
V2 Driver Floor Pan X Acceleration



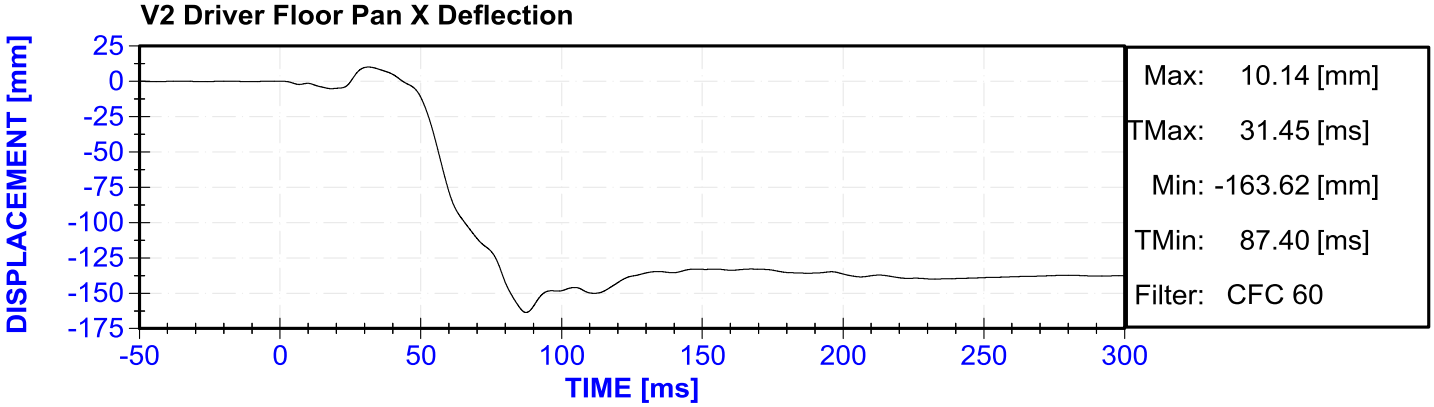
V2 Driver Floor Pan Y Acceleration



V2 Driver Floor Pan Z Acceleration



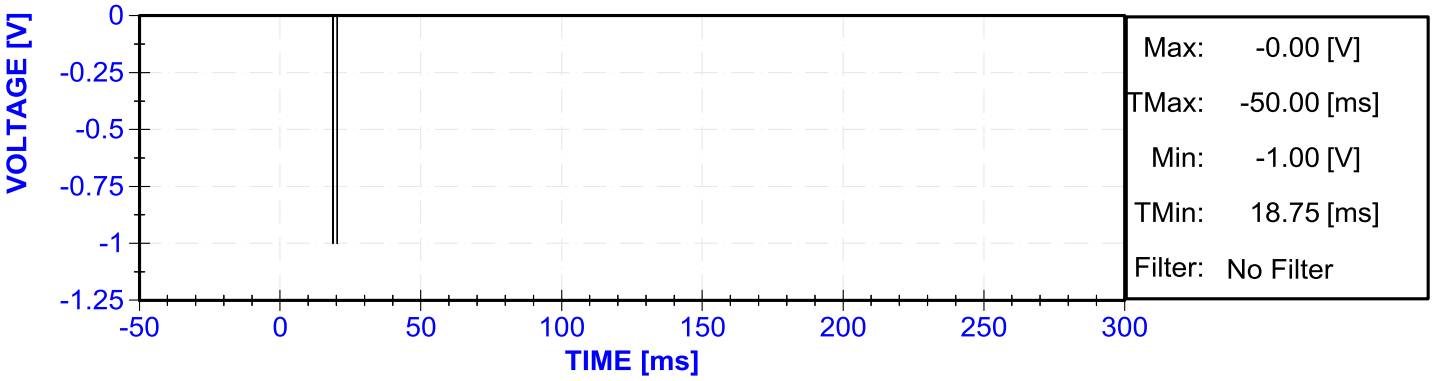
V2 Driver Floor Pan X Deflection



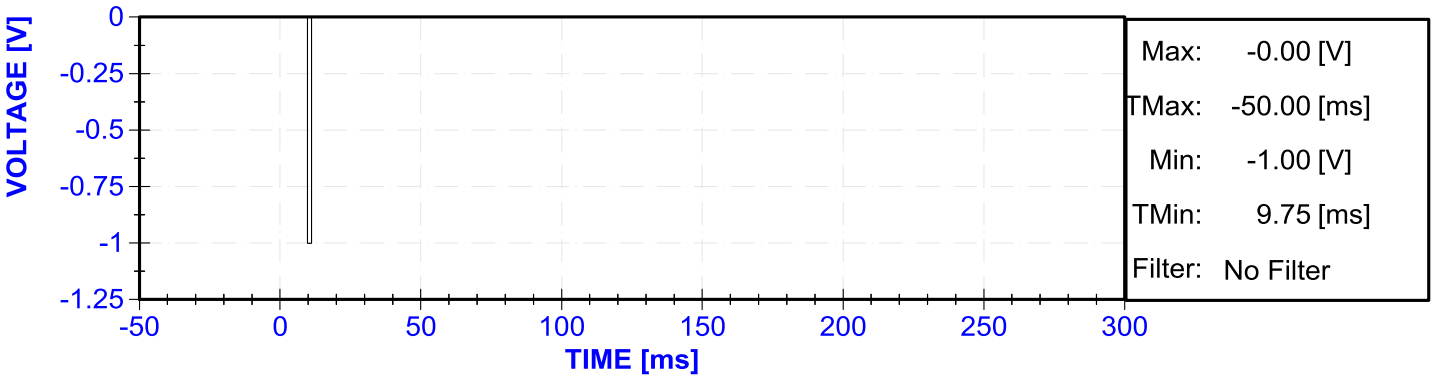
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

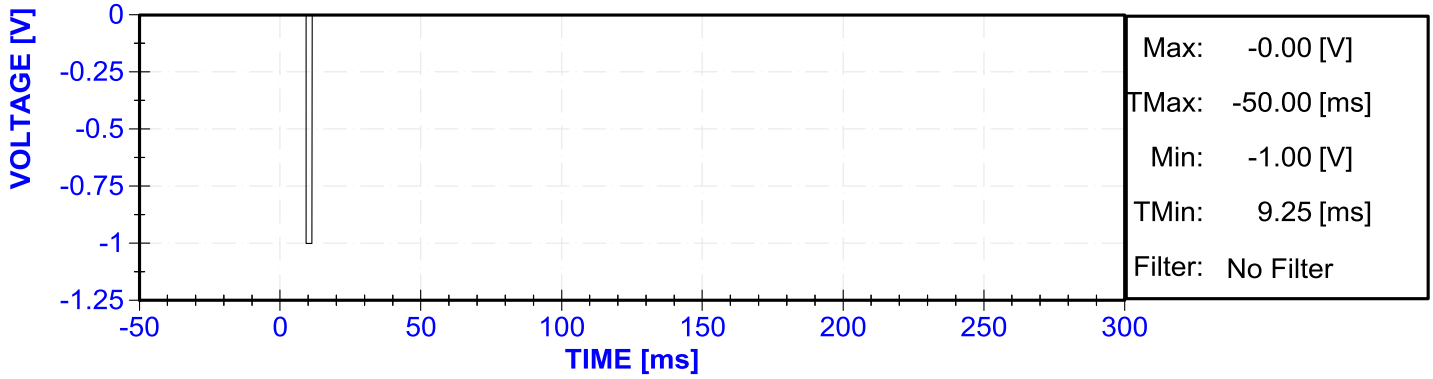
V2 Driver Left Knee CS1



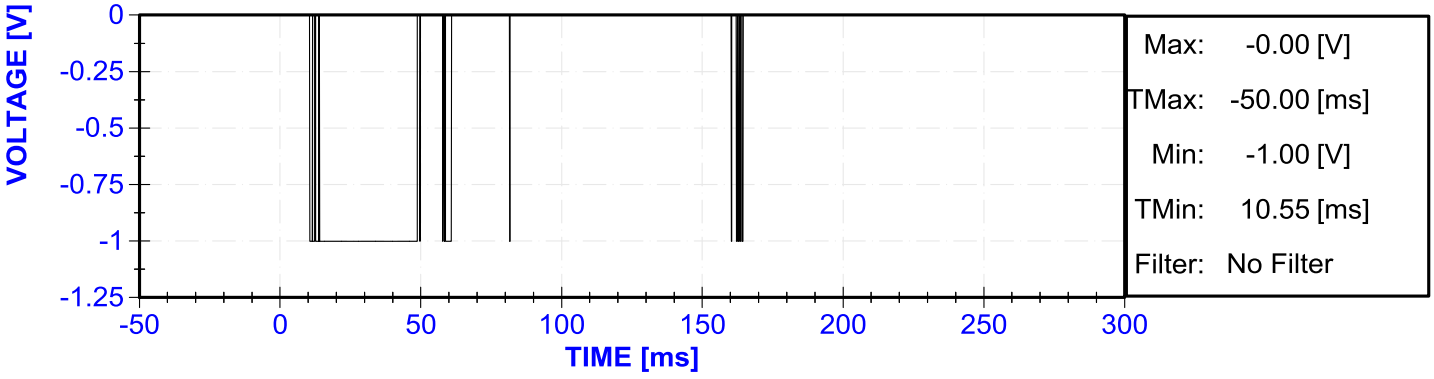
V2 Driver Left Knee CS2



V2 Driver Left Knee CS3



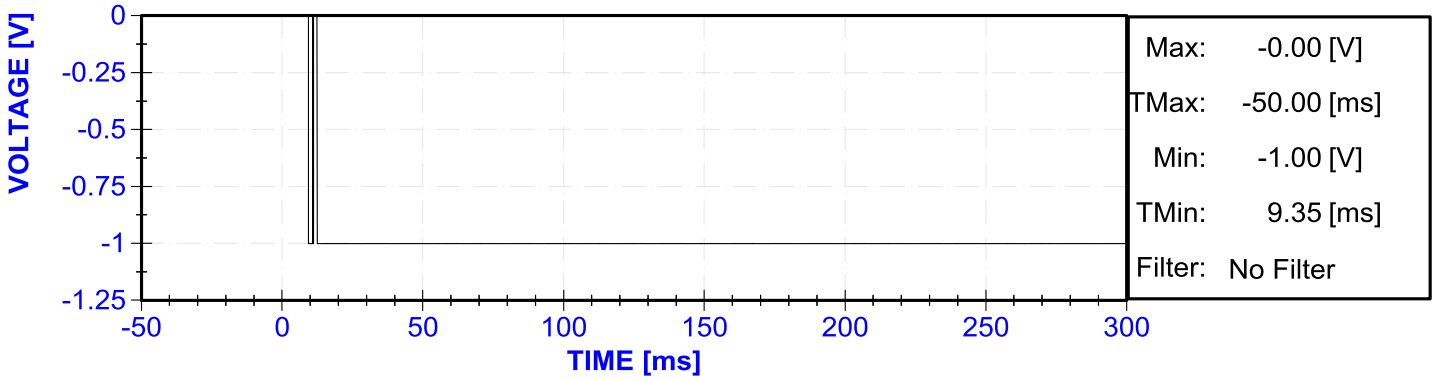
V2 Driver Right Knee CS4



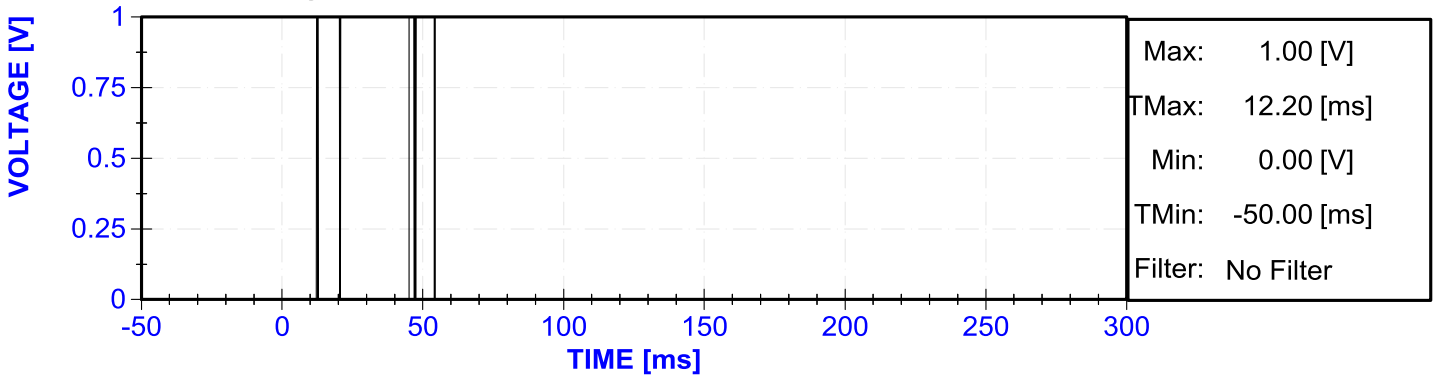
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

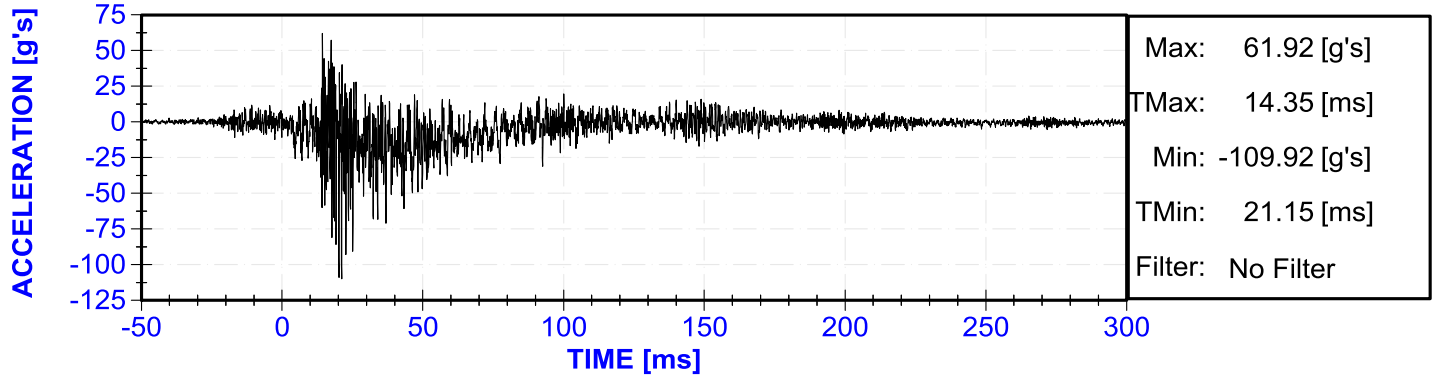
V2 Driver Right Knee CS5



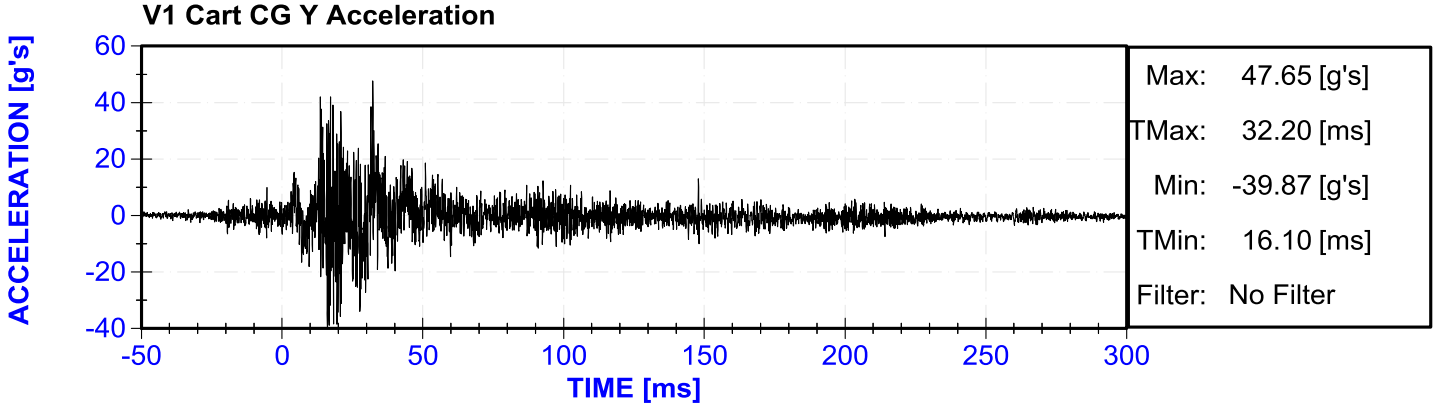
V2 Driver Right Knee CS6



V1 Cart CG X Acceleration



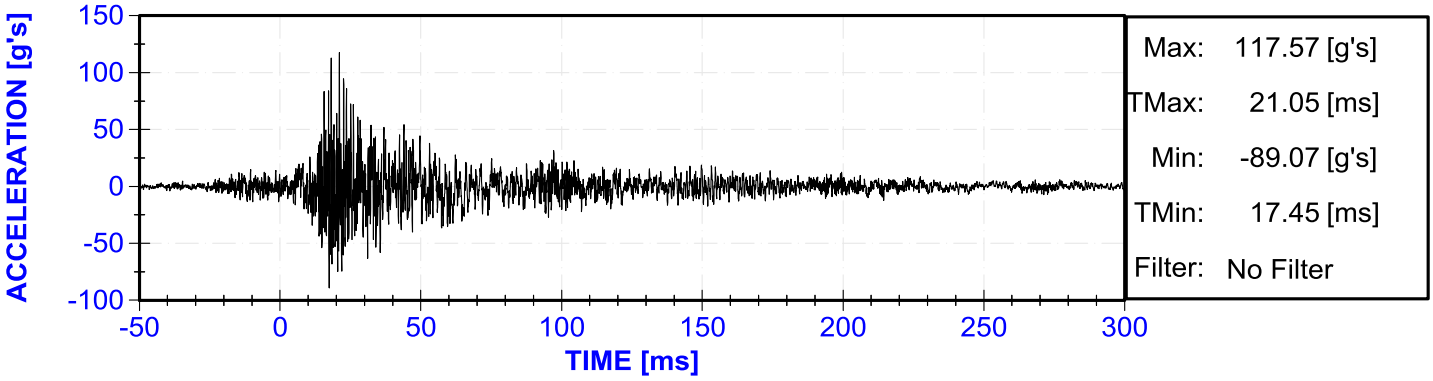
V1 Cart CG Y Acceleration



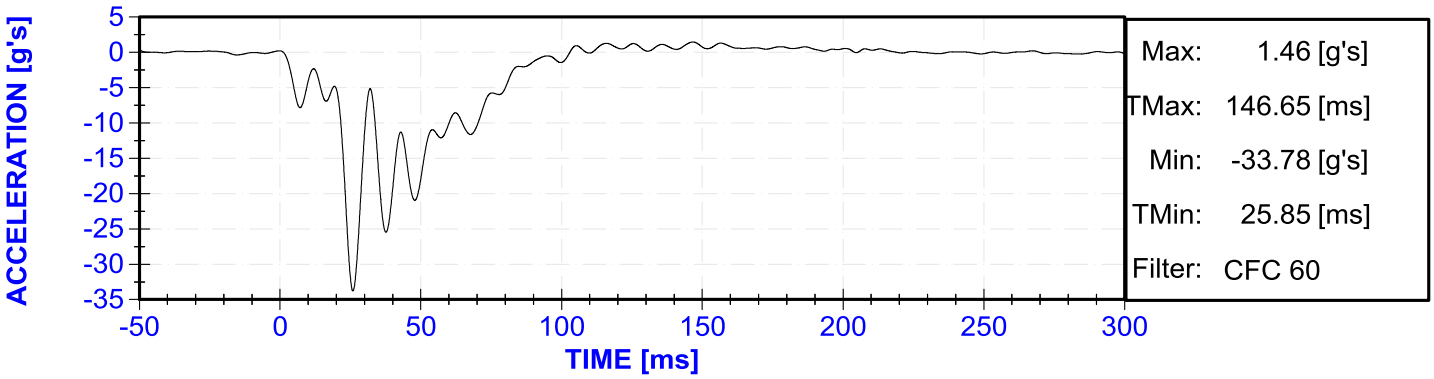
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

