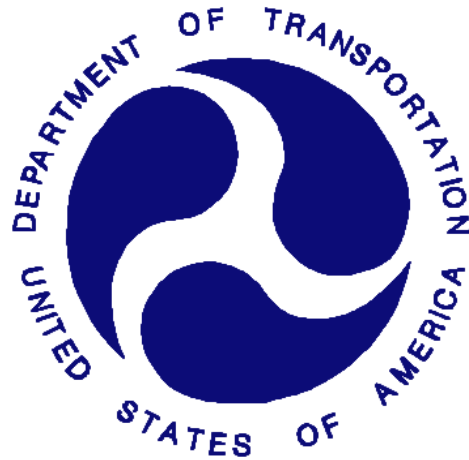


REPORT NUMBER: SINCAP-MGA-2016-024

**NEW CAR ASSESSMENT PROGRAM (NCAP)
Moving Deformable Barrier Side Impact Test**

**FCA US LLC
2016 Dodge Journey SE 5-Door SUV
NHTSA No.: M20160307**

**MGA RESEARCH CORPORATION
5000 Warren Road
Burlington, WI 53105**



Test Date: October 20, 2015

Final Report Date: October 27, 2015

FINAL REPORT

**U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Office of Crashworthiness Standards
Mail Code: NVS-111
1200 New Jersey Ave, SE
Room W43-410
Washington, DC 20590**

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Prepared by: 
Ben Fischer, Project Engineer

Approved by: 
Dave Winkelbauer, Project Manager

Approval Date: October 27, 2015

FINAL REPORT ACCEPTANCE BY OCWS:

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

Date: _____

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

Date: _____

Technical Report Documentation Page

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7. Author(s) Ben Fischer, Project Engineer		8. Performing Organization Report No. SINCAP-MGA-2016-024																													
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12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards (NVS-111) 1200 New Jersey Ave, SE, Room W43-410 Washington, D.C. 20590		13. Type of Report and Period Covered: Final Test Report October 20, 2015 to October 27, 2015																													
		14. Sponsoring Agency Code NVS-111																													
15. Supplementary Notes																															
16. Abstract A 55/28 km/h 90° Moving Deformable Barrier NCAP Side Impact Test was conducted on the 2016 Dodge Journey SE 5-Door SUV in accordance with the specifications of the Office of Crashworthiness Standards NCAP Side Laboratory Test Procedure for the generation of consumer information on vehicle side crash protection. The test was conducted at MGA Research Corporation in Burlington, Wisconsin on October 20, 2015. The impact velocity of the Moving Deformable Barrier (MDB) was 61.46 km/h, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 20.5°C. The target vehicle post-test maximum crush was 194 mm at level 2. The test vehicle's performance was as follows:																															
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17. Key Words New Car Assessment Program (NCAP) Side Impact MDB ES-2re SID-IIs		18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services Division, NPO-411 1200 New Jersey Ave, SE Washington, DC 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833																													
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SECTION 1
TEST PURPOSE AND PROCEDURE

This moving deformable barrier side impact test is part of the MY 2016 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-14-D-00353. The purpose of this test is to generate comparative side impact performance in a 2016 Dodge Journey SE 5-Door SUV. The side impact test was conducted in accordance with the Office of Crashworthiness Standard's Side NCAP Laboratory Test Procedure dated September 2013.

SECTION 2 SUMMARY OF TEST RESULTS

A 2016 Dodge Journey SE 5-Door SUV was impacted on the left (driver's) side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 61.46 km/h. The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by MGA Research Corporation in Burlington, Wisconsin on October 20, 2015. Pre-test and post-test photographs of the test vehicle, the MDB, and the dummies (ES-2re and SID-IIs) are included in this report.

Dummies were placed in the driver and left rear designated seating positions according to instructions specified in the OCWS NCAP Side Laboratory Test Procedure dated September 2013. The side impact event was documented by eleven (11) cameras. Camera locations are included in this report.

The dummies were instrumented in the following manner:

DRIVER ATD (ES-2re)

Primary and Redundant Head CG Triaxial Accelerometers
 Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
 Abdomen Forward, Middle, and Rear Y-Axis Load Cells
 Lower Spine (T12) Triaxial Accelerometers
 Pubic Symphysis Y-Axis Load Cell

PASSENGER ATD (SID-IIs)

Primary and Redundant Head CG Triaxial Accelerometers
 Primary Head CG Angular Rate Sensors
 Chest Upper Rib, Middle Rib, and Lower Rib Y-Axis Displacement Potentiometers
 Abdomen Upper Rib and Lower Rib Y-Axis Displacement Potentiometers
 Lower Spine (T12) Triaxial Accelerometers
 Acetabulum and Iliac Wing Y-Axis Load Cells

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

Dummy Injury readings were recorded as follows:

DUMMY INJURY VALUES

	Driver ATD (ES-2re)		
Measurement Description	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	106
Maximum Thorax Rib Deflection	mm	44	26
Total Abdominal Force	N	2500	612
Pubic Symphysis Force	N	6000	1203

	Passenger ATD (SID-IIs)		
Measurement Description	Units	Threshold	Result
Head Injury Criteria (HIC ₃₆)	N/A	1000	135
Resultant Lower Spine Acceleration	Gs	82	38
Total Pelvic Force (sum of acetabular and iliac forces)	N	5525	4327
Maximum Thoracic Rib Deflection	mm	38*	23
Maximum Abdomen Rib Deflection	mm	45*	33

*Proposed IARV

Supplemental restraint information is given below:

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	Yes	No		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other:	No		No	

The test data can be found on the NHTSA website at www.nhtsa.dot.gov

GENERAL COMMENTS

None.

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

SECTION 3
OCCUPANT AND VEHICLE INFORMATION / DATA SHEETS

**DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
Test Date: 10/20/2015

TEST VEHICLE INFORMATION AND OPTIONS

NHTSA No.	M20160307	Traction Control System (TCS)	Yes
Model Year	2016	Auto-Leveling System	No
Make	Dodge	Automatic Door Locks (ADL)	Yes
Model	Journey SE	Power Window Auto-Reverse	Yes
Body Style	5-Door SUV	Other Optional Feature	N/A
VIN	3C4PDCAB9GT104388	Driver Front Airbag	Yes
Body Color	Billet Silver Metallic	Driver Curtain Airbag	Yes
Odometer Reading (km/mi)	92 / 57	Driver Head/Torso Airbag	No
Engine Displacement (L)	2.4	Driver Torso Airbag	No
Type/No. Cylinders	4	Driver Torso/Pelvis Airbag	Yes
Engine Placement	Lateral	Driver Pelvis Airbag	No
Transmission Type	Automatic	Driver Knee Airbag	Yes
Transmission Speeds	4	Rear Pass. Curtain Airbag	Yes
Overdrive	Yes	Rear Pass. Head/Torso Airbag	No
Final Drive	FWD	Rear Pass. Torso Airbag	No
Roof Rack	Yes	Rear Pass. Torso/Pelvis Airbag	No
Sunroof/T-Top	No	Rear Pass. Pelvis Airbag	No
Running Boards	No	Driver Seat Belt Pretensioner	Yes
Tilt Steering Wheel	Yes	Rear Pass. Seat Belt Pretensioner	No
Power Seats	No	Driver Load Limiter	Yes
Anti-Lock Brakes (ABS)	Yes	Rear Pass. Load Limiter	No
		Other Restraint Feature	N/A

Does owner's manual provide instruction to turn off automatic door locks?	No
---	----

DATA FROM CERTIFICATION LABEL

Manufactured By	FCA US LLC	GVWR (kg)	2271
Date of Manufacture	08/15	GAWR Front (kg)	1248
Vehicle Type	MPV	GAWR Rear (kg)	1339

VEHICLE SEATING AND WEIGHT CAPACITY DATA

Measured Parameter	Front	Rear	Third	Total	
Designated Seating Capacity (DSC)	2	3		5	
Capacity Weight (VCW) (kg)				392	(A)
DSC x 68.04 kg				340	(B)
Rated Cargo and Luggage Weight (RCLW) (kg)				52	(A-B)

VEHICLE SEAT TYPE

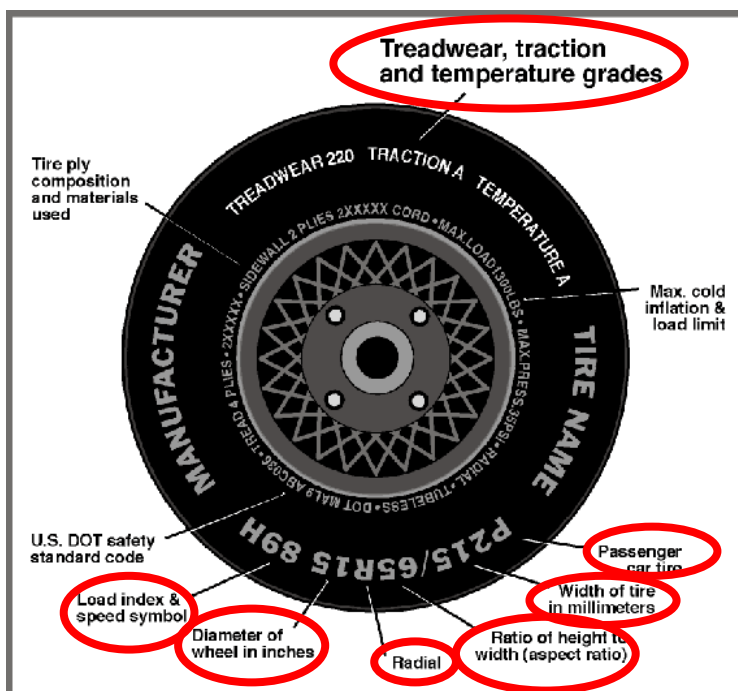
Seating Location	Type of Seat Pan				Type of Seat Back		
	Bucket	Bench	Split Bench	Contoured	Fixed	Adjustable	
						Manual	Power
Front Seat	X					w/ Lever	
Rear or Second Row Seat			X			w/ Lever	
Third Row Seat							

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

VEHICLE TIRE INFORMATION



Measured Parameter	Front	Rear
Max. Tire Pressure (kPa)	300	300
Cold Pressure (kPa)	250	250
Recommended Tire Size	225/65R17	225/65R17
Tire Size on Vehicle	225/65R17	225/65R17
Tire Manufacturer	Kumho	Kumho
Tire Model	Solus KH16	Solus KH16
Treadwear	440	440
Traction	A	A
Temperature Grade	A	A
Tire Plies Sidewall	2 Polyester	2 Polyester
Tire Plies Body	2 Steel, 2 Polyester, 1 Nylon	2 Steel, 2 Polyester, 1 Nylon
Load Index/Speed Symbol	100H	100H
Tire Material	Rubber	Rubber
DOT Safety Code Left	C0E6 YP5M 2015	C0E6 YP5M 1915
DOT Safety Code Right	C0E6 YP5M 2015	C0E6 YP5M 2015

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

TEST PRESSURES

	Units	LF	RF	LR	RR
As Delivered	kPa	283	290	290	290
Tire Placard	kPa	250	250	250	250
Owner's Manual	kPa	250	250	250	250
As Tested	kPa	250	250	250	250

MDB TIRE SPECIFICATIONS

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

TEST VEHICLE AXLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)			Fully Loaded		
		Front	Rear	Total	Front	Rear	Total	Front	Rear	Total
Left	kg	502.0	389.0		548.0	458.5		542.0	467.5	
Right	kg	485.5	384.0		490.5	438.0		490.5	441.5	
Ratio	%	56.1%	43.9%		53.7%	46.3%		53.2%	46.8%	
Totals	kg	987.5	773.0	1760.5	1038.5	896.5	1935.0	1032.5	909.0	1941.5

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value	
Total Delivered Weight (UVW)	kg	1760.5	(A)
Sum of Actual Weight of 2 P572 ATDs Used	kg	129	(B)
Rated Cargo/Luggage Weight (RCLW)	kg	52	(C)
Calculated Test Vehicle Target Weight (TWTW)	kg	1941.5	(A+B+C)

Does the measured As Tested Vehicle Weight lie within the required weight range (i.e. Calculated Test Vehicle Target Weight – 4.5 kg to 9 kg)? **YES**

TEST VEHICLE ATTITUDES AND CG

	Units	Fully Loaded	As Tested	Meets Requirement***
Left Front	mm	798	794	Yes
Right Front	mm	803	800	Yes
Right Rear	mm	800	802	Yes
Left Rear	mm	790	798	Yes
Vehicle CG (Aft of Front Axle)	mm	1356	1342	
Vehicle CG (Left (+) / Right (-) from Longitudinal Centerline)	mm	32	10	

*** The "As Tested" vehicle attitude measurements must be equal to or within ± 10 mm of the "Fully Loaded" vehicle attitude measurements at each wheel well.

Test height adjustable suspension setting, if applicable:	Not Applicable
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DATA SHEET NO. 1 (CONTINUED)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
Test Date: 10/20/2015

WEIGHT OF BALLAST AND VEHICLE COMPONENTS REMOVED TO MEET TVTW

Component Description	Weight (kg)
Weight of Ballast, if any	25
None	

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

SEAT POSITIONING

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

SCRL ANGLE RANGE

Seat	SCRL (°)		
	Max	Min	Mid
Driver Seat	20.6	16.8	18.7
Front Passenger Seat	Fixed	Fixed	Fixed
Front Center Seat			
Struck Side Rear Seat	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Fixed

SEAT HEIGHT AND ANGLE

Seat	As-Tested SCRL Angle (Mid)	As-Tested SCRP Height (mm)	SCRP Height Position	SCRP Height (mm)		
				Rear-Most	Mid	Forward-Most
Driver Seat	18.7	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Front Passenger Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Front Center Seat			Max			
			Mid			
			Min			
Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Non-Struck Side Rear Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed
Rear Center Seat	Fixed	Fixed	Max	Fixed	Fixed	Fixed
			Mid	Fixed	Fixed	Fixed
			Min	Fixed	Fixed	Fixed

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

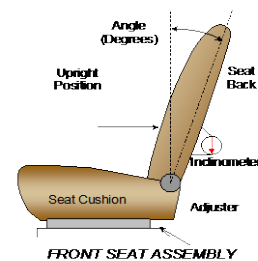
NHTSA No. M20160307
 Test Date: 10/20/2015

SEAT FORE/AFT POSITIONS

Seat	Total Fore/Aft Travel		Test Position from Forward-most Position	
	mm	Detents	mm	Detent
Driver Seat	232	34 (1 st as 1)	116	17 th (1 st as 0)
Front Passenger Seat	234	35 (1 st as 1)	117	17 th (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	120	13 (1 st as 1)	120	12 th (1 st as 0)
Non-Struck Side	120	13 (1 st as 1)	120	12 th (1 st as 0)
Rear Center Seat	120	13 (1 st as 1)	120	12 th (1 st as 0)

SEAT BACK ANGLE ADJUSTMENT

The driver's seat back is positioned to the manufacturer's designated design angle. The front passenger's seat back is positioned in a similar manner as the driver's seat back. The struck side rear seat back is adjusted following Appendix C, "Positioning Dummies in the Test Vehicle" in the NCAP Laboratory Test Procedure dated September 2013. The rear center and non-struck side rear outboard seat backs are positioned to match the struck side rear seat back.



Seat	Total Seat Back Angle Range		Test Position from Vertical	
	Degrees	Detents	Degrees	Detent
Driver Seat w/Seated Dummy	70.3	37 (1 st as 1)	14.3	9 th (1 st as 0)
Front Passenger Seat	76.2	39 (1 st as 1)	13.7	9 th (1 st as 0)
Front Center Seat				
Struck Side Rear Seat	22.0	12 (1 st as 1)	3.5	0 th (1 st as 0)
Non-Struck Side Rear Seat	22.0	12 (1 st as 1)	3.5	0 th (1 st as 0)
Rear Center Seat	22.0	12 (1 st as 1)	3.5	0 th (1 st as 0)

Seat back angles measured on outboard headrest post.

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

SEAT BELT ANCHORAGE ADJUSTMENT

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

	Total # of Positions	Placed in Position #
Driver Seat	5 detents	0 (uppermost as 0)
Rear Seat	Fixed	

HEAD RESTRAINT ADJUSTMENT

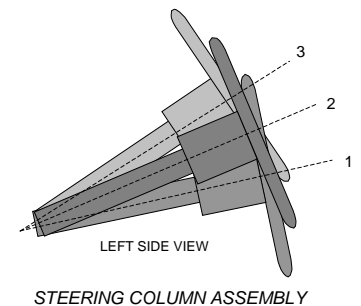
The driver's head restraint is adjusted to the highest and most full forward in-use position. The struck-side rear passenger's head restraint is adjusted to the lowest and most full forward in-use position.

	Total # of Positions	Placed in Position #
Driver Seat	5	4 (Lowest as 0) / Foremost
Rear Seat	3	0 (Lowest as 0) / Fixed Fore-Aft

STEERING COLUMN ADJUSTMENT

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

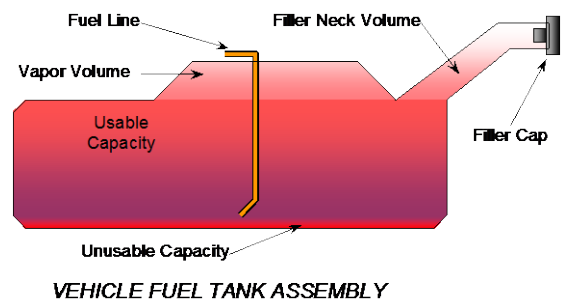
	Wheel Angle (deg)	Fore/Aft Position (mm)
Lowermost, Position 1	68.2	234
Geometric Center, Position 2	65.1	211
Uppermost, Position 3	62.0	187
Telescoping Steering Wheel Travel		47
Test Position	65.1	211



FUEL PUMP

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

The electric fuel pump turns on when the key is in the "ON" position. The fuel filler neck is on the driver's side.



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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

FUEL TANK CAPACITY DATA

	Liters
Usable Capacity of Standard Tank (see Form No. 1)	77.6
Usable Capacity of Optional Tank (see Form No. 1)	79.5
Usable Capacity of Standard Tank as Specified in Owner's Manual	77.6
Usable Capacity of Optional Tank as Specified in Owner's Manual	79.5
93% of Usable Capacity	72.2
Actual Amount of Solvent Used	72.3
1/3 of Usable Capacity	25.9

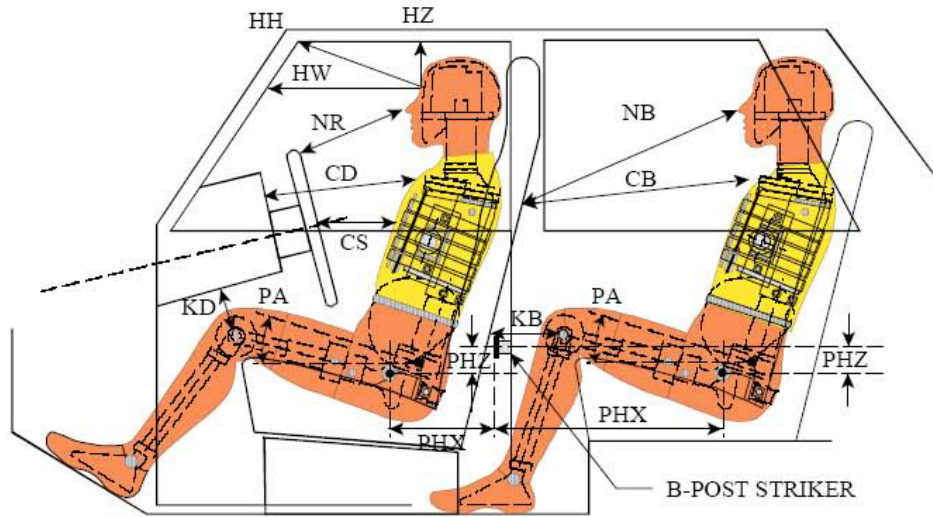
Is the actual amount of solvent used in the test equal to 93% + 1%
 of the Usable Capacity stated in Form No. 1?

YES

**DATA SHEET NO. 3
DUMMY LONGITUDINAL CLEARANCE DIMENSIONS**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



LEFT SIDE VIEW

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

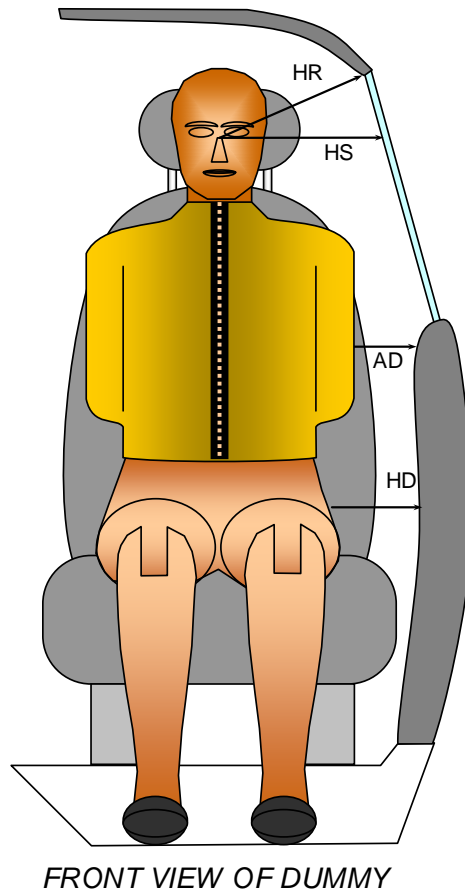
DUMMY LONGITUDINAL CLEARANCE DIMENSION INFORMATION

Driver Code	Pass. Code	Measurement Description	Driver		Passenger	
			Length (mm)	Angle (°)	Length (mm)	Angle (°)
HH		Head to Header	464	10.2		
HW		Head to Windshield	732	0		
HZ	HZ	Head to Roof Liner	208	90	311	90
NR	NB	Nose to Rim/Seat Back	479	20.0	482	18.9
CD	CB	Chest to Dashboard/Seat Back	585	3.6	485	5.9
CS		Chest to Steering Wheel	361	9.8		
KDL	KBL	Left Knee to Dash/Seat Back	181	31.1	235	19.6
KDR	KBR	Right Knee to Dash/Seat Back	152	31.4	241	20.2
PAX	PAX	Pelvic Tilt Angle X		25.9		20.7
PAY	PAY	Pelvic Tilt Angle Y		-1.6		0.5
PHX	PHX	Hip Point to Striker (X-Axis)	183		327	
PHZ	PHZ	Hip Point to Striker (Z-Axis)	123		199	

**DATA SHEET NO. 4
DUMMY LATERAL CLEARANCE DIMENSIONS**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



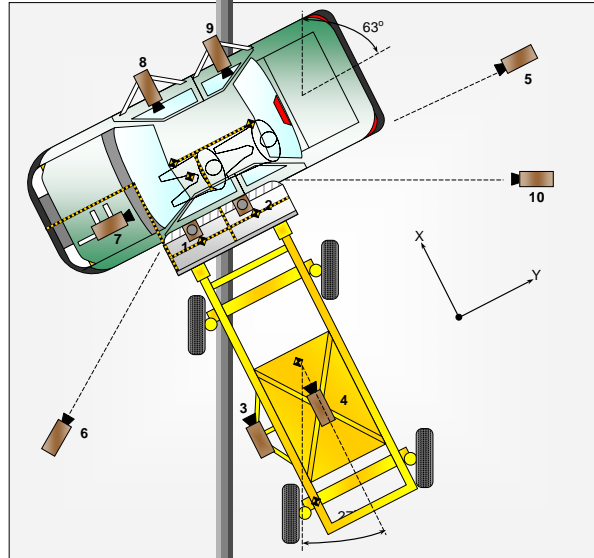
DUMMY LATERAL CLEARANCE DIMENSION INFORMATION

Code	Measurement Description	Units	Driver	Passenger
HR	Head to Side Header	mm	206	258
HS	Head to Side Window	mm	355	359
AD	Arm to Door	mm	92	136
HD	Hip Point to Door	mm	150	156

**DATA SHEET NO. 5
CAMERA AND INSTRUMENTATION DATA**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



CAMERA LOCATIONS AND DATA

No.	Camera View	Coordinates (mm)			Lens Length (mm)	Operating Frame Rate (fps)
		X*	Y*	Z*		
1	Overhead Overall	130	-60	-4430	14	1000
2	Overhead Close-Up	0	0	-4430	20	1000
3	Left Impact Point (MDB)				50	1000
4	Side Overall (MDB)				16	1000
5	Rear	40	5970	-1250	24	1000
6	Left Front	-1840	-5460	-1250	24	1000
7	Driver Front (OB)				16	1000
8	Driver Side (OB)				8	1000
9	Passenger Side (OB)				8	1000
10	Real Time Left Rear					30
11	Real Time Inrun					30

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

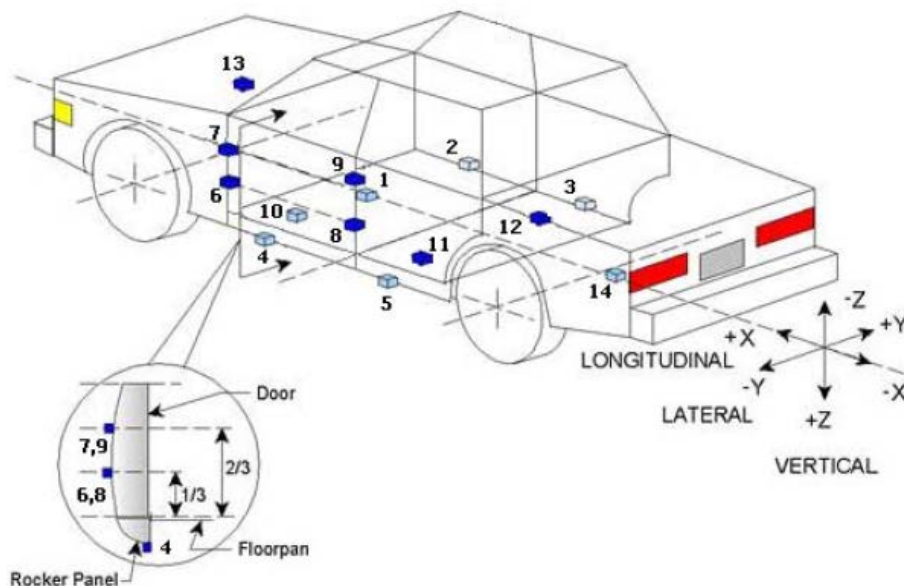
INSTRUMENTATION

	Number of Channels
Driver Dummy	16
Passenger Dummy	19
Vehicle Structure	23
MDB Accelerometers	5
MDB Contacts	2
Total	65

DATA SHEET NO. 6 TEST VEHICLE ACCELEROMETER LOCATIONS

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



TEST VEHICLE ACCELEROMETER LOCATIONS

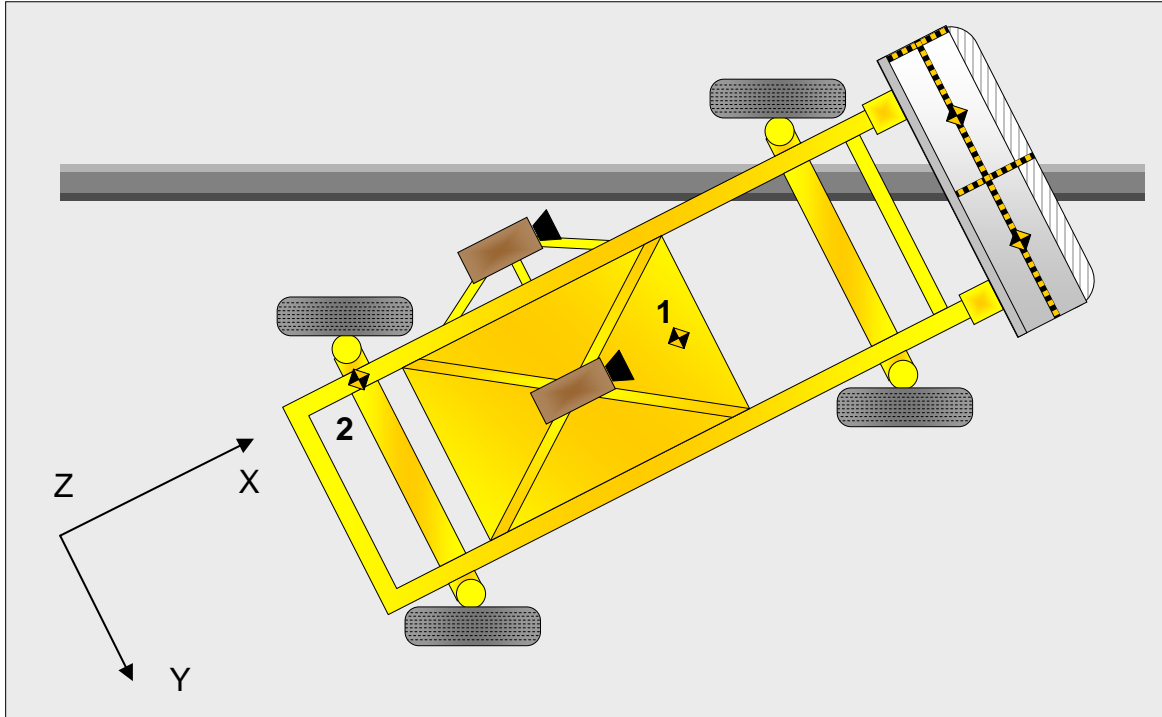
Accelerometer Location				
No.	ID	Coordinates (mm)		
		X	Y	Z
1	Vehicle CG	2456	200	-284
2	Right Sill at Front Seat	2330	730	-282
3	Right Sill at Rear Seat	1520	730	-293
4	Left Sill at Front Door	2798	-730	-273
5	Left Sill at Rear Door	1630	-730	-288
6	Left Lower A-Post	3309	-827	-910
7	Left Middle A-Post	3309	-807	-594
8	Left Lower B-Post	2191	-732	-690
9	Left Middle B-Post	2230	-732	-980
10	Front Seat Track	2430	-369	-334
11	Rear Seat Structure	1861	-350	-491
12	Rt. Rear Occ. Compartment	1932	386	-428
13	Engine Block	4078	33	-876
14	Rear Above Axle	1021	0	-626

Reference: X – Rear Surface of Vehicle (+ forward)
 Y – Vehicle Centerline (+ to right)
 Z – Ground Plane (+ down)

**DATA SHEET NO. 7
MDB ACCELEROMETER LOCATIONS**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



MDB ACCELEROMETER LOCATIONS

No.	Accelerometer Location	Coordinates (mm)		
		X	Y	Z
1	MDB CG	-1105	0	-330
2	MDB Rear	-2580	-650	-625

Reference: X – MDB Face (+ forward)
 Y – MDB Centerline (+ to right)
 Z – Ground Plane (+ down)

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat Dummy (ES-2re)	Rear Seat Dummy (SID-lis)
Face	CAB	CAB
Top of Head	CAB, Headliner	CAB
Left Side of Head	CAB	CAB
Back of Head	CAB, Headrest	CAB, Center Headrest
Left Shoulder	CAB	Door Panel
Upper Torso	SAB, Seatback	None
Lower Torso	SAB, Seatback	Door Panel
Left Hip	Seat Cushion, Door Panel	Door Panel
Left Knee	Door Panel	Door Panel

POST-TEST DOOR PERFORMANCE

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

POST-TEST SEAT PERFORMANCE

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

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No Separation
Sill Separation	None
Windshield Damage	None
Side Window Damage	LF Window Broken
Other Notable Effects	None

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Struck Side Driver		Struck Side Rear Passenger	
	Mounted	Deployed	Mounted	Deployed
Frontal Airbag	Yes	No		
Knee Airbag	Yes	No		
Side Curtain Airbag	Yes	Yes	Yes	Yes
Side Torso/Pelvis Airbag	Yes	Yes	No	
Seat Belt Pretensioner	Yes	Yes	No	
Seat Belt Load Limiter	Yes		No	
Other:	No		No	

IMPACT POINT LOCATION DATA

Measured Parameter	Units	Tolerance	Value
Vehicle Wheel Base	mm		2896
Vertical Impact Reference Line (Aft of Front Axle) (Intended Impact Point)	mm		508
Actual Impact Point (Aft of Front Axle)	mm		500
Horizontal Offset (+forward / -rearward)	mm	+/- 50 of intended impact point	8
Vertical Offset (+down / -up)	mm	+/- 20 of intended impact point	-2

**DATA SHEET NO. 9
MDB SUMMARY OF RESULTS**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

MDB SPECIFICATIONS

Measurement Description	Length (mm)
Overall Width of Framework Carriage	1250
Overall Length Including Honeycomb Face	4119
Wheelbase of Framework Carriage	2588
CG Location aft of Front Axle	1138

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	406.0	283.3	
Right	kg	357.9	316.4	
Ratio	%	56.0	44.0	
Totals	kg	763.9	599.7	

SPEED AND ANGLE AT IMPACT DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.46
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.65
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.9
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	62.8
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	27.3

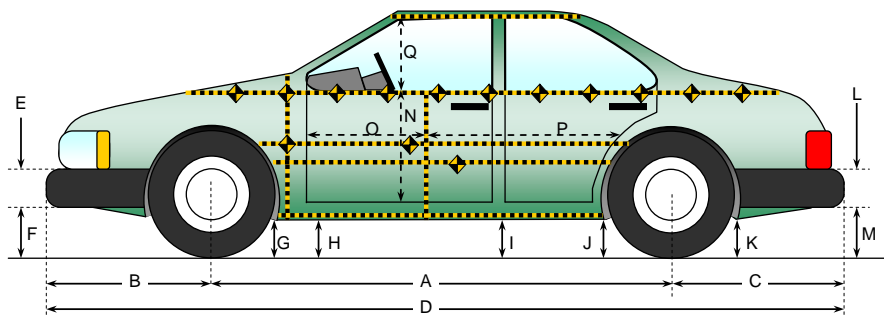
MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	700	Right	222
B	Top of Bumper	533	800	Right	141
C	Mid-Level	686	100	Right	133
D	Top of Stack	813	100	Right	179

DATA SHEET NO. 10
TEST VEHICLE PROFILE MEASUREMENTS

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
Test Date: 10/20/2015



All measurements in (mm) with tolerance of ± 3 mm

LEFT SIDE VIEW

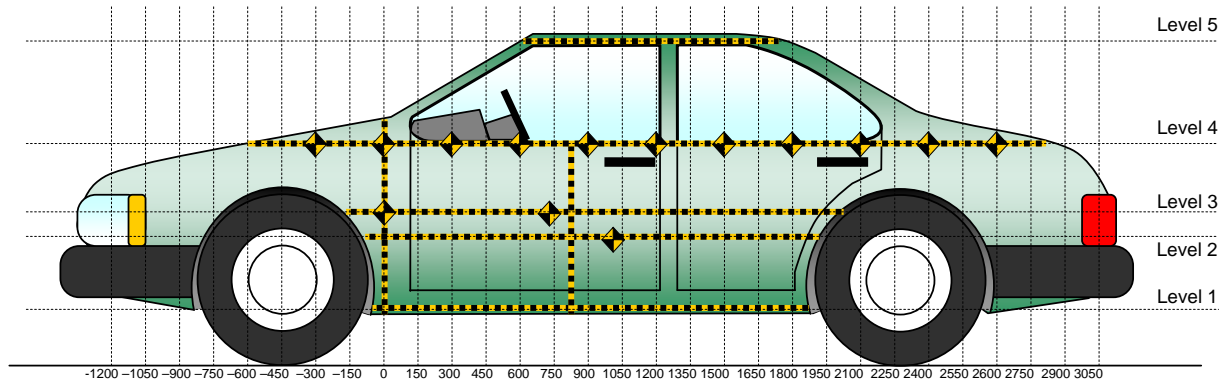
VEHICLE PRE- AND POST-TEST MEASUREMENT INFORMATION

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2896	2883	13
B	Front Axle to FSOV	995	1060	-65
C	Rear Axle to RSOV	1004	955	49
D	Total Length at Centerline	4895	4898	-3
E	Front Bumper Thickness	110	110	0
F	Front Bumper Bottom to Ground	268	270	-2
G	Sill Height at Front Wheel Well	235	227	8
H	Sill Height at Front Door Leading Edge	235	230	5
I	Sill Height at B Pillar	250	255	-5
J1	Sill Height at Rear Wheel Well	255	261	-6
J2	Pinch Weld Height at Rear Wheel Well	255	255	0
K	Sill Height Aft of Rear Wheel Well	271	270	1
L	Rear Bumper Thickness	114	114	0
M	Rear Bumper Bottom to Ground	368	368	0
N	Sill Height to Window Bottom Sill	780	736	44
O	Front Door Leading Edge to Impact CL	827	724	103
P	Rear Door Trailing Edge to Impact CL	1341	1245	96
Q	Front Window Opening	452	447	5
R	Right Side Length	3856	3853	3
S	Left Side Length	3856	3846	10
T	Vehicle Width at B Post	1830	1747	83

DATA SHEET NO. 11
TEST VEHICLE EXTERIOR CRUSH MEASUREMENTS

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



All Measurements Shown in mm

LEFT SIDE VIEW

MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Static Crush	Distance from Impact
1	Sill Top	369	129	1950
2	Occupant H-Point	723	194	750
3	Mid Door	751	188	750
4	Window Sill	1049	84	1200
5	Window Top	1657	6	1350

Note: The measurements are taken along the vertical impact reference line. Vehicle measurements forward of the vertical impact reference line are negative.

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015

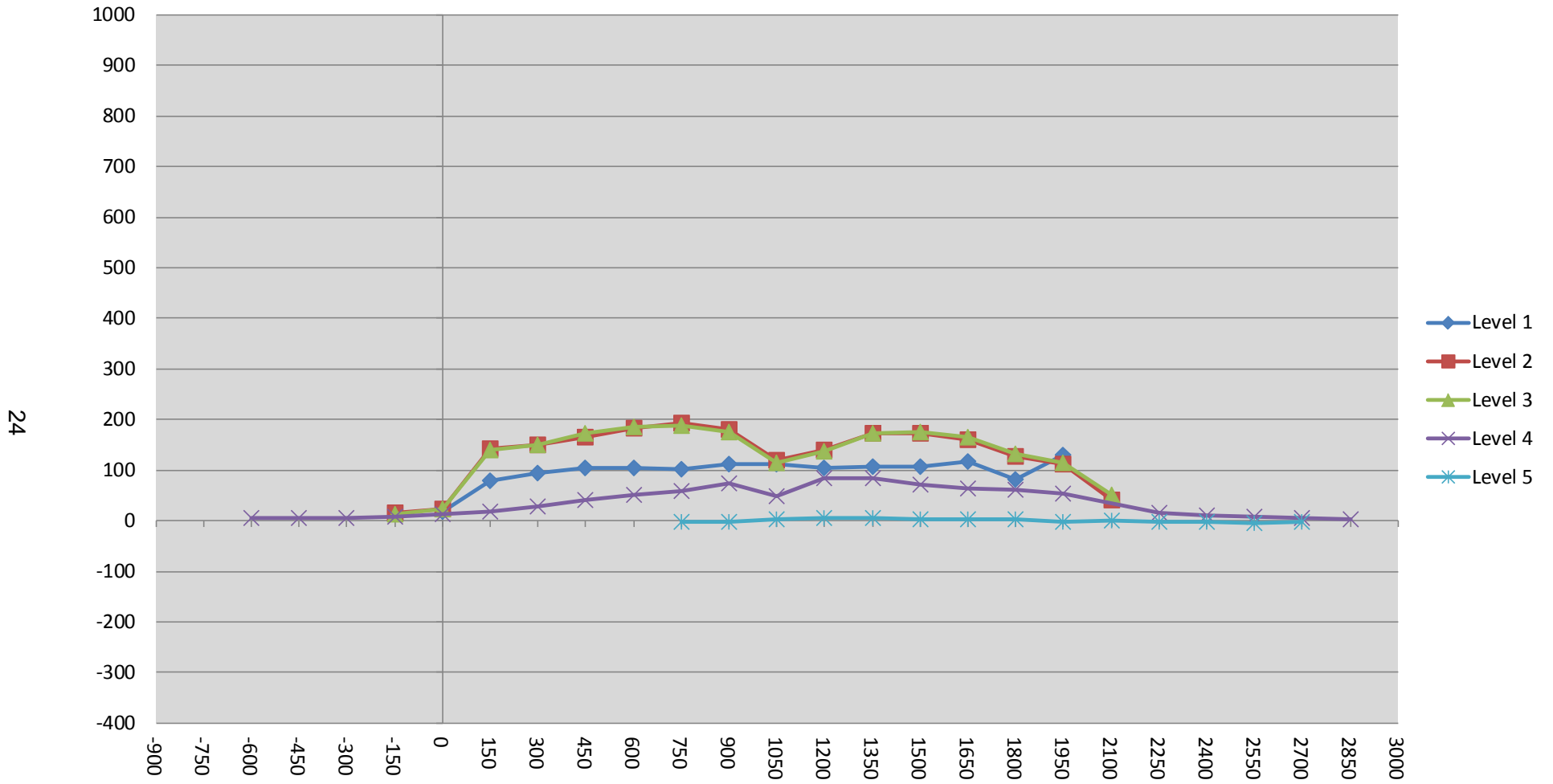
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-2100															
-1950															
-1800															
-1650															
-1500															
-1350															
-1200															
-1050															
-900															
-750															
-600				313					319					6	
-450				288					293					5	
-300				272					277					5	
-150		170	174	258			186	188	267			16	14	9	
0	204	190	190	248		223	213	212	260		19	23	22	12	
150	214	187	187	240		293	330	327	259		79	143	140	19	
300	211	185	185	232		305	335	335	261		94	150	150	29	
450	211	185	184	222		315	351	356	263		104	166	172	41	
600	210	184	184	216		314	368	370	266		104	184	186	50	
750	210	184	184	210	458	313	378	372	268	455	103	194	188	58	-3
900	209	185	185	207	454	320	365	360	280	453	111	180	175	73	-1
1050	210	186	186	205	452	323	306	301	254	456	113	120	115	49	4
1200	210	189	188	206	455	314	330	325	290	460	104	141	137	84	5
1350	212	192	191	208	457	320	366	364	291	463	108	174	173	83	6
1500	215	196	195	211	459	322	370	371	282	463	107	174	176	71	4
1650	219	201	199	214	461	336	361	364	278	465	117	160	165	64	4
1800	221	205	204	219	466	302	331	337	280	468	81	126	133	61	2
1950	191	209	209	224	470	320	322	324	277	467	129	113	115	53	-3
2100		166	170		479		207	221		479		41	51		0
2250				235	486				250	485				15	-1
2400				241	497				251	494				10	-3
2550				248	508				255	503				7	-5
2700				254	518				260	516				6	-2
2850				262					265					3	
3000															
3150															
3300															
3450															
3600															
3750															
3900															

NOTE: Pre-test measurements are taken when the vehicle is in the "As Tested" weight condition. Vehicle measurements forward of the vertical impact reference line are negative. The crush profile grid is established prior to the test based on an estimated impact point.

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
Test Program: NCAP Side MDB Impact Test

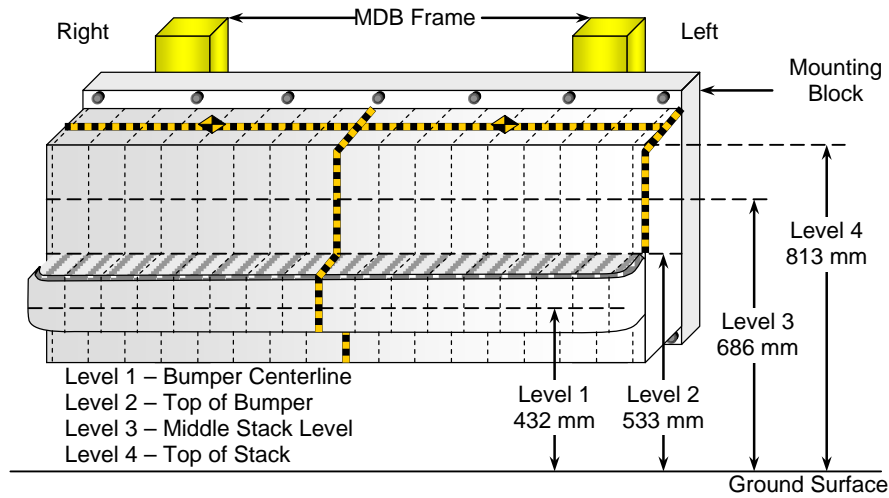
NHTSA No. M20160307
Test Date: 10/20/2015



DATA SHEET NO. 12
MDB EXTERIOR STATIC CRUSH MEASUREMENTS

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



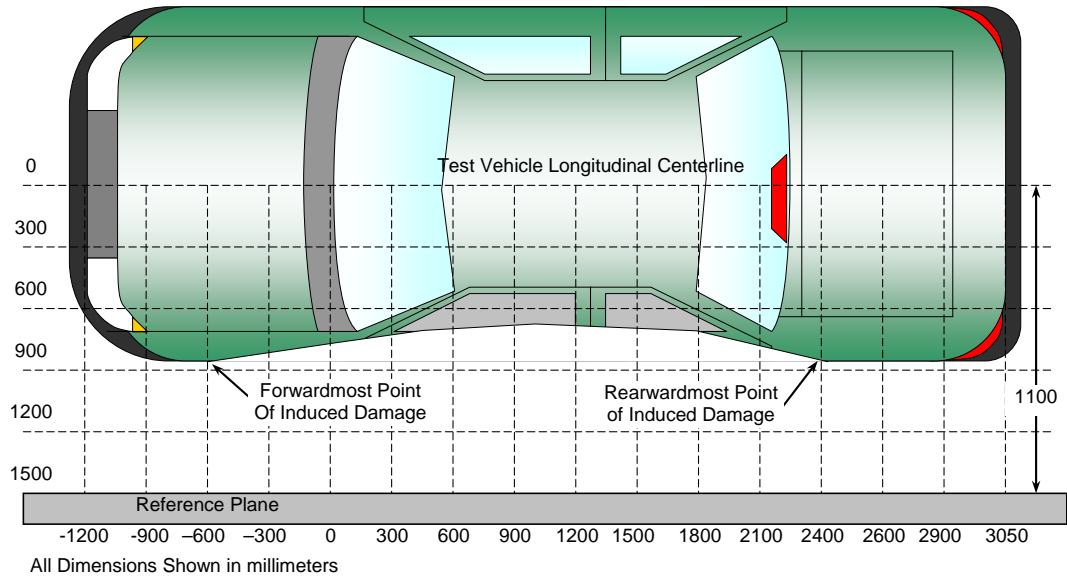
DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center (mm)								C _L	Distance Left of Center (mm)							
	800	700	600	500	400	300	200	100		0	100	200	300	400	500	600	700
4	114	105	93	84	93	120	164	179	150	115	99	99	111	129	140	160	179
3	116	95	80	76	77	91	122	133	109	79	71	73	80	90	104	116	129
2	141	137	138	135	115	109	110	113	107	119	124	133	139	138	138	139	140
1	216	222	212	213	217	217	215	216	217	217	215	214	215	217	217	216	213

**DATA SHEET NO. 13
VEHICLE AND MDB DAMAGE PROFILE DISTANCES**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
Test Date: 10/20/2015



TOP VIEW

VEHICLE DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	2075	3	195	240	45
2	1618	3	192	366	174
3	1161	3	190	310	120
4	704	3	187	373	186
5	247	3	184	333	149
6	-210	3	181	182	1

MDB DAMAGE PROFILE DISTANCES

DPD	Distance from Impact Point (mm)	Level	Max. Static Crush (mm)
1	800 mm right of center	1	216
2	480 mm right of center	1	216
3	160 mm right of center	1	215
4	160 mm left of center	1	216
5	480 mm left of center	1	215
6	800 mm left of center	1	213

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

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

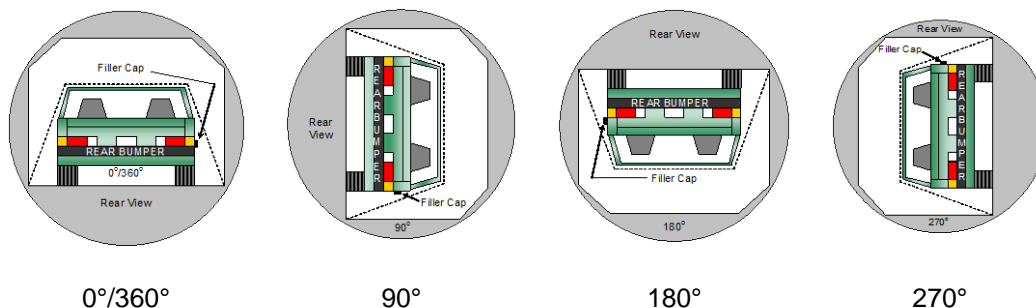
NHTSA No. M20160307
 Test Date: 10/20/2015

Test Time: 3:32 pm

Temperature: 21.5 °C

- A. From impact until vehicle motion ceases: 0.0
 (Maximum Allowable = 1 ounce) oz.
- B. For the 5 minute period after motion ceases: 0.0
 oz.
- C. For the following 25 minutes: None
 (Maximum Allowable = 1 ounce / minute)
- D. Spillage Details: None

FMVSS 301 STATIC ROLLOVER DATA



ROLLOVER SOLVENT COLLECTION TIME TABLE IN SECONDS

Test Phase	Rotation Time	Hold Time	Total Time
0° to 90°	112	300	412
90° to 180°	112	300	412
180° to 270°	107	300	407
270° to 360°	111	300	411

FMVSS 301 ROLLOVER SPILLAGE TABLE (units in ounces)

Test Phase	First 5 Minutes	Sixth Minute	Seventh Minute	Eighth Minute
0° to 90°	0.0	0.0	0.0	
90° to 180°	0.0	0.0	0.0	
180° to 270°	0.0	0.0	0.0	
270° to 360°	0.0	0.0	0.0	

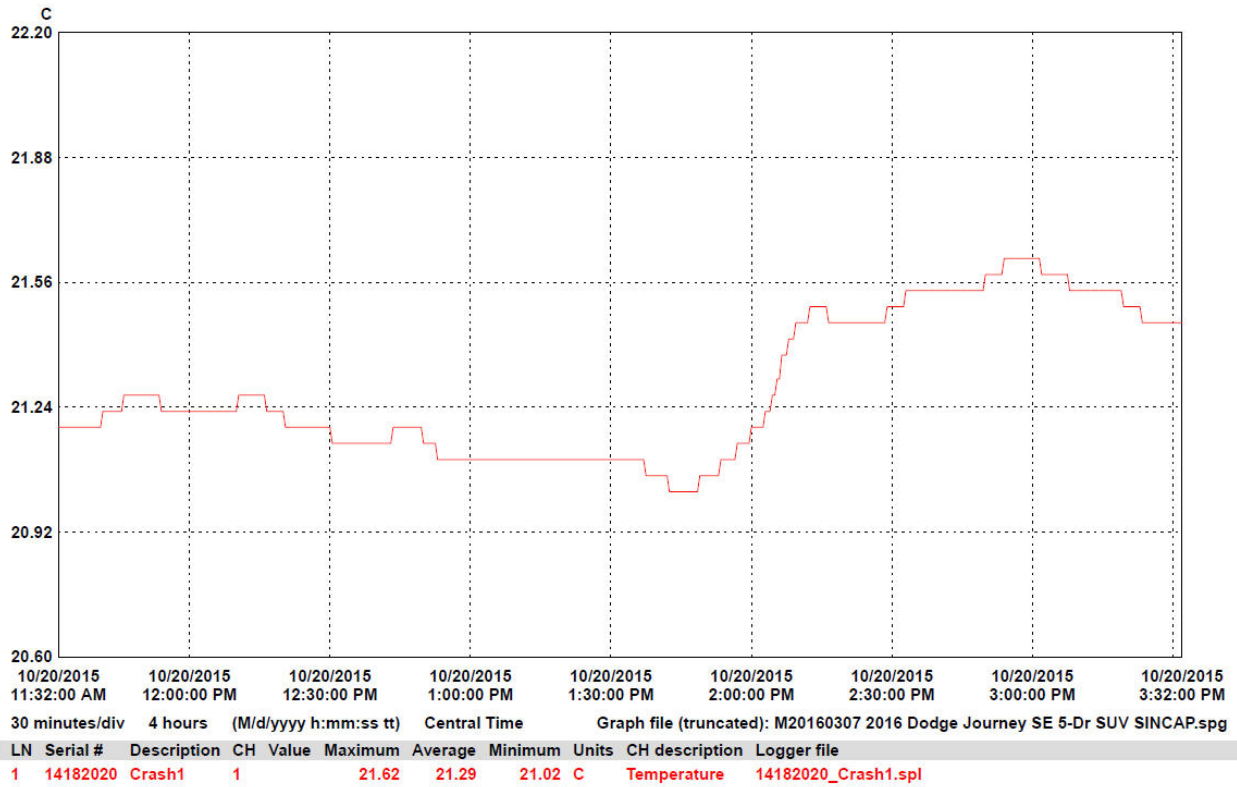
ROLLOVER SOLVENT SPILLAGE LOCATION TABLE

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

**DATA SHEET NO. 15
DUMMY/VEHICLE TEMPERATURE STABILIZATION DATA**

Test Vehicle: 2016 Dodge Journey SE 5-Door SUV
 Test Program: NCAP Side MDB Impact Test

NHTSA No. M20160307
 Test Date: 10/20/2015



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PHOTOGRAPHS**

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Photo No. 001 - As Delivered Right Front Three-Quarter View of Test Vehicle



Photo No. 002 - As Delivered Left Rear Three-Quarter View of Test Vehicle

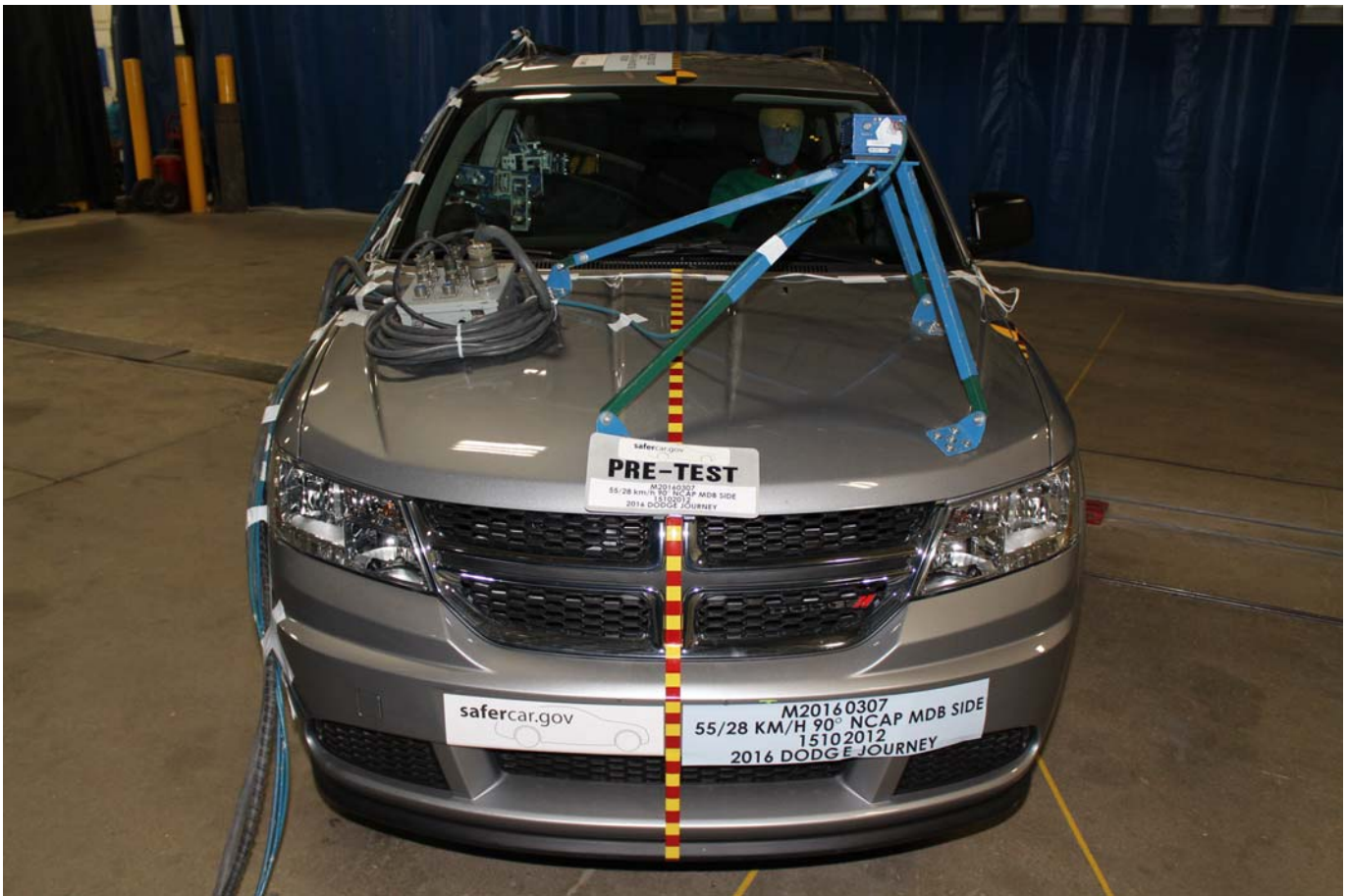


Photo No. 003 - Pre-Test Frontal View of Test Vehicle

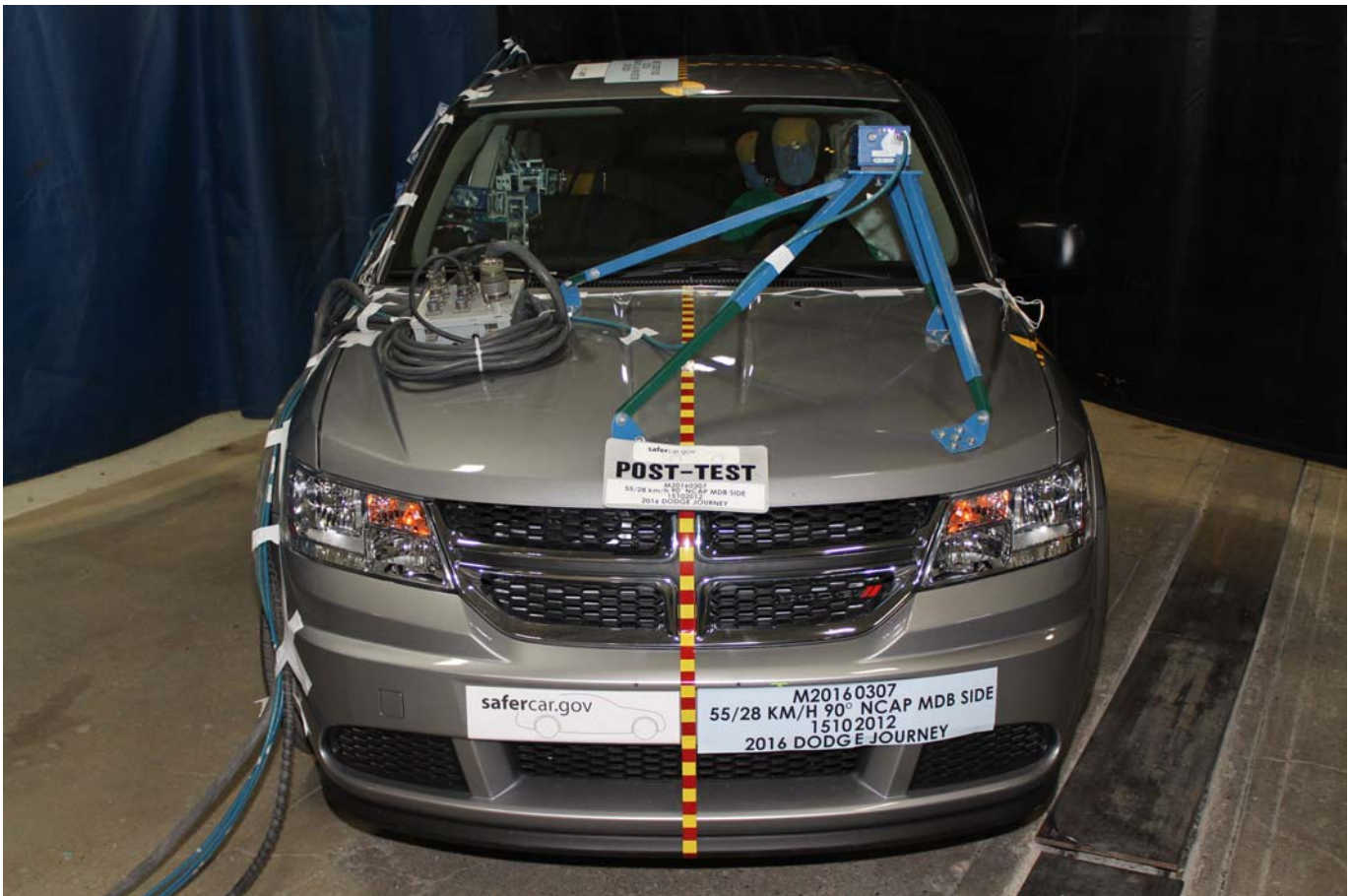


Photo No. 004 - Post-Test Frontal View of Test Vehicle



Photo No. 005 - Pre-Test Left Front Three-Quarter View of Test Vehicle



Photo No. 006 - Post-Test Left Front Three-Quarter View of Test Vehicle



Photo No. 007 - Pre-Test Left Side View of Test Vehicle



Photo No. 008 - Post-Test Left Side View of Test Vehicle



Photo No. 009 - Pre-Test Left Three-Quarter Rear View of Test Vehicle



Photo No. 010 - Post-Test Left Three-Quarter Rear View of Test Vehicle



Photo No. 011 - Pre-Test Rear View of Test Vehicle



Photo No. 012 - Post-Test Rear View of Test Vehicle



Photo No. 013 - Pre-Test Right Side View of Test Vehicle



Photo No. 014 - Post-Test Right Side View of Test Vehicle



Photo No. 015 - Pre-Test Overhead View of Test Area



Photo No. 016 - Post-Test Overhead View of Test Area



Photo No. 017 - Pre-Test Left Side View of MDB Positioned Against Side of Test Vehicle



Photo No. 018 - Pre-Test Right Side View of MDB Positioned Against Side of Test Vehicle



Photo No. 019 - Pre-Test Close-Up View of Impact Point Target



Photo No. 020 - Post-Test Close-Up View of Impact Point Target



Photo No. 021 - Pre-Test Left Front Door Latch Close-Up

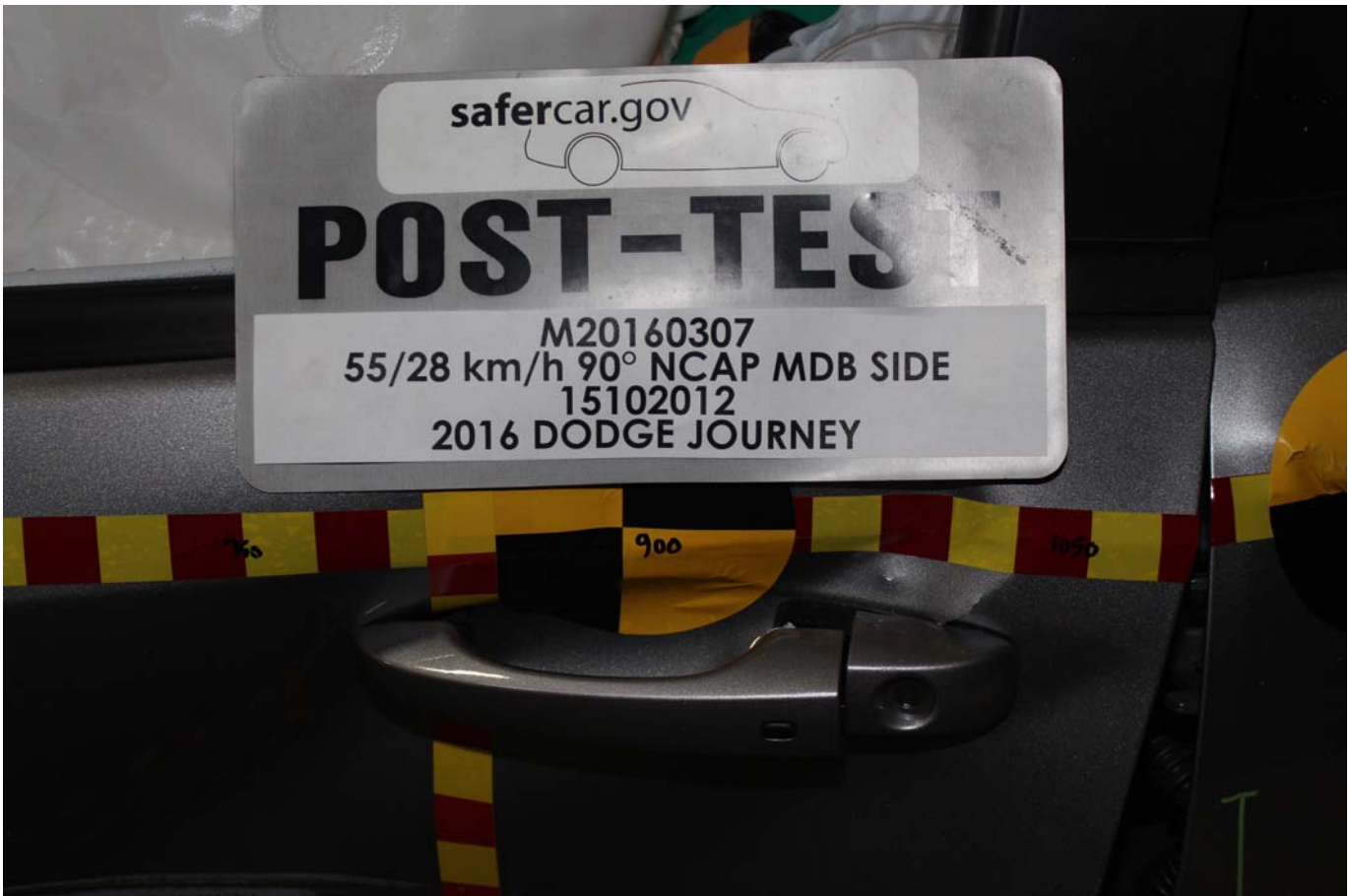


Photo No. 022 - Post-Test Left Front Door Latch Close-Up



Photo No. 023 - Pre-Test Left Rear Door Latch Close-Up



Photo No. 024 - Post-Test Left Rear Door Latch Close-Up



Photo No. 025 - Pre-Test Front Close-Up View of Driver Dummy



Photo No. 026 - Post-Test Front Close-Up View of Driver Dummy



Photo No. 027 - Pre-Test Left Side View of Driver Dummy Showing Belt and Chalking



Photo No. 028 - Pre-Test Left Side View of Driver Dummy Shoulder and Door Top View



Photo No. 029 - Post-Test Left Side View of Driver Dummy Shoulder and Door Top View



Photo No. 030 - Pre-Test Frontal View of Driver Seat Back Prior to Dummy Positioning



Photo No. 031 - Pre-Test Frontal View of Driver Dummy Head and Shoulders in Relation to Head Restraint



Photo No. 032 - Pre-Test Frontal View of Driver Seat Pan Prior to Dummy Positioning

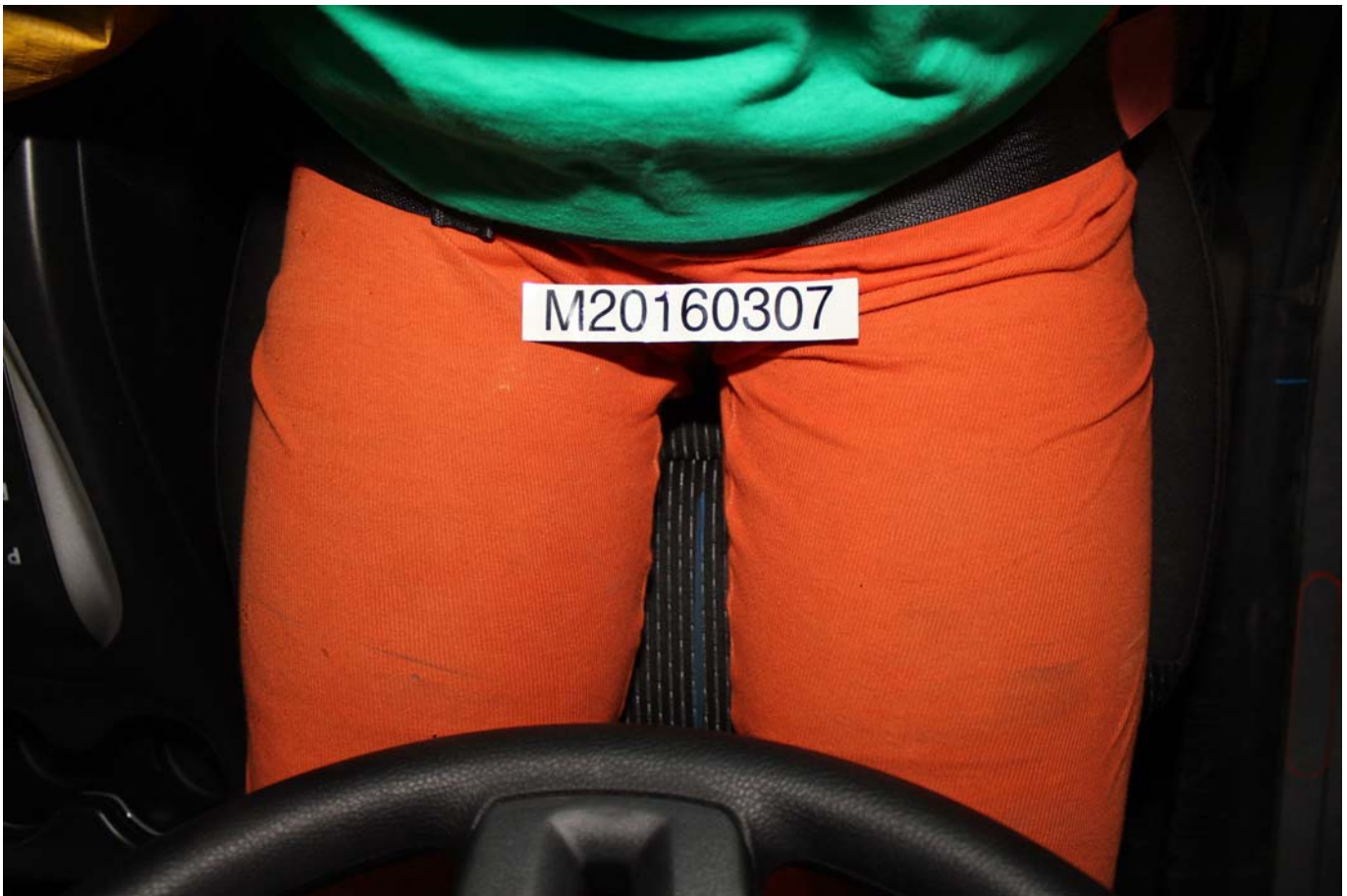


Photo No. 033 - Pre-Test Overhead View of Driver Dummy Thighs on Seat Pan



Photo No. 034 - Pre-Test Placement of Driver Dummy's Feet



Photo No. 035 - Pre-Test View of Belt Anchorage for Driver Dummy



Photo No. 036 - Pre-Test Left Side View of Steering Wheel



Photo No. 037 - Pre-Test View of Disengaged Parking Brake



Photo No. 038 - Pre-Test View of Parking Brake



Photo No. 039 - Pre-Test Close-Up Left Side View of Driver Seat Track



Photo No. 040 - Pre-Test Close-Up Left Side View of Driver Seat Back



Photo No. 041 - Pre-Test Close-Up View of Driver Seat Back or Head Restraint



Photo No. 042 - Pre-Test Driver Dummy and Door Clearance View



Photo No. 043 - Post-Test Driver Dummy and Door Clearance View



Photo No. 044 - Pre-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



Photo No. 045 - Post-Test Right Side View of Driver Dummy and Front Seat of Occupant Compartment



Photo No. 046 - Pre-Test Driver Inner Door Panel View



Photo No. 047 - Post-Test Driver Inner Door Panel View



Photo No. 048 - Post-Test Driver Dummy Close-up Head Contact with Vehicle Interior View



Photo No. 049 - Post-Test Driver Dummy Close-up Head Contact with Side Airbag View



Photo No. 050 - Post-Test Driver Dummy Close-up Torso Contact with Vehicle Interior View



Photo No. 051 - Post-Test Driver Dummy Close-up Torso Contact with Side Airbag View



Photo No. 052 - Post-Test Driver Dummy Close-up Pelvis Contact with Vehicle Interior View

PHOTOGRAPH NOT APPLICABLE

Photo No. 053 - Post-Test Driver Dummy Close-up Pelvis Contact with Side Airbag View



Photo No. 054 - Post-Test Driver Dummy Close-up Knee Contact View



Photo No. 055 - Pre-Test Left Side View of Rear Passenger Dummy Showing Belt and Chalking



Photo No. 056 - Pre-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



Photo No. 057 - Post-Test Left Side View of Rear Passenger Dummy Shoulder and Door Top View



Photo No. 058 - Pre-Test Frontal View of Rear Passenger Seat Back Prior to Dummy Positioning



Photo No. 059 - Pre-Test Frontal View of Rear Passenger Dummy Head and Shoulders in Relation to Head



Photo No. 060 - Pre-Test Overhead View of Rear Passenger Seat Pan Prior to Dummy Positioning



Photo No. 061 - Pre-Test Overhead View of Rear Passenger Dummy Thighs on Seat Pan



Photo No. 062 - Pre-Test View of Rear Passenger Dummy's Neck Showing Position of Adjustable Neck



Photo No. 063 - Pre-Test View of Rear Passenger Dummy's Head Showing Dummy's Head is Level



Photo No. 064 - Pre-Test Placement of Rear Passenger Dummy's Feet



Photo No. 065 - Pre-Test View of Belt Anchorage for Rear Passenger Dummy



Photo No. 066 - Pre-Test Close-Up Left Side View of Rear Passenger Seat Track



Photo No. 067 - Pre-Test Close-Up Left Side View of Rear Passenger Seat Back



Photo No. 068 - Pre-Test Close-up View of Rear Passenger Seat Back or Head Restraint



Photo No. 069 - Pre-Test Rear Passenger Dummy and Door Clearance View



Photo No. 070 - Post-Test Rear Passenger Dummy and Door Clearance View



Photo No. 071 - Pre-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



Photo No. 072 - Post-Test Right Side View of Rear Passenger Dummy and Rear Seat Occupant Compartment



Photo No. 073 - Pre-Test Rear Passenger Inner Door Panel View



Photo No. 074 - Post-Test Rear Passenger Inner Door Panel View



Photo No. 075 - Post-Test Rear Passenger Dummy Close-up Head Contact with Vehicle Interior View

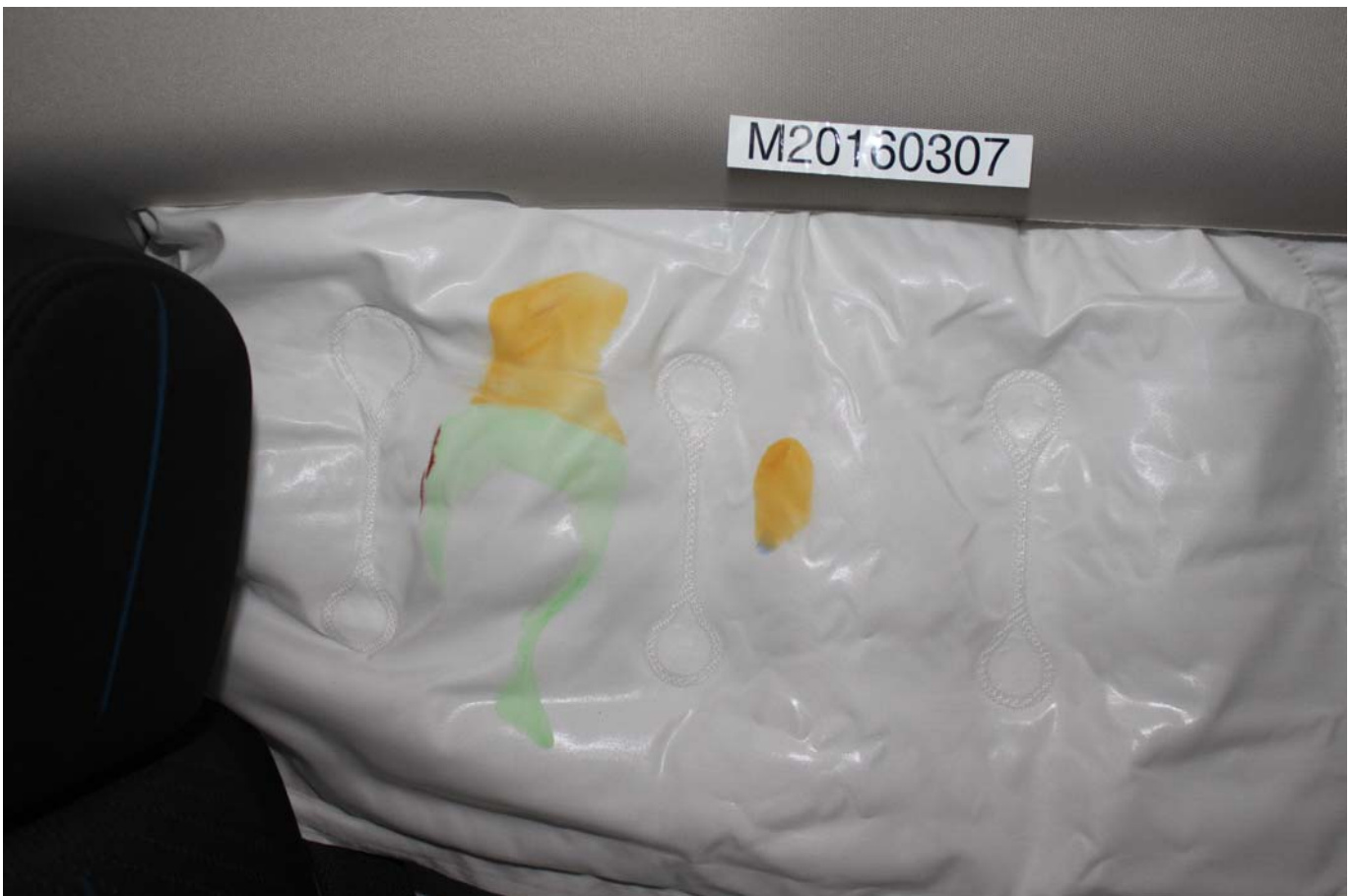


Photo No. 076 - Post-Test Rear Passenger Dummy Close-up Head Contact with Side Airbag View



Photo No. 077 - Post-Test Rear Passenger Dummy Close-up Torso Contact with Vehicle Interior View

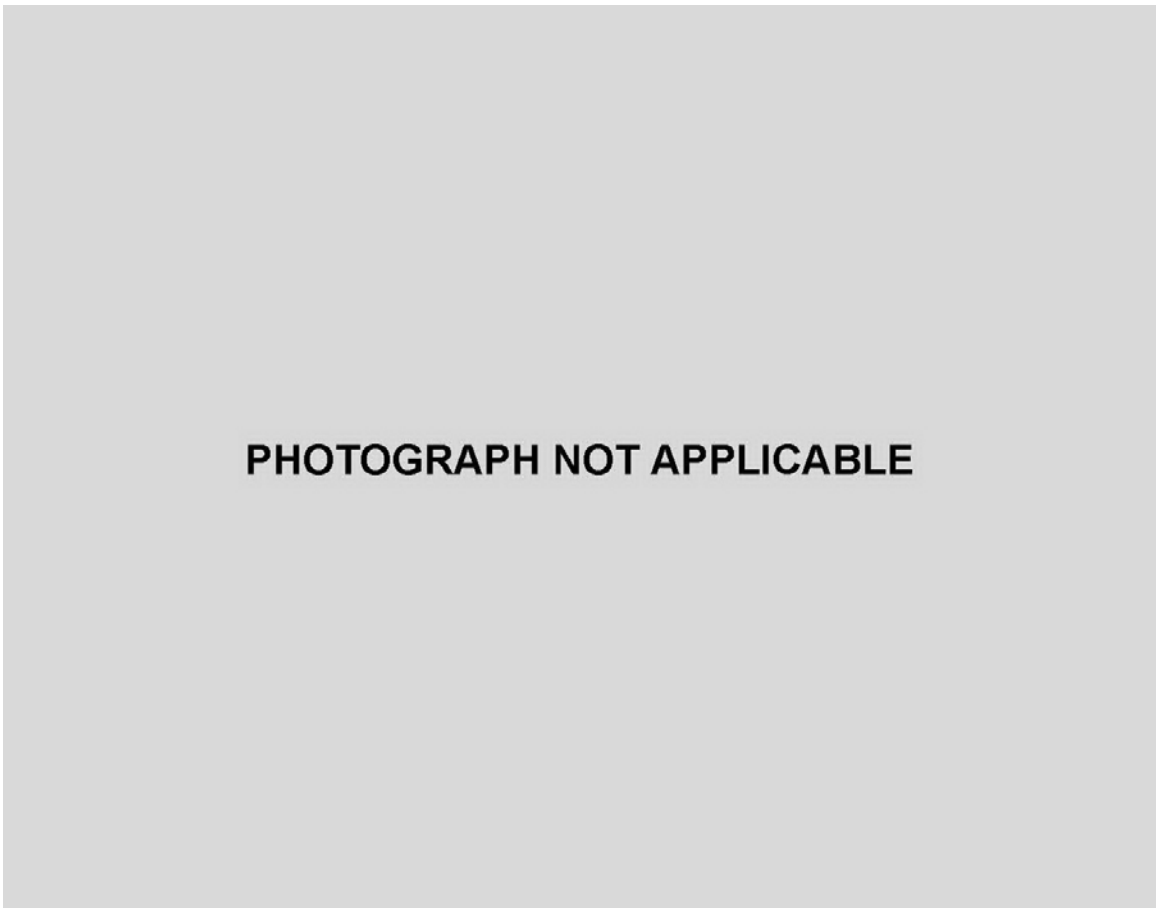


Photo No. 078 - Post-Test Rear Passenger Dummy Close-up Torso Contact with Side Airbag View



