

REPORT NUMBER: NCAPSIDE-MGA-2005-005

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

**NISSAN MOTOR COMPANY
2005 NISSAN PATHFINDER SE-OR
NHTSA NUMBER: M55206**

**PREPARED BY:
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BURLINGTON, WI 53105**



Test Date: January 10, 2005

Report Date: January 19, 2005

FINAL REPORT

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
RULEMAKING
OFFICE OF CRASHWORTHINESS STANDARDS
400 SEVENTH STREET, SW, ROOM 5311
WASHINGTON, D.C. 20590**

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16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP side impact was conducted on the subject 2005 Nissan Pathfinder SE-OR to obtain new car assessment and research data indicant of FMVSS No. 214D performance. The test was conducted at MGA Research Corporation, in Burlington, Wisconsin, on January 10, 2005. The impact velocity of the Moving Deformable Barrier (MDB) was 62.0 km/h, and the ambient temperature at the struck side (driver's) of the vehicle was 21°C. The target vehicle's maximum post test static crush was 155 mm at level 3. The test vehicle's occupant performance is as follows: <table style="margin-left: auto; margin-right: auto; border: none;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: center;"><u>DRIVER</u></th> <th style="text-align: center;"><u>PASS.</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib (LUR) Accel., g</td> <td style="text-align: center;">14.7</td> <td style="text-align: center;">14.0</td> </tr> <tr> <td>Left Lower Rib (LLR) Accel., g</td> <td style="text-align: center;">16.1</td> <td style="text-align: center;">13.9</td> </tr> <tr> <td>Lower Spine (T₁₂) Accel., g</td> <td style="text-align: center;">15.9</td> <td style="text-align: center;">16.7</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td style="text-align: center;">16.0</td> <td style="text-align: center;">15.4</td> </tr> <tr> <td>Pelvis (PEV) Accel., g</td> <td style="text-align: center;">17.9</td> <td style="text-align: center;">18.1</td> </tr> <tr> <td>HIC</td> <td style="text-align: center;">387</td> <td style="text-align: center;">400</td> </tr> </tbody> </table>					<u>DRIVER</u>	<u>PASS.</u>	Left Upper Rib (LUR) Accel., g	14.7	14.0	Left Lower Rib (LLR) Accel., g	16.1	13.9	Lower Spine (T ₁₂) Accel., g	15.9	16.7	Thoracic Trauma Index (TTI)	16.0	15.4	Pelvis (PEV) Accel., g	17.9	18.1	HIC	387	400
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HIC	387	400																						
The doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.																								
17. Key Words New Car Assessment Program (NCAP) Side Impact Side Impact Hybrid III Dummy (SID/HIII) Occupant Side Impact Protection		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Adm. Technical Ref. Division, Room 5108 (NPO-230) 400 Seventh Street, S.W. Washington, D.C. 20590																						
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SECTION 1
PURPOSE AND TEST PROCEDURE

1.1 PURPOSE

This side impact test was conducted as part of the FY' 2005 test program sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-03-D-12005. The purpose of this test was to evaluate side impact protection in a 2005 Nissan Pathfinder SE-OR manufactured by Nissan Motor Company.

1.2 TEST PROCEDURE

The side impact test was conducted in accordance with the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated November 2002 and the corresponding MGA Research Corporation Test Procedure MGA-NHTSA5. The procedures for receiving, inspection, testing, and reporting of test results are described in the test procedures and are not repeated in this report.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

SECTION 2

SUMMARY OF NCAP SIDE IMPACT TEST

2.1 SUMMARY OF SIDE IMPACT TEST

A model year 2005 Nissan Pathfinder SE-OR was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.0 km/h. The specified impact velocity range is from 61.1 to 62.7 km/h. The test (target) vehicle was stationary and positioned 63° to the line of forward motion. The weight of the vehicle as tested was 2353.4 kg and the test weight of the MDB was 1361.2 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on January 10, 2005.

One (1) real-time motion picture camera and nine (9) high-speed motion picture cameras were used to document the impact event. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in the data sheets. Pre- and post-test photographs of the vehicle and Side Impact Dummies (SID/HIII's) can be found in Appendix A. Two 50th percentile adult male SID/HIII's were placed in the driver and left rear passenger designated seating positions according to instructions specified in the Laboratory Test Procedure for New Car Assessment Program Side Impact Testing dated November 2002. Each SID/HIII was instrumented in the following locations:

- Left Upper Rib (LUR) uni-axial accelerometer (Y-axis primary and redundant)
- Left Lower Rib (LLR) uni-axial accelerometer (Y-axis primary and redundant)
- Lower Thoracic Spine (T12) uni-axial accelerometer (Y-axis primary and redundant)
- Pelvic (PEV) section uni-axial accelerometer (Y-axis primary and redundant)
- Head Center of Gravity (CG) tri-axial accelerometers (X, Y and Z axes primary and redundant)
- Upper Neck load cell (Fx, Fy, Fz, Mx, My, Mz)

The test vehicle was instrumented with twenty-five (25) structural accelerometers and the MDB was instrumented with six (6) accelerometers and two (2) contact switches on the bumper to compare left side to right side bumper impact timing. All data channels were recorded with a fully self contained on-board DTS TDAS Pro Data Acquisition System. The data was digitally sampled at 10,000 samples per second and processed per Appendix V of the Test Procedure.

2.2 GENERAL COMMENTS

The test vehicle sustained a maximum static crush of 155 mm at level 3, 900 mm rearward of the left vertical impact point. The driver and passenger SID/HIII's, Serial Nos. 271 and 904 respectively, were calibrated just prior to this test. The SID/HIII's injury criteria are summarized as follows:

Measurements	Units	Driver	Passenger
Thoracic Trauma Index (TTI)	G's	16.0	15.4
Peak Pelvic G's (PEV)	G's	17.9	18.1
Head Injury Criteria (HIC)	none	387.4	400.0

Test summaries and post-test observations are presented in Section 3. The vehicle, camera, and occupant measurements are presented in Section 4. Appendix A contains the still photograph prints. Appendix B contains the driver and passenger SID/HIII's, vehicle, and MDB response data traces. Appendix C contains the SID/HIII's configuration and performance verification data. Appendix D contains the test equipment information.

TEST NOTES

The vehicle rolled onto its right side during impact. See Appendix B for photos.

One of the cameras on the cart (MDB Onboard, Impact Point Close-up) did not run.

The following channels did not collect any data:

Left Front Sill Y

Left Lower A-Post Y

Driver Lower Spine Yr

Driver Pelvis Yr after 140ms

Left Rear Sill Y after 40ms

Left Lower B-Post Y after 15ms

Left Mid A-Post Y after 27ms

The vehicle test weight was 37.3 kg higher than the target test weight due to an error in calculation of the test weight.

The size of the target used for the impact point was 76.2 mm diameter (3 inch target). The actual impact point was 41 mm rear. This point was outside the target but within the 50 mm tolerance.

SECTION 3

SIDE IMPACT HYBRID III DUMMY (SID/HIII) AND VEHICLE TEST DATA

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

NHTSA No. M55206
Test Date: 01/10/05

CONVERSION FACTORS USED IN THIS REPORT*

Quantity	Typical Application	English Units	Metric Unit	Multiply By
Mass	Vehicle Weight	lb	kg	0.4536
Linear Velocity	Impact Velocity	mile/h	km/h	1.609
Length or Distance	Measurements	in	mm	25.4
Volume	Fuel Systems	gal	liter	3.785
Volume	Small Fluids	oz	mL	29.573
Pressure	Tire Pressure	lbf/in ²	kPa	7.0
Volume	Liquid	gal	liter	3.785
Temperature	General Use	°F	°C	$=(tf - 32)/1.8$
Force	Dynamic Forces	lbf	N	4.448
Moment	Torque	lbf/ft	Nm	1.355

*Based on the Recommended Practice in SAE J916, May 85

DATA SHEET NO. 1

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

TEST VEHICLE INFORMATION

TEST VEHICLE OPTIONS

Make	Nissan Motor Company
Model	Pathfinder
Body Style	MPV
NHTSA No.	M55206
VIN	5N1AR18U75C714992
Color	Grey
Delivery Date	12/29/04
Odometer Reading (mile)	78
Dealer	Gordie Boucher Nissan
Transmission	Automatic
Final Drive	Rear
Number of Cylinders	6
Engine Displacement (L)	4
Engine Placement	Longitudinal
Automatic Door Locks (ADL)	No
Owner's Manual Details Instructions on Disabling ADLs	NA

Front Airbag	Yes
Side Airbags	No
Power Windows	Yes
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Air Conditioning	Yes
Power Brakes	Yes
Disc Brakes, Front	Yes
Disc Brakes, Rear	Yes
Anti-lock Brakes	Yes
AM/FM/CD	Yes
Anti-theft System	Yes
Cruise Control	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Company	GVWR (kg)	2631
Date of Manufacture	11/04	GAWR Front (kg)	1259
		GAWR Rear (kg)	1588

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	308	308
Cold / Test Pressure (kPa)	240	240
Recommended Tire Size	P265/75R16	P265/75R16
Tire Size on Vehicle	P265/75R16	P265/75R16
Tire Manufacturer	BF Goodrich	BF Goodrich

Measured Parameter	Front	Rear	Third	Total
Type of Seats	Bucket	Split Bench	Bench	
Number Of Occupants	2	3	2	7
Capacity Wt. (VCW) (kg)				551
Cargo Wt. (RCLW) (kg)				74.8

DATA SHEET NO. 1... (continued)

GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	501.7	538.0		556.6	681.8	
Right	kg	520.3	519.8		508.5	606.5	
Ratio	%	49.1	51.9		45.3	54.7	
Totals	kg	1022.0	1057.8	2079.8	1065.1	1288.3	2353.4

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	2079.8
Weight of 2 P572E ATDs	kg	161.5
Rated Cargo/Luggage Weight (RCLW)	kg	74.8
Calculated Vehicle Target Weight (TVTW)	kg	2316.1

* Actual As Tested Weight (ATW) will be TVTW -5/-10 kg

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG(aft of front axle)
As Delivered	mm	888	888	888	893	1453
As Tested	mm	883	890	848	893	1563
Fully Loaded	mm	878	890	847	860	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2857
Total Vehicle Length at Left Side	mm	4060
Total Vehicle Length at Centerline	mm	4747
Total Vehicle Length at Right Side	mm	4060
Total Vehicle Width	mm	1836
Weight of Ballast in Cargo Area	kg	124.7
Amount of Stoddard Solvent in Fuel Tank	liters	74.6

TEST VEHICLE VERTICAL IMPACT LINE DATA

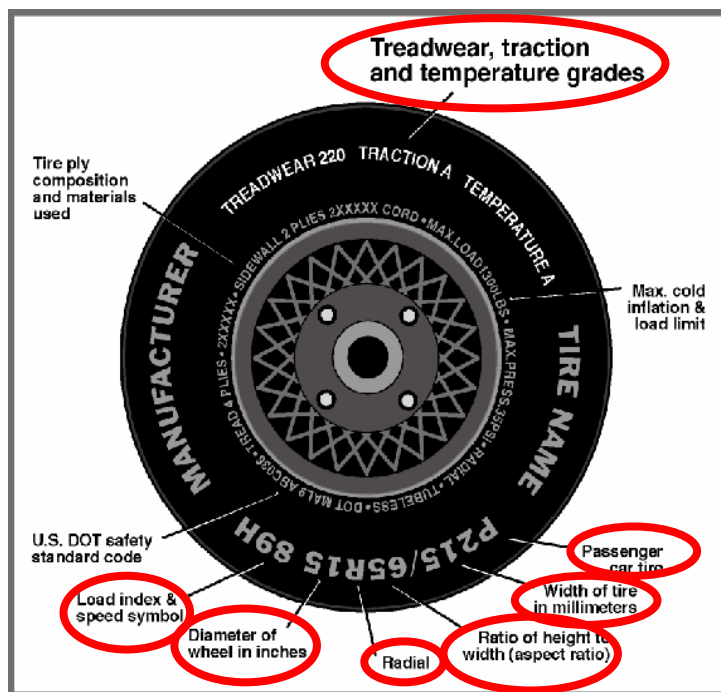
Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2857
Target Impact Point Aft of Front Axle	mm	489
Actual Impact Point Aft of Front Axle	mm	530

DATA SHEET NO. 2
TEST VEHICLE TIRE INFORMATION

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

NHTSA No.: M55206
Test Date: 01/10/05

Vehicle Year	2005	Vehicle Make	Nissan
VIN	5N1AR18U75C714992	Vehicle Model	Pathfinder



	Front	Rear
Tire Manufacturer	BF Goodrich	BF Goodrich
Tire Name	Rugged Trail T/A	Rugged Trail T/A
Tire Type	P	P
Tire Width (mm)	265	265
Ratio of Height to Width (aspect ratio)	75	75
Radial	R	R
Wheel Diameter	16	16
Load Index & Speed Symbol	114T	114T
Treadwear	400	400
Traction Grade	A	A
Temperature Grade	B	B

DATA SHEET NO. 3

TEST VEHICLE INFORMATION

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

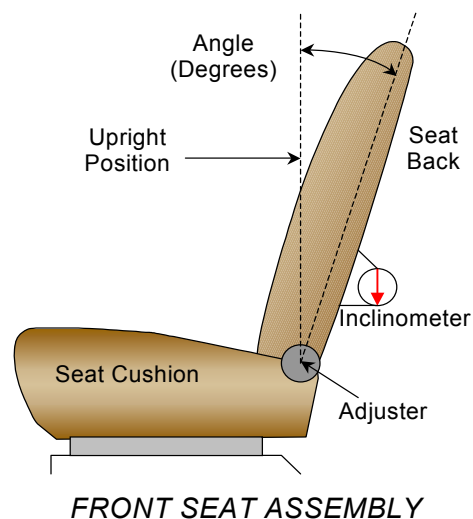
NHTSA No. M55206
Test Date: 01/10/05

NORMAL DESIGN RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle.

Driver seat back angle: 11° from headrest post.

Passenger seat back angle: 22.5° from headrest post.



SEAT FORE/AFT POSITIONS

Position of the driver seat and the passenger seat:

Driver seat fore/aft total travel: 232 mm

Driver seat fore/aft position: 116 of 232 mm

The rear seat has no adjustable mechanism.

DATA SHEET NO. 3... (continued)

TEST VEHICLE INFORMATION

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

NHTSA No. M55206
Test Date: 01/10/05

FUEL TANK CAPACITY DATA

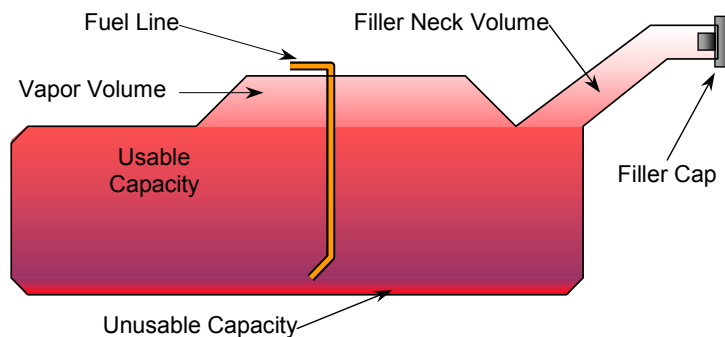
The "Usable Capacity" of the standard equipment fuel tank is: 79.9 liters

The "Usable Capacity" of any optional equipment fuel tank is: N/A liters

The "Usable Capacity" used for certification to FMVSS 301 requirements: 79.9 liters

Actual amount of Stoddard solvent added to vehicle for certification test: 74.6 liters

The fuel door is located on the driver's side of the vehicle.



VEHICLE FUEL TANK ASSEMBLY

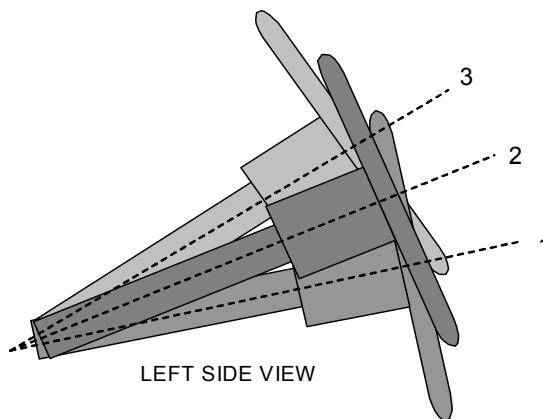
STEERING COLUMN ADJUSTMENT

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

Lowermost, position 1: 15.1°

Geometric center, position 2: 24.1°

Uppermost, Position 3: 33.2°



STEERING COLUMN ASSEMBLY

DATA SHEET NO. 4
TEST VEHICLE SUMMARY OF RESULTS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front Axle	Rear Axle	Total	Front Axle	Rear Axle	Total
Left	kg	501.7	538.0		556.6	681.8	
Right	kg	520.3	519.8		508.5	606.5	
Weight Ratio	%	49.1	51.9		45.3	54.7	
Totals	kg	1022.0	1057.8	2079.8	1065.1	1288.3	2353.4

MAXIMUM EXTERIOR STATIC CRUSH

Level	Measured Parameter	Units	Maximum Crush	Above Ground
Level 1	Sill Top Height	mm	145	384
Level 2	Occupant H-Point	mm	149	820
Level 3	Mid Door	mm	155	794
Level 4	Window Sill	mm	42	1138
Level 5	Window Top	mm	0	1688
N/A	Maximum Penetration	mm	155	794

INSTRUMENTATION

Driver SID/HIII Instrumentation	23
Passenger SID/HIII Instrumentation	23
Vehicle Structure Accelerometers	25
MDB Accelerometers	6
Total	77

DATA SHEET NO. 5

MOVING DEFORMABLE BARRIER (MDB) SUMMARY OF RESULTS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1252
Overall Length Including Honeycomb Face	4115
Wheel base of Framework Carriage	2587
C.G. Location aft of Front Axle	1103

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	449.4	239.9	
Right	kg	331.3	340.6	
Ratio	%	57.4	42.6	
Totals	kg	780.7	580.5	1361.2

SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	62.0
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	62.0
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.8

MAXIMUM STATIC CRUSH OF HONEYCOMB FACE

Vertical Location			From Centerline		Max. Crush
Level	Description	Height	Distance	Direction	
1	Center of Bumper (mm)	432	Right	800	197
2	Top of Bumper (mm)	533	Right	500	187
3	Mid Level (mm)	686	Left	800	167
4	Top of Stack (mm)	813	Left	800	183

MDB INSTRUMENTATION AND CAMERAS

Accelerometers	6
Contact Switches	2
High Speed Cameras	2

DATA SHEET NO. 6

POST TEST OBSERVATIONS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat SID/HIII	Rear Seat SID/HIII
Dummy Type / Serial No.	SID/HIII / 271	SID/HIII / 904
Head Contact	Side Header, Headrest	Side Header, Headrest
Upper Torso Contact	Door Panel	Door Panel
Lower Torso Contact	Door Panel	Door Panel
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	Left Knee	Left Knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

Description	Front	Rear
Locked/Unlocked Doors	Doors were unlocked	Doors were unlocked
Left Side Door Opening	Door remained closed and latched	Door remained closed and latched
Right Side Door Opening	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Seat Movement	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	None
Window Damage	Right Rear Window broke
Other Notable Effects	The vehicle rolled onto its right side during impact.

AIRBAG DEPLOYMENT

	Driver	Front Passenger	Rear Passenger
Front	No	No	
Side (Torso Bag)			
Curtain			

MDB LEFT EDGE IMPACT POINT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	+/- 50	41 mm rear
Vertical Offset	mm	+/-20	1 mm down

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 7

SID/HIII INJURY CRITERIA AND SENSOR DATA

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

THORAX AND PELVIS PEAK ACCELERATIONS (FIR 100 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Upper Rib (LUR)	Y	G's	14.7	71	-3.0	278	14.0	77	-6.4	156
Upper Rib (LUR) (R)	Y	G's	14.6	71	-3.3	278	12.7	77	-5.7	156
Lower Rib (LLR)	Y	G's	16.1	62	-4.2	278	13.9	56	-5.8	175
Lower Rib (LLR) (R)	Y	G's	14.4	62	-5.8	278	13.5	56	-5.7	175
Lower Spine (T ₁₂)	Y	G's	15.9	57	-12.8	81	16.7	56	-22.0	78.2
Lower Spine (T ₁₂) (R)	Y	G's	*	*	*	*	16.2	56	-22.4	78
Pelvis (PEV)	Y	G's	17.9	53	-5.2	82	18.1	56	-13.2	83
Pelvis (PEV) (R)	Y	G's	**	**	**	**	18.1	56	-12.1	83

* No valid data collected

** No valid data collected after 140ms

THORACIC TRAUMA INDEX (TTI) AND PELVIC ACCELERATION (FIR 100 Filtered)

Location	Driver				Passenger			
	LLR	T ₁₂	TTI(g)	PEV(g)	LUR	T ₁₂	TTI(g)	PEV(g)
Rib, Spine, and Pelvis	16.1	15.9	16.0	17.9	14.0	16.7	15.4	18.1
Rib, Spine, and Pelvis (R)	14.4	*	***	**	13.5	16.2	14.9	18.1

*** TTI cannot be calculated

HEAD CG PEAK ACCELERATIONS (SAE CLASS 1000 Filtered)

Location	Axis	Units	Driver				Passenger			
			Max	Time	Min	Time	Max	Time	Min	Time
Head CG	X	G's	2.5	31	-19.3	73	4.9	76	-24.8	69
Head CG	Y	G's	121.0	72	-5.0	58	112.0	69	-4.2	79
Head CG	Z	G's	25.6	72	-14.1	76	32.9	71	-10.2	92
Head CG Resultant		G's	124.9	72			119.1	69		

HEAD INJURY CRITERIA (SAE CLASS 1000 Filtered)

Location	Driver				Passenger			
	HIC	T ¹	T ²	Avg G's	HIC	T ¹	T ²	Avg G's
Head CG	387.4	70.6	74.4	100.8	400.0	67.8	72.9	90.7

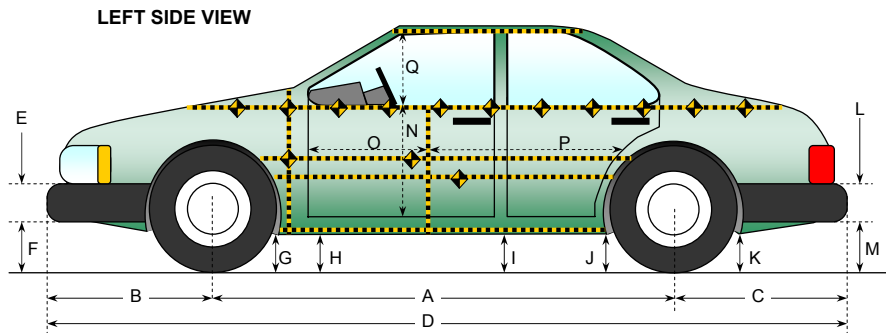
Positive Acceleration Polarities: Longitudinal (X) = Forward
 (Conforms to SAE J211) Lateral (Y) = Right
 Vertical (Z) = Down

DATA SHEET NO. 8

VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05



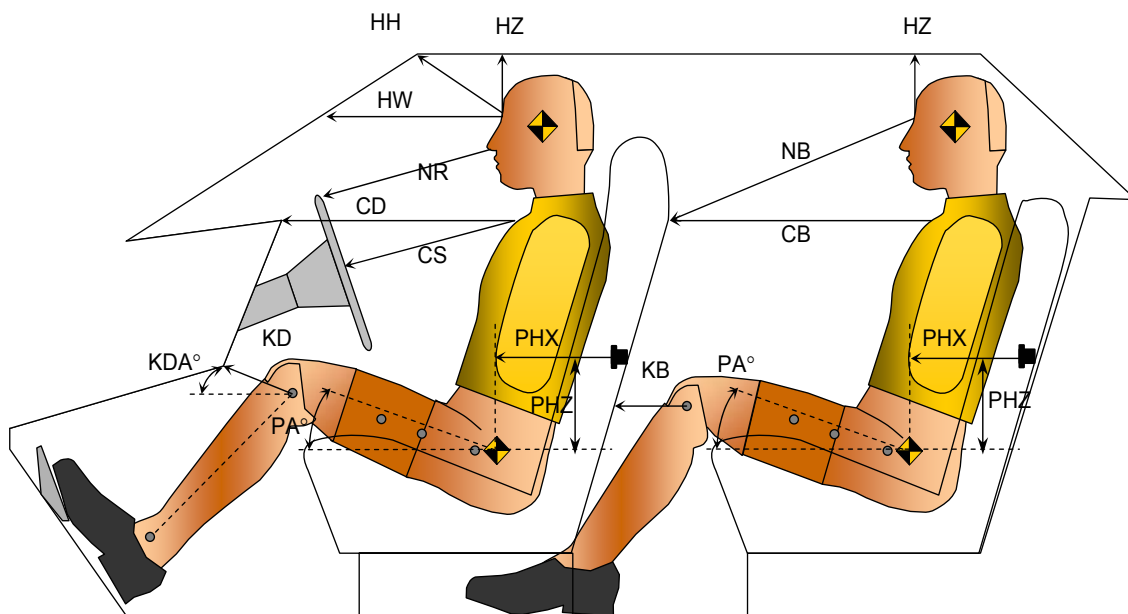
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2857	2842	15
B	Front Axle to FSOV	780	794	-14
C	Rear Axle to RSOV	1110	1110	0
D	Total Length at Centerline	4747	4746	1
E	Front Bumper Thickness	248	248	0
F	Front Bumper Bottom to Ground	442	448	-6
G	Sill Height at Front Wheel Well	318	324	-6
H	Sill Height at Front Door Leading Edge	343	360	-17
I	Sill Height at "B" Pillar	348	358	-10
J1	Sill Height at Rear Wheel Well	311	315	-4
J2	Pinch Weld Height at Rear Wheel Well	339	346	-7
K	Sill Height Aft of Rear Wheel Well	352	359	-7
L	Rear Bumper Thickness	164	164	0
M	Rear Bumper Bottom to Ground	464	466	-2
N	Sill Height to Window Bottom Sill	726	701	25
O	Front Door Leading Edge to Impact CL	720	715	5
P	Rear Door Trailing Edge to Impact CL	1388	1342	46
Q	Front Window Opening	500	502	-2
R	Right Side Length	4060	4020	40
S	Left Side Length	4060	4060	0
T	Vehicle Width at "B" Post	1788	1665	123

DATA SHEET NO. 9
SID/HIII LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

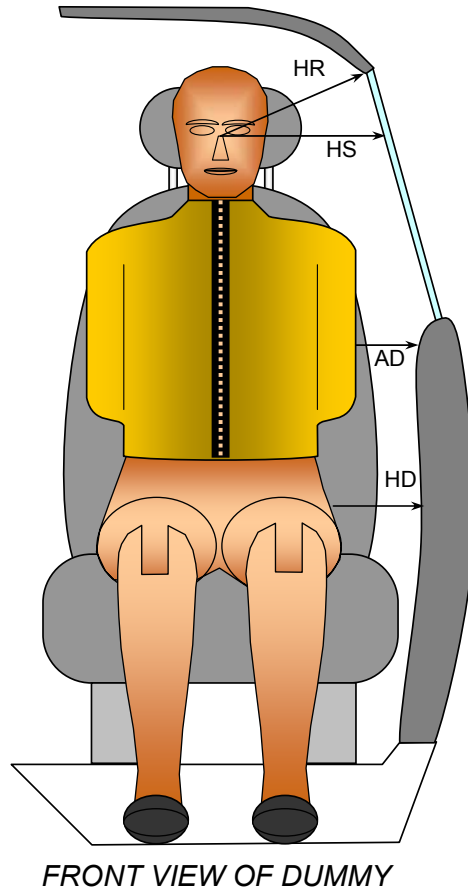


Driver Code	Pass. Code	Measurement Description	Driver S/N 271		Passenger S/N 904	
			Length(mm)	Angle(°)	Length(mm)	Angle(°)
HH		Head to Header	424			
HW		Head to Windshield	617			
HZ	HZ	Head to Roof	150		175	
NR	NB	Nose to Rim/Nose to Seatback	474		561	
CD	CB	Chest to Dash or Seatback	564		500	
CS		Chest to Steering Wheel	341			
KDL	KBL	Left Knee to Dash or Seatback	125	11.4	212	33.0
KDR	KBR	Right Knee to Dash or Seatback	107	20.5	208	45.7
PA	PA	Pelvic Angle		23.3		23.8
PHX	PHX	H-Point to Striker (X-Axis)	244		348	
PHZ	PHZ	H-Point to Striker (Z-Axis)	53		235	

DATA SHEET NO. 10
SID/HIII LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

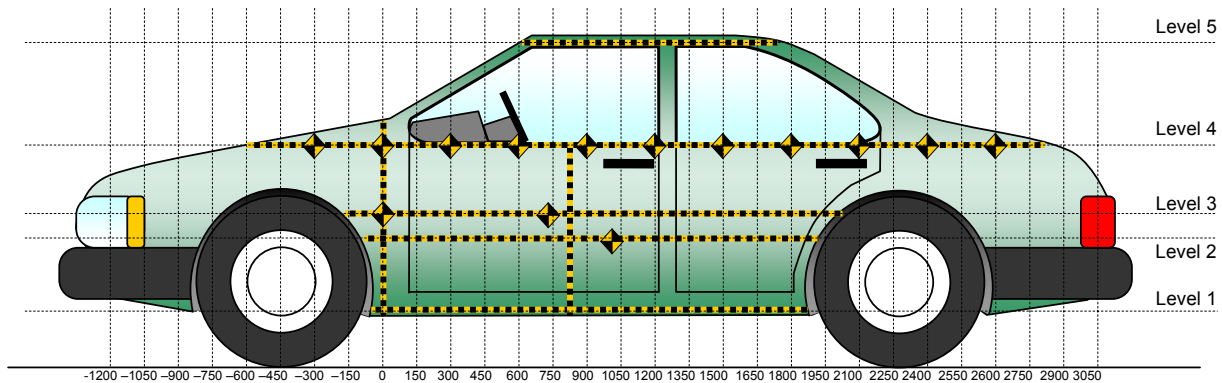


Code	Measurement Description	Units	Driver S/N 271	Passenger S/N 904
HR	Head to Side Header	mm	191	188
HS	Head to Side Window	mm	311	418
AD	Arm to Door	mm	112	61
HD	H-Point to Door	mm	174	160

DATA SHEET NO. 11
VEHICLE SIDE MEASUREMENTS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05



All Measurements Shown in mm

LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.
 Measurements along the vertical 800 mm.
 All measurements below in mm.

Level	Measurement Description	Height Above Ground
5	Window	1688
4	Window Sill	1138
3	Mid Door	794
2	Occupant H-Point	820
1	Sill Top	384

DATA SHEET NO. 12
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

NHTSA No. M55206
Test Date: 01/10/05

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-900				314					295					-19	
-750		177		295			187		280			10		-15	
-600				283					272					-11	
-450				274					267					-7	
-300				266					265					-1	
-150		182	177	260			225	224	265			43	47	5	
0		225	221	257			280	278	265			55	57	8	
150	287	221	221	252		375	310	307	244		88	89	86	-8	
300	285	218	219	261		392	313	338	248		107	95	119	-13	
450	283	216	216	257		400	333	343	239		117	117	127	-18	
600	281	214	214	255		405	356	363	237		124	142	149	-18	
750	280	213	213	255	465	408	352	361	249	460	128	139	148	-6	-5
900	279	212	212	255	465	409	361	367	261	460	130	149	155	6	-5
1050	279	211	211	254	464	408	358	358	274	460	129	147	147	20	-4
1200	277	211	211	242	467	410	325	334	277	461	133	114	123	35	-6
1350	279	211	211	252	467	414	346	361	294	463	135	135	150	42	-4
1500	280	210	210	254	468	420	335	348	282	462	140	125	138	28	-6
1650	280	209	209	254	467	425	329	342	268	462	145	120	133	14	-5
1800	260	211	211	256	466	386	319	329	261	463	126	108	118	5	-3
1950		200	192	256	468		282	267	257	465		82	75	1	-3
2100		174	174	249	468		202	201	239	468		28	27	-10	0
2250				253	470				258	469				5	-1
2400				257	474				269	471				12	-3
2550		175		262	478		190		270	475		15		8	-3
2700		197	190	269	485		207	200	274	483		10	10	5	-2
2850		243	244	278	492		249	249	280	488		6	5	2	-4
3000		255	255	289	504		272	260	289	497		17	5	0	-7

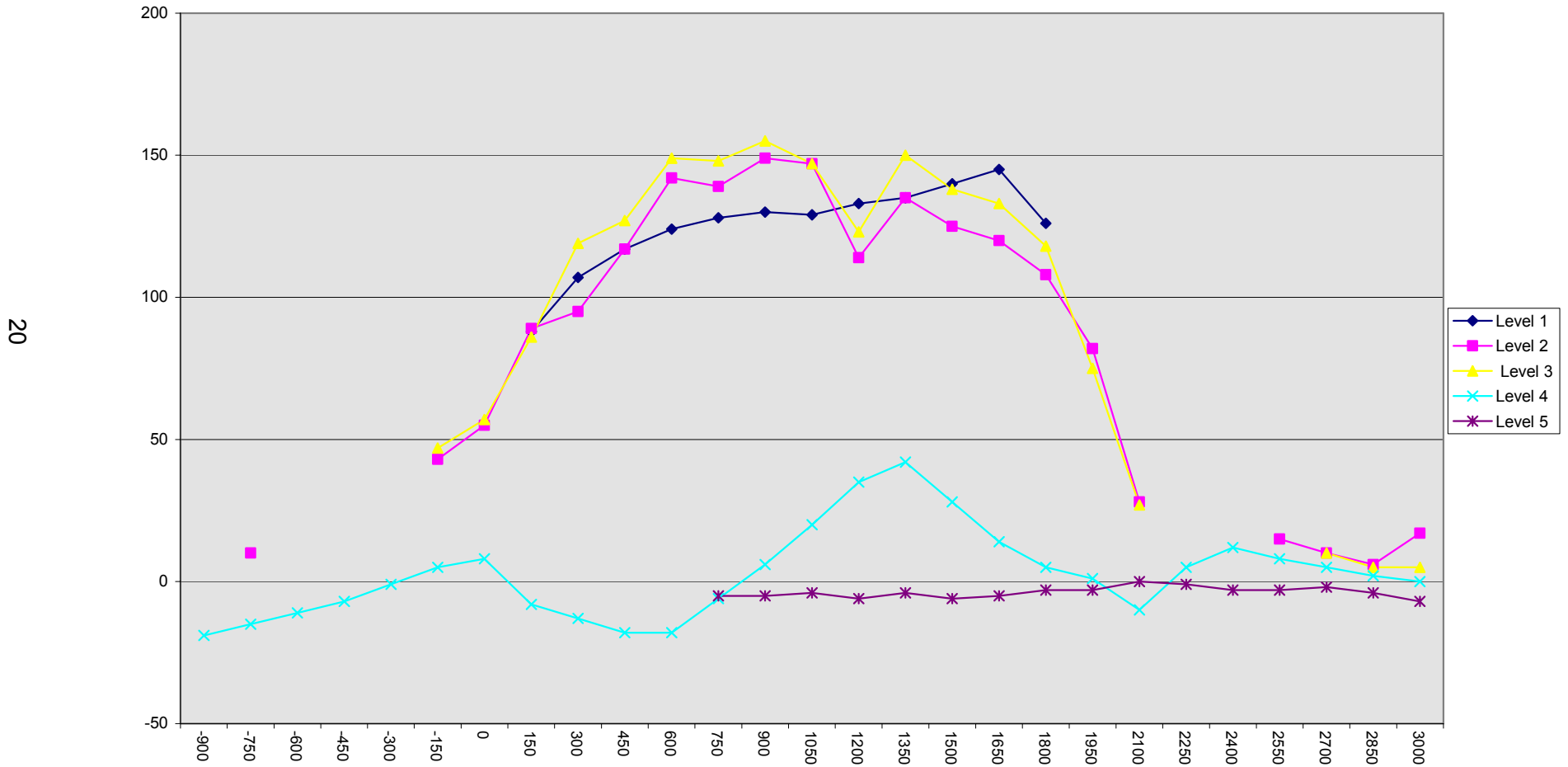
Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body

DATA SHEET NO. 12...(continued)
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

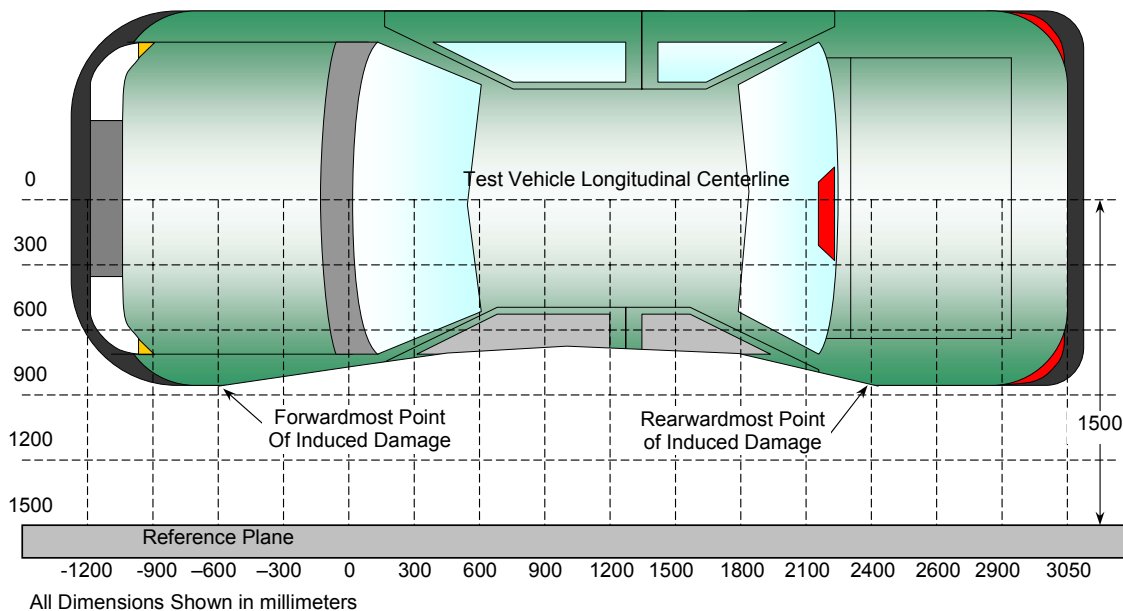
NHTSA No. M55206
Test Date: 01/10/05



DATA SHEET NO. 13
VEHICLE DAMAGE PROFILE DISTANCES

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05



TOP VIEW

DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	3000 mm	4	289	289	0
2	2344 mm	4	256	269	13
3	1673 mm	1	270	424	154
4	1012 mm	1	279	408	129
5	345 mm	1	284	397	113
6	-300 mm	4	266	265	-1

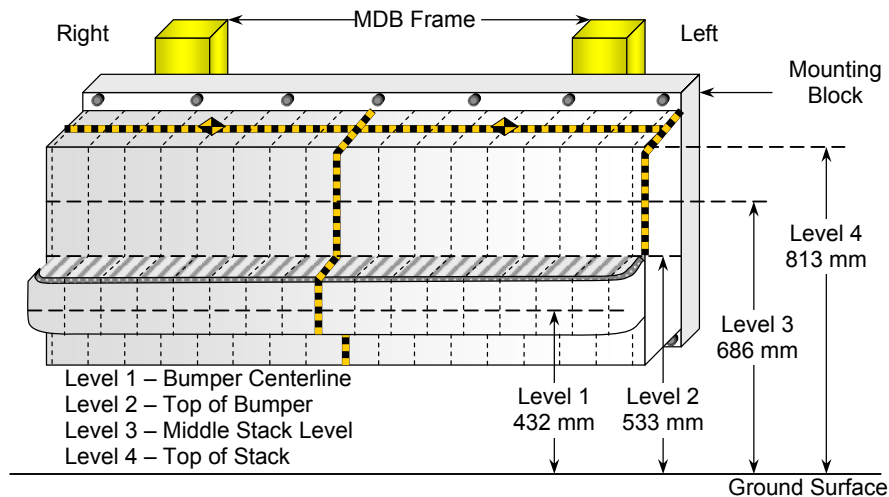
Reference plane is parallel to test vehicle longitudinal centerline.
 Given dimensions = Reference plane to car body.

DATA SHEET NO. 14

DEFORMABLE BARRIER HONEYCOMB FACE STATIC CRUSH

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05



DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C _L	Distance Left of Center							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
1	197	190	187	187	187	186	183	178	172	166	165	164	163	163	167	175	173
2	186	186	186	187	182	179	174	166	163	159	157	156	153	153	151	155	160
3	140	105	106	115	145	126	110	90	82	75	71	69	70	75	93	127	167
4	153	142	134	131	162	150	136	101	97	95	104	110	101	107	124	149	183

All Dimensions in mm

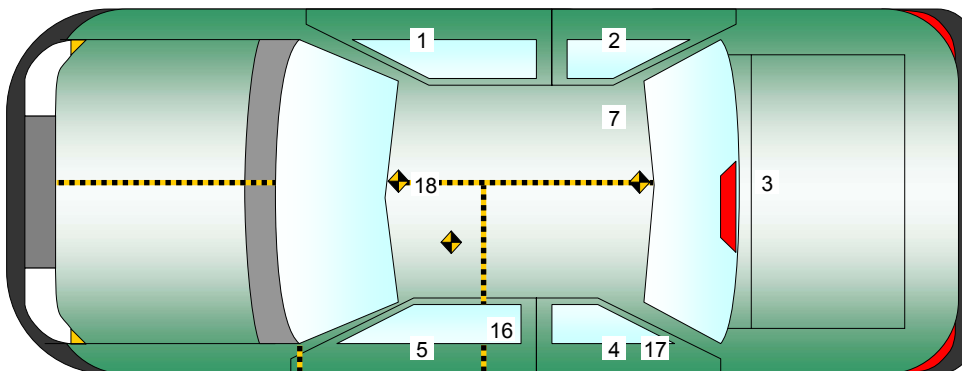
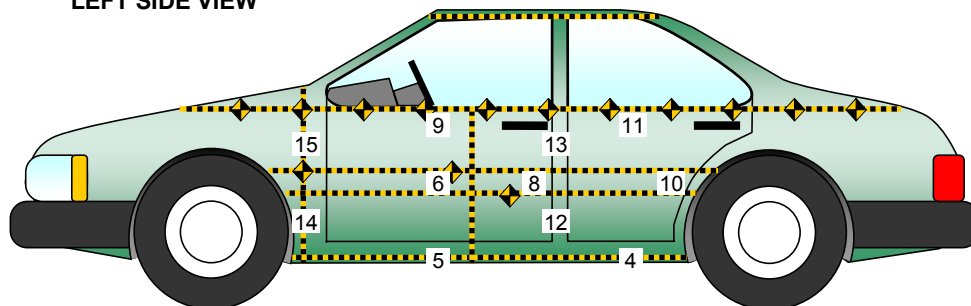
DATA SHEET NO. 15

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

LEFT SIDE VIEW



No.	Location
1	Right Sill at Front Seat
2	Right Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Sill at Rear Door
5	Left Sill at Front Door
6	Left Front Door Centerline
7	Right Rear Occupant Compartment
8	Left Front Door Mid-Rear
9	Left Front Door Upper Centerline

No.	Location
10	Left Rear Door Mid-Rear
11	Left Rear Door Upper Centerline
12	Left Lower B-Post
13	Left Middle B-Post
14	Left Lower A-Post
15	Left Middle A-Post
16	Front Seat Track
17	Rear Seat Track or Structure
18	Vehicle CG

DATA SHEET NO. 15...(continued)

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Measurements (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	Right Sill at Front Seat	2692	716	420	X	3.0	13	-6.4	18
					Y	35.9	8	-4.2	79
					Z	4.9	67	-9.1	13
					RES	36.1	8		
2	Right Sill at Rear Seat	1597	708	445	X	2.4	76	-5.8	18
					Y	65.6	8	-12.2	21
					Z	9.9	7	-11.1	25
					RES	66.2	8		
3	Rear Floorpan Above Axle	650	0	730	X	6.0	49	-11.0	54
					Y	20.8	49	-4.9	85
					Z	7.7	45	-7.9	68
					RES	21.7	49		
4	Left Sill at Rear Door	1635	-708	430	Y	*	*	*	*
5	Left Sill at Front Door	2676	-716	435	Y	**	**	**	**
6	Left Front Door C/L	2714	-780	880	Y	109.1	13	-106.2	29
7	Rear Occupant Compartment	2086	320	730	Y	70.9	9	-7.8	27
8	Left Front Door Mid-Rear	2430	-765	885	Y	130.4	12	-91.6	15
9	Left Front Door Upper C/L	2735	-755	1165	Y	84.7	15	-57.5	27
10	Left Rear Door Mid-Rear	1578	-757	950	Y	82.8	8	-30.1	28
11	Left Rear Door Upper C/L	1775	-740	1195	Y	96.8	13	-39.6	8
12	Left Lower B-Post	2165	-710	766	Y	***	***	***	***
13	Left Middle B-Post	2170	-700	1120	Y	85.3	10	-43.2	18
14	Left Lower A-Post	3335	-738	710	Y	**	**	**	**
15	Left Middle A-Post	3346	-750	1082	Y	****	****	****	****
16	Front Seat Track				Y	40.3	8	-12.2	57
17	Rear Seat Track or Structure				Y				
18	Vehicle CG	2505	0	773	X	16.3	11	-28.5	7
					Y	59.3	7	-18.4	10
					Z	25.6	58	-46.4	9
					RES	71.2	7		

*No Valid Data collected after 40ms

*** No valid data collected after 15ms

** No valid data collected.

**** No valid data collected after 27ms

See reference points on the following page.

DATA SHEET NO. 15...(continued)
VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

NHTSA No. M55206
Test Date: 01/10/05

Reference Points X - Test Vehicle Rear Bumper (+ forward)
Y - Test Vehicle Centerline (+ to right)
Z - Ground Plane (+ down)

DATA SHEET NO. 16

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

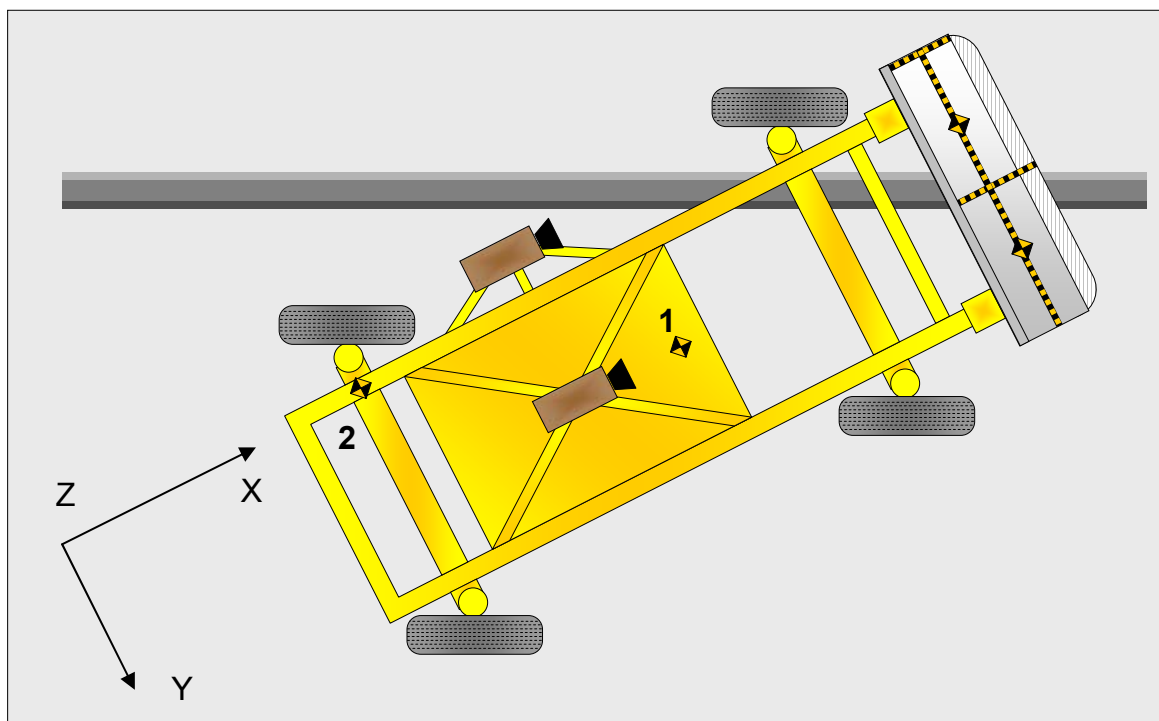
Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

MDB ACCELEROMETER PEAK DATA AND LOCATIONS

Loc. No.	Accelerometer Location	Measurement (mm)			Peak Values (G's)				
		X	Y	Z	Axis	Max	Time	Min	Time
1	MDB CG	-1092	0	-483	X	1.4	107	-20.4	32
					Y	0.5	78	-8.3	41
					Z	17.7	39	-17.2	67
					RES	27.7	39		
2	MDB Rear	-2591	-625	-622	X	1.4	156	-25.3	34
					Y	3.9	34	-2.2	59
					Z	6.5	32	-2.3	80
					RES	26.3	34		

Reference Points X - MDB Front Axle (+ forward)
 Y - MDB Centerline (+ to right)
 Z - Ground Plane (+ down)



DATA SHEET NO. 17
VEHICLE STRUCTURAL MEASUREMENTS

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05

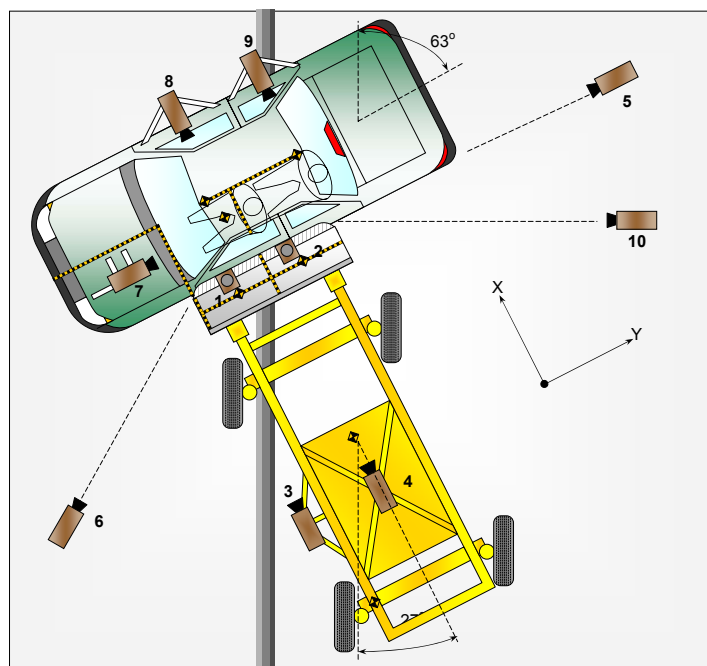
	Elements	Pre-Test (mm)
1	Total Length	4747
2	Total Width	1836
3	Bumper Top Height	536
4	Bumper Bottom Height	464
5	Longitudinal Member Top Height	520
6	Distance between Longitudinal Members	605
7	Longitudinal Member Width	83
8	Engine Top Height	1142
9	Engine Bottom Height	255
10	Engine and gearbox width	585
11	Front bumper-engine distance	666
12	Front shock absorber fixing height	730
13	Bonnet leading edge height	1026
14	Front shock absorber fixing width	920
15	Front bumper – front axle distance	795
16	Front axle – a pillar distance	653
17	A-pillar – B-pillar distance	1107
18	B-Pillar – rear axle distance	1095
19	B-pillar – C-pillar distance	598
20	Roof sill bottom height	1700
21	Roof sill top height	1735
22	Floor sill bottom height	450
23	Floor sill top height	385

DATA SHEET NO. 18

HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Close-up	0	-1050	5460	50	1000
2	Overhead Overall	0	970	5470	14	1000
3	MDB Onboard, Impact Point Close-up				25	*
4	MDB Onboard, Centerline of Impact				13	1000
5	Right Side, Ground Level, Overall	1080	8230	1355	19	1000
6	Left Side, Ground Level, Overall	390	-5500	1315	19	1000
7	Vehicle Onboard Front SID/HIII, Front				13	1000
8	Vehicle Onboard Front SID/HIII, Side				8	1000
9	Vehicle Onboard Rear SID/HIII, Side				8	1000
10	Real Time Coverage				13	24

Reference Points X - Impact Line
 Y - MDB Left Edge Impact Point
 Z - Ground Plane

* The camera did not run.

DATA SHEET NO. 19

FMVSS 301 FUEL SYSTEM INTEGRITY POST IMPACT DATA

Test Vehicle: 2005 Nissan Pathfinder SE-OR
Test Program: NCAP Side Impact

NHTSA No. M55206
Test Date: 01/10/05

Test Time: 11:13 pm

Temperature at Time of Impact: 21°C

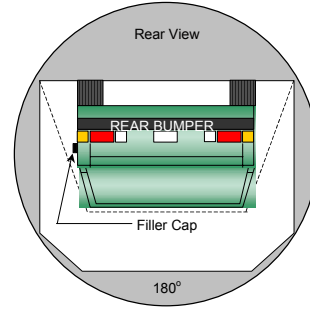
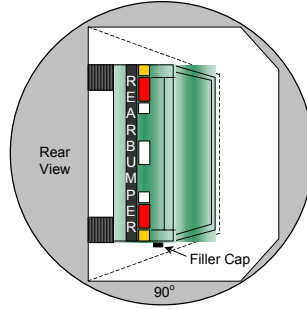
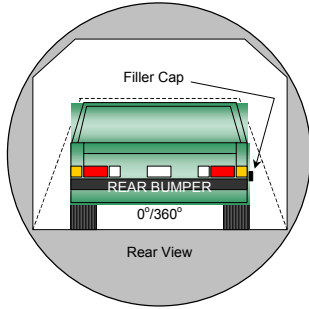
STODDARD SOLVENT SPILLAGE MEASUREMENTS

- A. From impact until vehicle motion ceases: 0 oz.
(Maximum Allowable = 1 ounce)
- B. For the 5 minute period after motion ceases: 0 oz.
(Maximum allowable = 5 ounces)
- C. For the following 25 minutes: 0 oz.
(Maximum allowable = 1 oz./minute)
- D. Spillage Details: None

DATA SHEET NO. 20
FMVSS 301 STATIC ROLLOVER DATA SHEET

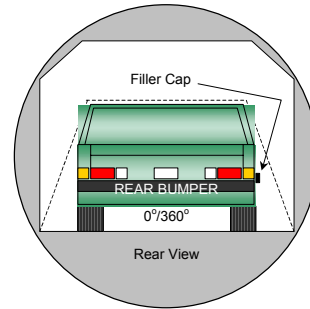
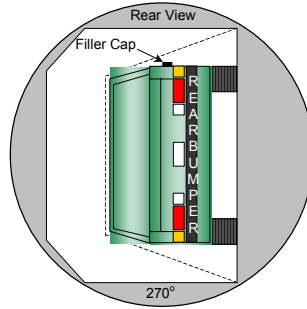
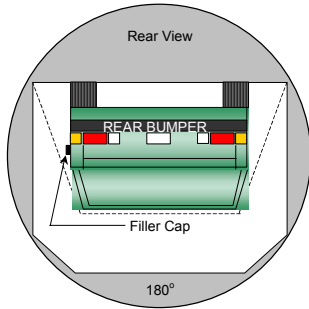
Test Vehicle: 2005 Nissan Pathfinder SE-OR
 Test Program: NCAP Side Impact

NHTSA No. M55206
 Test Date: 01/10/05



0° to 90°

90° to 180°



180° to 270°

270° to 360°

1. The specified fixture rollover rate for each 90° of rotation is 60 to 180 seconds.
2. The position hold time at each position is 300 seconds (minimum).
3. Details of Stoddard Solvent Spillage locations: None

Rollover Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° to 90°	166	300	0
90° to 180°	148	300	0
180° to 270°	139	300	0
270° to 360°	155	300	0

APPENDIX A
PHOTOGRAPHS

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Left Rear of Vehicle As Received

A-2.



Right Front of Vehicle As Received

MFD BY NISSAN MOTOR CO., LTD.

DATE 11/04
GVWR 5800 LB
GAWR FR. 2775 LB
WITH P265/75R16 TIRES
16X7.0 RIMS AT 35 PSI
COLD SINGLE
GAWR RR. 3500 LB
WITH P265/75R16 TIRES
16X7.0 RIMS AT 35 PSI
COLD SINGLE

THIS VEHICLE CONFORMS TO
ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY AND
THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF
MANUFACTURE SHOWN ABOVE.
SEE OWNERS MANUAL FOR
ADDITIONAL INFORMATION.

SN1AR18U75C 714992

MPV 609

MODEL: JCKULTN-EUA 02000

COLOR	TRIM	TRANS
-------	------	-------

K27	T	TRESR05A
-----	---	----------

AXLE	ENGINE
------	--------

RC31	VQ40DE 3954CC
------	---------------



Vehicle Certification Label

RECOMMENDED COLD TIRE INFLATION PRESSURE PRESSION DE GONFLAGE RECOMMANDEE DES PNEUS FROIDS	
TIRE SIZE DIMENSIONS	kPa (psi)
P235/75R15 P265/70R16	FRONT: 240 (35)
P245/75R16 P265/75R16	
P265/65R17	REAR: 240 (35)

99090 EA00A

Tire Placard

A-5.



Pre-Test Front View of Test Vehicle

A-6.



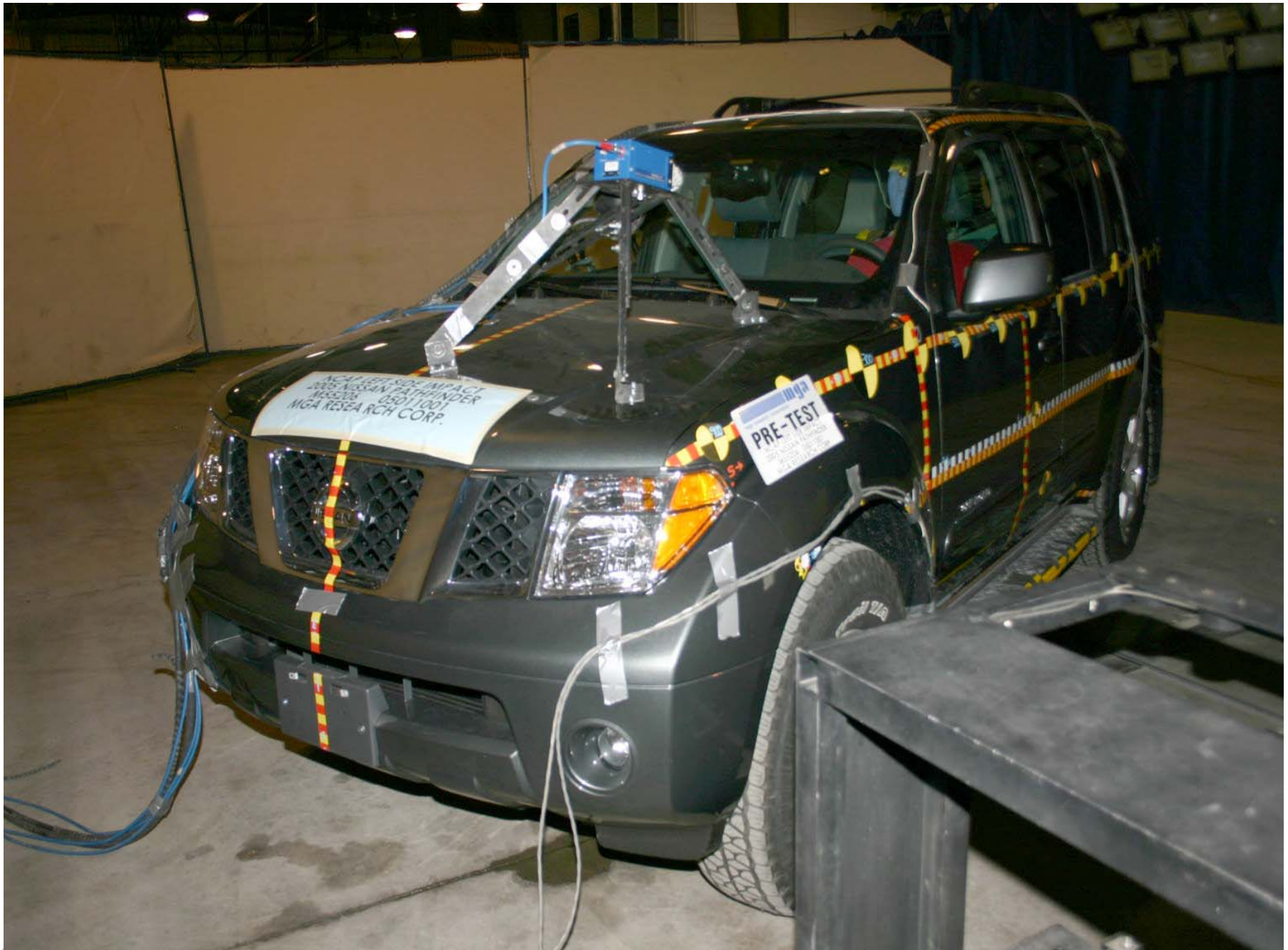
Post-Test Front View of Test Vehicle

A-8.



Post-Test Right Front 3/4 View of Test Vehicle

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Pre-Test Left Front 3/4 View of Test Vehicle

A-10.



Post-Test Left Front $\frac{3}{4}$ View of Test Vehicle

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Pre-Test Left Side View of Test Vehicle

A-12.



Post-Test Left Side View of Test Vehicle



Pre-Test Left Rear ¾ View of Test Vehicle

A-14.



Post-Test Left Rear $\frac{3}{4}$ View of Test Vehicle



Pre-Test Right Rear $\frac{3}{4}$ View of Test Vehicle



Post-Test Right Rear 3/4 View of Test Vehicle



Post-Test Right Rear 3/4 View of Test Vehicle (window broken)



Pre-Test Rear View of Test Vehicle



Post-Test Rear View of Test Vehicle



Pre-Test MDB (Left Side) Positioned Against Vehicle



Pre-Test MDB (Right Side) Positioned Against Vehicle



Pre-Test MDB Positioned Against Vehicle Overhead View



Post-Test MDB (Front) and Vehicle

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Pre-Test Impact Point on Vehicle

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Post-Test Impact Point on Vehicle

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Pre-Test Fuel Filler Cap View



Post-Test Fuel Filler Cap View



Pre-Test Three-Quarter View of Left Side Doors of Test Vehicle



Post-Test Three-Quarter View of Left Side Doors of Test Vehicle



Pre-Test Three-Quarter View of Right Side Doors of Test Vehicle



Post-Test Three-Quarter View of Right Side Doors of Test Vehicle



Pre-Test Driver Dummy Left Side View (Door Open)



Pre-Test Driver Dummy Left Side View



Post-Test Driver Dummy Left Side View



Pre-Test Driver Dummy Shoulder and Door Top View

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Post-Test Driver Dummy Shoulder and Door Top View



Pre-Test Driver Dummy Right Side View



Post-Test Driver Dummy Right Side View



Post-Test Driver Dummy Head Contact (side header)



Post-Test Driver Dummy Mid Contact



Pre-Test Passenger Dummy Left Side View (Door Open)

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Pre-Test Passenger Dummy Left Side View

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Post-Test Passenger Dummy Left Side View



Pre-Test Passenger Dummy Shoulder and Door Top View



Post-Test Passenger Dummy Shoulder and Door Top View



Pre-Test Passenger Dummy Right Side View



Post-Test Passenger Dummy Right Side View

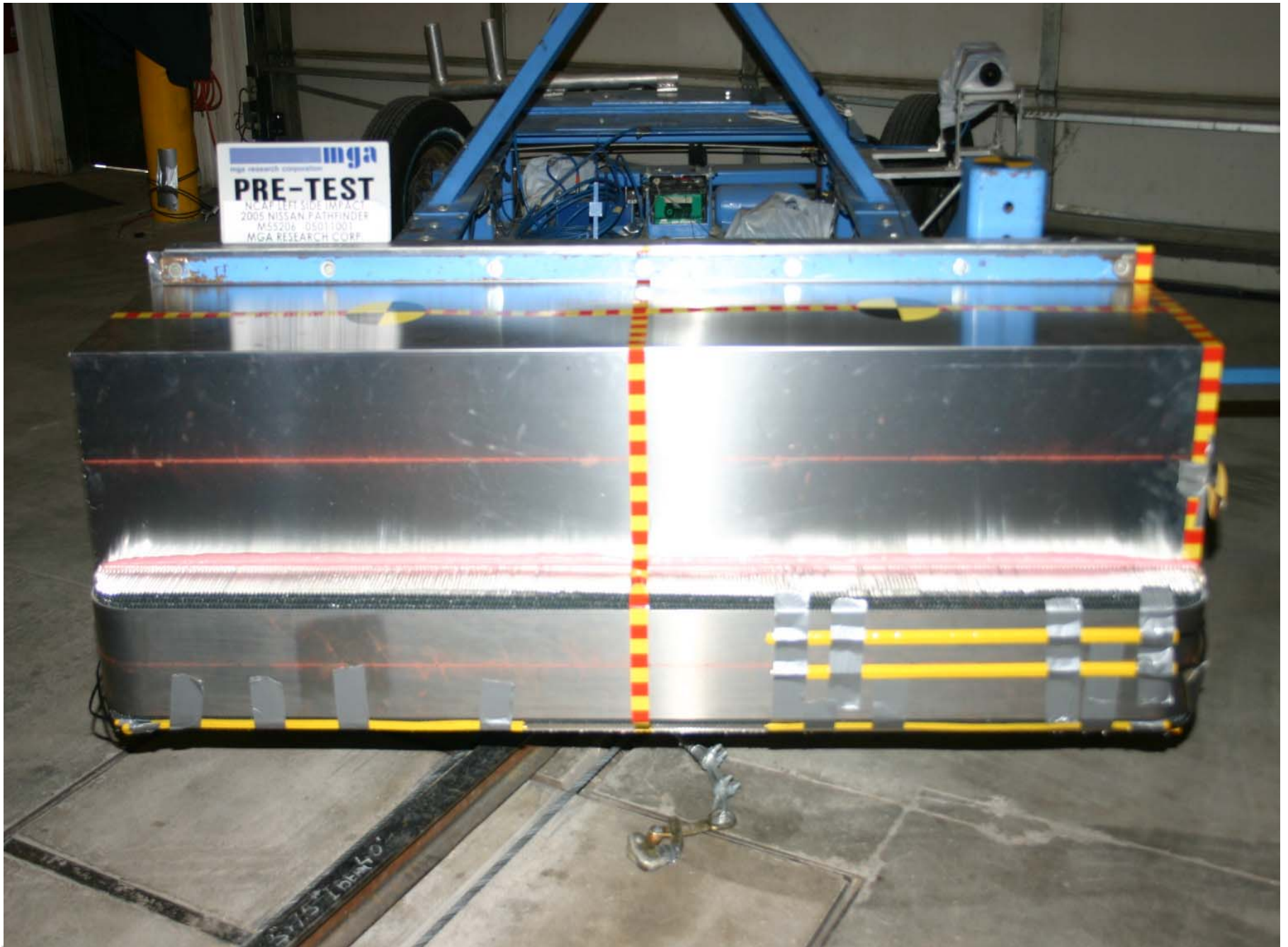


Post-Test Passenger Dummy Head Contact (side header)



Post-Test Passenger Dummy Mid Contact

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Pre-Test MDB Front View

A-52.



Post-Test MDB Front View



Pre-Test MDB Top View

A-54.



Post-Test MDB Top View

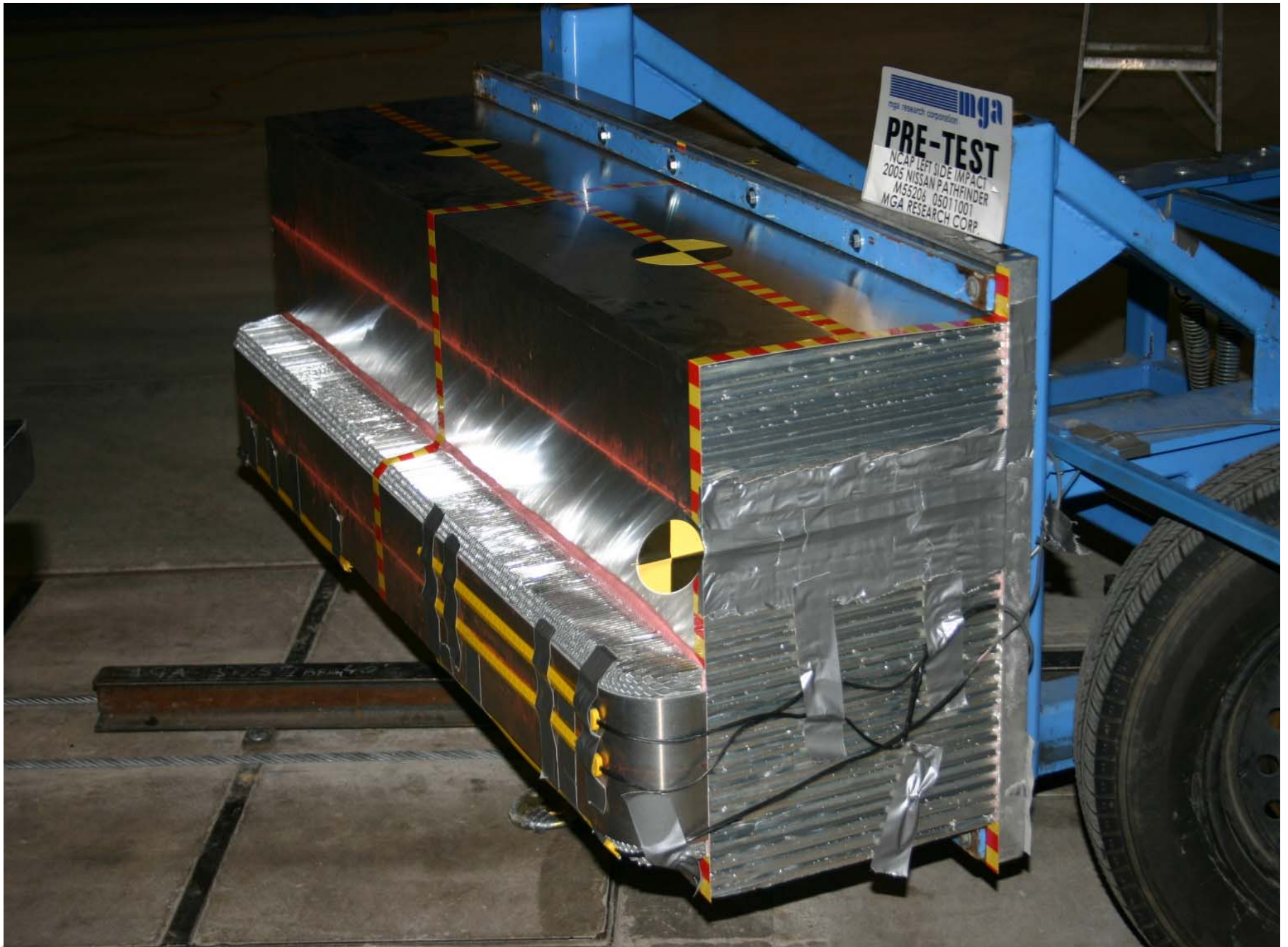


Pre-Test MDB Right Side View



Post-Test MDB Right Side View

A-57.