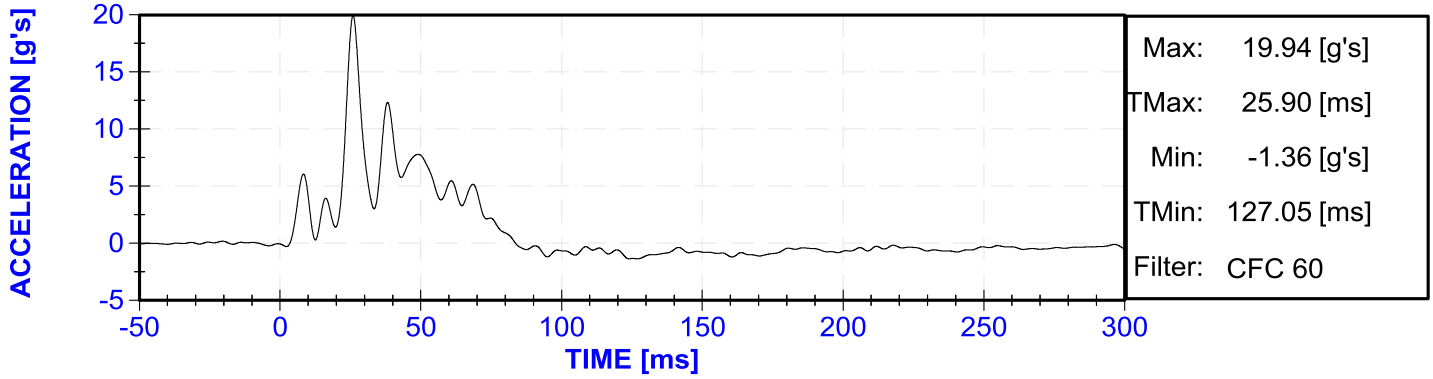
V1 Cart CG Z Acceleration



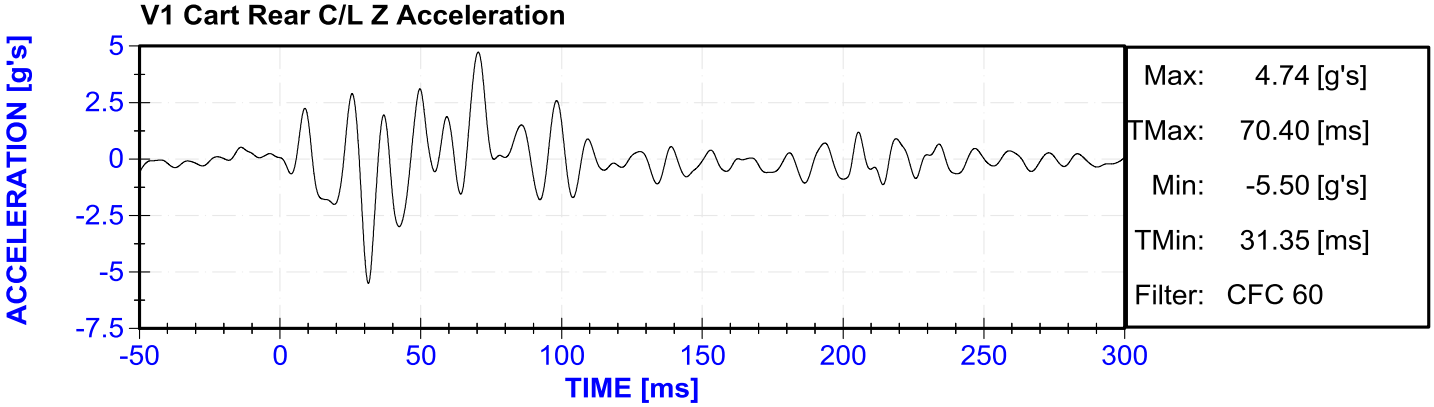
V1 Cart Rear C/L X Acceleration



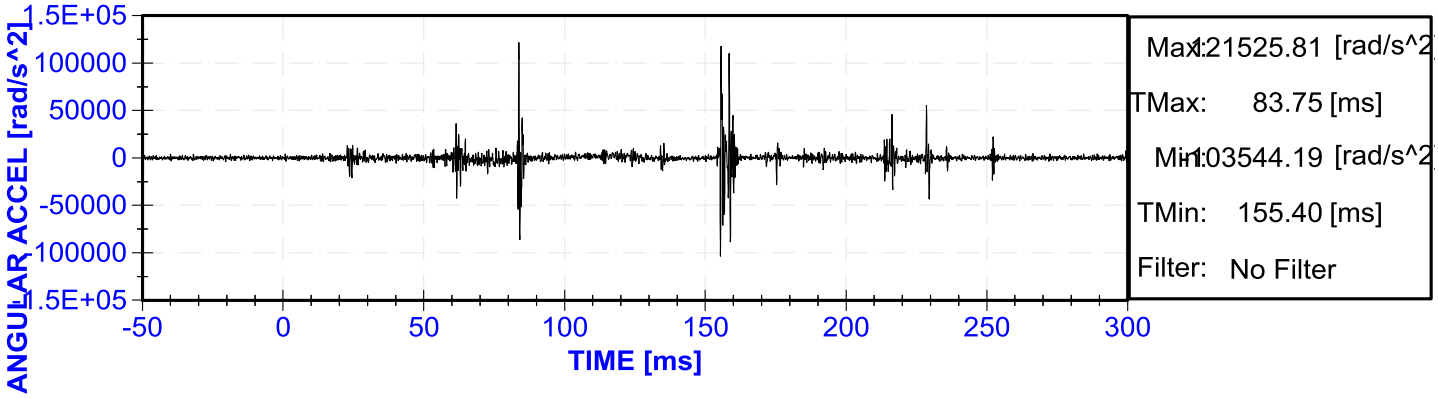
V1 Cart Rear C/L Y Acceleration



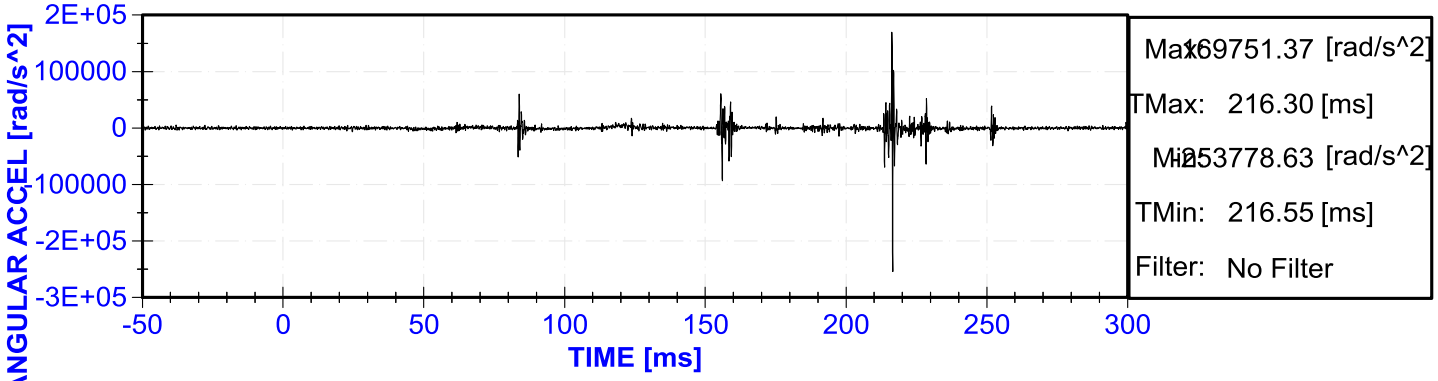
V1 Cart Rear C/L Z Acceleration



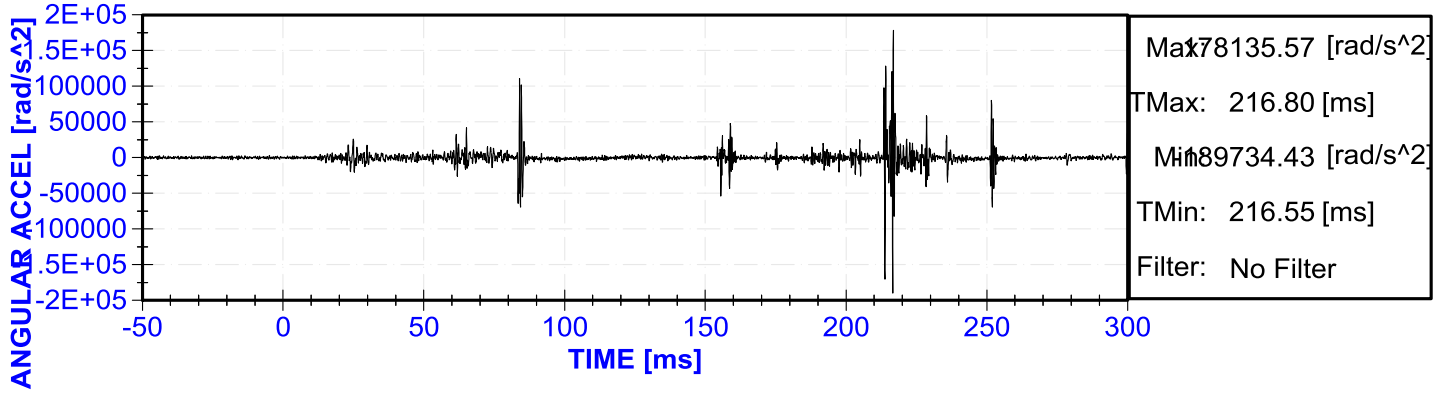
V2P1 HEAD ANGULAR ACCELERATION X [SIMON]



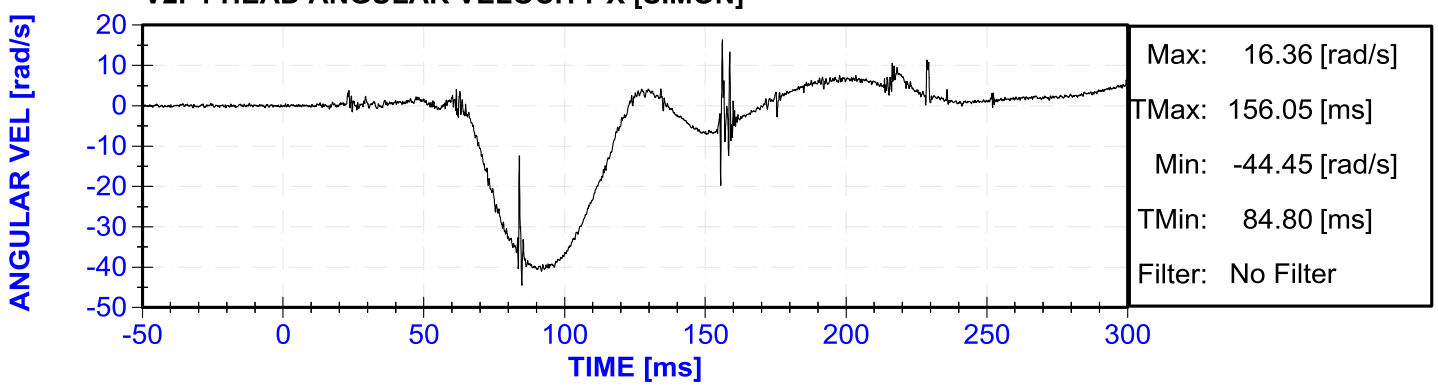
V2P1 HEAD ANGULAR ACCELERATION Y [SIMON]



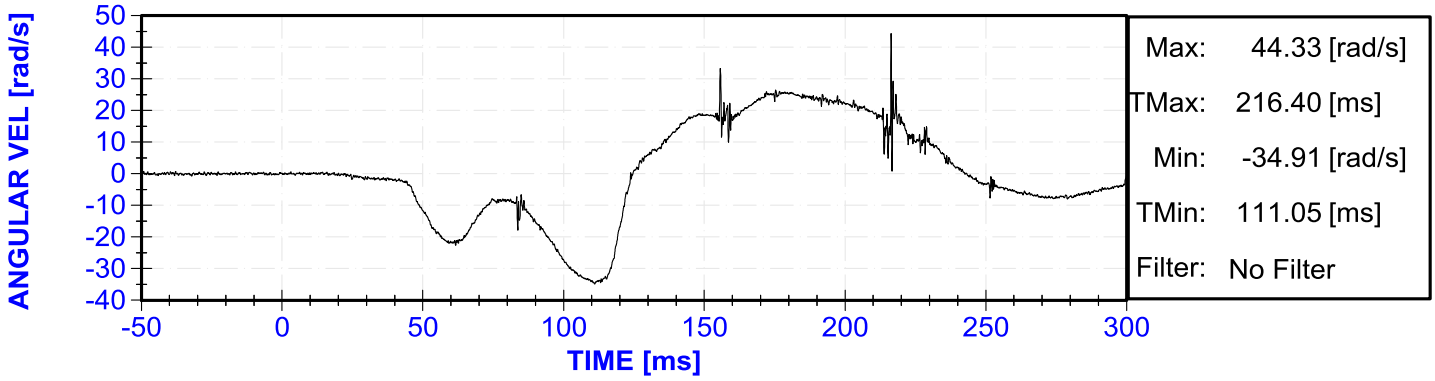
V2P1 HEAD ANGULAR ACCELERATION Z [SIMON]



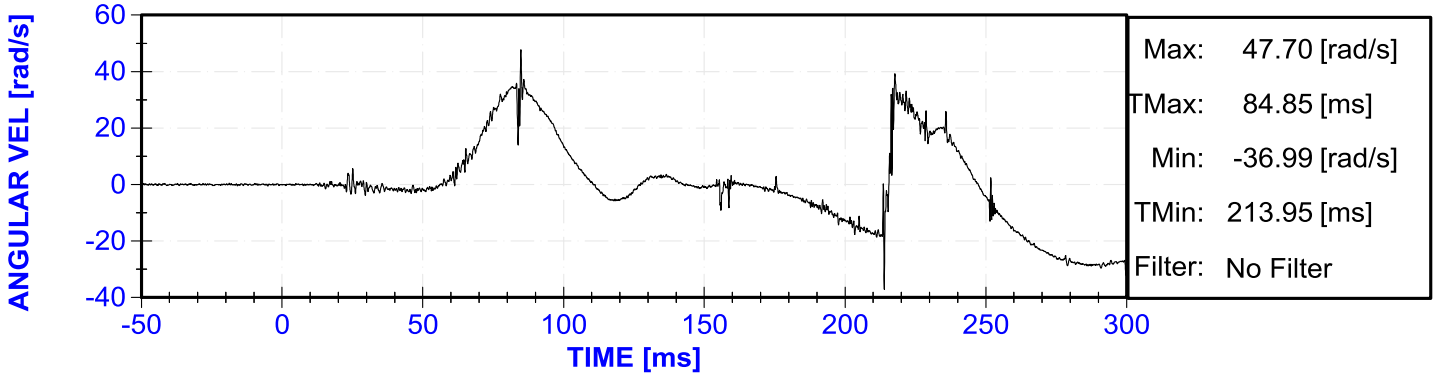
V2P1 HEAD ANGULAR VELOCITY X [SIMON]



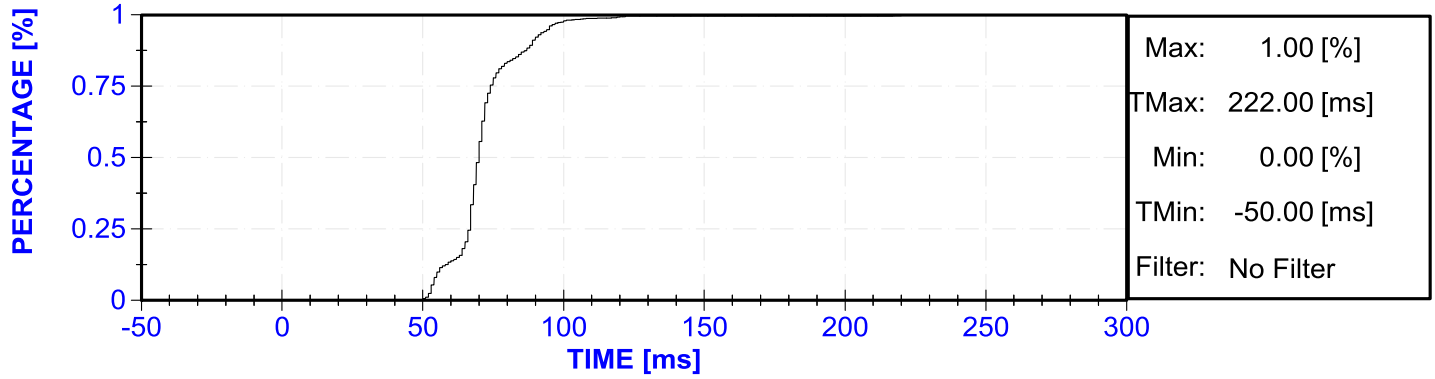
V2P1 HEAD ANGULAR VELOCITY Y [SIMON]



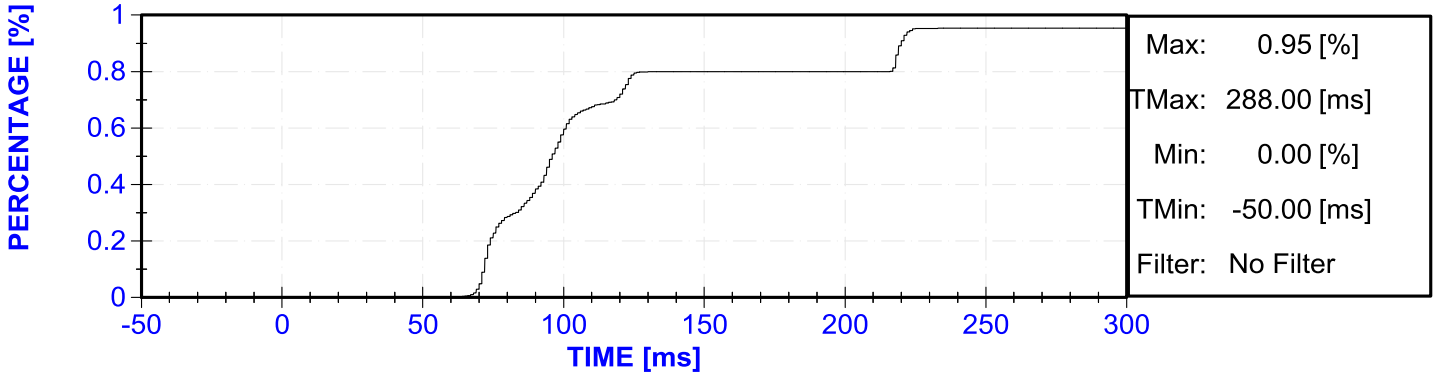
V2P1 HEAD ANGULAR VELOCITY Z [SIMON]



V2P1 CUMULATIVE STRAIN 0.05 [SIMON]



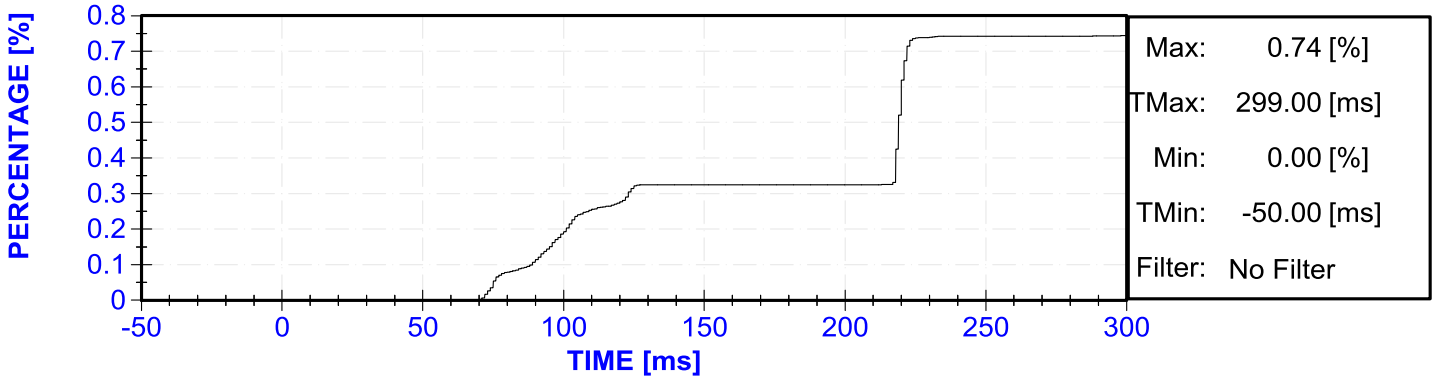
V2P1 CUMULATIVE STRAIN 0.10 [SIMON]



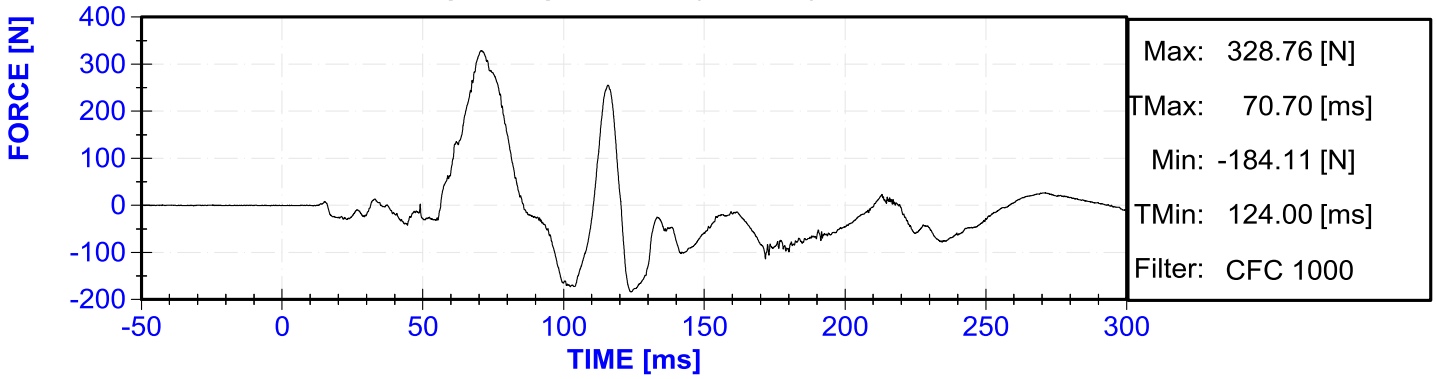
R&D OBLIQUE OFFSET - 15 DEG/ 35% OVERLAP - RB0225 2011 FORD FIESTA

Test Date: July 26,2011

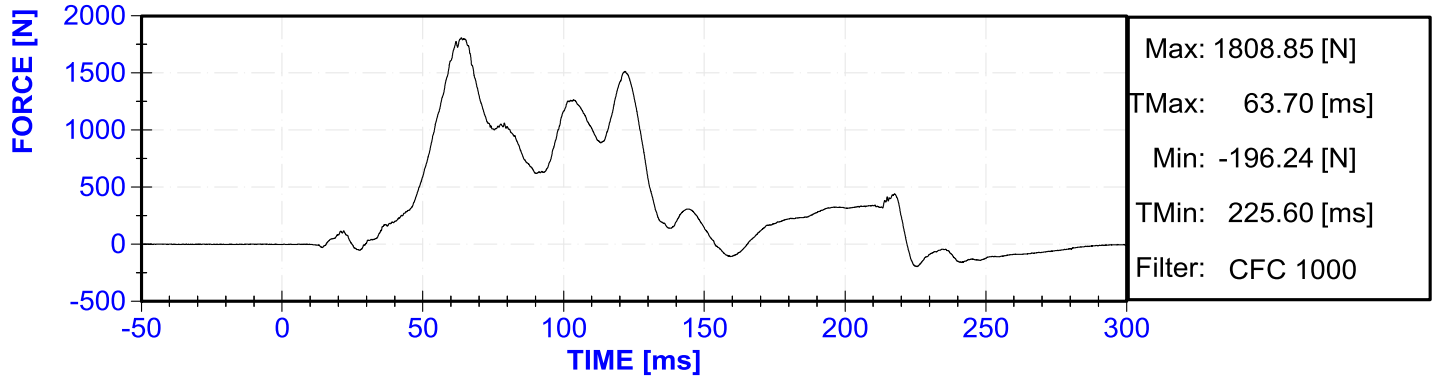
V2P1 CUMULATIVE STRAIN 0.15 [SIMON]



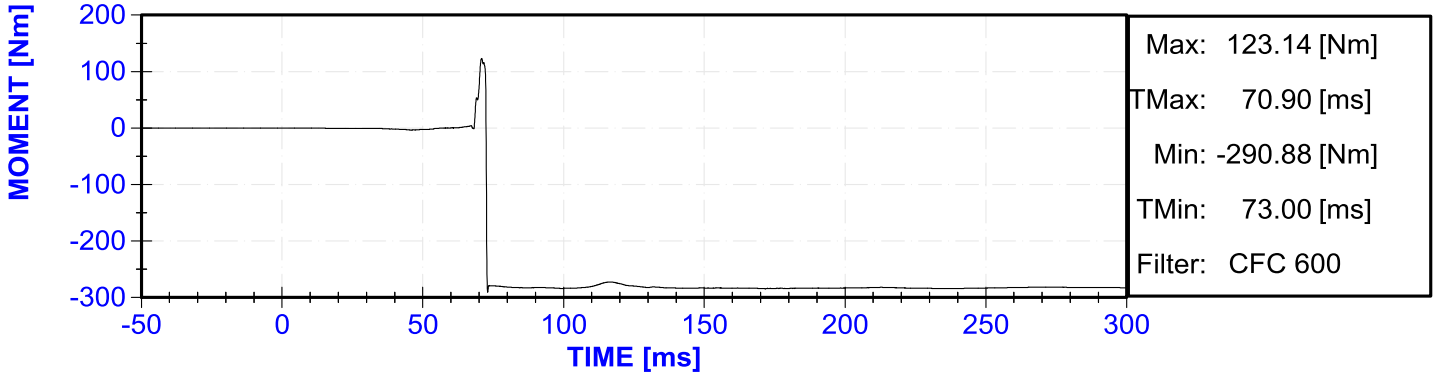
V2P1 Fx on head acting through the O.C. joint only



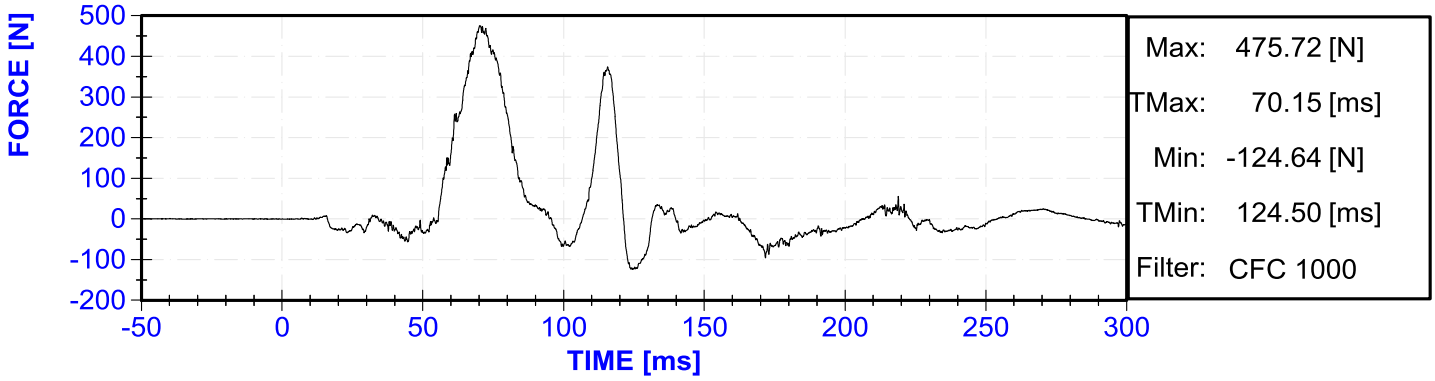
V2P1 Fz on head acting through the O.C. joint only