Photo No. 079 - Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Vehicle Interior View

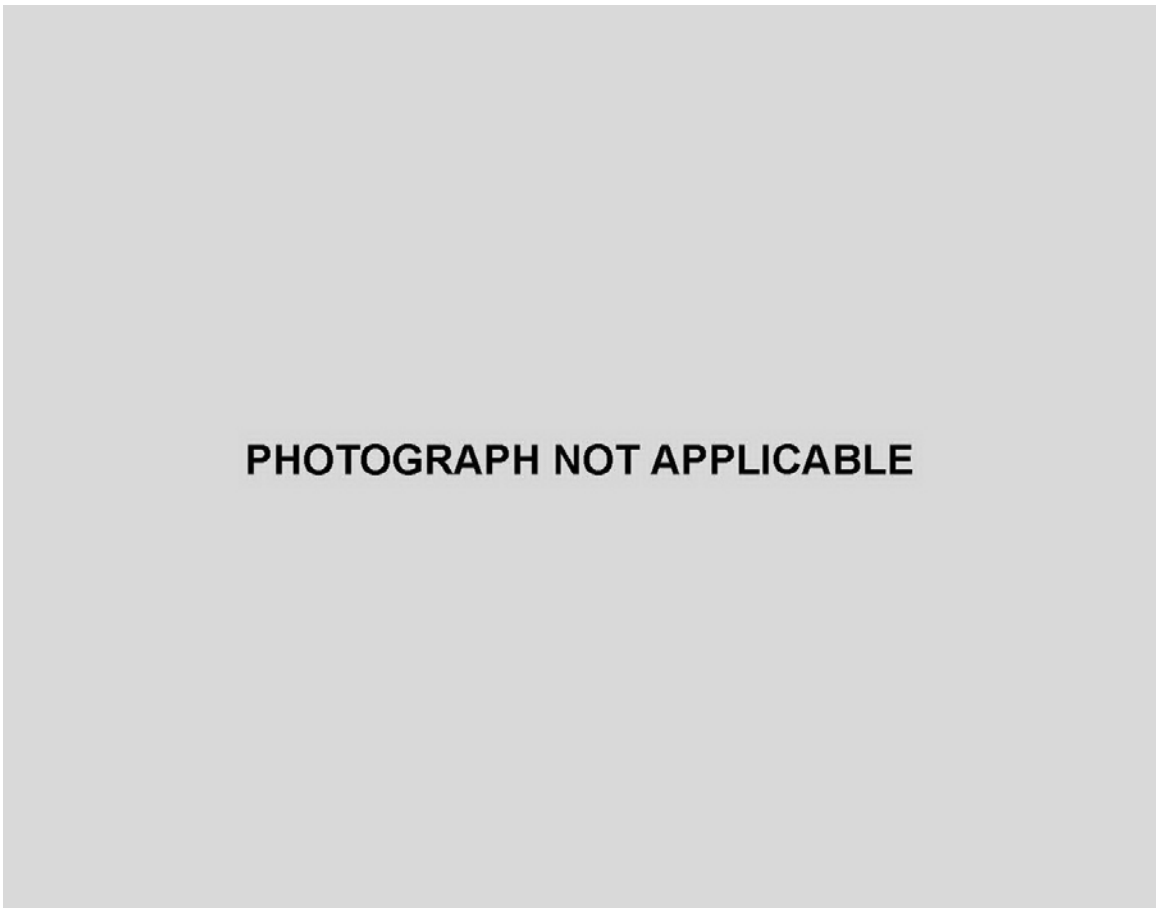


Photo No. 080 - Post-Test Rear Passenger Dummy Close-up Pelvis Contact with Side Airbag View



Photo No. 081 - Post-Test Rear Passenger Dummy Close-up Knee Contact View



Photo No. 082 - Pre-Test View of Fuel Filler Cap or Fuel Filler Neck



Photo No. 083 - Post-Test View of Fuel Filler Cap or Fuel Filler Neck

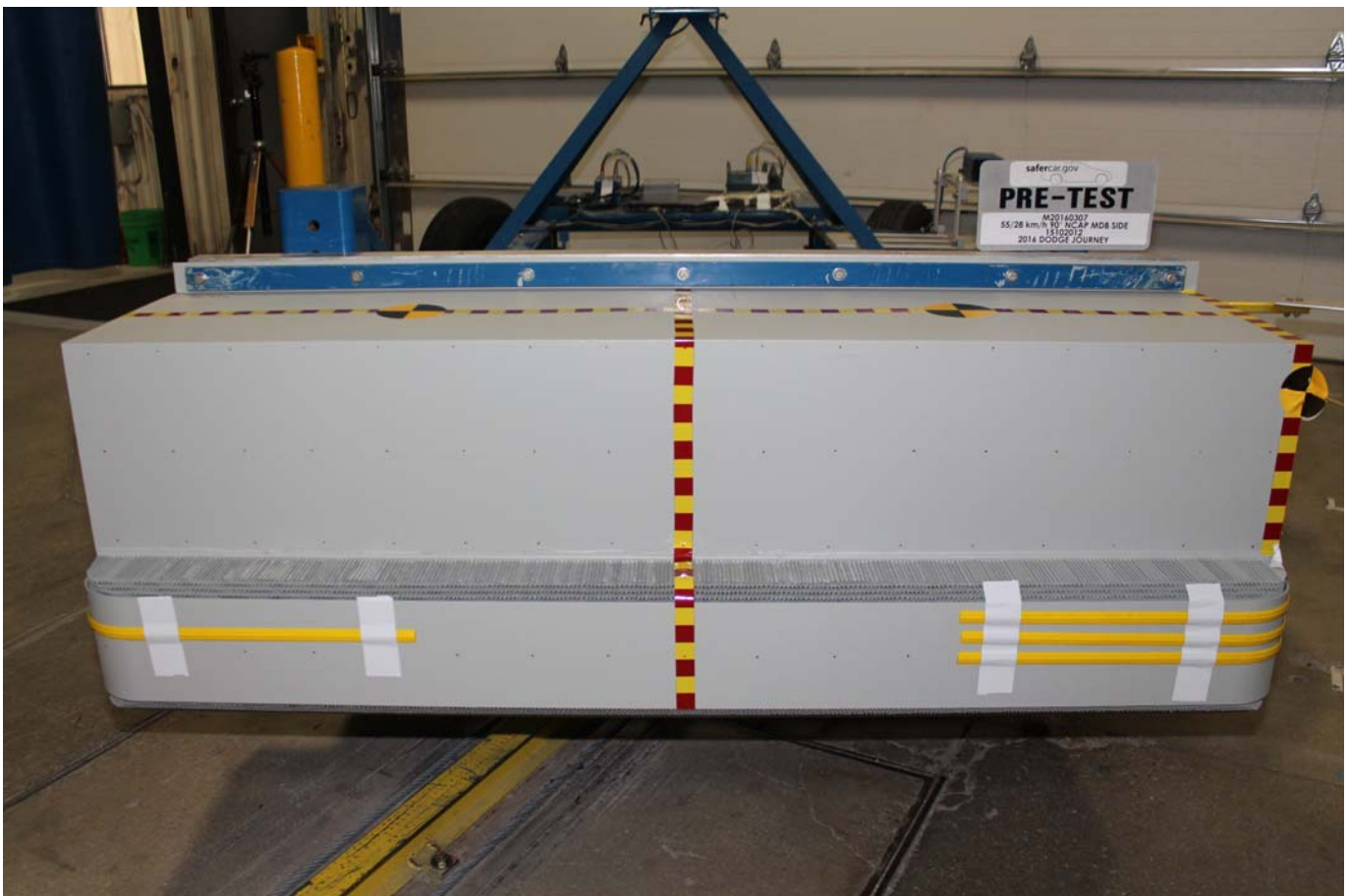


Photo No. 084 - Pre-Test Front View of MDB Impactor Face



Photo No. 085 - Post-Test Front View of MDB Impactor Face



Photo No. 086 - Pre-Test Top View of MDB Impactor Face



Photo No. 087 - Post-Test Top View of MDB Impactor Face



Photo No. 088 - Pre-Test Left Side View of MDB Impactor Face



Photo No. 089 - Post-Test Left Side View of MDB Impactor Face



Photo No. 090 - Pre-Test Right Side View of MDB Impactor Face



Photo No. 091 - Post-Test Right Side View of MDB Impactor Face



Photo No. 092 - Close-Up View of Vehicle's Certification Label



Photo No. 093 - Close-Up View of Vehicle's Tire Information Placard or Label



Photo No. 094 - Pre-Test Ballast View

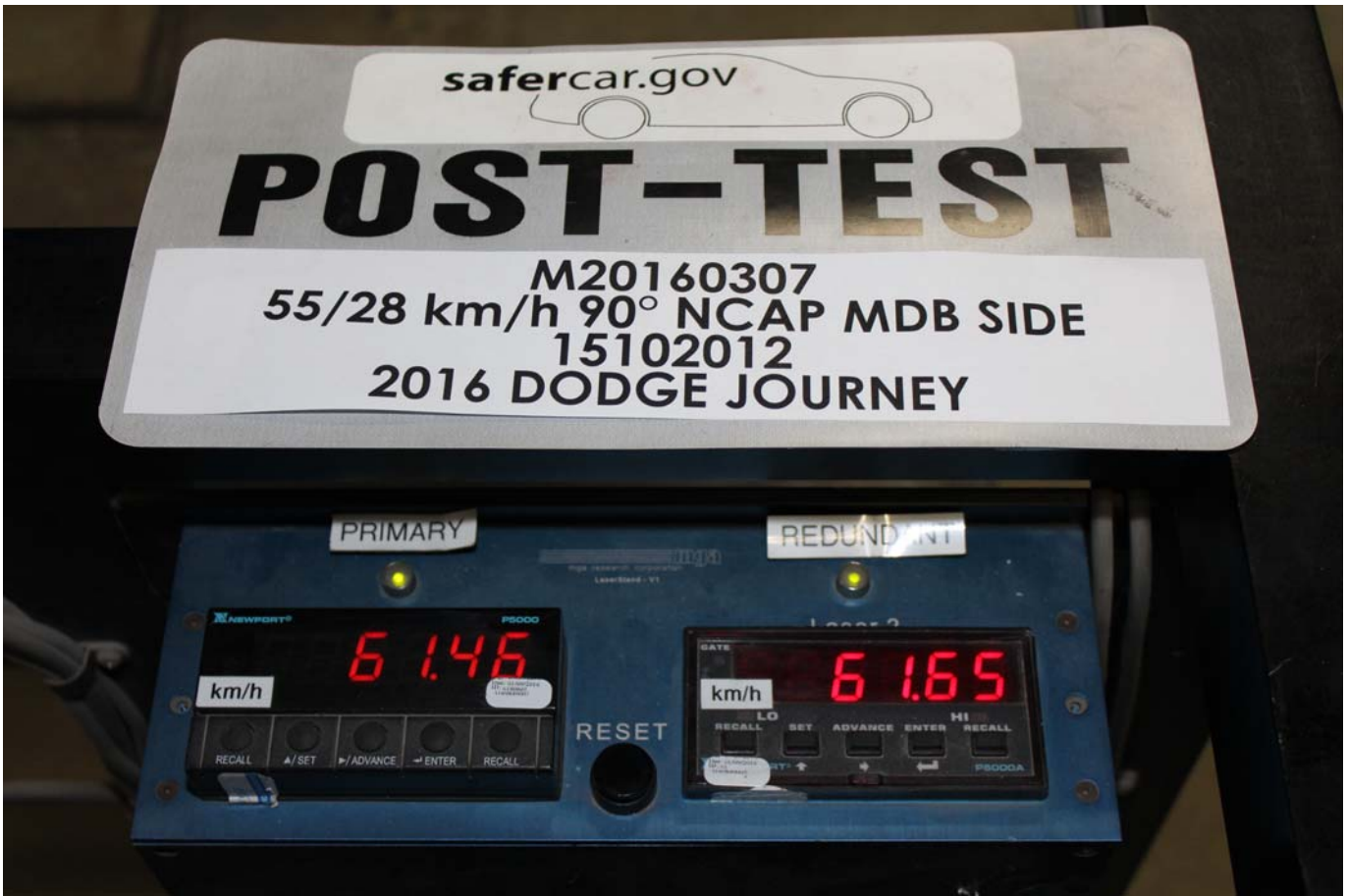


Photo No. 095 - Post-Test Primary and Redundant Speed Trap Read-Out



Photo No. 096 - FMVSS No. 301 Static Rollover 0 Degrees

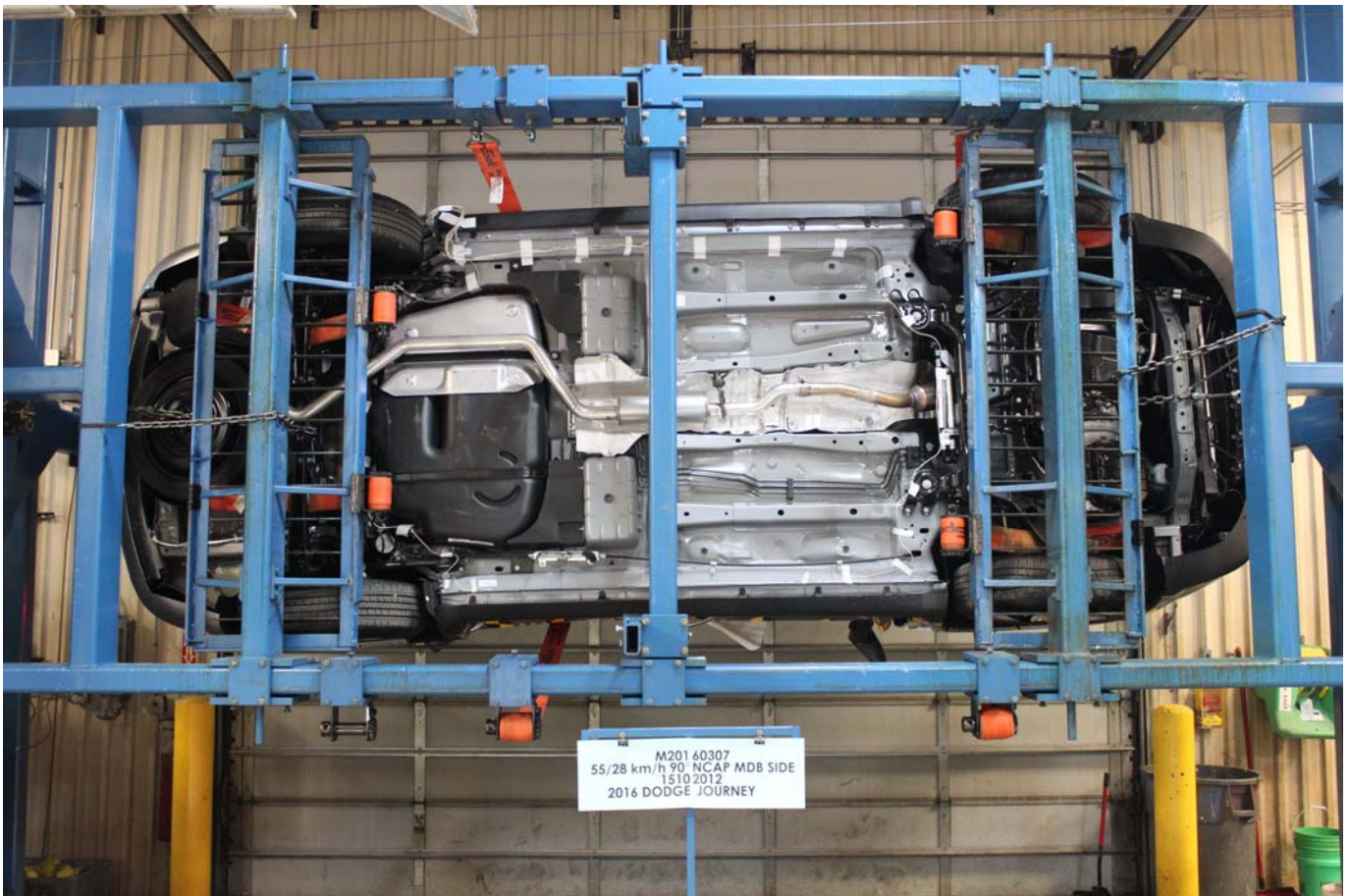


Photo No. 097 - FMVSS No. 301 Static Rollover 90 Degrees

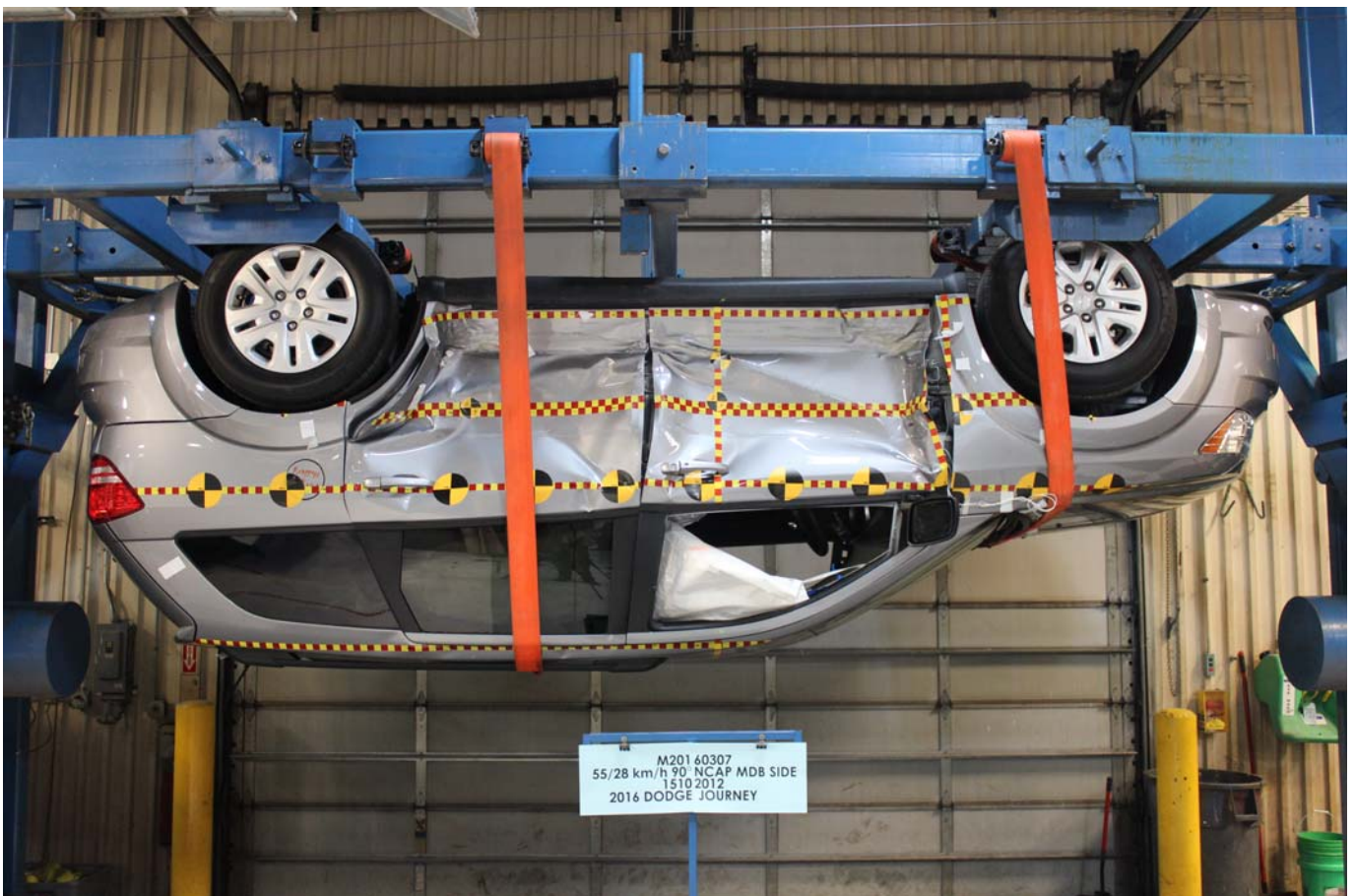


Photo No. 098 - FMVSS No. 301 Static Rollover 180 Degrees



Photo No. 099 - FMVSS No. 301 Static Rollover 270 Degrees

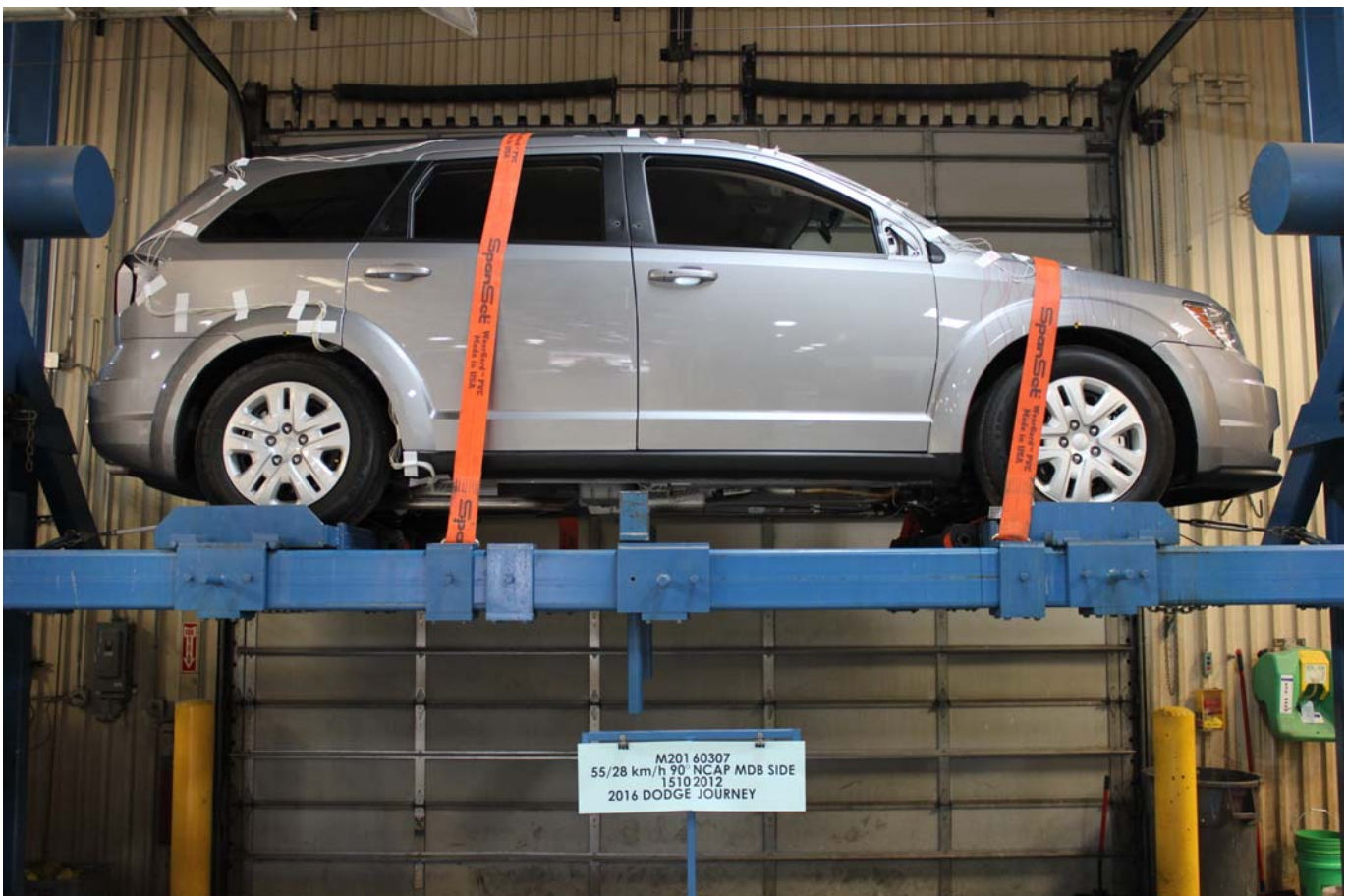


Photo No. 100 - FMVSS No. 301 Static Rollover 360 Degrees



Photo No. 101 - Impact Event

2016 DODGE JOURNEY SE

THIS VEHICLE IS MANUFACTURED TO MEET SPECIFIC UNITED STATES REQUIREMENTS. THIS VEHICLE IS NOT MANUFACTURED FOR SALE OR REGISTRATION OUTSIDE OF THE UNITED STATES.

MANUFACTURER'S SUGGESTED RETAIL PRICE OF THIS MODEL INCLUDING DEALER PREPARATION

Base Price: \$20,895

DODGE JOURNEY SE (FWD)
Exterior Color: Silver Metallic Clear Coat Exterior Paint
Interior Color: Black Interior Color
Interior: Premium Cloth Love-Seat Bucket Seats
Engine: 2.4-Liter I4 DOHC 16-Valve Dual VVT Engine
Transmission: 4-Speed Automatic Transmission

STANDARD EQUIPMENT (UNLESS REPLACED BY OPTIONAL EQUIPMENT)
FUNCTIONAL SAFETY FEATURES
 Advanced Multi-stage Front Airbags
 Supplemental Side-Curtain Airbags in All Rows
 Supplemental Front Seat-Mounted Side Airbags
 Driver Inflatable Knee-Bolster Airbag
 Active Head Restraints
 LATCH Ready Child Seat Anchor System
 Tire Pressure Monitoring Display
 Keyless Go™
 Remote Proximity Keyless Entry
 Power Door Locks
 Sentry Key® Theft Deterrent System
 Height-Adjustable Front Shoulder Belts
 Anti-Lock 4-Wheel Disc Brakes
 Electronic Stability Control
 Traction Control
 Electronic Roll Mitigation
 Trailer Sway Damping
 Brake Assist
 Speed Control
 Headlamps with Turn-Off Time Delay
 Variable Intermittent Windshield Wipers
 Rear Window Defroster
 Liftgate Flood Lamp
 Electronic Vehicle Information Center
 20.5-Gallon Fuel Tank

INTERIOR FEATURES
 Radio 4.3
 4.3-Inch Touch Screen Display
 6 Speakers
 Air Conditioning with Dual Zone Temperature Control
 Second-Row 40 / 60 Seat with Fore / Aft Adjust

OPTIONAL EQUIPMENT (May Replace Standard Equipment)
 Customer Preferred Package ZZF

DESTINATION CHARGE \$985

TOTAL PRICE: * \$21,890

WARRANTY COVERAGE
 5-year or 60,000-mile Powertrain Limited Warranty,
 3-year or 36,000-mile Basic Limited Warranty.
 Ask Dealer for a copy of the limited warranties or
 see your owner's manual for details.

5 YEAR / 60,000 MILE
POWERTRAIN WARRANTY

SALES TAX, TITLE AND LICENSE FEES AND OTHER LOCAL FEES ARE NOT INCLUDED IN THIS PRICE. EXCEPT WHERE SHOWN, ALL PRICES ARE IN U.S. DOLLARS AND ARE APPROXIMATE. EXCEPT WHERE SHOWN, ALL PRICES ARE IN U.S. DOLLARS AND ARE APPROXIMATE. EXCEPT WHERE SHOWN, ALL PRICES ARE IN U.S. DOLLARS AND ARE APPROXIMATE.

For more information visit: www.dodge.com
or call 1-800-4ADODGE

FCA US LLC

EPA DOT Fuel Economy and Environment Gasoline Vehicle

Fuel Economy

21 MPG

combined city/hwy

19 26

city highway

4.8 gallons per 100 miles

Small SUV 2WD range from 17 to 33 MPG. The best vehicle rates 119 MPG/gal.

You spend \$1,750 more in fuel costs over 5 years compared to the average new vehicle.

Annual fuel cost \$2,150

Fuel Economy & Greenhouse Gas Rating (tailpipe only) Smog Rating (tailpipe only)

This vehicle emits 41.8 grams CO2 per mile. The best emits 0.0 grams per mile (tailpipe only). Producing and distributing fuel also creates emissions. Learn more at fuelconomy.gov

fuelconomy.gov

Calculate your own annual fuel costs for comparison.

GOVERNMENT 5-STAR SAFETY RATINGS

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

Frontal Crash	Driver	★★★★★
	Passenger	★★★★★
Side Crash	Front seat	Not Rated
	Rear seat	Not Rated
Rollover		★★★★★

Based on the risk of rollover in a single-vehicle crash.

Star ratings range from 1 to 5 stars (★★★★★) with 5 being the highest. Source: National Highway Traffic Safety Administration (NHTSA) www.safercar.gov or 1-888-327-4236

PARTS CONTENT INFORMATION FOR VEHICLES IN THIS CARLINE: U.S./CANADIAN PARTS CONTENT: 29% MAJOR SOURCES OF FOREIGN PARTS CONTENT:

MEXICO: 62%
 NOTE: PARTS CONTENT DOES NOT INCLUDE FINAL ASSEMBLY, DISTRIBUTION, OR OTHER NON-PARTS COSTS.

FOR THIS VEHICLE:
 FINAL ASSEMBLY POINT: TOLUCA, MEXICO
 COUNTRY OF ORIGIN: ENGINE: UNITED STATES
 TRANSMISSION: UNITED STATES

Photo No. 102 - Monroney Label

Supplemental Active Head Restraints (AHR) — Front Seats

Supplemental Active Head Restraints are passive, deployable components, and vehicles with this equipment can not be readily identified by any markings, only through visual inspection of the head restraint. The head restraint will be split in two halves, with the front half being soft foam and trim, the back half being decorative plastic.

When AHRs deploy during a rear impact, the front half of the head restraint extends forward to minimize the gap between the back of the occupant's head and the AHR. This system is designed to help prevent or reduce the extent of injuries to the driver and front passenger in certain types of rear impacts. Refer to "Occupant Restraints" in "Things To Know Before Starting" for further information.

To raise the head restraint, pull upward on the head restraint. To lower the head restraint, push the adjustment button, located at the base of the head restraint, and push downward on the head restraint.



Adjustment Button

For comfort, the Active Head Restraints can be tilted forward and backward. To tilt the head restraint closer to the back of your head, pull forward on the bottom of the head restraint. Push rearward on the bottom of the head restraint to move the head restraint away from your head.



Active Head Restraint (Normal Position)



Active Head Restraint (Tilted)

Photo No. 103 - Head Restraint Use and Adjustment Information from Vehicle Owner's Manual

APPENDIX B
DUMMY RESPONSE DATA PLOTS

TABLE OF DATA PLOTS
Driver Dummy Instrumentation Plots

<u>No.</u>	<u>Description</u>	<u>Page No.</u>
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Figure No. 2.	Driver Head Acceleration (Y) Primary vs. Time	B-1
Figure No. 3.	Driver Head Acceleration (Z) Primary vs. Time	B-1
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Figure No. 20.	Passenger Lower Spine T12 Acceleration (Z) vs. Time	B-6
Figure No. 21.	Passenger Lower Spine T12 Resultant Acceleration vs. Time	B-6
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Figure No. 23.	Passenger Acetabulum Force on Impact Side (Y) vs. Time	B-7
Figure No. 24.	Passenger Total Pelvic Force on Impact Side (Y) vs. Time	B-7

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

Additional Driver & Passenger Dummy Instrumentation Data

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

Vehicle Instrumentation Data

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

MDB Instrumentation Data

MDB Center of Gravity Acceleration (X)

MDB Center of Gravity Acceleration (Y)

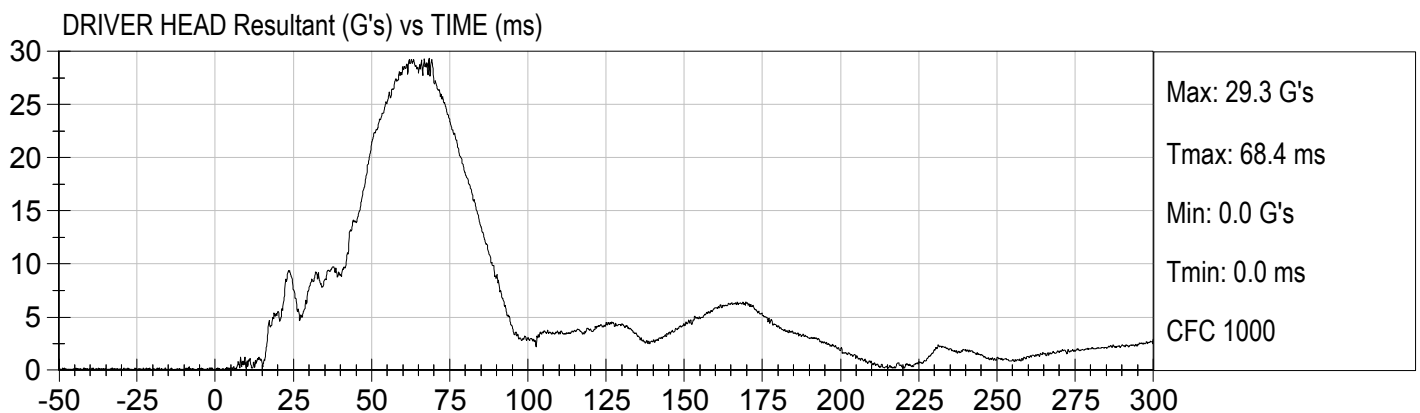
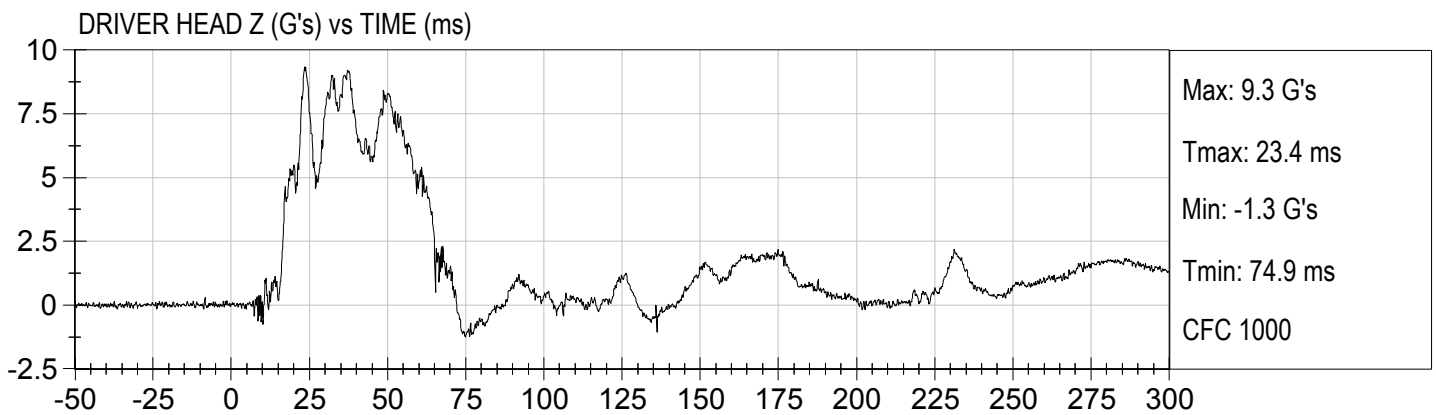
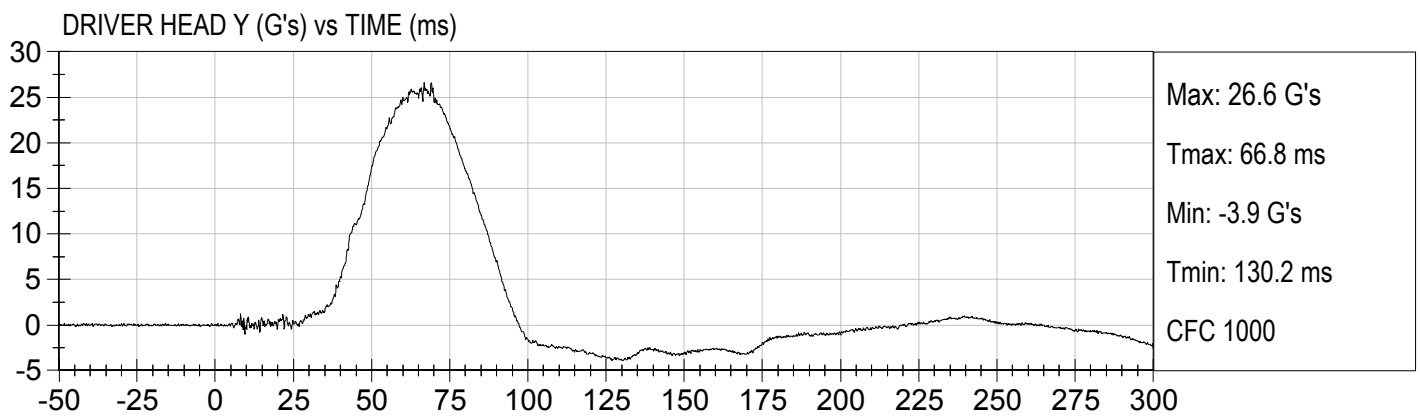
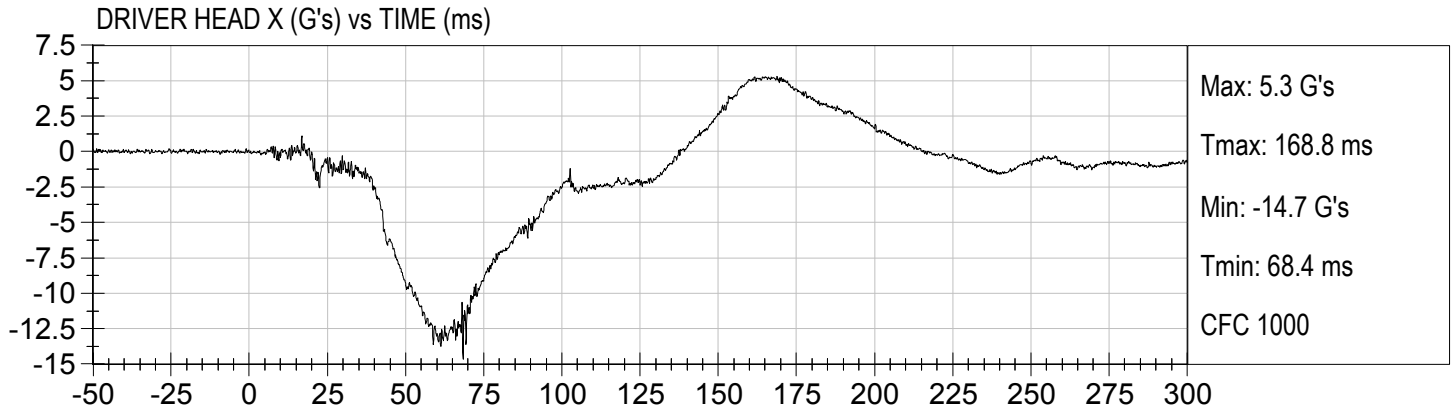
MDB Center of Gravity Acceleration (Z)

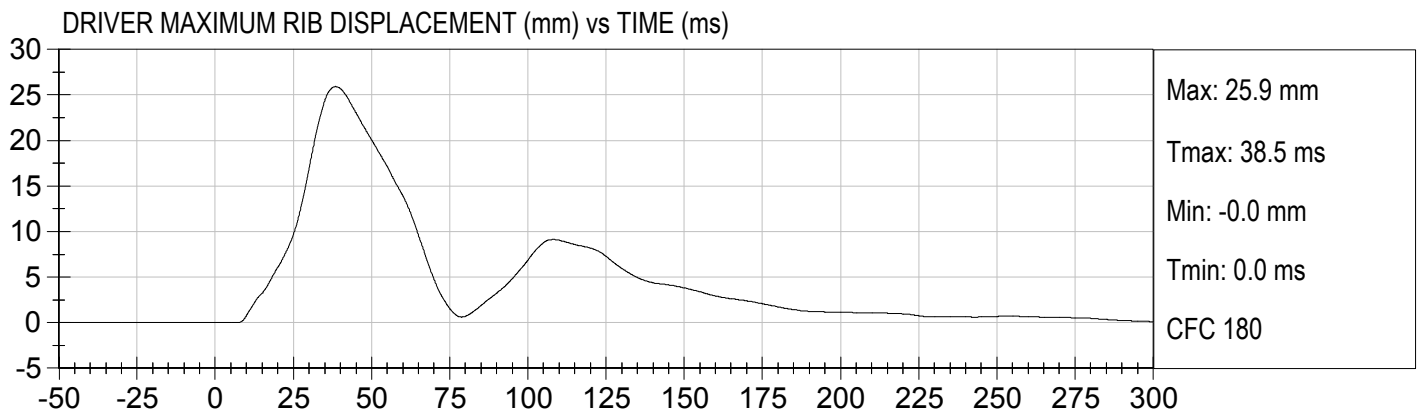
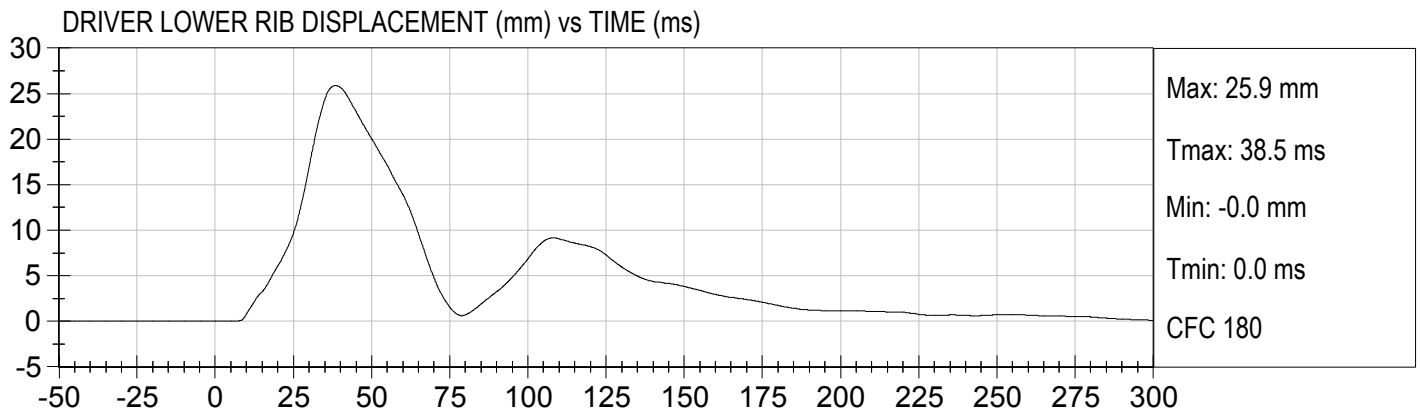
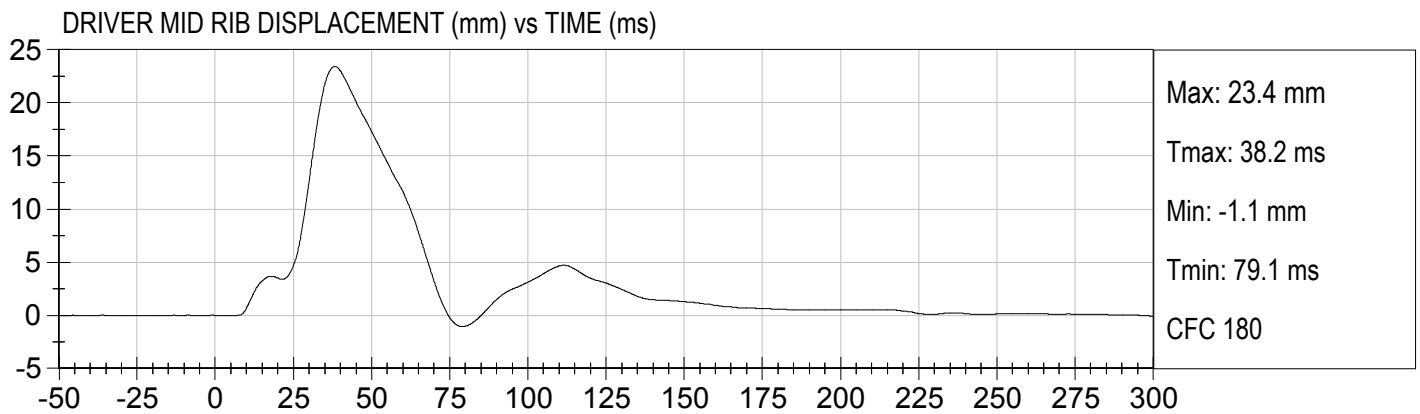
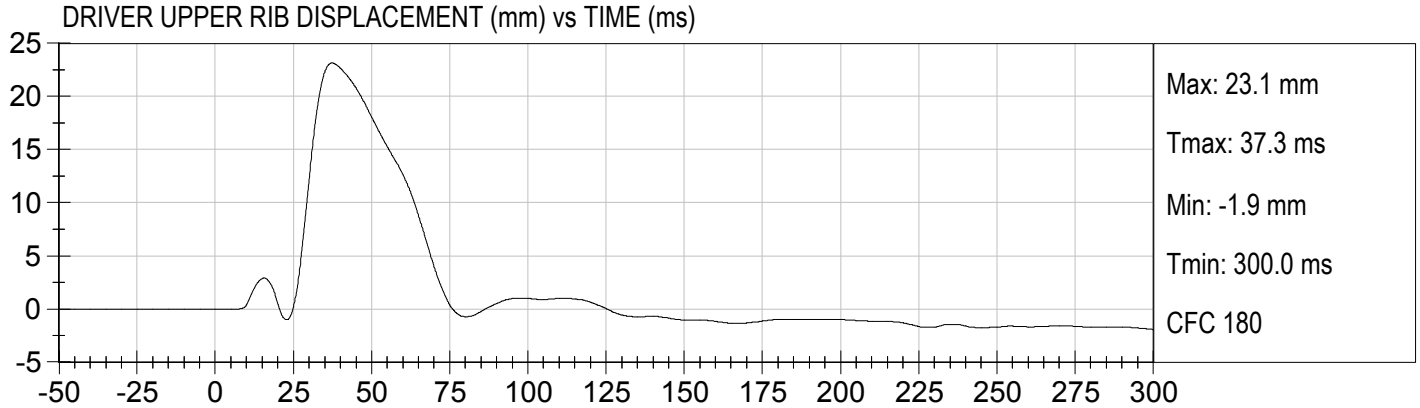
MDB Rear Acceleration (X)

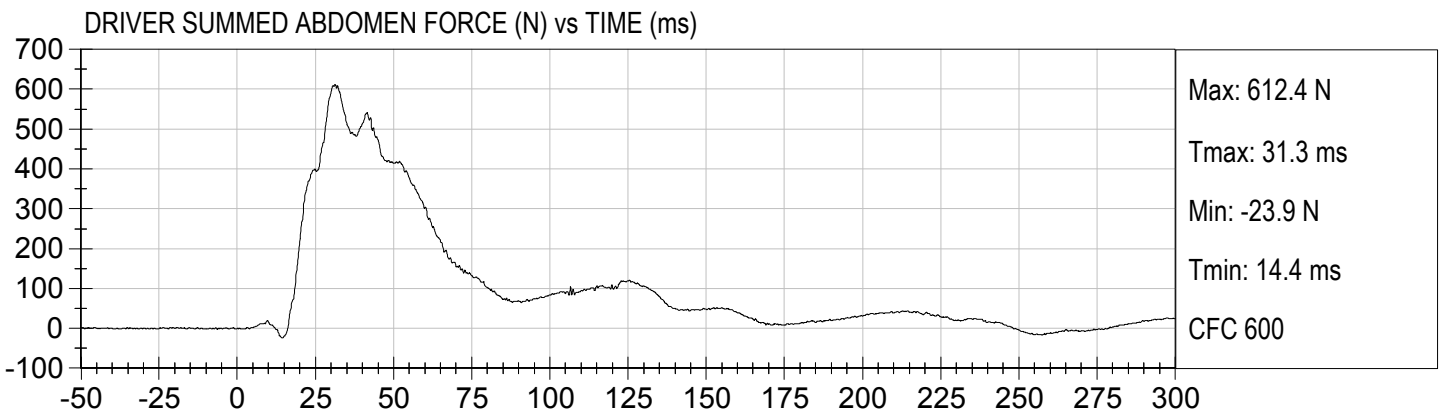
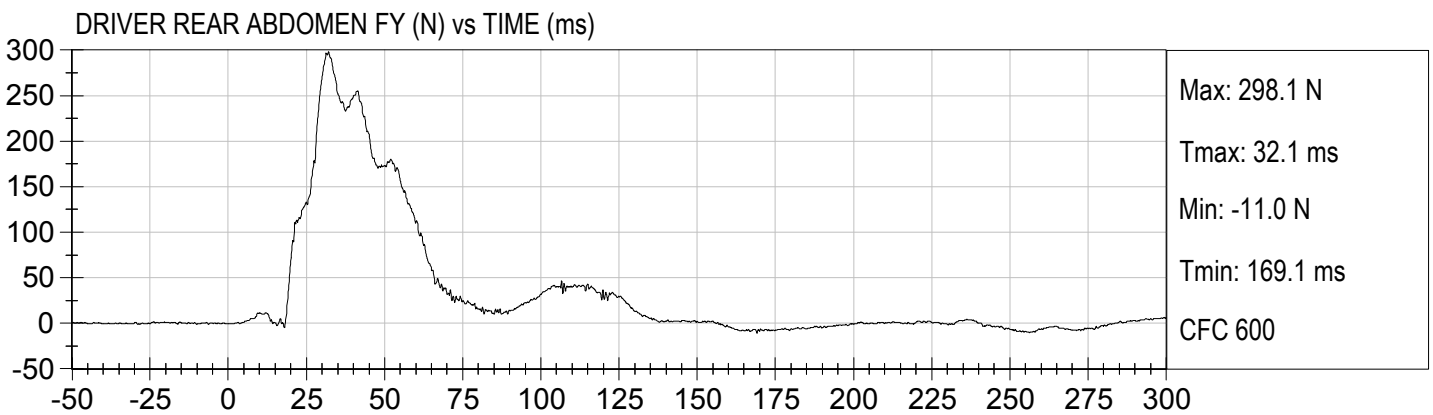
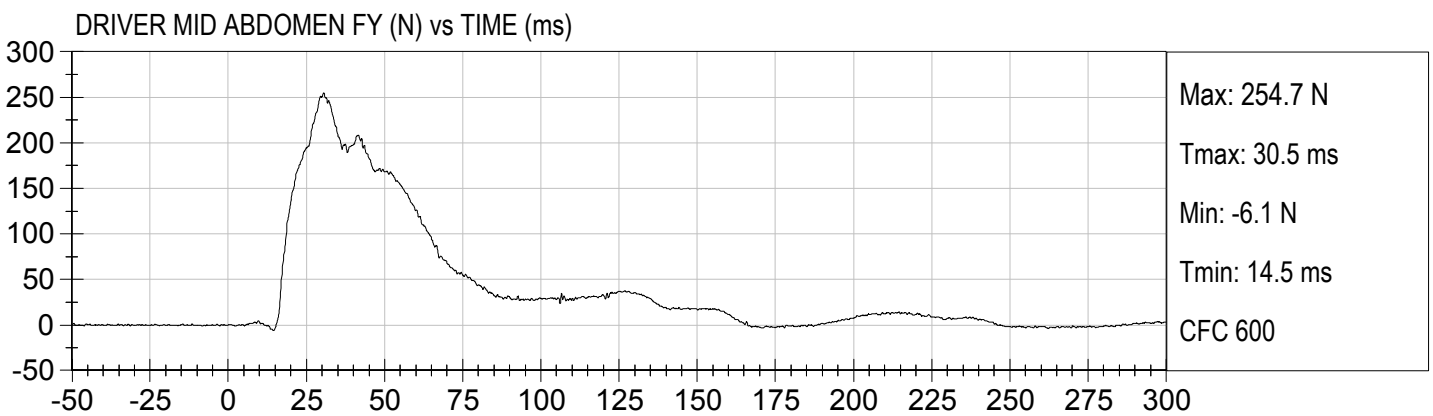
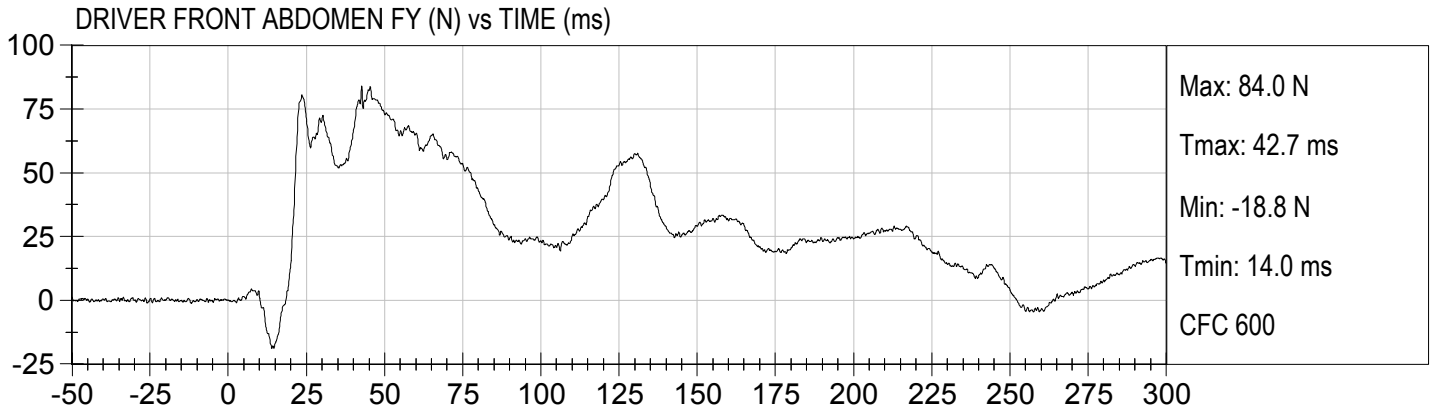
MDB Rear Acceleration (Y)

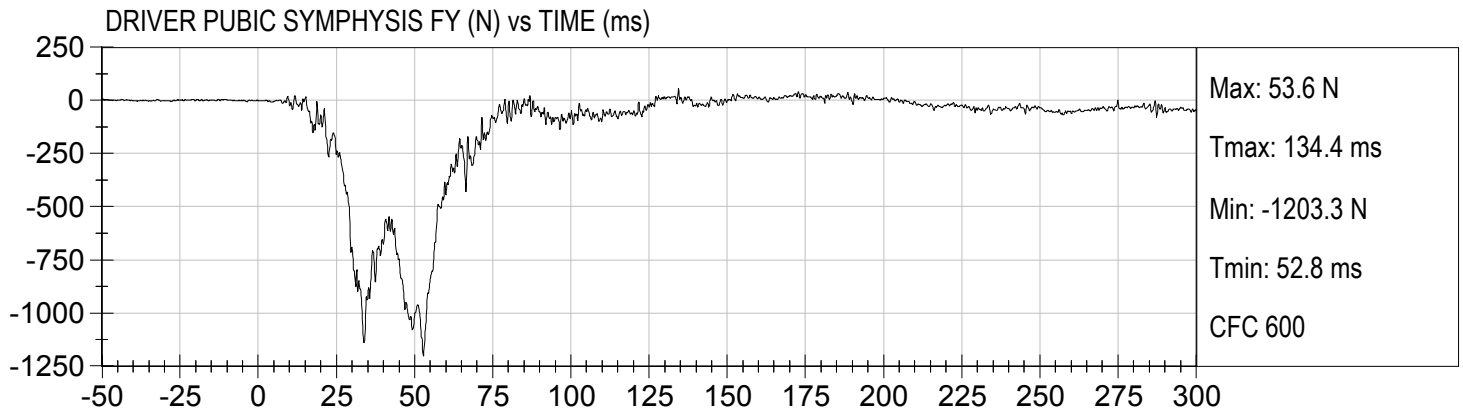
Left MDB Contact Switch

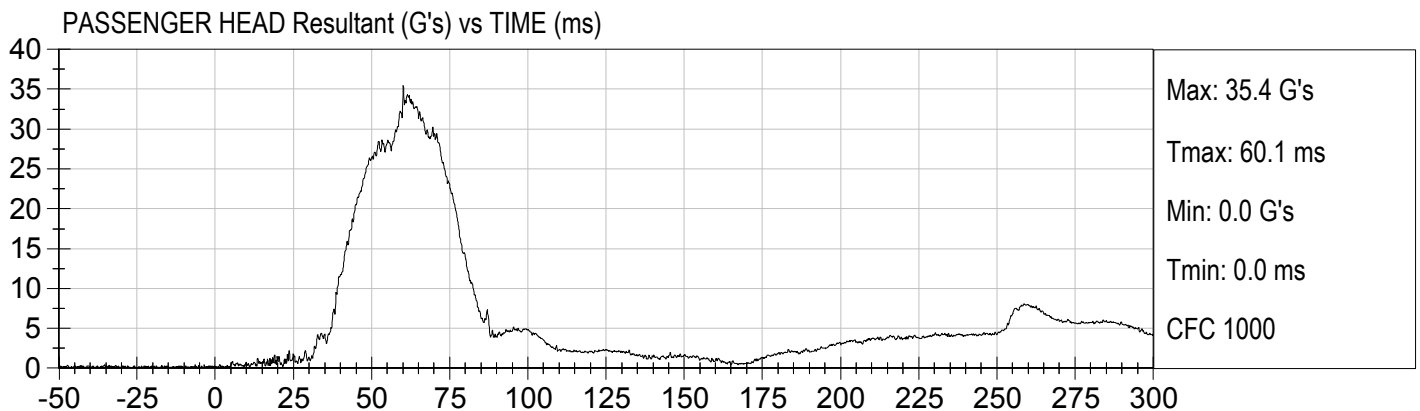
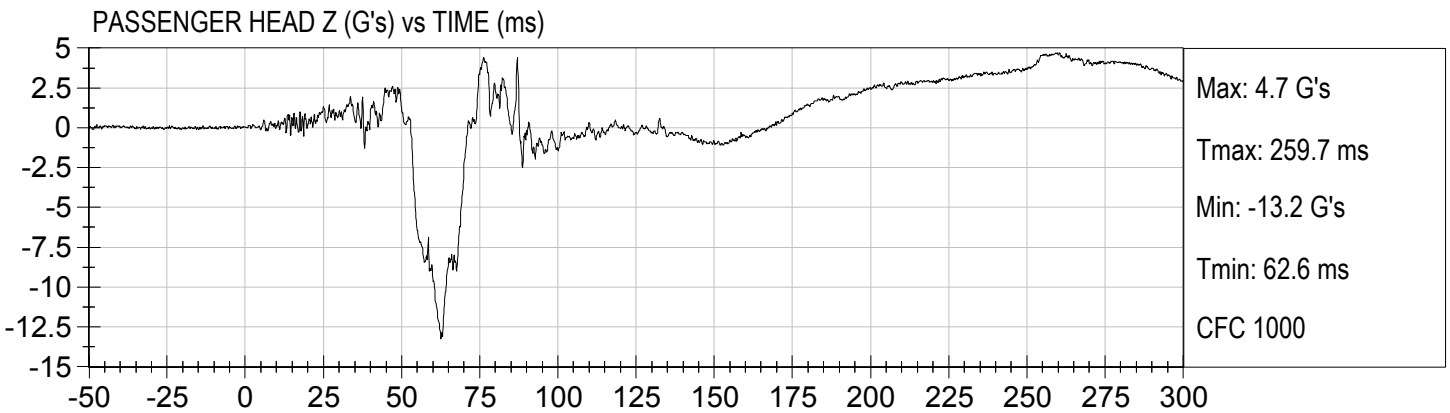
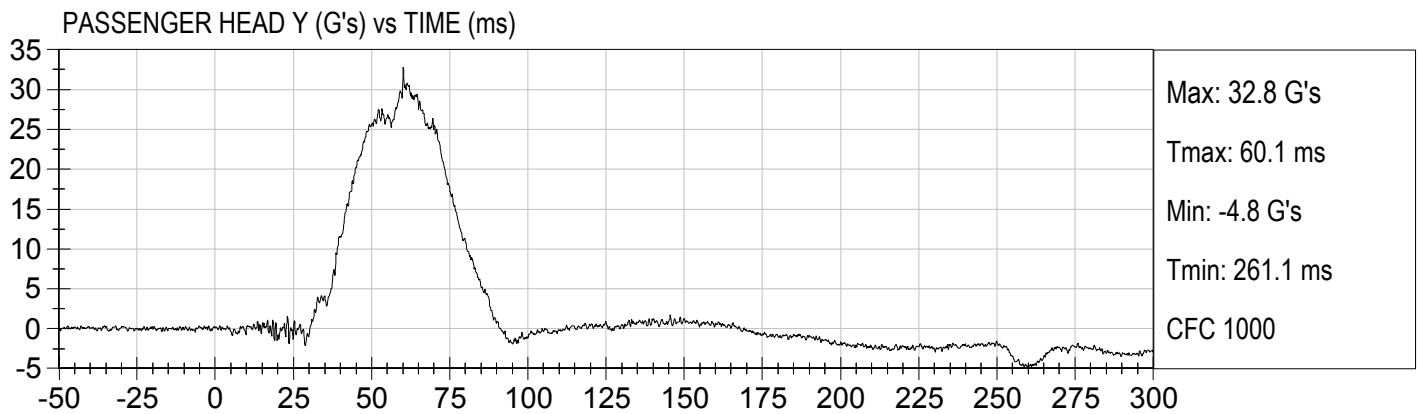
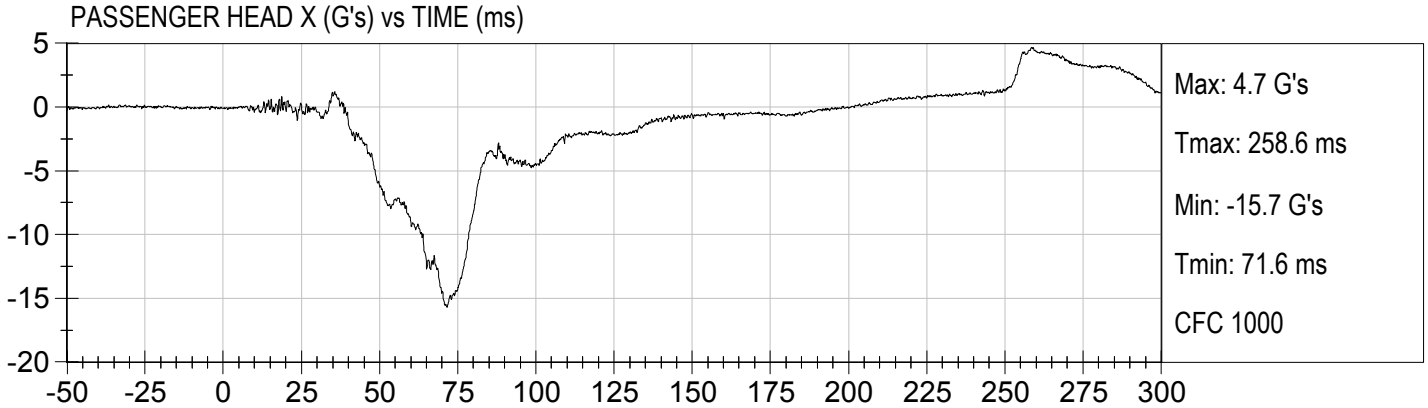
Right MDB Contact Switch

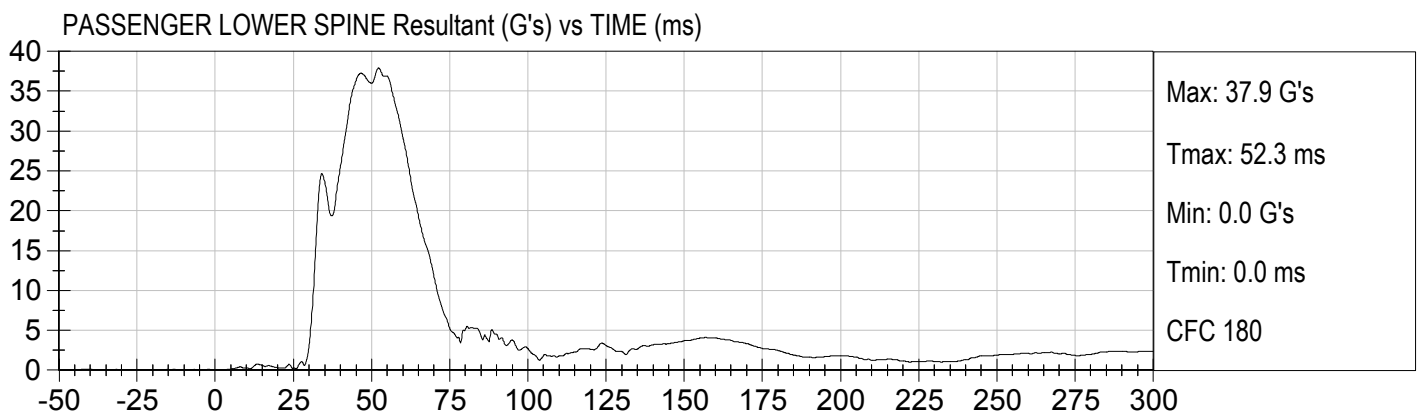
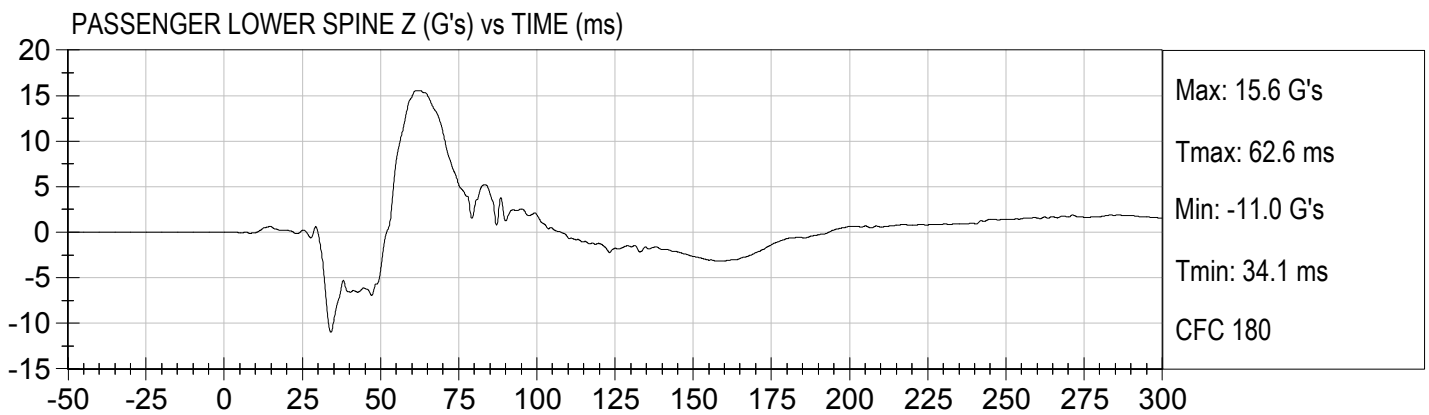
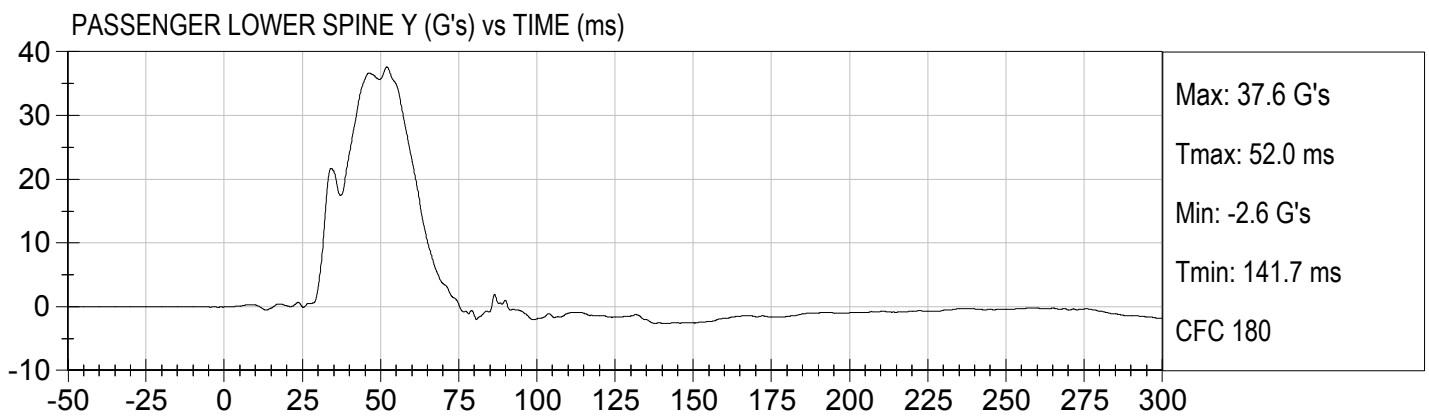
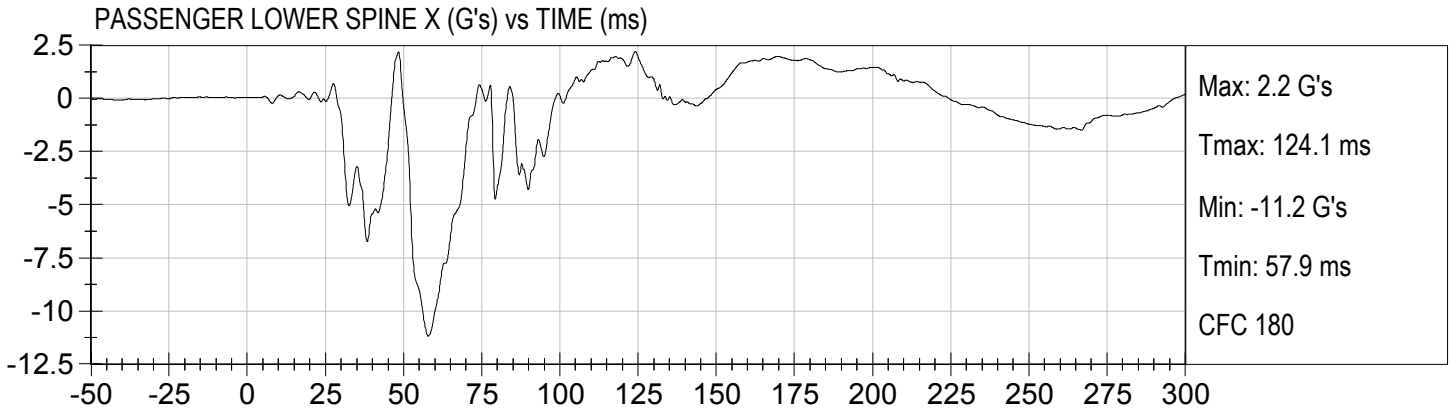


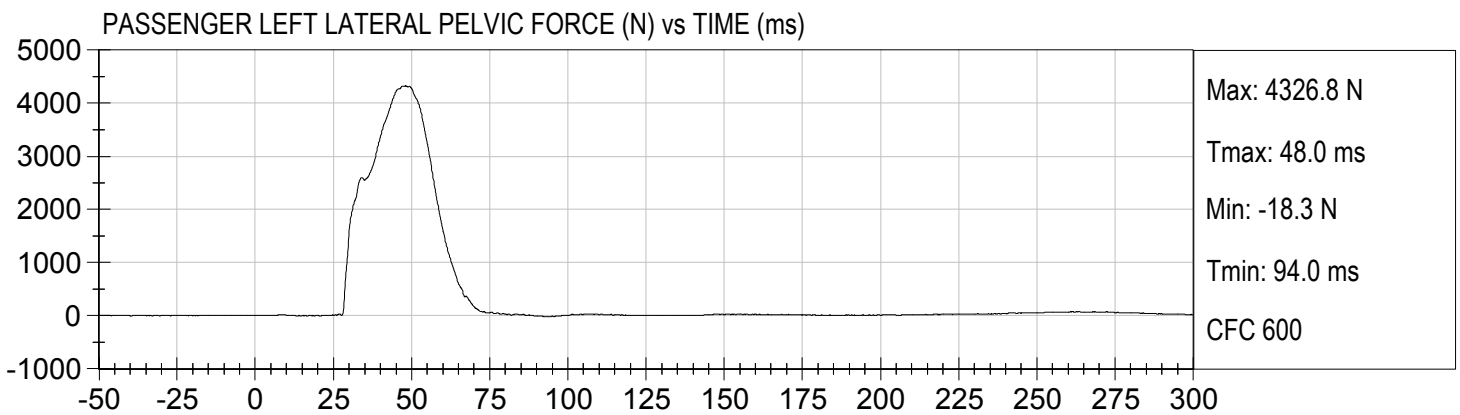
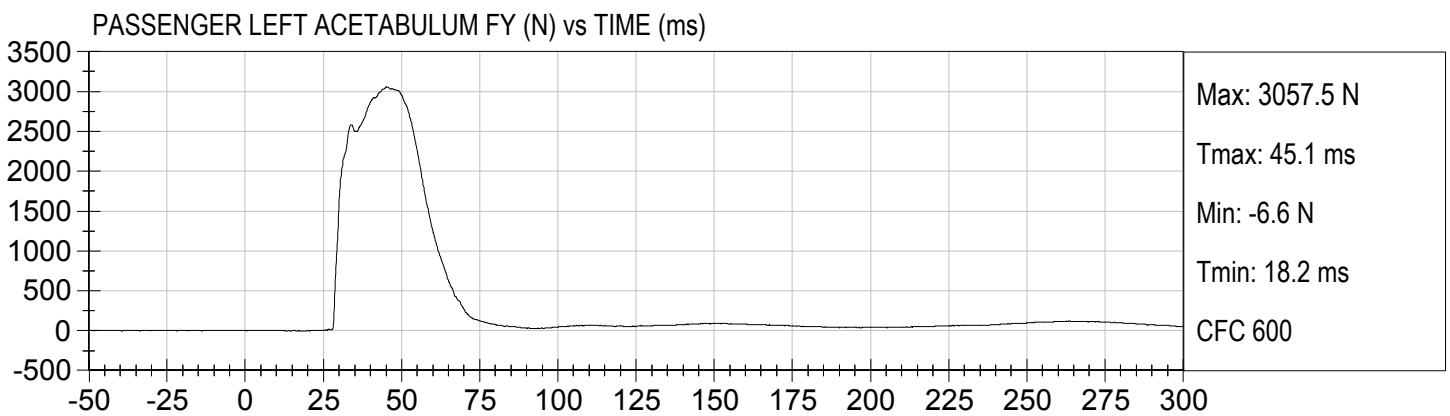
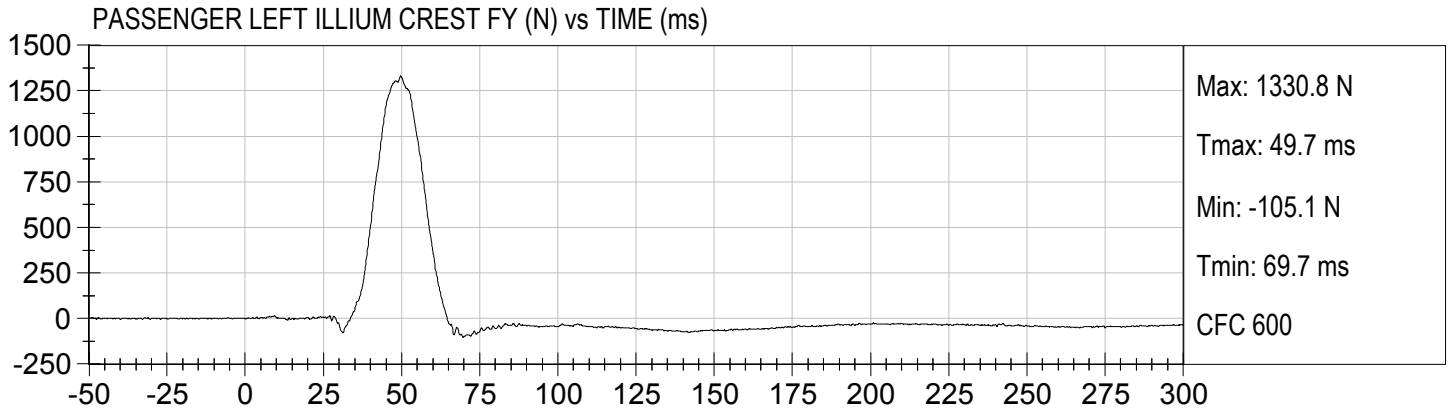












APPENDIX C
DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA

**ES-2re External Measurements
SN: 032**

No.	Name	Spec. (mm)	Result	Pass/Fail
1	Sitting Height	900 - 918	915	Pass
2	Seat to Shoulder Joint	558 - 572	568	Pass
3	Seat to Lower Face of Thoracic Spine Box	346 - 356	355	Pass
4	Seat to Hip Joint (center of bolt)	97 - 103	98	Pass
5	Sole to Seat, Sitting	333 - 451	440	Pass
6	Head Width	152 - 158	157	Pass
7	Shoulder/Arm Width	461 - 479	464	Pass
8	Thorax Width	322 - 332	323	Pass
9	Abdomen Width	273 - 287	281	Pass
10	Pelvis Lap Width	359 - 373	370	Pass
11	Head Depth	196 - 206	203	Pass
12	Thorax Depth	262 - 272	264	Pass
13	Abdomen Depth	194 - 204	196	Pass
14	Pelvis Depth	235 - 245	236	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150 - 160	151	Pass
16	Back of Buttocks to Front Knee	597 - 615	607	Pass

MGA RESEARCH CORPORATION
HEAD DROP TEST
ES-2re DUMMY

ATD Serial No: 032

Test ID: D153151

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Peak Resultant Acceleration	G's	125 to 155	134	Pass
Peak Longitudinal Acceleration	G's	<= +/- 15.0	8.0	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
Overall Test Results				Pass

David Schoedel

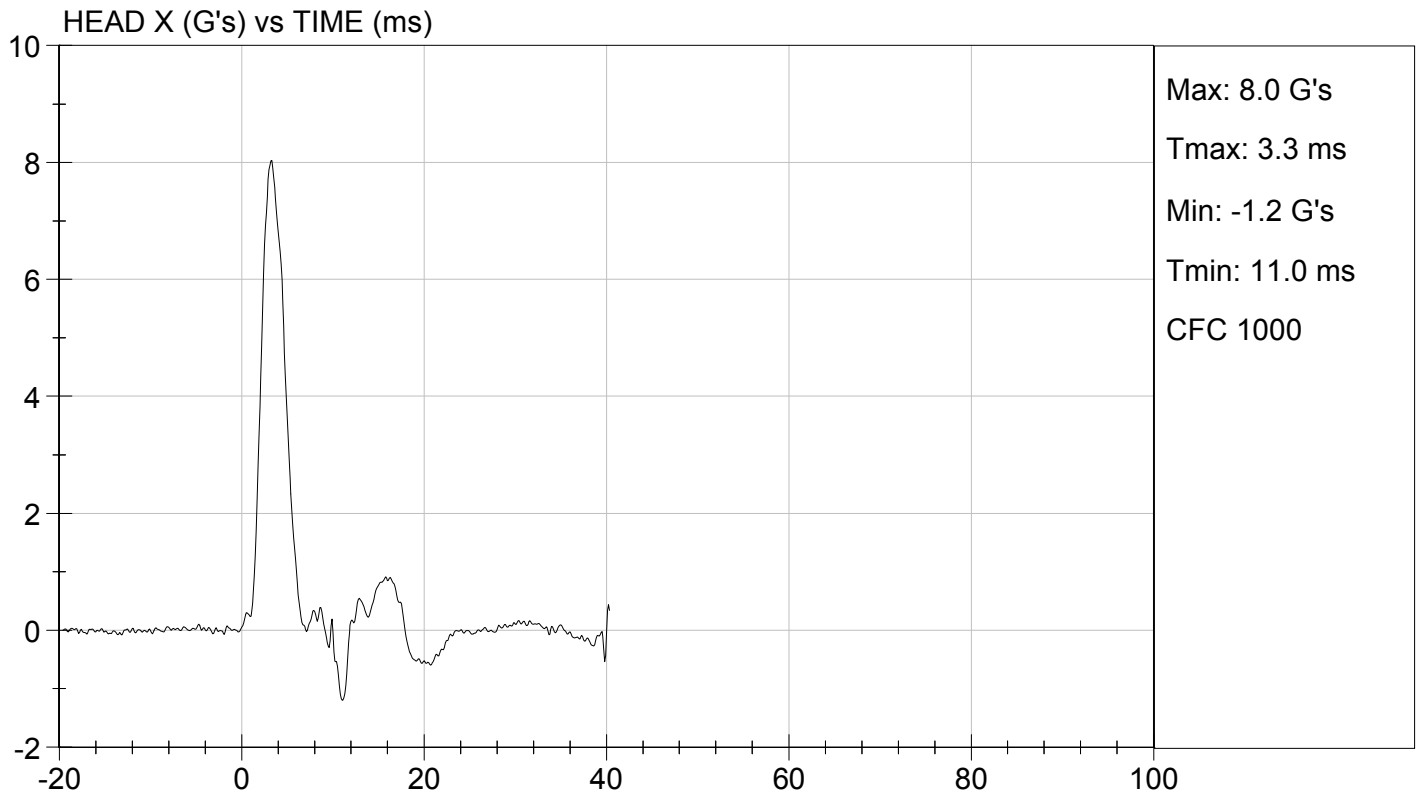
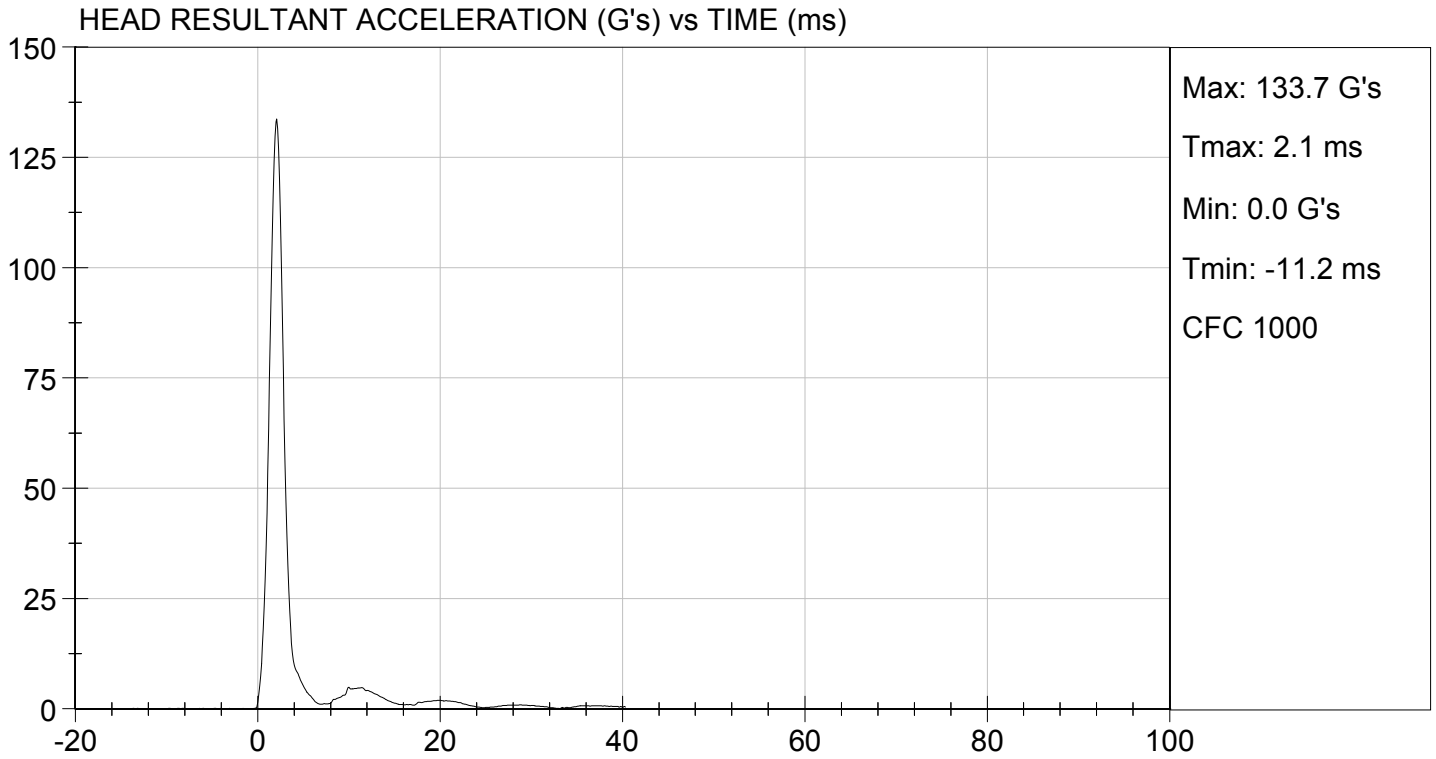
 Laboratory Technician