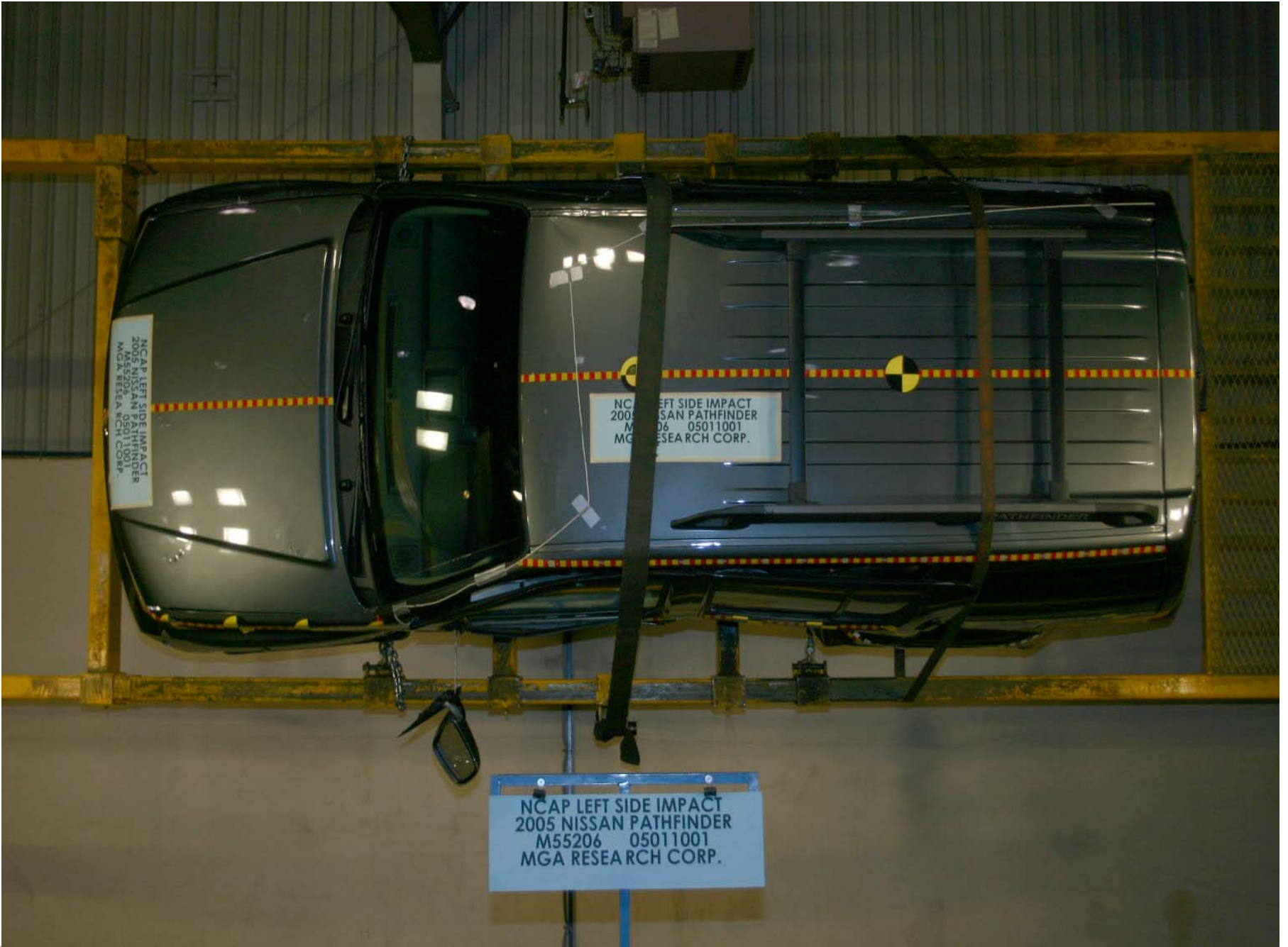


Pre-Test MDB Left Side View

A-58.



Post-Test MDB Left Side View



A-59.

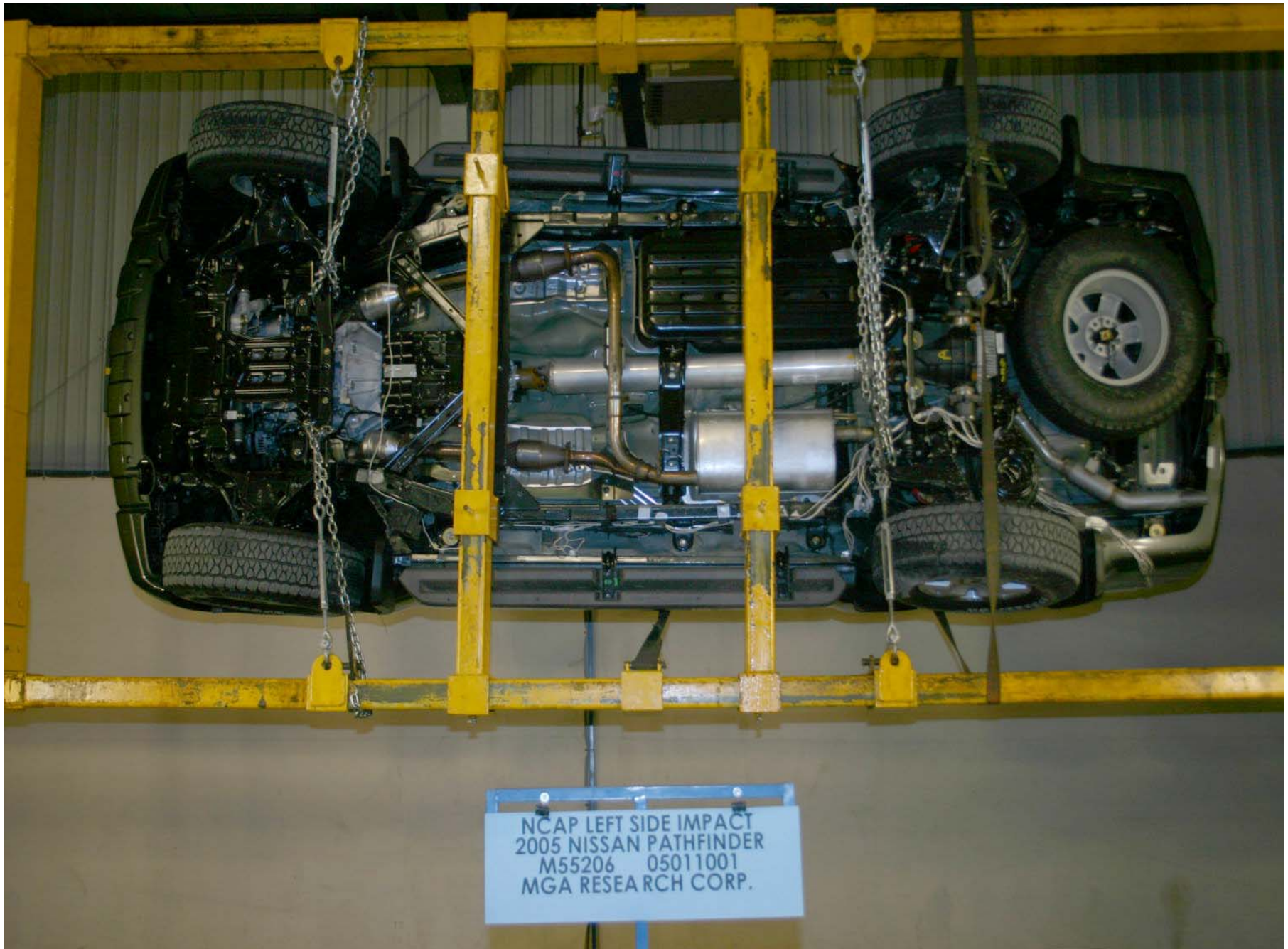
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Rollover 180 Degrees

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Rollover 270 Degrees

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Rollover 360 Degrees

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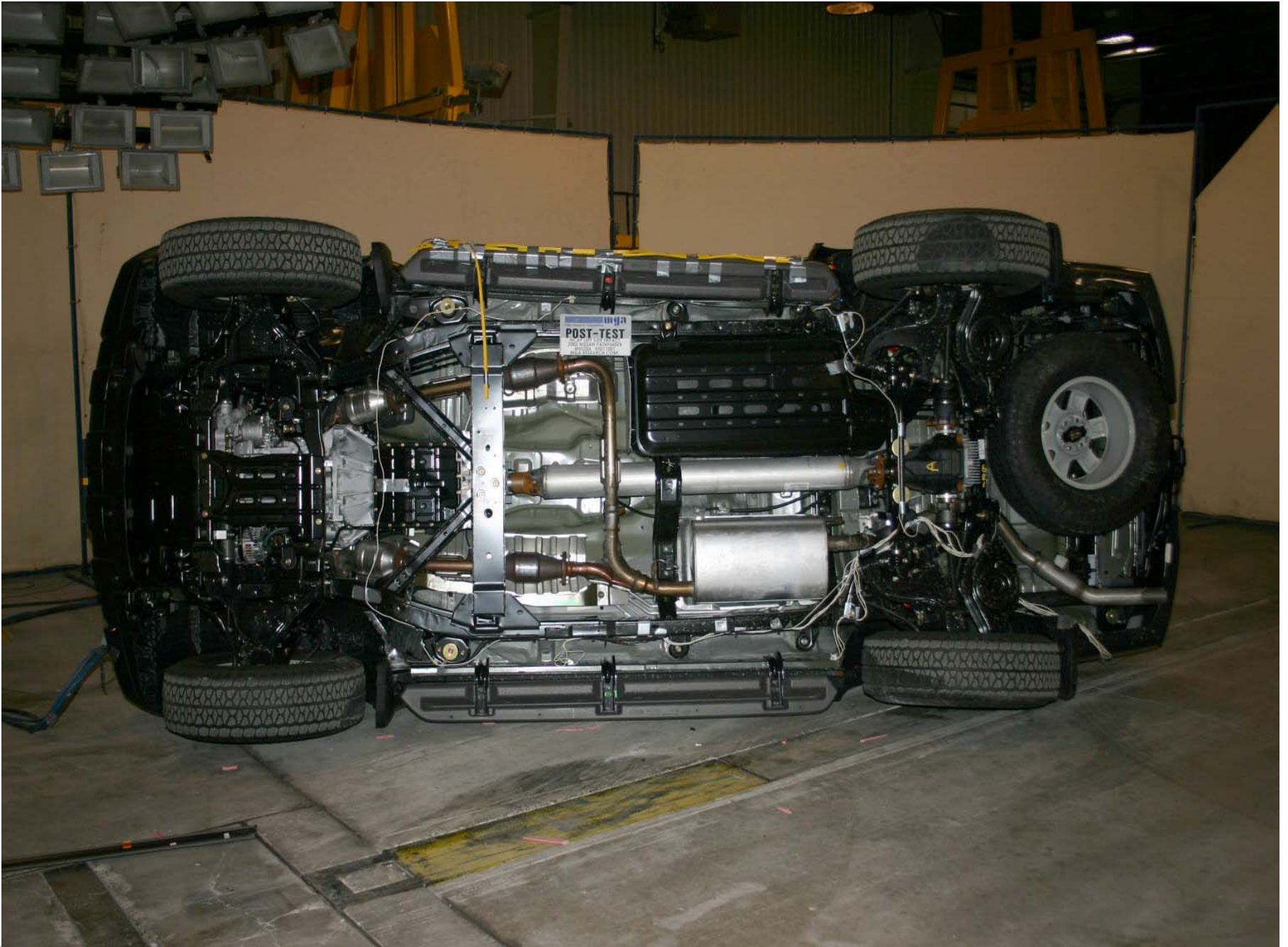
Vehicle Impact

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Vehicle After Impact Roof View

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Vehicle After Impact Underbody View



Vehicle After Impact Front $\frac{3}{4}$ Underbody View



Vehicle After Impact Rear $\frac{3}{4}$ Underbody View

APPENDIX B

SID/HIII, VEHICLE, AND MDB RESPONSE DATA

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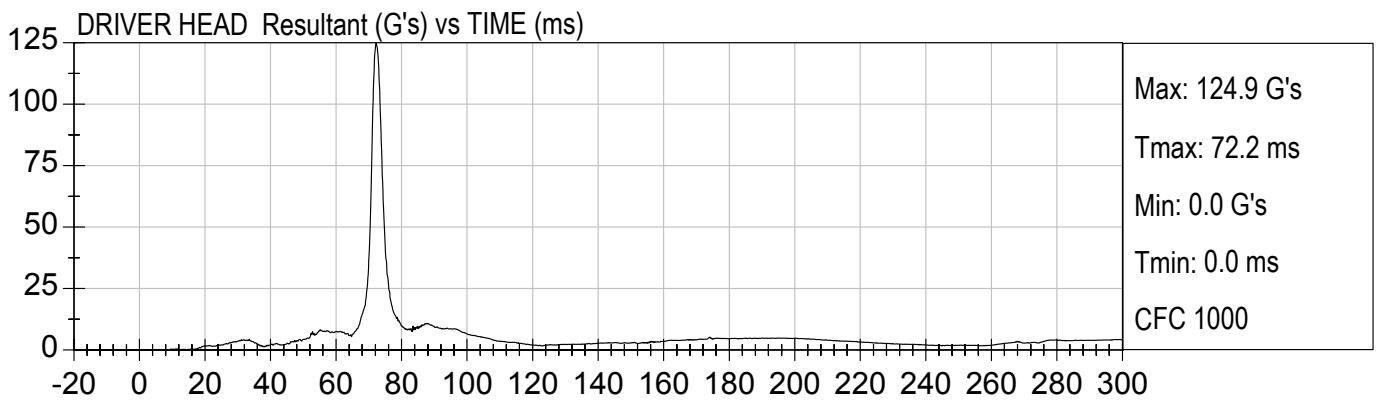
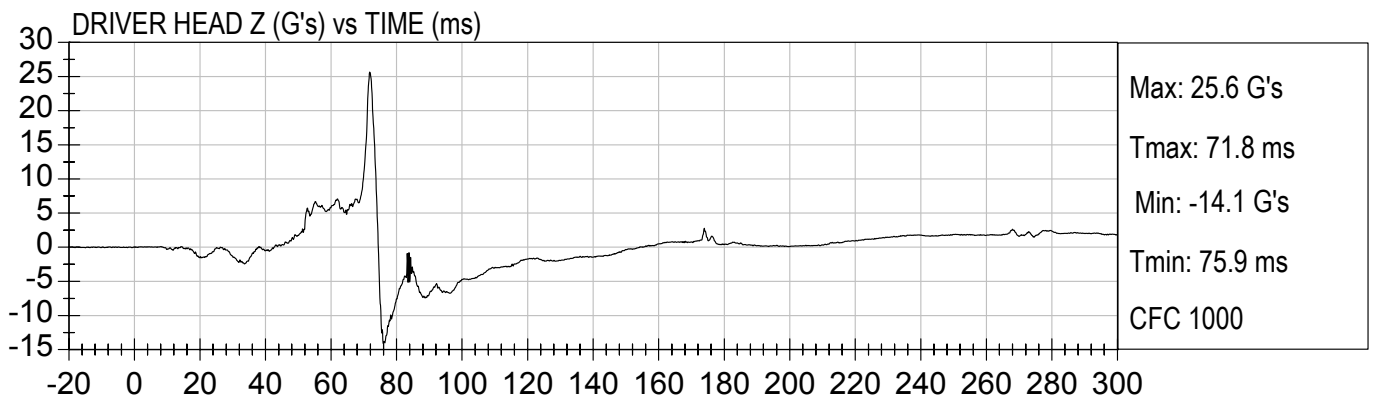
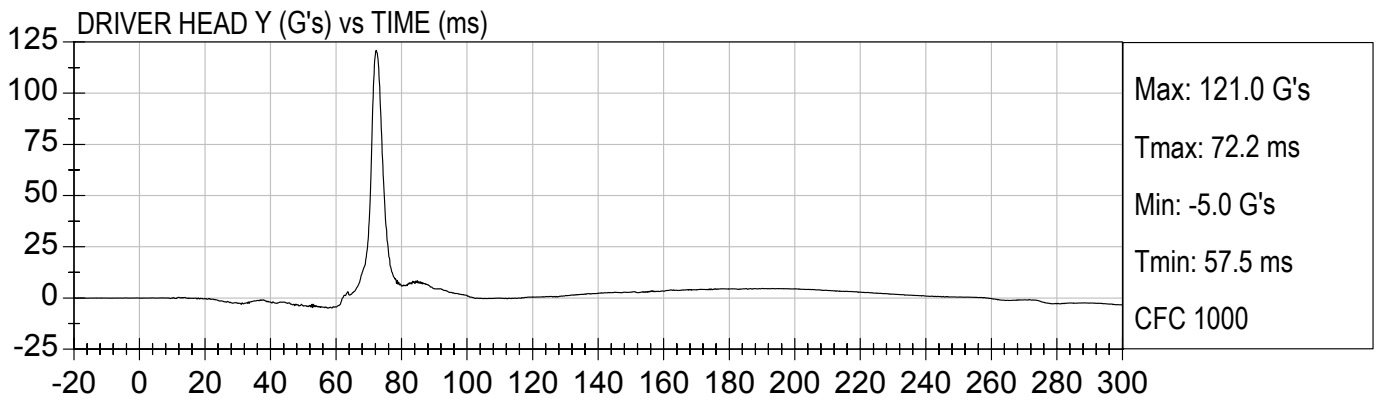
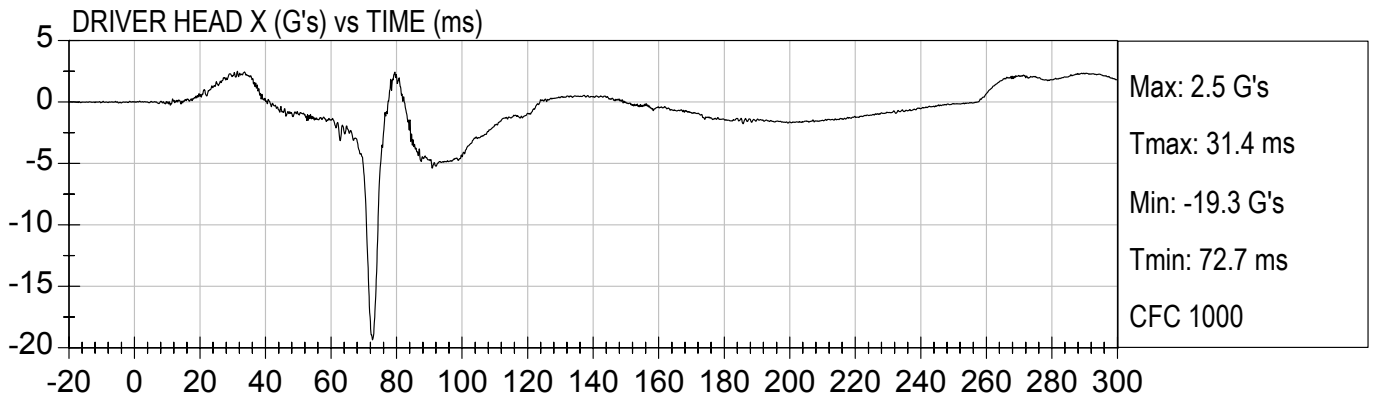
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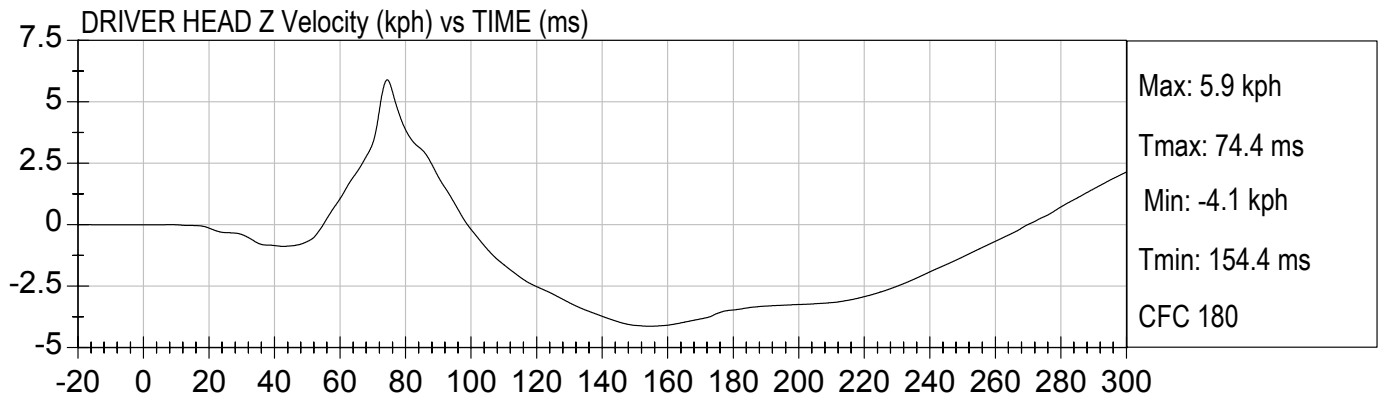
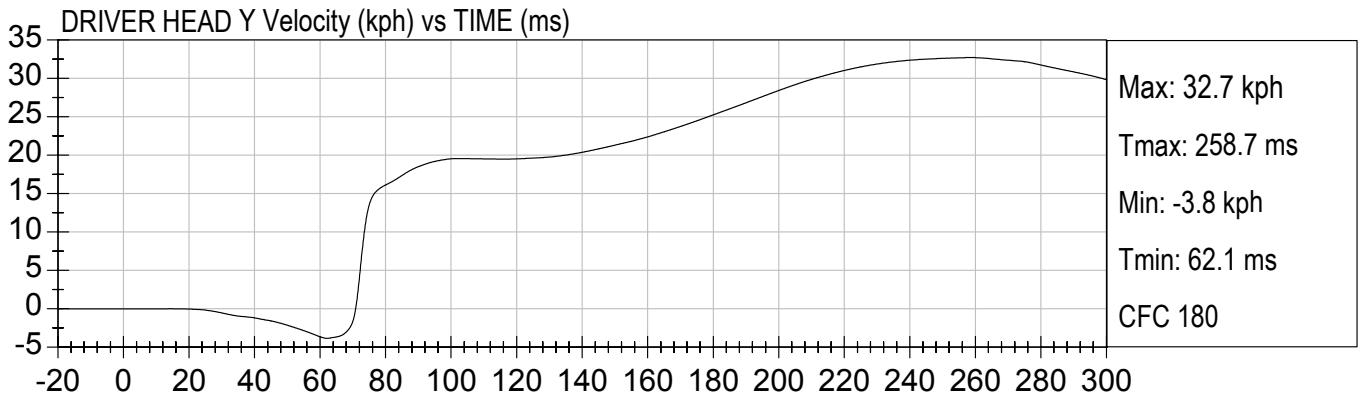
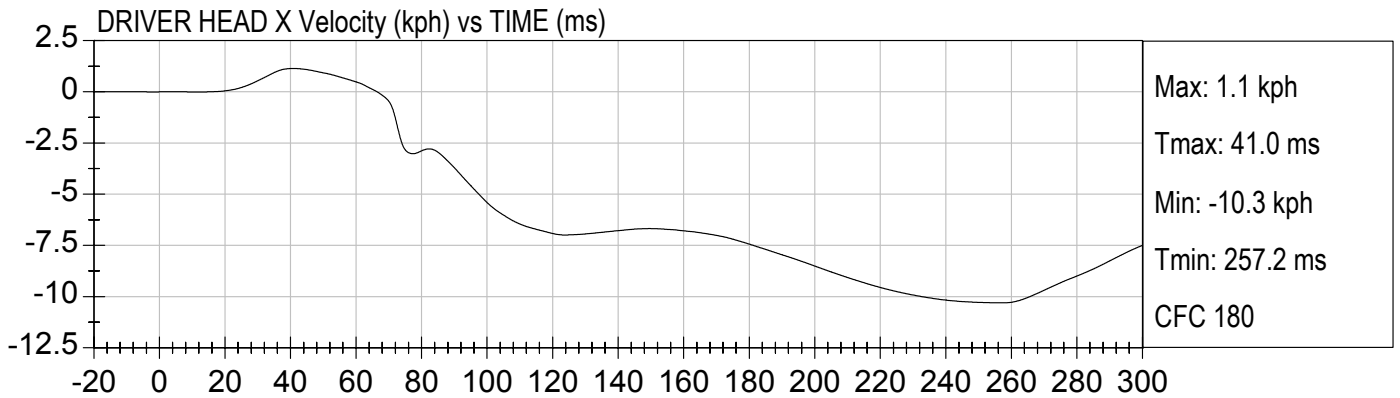
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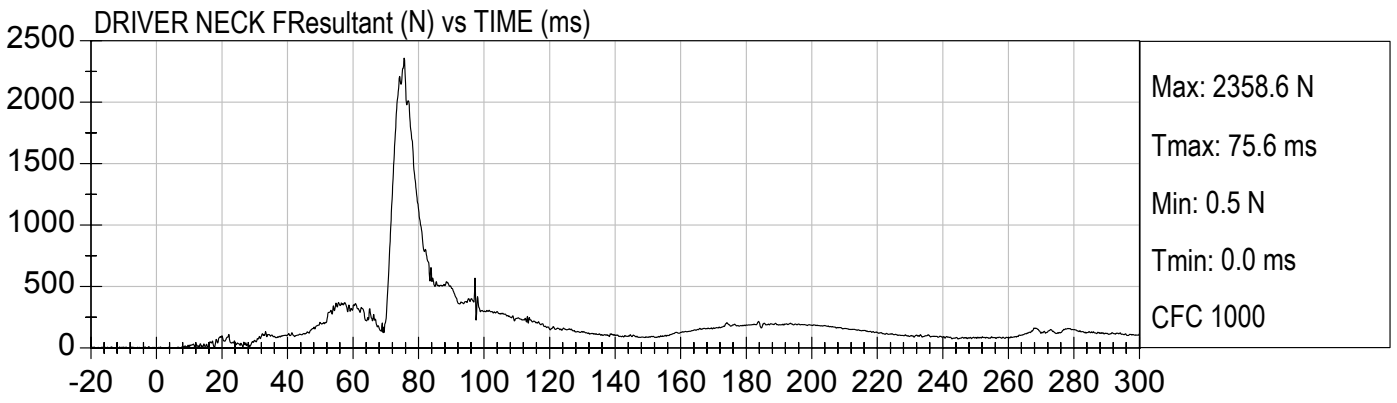
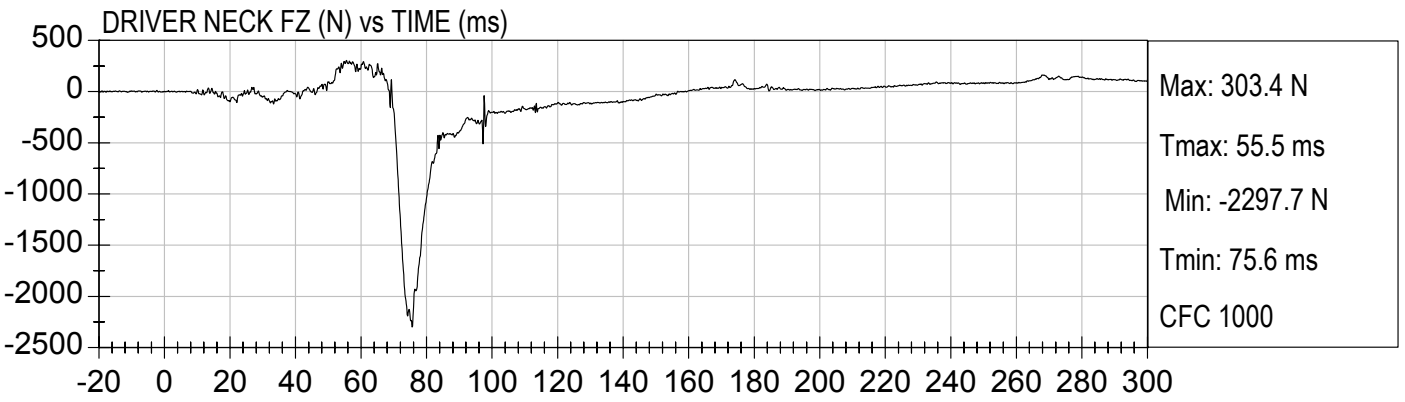
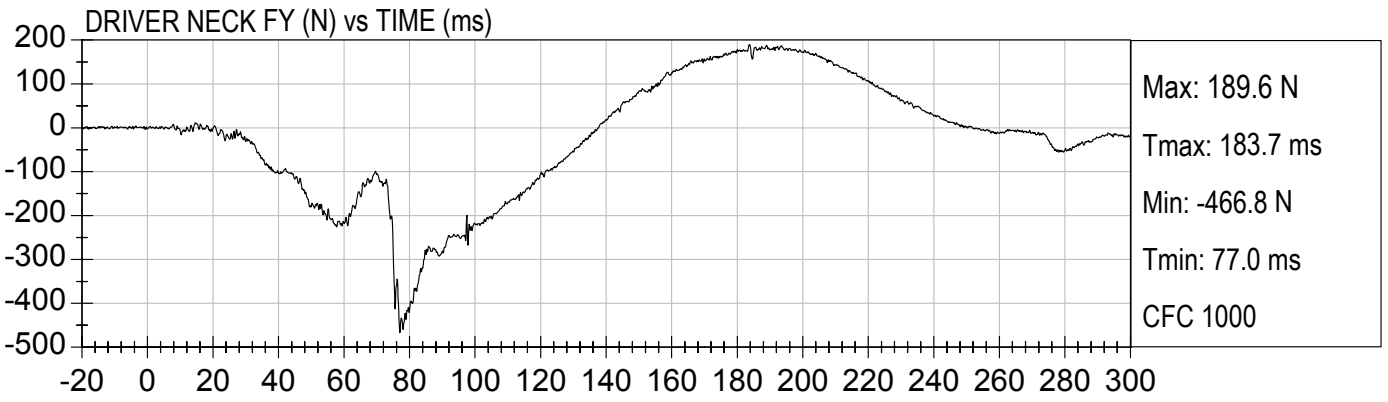
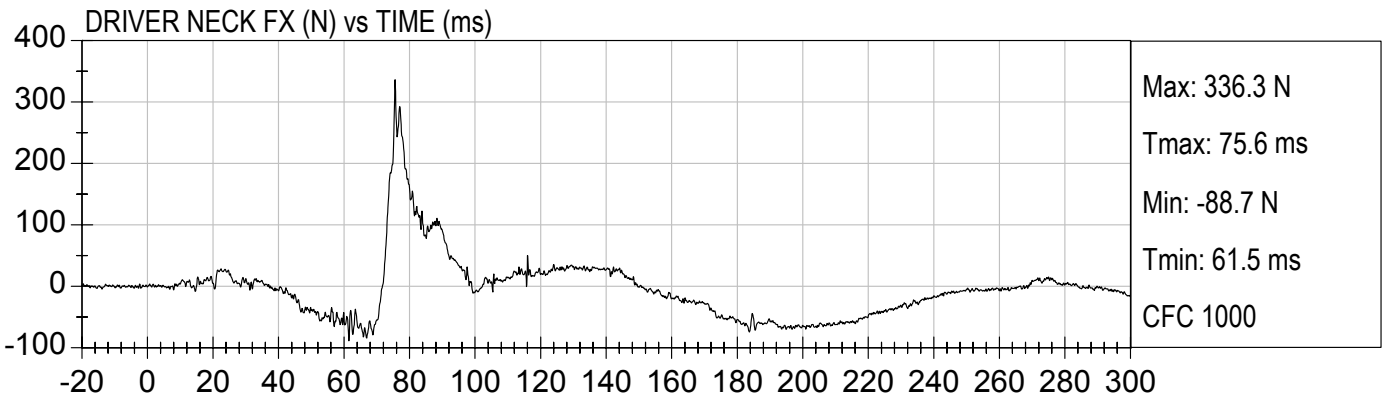
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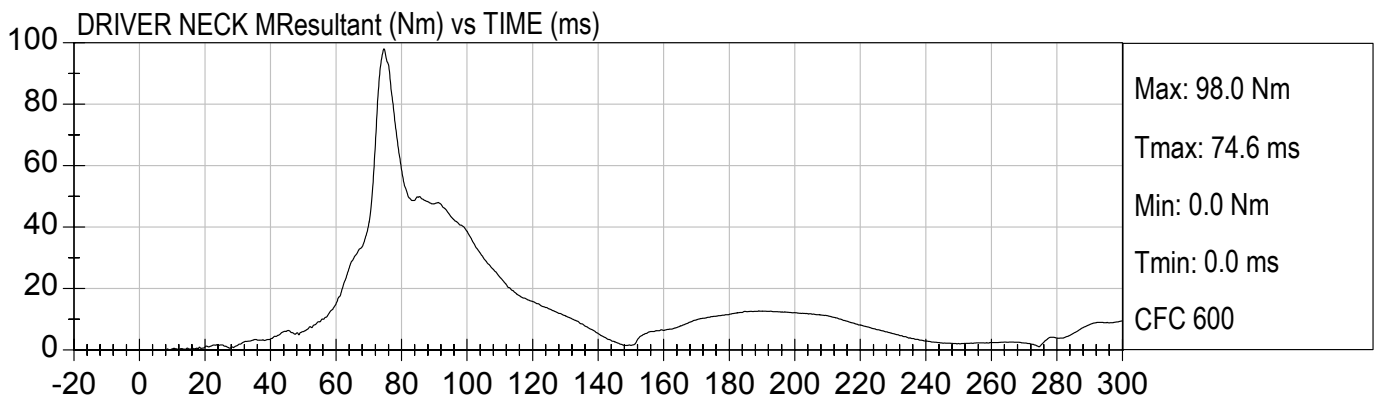
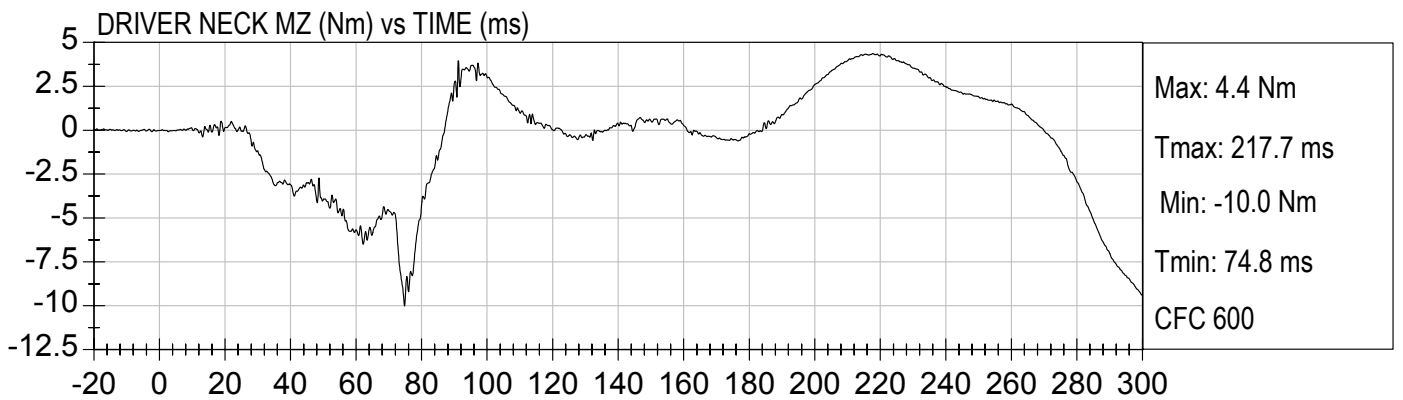
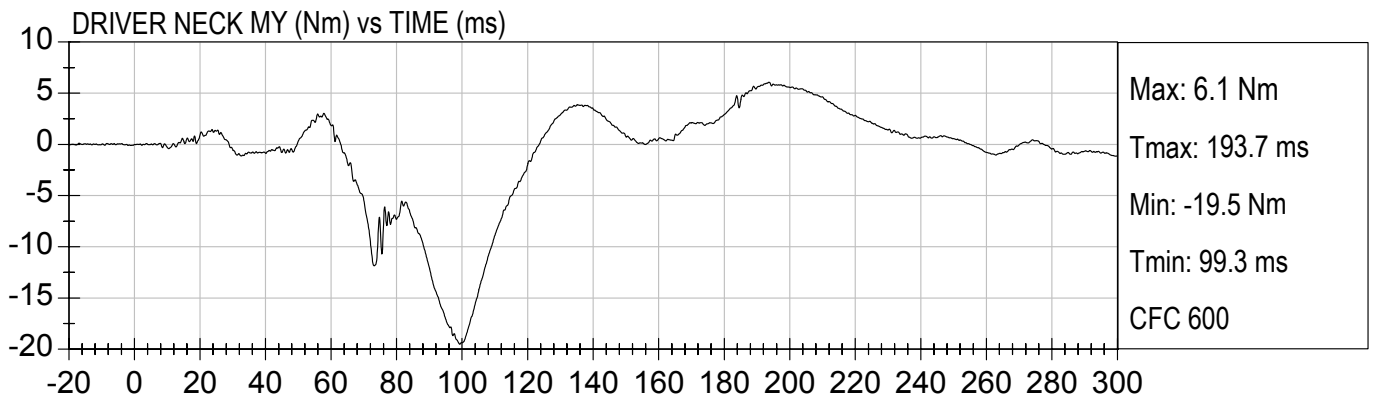
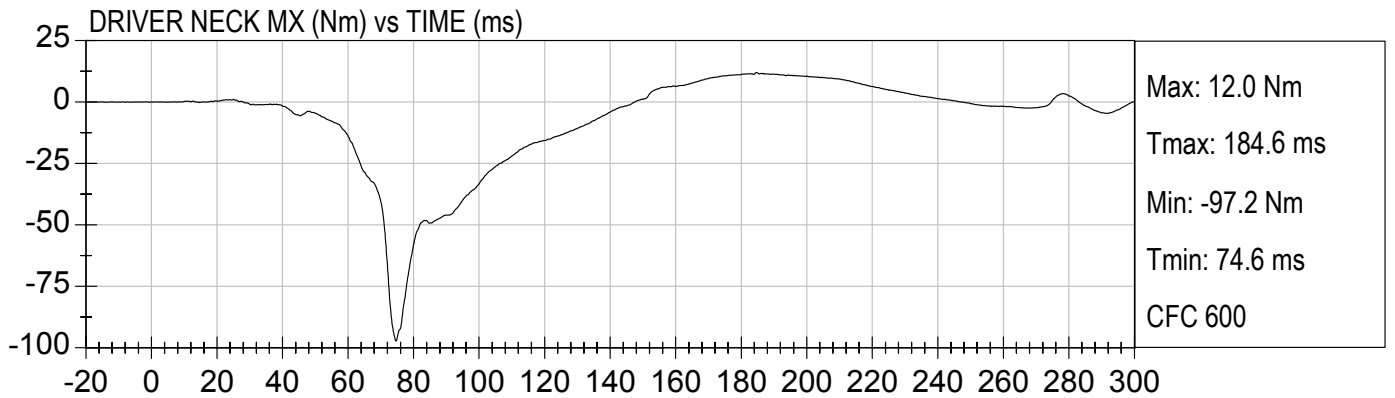
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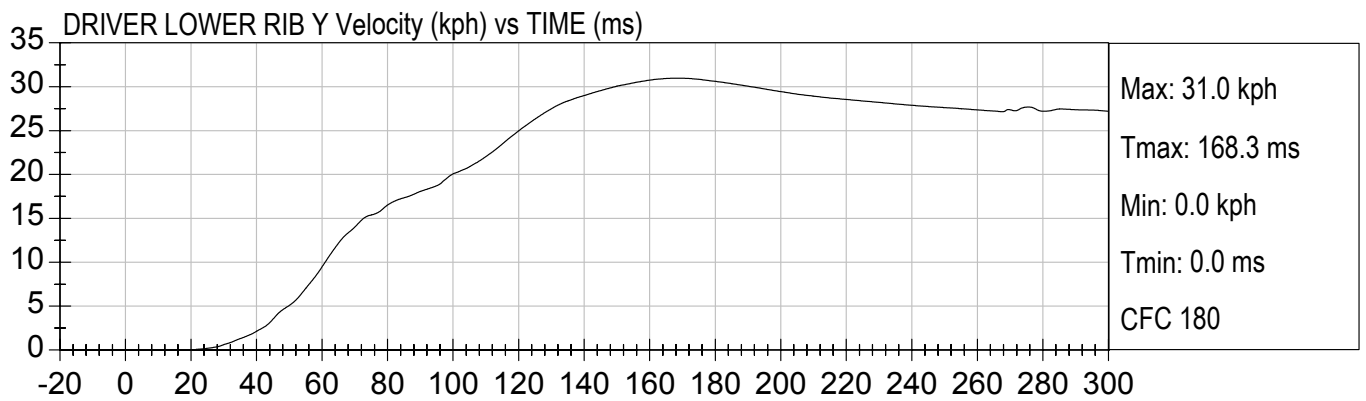
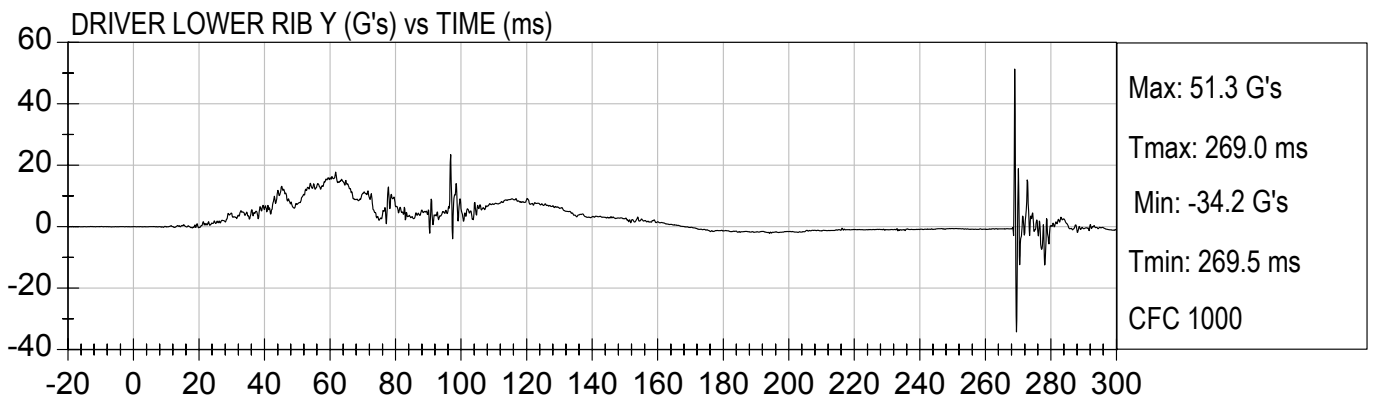
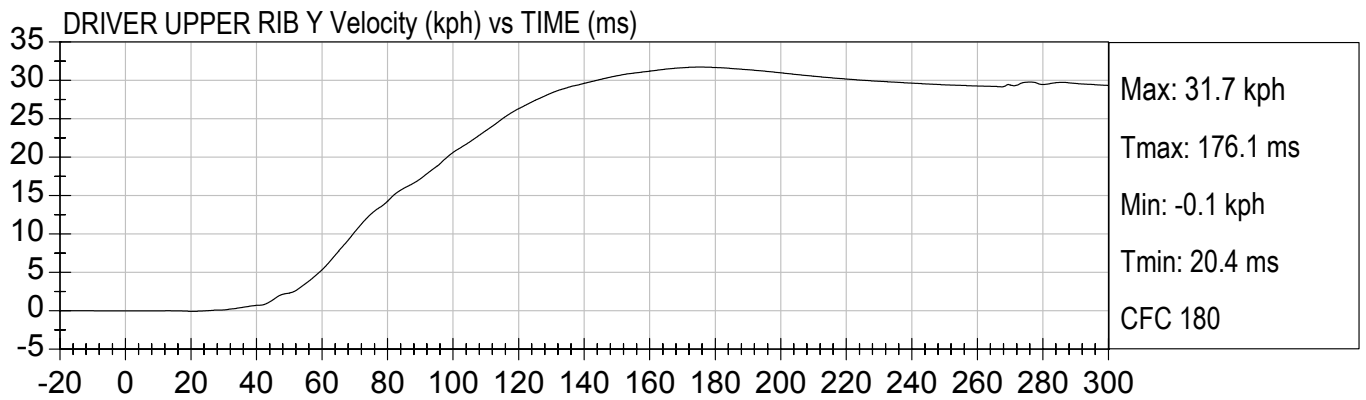
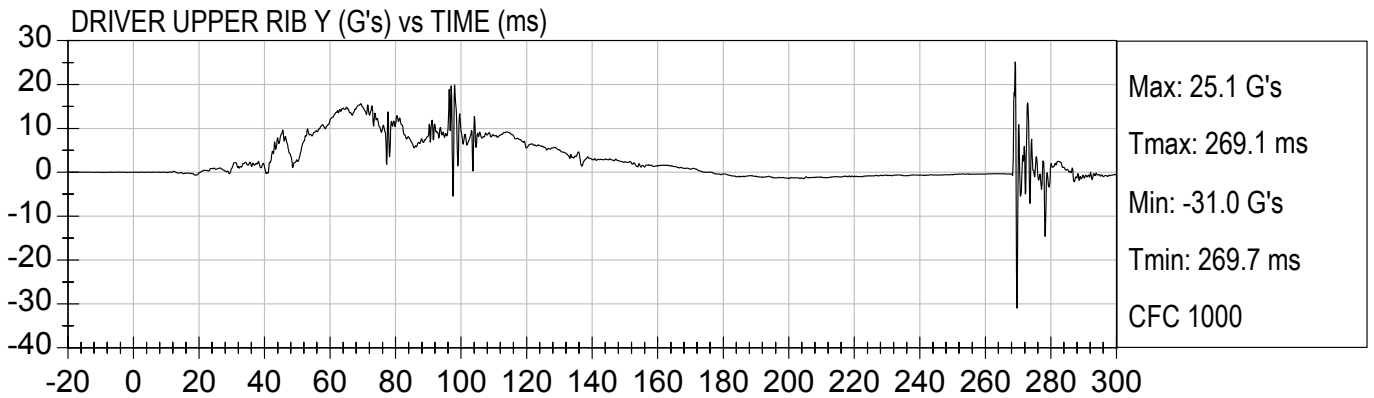
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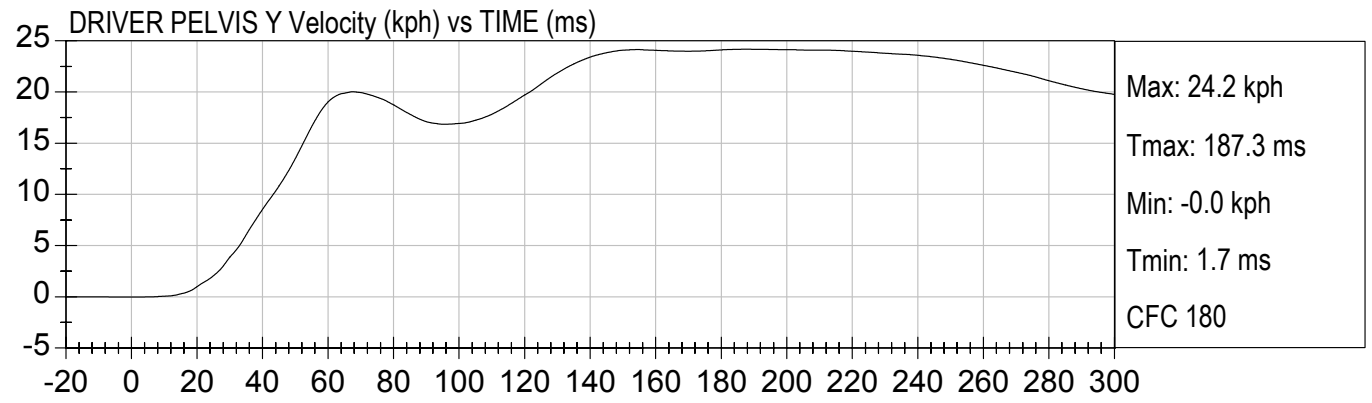
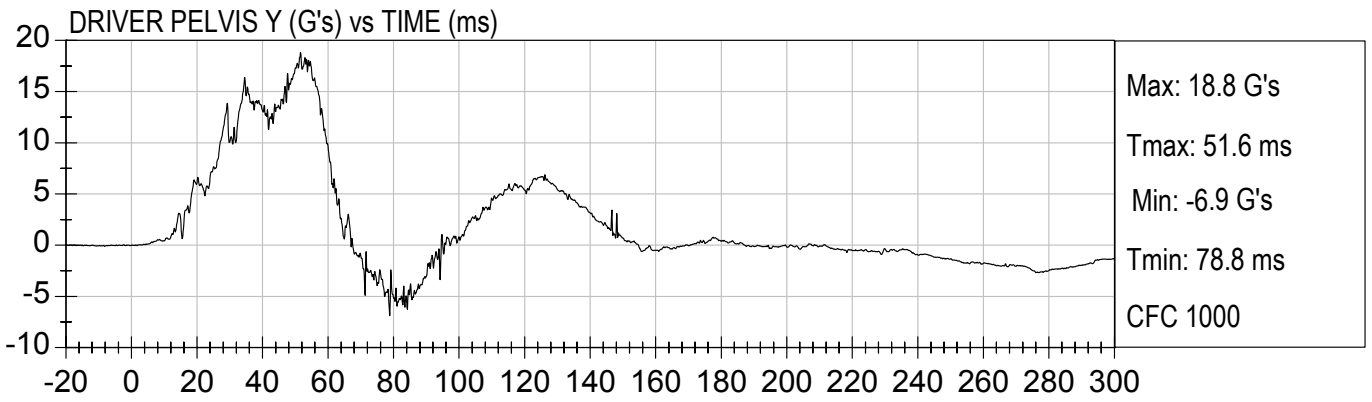
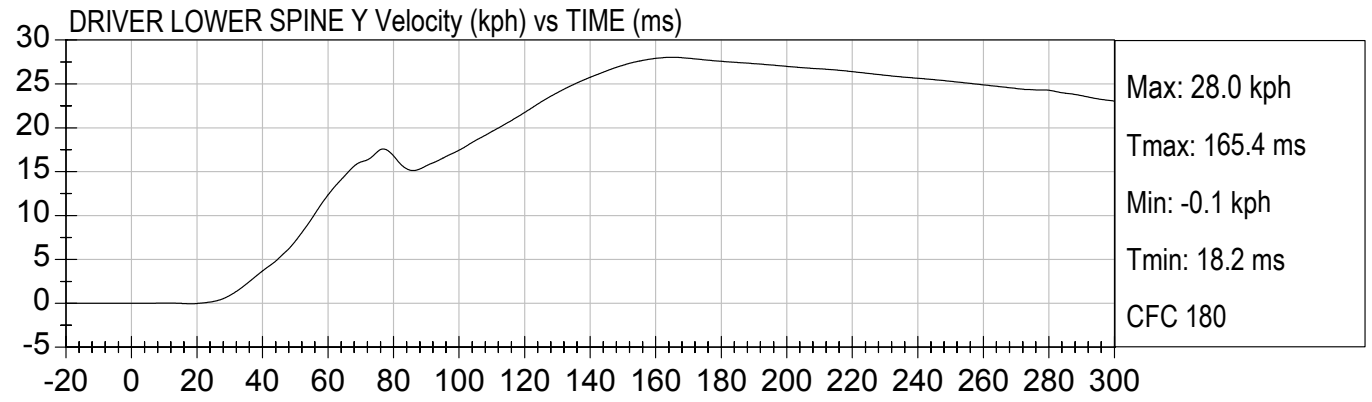
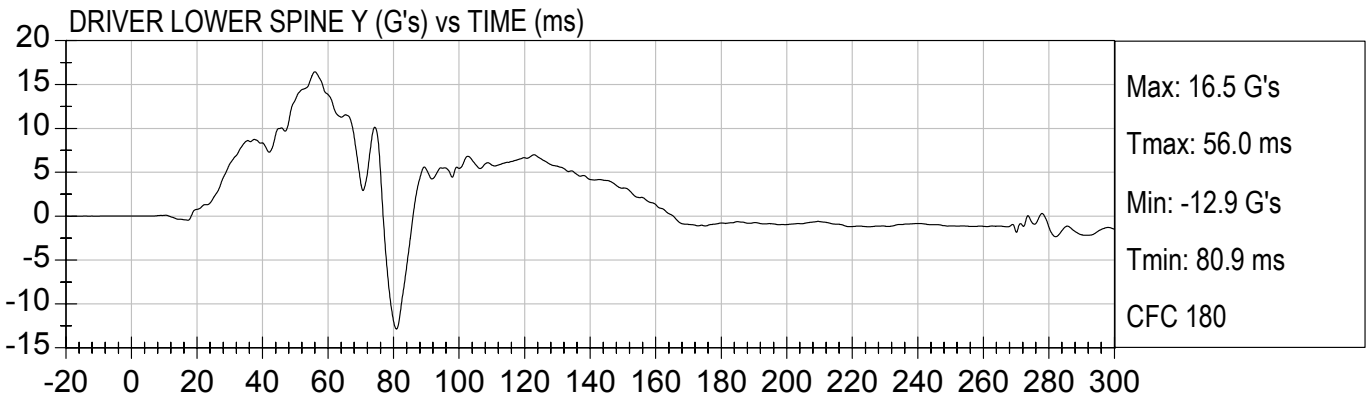


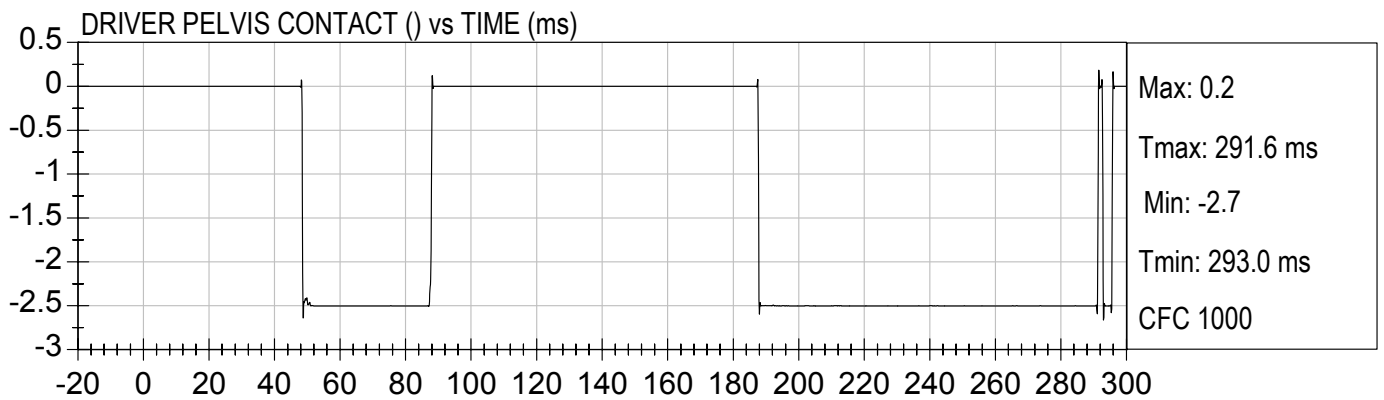
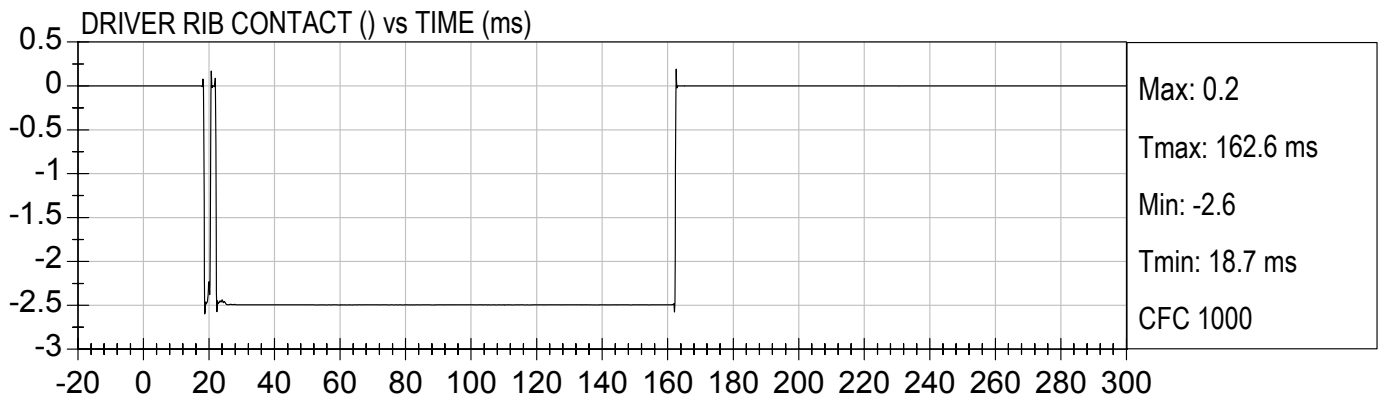
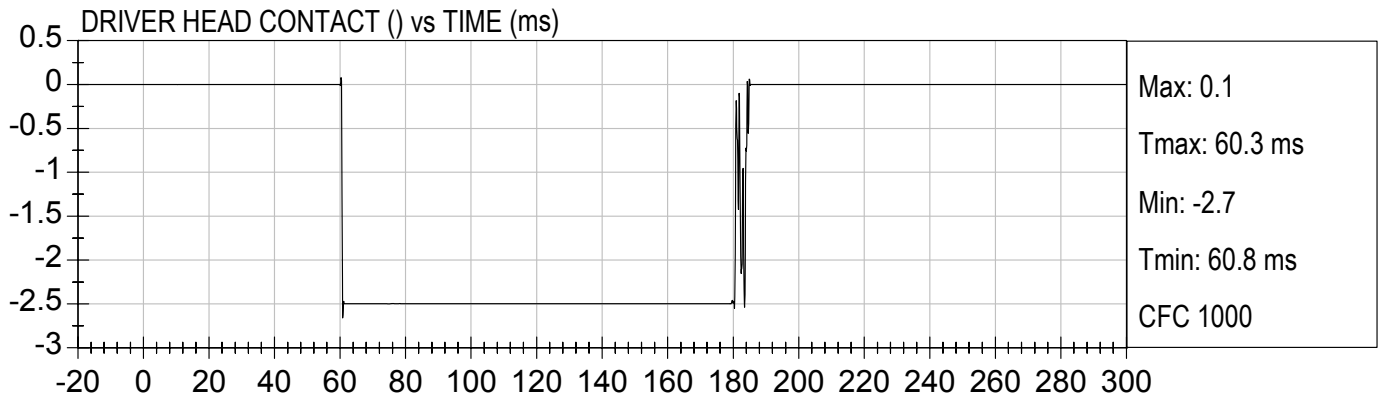


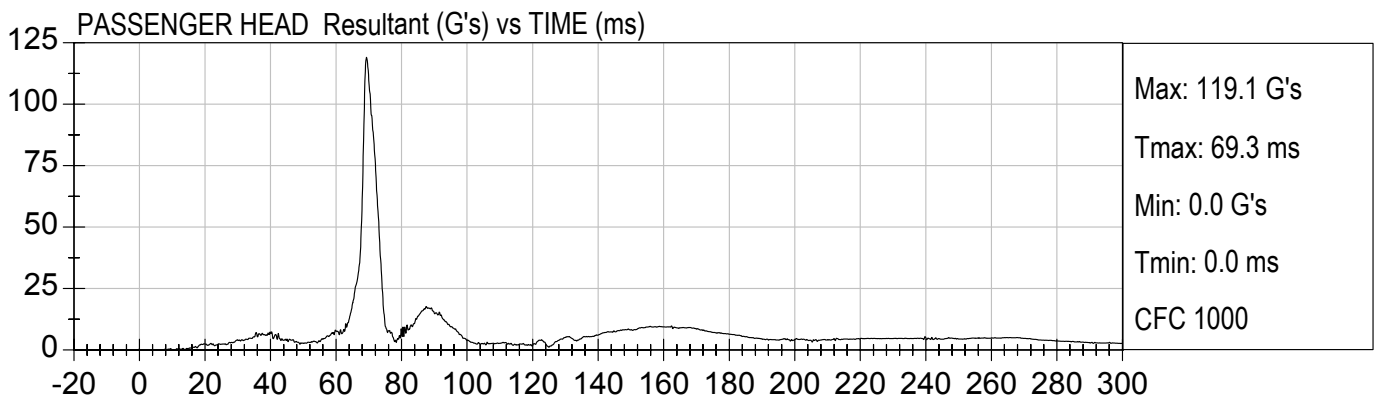
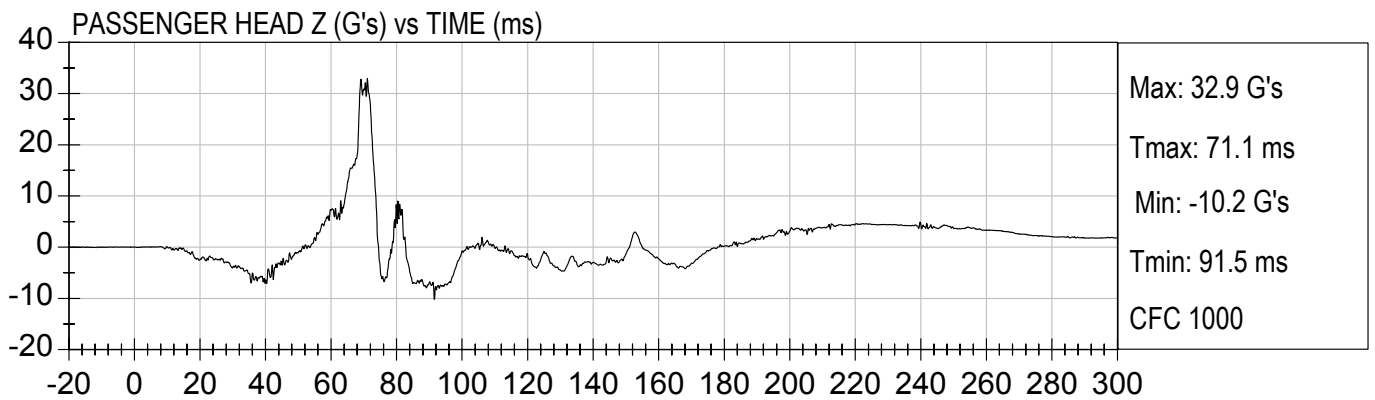
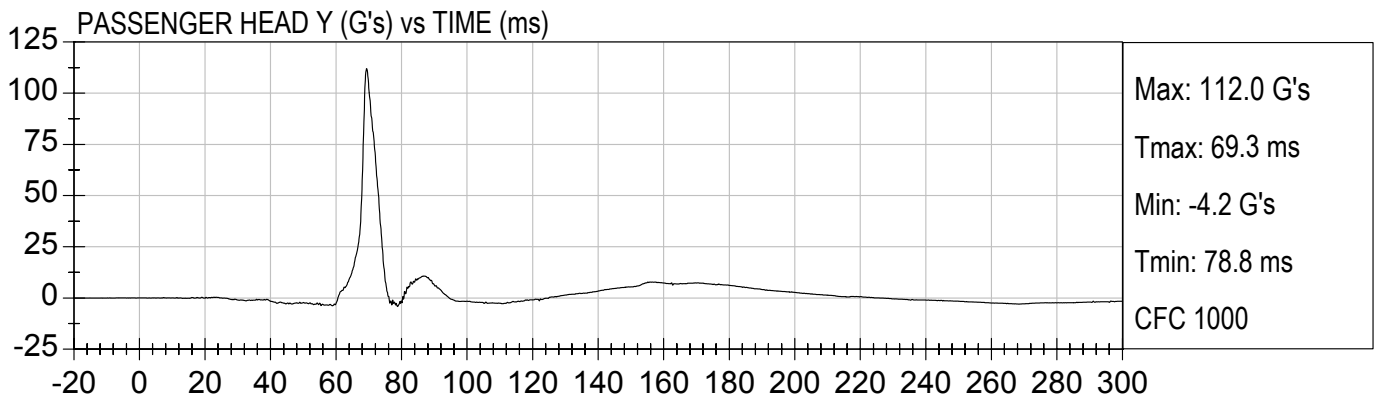
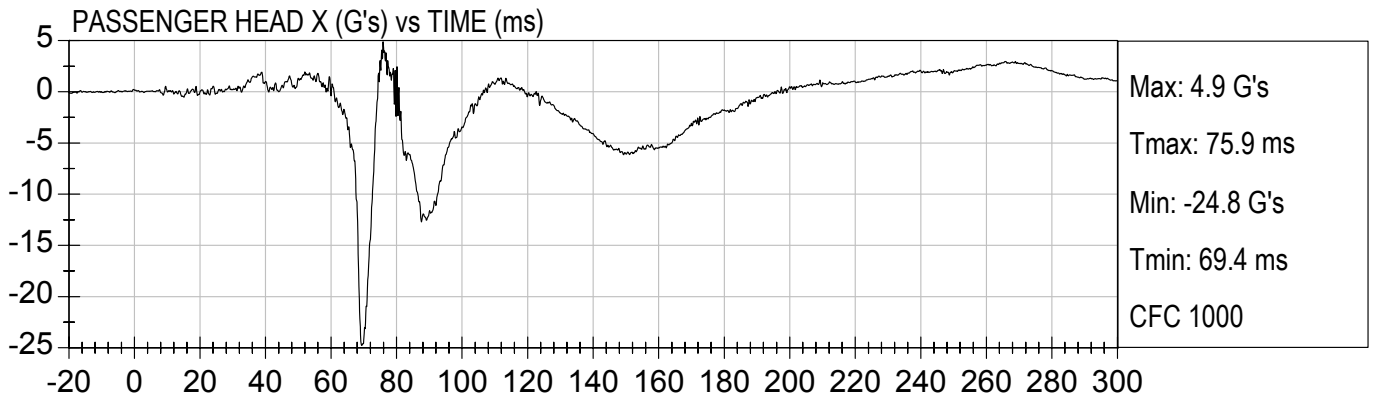


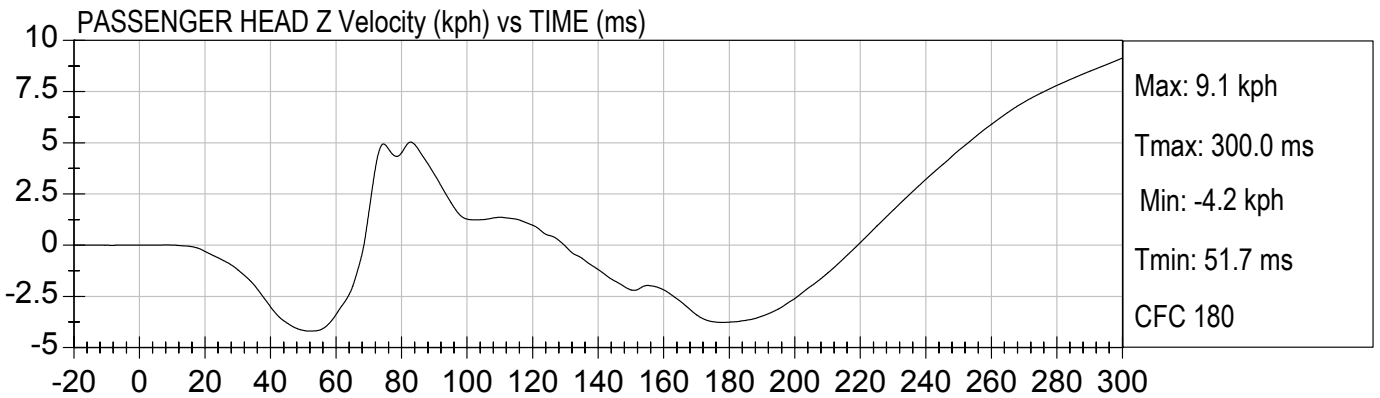
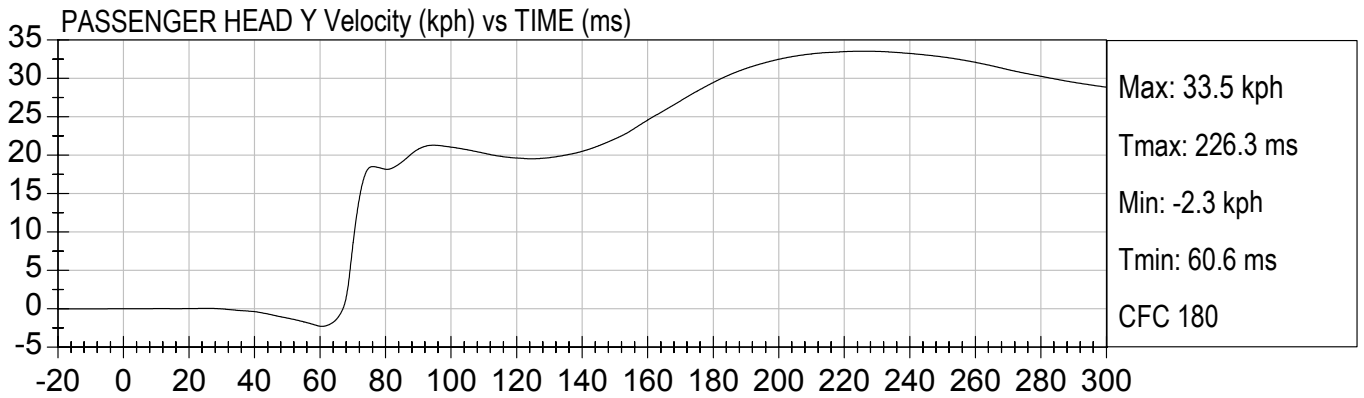
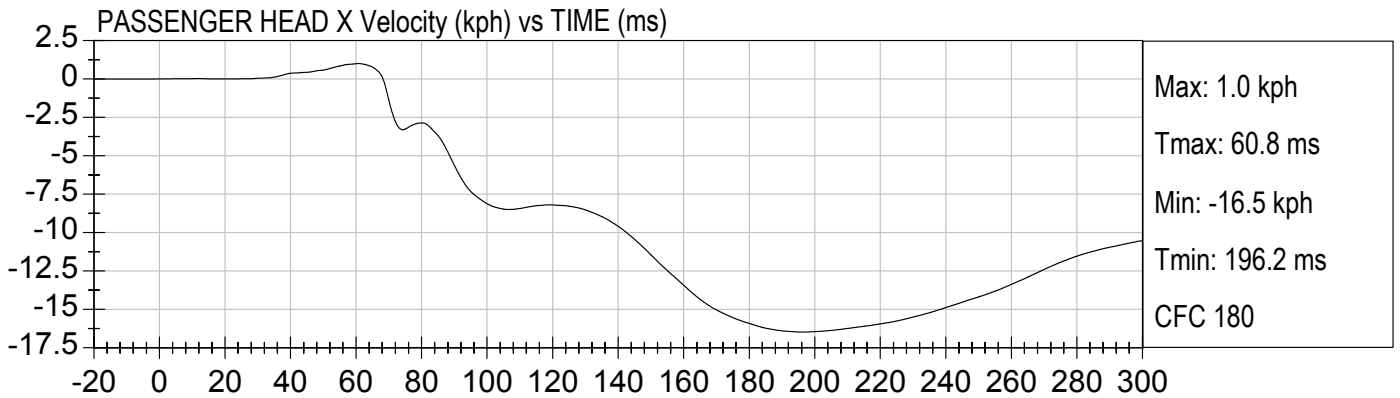