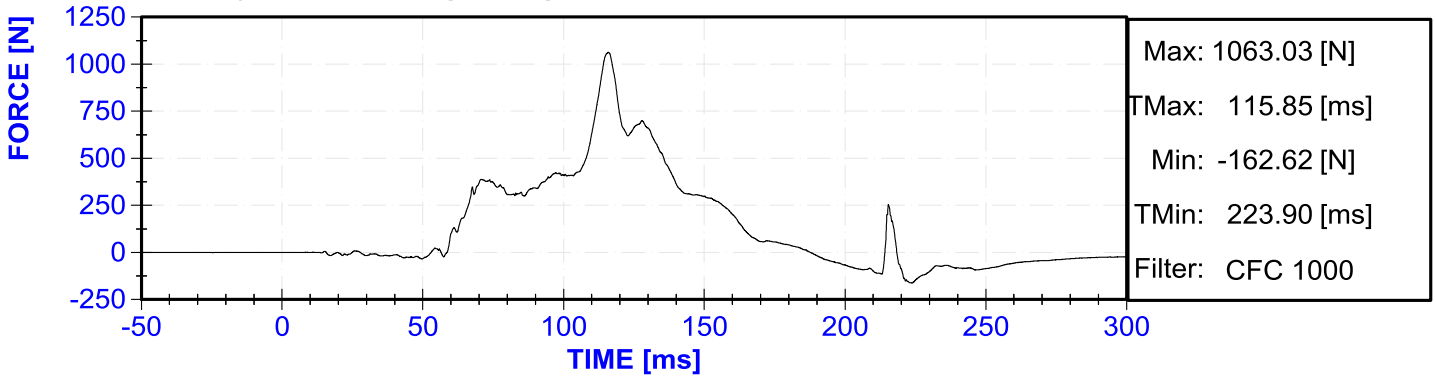
V2P1 My on head acting through the O.C. joint only



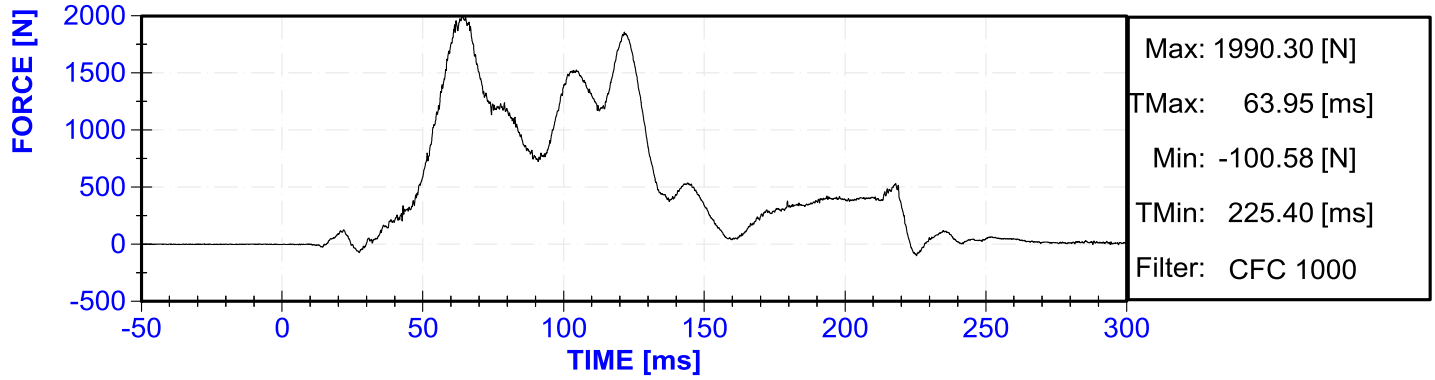
V2P1 Fx on head acting through the total neck section



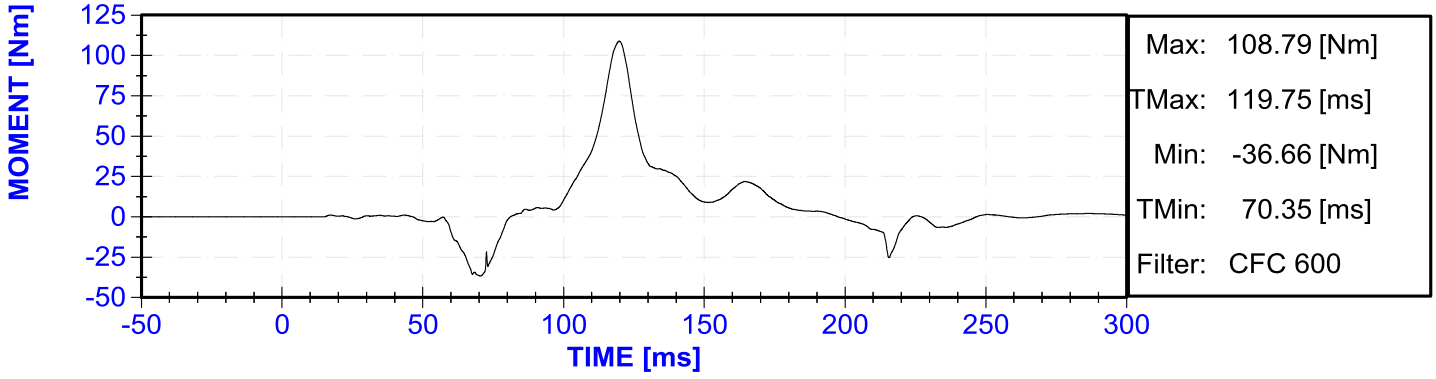
V2P1 Fy on head acting through the total neck section



V2P1 Fz on head acting through the total neck section

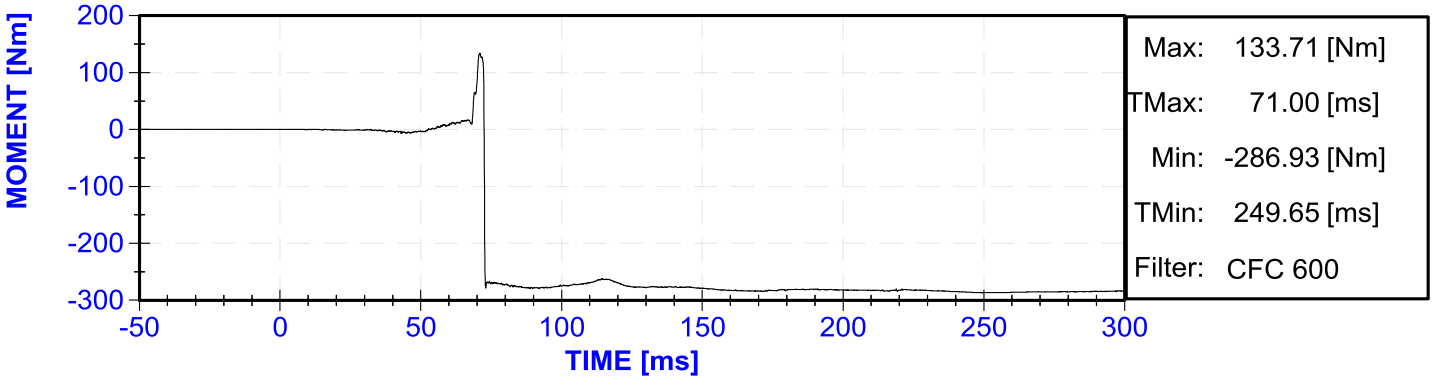


V2P1 Mx on head acting through the total neck section

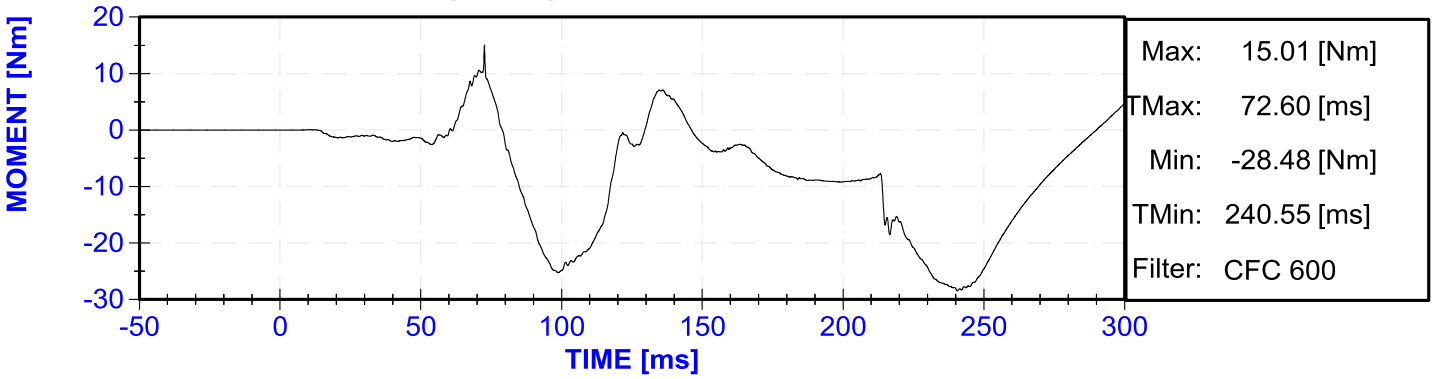


V2P1 My on head acting through the total neck section

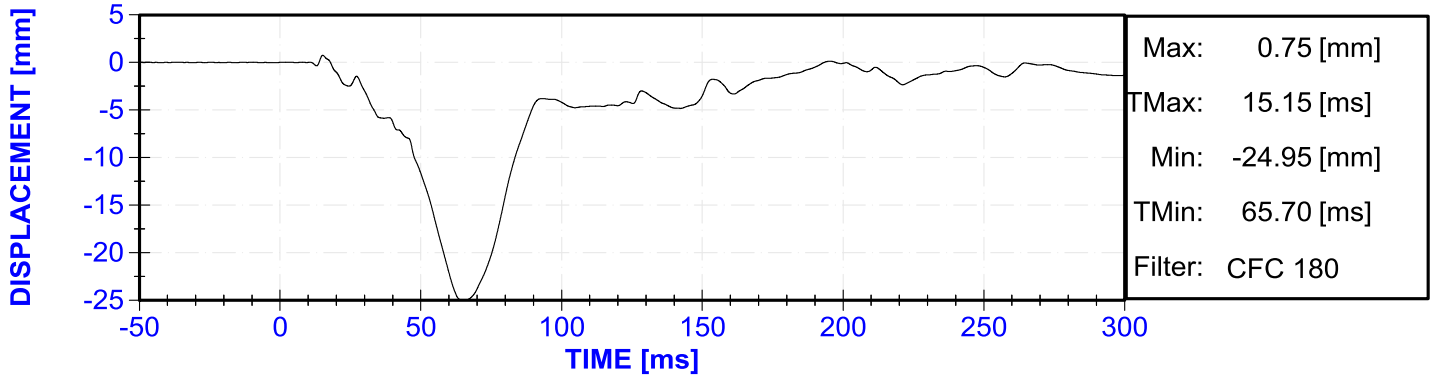
V2P1 NEKU MY HAD QD AFTER 72MS



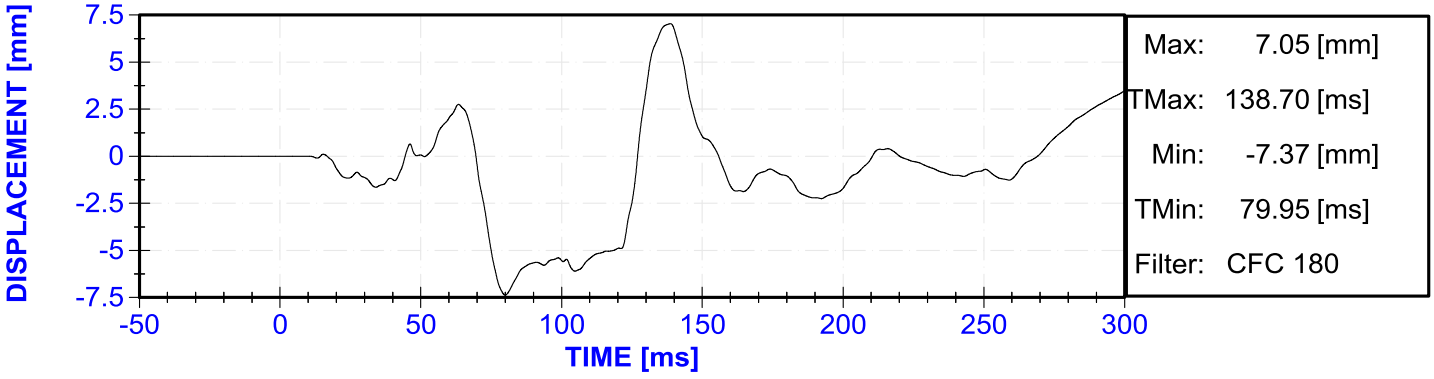
V2P1 Mz on head acting through the total neck section