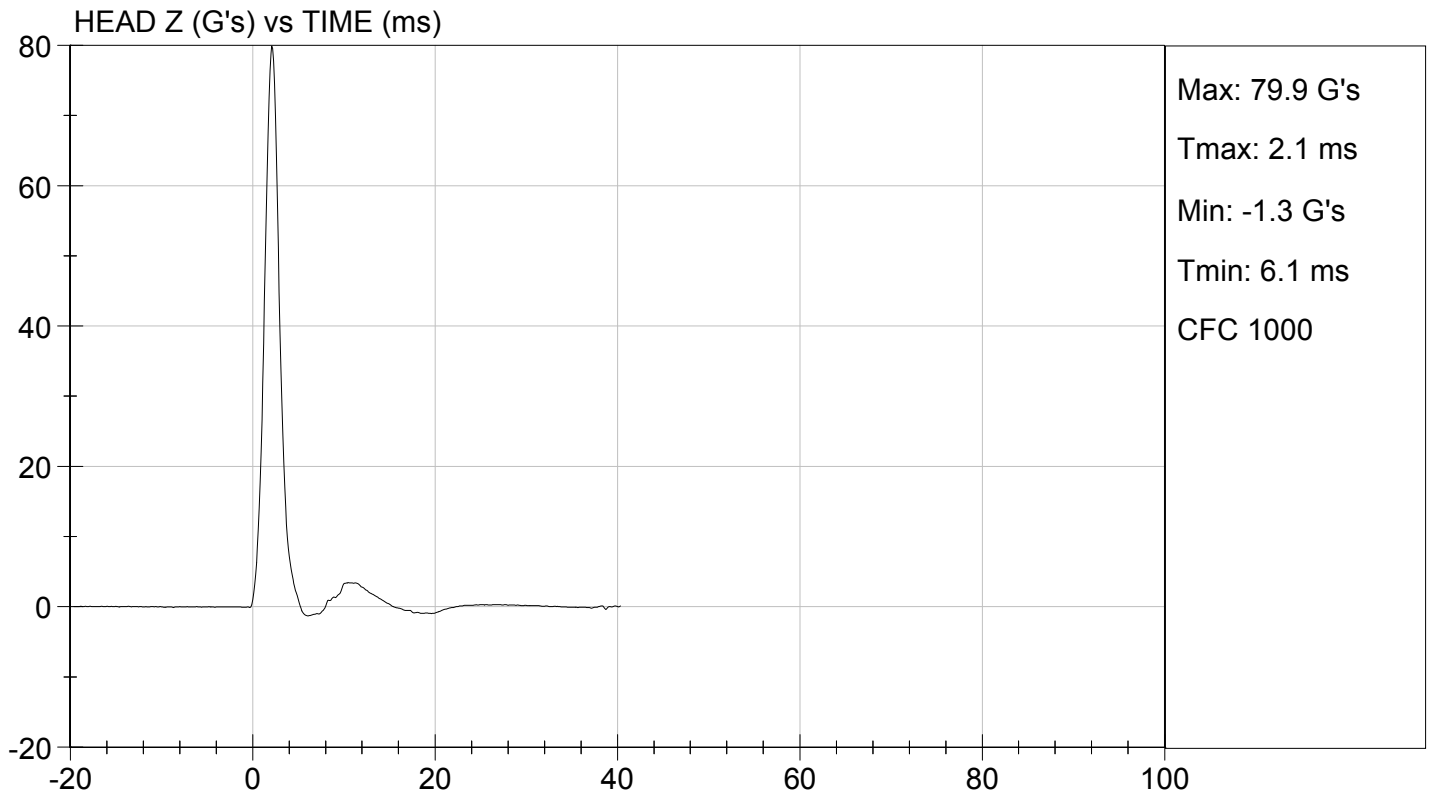
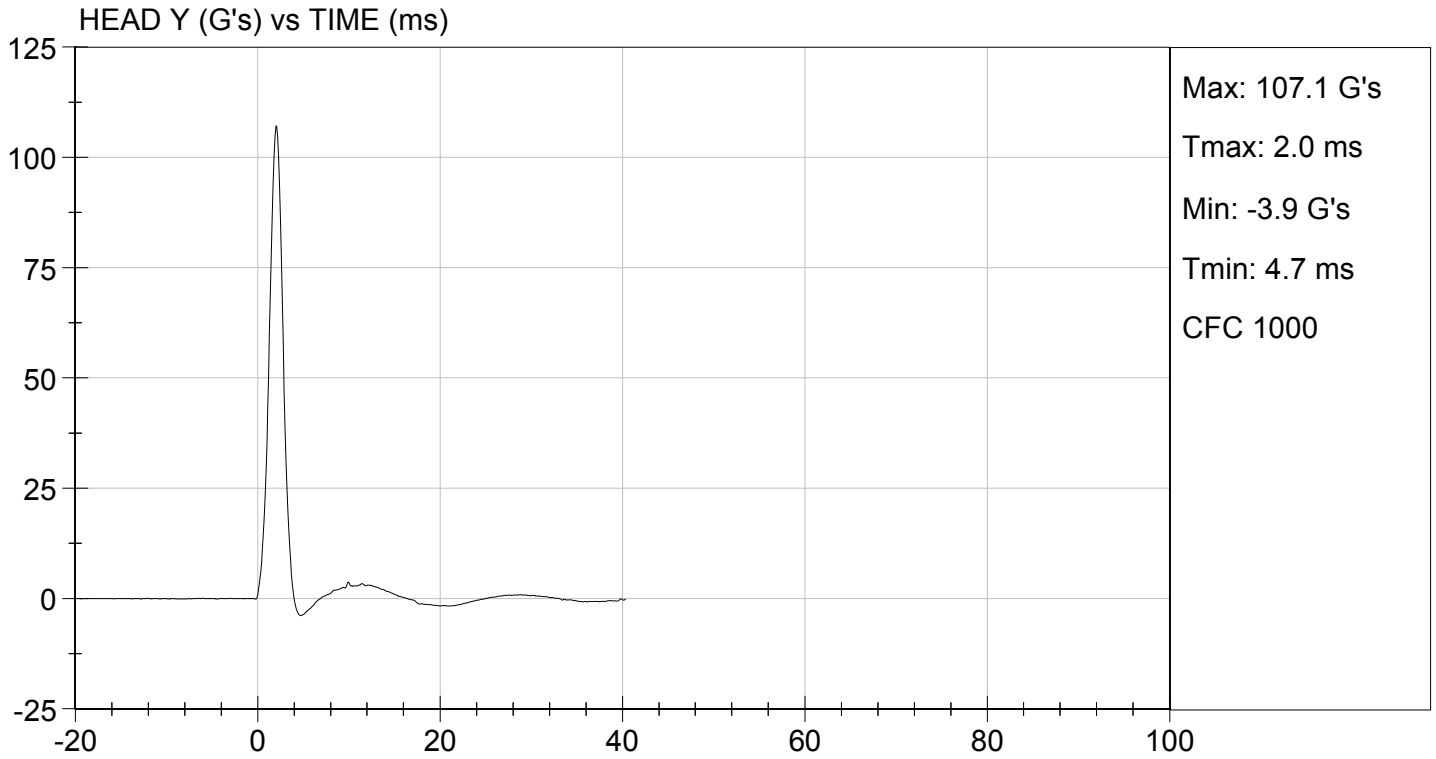
10/07/2015

 Test Date

Jessica Hall

 Approved By





MGA RESEARCH CORPORATION
NECK PENDULUM TEST
ES-2re DUMMY

ATD Serial No: 032

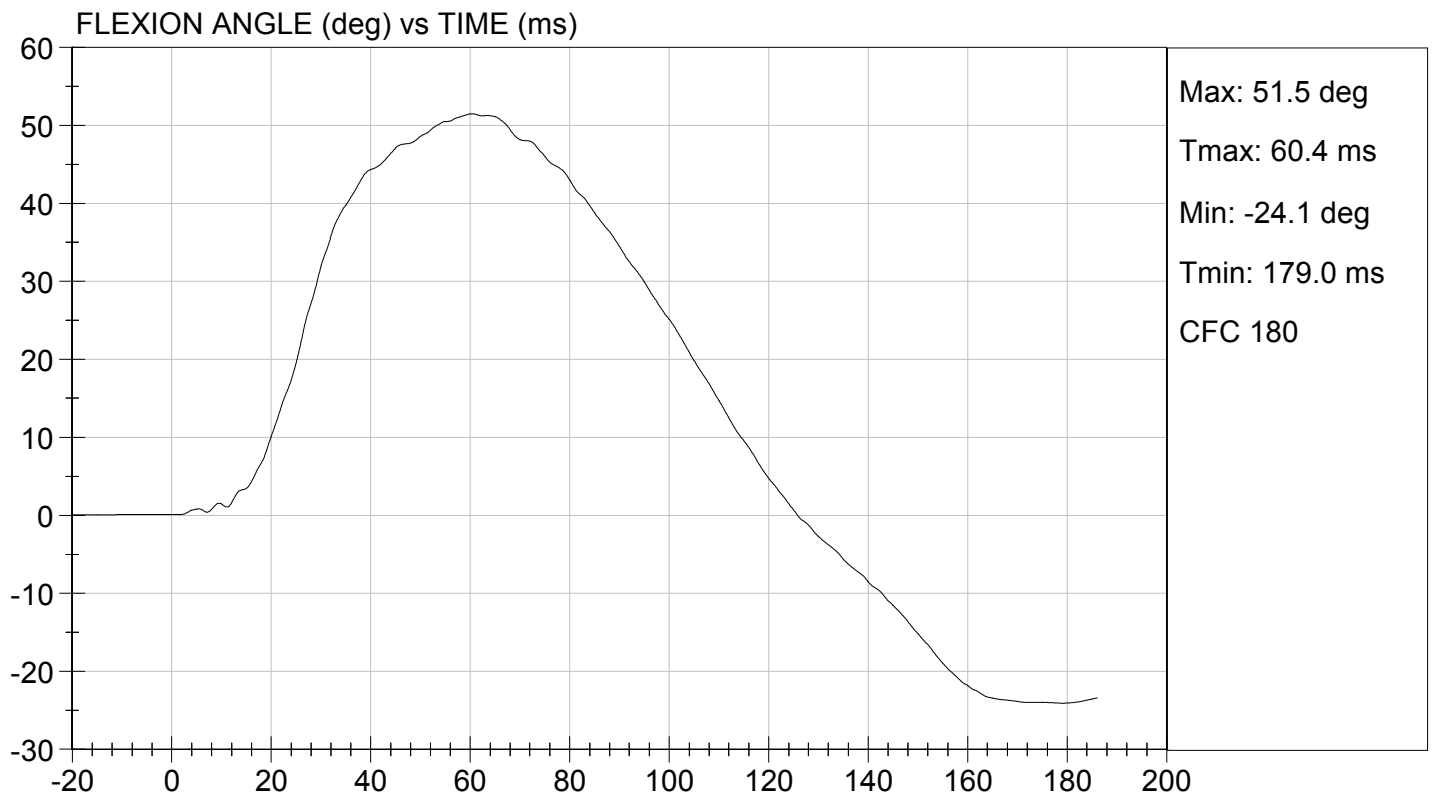
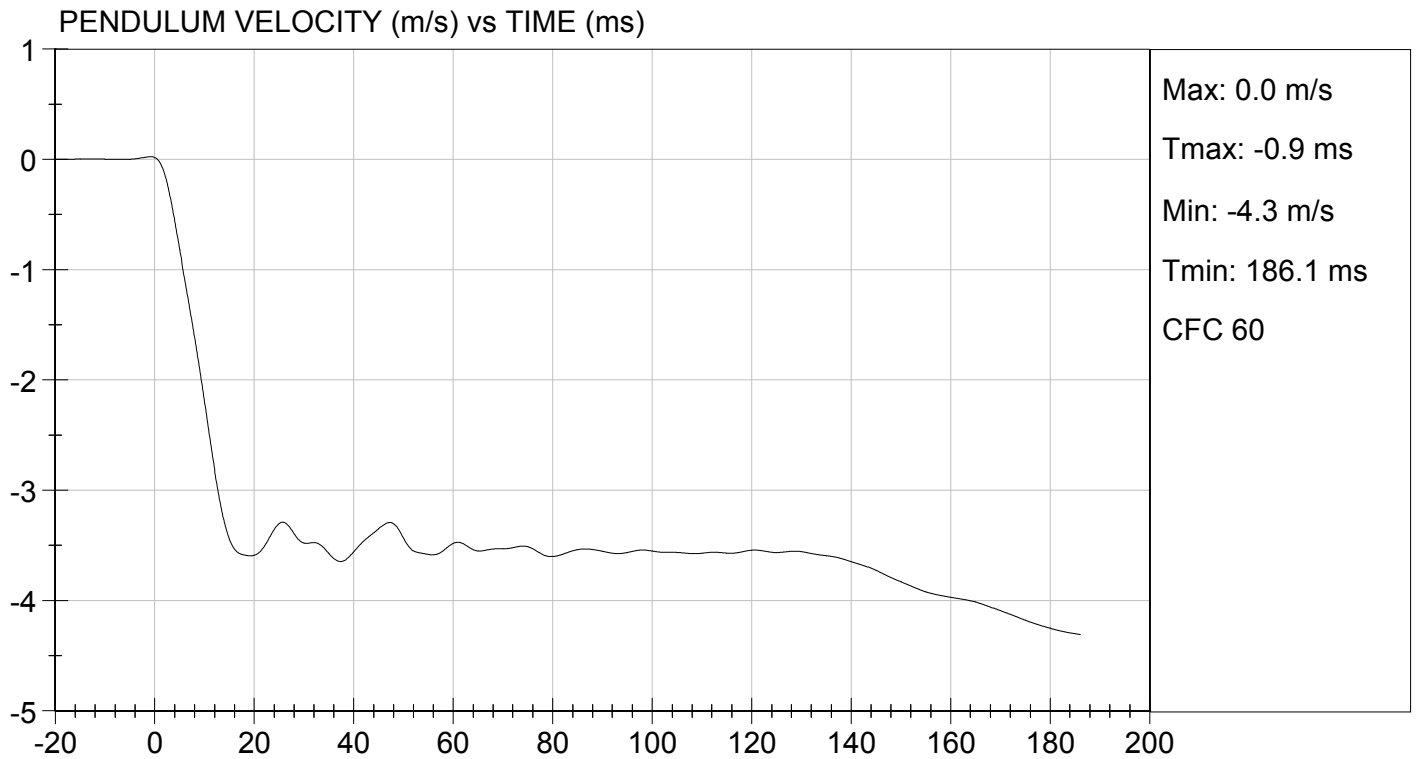
Test I.D.: D153152

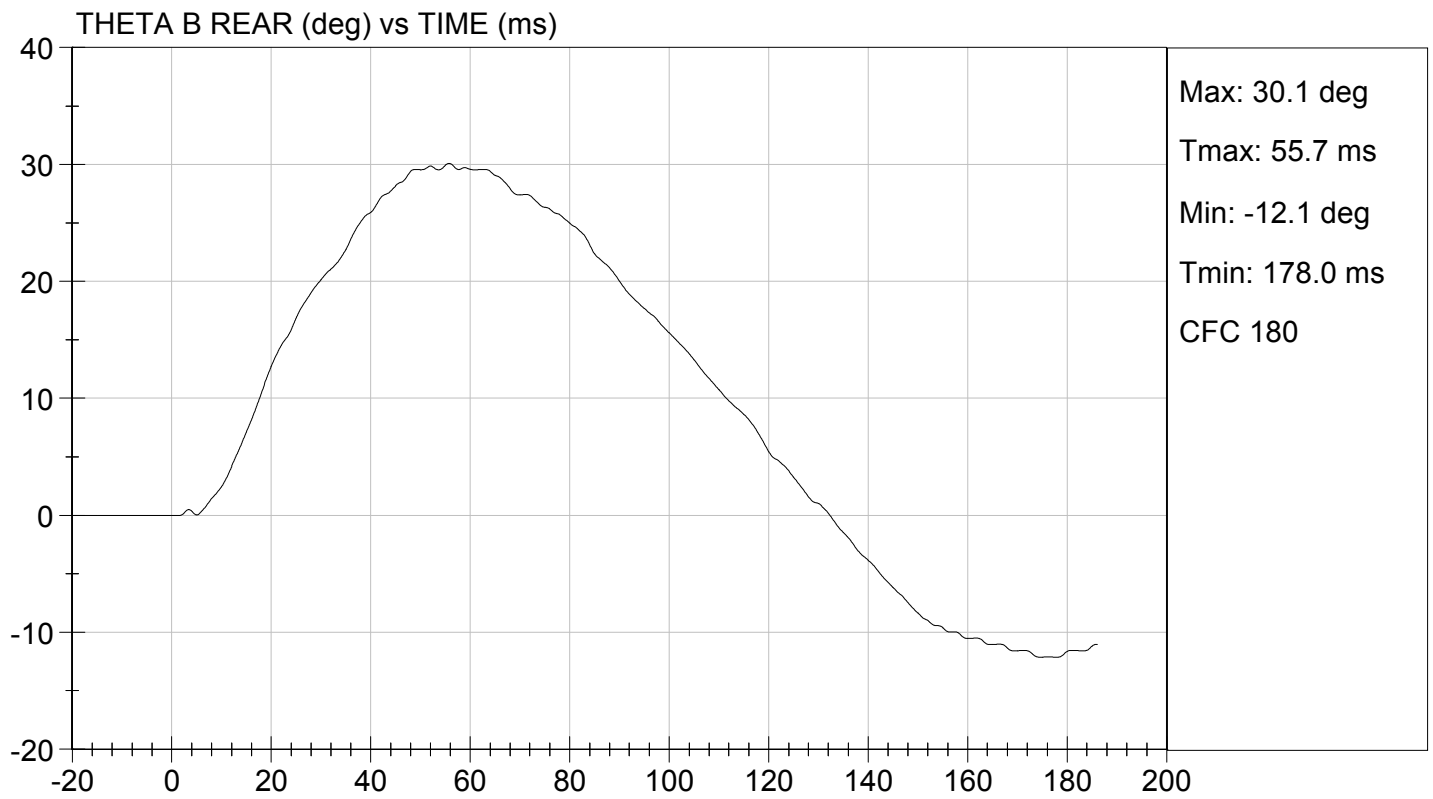
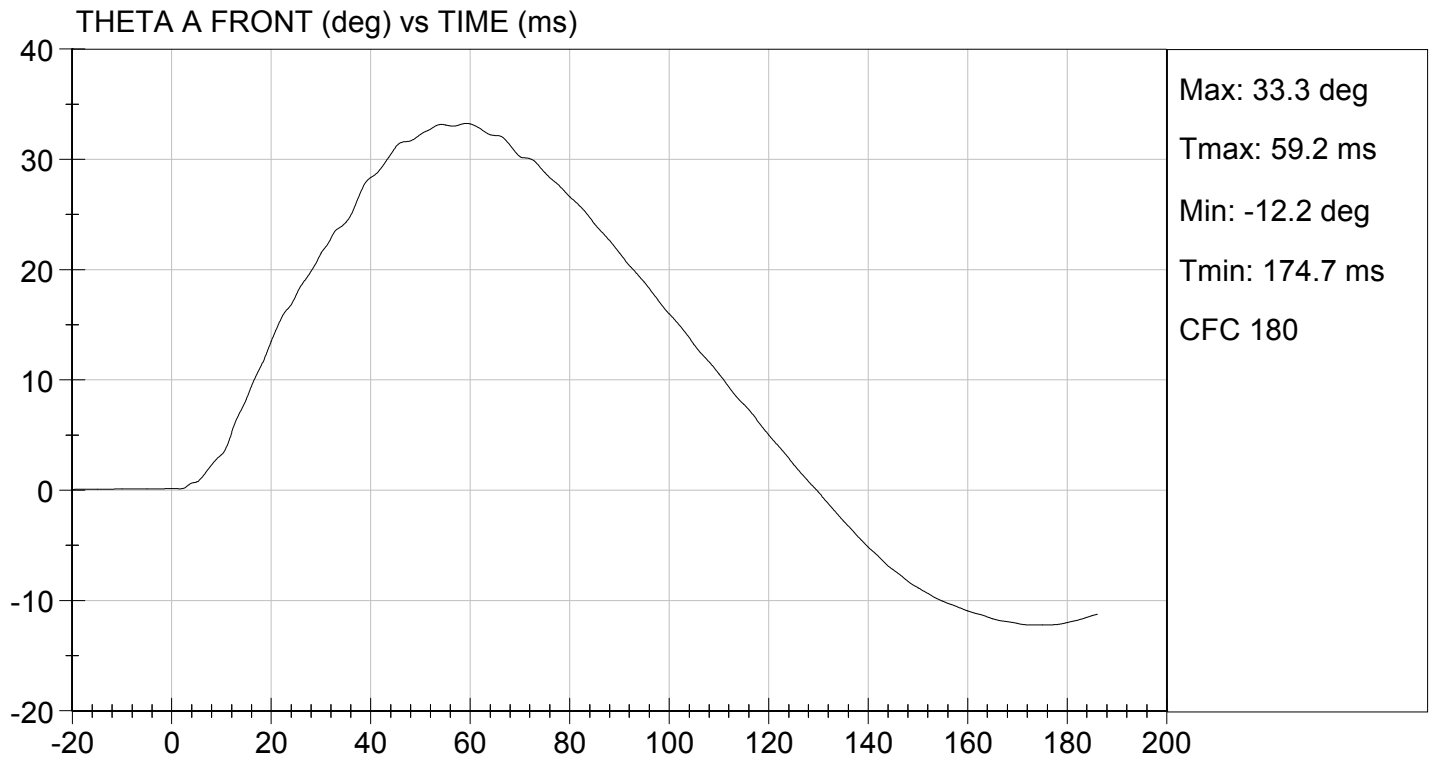
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	deg C	20.6 to 22.2	21.4	Pass	
Laboratory Relative Humidity	%	10 to 70	49	Pass	
Pendulum Speed	m/s	3.30 to 3.50	3.48	Pass	
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.03	Pass
	3 ms	m/s	-0.25 to -0.375	-0.32	Pass
	14 ms	m/s	-3.20 to -3.70	-3.29	Pass
	17 ms	m/s	>= -3.70	-3.57	Pass
Maximum Flexion Angle	deg	49.0 to 59.0	51.5	Pass	
Time of Maximum Flexion Angle	ms	54.0 to 66.0	60.4	Pass	
Head Rotation Decay Time to 0 Degree	ms	53.0 to 88.0	55.7	Pass	
Overall Results				Pass	

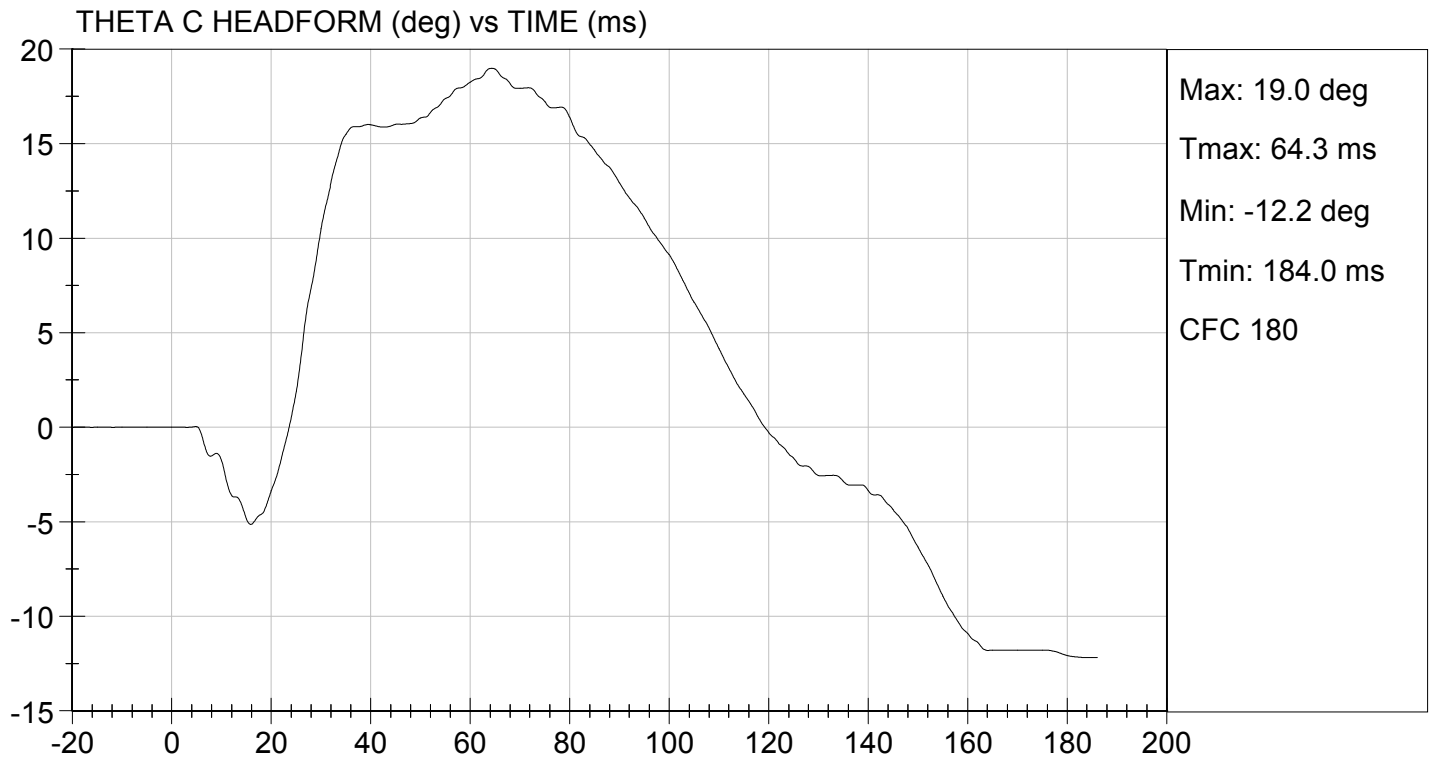
Jack Coleman
 Laboratory Technician

Jessica Hall
 Approved By

10/07/2015
 Test Date







MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
ES-2re DUMMY


ATD Serial No: 032

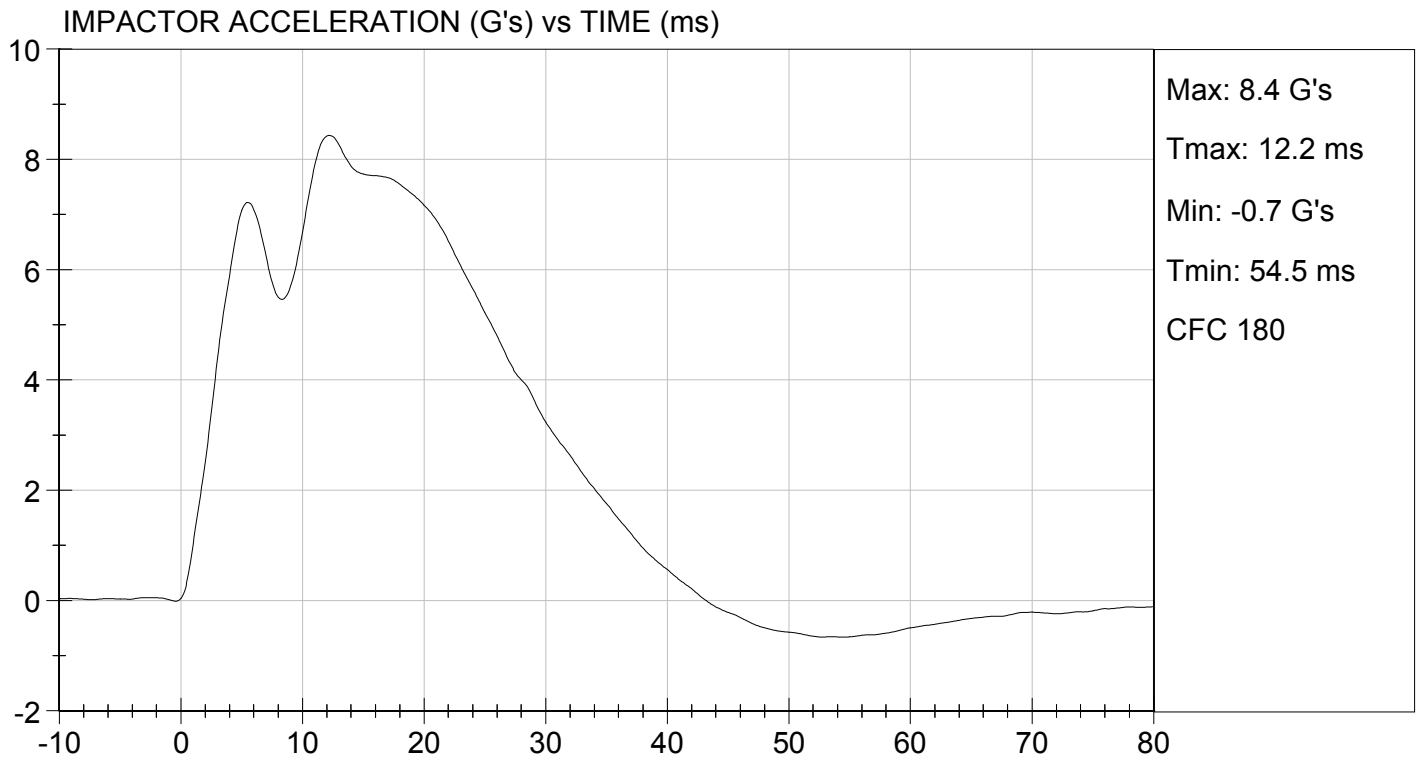
Test I.D: D153153

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Pendulum Speed	m/s	4.20 to 4.40	4.38	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	8.4	Pass
Overall Test Results				Pass


 Laboratory Technician

10/07/2015
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UPPER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D153154

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	49	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.9	Pass
Displacement at 815 mm	mm	46.0 to 51.0	49.7	Pass
Overall Test Results				Pass

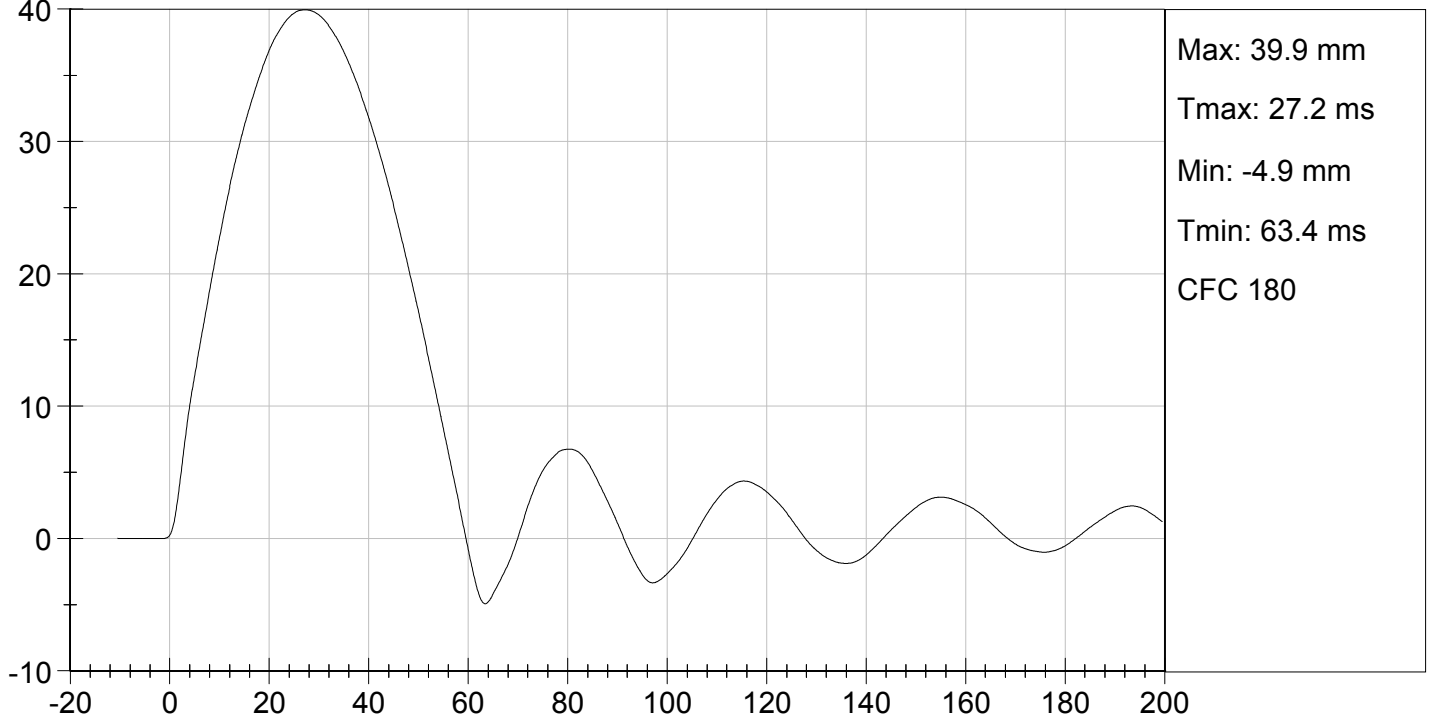

Laboratory Technician

10/07/2015
Test Date

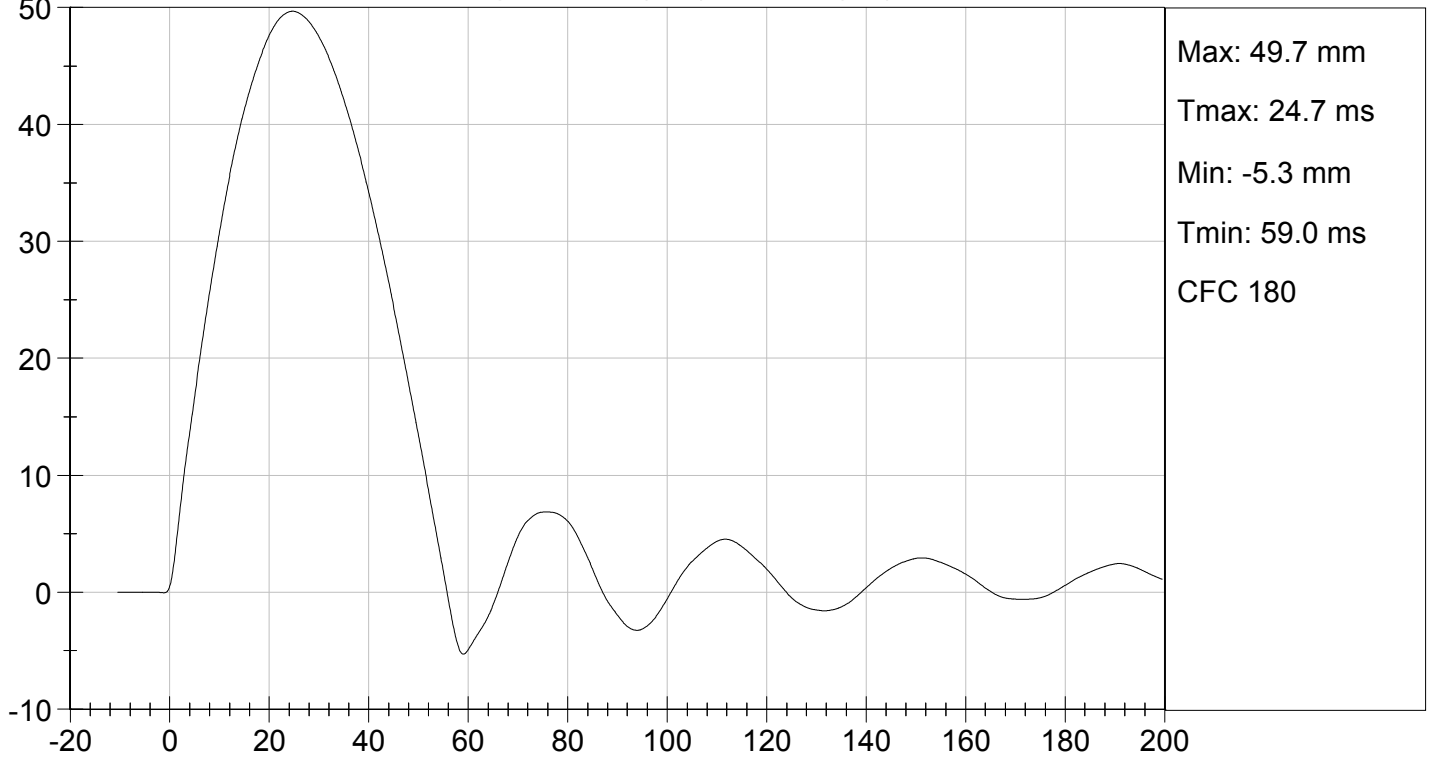

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UPPER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

MID RIB TEST

ES-2re DUMMY

ATD Serial No: 032

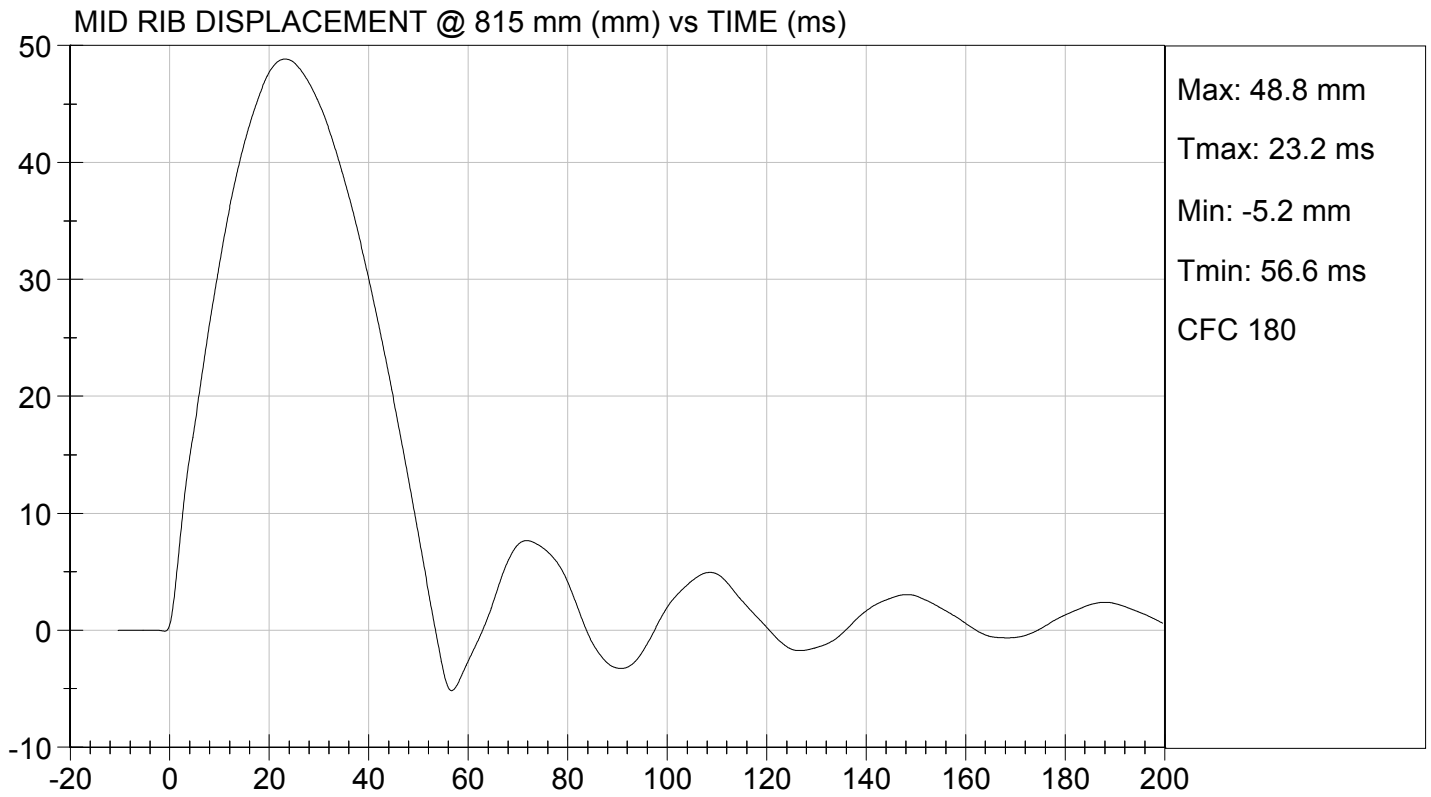
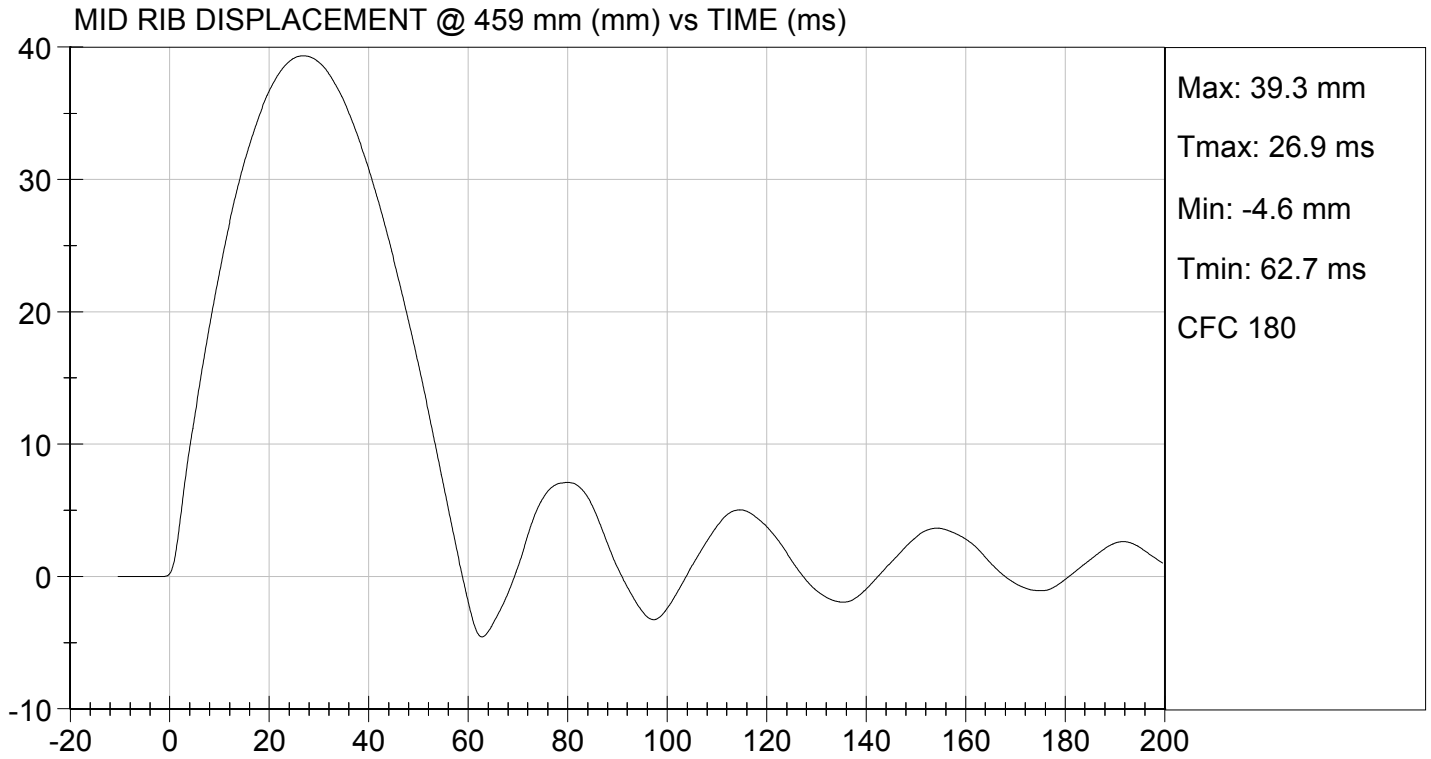
Test I.D: D153155

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	49	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.3	Pass
Displacement at 815 mm	mm	46.0 to 51.0	48.8	Pass
Overall Test Results				Pass


Laboratory Technician

10/07/2015
Test Date


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MGA RESEARCH CORPORATION

LOWER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D.: D153156

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	49	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.8	Pass
Displacement at 815 mm	mm	46.0 to 51.0	50.1	Pass
Overall Test Results				Pass

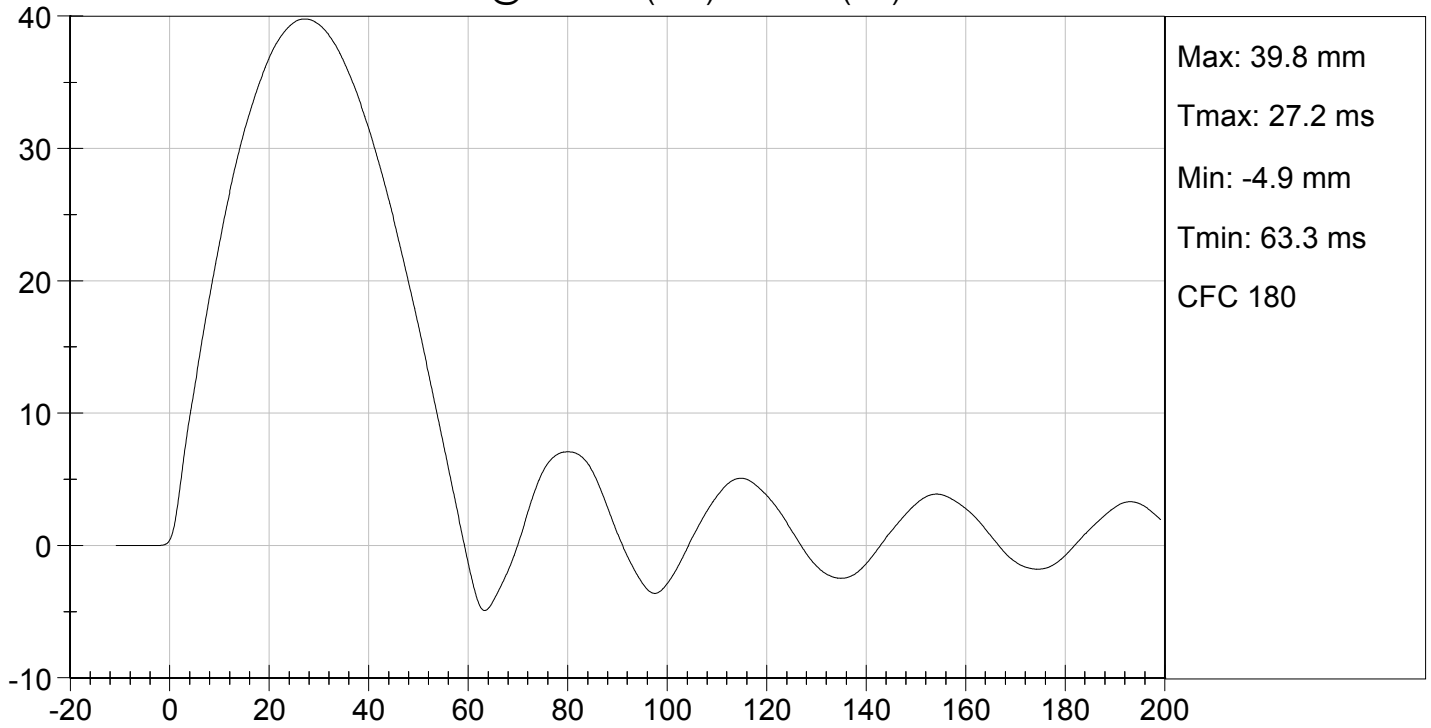

Laboratory Technician

10/07/2015
Test Date

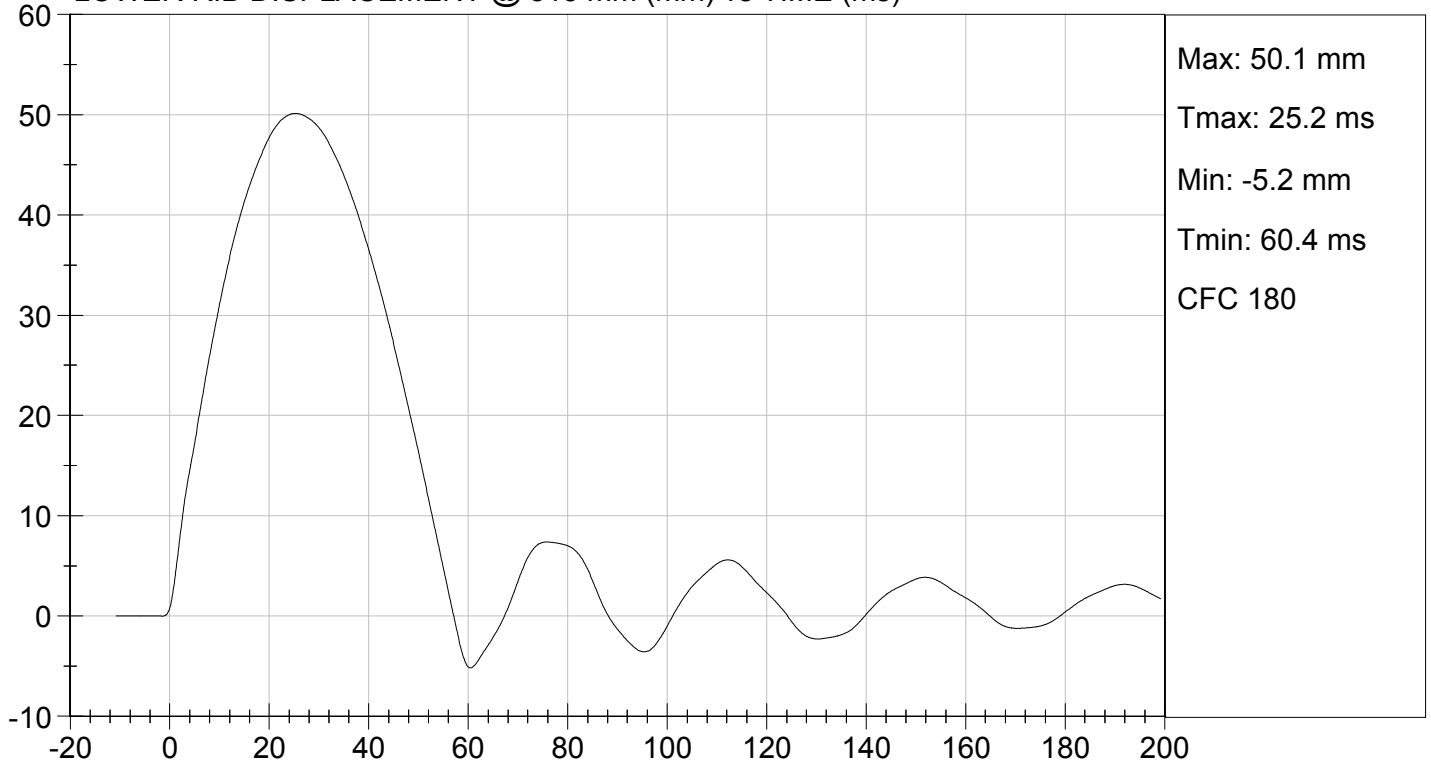

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LOWER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION
THORAX IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

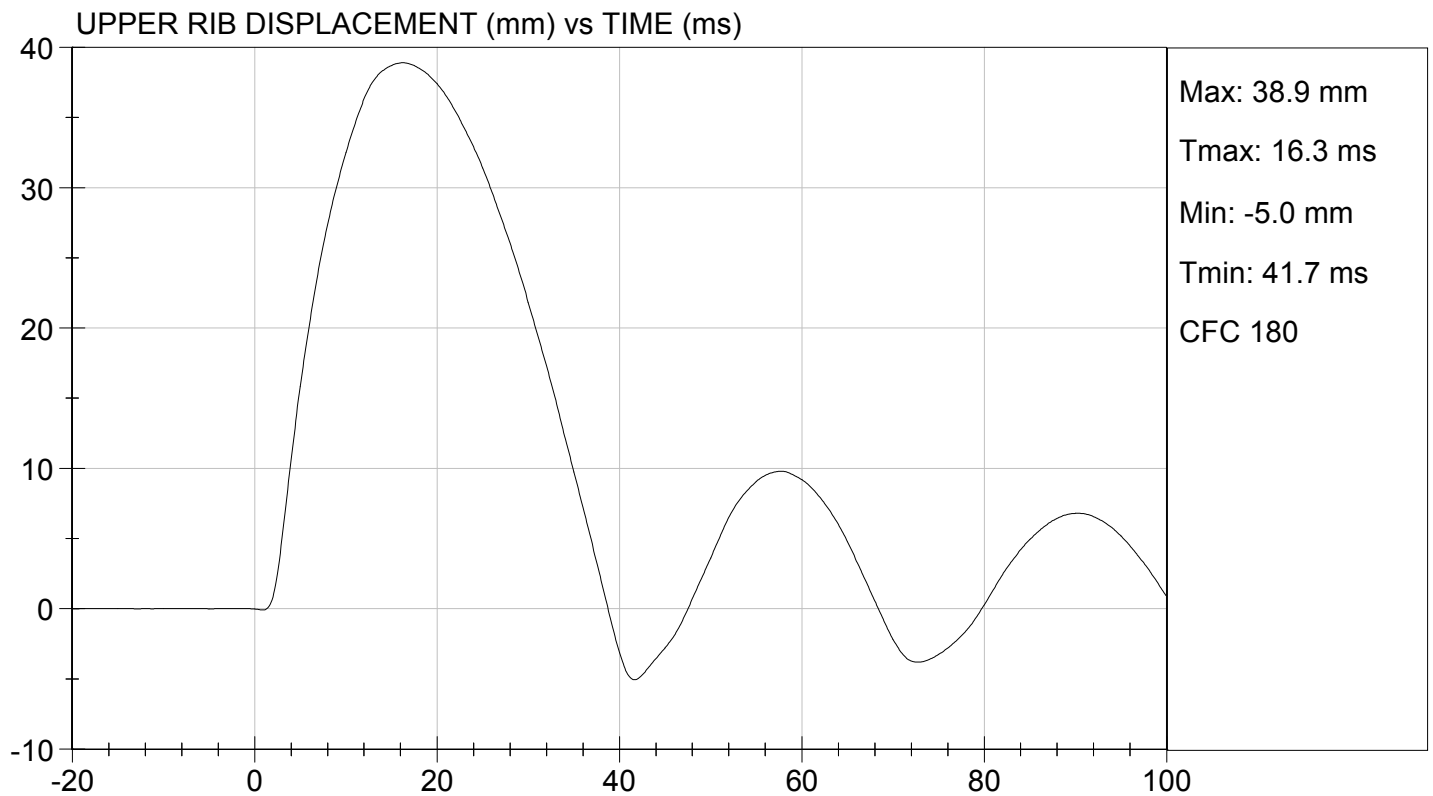
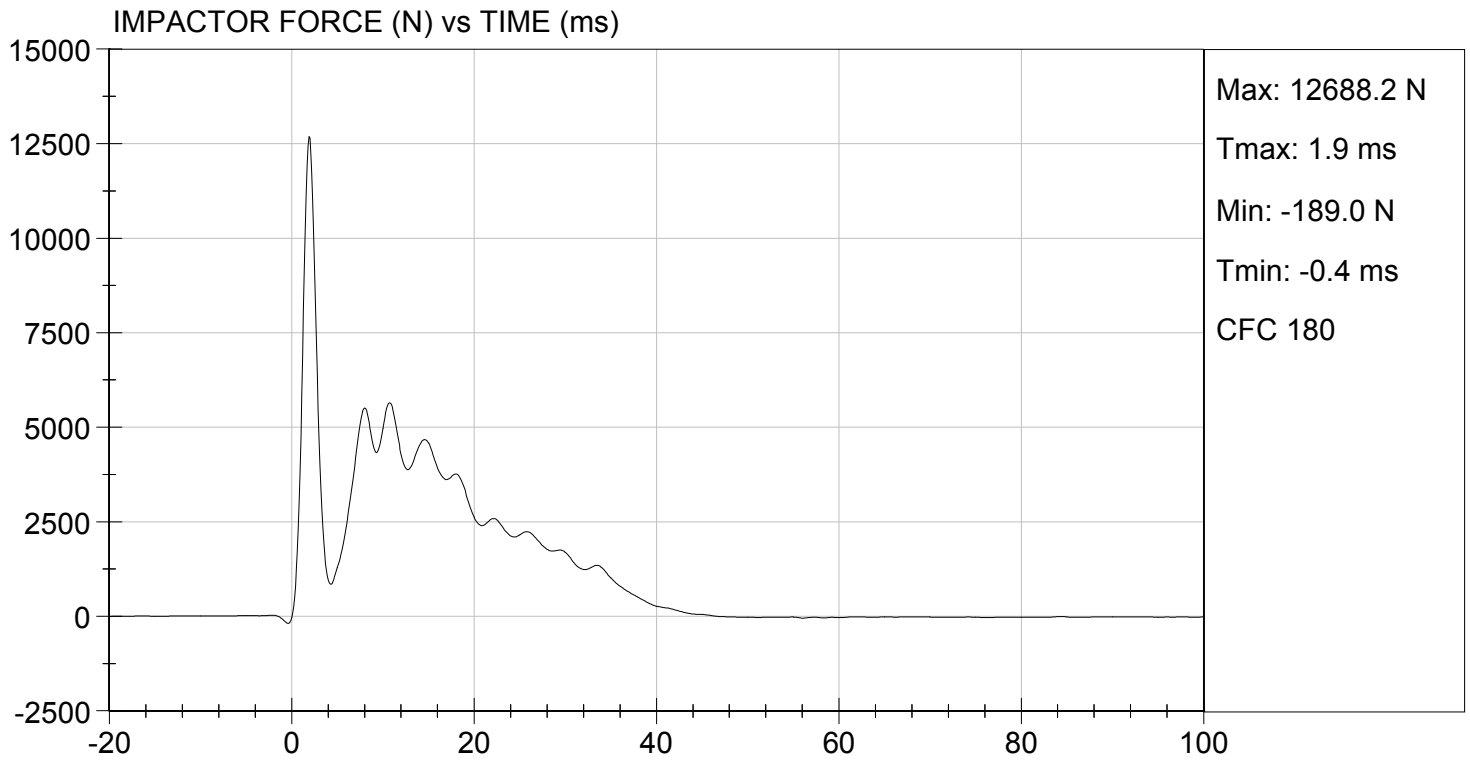
Test I.D: D153150

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.0	Pass
Humidity	%	10 to 70	47	Pass
Probe Speed	m/s	5.40 to 5.60	5.46	Pass
Maximum Impactor Force (after 6 ms)	N	5100 to 6200	5649	Pass
Upper Rib Displacement	mm	34.0 to 41.0	38.9	Pass
Middle Rib Displacement	mm	37.0 to 45.0	41.7	Pass
Lower Rib Displacement	mm	37.0 to 44.0	41.9	Pass
Overall Test Results				Pass

Jack Coleman
 Laboratory Technician

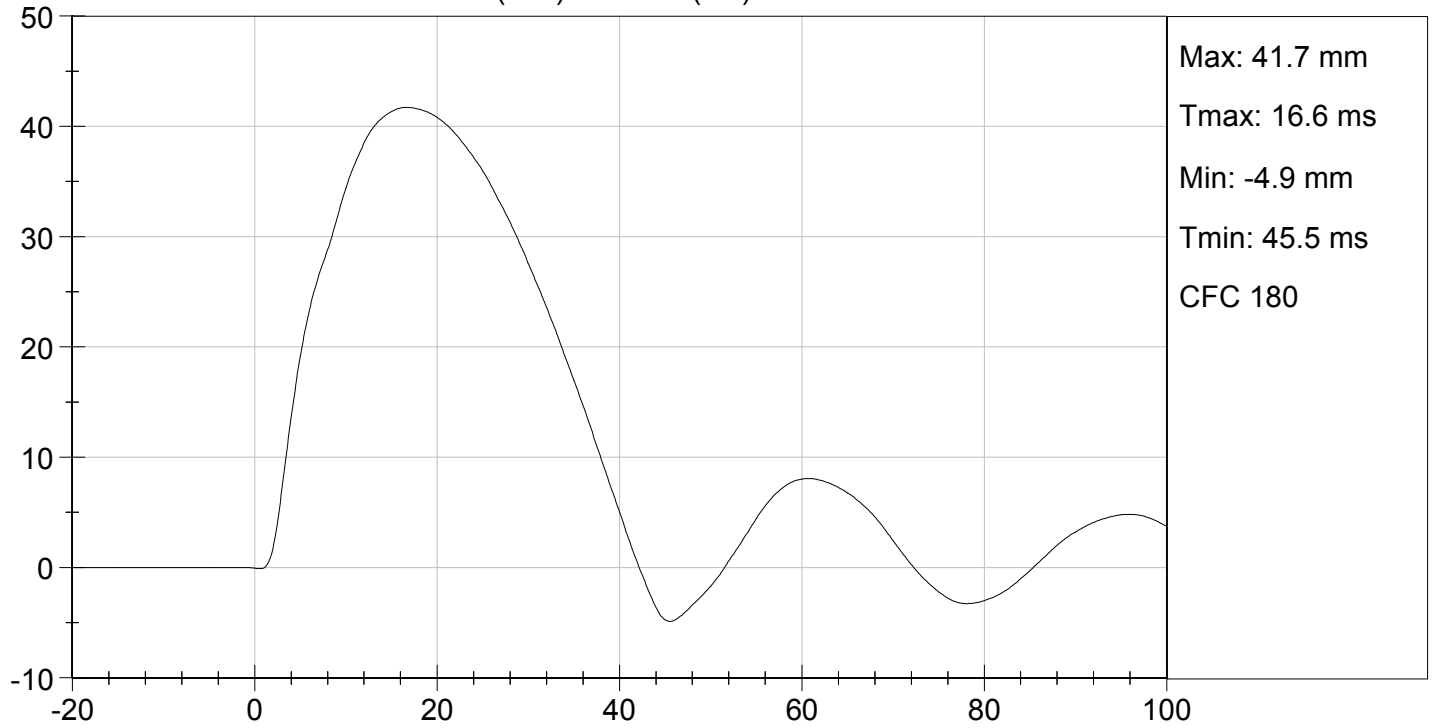
10/07/2015
 Test Date

Jessica Hall
 Approved By

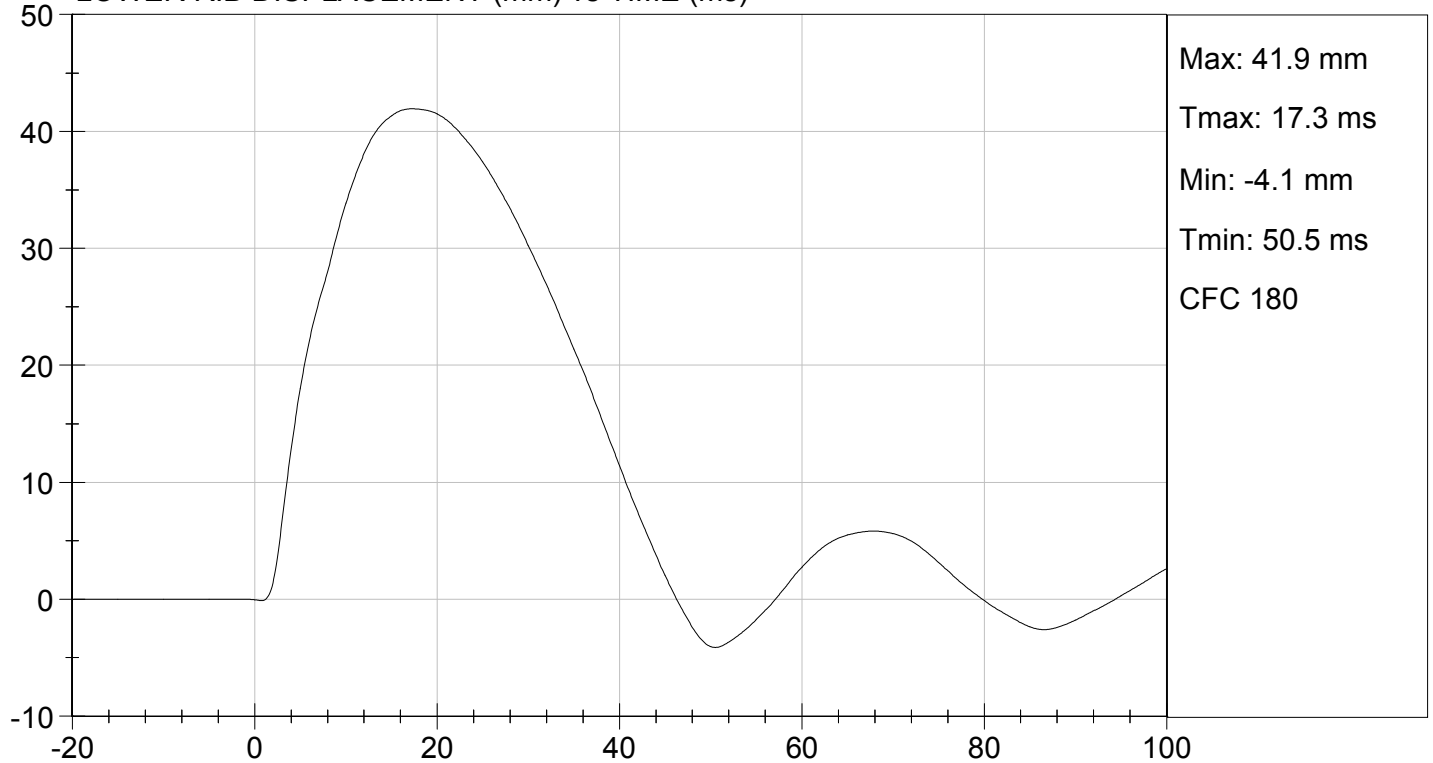




MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

ABDOMEN TEST

ES-2re DUMMY


ATD Serial No: 032

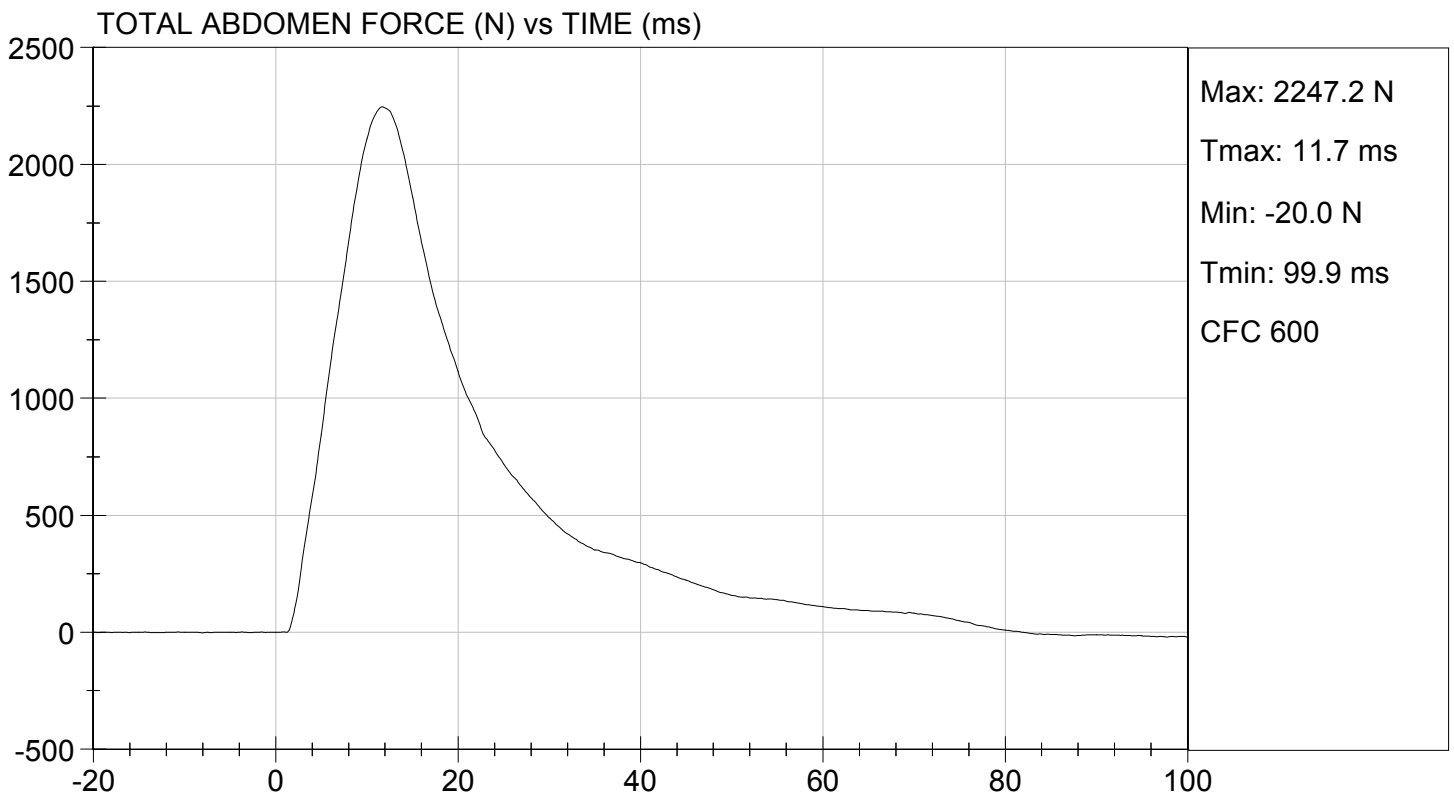
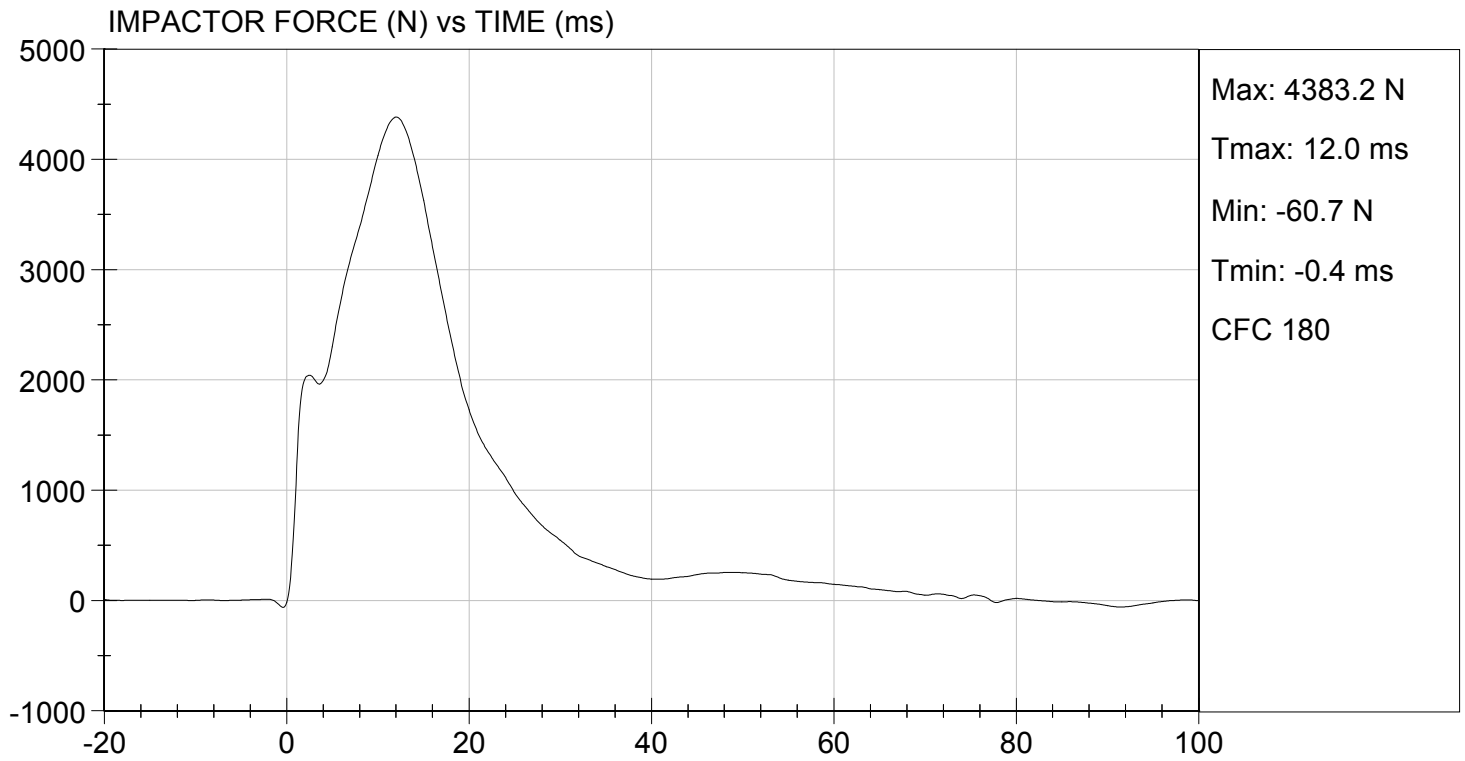
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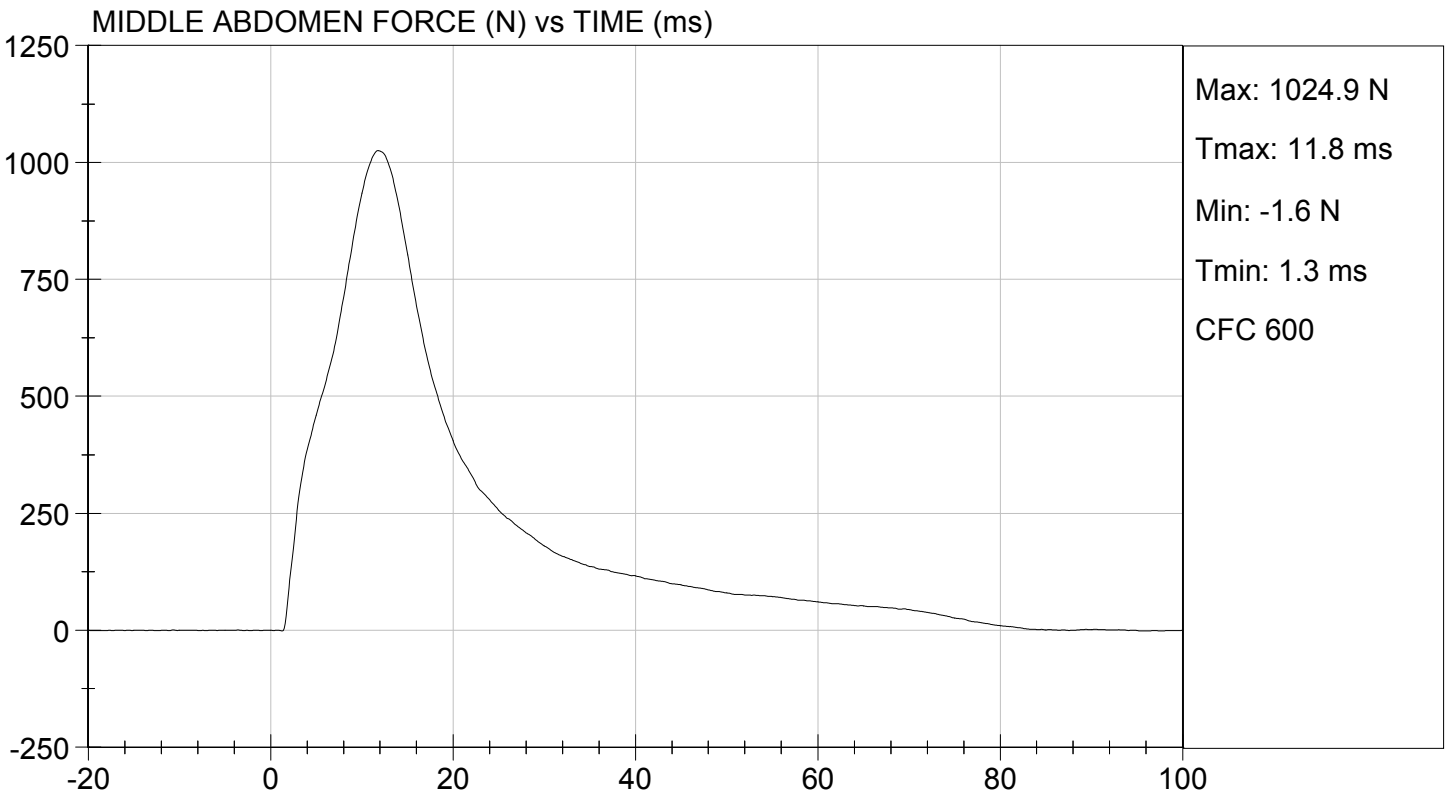
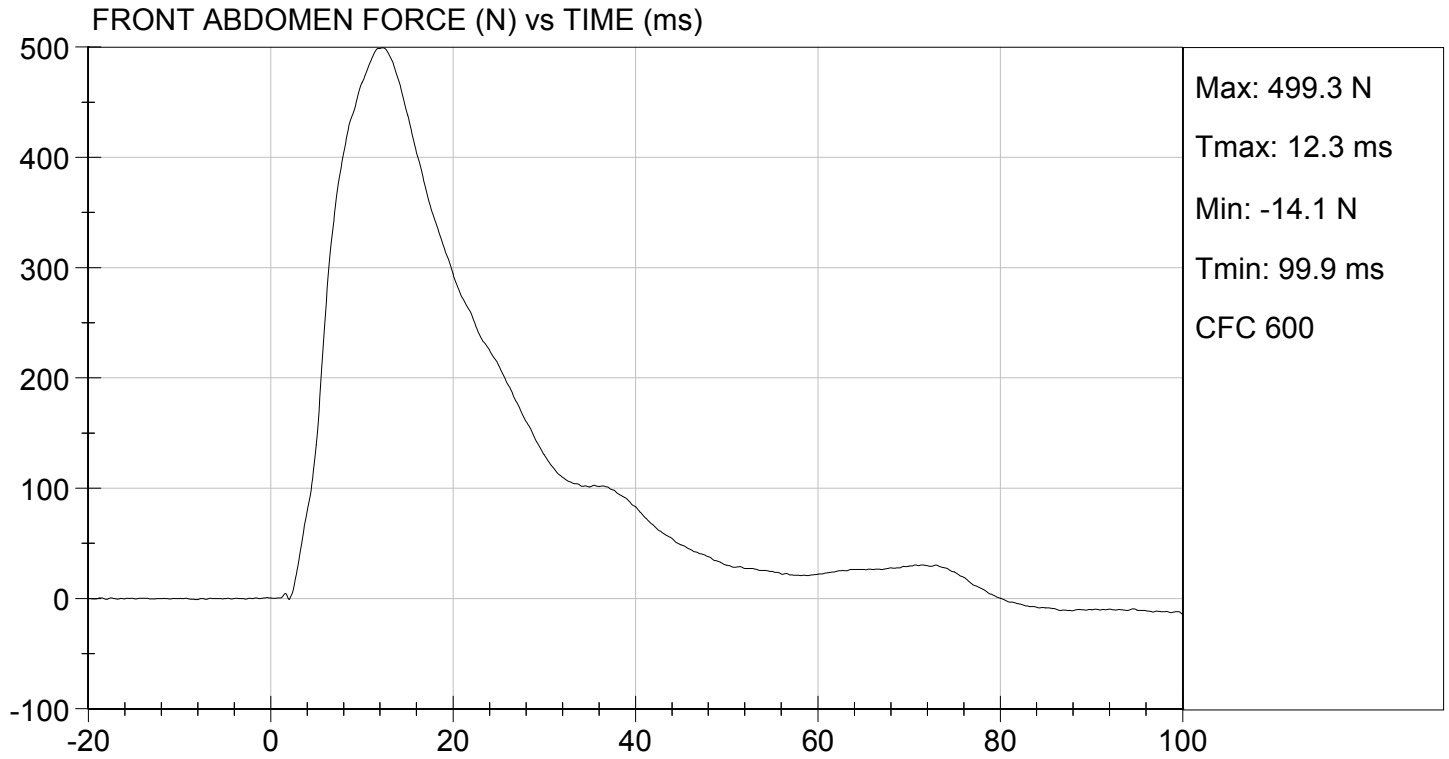
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Probe Speed	m/s	3.90 to 4.10	4.00	Pass
Maximum Impactor Force	N	4000 to 4800	4383	Pass
Time of Maximum Impactor Force	ms	10.6 to 13.0	12.0	Pass
Maximum Total Abdomen Force	N	2200 to 2700	2247	Pass
Time of Maximum Abdomen Force	ms	10.0 to 12.3	11.7	Pass
Overall Test Results				Pass