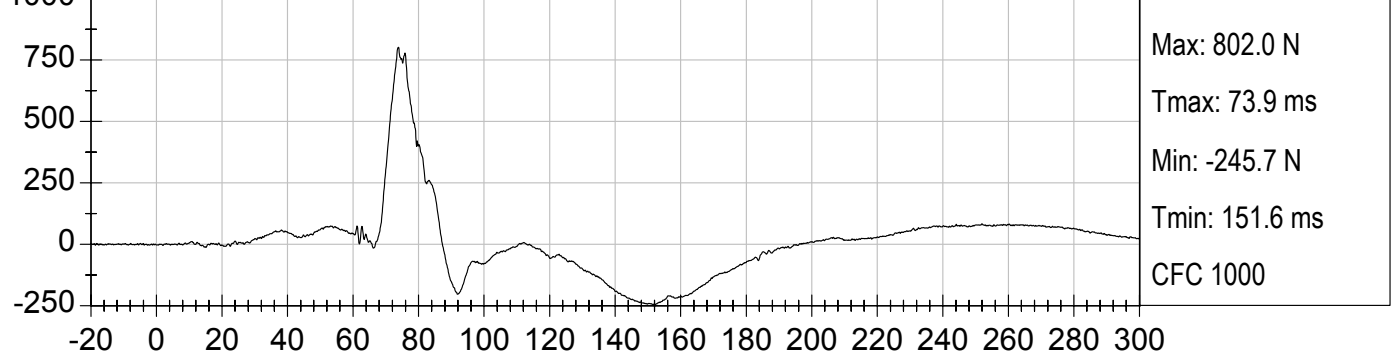




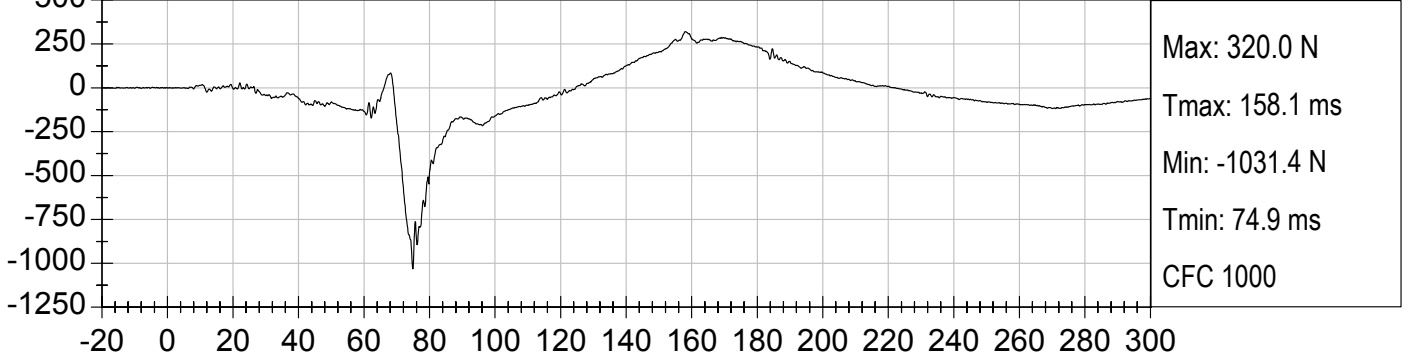




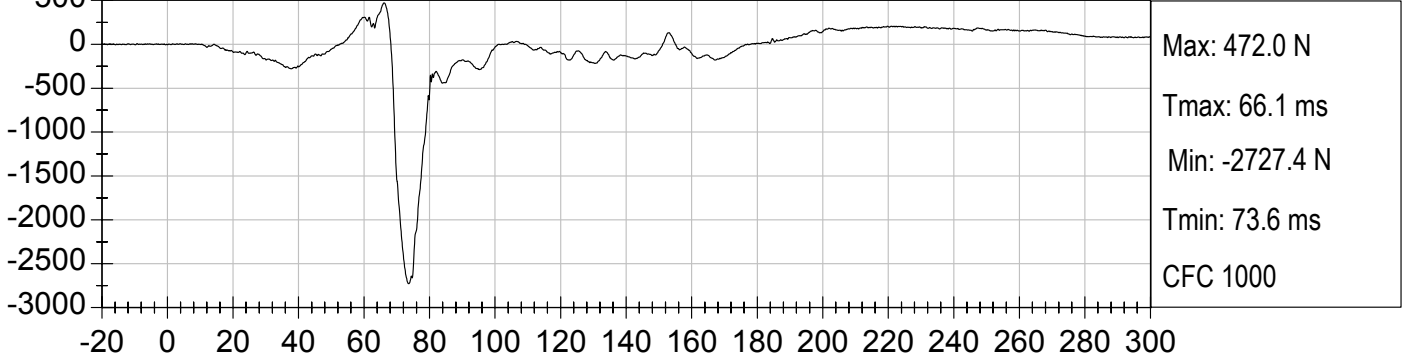
PASSENGER NECK FX (N) vs TIME (ms)



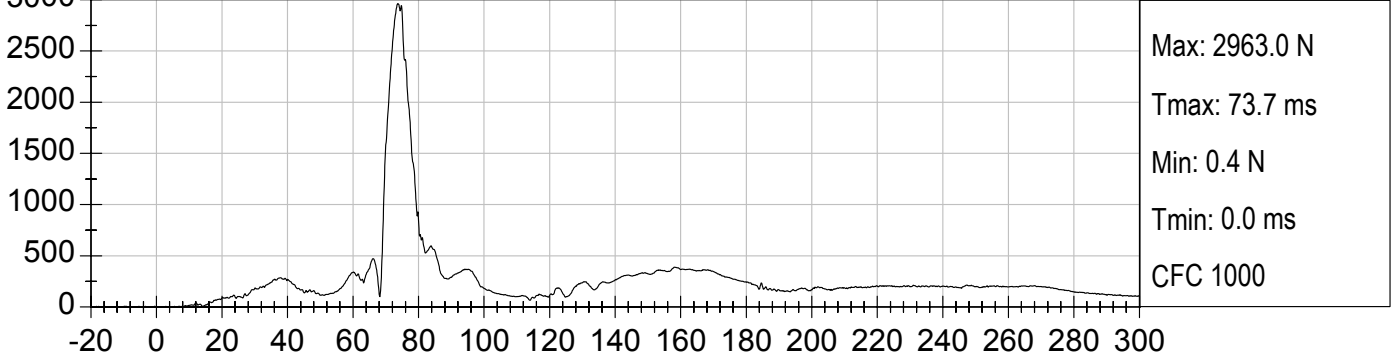
PASSENGER NECK FY (N) vs TIME (ms)

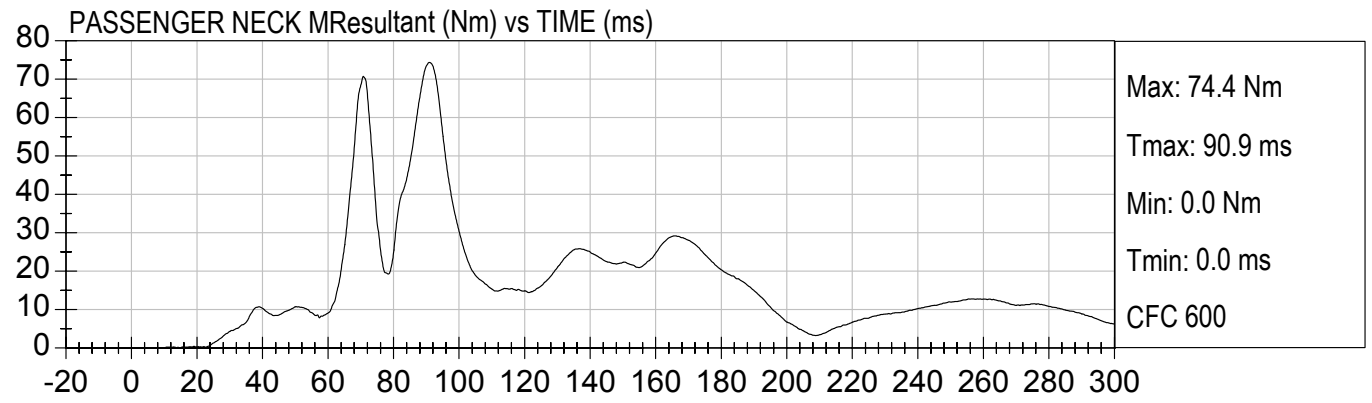
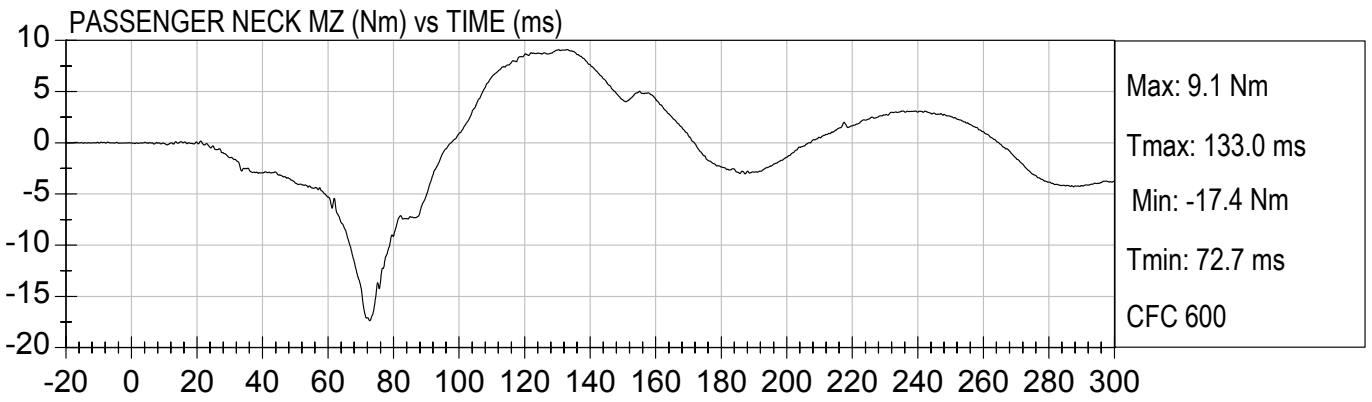
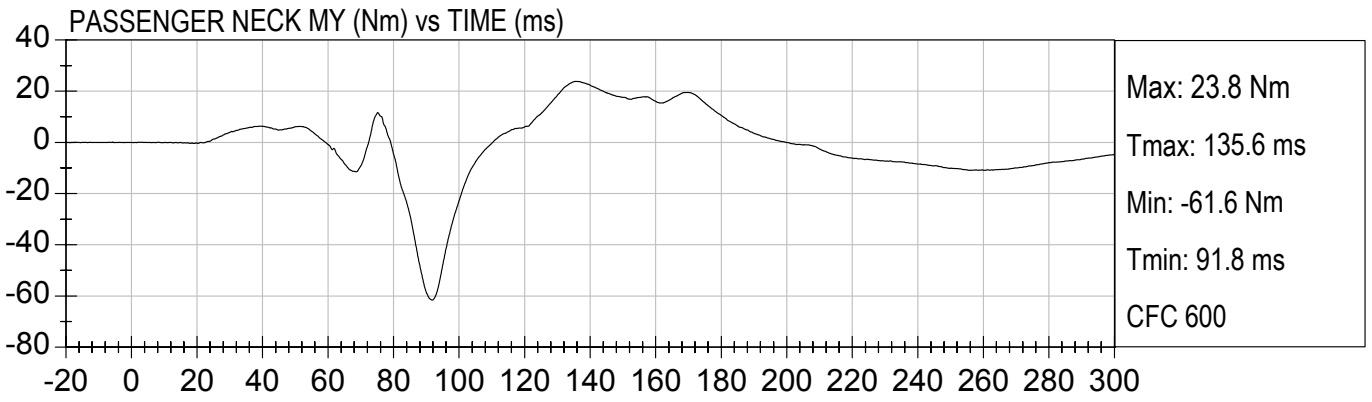
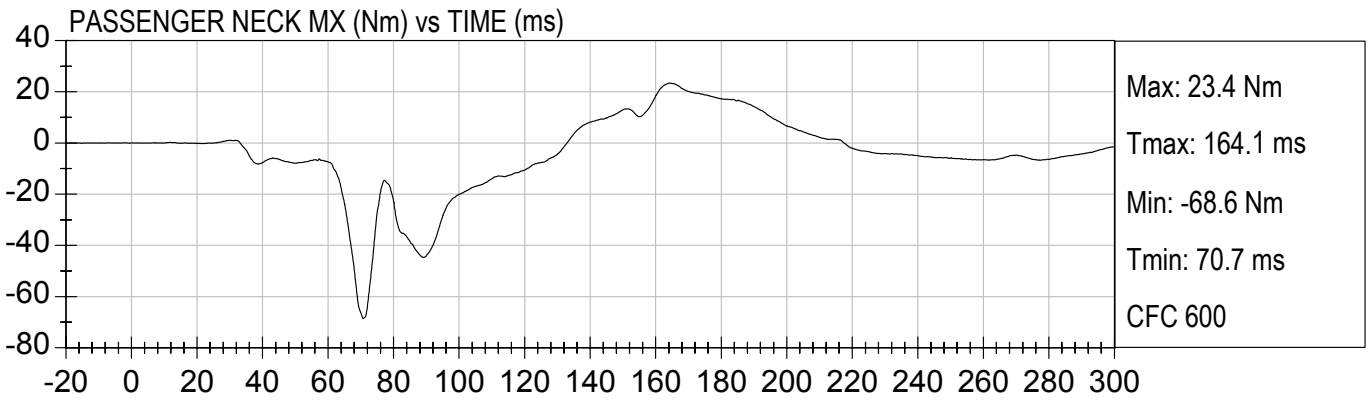


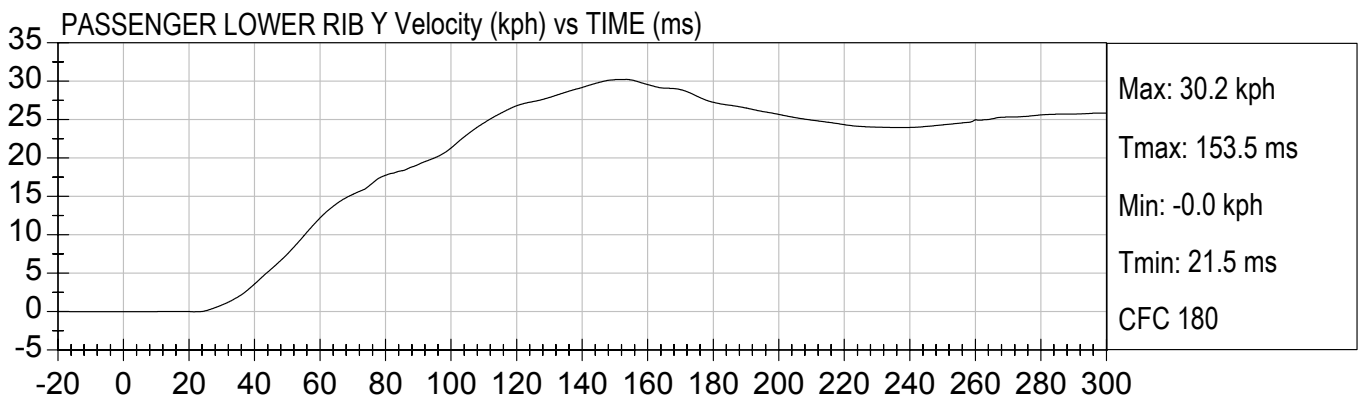
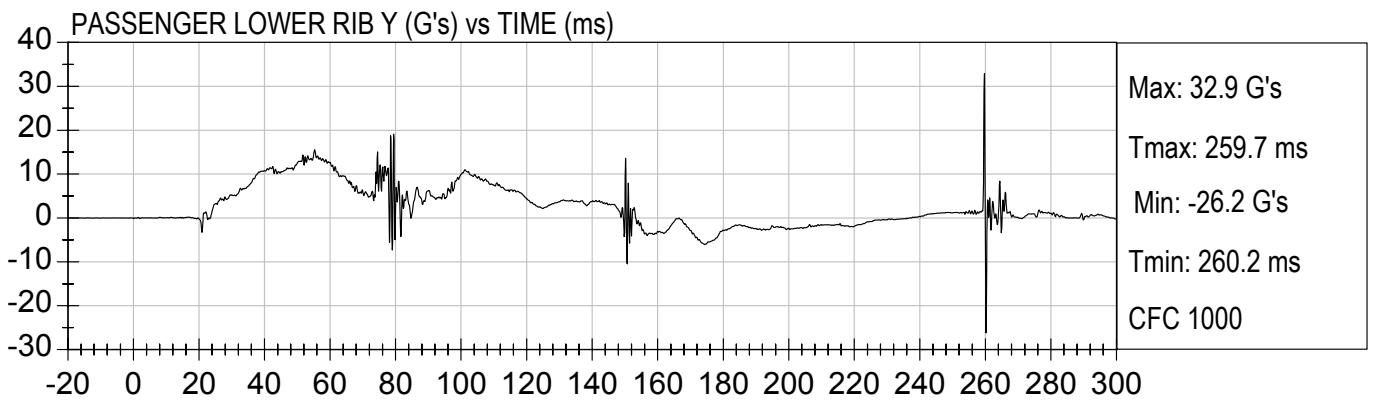
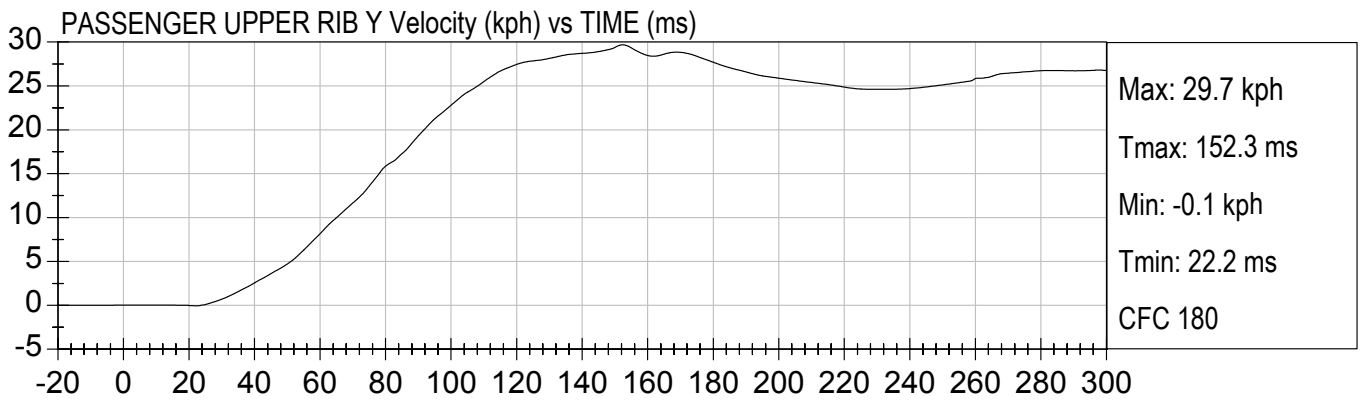
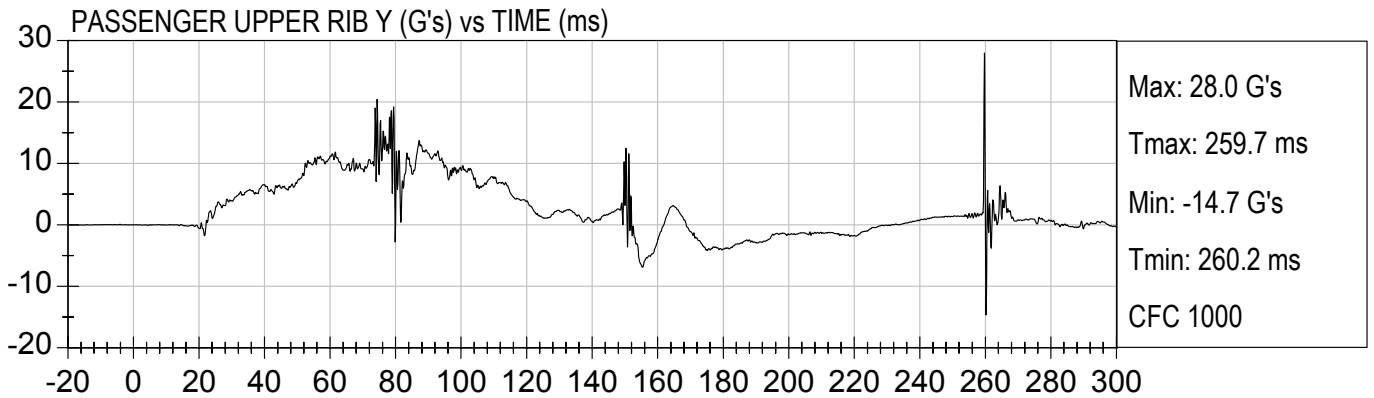
PASSENGER NECK FZ (N) vs TIME (ms)

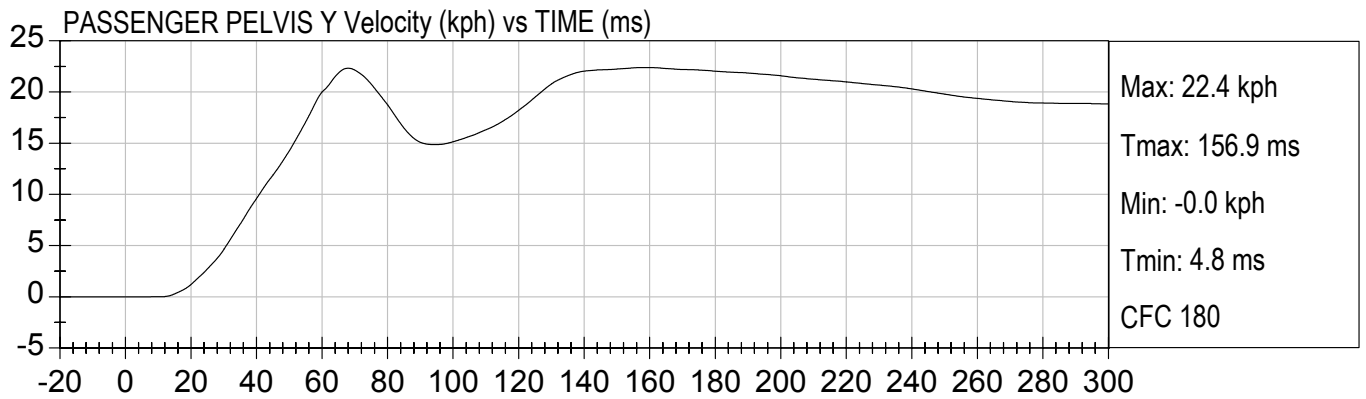
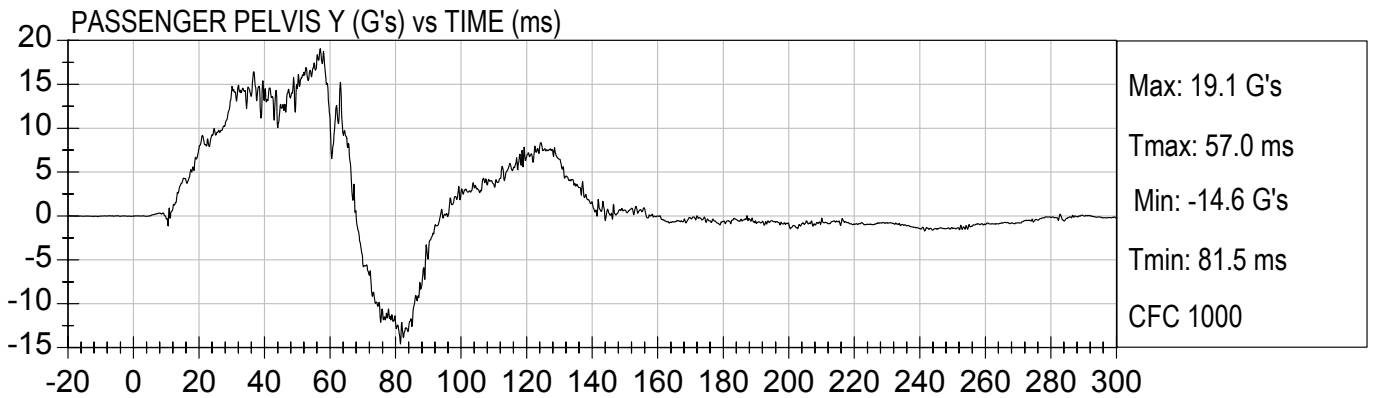
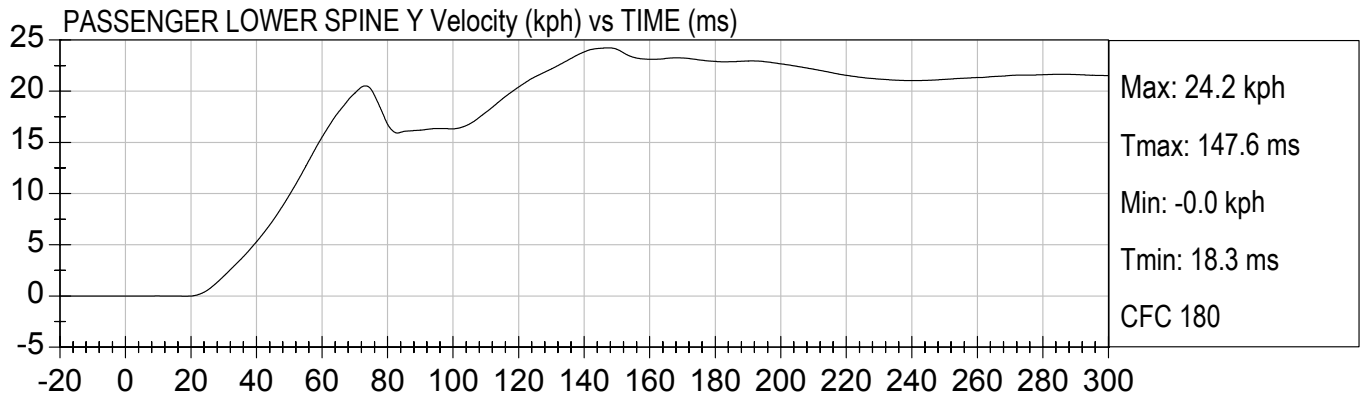
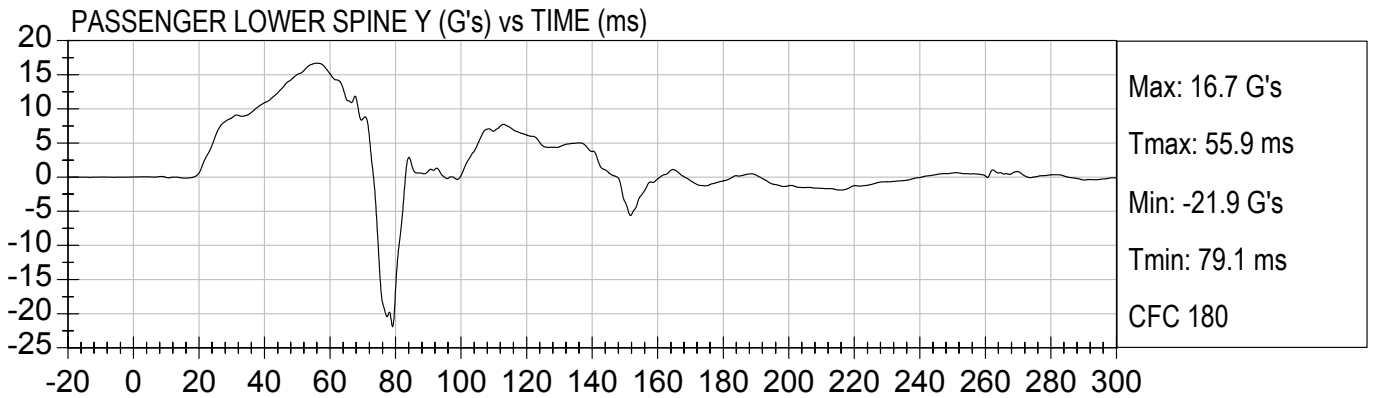


PASSENGER NECK FResultant (N) vs TIME (ms)



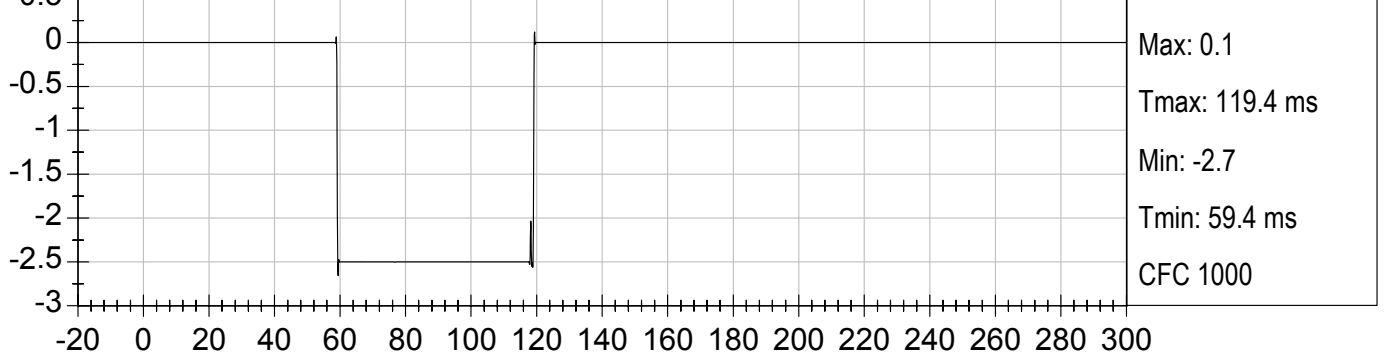




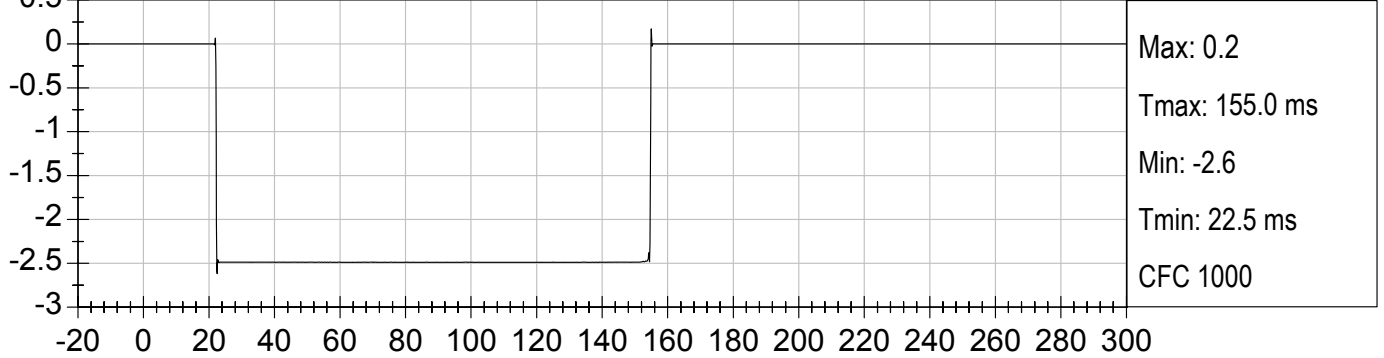




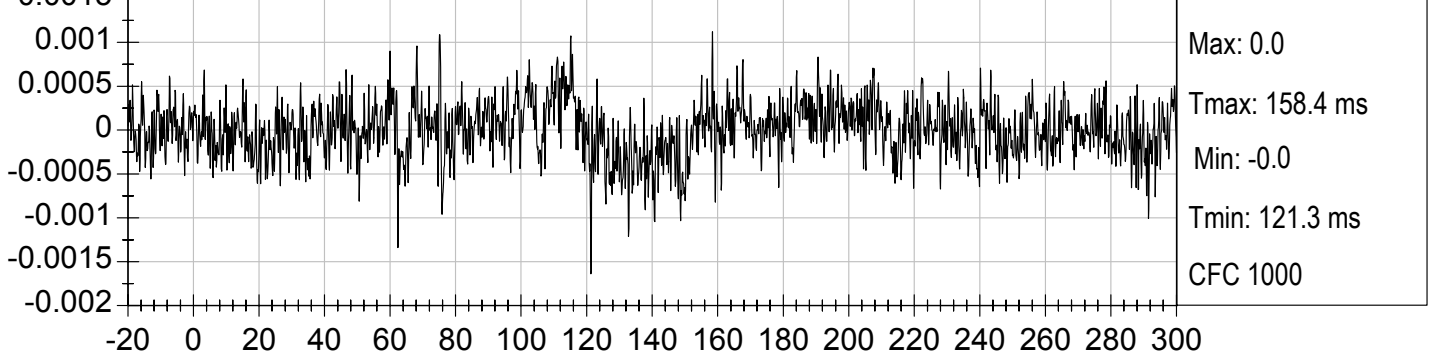
PASSENGER HEAD CONTACT () vs TIME (ms)



PASSENGER RIB CONTACT () vs TIME (ms)

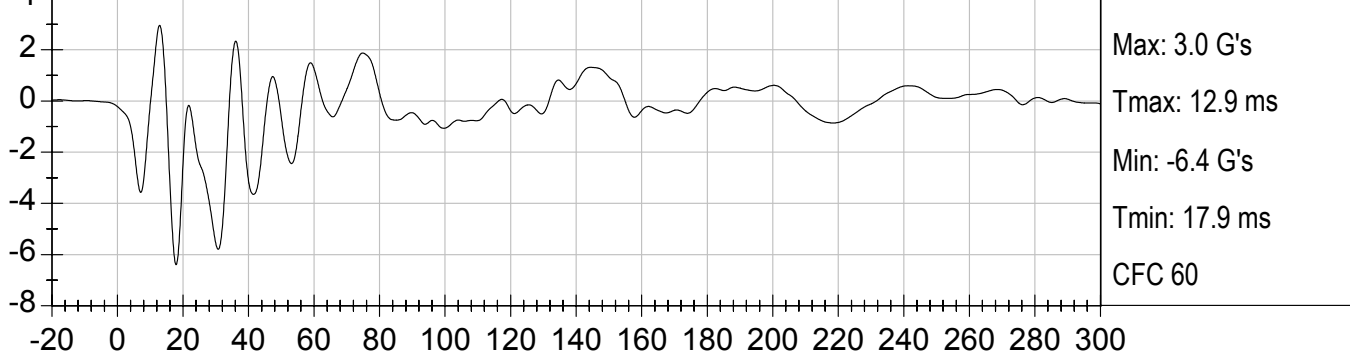


PASSENGER PELVIS CONTACT () vs TIME (ms)

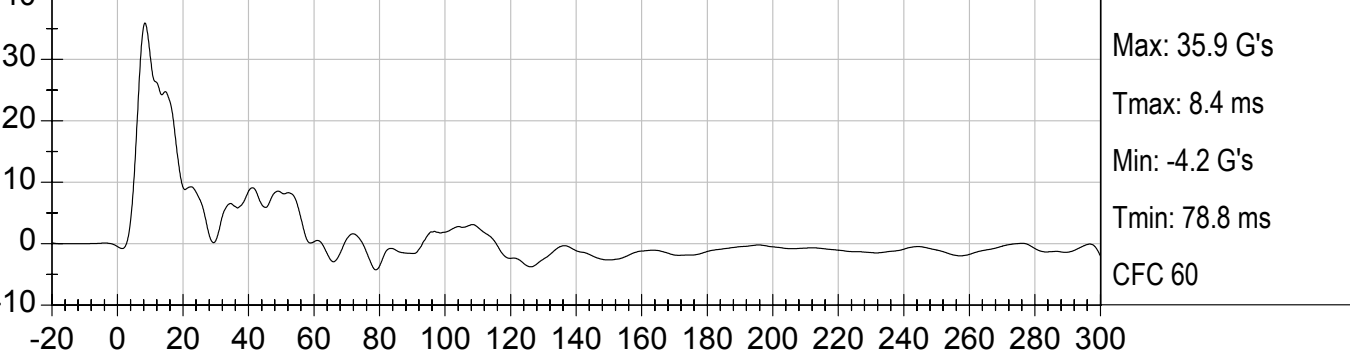




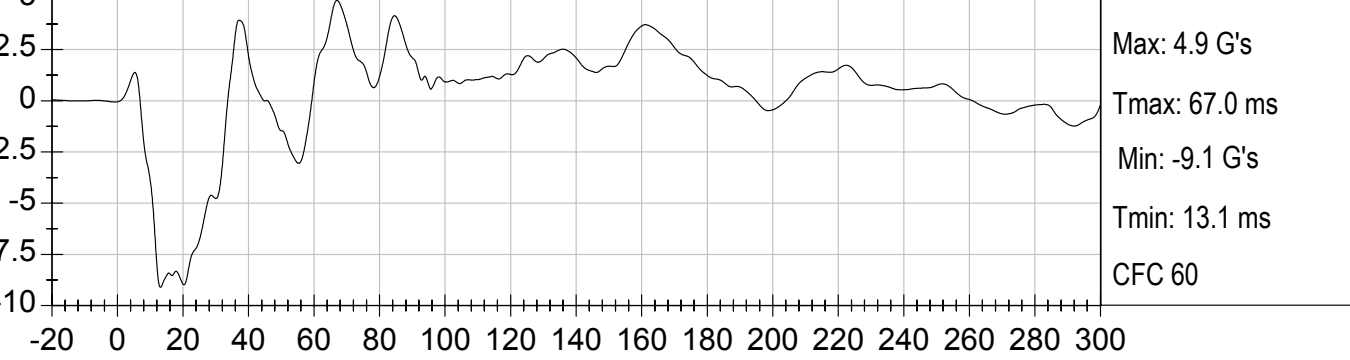
RIGHT FRONT SILL X (G's) vs TIME (ms)



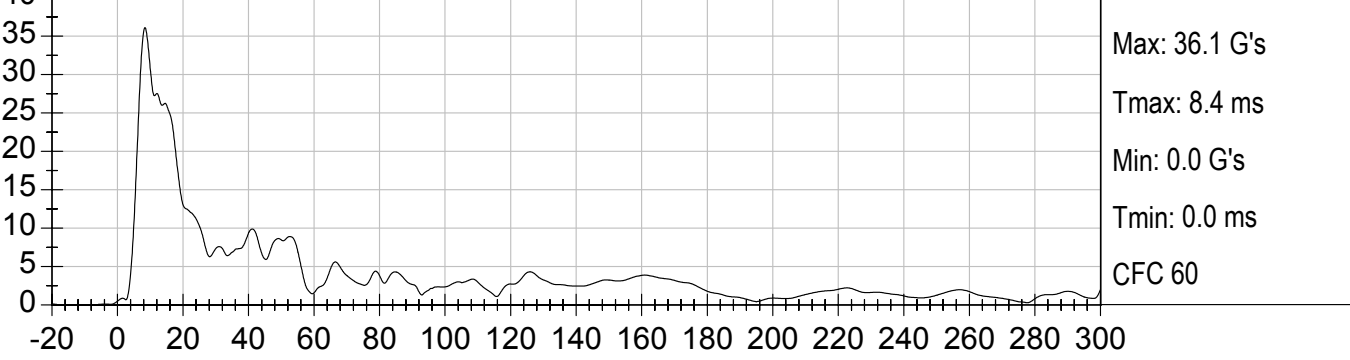
RIGHT FRONT SILL Y (G's) vs TIME (ms)

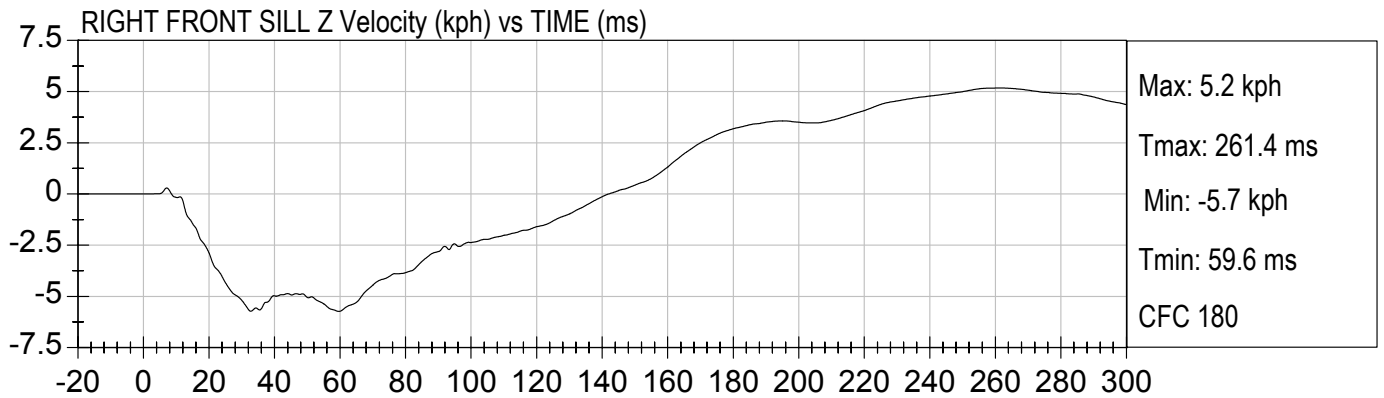
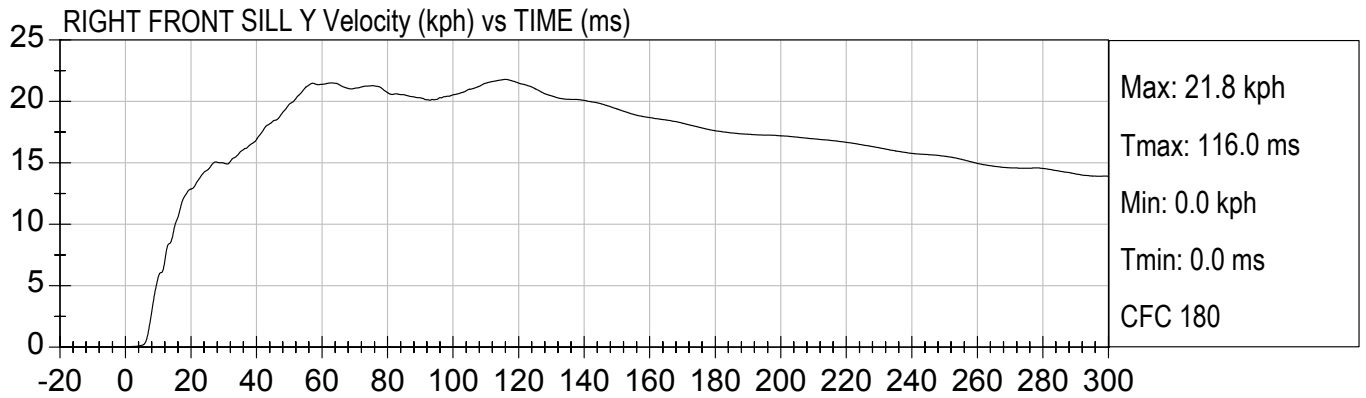
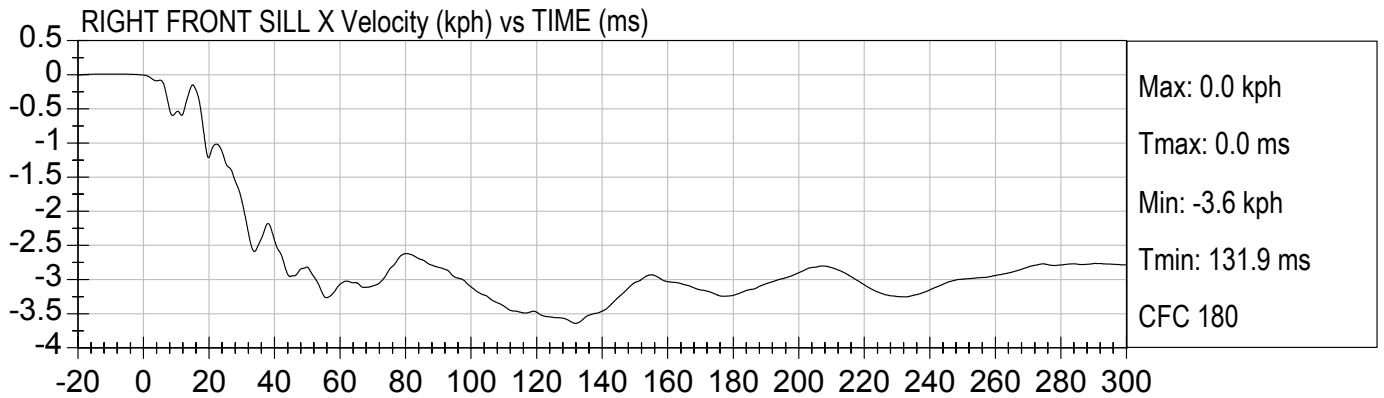


RIGHT FRONT SILL Z (G's) vs TIME (ms)



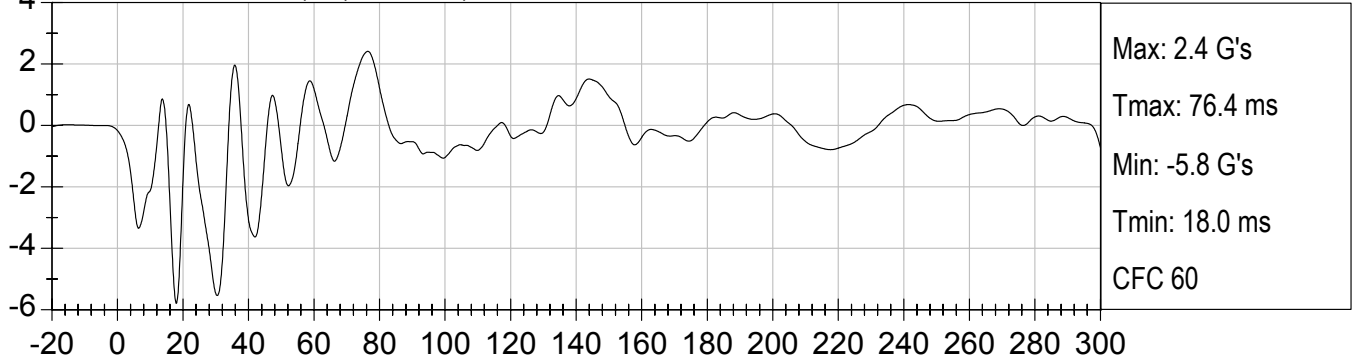
RIGHT FRONT SILL Resultant (G's) vs TIME (ms)



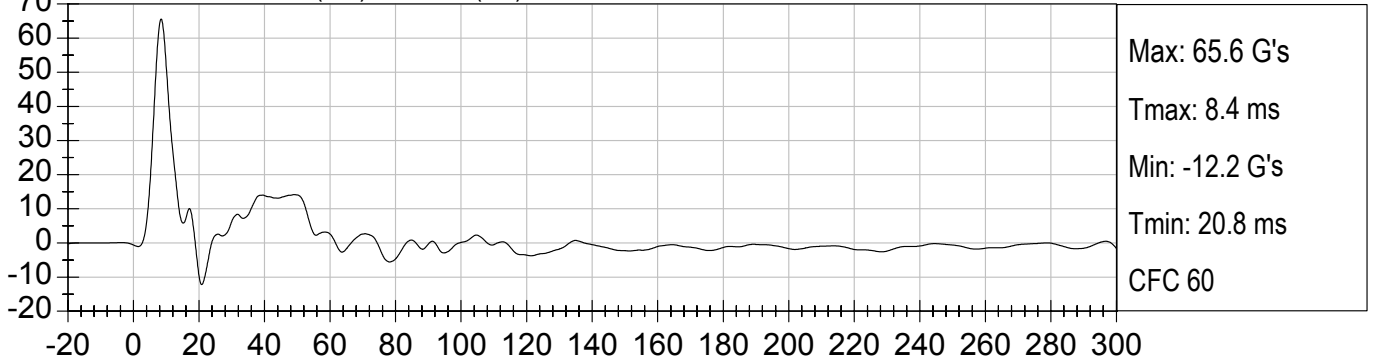




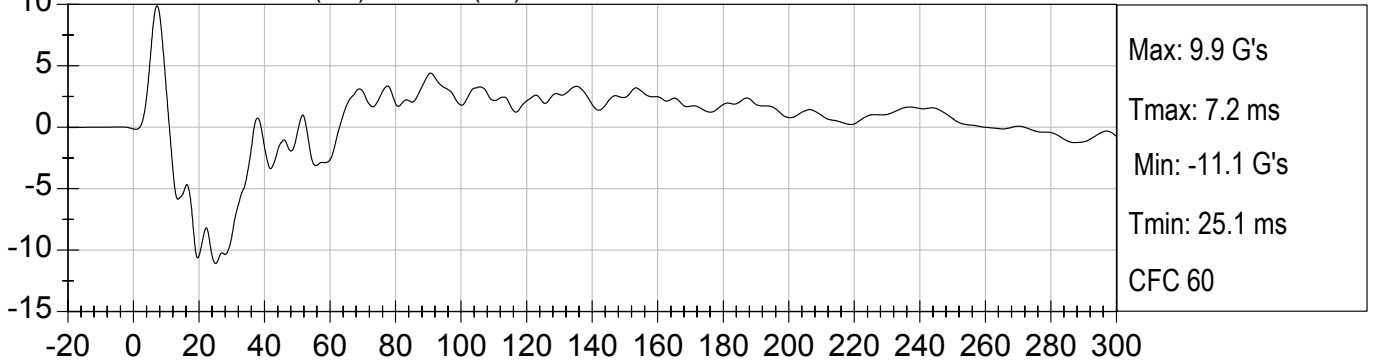
RIGHT REAR SILL X (G's) vs TIME (ms)



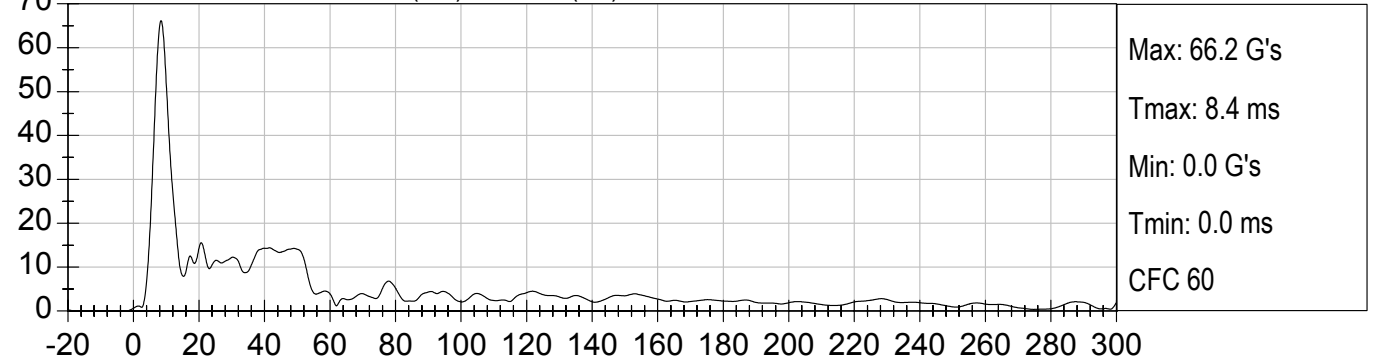
RIGHT REAR SILL Y (G's) vs TIME (ms)

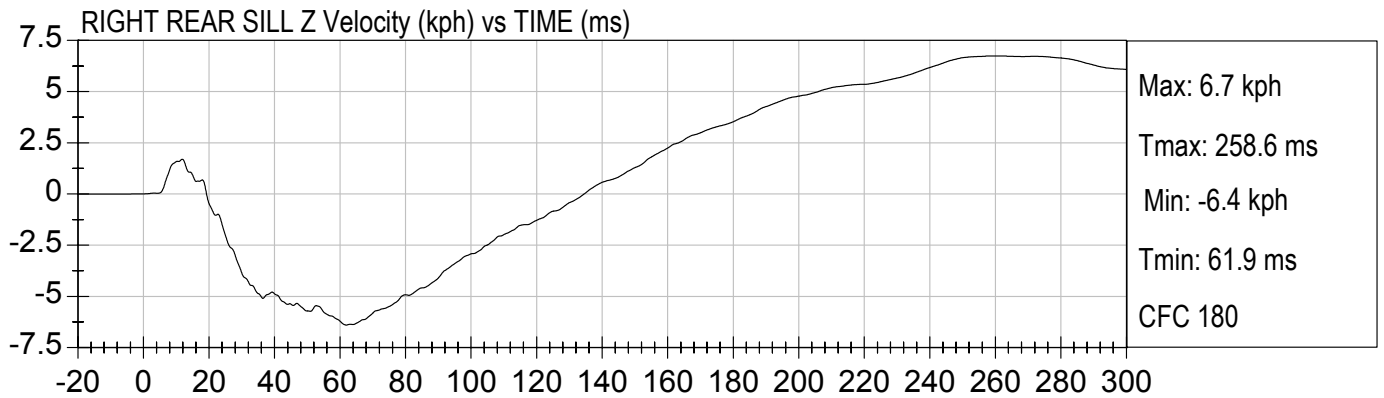
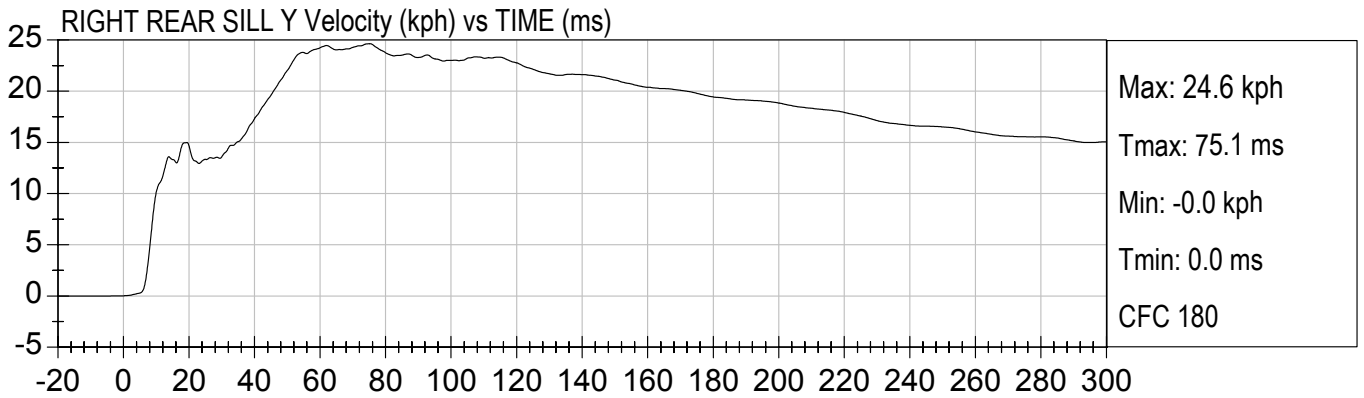
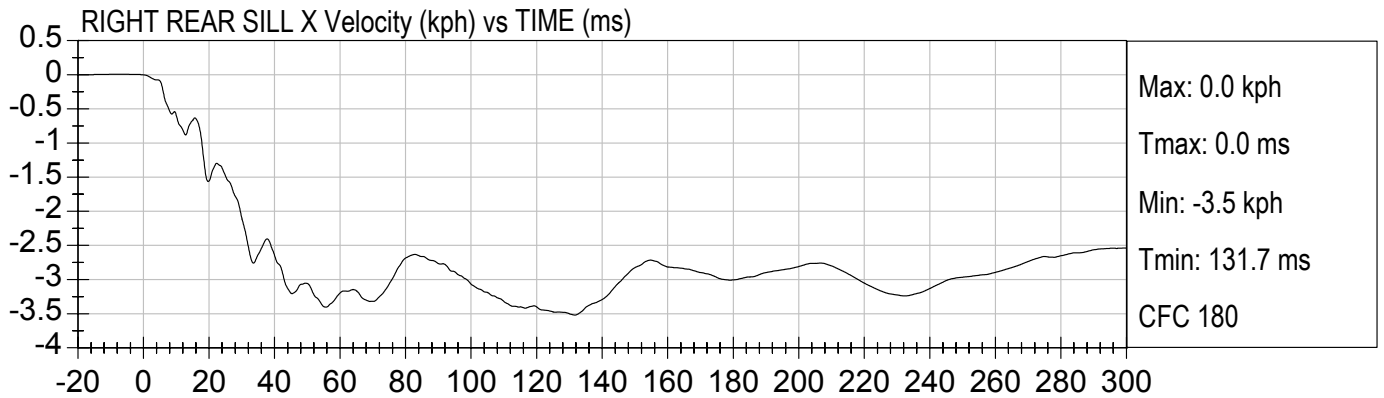


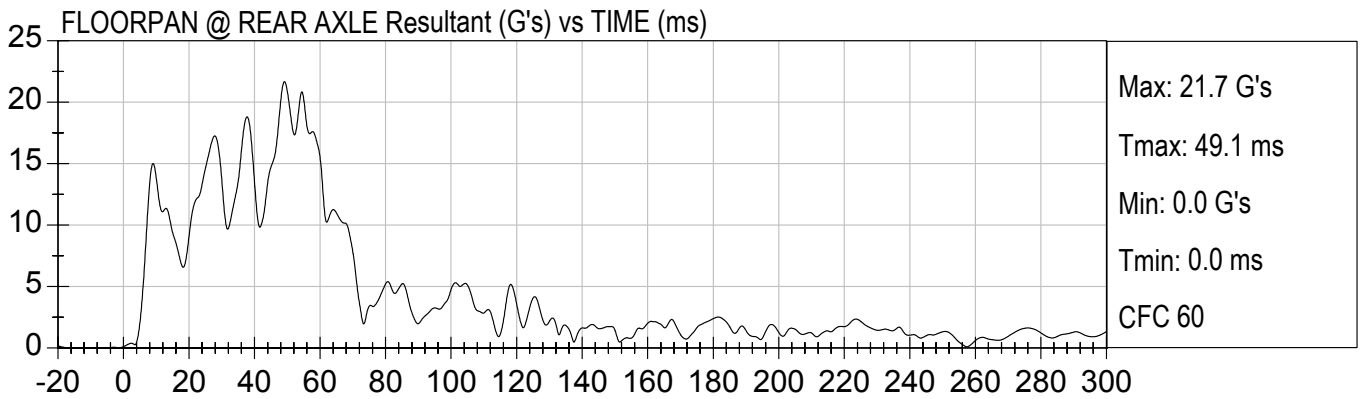
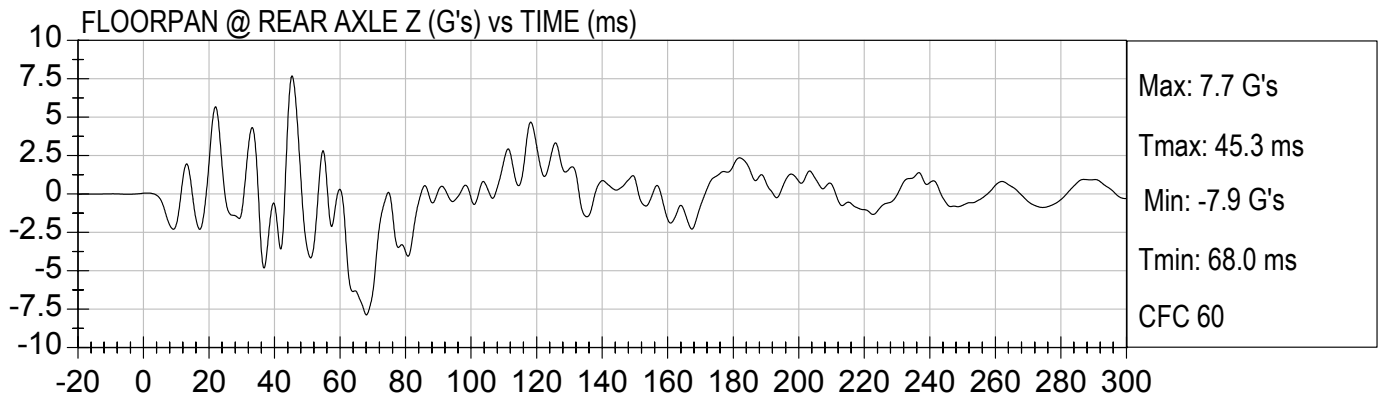
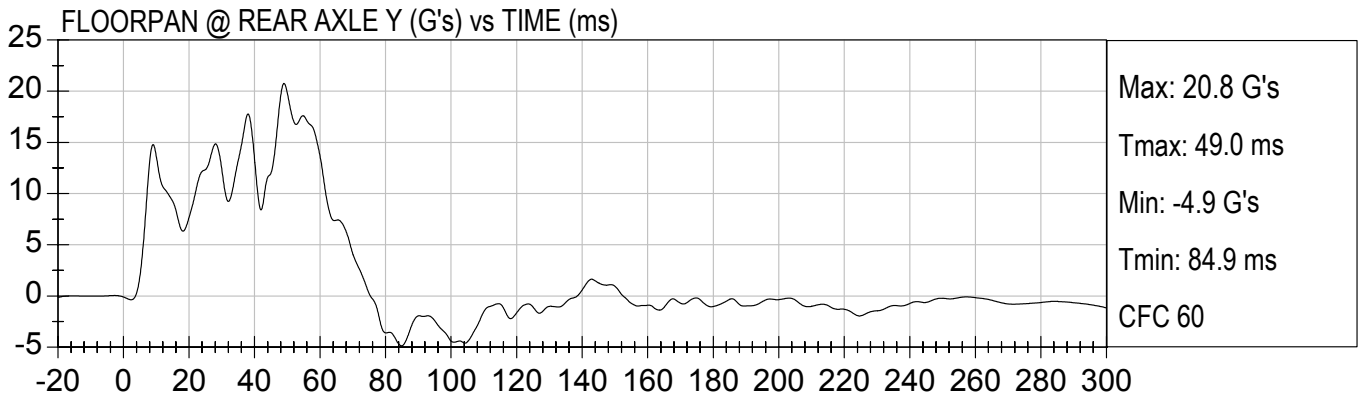
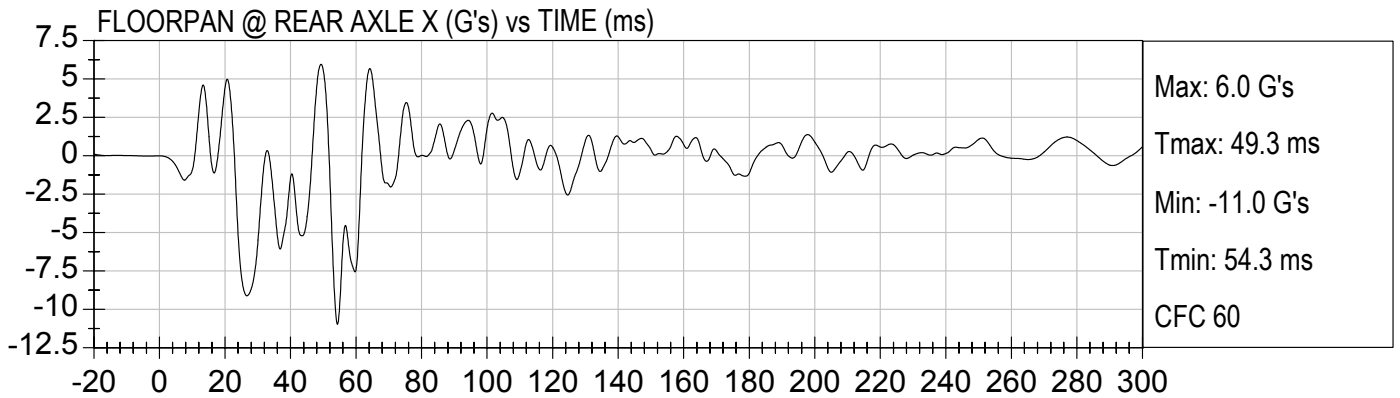
RIGHT REAR SILL Z (G's) vs TIME (ms)



RIGHT REAR SILL Resultant (G's) vs TIME (ms)

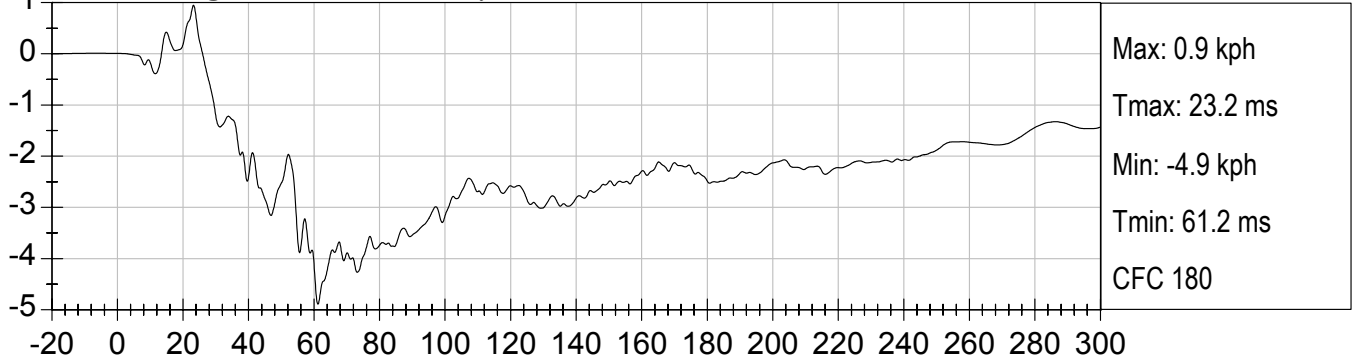




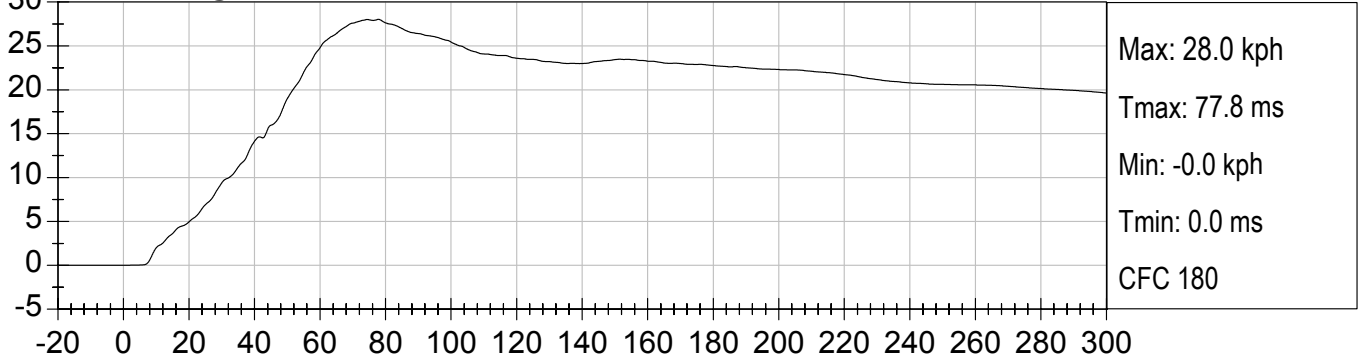




1 FLOORPAN @ REAR AXLE X Velocity (kph) vs TIME (ms)



30 FLOORPAN @ REAR AXLE Y Velocity (kph) vs TIME (ms)

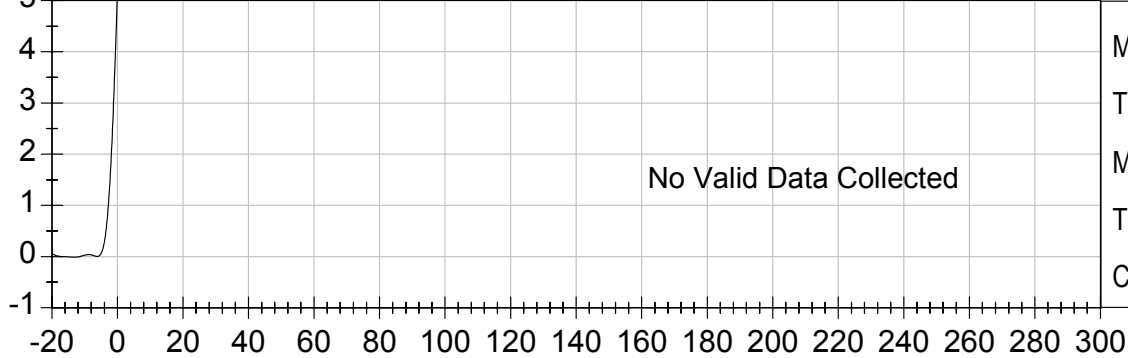


1 FLOORPAN @ REAR AXLE Z Velocity (kph) vs TIME (ms)



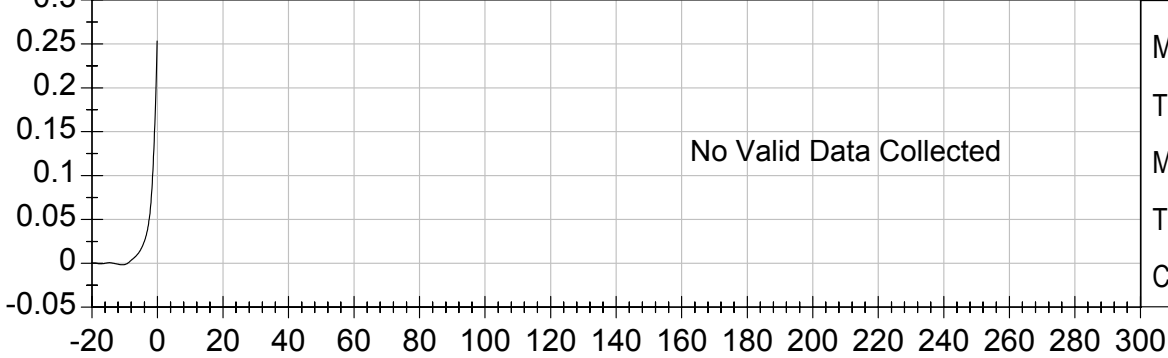


LEFT FRONT SILL Y (G's) vs TIME (ms)



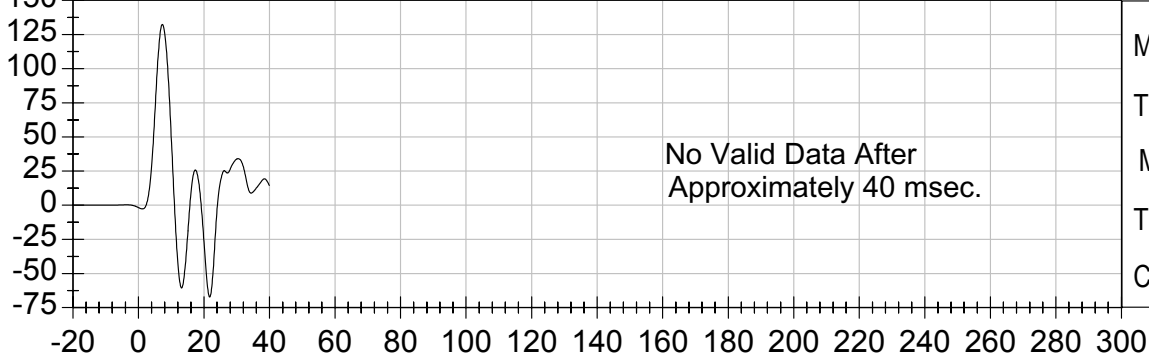
Max: 5.0 G's
Tmax: 0.0 ms
Min: -0.0 G's
Tmin: 0.0 ms
CFC 60

LEFT FRONT SILL Y Velocity (kph) vs TIME (ms)



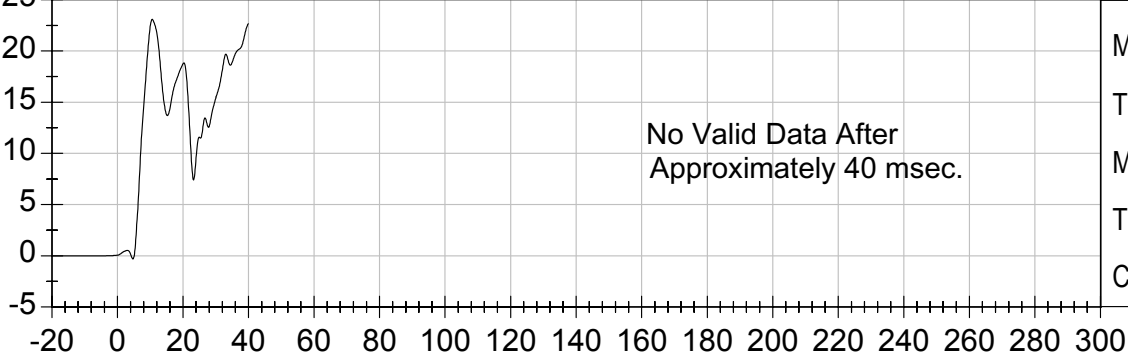
Max: 0.3 kph
Tmax: 0.0 ms
Min: -0.0 kph
Tmin: 0.0 ms
CFC 180

LEFT REAR SILL Y (G's) vs TIME (ms)