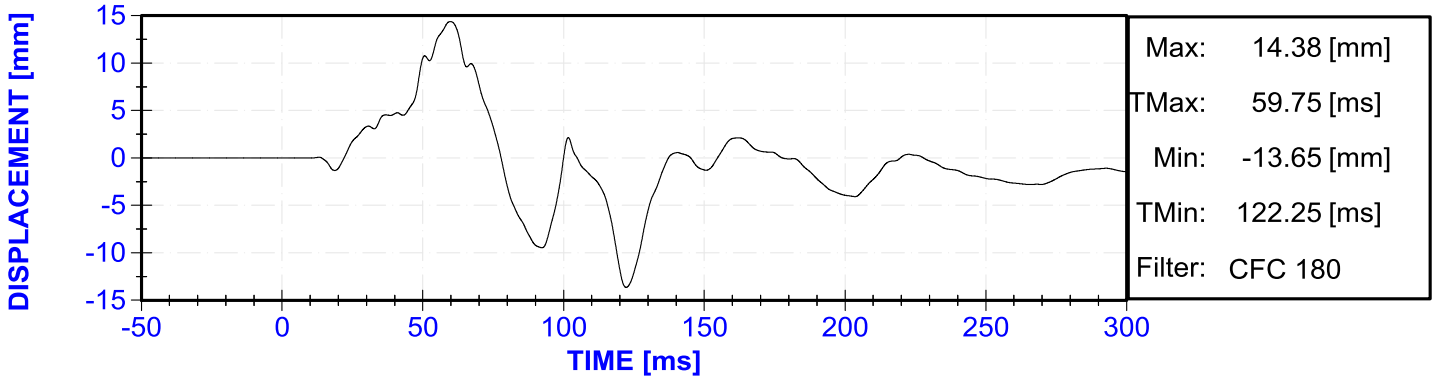
V2P1 Chest Left Upper Dx



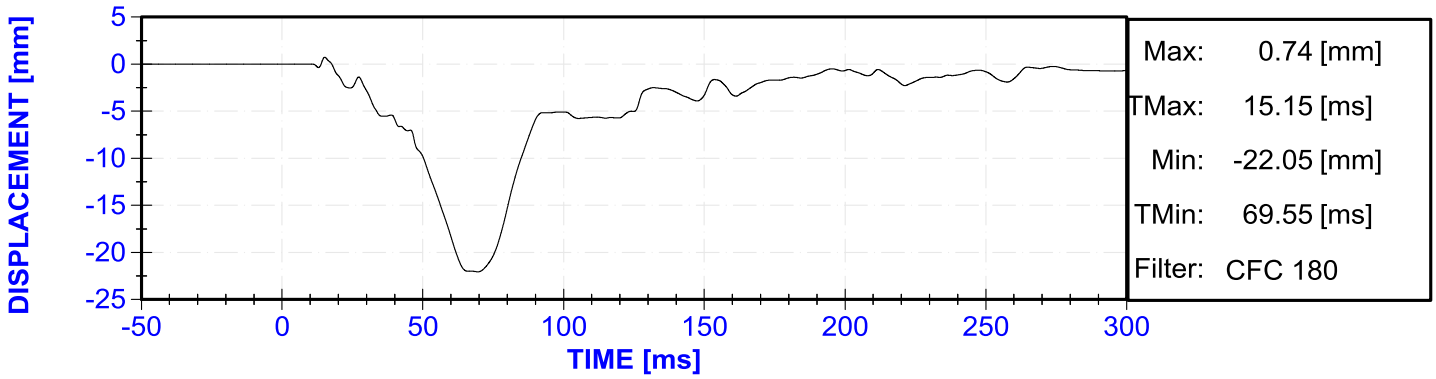
V2P1 Chest Left Upper Dy



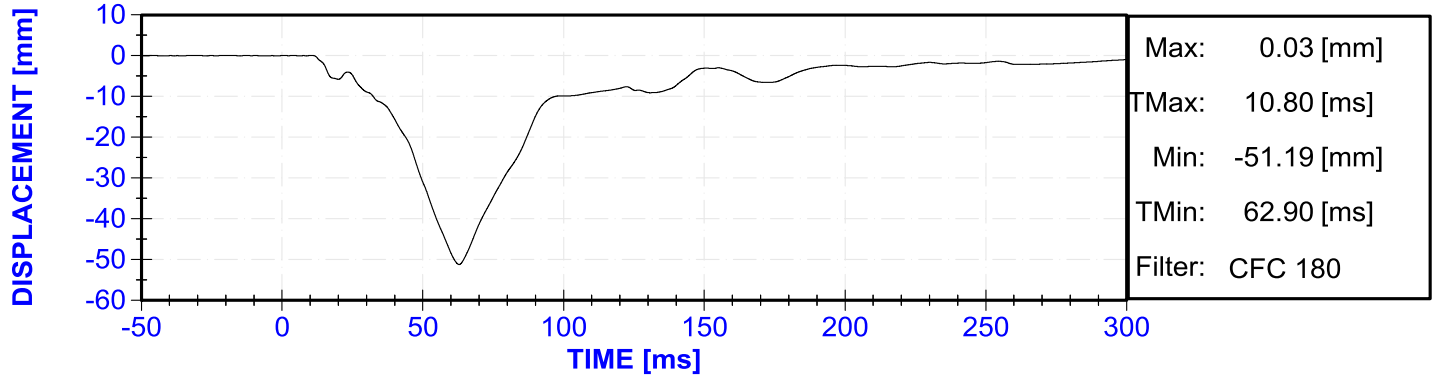
V2P1 Chest Left Upper Dz



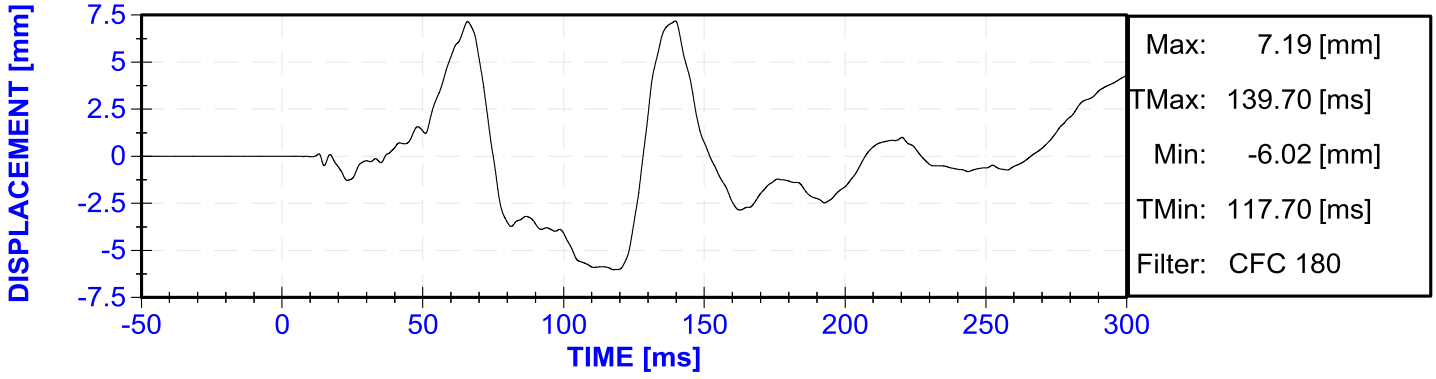
V2P1 Chest Left Upper D



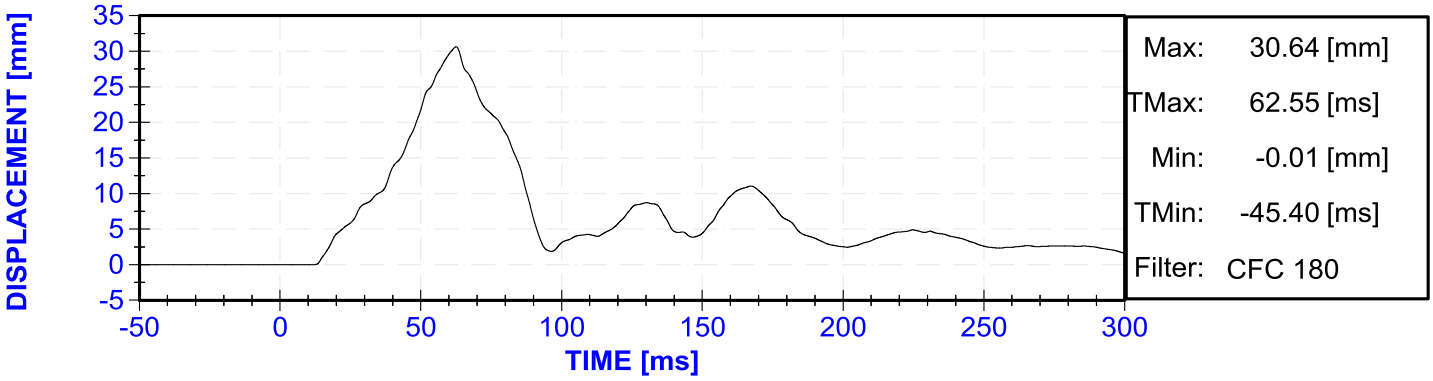
V2P1 Chest Right Upper Dx



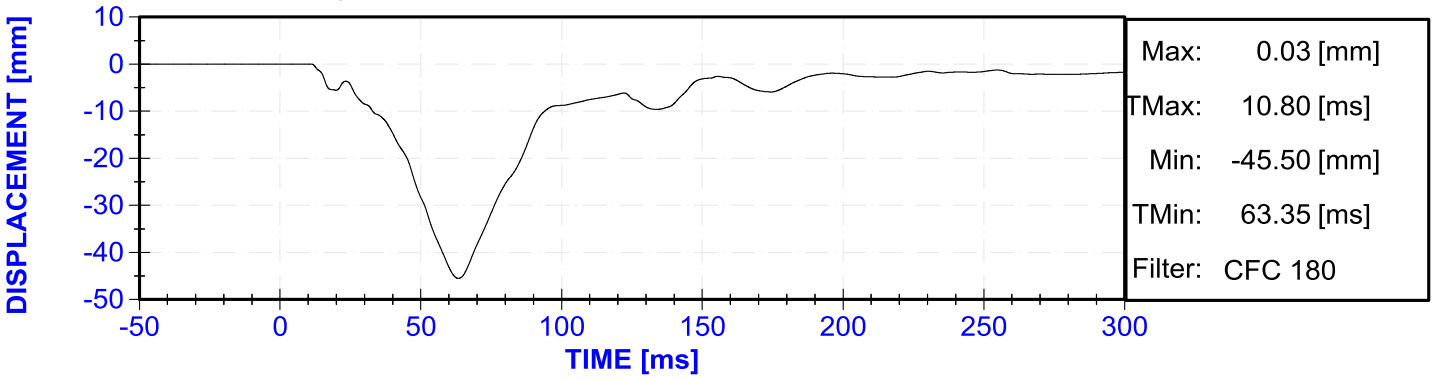
V2P1 Chest Right Upper Dy



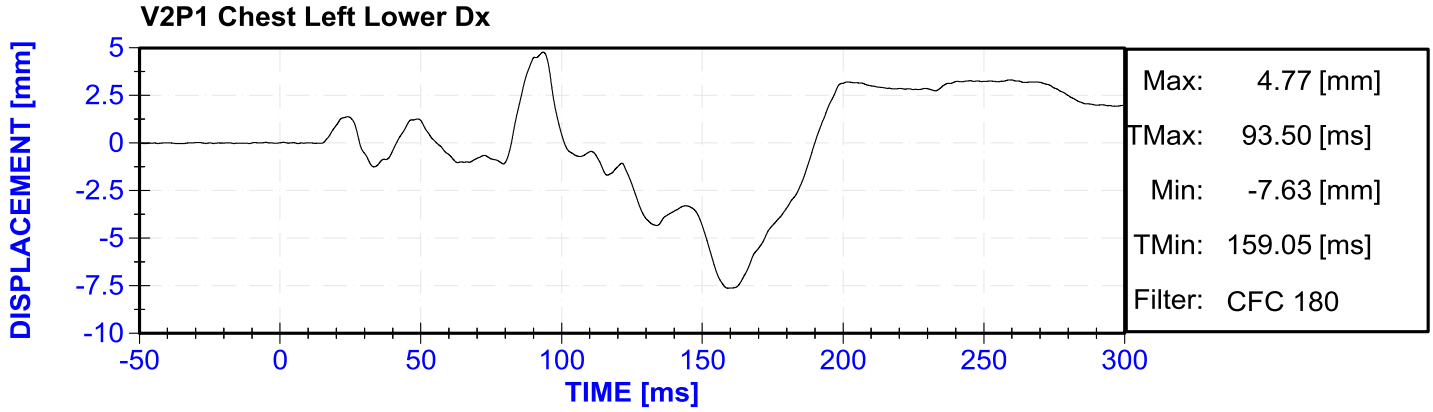
V2P1 Chest Right Upper Dz



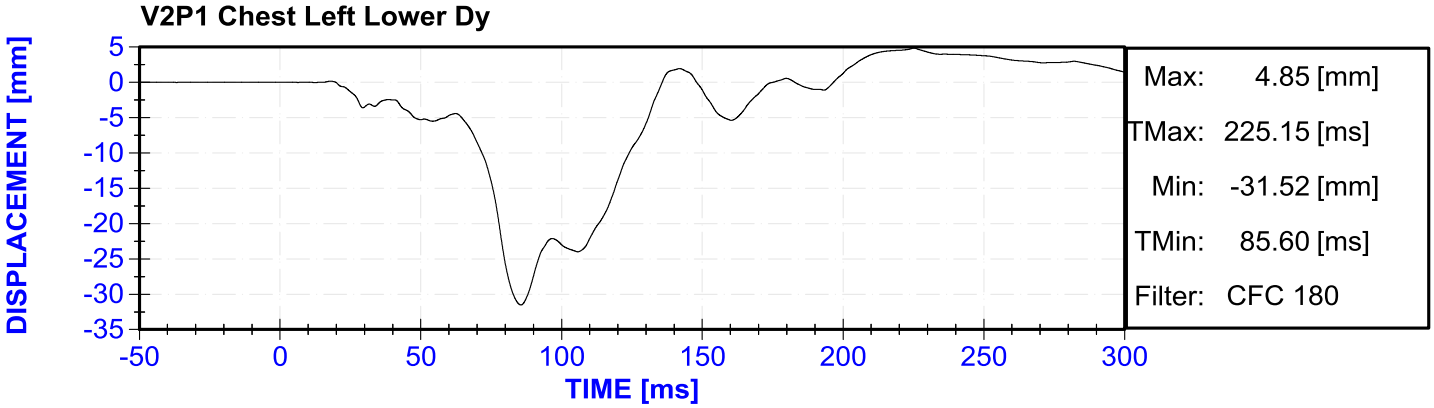
V2P1 Chest Right Upper D



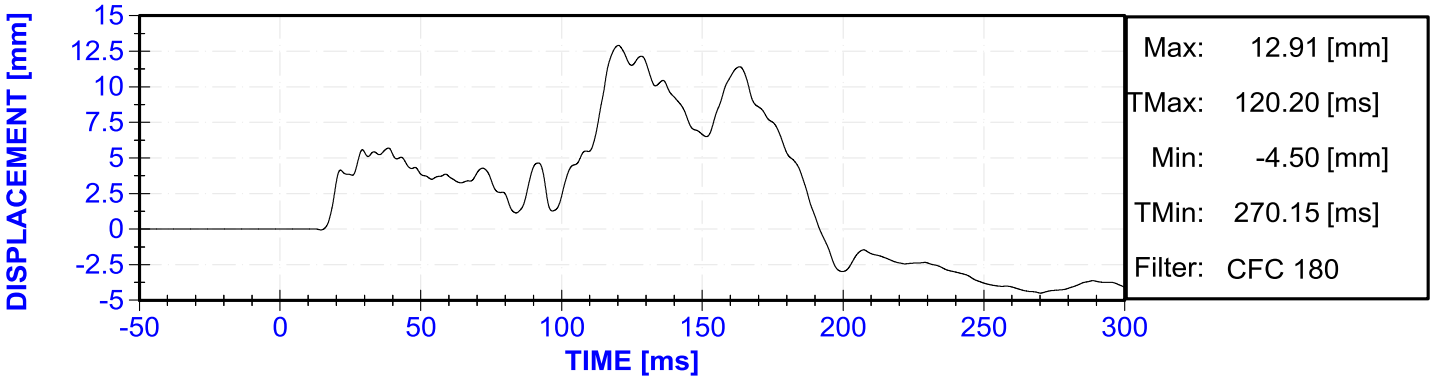
V2P1 Chest Left Lower Dx



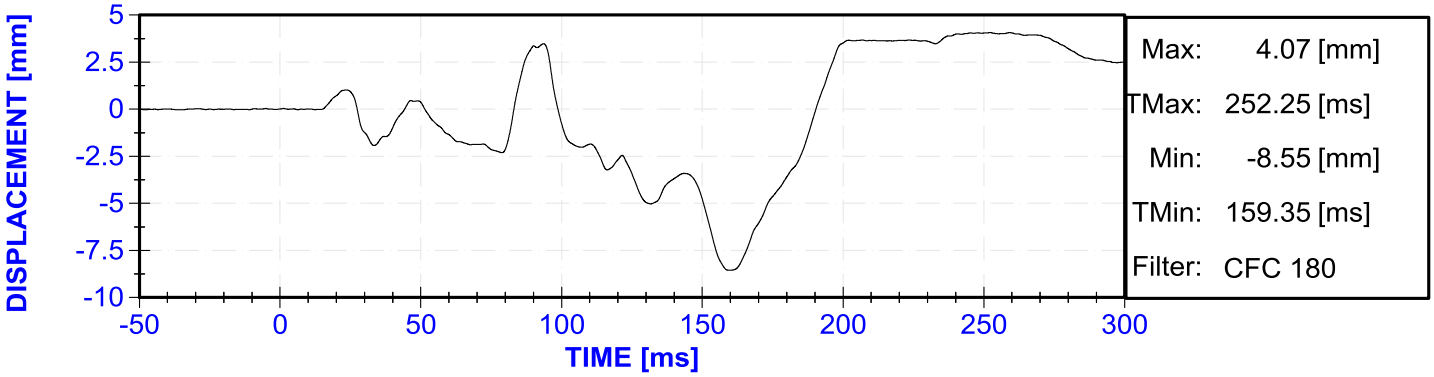
V2P1 Chest Left Lower Dy



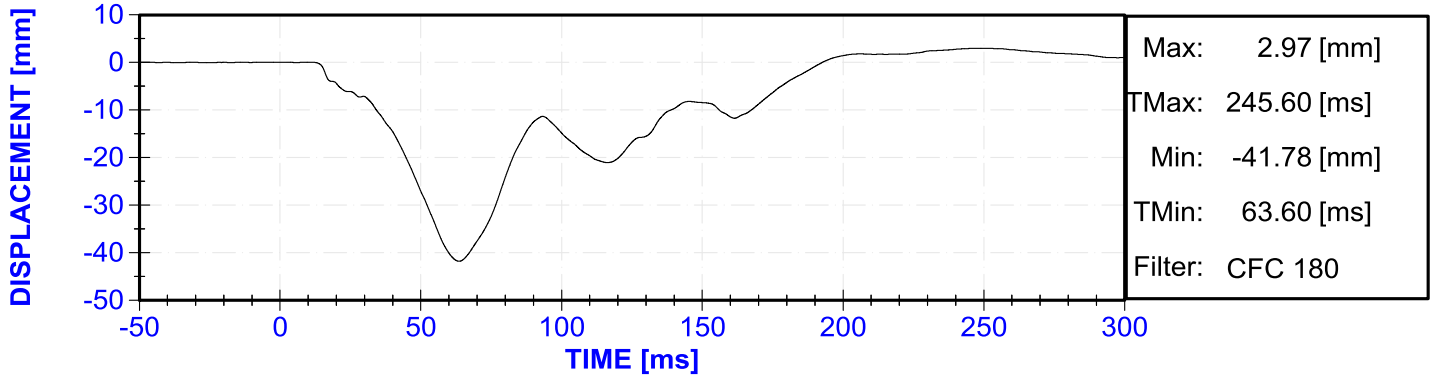
V2P1 Chest Left Lower Dz



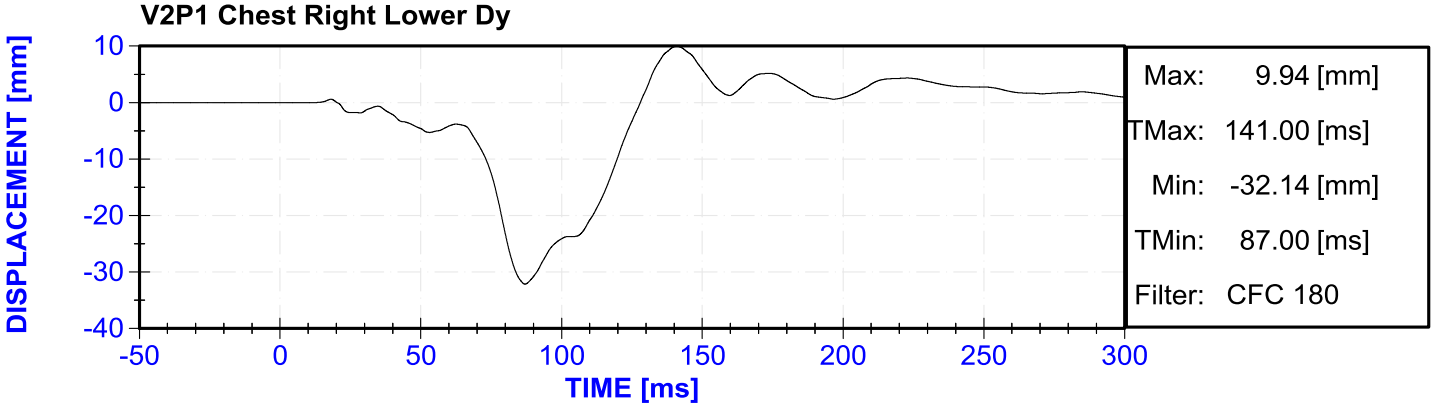
V2P1 Chest Left Lower D



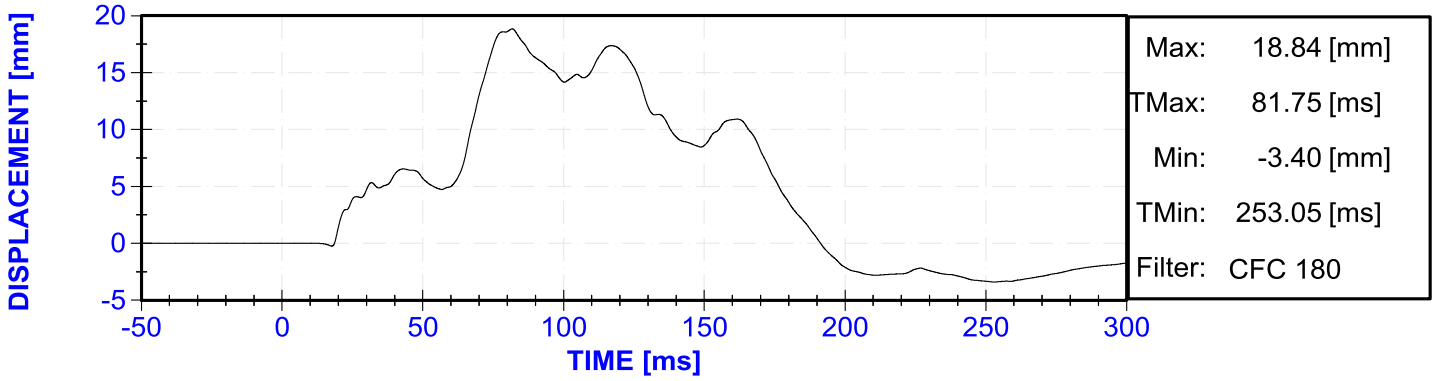
V2P1 Chest Right Lower Dx



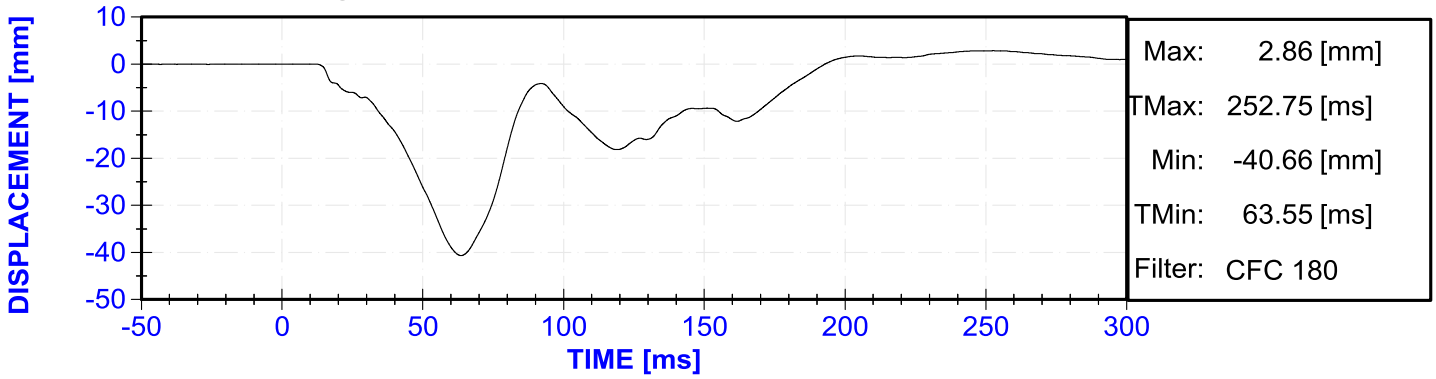
V2P1 Chest Right Lower Dy



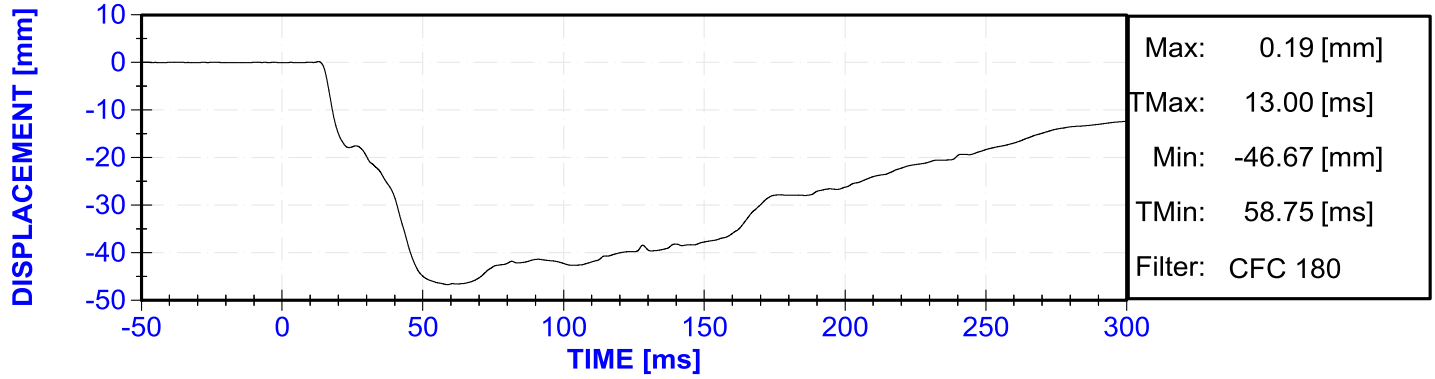
V2P1 Chest Right Lower Dz



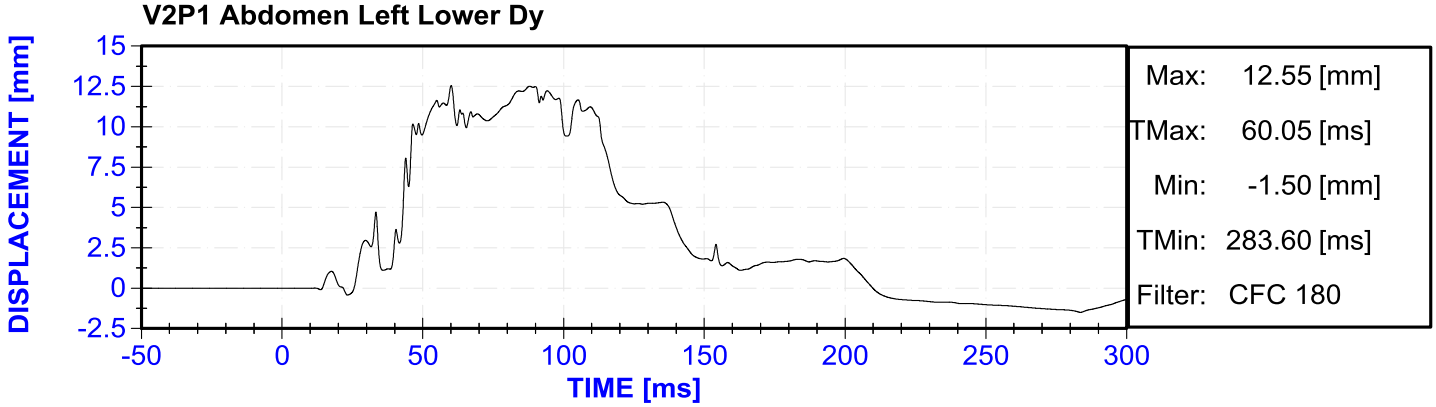
V2P1 Chest Right Lower D



V2P1 Abdomen Left Lower Dx

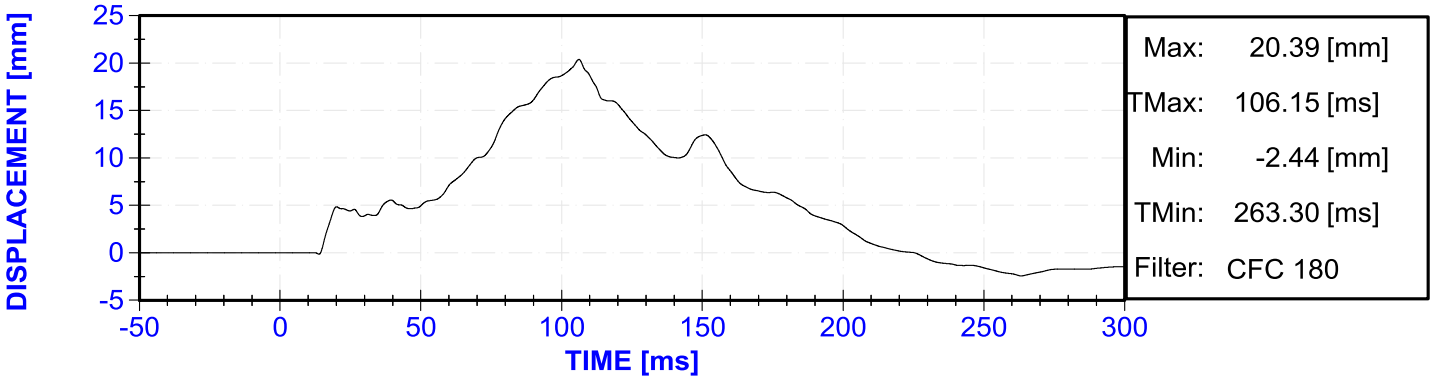


V2P1 Abdomen Left Lower Dy



V2P1 Abdomen Left Lower Dz

V2P1 ABDL RZ HAD NOISE SPIKES



Max:	20.39 [mm]
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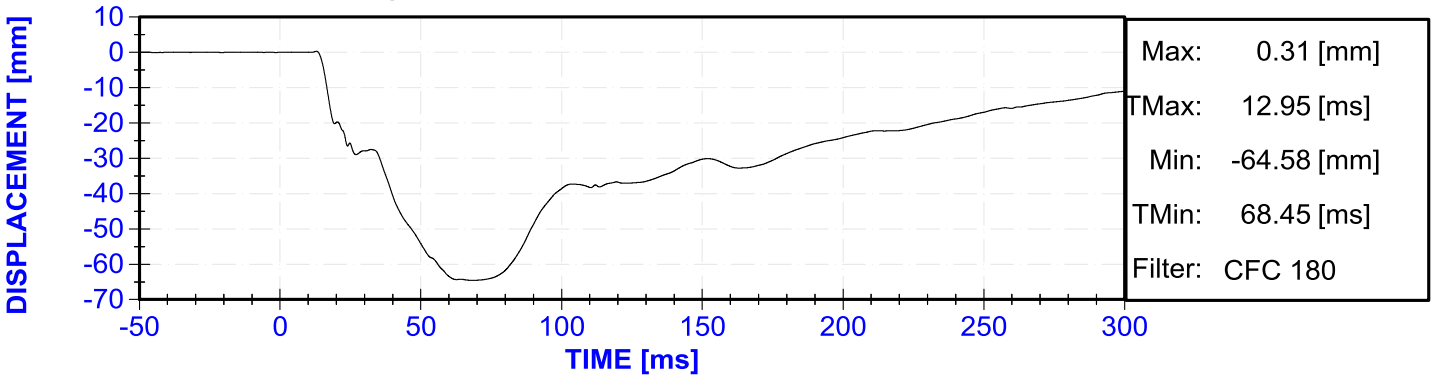
Min:	-2.44 [mm]
TMin:	263.30 [ms]
Filter:	CFC 180