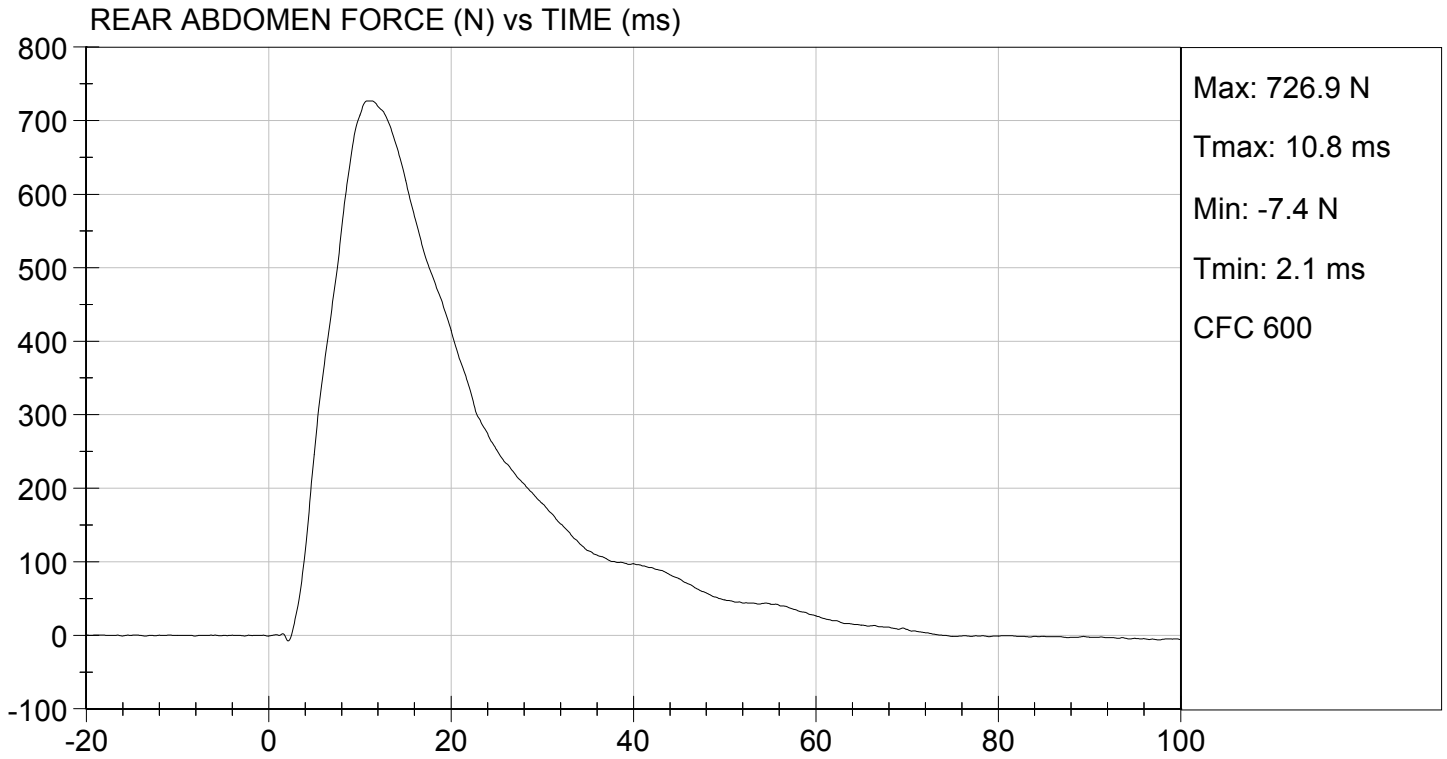

Laboratory Technician

10/07/2015
Test Date


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MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
ES-2re DUMMY

ATD Serial No: 032

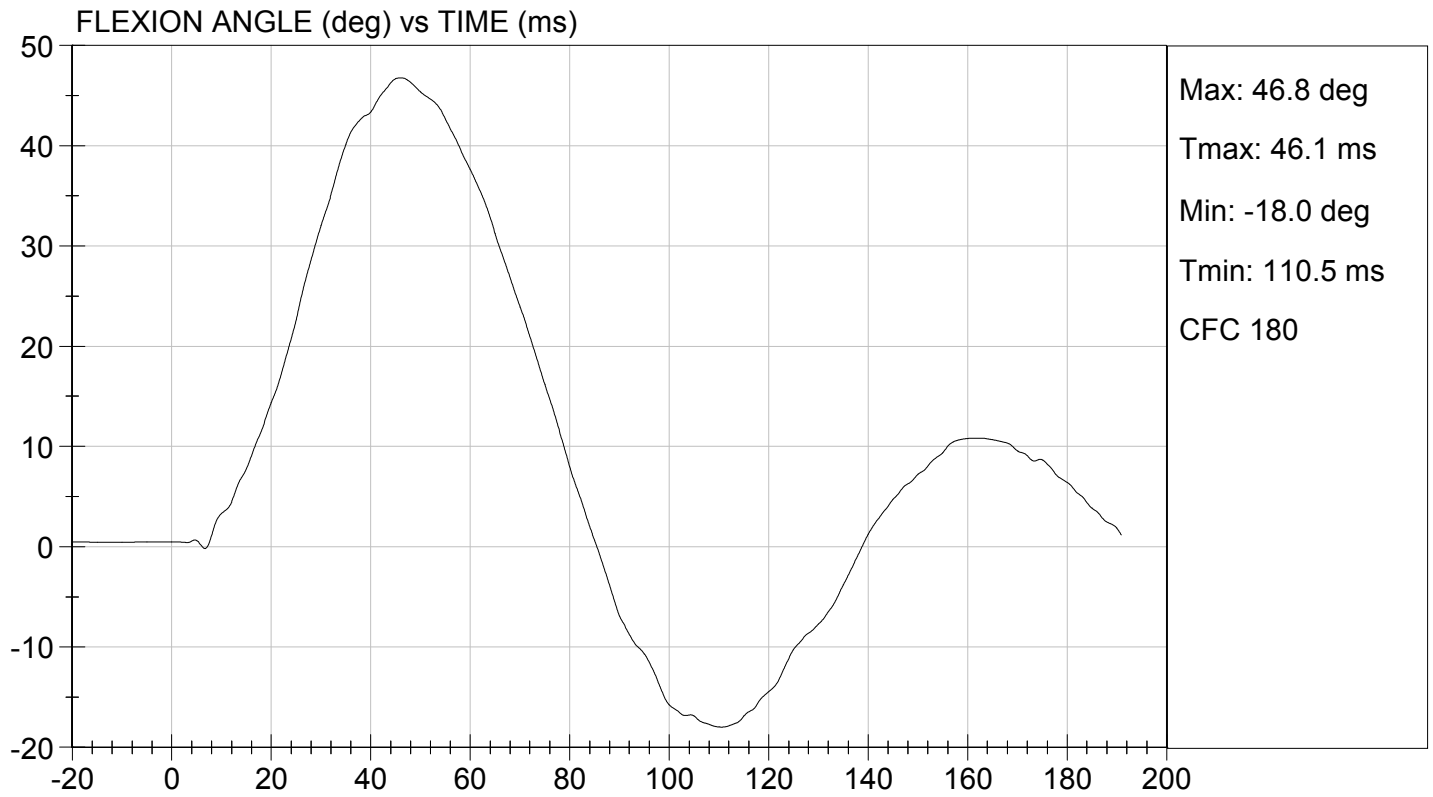
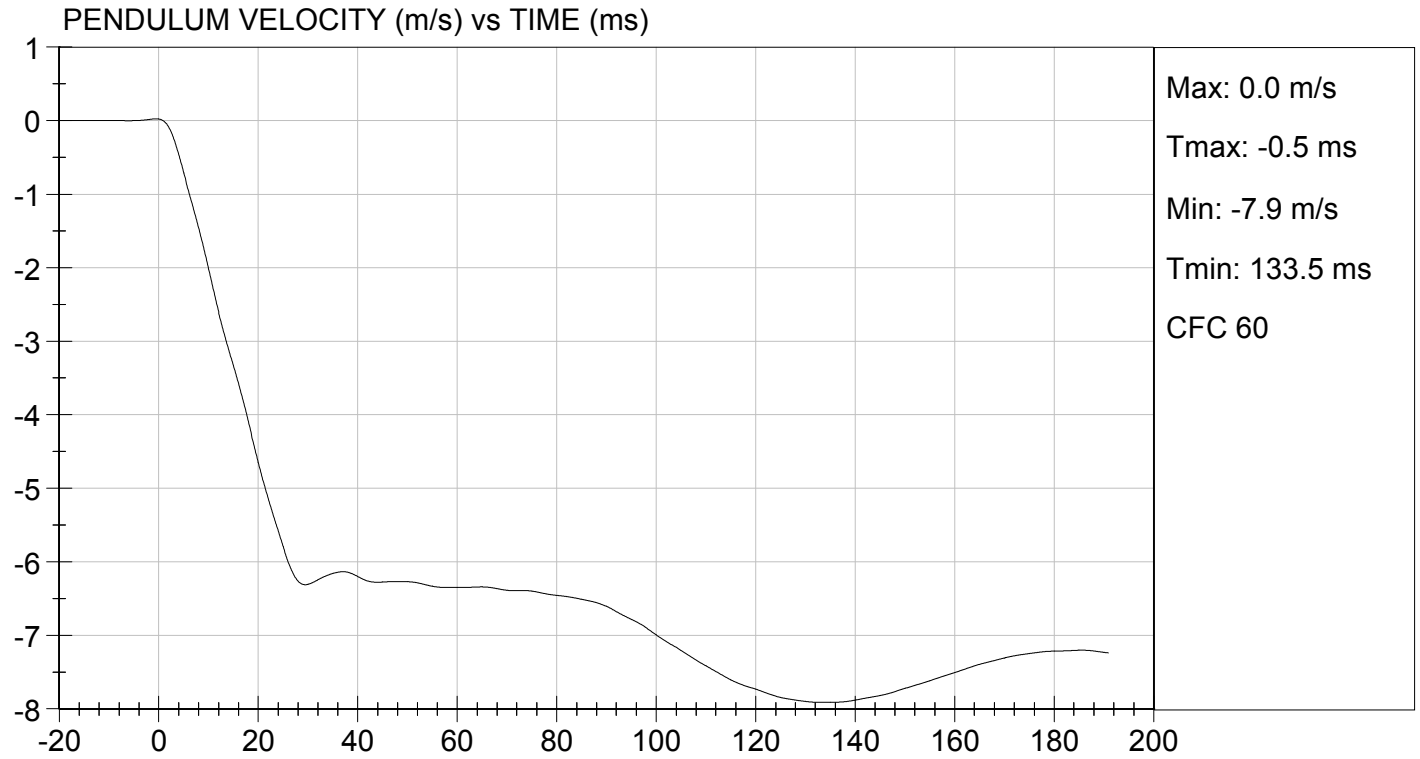
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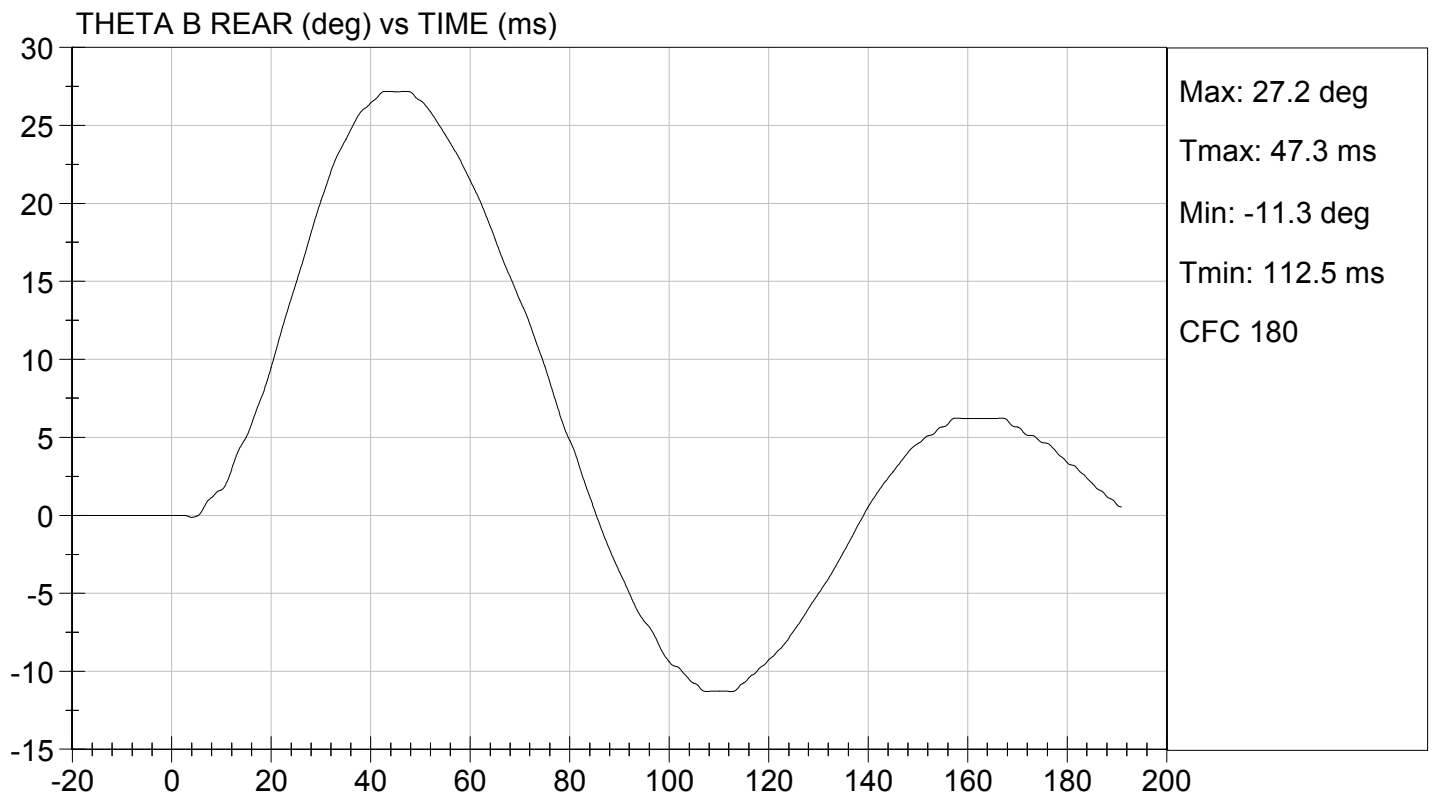
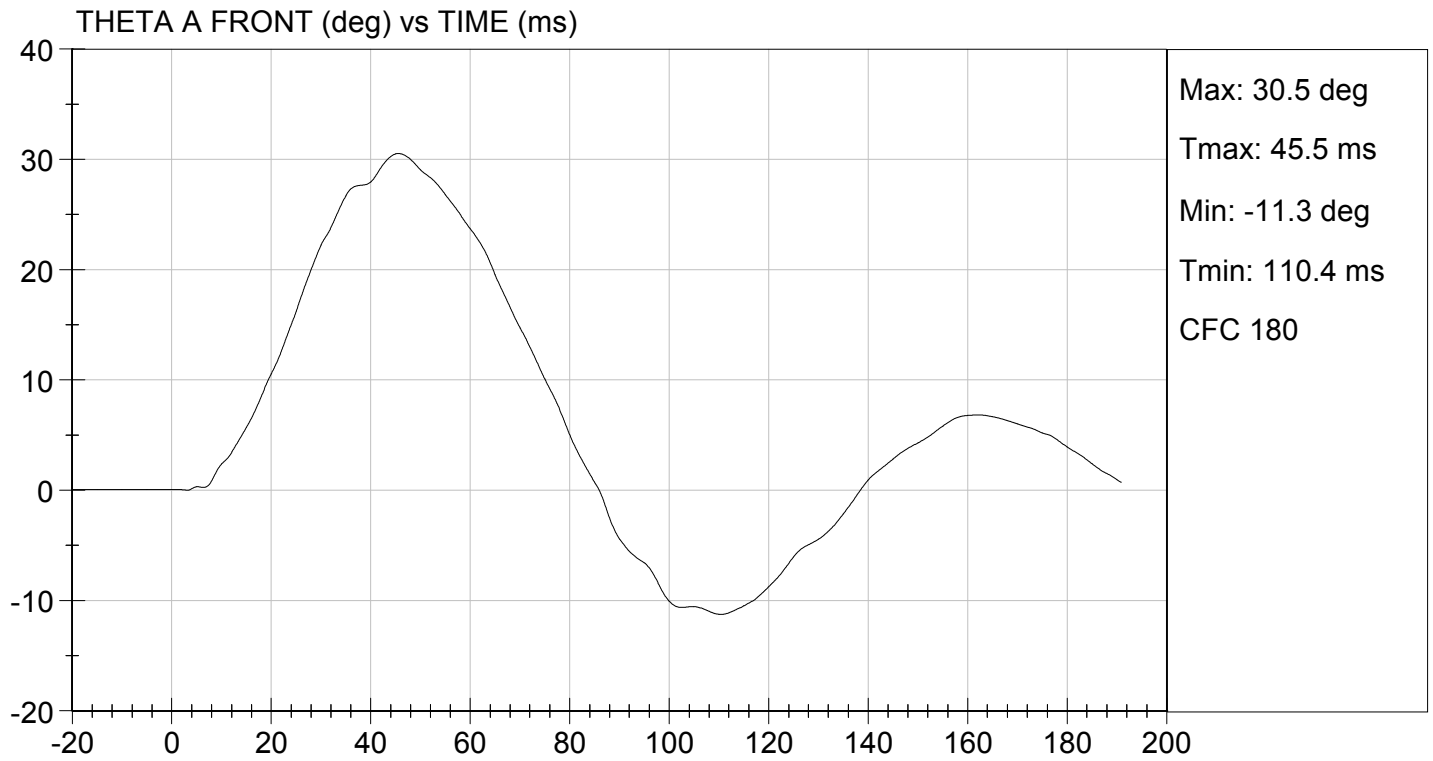
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	deg C	20.6 to 22.2	21.4	Pass	
Laboratory Relative Humidity	%	10 to 70	49	Pass	
Pendulum Speed	m/s	5.95 to 6.15	6.12	Pass	
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.01	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.393	Pass
	27 ms	m/s	-6.50 to -5.80	-6.16	Pass
	30 ms	m/s	>= -6.50	-6.31	Pass
Maximum Flexion Angle	deg	45.0 to 55.0	46.8	Pass	
Time of Maximum Flexion Angle	ms	39.0 to 53.0	46.1	Pass	
Headform Rotation Decay to Initial Position	ms	37 to 57	47	Pass	
Overall Results				Pass	

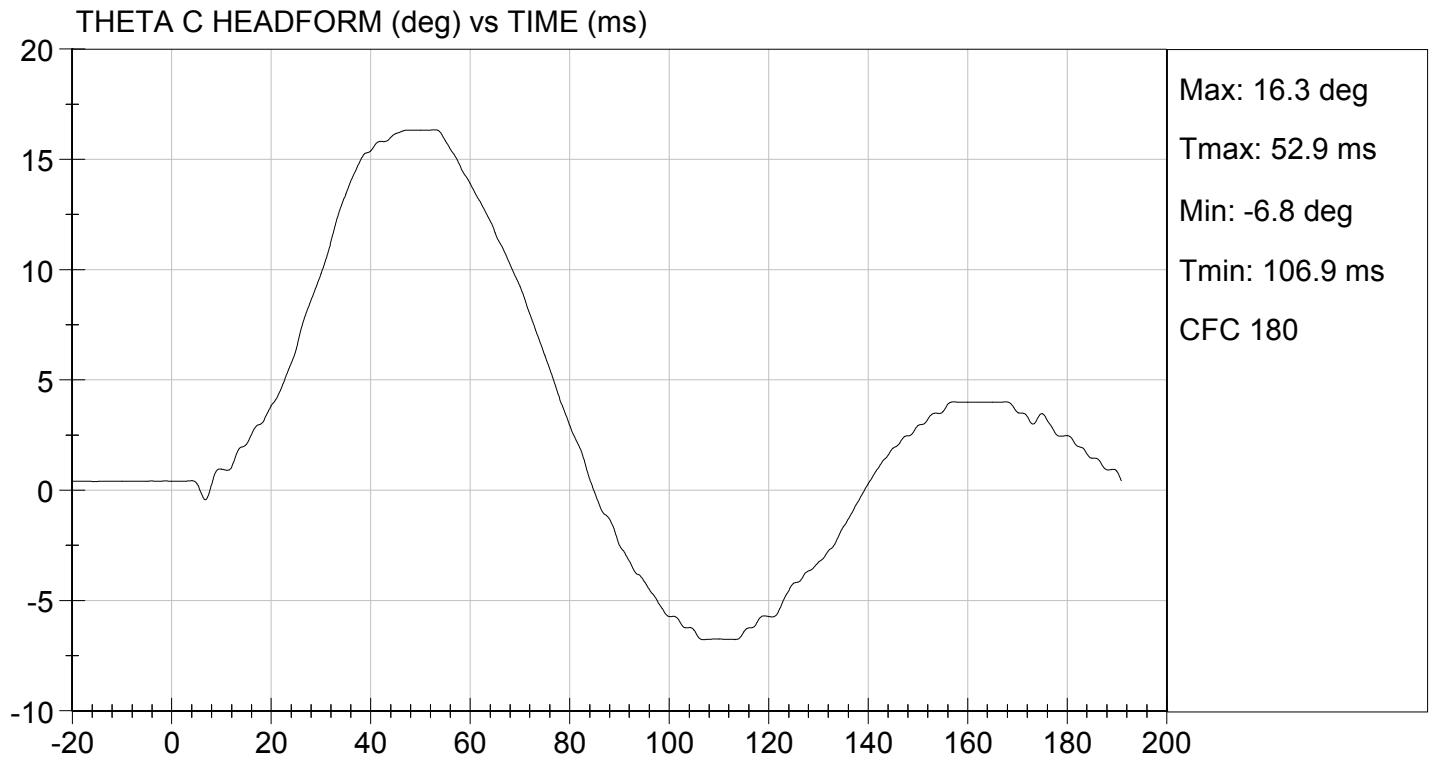
Jack Coleman
 Laboratory Technician

10/07/2015
 Test Date

Jessica Hall
 Approved By







MGA RESEARCH CORPORATION

PELVIS TEST

ES-2re DUMMY

ATD Serial No: 032

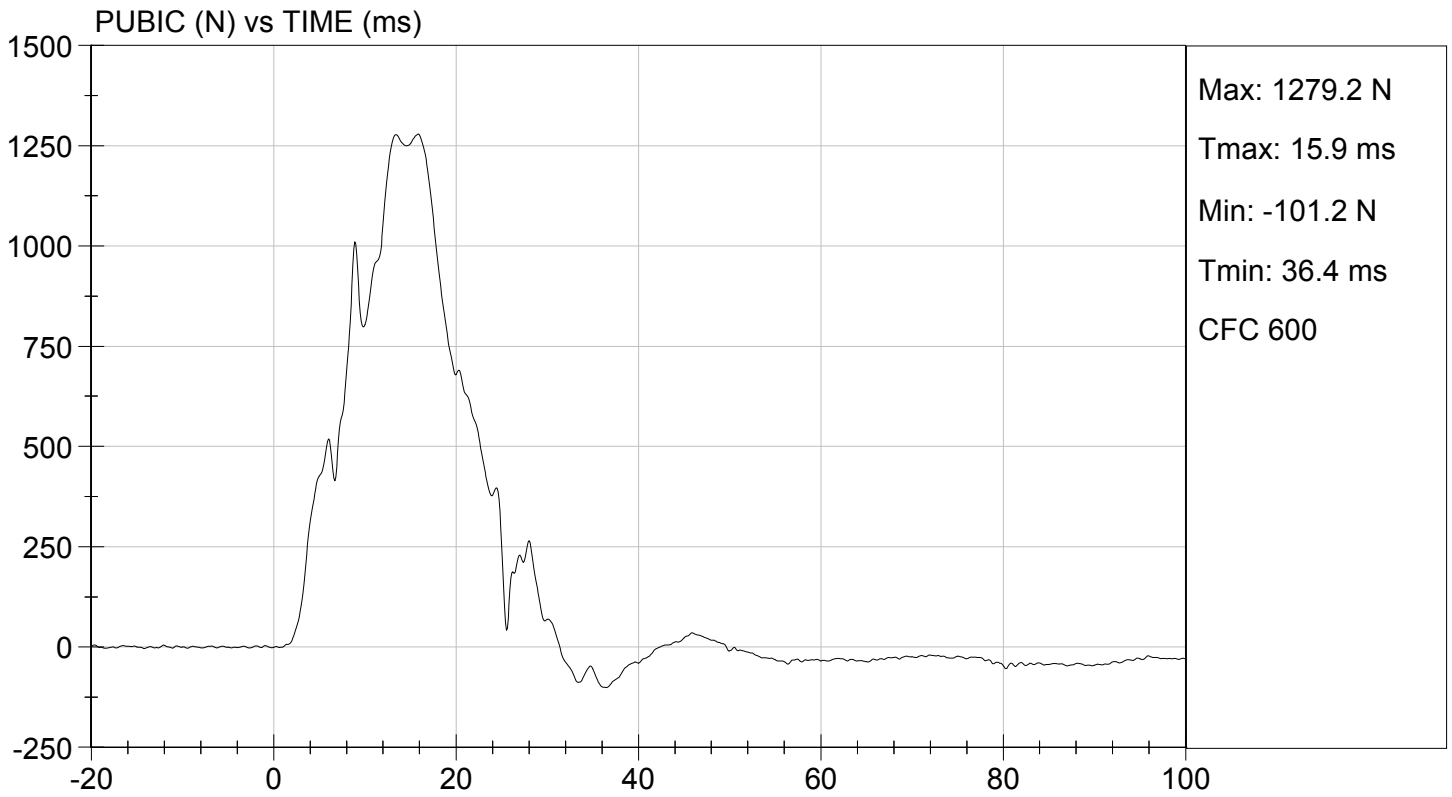
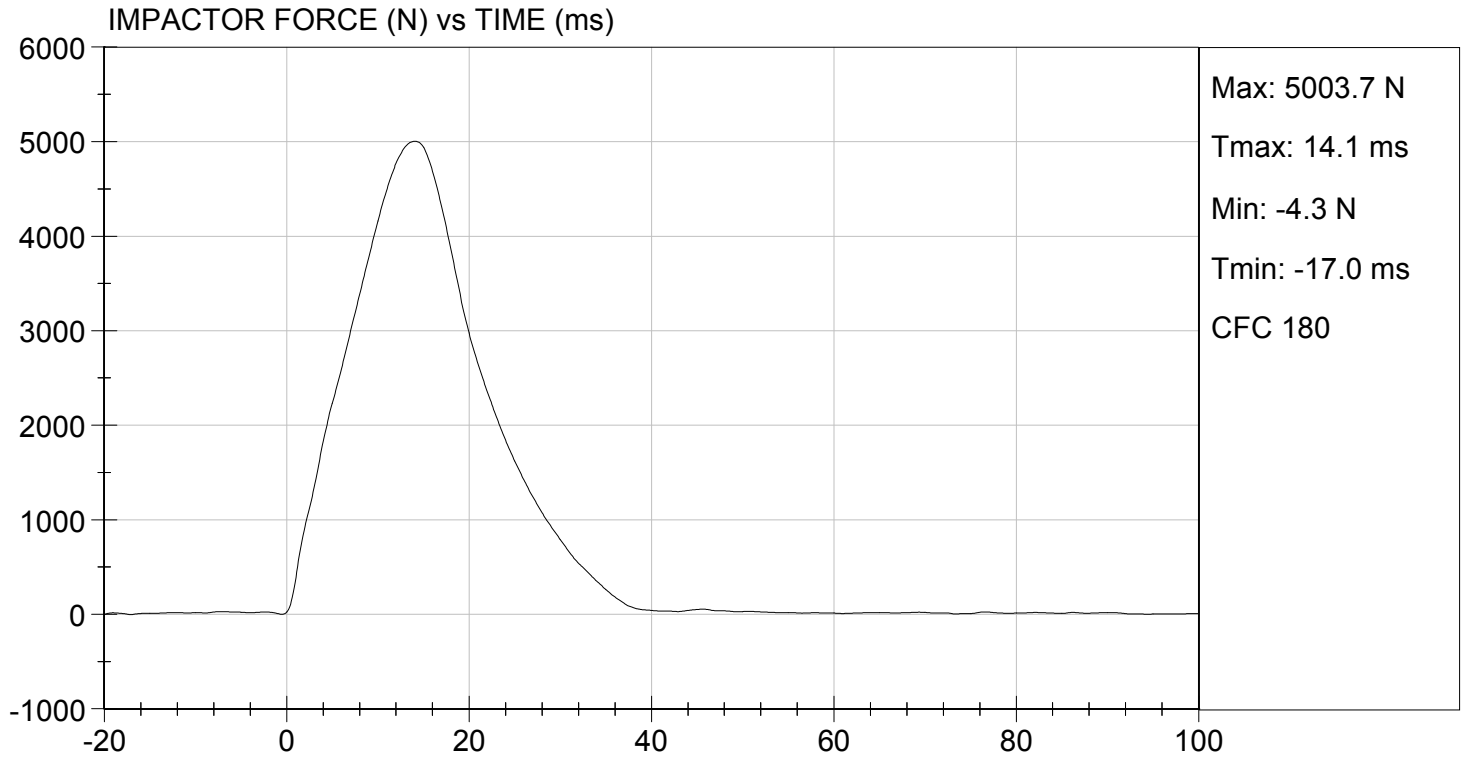
Test I.D: D153159

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.0	Pass
Laboratory Relative Humidity	%	10 to 70	47	Pass
Probe Speed	m/s	4.20 to 4.40	4.30	Pass
Maximum Impactor Force	N	4700 to 5400	5004	Pass
Time of Maximum Impactor Force	ms	11.8 to 16.1	14.1	Pass
Maximum Pubic Force	N	1230 to 1590	1279	Pass
Time of Maximum Pubic Force	ms	12.2 to 17.0	15.9	Pass
Overall Test Results				Pass


Laboratory Technician

10/07/2015
Test Date


Approved By



ES-2re External Measurements
SN: 032

No.	Name	Spec. (mm)	Result	Pass/Fail
1	Sitting Height	900 - 918	915	Pass
2	Seat to Shoulder Joint	558 - 572	568	Pass
3	Seat to Lower Face of Thoracic Spine Box	346 - 356	355	Pass
4	Seat to Hip Joint (center of bolt)	97 - 103	98	Pass
5	Sole to Seat, Sitting	333 - 451	440	Pass
6	Head Width	152 - 158	157	Pass
7	Shoulder/Arm Width	461 - 479	464	Pass
8	Thorax Width	322 - 332	323	Pass
9	Abdomen Width	273 - 287	281	Pass
10	Pelvis Lap Width	359 - 373	370	Pass
11	Head Depth	196 - 206	203	Pass
12	Thorax Depth	262 - 272	264	Pass
13	Abdomen Depth	194 - 204	196	Pass
14	Pelvis Depth	235 - 245	236	Pass
15	Back of Buttocks to Hip Joint (center of bolt)	150 - 160	151	Pass
16	Back of Buttocks to Front Knee	597 - 615	607	Pass

MGA RESEARCH CORPORATION
HEAD DROP TEST
ES-2re DUMMY

ATD Serial No: 032

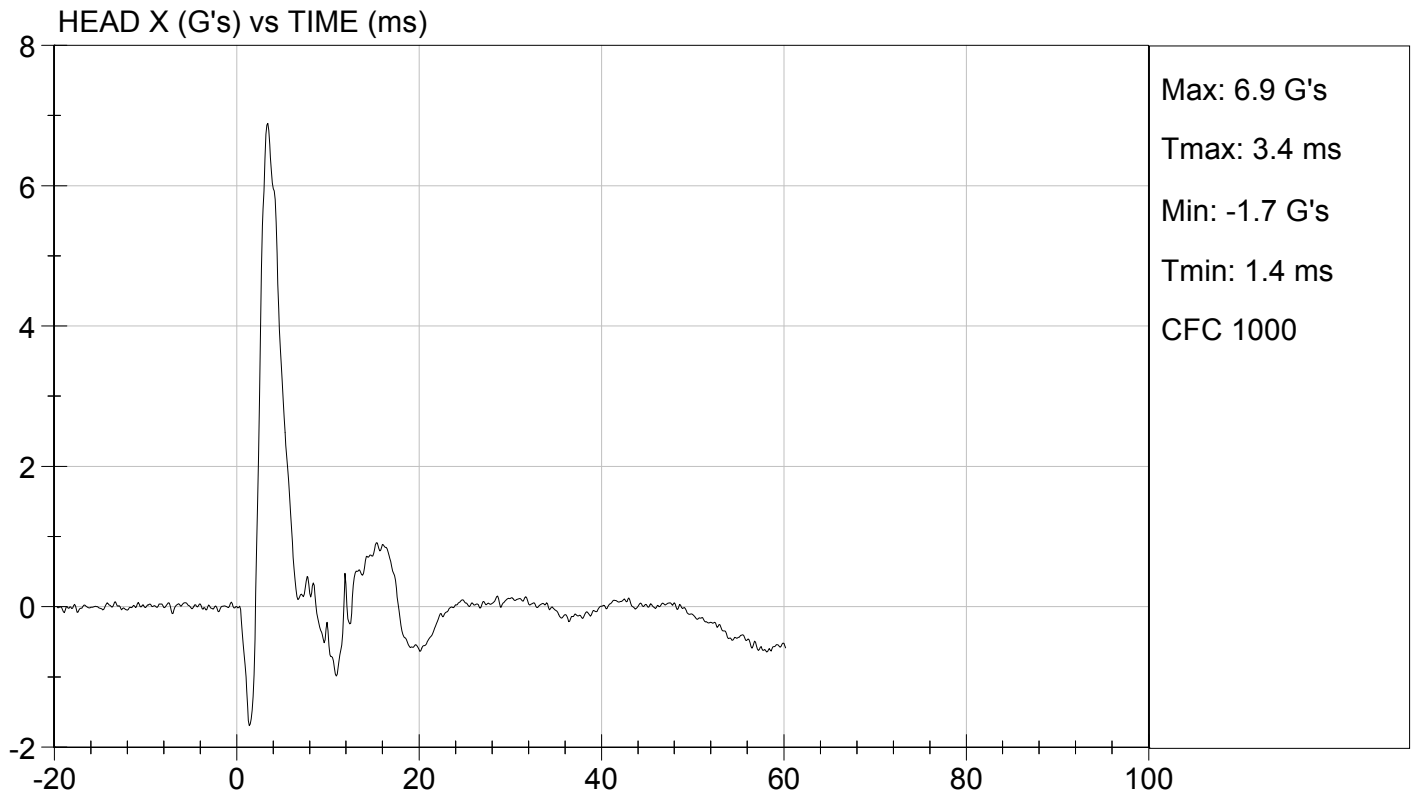
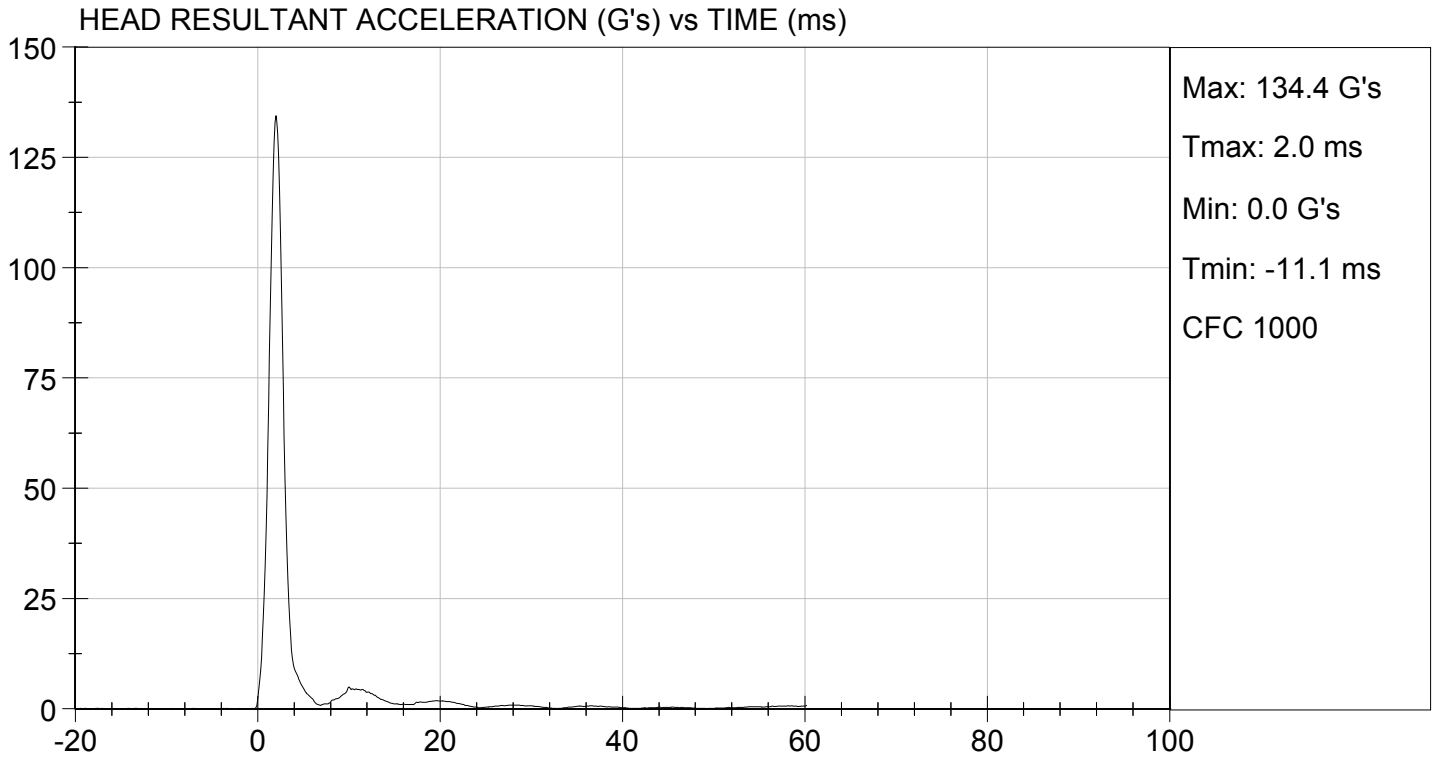
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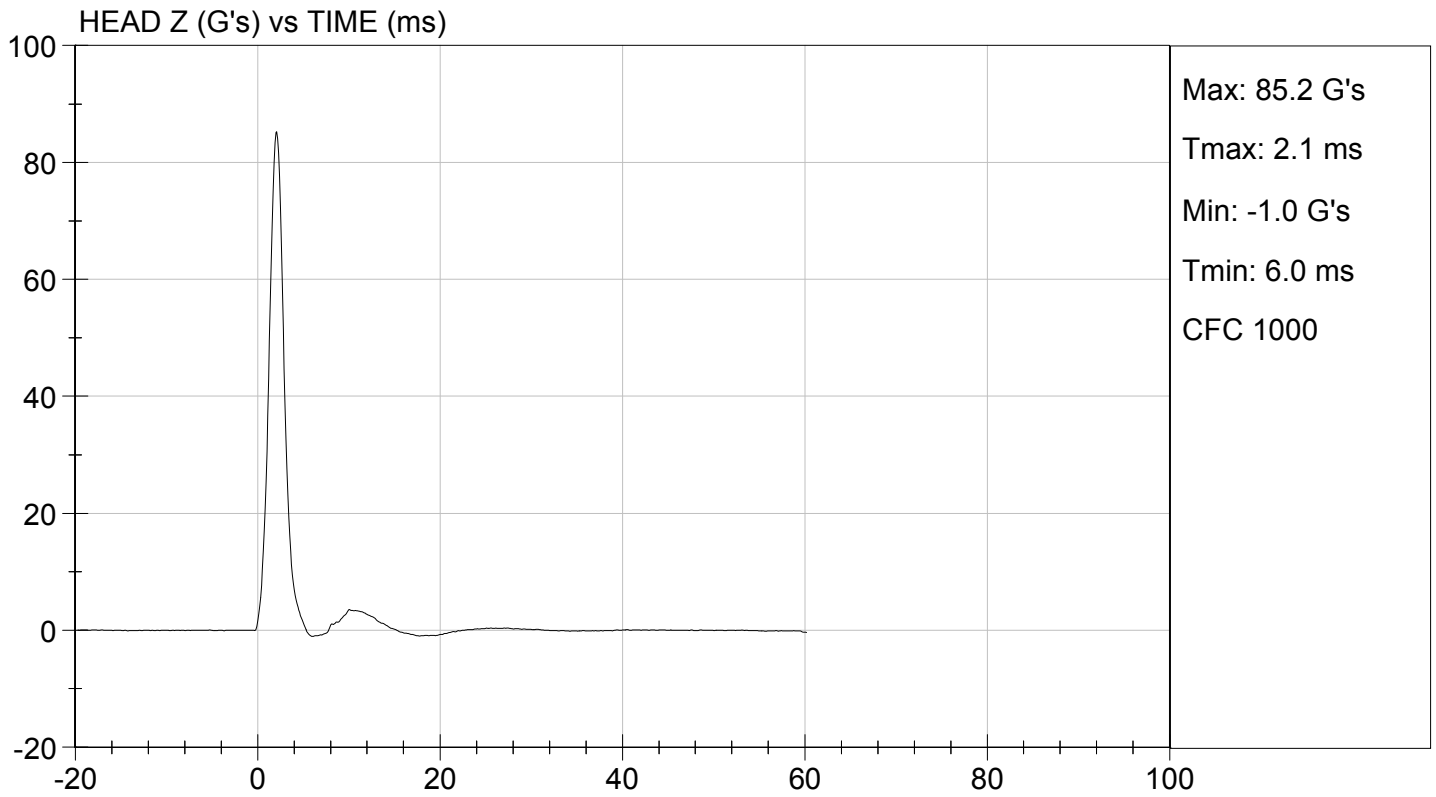
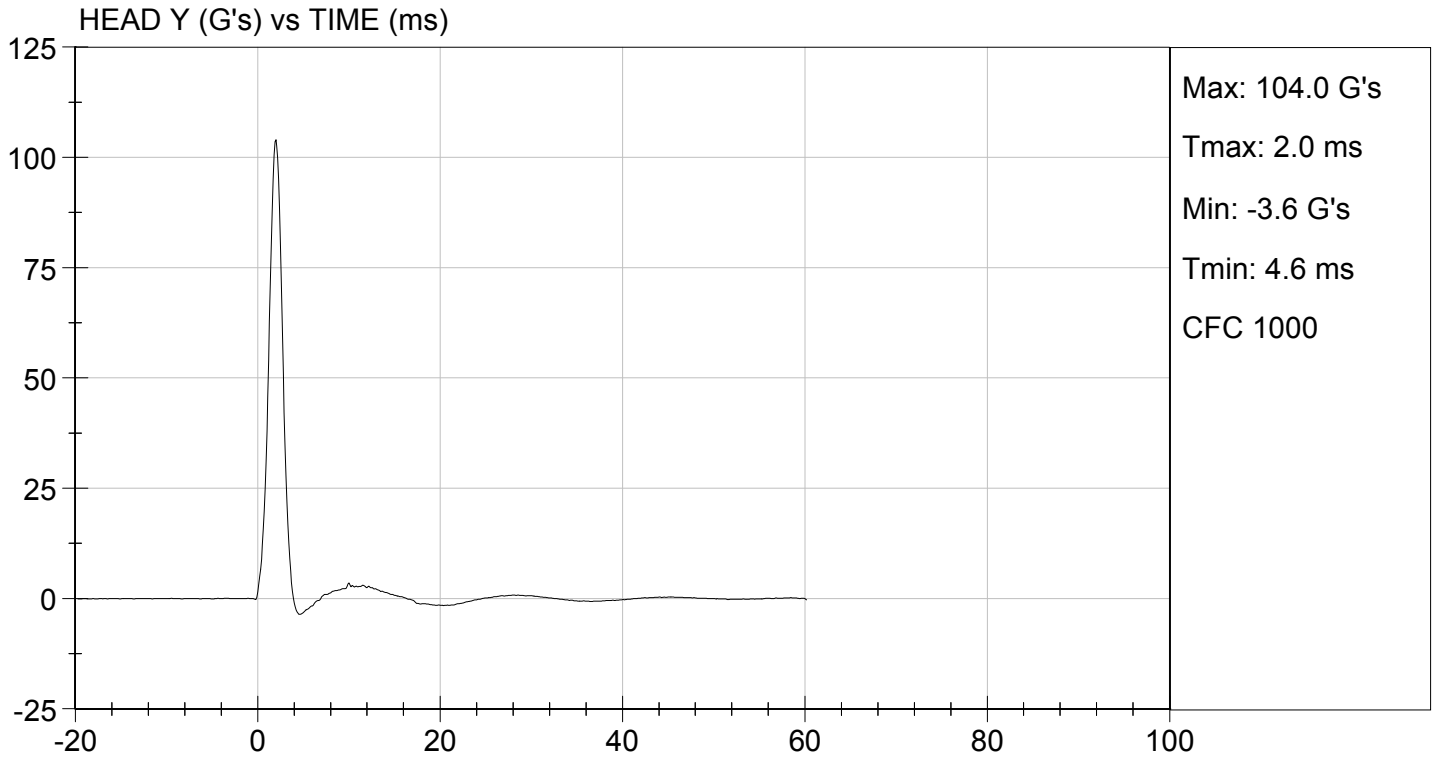
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	18.9 to 25.6	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Peak Resultant Acceleration	G's	125 to 155	134	Pass
Peak Longitudinal Acceleration	G's	<= +/- 15.0	6.9	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	within 15% of peak	Yes	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/21/2015
 Test Date

Jessica Hall
 Approved By





MGA RESEARCH CORPORATION
NECK PENDULUM TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D.: D153352

Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass	
Laboratory Relative Humidity	%	10 to 70	46	Pass	
Pendulum Speed	m/s	3.30 to 3.50	3.39	Pass	
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.02	Pass
	3 ms	m/s	-0.25 to -0.375	-0.32	Pass
	14 ms	m/s	-3.20 to -3.70	-3.27	Pass
	17 ms	m/s	>= -3.70	-3.57	Pass
Maximum Flexion Angle	deg	49.0 to 59.0	53.3	Pass	
Time of Maximum Flexion Angle	ms	54.0 to 66.0	59.2	Pass	
Head Rotation Decay Time to 0 Degree	ms	53.0 to 88.0	59.2	Pass	
Overall Results				Pass	

David Schoedel

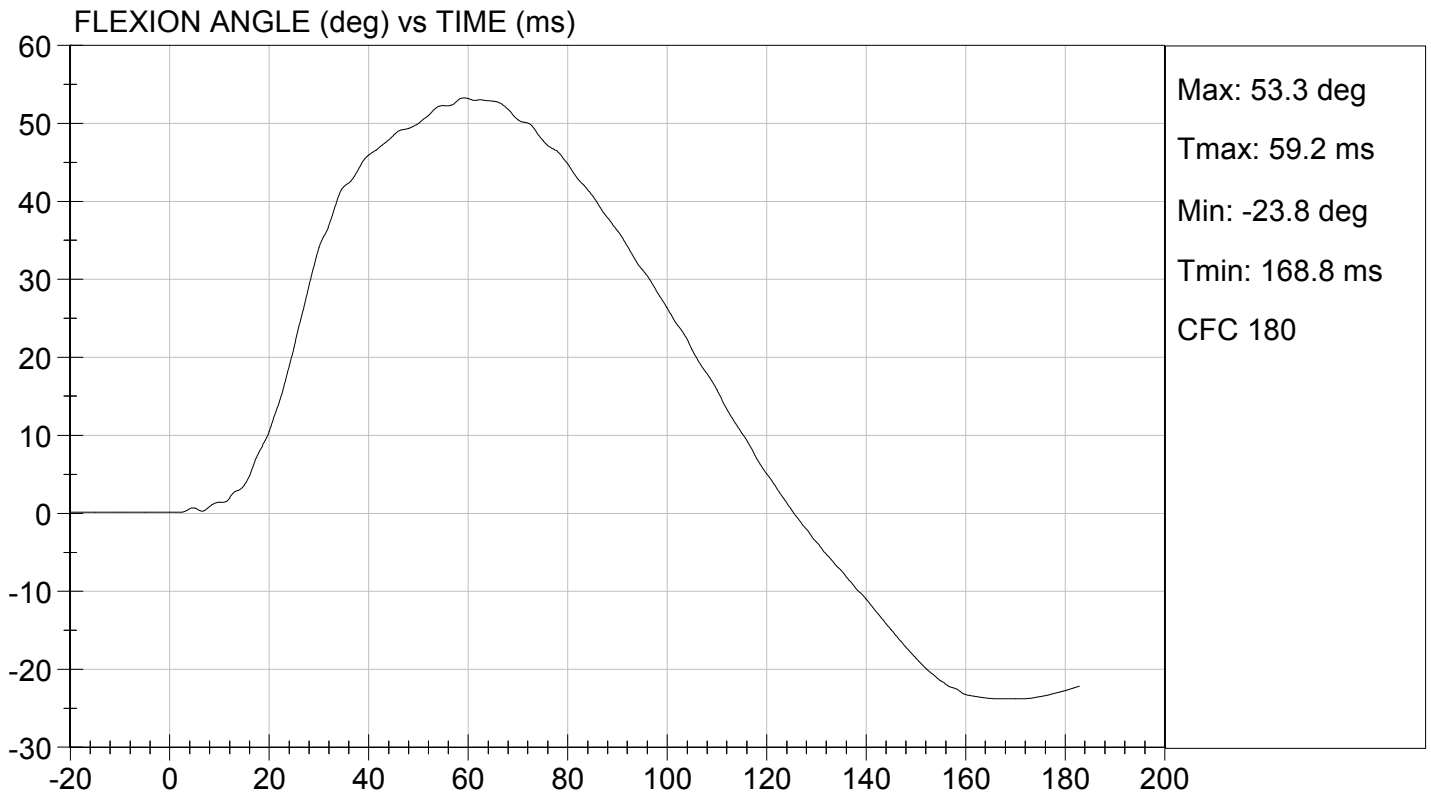
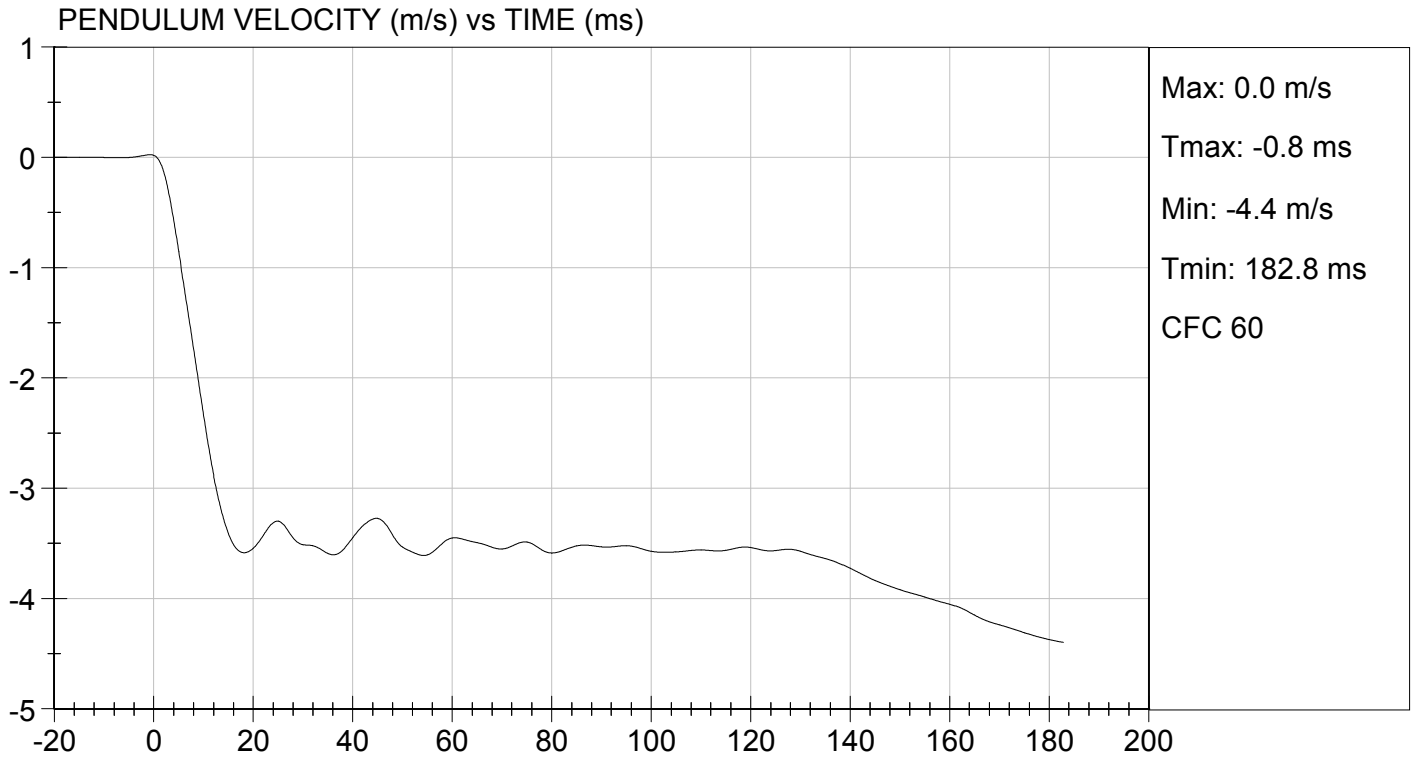
Laboratory Technician

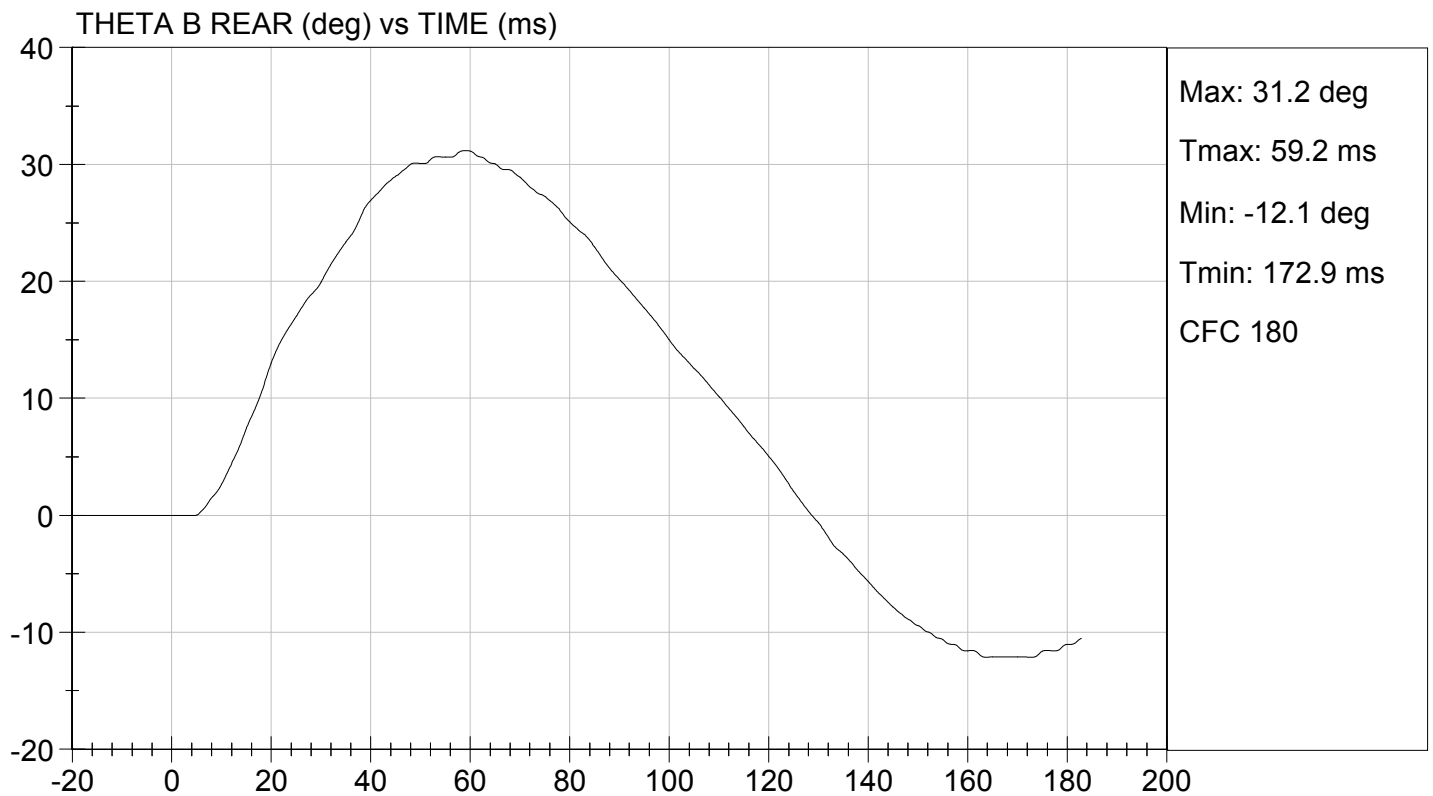
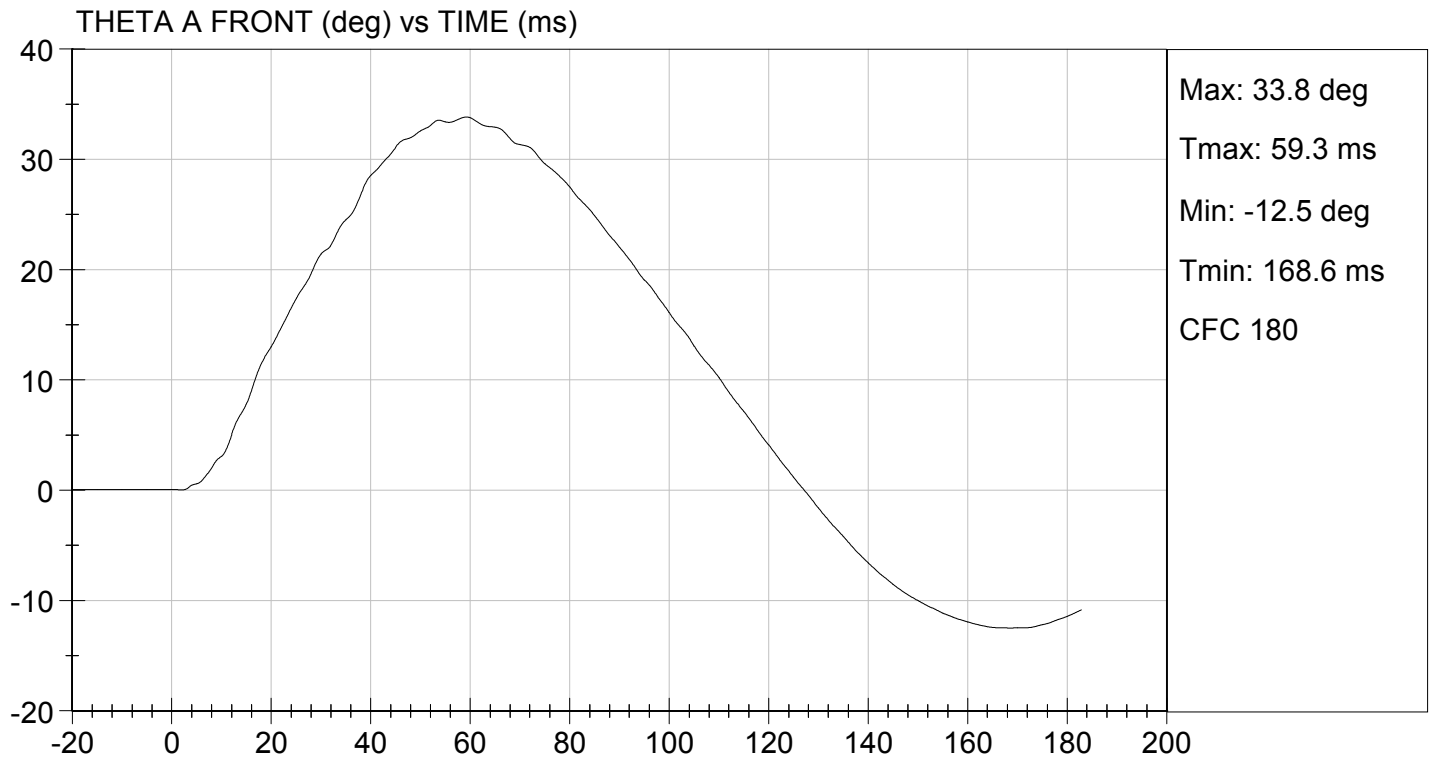
10/21/2015

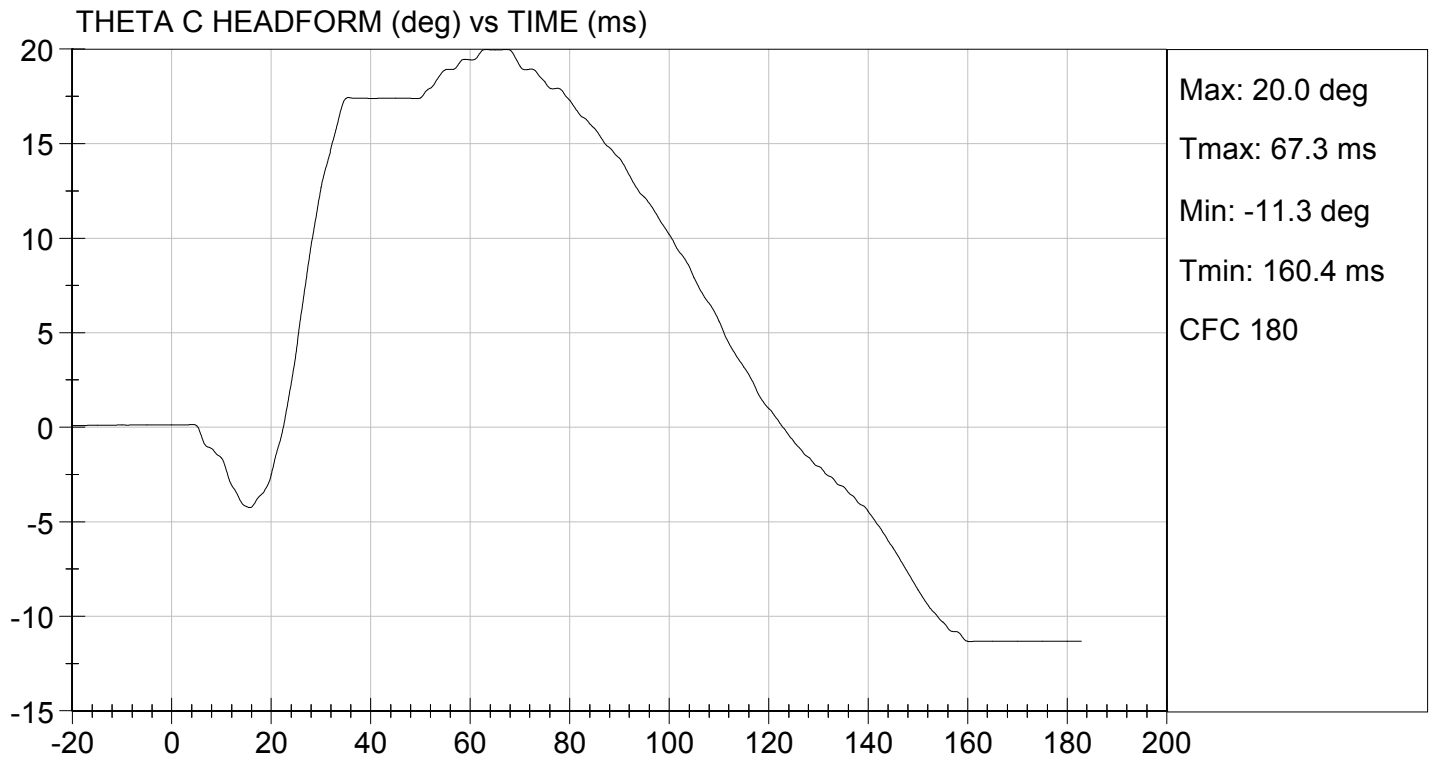
Test Date

Jessica Hall

Approved By







MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
ES-2re DUMMY

ATD Serial No: 032

Test I.D.: D153353

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Pendulum Speed	m/s	4.20 to 4.40	4.27	Pass
Peak Impactor Acceleration	G's	7.5 to 10.5	8.2	Pass
Overall Test Results				Pass

David Schoedel

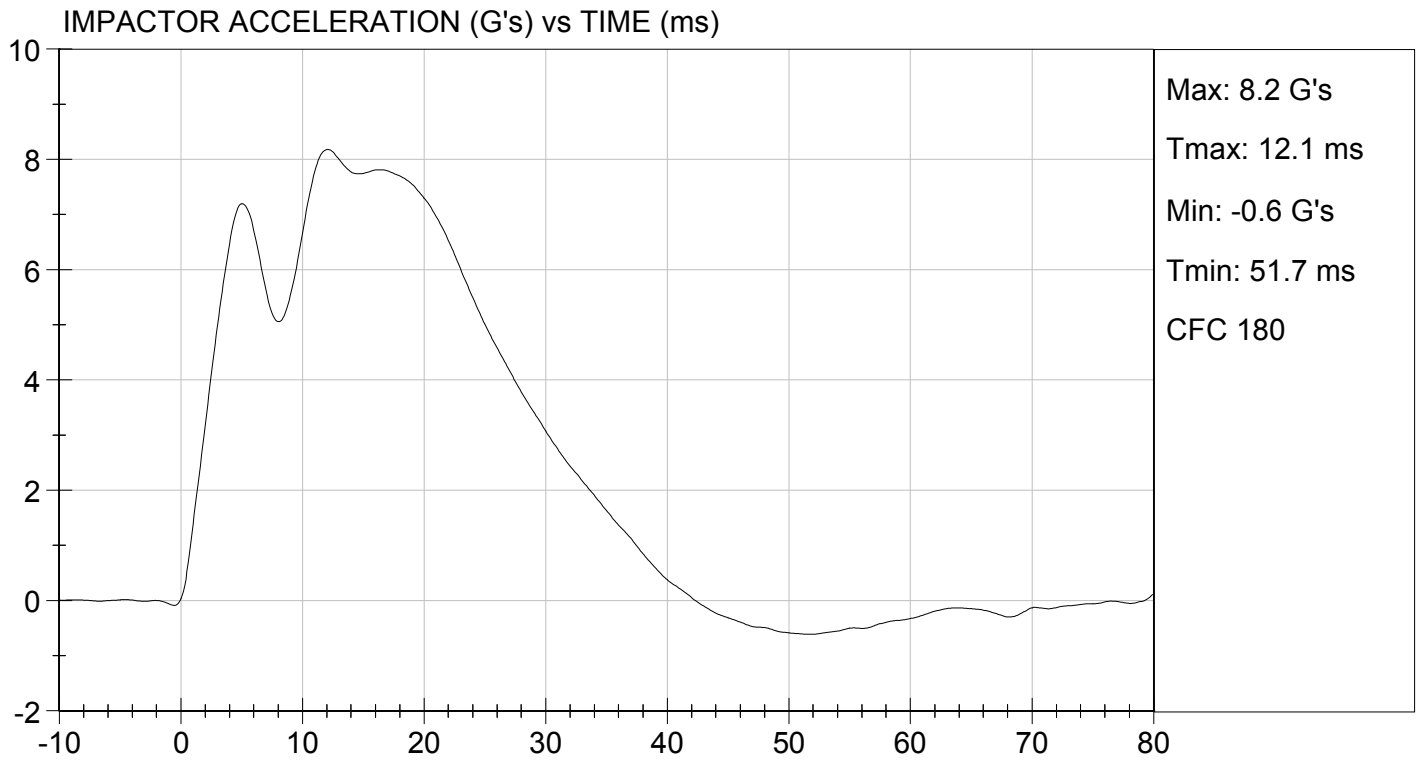
Laboratory Technician

10/21/2015

Test Date

Jessica Hall

Approved By



MGA RESEARCH CORPORATION

UPPER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D153354

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Displacement at 459 mm	mm	36.0 to 40.0	39.0	Pass
Displacement at 815 mm	mm	46.0 to 51.0	47.2	Pass
Overall Test Results				Pass

David Schoedel

Laboratory Technician

10/21/2015

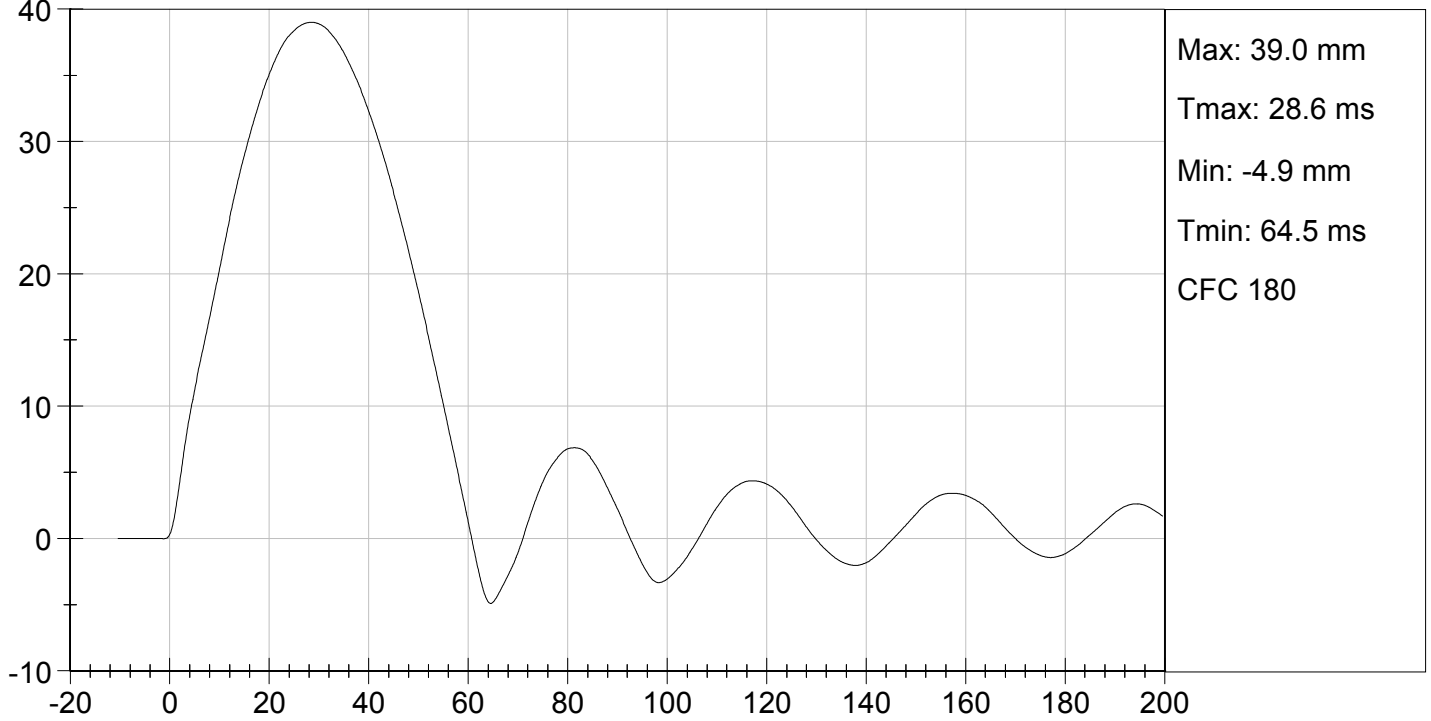
Test Date

Jessica Hall

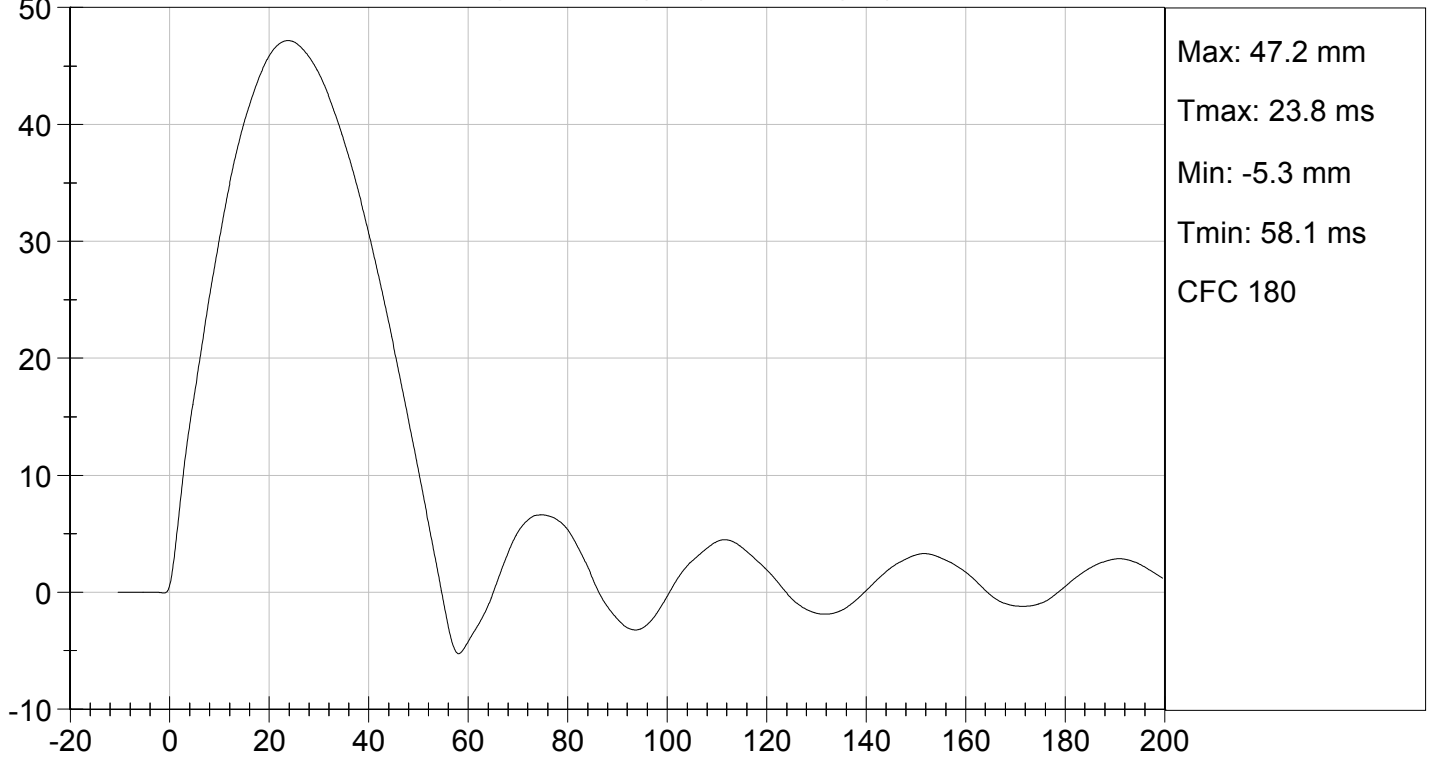
Approved By



UPPER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



UPPER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

MID RIB TEST

ES-2re DUMMY

ATD Serial No: 032

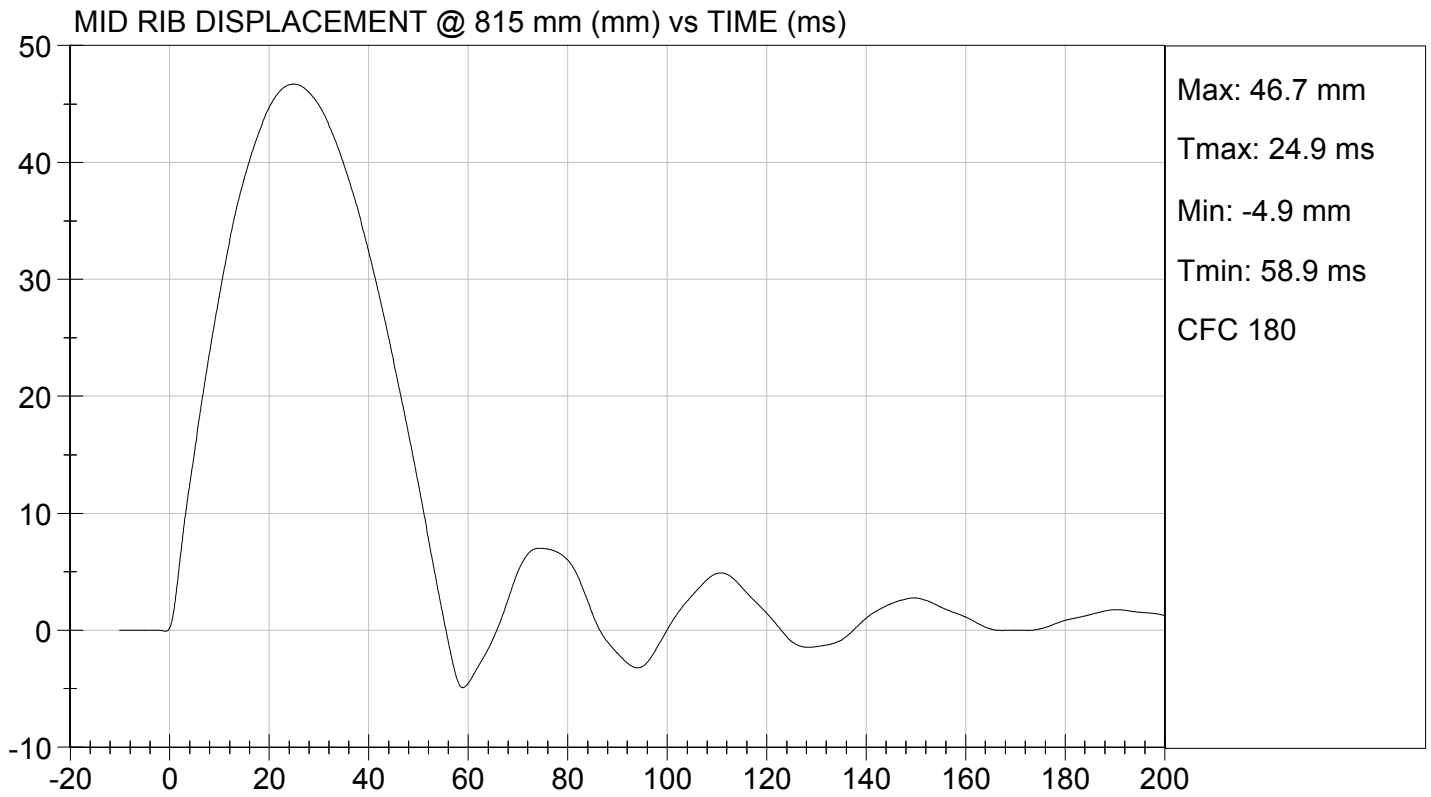
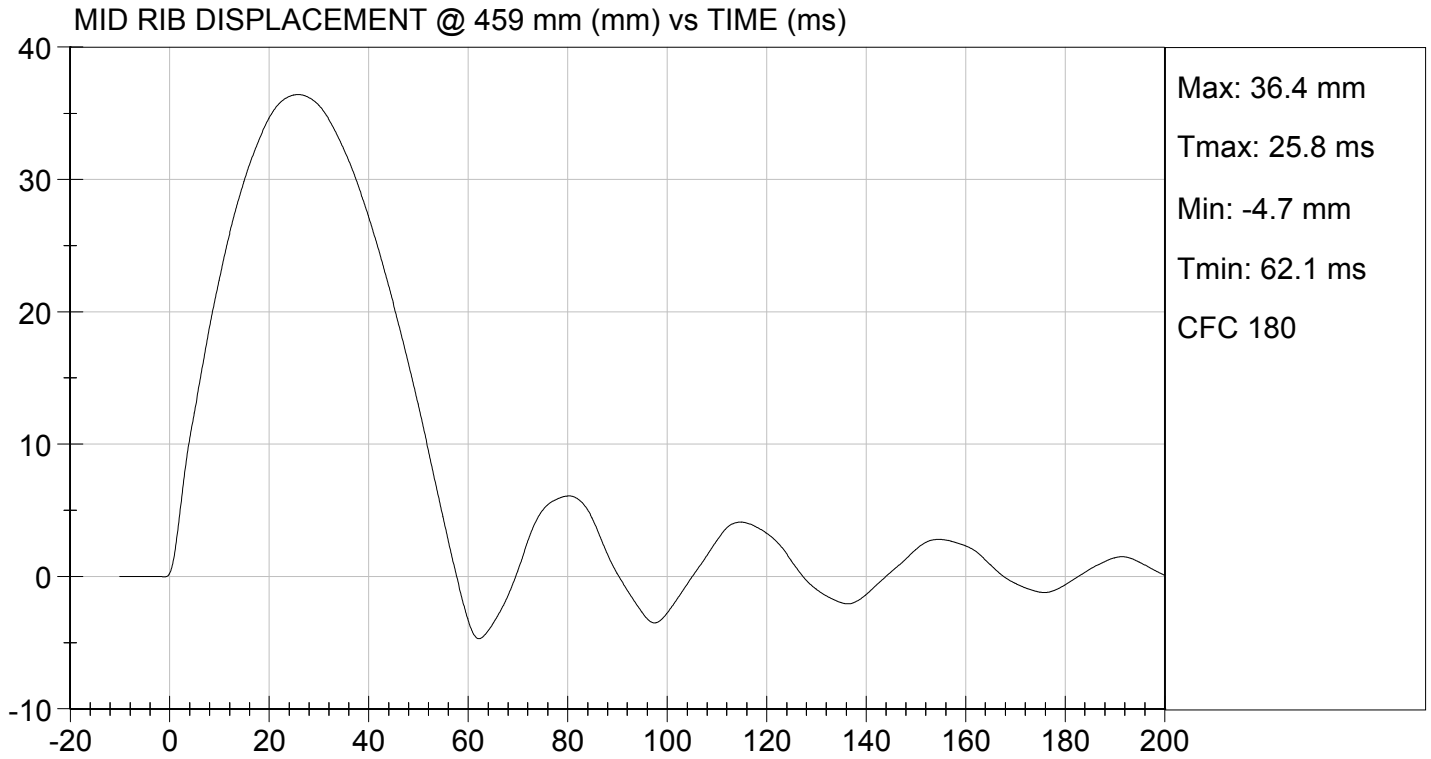
Test I.D: D153355