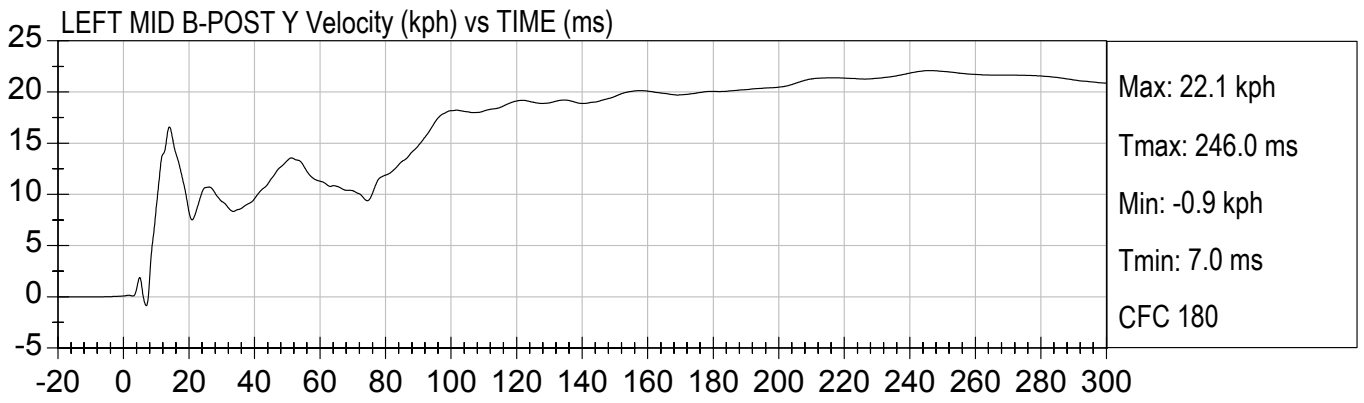
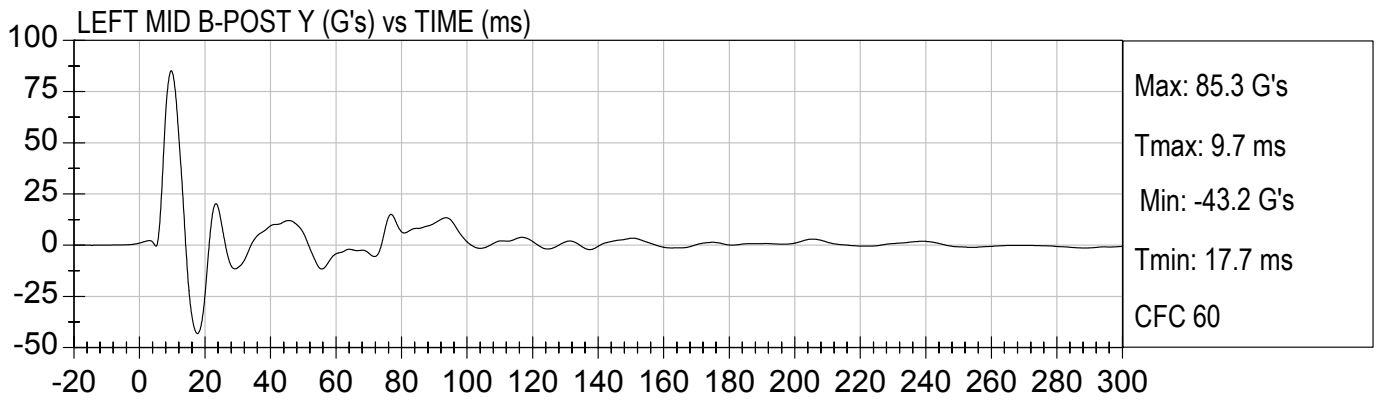
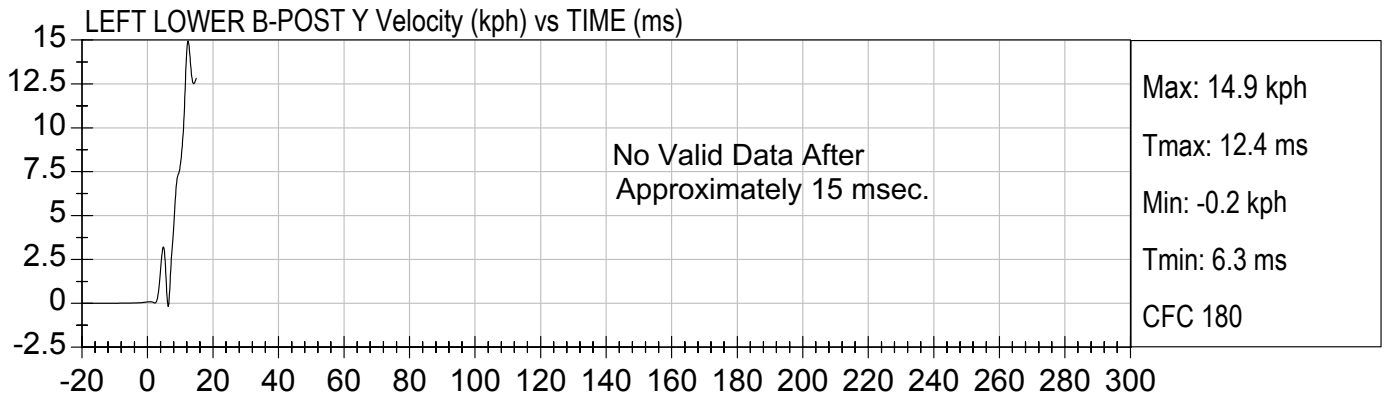
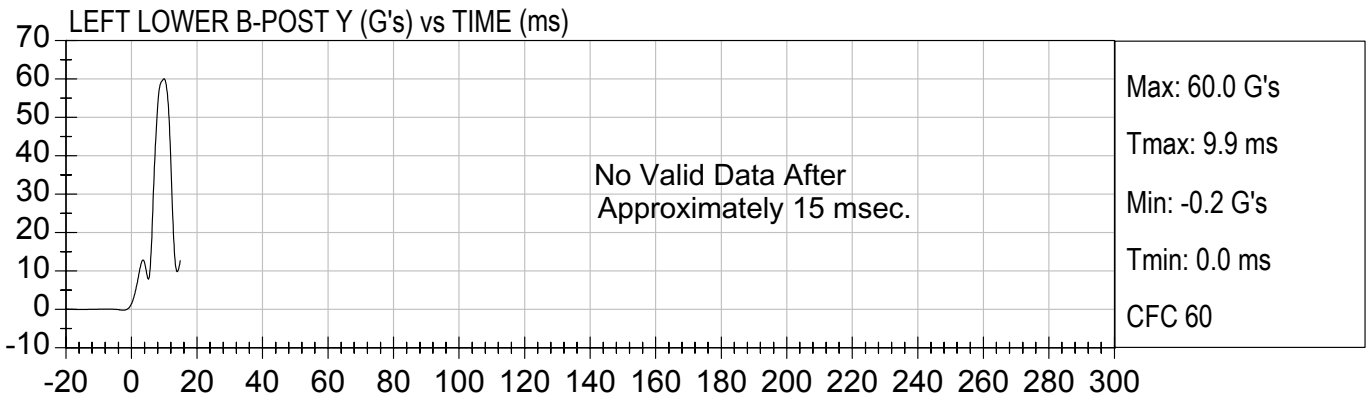


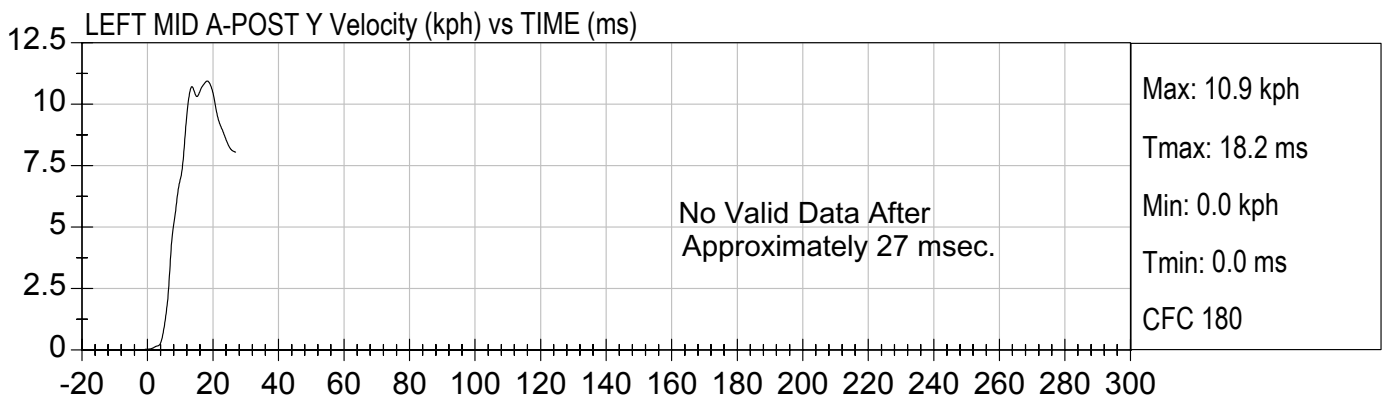
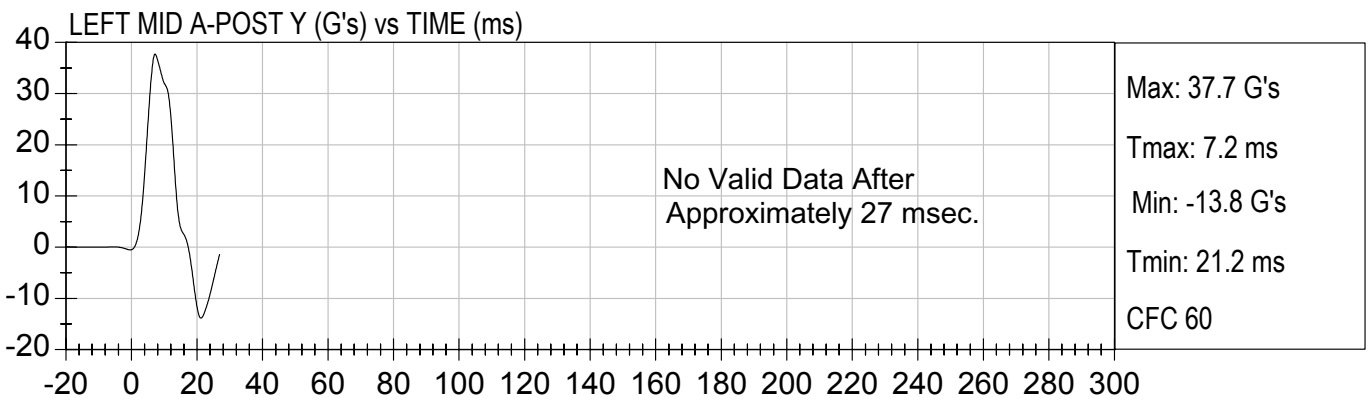
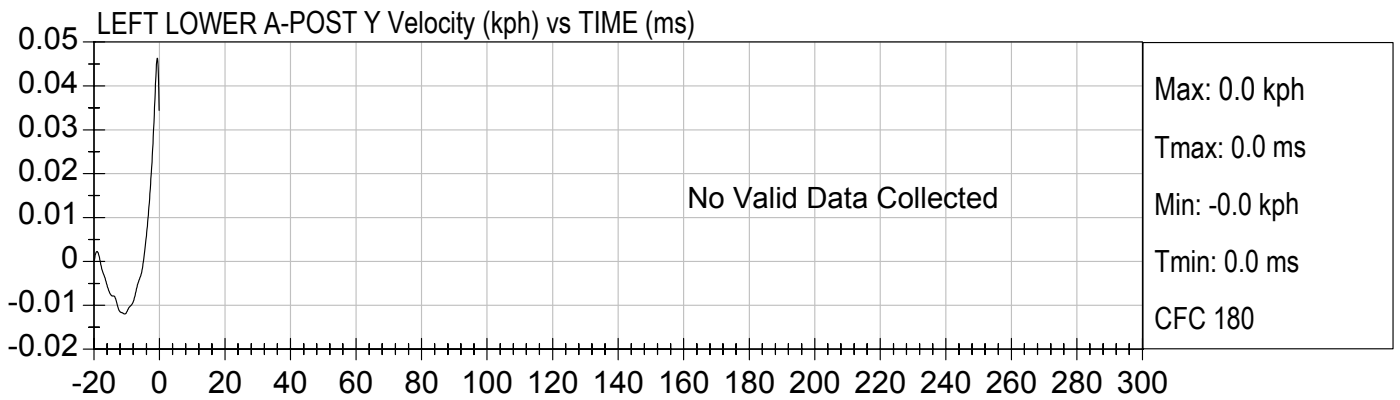
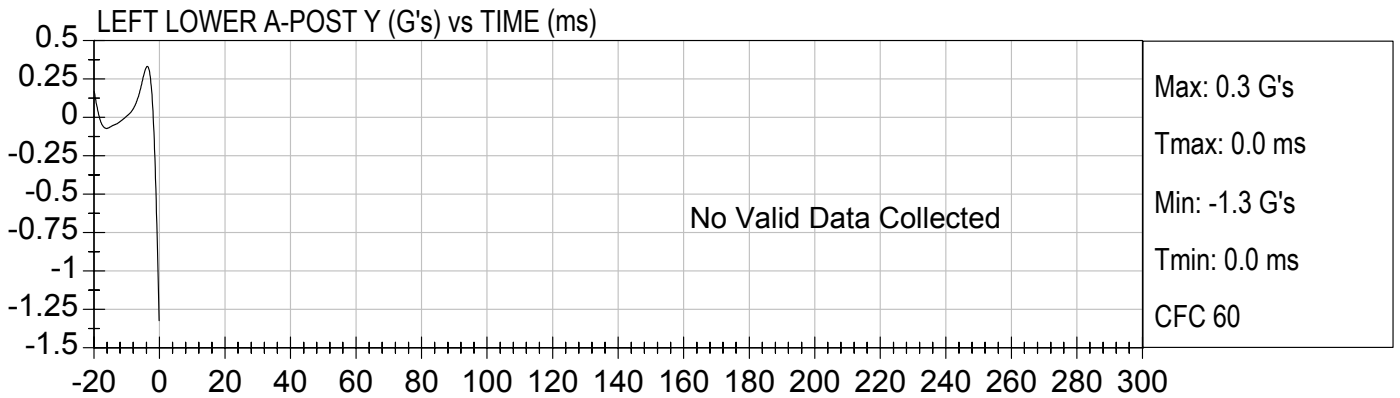
Max: 132.4 G's
Tmax: 7.3 ms
Min: -67.2 G's
Tmin: 21.7 ms
CFC 60

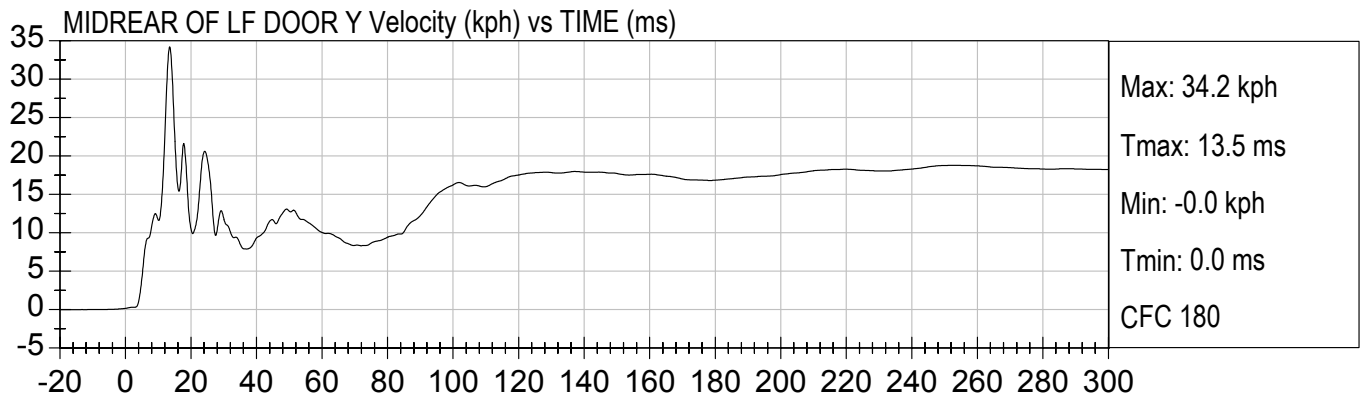
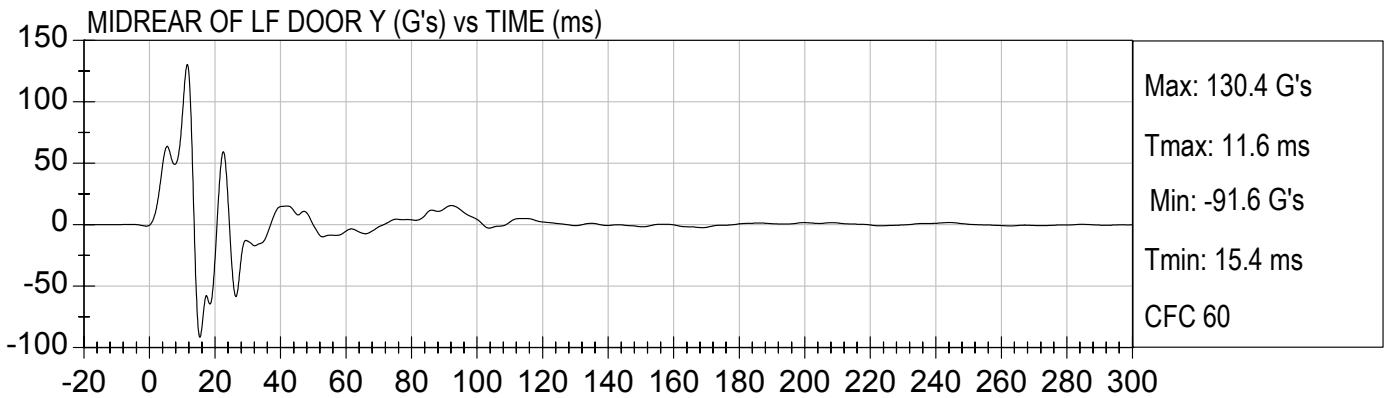
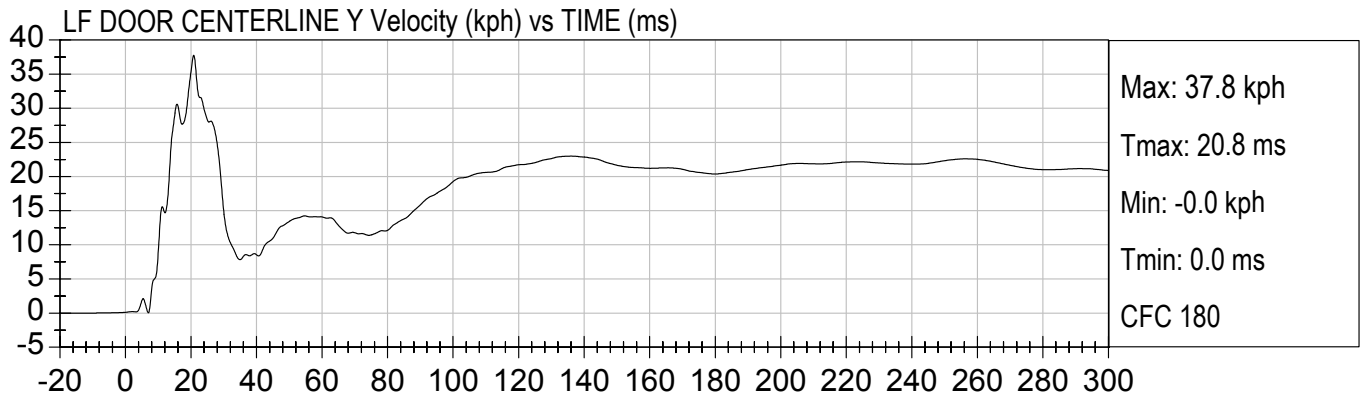
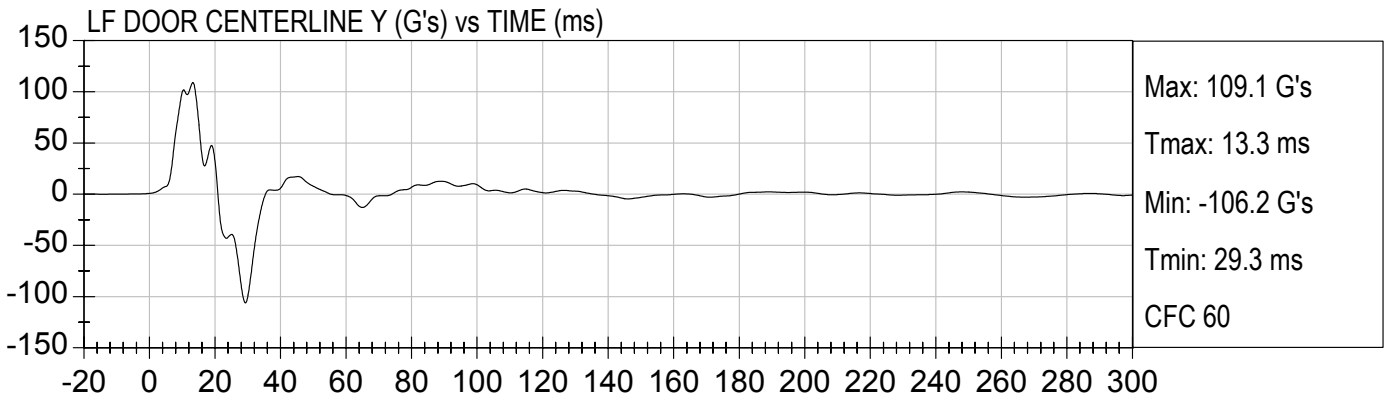
LEFT REAR SILL Y Velocity (kph) vs TIME (ms)



Max: 23.1 kph
Tmax: 10.6 ms
Min: -0.3 kph
Tmin: 4.7 ms
CFC 180

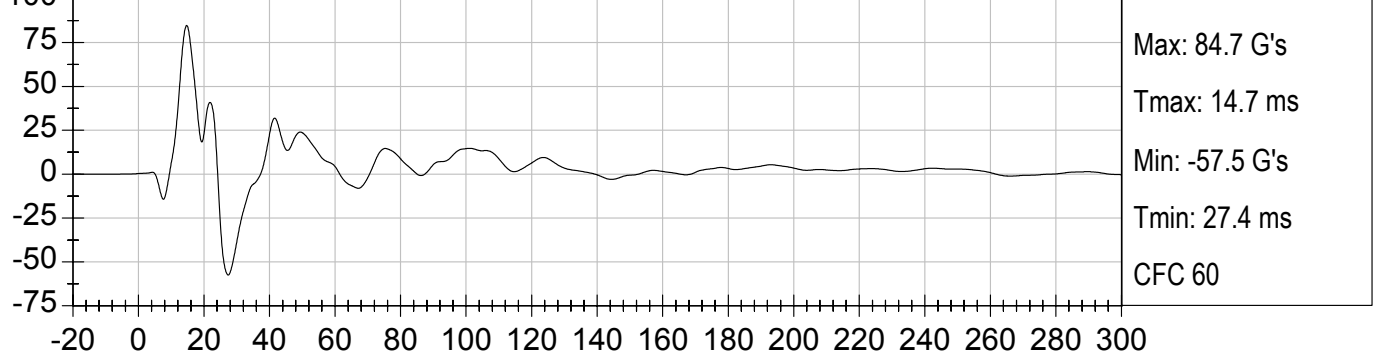




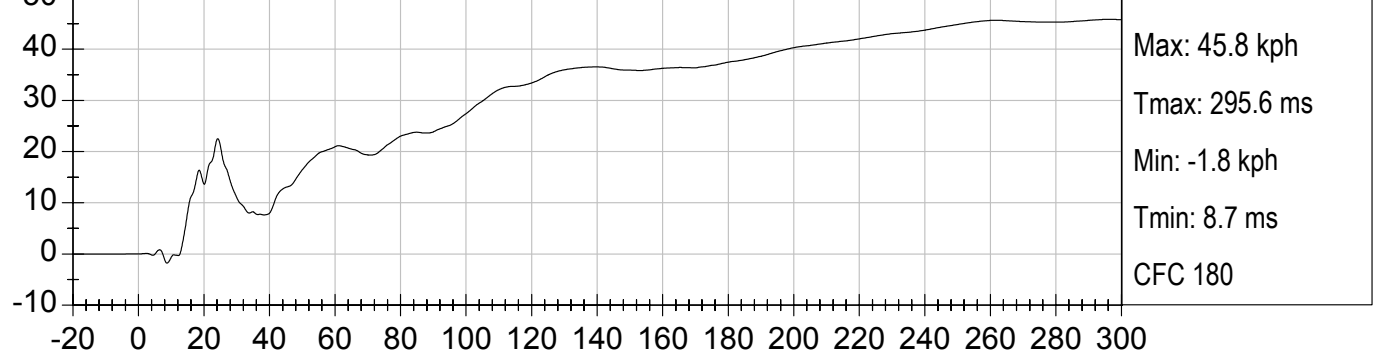




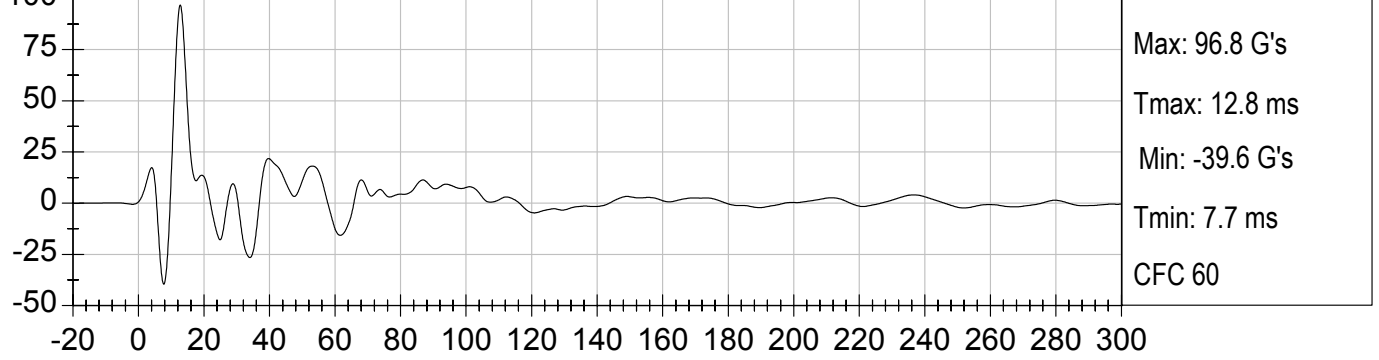
LF DOOR UPPER CENTERLINE Y (G's) vs TIME (ms)



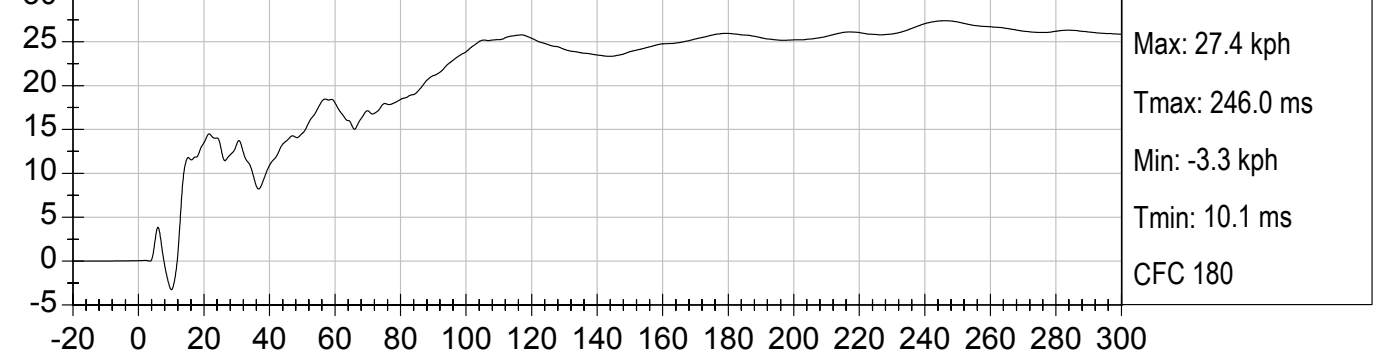
LF DOOR UPPER CENTERLINE Y Velocity (kph) vs TIME (ms)



LR DOOR UPPER CENTERLINE Y (G's) vs TIME (ms)

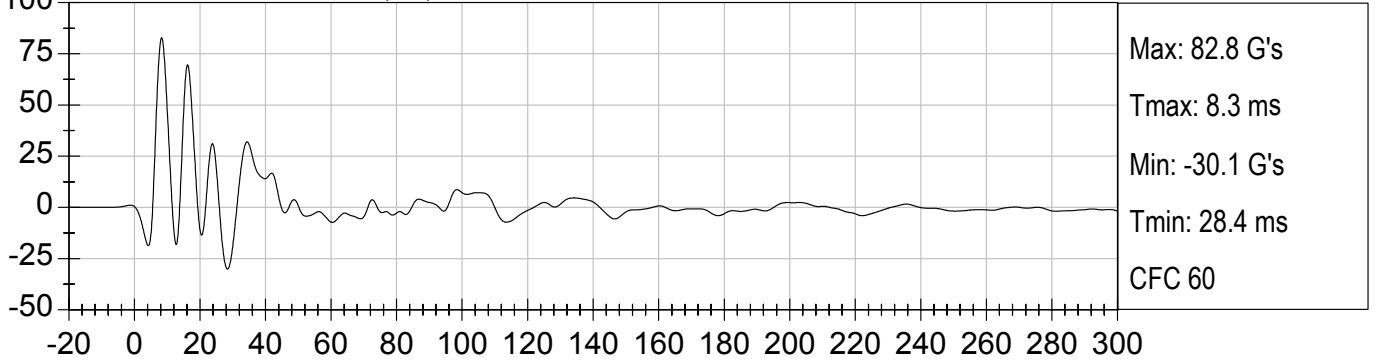


LR DOOR UPPER CENTERLINE Y Velocity (kph) vs TIME (ms)

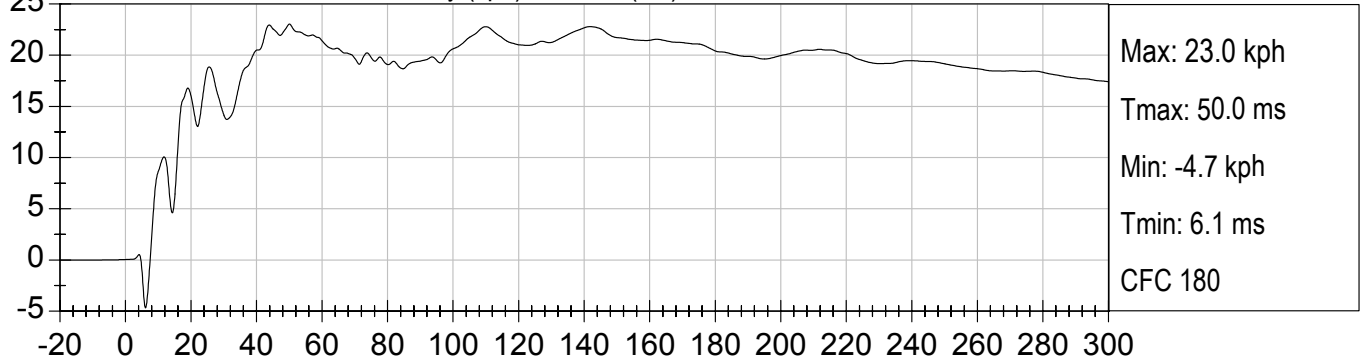




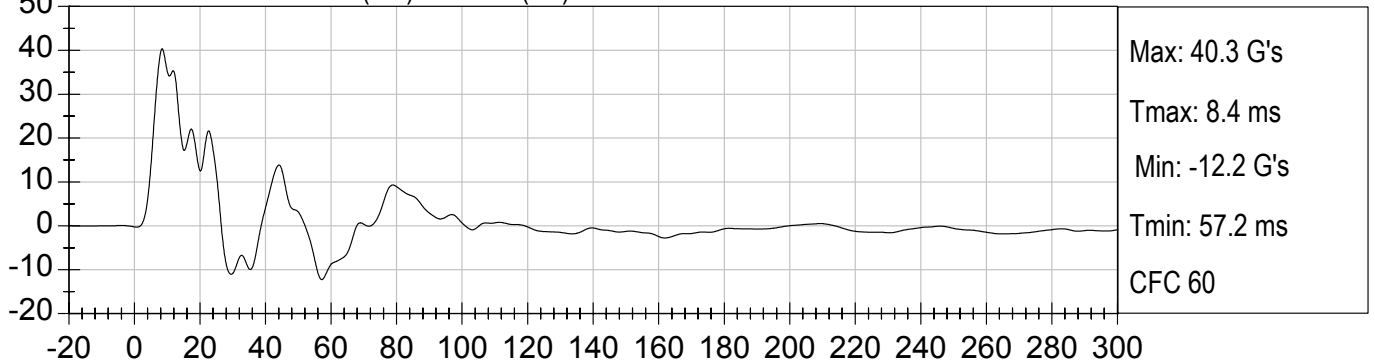
MIDREAR OF LR DOOR Y (G's) vs TIME (ms)



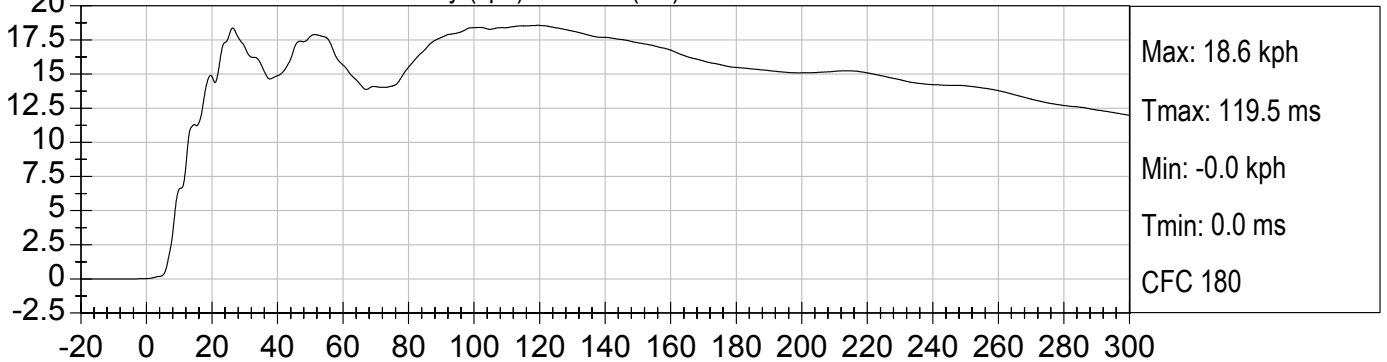
MIDREAR OF LR DOOR Y Velocity (kph) vs TIME (ms)

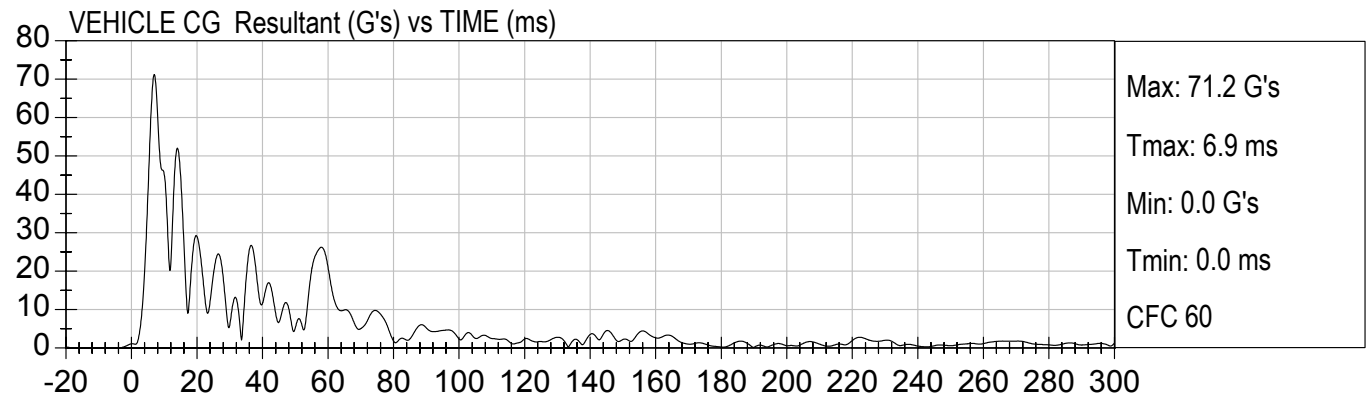
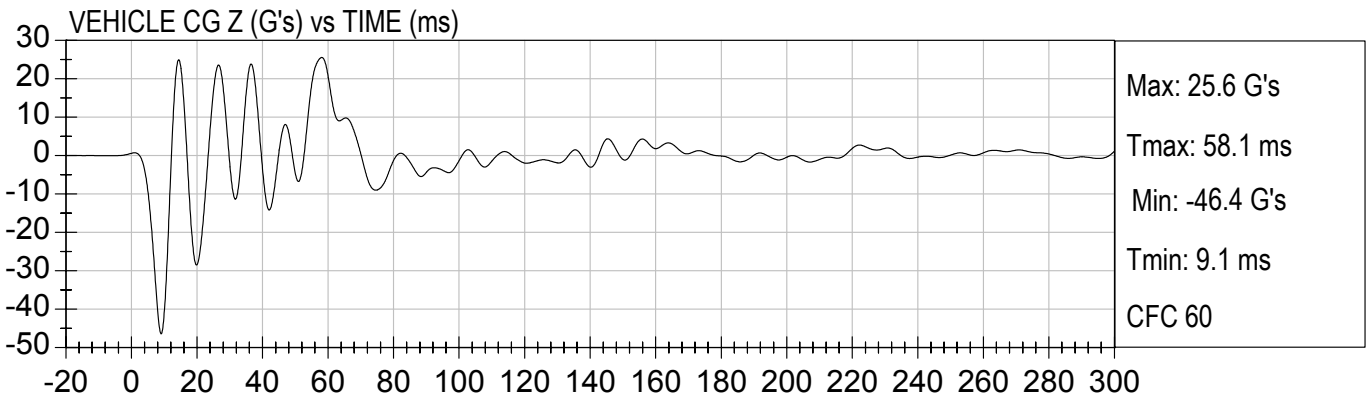
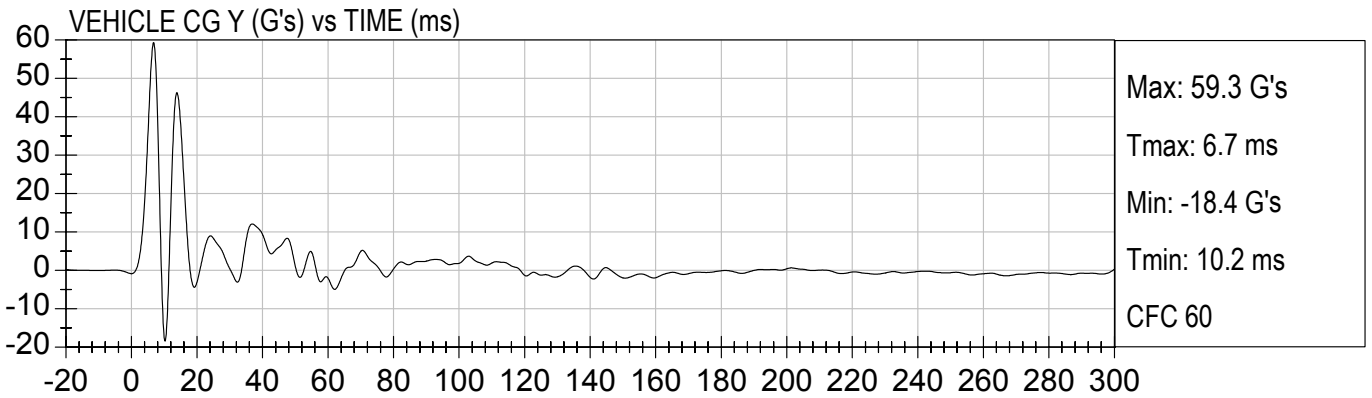
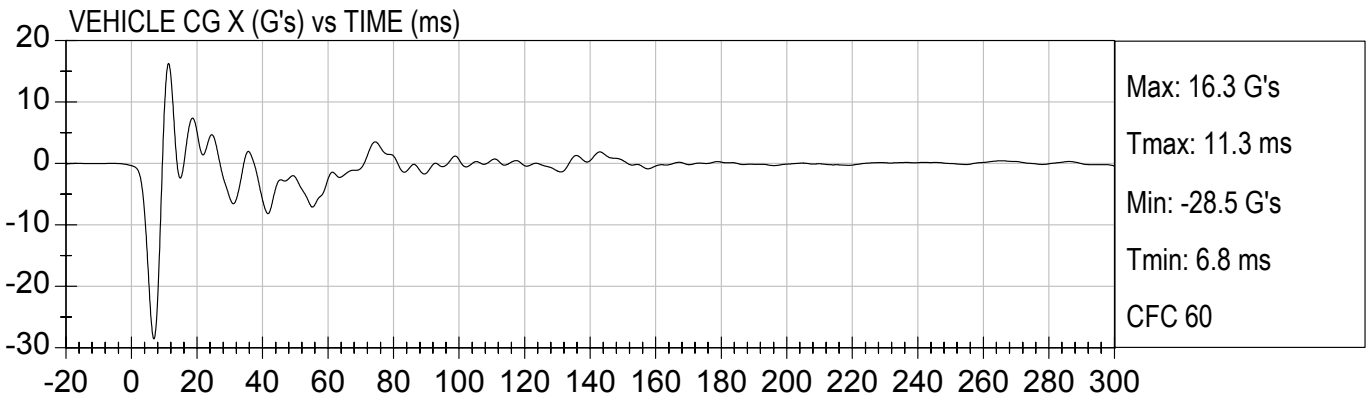


DRIVER SEAT TRACK Y (G's) vs TIME (ms)



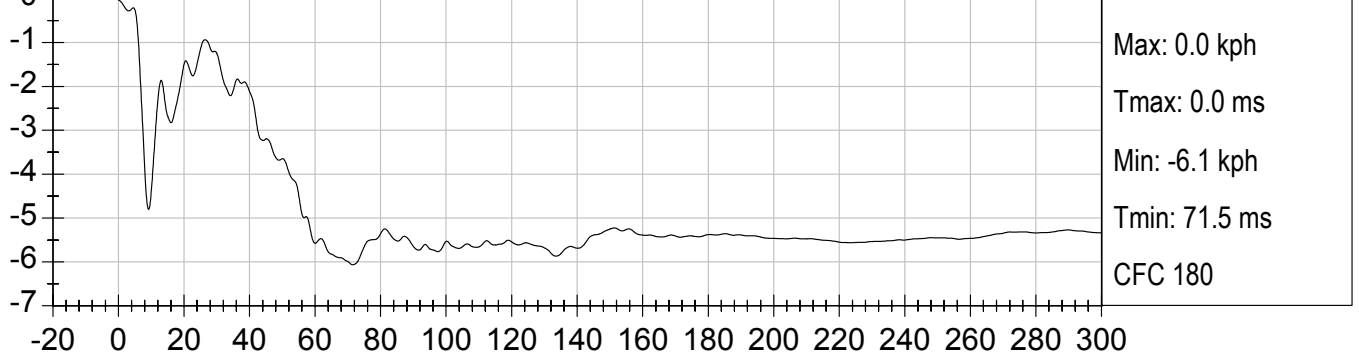
DRIVER SEAT TRACK Y Velocity (kph) vs TIME (ms)



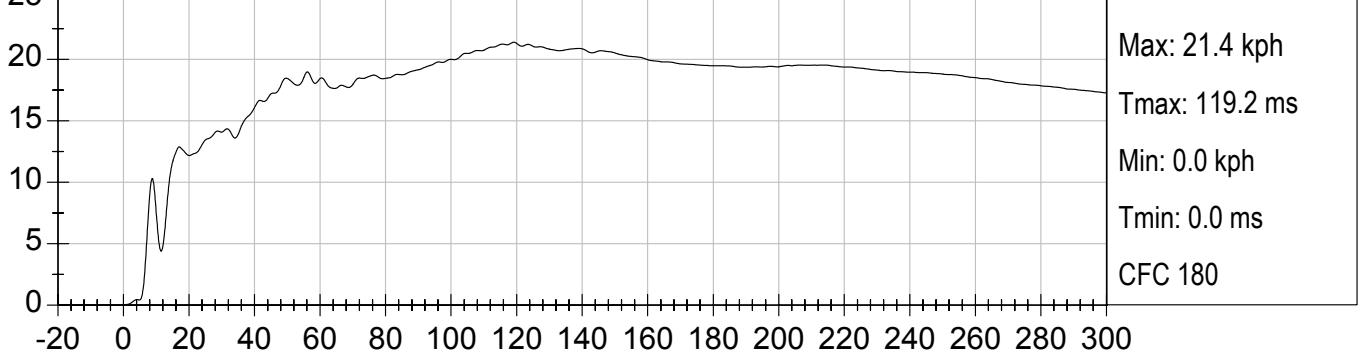




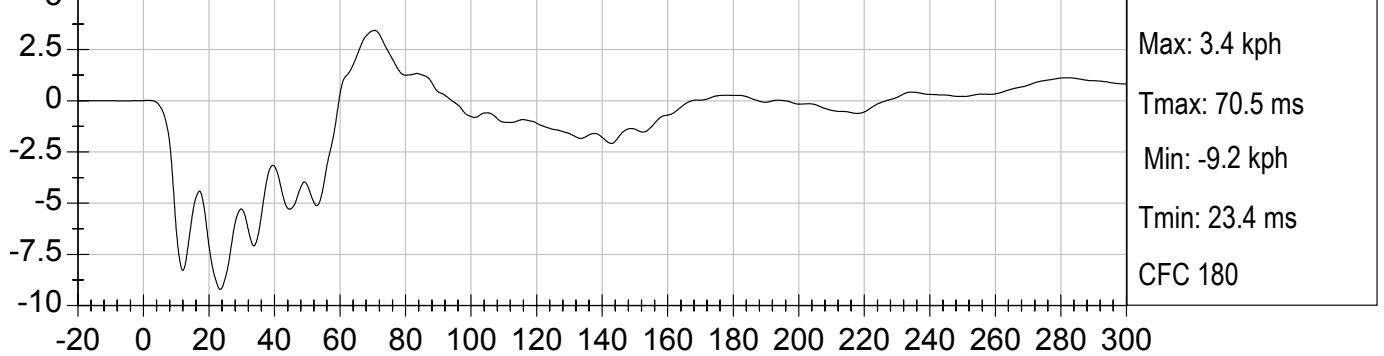
VEHICLE CG X Velocity (kph) vs TIME (ms)

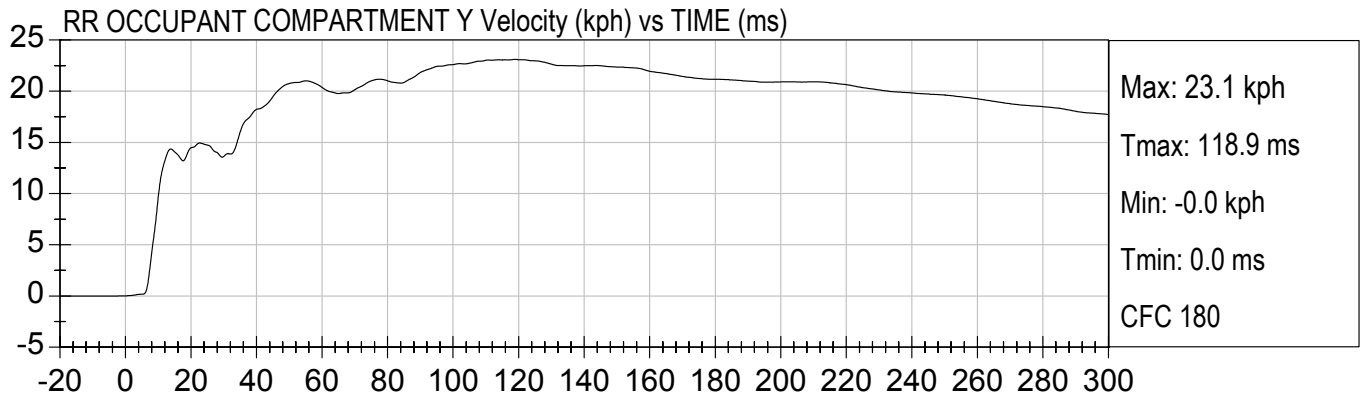
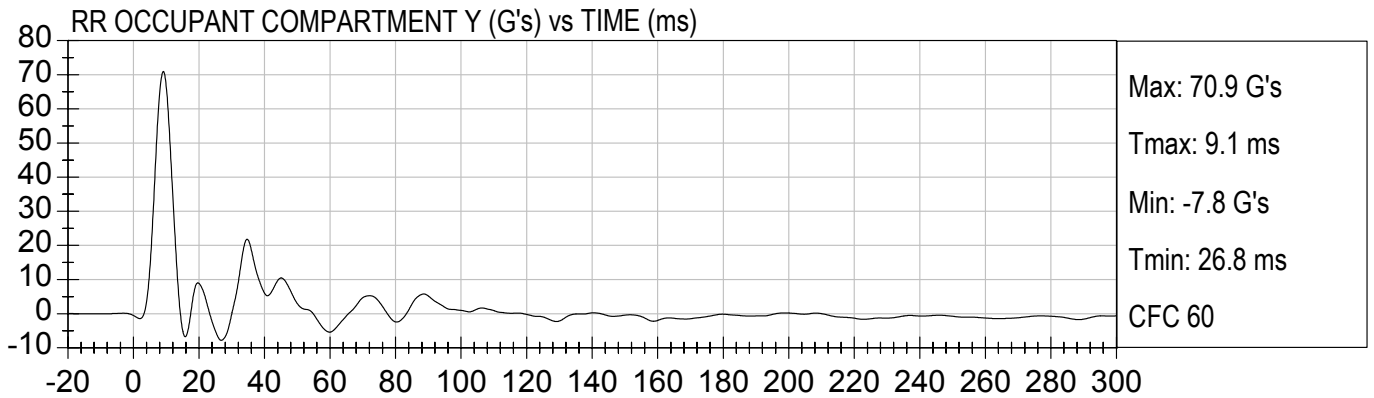


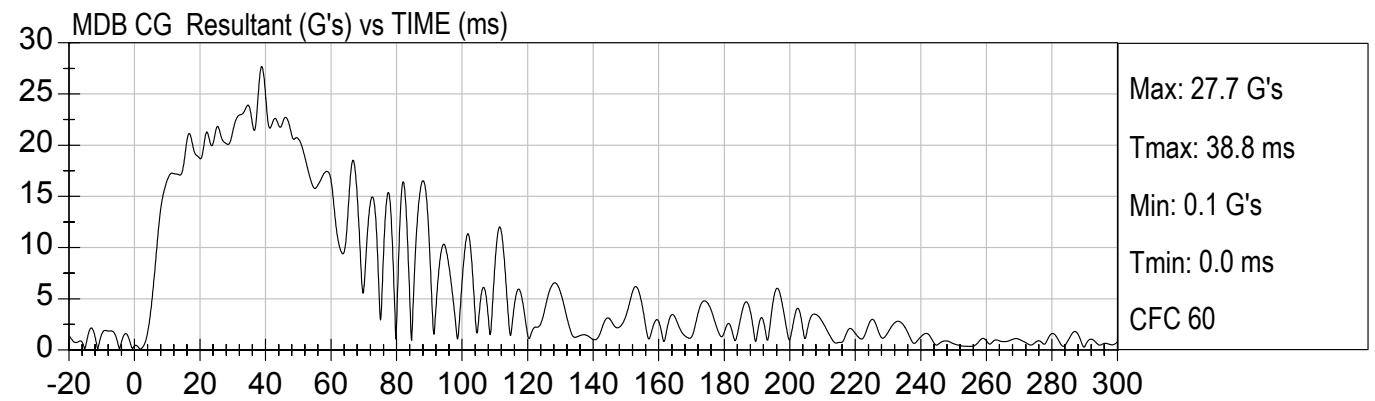
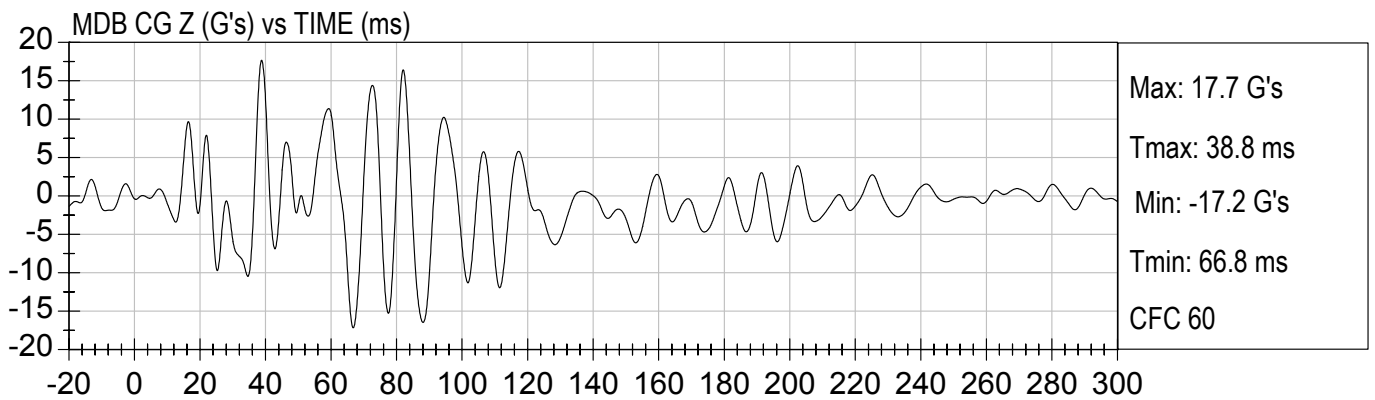
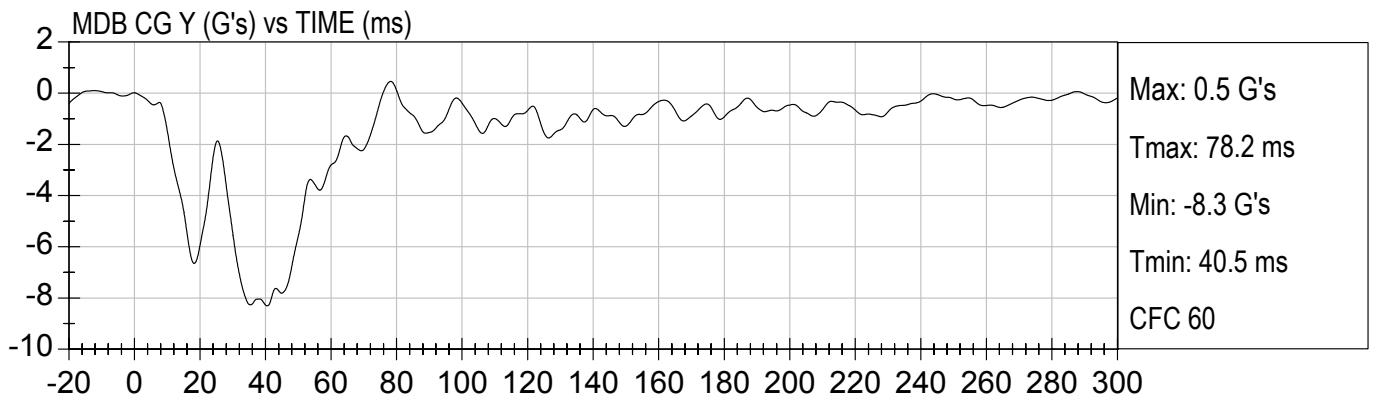
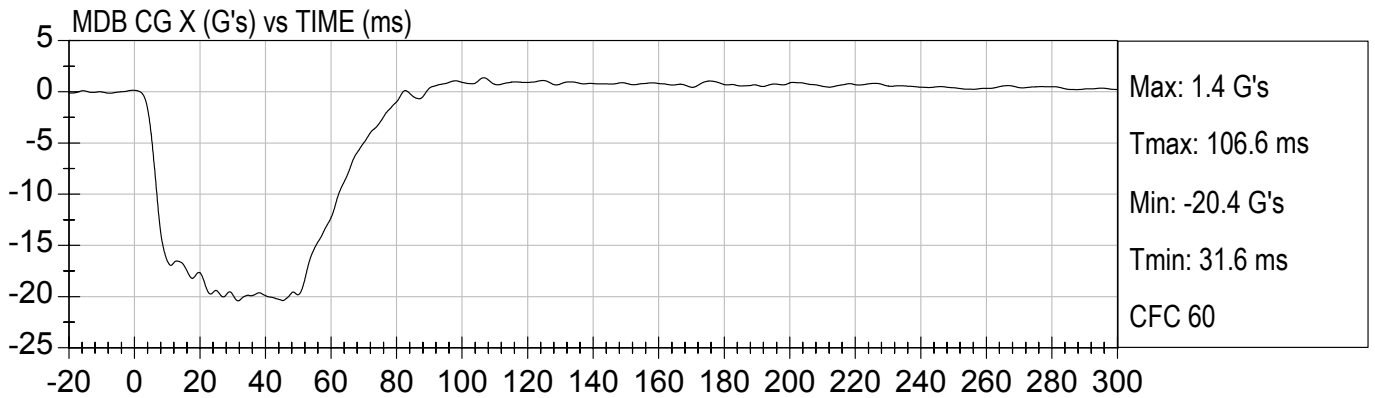
VEHICLE CG Y Velocity (kph) vs TIME (ms)



VEHICLE CG Z Velocity (kph) vs TIME (ms)

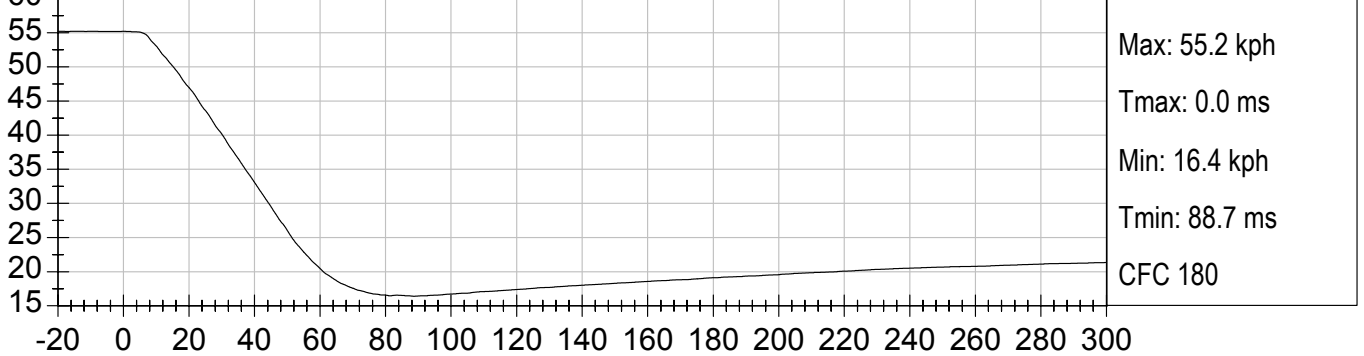




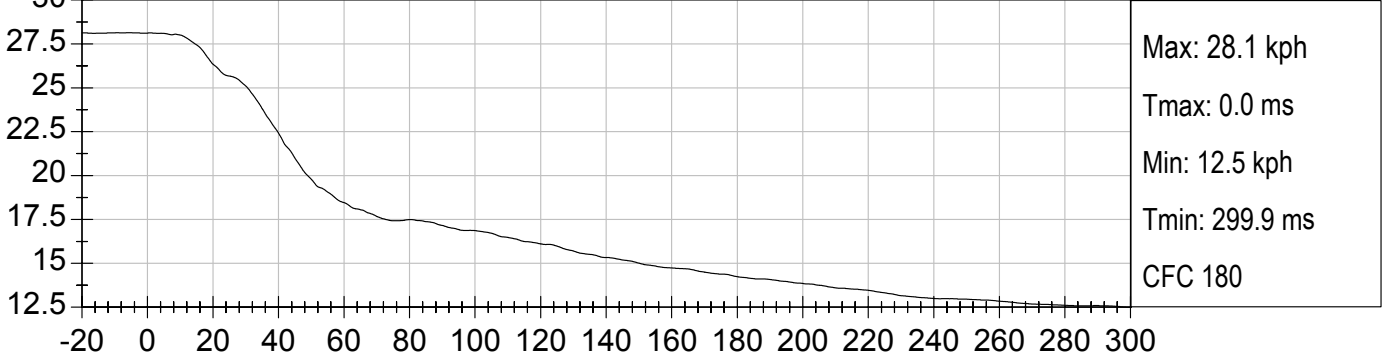




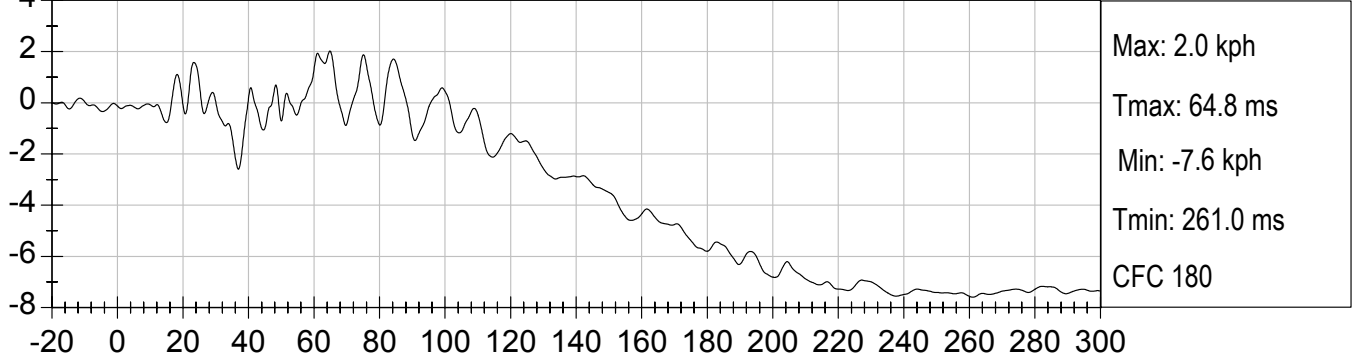
MDB CG X Velocity (kph) vs TIME (ms)

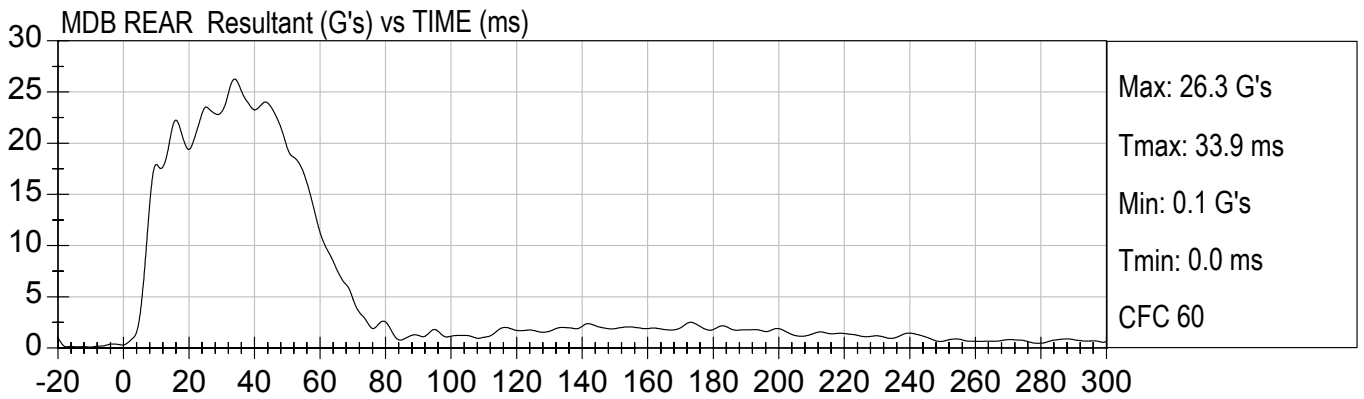
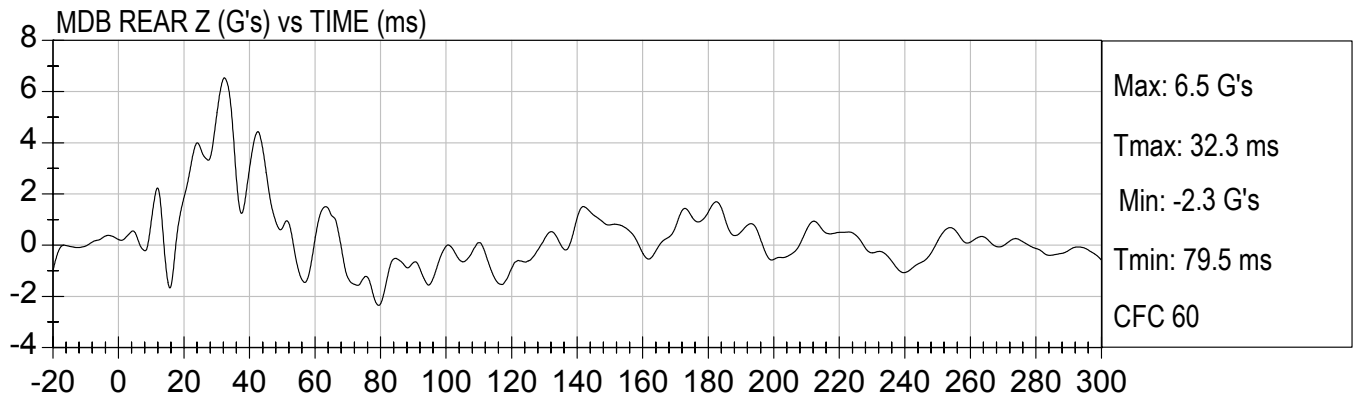
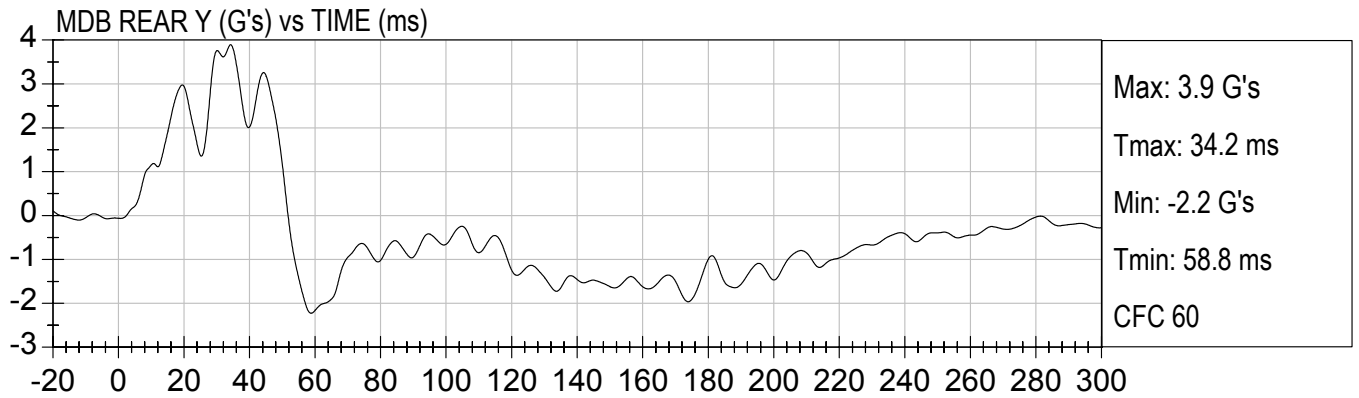
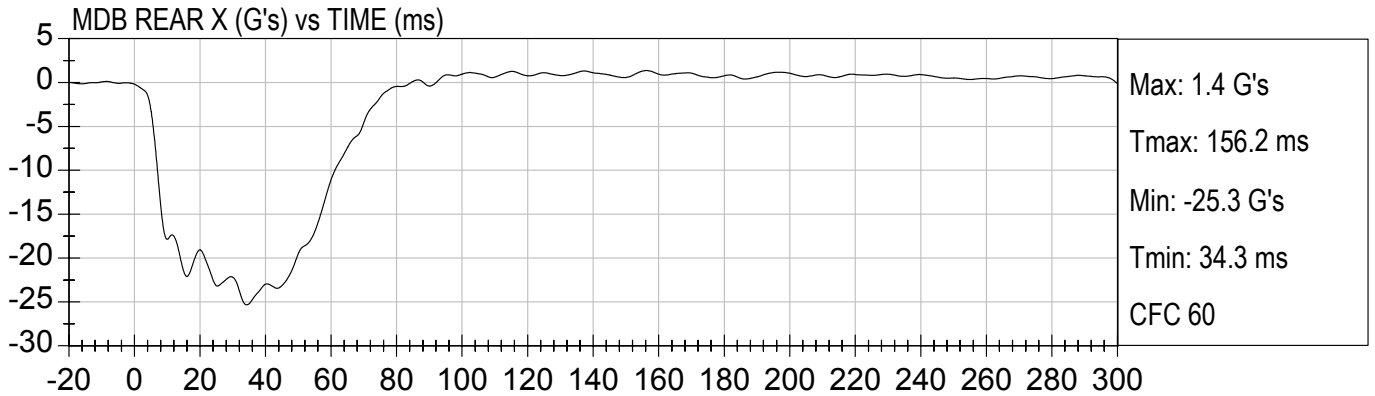


MDB CG Y Velocity (kph) vs TIME (ms)



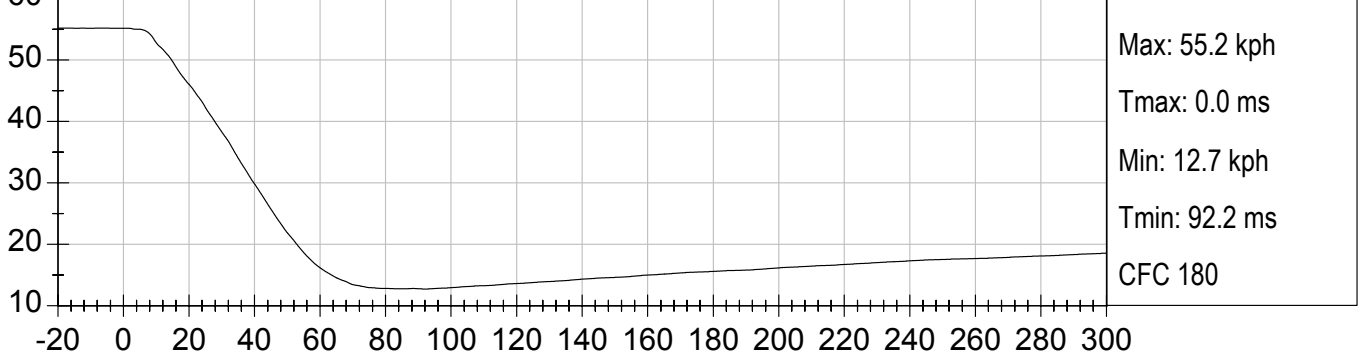
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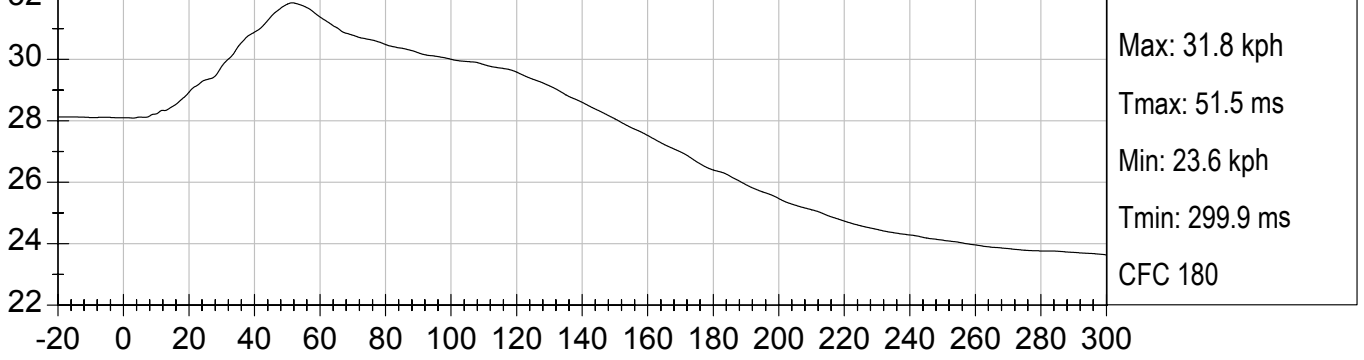