V2P1 Abdomen Right Lower Dx



Max:	0.31 [mm]
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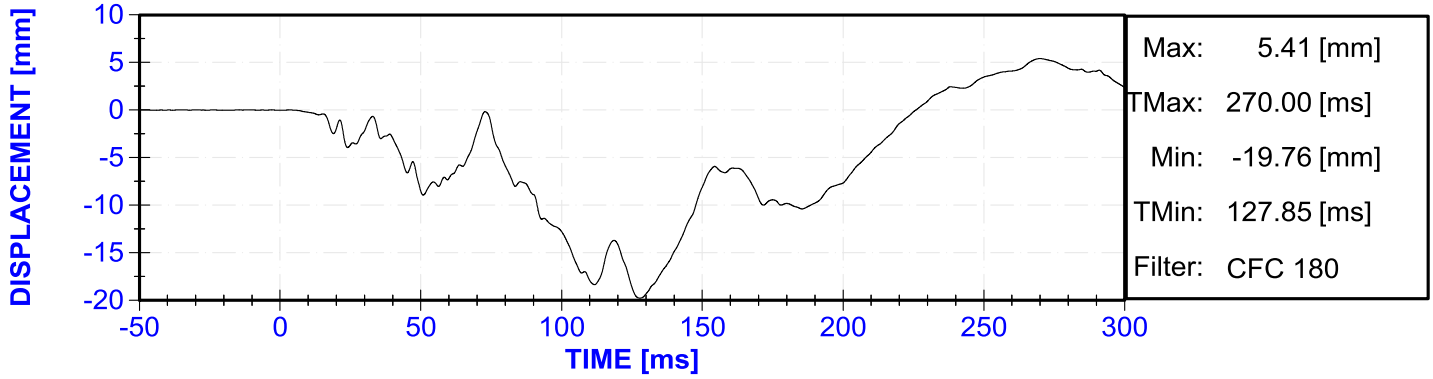
TMin:	68.45 [ms]
Filter:	CFC 180

V2P1 Abdomen Right Lower Dy



Max:	5.41 [mm]
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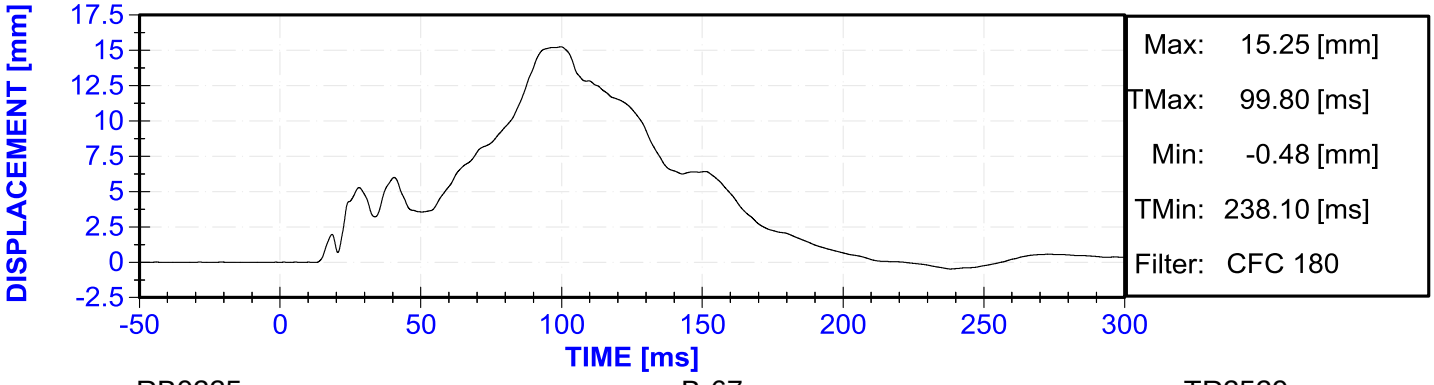
Min:	-19.76 [mm]
TMin:	127.85 [ms]
Filter:	CFC 180

V2P1 Abdomen Right Lower Dz



Max:	15.25 [mm]
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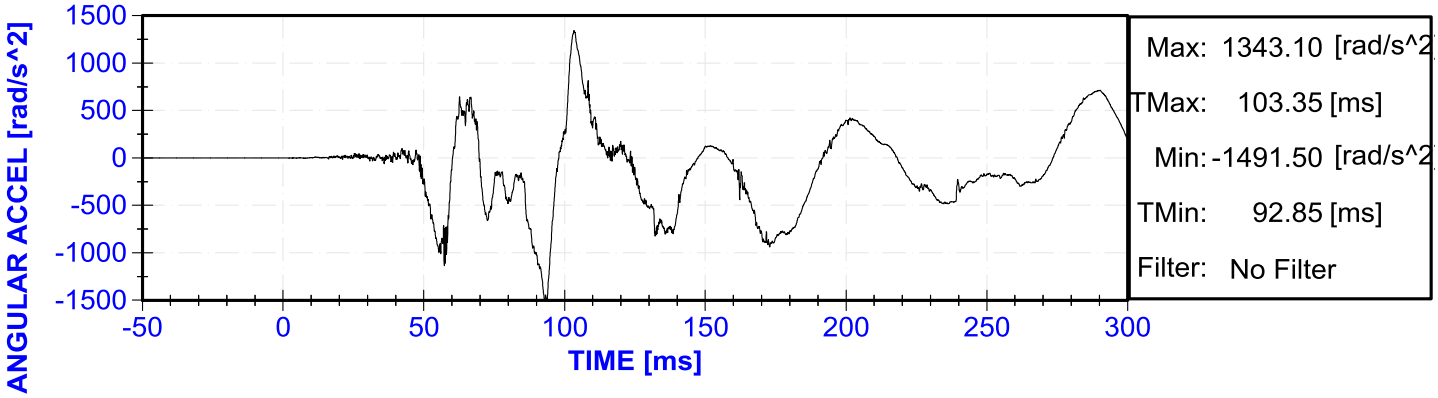
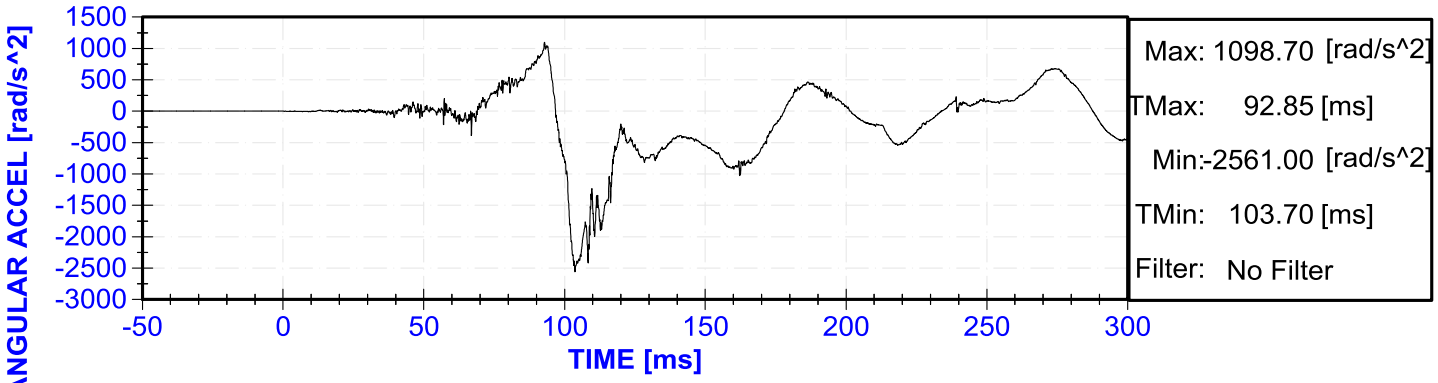
Min:	-0.48 [mm]
TMin:	238.10 [ms]
Filter:	CFC 180

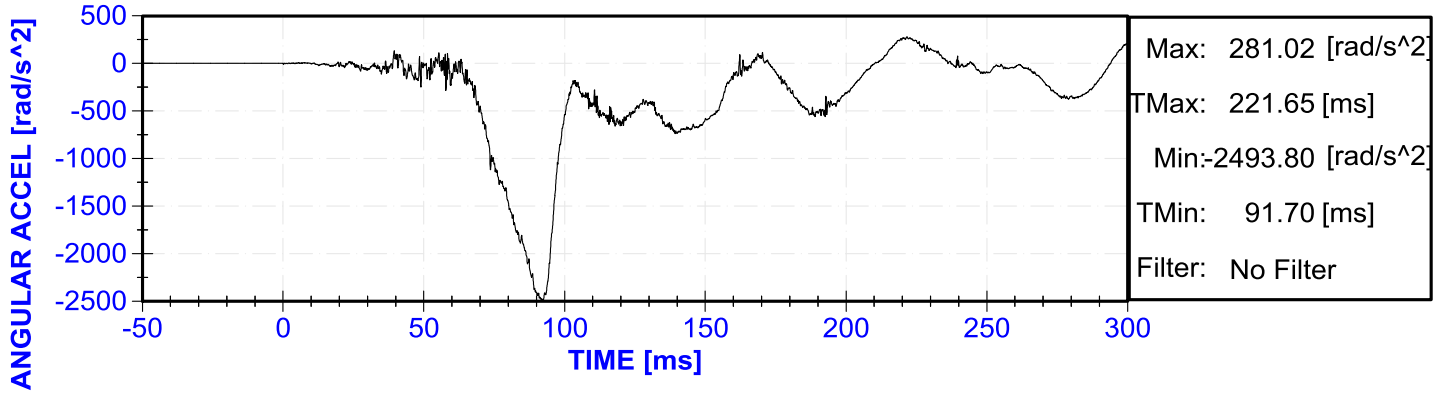
V2P4 HEAD ANGULAR ACCELERATION X [SIMON]



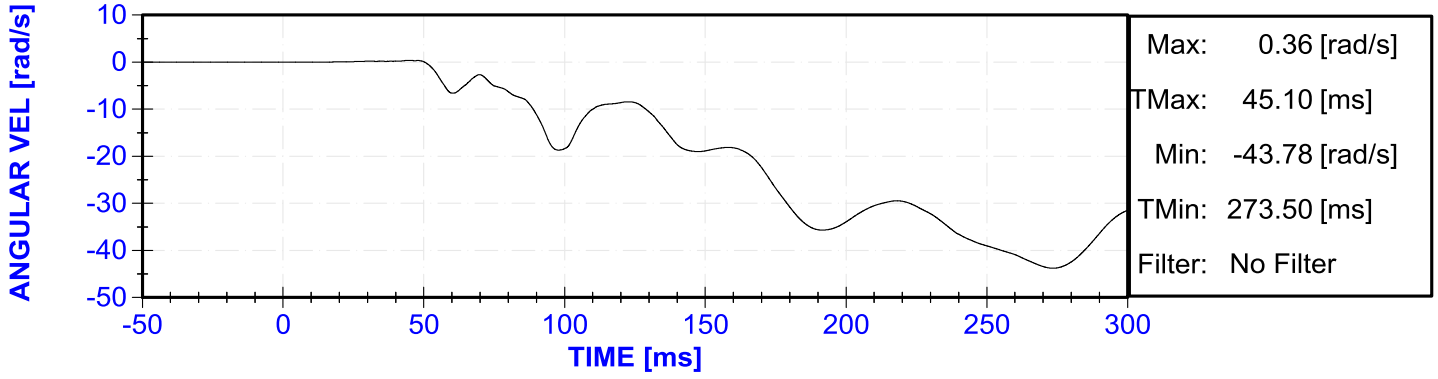
V2P4 HEAD ANGULAR ACCELERATION Y [SIMON]



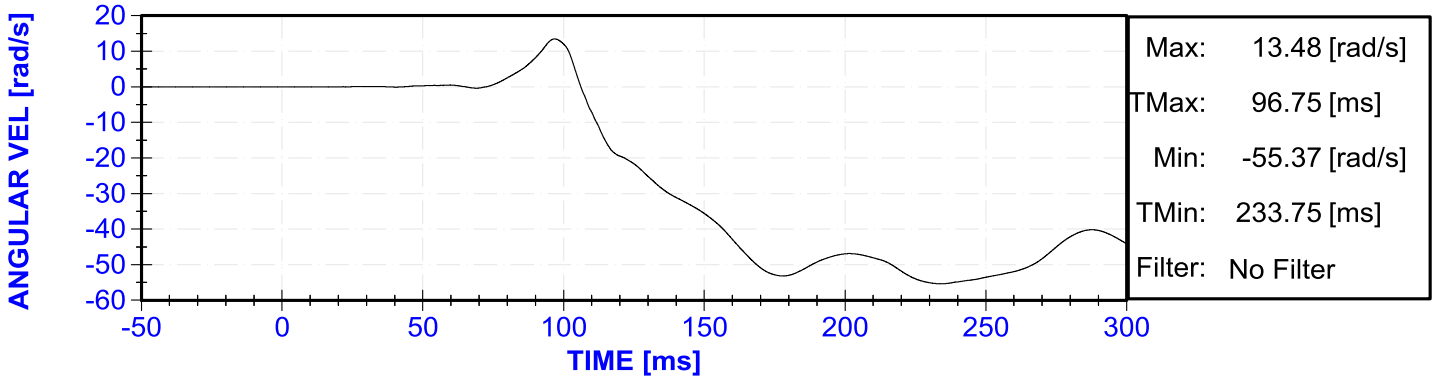
V2P4 HEAD ANGULAR ACCELERATION Z [SIMON]



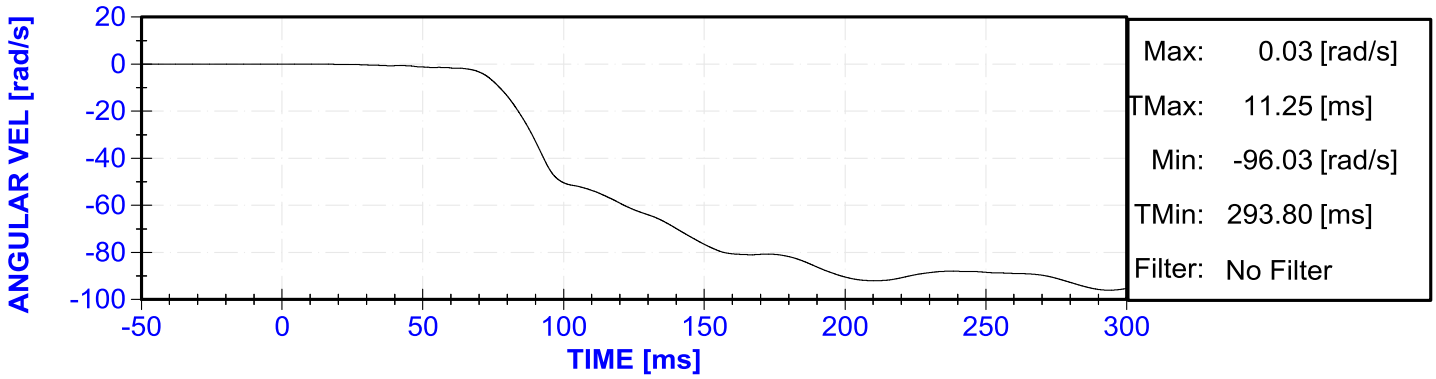
V2P4 HEAD ANGULAR VELOCITY X [SIMON]



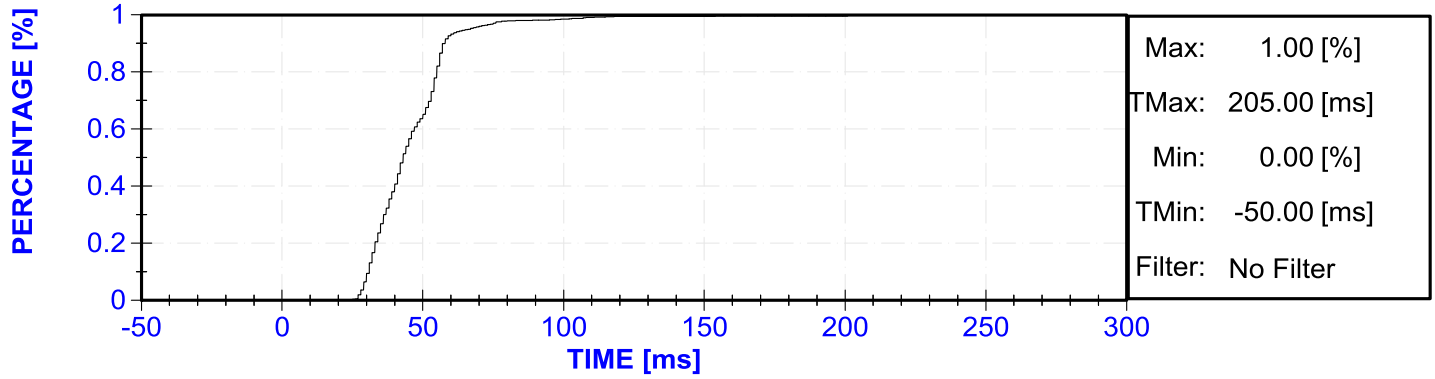
V2P4 HEAD ANGULAR VELOCITY Y [SIMON]



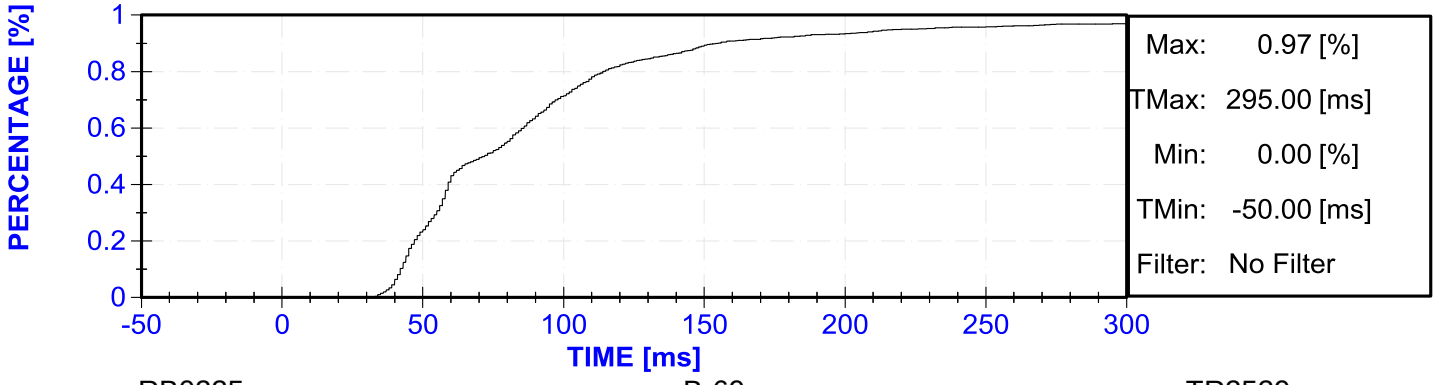
V2P4 HEAD ANGULAR VELOCITY Z [SIMON]



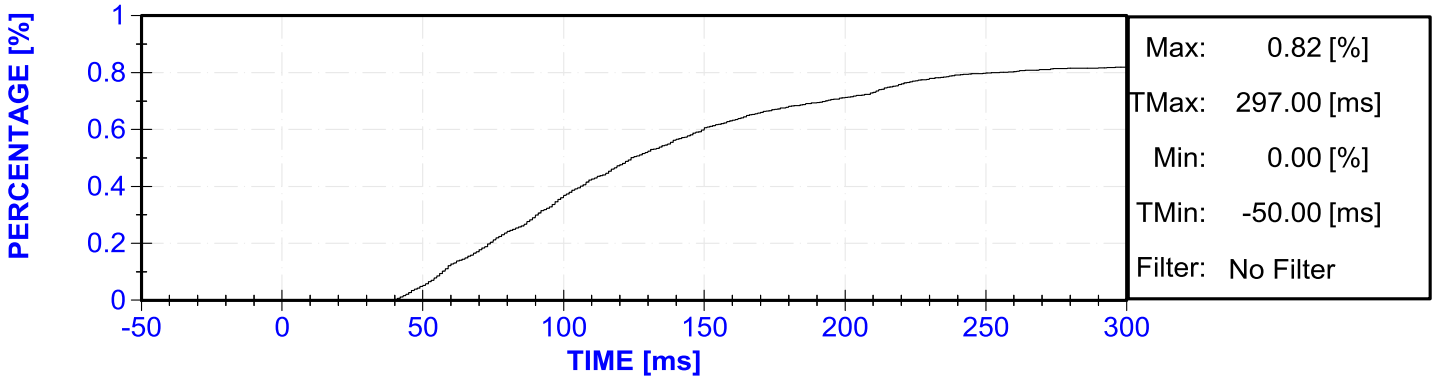
V2P4 CUMULATIVE STRAIN 0.05 [SIMON]



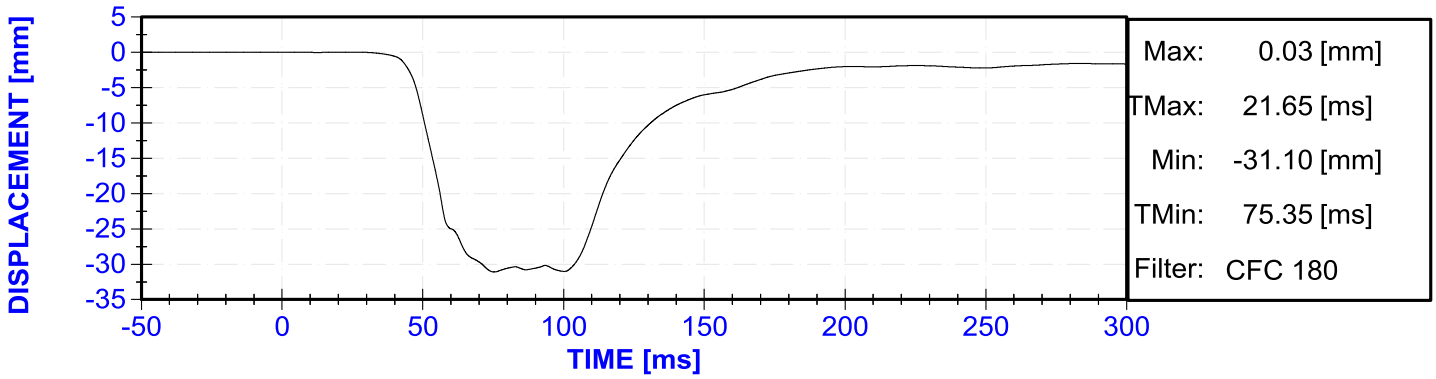
V2P4 CUMULATIVE STRAIN 0.10 [SIMON]



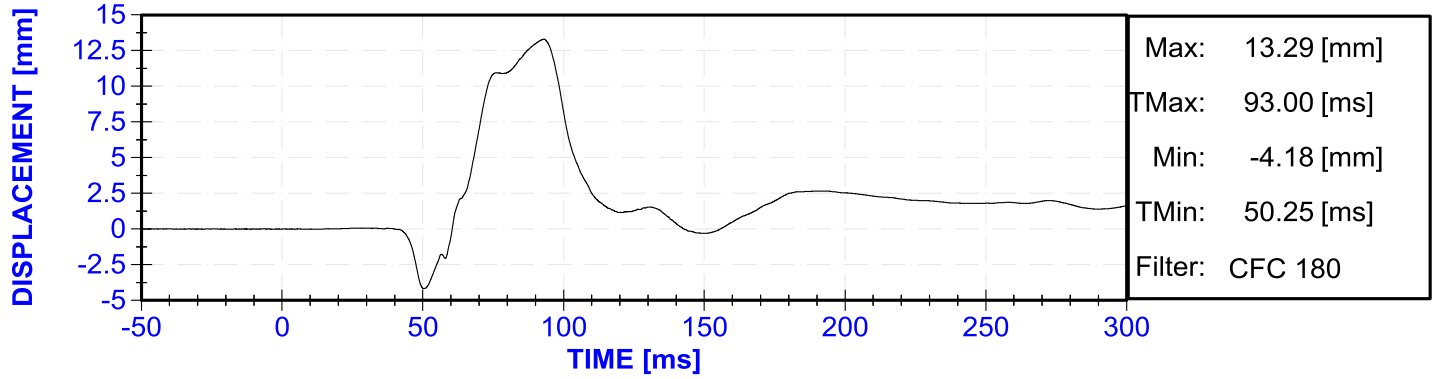
V2P4 CUMULATIVE STRAIN 0.15 [SIMON]