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Displacement at 459 mm	mm	36.0 to 40.0	36.4	Pass
Displacement at 815 mm	mm	46.0 to 51.0	46.7	Pass
Overall Test Results				Pass

David Schoedel
Laboratory Technician

10/21/2015
Test Date

Jessica Hall
Approved By



MGA RESEARCH CORPORATION

LOWER RIB TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D153356

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Displacement at 459 mm	mm	36.0 to 40.0	38.6	Pass
Displacement at 815 mm	mm	46.0 to 51.0	49.5	Pass
Overall Test Results				Pass

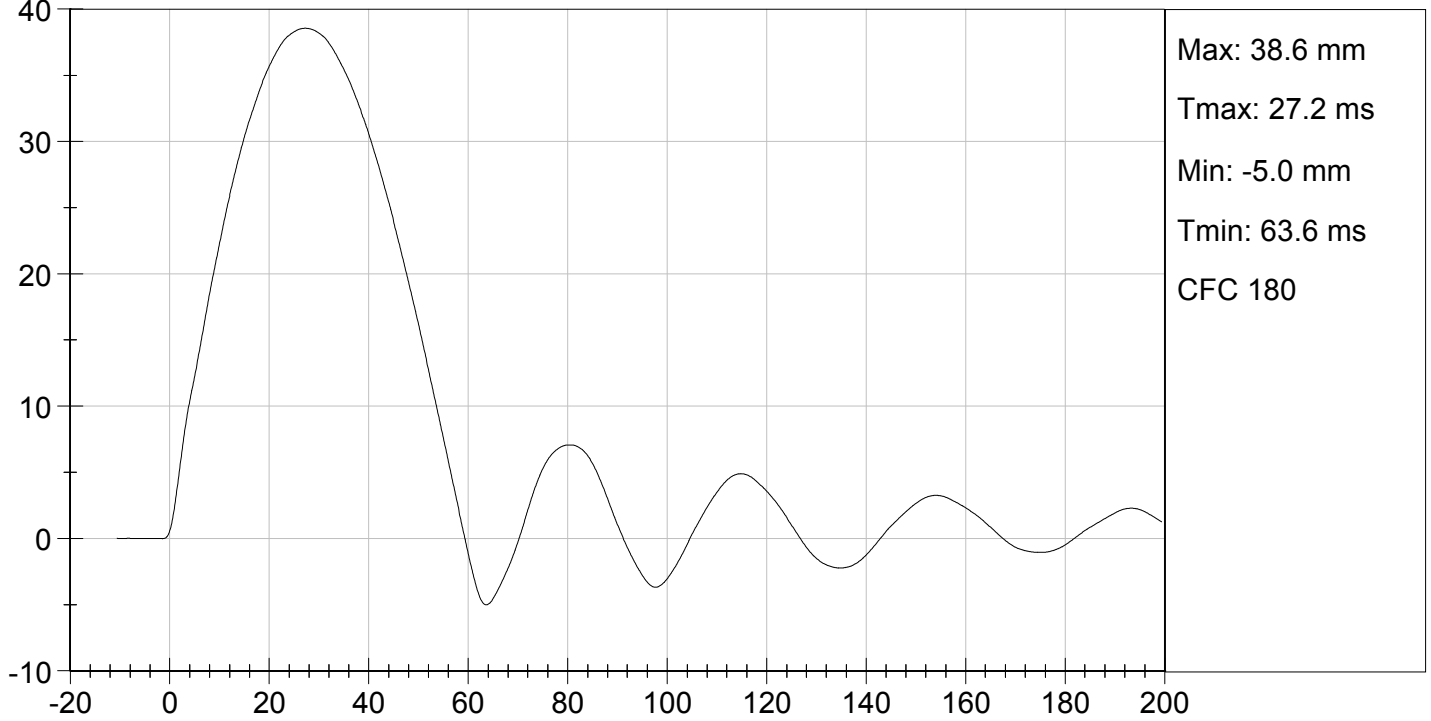
David Schoedel
Laboratory Technician

10/21/2015
Test Date

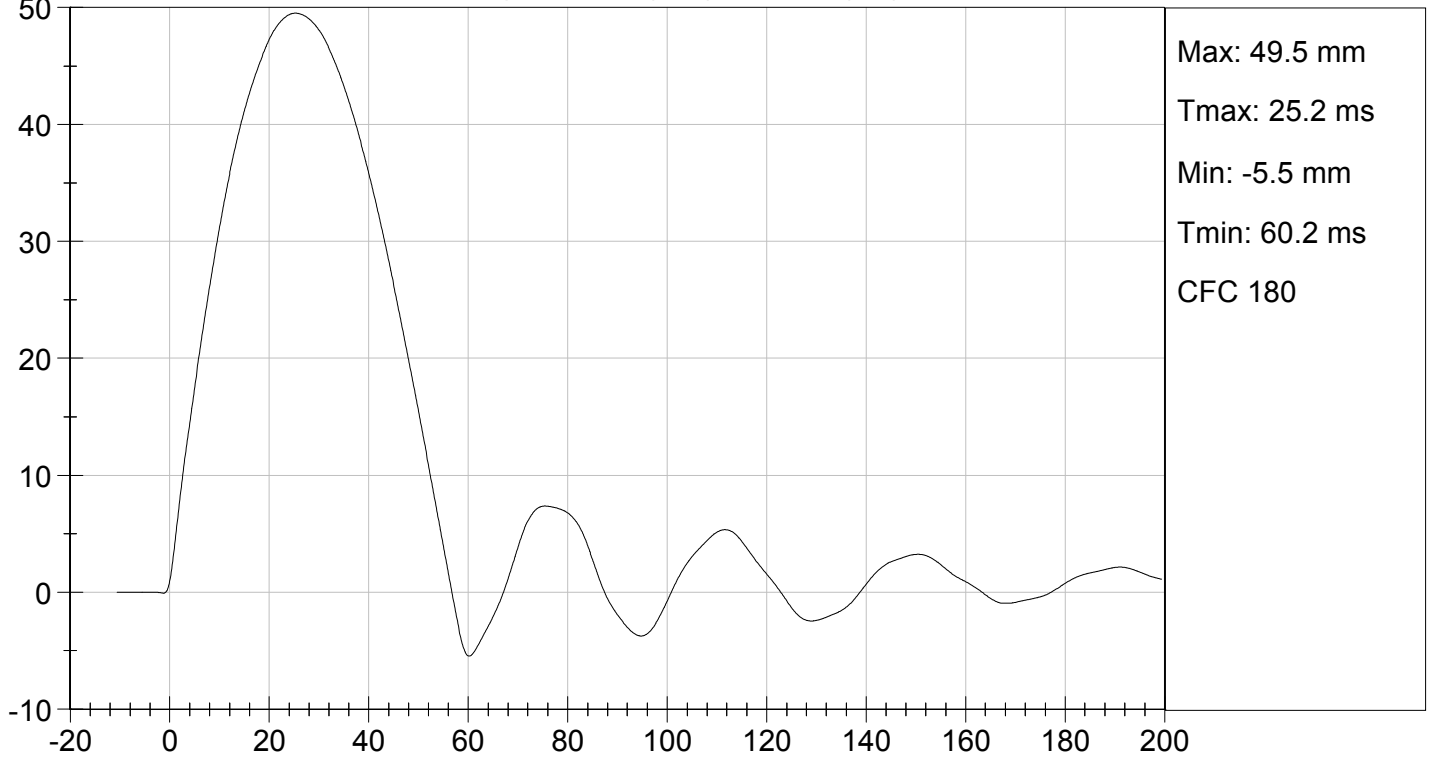
Jessica Hall
Approved By



LOWER RIB DISPLACEMENT @ 459 mm (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT @ 815 mm (mm) vs TIME (ms)



**MGA RESEARCH CORPORATION
THORAX IMPACT TEST
ES-2re DUMMY**

ATD Serial No: 032

Test I.D.: D153350

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	20.9	Pass
Humidity	%	10 to 70	49	Pass
Probe Speed	m/s	5.40 to 5.60	5.58	Pass
Maximum Impactor Force (after 6 ms)	N	5100 to 6200	5969	Pass
Upper Rib Displacement	mm	34.0 to 41.0	40.2	Pass
Middle Rib Displacement	mm	37.0 to 45.0	42.4	Pass
Lower Rib Displacement	mm	37.0 to 44.0	42.3	Pass
Overall Test Results				Pass

David Schoedel

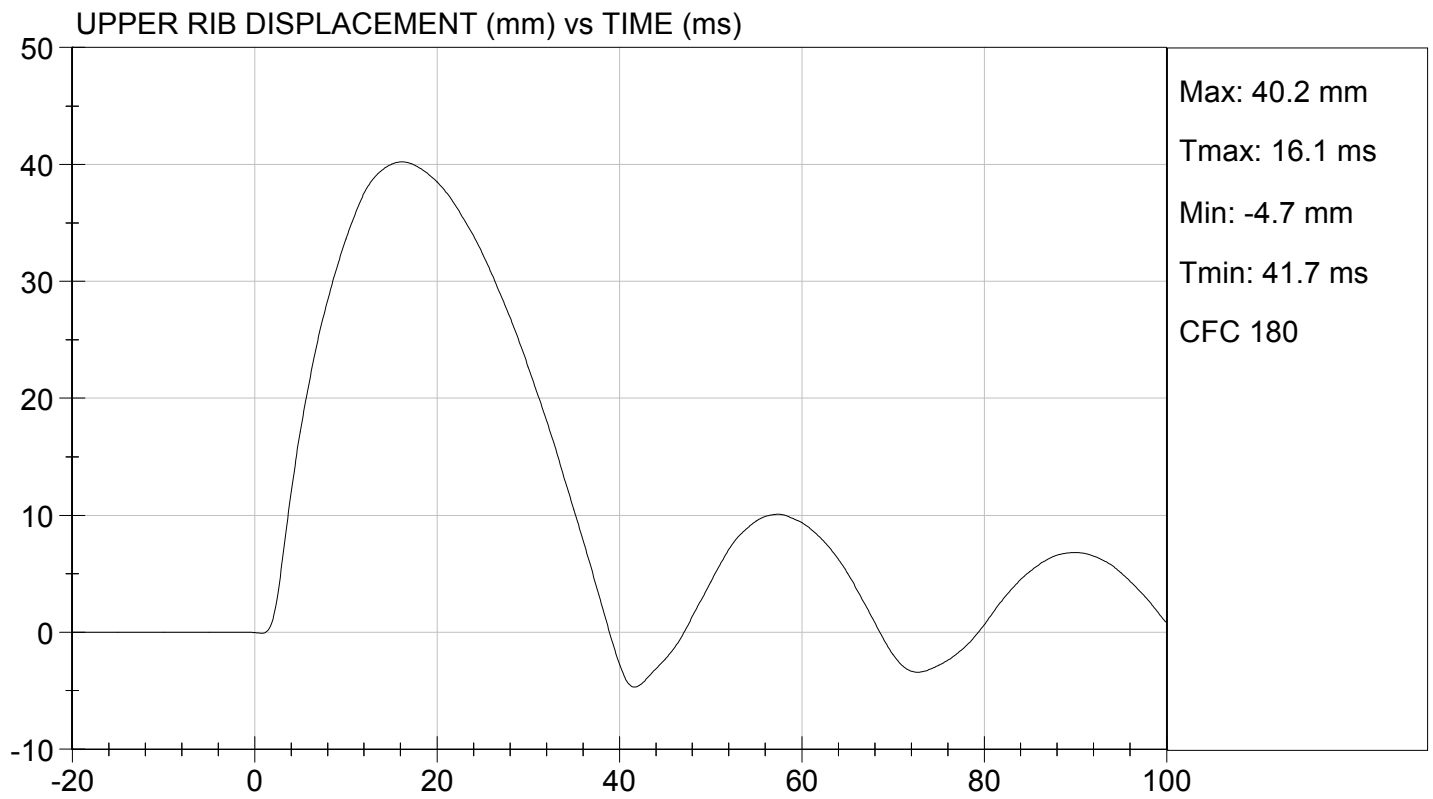
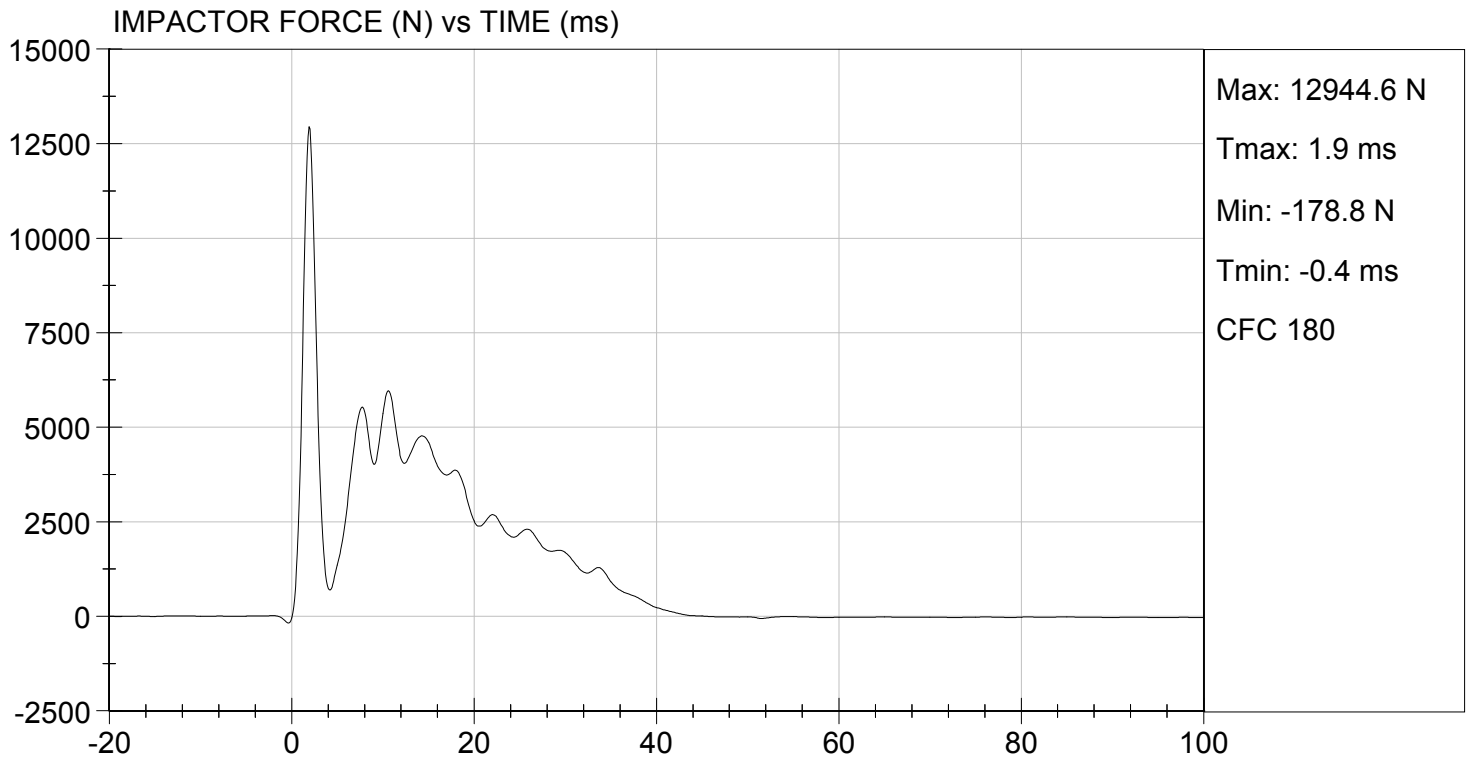
 Laboratory Technician

10/21/2015

 Test Date

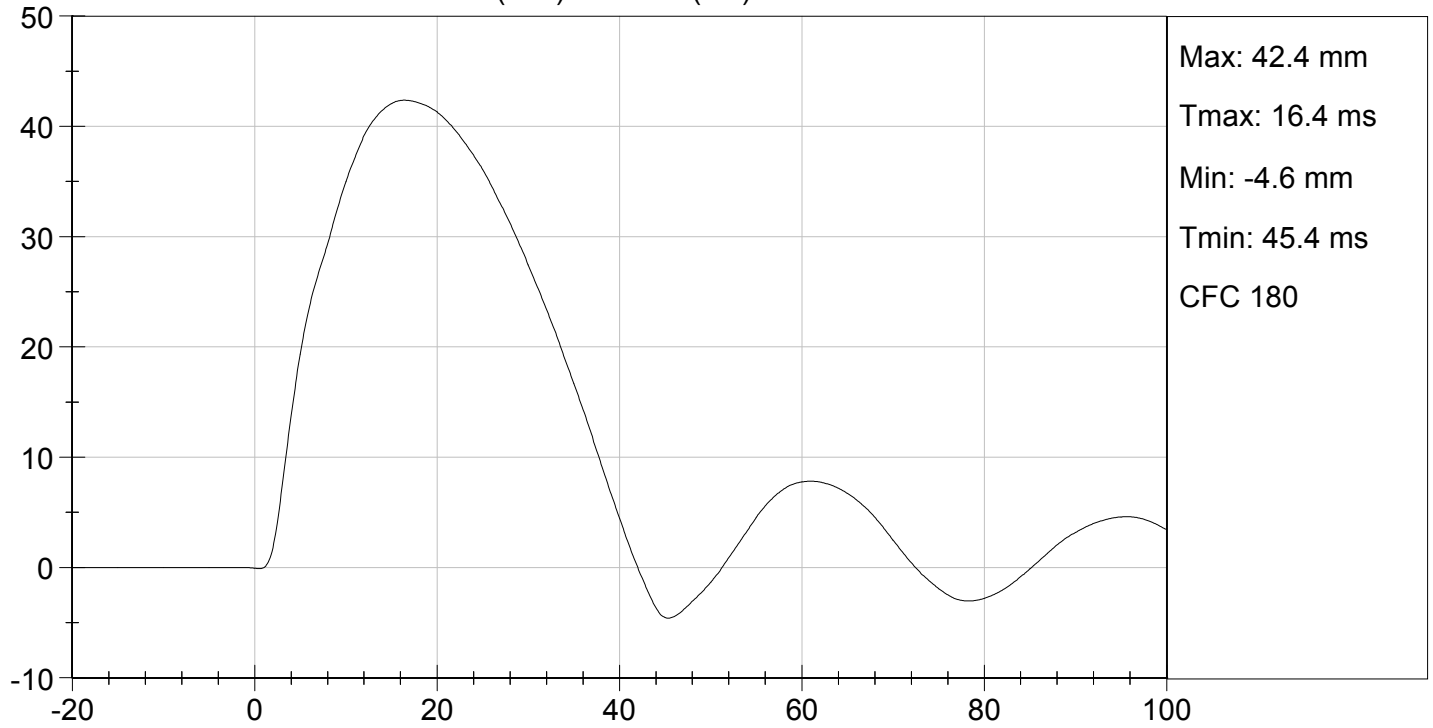
Jessica Hall

 Approved By

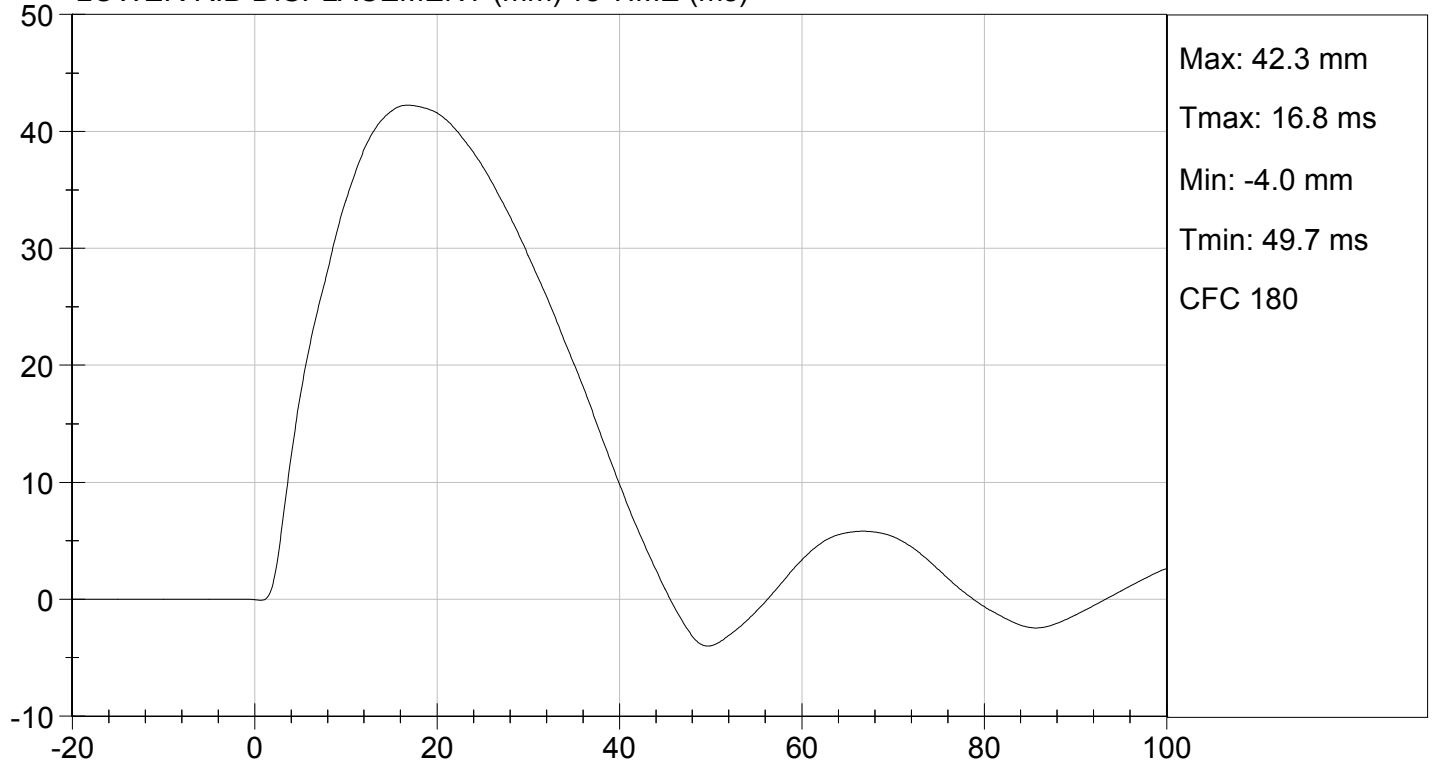




MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER RIB DISPLACEMENT (mm) vs TIME (ms)



MGA RESEARCH CORPORATION

ABDOMEN TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D153357

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Probe Speed	m/s	3.90 to 4.10	4.10	Pass
Maximum Impactor Force	N	4000 to 4800	4511	Pass
Time of Maximum Impactor Force	ms	10.6 to 13.0	11.4	Pass
Maximum Total Abdomen Force	N	2200 to 2700	2466	Pass
Time of Maximum Abdomen Force	ms	10.0 to 12.3	11.4	Pass
Overall Test Results				Pass

David Schoedel

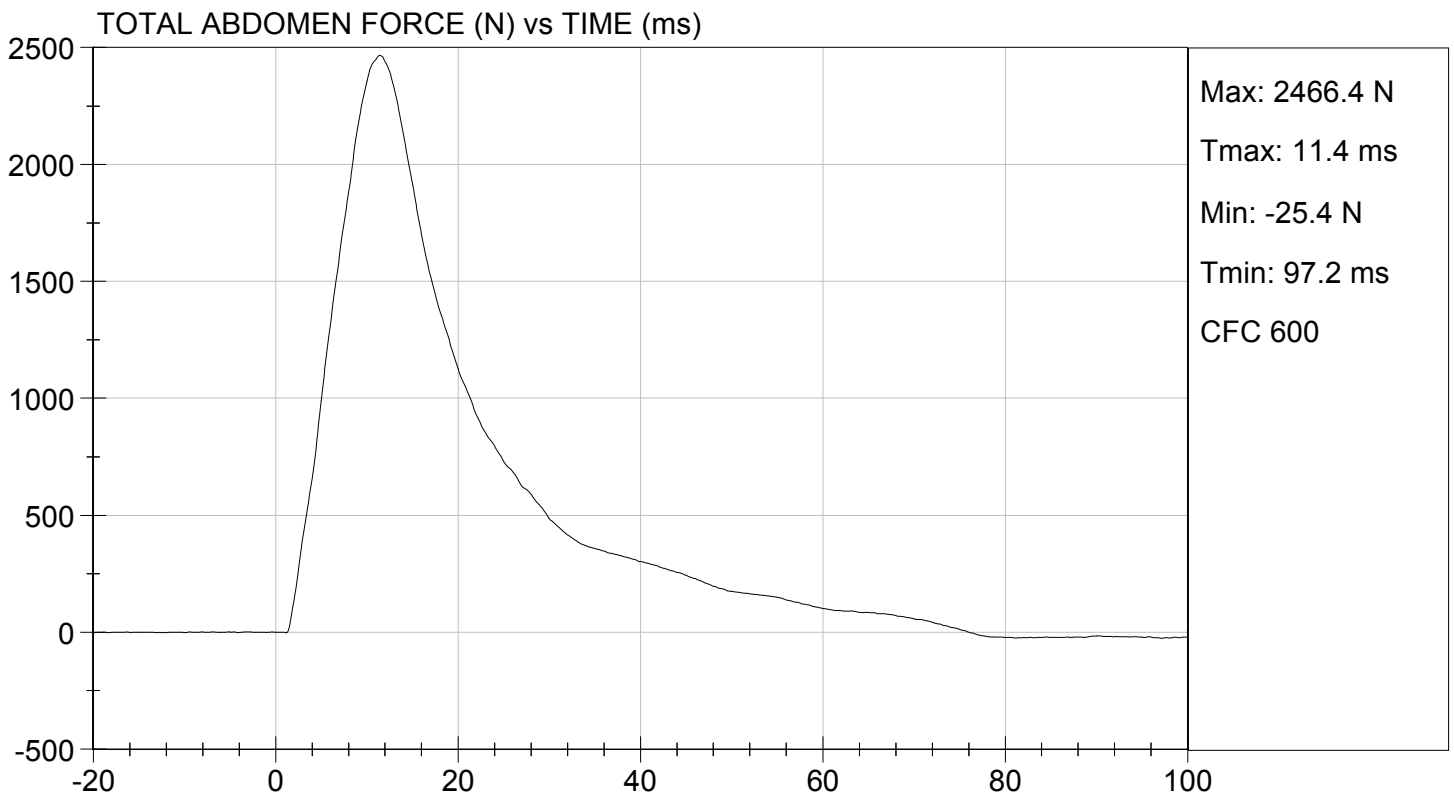
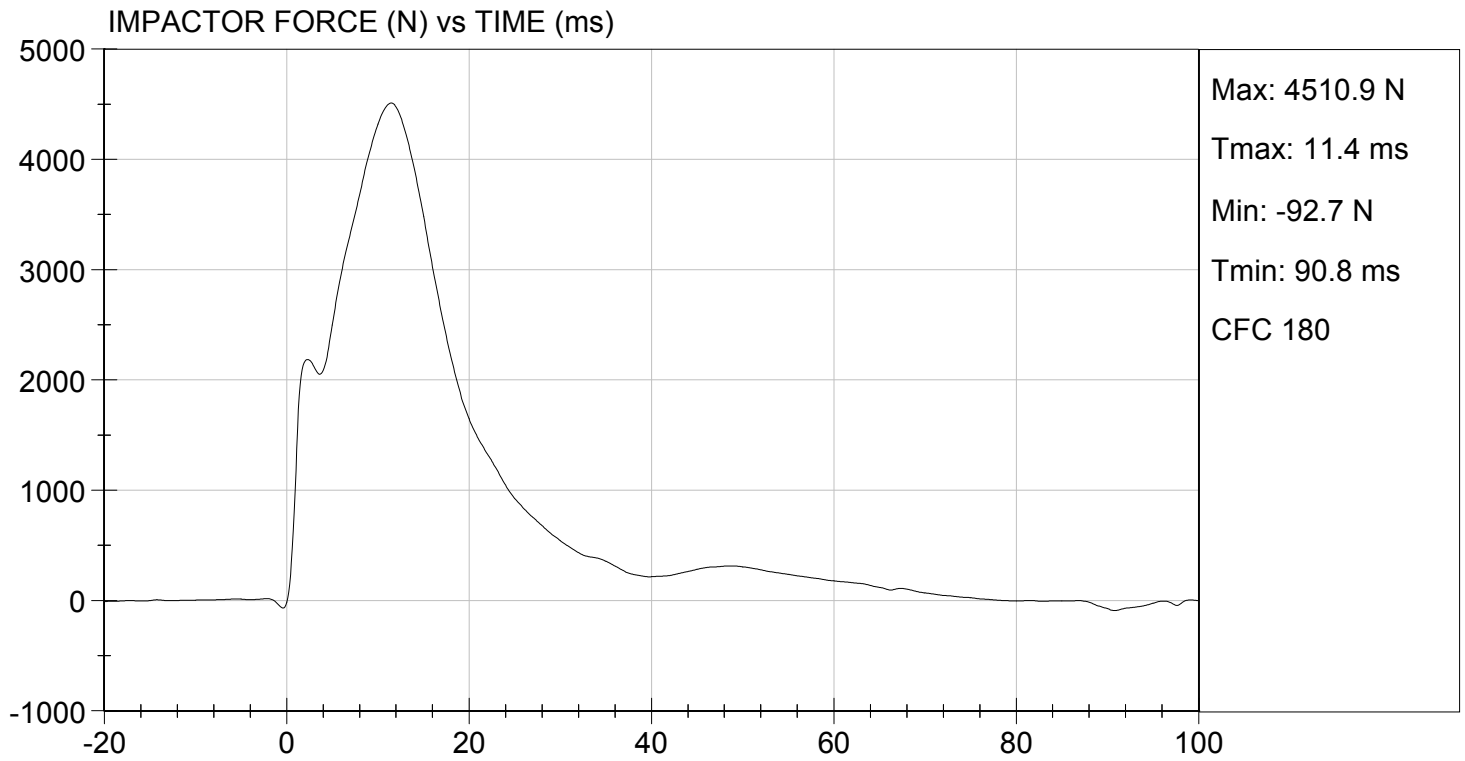
Laboratory Technician

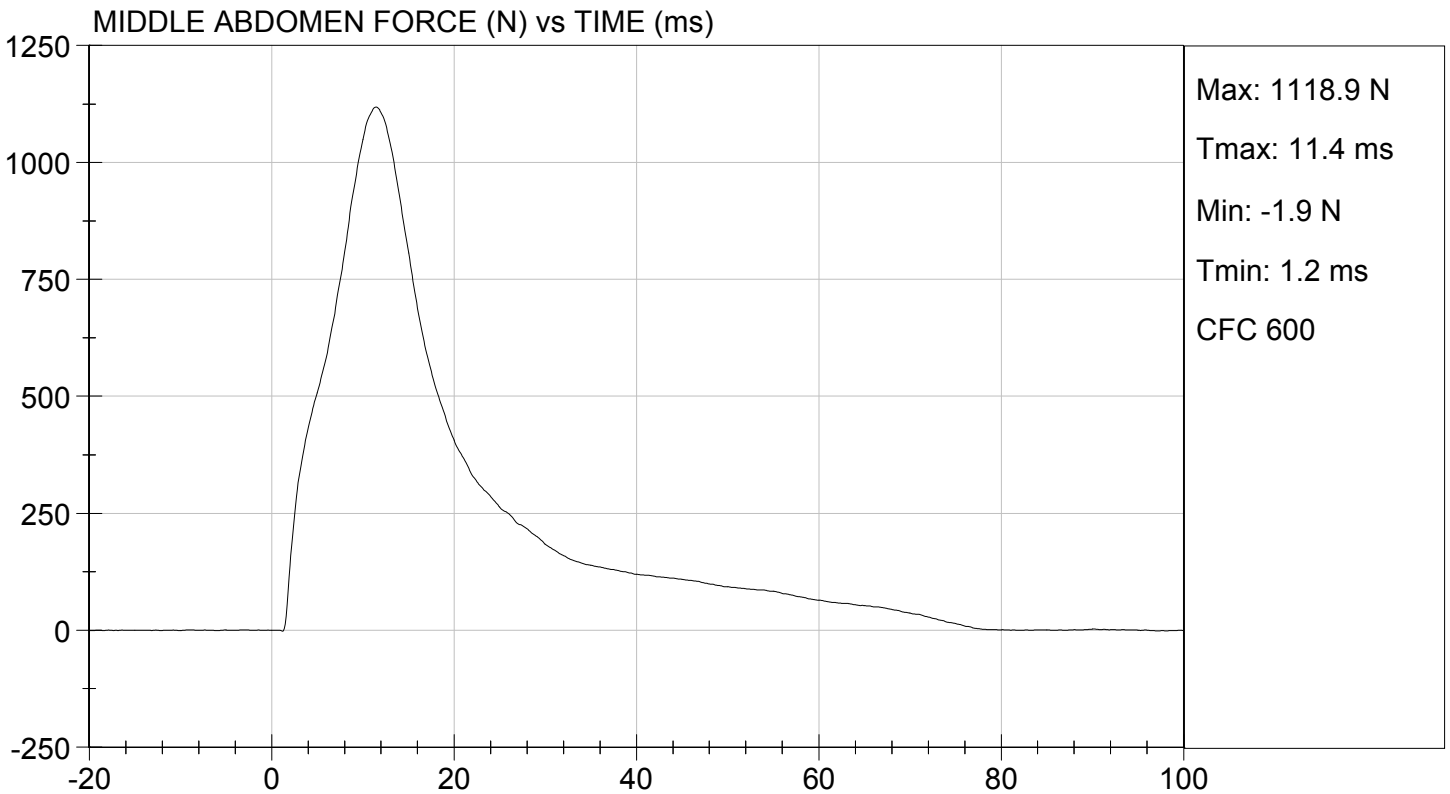
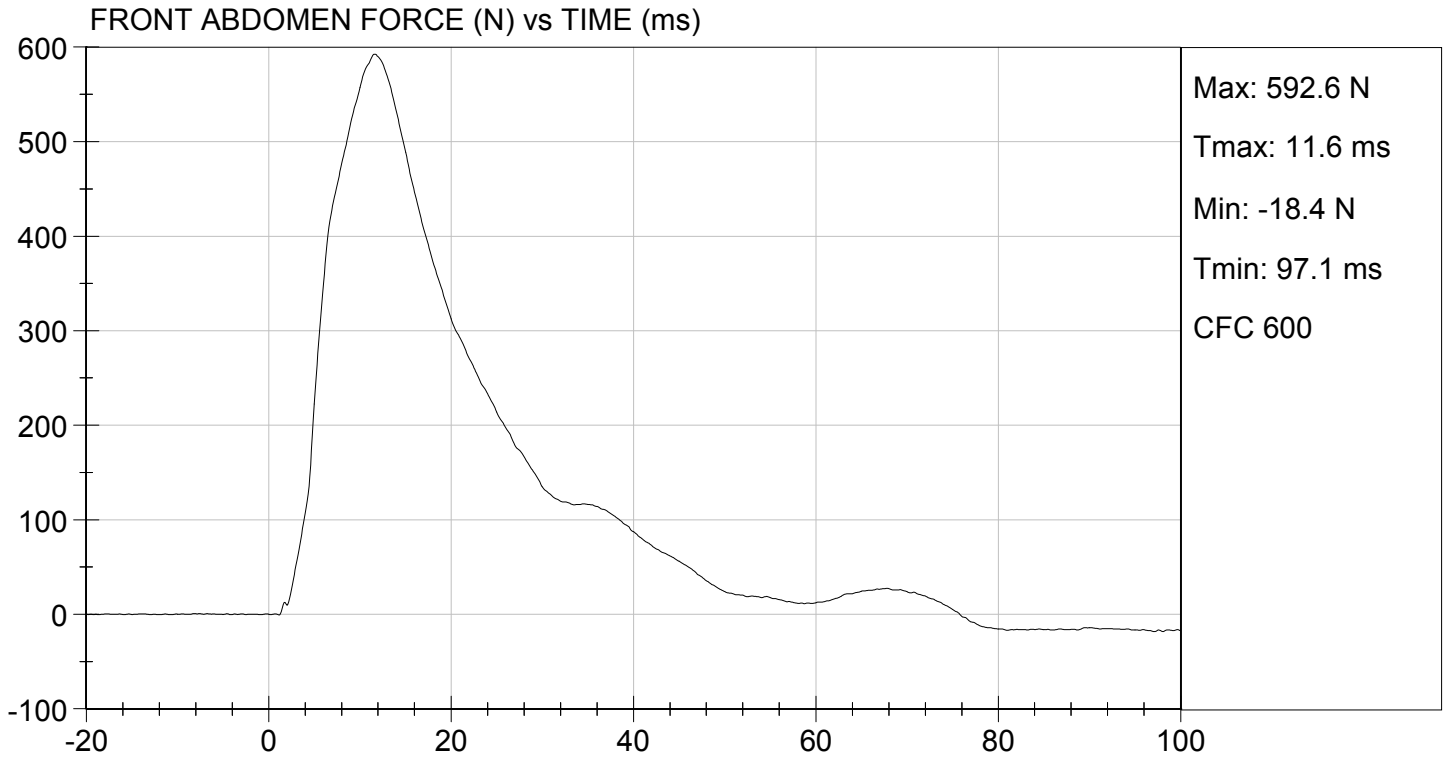
10/21/2015

Test Date

Jessica Hall

Approved By

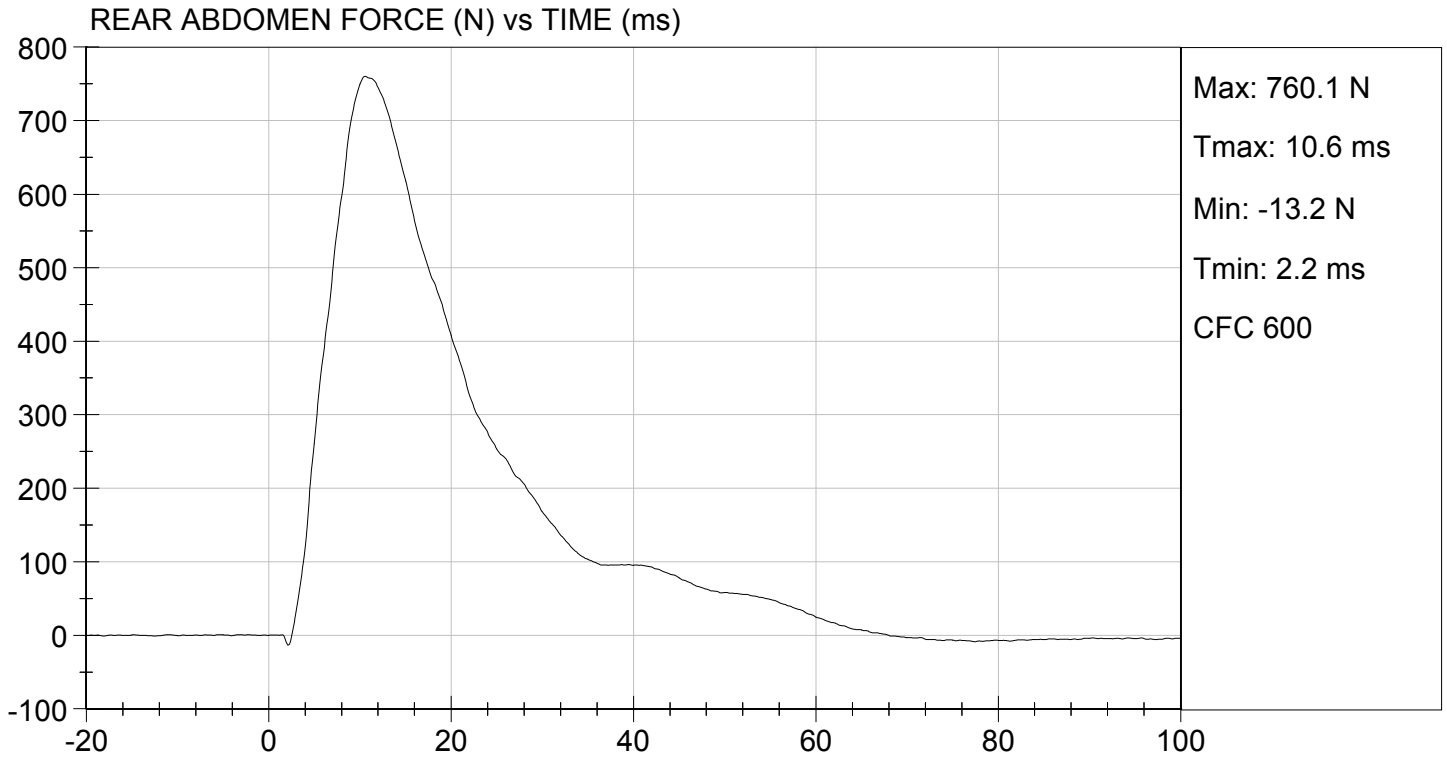






TEST DESC: ABDOMEN IMPACT
VELOCITY: 13.44 ft/s, 4.10 m/s

TEST DATE: 10/21/2015
TEST #: D153357



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
ES-2re DUMMY

ATD Serial No: 032

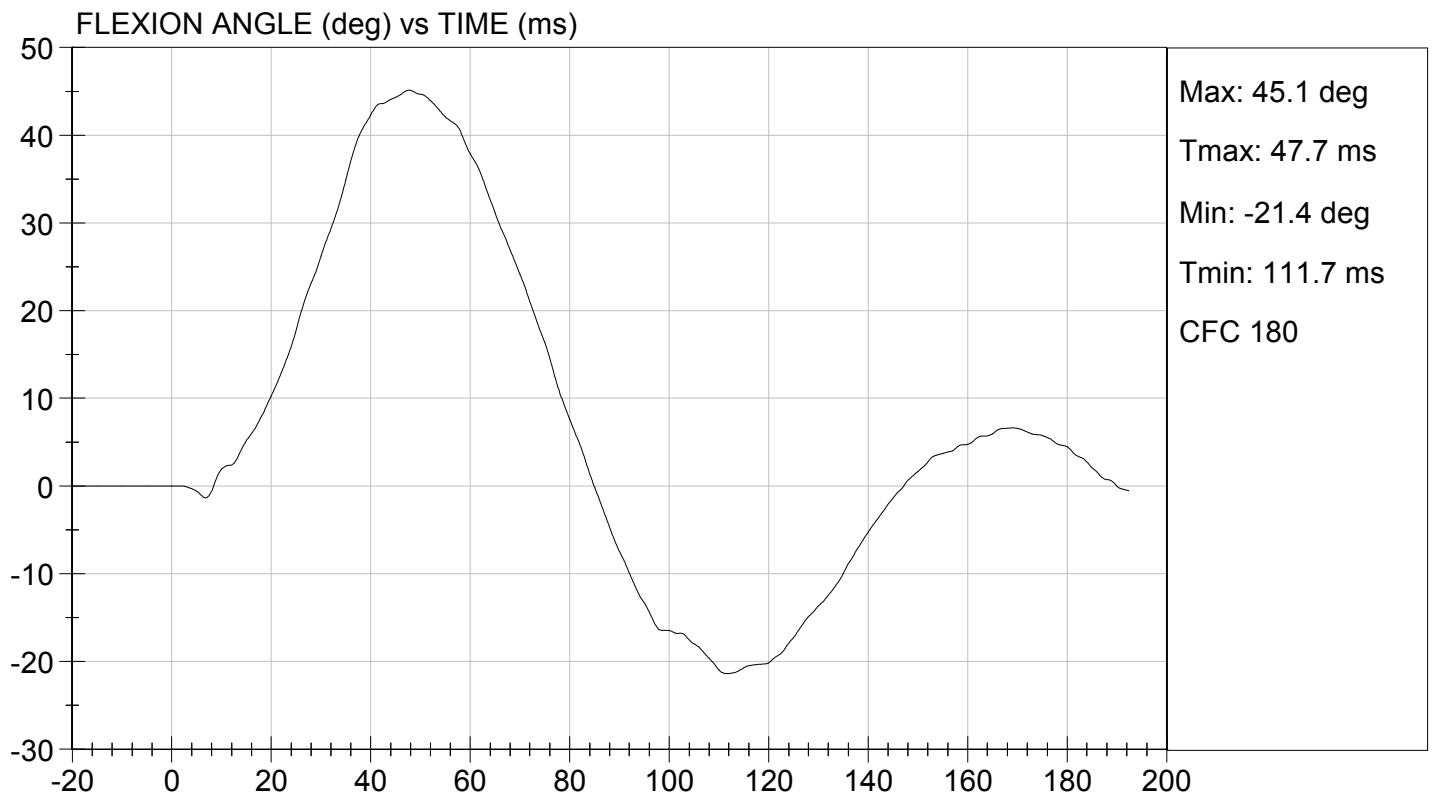
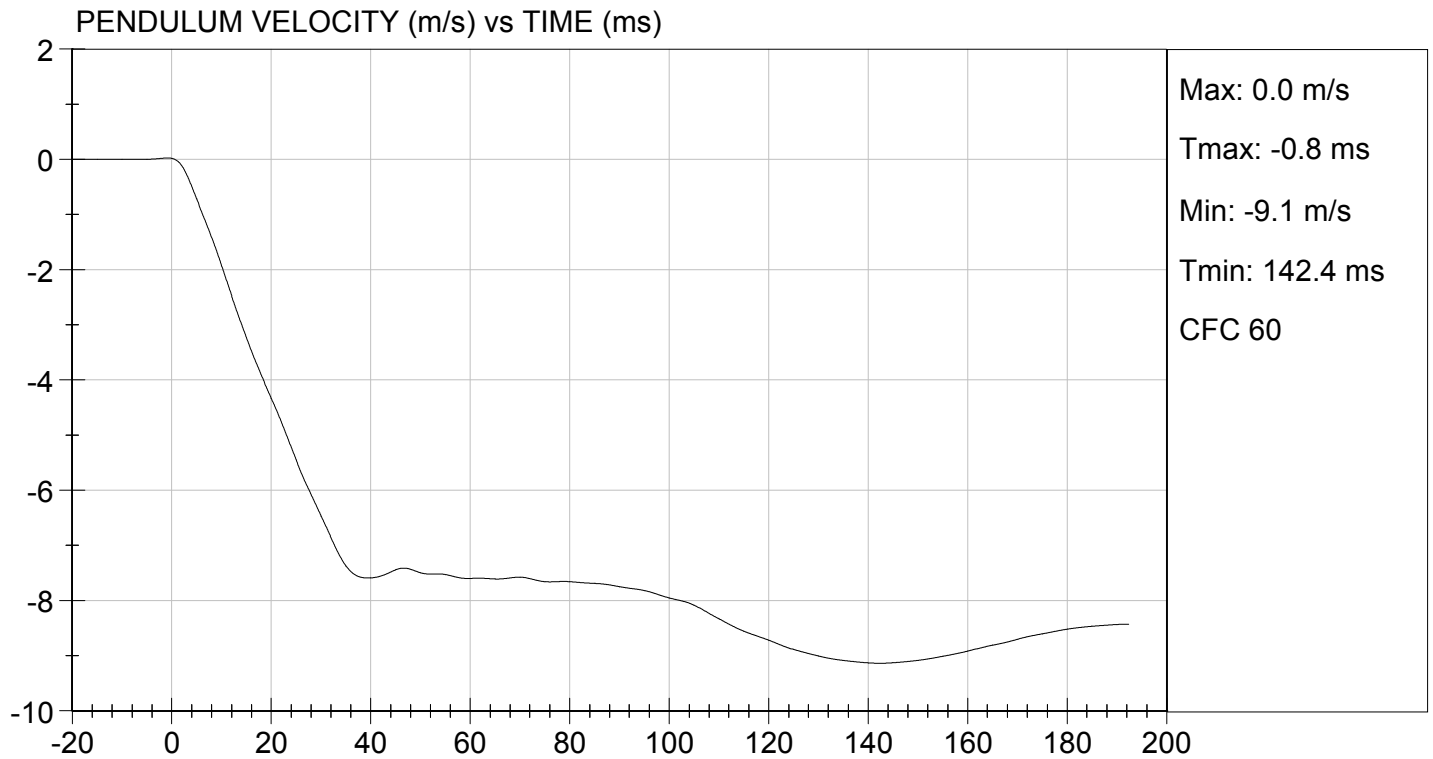
Test I.D.: D153358

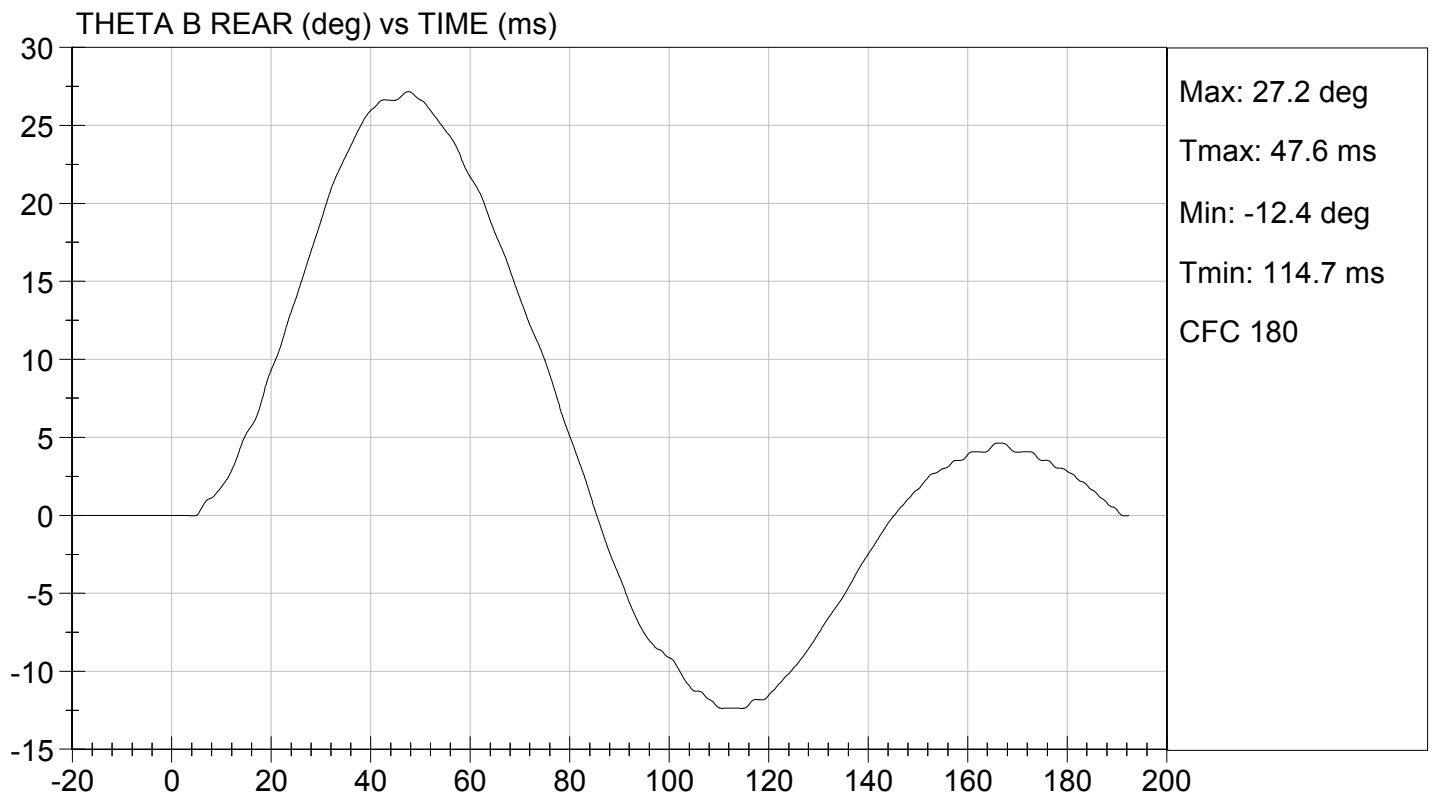
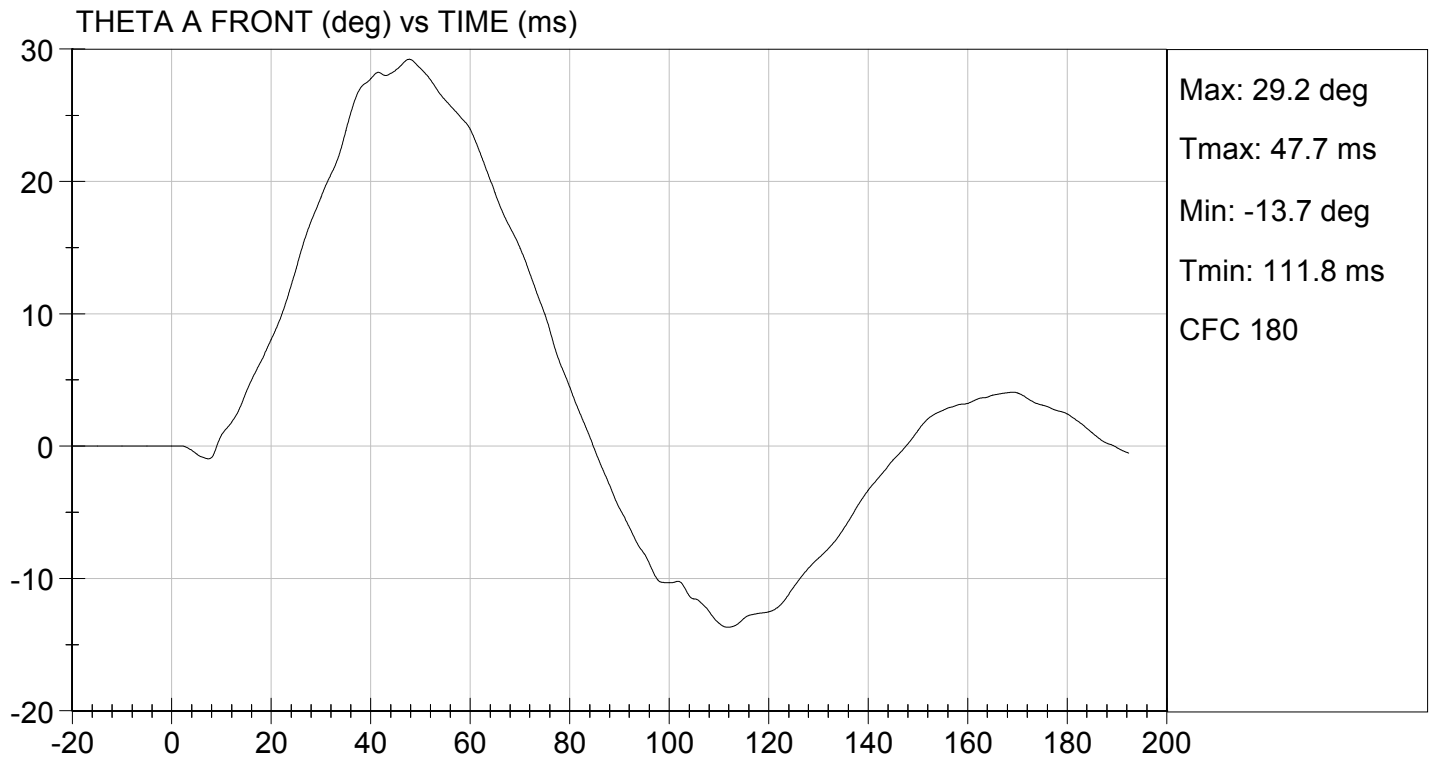
Tested Parameter	Units	Specification	Result	Pass/Fail	
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass	
Laboratory Relative Humidity	%	10 to 70	46	Pass	
Pendulum Speed	m/s	5.95 to 6.15	6.12	Pass	
Pendulum Velocity	1 ms	m/s	-0.05 to 0.00	-0.02	Pass
	3.7 ms	m/s	-0.425 to -0.24	-0.425	Pass
	27 ms	m/s	-6.50 to -5.80	-5.88	Pass
	30 ms	m/s	>= -6.50	-6.46	Pass
Maximum Flexion Angle	deg	45.0 to 55.0	45.1	Pass	
Time of Maximum Flexion Angle	ms	39.0 to 53.0	47.7	Pass	
Headform Rotation Decay to Initial Position	ms	37 to 57	48	Pass	
Overall Results				Pass	

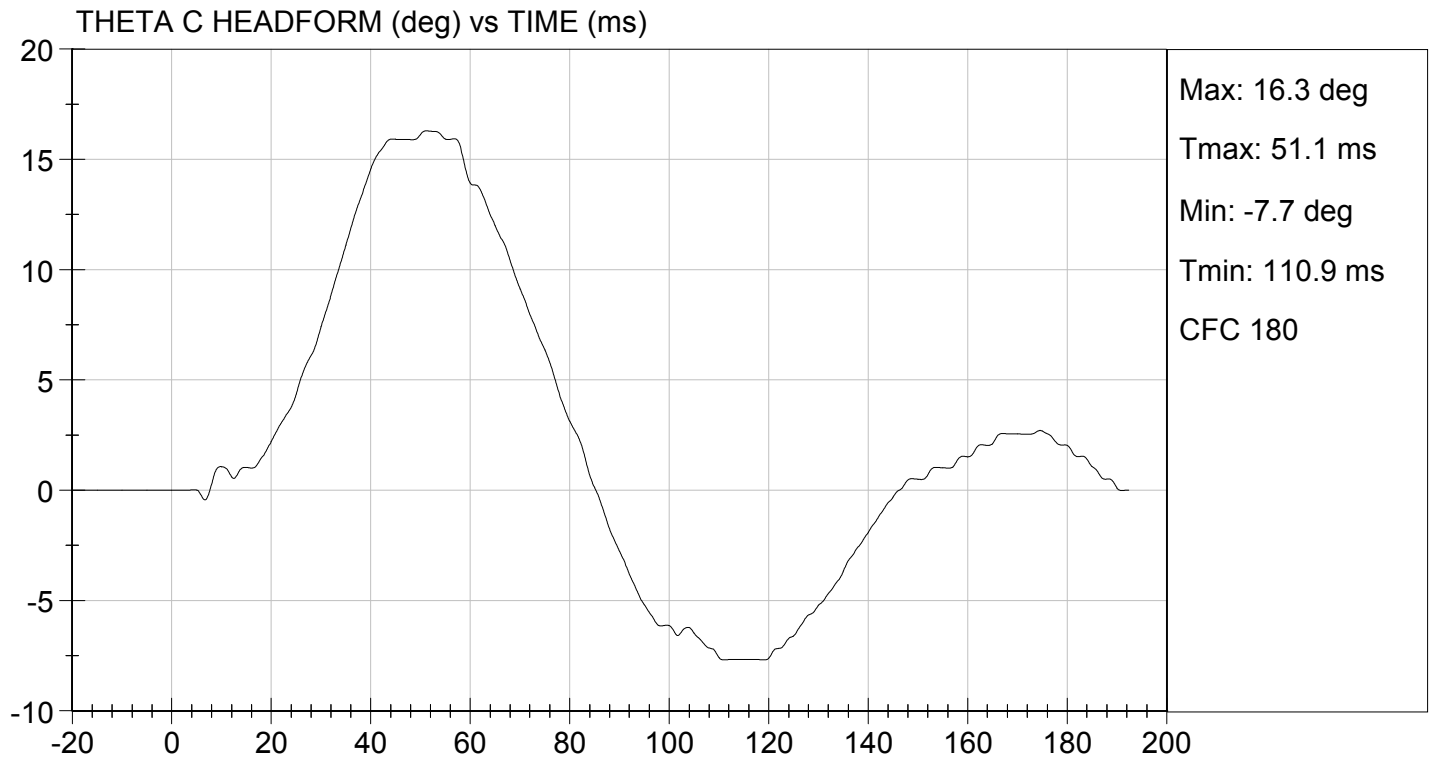
David Schoedel
 Laboratory Technician

10/21/2015
 Test Date

Jessica Hall
 Approved By







MGA RESEARCH CORPORATION

PELVIS TEST

ES-2re DUMMY

ATD Serial No: 032

Test I.D: D153359

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	20.9	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Probe Speed	m/s	4.20 to 4.40	4.34	Pass
Maximum Impactor Force	N	4700 to 5400	4886	Pass
Time of Maximum Impactor Force	ms	11.8 to 16.1	13.5	Pass
Maximum Pubic Force	N	1230 to 1590	1239	Pass
Time of Maximum Pubic Force	ms	12.2 to 17.0	15.3	Pass
Overall Test Results				Pass

David Schoedel

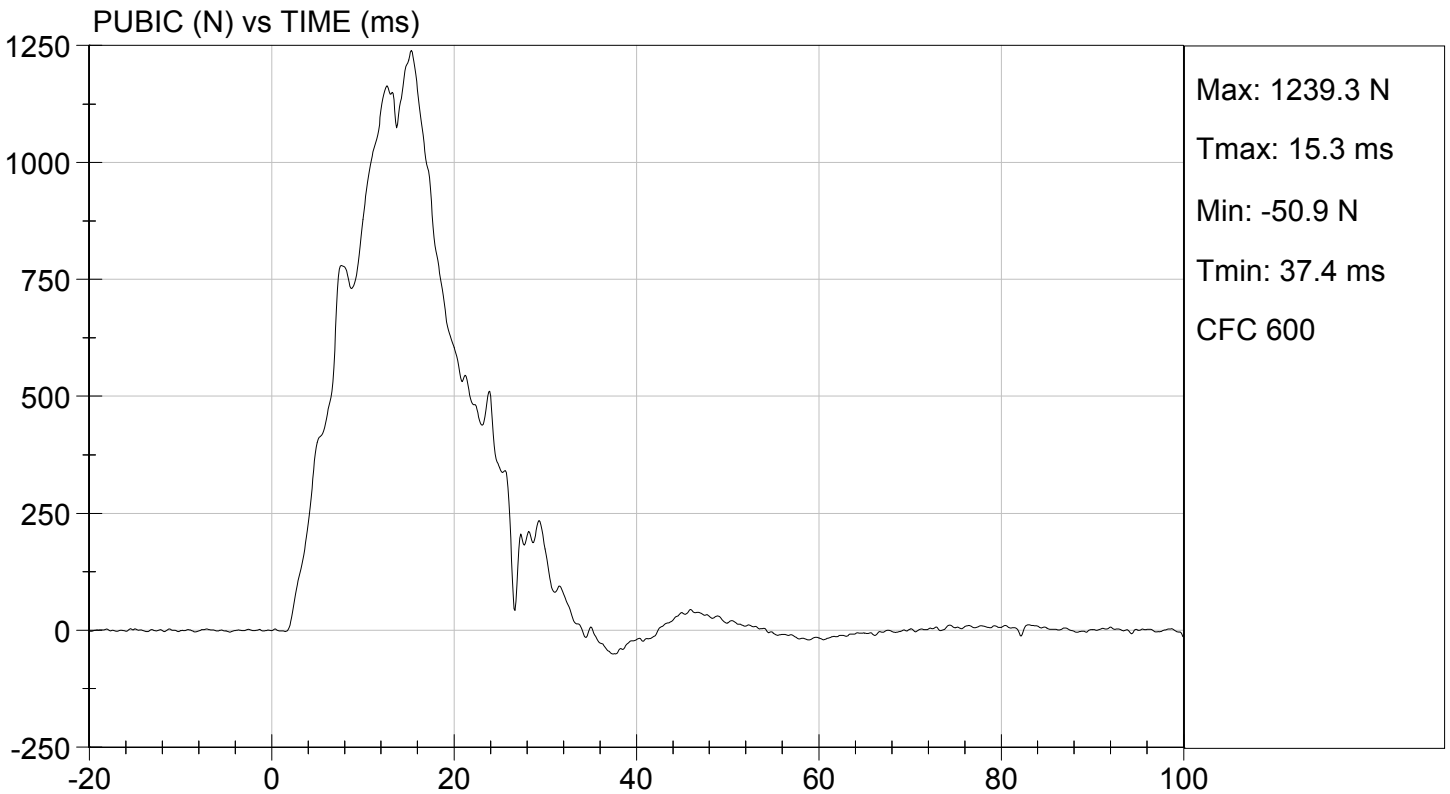
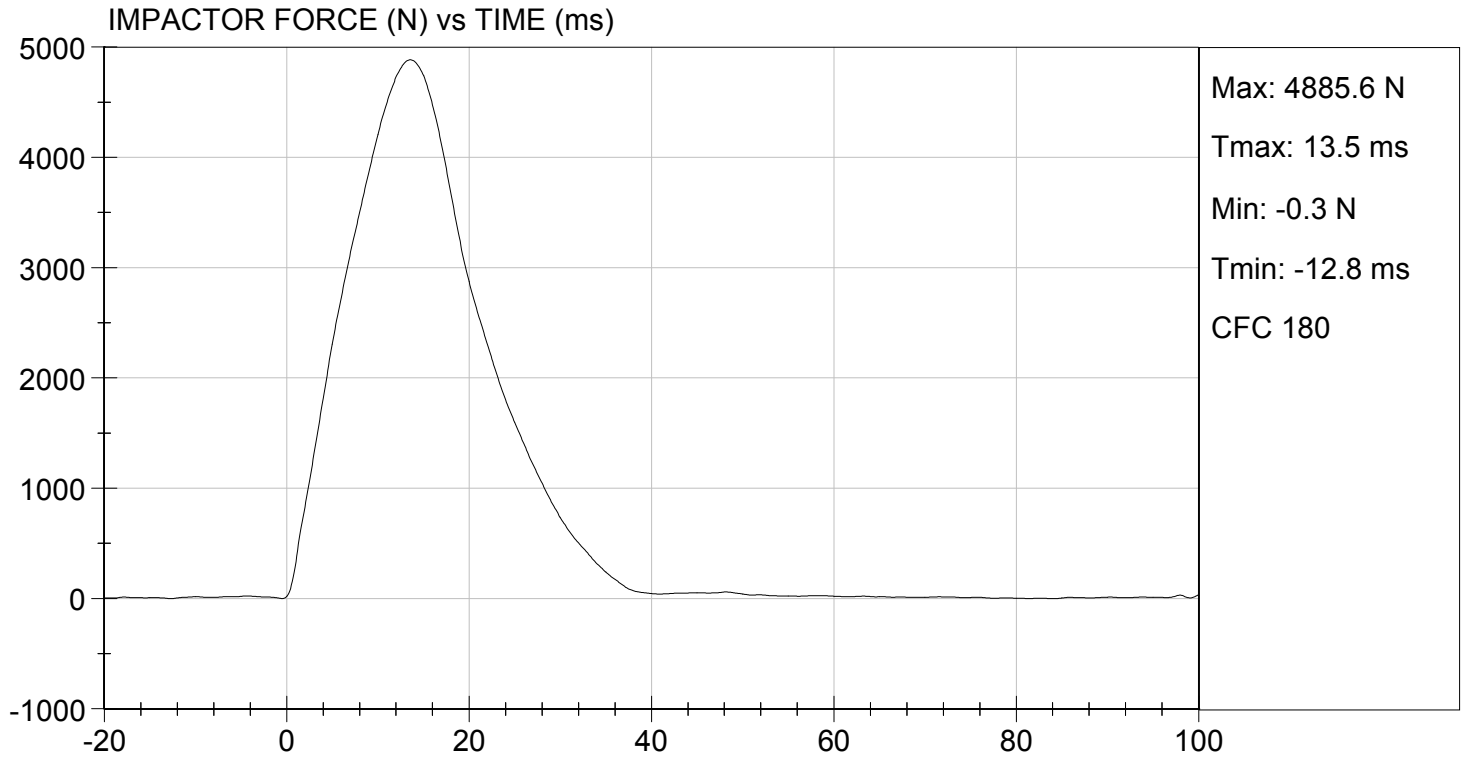
Laboratory Technician

10/21/2015

Test Date

Jessica Hall

Approved By



SID-IIsD External Measurements
SN: 296

No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	784	Pass
B	Shoulder Pivot Height	437 - 453	442	Pass
C	H-point Height	79 - 89	83	Pass
D	H-point from Seatback	141 - 151	145	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 - 135	121	Pass
G	Head Breadth	140 - 148	142	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	180	Pass
J	Head Circumference	541 - 551	548	Pass
K	Buttock to Knee Length	514 - 540	535	Pass
L	Popliteal Height	343 - 369	358	Pass
M	Knee Pivot to Floor Height	392 - 409	404	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	206	Pass
P	Foot Length	216 - 232	219	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	316	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	481	Pass
V	Shoulder Width	341 - 357	346	Pass
W	Foot Width	78 - 94	85	Pass
Y	Chest Circumference w/ jacket	851 - 881	870	Pass
Z	Waist Circumference	761 - 791	772	Pass

**MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

Test ID: D153141

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	49	Pass
Peak Resultant Acceleration	G's	115 to 137	128	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-9.0	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results				Pass

David Schoedel

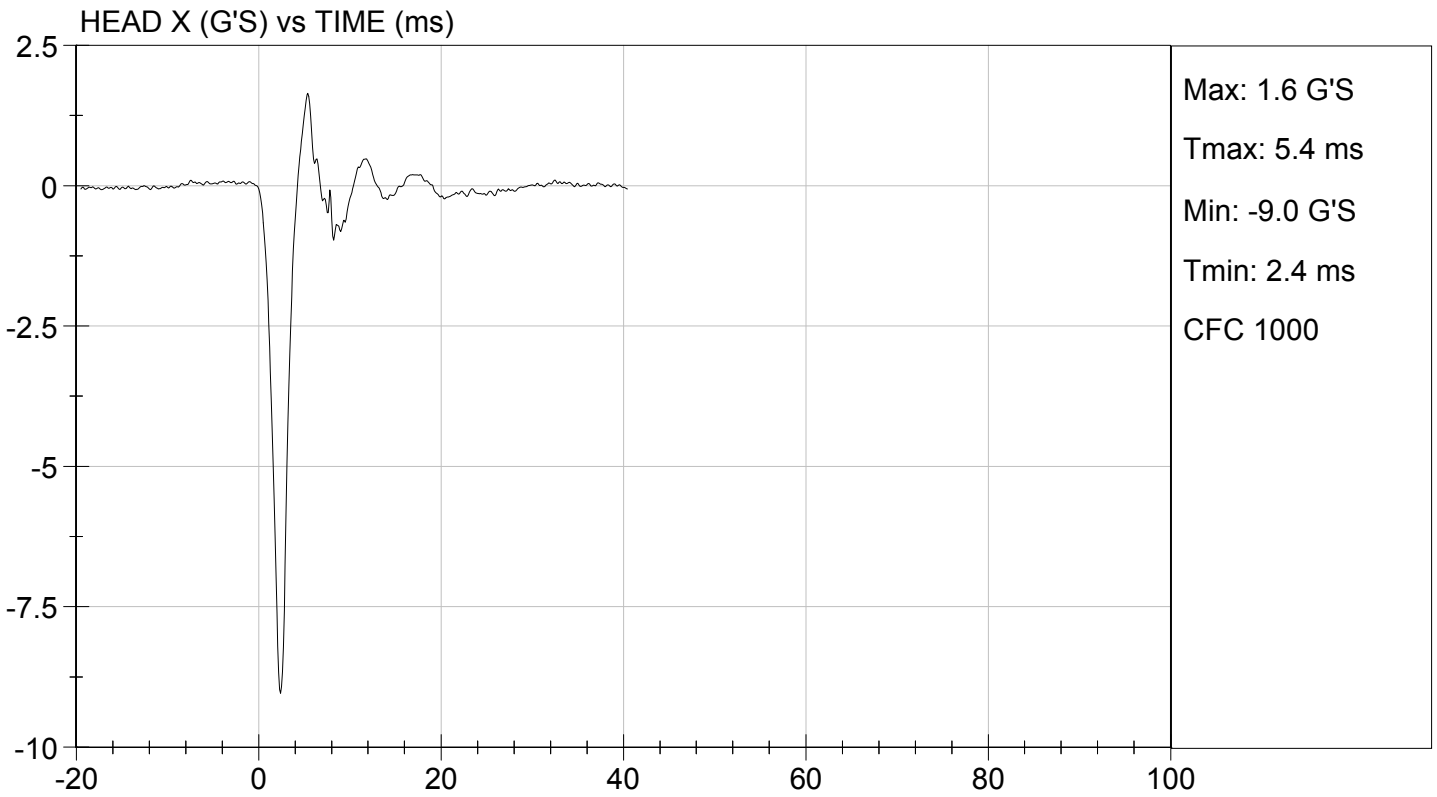
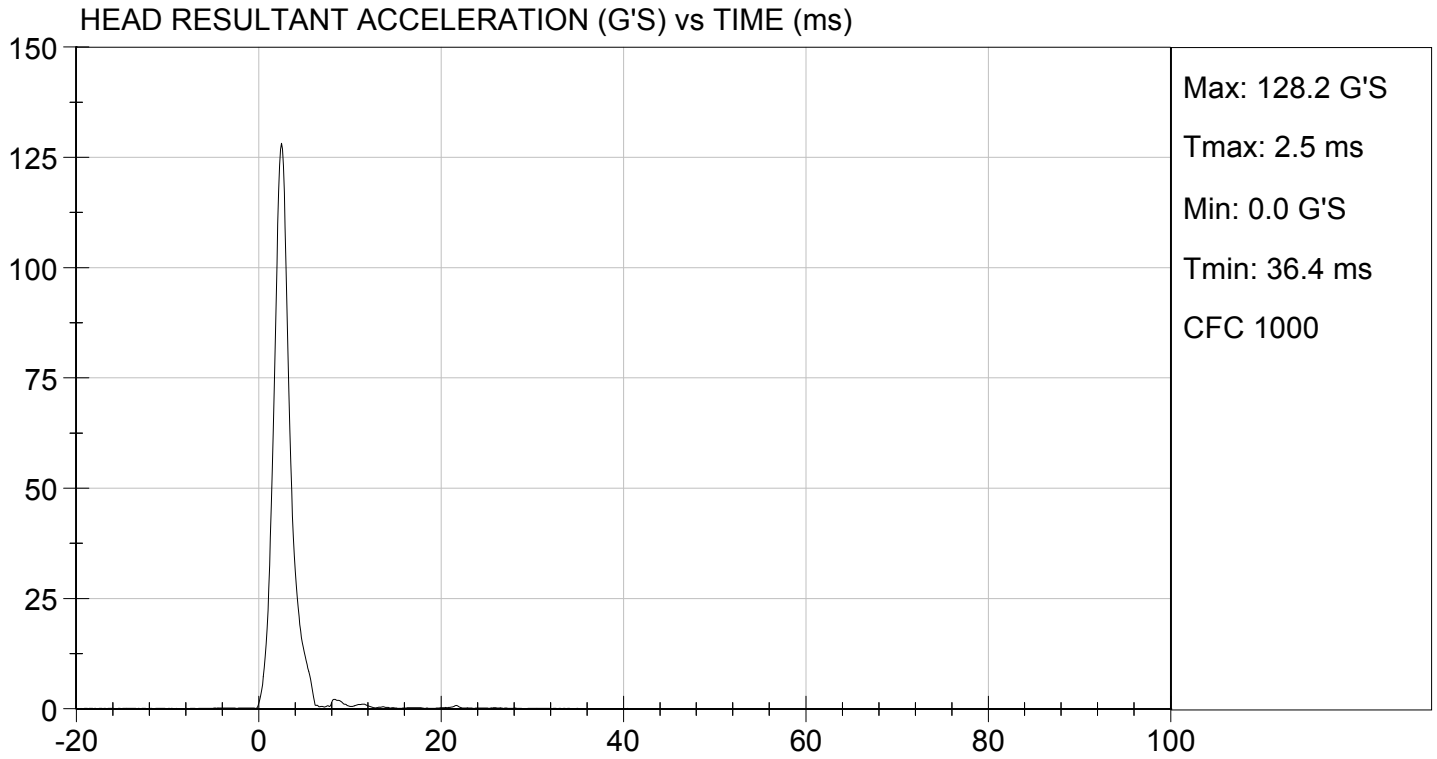
 Laboratory Technician