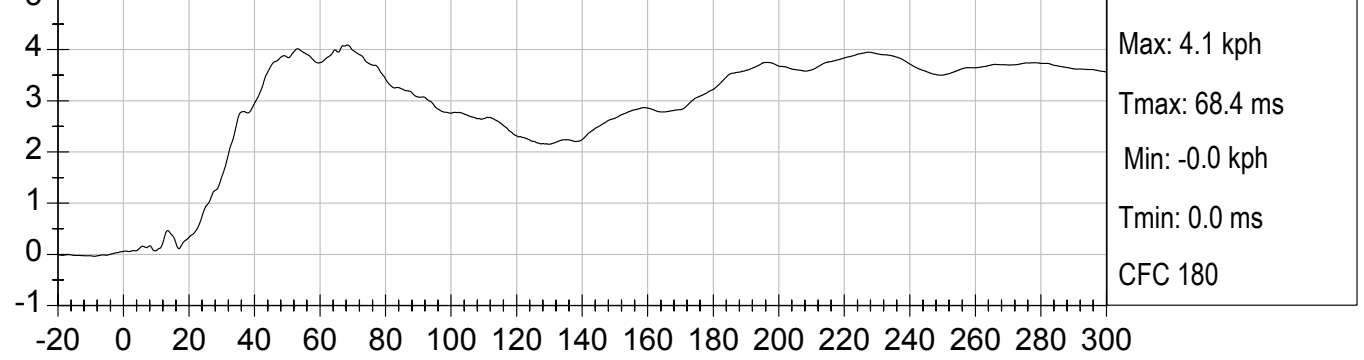
MDB REAR X Velocity (kph) vs TIME (ms)

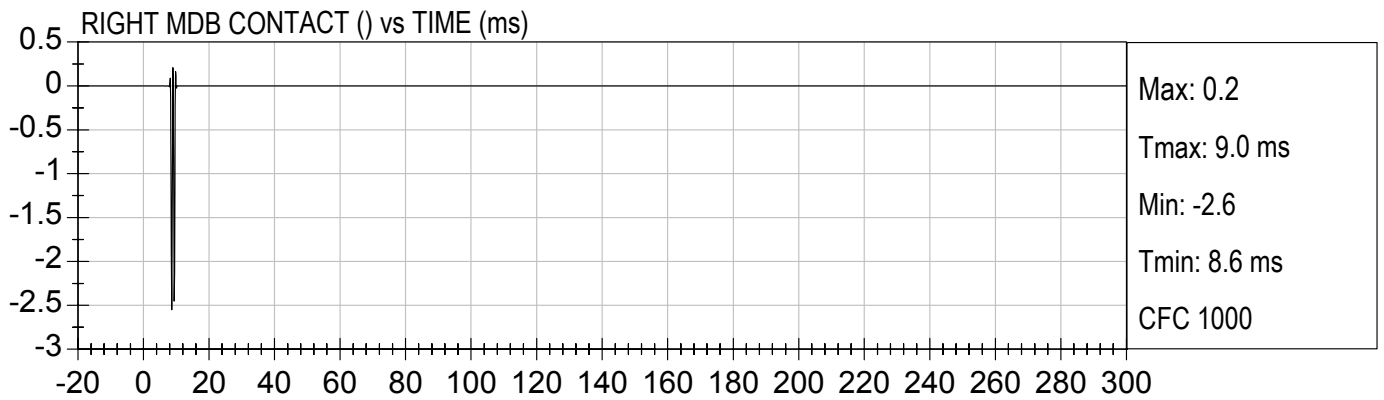
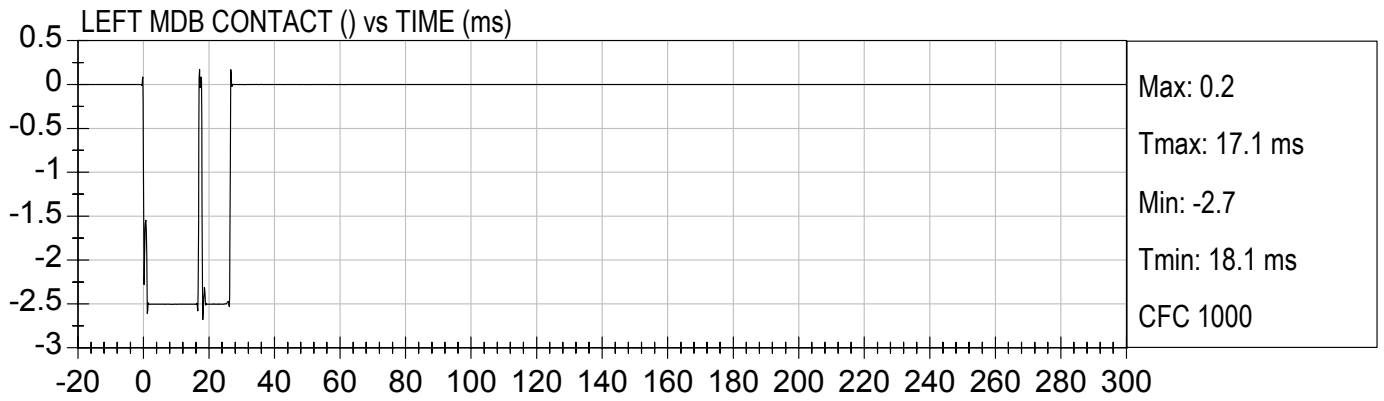


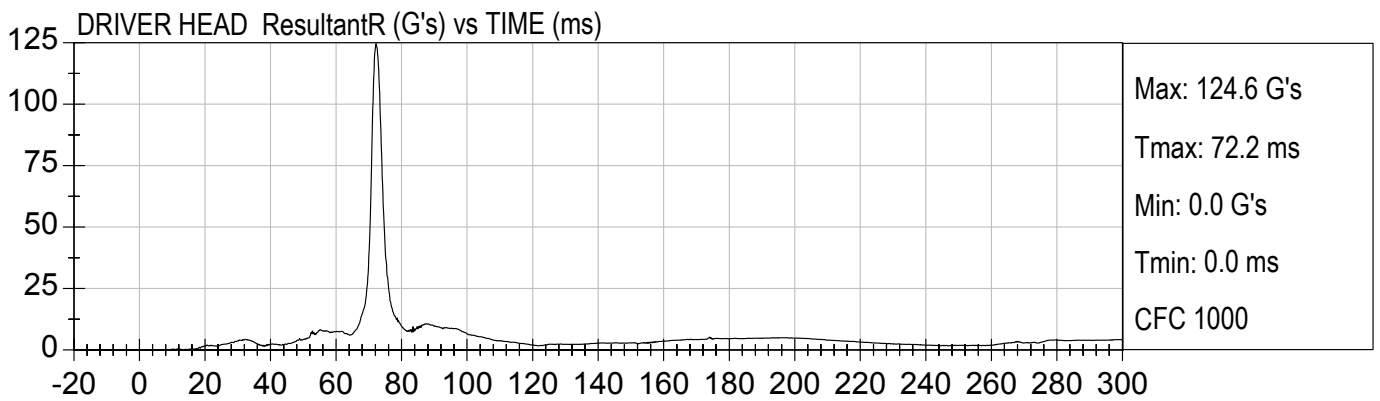
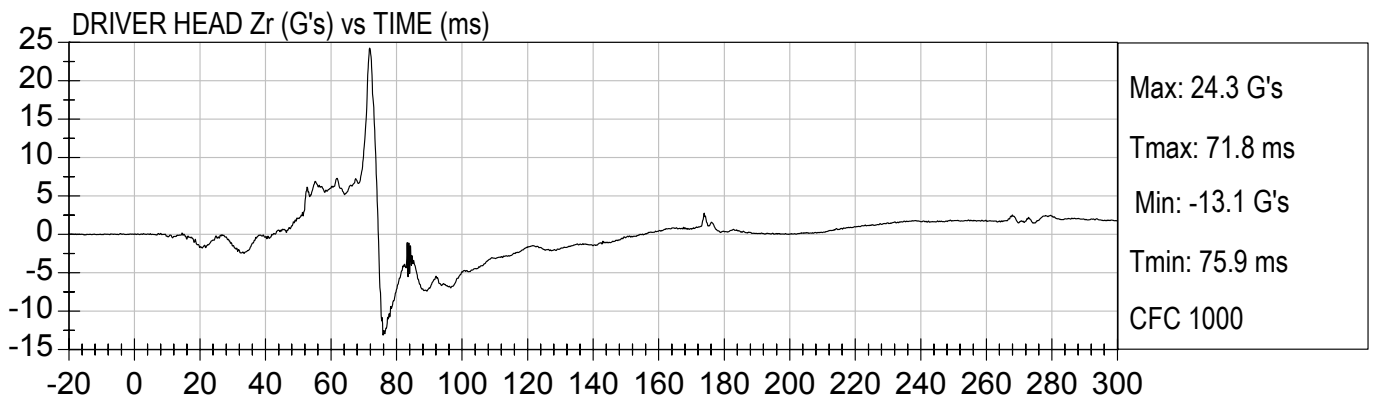
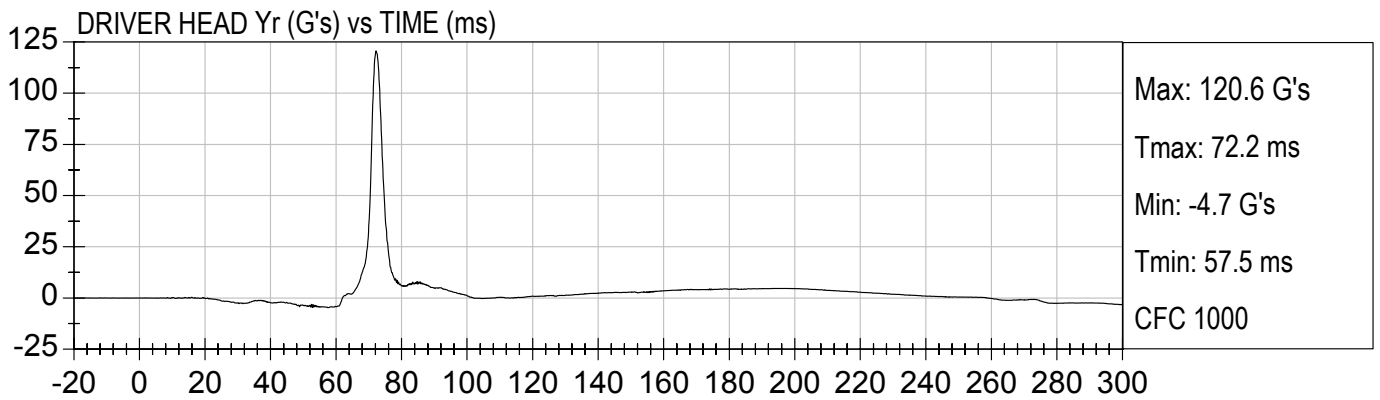
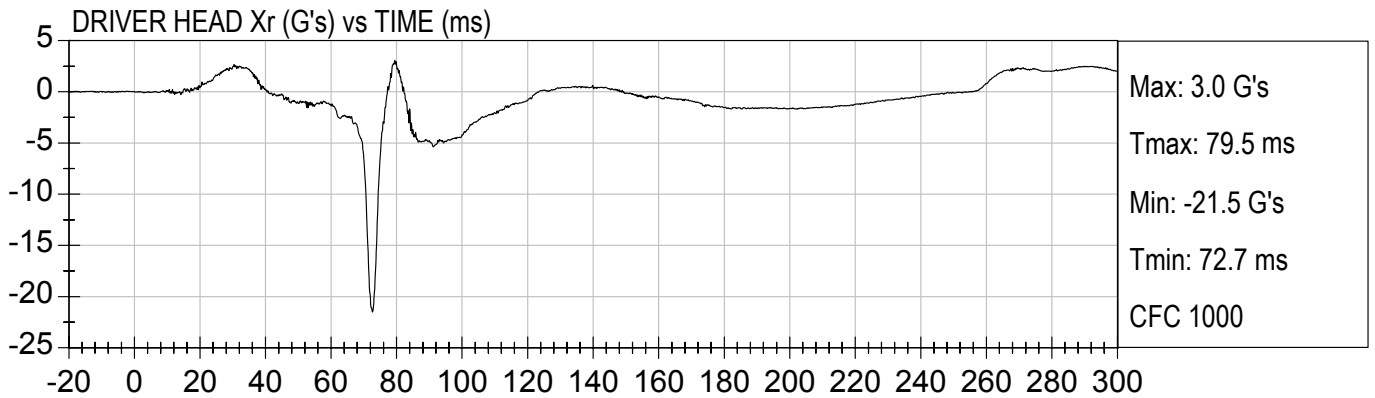
MDB REAR Y Velocity (kph) vs TIME (ms)

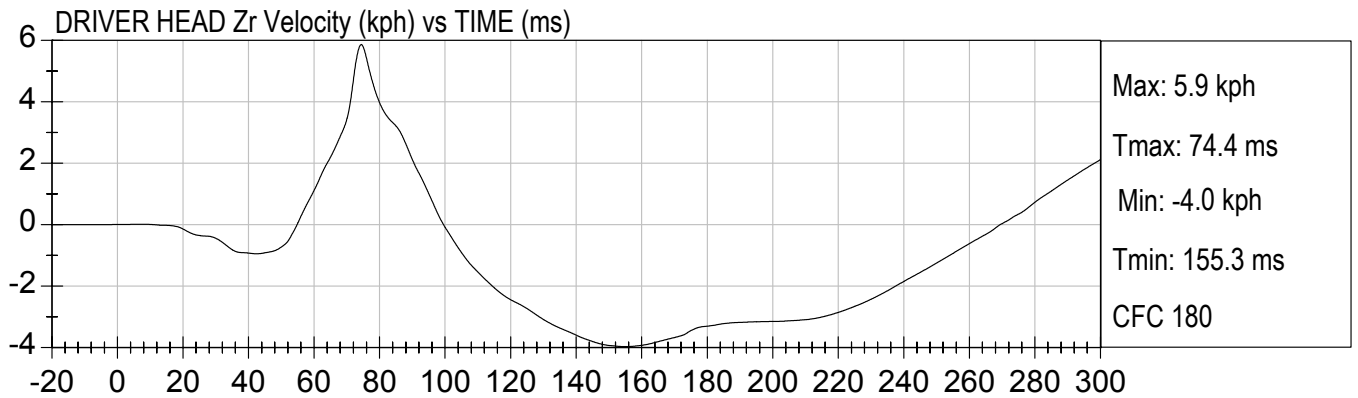
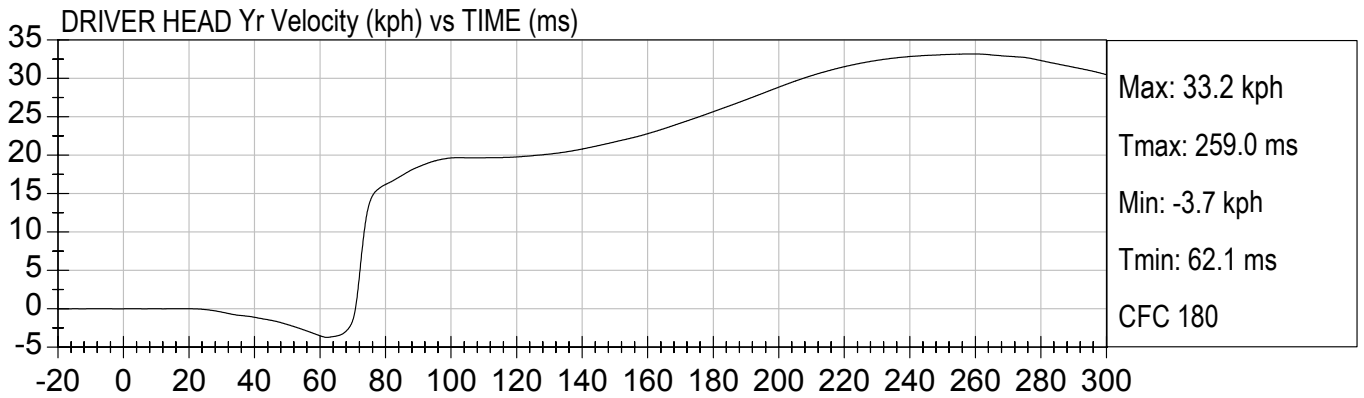
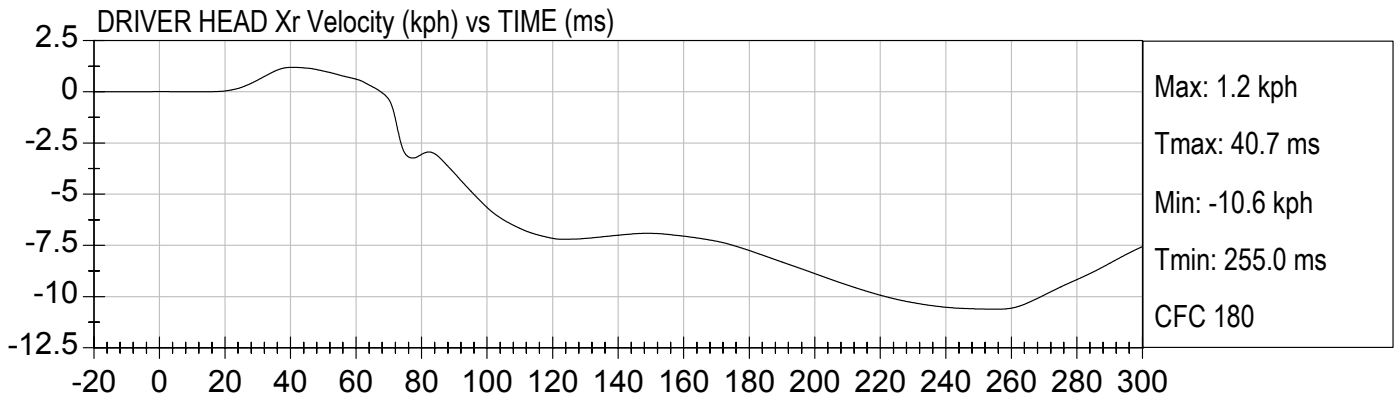


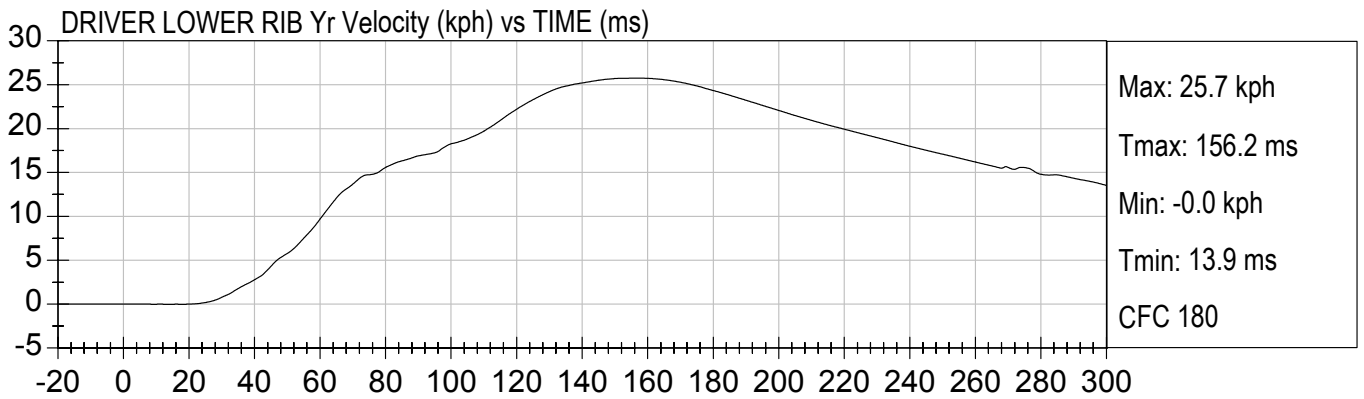
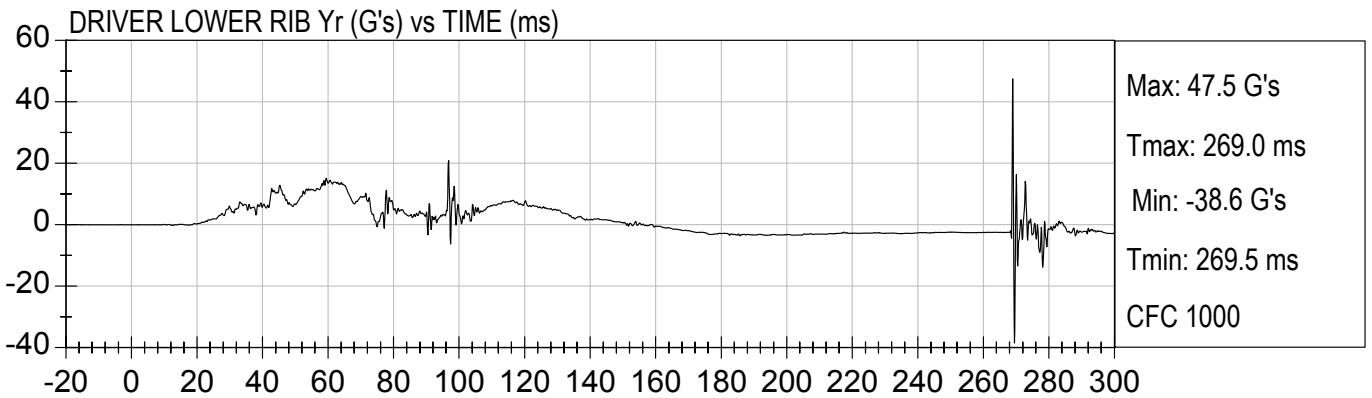
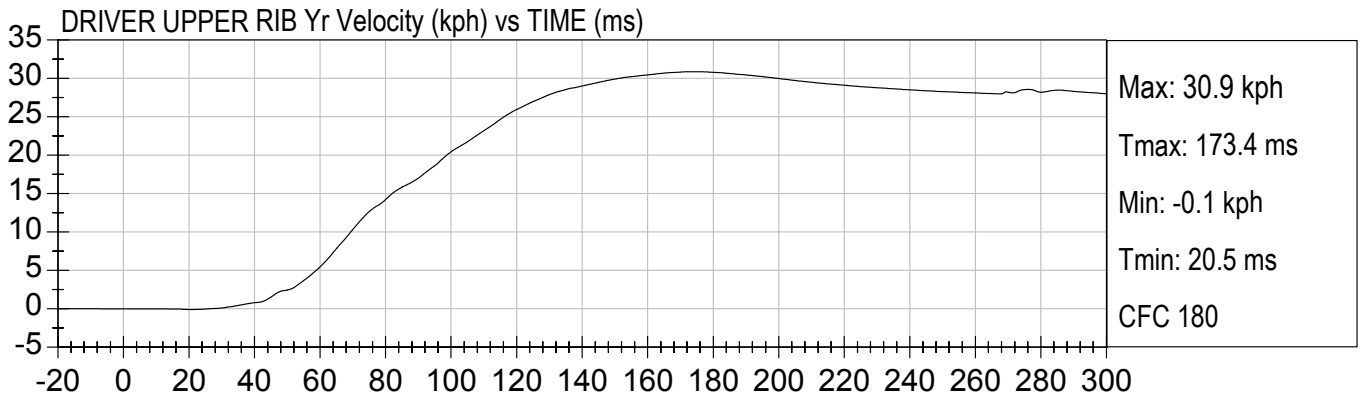
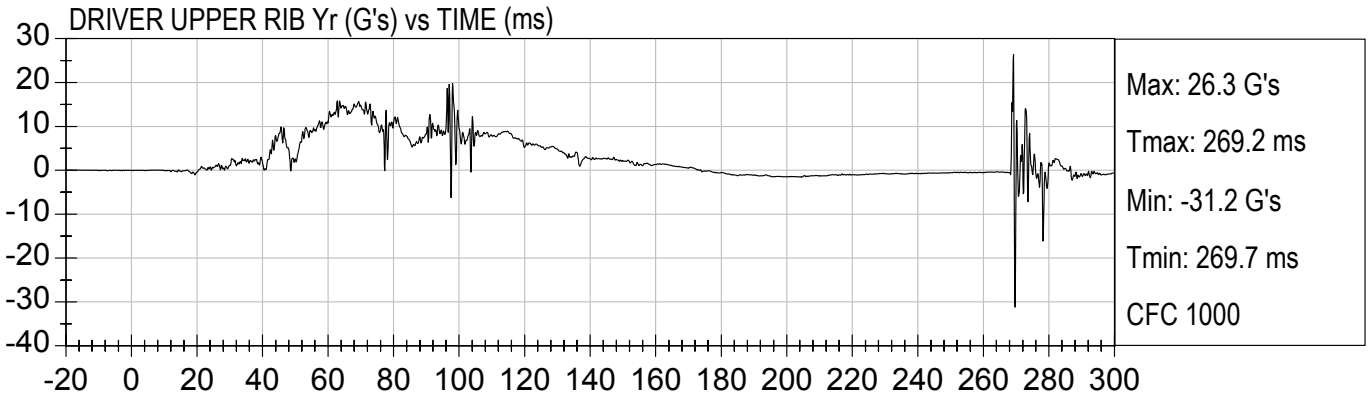
MDB REAR Z Velocity (kph) vs TIME (ms)





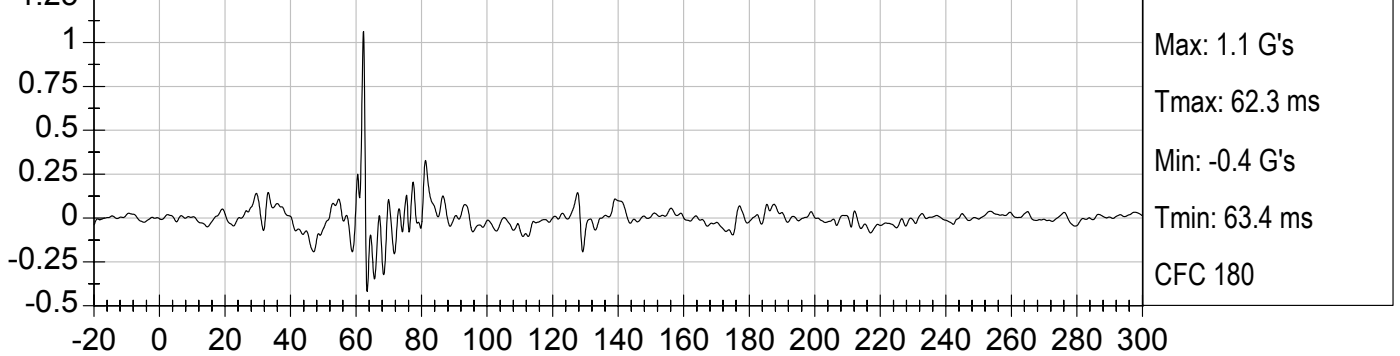




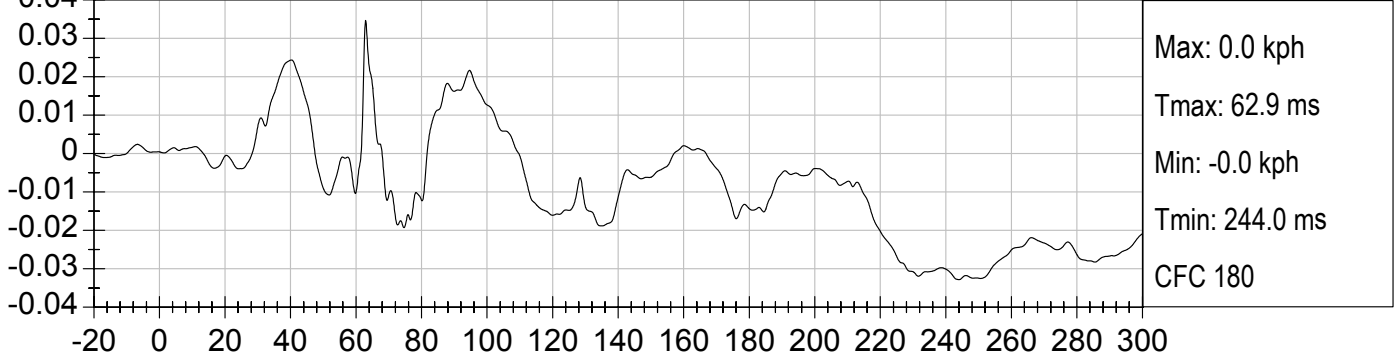




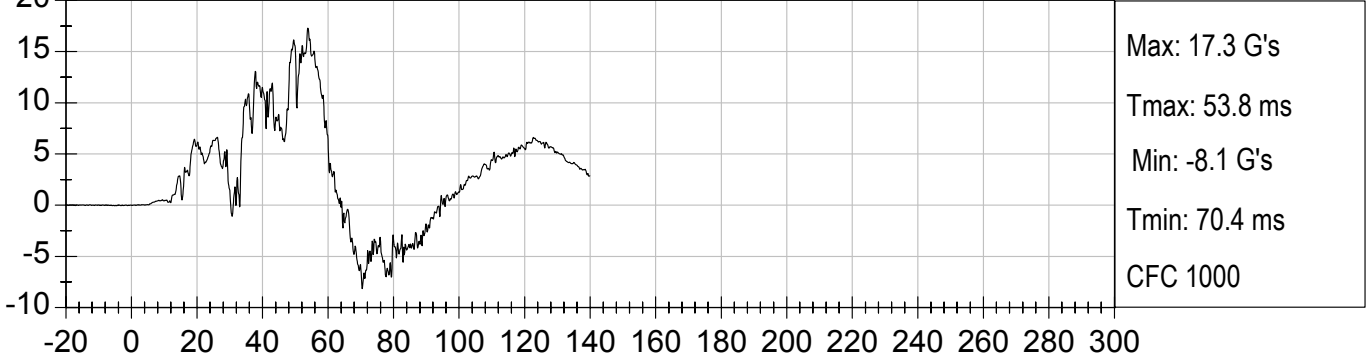
DRIVER LOWER SPINE Yr (G's) vs TIME (ms)



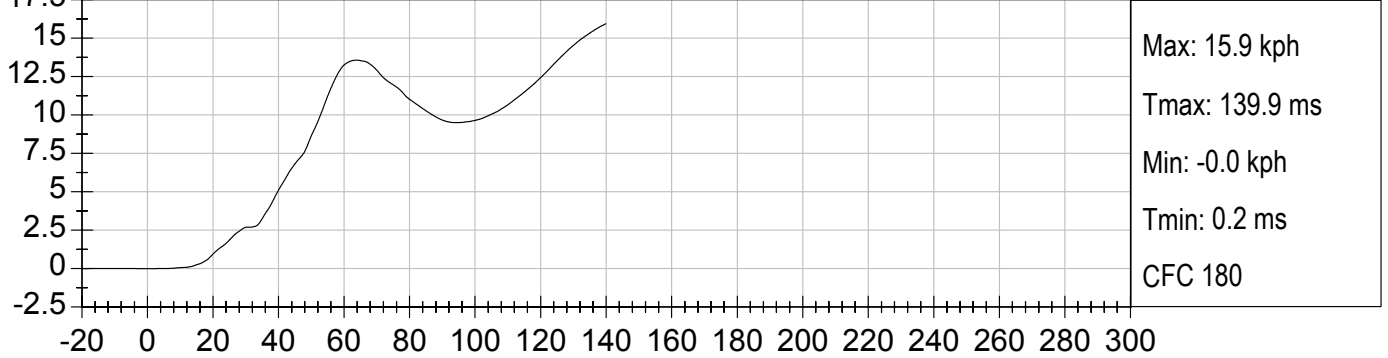
DRIVER LOWER SPINE Yr Velocity (kph) vs TIME (ms)

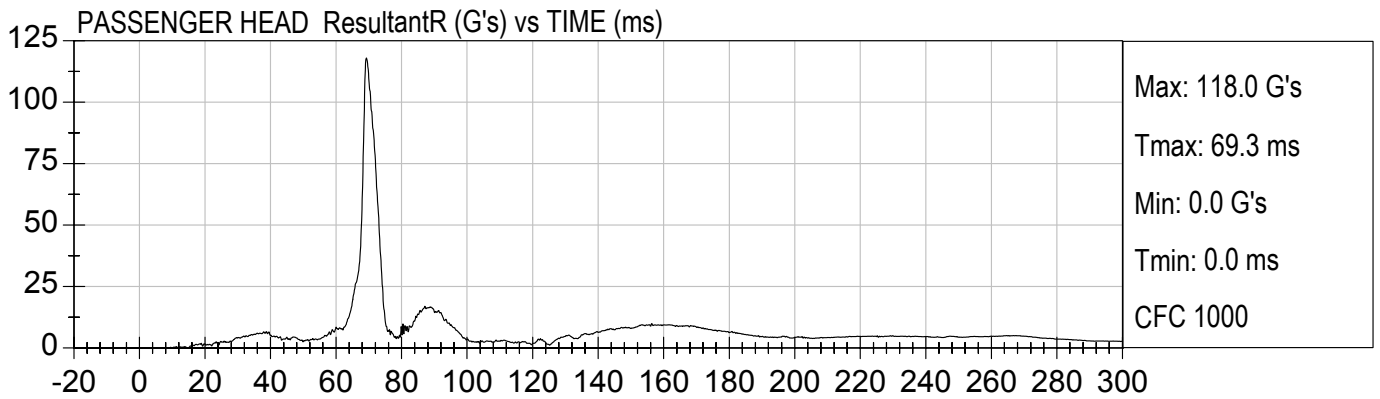
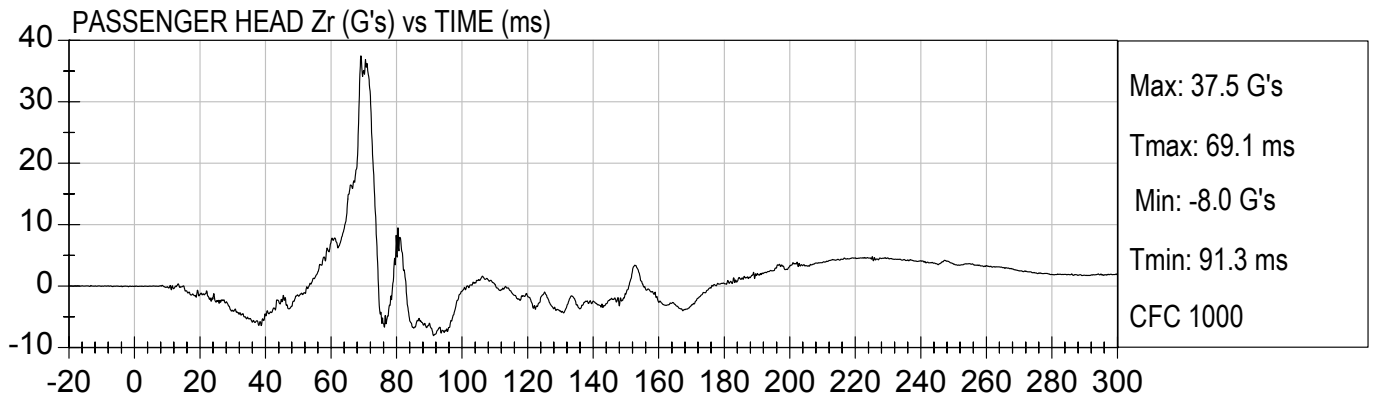
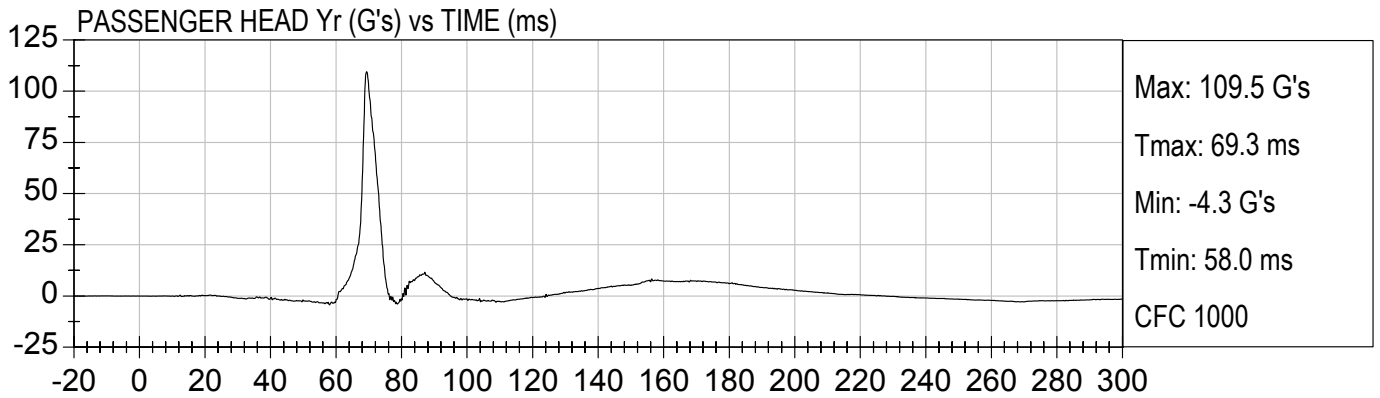
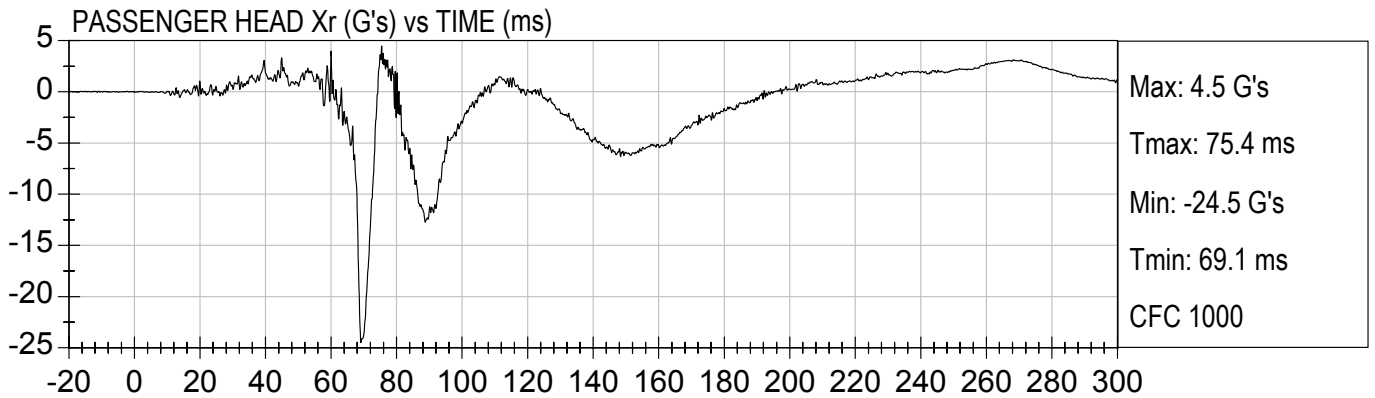


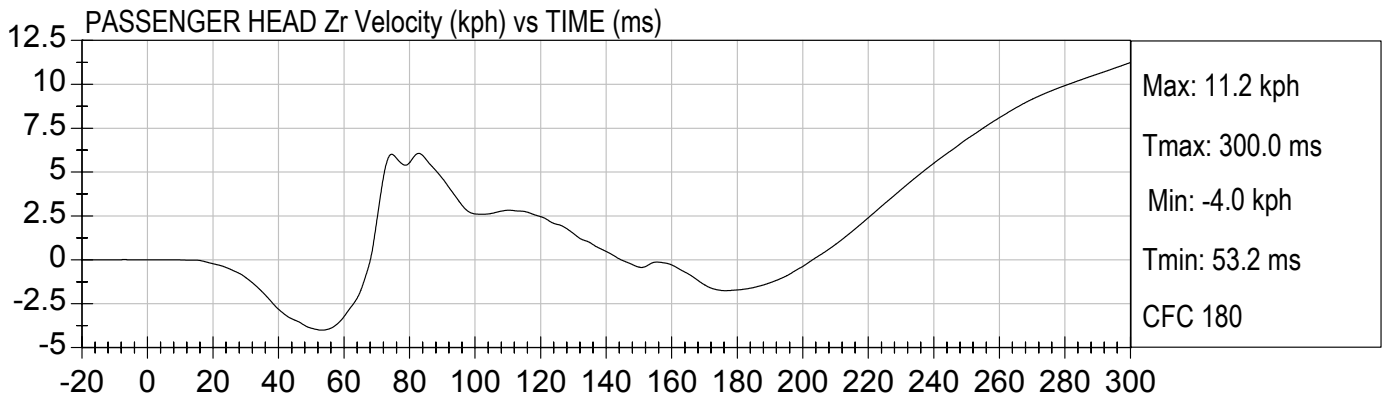
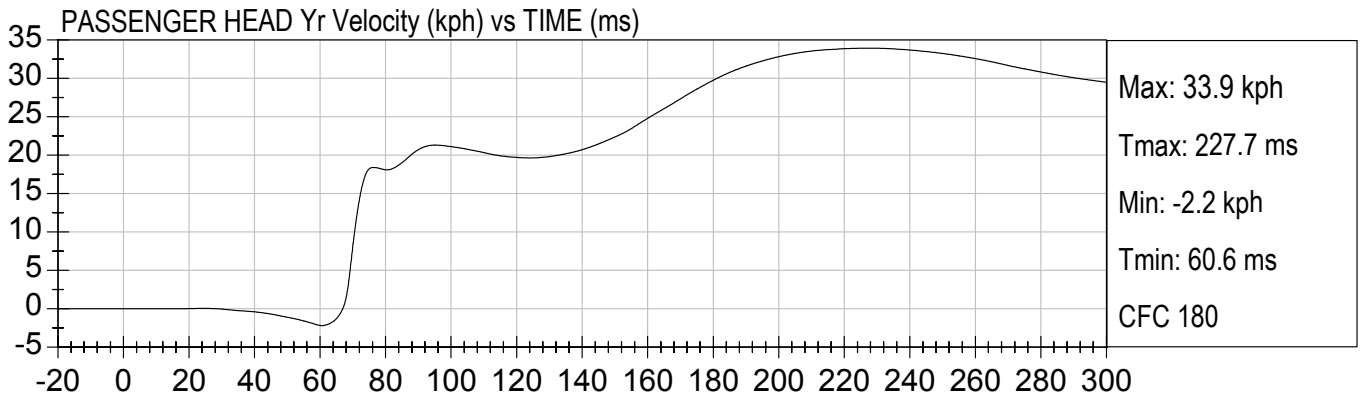
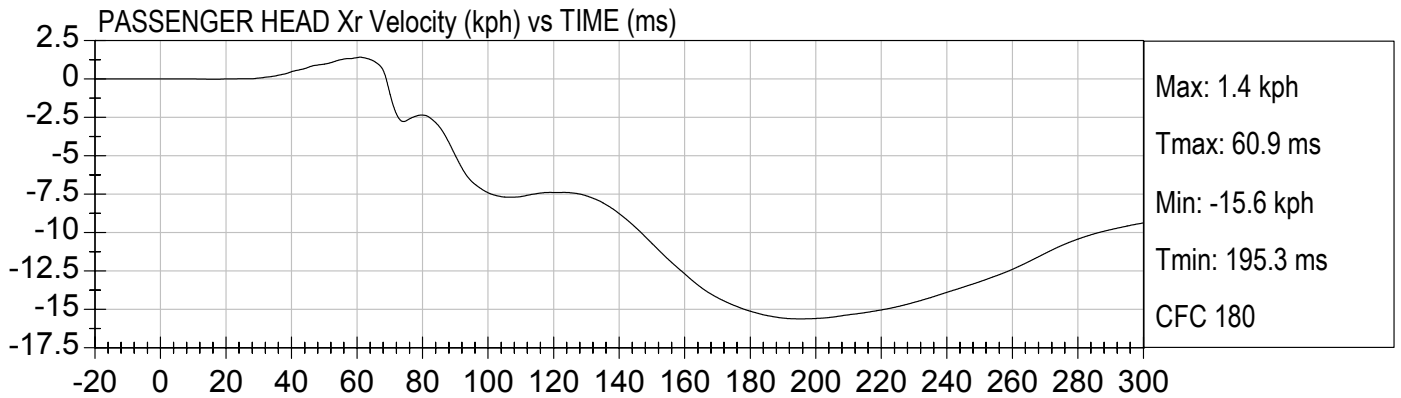
DRIVER PELVIS Yr (G's) vs TIME (ms)

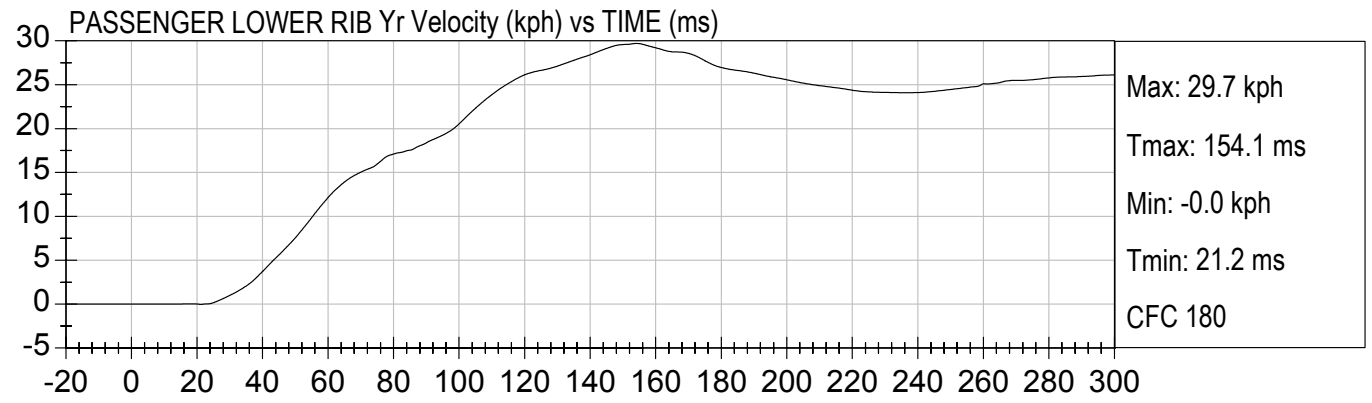
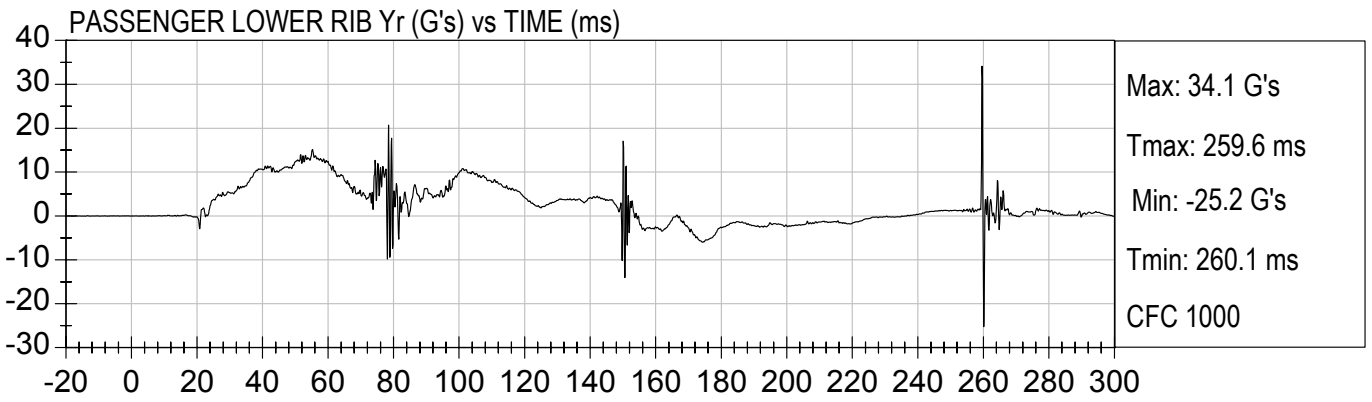
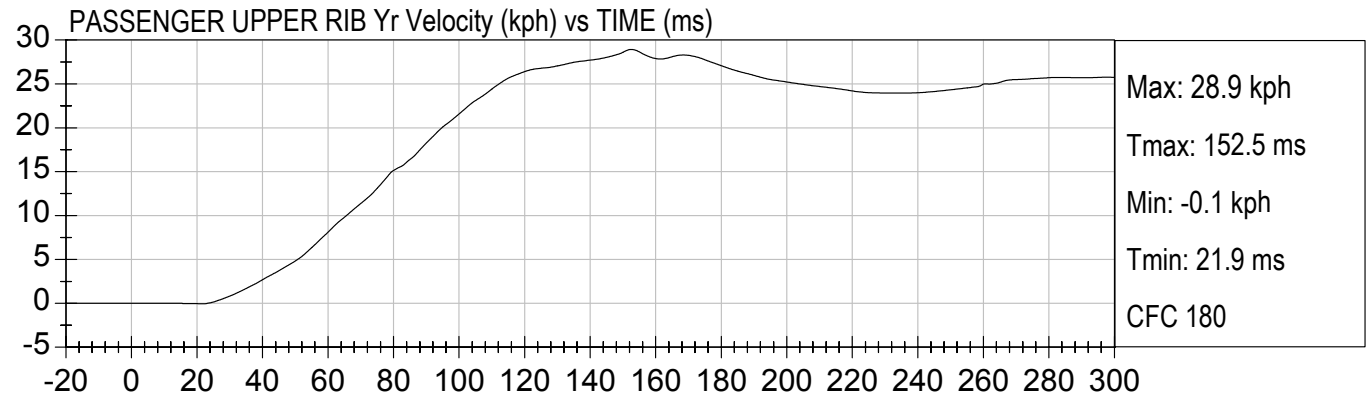
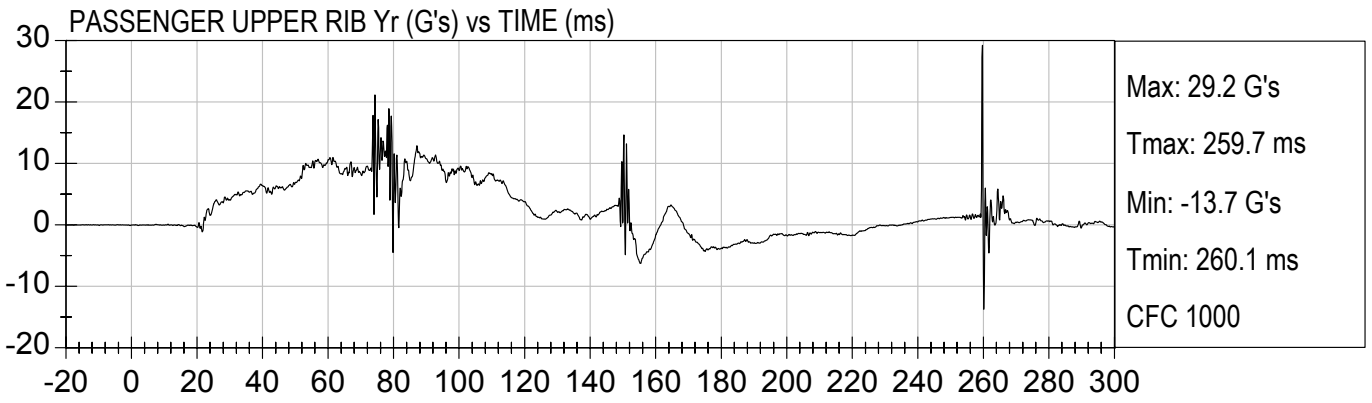


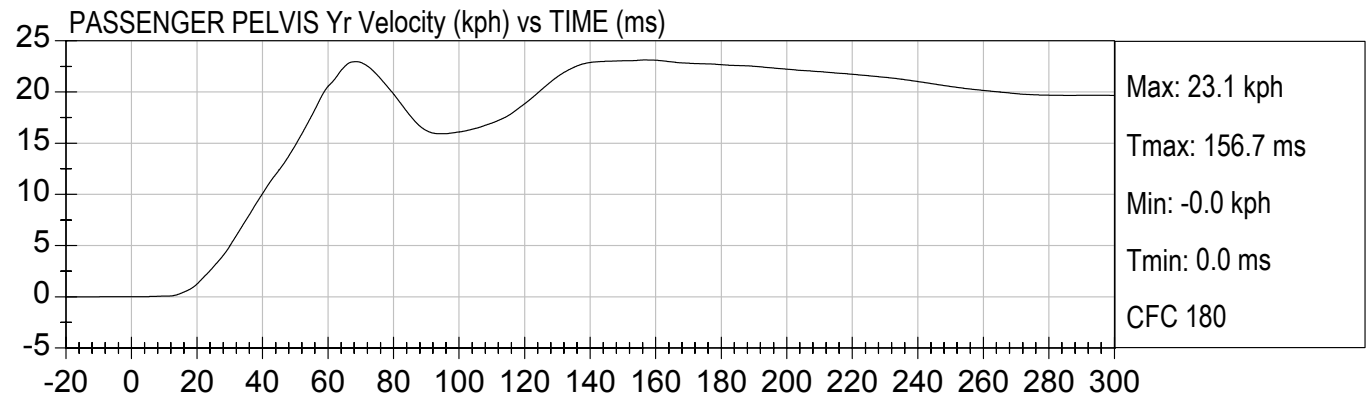
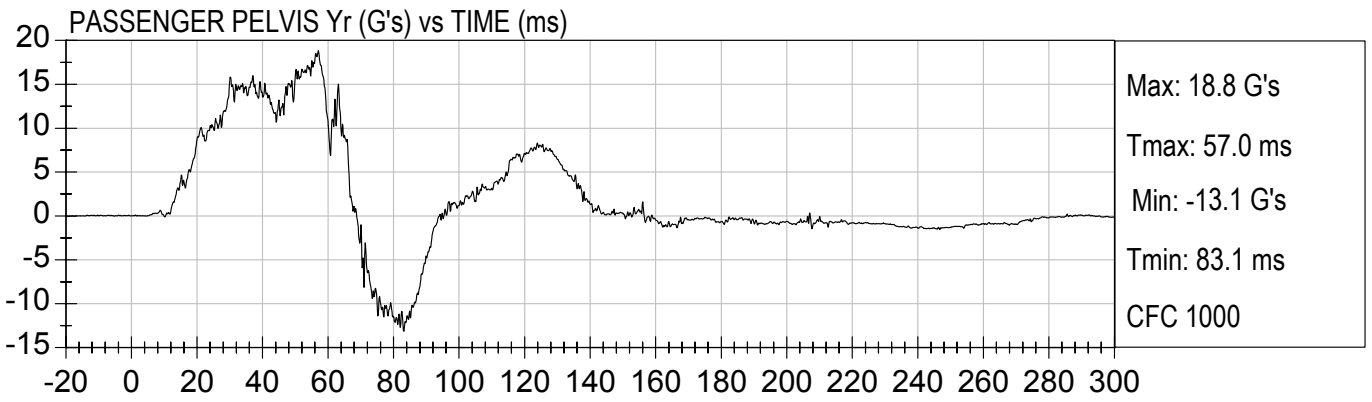
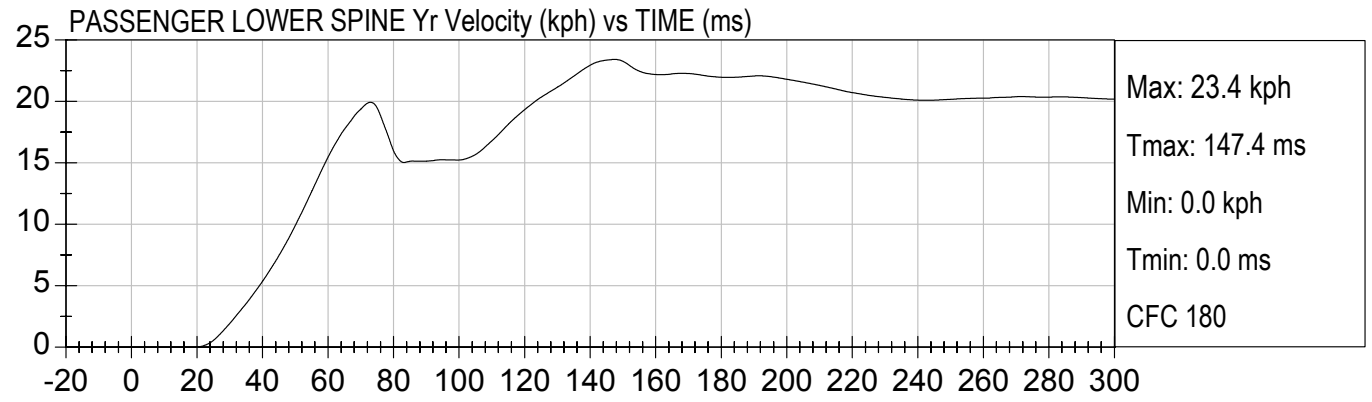
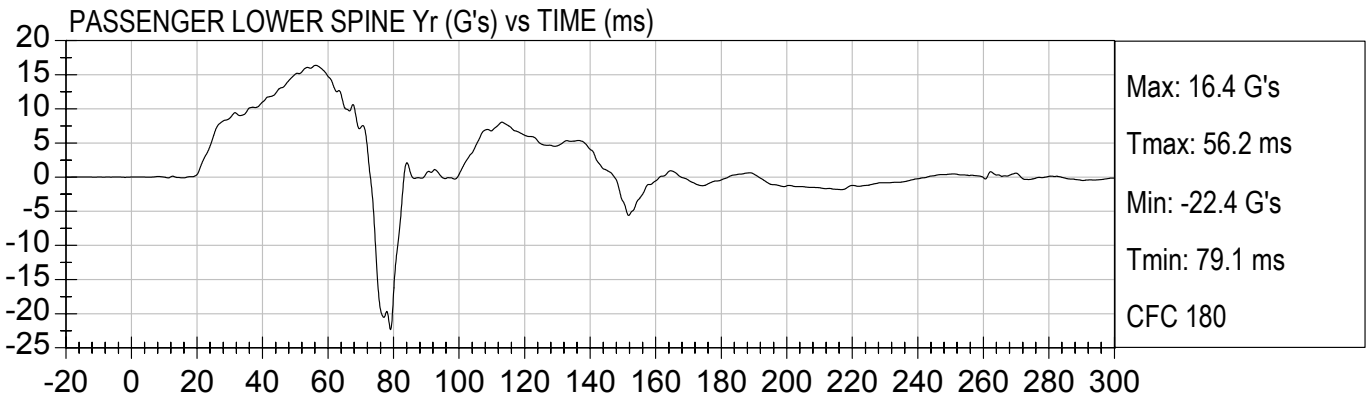
DRIVER PELVIS Yr Velocity (kph) vs TIME (ms)

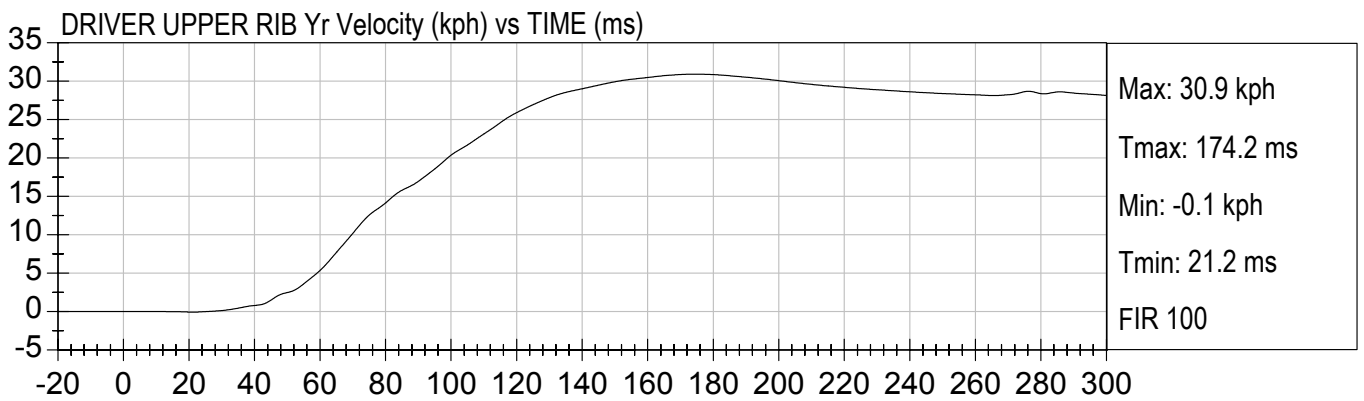
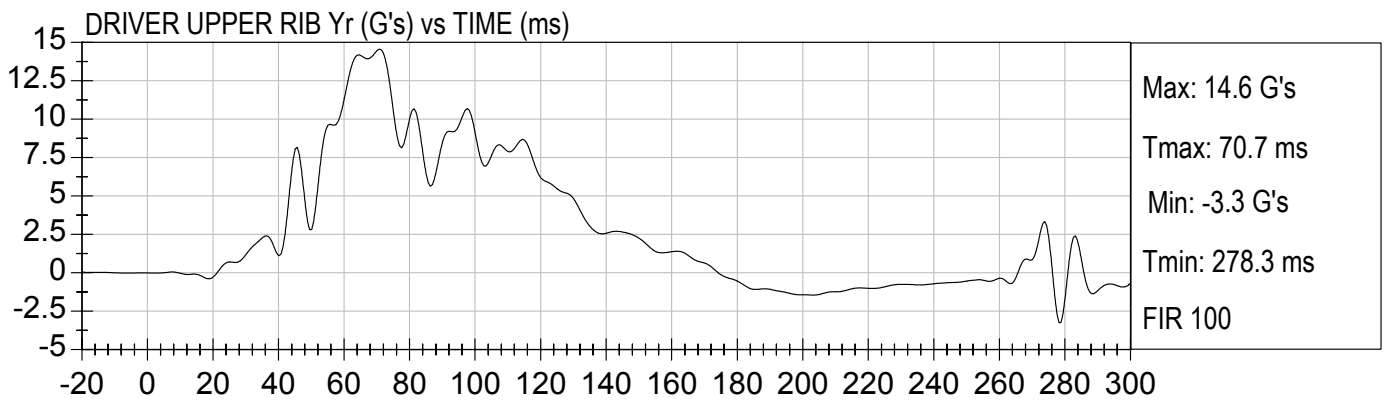
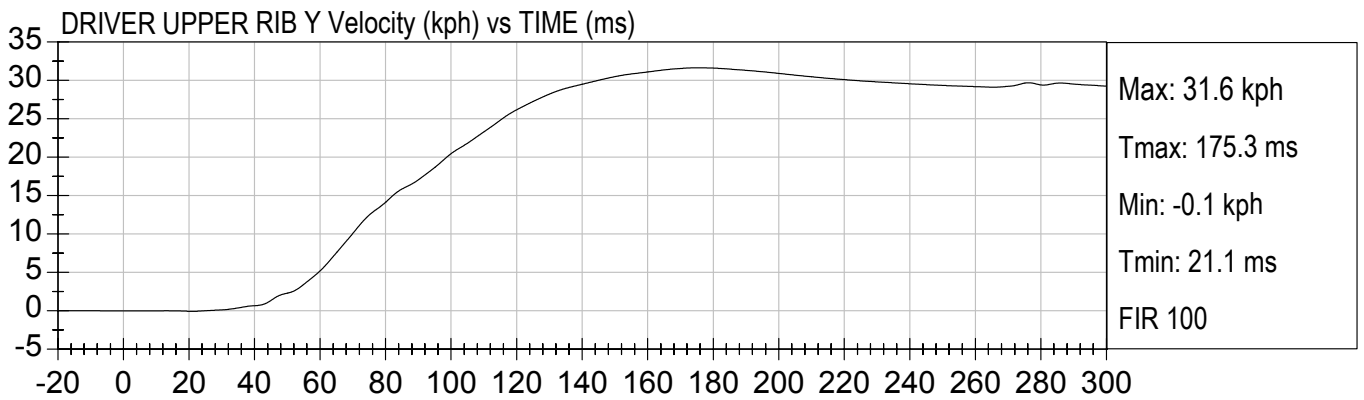
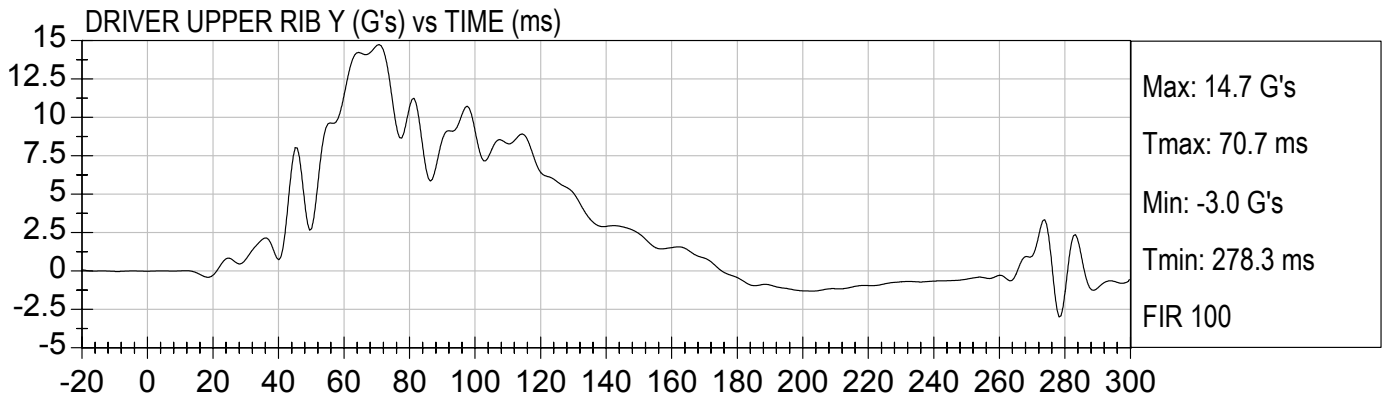






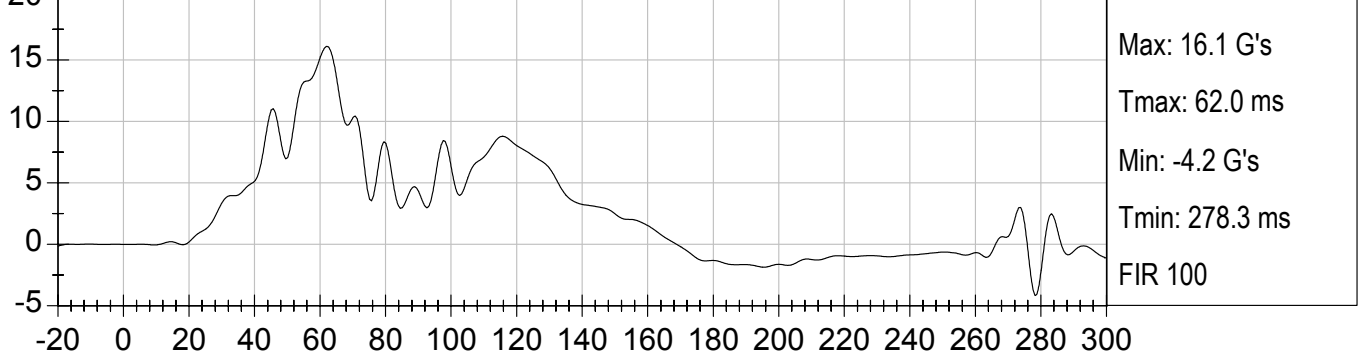




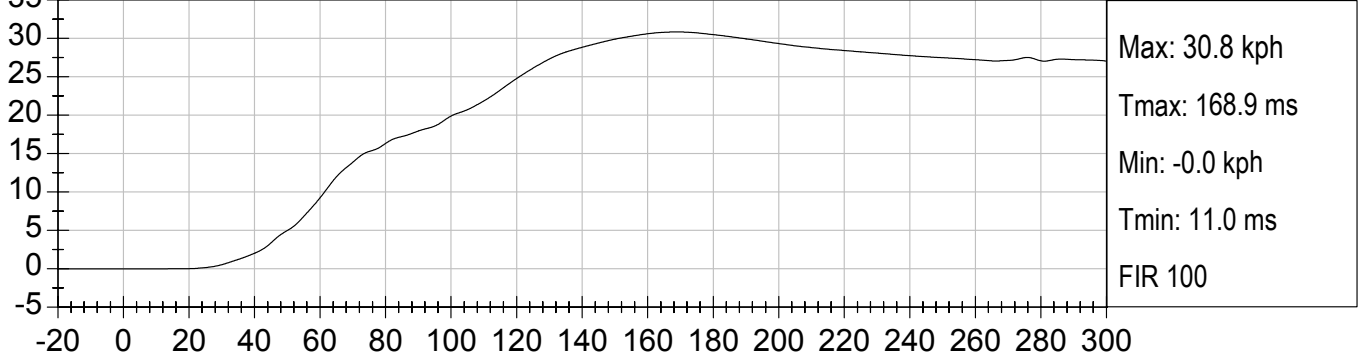




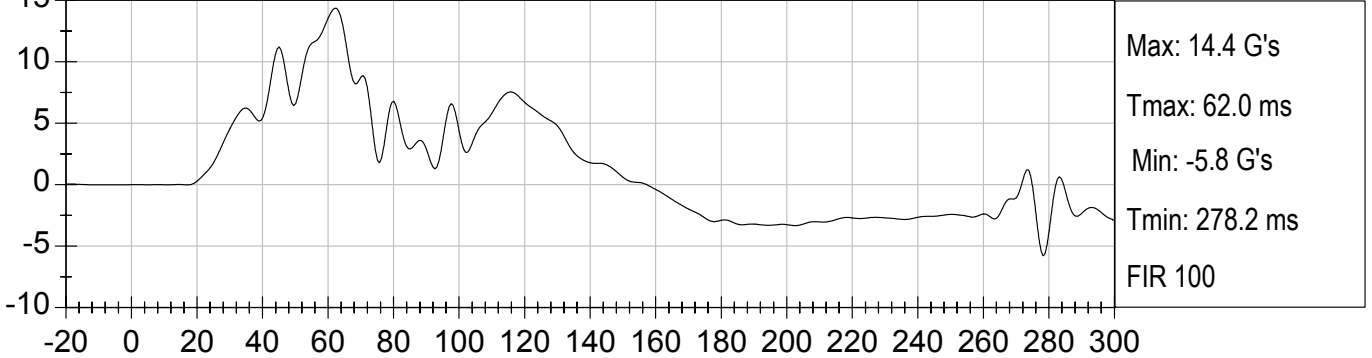
DRIVER LOWER RIB Y (G's) vs TIME (ms)



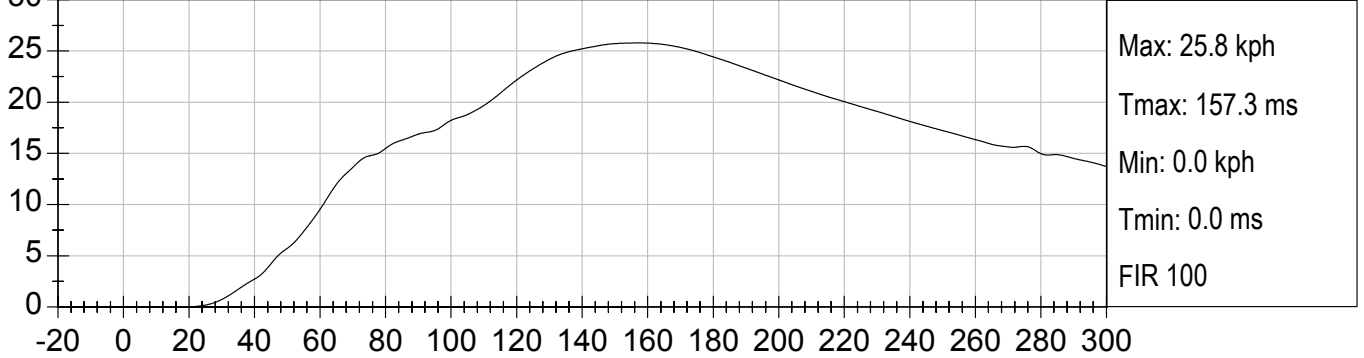
DRIVER LOWER RIB Y Velocity (kph) vs TIME (ms)