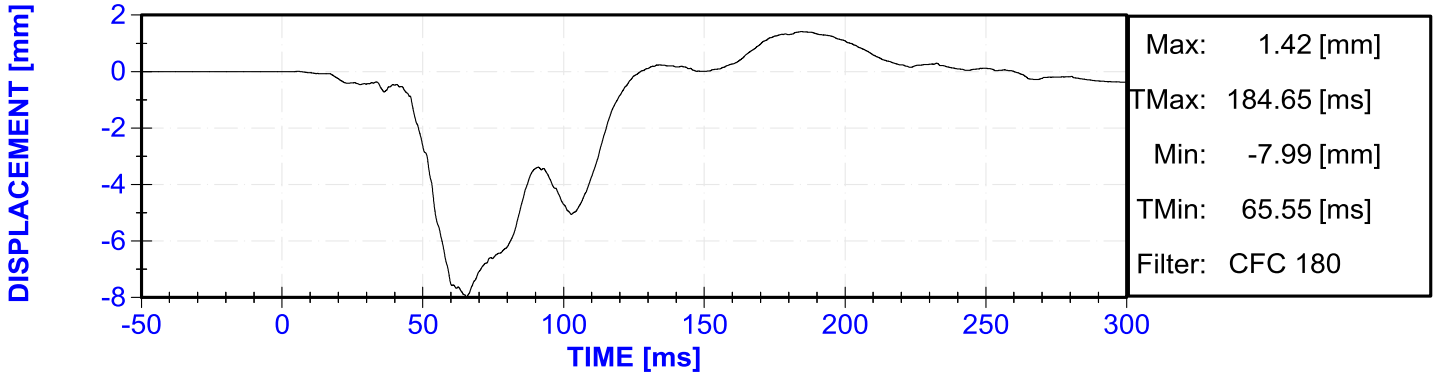
V2P4 CHEST UPPER LEFT X [COMPUTED, MM]



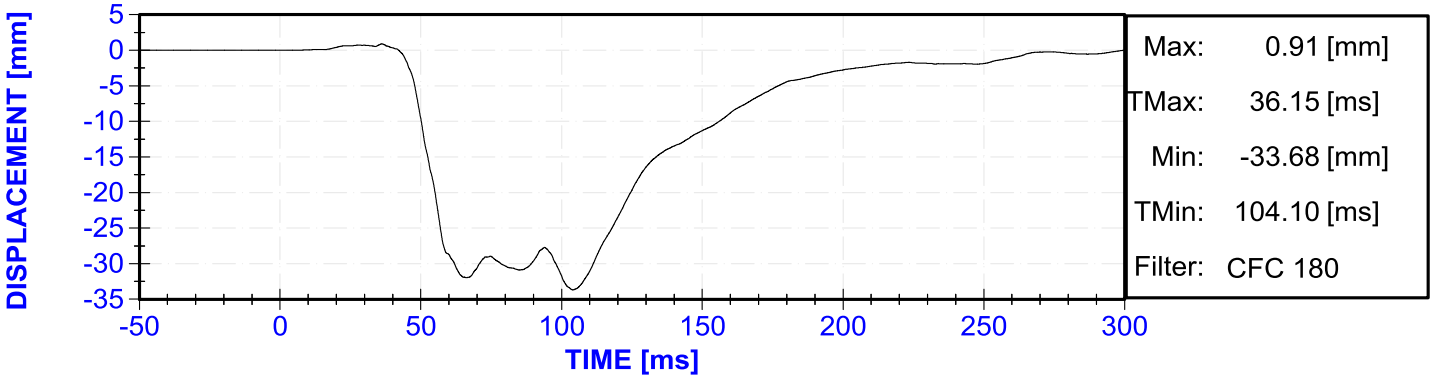
V2P4 CHEST UPPER LEFT Y [COMPUTED, MM]



V2P4 CHEST UPPER RIGHT X [COMPUTED, MM]

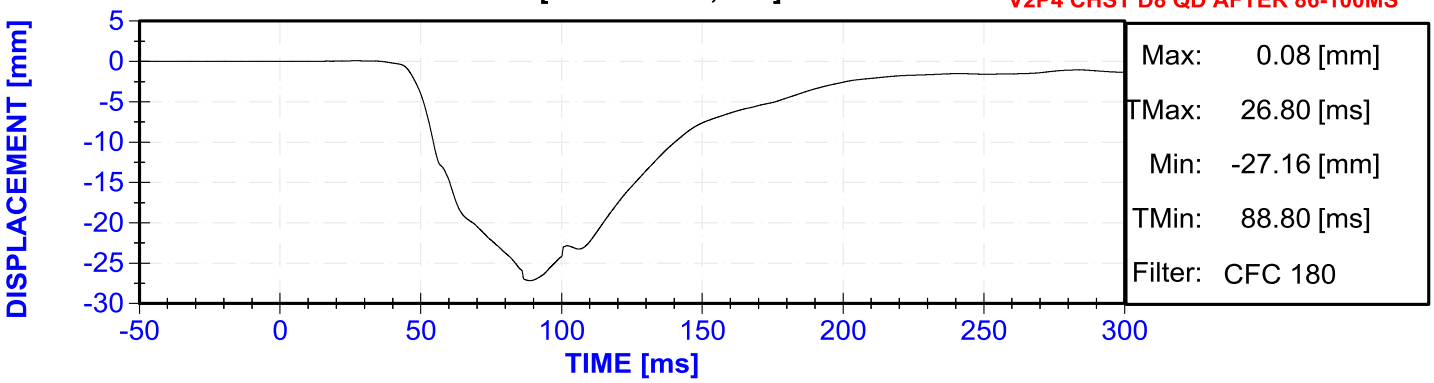


V2P4 CHEST UPPER RIGHT Y [COMPUTED, MM]



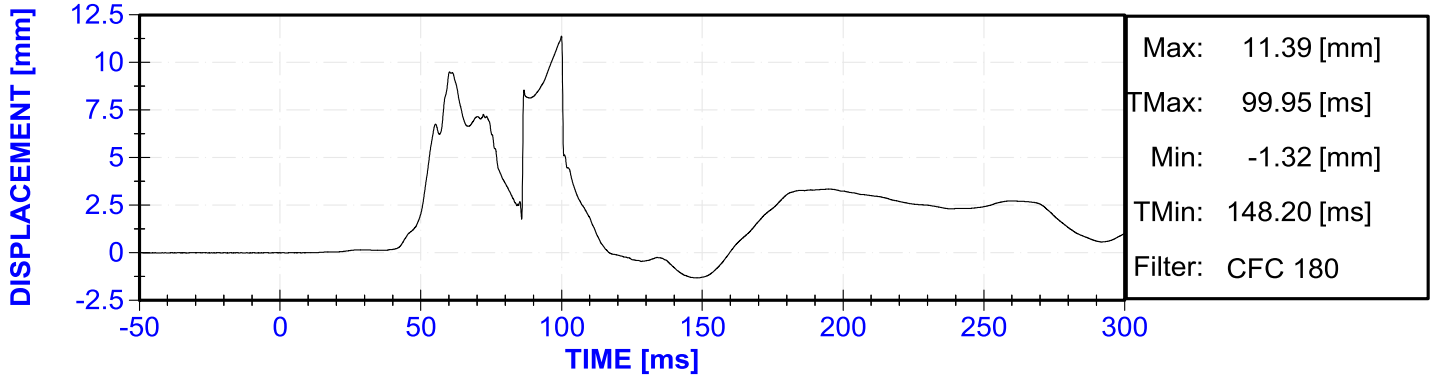
V2P4 CHEST LOWER LEFT X [COMPUTED, MM]

V2P4 CHST D8 QD AFTER 86-100MS



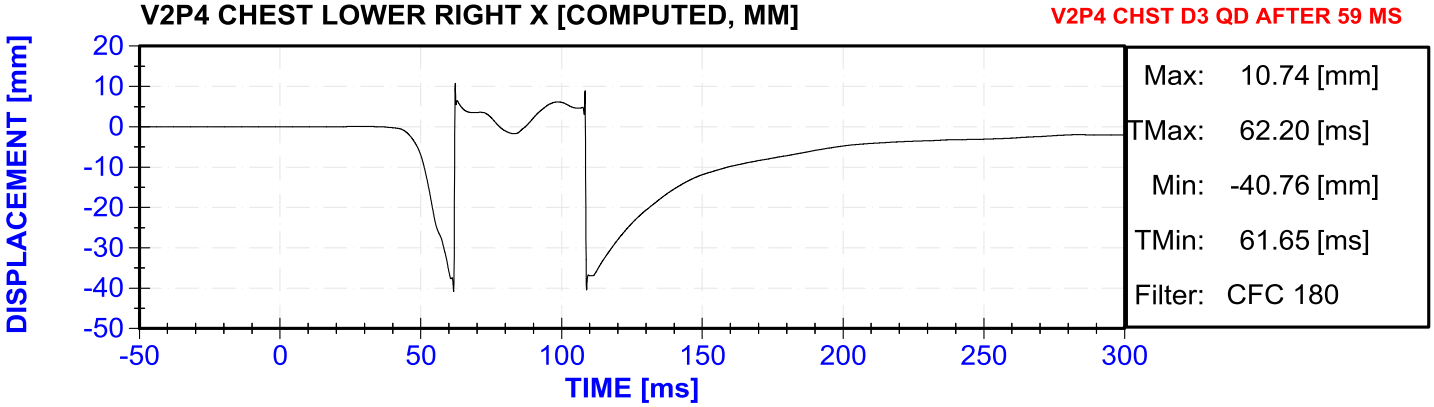
V2P4 CHEST LOWER LEFT Y [COMPUTED, MM]

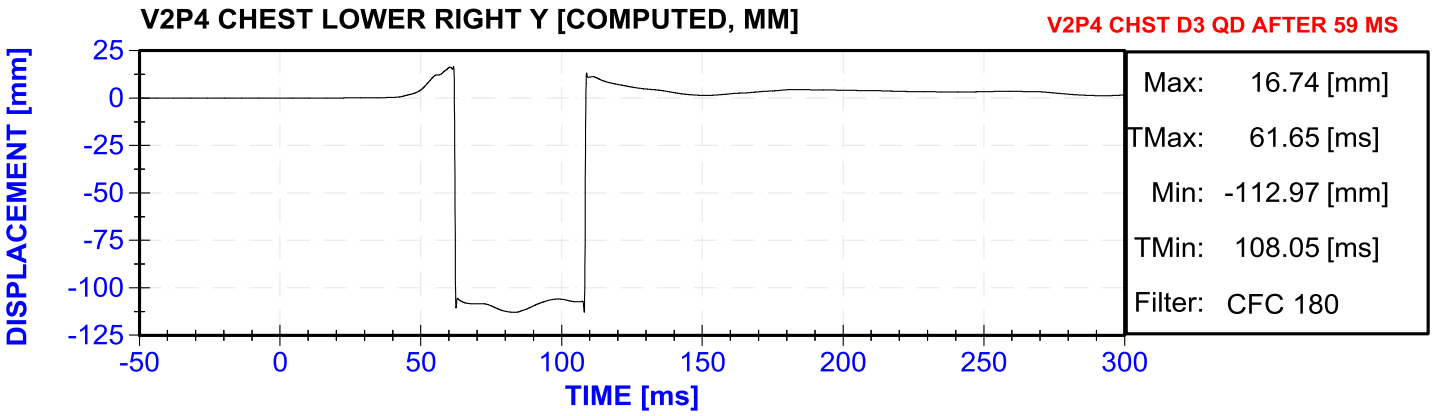
V2P4 CHST D8 QD AFTER 86-100MS



V2P4 CHEST LOWER RIGHT X [COMPUTED, MM]

V2P4 CHST D3 QD AFTER 59 MS




V2P4 CHEST LOWER RIGHT Y [COMPUTED, MM]
V2P4 CHST D3 QD AFTER 59 MS
DISPLACEMENT [mm]
25
0
-25
-50
-75
-100
-125
-50
0
50
100
150
200
250
300
TIME [ms]
Max: 16.74 [mm]
TMax: 61.65 [ms]
Min: -112.97 [mm]
TMin: 108.05 [ms]
Filter: CFC 180

APPENDIX C

PART 572 E/O DUMMY CALIBRATION AND PERFORMANCE VERIFICATION DATA SHEETS

Table 1 – Dummy Information

TYPE	DESCRIPTION	SERIAL NUMBER
THOR Hybrid III	50^{TH} Male 5^{th} Female	0007

Table 2 – THOR6 Set File

LFTX	LFTY	LFTZ	RFTX	RFTY	RFTZ
Left Ankle X Rotation	Left Ankle Y Rotation	Left Ankle Z Rotation	Right Ankle X Rotation	Right Ankle X Rotation	Right Ankle X Rotation
-2.3995	11.422	-0.65837	-3.56913	8.69623	47.566

Table 3 - THOR Dummy Initial SetUp Information

THOR – NT S/N: 0006									Sensitivity (JARI)	Sensitivity (GESAC)	Setup Angle (GESAC)
Sensor	**Description/Axis**	**MFG**	**Capacity**	**Unit 1**	**Unit 2**	**Range**	**Direction**	**CFC**	**V/Unit - 1**	**V/Unit-1**	**Degrees**
NKC RP	Upper Right Base										
Thorax CRUX	Upper Right Mid										
Thorax CRUX	Upper Right Elbow										
Thorax CRUX	Upper Left Base										
Thorax CRUX	Upper Left Mid										
Thorax CRUX	Upper Left Elbow										
Thorax CRUX	Lower Right Base										
Thorax CRUX	Lower Right Mid										
Thorax	Lower Right										

CRUX	Elbow										
Thorax CRUX	Lower Left Base										
Thorax CRUX	Lower Left Mid										
Thorax CRUX	Lower left Elbow										
Thorax CRUX	Right Abdomen X										
DGSP	Right Abdomen Y										
DGSP	Right Abdomen Z										
DGSP	Left Abdomen X										
DGSP	Left Abdomen Y										
DGSP	Left Abdomen Z										
DGSP	Upper Right Base										

Table 4: Pre-Test Inspection Sheet

THOR Inspection Checklist

Date: July 25, 2011
NHTSA Representative: James Saunders

Witness(es):
Inspection type (circle one): PRE POST
Dummy S/N: 007
Dummy Description: THOR 007
Date of last Certification or Inspection: July 20, 2011
Tests conducted since last full certification or inspection: 2011 Ford Fiesta RB0224
Known errors in data channels (no data, clipping, unexpected drops):
Physical evidence of damage:
Anecdotal evidence of damage:
Equipment delivered to Borrower:

HEAD	
(Y) / N	Rear head cap mounts securely to head
(Y) / N	Head skin fits securely over skull
Y / (N)	Head skin shows no sign of tears or damage - Small cut on forehead
(Y) / N	Interior components of skull cavity (ballast, accelerometer mount, accelerometers) securely attached
(Y) / N	Head securely mounted to OC joint
OTHER	
NECK	
(Y) / N	Neck cables slide freely through holes in neck plates
(Y) / N	Neck cables show no sign of fraying, broken strands, or kinking
Y / (N)	No evidence of debonding between neck pucks and plates If N – indicate which interface (where plate/puck 1 attach to upper neck load cell): - Debonding between pucks 4-5 (rear)
Y / (N)	No evidence of debonding or permanent compression in neck soft stop assemblies - Front neck stop is loose
(Y) / N	Neck securely attached to upper neck load cell
(Y) / N	Neck securely attached to lower neck load cell
(Y) / N	Neck pitch change joint mechanism mating teeth are engaged
OTHER	

SPINE	
(Y) / N	No evidence of debonding between thoracic spine flex joint and metal plates

Y / N	No evidence of debonding between lumbar spine flex joint and metal plates
Y / N	Lumbar spine pitch change joint mechanism mating teeth are engaged
OTHER	
SHOULDER	
Y / N	Urethane shoulder pads show no evidence of contact - Scuffs on the left and right pads
Y / N	Clavicles securely attached to sternum and shoulder
Y / N	No evidence of debonding, tearing, or permanent compression of posterior soft stops - Left soft stop debonding top corner
OTHER	
THORAX	
Y / N	No evidence of contact at top, bottom, or interior faces of rib damping material - Left / Right Rib #4 contact interior
Y / N	No evidence of debonding between rib damping material and ribs - Rib #5 left side
Y / N	CRUX anterior arms securely attached to anterior ribs
Y / N	CRUX posterior arms securely attached to double gimbals, spine
Y / N	Urethane bib is securely attached to ribs with no sign of tearing or washer penetration
Y / N	Ribs securely attached to posterior spine
Y / N	Rib stiffeners show no evidence of bending (no gaps between ribs and stiffeners)
OTHER	

ABDOMEN	
Y / N	No evidence of tearing, cuts, or broken stitches in upper abdomen bag and zipper - Small hole on the top of bag
Y / N	Upper abdomen insert securely attached to spine

Y / N	Upper abdomen insert shows no evidence of permanent set
Y / (N)	No evidence of tearing, cuts, or broken stitches in lower abdomen bag and zipper - Top right corner, small hole/broken stitches
(Y) / N	Lower abdomen insert securely attached to spine
(Y) / N	Lower abdomen insert shows no evidence of permanent set
OTHER	
PELVIS	
(Y) / N	Pelvis flesh fits securely over pelvis bones
(Y) / N	H-point tool fits securely into hole on both sides of pelvis
OTHER	
FEMUR	
(Y) / N	Acetabular load cells firmly attached
(Y) / N	Femur load cells firmly attached
(Y) / N	No evidence of deformation of knee slider bump stop
Y / (N)	No cuts, tears, or scuffing of knee flesh - Left knee scuffed and cut - Right knee scuffed
OTHER	
LOWER EXTREMITY (LX)	
(Y) / N	Rotational potentiometers in ankle securely attached
(Y) / N	Achilles tendon provides resistance to dorsiflexion
(Y) / N	No evidence of debonding, tearing, or permanent compression of ankle soft stops

OTHER	Right side horizontal cut
JACKET	
(Y) / N	Rib stiffeners show no sign of permanent deformation
(Y) / N	No evidence of tears or holes in jacket fabric, velcro, or zippers
OTHER	

Table 5: Post-Test Inspection Sheet

THOR Inspection Checklist

Date: July 27, 2011
NHTSA Representative: James Saunders
Witness(es):
Inspection type (circle one): PRE (POST)
Dummy S/N: 007
Dummy Description: THOR 007
Date of last Certification or Inspection:
Tests conducted since last full certification or inspection: Ford Fiesta RB0225
Known errors in data channels (no data, clipping, unexpected drops):
Physical evidence of damage:
Anecdotal evidence of damage:
Equipment delivered to Borrower: THOR S/N 07 has THOR 06's Femurs installed

HEAD	
(Y) / N	Rear head cap mounts securely to head
(Y) / N	Head skin fits securely over skull
(Y) / N	Head skin shows no sign of tears or damage
(Y) / N	Interior components of skull cavity (ballast, accelerometer mount, accelerometers) securely attached
(Y) / N	Head securely mounted to OC joint
OTHER	
NECK	
(Y) / N	Neck cables slide freely through holes in neck plates
(Y) / N	Neck cables show no sign of fraying, broken strands, or kinking
Y / (N)	No evidence of debonding between neck pucks and plates If N – indicate which interface (where plate/puck 1 attach to upper neck load cell): - Debonding between pucks 4-5 posterior
Y / (N)	No evidence of debonding or permanent compression in neck soft stop assemblies - Front soft stop is loose / detaches
(Y) / N	Neck securely attached to upper neck load cell
(Y) / N	Neck securely attached to lower neck load cell
(Y) / N	Neck pitch change joint mechanism mating teeth are engaged
OTHER	

SPINE	
(Y) / N	No evidence of debonding between thoracic spine flex joint and metal plates

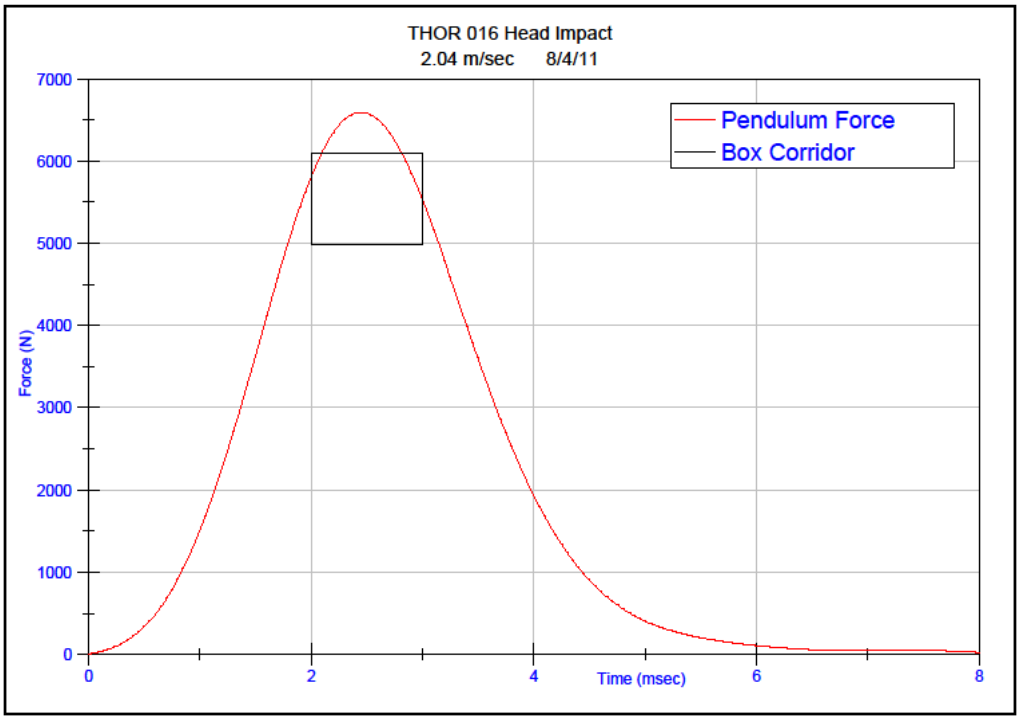
Y / N	No evidence of debonding between lumbar spine flex joint and metal plates
(Y) / N	Lumbar spine pitch change joint mechanism mating teeth are engaged
OTHER	
SHOULDER	
Y / (N)	Urethane shoulder pads show no evidence of contact - Scuffs/ Abrasions on the left and right pads
(Y) / N	Clavicles securely attached to sternum and shoulder - Slight movement at ends but secure
Y / (N)	No evidence of debonding, tearing, or permanent compression of posterior soft stops - Left soft stop debonding (top surface)
OTHER	
THORAX	
Y / (N)	No evidence of contact at top, bottom, or interior faces of rib damping material - Left / Right Rib #4 interior faces show contact
Y / (N)	No evidence of debonding between rib damping material and ribs - Rib #5 left side debonding
(Y) / N	CRUX anterior arms securely attached to anterior ribs
(Y) / N	CRUX posterior arms securely attached to double gimbals, spine
(Y) / N	Urethane bib is securely attached to ribs with no sign of tearing or washer penetration
(Y) / N	Ribs securely attached to posterior spine
Y / (N)	Rib stiffeners show no evidence of bending (no gaps between ribs and stiffeners) - Left side Rib #4 has a slight gap - Right side Rib #5 has a slight gap
OTHER	