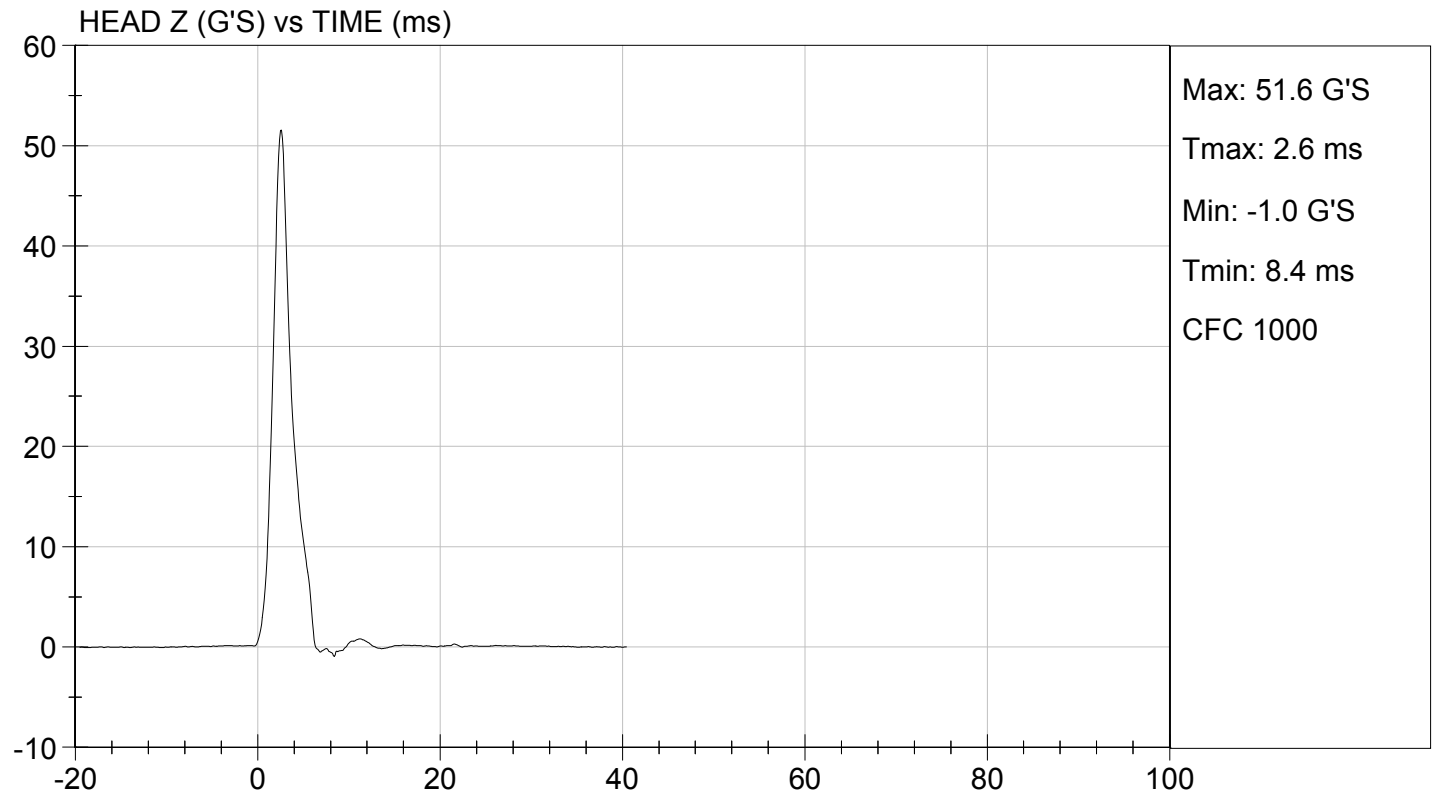
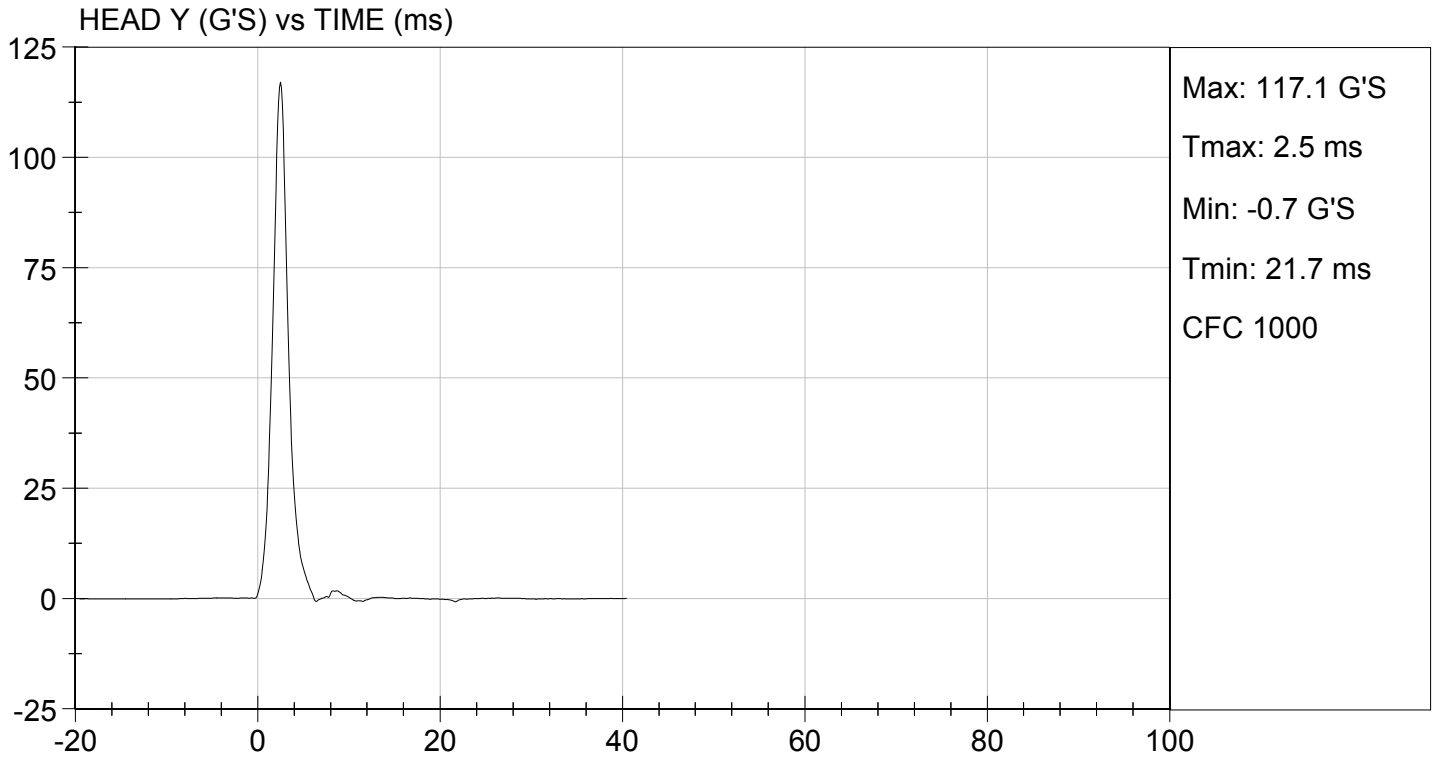
10/07/2015

 Test Date

Jessica Hall

 Approved By





**MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

Test I.D.: D153142

Tested Parameter	Units	Specification	Result	Pass/Fail	
Temperature	deg C	20.6 to 22.2	21.4	Pass	
Humidity	%	10 to 70	49	Pass	
Impact Velocity	m/s	5.51 to 5.63	5.58	Pass	
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.58	Pass
	15 ms	m/s	3.30 to 4.10	3.62	Pass
	20 ms	m/s	4.40 to 5.40	4.84	Pass
	25 ms	m/s	5.40 to 6.10	5.71	Pass
	25-100 ms	m/s	5.50 to 6.20	5.75	Pass
Maximum D-Plane Rotation	deg	71 to 81	74	Pass	
Time of Maximum D-Plane Rotation	ms	50 to 70	64	Pass	
Maximum Occipital Condyle Moment	Nm	-44 to -36	-39	Pass	
Time of Moment Decay to 0 Nm	ms	102 to 126	116	Pass	
Overall Test Results				Pass	

David Schoedel

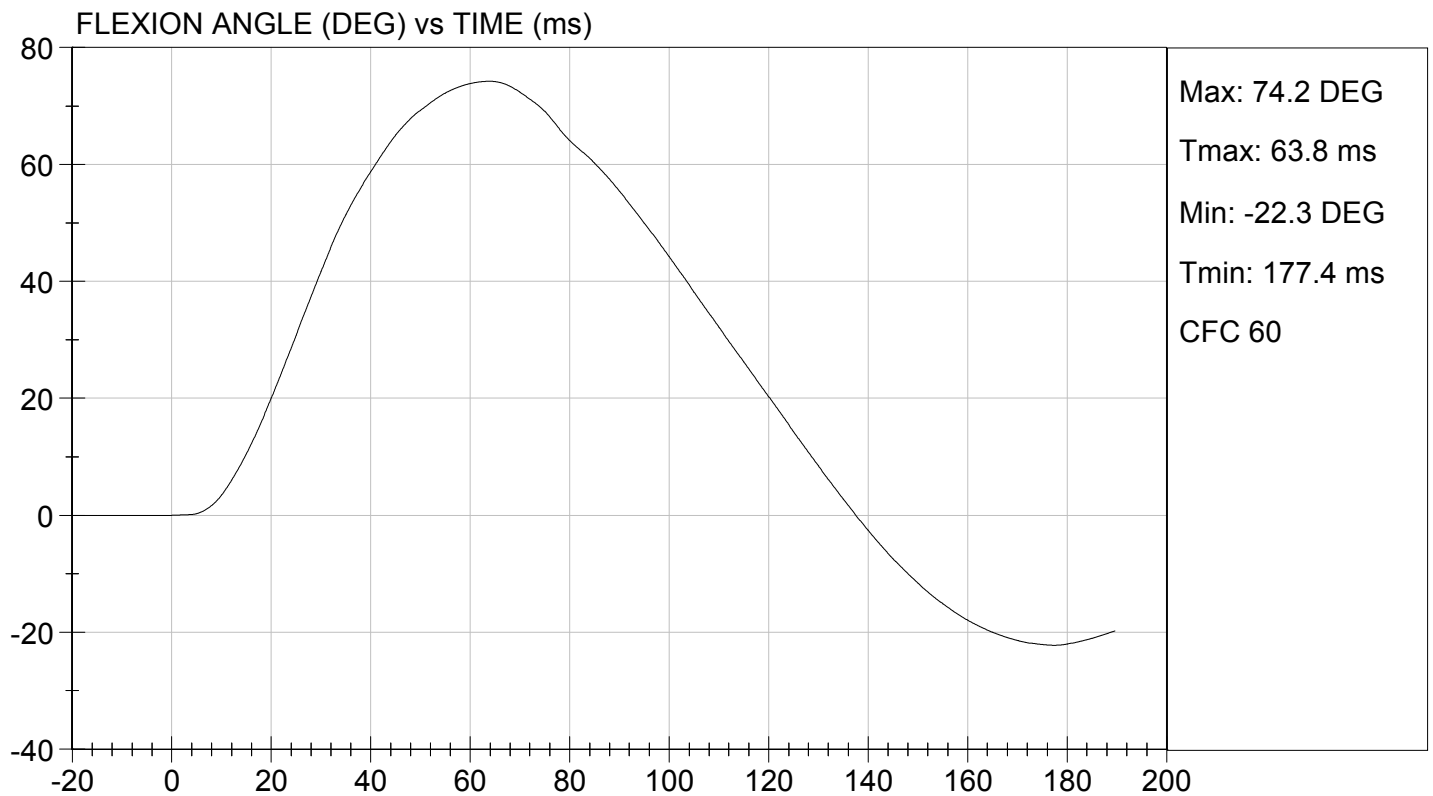
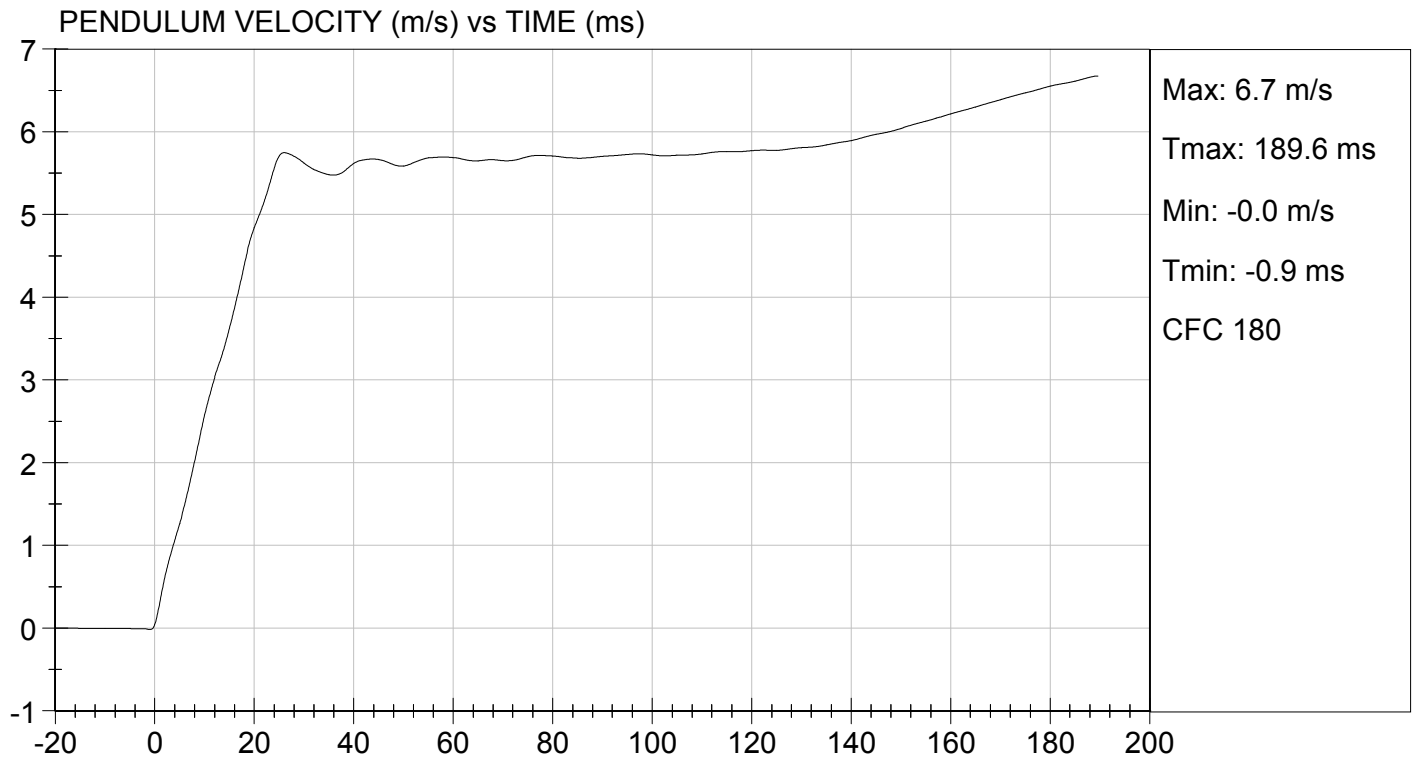
Laboratory Technician

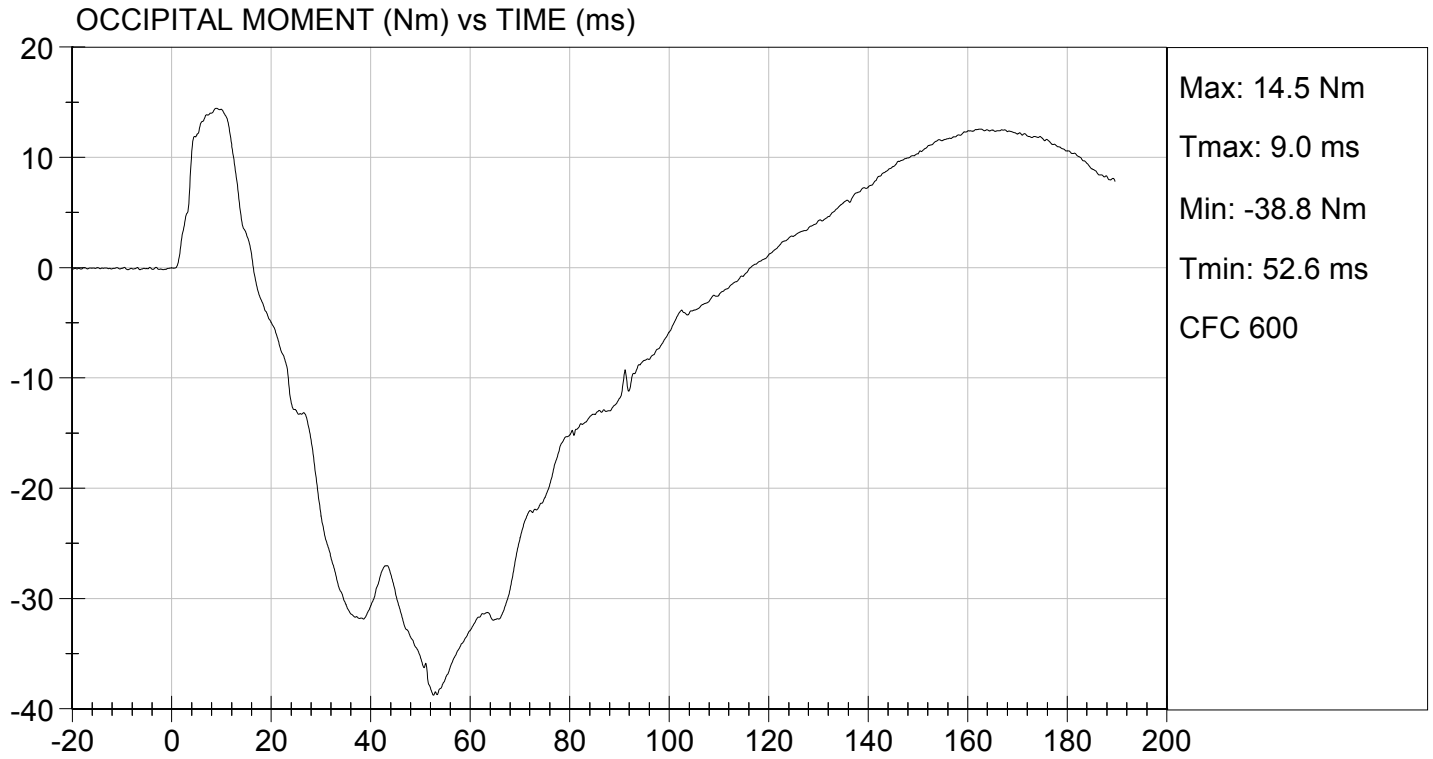
10/07/2015

Test Date

Jessica Gall

Approved By





MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

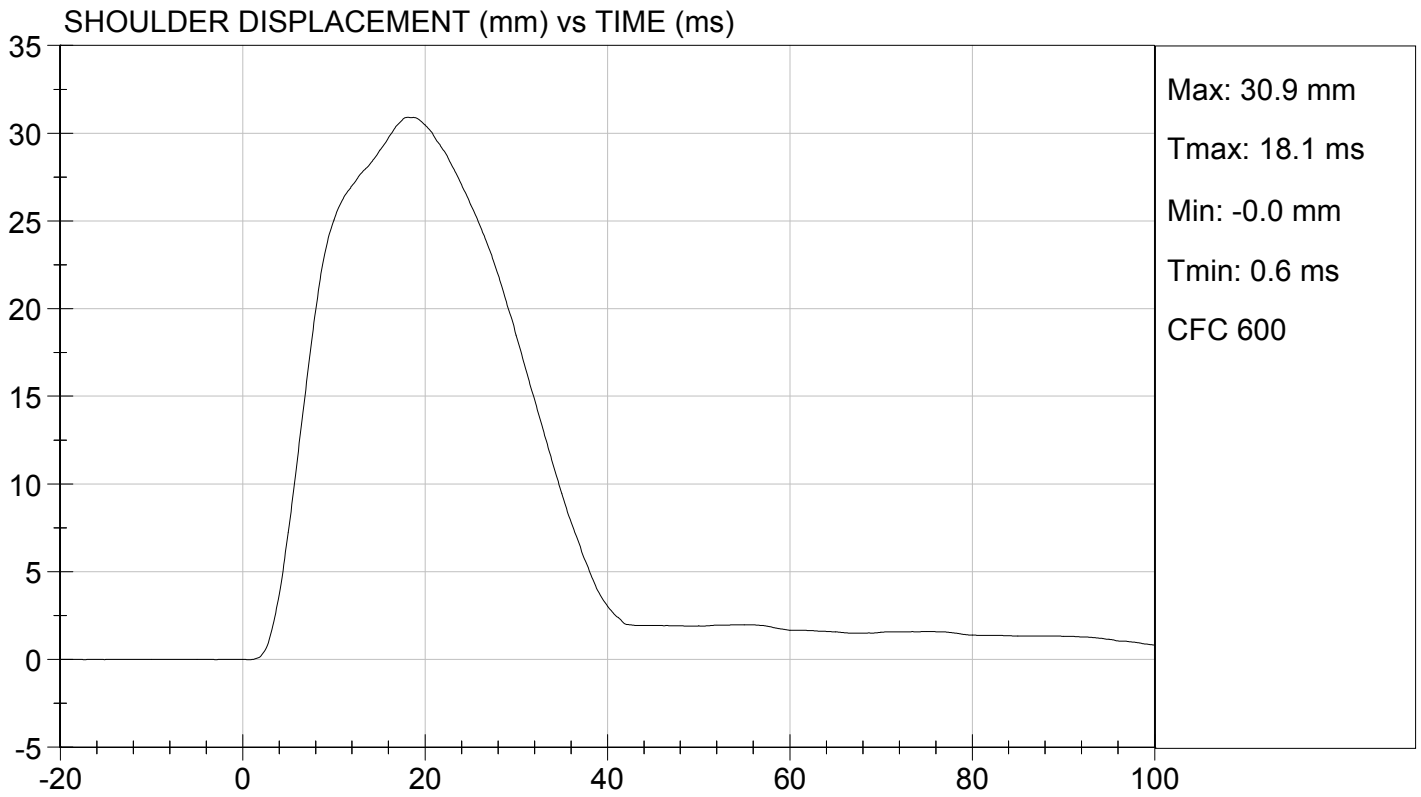
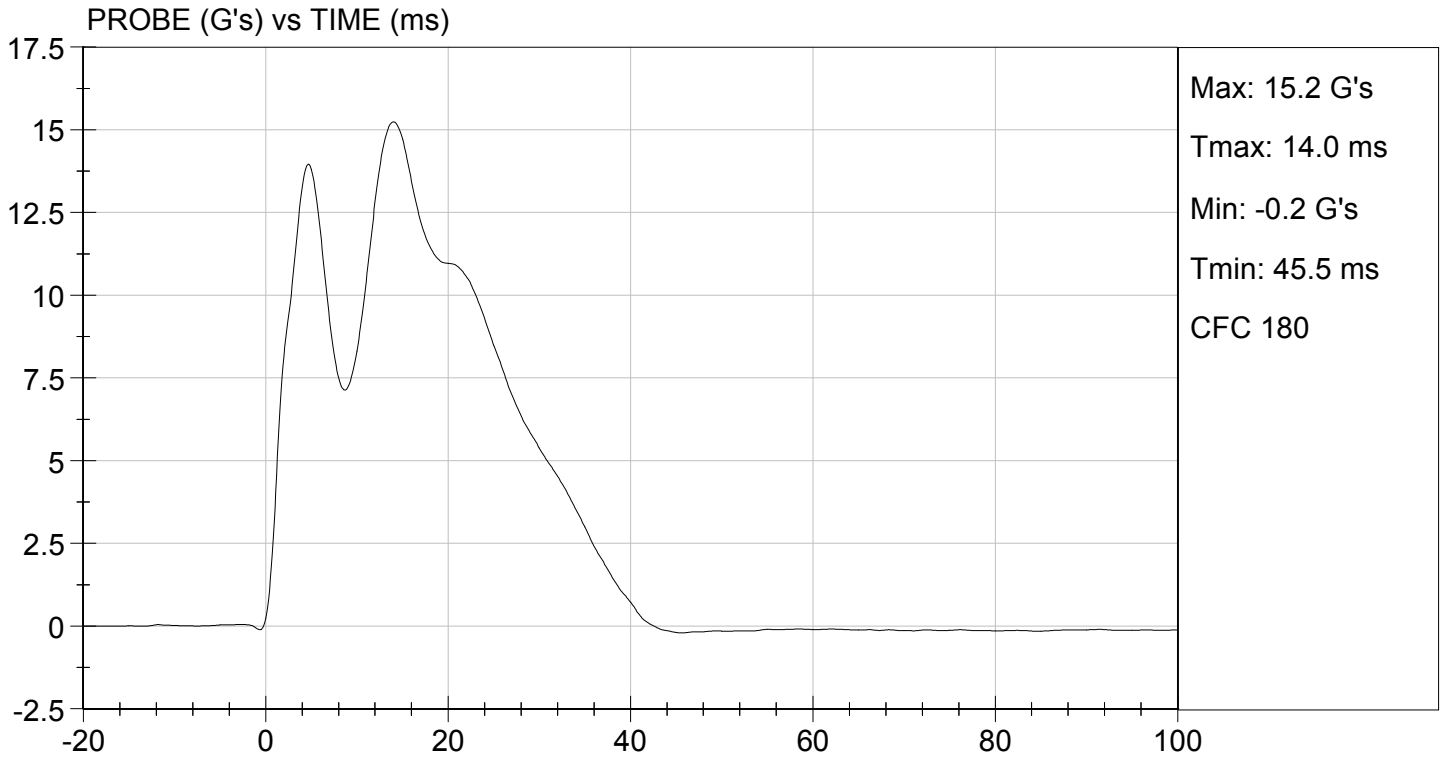
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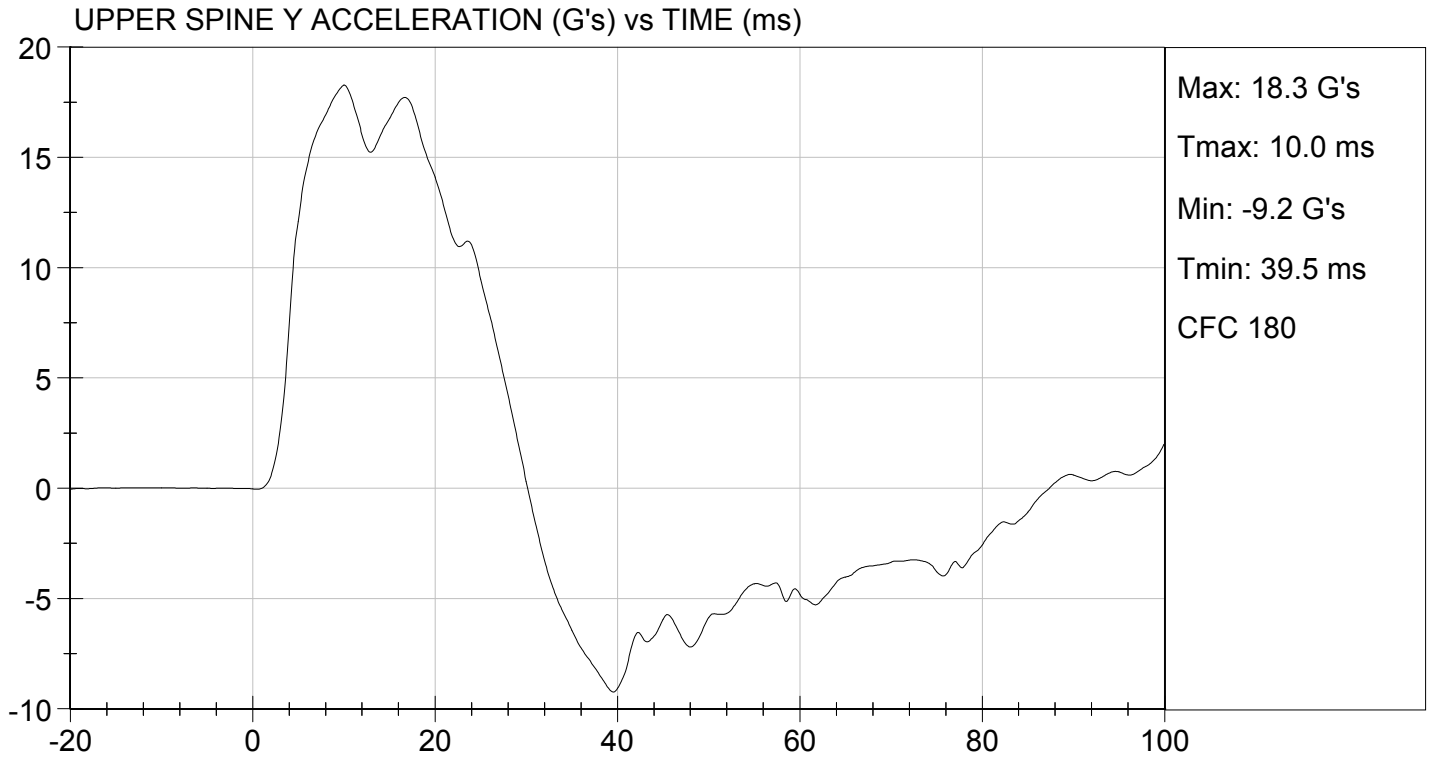
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.6	Pass
Laboratory Relative Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	31	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	18	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/07/2015
 Test Date

Jessica Hall
 Approved By





**MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

Test I.D.: D153144

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	6.60 to 6.80	6.77	Pass
Maximum Probe Acceleration	G's	30 to 36	31	Pass
Shoulder Displacement	mm	31 to 40	38	Pass
Upper Rib Displacement	mm	25 to 32	30	Pass
Middle Rib Displacement	mm	30 to 36	33	Pass
Lower Rib Displacement	mm	32 to 38	34	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	37	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	30	Pass
Overall Test Results				Pass

David Schoedel

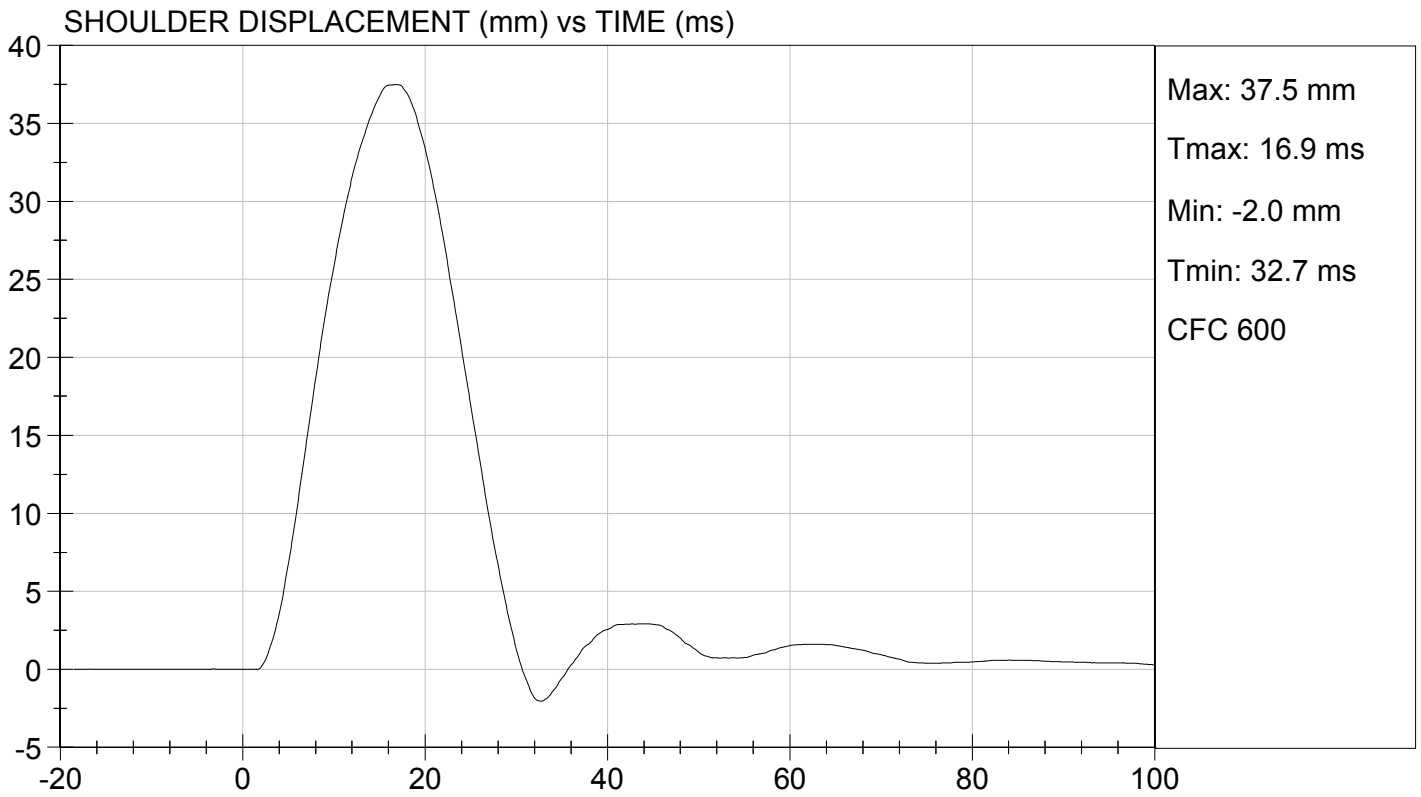
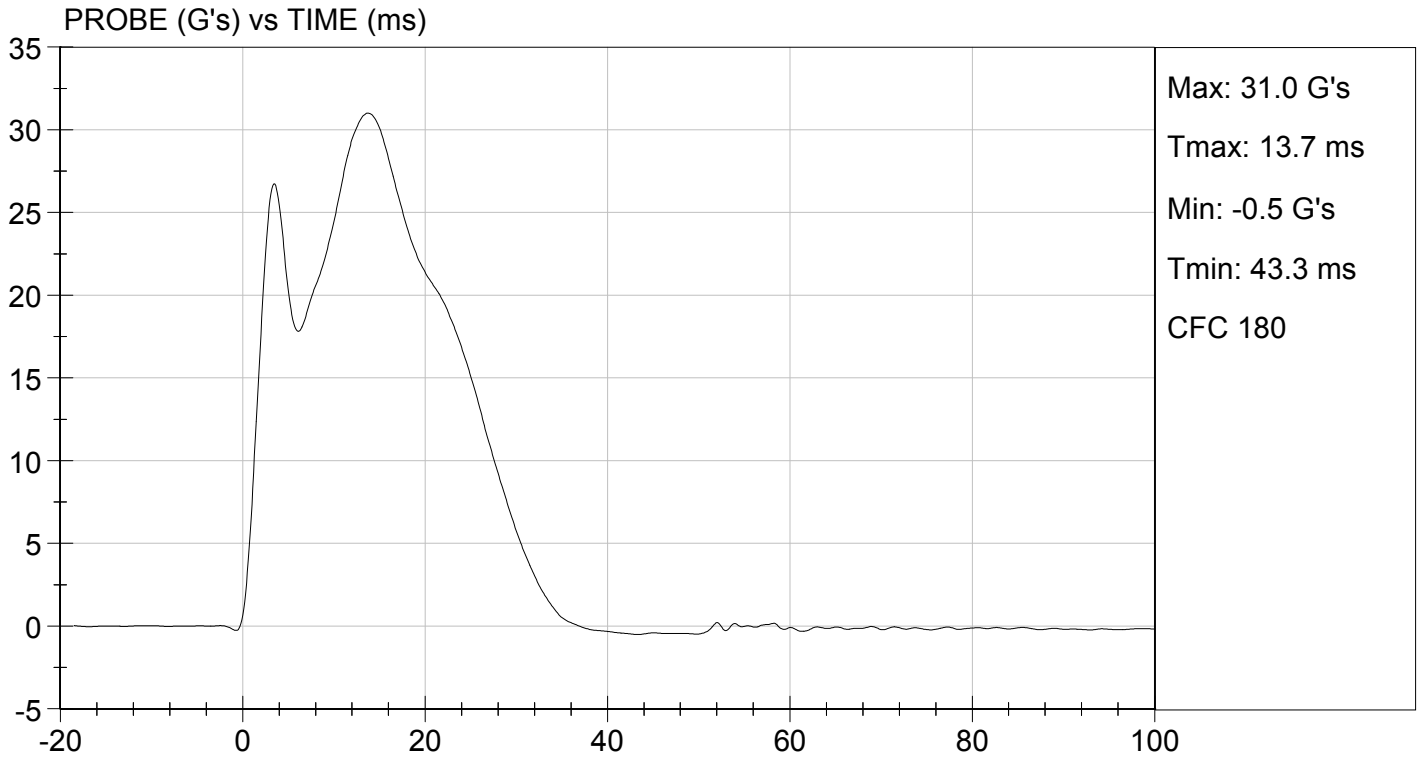
 Laboratory Technician

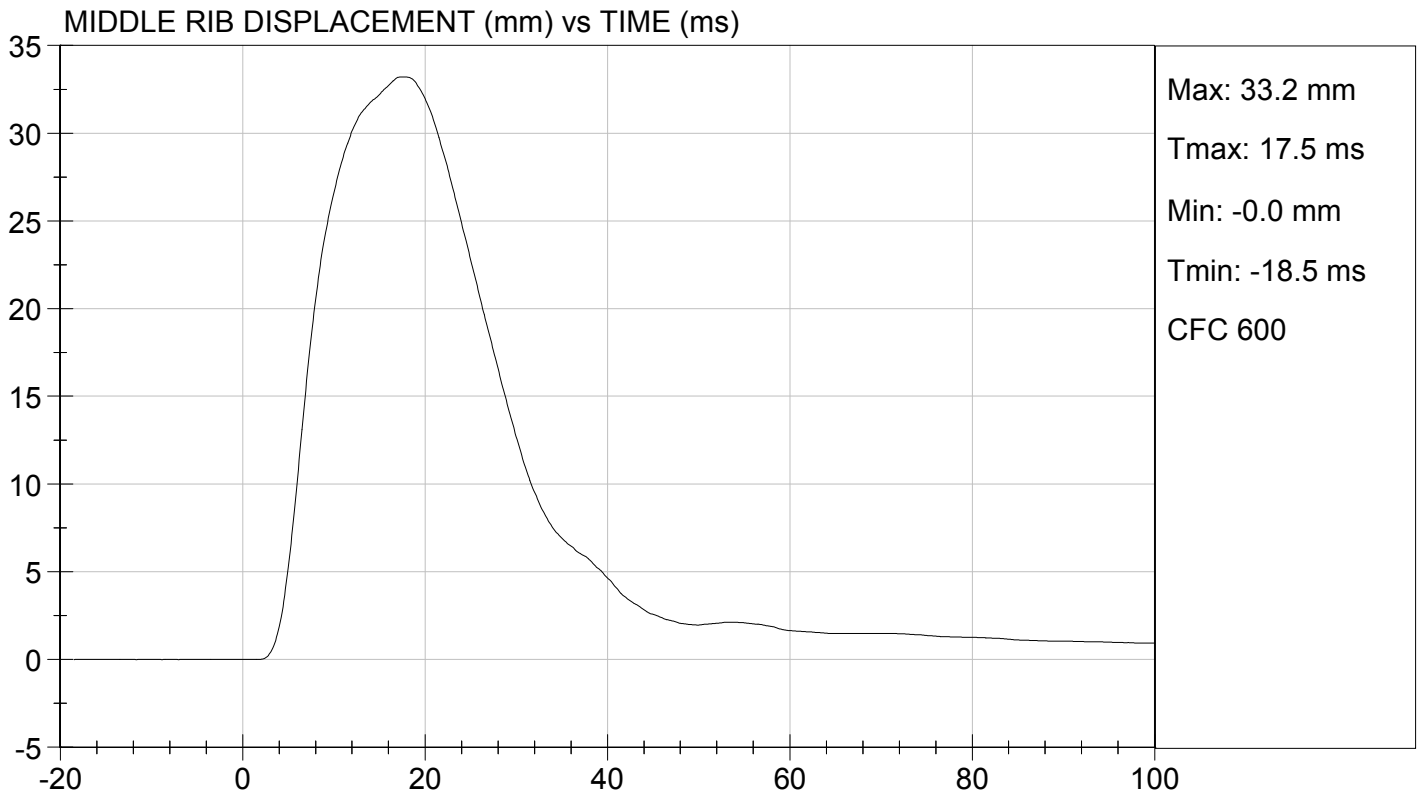
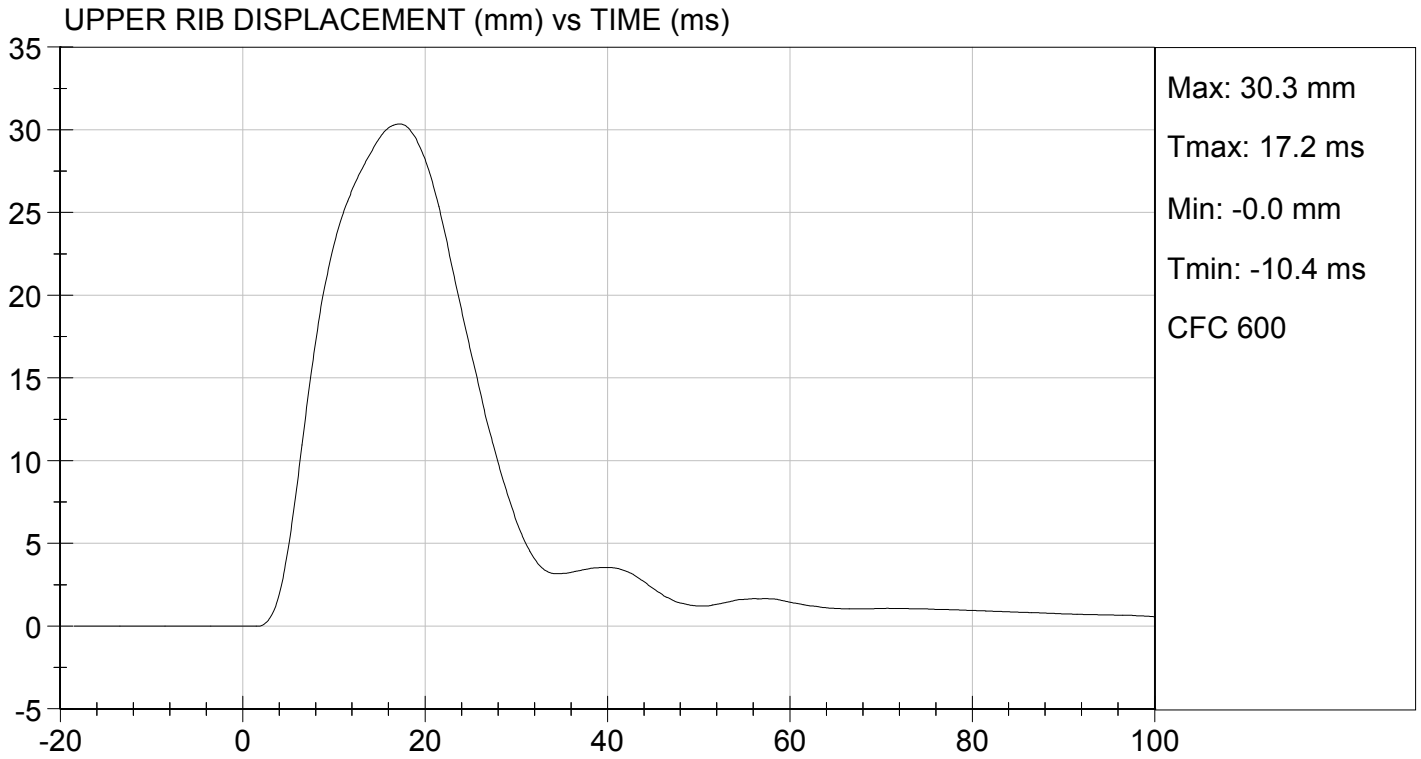
10/07/2015

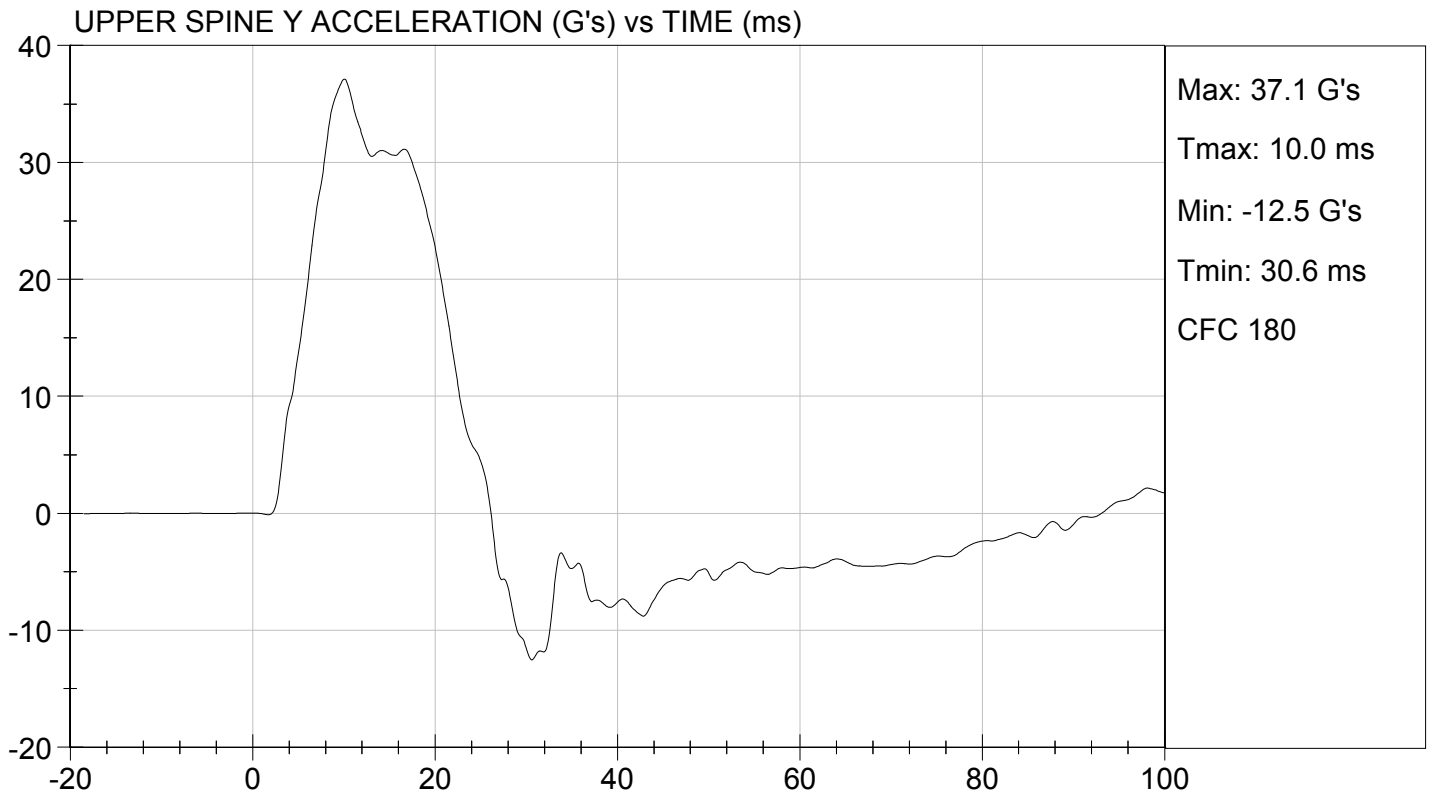
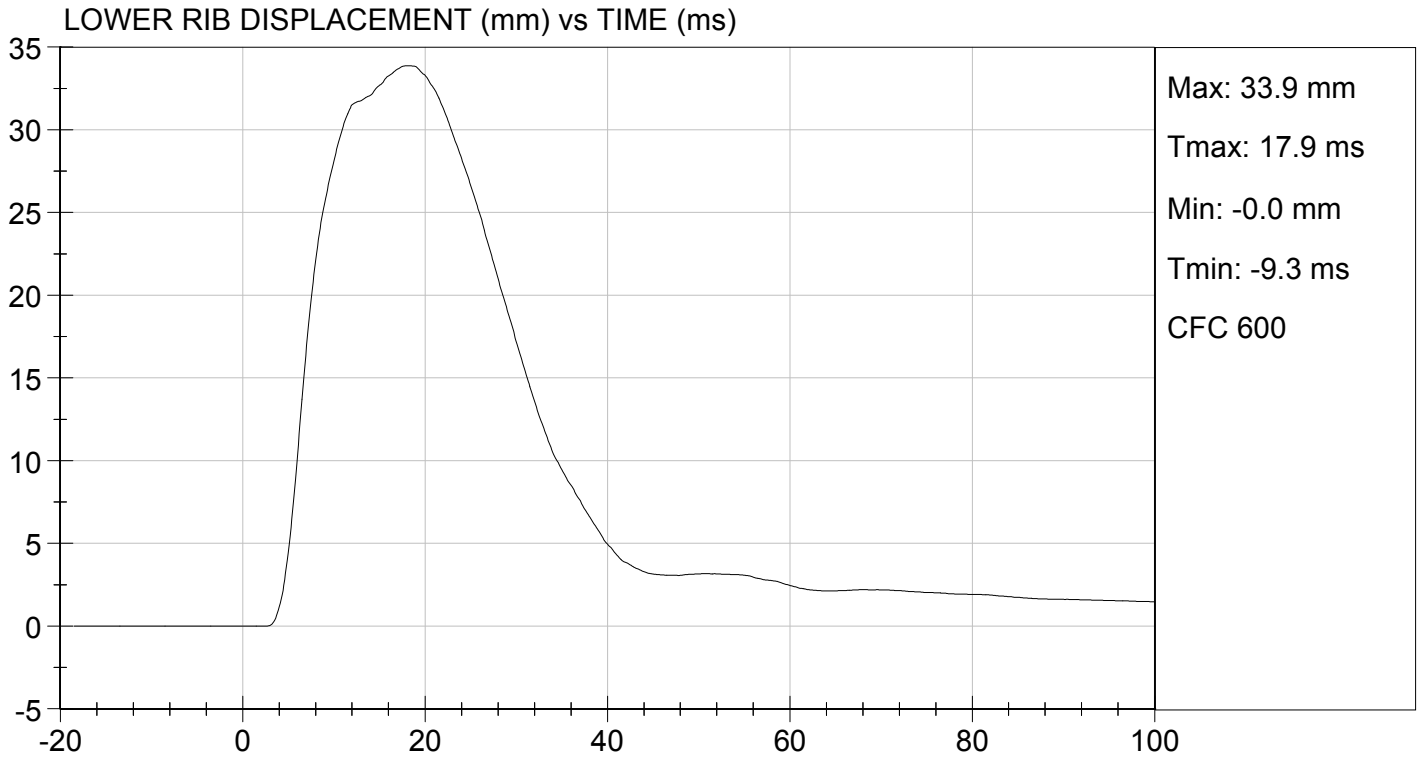
 Test Date

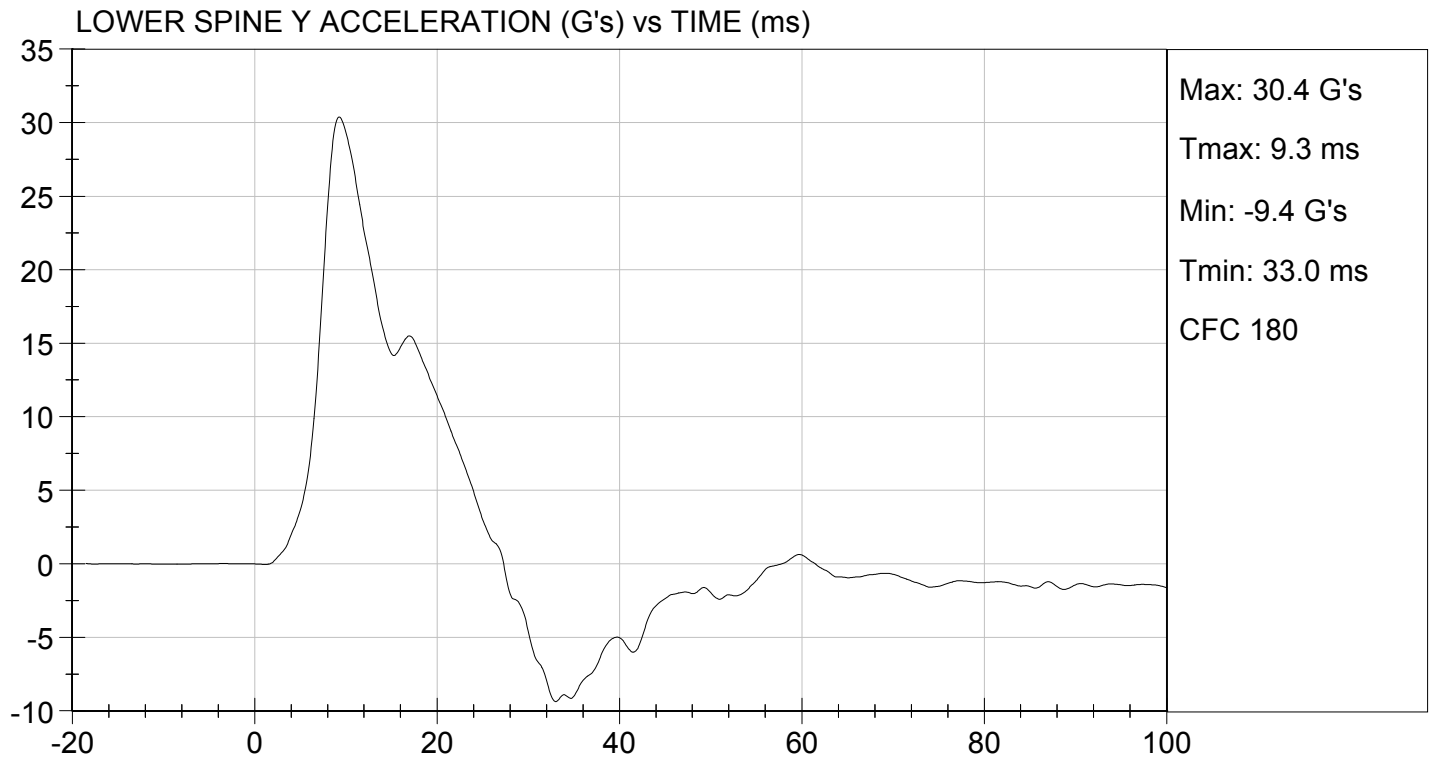
Jessica Hall

 Approved By









MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D153145

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	14 to 18	16	Pass
Upper Rib Displacement	mm	32 to 40	35	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	39	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	15	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	9	Pass
Overall Test Results				Pass

David Schoedel

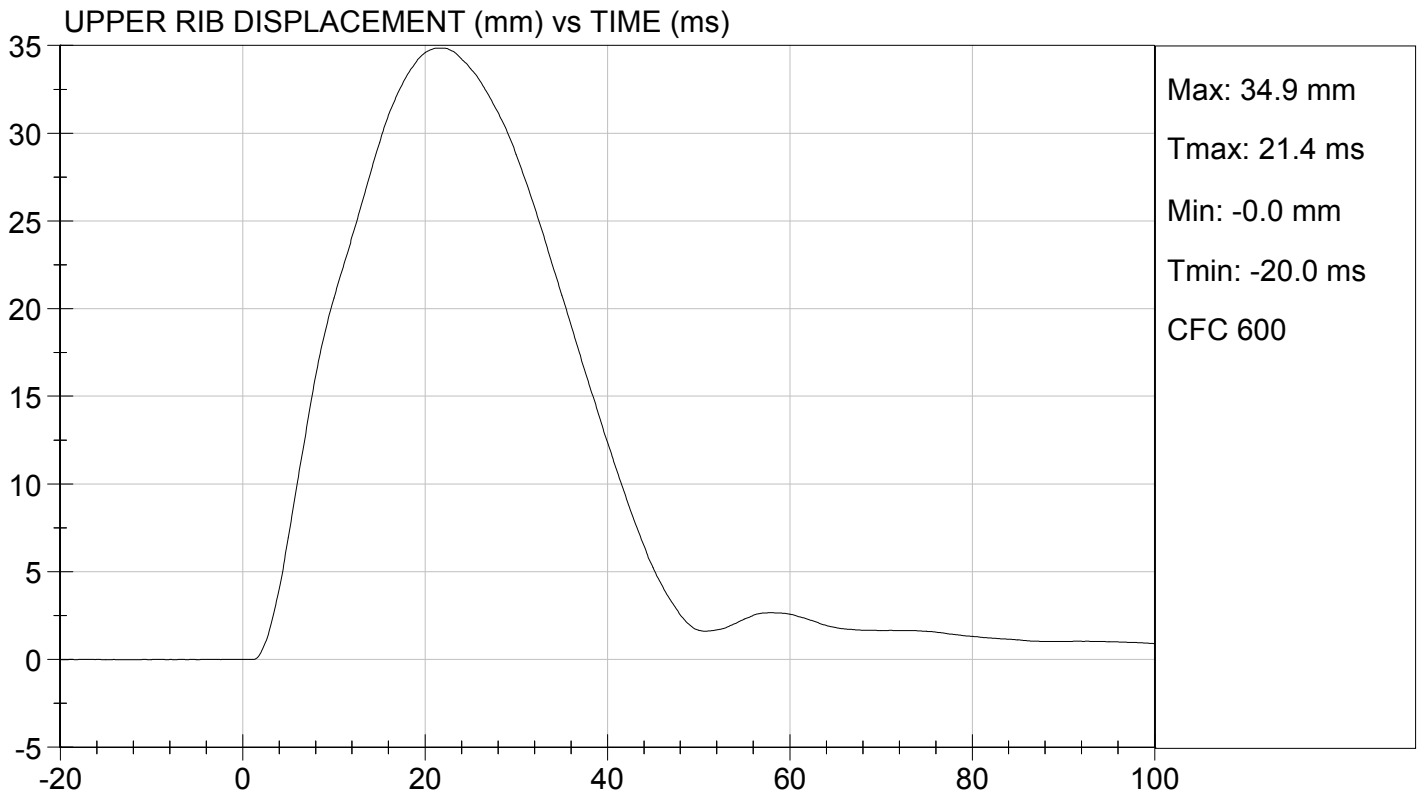
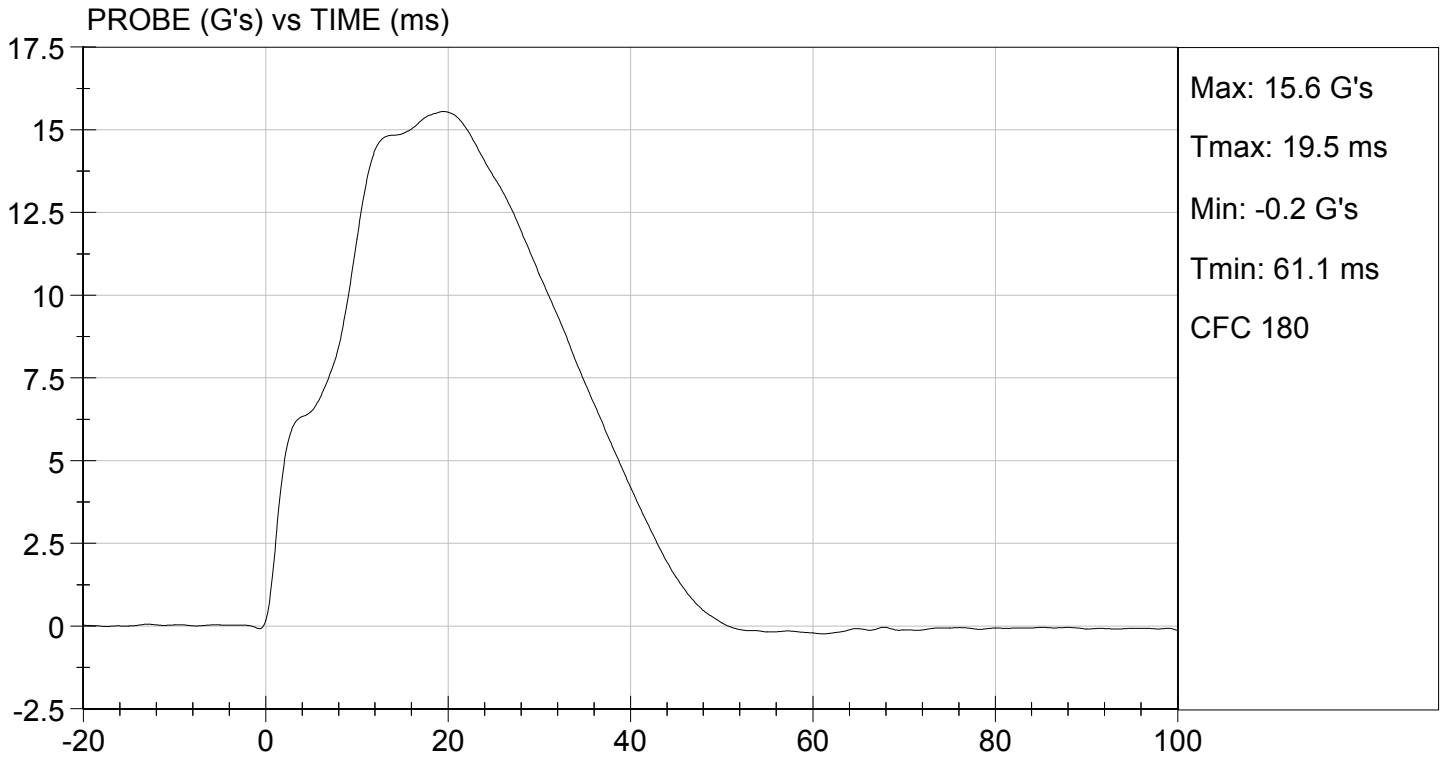
Laboratory Technician

10/07/2015

Test Date

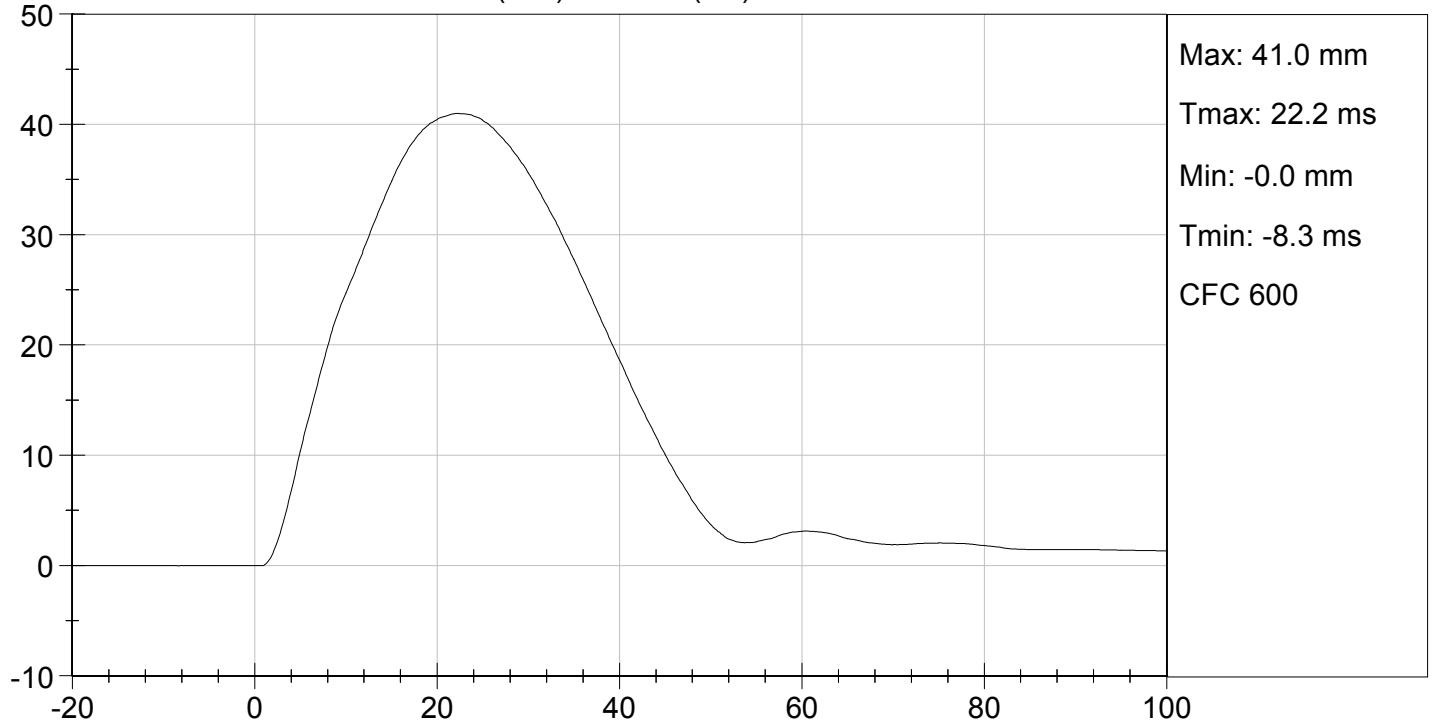
Jessica Hall

Approved By

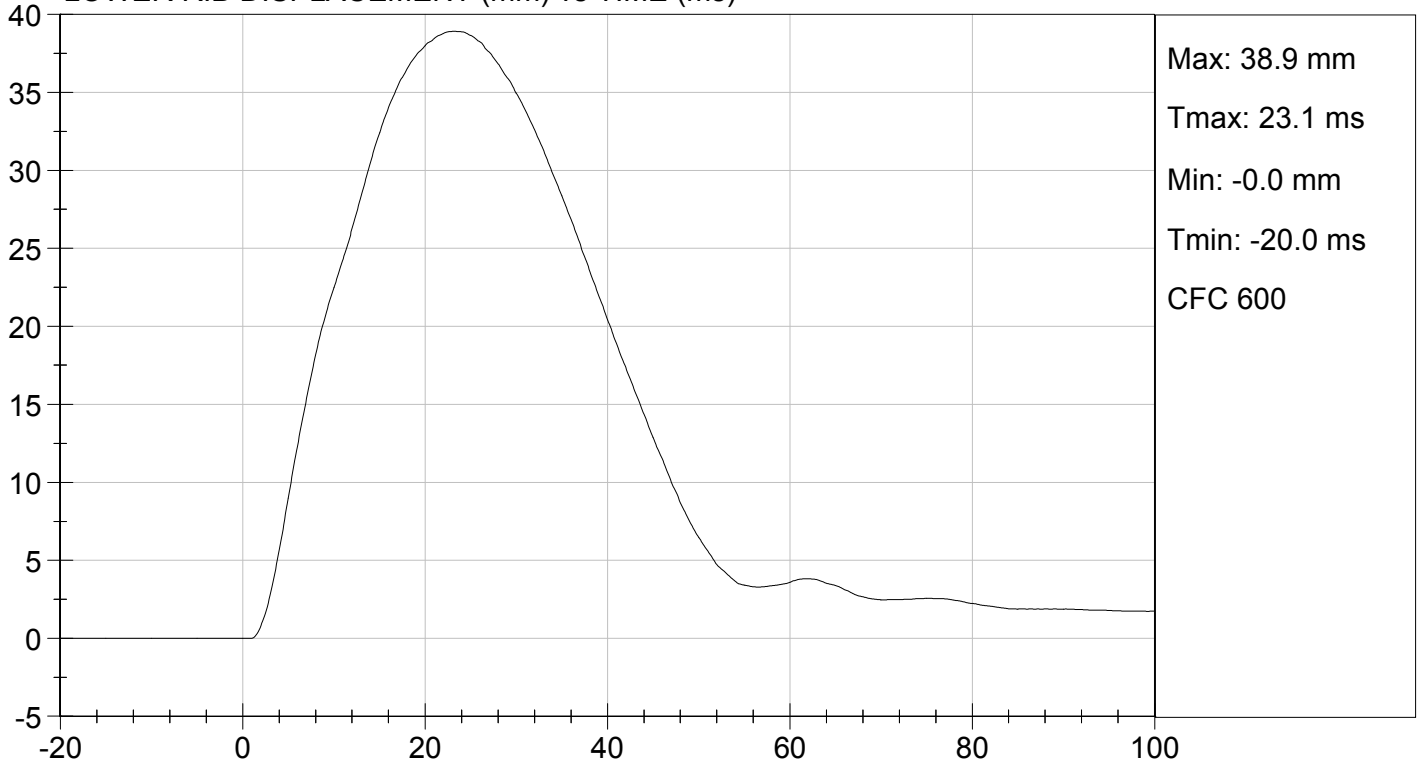




MIDDLE RIB DISPLACEMENT (mm) vs TIME (ms)

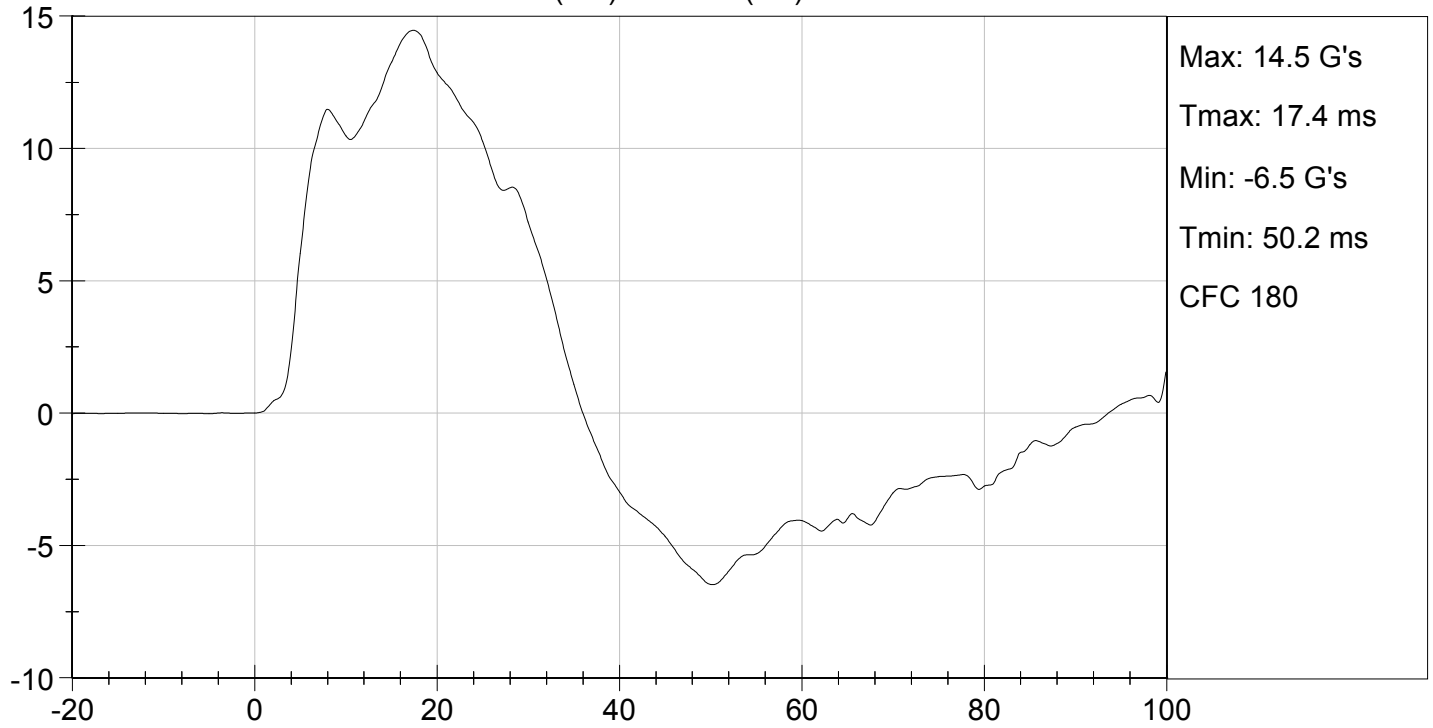


LOWER RIB DISPLACEMENT (mm) vs TIME (ms)

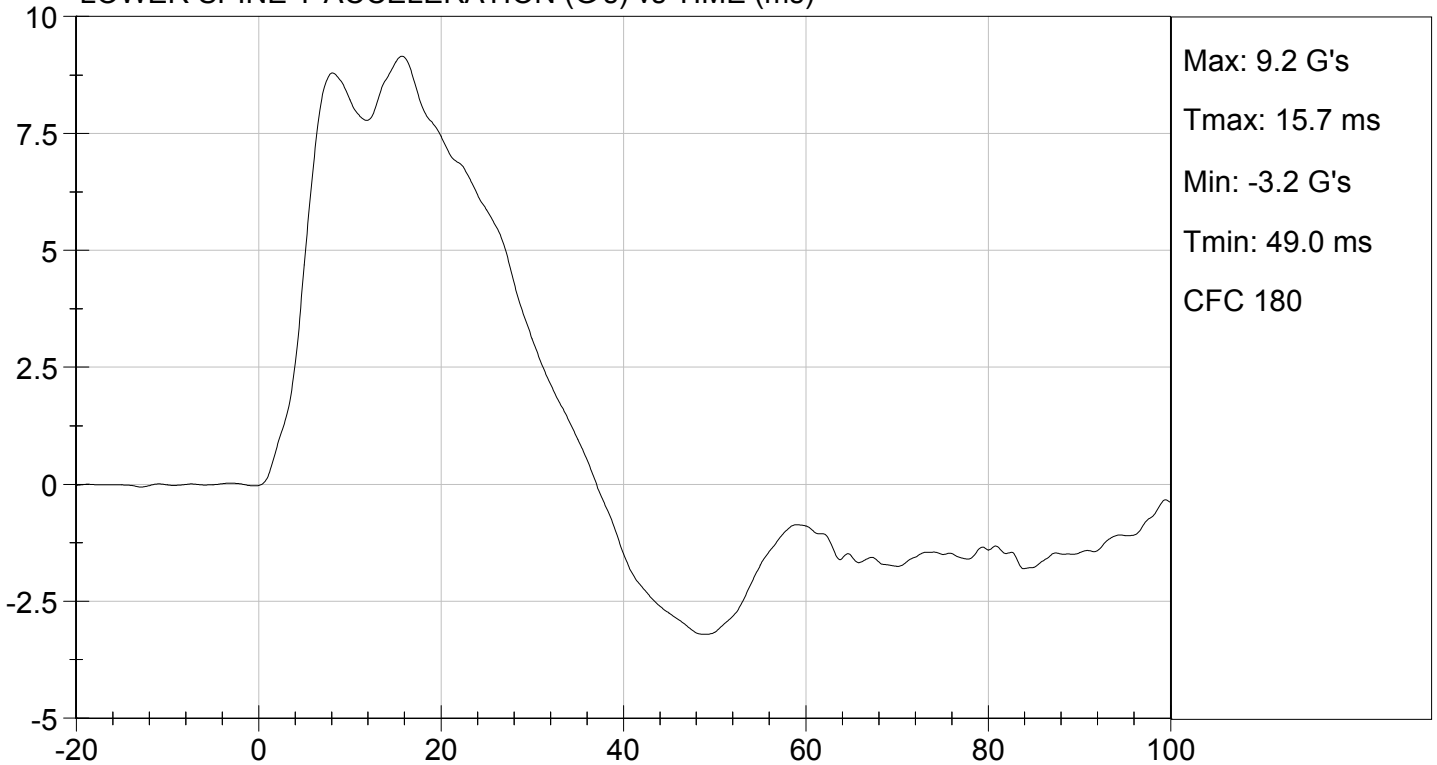




UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



LOWER SPINE Y ACCELERATION (G's) vs TIME (ms)



**MGA RESEARCH CORPORATION
 ABDOMINAL IMPACT TEST
 SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

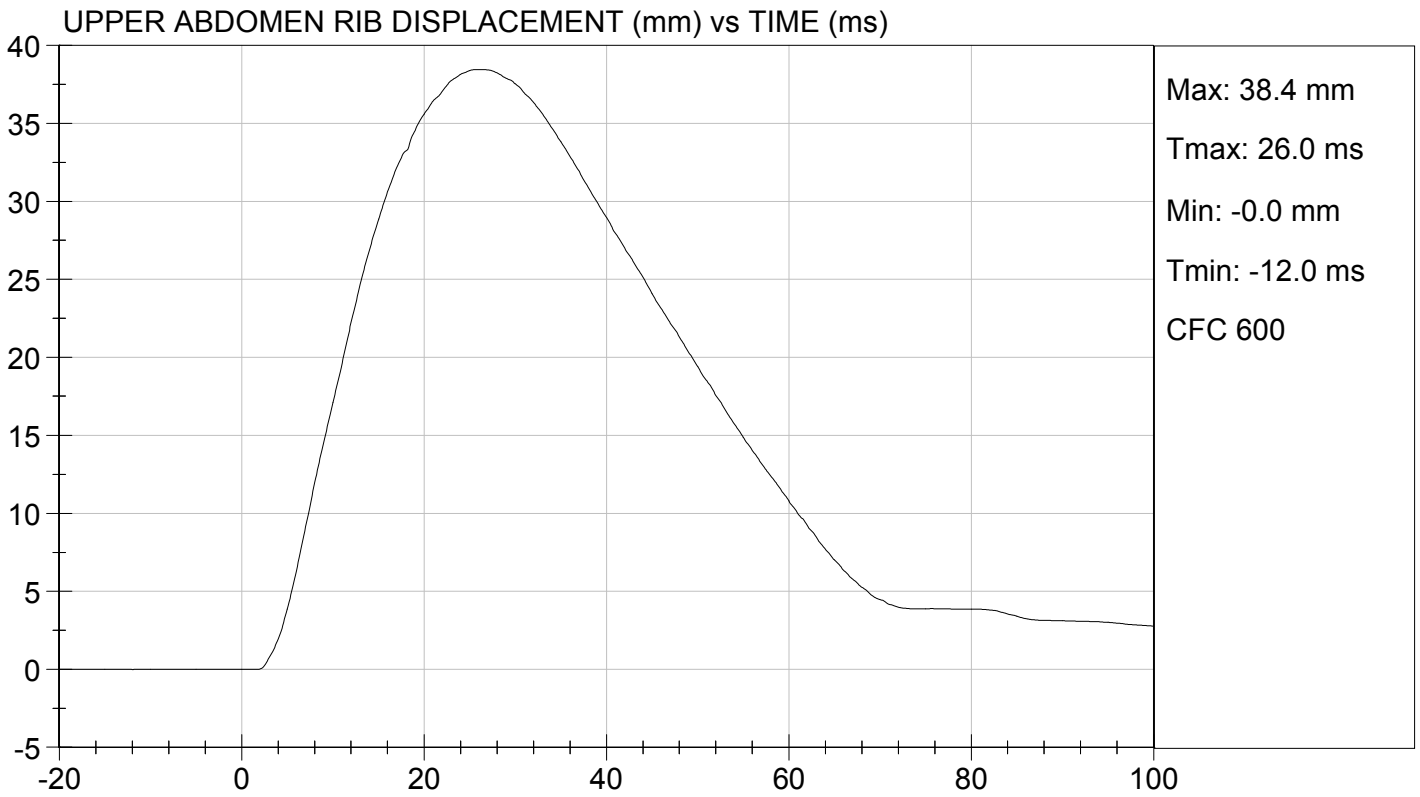
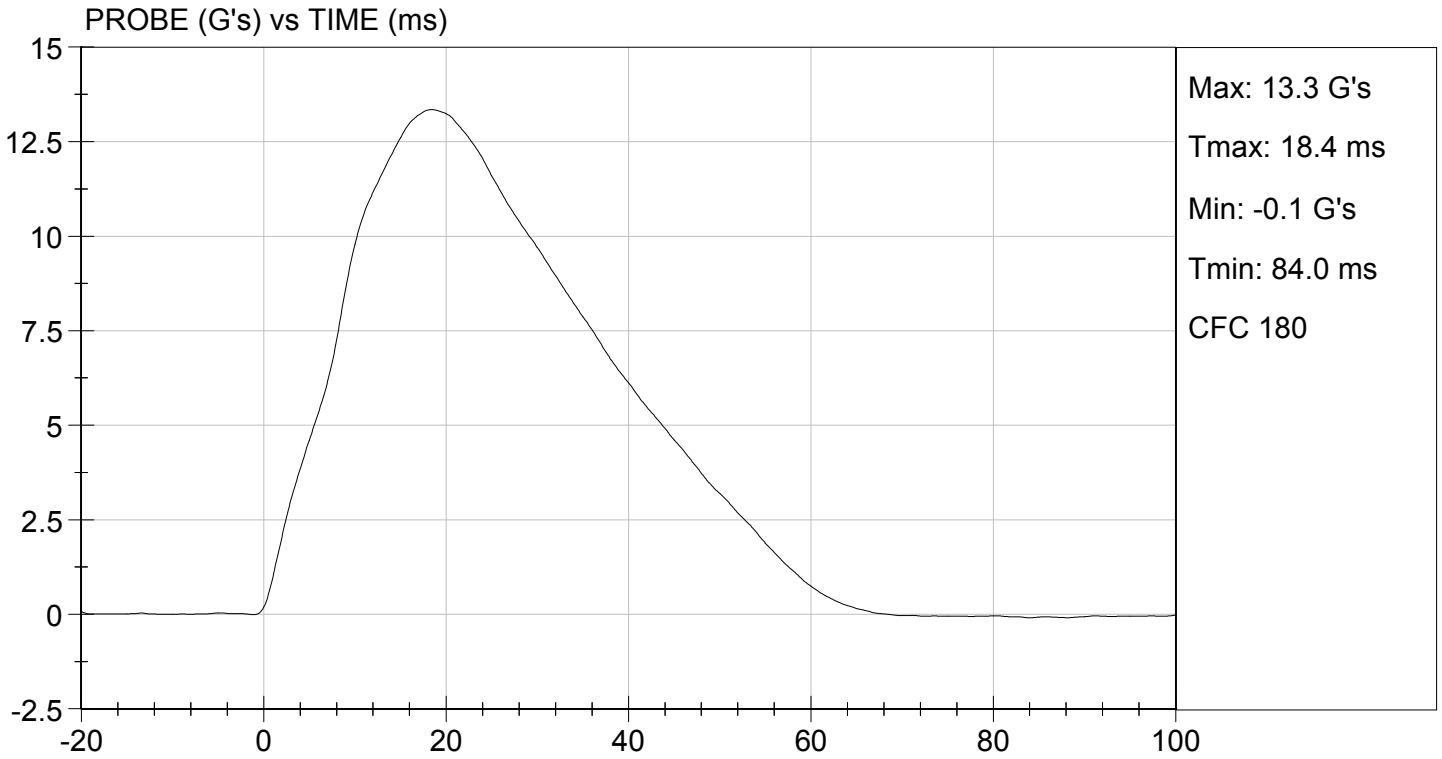
Test I.D: D153146

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	12 to 16	13	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	38	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	42	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