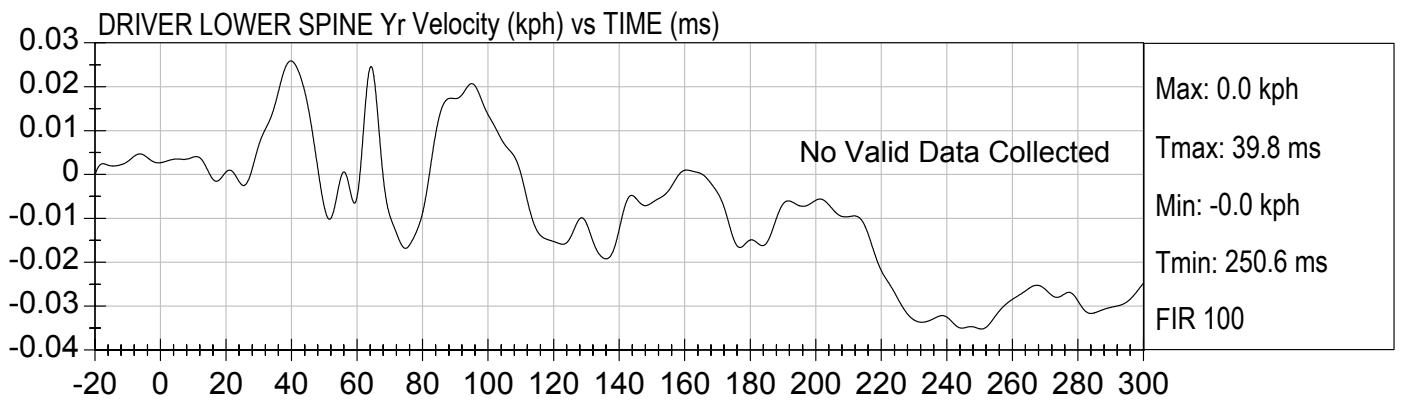
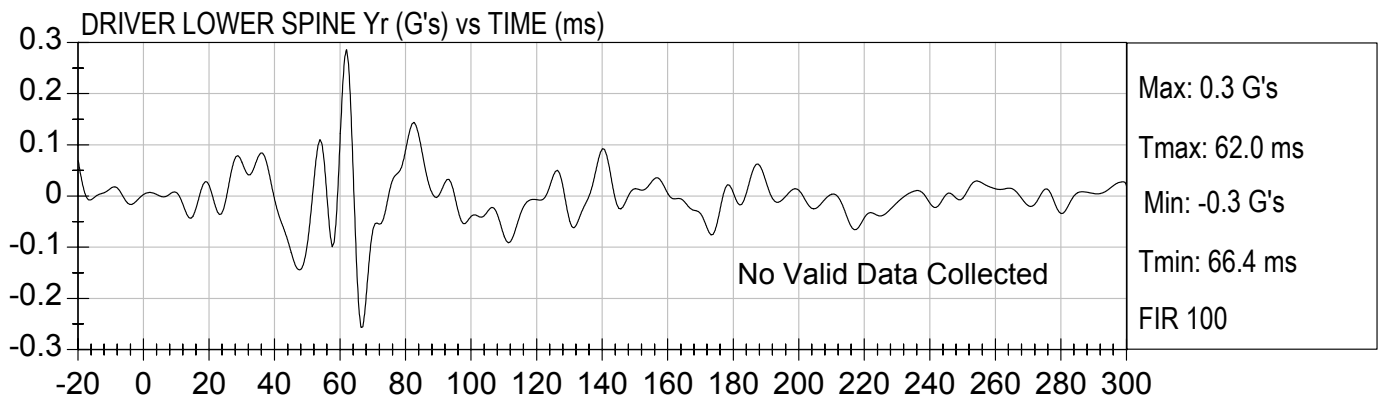
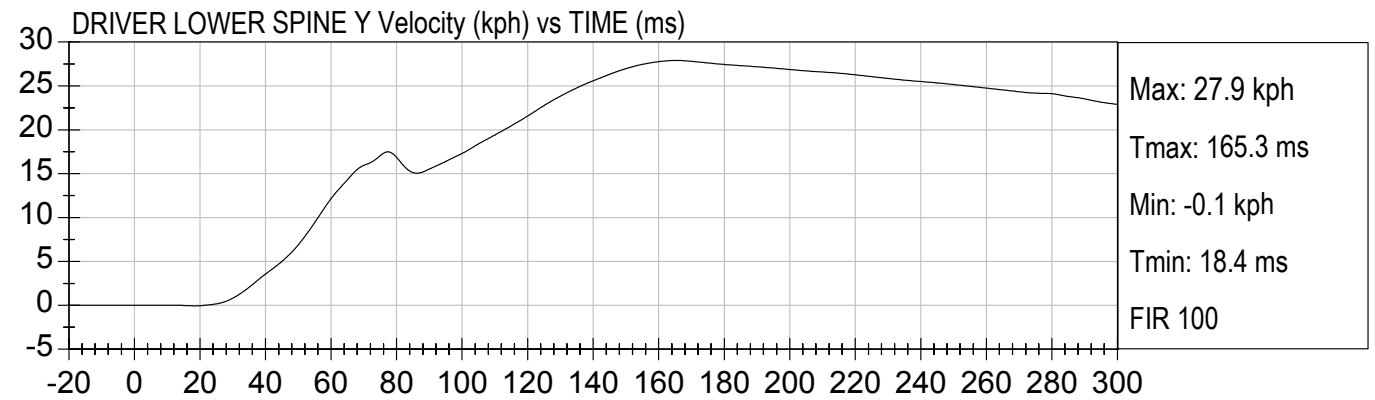
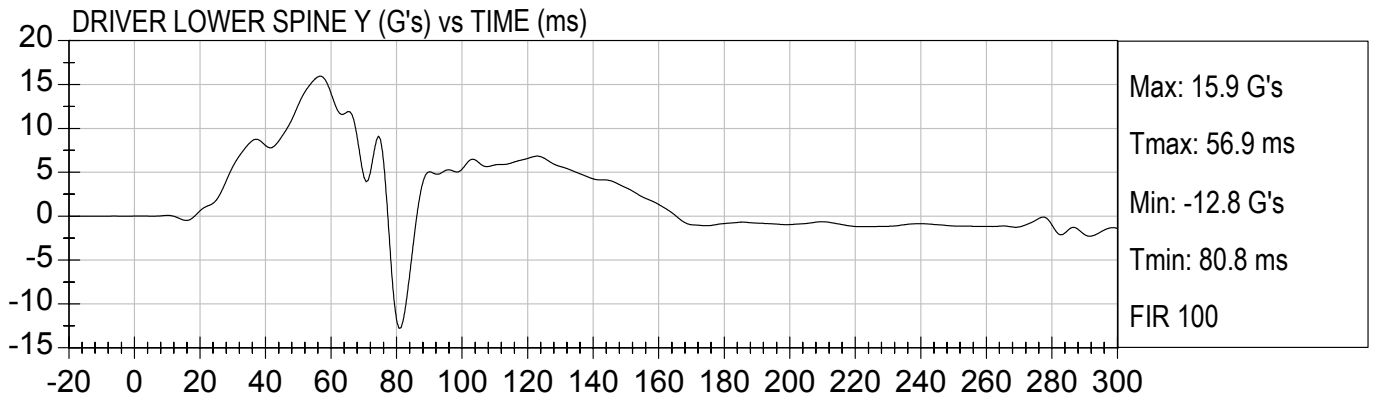


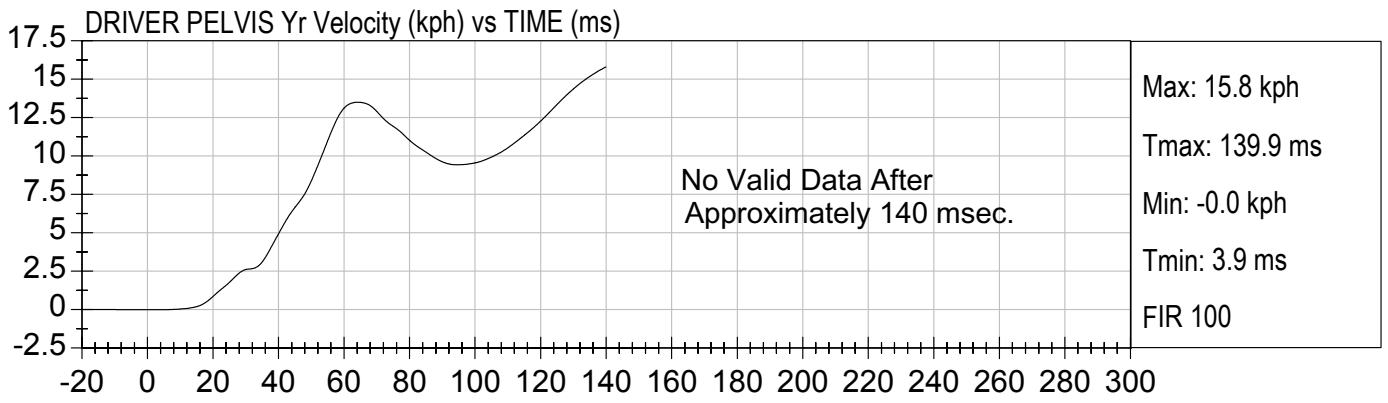
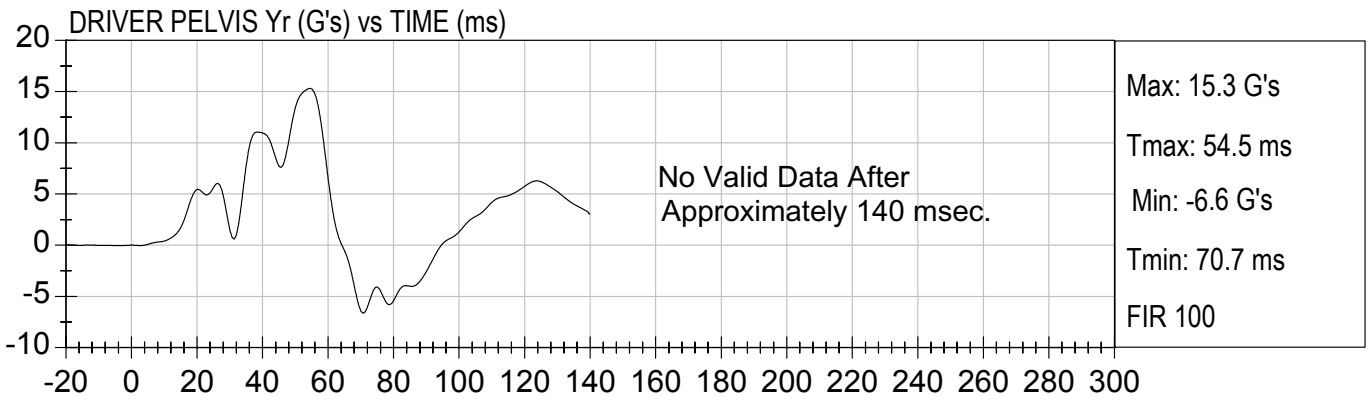
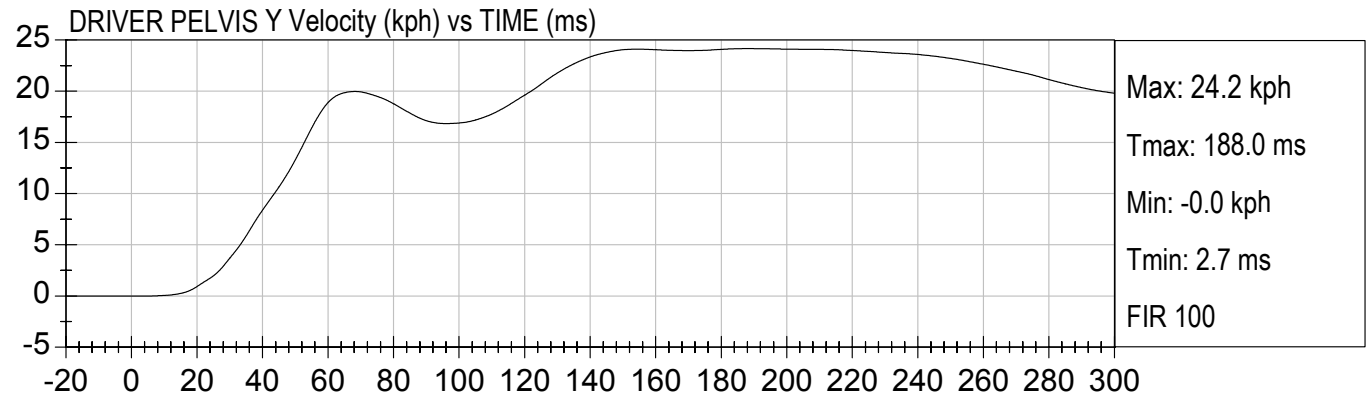
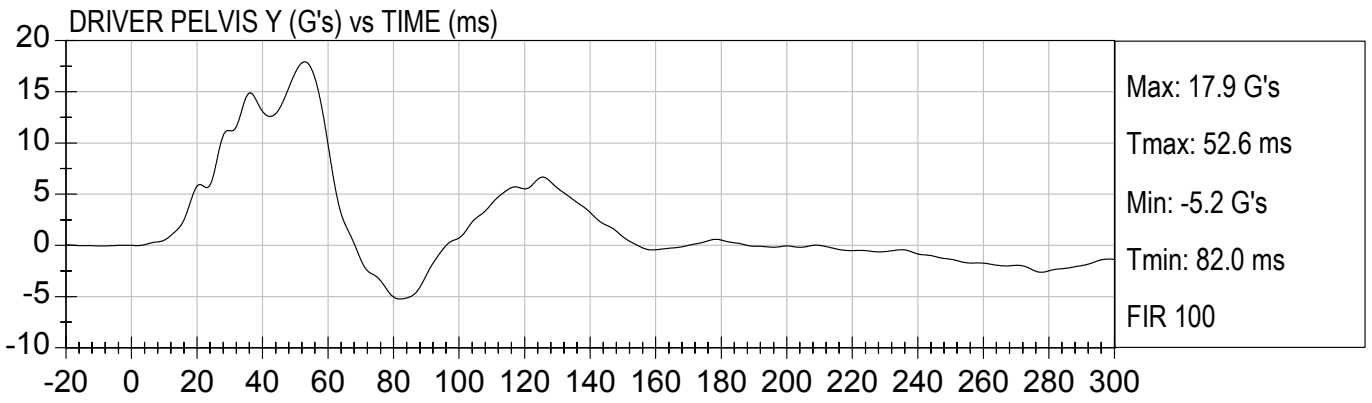
DRIVER LOWER RIB Yr (G's) vs TIME (ms)

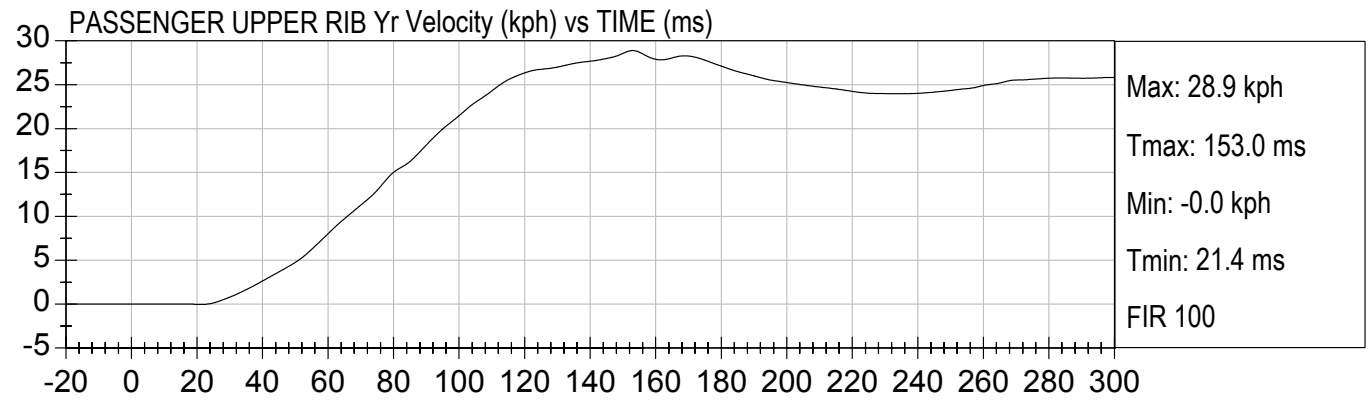
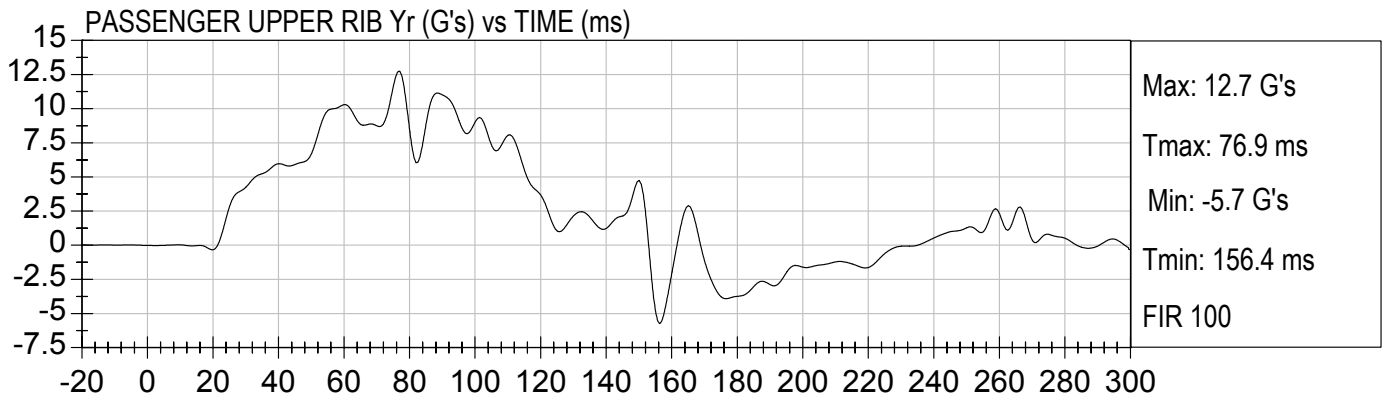
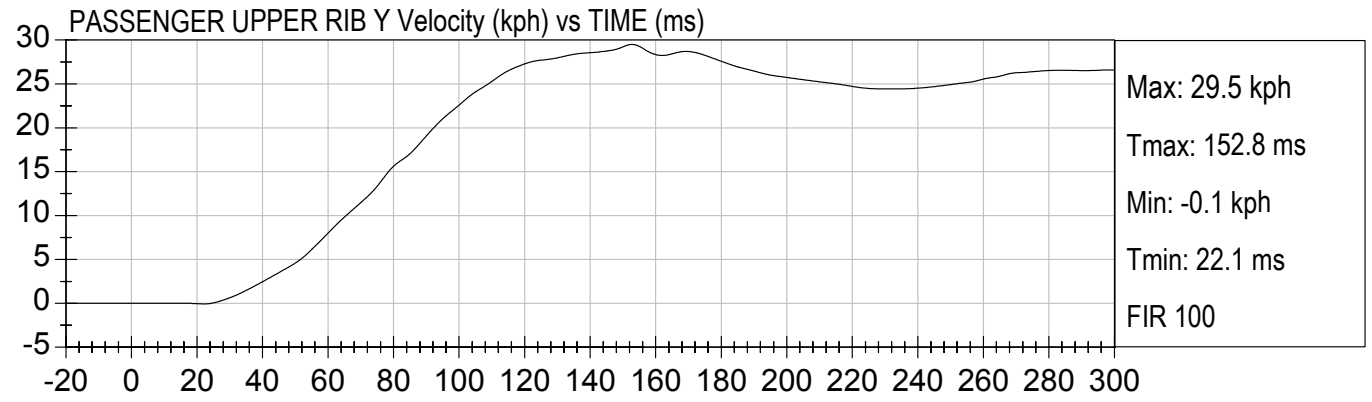
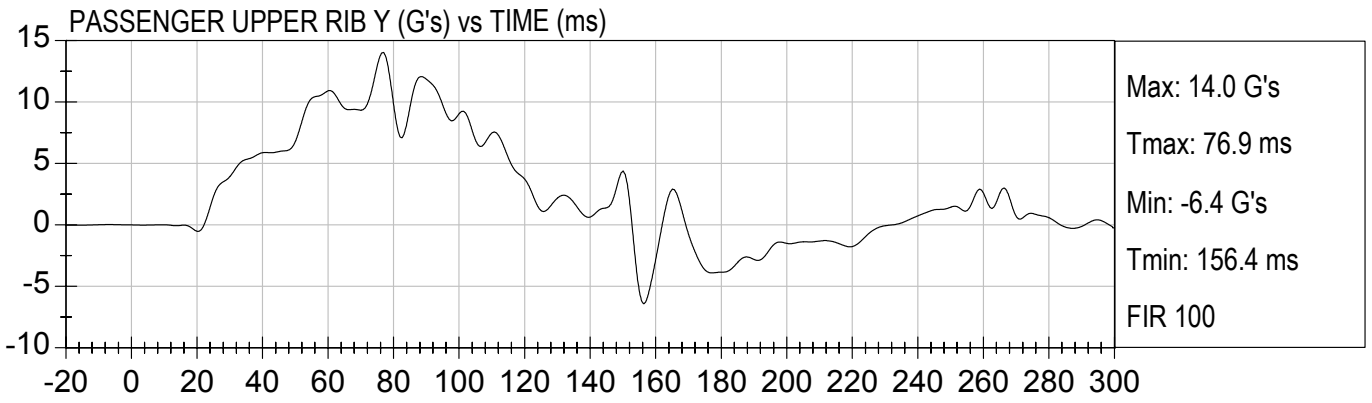


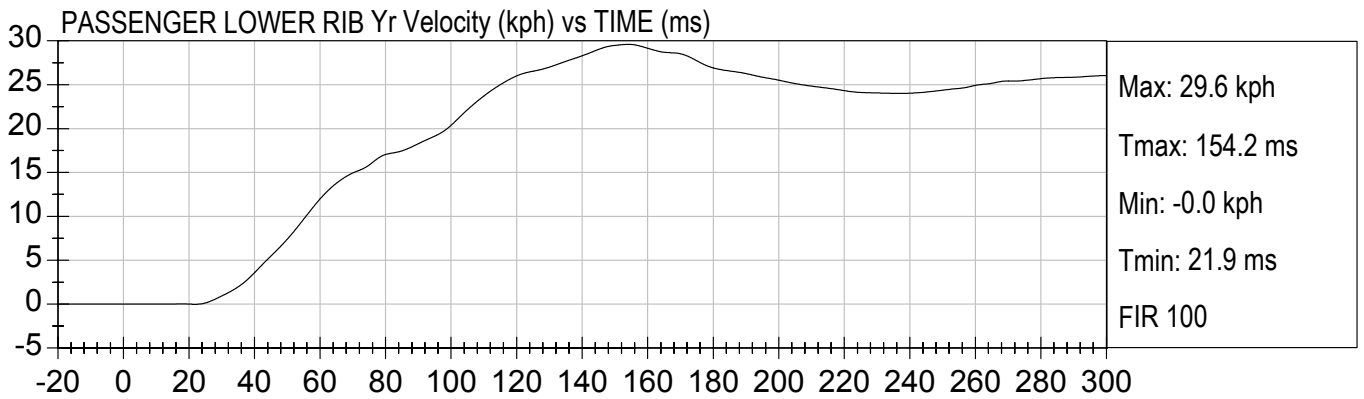
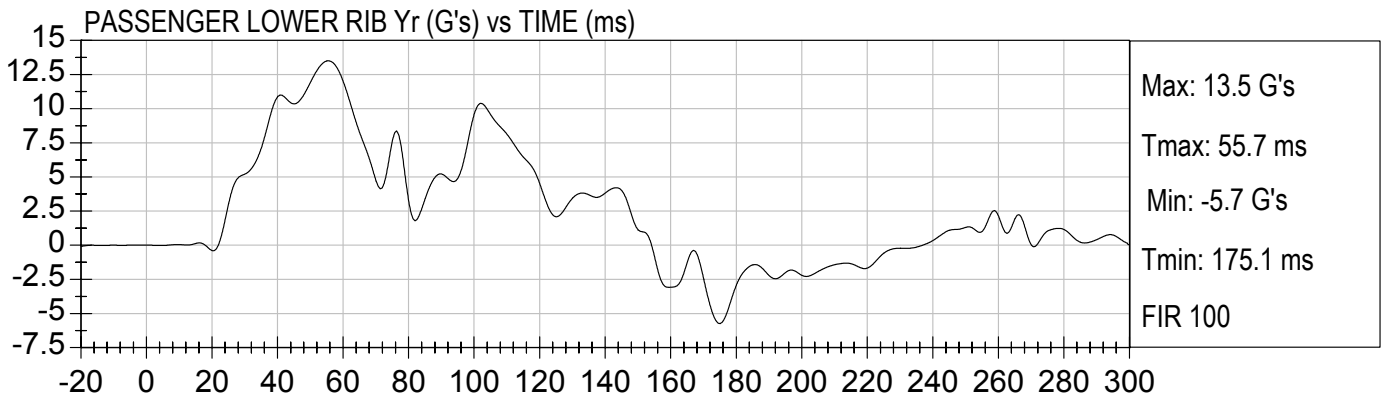
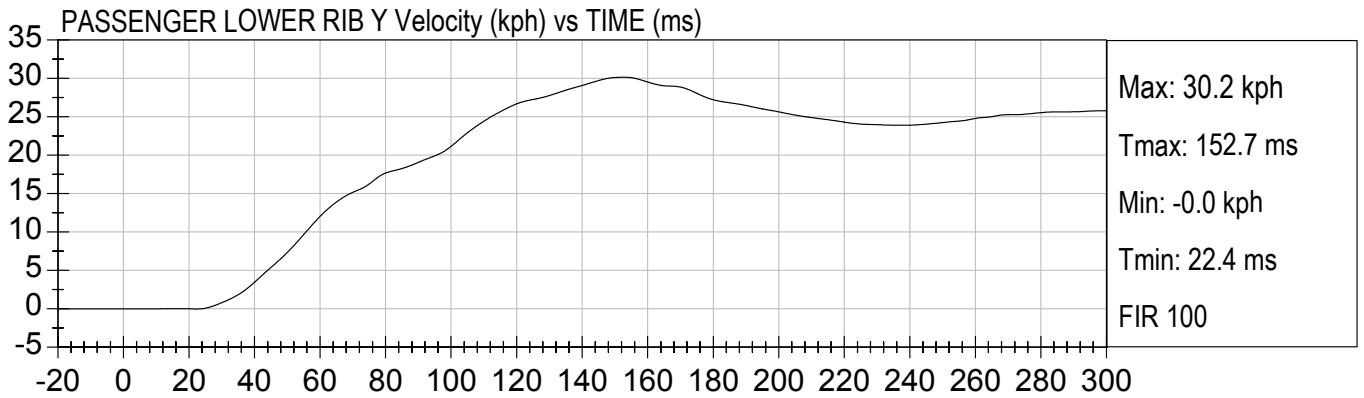
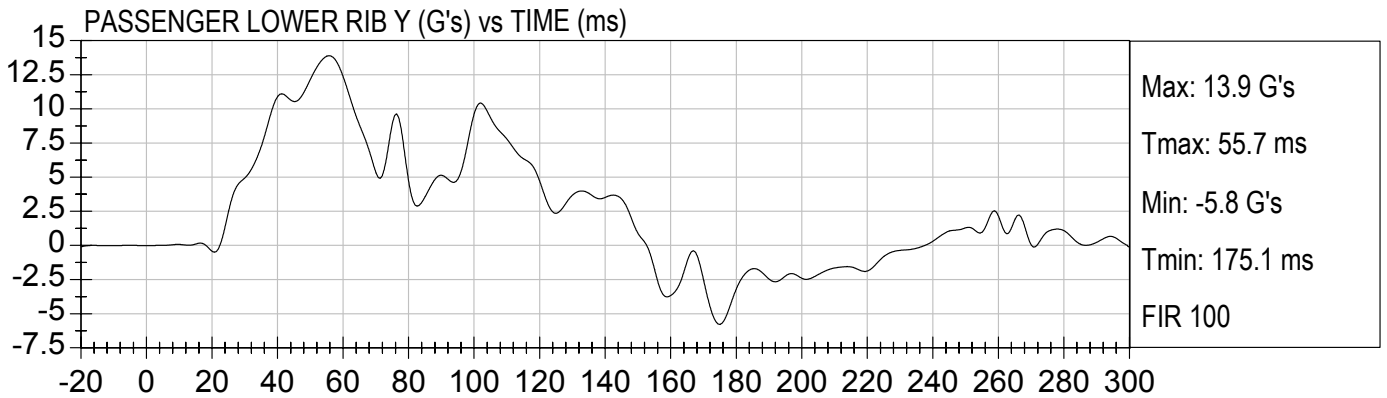
DRIVER LOWER RIB Yr Velocity (kph) vs TIME (ms)

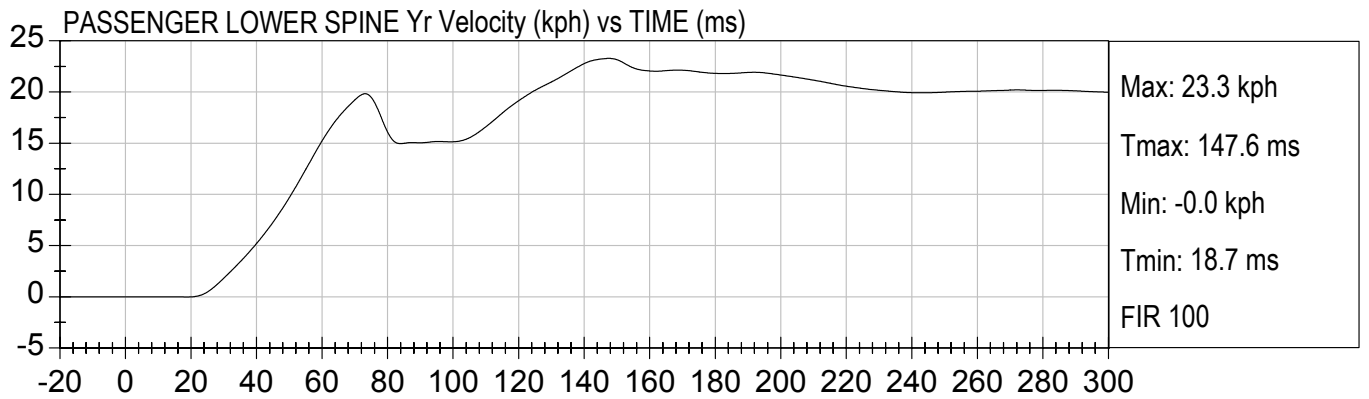
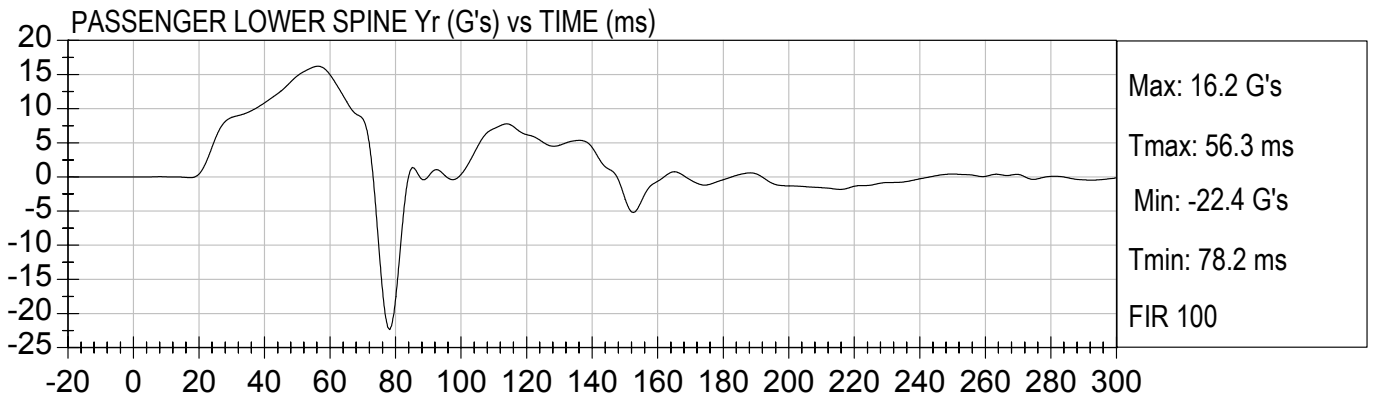
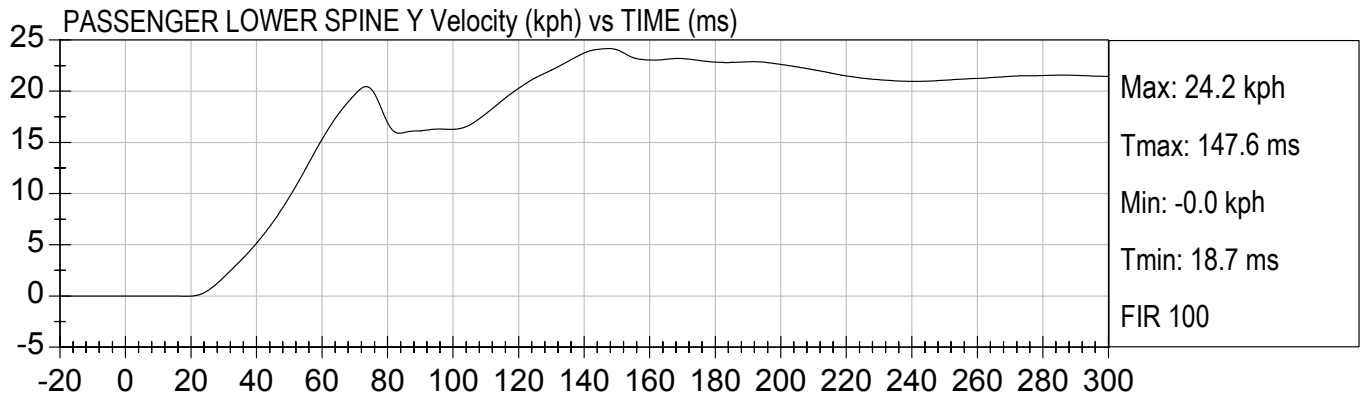
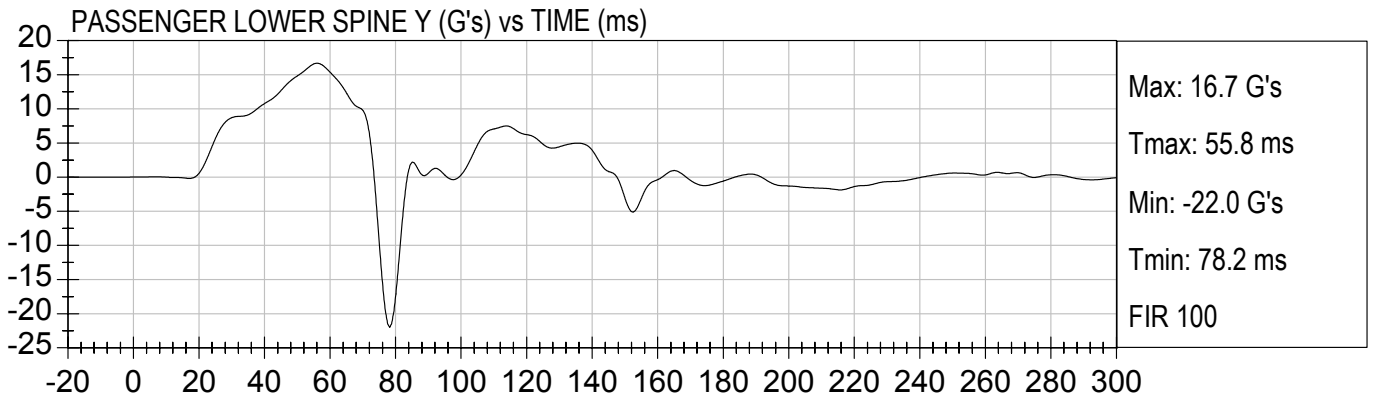


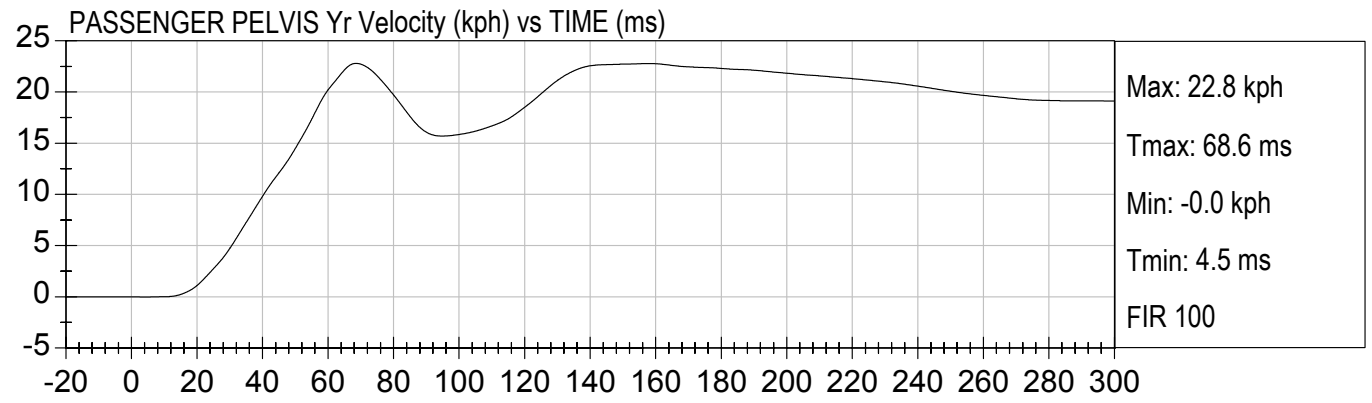
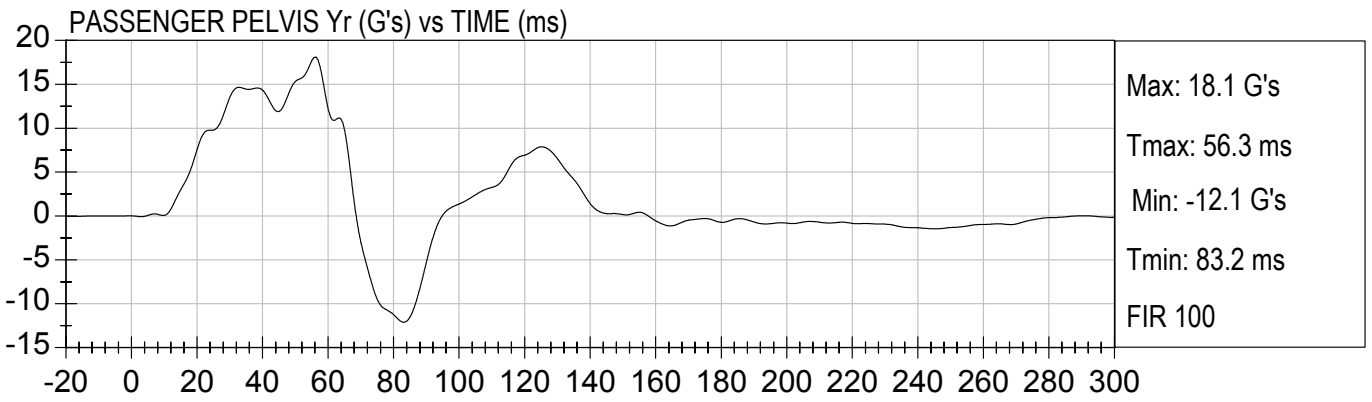
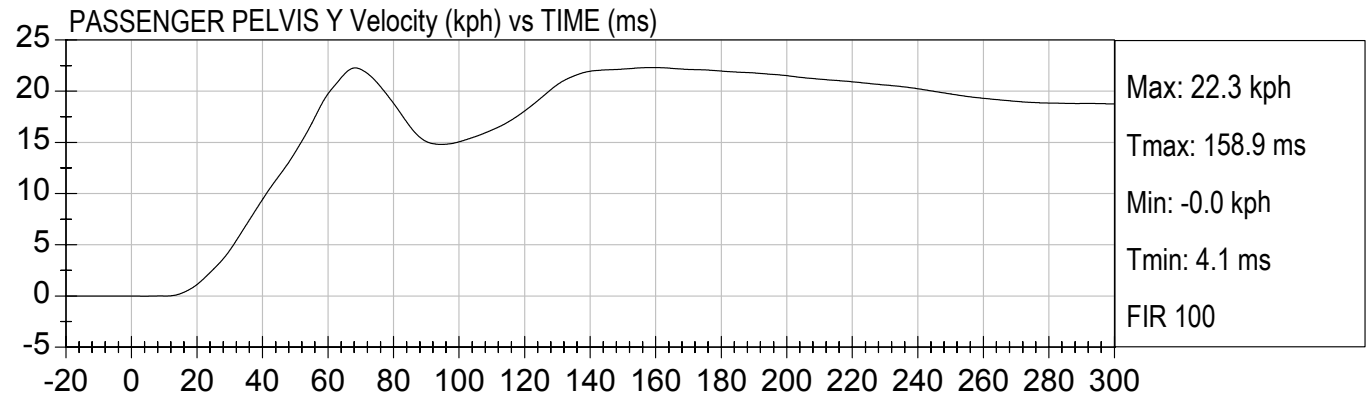
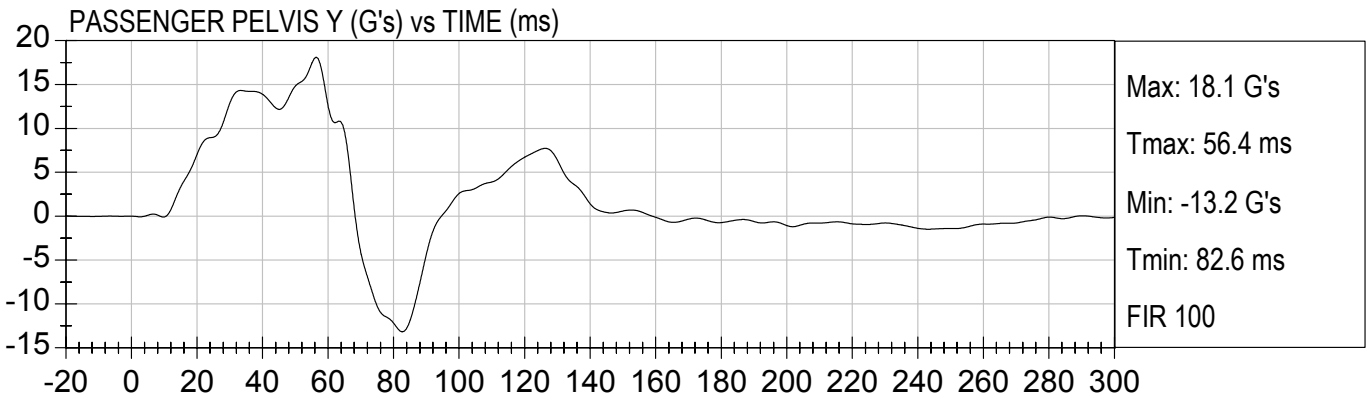












APPENDIX C

SID/HIII CONFIGURATION AND PERFORMANCE VERIFICATION DATA

CERTIFICATION DATA

Dummy Serial Number: 271

Calibration Test Results Summary

Dummy Serial Number: 271

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 271

Test I.D.: D0503

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	905	Pass
RH - Rib Height	mm	501 - 521	502	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	239	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	526	Pass
SW - Knee Pivot to Floor	mm	490 - 505	497	Pass
HW - Hip Width	mm	356 - 391	371	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

1/6/2005
 Test Date

David Winkelbauer
 Approved By

SID Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 271

Test I.D: D05031

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Peak Resultant Acceleration	G's	120 to 150	128	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	10	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

01/06/2005
Test Date

David Winkelbauer
Approved By

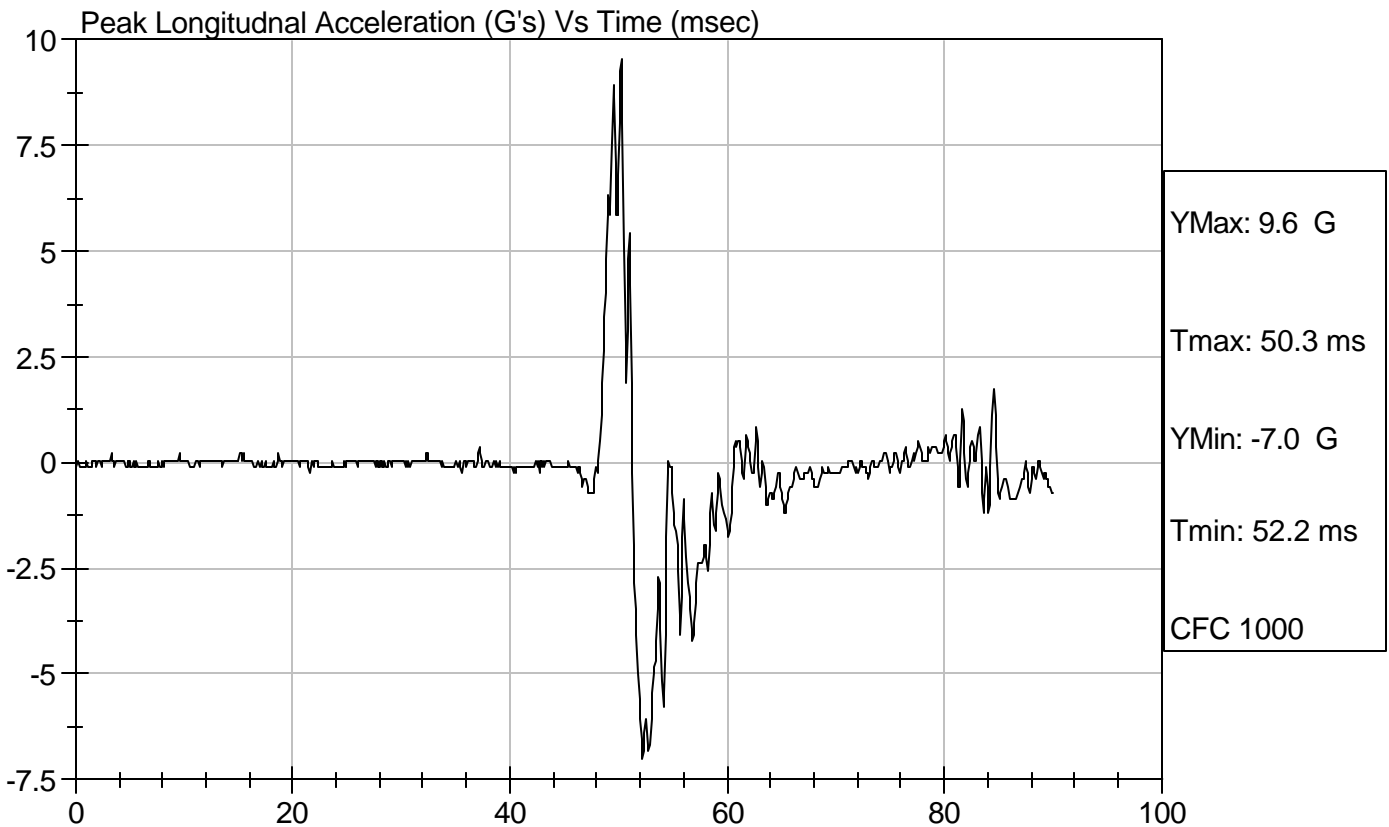
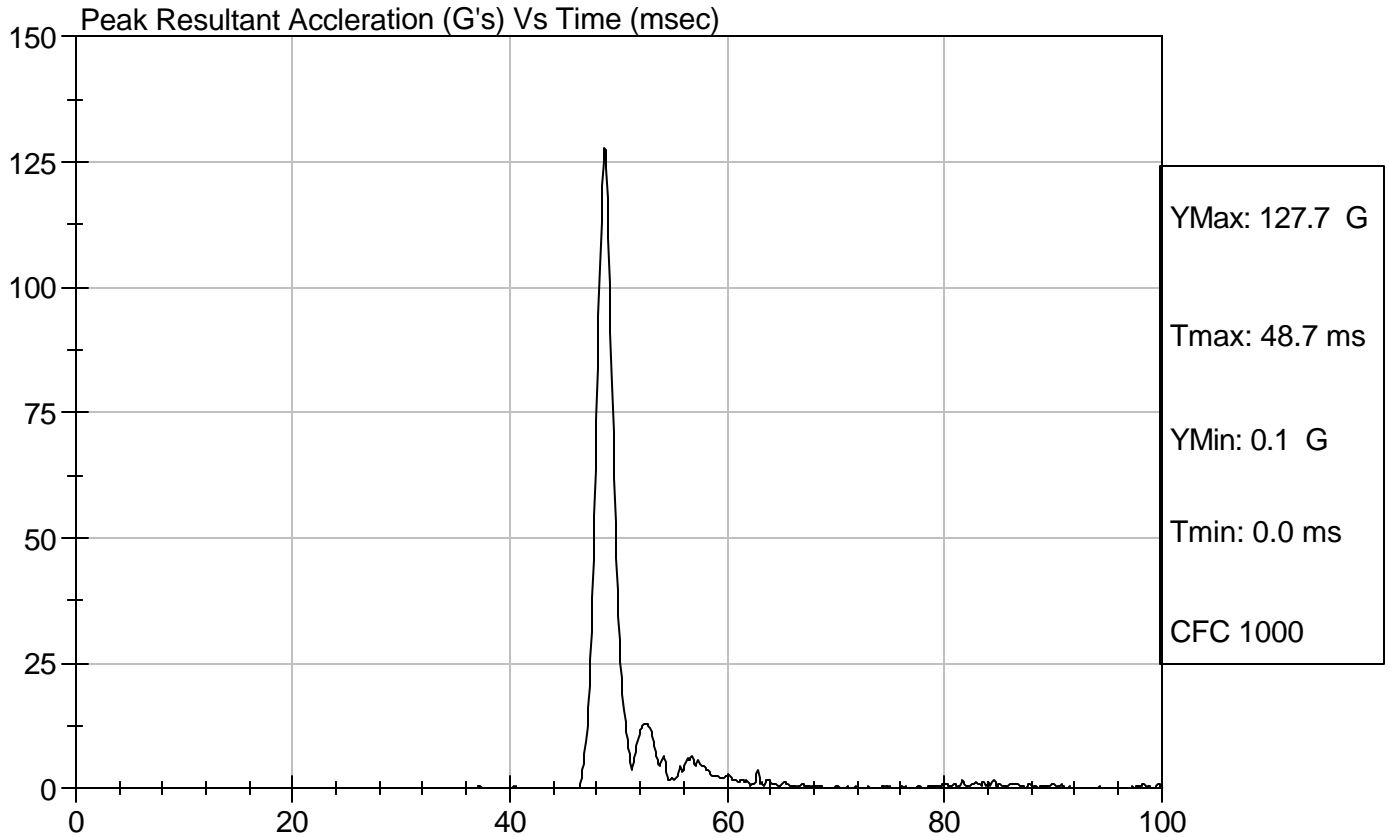


Test Description: Head Drop

Test Date: 01/06/2005

Component: D05031

Speed: 0 ft/s, 0.00 m/s



SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 271

Test I.D.: D05032

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Upper Rib	G's	37 - 46	42	Pass
Lower Rib	G's	37 - 46	41	Pass
Lower Spine	G's	15 - 22	19	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

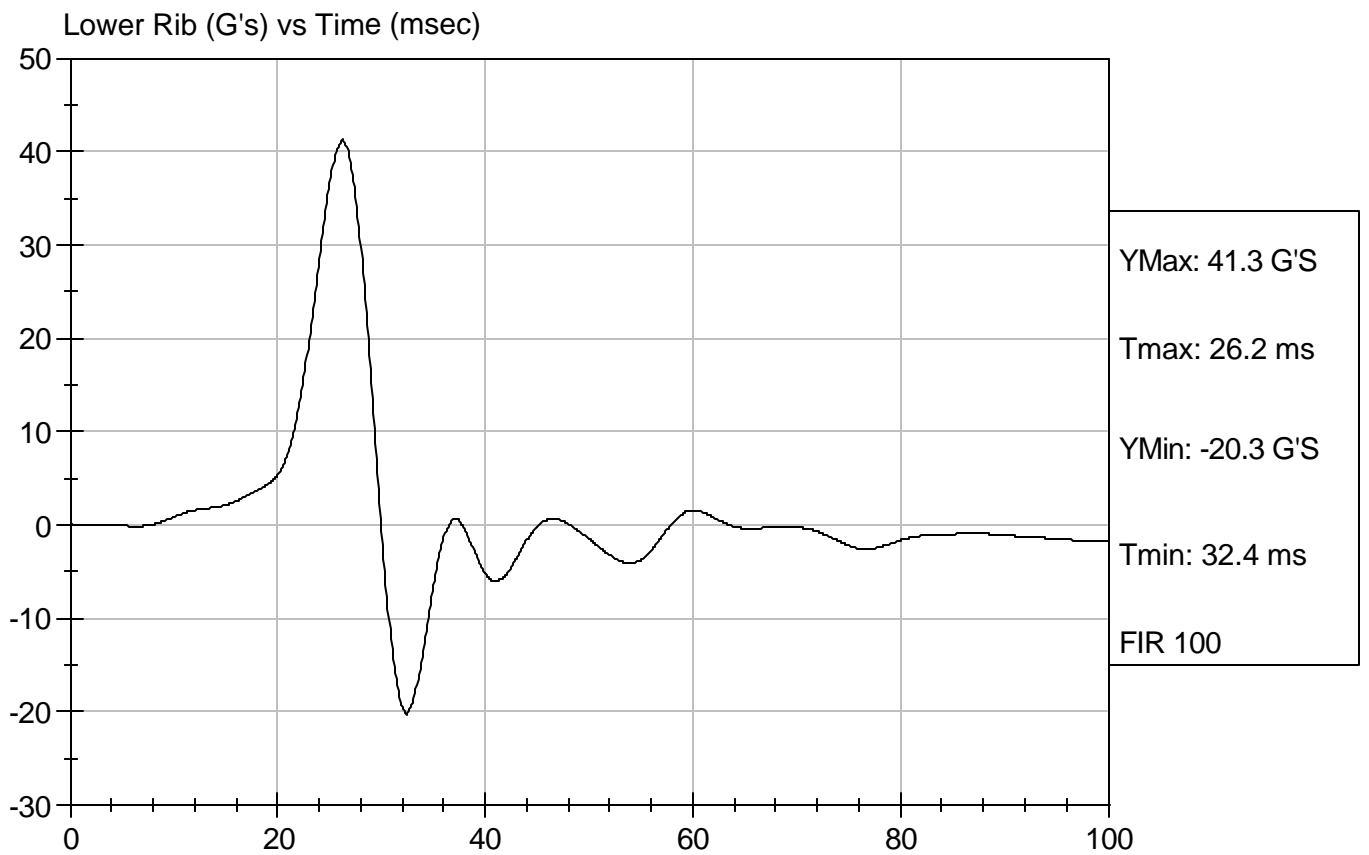
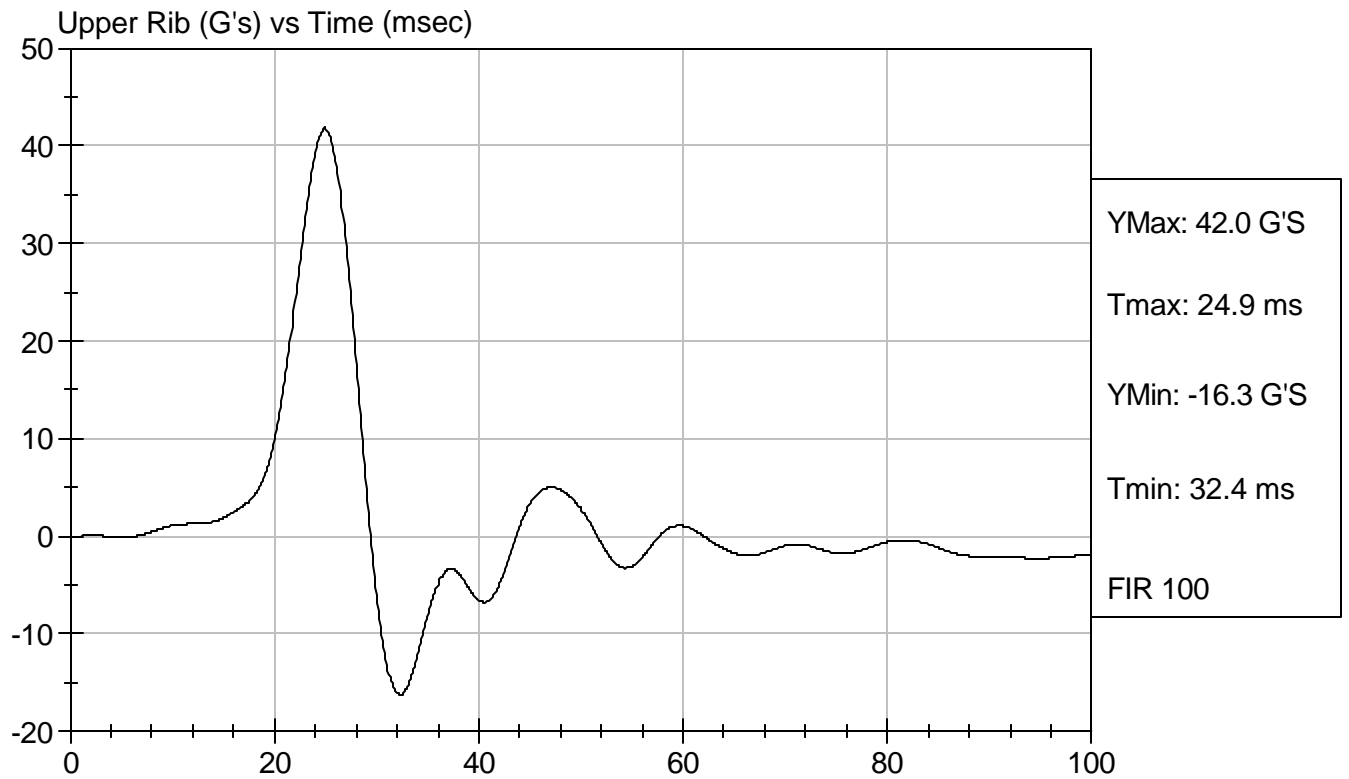
01/06/2005
 Test Date

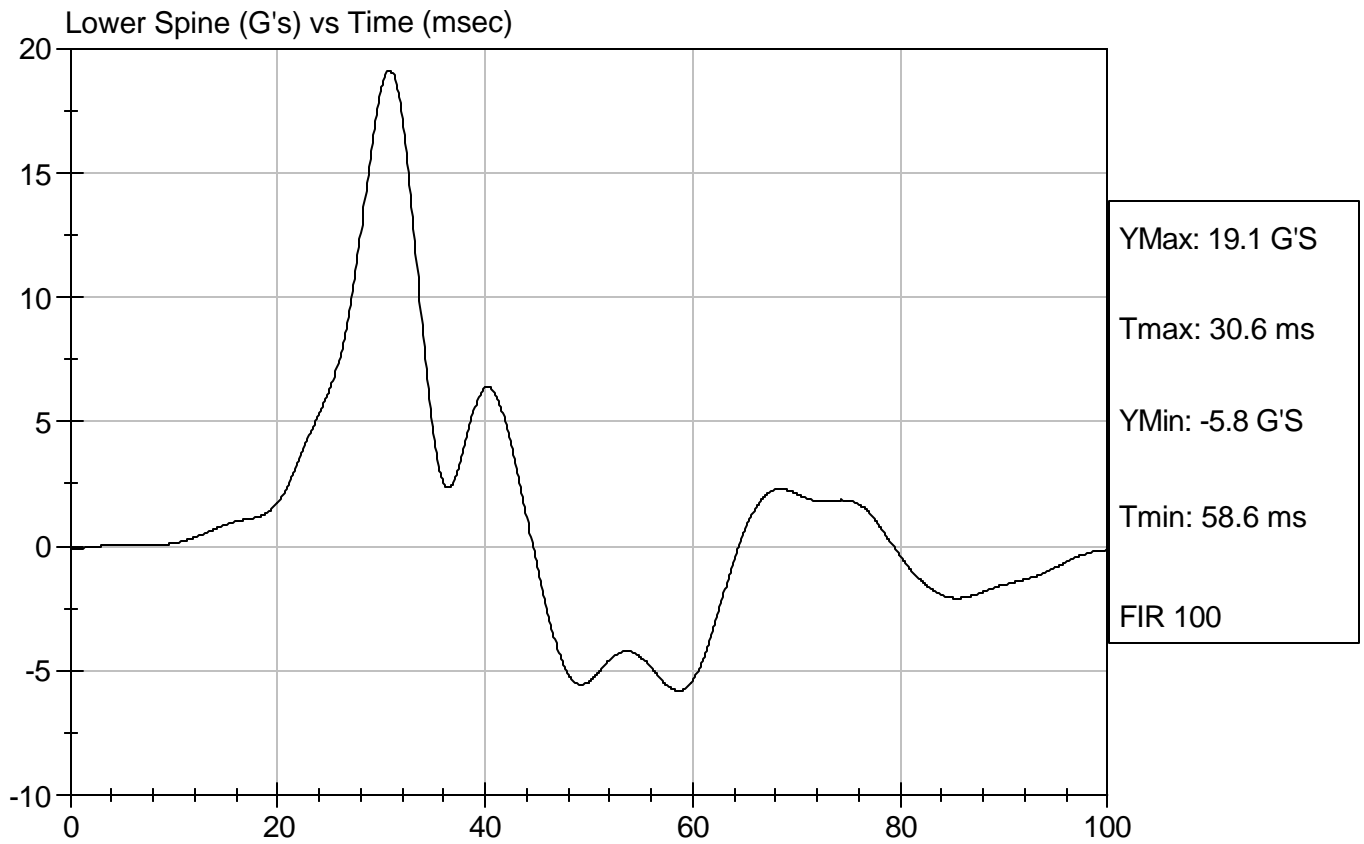
David Winkelbauer
 Approved By



Test Desc: Thorax Impact
Component ID: D05032

Test Date: 01/06/2005
Speed: 14.09 ft/sec, 4.29 m/sec





SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 271

Test I.D.: D05033

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.3	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.27	Pass
Pelvis Acceleration	G's	40 - 60	45	Pass
Overall Test Results				Pass

Jessica Hall
Laboratory Technician

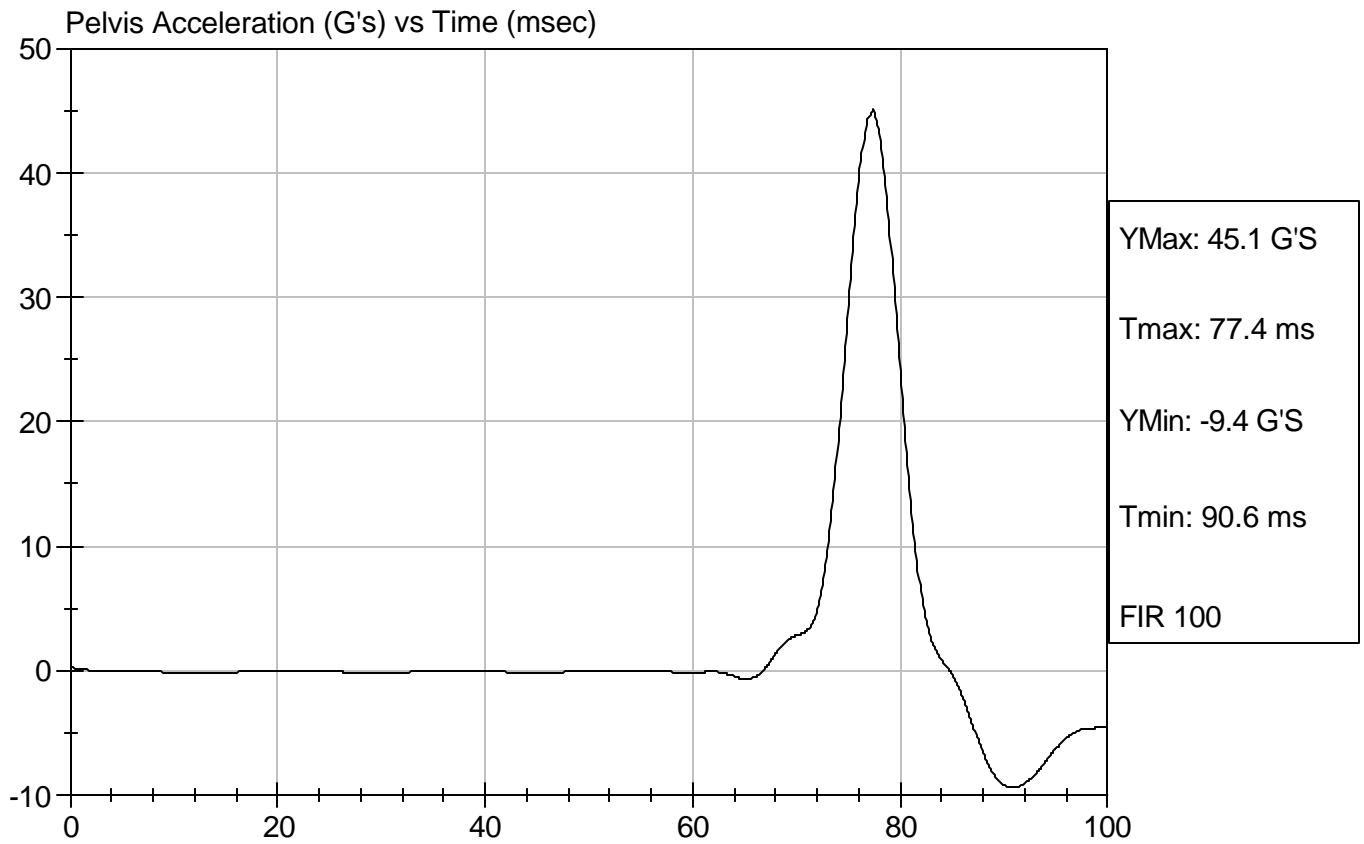
01/06/2005
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D05033

Test Date: 01/06/2005
Speed: 14.0 ft/sec, 4.27 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 271

Test I.D: D05034

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Force At 12.7 mm	N	104 - 162	139	Pass
Force At 19 mm	N	163 - 222	196	Pass
Force At 25.4 mm	N	222 - 280	265	Pass
Force At 33 mm	N	325 - 391	360	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

01/05/2005
Test Date

David Winkelbauer
Approved By

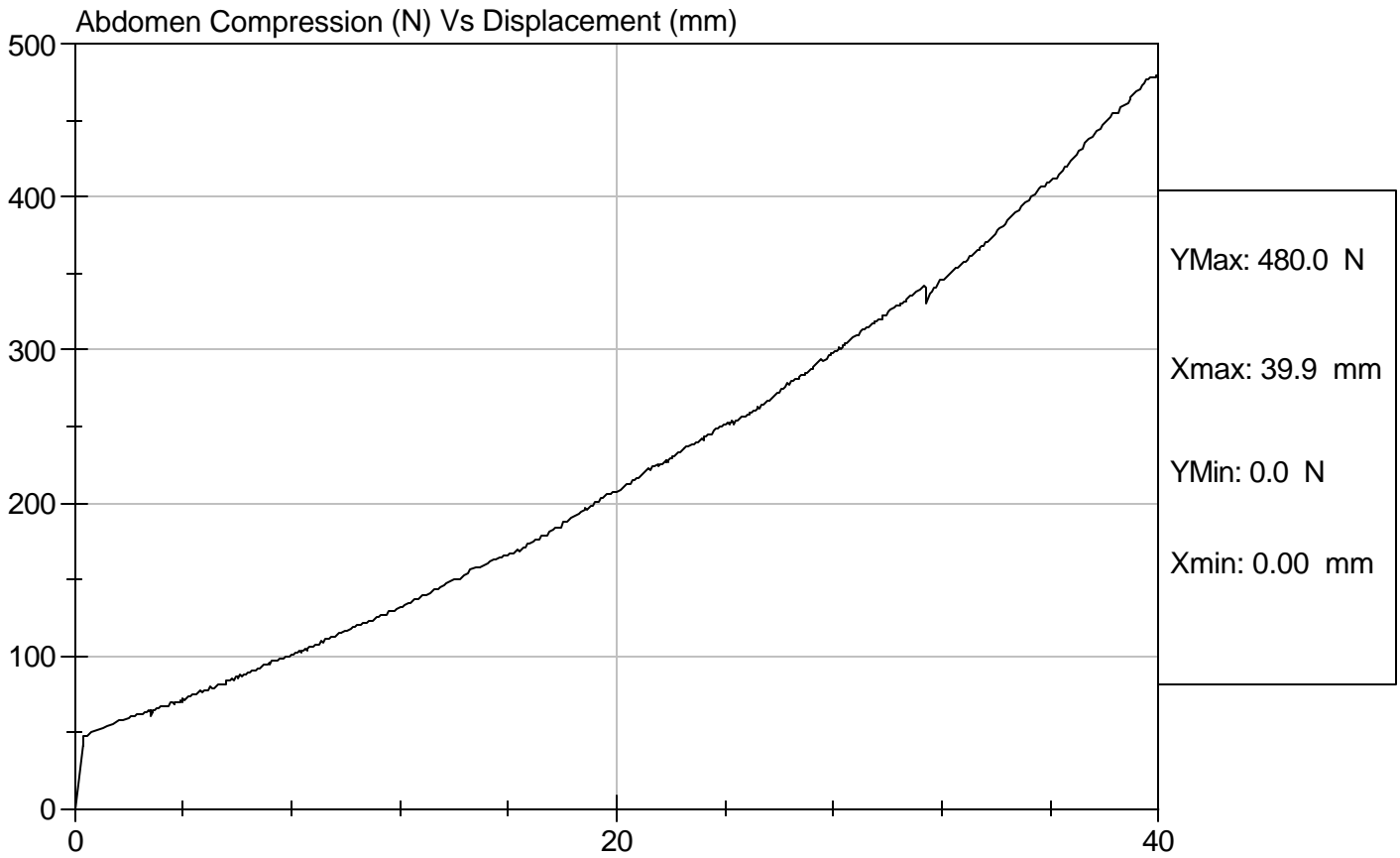


Test Description: Abdomen Compression

Test Date: 01/05/2005

Component: D05034

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 271

Test I.D.: D05035

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	141.3	Pass
Force At 30 deg	N	151.2 - 204.6	197.2	Pass
Force At 40 deg	N	204.6 - 258.0	253.1	Pass
Return Angle	Deg	12 Maximum	4	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