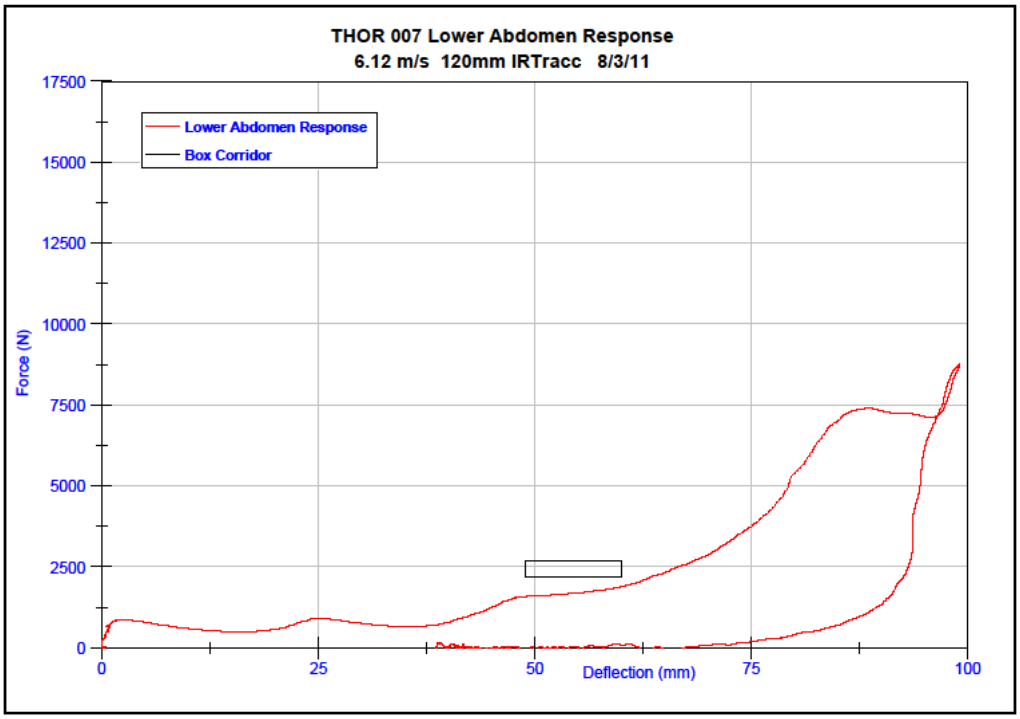
ABDOMEN	
Y / (N)	No evidence of tearing, cuts, or broken stitches in upper abdomen bag and zipper - Small tear on the top left side

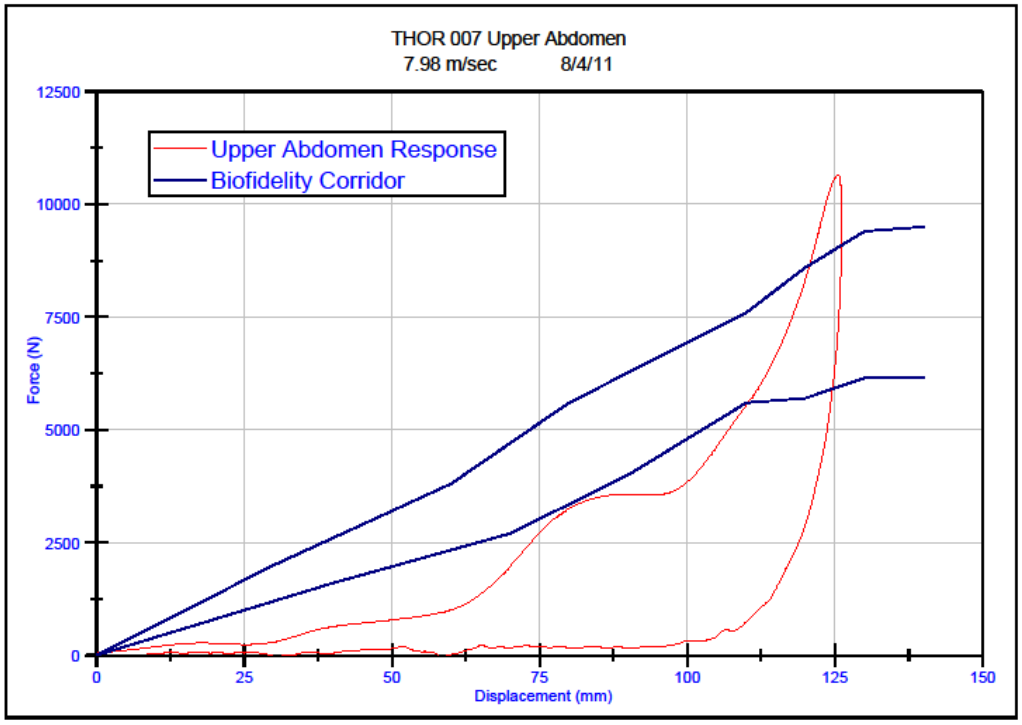
Y / N	Upper abdomen insert securely attached to spine
(Y) / N	Upper abdomen insert shows no evidence of permanent set
Y / (N)	No evidence of tearing, cuts, or broken stitches in lower abdomen bag and zipper - Broken stitches on the top right corner
(Y) / N	Lower abdomen insert securely attached to spine
(Y) / N	Lower abdomen insert shows no evidence of permanent set
OTHER	
PELVIS	
(Y) / N	Pelvis flesh fits securely over pelvis bones
(Y) / N	H-point tool fits securely into hole on both sides of pelvis
OTHER	
FEMUR	
(Y) / N	Acetabular load cells firmly attached
(Y) / N	Femur load cells firmly attached
(Y) / N	No evidence of deformation of knee slider bump stop
Y / (N)	No cuts, tears, or scuffing of knee flesh - Cuts and scuffing on both of the knee flesh areas
OTHER	
LOWER EXTREMITY (LX)	
(Y) / N	Rotational potentiometers in ankle securely attached
(Y) / N	Achilles tendon provides resistance to dorsiflexion
(Y) / N	No evidence of debonding, tearing, or permanent compression of ankle soft stops

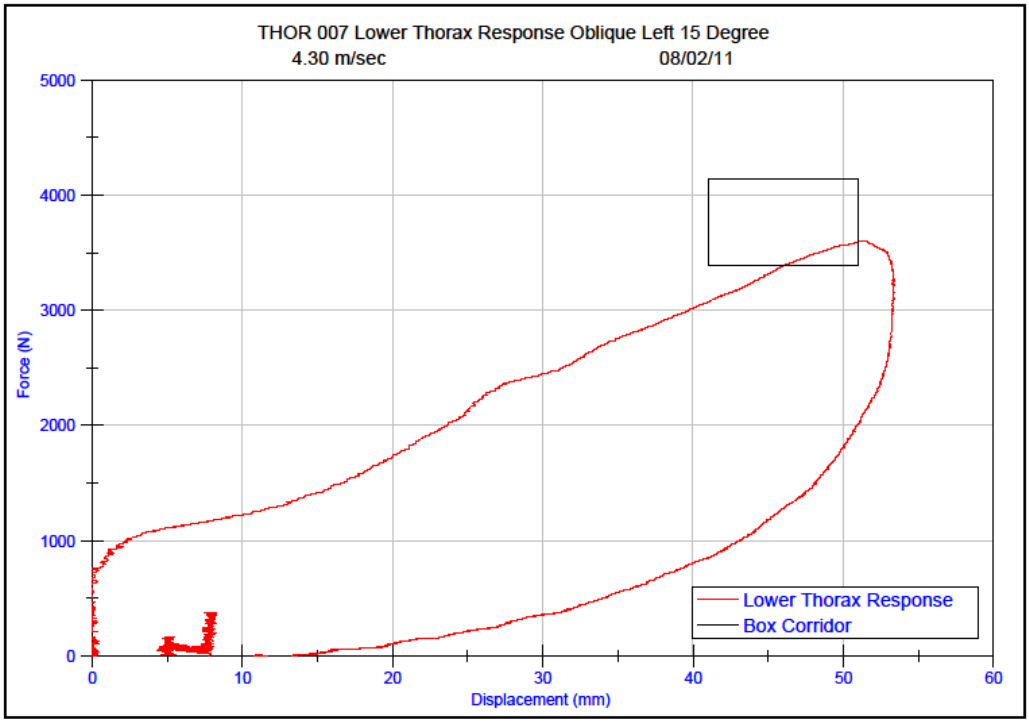
OTHER	Horizontal cut in flesh on the right shin
JACKET	
(Y) / N	Rib stiffeners show no sign of permanent deformation
(Y) / N	No evidence of tears or holes in jacket fabric, velcro, or zippers
OTHER	

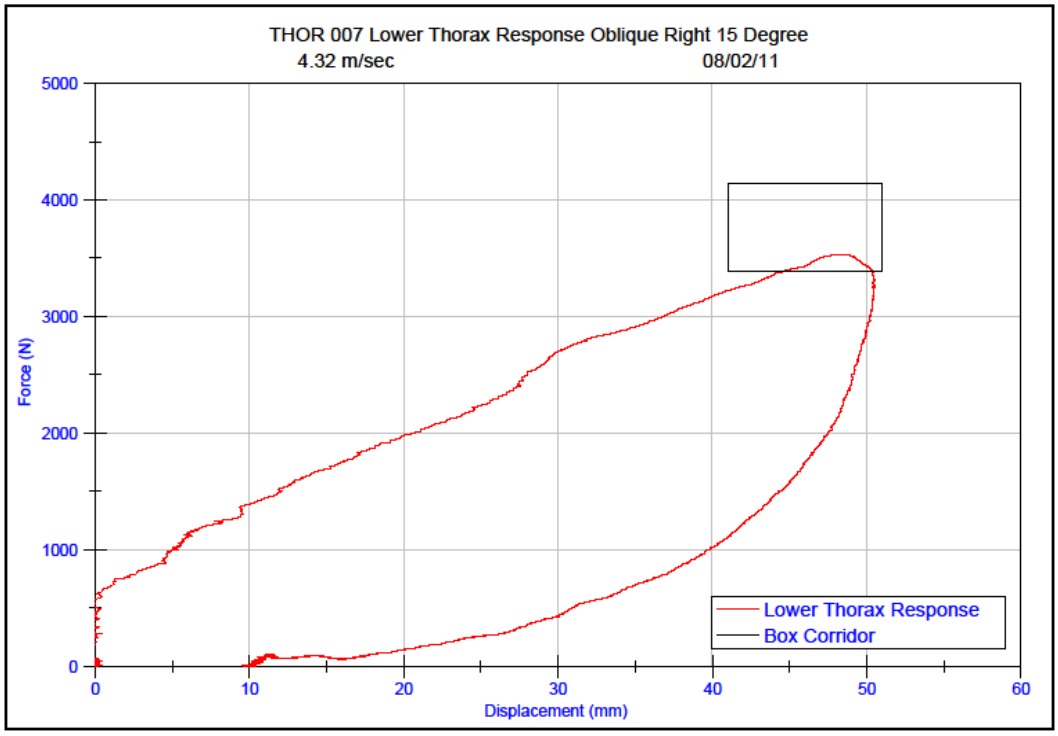
DUMMY CALIBRATION PLOTS

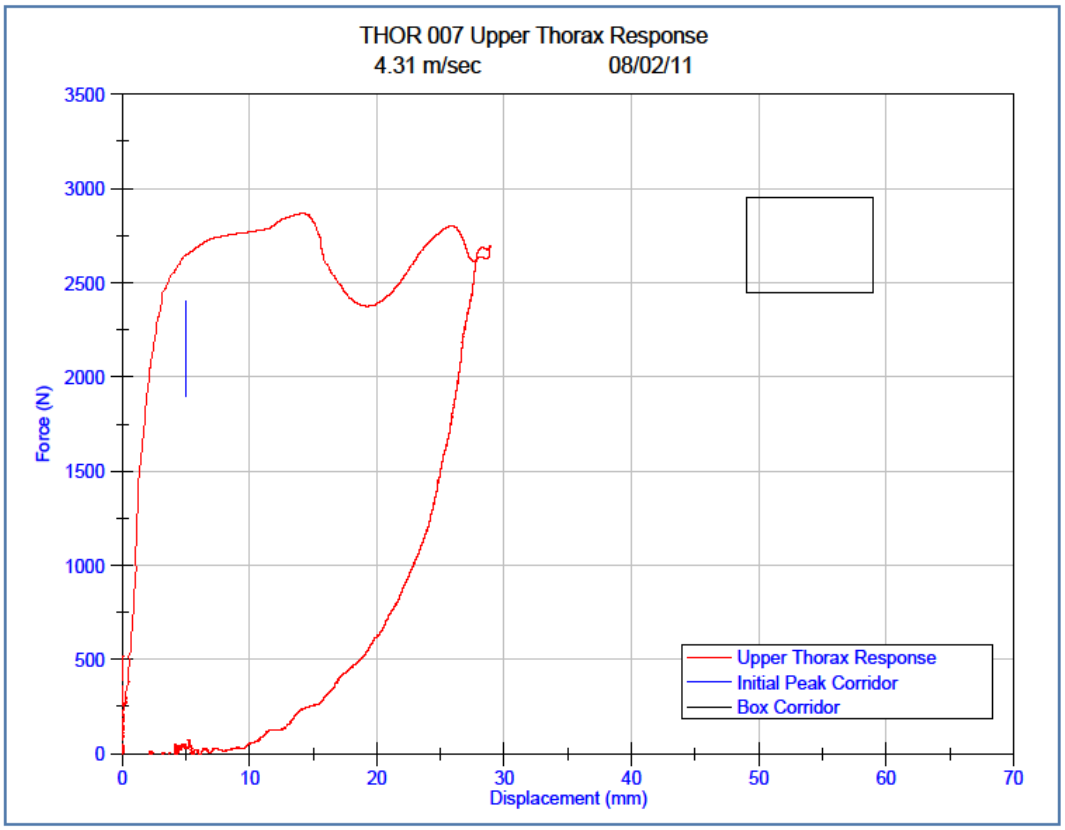

THOR 016 Head Impact
2.04 m/sec 8/4/11
Pendulum Force
Box Corridor
Force (N)
Time (msec)
7000
6000
5000
4000
3000
2000
1000
0
0
2
4
6
8

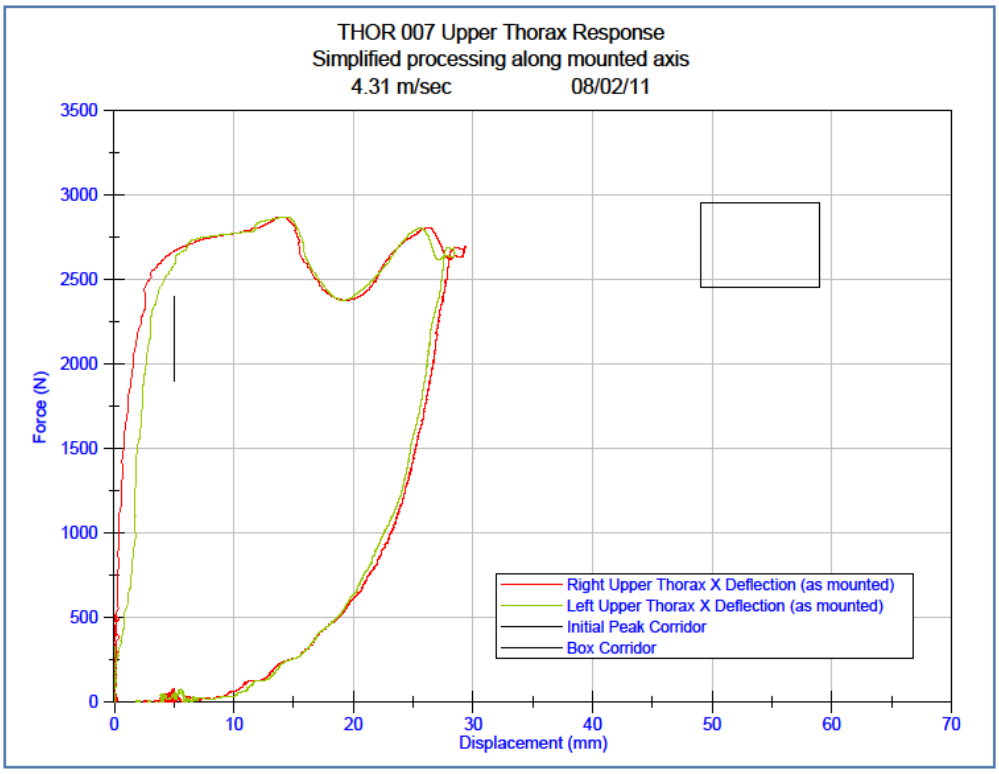

THOR 007 Lower Abdomen Response
6.12 m/s 120mm IRTracc 8/3/11
Lower Abdomen Response
Box Corridor
Force (N)
Deflection (mm)
17500
15000
12500
10000
7500
5000
2500
0
0
25
50
75
100


THOR 007 Upper Abdomen
7.98 m/sec 8/4/11
Upper Abdomen Response
Biofidelity Corridor
Force (N)
Displacement (mm)
12500
10000
7500
5000
2500
0
0
25
50
75
100
125
150

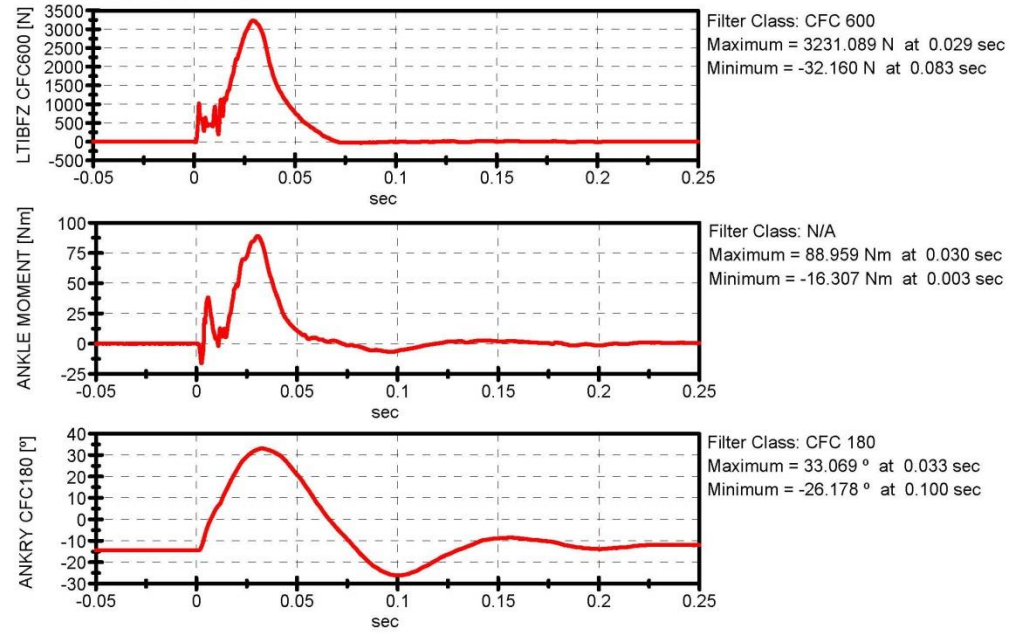

THOR 007 Lower Thorax Response Oblique Left 15 Degree
4.30 m/sec 08/02/11
Lower Thorax Response
Box Corridor
Force (N)
Displacement (mm)
5000
4000
3000
2000
1000
0
0
10
20
30
40
50
60


THOR 007 Lower Thorax Response Oblique Right 15 Degree
4.32 m/sec
08/02/11
Force (N)
Displacement (mm)
Lower Thorax Response
Box Corridor

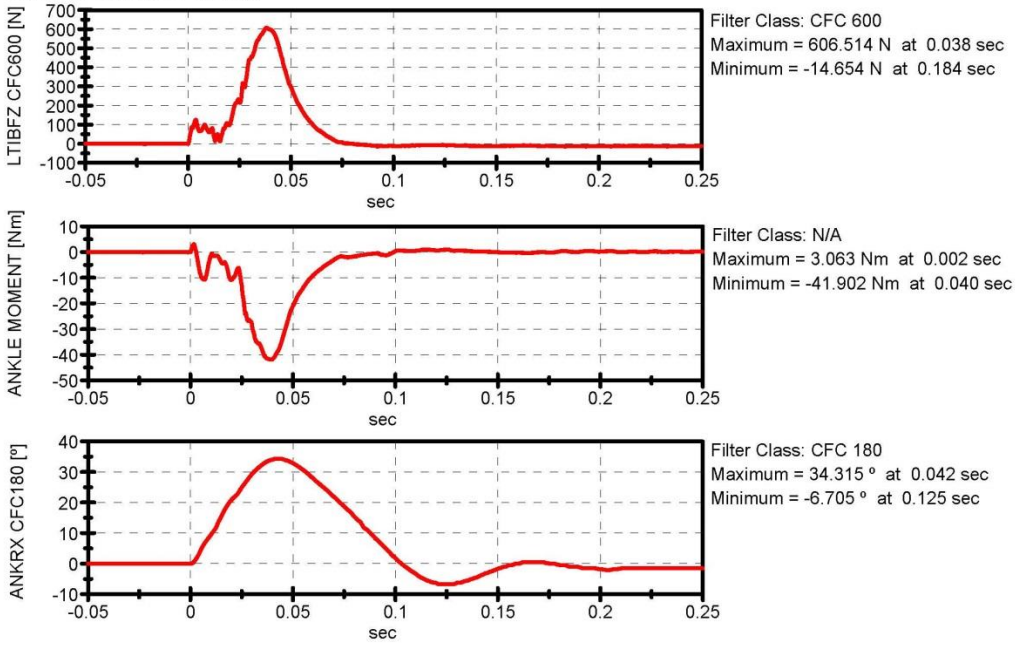

THOR 007 Upper Thorax Response
4.31 m/sec
08/02/11
Force (N)
Displacement (mm)
Upper Thorax Response
Initial Peak Corridor
Box Corridor


THOR 007 Upper Thorax Response
Simplified processing along mounted axis
4.31 m/sec
08/02/11
Force (N)
Displacement (mm)
3500
3000
2500
2000
1500
1000
500
0
0
10
20
30
40
50
60
70
Right Upper Thorax X Deflection (as mounted)
Left Upper Thorax X Deflection (as mounted)
Initial Peak Corridor
Box Corridor

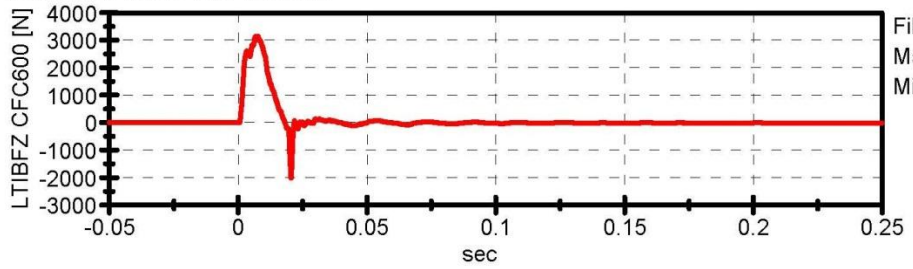
Test Performer: Vehicle Research and Test Center
Test Type: Dorsiflexion/Ball of Foot
Test Name: LX103R_2011_07_12_DORSI_01
Test Date: 12.07.2011 13:03:52



Test Performer: Vehicle Research and Test Center
Test Type: Eversion
Test Name: LX103R_2011_07_12_EVER_01
Test Date: 12.07.2011 14:00:09

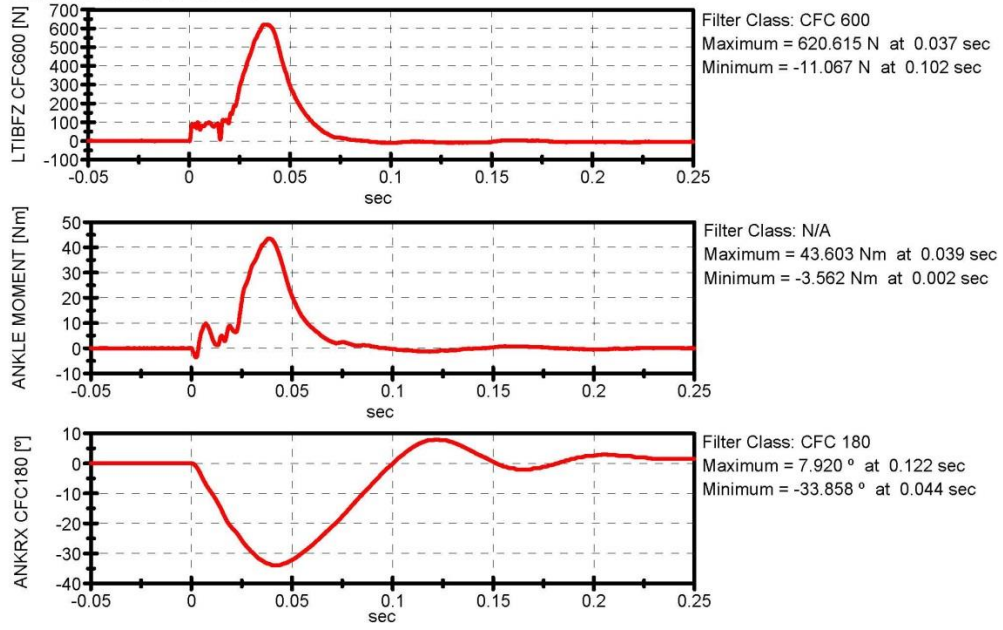


Test Performer: Vehicle Research and Test Center
Test Type: Heel of Foot
Test Name: LX103R_2011_07_12_HEEL_01
Test Date: 12.07.2011 12:23:32