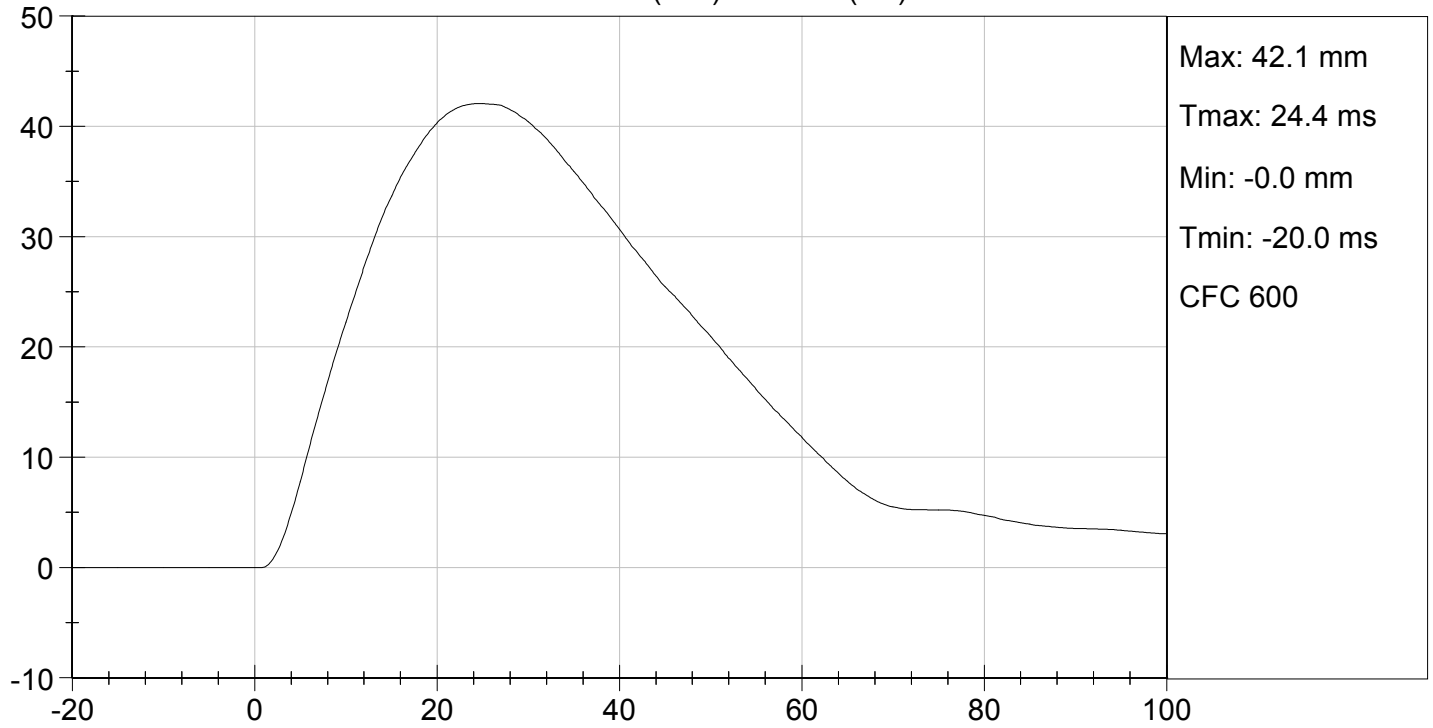
10/07/2015
 Test Date

Jessica Hall
 Approved By

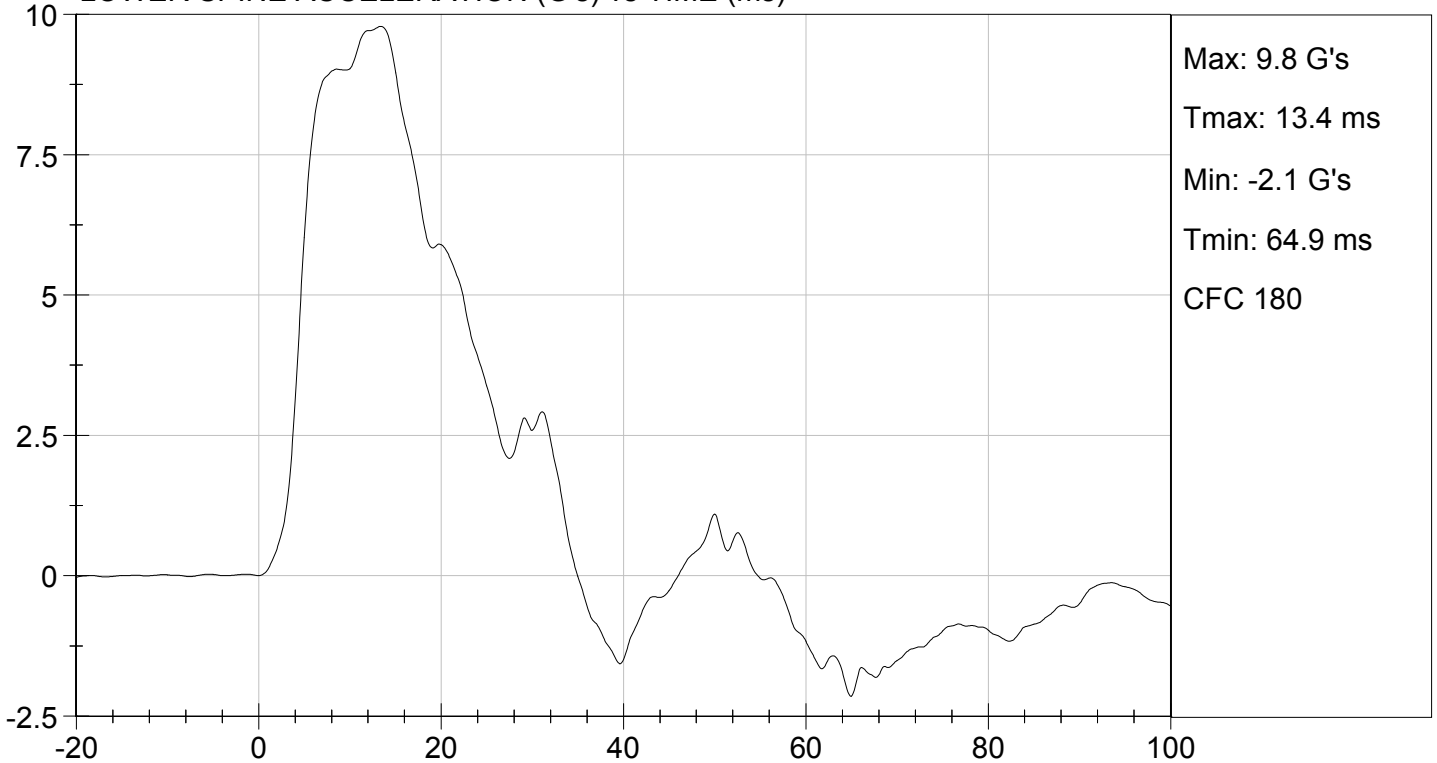




LOWER ABDOMEN RIB DISPLACEMENT (mm) vs TIME (ms)



LOWER SPINE ACCELERATION (G's) vs TIME (ms)



MGA RESEARCH CORPORATION
PELVIS IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D153147

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	44	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	40	Pass
Peak Acetabulum Force	N	3600 to 4300	4,029	Pass
Overall Test Results				Pass

David Schoedel

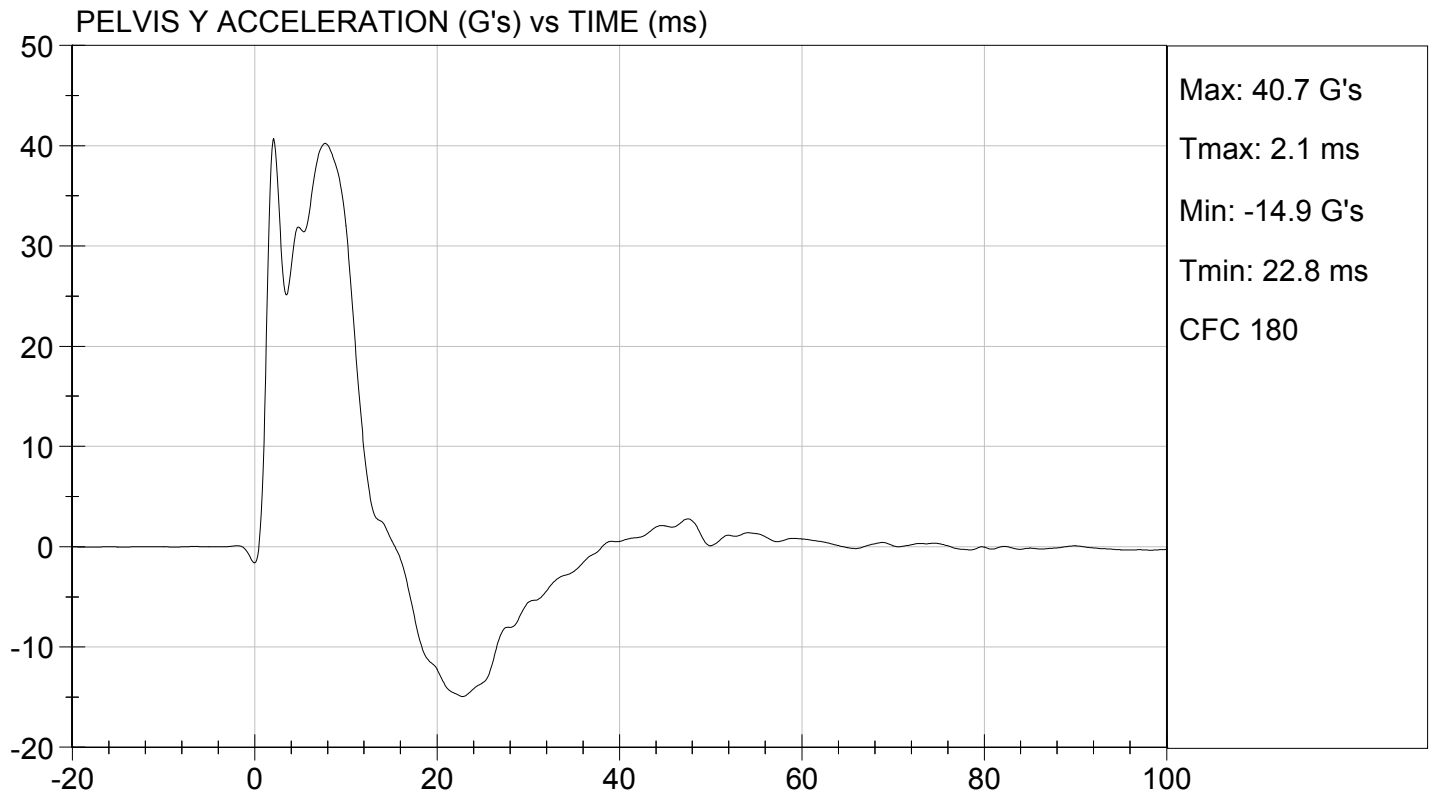
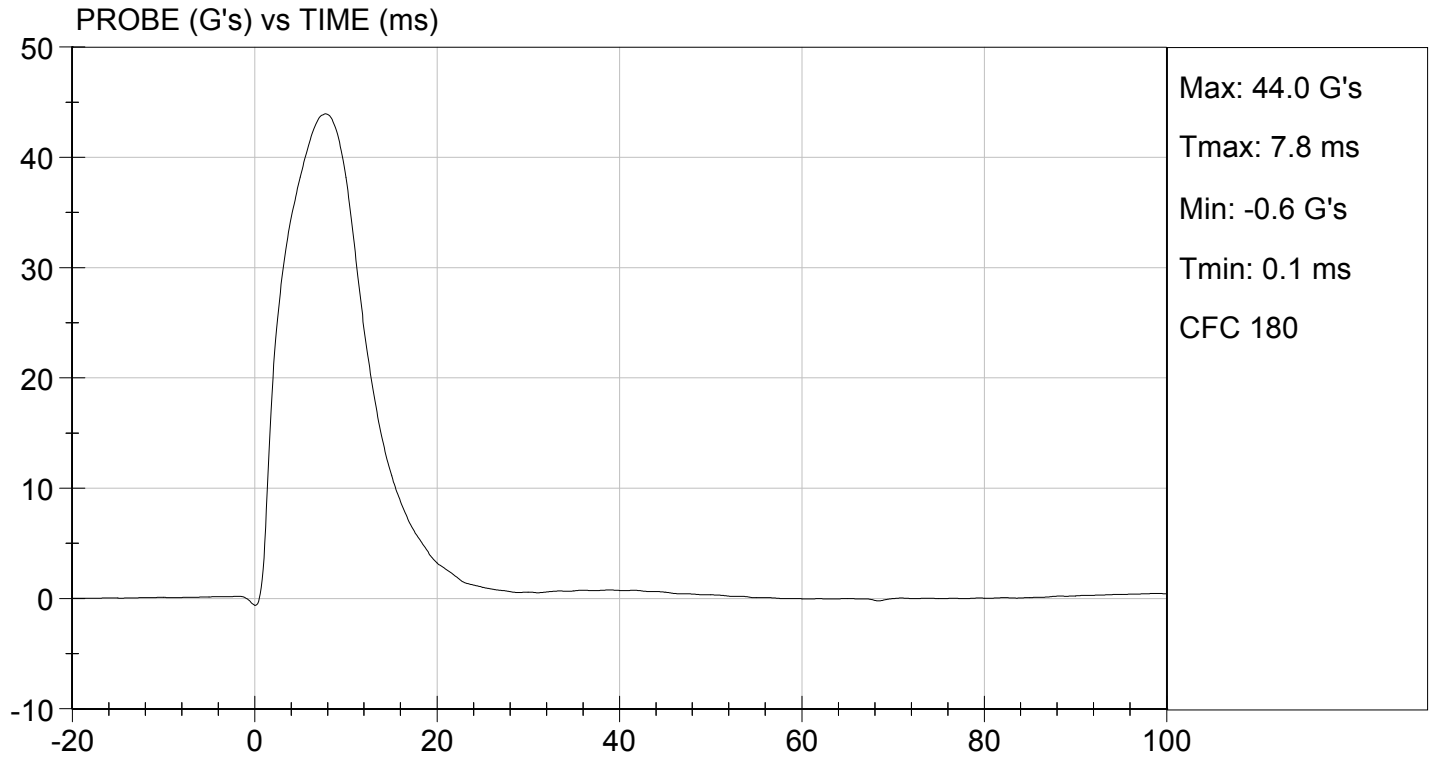
 Laboratory Technician

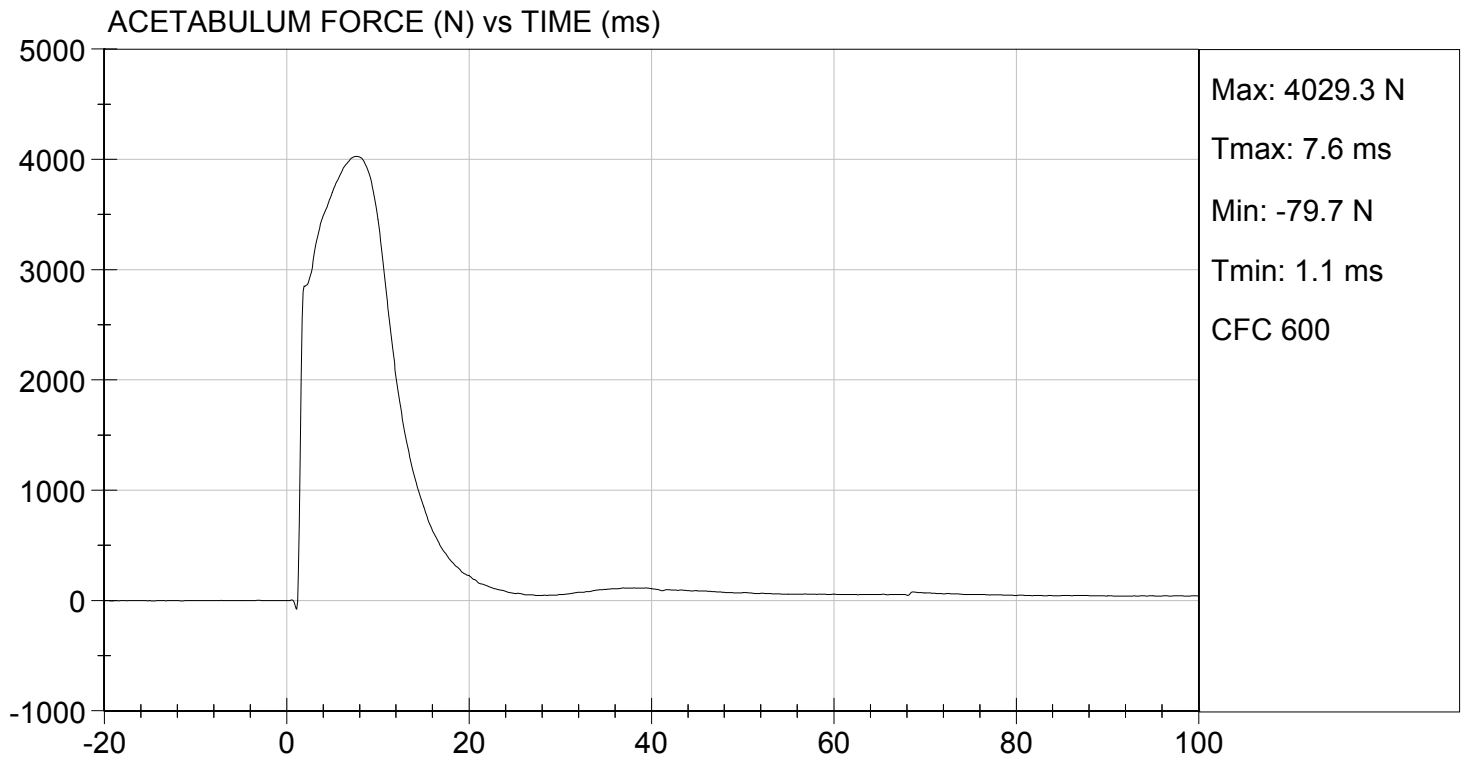
10/07/2015

 Test Date

Jessica Hall

 Approved By





MGA RESEARCH CORPORATION
ILIAC IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

Test I.D: D153148

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.6	Pass
Humidity	%	10 to 70	49	Pass
Impact Velocity	m/s	4.20 to 4.40	4.27	Pass
Maximum Probe Acceleration	G's	36 to 45	41	Pass
Pelvis Y Acceleration	G's	28 to 39	34	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,889	Pass
Overall Test Results				Pass

David Schoedel

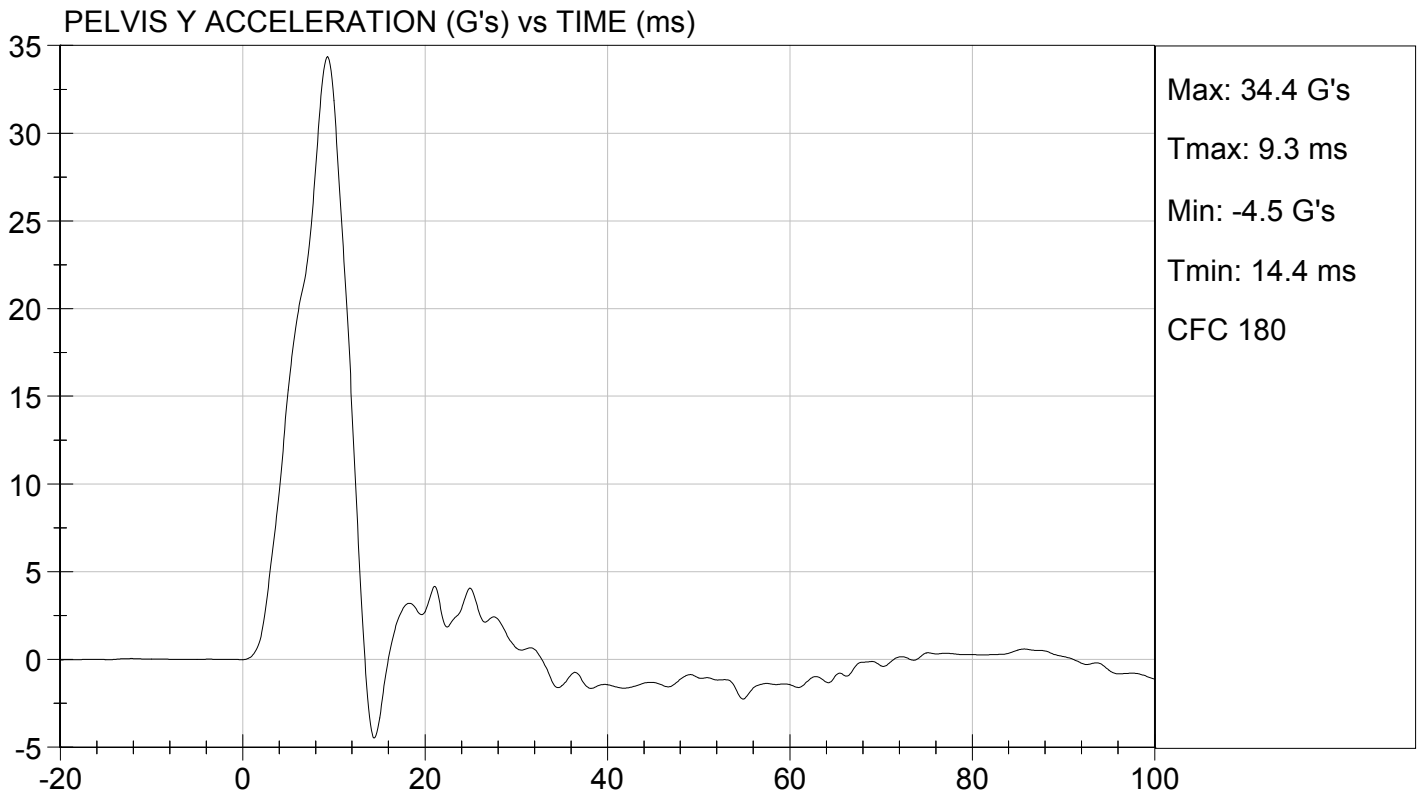
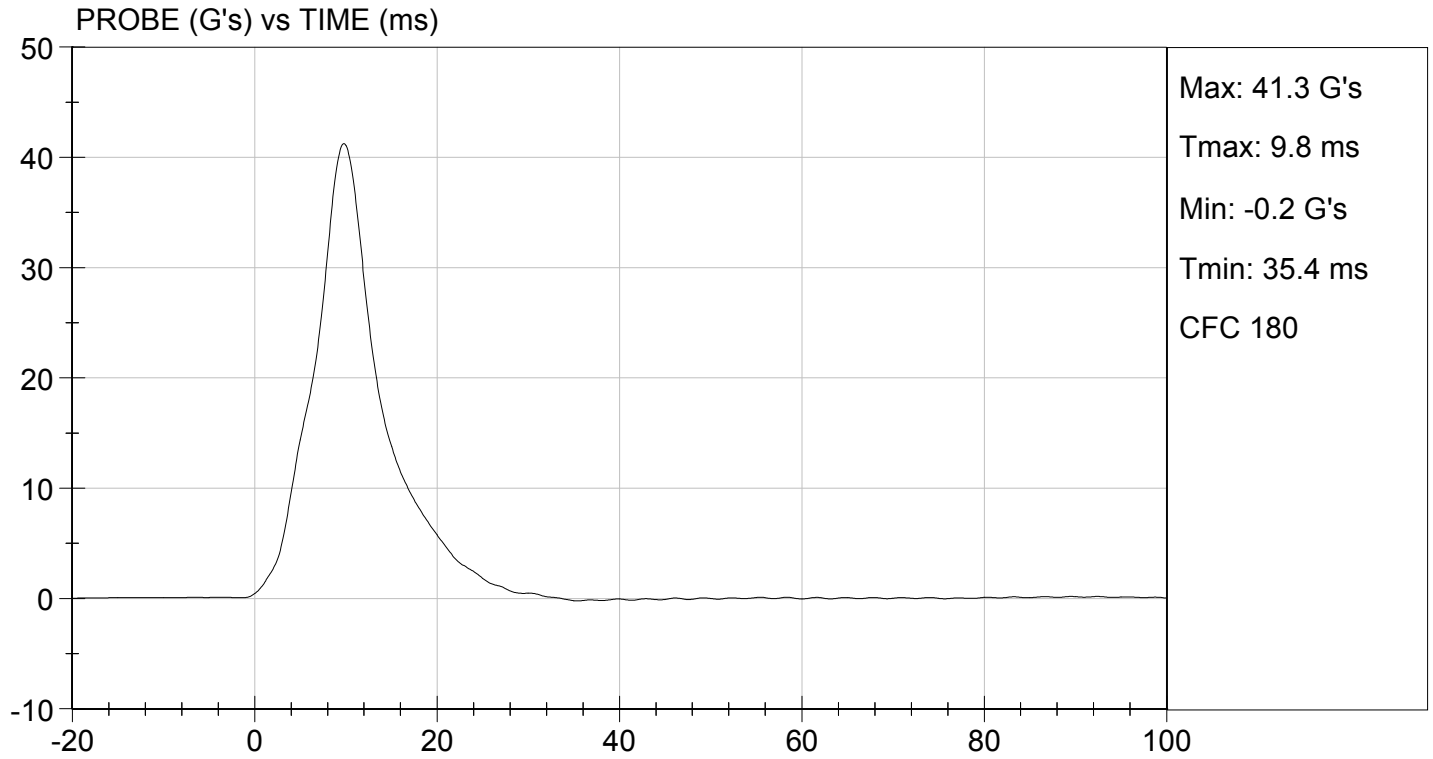
Laboratory Technician

10/07/2015

Test Date

Jessica Hall

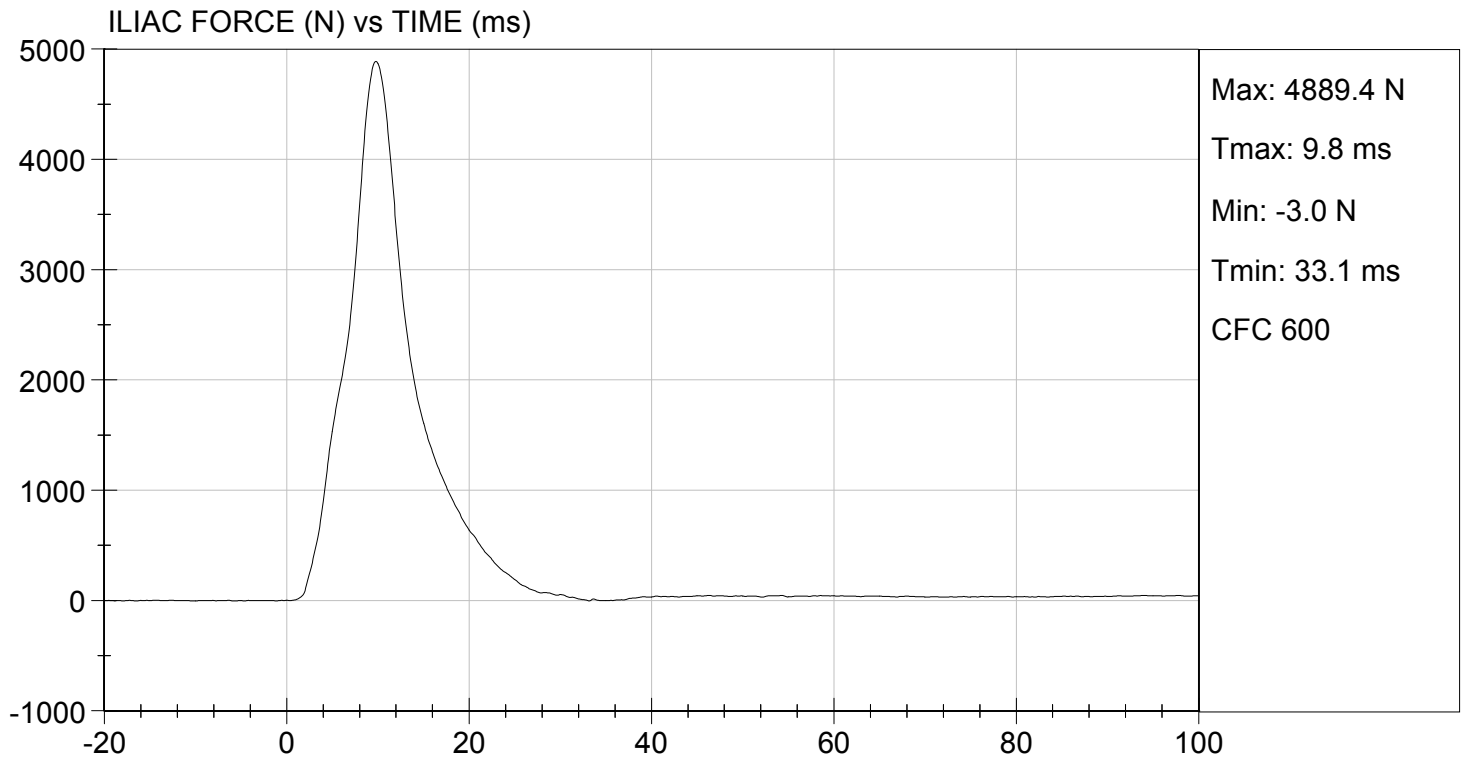
Approved By





TEST DESC: ILLIAC
VELOCITY: 14.01 ft/s, 4.27 m/s

TEST DATE: 10/07/2015
TEST #: D153148



SID-IIsD External Measurements
SN: 296

No.	Name	Spec. (mm)	Result	Pass/Fail
A	Sitting Height	772 - 788	784	Pass
B	Shoulder Pivot Height	437 - 453	442	Pass
C	H-point Height	79 - 89	83	Pass
D	H-point from Seatback	141 - 151	145	Pass
E	Shoulder Pivot from Backline	97 - 107	99	Pass
F	Thigh Clearance	119 - 135	121	Pass
G	Head Breadth	140 - 148	142	Pass
H	Head Back from Backline	40 - 46	45	Pass
I	Head Depth	178 - 188	180	Pass
J	Head Circumference	541 - 551	548	Pass
K	Buttock to Knee Length	514 - 540	535	Pass
L	Popliteal Height	343 - 369	358	Pass
M	Knee Pivot to Floor Height	392 - 409	404	Pass
N	Buttock Popliteal Length	416 - 442	435	Pass
O	Chest Depth w/o Jacket	195 - 211	206	Pass
P	Foot Length	216 - 232	219	Pass
Q	Hip Breadth (w/ pelvic plugs)	313 - 323	316	Pass
R	Arm Length	249 - 259	250	Pass
S	Knee Joint to Seatback	477 - 493	481	Pass
V	Shoulder Width	341 - 357	346	Pass
W	Foot Width	78 - 94	85	Pass
Y	Chest Circumference w/ jacket	851 - 881	870	Pass
Z	Waist Circumference	761 - 791	772	Pass

**MGA RESEARCH CORPORATION
HEAD DROP TEST
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

Test ID: D153341

Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.8	Pass
Laboratory Relative Humidity	%	10 to 70	36	Pass
Peak Resultant Acceleration	G's	115 to 137	125	Pass
Peak Longitudinal Acceleration	G's	+/- 15	-9.0	Pass
Unimodal	N/A	Yes	Yes	Pass
Oscillations	N/A	<15%	Yes	Pass
Overall Test Results				Pass

David Schoedel

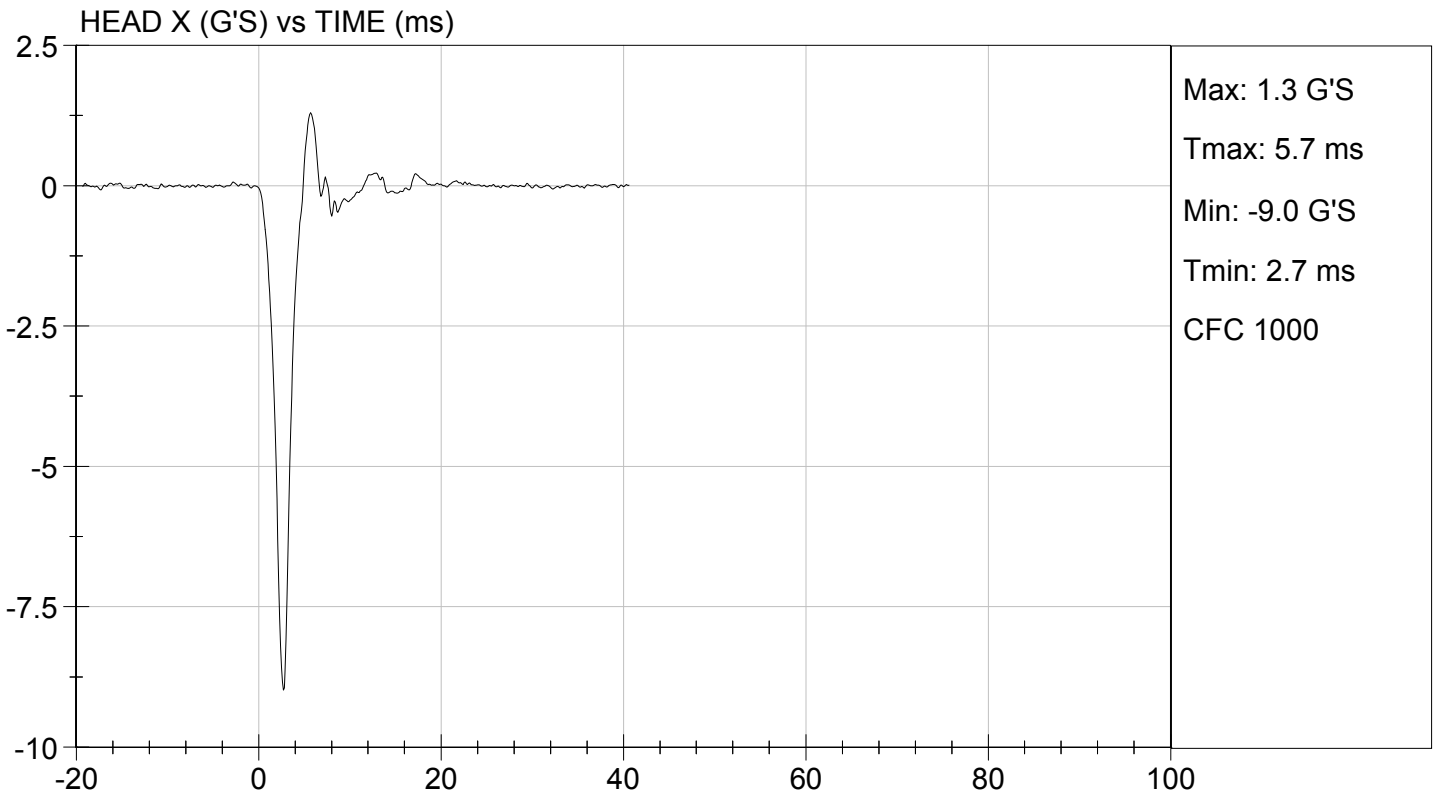
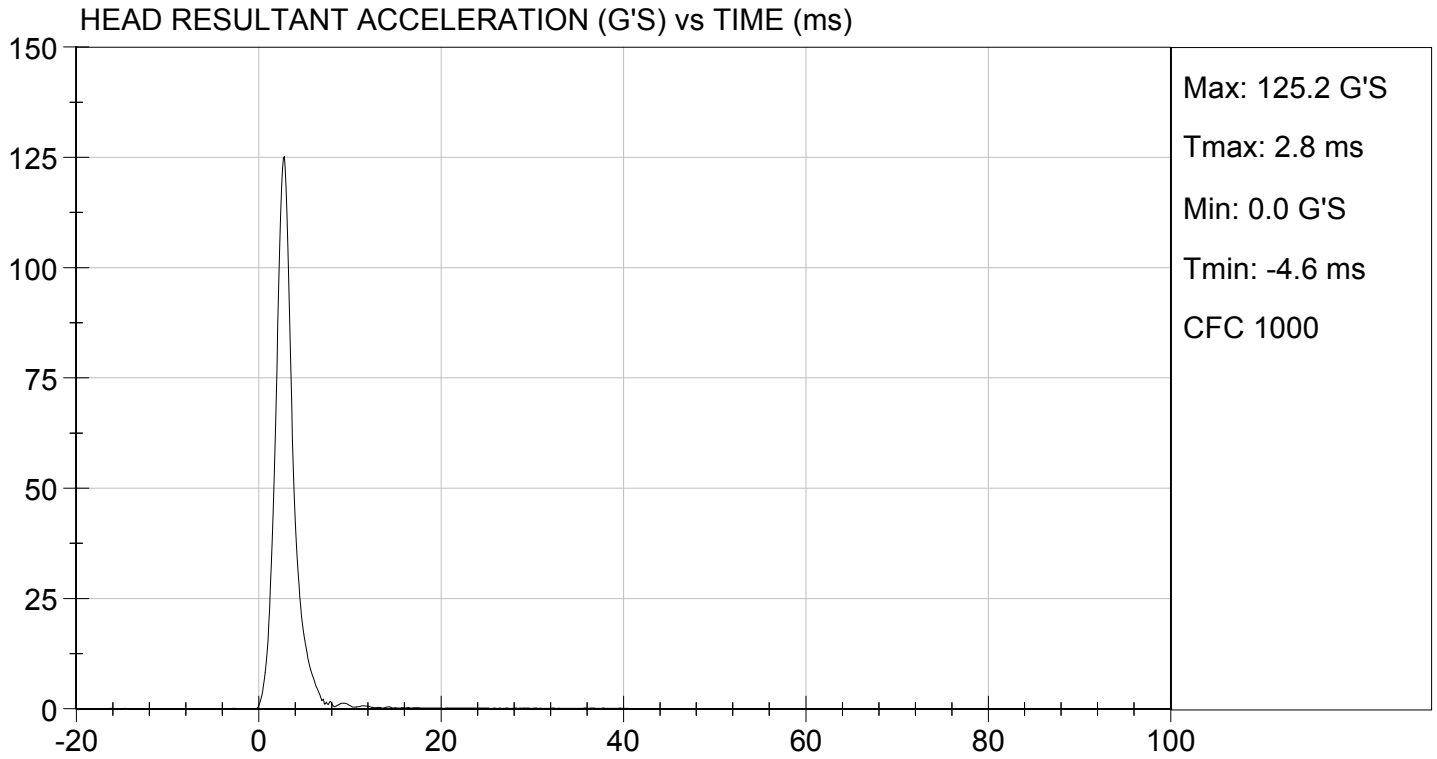
Laboratory Technician

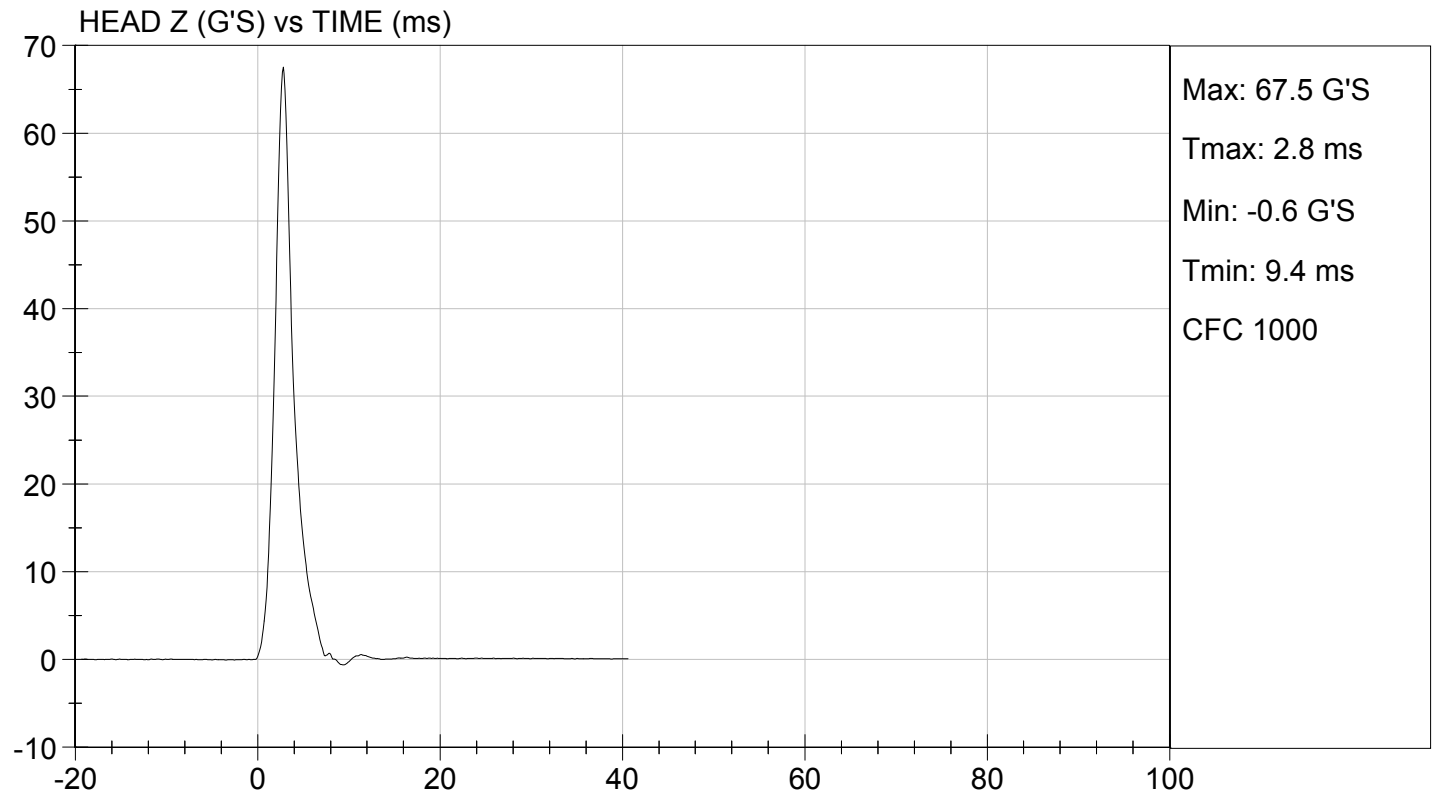
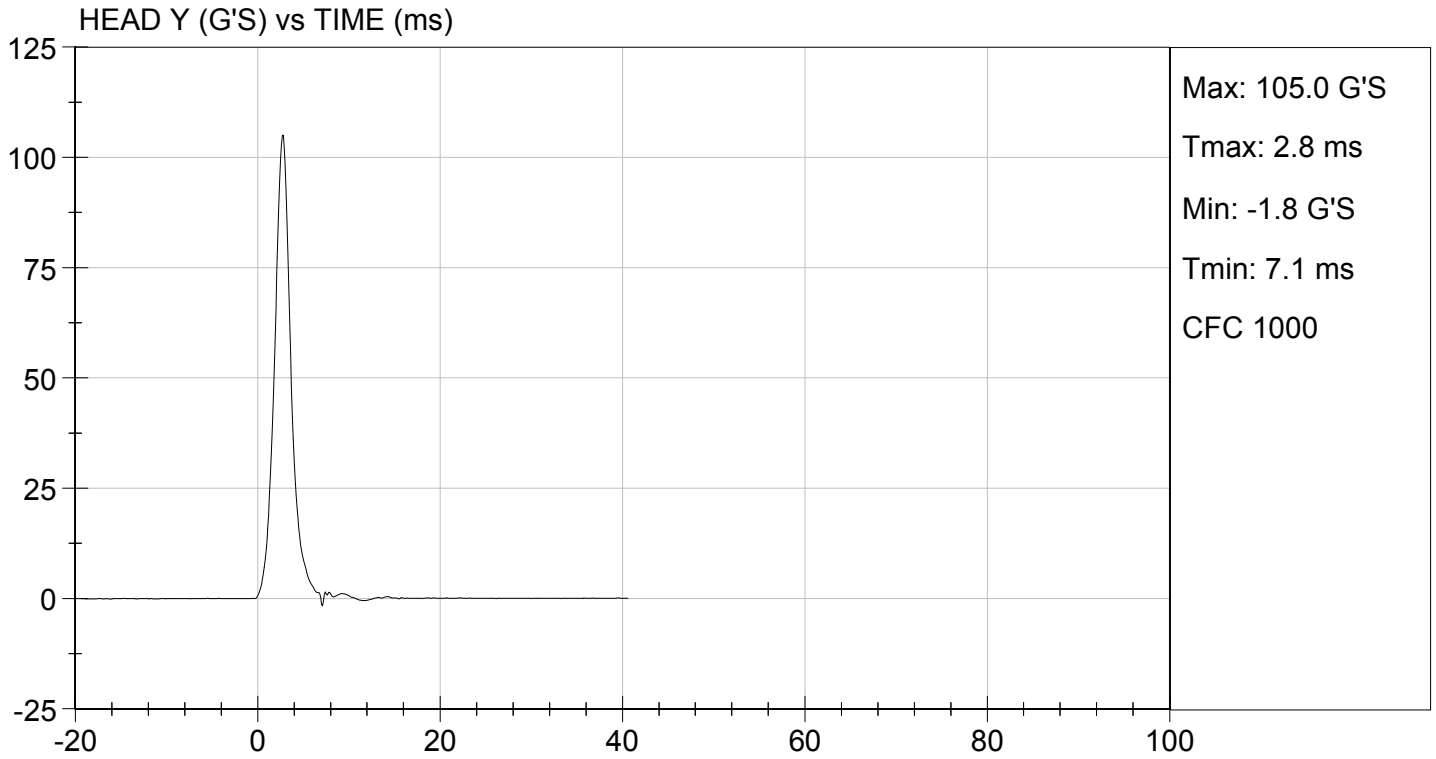
10/20/2015

Test Date

Jessica Hall

Approved By





**MGA RESEARCH CORPORATION
LATERAL NECK PENDULUM TEST
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

Test I.D: D153342

Tested Parameter	Units	Specification	Result	Pass/Fail	
Temperature	deg C	20.6 to 22.2	21.5	Pass	
Humidity	%	10 to 70	43	Pass	
Impact Velocity	m/s	5.51 to 5.63	5.58	Pass	
Pendulum Velocity	10 ms	m/s	2.20 to 2.80	2.45	Pass
	15 ms	m/s	3.30 to 4.10	3.43	Pass
	20 ms	m/s	4.40 to 5.40	4.58	Pass
	25 ms	m/s	5.40 to 6.10	5.51	Pass
	25-100 ms	m/s	5.50 to 6.20	5.76	Pass
Maximum D-Plane Rotation	deg	71 to 81	73	Pass	
Time of Maximum D-Plane Rotation	ms	50 to 70	58	Pass	
Maximum Occipital Condyle Moment	Nm	-44 to -36	-37	Pass	
Time of Moment Decay to 0 Nm	ms	102 to 126	116	Pass	
Overall Test Results				Pass	

David Schoedel

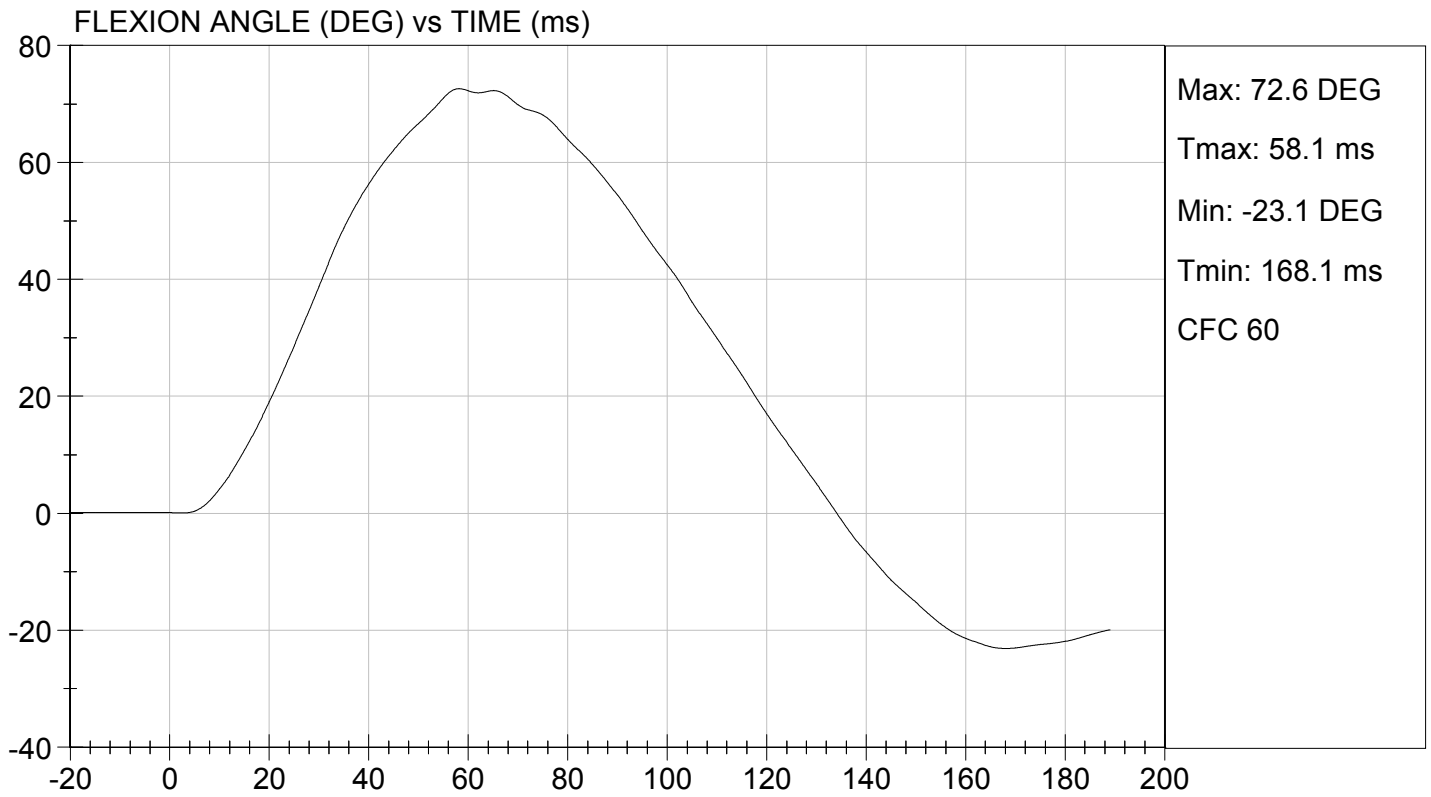
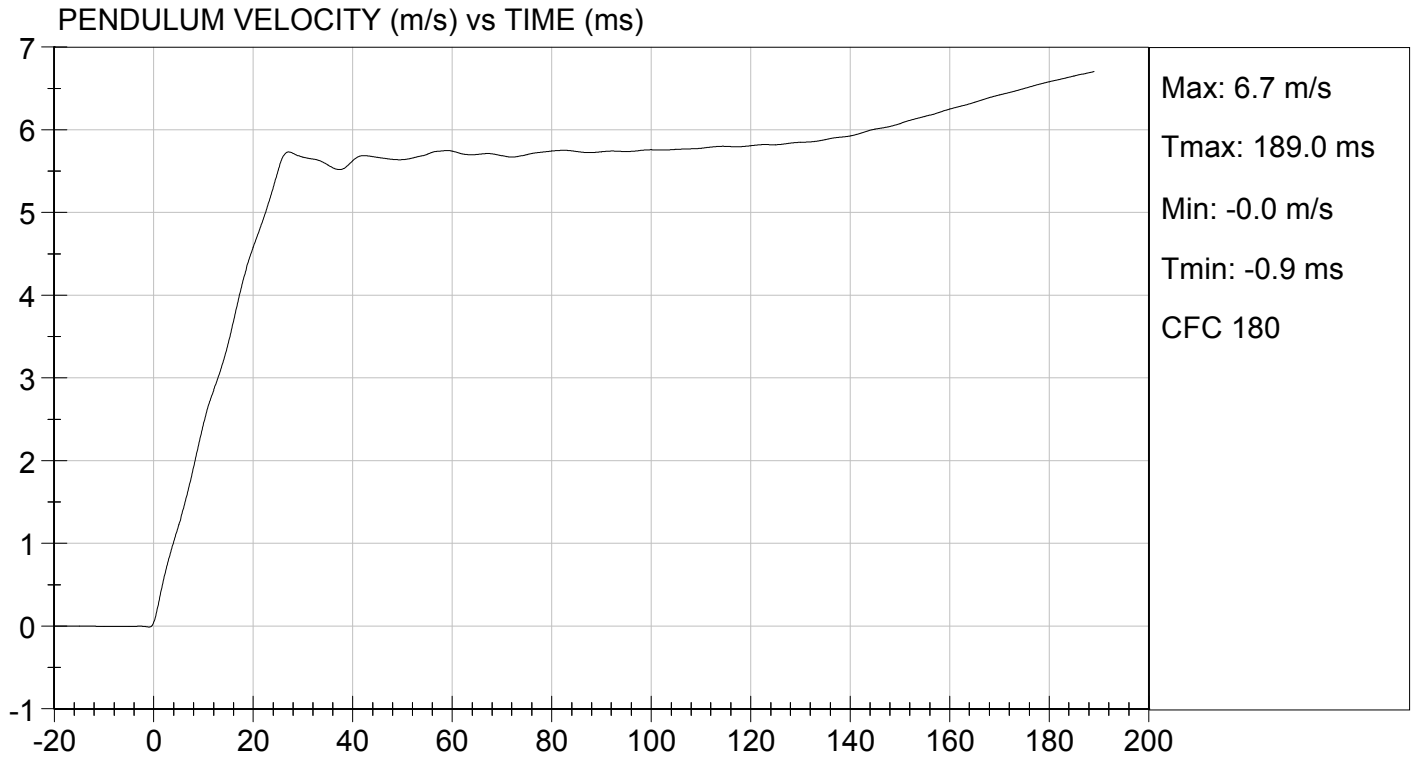
Laboratory Technician

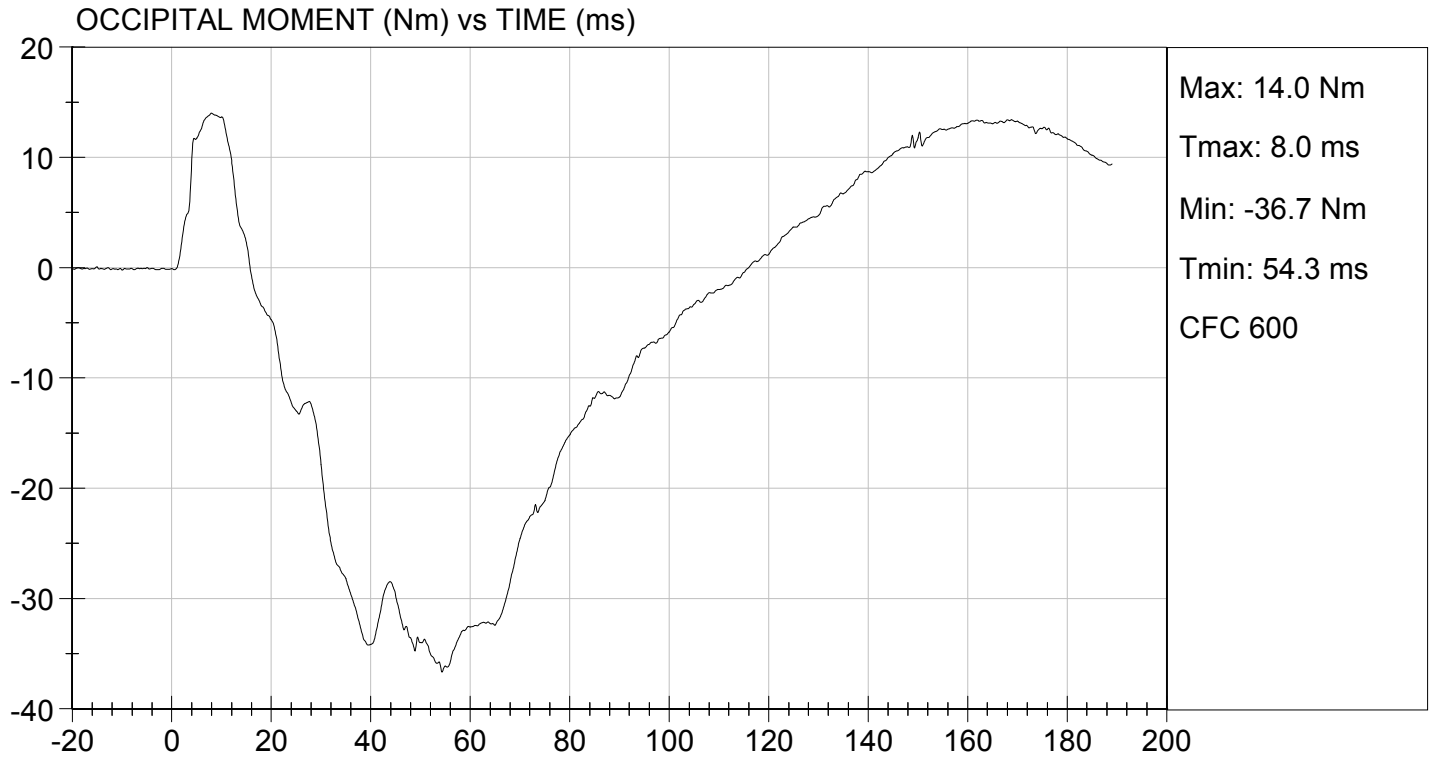
10/21/2015

Test Date

Jessica Hall

Approved By





MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

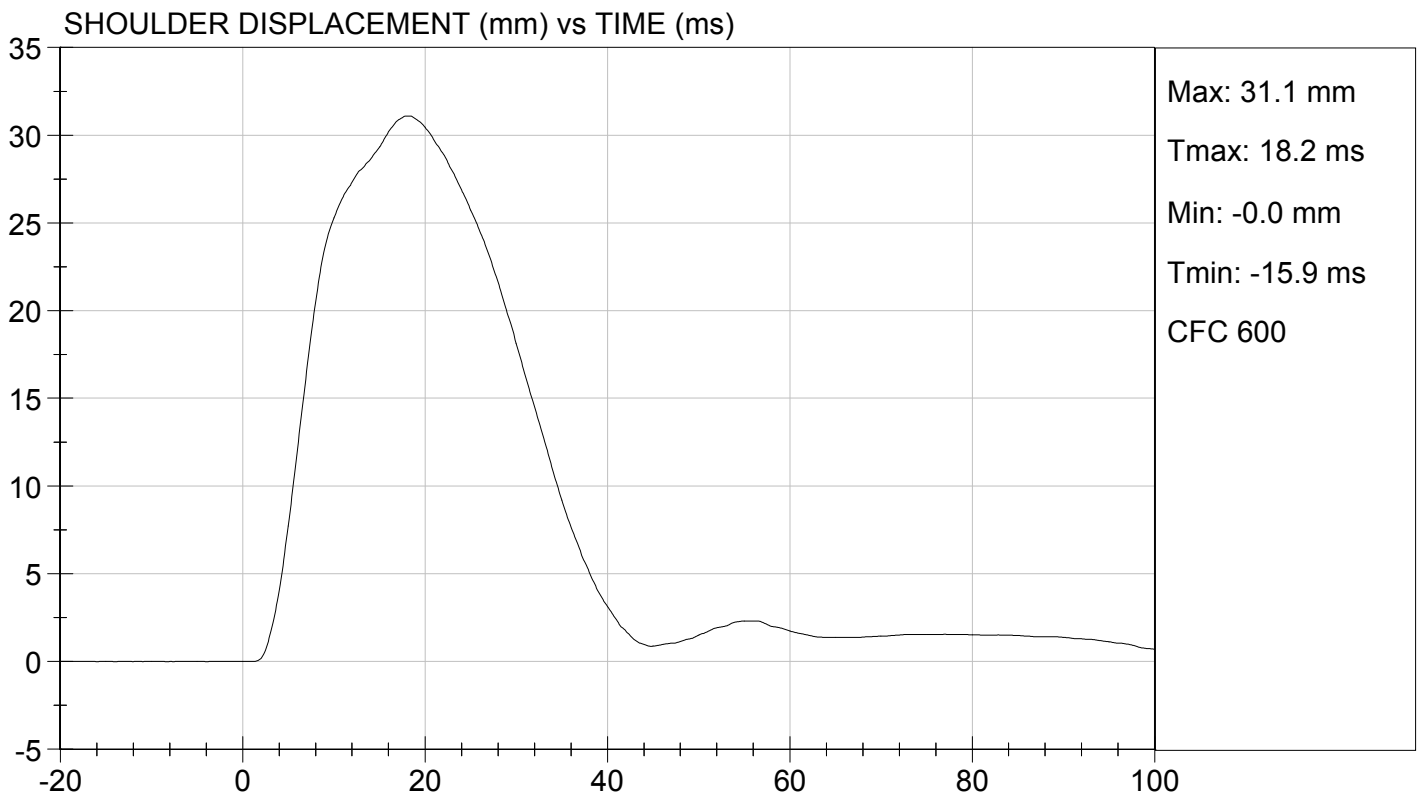
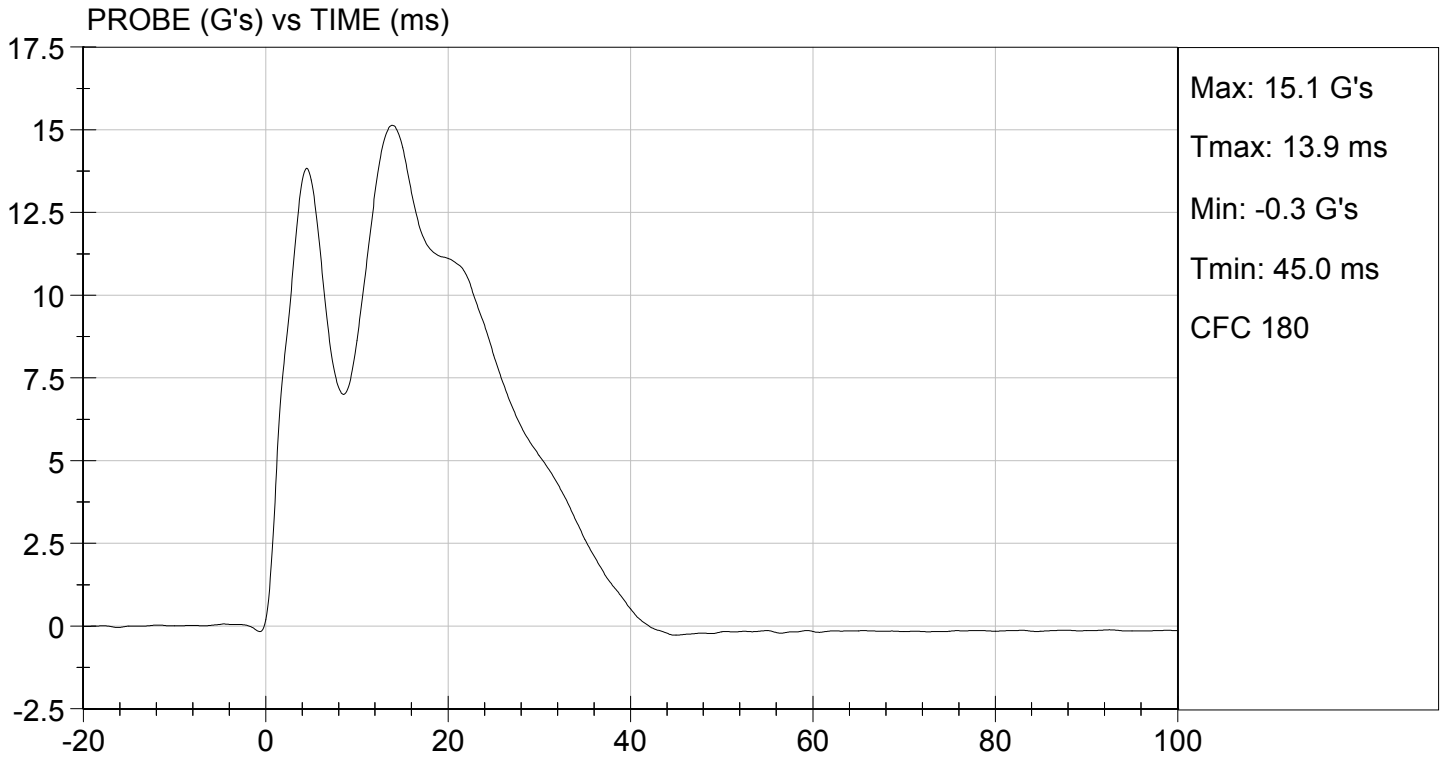
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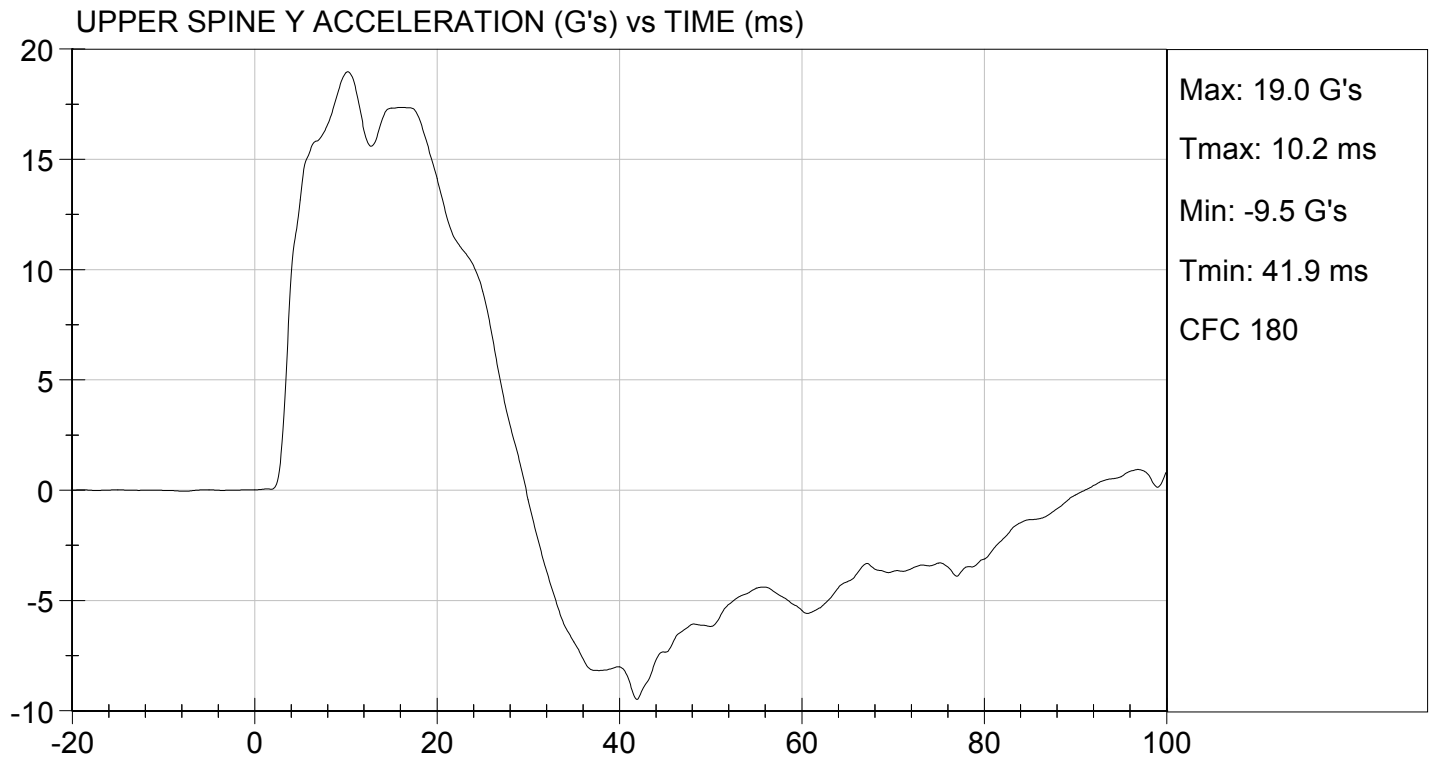
Tested Parameter	Units	Specification	Result	Pass/Fail
Laboratory Temperature	deg C	20.6 to 22.2	21.2	Pass
Laboratory Relative Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.34	Pass
Maximum Probe Acceleration	G's	13 to 18	15	Pass
Shoulder Displacement	mm	28 to 37	31	Pass
Upper Spine (T1) Y Acceleration	G's	17 to 22	19	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/21/2015
 Test Date

Jessica Hall
 Approved By





**MGA RESEARCH CORPORATION
THORAX (WITH ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

Test I.D.: D153344

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	30 to 36	30	Pass
Shoulder Displacement	mm	31 to 40	38	Pass
Upper Rib Displacement	mm	25 to 32	30	Pass
Middle Rib Displacement	mm	30 to 36	33	Pass
Lower Rib Displacement	mm	32 to 38	34	Pass
Upper Spine (T1) Y Acceleration	G's	34 to 43	37	Pass
Lower Spine (T12) Y Acceleration	G's	29 to 37	31	Pass
Overall Test Results				Pass

David Schoedel

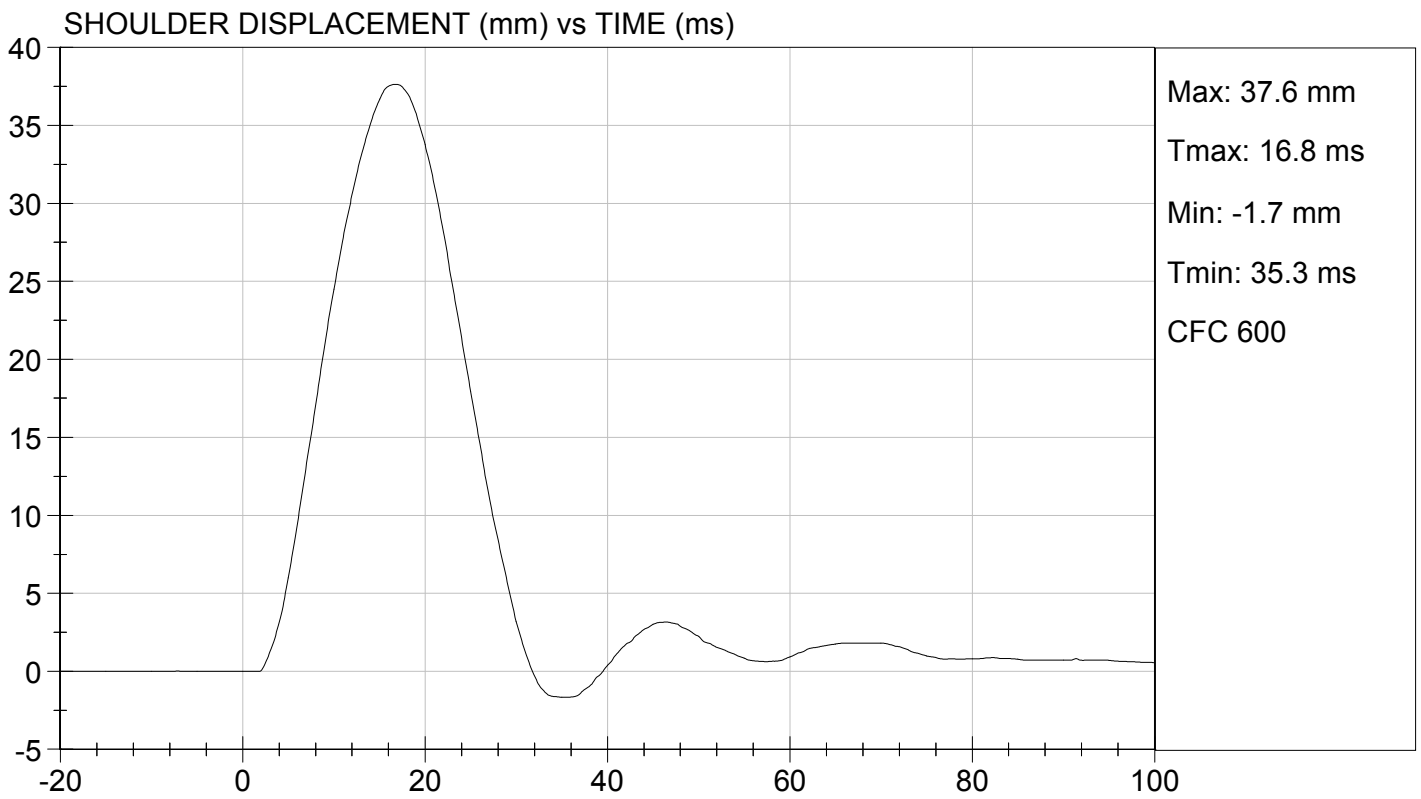
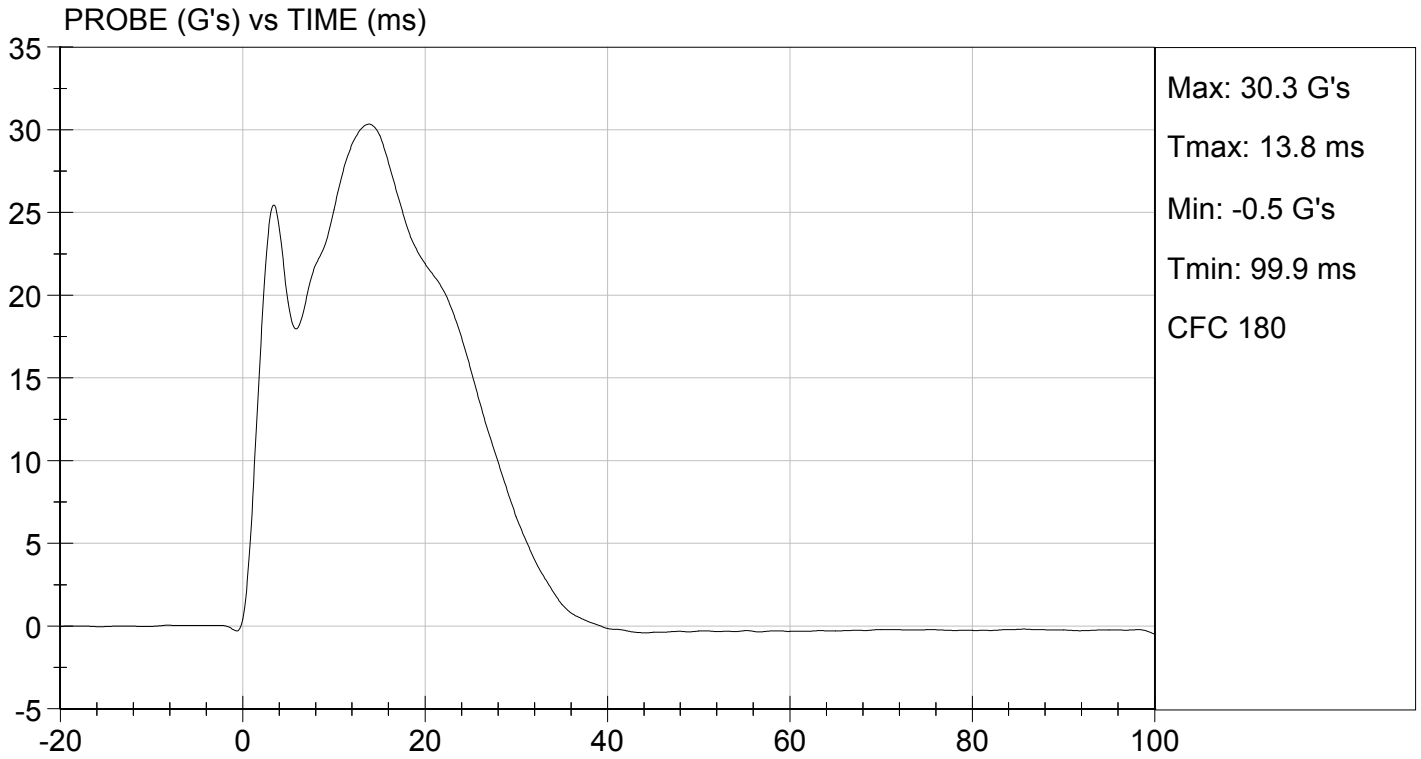
Laboratory Technician

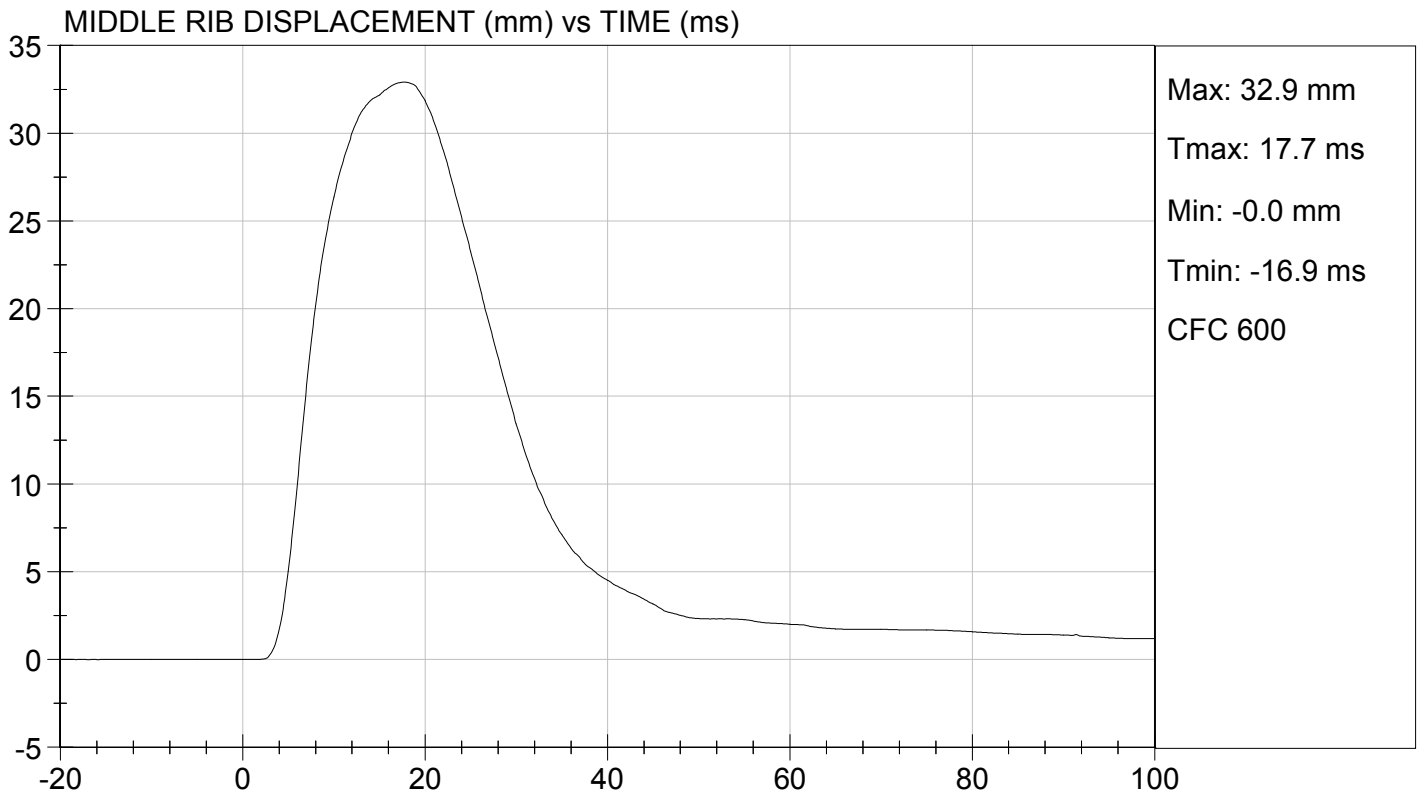
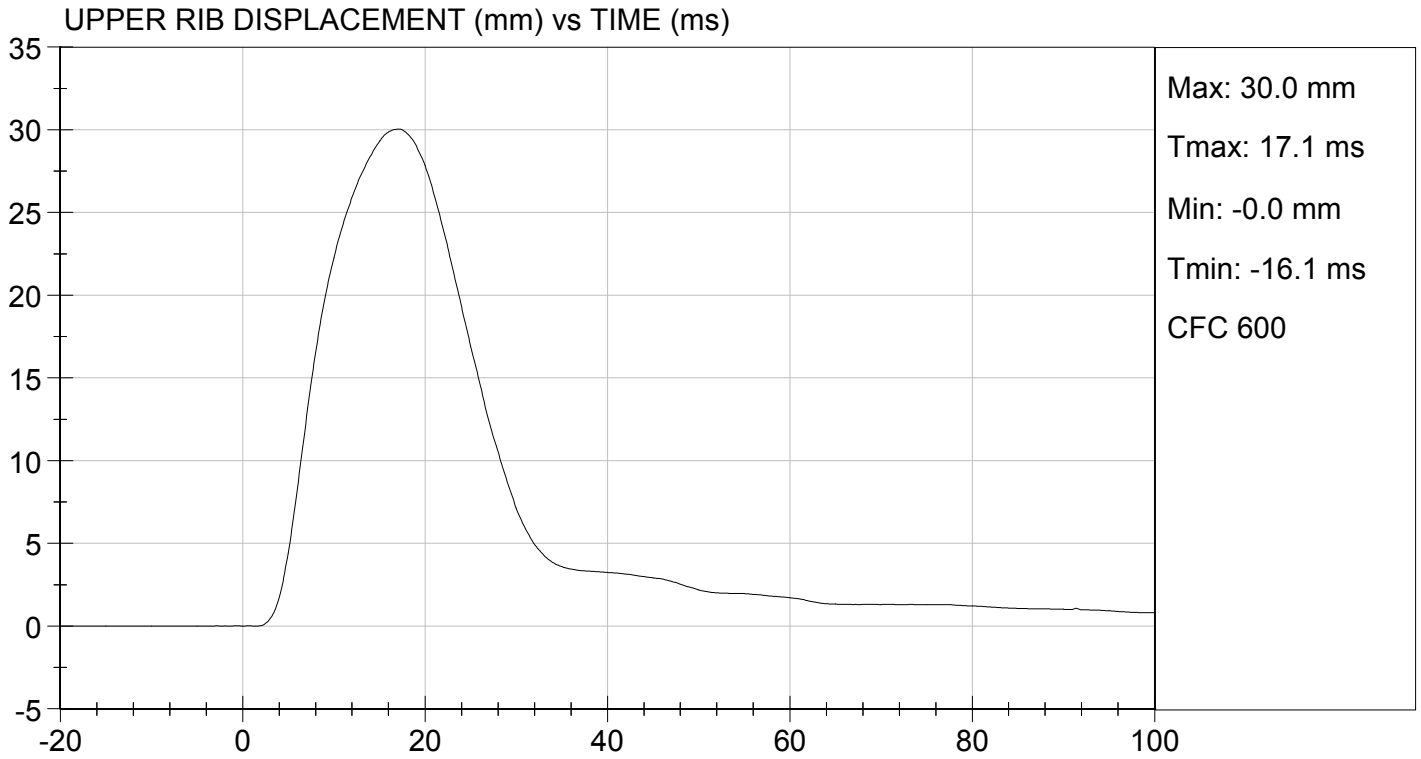
10/21/2015