01/05/2005
 Test Date

David Winkelbauer
 Approved By

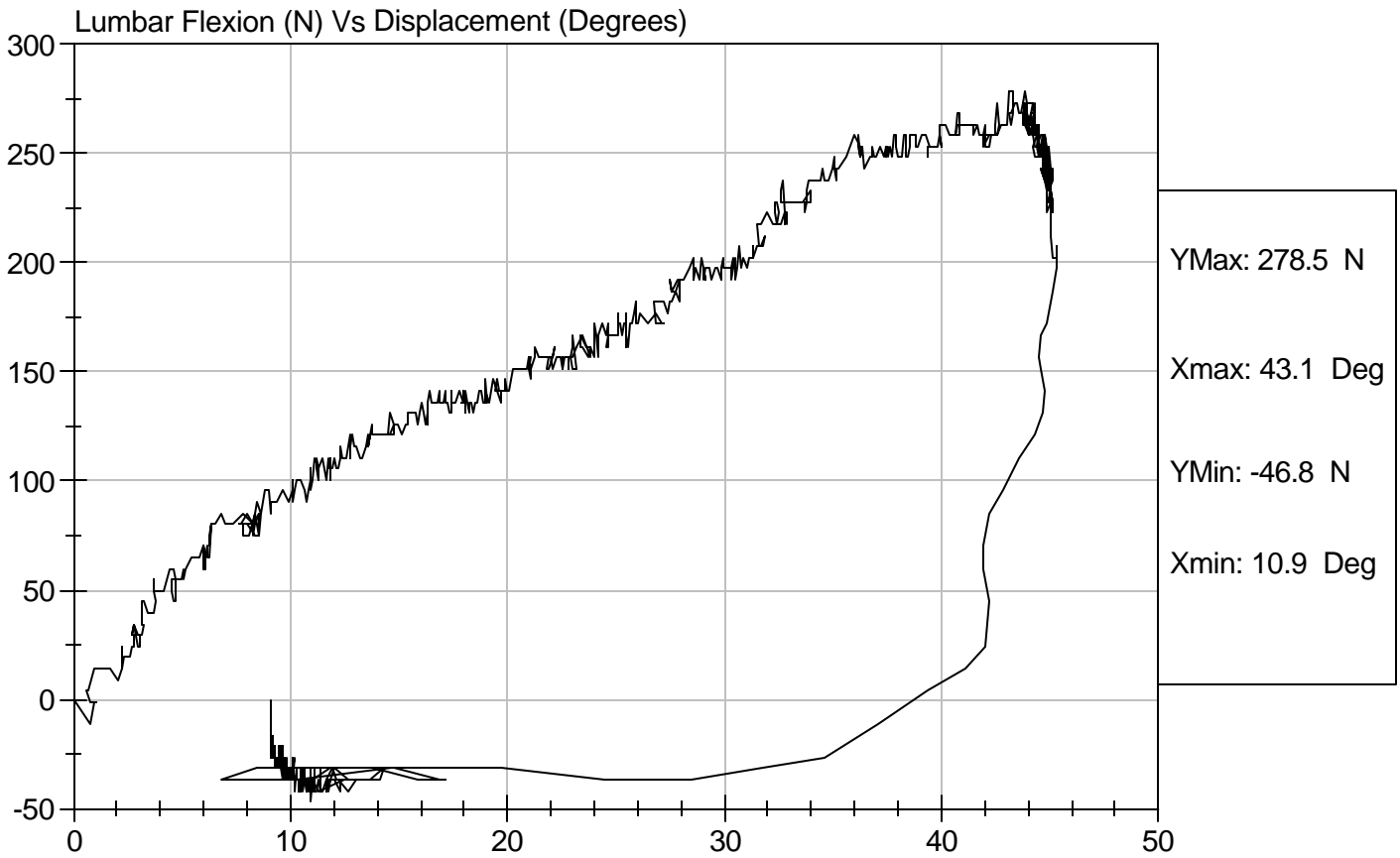


Test Description: Lumbar Flexion

Test Date: 01/05/2005

Component: D05035

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 271

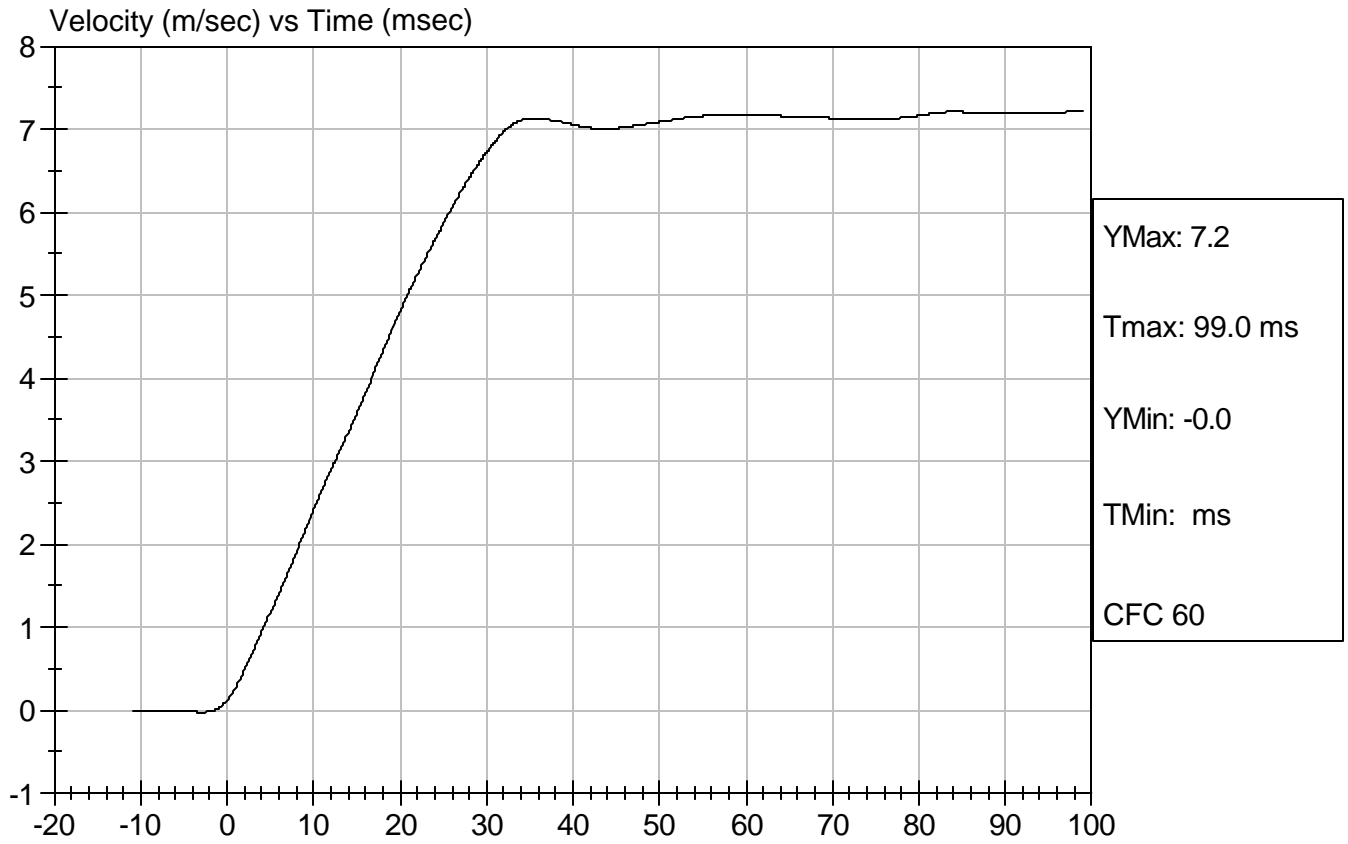
Test I.D.: D05039

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.4	Pass
Laboratory Relative Humidity		%	10 to 70	19	Pass
Impact Velocity		m/s	6.89 to 7.13	7.00	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.42	Pass
	20 msec	m/s	4.12 to 5.10	4.82	Pass
	30 msec	m/s	5.73 to 7.01	6.72	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.18	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	77	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	63	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	78	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	62	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	13	Pass


 Laboratory Technician

01/06/2005
 Test Date


 Approved By

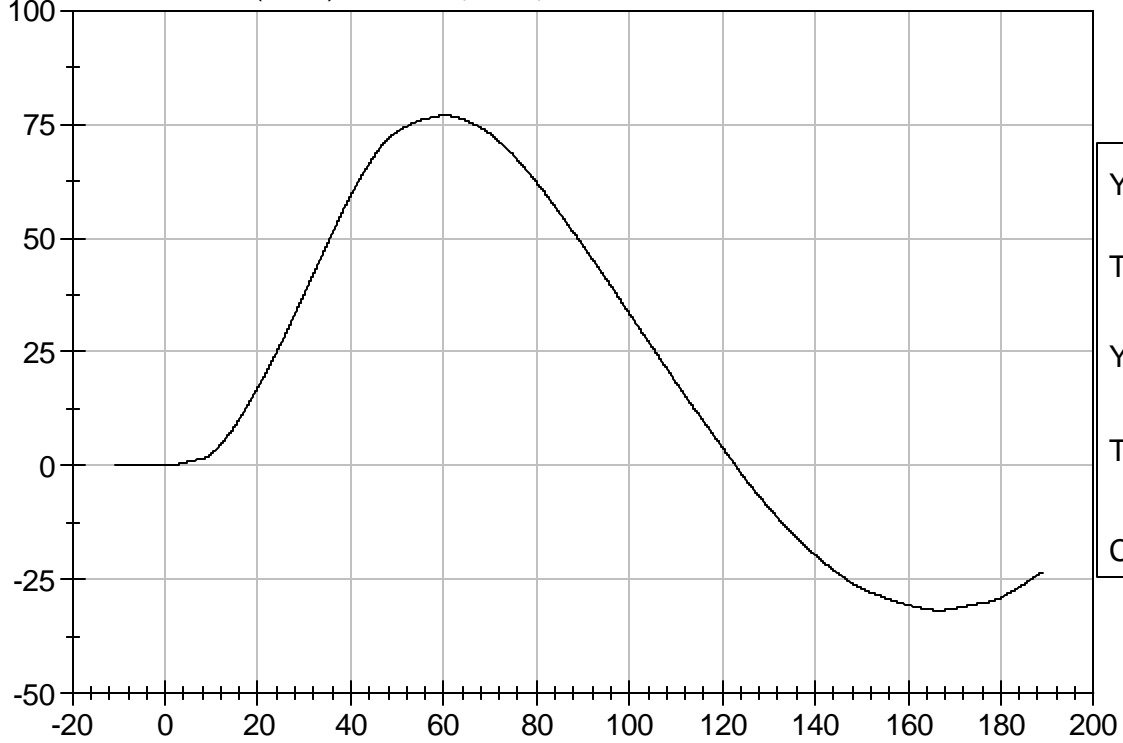




Test Desc: Neck Bending
Component ID: D05039

Test Date: 01/06/2005
Speed: 22.96 ft/sec, 7.00 m/sec

Neck Rotation (DEG) vs Time (msec)



YMax: 76.9

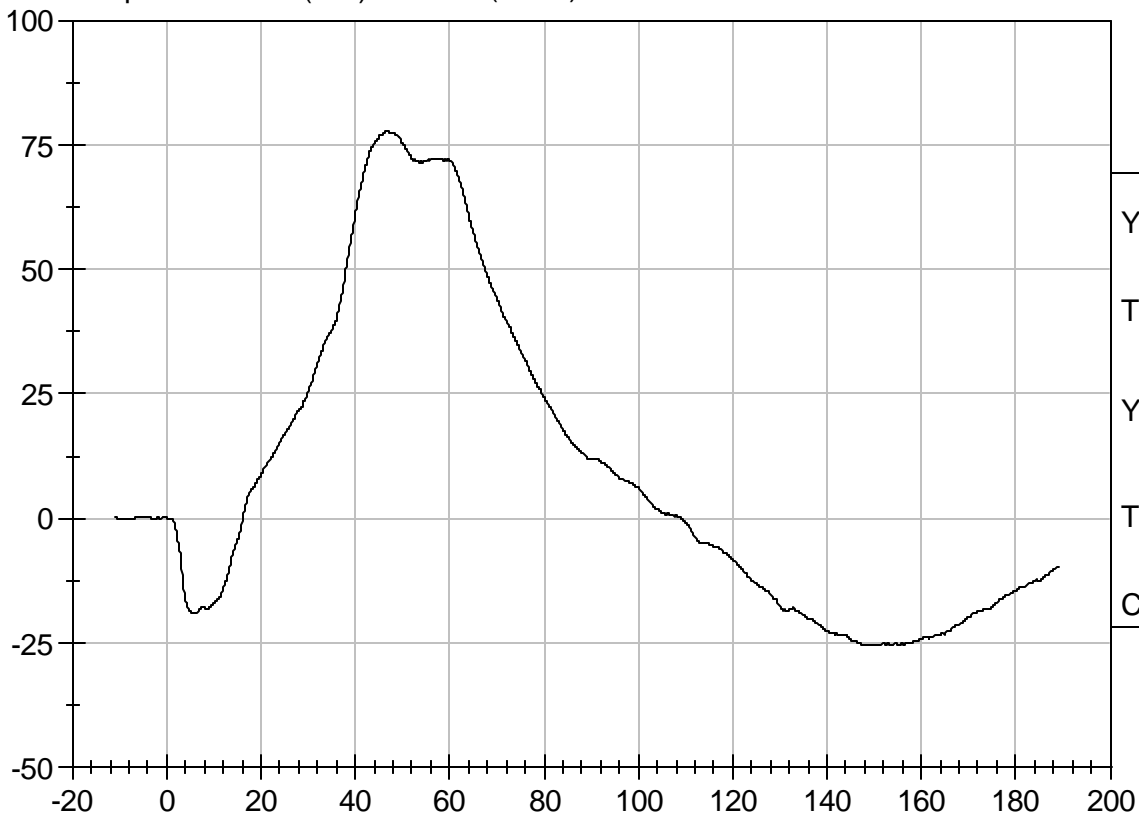
Tmax: 60.2 ms

YMin: -31.8

Tmin: 166.8 ms

CFC 60

Occipital Moment (Nm) vs Time (msec)



YMax: 77.9

Tmax: 46.8 ms

YMin: -25.5

Tmin: 148.8 ms

CFC 600

Calibration Test Results Summary

Dummy Serial Number: 271

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 271

Test I.D: D05071

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Peak Resultant Acceleration	G's	120 to 150	134	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	12	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

01/10/2005
 Test Date

David Winkelbauer
 Approved By

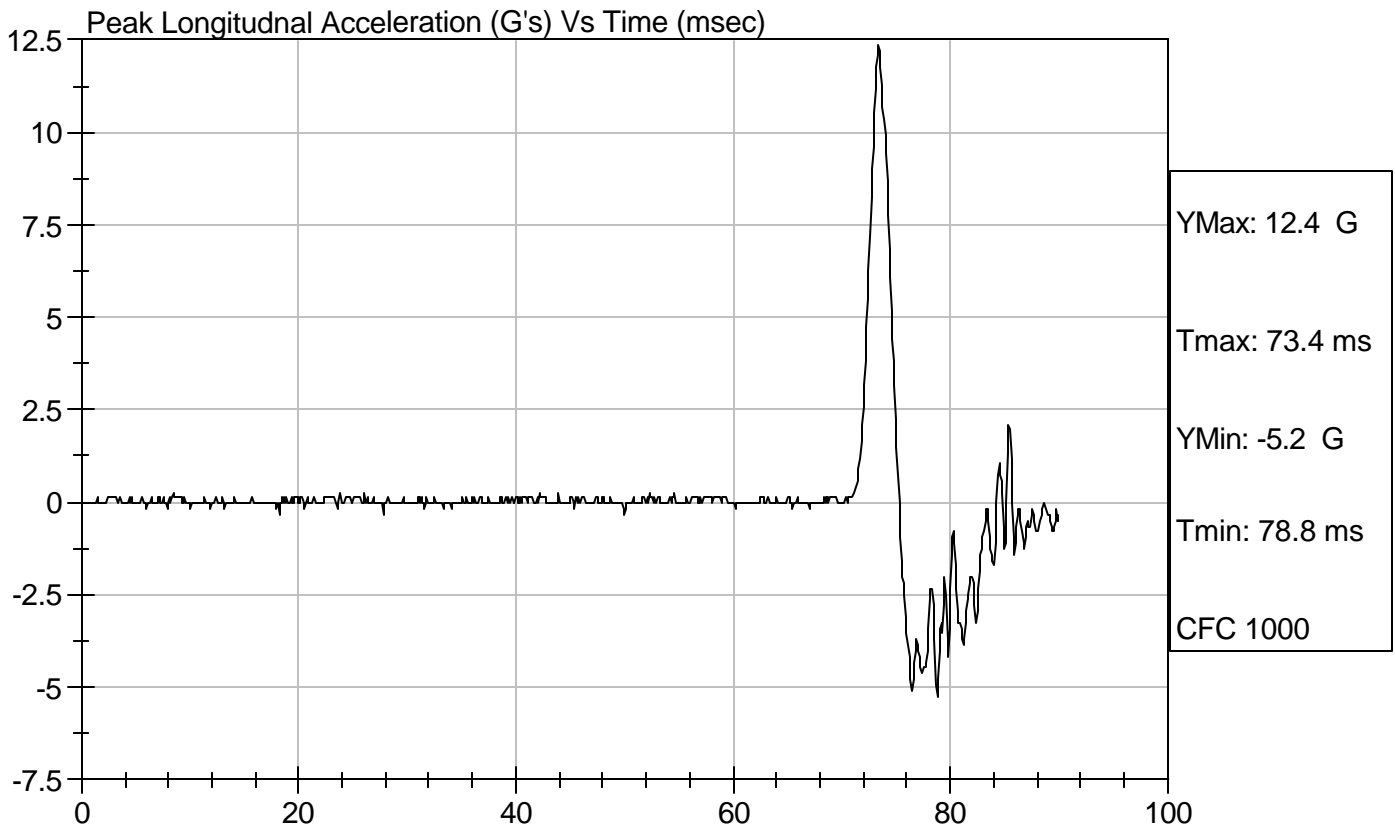
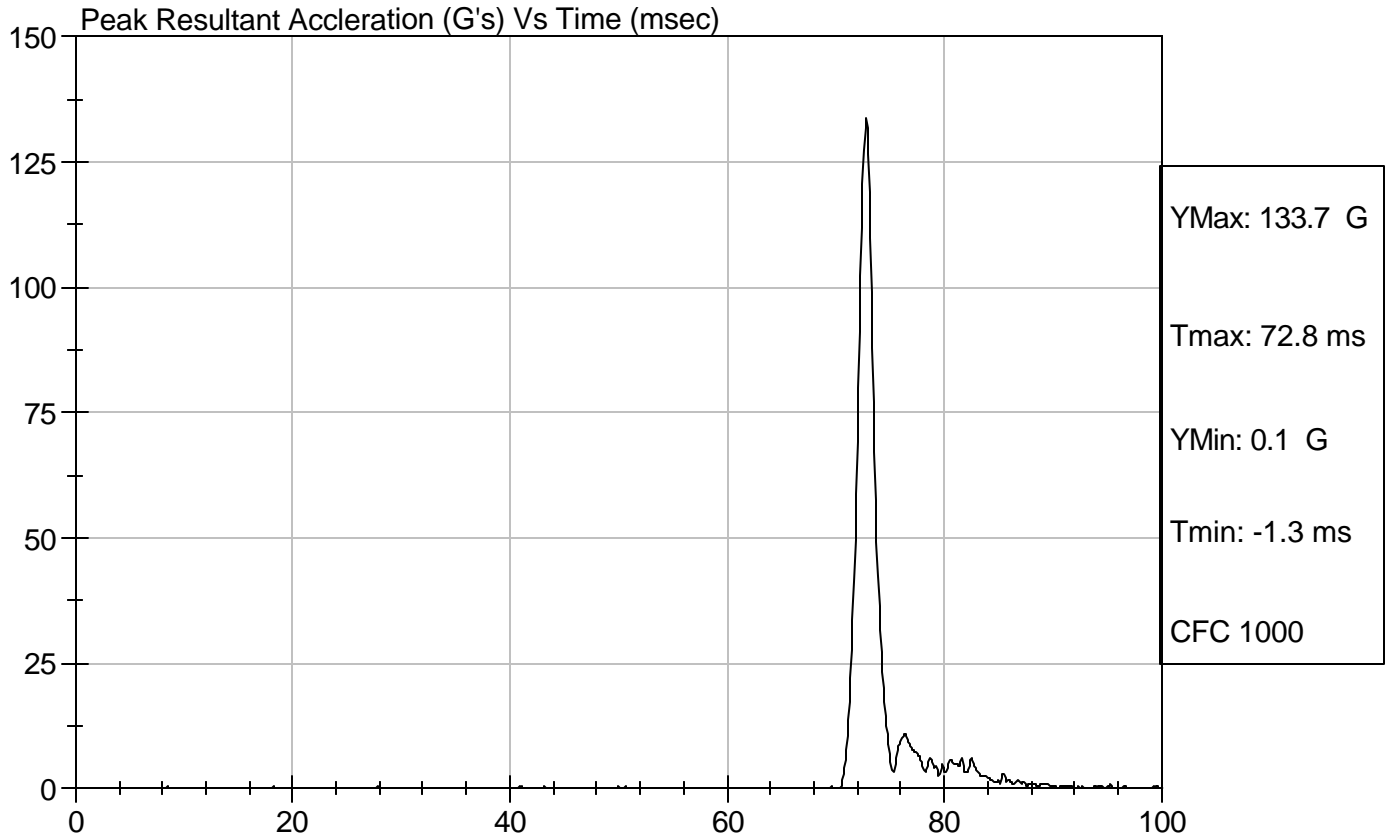


Test Description: Head Drop

Test Date: 01/10/2005

Component: D05071

Speed: 0 ft/s, 0.00 m/s



SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 271

Test I.D.: D05072

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.28	Pass
Upper Rib	G's	37 - 46	41	Pass
Lower Rib	G's	37 - 46	42	Pass
Lower Spine	G's	15 - 22	21	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

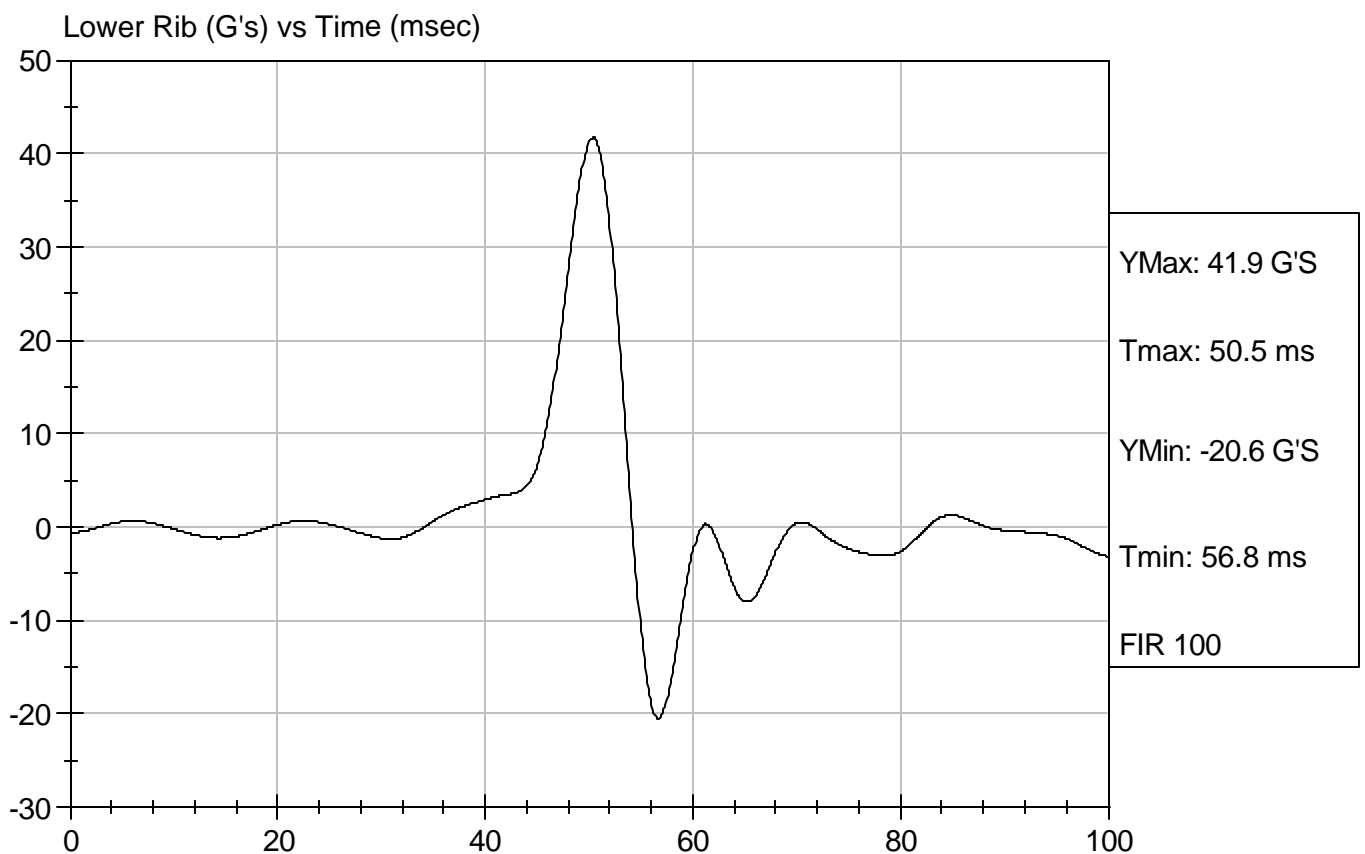
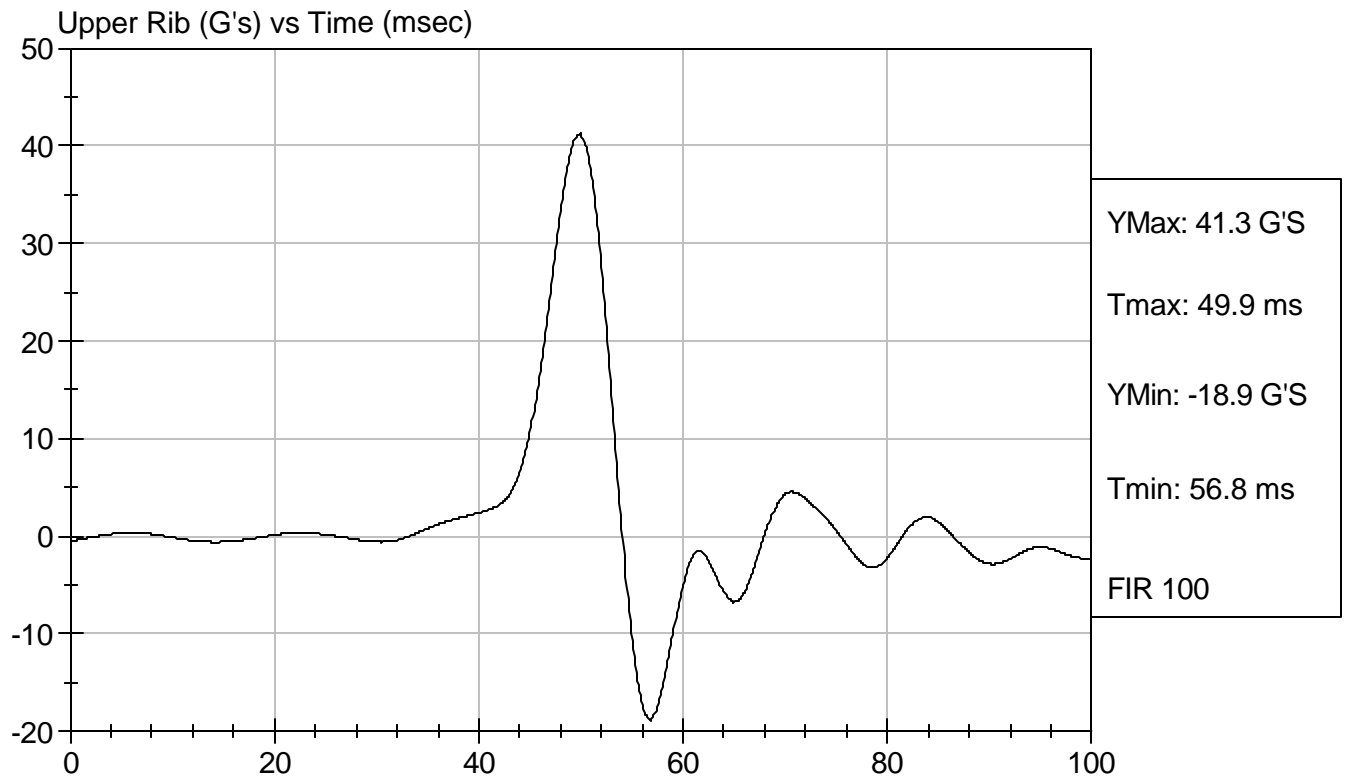
01/10/2005
Test Date

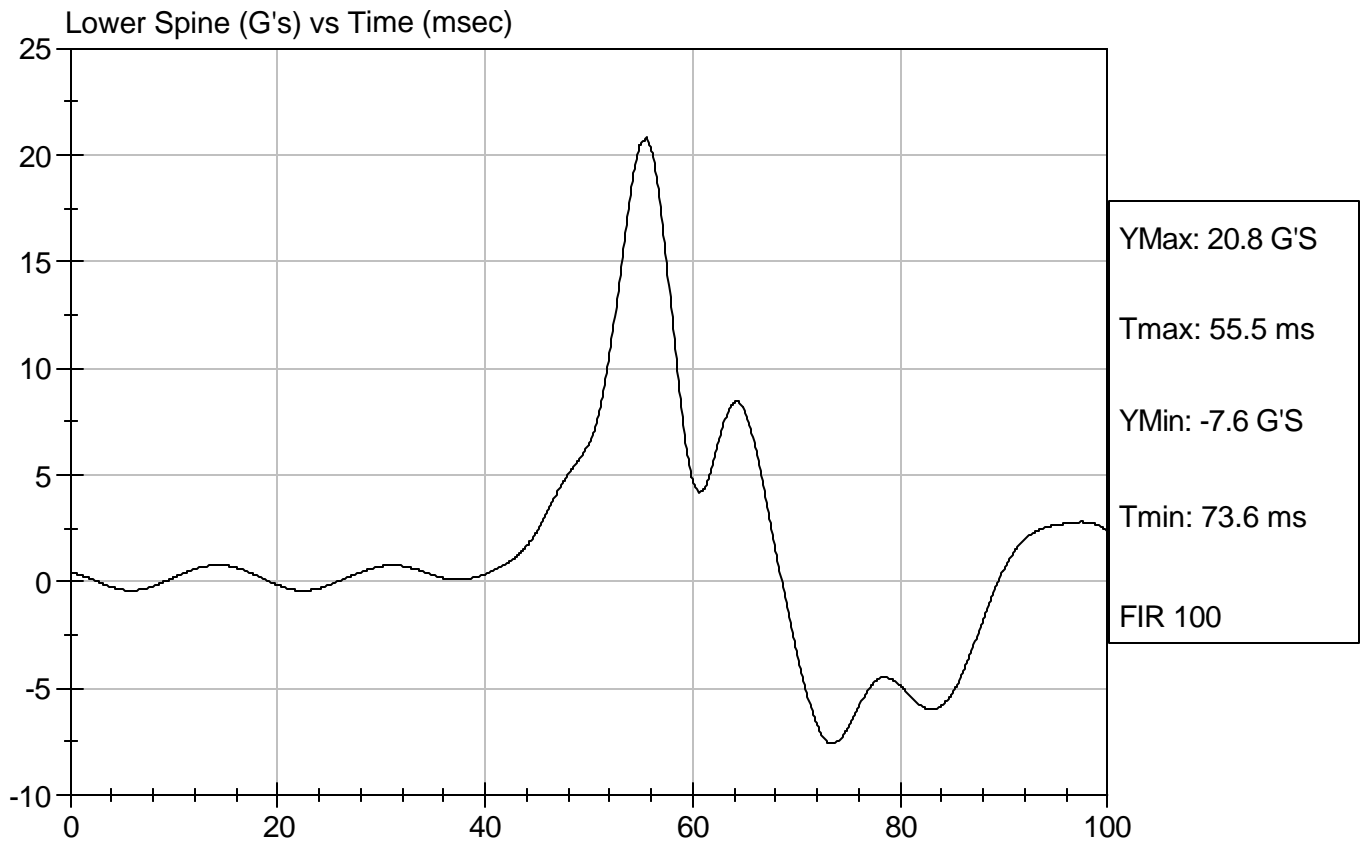
David Winkelbauer
Approved By



Test Desc: Thorax Impact
Component ID: D05072

Test Date: 01/10/2005
Speed: 14.04 ft/sec, 4.28 m/sec





SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 271

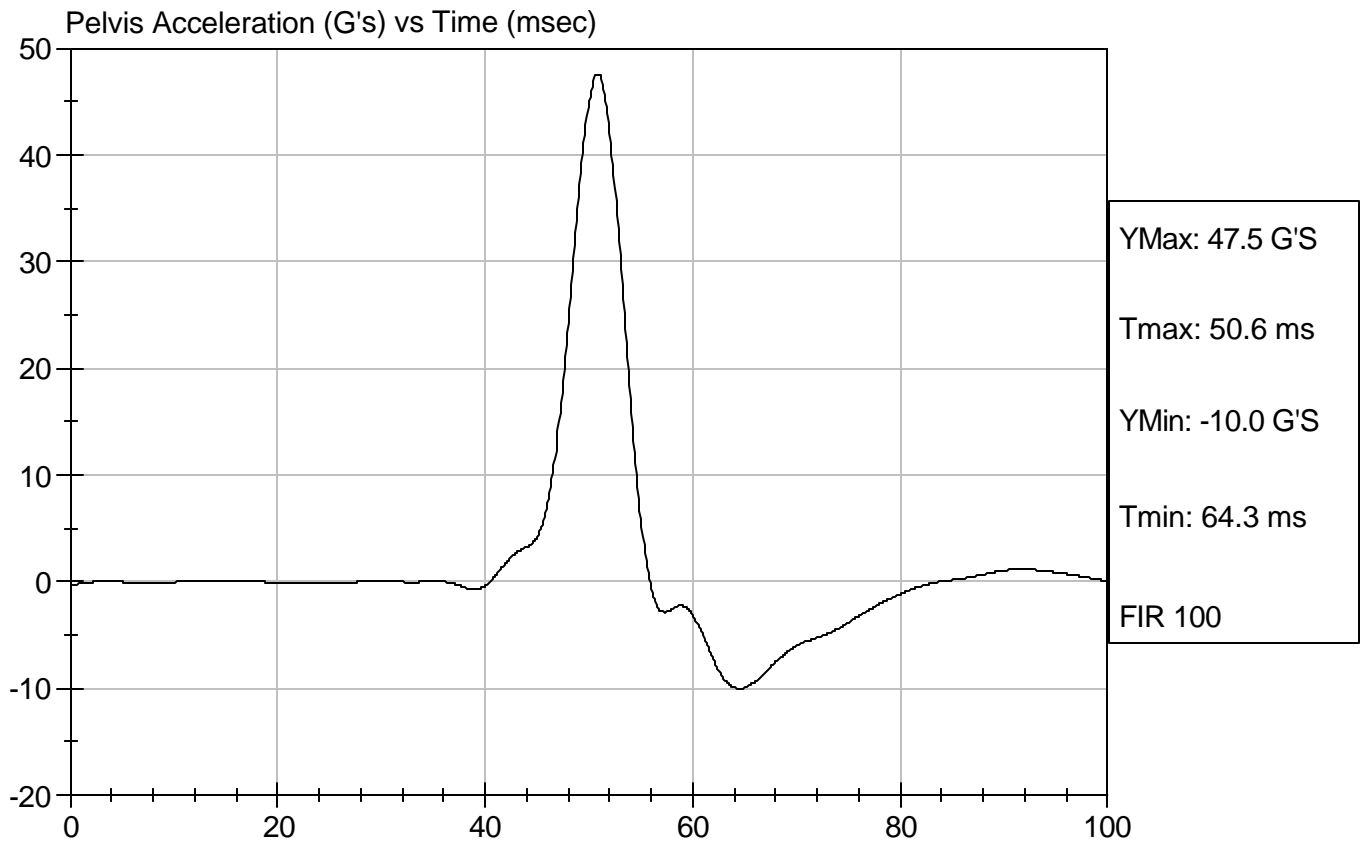
Test I.D: D05073

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	48	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

01/10/2005
Test Date

David Winkelbauer
Approved By



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 271

Test I.D: D05074

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 12.7 mm	N	104 - 162	151	Pass
Force At 19 mm	N	163 - 222	209	Pass
Force At 25.4 mm	N	222 - 280	276	Pass
Force At 33 mm	N	325 - 391	384	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

01/10/2005
 Test Date

David Winkelbauer
 Approved By

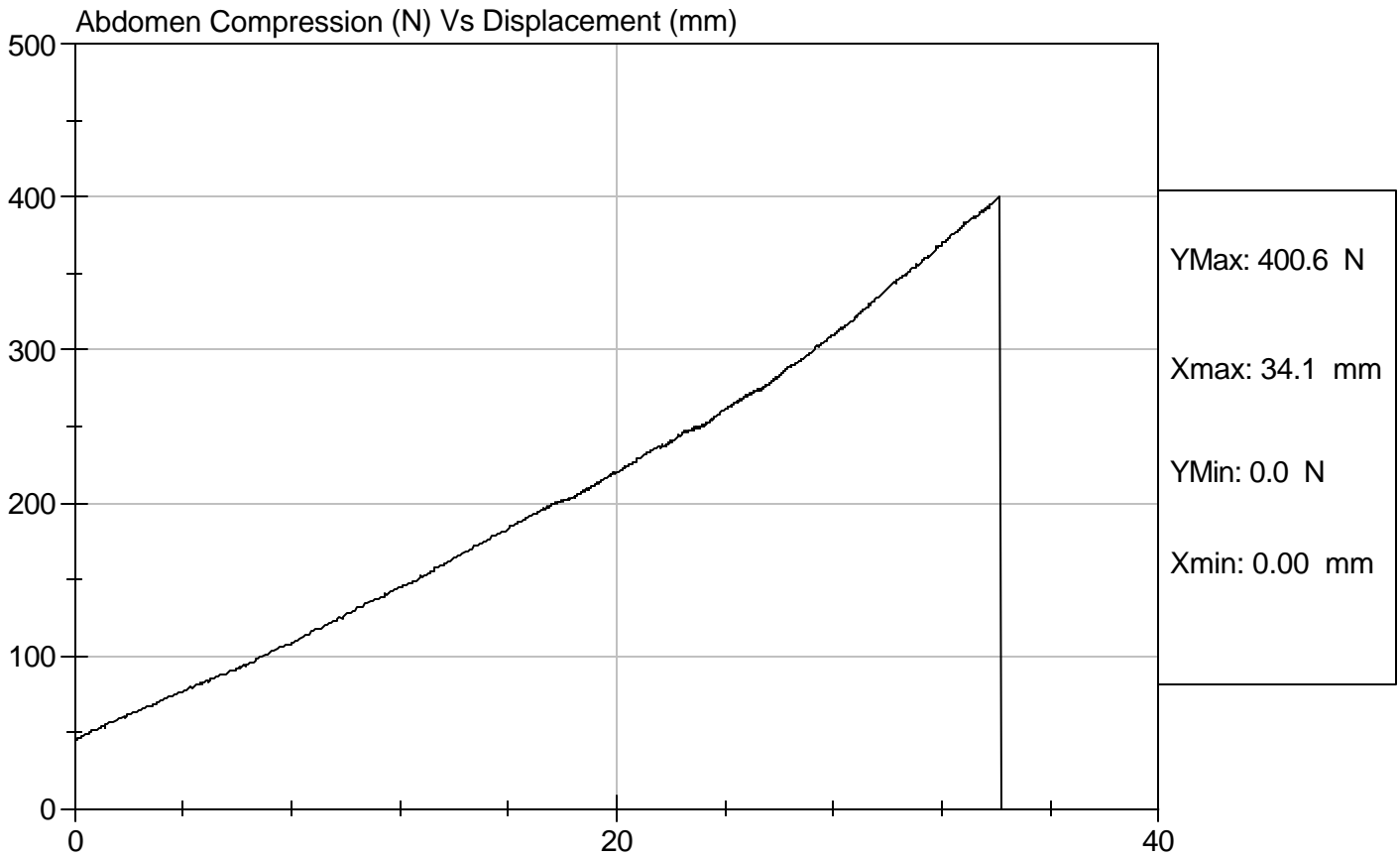


Test Description: Abdomen Compression

Test Date: 01/10/2005

Component: D05074

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 271

Test I.D: D05075

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	108.6	Pass
Force At 30 deg	N	151.2 - 204.6	164.6	Pass
Force At 40 deg	N	204.6 - 258.0	256.1	Pass
Return Angle	Deg	12 Maximum	3	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

01/10/2005
 Test Date

David Winkelbauer
 Approved By

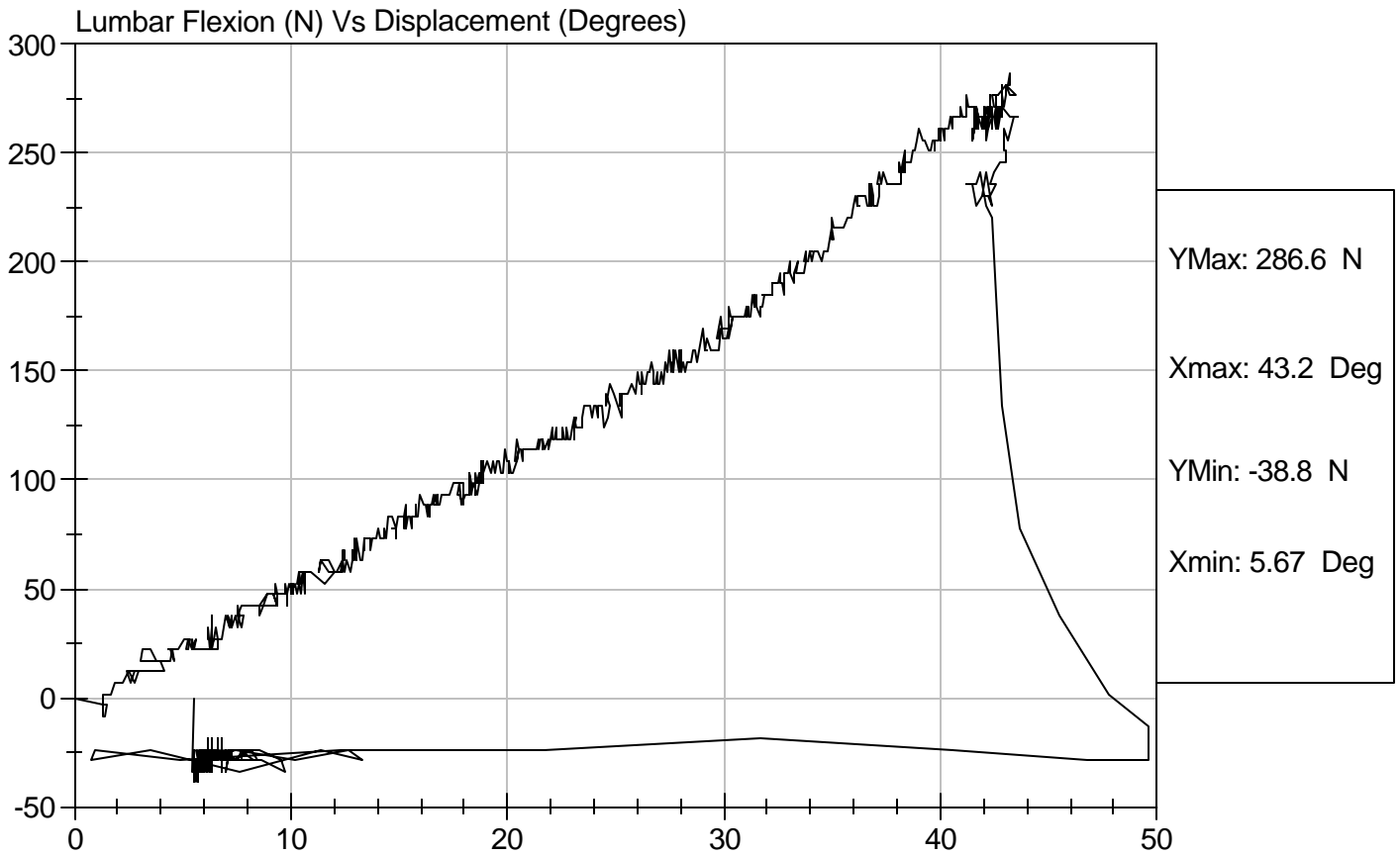


Test Description: Lumbar Flexion

Test Date: 01/10/2005

Component: D05075

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 271

Test I.D.: D05079

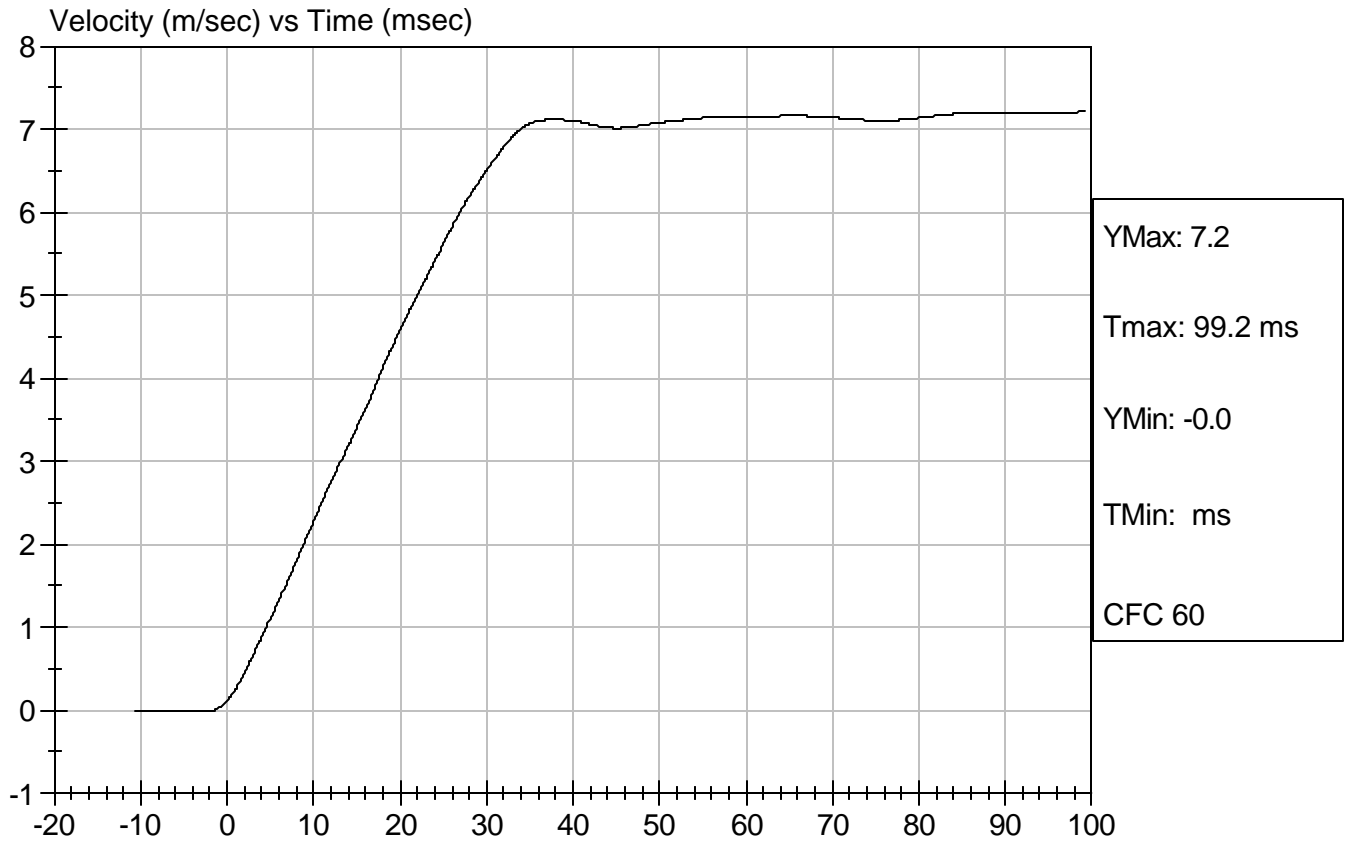
Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.7	Pass
Laboratory Relative Humidity		%	10 to 70	20	Pass
Impact Velocity		m/s	6.89 to 7.13	6.99	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.28	Pass
	20 msec	m/s	4.12 to 5.10	4.59	Pass
	30 msec	m/s	5.73 to 7.01	6.51	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.16	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	79	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	78	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	60	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	12	Pass


 Laboratory Technician

01/10/2005

Test Date


 Approved By

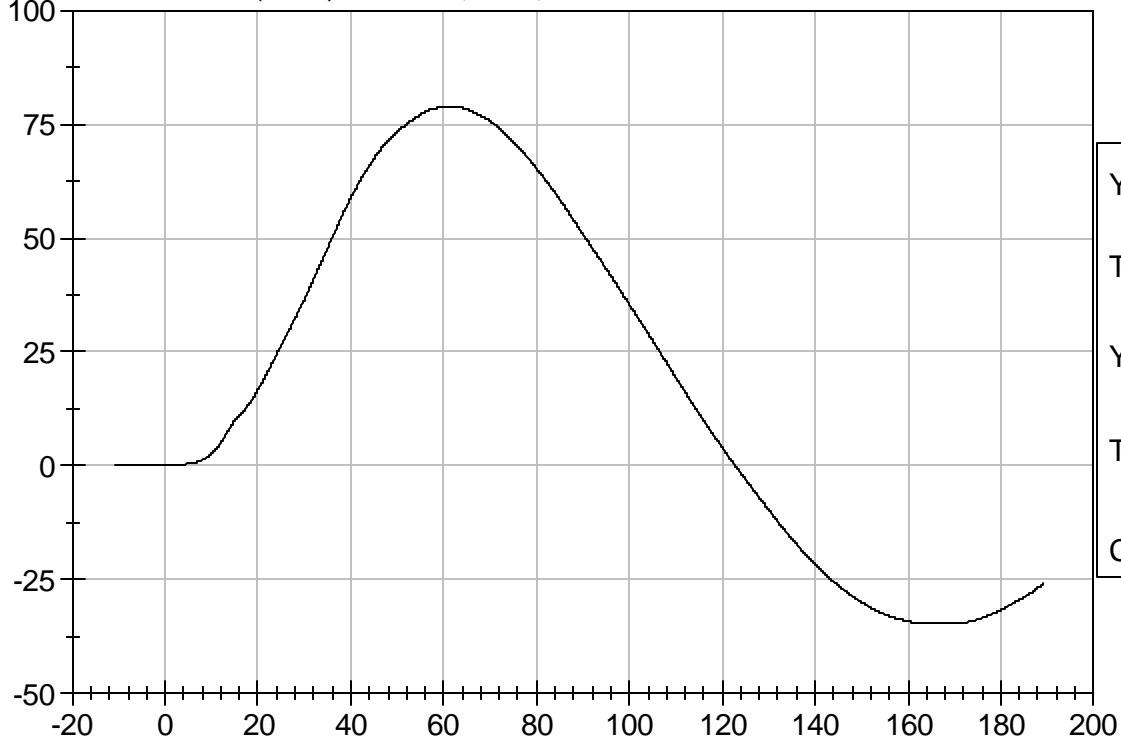




Test Desc: Neck Bending
Component ID: D05079

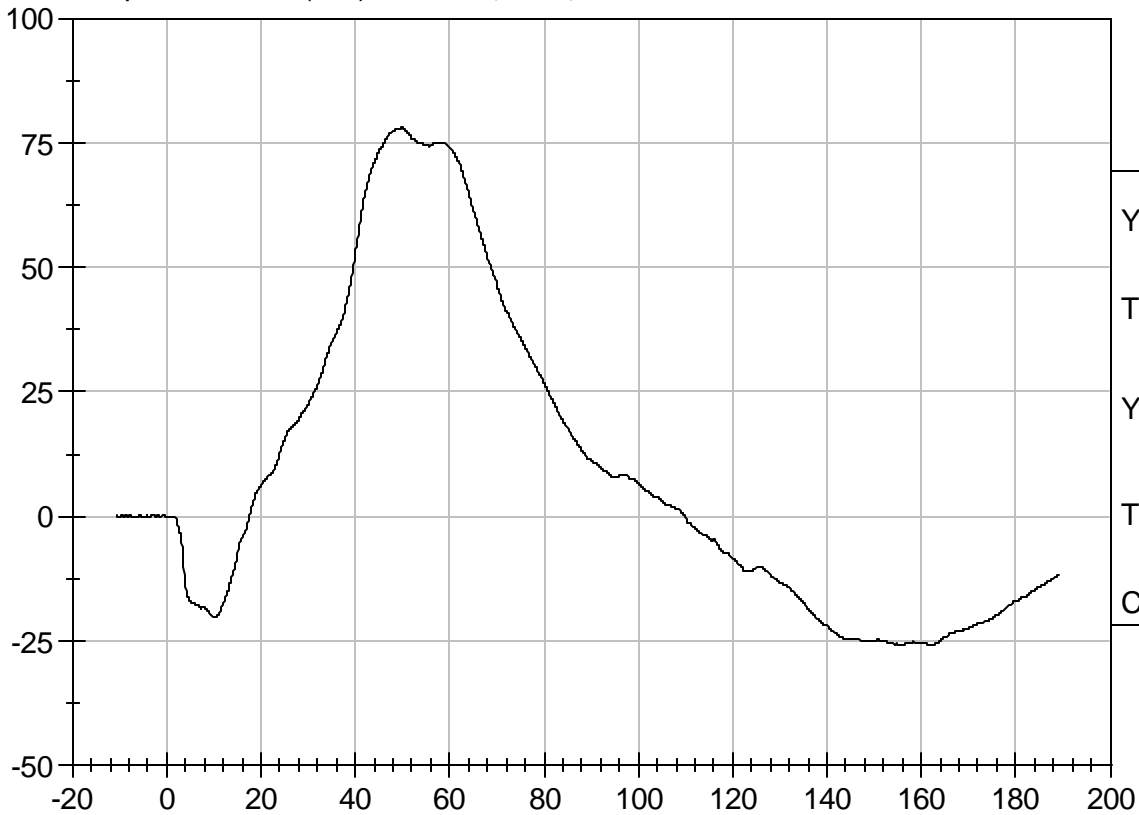
Test Date: 01/10/2005
Speed: 22.93 ft/sec, 6.99 m/sec

Neck Rotation (DEG) vs Time (msec)



YMax: 79.0
Tmax: 61.5 ms
YMin: -34.5
Tmin: 163.3 ms
CFC 60

Occipital Moment (Nm) vs Time (msec)



YMax: 78.1
Tmax: 49.8 ms
YMin: -26.0
Tmin: 162.2 ms
CFC 600

SID Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 271

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass

Jessica Hall
 Laboratory Technician
David Winkelbauer
 Approved By

01/10/2004
 Test Date

CERTIFICATION DATA

Dummy Serial Number: 904

Calibration Test Results Summary

Dummy Serial Number: 904

Pre-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
External Measurements

ATD Serial No: 904

Test I.D.: D0504

Tested Parameter	Units	Specification	Result	Pass/Fail
SH - Seated Height	mm	889 - 909	903	Pass
RH - Rib Height	mm	501 - 521	509	Pass
HP - Hip Pivot Height	mm	99 ref.	99	Pass
RD - Rib from Back Line	mm	229 - 241	240	Pass
KV - Knee Pivot to Back Line	mm	511 - 526	525	Pass
SW - Knee Pivot to Floor	mm	490 - 505	500	Pass
HW - Hip Width	mm	356 - 391	368	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

1/06/2005
 Test Date

David Winkelbauer
 Approved By

SID Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 904

Test I.D: D05041

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Peak Resultant Acceleration	G's	120 to 150	146	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	-11	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

01/05/2005
Test Date

David Winkelbauer
Approved By

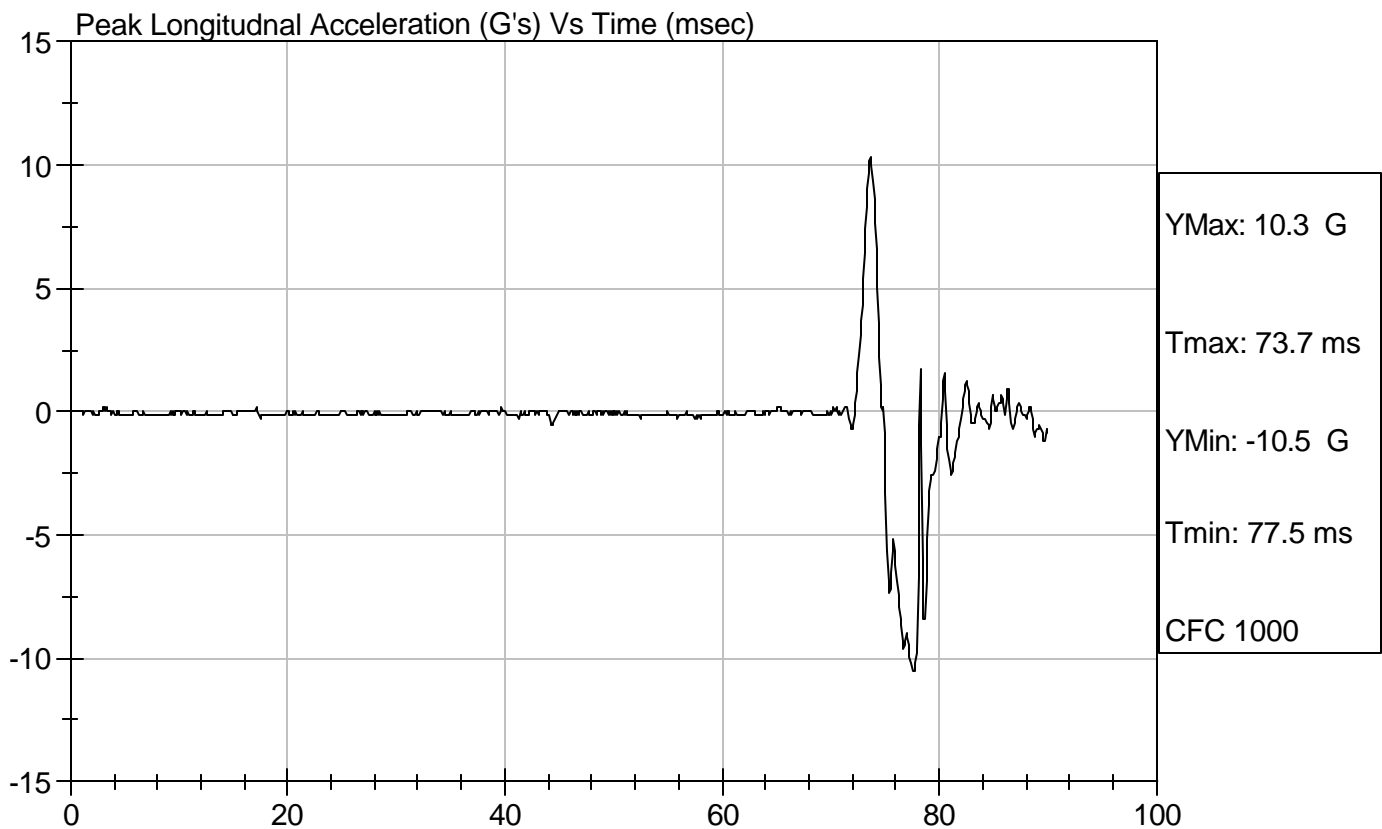
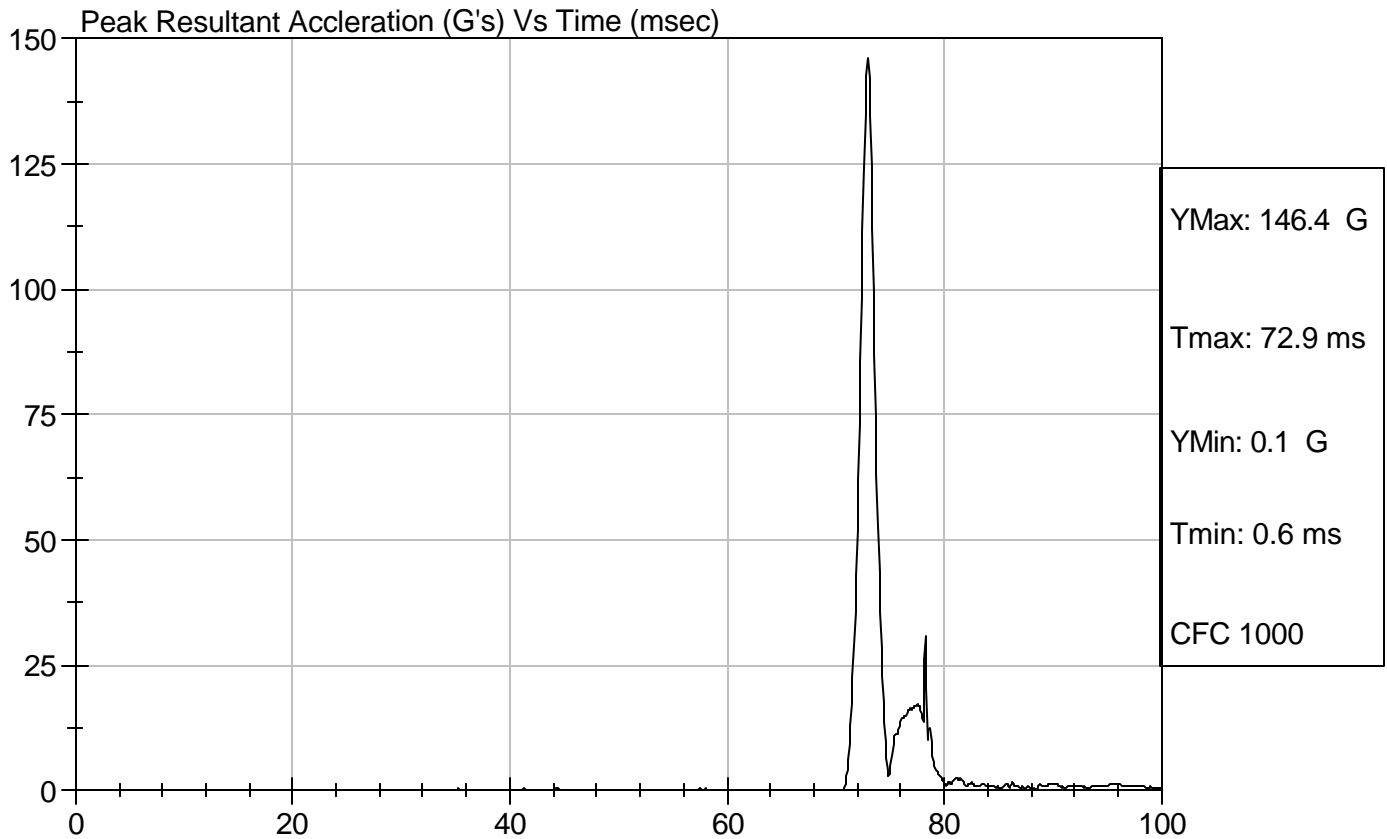


Test Description: Head Drop

Test Date: 01/05/2005

Component: D05041

Speed: 0 ft/s, 0.00 m/s



SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 904

Test I.D.: D05042

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Probe Velocity	m/s	4.27 - 4.33	4.33	Pass
Upper Rib	G's	37 - 46	39	Pass
Lower Rib	G's	37 - 46	38	Pass
Lower Spine	G's	15 - 22	22	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

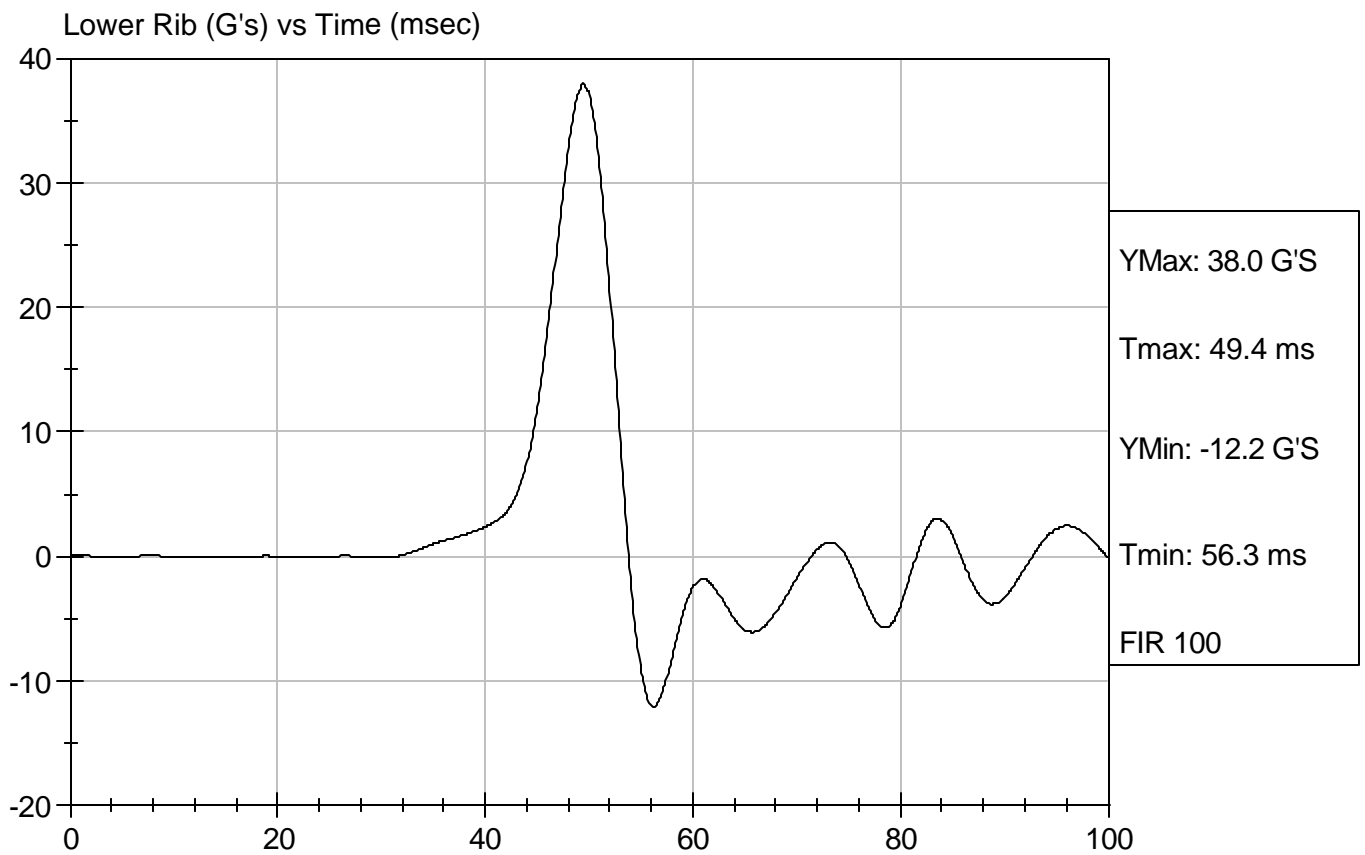
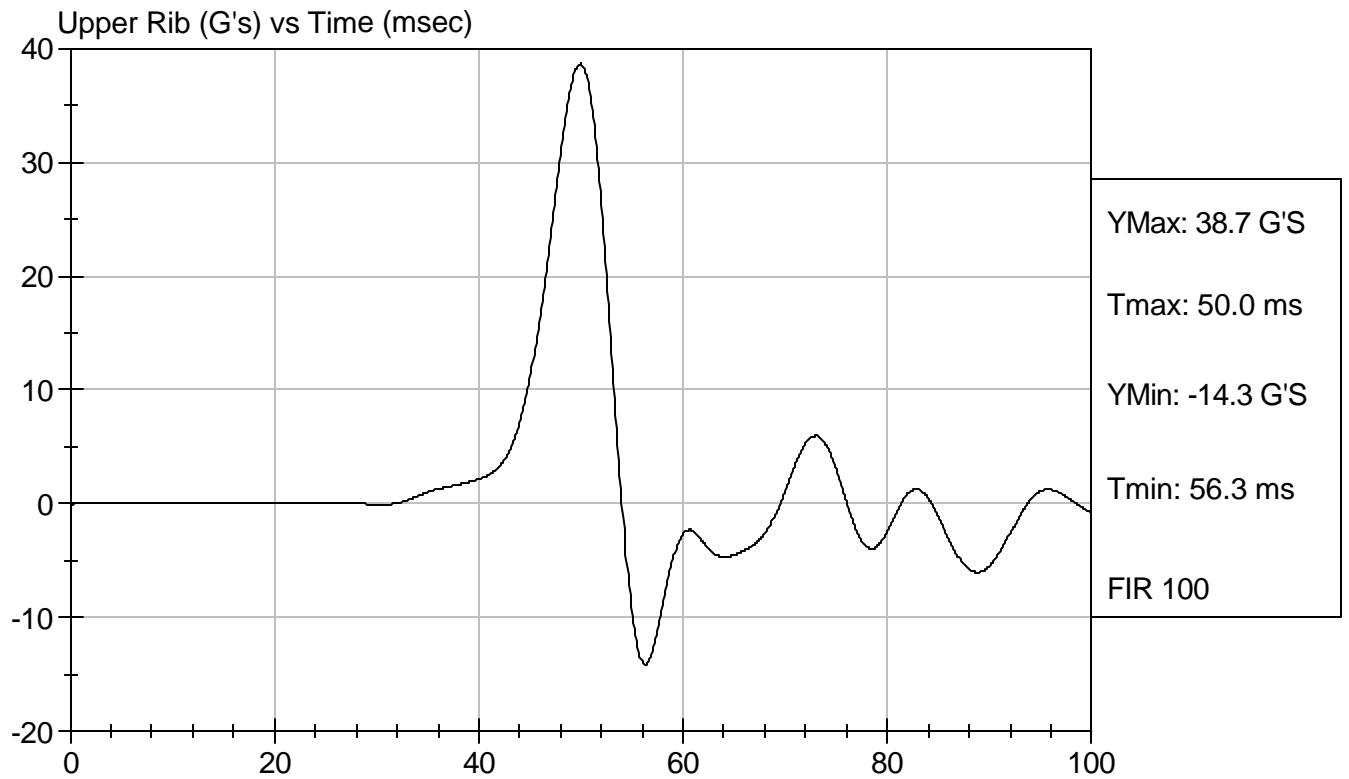
01/06/2005
 Test Date