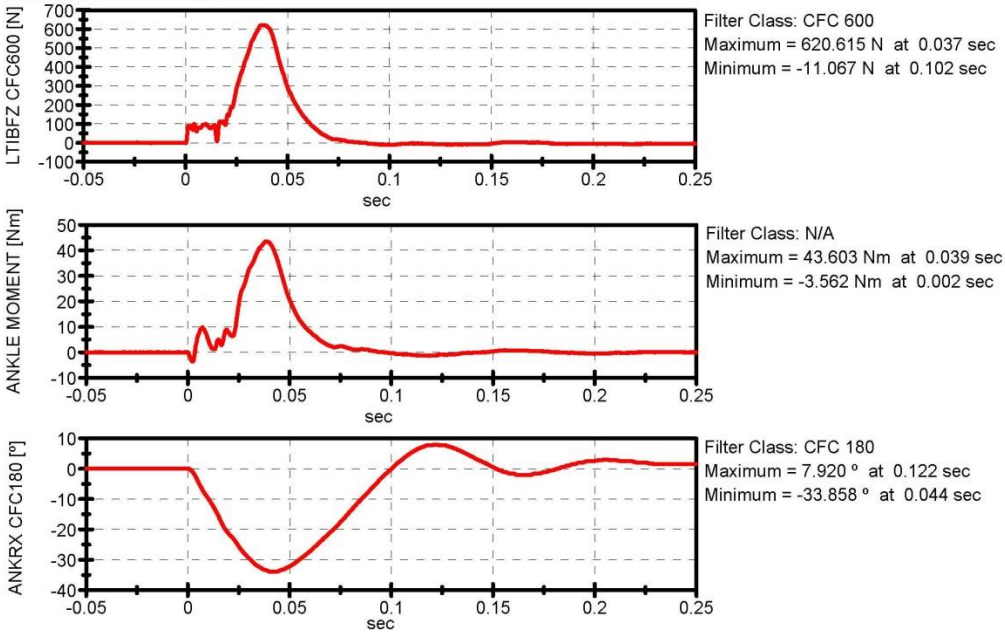


Filter Class: CFC 600
Maximum = 3140.967 N at 0.008 sec
Minimum = -2014.830 N at 0.021 sec

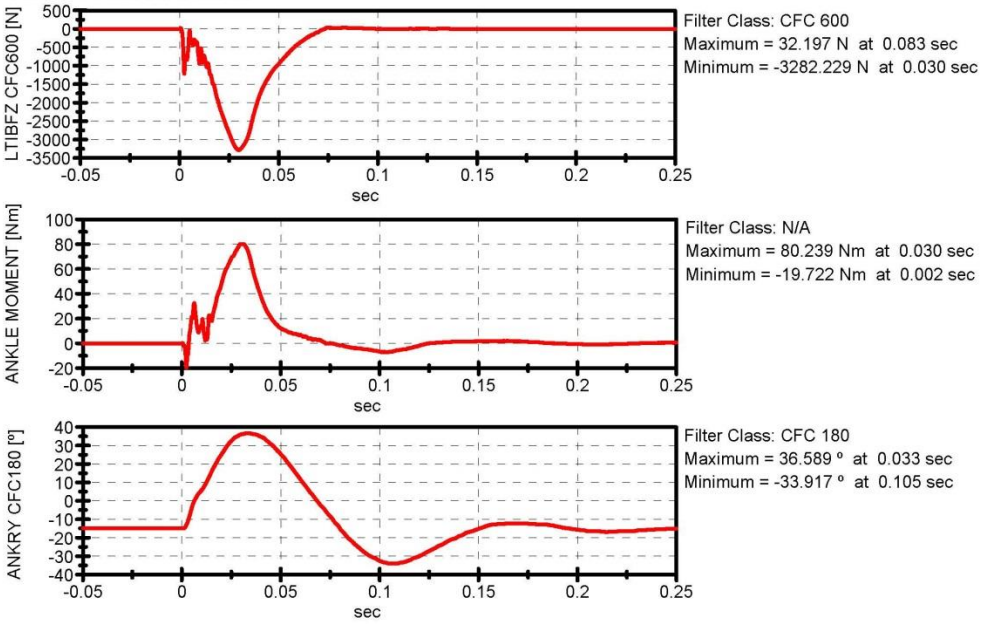
Test Performer: Vehicle Research and Test Center
Test Type: Inversion
Test Name: LX103R_2011_07_12_INVER_01
Test Date: 12.07.2011 13:33:12



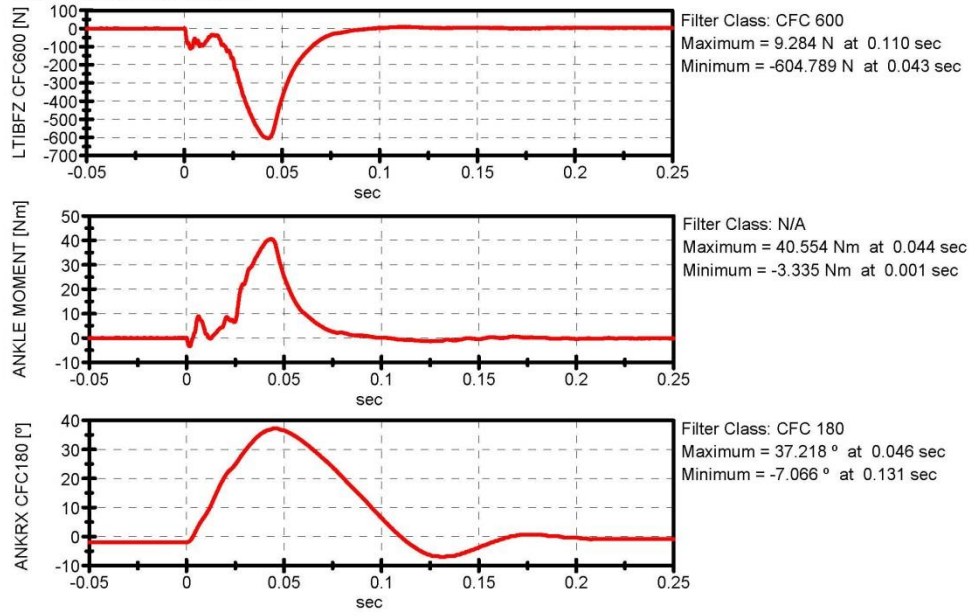
Test Performer: Vehicle Research and Test Center
Test Type: Inversion
Test Name: LX103R_2011_07_12_INVER_01
Test Date: 12.07.2011 13:33:12



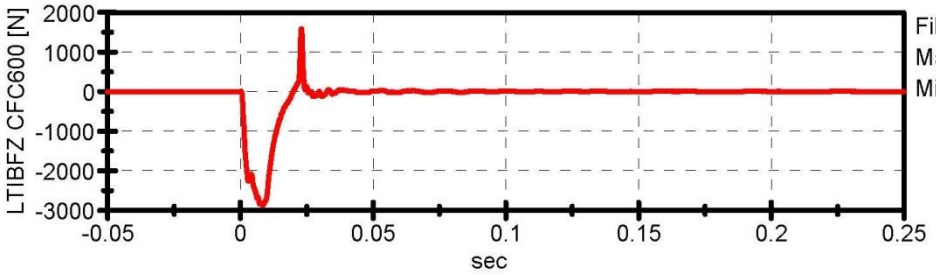
Test Performer: Vehicle Research and Test Center
Test Type: Dorsiflexion/Ball of Foot
Test Name: LX104L_2011_07_11_DORSI_02
Test Date: 12.07.2011 07:30:24



Test Performer: Vehicle Research and Test Center
Test Type: Eversion
Test Name: LX104L_2011_07_12_EVER_01
Test Date: 12.07.2011 08:58:27

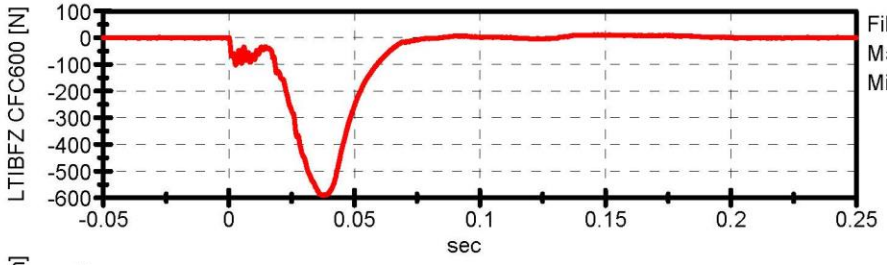


Test Performer: Vehicle Research and Test Center
Test Type: Heel of Foot
Test Name: LX104L_2011_07_12_HEEL_01
Test Date: 12.07.2011 10:26:09

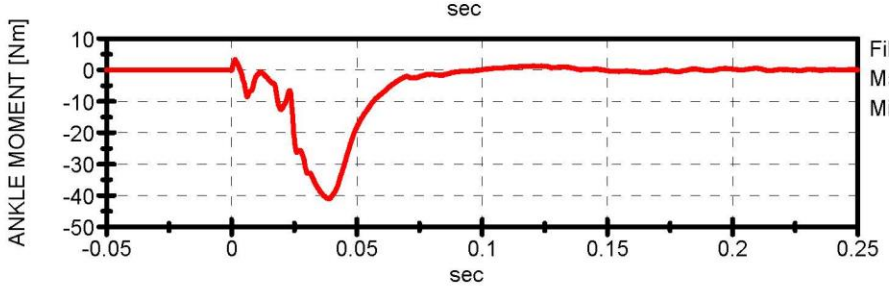


Filter Class: CFC 600
Maximum = 1590.985 N at 0.023 sec
Minimum = -2861.040 N at 0.008 sec

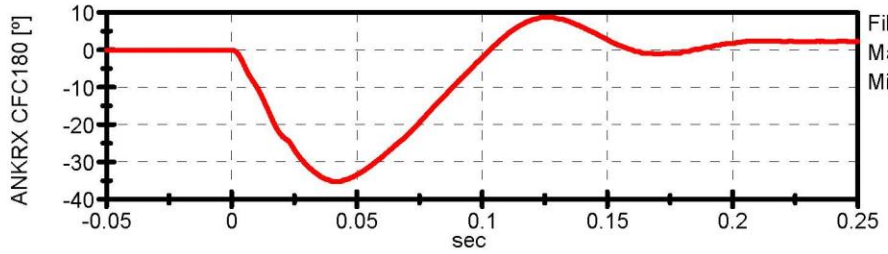
Test Performer: Vehicle Research and Test Center
Test Type: Inversion
Test Name: LX104L_2011_07_12_INVER_01
Test Date: 12.07.2011 08:18:46



Filter Class: CFC 600
Maximum = 10.894 N at 0.152 sec
Minimum = -589.823 N at 0.038 sec



Filter Class: N/A
Maximum = 3.314 Nm at 0.001 sec
Minimum = -40.998 Nm at 0.039 sec



Filter Class: CFC 180
Maximum = 8.754 ° at 0.125 sec
Minimum = -35.243 ° at 0.041 sec

APPENDIX D

ADDITIONAL MEASUREMENTS & DATA CALCULATIONS

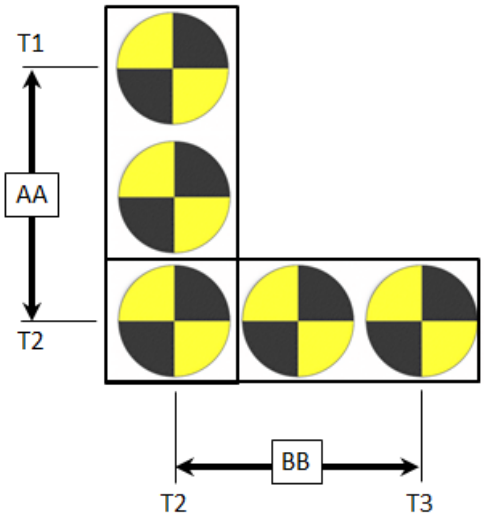
ADDITIONAL TARGETS

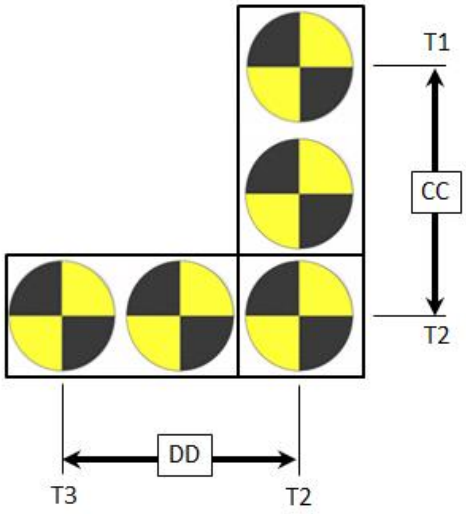
Overhead Reference Targets:

AA (T1 to T2)	236	mm
BB (T2 to T3)	236	mm

Ground Reference Targets:

CC (T1 to T2)	236	mm
DD (T2 to T3)	236	mm





APPENDIX E

Positioning Procedure for rear seat Part 572O 5th female ATD

The rear seat 5th female was positioned using a combination of the FMVSS 214D side impact and FMVSS 208 seating procedures.

The lateral seat centerline was determined by following the FMVSS 214D seating procedures for the rear seat. Once the Part 572O 5th female dummy was located on the lateral centerline, the dummy was positioned following FMVSS 208 as if would be if it were in the front seating position. The legs would be positioned at the 120 degree angle and the pelvis would be pushed back against the seatback until the calves contacted the seat cushion. If the seatback was adjustable, the seatback would be raised to level the head. The 5th female dummy used in this test series had a lower neck transducer which prevented using the neck bracket as an adjustment to level the head.

APPENDIX F

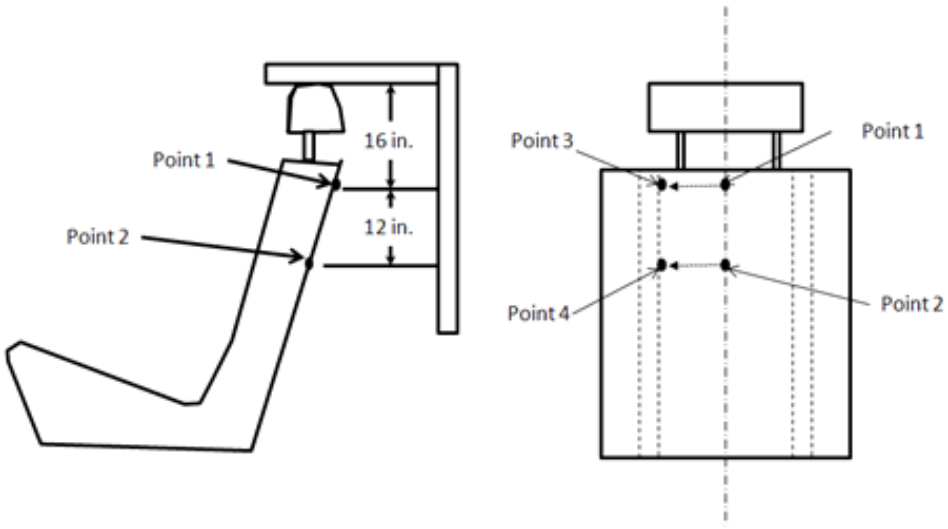
CMM MEASUREMENT PROCEDURES

SECTION F.1

SEAT BACK MEASUREMENT PROCEDURE

The following procedure was used in obtaining the required seat back measurements, please see the below diagram for additional clarification:

1. Measure Points 3 and 4 on the using the following method after positioning the dummy and head restraint:
2. Place a level at the center of the head restraint and make sure it is level to the horizontal
3. Measure down 16 inches from the bottom of the level in the vertical direction
4. Project a line in the longitudinal direction until contact with seat and mark point 1 with a marker
5. Project another line in the longitudinal direction until contact with seat and mark point 2 with a marker
6. Push on the seat fabric at point 1 and determine if there is any structure. Do not push in the longitudinal direction more than an inch
7. If no structure found push on the seat cloth and move in the lateral direction toward the outboard of the seat until seat structure is found
8. Cut a slit in the seat fabric
9. Mark Point 3 at the begin on the structure and measure the point
10. Perform the same procedure to determine Point 4 using Point 2



SECTION F.2

DOOR SILL INTRUSION MEASUREMENT PROCEDURE

The following procedure was conducted in order to obtain the required door sill intrusion measurements for this test. Please see the below picture for further clarifications:

1. Put steering wheel in center position. Create a horizontal plane (plane 1) that passes through the center of the steering wheel.
2. Point 1: Mark the sheet metal at the intersection of plane 1 and the outer edge of rubber part of the door sill running down the A-pillar.
3. Point 22: Mark the sheet metal at the intersection of plane 1 and the outer edge of rubber part of the door sill running down the B-pillar.
4. Mark 20 evenly spaced points between points 1 and 22 along the outer edge of the rubber door sill on the sheet metal. (A tape measure can be used to mark these points).
5. Mark 20 evenly spaced points between points 22 and 1 along the outer edge of the rubber door sill on the sheet metal. (A tape measure can be used to mark these points).
6. Measure points using CMM
7. Record in the appropriate data sheet and calculate the difference by subtracting the post-test minus the pre-test. A picture with the points labeled shall be included on the data sheet. All points shall be visible in the pictures.

8. Repeat on the passenger door.

SECTION F.3

VEHICLE EXTERIOR CRUSH PROFILE PROCEDURE

1. Expose the bumper beam and level the vehicle such that all attitudes are within 5 mm.

2. Cross section A-A is defined as a horizontal plane passing through the center of the front bumper beam at the centerline of the vehicle (Figure F.3.1). Record the height of this plane (d1) and take enough points at this height to create an exterior cross-section of the vehicle.

3. Perform the same procedure for cross-section B-B. Cross section B-B is defined as a plane passing through the top the upper radiator support.

4. Post-test put the vehicle back to its original coordinate system (Figure F.3.2). Take enough points at the height of d1 and d2 to create a post-test cross-section A-A and B-B. There can be more points measured posttest than pre-test (Figure F.3.3). Record these points in the appropriate data sheet.

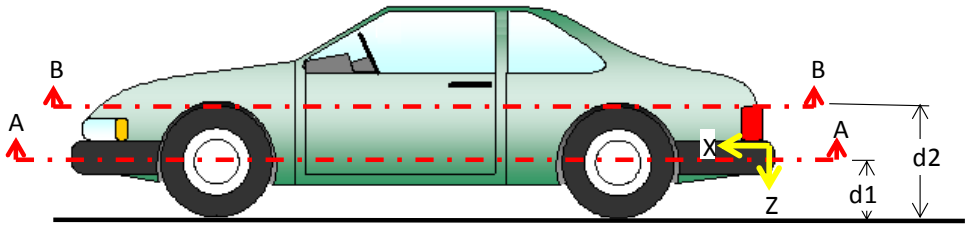


Figure F.3.1 - Pre-Test Cross-Sections

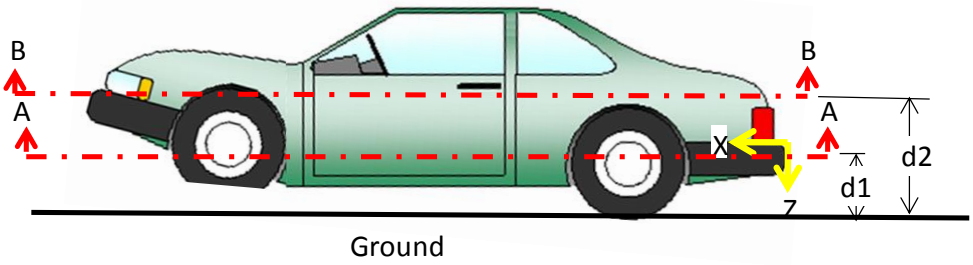


Figure F.3.2 - Post-Test Cross-Sections

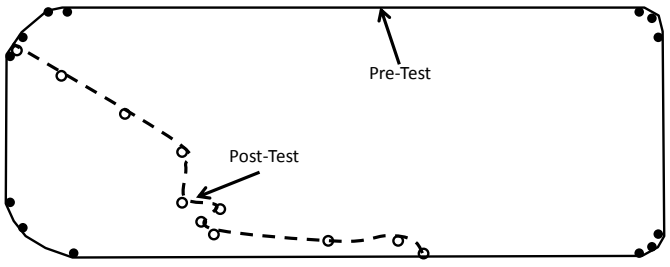


Figure F.3.3 - Plot of Cross-Section

SECTION F.4

DASH PROFILE MEASUREMENT PROCEDURE

The following procedure was used in order to obtain the dash profile measurements required for this test. Please see the diagram on the following page for further clarifications:

1. Left Plane: create a vertical plane that is parallel to the longitudinal axis of the vehicle and is located 150mm to the left of the center of the steering wheel (Figure 31).

2. Left Line: create a line on the IP/Knee Bolster at the intersection of the Left Plane and the IP/KneeBolster

3. L1: create a point on the dash that is located on the Left Line and is 450 mm above the floorboard (with floor mats removed). Note this is the Left IP point for the IP5 file and IP Left in DATA SHEET NO.13 (CONTINUED) - VEHICLE INTRUSION MEASUREMENTS.

4. Lt1: From L1 move up the Left Line 50 mm

5. Lt2: From Lt1 move up the Left Line 50 mm

6. Ltn: Mark points at 50 mm increments along Left Line until the window sill is reached.

7. Lb1: From L1 move down the Left Line 50 mm

8. Lb2: From Lb1 move down the Left Line 50 mm

9. Lbn: Mark points at 50 mm increments along Left Line until the bottom of the IP/Knee Bolster is reached.

10. Right Plane: create a vertical plane that is parallel to the longitudinal axis of the vehicle and is located 150mm to the right of the center of the steering wheel (Figure 31).

11. Right Line: create a line on the IP/Knee Bolster at the intersection of the Right Plane and the IP/KneeBolster

12. R1: create a point on the dash that is located on the Right Line and is 450 mm above the floorboard (with floor mats removed). Note this is the Right IP point for the IP5 file and IP Right in DATA SHEET NO.13 (CONTINUED) - VEHICLE INTRUSION MEASUREMENTS.

13. Rt1: From R1 move up the Right Line 50 mm

14. Rt2: From Rt1 move up the Right Line 50 mm

15. Rtn: Mark points at 50 mm increments along Right Line until the window sill is reached.

16. Rb1: From R1 move down the Right Line 50 mm

17. Rb2: From Rb1 move down the Right Line 50 mm

18. Rbn: Mark points at 50 mm increments along Right Line until the bottom of the IP/Knee Bolster is reached.

19. If dash panel or knee bolster loosens or breaks away in the crash, the post-test measurements are taken by pressing and holding the panel against the underlying structure. Record in the appropriate data sheet and calculate the difference by subtracting the post-test minus the pre-test. A picture with the points labeled shall be included on the data sheet. All points shall be visible in the picture.