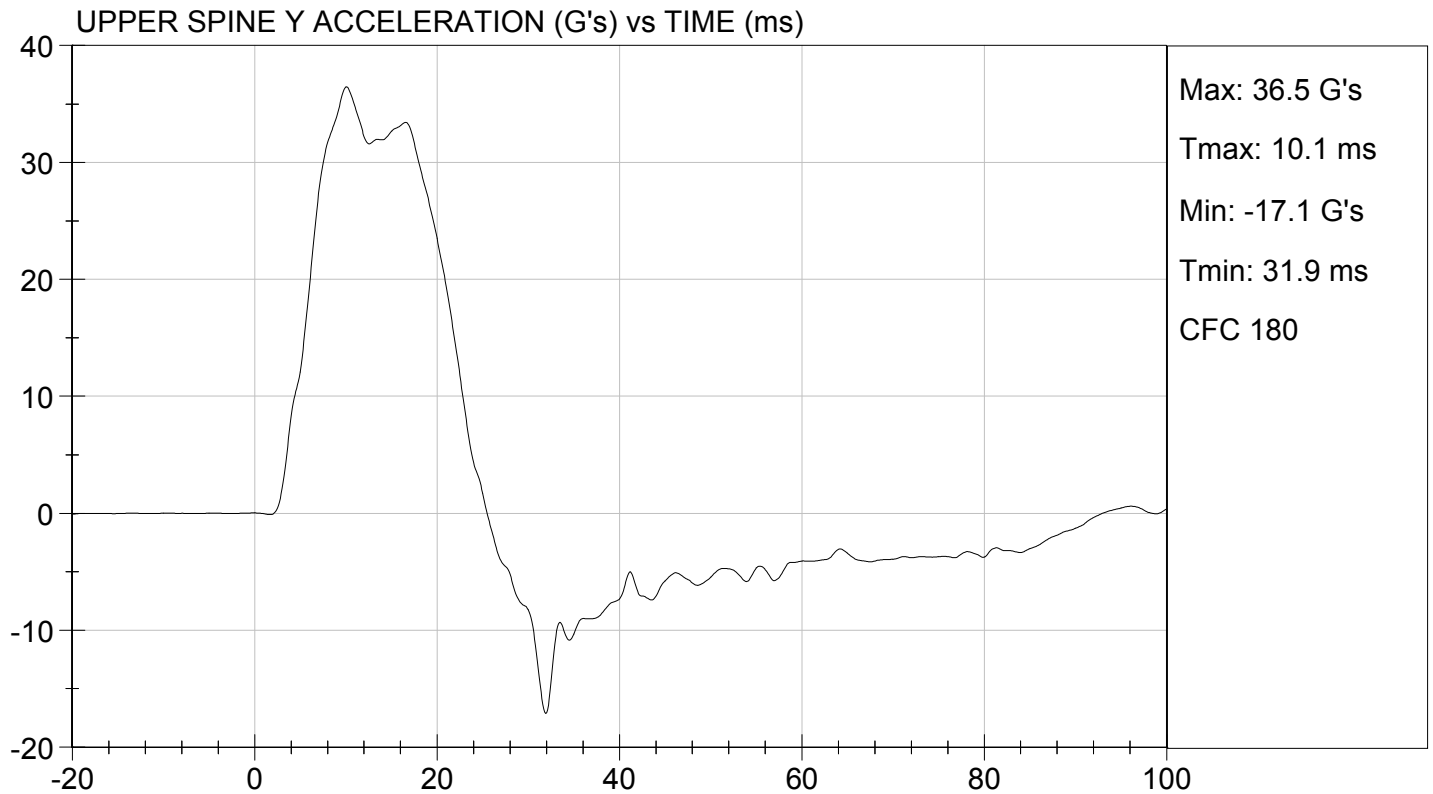
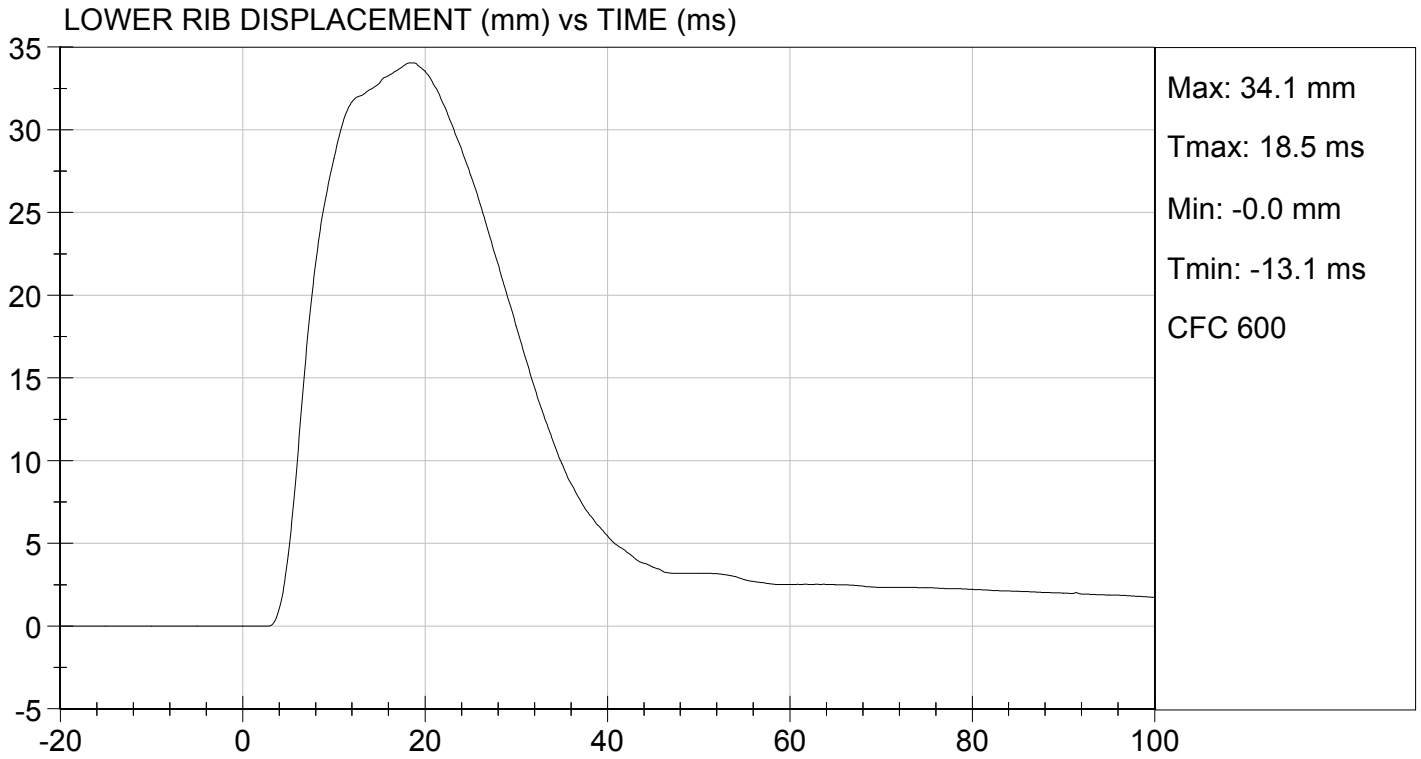
Test Date

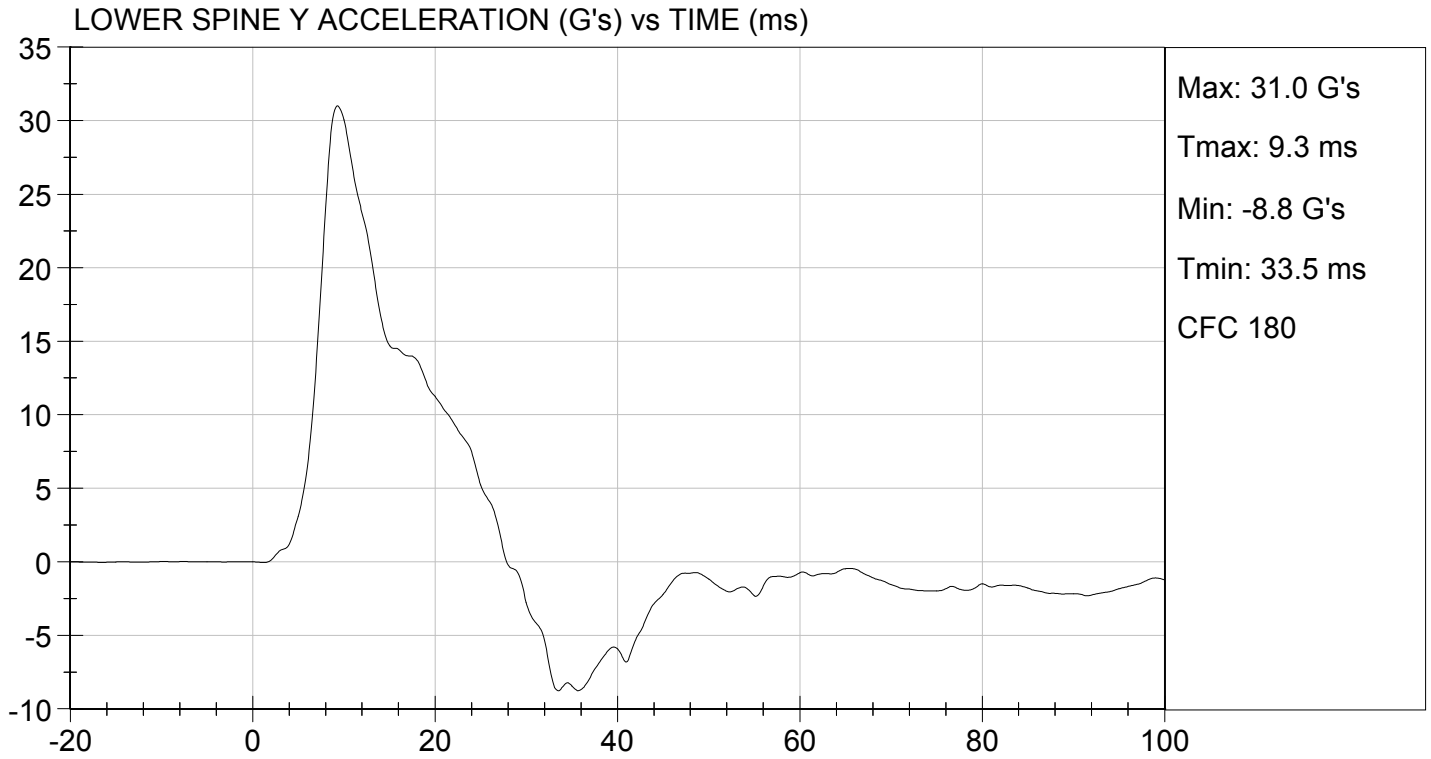
Jessica Hall

Approved By









MGA RESEARCH CORPORATION
THORAX (WITHOUT ARM) IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

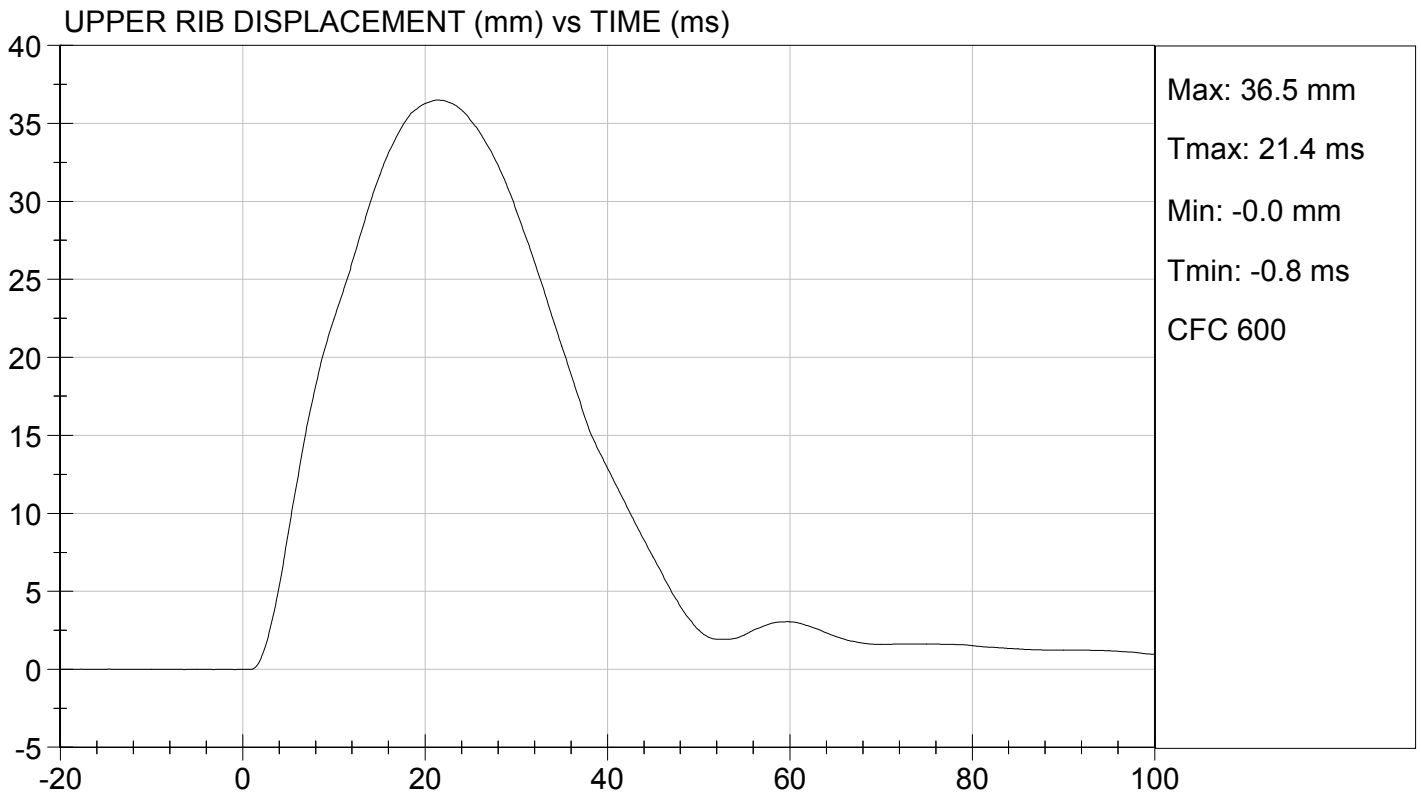
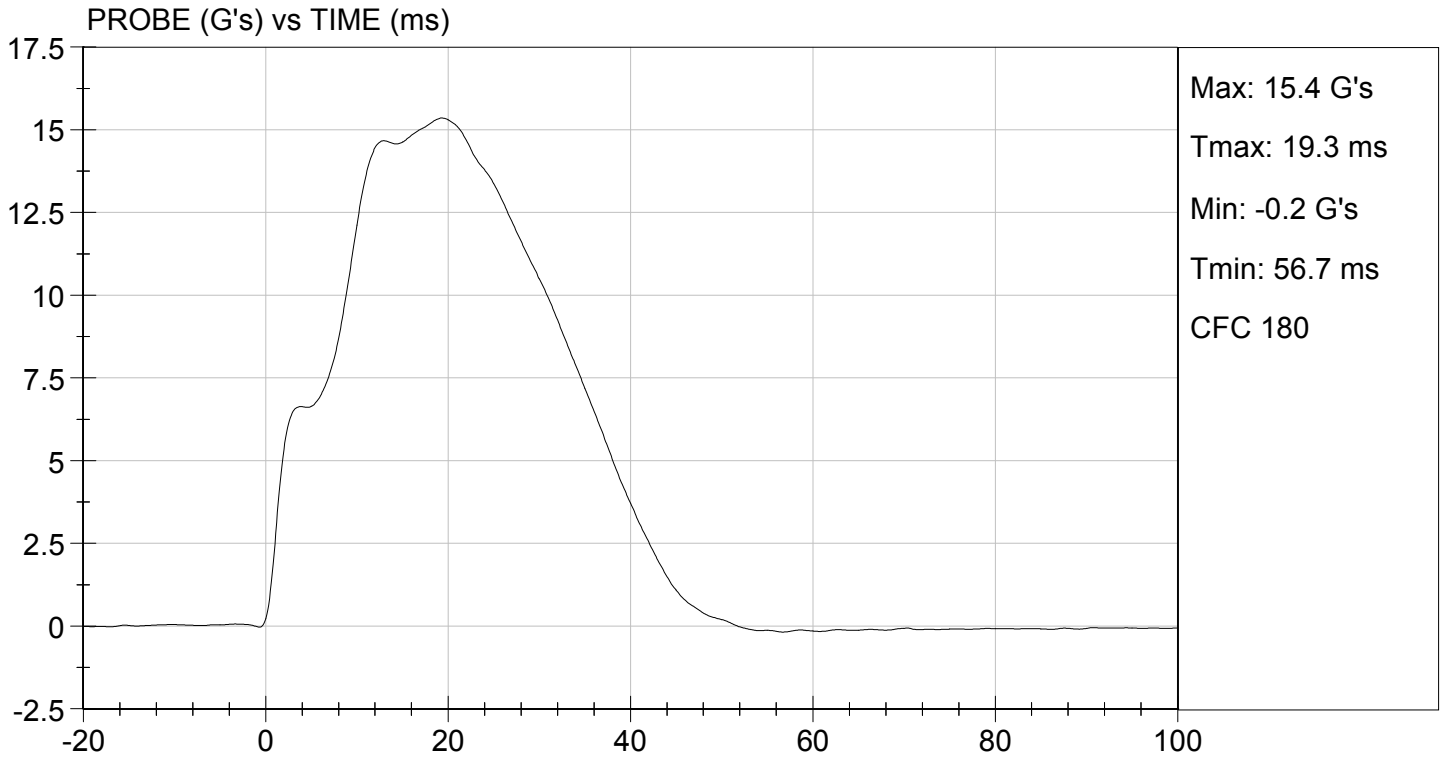
Test I.D: D153345

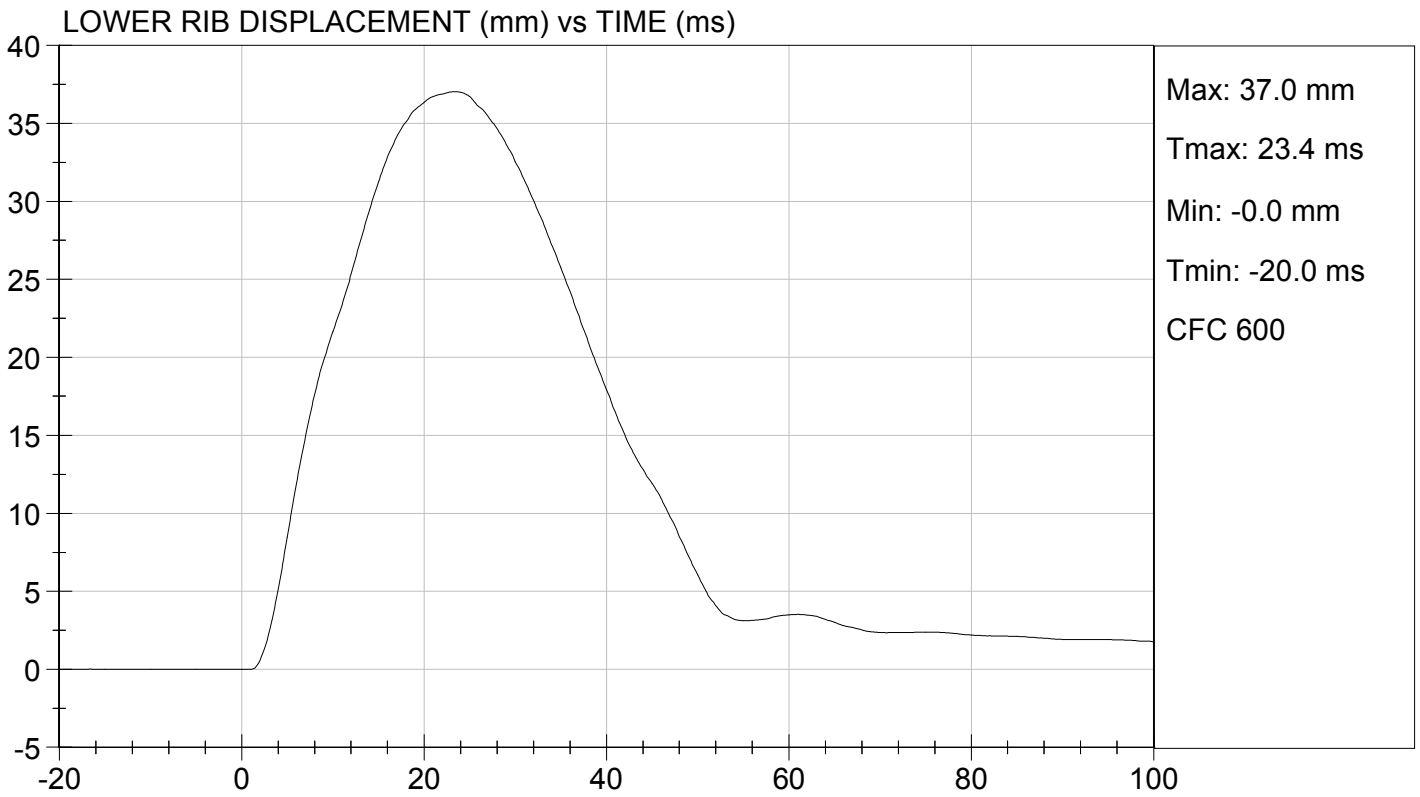
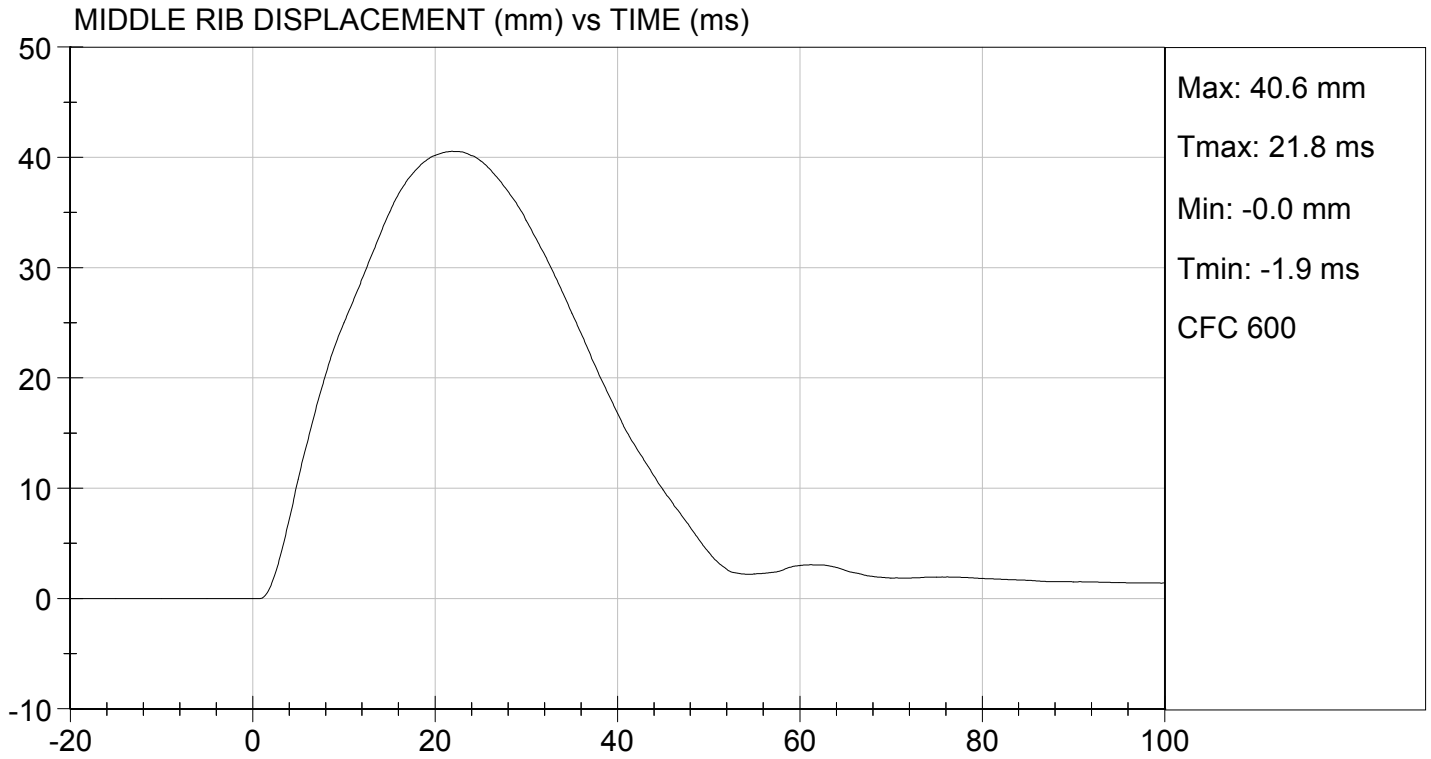
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	14 to 18	15	Pass
Upper Rib Displacement	mm	32 to 40	37	Pass
Middle Rib Displacement	mm	39 to 45	41	Pass
Lower Rib Displacement	mm	35 to 43	37	Pass
Upper Spine (T1) Y Acceleration	G's	13 to 17	14	Pass
Lower Spine (T12) Y Acceleration	G's	7 to 11	10	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/21/2015
 Test Date

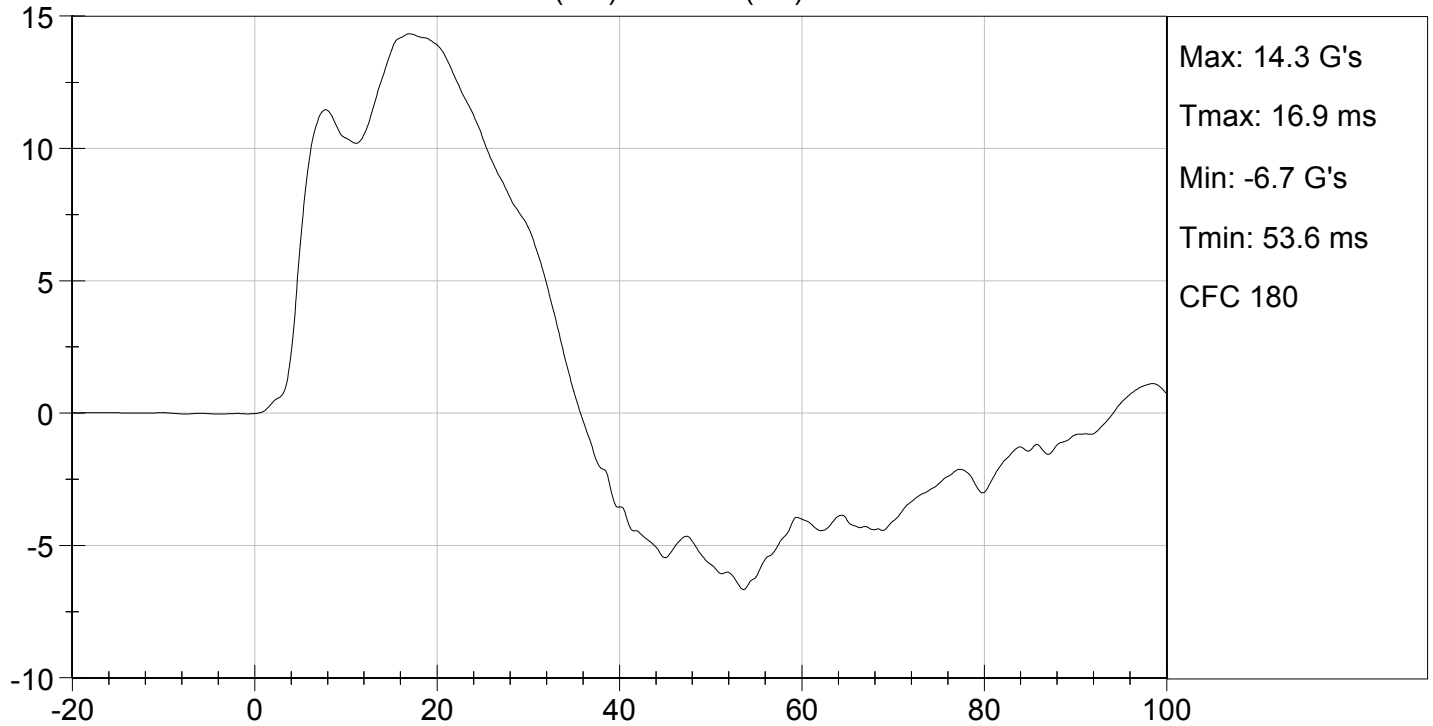
Jessica Hall
 Approved By



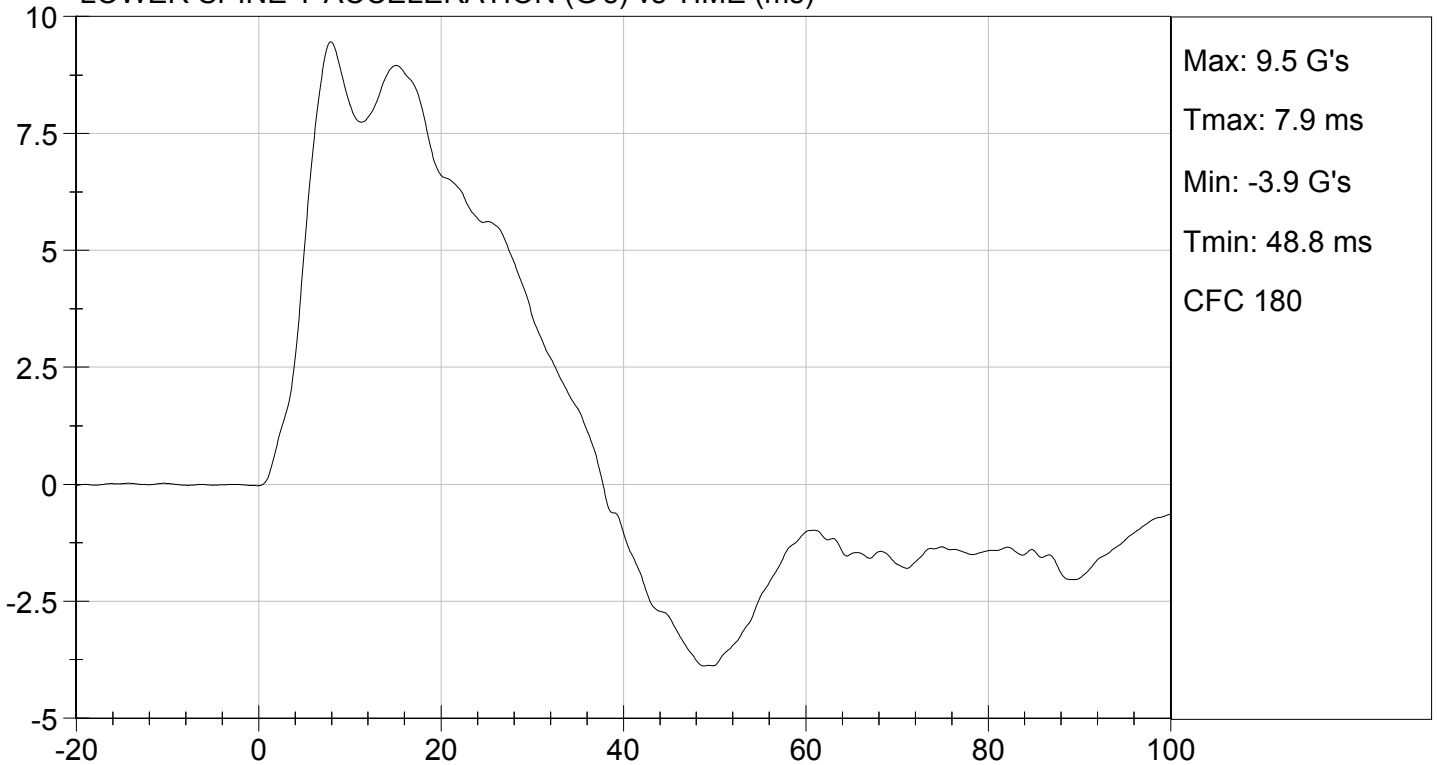




UPPER SPINE Y ACCELERATION (G's) vs TIME (ms)



LOWER SPINE Y ACCELERATION (G's) vs TIME (ms)



MGA RESEARCH CORPORATION
ABDOMINAL IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

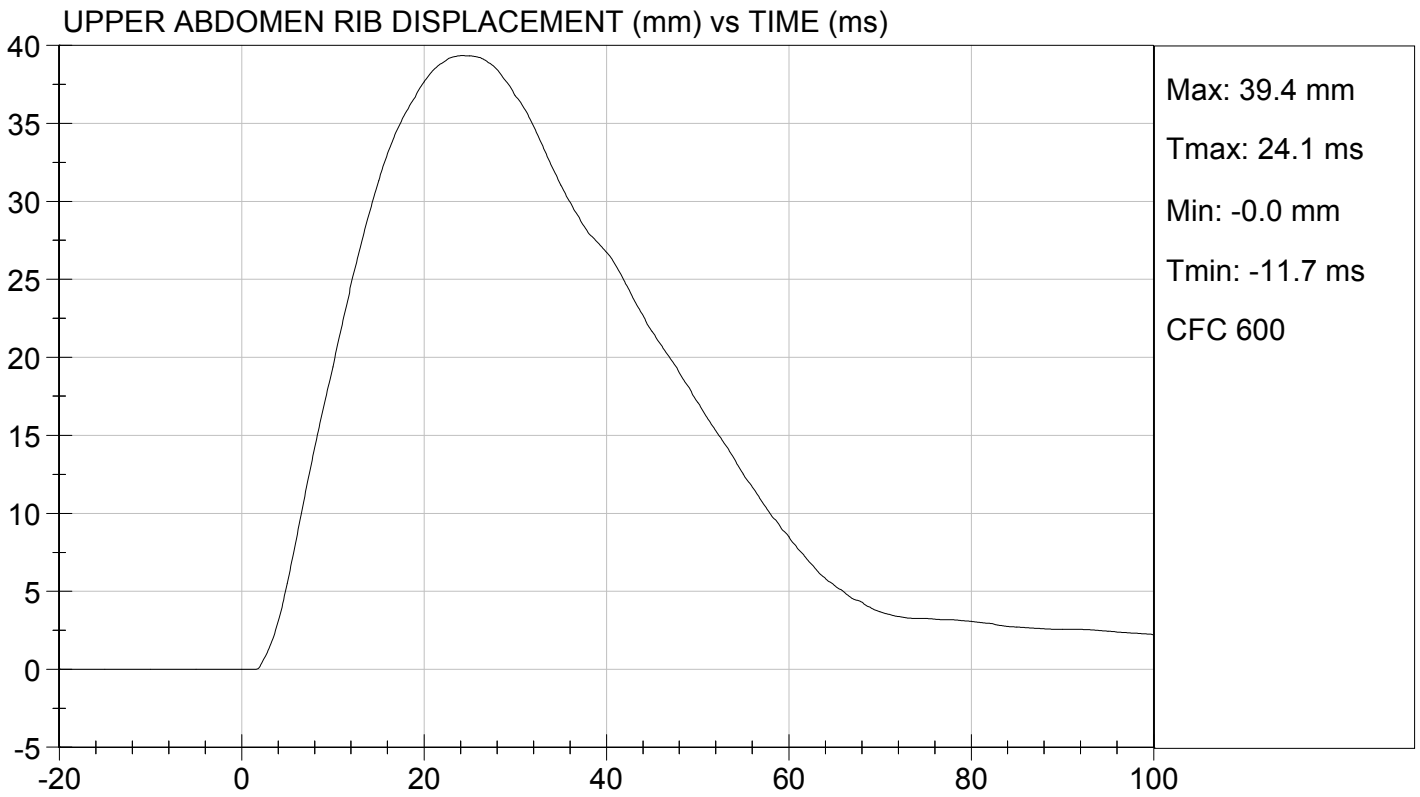
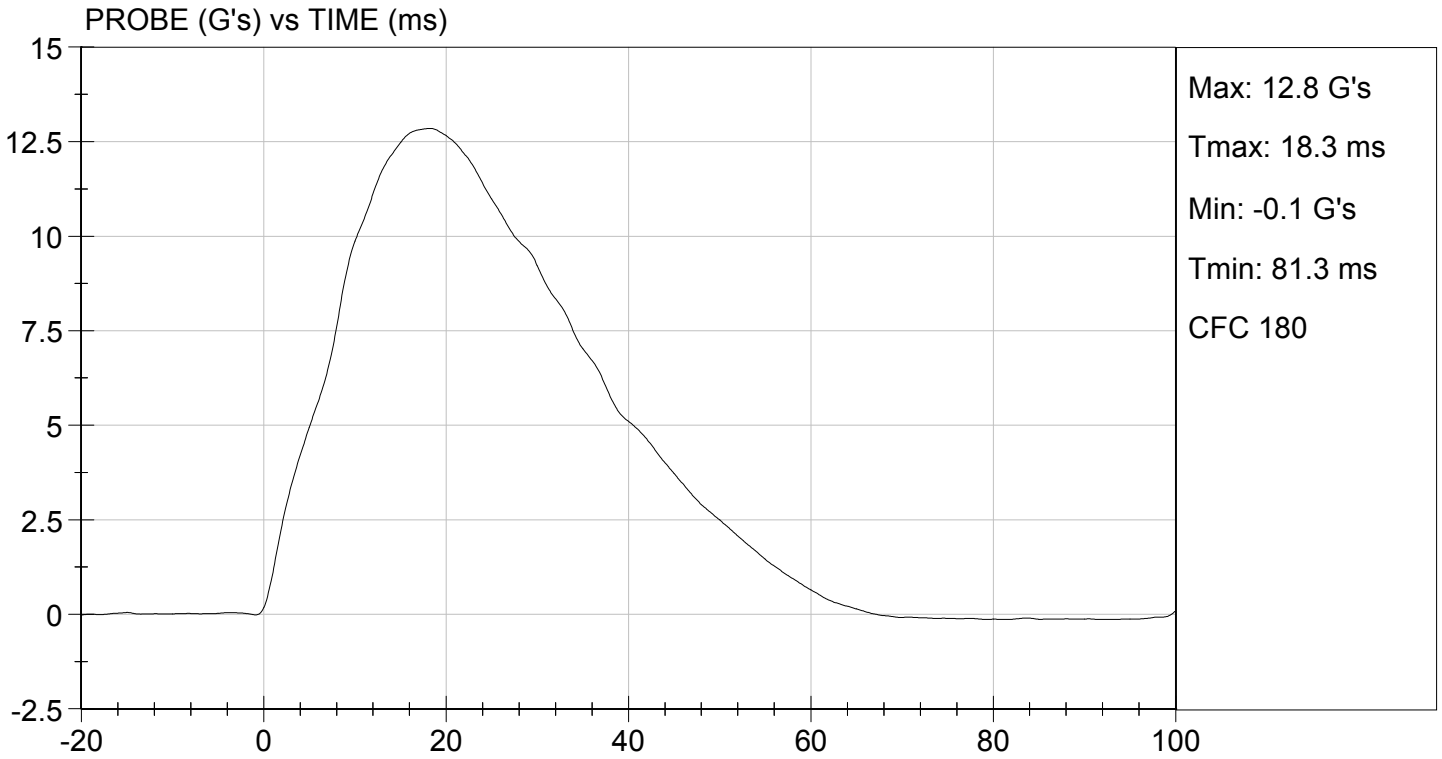
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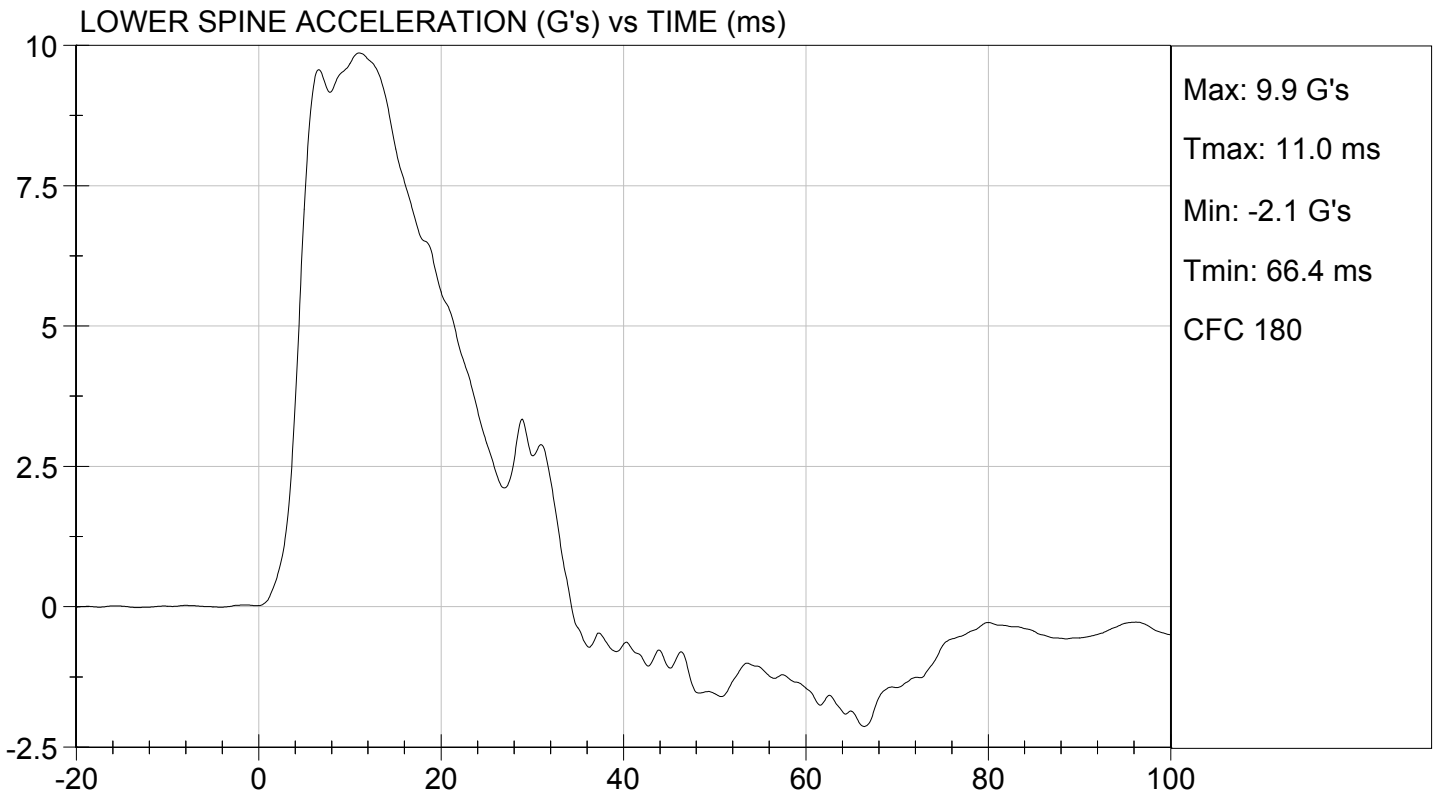
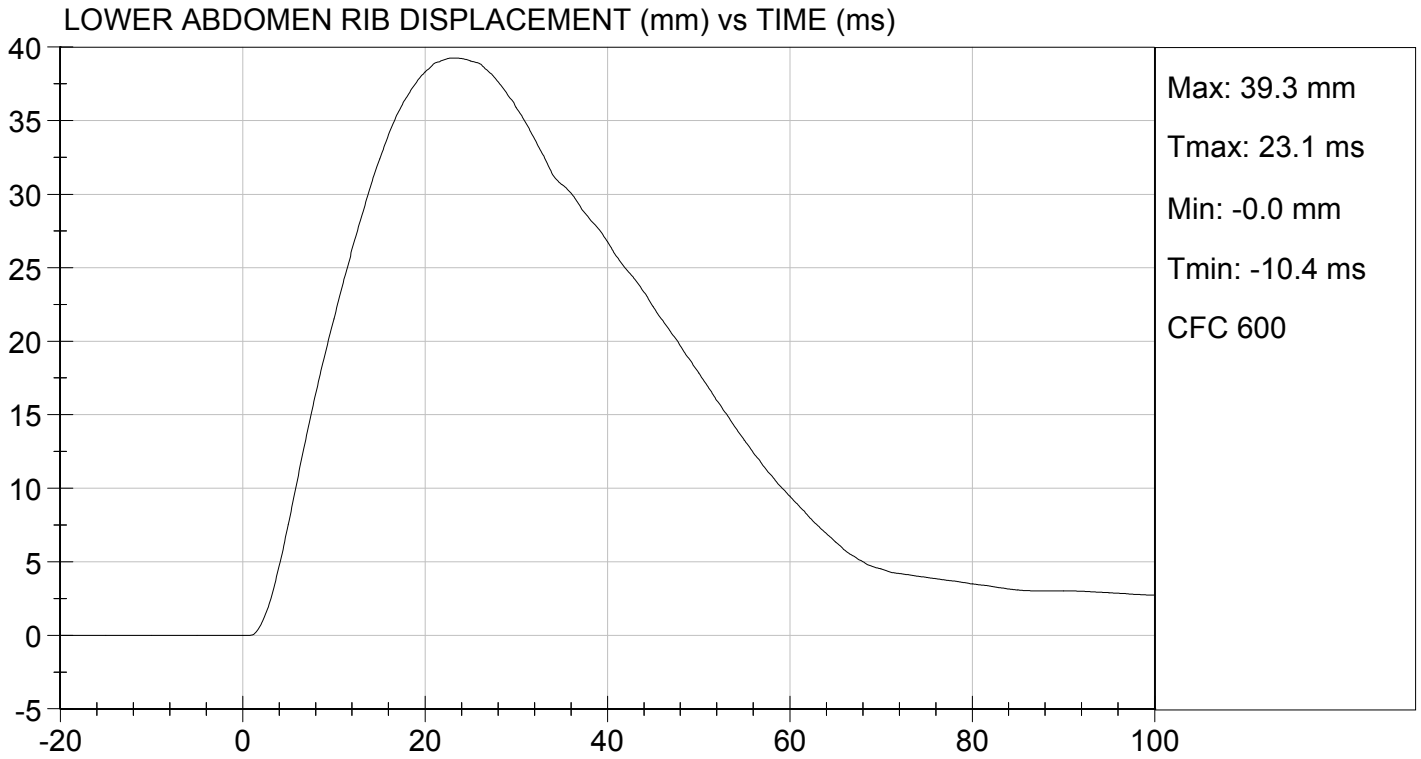
Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.30	Pass
Maximum Probe Acceleration	G's	12 to 16	13	Pass
Upper Abdomen Rib Displacement	mm	36 to 47	39	Pass
Lower Abdomen Rib Displacement	mm	33 to 44	39	Pass
Lower Spine (T12) Y Acceleration	G's	9 to 14	10	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/21/2015
 Test Date

Jessica Hall
 Approved By





**MGA RESEARCH CORPORATION
 PELVIS IMPACT TEST
 SID-IIs BUILD LEVEL D DUMMY**

ATD Serial No: 296

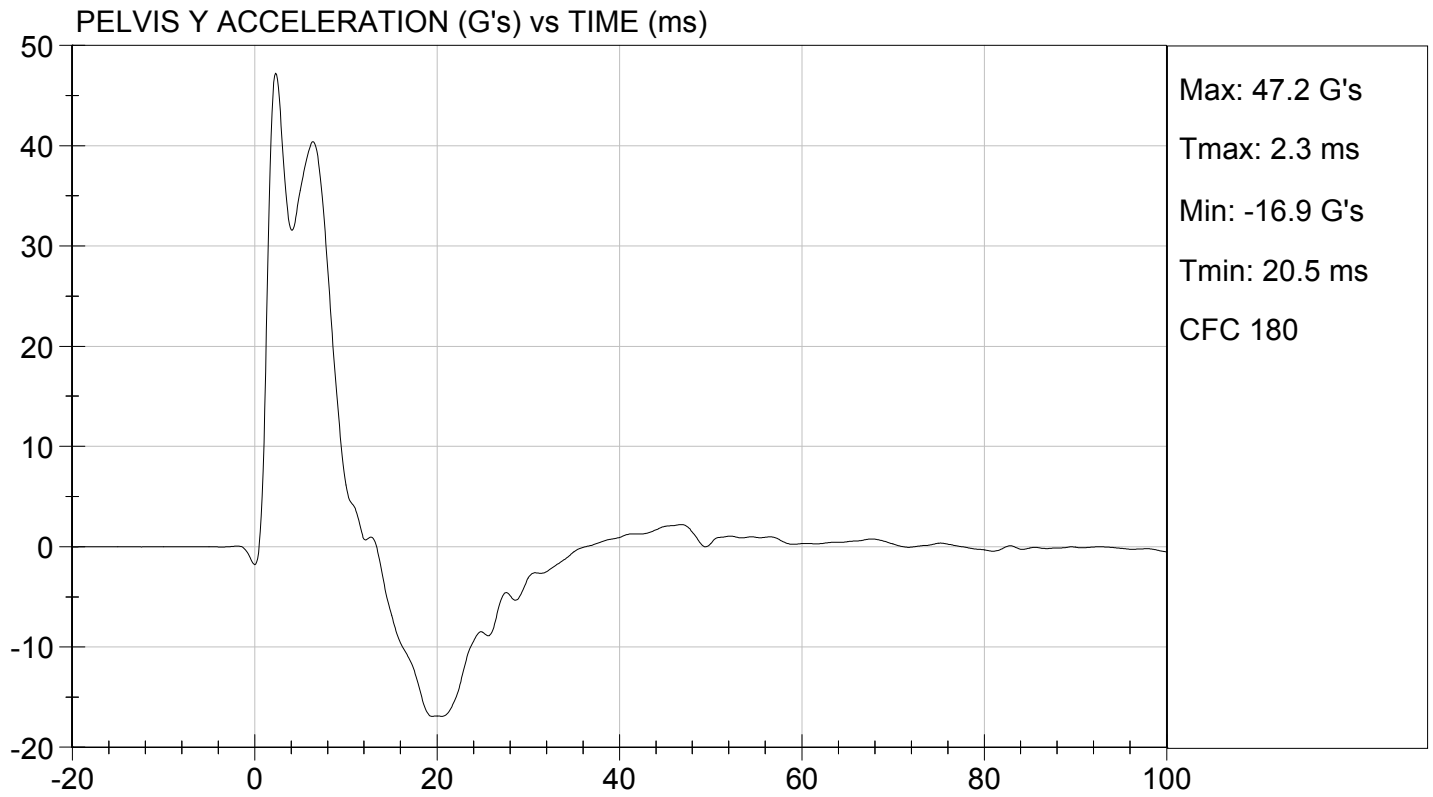
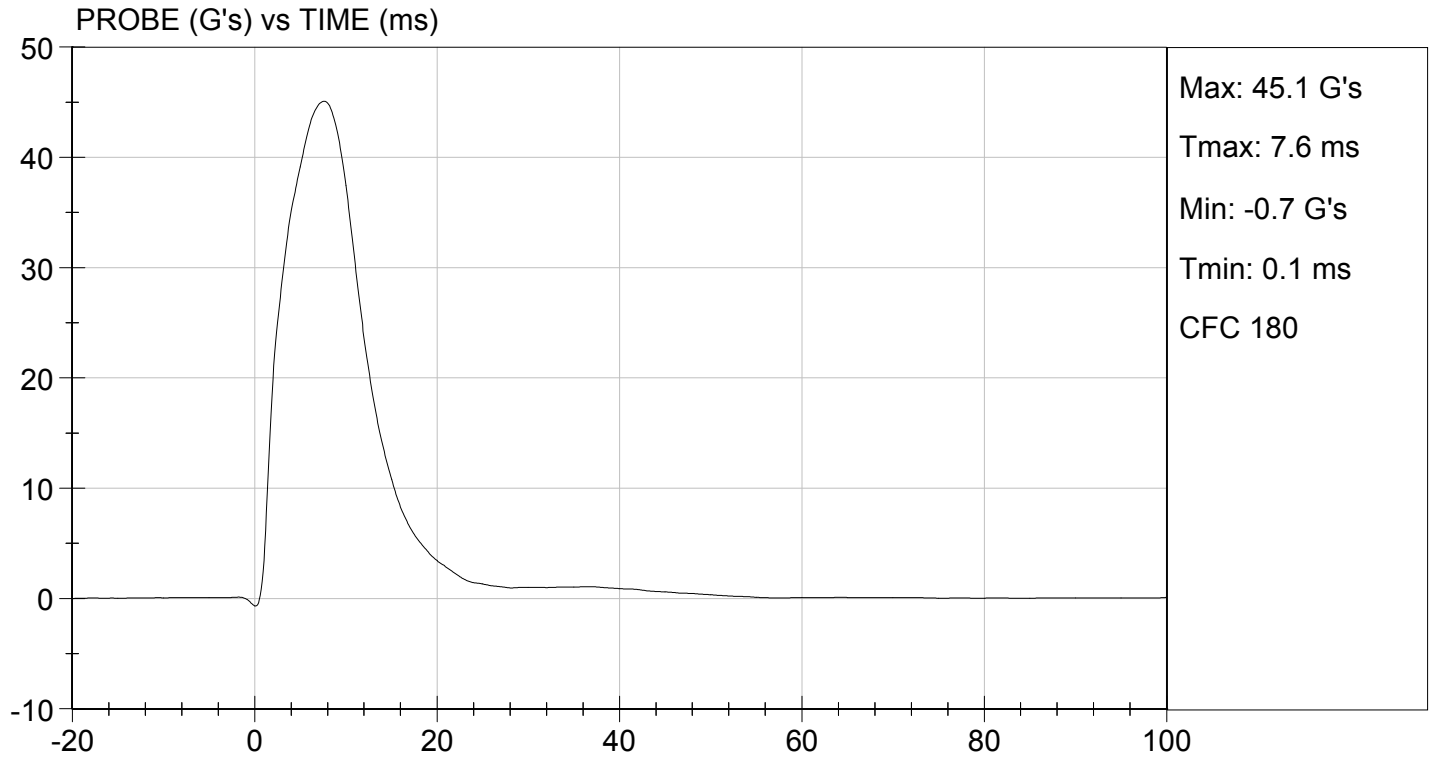
Test I.D: D153347

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	6.60 to 6.80	6.68	Pass
Maximum Probe Acceleration	G's	38 to 47	45	Pass
Pelvis Y Acceleration After 6 ms	G's	34 to 42	40	Pass
Peak Acetabulum Force	N	3600 to 4300	4,233	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/21/2015
 Test Date

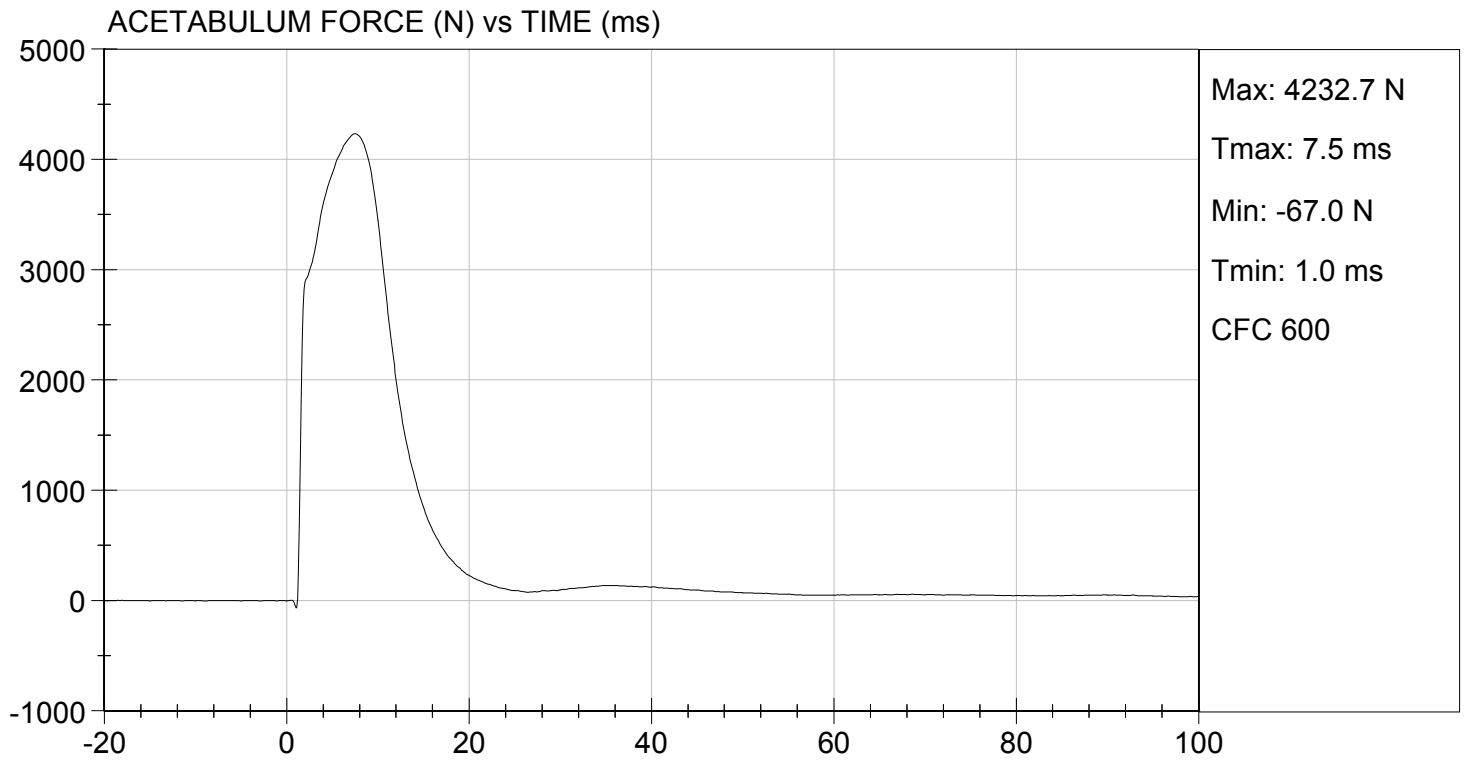
Jessica Hall
 Approved By





TEST DESC: PELVIS IMPACT
VELOCITY: 21.93 ft/s, 6.68 m/s

TEST DATE: 10/21/2015
TEST #: D153347



MGA RESEARCH CORPORATION
ILIAC IMPACT TEST
SID-IIs BUILD LEVEL D DUMMY

ATD Serial No: 296

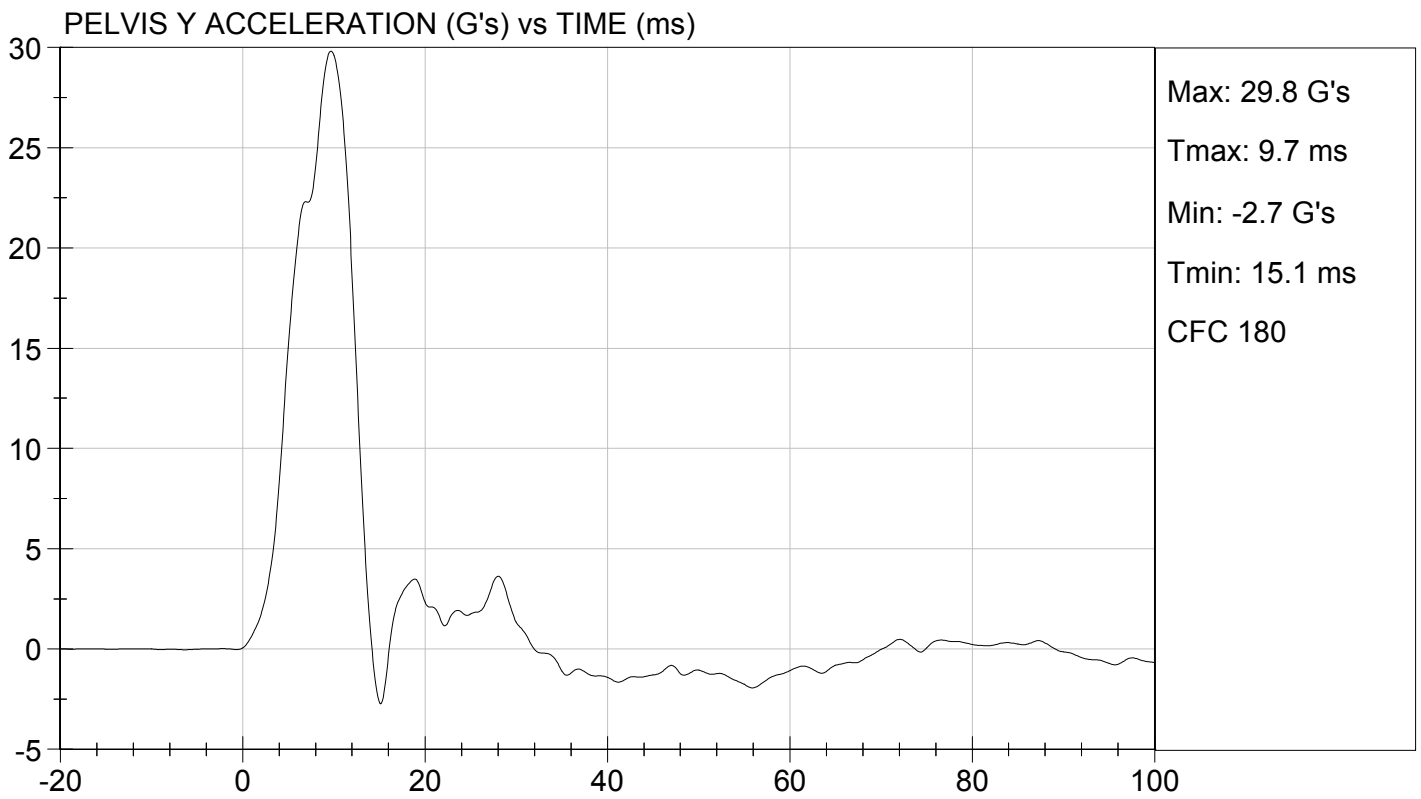
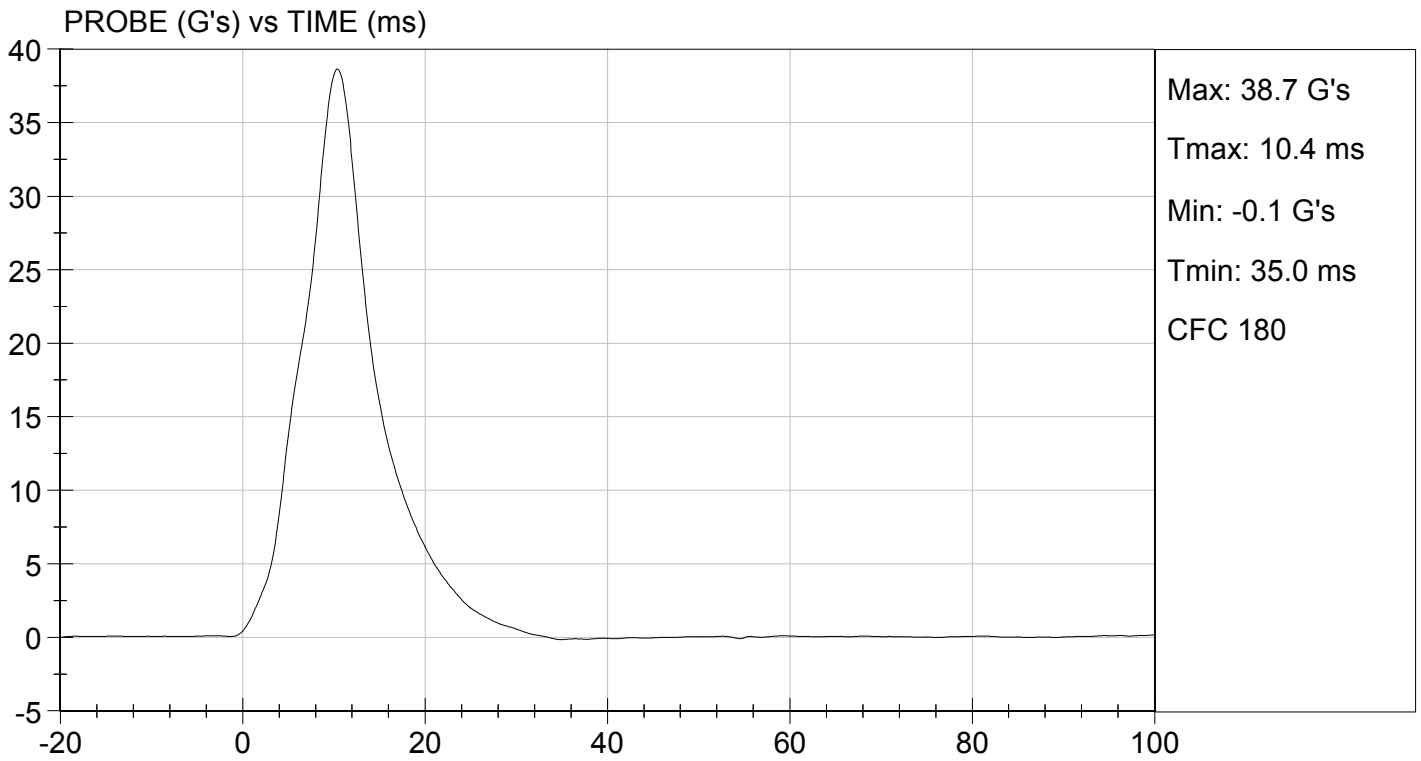
Test I.D: D153348

Tested Parameter	Units	Specification	Result	Pass/Fail
Temperature	deg C	20.6 to 22.2	21.2	Pass
Humidity	%	10 to 70	44	Pass
Impact Velocity	m/s	4.20 to 4.40	4.23	Pass
Maximum Probe Acceleration	G's	36 to 45	39	Pass
Pelvis Y Acceleration	G's	28 to 39	30	Pass
Peak Pelvis Iliac Force	N	4100 to 5100	4,417	Pass
Overall Test Results				Pass

David Schoedel
 Laboratory Technician

10/21/2015
 Test Date

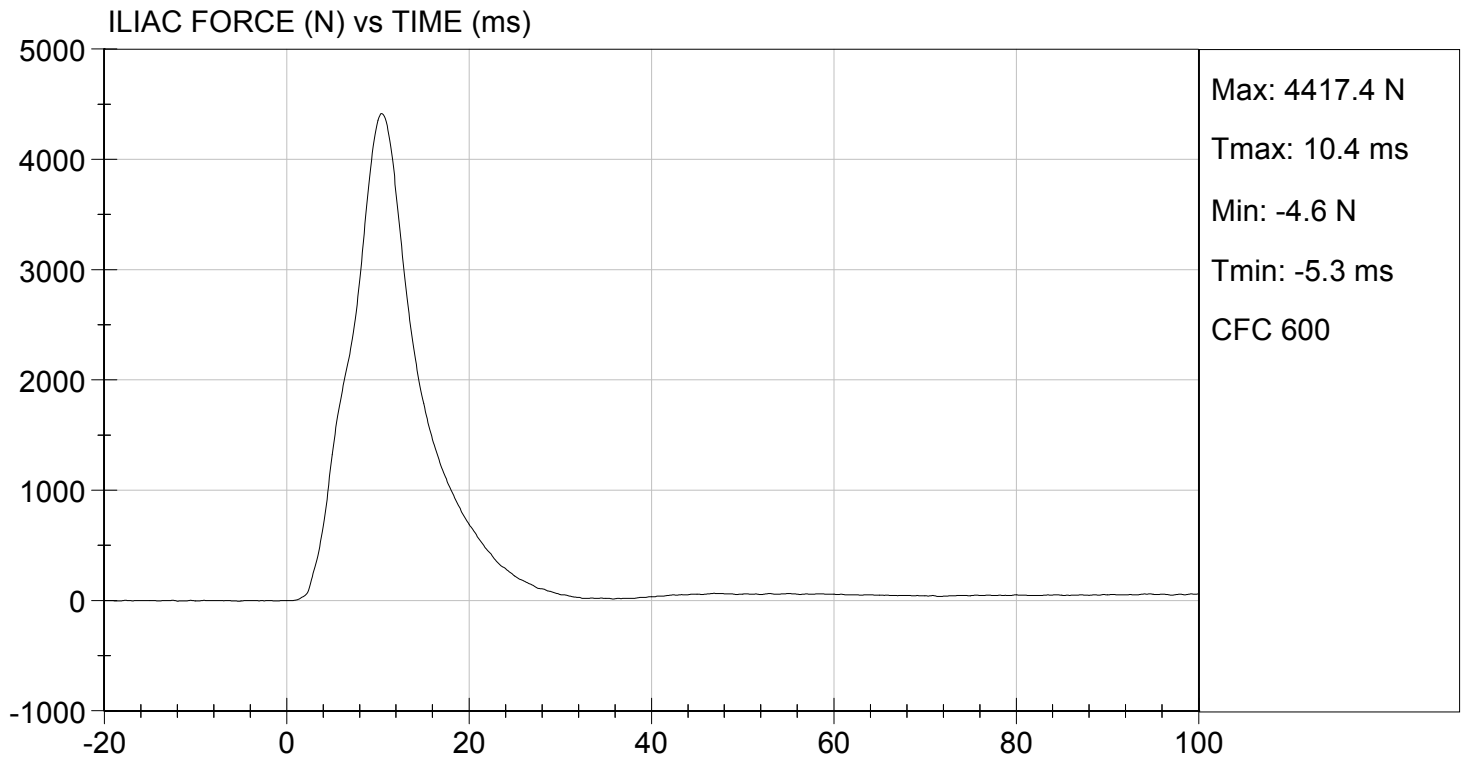
Jessica Hall
 Approved By



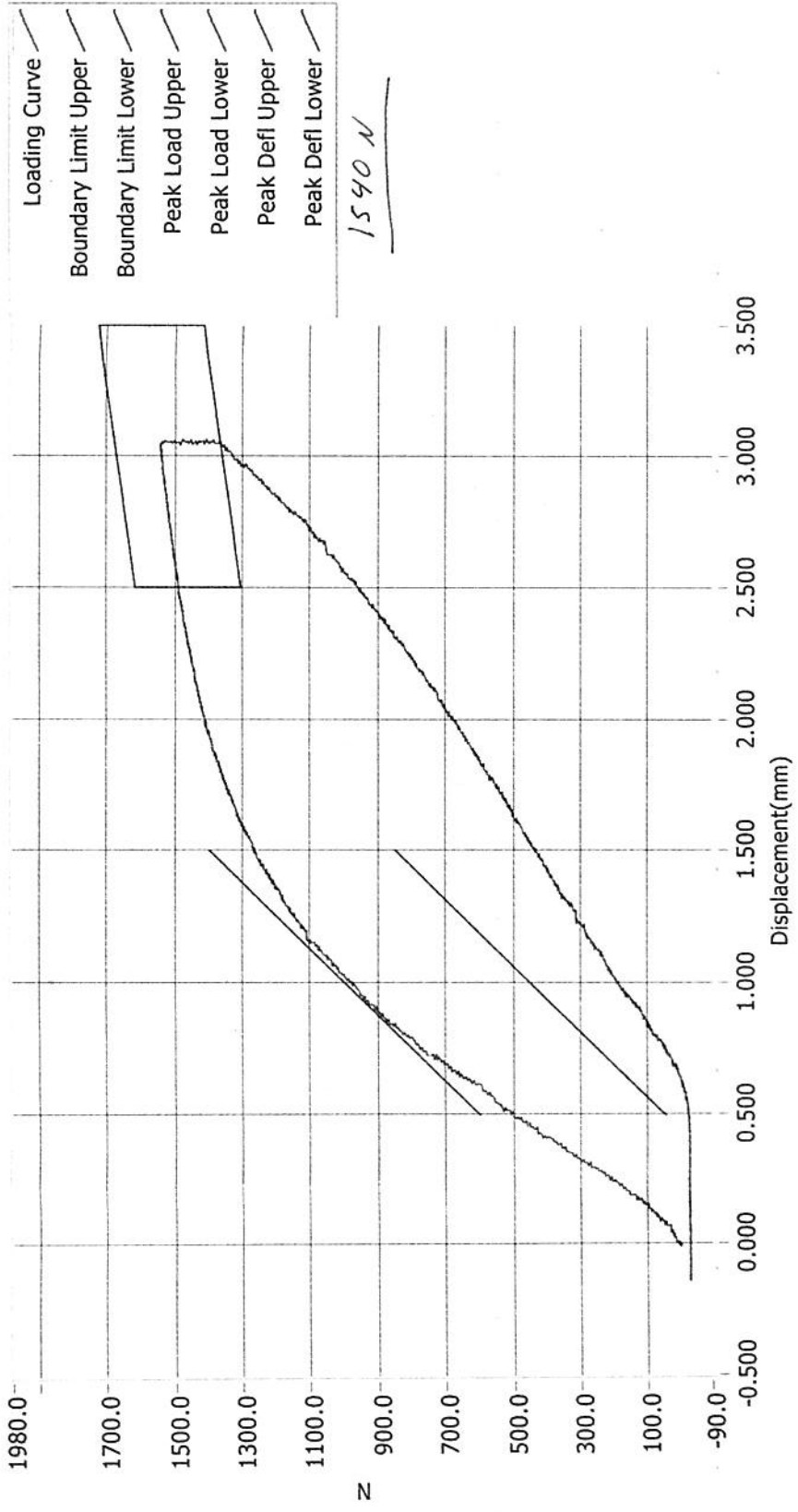


TEST DESC: ILLIAC
VELOCITY: 13.89 ft/s, 4.23 m/s

TEST DATE: 10/21/2015
TEST #: D153348



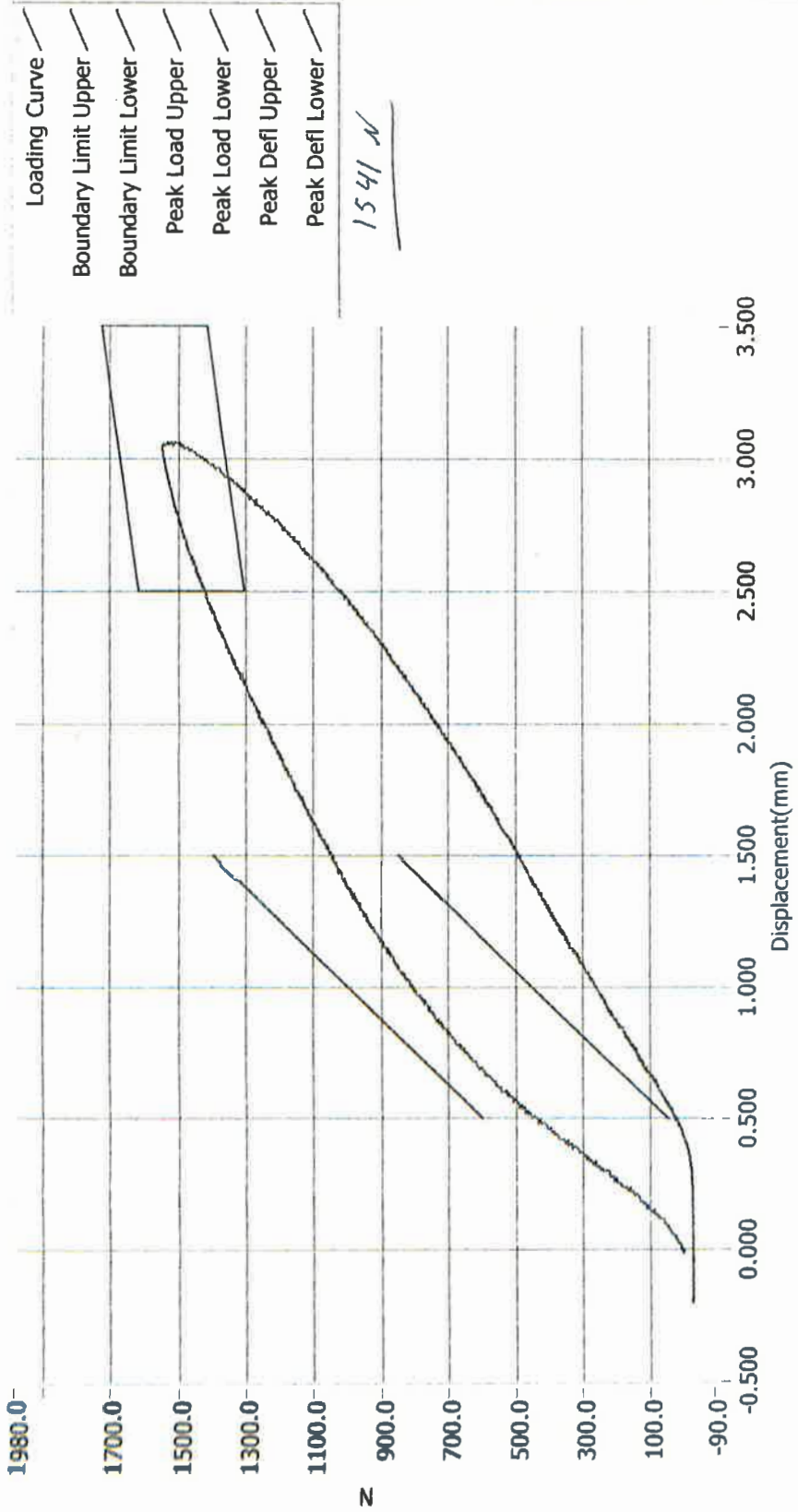
Resultant Data - SIDIIs Plug Compression



Test ID	Part Serial Number	Test Date	Test Time
	71304	12/19/2013	8:27 PM
Cert ID	ATD Serial Number	ATD Type	
	N/A	SIDIIs	

ATD Calibration Lab

Resultant Data - SIDIIs Plug Compression



ATD Calibration Lab

<u>Test ID</u>	<u>Part Serial Number</u>	<u>Test Date</u>	<u>Test Time</u>
	71151	12/18/2013	10:09 PM
<u>Cert ID</u>	<u>ATD Serial Number</u>	<u>ATD Type</u>	
	N/A	SIDIIs	

Current Date : 12/18/2013 Current Time : 22:09:55

APPENDIX D
TEST EQUIPMENT AND INSTRUMENTATION CALIBRATION DATA

Table 1 – Dummy Instrumentation (ES-2re)

		ES-2re S/N 032			
		Serial Number	Manufacturer	Calibration Date	
Head CG Accelerometers		X	P79600	Endevco	07/22/15
		Y	P83187	Endevco	07/22/15
		Z	P83188	Endevco	07/22/15
		Xr	P84438	Endevco	07/22/15
		Yr	P84445	Endevco	07/22/15
		Zr	P84449	Endevco	07/22/15
Thorax Rib Displacement Potentiometers	Upper	Y	G176	Honeywell	07/24/15
	Middle	Y	G169	Honeywell	07/24/15
	Lower	Y	G164	Honeywell	07/24/15
Abdomen Load Cells	Forward	Y	ABG1513	Denton	12/15/14
	Middle	Y	ABG1531	Denton	12/15/14
	Rear	Y	ABG1536	Denton	12/15/14
Lower Spine Accelerometers (T12)		X	P86742	Endevco	07/01/15
		Y	P86743	Endevco	07/01/15
		Z	P86744	Endevco	07/01/15
Public Symphysis Load Cell		Y	PG462	Denton	12/15/14

Table 2 – Dummy Instrumentation (SID-IIs)

				SID-IIs S/N 296			
				Serial Number	Manufacturer	Calibration Date	
Head CG Accelerometers				X	P79586	Endevco	07/16/15
				Y	P79590	Endevco	07/16/15
				Z	P79592	Endevco	07/16/15
				Xr	P79741	Endevco	07/16/15
				Yr	P79743	Endevco	07/16/15
				Zr	P79744	Endevco	07/16/15
Head Angular Rate Sensors				X	ARS7413	DTS	07/15/14
				Y	ARS7421	DTS	07/15/14
				Z	ARS7423	DTS	07/15/14
Displacement Potentiometers	Thoracic Rib	Upper	Y	G012	Servo	07/17/15	
		Middle	Y	G1163	FTSS	07/17/15	
		Lower	Y	G1158	FTSS	07/17/15	
	Abdominal Rib	Upper	Y	G1146	FTSS	07/17/15	
		Lower	Y	G1126	FTSS	07/17/15	
Lower Spine Accelerometers (T12)				X	P80116	Endevco	07/16/15
				Y	P80118	Endevco	07/16/15
				Z	P80119	Endevco	07/16/15
Acetabulum Load Cell				Y	ACG268	Denton	01/06/15
Iliac Wing Load Cell				Y	IWG282	Denton	01/06/15
Pelvis Plug (struck side)					71304	FTSS	12/19/13
Pelvis Plug (non-struck side)					71151	FTSS	12/18/13

Table 3 – Vehicle Instrumentation

			Serial Number	Manufacturer	Calibration Date
1	Vehicle Center of Gravity	X	P75047	Endevco	08/11/15
	Vehicle Center of Gravity	Y	P75046	Endevco	08/11/15
	Vehicle Center of Gravity	Z	P75048	Endevco	08/11/15
2	Right Sill at Front Seat	X	P87542	Endevco	07/06/15
	Right Sill at Front Seat	Y	P87544	Endevco	07/06/15
	Right Sill at Front Seat	Z	P87543	Endevco	07/06/15
3	Right Sill at Rear Seat	X	P88769	Endevco	07/10/15
	Right Sill at Rear Seat	Y	P88771	Endevco	07/10/15
	Right Sill at Rear Seat	Z	P88770	Endevco	07/10/15
4	Left Sill at Front Door	Y	P68853	Endevco	09/10/15
5	Left Sill at Rear Door	Y	P85042	Endevco	09/10/15
6	Left A-Post Lower	Y	P90619	Endevco	10/07/15
7	Left A-Post Middle	Y	P90618	Endevco	10/07/15
8	Left B-Post Lower	Y	P88731	Endevco	09/09/15
9	Left B-Post Middle	Y	P88732	Endevco	09/09/15
10	Front Seat Track	Y	P67447	Endevco	05/29/15
11	Rear Seat Track or Structure	Y	P79663	Endevco	08/11/15
12	Right Rear Occ. Compartment	Y	P78804	Endevco	05/27/15
13	Engine Block	X	P77644	Endevco	07/10/15
	Engine Block	Y	P77645	Endevco	07/10/15
14	Rear Floorpan Above Axle	X	P79697	Endevco	08/05/15
	Rear Floorpan Above Axle	Y	P79699	Endevco	08/05/15
	Rear Floorpan Above Axle	Z	P79698	Endevco	08/05/15

Table 4 – MDB Instrumentation

		Serial Number	Manufacturer	Calibration Date
MDB Center of Gravity	X	P85036	Endevco	01/16/2015
MDB Center of Gravity	Y	P85037	Endevco	01/16/2015
MDB Center of Gravity	Z	P85038	Endevco	01/16/2015
Left Frame at Rear Axle Centerline	X	P67517	Endevco	01/16/2015
Left Frame at Rear Axle Centerline	Y	P67518	Endevco	01/16/2015