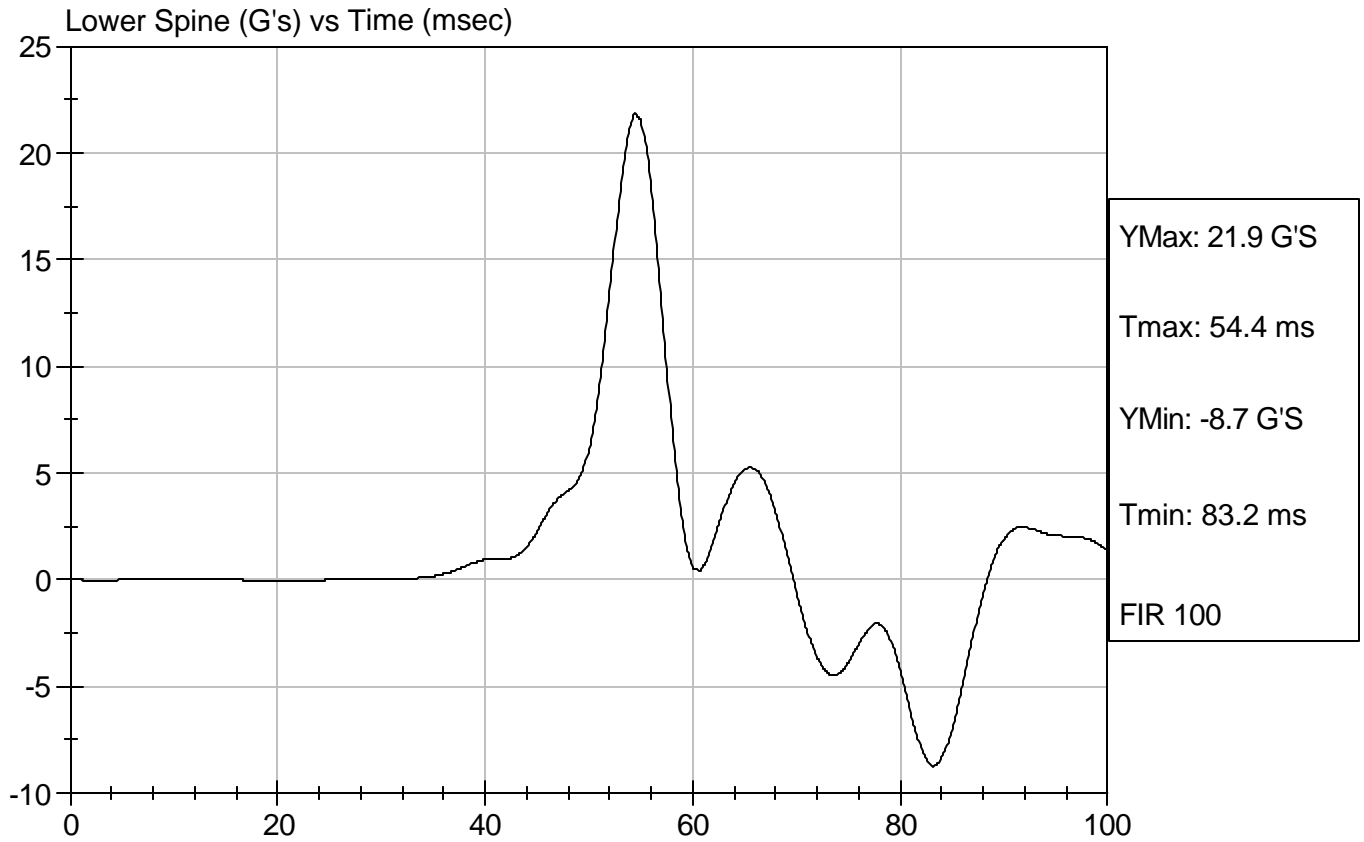
David Winkelbauer
 Approved By



Test Desc: Thorax Impact
Component ID: D05042

Test Date: 01/06/2005
Speed: 14.2 ft/sec, 4.33 m/sec





SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 904

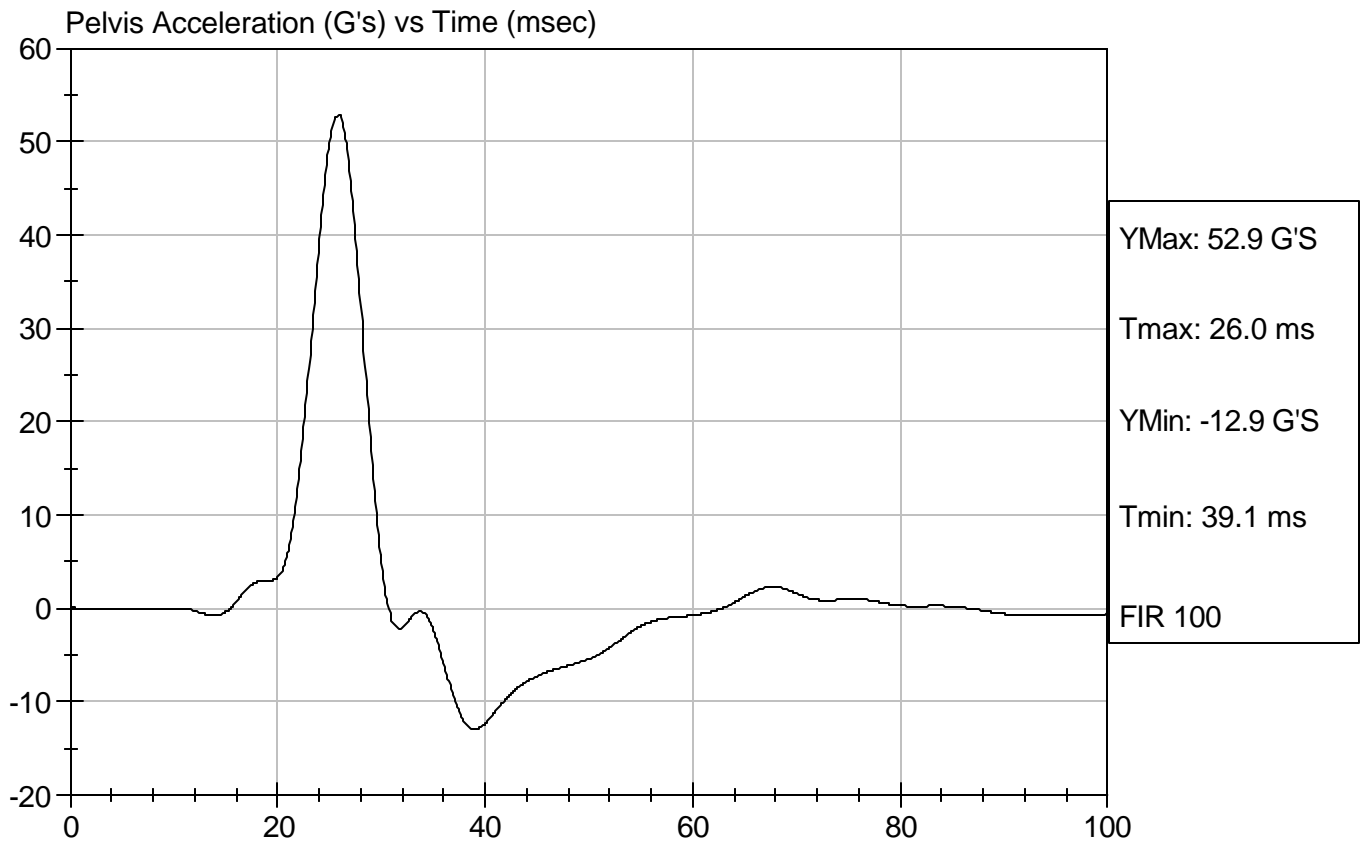
Test I.D.: D05043

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Probe Velocity	m/s	4.27 - 4.33	4.30	Pass
Pelvis Acceleration	G's	40 - 60	53	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

01/06/2005
Test Date

David Winkelbauer
Approved By



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 904

Test I.D: D05044

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	22	Pass
Force At 12.7 mm	N	104 - 162	141	Pass
Force At 19 mm	N	163 - 222	196	Pass
Force At 25.4 mm	N	222 - 280	259	Pass
Force At 33 mm	N	325 - 391	364	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

01/05/2005
 Test Date

David Winkelbauer
 Approved By

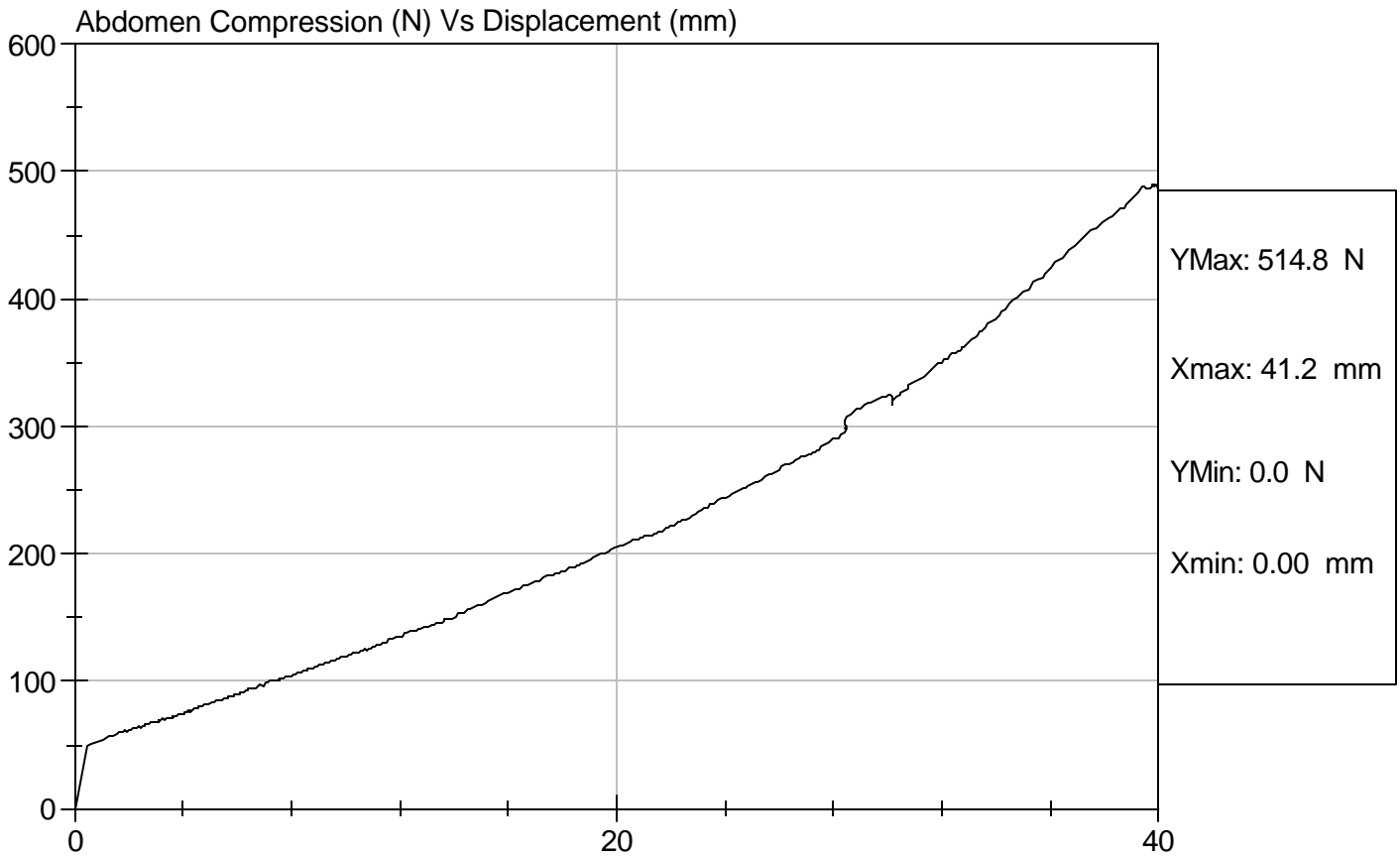


Test Description: Abdomen Compression

Test Date: 01/05/2005

Component: D05044

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 904

Test I.D: D05045

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.4	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	106.7	Pass
Force At 30 deg	N	151.2 - 204.6	177.9	Pass
Force At 40 deg	N	204.6 - 258.0	249.1	Pass
Return Angle	Deg	12 Maximum	4	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

01/06/2005
Test Date

David Winkelbauer
Approved By

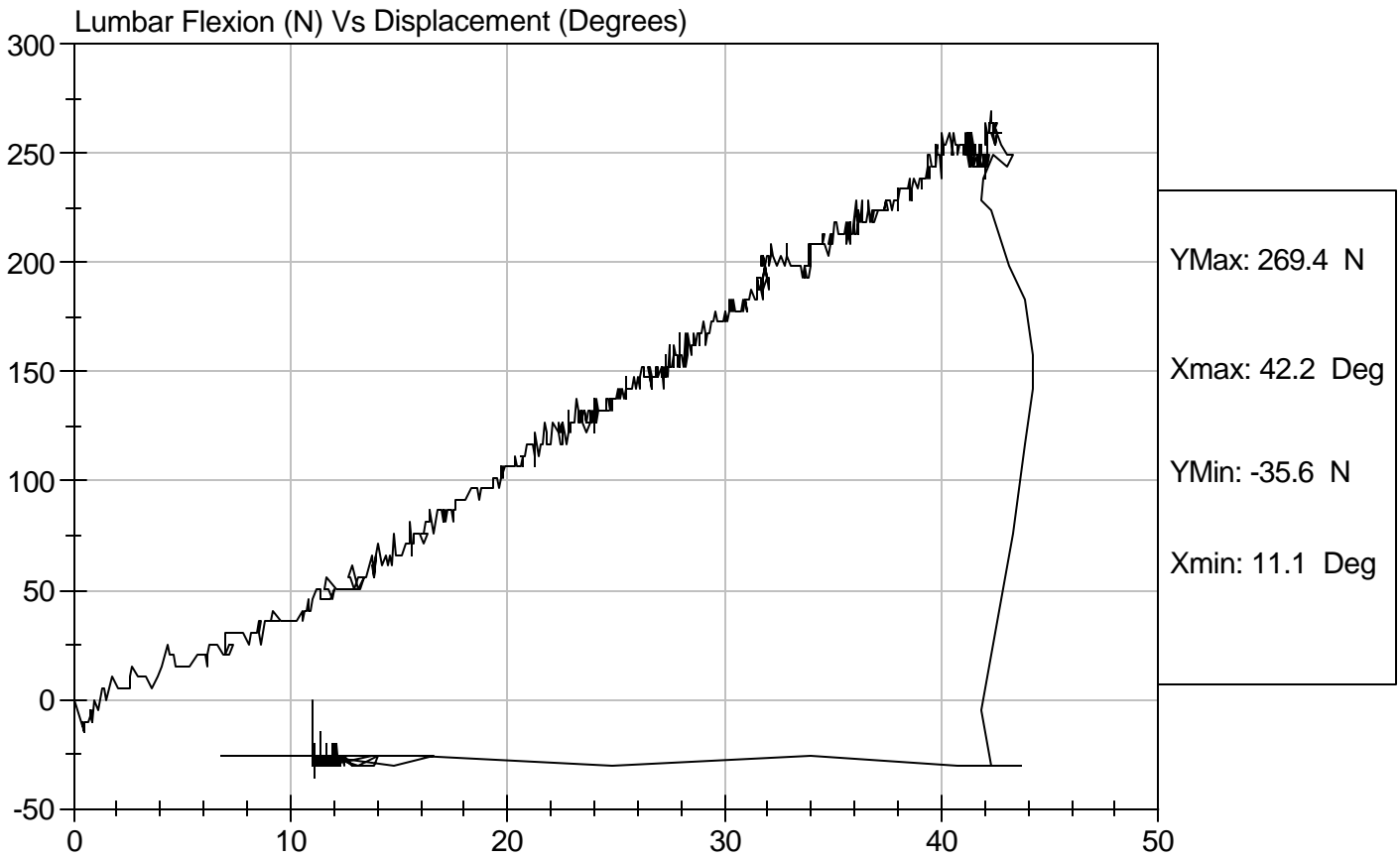


Test Description: Lumbar Flexion

Test Date: 01/06/2005

Component: D05045

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 904

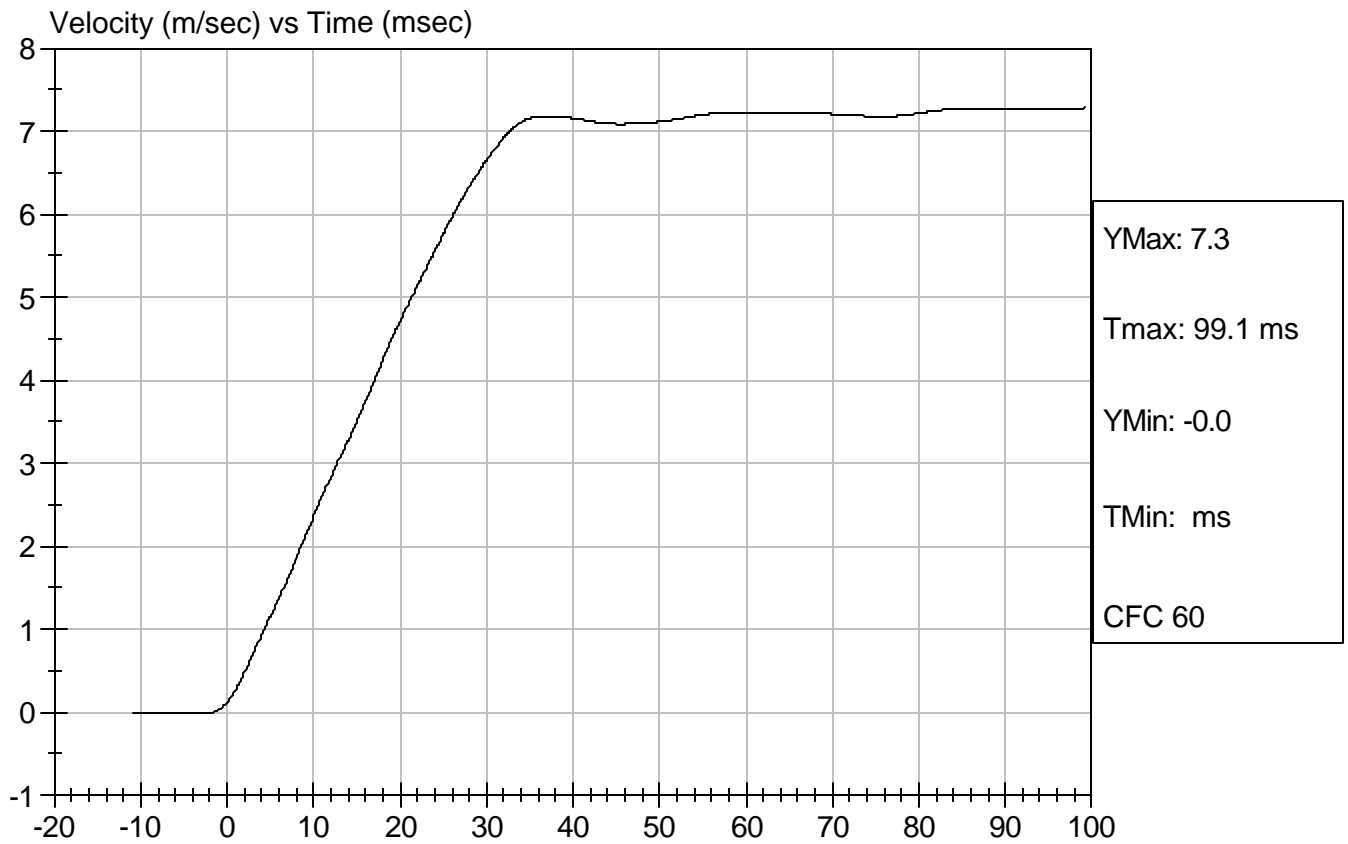
Test I.D.: D05049

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.3	Pass
Laboratory Relative Humidity		%	10 to 70	19	Pass
Impact Velocity		m/s	6.89 to 7.13	6.90	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.37	Pass
	20 msec	m/s	4.12 to 5.10	4.72	Pass
	30 msec	m/s	5.73 to 7.01	6.65	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.23	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	74	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	60	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	79	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	58	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	11	Pass


 Laboratory Technician

01/06/2005
 Test Date

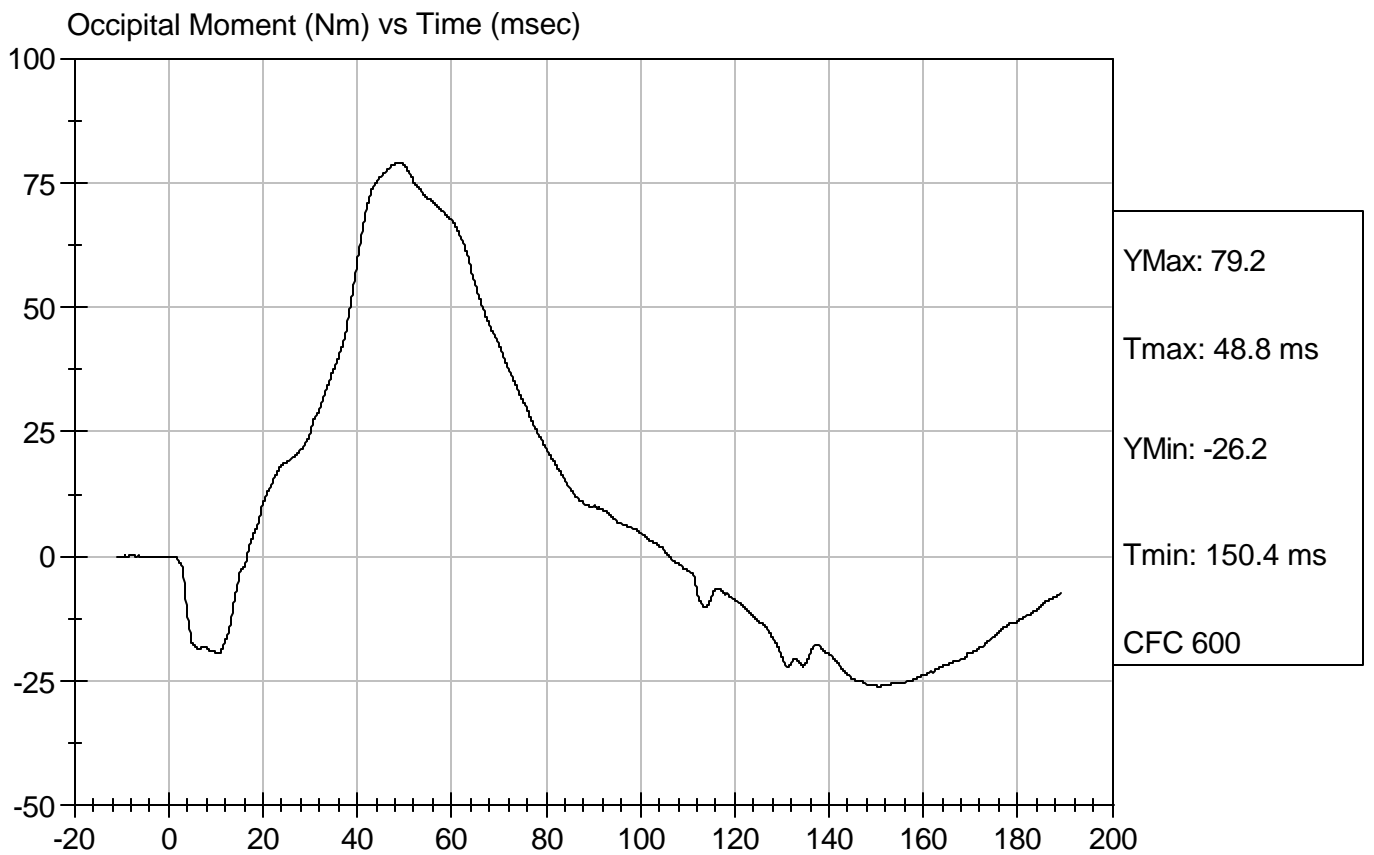
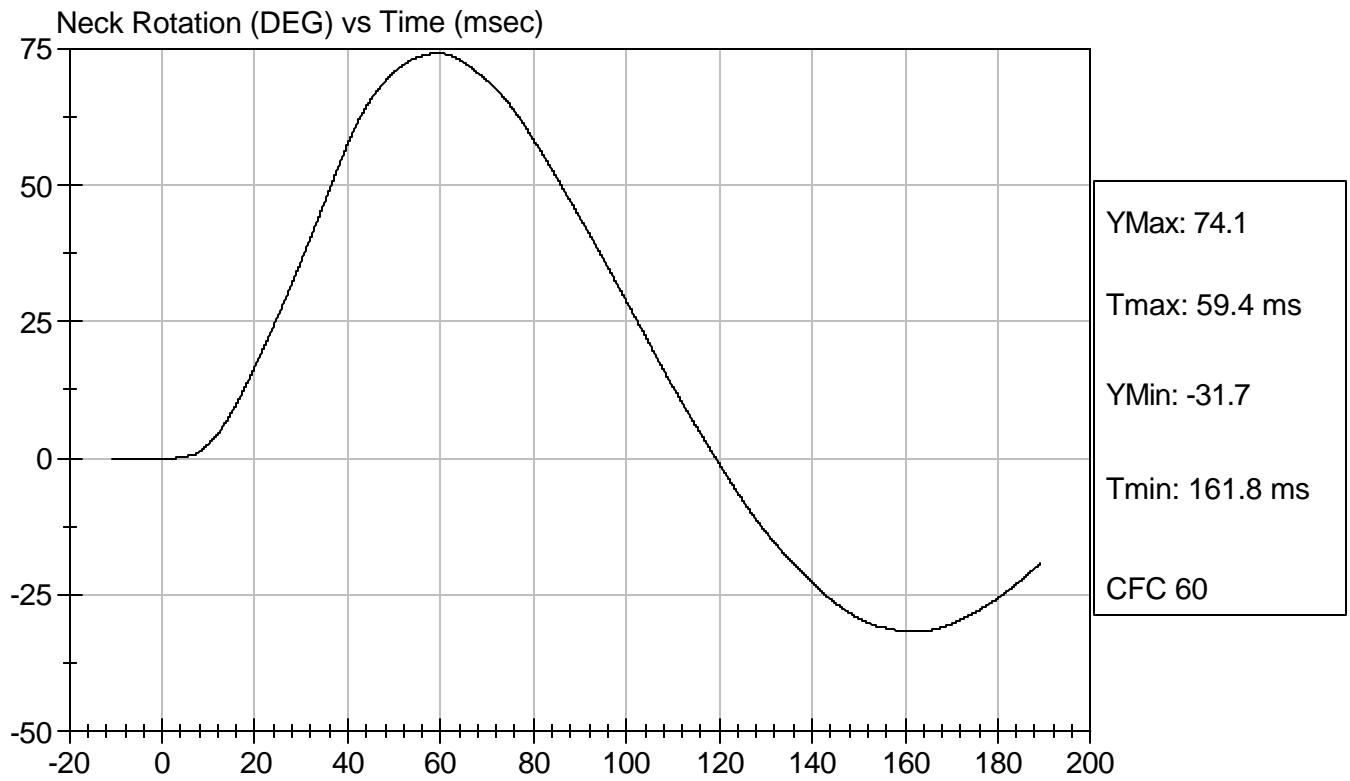

 Approved By





Test Desc: Neck Bending
Component ID: D05049

Test Date: 01/06/2005
Speed: 22.63 ft/sec, 6.90 m/sec



Calibration Test Results Summary

Dummy Serial Number: 904

Post-Test Calibration

External Dimensions:	The dummy passed all external dimension requirements.
Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all pendulum test requirements.
Thorax Impact Test:	The thorax passed all impact test requirements.
Pelvic Impact Test:	The pelvis passed all impact test requirements.
Abdominal Compression Test:	The abdomen passed all compression test requirements.
Lumbar Flexion Test:	The lumbar passed all flexion test requirements.

SID Calibration Data Sheet
Side Impact Dummy
Head Drop Calibration (Lateral)

ATD Serial No: 904

Test I.D: D05081

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	21	Pass
Peak Resultant Acceleration	G's	120 to 150	146	Pass
Is Resultant Curve Unimodal?	Yes/No	15% of peak	Yes	Pass
Peak Longitudnal Acceleration	G's	+/- 15	12	Pass
Overall Test Results				Pass

Jessica Hall
 Laboratory Technician

01/10/2005
 Test Date

David Winkelbauer
 Approved By

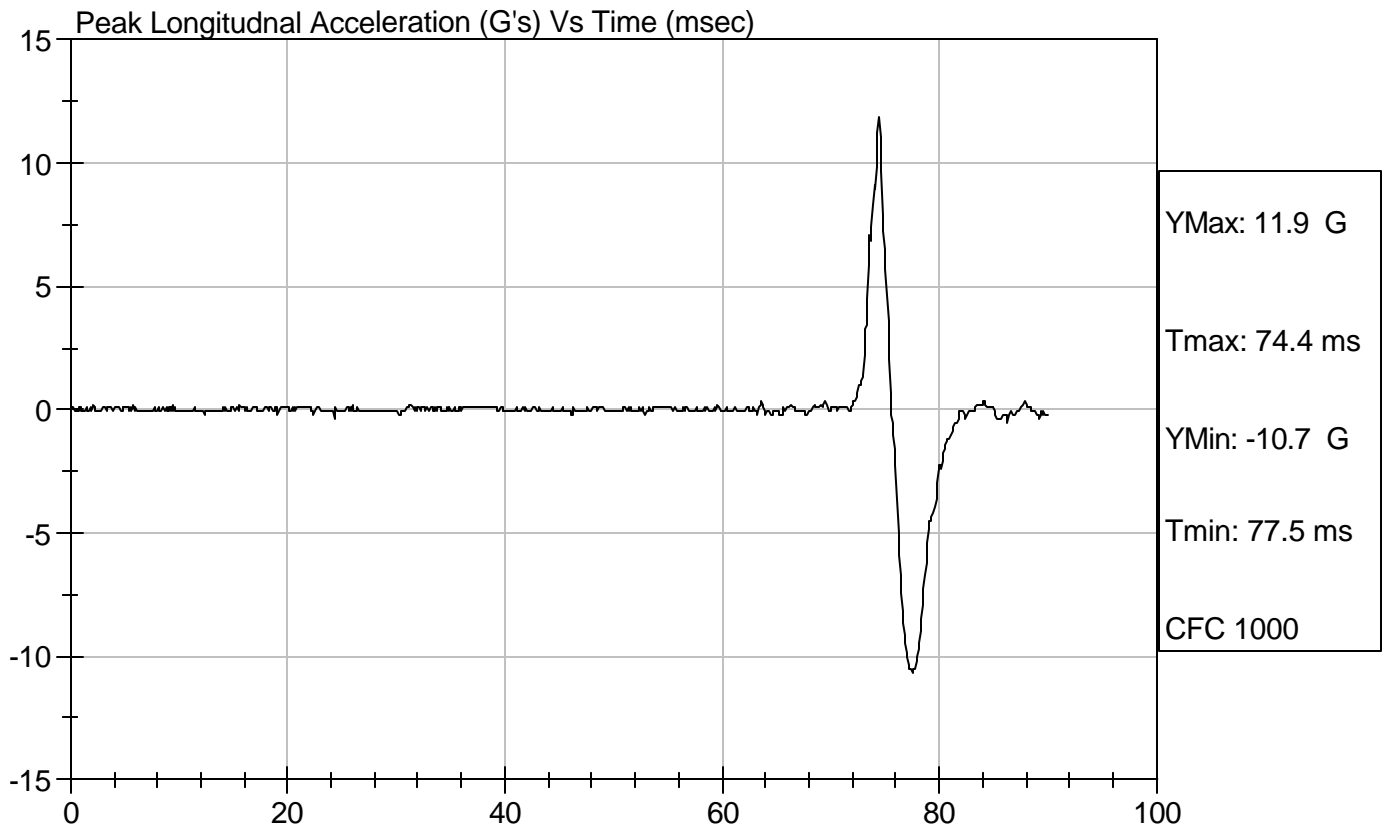
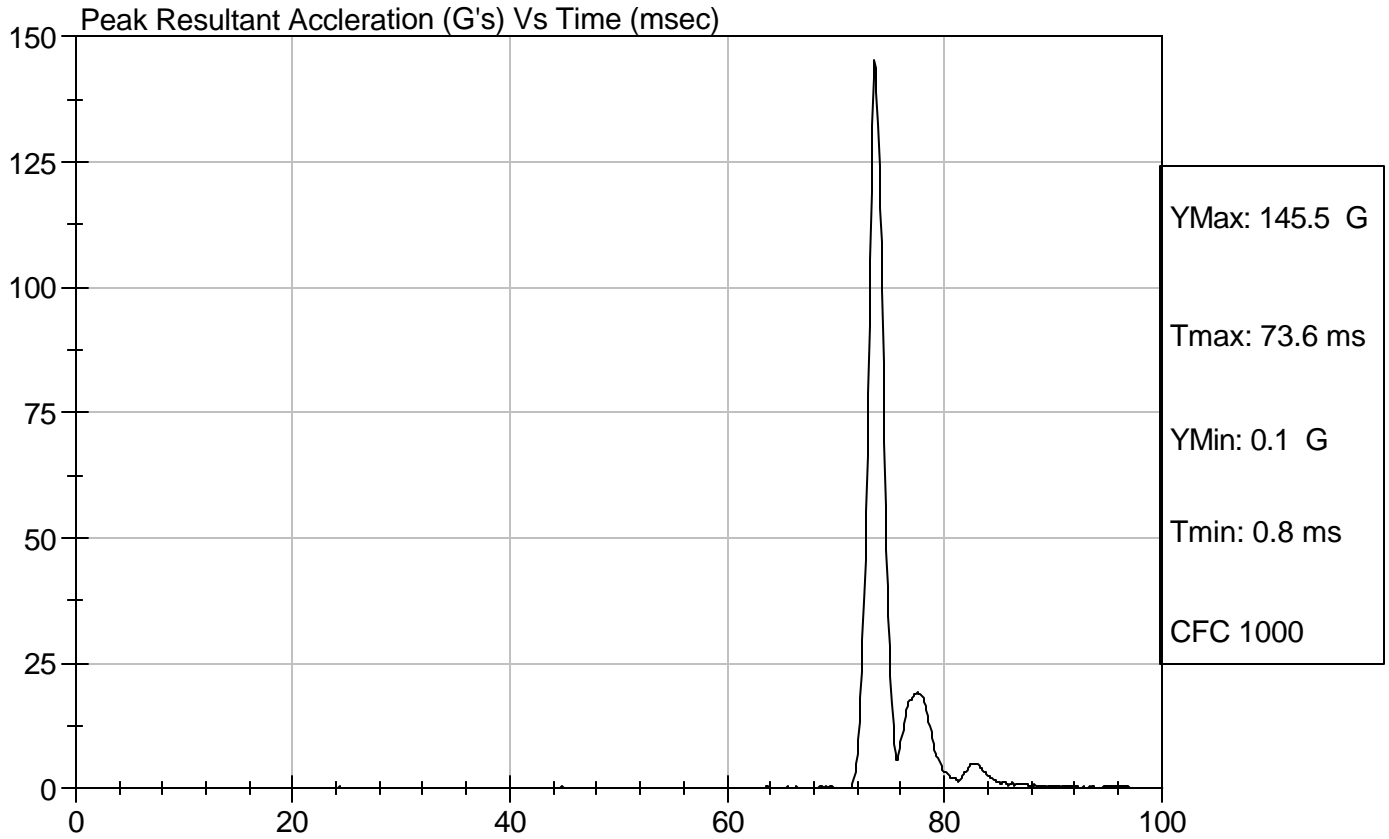


Test Description: Head Drop

Test Date: 01/10/2005

Component: D05081

Speed: 0 ft/s, 0.00 m/s



SID Calibration Data Sheet
Side Impact Dummy
Thorax Impact Test

ATD Serial No: 904

Test I.D: D05082

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Upper Rib	G's	37 - 46	38	Pass
Lower Rib	G's	37 - 46	37	Pass
Lower Spine	G's	15 - 22	22	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

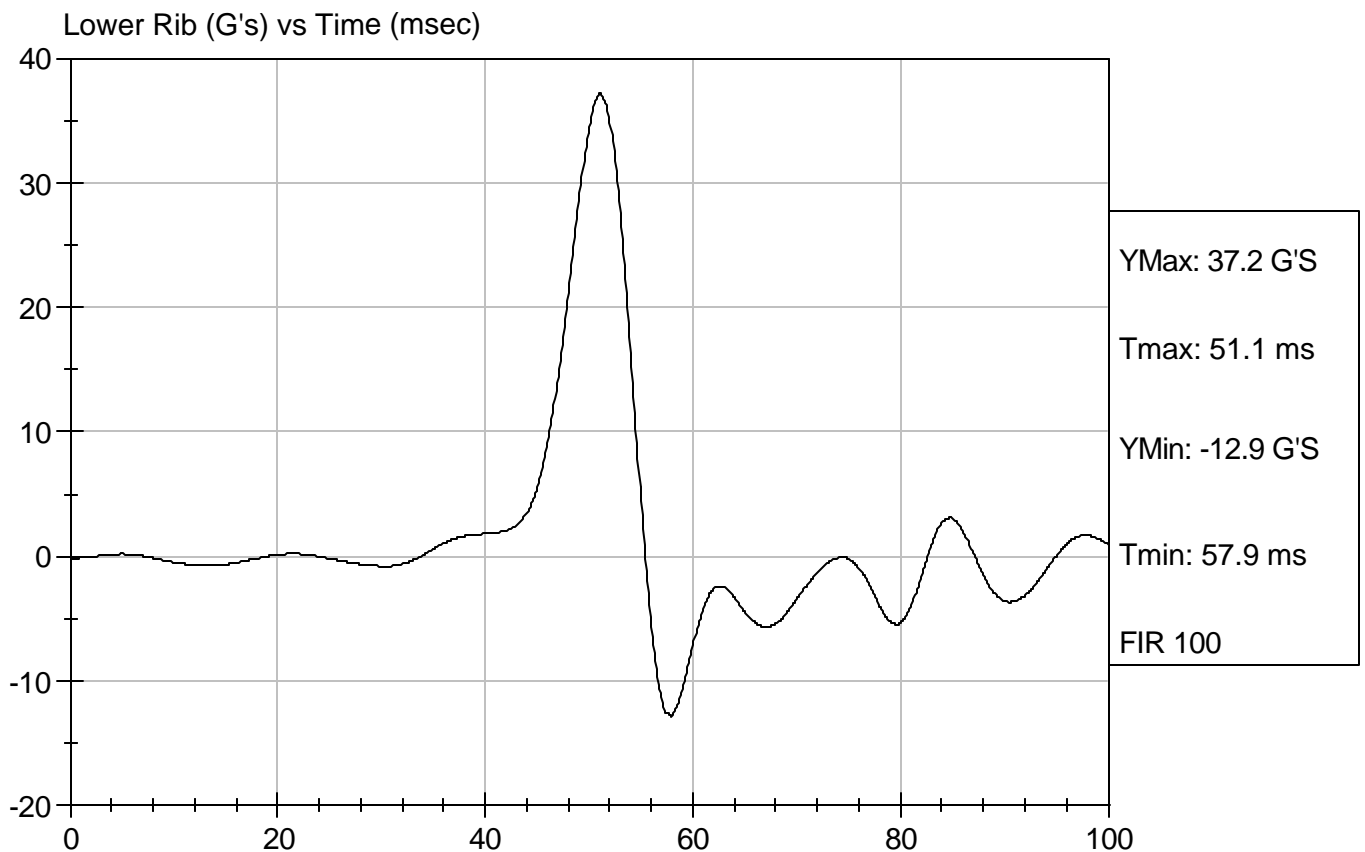
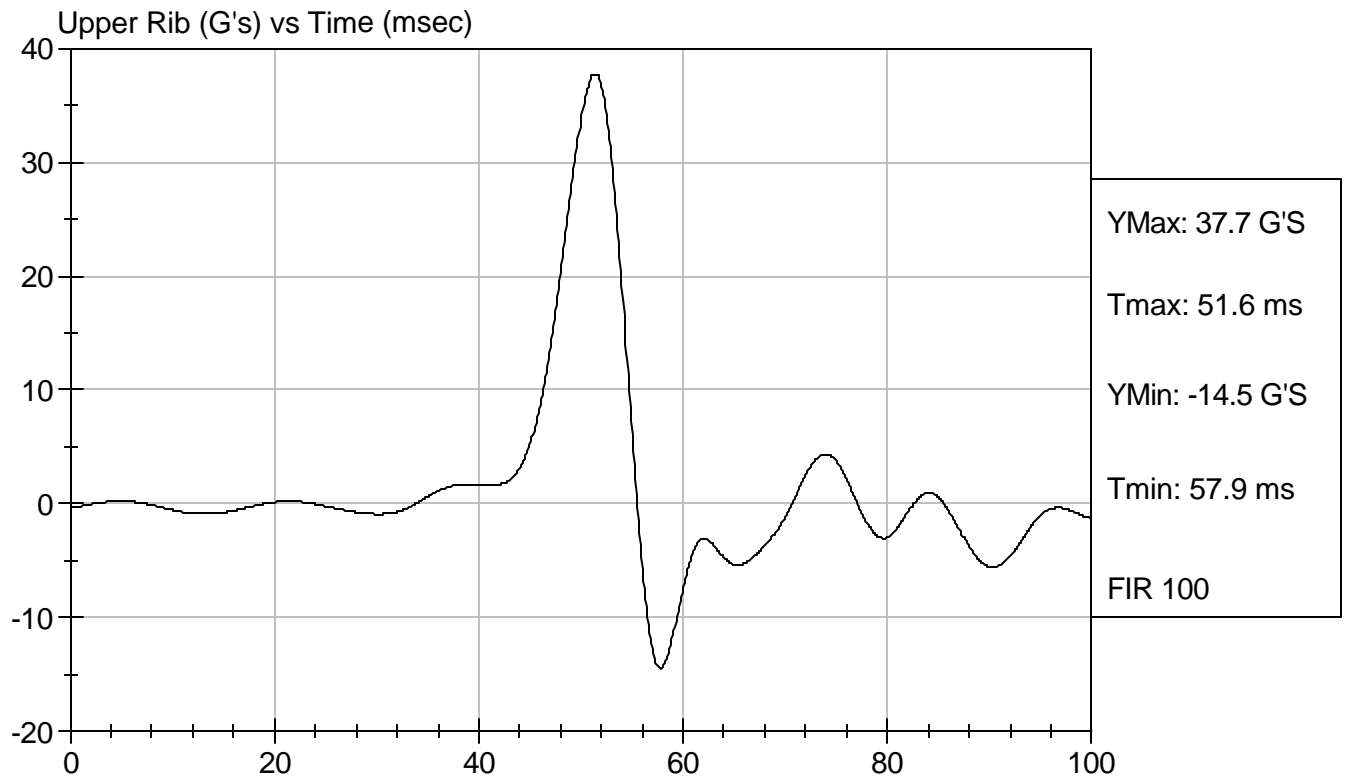
01/10/2005
 Test Date

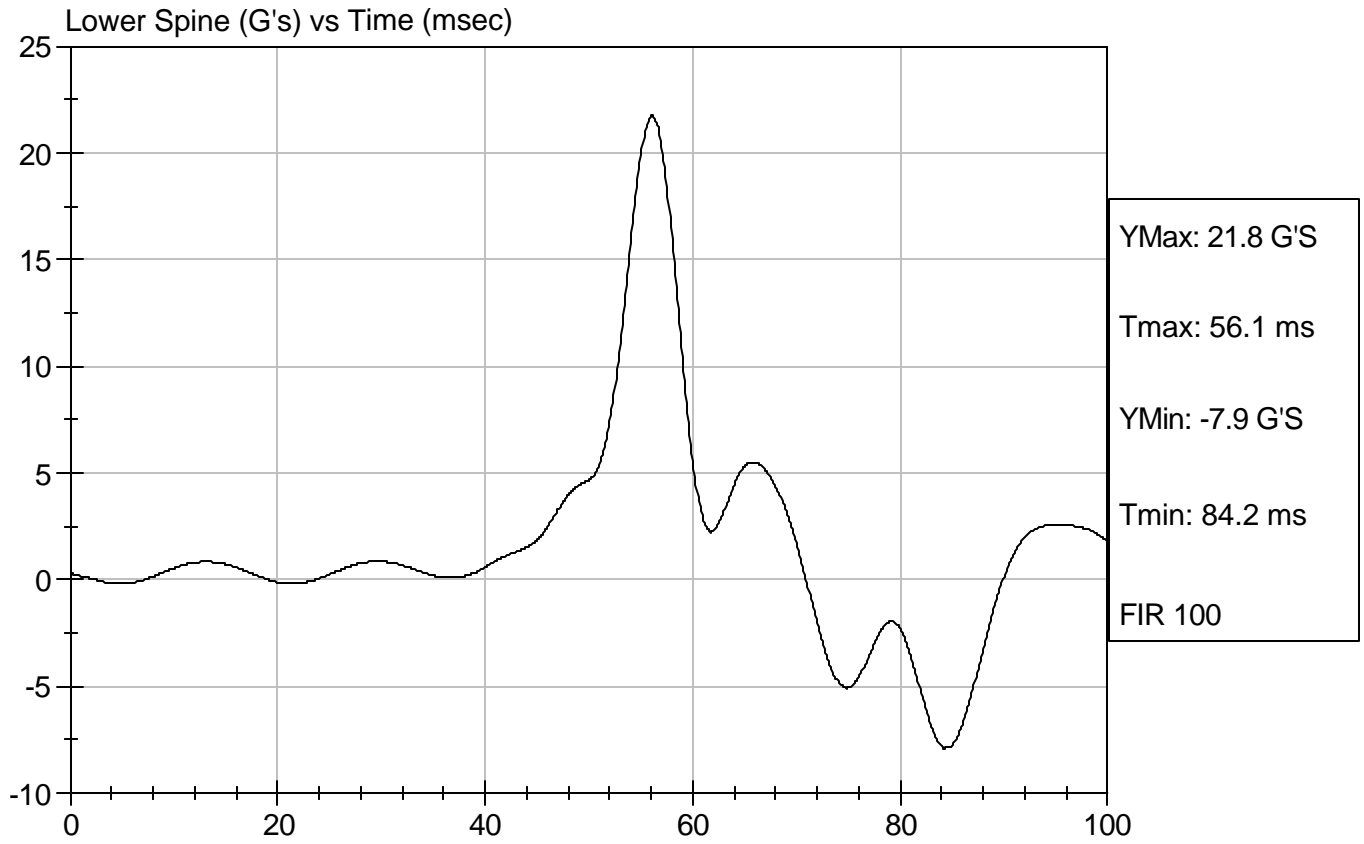
David Winkelbauer
 Approved By



Test Desc: Thorax Impact
Component ID: D05082

Test Date: 01/10/2005
Speed: 14.06 ft/sec, 4.29 m/sec





SID Calibration Data Sheet
Side Impact Dummy
Pelvis Impact Test

ATD Serial No: 904

Test I.D: D05083

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.5	21.5	Pass
Laboratory Relative Humidity	%	10 to 70	19	Pass
Probe Velocity	m/s	4.27 - 4.33	4.29	Pass
Pelvis Acceleration	G's	40 - 60	49	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

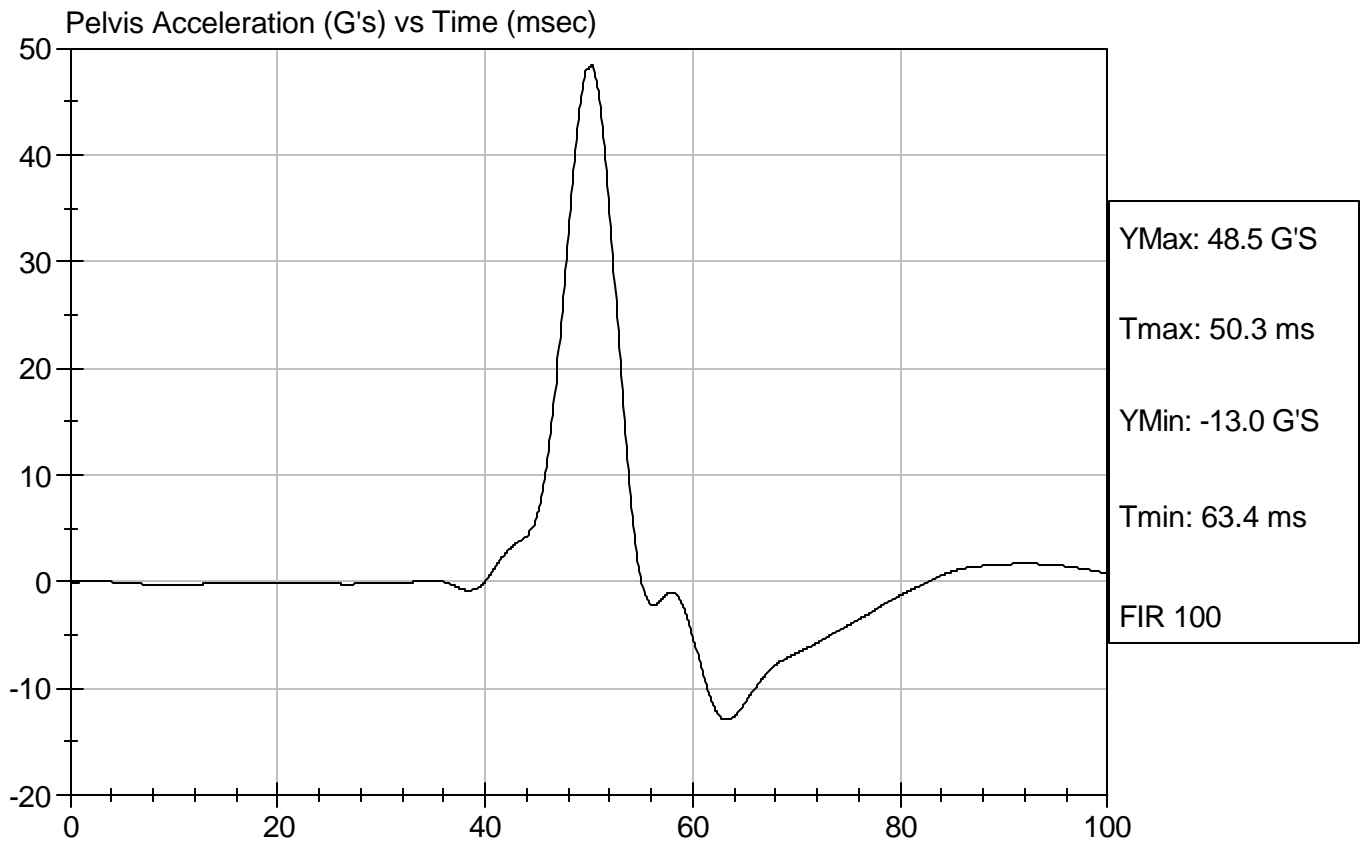
01/10/2005
Test Date

David Winkelbauer
Approved By



Test Desc: Pelvis Impact
Component ID: D05083

Test Date: 01/10/2005
Speed: 14.07 ft/sec, 4.29 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Abdominal Compression Calibration (Pre-Load = 10 lbs)

ATD Serial No: 904

Test I.D: D05084

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.7	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 12.7 mm	N	104 - 162	145	Pass
Force At 19 mm	N	163 - 222	200	Pass
Force At 25.4 mm	N	222 - 280	266	Pass
Force At 33 mm	N	325 - 391	372	Pass
Overall Test Results				Pass

Jessica Gall
Laboratory Technician

01/10/2005
Test Date

David Winkelbauer
Approved By

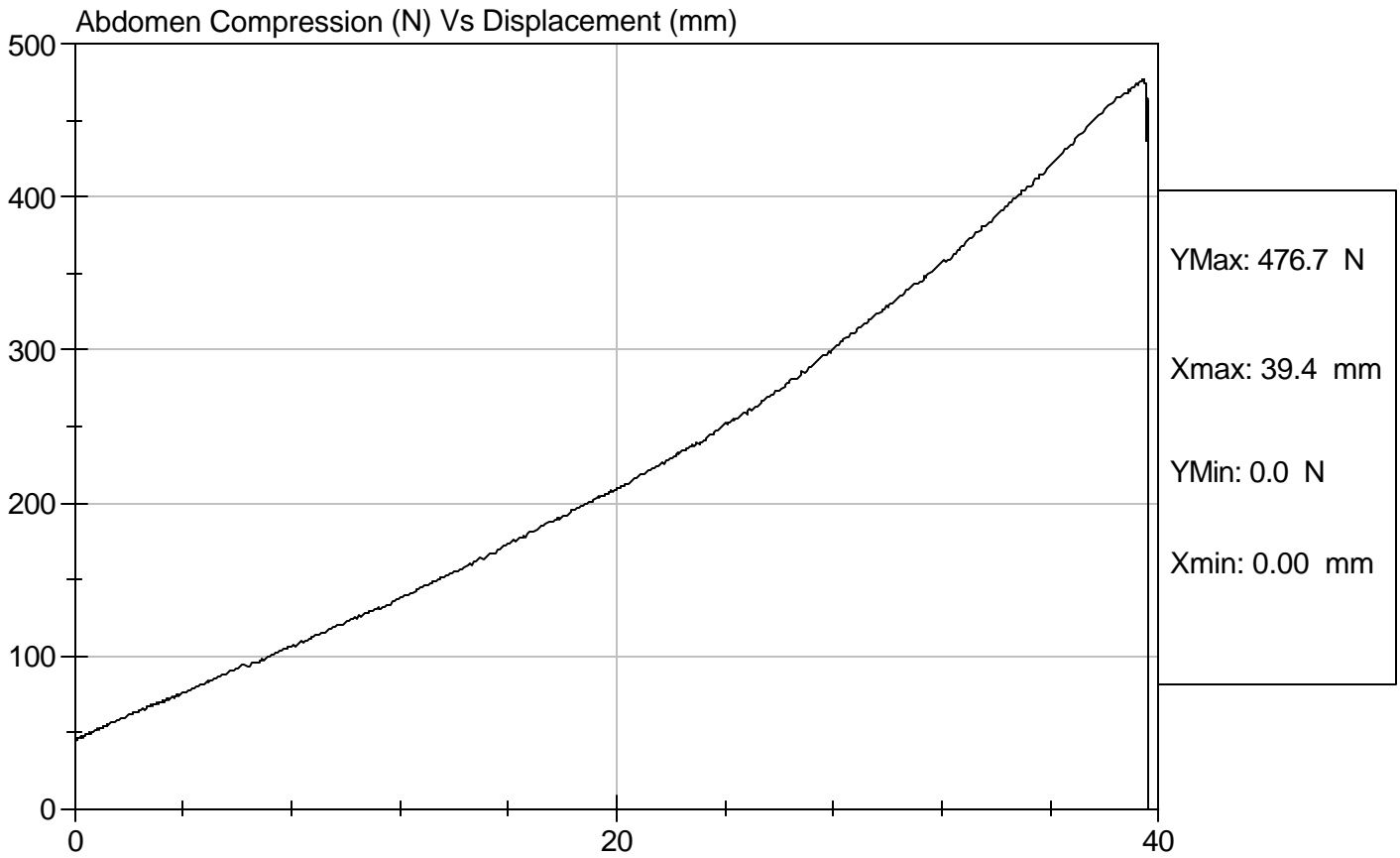


Test Description: Abdomen Compression

Test Date: 01/10/2005

Component: D05084

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy
Lumbar Flexion Calibration

ATD Serial No: 904

Test I.D.: D05085

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 - 25.5	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	20	Pass
Force At 0 deg	N	0 - 26.7	0.0	Pass
Force At 20 deg	N	97.9 - 151.2	129.3	Pass
Force At 30 deg	N	151.2 - 204.6	185.2	Pass
Force At 40 deg	N	204.6 - 258.0	246.3	Pass
Return Angle	Deg	12 Maximum	4	Pass
Overall Test Results				Pass

Jessica Gall
 Laboratory Technician

01/10/2005
 Test Date

David Winkelbauer
 Approved By

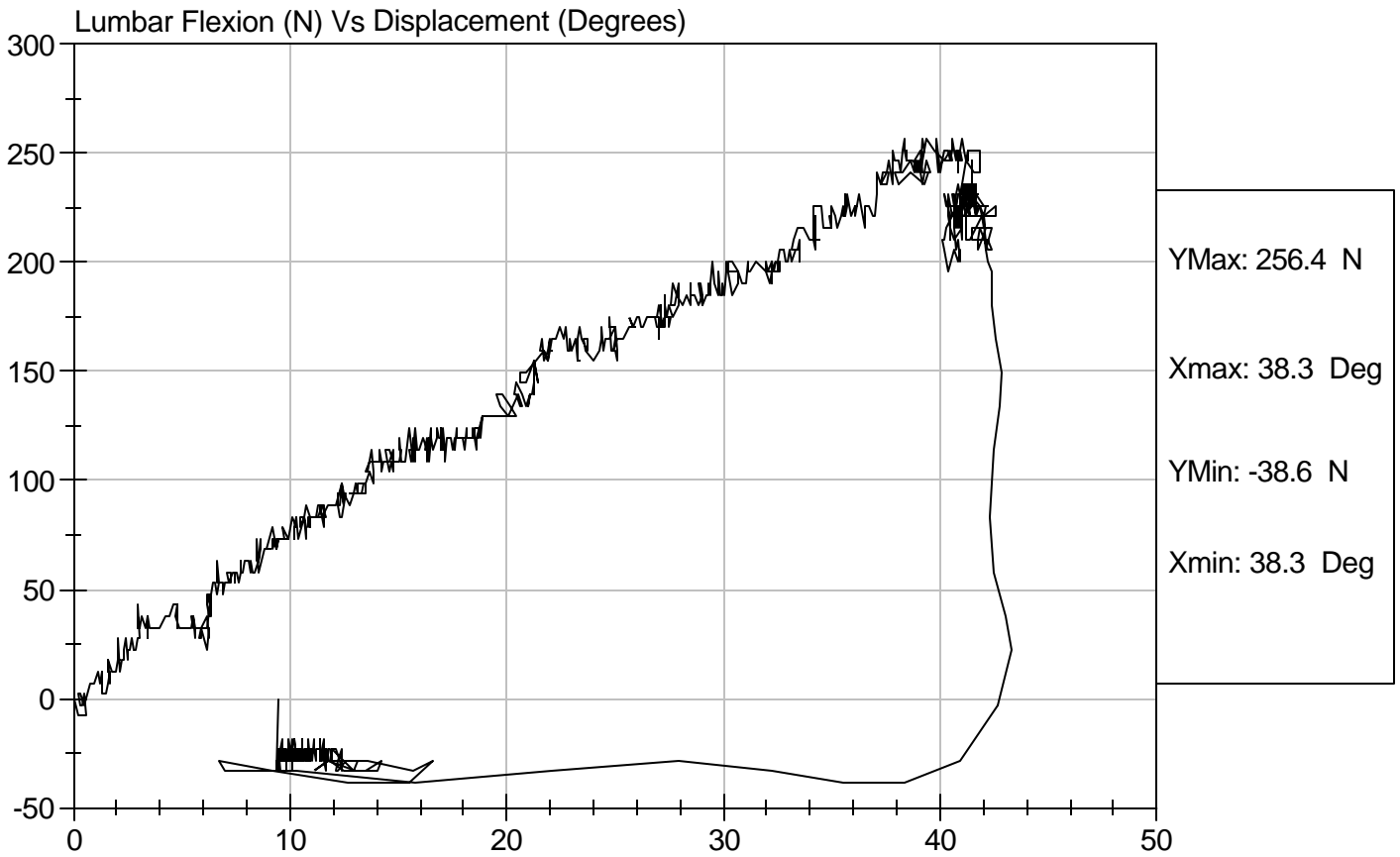


Test Description: Lumbar Flexion

Test Date: 01/10/2005

Component: D05085

Speed: 0 ft/sec, 0 m/sec



SID Calibration Data Sheet
Side Impact Dummy (SID)
Neck Pendulum Test

ATD Serial No: 904

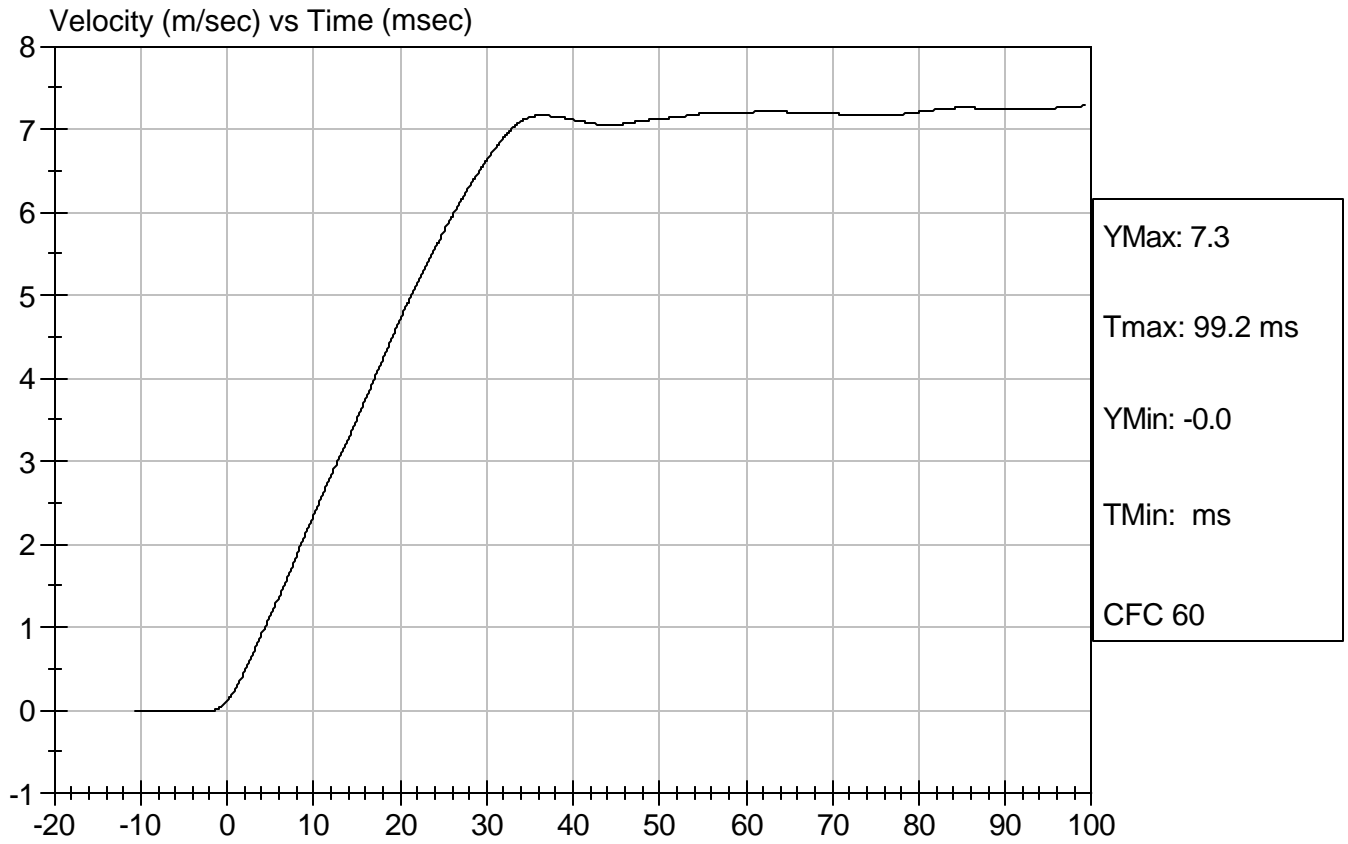
Test I.D.: D05089

Tested Parameter		Units	Specification	Result	Pass/Fail
Laboratory Temperature		deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity		%	10 to 70	20	Pass
Impact Velocity		m/s	6.89 to 7.13	7.02	Pass
Pendulum Deceleration	10 msec	m/s	1.96 to 2.55	2.36	Pass
	20 msec	m/s	4.12 to 5.10	4.72	Pass
	30 msec	m/s	5.73 to 7.01	6.63	Pass
	40 to 70 msec	m/s	6.27 to 7.64	7.21	Pass
Midsagittal Plane Max Rotation		deg	66 to 82	76	Pass
Head Rotation Peak to Zero - Decay Time		msec	58 to 67	61	Pass
Max. Mx at Occipital Condyles		Nm	73 to 88	79	Pass
Mx Peak To Zero - Decay Time		msec	49 to 64	61	Pass
Mx Peak to Max. Head Rotation		msec	2 to 16	12	Pass


 Laboratory Technician

01/10/2005
 Test Date


 Approved By

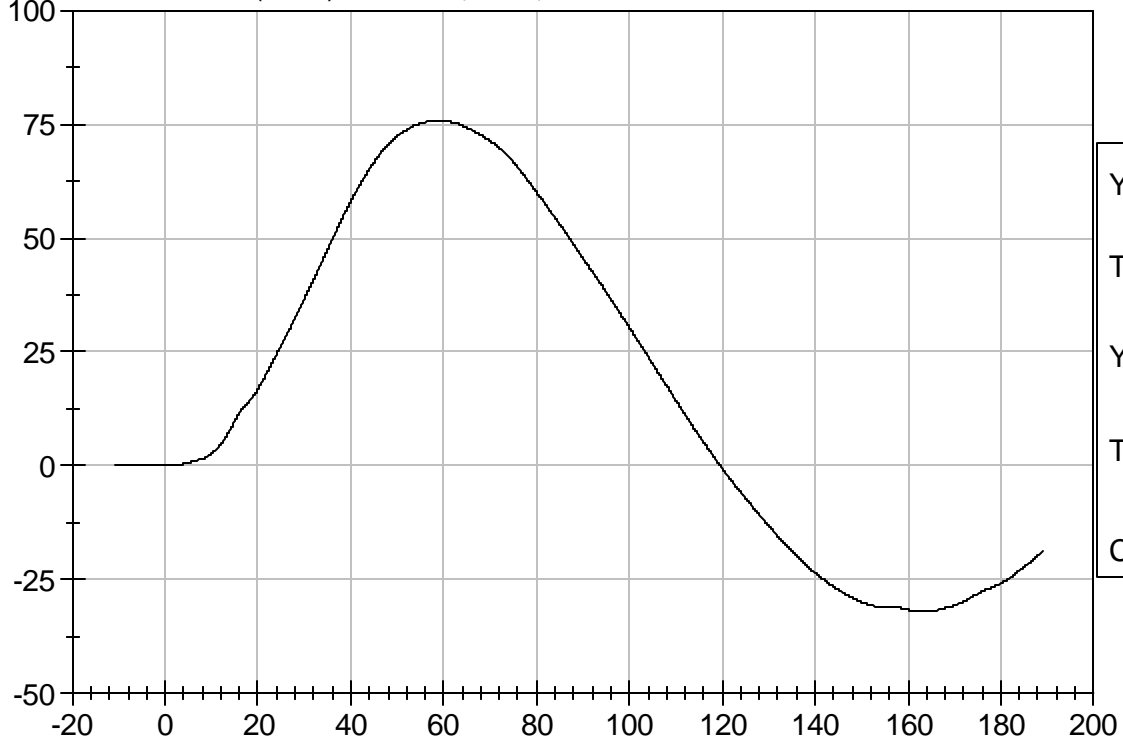




Test Desc: Neck Bending
Component ID: D05089

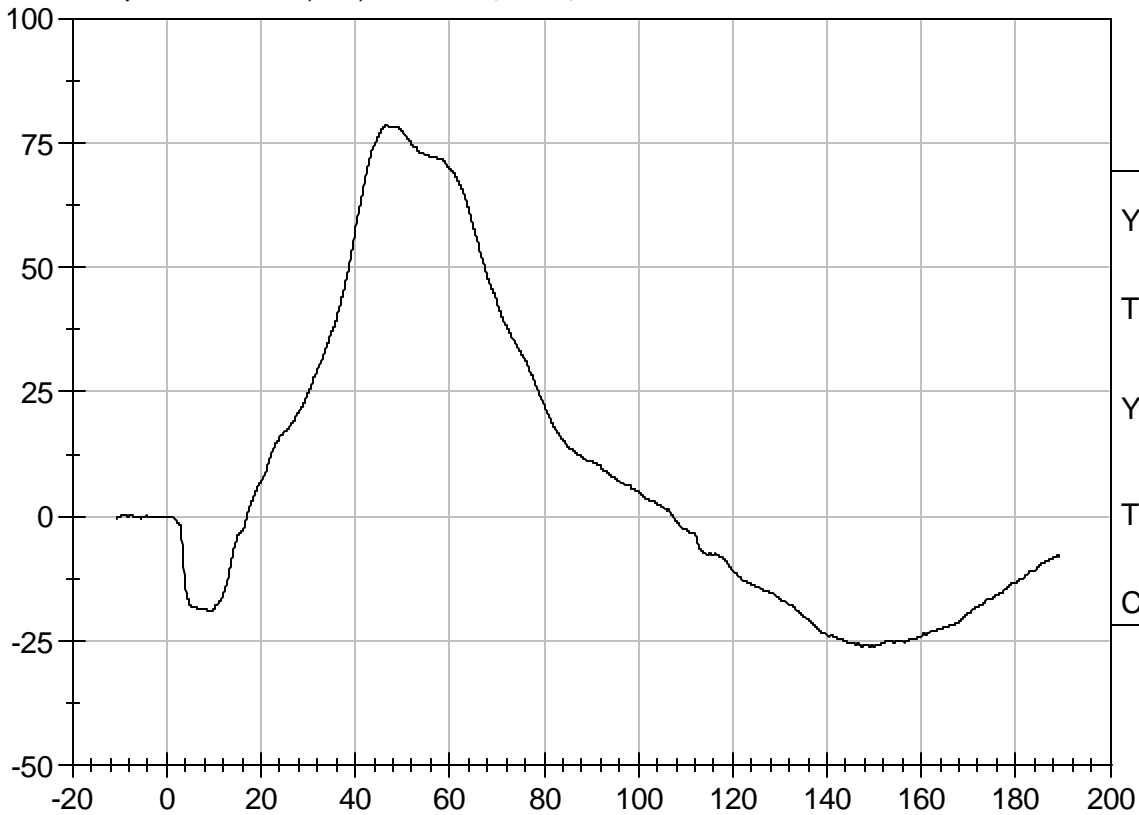
Test Date: 01/10/2005
Speed: 23.02 ft/sec, 7.02 m/sec

Neck Rotation (DEG) vs Time (msec)



YMax: 75.8
Tmax: 58.8 ms
YMin: -32.1
Tmin: 163.3 ms
CFC 60

Occipital Moment (Nm) vs Time (msec)



YMax: 78.5
Tmax: 46.6 ms
YMin: -26.3
Tmin: 149.0 ms
CFC 600

SID Calibration Data Sheet
Side Impact Dummy
Inspection Checklist

ATD Serial No: 904

Test Part	Items Checked	Result
Skin	Visual inspection	Pass
Head	Visual, ballast, accelerometer mount	Pass
Neck	Visual	Pass
Spine Box	Visual, ballast, accelerometer mount	Pass
Rib Cage	Visual, measure	Pass
Sternum	Visual	Pass
Lumbar Spine	Visual	Pass
Abdomen	Visual	Pass
Pelvis	Visual, palpate, accelerometer mount	Pass
Upper Legs	Visual	Pass
Knees	Visual	Pass
Lower Legs	Visual, range of motion	Pass
Ankles	Visual, range of motion	Pass
Feet	Visual, range of motion	Pass
Joints	1 to 2 g range	Pass
Other		Pass

Jessica Hall
 Laboratory Technician
David Winkelbauer
 Approved By

01/10/2005
 Test Date

APPENDIX D

TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR DRIVER DUMMY NO.271		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	AHR15	Endevco	8/19/04
Lower Rib Y	J21612	Endevco	8/19/04
Lower Spine Y	AH0N9	Endevco	8/23/04
Pelvis Y	AGTM8	Endevco	8/24/04
Upper Rib Redundant Y	AP2D6	Endevco	8/19/04
Lower Rib Redundant Y	AHW95	Endevco	8/19/04
Lower Spine Redundant Y	ALCR0	Endevco	8/23/04
Pelvis Redundant Y	AMRR4	Endevco	8/23/04
Head X	F14-B19	Entran	9/10/04
Head Y	F09-N09	Entran	9/10/04
Head Z	F14-A12	Entran	9/10/04
Head Redundant X	F11-H07	Entran	9/10/04
Head Redundant Y	F11-H19	Entran	9/10/04
Head Redundant Z	F28-N04	Entran	9/10/04
Neck Load Cell	376	Denton	9/29/04

	INSTRUMENTS FOR PASSENGER DUMMY NO. 904		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Upper Rib Y	J03-J09	Entran	8/23/04
Lower Rib Y	J23-J04	Entran	8/23/04
Lower Spine Y	J14-J17	Entran	8/19/04
Pelvis Y	AH0A2	Endevco	8/24/04
Upper Rib Redundant Y	J14-J14	Entran	8/23/04
Lower Rib Redundant Y	J23-J08	Entran	8/23/04
Lower Spine Redundant Y	AHY54	Endevco	7/26/04
Pelvis Redundant Y	AJ462	Endevco	8/24/04
Head X	AGTY6	Endevco	8/23/04
Head Y	AALH1	Endevco	8/23/04
Head Z	J13943	Endevco	8/23/04
Head Redundant X	AN8D2	Endevco	8/23/04
Head Redundant Y	J10195	Endevco	8/23/04
Head Redundant Z	J11166	Endevco	8/23/04
Neck Load Cell	1561	Entran	7/21/04

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Midrear of Left Front Door Y	K20-J10	Entran	12/02/04
Left Front Door Upper Centerline Y	H20-R08	Entran	9/24/04
Midrear of Left Rear Door Y	A29-B06	Entran	9/13/04
Left Rear Door Upper Centerline Y	F15-M09	Entran	9/27/04
Left Mid A-Post Y	K20-J05	Entran	12/02/04
Left Lower A-Post Y	J07-M07	Entran	10/29/04
Left Mid B-Post Y	L20-B12	Entran	12/02/04
Left Lower B-Post Y	A29-F09	Entran	9/13/04
Floorpan @ Rear Axle X	J07-M14	Entran	10/29/04
Floorpan @ Rear Axle Y	J07-M18	Entran	10/29/04
Floorpan @ Rear Axle Z	J07-M16	Entran	10/29/04
Right Front Sill X	L18-N12	Entran	10/22/04
Right Front Sill Y	J25-R17	Entran	12/01/04
Right Front Sill Z	J25-R20	Entran	12/01/04
Right Rear Sill X	K07-R11	Entran	8/25/04
Right Rear Sill Y	A27-R17	Entran	10/22/04
Right Rear Sill Z	L18-J07	Entran	8/24/04
Left Front Sill Y	J21-Z09	Entran	12/1/04
Left Rear Sill Y	K18-J06	Entran	12/02/04
Right Rear Occupant Compartment Y	K11-Z14	Entran	12/02/04
Passenger Seat Track Y	K18-D23	Entran	12/02/04
Vehicle CG X	K18-J04	Entran	12/02/04
Vehicle CG Y	K18-D18	Entran	12/02/04
Vehicle CG Z	K18-D15	Entran	12/02/04
Driver Seat Track Y	H20-R07	Entran	10/27/04